

**EAST HELENA SCHOOL DISTRICT NO. 9**  
School Site Evaluation Study

December 2014



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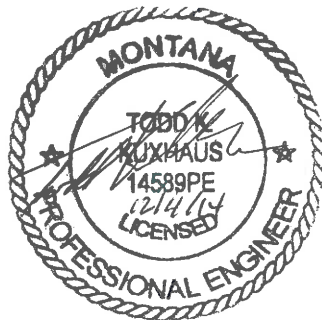
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## **School Site Evaluation Study**

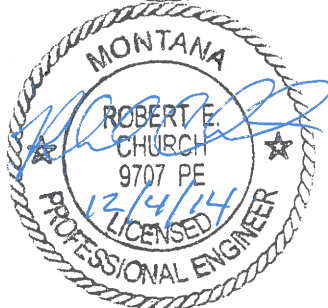
**December 2014**

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**East Helena School District**

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# **1.0 EXECUTIVE SUMMARY**

## **1.1 Introduction and Background**

The East Helena School District is rapidly reaching its capacity for students, and needs to complete planning for the future expansion of its facilities. It is estimated that the current facilities will be at or exceeding capacity sometime in the next few years. East Helena Public Schools currently has three existing facilities in operation, Eastgate Elementary School, Robert H. Radley Elementary School, and East Valley Middle School. The District contracted with Schlenker and McKittrick Architects and Great West Engineering to perform a study to determine the feasibility of expanding the District's existing facilities to accommodate the anticipated increase in student enrollment as well as evaluate alternative sites for the construction of a new school.

The current and projected student enrollment in the District's existing school facilities have reached the planning Trigger Points outlined in the Long Term Infrastructure Handbook developed by the District (Appendix A). The Handbook evaluates and outlines facility capacities, growth potential, future classroom needs, and the construction of new schools. The current enrollment in the East Helena Public Schools is 1,165 students. Student enrollment numbers have generally matched or exceeded the projected enrollment numbers in the Long Term Infrastructure Handbook. Despite the trend of enrollment remaining relatively stable for the last two to three years, the District anticipates a resurgence in new home construction within the District. Specifically, Mountain View Meadows Subdivision has the potential to add 1,800 new homes and is growing as this report is being written.

The District's existing facilities are approaching their maximum capacities as outlined in the Montana School Accreditation Standards and Procedures Manual (Montana ARM 10.55.712). These facts have led the District to research potential alternatives for accommodating the projected student population and have concluded that additional facilities will be necessary.

## **1.2 Problem Definition**

The problem that the East Helena Public Schools District faces is that the current and projected student enrollment in the District's current facilities is approaching their maximum capacities. As stated previously, current enrollment of the East Helena Public Schools is 1,165 students.

For the 2012/2013 school year, Eastgate Elementary School had an enrollment of 301 students. The school accommodated 40 preschool students in two classrooms, 135 kindergarten students in seven classrooms, and 128 first grade students in seven classrooms. These averages of 20, 19.3, and 18.3 students per classroom, respectively, are at or approaching the State maximum capacity of 20 students per classroom. The District's greatest need for facility expansion is for the kindergarten through 3<sup>rd</sup> grade level of students. At Robert H. Radley Elementary School and East Valley Middle School the situation is similar and trending that direction as well.

Although the existing school facilities are in overall good condition, they are not suitable candidates for expansion. The facilities' sizes, configurations, and related constraints do not lend themselves to cost effective or efficient site and building expansion. From these conclusions, it was recommended that the District pursue a new school site and construction of a new facility. The construction of a new facility on a new site provides the best opportunity for the District to address their projected enrollment needs in an efficient, cost effective manner.

The focus of this study is to evaluate and compare alternative sites for a new school based on several criteria. A primary purpose of this study is to help the District determine the best property or properties to acquire for new school construction. The study determines and compares capital costs, technical feasibility, operations and maintenance considerations, access and safety, long term flexibility, environmental impacts and public opinion for each site the District elected to evaluate in detail. The results of these investigations will be presented to the school board so that an informed decision can be made about the selection of the preferred property. Construction costs of the actual school building(s) are expected to be nearly identical at each site, therefore this study focuses on evaluating and comparing the costs of the supporting infrastructure needed as well as the suitability of each site as a school property.

### **1.3 Alternatives Considered**

The recommendation to pursue a new site and facility led the District to contract Schlenker and McKittrick Architects and Great West Engineering to research and explore new site and facility alternatives. Schlenker and McKittrick Architects planned a preliminary school facility footprint for 400 students and Great West Engineering has evaluated numerous site alternatives. Nine site alternatives were evaluated in detail. Figure 5.1 shows the location of the site alternatives evaluated in this report. A summary of the key elements of each site alternative is as follows:

- Lamping Field

- 80 acre site in East Helena City limits,
  - Requires contaminated soil removal,
  - Connection to City of East Helena water/sewer infrastructure available,
  - Wastewater lift station required,
  - Modest transportation infrastructure improvements required including turn lanes on Wylie Drive, sidewalks and intersection improvements.
  - Acquisition through Montana Environmental Trust Group (METG), State of Montana and EPA
- Dartman Property
  - 80 acre site in East Helena City limits,
  - Requires contaminated soil removal,
  - Connection to City of East Helena water/sewer infrastructure available,
  - Gravity wastewater infrastructure
  - Modest transportation infrastructure improvements required including turn lanes on Valley Drive, sidewalks and intersection improvements.
  - Acquisition through Montana Environmental Trust Group (METG), State of Montana and EPA
- HSG Property
  - 45 acre site north of Eastgate School,
  - Requires contaminated soil removal,
  - Connection to Eastgate Water & Sewer Association water/sewer infrastructure available,
  - Wastewater lift station required,
  - Modest transportation infrastructure improvements required including turn lanes on Lake Helena Drive, sidewalks and intersection improvements.
  - Acquisition through purchase from Helena Sand & Gravel
- Hamlin Alternative 1A
  - 80 acre private owned site,
  - No contaminated soil removal,
  - On-site water/sewer infrastructure,
  - Extensive transportation infrastructure improvements required including improvements to Canyon Ferry Drive, sidewalks and intersection improvements.
  - Acquisition by purchase from private landowner.

- Hamlin Alternative 1B
  - 80 acre private owned site,
  - No contaminated soil removal,
  - Connection to Eastgate water/sewer infrastructure,
  - Wastewater lift station required,
  - Extensive transportation infrastructure improvements required including improvements to Canyon Ferry Drive, sidewalks and intersection improvements.
  - Acquisition by purchase from private landowner.
- Hamlin Alternative 2
  - 80 acre private owned site,
  - No contaminated soil removal,
  - Connection to Eastgate water/sewer infrastructure,
  - Wastewater lift station required,
  - Extensive transportation infrastructure improvements required including improvements to Canyon Ferry Drive, construction of new County Road, sidewalks and intersection improvements.
  - Acquisition by purchase from private landowner.
- Mountain View Meadows
  - 9 acre lot owned by the District,
  - Located in City of Helena limits,
  - No contaminated soil removal,
  - Connection to City of Helena water/sewer required,
  - Requires wastewater lift station,
  - Could possibly require costly pedestrian bridge/tunnel,
  - Requires moderate transportation improvements
  - Small lot size not conducive to long term flexibility.
- East Fields
  - 75 acre lot owned by METG with City of East Helena limits,
  - Contaminated soil removal required
  - Connection to City of East Helena water/sewer required,
  - Requires wastewater lift station,
  - Extensive transportation infrastructure improvements required,
  - Could possibly require costly pedestrian bridge/tunnel.



- Diehl Fields
  - 93 acre parcel owned by Diehl Ranch Co, Incorporated outside of East Helena limits,
  - Contaminated soil removal may be required
  - Connection to East Gate water/sewer required,
  - Requires wastewater lift station,
  - Extensive transportation infrastructure improvements required, and,
  - Long distance between site and center of city.

Table 1-1 - Capital Costs and Present Worth Analysis

SITE ALTERNATIVES CAPITAL COSTS AND PRESENT WORTH ANALYSIS									
ITEM	Lamping Field	Dartman Property	Helena Sand and Gravel	Hamlin Property Alt. 1A	Hamlin Property Alt. 1B	Hamlin Property Alt. 2	Mountain View Meadows	East Fields	Diehl
Capital Costs	\$2,245,258	\$2,090,219	\$3,094,690	\$4,935,996	\$3,950,475	\$5,081,445	\$1,698,625	\$2,276,068	\$5,332,987
Annual O&M Costs	\$32,646	\$20,251	\$43,200	\$26,731	\$43,200	\$54,383	\$50,843	\$32,646	\$32,646
20-Year Salvage Value	\$143,000	\$256,000	\$415,000	\$955,000	\$783,000	\$600,000	\$124,000	\$175,000	\$648,000
Present Worth of Salvage Value	\$44,600	\$79,800	\$129,400	\$297,800	\$244,100	\$187,100	\$38,700	\$54,600	\$202,000
Present Worth of Annual O&M Cost	\$489,701	\$303,770	\$648,012	\$400,968	\$648,012	\$815,765	\$762,659	\$489,701	\$489,701
Present Worth Cost	\$2,690,359	\$2,314,189	\$3,613,302	\$5,039,164	\$4,354,387	\$5,710,110	\$2,422,584	\$2,711,169	\$5,620,688

Table 1-2 - Decision Matrix

Decision Matrix																
Alternative	Alternative	Financial Feasibility		Public Opinion		Environmental Impacts		Operation and Maintenance		Technical Feasibility		Access and Safety		Long Term Flexibility		TOTAL
	Life Cycle	Weight:	25	Weight:	40	Weight:	6	Weight:	10	Weight:	20	Weight:	10	Weight:	10	
	Cost	Score	Wtd.	Score	Wtd.	Score	Wtd.	Score	Wtd.	Score	Wtd.	Score	Wtd.	Score	Wtd.	
LAMPING FIELD	\$2,690,359	4.8	121	8.0	320	10.0	60	10.0	100	8.0	160	7.0	70	10.0	100	931
DARTMAN	\$2,314,189	5.6	140	10.0	400	10.0	60	10.0	100	9.0	180	10.0	100	10.0	100	1080
HSG SITE	\$3,613,302	3.6	89	7.0	280	10.0	60	10.0	100	7.0	140	8.0	80	8.0	80	829
HAMLIN - ALT 1A	\$5,039,164	2.4	60	3.0	120	7.0	42	2.0	20	2.0	40	4.0	40	10.0	100	422
HAMLIN - ALT 1B	\$4,354,387	2.9	72	3.0	120	8.0	48	10.0	100	4.0	80	4.0	40	10.0	100	560
HAMLIN - ALT 2	\$5,710,110	2.0	51	3.0	120	8.0	48	8.0	80	4.0	80	6.0	60	10.0	100	539
MOUNTAIN VIEW	\$2,422,584	5.4	134	3.0	120	9.0	54	10.0	100	3.0	60	3.0	30	2.0	20	518
EAST FIELDS	\$2,711,169	4.8	120	3.0	120	10.0	60	10.0	100	4.0	80	4.0	40	10.0	100	620
DIEHL	\$5,620,688	2.1	52	3.0	120	10.0	60	10.0	100	4.0	80	4.0	40	10.0	100	552

## **1.4 Preferred Alternative**

The preferred alternative for the proposed project is the Dartman Property site. The site received the highest aggregate score from the decision matrix. The decision matrix scored each site alternative based upon seven weighted criterion. The criterion were as follows: financial feasibility, public opinion, environmental impacts, operation and maintenance, technical feasibility, access and safety, and long term flexibility.

The Dartman Property site is the best candidate for numerous reasons. The site is cost effective and has the second lowest overall capital cost among sites evaluated. The site has the desired 80 acres and most centrally located among the sites researched. Being that the site is located within the East Helena city limits, a water and wastewater connection is readily available which promotes lower costs and less operation and maintenance. The site topography provides the proper gradient for a gravity collection system versus a costly lift station. The surrounding transportation network and corresponding levels of service would not be as adversely affected as the other sites evaluated. The Dartman site and surrounding area would only require minimal transportation infrastructure improvements.

The Lamping Field site, HSG Property site, and East Field site were also strong candidates for a new school site. These sites shared some of the same qualities as the Dartman Property site but did not score as high consistently among the criteria weighted in the decision matrix.

## **1.5 Project Costs and Budget**

The capital cost of the Dartman Property site is \$2,090,219 and has a net present worth cost of \$2,314,189. Annual operation and maintenance costs associated with the site are water and sewer utility bills due to the City of East Helena.

## 2.0 PROJECT PLANNING

The East Helena School District, District No. 9 has been growing steadily over the last several years and the existing school facilities are reaching their capacity to handle additional students. The District recently completed a Planning Report<sup>1</sup> that substantiated the need for additional classroom capacity and ruled out expansion of the existing schools (Appendix B). The recommendation of the report was to accommodate student enrollment growth by the construction of a new school.

The purpose of this study is to provide a comprehensive planning document to help identify a preferred school site by evaluating the infrastructure needed to support a new school facility including water, sewer, and transportation infrastructure. The report also examines and weighs other factors including environmental considerations, access and safety, long term flexibility, technical feasibility, public opinion, purchase price and soil contamination clean-up.

### 2.1 Location

The East Helena School District, District No. 9 encompasses the land including East Helena and Eastgate Village as well as a fairly large area outside of these two target areas. There are three existing schools within the district. Eastgate Elementary School serves grades preschool through first, Radley Elementary School serves grades second through fifth, and East Valley Middle School serves grades sixth through eighth.

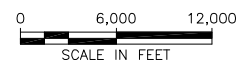
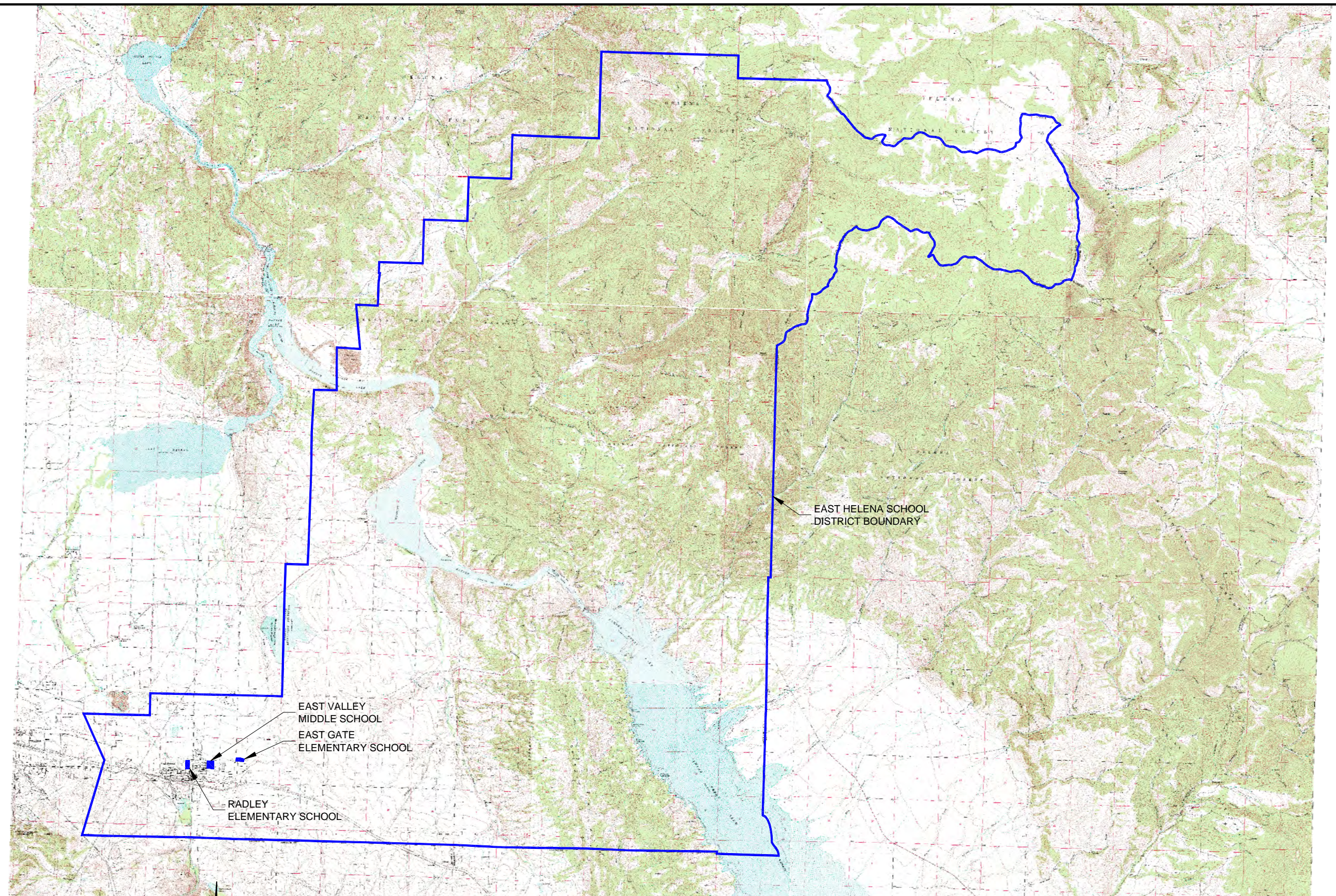
Although long-term planning needs to consider the entire school district boundaries, the boundaries are very large and extend well beyond the densely populated areas. For practical purposes, potential new school site locations need to be closer to the East Helena City Limits and Eastgate Village where the main population density is.

Figure 2.1 shows a topographic view of the area showing the actual boundaries of the school district. Figure 2.2 shows an aerial view of the more practical planning area. The actual planning areas for the school district are located within Sections 25 and 36 of Township 10N and Range 3W and Sections 31, 19, 20, 21, 28 and 33 of Township 10 N and Range 2W.

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<sup>1</sup> SMA Architects. *Planning Report for East Helena Public Schools, School District No. 9.* June 18, 2014.





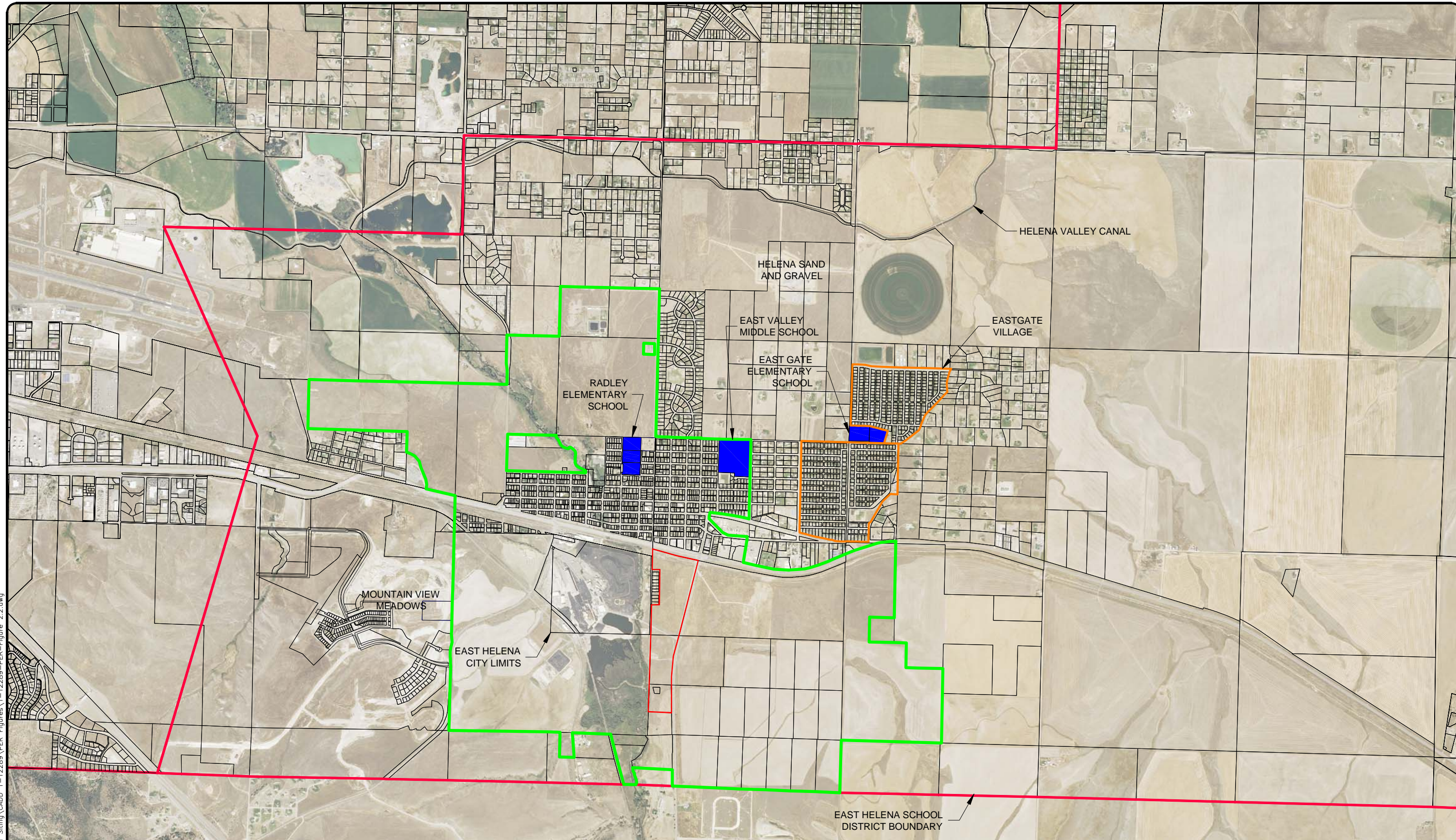
**FIGURE 2.1**  
**TOPOGRAPHIC MAP OF SCHOOL**  
**DISTRICT**

SCHOOL SITE EVALUATION PER  
EAST HELENA PUBLIC SCHOOL DISTRICT NO. 9





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**FIGURE 2.2**  
**AERIAL VIEW OF PLANNING AREA**  
SCHOOL SITE EVALUATION PER  
EAST HELENA PUBLIC SCHOOL DISTRICT NO. 9





## **2.2 Physical Characteristics of Area**

### **2.2.1 Topography**

The land within the East Helena area gently slopes to the northwest with the Spokane Hills lying to the east.

### **2.2.2 Area Soils and Geology**

Information on the area soils was gathered from the *Web Soil Survey*<sup>1</sup>. A summary of the important soil characteristics is provided in the text, but a complete description of the soils and soil properties as well as a copy of the soils map is included in Appendix C.

The largest cross section of soil in the area is the Sappington-Amesha loam which ranges from a 1 to 4 percent slope. The next largest section is the Nippt-Attewan Complex which range from 1 to 2 percent slopes. Finally, the last large section is the Musselshell-Crago complex which ranges from 2 to 8 percent slopes. There are many other small pockets of soil including gravels, cobbles, and loams which make up East Helena and the surrounding area. All of the surrounding soils are generally well drained with the most restrictive layer at more than 80 inches and are considered farmland of local importance.

Only one active leaking underground storage tank (LUST) site was found, while three inactive LUST site were found in East Helena. All of these sites are located outside the areas of interest for the new school location and should not affect construction of the new school.

Most of the City of East Helena and part of Eastgate are underlain by Holocene-aged alluvial sediments. These comprise generally coarse-grained deposits of sand and gravel, although some strata of silt- and clay-rich sediments are also present (Thamke, 2000, Hydrology of the Helena Area Bedrock, West-Central Montana, 1993-98, US Geological Survey Water-Resources Report 00-4212; Swierc, 2013, Ground Water Monitoring Results and Surface Water – Ground Water Interaction, Helena Valley, Montana, Lewis and Clark Water Quality Protection District). The central and eastern portions of Eastgate are underlain by semi-consolidated Tertiary-aged sediments of primarily volcanoclastic origin.



## **2.3 Environmental Resources Present**

Environmental resources are particularly important with regard to the school site selection as there will be disturbance to 10+ acres of land for any new school site. The following sections provide a general overview of the environmental resources that are present with the planning area.

### **2.3.1 Land Resources**

The Natural Resource Information System (NRIS) website<sup>ii</sup> was searched for vegetation information within a 3-mile radius of East Helena. The Montana Land Use Map from the NRIS website indicates that the area within the East Helena City Limits is all “Urban” while the areas surrounding are considered Agricultural or Rangeland. Spokane Hills to the east and the Elkhorn Mountains to the south are considered evergreen forest, but are both located well outside of the planning area for this project.

### **2.3.2 Biological Resources**

The Montana Natural Heritage Program website<sup>iii</sup> was reviewed for information relating to any animals or plants in the project area that may be species of concern. There were no Plant Species of Concern that were identified within Township 10N, Range 2W. Although, there were five Animal Species of Concern and five Potential Species of Concern identified for the same area. Additionally, there were two Plant Species of Concerns identified in Range 3W, as well as, eleven Animal Species of Concern and five Potential Animal Species of Concern.

The species of concern in Range 2W include the Golden Eagle (Accipitriidae), Great Blue Heron (Ardeidae), Veery (Turdidae) and Bobolink (Icteridae) bird species are ranked G5, S3 and G5, S3B, the Westslope Cutthroat Trout (Salmonidae) fish species is ranked G4T3, S2. The G5 ranking indicates that in their global population, they are common, widespread, and abundant and not vulnerable in most of its range. The S3 ranking indicates that, in Montana, their population may be potentially at risk because of limited and/or declining numbers, range and/or habitat, even though it may be abundant in some areas. The S3B ranking indicates that, in Montana, their breeding population is potentially at risk because parts of its range, and/or suspected to be declining. The G4T3 rank indicates that globally population is apparently secure, but the global rank of a subspecies is potentially at risk.

The potential species of concern in Range 2W are Barrow's Goldeneye (Anatidae) and Hooded Merganser (Anatidae) both bird species are ranked as a G5, S4, the Burbot (Gadidae) fish species is ranked G5, S4 and the California Darner and the Blue-eyed Darner (Aeshnidae) insect species are ranked G5, S3S5 and G5, S2S4 respectively. Again, the G5 ranking indicates that in their global population, they are common, widespread, and abundant and not vulnerable in most of its range. The S4 ranking indicates that, in Montana, their population is apparently secure, though it may be quite rare in parts of its range, and/or suspected to be declining. The S3S5 and S2S4 ranking indicates that the species rank in Montana ranges from potentially at risk to abundant and from at risk because of very limited populations to apparently secure, but rare populations.

Range 3W species of concern include the Lesser Rushy Milkvetch (Fabaceae) and the Wedge-leaf Saltbrush (Amaranthaceae) in plant species, which are ranked G5, S3, the Wolverine (Mustelidae) ranked G4, S3 and Hoary Bat (Vespertilionidae) ranked G5,S3 in mammal species, the Great Blue Heron (Ardeidae), the Pinyon Jay (Corvidae), the Cassin's Finch (Fringillidae), the Clark's Nutcracker (Corvidae), the Long-billed Curlew (Scolopacidae), and the Brewer's Sparrow (Emberizidae) bird species are all ranked G5, S3, the Veery (Turdidae) and Bobolink (Icteridae) both bird species are ranked G5, S3B, and the Plains Spadefoot (Scaphiopodidae) amphibian species is ranked G5, S3. Again, the G5 ranking indicates that in their global population, they are common, widespread, and abundant and not vulnerable in most of its range. The G4 ranking indicates that the species is apparently globally secure, but is suspected of declining. The S3 ranking indicates that, in Montana, their population is apparently secure, though it may be quite rare in parts of its range, and/or suspected to be declining. The S3B ranking indicates that, in Montana, their breeding population is potentially at risk because parts of its range, and/or suspected to be declining.

The potential species of concern in Range 3W are the Small Yellow Lady's Slipper (Orchidaceae) flower ranked G5, S3S4, the Hooded Merganser (Anatidae) bird species is ranked as a G5, S4, the Burbot (Gadidae) fish species is ranked G5, S4 and the California Darner, the Blue-eyed Darner (Aeshnidae), and the Red-veined Meadowhawk (Livellulidae) insect species are ranked G5, S3S5, G5, S2S4, and G4,S2S3 respectively. The G5 ranking indicates that in their global population, they are common, widespread, and abundant and not vulnerable in most of its range. The G4 ranking indicates that the species is apparently globally secure, but is suspected of declining. The S3S4 ranking indicates that, in Montana, their population is potentially at risk, though it may be quite rare in parts of its range, and/or

suspected to be declining. The S3S5, S2S4 and S2S3 ranking indicates that the species rank in Montana ranges from potentially at risk to abundant and from at risk because of very limited populations to apparently secure, but rare populations.

Appendix D provides a copy of the Species of Concern reports. In general, a school site would not be anticipated to have a negative impact on any species or potential species of concern. The improvements would not be expected to impact actual breeding grounds and/or habitats of any of the mammals, birds, fish, or insects listed.

A more detailed discussion of potential impacts is discussed in the Alternative Analysis section.

### **2.3.3 Water Resources**

#### **2.3.3.1 Groundwater**

Groundwater underlies the entire study area, contained within coarse sediments, commonly as confined or semi-confined aquifers. The groundwater system is recharged around the edges of the valley where the unconsolidated deposits overlap harder crystalline bedrock. The system is also recharged directly via infiltration from streams, irrigation canals, and irrigated farmland. The depth of wells in the study area varies from 30 to almost 600 feet, but groundwater generally occurs in useable quantities within several tens of feet of the ground surface. Shallower groundwater does not appear to occur within the area of interest, but the potential for shallower perched aquifers should be investigated prior to construction. A standard geotechnical investigation will allow for the evaluation of shallow groundwater potential.

#### **2.3.3.2 Surface Water**

There were no major lakes identified by the Natural Resource Information System (NRIS) websiteiv within a 1-mile radius of East Helena. The only major stream that was identified was the Prickly Pear Creek, which is a tributary to the Missouri River. Prickly Pear Creek provides opportunities for fishing and is home to Brook Trout, Brown Trout, Longnose Sucker, Mottled Sculpin, Mountain Whitefish, Rainbow Trout, and White Sucker.

Other surface water identified includes Helena Valley canal, which runs to the east and north to Lake Helena. There were no other major irrigation ditches or surface water bodies that were located within the project planning area.

### **2.3.4 Floodplains**

The site alternatives considered for East Helena Public Schools district are located above the 100 year floodplain of the Prickly Pear Creek. There are no improvements planned in the any designated 100 year floodplain area. The maps do not identify the 500 year floodplain near East Helena and the surrounding area. No floodplains will be impacted as a result of the proposed school sites. Floodplain maps for the planning area are included in Appendix E.

### **2.3.5 Wetlands**

The site alternatives have been preliminarily inspected on a cursory level for potential wetland areas. No impacts to wetlands have been identified, although there may be utility crossings of the various streams and drainages for some of the site alternatives. All necessary permits from State, Federal, and Local agencies will be obtained prior to commencing construction.

### **2.3.6 Cultural Resources**

Cultural resources include historic and prehistoric archaeological sites, historic architecture, engineering features and structures, and resources of significance to Native Americans. An investigation of cultural resources will be explored further upon site selection during design phase of project.

### **2.3.7 Socio-economic and Environmental Justice Issues**

The Montana Department of Commerce considers a community a low-income community if their low and moderate income percentage is greater than 50%. Based on the 2010 census information, the MDOC lists the City of East Helena with a low to moderate income percentage of 51.8%. Although the community is located in a low-income area, the proposed project would have no disproportionate effects on any particular area. In fact, the addition of a school would actually help to improve the quality of education received by all students in the district as class sizes could remain smaller. Environmental impacts and health and safety impacts will be evaluated as part of each separate alternative but, again, would be proportionate for the entire school district.

## 2.4 Population Trends

Although population trends within the community are important to estimating future enrollment, the major concern for population is the actual population or enrollment in the school district. Each school has a limited capacity for number of students the school is capable of serving. As noted in the *Planning Report for East Helena Public Schools, School District No. 9*<sup>2</sup> (Appendix B), the anticipated enrollment for the 2014/2015 school year is 1,152 students. As determined in the *Long Term Infrastructure Handbook*, when enrollment approaches 1,200 students, construction of a new facility should be considered. Thus, a new school site is being considered in this report in order to accommodate future enrollments of over 1,200 students.

*Planning Report for East Helena Public Schools, School District No. 9* provides additional supporting data with regard to student enrollment and school capacities. The referenced *Long Term Infrastructure Handbook* is a lengthier document and excerpts are included in Appendix A.

## 2.5 Community Engagement

The East Helena School District No. 9 Board is ultimately responsible for the project planning process. The entire process will be subject to regular school district laws and regulations. All school board meetings are open to the public, of which the public has ability to speak at each meeting. Upon completion of this report, a public hearing will be scheduled to allow additional public input into planning process.

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<sup>2</sup> SMA Architects. *Planning Report for East Helena Public Schools, School District No. 9*. June 18, 2014.

## 3.0 EXISTING FACILITIES

The existing facilities for the schools in East Helena are discussed and analyzed in this chapter. Most of the information for this chapter originates from the *Planning Report for East Helena Public Schools, School District No. 9*<sup>3</sup>. For easier reference, pertinent information will be summarized here but for additional detailed information, please see the full report included in Appendix B. The Planning Report also references:

- National recommendations regarding minimum (200) and maximum (600-650) enrollment sizes for elementary schools
- Accepted standards for minimum school site size
  - Elementary Schools = 10 acres plus 1 acre for every 100 students
  - Middle Schools = 20 acres plus 1 acre for every 100 students
- State of Montana Rules for class sizes by grade

The East Helena School District No. 9 currently has three schools. Eastgate Elementary School serves grades preschool through first grade and had a total of 301 students last year. Robert H. Radley Elementary School serves grades second through fifth and had a total of 507 students last year. East Valley Middle School serves grades sixth through eighth and had a total of 379 students last year.

### 3.1 Location Map

Figure 5-1 illustrates the location of all existing facilities.

### 3.2 History

The history of the three existing East Helena School District facilities will be discussed in this section.

#### 3.2.1 Eastgate Elementary School

Eastgate Elementary School was originally constructed in 1986 as an approximately 31,000 square foot facility. The building had approximately 13,350 square feet of classroom and

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<sup>3</sup> SMA Architects. *Planning Report for East Helena Public Schools, School District No. 9*. June 18, 2014.

gymnasium added to the existing structure in 1998. Eastgate Elementary School accommodates 301 students.

Eastgate Elementary School is located on a 6.56 acre lot. The District also owns an adjacent 2.954 acre lot that accommodates the District's bus barn. The existing Eastgate Elementary School site is significantly smaller than the 13 acres recommended using the guidelines for elementary school site size. If the District were to merge the adjacent Bus Barn lot, the site would still be approximately 2.5 acres smaller than the recommended 13 acres. Adding additional building square footage and student enrollment by building an addition to Eastgate Elementary School would only exacerbate the existing site constraints.

### **3.2.2 Robert H. Radley Elementary School**

Robert H. Radley Elementary School was constructed in two phases. The original building (east wing) was built in 1963 and the addition (west wing), including the gymnasium, was built in 1978. The total building area is approximately 67,900 square feet. Radley School accommodates 507 second grade through fifth grade students. Radley School is located on a 9.662 acre site shared with the District Administration building. The site is smaller than the 15 acres recommended using the guidelines for elementary school site size.

### **3.2.3 East Valley Middle School**

East Valley Middle School was constructed in 1998 as a 61,980 square foot single story structure. East Valley Middle School accommodates 379 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grade students and 35 staff members.

East Valley Middle School sits on a 19.22 acre site. The current site size falls within the recommended size for elementary schools, but falls below the recommended 24 acres for a middle school site. The site does provide potential space for a building addition to the east and south; however a building addition and the corresponding increase in enrollment would further increase the disparity between the size of the site and the recommended minimum site size for a middle school.

## **3.3 Condition of Existing Facilities & Suitability for Expansion**

The condition of the three existing East Helena School District facilities and their suitability for expansion are discussed in this section.

### **3.3.1 Eastgate Elementary School**

Overall, the building is in good condition relative the age of the structure. Depending on the size and location of a proposed addition, the existing boilers may not have the capacity to provide heating to the addition. The existing building does not have a fire suppression sprinkler system. Current building codes would require the addition of a fire suppression sprinkler system to the existing building and addition in the event an addition was constructed.

The original building consisted of a central administrative and multipurpose room core flanked by classroom wings to the east and west. The building addition extended the east classroom wing by six classrooms terminated by a gymnasium addition at the east end. Due to the configuration of the building and its location on the site, there is no opportunity to expand either of the existing classroom wings. Adding additional classroom space, and the associated increase in students and staff, would stress the common/support spaces in the building and would require the construction of additional support/common spaces to be considered.

The building is a one story structure and oriented east-west on the site with the main parking and playground area to the south and additional staff parking to the north. Parking lot size is currently inadequate for the student population. The configuration is also inefficient during drop-off and pickup of students. The arrangement of the building, parking, and playground area on the site do not allow space for an addition to the existing building.

### **3.3.2 Robert H. Radley Elementary School**

Overall, the building is in good condition relative to the age of the structure. Depending on the size and location of a proposed addition, the existing boilers may not have the capacity to provide heating to an addition. The building does not have a fire suppression sprinkler system except for the basement of the east wing. If an addition were built, both the addition and existing building would need to be equipped with an automatic fire sprinkler throughout.

Radley Elementary School is configured with the classroom wings oriented east-west and the kitchen/cafe/tergia/gymnasium wing extending to the north. Due to the configuration of the building and its location on the site, there is no opportunity to expand either of the existing classroom wings. Furthermore, the existing building has a basement that houses classrooms requiring proper egress further complicates providing an addition to the building. Adding additional classroom space, and the associated increase in students and staff, would stress the



common/support spaces in the building and would require the construction of additional support/common spaces to be considered.

The orientation of the classroom wings on the site does not allow for additions to the wings at either the east or west sides. The location of the parking lot to the south and utility services to the north of the building limit the potential for additional classrooms being added to the building without significant reconfiguration to the site.

Radley School's student population currently exceeds the recommended effective size for an elementary school of 300 to 400 students and is approaching the recommended maximum enrollment size of 600 to 650. Any proposed addition to Radley School would push the population above these recommended values. Radley Elementary School currently serves the District's 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> grade students. While the current enrollment at the school is supported by the number of classrooms, only a small increase in enrollment per grade, particularly at the 2<sup>nd</sup> grade level, could increase the student per classroom number beyond the maximum capacities outlined in Section 10.55.712, Montana School Accreditation Standards and Procedure Manual. Given the myriad of issues, an expansion of Radley School is not recommended.

### **3.3.3 East Valley Middle School**

East Valley Middle School is the newest school facility in the District and is in good condition.

The existing building is configured with four wings surrounding a central court. The main entry and administration forms the west wing of the building with the gymnasium, cafeteria, and mechanical support spaces forming the north wing. The library and classrooms form the south and east wings of the building. While the site offers room for expansion, the configuration of the wings around the central court meeting at right angles would make positioning a new addition awkward and inefficient. Due to the building's configuration and location on the site, a proposed addition would need to extend to the south and/or east of the building. Adding additional classroom space, and the associated increase in students and staff, would stress the common/support spaces in the building and would require the construction of additional support/common spaces to be considered.

East Valley Middle School's current student population of 379 falls within the recommended effective size of 300 to 400 students and would allow for additional students before approaching the recommended maximum enrollment size of 600 to 650 students.

### **3.4 Conclusions**

Because of both facility and property limitations neither Eastgate Elementary nor Radley School are suitable for expansion. East Valley Middle School provides the best opportunity for expansion, however the District's greatest need is increasing its capacity to serve students in the kindergarten to 3<sup>rd</sup> grade level. Therefore, the District has made the decision to proceed with the construction of a new school.

## **4.0 NEED FOR PROJECT**

### **4.1 Health, Sanitation and Security**

The primary need for the project is due to overcrowding and growth within the school system. Although it seems a separate issue, the overcrowding has a direct impact on health and safety. Numerous studies show that students have a difficult time learning in an overcrowded environment and that teachers have increased stress and workload as a result of overcrowding. The *Long Term Infrastructure Handbook (Appendix A)* was very intentional in setting a trigger population of 1,200 students specific to the East Helena School District. This provides time for sufficient planning to take place and prevent negative impacts to students and faculty in the District.

### **4.2 Aging Infrastructure**

The existing schools were determined to have adequate infrastructure for existing student populations but cannot support the anticipated growth. Thus, a new school site is being considered primarily to accommodate growth and not necessarily due to a result of the aged infrastructure.

### **4.3 Reasonable Growth**

As noted in the *Planning Report for East Helena Public Schools, School District No. 9*:

*The current and projected enrollments for East Helena Public Schools have reached the trigger points outlined in the Long Term Infrastructure Handbook that require the District to evaluate their existing facilities capability to handle the project student populations. Based on the projected enrollment and maximum classroom size dictated by the Montana Department of Education, the District's greatest needs in the near future will be at the kindergarten through 3<sup>rd</sup> grade levels.*

As indicated in the planning report, the District's school aged population is anticipated to grow which will cause overcrowding in the existing schools. Each of the existing elementary schools were evaluated for the potential of expansion to accommodate the District's growth needs in that K-3<sup>rd</sup> grade level. However, an addition to either school was not considered to be feasible. Thus, a new grade school has been recommended. The purpose of the remainder of this report

is to identify and narrow down potential new school sites to allow the District to plan for and accommodate their future growth.

## **5.0 ALTERNATIVES CONSIDERED**

### **5.1 Alternative Screening**

Numerous site and infrastructure alternatives exist that will address the need for a proposed school for the East Helena School District. However, some of the alternatives are not financially viable due to capital, operations and maintenance costs that are higher than other available alternatives, or are simply not appropriate for the District's needs. Additionally, all sites with less than 25 acres have been excluded from consideration with the exception of Mountain View Meadows. The property developer has indicated that he may be willing to dedicate additional property to the School District.

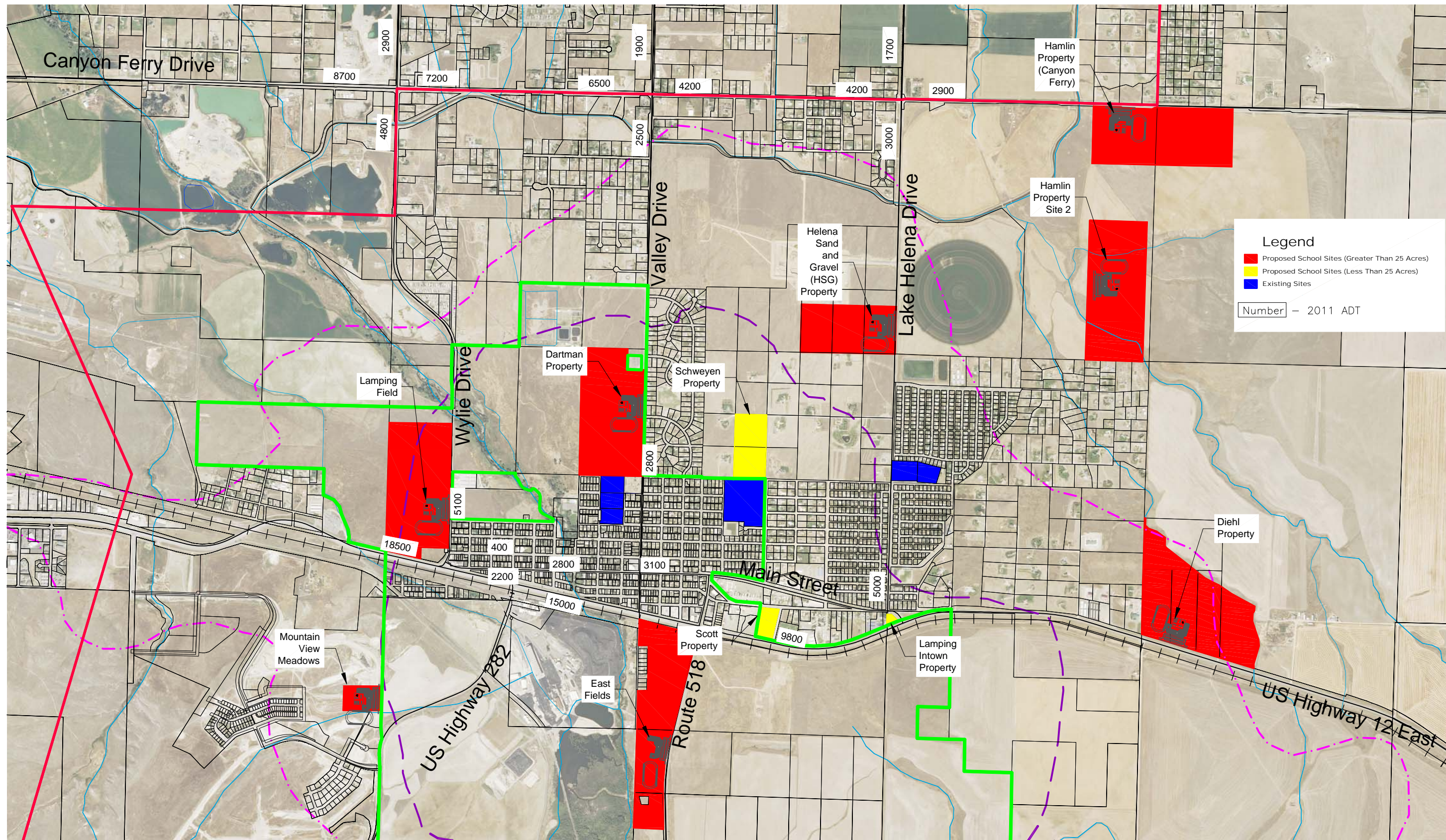
The following section evaluates the reasonable alternatives and determines which ones are viable for detailed consideration in Chapter 6.

### **5.2 Lamping Field Alternative**

The Lamping Field site is located west of Wylie Drive and north of Highway 12 East. The property is owned by Montana Environmental Trust Group (METG) and is 93 acres in size. Being that the school district is only seeking to use at maximum an 80 acre parcel, this property has potential to have the remaining 13 acres sold for other use by the METG. The following sections discuss various water, wastewater, transportation, and remediation alternatives for the Lamping Field site with the intent of determining the technical and financial viability of each.



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**Note:**  
Property less than 25 acres is considered not viable by the School District with the exception of Mountain View Meadows due to developer possibly interested in increasing lot size.

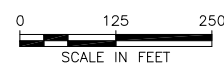
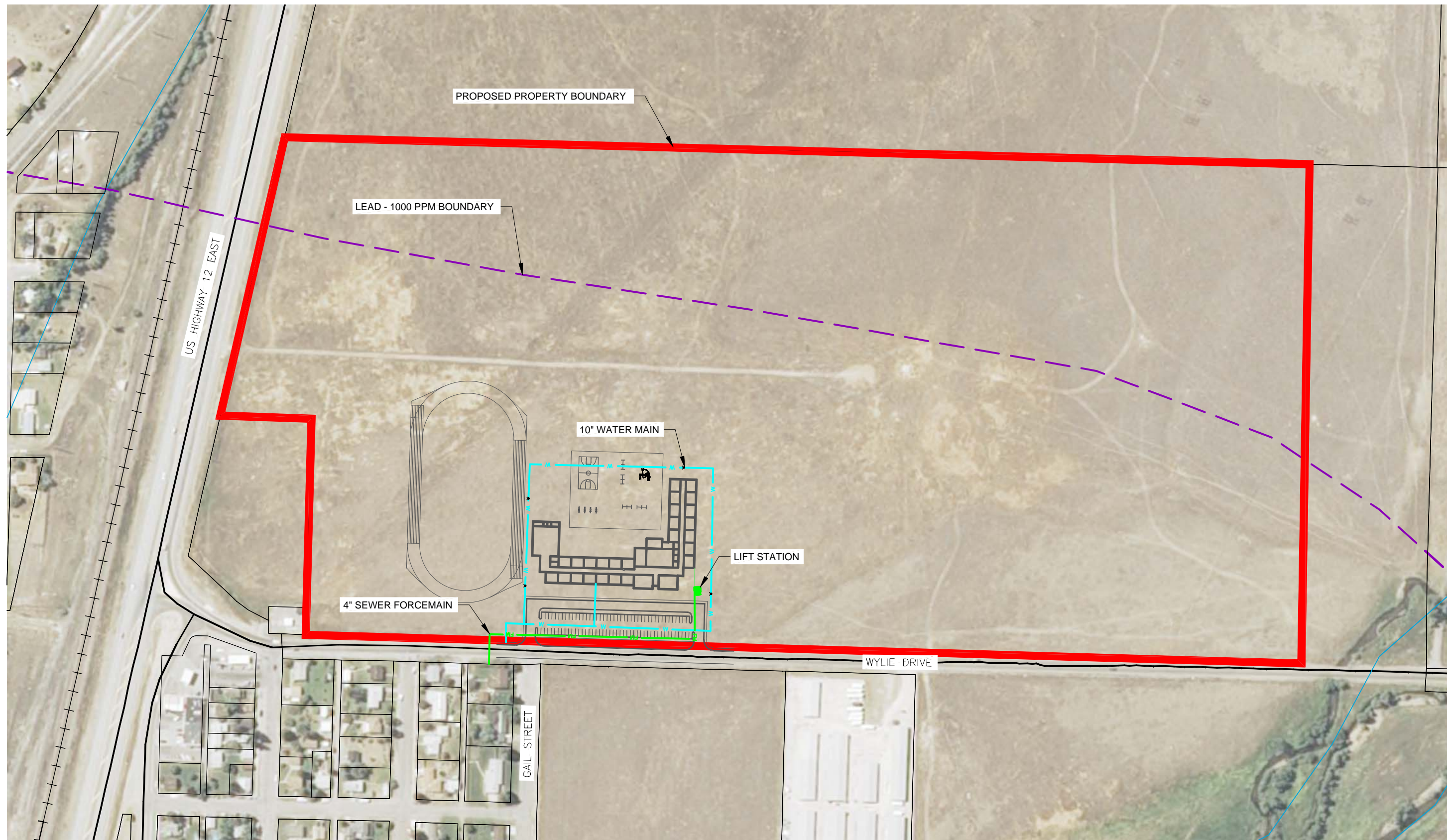


**FIGURE 5.1  
EAST HELENA SCHOOL SITE  
ALTERNATIVES**

EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES



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Legend

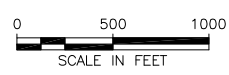
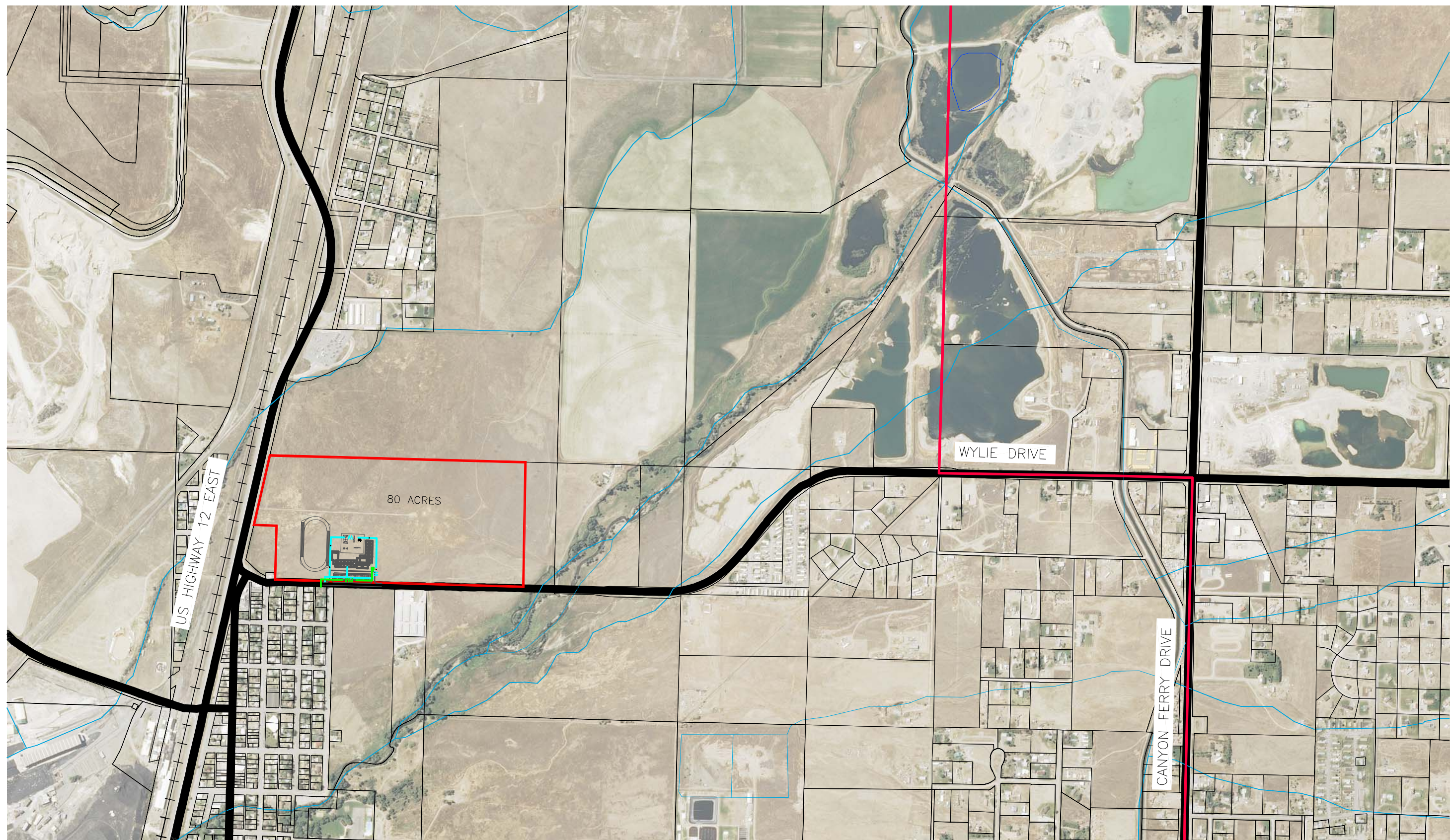
Proposed School Property Boundary

**FIGURE 5.2**  
**LAMPING FIELD**  
**WATER/SEWER IMPROVEMENTS**

EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES



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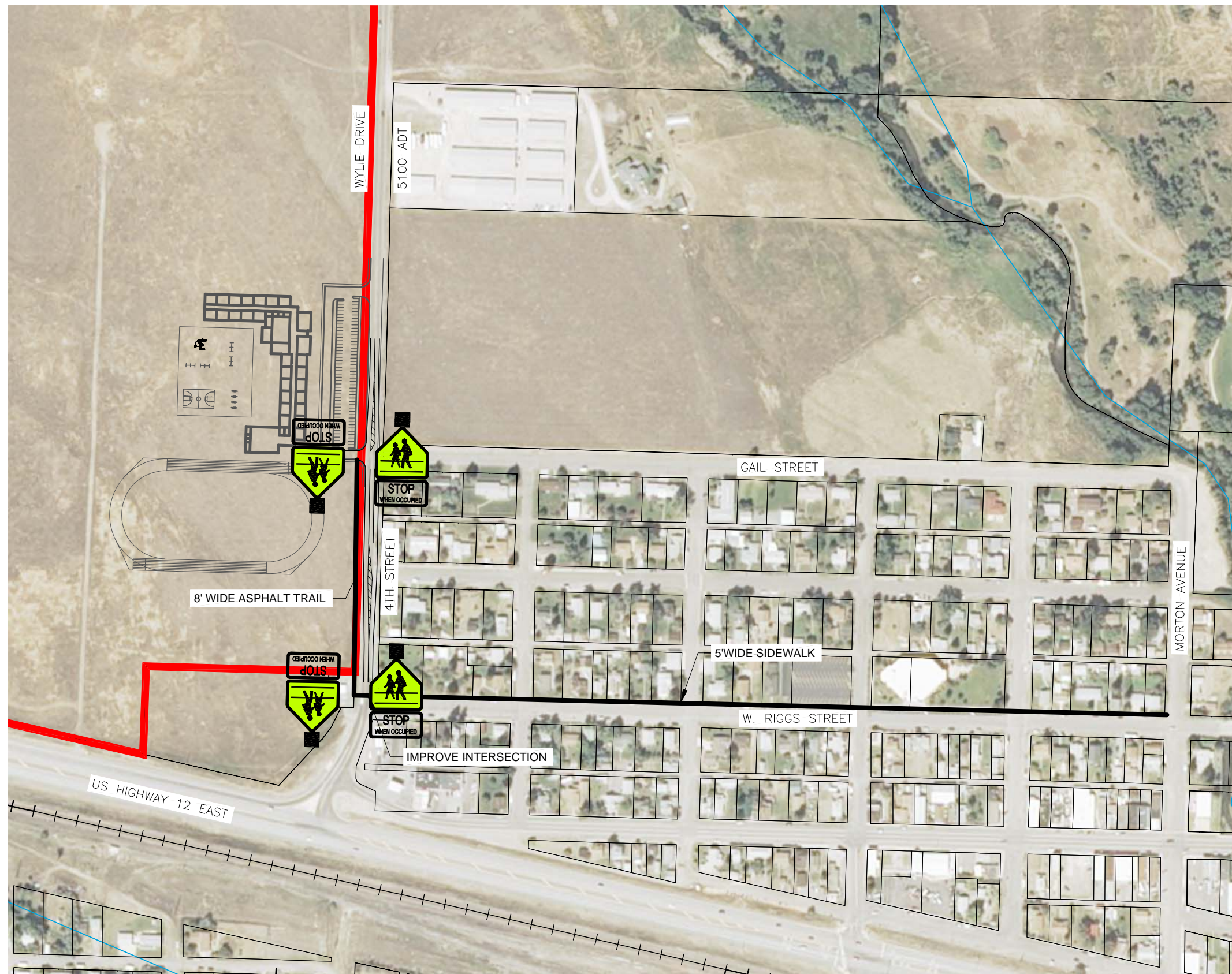


Legend  
■ Proposed School Property Boundary

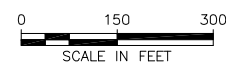
**FIGURE 5.3**  
**LAMPING FIELD**  
**TRANSPORTATION NETWORK**  
  
EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES



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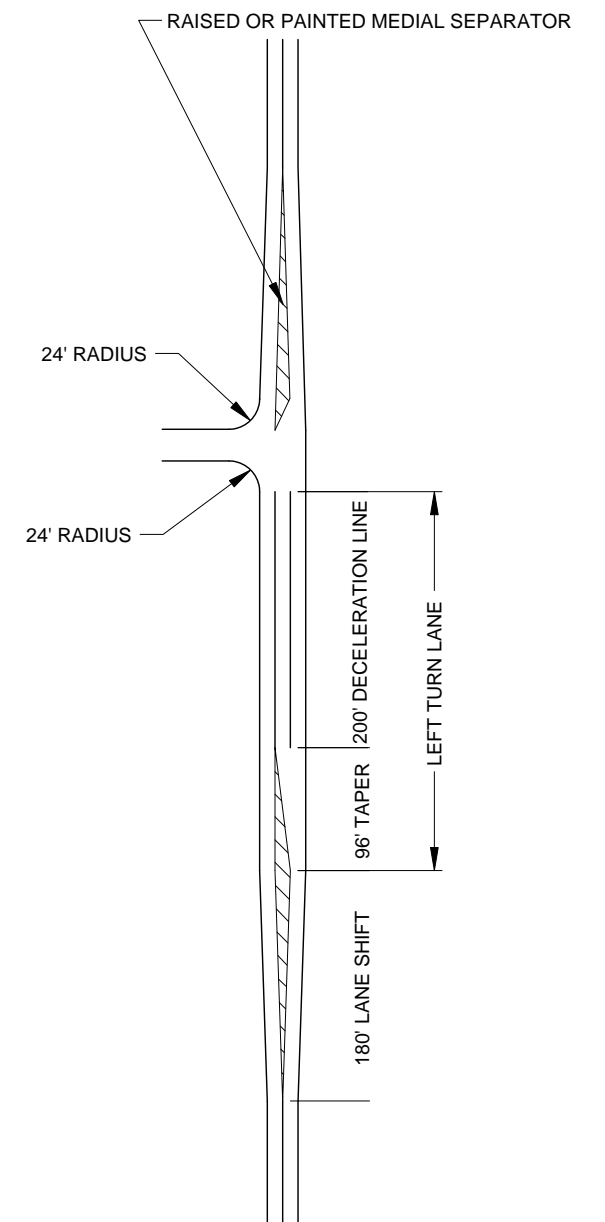


**SITE PLAN DETAIL**



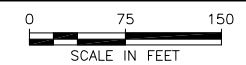
**Legend**

Proposed School Property Boundary



NOTES:  
1. WIDEN ROAD TO ACCOMMODATE TURN LANES.  
25 MPH DESIGN SPEED

**LEFT-TURN LANE DETAIL**



**FIGURE 5.4  
LAMPING FIELD  
TRANSPORTATION IMPROVEMENTS**

EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES



### **5.2.1 Water Alternatives**

There are two known water alternatives for the Lamping Field site. The first alternative is to connect to the City of East Helena's existing water system and the second alternative is to utilize onsite water via wells on or near the site. The first water alternative considered, connecting to City of East Helena's existing water system, requires installing water main piping and appurtenances from the City's system to the proposed school site to provide domestic and fire service. The proposed site is located immediately adjacent to the City's existing water system and requires approximately 2,020 feet of 10" C900 PVC water main (Figure 5.2). The water main piping also has to cross Wylie Drive and which may require boring and jacking. To meet fire code and provide for the minimum fire flow of 1,500 gallons per minute (GPM), the water main has to be looped around the proposed school site with four fire hydrants installed in strategic positions. Since the distance from the City's existing system to the proposed site is comparatively close this water alternative is relatively inexpensive and viable. This water alternative is discussed and scored in Chapter 6.

The second water alternative considered is to supply onsite water via wells on or near the site. Being that the Lamping Field site is located within the East Helena city limits and the City does not allow onsite water within the city limits, it is required to connect to the City's existing water system. In addition, the process of obtaining a new water right is costly and complex. Finally, groundwater in the Lamping Field area is contaminated with heavy metals from the ASARCO plant. Also, the Lamping Field property is included in the East Valley Groundwater Control Area which prohibits drilling new wells. Therefore, onsite water is considered unviable and is not considered or discussed further.

### **5.2.2 Wastewater Alternatives**

There are two known wastewater alternatives for the Lamping Field site. The first alternative is to connect to the City of East Helena's existing wastewater treatment system and the second alternative is to treat the wastewater on site. The first wastewater alternative considered, connecting to City's existing wastewater treatment system, requires transporting the wastewater through either a gravity collection system or a lift station with force main depending upon the topography of the initial wastewater collection point in relationship to the selected connection point to the existing treatment system. Although a gravity collection system is significantly more economical relative to a lift station, it was determined from the topography of the sewer route

that the gradient is insufficient for a gravity collection system and a lift station is required. This alternative also requires installing lift station pumps, controls and telemetry, force main, sewer service pipe, an automatic air release valve, and paying wastewater connection fees. The proposed site is immediately adjacent to City's existing sewer and requires only 750 feet of 4-inch HDPE force main and appurtenances (Figure 5.2). This wastewater alternative is considered viable due to the comparatively close proximity to the City's existing sewer system. This wastewater alternative is discussed and scored in Chapter 6.

The second wastewater alternative considered, onsite treatment, requires constructing a treatment system onsite that would treat wastewater to required standards and discharged via an onsite drain field. Being that the Lamping Field site is located within the East Helena city limits and the City does not allow onsite treatment within the city limits, it is required to connect to the City's existing wastewater system. In addition, the process of obtaining discharge permits is costly and complex. Therefore, onsite wastewater is considered unviable and is not considered or discussed further.

### **5.2.3 Transportation Alternatives**

The Lamping Field site is located within the East Helena city limits and is bordered by Wylie Drive to the east and U.S. Highway 12 East to the south. Figure 5.3 details the transportation network in the vicinity of this site. The Lamping Field site does not currently meet the transportation regulations and standards that are mandatory to accommodate a school and therefore improvements are required.

The proximity of U.S. Highway 12 East to the proposed site provides efficient travel and ease of access to the school along the highway but being that the site is located away from growth areas it would require relatively longer bus routes and an increased traffic load within the City and along Wylie Drive. Adoption by the Montana Department of Transportation (MDT) would require the roadways to be enhanced to current State transportation standards and also qualify them for certain state and federal funding options that could be used to construct the necessary transportation improvements. U.S. Highway 12 East has long been adopted by the Montana Department of Transportation while Wylie Drive, currently a county road, is likely to be adopted as well in the future. Wylie Drive requires a left turn lane to accommodate the increased traffic load and to meet an acceptable level of service and school requirements. Pedestrian crossings along with trails and sidewalks also need to be constructed to accommodate increased



pedestrian traffic and to meet school requirements. Because of increased traffic and bus routes, pedestrians, tight intersection turns, and current site grading and layout, the 4<sup>th</sup> and Riggs intersection also needs to be improved to mitigate these issues. These transportation improvements are costly but are required to allow the construction of a school at this site. Figure 5.4 details the needed transportation improvements for the Lamping Field Alternative. These improvements are viable and are discussed and scored in Chapter 6.

#### **5.2.4 Remediation Alternatives**

The Lamping Field site is located within the Asarco groundwater and soil contamination plume. Environmental remediation is required before a school could be constructed on the site. The Montana Environmental Trust Group (METG) owns the 93 acre Lamping Field site. The soils have been contaminated by the Asarco lead smelter that operated for over 100 years and have been tested for Lead, Arsenic, and Cadmium. The site soils have been tested to determine the location of the specific contaminants and corresponding levels of each at certain depths. There are three alternatives explored to remediate the site soil contamination. Groundwater remediation is unnecessary as part of the school project since the City of East Helena will provide the drinking water supply under the Lamping Field alternative.

The first remediation alternative considered is complete removal and replacement of the contaminated soils. The combination of the relatively thin layer of contamination and the poor quality and rocky soil conditions on the site make a thin removal and replacement of contaminated soils a primary alternative. Contaminated soils would only be removed until an acceptable threshold of contamination has been met and then an appropriate import fill material would be provided to bring the site back to grade. Being that METG owns the site, they have offered to dispose of the contaminated soils free of cost at one of their contaminated soil depositories on METG property. The expense is in excavating and trucking the contaminated soils and replacing contaminated soils with suitable soil. Due to increasingly stringent contamination regulations, complete removal and replacement alleviates all uncertainty of possible future remediation, as it is the most comprehensive and conservative remediation alternative. Removal and replacement truly mitigates the issue and is substantially superior for the environment, public, and future. After thorough analysis of the remediation alternatives, it was determined that complete removal and replacement of the contaminated soils is the most appropriate and conservative alternative. This remediation alternative is discussed and scored in Chapter 6. Data on contaminated soil for each of the sites is enclosed in Appendix H.

The second remediation alternative considered is deep tilling or in-place treatment. The process consists of blending the soil to lower the surface soil contamination levels through dilution without actually removing the contaminant. This is only feasible when the subsurface has lower contamination levels than the surface soils. To aid in the process, products such as lime, phosphorus, and organic matter can be added during the tilling to help immobilize the metals. This remediation alternative has been deemed an unviable option and is not considered or discussed further.

The third remediation alternative considered is capping. Capping is the process of adding a cover over contaminated surfaces that do not meet the minimum required contamination levels. This alternative essentially provides a barrier to exposure but does not actually remove the contaminant. Capping is a cost effective alternative when the contaminant is deep within the soil. Capping usually requires at minimum a cap of 12 to 16 inches in depth and the contamination profile for the East Helena sites is generally within the top 6 inches. The cost to install even a 12 to 16 inch cap is approximately equal to removal and replacement of 6 inches of contaminated soils due to material import costs. These factors deem this remediation alternative unattractive and it is not considered or discussed further.

A combination of removal and replacement with deep tilling was considered but ultimately deemed unviable and is not considered or discussed further.

During the development of the study, Great West discussed purchase of METG property with Ms. Cynthia Brooks on several occasions. Ms. Brooks said the METG is committed to re-use of the Trust properties, however clean-up of the outlying properties of the METG are a lower priority than the plant site itself at this time. Ms. Brooks said the METG would consider an offer for purchase based on the fair market value of the property minus the clean-up costs. For this report we investigated several similar sales in the East Helena area and established an estimated property value of \$6,000/acre. In some cases, the clean-up costs exceed the estimated property value. In this instance, we assigned a property purchase price of zero. However, a commitment to clean up the property by the District will certainly be part of the acquisition of METG properties under this scenario.

Table 5-1 - Estimated Infrastructure Capital Costs for Lamping Field Alternative

DECEMBER 2014 OPINION OF PROBABLE COST EAST HELENA SCHOOL SITING ALTERNATIVES - LAMPING FIELD					
#	DESCRIPTION	QTY	UNITS	UNIT PRICE	TOTAL
1	Sitework	1	LS	\$50,000.00	\$50,000.00
2	Contaminated Soil Removal	36,914	CY	\$14.50	\$535,253.00
3	Dewatering	1	LS	\$15,000.00	\$15,000.00
	<b>Earthwork Subtotal</b>				<b>\$600,253.00</b>
4	10" C900 PVC Water Main	2,020	LF	\$45.00	\$90,900.00
5	Boring and Jacking Water	80	LF	\$350.00	\$28,000.00
6	6" Fire Service	110	LF	\$35.00	\$3,850.00
7	3" Domestic Service	110	LF	\$30.00	\$3,300.00
8	Hydrants	4	EA	\$6,500.00	\$26,000.00
9	Water Connection/Meter	1	EA	\$25,000.00	\$25,000.00
	<b>Water Subtotal</b>				<b>\$177,050.00</b>
10	6" Sanitary Sewer Service Pipe	60	LF	\$30.00	\$1,800.00
11	Boring and Jacking Sewer	80	LF	\$350.00	\$28,000.00
12	Packaged Submersible Lift Station	1	LS	\$200,000.00	\$200,000.00
13	Lift Station Controls and Telemetry	1	LS	\$30,000.00	\$30,000.00
14	4" HDPE Force Main	751	LF	\$30.00	\$22,530.00
15	Automatic Air Release Valve	1	LS	\$15,000.00	\$15,000.00
	<b>Wastewater Subtotal</b>				<b>\$297,330.00</b>
16	Left Turn Lane	1	LS	\$100,000.00	\$100,000.00
17	Trail - 8' Asphalt	650	LF	\$55.00	\$35,750.00
18	Sidewalk	2225	LF	\$35.00	\$77,875.00
19	Improved Intersection - 4th and Riggs	1	LS	\$100,000.00	\$100,000.00
20	Signs - School Crossing W/Ped Light	4	EA	\$4,000.00	\$16,000.00
	<b>Transportation Subtotal</b>				<b>\$329,625.00</b>
21	Power	200	LF	\$50.00	\$10,000.00
22	Communication	200	LF	\$50.00	\$10,000.00
23	Gas	200	LF	\$25.00	\$5,000.00
	<b>Miscellaneous Subtotal</b>				<b>\$25,000.00</b>
	<b>Total</b>				<b>\$1,429,258.00</b>
	Mobilization			10%	\$143,000.00
	Contingency			20%	\$286,000.00
	<b>Direct Construction Subtotal</b>				<b>\$1,858,258.00</b>
	<b>Non Construction Costs</b>				
	(\$6,000/AC - Clean-up)	80	AC		\$0.00
	Engineering		LS	20%	\$372,000.00
	Legal and Administration		LS		\$15,000.00
	<b>Non Construction Subtotal</b>				<b>\$387,000.00</b>
	<b>Grand Total</b>				<b>\$2,245,258.00</b>

## **5.3 Dartman Property Alternative**

The Dartman site is located in the north central portion of the East Helena city limits. The site is bordered by Lewis Street to the south and Valley Drive to the east. This site is just north of the Radley School, one of the existing elementary schools, and just south of East Valley Volunteer Fire Department. The site is owned by Montana Environmental Trust Group (METG) and is 80 acres in size. The site is centrally located and conveniently located for East Helena residents. The following sections discuss various water, wastewater, transportation, and remediation alternatives for the Dartman Property site with the intent of determining the viability of each.

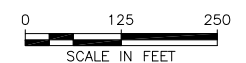
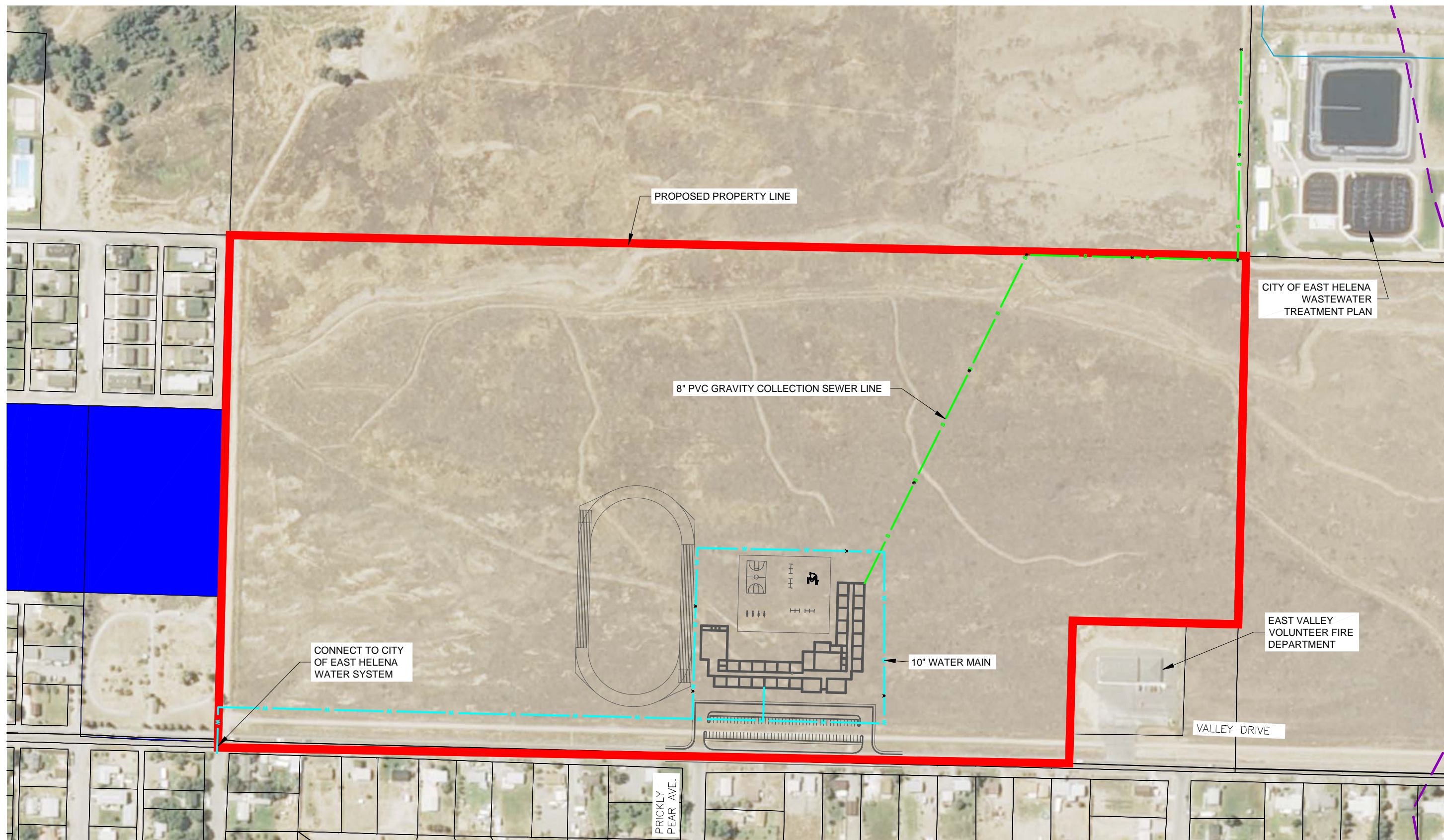
### **5.3.1 Water Alternatives**

There are two known water alternatives for the Dartman Property site. The first alternative is to connect to the City of East Helena's existing water system and the second alternative is onsite water via wells on or near the site. The first water alternative considered, connecting to City's existing water system, requires installing water main piping and appurtenances from the City's system to the proposed school site for domestic and fire service. The proposed site is located approximately 1,500 feet from the nearest connection to the City's existing water system. This alternative requires approximately 3,340 feet of 10" C900 PVC water main. The water main piping also needs to cross Valley Drive which may require boring and jacking. To meet fire code and provide for the minimum fire flow of 1,500 gallons per minute (GPM), the water main needs to be looped around the proposed school site with four fire hydrants installed in strategic positions (Figure 5.5). This water alternative is considered viable due to relatively short piping runs and ease of construction and is discussed and scored in Chapter 6.

The second water alternative considered is to supply onsite water via wells on or near the site. Being that the Dartman Property site is located within the East Helena city limits and the City does not allow onsite water within the city limits, it is required to connect to the City's existing water system. In addition, the process of obtaining a new water right is costly and complex. Therefore, onsite water is considered unviable and is not considered or discussed further.



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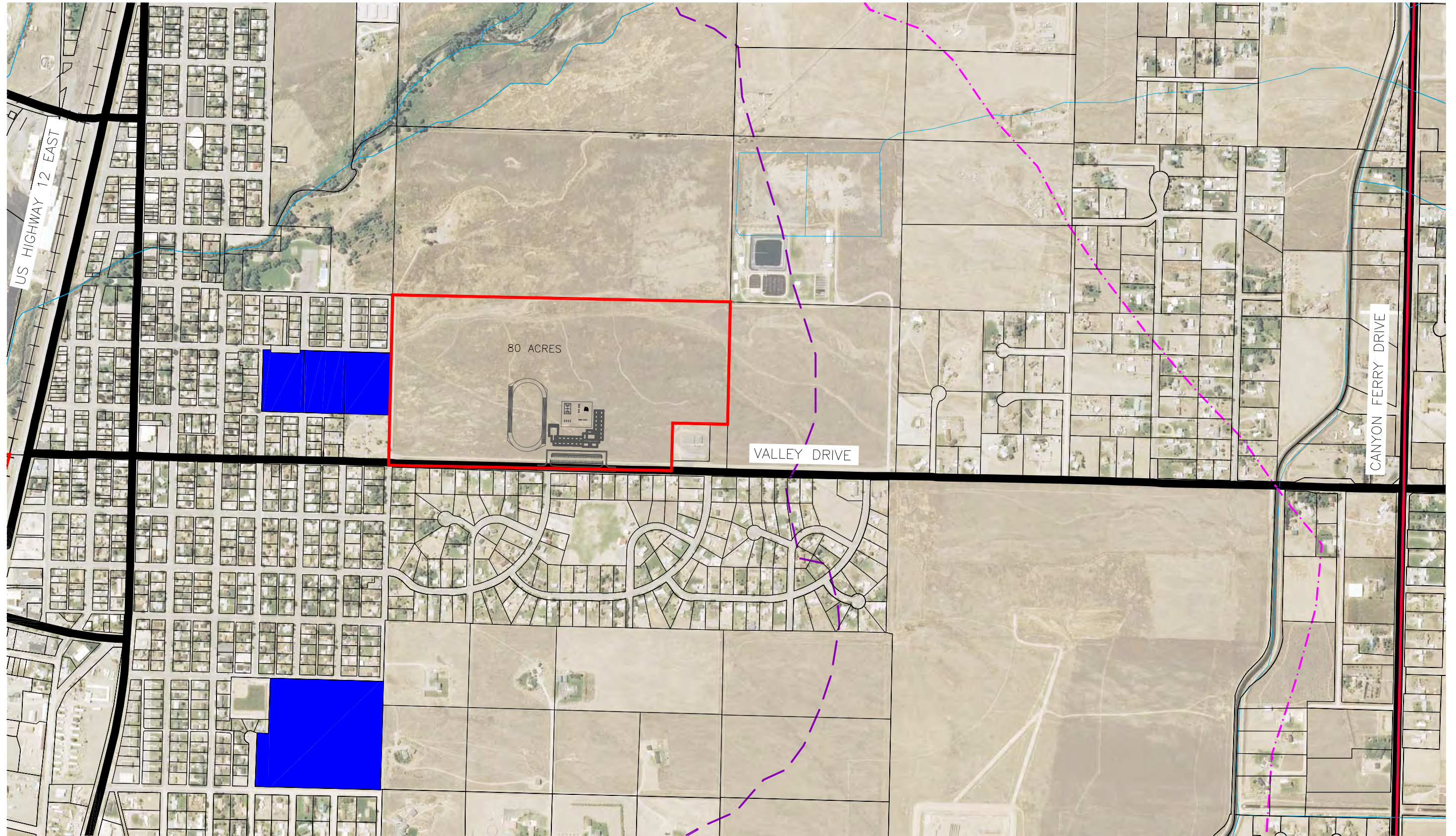


- Legend
- Proposed School Property Boundary
  - Existing Sites

**FIGURE 5.5**  
**DARTMAN PROPERTY**  
**WATER/SEWER IMPROVEMENTS**

EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES

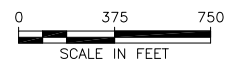




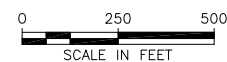
**FIGURE 5.6**  
**DARTMAN PROPERTY**  
**TRANSPORTATION NETWORK**  
 EAST HELENA PUBLIC SCHOOLS  
 EAST HELENA SCHOOLS SITING ALTERNATIVES


Legend

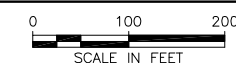
- Proposed School Property Boundary
- Existing Sites







 Proposed School Property Boundary  
 Existing Sites



EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES



### **5.3.2 Wastewater Alternatives**

There are two known wastewater alternatives for the Dartman Property site. The first alternative is to connect to the City of East Helena's existing wastewater treatment system and the second alternative is to treat the wastewater on site. The first wastewater alternative considered, connecting to City's existing wastewater treatment system, requires transporting the wastewater through either a gravity collection system or a lift station with force main. This depends upon the topography of the initial wastewater collection point in relation to the selected connection point to the existing treatment system. It was determined from the topography of the sewer route that the gradient is sufficient for a gravity collection system and a lift station is not required. The gravity collection system is significantly more economical than a lift station and force main. A gravity collection system would require installing manholes at not greater than 400 feet apart. Installation of sanitary sewer service pipe and paying wastewater connection fees is also required. The proposed site requires about 2,065 feet of 8" PVC gravity sewer main and appurtenances, sewer manholes, and 60 feet of 6" sanitary sewer service pipe (Figure 5.5). Although this is a significant amount of sewer main, this alternative is relatively inexpensive due to it not requiring a lift station and therefore deemed a viable wastewater alternative which is discussed and scored in Chapter 6.

The second wastewater alternative considered, onsite treatment, requires constructing a treatment system onsite that would treat wastewater to required standards and discharged via an onsite drain field. Being that the Dartman Property site is located within the East Helena city limits and the City does not allow onsite treatment within the city limits, it is required to connect to the City's existing wastewater system. In addition, the process of obtaining discharge permits is costly and complex. Therefore, onsite wastewater is considered unviable and is not considered or discussed further.

### **5.3.3 Transportation Alternatives**

The Dartman Property site is located within the East Helena city limits and is bordered by Lewis Street to the south and Valley Drive to the east. The overall transportation network around the Dartman Field site is detailed on Figure 5.6. The site is located just north of Radley School and just south of the East Valley Volunteer Fire Department. The Dartman Field site does not currently meet the transportation regulations and standards that are mandatory to accommodate a school and therefore improvements are required.

The central location and the proximity of Valley Drive provide efficient travel and ease of access to the proposed site. The site is centrally located and has the lowest Average Daily Traffic (ADT) of the major north-south collectors. This is a strong candidate as it would require relatively shorter bus routes and only a moderately increased traffic load within the City and along Valley Drive. Adoption by the Montana Department of Transportation (MDT) requires the roadways be enhanced to their current transportation standards and also qualify them for certain state and federal funding options that could be used to construct the necessary transportation improvements. Valley Drive, currently a county road, is unlikely to be adopted in the future. Valley Drive requires a left turn lane to accommodate the increased traffic load and to meet an acceptable level of service and school requirements. Pedestrian crossings along with trails and sidewalks also need to be constructed to accommodate increased pedestrian traffic and to meet school requirements. Because of increased traffic and bus routes, pedestrians, tight intersection turns, and current site grading and layout, the E. Clinton and N. Montana intersection has to be improved to mitigate these issues. Figure 5.7 details proposed transportation improvements needed for Dartman Field site. These transportation improvements are required to allow the construction of a school this site. These improvements are viable and are discussed and scored in Chapter 6.

#### **5.3.4 Remediation Alternatives**

The Dartman Property site is located within the Asarco soil contamination plume and environmental remediation is required before a school could be constructed on the site. The Montana Environmental Trust Group (METG) owns the 80 acre Dartman Property site. The soils have been contaminated by the Asarco lead smelter that operated for over 100 years and have been tested for Lead, Arsenic, and Cadmium. The site soils have been tested to determine the location of the specific contaminants and corresponding levels of each at certain depths. Appendix F contains contaminated soil data for Dartman Field. There are three alternatives explored to remediate the site contamination.

The first remediation alternative considered is complete removal and replacement of the contaminated soils. The combination of the relatively thin layer of contamination and the poor quality and rocky soil conditions on the site make a thin removal and replacement of contaminated soils a primary alternative. Contaminated soils will only be removed until an acceptable threshold of contamination has been met and then an appropriate import fill material will be provided to bring the site back to grade. Being that METG owns the site, they have

offered to dispose of the contaminated soils free of cost at one of their contaminated soil depositories on METG property. The expense is in excavating and trucking the contaminated soils to the soil repository and replacing the contaminated soils with new suitable soil. Due to increasingly stringent contamination regulations, complete removal and replacement alleviates all uncertainty of possible future remediation as it is the most comprehensive and conservative remediation alternative. Removal and replacement truly mitigates the issue and is substantially superior for the environment, public, and future. After thorough analysis of the remediation alternatives, it was determined that complete removal and replacement of the contaminated soils is the most appropriate and viable alternative. This remediation alternative is discussed and scored in Chapter 6.

The second remediation alternative considered is deep tilling or in place treatment. The process consists of blending the soil to lower the surface soil contamination levels through dilution without actually removing the contaminant. This is only feasible when the subsurface has lower contamination levels than the surface soils. To aid in the process, products such as lime, phosphorus, and organic matter can be added during the tilling to help immobilize the metals. This remediation alternative has been deemed an unviable option and is not considered or discussed further.

The third remediation alternative considered is capping. Capping is the process of adding a cover over contaminated surfaces that do not meet the minimum required contamination levels. This alternative essentially provides a barrier to exposure but does not actually remove the contaminant. Capping is a cost effective alternative when the contaminant is deep within the soil. Capping usually requires at minimum a cap of 12 to 16 inches in depth and the contamination profile for the East Helena sites is generally within the top 6 inches. The cost to install even a 12 to 16 inch cap is approximately equal to removal and replacement of 6 inches of contaminated soils due to material import costs. These factors deem this remediation alternative unviable and is not considered or discussed further.

A combination of removal and replacement with deep tilling was considered but ultimately deemed unviable and will not be considered or discussed further.

During the development of the study, Great West discussed purchase of METG property with Ms. Cynthia Brooks on several occasions. Ms. Brooks said the METG is committed to re-use of the Trust properties, however clean-up of the outlying properties of the METG are a lower

priority than the plant site itself at this time. Ms. Brooks said the METG would consider an offer for purchase based on the fair market value of the property minus the clean-up costs. For this report we investigated several similar sales in the East Helena area and established an estimated property value of \$6,000/acre. In some cases, the clean-up costs exceed the estimated property value of the property. In this instance, we assigned a purchase price of zero. However, a commitment by the District to clean up the property will certainly be part of the land acquisition.

Table 5-2 - Estimated Infrastructure Capital Costs for Dartman Property Alternative

DECEMBER 2014 OPINION OF PROBABLE COST EAST HELENA SCHOOL SITING ALTERNATIVES - DARTMAN PROPERTY					
#	DESCRIPTION	QTY	UNITS	UNIT PRICE	TOTAL
1	Sitework	1	LS	\$50,000.00	\$50,000.00
2	Contaminated Soil Removal	35,493	CY	\$14.50	\$514,648.50
3	Dewatering	1	LS	\$15,000.00	\$15,000.00
	<b>Earthwork Subtotal</b>				<b>\$579,648.50</b>
4	10" C900 PVC Water Main	3,340	LF	\$45.00	\$150,300.00
5	Boring and Jacking Water	80	LF	\$350.00	\$28,000.00
6	6" Fire Service	110	LF	\$35.00	\$3,850.00
7	3" Domestic Service	110	LF	\$30.00	\$3,300.00
8	Hydrants	4	EA	\$6,500.00	\$26,000.00
9	Water Connection/Meter	1	EA	\$25,000.00	\$25,000.00
	<b>Water Subtotal</b>				<b>\$236,450.00</b>
10	6" Sanitary Sewer Service Pipe	30	LF	\$30.00	\$900.00
11	8" PVC Gravity Sewer Main	2,065	LF	\$68.00	\$140,420.00
12	Sewer Manhole	8	LS	\$5,000.00	\$40,000.00
	<b>Wastewater Subtotal</b>				<b>\$181,320.00</b>
13	Left Turn Lane	1	LS	\$100,000.00	\$100,000.00
14	Trail - 8' Asphalt	2560	LF	\$55.00	\$140,800.00
15	Sidewalk	1000	LF	\$35.00	\$35,000.00
16	Signs - School Crossing W/Ped Light	8	EA	\$4,000.00	\$32,000.00
	<b>Transportation Subtotal</b>				<b>\$307,800.00</b>
17	Power	200	LF	\$50.00	\$10,000.00
18	Communication	200	LF	\$50.00	\$10,000.00
19	Gas	200	LF	\$25.00	\$5,000.00
	<b>Miscellaneous Subtotal</b>				<b>\$25,000.00</b>
	<b>Total</b>				<b>\$1,330,219.00</b>
	Mobilization			10%	\$133,000.00
	Contingency			20%	\$266,000.00
	<b>Direct Construction Subtotal</b>				<b>\$1,729,219.00</b>
	<b>Non Construction Costs</b>				
	(\$6,000/AC - Clean-up)	80	AC	\$0.00	\$0.00
	Engineering		LS	20%	\$346,000.00
	Legal and Administration		LS		\$15,000.00
	<b>Non Construction Subtotal</b>				<b>\$361,000.00</b>
	<b>Grand Total</b>				<b>\$2,090,219.00</b>



## **5.4 HSG Property Alternative**

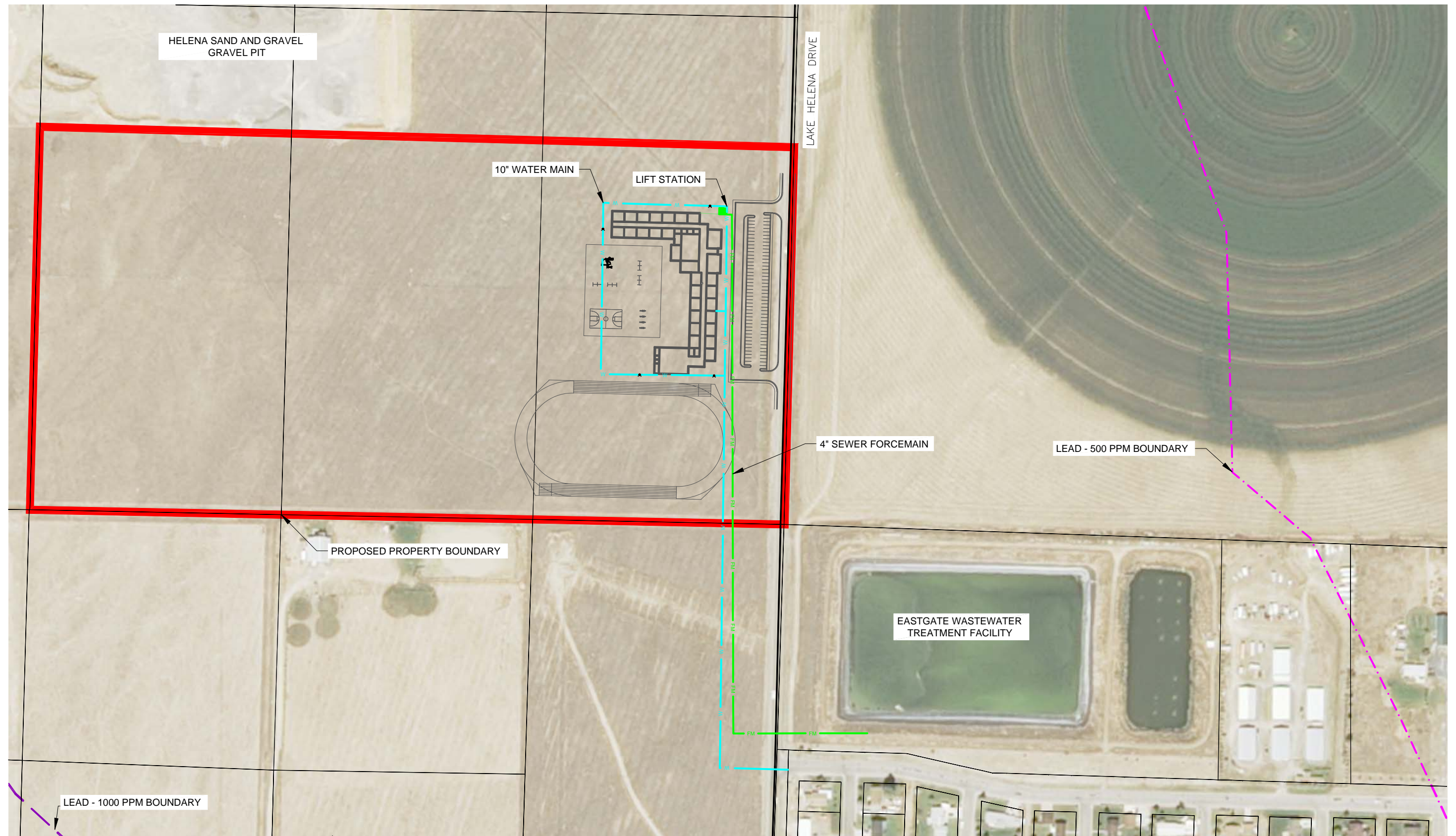
The Helena Sand and Gravel (HSG) site is located north of East Helena and borders Lake Helena Drive to the east. It is approximately halfway between U.S. Highway 12 East and Canyon Ferry Drive. The Property is owned by Helena Sand and Gravel and is 45 acres in size. The property is located just northwest of the Eastgate subdivision and its wastewater treatment facility. The site is located outside of the East Helena city limits. The following sections discuss various water, wastewater, transportation, and remediation alternatives for the Helena Sand and Gravel Property site with the intent of determining the viability of each.

### **5.4.1 Water Alternatives**

There are two known water alternatives for the Helena Sand and Gravel Property site. The first alternative is to connect to the Eastgate Water and Sewer Association's existing water system and the second alternative is onsite water via wells on or near the site. The first water alternative considered, connecting to Association's existing water system, requires installing water main piping and appurtenances from the system to the proposed school site for domestic and fire service. The proposed site is located approximately 2,000 feet from the nearest connection to the Association's existing water system. It requires approximately 2,780 feet of 10" C900 PVC water main. The water main piping would also have to cross Lake Helena Drive which may require boring and jacking. To meet fire code and provide for the minimum fire flow of 1,500 gallons per minute (GPM), the water main needs to be looped around the proposed school site with four fire hydrants installed in strategic positions. Figure 5.8 details the location of the proposed water system improvements. This water alternative is considered viable due to relatively short piping runs and ease of construction and is discussed and scored Chapter 6.

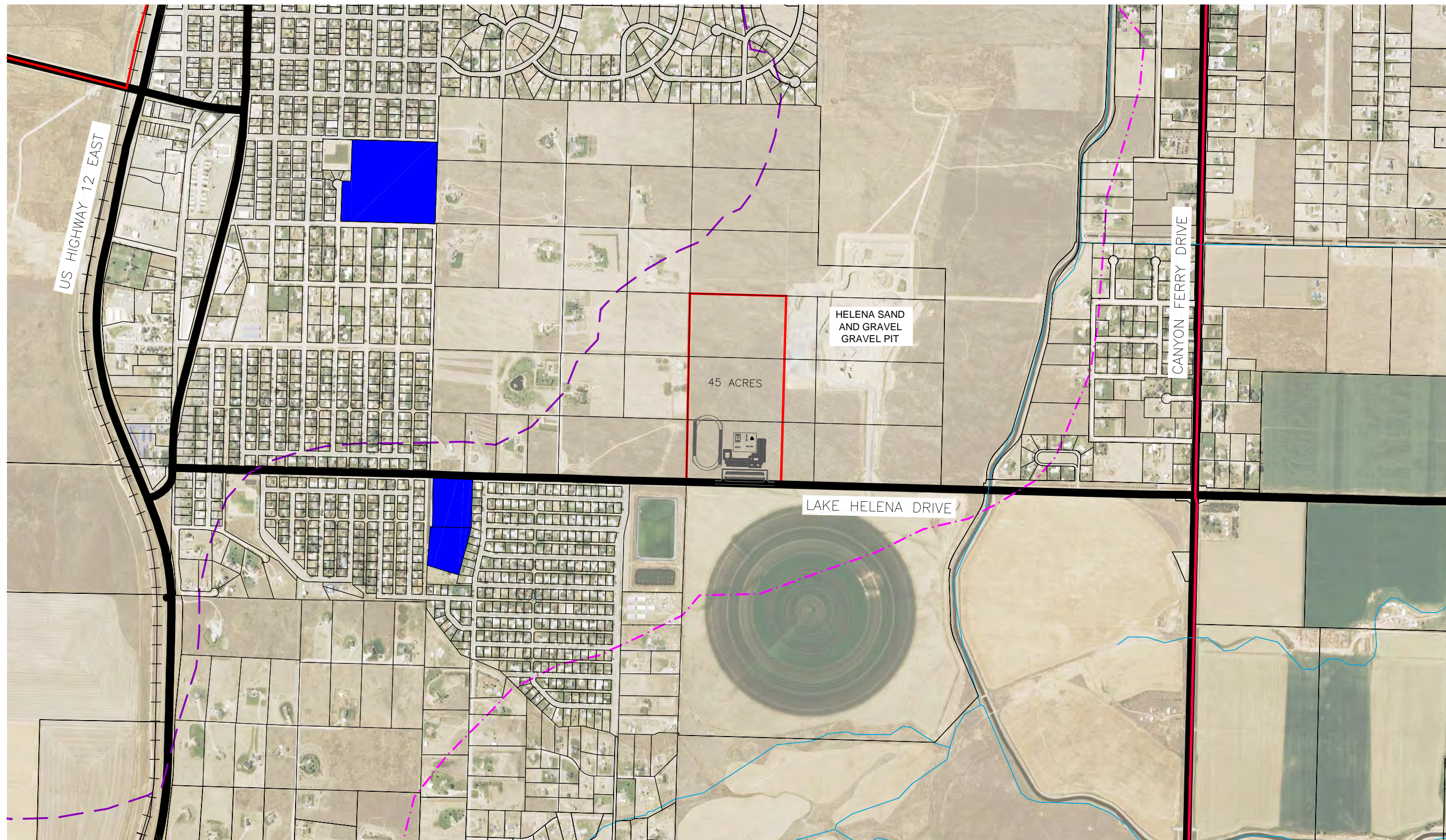
The second water alternative considered is to supply onsite water via water wells. This requires the installation of two developed wells with submersible pumps, water main piping and appurtenances from the wells to the proposed site, domestic and fire service, and associated materials required to meet fire code and flow. The site would require 10" C900 PVC water main from supply wells drilled on or near the site. Two wells are required per Montana Department of Environmental Quality (MDEQ) standards to provide redundancy in case of production loss from one well. To meet fire code, the water main also needs to be looped around the school to

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**FIGURE 5.8**  
**HSG PROPERTY**  
**WATER/SEWER IMPROVEMENTS**  
EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES



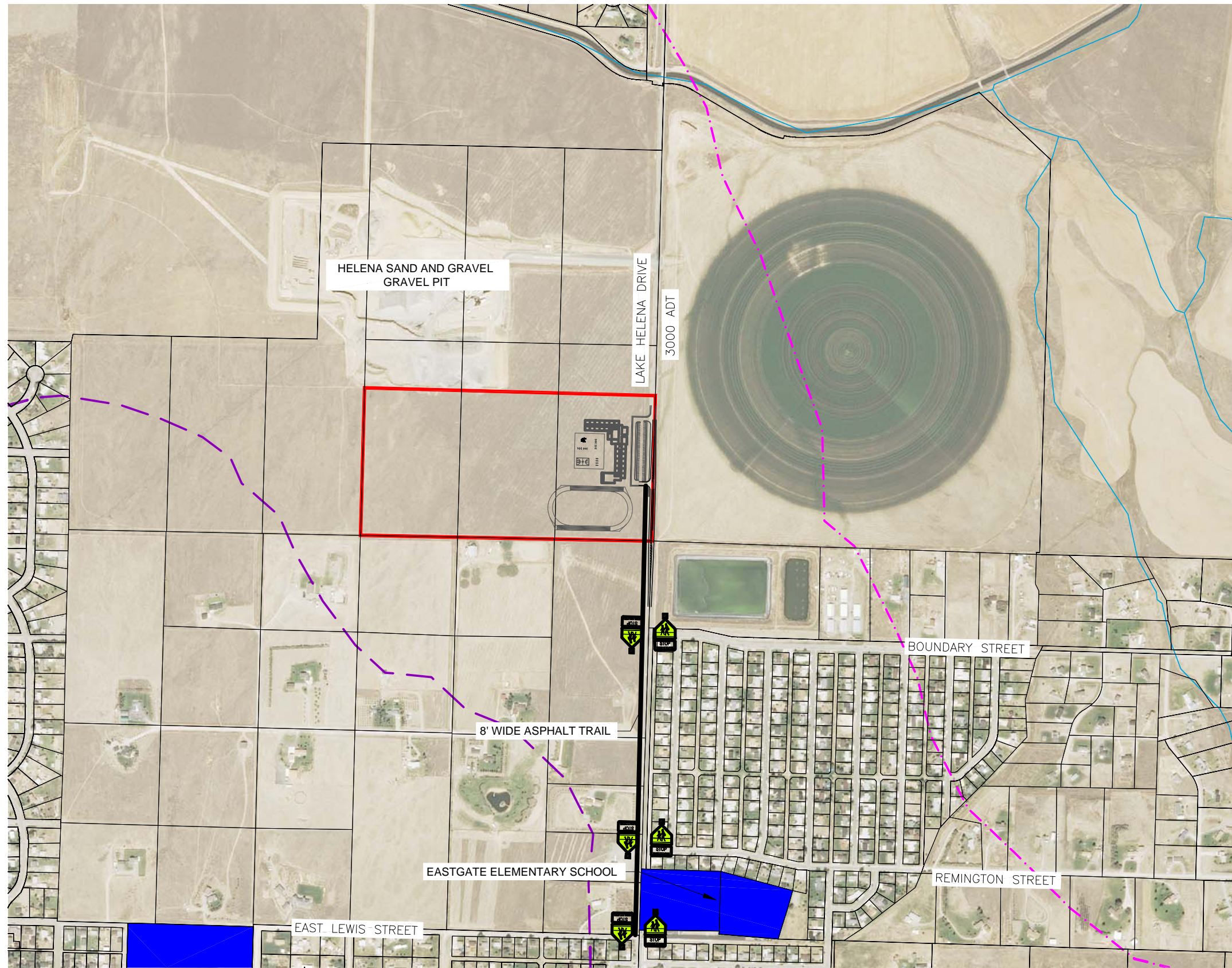


- Legend
- Proposed School Property Boundary
  - Existing Sites

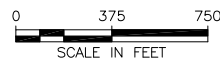
**FIGURE 5.9**  
**HSG PROPERTY**  
**TRANSPORTATION NETWORK**  
EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES



F:\1-12289-E Helena School Siting\CADD\1-12289\PER Figures\1-12289-PER-Figure 5.10.dwg

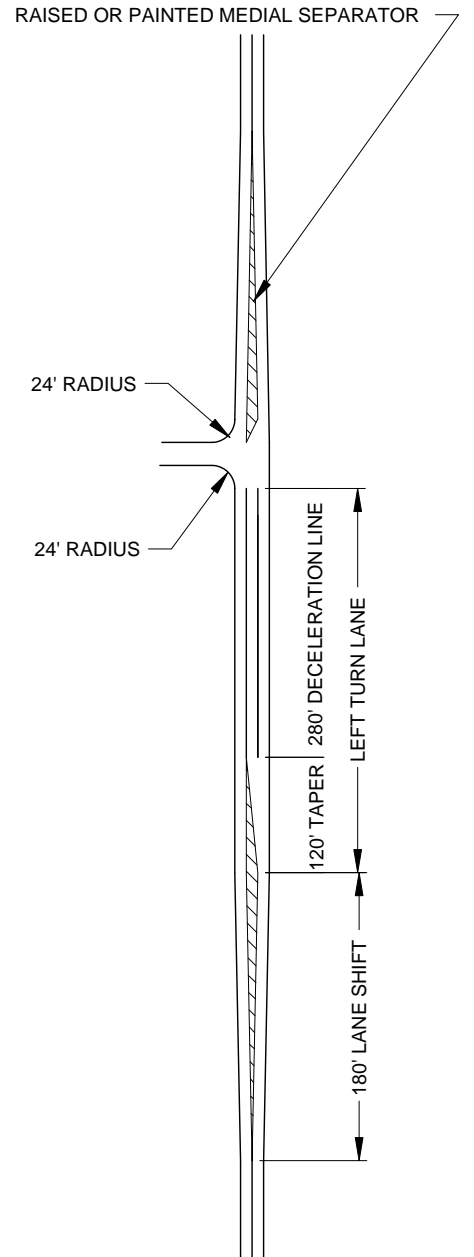


**SITE PLAN DETAIL**



**Legend**

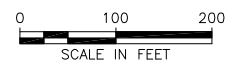
- Proposed School Property Boundary
- Existing Sites



NOTES:  
1. WIDEN ROAD TO ACCOMMODATE TURN LANES.

35 MPH DESIGN SPEED

**LEFT-TURN LANE DETAIL**



**FIGURE 5.10  
HSG PROPERTY  
TRANSPORTATION IMPROVEMENTS**

EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES

maintain the minimum 1,500 gallons per minute (GPM) of fire flow with four fire hydrants strategically installed. An underground concrete water tank with a 360,000 gallon capacity would have to be installed to maintain residual fire flow pressures as the submersible pumps in the water wells alone would not be able to sustain the minimum pressure. A building with fire flow distribution pumps and controls would also have to be installed to properly control the distribution of the water in case of a fire emergency. This alternative also requires obtaining water rights which would be extremely difficult and costly. The complexity and associated costs for meeting requirements for fire code and onsite water deem this water alternative unviable and will be not be considered or discussed further.

#### **5.4.2 Wastewater Alternatives**

There are two known wastewater alternatives for the Helena Sand and Gravel site. The first alternative is to connect to the Eastgate Water and Sewer Association's existing wastewater treatment system and the second alternative is to treat the wastewater on site.

The first wastewater alternative considered, connecting to Association's existing wastewater treatment system, requires transporting the wastewater through either a gravity collection system or a lift station with force main. The decision depends on the topography of the wastewater collection point in relationship to the connection point on the existing treatment system. Although a gravity collection system is significantly more economical relative to a lift station, it was determined from the topography of the sewer route that the gradient is insufficient for a gravity collection system and a lift station is required. This alternative also requires installing lift station pumps, controls and telemetry, force main, sewer service pipe, an automatic air release valve, and paying wastewater system impact fees. The proposed site is located within 2,000 feet of the Association's existing sewer and would require about 1,750 feet of 4" HDPE force main and appurtenances and 60 feet of 6" sanitary sewer service pipe (Figure 5.8). This wastewater alternative is considered viable due to the relatively short pipe lengths and ease of construction and is discussed and scored in Chapter 6.

The second wastewater alternative considered, onsite treatment, requires the installation of a treatment facility including septic tanks, a level II treatment system with recirculation and dose tanks, and then discharging via a drain field. It was determined from the topography of the site that there is enough gradient to install gravity collection for a portion of the system and then a lift station with force main must be installed to discharge the wastewater to the drain field. The lift

station also requires the installation of pumps, controls, and telemetry to operate the system. This alternative also requires an 8" PVC gravity collection sewer line, 6" sanitary sewer service pipe, 4" HDPE force main, and approximately 6,500 feet of drain field piping. A future drain field replacement area must also be designated per state and federal regulations. Onsite treatment also requires more operation and maintenance to sustain the treatment facilities performance. An operator would be required to service the system. This alternative also requires obtaining a groundwater discharge permit which is relatively complex. The complexity and associated costs for meeting the treatment requirements and operation and maintenance of onsite treatment deem this wastewater alternative unviable and it will not be considered or discussed further.

### **5.4.3 Transportation Alternatives**

The Helena Sand and Gravel Property site is located outside the East Helena city limits and is bordered by Lake Helena Drive to the east. Figure 5.9 details the transportation infrastructure in the vicinity of this site. It is approximately halfway between U.S. Highway 12 East and Canyon Ferry Drive. The HSG site does not currently meet the transportation regulations and standards that are mandatory to accommodate a school and therefore improvements are required.

The proximity of U.S. Highway 12 East and Canyon Ferry Drive to the proposed site provides efficient travel and ease of access to the proposed school site. The site is located near growth areas and it would require relatively shorter bus routes and a moderately increased traffic load within the City and along Lake Helena Drive. Adoption by the Montana Department of Transportation (MDT) requires the roadways be enhanced to the current transportation standards and which also qualifies them for certain state and federal funding options that could be used to construct the necessary transportation improvements. U.S. Highway 12 East and Canyon Ferry Drive have long been adopted by the Montana Department of Transportation while Lake Helena Drive, currently a county road, is likely to be adopted in the future. Lake Helena Drive would require road widening and a left turn lane to accommodate the increased traffic load and to meet an acceptable level of service and school requirements. Pedestrian crossings along with trails and sidewalks would also have to be constructed to accommodate increased pedestrian traffic and to meet school requirements. The substantial distance of the proposed school site from the East Helena city limits creates long trails and sidewalks which can prove to be costly. Figure 5.10 shows needed transportation improvements for this alternative. These transportation improvements are costly but are required to allow the



construction of a school at this site. These improvements are viable and are discussed and scored in Chapter 6.

#### **5.4.4 Remediation Alternatives**

The Helena Sand and Gravel Property site is located within the Asarco soil contamination plume and environmental remediation is required before a school could be constructed on the site. Helena Sand and Gravel owns the 45 acre site. The soils have been contaminated by the Asarco lead smelter that operated for over 100 years and have been tested for Lead, Arsenic, and Cadmium. The site soils have been tested to determine the location of the specific contaminants and corresponding levels of each at certain depths. Appendix F contains contaminated soil data for the HSG site. There are three alternatives explored to remediate the site contamination.

The first remediation alternative considered is complete removal and replacement of the contaminated soils. The combination of the relatively thin layer of contamination and the poor quality and rocky soil conditions on the site make a thin removal and replacement of contaminated soils a primary alternative. Contaminated soils would be removed until an acceptable threshold of contamination has been met and then an appropriate import fill material placed to bring the site back to grade. Because the property is not owned by METG, we are unsure if the contaminated soil can be disposed of at METG's disposal site near the old ASARCO. The question has been asked of METG, however we have received no response at the time of this report. In an effort to develop costs we have increased the cost of contaminated soil removal to allow for additional expenses related to disposal. The additional expense is in excavating and trucking the contaminated soils to the soil repository and replacing the contaminated soils with new suitable soil. Due to increasingly stringent contamination regulations, complete removal and replacement alleviates all uncertainty of possible future remediation as it is the most comprehensive and conservative remediation alternative. Removal and replacement truly mitigates the issue and is substantially superior for the environment, public, and future. After thorough analysis of the remediation alternatives, it was determined that complete removal and replacement of the contaminated soils is the most appropriate and viable alternative. This remediation alternative is discussed and scored in Chapter 6.

The second remediation alternative considered is deep tilling or in place treatment. The process consists of blending the soil to lower the surface soil contamination levels through dilution

without actually removing the contaminant. This is only feasible when the subsurface has lower contamination levels than the surface soils. To aid in the process, products such as lime, phosphorus, and organic matter can be added during the tilling to help biologically lower the contamination levels. This remediation alternative has been deemed an unviable option and is not considered or discussed further.

The third remediation alternative considered is capping. Capping is the process of adding a cover over contaminated surfaces that do not meet the minimum required contamination levels. This alternative essentially provides a barrier to exposure but does not actually remove the contaminant. Capping is a cost effective alternative when the contaminant is deep within the soil. Capping usually requires at minimum a cap of 12 to 16 inches in depth and the contamination profile for the East Helena sites is generally within the top 6 inches. The cost to install even a 12 to 16 inch cap is approximately equal to removal and replacement of 6 inches of contaminated soils due to material import costs. These factors deem this remediation alternative unviable and it is not considered or discussed further.

A combination of removal and replacement with deep tilling was considered but ultimately deemed unviable and will not be considered or discussed further.

Unlike the previous alternatives, the HSG site is privately owned. Although the estimated clean-up costs exceed the estimated property value, it is unlikely HSG would transfer ownership of the property at no cost to the District. At one time HSG did discuss transferring ownership of the property to the District as part of a deal to obtain relief from a local zoning ordinance which prohibits further development of the gravel pit within the existing 1,000 foot buffer. At this time we understand that because of developments in the zoning legal case that this offer is no longer on the table. Therefore, we have added a purchase price to the estimate which is significantly less than the market value yet greater than zero.

Table 5-3 - Estimated Infrastructure Capital Costs for Helena Sand &amp; Gravel Alternative

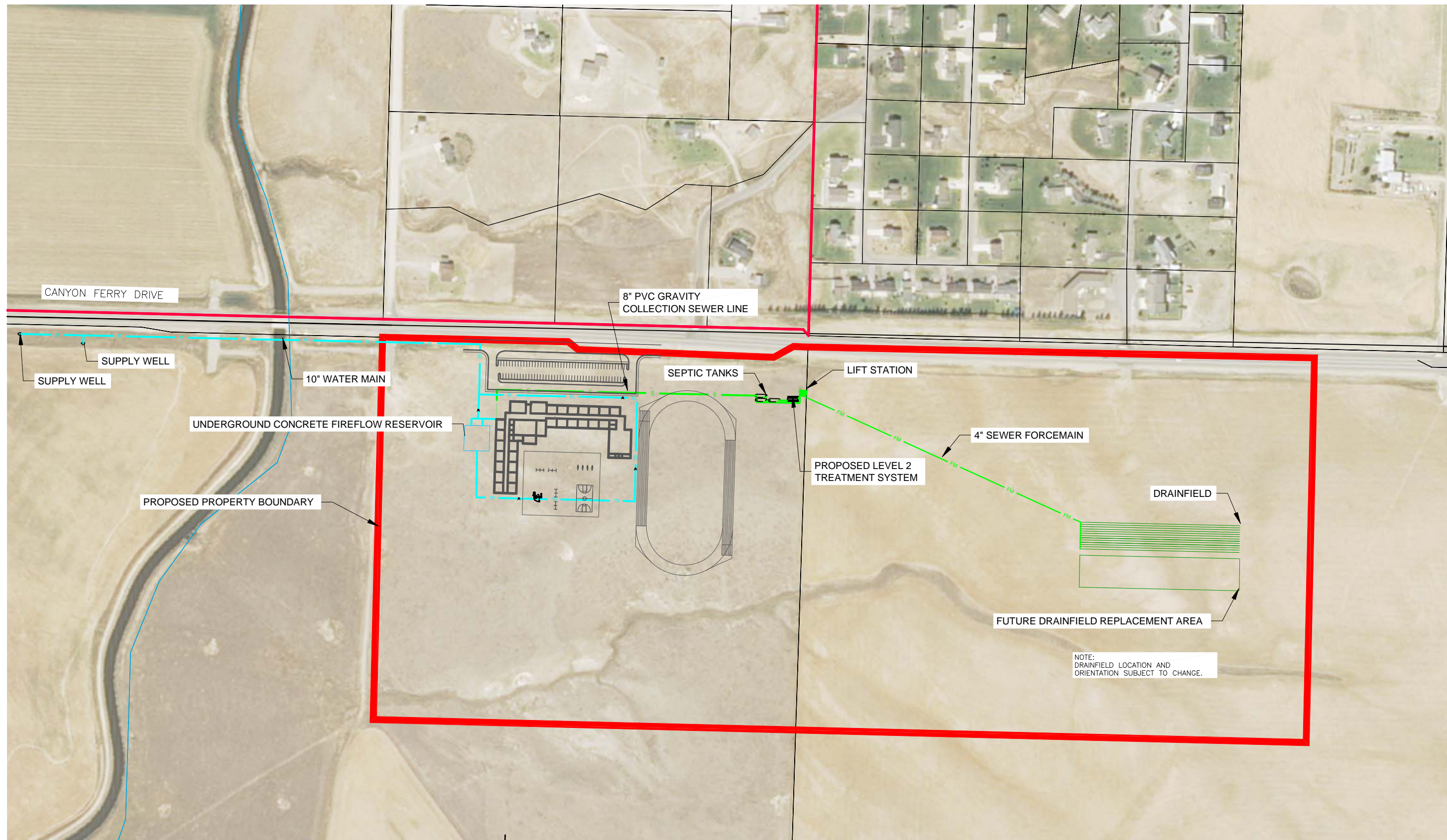
DECEMBER 2014 OPINION OF PROBABLE COST EAST HELENA SCHOOL SITING ALTERNATIVES - HSG PROPERTY					
#	DESCRIPTION	QTY	UNITS	UNIT PRICE	TOTAL
1	Sitework	1	LS	\$50,000.00	\$50,000.00
2	Contaminated Soil Removal	24,167	CY	\$20.00	\$483,340.00
	Earthwork Subtotal				\$533,340.00
3	10" C900 PVC Water Main	2,780	LF	\$45.00	\$125,100.00
4	Boring and Jacking Water	80	LF	\$350.00	\$28,000.00
5	6" Fire Service	110	LF	\$35.00	\$3,850.00
6	3" Domestic Service	110	LF	\$30.00	\$3,300.00
7	Hydrants	4	EA	\$6,500.00	\$26,000.00
8	Water Impact Fee	1	LS	\$200,000.00	\$200,000.00
9	Water Connection/Meter	1	EA	\$25,000.00	\$25,000.00
	Water Subtotal				\$411,250.00
10	6" Sanitary Sewer Service Pipe	60	LF	\$30.00	\$1,800.00
11	Boring and Jacking Sewer	80	LF	\$350.00	\$28,000.00
12	Packaged Submersible Lift Station	1	LS	\$200,000.00	\$200,000.00
13	Lift Station Controls and Telemetry	1	LS	\$30,000.00	\$30,000.00
14	4" HDPE Force Main	1,750	LF	\$30.00	\$52,500.00
15	Automatic Air Release Valve	1	LS	\$15,000.00	\$15,000.00
16	Wastewater System Impact Fee	1	EA	\$190,000.00	\$190,000.00
	Wastewater Subtotal				\$517,300.00
17	Left Turn Lane	1	LS	\$100,000.00	\$100,000.00
18	Trail - 8' Asphalt	2685	LF	\$55.00	\$147,675.00
19	Sidewalk	375	LF	\$35.00	\$13,125.00
20	Signs - School Crossing W/Ped Light	8	EA	\$4,000.00	\$32,000.00
21	Widening of Road	1	LS	\$50,000.00	\$50,000.00
	Transportation Subtotal				\$342,800.00
22	Power	200	LF	\$50.00	\$10,000.00
23	Communication	200	LF	\$50.00	\$10,000.00
24	Gas	200	LF	\$25.00	\$5,000.00
	Miscellaneous Subtotal				\$25,000.00
	Total				\$1,829,690.00
	Mobilization			10%	\$183,000.00
	Contingency			20%	\$366,000.00
	Direct Construction Subtotal				\$2,378,690.00
	Non Construction Costs				
	\$5000/Acre	45	AC	\$5,000.00	\$225,000.00
	Engineering		LS	20%	\$476,000.00
	Legal and Administration		LS		\$15,000.00
	Non Construction Subtotal				\$716,000.00
	Grand Total				\$3,094,690.00

## **5.5 Hamlin Property Alternative 1A**

The Hamlin Property Alternative 1A site is located approximately 2.5 miles north of the East Helena city limits. The property is located adjacent to Canyon Ferry Drive and approximately one mile east of the Lake Helena Drive and Canyon Ferry Drive Intersection. The site is owned by Hamlin and is 80 acres in size. The site sits outside of the Asarco contamination plume and does not require environmental remediation. Hamlin Alternatives 1A and 1B are the same property. Alternative 1A is developed with on-site water and wastewater infrastructure. Alternative 1B is developed with connection to Eastgate water and sewer infrastructure. The following sections discuss various water, wastewater, transportation, and remediation alternatives for the Hamlin Property Alternative 1A site with the intent of determining the viability of each.



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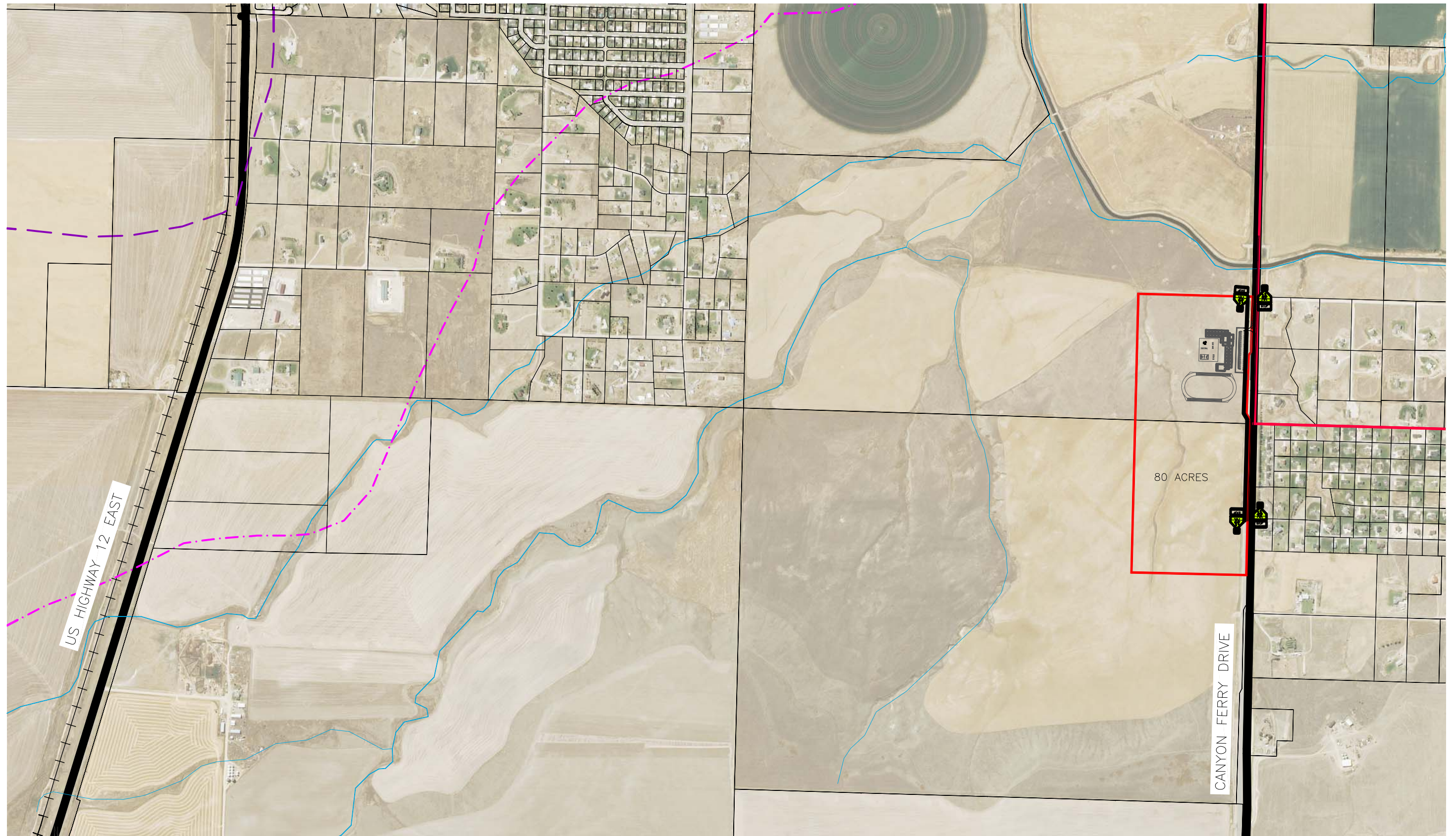


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SCALE IN FEET

Legend  
Proposed School Property Boundary

**FIGURE 5.11**  
**HAMLIN PROPERTY**  
**WATER/SEWER IMPROVEMENTS**  
**ALTERNATIVE 1A**  
EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES

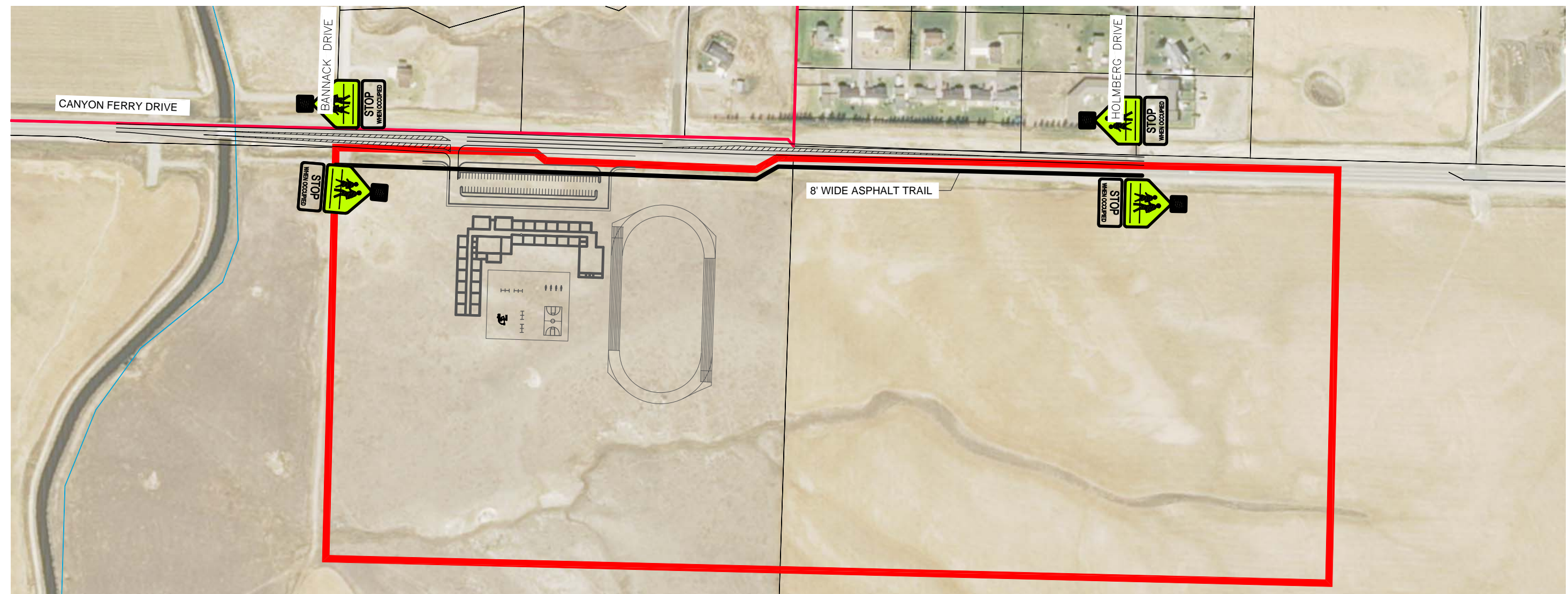
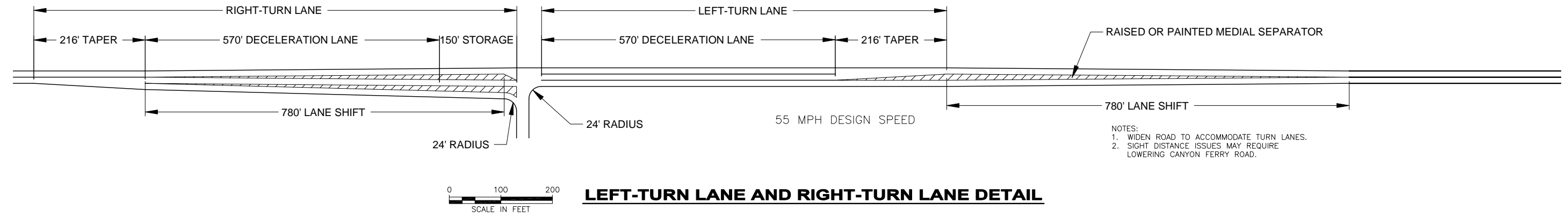




Legend  
■ Proposed School Property Boundary

**FIGURE 5.12**  
**HAMLIN PROPERTY**  
**TRANSPORTATION NETWORK**  
**ALTERNATIVE 1A & 1B**  
EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES





**FIGURE 5.13**  
**HAMLIN PROPERTY**  
**TRANSPORTATION IMPROVEMENTS**  
**ALTERNATIVE 1A & 1B**  
 EAST HELENA PUBLIC SCHOOLS  
 EAST HELENA SCHOOLS SITING ALTERNATIVES

### **5.5.1 Water Alternatives**

There are two known water alternatives for the Hamlin Property Alternative 1 site. The first alternative is onsite water via wells on or near the site (Hamlin Alternative 1A) and the second alternative is connecting to the Eastgate Water and Sewer Association's existing water system (Hamlin Alternative 1B). The first water alternative (Hamlin Alternative 1A) considered is to supply onsite water via water wells. This requires the installation of two developed wells with submersible pumps, water main piping and appurtenances from the wells to the proposed site, domestic and fire service, and associated materials required to meet fire code and flow. The site requires approximately 3,290 feet of 10" C900 PVC water main from supply wells drilled approximately 1,100 feet west of the property along Canyon Ferry Drive. Two wells would be required per Montana Department of Environmental Quality (MDEQ) standards to provide redundancy in case of production loss from one well. Directional drilling would have to be utilized to cross the irrigation ditch west of the property. To meet fire code, the water main also needs to be looped around the school to maintain the minimum 1,500 GPM of fire flow with four fire hydrants strategically installed. An underground concrete water tank with a 360,000 gallon capacity would be installed to maintain residual fire flow pressures as the submersible pumps in the water wells alone would not be able to sustain the minimum pressure during a fire event. A building with fire flow distribution pumps and controls would also be installed to properly control the distribution of the water in case of a fire emergency. Figure 5.11 details the water system infrastructure under Hamlin Alternative 1A. Onsite water also requires more operation and maintenance to sustain the facilities performance. An operator would be required to service the system. The complexity and associated costs for meeting requirements for fire code and onsite water prove to be costly but ultimately this water alternative is viable and it is discussed and scored in Chapter 6.

The second water alternative considered, connecting to Eastgate's existing water system, would require installing water main piping and appurtenances from Eastgate to the proposed school site. This alternative is discussed in more detail in Hamlin Alternative 1B.

### **5.5.2 Wastewater Alternatives**

There are two known wastewater alternatives for the Hamlin Property Alternative 1 site. The first alternative is to treat the wastewater on site (Hamlin Alternative 1A), and the second alternative



is to connect to the Eastgate Water and Sewer Association's existing wastewater treatment system (Hamlin Alternative 1B).

The first wastewater alternative considered, onsite treatment, requires the installation of a treatment facility including septic tanks, a level II treatment system with recirculation and dose tanks, and then discharging via a drain field. It was determined from the topography of the site that there is enough gradient to install gravity collection for a portion of the system and then a lift station with force main must be installed to discharge the wastewater to the drain field. The lift station also requires the installation of pumps, controls, and telemetry to operate the system. This alternative requires approximately 1,093 feet of 8" PVC gravity collection sewer line, 60 feet of 6" sanitary sewer service pipe, 1,050 feet of 4" HDPE force main, and 6,500 feet of drain field piping. A future drain field replacement area must also be designated per state and federal regulations. Figure 5.11 details the wastewater system infrastructure under Hamlin Alternative 1A. Onsite treatment also requires more operation and maintenance to sustain the treatment facilities performance. An operator would be required to service the system. The complexity and associated costs for meeting the treatment requirements and operation and maintenance of onsite treatment prove to be costly but ultimately this wastewater alternative is viable and it is discussed and scored in Chapter 6.

The second wastewater alternative considered, connecting to Eastgate's existing wastewater treatment facility, is discussed in more detail in Hamlin Alternative 1B

### **5.5.3 Transportation Alternatives**

The Hamlin Property Alternative 1 site is located outside the East Helena city limits and is bordered by Canyon Ferry Drive to the north. The site is located approximately one mile east of the Lake Helena Drive and Canyon Ferry Drive intersection and 2.5 miles north of the city limits. Figure 5.12 shows the location of this site relative to the existing transportation infrastructure. The Hamlin site does not currently meet the transportation regulations and standards that are mandatory to accommodate a school and therefore improvements are required. The relative remoteness of the site and the proximity of growth areas would require longer bus routes as well as additional students requiring bus service. This alternative would also result in an increased traffic load within the area and along Canyon Ferry Drive and Lake Helena Drive. Adoption by the Montana Department of Transportation (MDT) requires the roadways to be enhanced to the current transportation standards and also qualifies them for certain state and federal funding

options that could be used to construct the necessary transportation improvements. Canyon Ferry Drive has long been adopted by the Montana Department of Transportation while Lake Helena Drive, currently a county road, is likely to be adopted in the future. Canyon Ferry Drive requires highway widening and a left and right turn lane to accommodate the increased traffic load and to meet an acceptable level of service and school requirements. It is possible that the highway widening may create the need to increase the width of the bridge as well. Pedestrian crossings along with trails and sidewalks would also have to be constructed to accommodate increased pedestrian traffic and to meet school requirements. Figure 5.13 details the needed transportation improvements for this alternative. The combination of poor site distance, high rates of speed, and pedestrian crossings are major safety concerns for this proposed site. These transportation improvements are costly but are required to allow the construction of a school at this site. These improvements are viable and are discussed and scored in Chapter 6.

#### **5.5.4 Remediation Alternatives**

The Hamlin Property Alternative 1A site is located outside of the Asarco soil contamination plume and therefore does not require environmental remediation.

Table 5-4 - Estimated Infrastructure Capital Costs for Hamlin Alternative 1B

DECEMBER 2014 OPINION OF PROBABLE COST EAST HELENA SCHOOL SITING ALTERNATIVES - HAMLIN PROPERTY -ALT 1A					
#	BID ITEM	QTY	UNITS	UNIT PRICE	TOTAL
1	Sitework	1	LS	\$100,000.00	\$100,000.00
	<b>Earthwork Subtotal</b>				<b>\$100,000.00</b>
2	100' Supply Well, 7.5-10 HP Pumps	2	EA	\$100,000.00	\$200,000.00
3	Direction Drill Under Irrigation Ditch	200	FT	\$100.00	\$20,000.00
4	6" Fire Service	110	LF	\$35.00	\$3,850.00
5	3" Domestic Service	110	LF	\$30.00	\$3,300.00
6	80x80x10 FF Buried Concrete Tank	360000	GAL	\$1.40	\$504,000.00
7	FF Distribution Pumps, Controls, Building	1	LS	\$125,000.00	\$125,000.00
8	Piping and Appurtenances	1	LS	\$75,000.00	\$75,000.00
9	10" C900 PVC Water Main	3,290	LF	\$45.00	\$148,050.00
10	Hydrants	4	EA	\$6,500.00	\$26,000.00
	<b>Water Subtotal</b>				<b>\$1,105,200.00</b>
11	6" Sanitary Sewer Service Pipe	60	LF	\$30.00	\$1,800.00
12	8" PVC Gravity Collection Sewer Line	1093	LF	\$68.00	\$74,324.00
13	Packaged Submersible Lift Station	1	LS	\$200,000.00	\$200,000.00
14	Lift Station Controls and Telemetry	1	LS	\$30,000.00	\$30,000.00
15	4" HDPE Force Main	1,050	LF	\$30.00	\$31,500.00
16	Drainfield	6,500	LF	\$25.00	\$162,500.00
17	Septic Tanks	53,700	GAL	\$2.31	\$124,047.00
18	Recirculation Tanks	1	EA	\$65,000.00	\$65,000.00
19	Level II Treatment System	1	LS	\$150,000.00	\$150,000.00
20	Dose Tank	10,000	GAL	\$2.00	\$20,000.00
	<b>Wastewater Subtotal</b>				<b>\$859,171.00</b>
21	Highway Widening/Improvements	1	LS	\$380,000.00	\$380,000.00
22	Trail - 8' Wide Asphalt	2375	LF	\$55.00	\$130,625.00
23	Signs - School Crossing W/Ped Light	4	EA	\$4,000.00	\$16,000.00
	<b>Transportation Subtotal</b>				<b>\$526,625.00</b>
24	Land Acquisition Cost	80	AC	\$5,000.00	\$400,000.00
25	Power	200	LF	\$50.00	\$10,000.00
26	Communication	200	LF	\$50.00	\$10,000.00
27	Gas	200	LF	\$25.00	\$5,000.00
	<b>Miscellaneous Subtotal</b>				<b>\$425,000.00</b>
	<b>Total</b>				<b>\$3,015,996.00</b>
	Mobilization			10%	\$302,000.00
	Contingency			20%	\$603,000.00
	<b>Direct Construction Subtotal</b>				<b>\$3,920,996.00</b>
	Engineering			20%	\$800,000.00
	Legal and Administration				\$15,000.00
	Water Rights				\$150,000.00
	Discharge Permitting				\$50,000.00
	<b>Non Construction Subtotal</b>				<b>\$1,015,000.00</b>
	<b>Grand Total</b>				<b>\$4,935,996.00</b>

## **5.6 Hamlin Property Alternative 1B**

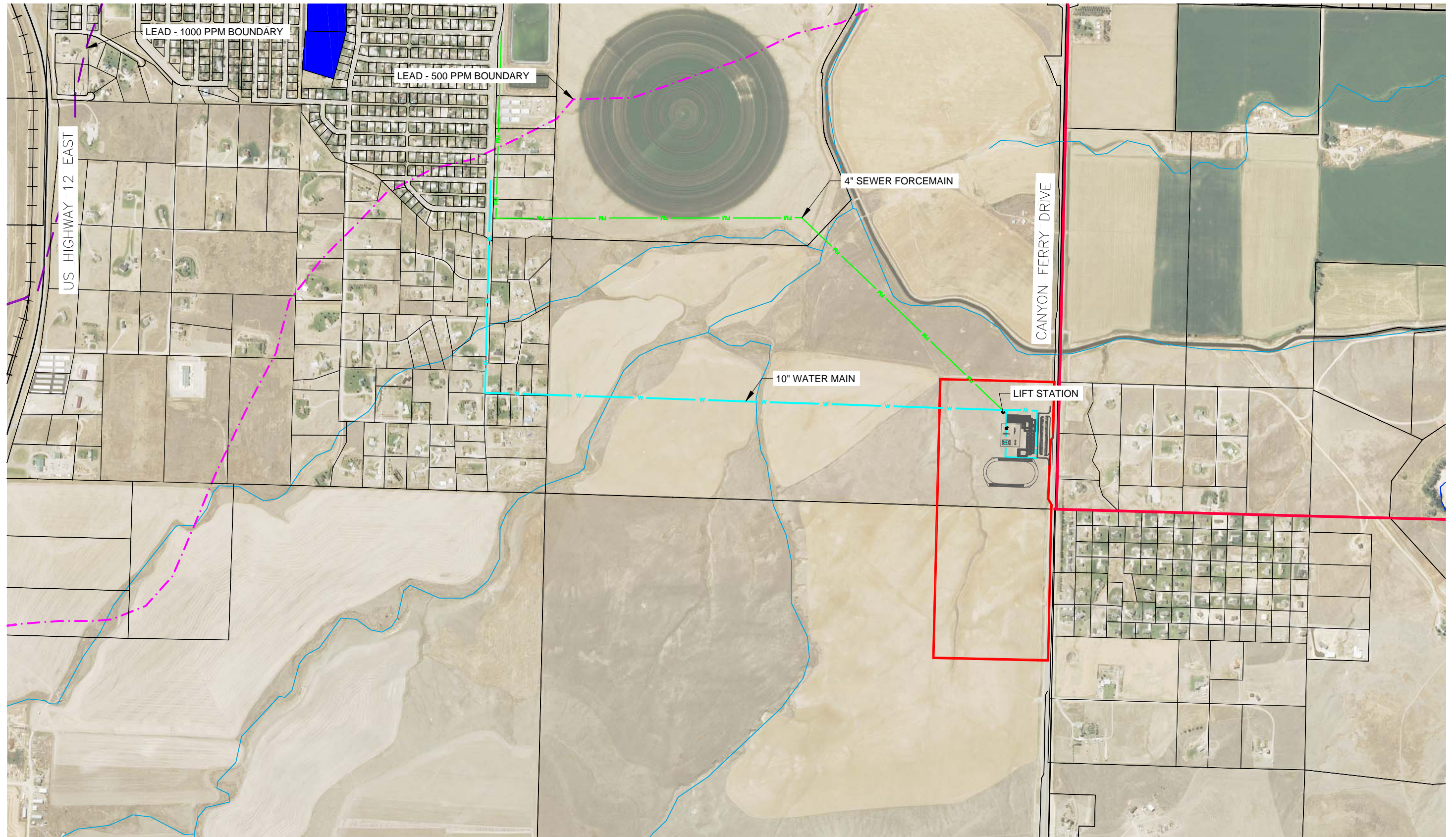
The Hamlin Property Alternative 1 site is located approximately 2.5 miles north of the East Helena city limits. The property is located adjacent to Canyon Ferry Drive and approximately one mile east of the Lake Helena Drive and Canyon Ferry Drive Intersection. Hamlin Alternatives 1A and 1B are the same property. Alternative 1A is developed with on-site water and wastewater infrastructure. Alternative 1B is developed with connection to Eastgate water and sewer infrastructure. The site is owned by Hamlin and is 80 acres in size. The site is outside of the Asarco soil contamination plume and does not require environmental remediation. The following sections discuss various water, wastewater, transportation, and remediation alternatives for the Hamlin Property Alternative 1B site with the intent of determining the viability of each.

### **5.6.1 Water Alternatives**

There are two known water alternatives for the Hamlin Property Alternative 1 site. The first alternative is onsite water via wells on or near the site (Hamlin Alternative 1A) and the second alternative is connecting to the Eastgate Water and Sewer Association's existing water system (Hamlin Alternative 1B). The first water alternative considered is to supply onsite water via on-site water wells is discussed in detail within Hamlin Alternative 1A.

The second water alternative considered, connecting to Eastgate's existing water system (Hamlin Alternative 1B), requires installing water main piping and appurtenances from Eastgate to the proposed school site, a booster station, and fire hydrants to provide domestic and fire service. Being that the site is located nearly two miles from Eastgate, approximately 9,340 feet of 10" C900 PVC water main and a booster station would be installed. The water main piping would also have to cross three irrigation ditches and which may require boring and jacking. To provide for the minimum fire flow of 1,500 gallons per minute (GPM), the water line would be looped around the school site with four fire hydrants installed in strategic positions. Figure 5.14 details the water and sewer infrastructure under this alternative. The distance from Eastgate to the proposed site causes this water alternative to be costly but ultimately viable and it is discussed and scored in Chapter 6.





- Legend
- Proposed School Property Boundary
  - Existing Sites

**FIGURE 5.14**  
**HAMLIN PROPERTY**  
**WATER/SEWER IMPROVEMENTS**  
**ALTERNATIVE 1B**  
 EAST HELENA PUBLIC SCHOOLS  
 EAST HELENA SCHOOLS SITING ALTERNATIVES



### **5.6.2 Wastewater Alternatives**

There are two known wastewater alternatives for the Hamlin Property Alternative 1 site. The first alternative is to treat the wastewater on site (Hamlin Alternative 1A), and the second alternative is to connect to the Eastgate Water and Sewer Association's existing wastewater treatment system (Hamlin Alternative 1B).

The first wastewater alternative considered, onsite treatment, is discussed in detail within Hamlin Alternative 1A.

The second wastewater alternative considered, connecting to Eastgate's existing wastewater treatment facility (Hamlin Alternative 1B), requires transporting the wastewater through either a gravity collection system or a lift station with force main depending upon the topography of the initial wastewater collection point and the selected connection point to the existing treatment system. Although a gravity collection system is significantly more economical relative to a lift station, it was determined from the topography of the sewer route that the gradient is insufficient for a gravity collection system and a lift station is required. This alternative also requires installing lift station pumps, controls, and telemetry, force main, sewer service pipe, an automatic air release valve, and paying wastewater system impact fees. Approximately 8,120 feet of 4" HDPE force main and appurtenances are required for this alternative. Boring and jacking for the sewer pipe may be required as the sewer route crosses an irrigation ditch. Figure 5.14 details the wastewater infrastructure needed under this alternative. The distance from Eastgate to the proposed site causes this wastewater alternative to be costly but viable and it is discussed and scored in Chapter 6.

### **5.6.3 Transportation Alternatives**

The Hamlin Property Alternative 1 site is located outside the East Helena city limits and is bordered by Canyon Ferry Drive to the north. The site is located approximately one mile east of the Lake Helena Drive and Canyon Ferry Drive intersection and 2.5 miles north of the city limits. Figure 5.12 shows the location of this site relative to the existing transportation infrastructure. The Hamlin site does not currently meet the transportation regulations and standards that are mandatory to accommodate a school and therefore improvements are required. The relative remoteness of the site and the proximity of growth areas would require longer bus routes as well as additional students requiring bus service. This alternative would also result in an increased traffic load within the area and along Canyon Ferry Drive and Lake Helena Drive. Adoption by

the Montana Department of Transportation (MDT) requires the roadways to be enhanced to the current transportation standards and also qualifies them for certain state and federal funding options that could be used to construct the necessary transportation improvements. Canyon Ferry Drive has long been adopted by the Montana Department of Transportation while Lake Helena Drive, currently a county road, is likely to be adopted in the future. Canyon Ferry Drive requires highway widening and a left and right turn lane to accommodate the increased traffic load and to meet an acceptable level of service and school requirements. It is possible that the highway widening may create the need to increase the width of the bridge as well. Pedestrian crossings along with trails and sidewalks would also have to be constructed to accommodate increased pedestrian traffic and to meet school requirements. Figure 5.13 details the needed transportation improvements for this alternative. The combination of poor site distance, high rates of speed, and pedestrian crossings are major safety concerns for this proposed site. These transportation improvements could prove to be costly but are required to allow the construction of a school at this site. These improvements are viable and are discussed and scored in Chapter 6.

#### **5.6.4 Remediation Alternatives**

The Hamlin Property Alternative 1 site is located outside of the Asarco soil contamination plume and therefore does not require environmental remediation.

Table 5-5 - Estimated Infrastructure Capital Costs for Hamlin Alternative 1B

DECEMBER 2014 OPINION OF PROBABLE COST EAST HELENA SCHOOL SITING ALTERNATIVES - HAMLIN PROPERTY - ALT 1B					
#	BID ITEM	QTY	UNITS	UNIT PRICE	TOTAL
1	Sitework	1	LS	\$100,000.00	\$100,000.00
	<b>Earthwork Subtotal</b>				<b>\$100,000.00</b>
2	10" C900 PVC Water Main	9340	LF	\$45.00	\$420,300.00
3	Directional Drill under Irrigation Ditch	100	FT	\$100.00	\$10,000.00
4	Booster Station	1	EA	\$200,000.00	\$200,000.00
5	6" Fire Service	110	LF	\$35.00	\$3,850.00
6	3" Domestic Service	110	LF	\$30.00	\$3,300.00
7	Water System Impact Fee	1	LS	\$200,000.00	\$200,000.00
8	Hydrants	4	EA	\$6,500.00	\$26,000.00
	<b>Water Subtotal</b>				<b>\$863,450.00</b>
9	6" Sanitary Sewer Service Pipe	60	LF	\$30.00	\$1,800.00
10	Directional Drill under Irrigation Ditch	100	FT	\$100.00	\$10,000.00
11	Packaged Submersible Lift Station	1	LS	\$200,000.00	\$200,000.00
12	Lift Station Controls and Telemetry	1	LS	\$30,000.00	\$30,000.00
13	Automatic Air Release Valve	1	LS	\$15,000.00	\$15,000.00
14	4" HDPE Force Main	8,120	LF	\$30.00	\$243,600.00
15	Wastewater System Impact Fee	1	LF	\$190,000.00	\$190,000.00
	<b>Wastewater Subtotal</b>				<b>\$690,400.00</b>
16	Highway Widening/Improvements	1	LS	\$380,000.00	\$380,000.00
17	Trail - 8' Wide Asphalt	2375	LF	\$55.00	\$130,625.00
18	Signs - School Crossing W/Ped Light	4	EA	\$4,000.00	\$16,000.00
	<b>Transportation Subtotal</b>				<b>\$526,625.00</b>
19	Power	200	LF	\$50.00	\$10,000.00
20	Communication	200	LF	\$50.00	\$10,000.00
21	Gas	200	LF	\$25.00	\$5,000.00
	<b>Miscellaneous Subtotal</b>				<b>\$25,000.00</b>
<b>Total</b>					<b>\$2,205,475.00</b>
	Mobilization			10%	\$230,000.00
	Contingency			20%	\$450,000.00
<b>Direct Construction Subtotal</b>					<b>\$2,885,475.00</b>
	Land Acquisition Cost	80	AC	\$5,000.00	\$400,000.00
	Water and Sewer Easements				\$50,000.00
	Engineering			20%	\$600,000.00
	Legal and Administration				\$15,000.00
<b>Non Construction Subtotal</b>					<b>\$1,065,000.00</b>
<b>Grand Total</b>					<b>\$3,950,475.00</b>



## **5.7 Hamlin Property Alternative 2**

The Hamlin Property Alternative 2 site is located approximately 0.75 miles northeast of Eastgate and half a mile south of Canyon Ferry Drive. The site is owned by Hamlin and is 80 acres in size. The site is located outside of the Asarco soil contamination plume and does not require environmental remediation. The site currently does not have access and requires significant transportation improvements. The following sections discuss various water, wastewater, transportation, and remediation alternatives for the Hamlin Property Alternative 2 site with the intent of determining the viability of each.

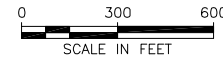
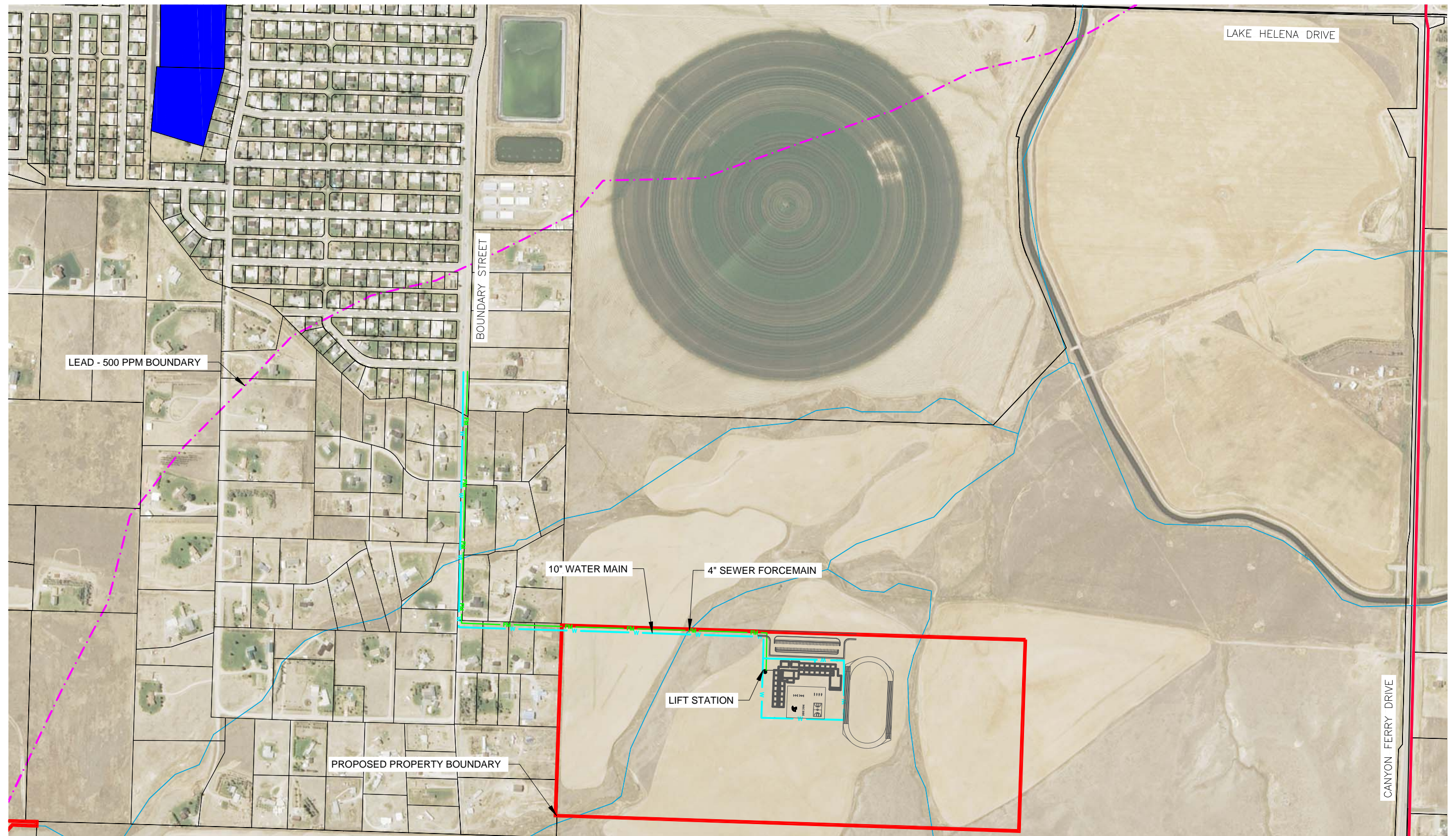
### **5.7.1 Water Alternatives**

There are two known water alternatives for the Hamlin Property Alternative 2 site. The first alternative is connecting to the Eastgate Water and Sewer Association's existing water system and the second alternative is to supply onsite water via drilling and installing wells on location.

The first water alternative considered, connecting to Eastgate's existing water system, requires installing water main piping and appurtenances from Eastgate to the proposed school site and a booster station to provide domestic and fire service. The site is located roughly 0.75 miles northeast of Eastgate and requires approximately 3,749 feet of 10" C900 PVC water main. The piping crosses two irrigation ditches, which may require boring and jacking for the pipe. To provide for the minimum fire flow of 1,500 gallons per minute (GPM), the water line will be looped around the school site with four fire hydrants installed in strategic positions. Figure 5.15 details water and sewer infrastructure under this alternative. The distance from Eastgate to the proposed site is about a third of the Hamlin Property Alternative 1B site therefore lowering costs of construction and therefore deeming it a viable water alternative. It is discussed and scored in Chapter 6.



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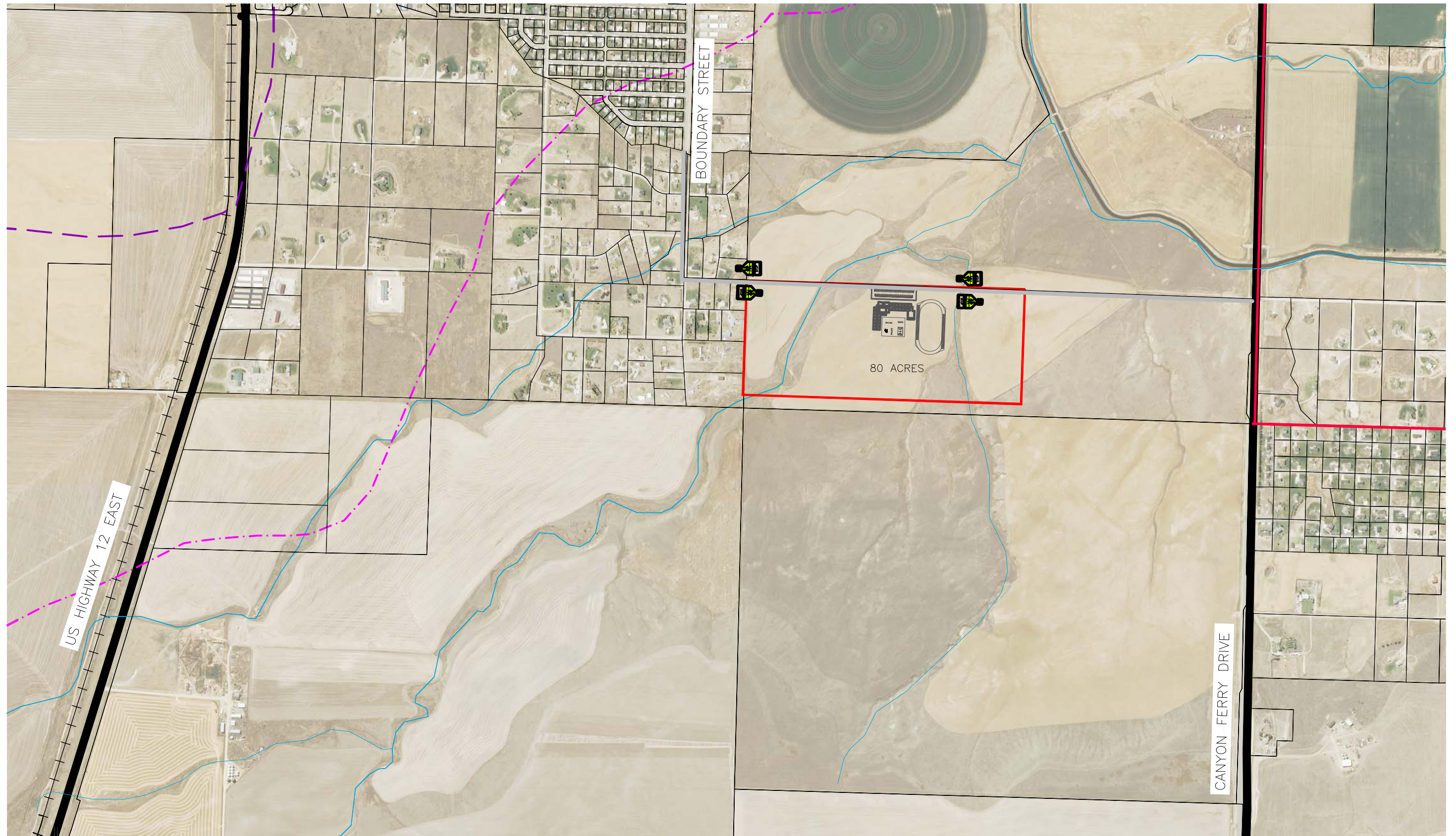


Legend

- Proposed School Property Boundary
- Existing Sites

**FIGURE 5.15**  
**HAMLIN PROPERTY**  
**WATER/SEWER IMPROVEMENTS**  
**ALTERNATIVE 2**  
EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES



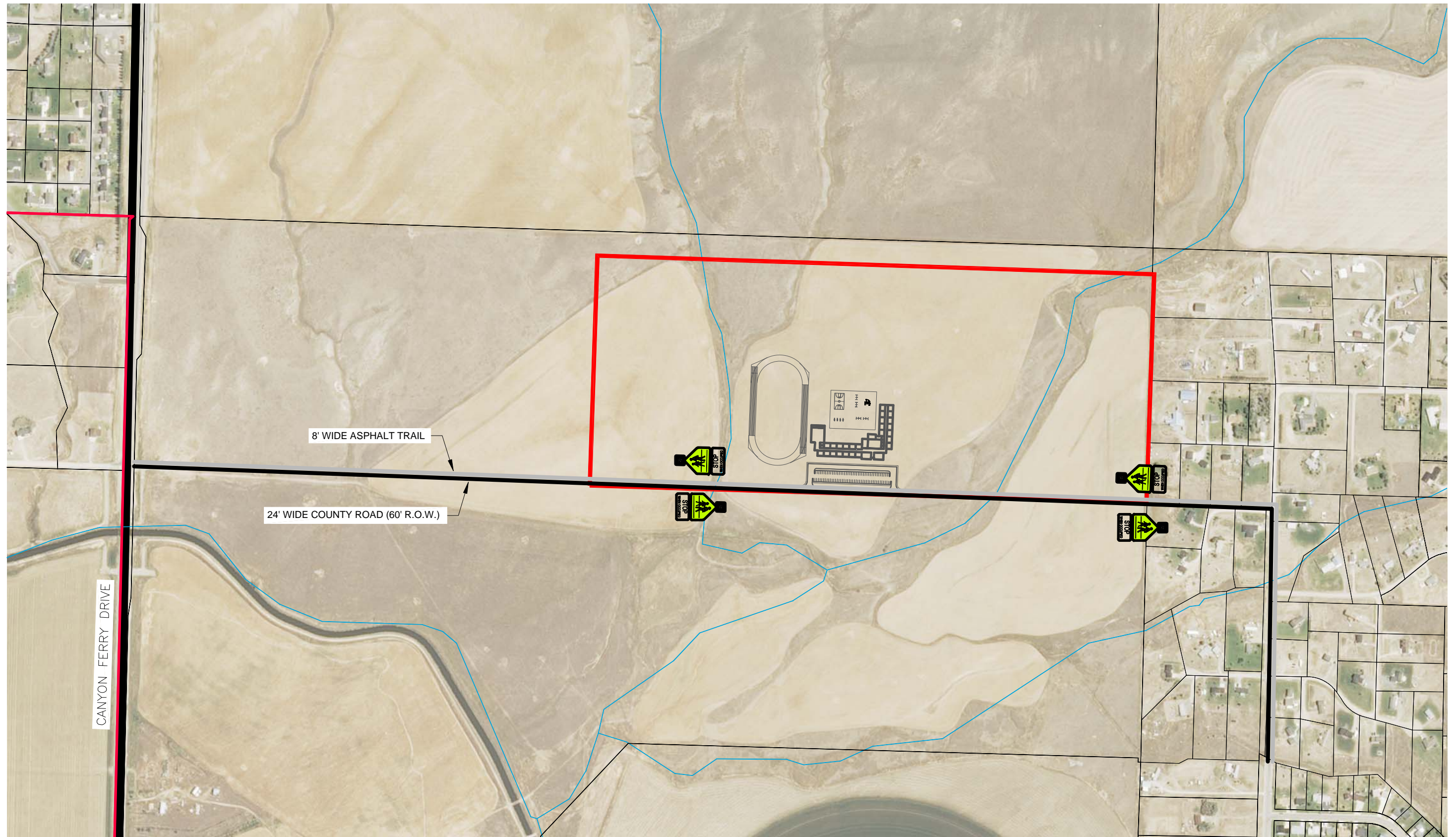


Legend  
■ Proposed School Property Boundary

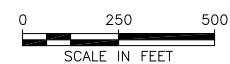
**FIGURE 5.16**  
**HAMLIN PROPERTY**  
**TRANSPORTATION NETWORK**  
**ALTERNATIVE 2**  
EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES



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**SITE PLAN DETAIL**



**Legend**

■ Proposed School Property Boundary

**FIGURE 5.17**  
**HAMLIN PROPERTY**  
**TRANSPORTATION IMPROVEMENTS**  
**ALTERNATIVE 2**  
EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES

The second water alternative considered is to supply onsite water via water wells. This requires the installation of two developed wells with submersible pumps, water main piping and appurtenances from the wells to the proposed site, domestic and fire service, and associated materials required to meet fire code and flow. The site requires approximately 3,000 feet of 10" C900 PVC water main from supply wells drilled near the site. Two wells are required per Montana Department of Environmental Quality (MDEQ) standards to provide redundancy in case of production loss from one well. Boring and jacking may be required to cross the irrigation ditches within the vicinity of the site. To meet fire code, the water main will be looped around the school to maintain the minimum 1,500 GPM of fire flow with four fire hydrants strategically installed. An underground concrete water tank with a 360,000 gallon capacity is required to maintain residual fire flow pressures as the submersible pumps in the water wells alone are not adequate to sustain the minimum pressure during fire events. A building with fire flow distribution pumps and controls is needed to properly control the distribution of the water in case of a fire emergency. Water infrastructure costs under this alternative would be similar to those for the Hamlin Alternative 1A. The complexity and associated costs for meeting requirements for fire code and onsite water deem this water alternative unviable and it will not be considered or discussed further.

### **5.7.2 Wastewater Alternatives**

There are two known wastewater alternatives for the Hamlin Property Alternative 2 site. The first alternative is to connect to the Eastgate Water and Sewer Association's existing wastewater treatment system and the second alternative is to treat the wastewater on site. The first wastewater alternative considered, connecting to Eastgate's existing wastewater treatment facility, requires transporting the wastewater through either a gravity collection system or a lift station with force main depending upon the topography between the wastewater collection point and the existing treatment system. Although a gravity collection system is significantly more economical relative to a lift station, it was determined from the topography of the sewer route that the gradient is insufficient for a gravity collection system and a lift station is required. This alternative also requires installing lift station pumps, controls, and telemetry, force main, sewer service pipe, an automatic air release valve, and paying wastewater system impact fees. The site is located roughly 0.75 miles northeast of Eastgate and requires approximately 3,749 feet of 4" HDPE force main and appurtenances and 60 feet of 6" sanitary sewer service pipe. Boring and jacking for the sewer pipe may be required as the sewer route crosses an irrigation ditch

(Figure 5.15). This wastewater alternative is considered viable due to the comparatively close proximity to the Association's existing sewer system and is discussed and scored in Chapter 6.

The second wastewater alternative considered, onsite treatment, requires the installation of a treatment facility including septic tanks, a level II treatment system with recirculation and dose tanks, and then discharging via a drain field. It was determined from the topography of the site that there is enough gradient to install gravity collection for a portion of the system and then a lift station with force main must be installed to discharge the wastewater to the drain field. The lift station also requires the installation of pumps, controls, and telemetry to operate the system. This alternative requires approximately 1,000 feet of 8" PVC gravity collection sewer line, 60 feet of 6" sanitary sewer service pipe, 1,000 feet of 4" HDPE force main, and 6,500 feet of drain field piping. A future drain field replacement area must also be designated per state and federal regulations. Wastewater infrastructure costs under this alternative would be similar to those for the Hamlin Alternative 1A. Onsite treatment also requires more operation and maintenance to sustain the treatment facilities performance. An operator would also be required to service the system. The complexity and associated costs for meeting the treatment requirements and operation and maintenance of onsite treatment deem this wastewater alternative unviable and it will not be considered or discussed further.

### **5.7.3 Transportation Alternatives**

The Hamlin Property Alternative 2 site is located outside the East Helena city limits and approximately 0.5 miles north of Eastgate's Boundary Street and half a mile south of Canyon Ferry Drive. Figure 5.16 details the existing transportation infrastructure. The site does not currently have access and would require road construction. Transportation improvements are required as the Hamlin Property Alternative 2 site does not currently meet the transportation regulations and standards that are mandatory to accommodate a school

The relative remoteness of the site and the proximity of growth areas would require longer bus routes and an increased traffic load within the area and along Canyon Ferry Drive, Boundary Street, and the proposed connecting road. Adoption by the Montana Department of Transportation (MDT) requires the roadways be enhanced to the current transportation standards and also qualifies them for certain state and federal funding options that could be used to construct the necessary transportation improvements. Canyon Ferry Drive has long been adopted by the Montana Department of Transportation while Lake Helena Drive, currently



a county road, is likely to be adopted as well. Boundary Street and the proposed access road are unlikely to be adopted by the MDT. Canyon Ferry Drive and Boundary Street require widening and other improvements to accommodate the increased traffic load and to meet an acceptable level of service and school requirements. It is possible that the road widening may create the need to increase the width of the bridge as well. The proposed road would most likely require a left turn lane on Canyon Ferry. Figure 5.17 details proposed transportation improvements under this alternative. Pedestrian crossings along with trails and sidewalks would also have to be constructed to accommodate increased pedestrian traffic and to meet school requirements. The combination of poor site distance, high rates of speed, and pedestrian crossings are major safety concerns for this proposed site. Another concern is that if MDT does not adopt the proposed road, the District would be responsible for the O&M of the pedestrian routes and roadways that service the site. These transportation improvements including O&M are costly but are required to allow the construction of a school at this site. These improvements are viable and are discussed and scored in Chapter 6.

#### **5.7.4 Remediation Alternatives**

The Hamlin Property Alternative 2 site is located outside of the Asarco soil contamination plume and therefore does not require environmental remediation.

Table 5-6 - Estimated Infrastructure Capital Costs for Hamlin Alternative 2

DECEMBER 2014 OPINION OF PROBABLE COST EAST HELENA SCHOOL SITING ALTERNATIVES - HAMLIN PROPERTY - ALT 2					
#	BID ITEM	QTY	UNITS	UNIT PRICE	TOTAL
1	Sitework	1	LS	\$100,000.00	\$100,000.00
	Earthwork Subtotal				\$100,000.00
2	10" C900 PVC Water Main	5475	LF	\$45.00	\$246,375.00
3	Directional Drill under Irrigation Ditch	100	FT	\$100.00	\$10,000.00
4	Booster Station	1	EA	\$200,000.00	\$200,000.00
5	6" Fire Service	110	LF	\$35.00	\$3,850.00
6	3" Domestic Service	110	LF	\$30.00	\$3,300.00
7	Water System Impact Fee	1	LS	\$200,000.00	\$200,000.00
8	Hydrants	4	EA	\$6,500.00	\$26,000.00
	Water Subtotal				\$689,525.00
9	6" Sanitary Sewer Service Pipe	60	LF	\$30.00	\$1,800.00
10	Directional Drill under Irrigation Ditch	100	FT	\$100.00	\$10,000.00
11	Packaged Submersible Lift Station	1	LS	\$200,000.00	\$200,000.00
12	Lift Station Controls and Telemetry	1	LS	\$30,000.00	\$30,000.00
13	Automatic Air Release Valve	1	LS	\$15,000.00	\$15,000.00
14	4" HDPE Force Main	3,749	LF	\$30.00	\$112,470.00
15	Wastewater System Impact Fee	1	LF	\$190,000.00	\$190,000.00
	Wastewater Subtotal				\$559,270.00
16	Highway Widening/Improvements	1	LS	\$380,000.00	\$380,000.00
17	Trail - 8' Wide Asphalt	7350	LF	\$55.00	\$404,250.00
18	Signs - School Crossing W/Ped Light	4	EA	\$4,000.00	\$16,000.00
19	New Road Construction	7400	LF	\$106.00	\$784,400.00
	Transportation Subtotal				\$1,584,650.00
20	Power	200	LF	\$50.00	\$10,000.00
21	Communication	200	LF	\$50.00	\$10,000.00
22	Gas	200	LF	\$25.00	\$5,000.00
	Miscellaneous Subtotal				\$25,000.00
Total					\$2,958,445.00
	Mobilization			10%	\$296,000.00
	Contingency			20%	\$592,000.00
Direct Construction Subtotal					\$3,846,445.00
	Land Acquisition Cost	80	AC	\$5,000.00	\$400,000.00
	Water and Sewer Easements				\$50,000.00
	Engineering			20%	\$770,000.00
	Legal and Administration				\$15,000.00
Non Construction Subtotal					\$1,235,000.00
Grand Total					\$5,081,445.00

## **5.8 Mountain View Meadows Alternative**

The Mountain View Meadows site is located just west of the East Helena city limits and is actually located within the City of Helena limits. The site is approximately one mile from U.S. Highway 12 East and is located adjacent to the new Mountain View Meadows subdivision. The site was donated to the East Helena School District and is 9 acres in size. The donation is helpful in that the does not have to pay land acquisition costs for the site. The relatively small size of the site does create an issue as the proposed school footprint does not fit within the site regardless of orientation. However, the property developer has indicated that he would be interested in dedicating additional property to the school district, as required. The site does not require environmental remediation since the entire proposed school footprint has been stripped as part of a gravel pit operation. The following sections discuss various water, wastewater, transportation, and remediation alternatives for the Mountain View Meadows site with the intent of determining the viability of each.

### **5.8.1 Water Alternatives**

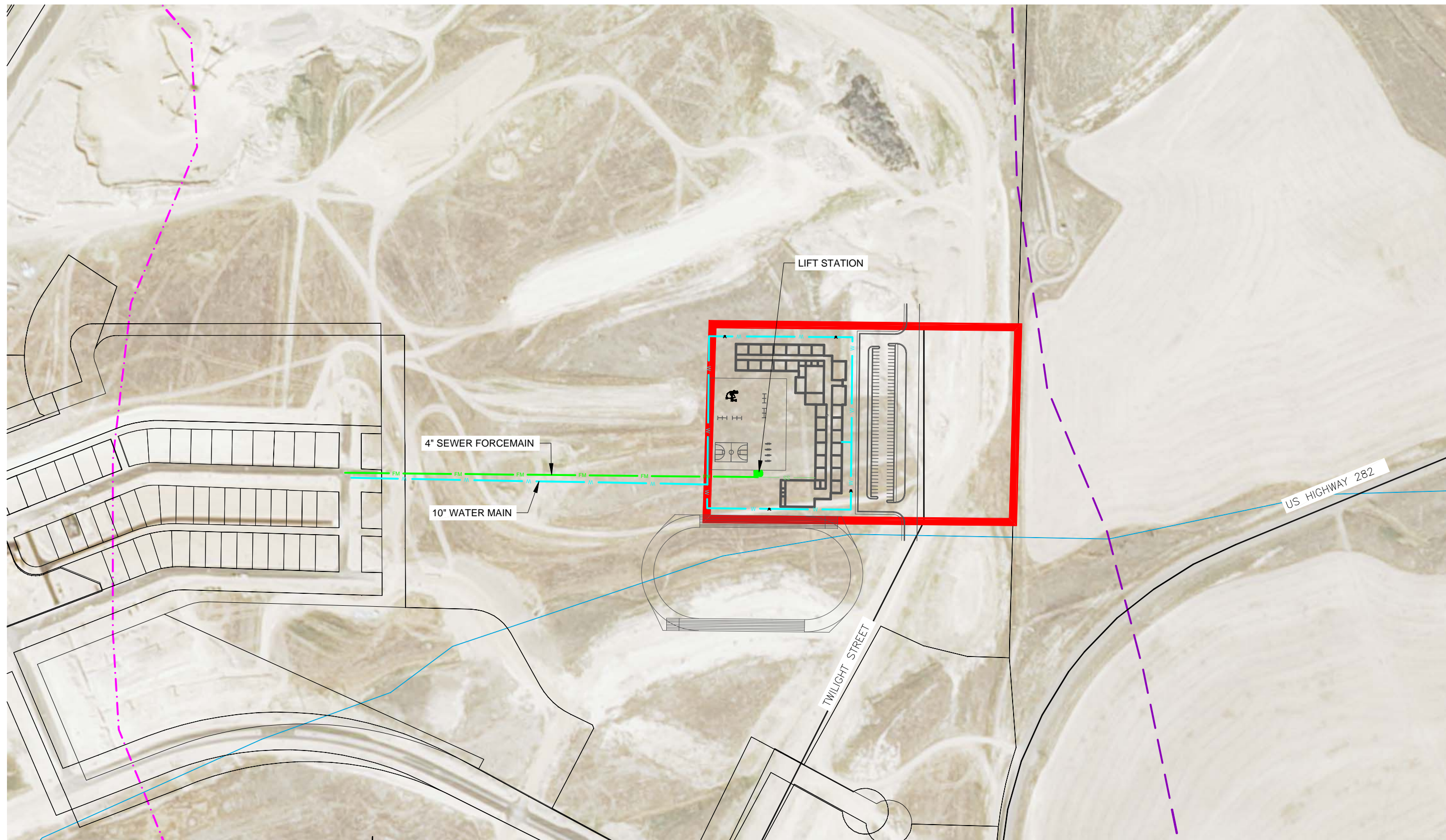
There are two known water alternatives for the Mountain View Meadows site. The first alternative is connecting to the City of Helena's existing water system and the second alternative is to onsite water via wells on or near the site.

The first water alternative considered, connecting to the City of Helena's existing water system, requires installing water main piping and appurtenances from the City's existing water to the proposed school site to provide domestic and fire service. The site is located within 1000 feet of the City's existing water system and requires only 2,610 feet of 10" C900 PVC water main, most of that piping for looping around the proposed school. To provide for the minimum fire flow of 1,500 gallons per minute (GPM), the water line is looped around the school site with four fire hydrants installed in strategic positions. Figure 5.18 details the water and wastewater improvements under this alternative. The close proximity of the City's existing water system make this water alternative relatively inexpensive and ultimately viable. It is discussed and scored in Chapter 6.

The second water alternative considered is to supply onsite water via water wells. Being that the Mountain View Meadows site is located within the Helena city limits and the City does not allow onsite water within the city limits, it is required to connect to the City's existing water system. In



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0 125 250  
SCALE IN FEET

#### Legend

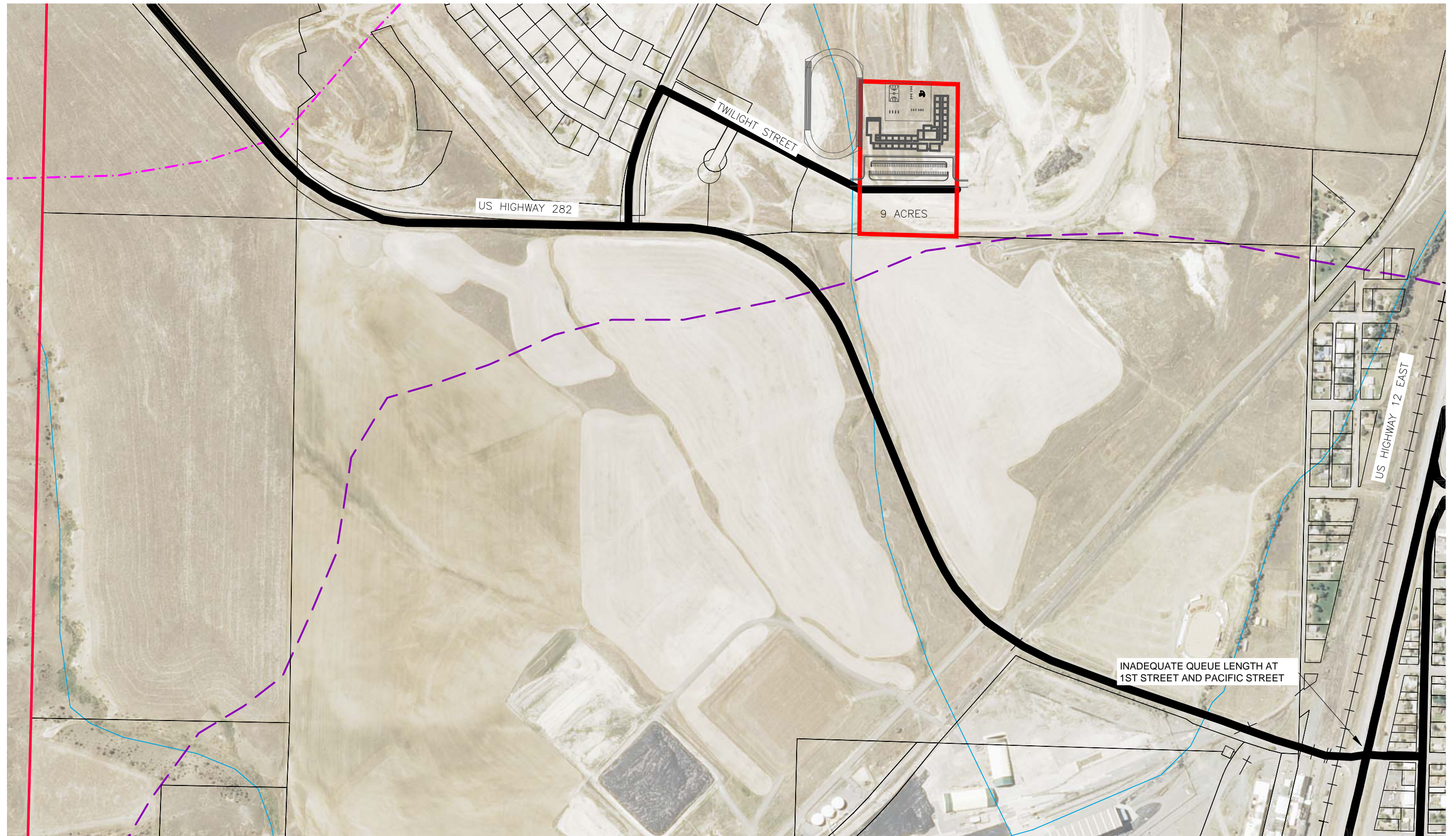
Proposed School Property Boundary

**FIGURE 5.18**  
**MOUNTAIN VIEW MEADOWS**  
**WATER/SEWER IMPROVEMENTS**

EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES



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Legend

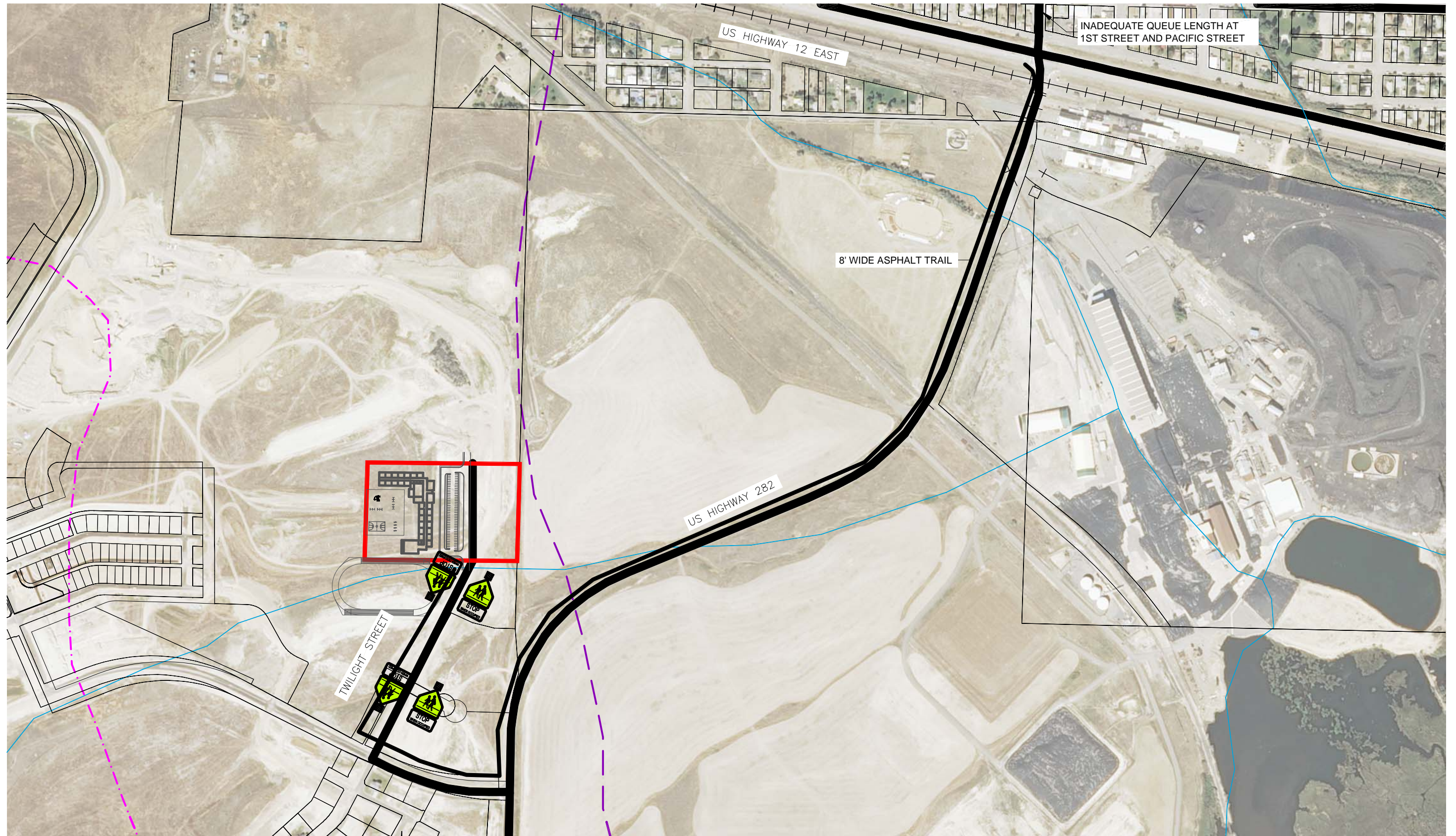
Proposed School Property Boundary

**FIGURE 5.19**  
**MOUNTAIN VIEW MEADOWS**  
**TRANSPORTATION NETWORK**

EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES



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Legend  
■ Proposed School Property Boundary

**FIGURE 5.20**  
**MOUNTAIN VIEW MEADOWS**  
**TRANSPORTATION IMPROVEMENTS**

EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES



addition, the process of obtaining a new water right is costly and complex. Therefore, onsite water is considered unviable and is not considered or discussed further.

### **5.8.2 Wastewater Alternatives**

There are two known wastewater alternatives for the Mountain View Meadows site. The first alternative is to connect to the City of Helena's existing wastewater treatment system and the second alternative is to treat the wastewater on site. The first wastewater alternative considered, connecting to City's existing wastewater treatment system, requires transporting the wastewater through either a gravity collection system or a lift station with force main depending upon the topography between the initial wastewater collection point and the existing wastewater system. Although a gravity collection system is significantly more economical relative to a lift station, it was determined from the topography of the sewer route that the gradient is insufficient for a gravity collection system and a lift station is required. This alternative also requires installing lift station pumps, controls, and telemetry, force main, sewer service pipe, an automatic air release valve, and paying wastewater connection fees. The site is located within 1000 feet of the City's existing sewer and requires only 1,081 feet of 4" HDPE force main and appurtenances and 60 feet of 6" sanitary sewer service pipe. The close proximity to the City's existing wastewater system make this alternative comparatively inexpensive it is discussed and scored in Chapter 6.

The second wastewater alternative considered, onsite treatment, requires constructing a treatment system onsite that would treat wastewater to required standards and discharged via a drain field onsite. Being that the Mountain View Meadows site is located within Helena city limits, it is required to connect to the existing sewer system. This effectively deems this wastewater alternative unviable and it is not considered or discussed further.

### **5.8.3 Transportation Alternatives**

The Mountain View Meadows site is located just west of the East Helena city limits and is actually located within the Helena city limits. The site is approximately one mile from U.S. Highway 12 East and is located adjacent to the new Mountain View Meadows subdivision. Figure 5.19 details the existing transportation infrastructure in the vicinity of this alternative. Transportation improvements are required as the Mountain View Meadows site does not currently meet the transportation regulations and standards that are mandatory to accommodate a school.

The site can be accessed from two directions. The main access to the site is from U.S. Highway 12 East to U.S. Highway 282 and finally to the newly constructed Twilight Street. The proximity of U.S. Highway 12 East to the proposed site provides efficient travel and ease of access to the school along the highway but being that the site is located away from the population center it would require relatively longer bus routes and an increased traffic load within the City and along U.S. Highway 12 East. Adoption by the Montana Department of Transportation (MDT) requires the roadways to be enhanced to their current transportation standards and also qualifies them for certain state and federal funding options that could be used to construct the necessary transportation improvements. U.S. Highway 12 East and U.S. Highway 282 have long been adopted by the Montana Department of Transportation. Twilight Street is owned by the City of Helena and was recently constructed and should not require substantial improvements. All other street improvements within the subdivision are the responsibility of the developer. The disadvantage of the Mountain View Meadows is that U.S. Highway 282, which is the main arterial street, is that it has six rail road crossings which create safety issues, traffic congestion, delayed travel times, and increased queue lengths. Another significant concern is that a costly pedestrian crossing may need to be installed at U.S. Highway 12 East to safely accommodate pedestrians. This would most likely be in the form of a pedestrian bridge or tunnel. Because of the uncertainty of a grade separated pedestrian crossing being required by MDT, the costs of such a crossing has not been included. Only the costs of minor improvements to the intersection have been included. In addition, if a grade separated pedestrian crossing is required, MDT may participate in the funding of such a project. Trails and sidewalks would also have to be constructed to accommodate increased pedestrian traffic and to meet school requirements. Figure 5.20 details needed transportation improvements under this alternative. These transportation improvements are costly but are required to allow the construction of a school and are necessary at each site alternative. Although these factors make this transportation alternative comparatively expensive, these improvements are viable and will be discussed and scored in Chapter 6.

#### **5.8.4 Remediation Alternatives**

The Mountain View Meadows site has been stripped as part of a gravel pit operation and therefore does not require environmental remediation.

Table 5-7 - Estimated Infrastructure Capital Costs for Mountain View Meadows Alternative

DECEMBER 2014					
OPINION OF PROBABLE COST					
EAST HELENA SCHOOL SITING ALTERNATIVES - MOUNTAIN VIEW MEADOWS					
#	DESCRIPTION	QTY	UNITS	UNIT PRICE	TOTAL
1	Sitework	1	LS	\$100,000.00	\$100,000.00
	Earthwork Subtotal				\$100,000.00
5	10" C900 PVC Water Main	2,610	LF	\$45.00	\$117,450.00
6	6" Fire Service	110	LF	\$35.00	\$3,850.00
7	3" Domestic Service	110	LF	\$30.00	\$3,300.00
8	Hydrants	4	EA	\$6,500.00	\$26,000.00
9	Water Connection/Meter	1	EA	\$25,000.00	\$25,000.00
	Water Subtotal				\$175,600.00
8	6" Sanitary Sewer Service Pipe	60	LF	\$30.00	\$1,800.00
9	Packaged Submersible Lift Station	1	LS	\$200,000.00	\$200,000.00
10	Lift Station Controls and Telemetry	1	LS	\$30,000.00	\$30,000.00
11	4" HDPE Force Main	1,081	LF	\$30.00	\$32,430.00
12	Automatic Air Release Valve	1	LS	\$15,000.00	\$15,000.00
	Wastewater Subtotal				\$279,230.00
13	Trail - 8' Asphalt	6869	LF	\$55.00	\$377,795.00
14	US 12 Crossing (Pedestrian Crossing)	1	LS	\$100,000.00	\$100,000.00
15	Signs - School Crossing W/Ped Light	4	EA	\$4,000.00	\$16,000.00
	Transportation Subtotal				\$493,795.00
16	Power	200	LF	\$50.00	\$10,000.00
17	Communication	200	LF	\$50.00	\$10,000.00
18	Gas	200	LF	\$25.00	\$5,000.00
	Miscellaneous Subtotal				\$25,000.00
	Total				\$1,073,625.00
	Mobilization			10%	\$110,000.00
	Contingency			20%	\$220,000.00
	Direct Construction Subtotal				\$1,403,625.00
	Non Construction Costs				
	Land Acquisition Cost	9	AC	\$0.00	\$0.00
	Engineering		LS	20%	\$280,000.00
	Legal and Administration		LS		\$15,000.00
	Non Construction Subtotal				\$295,000.00
	Grand Total				\$1,698,625.00



## **5.9 East Fields Alternative**

The East Fields site is located south of Highway 12 East between South Montana Avenue and Route 518. The property is owned by Montana Environmental Trust Group (METG). METG owns more than 80 acres near this site, but it is anticipated that there would be a boundary relocation and the school would secure a 75 acre parcel. As with each site that will be considered, there are site specific requirements that need to be considered in detail relating to the site remediation as well as the water, wastewater, and transportation infrastructure.

### **5.9.1 Water Alternatives**

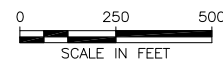
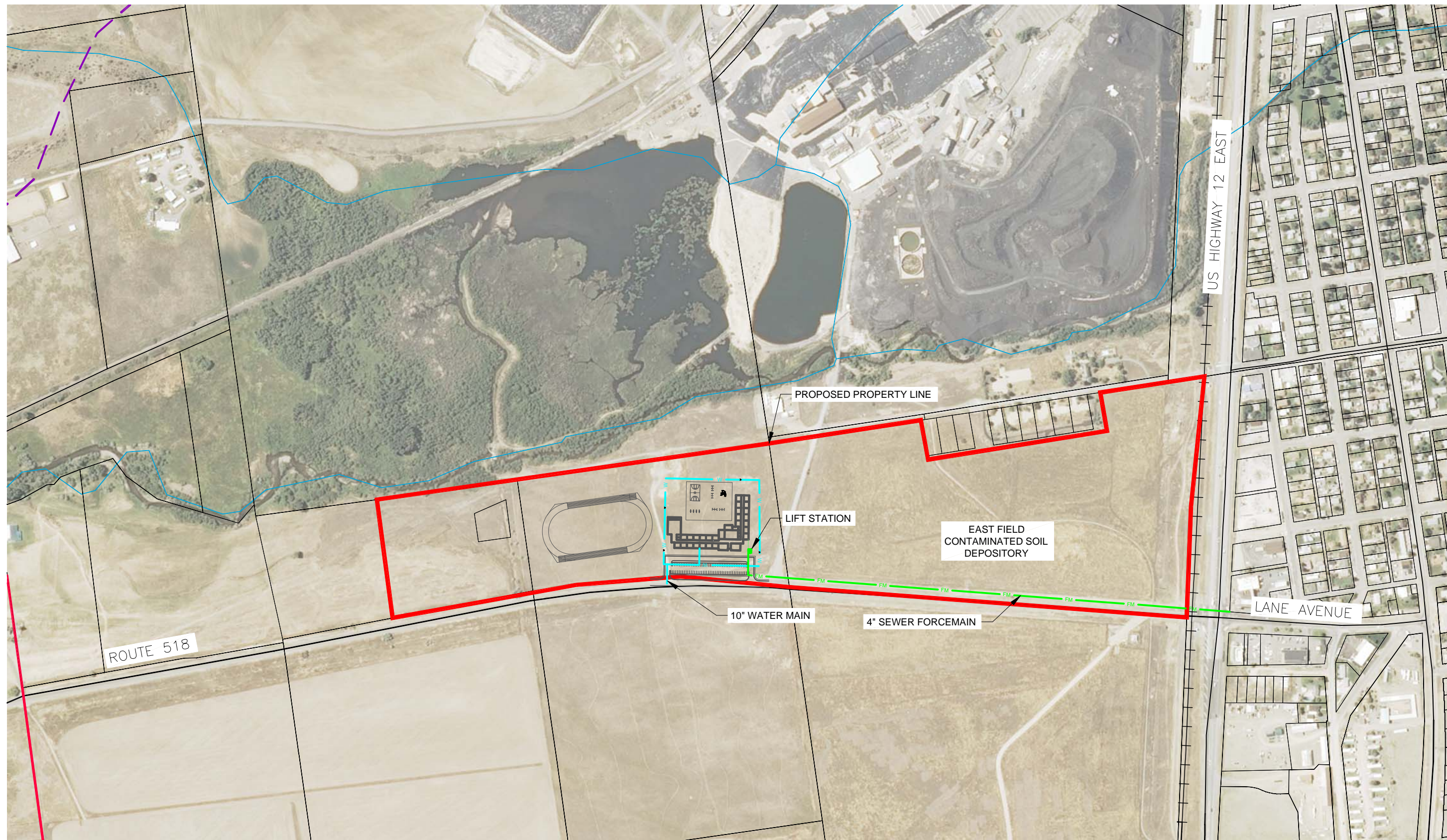
There are two known water alternatives for the East Fields site. The first alternative is to connect to the City of East Helena's existing water system and the second alternative is onsite water via wells on or near the site.

The first water alternative considered, connecting to City's existing water system, requires installing water main piping and appurtenances from the City's system to the proposed school site, domestic and fire service, fire hydrants, and paying for the water system connection and meter fees. The proposed site is located immediately adjacent to a City of East Helena water main. The water main extension requires the crossing of Highway 12 East, of which jacking and boring would be necessary. In addition to the connection, the water main would be looped around the school site in order to maintain adequate fire protection. Total estimated piping necessary to extend water service to this proposed site is 1,890 feet of 10" C900 PVC water main along with four strategically placed fire hydrants. To meet fire code and provide for the minimum fire flow of 1,500 gallons per minute (GPM), the water main is looped around the proposed school site with four fire hydrants installed in strategic positions. Figure 5.21 details the proposed water and sewer improvements under this alternative. The distance from the City's existing system to the proposed site is close which makes this water alternative relatively inexpensive and viable. This water alternative is discussed and scored in Chapter 6.

The second water alternative considered is to supply onsite water via wells on or near the site. Being that the East Fields site is located within the East Helena city limits, only connection to the city will be considered. In addition, the process of obtaining a new water right is costly and complex. Therefore, onsite water is considered unviable and it is not considered or discussed further.



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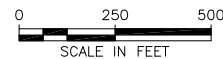
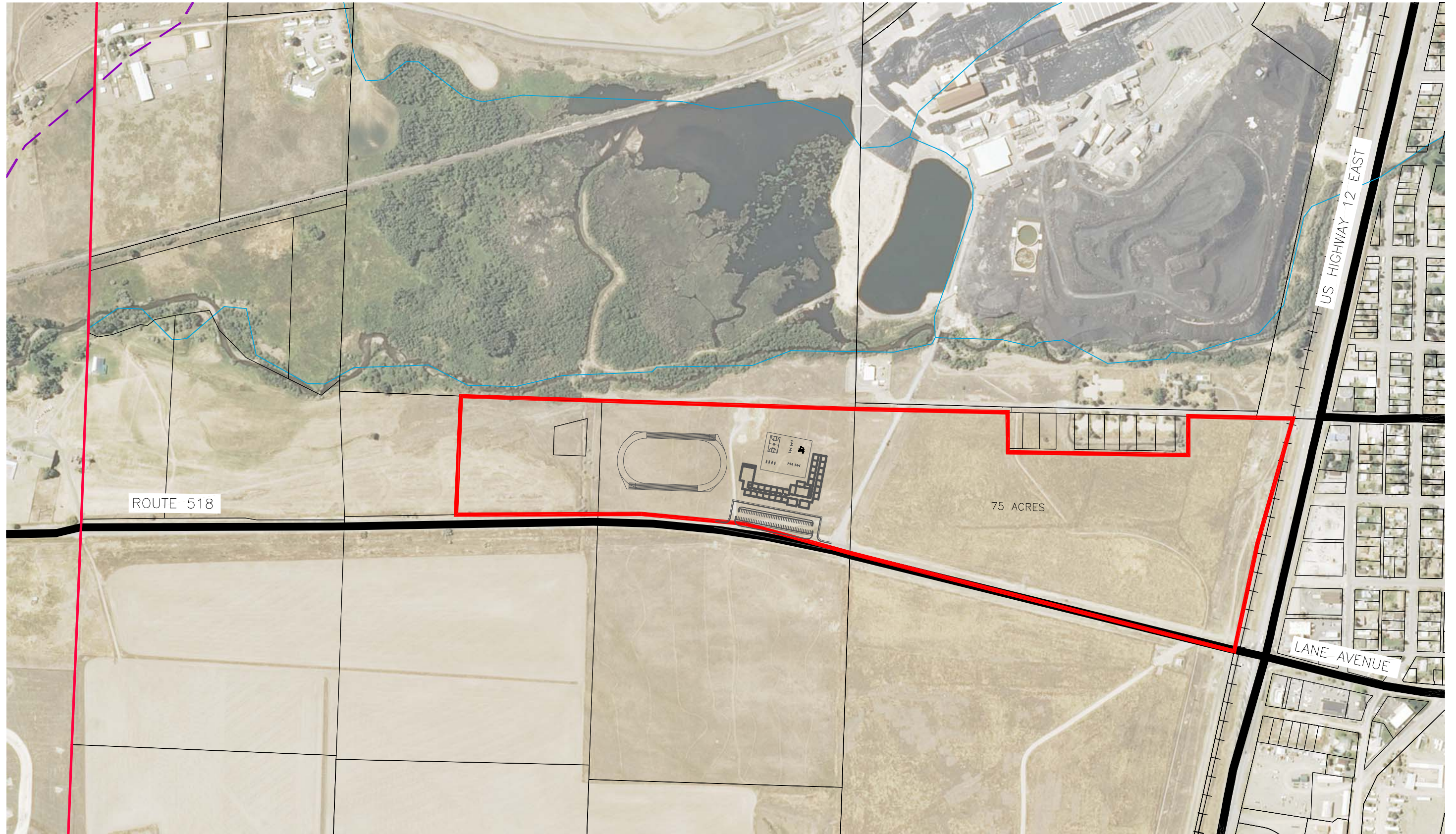
- Legend
- Proposed School Property Boundary
  - Existing Sites

**FIGURE 5.21**  
**EAST FIELDS**  
**WATER/SEWER IMPROVEMENTS**

EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES



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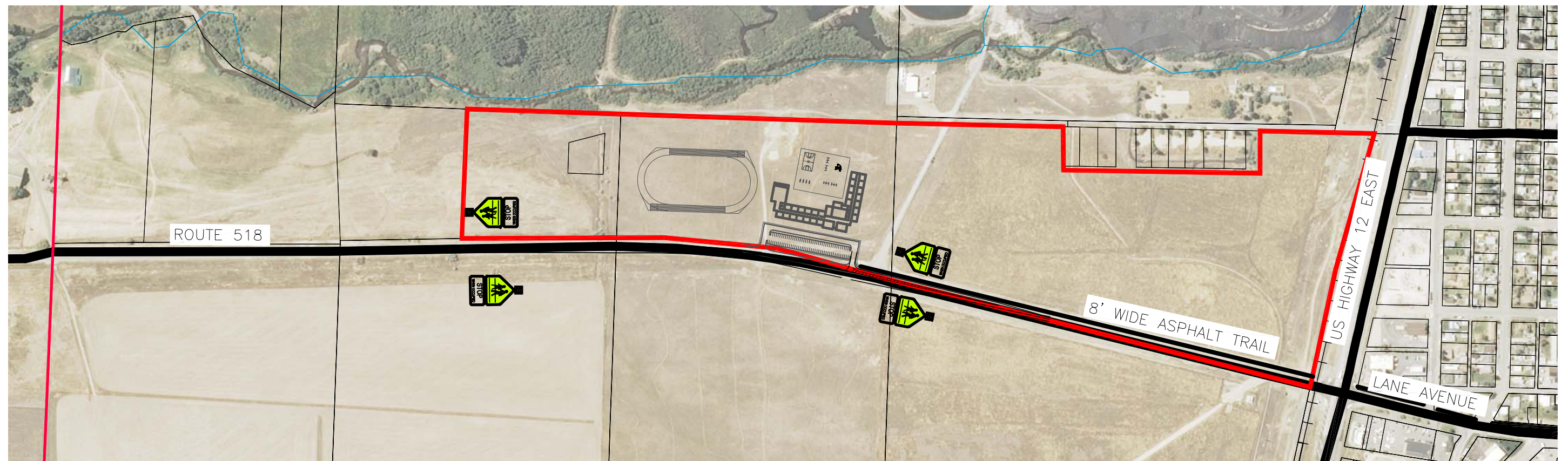
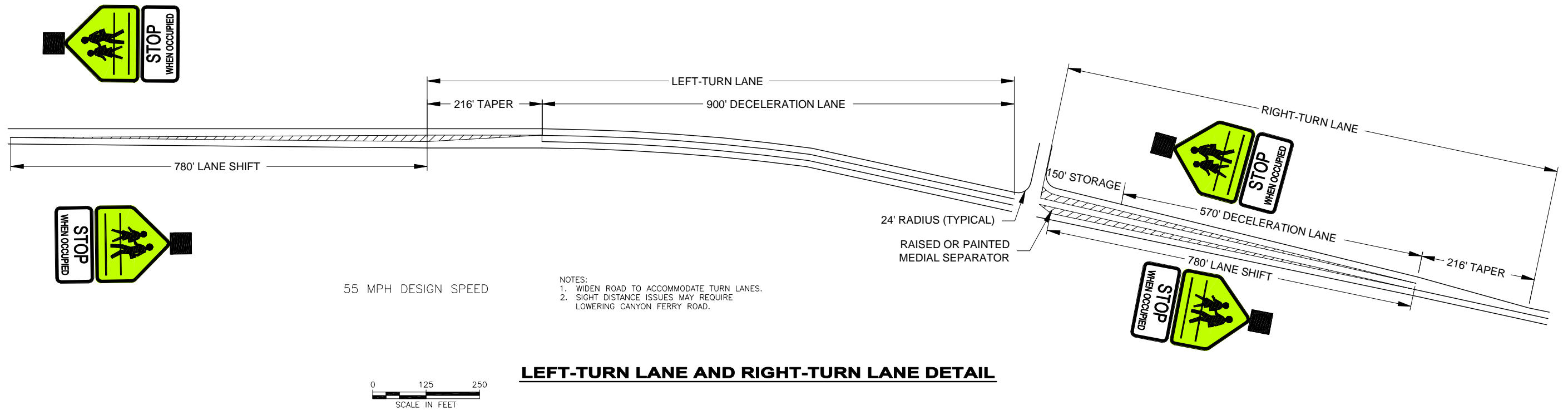


- Legend
- Proposed School Property Boundary
  - Existing Sites

**FIGURE 5.22**  
**EAST FIELDS**  
**TRANSPORTATION NETWORK**

EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES





**FIGURE 5.23**  
**EAST FIELDS**  
**TRANSPORTATION IMPROVEMENTS**  
 EAST HELENA PUBLIC SCHOOLS  
 EAST HELENA SCHOOLS SITING ALTERNATIVES

### **5.9.2 Wastewater Alternatives**

There are two known wastewater alternatives for the East Fields site. The first alternative is to connect to the City of East Helena's existing wastewater treatment system and the second alternative is to treat the wastewater on site. The first wastewater alternative considered, connecting to City's existing wastewater treatment system, requires transporting the wastewater through either a gravity collection system or a lift station with force main depending upon the topography of the initial wastewater collection point and the selected connection point to the existing wastewater system. Although a gravity collection system is significantly more economical relative to a lift station, it was determined from the topography of the sewer route that the gradient is insufficient for a gravity collection system and a lift station is required. This alternative also requires installing lift station pumps, controls, and telemetry, force main, sewer service pipe, an automatic air release valve, and paying wastewater connection fees. The site is located within 2,000 feet of the City's existing sewer and requires approximately 2,660 feet of 4" HDPE force main and appurtenances and 60 feet of 6" sanitary sewer service pipe (Figure 5.21). The close proximity to the City's existing sewer system make this alternative comparatively inexpensive and ultimately viable and it is discussed and scored in Chapter 6.

The second wastewater alternative considered, onsite treatment, requires constructing a treatment system onsite that would treat wastewater to required standards and discharged via a drain field onsite. Being that the East Fields site is located within East Helena city limits, it is both required and logical to connect to the existing sewer system, which effectively deems this wastewater alternative unviable.

### **5.9.3 Transportation Alternatives**

The East Fields site is located within the East Helena city limits. The site is located just south of Highway 12 East and is bordered by South Montana Avenue to the west and Route 518 to the east. Figure 5.22 details the existing transportation network in the vicinity of this alternative. The East Fields site does not currently meet the transportation regulations and standards that are mandatory to accommodate a school and therefore improvements are required.

The site can be accessed from two directions. The proximity of U.S. Highway 12 East to the proposed site provides efficient travel and ease of access to the school along the highway. However since the site is located away from growth areas it would require relatively longer bus routes and an increased traffic load within the City, along U.S. Highway 12 East and Route 518.

Adoption by the Montana Department of Transportation (MDT) requires the roadways to be enhanced to their current transportation standards and also qualifies them for certain state and federal funding options that could be used to construct the necessary transportation improvements. U.S. Highway 12 East has long been adopted by the Montana Department of Transportation. The disadvantage of the East Fields site is that the U.S. Highway 12 East and Route 518 intersection would be detrimentally affected by the increased traffic due to a new school with pedestrian safety concerns, decreased level of service, delayed travel times, and increased queue lengths. Another significant concern is that a costly pedestrian crossing may possibly have to be installed over U.S. Highway 12 East. This would most likely be in the form of a pedestrian bridge or tunnel. Because of the uncertainty of a grade separated pedestrian crossing being required by MDT, the costs of such a crossing have not been included. Only the costs of minor improvements to the intersection have been included. In addition, if a grade separated pedestrian crossing is required, MDT may participate in the funding of such a project. Trails and sidewalks would also have to be constructed to accommodate increased pedestrian traffic and to meet school requirements. Figure 5.23 details needed transportation improvements for this alternative. These transportation improvements will be costly but are required to allow the construction of a school at this site. Although these factors make this transportation alternative comparatively expensive, these improvements are viable and are discussed and scored in Chapter 6.

#### **5.9.4 Remediation Alternatives**

The East Fields site is located directly east of the old Asarco plant and is within the Asarco soil contamination plume. Environmental remediation is required before a school could be constructed on the site. The Montana Environmental Trust Group (METG) owns the 80 acre East Fields site. The soils have been contaminated by the Asarco lead smelter that operated for over 100 years and have been tested for Lead, Arsenic, and Cadmium. The site soils have been tested to determine the location of the specific contaminants and corresponding levels of each at certain depths. There are three main methods explored which could be used to remediate the site contamination.

The first remediation method considered is complete removal and replacement of the contaminated soils. The combination of the relatively thin layer of contamination and the poor quality and rocky soil conditions on the site make a thin removal and replacement of contaminated soils a favorable alternative. Contaminated soils will only be removed until an



acceptable threshold of contamination has been met and then an appropriate import fill material placed to bring the site back to grade. Being that METG owns the site, they have offered to dispose of the contaminated soils free of cost. The expense is in excavating and trucking the contaminated soils and replacing the site with new suitable soil. Due to increasingly stringent contamination regulations, complete removal and replacement alleviates all uncertainty of possible future remediation as it is the most comprehensive and conservative remediation method. Removal and replacement truly mitigates the issue and is substantially superior for the environment, public, and future. The proposed property has had significant activity associated with the remediation work on the plant site. This includes topsoil stripping and stockpiling activities. It is expected that the clean-up effort required on this property will be significantly less than other properties because the stripping, surface disturbance and mixing activities have likely significantly reduced the concentration of contaminants. However, there is budgeted some work for clean up in the cost estimate for the alternative.

The second remediation method considered is deep tilling or in place treatment. The process consists of blending the soil to lower the surface soil contamination levels through dilution without actually removing the contaminant. This is only feasible when the subsurface has lower contamination levels than the surface soils. To aid in the process, products such as lime, phosphorus, and organic matter can be added during the tilling to help biologically lower the contamination levels.

The third remediation method considered is capping. Capping is the process of adding a cover over contaminated surfaces that do not meet the minimum required contamination levels. This alternative essentially provides a barrier to exposure but does not actually remove the contaminant. Capping is a cost effective alternative when the contaminant is deep within the soil. Capping usually requires at minimum a cap of 12 to 16 inches in depth and the contamination profile for the East Helena sites is generally within the top 6 inches. The cost to install even a 12 to 16 inch cap is approximately equal to removal and replacement of 6 inches of contaminated soils due to material import costs. These factors make capping an uneconomical solution for this site.

Because the area of the proposed school footprint has already been disturbed by construction activity, additional sampling will be conducted to determine the lead, arsenic and cadmium levels near the surface. If the levels exceed acceptable values, impacted soil removal and replacement is proposed for this site.

Table 5-8 - Estimated Infrastructure Capital Costs for East Fields Alternative

DECEMBER 2014 OPINION OF PROBABLE COST EAST HELENA SCHOOL SITING ALTERNATIVES - EAST FIELDS					
#	DESCRIPTION	QTY	UNITS	UNIT PRICE	TOTAL
1	Site Work	1	LS	\$100,000.00	\$100,000.00
2	Contaminated Soil Removal	1	CY	\$100,000.00	\$100,000.00
3	Dewatering	1	LS	\$15,000.00	\$15,000.00
	Earthwork Subtotal				\$215,000.00
4	10" C900 PVC Water Main	1,890	LF	\$45.00	\$85,050.00
5	Boring and Jacking Water	80	LF	\$350.00	\$28,000.00
6	6" Fire Service	110	LF	\$35.00	\$3,850.00
7	3" Domestic Service	110	LF	\$30.00	\$3,300.00
8	Hydrants	4	EA	\$6,500.00	\$26,000.00
9	Water Connection/Meter	1	EA	\$25,000.00	\$25,000.00
	Water Subtotal				\$171,200.00
10	6" Sanitary Sewer Service Pipe	60	LF	\$30.00	\$1,800.00
11	Boring and Jacking Sewer	80	LF	\$350.00	\$28,000.00
12	Packaged Submersible Lift Station	1	LS	\$200,000.00	\$200,000.00
13	Lift Station Controls and Telemetry	1	LS	\$30,000.00	\$30,000.00
14	4" HDPE Force Main	2,660	LF	\$35.00	\$93,100.00
15	Automatic Air Release Valve	1	LS	\$15,000.00	\$15,000.00
	Wastewater Subtotal				\$367,900.00
16	Highway Widening/Improvements	1	LS	\$380,000.00	\$380,000.00
17	Trail - 8' Asphalt	3125	LF	\$55.00	\$171,875.00
18	US 12 Crossing (Pedestrian Crossing)	1	LS	\$100,000.00	\$100,000.00
19	Signs - School Crossing W/Ped Light	4	EA	\$4,000.00	\$16,000.00
	Transportation Subtotal				\$667,875.00
20	Power	200	LF	\$50.00	\$10,000.00
21	Communication	200	LF	\$50.00	\$10,000.00
22	Gas	200	LF	\$25.00	\$5,000.00
	Miscellaneous Subtotal				\$25,000.00
	Total				\$1,446,975.00
	Mobilization			10%	\$144,697.50
	Contingency			20%	\$289,395.00
	Direct Construction Subtotal				\$1,881,067.50
	Non Construction Costs				
	Land Acquisition Cost		AC	\$0.00	\$0.00
	Engineering		LS	20%	\$380,000.00
	Legal and Administration		LS		\$15,000.00
	Non Construction Subtotal				\$395,000.00
	Grand Total				\$2,276,067.50

## **5.10 Diehl Property Alternative**

The Diehl Property site is located east of East Helena and north of Highway 12 East near the McClellan Creek Road intersection. The property is owned by Diehl Ranch Co, Incorporated and is 93 acres in size. As with each site that will be considered, there are site specific requirements that need to be considered in detail relating to the site remediation as well as the water, wastewater, and transportation infrastructure.

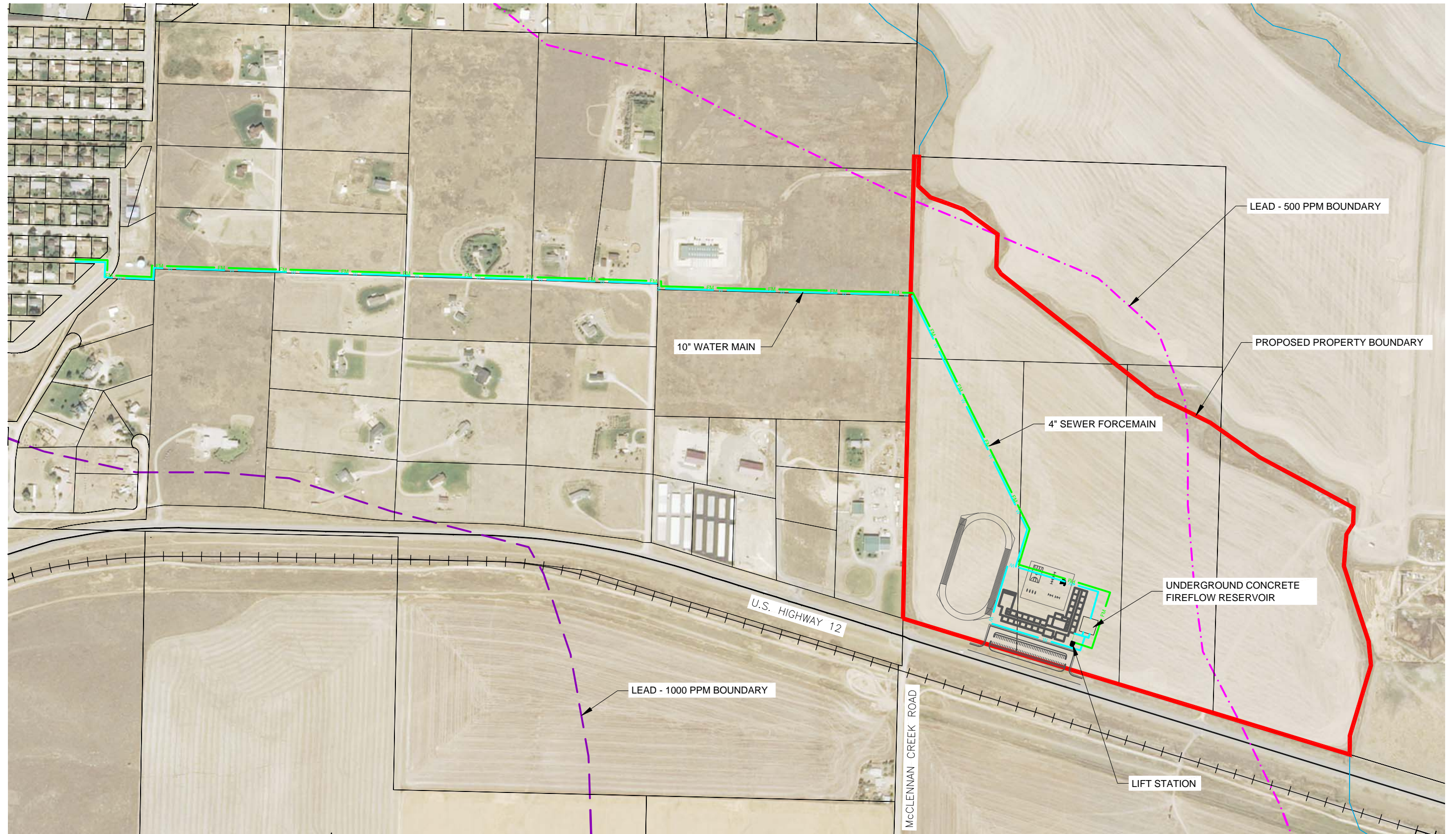
### **5.10.1 Water Alternatives**

There are two known water alternatives for the Diehl Property site. The first alternative is to connect to the Eastgate Water and Sewer Association's existing water system and the second alternative is onsite water via wells on or near the site. The first water alternative considered, connecting to Association's existing water system, requires installing water main piping and appurtenances from the system to the proposed school site for domestic and fire service. The proposed site is located approximately 1.25 miles from the nearest connection to the Association's existing water system. It requires approximately 7,600 feet of 10" C900 PVC water main. To meet fire code and provide for the minimum fire flow of 1,500 gallons per minute (GPM), the water main needs to be looped around the proposed school site with four fire hydrants installed in strategic positions. Figure 5.24 details the location of the proposed water system improvements. This water alternative is considered viable due to the cost of piping runs and ease of construction and is discussed and scored in Chapter 6.

The second water alternative considered is to supply onsite water via water wells. This requires the installation of two developed wells with submersible pumps, water main piping and appurtenances from the wells to the proposed site, domestic and fire service, and associated materials required to meet fire code and flow. The site would require 10" C900 PVC water main from supply wells drilled on or near the site. Two wells are required per Montana Department of Environmental Quality (MDEQ) standards to provide redundancy in case of production loss from one well. To meet fire code, the water main also needs to be looped around the school to maintain the minimum 1,500 gallons per minute (GPM) of fire flow with four fire hydrants strategically installed. An underground concrete water tank with a 360,000 gallon capacity would have to be installed to maintain residual fire flow pressures as the submersible pumps in the water wells alone would not be able to sustain the minimum pressure. A building with fire flow distribution pumps and controls would also have to be installed to properly control the distribution of



F:\1-12289-E Helena School Siting\CADD\1-12289\PER Figures\1-12289-PER-Figure 5.24.dwg



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SCALE IN FEET

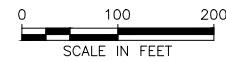
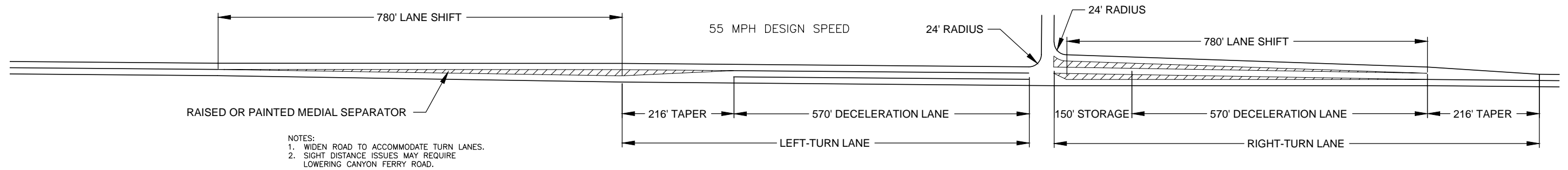
Legend

Proposed School Property Boundary

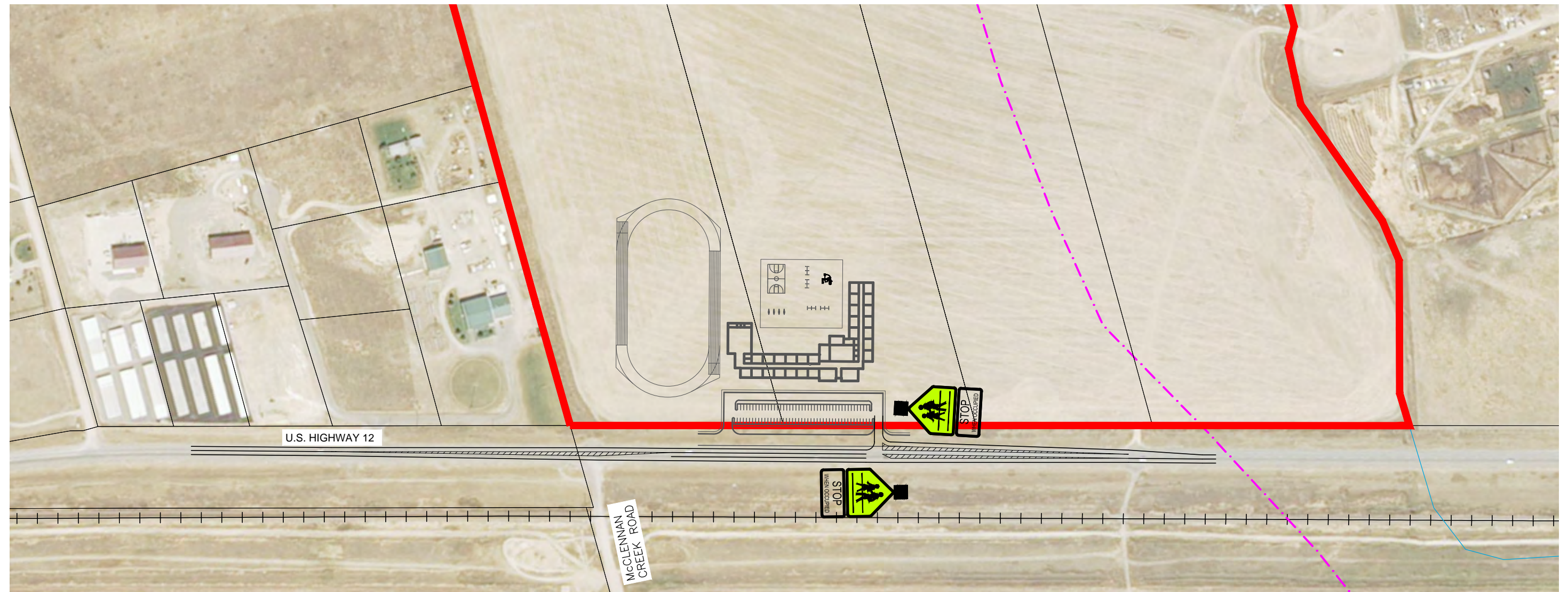
**FIGURE 5.24**  
**DIEHL PROPERTY**  
**WATER/SEWER IMPROVEMENTS**

EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES





**LEFT-TURN LANE AND RIGHT-TURN LANE DETAIL**



**SITE PLAN DETAIL**

Legend

Proposed School Property Boundary

**FIGURE 5.25  
DIEHL PROPERTY  
TRANSPORTATION IMPROVEMENTS**

EAST HELENA PUBLIC SCHOOLS  
EAST HELENA SCHOOLS SITING ALTERNATIVES

the water in case of a fire emergency. This alternative also requires obtaining water rights which would be extremely difficult and costly. The complexity and associated costs for meeting requirements for fire code and onsite water deem this water alternative unviable and will be not be considered or discussed further.

### **5.10.2 Wastewater Alternatives**

There are two known wastewater alternatives for the Diehl Property site. The first alternative is to connect to the Eastgate Water and Sewer Association's existing wastewater treatment system and the second alternative is to treat the wastewater on site. The first wastewater alternative considered, connecting to Eastgate's existing wastewater treatment facility, requires transporting the wastewater through either a gravity collection system or a lift station with force main depending upon the topography between the wastewater collection point and the existing treatment system. Although a gravity collection system is significantly more economical relative to a lift station, it was determined from the topography of the sewer route that the gradient is insufficient for a gravity collection system and a lift station is required. This alternative also requires installing lift station pumps, controls, and telemetry, force main, sewer service pipe, an automatic air release valve, and paying wastewater system impact fees. The site is located roughly 1.25 miles east of Eastgate and requires approximately 6,400 feet of 4" HDPE force main and appurtenances and 60 feet of 6" sanitary sewer service pipe. Boring and jacking for the sewer pipe may be required as the sewer route crosses an irrigation ditch (Figure 5.24). This wastewater alternative is considered viable due to the comparatively close proximity to the Association's existing sewer system and is discussed and scored in Chapter 6.

The second wastewater alternative considered, onsite treatment, requires the installation of a treatment facility including septic tanks, a level II treatment system with recirculation and dose tanks, and then discharging via a drain field. It was determined from the topography of the site that there is enough gradient to install gravity collection for a portion of the system and then a lift station with force main must be installed to discharge the wastewater to the drain field. The lift station also requires the installation of pumps, controls, and telemetry to operate the system. This alternative requires approximately 1,000 feet of 8" PVC gravity collection sewer line, 60 feet of 6" sanitary sewer service pipe, 1,000 feet of 4" HDPE force main, and 6,500 feet of drain field piping. A future drain field replacement area must also be designated per state and federal regulations. Wastewater infrastructure costs under this alternative would be similar to those for



the Hamlin Alternative 1A. Onsite treatment also requires more operation and maintenance to sustain the treatment facilities performance. An operator would also be required to service the system. The complexity and associated costs for meeting the treatment requirements and operation and maintenance of onsite treatment deem this wastewater alternative unviable and it will not be considered or discussed further.

### **5.10.3 Transportation Alternatives**

The Diehl Property site is located east of the East Helena city limits and is bordered by Highway 12 East to the south. The site is located approximately 1.25 miles east of the city limits and near the intersection with McClellan Creek Road. Figure 5.25 shows the location of this site relative to the existing transportation infrastructure. The Diehl Property site does not currently meet the transportation regulations and standards that are mandatory to accommodate a school and therefore improvements are required. The relative remoteness of the site and the proximity of growth areas would require longer bus routes as well as additional students requiring bus service. This alternative would also result in an increased traffic load within the area and along Highway 12 East. Adoption by the Montana Department of Transportation (MDT) requires the roadways to be enhanced to the current transportation standards and also qualifies them for certain state and federal funding options that could be used to construct the necessary transportation improvements. At minimum Highway 12 East would require highway widening and a left and right turn lane to accommodate the increased traffic load and to meet an acceptable level of service and school requirements. Pedestrian crossings along with trails and sidewalks would also have to be constructed to accommodate increased pedestrian traffic and to meet school requirements. Figure 5.25 details the needed transportation improvements for this alternative. The combination of poor site distance, high rates of speed, and pedestrian crossings are major safety concerns for this proposed site. These transportation improvements are costly but are required to allow the construction of a school at this site. These improvements are viable and are discussed and scored in Chapter 6.

### **5.10.4 Remediation Alternatives**

The Diehl Property site is located within the Asarco soil contamination plume and environmental remediation is required before a school could be constructed on the site. Diehl Ranch Co, Incorporated owns the 93 acre site. The soils have been contaminated by the Asarco lead smelter that operated for over 100 years and have been tested for Lead, Arsenic, and

Cadmium. Although the site soils have been assumed to be impacted, no recent soil testing data is available for this site. However, to maintain conservatism we have assumed that up to 4 inches of soil will need to be remediated.

The first remediation alternative considered is complete removal and replacement of the contaminated soils. The combination of the relatively thin layer of contamination and the poor quality and rocky soil conditions on the site make a thin removal and replacement of contaminated soils a primary alternative. Contaminated soils would be removed until an acceptable threshold of contamination has been met and then an appropriate import fill material placed to bring the site back to grade. Because the property is not owned by METG, we are unsure if the contaminated soil can be disposed of at METG's disposal site near the old ASARCO. The question has been asked of METG, however we have received no response at the time of this report. In an effort to develop costs we have increased the cost of contaminated soil removal to allow for additional expenses related to disposal. The additional expense is in excavating and trucking the contaminated soils to the soil repository and replacing the contaminated soils with new suitable soil. Due to increasingly stringent contamination regulations, complete removal and replacement alleviates all uncertainty of possible future remediation as it is the most comprehensive and conservative remediation alternative. Removal and replacement truly mitigates the issue and is substantially superior for the environment, public, and future. After thorough analysis of the remediation alternatives, it was determined that complete removal and replacement of the contaminated soils is the most appropriate and viable alternative. This remediation alternative is discussed and scored in Chapter 6.

The second remediation alternative considered is deep tilling or in place treatment. The process consists of blending the soil to lower the surface soil contamination levels through dilution without actually removing the contaminant. This is only feasible when the subsurface has lower contamination levels than the surface soils. To aid in the process, products such as lime, phosphorus, and organic matter can be added during the tilling to help biologically lower the contamination levels. This remediation alternative has been deemed an unviable option and is not considered or discussed further.

The third remediation alternative considered is capping. Capping is the process of adding a cover over contaminated surfaces that do not meet the minimum required contamination levels. This alternative essentially provides a barrier to exposure but does not actually remove the contaminant. Capping is a cost effective alternative when the contaminant is deep within the

soil. Capping usually requires at minimum a cap of 12 to 16 inches in depth and the contamination profile for the East Helena sites is generally within the top 6 inches. The cost to install even a 12 to 16 inch cap is approximately equal to removal and replacement of 6 inches of contaminated soils due to material import costs. These factors deem this remediation alternative unviable and it is not considered or discussed further.

A combination of removal and replacement with deep tilling was considered but ultimately deemed unviable and will not be considered or discussed further.



Table 5-9 - Estimated Infrastructure Capital Costs for Diehl Property Alternative

<b>DECEMBER 2014</b> <b>OPINION OF PROBABLE COST</b> <b>EAST HELENA SCHOOL SITING ALTERNATIVES - DIEHL PROPERTY</b>					
#	BID ITEM	QTY	UNITS	UNIT PRICE	TOTAL
1	Sitework	1	LS	\$100,000.00	\$100,000.00
2	Contaminated Soil Removal (assumes 4'	34,952	CY	\$20.00	\$699,040.00
	<b>Earthwork Subtotal</b>				<b>\$799,040.00</b>
3	10" C900 PVC Water Main	7600	LF	\$45.00	\$342,000.00
4	Booster Station	1	EA	\$200,000.00	\$200,000.00
5	6" Fire Service	110	LF	\$35.00	\$3,850.00
6	3" Domestic Service	110	LF	\$30.00	\$3,300.00
7	Water System Impact Fee	1	LS	\$200,000.00	\$200,000.00
8	Hydrants	4	EA	\$6,500.00	\$26,000.00
	<b>Water Subtotal</b>				<b>\$775,150.00</b>
9	6" Sanitary Sewer Service Pipe	60	LF	\$30.00	\$1,800.00
10	Packaged Submersible Lift Station	1	LS	\$200,000.00	\$200,000.00
11	Lift Station Controls and Telemetry	1	LS	\$30,000.00	\$30,000.00
12	Automatic Air Release Valve	1	LS	\$15,000.00	\$15,000.00
13	4" HDPE Force Main	6,400	LF	\$30.00	\$192,000.00
14	Wastewater System Impact Fee	1	LF	\$253,000.00	\$253,000.00
	<b>Wastewater Subtotal</b>				<b>\$691,800.00</b>
15	Highway Widening/Improvements	1	LS	\$380,000.00	\$380,000.00
16	Trail - 8' Wide Asphalt	5600	LF	\$55.00	\$308,000.00
17	Signs - School Crossing W/Ped Light	4	EA	\$4,000.00	\$16,000.00
	<b>Transportation Subtotal</b>				<b>\$704,000.00</b>
18	Power	500	LF	\$50.00	\$25,000.00
19	Communication	500	LF	\$50.00	\$25,000.00
20	Gas	4,000	LF	\$25.00	\$100,000.00
	<b>Miscellaneous Subtotal</b>				<b>\$150,000.00</b>
<b>Total</b>					<b>\$3,119,990.00</b>
	Mobilization			10%	\$311,999.00
	Contingency			20%	\$623,998.00
<b>Direct Construction Subtotal</b>					<b>\$4,055,987.00</b>
	Land Acquisition Cost	80	AC	\$5,000.00	\$400,000.00
	Water and Sewer Easements				\$50,000.00
	Engineering			20%	\$812,000.00
	Legal and Administration				\$15,000.00
<b>Non Construction Subtotal</b>					<b>\$1,277,000.00</b>
<b>Grand Total</b>					<b>\$5,332,987.00</b>

## **6.0 SELECTION OF A SITE ALTERNATIVE**

Each of the technically feasible alternatives considered meet the design criteria and applicable regulations identified in the Alternatives Considered section. This section will examine advantages and disadvantages of each in terms of financial feasibility and life cycle costs, public opinion, environmental impacts, operation and maintenance, technical feasibility, access and safety and long term flexibility.

### **6.1 Ranking Criteria**

A matrix to compare each alternative objectively against the other will be developed to select an alternative. Each alternative will be given a score ranging from 0 to 10 for a set of specific criteria, with 0 representing a negative impact and 10 representing the maximum benefit to the community. The alternatives will begin with a score of 5 for each criterion, and then adjusted positively or negatively in relation to the additional scored alternatives.

In addition to scoring each alternative, the criteria will be weighted by importance in relation to one another. Weighting factors will be used to give greater importance to items such as cost. This is appropriate, as often times higher investments are made to overcome many other problems such as reliability or to mitigate problems with technical feasibility or environmental concerns.

#### **6.1.1 Financial Feasibility - Life Cycle Costs**

The cost of extensive capital improvements to meet minimum health and safety requirements, applicable regulations, and environmental impacts is a great concern to small communities with limited budgets and resources. Life cycle costs also include anticipated increases to ongoing O&M costs.

Accordingly, this criterion will be provided with a weighting factor of 25. This represents over 27% of the total weighting, and public opinion is closely tied to cost also, giving the cost for each alternative even more weight.

In addition to providing the maximum emphasis on costs, a method must be utilized to provide an objective comparison of costs for each alternative relative to one another and not just an overall comparison. Given a range of costs for various alternatives, the relative cost of any

alternative can be determined using the lowest cost and the highest cost from the range of costs and the following equation.

$$5 \times [(Lowest\ Cost) / (Cost) + (Highest\ Cost - Cost) / (Highest\ Cost)]$$

For example, if a number of alternatives were compared having costs of \$500,000, \$1,000,000 and \$2,000,000, the above equation would provide scores of 8.8, 5.0, and 1.3, respectively. The utilization of a formula to score the 20 year life cycle costs in the matrix eliminates any subjectivity and provides a consistent, relative comparison of costs.

### **6.1.2 Public Opinion**

The alternatives and recommendations of the draft study were presented to the public in a public meeting on November 13, 2014. During that meeting, the public provided input to the School District on their preferred site. In addition, several members of the public also provided input on their least preferred sites. The minutes and agenda from the public meeting held on November 13, 2014 are included in Appendix J. A public opinion summary will be provided during the scoring discussion for each site.

This criterion will be assigned a weighting factor of 40.

### **6.1.3 Environmental Impacts**

Environmental impacts created by each alternative, whether detrimental or beneficial; need to be considered in the selection of a preferred alternative. The alternatives can directly and indirectly impact land resources, floodplains, wetlands, endangered species, historical and archaeological properties, and related environmental aspects. The alternatives can also generate residuals and wastes that must also be considered in the evaluation process. Being that East Helena partially resides within the Asarco soil contamination plume, special consideration is required to mitigate the issues created by the contamination. To provide for public health and safety, site remediation is required where contamination levels are unacceptable.

This criterion will be provided with a weighting factor of 6.



#### **6.1.4 Site Operation and Maintenance**

Operation and maintenance (O&M) is an important issue when considering any large capital improvements within a small community. The costs for the O&M associated with the site alternatives is included in the 20 year life cycle costs compared under the financial feasibility section, but there are other considerations that must be weighed for the O&M associated with each site alternative.

The East Helena School District has limited resources and manpower, and certain site alternatives may have O&M requirements that drastically tax those limited District manpower resources creating deficiencies in other areas. Certain site alternatives will not require O&M due the site infrastructure being connected to existing facilities, being either East Helena, Helena or Eastgate. In this case, these entities will oversee the O&M with only an initial connection or impact fee required in conjunction with monthly bills.

This criterion will be assigned a weighting factor of 10.

#### **6.1.5 Technical Feasibility**

The technical feasibility of the site alternatives is determined by the viability and capability of the proposed site and infrastructure to function efficiently and effectively. This criterion will include ranking the feasibility of construction viability, infrastructure complexity, land acquisition considerations, permitting requirements and transportation capability.

This criterion will be assigned a weighting factor of 20.

#### **6.1.6 Access and Safety**

The access and safety associated with each site alternative is an important criterion in scoring each. Access is described as the transportation network corresponding to each site in the form of vehicle and pedestrian routes. The scoring of access is based upon the traffic and pedestrian count, route distance, proximity to hazards, pedestrian and railroad crossings, and impacts from the site alternative to the existing transportation network. This factor is especially critical for the elementary students that the facility is being constructed for. The safety aspect of this criterion is directly related to the quality of the access to each site and is essential in a school siting alternative scoring.

This criterion will be assigned a weighting factor of 10.

### 6.1.7 Long Term Flexibility

The long term flexibility of the site alternatives is an important criterion in scoring each. A site may require flexibility and accommodation for future growth and expansion if the need arises for the District. Being that each site alternative has different characteristics, certain sites are more or less able to accommodate future growth and expansion.

This criterion will be assigned a weighting factor of 10.

## 6.2 Scoring of Site Alternatives

The site alternatives to be scored are as follows:

- Lamping Field Site Alternative
- Dartman Property Site Alternative
- Helena Sand and Gravel Property Site Alternative
- Hamlin Property 1A Site Alternative
- Hamlin Property 1B Site Alternative
- Hamlin Property 2 Site Alternative
- Mountain View Meadows Site Alternative
- East Fields Site Alternative

### 6.2.1 Lamping Field

#### Financial Feasibility – Life Cycle Costs

Table 6-1 provides a summary of the life cycle cost and calculated relative cost score for the Lamping Field site.

Table 6-1 - Lamping Field Life Cycle Costs

ITEM	Lamping Field
Capital Costs	\$2,245,258
Annual O&M Costs	\$32,646
20-Year Salvage Value	\$143,000
Present Worth of Salvage Value	\$44,600
Present Worth of Annual O&M Cost	\$489,701
Present Worth Cost	\$2,690,359

The Lamping Field site alternative scored a 4.8 in the financial feasibility criterion.

**Public Opinion**

The Lamping Field site alternative had moderate support during the public meeting held on November 13, 2014. Overall, the site was the second most favored site, losing out to the Dartman site. The Dartman site was preferred due to its location closer to the center of the City of East Helena.

The Lamping site will be assigned a score of 8 in the public opinion criterion.

**Environmental Impacts**

The Lamping Field site is located within the Asarco soil contamination plume and needs environmental remediation of the site before a school could be constructed. As the site is currently contaminated, it is already limited in possible use and capacity until remediation occurs. Complete removal and replacement of the contaminated soils would positively impact the site environment substantially and free the site of dangerously high levels of lead, arsenic, and cadmium. Remediation of the site would also promote health and safety, future growth, economic benefits, and alleviate all uncertainty of possible future remediation due to increasingly stringent contamination regulations. During construction of the site, dust and noise would most likely occur and could negatively impact the surrounding area for a short term. Because of the soil contamination issue, the contractor will be required to conduct significant dust control measures. There is no evidence that the Lamping Field site alternative would negatively impact the area land resources, floodplains, wetlands, endangered species, or historical and archaeological properties. Remediation, would in fact, positively impact the site and surrounding area environment substantially.

The Lamping Field site alternative scored a 10 in the environmental impacts criterion.

**Operation and Maintenance**

At the Lamping Field site, the District would not be responsible for the supporting infrastructure operation and maintenance requirements. The site infrastructure would be connected to the City of East Helena's existing water and wastewater systems, therefore requiring the City to assume responsibilities associated with the O&M. Water and Sewer usage and rates were analyzed for existing schools in East Helena that use the City of East Helena for these services. Based upon this information an annual water and sewer rate from the City of East Helena was estimated.



Being that the East Helena School District has limited resources and manpower, it is beneficial to the District to have the City responsible for the operation and maintenance of the infrastructure. The District will pay for that O&M through water and sewer rates. However, The District will incur minimal O&M costs for a lift station and cost associated with operation of the lift station. The annual water and sewer rates are reflected in the Opinion of Probable Annual Operation & Maintenance costs table in chapter 5 of this report for this alternative

The Lamping Field site alternative scored a 10 in the site operation and maintenance criterion.

### **Technical Feasibility**

The Lamping Field site's technical feasibility is scored by the construction viability, infrastructure complexity, land acquisition considerations, permitting and transportation capability. Construction of the site infrastructure on the Lamping Field site is viable. The site does not have characteristics that pose issues or challenges that would deem its construction difficult or unviable. The Lamping Field site infrastructure is relatively simple. The most complex aspect of the infrastructure is that the site would require a lift station. Lift stations require more attention via operation and maintenance and have a finite service life. As discussed earlier, the land acquisition for the Lamping Field site appears feasible through the METG. There are no significant permitting issues since water and sewer will be connected to the City of East Helena. The site is the desired 80 acres which provides for ease of construction and long term flexibility. The Lamping Field site requires moderate transportation improvements to meet regulations but with these additions the transportation infrastructure is capable of providing a relatively high level of service and fully capable of meeting the transportation needs of the District.

The Lamping Field site alternative scored an 8 in the technical feasibility criterion. The score was slightly reduced to account for acquisition process through METG, State and EPA.

### **Access and Safety**

The Lamping Field site's main access roads are U.S. Highway 12 East and Wylie Drive. The site is relatively centrally located and would only minimally impact the existing transportation network. The intersection at U.S. Highway 12 East and Wylie Drive has the highest average daily traffic count relative to the other site alternatives. Although the majority of traffic and pedestrians would not need to cross U.S. Highway 12 East, it does pose a safety concern due to the large volume of traffic and high rates of speed traveled on the roadway. The site requires

relatively moderate improvements to roadways, pedestrian routes, and intersections to satisfy access and safety requirements.

The Lamping Field site alternative scored a 7 in the access and safety criterion.

### **Long Term Flexibility**

The Lamping Field site is 80 acres in size and has a generally flat topography. The majority of the site is conducive to future development. These characteristics provide for a variety of options for future growth and expansion should the need from the District arise.

The Lamping Field site alternative scored a 10 in the long term flexibility criterion.

## **6.2.2 Dartman Property**

### **Financial Feasibility – Life Cycle Costs**

Table 6-2 provides a summary of the life cycle cost and calculated relative cost score for the Dartman Property site.

Table 6-2 - Dartman Property Life Cycle Costs

ITEM	Dartman Property
Capital Costs	\$2,090,219
Annual O&M Costs	\$20,251
20-Year Salvage Value	\$331,000
Present Worth of Salvage Value	\$103,200
Present Worth of Annual O&M Cost	\$303,770
Present Worth Cost	\$2,290,789

The Dartman Property site alternative scored the highest in the financial feasibility criterion with a 5.6.

### **Public Opinion**

The Dartman property alternative had strong support from most people in attendance at the public meeting held on November 13, 2014. Overall, the site was the favored site, due primarily to it's location closer to the center of the City of East Helena and access to Valley Drive.

The Dartman site will be assigned a score of 10 in the public opinion criterion.

**Environmental Impacts**

The Dartman site is located within the Asarco contamination plume and needs environmental remediation of the site before a school could be constructed. As the site is currently contaminated, it is already limited in possible use and capacity until remediation occurs. Complete removal and replacement of the contaminated soils will positively impact the site environment and free the site of dangerously high levels of lead, arsenic, and cadmium. Remediation of the site would also promote health and safety, future growth, economic benefits, and alleviate all uncertainty of possible future remediation due to increasingly stringent contamination regulations. During construction of the site, dust and noise would most likely occur and could negatively impact the surrounding area for a short term. Because of the soil contamination issue, the contractor will be required to conduct significant dust control measures during construction. There is no evidence that the Dartman Property site alternative will negatively impact the area land resources, floodplains, wetlands, endangered species, or historical and archaeological properties. Remediation, would in fact, positively impact the site and surrounding area environment substantially.

The Dartman Property site alternative scored a 10 in the environmental impacts criterion.

**Operation and Maintenance**

At the Dartman Property site, the District would not be responsible for supporting infrastructure operation and maintenance requirements. The site water and wastewater infrastructure will be connected to the City of East Helena's existing system, therefore requiring the City to assume responsibilities associated with the O&M. Water and Sewer usage and rates were analyzed for existing schools in East Helena that use the City of East Helena for these services. Based upon this information an annual water and sewer rate from the City of East Helena was estimated. Being that the East Helena School District has limited resources and manpower, it is beneficial to the District to have the City responsible for the operation and maintenance of the infrastructure.

The Dartman Property site alternative scored a 10 in the site operation and maintenance criterion.

**Technical Feasibility**

The Dartman Property site's technical feasibility is scored by the construction viability, infrastructure complexity, land acquisition, permitting considerations and transportation



capability. Construction of the site infrastructure on the Dartman Property site is viable. The site does not have characteristics that pose issues or challenges that would deem its construction difficult or unviable. The Dartman Property site infrastructure is the most simple of the considered alternatives. The site is considered the least complex as it has the necessary gradient required to provide for gravity collection which eliminates the need for a lift station. As discussed earlier, the land acquisition for the Dartman Property site appears feasible. There are no significant permitting issues since water and sewer will be connected to the City of East Helena. The site is the desired 80 acres which provides for ease of construction and long term flexibility. The Dartman Property site would require moderate transportation improvements to meet regulations but with these additions the transportation infrastructure is capable of providing a relatively high level of service and fully capable of meeting the transportation needs of the District.

The Dartman Property site alternative scored a 9 in the technical feasibility criterion. The score was slightly reduced to account for acquisition process through METG, State and EPA.

**Access and Safety**

The Dartman Property site's main access roads are Main Street and Valley Drive. The site is the most centrally located and will moderately impact the existing transportation network. The intersection at Main Street and Valley has a relatively low daily traffic count relative to the other site alternatives. Being that the site is centrally located and close to roadways that have lower rates of speed, the site is the safest comparatively. The site requires relatively moderate improvements to roadways, pedestrian routes, and intersections to satisfy access and safety requirements.

The Dartman Property site alternative scored a 10 in the access and safety criterion.

**Long Term Flexibility**

The Dartman Property site is 80 acres in size and has a generally flat topography. The majority of the site is conducive to future development. These characteristics provide for a variety of options for future growth and expansion should the need from the District arise.

The Dartman Property site alternative scored a 10 in the long term flexibility criterion.

### 6.2.3 Helena Sand and Gravel Property

#### Financial Feasibility – Life Cycle Costs

Table 6-3 provides a summary of the life cycle cost and calculated relative cost score for the Helena Sand and Gravel Property site.

Table 6-3 - Helena Sand and Gravel Life Cycle Costs

ITEM	Helena Sand and Gravel
Capital Costs	\$3,094,690
Annual O&M Costs	\$43,200
20-Year Salvage Value	\$415,000
Present Worth of Salvage Value	\$129,400
Present Worth of Annual O&M Cost	\$648,012
Present Worth Cost	\$3,613,302

The Helena Sand and Gravel site alternative scored a 4.0 in the financial feasibility criterion.

#### Public Opinion

The HSG site alternative had moderate support during the public meeting held on November 13, 2014. Overall, the site was the third most favored site, losing out to both Lamping and the Dartman site.

The HSG site will be assigned a score of 7 in the public opinion criterion.

#### Environmental Impacts

The Helena Sand and Gravel Property site is located within the Asarco contamination plume and needs environmental remediation of the site before a school could be constructed. As the site is currently contaminated, it is already limited in possible use and capacity until remediation occurs. Complete removal and replacement of the contaminated soils would positively impact the site environment substantially and free the site of dangerously high levels of lead, arsenic, and cadmium. Remediation of the site will also promote health and safety, future growth, economic benefits, and alleviate all uncertainty of possible future remediation due to increasingly stringent contamination regulations. During construction of the site, dust and noise would most likely occur and could negatively impact the surrounding area for a short term. Because of the soil contamination issue, the contractor will be required to conduct significant dust control measures during construction. There is no evidence that the Helena Sand and

Gravel Property site alternative will negatively impact the area land resources, floodplains, wetlands, endangered species, or historical and archaeological properties. Remediation, would in fact, positively impact the site and surrounding area environment substantially.

The Helena Sand and Gravel Property site alternative scored a 10 in the environmental impacts criterion.

### **Operation and Maintenance**

At the Helena Sand and Gravel Property site, the District would not be responsible for supporting infrastructure operation and maintenance requirements. The water and wastewater infrastructure will be connected to Eastgate's existing system, therefore requiring the Eastgate Water and Sewer Association to assume responsibilities associated with the O&M. Being that the East Helena School District has limited resources and manpower, it is beneficial to the District to have the Association responsible for the operation and maintenance of the infrastructure. The District would have to pay for an initial connection to the Association's water and sewer system. Based on DEQ recommendations for wastewater usage per student and BOD capacity for Association's wastewater system, an equivalent number of EDUs was calculated to develop an annual water and sewer rate for the new school.

The Helena Sand and Gravel Property site alternative scored a 10 in the site operation and maintenance criterion.

### **Technical Feasibility**

The Helena Sand and Gravel Property site's technical feasibility is scored by the construction viability, infrastructure complexity, land acquisition, permitting considerations, and transportation capability. Construction of the site infrastructure on the Helena Sand and Gravel Property site is viable. The site does not have characteristics that pose issues or challenges that would deem its construction difficult or unviable. The Helena Sand and Gravel Property site infrastructure is relatively simple. The most complex aspect of the infrastructure is that the site requires a lift station. Lift stations require more attention via operation and maintenance and have a finite service life. As discussed earlier, the land acquisition for the Helena Sand and Gravel site is relatively feasible. There are no significant permitting issues since water and sewer will be connected to Eastgate. The site is only 45 acres in size which does affect construction options and limits long term flexibility. The Helena Sand and Gravel Property site requires moderate transportation improvements to meet regulations but with these additions the transportation



infrastructure is capable of providing a relatively high level of service and fully capable of meeting the transportation needs of the District.

The Helena Sand and Gravel Property site alternative scored a 7 in the technical feasibility criterion. This alternative was down ranked slightly because it is unknown what HSG's terms for purchase will be.

### **Access and Safety**

The Helena Sand and Gravel Property site's main access roads are Main Street and Lake Helena Drive. The site is relatively centrally located and will moderately impact the existing transportation network. The intersection at Main Street and Lake Helena has a relatively low daily traffic count relative to other site alternatives. Being that the site is centrally located and close to roadways that have lower rates of speed, the site is less prone to issues with safety. The site will require relatively moderate improvements to roadways, pedestrian routes, and intersections to satisfy access and safety requirements.

The Helena Sand and Gravel Property site alternative scored an 8 in the access and safety criterion.

### **Long Term Flexibility**

The Helena Sand and Gravel Property site is 45 acres in size and has a generally flat topography. Being that the site is only 45 acres in size, it is not as flexible relative to the larger sites but still able to accommodate some additional development. These characteristics provide for a variety of options for future growth and expansion should the need from the District arise.

The Helena Sand and Gravel Property site alternative scored an 8 in the long term flexibility criterion.

## **6.2.4 Hamlin Property Alternative 1A**

### **Financial Feasibility – Life Cycle Costs**

Table 6-4 provides a summary of the life cycle cost and calculated relative cost score for the Hamlin Property Alternative 1A site.

Table 6-4 - Hamlin Property Alternative 1A Life Cycle Costs

ITEM	Hamlin Property Alt. 1A
Capital Costs	\$4,935,996
Annual O&M Costs	\$26,731
20-Year Salvage Value	\$955,000
Present Worth of Salvage Value	\$297,800
Present Worth of Annual O&M Cost	\$400,968
Present Worth Cost	\$5,039,164

The Hamlin Property Alternative 1A site scored a 2.3 in the financial feasibility criterion.

### Public Opinion

The Hamlin Property Alternative 1A had very little support during the public meeting held on November 13, 2014. The public's reasoning for not preferring the site include the location, access, and cost of the Hamlin Property Alternative 1A.

The Hamlin Property Alternative 1A will be assigned a score of 3 in the public opinion criterion.

### Environmental Impacts

The Hamlin Property Alternative 1A site is located outside of the Asarco contamination plume and does not require environmental remediation prior to construction. There is no evidence that the Hamlin Property Alternative 1A site will negatively impact the area land resources, floodplains, wetlands, endangered species, or historical and archaeological properties. The site's land use is currently agricultural and the construction of a new school on this land will negatively impact the area's agricultural production. Although this is a concern, the necessity and benefits of a new school far outweigh the agricultural needs of the area. During construction of the site, dust and noise would most likely occur and could negatively impact the site and surrounding area for a short term. This is a minimal concern and is standard with all construction.

The Hamlin Property Alternative A site scored a 7 in the environmental impacts criterion.

### Operation and Maintenance

The Hamlin Property Alternative 1A site has onsite water and wastewater and requires extensive O&M. The site alternative requires an operator compensated with both salary and benefits to maintain both systems. The water system wells and piping both require maintenance

on a scheduled basis. The level II treatment system requires more involved O&M considerations to provide sufficient treatment levels. The power required to operate all of the equipment is at the District's expense as well as spare parts, chemicals, and vehicles. Consequently, these factors make this alternative the least desirable for O&M.

The Hamlin Property Alternative 1A site scored a 2 in the site operation and maintenance criterion.

### **Technical Feasibility**

The Hamlin Property Alternative 1A site's technical feasibility is scored by the construction viability, infrastructure complexity, land acquisition, permitting considerations and transportation capability. Construction of the site infrastructure on the Hamlin Property Alternative 1A site is viable. The site does not have characteristics that pose issues or challenges that deem its construction difficult or unviable. The Hamlin Property Alternative 1A site infrastructure is the most complex relative to the site alternatives considered. The most complex aspect of the infrastructure is that the site requires onsite water and wastewater systems. Onsite water requires wells, piping, and maintaining fire flow standards via storage tanks, pumps, and piping. Onsite wastewater treatment requires septic tanks, a treatment system, dose tanks, and a drain field. To further complicate the infrastructure of this site, both water and wastewater systems would require pumping stations. Pumping stations require more attention via operation and maintenance and have a finite service life.

As discussed earlier, the land acquisition for the Hamlin Property Alternative 1A site is relatively feasible. Significant permitting issues for water rights and groundwater discharge permits will need to be overcome for this alternative. The site is the desired 80 acres which provides for ease of construction and long term flexibility. The Hamlin Property Alternative 1A site requires extensive transportation improvements to meet regulations but with these additions the transportation infrastructure is capable of providing a relatively high level of service and fully capable of meeting the transportation needs of the District.

The Hamlin Property Alternative 1A site scored a 2 in the technical feasibility criterion.

### **Access and Safety**

The Hamlin Property Alternative 1A site's main access roads are Canyon Ferry Drive and Lake Helena Drive. The site is the least centrally located and will moderately impact the existing transportation network. The intersection at Canyon Ferry Drive and Lake Helena Drive has a



moderate average daily traffic count relative to the other site alternatives. Although the majority of traffic and pedestrians would not need to cross Canyon Ferry Drive, it does pose a safety concern due to the large volume of traffic and high rates of speed traveled on the roadway. The site requires relatively major improvements to roadways, pedestrian routes, and intersections to satisfy access and safety requirements.

The Hamlin Property Alternative 1A site scored 4 in the access and safety criterion.

### **Long Term Flexibility**

The Hamlin Property Alternative 1A site is 80 acres in size and has a generally flat topography. The majority of the site is conducive to future development. These characteristics provide for a variety of options for future growth and expansion should the need from the District arise.

The Hamlin Property Alternative 1A site scored a 10 in the long term flexibility criterion.

## **6.2.5 Hamlin Property Alternative 1B**

### **Financial Feasibility – Life Cycle Costs**

Table 6-5 provides a summary of the life cycle cost and calculated relative cost score for the Hamlin Property Alternative 1B site.

Table 6-5 - Hamlin Property Alternative 1B Life Cycle Costs

ITEM	Hamlin Property Alt. 1B
Capital Costs	\$3,950,475
Annual O&M Costs	\$43,200
20-Year Salvage Value	\$600,000
Present Worth of Salvage Value	\$187,100
Present Worth of Annual O&M Cost	\$648,012
Present Worth Cost	\$4,411,387

The Hamlin Property Alternative 1B site scored a 2.8 in the financial feasibility criterion.

**Public Opinion**

The Hamlin Property Alternative 1B had very little support during the public meeting held on November 13, 2014. The public's reasoning for not preferring the site include the location, access, and cost of the Hamlin Property Alternative 1B.

The Hamlin Property Alternative 1B will be assigned a score of 3 in the public opinion criterion.

**Environmental Impacts**

The Hamlin Property Alternative 1B site is located outside of the Asarco soil contamination plume and does not require environmental remediation prior to construction. There is no evidence that the Hamlin Property Alternative 1B site will negatively impact the area land resources, floodplains, wetlands, endangered species, or historical and archaeological properties. The site's land use is currently agricultural and the construction of a new school on this land will negatively impact the area's agricultural production. Although this is a concern, the necessity and benefits of a new school far outweigh the agricultural needs of the area. During construction of the site, dust and noise will most likely occur and could negatively impact the site and surrounding area for a short term. This is a minimal concern and is standard with all construction.

The Hamlin Property Alternative 1B site scored an 8 in the environmental impacts criterion.

**Operation and Maintenance**

At the Hamlin Property Alternative 1B site, the District will not be responsible for operation and maintenance requirements. The site infrastructure will be connected to Eastgate's existing system, therefore requiring the Eastgate Water and Sewer Association to assume responsibilities associated with the O&M. Being that the East Helena School District has limited resources and manpower, it is beneficial to the District to have the Association responsible for the operation and maintenance of the infrastructure. The District would have to pay for an initial connection to the Association's water and sewer system at this site. Based on DEQ recommendations for wastewater usage per student and BOD capacity for Association's wastewater system, an equivalent number of EDUs was calculated to develop an annual water and sewer rate for the new school.

The Hamlin Property Alternative 1B site scored a 10 in the site operation and maintenance criterion.

**Technical Feasibility**

The Hamlin Property Alternative 1B site's technical feasibility is scored by the construction viability, infrastructure complexity, land acquisition, permitting considerations and transportation capability. Construction of the site infrastructure on the Hamlin Property Alternative 1B site is viable. The site does not have characteristics that pose issues or challenges that would deem its construction difficult or unviable. The Hamlin Property Alternative 1B site infrastructure is moderately complex. One complex aspect of the infrastructure is that the site would require a lift station. Lift stations require more attention via operation and maintenance and have a finite service life. Another disadvantage is that the site infrastructure piping for the water and wastewater has the furthest length from the site to the existing systems relative to alternatives considered. As discussed earlier, the land acquisition for the Hamlin Property Alternative 1B site is relatively feasible. There are no significant permitting issues since water and sewer will be connected to the Eastgate Water and Sewer Association. The site is the desired 80 acres which provides for ease of construction and long term flexibility. The Hamlin Property Alternative 1B site requires extensive transportation improvements to meet regulations but with these additions the transportation infrastructure is capable of providing a relatively high and satisfactory level of service and fully capable of meeting the transportation needs of the District.

The Hamlin Property Alternative 1B site scored a 4 in the technical feasibility criterion.

**Access and Safety**

The Hamlin Property Alternative 1B site's main access roads are Canyon Ferry Drive and Lake Helena Drive. The site is the least centrally located and will moderately impact the existing transportation network. The intersection at Canyon Ferry Drive and Lake Helena Drive has a moderate average daily traffic count relative to the additional site alternatives. Although the majority of traffic and pedestrians would not need to cross Canyon Ferry Drive, it does pose a safety concern due to the large volume of traffic and high rates of speed traveled on the roadway. The site requires relatively major improvements to roadways, pedestrian routes, and intersections to satisfy access and safety requirements.

The Hamlin Property Alternative 1B site scored a 4 in the access and safety criterion.



### Long Term Flexibility

The Hamlin Property Alternative 1B site is 80 acres in size and has a generally flat topography. The majority of the site is conducive to future development. These characteristics provide for a variety of options for future growth and expansion should the need from the District arise.

The Hamlin Property Alternative 1B site scored a 10 in the long term flexibility criterion.

### 6.2.6 Hamlin Property Alternative 2

#### Financial Feasibility – Life Cycle Costs

Table 6-6 provides a summary of the life cycle cost and calculated relative cost score for the Hamlin Property Alternative 2 site.

Table 6-6 - Hamlin Property Alternative 2 Life Cycle Costs

ITEM	Hamlin Property Alt. 2
Capital Costs	\$5,081,445
Annual O&M Costs	\$54,383
20-Year Salvage Value	\$600,000
Present Worth of Salvage Value	\$187,100
Present Worth of Annual O&M Cost	\$815,765
Present Worth Cost	\$5,710,110

The Hamlin Property Alternative 2 site scored the lowest in the financial feasibility criterion with a 2.0.

### Public Opinion

The Hamlin Property Alternative 2 had very little support during the public meeting held on November 13, 2014. The public's reasoning for not preferring the site include the location, access, and cost of the Hamlin Property Alternative 2.

The Hamlin Property Alternative 2 will be assigned a score of 3 in the public opinion criterion.

### Environmental Impacts

The Hamlin Property Alternative 2 site is located outside of the Asarco contamination plume and does not require environmental remediation prior to construction. There is no evidence that the Hamlin Property Alternative 2 site will negatively impact the area land resources, floodplains, wetlands, endangered species, or historical and archaeological properties. The site's land use is

currently agricultural and the construction of a new school on this land will negatively impact the area's agricultural production. Although this is a concern, the necessity and benefits of a new school far outweigh the agricultural needs of the area. During construction of the site, dust and noise will most likely occur and could negatively impact the site and surrounding area for a short term. This is a minimal concern and is standard with all construction.

The Hamlin Property Alternative 2 site scored 8 in the environmental impacts criterion.

### **Operation and Maintenance**

At the Hamlin Property Alternative 2 site, the District will not be responsible for operation and maintenance requirements associated with water and wastewater. The water and wastewater infrastructure will be connected to Eastgate's existing system, therefore requiring the Eastgate Water and Sewer Association to assume responsibilities and costs associated with the O&M. Being that the East Helena School District has limited resources and manpower, it is beneficial to the District to have the Association responsible for the operation and maintenance of the infrastructure. The District will however, be responsible for the O&M of the proposed road and pedestrian routes that service the school between Canyon Ferry Drive and Boundary Street. The District would have to pay for an initial connection to the Association's water and sewer system at this site. Based on DEQ recommendations for wastewater usage per student and BOD capacity for Association's wastewater system, an equivalent number of EDUs was calculated to develop an annual water and sewer rate for the new school.

The Hamlin Property Alternative 2 site scored an 8 in the site operation and maintenance criterion.

### **Technical Feasibility**

The Hamlin Property Alternative 2 site's technical feasibility is scored by the construction viability, infrastructure complexity, land acquisition, permitting considerations and transportation capability. Construction of the site infrastructure on the Hamlin Property Alternative 2 site is viable. The site does not have characteristics that pose issues or challenges that would deem its construction difficult or unviable. The Hamlin Property Alternative 2 site infrastructure is relatively complex. One complex aspect of the infrastructure is that the site requires a lift station. Lift stations require more attention via operation and maintenance and have a finite service life. Another disadvantage is that the site infrastructure piping for the water and wastewater has a relatively lengthy run from the site to the existing systems. As discussed earlier, the land

acquisition for the Hamlin Property Alternative 2 site is relatively feasible. There are no significant permitting issues since water and sewer will be connected to Eastgate's systems. The site is the desired 80 acres which provides for ease of construction and long term flexibility. The main issue with the Hamlin Property Alternative 2 site is that the site requires major transportation improvements and new road construction. The Hamlin Property Alternative 2 site requires the most extensive transportation improvements to meet regulations but with these additions the transportation infrastructure is capable of providing a relatively high level of service and fully capable of meeting the transportation needs of the District.

The Hamlin Property Alternative 2 site scored a 4 in the technical feasibility criterion.

### **Access and Safety**

The Hamlin Property Alternative 2 site's main access roads are the proposed access road, Canyon Ferry Drive, and Lake Helena Drive. The site is not centrally located and will moderately impact the existing transportation network. It is however more centrally located than the other Hamlin alternatives. The traffic surrounding the Hamlin Property Alternative 2 site has a low average daily traffic count relative to the other site alternatives. Although the majority of traffic and pedestrians would not need to cross Canyon Ferry Drive, it does pose a safety concern due to the large volume of traffic and high rates of speed traveled on the roadway. The site requires the most construction and improvements of roadways, pedestrian routes, and intersections to satisfy access and safety requirements.

The Hamlin Property Alternative 2 site scored a 6 in the access and safety criterion.

### **Long Term Flexibility**

The Hamlin Property Alternative 2 site is 80 acres in size and has a generally flat topography. The majority of the site is conducive to future development. These characteristics provide for a variety of options for future growth and expansion should the need from the District arise.

The Hamlin Property Alternative 2 site scored a 10 in the long term flexibility criterion.

## **6.2.7 Mountain View Meadows**

### **Financial Feasibility – Life Cycle Costs**

Table 6-7 provides a summary of the life cycle cost and calculated relative cost score for the Mountain View Meadows site.



Table 6-7 - Mountain View Meadows Life Cycle Costs

ITEM	Mountain View Meadows
Capital Costs	\$1,698,625
Annual O&M Costs	\$50,843
20-Year Salvage Value	\$124,000
Present Worth of Salvage Value	\$38,700
Present Worth of Annual O&M Cost	\$762,659
Present Worth Cost	\$2,422,584

The Mountain View Meadows site alternative scored a 5.4 in the financial feasibility criterion.

### Public Opinion

The Mountain View Meadows site had very little support during the public meeting held on November 13, 2014. The public's reasoning for not preferring the site include the location and access of the Mountain View Meadows site.

The Mountain View Meadows site will be assigned a score of 3 in the public opinion criterion.

### Environmental Impacts

The Mountain View Meadows site is located outside of the Asarco soil contamination plume and does not require environmental remediation prior to construction. There is no evidence that the Mountain View Meadows site will negatively impact the area land resources, floodplains, wetlands, endangered species, or historical and archaeological properties. The site's land use is currently a gravel pit and the construction of a new school on this land has no negative impacts. During construction of the site, dust and noise would most likely occur and could negatively impact the site and surrounding area for a short term. This is a minimal concern and is standard with all construction.

The Mountain View Meadows site alternative scored a 10 in the environmental impacts criterion.

### Operation and Maintenance

At the Mountain View Meadows site, the District is not responsible for the supporting infrastructure operation and maintenance requirements. The site infrastructure is connected to the City of Helena's existing system, therefore requiring the City to assume responsibilities associated with the O&M. Water and Sewer usage and rates were analyzed for existing schools in East Helena that use the City of East Helena for these services. Based upon this information

an annual water and sewer usage was calculated. The current City of Helena water and sewer rates were then used to calculate an annual water and sewer rate. Being that the East Helena School District has limited resources and manpower, it is beneficial to the District to have the City responsible for the operation and maintenance of the infrastructure.

The Mountain View Meadows site alternative scored a 10 in the site operation and maintenance criterion.

### **Technical Feasibility**

The Mountain View Meadows site's technical feasibility is scored by the construction viability, infrastructure complexity, land acquisition, permitting considerations and transportation capability. Construction of the site infrastructure on the Mountain View Meadows site is viable. The site does not have characteristics that pose issues or challenges that would deem its construction difficult or unviable. The Mountain View Meadows site infrastructure is relatively simple. The most complex aspect of the infrastructure is that the site would require a lift station. Lift stations require more attention via operation and maintenance and have a finite service life. As discussed earlier, the land acquisition for the Mountain View Meadows site is not an issue as it has been donated and is already the property of the District. The site is only 9 acres in size which does severely affect construction options and limits long term flexibility. The proposed school footprint includes a track which would have to be excluded from this site as it does not have the required area to accommodate it. The developer of the Mountain View Meadows site has expressed interest in expanding the size of the site to possibly accommodate required facilities. The Mountain View Meadows site requires moderate transportation improvements to meet regulations but with these additions the transportation infrastructure is capable of providing an acceptable level of service for the transportation needs of the District. The impacts of the train tracks on traffic as well as possibility of needing a pedestrian bridge or tunnel in the future also impacted the technical feasibility scoring for this alternative.

The Mountain View Meadows site alternative scored a 3 in the technical feasibility criterion primarily because of the site size limitations and transportation issues.

### **Access and Safety**

The Mountain View Meadows site's main access roads are U.S. Highway 12 East, U.S. Highway 282, and Twilight Street. The site is not centrally located and will impact the existing transportation network. The intersection at U.S. Highway 12 East and U.S. Highway 282 has

one of the highest average daily traffic counts relative to other site alternatives. The majority of traffic and pedestrians would need to cross U.S. Highway 12 East, which poses a safety concern due to the large volume of traffic and high rates of speed traveled on the roadway. The site may also require a costly pedestrian bridge or tunnel over U.S. Highway 12 East to safely accommodate foot traffic. Another negative aspect for this site is that U.S. Highway 282 has 6 railroad crossings between U.S. Highway 12 East and Twilight Street that pose safety and level of service concerns for access particularly for bus traffic. The site would require relatively moderate improvements to roadways, pedestrian routes and intersections to accommodate for the access and safety impacts created from the site.

The Mountain View Meadows site alternative scored a 3 in the access and safety criterion due to the significant transportation issues that this site raises.

### **Long Term Flexibility**

The Mountain View Meadows site is 9 acres in size and has a generally flat topography. Although the property developer has indicated that he would accommodate a larger site to suit the school district's needs, it is unlikely that the site would be as large as 80 acres. It is the least flexible relative to the other sites but still able to accommodate minimal development. Consequently, this site does not provide for a variety of options for future growth and expansion should the need from the District arise.

The Mountain View Meadows site alternative scored a 2 in the long term flexibility criterion.

## **6.2.8 East Fields**

### **Financial Feasibility – Life Cycle Costs**

Table 6-8 provides a summary of the life cycle cost and calculated relative cost score for the East Fields site.

Table 6-8 - East Fields Life Cycle Costs

ITEM	East Fields
Capital Costs	\$2,276,068
Annual O&M Costs	\$32,646
20-Year Salvage Value	\$175,000
Present Worth of Salvage Value	\$54,600
Present Worth of Annual O&M Cost	\$489,701
<b>Present Worth Cost</b>	<b>\$2,711,169</b>



The East Fields site alternative scored a 4.9 in the financial feasibility criterion.

### **Public Opinion**

The East Fields site had very little support during the public meeting held on November 13, 2014. The public's reasoning for not preferring the site include the location and access of the East Fields site.

The East Fields site will be assigned a score of 3 in the public opinion criterion.

### **Environmental Impacts**

The East Fields site is located within the Asarco soil contamination plume and needs environmental remediation of the site before a school could be constructed. As the site is currently contaminated, it is already limited in possible use and capacity until remediation occurs. Complete removal and replacement of the contaminated soils will positively impact the site environment and free the site of dangerously high levels of lead, arsenic, and cadmium. Remediation of the site also promotes health and safety, future growth, economic benefits, and alleviates all uncertainty of possible future remediation due to increasingly stringent contamination regulations. During construction of the site, dust and noise would most likely occur and could negatively impact the surrounding area for a short term. Because of the soil contamination issue, the contractor will be required to conduct significant dust control measures during construction. There is no evidence that the East Fields site alternative will negatively impact the area land resources, floodplains, wetlands, endangered species, or historical and archaeological properties. Remediation, would in fact, positively impact the site and surrounding area environment substantially.

The East Fields site alternative scored a 10 in the environmental impacts criterion.

### **Operation and Maintenance**

At the East Fields site, the District will not be responsible for supporting infrastructure operation and maintenance requirements. The water and wastewater infrastructure will be connected to the City of East Helena's existing system, therefore requiring the City to assume responsibilities associated with the O&M. Water and Sewer usage and rates were analyzed for existing schools in East Helena that use the City of East Helena for these services. Based upon this information an annual water and sewer rate from the City of East Helena was estimated. Being that the East Helena School District has limited resources and manpower, it is beneficial to the District to

have the City responsible for the operation and maintenance of the infrastructure. The District will pay for that O&M through water and sewer rates. However, The District will incur minimal O&M costs for a lift station and cost associated with operation of the lift station. The annual water and sewer rates are reflected in the Opinion of Probable Annual Operation & Maintenance costs table in chapter 5 of this report for this alternative.

The East Fields site alternative scored a 10 in the site operation and maintenance criterion.

### **Technical Feasibility**

The East Fields site's technical feasibility is scored by the construction viability, infrastructure complexity, land acquisition, permitting considerations and transportation capability. Construction of the site infrastructure on the East Fields site is viable. The site does not have characteristics that pose issues or challenges that would deem its construction difficult or unviable. The East Fields site infrastructure is relatively simple. The most complex aspect of the infrastructure is that the site would require a lift station. Lift stations require more attention via operation and maintenance and have a finite service life. Land acquisition is feasible because the METG is interested in transferring ownership of this property. There are no significant permitting issues because The East Fields site requires major transportation improvements to meet regulations but with these additions the transportation infrastructure would be capable of providing a relatively high level of service and fully capable of meeting the transportation needs of the District. The impacts of the train tracks on traffic as well as possibility of needing a pedestrian bridge or tunnel in the future caused this alternative to be ranked down for technical feasibility.

The East Fields site alternative scored a 4 in the technical feasibility criterion.

### **Access and Safety**

The East Fields site's main access roads are U.S. Highway 12 East and Route 518. The site is not centrally located and could possibly negatively impact the existing transportation network. The intersection at U.S. Highway 12 East and Route 518 has one of the highest average daily traffic counts relative to the other site alternatives. The majority of traffic and pedestrians will need to cross U.S. Highway 12 East, which does pose a safety concern due to the large volume of traffic and high rates of speed traveled on the roadway. The site may require a costly pedestrian bridge or tunnel for U.S. Highway 12 East and the railroad to safely accommodate foot traffic. Another negative aspect for this site is that the level of service and safety could be

lowered due to increased traffic at the intersection of U.S. Highway 12 East and Route 518. The site will require relatively major improvements to roadways, pedestrian routes, and intersections to accommodate impacts created from the site to accommodate access and safety requirements

The East Fields site alternative scored a 4 in the access and safety criterion.

### **Long Term Flexibility**

The East Fields site is 75 acres in size and has a generally flat topography. The majority of the site is conducive to future development. These characteristics provide for a variety of options for future growth and expansion should the need from the District and community arise.

The East Fields site alternative scored a 10 in the long term flexibility criterion.

## **6.2.9 Diehl Property**

### **Financial Feasibility – Life Cycle Costs**

Table 6-8 provides a summary of the life cycle cost and calculated relative cost score for the Diehl Property site.

Table 6-9 - Diehl Property Life Cycle Costs

ITEM	Diehl
Capital Costs	\$5,332,987
Annual O&M Costs	\$32,646
20-Year Salvage Value	\$648,000
Present Worth of Salvage Value	\$202,000
Present Worth of Annual O&M Cost	\$489,701
Present Worth Cost	\$5,620,688

The Diehl Property site alternative scored a 2.1 in the financial feasibility criterion.

### **Public Opinion**

The Diehl Property site had very little support during the public meeting held on November 13, 2014. The public's reasoning for not preferring the site include the location and access to and from the Diehl Property site.

The Diehl Property site will be assigned a score of 3 in the public opinion criterion.



**Environmental Impacts**

The Diehl Property site is located within the Asarco soil contamination plume and needs environmental remediation of the site before a school could be constructed. As the site is currently contaminated, it is already limited in possible use and capacity until remediation occurs. Complete removal and replacement of the contaminated soils will positively impact the site environment and free the site of dangerously high levels of lead, arsenic, and cadmium. Remediation of the site also promotes health and safety, future growth, economic benefits, and alleviates all uncertainty of possible future remediation due to increasingly stringent contamination regulations. During construction of the site, dust and noise would most likely occur and could negatively impact the surrounding area for a short term. Because of the soil contamination issue, the contractor will be required to conduct significant dust control measures during construction. There is no evidence that the Diehl Property site alternative will negatively impact the area land resources, floodplains, wetlands, endangered species, or historical and archaeological properties. Remediation, would in fact, positively impact the site and surrounding area environment substantially.

The Diehl Property site alternative scored a 10 in the environmental impacts criterion.

**Operation and Maintenance**

At the Diehl Property site, the District will not be responsible for operation and maintenance requirements associated with water and wastewater. The water and wastewater infrastructure will be connected to Eastgate's existing system, therefore requiring the Eastgate Water and Sewer Association to assume responsibilities and costs associated with the O&M. Being that the East Helena School District has limited resources and manpower, it is beneficial to the District to have the Association responsible for the operation and maintenance of the infrastructure. The District would have to pay for an initial connection to the Association's water and sewer system at this site. Based on DEQ recommendations for wastewater usage per student and BOD capacity for Association's wastewater system, an equivalent number of EDUs was calculated to develop an annual water and sewer rate for the new school.

The Diehl Property site scored a 10 in the site operation and maintenance criterion.

**Technical Feasibility**

The Diehl Property site's technical feasibility is scored by the construction viability, infrastructure complexity, land acquisition, permitting considerations and transportation capability.

Construction of the site infrastructure on the Diehl Property site is viable. The site does not have characteristics that pose issues or challenges that would deem its construction difficult or unviable. The Diehl Property site infrastructure is relatively simple. The most complex aspect of the infrastructure is that the site would require a lift station. Lift stations require more attention via operation and maintenance and have a finite service life. Land acquisition is feasible because Diehl Ranch Co, Incorporated is interested in transferring ownership of this property. There are no significant permitting issues because the Diehl Property site requires major transportation improvements to meet regulations but with these additions the transportation infrastructure would be capable of providing a relatively high level of service and fully capable of meeting the transportation needs of the District.

The Diehl Property site alternative scored a 4 in the technical feasibility criterion.

### **Access and Safety**

The East Fields site's main access road is U.S. Highway 12 East. The site is not centrally located and could negatively impact the existing transportation network. The intersection at U.S. Highway 12 East and Route 518 has one of the highest average daily traffic counts relative to the other site alternatives. The majority of traffic and pedestrians will need to cross U.S. Highway 12 East, which does pose a safety concern due to the large volume of traffic and high rates of speed traveled on the roadway. The site will require relatively major improvements to roadways, pedestrian routes, and intersections to accommodate impacts created from the site to accommodate access and safety requirements

The Diehl Property site alternative scored a 4 in the access and safety criterion.

### **Long Term Flexibility**

The Diehl Property site is 93 acres in size and has a generally flat topography. The majority of the site is conducive to future development. These characteristics provide for a variety of options for future growth and expansion should the need from the District and community arise.

The Diehl Property site alternative scored a 10 in the long term flexibility criterion.

### 6.3 Decision Matrix and Selection of Preferred Alternative

Using the criteria, scoring, and weighting factors described, Table 6-8 was established to provide a concise comparison of the site alternatives.

Table 6-10 - Decision Matrix

Decision Matrix																
Alternative	Alternative	Financial Feasibility		Public Opinion		Environmental Impacts		Operation and Maintenance		Technical Feasibility		Access and Safety		Long Term Flexibility		TOTAL
	Life Cycle	Weight:	25	Weight:	40	Weight:	6	Weight:	10	Weight:	20	Weight:	10	Weight:	10	
	Cost	Score	Wtd.	Score	Wtd.	Score	Wtd.	Score	Wtd.	Score	Wtd.	Score	Wtd.	Score	Wtd.	
LAMPING FIELD	\$2,690,359	4.8	121	8.0	320	10.0	60	10.0	100	8.0	160	7.0	70	10.0	100	931
DARTMAN	\$2,314,189	5.6	140	10.0	400	10.0	60	10.0	100	9.0	180	10.0	100	10.0	100	1080
HSG SITE	\$3,613,302	3.6	89	7.0	280	10.0	60	10.0	100	7.0	140	8.0	80	8.0	80	829
HAMLIN - ALT 1A	\$5,039,164	2.4	60	3.0	120	7.0	42	2.0	20	2.0	40	4.0	40	10.0	100	422
HAMLIN - ALT 1B	\$4,354,387	2.9	72	3.0	120	8.0	48	10.0	100	4.0	80	4.0	40	10.0	100	560
HAMLIN - ALT 2	\$5,710,110	2.0	51	3.0	120	8.0	48	8.0	80	4.0	80	6.0	60	10.0	100	539
MOUNTAIN VIEW	\$2,422,584	5.4	134	3.0	120	9.0	54	10.0	100	3.0	60	3.0	30	2.0	20	518
EAST FIELDS	\$2,711,169	4.8	120	3.0	120	10.0	60	10.0	100	4.0	80	4.0	40	10.0	100	620
DIEHL	\$5,620,688	2.1	52	3.0	120	10.0	60	10.0	100	4.0	80	4.0	40	10.0	100	552

As indicated in the Decision Matrix, the highest ranked site alternative for the East Helena School District is the Dartman Property alternative. The primary factors influencing the selection of the preferred alternative is the financial feasibility, accessibility, safety, and location. The preferred alternative includes environmental remediation, a water and wastewater connection to the existing City of East Helena's system, and improvements to the transportation network. A detailed description of the preferred alternative is included in the following section.



## **7.0 PROPOSED PROJECT**

The preferred alternative or proposed project will be discussed in detail in this chapter. The preferred alternative is the Dartman Property site.

### **7.1 Preliminary Project Design**

### **7.2 Project Schedule**

The preliminary schedule for project schedule is as follows:

- Preliminary Engineering Report – October 2013 to November 2014
- Public Meetings – November 2014 to May 2015
- Bond Election Meetings – May 2015 to December 2015
- School Construction – January 2016 to December 2016

### **7.3 Permit and Land Acquisition Requirements**

The Dartman Property preferred alternative site requires permitting prior to funding and construction. Permitting would be required from the Montana Department of Transportation (MDT), Montana Department of Environmental Quality (DEQ), Environmental Protection Agency (EPA), and Storm Water Pollution Prevention Plan (SWPPP). The Dartman Property will also require a significant land acquisition effort through the METG, State of Montana and EPA.

### **7.4 Total Project Cost Estimate**

The total project capital cost estimate for the Dartman Property site is \$2,090,219. The estimated total project present worth cost for the Dartman Property site is \$2,314,189.

### **7.5 Funding Alternatives**

Ultimately construction of the school project will require passage of a bond issue. However, there are significant project elements which may be eligible for grant funding to reduce the cost to District taxpayers. The District should consider grant applications to following programs:

**Quality Schools Grant Program** – This program is administered by the Montana Department of Commerce specifically for funding school infrastructure. Grant applications are taken on even years and funded during the following year's legislature. The next grant cycle is due in May 2016 for funding by the 2017 Legislature. Grant amounts up to \$1,000,000 have been awarded to a wide variety of school projects across Montana.

**Treasure State Endowment Program** – This program is also administered by the Montana Department of Commerce and can be utilized to construct drinking water, wastewater and bridge infrastructure for local governments. Grant applications are taken on even years and funded during the following year's legislature. The next grant cycle is due in May 2016 for funding by the 2017 Legislature. Grant amounts up to \$750,000 are available. School districts are not directly eligible for these grants, however the District could be sponsored by a local government for this type of grant. The most likely scenario for this grant funding is for water and sewer infrastructure needed to connect to either the East Helena or Helena systems.

**Community Development Block Grant Program** - This program is also administered by the Montana Department of Commerce and can be utilized to construct drinking water, wastewater and other public facility projects. Grant applications are taken every year. The next grant cycle is due in April 2015. Grant amounts up to \$450,000 are available. School districts are not directly eligible for these grants, however the District could be sponsored by a local government for this type of grant. The most likely scenario for this grant funding is for water and sewer infrastructure needed to connect to either the East Helena or Helena systems.

## 8.0 Conclusions and Recommendations

The Dartman Property site is the preferred alternative for the proposed project. The site is the most logical choice in terms of permitting, economic, and constructible viability. The Lamping Field, HSG, and East Fields sites are also nearly as viable alternatives but did not score as high due to different criteria.

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<sup>i</sup> Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture, Web Soil Survey, <http://websoilsurvey.nrcs.usda.gov/app>.

<sup>ii</sup> Natural Resource Information System (NRIS), State of Montana, <http://nr.is.mt.gov/>.

<sup>iii</sup> Montana Natural Heritage Program, State of Montana, <http://mtnhp.org/SpeciesOfConcern/>.

<sup>iv</sup> Natural Resource Information System (NRIS), State of Montana, <http://nr.is.mt.gov/>.

Planning Report, East Helena Public Schools, June 18, 2014