El Paso County, CO
Public Health
Prevent • Promote • Protect

Environmental Health Division

1675 W. Garden of the Gods Rd., Suite 2044
Colorado Springs, CO 80907
(719) 578-3199 *phone*
(719) 575-8664 *fax*
www.elpasocountyhealth.org

ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION FORM

ON-SITE ID: ON0048931
APN # 1600000020
DATE: 12/27/2016

P

APPROVED YES ☒ **NO** ☐ Environmental Health Specialist: Kat McGarvy

Address: 14550 Edison Rd Yoder CO 80864 Owner: Edison School District 54JT

Residence: ☐ #Bedrooms: Number Commercial: ☒ System Installer: Soil Modification INC

SEPTIC TANK: Construction Material concrete Capacity Gallon 1000 gallon - 1000 gallon - 1000 gallon with pump in second chamber

SOIL TREATMENT AREA:

Trench: Depth (Range): ___ Width: ___ Total Length: ___ Sq. Ft.: ___

Bed: Depth (Range): ___ Width: ___ Total Length: ___ Sq. Ft.: ___

Depth of Rock: ___ Under PVC: Type of cover on Rock: ___

SEEPAGE PITS: # of Pits: ___ Working Depth #1: ___ #2: ___ Size (L x W) #1 ___ #2 ___ Total Sq. Ft. ___

CHAMBER SYSTEMS:

Type of Chamber: Q4 LP #Chambers: 200 Sq. Ft./Chamber: 12 Bed: ☐ Trench: ☒ Depth (Range): ___

Sq. Ft. Required (10-1): ___ Sq. Ft. Required (10-2): ___ Sq. Ft. Required (10-3): ___ Sq. Ft. Required for Diverter Valve: (10-2)/(2)

Sq. Ft. Installed: ___

Engineer Design: Y ☐ N ☒ Engineering Firm: ___ **Approval Letter Provided:** Y ☐ N ☐

Well installed at time of OWTS inspection: Y ☐ N ☒ **Public Water:** Y ☐ N ☒

**Approval will be revoked if in the future the well is found to be within 50 feet of the septic tank and/or 100 feet of the soil treatment area.*

Notes:

Engineering received 8.9.18

ON0048931
APN 1600000020
12.27.18

JVA, Incorporated
1319 Spruce Street
Boulder, CO 80302
303 444.1951
info@jvajva.com
www.jvajva.com

August 9, 2018

Catherine McGarvy, Lead Environmental Health Specialist
El Paso County Public Health
1675 West Garden of the Gods Road, Suite 2044
Colorado Springs, CO 80907

14450 Edison Rd
Yoder CO 80864

RE: Onsite Wastewater Treatment System Final Certification – Edison School

Dear Catherine:

The new Onsite Wastewater Treatment System, Onsite ID ON0048931, serving the Edison School located at 14550 South Edison Road in Yoder, CO 80864 is ready for final certification from El Paso County Public Health. JVA has confirmed that the onsite wastewater treatment system was installed according to the plans and specifications. The engineer of record for this system is Kevin Tone with JVA, Inc (JVA). The final record drawings from JVA are provided as an attachment. Please proceed with the closeout process for this onsite wastewater treatment system permit.

Please feel free to contact me at (303) 444-1951 if you have any additional questions.

Sincerely,
JVA, INCORPORATED

By: _____
Kevin Tone, P.E., LEED AP
President

Enclosure:

Attachment A – JVA Inc. Record Drawings

CC: Simon Farrell, JVA

ABBREVIATIONS:

LEGEND

SYMBOLS

DETAIL TITLE

DETAIL MARKER

GENERAL NOTES:

14550 Edison Rd
Yoder CO 80864

ON0048931
APN 1600000020
12/27/16

CONFORMED TO CONSTRUCTION RECORD

E

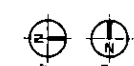
L K A PARTNERS INCORPORATED

Edison Jr/Sr High School
Addition / Renovations

Edison School District 54JT
14550 Edison Road
Yoder CO 80864

Construction Documents
Permit Set

Area Key Plan



NOTES, LEGEND, AND ABBREVIATIONS

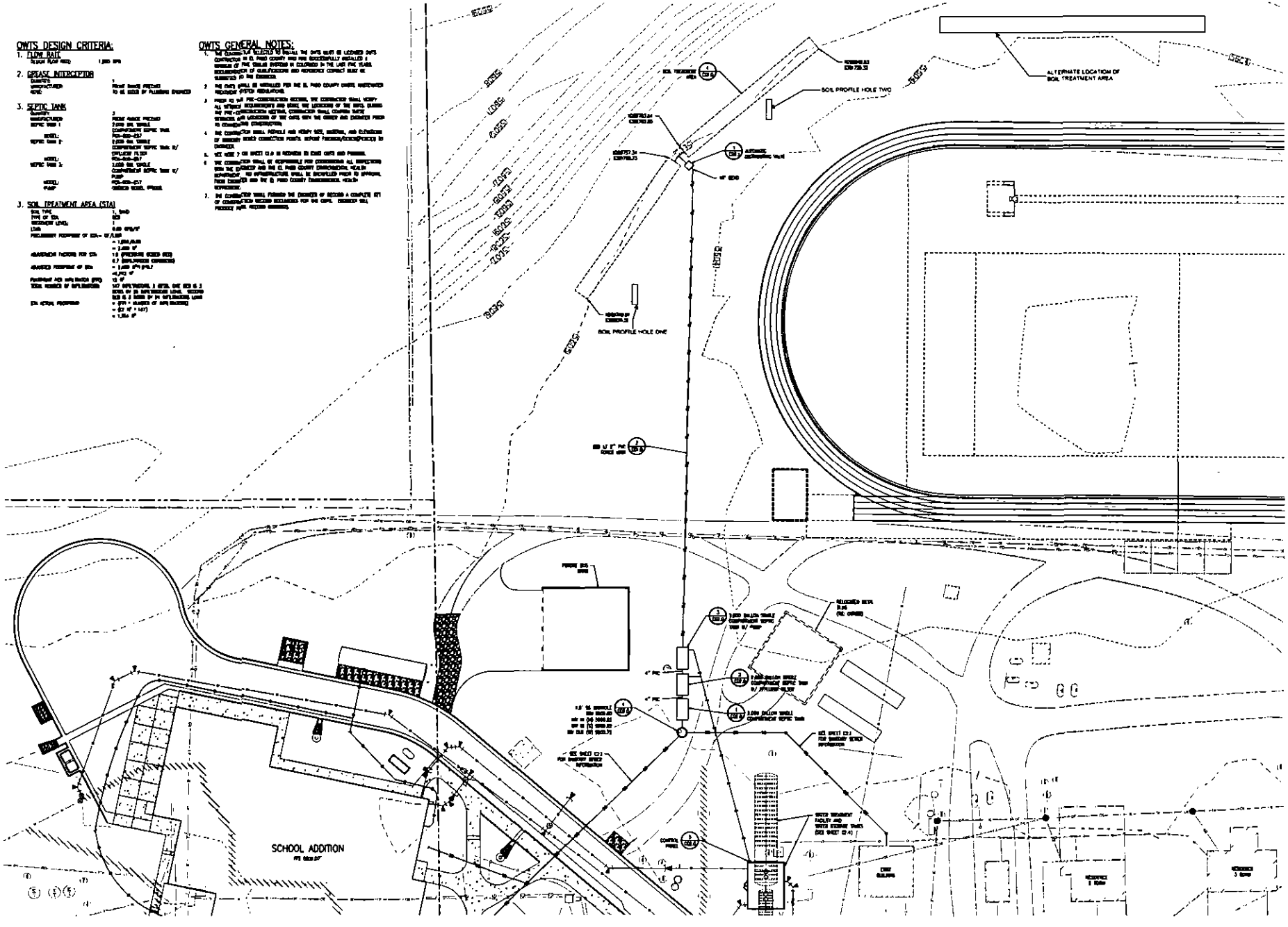
C0.1

The LKA Partners Incorporated

OWTS DESIGN CRITERIA:

1. FLOW RATE
2. GREASE INTERCEPTOR
3. SEPTIC TANK
3. SOIL TREATMENT AREA (STA)

OWTS GENERAL NOTES:



CONFORMED TO CONSTRUCTION RECORD

L.K.A. PARTNERS INCORPORATED

Edison Jr/Sr High School Addition / Renovations

Edison School District 54JT
14500 Edison Road
Castle CO 80104

Construction Documents
Permit Set

Drawn
Checked
Issued
Revised

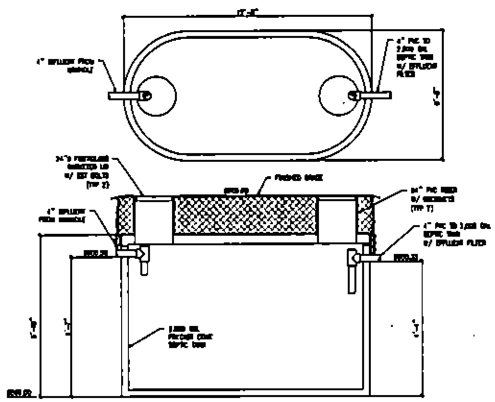
Area Key Plan

True North
Plan North

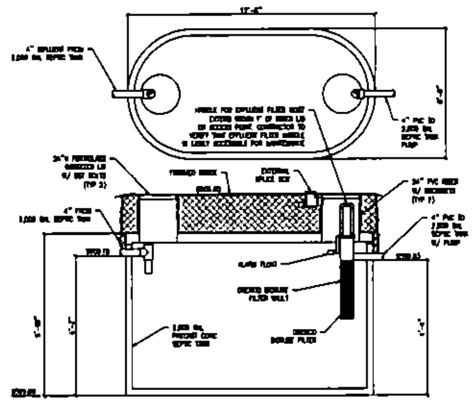
OWTS SITE PLAN

C2.3

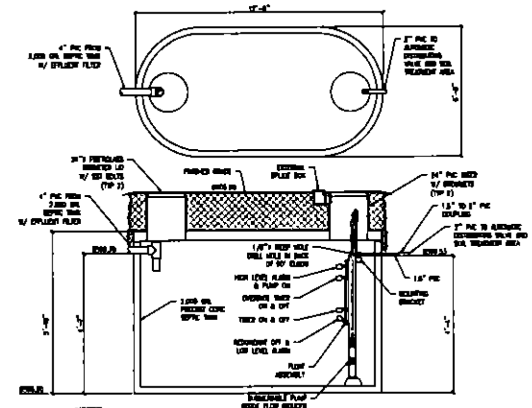
Project No.
The L.K.A. Partners Incorporated



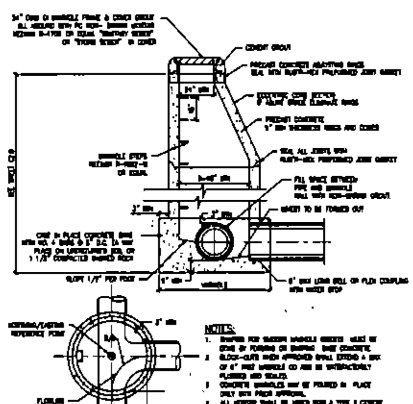
2,000 GALLON SINGLE COMPARTMENT SEPTIC TANK DETAIL



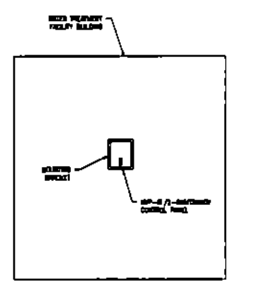
2,000 GALLON SINGLE COMPARTMENT SEPTIC TANK W/ EFFLUENT FILTER DETAIL



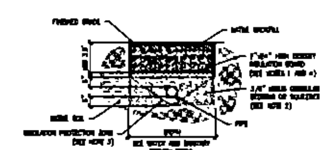
2,000 GALLON SINGLE COMPARTMENT SEPTIC TANK W/ PUMP DETAIL



TYPICAL PRECAST MANHOLE DETAIL



CONTROL PANEL DETAIL



TYPICAL HIGH DENSITY INSULATION BOARD DETAIL

CONFORMED TO CONSTRUCTION RECORD

Edison Jr/Sr High School
Addition / Renovations

Edison School District 54JT
14550 Edison Road
Yoder, CO 80864

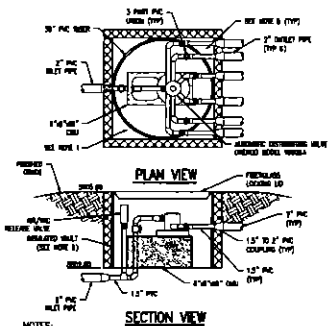
Construction Documents
Permit Set

Area Key Plan

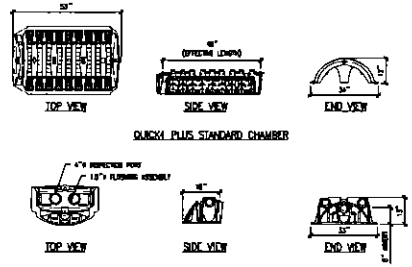
OWTS DETAILS

CD2.0

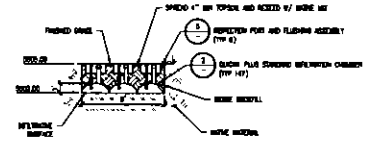
Project No.
The LKA Partners Incorporated



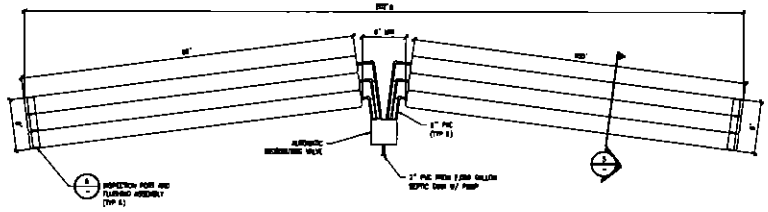
AUTOMATIC DISTRIBUTING VALVE DETAIL



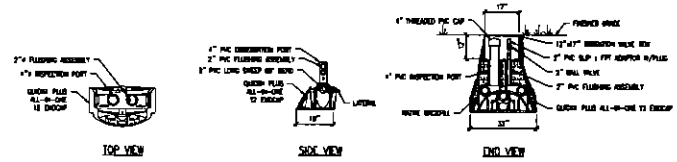
STANDARD INFILTRATION CHAMBER DETAIL



SOIL TREATMENT AREA CROSS SECTION



SOIL TREATMENT AREA PLAN



INSPECTION PORT AND FLUSHING ASSEMBLY DETAIL

L&A PARTNERS INCORPORATED

Edison Jr/Sr High School Addition / Renovations

Edison School District 54JT
16556 Edison Road
Yoder, CO 80864

Construction Documents
Permit Set

Area Key Plan

OWTS DETAILS

CD2.1

Project No.

The L+A Partners Incorporated

CONFORMED TO CONSTRUCTION RECORD

Notify Environmental Health of any change of ownership, type of business activity, business name, or billing address by calling (719) 578-3199. Failure to notify Environmental Health may result in late penalties, Permit/License denial or revocation, and business closure. PERMITS/LICENSES TO OPERATE AND ANNUAL FEE PAYMENTS ARE NOT TRANSFERABLE. Permits become void on change of ownership. New owners must apply and pay for a new Permit(s)/License(s) prior to beginning operation.

Attn: EDISON SCHOOL DISTRICT 54JT
14550 S EDISON RD
YODER, CO 80864

El Paso County, CO
Public Health
Prevent • Promote • Protect

EL PASO COUNTY PUBLIC HEALTH
ENVIRONMENTAL HEALTH DIVISION
1675 W. GARDEN OF THE GODS ROAD, SUITE 2044
COLORADO SPRINGS, CO 80907
PHONE: (719) 578-3199 FAX: (719) 578-3188
www.elpasocountyhealth.org

NEW SYSTEM PERMIT - OWTS

Valid From 7/25/2016 To 7/25/2017

PERMITEE : EDISON SCHOOL DISTRICT 54JT
14550 S EDISON RD
YODER, CO 80864

OWNER NAME : **EDISON SCHOOL DISTRICT 54JT**

Onsite ID: ON0048931
Tax Schedule # : 1600000020
Permit Issue Date: 07/25/2016
Dwelling Type: COMMERCIAL
# of Bedrooms (if Res): 0
Proposed Use (if Comm):
Designed Gallons/Day: 1,501-2,000 GALLONS.
Water Source: PRIVATE WELL

System Installation Requirements:

Thursday, July 21, 2016 9:28 AM - CHRISTINE JUAREZ
Tier 2 license installer must install system based on the stamped design document dated 07/21/2016.

The OWTS must be installed per the stamped and approved Design Document dated 07/25/2016.

This permit is issued in accordance with 25-10-106 Colorado Revised Statutes. The PERMIT EXPIRES upon completion/installation of the Onsite Wastewater Treatment System, or at the end of twelve (12) months from date of issue, whichever occurs first. If both a Building Permit and an Onsite Wastewater Treatment System Permit are issued for the same property and construction has not commenced prior to the expiration date of the Building Permit, the Onsite Wastewater Permit shall expire at the same time as the Building Permit. This permit is revocable if all stated requirements are not met. The Onsite Wastewater Treatment System must be installed by an El Paso County Licensed System Contractor, or the property owner.

The Health Officer shall assume no responsibility in case of failure or inadequacy of an Onsite Wastewater Treatment System, beyond consulting in good faith with the property owner or representative. Access to the property shall be authorized at reasonable time for the purpose of making such inspections as are necessary to determine compliance with the requirements of this law (permit).

Inspection request line: Call (719) 575-8699 before 8:30 a.m. of the day that the inspection is requested
Weekends & Holidays excluded.

Authorized By: Environmental Health Specialist

El Paso County, CO
Public Health
Prevent • Promote • Protect

Environmental Health Division

1675 W. Garden of the Gods Rd., Suite 2044
Colorado Springs, CO 80907
(719) 578-3199 *phone*
(719) 578-3188 *fax*
www.elpasocountyhealth.org

SR0005247 AR0009541

APPLICATION FOR AN ON-SITE WASTEWATER TREATMENT SYSTEM PERMIT

[X] NEW PERMIT [ ] MAJOR REPAIR PERMIT [ ] MINOR REPAIR PERMIT

Owner Edison School District 54JT Daytime Phone (719) 478-2125
System Installer Soil Modification, Inc. Daytime Phone (720) 570-0589
Property Address 14550 Edison Road City and Zip Yoder, CO 80864
Legal Description NE 1/4 of NE1/4, Section 36, Township 16S, Range 61W
Owners Mailing Address 14550 Edison Road Yoder, CO 80864
Email Address pbershinsky@edison54jt.org Fax # Not applicable
Tax Schedule # 1600000020 Lot Size 40 acres
Site Located Inside City Limits [ ] Yes [X] No Primary Contact [ ] Owner [X] Contractor
Proposed Use: [ ] Single Family [ ] Multi-Family [X] Commercial
Water Supply: [X] Well [ ] Cistern [ ] Municipal Number of Bedrooms 0
[ ] **Pick up:** [ ] **Fax:** [X] **Email:** pbershinsky@edison54jt.org
doughahn@.lkapartners.com

CURRENT FEES AS APPROVED BY THE El PASO COUNTY BOARD OF HEALTH

New Permit: $685.00 (EPCPH Charge) + $147.00 (EPC Planning Dept. Surcharge) + $23.00 (CDPHE Surcharge) = **$855.00**
Major Repair Permit: $525.00 (EPCPH Charge) + $23.00 (CDPHE Surcharge) = **$548.00**
Minor Repair Permit: $240.00 (EPCPH Charge) + $23.00 (CDPHE Surcharge) = **$263.00**

- **All Payments are due at the time of application submittal; by cash, check or major credit card (Visa / MC)**
- **This permit will expire one year from the date of issuance.**

I certify that the information provided on this application is in compliance with Section 8.3, Chapter 8 of the Onsite Wastewater System (OWS) Regulations of the El Paso County Board of Health. I also authorize the assigned representative of El Paso County Public Health to enter onto this property in order to obtain information necessary for the issuance of a permit.

Applicants Signature: Pat Bershinsky Date: 6-28-16

Site Insp. Date: 7/21/16 Perc. Rate: FAR0080 **Permit #** ON0036003
E.H.S. Review Notes: Is there school kitchen on this septic? grease trap?
gallons daily flow = 1990 (under 2000 gallons per day)
Date to: E.P.C. Development Services 7/13/16 disapproved Flood Plain and Enumerations 7/12/13

Permit Requirements: Tier 2 license. 7/15/16 Amanda with Soil Modifications (303) 709-9274 called. Will have installer get El Paso County license.
~~1647 Enfield Circle~~
James Cochran Engineer JVA
(303) 565-4898 jcochran@jva.com
2000 1200 2000 1742
Min. Septic Tank Capacity Min. Absorption Area

E.H. Specialist Janet Christensen Date 7/25/16 [✓] Approved [ ] Denied

Tier 2 license David Wilson Sauer Soil Modifications

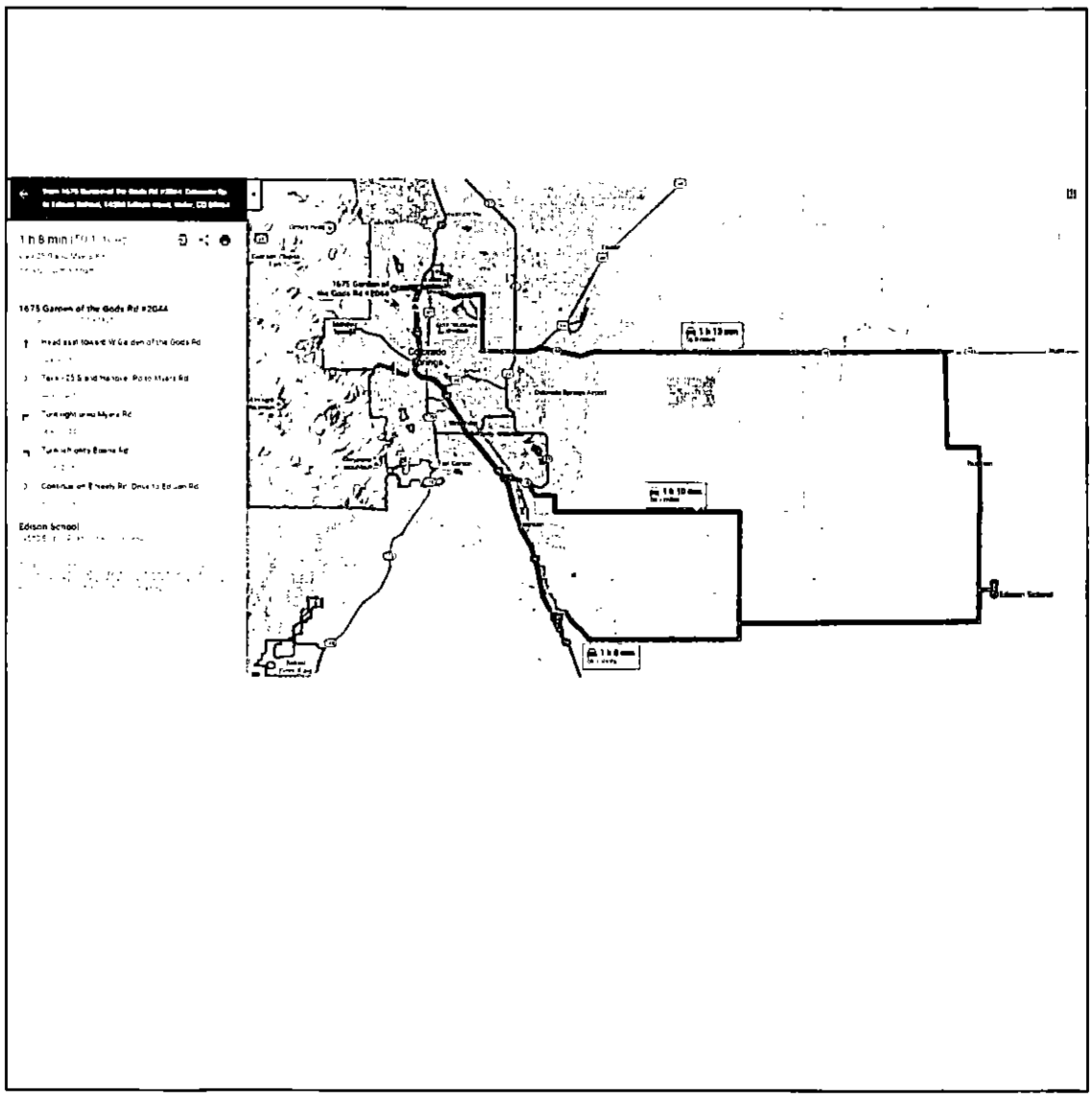
Reviewed 2016 approved fee (12/30/2015)
demolish old middle & high school, build new

1) A report is required per Section 8.5 A-E, "Site and Soil Evaluation", or Section 8.5 A-F if the OWTS requires design by a Colorado Registered Professional Engineer. If your permit application submittal is incomplete, the application will not be accepted.

2) Property address or lot number must be posted and clearly visible from the road. The percolation test holes and/ or soil profile test pit must be clearly marked or an additional charge for a return trip to the site may be assessed.

3) The proposed soil treatment area must be protected from compaction and disturbance by staking, fencing, posting or other effective method.

4) In the Box below, please provide complete and accurate directions to the property from a main highway.



JVA, Incorporated
1512 Larimer Street
Suite 710
Denver, CO 80202
303.444.1951
info@jvajva.com

www.jvajva.com

June 24, 2016

Mr. Doug Hahn, Principal
LKA Partners, Inc.
430 North Tejon Street
Colorado Springs, CO 80903

RE: Edison School District 54JT Projects – Onsite Wastewater Treatment System Site and Soil Evaluation & Design
JVA Job No. 2498.2c

Dear Doug:

Enclosed in this report are the results of the site and soil evaluation for the Edison School middle/high school onsite wastewater treatment system (OWTS). This report provides background information, the results from the preliminary site and soil investigation, the site (reconnaissance) visit, the soil evaluation, the site constraints, and OWTS design. To obtain a construction permit, this report along with the attached OWTS permit application, and design documents can be submitted to El Paso County Public Health and Environment.

BACKGROUND

The Edison School District 54JT (Edison School) located in El Paso County at 14550 Edison Road in Yoder, Colorado is planning on updating the current 40 acre campus. In this update, portions of the existing campus will be demolished, renovated, relocated, and/or added onto. The wastewater produced from the proposed middle/high school building is to be treated via an OWTS. For permitting the OWTS a site and soil evaluation was conducted on May 19, 2016 by JVA Design Engineer James Cochran.

PRELIMINARY SITE & SOIL INVESTIGATION

In preparation for a more efficient and informed site visit and soil investigation, a preliminary investigation was conducted on May 12th, 2016. The purpose of the preliminary investigation was to identify site constraints, options for locations of the OWTS, locations of all proposed improvements, topography, soil types, and limiting conditions via web-based programs.

Site constraints are defined as springs, wells, water supply lines, water cisterns, occupied buildings, property lines, irrigation ditches, lakes, watercourses, streams, dry gulches or cut banks, and septic tanks. The horizontal and/or vertical separation distance from these site constraints and the components of the OWTS and soil treatment area (STA) determine where the OWTS and STA can be placed. Specific horizontal and/or vertical setbacks from these site constraints to the OWTS and/or STA are specified in Tables 7-1 and 7-2 of the El Paso County OWTS Regulation. As seen in Appendix A, site constraints, locations of all existing and proposed improvements, and the site topography are displayed and measured horizontally to the OWTS and the STA

Soil types and limiting conditions were identified in the preliminary investigation via Web Soil Survey. As seen in Appendix B, the dominant soil in the STA area of interest is the Olney Sandy Loam complex. This soil complex consists of sandy loam from the surface to approximately one

feet deep, sandy clay loam from one to two feet deep, sandy loams from two to four feet deep, and fine sandy loam throughout the remaining soil profile.

SITE VISIT

A site visit was conducted on May 19th, 2016 by JVA Design Engineer James Cochran. The purpose of the site visit was to identify the topography, landscape position, vegetation, natural and cultural features, and current and historic land use for the proposed OWTS and STA. The topography of the site is flat, with occasional small rolling hills. The proposed landscape position of the OWTS is on a flat area. The dominant vegetation at the proposed OWTS and STA sites was native grasses. No wetlands or other vegetation prone to growing in saturated soils were identified at the proposed OWTS or STA sites. Currently, the area adjacent to the OWTS and STA is used as a sports field and track, Figures 1 and 2 below.

Figure 1 – Approximate Location for OWTS Tanks

Figure 2 – Sports Field Adjacent to STA

SOIL EVALUATION

A visual and tactile soil evaluation was conducted after the site evaluation by JVA Design Engineer James Cochran. Two soil profile holes were excavated using a rubber tired backhoe in the locations identified in the design drawings provided in Appendix A.

As seen in Table 1 below, the soil texture, soil structure shape, soil structure grade, and resulting soil type were classified throughout the soil profile horizon for each profile hole. For each soil profile hole, a topsoil corresponding to a sandy loam was discovered, followed by sand to a depth of eight feet. No redoximorphic or other indications of seasonally high groundwater were observed in either soil profile hole.

Table 1 – Visual and Tactile Soil Results

Profile Hole	Depth (ft.)	Soil Texture	Percent Rock	Soil Structure Shape	Soil Structure Grade	Soil Type
1	0 – 1	Sandy Loam	0%	Granular	Moderate	2
	1 – 8	Sand	0%	Not Applicable	Single Grain	1
2	0 – 1	Sandy Loam	0%	Granular	Moderate	2
	2 – 8	Sand	0%	Not Applicable	Single Grain	1

As seen in Figures 3 through 6 below, the soil profile hole and soil profile horizon are displayed for each of the soil profile holes. Profile hole one was excavated to a depth of approximately eight

feet, had a topsoil of sandy loam and a remaining soil profile of sand. Profile hole two was excavated to a depth of eight feet, had a topsoil of sandy loam and a remaining soil profile of sand.

Figure 3 – Soil Profile Hole One

Figure 4 – Soil Profile Hole One Horizon

Figure 5 – Soil Profile Hole Two

Figure 6 – Soil Profile Hole Two Horizon

SITE CONSTRAINTS

Site constraints are defined as springs, wells, water supply lines, water cisterns, occupied buildings, property lines, irrigation ditches, lakes, watercourses, streams, dry gulches or cut banks, and septic tanks. Site constraints identified during the preliminary investigation were re-examined and physically measured during the site visit on May 19th, 2016 by JVA Design Engineer James Cochran. As seen in Appendix A, no site constraints setbacks were in violation.

ONSITE WASTEWATER TREATMENT SYSTEM DESIGN

After the detailed soil investigation, sand was found to be the representative soil type for the STA infiltrative surface and four feet below. As per the El Paso County OWTS Regulation, sand with zero percent rock corresponds to a soil type one. For this system, wastewater will flow from the middle/high school to a 2,000 gallon single compartment septic tank where the majority of solids will settle; to another 2,000 gallon single compartment septic tank equipped with an effluent filter to ensure solids remain in the first two septic tanks; to a final 2,000 gallon single compartment septic tank equipped with an effluent dosing pump. From the 2,000 gallon single compartment septic tank with effluent dosing pump, wastewater effluent will be flow through a pressurized pump to an automatic distributing valve; and be pressure dosed to the soil treatment area equipped with infiltration chambers. The complete OWTS design, including STA sizing calculations, is provided in Appendix A.

Sincerely,
JVA, INCORPORATED

By: _____
James R. Cochran
Design Engineer

Enclosure:

Appendix A - OWTS Design
Appendix B - USDA Websoil Survey Data

Reviewed by: Simon A. Farrell, P.E., REHS – JVA, Inc. Project Engineer

APPENDIX A – OWTS DESIGN

Pump Selection for a Pressurized System - Single Family Residence Project

Edison School

Parameters

Discharge Assembly Size	1.50	inches
Transport Length Before Valve	285	feet
Transport Pipe Class	40	
Transport Line Size	2.00	inches
Distributing Valve Model	6606	
Transport Length After Valve	10	feet
Transport Pipe Class	40	
Transport Pipe Size	2.00	inches
Max Elevation Lift	5	feet
Manifold Length	0	feet
Manifold Pipe Class	40	
Manifold Pipe Size	2.00	inches
Number of Laterals per Cell	6	
Lateral Length	100	feet
Lateral Pipe Class	40	
Lateral Pipe Size	2.00	inches
Orifice Size	1/8	inches
Orifice Spacing	2	feet
Residual Head	5	feet
Flow Meter	None	inches
'Add-on' Friction Losses	0	feet

Calculations

Minimum Flow Rate per Orifice	0.43	gpm
Number of Orifices per Zone	51	
Total Flow Rate per Zone	22.2	gpm
Number of Laterals per Zone	1	
% Flow Differential 1st/Last Orifice	3.0	%
Transport Velocity Before Valve	2.1	fps
Transport Velocity After Valve	2.1	fps

Frictional Head Losses

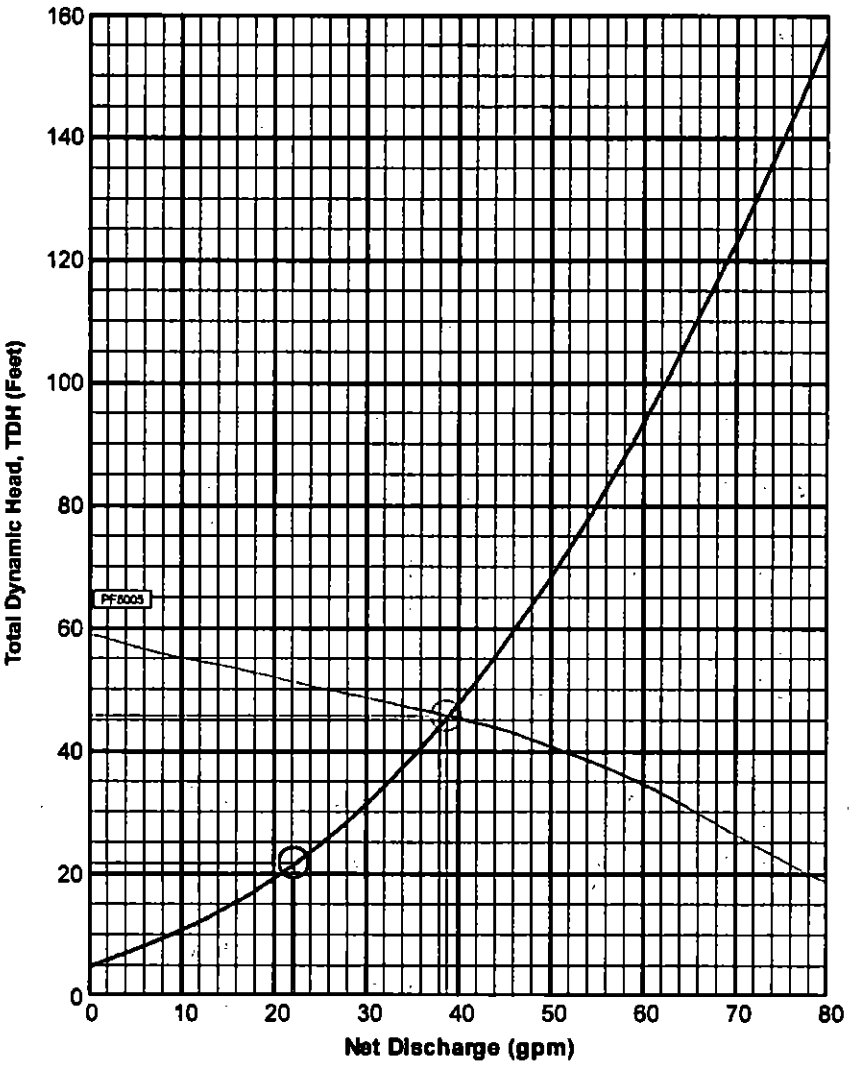
Loss through Discharge	1.5	feet
Lose In Transport Before Valve	2.5	feet
Loss through Valve	7.3	feet
Loss in Transport after Valve	0.1	feet
Loss in Manifold	0.0	feet
Loss in Laterals	0.3	feet
Loss through Flowmeter	0.0	feet
'Add-on' Friction Losses	0.0	feet

Pipe Volumes

Vol of Transport Line Before Valve	49.7	gals
Vol of Transport Line After Valve	1.7	gals
Vol of Manifold	0.0	gals
Vol of Laterals per Zone	17.4	gals
Total Vol Before Valve	49.7	gals
Total Vol After Valve	19.2	gals

Minimum Pump Requirements

Design Flow Rate	22.2	gpm
Total Dynamic Head	21.8	feet



PumpData

PF5005 High Head Effluent Pump
50 GPM, 1/2HP
115/230V 1Ø 60Hz, 200/230V 3Ø 60Hz

Legend

System Curve:
Pump Curve:
Pump Optimal Range
Operating Point
Design Point

Orenco Systems® Incorporated

Changing the Way the World Does Wastewater®

APPENDIX B – USDA WEBSOIL SURVEY DATA

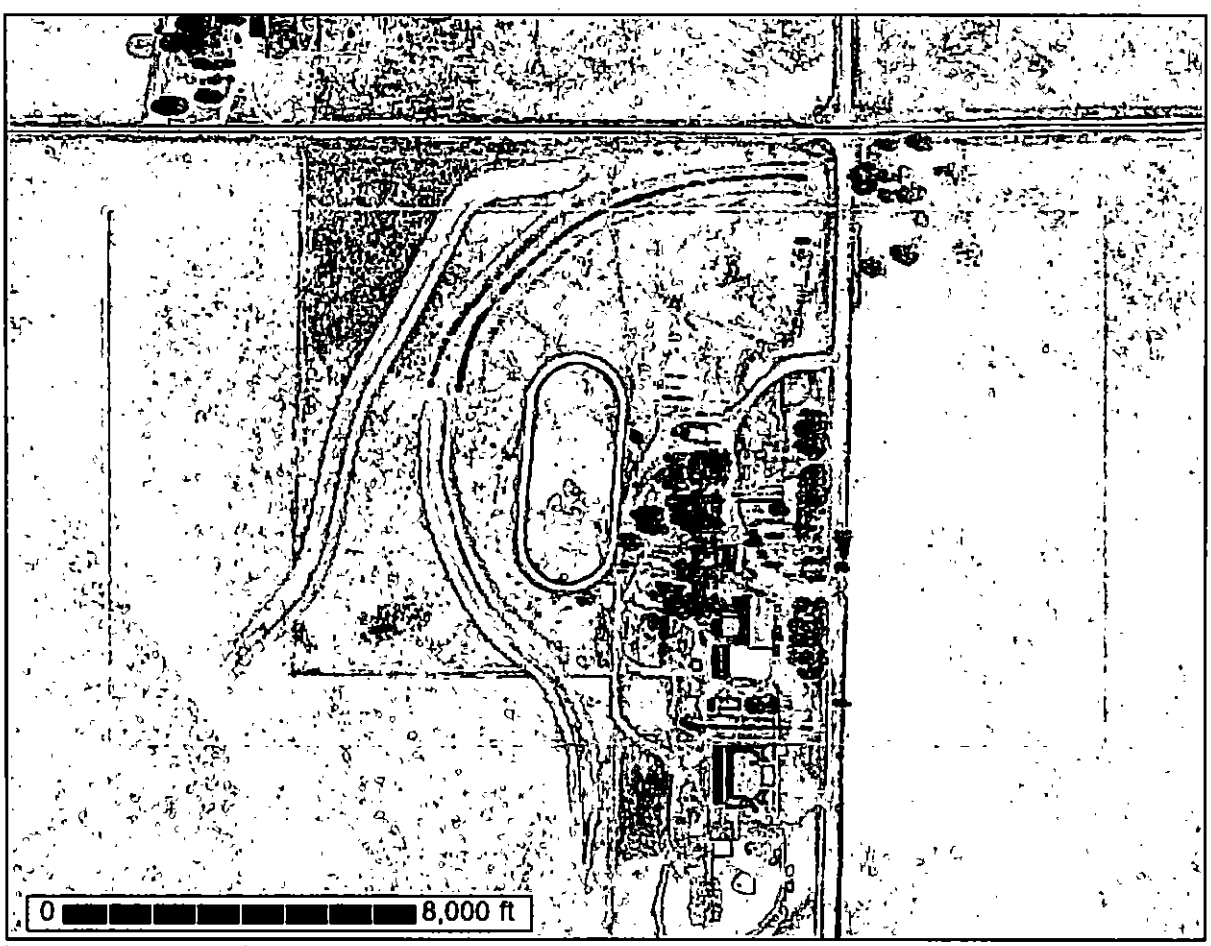
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for El Paso County Area, Colorado



May 12, 2016

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

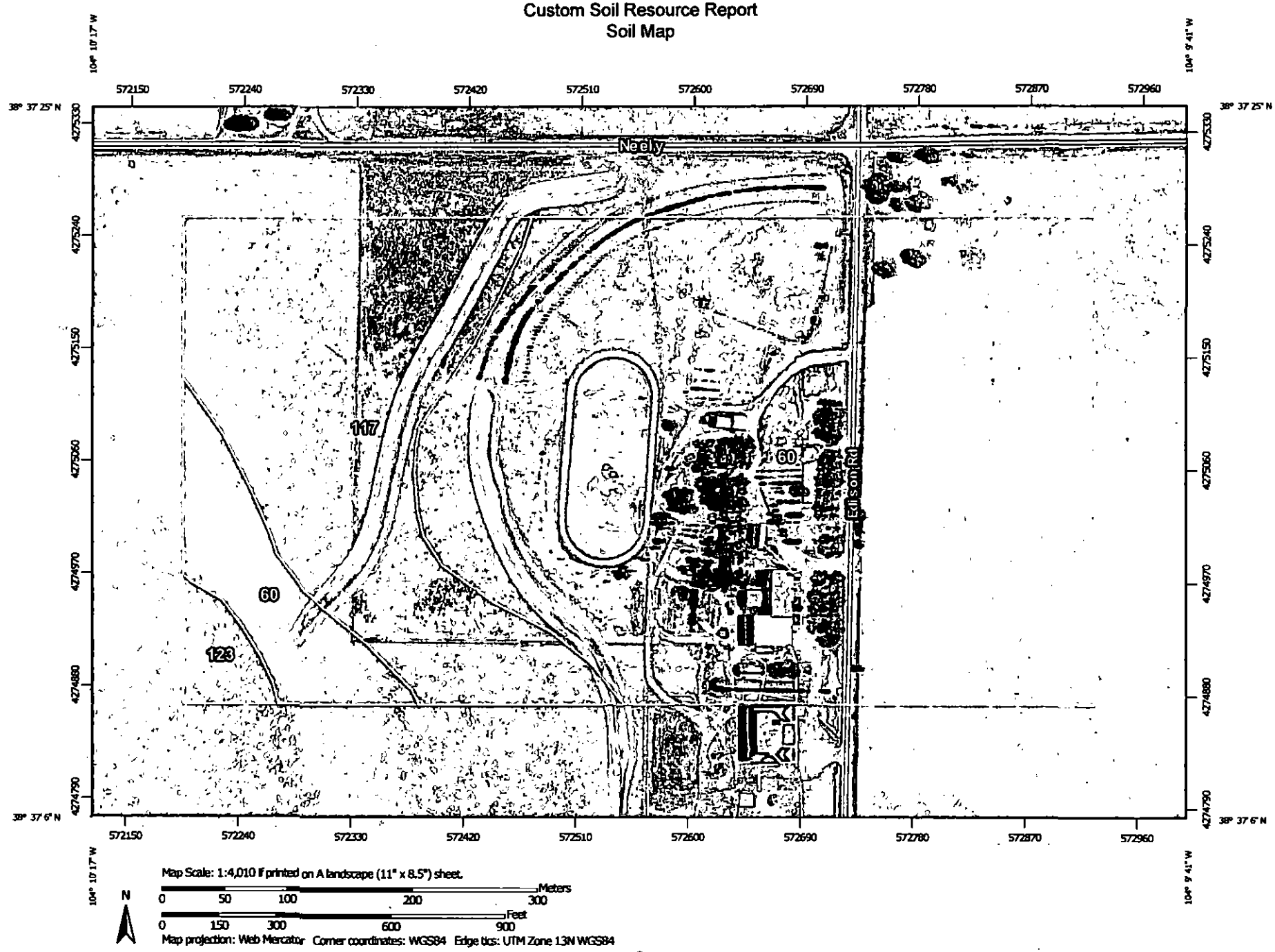
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 13, Sep 22, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 15, 2011—Sep 22, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

El Paso County Area, Colorado (CO625)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
60	Olney sandy loam, 0 to 3 percent slopes	51.6	73.1%
117	Vonid sandy loam, 0 to 5 percent slopes	17.7	25.1%
123	Olney-Vonid soils, 1 to 6 percent slopes, eroded	1.2	1.8%
Totals for Area of Interest		**70.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments

on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

El Paso County Area, Colorado

60—Olney sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2qnms
Elevation: 3,800 to 6,200 feet
Mean annual precipitation: 12 to 14 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 130 to 170 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Olney and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Olney

Setting

Landform: Interfluves
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Eolian deposits

Typical profile

A - 0 to 12 inches: sandy loam
Bt - 12 to 24 inches: sandy clay loam
Bk1 - 24 to 46 inches: sandy loam
Bk2 - 46 to 79 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B
Ecological site: Sandy Plains (R069XY026CO)
Other vegetative classification: Loamy (G069XW017CO)

Minor Components

Vonid

Percent of map unit: 9 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: Sandy Plains (R069XY026CO)
Other vegetative classification: Loamy, Dry (G069XW019CO), Sandy Plains (069XY026CO_1)

Oterodry

Percent of map unit: 4 percent
Landform: Hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: Sandy Plains (R069XY026CO)
Other vegetative classification: Loamy, Dry (G069XW019CO), Sandy Plains (069XY026CO_1)

Ustertic haplargids, ponded

Percent of map unit: 2 percent
Landform: Closed depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: Plains Swale (R067BY010CO)
Other vegetative classification: Clayey (G069XW001CO)

117—Vonid sandy loam, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2rgqc
Elevation: 4,000 to 6,200 feet
Mean annual precipitation: 12 to 14 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 130 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Vonid and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vonid

Setting

Landform: Sand sheets
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian sands

Typical profile

A - 0 to 6 inches: sandy loam
Bt - 6 to 29 inches: sandy loam
Bk - 29 to 52 inches: sandy loam
C - 52 to 79 inches: loamy sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: A
Ecological site: Sandy Plains (R069XY026CO)
Other vegetative classification: Loamy, Dry (G019XW019CO)

Minor Components

Olney

Percent of map unit: 10 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Sandy Plains (R069XY026CO)
Other vegetative classification: Loamy (G069XW017CO)

Valent

Percent of map unit: 4 percent
Landform: Sand sheets
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: Deep Sand (R067BY015CO)

Other vegetative classification: Loamy, Dry (G069XW019CO), DEEP SANDS (067XY015CO_2)

Ustertic haplargids, ponded

Percent of map unit: 1 percent
Landform: Closed depressions
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: Plains Swale (R067BY010CO)
Other vegetative classification: Clayey (G069XW001CO)

123—Olney-Vonid soils, 1 to 6 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2t51d
Elevation: 4,000 to 6,200 feet
Mean annual precipitation: 12 to 14 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 130 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Olney, eroded, and similar soils: 50 percent
Vonid, eroded, and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Olney, Eroded

Setting

Landform: Interfluves
Landform position (two-dimensional): Summit
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits

Typical profile

A - 0 to 2 inches: sandy loam
Bt - 2 to 14 inches: sandy clay loam
Bk1 - 14 to 36 inches: sandy loam
Bk2 - 36 to 79 inches: fine sandy loam

Properties and qualities

Slope: 1 to 4 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Calcium carbonate, maximum in profile: 25 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: Sandy Plains (R069XY026CO)
Other vegetative classification: Loamy (G069XW017CO)

Description of Vonid, Eroded

Setting

Landform: Sand sheets
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian sands

Typical profile

A - 0 to 2 inches: sandy loam
Bt - 2 to 29 inches: sandy loam
Bk - 29 to 52 inches: sandy loam
C - 52 to 79 inches: loamy sand

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.5 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: Sandy Plains (R069XY026CO)
Other vegetative classification: Loamy, Dry (G019XW019CO)

Minor Components

Vonid

Percent of map unit: 5 percent
Landform: Sand sheets
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear

Ecological site: Sandy Plains (R069XY026CO)
Other vegetative classification: Loamy, Dry (G019XW019CO)

Olney

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Sandy Plains (R069XY026CO)
Other vegetative classification: Loamy (G069XW017CO)

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Sanitary Facilities

Sanitary Facilities interpretations are tools designed to guide the user in site selection for the safe disposal of sewage and solid waste. Example interpretations include septic tank absorption fields, sewage lagoons, and sanitary landfills.

Septic Tank Absorption Fields (Edison)

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Saturated hydraulic conductivity (Ksat), depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning,

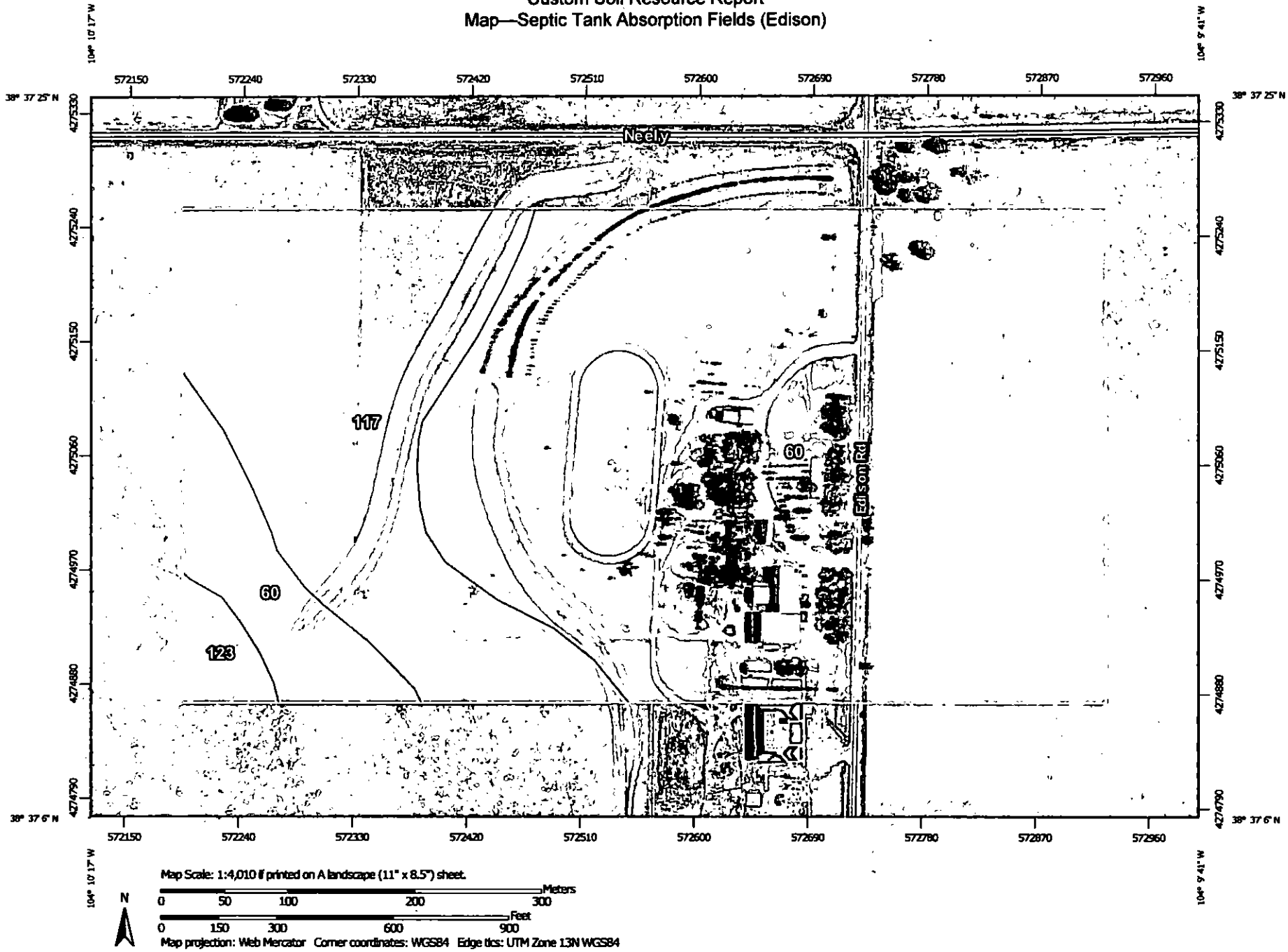
design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Custom Soil Resource Report
Map—Septic Tank Absorption Fields (Edison)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Background
- Aerial Photography

Soils

Soil Rating Polygons
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Soil Rating Lines
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Soil Rating Points
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 13, Sep 22, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 15, 2011—Sep 22, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Tables—Septic Tank Absorption Fields (Edison)

Septic Tank Absorption Fields— Summary by Map Unit — El Paso County Area, Colorado (CO625)						
Map unit symbol	**Map unit name**	**Rating**	**Component name (percent)**	**Rating reasons (numeric values)**	**Acres in AOI**	**Percent of AOI**
60	Olney sandy loam, 0 to 3 percent slopes	Not limited	Olney (85%)		51.6	73.1%
			Vonid (9%)			
			Oterodry (4%)			
117	Vonid sandy loam, 0 to 5 percent slopes	Not limited	Vonid (85%)		17.7	25.1%
			Olney (10%)			
123	Olney-Vonid soils, 1 to 6 percent slopes, eroded	Not limited	Olney, eroded (50%)		1.2	1.8%
			Vonid, eroded (40%)			
			Olney (5%)			
			Vonid (5%)			
Totals for Area of Interest					**70.5**	**100.0%**

Septic Tank Absorption Fields— Summary by Rating Value		
Rating	**Acres in AOI**	**Percent of AOI**
Not limited	70.5	100.0%
Totals for Area of Interest	**70.5**	**100.0%**

Rating Options—Septic Tank Absorption Fields (Edison)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

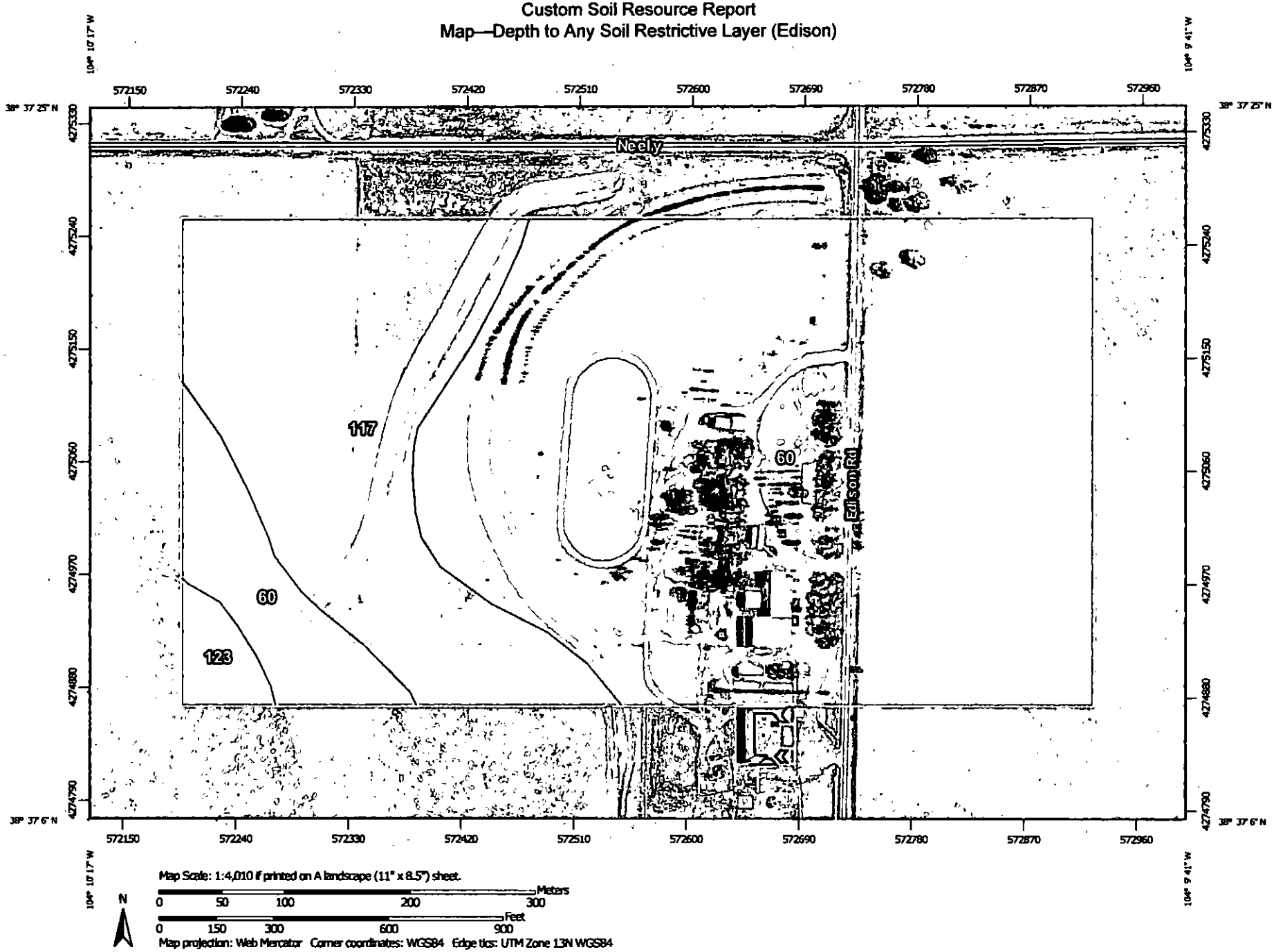
Depth to Any Soil Restrictive Layer (Edison)

A "restrictive layer" is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers.

This theme presents the depth to any type of restrictive layer that is described for each map unit. If more than one type of restrictive layer is described for an individual soil type, the depth to the shallowest one is presented. If no restrictive layer is described in a map unit, it is represented by the "> 200" depth class.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer (Edison)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Lines

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Points

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 13, Sep 22, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 15, 2011—Sep 22, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Depth to Any Soil Restrictive Layer (Edison)

Depth to Any Soil Restrictive Layer— Summary by Map Unit — El Paso County Area, Colorado (CO625)				
Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
60	Olney sandy loam, 0 to 3 percent slopes	>200	51.6	73.1%
117	Vonid sandy loam, 0 to 5 percent slopes	>200	17.7	25.1%
123	Olney-Vonid soils, 1 to 6 percent slopes, eroded	>200	1.2	1.8%
Totals for Area of Interest			**70.5**	**100.0%**

Rating Options—Depth to Any Soil Restrictive Layer (Edison)

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

Water Features

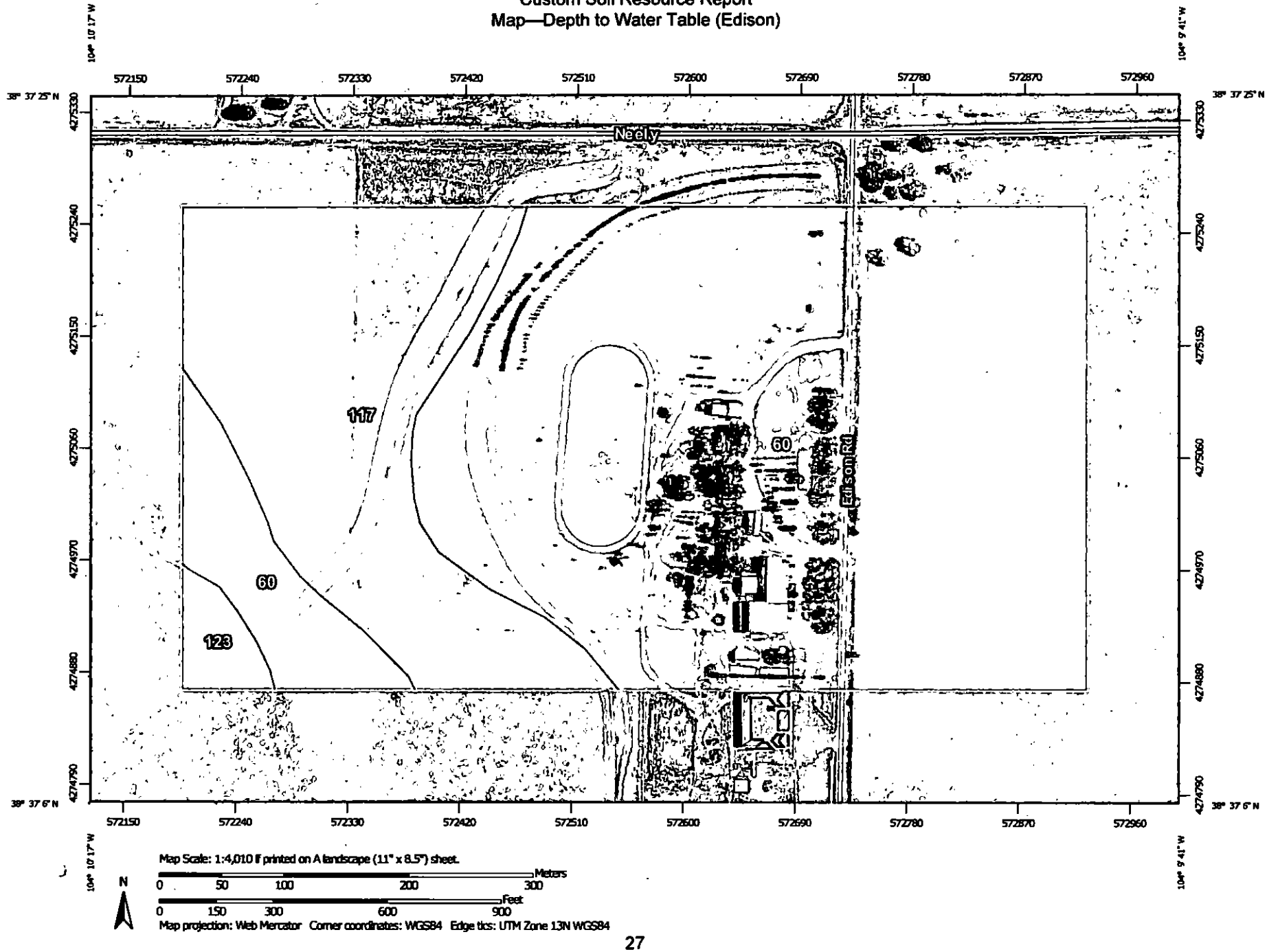
Water Features include ponding frequency, flooding frequency, and depth to water table.

Depth to Water Table (Edison)

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report
Map—Depth to Water Table (Edison)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Lines

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Soil Rating Points

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 150
- 150 - 200
- > 200
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 13, Sep 22, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 15, 2011—Sep 22, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Depth to Water Table (Edison)

Depth to Water Table— Summary by Map Unit — El Paso County Area, Colorado (CO625)				
Map unit symbol	**Map unit name**	**Rating (centimeters)**	**Acres in AOI**	**Percent of AOI**
60	Olney sandy loam, 0 to 3 percent slopes	>200	51.6	73.1%
117	Vonid sandy loam, 0 to 5 percent slopes	>200	17.7	25.1%
123	Olney-Vonid soils, 1 to 6 percent slopes, eroded	>200	1.2	1.8%
Totals for Area of Interest			**70.5**	**100.0%**

Rating Options—Depth to Water Table (Edison)

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: *None Specified*

Tie-break Rule: Lower

Interpret Nulls as Zero: No

Beginning Month: January

Ending Month: December

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

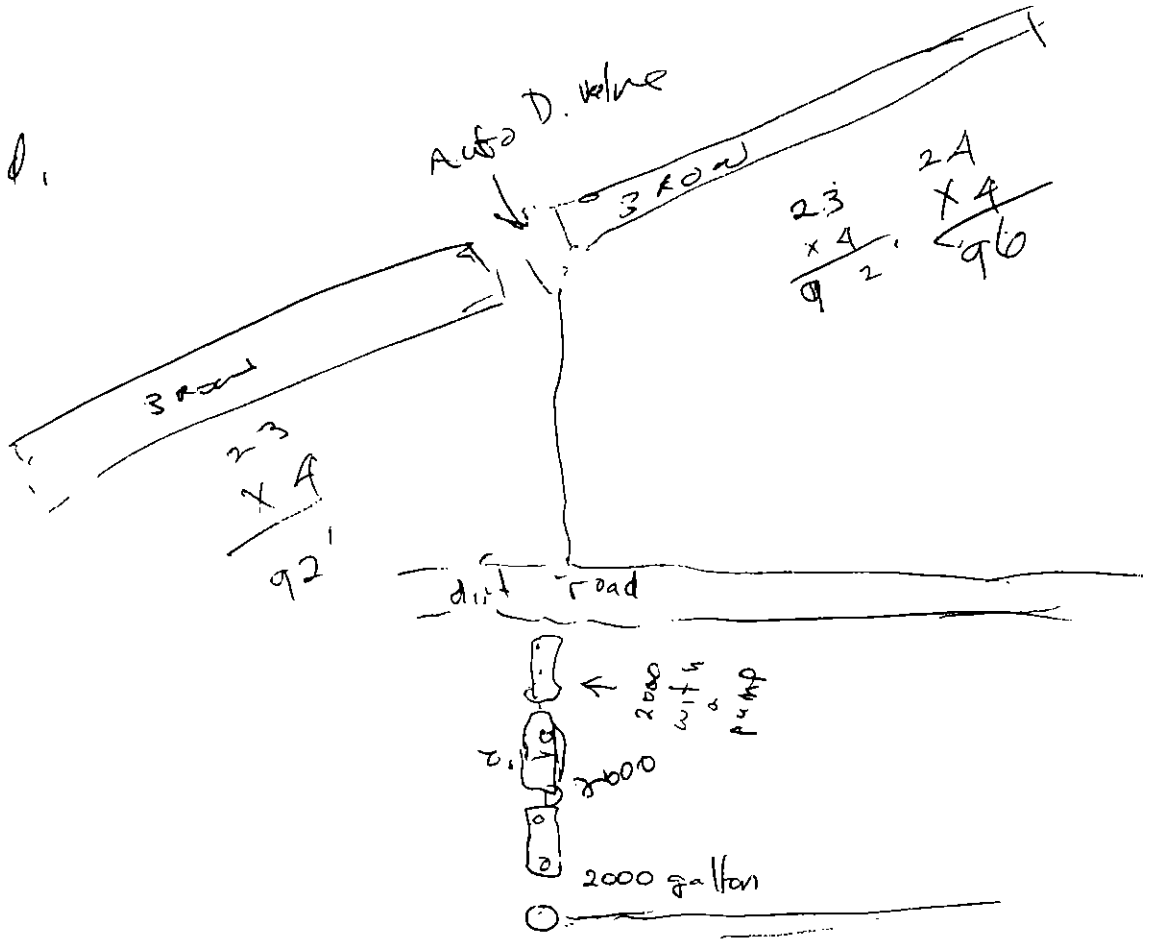
United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

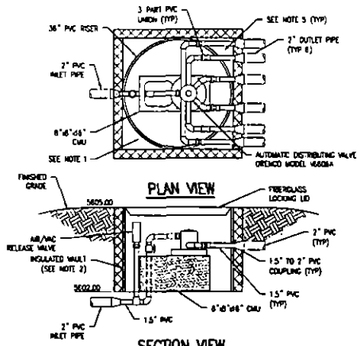
United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

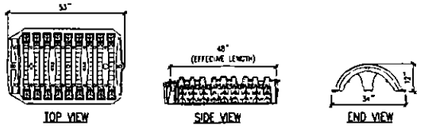
54 IT
Edison Rd.





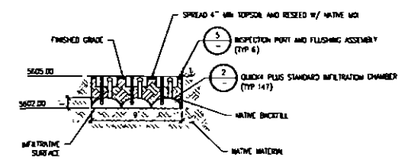
NOTES:
1. AUTOMATIC DISTRIBUTING VALVE TO BE INSTALLED AT HIGH POINT OF SYSTEM
2. BACKFILL & COMPACT SOIL BETWEEN RISER AND INSULATION (TYP).
3. VAULT SHALL BE SIZED TO ALLOW ACCESS TO ALL PIPE UNIONS TO FACILITATE REMOVAL OF ADV
4. SLOPE FINISHED GRADE AWAY FROM RISER AT 2% FOR 5'.
5. SEE PLAN VIEWS FOR OUTLET CONFIGURATION.
6. INSTALL 2" HIGH DENSITY FOAM INSULATION AT TOP OF FIBERGLASS LOCKING LID.
7. FURNISH & INSTALL MIN 2" THICK HIGH DENSITY FOAM INSULATION OVER ALL PIPING NOT BURIED TO MIN BURY DEPTH.
8. 3 PART UNIONS REQUIRED ON ALL ADV CONNECTIONS TO INLET AND OUTLET PIPES.
9. INSTALL CMU AS INDICATED TO SUPPORT ADV BODY & ALLOW REMOVAL OF UNIONS. FILL CMU W/SOIL
10. PROVIDE SPACE BELOW UNIONS FOR DISASSEMBLY, AND SOIL BENCH WITHIN 12" OF UNIONS FOR PIPE BEDDING

AUTOMATIC DISTRIBUTING VALVE DETAIL — NTS — 1/D3.1

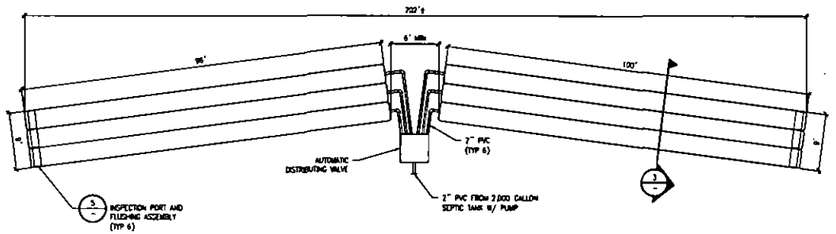


NOTES:
1. CHAMBER BASED ON QUICK4 PLUS STANDARD CHAMBER OFFERED BY INFILTRATOR
2. END CAP BASED ON QUICK4 PLUS ALL-IN-ONE 12 ENDCAP OFFERED BY INFILTRATOR

STANDARD INFILTRATION CHAMBER DETAIL — NTS — 2/-

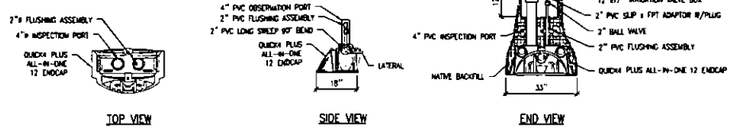


SOIL TREATMENT AREA CROSS SECTION — NTS — 1/-



NOTES:
1. ALL CHAMBERS FOR STA MUST BE SET AT SAME ELEVATION
2. 2.0 INCH PVC EFFLUENT PIPES FROM THE AUTOMATIC DISTRIBUTION VALVE TO THE INFILTRATORS CAN BE SOLVENT WELDED SCHEDULE 40 PVC. THESE PIPES MUST SLOPE AWAY FROM THE DISTRIBUTION BOX AT A MINIMUM OF 1 PERCENT. EFFLUENT MUST COMPLETELY DRAIN OUT OF THESE PIPES IN-BETWEEN DOSING EVENTS.
3. ALL CHAMBERS FOR EACH BED SHALL BE PLACED AT THE SAME ELEVATION TO PROMOTE EQUAL DISTRIBUTION OF EFFLUENT IN THE SOIL TREATMENT AREA.
4. A TOTAL OF 147 CHAMBERS SHALL BE USED FOR THE SOIL TREATMENT AREA.
5. THE 2.0 INCH LATERALS IN THE SOIL TREATMENT AREA SHALL BE PLACED WITH 1/8 INCH HOLES DRILLED EVERY TWO FEET ON CENTER EXCEPT FOR THE FIRST AND LAST HOLE IN EACH LATERAL. THE HOLES SHALL BE IN THE 12 O'CLOCK POSITION. THE FIRST AND LAST HOLE IN EACH LATERAL SHOULD BE at THE 6 O'CLOCK POSITION TO ENSURE PROPER DRAINAGE BETWEEN BOSES. ORIFICES LOCATED AT THE 6 O'CLOCK POSITION SHALL BE PROVIDED WITH AN ORENCO ORIFICE SHIELD.
6. THE EFFLUENT PIPE MUST BE SUSPENDED NEAR THE TOP OF THE INFILTRATOR. INSTALL ALL WEATHER PLASTIC PIPE STRAP WITH 120 POUNDS TENSILE STRENGTH AT EVERY CHAMBER CONNECTION

SOIL TREATMENT AREA PLAN — NTS — 4/D2.1



INSPECTION PORT AND FLUSHING ASSEMBLY DETAIL — NTS — 5/-

LKA PARTNERS INCORPORATED
A Professional Corporation for Architecture and Planning
430 North Tejon Street, Suite 200
Colorado Springs, Colorado 80903
tele: 719.473.6648 fax: 719.473.6649
www: www.thelkapartners.com

Edison Jr/Sr High School Addition / Renovations

Edison School District 54JT
11550 Edison Road
Yoder, CO 80864

Construction Documents
Permit Set

Drawn	JRC/JCD
Checked	KAT
Issued	08 June 2016
Revised	

Area Key Plan

True North / Plan North

OWTS DETAILS

CD2.1

Project No. 15.016
The LKA Partners Incorporated

ABBREVIATIONS:

AASHTO	AMERICAN ASSOC. OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ABAN	ABANDON
AC	ACRE, ASPHALTIC CONCRETE PAVING
ADDL	ADDITIONAL
ADDM	ADDENDUM
ADJ	ADJUST, ADJUSTABLE
AL	ALUMINUM
ALT	ALTERNATE
AMT	AMOUNT
APPROX	APPROXIMATE
ARCH	ARCHITECT(URAL)
ARV	AIR RELIEF VALVE
ASTM	AMER. SOCIETY FOR TESTING AND MATERIALS
ASPH	ASPHALT
ASSY	ASSEMBLY
ASYM	ASYMMETRICAL
AUTO	AUTOMATIC
AVG	AVERAGE
AWWA	AMER. WATER WORKS ASSOC.
BC	BACK OF CURB
BFV	BUTTERFLY VALVE
BLDG	BUILDING
BLK	BLOCK
BM	BENCHMARK
BMP	BEST MANAGEMENT PRACTICE
BS	BACKSIGHT
BOT	BOTTOM
BSMT	BASEMENT
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
BW	BOTTOM OF WALL
CB	CATCH BASIN
CCW	COUNTER CLOCKWISE
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION
CIP	CAST IRON PIPE
CJ	CONSTRUCTION JOINT
CL	CENTERLINE OR CHAIN LINK FENCE
CLR	CLEAR(ANCE)
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS, CONTINUATION
COR	CORNER
CR	CONCENTRIC REDUCER
CTR	CENTER
CY	CUBIC YARDS
DEMO	DEMOLISH, DEMOLITION
DIA	DIAMETER
DIAG	DIAGONAL
DIP	DUCTILE IRON PIPE
DOM	DOMESTIC
DN	DOWN
DR	DRAIN
DWG	DRAWING
DWL	DOWEL
E	EAST
EA	EACH
ECC	ECCENTRIC
EJ	EXPANSION JOINT
EL	ELEVATION
ELB	ELBOW
ELEC	ELECTRIC(AL)
ENGR	ENGINEER
EP	EDGE OF PAVEMENT
EQ	EQUAL
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
ESMT	EASEMENT
EST	ESTIMATE(D)
EVCE	END VERTICAL CURVE ELEVATION
EVCS	END VERTICAL CURVE STATION
EW	EACH WAY
EXIST	EXISTING
FND	FOUNDATION
FES	FLARED END SECTION
FF	FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
FN	FENCE
FOC	FACE OF CONCRETE
FPM	FEET PER MINUTE
FT	FEET
FTG	FOOTING OR FITTING
G	GAS
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GCO	GRADE CLEANOUT
GIP	GALVANIZED IRON PIPE
GND	GROUND
GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
GRTG	GRATING
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
H	HIGH
HB	HOSE BIB
HE	HORIZONTAL ELLIPTICAL
HDPE	HIGH DENSITY POLYETHYLENE
HDWL	HEADWALL
HNDRL	HANDRAIL
HP	HIGH POINT
HR	HOUR
HVAC	HEAT, VENT, AIR CONDITIONING
HWY	HIGHWAY
HWL	HIGH WATER LEVEL
HYD	HYDRANT
INC	INCLUDED
ID	INSIDE DIAMETER
INL	INLET
INSUL	INSULATE, INSULATION
INV	INVERT
IRR	IRRIGATION
JT	JOINT
JTS	JOINTS
KB	KICKBLOCK
KO	KNOCKOUT
KPL	KICK PLATE
KWY	KEYWAY
L	LEFT, LITER
LSCAPE	LANDSCAPE, LANDSCAPING
LF	LINEAR FOOT
LP	LOW POINT, LOW PRESSURE, LIGHT POLE
LT	LIGHT
LWL	LOW WATER LEVEL
MAINT	MAINTAIN, MAINTENANCE
MAN	MANUAL
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
N	NORTH
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPP	OPPOSITE
OPT	OPTION(AL)
PC	POINT OF CURVATURE
PCO	PRESSURE CLEANOUT
PCR	POINT OF CURVE RETURN
PI	POINT OF INTERSECTION
PVI	POINT OF VERTICAL INTERSECTION
PL	PROPERTY LINE
PE	POLYETHYLENE
PREFAB	PREFABRICATE(D)
PRELIM	PRELIMINARY
PREP	PREPARATION
PROP	PROPOSED
PRV	PRESSURE REDUCING VALVE OR PRESSURE RELIEF VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE OR POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
QTY	QUANTITY
R	RIGHT, RADIUS
RAD	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
RE	REFERENCE
RECT	RECTANGULAR
REINF	REINFORCE, REINFORCED, REINFORCEMENT, REINFORCING
REQD	REQUIRED
ROW	ROW OF WAY
SAN	SANITARY
SD	STORM DRAIN
SECT	SECTION
SPD	STANDARD PROCTOR DENSITY
SPEC	SPECIFICATION
SQ	SQUARE
SQ IN	SQUARE INCH
SQ FT	SQUARE FOOT
SQ YD	SQUARE YARD
SS	SANITARY SEWER
SST	STAINLESS STEEL
STA	STATION
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURE, STRUCTURAL
SWMP	STORMWATER MANAGEMENT PLAN
SYM	SYMMETRICAL
TB	THRUST BLOCK
TBC	TOP BACK OF CURB
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TEMP	TEMPORARY
THK	THICK
TOB	TOP OF BANK
TOC	TOP OF CONCRETE
TOT	TOTAL
TW	TOP OF WALL
TYP	TYPICAL
UE	UNDERGROUND ELECTRIC
UTIL	UTILITY
VERT	VERTICAL
VCP	VITRIFIED CLAY PIPE
W	WIDE, WIDTH
W/	WITH
W/O	WITHOUT
WQSE	WATER QUALITY SURFACE ELEVATION
WSE	WATER SURFACE ELEVATION
WW	WASTEWATER
YD	YARD
YH	YARD HYDRANT

LEGEND

- SURVEY CONTROL POINT
- BENCHMARK
- PROPOSED MANHOLE
- EXISTING MANHOLE
- 18" AREA DRAIN
- 12" AREA DRAIN
- COMBINATION INLET
- TYPE R INLET
- TYPE 13 FIELD INLET
- FLARED END SECTION
- RIPRAP
- THRUST BLOCK
- TEE W/ THRUST BLOCK
- BEND W/ THRUST BLOCK
- END CAP W/ THRUST BLOCK
- GATE VALVE
- REDUCER/INCREASER
- WATER METER
- FIRE HYDRANT
- LIGHT POLE
- SIGN
- STRUCTURE IDENTIFICATION (1)
- SIGN IDENTIFICATION (M-1)
- STORM DRAIN (SD)
- ROOF DRAIN (RD)
- SANITARY SEWER (SS)
- WATER (W)
- IRRIGATION (IRR)
- UNDERDRAIN (UD)
- TRENCH DRAIN (TD)
- FRENCH DRAIN (FD)
- PERFORATED DRAIN (PD)
- TELEPHONE (T)
- ELECTRIC (E)
- OVERHEAD ELECTRIC (OE)
- UNDERGROUND ELECTRIC (UE)
- GAS (G)
- CABLE TV (CATV)
- FIBER OPTIC (FO)
- FLOW LINE
- FENCE
- ABANDON UTILITY
- DEMO SURFACE FEATURE
- DEMO SUBSURFACE FEATURE
- DEMO TREE
- LIMITS OF SAWCUT
- PROPERTY LINE / ROW
- EASEMENT LINE
- LIMITS OF WORK
- LIMITS OF OVEREXCAVATION
- MATCHLINE
- PROPOSED BUILDING
- EXIST BUILDING
- BLDG ACCESS
- CONCRETE PAVING
- HEAVY DUTY ASPHALT PAVING
- EARTH
- GRASS PAVERS
- CONCRETE SCORING
- CURB & GUTTER
- GUTTER PAN
- SPILL/CATCH CURB TRANSITION
- PROPOSED INDEX CONTOUR (70)
- PROPOSED INTERMEDIATE CONTOUR (71)
- EXIST INDEX CONTOUR
- EXIST INTERMEDIATE CONTOUR
- PROPOSED SPOT ELEVATION (20.50)
- EXIST SPOT ELEVATION

SYMBOLS

DETAIL TITLE
SCALE

- 1 — DETAIL NUMBER IDENTIFICATION
- – — SHEETS WHERE THE SECTION OR ELEVATION IS CUT OR CALLED OUT - INDICATES SAME DRAWING

DETAIL TITLE

- 1 — DETAIL NUMBER IDENTIFICATION
- C0.0 — SHEET WHERE THE DETAIL IS DRAWN - INDICATES SAME DRAWING

DETAIL MARKER

- REVISION CLOUD
- REVISION NUMBER

GENERAL NOTES:

1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF THE EL PASO COUNTY, COLORADO DEPARTMENT OF TRANSPORTATION, EDISON & COLORADO SPRINGS FIRE PROTECTION REQUIREMENTS, AND APPLICABLE STATE AND LOCAL STANDARDS AND SPECIFICATIONS. THE CONTRACTOR SHALL HAVE IN POSSESSION AT THE JOB SITE AT ALL TIMES ONE (1) SIGNED COPY OF APPROVED PLANS, STANDARDS AND SPECIFICATIONS. CONTRACTOR SHALL CONSTRUCT AND MAINTAIN EMERGENCY ACCESS ROUTES TO THE SITE AND STRUCTURE AT ALL TIMES PER THE APPLICABLE JURISDICTIONAL FIRE PROTECTION DISTRICT REQUIREMENTS. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR ANY VARIANCE TO THE ABOVE DOCUMENTS. NOTIFY ENGINEER OF ANY CONFLICTING STANDARDS OR SPECIFICATIONS. IN THE EVENT OF ANY CONFLICTING STANDARD OR SPECIFICATION, THE MORE STRINGENT OR HIGHER QUALITY STANDARD, DETAIL OR SPECIFICATION SHALL APPLY.

2. THE CONTRACTOR SHALL OBTAIN, AT HIS OWN EXPENSE, ALL APPLICABLE CODES, LICENSES, STANDARD SPECIFICATIONS, PERMITS, BONDS, ETC., WHICH ARE NECESSARY TO PERFORM THE PROPOSED WORK, INCLUDING, BUT NOT LIMITED TO A LOCAL AND STATE GROUNDWATER DISCHARGE AND COLORADO DEPARTMENT OF HEALTH AND ENVIRONMENT (CDPHE) STORMWATER DISCHARGE PERMIT ASSOCIATED WITH CONSTRUCTION ACTIVITY.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE REQUIRED PARTY (OWNER, OWNER'S REPRESENTATIVE, MUNICIPAL/DISTRICT INSPECTOR, GEOTECHNICAL ENGINEER, ENGINEER AND/OR UTILITY OWNER) AT LEAST 48 HOURS PRIOR TO START OF ANY CONSTRUCTION. PRIOR TO BACKFILLING, AND AS REQUIRED BY JURISDICTIONAL AUTHORITY AND/OR PROJECT SPECIFICATIONS. THE CONTRACTOR SHALL CONTINUE WITH NOTIFICATIONS THROUGHOUT THE PROJECT AS REQUIRED BY THE STANDARDS AND SPECIFICATIONS.

4. THE LOCATIONS OF EXISTING UTILITIES ARE SHOWN IN THE APPROXIMATE LOCATION BASED ON INFORMATION BY OTHERS. NOT ALL UTILITIES MAY BE SHOWN. THE CONTRACTOR SHALL DETERMINE THE EXACT SIZE, LOCATION AND TYPE OF ALL EXISTING UTILITIES WHETHER SHOWN OR NOT BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR ANY AND ALL DAMAGES AND COSTS WHICH MIGHT OCCUR BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES. THE CONTRACTOR SHALL NOTIFY ALL PUBLIC AND PRIVATE UTILITY COMPANIES AND DETERMINE THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO PROCEEDING WITH GRADING AND CONSTRUCTION. ALL WORK PERFORMED IN THE AREA OF UTILITIES SHALL BE PERFORMED AND INSPECTED ACCORDING TO THE REQUIREMENTS OF THE UTILITY OWNER. LIKEWISE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MAPPING ANY EXISTING UTILITY (INCLUDING DEPTH) WHICH MAY CONFLICT WITH THE PROPOSED CONSTRUCTION, AND FOR RELOCATING ENCOUNTERED UTILITIES AS DIRECTED BY THE ENGINEER. CONTRACTOR SHALL CONTACT AND RECEIVE APPROVAL FROM MUNICIPALITY/UTILITY OWNER AND ENGINEER BEFORE RELOCATING ANY ENCOUNTERED UTILITIES. CONTRACTOR RESPONSIBLE FOR SERVICE CONNECTIONS, AND RELOCATING AND RECONNECTING AFFECTED UTILITIES AS COORDINATED WITH UTILITY OWNER AND/OR ENGINEER, INCLUDING NON-MUNICIPAL UTILITIES (TELEPHONE, GAS, CABLE, ETC., WHICH SHALL BE COORDINATED WITH THE UTILITY OWNER). THE CONTRACTOR SHALL IMMEDIATELY CONTACT ENGINEER UPON DISCOVERY OF A UTILITY DISCREPANCY OR CONFLICT. AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO (1-800-922-1987, WWW.UNCC.ORG).

5. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS AT AND ADJACENT TO THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING THE PERFORMANCE OF THE WORK. THE CONTRACTOR SHALL PREPARE A TRAFFIC CONTROL PLAN FOR OWNER AND/OR CITY APPROVAL AND PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FENCING, FLAGMEN OR OTHER DEVICES NECESSARY TO PROVIDE FOR PUBLIC SAFETY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR AGREES TO COMPLY WITH THE PROVISIONS OF THE TRAFFIC CONTROL PLAN AND THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," PART VI, FOR CONSTRUCTION SIGNAGE AND TRAFFIC CONTROL. ALL TEMPORARY AND PERMANENT TRAFFIC SIGNS SHALL COMPLY TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) WITH REGARD TO SIGN SHAPE, COLOR, SIZE, LETTERING, ETC. UNLESS OTHERWISE SPECIFIED. IF APPLICABLE, PART NUMBERS ON SIGNAGE DETAILS REFER TO MUTCD SIGN NUMBERS.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY GROUNDWATER ENCOUNTERED DURING THE CONSTRUCTION OF ANY PORTION OF THIS PROJECT. GROUNDWATER SHALL BE PUMPED, PIPED, REMOVED AND DISPOSED OF IN A MANNER WHICH DOES NOT CAUSE FLOODING OF EXISTING STREETS NOR EROSION ON ABUTTING PROPERTIES IN ORDER TO CONSTRUCT THE IMPROVEMENTS SHOWN ON THESE PLANS.

7. RIM AND GRATE ELEVATIONS SHOWN ON PLANS ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATIONS. THE CONTRACTOR SHALL ADJUST RIMS AND OTHER IMPROVEMENTS TO MATCH FINAL PAVEMENT AND FINISHED GRADE ELEVATIONS.

8. FINAL LIMITS OF REQUIRED ASPHALT SAWCUTTING AND PATCHING MAY VARY FROM LIMITS SHOWN ON PLANS. CONTRACTOR TO PROVIDE SAWCUT AND PATCH WORK TO ACHIEVE POSITIVE DRAINAGE AND A SMOOTH TRANSITION TO EXISTING ASPHALT WITHIN SLOPES ACCEPTABLE TO THE ENGINEER AND WITHIN MUNICIPAL STANDARDS. CONTRACTOR SHALL PROVIDE ADDITIONAL SAWCUTTING AND PATCHING AT UTILITY WORK, CONNECTION POINTS TO EXISTING PAVEMENT AND FEATURES, ETC. THAT MAY NOT BE DELINEATED ON PLANS.

10. ANY EXISTING MONITORING WELLS, CLEANOUTS, VALVE BOXES, ETC. TO BE PROTECTED AND TO REMAIN IN SERVICE. IF FEATURES EXIST, EXTEND OR LOWER TO FINAL SURFACE WITH LIKE KIND CAP WITH STANDARD CAST ACCESS LID WITH SAME MARKINGS. IN LANDSCAPED AREAS PROVIDE A CONCRETE COLLAR (18"x18"x6" THICK) AT ALL EXISTING AND PROPOSED MONITORING WELLS, CLEANOUTS, VALVE BOXES, ETC.

12. PIPE LENGTHS AND HORIZONTAL CONTROL POINTS SHOWN ARE FROM CENTER OF STRUCTURES, END OF FLARED END SECTIONS, ETC. SEE STRUCTURE DETAILS FOR EXACT HORIZONTAL CONTROL LOCATION. CONTRACTOR IS RESPONSIBLE FOR ADJUSTING ACTUAL PIPE LENGTHS TO ACCOUNT FOR STRUCTURES AND LENGTH OF FLARED END SECTIONS.

13. ALL SURPLUS MATERIALS, TOOLS, AND TEMPORARY STRUCTURES, FURNISHED BY THE CONTRACTOR, SHALL BE REMOVED FROM THE PROJECT SITE BY THE CONTRACTOR. ALL DEBRIS AND RUBBISH CAUSED BY THE OPERATIONS OF THE CONTRACTOR SHALL BE REMOVED, AND THE AREA OCCUPIED DURING CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO ITS ORIGINAL CONDITION, WITHIN 48 HOURS OF PROJECT COMPLETION, UNLESS OTHERWISE DIRECTED BY THE MUNICIPALITY OR OWNER'S REPRESENTATIVE.

14. THE CONTRACTOR IS REQUIRED TO PROVIDE AND MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE LOCAL JURISDICTION, THE STATE OF COLORADO, URBAN DRAINAGE AND FLOOD CONTROL DISTRICT "URBAN STORM DRAINAGE CRITERIA MANUAL VOLUME 3", THE M-STANDARD PLANS OF THE COLORADO DEPARTMENT OF TRANSPORTATION, AND THE APPROVED EROSION CONTROL PLAN. JURISDICTIONAL AUTHORITY MAY REQUIRE THE CONTRACTOR TO PROVIDE ADDITIONAL EROSION CONTROL MEASURES AT THE CONTRACTOR'S EXPENSE DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE PLANS DO NOT FUNCTION AS INTENDED. THE CONTRACTOR IS RESPONSIBLE FOR PROHIBITING SILT AND DEBRIS LADEN RUNOFF FROM LEAVING THE SITE, AND FOR KEEPING ALL PUBLIC AREAS FREE OF MUD AND DEBRIS. THE CONTRACTOR IS RESPONSIBLE FOR RE-ESTABLISHING FINAL GRADES AND FOR REMOVING ACCUMULATED SEDIMENTATION FROM ALL AREAS INCLUDING SWALES AND DETENTION/WATER QUALITY AREAS. CONTRACTOR SHALL REMOVE TEMPORARY EROSION CONTROL MEASURES AND REPAIR AREAS AS REQUIRED AFTER VEGETATION IS ESTABLISHED AND ACCEPTED BY OWNER AND MUNICIPALITY.

16. BENCHMARK INFORMATION: TOPOGRAPHIC INFORMATION WAS PROVIDED BY ARROW POINT SURVEYING, LTD. SEE TOPOGRAPHIC SURVEY FOR EDISON SCHOOL DISTRICT 54JT DATED JUNE 2015. PROJECT BENCHMARK: ELEVATIONS ARE BASED ON CONTROL POINT NUMBER 1, BEING A SET NUMBER 5 REBAR, AS SHOWN ON SHEET 2 OF 2 OF THIS TOPOGRAPHIC SURVEY, HAVING AN ELEVATION OF 5,802.54' (NAVD 88 DATUM).

THE ELEVATION FOR CONTROL POINT NUMBER 1 WAS DETERMINED BY THE AVERAGE COMPUTED ORTHOMETRIC HEIGHT OBTAINED BY SEVERAL INDEPENDENT GPS STATIC OCCUPATIONS SUBMITTED TO AND PROCESSED BY THE NATIONAL GEODETIC SURVEY ON-LINE POSITIONING USER SERVICE (OPUS).

ADDITIONAL TEMPORARY SITE BENCHMARK (TBM): CONTROL POINT NUMBER 2, BEING A SET NUMBER 5 REBAR, AS SHOWN ON SHEET 2 OF 2 OF THIS TOPOGRAPHIC SURVEY, HAVING AN ELEVATION OF 5,802.26' DATUM PER SURVEY. COORDINATE AND VERIFY ALL VERTICAL AND HORIZONTAL DATA SHOWN IN SURVEY AND REPORT ANY IRREGULARITIES OR DISCREPANCIES TO ENGINEER PRIOR TO CONSTRUCTION.

17. HORIZONTAL CONTROL INFORMATION: HORIZONTAL CONTROL COORDINATES ARE BASED ON THE REFERENCED SURVEY.

BASIS OF BEARINGS: BEARINGS ARE BASED ON A LINE BETWEEN THE SOUTHEAST CORNER OF SECTION 36 AND THE NORTHEAST CORNER OF SECTION 36, MONUMENTED AS SHOWN ON SHEETS 1 AND 2 OF THIS TOPOGRAPHIC SURVEY. SAID LINE BEARS N 00° 09' 18" E, PER A GRID BEARING, COLORADO STATE PLANE COORDINATES, CENTRAL ZONE 0502, NAD 83 (2011).

18. PROTECT ALL TREES AND VEGETATION. PLACE CONSTRUCTION FENCING AT DRIP LINE OF TREES AND PLANTS NEAR THE WORK ZONE. DEEP WATER TREES WEEKLY. HAND EXCAVATION REQUIRED AT ROOT ZONES WHERE PROPOSED PAVING OR UTILITY WORK IS WITHIN DRIPLINE OF TREES.

19. THE CONTRACTOR SHALL FURNISH THE ENGINEER OF RECORD A COMPLETE SET OF CONSTRUCTION RECORD DRAWINGS ("AS-BUILTS"), FOR THE CONSTRUCTED IMPROVEMENTS. THE PLANS SHALL SHOW SUFFICIENT DIMENSION TIES TO PERMANENT SURFACE FEATURES FOR ALL BURIED FACILITIES TO ALLOW FOR FUTURE LOCATING. THE PLANS SHALL SHOW FINAL PAVEMENT, FLOW LINE ELEVATIONS, CONTOURS AT POND/DRAINAGE FEATURES (AS SURVEYED AND CERTIFIED BY A COLORADO P.L.S.), MANHOLE, PIPE, AND INLET LOCATIONS, INVERTS, GRATE ELEVATIONS, SIZES OF ALL UTILITIES, AND ANY VARIATIONS FROM THE APPROVED PLAN. ENGINEER WILL PRODUCE FINAL RECORD DRAWINGS.

LKA PARTNERS INCORPORATED
A Professional Corporation for Architecture and Planning
430 North Tejon Street Suite 200
Colorado Springs Colorado 80903

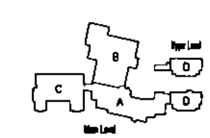
Edison Jr/Sr High School
Addition / Renovations

Edison School District 54JT
14550 Edison Road
Yoder, CO 80864

Construction Documents
Permit Set

Drawn	JPC
Checked	DNS
Issued	03 June 2016
Revised	

Area Key Plan



True North
Plan North

NOTES, LEGEND, AND ABBREVIATIONS

C0.1

Project No. 15.018
The LKA Partners Incorporated

OWTS DESIGN CRITERIA:

1. FLOW RATE

DESIGN FLOW RATE:	1,990 GPD

2. GREASE INTERCEPTOR

QUANTITY	1
MANUFACTURER	FRONT RANGE PRECAST
NOTE	TO BE SIZED BY PLUMBING ENGINEER

3. SEPTIC TANK

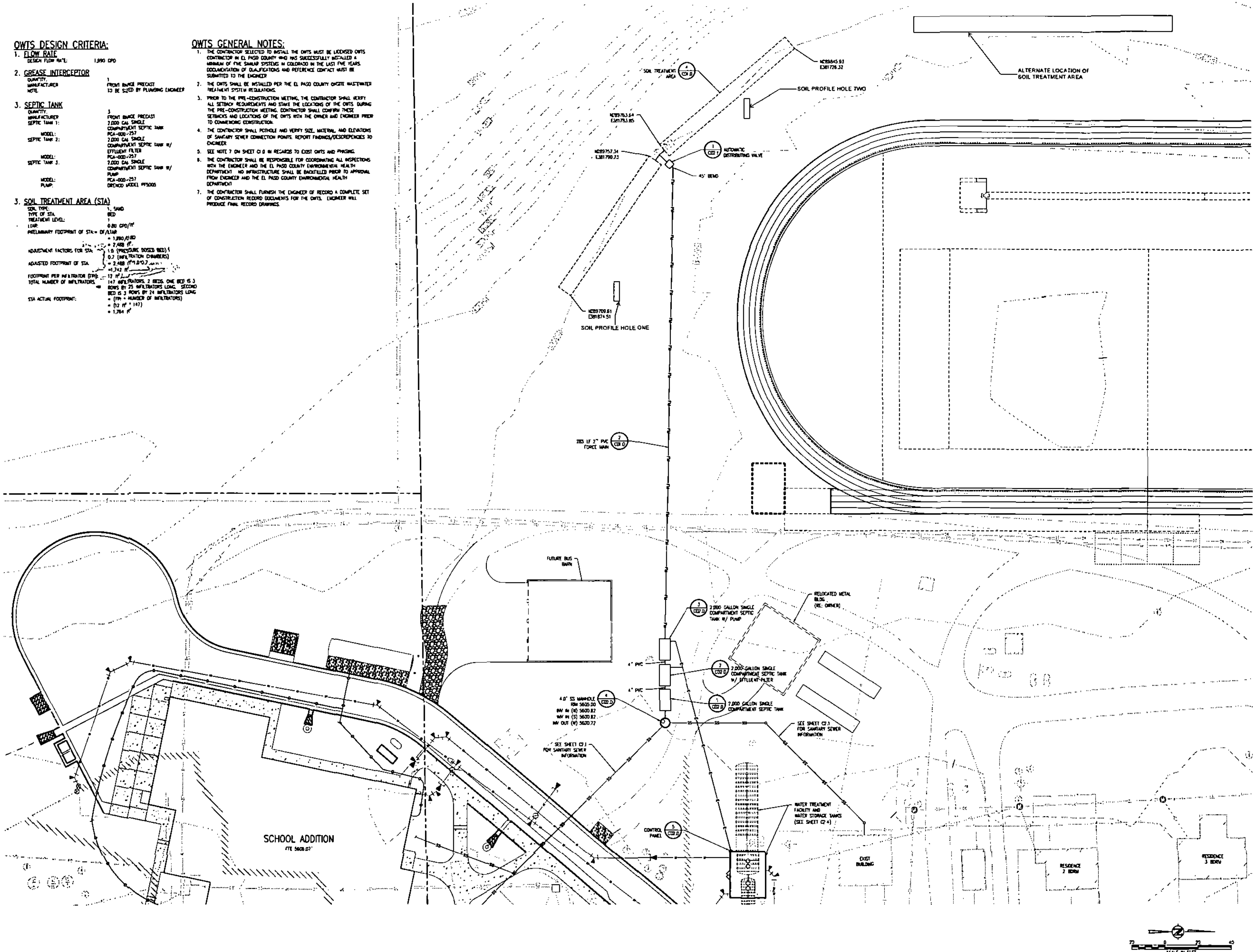
QUANTITY	3
MANUFACTURER	FRONT RANGE PRECAST
SEPTIC TANK 1:	2,000 GAL SINGLE COMPARTMENT SEPTIC TANK
MODEL:	PCA-000-257
SEPTIC TANK 2:	2,000 GAL SINGLE COMPARTMENT SEPTIC TANK W/ EFFLUENT FILTER
MODEL:	PCA-000-257
SEPTIC TANK 3:	2,000 GAL SINGLE COMPARTMENT SEPTIC TANK W/ PUMP
MODEL:	PCA-000-257
PUMP:	ORENCO MODEL PF5005

3. SOIL TREATMENT AREA (STA)

SOIL TYPE:	1, SAND
TYPE OF STA	BED
TREATMENT LEVEL:	1
LTAR:	0.80 GPD/ft²
PRELIMINARY FOOTPRINT OF STA = DF/LTAR	= 1,990/0.80
	= 2,488 ft²
ADJUSTMENT FACTORS FOR STA	1.0 (PRESSURE DOSED BED) 0.7 (INFILTRATION CHAMBERS)
ADJUSTED FOOTPRINT OF STA	= 2,488 ft²*1.0*0.7
	=1,742 ft²
FOOTPRINT PER INFILTRATOR (FPI):	12 ft²
TOTAL NUMBER OF INFILTRATORS	147 INFILTRATORS. 2 BEDS. ONE BED IS 3 ROWS BY 25 INFILTRATORS LONG. SECOND BED IS 3 ROWS BY 24 INFILTRATORS LONG
STA ACTUAL FOOTPRINT:	= (FPI * NUMBER OF INFILTRATORS)
	= (12 ft² * 147)
	= 1,764 ft²

OWTS GENERAL NOTES:

1. THE CONTRACTOR SELECTED TO INSTALL THE OWTS MUST BE LICENSED OWTS CONTRACTOR IN EL PASO COUNTY WHO HAS SUCCESSFULLY INSTALLED A MINIMUM OF FIVE SIMILAR SYSTEMS IN COLORADO IN THE LAST FIVE YEARS. DOCUMENTATION OF QUALIFICATIONS AND REFERENCE CONTACT MUST BE SUBMITTED TO THE ENGINEER
2. THE OWTS SHALL BE INSTALLED PER THE EL PASO COUNTY ONSITE WASTEWATER TREATMENT SYSTEM REGULATIONS.
3. PRIOR TO THE PRE-CONSTRUCTION MEETING, THE CONTRACTOR SHALL VERIFY ALL SETBACK REQUIREMENTS AND STAKE THE LOCATIONS OF THE OWTS. DURING THE PRE-CONSTRUCTION MEETING, CONTRACTOR SHALL CONFIRM THESE SETBACKS AND LOCATIONS OF THE OWTS WITH THE OWNER AND ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
4. THE CONTRACTOR SHALL POTHOLE AND VERIFY SIZE, MATERIAL, AND ELEVATIONS OF SANITARY SEWER CONNECTION POINTS. REPORT FINDINGS/DESCREPENCIES TO ENGINEER
5. SEE NOTE 7 ON SHEET C1.0 IN REGARDS TO EXIST OWTS AND PHASING.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL INSPECTIONS WITH THE ENGINEER AND THE EL PASO COUNTY ENVIRONMENTAL HEALTH DEPARTMENT. NO INFRASTRUCTURE SHALL BE BACKFILLED PRIOR TO APPROVAL FROM ENGINEER AND THE EL PASO COUNTY ENVIRONMENTAL HEALTH DEPARTMENT
7. THE CONTRACTOR SHALL FURNISH THE ENGINEER OF RECORD A COMPLETE SET OF CONSTRUCTION RECORD DOCUMENTS FOR THE OWTS. ENGINEER WILL PRODUCE FINAL RECORD DRAWINGS.



LKA PARTNERS INCORPORATED

Edison Jr/Sr High School Addition / Renovations

Edison School District 54JT
14550 Edison Road
Yoder, CO 80864

Construction Documents
Permit Set

Drawn	JRC/JCD
Checked	KAT
Issued	03 June 2016
Revised	

Area Key Plan

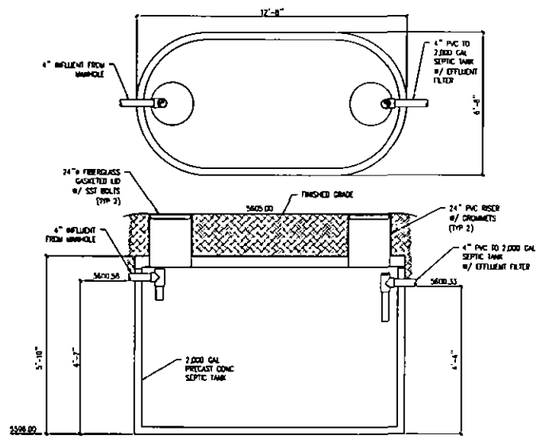
True North / Plan North

OWTS SITE PLAN

C2.3

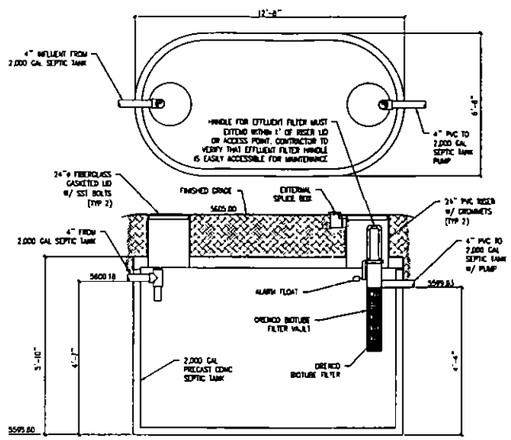
Project No 15.016

The LKA Partners Incorporated



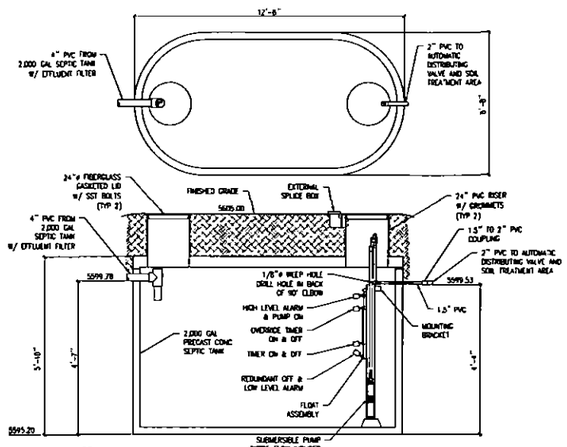
NOTES:
1. COMPACT SUBGRADE PRIOR TO PLACING TANK BEDDING MATERIAL. A 3 INCH LAYER OF CDOT CLASS 7 (3/4 INCH MINUS) MATERIAL SHALL BE PLACED AND COMPACTED TO 95% STANDARD DENSITY PRIOR TO PLACING TANK.
2. TANK SHALL BE BACKFILLED USING ONE FOOT LIFTS. COMPACTION OF NATIVE MATERIAL TO 95% STANDARD PROCTOR DENSITY IS REQUIRED OR TANK MAY BE BACKFILLED WITH 3/8" MINUS GRANULAR BEDDING OR SQUEEGEE

2,000 GALLON SINGLE COMPARTMENT SEPTIC TANK DETAIL — NTS — 1 / CD 2.1



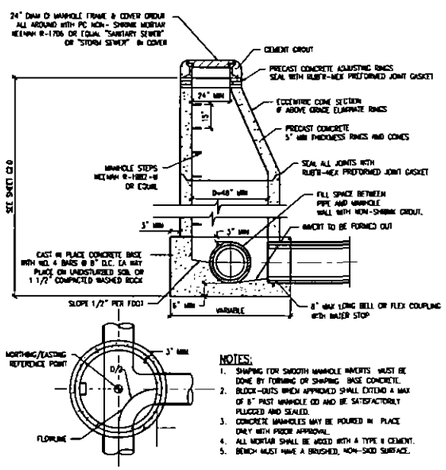
NOTES:
1. COMPACT SUBGRADE PRIOR TO PLACING TANK BEDDING MATERIAL. A 3 INCH LAYER OF CDOT CLASS 7 (3/4 INCH MINUS) MATERIAL SHALL BE PLACED AND COMPACTED TO 95% STANDARD DENSITY PRIOR TO PLACING TANK.
2. TANK SHALL BE BACKFILLED USING ONE FOOT LIFTS. COMPACTION OF NATIVE MATERIAL TO 95% STANDARD PROCTOR DENSITY IS REQUIRED OR TANK MAY BE BACKFILLED WITH 3/8" MINUS GRANULAR BEDDING OR SQUEEGEE
3. AN EXTERNAL SPLICE BOX MUST BE PROVIDED ON THE OUTSIDE OF THE RISER. ELECTRICAL CONNECTIONS OUTSIDE OF THE SPLICE BOX (IN THE RISER OR TANK) ARE NOT PERMITTED.
4. ALARM REQUIRES ONE 230V, 10 AMP CIRCUIT.

2,000 GALLON SINGLE COMPARTMENT SEPTIC TANK W/ EFFLUENT FILTER DETAIL — NTS — 2 / CD 2.1



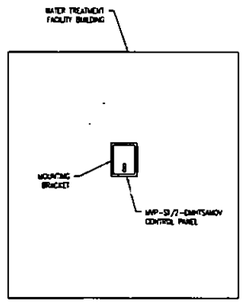
NOTES:
1. COMPACT SUBGRADE PRIOR TO PLACING TANK BEDDING MATERIAL. A 3 INCH LAYER OF CDOT CLASS 7 (3/4 INCH MINUS) MATERIAL SHALL BE PLACED AND COMPACTED TO 95% STANDARD DENSITY PRIOR TO PLACING TANK.
2. TANK SHALL BE BACKFILLED USING ONE FOOT LIFTS. COMPACTION OF NATIVE MATERIAL TO 95% STANDARD PROCTOR DENSITY IS REQUIRED OR TANK MAY BE BACKFILLED WITH 3/8" MINUS GRANULAR BEDDING OR SQUEEGEE
3. AN EXTERNAL SPLICE BOX MUST BE PROVIDED ON THE OUTSIDE OF THE RISER. ELECTRICAL CONNECTIONS OUTSIDE OF THE SPLICE BOX (IN THE RISER OR TANK) ARE NOT PERMITTED
4. AN ORENCO PF500S HIGH HEAD EFFLUENT PUMP SHALL BE USED. CONTRACTOR TO PROVIDE ONE SHELF SPARE
5. THE PUMP AND ALARM MUST BE WIRED ON SEPARATE CIRCUITS WITHIN THE SAME CONTROL PANEL.
6. EFFLUENT PUMP REQUIRES ONE 230V, 20 AMP CIRCUIT, ALARM REQUIRES ONE 230V CIRCUIT 10 AMP CIRCUIT.
7. INSTALL HIGH WATER ALARM FLOAT 4 INCHES ABOVE OVERRIDE TIMER FLOAT

2,000 GALLON SINGLE COMPARTMENT SEPTIC TANK W/ PUMP DETAIL — NTS — 3 / CD 2.1



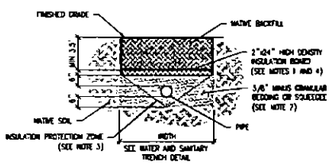
NOTES:
1. SHAPING FOR SMOOTH MANHOLE INVERTS MUST BE DONE BY FORMING OR SHAPING BASE CONCRETE.
2. BLOCK-OUTS WHEN APPROVED SHALL EXTEND A MAX OF 8" PAST MANHOLE OD AND BE SATISFACTORILY PLUGGED AND SEALED.
3. CONCRETE MANHOLES MAY BE POURED IN PLACE ONLY WITH PRIOR APPROVAL.
4. ALL MORTAR SHALL BE MIXED WITH 4 TYPE II CEMENT.
5. BENCH MUST HAVE A BRUSHED, NON-SKID SURFACE.

TYPICAL PRECAST MANHOLE DETAIL — NTS — 4 / CD 2.1



NOTES:
1. PUMP REQUIRES ONE 20 AMP CIRCUIT
2. ALARM REQUIRES ONE 10 AMP CIRCUIT
3. CONTROL PANEL REQUIRES ONE 10 AMP CIRCUIT
4. CONTRACTOR TO PROVIDE ISOLATION RELAYS FOR MVP CONTROL PANEL
5. CONTRACTOR RESPONSIBLE FOR ROUTING POWER TO PANEL
6. CONTRACTOR TO PROGRAM TIMER ON FOR 7 MINUTES AND OFF FOR 4.5 HOURS.
7. CONTRACTOR TO PROGRAM OVERRIDE TIMER ON FOR 7 MINUTES AND OFF FOR 2 HOURS

CONTROL PANEL DETAIL — NTS — 5 / CD 2.1



NOTES:
1. CENTER WIDTH OF HIGH DENSITY INSULATION BOARD OVER CROWN OF PIPE.
2. INSTALL BEDDING ABOVE AND BELOW PIPE AS NOTED IN WATER AND SANITARY TRENCH DETAIL.
3. INSULATION PROTECTION ZONE IS APPROXIMATE FOR AVERAGE WINTER FROST SOIL PENETRATION.
4. IN GENERAL, TWO INCHES OF HIGH DENSITY INSULATION BOARD IS EQUIVALENT TO ONE FOOT OF NATIVE SOIL COVER. ONLY TWO INCHES OF HIGH DENSITY INSULATION BOARD CAN BE USED TO ACHIEVE MINIMUM REQUIRED BURY DEPTH.

TYPICAL HIGH DENSITY INSULATION BOARD DETAIL — NTS — 6 / -

LKA PARTNERS INCORPORATED
A Professional Corporation for Architecture and Planning
430 North Tejon Street, Suite 200
Colorado Springs, Colorado 80903
tele: 719.473.8446 fax: 719.473.8448
website: www.lkapartners.com

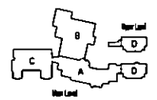
Edison Jr/Sr High School Addition / Renovations

Edison School District 54JT
14550 Edison Road
Yoder, CO 80864

Construction Documents
Permit Set

Drawn	JRC/JCD
Checked	KAT
Issued	03 June 2016
Revised	

Area Key Plan



True North — Plan North

OWTS DETAILS

CD2.0

Project No. 15.014