DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT
1010 10TH Street, Suite 3400, Modesto, CA 95354
Planning Phone: (209) 525-6330 Fax: (209) 525-5911
Building Phone: (209) 525-6557 Fax: (209) 525-7759

Referral
Early Consultation

Date: **March 2, 2018**

To: **Distribution List (See Attachment A)**

From: **Kristin Doud, Senior Planner, Planning and Community Development**

Subject: **REZONE AND PARCEL MAP APPLICATION NO. PLN2018-0017 – LINDE GROUP, LLC**

Respond By: **March 20, 2018**

****PLEASE REVIEW REFERRAL PROCESS POLICY****

The Stanislaus County Department of Planning and Community Development is soliciting comments from responsible agencies under the Early Consultation process to determine: a) whether or not the project is subject to CEQA and b) if specific conditions should be placed upon project approval.

Therefore, please contact this office by the response date if you have any comments pertaining to the proposal. Comments made identifying potential impacts should be as specific as possible and should be based on supporting data (e.g., traffic counts, expected pollutant levels, etc.). Your comments should emphasize potential impacts in areas which your agency has expertise and/or jurisdictional responsibilities.

These comments will assist our Department in preparing a staff report to present to the Planning Commission. Those reports will contain our recommendations for approval or denial. They will also contain recommended conditions to be required should the project be approved. Therefore, please list any conditions that you wish to have included for presentation to the Commission as well as any other comments you may have. Please return all comments and/or conditions as soon as possible or no later than the response date referenced above.

Thank you for your cooperation. Please call (209) 525-6330 if you have any questions.

Applicant: **The Linde Group, LLC, Audie Chong**

Project Location: **Faith Home Road, on the northeast corner of Faith Home and Jessup Roads, west of Highway 99, in the Community of Keyes.**

APN: **045-026-040**

Williamson Act Contract: **N/A**

General Plan: **P-D (Planned Development)**

Community Plan: **Industrial**

Current Zoning: **P-D (123) (Planned Development)**

Project Description: This is a request to Rezone 5.32 acres of a 28.72 acre parcel currently zoned P-D (123), which is expired, to a new P-D (Planned Development) to allow the development of a liquid carbon dioxide (CO2) purification and liquefaction plant. Currently, carbon dioxide gas is generated during the ethanol fermentation process from the Aemetis Bio Fuel facility, located to the east of the project site, and is vented into the atmosphere after a regenerative Thermal Oxidizer to reduce Volatile Organic Chemicals (VOC) without recovery. The proposed project will serve the purpose of recovering the lost Carbon dioxide (CO2) via a pipeline from the Aemetis facility to the proposed project site. Once recovered, the CO2 will be purified and then liquefied and stored into eight proposed storage tanks, 138 feet long and 12 feet wide. The project will include compression equipment for the CO2 gas, modular equipment for purification of the CO2 gas, and ammonia compression equipment for the refrigeration system (5,000 pounds in the system) to condense the CO2 into liquid form. Ammonia is utilized in a closed-loop system to liquefy and chill the CO2. CO2 and ammonia compressors will be stored in a 2,500 square foot storage building on-site, and will include engineering to provide noise attenuation. The project also includes an 840 square foot control room, 588 square foot storage room, an 840 square foot control room, a waiting/break room, restroom, truck scales, employee parking, and a 480 square foot electrical room. The business is proposed to operate 24 hours a day, 7 days a week; and to be shutdown for 2 weeks per year for maintenance purposes. Tank trailers are proposed to enter the site utilizing a driveway on Faith Home Road; 20 tank trailers per day are anticipated. Rail cars are estimated to be filled once a week. Additional rail delivery may occur to supplement the project supply in the case that the CO2 supply from Aemetis is interrupted. The plant will employ 20 full-time truck drivers and three full-time (working from 8 a.m. to 6 p.m.) employees on a maximum shift for plant operation. The plant will be remotely monitored from 6 p.m. to 8 a.m. daily. The site will be served by a private anaerobic septic and leach-field system and will annex into the Keyes Community Services District in order to obtain water. The project also includes a proposal to construct a new rail spur off of the Union Pacific Railroad on an adjacent parcel (APN: 045-026-038) along with two rail loading/unloading stations and tank trailer parking. A tentative parcel map is included with the project to create a 5.32 acre parcel and a 25.7 acre remainder. The project will be contained on the 5.32 acre parcel.

Grading and site preparation is proposed to take place in the spring of 2019. Construction is proposed to begin in summer or fall of 2019 and the plant is estimated to begin operation in the fall of 2019.

Full document with attachments available for viewing at:
http://www.stancounty.com/planning/pl/act-projects.shtm

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REZONE AND PARCEL MAP APPLICATION NO. PLN2018-0017 – LINDE GROUP, LLC
Attachment A

Distribution List

	CA DEPT OF CONSERVATION Land Resources / Mine Reclamation		STAN CO ALUC
X	CA DEPT OF FISH & WILDLIFE		STAN CO ANIMAL SERVICES
	CA DEPT OF FORESTRY (CAL FIRE)	X	STAN CO BUILDING PERMITS DIVISION
X	CA DEPT OF TRANSPORTATION DIST 10	X	STAN CO CEO
X	CA OPR STATE CLEARINGHOUSE		STAN CO CSA
X	CA RWQCB CENTRAL VALLEY REGION	X	STAN CO DER
	CA STATE LANDS COMMISSION	X	STAN CO ERC
	CEMETERY DISTRICT		STAN CO FARM BUREAU
	CENTRAL VALLEY FLOOD PROTECTION	X	STAN CO HAZARDOUS MATERIALS
	CITY OF:		STAN CO PARKS & RECREATION
X	COMMUNITY SERVICES DIST: KEYES	X	STAN CO PUBLIC WORKS
X	COOPERATIVE EXTENSION		STAN CO RISK MANAGEMENT
	COUNTY OF:	X	STAN CO SHERIFF
X	FIRE PROTECTION DIST: KEYES FIRE	X	STAN CO SUPERVISOR DIST #2: CHIESA
	HOSPITAL DIST:	X	STAN COUNTY COUNSEL
X	IRRIGATION DIST: TURLOCK	X	StanCOG
X	MOSQUITO DIST: TURLOCK MOSQUITO	X	STANISLAUS FIRE PREVENTION BUREAU
X	MOUNTIAN VALLEY EMERGENCY MEDICAL SERVICES	X	STANISLAUS LAFCO
X	MUNICIPAL ADVISORY COUNCIL: KEYES		SURROUNDING LAND OWNERS (on file w/the Clerk to the Board of Supervisors)
X	PACIFIC GAS & ELECTRIC	X	TELEPHONE COMPANY: AT&T
X	U.S. POSTMASTER: KEYES		TRIBAL CONTACTS (CA Government Code §65352.3)
X	RAILROAD: UNITED PACIFIC RAIL ROAD		US ARMY CORPS OF ENGINEERS
X	SAN JOAQUIN VALLEY APCD		US FISH & WILDLIFE
X	SCHOOL DIST 1: KEYES UNION	X	US MILITARY (SB 1462) (7 agencies)
X	SCHOOL DIST 2: TURLOCK JOINT UNION		USDA NRCS
	STAN ALLIANCE		WATER DIST:
X	STAN CO AG COMMISSIONER		
	TUOLUMNE RIVER TRUST		

STANISLAUS COUNTY
CEQA REFERRAL RESPONSE FORM

TO: **Stanislaus County Planning & Community Development**
1010 10th Street, Suite 3400
Modesto, CA 95354

FROM: _____

SUBJECT: **REZONE AND PARCEL MAP APPLICATION NO. PLN2018-0017 – LINDE GROUP, LLC**

Based on this agencies particular field(s) of expertise, it is our position the above described project:

_____ Will not have a significant effect on the environment.
_____ May have a significant effect on the environment.
_____ No Comments.

Listed below are specific impacts which support our determination (e.g., traffic general, carrying capacity, soil types, air quality, etc.) – (attach additional sheet if necessary)

1.
2.
3.
4.

Listed below are possible mitigation measures for the above-listed impacts: *PLEASE BE SURE TO INCLUDE WHEN THE MITIGATION OR CONDITION NEEDS TO BE IMPLEMENTED (PRIOR TO RECORDING A MAP, PRIOR TO ISSUANCE OF A BUILDING PERMIT, ETC.):*

1.
2.
3.
4.

In addition, our agency has the following comments (attach additional sheets if necessary).

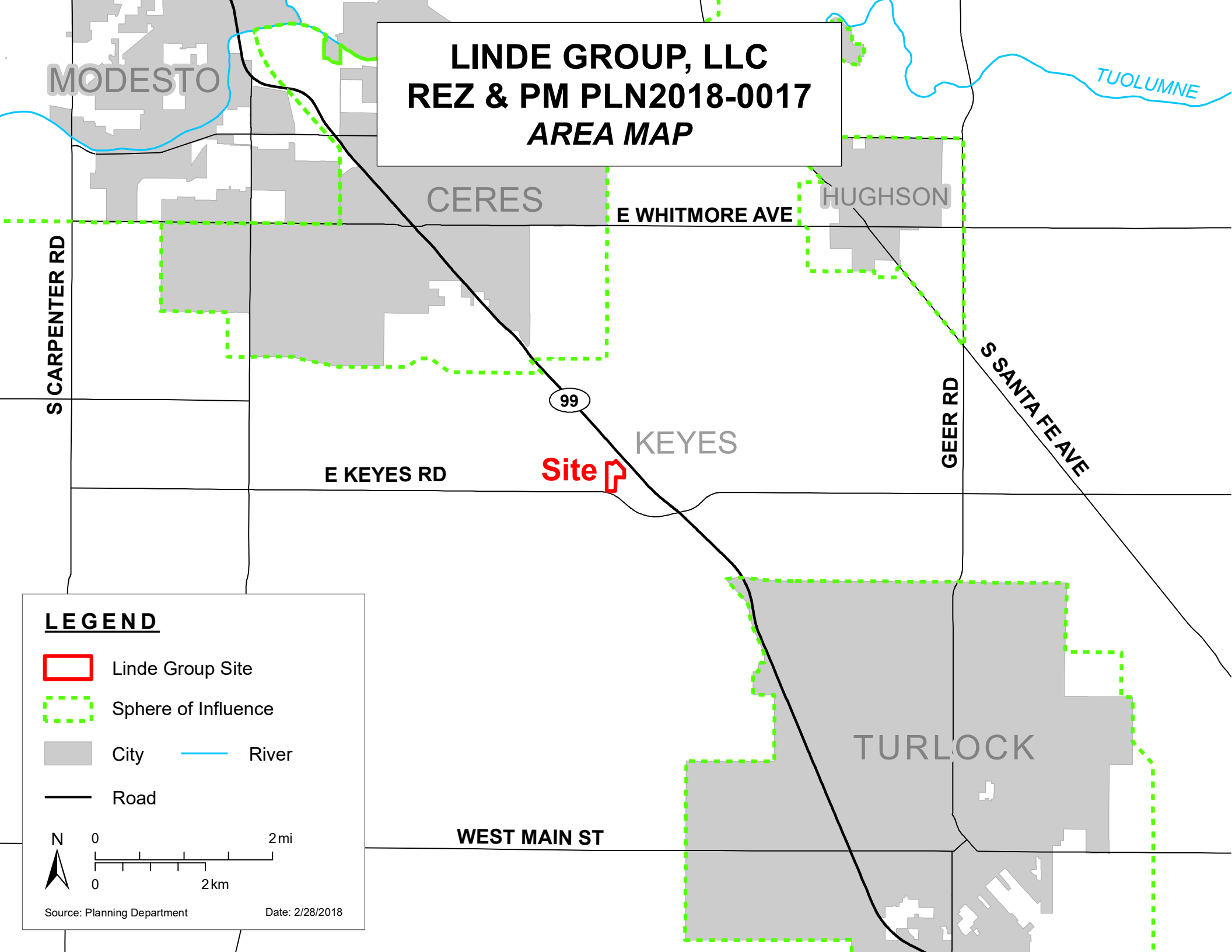
_____

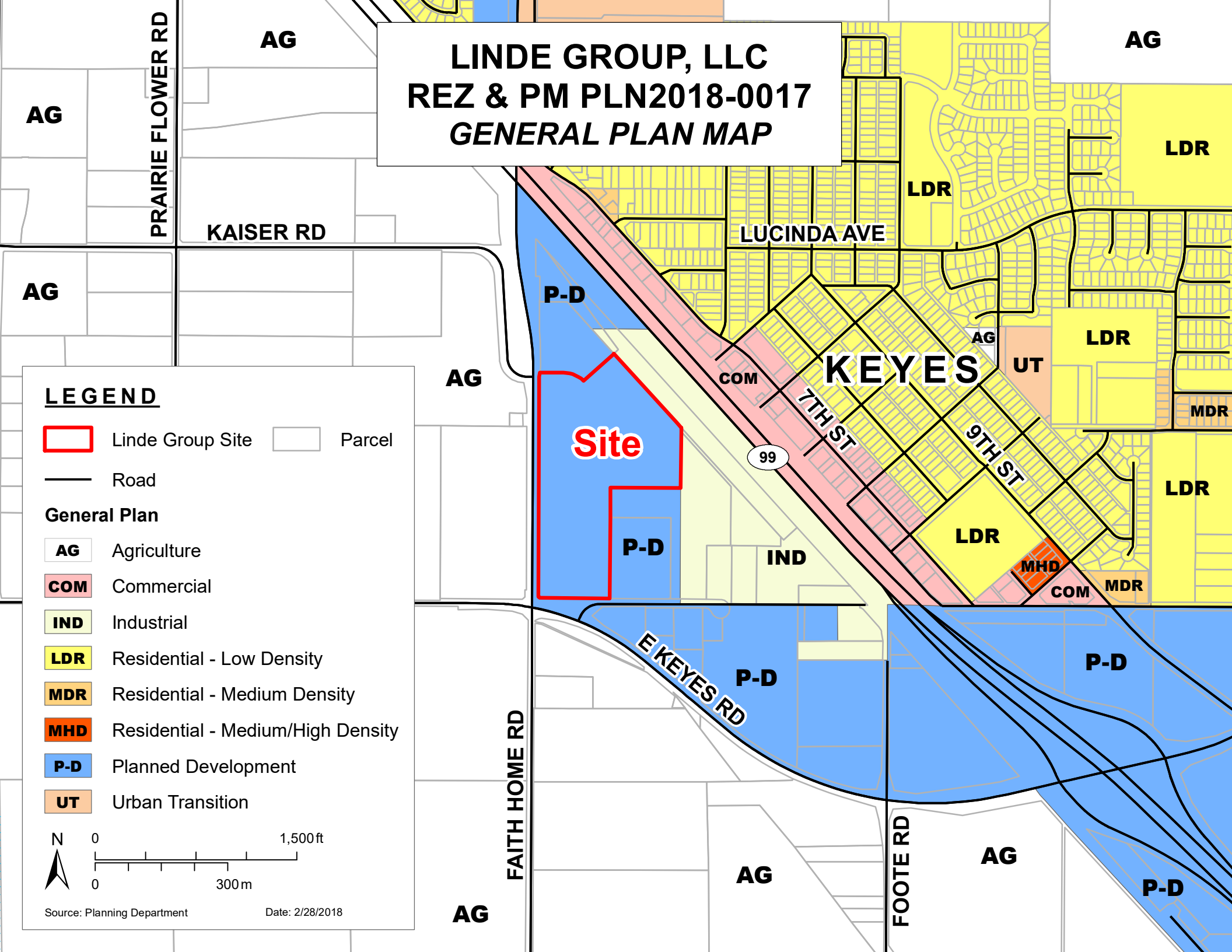
_____

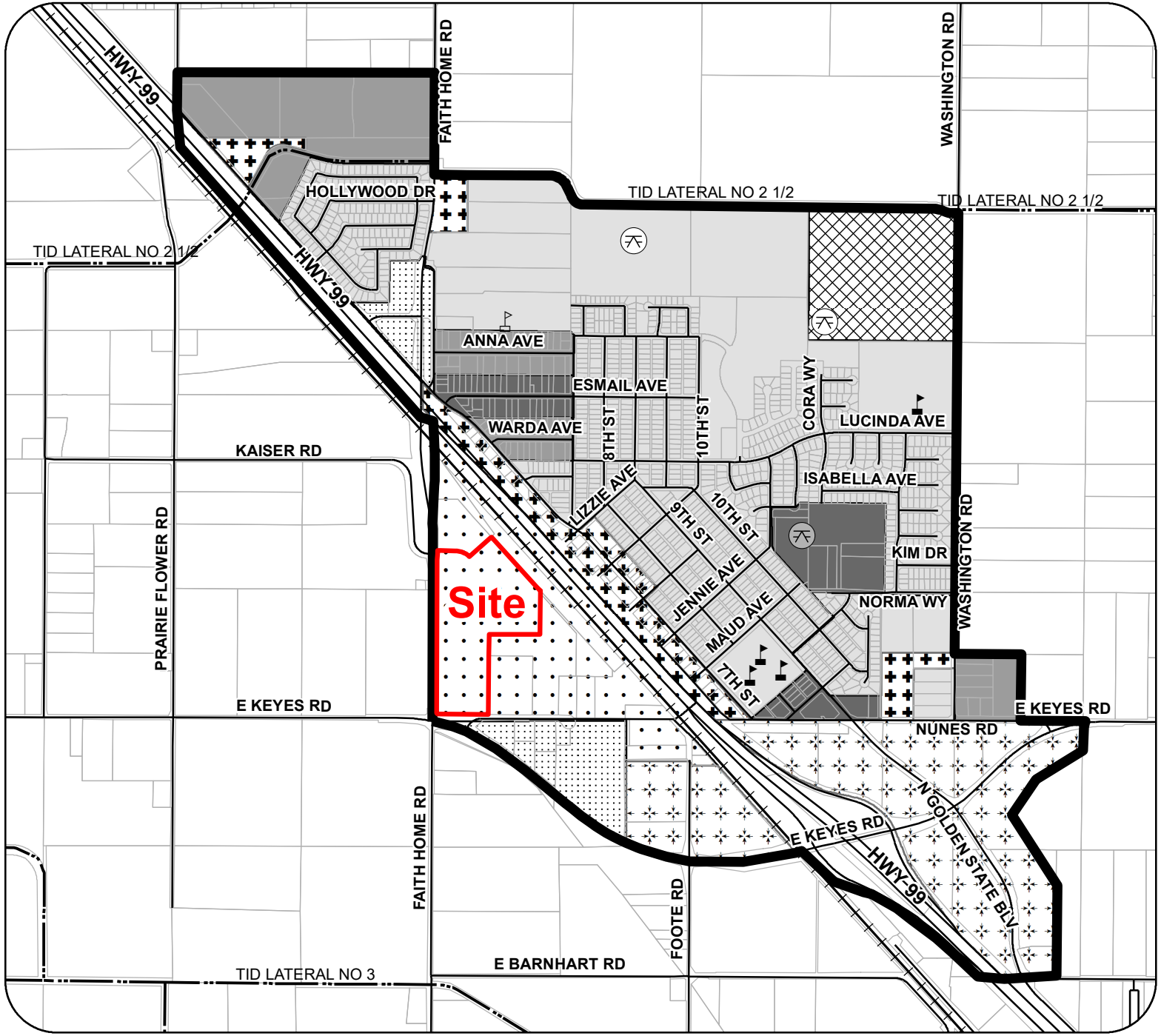
Response prepared by:

_____

Name Title Date


LINDE GROUP, LLC
REZ & PM PLN2018-0017
AREA MAP
MODESTO
CERES
HUGHSON
KEYES
TURLOCK
TUOLUMNE
E WHITMORE AVE
S CARPENTER RD
99
GEER RD
S SANTA FE AVE
E KEYES RD
Site
WEST MAIN ST
LEGEND
Linde Group Site
Sphere of Influence
City
River
Road
N
0
2 mi
0
2 km
Source: Planning Department
Date: 2/28/2018


LINDE GROUP, LLC
REZ & PM PLN2018-0017
GENERAL PLAN MAP
PRAIRIE FLOWER RD
KAISER RD
LUCINDA AVE
FAITH HOME RD
FOOTE RD
E KEYES RD
7TH ST
9TH ST
99
KEYES
Site
AG
P-D
IND
COM
UT
LDR
MDR
MHD
LEGEND
Linde Group Site
Parcel
Road
General Plan
AG Agriculture
COM Commercial
IND Industrial
LDR Residential - Low Density
MDR Residential - Medium Density
MHD Residential - Medium/High Density
P-D Planned Development
UT Urban Transition
N
0
1,500 ft
0
300 m
Source: Planning Department
Date: 2/28/2018



Keyes
COMMUNITY PLAN

Land Use Designations:

- Commercial
- Commercial - Highway
- Industrial
- Planned Industrial
- Residential - Low
- Residential - Medium
- Residential - Medium-High
- Urban Transition

Parks and Schools:

- Existing Park
- Proposed Park
- Existing School
- Proposed School

N
W E
S

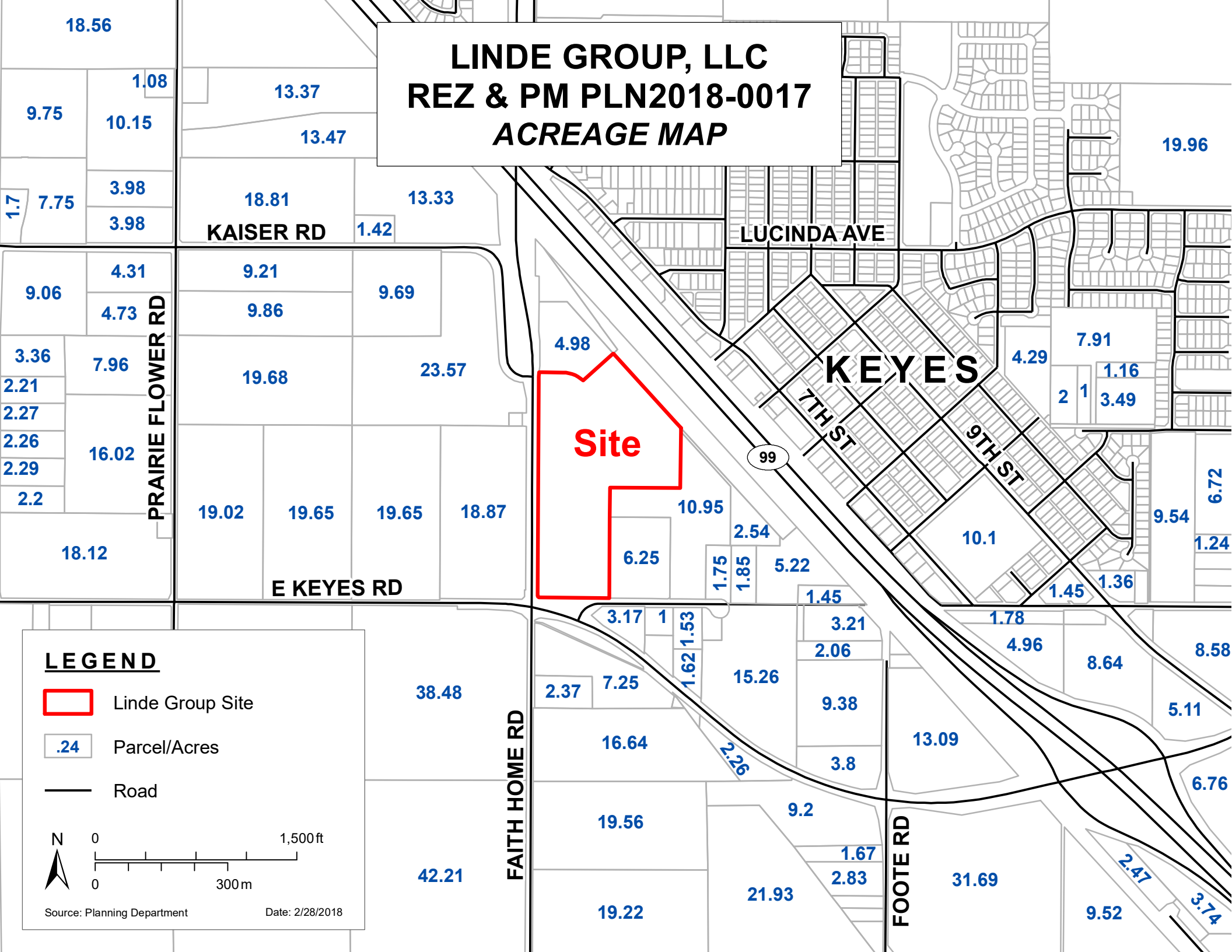
0 500 1,000 2,000
Feet

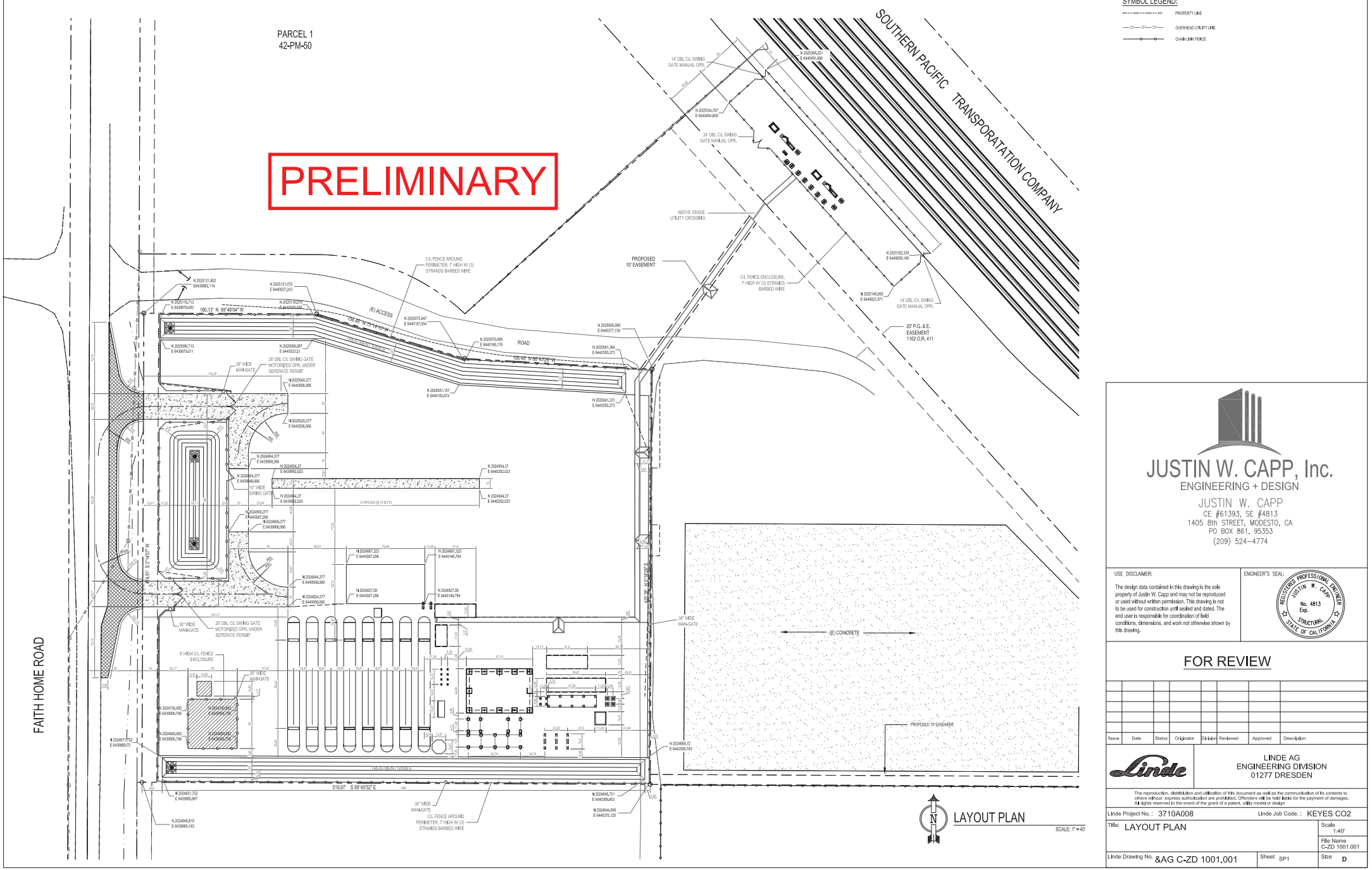

LINDE GROUP, LLC
REZ & PM PLN2018-0017
ZONING MAP
LEGEND
Linde Group Site
Parcel
Road
Zoning Designation
A-2-10 General AG 10 Acre UT
A-2-40 General AG 40 Acre
H-1 Highway Frontage
M Industrial
P-D Planned Development
R-1 Single Family Residential
R-1 US Single Family Residential
R-2 Medium Density Residential
R-3 Multiple Family
N
0
1,500 ft
0
300 m
Source: Planning Department
Date: 2/28/2018
PRAIRIE FLOWER RD
KAISER RD
LUCINDA AVE
KEYES
7TH ST
9TH ST
99
FAITH HOME RD
E KEYES RD
FOOTE RD
Site
A-2-40
A-2-10
H-1
M
P-D (123)
P-D (110)
P-D (332)
P-D (299)
P-D (289)
R-1
R-1 US
R-2
R-3
R-A

LINDE GROUP, LLC
REZ & PM PLN2018-0017
2017 AERIAL AREA MAP

LINDE GROUP, LLC
REZ & PM PLN2018-0017
2017 AERIAL SITE MAP

LINDE GROUP, LLC
REZ & PM PLN2018-0017
ACREAGE MAP





JUSTIN W. CAPP, Inc.
ENGINEERING + DESIGN
JUSTIN W. CAPP
CE #61393, SE #4813
1405 8th STREET, MODESTO, CA
PO BOX 861, 95353
(209) 524-4774

ENGINEER'S SEAL:
REGISTERED PROFESSIONAL ENGINEER JUSTIN W. CAPP No. 4813 Exp. STRUCTURAL STATE OF CALIFORNIA

FOR REVIEW

Issue	Date	Status	Originator	Division	Reviewed	Approved	Description

LINDE AG
ENGINEERING DIVISION
01277 DRESDEN

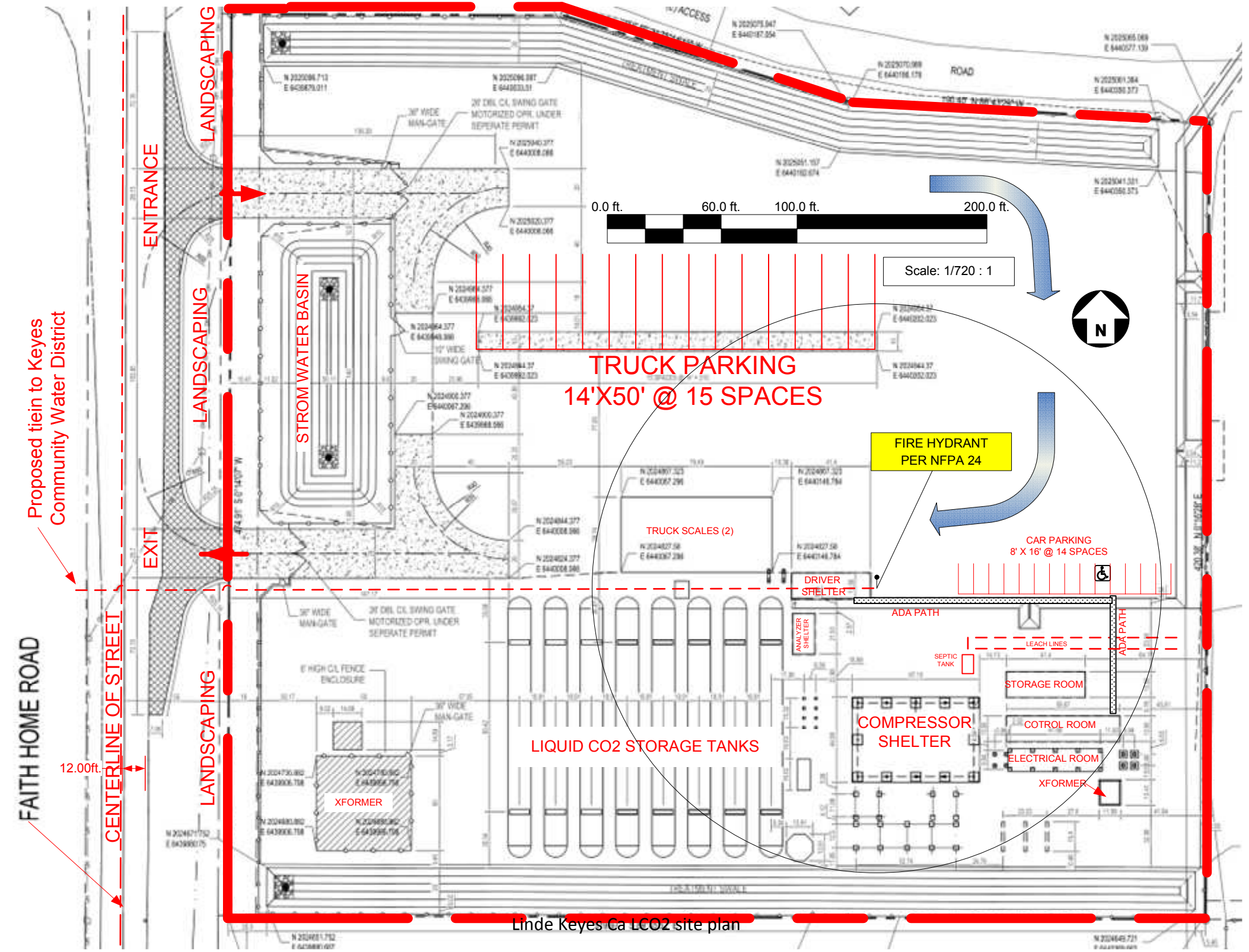
Linde Project No.: 3710A008 Linde Job Code.: KEYES CO2

Title: LAYOUT PLAN

Scale 1:40'

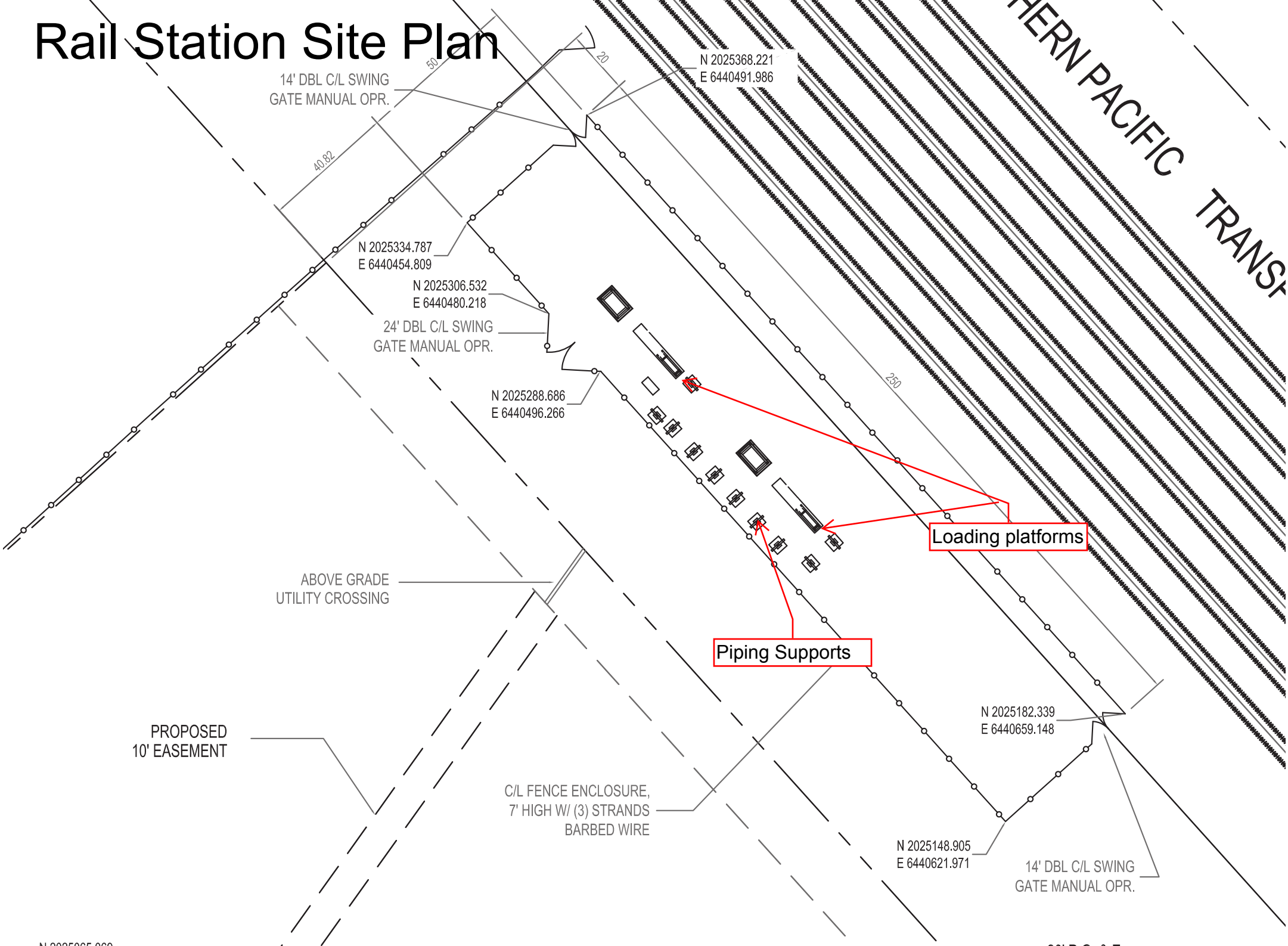
File Name C-ZD 1001.001

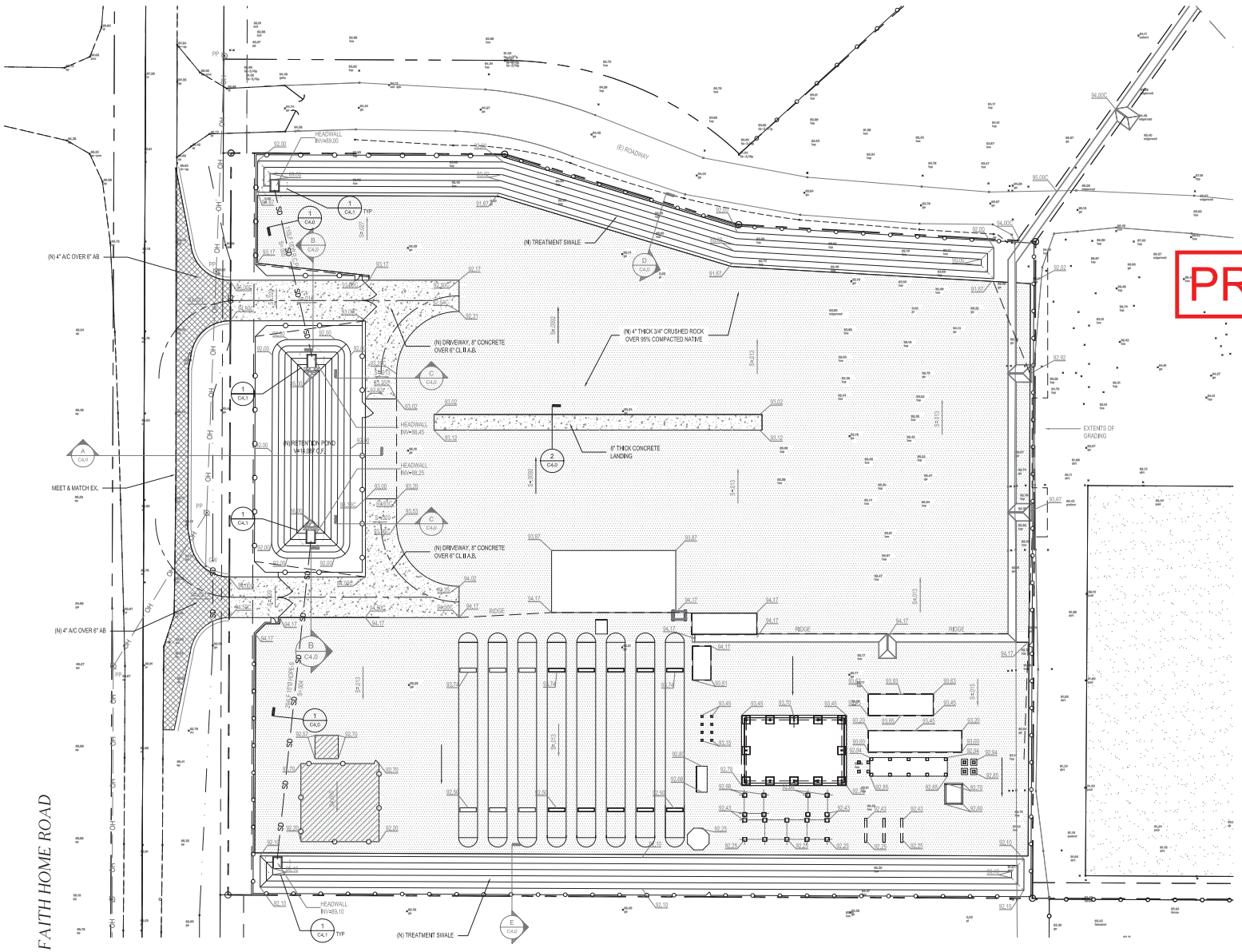
Linde Drawing No. &AG C-ZD 1001.001 Sheet SP1 Size D



Linde Keyes Ca LCO2 site plan

Rail Station Site Plan





PRELIMINARY

GRADING & DRAINAGE PLAN

SCALE: 1" = 30'

JUSTIN W. CAPP, Inc.
ENGINEERING + DESIGN
JUSTIN W. CAPP
CE #61393, SE #4813
1405 8th STREET, MODESTO, CA
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REGISTERED PROFESSIONAL ENGINEER
JUSTIN W. CAPP
No. 4813
Exp.
STRUCTURAL
STATE OF CALIFORNIA

FOR REVIEW

Issue	Date	Status	Originator	Division Reviewed	Approved	Description

LINDE AG
ENGINEERING DIVISION
01277 DRESDEN

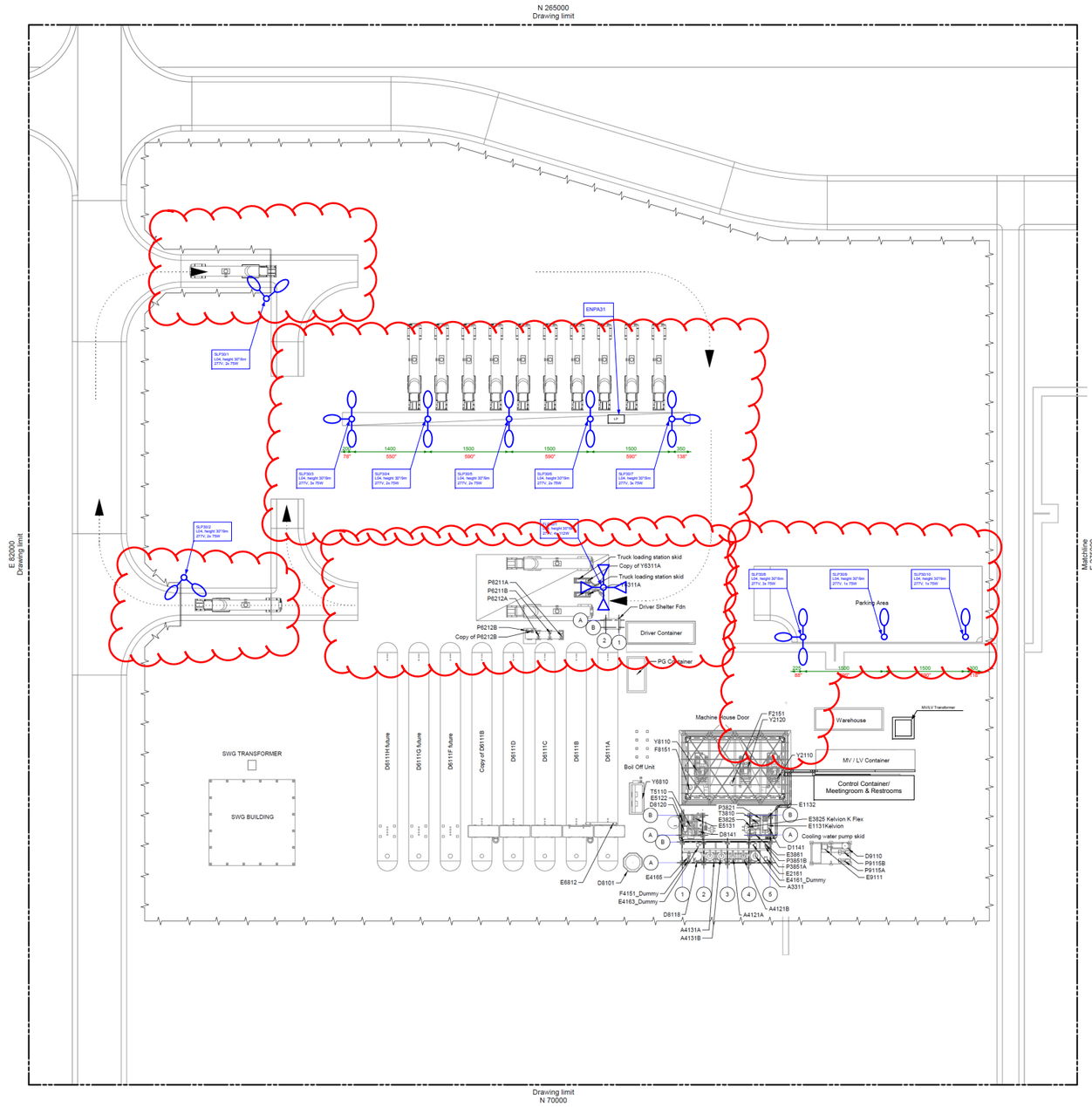
Linde Project No.: 3710A008 Linde Job Code.: KEYES CO2

Title: GRADING & DRAINAGE PLAN

Scale: 1:30'

File Name: C-ZD 1001.001

Linde Drawing No. &AG C-ZD 1001.001 Sheet C3.1 Size D



PHOTOMETERIC

SCALE 1:300 in ft
0ft 50ft 100ft 150ft 200ft

SCALE 1:300 in m
0m 5m 10m 15m 20m 30m 40m 50m

General Notes:

Symbol	Description
	Ceiling Mounted Fixture 120V, ….W, LED type,
	Pendant Mounted Fixture 120V, ….W, LED type,
	Bracket Mounted Fixture With Angle Reflector 120V, ….W, LED type,
	Stancion Mounted Fixture 120V, ….W, LED type,
	Ceiling Mounted Fixture With Internal Battery as Emergency Light 120V, ….W, LED type,
	Pendant Mounted Fixture With Internal Battery as Emergency Light 120V, ….W, LED type,
	Bracket Mounted Fixture With Internal Battery as Emergency Light 120V, ….W, LED type,
	Stancion Mounted Fixture With Internal Battery as Emergency Light 120V, ….W, LED type,
EXIT	Exit Light (Indoor) 120V, ….W, LED type,
P	Photoelectric Switch 120V, ...A, type ….
	Toggle Switch Surface Mounted 120V, ...A, type ...
	Receptacle 20A/120V/GFCI 5mA Surface Mounted
	High Bay Lighting Fixture Ceiling Mounted 277V, 168W, LED type, Crouse-Hinds Champ Pro PVM17L or similar
	Ceiling Mounted Floodlight 277V, 62W, LED type, Crouse-Hinds FMV7L or similar
	Wall Mounted Floodlight 277V, 62W, LED type, Crouse-Hinds FMV7L or similar
	Stancion Mounted Floodlight 277V, 62W, LED type, Crouse-Hinds FMV7L or similar
	Pole Mounted Floodlight 277V, 112W, LED type, Crouse-Hinds FMV13L or similar
	Pole Mounted Streetlight 277V, 75W, LED type, Crouse-Hinds OVH-E03-LED-E-U-T4-AP or similar
	Pole With Two (2) Light Bracket In Opposed Position For Street Or Floodlight Fixtures
	Pole With Two (2) Light Bracket In Rectangular Position For Street Or Floodlight Fixtures
	Pole With Three (3) Light Bracket In Rectangular Position For Street Or Floodlight Fixtures
	Pole With Four (4) Light Bracket In Rectangular Position For Street Or Floodlight Fixtures
LP	Lighting Panel
PP	Power Panel
300	Distances in CM
	Tagging SLP: Streetlighting Pole FLP: Floodlighting Pole 30:Contruction Area /6: Counting Number L03: Installation Typical According Drawing &AE-9400-E-ZH 502.1701 (EN) 277V, 2x 75W: Voltage, Number of Fixtures and Wattage

Further Remarks:

(1) All data are preliminary. Further detailing will be required. Given civil layout is not in responsibility of Linde Engineering Division Dresden Germany.

(2) Plant design is not final and need to receive further updates.

(3) U/G conduits for lighting are part of the document UNDERGROUND DUCT BANK LAYOUT ELECTRICAL & INSTRUMENTATION drw. No. &AE 9400 E-ZA 525.2001(EN)

Ausgabe Issue	Datum Date	Dok. Status	Bearbeiter Originator	Abteilung Division	Geprüft Reviewed	Genehmigt Approved	Änderung Discription
1	05.12.2017	IFQ	Skirlo	XEE	Wiegandt	Nyderle	Issued for Inquiry

Maßstab/Scale: 1:300

LINDE ENGINEERING DRESDEN GMBH

Projekt-Nr./Job No.: 3710 A008

Anlagenbezeichnung/Plant: CO_2 Purification and Liquefaction Plant

Dok.-Nr./Doc. No.: &AE-9400-E-ZA 528.1001(EN)

Benennung/Title: Lighting & Socket Layout
Overall CO2 Core Plant Streetlighting

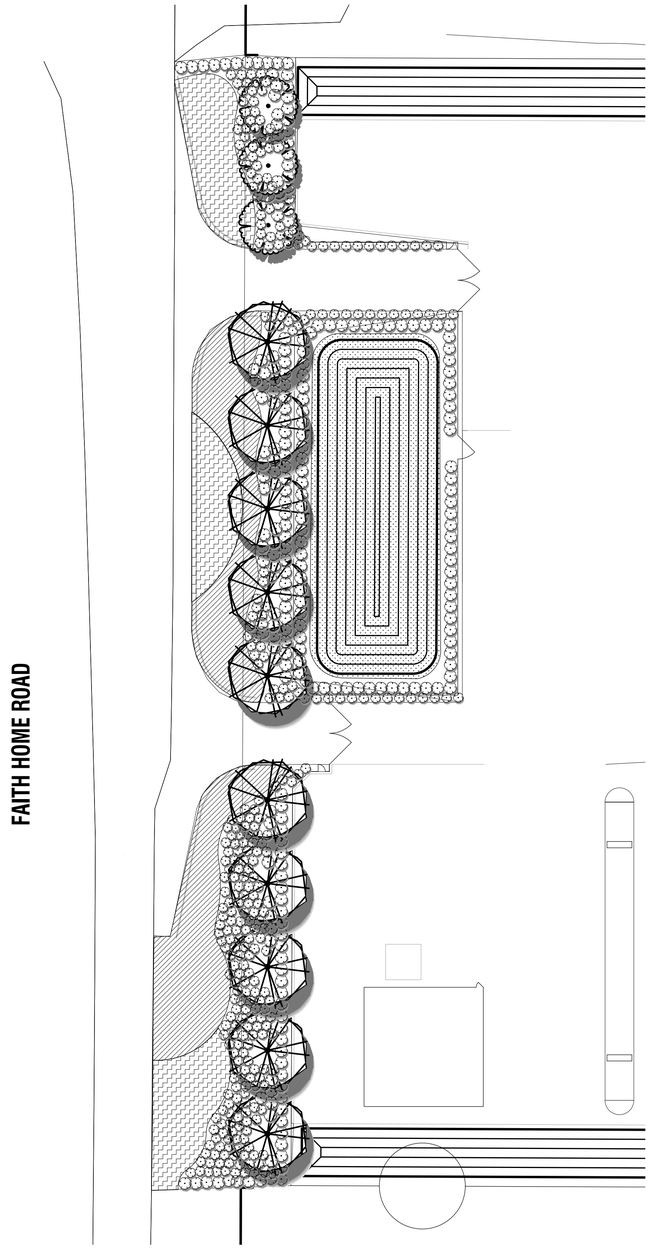
Kennwort/Code: KEYES CO2

Ident-Nr./Item No.:

Dateiname/Data file: General Engineering\500 LAYOUT AND DESIGN\ 510 Lighting and Small Power Layouts\&AE 9400-E-ZA 528.1001(EN) Overall Lighting.dwg

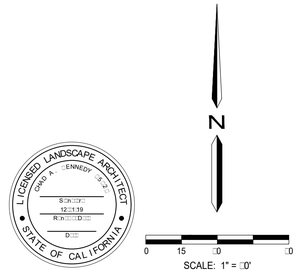
Blatt/Sheet 1 von/of 3 Blatt/Sheets

LINDE LC02 PLANT



PLANT SPECIES LEGEND				
SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS/NOTES
35' DIA TREE OPTIONS				
	Cercis canadensis	Redbud	15 GAL	FRUITLESS VARIETY
	Celtis occidentalis	Common Hackberry	15 GAL	Single Leader
	Fraxinus americana 'Autumn Purple'	American Purple Ash	15 GAL	Single Leader
	Platanus acerifolia 'Bloodgood'	London Plane Tree	15 GAL	Single Leader
	Quercus lobata	Valley Oak	15 GAL	Single Leader
25' DIA TREE OPTIONS				
	Prunus serrulata	Flowering Cherry	15 GAL	Single or Multi Stem
	Lagerstroesmia indica	Crape Myrtle	15 GAL	Single or Multi Stem
SHRUB OPTIONS				
	Ceanothus griseus horizontalis	Carmel Creeper	5 GAL	PURPLE FLOWERS
	Cistus x purpureus	Rock Rose	5 GAL	PINK FLOWERS
	Dietes vegeta	African Iris	5 GAL	WHITE FLOWERS
	Olea europaea 'Little Ollie'	Little Ollie Olive	5 GAL	DWARF VARIETY
	Pennisetum alopecuroides 'Little Bunny'	Fountain Grass	5 GAL	
	Podocarpus macrophyllus 'Maki'	Shrubby Yew	15 GAL	EVERGREEN DWARF VARIETY
	Prunus caroliniana 'Bright & Tight' Compacta	Compact Carolina Laurel Cherry Column	5 GAL	EVERGREEN
	Salvia nemorosa 'East Friesland'	East Friesland Meadow Sage	5 GAL	PURPLE FLOWERS
	Tulbaghia violacea	Society Garlic	1 GAL	
	Ficus pumila	Creeping Fig	1 GAL	Evergreen Vine
	Hemerocallis sp.	Day Lilly	1 GAL	Semi-Evergreen
	Juniperus sp.	Juniper	5 GAL	Evergreen
	Muhlenbergia rigens	Deer Grass	1 GAL	Bunch Grass
	Phormium tenax	New Zealand Flax	5 GAL	Evergreen
	Pittosporum tobira	Mock Orange	5 GAL	Evergreen
	Rhaphiolepis indica	India Hawthorn	5 GAL	Evergreen / Pink Flowers
	Rosa sp.	Carpet Roses	5 GAL	Pink/White/Red Flowers
GROUND COVER				
	Myoporum parvifolium	Myoporum	1 GAL	30" Spacing
	Rosmarinus 'Prostratus'	Trailing rosemary	1 GAL	36" Spacing
	Fescue Blend	No-Mow Grass Blend	Hydro	

LANDSCAPE CONCEPT PLAN

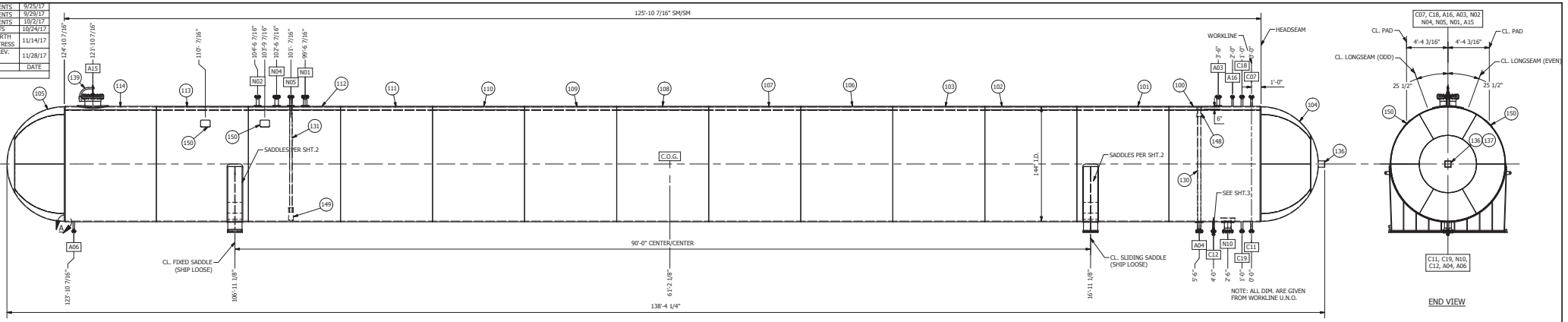


O'DELL ENGINEERING

01/15/2018

NOTE: THIS DOCUMENT IS FOR CONCEPTUAL PLANNING PURPOSES ONLY. THIS DOCUMENT IS MARKED PRELIMINARY AND NOT TO BE USED FOR CONSTRUCTION PURPOSES. ANY IMAGES SHOWN ARE TO CONVEY CONCEPT ONLY. CONSTRUCTION PLANS WILL VARY DEPENDING ON BUDGET, CLIENT DIRECTION, COMMUNITY INPUT AND FINAL MATERIALS SELECTION.

REV	DESCRIPTION	DATE
1	PER CUST. COMMENTS	9/25/17
2	PER CUST. COMMENTS	9/29/17
3	PER CUST. COMMENTS	10/2/17
4	ADDED WEIGHTS	10/24/17
5	ADDED TABLE, NORTH ARROW,SADDLE STRESS	11/14/17
6	DELETED NOTE, REV. ITEM #150	11/28/17

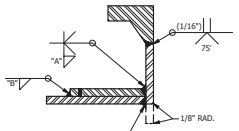


ELEVATION

END VIEW

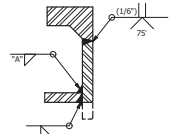
DETAIL A

SHOP NOTE: ALL TEST BLIND FLANGES TO BE LEFT IN PLACE FOR SHIPPING.
CUSTOMER NOTE: ALL SHIPPING BLIND FLANGES WILL BE SA-105 (EXCEPT SPARE SERVICE) AND WILL NOT REMAIN IN SERVICE.



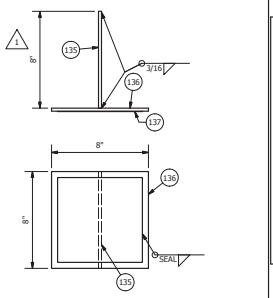
TYP. WELD NOZZLE DET'L WITH REINFORCING PAD

(NOTE: ALL REINFORCING PADS SHALL BE AIR TESTED AT 50 PSIG.)



TYP. NOZZLE DET'L WITHOUT REINFORCING PAD

WELD PROCEDURES	
JOINT DESCRIPTION	WELD PROCEDURE
SHELL LONGSEAM/ROUNDSEAM	A101019, S10C02
STARTING HEAD TO SHELL	A101020, S10C02
CLOSING HEAD TO SHELL	F101002, A101020
FLANGE TO PIPE	GF1113,T1105,F1120
MANWAY FLG. TO PIPE	F1120,A1101
NOZZLE TO SHELL	F10116
SADDLE PAD TO SHELL	F1120
SADDLES	F10114
FITTINGS TO SHELL	F10116
NOZZLE PAD TO SHELL	F101002



NAMEPLATE BRACKET DET'L

CERTIFIED BY:
MISSISSIPPI TANK COMPANY
HATTIESBURG, MISSISSIPPI

MAWP	260	PSIG	AT	+150	°F
MAWP	5	PSIG	AT	-40	°F
MDMT	-40	°F	AT	260	PSIG
S/N	****		YEAR	2017	
RT 1	X	ABOVEGROUND		UNDERGROUND	
		HD	985MI	WC	113,000 GAL
		OL	1652.25	IN	OD 145.684 IN
NO. LATER		SHELL THK	.842/.906	IN	HEAD THK .403 IN MIN
					OSSA 3266 SQ FT

THIS CONTAINER SHALL NOT CONTAIN A PRODUCT THAT HAS A VAPOR PRESSURE IN EXCESS OF ---- PSIG AT ---- °F

****	
JOB NUMBER	SERIAL NUMBER
55447	C14203
55448	C14204
55449	C14205
55450	C14206
55451	C14207

X-RAY/PAUT	
JOINT DESCRIPTION	X-RAY
STARTING HEAD TO SHELL	FULL UW-11(a)/TYPE 1
SHELL LONG SEAMS	FULL UW-11(a)/TYPE 1
SHELL ROUND SEAMS	FULL UW-11(a)/TYPE 1
CLOSING HEAD TO SHELL	FULL UW-11(a)/TYPE 1

SEISMIC DATA:
RISK CATEGORY: II
SITE SOIL CLASSIFICATION: D
Ss= 0.919 g
S1= 0.336 g

WIND DATA:
RISK CATEGORY: II
MAX. VELOCITY AT GROUND LEVEL = 110 mph

OPERATING WEIGHT=1,142,269 LBS
TEST WEIGHT=1,127,752 LBS.

ITEM	QTY	DESCRIPTION	MATERIAL	DES
		BILL OF MATERIAL		
186	1	1/8" THK. FLEXITALLIC TYPE "CG" GASKET FOR 3" 150# R.F. FLG.		
185	1	3" 150# R.F. BLIND FLANGE	SA-350-LF2	R
184	1	1/8" THK. FLEXITALLIC TYPE "CG" GASKET FOR 4" 150# R.F. FLG.		
183	1	4" 150# R.F. BLIND FLANGE	SA-350-LF2	R
182	1	2" 150# R.F. BLIND FLANGE	SA-350-LF2	R
181	1	1/8" THK. FLEXITALLIC GASKET TYPE "CG" FOR 2" 150# R.F. FLG.		
180	4	1/2" DIA. STUD X 2 1/2" LG.	SA-193-B7	
179	8	NUT FOR 1/2" DIA. STUD	SA-194-2H	
178	1	1/8" THK. GASKET FOR 1/2" 150# R.F. FLG.	Compressed Synthetic Fiber	
177	1	1/2" 150# R.F. BLIND FLANGE	SA-105	R
176	8	1/2" DIA. STUD X 3" LG.	SA-193-B7	
175	16	NUT FOR 1/2" DIA. STUD	SA-194-2H	
174	2	1 1/2" 150# R.F. BLIND FLANGE	SA-105	R
173	2	1/8" THK. GASKET FOR 1 1/2" 150# R.F. FLG.	Compressed Synthetic Fiber	
172	2	1 1/2" SCH. 80 (0.200 in THK. WALL) PIPE X 14" LG.	SA-106-B	M
171	2	1 1/2" 150# R.F.W.N. FLG. (SCH. 80 BORE)	SA-350-LF2	R
170	4	1/2" X 4" PL. X 6" LG. (CUT & DRILL PER DET'L)	SA-516 GR. 70	
169	1	1/2" SCH. 80 (.147" THK. WALL) PIPE X 1B 13/16" LG.	SA-106-B	M
168	1	1/2" 150# R.F.W.N. FLG. (SCH. 80 BORE)	SA-350-LF2	R
167	1	1/4" X 18" DIA. PLATE	SA-516 GR. 70	
166	8	3/4" DIA. STUD X 4 1/4" LG.	SA-193-B7	
165	16	NUT FOR 3/4" DIA. STUD	SA-194-2H	
164	1	1/8" THK. GASKET FOR 8" 150# R.F. FLG.	Compressed Synthetic Fiber	
163	1	8" 150# R.F. BLIND FLANGE	SA-105	R
162	2	1/8" THK. GASKET FOR 4" 150# R.F. FLG.		
161	2	4" 150# R.F. BLIND FLANGE	SA-105	R
160	2	1/8" THK. GASKET FOR 3" 150# R.F. FLG.		
159	2	3" 150# R.F. BLIND FLANGE	SA-105	R
158	112	NUT FOR 5/8" DIA. STUD	SA-194-2H	
157	4	1/8" THK. GASKET FOR 2" 150# R.F. FLG.		
156	4	2" 150# R.F. BLIND FLANGE	SA-105	R
155	56	5/8" DIA. STUD X 3 3/4" LG.	SA-193-B7	
154	1	BEARING PLATE PER SHT.4		
153	1	FIXED SADDLE REINFORCEMENT PLATE PER SHT.4		
152	1	1 3/8" X 19" PL. X 144" LG.	SA-516 GR. 70	
151	1	3/8" PL. X 3" X 3"	SA-516 GR. 70	M
150	4	3/8" X 12" PL. X 12" LG. (PLATFORM CLIP PAD) (HOLDS 8,100 LB LOAD ON EACH PAD)	SA-516 GR. 70	
149	1	1/4" X 6" PL. X 24 1/4" LG. (CUT & BEND PER DET'L)	SA-516 GR. 70	
148	1	1/4" X 6" PL. X 19 9/16" LG. (CUT & BEND PER DET'L)	SA-516 GR. 70	
147	8	3/4" X 8 5/8" PL. X 11 3/4" LG. (TRIM AS REQ'D)	SA-516 GR. 70	
146	8	3/4" X 8 5/8" PL. X 15 1/4" LG. (TRIM AS REQ'D)	SA-516 GR. 70	
145	8	3/4" X 8 5/8" PL. X 22 15/16" LG. (TRIM AS REQ'D)	SA-516 GR. 70	
144	8	3/4" X 8 5/8" PL. X 36 11/16" LG. (TRIM AS REQ'D)	SA-516 GR. 70	
143	1	1 3/8" X 19" PL. X 144" LG.	SA-516 GR. 70	
142	4	3/4" X 18" PL. X 81 3/4" LG. (TRIM AS REQ'D)	SA-516 GR. 70	
141	4	3/4" X 73 1/2" PL. X 81 3/4" LG. (TRIM AS REQ'D)	SA-516 GR. 70	
140	2	3/4" X 20" PL. X 229 7/8" LG. (ROLL TO 145 11/16" I.D.)	SA-516 GR. 70	M
139	1	DAVIT PER SHT. 5 (SHIP LOOSE W/ SADDLES)		
138	3	1/4" X 3 3/4" PL. X 5" LG.	SA-516 GR. 70	

NOTE: ALL SHELL PLATE AND NOZZLE REINFORCING PADS TO BE CHARPY IMPACT TESTED

ITEM	QTY	DESCRIPTION	MATERIAL	DES
		BILL OF MATERIAL		
137	1	ABOVE GROUND NAMPLATE	Stainless Steel	
136	1	1/4" X 8" PL. X 8" LG.	Stainless Steel	
135	1	1/4" X 8" PL. X 8" LG.	SA-516 GR. 70	M
134	1	8" SCH. 40 (.322" THK. WALL) PIPE X 11" LG.	SA-106-B	M
133	1	8" 150# R.F.W.N. FLG. (SCH. 40 BORE)	SA-350-LF2	R
132	1	.906" X 8 5/8" I.D. X 15 5/8" O.D. (REPAD)	SA-516 GR. 70N	M
131	1	3" SCH. 80 (.300" WALL) PIPE X 143 1/16" LG. (FINISHED LENGTH)	SA-106-B	
130	1	4" SCH. 80 (.337" WALL) PIPE X 151 1/16" LG. (FINISHED LENGTH)	SA-106-B	
129	5	2" SCH. 80 (.218" THK. WALL) PIPE X 11" LG.	SA-106-B	M
128	5	2" 150# R.F.W.N. FLG. (SCH. 80 BORE)	SA-350-LF2	R
127	3	3" 150# R.F.W.N. FLG. (SCH. 80 BORE)	SA-350-LF2	R
126	2	3" SCH. 80 (.300" THK. WALL) PIPE X 11" LG.	SA-106-B	M
125	3	.906" X 3 1/2" I.D. X 8 1/2" O.D. (REPAD)	SA-612N	M
124	40	NUT FOR 1 1/8" DIA. STUD	SA-194-2H	
123	20	1 1/8" DIA. STUD X 6 1/4" LG.	SA-193-B7	
122	1	20" 150# R.F. BLIND FLANGE	SA-350-LF2	R
121	4	1/8" THK. FLEXITALLIC TYPE "CG" GASKET FOR 20" 150# R.F. FLG. (SHIP 3 LOOSE WITH SADDLES)		
120	1	20" SCH. 30 (.50" THK. WALL) PIPE X 9" LG.	SA-106-B	M
119	1	20" 150# R.F.W.N. FLG. (SCH. 30 BORE)	SA-350-LF2	R
118	1	.906" X 20" I.D. X 39" O.D. (REPAD)	SA-612N	M
117	2	4" SCH. 80 (.337" THK. WALL) PIPE X 11" LG.	SA-106-B	M
116	3	4" 150# R.F.W.N. FLG. (SCH. 80 BORE)	SA-350-LF2	R
115	3	.906" X 4 1/2" I.D. X 9 1/2" O.D. (REPAD)	SA-612N	M
114	1	.842" X 116 3/16" PL. X 455" LG. (ROLL TO 144" I.D.)	SA-612N	M
113	1	.906" X 116 3/16" PL. X 454 3/4" LG. (ROLL TO 144" I.D.)	SA-612N	M
112	1	.842" X 116 3/16" PL. X 455" LG. (ROLL TO 144" I.D.)	SA-612N	M
111	1	.842" X 116 3/16" PL. X 455" LG. (ROLL TO 144" I.D.)	SA-612N	M
110	1	.842" X 116 3/16" PL. X 455" LG. (ROLL TO 144" I.D.)	SA-612N	M
109	1	.842" X 116 3/16" PL. X 455" LG. (ROLL TO 144" I.D.)	SA-612N	M
108	1	.842" X 116 3/16" PL. X 455" LG. (ROLL TO 144" I.D.)	SA-612N	M
107	1	.842" X 116 3/16" PL. X 455" LG. (ROLL TO 144" I.D.)	SA-612N	M
106	1	.842" X 116 3/16" PL. X 455" LG. (ROLL TO 144" I.D.)	SA-612N	M
105	1	.403" MIN. THK. X 144" I.D. HEMI-HEAD PER SHT.	SA-612N	M
104	1	.403" MIN. THK. X 144" I.D. HEMI-HEAD PER SHT.	SA-612N	M
103	1	.842" X 116 3/16" PL. X 455" LG. (ROLL TO 144" I.D.)	SA-612N	M
102	1	.842" X 116 3/16" PL. X 455" LG. (ROLL TO 144" I.D.)	SA-612N	M
101	1	.906" X 116 3/16" PL. X 454 3/4" LG. (ROLL TO 144" I.D.)	SA-612N	M
100	1	.842" X 116 3/16" PL. X 455" LG. (ROLL TO 144" I.D.)	SA-612N	M

VESSEL DESIGN DATA & INSPECTION NOTES

CODE: 2015 ED. ASME, SECT. VIII, DIV. 1
CONSTRUCTION: WELDED
INTERNAL DESIGN PRESS: 260 PSIG @ +150 °F
INTERNAL OPERATING PRESS: ---- PSIG @ ---- °F
EXTERNAL DESIGN PRESS: 5 PSIG @ -40 °F
EXTERNAL OPERATING PRESS: ---- PSIG @ ---- °F
MAX. ALLOW. WORKING PRESS: 260 PSIG @ +150 °F
HYDROSTATIC TEST: 340 PSIG @ AMBIENT °F
SHELL THICKNESS: .842/.906" NOM.
HEAD THICKNESS: .403" MIN.
CONE: ---- NOM.
CORROSION ALLOWANCE: NONE
HEAT TREAT: NONE
X-RAY: RT 1 FOR ALL "T" JOINTS & UW-51, PAUT
APPLY SYMBOL OR STAMP: PER ASME
INSPECTION: NATIONAL BOARD & MTC

GENERAL NOTES

1. All bolts to straddle normal centerline unless otherwise noted.
2. Vessel to be cleaned (hand dried) after testing.
3. All openings are to be protected prior to shipment.
4. Approximate weight 188,829 W/ SADDLES lbs.
5. Welding procedures SEE ABOVE
6. A longitudinal & transverse workline to be stamped on vessel prior to layout of nozzles and attachments.
7. Tolerances to be per BOC ENG. STD. tolerance sheet
8. All flanges to be ASME B16.5-2013; All couplings to be ASME B16.11-LATEST EDITION. All elbows to be ASME B16.9-LATEST EDITION Flanges over 24" to be ASME "B16.47-2011"

SURFACE PREPARATION: EXTERIOR BLASTED TO SSPC-SP10
INTERIOR: DRAIN, CLEAN AND DRY VESSEL AFTER HYDRO. REMOVE ALL WELD RODS, LOOSE SCALE, CHIPS, OR EXCESSIVE OIL OR GREASE
PAINT: SHERWIN WILLIAMS EPO-PHEN FF, 7-9 MILS DFT

SCHEDULE OF OPENINGS																
MARK	QUAN	SIZE	RAT	FAC	TYPE	SERVICE	NOZZLE OD	WALL THK.	PAD THK.	PAD WIDTH	OS PROJ	IS PROJ	WELD A	WELD B	WELD C	BEVEL	B.O.M. NUMBER
N02	1	3"	150#	RF	WN	VAPOR RECYCLE VENT	3.5"	.300"	.906"	2"	12"	1/2"	3/8	9/16	3/8	FULL	125,126,127,159,160
C12	1	2"	150#	RF	WN	SAMPLE TAP W/ INTERNAL RETURN	2.375"	.218"	----	----	12"	1/2"	1/4	----	3/8	FULL	128,129,155,158,168,169,177,179,180,181,182
A15	1	20"	150#	RF	WN	MAWAY W/ BLIND & DAVIT	20.0"	.500"	.906"	8 1/2"	12"	1/2"	3/8	9/16	3/8	FULL	118,119,120,121,122,123,124
A04	1	4"	150#	RF	WN	SPARE W/ INTERNAL STANDPIPE	4.5"	.337"	.906"	2.75"	12"	SEE DET'L	3/8	9/16	3/8	FULL	115,116,130,148,183,184,161
N04	1	4"	150#	RF	WN	PURGE	1.90"	.200"	----	----	12"	1/2"	1/4	----	3/8	FULL	171,172,174
N01	1	4"	150#	RF	WN	SAFETY VALVE	4.5"	.337"	.906"	2"	12"	1/2"	3/8	9/16	3/8	FULL	115,116,117,161
A06	1	1 1/2"	150#	RF	WN	LOW POINT DRAIN	1.90"	.200"	----	----	12"	1/2"	1/4	----	3/8	FULL	171,172,174
C11	1	2"	150#	RF	WN	LEVEL INDICATOR TAP	2.375"	.218"	----	----	12"	1/2"	1/4	----	3/8	FULL	128,129,156,157
C19	1	2"	150#	RF	WN	LEVEL INDICATOR TAP	2.375"	.218"	----	----	12"	1/2"	1/4	----	3/8	FULL	128,129,156,157
C18	1	2"	150#	RF	WN	LEVEL INDICATOR TAP	2.375"	.218"	----	----	12"	1/2"	1/4	----	3/8	FULL	128,129,156,157
C07	1	2"	150#	RF	WN	LEVEL INDICATOR TAP	2.375"	.218"	----	----	12"	1/2"	1/4	----	3/8	FULL	128,129,156,157
A03	1	3"	150#	RF	WN	SPARE	3.5"	.300"	.906"	2"	12"	1/2"	3/8	9/16	3/8	FULL	125,126,127,185,186,159
A16	1	1 1/2"	150#	RF	WN	LOW POINT DRAIN	1.90"	.200"	----	----	12"	1/2"	1/4	----	3/8	FULL	171,172,174
N01	1	4"	150#	RF	WN	SAFETY VALVE	4.5"	.337"	.906"	2"	12"	1/2"	3/8	9/16	3/8	FULL	115,116,117,161
N04	1	4"	150#	RF	WN	PROCESS LIQUID FILL	4.5"	.337"	.906"	2"	12"	1/2"	3/8	9/16	3/8	FULL	115,116,117,161
A16	1	1 1/2"	150#	RF	WN	PURGE	1.90"	.200"	----	----	12"	1/2"	1/4	----	3/8	FULL	171,172,174
A04	1	4"	150#	RF	WN	SPARE W/ INTERNAL STANDPIPE	4.5"	.337"	.906"	2.75"	12"	SEE DET'L	3/8	9/16	3/8	FULL	115,116,130,148,183,184,161
A15	1	20"	150#	RF	WN	MAWAY W/ BLIND & DAVIT	20.0"	.500"	.906"	8 1/2"	12"	1/2"	3/8	9/16	3/8	FULL	118,119,120,121,122,123,124
C12	1	2"	150#	RF	WN	SAMPLE TAP W/ INTERNAL RETURN	2.375"	.218"	----	----	12"	1/2"	1/4	----	3/8	FULL	128,129,155,158,168,169,177,179,180,181,182
N10	1	8"	150#	RF	WN	PUMP SUCTION W/ VORTEX BREAKER	8.625"	.322"	.906"	3"	12"	FLUSH	5/8	9/16	7/8	FULL	132,133,134,138,163,167
N05	1	3"	150#	RF	WN	RECONDENSER RETURN W/ DIP PIPE	3.5"	.300"	.906"	2"	12"	SEE DET'L	3/8	9/16	3/8	FULL	125,127,131,149,159,160
C19	1	2"	150#	RF	WN	LEVEL INDICATOR TAP	2.375"	.218"	----	----	12"	1/2"	1/4	----	3/8	FULL	128,129,156,157
C18	1	2"	150#	RF	WN	LEVEL INDICATOR TAP	2.375"	.218"	----	----	12"	1/2"	1/4	----	3/8	FULL	128,129,156,157
C11	1	2"	150#	RF	WN	LEVEL INDICATOR TAP	2.375"	.218"	----	----	12"	1/2"	1/4	----	3/8	FULL	128,129,156,157
C07	1	2"	150#	RF	WN	LEVEL INDICATOR TAP	2.375"	.218"	----	----	12"	1/2"	1/4	----	3/8	FULL	128,129,156,157
A03	1	3"	150#	RF	WN	SPARE	3.5"	.300"	.906"	2"	12"	1/2"	3/8	9/16	3/8	FULL	125,126,127,185,186,159
A06	1	1 1/2"	150#	RF	WN	LOW POINT DRAIN	1.90"	.200"	----	----	12"	1/2"	1/4	----	3/8	FULL	171,172,174
N01	1	4"	150#	RF	WN	SAFETY VALVE	4.5"	.337"	.906"	2"	12"	1/2"	3/8	9/16	3/8	FULL	115,116,117,161
N04	1	4"	150#	RF	WN	PROCESS LIQUID FILL	4.5"	.337"	.906"	2"	12"	1/2"	3/8	9/16	3/8	FULL	115,116,117,161
A16	1	1 1/2"	150#	RF	WN	PURGE	1.90"	.200"	----	----	12"	1/2"	1/4	----	3/8	FULL	171,172,174
A04	1	4"	150#	RF	WN	SPARE W/ INTERNAL STANDPIPE	4.5"	.337"	.906"	2.75"	12"	SEE DET'L	3/8	9/16	3/8	FULL	115,116,130,148,183,184,161
A15	1	20"	150#	RF	WN	MAWAY W/ BLIND & DAVIT	20.0"	.500"	.906"	8 1/2"	12"	1/2"	3/8	9/16	3/8	FULL	118,119,120,121,122,123,124
C12	1	2"	150#	RF	WN	SAMPLE TAP W/ INTERNAL RETURN	2.375"	.218"	----	----	12"	1/2"	1/4	----	3/8	FULL	128,129,155,158,168,169,177,179,180,181,182
N02	1	3"	150#	RF	WN	VAPOR RECYCLE VENT	3.5"	.300"	.906"	2"	12"	1/2"	3/8	9/16	3/8	FULL	125,126,127,159,160
MARK	QUAN	SIZE	RAT	FAC	TYPE	SERVICE	NOZZLE OD	WALL THK.	PAD THK.	PAD WIDTH	OS PROJ	IS PROJ	WELD A	WELD B	WELD C	BEVEL	B.O.M. NUMBER

REFERENCE DRAWINGS

MISSISSIPPI TANK COMPANY
HATTIESBURG, MISSISSIPPI

MO NO. LATER UNITS REQ'D. ONE

CUSTOMER
LINDE LLC, CERES, CA

P.O. NO. 9300198912 ITEM#

144" I.D. X 137'-8 1/4" O.A.L.
113,000 W.G. CAP. C02
STORAGE TANK

DES:
D = DOMESTIC MATERIAL: R = RECORD
M = MILL TEST REPORT: C = VENDOR CERTIFICATION; OF DOMESTIC ORIGIN
A = APPROVED VENDOR LIST:

	DATE	DWG. NO.	REV.
DWN BY: saultman	8/15/2017	C14203	6
CKD BY: tlc	8/24/2017		
APPROVED BY:		SCALE: N.T.S.	SHT. 1 OF 4

GENERAL NOTES:

1. THE CONTRACTOR SHALL READ AND UNDERSTAND ALL NOTES AND SPECIFICATIONS WHICH APPLY TO THIS PROJECT PRIOR TO BIDDING AND OR CONSTRUCTION. IT IS THE CONTRACTORS RESPONSIBILITY TO UNDERSTAND THE TRUE MEANING AND INTENT AND SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL SPECIFICATIONS.
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF STANISLAUS COUNTY STANDARDS AND SPECIFICATIONS. SAID STANDARDS AND SPECIFICATIONS ARE HEREBY MADE APART OF THESE PLANS.
3. PRIOR TO THE START OF ANY WORK THE CONTRACTOR SHALL CONTACT THE APPROPRIATE REGULATORY AGENCY AND PROJECT CONTACTS FOR A PRE-CONSTRUCTION MEETING. THE CONTRACTOR SHALL VERIFY ALL AGENCIES ASSOCIATED WITH THE PROJECT.
4. WHERE PLANS OR SPECIFICATIONS DESCRIBE PORTIONS OF THE WORK IN GENERAL TERMS, IT IS UNDERSTOOD THAT ONLY QUALITY WORKMANSHIP AND MA TERIALS ARE TO BE USED.
5. THESE PLANS HAVE BEEN CHECKED BY STANISLAUS COUNTY AND/OR ITS AUTHORIZED REPRESENTATIVES BUT SUCH CHECKING AND/OR APPROVAL DOES NOT RELIEVE THE DEVELOPER AND CONTRACTOR FROM HIS/HER RESPONSIBILITY TO CORRECT ERRORS. OMISSIONS OR MAKE CHANGES REQUIRED BY CONDITIONS DISCOVERED IN THE FIELD DURING THE COURSE OF CONSTRUCTION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS AND LICENSES REQUIRED FOR THE CONSTRUCTION AND COMPLETION OF THE PROJECT. THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS AND CONDITIONS OF ALL PERMITS AND APPROVALS APPLICABLE TO THE PROJECT.
7. THE CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING CONSTRUCL1ON, INCLUDING JOB SITE SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO WORKING HOURS. THE CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD JUSTIN W. CAPP, INC. HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH WORK PERFORMED ON THIS PROJECT; EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF JUSTIN W. CAPP, INC.
8. ALL INSPECTIONS AND TESTING REQUIRED UNDER THIS CONTRACT SHALL BE COORDINATED BY THE CONTRACTOR AT THE CONTRACTORS EXPENSE. ALL RE-INSPECTION AND/OR RE-TESTING SHALL BE PAID FOR BY THE CONTRACTOR.
9. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL SAFETY REGULATIONS PERTAINING TO HIS OPERATIONS. HE SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAG MEN OR OTHER DEVICES NECESSARY FOR PUBLIC SAFETY.
10. THE CONTRACTOR SHALL SUBMIT, FOR APPROVAL, A DETAILED PLAN SHOWING DESIGN OF ALL SHORING, BRACING, SLOPE CUTS AND OTHER PROVISIONS FOR WORKER PROTECTION IN AREAS OF EXCAVATION EXCEEDING FIVE FEET IN DEPTH. IF SUCH PLAN VARIES FROM SHORING SYSTEM STANDARDS, THE PLANS SHALL BE PREPARED BY A REGISTERED CIVIL OR STRUCTURAL ENGINEER.
11. CAUTION - **CALL BEFORE YOU DIG:** CALL UNDERGROUND SERVICE ALERT (USA) PRIOR TO TRENCHING, GRADING, EXCAVATION, DRILLING, BORING, SETTING POSTS, PLANTING TREES, ETC. USA WILL PROVIDE INFORMATION OR LOCATE AND MARK ANY UNDERGROUND UTILITIES. CALL USA, TOLL FREE AT **1 (800) 227-2600.**
12. LINES AND GRADES: ALL DISTANCES AND MEASUREMENTS ARE GIVEN AND WILL BE MADE IN A HORIZONTAL PLANE. GRADES ARE GIVEN FROM THE TOP OF STAKES OR NAILS. UNLESS OTHERWISE NOTED.
13. STREET CLOSURE OR LANE CLOSURE WILL REQUIRE A TRAFFIC CONTROL PLAN AND THE DESIGNATION OF A QUALIFIED INDIVIDUAL FOR ITS IMPLEMENTATION AND SAFE MAINTENANCE.
14. FOR ALL PROJECTS, REGARDLESS OF SIZE, THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES TO ELIMINATE OR MINIMIZE POLLUTION DISCHARGE CAUSED BY CONSTRUCTION.
15. THE CONTRACTOR SHALL PROVIDE, AT HIS EXPENSE, APPROPRIATE DUST CONTROL AS REQUIRED FOR THE PREVENTION AND/OR ALLEVIATION OF DUST NUISANCE DURING THE COURSE OF PROJECT CONSTRUCTION.
16. WARNING - UNAUTHORIZED USES OR CHANGES: JUSTIN W. CAPP, INC. WILL NOT BE RESPONSIBLE OR LIABLE FOR UNAUTHORIZED USES OR CHANGES TO THESE PLANS AND/OR SPECIFICATIONS. ONLY A SIGNED AND APPROVED HARD COPY OF THESE PLANS SHALL BE USED FOR CONSTRUCTION, ANY CHANGES TO THESE PLANS MUST BE IN WRITING AND APPROVED BY JUSTIN W. CAPP, INC.
17. THE CONTRACTOR SHALL MAINTAIN A NEATLY MARKED SET OF FULL-SIZE AS-BUILT RECORD DRAWINGS INDICATING THE AS CONSTRUCTED LOCATION OF ALL UNDERGROUND UTILITIES, ELECTRICAL, CONDUITS, STRUCTURES AND OTHER FACILITIES AS THEY DIFFER FROM THE APPROVED PROJECT PLANS. PRIOR TO ACCEPTANCE OF THE PROJECT THE CONTRACTOR SHALL DELIVER TO THE ENGINEER THE AS-BUILT DRAWINGS FOR REVIEW. ALL CHANGES, ADDITIONS OR DEVIATIONS FROM THE APPROVED PLANS SHALL BE SHOW.

CLEARING & GRADING NOTES:

1. AFTER CLEARING THE SITE, THE EXPOSED SOIL SURFACE SHOULD BE RE-COMPACTED TO A MINIMUM DEPTH OF 6" THE RECOMMENDED RELATIVE COMPACTION IS 95 IN AREAS TO BE COVERED WITH ASPHALT OR CONCRETE PAVING. THIS PERCENTAGE REFERS TO THE MAXIMUM DRY DENSITY AS OBTAINED BY THE ASTM D-1557-78 TEST PROCEDURE.
2. ALL EXCESS SOIL & MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR. ALL MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LAWFUL MANNER. ALL COST ASSOCIATED WITH MATERIAL REMOVAL AND DISPOSAL SHALL BE INCLUDED IN THE PROJECT BID UNLESS OTHERWISE NOTED.
3. THE GEOTECHNICAL REPORT NO. G002.01 PREPARED BY BAEZ GEOTECHNICAL GROUP, DATED 10/17/2017 IS HEREBY ACKNOWLEDGED AS A REFERENCED DOCUMENT TO THESE PLANS. ALL SITE PREPARATION AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THIS REPORT.
4. COMPACTION TEST(S) SHALL BE PROVIDED BY THE CONTRACTOR AS REQUIRED BY THE DEVELOPER. TESTING WILL BE PAID FOR BY THE CONTRACTOR.
5. IF DURING CONSTRUCTION ANY UNDERGROUND STRUCTURES OR UNDESIRABLE MATERIALS ARE FOUND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ALERT THE ENGINEER PRIOR TO PROCEEDING.

UNDERGROUND UTILITIES

1. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF CHAPTER 9, SECTION 6705, 6706 AND 6707 OF THE STATE LABOR CODE.
2. ALL EXISTING UNDERGROUND UTILITIES MAY NOT BE SHOWN. CONTRACTOR SHALL TAKE PRECAUTIONARY MEASURES TO PROTECT THESE UTILITIES. THE CONTRACTOR SHALL DO NO EXCAVATION UNTIL ALL UTILITY COMPANIES, STANISLAUS COUNTY AND THE CITY OF MODESTO HAVE BEEN NOTIFIED AND HAVE BEEN GIVEN THE OPPORTUNITY TO MARK THEIR FACILITIES IN THE FIELD.
3. THE EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY AND ARE BASED UPON INFORMATION PROVIDED BY UTILITY COMPANIES AND FIELD INVESTIGATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION OF THE LOCATION OF ALL UNDERGROUND FACILITIES AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH OCCUR DUE TO FAILURE TO LOCATE AND PRESERVE SUCH UTILITIES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 48 HOURS IN ADVANCE OF UNCOVERING ANY EXISTING UTILITY CONNECTION POINTS FOR VERIFICATION AS SHOWN ON THESE PLANS.
4. ALL EXCAVATION, TRENCHING, PIPE MATERIAL. & BACKFILL SHALL BE PER CITY OF MODESTO STANDARDS AND SPECIFICATIONS.
5. ALL UNDERGROUND UTILITIES SHALL BE INSTALLED PRIOR TO THE CONSTRUCTION OF SURFACE IMPROVEMENTS.

CONCRETE PAVING SPECIFICATIONS

1. CONCRETE: PORTLAND CEMENT CONCRETE PAVING SHALL BE CLASS B AS DEFINED IN THE STATE OF CALIFORNIA STANDARDS. WITH A 28 DAY COMPRESSIVE STRENGTH OF 4,000 POUNDS PER SQUARE INCH AS A MINIMUM, AND A MAXIMUM SLUMP OF 3 INCHES CONCRETE SHALL CONSIST OF A 5 SACK MIXTURE OF PORTLAND CEMENT, WATER AND AGGREGATE. PORTLAND CEMENT SHALL BE TYPE II. AGGREGATES SHALL BE WASHED BEFORE USE AND BE FREE FROM ANY FOREIGN MATTER.
2. AGGREGATES: SHALL BE GRADED TO PROVIDE A PLASTIC, WORKABLE MIXTURE OF MAXIMUM DENSITY WITH A MAXIMUM SIZE AGGREGATE OF 3/4 INCHES. THE WATER SHALL BE POTABLE AND NO ADMIXTURES SHALL BE USED WITHOUT APPROVAL OF THE ENGINEER, THE CEMENT, WATER AND AGGREGATES SHALL BE COMBINED AT THE BATCH PLANT AND BE THOROUGHLY MIXED. NO WATER SHALL BE ADDED TO THE MIXTURE AFTER LEAVING THE BATCH PLANT, WITHOUT APPROVAL OF THE ENGINEER. ALL CONCRETE SHALL BE PLACED WITHIN 90 MINUTES AFTER THE INTRODUCTION OF WATER TO THE CEMENT. THE TEMPERATURE OF THE CONCRETE SHALL NO BE LESS THAN 50°AND NOT MORE THAN 90° F.
3. THE CONCRETE SHALL BE CONSOLIDATED BY VIBRATING. CONCRETE WHICH HAS ROCK POCKETS OR HONEYCOMBING AFTER CURING SHALL BE REMOVED AND REPLACED.
4. ALL CONCRETE SHALL BE CURED IN ACCORDANCE WITH SECTION 90-7.018 OF THE STATE OF CALIFORNIA STANDARDS.
5. CONCRETE PAVING SECTIONS:

a. ALL OTHER CONCRETE PAVING SHALL BE 6" CONCRETE OVER 4" A.B. OVER 12" SCARIFIED NATIVE MATERIAL RE-COMPACTED TO 95% RELATIVE DENSITY.

6. DEFORMED REINFORCING STEEL SHALL PER ASTM A615, GRADE 60
7. CRACK CONTROL JOINTS SHALL BE PLACED AT 15' ON CENTER MAXIMUM INTERVALS AND SHALL PENETRATE THE CONCRETE SLAB A MINIMUM OF 1/4 OF THE SLAB THICKNESS.
8. ALL MANHOLES, VALVE, MONUMENT WELLS, ETC., SHALL BE BROUGHT TO THE SURFACE BY THE PAVING CONTRACTOR AFTER THE FINAL PAVING COURSE IS PLACED.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ANY EXISTING STRIPING NECESSARY TO CONNECT TO PROPOSED STRIPING.
10. ALL STRIPING AND PAVEMENT MARKINGS SHALL BE PER CALTRANS STANDARDS (CURRENT EDITION). ALL PAINT SHALL BE THERMOPLASTIC.

STORMDRAIN SPECIFICATIONS

1. H.D.P.E. PIPE AS SHOWN ON THE PLANS SHALL BE HIGH DENSITY POLYETHYLENE AND SHALL CONFORM TO SECTION 64 OF CALTRANS STANDARD SPECIFICATIONS FOR TYPE S CORRUGATED PIPE AS SPECIFIED IN AASHTO DESIGNATION: M294, JOINTS SHALL BE WATER TIGHT AS DESCRIBED IN SECTION 61 OF THE CALTRANS STANDARD SPECIFICATIONS.
2. CORRUGATED METAL PIPE (C.M.P.) SHOWN ON THE PLANS SHALL CONFORM TO SECTIONS 66-1.01, 66-1.02, AND 66-1.05 OF THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION.
3. D.I.P. PIPE SHALL BE DUCTILE IRON PIPE CONFORMING TO AWWA C151-96 AND CL04-95 (WITH BITUMINOUS COATING), WITH "TYTON JOINTS" AND DUCTILE IRON FITTINGS CONFORMING TO AWWA C110 & C104 (W/ BITUMINOUS COATING).
4. POLYVINYL CHLORIDE PIPE (P.V.C.) - ASTM D-3034, SDR 35 WITH RUBBER SEALING RINGS MEETING ASTM D-3212 "JOINTS FOR DRAINS AND SEWER PIPES USING FLEXIBLE ELASTOMERIC SEALS" OR AN APPROVED EQUAL.
5. AFTER PIPE HAS BEEN PROPERLY INSTALLED, THE INITIAL BACKFILL CONSISTING OF SELECT FINE EARTH FROM THE EXCAVATED MATERIAL SHALL BE COMPACTED IN 6" THICK LAYERS EXTENDING TO 12" OVER THE TOP OF THE PIPE, THE FINAL BACKFILL SHALL BE PLACED IN LAYERS AND COMPACTED TO A RELATIVE DENSITY OF AT LEAST 95% OR AS SPECIFIED IN THE GEOTECHNICAL SERVICES REPORT.

ASPHALTIC PAVEMENT SPECIFICATIONS

1. THE AGGREGATE BASE (CLASS II, 3/4" MAXIMUM) SHALL COMPLY WITH SECTION 26 OF THE CALTRANS STANDARD SPECIFICATIONS, AGGREGATE BASE SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT RELATIVE COMPACTION AS TESTED BY ASTM D1557 OR CALIFORNIA TEST METHOD CT 216 (DRY METHOD) TEST PROCEDURE.
2. THE FLEXIBLE PAVEMENT SHALL CONFORM TO, AND BE PLACED IN ACCORDANCE WITH THE JUNE 5, 2008, VERSION OF SECTION 39 OF THE CALTRANS STANDARD SPECIFICATIONS, USING THE STANDARD PLACEMENT METHOD (SUBSECTION 39-2). A 3/4" HMA TYPE A, UTILIDING A PG 70-10 BINDER, SHALL BE USED FOR BOTH NEW AND OVERLAY CONSTRUCTION AS NECESSARY. THE AGGREGATE BASE SHALL COMPLY WITH SECTION 26 OF THE CALTRANS STANDARD Specifications. AGGREGATE BASE SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT RELATIVE Compaction AS TESTED BY ASTM D1557 OR CALIFORNIA TEST METHOD CT 216 (DRY METHOD) TEST PROCEDURE. THE UPPER 6 INCHES OF SUBGRADE SHALL BE UNIFORMLY MOISTURE Conditioned TO OPTIMUM AND COMPACTED TO 90 OF THE MAXIMUM DRY DENSITY AS TESTED BY ASTM D1557. AGGREGATE BASE SHALL CONFORM TO SECTION 26 OF THE CALTRANS Specifications AND SHALL BE CLASS 2, 3/4" MAXIMUM AB THICKNESS SHOWN ON THESE PLANS SHALL BE THE MINIMUM ALLOWED.
3. IN PLACE, COMPACTED, ASPHALT CONCRETE & AGGREGATE BASE THICKNESS ARE SHOWN IN THESE PLANS. CONSTRUCTION TOLERANCES ARE AS FOLLOWS:

   AGGREGATE BASE: 1/2" PLUS OR MINUS

   ASPHALT CONCRETE: 1/4- PLUS OR MINUS

4. A TACK COAT IS TO BE APPLIED TO ALL CONCRETE EDGES IN WHICH PAVEMENT IS TO BE PLACED AGAINST OR ON.

MONUMENT PRESERVATION & PROTECTION:

CONTRACTOR IS RESPONSIBLE FOR PRESERVATION AND/OR PERPETUATION OF ALL EXISTING MONUMENTS WHICH CONTROL SUBDIVISIONS, TRACTS, BOUNDARIES, STREETS, HIGHWAYS, EASEMENTS, OR OTHER RIGHT-OF-WAY, EASEMENTS, OR PROVIDE SURVEY CONTROL WHICH WILL BE DISTURBED OR REMOVED DUE TO CONTRACTOR'S WORK. CONTRACTOR SHALL PROVIDE A MINIMUM OF 10 WORKING DAYS NOTICE TO PROJECT ENGINEER/SURVEYOR PRIOR TO DISTURBANCE OR REMOVAL OF EXISTING MONUMENTS. PROJECT ENGINEER/SURVEYOR SHALL COORDINATE WITH CONTRACTOR TO RESET MONUMENTS OR PROVIDE PERMANENT WITNESS MONUMENTS AND FILE THE REQUIRED DOCUMENTATION WITH THE COUNTY SURVEYOR PURSUANT TO BUSINESS AND PROFESSIONAL CODE SECTION 8771.

CALL BEFORE YOU DIG

BEFORE PLANTING TREES, TRENCHING, POST HOLING, BLASTING, GRADING, EXCAVATING, BORING, DRILLING, ETC., CALL UNDERGROUND SERVICE ALERT FOR UNDERGROUND CLEARANCE. THEY WILL LOCATE AND MARK UNDERGROUND FACILITIES, OR PROVIDE THE NECESSARY LOCATION INFORMATION TO YOU.

811 Know what's below. Call before you dig.

PRELIMINARY

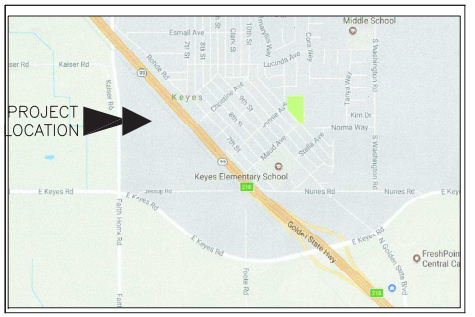
SYMBOL LEGEND:

PROPERTY LINE
WATER LINE
STORM DRAIN LINE
FIRE LINE
SANITARY SEWER LINE
GAS LINE
IRRIGATION LINE
OVERHEAD UTILITY LINE
CHAIN LINK FENCE
RAILROAD TRACKS
CONCRETE
ASPHALT PAVEMENT
WASHOUT FACILITY
2-4" COARSE AGGREGATE
3/4" CRUSHED ROCK

STORM DRAIN MANHOLE
SANITARY SEWER MANHOLE
SANITARY SEWER CLEANOUT
HOSE BIBB
HUB DRAIN
FLOOR DRAIN
ROOF DRAIN
ELECTROLIER/LIGHT
CATCH BASIN
POWER POLE
FIRE HYDRANT
WATER VALVE
ELECTRIC BOX
CHRISTY BOX
EXISTING TOPO
FINISH SUB-GRADE (GRADED SOIL ELEVATION)
STRAW WATTLE
PEA GRAVEL BAGS AND SEDIMENT FILTER FABRIC
RUNOFF SAMPLING LOCATION

Proposed CO_2 Plant

FAITH HOME ROAD.
Keyes, California



VICINITY MAP
N.T.S.

SHEET TITLE INDEX

ABBREVIATIONS:

AP - ANGLE POINT
BC - BEGINNING OF CURVE
BD - BOLLARD
BFP - BACK FLOW PREVENTOR
BSW - BACK OF WALK
BWF - BARB WIRE FENCE
BXE - ELECTRICAL CHRISTY BOX
BXL - LIGHTING CHRISTY BOX
BXR - TRAFFIC CHRISTY BOX
BXT - TELEPHONE CHRISTY BOX
BXW - WATER CHRISTY BOX
CB - CATCH BASIN
℄ - CENTER LINE
CL - CHAIN LINK FENCE
CMP - CORRUGATED METAL PIPE
CO - CLEANOUT
CONC. - CONCRETE
C - CONCRETE
DI - DRAIN INLET
DIP - DUCTILE IRON PIPE
DW - DRIVEWAY
EC - END OF CURVE
EL - ELECTROLIER
EP - EDGE OF PAVEMENT
(E) - EXISTING
FD - FLOOR DRAIN
FF - FINISH FLOOR
FG - FINISH GRADE
FH - FIRE HYDRANT
GB - GRADE BREAK
GE - GROUND ELEVATION
GW - GUY WIRE
HD - HUB DRAIN
HP - HIGH POINT
INV - INVERT OF PIPE
ISP - IRRIGATION STAND PIPE
LI - LIP OF GUTTER
LF - LINEAR FOOT/FEET
LLA - LOT LINE ADJUSTMENT
MH - MANHOLE
(N) - NEW/PROPOSED
P - PAVEMENT
POC - POINT ON CURVE
PP - POWER POLE
℄ - PROPERTY LINE
P.U.E. - PUBLIC UTILITY EASEMENT
PVC - POLYVINYL CHLORIDE PIPE
RCP - REINFORCED CONCRETE PIPE
RD - ROOF DRAIN
RG - ROUGH GRADE
R.O.W. (R/W) - RIGHT OF WAY
SD - STORM DRAIN
SDMH - STORM DRAIN MANHOLE
SP - SERVICE POLE
SS - SANITARY SEWER
SSMH - SANITARY SEWER MANHOLE
SW - SIDEWALK
TC - TOP OF CURB
TE - TRASH ENCLOSURE
TOB - TOP OF BANK
TOE - TOE OF BANK
VG - VALLEY GUTTER
WV - WATER VALVE

JUSTIN W. CAPP, Inc.
ENGINEERING + DESIGN
JUSTIN W. CAPP
CE #61393, SE #4813
1405 8th STREET, MODESTO, CA
PO BOX 861, 95353
(209) 524-4774

ENGINEER'S SEAL: REGISTERED PROFESSIONAL ENGINEER — JUSTIN W. CAPP — No. 4813 Exp. — STRUCTURAL — STATE OF CALIFORNIA

FOR REVIEW

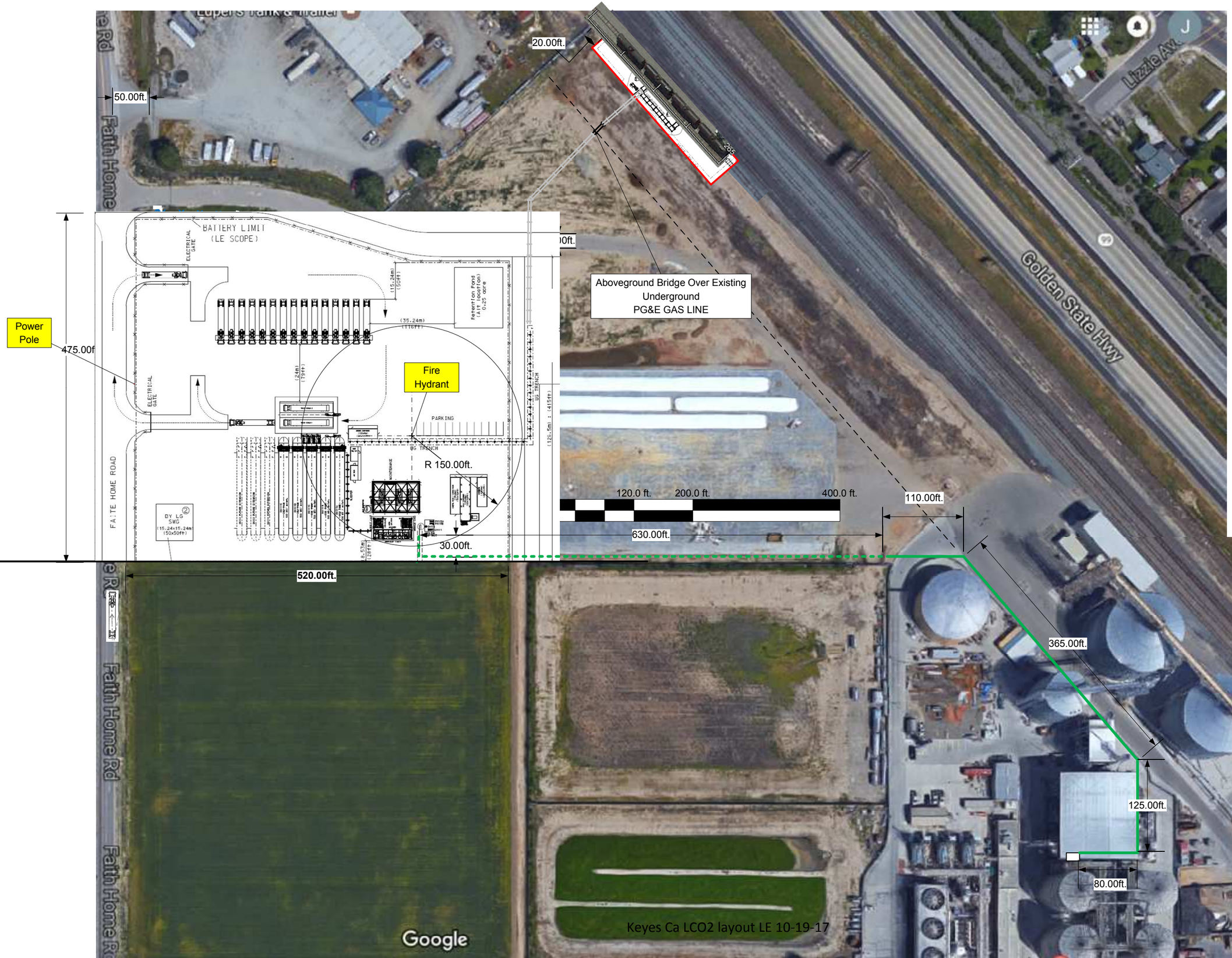
Issue	Date	Status	Originator	Checker	Reviewed	Approved	Description

Linde
LINDE AG
ENGINEERING DIVISION
01277 DRESDEN

Linde Project No.: 3710A008 Linde Job Code.: KEYES CO2

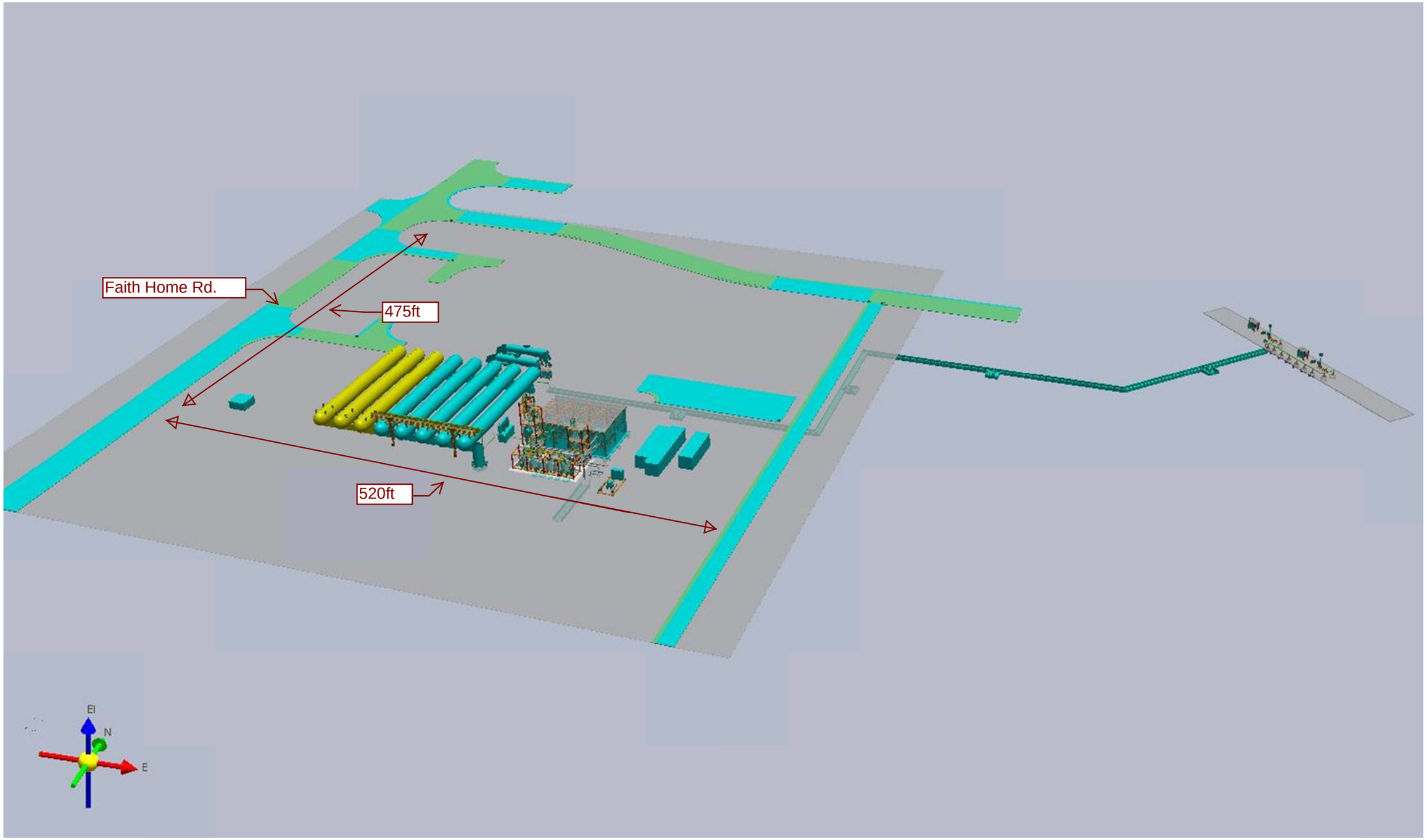
Title: GENERAL NOTES | Scale: NTS | File Name: C-ZD 1001.001

Linde Drawing No. &AG C-ZD 1001.001 | Sheet CO | Size D

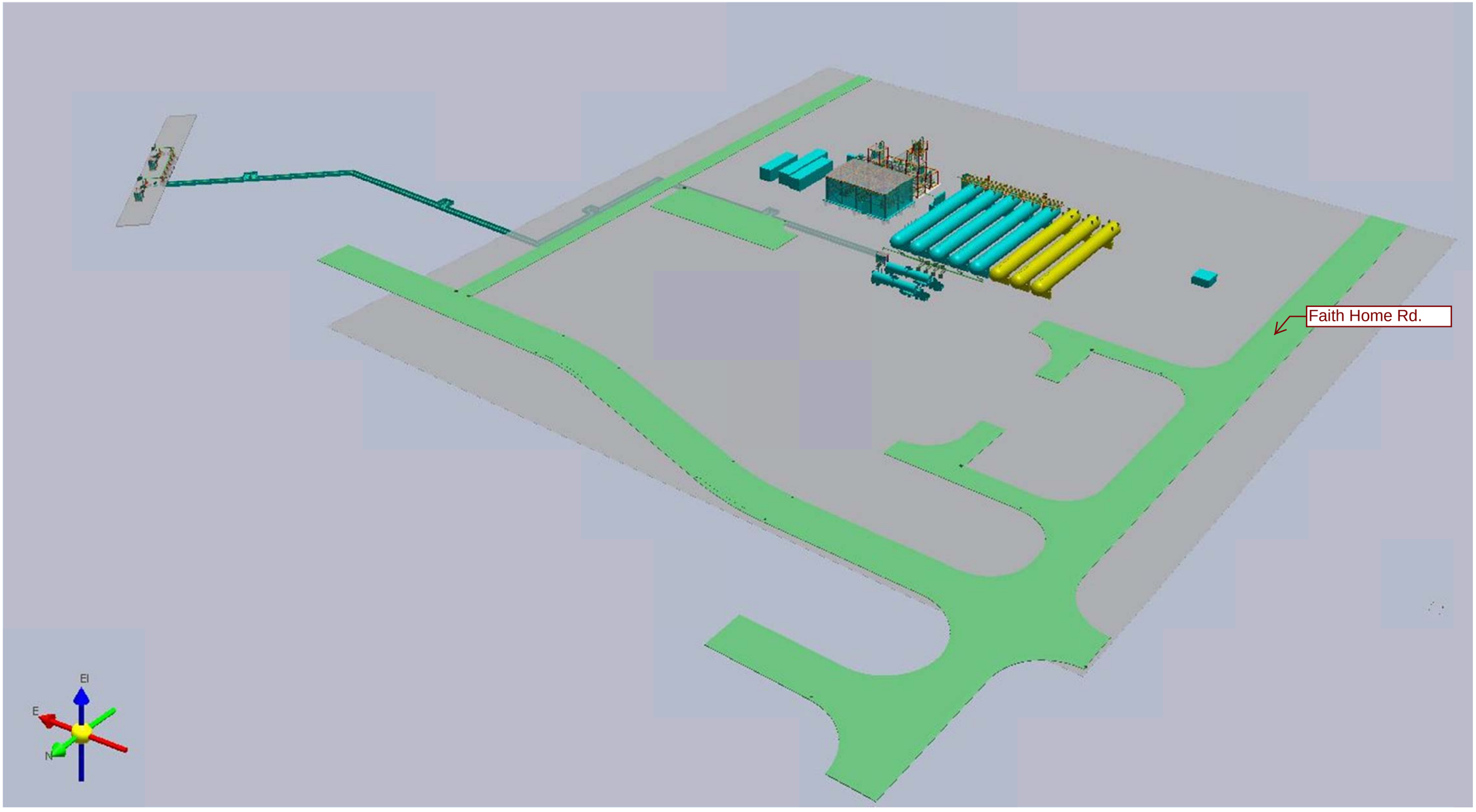

Faith Home Rd
50.00ft.
20.00ft.
Lizzie Ave
Golden State Hwy
Aboveground Bridge Over Existing
Underground
PG&E GAS LINE
Power
Pole
475.00f
BATTERY LIMIT
(LE SCOPE)
ELECTRICAL GATE
Retention Pond
(Alt location)
0.25 acre
Fire
Hydrant
PARKING
UG TRENCH
R 150.00ft.
FAITE HOME ROAD
DY LG
SWG
(15.24x15.24m
(50x50ft)
30.00ft.
520.00ft.
120.0 ft.
200.0 ft.
400.0 ft.
630.00ft.
110.00ft.
365.00ft.
125.00ft.
80.00ft.
Truck
Route
By Aemetis
Rail
By LG
Google
Keyes Ca LCO2 layout LE 10-19-17

3710A008 Keyes Plant Views

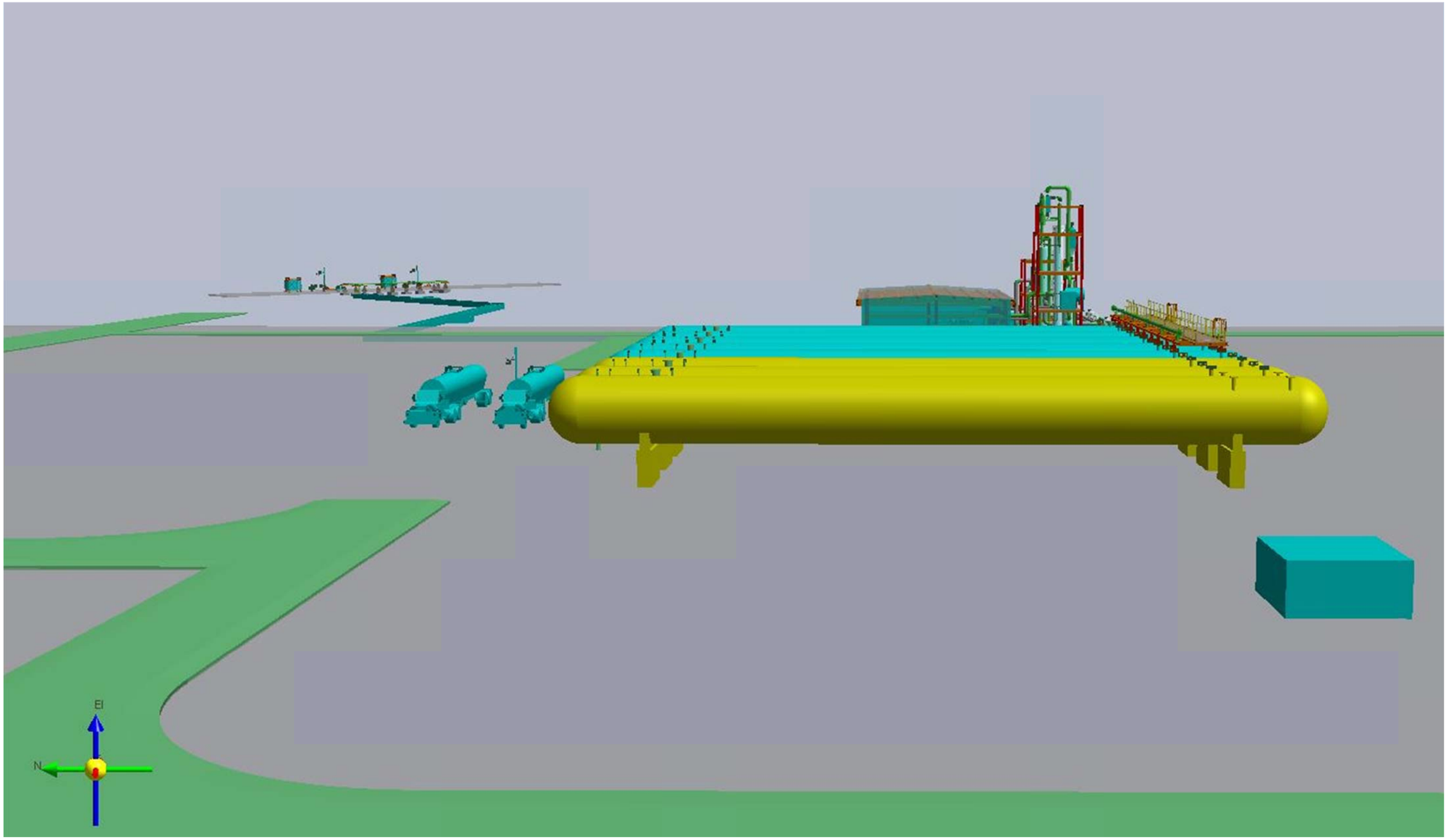
1. Overview, looking north west



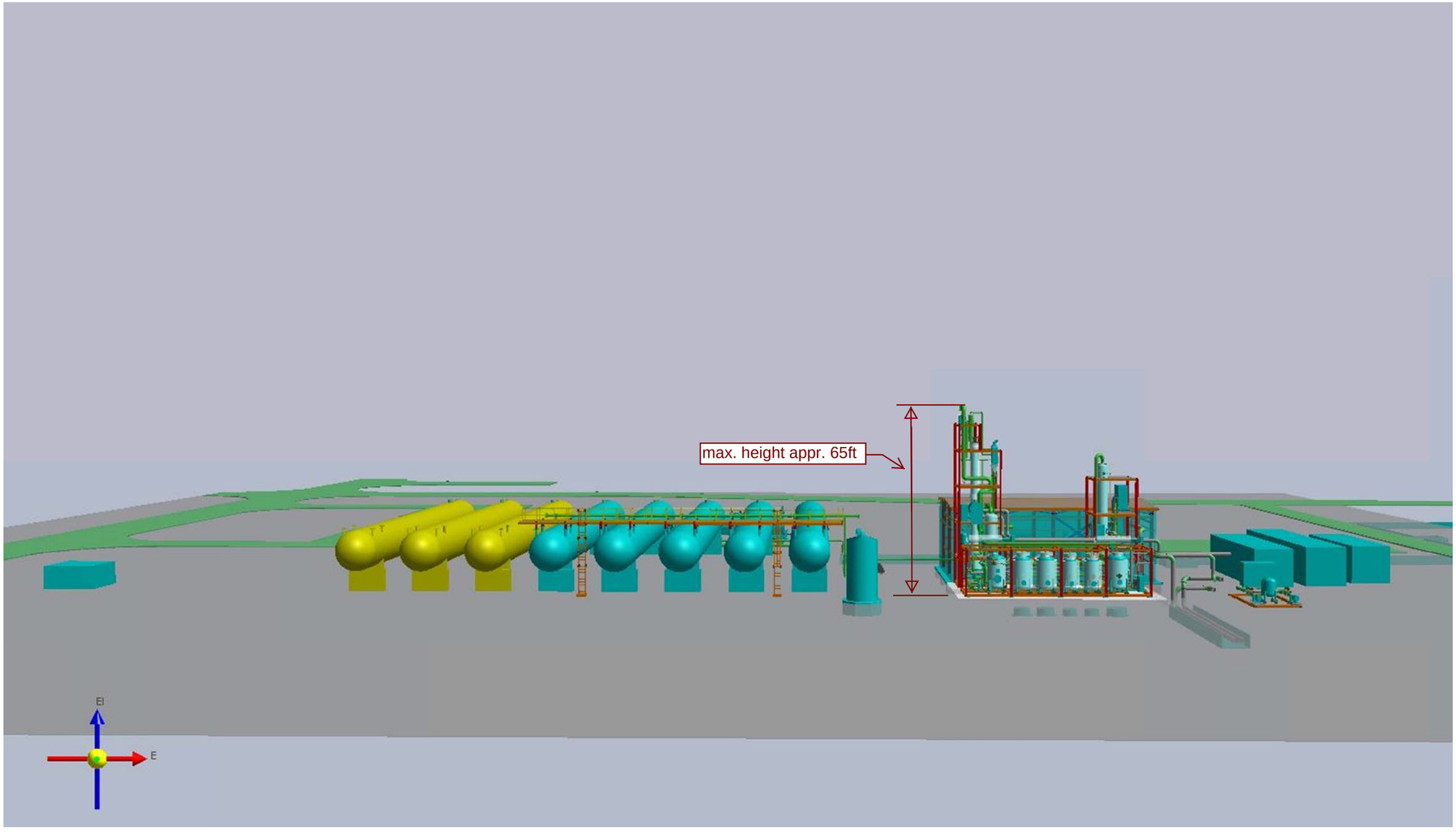
2. Overview, looking south east



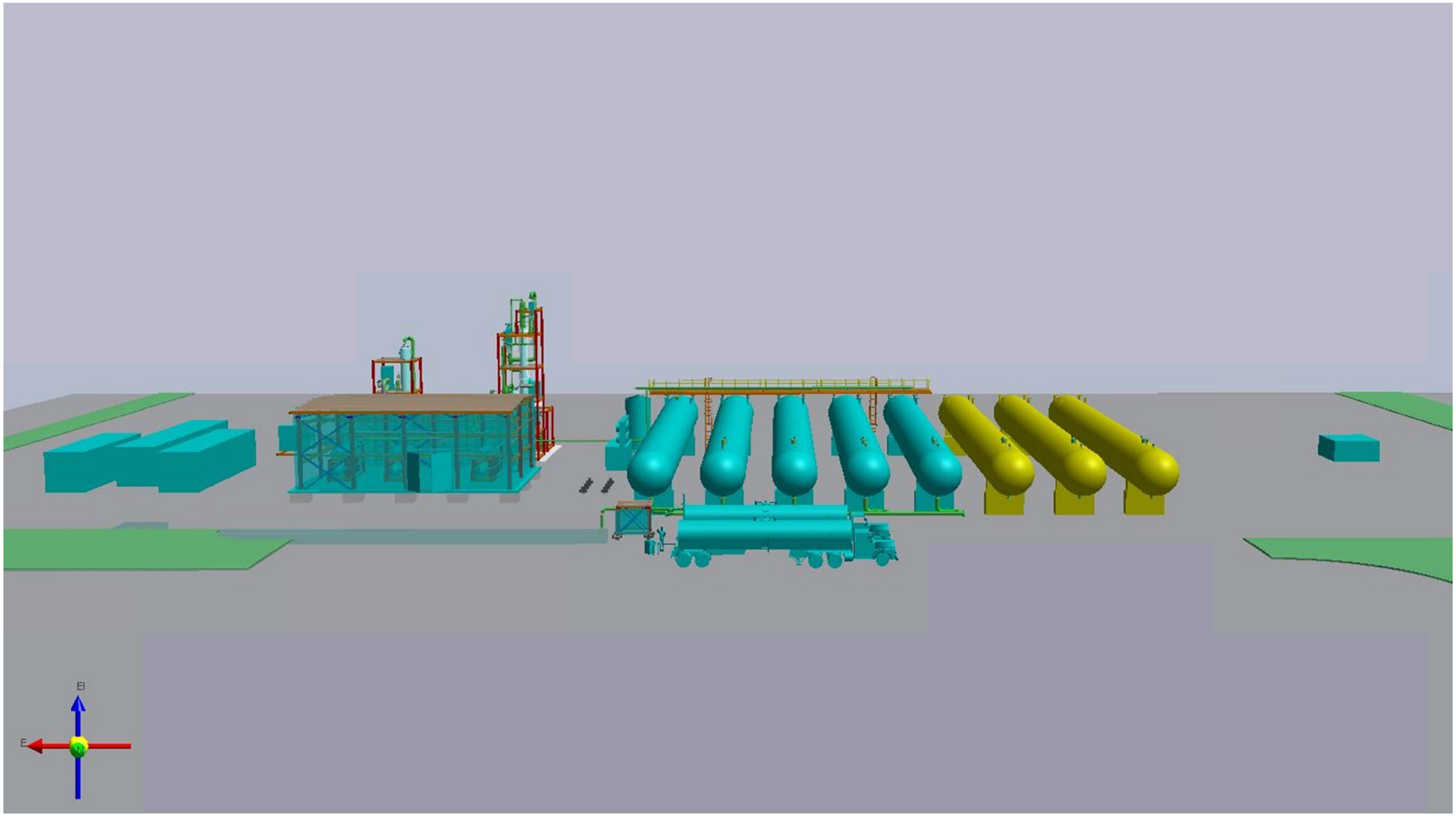
3. Looking east



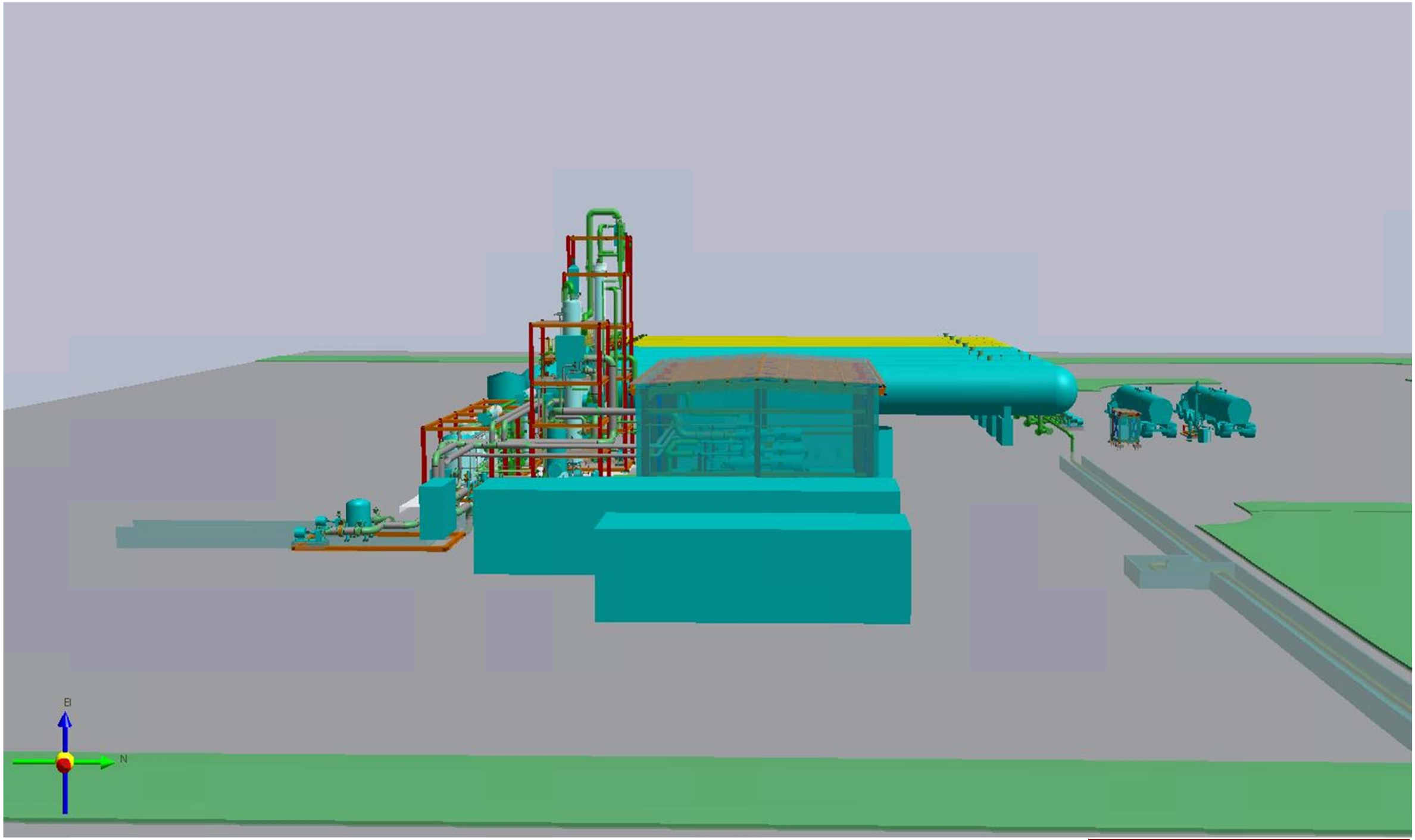
4. looking north



5. looking south



6. looking west



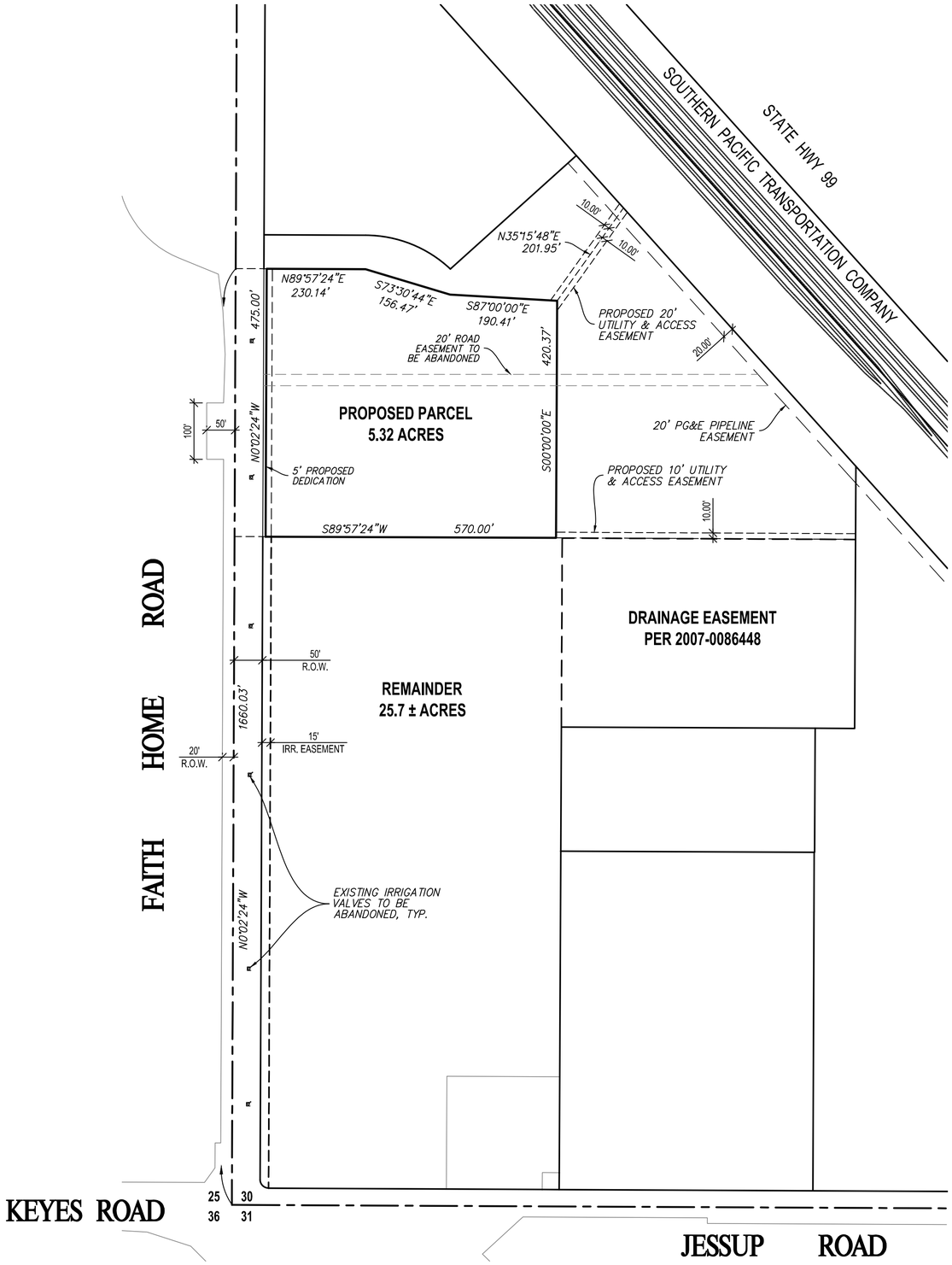
T. Lang/Linde Engineering/XEP/15.Sept 2017

TENTATIVE PARCEL MAP

JUSTIN W. CAPP, Inc.
ENGINEERING + DESIGN

PREPARED BY:
JUSTIN W. CAPP ENGINEERING, INC.
1003 12TH STREET
MODESTO, CA 95354

PREPARED FOR:
A.L. GILBERT COMPANY
P.O. BOX 459
KEYES, CA 95328




Linde
We deliver.

APPLICATION QUESTIONNAIRE

Please Check all applicable boxes

APPLICATION FOR:

Staff is available to assist you with determining which applications are necessary

☐	General Plan Amendment	☐	Subdivision Map
☒	Rezone	☒	Parcel Map
☐	Use Permit	☐	Exception
☐	Variance	☐	Williamson Act Cancellation
☐	Historic Site Permit	☐	Other _____

PLANNING STAFF USE ONLY:

Application No(s): PIN 2018 0017

Date: 2-6-2018

S 30 T 4 R 10

GP Designation: PD

Zoning: PD 123

Fee: $4559.00

Receipt No. 512398

Received By: D.H

Notes: needs articles of incorporation & will serve letter

In order for your application to be considered COMPLETE, please answer all applicable questions on the following pages, and provide all applicable information listed on the checklist on pages i – v. Under State law, upon receipt of this application, staff has 30 days to determine if the application is complete. We typically do not take the full 30 days. It may be necessary for you to provide additional information and/or meet with staff to discuss the application. Pre-application meetings are not required, but are highly recommended. An incomplete application will be placed on hold until all the necessary information is provided to the satisfaction of the requesting agency. An application will not be accepted without all the information identified on the checklist.

Please contact staff at (209) 525-6330 to discuss any questions you may have. Staff will attempt to help you in any way we can.

PROJECT INFORMATION

PROJECT DESCRIPTION: (Describe the project in detail, including physical features of the site, proposed improvements, proposed uses or business, operating hours, number of employees, anticipated customers, etc. – Attach additional sheets as necessary)

****Please note: A detailed project description is essential to the reviewing process of this request. In order to approve a project, the Planning Commission or the Board of Supervisors must decide whether there is enough information available to be able to make very specific statements about the project. These statements are called "Findings". It is your responsibility as an applicant to provide enough information about the proposed project, so that staff can recommend that the Commission or the Board make the required Findings. Specific project Findings are shown on pages 17 – 19 and can be used as a guide for preparing your project description. (If you are applying for a Variance or Exception, please contact staff to discuss special requirements).***

Please refer to the Project Description.

PROJECT SITE INFORMATION

Complete and accurate information saves time and is vital to project review and assessment. Please complete each section entirely. If a question is not applicable to your project, please indicated this to show that each question has been carefully considered. Contact the Planning & Community Development Department Staff, 1010 10th Street – 3rd Floor, (209) 525-6330, if you have any questions. Pre-application meetings are highly recommended.

ASSESSOR'S PARCEL NUMBER(S): **Book** 045 **Page** 026 **Parcel** 040

Additional parcel numbers: _____

Project Site Address or Physical Location: _____

_____

Property Area: Acres: 5.32 or Square feet: _____

Current and Previous Land Use: (Explain existing and previous land use(s) of site for the last ten years)

Historically - row crop farming. Currently vacant and not used for agricultural purposes.

List any known previous projects approved for this site, such as a Use Permit, Parcel Map, etc.: (Please identify project name, type of project, and date of approval)

Planned Development 123 (PD-123), approved in 1985 allowed for trailer manufacturing and repair. The PD expired in 1988 after the 36 month development schedule was not met.

Existing General Plan & Zoning: GP - Industrial & Zoning - PD-123 PD

Proposed General Plan & Zoning: PD-___ (if applicable)

ADJACENT LAND USE: (Describe adjacent land uses within 1,320 feet (1/4 mile) and/or two parcels in each direction of the project site)

East: Industrial

West: Agricultural

North: Industrial

South: Industrial

WILLIAMSON ACT CONTRACT:

Yes ☐ **No** ☒

Is the property currently under a Williamson Act Contract?

Contract Number: _____

If yes, has a Notice of Non-Renewal been filed?

Date Filed: _____

Yes ☐ No ☒ Do you propose to cancel any portion of the Contract?

Yes ☐ No ☒ Are there any agriculture, conservation, open space or similar easements affecting the use of the project site. (Such easements do not include Williamson Act Contracts)

If yes, please list and provide a recorded copy: _____

_____

SITE CHARACTERISTICS: (Check one or more) Flat ☒ Rolling ☐ Steep ☐

VEGETATION: What kind of plants are growing on your property? (Check one or more)

Field crops ☒ Orchard ☐ Pasture/Grassland ☐ Scattered trees ☐

Shrubs ☐ Woodland ☐ River/Riparian ☐ Other ☐

Explain Other: _____

Yes ☐ No ☒ Do you plan to remove any trees? (If yes, please show location of trees planned for removal on plot plan and provide information regarding transplanting or replanting.)

GRADING:

Yes ☒ No ☐ Do you plan to do any grading? (If yes, please indicate how many cubic yards and acres to be disturbed. Please show areas to be graded on plot plan.) 5.32 acres

_____

STREAMS, LAKES, & PONDS:

Yes ☐ No ☒ Are there any streams, lakes, ponds or other watercourses on the property? (If yes, please show on plot plan)

Yes ☐ No ☒ Will the project change any drainage patterns? (If yes, please explain – provide additional sheet if needed) _____

_____

Yes ☐ No ☒ Are there any gullies or areas of soil erosion? (If yes, please show on plot plan)

Yes ☐ No ☒ Do you plan to grade, disturb, or in any way change swales, drainages, ditches, gullies, ponds, low lying areas, seeps, springs, streams, creeks, river banks, or other area on the site that carries or holds water for any amount of time during the year? (If yes, please show areas to be graded on plot plan)

Please note: If the answer above is yes, you may be required to obtain authorization from other agencies such as the Corps of Engineers or California Department of Fish and Game.

STRUCTURES:

Yes ☐ No ☒ Are there structures on the site? (If yes, please show on plot plan. Show a relationship to property lines and other features of the site.

Yes ☐ No ☒ Will structures be moved or demolished? (If yes, indicate on plot plan.)

Yes ☒ No ☐ Do you plan to build new structures? (If yes, show location and size on plot plan.)

Yes ☐ No ☒ Are there buildings of possible Historical significance? (If yes, please explain and show location and size on plot plan.) _____

_____

PROJECT SITE COVERAGE:

Existing Building Coverage: n/a Sq. Ft.

Proposed Building Coverage: 2500 Sq. Ft.

Landscaped Area: 500 Sq. Ft.

Paved Surface Area: 2000 Sq. Ft.

BUILDING CHARACTERISTICS:

Size of new structure(s) or building addition(s) in gross sq. ft.: (Provide additional sheets if necessary) Please see attached

Number of floors for each building: 1

Building height in feet (measured from ground to highest point): (Provide additional sheets if necessary) 20 ft

Height of other appurtenances, excluding buildings, measured from ground to highest point (i.e., antennas, mechanical equipment, light poles, etc.): (Provide additional sheets if necessary) 60 ft

Proposed surface material for parking area: (Provide information addressing dust control measures if non-asphalt/concrete material to be used) Concrete paving and crushed rock throughout.

UTILITIES AND IRRIGATION FACILITIES:

Yes ☒ No ☐ Are there existing public or private utilities on the site? Includes telephone, power, water, etc. (If yes, show location and size on plot plan)

Who provides, or will provide the following services to the property?

Electrical: TID

Telephone: Charter

Water**: KCSD and Aemetis

Sewer*: anaerobic treatment system and leech field

Gas/Propane: PG & E

Irrigation: TID

***Please Note: A "will serve" letter is required if the sewer service will be provided by City, Sanitary District, Community Services District, etc.**

****Please Note: A "will serve" letter is required if the water source is a City, Irrigation District, Water District, etc., and the water purveyor may be required to provide verification through an Urban Water Management Plan that an adequate water supply exists to service your proposed development.**

Will any special or unique sewage wastes be generated by this development other than that normally associated with resident or employee restrooms? Industrial, chemical, manufacturing, animal wastes? (Please describe:)

No

Please Note: Should any waste be generated by the proposed project other than that normally associated with a single family residence, it is likely that Waste Discharge Requirements will be required by the Regional Water Quality Control Board. Detailed descriptions of quantities, quality, treatment, and disposal may be required.

Yes ☒ **No** ☐ Are there existing irrigation, telephone, or power company easements on the property? (If yes, show location and size on plot plan.)

Yes ☒ **No** ☐ Do the existing utilities, including irrigation facilities, need to be moved? (If yes, show location and size on plot plan.)

Yes ☒ **No** ☐ Does the project require extension of utilities? (If yes, show location and size on plot plan.)

AFFORDABLE HOUSING/SENIOR:

Yes ☐ **No** ☒ Will the project include affordable or senior housing provisions? (If yes, please explain)

RESIDENTIAL PROJECTS: (Please complete if applicable – Attach additional sheets if necessary)

Total No. Lots:_____ Total Dwelling Units:_____ Total Acreage:_____

Net Density per Acre: _____ Gross Density per Acre: _____

(complete if applicable)	Single Family	Two Family Duplex	Multi-Family Apartments	Multi-Family Condominium/ Townhouse
Number of Units:				
Acreage:				

COMMERCIAL, INDUSTRIAL, MANUFACTURING, RETAIL, USE PERMIT, OR OTHER PROJECTS: (Please complete if applicable – Attach additional sheets if necessary)

Square footage of each existing or proposed building(s): proposed 2500 sq.ft. building to house CO2 and Ammonia compressors and several small container buildings

Type of use(s): *Employee breakroom/restrooms, enclosures for compressors*

Days and hours of operation: 24 hours a day, 7 days a week with 2 weeks per year shut down for scheduled maintenance

Seasonal operation (i.e., packing shed, huller, etc.) months and hours of operation: *No, year round*

Occupancy/capacity of building: *F-1 occupancy, 3 occupants*

Number of employees: (Maximum Shift): 3 (Minimum Shift): 0

Estimated number of daily customers/visitors on site at peak time: *0*

Other occupants:

Estimated number of truck deliveries/loadings per day: *20*

Estimated hours of truck deliveries/loadings per day: *24 hrs*

Estimated percentage of traffic to be generated by trucks: *87%*

Estimated number of railroad deliveries/loadings per day: *<1*

Square footage of:

Office area: *500* Warehouse area: *0*

Sales area: *0* Storage area: 588

Loading area: *0* Manufacturing area: *2000*

Other: (explain type of area) Control Room - 840. Electrical Room - 480. Analyzer Shelter - 308.

Yes ☒ No ☐ Will the proposed use involve toxic or hazardous materials or waste? (Please explain)

Ammonia refrigeration system

ROAD AND ACCESS INFORMATION:

What County road(s) will provide the project's main access? (Please show all existing and proposed driveways on the plot plan)

Faith Home Road

Yes ☒ No ☐ Are there private or public road or access easements on the property now? (If yes, show location and size on plot plan)

Yes ☐ No ☒ Do you require a private road or easement to access the property? (If yes, show location and size on plot plan)

Yes ☒ No ☐ Do you require security gates and fencing on the access? (If yes, show location and size on plot plan)

Please Note: Parcels that do not front on a County-maintained road or require special access may require approval of an Exception to the Subdivision Ordinance. Please contact staff to determine if an exception is needed and to discuss the necessary Findings.

STORM DRAINAGE:

How will your project handle storm water runoff? (Check one) ☒ Drainage Basin ☐ Direct Discharge ☐ Overland

☐ Other: (please explain) _____

If direct discharge is proposed, what specific waterway are you proposing to discharge to? N/A

Please Note: If direct discharge is proposed, you will be required to obtain a NPDES permit from the Regional Water Quality Control Board, and must provide evidence that you have contacted them regarding this proposal with your application.

EROSION CONTROL:

If you plan on grading any portion of the site, please provide a description of erosion control measures you propose to implement.

The site will be constructed with BMPs as required, primarily infiltration basins and pretreatment swales.

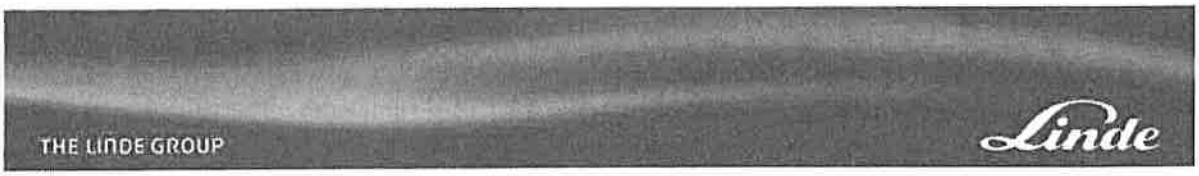
Please note: You may be required to obtain an NPDES Storm Water Permit from the Regional Water Quality Control Board and prepare a Storm Water Pollution Prevention Plan.

ADDITIONAL INFORMATION:

Please use this space to provide any other information you feel is appropriate for the County to consider during review of your application. (Attach extra sheets if necessary)

Parking required per Stanislaus County Ordinance 21.76.070 is 3 employees per shift + 3 additional spaces =

6 total spaces. Twelve (12) parking spaces are proposed. Eighteen (18) Commercial Vehicle parking spaces are proposed.



The Linde Group LCO2 Plant
Rezone to Planned Development and Tentative Parcel Map Application

Project Description

The Applicant, Linde Group, LLC., is requesting a Rezone to Planned Development and Tentative Parcel Map to consider an industrial development on a 5.32 acre portion of a twenty-eight (28±) site located along Faith Home Road, in the unincorporated community of Keyes, CA. The project property involves Accessor Parcel Number's (APNs) of 045-026-040 and 045-026-038. The project site has a Land Use Designation of Planned Industrial under the Keyes Community Plan, dated April 18, 2000 and is zoned as the expired PD-123. Historically, the project site was zoned Planned Development (PD-123) for trailer manufacturing and repair uses. However, that Planned Development zoning expired in 1988 after the 36-month development schedule was not met. Per discussions with Stanislaus County Staff, the property continues to be zoned the expired PD-123.

The proposed project includes the development of a liquid carbon dioxide (CO2) purification and liquefaction plant to be owned and operated by Linde Group, LLC. Currently, carbon dioxide gas is generated during the ethanol fermentation process from the Aemetis Bio Fuel facility, located to the east of the project site, and is vented into the atmosphere after a regenerative Thermal Oxidizer to reduce Volatile Organic Chemicals (VOC) without recovery. The proposed project intends to recover the lost Carbon Dioxide (CO2) via a pipe line from the Aemetis facility to the proposed Linde Plant. Once recovered, the CO2 is purified and then liquefied and stored into five (5) proposed storage tanks with reservations for three (3) future storage tanks. Any VOC and residual CO2 gas as a result of the purification process is delivered back to Aemetis for VOC reduction through the existing regenerative Thermal Oxidizer then vented to atmosphere. There will be no additional emission of CO2 gas as a result of this process. Liquid Carbon Dioxide (LCO2) is used in a variety of products, including beverages, food storage, fire extinguishers, etc. Three (3) additional spaces for storage tanks are included for future expansion of the Linde LCO2 Plant in Keyes, CA.

The proposed project also includes one (1) new rail spur off of the Union Pacific Railroad on an adjacent parcel (APN: 045-026-038). The rail site has a Land Use Designation of Industrial and is zoned as Industrial. Further discussion related to rail station is below.

Rezone

As part of this Application Package, the Applicant is requesting a Rezone to modify the Zoning Map for a 5.32 acre portion of the 28.72 acre site from the expired PD-123 to a new Planned Development.

Tentative Parcel Map

A Tentative Parcel Map is being filed to subdivide the existing 28.72± acre parcel into two (2) parcels: 5.32 acres containing the new Linde LCO2 Plant and a 25.7 acre remainder. The submitted Tentative Parcel Map is included in Section V of this Application Package.

Circulation and EVA Access

The site fronts Faith Home Road and access is proposed here. Tank trailers will enter the site utilizing the proposed northern driveway. These trucks then will fill on the one (1) of two (2) weight scales. An average of twenty (20) tank trailers a day would be filled. The filled tank trailers will exit onto Faith Home Road, entering the roadway by turning left or right, depending on the destination. In addition, the proposed project includes one (1) new rail spur west of the existing Union Pacific Railroad (UPRR) located north of the site to accommodate two (2) rail loading/ unloading stations plus space for placing the full/empty two tank cars, located on the adjacent parcel (APN: 045-026-038). Although the primary transportation of liquid CO2 product off-site will be tank trailers, the rail cars may be filled once a week. In addition, rail cars will be bought in and unloaded into the storage tanks for filling the tank trailers when the Linde Plant is down or the CO2 supply from Aemetis is interrupted in the circumstances that the storage inventory cannot meet the local demand. The proposed project will include fifteen (15) commercial vehicle parking spaces and fourteen (14) passenger vehicle spaces, including one (1) handicap accessible parking space.

As discussed above, primary access to the project site is proposed from Faith Home Road. The driveways are to be paved with concrete, with remaining balance of drive-aisles and parking areas four inch (4") thick compacted gravel. The concrete drive aisle extends about 140 feet from the edge of right-of-way into the project site. Emergency Vehicles will be able to enter the site through motorized double swing gates and access the facility.

Plant Equipment and Facilities

As part of the development of the project site, the plant will include a number of modular skids and equipment that are required to process the CO2 gas to liquid form. The proposed project will include compression equipment for the CO2 gas, modular equipment for purification of the CO2 gas, an ammonia compression equipment for the refrigeration system (5,000 lbs. in the system) to condense the CO2 into liquid form, and as discussed above, store in five (5) storage tanks plus 3 future storage tanks. The storage tanks are 138 feet in length and 12 feet wide. The Ammonia is utilized to liquefy and chill the CO2 into storage, and the ammonia refrigeration system is a closed loop system that will be serviced by Linde Group.

The CO2 and Ammonia compressors will be housed in a 2,500 square foot pre-engineered building to attenuate noise from the compressors, located adjacent to the storage tanks, control room, storage room and electrical room. A 588 sq. ft. driver shelter will be located between the automobile parking area and the truck scales, to allow for a waiting room/break room for the plant employees and truck drives to wait while the truck tanks are being filled.

Other proposed buildings on the site include:

- Analyzer Shelter – 14' x 22' – 308 sq. ft.
- Electrical Room – 10- x 48' – 480 sq. ft.
- Control Room – 14' x 60' – 840 sq. ft.
- Storage Room – 14' x 42' – 588 sq. ft.

Operation Description

Operation of the plant will run twenty-four (24) hours a day, seven (7) days a week with two (2) weeks per year of shutdown for the purposes of maintenance. The plant will employ up to twenty (20) full-time truck drivers and three (3) full-time employees for plant operation. Truck drivers will be in and out as they load and deliver the liquid CO2 to Linde customers. Personnel will operate the plant during the day from 8 am to 6pm and the site will be unattended during the night time. Ten (10) Closed Circuit Television (CCTV) cameras are to be installed on the project site. The plant will be remote monitored by the Linde Remote Operation Center (ROC) located in Houston, Texas. The plant will be fully automated and in the event that the critical programmed alarms are triggered, a safe shutdown will occur.

Electrical power will be supplied by Turlock Irrigation District (TID) and connect via the twelve (12) KV line along Faith Home Road. A transformer and switch gear to reduce the 12 KV to 4.16 KV will be located inside the fence as indicated on the Site Plan.

Development Schedule

As part of the proposed Planned Development, a Development Schedule must include a completion date of each proposed phase of development. The proposed project will be completed in one (1) phase and include the following development milestones:

- Grading and Site Preparation– Spring 2019
- Construction Begins – Summer/Fall 2019
- Operation Begins – Fall 2019

Sewer

Sewer for the project will be provided via an anaerobic treatment system and leech fields to comply with Stanislaus County standards, located on the eastern portion for the project site. The sewer system will meet the specifications and requirements of the Stanislaus County Environmental Health Department.

Water

The proposed project will have multiple water sources, both non-potable and potable. There are three (3) components to the water system:

1. Cooling water supply for the plant will be provided by Aemetis from their existing cooling tower located on the Aemetis site. The sixteen inch (16") size line will be placed underground within a new ten foot (10') easement.

2. Fire suppression will be connected via Faith Home Road (water main) and the site is within the Sphere of Influence (SOI) of the Keyes Community Service District (KCSD). The proposed project will include an Out of Boundary Service Agreement into the KCSD for water.
3. Domestic water will be provided by KCSD.

A formal Will-Serve Application to be submitted to KCSD for fire and domestic water.

Storm water

The proposed project will include two (2) treatment swales and one (1) on-site detention basin to manage storm water runoff as a result of increased impervious surface on the project site. The new treatment swales will include a storm drain that will connect to the new detention basin. The treatment swales are located along the northern and southern boundaries of the project site and the new retention basin is along a portion of the western property line. Further details regarding the storm water system are provided in Section V of this application package.

Landscaping

As part of the enclosed application package, a Preliminary Landscaping Plan has been prepared and will include drought tolerant species of plants and trees. Further details regarding the landscaping are provided in Section VII of this application package.

Environmental Setting

The proposed project site is approximately 5.44 acres in size, and is bounded by Industrial to the north and south, Agricultural uses to the west and State Highway 99 to the east. The site is currently vacant and undeveloped. Historically, the site was used for agricultural purposes.

North:

North of the project site parcels zoned Industrial.

East:

East of the project site are Industrial zoned properties and includes the Aemetis Bio Fuels facility.

South:

South of the project site include industrial and agricultural uses zoned Industrial and General AG 40 Acre.

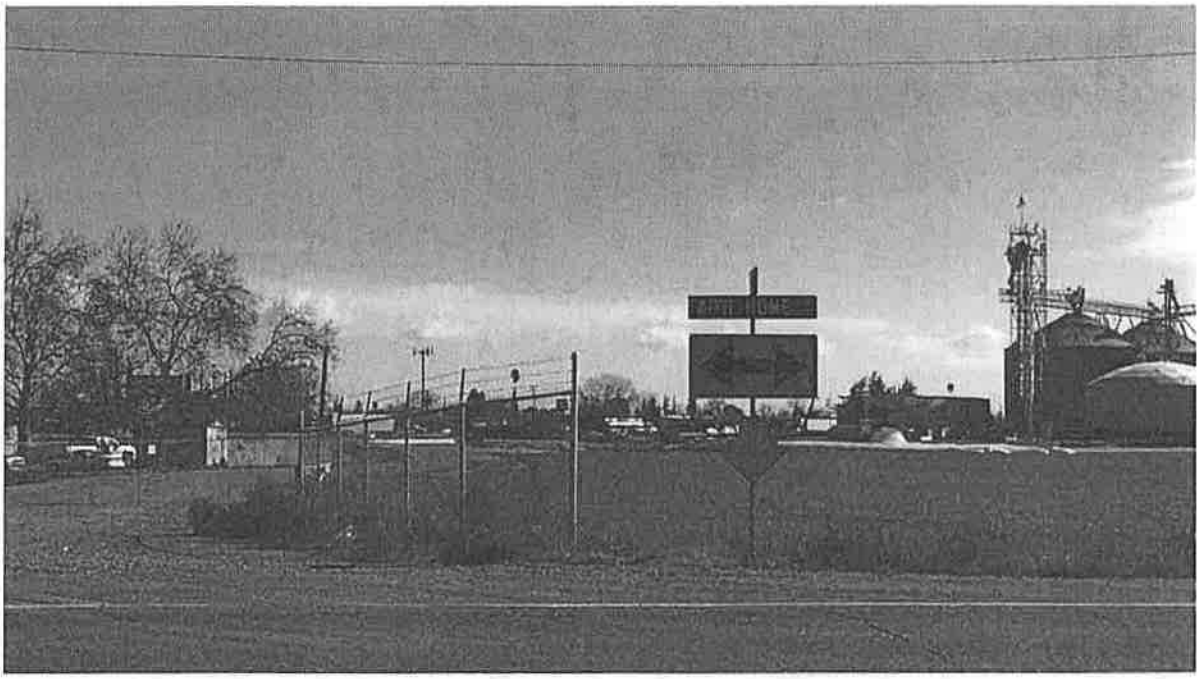
West:

West of the project site include agricultural uses zoned General AG 40 Acre.

Photos of the Site

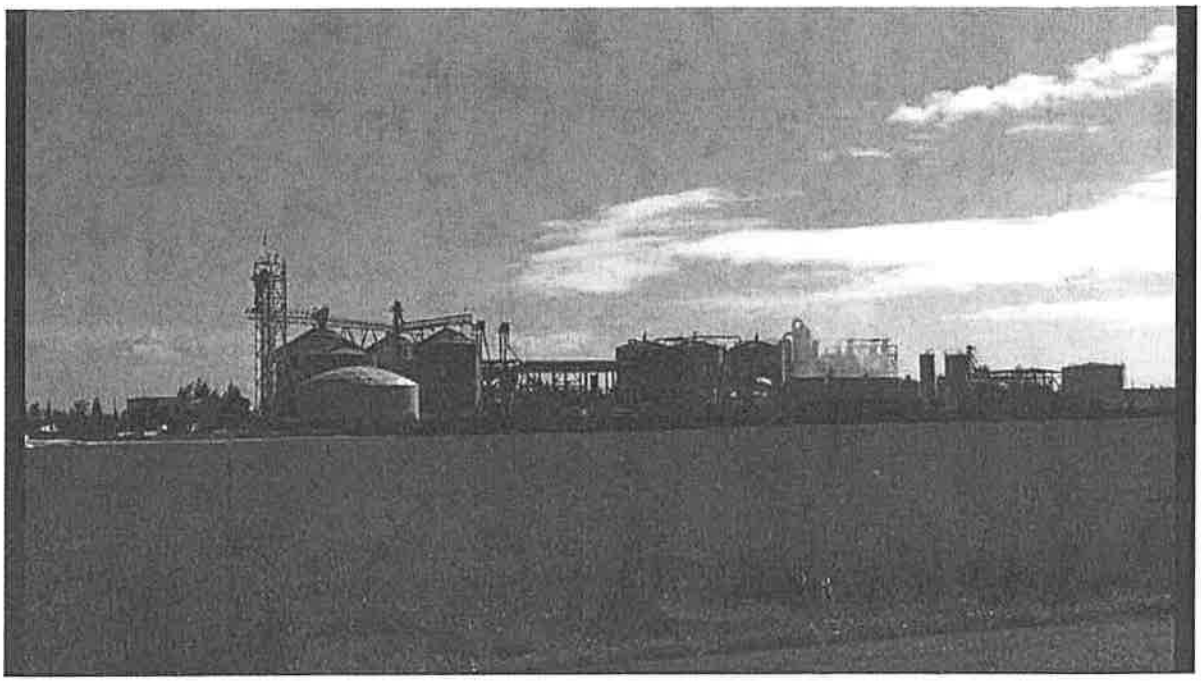
Looking North along Keyes Road

Looking North along Faith Home Road



Looking East along Faith Home Road

Looking South along Faith Home Road. Intersection of Faith Home Road and Keyes Road.



Looking East along Faith Home Road.

KEYES COMMUNITY SERVICES DISTRICT
5601 7TH STREET
P O BOX 699
KEYES, CA 95328

February 7, 2018

Audie Chong, Principal Project Manager
200 Somerset Corporation Boulevard, Suite 7000
Bridgewater, NJ 08807

Re: Will Serve Letter Request For APN: 045-026-040
0 Faith Home Road, Keyes, CA 95328

Dear Mr. Chong:

The Keyes Community Services District is willing to provide the requested water service on the following conditions:

1. All water service lines and sewer connections must be installed to District standards and according to plans approved by the District, at the expense of the owner.
2. All applicable District connection, facilities and inspection fees must be paid upon application for connections.
3. The owner must comply with all District rules and regulations.
4. This will-serve commitment will expire on February 7, 2019 unless construction has commenced by that date.
5. This Will Service Letter is valid only upon approval by Stanislaus County Local Agency Formation Commission (LAFCO) and may require annexation to the Keyes Community Services District.

Sincerely,

Ernie Garza
General Manager

CENTRAL CALIFORNIA INFORMATION CENTER
California Historical Resources Information System
Department of Anthropology – California State University, Stanislaus
One University Circle, Turlock, California 95382
(209) 667-3307

Alpine, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus & Tuolumne Counties

Date: 1/3/2018

Records Search File #: 10562N
Project: APN 045-026-040; Adjacent to Faith Home Road, Keyes, CA; Linde Group, LLC.

David Niskanen
J. B. Anderson Land Use Planning
139 S. Stockton Ave.
Ripon, CA 95366

roman@jbandersonplanning.com

Dear Mr. Niskanen:

We have conducted a records search as per your request for the above-referenced project area located on the Ceres USGS 7.5-minute quadrangle map in Stanislaus County.

Search of our files includes review of our maps for the specific project area and the immediate vicinity of the project area, and review of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the *California Inventory of Historic Resources* (1976), the *California Historical Landmarks* (1990), and the California Points of Historical Interest listing (May 1992 and updates), the Directory of Properties in the Historic Property Data File (HPDF) and the Archaeological Determinations of Eligibility (ADOE) (Office of Historic Preservation current electronic files dated 03-20-2014), the *Survey of Surveys* (1989), the Caltrans State and Local Bridges Inventory, GLO Plats, and other pertinent historic data available at the CCIC for each specific county.

The following details the results of the records search:

Prehistoric or historic resources within the project area:

- There are no formally recorded prehistoric or historic archaeological resources or historic buildings within the project area.

- The General Land Office Survey Plat for T4S R10E, Sheet No. 44-425, dated 1853-1854 shows no historical features within Section 30, but the SW ¼ of the section has been divided into parcels; the eastern half into two 160 acre parcels, and the western half into 4 parcels, ca. 80-85 acres each.

- The Official Map of the County of Stanislaus, California, dated 1906, shows the historic landowner at that time as E. Hatch.

Prehistoric or historic resources within the immediate vicinity of the project area: There are no formally recorded prehistoric or historic archaeological resources or historic buildings within the immediate vicinity of the project area.

Resources that are known to have value to local cultural groups: None have been formally reported to the Information Center.

Previous investigations within the project area: There has been one investigation that covered the project area, referenced as follows:

CCaIC Report ST-00860

Clark, M. R. (Holman & Associates; for Redwood Consulting Group)
1988 *An Archaeological Reconnaissance of Nine Sites for the Proposed Stanislaus County Public Safety Center, Stanislaus County, California.*

Recommendations/Comments: Based on existing data in our files, the area has a low sensitivity for the possible discovery of prehistoric or historic archaeological resources. No further recommendations are offered at this time.

We advise you that in accordance with State law, if any historical resources are discovered during project-related activities, all work is to stop and the lead agency and a qualified professional are to be consulted to determine the importance and appropriate treatment of the find. If Native American remains are found the County Coroner and the Native American Heritage Commission, West Sacramento (916-373-3710) are to be notified immediately for recommended procedures. If at any time you might require the services of a qualified professional the Statewide Referral List for Historical Resources Consultants is posted for your use on the internet at http://chrisinfo.org

We further advise you that if you retain the services of a historical resources consultant, the firm or individual you retain is responsible for submitting any report of findings prepared for you to the Central California Information Center, including one copy of the narrative report and copies of any records that document historical resources found as a result of field work, preferably in PDF format. If the consultant wishes to obtain copies of materials not included with this records search reply, additional copy or records search fees may apply.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the State Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

We thank you for contacting this office regarding historical resource preservation. Please let us know when we can be of further service. Please sign and return the attached **Access Agreement Short Form.**

Note: Billing will be transmitted separately via email from the Financial Services office ($150.00), payable within 60 days of receipt of the invoice.

Sincerely,

E. A. Greathouse, Coordinator
Central California Information Center
California Historical Resources Information System

Copy of invoice to Laurie Marroquin, Financial Services (lamarroquin@csustan.edu)

CENTRAL CALIFORNIA INFORMATION CENTER
California Historical Resources Information System
Department of Anthropology – California State University, Stanislaus
One University Circle, Turlock, California 95382
(209) 667-3307 - FAX (209) 667-3324

Alpine, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus & Tuolumne Counties

California Historical Resources Information System

ACCESS AGREEMENT SHORT FORM

Number: 10562N

I, the undersigned, have been granted access to historical resources information on file at the **Central California Information Center** of the California Historical Resources Information System.

I understand that any CHRIS Confidential Information I receive shall not be disclosed to individuals who do not qualify for access to such information, as specified in Section III(A-E) of the CHRIS Information Center Rules of Operation Manual, or in publicly distributed documents without written consent of the Information Center Coordinator.

I agree to submit historical Resource Records and Reports based in part on the CHRIS information released under this Access Agreement to the Information Center within sixty (60) calendar days of completion.

I agree to pay for CHRIS services provided under this Access Agreement within sixty (60) calendar days of receipt of billing.

I understand that failure to comply with this Access Agreement shall be grounds for denial of access to CHRIS Information.

Print Name:_____ Date: _____

Signature: _____

Affiliation: _____

Address: City/State/Zip: _____
Billing Address (if different from above): _____

Telephone:_____ Fax:_____ Email: _____
Purpose of Access: _____

Reference (project name or number, title of study, and street address if applicable):
_____

County: Township/Range/Section or UTMs: _____

USGS 7.5' Quad: _____

Via E-Mail Only

October 25, 2017
BGG No. G002.01

Mr. Justin Capp
Justin W. Capp, Inc.
1003 Twelfth Street
Modesto, California 95354

Subject: **Geotechnical Investigation**
Linde CO_2 Plant
Faith Home Road and Jessup Road
Keyes, California

Dear Mr. Capp:

This report presents the results of our geotechnical investigation for the proposed Linde CO_2 Plant in Keyes, California. Our investigation was performed based on conversations with the Linde development team, the guidelines contained in Linde Technical Specification T1403 for Soils investigation, our knowledge of the site, and our general experience with projects of a similar nature. We understand that the CO_2 plant will be constructed in an approximately 5-acre portion of an existing agricultural parcel on the east side of Faith Home Road, as shown on Plate 1, Vicinity Map. The proposed improvements with include tanks, equipment, a control building, and truck scales, which will be supported on shallow foundations and have concrete slabs on grade. A storm water retention pond will also be constructed in the northeast corner of the proposed improvement area. A portion of the area immediately east of the proposed CO_2 plant, which is part of the existing A.L. Gilbert Feed processing plant, will be leased by Linde for railcar handling and parking.

PURPOSE AND SCOPE OF SERVICES

The purpose of our investigation was to evaluate the subject site with respect to site soil and groundwater conditions, and to provide geotechnical recommendations for the design and construction of the proposed Linde CO_2 Plant. The scope of our services included a review of available geologic maps covering the site, review of previous geotechnical reports prepared for nearby sites, field exploration, field percolation testing, laboratory testing, engineering analyses based on field and laboratory data, and preparation of this report.

FIELD EXPLORATION AND LABORATORY TESTING

Our field exploration was conducted on September 22, 2017 and consisted of drilling and logging five borings in the approximate locations shown on Plate 2 – Site Plan. The borings were advanced to depths between 25 to 49 feet below the ground surface, using a truck-mounted drill rig equipped with solid flight augers. The soil was sampled with Modified California and SPT split spoon samplers. Materials encountered in the borings were visually classified in the field and a log was

recorded. The boring logs showing soil classification and blow counts are contained in Appendix A. The boreholes were backfilled with auger cuttings and the excess cuttings from drilling were spread around the boring locations.

Laboratory testing was performed on selected samples from the borings including moisture density, collapse/swell, direct shear, and resistivity and corrosion. The collapse/swell tests consisted of loading a relatively undisturbed soil sample to 2,500 psf, measuring the collapse (consolidation), and then saturating the sample. The total amount of collapse or swell (expansion) is then recorded. The collapse/swell and direct shear test results are summarized below. The laboratory test results are included in the boring logs and are contained in Appendix B.

Location	Depth	Collapse	Friction Angle	Cohesion
B2	3-3.5 ft	1.7%	---	---
B3	4-4.5 ft	---	32 degrees	190 psf
B3	5-5.5 ft	1.4%	---	---
B4	3-3.5 ft	2.5%	---	---
B4	9-9.5 ft	---	36 degrees	270 psf
B5	5-5.5 ft	2.2%	---	---

Shallow soil samples obtained from our borings were also submitted for corrosion testing to CERCO Analytical, a California state certified laboratory. A full corrosion suite (Redox, pH, Conductivity, Resistivity, Sulfide, Chloride and Sulfate) was performed on one sample composed of soil from between 2.5 to 6.5 feet deep at Boring B-4. Six resistivity tests were performed on various soil samples obtained at depths between 2 to 10 feet below ground surface (bgs). The results of the corrosion testing and a brief evaluation are also included in Appendix B.

Our field exploration also included excavating three test pits in the proposed storm water retention pond area. The test pits were excavated to depths between 4 to 5½ feet bgs using a backhoe equipped with a 2-foot wide bucket. The soil types encountered in the test pits were logged and the soils at the bottom of the test pits were then saturated. According to test method ASTM D3385, double ring infiltrometers, having 6-inch diameter inner rings and 12-inch diameter outer rings, were utilized for percolation testing by placing the rings on the saturated soil surface, filling with water, and recording the infiltration rate. The locations of the percolation tests are shown on the attached Plate 2, Site Plan. The test pit logs are contained in Appendix A.

SITE CONDITIONS

SURFACE CONDITIONS

The subject CO_2 Plant site is an approximately 5-acre parcel on the east side of Faith Home Road, approximately 1,200-feet north of the intersection of Faith Home Road and Keyes Road. The site has been historically used for agricultural row crop farming, predominantly silage corn. At the time of our field exploration, corn had been recently harvested and the proposed plant development area was vacant. The site is bordered to the east and southeast by an existing A.L. Gilbert Feed processing plant. The area immediately east of the proposed CO_2 Plant is predominantly used for commodity

storage, railcar handling, and truck parking. The CO_2 plant operations will include use of this space for loading and unloading railcars.

The site is bounded by a commercial trucking yard to the north, the A.L. Gilbert Feed processing plant to the east, agricultural farm land to the south, and Faith Home Road to the west. The site is relatively flat and at an approximate elevation of 100 feet above mean sea level.

SUBSURFACE CONDITIONS

According to the USDA Web Soil Survey, the Linde site is mapped as being mantled by the Dinuba sandy loam soil series, which is predominantly silty sand with Plasticity Indices between 3 and 12. Based upon our field explorations, the general soil profile at the site can be characterized as a sequence of predominantly sandy and silty soils. The near-surface soil consists of 5 to 8 feet of brown, loose to medium dense, silty sand. Below 8 feet is an alternating sequence of brown and gray, dense to very dense, sand with silt, and gray and brown, very stiff, sandy silt. Occurring occasionally between 4 to 6 feet deep is gray, brown, and orange, silty sand to sandy silt which is cemented hardpan. The alternating sequence of sandy and silty soils extends to the maximum depth explored of 49 feet below the ground surface. Details of materials encountered in the exploratory borings are contained in the boring logs in Appendix A.

GROUNDWATER

Groundwater was encountered in our deep boring, B-2, at a depth of 37 feet bgs. According to the California Department of Water Resources website, the groundwater table varies between about 30 to 40 feet deep in nearby wells. Numerous factors contribute to groundwater level fluctuations including precipitation, irrigation, and well pumping. A detailed evaluation of these and other factors, which may be responsible for groundwater fluctuations, was beyond the scope of this study.

RELEVANT GEOLOGIC HAZARDS

The site is proximal to a seismic region, and will experience seismic shaking from distant, large earthquakes. The site is not located in a California designated earthquake fault zone. The central valley is susceptible to subsidence from groundwater withdrawal; determining the settlement impacts from subsidence was beyond the scope of this study.

The peak ground acceleration (PGA), according to the USGS website, is 0.395g for the subject site. Dynamic compaction is the settlement of dry sand above the water table. Liquefaction is the temporary transformation of saturated, loose to medium dense sandy and silty soils from a solid state to a liquid state as a result of strong ground shaking during a major earthquake. Dynamic compaction is unlikely to occur at the site due to the anticipated low seismic shaking and dense soils. The potential for liquefaction to occur at the site is low, due to the low peak ground accelerations, depth to groundwater, and dense soils.

CONCLUSIONS AND RECOMMENDATIONS

GENERAL

We conclude, from a geotechnical engineering standpoint, that the proposed CO_2 plant can generally be constructed as planned, provided that the conclusions and recommendations contained in this report are incorporated into the project design and construction. The geotechnical recommendations contained in this report include site preparation and grading, seismic design parameters, building foundations, concrete slabs-on-grade, and pavement design. The predominant geotechnical condition is the presence of disturbed soil in the upper approximate 2 to 3 feet from past agricultural land uses.

SITE PREPARATION AND GRADING

Our general site preparation and grading recommendations are as follows:

1. The areas to be graded should be cleared of debris, surface vegetation, organics, and pre-existing abandoned utilities, pavement, and buried structures.

2. Areas to receive new structures or engineered fill should be overexcavated two feet. The overexcavation bottom should then be scarified to a depth of about 12 inches. The soil should be moisture conditioned to at least 3 percent above the optimum moisture content and compacted to at least 90 percent relative compaction.

3. If zones of soft or excessively saturated soils or undocumented fill are encountered during excavation and compaction, deeper excavations may be required to expose firm soils. This should be determined in the field by the soils engineer.

4. Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density determined by ASTM D1557 compaction test procedure. Optimum moisture is the water content (percentage by dry weight) corresponding to the maximum dry density.

5. Fill should be properly moisture conditioned and placed in thin lifts (normally 6 to 8 inches depending on the compaction equipment) and compacted as prescribed above.

6. The on-site soils are generally suitable for engineered fill, provided they are free of debris, significant vegetation, rocks greater than 4 inches in largest dimension and other deleterious matter. Debris, if encountered during grading, will need to be removed from the site.

7. Import fill, if required, should be subject to the evaluation of the soil engineer prior to their use. Import fill should contain no deleterious matter and no rocks greater than 4 inches in largest dimension. Import fill should also be cleared of toxic or hazardous materials prior to importing to the site.

8. Observations and soil density tests should be performed during grading to assist the contractor in obtaining the required degree of compaction and proper moisture content. Where the compaction is outside the range required, additional effort and adjustments to the moisture content should be made until the specified compaction and moisture conditioning is achieved.

9. The soils engineer should be notified at least 48 hours prior to any grading operations. The procedure and methods of grading may then be discussed between the contractor and the soils engineer.

UTILITY TRENCH EXCAVATION AND BACKFILL

Excavations should conform to applicable State and Federal industrial safety requirements. Temporary trench sidewalls more than 4-feet deep may have to be laid back to 1H:1V or flatter in order to be stable. Flatter trench slopes may be required if seepage is encountered during construction or if exposed soil conditions differ from those encountered in our field explorations. If the trench side slopes cannot be excavated due to site constraints, shoring should be provided; we can provide shoring design recommendations if needed.

Materials quality, placement procedures and compaction operations for utility line bedding and shading materials should meet local agency and/or other applicable agency requirements. Utility trench backfill above the shading materials may consist of native soils, processed to remove rubble, rock fragments over 6 inches in largest dimension, rubbish, vegetation and other undesirable substances. Backfill materials should be placed in level lifts about 8 to 10 inches in loose thickness, moisture conditioned and mechanically compacted according to the requirements contained in the "Site Preparation and Grading" section.

CALIFORNIA BUILDING CODE (CBC) SEISMIC DESIGN PARAMETERS

The subject site is located at approximately 37.5551 degrees north latitude and -120.9194 degrees west longitude. We are providing the following 2016 California Building Code seismic design criteria using the USGS Seismic Design Maps program, Version 3.1.0 dated July 11, 2013, which should be incorporated into the structural design of the proposed improvements:

California Building Code	
Mapped Spectral Acceleration for Short Periods, S_s, for Site Class B with 5% damping	0.919g
Mapped Spectral Acceleration for 1-Second Period, S_1, for Site Class B with 5% damping	0.336g
Site Class	D
Site Coefficient F_a (for Site Class D)	1.132
Site Coefficient F_v (for Site Class D)	1.728
Acceleration Parameter S_{MS} (adjusted for Site Class D)	1.041 g
Acceleration Parameter, S_{M1} (adjusted for Site Class D)	0.581 g
Acceleration Parameter, S_{DS} (adjusted for Site Class D)	0.694 g
Acceleration Parameter, S_{D1} (adjusted for Site Class D)	0.387 g

FOUNDATIONS

It is our opinion, from a geotechnical engineering standpoint, that shallow foundations can support the proposed structures. We recommend that the following criteria be incorporated in the design of shallow strip and isolated foundations:

Allowable Bearing Capacity (DL + LL) (may be increased by one-third for temporary seismic and wind loads, at the discretion of the structural engineer)	3,000 psf
Allowable Passive Equivalent Fluid Pressure (neglect the upper 1 foot if the ground surface is not confined by slabs or pavement)	350 pcf
Allowable Base Friction Coefficient	0.30
Minimum Footing Depth	2 feet

The following are recommendations for reinforced concrete mat foundations:

Allowable Bearing Capacity (DL + LL) (may be increased by one-third for seismic and wind loads, at the discretion of the structural engineer)	1,200 psf
Localized Bearing Capacity Increase (may be increased by one-third for seismic and wind loads, at the discretion of the structural engineer)	2,500 psf
Modulus of Subgrade Reaction	100 pci

It is recommended that footing excavations be probed by the geotechnical engineer prior to placement of rebar in the footings. The footing bottom conditions can be evaluated at that time. Concrete for footings should be placed against undisturbed engineered fill or firm on-site soils.

CONCRETE SLAB-ON-GRADE FLOORS

Concrete slabs-on-grade should be at least 6 inches thick and can, from a geotechnical engineering standpoint, be supported on properly prepared subgrade. During foundation and/or utility trench excavation, previously compacted subgrade soils may become disturbed. Before placement of concrete slabs, the disturbed subgrade soils should be moisture conditioned and compacted according to the requirements outlined under the section titled "Site Preparation and Grading" in this report. Subgrade soils should be maintained in a moist and compacted condition until covered with the complete pavement section.

Where moisture vapor through the slab would be objectionable, the use of a vapor retarder and capillary moisture break should be considered by the slab designer. The slab designer should determine the thicknesses of the slab and rock cushion. We do not require a layer of sand above the vapor retarder from a geotechnical standpoint. We suggest utilizing ASTM E1745 and ASTM E1643 as guidelines for the vapor retarder material and for installation of the vapor retarder. Construction joints in the concrete slabs-on-grade should be considered by the designer.

RETAINING WALLS

Retaining walls can be of conventional cantilever or gravity type walls, or mechanically stabilized

earth (MSE) retaining walls with geogrid. The following retaining wall pressures should be utilized in design for retaining walls less than 6 feet tall.

Active Equivalent Fluid Pressure (Level backfill and drained conditions)	35 pcf
At-Rest Equivalent Fluid Pressure (Level backfill and drained conditions)	50 pcf
Surcharge Load, where applicable	Designated by structural engineer

MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS

The following are MSE design parameters.

Retained Fill, Reinforced Fill and Foundation Material	
Unit Weight	115 pcf
Friction Angle	32 degrees
Cohesion	0 psf

RETAINING WALL DRAINAGE

The recommended lateral pressures assume drained conditions. The retaining walls should be provided with permanent backdrains to prevent hydrostatic pressure build-up. The backdrain should consist of perforated pipe with the perforations facing down. Subdrain pipes should typically be at least 4 inches in diameter. All subdrains should be surrounded by and be underlain by at least 6 inches of Class 2 Permeable Material, as defined in Section 68-1.025 of the State of California Standard Specification (May 2006). The drain should be at least 12 inches thick and should be placed from the base of the retaining wall to about 1 foot below the finished grade behind the retaining wall.

Alternatively, a geo-composite drain, such as Miradrain 6200 or approved equivalent may be used in lieu of the Class 2 Permeable Material blanket for non-MSE walls. The subdrain pipe should tie into a solid pipe into a suitable gravity discharge or storm drain system.

PAVEMENT RECOMMENDATIONS

The following are recommended structural pavement sections. Our pavement analyses are based upon an assumed R-value of 30 using the Caltrans Design Method for Flexible Pavement for a 20-year design life. The following are our pavement section recommendations along with their corresponding traffic indices (TI), which are indications of load frequency and intensity.

Traffic Index	AC (in)	Class 2 AB (in)	Total (in)
TI=4.5	3	4	7
TI=5	3	5	8
TI=6	3	8	11
TI=7	4	9	13
TI=8	5	10	15
TI=9	6	12	18
TI=10	6	15	21

Concrete pavement should be at least 6 inches thick and supported on a minimum of 8 inches of Class 2 aggregate base. Concrete pavement supporting heavy trucks, aprons around trash enclosures, and loading docks should be at least 8 inches thick, reinforced, and supported on at least 12 inches of Class 2 aggregate base. Subgrade soils beneath Portland Cement Concrete (PCC) pavement should be rolled to at least 90 percent relative compaction to provide a smooth, unyielding surface.

SUBGRADE AND AGGREGATE BASE

Prior to subgrade preparation, utility trench backfill should be properly placed and compacted. Subgrade soils for asphalt concrete pavement should be rolled to at least 90 percent relative compaction to provide a smooth, unyielding surface. Subgrade soils should be maintained in a moist and compacted condition until covered with the complete pavement section.

Class 2 aggregate base should conform to the requirements in Section 26, Caltrans Standard Specifications. The aggregate base should be placed in thin lifts in a manner to prevent segregation, uniformly moisture conditioned, and compacted to at least 95 percent relative compaction to provide a smooth, unyielding surface.

ADDITIONAL SOIL ENGINEERING SERVICES

Prior to construction, our firm should be provided the opportunity to review the plans and specifications to determine if the recommendations of this report have been implemented in those documents. To a degree, the performance of the proposed project is dependent on the procedures and quality of the construction. Therefore, we should provide observation of the contractor's procedures and the exposed soil conditions, and field and laboratory testing during site preparation and grading, placement and compaction of fill, underground utility backfilling, and foundation and pavement area construction. These observations will allow us to check the contractor's work for conformance with the intent of our recommendations and to observe any unanticipated soil conditions that could require modification of our recommendations. In addition, we would appreciate the opportunity to meet with the contractor prior to the start of earthwork operations to discuss the procedures and methods of construction. This can facilitate the performance of the construction operation and minimize possible misunderstanding and construction delays.

LIMITATIONS

The conclusions and recommendations of this report are based upon the information provided to us regarding the proposed site improvements, subsurface conditions encountered at the field exploration locations, and professional judgment. This study has been conducted in accordance with current professional geotechnical engineering standards; no other warranty is expressed or implied.

Site conditions described in this report are those existing at the time of our field exploration; it is not warranted that they are representative of such conditions at other locations or times. The locations of the subsurface explorations were estimated by pacing from existing features and should be considered approximate only.

In the event that changes in the nature, design, and/or location of the proposed improvements are planned, or if it is found during construction that subsurface conditions differ from those described in our field exploration logs, then the conclusions and recommendations in this report shall be considered invalid, unless the changes are reviewed, and the conclusions and recommendations are modified or approved in writing.

Should you have questions or need additional information, please contact Stefanie Parman at (209) 602-6569 or by e-mail at smp@baezgeotechnicalgroup.com. We appreciate the opportunity to be of service to you and to be involved in the design of this project.

Respectfully submitted,

BAEZ GEOTECHNICAL GROUP

Stefanie M. Parman
Project Engineer

William R. Stevens
Principal Engineer
GE 2339

SMP/WRS:smp

Attachments:
- Plate 1 – Vicinity Map
- Plate 2 – Site Plan
- Appendix A – Boring Logs
- Appendix B – Laboratory Test Results

Copies: Audie Chong, Linde LLC

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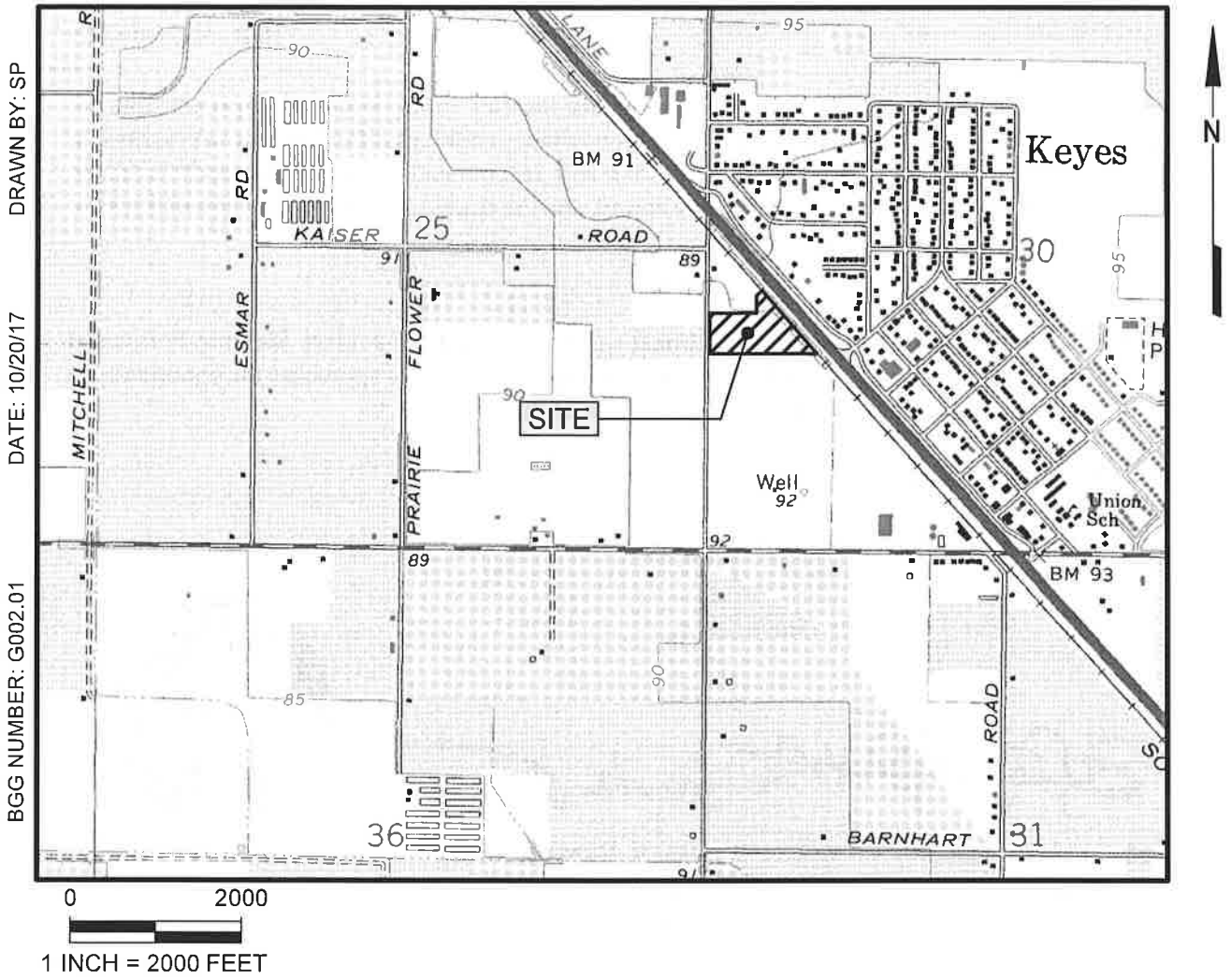


VICINITY MAP

LINDE CO_2 PLANT

FAITH HOME ROAD AND JESSUP ROAD

KEYES, CALIFORNIA

FOR

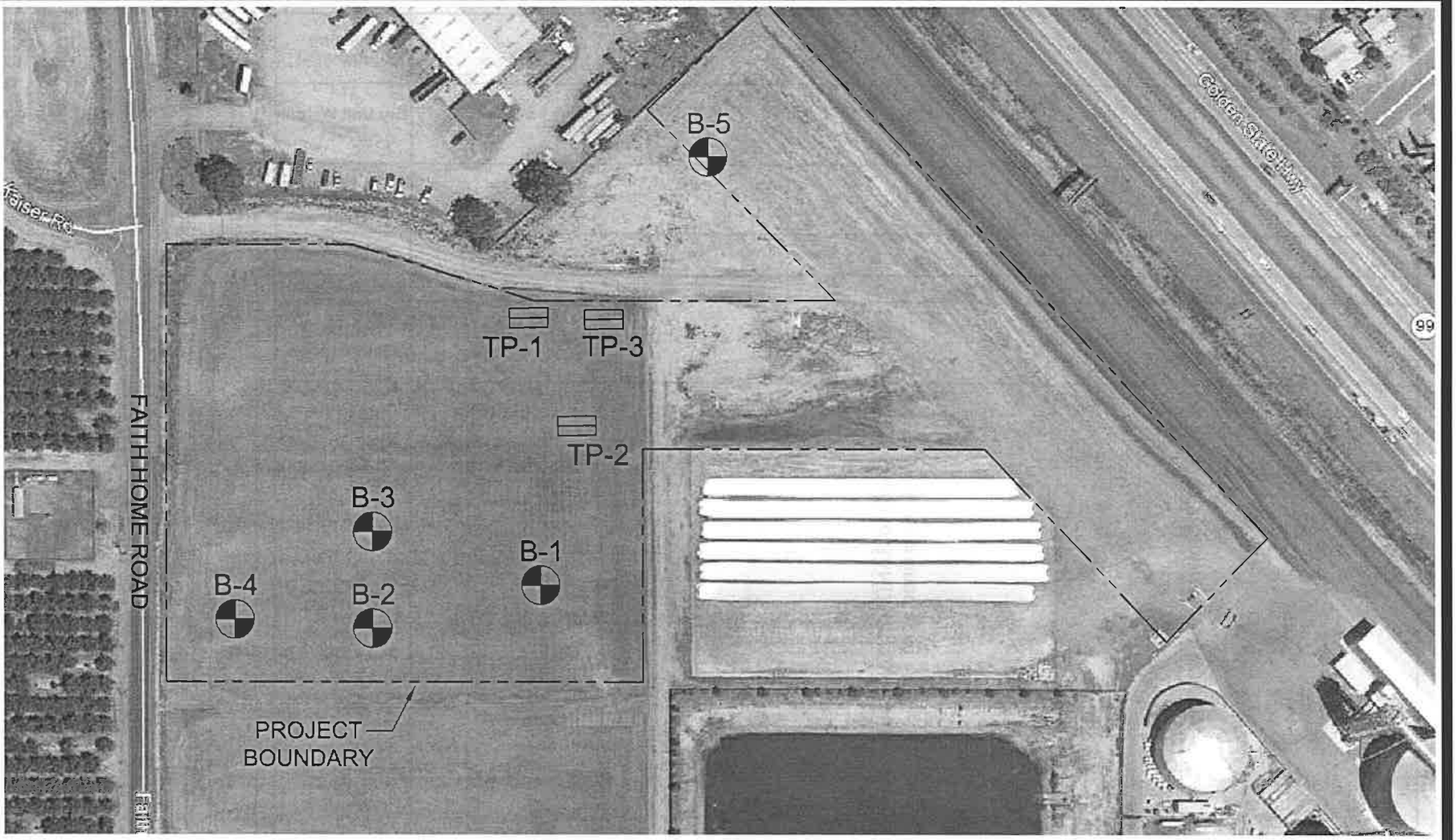
JUSTIN W. CAPP, INC.

BASE: PORTION OF U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE, CERES, CALIFORNIA, PHOTOREVISED 1987, AT A SCALE OF 1:24,000.

PLATE 1

BAEZ GEOTECHNICAL GROUP

BGG NUMBER: G002.01 DATE: 10/20/17 DRAWN BY: SP



0 150

1 INCH = 150 FEET

N

EXPLANATION

B-5 — APPROXIMATE BORING LOCATION

TP-3 — APPROXIMATE TEST PIT AND PERCOLATION TEST LOCATION

SITE PLAN

LINDE CO_2 PLANT

FAITH HOME ROAD AND JESSUP ROAD

KEYES, CALIFORNIA

FOR

JUSTIN W. CAPP, INC.

BASE: GOOGLE EARTH IMAGE

BAEZ GEOTECHNICAL GROUP

PLATE 2

BORING LOG B-1

BGG Project No.: G002.01	**Client: Justin W. Capp, Inc.**	**Elevation**: 100 feet
Project Name: Linde CO_2 Plant	**Drill Method**: Solid Flight Auger	**Date Drilled**: 9/22/2017

SAMPLER TYPE:	DRIVE WEIGHT (LBS.)	HEIGHT OF FALL (IN.)
2.5-inch I.D. Split Barrel	140	30
Standard Penetration Test	140	30

Moisture Content (%)	Dry Unit Weight (PCF)	Penetration Resistance (blows/foot)	Depth (feet)	Sample Symbol	USCS Classification	DESCRIPTION AND REMARKS
			0			
		11			SM	SILTY SAND, brown, dry to moist, loose, fine- to medium-grained sand
			5			below 3 feet, medium dense
		22				
			10		SM/SP	SILTY SAND to SAND with SILT, brown and gray, moist, dense to very dense, fine- to medium-grained sand
		36				
			15			
		56			SM	SILTY SAND, brown, moist, very dense, fine- to medium-grained sand
			20			

BORING LOG B-1

BGG Project No.: G002.01	**Client: Justin W. Capp, Inc.**	**Elevation**: 100 feet
Project Name: Linde CO_2 Plant	**Drill Method**: Solid Flight Auger	**Date Drilled**: 9/22/2017

SAMPLER TYPE:	DRIVE WEIGHT (LBS.)	HEIGHT OF FALL (IN.)
2.5-inch I.D. Split Barrel	140	30
Standard Penetration Test	140	30

Moisture Content (%)	Dry Unit Weight (PCF)	Penetration Resistance (blows/foot)	Depth (feet)	Sample Symbol	USCS Classification	DESCRIPTION AND REMARKS
			20		SM	SILTY SAND, brown, moist, very dense, fine- to medium-grained sand
		89	25			Boring terminated at 25 feet deep. Free groundwater was not encountered.
			30			
			35			
			40			

BORING LOG B-2

BGG Project No.: G002.01	**Client: Justin W. Capp, Inc.**	**Elevation**: 100 feet
Project Name: Linde CO_2 Plant	**Drill Method**: Solid Flight Auger	**Date Drilled**: 9/22/2017

SAMPLER TYPE:	DRIVE WEIGHT (LBS.)	HEIGHT OF FALL (IN.)
2.5-inch I.D. Split Barrel	140	30
Standard Penetration Test	140	30

Moisture Content (%)	Dry Unit Weight (PCF)	Penetration Resistance (blows/foot)	Depth (feet)	Sample Symbol	USCS Classification	DESCRIPTION AND REMARKS
			0			
		12	5		SM	SILTY SAND, brown, dry to moist, loose, fine- to medium-grained sand below 3 feet, medium dense
		15				
		50/6"	10		SM/SP	SILTY SAND to SAND with SILT, brown and gray, moist, dense to very dense, fine- to medium-grained sand
		59	15			
			20			

BORING LOG B-2

BGG Project No.: G002.01	**Client: Justin W. Capp, Inc.**	**Elevation**: 100 feet
Project Name: Linde CO_2 Plant	**Drill Method**: Solid Flight Auger	**Date Drilled**: 9/22/2017

SAMPLER TYPE:	DRIVE WEIGHT (LBS.)	HEIGHT OF FALL (IN.)
2.5-inch I.D. Split Barrel	140	30
Standard Penetration Test	140	30

Moisture Content (%)	Dry Unit Weight (PCF)	Penetration Resistance (blows/foot)	Depth (feet)	Sample Symbol	USCS Classification	DESCRIPTION AND REMARKS
		59	20		SM/SP	SILTY SAND to SAND with SILT, brown and gray, moist, dense to very dense, fine- to medium-grained sand
					SP	SAND with SILT, brown, dry to moist, very dense, fine- to medium-grained sand
		88	30			
			35			
		105	40			

BORING LOG B-2

BGG Project No.: G002.01	Client: Justin W. Capp, Inc.	Elevation: 100 feet
Project Name: Linde CO_2 Plant	Drill Method: Solid Flight Auger	Date Drilled: 9/22/2017

SAMPLER TYPE:	DRIVE WEIGHT (LBS.)	HEIGHT OF FALL (IN.)
2.5-inch I.D. Split Barrel	140	30
Standard Penetration Test	140	30

Moisture Content (%)	Dry Unit Weight (PCF)	Penetration Resistance (blows/foot)	Depth (feet)	Sample Symbol	USCS Classification	DESCRIPTION AND REMARKS
		105	40		SP	SAND with SILT, brown, dry to moist, very dense, fine- to medium-grained sand
			45			
		50/6"				
			50			Boring terminated at 49 feet deep. Free groundwater was not encountered.
			55			
			60			

BORING LOG B-3

BGG Project No.: G002.01	**Client: Justin W. Capp, Inc.**	**Elevation**: 100 feet
Project Name: Linde CO_2 Plant	**Drill Method**: Solid Flight Auger	**Date Drilled**: 9/22/2017

SAMPLER TYPE:	DRIVE WEIGHT (LBS.)	HEIGHT OF FALL (IN.)
2.5-inch I.D. Split Barrel	140	30
Standard Penetration Test	140	30

Moisture Content (%)	Dry Unit Weight (PCF)	Penetration Resistance (blows/foot)	Depth (feet)	Sample Symbol	USCS Classification	DESCRIPTION AND REMARKS
			0			
		12			SM	SILTY SAND, brown, dry to moist, loose, fine- to medium-grained sand below 3 feet, medium dense
		50/5"	5		SM/ML	SILTY SAND and SANDY SILT, brown, gray and orange, dry to moist, very dense to hard, fine- to medium-grained sand, cemented [HARDPAN]
					SM	SILTY SAND, brown, moist, very dense, fine- to medium-grained sand
		45	10		SP	SAND with SILT, brown, moist, dense, fine- to medium-grained sand
		80	15		SM	SILTY SAND, brown, moist, very dense, fine- to medium-grained sand
			20			

BORING LOG B-3

BGG Project No.: G002.01	Client: Justin W. Capp, Inc.	Elevation: 100 feet
Project Name: Linde CO_2 Plant	Drill Method: Solid Flight Auger	Date Drilled: 9/22/2017

SAMPLER TYPE:	DRIVE WEIGHT (LBS.)	HEIGHT OF FALL (IN.)
2.5-inch I.D. Split Barrel	140	30
Standard Penetration Test	140	30

Moisture Content (%)	Dry Unit Weight (PCF)	Penetration Resistance (blows/foot)	Depth (feet)	Sample Symbol	USCS Classification	DESCRIPTION AND REMARKS
		65	20 - 25		SM	SILTY SAND, brown, moist, very dense, fine- to medium-grained sand
			25 - 40			Boring terminated at 25 feet deep. Free groundwater was not encountered.

BORING LOG B-4

BGG Project No.: G002.01	**Client: Justin W. Capp, Inc.**	**Elevation**: 99 feet
Project Name: Linde CO_2 Plant	**Drill Method**: Solid Flight Auger	**Date Drilled**: 9/22/2017

SAMPLER TYPE:	DRIVE WEIGHT (LBS.)	HEIGHT OF FALL (IN.)
2.5-inch I.D. Split Barrel	140	30
Standard Penetration Test	140	30

Moisture Content (%)	Dry Unit Weight (PCF)	Penetration Resistance (blows/foot)	Depth (feet)	Sample Symbol	USCS Classification	DESCRIPTION AND REMARKS
			0			
					SM	SILTY SAND, brown, dry to moist, loose, fine- to medium-grained sand
		20				below 3 feet, medium dense
		23	5			
		17				
		59			SM/SP	SILTY SAND to SAND with SILT, brown and gray, moist, dense to very dense, fine- to medium-grained sand
			10			
		85				
			15			
					SM	SILTY SAND, brown, moist, very dense, fine- to medium-grained sand
		50/6"				
			20			

BORING LOG B-4

BGG Project No.: G002.01	Client: Justin W. Capp, Inc.	Elevation: 100 feet
Project Name: Linde CO_2 Plant	Drill Method: Solid Flight Auger	Date Drilled: 9/22/2017

SAMPLER TYPE:	DRIVE WEIGHT (LBS.)	HEIGHT OF FALL (IN.)
2.5-inch I.D. Split Barrel	140	30
Standard Penetration Test	140	30

Moisture Content (%)	Dry Unit Weight (PCF)	Penetration Resistance (blows/foot)	Depth (feet)	Sample Symbol	USCS Classification	DESCRIPTION AND REMARKS
		72	20 - 25		SM	SILTY SAND, brown, moist, very dense, fine- to medium-grained sand
			25 - 30 - 35 - 40			Boring terminated at 25 feet deep. Free groundwater was not encountered.

BORING LOG B-5

BGG Project No.: G002.01	Client: Justin W. Capp, Inc.	Elevation: 100 feet
Project Name: Linde CO_2 Plant	Drill Method: Solid Flight Auger	Date Drilled: 9/22/2017

SAMPLER TYPE:	DRIVE WEIGHT (LBS.)	HEIGHT OF FALL (IN.)
2.5-inch I.D. Split Barrel	140	30
Standard Penetration Test	140	30

Moisture Content (%)	Dry Unit Weight (PCF)	Penetration Resistance (blows/foot)	Depth (feet)	Sample Symbol	USCS Classification	DESCRIPTION AND REMARKS
			0			
		48			SM	SILTY SAND, brown, dry to moist, loose, fine- to medium-grained sand
						below 3 feet, medium dense
		46	5			
					SM/ML	SILTY SAND to SAND with SILT, brown and gray, moist, dense to very dense, fine- to medium-grained sand
		89	10			
		43	15			
			20			

BORING LOG B-5

BGG Project No.: G002.01	**Client: Justin W. Capp, Inc.**	**Elevation**: 100 feet
Project Name: Linde CO_2 Plant	**Drill Method**: Solid Flight Auger	**Date Drilled**: 9/22/2017

SAMPLER TYPE:	DRIVE WEIGHT (LBS.)	HEIGHT OF FALL (IN.)
2.5-inch I.D. Split Barrel	140	30
Standard Penetration Test	140	30

Moisture Content (%)	Dry Unit Weight (PCF)	Penetration Resistance (blows/foot)	Depth (feet)	Sample Symbol	USCS Classification	DESCRIPTION AND REMARKS
		50/6"	20 - 25		SM	SILTY SAND, brown, moist, very dense, fine- to medium-grained sand
			25 - 30 - 35 - 40			Boring terminated at 25 feet deep. Free groundwater was not encountered.

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			CLASSIFICATION SYMBOL	TYPICAL NAMES
COARSE GRAINED SOILS MORE THAN HALF OF THE MATERIAL IS LARGER THAN NO. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS WITH LITTLE TO NO FINES	GW	WELL GRADED GRAVELS, GRAVEL/SAND MIXTURES
			GP	POORLY GRADED GRAVELS, GRAVEL/SAND MIXTURES
		GRAVEL WITH OVER 12% FINES	GM	SILTY GRAVELS, POORLY GRADED GRAVEL/SAND/SILT MIXTURES
			GC	CLAYEY GRAVELS, POORLY GRADED GRAVEL/SAND/CLAY MIXTURES
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS WITH LITTLE TO NO FINES	SW	WELL GRADED SANDS, GRAVELLY SANDS
			SP	POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 12% FINES	SM	SILTY SANDS, POORLY GRADED SAND/SILT MIXTURES
			SC	CLAYEY SANDS, POORLY GRADED SAND/CLAY MIXTURES
FINE GRAINED SOILS MORE THAN HALF OF THE MATERIAL IS SMALLER THAN NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt	PEAT AND OTHER HIGHLY ORGANIC SILTS

KEY TO BORING LOG SYMBOLS

Depth in Feet	Moisture Content (%)	Dry Unit Weight (pcf)	Blows per foot	Unified Soil Classification System	
					Bulk Sample
					2.5-inch I.D. Split Barrel Sample
					2.8-inch I.D. Shelby Tube Sample
					No Sample recovered
					Standard Penetration Test interval
					Well-defined stratum changel
					Gradual stratum change
					Interpreted stratum change
					Apparent ground water level measured at date noted; seasonal weather conditions, site topography, etc., may cause fluctuations in water level indicated on boring logs
					Stabilized ground water level measured at date noted

Note: Soils described as dry, moist, and wet are estimated to be dry of optimum, near optimum, and more wet than optimum moisture content, respectively. Saturated soils are estimated to be within areas of free groundwater.

BY: SPB

DATE: 2-21-17

JOB NUMBER: S299.200

TEST PIT LOGS – 9/22/17

Test Pit Number	Depth (feet)	Description
TP-1	0 – 2½	**Silty Sand,** brown, dry to moist, loose, fine- to medium-grained
	2½ – 3	**Silty Sand to Sand with Silt,** brown and gray, dry, fine- to coarse-grained sand, with caliche
	3 – 5	**Silty Sand,** mottled gray and orange with caliche, moist, dense, fine- to medium-grained sand, weakly cemented HARDPAN
		Total Depth 5 feet No free groundwater encountered
TP-2	0 – 4	**Silty Sand,** brown, dry to moist, loose, fine- to medium-grained sand
		Total Depth 13 feet No free groundwater encountered
TP-3	0 – 3¾	**Silty Sand,** brown, dry to moist, loose, fine- to medium-grained
	3¾ – 4½	**Silty Sand to Sand with Silt,** brown and gray, dry, fine- to coarse-grained sand, with caliche
	4½ – 5½	**Silty Sand,** mottled gray, brown, and orange, moist, dense, fine- to medium-grained sand, weakly cemented HARDPAN
		Total Depth 5 feet No free groundwater encountered

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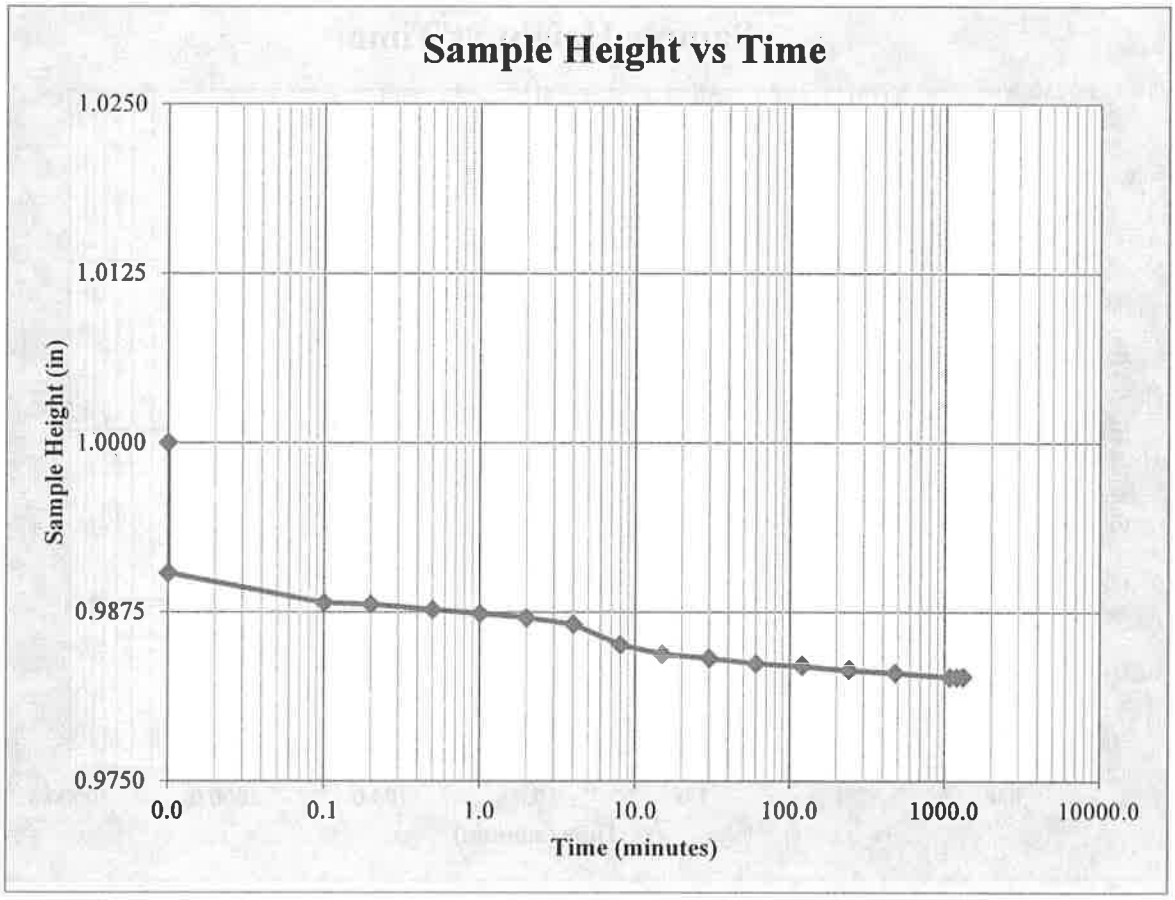
ONE DIMENSIONAL SWELL/COLLAPSE POTENTIAL - METHOD 'B'
ASTM D4546



SAMPLE ID: B2 @ 3-3.5 ft. (2500 psf) **USCS:** SM
SAMPLE DESCRIPTION: Dark yellow brown silty SAND
TYPE OF WATER USED: Tap **SOURCE OF WATER:** faucet
TRANSPORTATION METHOD: Insulated bucket **SAMPLING DATE:** n/a
STORAGE ENVIRONMENT: Controlled **TEST DATE:** 09/28/17

Specific Gravity, ≥#4: n/a	**Initial % Saturation:** 38.35
Specific Gravity, <#4 (Measured): 2.684	**Final %Saturation:** 100.00
Initial sample height (in): 1.0000	**Initial water content:** 7.3
Post-seating load height (in): 1.0000	**Final water content:** 18.1
Sample height after dry loading (in): 0.9904	**Post-test dry density (pcf):** 112.93
Final sample height (in): 0.9827	***Surcharge + seating load %SWELL/COLLAPSE:*** *-1.0*
Initial sample mass (g): 141.98	***Net %SWELL/COLLAPSE:*** *-0.8*
Final saturated sample mass (g): 156.27	***Overall %SWELL/COLLAPSE:*** *-1.7*

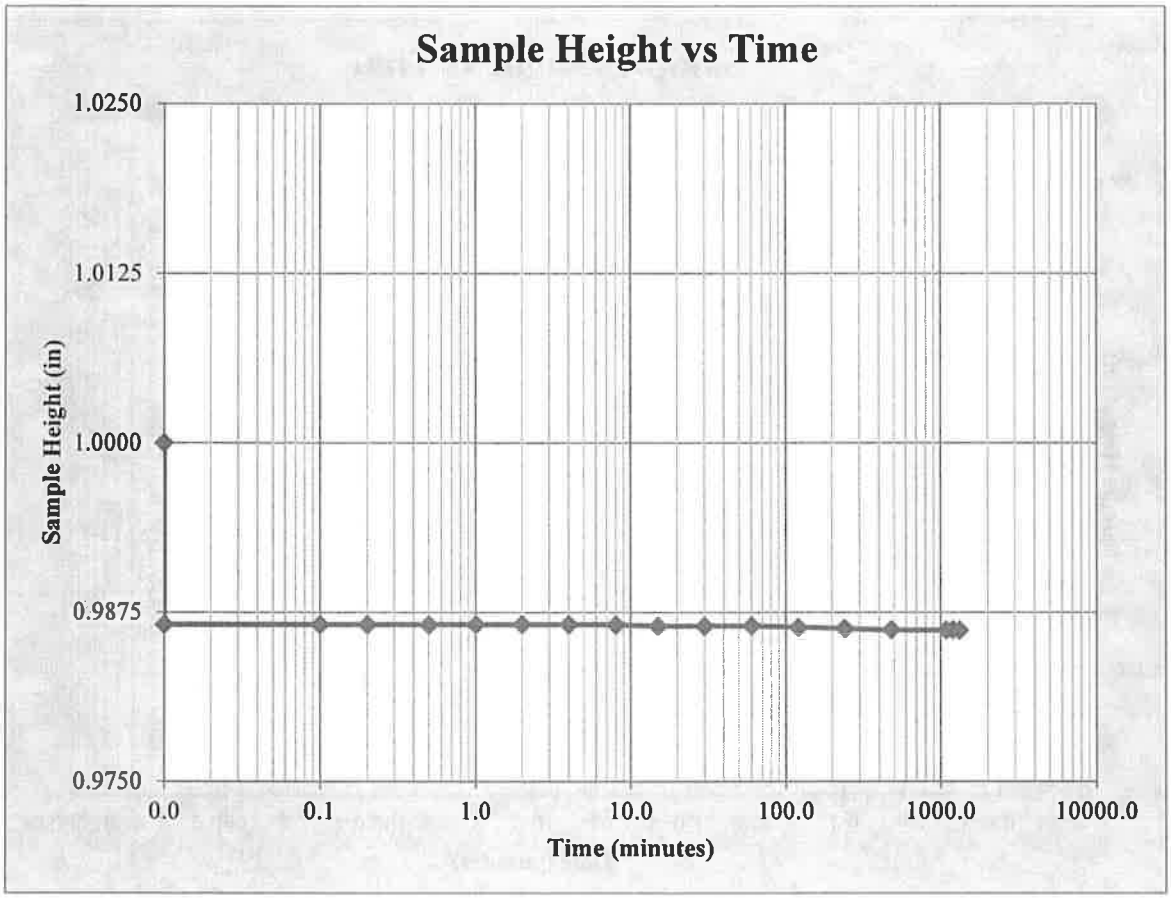
Testing remarks: USCS - ASTM D2488, D1140

PROJECT NAME: Linde, Keyes, CA (G17-002-001) **DATE:** 10/05/17
PROJECT NUMBER: 14368.000.001
CLIENT: BAEZ DESIGN GROUP, INC.
PHASE NUMBER: LAB

ENGEO
Expect Excellence

Tested by: K Lecce Reviewed by:

ONE DIMENSIONAL SWELL/COLLAPSE POTENTIAL - METHOD 'B'
ASTM D4546



SAMPLE ID: B3 @ 5-5.5 ft. (2500 psf) **USCS:** SM
SAMPLE DESCRIPTION: Dark yellow brown silty SAND
TYPE OF WATER USED: Tap **SOURCE OF WATER:** faucet
TRANSPORTATION METHOD: Insulated bucket **SAMPLING DATE:** n/a
STORAGE ENVIRONMENT: Controlled **TEST DATE:** 09/28/17

Specific Gravity, ≥#4:	n/a	Initial % Saturation:	96.77
Specific Gravity, <#4 (Measured):	2.635	Final %Saturation:	100.00
Initial sample height (in):	1.0000	Initial water content:	12.8
Post-seating load height (in):	1.0000	Final water content:	12.5
Sample height after dry loading (in):	0.9866	Post-test dry density (pcf):	123.77
Final sample height (in):	0.9862	*Surcharge + seating load %SWELL/COLLAPSE:*	*-1.3*
Initial sample mass (g):	164.82	*Net %SWELL/COLLAPSE:*	*0.0*
Final saturated sample mass (g):	164.50	*Overall %SWELL/COLLAPSE:*	*-1.4*

Testing remarks: USCS - ASTM D2488, D1140

PROJECT NAME: Linde, Keyes, CA (G17-002-001) **DATE:** 10/05/17
PROJECT NUMBER: 14368.000.001
CLIENT: BAEZ DESIGN GROUP, INC.
PHASE NUMBER: LAB

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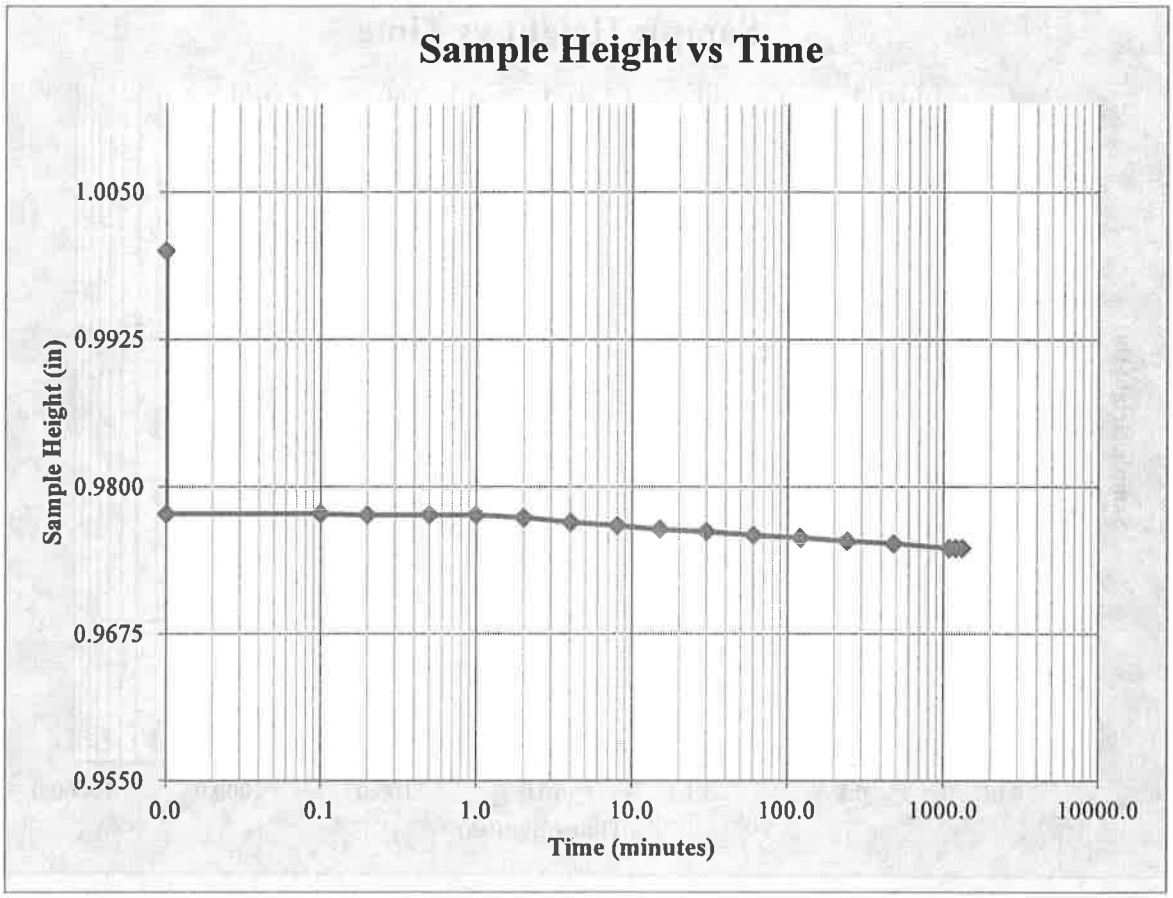
Tested by: K. Lecce Reviewed by

ONE DIMENSIONAL SWELL/COLLAPSE POTENTIAL - METHOD 'B'

ASTM D4546



SAMPLE ID: B4 @ 3-3.5 ft. (2500 psf)
USCS: CL
SAMPLE DESCRIPTION: Olive sandy CLAY
TYPE OF WATER USED: Tap
SOURCE OF WATER: faucet
TRANSPORTATION METHOD: Insulated bucket
SAMPLING DATE: n/a
STORAGE ENVIRONMENT: Controlled
TEST DATE: 09/28/17

Specific Gravity, ≥#4:	n/a
Specific Gravity, <#4 (Measured):	2.722
Initial sample height (in):	1.0000
Post-seating load height (in):	1.0000
Sample height after dry loading (in):	0.9777
Final sample height (in):	0.9748
Initial sample mass (g):	146.82
Final saturated sample mass (g):	151.04
Initial % Saturation:	78.53
Final %Saturation:	100.00
Initial water content:	17.6
Final water content:	21.0
Post-test dry density (pcf):	108.32
Surcharge + seating load %SWELL/COLLAPSE:	*-2.2*
Net %SWELL/COLLAPSE:	*-0.3*
Overall %SWELL/COLLAPSE:	*-2.5*

Testing remarks: USCS - ASTM D2488, D1140. High final moisture could be atributed to small voids and a pocket pen probe hole.

PROJECT NAME: Linde, Keyes, CA (G17-002-001)
DATE: 10/05/17
PROJECT NUMBER: 14368.000.001
CLIENT: BAEZ DESIGN GROUP, INC.
PHASE NUMBER: LAB

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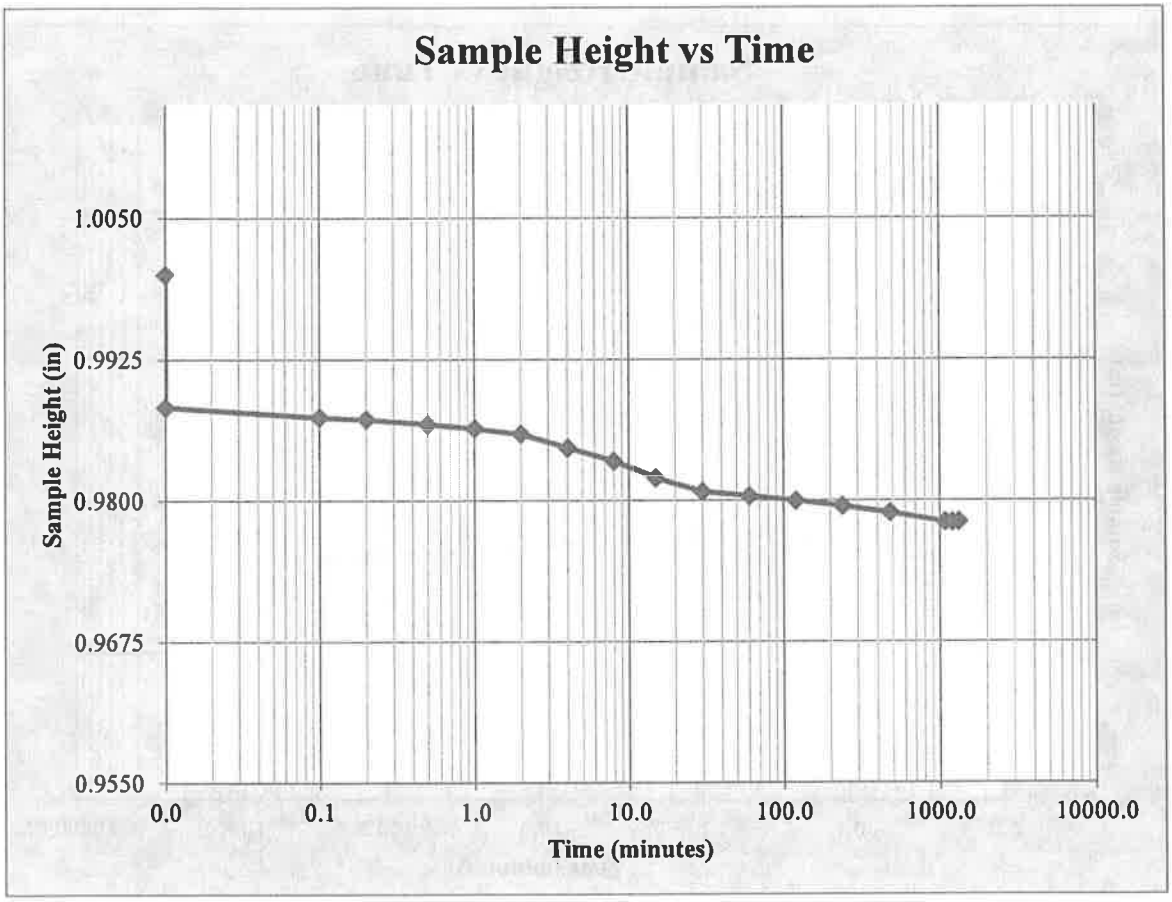
Tested by: K. Lecce
Reviewed by: G. Criste

ONE DIMENSIONAL SWELL/COLLAPSE POTENTIAL - METHOD 'B'

ASTM D4546



SAMPLE ID: B5 @ 5-5.5 ft. (2500 psf)
SAMPLE DESCRIPTION: Dark brown silty SAND
TYPE OF WATER USED: Tap
TRANSPORTATION METHOD: Insulated bucket
STORAGE ENVIRONMENT: Controlled

USCS: SM

SOURCE OF WATER: faucet
SAMPLING DATE: n/a
TEST DATE: 09/28/17

Specific Gravity, ≥#4:	n/a
Specific Gravity, <#4 (Measured):	2.675
Initial sample height (in):	1.0000
Post-seating load height (in):	1.0000
Sample height after dry loading (in):	0.9883
Final sample height (in):	0.9781
Initial sample mass (g):	145.37
Final saturated sample mass (g):	157.77

Initial % Saturation:	42.49
Final %Saturation:	100.00
Initial water content:	7.6
Final water content:	16.8
Post-test dry density (pcf):	115.32
Surcharge + seating load %SWELL/COLLAPSE:	*-1.2*
Net %SWELL/COLLAPSE:	*-1.0*
Overall %SWELL/COLLAPSE:	*-2.2*

Testing remarks: USCS - ASTM D2488, D1140

PROJECT NAME: Linde, Keyes, CA (G17-002-001)
PROJECT NUMBER: 14368.000.001
CLIENT: BAEZ DESIGN GROUP, INC.
PHASE NUMBER: LAB

DATE: 10/05/17

ENGEO
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Tested by: K Lecce

Reviewed by:

ENGEO Incorporated

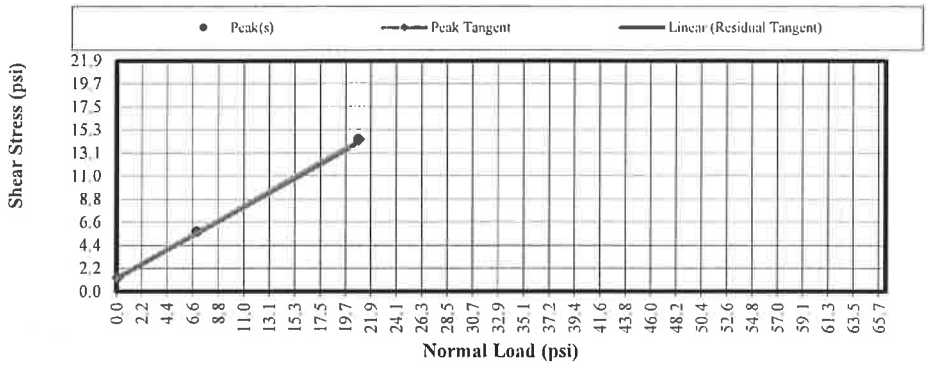
Direct Shear Test (ASTM D3080)

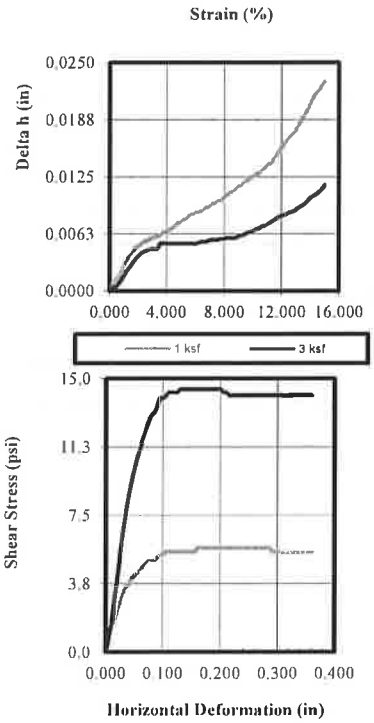
Date 10/05/17

Checked By G. Criste

Date 10/05/17

Tested By K. Lecce





Specimen				
Initial	**1 ksf**	**3 ksf**		
Moisture (%)	8.71	9.97		
Density (pcf)	111.77	112.54		
Void Ratio	0.504	0.493		
Saturation (%)	46.57	54.38		
Diameter (in)	2.405	2.405		
Height (in)	1.000	1.000		
Diameter-to-Height Ratio	2.405	2.405		
Specific Gravity (Measured)	2.692	2.692		
Final	**1 ksf**	**3 ksf**		
Moisture (%)	13.54	13.25		
Density (pcf)	119.02	118.85		
Void Ratio	0.364	0.357		
Saturation (%)	100.00	100.00		
Diameter (in)	2.405	2.405		
Height (in)	0.966	0.959		
Normal Stress (psi)	6.94	20.83		
Peak Stress (psi)	5.67	14.41		
Residual Stress (psi)	5.50	14.10		
Strain (%)	15.000	15.000		
Rate (in/min)	0.152730	0.152730		
Diameter-to-Height Ratio	2.489	2.507		

Test Date	
Date	9-28-17

			Phi	**C(psi)**
Project:	Linde - Keyes, CA (G17-002-001)			
Location:	Keyes, CA	**Peak Strength:**	**32.0**	**1.3**
Project Number:	14368.000.001	**Res./Ult. Strength:**	**31.8**	**1.2**
		ASTM D4318		
Boring Number	B3	**Liquid Limit:**	**n/a**	
Sample Number:	B3 @ 4-4.5	**Plastic Limit:**	**n/a**	
Depth:	4-4.5 feet	**ASTM D1140**		
Sample Type:	Undisturbed	**%Sand**	**78.3**	
Description:	Dark brown silty SAND	**%Silt/%Clay**	**21.7**	
Test Type:	**Direct Shear, CD (ASTM D3080)**			
Remarks:	Consolidation data inconclusive, default shear rate used per ASTM D3080. Samples were fragile	**ASTM D854**		
		Material Passing the #4 Sieve		

ENGEO Incorporated

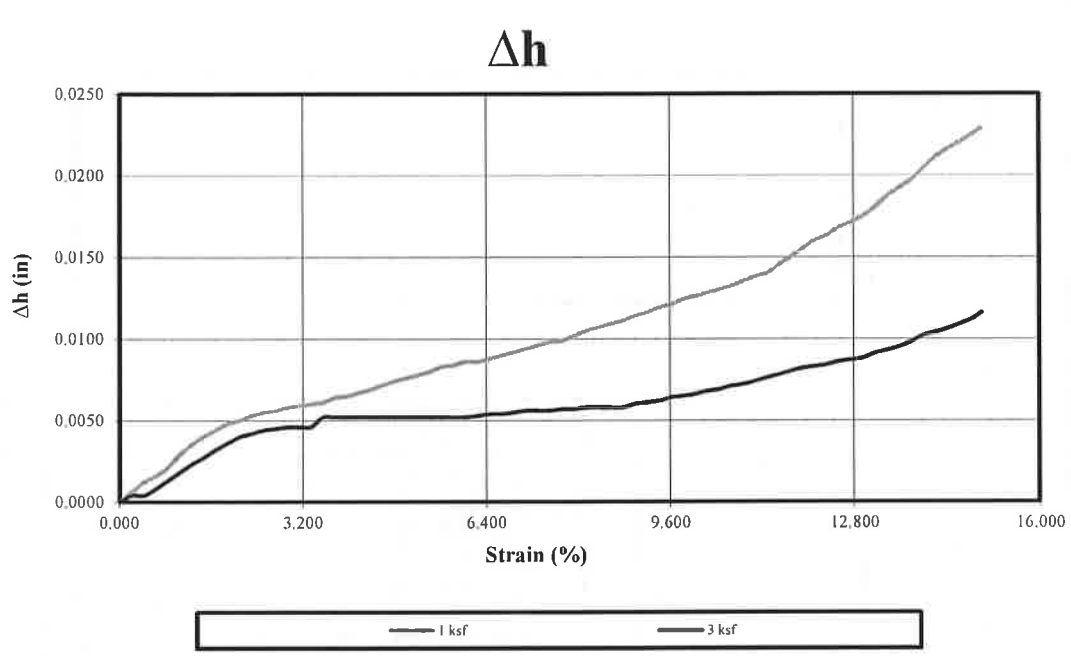
Direct Shear Test (ASTM D3080)

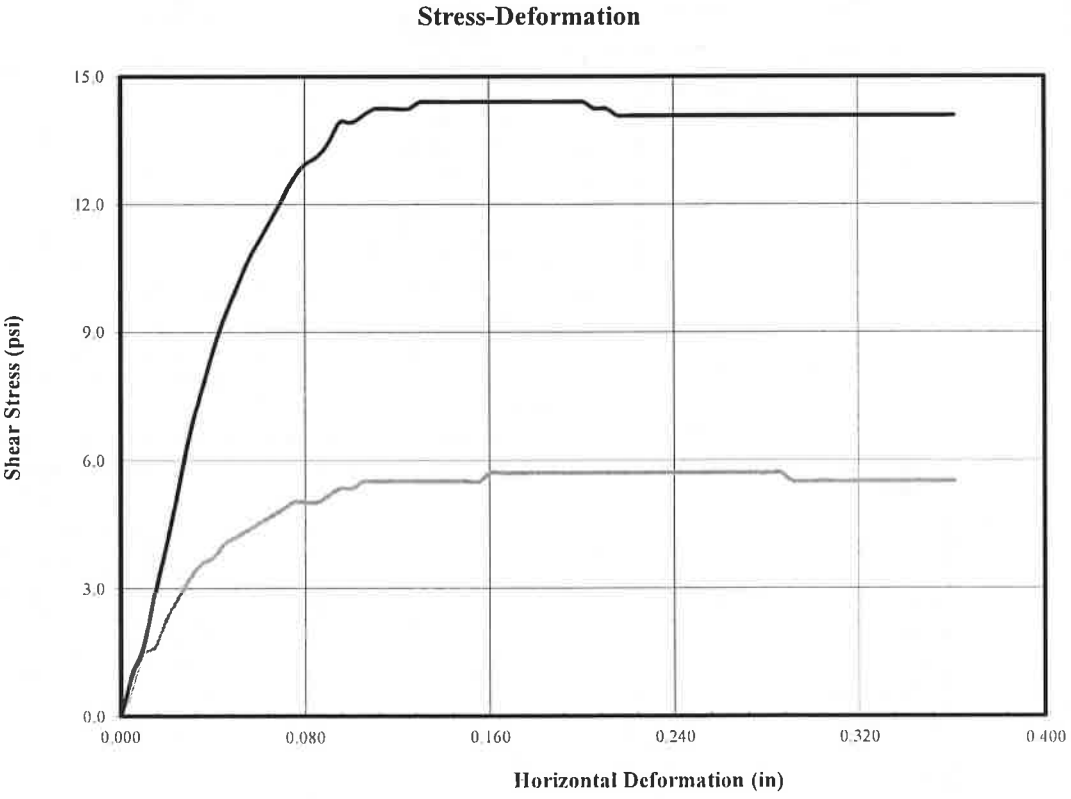
Date 10/05/17

Checked By G. Criste

Date 10/05/17

Tested By K. Lecce





ENGEO Incorporated

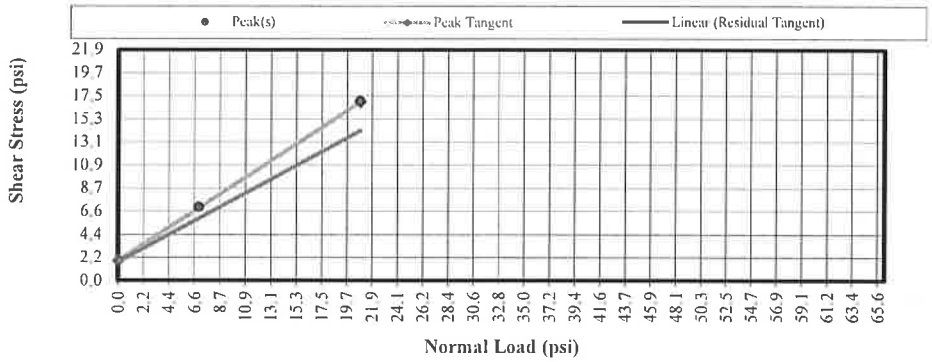
Direct Shear Test (ASTM D3080)

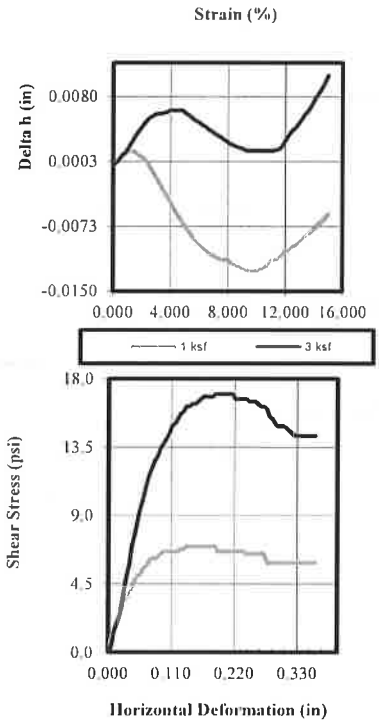
Date 10/05/17

Checked By G. Criste

Date 10/05/17

Tested By K. Lecce





Initial	1 ksf	3 ksf		
	Specimen			
Moisture (%)	6.84	7.62		
Density (pcf)	114.89	105.14		
Void Ratio	0.455	0.590		
Saturation (%)	40.29	34.58		
Diameter (in)	2.405	2.405		
Height (in)	1.000	1.000		
Diameter-to-Height Ratio	2.405	2.405		
Specific Gravity (Measured)	2.677	2.677		
Final	**1 ksf**	**3 ksf**		
Moisture (%)	18.33	18.70		
Density (pcf)	110.71	107.10		
Void Ratio	0.491	0.501		
Saturation (%)	100.00	100.00		
Diameter (in)	2.405	2.405		
Height (in)	0.988	0.962		
Normal Stress (psi)	6.94	20.83		
Peak Stress (psi)	6.96	17.00		
Residual Stress (psi)	5.90	14.20		
Strain (%)	15.000	15.000		
Rate (in/min)	0.152730	0.152730		
Diameter-to-Height Ratio	2.435	2.501		

Test Date	
Date	10-03-17

			Phi	C(psi)
Project:	Linde - Keyes, CA (G17-002-001)			
Location:	Keyes, CA	Peak Strength:	35.9	1.9
Project Number:	14368.000.000	Res./Ult. Strength:	30.9	1.8
		ASTM D4318		
Boring Number	B4	Liquid Limit:	n/a	
Sample Number:	B4 @ 9-9.5	Plastic Limit:	n/a	
Depth:	9-9.5	ASTM D1140		
Sample Type:	Undisturbed	%Sand/Gravel	91.1	
Description:	Lt olive gray poorly graded SAND with gravels	%Silt/Clay	8.9	
Test Type:	Direct Shear, CD (ASTM D3080)			
Remarks:	Consolidation data inconclusive, default shear rate used per ASTM D3080. Samples were fragile	ASTM D854		
		Material Passing the #4 Sieve		

ENGEO Incorporated

Direct Shear Test (ASTM D3080)

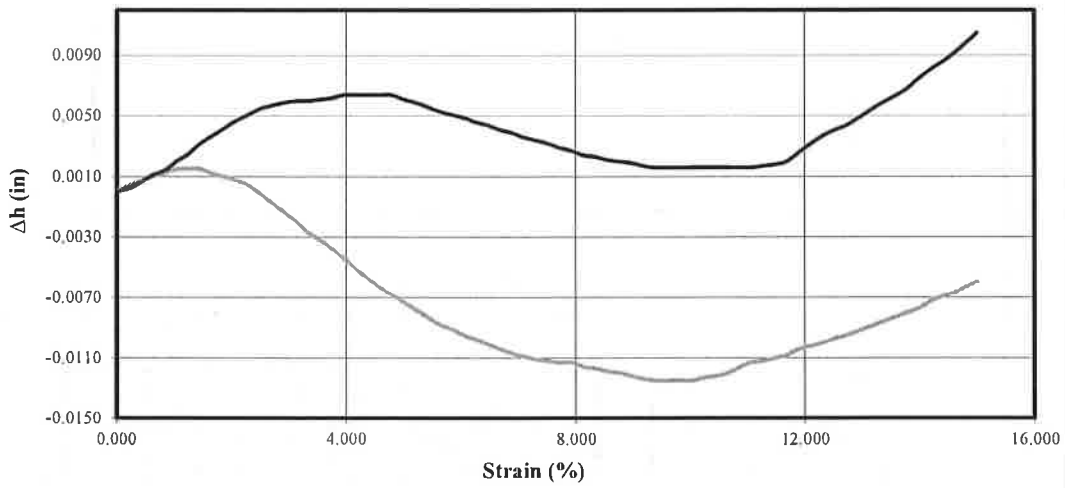
Date 10/05/17

Checked By G. Criste

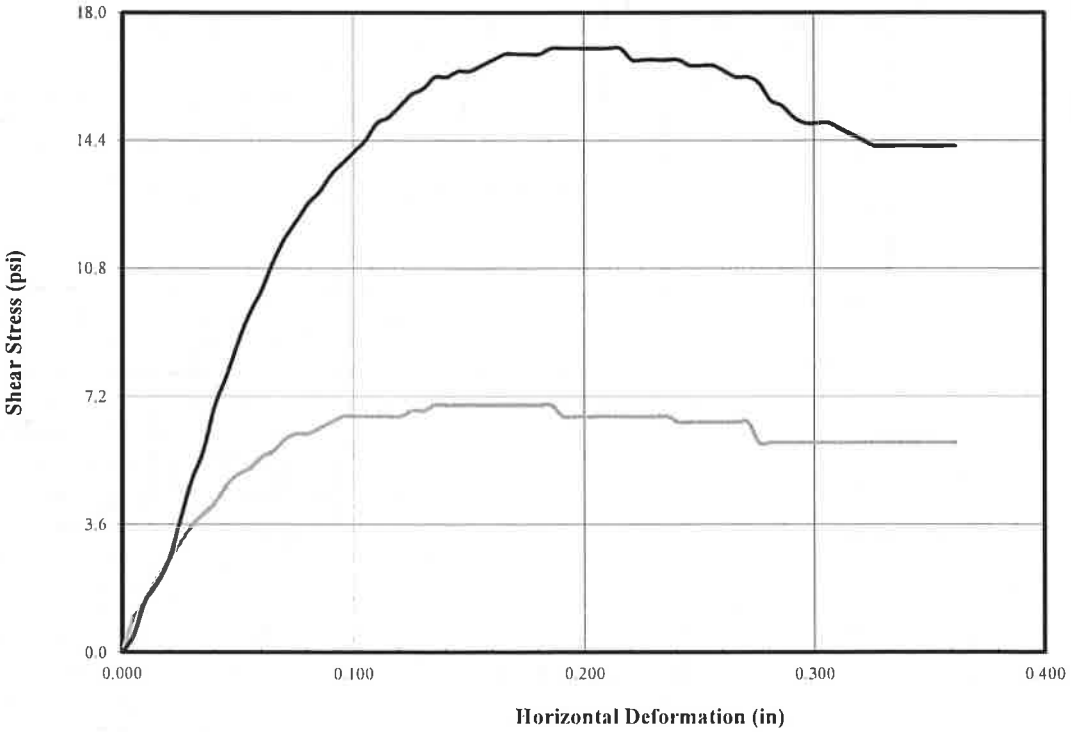
Date 10/05/17

Tested By K. Lecce

Δh



Stress-Deformation



California State Certified Laboratory No. 2153

CERCO analytical
1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

9 October, 2017

Job No. 1709175-004
Cust. No. 13042

Mr. Bill Stevens
Baez Design Group, Inc.
P.O. Box 3808
Turlock, CA 95381

Subject: Project No.: G17-002-001
Project Name: Linde Project
Corrosivity Analysis – ASTM Methods

Dear Mr. Stevens:

Pursuant to your request, CERCO Analytical has analyzed the soil samples submitted on September 26, 2017. Based on the analytical results, this brief corrosivity evaluation is enclosed for your consideration.

Based upon the resistivity measurement, the sample is classified as "mildly corrosive". All buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion depending upon the critical nature of the structure. All buried metallic pressure piping such as ductile iron firewater pipelines should be protected against corrosion.

The chloride ion concentration is 18 mg/kg. Because the chloride ion concentration is less than 300 mg/kg, it is determined to be insufficient to attack steel embedded in a concrete mortar coating.

The sulfate ion concentration is none detected with a detection limit of 15 mg/kg.

The sulfide ion concentration reflects none detected with a detection limit of 50 mg/kg.

The pH of the soil is 6.50, which does not present corrosion problems for buried iron, steel, mortar-coated steel and reinforced concrete structures.

The redox potential is 420-mV which is indicative of aerobic soil conditions.

This corrosivity evaluation is based on general corrosion engineering standards and is non-specific in nature. For specific long-term corrosion control design recommendations or consultation, please call *JDH Corrosion Consultants, Inc. at (925) 927-6630.*

We appreciate the opportunity of working with you on this project. If you have any questions, or if you require further information, please do not hesitate to contact us.

Very truly yours,
CERCO ANALYTICAL, INC.

J. Darby Howard, Jr., P.E.
President

JDH/jdl
Enclosure

Appendix B9

CERCO analytical
1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

Client: Baez Design Group, Inc.
Client's Project No.: GL17-002-001
Client's Project Name: Linde Project
Date Sampled: Not Indicated
Date Received: 26-Sep-17
Matrix: Soil
Authorization: Signed Chain of Custody

Date of Report: 9-Oct-2017

Job/Sample No.	Sample I.D.	Redox (mV)	pH	Conductivity (umhos/cm)*	Resistivity (100% Saturation) (ohms-cm)	Sulfide (mg/kg)*	Chloride (mg/kg)*	Sulfate (mg/kg)*
1709175-001	B1, 5' to 6.5'	-	-	-	3,800	-	-	-
1709175-002	B2, 2.5' to 3'	-	-	-	15,000	-	-	-
1709175-003	B2, 8.5' to 10'	-	-	-	4,000	-	-	-
1709175-004	B4, 2.5' to 6.5'	420	6.50	-	9,800	N.D.	18	N.D.
1709175-005	B5, 2' to 2.5'	-	-	-	1,800	-	-	-
1709175-006	B5, 2.5' to 3'	-	-	-	2,200	-	-	-
1709175-007	B5, 4.5' to 5'	-	-	-	1,700	-	-	-

Method:	ASTM D1498	ASTM D4972	ASTM D1125M	ASTM G57	ASTM D4658M	ASTM D4327	ASTM D4327-
Reporting Limit:	-	-	10	-	50	15	15
Date Analyzed:	5-Oct-2017	5-Oct-2017	-	6-Oct-2017	6-Oct-2017	5-Oct-2017	5-Oct-2017

Cheryl McMillen
Laboratory Director

* Results Reported on "As Received" Basis
N.D. - None Detected

Quality Control Summary - All laboratory quality control parameters were found to be within established limits