FIRST 5 RIVERSIDE
Riverside County Children & Families Commission

MANUAL GATE ENCLOSURE

PROJECT # 1135116

585 TECHNOLOGY CT, RIVERSIDE, CA 92507

PROJECT TEAM

ENGINEERING

ACC & ENGINEERING
768 N ETHAN WAY, ANAHEIM, CA 92805 United States

BEN HAMED, EIT | DESIGNER ENGINEER
MAGDY REZK, P.E.

STRUCTURAL AF
1010 RALEIGH ST., APT. 107, GLENDALE, CA 91205
Arsen Adzhemyan, P.E., ENV. SP. | REVIEW & SEAL

GENERAL ENGINEERING & CONSTRUCTION

HORIZONS CONSTRUCTION
432 W Meats Ave, Orange, CA 92865
United States

KINAN KOTRASH | VICE PRESIDENT

OWNER

COUNTY OF RIVERSIDE | PROJECT MANAGEMENT OFFICE
3133 MISSION INN AVENUE | RIVERSIDE, CA 92507

BLANCA I. LIMON | PROJECT MANAGER
IIIBLIMON@RIVCO.ORG | P: (951) 955-9138

PROJECT INFORMATION

PROVIDE NEW MANUAL SWINGING GATE ENCLOSURE AT THE DRIVEWAY APPROACH.

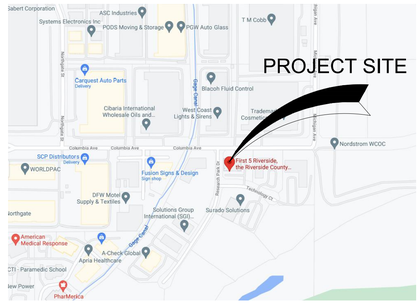
PROVIDE KNOX PADLOCK AS REQUIRED BY FIRE DEPARTMENT.

DESIGN REFERENCE

2019_CBC_ADVISORY_MANUAL DIVISION 4: ACCESSIBLE ROUTES. 11B-404.2 MANUAL DOORS, DOORWAYS, AND MANUAL GATES.

"ASCE STANDARD ASCE/SEI 7-10."

VICINITY MAP



FIRE DEPARTMENT NOTES:

GENERAL GUIDELINES REGARDING THIS PROJECT'S SCOPE OF WORK

FIRE DEPARTMENT ACCESS INFORMATION:
KNOX PADLOCKS, AND SIMILAR PRODUCTS MANUFACTURED BY KNOX COMPANY, ARE THE ONLY TYPE APPROVED BY RIVERSIDE COUNTY FIRE DEPARTMENT.

A KNOX PADLOCK IS REQUIRED WHERE A CHAIN OR MANUAL GATE IS BEING UTILIZED.

APPLICABLE CODES

- 2019 CALIFORNIA BUILDING CODE (CBC) / 2018 INTERNATIONAL BUILDING CODE (IBC)
- 2019 CALIFORNIA EXISTING BUILDING CODE (CEBC) / 2018 INTERNATIONAL EXISTING BUILDING CODE (IEBC)
- 2019 CALIFORNIA HISTORICAL BUILDING CODE (CHBC)
- 2019 CALIFORNIA RESIDENTIAL CODE (CRC) / 2018 INTERNATIONAL RESIDENTIAL CODE (IRC)
- 2019 CALIFORNIA ELECTRICAL CODE (CEC) / 2017 NATIONAL ELECTRICAL CODE (NEC)
- 2019 CALIFORNIA MECHANICAL CODE (CMC) / 2018 UNIFORM MECHANICAL CODE (UMC)
- 2019 CALIFORNIA PLUMBING CODE (CPC) / 2018 UNIFORM PLUMBING CODE (UPC)
- 2019 CALIFORNIA GREEN BUILDINGS STANDARDS CODE (CALGREEN)
- 2019 CALIFORNIA ENERGY CODE

SHEET INDEX

GENERAL CONSTRUCTION NOTES

1. SUBMITTALS INCLUDE, BUT ARE NOT LIMITED TO, SHOP DRAWINGS, FABRICATION DRAWINGS, PLACEMENT DRAWINGS, CALCULATIONS, DESIGNS, TEST DATA, PRODUCT DATA, SAMPLES, CERTIFICATIONS AND REPORTS AS REQUIRED BY THE CONSTRUCTION DOCUMENTS
2. PRIOR TO SUBMISSION TO THE STRUCTURAL ENGINEER, STAMP SUBMITTALS INDICATING THEY HAVE BEEN REVIEWED AND APPROVED FOR COMPLETENESS AND CONFORMANCE WITH THE INTENT OF THE CONSTRUCTION DOCUMENTS. SUBMITTALS THAT ARE DETERMINED TO BE INCOMPLETE, IN THE JUDGMENT OF THE STRUCTURAL ENGINEER, WILL BE RETURNED WITHOUT REVIEW SO THEY CAN BE COMPLETED. THE STRUCTURAL ENGINEER SHALL NOT BE REQUIRED TO REVIEW PARTIAL SUBMISSIONS OR THOSE FOR WHICH SUBMISSIONS OF CORRELATED ITEMS HAVE NOT BEEN RECEIVED.
3. PRIOR TO SUBMISSION TO THE STRUCTURAL ENGINEER, THE OWNER'S TESTING LABORATORY SHALL STAMP THE FOLLOWING MARKED SUBMITTALS INDICATING THEY HAVE BEEN REVIEWED AND APPROVED FOR COMPLETENESS AND CONFORMANCE WITH THE INTENT OF THE CONSTRUCTION DOCUMENTS:
   - CONCRETE MIX DESIGNS AND SUBSTANTIATING TEST DATA
   - MASONRY GROUT MIX DESIGNS AND SUBSTANTIATING TEST DATA
   - WELDING PROCEDURE SPECIFICATIONS
4. SUBMITTALS SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER PRIOR TO UTILIZATION, INSTALLATION, FABRICATION OR CONSTRUCTION OF ITEMS CONTAINED WITHIN THE SUBMITTALS.
5. WELDING MATERIALS & PROCEDURES SHALL CONFORM WITH AWS D1.1. AND AWS D1.8 WHERE APPLICABLE.
6. MINIMUM SIZE OF FILLET WELDS: 1/8" FOR MATERIAL 1/8" TO 1/4" THICK, 3/16" FOR MATERIAL OVER 1/4" TO 1/2" THICK, 1/4" FOR MATERIAL OVER 1/2" TO 3/4" THICK, AND 5/16" FOR MATERIAL OVER 3/4" THICK. MATERIAL THICKNESS IS FOR THINNER PART JOINED. SINGLE PASS WELDS MUST BE USED FOR SIZES SHOWN. SIZE OF WELD IS LEG DIMENSION OF FILLET. MINIMUM EFFECTIVE LENGTH OF FILLET WELDS SHALL BE NOT LESS THAN FOUR TIMES THE FILLET SIZE. MINIMUM EFFECTIVE LENGTH OF INTERMITTENT FILLET WELDS SHALL BE 1 1/2".
7. GROOVE WELDS SHALL BE COMPLETE JOINT PENETRATION WELDS, UNO. GROOVE WELDS SHALL BE TERMINATED AT THE END OF JOINTS IN A MANNER THAT WILL ENSURE SOUND WELDS. USE WELD TABS AND BACKING BARS ALIGNED TO PROVIDE AN EXTENSION OF THE JOINT PREPARATION. REMOVE EXTENSIONS UPON COMPLETION & COOLING OF THE WELD. GRIND ENDS OF THE WELD SMOOTH AND FLUSH WITH THE EDGES OF THE ABUTTING PARTS.
8. WHERE "ALL AROUND" FILLET WELDS ARE INDICATED AT CONCEALED/NON-EXPOSED SQUARE OR RECTANGULAR HSS CONNECTIONS TO PLATES, FILLET WELDS ARE NOT REQUIRED AT RADIUSED CORNERS , UNO.
9. BOLTS FOR STEEL-TO-STEEL CONNECTIONS SHALL BE PLACED IN STANDARD SIZE HOLES, TYP UNO. BOLTS FOR STEEL-TO-CONCRETE/MASONRY CONNECTIONS SHALL BE PLACED IN ANCHOR ROD HOLES, TYP UNO. USE STANDARD AISC PITCH & GAGE FOR BOLTED CONNECTIONS, UNO.
10. THE DESIGN, FABRICATION AND ERECTION OF STEEL SHALL BE IN ACCORDANCE WITH AISC 360 AND AISC 341 INCLUDING ANY ENFORCEMENT AGENCY AMENDMENTS.
11. STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING, UNO:

STEEL PRODUCT	ASTM SPECIFICATION, UNO	COMMENTS
W & WT SHAPES	A992, GRADE 50	Fy = 50ksi
HP SHAPES	A572, GRADE 50	Fy = 50ksi
M, MT, S & ST SHAPES	A36	Fy = 36ksi
CHANNELS (C & MC)	A36	Fy = 36ksi
ANGLES	A36	Fy = 36ksi
PLATES & BARS	A36,TYP, UNO	Fy = 36ksi
	A572, GRADE 50	Fy = 50ksi
RODS, PLAIN & ALL-THREADED	A36	Fy = 36ksi
RAISED-PATTERN FLOOR PLATE	A786, MEETING ASTM A36	Fy = 36ksi
PIPES	A53, GRADE B	Fy = 35ksi
ROUND HSS	A500, GRADE B	Fy = 42ksi
RECTANGULAR & SQUARE HSS	A500, GRADE B	Fy = 46ksi
HIGH-STRENGTH BOLTS	A325, HEAVY HEX, TYPE I	Fy = 92ksi
TWIST-OFF-TYPE TENSION-CONTROL BOLTS	F1852, TYPE I	
BOLTS	A307, GRADE A, HEX	Fy = 60ksi
WASHERS	F844	
PLATE WASHERS	A36	Fy = 36ksi
HARDENED WASHERS	F436, TYPE I	
DIRECT-TENSION INDICATOR WASHERS	F959, TYPE 325	
NUTS FOR HS & TENSION CONTROL BOLTS	A563, GRADE C, HEAVY HEX GRADE DH IF GALVANIZED	
NUTS FOR BOLTS & RODS	A563, HEAVY HEX, GRADE A TYP, UNO GRADE DH IF GALVANIZED GRADE DH W/ F1554 GRADE 105 BOLTS	
ANCHOR BOLTS & RODS (HEADED OR THREADED & NUTTED)	F1554, CLASS 2A, S3	
	GRADE 36 TYP, UNO	Fy = 36ksi
	GRADE 55, S1 & S4	Fy = 55ksi
	GRADE 105, S4 & S5	Fy = 105ksi
WELDED HEADED STUDS, SHEAR STUDS, & WELDED THREADED STUDS	A108, GRADES 1010 -1020	
DEFORMED BAR ANCHORS	A496	Fy = 75ksi
WELD FILLER METAL	AWS D1.1	Fy = 70ksi
TURNBUCKLES	F1145 & AISI C-1035	
CLEVISES, CLEVIS PINS, COTTER PINS	AISI C-1035	
EYENUTS & EYEBOLTS	AISI C-1030	
SLEEVE NUTS	AISI C-1018, GRADE 2	
RECESSED NUTS & PINS	A36	
COUPLING NUTS	AISI 12L14 CARBON STEEL	

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Project Engineer

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HORIZONS CONSTRUCTION

585 TECHNOLOGY CT, RIVERSIDE, CA 92507

COUNTY OF RIVERSIDE BUILDING & SAFETY DEPARTMENT

SUBMISSION DATE	9/14/2021
FIRST REVISIONS	10/23/2021

REGISTERED PROFESSIONAL ENGINEER
ARSEN ADZHEMYAN
No. C89103
Exp. 09-30-2022
CIVIL
STATE OF CALIFORNIA

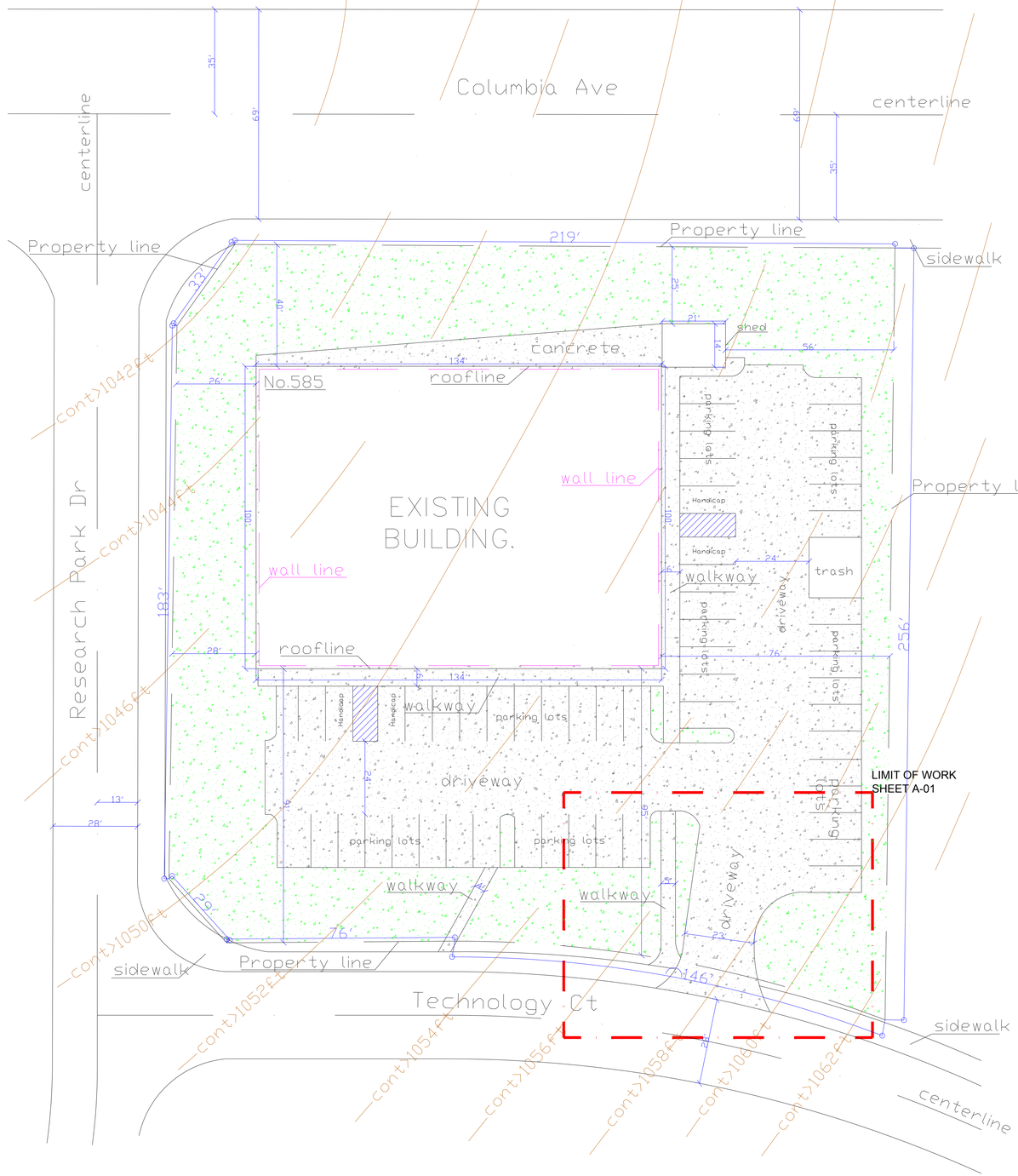
1

REGISTERED PROFESSIONAL ENGINEER
M39074
MAGDY SALEH HAREZ REZK
EXPIRATION DATE
SEPTEMBER 30, 2022
MECHANICAL
STATE OF CALIFORNIA

SHEET TITLE

TITLE SHEET

TS-1



OVERALL SITE PLAN

NORTH

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585 TECHNOLOGY CT,
RIVERSIDE, CA 92507

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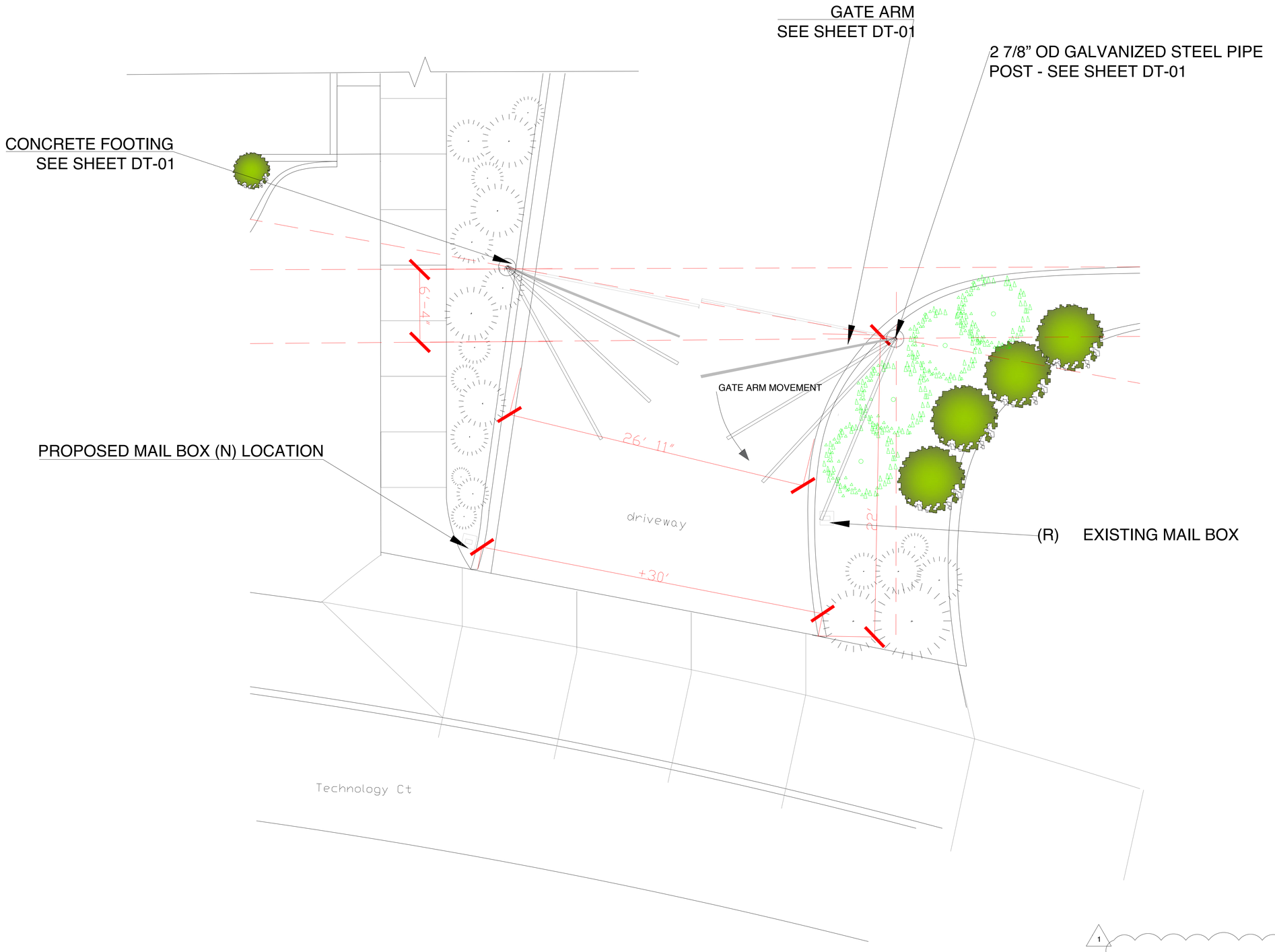
ST-1



ENLARGED SITE PLAN

NORTH

SCALE: 1/4"=1'

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585 TECHNOLOGY CT,
RIVERSIDE, CA 92507

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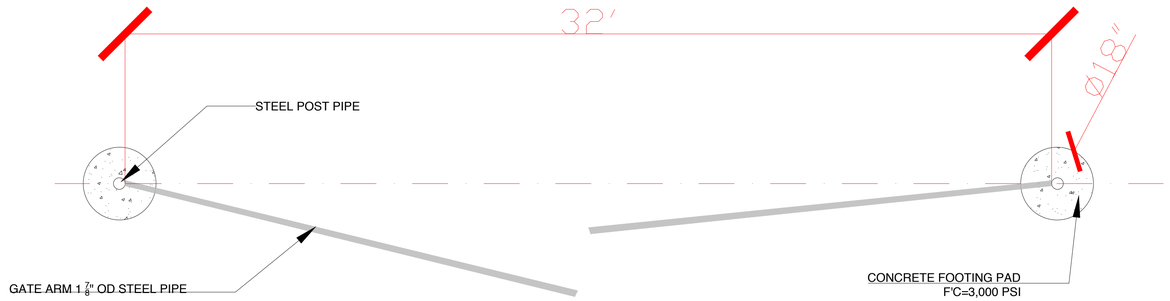
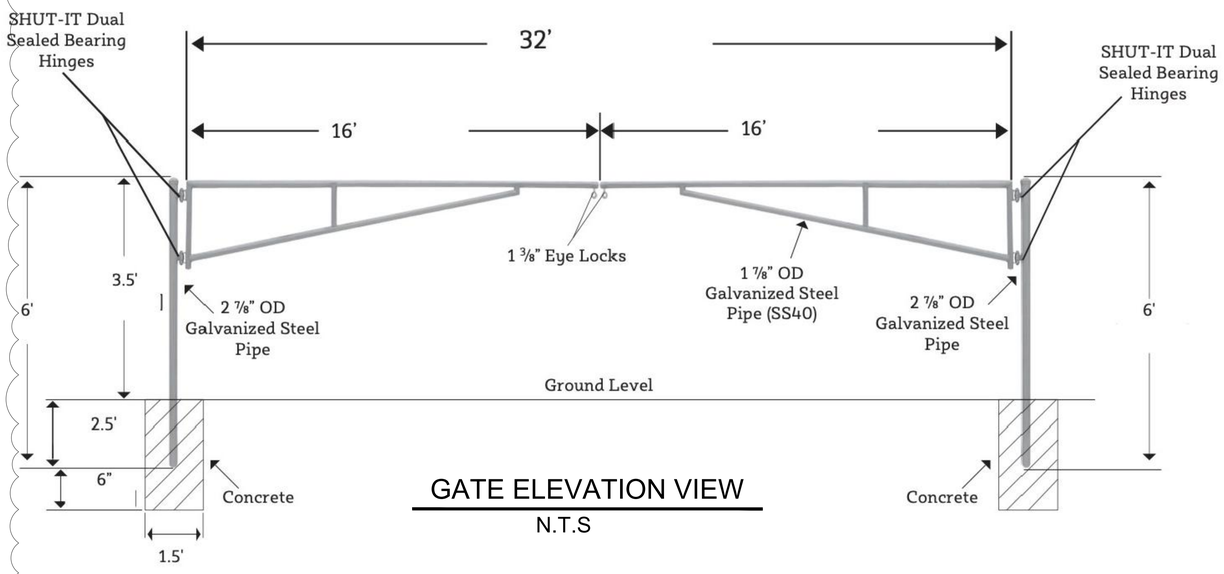
ENLARGED PLAN

TS-1



GATE PLAN VIEW
N.T.S



GATE ELEVATION VIEW
N.T.S

APPROVED PADLOCK INSTALLATION

Knox™ Padlock (Keyed for Fire Department access)

Standard Padlock (Keyed for owner's access)

INSTALLATION:
- VERIFY THE SHACKLE SIZE AND THAT THE LINKS ON THE CHAIN ARE LARGE ENOUGH TO ALLOW THE PADLOCK SHACKLE TO PASS THROUGH.
- ONE STANDARD LOCK AND ONE KNOX LOCK CAN BE HOOKED TOGETHER AS INDICATED ON THE DIAGRAM ABOVE. THIS WILL ALLOW ACCESS FOR, BOTH, THE OWNER AND FIRE DEPARTMENT.

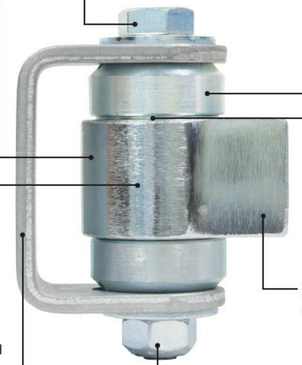
Shaft
- 100 year hinge comes with upgraded yoke and Grade 8 shaft (bolt)

Zinc Electroplating
- Long lasting rust and corrosion protection
- No need to grind off before welding
- On all components except aluminum, stainless steel & rusted look

Spacer (bushing)
- Distributes load directly onto the center ring of the sealed bearings for optimal performance and long life

Tightest tolerance in the industry
- Virtually frictionless rotation

Sealed Bearings
- Require no greasing
- Maintenance free
- Hinge options with 1, 2, 3 and 4 bearings per hinge
- Performs better with longer life than roller cages that require periodic greasing
- Stainless steel model includes stainless steel sealed bearings

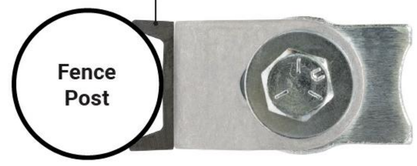


Body (mount to gate)
- Fits round or flat surfaces

Yoke (mount to post)
- Straight bends in yoke provide maximum horizontal adjustment range
- Straight bends in yoke provide maximum welding surface

Stover Lock Nut
- Uniquely shaped threads that provide a vibration resistant friction fit so the nut stays put
- Top thread section is deformed to create two or three locking zones - Can be reused 2-3 times
- These all metal locknuts withstand higher temperatures than nylon insert locknuts

For Welding Yoke to Round Fence Post
- Weld 1½ x ½ x ⅛" (38x13x3mm) A36 Steel Bar Channel to yoke first. After cooling, weld bar channel to fence post



SHUT IT - DUAL BEARING HINGES
N.T.S

GATE CONSTRUCTION NOTES

- USE CONCRETE STRENGTH F'C=3,000 PSI
- FASTENING REQUIREMENTS OF THE HINGE TO THE POST PER MANUFACTURER'S RECOMMENDATIONS.
- WELD HINGE TO ROUND POST $1\frac{1}{2} \times \frac{1}{2} \times \frac{1}{8}$"
- KNOX PADLOCKS, AND SIMILAR PRODUCTS MANUFACTURED BY KNOX COMPANY, ARE THE ONLY TYPE APPROVED BY RIVERSIDE COUNTY FIRE DEPARTMENT.
- A KNOX PADLOCK IS REQUIRED WHERE A CHAIN OR MANUAL GATE IS BEING UTILIZED,

1

GATE DETAILS

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HORIZONS CONSTRUCTION

585 TECHNOLOGY CT, RIVERSIDE, CA 92507

COUNTY OF RIVERSIDE BUILDING & SAFETY DEPARTMENT

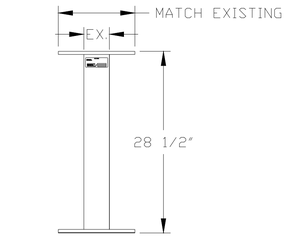
SUBMISSION DATE	9/14/2021
FIRST REVISION△	10/23/2021

REGISTERED PROFESSIONAL ENGINEER — No. CR9103 — Exp. 09-30-2022 — CIVIL — STATE OF CALIFORNIA

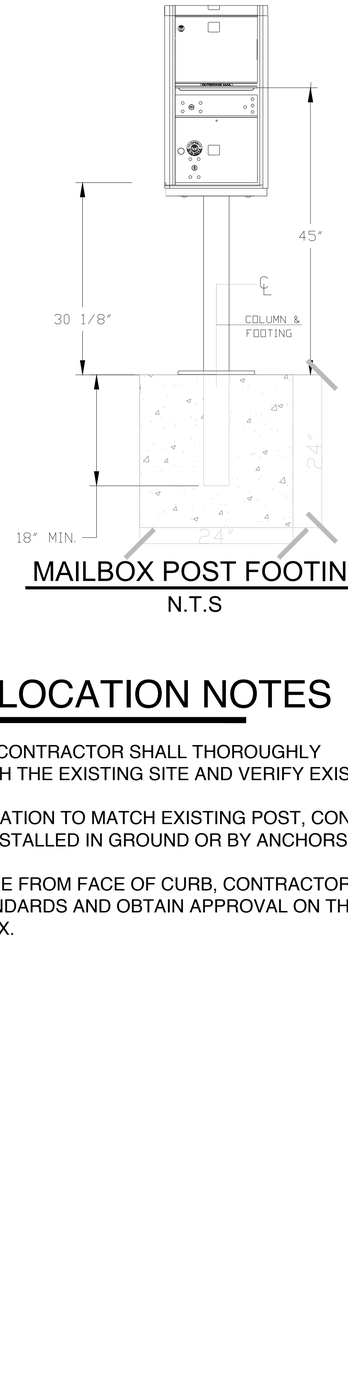
REGISTERED PROFESSIONAL ENGINEER — M39074 — EXPIRATION DATE SEPTEMBER 30 2022 — CHANICAL — STATE OF CALIFORNIA

SHEET TITLE
GATE DETAILS

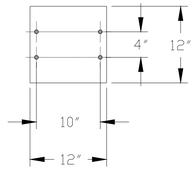
DT-01



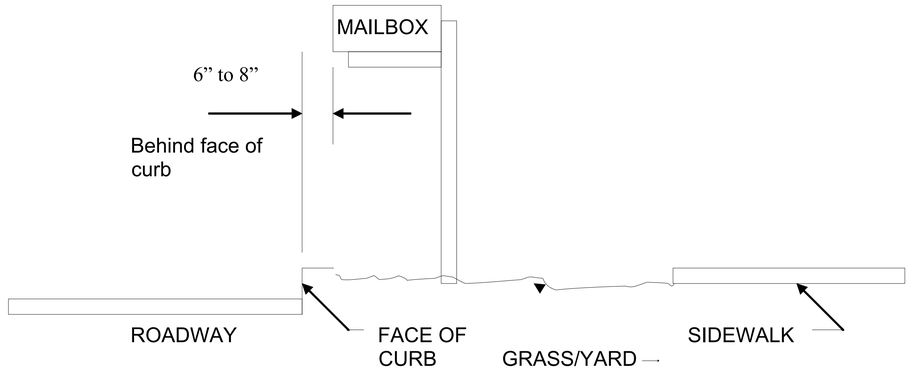
POST ELEVATION
N.T.S



MAILBOX POST FOOTING
N.T.S



ANCHORING DIAGRAM
IF APPLICABLE
N.T.S



MAILBOX & POST LOCATION
N.T.S

MAILBOX RELOCATION NOTES

1.PRIOR TO RELOCATING CONTRACTOR SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH THE EXISTING SITE AND VERIFY EXISTING CONDITIONS.

2. MAILBOX POST INSTALLATION TO MATCH EXISTING POST, CONTRACTOR TO VERIFY WHETHER THE POST IS INSTALLED IN GROUND OR BY ANCHORS TO FOOTING PAD.

3.DIMENSIONS SHOWN ARE FROM FACE OF CURB, CONTRACTOR TO VERIFY DIMENSIONS PER LOCAL POST OFFICE STANDARDS AND OBTAIN APPROVAL ON THE DRAWINGS PRIOR TO RELOCATING THE MAILBOX.

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COUNTY OF RIVERSIDE
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REGISTERED PROFESSIONAL ENGINEER
M39074
MAGDY SALEH HAMED MEKY
EXPIRATION DATE
SEPTEMBER 30 ,2022
MECHANICAL
STATE OF CALIFORNIA

SHEET TITLE
MAILBOX DETAIL

DT-02

MAIL-BOX DETAILS

STRUCTURAL CALCULATION PACKAGE
FOR
GATE FOUNDATION DESIGN
585 TECHNOLOGY CT,
RIVERSIDE, CA 92507

Prepared By: Arsen Adzhemyan, P.E., ENV. SP.
1010 Raleigh St., Apt. 107,
Glendale, CA 91205
(818) 455-6667

Prepared For: Ben Hamed

Project No: 2021-195
Date: September 10, 2021

Table of Contents:

STRUCTURAL CALCULATION PACKAGE

STRUCTURAL

PROJECT: 585 TECHNOLOGY CT			
CLIENT: BEN HAMED	JOB #2021-195	SHEET #	OF
SUBJECT/COMMENTS:	DESIGNED BY: AA	CHECKED BY:	
	DATE: 09/10/21	DATE:	

Gate foundation design per ASCE 7-16 Ch 15

Max gate weight = 400 #

200 # per support

R = 1.25, Ω_0 = 2, C_d = 2.5 Table 15.4-2

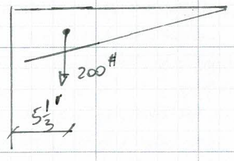
S_s = 1.644g, S_1 = 0.64g, S_{DS} = 1.315g

$$C_s = \frac{S_{DS}}{R/I_e} = \frac{1.644}{1.25} = 1.315$$

Lateral load per support =

= 1.315 · 200 # = 263 #

Dead Load



M_D = 1.2 · $5\frac{1}{3}'$ · 200 # =

= 1.280 k-ft

16'

Use 3' embedment per attached Enercalc calculations

Pole Footing Embedded in Soil

Lic. # : KW-06012895 — Structural AF

DESCRIPTION: Gate Post Foundation

Code References

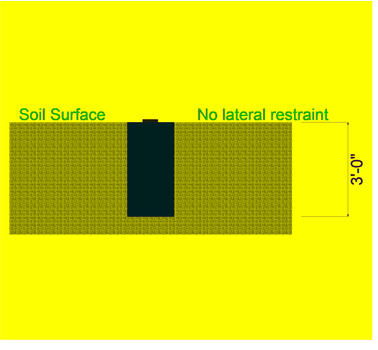
Calculations per IBC 2018 1807.3, CBC 2019, ASCE 7-16
Load Combinations Used : ASCE 7-16

General Information

Pole Footing Shape	Circular
Pole Footing Diameter	18.0 in
Find Lateral Pressure for Given Depth	
No Lateral Restraint at Ground Surface	
Allow Passive	100.0 pcf
Max Passive	100.0 psf
Embedment Depth of Footing	3.0 ft

Controlling Values

Governing Load Combination :	D Only
Lateral Load	0.0 k
Moment	0.0 k-ft
NO Ground Surface Restraint	
Pressures at 1/3 Depth	
Actual	**1.0** psf
Allowable	**100.0** psf
Footing Base Area	1.767 ft^2
Maximum Soil Pressure	0.1617 ksf



Applied Loads

	Lateral Concentrated Load (k)		Lateral Distributed Loads (klf)		Vertical Load (k)	
D : Dead Load	0.0	k		k/ft	0.20	k
Lr : Roof Live		k		k/ft		k
L : Live		k		k/ft		k
S : Snow		k		k/ft		k
W : Wind		k		k/ft		k
E : Earthquake	0.2630	k		k/ft	0.070	k
H : Lateral Earth		k		k/ft		k
Load distance above ground surface		ft	TOP of Load above ground surface	ft		
			BOTTOM of Load above ground surface	ft		

Load Combination Results

Load Combination	Forces @ Ground Surface		Pressure at 1/3 Depth		Soil Increase
	Loads - (k)	Moments - (ft-k)	Actual - (psf)	Allow - (psf)	Factor
D Only	0.000	0.000	1.0	100.0	1.000
+0.60D	0.000	0.000	1.0	100.0	1.000
+1.184D+0.70E	0.000	0.000	1.0	100.0	1.000
+1.184D-0.70E	0.000	0.000	1.0	100.0	1.000
+1.138D+0.5250E	0.000	0.000	1.0	100.0	1.000
+1.138D-0.5250E	0.000	0.000	1.0	100.0	1.000
+0.4159D+0.70E	0.000	0.000	1.0	100.0	1.000
+0.4159D-0.70E	0.000	0.000	1.0	100.0	1.000