

39-191

STATEMENT OF PURPOSE

THIS SURVEY WAS PERFORMED TO ESTABLISH PROJECT CONTROL, THE RIGHT OF WAY OF THE UNION PACIFIC RAILROAD, AND THE LINES OF ADJOINING PARCELS AND STREETS, IN CONNECTION WITH THE PLANNING AND DESIGN OF A SECOND RAILROAD BRIDGE OVER THE STANISLAUS RIVER. THIS SURVEY IS FILED IN COMPLIANCE WITH SECTION 8762(B), PARTS 1 THROUGH 5, OF THE PROFESSIONAL LAND SURVEYOR'S ACT.

SURVEYOR'S NOTES

- COORDINATES, DISTANCES, AND BEARINGS SHOWN ON THIS MAP ARE REFERENCED TO THE CCS83, ZONE 3 GRID, NAD83(2011) EPOCH 2010.00, DEFINED LOCALLY BY STATIONS "CMOD" AND "S300" (CORS OF THE NSRS) AND STATION "P309" (CGPS OF THE CSRS), THE LATITUDE AND LONGITUDE OF WHICH WERE HELD FIXED IN A LEAST SQUARES ADJUSTMENT. DISTANCES AND COORDINATES ARE EXPRESSED IN U.S. SURVEY FEET. ALL MEASURED DISTANCES PER THIS SURVEY ARE GRID.
- THE SITE COMBINATION FACTOR IS 0.99993124 AND THE SITE MAPPING ANGLE IS $-00^{\circ}23'15.36''$, BOTH CALCULATED AT SURVEY CONTROL STATION 101. TO OBTAIN GROUND LEVEL DISTANCES, MULTIPLY GRID DISTANCES BY 1.000068765 WHICH IS THE INVERSE OF THE SITE COMBINATION FACTOR. TO OBTAIN GEODETIC NORTH AZIMUTHS, ROTATE GRID AZIMUTHS COUNTERCLOCKWISE USING THE MAPPING ANGLE.
- RECORD DISTANCES AND BEARINGS ARE AS SHOWN OR NOTED IN THE DOCUMENT BEING REFERENCED. REFER TO THE DOCUMENT ITSELF TO DETERMINE IF THE RECORD DIMENSION IS EXPRESSED IN GRID OR GROUND UNITS. ALL RECORD DISTANCES USED FOR ESTABLISHMENT PURPOSES WERE FIRST SCALED TO GRID USING THE SITE COMBINATION FACTOR.
- COMBINED FACTORS ARE THE PRODUCT OF THE ELEVATION FACTOR TIMES THE CCS83 SCALE FACTOR. ELEVATION FACTORS WERE COMPUTED USING A VALUE OF 20,906,000 FEET AS THE RADIUS OF CURVATURE OF THE EARTH AND THE GEOID HEIGHT AT THE STATION. GEOID HEIGHTS HAVE BEEN INTERPOLATED FROM THE NGS GEOID12B GEOID MODEL.
- ELEVATIONS ARE REFERENCED TO NAVD88, DEFINED LOCALLY BY STATIONS "CMOD" AND "S300" (CORS OF THE NSRS) AND STATION "P309" (CGPS OF THE CSRS), THE ORTHOMETRIC HEIGHTS OF WHICH WERE HELD FIXED IN A LEAST SQUARES ADJUSTMENT. ELEVATIONS/ORTHO HEIGHTS ARE EXPRESSED IN US SURVEY FEET, UNLESS OTHERWISE NOTED. NAVD88 ELEVATIONS ON SURVEY CONTROL STATIONS 101, 102, 103, 104, 113, AND 117 HAVE BEEN DETERMINED USING GEOID MODELING, INTERPOLATED FROM THE NGS GEOID12B GEOID MODEL.
- FOUND MONUMENTS 201 THROUGH 211 AND THE RAILROAD TRACKS WERE SURVEYED USING RTK GNSS EQUIPMENT AND METHODS (BASE, ROVER, RADIO). THE RTK SURVEY WAS BASED ON A SITE CALIBRATION THAT HELD THE POST-ADJUSTMENT POSITIONS OF SURVEY CONTROL STATIONS 101, 102, 103, 104, 113, AND 117 FIXED.

BASIS OF BEARINGS

BEARINGS SHOWN ON THIS MAP ARE REFERENCED TO THE CALIFORNIA COORDINATE SYSTEM (CCS83) ZONE 3 GRID, NAD83(2011) EPOCH 2010.00, DEFINED LOCALLY BY STATIONS "CMOD" AND "S300" (CORS OF THE NSRS) AND STATION "P309" (CGPS OF THE CSRS). SEE SURVEYOR'S NOTES AND "TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM" DIAGRAM ON THIS SHEET.

COUNTY RECORDER'S STATEMENT

FILED THIS 29 DAY OF July, 2020, AT 9:40 A.M.

IN BOOK 29 OF SURVEYS, AT PAGE 191 AT THE

REQUEST OF GUIDA SURVEYING

FEE \$ 104.00

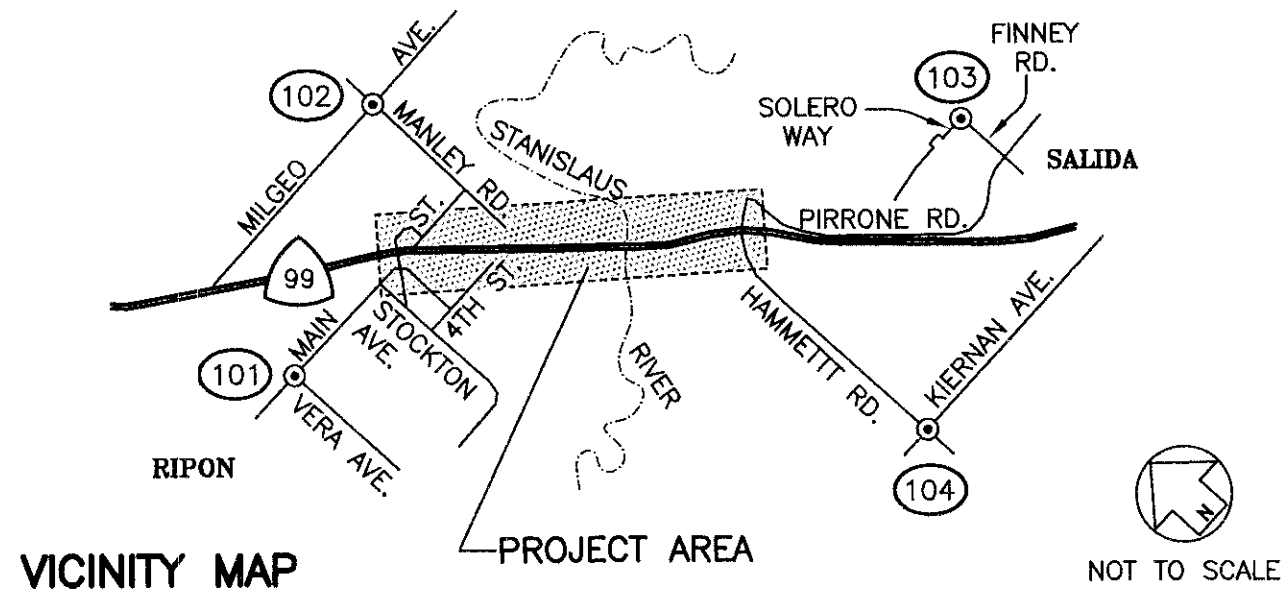
Steve J. Bestolarides

STEVE J. BESTOLARIDES
ASSESSOR-RECORDER-COUNTY CLERK

BY Debra Williams
ASSISTANT/DEPUTY RECORDER

ACCURACY STATEMENT

- SURVEYS WERE PERFORMED ACCORDING TO CALTRANS SURVEY MANUAL (CHAPTERS 5, 6, AND 9) PROCEDURES AND SPECIFICATIONS. THE CONTROL STATIONS TO WHICH THIS SURVEY IS REFERENCED MEET THE REQUIREMENTS FOR INCLUSION IN THE CALIFORNIA SPATIAL REFERENCE SYSTEM (CSRS) AS DEFINED IN THE CALIFORNIA PUBLIC RESOURCES CODE.
- THE SURVEY CONTROL NETWORK WAS PERFORMED AS A SECOND ORDER HORIZONTAL GPS SURVEY AND A VERTICAL GPS SURVEY USING STATIC GNSS EQUIPMENT AND METHODS (TRIMBLE R10 RECEIVERS AND FIXED HEIGHT TRIPODS). TIES TO CORS/CGPS STATIONS WERE DERIVED FROM GPS DATA DOWNLOADED FROM SOPAC AND UNAVCO. GNSS OBSERVATION DATA WAS PROCESSED USING TRIMBLE BUSINESS CENTER V5.1 SOFTWARE AND ADJUSTED BY THE LEAST SQUARES METHOD USING STAR*NET V8.2 SOFTWARE. THE POSITIONS AND ORTHO HEIGHTS HELD FIXED IN THE FINAL CONSTRAINED ADJUSTMENT ARE AS LISTED IN THE SURVEYOR'S NOTES. THE RESULTANT CCS83 ZONE 3 COORDINATES ACHIEVE A 1cm NETWORK ACCURACY AT THE 95% CONFIDENCE LEVEL. THE RESULTANT NAVD88 ELEVATIONS ACHIEVE A 2 cm LOCAL ACCURACY AT THE 95% CONFIDENCE LEVEL.
- THE FOUND MONUMENT SURVEY WAS PERFORMED AS A THIRD ORDER RTK SURVEY USING RTK GNSS (SEE SURVEYOR'S NOTE 6). DOUBLE OCCUPATION (SEPARATED BY A MINIMUM OF TWO HOURS) OF APPROXIMATELY 33% OF FOUND MONUMENTS SHOWED POSITION VARIATIONS OF 2.0cm OR LESS.



VICINITY MAP

REFERENCES

- R1 NGS DATASHEETS (<https://geodesy.noaa.gov/datasheets/>)
R2 RIGHT OF WAY AND TRACK MAP, CENTRAL PACIFIC RAILWAY
SHEET 4 OF 28 MAIN LINE, STOCKTON DIVISION, P.M. 103

STANISLAUS COUNTY

- ST1 31 S 35
ST2 CR 01298
ST3 33 S 46
ST4 STATE HIGHWAY MAP, 10-STA-99-20.9/24.5
(NOTE: SOME DIMENSIONS AND RADIALS WERE VERIFIED FROM
STATE RIGHT OF WAY MAP 10-STA-99, SHEETS 103-108.)

SAN JOAQUIN COUNTY

- SJ1 RS 37-22
SJ2 M&P 32-113 (RIPON BLUFFS, UNIT NO. 2)
SJ3 RS 35-196
SJ4 STATE ROW MAP 10-SJ-99, SHEETS 1-4
SJ5 M&P 29-87 (RIPON BLUFFS, UNIT NO. 1)
SJ6 PM 20-115
SJ7 M&P 11-91 (VAN VELDHIJZEN TRACT)
SJ8 M&P 10-65 (KOCH'S TRACT)

Doc #: 2020-091625
07/29/2020 09:40:59 AM
Page: 1 of 4 Fee: \$104.00
Steve J. Bestolarides
San Joaquin County Recorder
Paid By: GUIDA SURVEYING INC.

ABBREVIATIONS

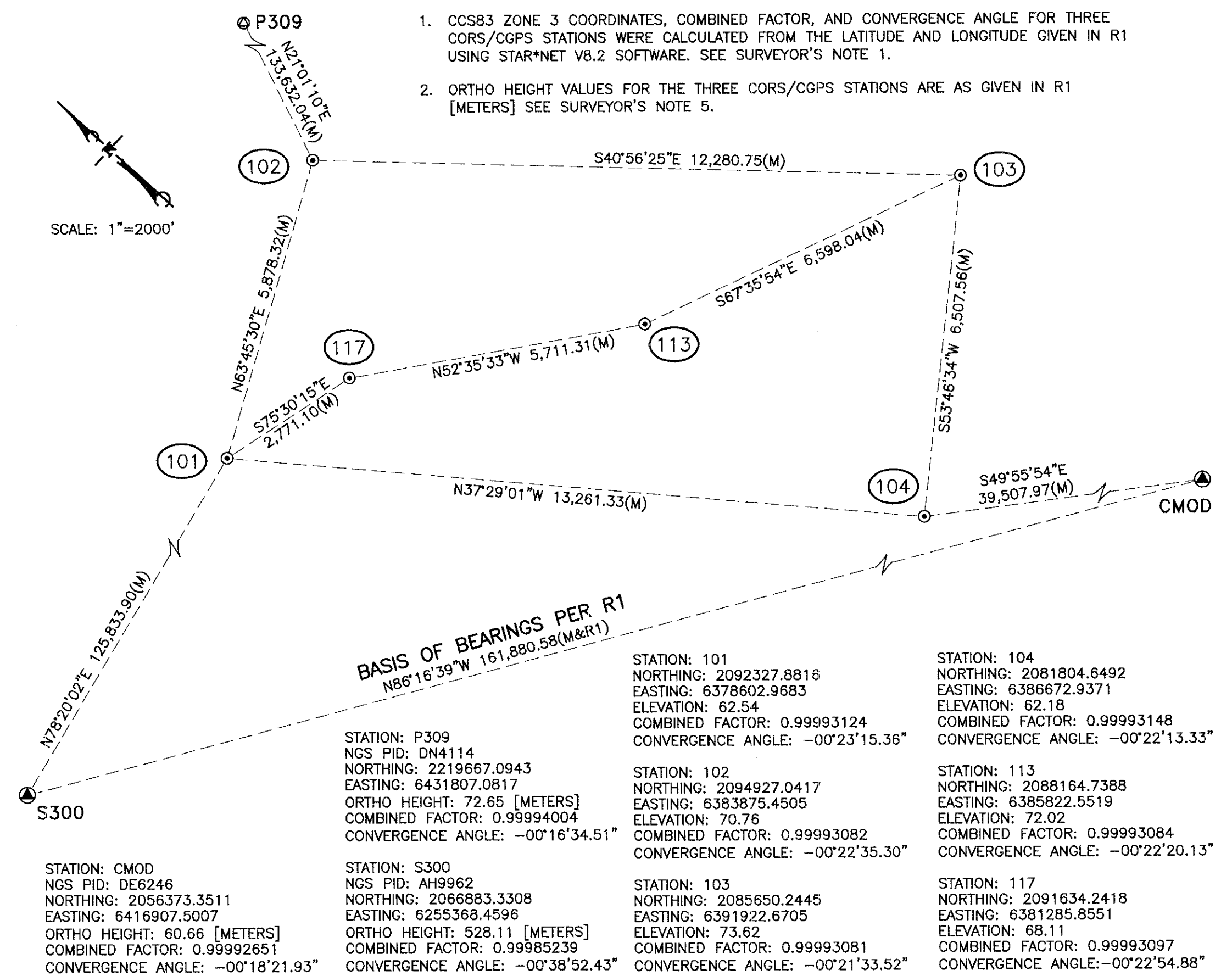
CF	CALCULATED FROM
CGPS	CONTINUOUS GPS STATION
cm	CENTIMETERS
CORS	CONTINUOUSLY OPERATING REFERENCE STATION
CR	CORNER RECORD
CSRC	CALIFORNIA SPATIAL REFERENCE CENTER
CSRS	CALIFORNIA SPATIAL REFERENCE SYSTEM

COUNTY SURVEYOR'S STATEMENT

THIS MAP HAS BEEN EXAMINED IN ACCORDANCE WITH
SECTION 8766 OF THE PROFESSIONAL LAND SURVEYORS'

ACT THIS 23 DAY OF JULY, 2020.

James E. Hart
JAMES E. HART, PLS 8657
COUNTY SURVEYOR



TIES TO THE NATIONAL SPATIAL REFERENCE SYSTEM

ABBREVIATIONS CONTINUED

IP	IRON PIPE
(M)	MEASURED
M	MAPS (STANCO)
M&P	MAPS & PLATS (SJCO)
PM	PARCEL MAP (SJCO)
NSRS	NATIONAL SPATIAL REFERENCE SYSTEM
OR	OFFICIAL RECORDS
ROW	RIGHT OF WAY
RS	RECORD OF SURVEY (SJCO)
S	RECORD OF SURVEY (STANCO)
SJCO	SAN JOAQUIN COUNTY
STANCO	STANISLAUS COUNTY
USFS	UNITED STATES SURVEY FEET

LEGEND

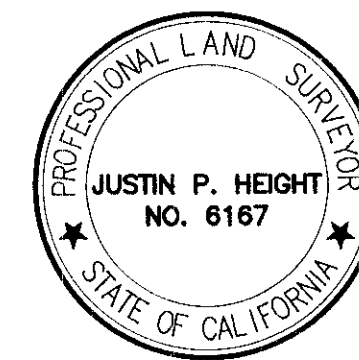
●	NSRS CORS STATION
⊙	CSRS CGPS STATION
⊙	SURVEY CONTROL POINT
○	FOUND MONUMENT AS NOTED
●	ESTABLISHED POSITION. NOTHING FOUND OR SET.
102	MONUMENT OR STATION REFERENCE NUMBER. SEE MONUMENT DESCRIPTIONS ON SHEET 2. SEE CONTROL DESCRIPTIONS ON SHEET 4.
3B	ESTABLISHMENT NOTES, VARIOUS SHEETS
---	LINE NOT SURVEYED. SHOWN FOR INFORMATIONAL PURPOSES ONLY.

SURVEYOR'S STATEMENT

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME
OR UNDER MY DIRECTION IN CONFORMANCE WITH THE
REQUIREMENTS OF THE PROFESSIONAL LAND SURVEYORS'
ACT AT THE REQUEST OF SAN JOAQUIN REGIONAL RAIL
COMMISSION IN APRIL 2020.

Justin P. Height
JUSTIN P. HEIGHT
PLS 6167

7-7-2020
DATE

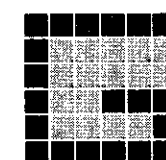


RECORD OF SURVEY

PORTIONS OF SECTIONS 19, 20, 28, 29, 30, 32,
AND 33, TOWNSHIP 2 SOUTH, RANGE 8 EAST,
MOUNT DIABLO BASE & MERIDIAN

PARTIALLY IN THE CITY OF RIPON, COUNTY OF
SAN JOAQUIN, STATE OF CALIFORNIA, AND
PARTIALLY IN THE COUNTY OF STANISLAUS,
STATE OF CALIFORNIA

APRIL 2020

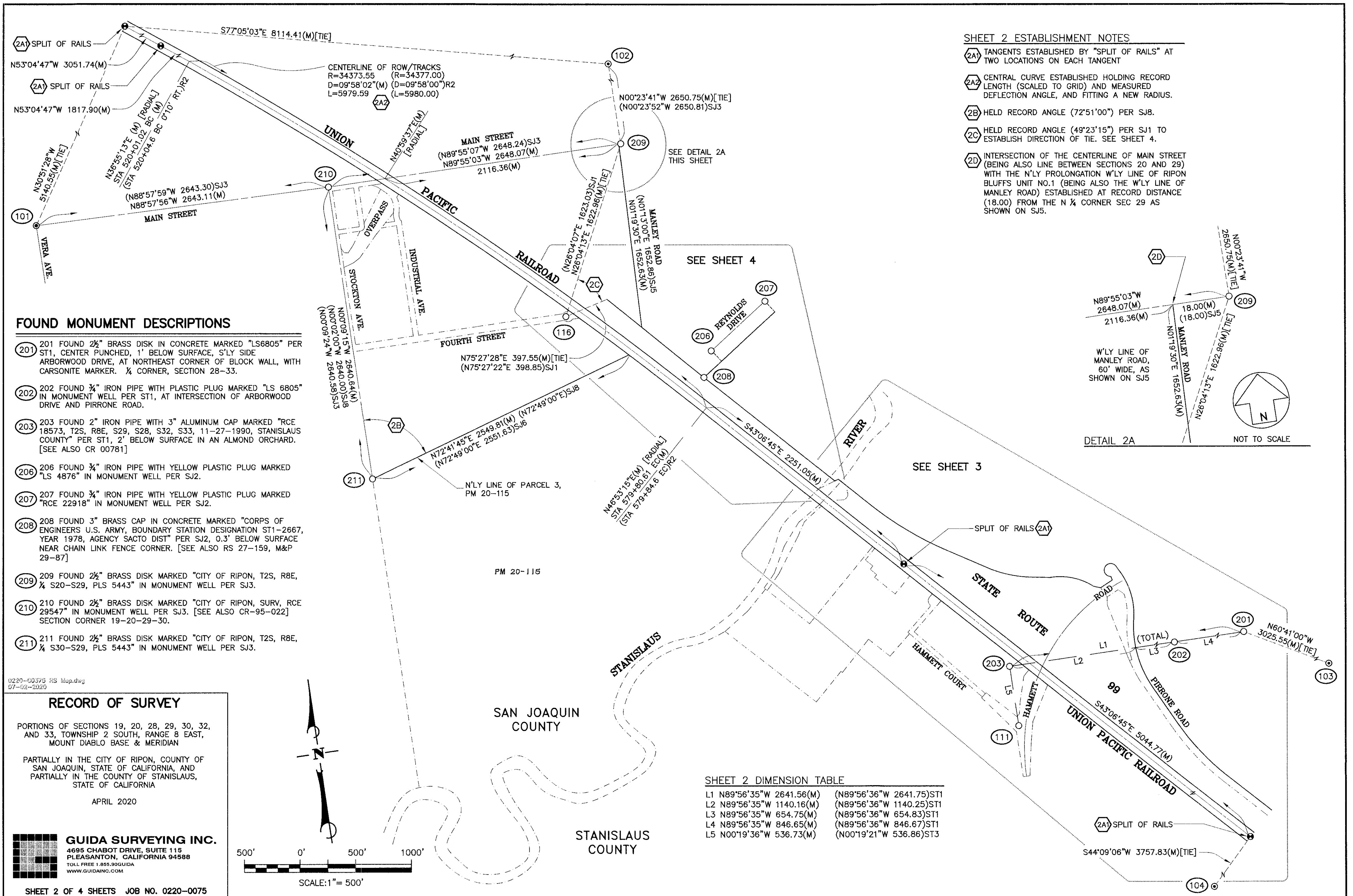


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PLEASANTON, CALIFORNIA 94588
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SHEET 1 OF 4 SHEETS JOB NO. 0220-0075

39-191

39-191A

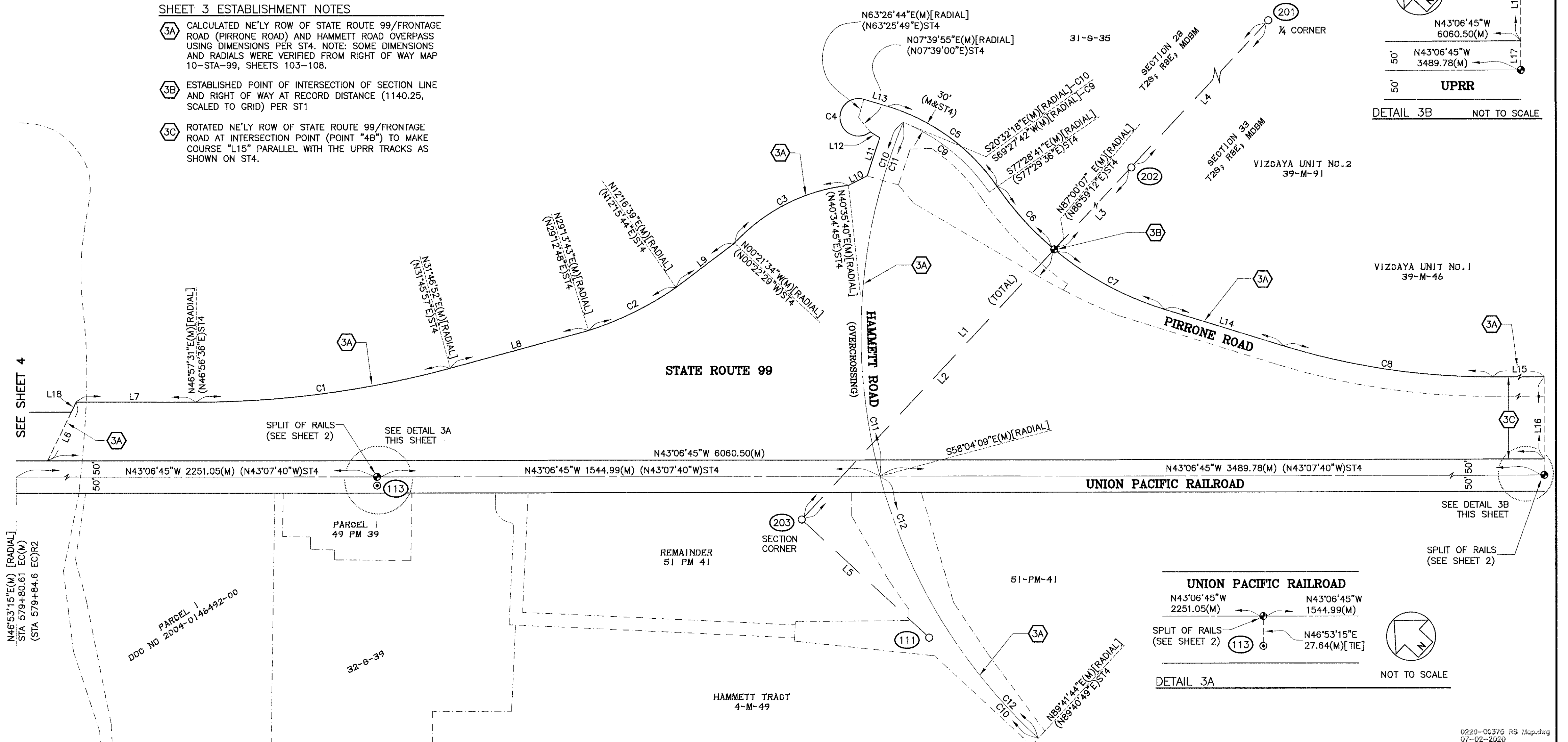
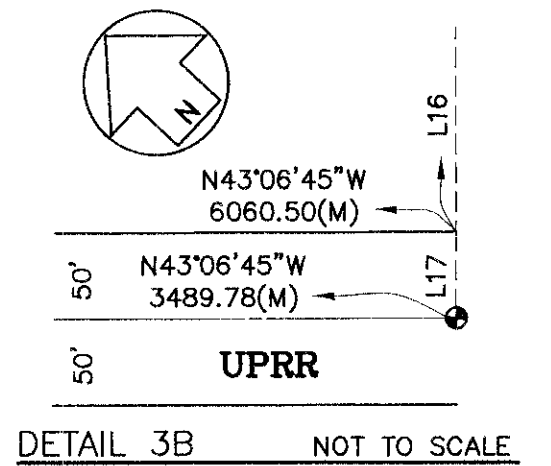


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39-191B

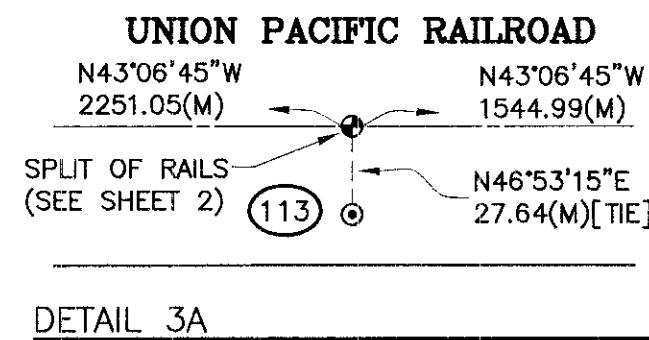
SHEET 3 ESTABLISHMENT NOTES

- 3A CALCULATED NE'LY ROW OF STATE ROUTE 99/FRONTAGE ROAD (PIRRONE ROAD) AND HAMMETT ROAD OVERPASS USING DIMENSIONS PER ST4. NOTE: SOME DIMENSIONS AND RADIALS WERE VERIFIED FROM RIGHT OF WAY MAP 10-STA-99, SHEETS 103-108.
- 3B ESTABLISHED POINT OF INTERSECTION OF SECTION LINE AND RIGHT OF WAY AT RECORD DISTANCE (1140.25, SCALED TO GRID) PER ST1
- 3C ROTATED NE'LY ROW OF STATE ROUTE 99/FRONTAGE ROAD AT INTERSECTION POINT (POINT "4B") TO MAKE COURSE "L15" PARALLEL WITH THE UPRR TRACKS AS SHOWN ON ST4.



SHEET 3 DIMENSION TABLE

L1	N89°56'35"W 2641.56(M)	(N89°56'36"W 2641.75)ST1	C1	R=3000.00 D=15°10'39" L=794.69 (M&ST4)
L2	N89°56'35"W 1140.16(M)	(N89°56'36"W 1140.25)ST1	C2	R=1020.00 D=16°57'04" L=301.77 (M&ST4)
L3	N89°56'35"W 654.75(M)	(N89°56'36"W 654.83)ST1	C3	R=565.00 D=40°57'14" L=403.85 (M&ST4)
L4	N89°56'35"W 846.65(M)	(N89°56'36"W 846.67)ST1	C4	R=58.00 D=235°46'49" L=238.68(M&ST4)
L5	N00°19'36"W 536.73(M)	(N00°19'21"W 536.86)ST3	C5	R=630.00 D=39°04'35" L=429.67 (M&ST4)
L6	N72°43'45"E 201.27(M)	(N72°42'50"E)ST4	C6	R=970.00 D=15°31'12" L=262.75 (M&ST4)
L7	N43°02'29"W 370.35(M)	(N43°03'24"W 370.35)ST4	C7	R=970.00 D=22°55'18" L=388.06 (M&ST4)
L8	N58°13'08"W 442.35(M)	(N58°14'03"W 442.35)ST4	C8	R=2170.00 D=17°11'34" L=651.15 (M&ST4)
L9	N80°16'10"W 226.65(M)	(N80°17'05"W 226.65)ST4	C9	R=600.00 D=33°03'37" L=346.21 (M&ST4)
L10	N69°41'48"W 65.02(M)	(N69°42'43"W 65.02)ST4	C10	R=1700.00 D=69°45'58" L=2070.00 (M&ST4)
L11	S65°04'48"W 123.51(M)	(S65°03'53"W 123.51)ST4	C11	R=1700.00 D=37°31'51" L=1113.56 (M)
L12	N10°42'56"W 33.87(M)	(N10°43'51"W 33.87)ST4	C12	R=1700.00 D=32°14'07" L=956.44 (M)
L13	S26°33'16"E 73.46(M)	(N26°34'11"W 73.46)ST4		
L14	S25°55'11"E 384.46(M)	(N25°56'06"W 384.46)ST4		
L15	N43°06'45"W 1604.75(M)	(N43°07'40"W)ST4		
L16	N46°53'15"E 253.20(M)[TIE]			
L17	N46°53'15"E 50.00(M)[TIE]			
L18	N72°43'45"E 34.60(M)	(N72°42'50"E 34.29)SJ4		



RECORD OF SURVEY

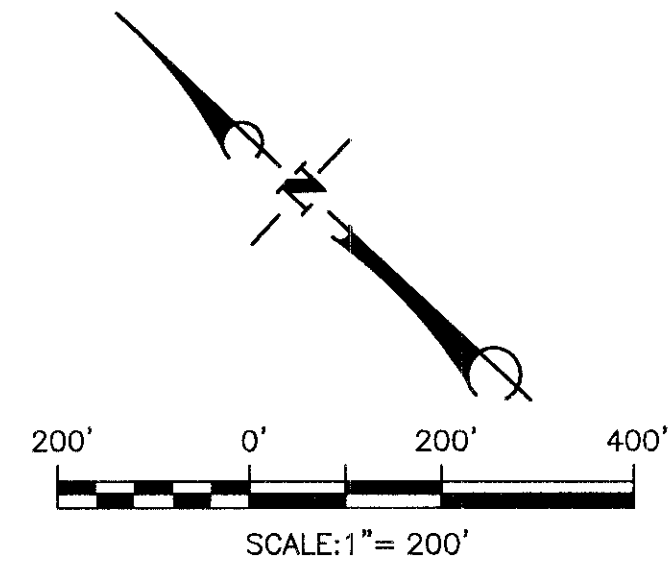
PORTIONS OF SECTIONS 19, 20, 28, 29, 30, 32, AND 33, TOWNSHIP 2 SOUTH, RANGE 8 EAST, MOUNT DIABLO BASE & MERIDIAN

PARTIALLY IN THE CITY OF RIPON, COUNTY OF SAN JOAQUIN, STATE OF CALIFORNIA, AND PARTIALLY IN THE COUNTY OF STANISLAUS, STATE OF CALIFORNIA

APRIL 2020

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SHEET 3 OF 4 SHEETS JOB NO. 0220-0075



39-191B

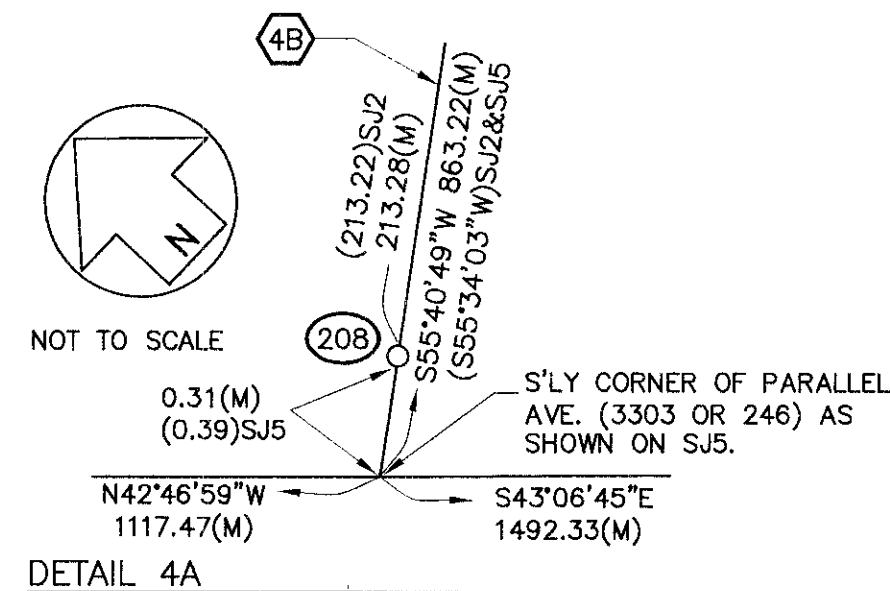
39-191C

SHEET 4 ESTABLISHMENT NOTES

- 4A ESTABLISHED NE'LY RIGHT OF WAY OF STATE ROUTE 99 PARALLEL WITH, AND 150.00 FEET NE'LY OF, THE NE'LY LINE OF THE UPRR AS SHOWN ON SJ4.
- 4B ESTABLISHED SE'LY LINE OF RIPON BLUFFS UNIT NO. 2 PARALLEL TO THE CENTERLINE OF REYNOLDS DRIVE, THROUGH FOUND MONUMENT 208, PER SJ2
- 4C HELD RECORD ANGLE (98°27'48") PER SJ2 AND SJ5 TO ESTABLISH NE'LY LINE OF STATE ROUTE 99
- 4D S'LY TERMINUS OF THE W'LY LINE OF RIPON BLUFFS UNIT NO.1 (BEING ALSO THE W'LY LINE OF MANLEY ROAD) ESTABLISHED AT RECORD DISTANCE (716.73) FROM THE S'LY CORNER OF PARALLEL AVENUE (3303 OR 246) AS SHOWN ON SJ5.
- 4E TIE FROM CITY OF RIPON GPS CONTROL NETWORK STATION 6030 (FOUND MONUMENT 116) AS SHOWN ON SJ1 USED AS A CHECK ON ESTABLISHMENT OF NE'LY LINE OF STATE ROUTE 99.
- 4F W'LY LINE OF MANLEY ROAD, 60' WIDE, AS SHOWN ON SJ5 USED AS A CHECK ON ESTABLISHMENT OF NE'LY LINE OF STATE ROUTE 99.

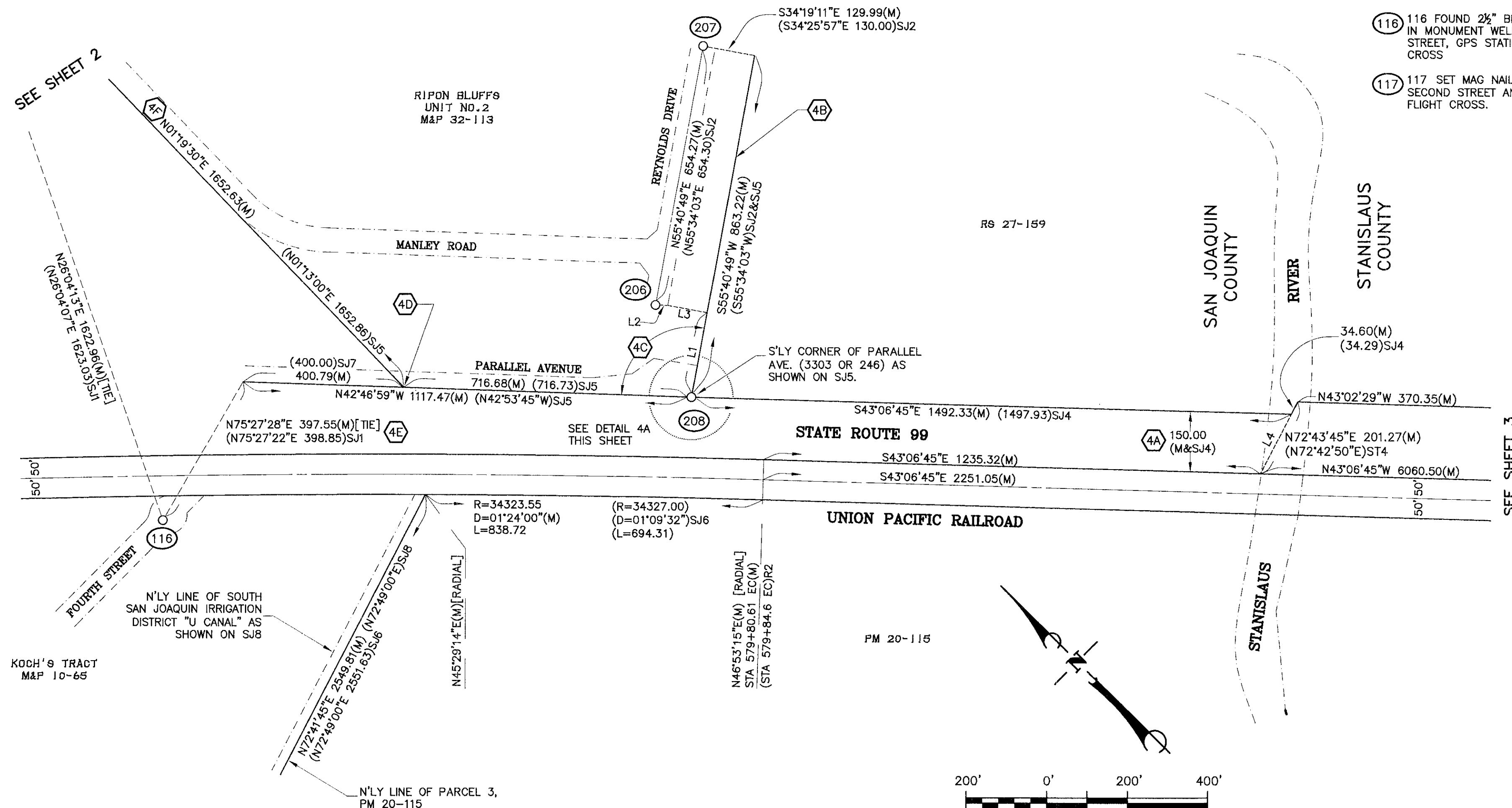
SHEET 4 DIMENSION TABLE

L1	S55°40'49"W 213.28(M)	(S55°34'03"W 213.22)SJ2
L2	S43°06'45"E 30.35(M)	(S42°53'45"E 30.33)SJ2
L3	S34°19'11"E 99.99(M)	(S34°25'57"E 100.00)SJ2
L4	N72°43'45"E 166.67(M)	



CONTROL POINT DESCRIPTIONS

- CMOD CONTINUOUSLY OPERATING REFERENCE STATION, NGS PID DE6246
- P309 CONTINUOUS GPS STATION, NGS PID DN4114
- S300 CONTINUOUSLY OPERATING REFERENCE STATION, NGS PID AH9962
- 101 101 FOUND 2 1/2" BRASS DISK STAMPED "CITY OF RIPON, SURVEY MONUMENT, LS 6953, 11-09" IN MONUMENT WELL AT INTERSECTION OF W. MAIN STREET AND VERA AVE. PER CR-09-84, S.J.CO. SURVEYOR'S RECORDS.
- 102 102 FOUND 2 1/2" BRASS DISK STAMPED "CITY OF RIPON, PLS 5443, T2S R8E, 1/4 S20" IN MONUMENT WELL, 75 FEET W'LY OF INTERSECTION OF MILGEO AVE. AND MANLEY ROAD, GPS STATION 6018 PER RS 35-196, S.J.CO.
- 103 103 FOUND 3/4" IRON PIPE WITH PLASTIC CAP MARKED "LS 6805" IN MONUMENT WELL AT INTERSECTION OF SOLERO WAY AND FINNEY ROAD PER 38-M-20, STAN.CO.
- 104 104 FOUND RECTANGULAR IRON PIN IN MONUMENT WELL AT INTERSECTION OF HAMMETT ROAD AND KIERNAN AVE. PER CR 01296, STAN.CO.
- 111 111 FOUND ALUMINUM CAP STAMPED "RCE 18573, T2S R8E, LOT 2, LOT 1, LOT 3, LOT 4, FD-CM-6.5 BELOW, 1990, STANISLAUS COUNTY" IN MONUMENT WELL AT INTERSECTION OF HAMMETT ROAD AND HAMMETT COURT, PER ST2. PAINTED FLIGHTCROSS.
- 113 113 SET COTTON SPINDLE AND SHINER FLUSH IN GRAVEL ROAD, ON HAMMETT COURT, APPROX. 420 FEET NW'LY OF "END OF COUNTY MAINTAINED ROAD" SIGN. PAINTED FLIGHT CROSS.
- 116 116 FOUND 2 1/2" BRASS DISK STAMPED "CITY OF RIPON, PT6030, PLS 5443" IN MONUMENT WELL IN CENTER OF CUL-DE-SAC OF EAST END OF FOURTH STREET, GPS STATION 6030 PER RS 35-196, S.J.CO. PAINTED FLIGHT CROSS
- 117 117 SET MAG NAIL AND SHINER FLUSH IN PAVEMENT, NE'LY QUADRANT OF SECOND STREET AND STOCKTON AVE. IN PAINTED MEDIAN TRIANGLE. PAINTED FLIGHT CROSS.



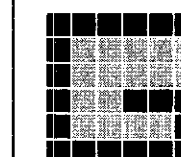
0220-00375 RS Map.dwg
07-02-2020

RECORD OF SURVEY

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SHEET 4 OF 4 SHEETS JOB NO. 0220-0075

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