

FINAL TECHNICAL MEMORANDUM

Date: October 7, 2016

To: Richard Rich, Samar Hajeer, and Pelle Clarke – City of Sacramento

From: John Gard – Fehr & Peers

Subject: *Parking Supply for Proposed MLS Stadium under Opening Day Conditions*

RS15-3374

This memorandum presents the data, analysis, and conclusions of our parking evaluation for the Major League Soccer (MLS) Stadium proposed for construction within the easterly portion of the Railyards Specific Plan (RSP). The purpose of our evaluation was to:

- Prepare detailed parking configuration drawings for the nine (9) off-street lots within the RSP Area to determine whether the resulting parking yield meets the desired supply of 4,000 parking spaces under Opening Day conditions.
- Evaluate the parking yield that could be expected for three parcels located in the River District (north of RSP Area) to determine if the addition of these parking areas meets the minimum desired goal of 6,500 total spaces under Opening Day conditions.

Calculation of Off-Street Parking Supply within the RSP Area

Figure 1 displays the nine lots identified as providing parking for the MLS Stadium under Opening Day conditions. This figure also shows the streets within the RSP Area that would be open to traffic under Opening Day conditions. Additionally, this figure shows the additional public street connections that would be necessary to provide access to these lots.

Figures 2 – 10 provide detailed maps of the off-street parking layouts for each of these lots. Key components of the off-street parking layouts include:

1. Parking stalls are assumed to be 9-foot by 20-foot. Stall depths of 20 feet are assumed due to the expectation that fences will be placed along parking area boundaries (i.e., vehicle front bumpers will not be able to hang over landscaping).
2. Parking aisles are a minimum of 24-feet wide in all areas.
3. Parking aisles are generally laid out in a perpendicular configuration with north-south versus east-west alignments dictated by anticipated pedestrian flows. For irregularly shaped lots, a conservative approach is taken to estimate parking supply (i.e., some portions of the parking lots were unoccupied versus having a small amount of irregularly configured spaces).
4. Pedestrian pathways to public streets are identified for each lot.
5. The parking lot layouts consider the need to provide off-street vehicle storage to collect parking fees with minimal on-street queue spillback.

6. Since these parking lots are temporary, the layouts do not include landscaping areas for trees and shrubs.

Table 1 shows the estimated number of parking spaces available in each lot based on the above design methodologies and assumptions. As shown, the nine lots would provide a combined 3,872 spaces with an average yield of 114 spaces per acre.

| Table 1 – Off-Street Parking Supply Estimates Within RSP Area | | | | |
|--|--|---------|---------------------------|-----------------|
| Lot(s) | Location | Acreage | Off-Street Parking Supply | Spaces per Acre |
| 69 | west of 8 th Street, south of N. B Street | 3.81 | 465 | 122 |
| 56 | west of 8 th Street, north of Railyards Blvd. | 2.89 | 349 | 120 |
| 49 | east of 7 th Street, south of Railyards Blvd. | 5.62 | 667 | 118 |
| 51 | east of 10 th Street, north of Railyards Blvd. | 3.36 | 355 | 105 |
| 47-48 | east of 6 th Street directly north of UPRR tracks | 5.86 | 549 | 93 |
| 4 | west of 5 th Street, south of Railyards Blvd. | 3.47 | 407 | 117 |
| 33 | west of Bercut Drive, south of Railyards Blvd. | 3.26 | 422 | 129 |
| 8 | east of Bercut Drive, south of Camille Ln. | 2.66 | 321 | 120 |
| 46 | west of 7 th Street, north of F Street | 3.19 | 337 | 105 |
| Total | | 34.12 | 3,872 | 114 |
| Source: Fehr & Peers, 2016. | | | | |

It should be noted that Lot 47-48 would have the lowest parking yield (per acre) due to topographic constraints. Figure 6 shows the parking layout for this lot. Two points of access along 6th Street are necessary based on the amount of parking to be provided. The southerly access would be located directly opposite Camille Lane. There is an approximate 9-foot elevation difference between this intersection and the finished lot grade. As shown, a 270-foot long raised driveway that extends to the interior of the site is assumed to be constructed, resulting in a 3.3 percent grade. Although a steeper driveway design may be possible, the additional parking associated with such a configuration would be modest.

Table 2 displays the recommended number of parking fee collection lanes at each parking lot (refer to figures for number of lanes at each driveway). Since the parking lots would be used exclusively for inbound travel during the pre-event conditions, it is anticipated that both the inbound and outbound lanes may be used for fare collection. This table also shows the

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estimated inbound vehicular capacity to each lot based on the number of entry lanes and the estimated service flow rate (i.e., parking fee transaction time).¹

Parking lots will not typically completely fill in a single hour. If the lots fill in 1.5 hours, then the equivalent hourly flow into each lot would range from about 40 to 80 percent of its maximum inbound service flow capacity. In other words, the hourly demand would not exceed the capacity provided to enter the lot. Further, the lots have been designed to provide on-site storage ranging from six to up to 30 vehicles to minimize vehicular queue spillback onto adjacent streets.

| Table 2 – Inbound Parking Fee Collection Lane Capacity for Lots Within RSP Area | | | | |
|---|--|---------------------------|--|---|
| Lot(s) | Location | Off-Street Parking Supply | # of Inbound Lanes / Total Off-Street Vehicle Storage ¹ | Maximum Hourly Inbound Flow Rate ² |
| 69 | west of 8 th Street, south of N. B Street | 465 | 4 / 300 ft. | 720 veh. |
| 56 | west of 8 th Street, north of Railyards Blvd. | 349 | 2 / 150 ft. | 360 veh. |
| 49 | east of 7 th Street, south of Railyards Blvd. | 667 | 3 / 720 ft. | 540 veh. |
| 51 | east of 10 th Street, north of Railyards Blvd. | 355 | 2 / 150 ft. | 360 veh. |
| 47-48 | east of 6 th Street directly north of UPRR tracks | 549 | 4 / 740 ft. | 720 veh. |
| 4 | west of 5 th Street, north of Railyards Blvd. | 407 | 4 / 200 ft. | 720 veh. |
| 33 | west of Bercut Drive, south of Railyards Blvd. | 422 | 4 / 300 ft. | 720 veh. |
| 8 | east of Bercut Drive, south of Camille Ln. | 321 | 2 / 200 ft. | 360 veh. |
| 46 | west of 7 th Street, north of F Street | 337 | 3 / 315 ft. | 540 veh. |
| Notes: ¹ Refer to Figures 2-10 for illustration of inbound parking fare collection lanes and vehicle storage. ² Based on a maximum service flow rate of 180 vehicles per hour in a given lane (see previous page). Source: Fehr & Peers, 2016. | | | | |

Estimation of Off-Street Parking Supply in Selected Parcels North of RSP Area

The following parcels have been identified as potential parking areas for MLS matches:

- Vacant 7.2-acre UPRR parcel located directly north of North B Street and west of 7th Street.

¹ In October 2015, we measured flow rates of inbound traffic paying to enter the Cherry Island Soccer Complex in Sacramento County as part of large soccer tournament. Those observations showed that a single lane could accommodate about three vehicles per minute.

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- Vacant, approximately 13.5-acre Township 9 parcel located north of Richards Boulevard, directly east of North 6th Street, and west of Scalehouse Street.
- Developed 10-acre "Incinerator" site located directly north of North B Street and east of 7th Street.

The UPRR parcel is somewhat irregularly shaped and would need to be graded and paved to accommodate parked vehicles. **Figure 11** shows the parking layout for this lot, and reveals that it can accommodate 917 spaces (not considering any potential environmental or physical site constraints). Vehicular access would be provided from North B Street.

The Township 9 parcel has a rectangular shape. **Figure 12** shows the parking layout for this lot, and reveals that it can accommodate 1,824 spaces (not considering any potential environmental or physical site constraints). Vehicular access would be provided from existing streets including Township Nine Avenue, Cannery Avenue, and North 5th Street.

The potential parking yield for the Incinerator site (see **Figure 13**) is not known at this time given the variety of different structures, equipment, debris, and other materials currently on the property. A detailed on-site investigation would be necessary to estimate the parking yield.

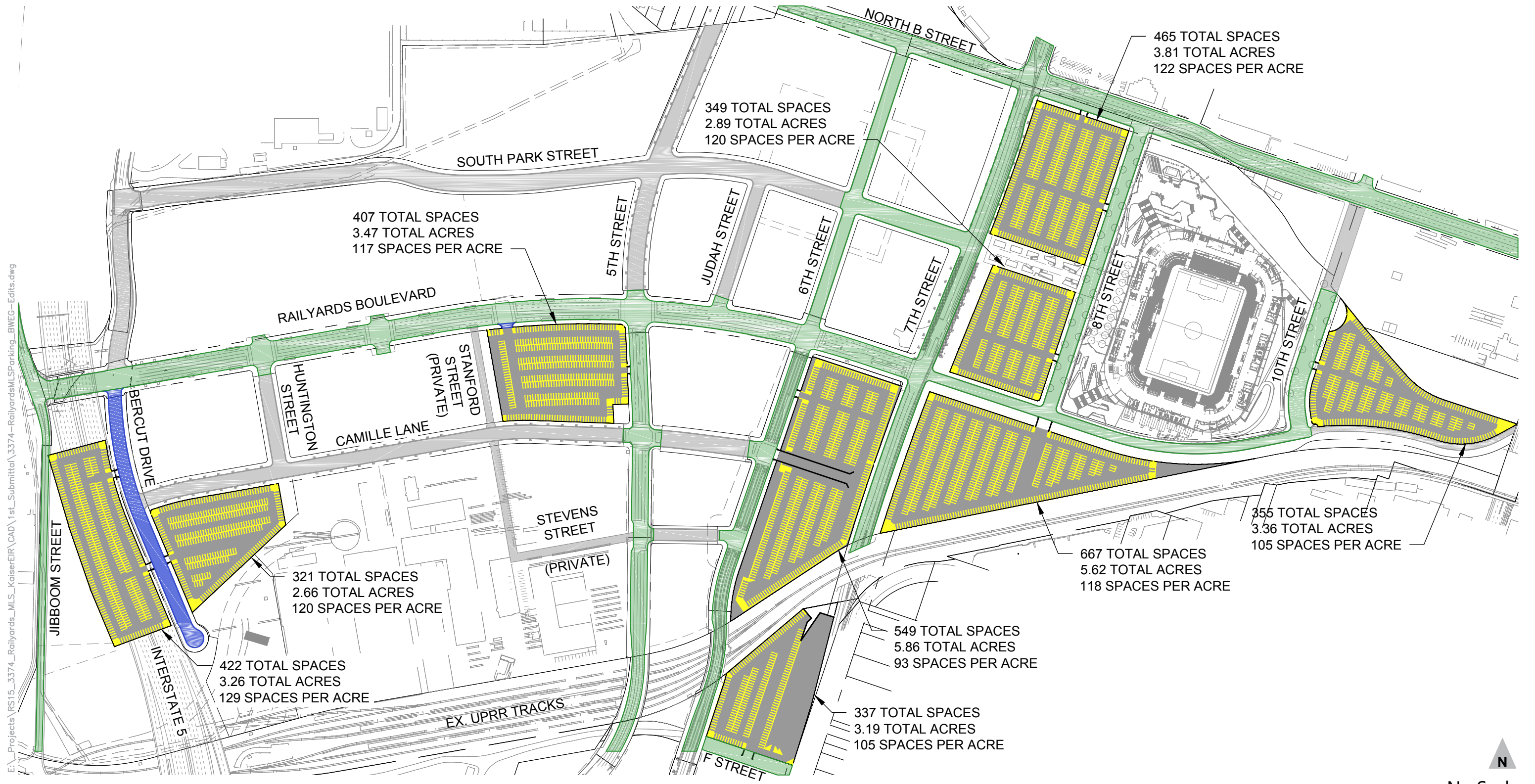
Thus, the UPRR and the Township 9 parcels would yield a combined 2,741 spaces, which would exceed the 2,500-space target.

Conclusions

This analysis has concluded that the Township 9 and UPRR parcels would have the potential to yield the 2,500 desired parking spaces north of the RSP Area. The identified parking areas within the RSP Area would yield an estimated 3,872 parking spaces, which is 128 spaces less than the target supply of 4,000 spaces for that area. The combined parking supply within the RSP Area, and on the UPRR and the Township 9 parcels would be 6,613 spaces, which exceeds the 6,500 total space target under Opening Day conditions.

As described on page 26 of the *MLS Stadium Event Transportation Management Plan* (TMP), pedestrian impacts on North 7th Street between North B Street and Richards Boulevard may be lessened/avoided by providing greater proportions of parking within the RSP Area, thereby reducing pedestrian traffic on North 7th Street.

We hope this information is helpful. Please call or email with any questions or comments.



- LEGEND**
- ROADWAY OPEN TO TRAFFIC ★
 - TEMPORARY ROADWAY CONNECTION NEEDED TO PROVIDE ACCESS TO PARKING
 - ROADWAY CLOSED/ NON-ACCESSIBLE TO TRAFFIC

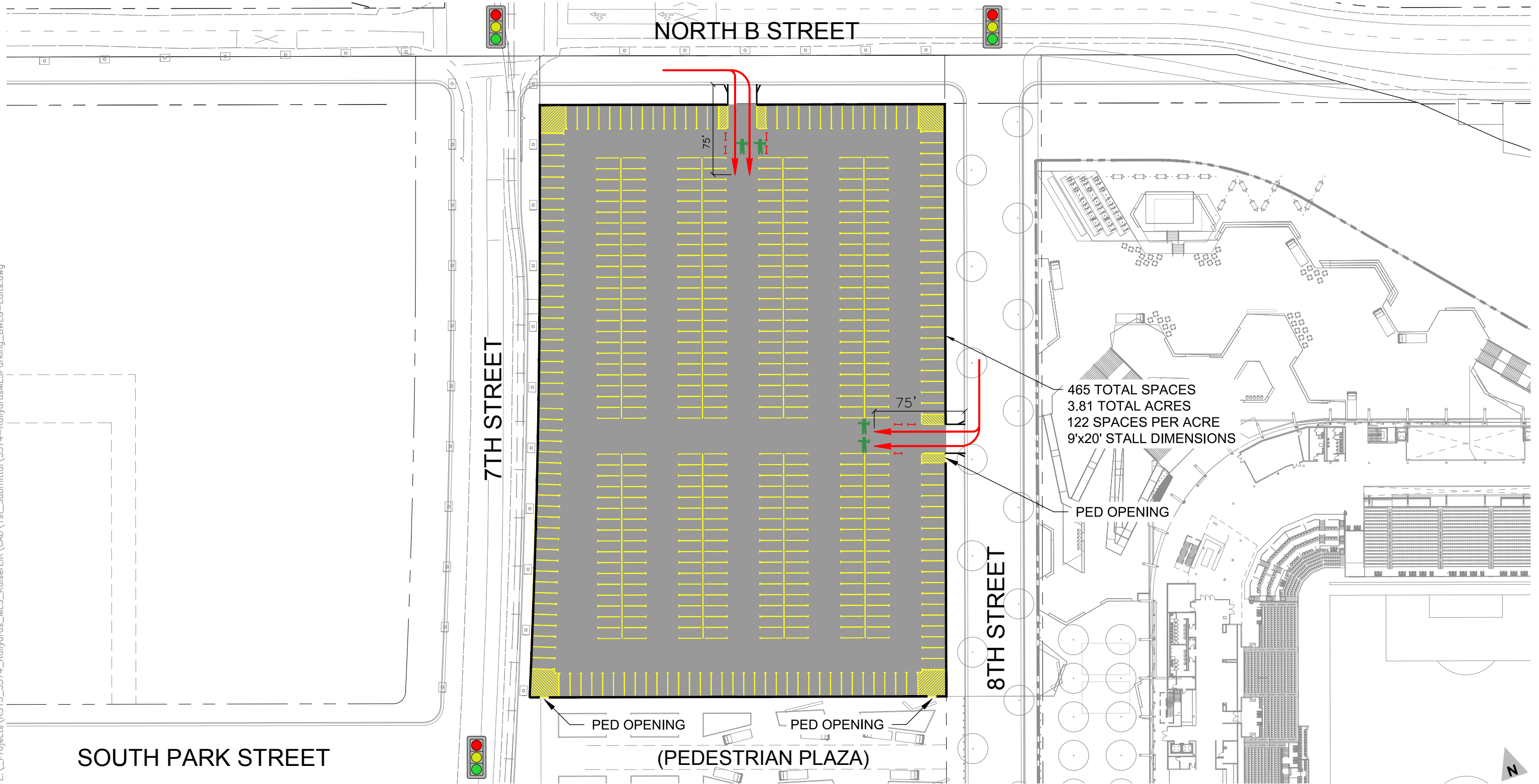
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No Scale



Figure 1
Proposed Off-Street Parking Supply Within RSP Area for MLS Stadium Under Opening Day Conditions

★ = BASED ON ASSUMED BASELINE PLUS MLS STADIUM ROADWAY NETWORK IN DRAFT EIR AND ASSOCIATED ROADWAY MITIGATION FOR THAT SCENARIO.

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SOUTH PARK STREET

NORTH B STREET

7TH STREET

8TH STREET

PED OPENING

PED OPENING

(PEDESTRIAN PLAZA)

465 TOTAL SPACES
3.81 TOTAL ACRES
122 SPACES PER ACRE
9'x20' STALL DIMENSIONS

PED OPENING

LEGEND



FENCE



BARRICADE



PARKING ATTENDANT



INBOUND PATH OF TRAVEL

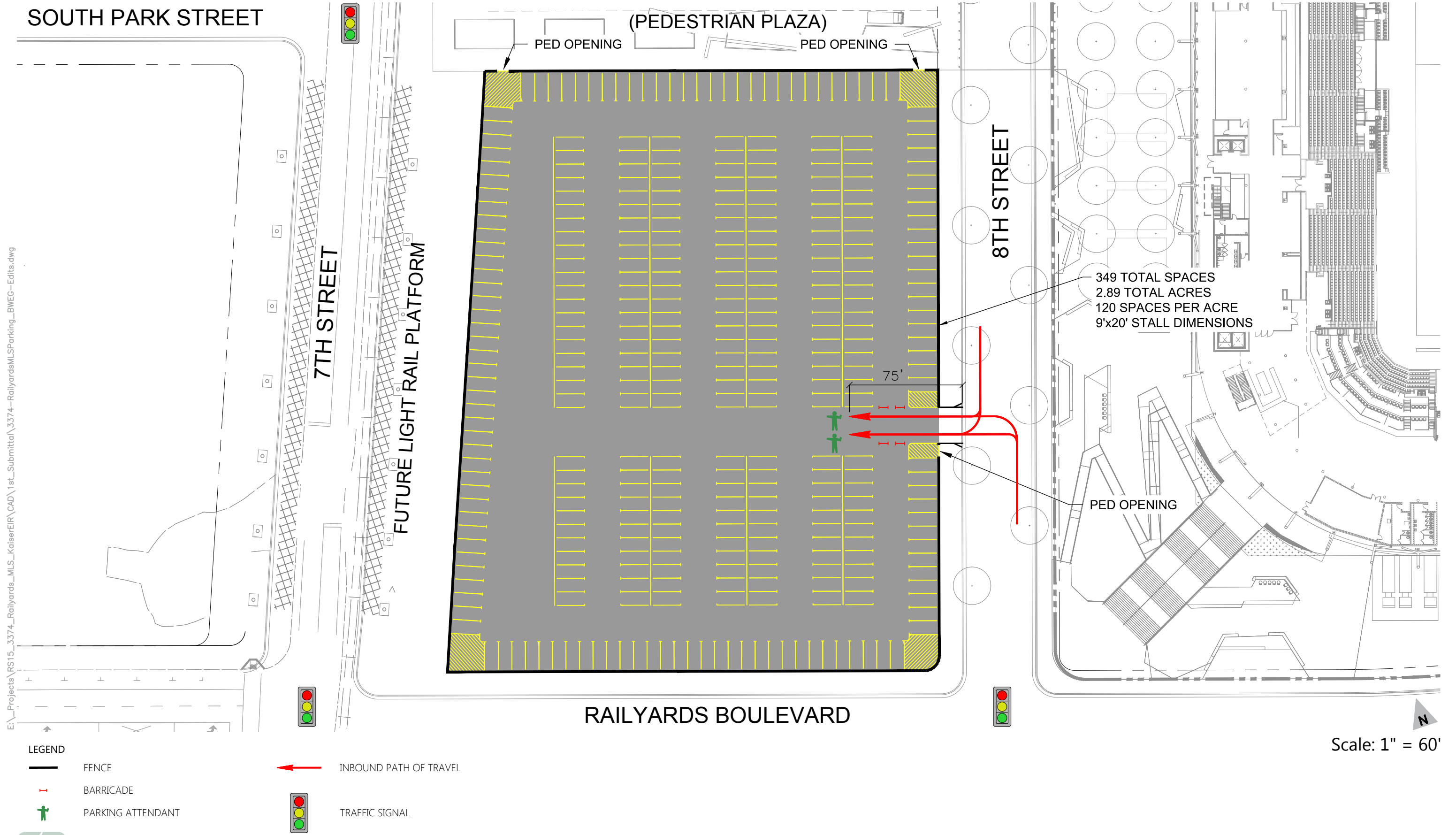


TRAFFIC SIGNAL

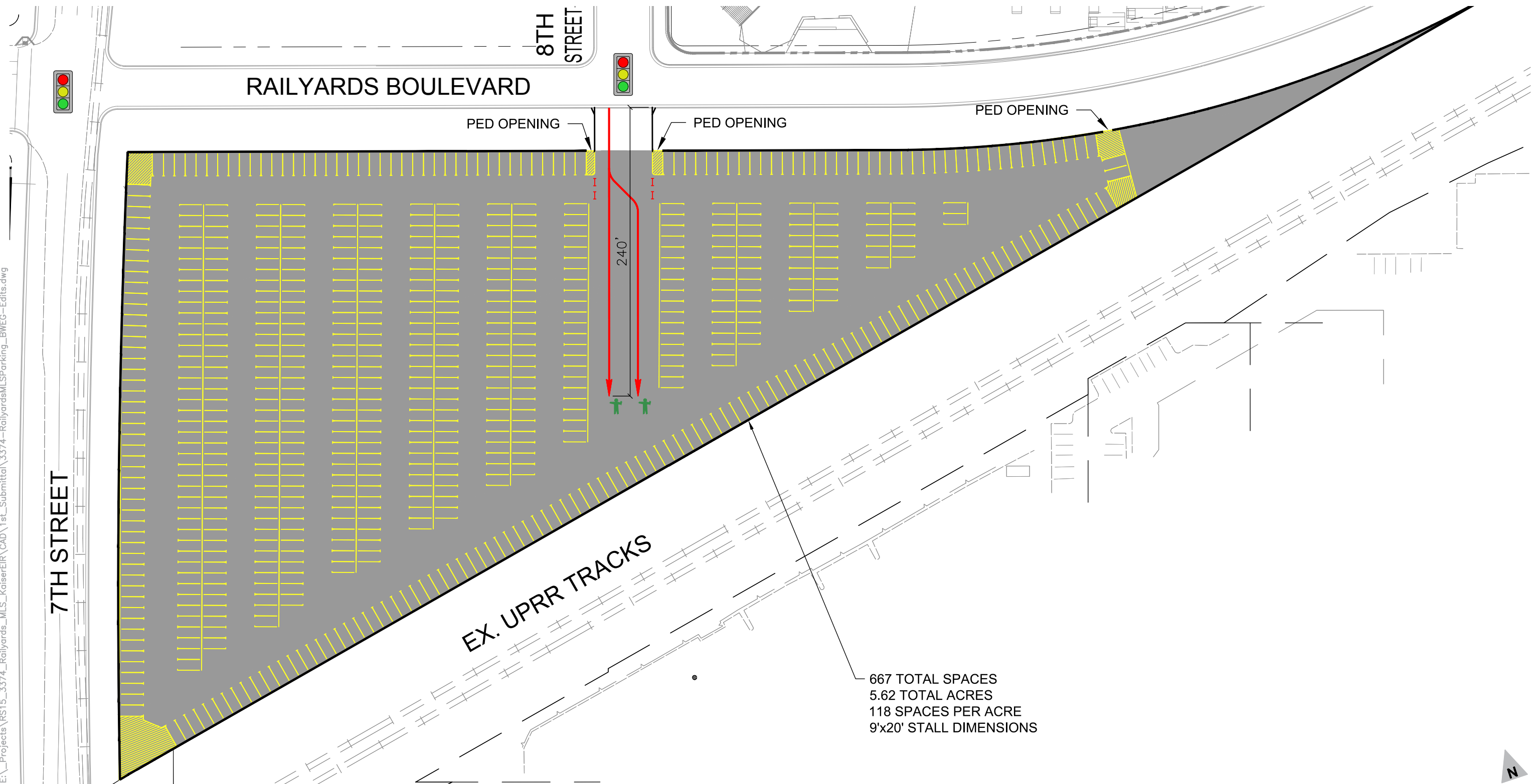


Scale: 1" = 80'

Figure 2
Parking Lot 69



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LEGEND

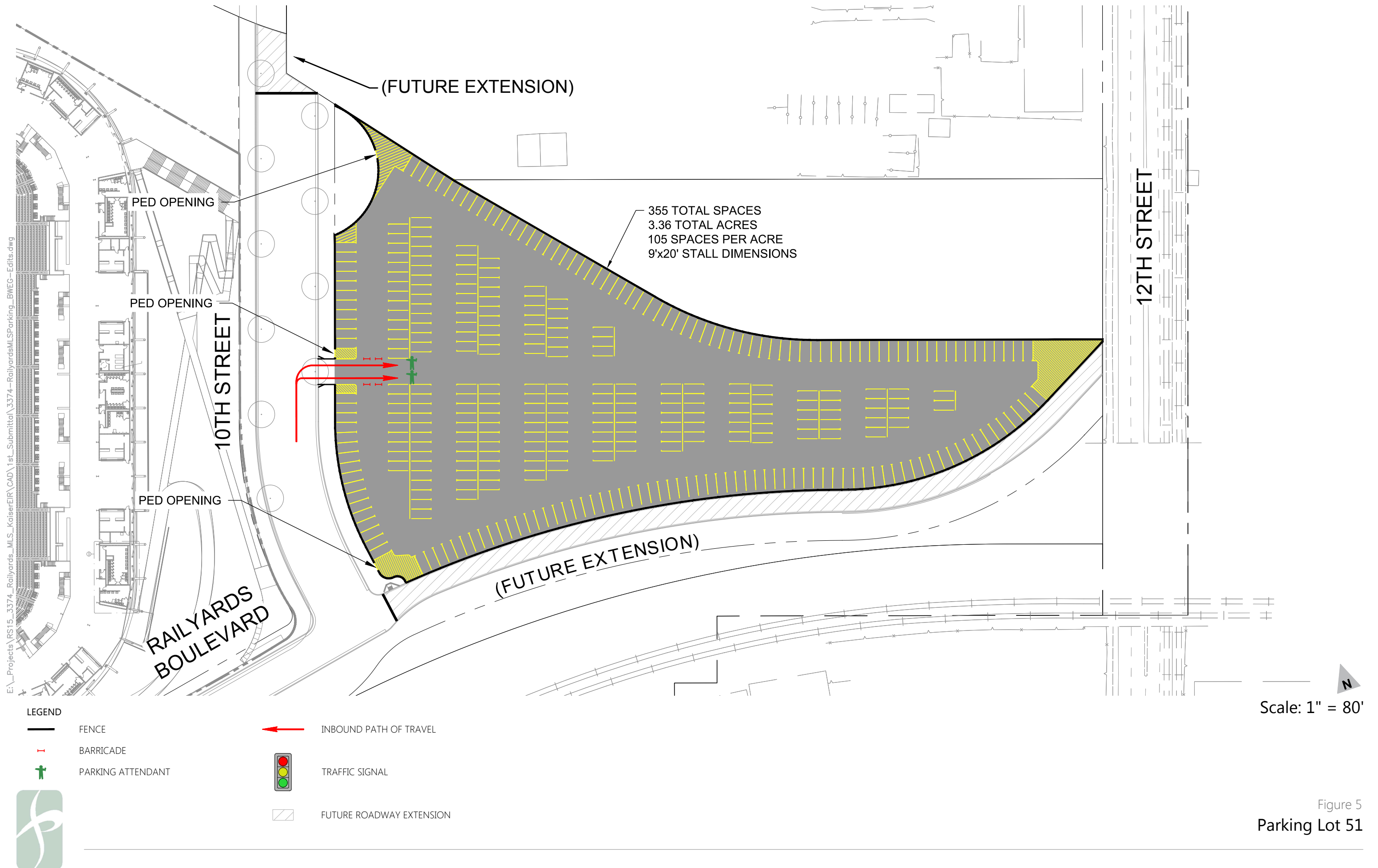
- FENCE
- BARRICADE
- PARKING ATTENDANT
- INBOUND PATH OF TRAVEL
- TRAFFIC SIGNAL



667 TOTAL SPACES
5.62 TOTAL ACRES
118 SPACES PER ACRE
9'x20' STALL DIMENSIONS

Scale: 1" = 80'

Figure 4
Parking Lot 49



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LEGEND

FENCE
 BARRICADE
 PARKING ATTENDANT

INBOUND PATH OF TRAVEL
 TRAFFIC SIGNAL
 FUTURE ROADWAY EXTENSION

Figure 5
Parking Lot 51

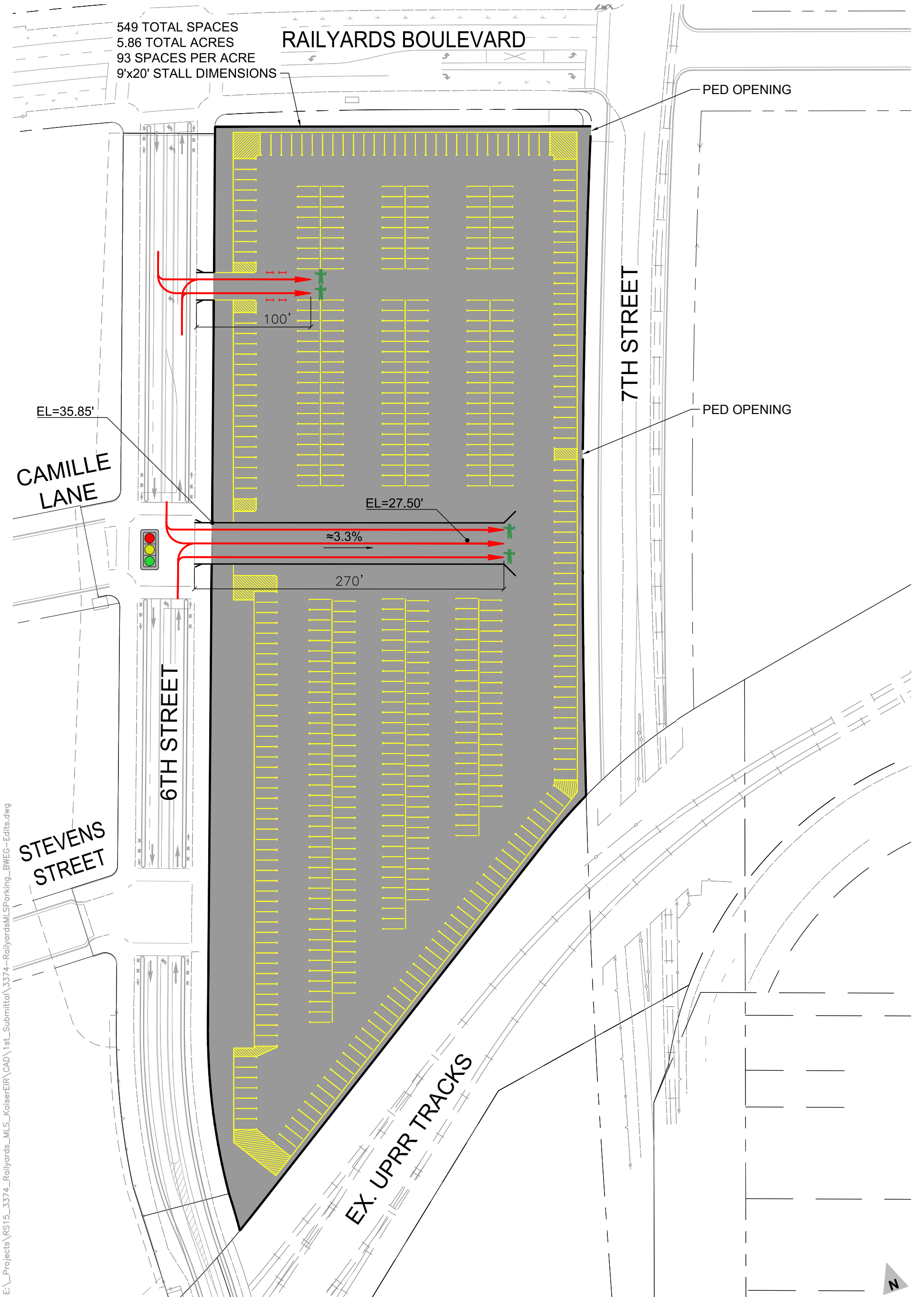


Figure 6
Parking Lot 47-48

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RAILYARDS BOULEVARD

PED OPENING

PED OPENING

PED OPENING

STANFORD STREET
(PRIVATE)

5TH STREET

CAMILLE LANE

407 TOTAL SPACES
3.47 TOTAL ACRES
117 SPACES PER ACRE
9'x20' STALL DIMENSIONS

LEGEND



FENCE



BARRICADE



PARKING ATTENDANT



INBOUND PATH OF TRAVEL



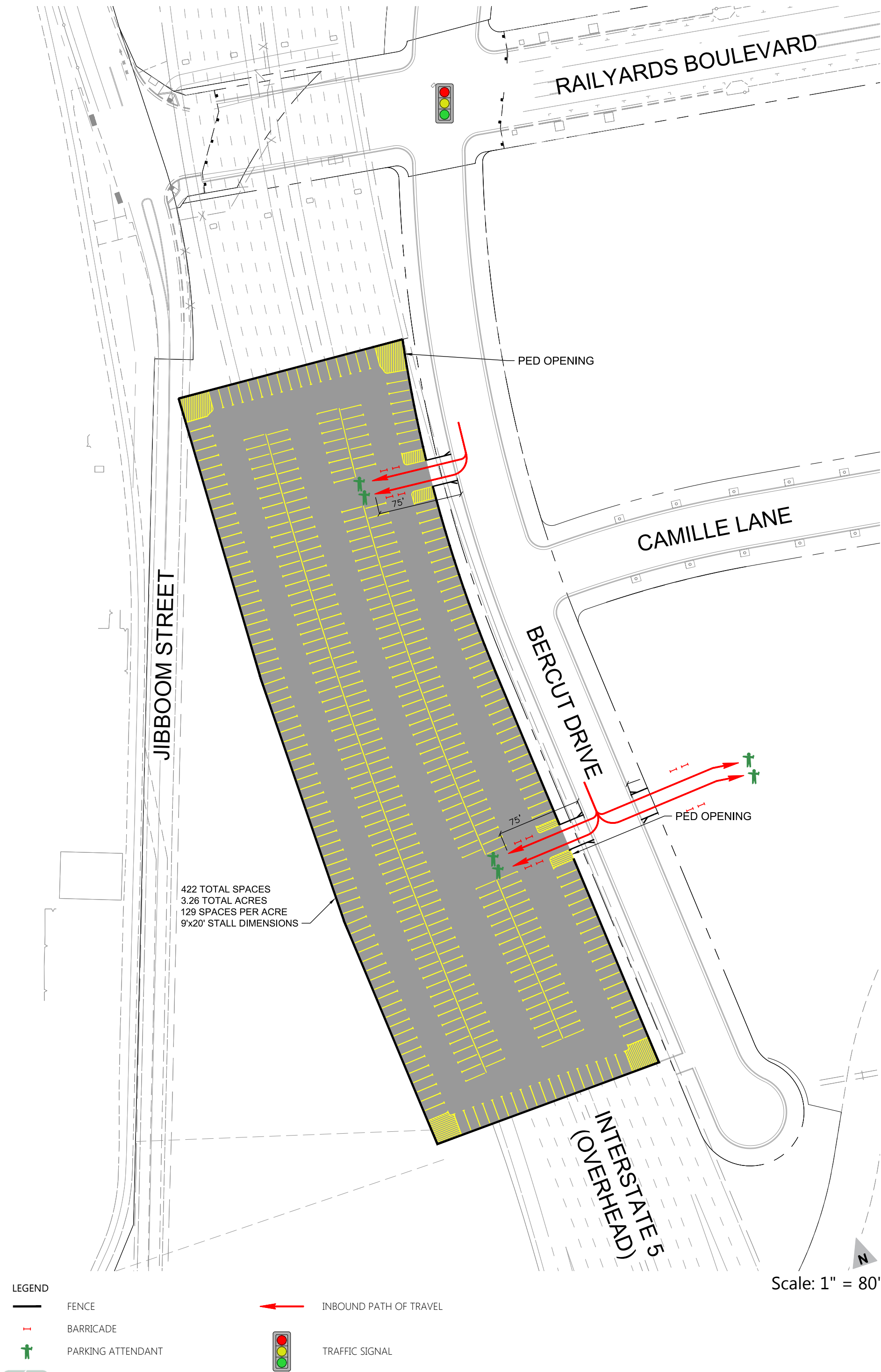
TRAFFIC SIGNAL



Scale: 1" = 80'

Figure 7
Parking Lot 4

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LEGEND

- FENCE
- BARRICADE
- PARKING ATTENDANT

- INBOUND PATH OF TRAVEL
- TRAFFIC SIGNAL

Scale: 1" = 80'

Figure 8
Parking Lot 33

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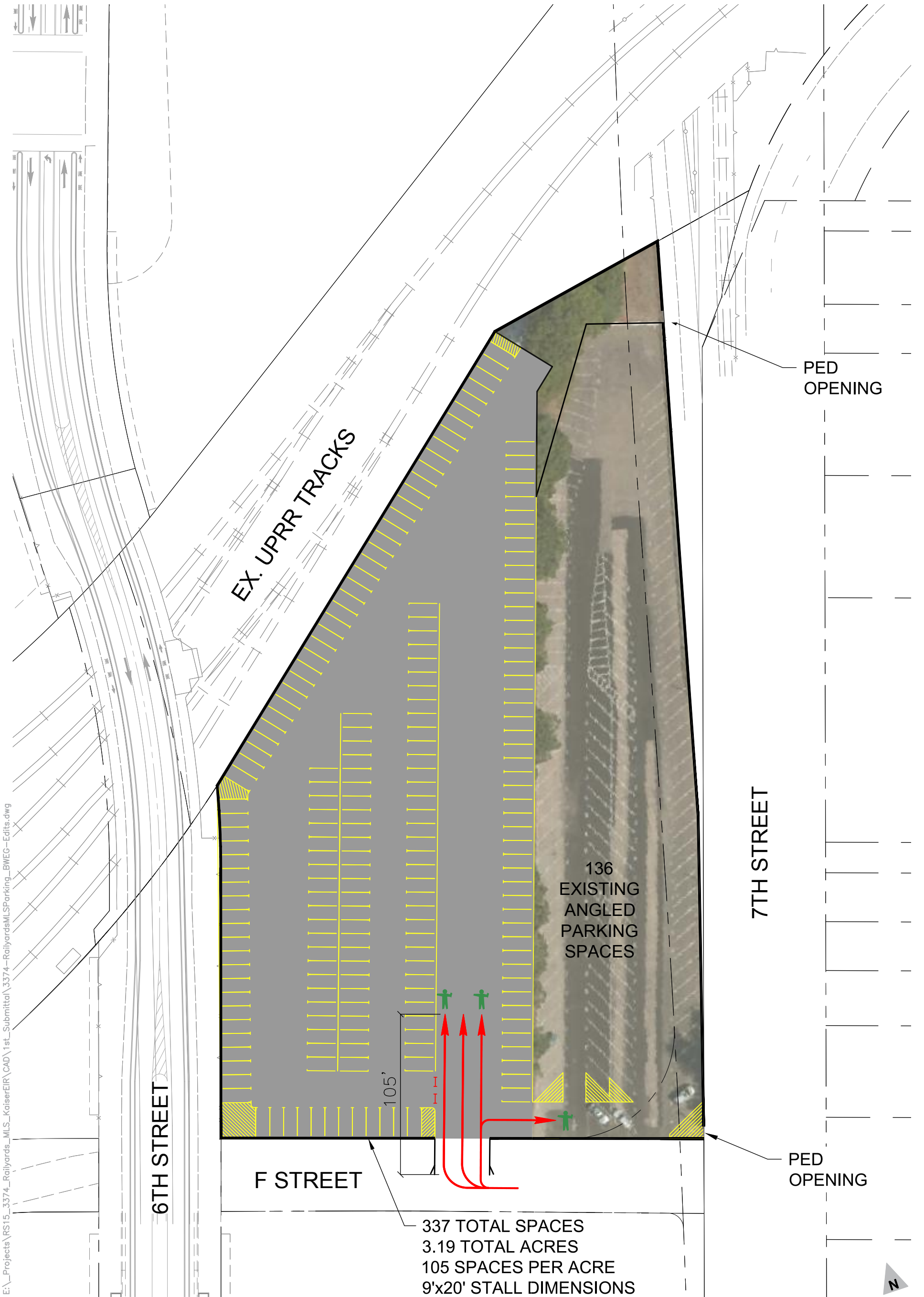
- LEGEND
- FENCE
 - BARRICADE
 - PARKING ATTENDANT

- INBOUND PATH OF TRAVEL
- TRAFFIC SIGNAL



Scale: 1" = 60'

Figure 9
Parking Lot 8



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LEGEND

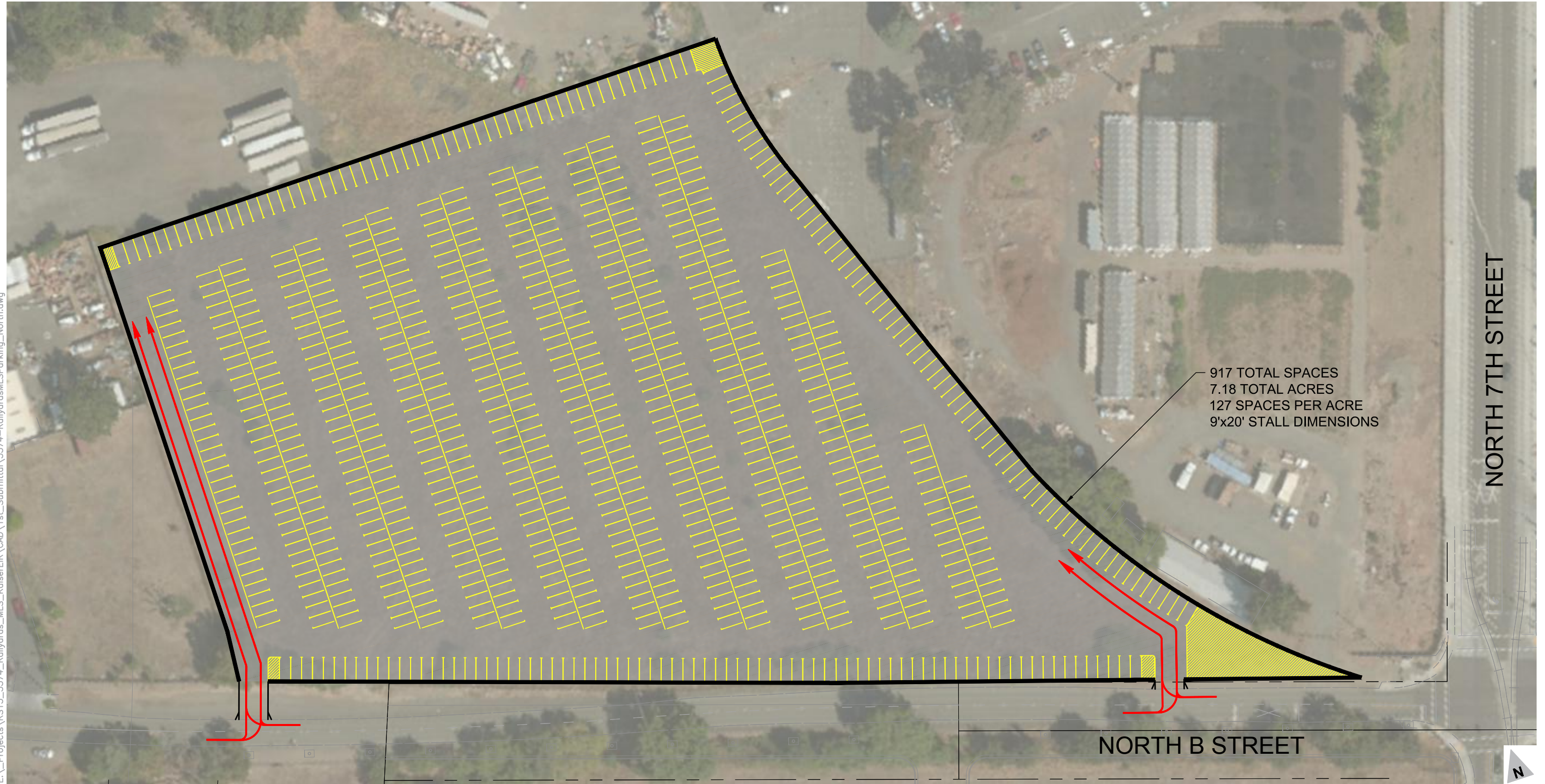
- FENCE
- BARRICADE
- PARKING ATTENDANT

- INBOUND PATH OF TRAVEL
- TRAFFIC SIGNAL

Scale: 1" = 60'

Figure 10
Parking Lot 46

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917 TOTAL SPACES
7.18 TOTAL ACRES
127 SPACES PER ACRE
9'x20' STALL DIMENSIONS

NORTH 7TH STREET

NORTH B STREET



LEGEND

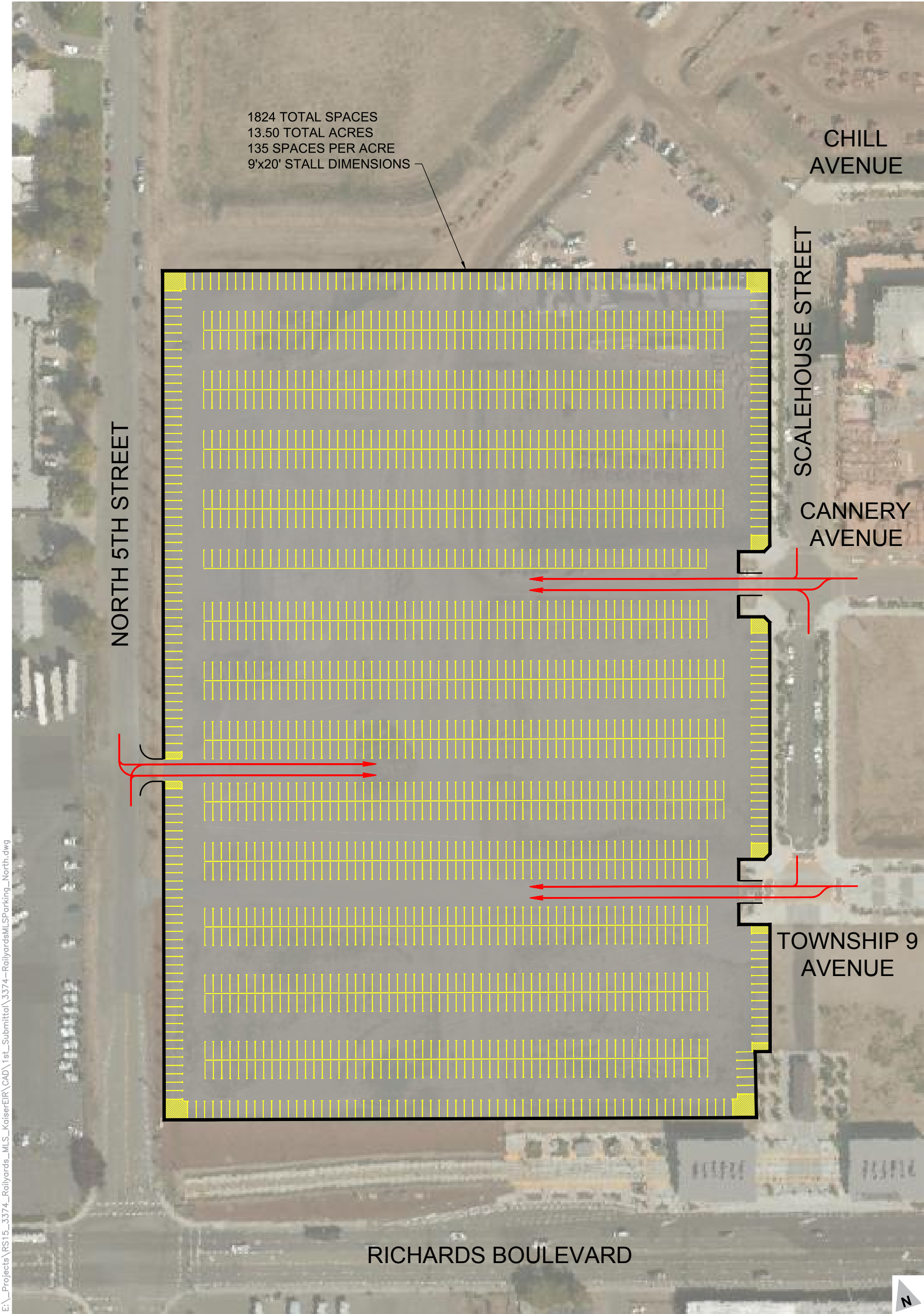
- SITE BOUNDARY (7.18-ACRES) ★
- ← INBOUND PATH OF TRAVEL

Scale: 1" = 80'





★ = BOUNDARY LINES AND ACREAGE OF SITE ARE APPROXIMATE.

Figure 11
UPRR Parcel



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LEGEND

-  SITE BOUNDARY (13.50-ACRES) *
-  INBOUND PATH OF TRAVEL



Scale: 1" = 100'



* = BOUNDARY LINES AND ACREAGE OF SITE ARE APPROXIMATE.

Figure 12
Township 9 Parcel



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LEGEND

- SITE BOUNDARY (10.03-ACRES) ★
- ← INBOUND PATH OF TRAVEL

Scale: 1" = 80'



★ = BOUNDARY LINES AND ACREAGE OF SITE ARE APPROXIMATE.

Figure 13
"Incinerator" Site