

**LEGEND**

	IRON PIPE
	MONUMENT
	VALVE
	FIRE HYDRANT SIGN
	TRAFFIC SIGNAL
	STREET LIGHT POLE
	LIGHT POLE
	GUY ANCHOR
	UTILITY POLE
	PROPERTY LINE EASEMENT
	CENTER LINE
	GRADE BREAK
	FENCE
	STORM DRAIN
	SANITARY SEWER
	OVERHEAD UTILITY LINE
	UNDERGROUND GAS LINE
	UNDERGROUND TELECOM LINE
	WATER
	UNDERGROUND ELECTRIC LINE
	CONCRETE

**NOTES**

- BOUNDARY AND EASEMENT INFORMATION ARE BASED ON RECORD INFORMATION ONLY.
- TOPOGRAPHY AND BOUNDARY DATA SHOWN ON THESE PLANS WAS PREPARED BY BKF IN JANUARY 2022.
- ALL DISTANCES AND DIMENSIONS ARE IN FEET AND DECIMALS THEREOF.
- THE UTILITIES SHOWN ON THIS PLAN ARE DERIVED FROM SURFACE OBSERVATIONS AND RECORD DATA. LOCATION AND SIZE, TOGETHER WITH ANY ADDITIONAL UTILITY LINES NOT SHOWN ON THIS PLAN SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION.
- ALL EXISTING UTILITY WITHIN THE PROPOSED SIDEWALK TO BE ADJUSTED TO GRADE OR RELOCATED AS NEEDED.

**BASIS OF BEARING**  
THE COORDINATES AND BEARINGS AS SHOWN HEREON ARE BASED UPON THE CALIFORNIA STATE PLANE COORDINATE SYSTEM OF 1983, (CC83), ZONE 3, (1991.35). ALL DISTANCES SHOWN, UNLESS OTHERWISE NOTED, ARE IN TERMS OF THE U.S. SURVEY FOOT.

**BENCHMARK**  
BENCHMARK: CITY OF ANTIOCH BENCHMARK 3561  
ELEVATION = 13.397 (NGVD29)

**KEYNOTES**

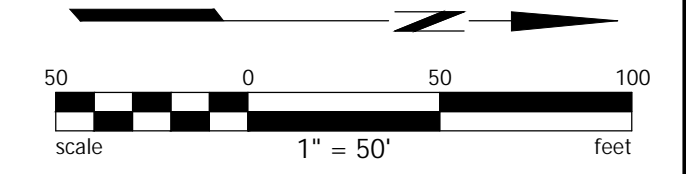
	DEMOLISH
	PROTECT

**ABBREVIATIONS**

±	MORE OR LESS
AC	ASPHALT CONCRETE
APN	ASSESSOR'S PARCEL NUMBER
BFP	BACKFLOW PREVENTOR
CONC	CONCRETE
DIA	DIAMETER
DN	DOCUMENT NUMBER
DW	DRIVEWAY
E	ELECTRIC
(E)	EAST
EP	EDGE OF PAVEMENT
ESMT	EASEMENT
G	GAS
GM	GAS METER
GYP	GUY POLE
HB	HOSE BIB
HDRL	HANDRAIL
HT	HEIGHT
IP	IRON PIPE
IP	IRON PIPE
(N)	NORTH
O/VH	OVERHEAD UTILITY LINE
PC&E	PACIFIC GAS & ELECTRIC
RCP	REINFORCED CONCRETE PIPE

**ABBREVIATIONS**

(S)	SOUTH
SD	STORM DRAIN
SDCB	STORM DRAIN CATCH BASIN
SDCO	STORM DRAIN CLEAN OUT
SDGI	GRATE INLET
SDMH	STORM DRAIN MANHOLE
SS	SANITARY SEWER
SSCO	SANITARY SEWER CLEAN OUT
SSMH	SANITARY SEWER MANHOLE
SQ	SQUARE
TB	TOP OF BOX
TEL	TELECOMMUNICATION
TG	TOP OF GRATE
TV	TELEVISION
TYP	TYPICAL
UB	UTILITY BOX
VCP	VITRIFIED CLAY PIPE
W	WATER
(W)	WEST
WM	WATER METER
YD	YARD DRAIN



BKF ENGINEERS  
1000 CALIFORNIA BLVD  
SUITE 400  
WALNUT CREEK, CA 94596  
(925) 945-2200  
www.bkf.com

**18TH STREET DEVELOPMENT - WEST**  
APN 051-052-086 & 051-052-072. PERMIT# PD-22-02, UP-22-04, AR-22-04  
ANTIOCH, CA

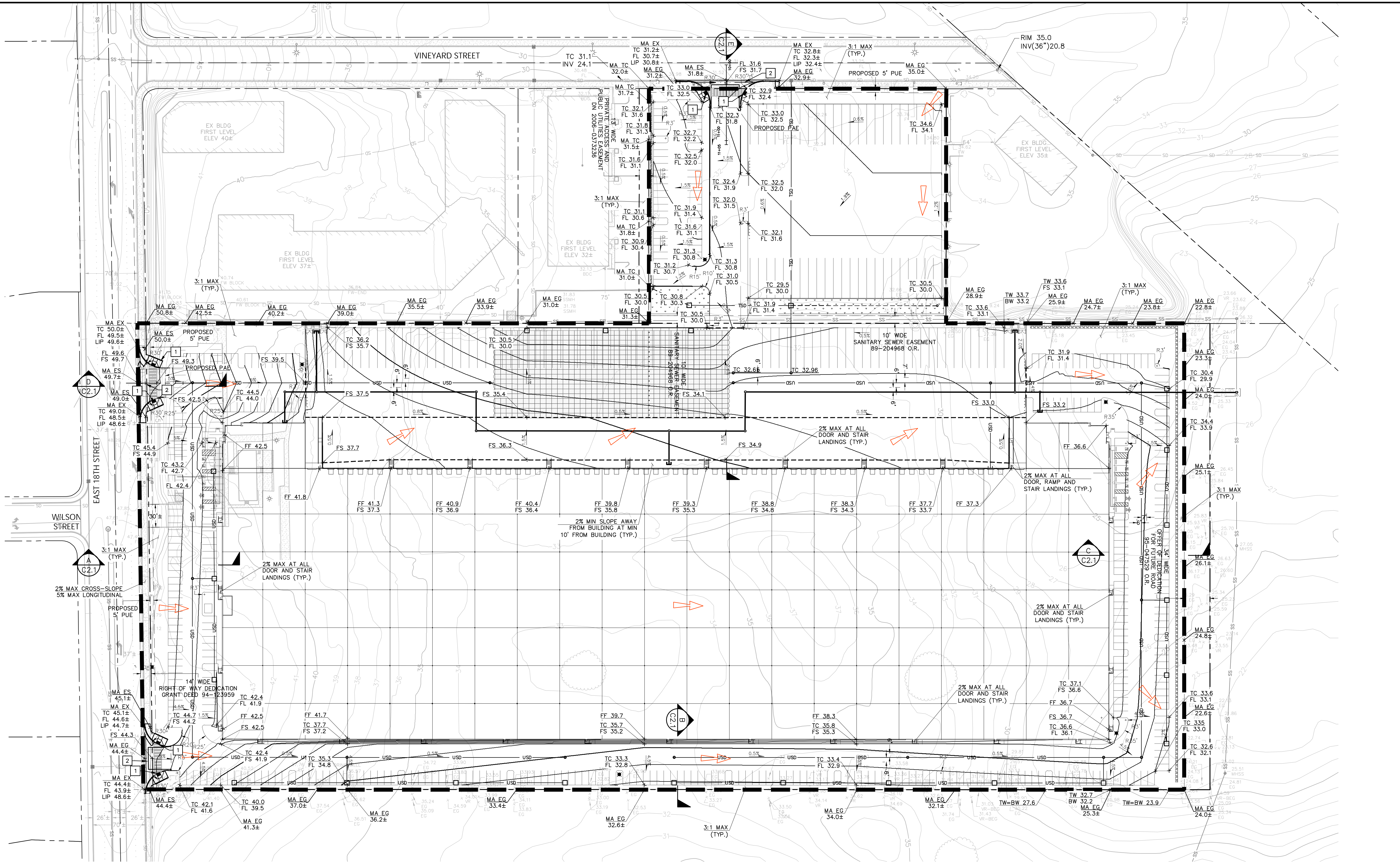
**EXISTING CONDITIONS**

Revisions

No.	Date	Description
1	06/20/2022	Scale: AS SHOWN
2	06/20/2022	Design: AZ
3	06/20/2022	Drawn: DB, MK
4	06/20/2022	Approved: MS
5	06/20/2022	Job No: 20220225

Drawing Number: **C1.0**

1 OF 6



**NOTES**

- EXISTING UTILITIES SHOWN ON THIS PLAN SET ARE DERIVED FROM RECORD DATA AND/OR SURFACE OBSERVATION AND ARE APPROXIMATE ONLY. ACTUAL LOCATION, DEPTH AND SIZE, TOGETHER WITH THE PRESENCE OF ANY ADDITIONAL UTILITY LINES NOT SHOWN ON THIS PLAN SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION.
- ALL EXISTING UTILITY BOXES, STRUCTURES, MANHOLES AND VALVES WITHIN THE LIMIT OF WORK SHALL BE ADJUSTED TO FINAL GRADE UNLESS OTHERWISE NOTED.
- PROPOSED BUILDING IS FOR REFERENCE ONLY. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

**KEYNOTES**

- CURB RAMP PER CITY OF ANTIPOCH CONSTRUCTION DETAIL ST-12
- VALLEY GUTTER PER CITY OF ANTIPOCH CONSTRUCTION DETAIL ST-08

**EARTHWORKS**

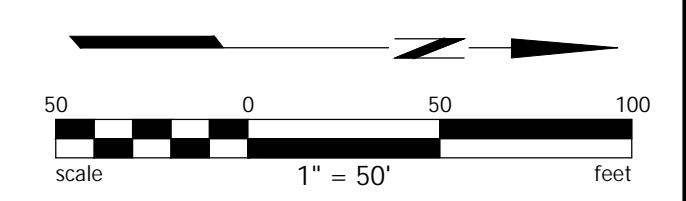
OUT: 14,000 CY  
 FILL: 96,000 CY  
 IMPORT: 82,000 CY

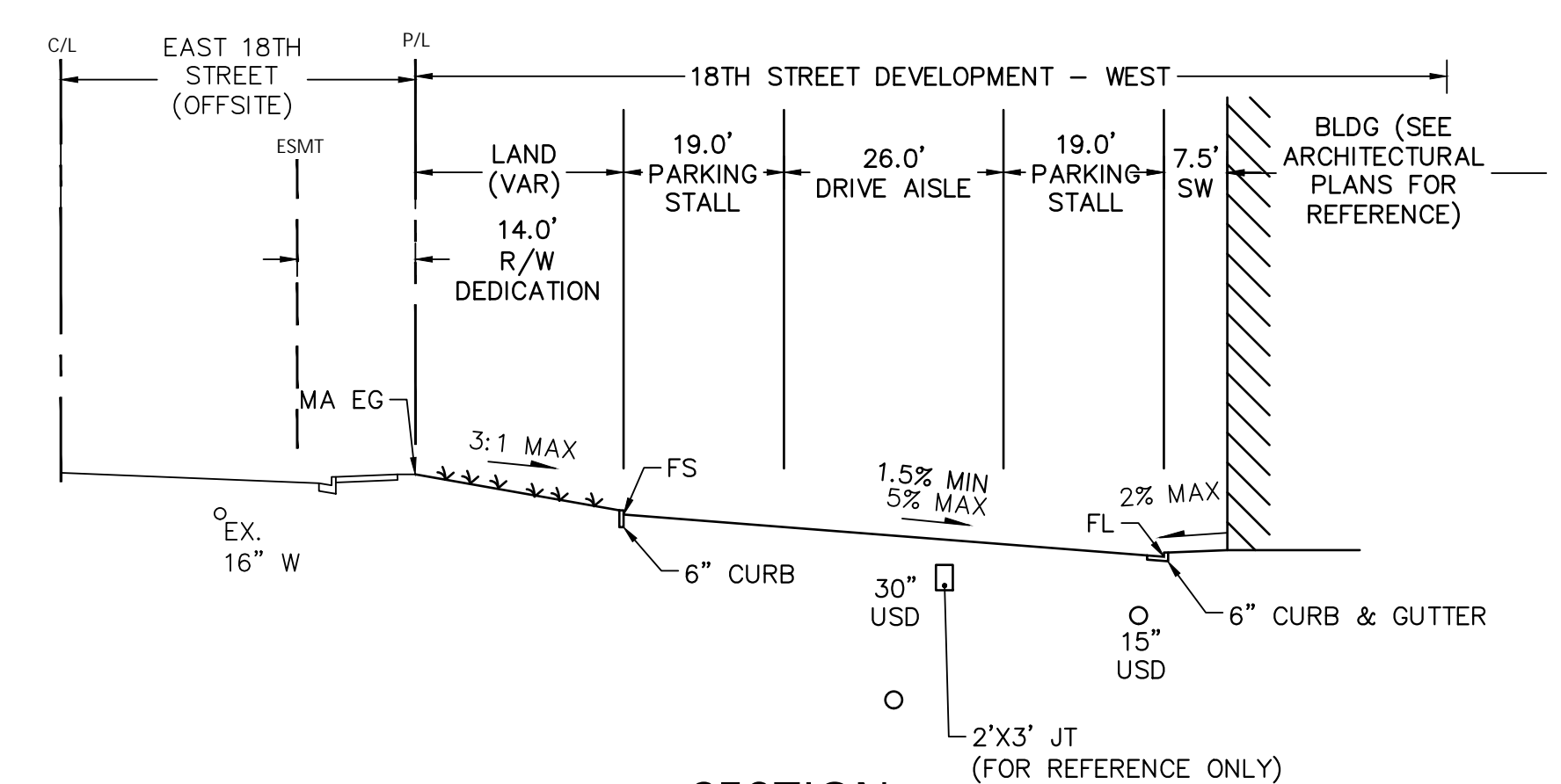
**ASSUMPTIONS:**

- ESTIMATE IS APPROXIMATE AND ARE BASED ON AERIAL TOPOGRAPHY, SUPPLEMENTAL SURVEY, AND AVAILABLE RECORD INFORMATION.
- THE EARTHWORKS QUANTITIES REPRESENTS EARTHWORK FROM EXISTING GRADE TO PROPOSED GRADE.

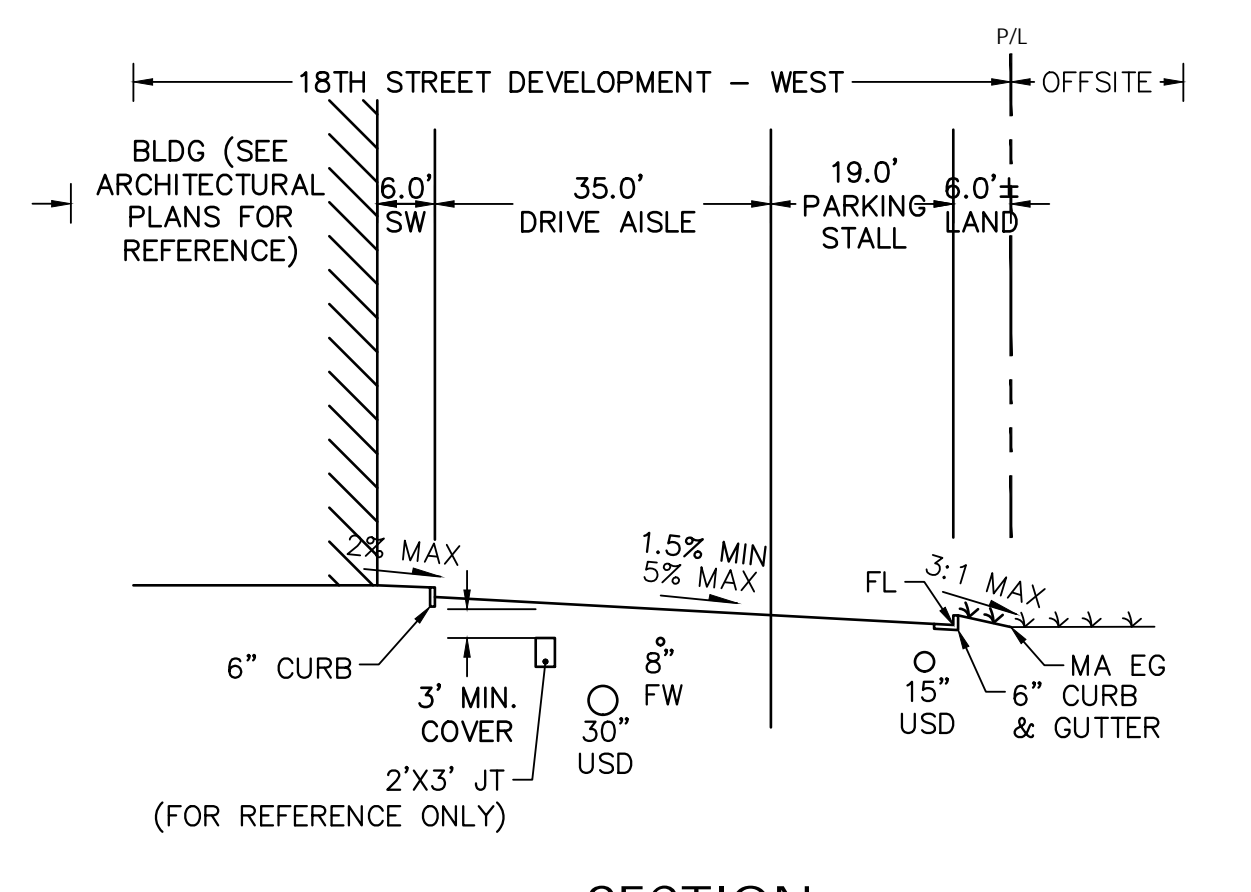
**ABBREVIATIONS**

±	MORE OR LESS
AC	ASPHALT CONCRETE
BW	BOTTOM OF WALL
EG	EXISTING GRADE
EX	EXISTING
FF	FINISHED FLOOR
FL	FLOW LINE
FS	FINISHED SURFACE
GR	GRATE
MA	MATCH
MAX	MAXIMUM
MIN	MINIMUM
SD	STORM DRAIN
TC	TOP OF CURB
TW	TOP OF WALL
TSD	TREATED STORM DRAIN
USD	UNTREATED STORM DRAIN

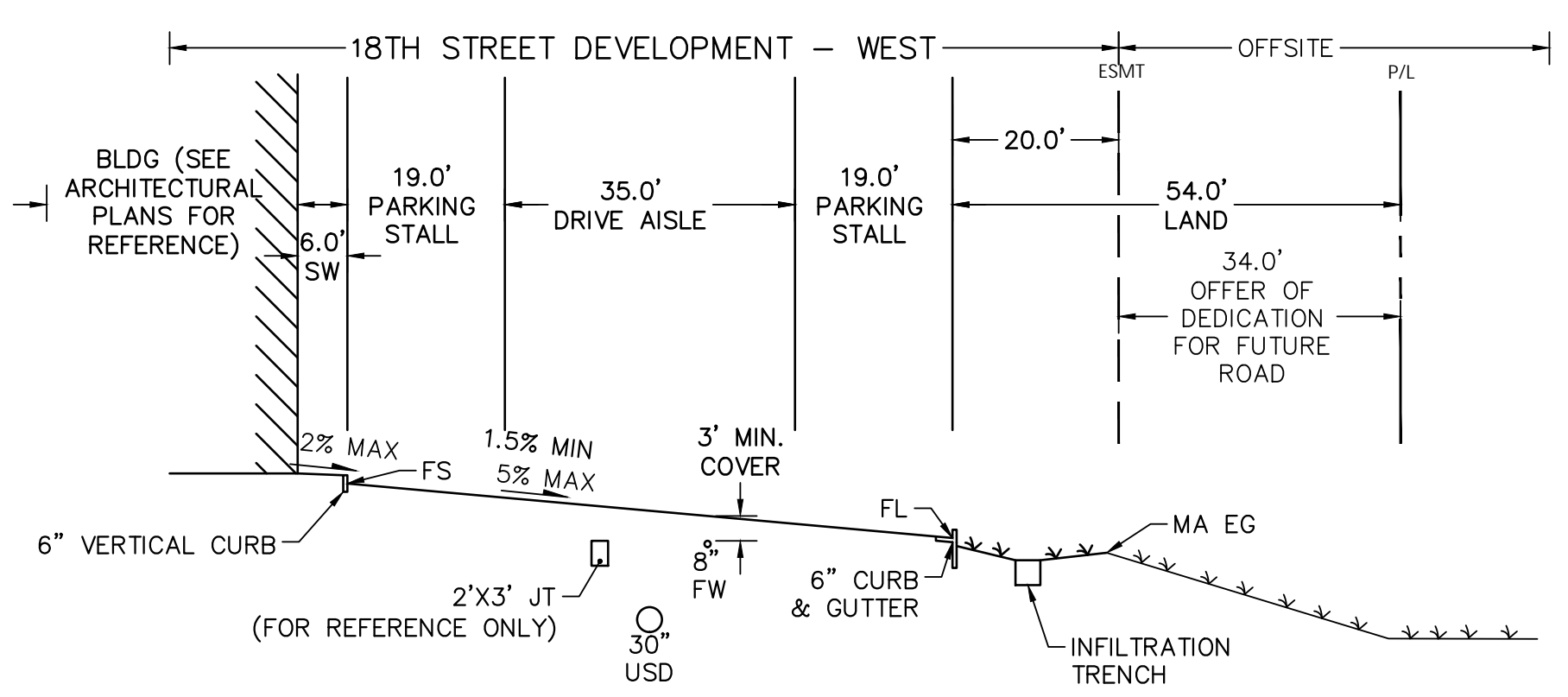




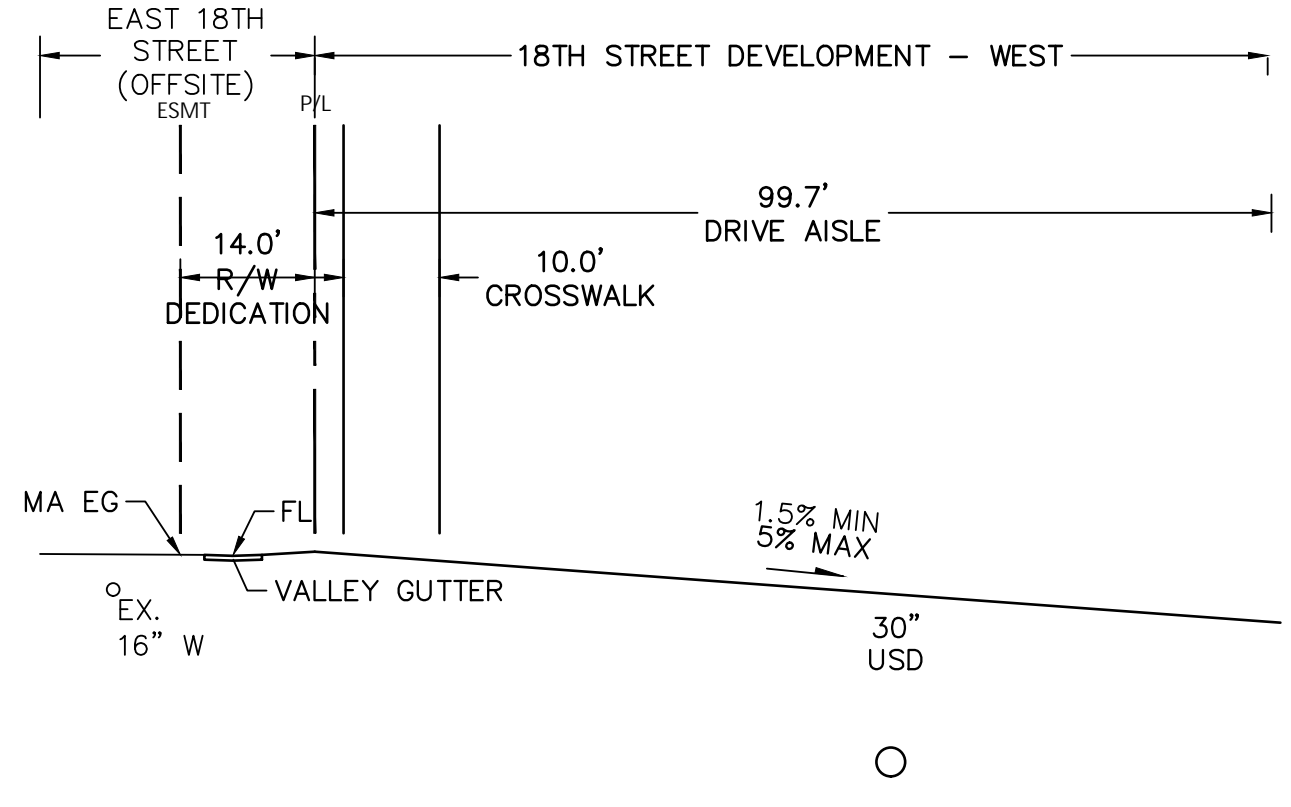
(A) SECTION  
 SCALE: 1"=20'



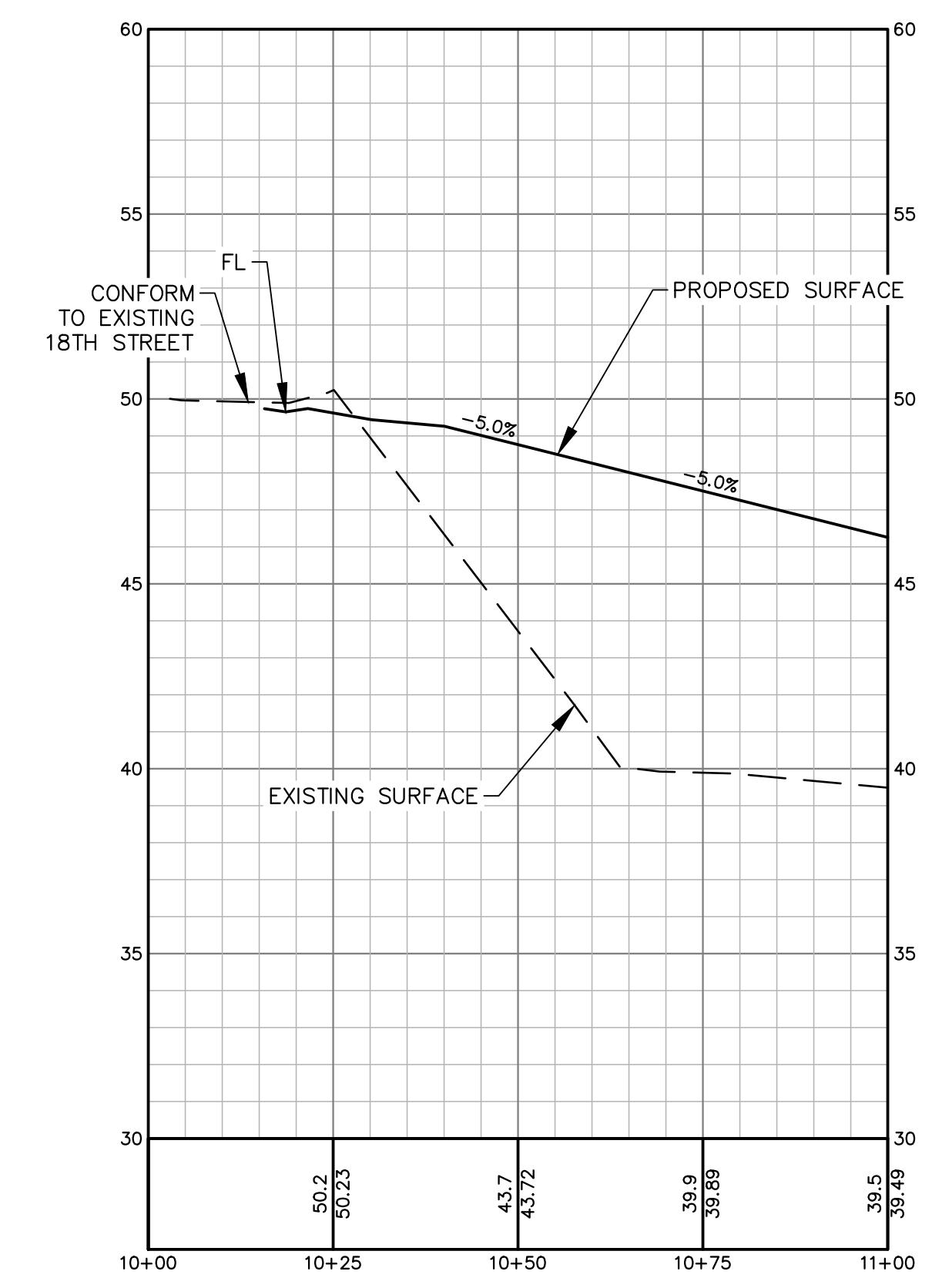
(B) SECTION  
 SCALE: 1"=20'



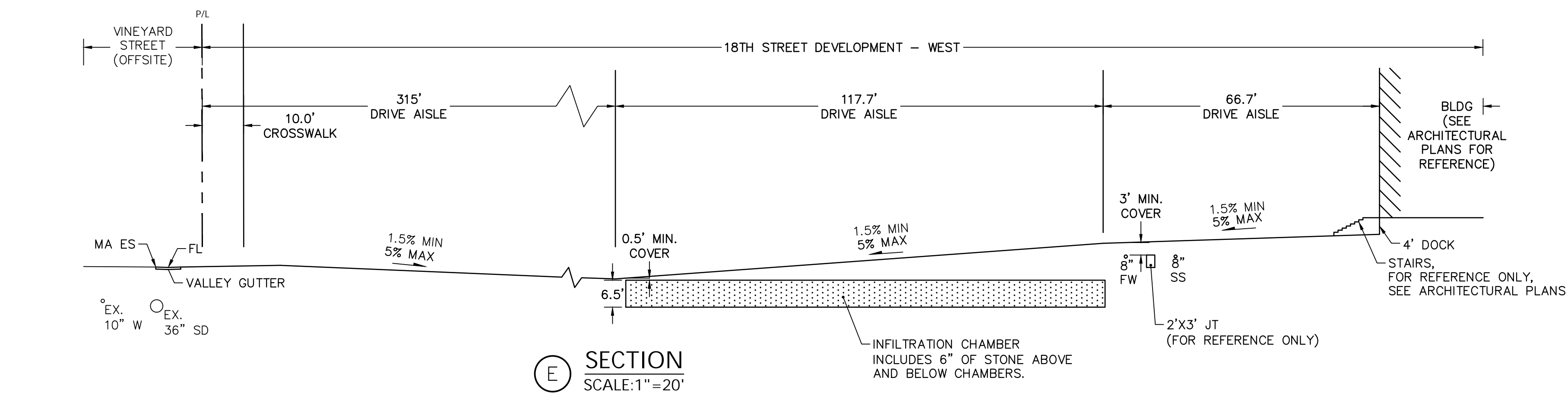
(C) SECTION  
 SCALE: 1"=20'



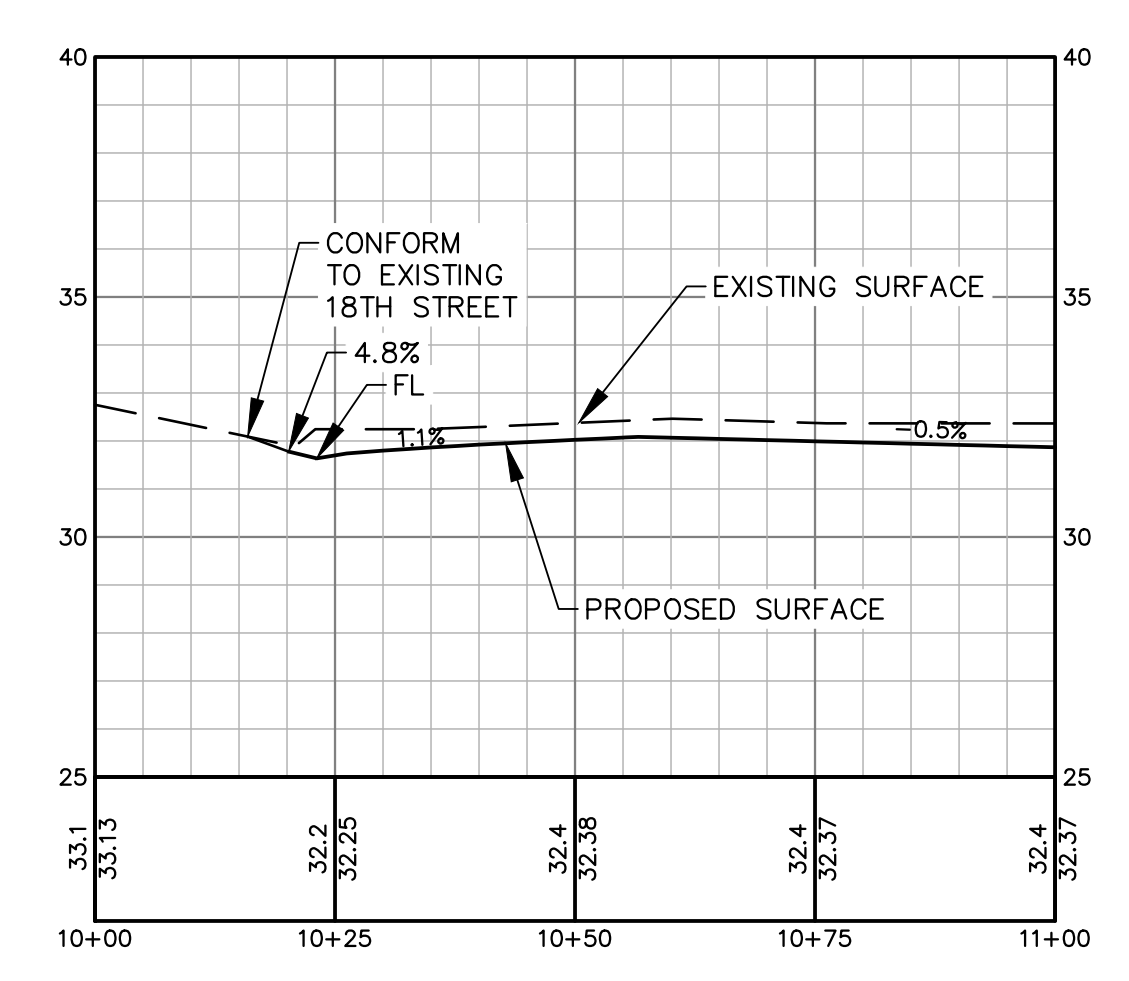
(D) SECTION  
 SCALE: 1"=20'



SECTION D (DECA WEST)  
 H: 1"=20'  
 V: 1"=4'

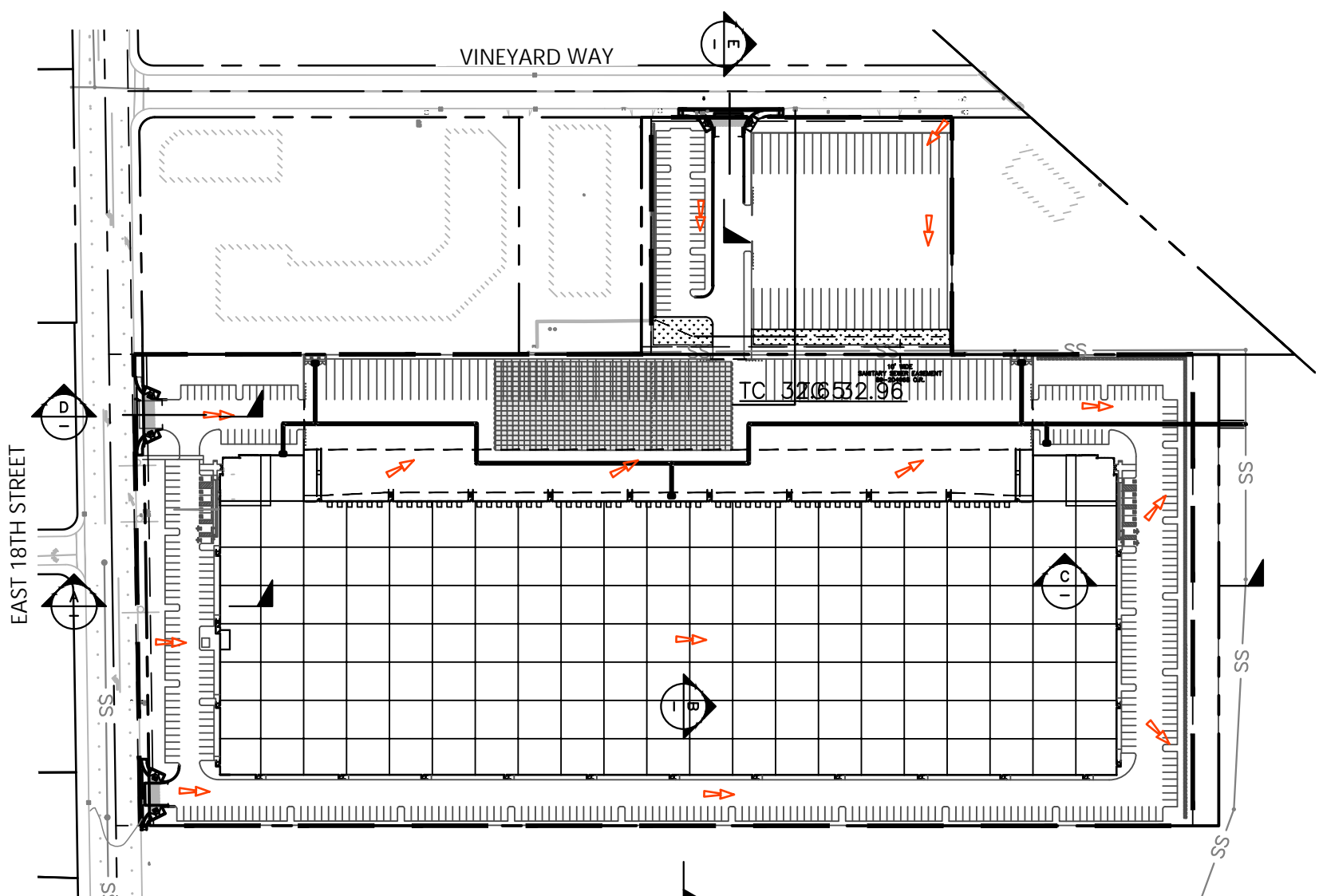


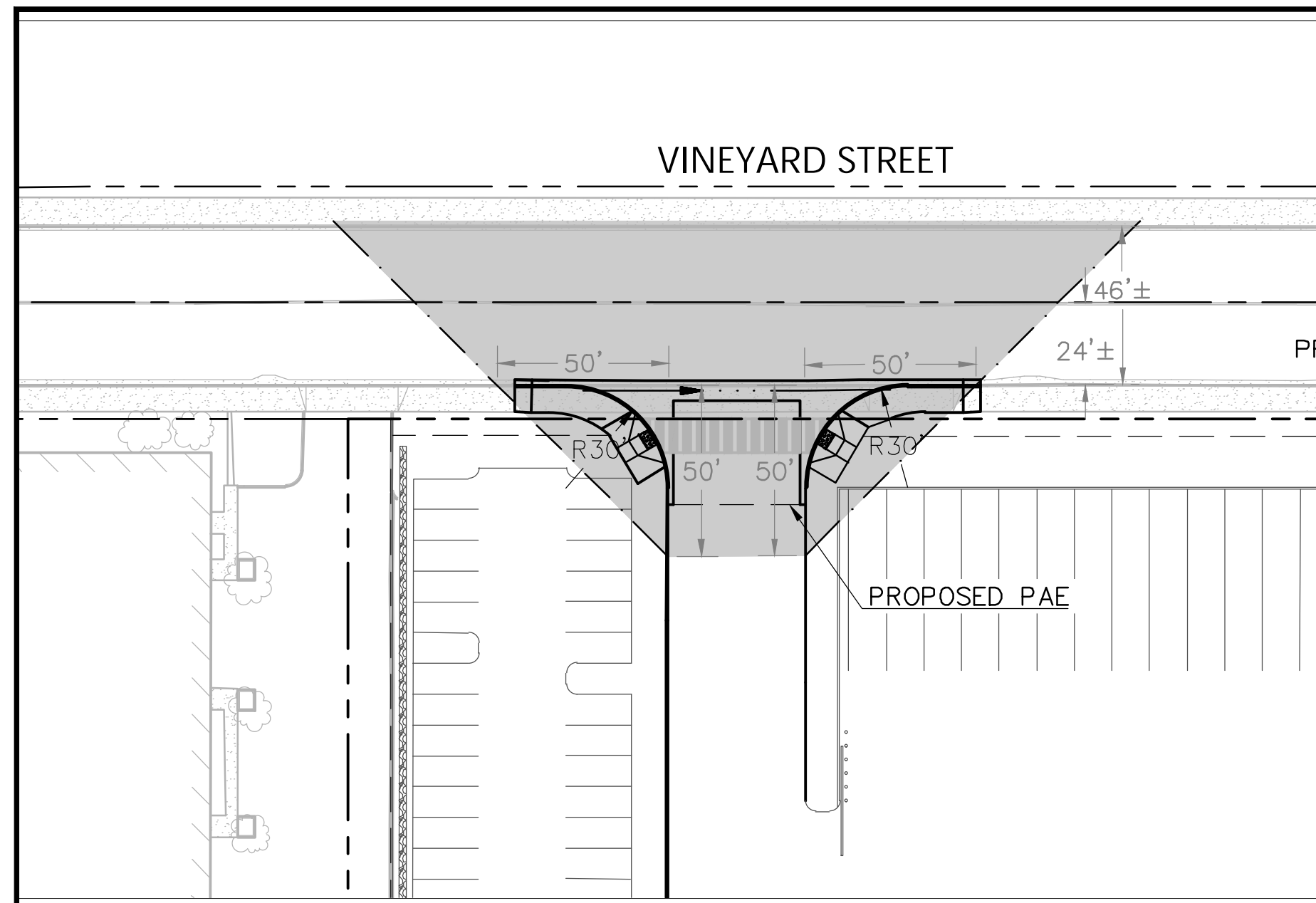
(E) SECTION  
 SCALE: 1"=20'



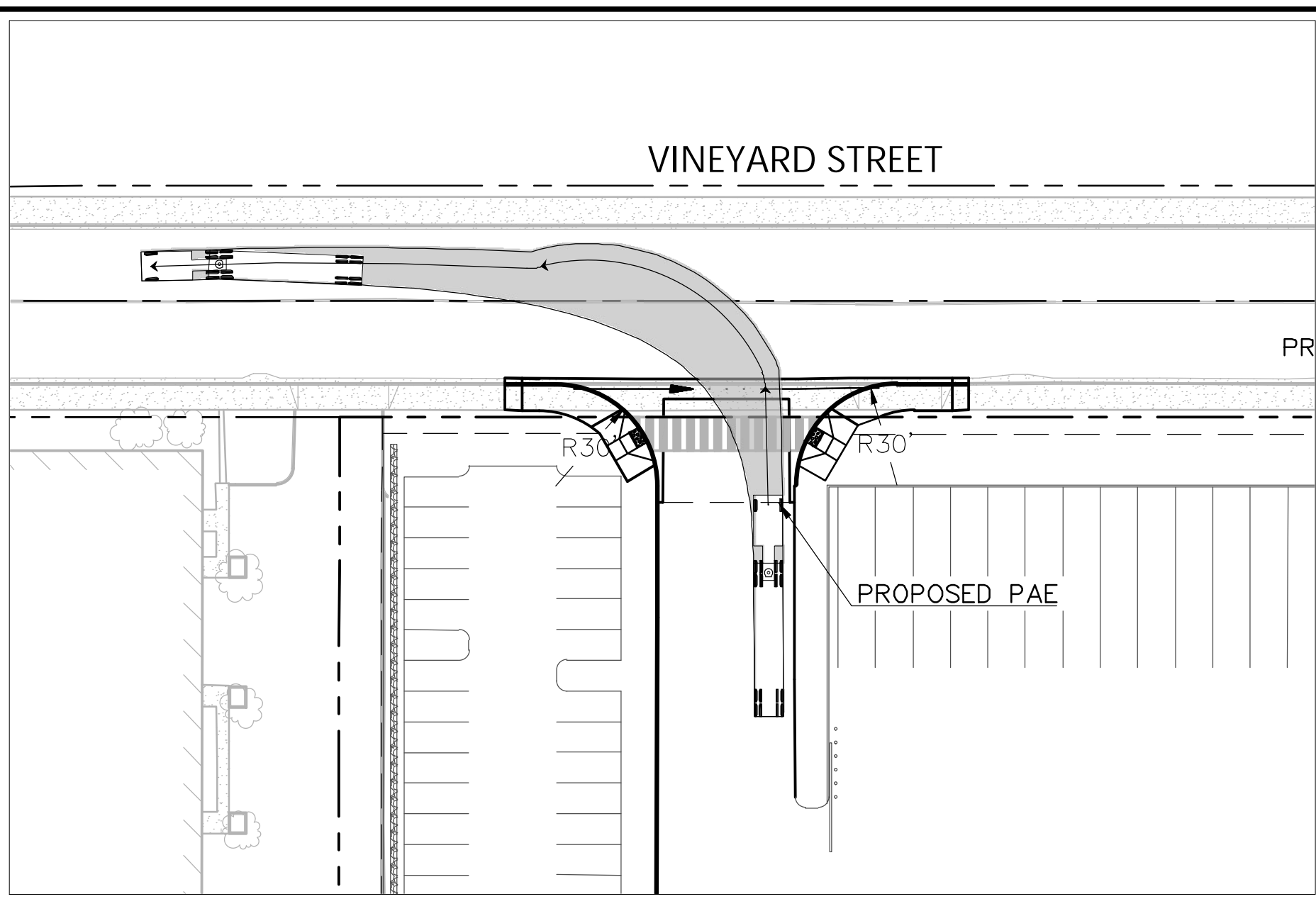
SECTION E (DECA WEST)  
 H: 1"=20'  
 V: 1"=4'

KEYMAP  
 NTS

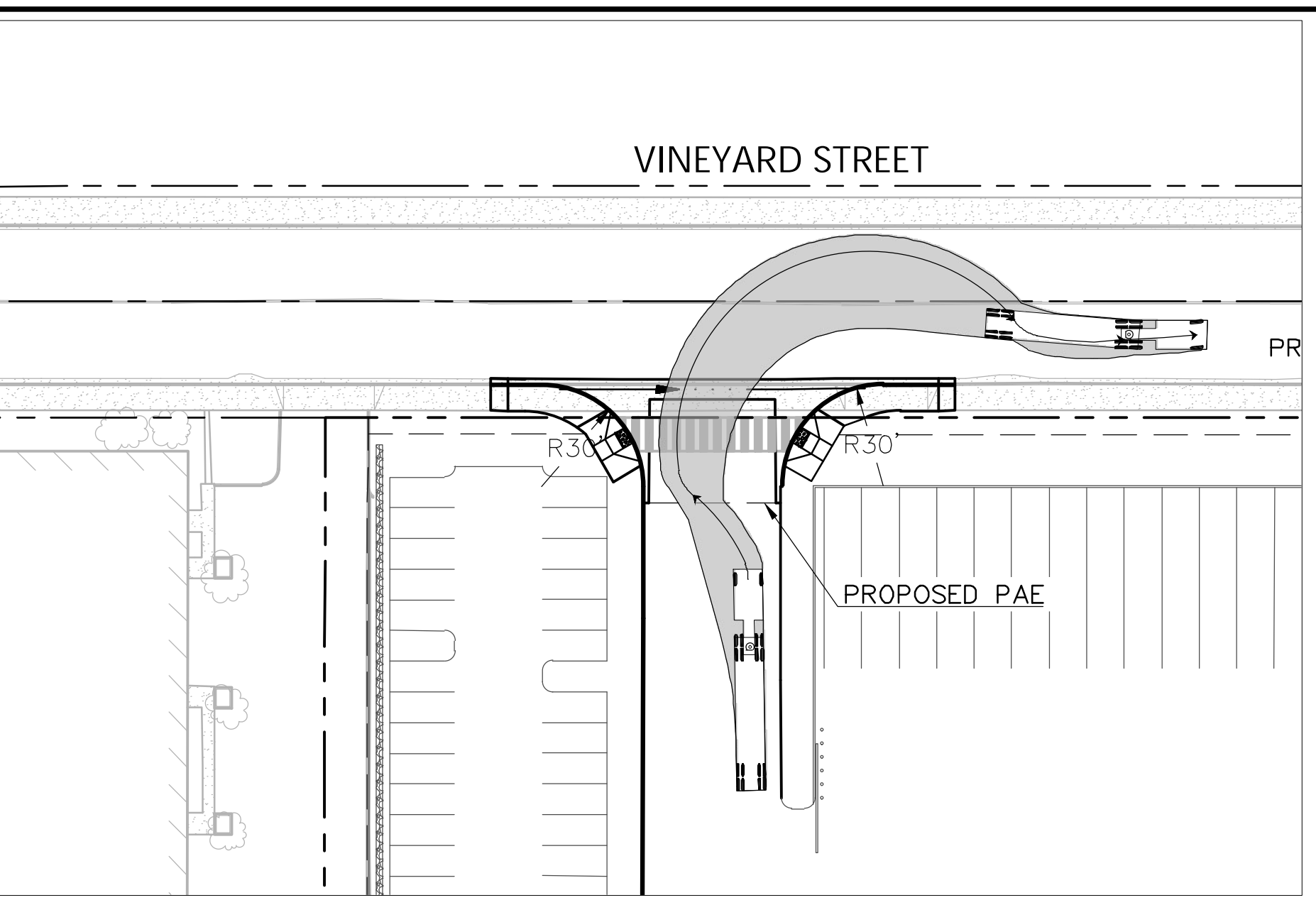




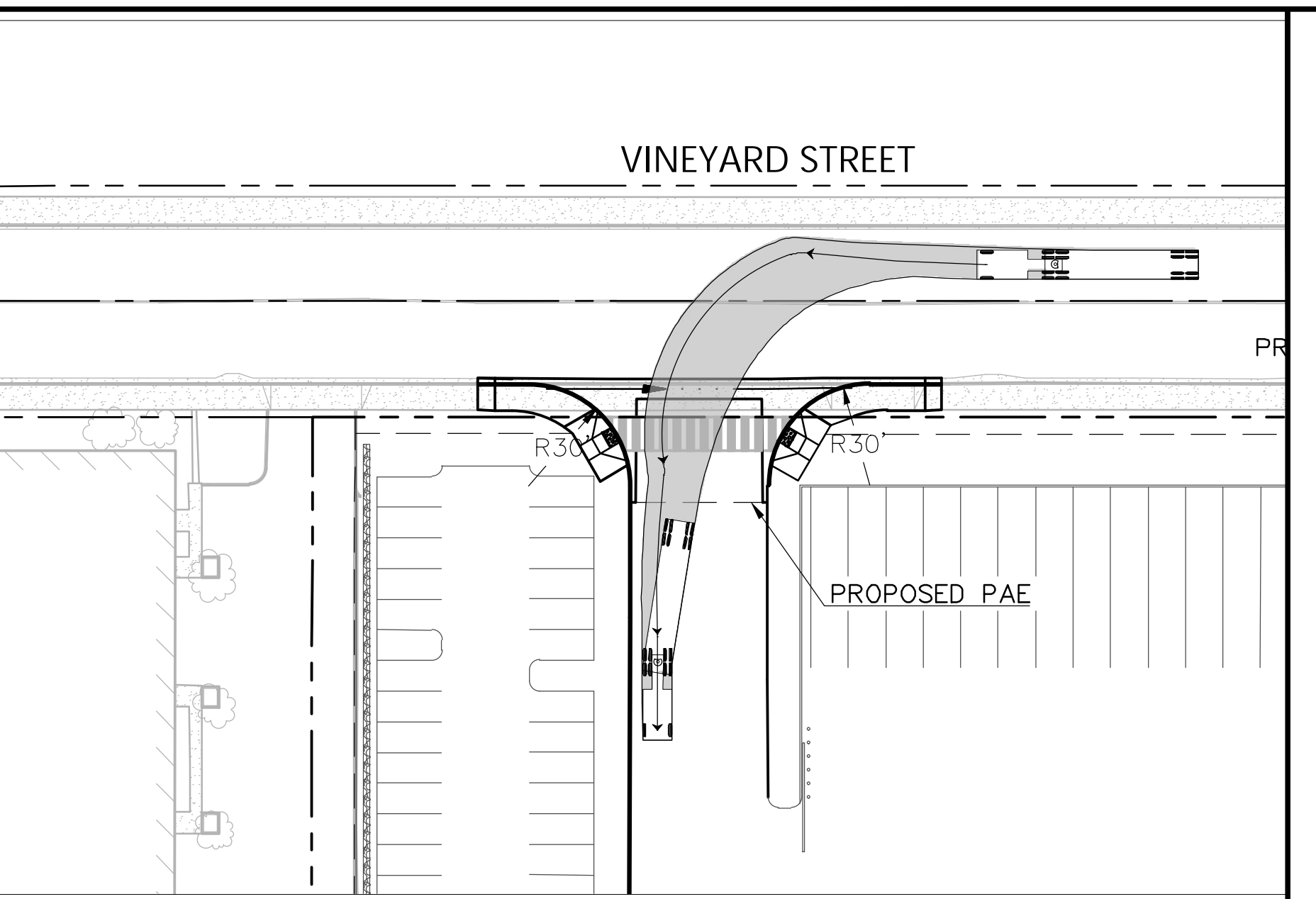
1 SIGHT TRIANGLE



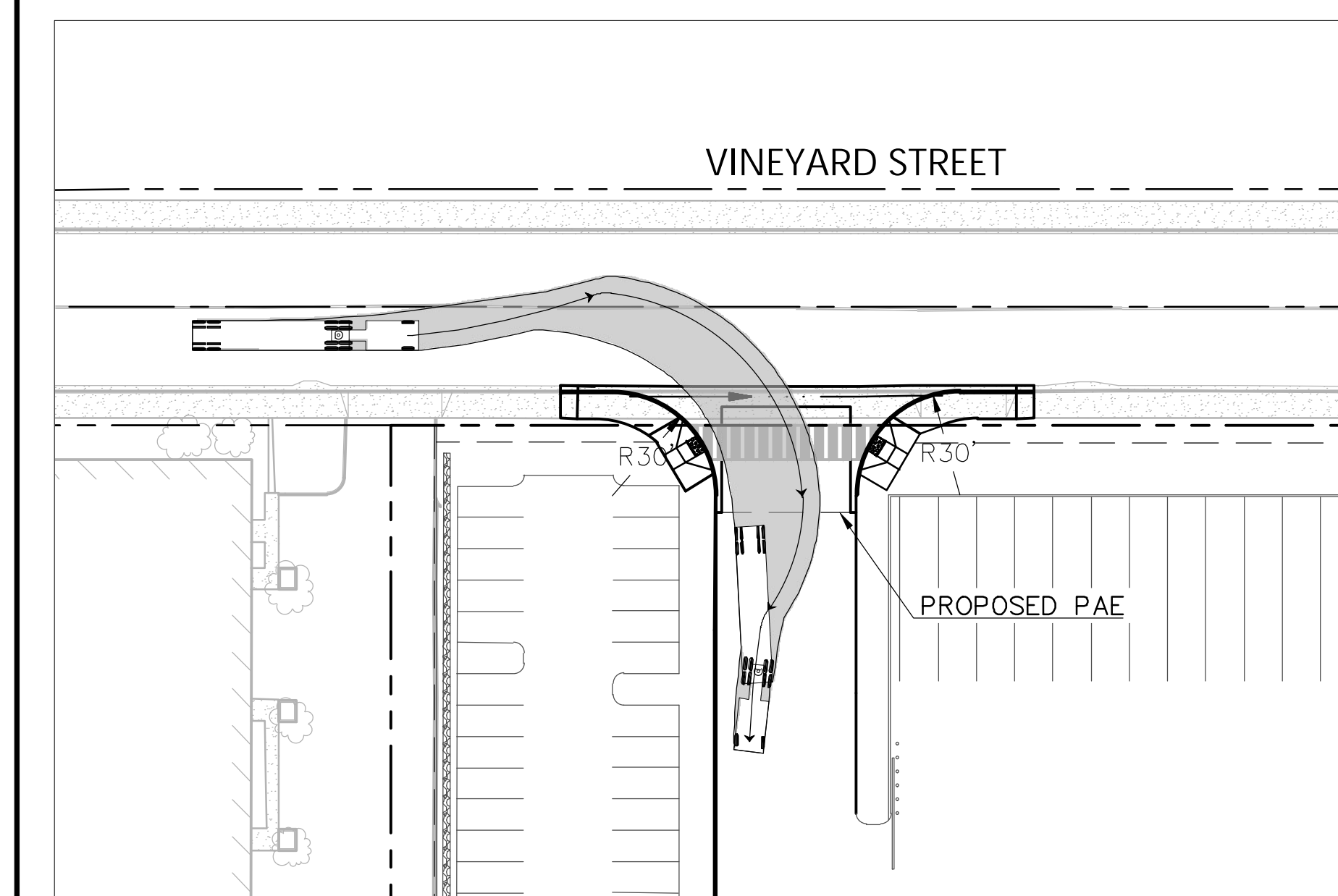
2 LEFT TURN EXIT



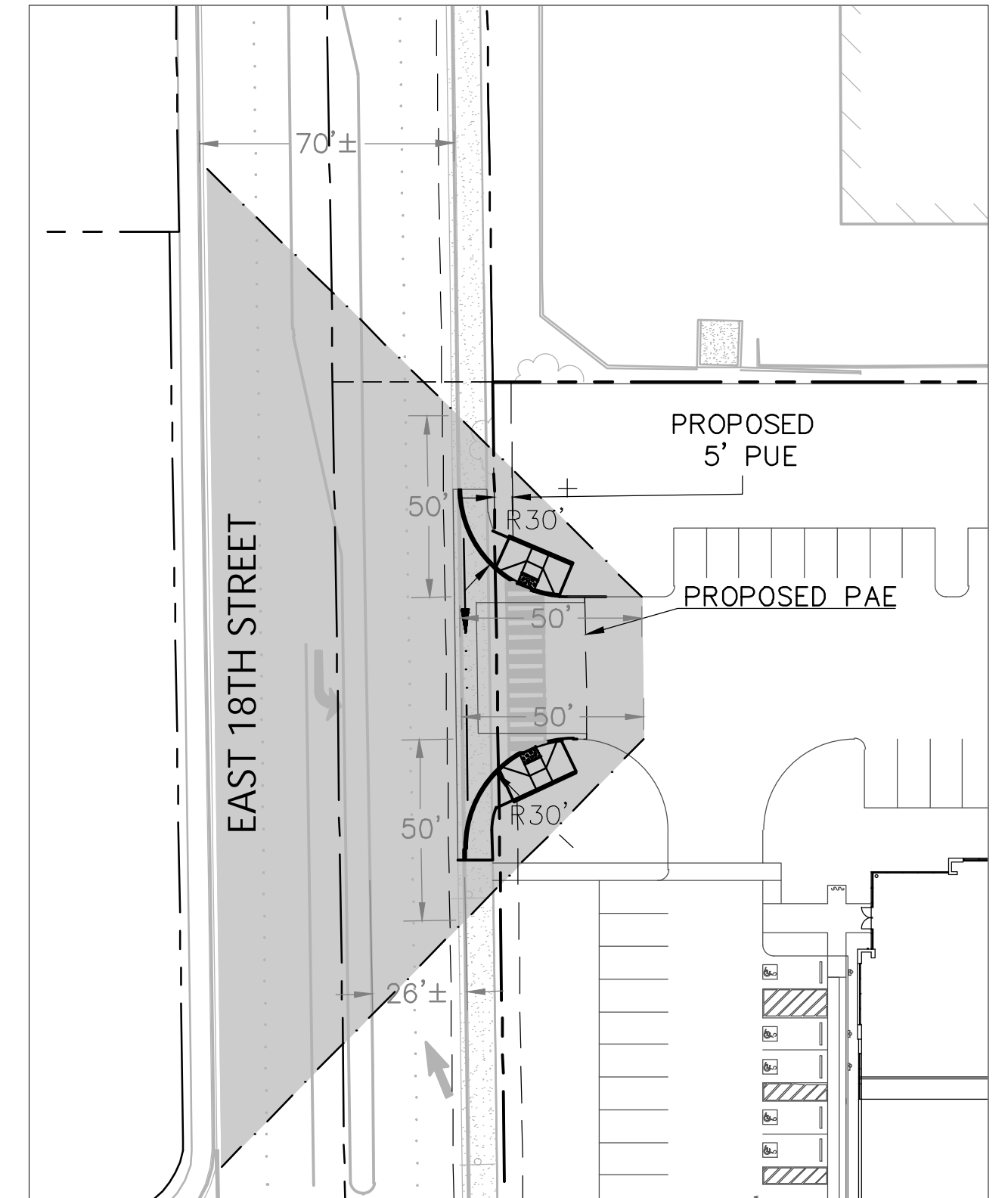
3 RIGHT TURN EXIT



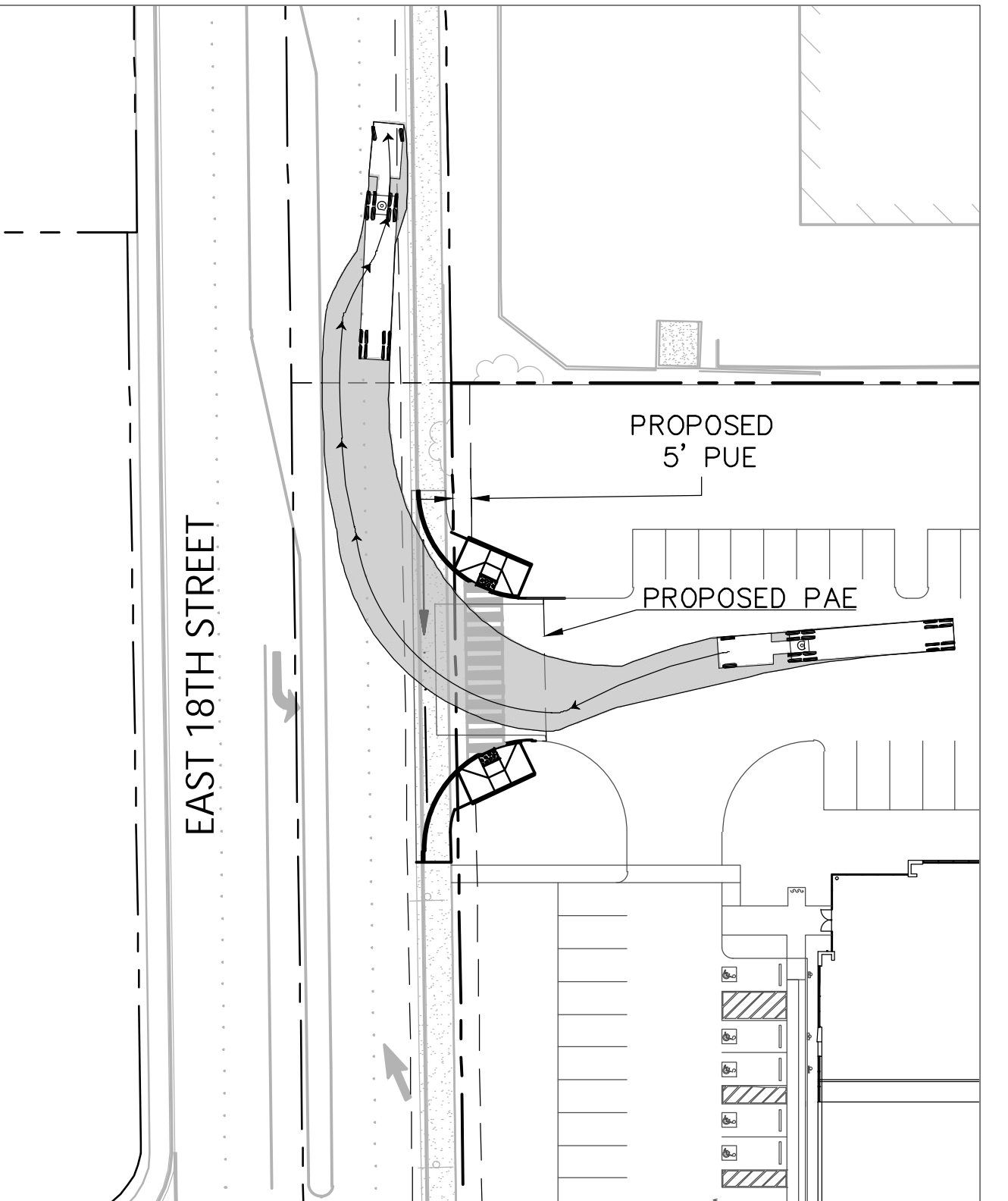
4 LEFT TURN ENTRANCE



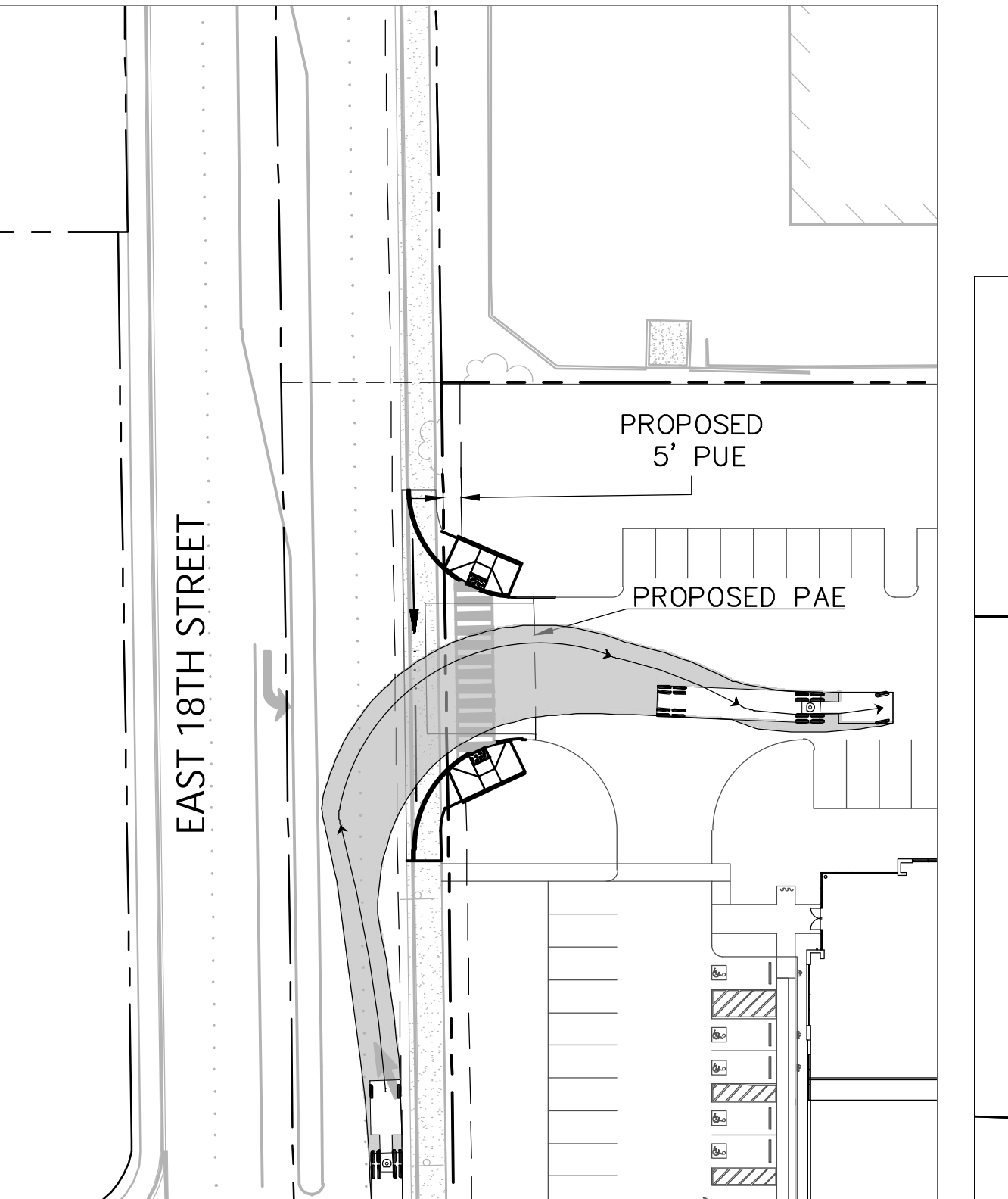
5 RIGHT TURN ENTRANCE



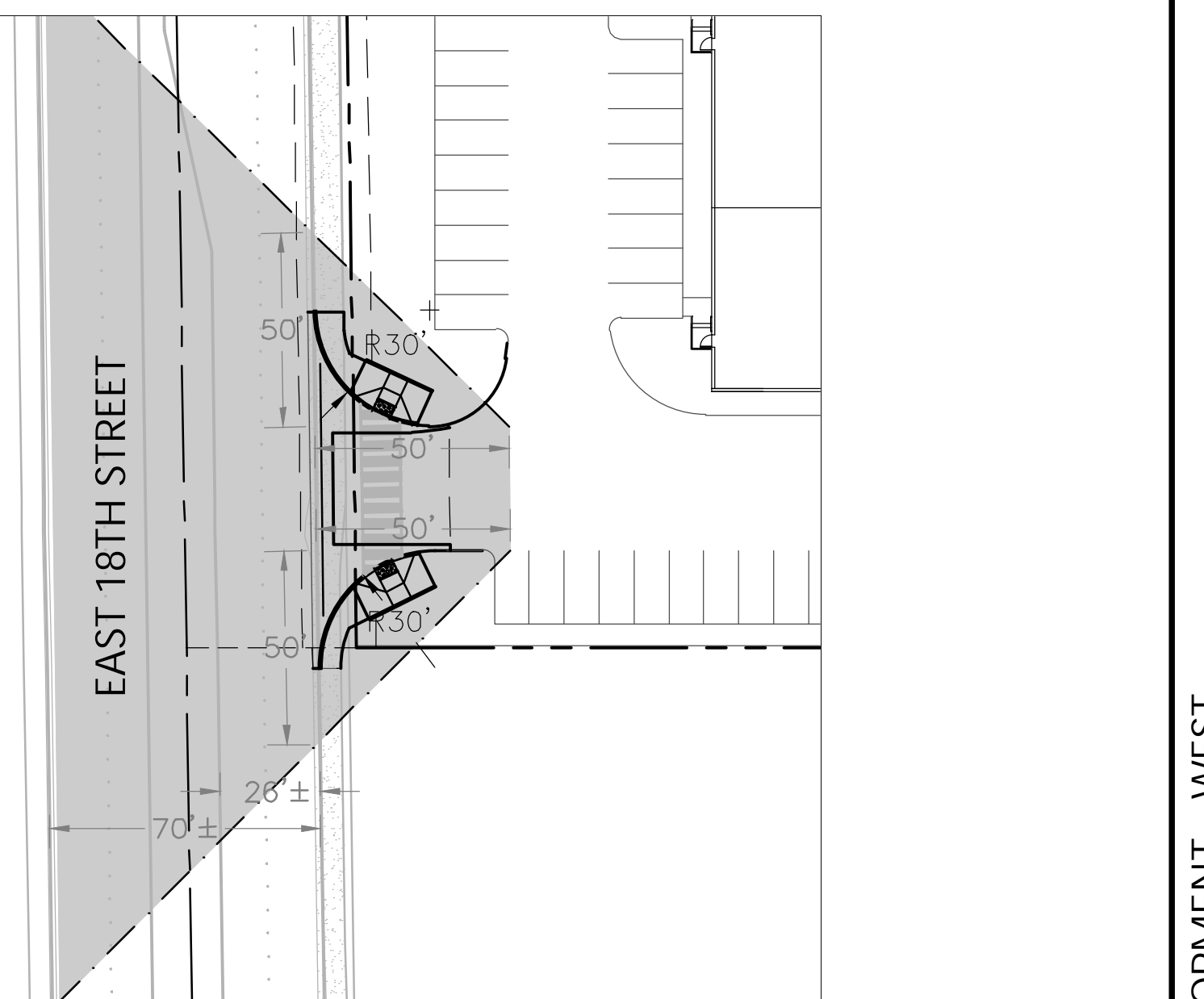
6 SIGHT TRIANGLE



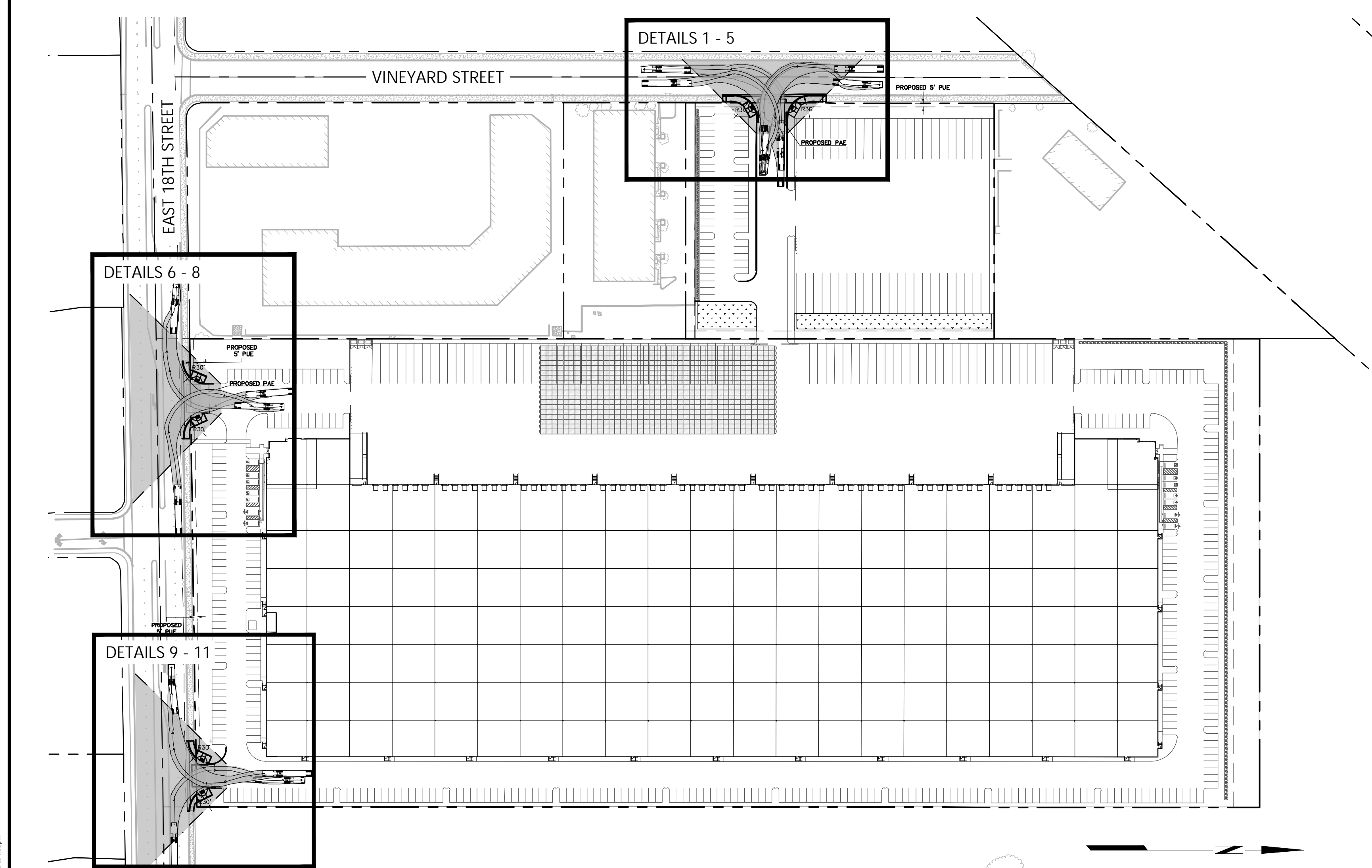
7 RIGHT TURN EXIT



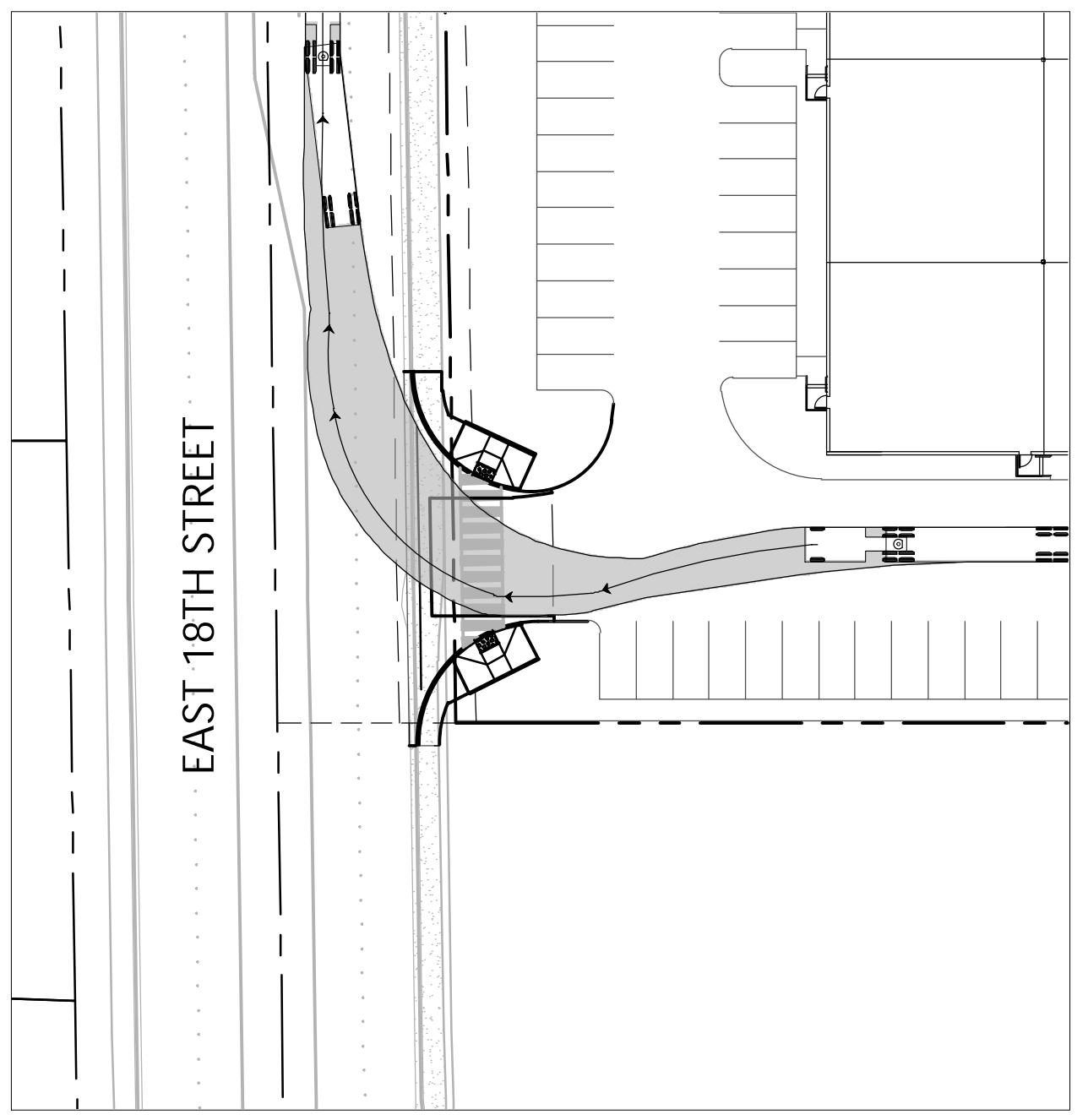
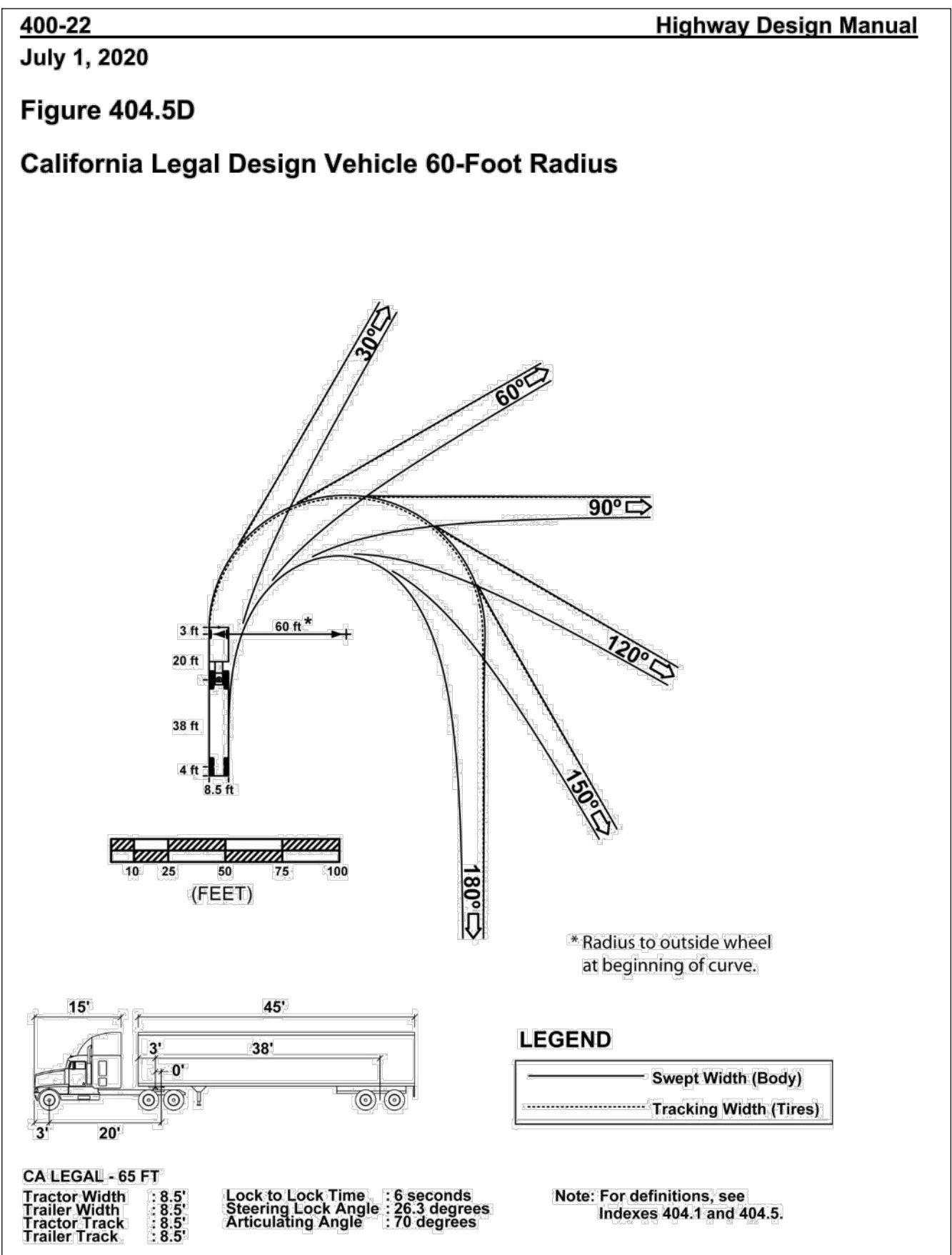
8 RIGHT TURN ENTRANCE



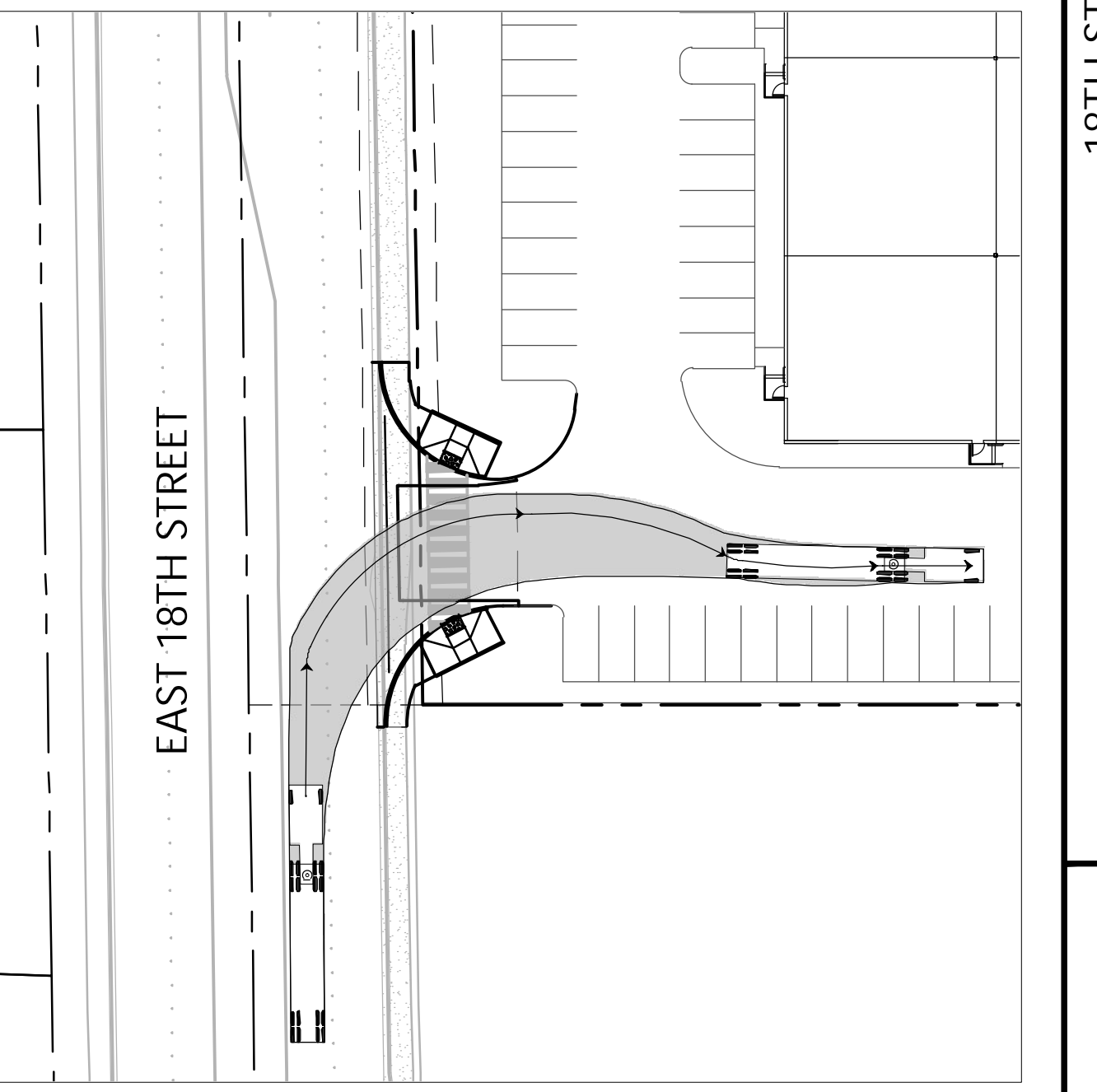
9 SIGHT TRIANGLE



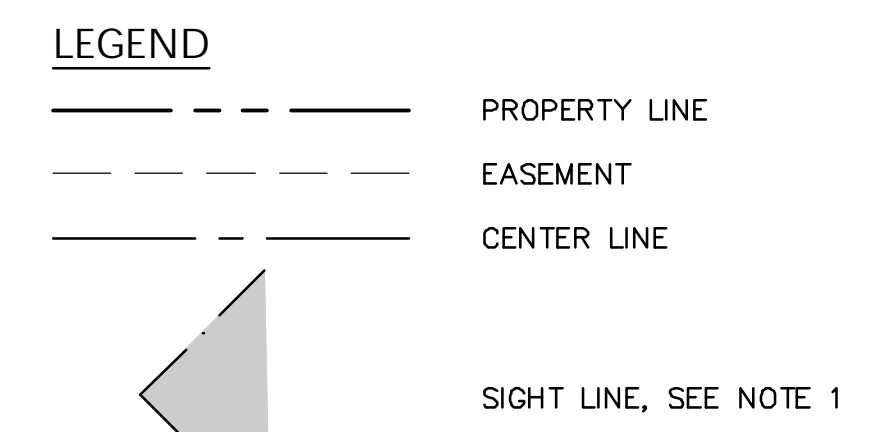
KEYMAP



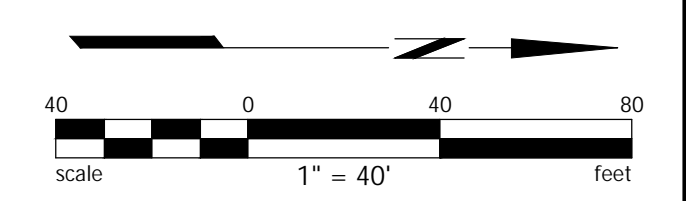
10 RIGHT TURN EXIT

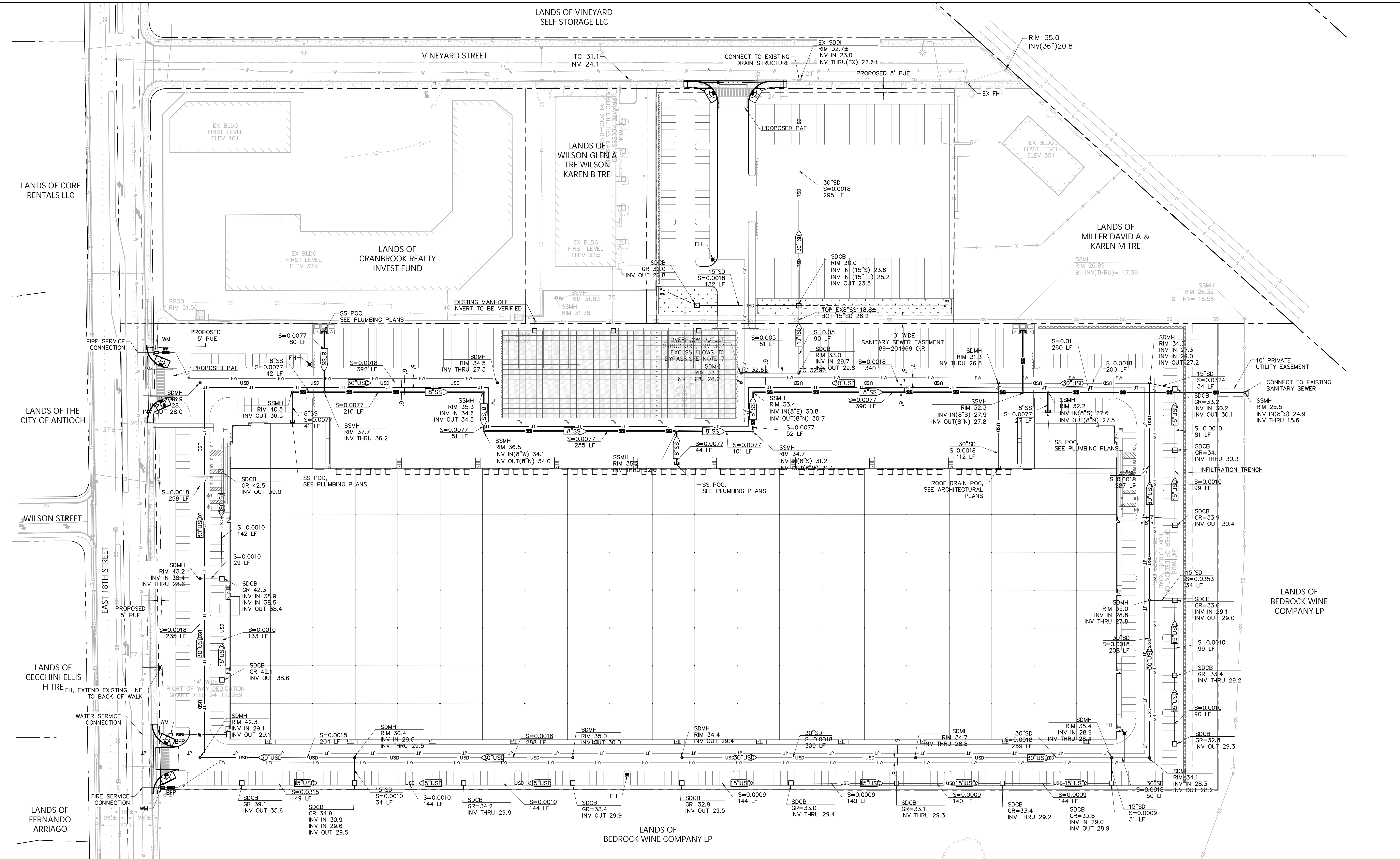


11 RIGHT TURN ENTRANCE



NOTES  
 1. SIGHT TRIANGLES DRAWN PER ANTIPOCH GUIDELINES - "§ 9-5.1101 SITE OBSTRUCTIONS AT INTERSECTIONS."





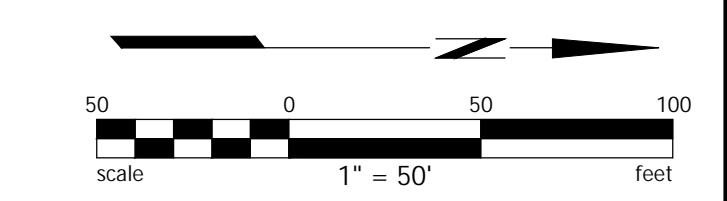
**LEGEND**

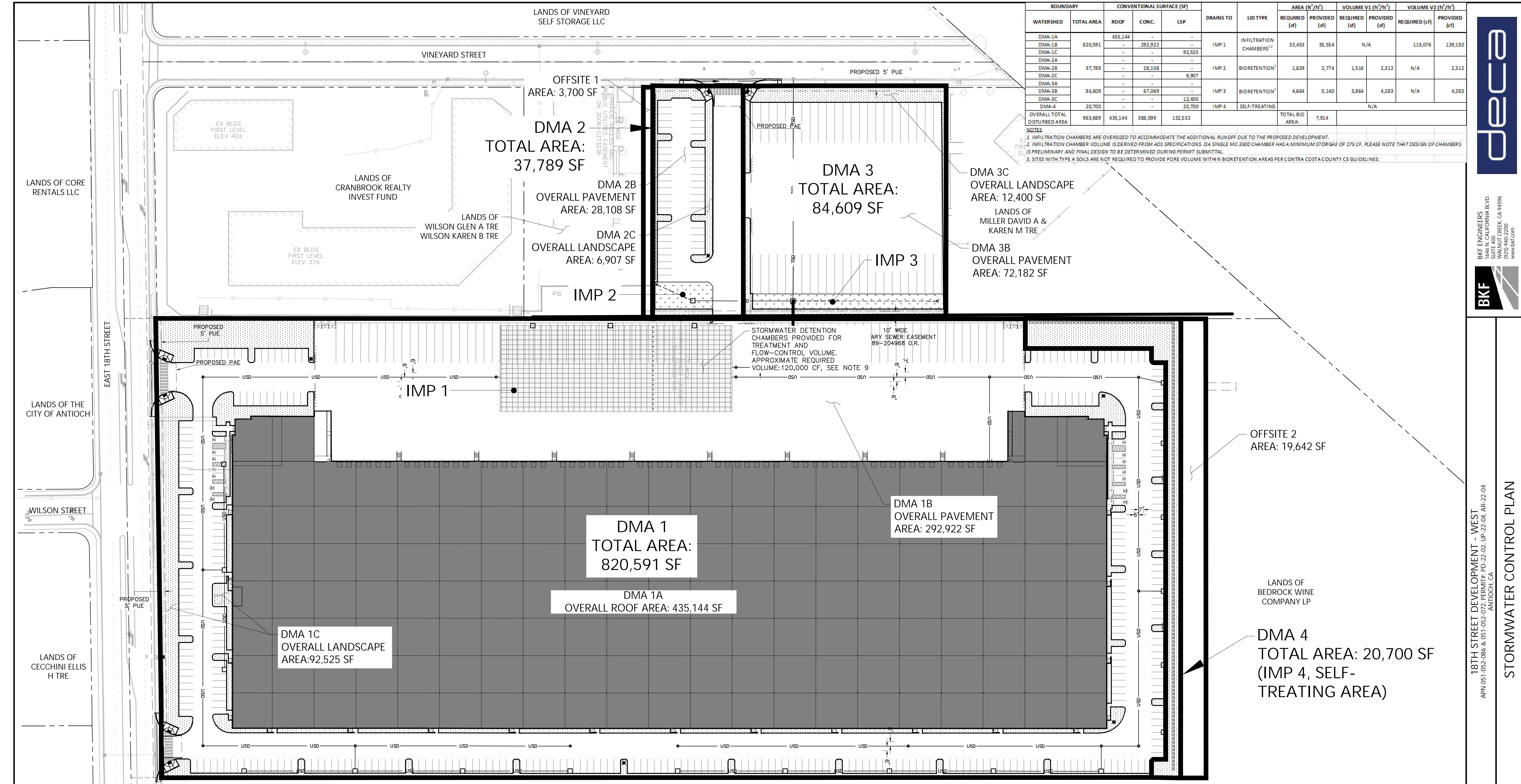
---	PROPERTY LINE	⊙	SANITARY SEWER MANHOLE
- - -	EASEMENT	□	WATER METER
---	CENTER LINE	⊠	BACKFLOW PREVENTOR
---	PROPOSED UNTREATED STORM DRAIN	⊠	FIRE HYDRANT
---	PROPOSED TREATED STORM DRAIN	⊠	UTILITY DIRECTION OF FLOW
---	PROPOSED SANITARY SEWER	⊠	STORMWATER CHAMBERS
---	PROPOSED DOMESTIC WATER	⊠	BIORETENTION FACILITY
---	PROPOSED FIRE WATER	⊠	INFILTRATION TRENCH
---	PROPOSED JOINT TRENCH (FOR REFERENCE ONLY)	⊠	
⊙	STORM DRAIN MANHOLE		
□	STORM DRAIN CATCH BASIN		
○	DRAINAGE BUBBLER		

- NOTES**
- EXISTING UTILITIES SHOWN ON THIS PLAN SET ARE DERIVED FROM RECORD DATA AND/OR SURFACE OBSERVATION AND ARE APPROXIMATE ONLY. ACTUAL LOCATION, DEPTH AND SIZE, TOGETHER WITH THE PRESENCE OF ANY ADDITIONAL UTILITY LINES NOT SHOWN ON THIS PLAN SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION.
  - ALL EXISTING UTILITY BOXES, STRUCTURES, MANHOLES AND VALVES WITHIN THE LIMIT OF WORK SHALL BE ADJUSTED TO FINAL GRADE UNLESS OTHERWISE NOTED.
  - CONTRACTOR SHALL VERIFY EXISTING UTILITY POINTS OF CONNECTION PRIOR TO CONSTRUCTION.
  - CONTRACTOR TO POTHOLE AND FIELD VERIFY ALL UTILITY CROSSINGS.
  - PROPOSED BUILDING IS FOR REFERENCE ONLY. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
  - UTILITY DESIGN IS PRELIMINARY ONLY.
  - DESIGN OF BIORETENTION TREATMENT FACILITIES AND INFILTRATION CHAMBERS ARE PRELIMINARY AND FINAL DESIGN TO BE DETERMINED DURING PERMIT SUBMITTAL.

**ABBREVIATIONS**

±	MORE OR LESS	(S)	SOUTH
AC	ASPHALT CONCRETE	SD	STORM DRAIN
APN	ASSESSOR'S PARCEL NUMBER	SDCB	STORM DRAIN CATCH BASIN
BFP	BACKFLOW PREVENTOR	SDCO	STORM DRAIN CLEAN OUT
CONC	CONCRETE	SDGI	GRATE INLET
DIA	DIAMETER	SDMH	STORM DRAIN MANHOLE
E	ELECTRIC	SS	SANITARY SEWER
(E)	EAST	SSMH	SANITARY SEWER MANHOLE
EP	EDGE OF PAVEMENT	TB	TOP OF BOX
ESMT	EASEMENT	TEL	TELECOMMUNICATION
EX	EXISTING	TG	TOP OF GRATE
FL	FLOWLINE	TV	TELEVISION
G	GAS	TYP	TYPICAL
GM	GAS METER	TSD	TREATED STORM DRAIN
GYP	GUY POLE	USD	UNTREATED STORM DRAIN
INV	INVERT	UB	UTILITY BOX
IP	IRON PIPE	VCP	VITRIFIED CLAY PIPE
(N)	NORTH	W	WATER
OVH	OVERHEAD UTILITY LINE	(W)	WEST
P&E	PACIFIC GAS & ELECTRIC	WM	WATER METER
RCP	REINFORCED CONCRETE PIPE	YD	YARD DRAIN





BOUNDARY	WATERSHED	TOTAL AREA	CONVENTIONAL SURFACE (SF)			DRAINS TO	LID TYPE	AREA (ft <sup>2</sup> )		VOLUME V1 (ft <sup>3</sup> /hr)		VOLUME V2 (ft <sup>3</sup> /hr)	
			ROOF	CONC.	LSP			REQUIRED (sf)	PROVIDED (sf)	REQUIRED (cf)	PROVIDED (cf)		
	DMA-1A		435,144	-	-	IMP 1	INFILTRATION CHAMBERS <sup>1,2</sup>	33,453	35,554	N/A	115,076	129,150	
	DMA-1B	820,591	-	292,922	-								
	DMA-1C		-	-	92,525								
	DMA-2A	37,789	-	28,108	-	IMP 2	BIORETENTION <sup>1</sup>	1,829	2,774	1,516	2,312	N/A	
	DMA-2B		-	-	6,907								
	DMA-2C		-	-	-								
	DMA-3A	84,609	-	67,069	-	IMP 3	BIORETENTION <sup>1</sup>	4,664	5,140	3,864	4,283	N/A	
	DMA-3B		-	-	12,400								
	DMA-3C		-	-	-								
	DMA-4	20,700	-	-	20,700	IMP 4	SELF-TREATING						
	OVERALL TOTAL DISTURBED AREA	963,689	435,144	388,099	132,532			TOTAL BID AREA:	7,914				

NOTES:  
 1. INFILTRATION CHAMBERS ARE OVERSIZED TO ACCOMMODATE THE ADDITIONAL RUNOFF DUE TO THE PROPOSED DEVELOPMENT.  
 2. INFILTRATION CHAMBER VOLUME IS DERIVED FROM AGS SPECIFICATIONS. A SINGLE MC-3500 CHAMBER HAS A MINIMUM STORAGE OF 175 CF. PLEASE NOTE THAT DESIGN OF CHAMBERS IS PRELIMINARY AND FINAL DESIGN TO BE DETERMINED DURING PERMIT SUBMITTAL.  
 3. SITES WITH TYPE A SOILS ARE NOT REQUIRED TO PROVIDE PORE VOLUME WITHIN BIORETENTION AREAS PER CONTRA COSTA COUNTY C3 GUIDELINES.

**LEGEND**

- PROPERTY LINE
- EASEMENT
- CENTER LINE
- PROPOSED UNTREATED STORM DRAIN
- PROPOSED TREATED STORM DRAIN
- DRAINAGE MANAGEMENT AREA
- STORM DRAIN MANHOLE
- STORM DRAIN CATCH BASIN
- DRAINAGE BUBBLER
- UTILITY DIRECTION OF FLOW
- STORMWATER INFILTRATION CHAMBERS, SEE NOTE 9
- ROOF AREA
- PAVEMENT AREA
- LANDSCAPE AREA
- BIORETENTION AREA, SEE NOTE 9
- INFILTRATION TRENCH

**NOTES**

1. PROPOSED BUILDING IS FOR REFERENCE ONLY. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

**C.3 STORMWATER MANAGEMENT EXHIBIT NOTES:**

1. THIS PROJECT IS REGULATED BY THE MUNICIPAL REGIONAL STORMWATER NPDES PERMIT, ORDER NO. R2-2015-0049 DATED NOVEMBER 19, 2015. CALCULATIONS ARE BASED ON THE CONTRA COSTA CLEAN WATER PROGRAMS "STORMWATER C.3 GUIDEBOOK" 7TH EDITION MAY 17, 2017 (GUIDEBOOK).

2. THE PROJECT TOTAL SITE AREA IS 22.7 ACRES (987,031 SF) AND THE TOTAL AREA OF LAND DISTURBED IS 21.7 ACRES (963,689 SF). THE TOTAL PRE-PROJECT IMPERVIOUS SURFACE AREA IS 826,943 SQUARE FEET AND THE TOTAL POST-PROJECT IMPERVIOUS SURFACE AREA IS 826,943 SQUARE FEET. SEE NOTE 8.

3. THIS PROJECT PROPOSES TO INCREASE IMPERVIOUS SURFACE AREA BY 826,943 SQUARE FEET AND WILL REPLACE 36,300 SQUARE FEET OF EXISTING IMPERVIOUS SURFACE AREA. THE EXISTING 3,700 SF OF IMPERVIOUS AREA WILL REMAIN UNDISTURBED AND OUTSIDE OF THE LIMIT OF DISTURBANCE. THE TOTAL PRE-PROJECT IMPERVIOUS SURFACE AREA IS 40,000 SQUARE FEET. THE TOTAL POST-PROJECT IMPERVIOUS SURFACE AREA IS 826,943 SQUARE FEET. SEE NOTE 8.

4. PROVISION C.3 PROJECT REQUIREMENTS INCLUDE: NEW/REDEVELOPED AREA SUBJECT TO STORMWATER TREATMENT AND FLOW CONTROL.

5. COMPLIANCE WITH FLOW CONTROL REQUIREMENTS ARE MET THROUGH: INTEGRATED MANAGEMENT PRACTICES PER THE GUIDEBOOK.

6. DESIGN CRITERIA  
 6.1. MEAN ANNUAL PRECIPITATION = 13 INCHES PER HOUR CCCCWD MEAN SEASONAL ISOHYETS, FIGURE B-166  
 6.2. SOIL GROUP: A  
 6.3. HYDRAULIC DESIGN CRITERIA: 0.2 INCHES PER HOUR RAINFALL INTENSITY  
 6.4. BIORETENTION SOIL LOADING RATE: 5 INCHES PER HOUR  
 6.5. BIORETENTION SOIL MIX PER APPENDIX B OF THE GUIDEBOOK

7. THE PROJECT SITE IS DELINEATED INTO 1 DRAINAGE MANAGEMENT AREA (DMA) AS SHOWN ON THIS SHEET. DATA OUTPUT FROM THE CONTRA COSTA CLEAN WATER PROGRAM IMP SIZING CALCULATOR IS INCLUDED ON THIS SHEET.

8. THE SITE INCLUDES 2 OFFSITE SHEDS  
 8.1. OFFSITE SHED 1 IS ENTIRELY IMPERVIOUS AND IS WITHIN A PRIVATE ACCESS EASEMENT GRANTED TO THE ADJACENT PROPERTY. THIS SHED WILL REMAIN UNDISTURBED.  
 8.2. OFFSITE SHED 2 IS ENTIRELY PERVIOUS AND IS WITHIN AN EXISTING OFFER OF DEDICATION FOR A FUTURE ROADWAY. THIS SHED WILL REMAIN UNDISTURBED.

9. DESIGN OF BIORETENTION TREATMENT FACILITIES AND INFILTRATION CHAMBERS ARE PRELIMINARY AND FINAL DESIGN TO DETERMINED DURING PERMIT SUBMITTAL.

10. DEPTH OF GROUNDWATER TABLE: ROUGHLY 24'-28', PER GEOTECH REPORT, "PRELIMINARY GEOTECHNICAL EXPLORATION UPDATE FOR ANTIUCH INDUSTRIAL PARK, ANTIUCH, CALIFORNIA", CONDUCTED BY ENGE INCORPORATED, DATED 02/04/2022.B ADDITIONAL BORINGS PERFORMED IN AUGUST 2022 INDICATE GROUNDWATER DEPTHS 24'-30' BELOW EXISTING SURFACE.

**Project Name: DECA-WEST**  
**Project Type: Treatment and Flow Control**  
**APN: 051-052-056**  
**Drainage Area: 985,285**  
**Mean Annual Precipitation: 13.0**

**IV. Areas Draining to IMPs**

**IMP Name: IMP1**  
**IMP Type: Dry Well**  
**Soil Group: IMP1**

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor	IMP Sizing Factor	Rain Adjustment Factor	Minimum Area or Volume	Proposed Area or Volume
DMA-1A	435,144	Conventional Roof	1.00	435,144	0.050	0.907	33,453	35,554
DMA-1B	292,922	Concrete or Asphalt	1.00	292,922				
DMA-1C	92,525	Landscape	0.10	9,253				
<b>Total</b>				<b>737,319</b>	0.130	0.907	86,978	129,150

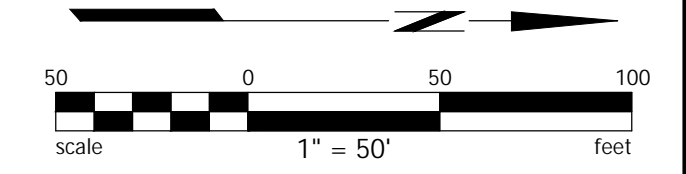
**IMP Name: IMP2**  
**IMP Type: Bioretention Facility**  
**Soil Group: IMP2**

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor	IMP Sizing Factor	Rain Adjustment Factor	Minimum Area or Volume	Proposed Area or Volume
DMA-2B	28,105	Concrete or Asphalt	1.00	28,105	0.070	0.907	1,829	2,774
DMA-2C	6,907	Landscape	0.10	691				
<b>Total</b>				<b>28,796</b>	0.058	0.907	1,516	1,850

**IMP Name: IMP3**  
**IMP Type: Bioretention Facility**  
**Soil Group: IMP3**

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor	IMP Sizing Factor	Rain Adjustment Factor	Minimum Area or Volume	Proposed Area or Volume
DMA-3B	12,400	Concrete or Asphalt	1.00	12,400	0.070	0.907	4,664	5,140
DMA-3C	12,400	Landscape	0.10	1,240				
<b>Total</b>				<b>13,640</b>				

PRE-IMPROVEMENT					
PROJECT SITE AREA:	987,031	(FT) <sup>2</sup>			
PERVIOUS AREAS:			IMPERVIOUS AREAS:		
DESCRIPTION	AREA	UNITS	DESCRIPTION	AREA	UNITS
UNDEVELOPED/LANDSCAPE	947,031	(FT) <sup>2</sup>	RF + PAVED AREAS	40,000	(FT) <sup>2</sup>
<b>TOTAL</b>	947,031	(FT) <sup>2</sup>	<b>TOTAL</b>	40,000	(FT) <sup>2</sup>
POST-IMPROVEMENT <sup>2,3,8</sup>					
PROJECT SITE AREA:	987,031	(FT) <sup>2</sup>	% IMPERVIOUS AREA INCREASE	80%	
PERVIOUS AREAS:			IMPERVIOUS AREAS:		
DESCRIPTION	AREA	UNITS	DESCRIPTION	AREA	UNITS
LANDSCAPE + PERVIOUS PAVEMENT + BIORETENTION AREAS	160,088	(FT) <sup>2</sup>	ROOF + PAVED AREAS	826,943	(FT) <sup>2</sup>
<b>TOTAL</b>	160,088	(FT) <sup>2</sup>	<b>TOTAL</b>	826,943	(FT) <sup>2</sup>



**deca**

BKF ENGINEERS  
 100 CALIFORNIA BLVD  
 SUITE 400  
 WALNUT CREEK, CA 94596  
 (925) 942-2200  
 www.bkf.com

**BKF**

18TH STREET DEVELOPMENT - WEST  
 APN 051-052-086 & 051-052-072. PERMIT# PD-22-02, UP-22-04, AR-22-04  
 ANTIUCH, CA

**STORMWATER CONTROL PLAN**

Revisions: \_\_\_\_\_  
 No. \_\_\_\_\_  
 Date: 09/20/2022  
 Scale: AS SHOWN  
 Design: AZ  
 Drawn: DB, MK  
 Approved: MS  
 Date: 09/20/2022

Drawing Number:  
**C4.0**  
 6 OF 6