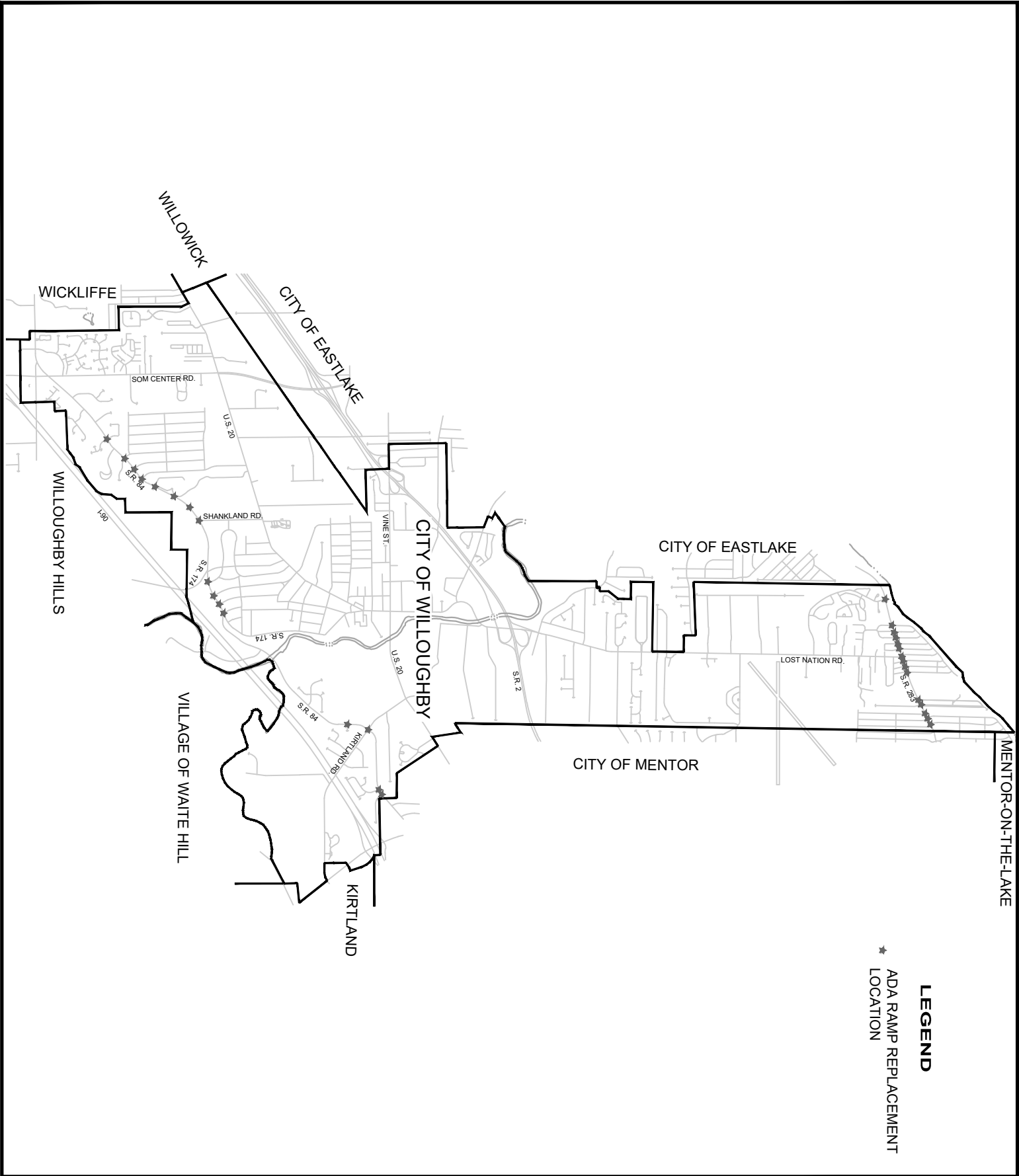
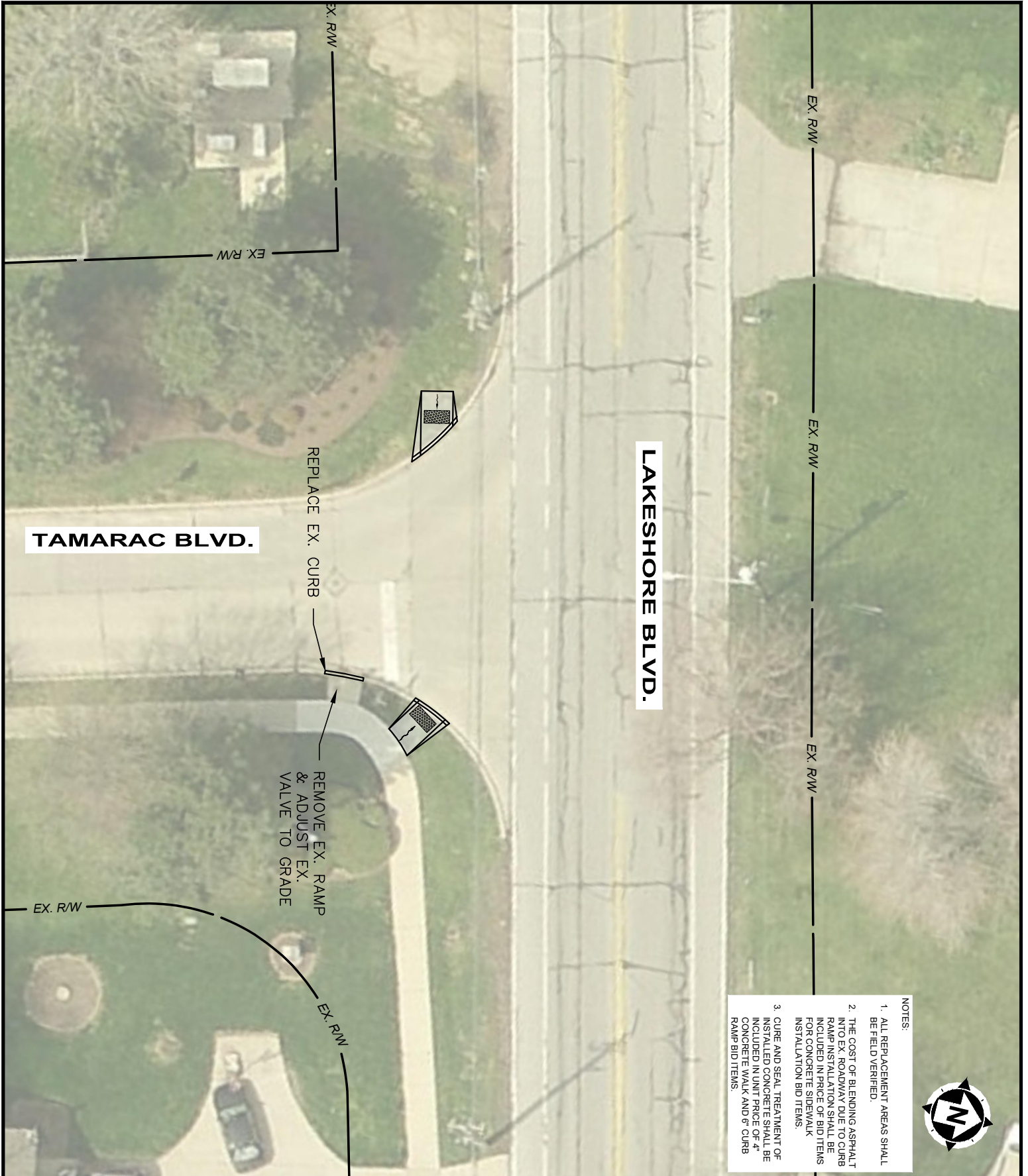

SECTION 9
DETAILED DRAWINGS



LEGEND
★ ADA RAMP REPLACEMENT
LOCATION

<div>1</div> <div>SHEET OF</div> <div>33</div>		PROJECT NO.		<div><div><div></div><div>your trusted advisor</div><div>consultants</div></div><div>engineers architects planners</div></div>	
		200146			
		DISCIPLINE			
		CIVIL			
LAKE COUNTY, OHIO		ISSUE DATE: 3/19/2020			
ADA RAMP REPLACEMENT		SCALE: 1" = 20'			
CITY OF WILLOUGHBY		DESIGNED BY: JNS			
CITY OF WILLOUGHBY MAP		DRAWN BY: JNS			
		CHECKED BY: TRL			



- NOTES:
1. ALL REPLACEMENT AREAS SHALL BE FIELD VERIFIED.
 2. THE COST OF BLENDING ASPHALT INTO EX. ROADWAY DUE TO CURB RAMP INSTALLATION SHALL BE INCLUDED IN PRICE OF BID ITEMS FOR CONCRETE SIDEWALK INSTALLATION BID ITEMS.
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LAKE COUNTY, OHIO

ADA RAMP REPLACEMENT

CITY OF WILLOUGHBY

S.R. 283 (LAKESHORE BLVD)

ISSUE DATE: 3/19/2020

SCALE: 1" = 20'

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PROJECT NO.
200146

DISCIPLINE
CIVIL

SHEET
2
OF
33



2 EX. GAS VALVES
TO BE ADJUSTED
TO GRADE

LAKESHORE BLVD.

BEACHVIEW ROAD

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LAKE COUNTY, OHIO

ADA RAMP REPLACEMENT

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S.R. 283 (LAKESHORE BLVD)

ISSUE DATE: 3/19/2020

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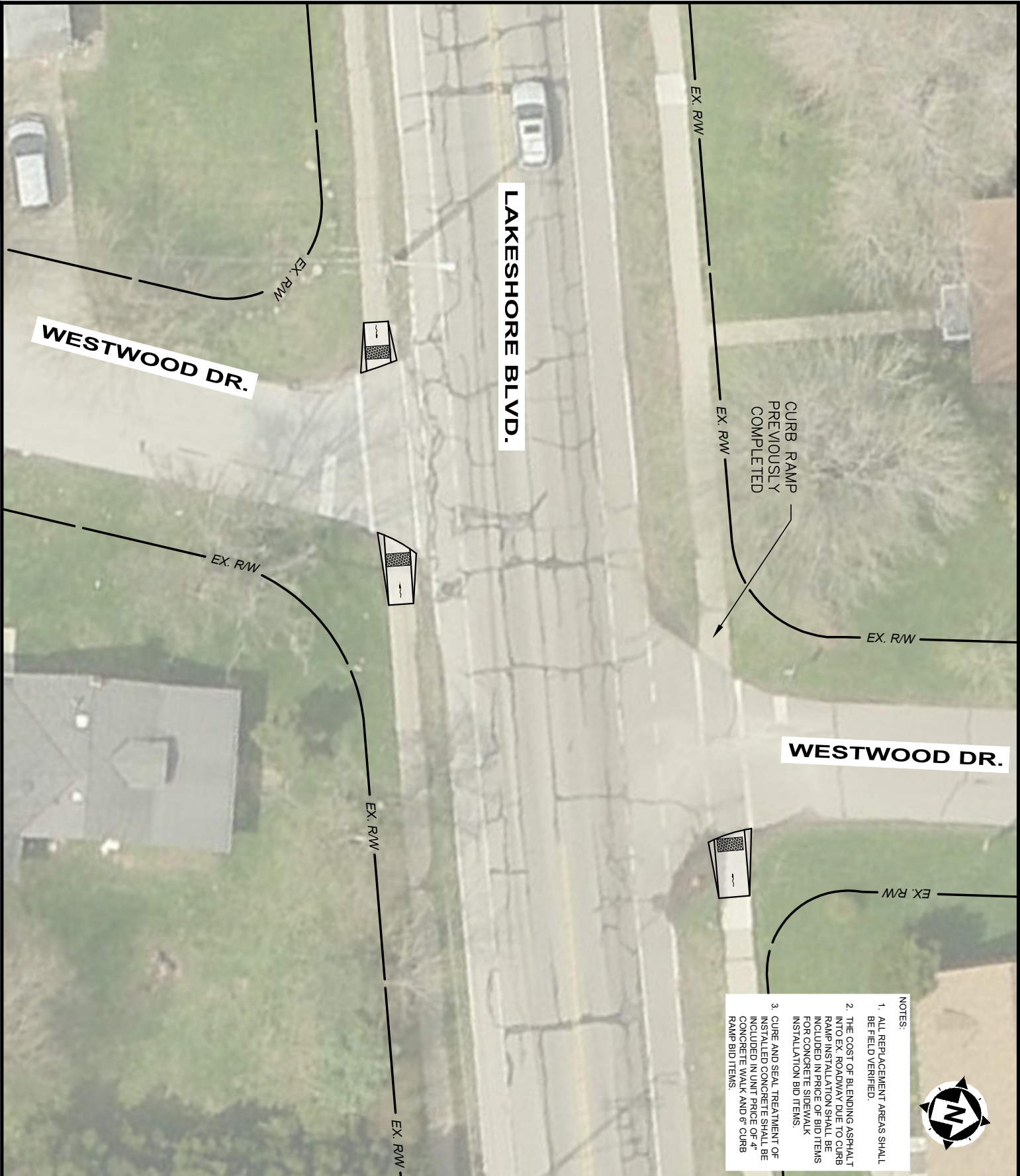
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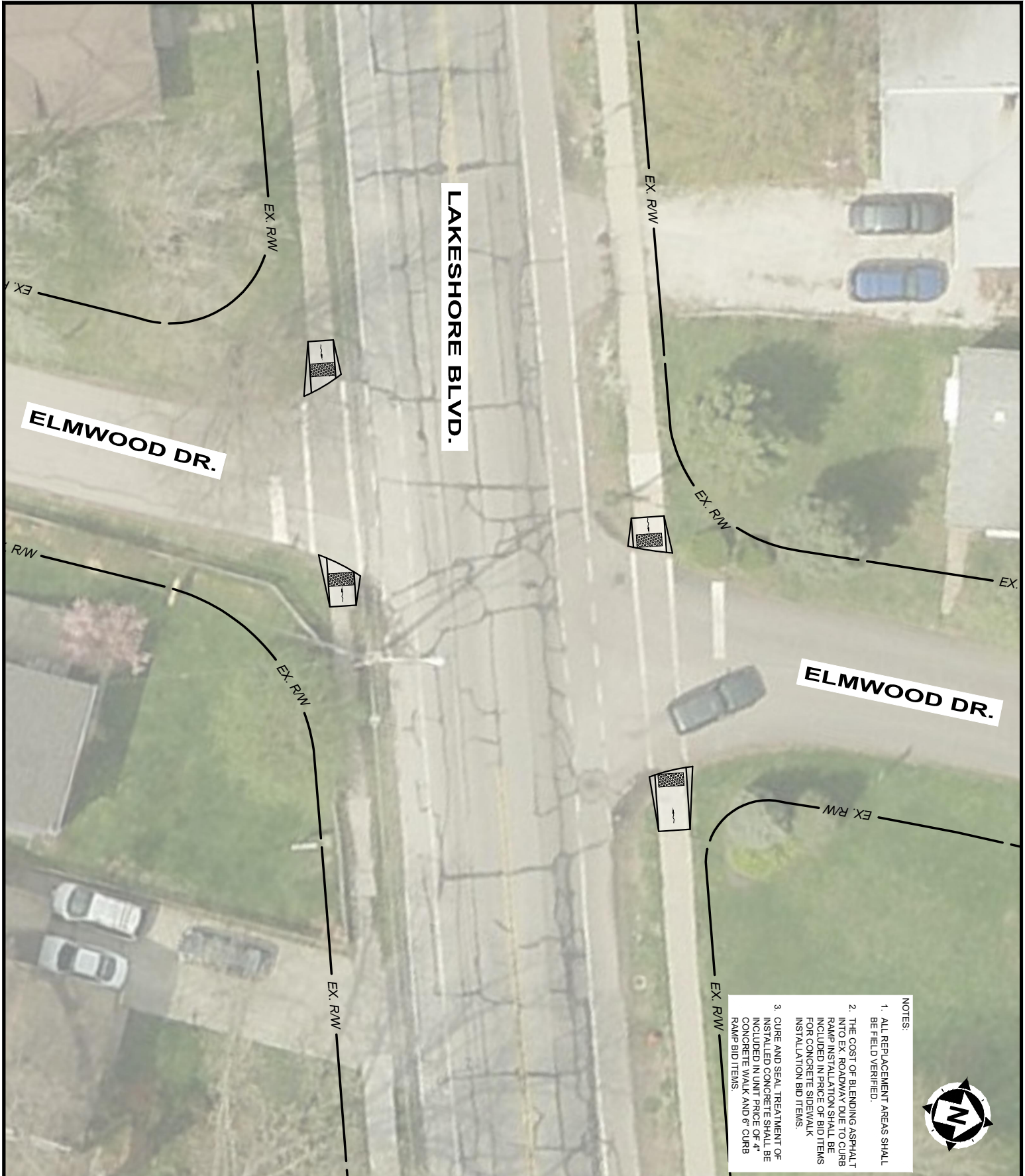
PROJECT NO.		200146
DISCIPLINE		CIVIL
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<div>4</div> <div>33</div>		<div>SHEET</div> <div>OF</div>	<div>CIVIL</div>	<div>DISCIPLINE</div>	<div>200146</div>	<div>PROJECT NO.</div>	LAKE COUNTY, OHIO		ISSUE DATE: 3/19/2020		<div><div><div></div></div><div>your trusted advisor consultants</div><div>→engineers architects planners</div></div>
							ADA RAMP REPLACEMENT		SCALE: 1" = 20'		
							CITY OF WILLOUGHBY		DESIGNED BY: JNS		
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							S.R. 283 (LAKESHORE BLVD)	CHECKED BY: TRL			



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LAKE COUNTY, OHIO

ADA RAMP REPLACEMENT

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S.R. 283 (LAKESHORE BLVD)

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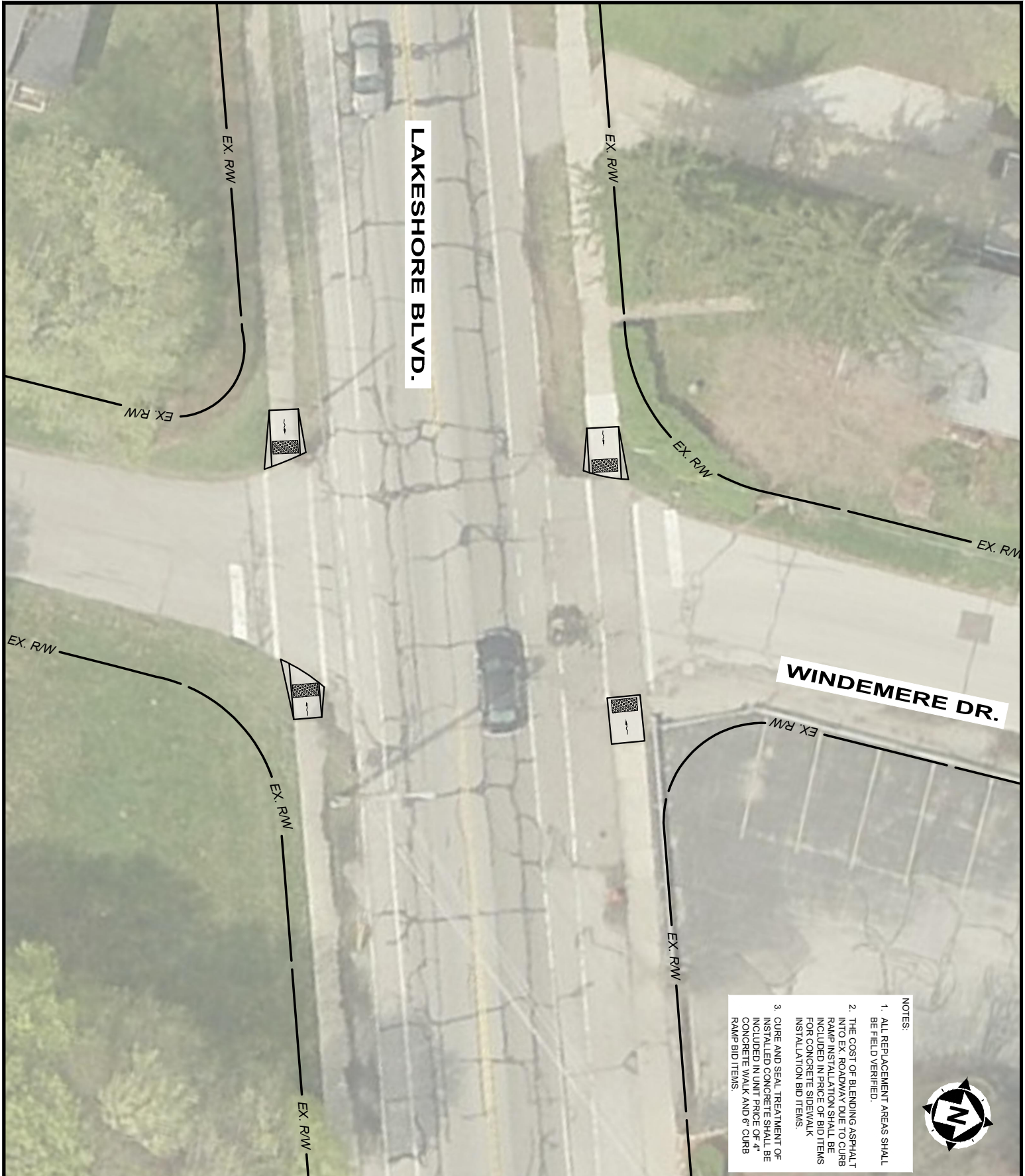
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PROJECT NO.	200146
DISCIPLINE	CIVIL
SHEET OF	5 OF 33



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LAKE COUNTY, OHIO

ADA RAMP REPLACEMENT

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S.R. 283 (LAKESHORE BLVD)

ISSUE DATE: 3/19/2020

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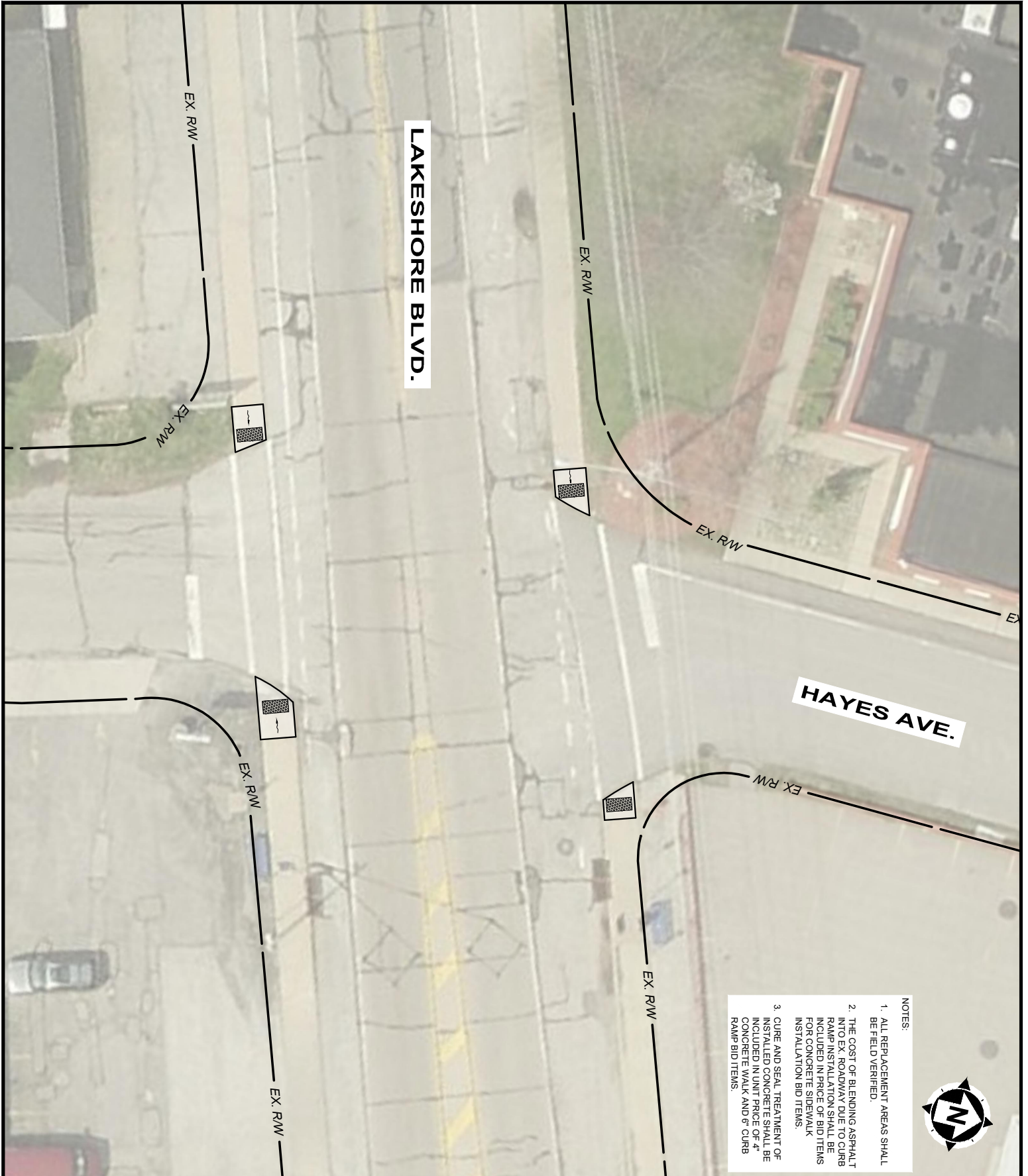
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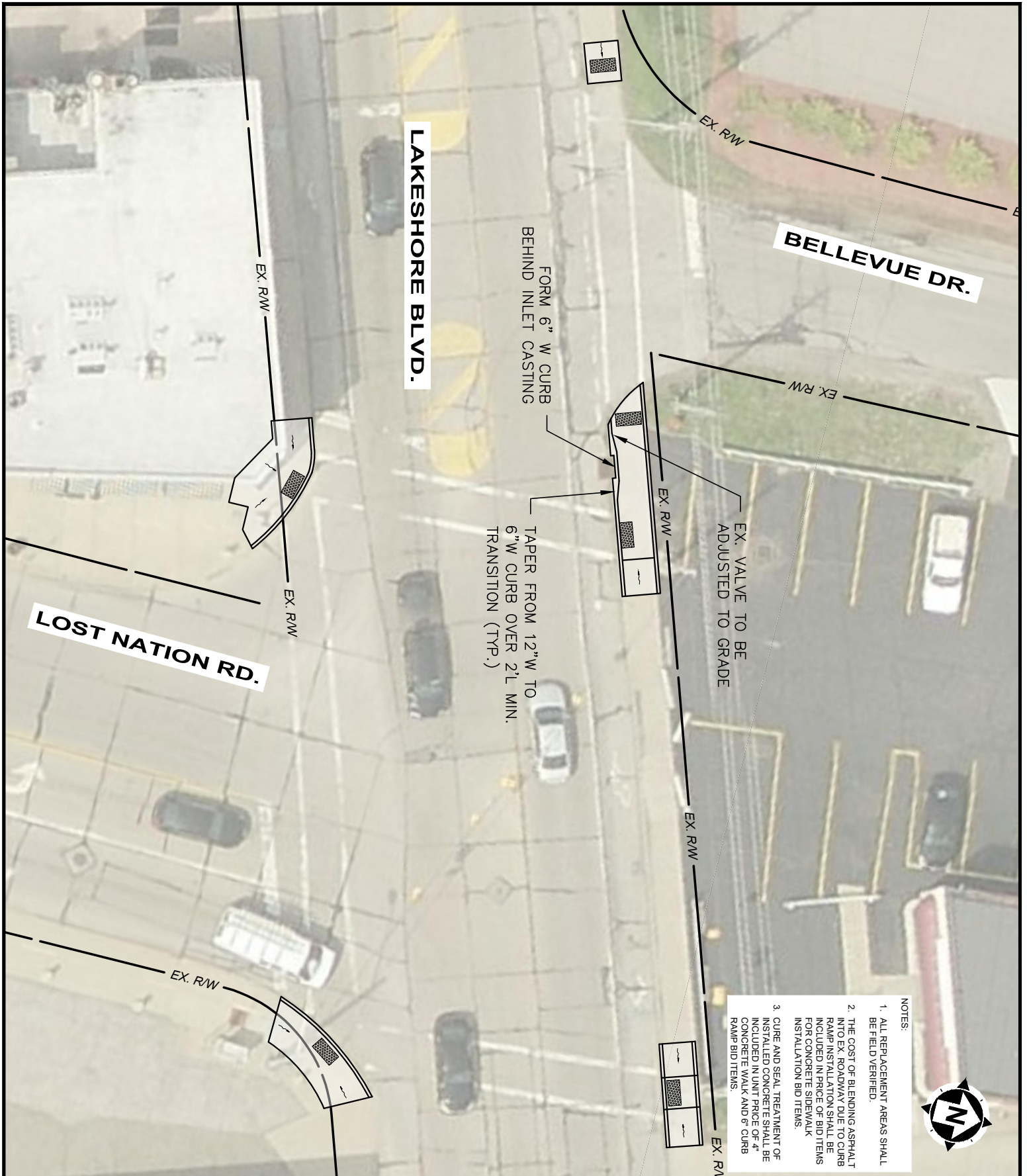
PROJECT NO.	200146
DISCIPLINE	CIVIL
SHEET OF	6 OF 33



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<div><div>733</div><div>SHEET OF</div><div>CIVIL</div><div>DISCIPLINE</div><div>200146</div><div>PROJECT NO.</div></div>		LAKE COUNTY, OHIO		ISSUE DATE: 3/19/2020		<div><div><div><div></div></div><div>your trusted advisor consultants</div></div><div>engineers architects planners</div></div>
		ADA RAMP REPLACEMENT		SCALE: 1" = 20'		
		CITY OF WILLOUGHBY		DESIGNED BY: JNS		
		S.R. 283 (LAKESHORE BLVD)		DRAWN BY: JNS		
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LAKE COUNTY, OHIO

ADA RAMP REPLACEMENT

CITY OF WILLOUGHBY

S.R. 283 (LAKESHORE BLVD)

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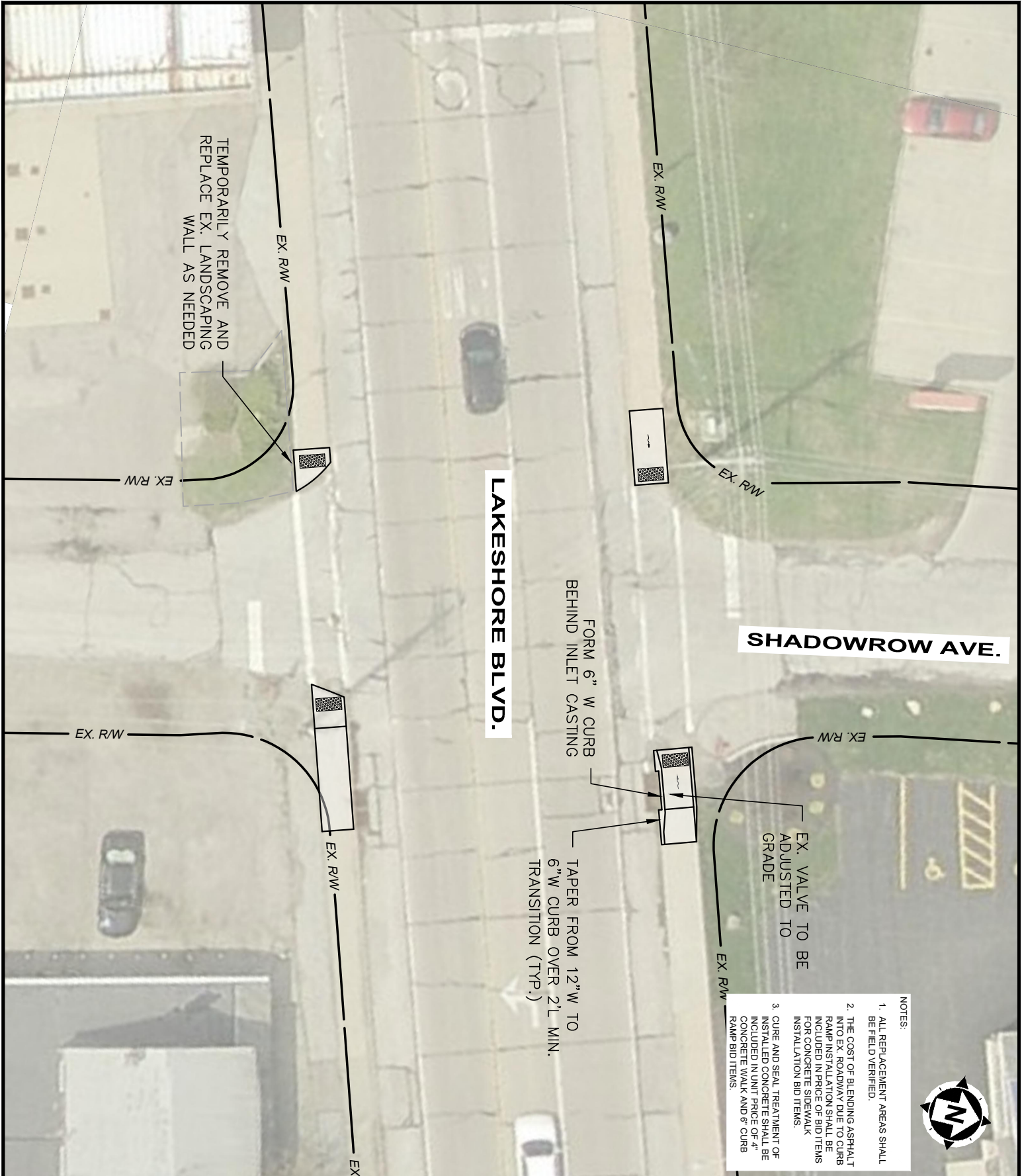
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PROJECT NO.	200146
DISCIPLINE	CIVIL
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LAKE COUNTY, OHIO

ADA RAMP REPLACEMENT

CITY OF WILLOUGHBY

S.R. 283 (LAKESHORE BLVD)

ISSUE DATE: 3/19/2020

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PROJECT NO.	200146
DISCIPLINE	CIVIL
SHEET OF	9 OF 33

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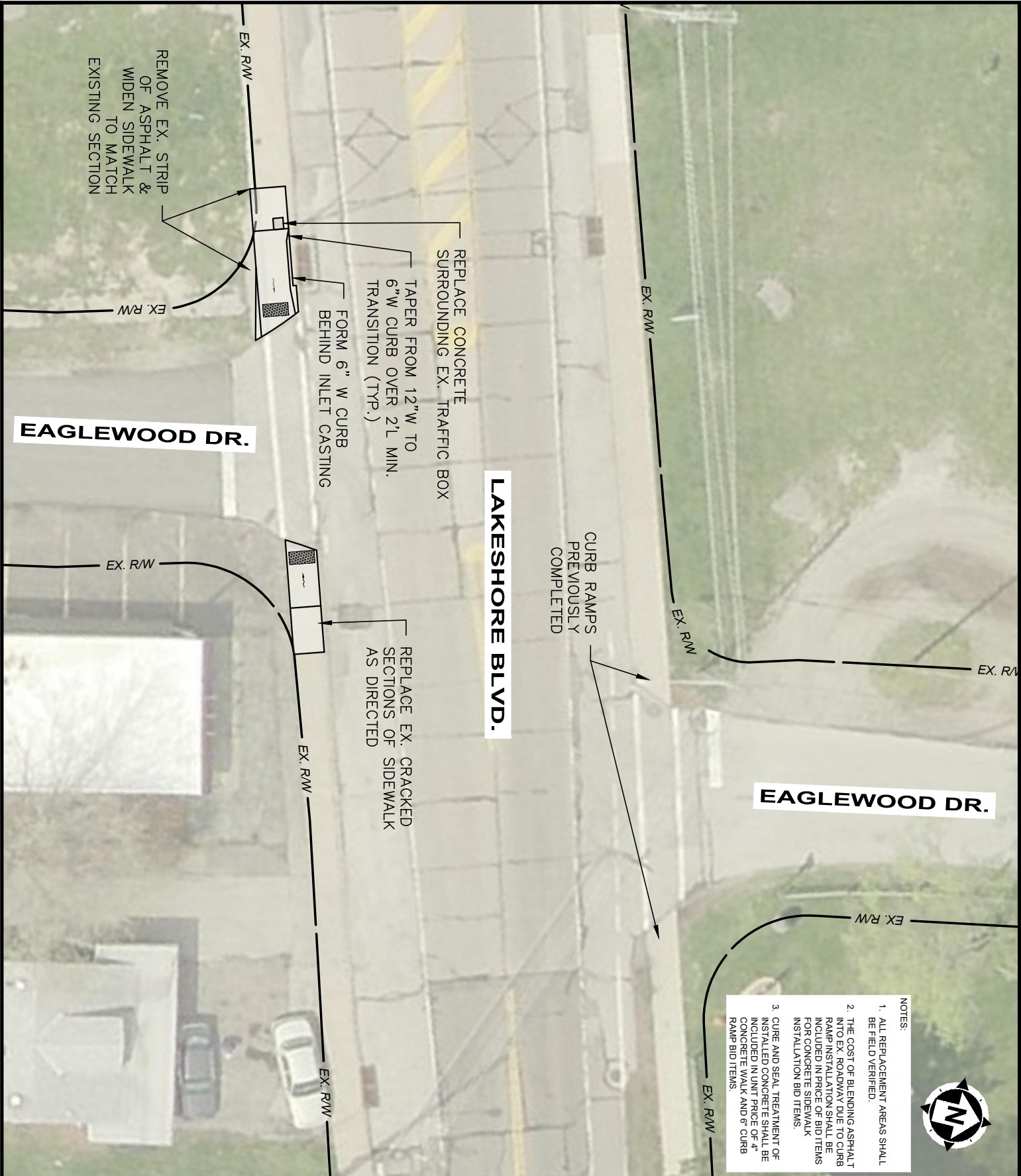


S.R. 283 (LAKESHORE BLVD)

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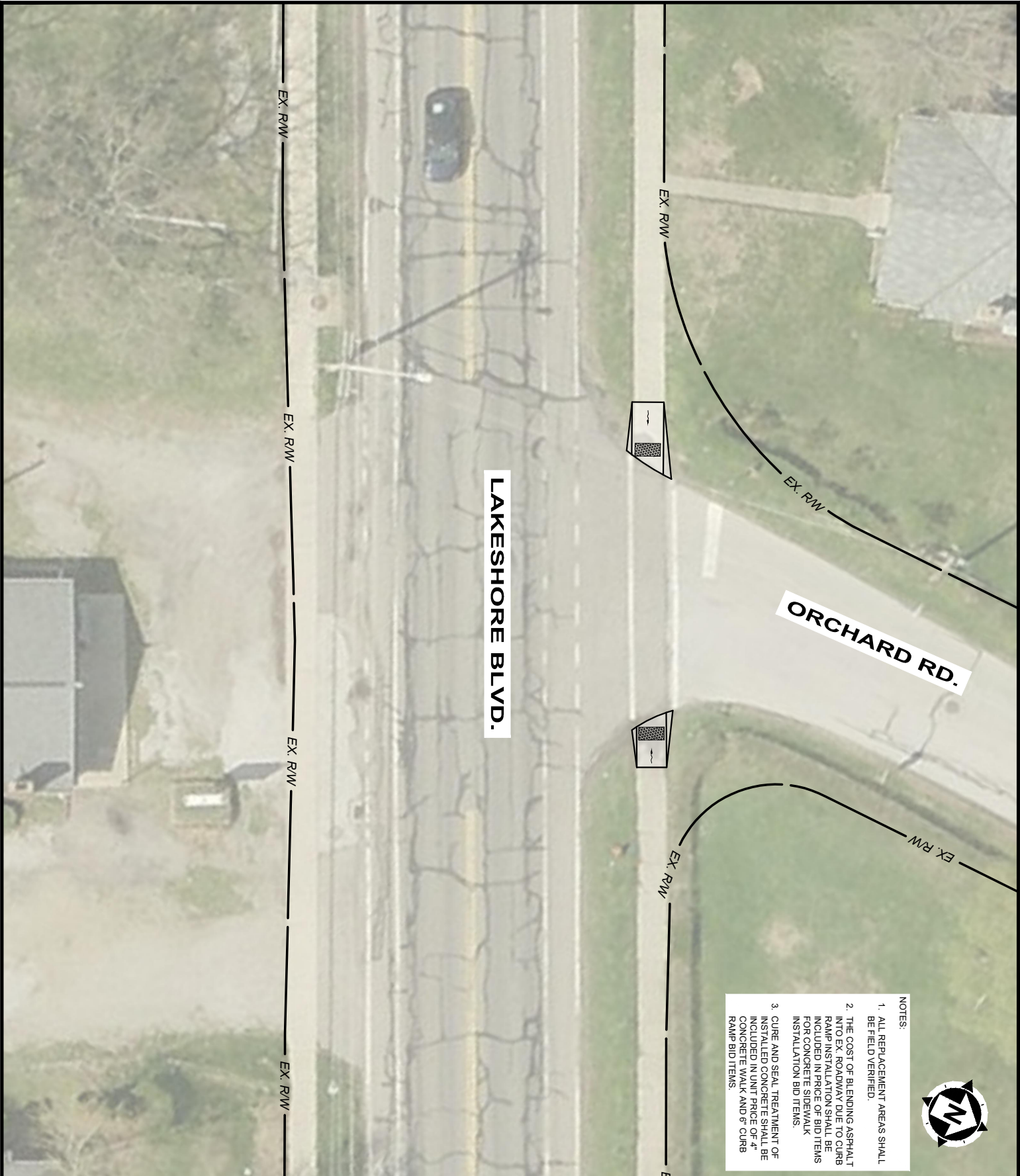
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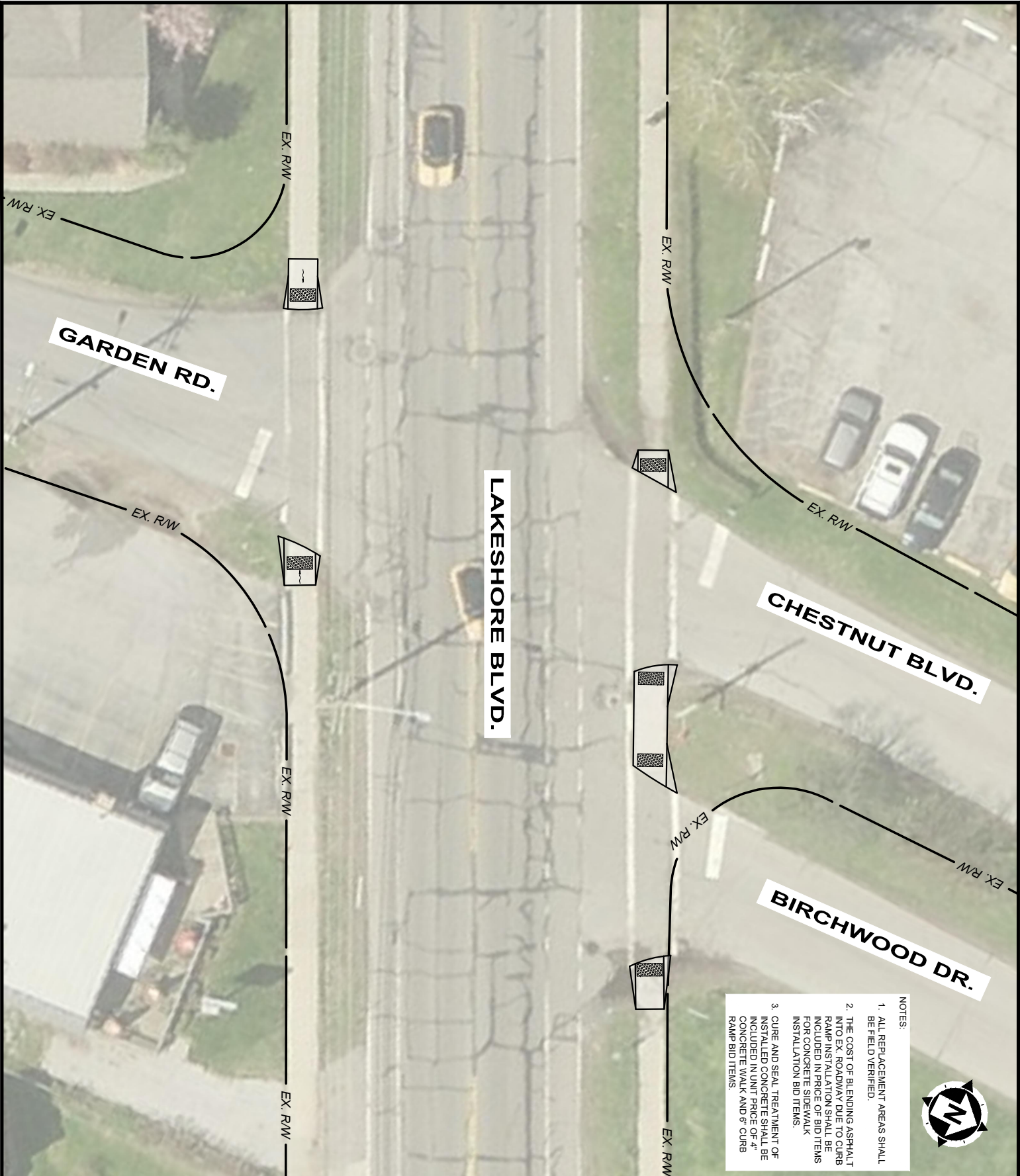
SHEET 11 OF 33		CIVIL	DISCIPLINE	200146	PROJECT NO.	LAKE COUNTY, OHIO		ISSUE DATE: 3/19/2020		<div><div><div></div><div>your trusted advisor consultants</div></div><div>engineers architects planners</div></div>
						ADA RAMP REPLACEMENT		SCALE: 1" = 20'		
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<div>12</div> <div>33</div>		<div>SHEET</div> <div>OF</div>	<div>CIVIL</div> <div>DISCIPLINE</div> <div>200146</div> <div>PROJECT NO.</div>	LAKE COUNTY, OHIO		ISSUE DATE: 3/19/2020		<div><div><div></div></div><div>your trusted advisor</div><div>consultants</div><div>engineers architects planners</div></div>
				ADA RAMP REPLACEMENT		SCALE: 1" = 20'		
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LAKE COUNTY, OHIO

ADA RAMP REPLACEMENT

CITY OF WILLOUGHBY

S.R. 283 (LAKESHORE BLVD)

ISSUE DATE: 3/19/2020

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DISCIPLINE	CIVIL
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OF	33



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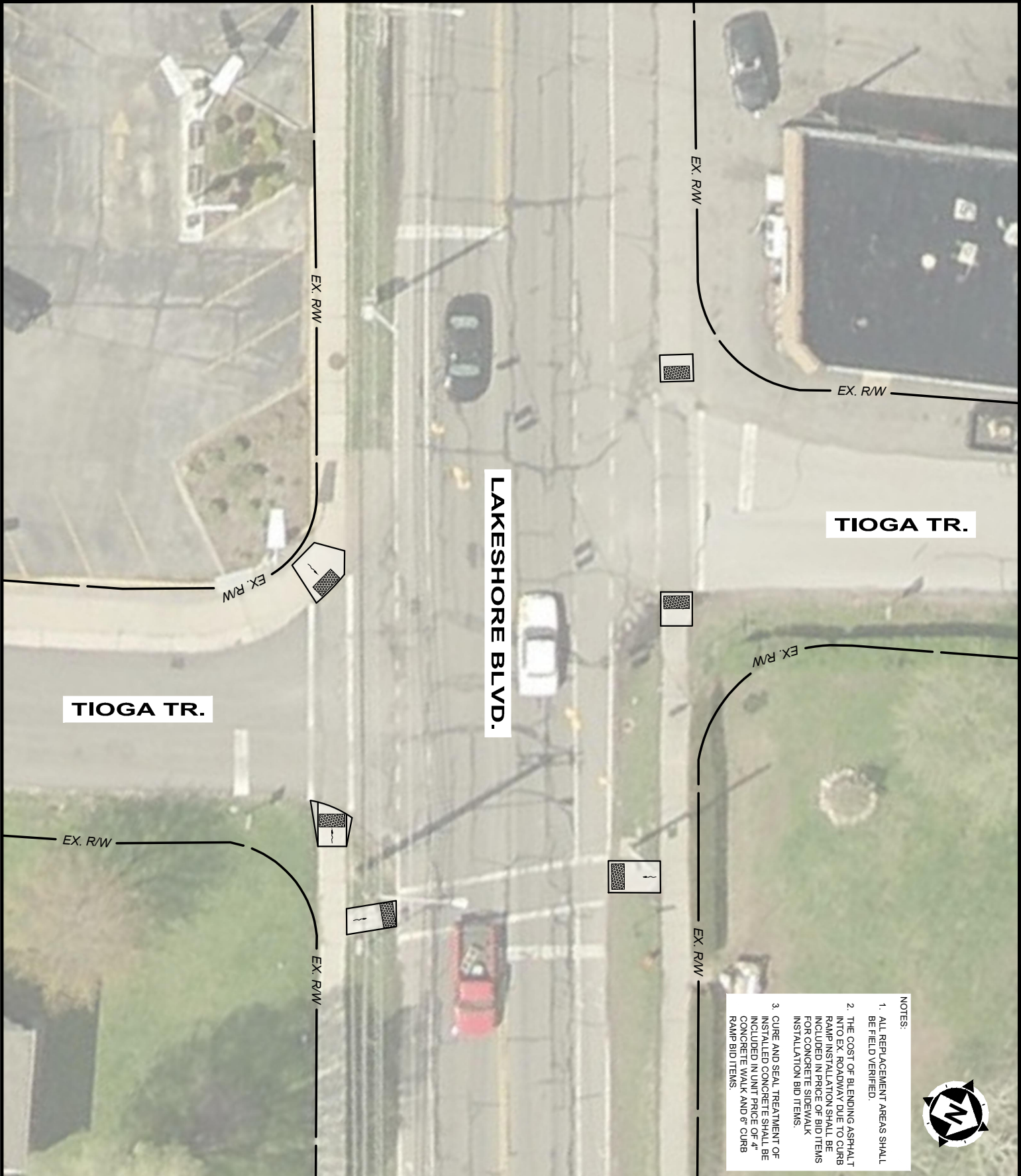


PROJECT NO. 200146		ISSUE DATE: 3/19/2020	
DISCIPLINE CIVIL		SCALE: 1" = 20'	
SHEET OF 14 33		DESIGNED BY: JNS	
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LAKE COUNTY, OHIO
ADA RAMP REPLACEMENT
CITY OF WILLOUGHBY

S.R. 283 (LAKESHORE BLVD)

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TIOGA TR.

LAKESHORE BLVD.

TIOGA TR.

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LAKE COUNTY, OHIO

ADA RAMP REPLACEMENT

CITY OF WILLOUGHBY

S.R. 283 (LAKESHORE BLVD)

ISSUE DATE: 3/19/2020

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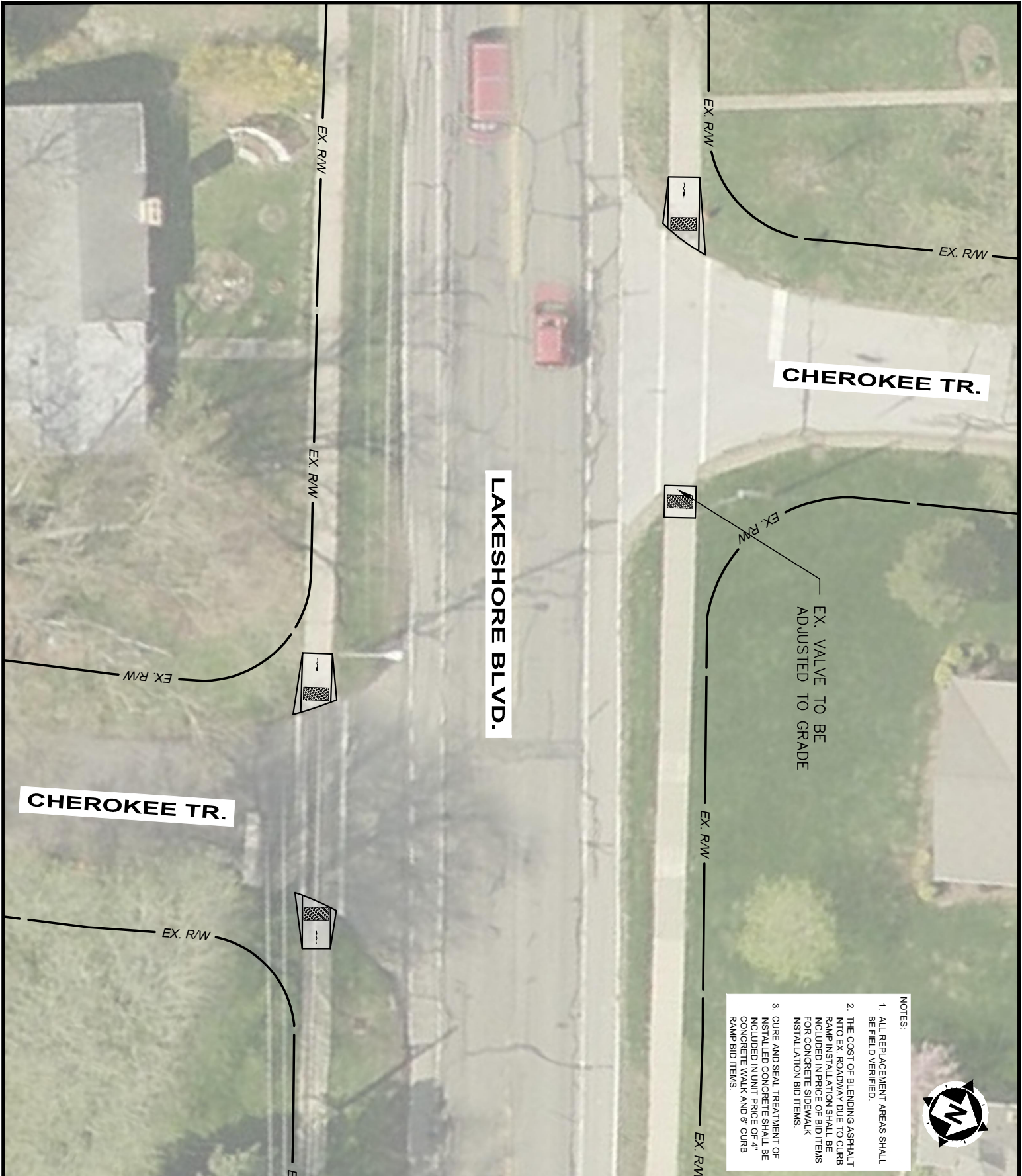
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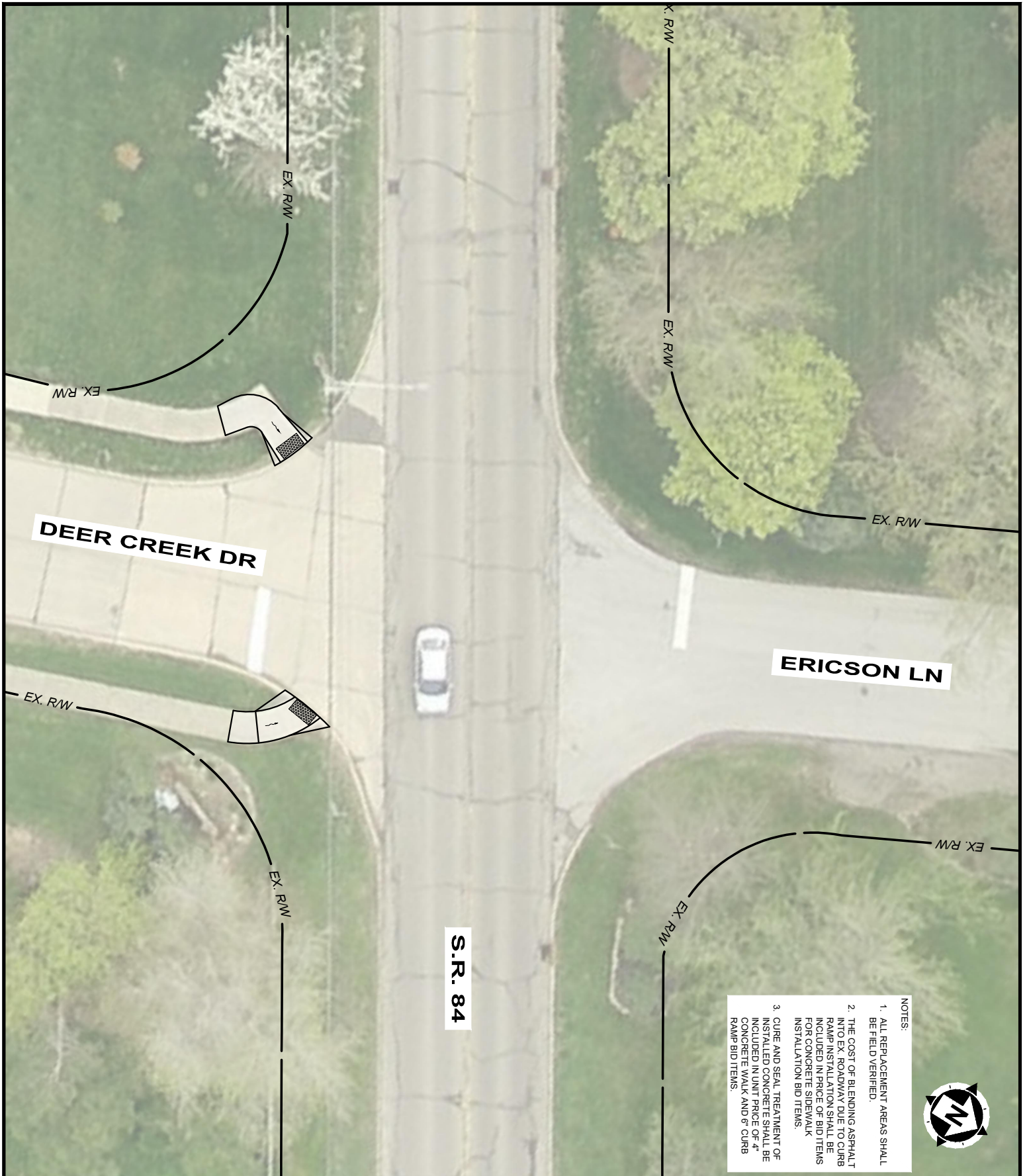
PROJECT NO.	200146
DISCIPLINE	CIVIL
SHEET OF	15 33



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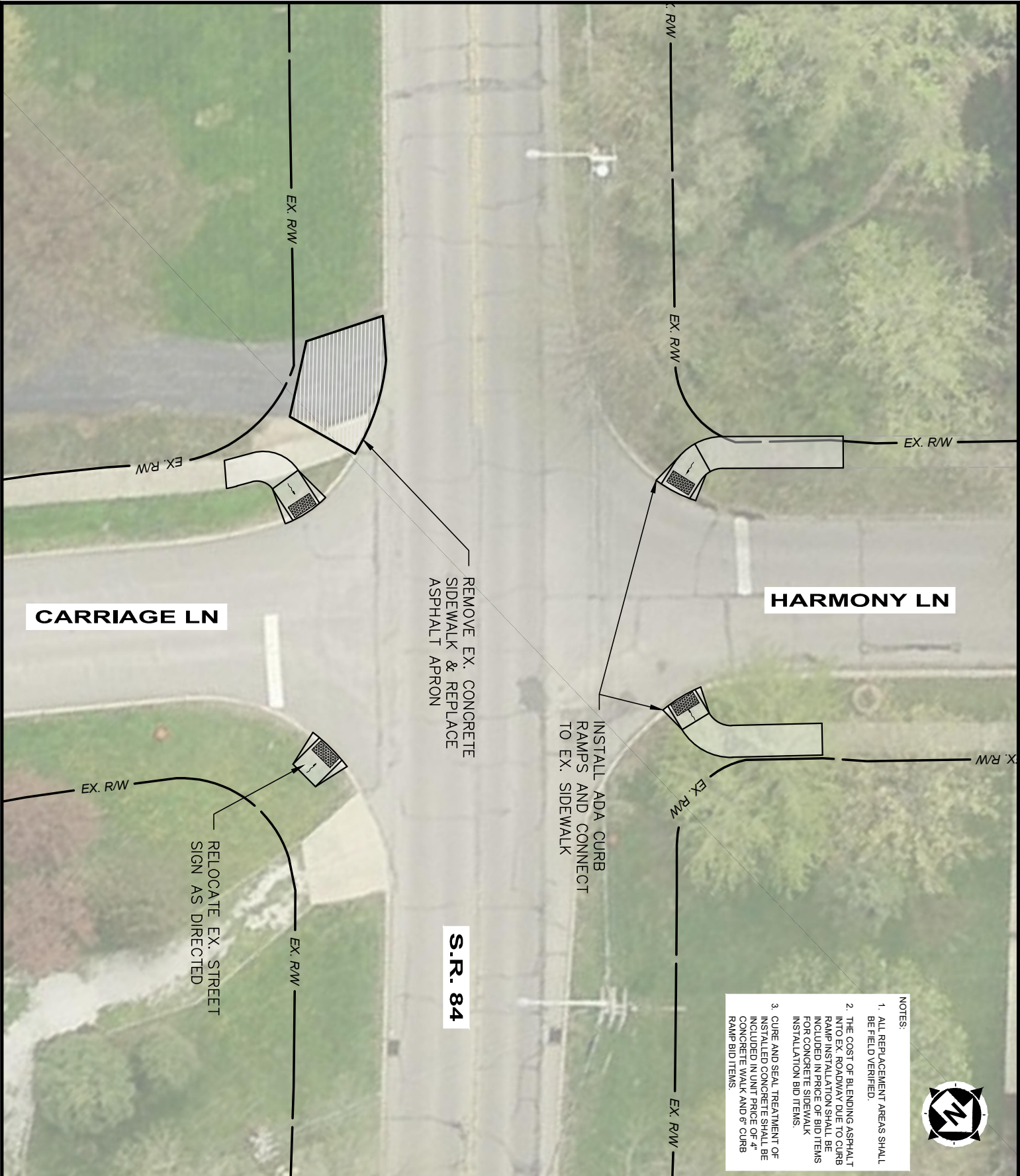


PROJECT NO. 200146		DISCIPLINE CIVIL		SHEET OF 16 33		LAKE COUNTY, OHIO ADA RAMP REPLACEMENT CITY OF WILLOUGHBY		ISSUE DATE: 3/19/2020		
						S.R. 283 (LAKESHORE BLVD)		SCALE: 1" = 20'		
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<div><div>PROJECT NO.</div><div>200146</div><div>DISCIPLINE</div><div>CIVIL</div><div>SHEET 17 OF 33</div></div>		LAKE COUNTY, OHIO		ISSUE DATE: 3/19/2020		<div><div><div>T</div><div>your trusted advisor consultants</div></div><div>→ engineers architects planners</div></div>
		ADA RAMP REPLACEMENT		SCALE: 1" = 20'		
		CITY OF WILLOUGHBY		DESIGNED BY: JNS		
		S.R. 84 (JOHNNYCAKE RIDGE ROAD)		DRAWN BY: JNS		
				CHECKED BY: TRL		

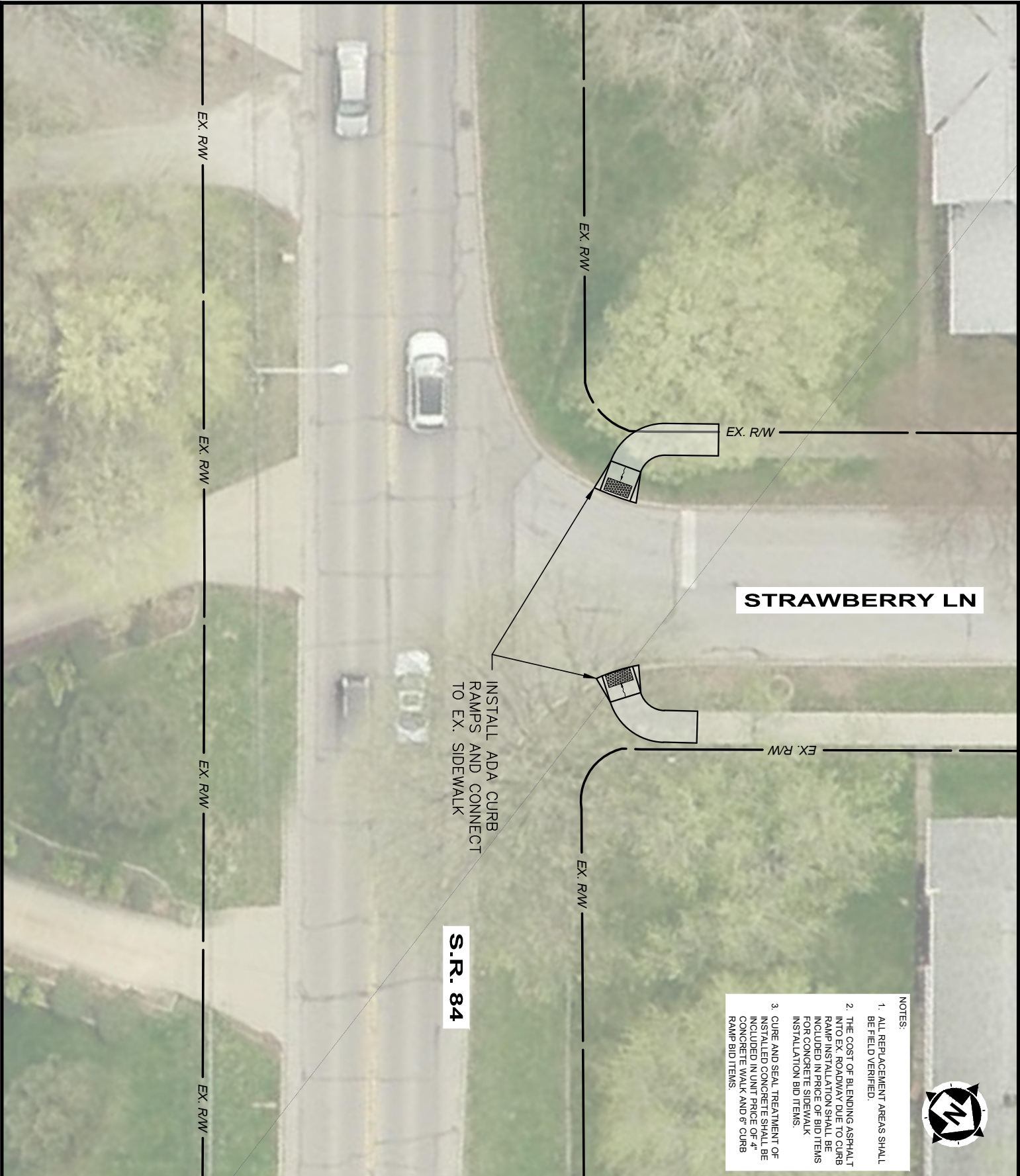


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SHEET 18 OF 33			LAKE COUNTY, OHIO ADA RAMP REPLACEMENT CITY OF WILLOUGHBY S.R. 84 (JOHNNYCAKE RIDGE ROAD)		ISSUE DATE: 3/19/2020
PROJECT NO. 200146			SCALE: 1" = 20'		DESIGNED BY: JNS
DISCIPLINE CIVIL			DRAWN BY: JNS		CHECKED BY: TRL

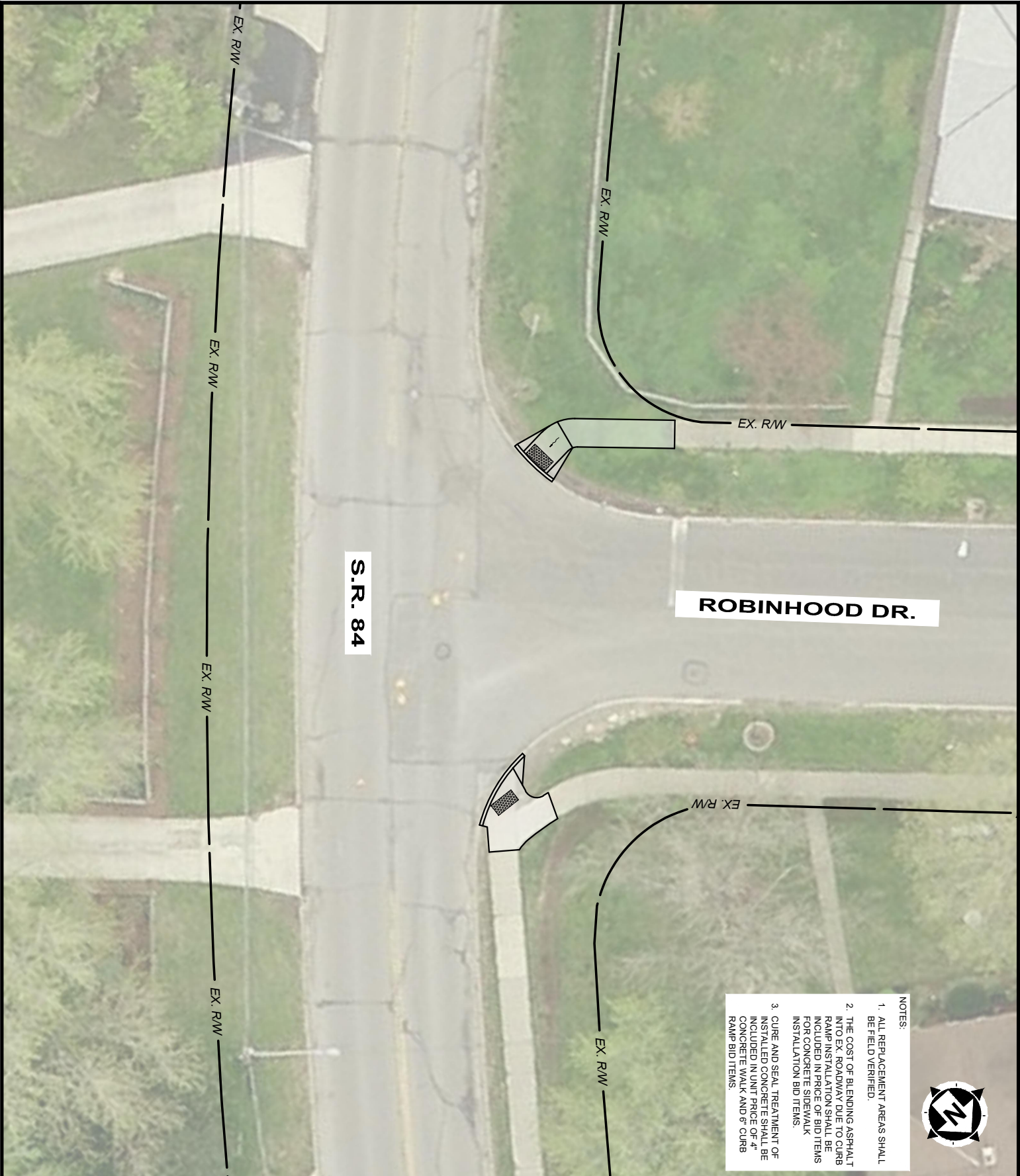




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SHEET OF 18 33		PROJECT NO. 200146		ISSUE DATE: 3/19/2020					
		DISCIPLINE CIVIL						SCALE: 1" = 20'	
		LAKE COUNTY, OHIO ADA RAMP REPLACEMENT CITY OF WILLOUGHBY						DESIGNED BY: JNS	
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LAKE COUNTY, OHIO

ADA RAMP REPLACEMENT

CITY OF WILLOUGHBY

S.R. 84 (JOHNNYCAKE RIDGE ROAD)

ISSUE DATE: 3/19/2020

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CIVIL

SHEET

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OF

33



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SHEET 21 OF 33		CIVIL	DISCIPLINE	PROJECT NO. 200146	LAKE COUNTY, OHIO		ISSUE DATE: 3/19/2020		
					ADA RAMP REPLACEMENT		SCALE: 1" = 20'		
					CITY OF WILLOUGHBY		DESIGNED BY: JNS		
					S.R. 84 (JOHNNYCAKE RIDGE ROAD)		DRAWN BY: JNS		
							CHECKED BY: TRL		




NORTHBRIDGE DR.

S.R. 84

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LAKE COUNTY, OHIO			ISSUE DATE: 3/19/2020		
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CITY OF WILLOUGHBY			DESIGNED BY: JNS		
S.R. 84 (JOHNNYCAKE RIDGE ROAD)			DRAWN BY: JNS		
			CHECKED BY: TRL		
PROJECT NO.	200146				
DISCIPLINE	CIVIL				
SHEET	22	OF			
	33				



**WILLOUGHBY
SCHOOLS / YMCA
ACCESS DRIVE**

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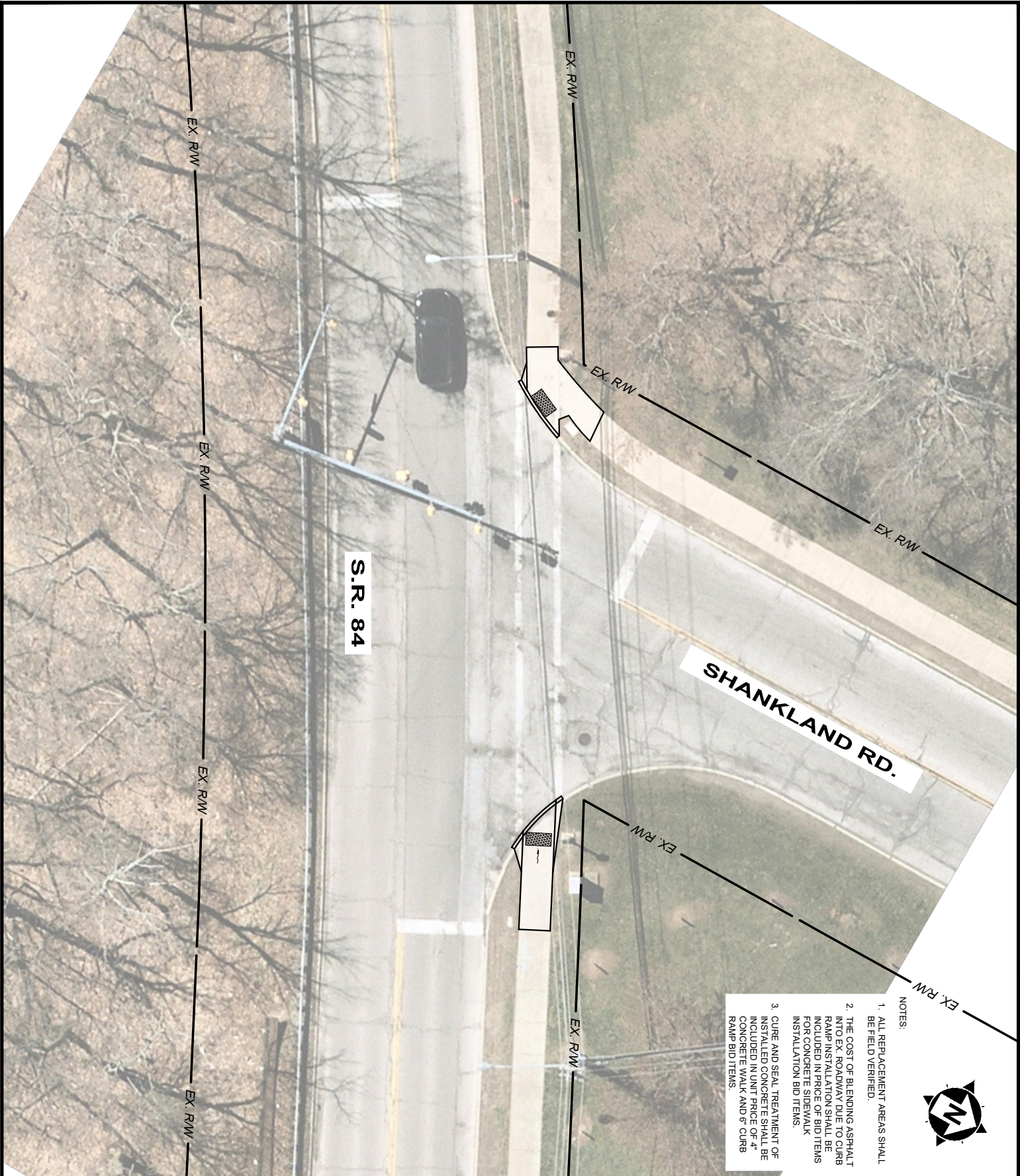
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DISCIPLINE

CIVIL

SHEET OF

23 33



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LAKE COUNTY, OHIO

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DESIGNED BY: JNS

DRAWN BY: JNS

CHECKED BY: TRL



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PROJECT NO.	200146
DISCIPLINE	CIVIL
SHEET OF	24 33



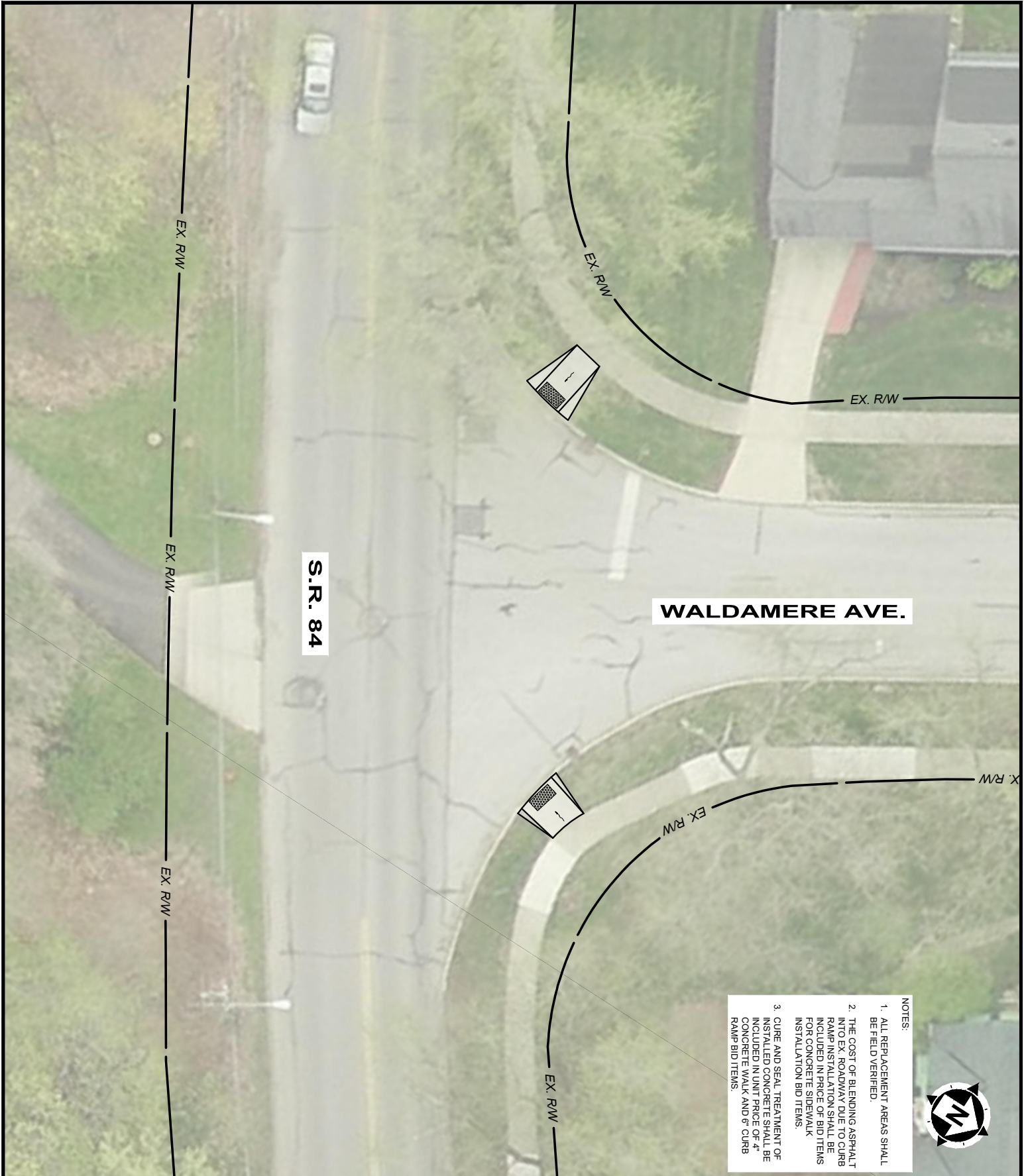
- NOTES:
1. ALL REPLACEMENT AREAS SHALL BE FIELD VERIFIED.
 2. THE COST OF BLENDING ASPHALT INTO EX. ROADWAY DUE TO CURB RAMP INSTALLATION SHALL BE INCLUDED IN PRICE OF BID ITEMS FOR CONCRETE SIDEWALK INSTALLATION BID ITEMS.
 3. CURE AND SEAL TREATMENT OF INSTALLED CONCRETE SHALL BE INCLUDED IN UNIT PRICE OF 4" CONCRETE WALK AND 6" CURB RAMP BID ITEMS.



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SHEET		25	
OF		33	

LAKE COUNTY, OHIO		ISSUE DATE: 3/19/2020	
ADA RAMP REPLACEMENT		SCALE: 1" = 20'	
CITY OF WILLOUGHBY		DESIGNED BY: JNS	
S.R. 84 (JOHNNYCAKE RIDGE ROAD)		DRAWN BY: JNS	
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LAKE COUNTY, OHIO
ADA RAMP REPLACEMENT
CITY OF WILLOUGHBY

S.R. 84 (JOHNNYCAKE RIDGE ROAD)

ISSUE DATE: 3/19/2020
SCALE: 1" = 20'
DESIGNED BY: JNS
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PROJECT NO.
200146

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CIVIL


SHEET
26

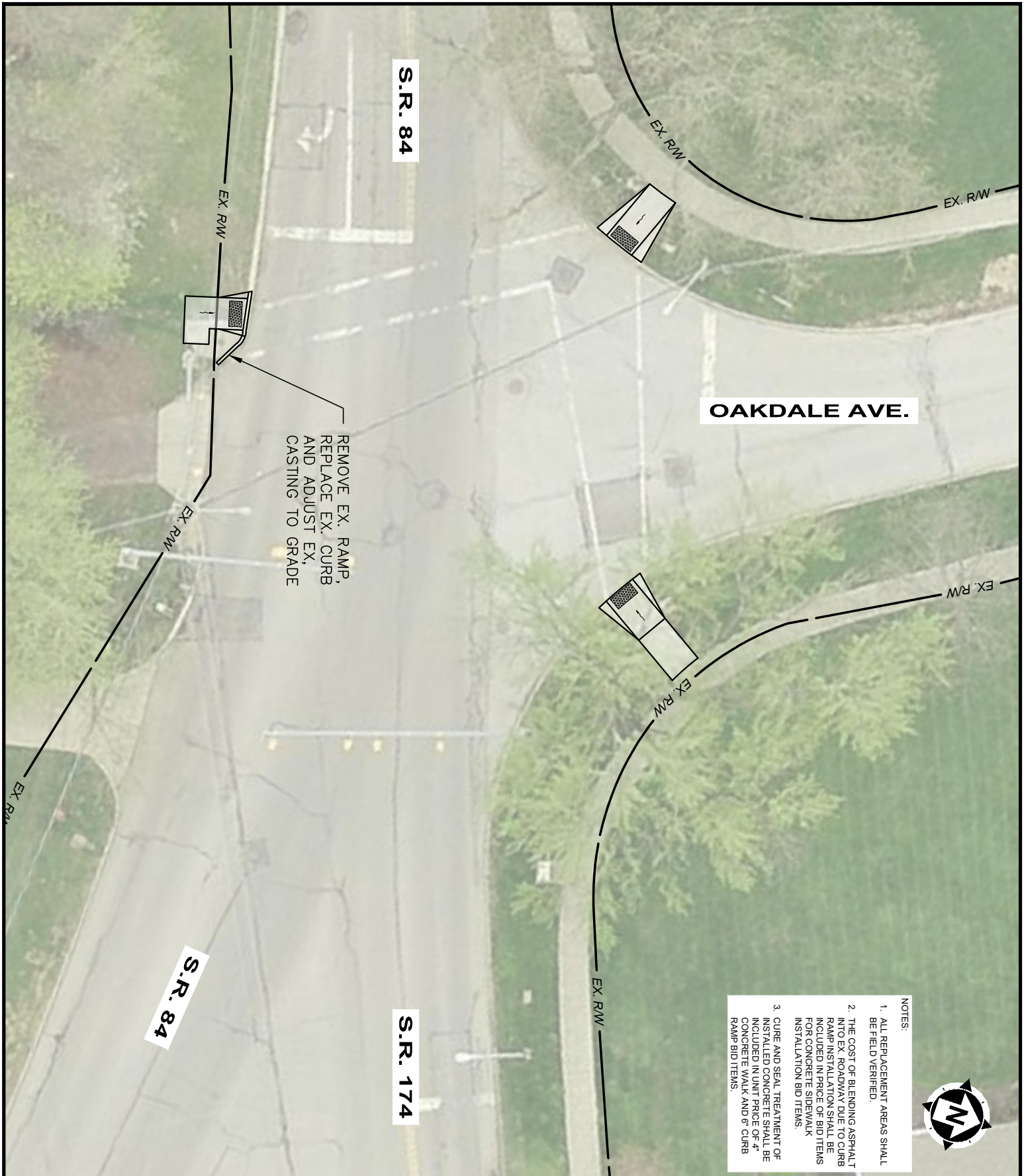
OF
33



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LAKE COUNTY, OHIO ADA RAMP REPLACEMENT CITY OF WILLOUGHBY			ISSUE DATE: 3/19/2020		
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S.R. 84 (JOHNNYCAKE RIDGE ROAD)			DESIGNED BY: JNS		
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PROJECT NO. 200146					
DISCIPLINE CIVIL					
SHEET 27 OF 33					



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LAKE COUNTY, OHIO

ADA RAMP REPLACEMENT

CITY OF WILLOUGHBY

S.R. 84 (JOHNNYCAKE RIDGE ROAD)

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33



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PROJECT NO. 200146			DISCIPLINE CIVIL		
SHEET 29			OF 33		
LAKE COUNTY, OHIO ADA RAMP REPLACEMENT CITY OF WILLOUGHBY			ISSUE DATE: 3/19/2020		
S.R. 84 (JOHNNYCAKE RIDGE ROAD)			SCALE: 1" = 20'		
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KIRTLAND ROAD

S.R. 84

- NOTES:
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LAKE COUNTY, OHIO

ADA RAMP REPLACEMENT

CITY OF WILLOUGHBY

S.R. 84 (JOHNNYCAKE RIDGE ROAD)

ISSUE DATE: 3/19/2020

SCALE: 1" = 20'

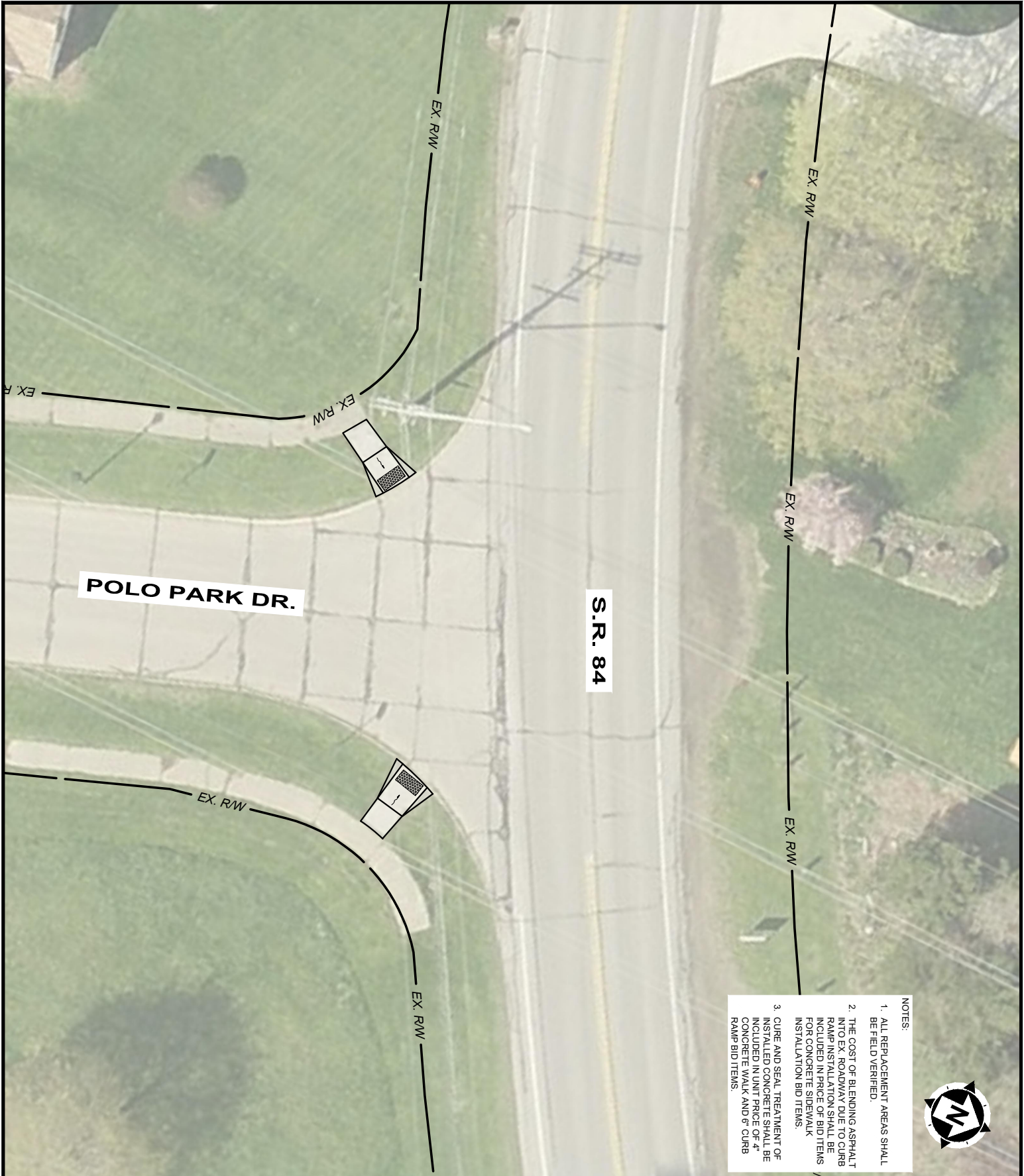
DESIGNED BY: JNS

DRAWN BY: JNS

CHECKED BY: TRL



PROJECT NO.		200146
DISCIPLINE		CIVIL
SHEET	OF	
30	33	



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LAKE COUNTY, OHIO

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S.R. 84 (JOHNNYCAKE RIDGE ROAD)

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LAKE COUNTY, OHIO	
ADA RAMP REPLACEMENT	
CITY OF WILLOUGHBY	
S.R. 84 (JOHNNYCAKE RIDGE ROAD)	

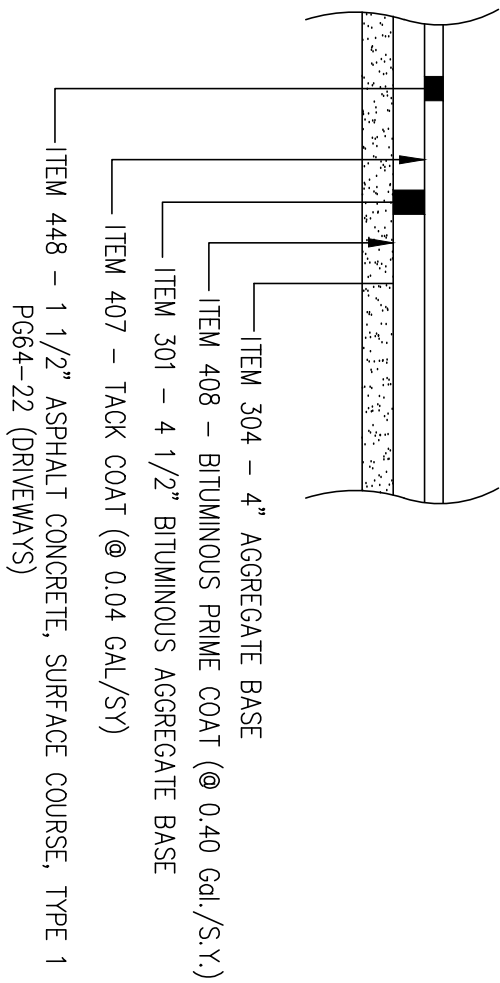
ISSUE DATE:	3/19/2020
SCALE:	1" = 20'
DESIGNED BY:	JNS
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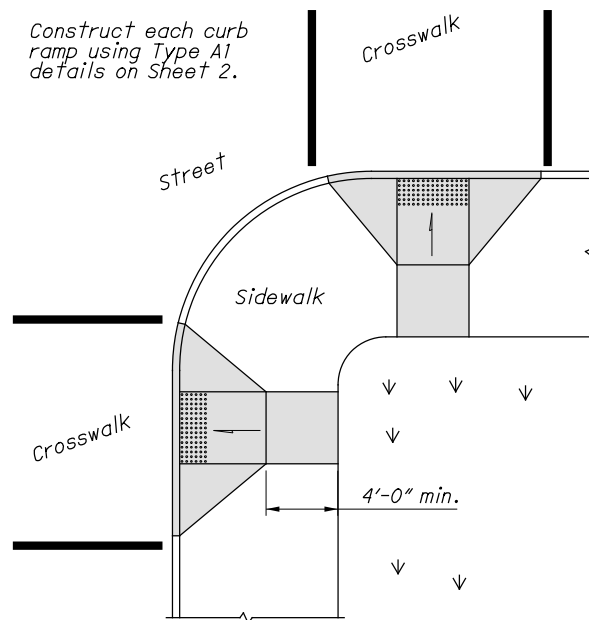


**TYPE "C" PAVEMENT REPLACEMENT
(ASPHALT), DRIVEWAY, APRON OR
PARKING LOT,
AS PER PLAN**
(Residential Asphalt Drives)

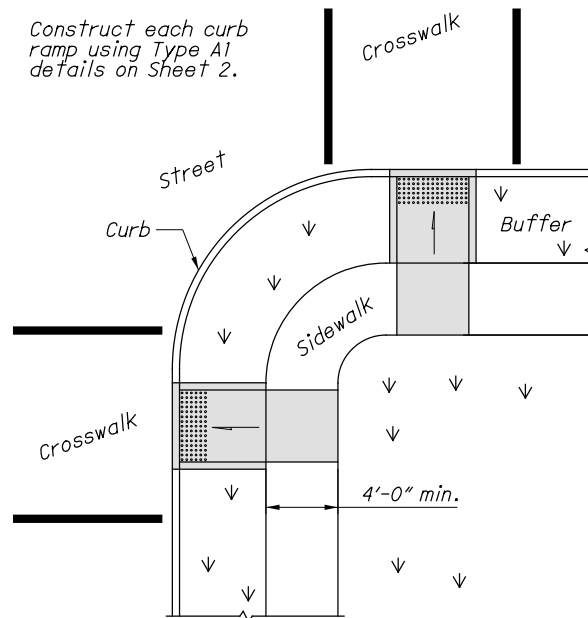
NOTES:

- 1. PROPOSED CURB RAMPS SHALL BE
INSTALLED PER ODOT SCD BP-7.1

LAKE COUNTY, OHIO ADA RAMP REPLACEMENT CITY OF WILLOUGHBY		ISSUE DATE: 3/19/2020		
		SCALE: 1" = 20'		
DETAILS		DESIGNED BY: JNS		
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PROJECT NO. 200146	DISCIPLINE CIVIL	SHEET 33	OF 33	

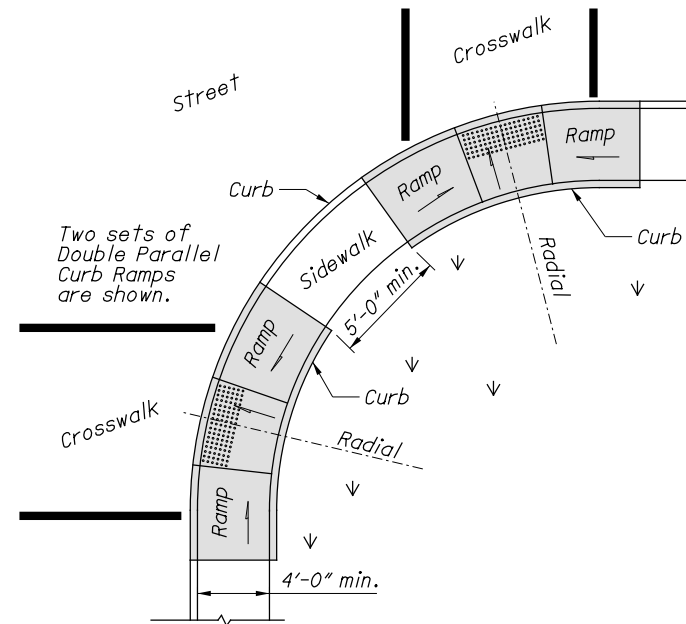


Use curb ramps with flared sides at locations with wide sidewalks.



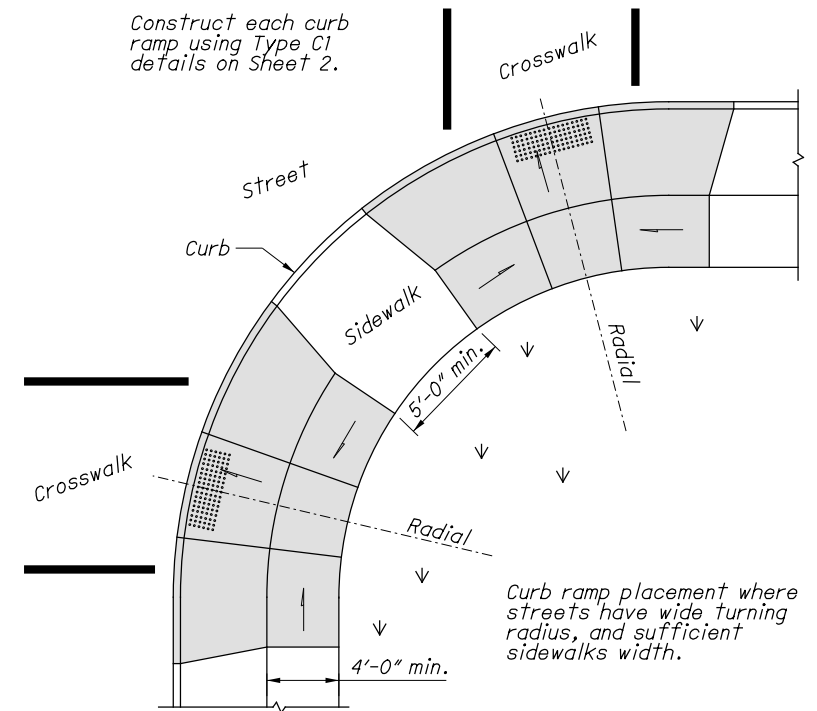
Use curb ramps with returned curbs where buffer is wide enough to accommodate ramp slope.

PERPENDICULAR CURB RAMPS



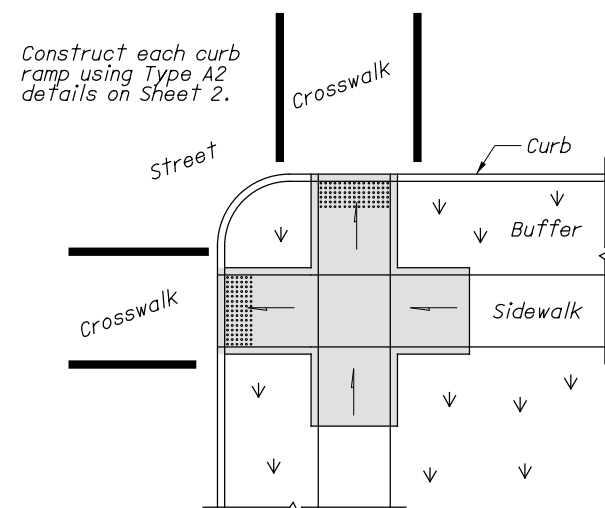
Place on streets having wide turning radius and where sidewalks are narrow.

PARALLEL CURB RAMPS



Curb ramp placement where streets have wide turning radius, and sufficient sidewalks width.

COMBINATION CURB RAMPS



NOTES

GENERAL: This drawing shows curb ramp types details and placement examples for curb ramp construction, including the installation of detectable warnings.

Curb ramp types are shown on Sheet 2 and include Perpendicular, Parallel, and Combined types as specified to be constructed in the locations shown on the project plans.

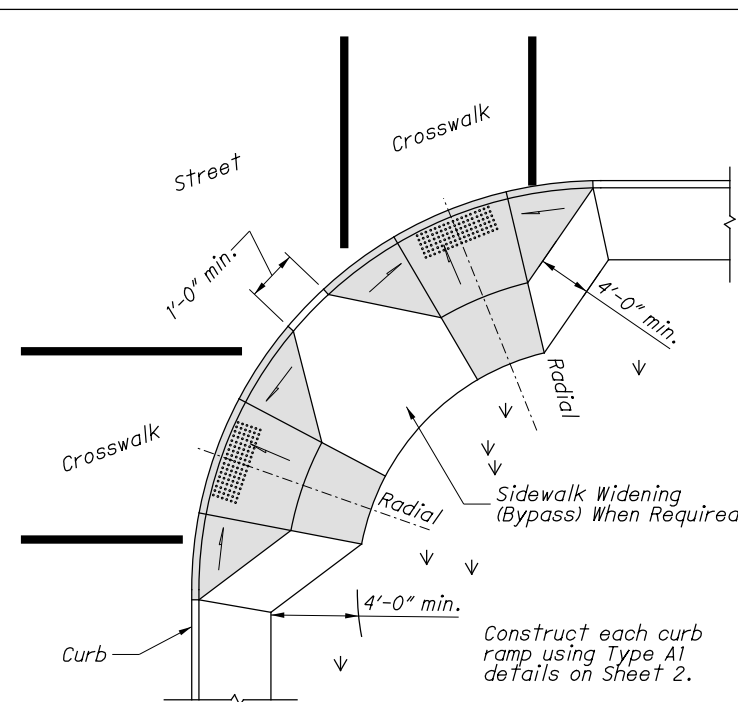
Curb ramps added to an existing intersection or walk should be individually detailed on the project plans to assure that the design is appropriate for site constraints and all items can be constructed to ADA standards. The contractor may adjust the placement of curb ramps if existing field conditions warrant with the approval of the Engineer.

PAYMENT: Measure and pay for the ramp area within the shaded limits of this drawing as Item 608 Curb Ramp, Square Foot. This includes the cost of any curb or curb and gutter, detectable warnings, landing areas and any additional materials, installation, grading, forming, and finishing required within the shaded area.

Work beyond the shaded ramp/landing area is paid for as curb (609) and walk (608). Removal of existing curb, walk (or existing curb ramps) are paid under Item 202.

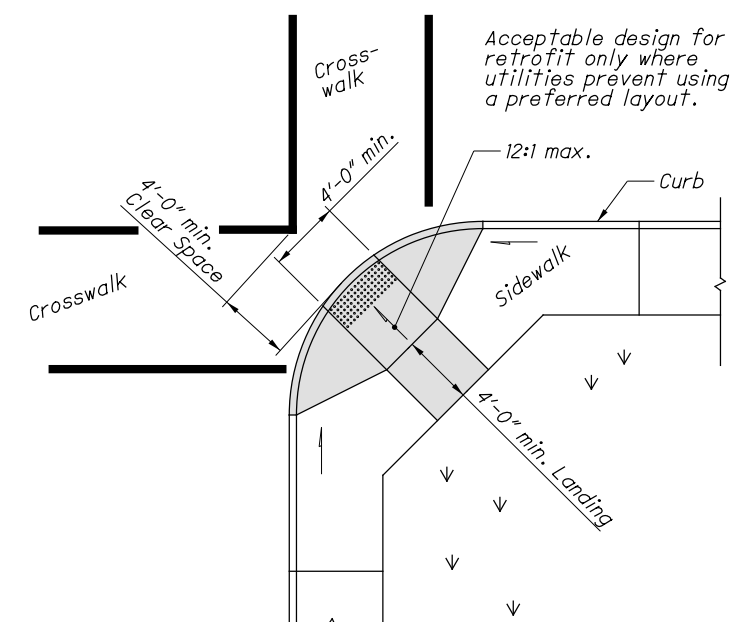
For at-grade crossing locations where only detectable warnings are required in order to achieve ADA compliance, measure and pay for the strip of detectable warnings as Item 608 Detectable Warning, Square Foot. The work to cast the tiles in place will also require removal of existing pavement (Item 202) to the nearest joint, or if no joint exists, a minimum of 4 feet.

PREFERRED CONSTRUCTION PLACEMENT



Acceptable design on corners with wide turning radius where user is able to maneuver within crosswalk limits so as not to encroach into adjacent traveled lanes.

PERPENDICULAR RAMPS

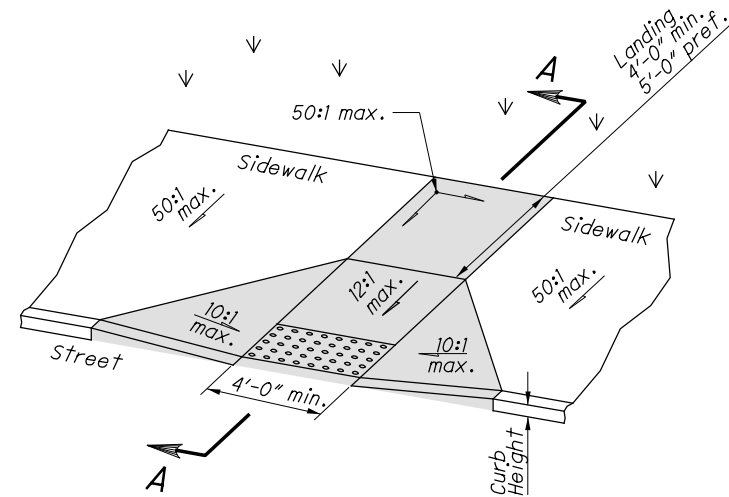


Use this design only for existing walks, and when site constraints prohibit other designs. The diagonal Type D ramp may be constructed as either a Perpendicular, Parallel or Combination curb ramp type. Avoid using where curb radii are less than 20'-0" .

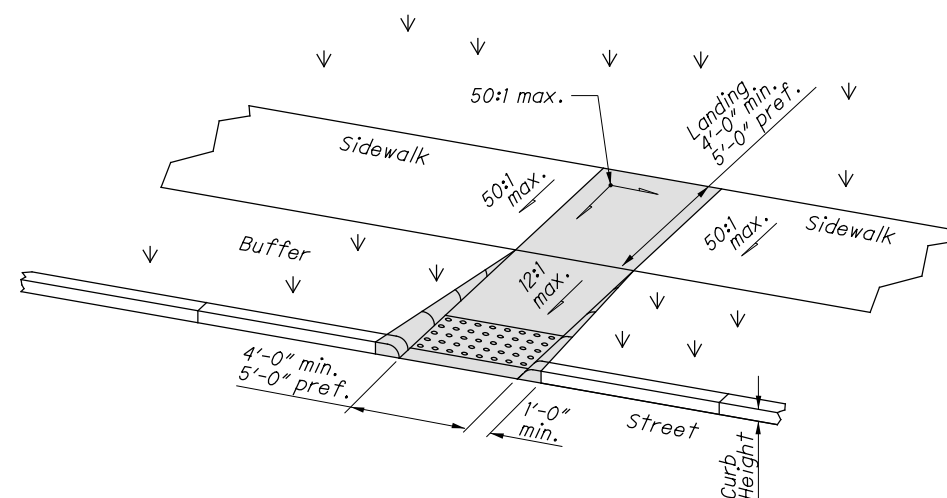
DIAGONAL RAMP (Type D)

ACCEPTABLE CONSTRUCTION PLACEMENT

STATE OF OHIO DEPARTMENT OF TRANSPORTATION ADMINISTRATOR	REVISION DATE
David L. Holstein	7-20-2018
STUDY ENGINEER	D. Fisher
OFFICE OF ROADWAY ENGINEERING	
STANDARD ROADWAY CONSTRUCTION DRAWING NEW CURB RAMPS (with Detectable Warnings)	
SCD NUMBER BP-7.1	
THIS DRAWING REPLACES BP-7.1 DATED 7-18-14.	
1	3

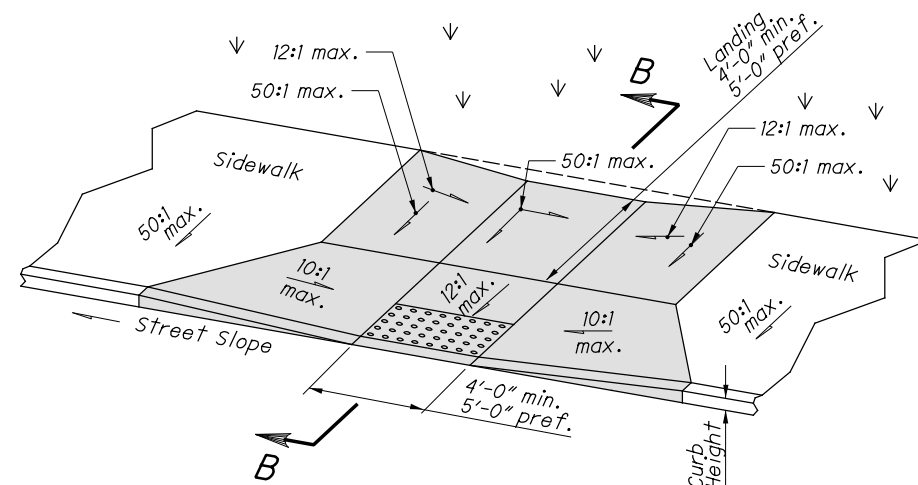


Type A1 (Perpendicular with flared sides)

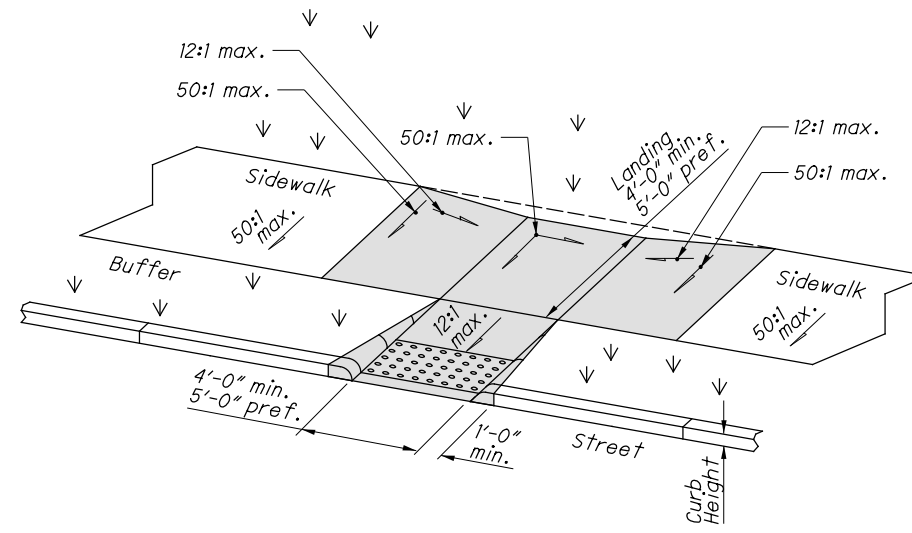


Type A2 (Perpendicular with returned curb)

PERPENDICULAR CURB RAMP DETAILS

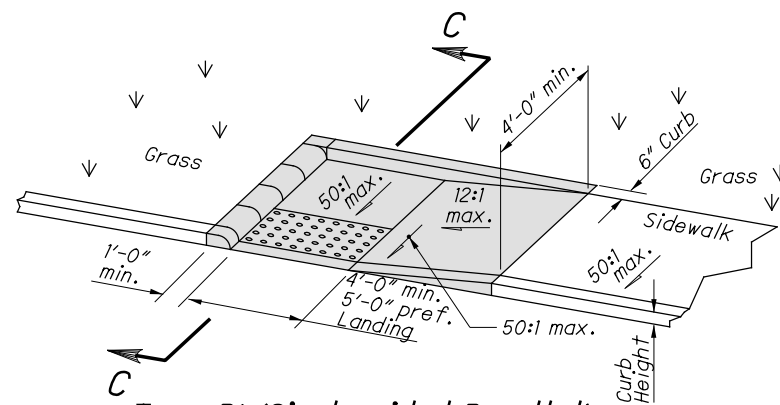


Type C1 (Combined with flared sides)

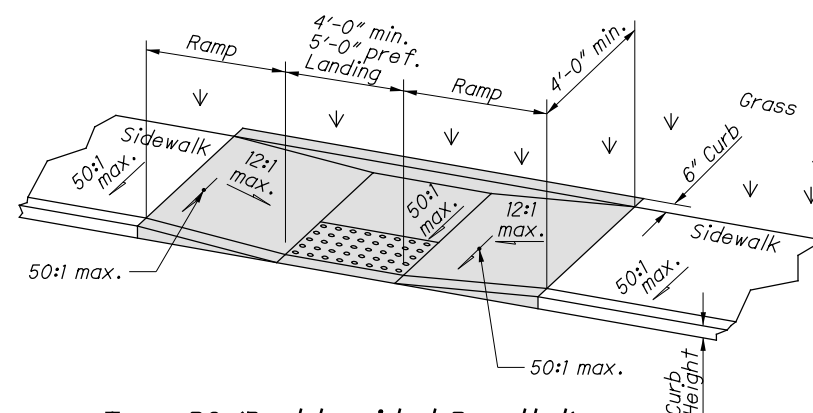


Type C2 (Combined with returned curb)

COMBINED CURB RAMP DETAILS

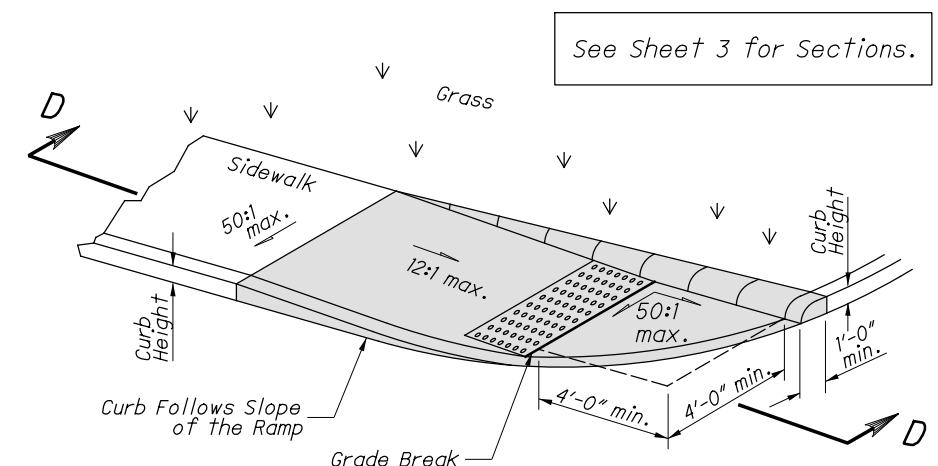


Type B1 (Single sided Parallel)



Type B2 (Double sided Parallel)

PARALLEL CURB RAMP DETAILS



Type B3 (Single sided Parallel)

NOTES CONTINUED

The running slope of the curb ramp shall be a 12:1 maximum or flatter. In existing sidewalks, where the maximum ramp slope is not feasible due to site constraints (e.g. utility poles or vaults, right-of-way limits) it may be reduced as follows:

- A) 10:1 for a max. rise of 6",
- B) 8:1 for a max. rise of 3",
- C) 6:1 over a max. run of 2'-0" for historic areas where a flatter slope is not feasible.

To prevent chasing the grade indefinitely, the transition from existing sidewalk to the shaded curb ramp area is not required to exceed 15 feet in length.

While ramps may be skewed to the crosswalk, the entire lower landing area must fall within the cross walk that the ramp serves and cannot be located in the traveled lane of opposing traffic.

The counter slope of the gutter or street at the foot of a curb ramp, landing, or blended transitions shall be 20:1 or flatter.

The bottom edge of the ramp shall change planes perpendicular to the landing.

The edge of the curb shall be flush with the edge of the adjacent pavement and gutter and surface slopes that meet grade breaks shall also be flush.

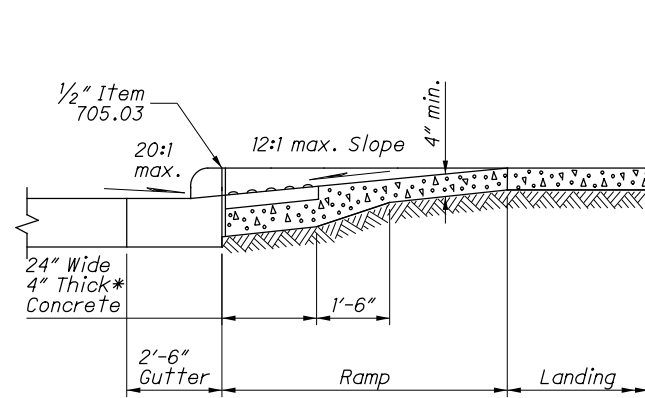
Ramp landings shall be 4' min. x 4' min. with a 50:1 or flatter cross slope and running slope.

DETECTABLE WARNINGS: Install Detectable Warnings on each curb ramp with approved materials, as shown on Sheet 3. Install these proprietary products as per manufacturer's written instructions.

DRAINAGE: Contractor is to ensure the base of each constructed curb ramp allows for proper drainage, without exceeding allowable cross slope or ramp slopes. Vertical change in level exceeding $\frac{1}{8}$ " between the 1) pavement and gutter, and 2) gutter and ramp, are not allowed.

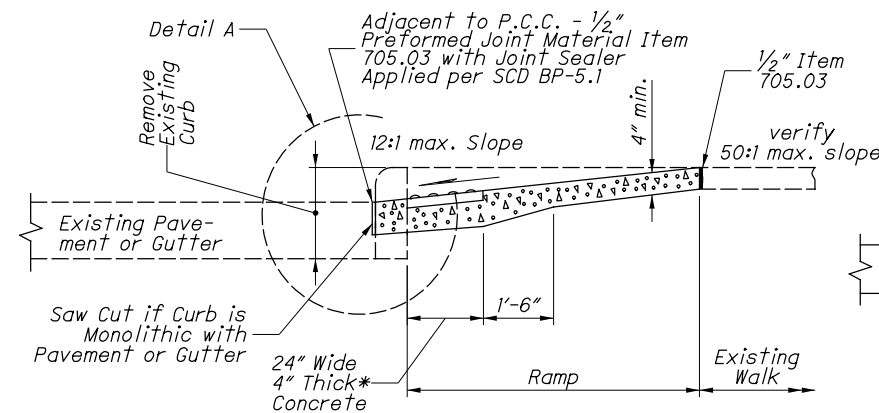
SURFACE TEXTURE: Texture concrete surfaces by coarse brooming transverse to the ramp slopes to be rougher than the adjacent walk.

JOINTS: Provide expansion joints in the curb ramp as extensions of walk joints and consistent with Item 608.03 requirements for a new concrete walk. Provide a $\frac{1}{2}$ " Item 705.03 expansion joint filler around the edge of ramps built in existing concrete walks. Lines shown on this drawing indicate the ramp edges and slope changes, and do not necessarily indicate joint lines.

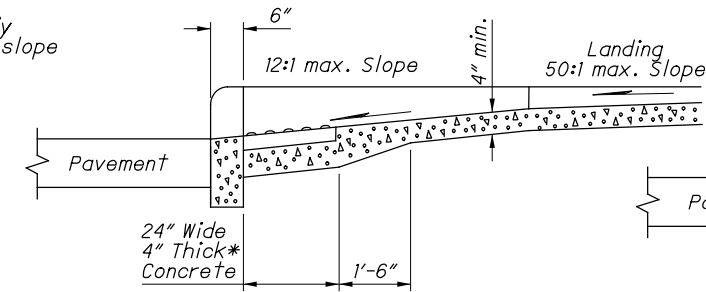


New gutter shown.

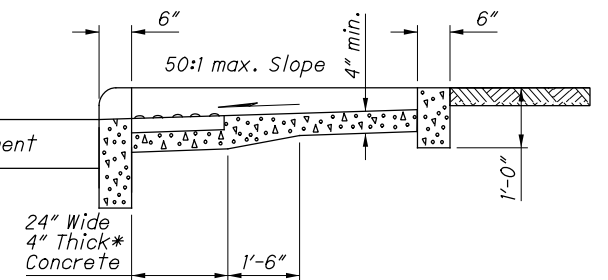
**SECTION A-A
NORMAL DETAIL**
See Sheet 2.



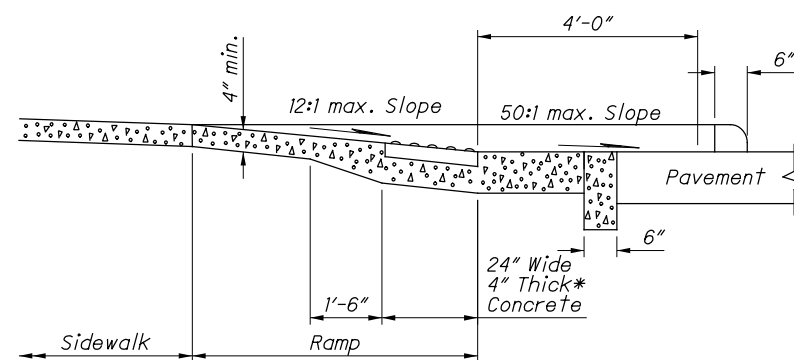
**SECTION A-A
EXISTING WALK DETAIL**
See Sheet 2.



SECTION B-B
See Sheet 2.



SECTION C-C
See Sheet 2.



SECTION D-D
See Sheet 2.

*Where possible, pour ramp area integral with the curb, otherwise use 6" thick walk.

DETECTABLE WARNINGS NOTES

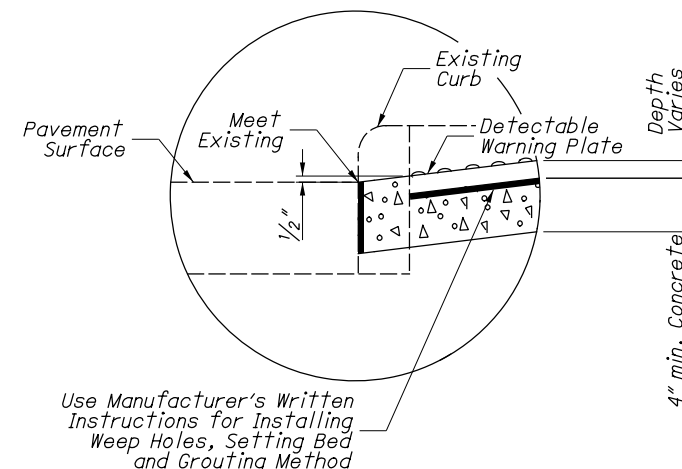
GENERAL: Detectable Warnings are a distinctive surface pattern of truncated domes which are detectable by cane or underfoot to alert people with vision impairments of their approach to streets and hazardous drop-offs.

PLACEMENT: Detectable warnings are to be installed at any location where pedestrians might cross paths with vehicular traffic lanes, such as the base of curb ramps or at blended curbs. A 24" strip of domes is to be installed for the full width of the ramp or walk. Typical street corner placement locations are shown on Sheet 1.

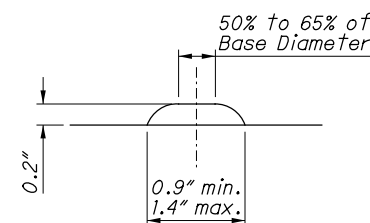
The depth of concrete underneath detectable warning products shall be a minimum of 4". See DETAIL A.

ALIGNMENT: Truncated domes should be aligned with the primary direction of the ramp as shown on the DETECTABLE WARNING ALIGNMENT Detail. Normally the detectable warnings should be flush with the back of the curb, but for skewed conditions see DETECTABLE WARNING ALIGNMENT Detail. For non-standard layouts, detectable warning materials may have to be mitered and placed segmentally.

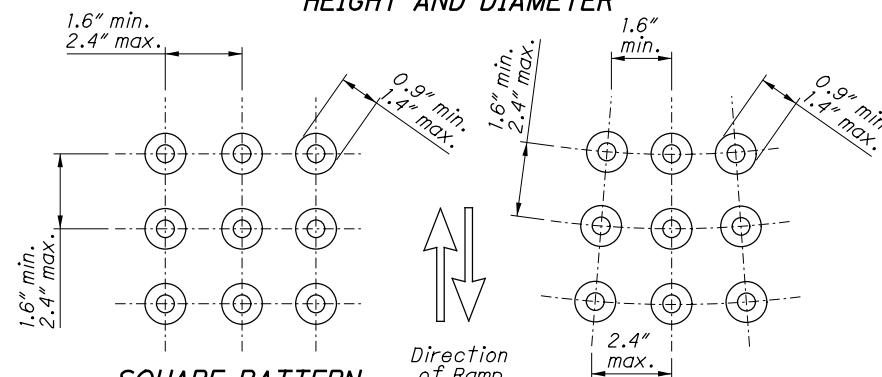
PRODUCTS & COLORS: Color of the detectable warnings should contrast with surrounding concrete walk and ramp. Black is not an acceptable color. Approved products and guidance on color may be found on the Office of Roadway Engineering Service's Detectable Warnings Approved List. Install products as per manufacturer's printed instructions.



DETAIL A



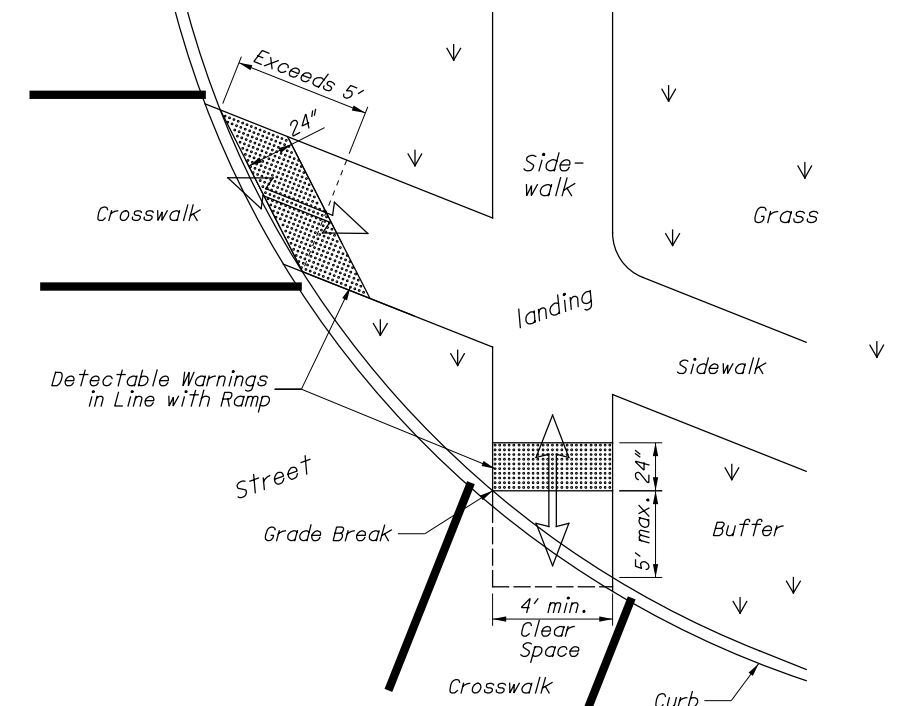
HEIGHT AND DIAMETER



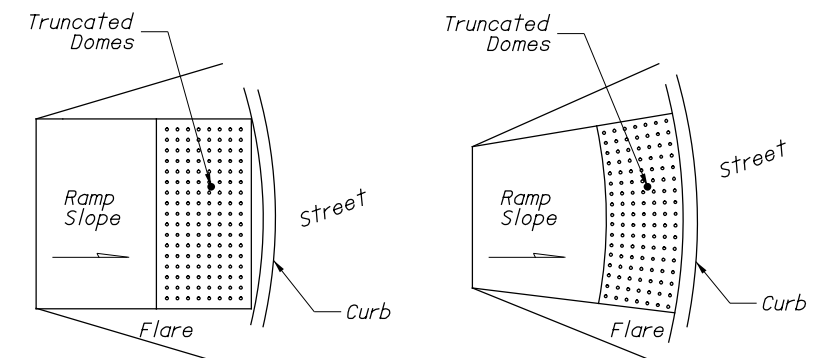
**SQUARE PATTERN,
PARALLEL ALIGNMENT**

RADIAL ALIGNMENT

TRUNCATED DOMES DETAILS



DETECTABLE WARNING ALIGNMENT



DOME ALIGNMENT ON RADIUS CURB