

MINNESOTA DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLAN FOR MILLING & BITUMINOUS OVERLAY

LOCATED ON UNIVERSITY AVE. FROM VANDALIA ST. TO RICE ST.

STATE PROJ. NO. 6208-33 (T.H.52=104)

MINN. PROJ. NO. _____
 GROSS LENGTH 22,225 FEET 4.21 MILES
 BRIDGES-LENGTH 0.00 FEET 0.00 MILES
 EXCEPTIONS-LENGTH 0.00 FEET 0.00 MILES
 NET LENGTH 22,225 FEET 4.21 MILES
 REF. POINT _____ TO REF. POINT _____

STATE PROJ. NO. _____

MINN. PROJ. NO. _____
 GROSS LENGTH _____ FEET _____ MILES
 BRIDGES-LENGTH _____ FEET _____ MILES
 EXCEPTIONS-LENGTH _____ FEET _____ MILES
 NET LENGTH _____ FEET _____ MILES
 REF. POINT _____ TO REF. POINT _____

FED. PROJ. NO. STATE FUNDS

GOVERNING SPECIFICATIONS

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS AMENDED BY THE MAY 2, 1994, SUPPLEMENTAL SPECIFICATIONS SHALL GOVERN.

INDEX

SHEET NO.	DESCRIPTION
1	TITLE
2	ESTIMATED QUANTITIES AND CONSTRUCTION NOTES
3	TYPICAL SECTIONS AND STANDARD PLATES
4-11	NEW CONSTRUCTION
12	STRIPING DETAILS AND NOTES
13-20	STRIPING PLAN

THIS PLAN CONTAINS 20 SHEETS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE 3/7/94 REG. NO. 19199 ENGR. *William J. OCH*
 DESIGN SQUAD J. OCH

RECOMMENDED FOR APPROVAL *DeLacey* 1/10/95
 METRO DIVISION ENGINEER

RECOMMENDED FOR APPROVAL _____ 19____
 RECOMMENDED FOR APPROVAL *William S. Eide* 3/11/94
 METRO DIVISION MATERIALS ENGINEER

RECOMMENDED FOR APPROVAL _____ 19____
 RECOMMENDED FOR APPROVAL *John R. Hines* 3/11/94
 METRO DIVISION TRAFFIC ENGINEER

RECOMMENDED FOR APPROVAL *Robert J. ...* 2-9-95
 STATE PRE-LETTING ENGINEER

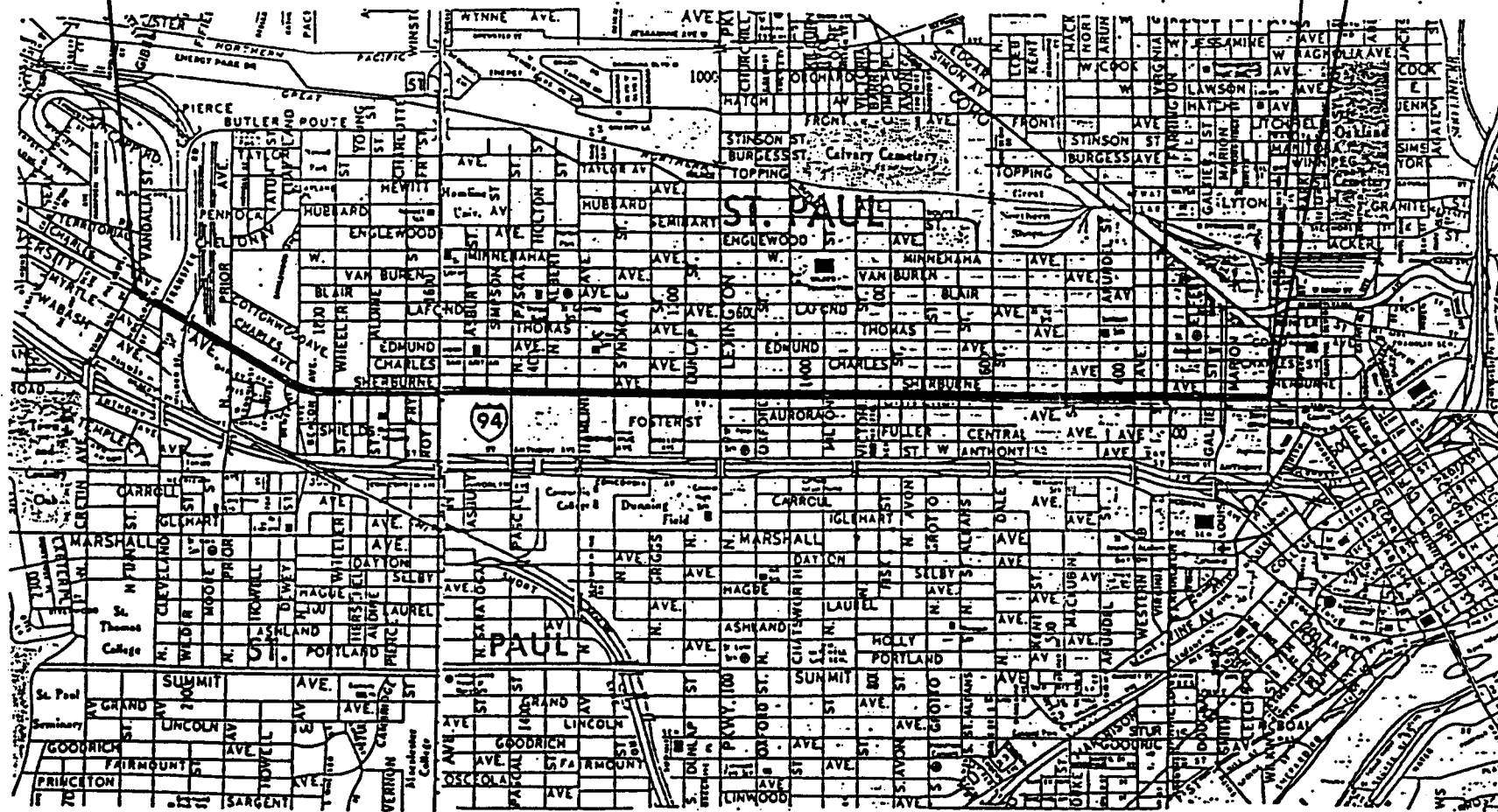
RIGHT OF WAY APPROVAL *William J. OCH* 2-9-95
 STATE RIGHT OF WAY ENGINEER
 APPROVED 2-10-95 *Levell R. ...*
 STATE DESIGN ENGINEER

28-293

BEG. S.P. 6208-33
 STA. 154+70

EQU STA. 124+60.84
 STA. 376+65.17 =

END S.P. 6208-33
 STA. 124+31



SCALES

PLAN	_____
PROFILE	_____
INDEX MAP	_____
GENERAL LAYOUT	_____

DESIGN DESIGNATION - TIER NO.

ADT (Current Year) _____	Design Speed _____ MPH
ADT (Future Year) _____	Based on _____ Sight Distance
DHV (Design Hr. Vol.) _____	Height of eye _____ Height of object _____
D (Directional Distr.) _____ %	Design Speed not achieved at: _____
T (Heavy Commercial) _____ %	STA. _____ TO STA. _____ MPH
	STA. _____ TO STA. _____ MPH



PROJECT LOCATION
 COUNTY : RAMSEY
 DISTRICT : METRO

FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

STATE PROJ. NO. 6208-33 CHARGE IDENTIFIER

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

10/10/95 - P. 10

CONSTRUCTION NOTES

ALL BITUMINOUS, CONCRETE, AND GRADING MATERIAL REMOVED DURING CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR, AND EITHER RECYCLED OR DISPOSED OF OUTSIDE OF THE RIGHT-OF-WAY.

THE TACK COAT MATERIAL SHALL BE AN EMULSIFIED ASPHALT (CSS-1 OR CSS-1H). THE TACK COAT APPLIED TO MILLED BITUMINOUS OR CONCRETE SURFACES SHALL HAVE WATER ADDED AT A RATE OF 30 TO 40 PERCENT OF THE VOLUME OF THE EMULSION. THIS WATER SHALL BE EXCLUDED FROM THE PAY QUANTITIES. THE TACK COAT SHALL BE APPLIED AT A UNIFORM RATE .03 TO .05 GALLONS PER SQUARE YARD BETWEEN BITUMINOUS LAYERS, AND AT .07 TO .10 GALLONS PER SQUARE YARD ON MILLED SURFACES. THE APPLICATION RATES ARE BASED ON UNDILUTED TACK MATERIAL.

IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO CONTACT VARIOUS UTILITY COMPANIES FOR UNDERGROUND UTILITY LOCATIONS BEFORE ANY CONSTRUCTION BEGINS.

BEFORE PLACING BITUMINOUS MATERIAL, THE AREA SHALL BE CLEARED OF ALL LOOSE DEBRIS OR CRACK SEAL MATERIALS FROM THE MILLED SURFACE AS DIRECTED BY THE ENGINEER. DEPRESSIONS WHICH RESULT AFTER REMOVAL OPERATIONS, WHICH ARE GREATER THAN TWO INCHES IN DEPTH AND FOUR INCHES IN WIDTH, AND JOINTS AND CRACKS THAT ARE GREATER THAN 1-1/2" IN DEPTH AND WIDTH SHALL BE AIR BLASTED WITH HIGH PRESSURE (100 P.S.I.) EQUIPMENT, SWEEP AND PATCHED WITH SPEC. 2231 PATCHING MIXTURE AS DIRECTED BY THE ENGINEER. PATCHING OF THESE AREAS SHALL BE DONE AHEAD OF PAVING OPERATION AND ROLLED WITH A PNEUMATIC TIRED ROLLER.

MILLING OPERATIONS SHALL BE CONDUCTED SO THAT THE ENTIRE PAVEMENT WIDTH IS MILLED TO A FLUSH SURFACE AT THE END OF EACH WORK PERIOD, WHENEVER THE PAVEMENT IS OPEN TO TRAFFIC. TO FURTHER PROVIDE FOR TRAFFIC, THE CONTRACTOR SHALL ALSO CONSTRUCT TEMPORARY BITUMINOUS TAPERS AT INTERSECTING STREETS, AROUND UTILITY APPURTENANCES, AND AT ALL APPROPRIATE ENTRANCES DURING THE MILLING OPERATIONS, TO BE INCIDENTAL AND NO DIRECT COMPENSATION WILL BE MADE.

STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	EST. QUAN.	FINAL
2021.501	MOBILIZATION	LUMP SUM	1	
0563.601	TRAFFIC CONTROL	LUMP SUM	1	
2232.501	MILL BITUMINOUS SURFACE (1.5")	SQ. YD.	221350	
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	22135	
2340.508	TYPE 41 WEARING COURSE MIXTURE	TON	18260	
2231.501	BITUMINOUS PATCHING MIXTURE (1)	TON	50	
0564.603	4" BROKEN LINE WHITE-POLY PREFORMED	LIN. FT.	10676	
0564.603	4" SOLID LINE WHITE-POLY PREFORMED	LIN. FT.	14733	
0564.603	12" SOLID LINE WHITE-POLY PREFORMED	LIN. FT.	6062	
0564.603	4" DOUBLE SOLID LINE YELLOW-POLY PREFORMED(3)	LIN. FT.	375	
0564.602	PAVT MESSAGE (LEFT ARROW) POLY PREFORMED	EACH	119	
0564.602	PAVT MESSAGE (RIGHT ARROW) POLY PREFORMED	EACH	7	
2580.502	TEMPORARY LANE MARKING (4) (2)	LIN. FT.	4166	
2506.522	ADJUST FRAME AND RING CASTING (1)	EACH	6	
0504.602	ADJUST GATE VALVE (1)	EACH	6	
0565.602	LOOP DETECTOR 6'X15'	EACH	20	

- (1) TO BE USED AT THE DISCRETION OF THE ENGINEER.
- (2) CONSISTS OF 3416 LINEAL FEET WHITE AND 750 LINEAL FEET YELLOW.
- (3) TO BE MEASURED AS ONE LINE.
- (4) THE CONTRACTOR MAY OPT TO PAINT IN LIEU OF TEMPORARY LANE MARKING. HOWEVER, WHITE SKIPS WILL BE PAID FOR AT MAXIMUM OF 4' LENGTHS.

28-293

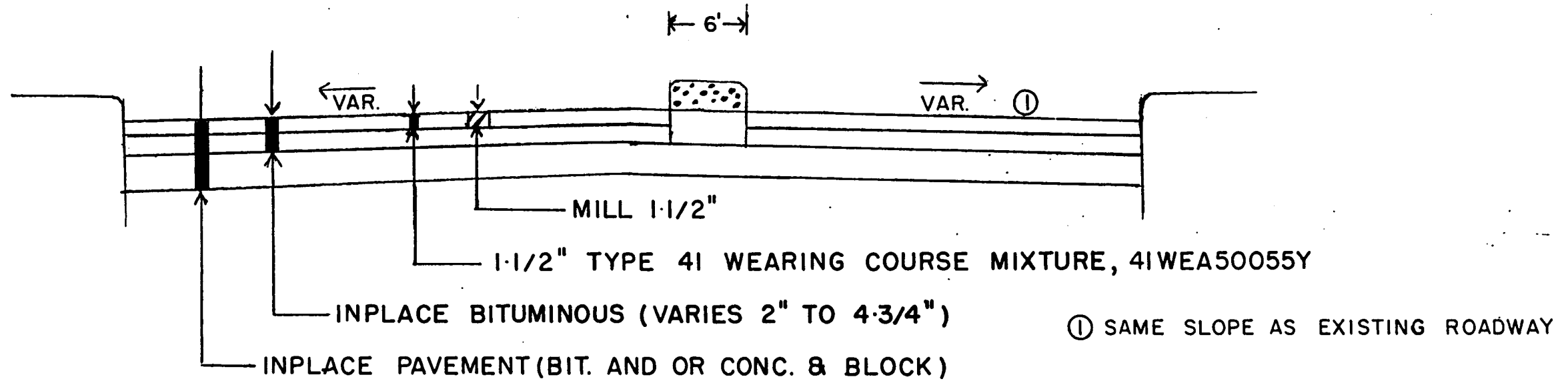
ESTIMATED QUANTITIES
CONSTRUCTION NOTES

CERTIFIED BY *[Signature]* REG. NO. 19149 2/9 1995
PROFESSIONAL ENGINEER

State Proj. No. 6208-33

Sheet No. 2 of 20 Sheets

UNIVERSITY AVE.
(VANDALIA ST. TO RICE ST.)



The following Standard Plates, approved by the Federal Highway Administration, shall apply on this project.

STANDARD PLATES	
PLATE NO.	DESCRIPTION
4010G	CONCRETE SHORT CONE AND ADJUSTING RING
4101C	RING CASTING FOR CATCH BASIN OR MANHOLE
4108F	MANHOLE ADJUSTING RINGS (CAST IRON)
4110E	COVER CASTING FOR MANHOLE
4154B	CATCH BASIN GRATE CASTING
7111	INSTALLATION AND REINFORCEMENT OF CATCH BASIN CASTINGS
8000I	STANDARD BARRICADES
8130D	SAWCUT LOOP DETECTOR

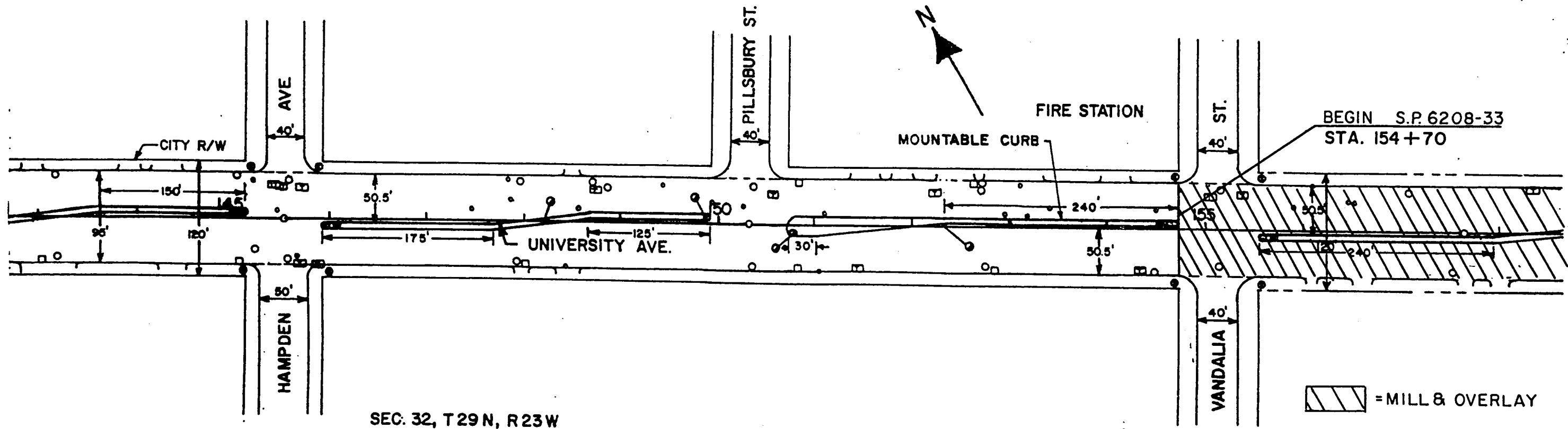
28-293

TYPICAL SECTIONS
STANDARD PLATES
Sheet No. 3 of 20 Sheets

CERTIFIED BY *Richard Ben* REG. NO. 19149 2/9 1995
PROFESSIONAL ENGINEER

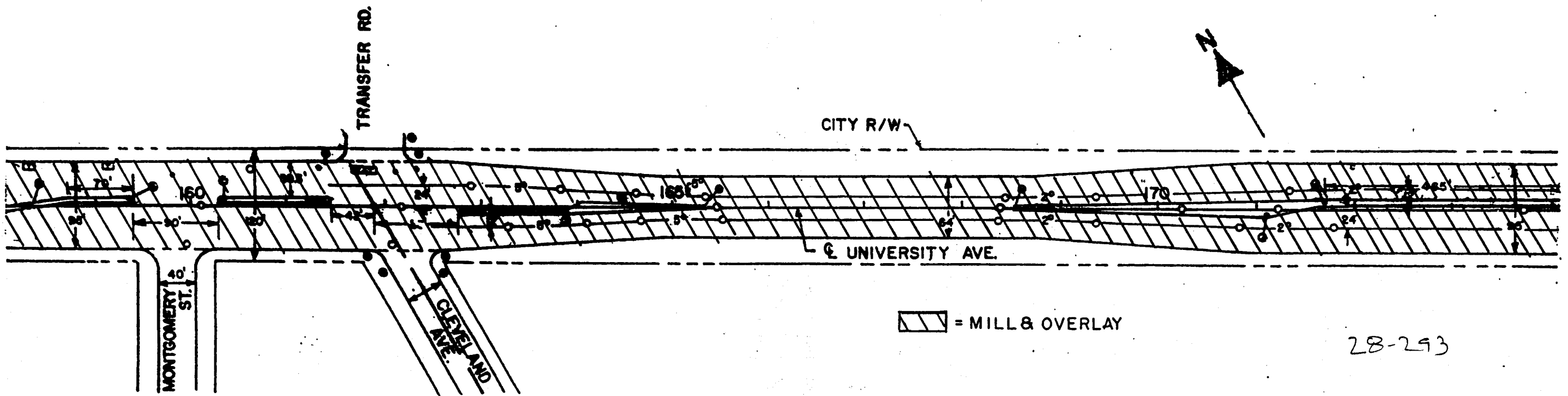
State Proj. No. 6208-33

TELETYPE POST-12-11-84 NR0378



SEC. 32, T29 N, R23 W

= MILL & OVERLAY



SEC. 32, T29W, R23W

SEC. 33, T29, R23W

= MILL & OVERLAY

28-293

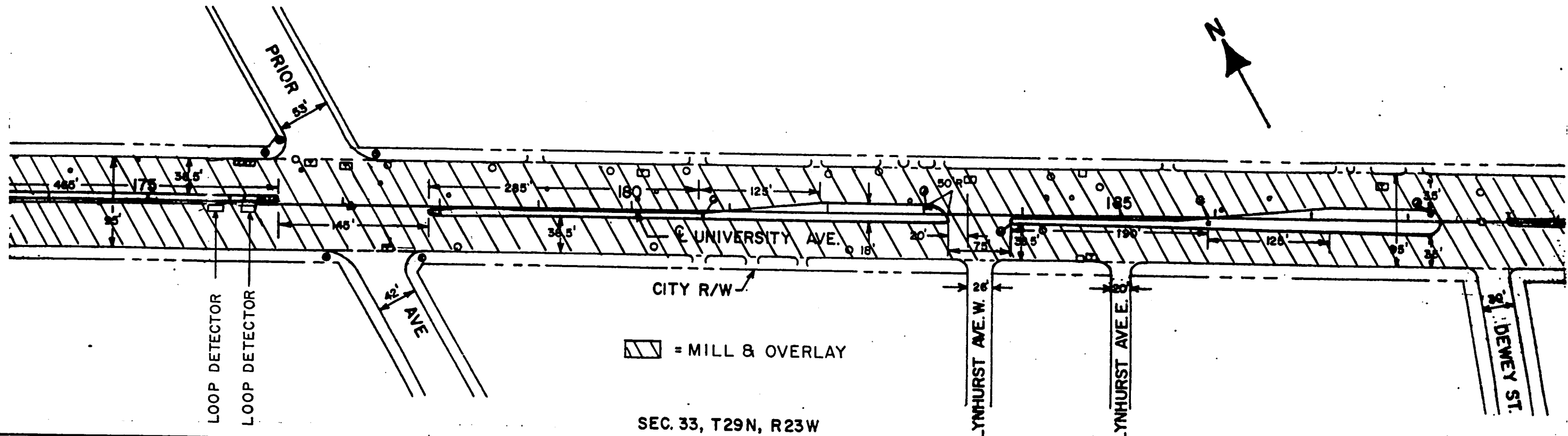
CERTIFIED BY *Richard G. ...* REG. NO. 19149 2/9 1995
PROFESSIONAL ENGINEER

State Proj. No. 6208-33

CONSTRUCTION

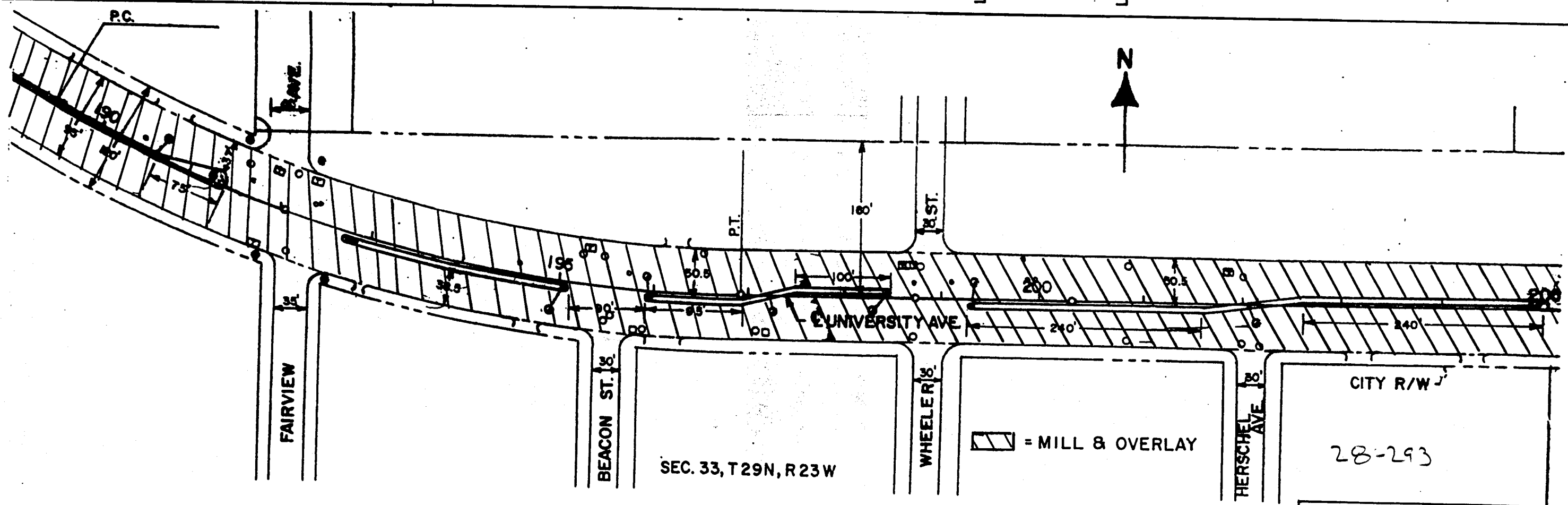
Sheet No. 4 of 20 Sheets

TELEDYNE POST-IT 3/87 NF0598



▨ = MILL & OVERLAY

SEC. 33, T29N, R23W



▨ = MILL & OVERLAY

SEC. 33, T29N, R23W

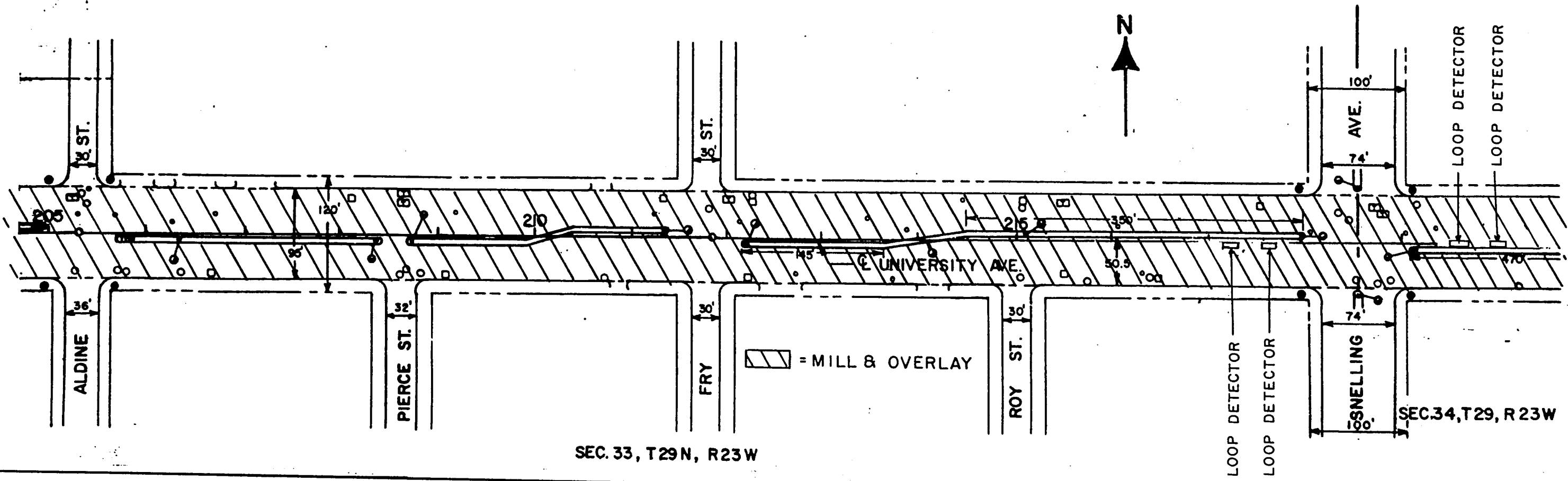
CERTIFIED BY *[Signature]* REG. NO. 19149 2/9 1995
PROFESSIONAL ENGINEER

State Proj. No. 6208-33

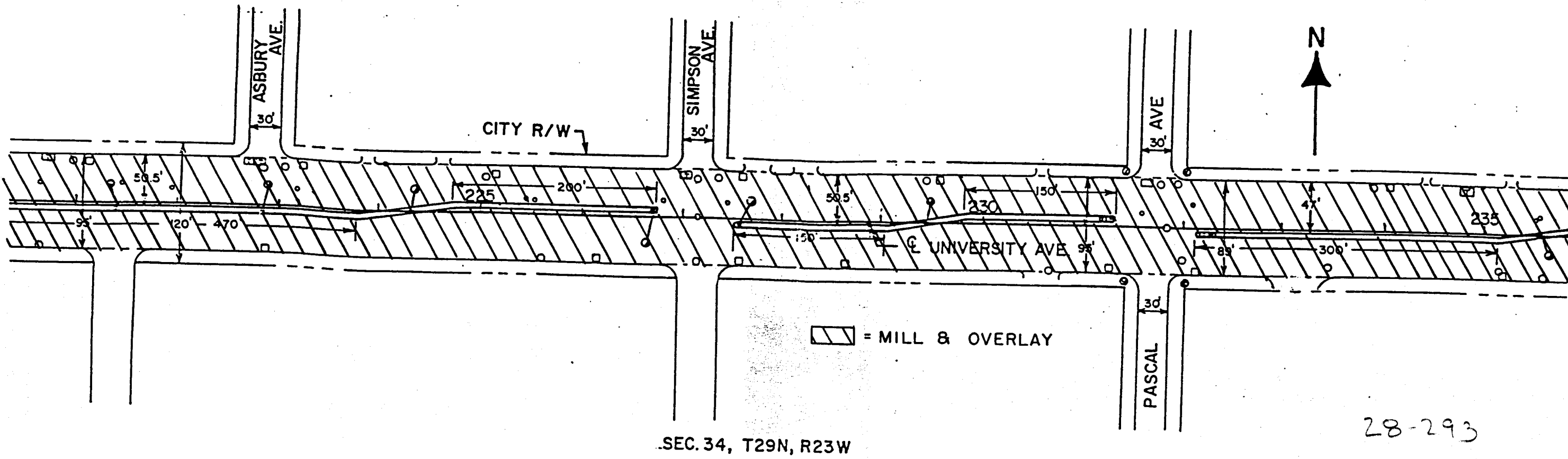
CONSTRUCTION

Sheet No. 5 of 20 Sheets

TELETYPE PHONE 3/87 NR0398



SEC. 33, T29N, R23W



SEC. 34, T29N, R23W

28-293

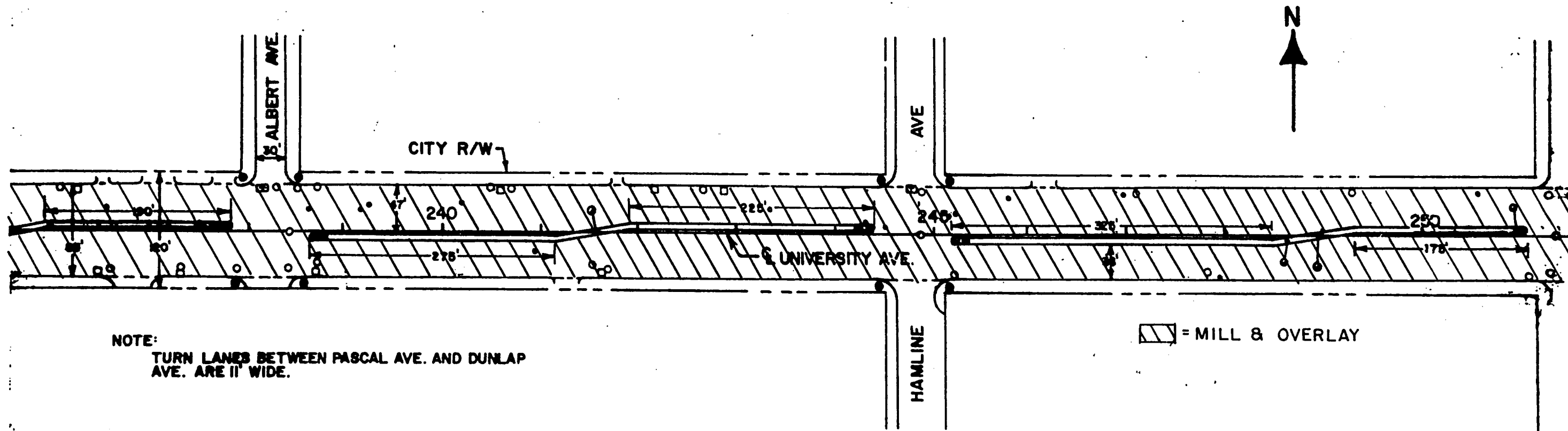
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PROFESSIONAL ENGINEER

CONSTRUCTION

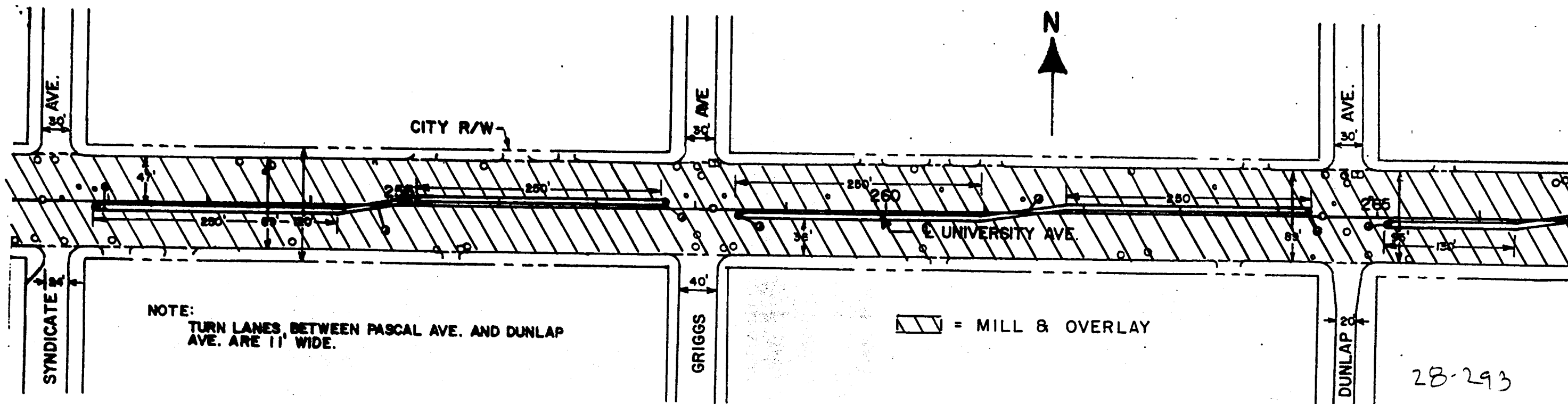
State Proj. No. 6208-33

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TELEDY 05' 11" IM 3/87 110098



SEC. 34, T29N, R23W



SEC. 34, T29N, R23W

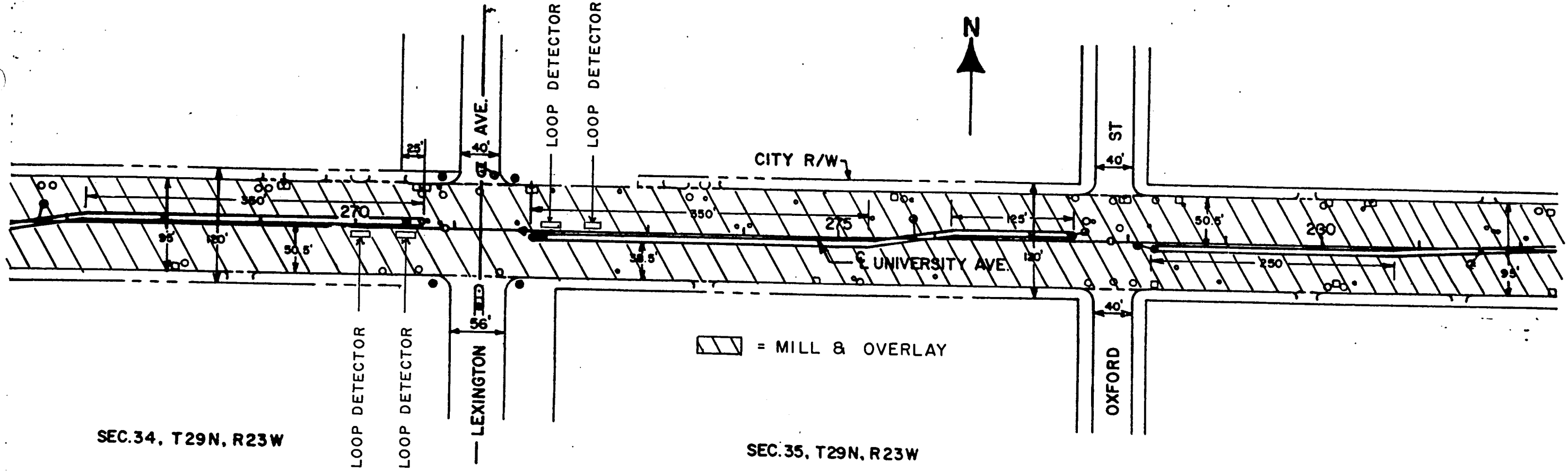
CERTIFIED BY *David R. ...* REG. NO. 19149 2/9 1995
PROFESSIONAL ENGINEER

State Proj. No. 6208-33

CONSTRUCTION

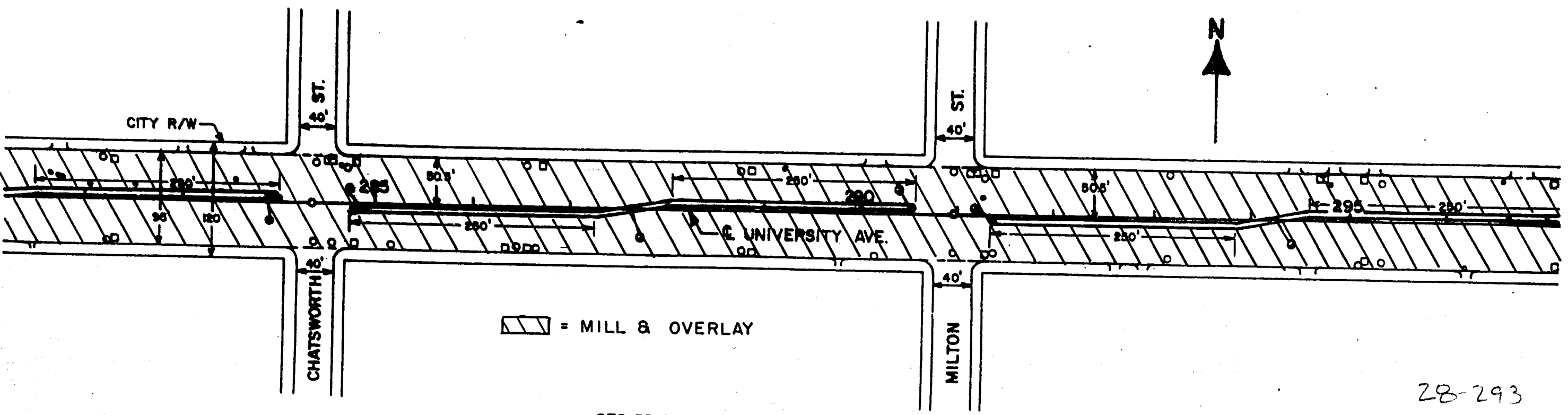
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TEL 16 POST 3/87 1100598



SEC. 34, T29N, R23W

SEC. 35, T29N, R23W



SEC. 35, T29N, R23W

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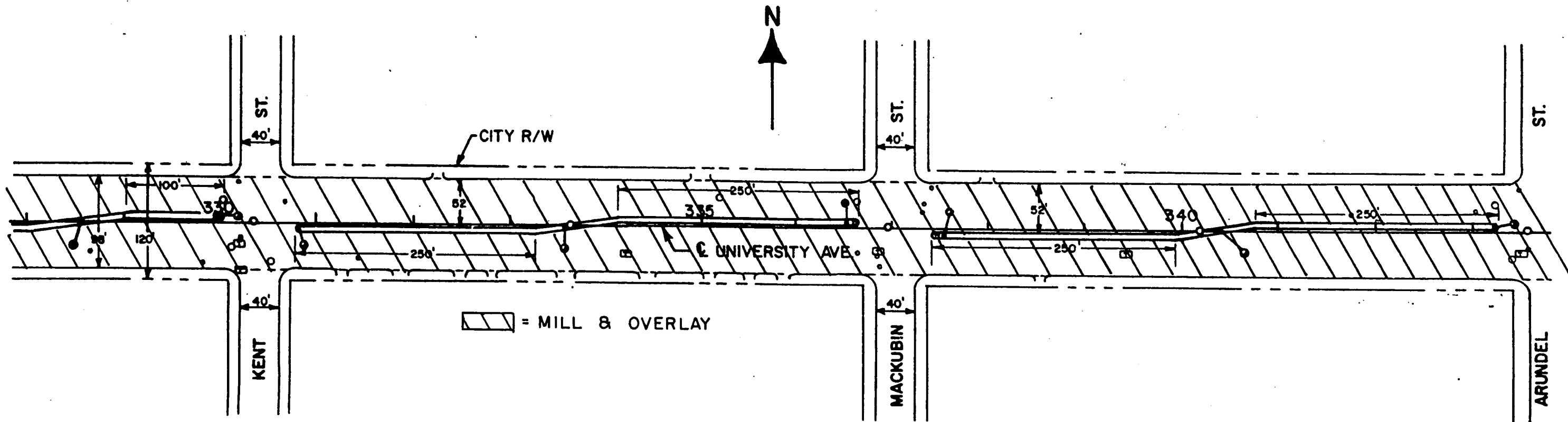
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PROFESSIONAL ENGINEER

State Proj. No. 6208-33

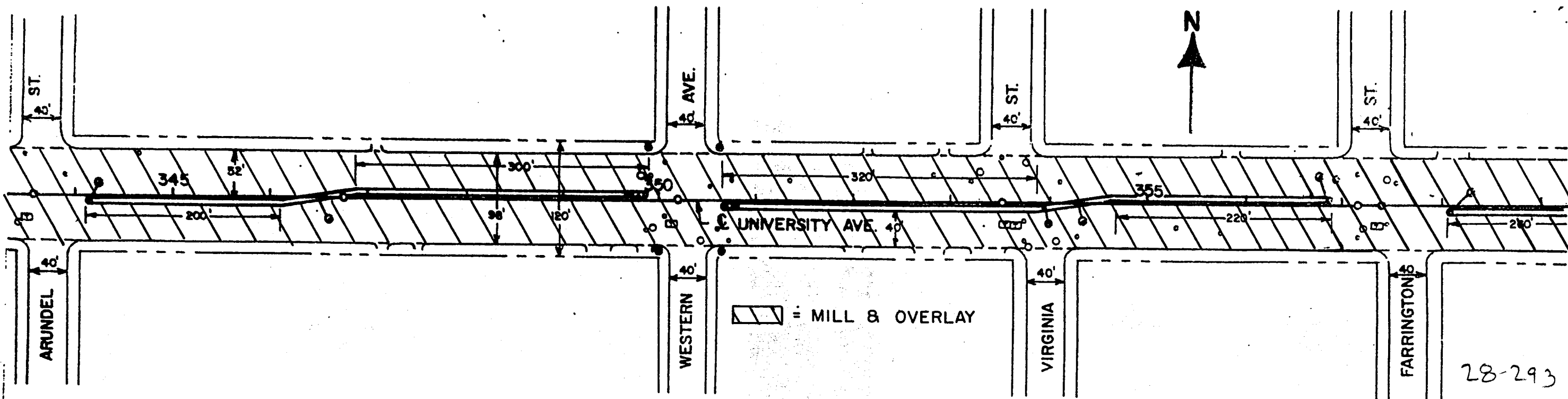
CONSTRUCTION

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TELETYPE POST... 3/77 NR0398



SEC. 36. T29N. R23W



SEC. 36, T29N, R23W

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PROFESSIONAL ENGINEER

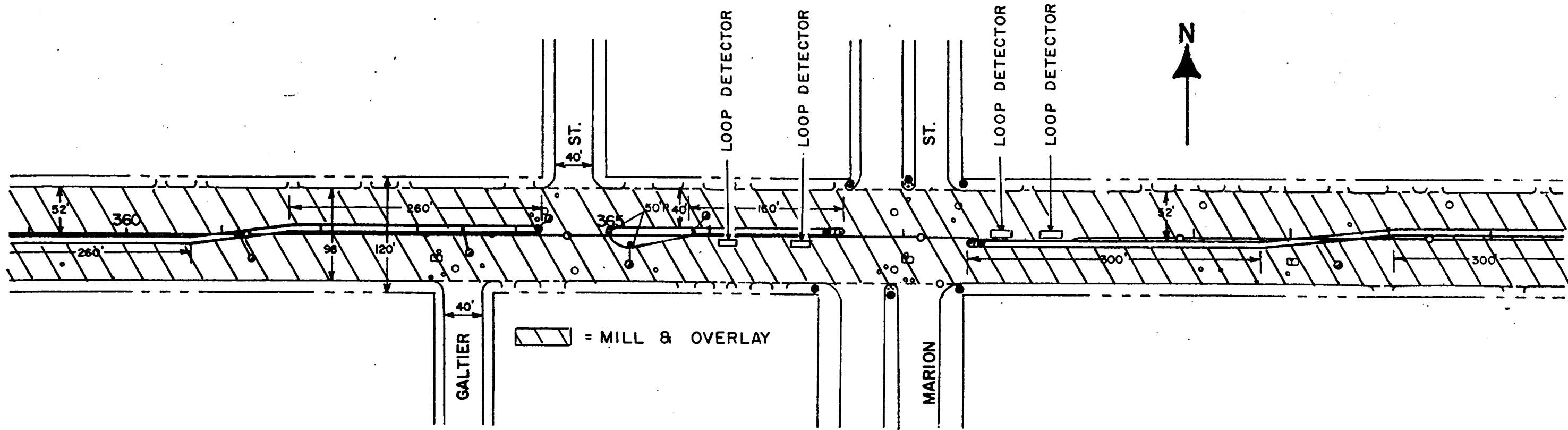
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CONSTRUCTION

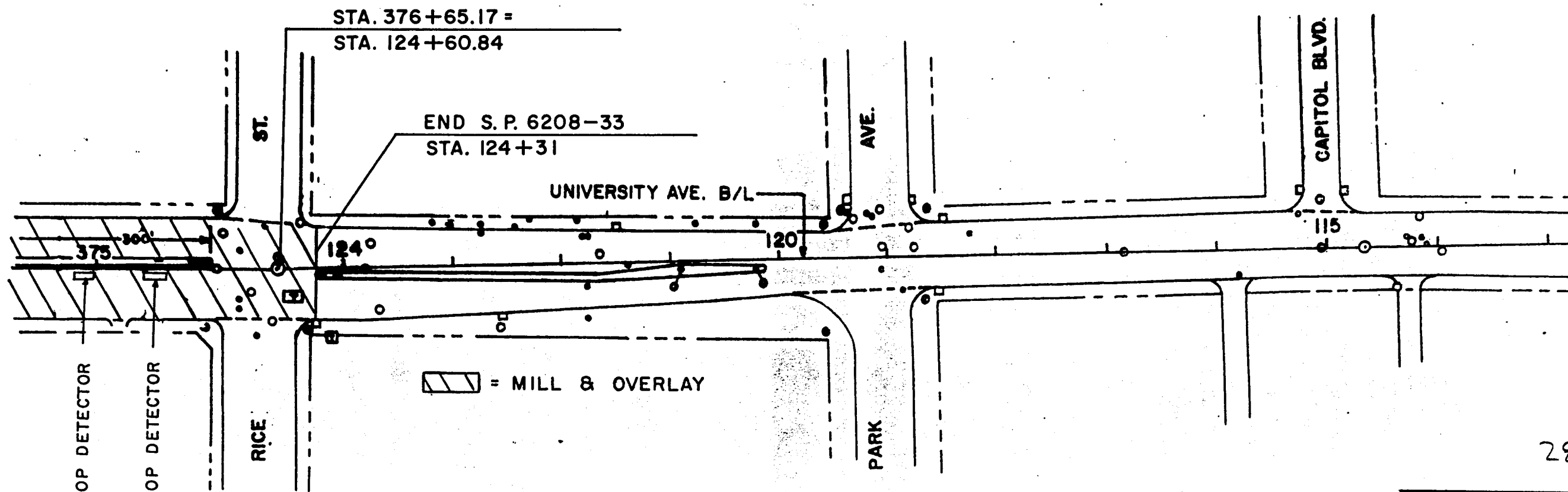
Sheet No. 10 of 20 Sheets

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TELETYPE POST M. 3/87 N00598



SEC. 36, T29N, R23W



SEC. 31, T29N, R22W

CERTIFIED BY *Timothy* REG. NO. 19144 2/9 1995
PROFESSIONAL ENGINEER

State Proj. No. 6208-33

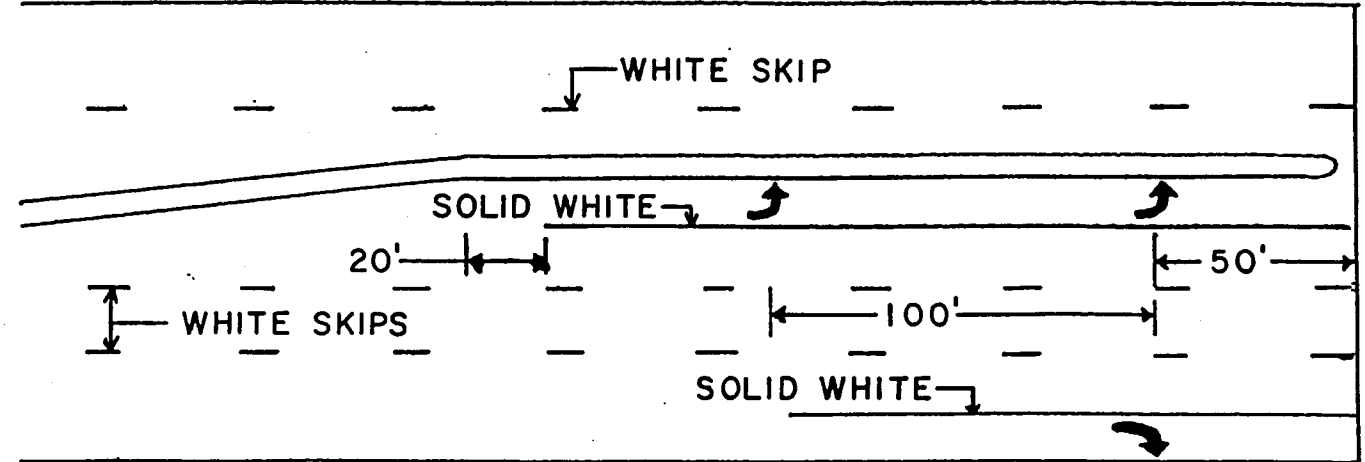
CONSTRUCTION

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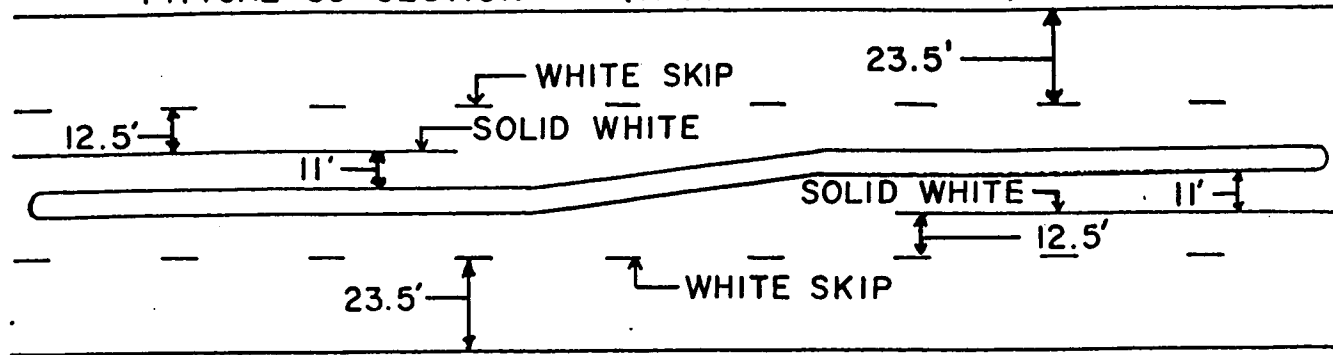
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TELETYPE POST 3/87 INR0598

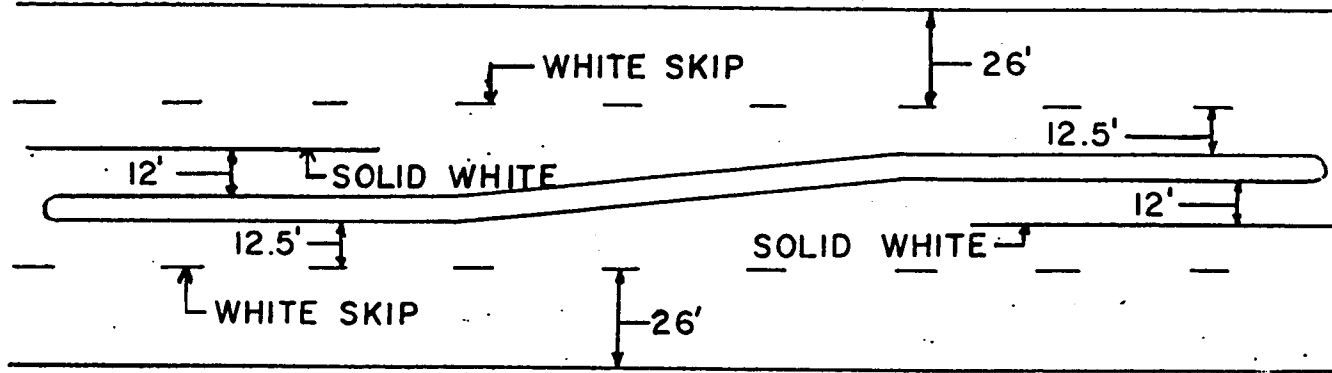
TURN LANE DETAILS



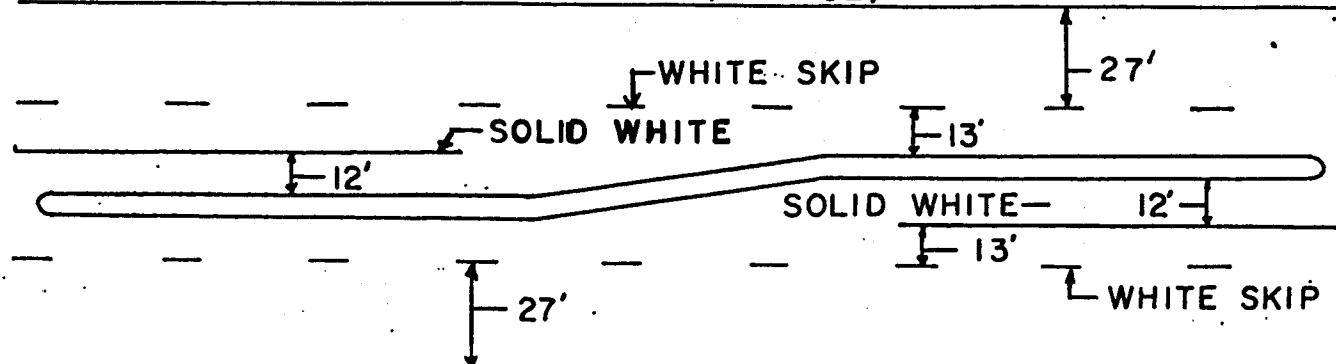
TYPICAL 89' SECTION (PASCAL TO DUNLAP)



TYPICAL 95' SECTION (VANDALIA TO PASCAL) (DUNLAP TO DALE)



TYPICAL 98' SECTION (DALE TO RICE)



STRIPING NOTES

- 1) All center lines shall be 4" solid double yellow.
- 2) Double yellow lines shall be placed 4" apart.
- 3) Permanent white skips shall be 10 feet long with 30 foot gaps.
- 4) The Contractor Shall Topog The Inplace Roadway Prior To Milling, For The Purpose Of Reestablishing Permanent Striping.
- 5) Arrows shall be in conformance with the standard alphabets for highway signs and pavement markings, available from FHWA (HTO-20), WASHINGTON D.C. 205
- 6) Turn lanes shall begin 20' from the end of taper or beginning of turn lane, or as otherwise shown on the striping plans.
- 7) Crosswalks shall be 12" solid white and be 10' wide (8' space between 12" solid lines).
- 8) Poly-preformed material used for crosswalks shall conform to Specifications No. 3 "High Durability Preformed Pavement Markings".

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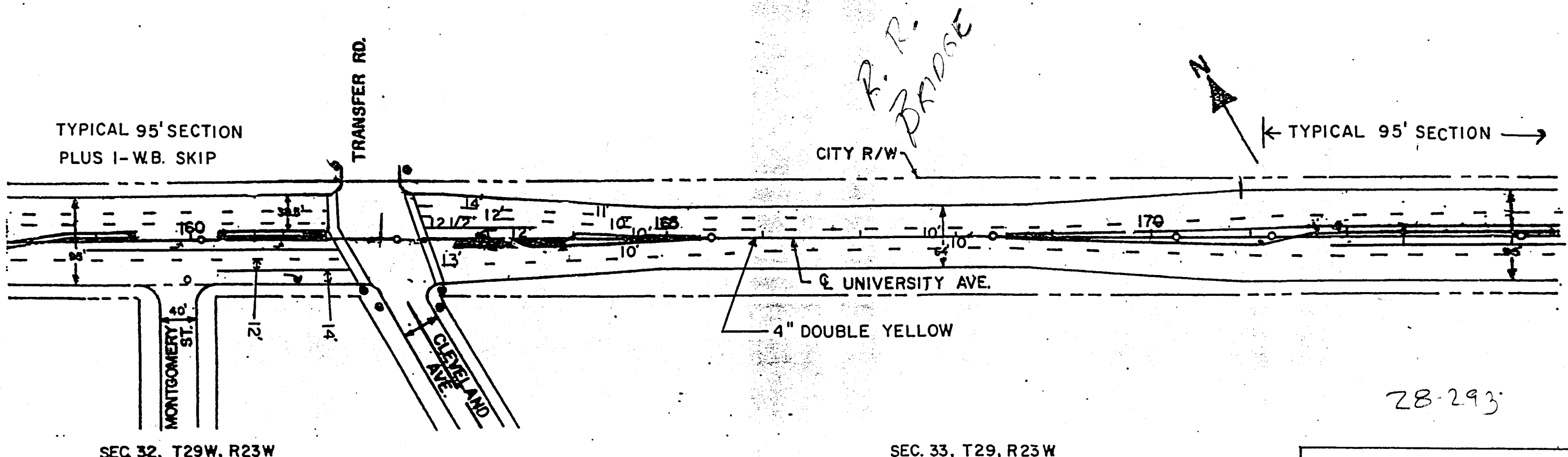
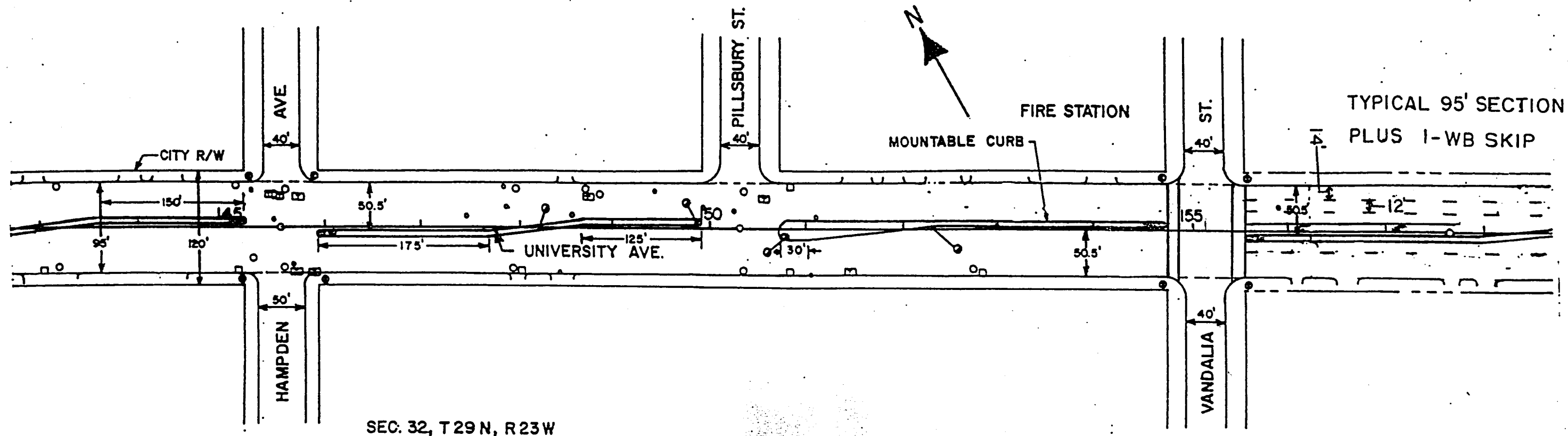
STRIPING DETAILS AND NOTES

CERTIFIED BY *John J. Bar* REG. NO. 19149 2/9 1985
PROFESSIONAL ENGINEER

State Proj. No. 6208-33

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TELETYPE POST-12144 3/87 N8098



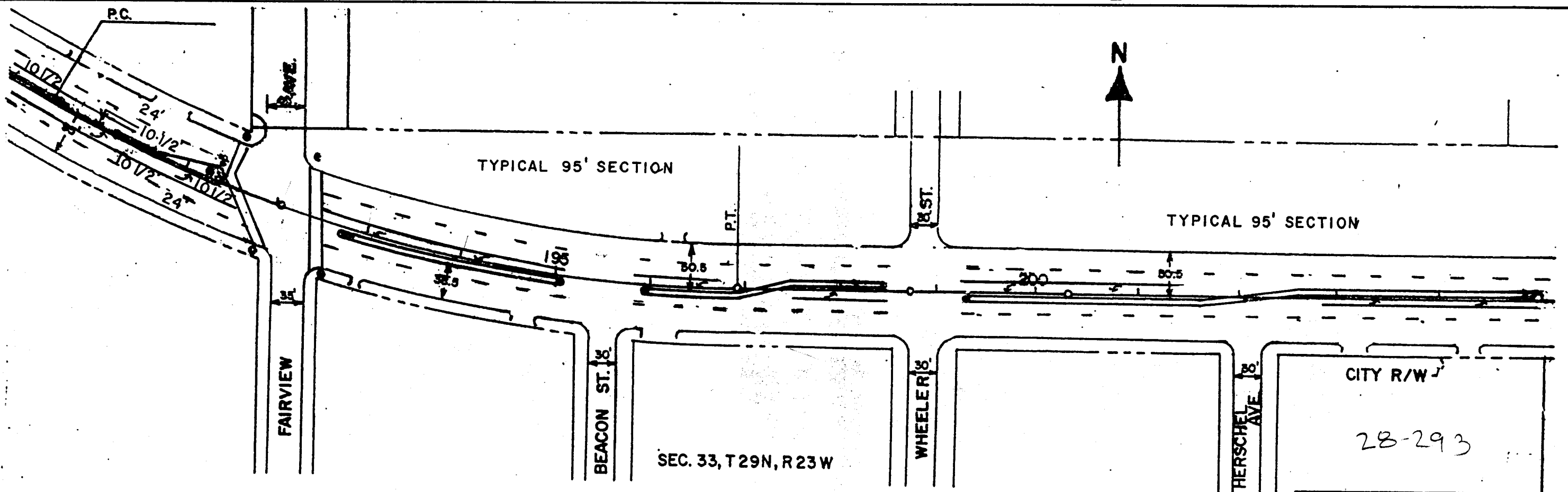
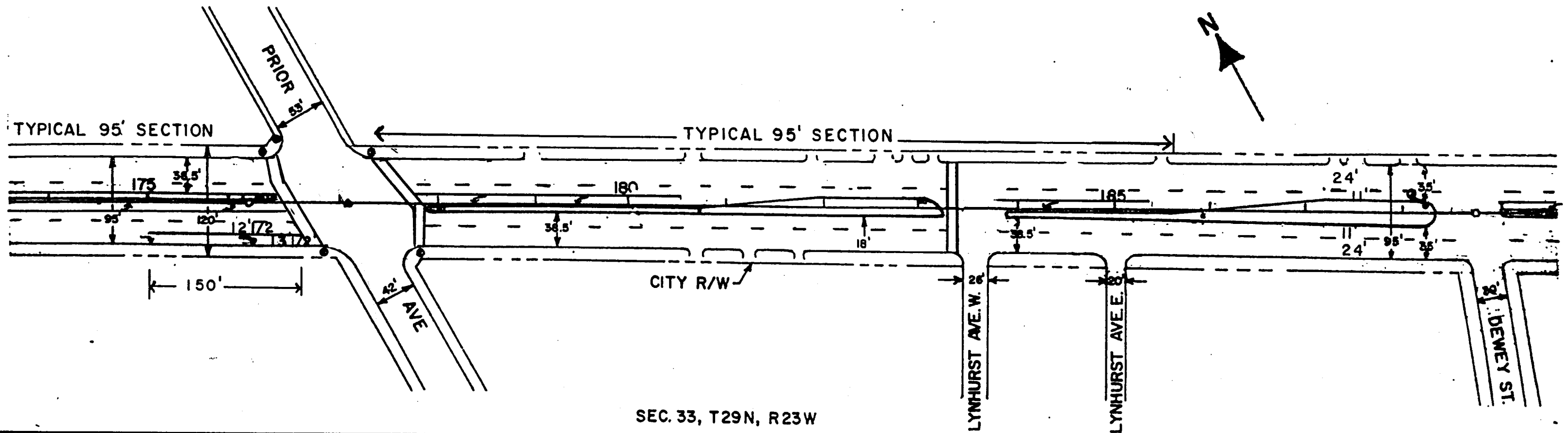
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 PROFESSIONAL ENGINEER

State Proj. No. 6208-33

STRIPING
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TELETYPE POST-121A



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 PROFESSIONAL ENGINEER

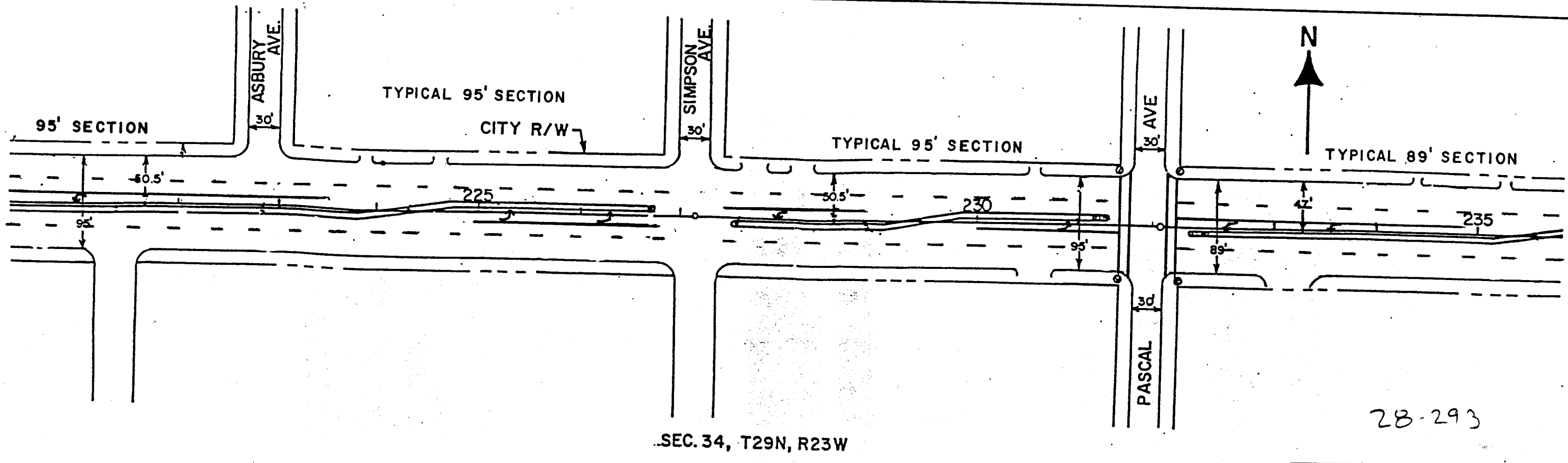
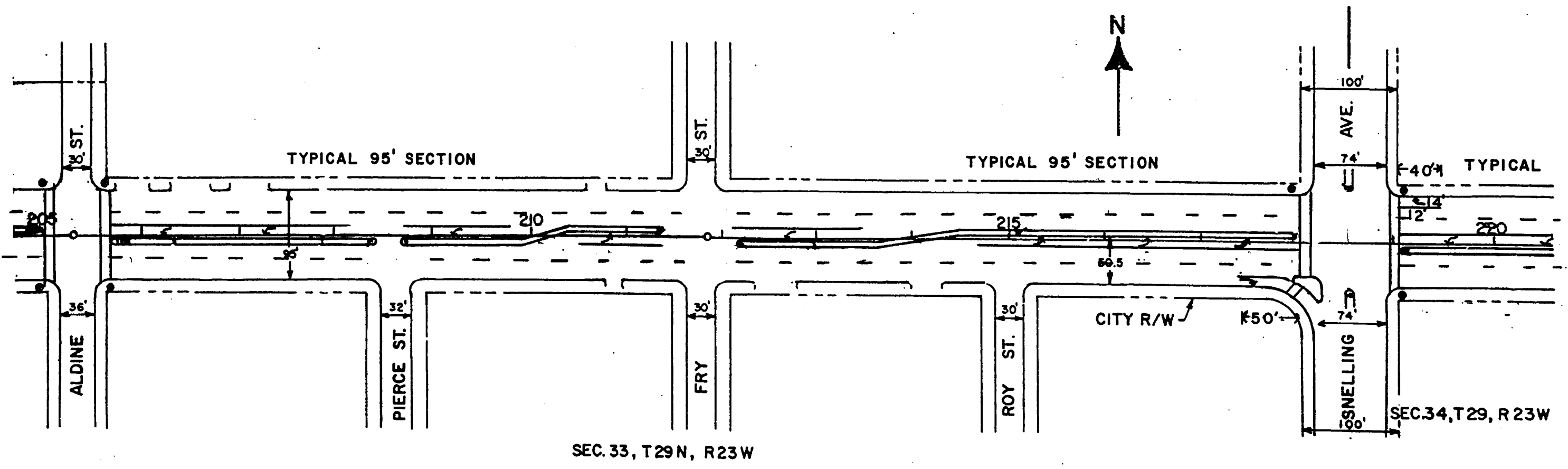
State Proj. No. 6208-33

STRIPING

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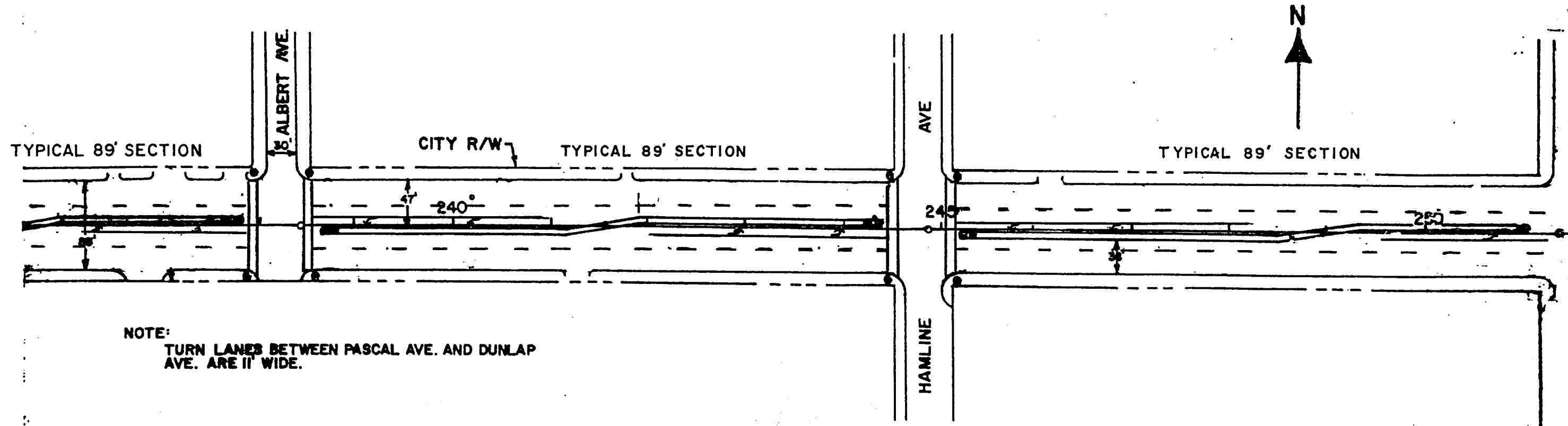
28-293

CERTIFIED BY *[Signature]* REG. NO. 19149 2/9 19 95
 PROFESSIONAL ENGINEER

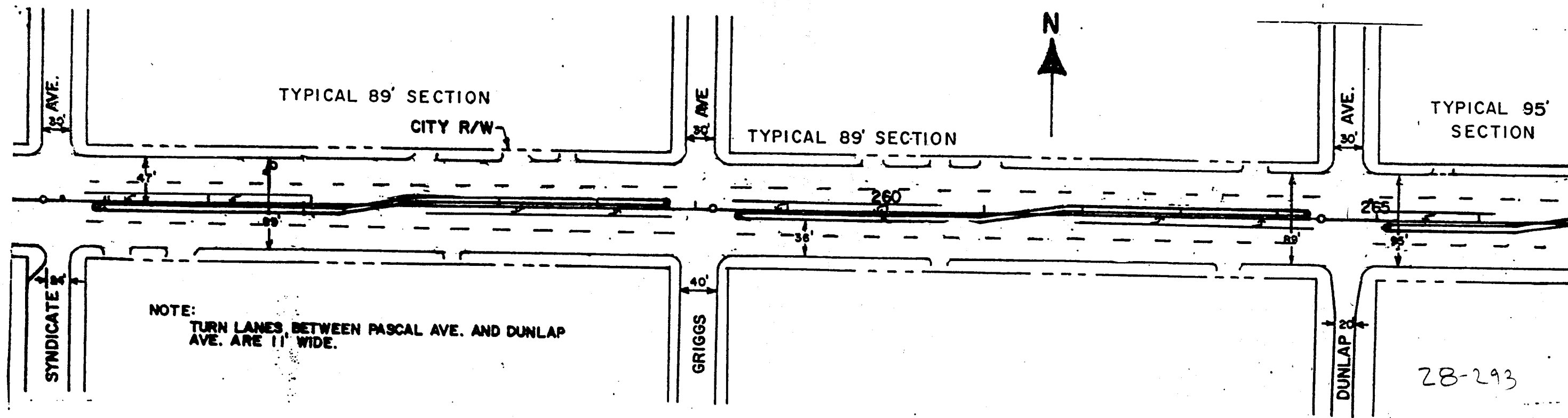
State Proj. No. 6208-33

STRIPING
 Sheet No. 15 of 20 Sheets

TELETYPE 051-1211A 3/87 NPG078



SEC. 34, T29N, R23W



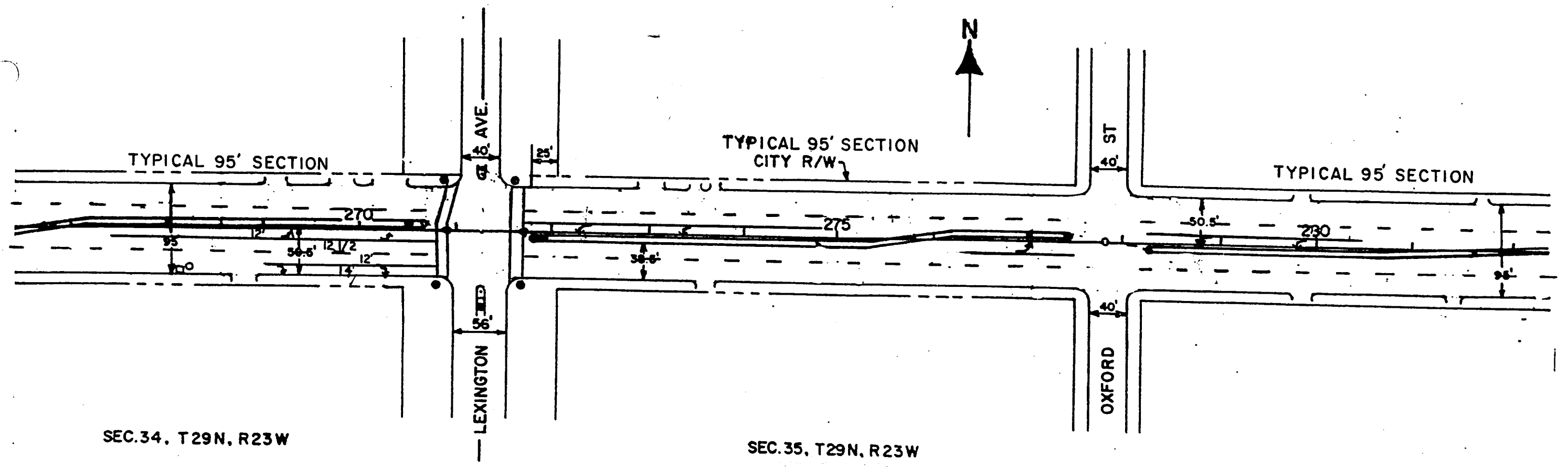
SEC. 34, T29N, R23W

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PROFESSIONAL ENGINEER

State Proj. No. 6208-33

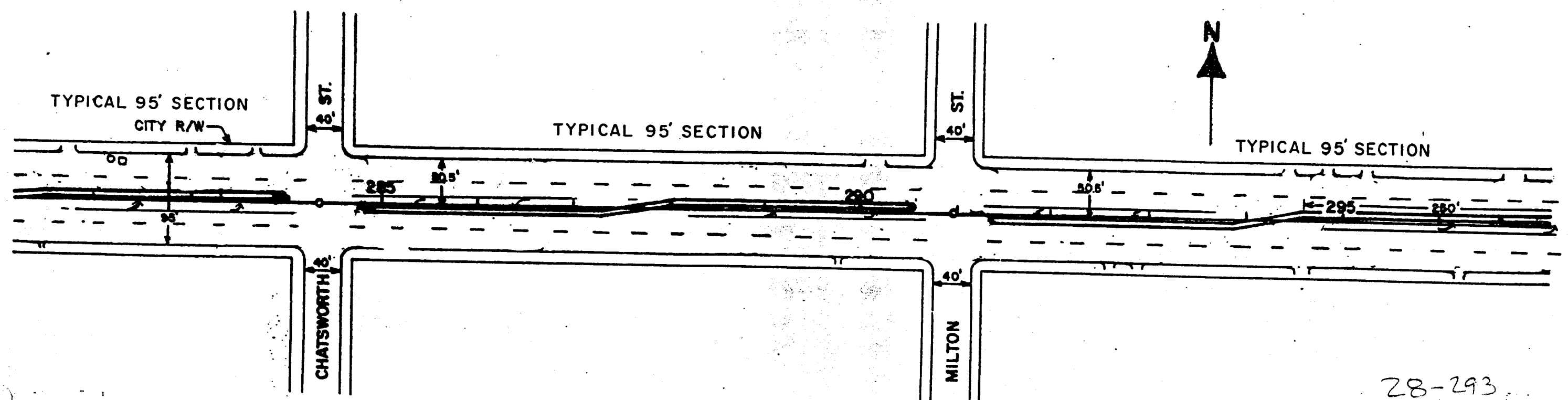
STRIPING

Sheet No. 16 of 20 Sheets



SEC. 34, T29N, R23W

SEC. 35, T29N, R23W



SEC. 35, T29N, R23W

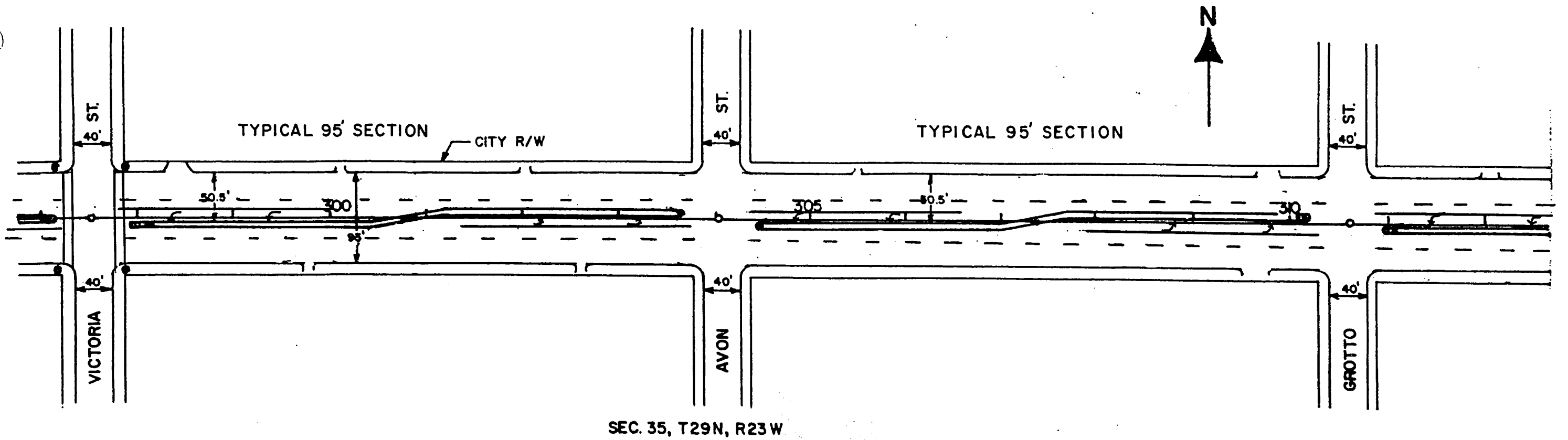
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PROFESSIONAL ENGINEER

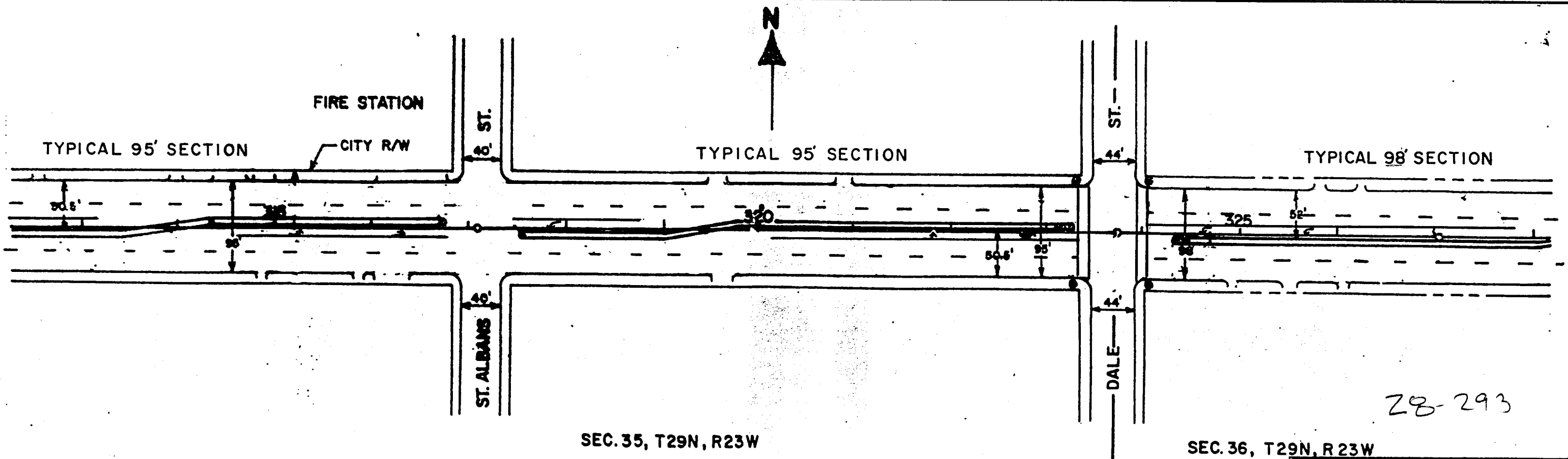
State Proj. No. 6208-33

STRIPING
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ILLUSTRATION POST-1211A 3/07



SEC. 35, T29N, R23W



SEC. 35, T29N, R23W

SEC. 36, T29N, R23W

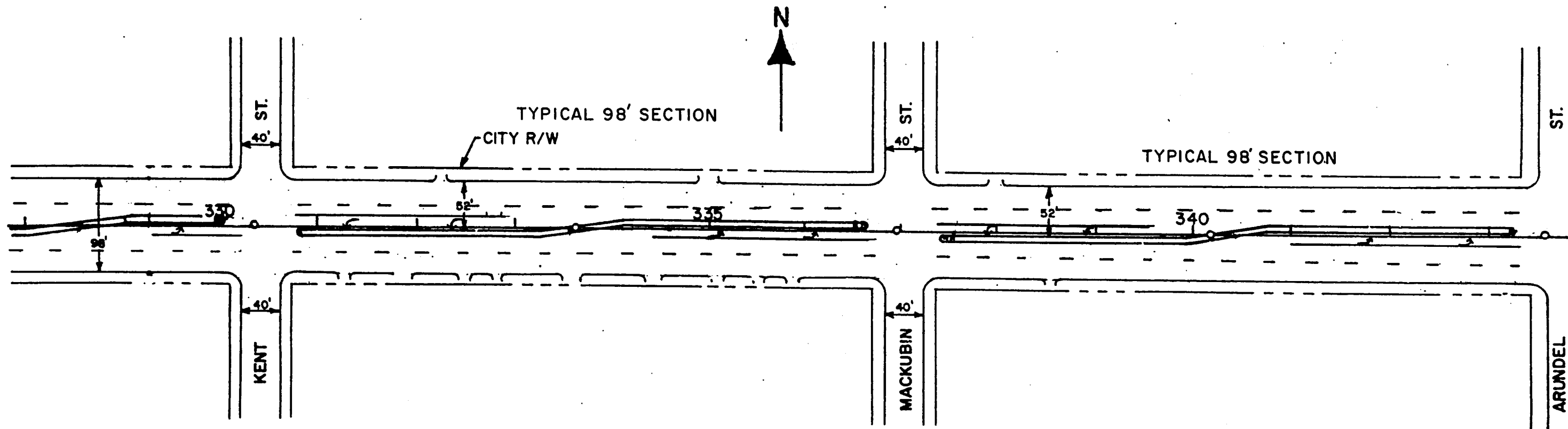
28-293

CERTIFIED BY *W. J. [Signature]* REG. NO. 19149 2/9 1975
PROFESSIONAL ENGINEER

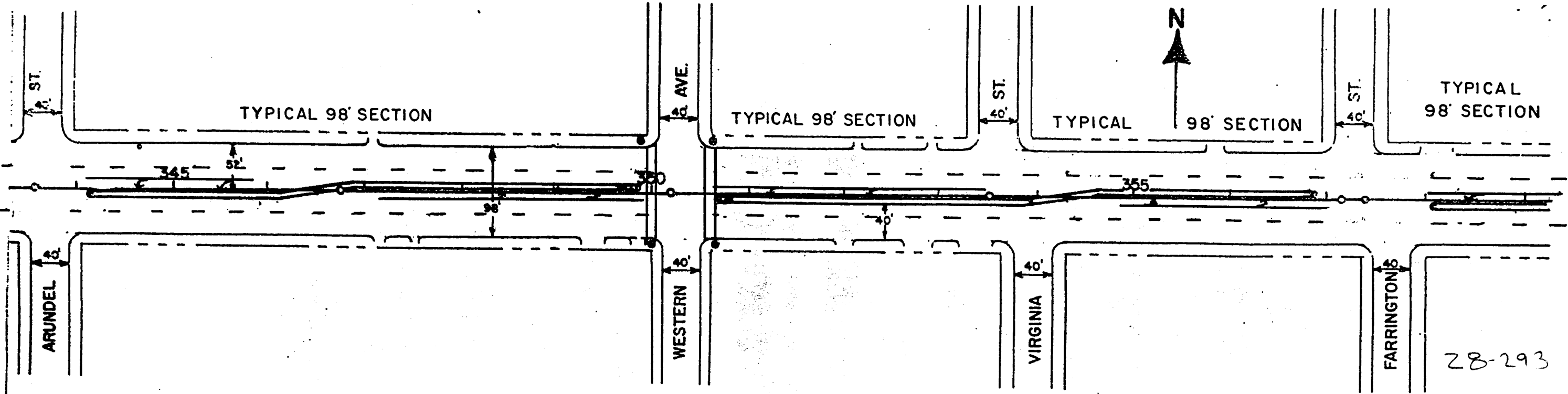
State Proj. No. 6208-33

STRIPING

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SEC. 36. T29N. R23W



SEC. 36, T29N, R23W

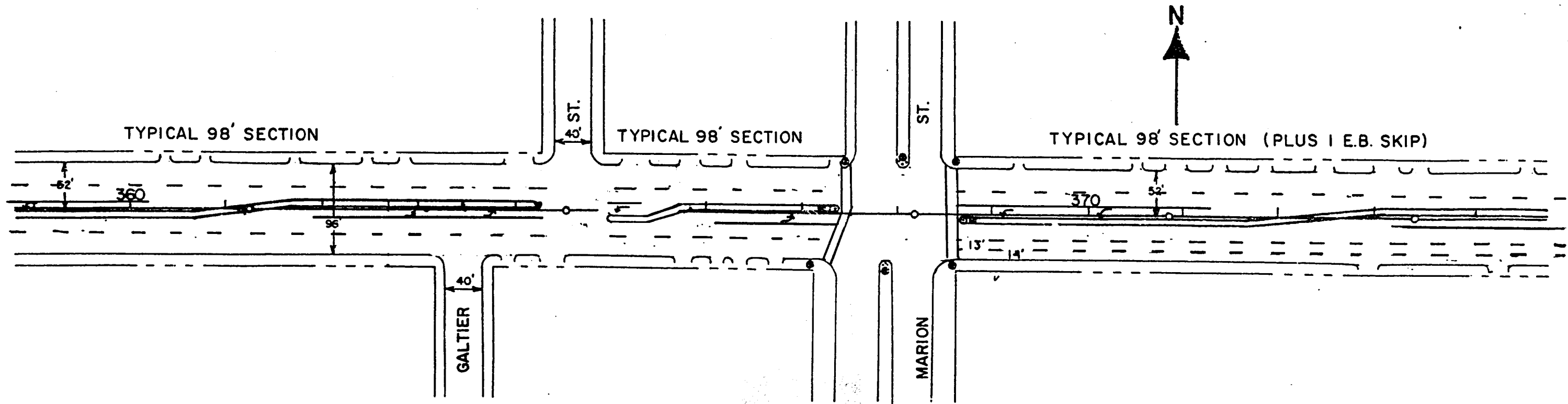
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PROFESSIONAL ENGINEER

State Proj. No. 6208-33

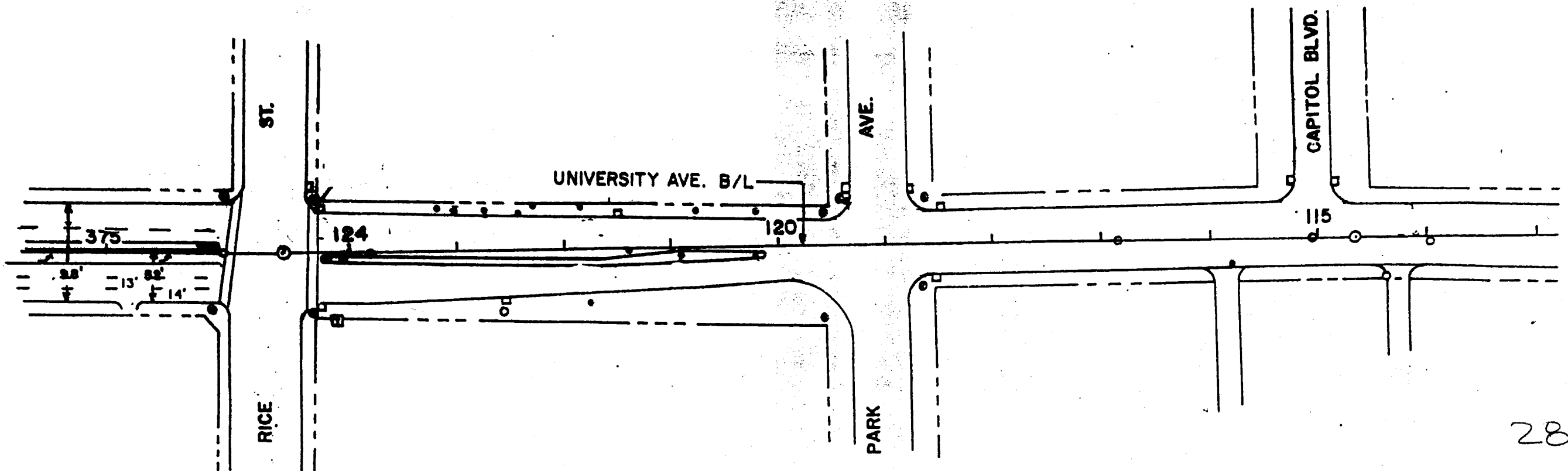
STRIPING

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TELETYPE POST 7/87 11/05/96



SEC. 36, T29N, R23W



SEC. 36, T29N, R23W

SEC. 31, T29N, R22W

CERTIFIED BY *[Signature]* REG. NO. 19142 2/1 1995
PROFESSIONAL ENGINEER

State Proj. No. 6208-33

STRIPING

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TELETYPE POST-1911 3/27 NR0578