



Illinois Department of Transportation

Memorandum

To: Jack Elston

Attn: Michael Brand

From: Jose A. Dominguez

By: Ojas Patel

Subject: Pavement Analysis*

Date: March 16, 2020

*Route: Interstate 55

County: Will

Limits: at Lemont Road

Contract No.: 62G39

Section: 22-36HB-1

Job No.: D-91-296-18

Current target: 09CY20

We have completed the pavement analysis for the above captioned location. Review by the Central Office is required since the total pavement area for reconstruction and widening exceeds 4,750 Square Yards. The following is the scope of the project:

I-55 mainline and ramps – Reconstruction and widening/resurfacing as a result of replacement of the structure carrying I-55 over Lemont Road. The new structure and reconstruction portions of I-55 will accommodate future managed lanes.

Since the widening and reconstruction sections of Interstate 55 are relatively short segments and the traffic factor for mainline Interstate 55 exceeds 60, this pavement design will be classified as a "Special Design" per BDE Figure 54-1.A. It is beneficial to match the existing composite pavement for uniformity and ease of maintenance. The recommended pavement is as follows:

I-55 Mainline/Ramps

Reconstruction and Widening⁶

HMA Shoulder

2" Polymerized HMA Surface Course, SMA, 12.5, Mix "F", N80¹

3" Polymerized HMA Binder Course, SMA, 12.5, N80²

10" PCC Pavement (Jointed)^{3,4}

12" Aggregate Subgrade Improvement⁵

Pavement Resurfacing⁶

Cold Milling of HMA Pavement

5" minimum (more if necessary)

2" Polymerized HMA Surface Course, SMA, 12.5, Mix "F", N80¹

3" Polymerized HMA Binder Course, SMA, 12.5, N80²

J. Elston
March 16, 2020
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¹Designer Note 1: Use pay item **40605036, POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, SMA, 12.5, Mix "F", N80** paid for in tons.

²Designer Note 2: Use pay item **40605015, POLYMERIZED HMA BINDER COURSE, 12.5, N80** paid for in tons.

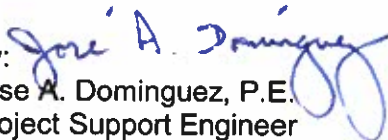
³Designer Note 3: Use pay item **42000501, PORTLAND CEMENT CONCRETE PAVEMENT 10" (JOINTED)**, for reconstruction and widening greater than 6 feet in width, paid for in square yards.

⁴Designer Note 4: Use pay item **35400500, PORTLAND CEMENT CONCRETE BASE COURSE WIDENING, 10"**, for widening 6 feet or less in width, paid for in square yards.

⁵Designer Note 5: Use pay item **30300112, AGGREGATE SUBGRADE IMPROVEMENT, 12"**, paid in square yards.

⁶Designer Note 6: Refer to the District One, Bureau of Materials' "Hot-Mix Asphalt – Mix Selection" tables to determine the corresponding HMA mix table requirements for the plans.

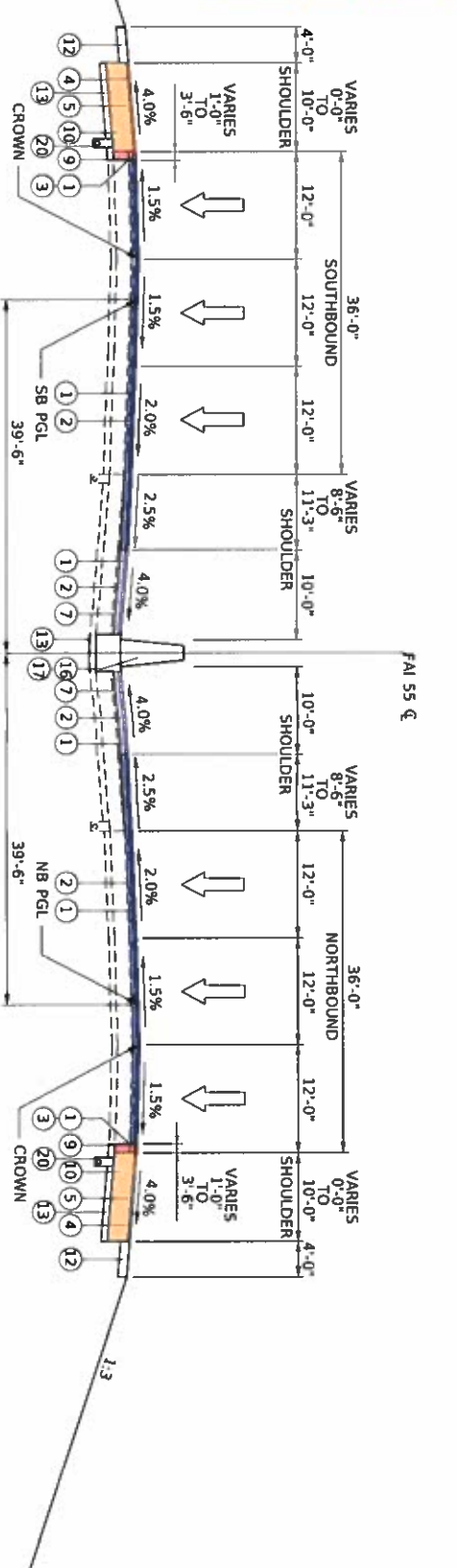
If you have any questions or need additional information, please contact Ojas Patel, Pavement Design Engineer, at (847)705-4550.

By: 
Jose A. Dominguez, P.E.
Project Support Engineer

**HMA MILLING/
RESURFACING** **FULL-DEPTH RAMP
RECONSTRUCTION**

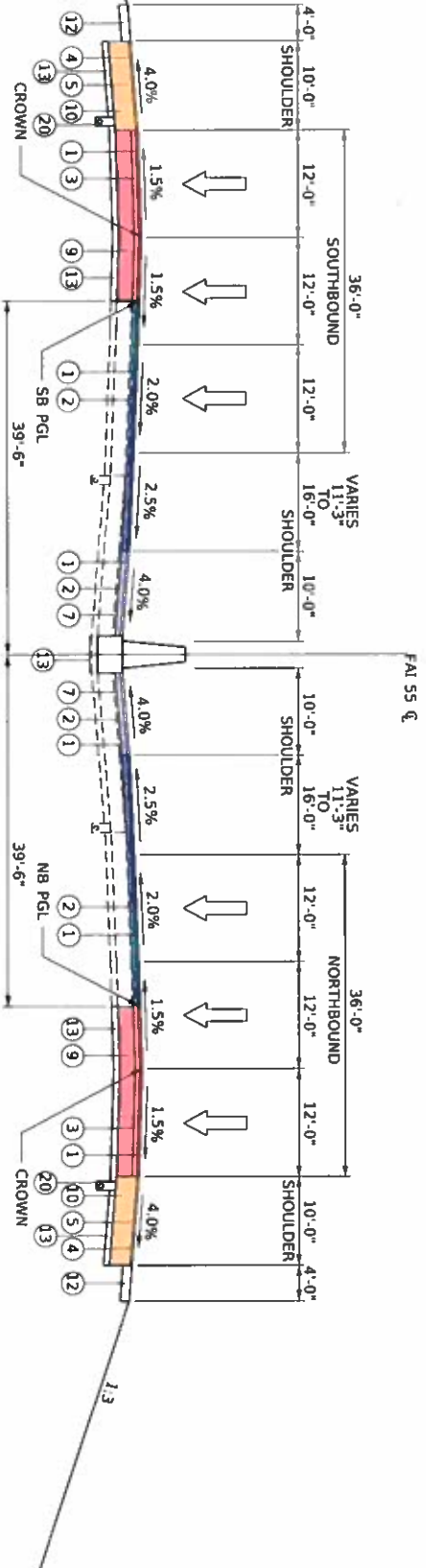
**WIDENING AND
RESURFACING** **FULL-DEPTH
HMA SHOULDER
RECONSTRUCTION**

**FULL-DEPTH
RECONSTRUCTION** **HMA SHOULDER
RESURFACING**



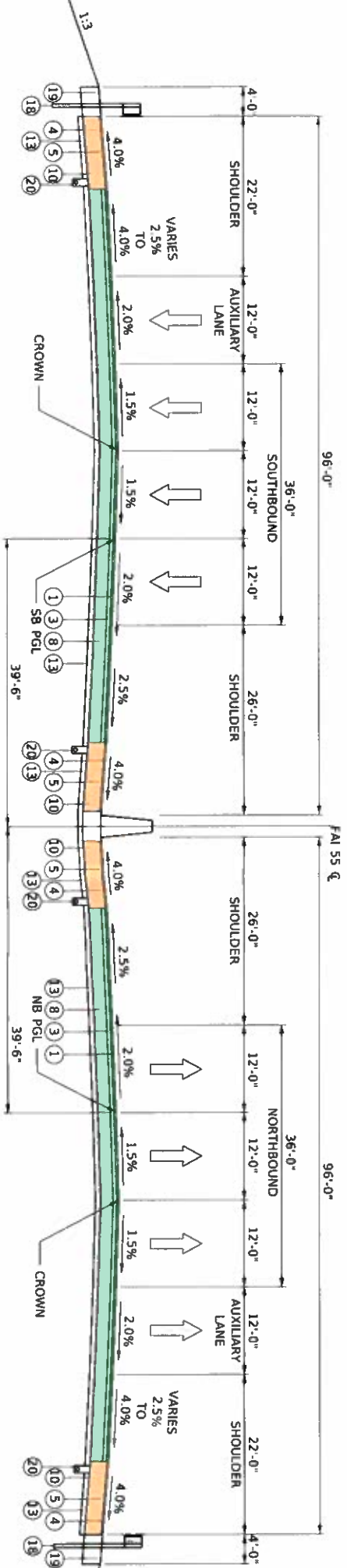
TYPICAL SECTION #1

1-55
STA. 266+55.00 TO STA. 268+50.00
STA. 286+30.00 TO STA. 288+25.00



TYPICAL SECTION #2

1-55
STA. 268+50.00 TO STA. 271+82.68
STA. 282+98.66 TO STA. 286+30.00



TYPICAL SECTION #3

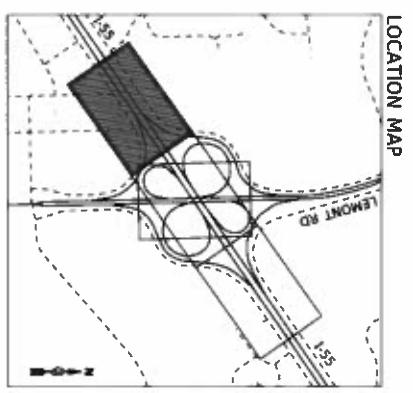
1-55
STA. 271+82.68 TO STA. 282+98.66
NB BRIDGE OMISSION 2275+33.86 TO 2278+84.46
SB BRIDGE OMISSION 4275+98.82 TO 4279+49.42

- PROPOSED LEGEND**
- ① POLY. HMA SURFACE COURSE, SMA, 12.5, MIX "P", N80 (2")
 - ② POLY. HMA BINDER COURSE, SMA, 12.5, N80 (2") *
 - ③ POLY. HMA BINDER COURSE, SMA, 12.5, N80 (3")
 - ④ HMA SURFACE COURSE, MIX "D", IL-9.5, N70 (1.1-1.2")
 - ⑤ HMA BINDER COURSE, IL-19.0, N70 (1.1-1.2") **
 - ⑥ HMA BINDER COURSE, 13"
 - ⑦ POLY. LEVELING BINDER (MACHINE METHOD), NS0 (1" AND VAR.) **
 - ⑧ PCC BASE COURSE, 10"
 - ⑨ PCC BASE COURSE WIDENING, 10"
 - ⑩ OPEN
 - ⑪ OPEN
 - ⑫ AGG. SHOULDERS, TYPE B, 6"
 - ⑬ SUBBASE GRAN. MATL., 4"
 - ⑭ AGGREGATE SUBGRADE, 12"
 - ⑮ STABILIZED MEDIAN SURFACE (4")
 - ⑯ CONCRETE BARRIER, DOUBLE FACE, 44 INCH HEIGHT
 - ⑰ CONCRETE BARRIER BASE
 - ⑱ STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS
 - ⑲ HMA GUARDRAIL STABILIZATION (PAID FOR AS HMA SHOULDERS, DEPTH AS SPECIFIED)
 - ⑳ PIPE UNDERDRAIN

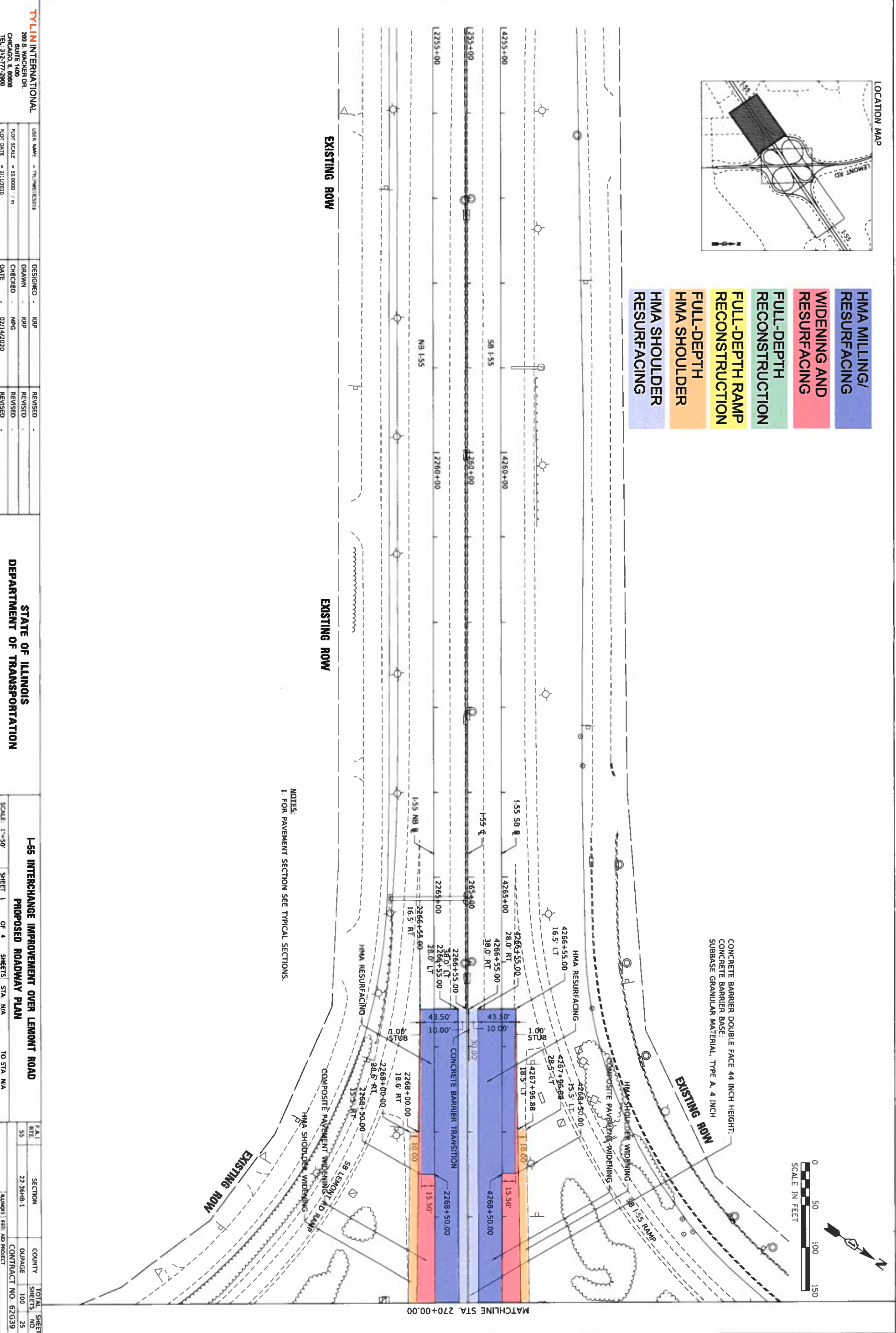
* IN MAINLINE OVERLAY SECTIONS, TRANSITION TO BINDER COURSE WHERE TOTAL HMA THICKNESS EXCEEDS 2"

** IN SHOULDER OVERLAY SECTION, TRANSITION TO BINDER COURSE WHERE TOTAL HMA THICKNESS EXCEEDS 1-1/2"

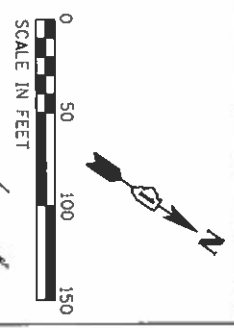
*** IN MAINLINE AND SHOULDER OVERLAY SECTIONS, TRANSITION TO LEVELING BINDER WHERE TOTAL HMA THICKNESS EXCEEDS 4"



- HMA MILLING/
RESURFACING
- WIDENING AND
RESURFACING
- FULL-DEPTH
RECONSTRUCTION
- FULL-DEPTH RAMP
RECONSTRUCTION
- FULL-DEPTH
HMA SHOULDER
- HMA SHOULDER
RESURFACING



NOTES:
 1. FOR PAVEMENT SECTION SEE TYPICAL SECTIONS.



TYLIN INTERNATIONAL		DESIGNED BY	KRP	REVISIONS	
200 S. WACKER DR.		DRAWN BY	KRP	NO.	
SUITE 1400		CHECKED BY	MFG	DATE	02/14/2020
CHICAGO, IL 60606		DATE	02/14/2020		
TEL: 312-777-2800					

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

I-55 INTERCHANGE IMPROVEMENT OVER LEMONT ROAD
 PROPOSED ROADWAY PLAN
 SHEET 1 OF 4 SHEETS STA N/A TO STA N/A

F.A.I.	SECTION	COUNTY	TOTAL SHEET
55	22-361B-1	DUPAGE	NO. 100
			SHEETS 25
		CONTRACT NO.	62639

TYLIN INTERNATIONAL
 200 S. WACKER DR.
 SUITE 1400
 CHICAGO, IL 60606
 TEL: 312.777.2800

USER NAME: TYLINPW01CS01
 PLOT SCALE: = 50.0000' / in.
 PLOT DATE: = 2/11/2020

DESIGNED: KRP
 DRAWN: KRP
 CHECKED: MFG
 DATE: 02/11/2020

REVISED: -
 REVISED: -
 REVISED: -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

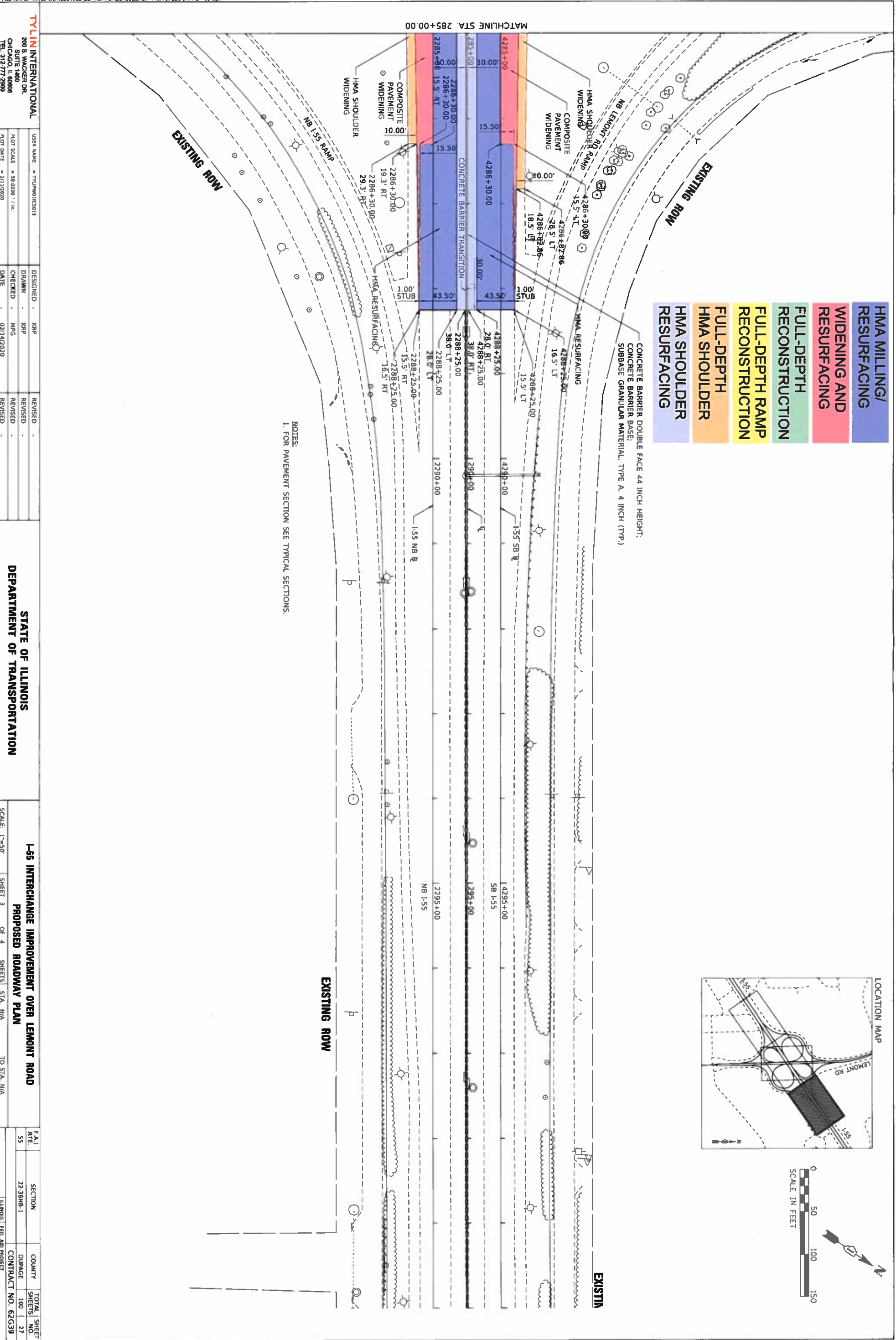
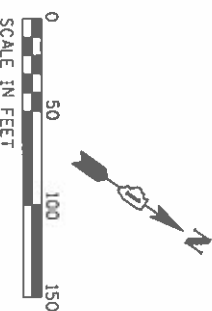
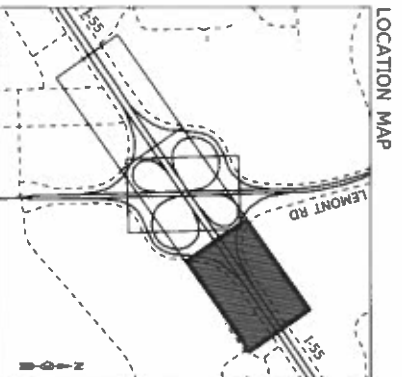
I-55 INTERCHANGE IMPROVEMENT OVER LEMONT ROAD
PROPOSED ROADWAY PLAN

SCALE: 1"=50'
 SHEET 3 OF 4 SHEETS
 STA. N/A TO STA. N/A

FAI ATE	SECTION	COUNTY	TOTAL SHEET
55	22.36RB-1	DUPAGE	100
		CONTRACT NO.	27
		ILLINOIS FED. AID PROJECT	62G39

- HMA MILLING/RESURFACING
- WIDENING AND RESURFACING
- FULL-DEPTH RECONSTRUCTION
- FULL-DEPTH RAMP RECONSTRUCTION
- FULL-DEPTH HMA SHOULDER
- HMA SHOULDER RESURFACING

CONCRETE BARRIER DOUBLE FACE 44 INCH HEIGHT.
 CONCRETE BARRIER BASE:
 SUBBASE GRANULAR MATERIAL, TYPE A, 4 INCH (TYP.)



NOTES:
 1. FOR PAVEMENT SECTION SEE TYPICAL SECTIONS.