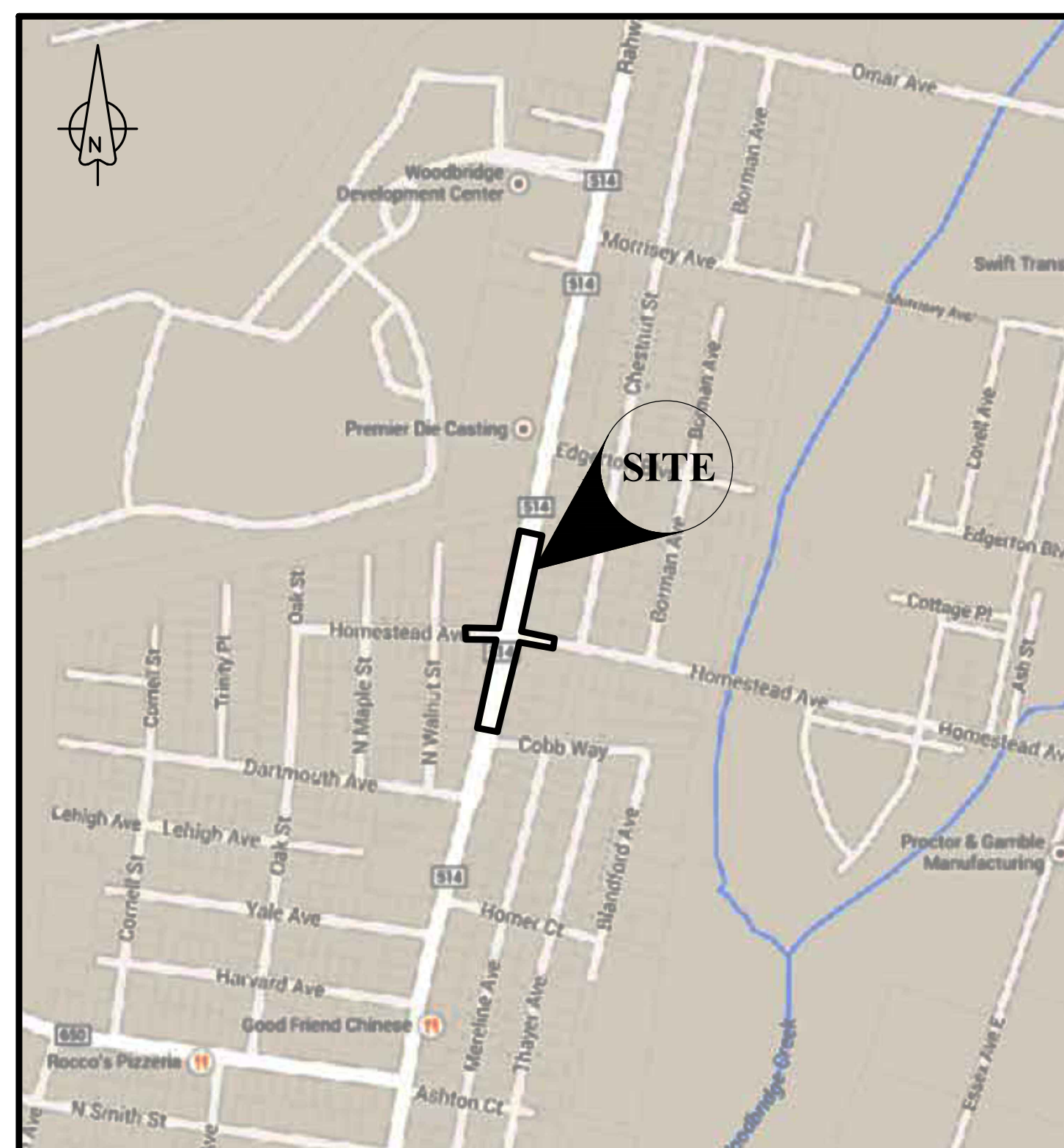


County of Middlesex  
Department of Transportation  
Office of Engineering

# MODIFICATIONS/UPGRADES TO THE INTERSECTION OF RAHWAY AVENUE & HOMESTEAD AVENUE (WBR042)

## TOWNSHIP OF WOODBRIDGE MIDDLESEX COUNTY, NEW JERSEY



ROAD MAP  
1"=500'

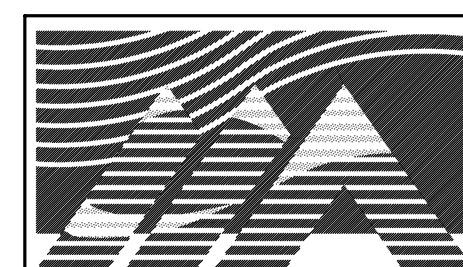
DRAWING LIST	
SHEET #	TITLE
1	COVER SHEET
2	LEGEND & GENERAL NOTES
3	ESTIMATE OF QUANTITIES
4	CONSTRUCTION PLAN
5	TIES
6	GRADING PLAN
7	SIGNING & STRIPING PLAN
8	TRAFFIC SIGNAL PLAN
9-10	ELECTRICAL PLAN
11	TYPICAL SECTIONS
12	PROFILES
13-17	CROSS SECTIONS
18-23	TRAFFIC CONTROL & STAGING PLANS
24	SOIL EROSION & SEDIMENT CONTROL PLAN & DETAILS
25	CONSTRUCTION DETAILS

PUBLIC UTILITIES	
<p><b>GAS:</b> ELIZABETHOWN GAS COMPANY 520 GREEN LANE UNION, NJ 07083 ATTN: GREG BALINT Office: 908-662-8321 Cell: 732-713-2581 Email: gbalint@agresources.com</p>	
<p><b>TELEPHONE:</b> VERIZON NEW JERSEY 999 WEST MAIN STREET FREEHOLD, NJ 07728 ATTN: IAN CHAN Office: 732-683-5146 Cell: 224-713-2566 Email: ian.chan@verizon.com</p>	
<p><b>CABLE:</b> COMCAST 800 RAHWAY AVENUE UNION, NJ 07083 ATTN: ROBERT KNOEPFEL Cell: 908-378-0256 Email: Robert_Knoepfel@cable.comcast.com</p>	
<p><b>CROWN CASTLE</b> 581 MAIN STREET WOODBRIDGE, NJ 07095 ATTN: ANTHONY BOMBACIE Office: 973-487-3585 Cell: 848-466-0007 Email: Anthony.Bombacie@crowncastle.com</p>	
<p><b>CROWN CASTLE</b> 3200 HORIZON DRIVE, SUITE 150 KING OF PRUSSIA, PA 19406 ATTN: RON RHOADS Office: 610-567-7023 Cell: 267-718-0984 Email: Ron.Rhoads@crowncastle.com</p>	
<p><b>ZENFI NETWORKS/CROSS RIVER FIBER</b> 461 HEADQUARTERS PLAZA NORTH TOWER, 2ND FLOOR MORRISTOWN, NJ 07960 ATTN: MICHAEL SPANGLER Office: 908-409-6921 Cell: 908-878-3010 Email: mspangl@zenfi.com</p>	
<p><b>NEVADA MENOR</b> Office: 908-277-0105 Email: nmenor@zenfi.com</p>	
<p><b>ALTICEUSA</b> 275 CENTENNIAL AVENUE PISCATAWAY, NJ 08854 ATTN: JEFFREY POLANCO Office: 732-317-7344 Cell: 973-962-3449 Email: Jeffrey.Polanco@AlticeUSA.com</p>	
<p><b>ALEXIS REYES MUNOZ</b> Email: Alexis.ReyesMunoz@AlticeUSA.com</p>	
<p><b>ELECTRIC:</b> PSE&amp;G 472 WESTON CANAL ROAD SOMERSET, NJ 08873 ATTN: JOHN GRABENSTEIN 732-764-3067 Email: john.grabenstein@pseg.com</p>	
<p><b>BURK LAMBERTSON</b> 732-764-3161 Email: burk.lambertsonjr@pseg.com</p>	
<p><b>WATER:</b> MIDDLESEX WATER COMPANY 485C ROUTE 1 SOUTH, SUITE 400 ISELIN, NJ 08830 ATTN: ISIDRO BUEN Office: 732-634-1500 x244 Cell: 732-638-7533 Email: lbuen@middlesexwater.com</p>	
<p><b>SANITARY SEWER:</b> WOODBRIDGE TOWNSHIP DEPARTMENT OF PUBLIC WORKS 225 SMITH STREET KEASBEY, NJ 08832 ATTN: GEORGE T. BREW 732-738-1311 x3010</p>	
<p>CONTRACTOR SHALL CALL THE UNDERGROUND LOCATIONS SERVICE: (800) 272-1000</p>	
<p>BIDDERS ARE ADVISED TO VERIFY THE ABOVE INFORMATION AS ITS ACCURACY AND COMPLETENESS ARE NOT GUARANTEED BY THE COUNTY</p>	
<p>LOCATIONS OF UTILITIES SHOWN ON THE PLANS ARE PLOTTED FROM AVAILABLE DATA ON FILE WITH THE UTILITY COMPANIES AND ARE NOT GUARANTEED AS TO EXACTNESS. THE CONTRACTOR IS TO DETERMINE EXACT LOCATION AND DEPTH OF UTILITIES AT ALL CROSSINGS PRIOR TO CONSTRUCTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL USE THE UTILITY LOCATIONS SHOWN AS AN AID IN DETERMINING EXACT LOCATIONS.</p>	

NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS  
FOR ROAD AND BRIDGE CONSTRUCTION 2019 AND MIDDLESEX COUNTY  
SUPPLEMENTARY SPECIFICATIONS SHALL GOVERN

NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD CONSTRUCTION  
DETAILS-ROADWAY-TRAFFIC CONTROL-BRIDGE DETAILS BOOKLET 2016 AND  
STANDARD ELECTRICAL DETAILS BOOKLET 2007 ARE APPLICABLE  
EXCEPT FOR THOSE DETAILS CONTAINED HEREIN

PREPARED BY:



**MENLO ENGINEERING ASSOCIATES, INC.**

CIVIL ENGINEERING CONSULTANTS & PROFESSIONAL PLANNERS  
261 CLEVELAND AVENUE HIGHLAND PARK, NEW JERSEY 08904



THE STATE OF NEW JERSEY REQUIRES  
NOTIFICATION BY EXCAVATORS, DESIGNERS,  
OR ANY PERSON PREPARING TO DISTURB THE  
EARTH'S SURFACE ANYWHERE IN THE STATE.

APPROVED BY COUNTY ENGINEER:

RONALD M. SENDNER, P.E.  
N.J.P.E. No. 24GE03162200

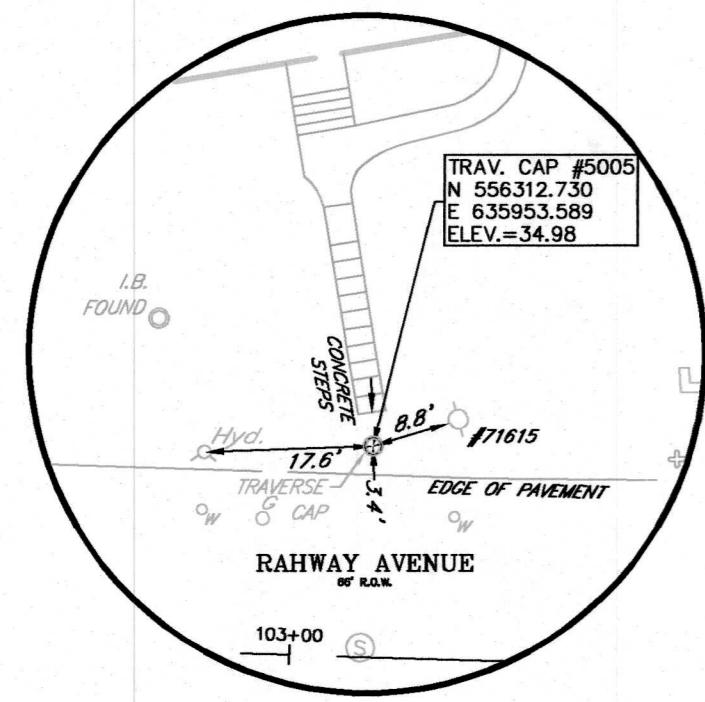
DATE

SHEET 1 of 25  
MARCH 11, 2016  
REVISED: MARCH 10, 2022

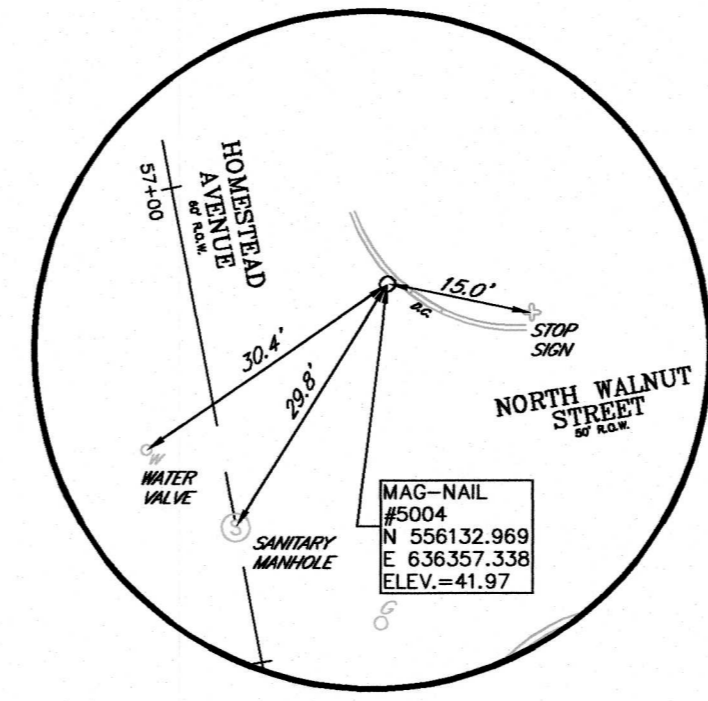




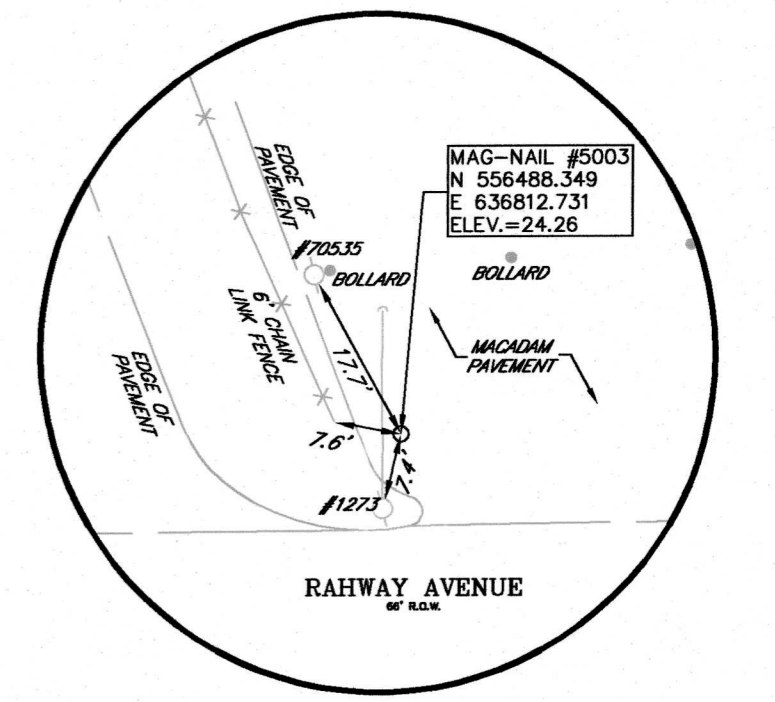




CONTROL TIES  
TRAV. CAP #5005  
SET IN GRASS  
N.T.S.



CONTROL TIES  
MAG-NAIL #5004  
SET IN ROAD  
N.T.S.

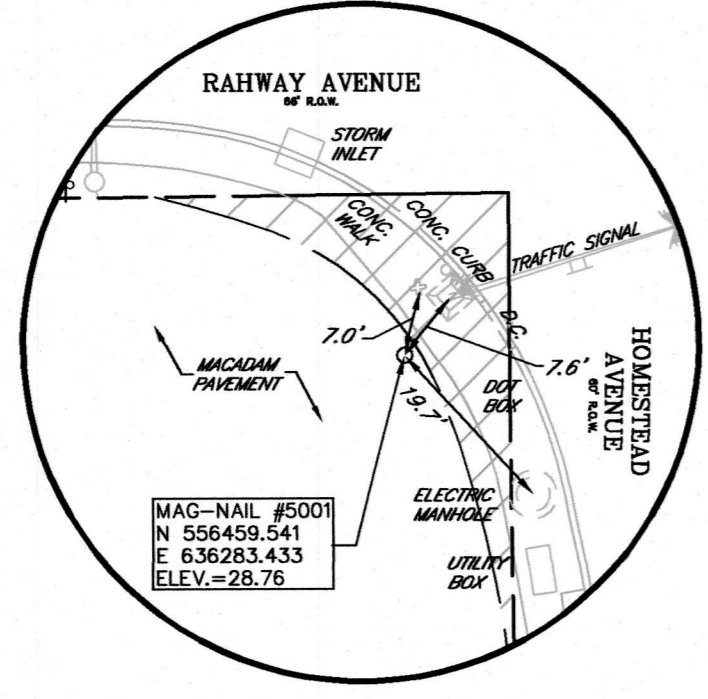


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N.T.S.

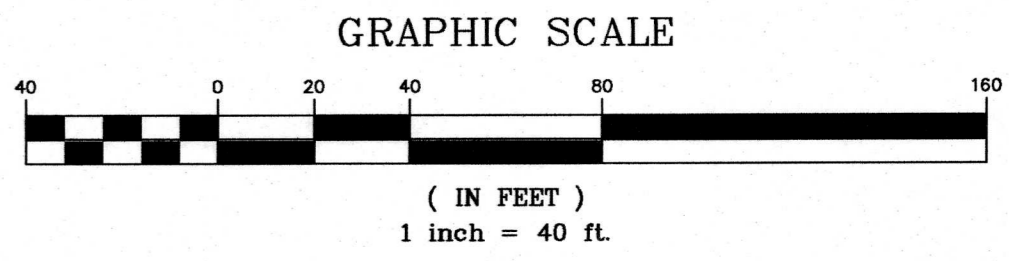
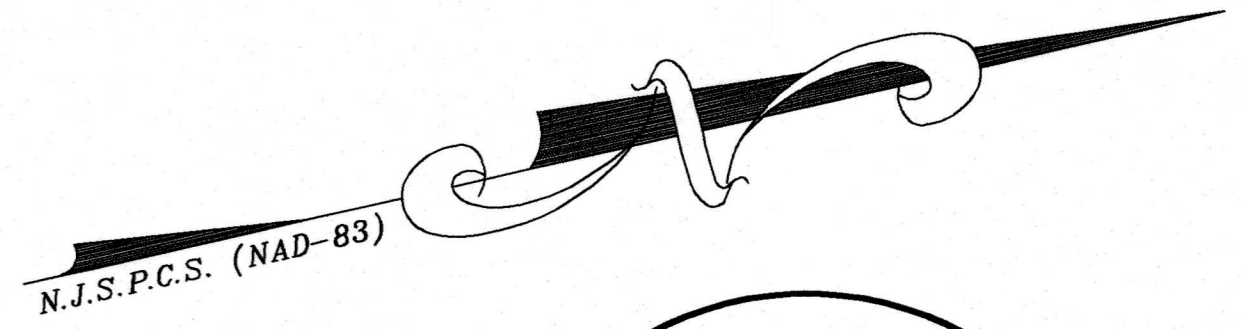
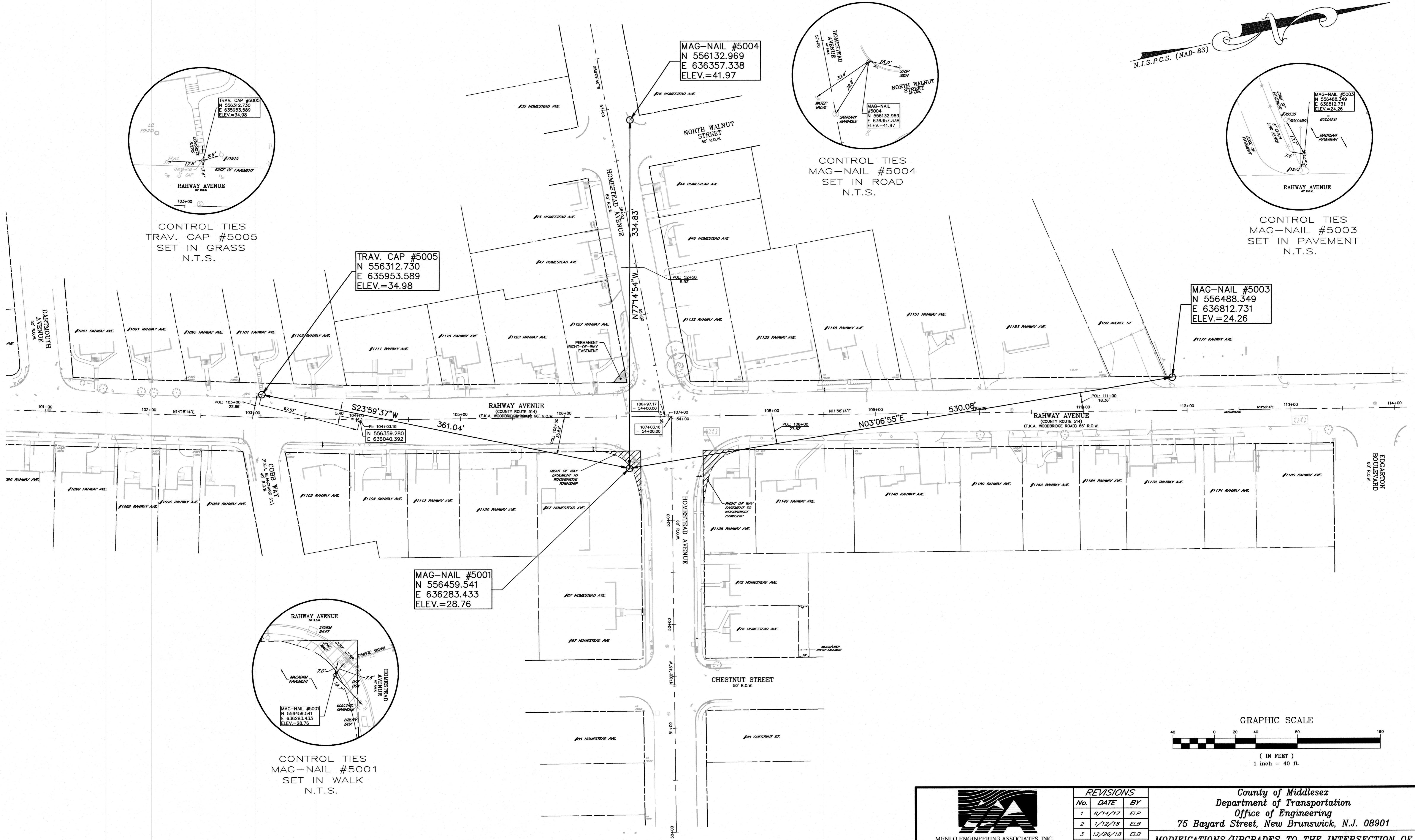
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E 635953.589  
ELEV.=34.98

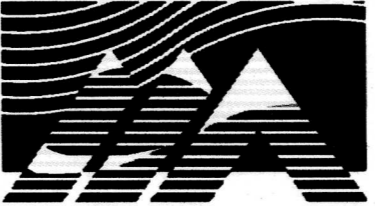
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ELEV.=24.26

MAG-NAIL #5001  
N 556459.541  
E 636283.433  
ELEV.=28.76

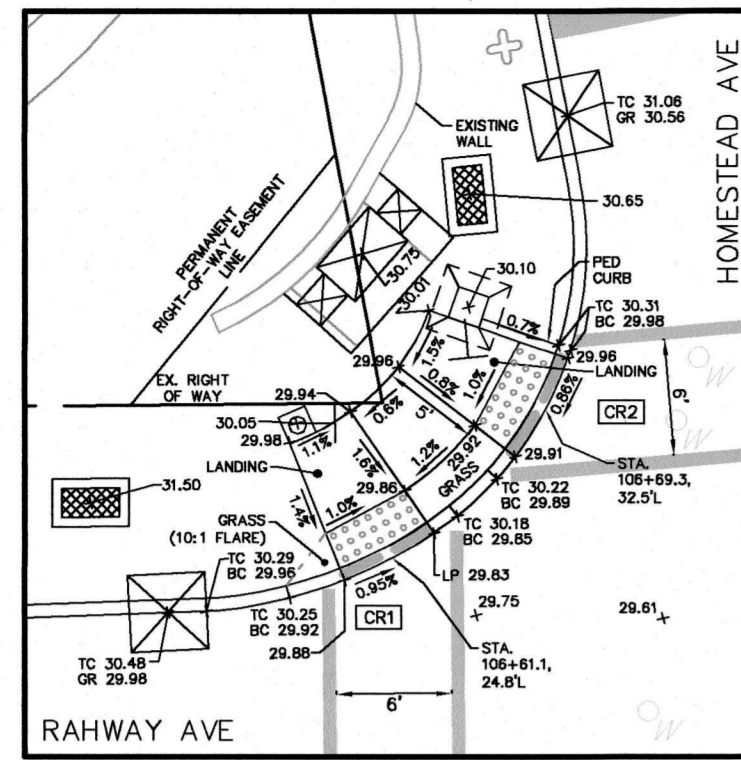


CONTROL TIES  
MAG-NAIL #5001  
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N.T.S.

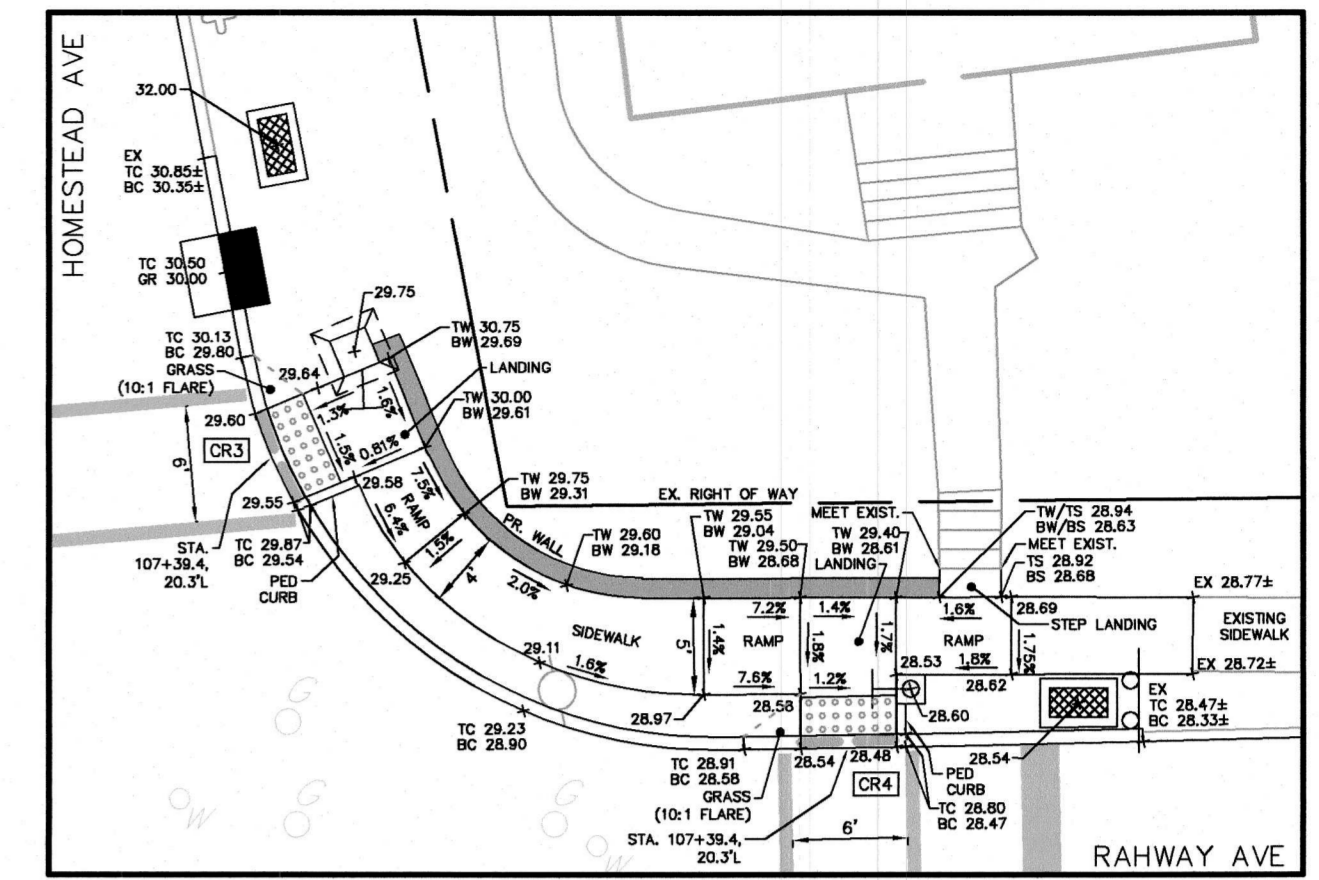


 <p>MENLO ENGINEERING ASSOCIATES, INC. CIVIL ENGINEERS, LAND SURVEYORS &amp; PROFESSIONAL PLANNERS 261 CLEVELAND AVENUE HIGHLAND PARK, NEW JERSEY 08904 PHONE: 732.846.8585 FAX: 732.846.9439 CERTIFICATE OF AUTHORIZATION: 24GA27951900</p>	<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>No.</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>8/14/17</td> <td>ELP</td> </tr> <tr> <td>2</td> <td>1/12/18</td> <td>ELB</td> </tr> <tr> <td>3</td> <td>12/26/18</td> <td>ELB</td> </tr> <tr> <td>4</td> <td>4/14/20</td> <td>ELB</td> </tr> </tbody> </table>		No.	DATE	BY	1	8/14/17	ELP	2	1/12/18	ELB	3	12/26/18	ELB	4	4/14/20	ELB	<p>County of Middlesex Department of Transportation Office of Engineering 75 Bayard Street, New Brunswick, N.J. 08901</p> <p><b>MODIFICATIONS/UPGRADES TO THE INTERSECTION OF RAHWAY AVENUE &amp; HOMESTEAD AVENUE</b> TOWNSHIP OF WOODBRIDGE</p> <p><b>TIES</b></p>
	No.	DATE	BY															
	1	8/14/17	ELP															
	2	1/12/18	ELB															
3	12/26/18	ELB																
4	4/14/20	ELB																
<p>Designed By: GSO Checked By: VSH</p>	<p>Drawn By: ELP Approved By: GSO</p>	<p>Scale: 1"=40' Sheet No: 5 Date: August 16, 2016</p>																
<p>DATE: 4/14/20</p>	<p>DATE</p>		<p><b>Ronald M. Sendner</b> County Engineer N.J.P.E. No. 24CE03162200</p>															

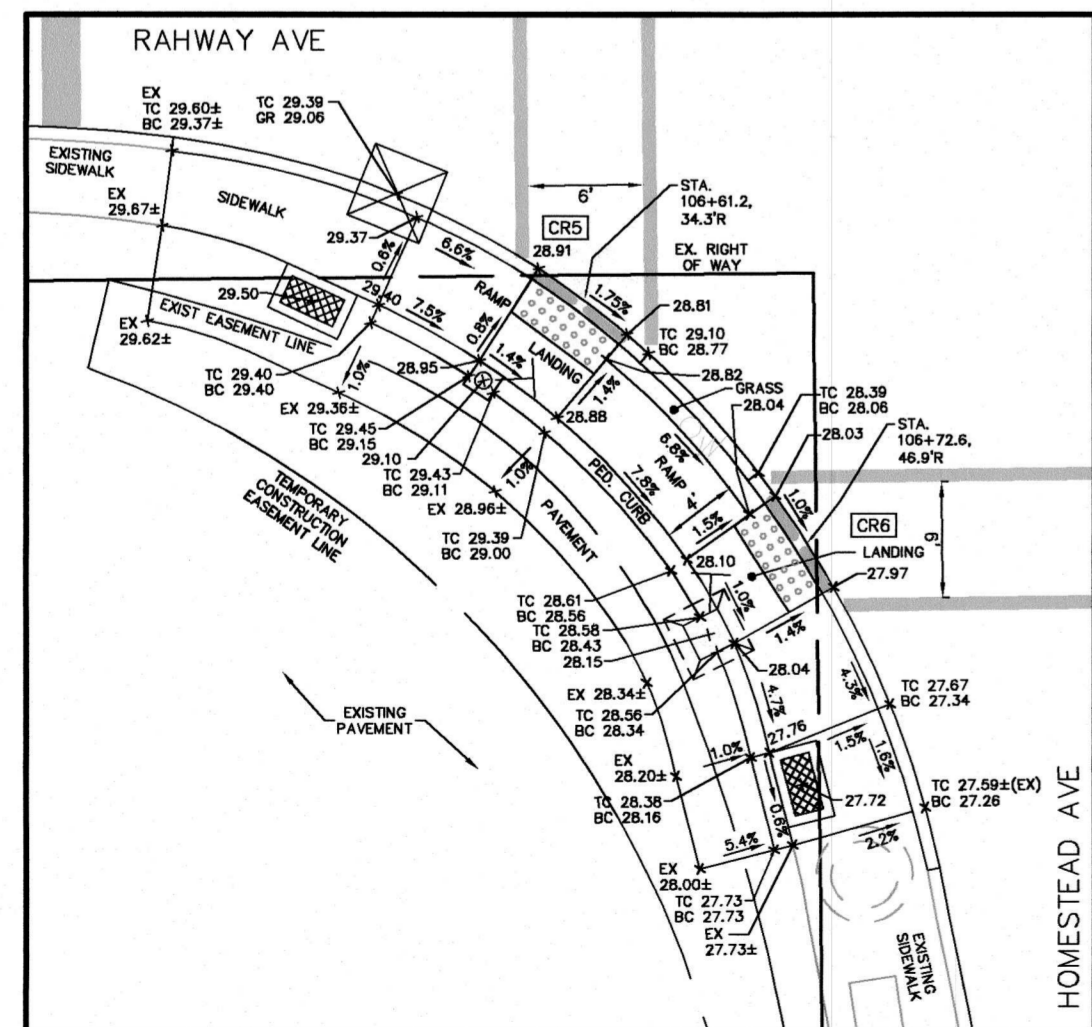
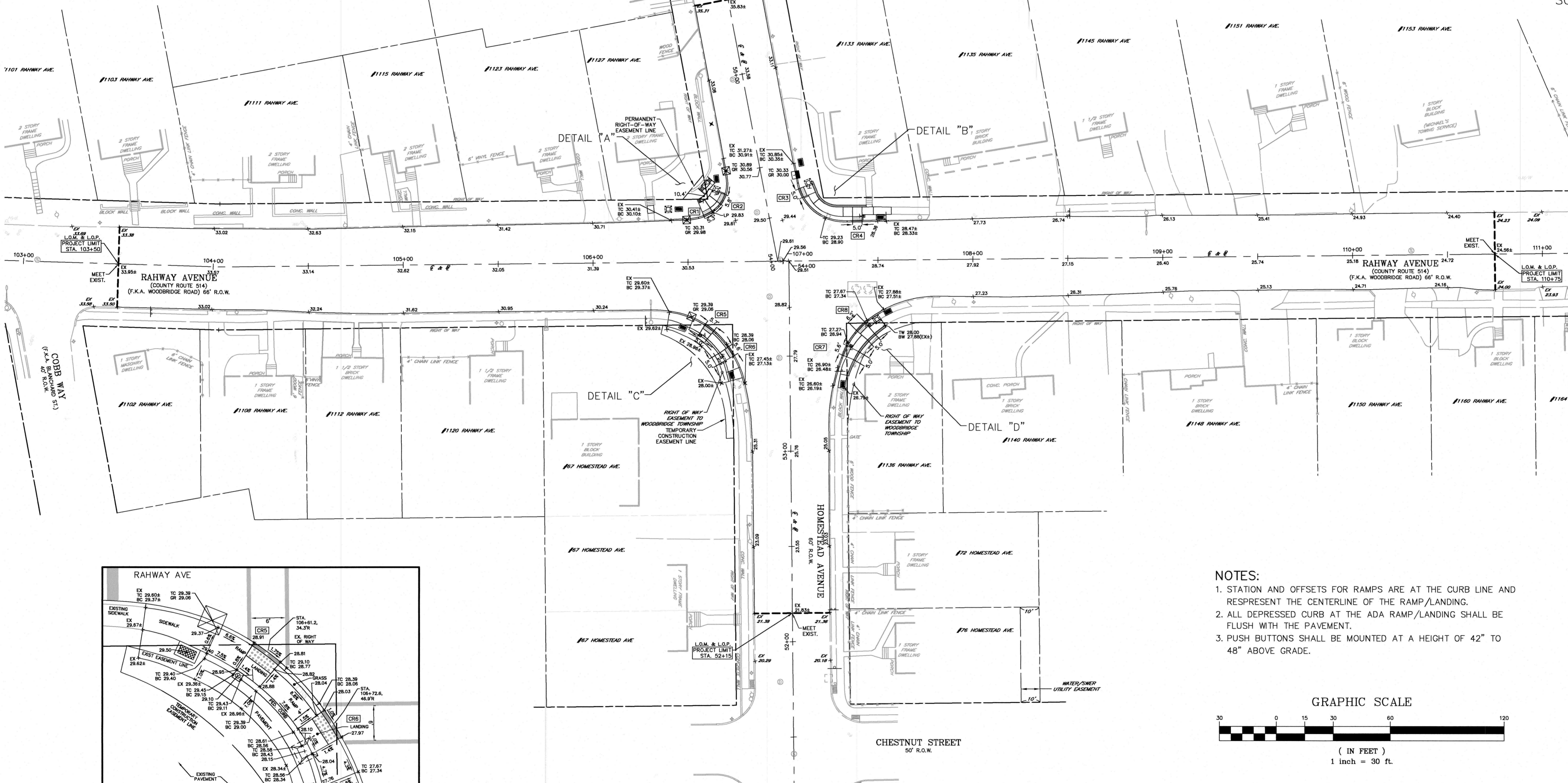
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 2013.092 - Base - Homestead - Rahway  
 PLOTTED: 3/1/2021 11:20 AM BY: VALERIE HILLEN



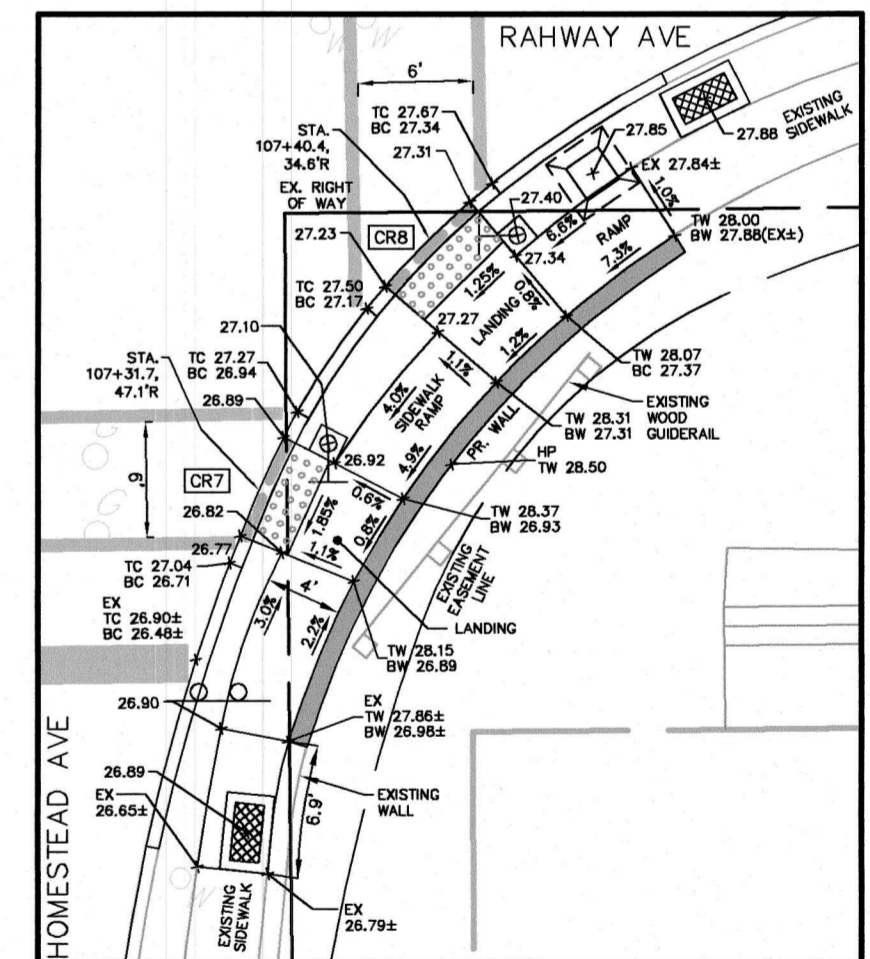
DETAIL "A"  
SCALE: 1"=10'



DETAIL "B"  
SCALE: 1"=10'

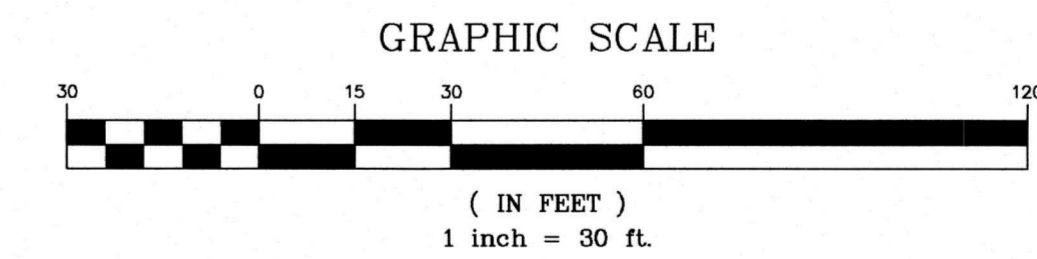


DETAIL "C"  
SCALE: 1"=10'



DETAIL "D"  
SCALE: 1"=10'

- NOTES:
1. STATION AND OFFSETS FOR RAMPS ARE AT THE CURB LINE AND REPRESENT THE CENTERLINE OF THE RAMP/LANDING.
  2. ALL DEPRESSED CURB AT THE ADA RAMP/LANDING SHALL BE FLUSH WITH THE PAVEMENT.
  3. PUSH BUTTONS SHALL BE MOUNTED AT A HEIGHT OF 42" TO 48" ABOVE GRADE.



**CURB RAMP DETAIL LEGEND**

	DETECTABLE WARNING SURFACE
	ACCESSIBLE PUSH BUTTON
	SIGNAL POLE FOUNDATIONS
	PEDESTRIAN SIGNAL FOUNDATION
	JUNCTION BOX FOUNDATION
	DEPRESSED CURB
	CURB RAMP IDENTIFICATION

**MENLO ENGINEERING ASSOCIATES, INC.**  
 CIVIL ENGINEERS, LAND SURVEYORS & PROFESSIONAL PLANNERS  
 261 CLEVELAND AVENUE  
 HIGHLAND PARK, NEW JERSEY 08904  
 PHONE: 732.846.8585 FAX: 732.846.9439  
 CERTIFICATE OF AUTHORIZATION: 24GA27951900

*Gregory S. Oman*  
**GREGORY S. OMAN**  
 PROFESSIONAL ENGINEER  
 N.J. PE#43441

3/10/22  
 DATE

**REVISIONS**

No.	DATE	BY
1	8/16/16	ELP
2	8/14/17	ELP
3	1/12/18	ELB
4	12/26/18	ELB
5	4/14/20	ELB
6	3/10/22	VSH

Designed By: ELP  
 Drawn By: GSO  
 Checked By: VSH  
 Approved By: GSO

County of Middlesex  
 Department of Transportation  
 Office of Engineering  
 75 Bayard Street, New Brunswick, N.J. 08901

**MODIFICATIONS/UPGRADES TO THE INTERSECTION OF RAHWAY AVENUE & HOMESTEAD AVENUE**  
 TOWNSHIP OF WOODBRIDGE

**GRADING PLAN**

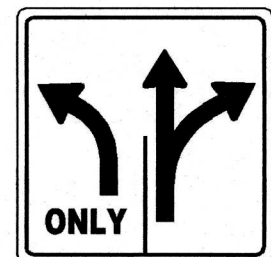
Scale: As Shown  
 Sheet No: 6  
 Date: March 11, 2016

*Ronald M. Sendner*  
**Ronald M. Sendner**  
 County Engineer  
 N.J.P.E. No. 24GE03162200

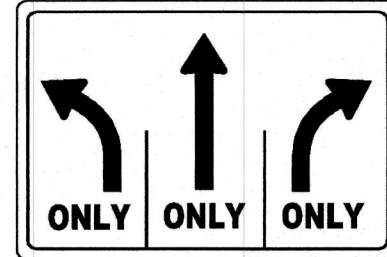
PLOT FILE # 2013.062-Base-Homestead-Rahway 2013.062-Base.dwg PLOTTED: 3/14/2022 4:03 PM BY: VALERIE HILLEN  
 C:\DWG\2013.062-Base-Homestead-Rahway\2013.062-Base.dwg

**SIGN LEGEND**

R2-1	SPEED LIMIT	24"x30"
R5-2	NO TRUCKS	24"x24"
R12-1	WEIGHT LIMIT	24"x18"
R14-1	TRUCK ROUTE	24"x18"
M6-3	DIRECTIONAL ARROW (PLAQUE)	21"x15"



R(N)J3-BF  
30'x30'  
EXISTING LANE USE SIGN &  
PROPOSED RELOCATED LANE  
USE SIGN



R3-BB  
48'x30'  
EXISTING LANE USE SIGN

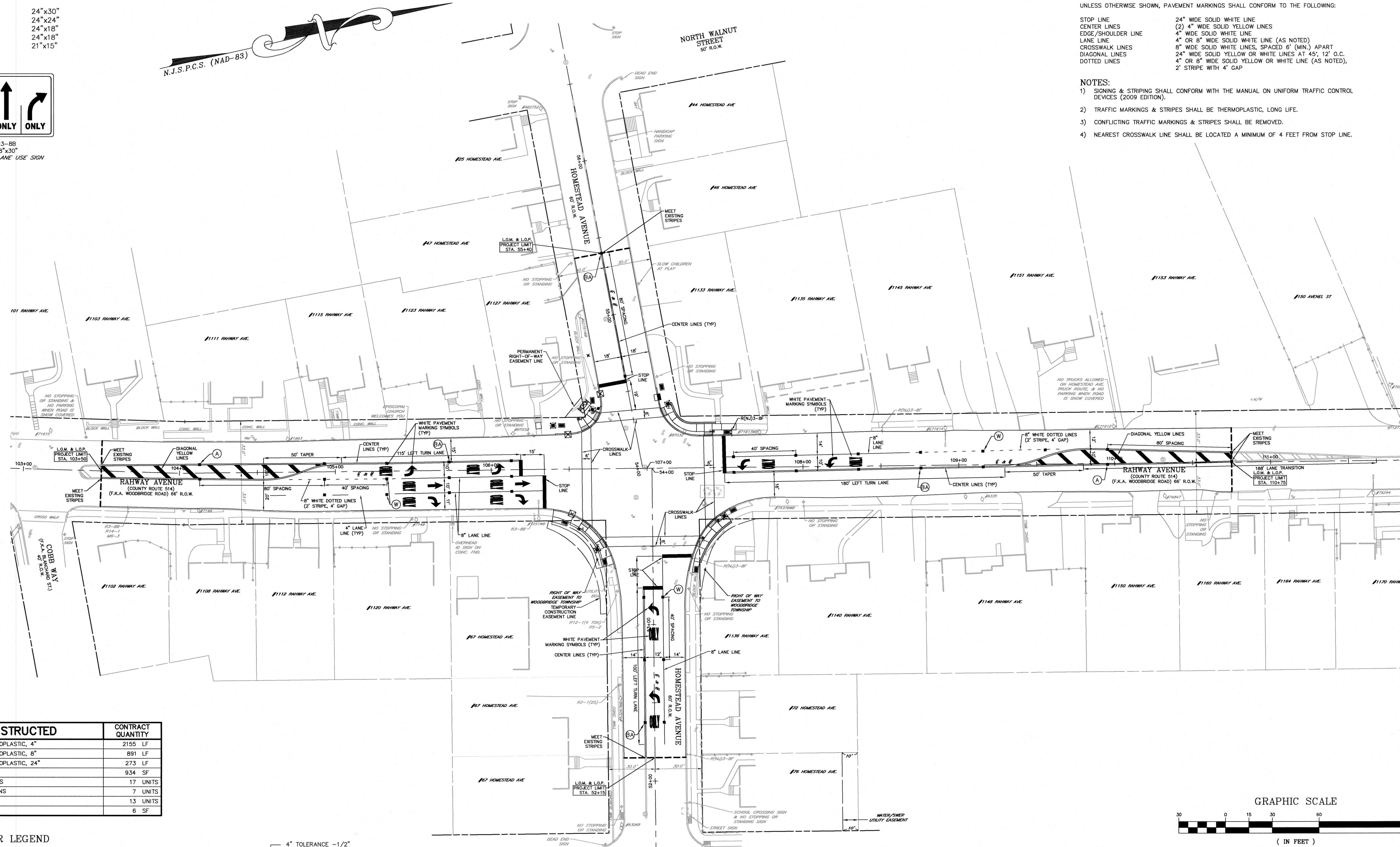
**PAVEMENT MARKING LEGEND**

UNLESS OTHERWISE SHOWN, PAVEMENT MARKINGS SHALL CONFORM TO THE FOLLOWING:

STOP LINE	24" WIDE SOLID WHITE LINE
CENTER LINES	(2) 4" WIDE SOLID YELLOW LINES
EDGE/SHOULDER LINE	4" WIDE SOLID WHITE LINE
LANE LINE	4" OR 8" WIDE SOLID WHITE LINE (AS NOTED)
CROSSWALK LINES	8" WIDE SOLID WHITE LINES, SPACED 6" (MIN.) APART
DIAGONAL LINES	24" WIDE SOLID YELLOW OR WHITE LINES AT 45°, 12" O.C.
DOTTED LINES	4" OR 8" WIDE SOLID YELLOW OR WHITE LINE (AS NOTED), 2' STRIPE WITH 4' GAP

**NOTES:**

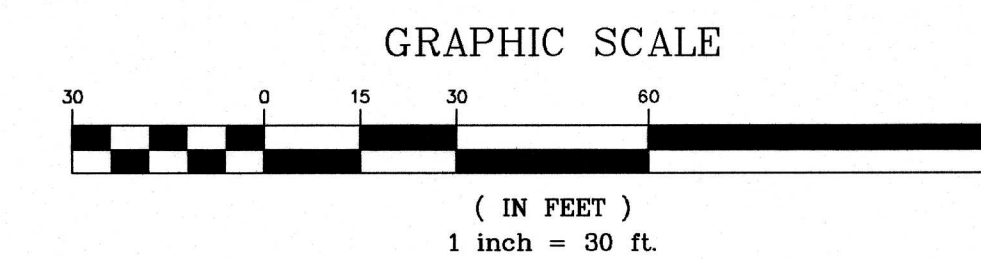
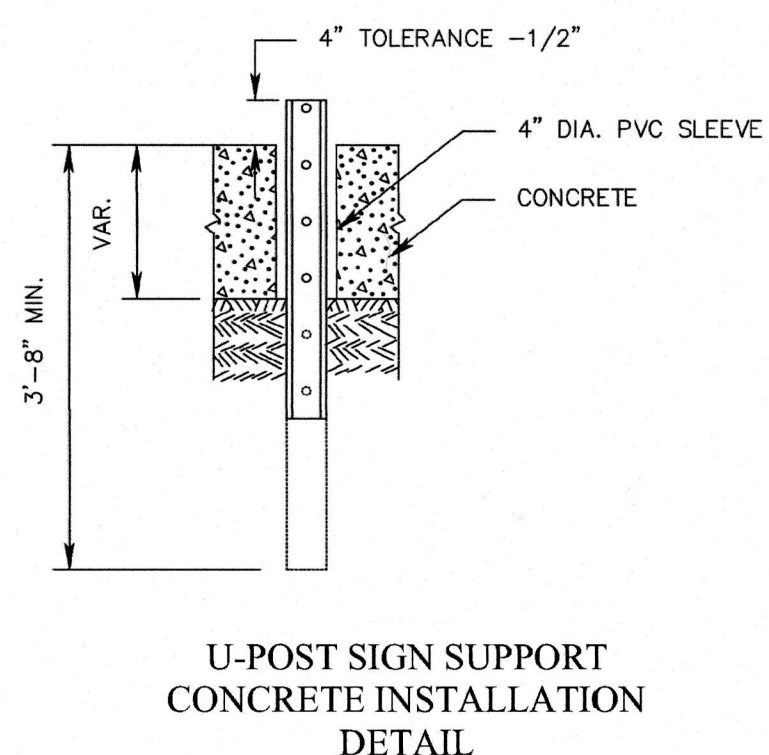
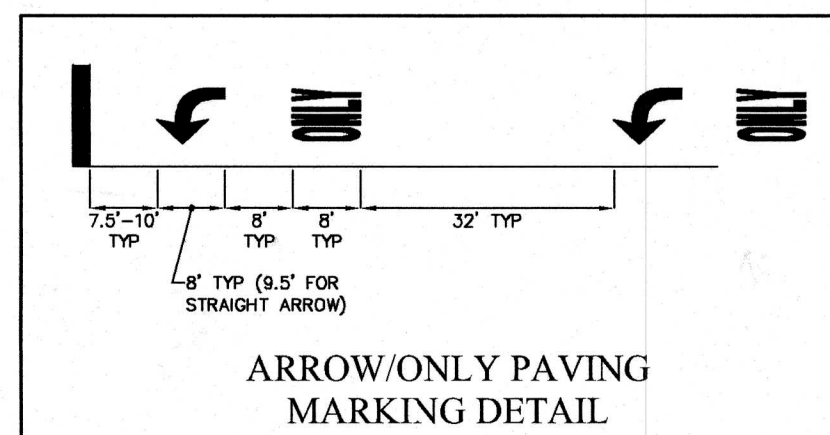
- SIGNING & STRIPING SHALL CONFORM WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (2009 EDITION).
- TRAFFIC MARKINGS & STRIPES SHALL BE THERMOPLASTIC, LONG LIFE.
- CONFLICTING TRAFFIC MARKINGS & STRIPES SHALL BE REMOVED.
- NEAREST CROSSWALK LINE SHALL BE LOCATED A MINIMUM OF 4 FEET FROM STOP LINE.



ITEM NO.	TO BE CONSTRUCTED	CONTRACT QUANTITY
44M	TRAFFIC STRIPES, LONG-LIFE, THERMOPLASTIC, 4"	2155 LF
45M	TRAFFIC STRIPES, LONG-LIFE, THERMOPLASTIC, 8"	891 LF
46M	TRAFFIC STRIPES, LONG-LIFE, THERMOPLASTIC, 24"	273 LF
47M	TRAFFIC MARKINGS, THERMOPLASTIC	934 SF
48M	RPM, MONO-DIRECTIONAL, WHITE LENS	17 UNITS
49M	RPM, MONO-DIRECTIONAL, AMBER LENS	7 UNITS
50M	RPM, BI-DIRECTIONAL, AMBER LENS	13 UNITS
51M	REGULATORY AND WARNING SIGNS	6 SF

**RAISED PAVEMENT MARKER LEGEND**

- (A) MONO-DIRECTIONAL, AMBER LENS
- (W) MONO-DIRECTIONAL, WHITE LENS
- (BA) BI-DIRECTIONAL, AMBER LENS



**MENLO ENGINEERING ASSOCIATES, INC.**  
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HIGHLAND PARK, NEW JERSEY 08904  
PHONE: 732.846.8585 FAX: 732.846.9439  
CERTIFICATE OF AUTHORIZATION: 24GA27951900

*Gregory S. Oman*  
GREGORY S. OMAN  
PROFESSIONAL ENGINEER  
NJ PE#43541

REVISIONS		
No.	DATE	BY
1	8/16/16	ELP
2	8/14/17	ELP
3	1/12/18	ELB
4	12/26/18	ELB
5	4/14/20	ELB
6	9/24/21	VSH

Designed By: ELP  
Drawn By: ELP  
Checked By: VSH  
Approved By: GSO

DATE: 9/24/21

County of Middlesex  
Department of Transportation  
Office of Engineering  
75 Bayard Street, New Brunswick, N.J. 08901

**MODIFICATIONS/UPGRADES TO THE INTERSECTION OF  
RAHWAY AVENUE & HOMESTEAD AVENUE**  
TOWNSHIP OF WOODBRIDGE

**SIGNING & STRIPING PLAN**

Scale: 1"=30'  
Sheet No: 7  
Date: March 11, 2016

*Ronald M. Sendner*  
Ronald M. Sendner  
County Engineer  
N.J.P.E. No. 24GE03162200

PLOTTER: 9/29/2021 11:48 AM BY: VALERIE HILLEN  
 C:\Users\2013092-BASE-Homestead-Rahway\2013092-Base.dwg  
 ZP FILE # 2013092-BASE-Homestead-Rahway

**SIGN LEGEND**

SIGN "A"		SIGN "B"	
TAG	LENGTH (INCHES)	TAG	LENGTH (INCHES)
A	5.0	L	5.0
B	39.2	M	53.0
C	3.9	N	3.1
D	11.9	O	11.9
E	4.0	P	5.0
F	18.0	Q	3.0
G	1.0	R	12.0
H	3.0	S	3.0
I	12.0	T	9.0
J	3.0		
K	9.0		

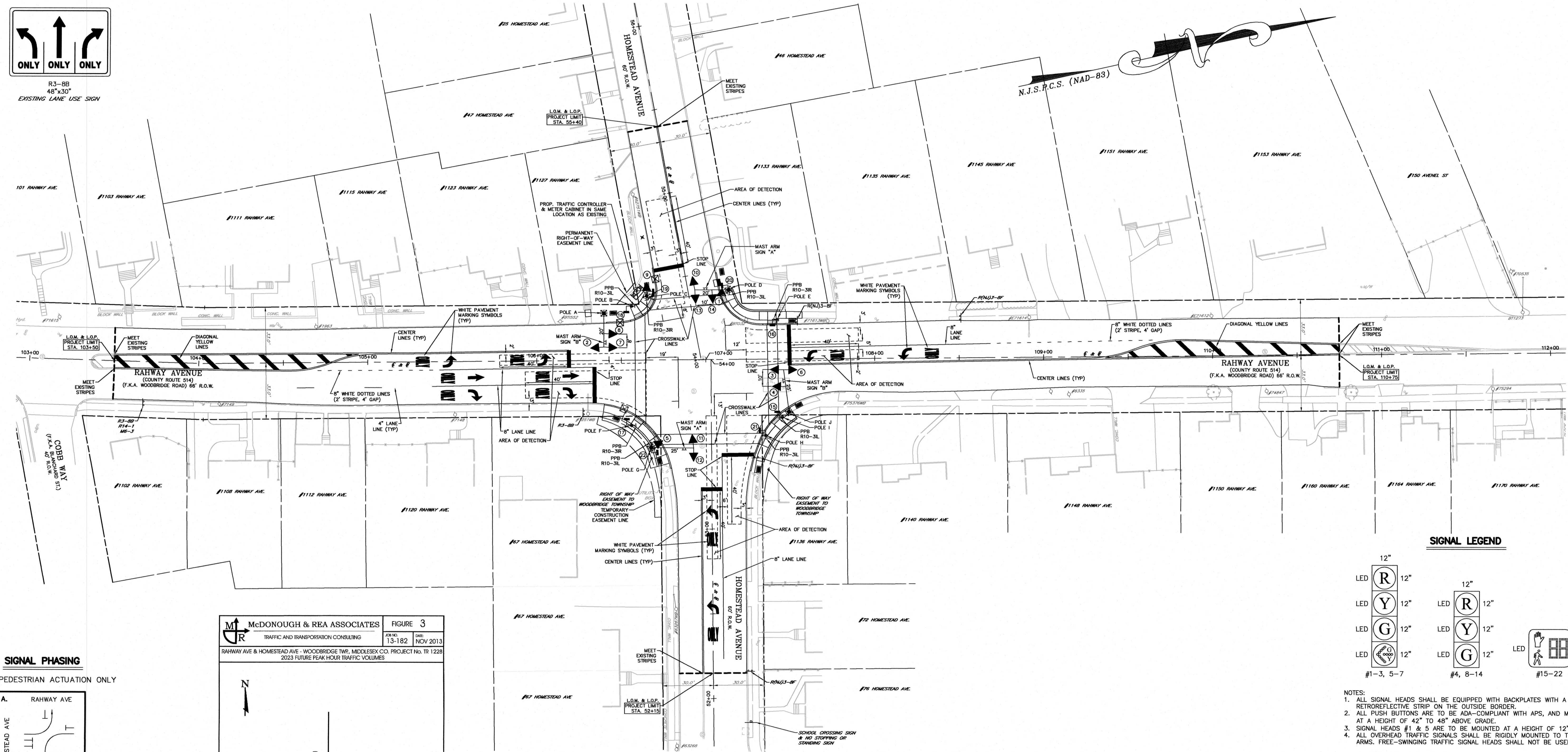
LETTERS:  
Street Name - 12" UC/9" LC (Series C)  
"Ave" - 7.5" UC/5.5" LC (Series C)

COLORS:  
LEGEND, BORDER - WHITE (RETROREFLECTIVE)  
BACKGROUND - GREEN (RETROREFLECTIVE)

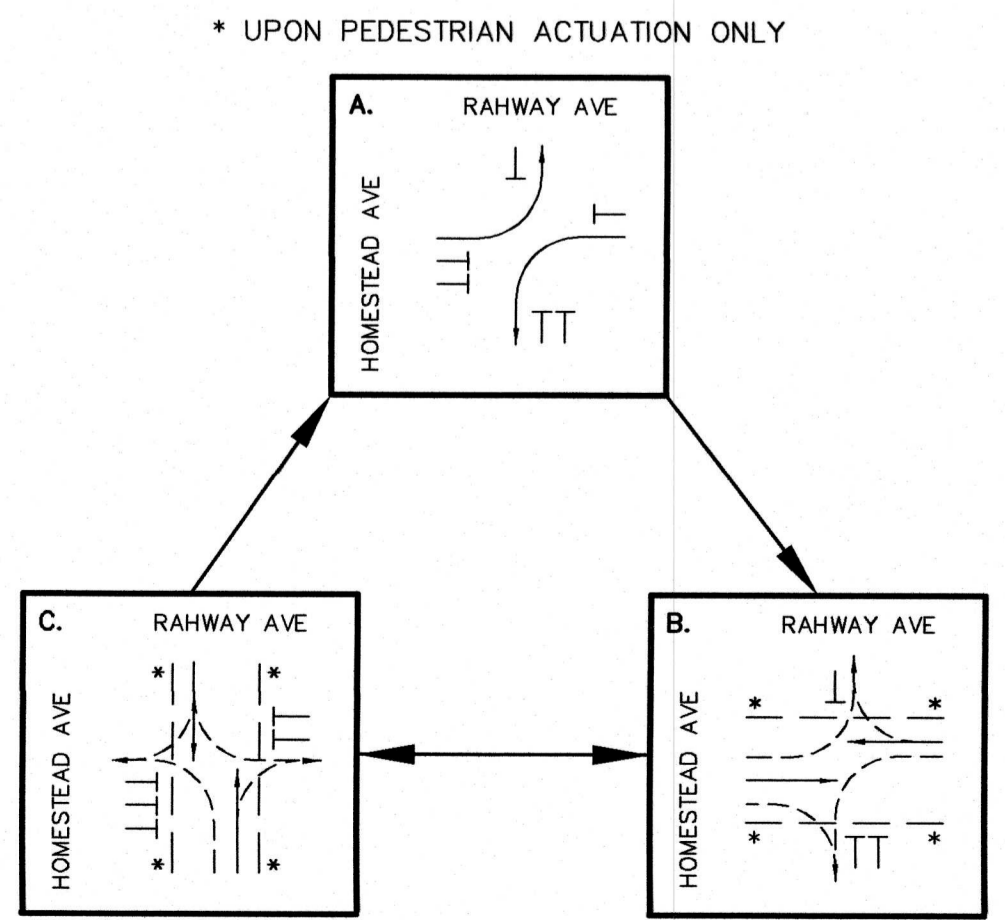
COUNTY ROUTE SIGN (M1-6):  
SIZE - 18" x 18"  
LEGEND, BORDER - YELLOW (RETROREFLECTIVE)  
BACKGROUND - BLUE (RETROREFLECTIVE)

**PAVEMENT MARKING LEGEND**

- UNLESS OTHERWISE SHOWN, PAVEMENT MARKINGS SHALL CONFORM TO THE FOLLOWING:
- |                    |   |
|--------------------|---|
| STOP LINE          | 24" WIDE SOLID WHITE LINE   |
| CENTER LINES       | (2) 4" WIDE SOLID YELLOW LINES  |
| EDGE/SHOULDER LINE | 4" WIDE SOLID WHITE LINE  |
| LANE LINE          | 4" OR 8" WIDE SOLID WHITE LINE (AS NOTED)                                     |
| CROSSWALK LINES    | 8" WIDE SOLID WHITE LINES, SPACED 6" (MIN.) APART                             |
| DIAGONAL LINES     | 24" WIDE SOLID YELLOW OR WHITE LINES AT 45°, 12" O.C.                         |
| DOTTED LINES       | 4" OR 8" WIDE SOLID YELLOW OR WHITE LINE (AS NOTED),<br>2' STRIPE WITH 4" GAP |
- NOTES:  
1) SIGNING & STRIPING SHALL CONFORM WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (2009 EDITION).  
2) TRAFFIC MARKINGS & STRIPES SHALL BE THERMOPLASTIC, LONG LIFE.  
3) CONFLICTING TRAFFIC MARKINGS & STRIPES SHALL BE REMOVED.  
4) NEAREST CROSSWALK LINE SHALL BE LOCATED A MINIMUM OF 4 FEET FROM STOP LINE.



**SIGNAL PHASING**



**McDONOUGH & REA ASSOCIATES** FIGURE 3  
TRAFFIC AND TRANSPORTATION CONSULTING  
JOB NO. 13-182 DATE NOV 2013  
RAHWAY AVE & HOMESTEAD AVE - WOODBRIDGE TWP., MIDDLESEX CO. PROJECT NO. TR 1228  
2023 FUTURE PEAK HOUR TRAFFIC VOLUMES

**SIGNAL LEGEND**

- NOTES:  
1. ALL SIGNAL HEADS SHALL BE EQUIPPED WITH BACKPLATES WITH A YELLOW RETROREFLECTIVE STRIP ON THE OUTSIDE BORDER.  
2. ALL PUSH BUTTONS ARE TO BE ADA-COMPLIANT WITH APS, AND MOUNTED AT A HEIGHT OF 42" TO 48" ABOVE GRADE.  
3. SIGNAL HEADS #1 & 5 ARE TO BE MOUNTED AT A HEIGHT OF 12".  
4. ALL OVERHEAD TRAFFIC SIGNALS SHALL BE RIGIDLY MOUNTED TO THE MAST ARMS. FREE-SWINGING TRAFFIC SIGNAL HEADS SHALL NOT BE USED.

MENLO ENGINEERING ASSOCIATES, INC.  
CIVIL ENGINEERS, LAND SURVEYORS & PROFESSIONAL PLANNERS  
261 CLEVELAND AVENUE  
HIGHLAND PARK, NEW JERSEY 08904  
PHONE: 732.846.8585 FAX: 732.846.9439  
CERTIFICATE OF AUTHORIZATION: 24GA27951900

DESIGNED BY: GREGORY S. OMAN  
PROFESSIONAL ENGINEER  
NJ PE#43441

REVISIONS		
No.	DATE	BY

4/30/21  
DATE

County of Middlesex  
Department of Transportation  
Office of Engineering  
75 Bayard Street, New Brunswick, N.J. 08901

**MODIFICATIONS/UPGRADES TO THE INTERSECTION OF RAHWAY AVENUE & HOMESTEAD AVENUE**  
TOWNSHIP OF WOODBRIDGE

**TRAFFIC SIGNAL PLAN**

Scale: 1"=30'  
Sheet No: 8  
Date: April 30, 2021

Ronald M. Sendner  
County Engineer  
N.J.P.E. No. 24E03162200



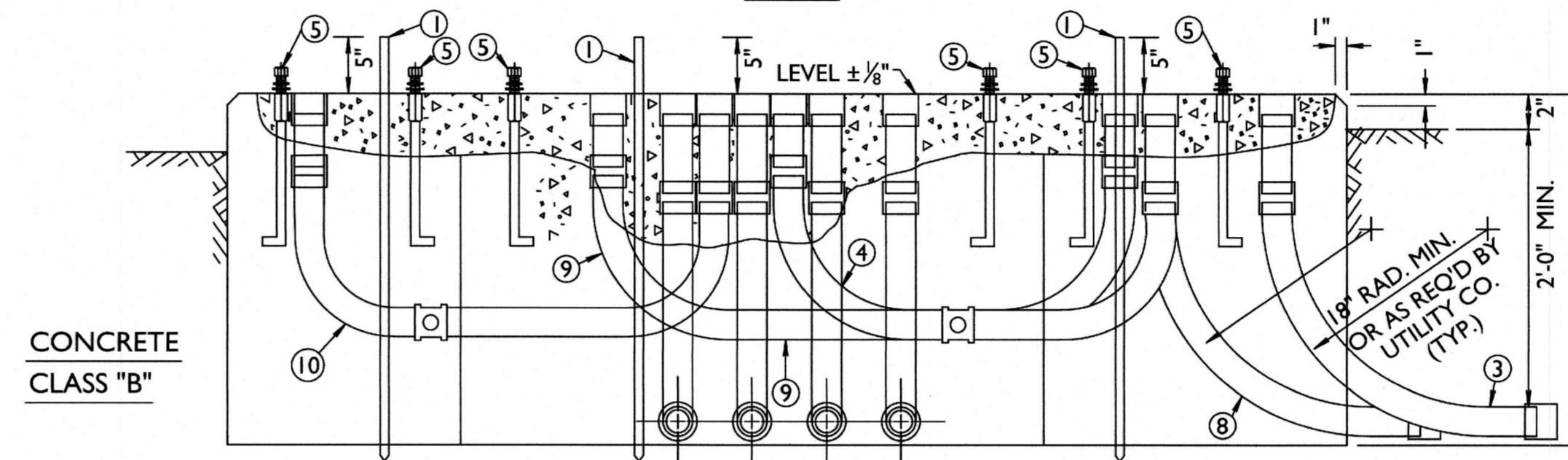
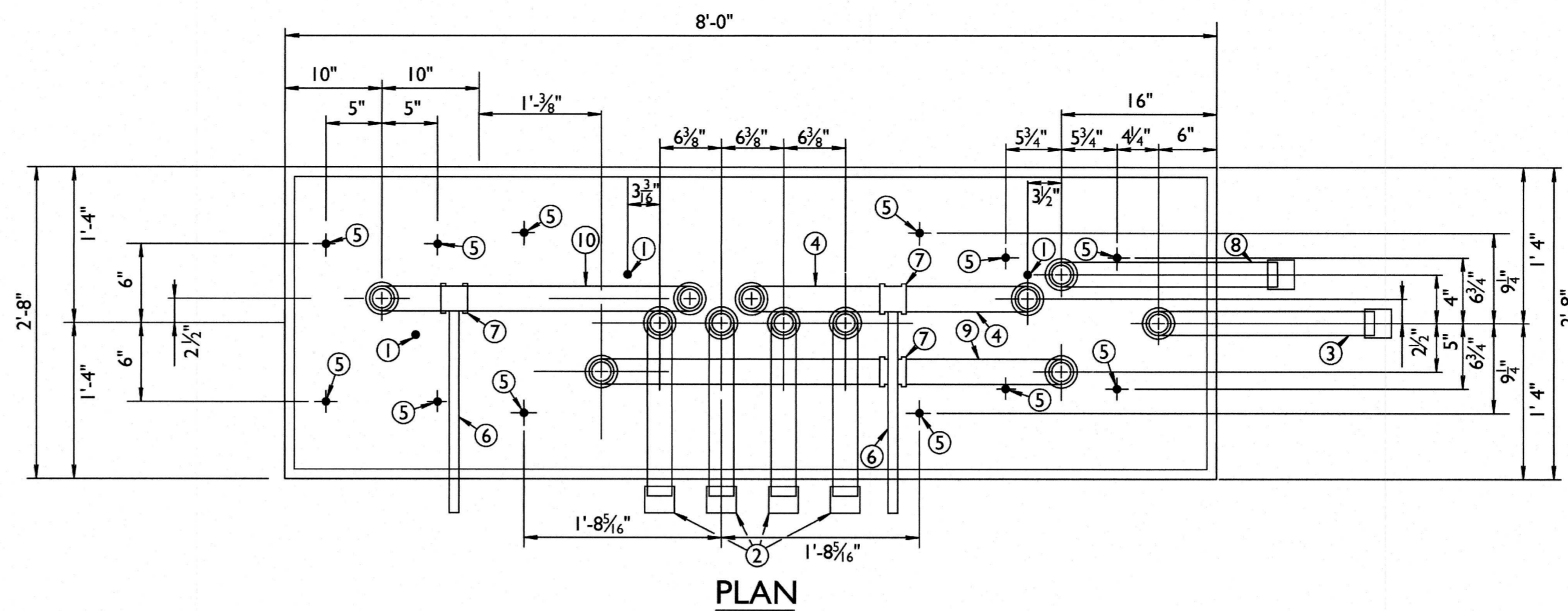
**SIGNAL TIMING DIRECTIVE**

PHASE	RIGHT OF WAY	NO PEDESTRIAN ACTUATION				TIME (SEC)
		1-3, 5-7	4,8	9-11, 12-14	15-18, 19-22	
A	Rahway Avenue Lead Left Change	<G/R	R	R	DW	6-10
		<Y/R	R	R	DW	3
B	ROW Change Clear	G	G	R	DW	10-40
		Y	Y	R	DW	4
		R	R	R	DW	2
C	Homestead Ave. ROW Change Clear	R	R	G	DW	10-25
		R	R	Y	DW	4
		R	R	R	DW	2

PHASE	RIGHT OF WAY	PEDESTRIAN ACTUATION				TIME (SEC)
		1-3, 5-7	2,6	9-11, 12-14	15-18, 19-22	
A	Rahway Avenue Lead Left Change	<G/R	R	R	DW	6-10
		<Y/R	R	R	DW	3
B	ROW Pedestrian Clearance Vehicle Extension Change Clear	G	G	R	DW	17
		G	G	R	DW	17
		G	G	R	FDW	0-6
		Y	Y	R	DW	4
C	Homestead Ave. ROW Pedestrian Clearance Change Clear	R	R	G	DW	17
		R	R	G	FDW	17
		R	R	Y	DW	4
	Emergency Flash	Y	Y	R	DARK	50-60 FLASHES PER MINUTE

**Timing Notes:**

- Phase A shall always be followed by Phase B.
- Phase A shall only follow Phase C. Phase C shall only follow Phase B.
- Soft recall to (Phase B) Rahway Avenue Right of Way (Don't Walk).
- The left-turning slots on the Rahway Avenue approaches shall be wired as separate phases.
- Operation shall be: If an actuation occurs in both opposing Rahway Avenue left-turn slots, the respective modules shall be timed concurrently. They shall also have the capacity of extending separately and terminating independently and convert the timing to the non-conflicting Right of Way movement.
- Actuation of the Rahway Avenue left-turn slot shall be capable of extending the Phase B green.
- Vehicle extension is to be set at 2 seconds unless otherwise noted.
- Phase A (Rahway Avenue Lead Left) vehicular detection shall have 3 second delay.
- Phase C (Homestead Avenue) vehicular detection shall have 5 second delay.
- The manual control shall be disconnected.
- Memory shall be turned off.
- Phases not actuated shall be capable of being skipped.



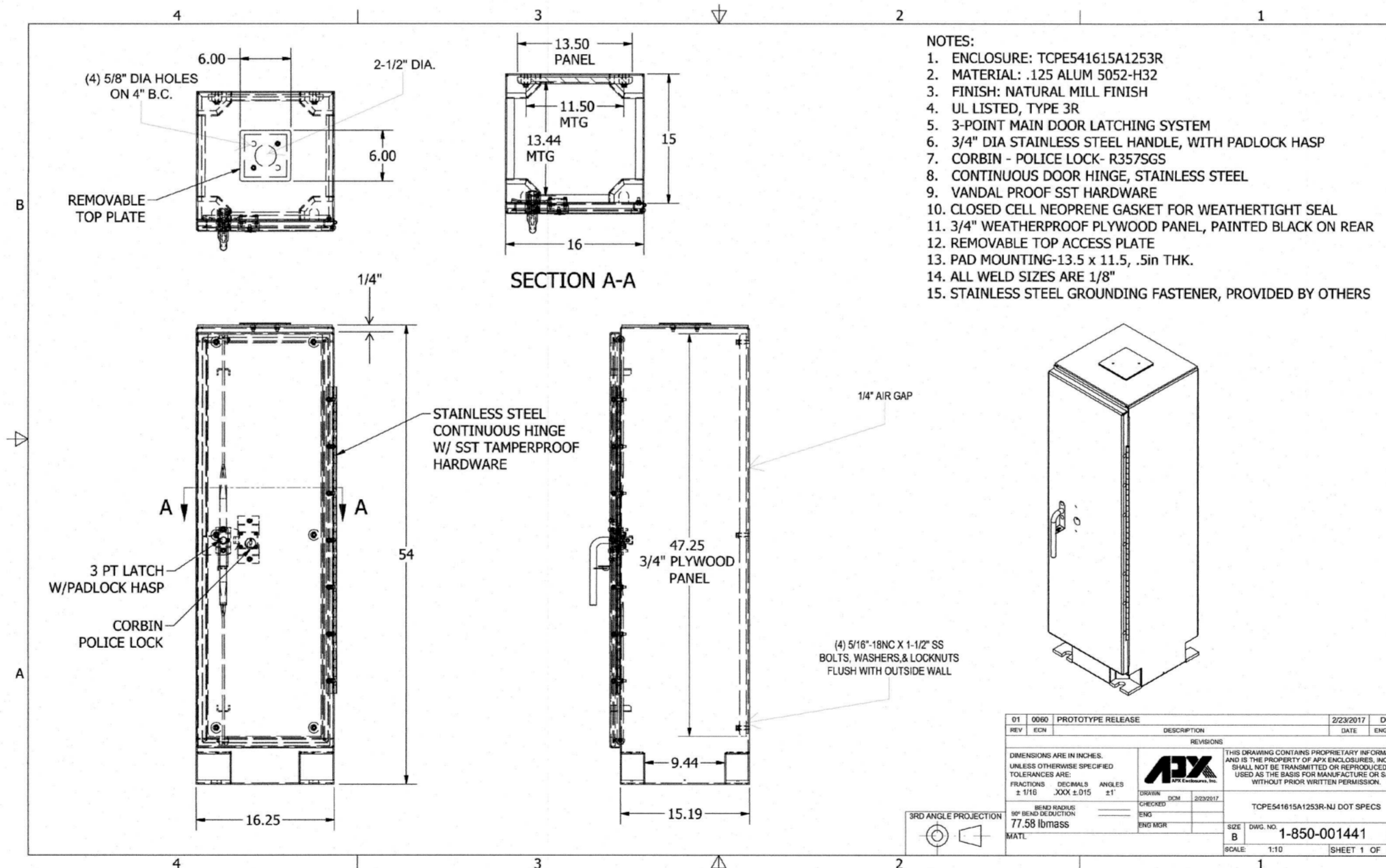
**FOUNDATION TYPE "P-MC(MOD)"**  
N.T.S.

**ITEM**

- 3/8" x 12' LG. GROUND ROD.
- 3" DIA. RIGID METALLIC CONDUIT. (ALL SHALL EXTEND TO JUNCTION BOX) FOURTH CONDUIT SHALL BE INSTALLED ONLY WHEN SPECIFIED IN PLAN DRAWING.
- RIGID METALLIC CONDUIT (SERVICE CONDUIT). SEE GENERAL PLAN FOR DIRECTION AND SIZE.
- 2" DIA. RIGID METALLIC CONDUIT (SERVICE CONDUIT)
- 3/4" DIA. ANCHOR BOLTS (SEE NIDOT STANDARD ELECTRICAL DETAILS)
- DRAIN 1" DIA. RIGID METALLIC CONDUIT (PITCH TO JUNCTION BOX).
- 2" x 2" x 1" GALV. TEE FITTING.
- 3" DIA. RIGID METALLIC CONDUIT (INTERCONNECT CONDUIT - FOR FUTURE USE) AND 1" INNERDUCT (ORANGE IN COLOR)
- 2" DIA. RIGID METALLIC CONDUIT (INTERCONNECT CONDUIT).
- 2" DIA. RIGID METALLIC CONDUIT (UPS CABINET).

**NOTES:**

- ALL CONDUIT SHALL BE INSTALLED SO THAT COUPLINGS ARE EMBEDDED PLUMB AND FLUSH WITH TOP OF CONCRETE FOUNDATION.
- J-BOLT MUST BE INSERTED 1/2" ± 1/8" INTO 3" COUPLING
- FOUNDATION SHALL BE POURED MONOLITHIC.
- CONTRACTOR SHALL CONFIRM THAT THE BOLT PATTERN MATCHES EQUIPMENT BEFORE ADVANCING ANY CONSTRUCTION OF THE FOUNDATION. IF THE BOLT PATTERN DOES NOT MATCH, THE ENGINEER SHOULD BE CONTACTED IMMEDIATELY FOR DIRECTION.
- THE ORIENTATION OF THE FOUNDATION IS DEPENDENT ON THE SERVICE LINE LOCATIONS OF THE GENERATOR AUXILIARY CABINET AND THE METER CABINET. THE CONTRACTOR SHALL CONFIRM POSITIONING PRIOR TO ADVANCING FOUNDATION CONSTRUCTION.
- THE SERVICE CONDUIT AND CABLE IS TO BE PLACED OUTSIDE OF THE METER CABINET AND ATTACHED TO THE BOTTOM OF THE METER FAN WHICH IS MOUNTED ON THE OUTSIDE OF THE METER CABINET.
- INTERNET SERVICE PROVIDER (ISP) CABLE SHALL BE INSERTED WITHIN THE 1" INNERDUCT (ORANGE IN COLOR) WHICH IS LOCATED WITHIN THE 3" DIA. RIGID METALLIC INTERCONNECT CONDUIT.



- NOTES:**
- ENCLOSURE: TOPS41615A123R
  - MATERIAL: 125 ALUM 5052-H32
  - FINISH: NATURAL MILL FINISH
  - UL LISTED, TYPE 3R
  - 3 POINT MAIN DOOR LATCHING SYSTEM
  - 3/4" DIA STAINLESS STEEL HANDLE, WITH PADLOCK HASP
  - CORBIN - POLICE LOCK- R357955
  - CONTINUOUS DOOR HINGE, STAINLESS STEEL
  - VANDAL PROOF SST HARDWARE
  - CLOSED CELL NEOPRENE GASKET FOR WEATHERTIGHT SEAL
  - 3/4" WEATHERPROOF PLYWOOD PANEL, PAINTED BLACK ON REAR
  - REMOVABLE TOP ACCESS PLATE
  - PAD MOUNTING-13.5 x 11.5, .5IN THK.
  - ALL WELD SIZES ARE 1/8"
  - STAINLESS STEEL GROUNDING FASTENER, PROVIDED BY OTHERS



**ICCU-S2: iIntelligent Control Unit for Shelf Mount**



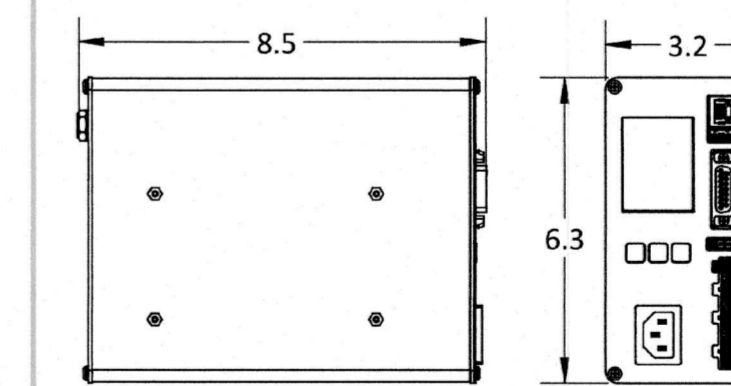
The ICCU-S2 replaces the ICCU-S and is designed to work with all style cabinets as the intelligent control unit for Polara's IN2/INS2 accessible push button stations (PBS). The system includes an interconnect board (PN: IN2-ICB sold separately) to facilitate connection of up to 16 PBS. Each PBS connects via two wires in parallel, and do not have a polarity requirement. A 2-wire BUTTION-PLC-CABLE is included with each unit and is used to connect the ICCU-S2 to the IN2-ICB.

This model utilizes four separate cable assemblies (A/B/C/D) to provide all the features/functions of the legacy 50 pin cable harness, allowing selection of just the features needed, at reduced cost. If just standard functions are needed, only Cables A and C are needed. For Preemption, Cable B is needed. For General Purpose Input functions, Cable D is needed.

This model also supports SDLC communication in TS1 and TS2 cabinets when a TS2 controller operating in TS2 mode, with an MMU, is utilized (there must be an MMU). If just PED Walk/Don't Walk interval information is communicated by SDLC, just Cable C would be needed. If both PED interval information and call placements are communicated through SDLC, Cables A and C would not be needed. The included CABLE-C-UG is necessary to ensure proper grounding when using the ICCU-S2 in this BIU mode. Cables B and D would only be needed if Preemption or General Input functions are needed.

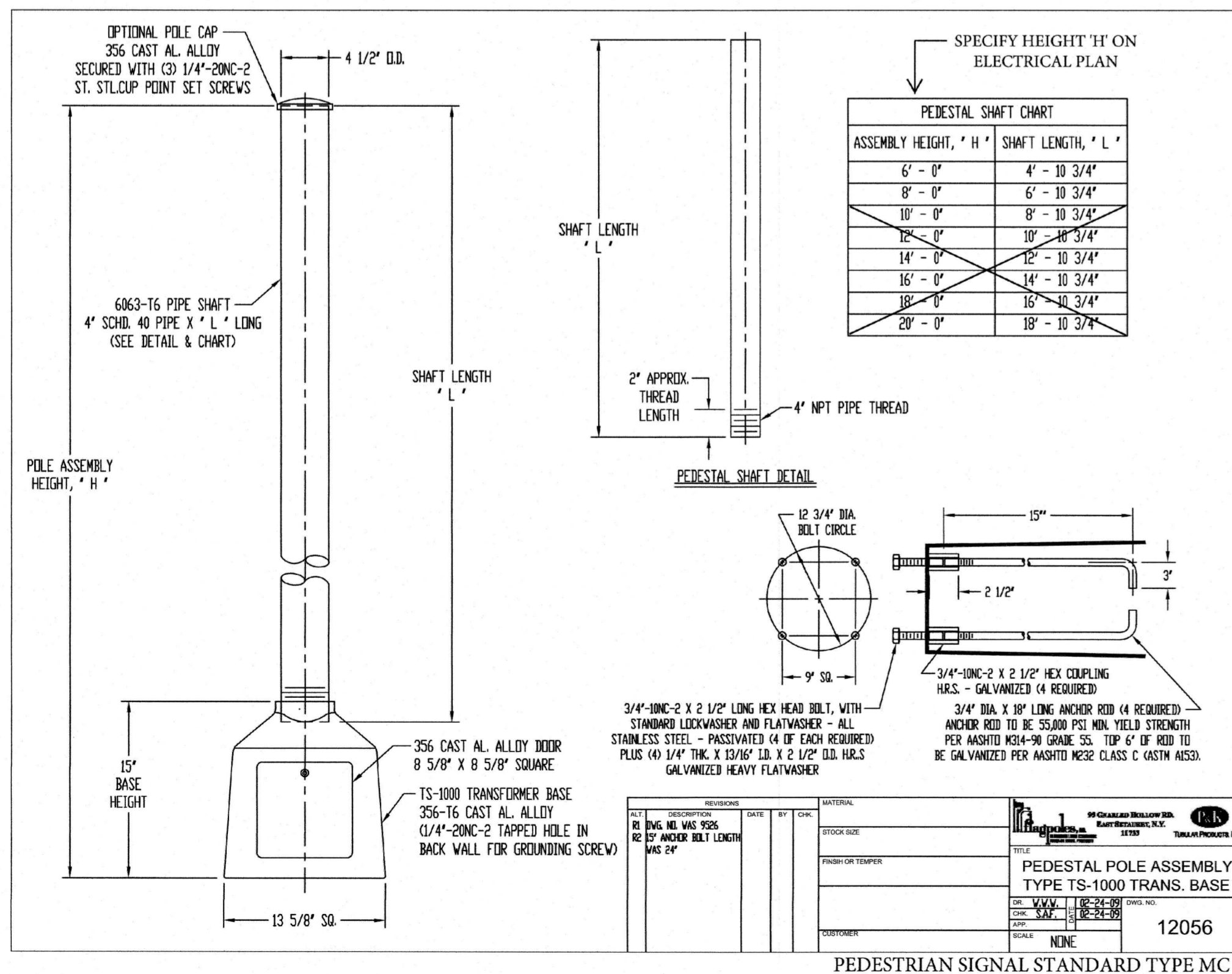
The ICCU-S2 front panel includes a backlit LCD for displaying system status information. Front panel buttons are used during setup, placing test calls, and to enable Wi-Fi. All setup functions can be performed via Ethernet or Wi-Fi using a PC. Setup and configuration is also supported using an iPhone, iPad or Android device via Wi-Fi. In addition, configuration via Bluetooth is supported by pairing with any connected PBS using a PC with an IN-DIGI (purchased separately), or iOS/Android mobile device. All of the connection options provide full access to setup and configuration options of both the ICCU-S2 and all connected PBSs. Polara provides free apps for Windows PCs (Windows 7+), iOS (9.0+) devices, and Android (5.0+) devices.

Multiple configurations are supported, with the ability to change operational features based on time of day. General purpose inputs are available for options such as voice message on emergency vehicle preemption. The system has downloadable internal conflict monitoring and health log data capture that contains extensive status/fault reporting. Remote Monitoring can be done over Ethernet.



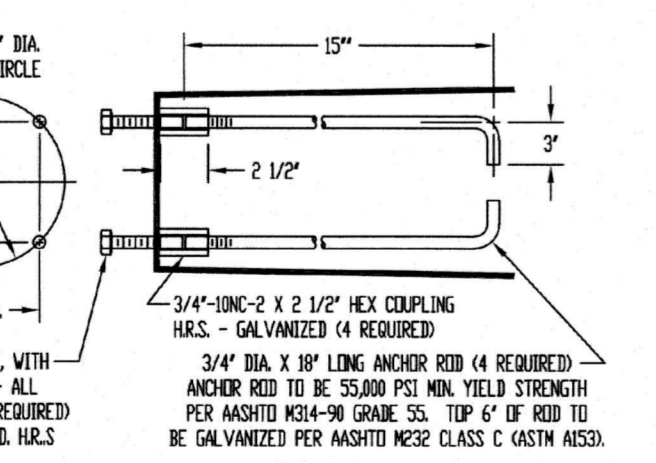
Doc. ICCU-S2-CutSheet Rev. A-25224 02/05/2020

www.polara.com



**PEDESTRIAN SHAFT CHART**

ASSEMBLY HEIGHT, " H "	SHAFT LENGTH, " L "
6' - 0"	4' - 10 3/4"
8' - 0"	6' - 10 3/4"
10' - 0"	8' - 10 3/4"
12' - 0"	10' - 10 3/4"
14' - 0"	12' - 10 3/4"
16' - 0"	14' - 10 3/4"
18' - 0"	16' - 10 3/4"
20' - 0"	18' - 10 3/4"



ITEM NO.	TO BE CONSTRUCTED	CONTRACT QUANTITY
39M	CONCRETE SIDEWALK, REINFORCED, 4" THICK	4 SY
52M	REFLECTORIZED MAST ARM STREET NAME SIGNS	42 SF
55M	GENERAL AUXILIARY CABINET W/UPS BATTERY BACKUP W/BATTERY SKIRT	1 UNIT
56M	2" RIGID METALLIC CONDUIT	81 LF
57M	3" RIGID METALLIC CONDUIT	493 LF
58M	GROUND WIRE, No. 8 AWG	693 LF
59P	SERVICE WIRE, No. 6 AWG	150 LF
60M	FOUNDATIONS, TYPE P-MC (MOD)	1 UNIT
61M	FOUNDATIONS, TYPE SPF	5 UNITS
62M	FOUNDATIONS, TYPE SFK	4 UNITS
63M	FOUNDATIONS, TYPE SFT	1 UNITS
64M	18"x36" JUNCTION BOXES	8 UNITS
65M	IMAGE DETECTOR	4 UNITS
66M	CONTROLLER ASSEMBLIES, 8 PHASE	1 UNIT
67M	METER CABINET, TYPE T	1 UNIT
68M	TRAFFIC SIGNAL HEAD	14 UNITS
69M	PEDESTRIAN SIGNAL HEAD	8 UNITS
70M	PUSH BUTTON	8 UNITS
71M	TRAFFIC SIGNAL CABLE, 2 CONDUCTOR	1274 LF
72M	TRAFFIC SIGNAL CABLE, 5 CONDUCTOR	1274 LF
73M	TRAFFIC SIGNAL CABLE, 10 CONDUCTOR	1823 LF
74M	TRAFFIC SIGNAL STANDARDS, ALUMINUM	5 UNITS
75M	PEDESTRIAN SIGNAL STANDARD, TYPE MC	5 UNITS
76M	TRAFFIC SIGNAL MAST ARM, ALUMINUM	4 UNITS
77P	CONTROLLER TURN-ON	1 UNIT

**MENLO ENGINEERING ASSOCIATES, INC.**  
CIVIL ENGINEERS, LAND SURVEYORS & PROFESSIONAL PLANNERS  
261 CLEVELAND AVENUE  
HIGHLAND PARK, NEW JERSEY 08904  
PHONE: 732.846.8585 FAX: 732.846.9439  
CERTIFICATE OF AUTHORIZATION: 24GA27951900

3/10/22  
DATE

GREGORY S. OMAN  
PROFESSIONAL ENGINEER  
NJ PE#A3441

REVISIONS		
No.	DATE	BY
1	8/14/17	ELP
2	1/12/18	ELB
3	12/26/18	ELB
4	4/14/20	ELB
5	2/23/21	VSH
6	4/7/21	VSH
7	3/10/22	VSH

**County of Middlesex**  
**Department of Transportation**  
**Office of Engineering**  
75 Bayard Street, New Brunswick, N.J. 08901

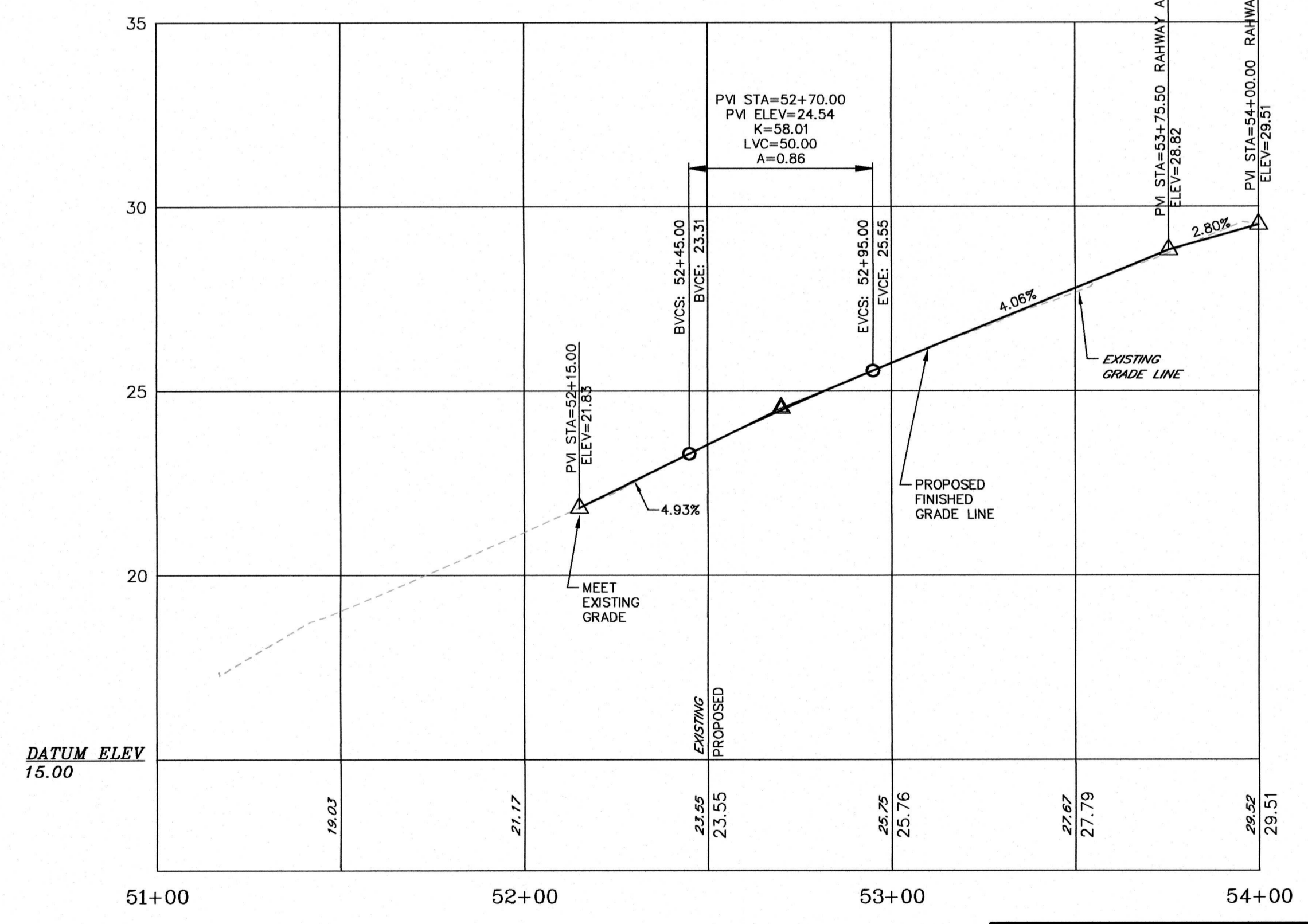
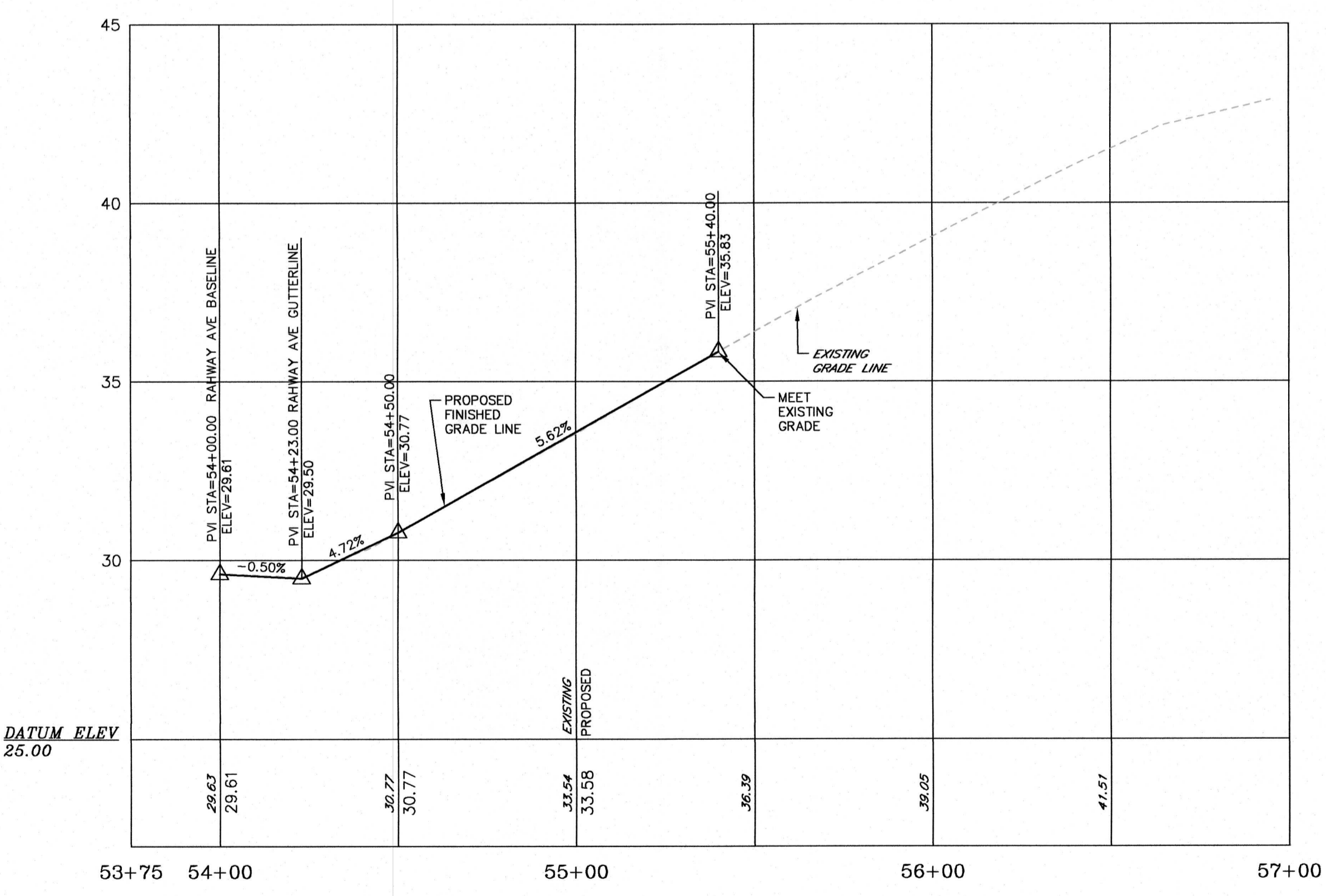
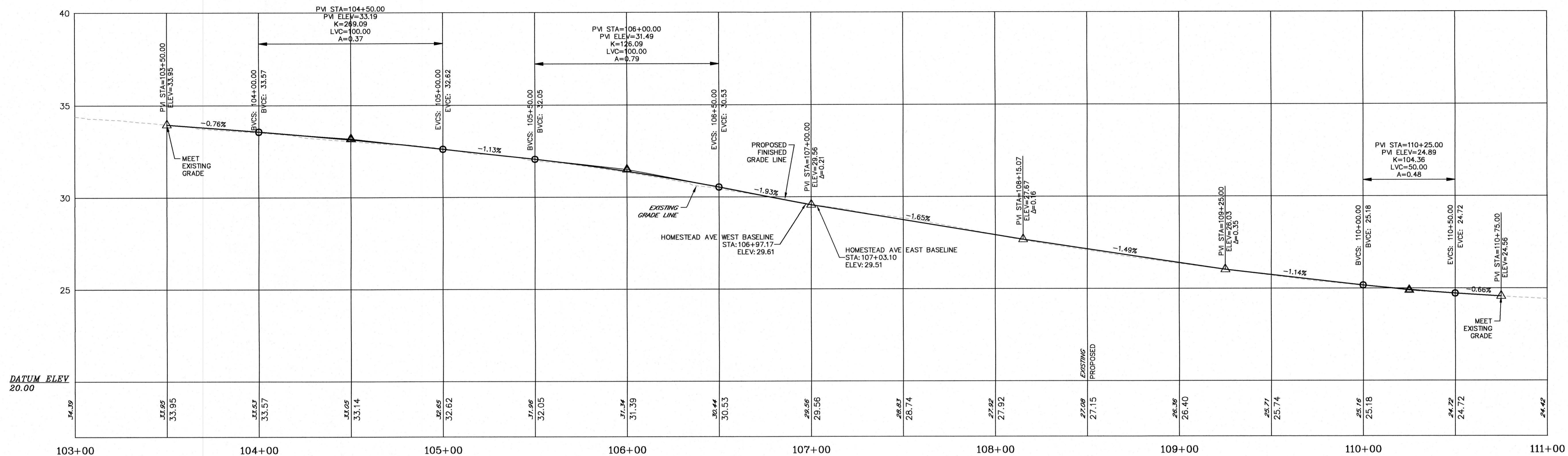
**MODIFICATIONS/UPGRADES TO THE INTERSECTION OF RAHWAY AVENUE & HOMESTEAD AVENUE**  
TOWNSHIP OF WOODBRIDGE

**ELECTRICAL PLAN-2**

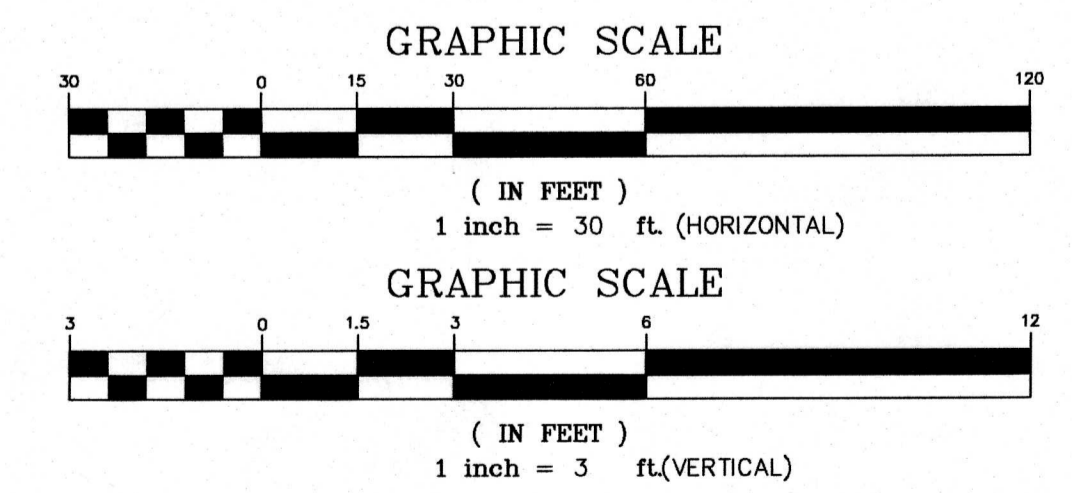
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Date: August 16, 2016

Ronald M. Sendner  
County Engineer  
N.J.P.E. No. 24GE03162200





STREET NAME	POSTED SPEED	DESIGN SPEED
RAHWAY AVENUE	35 MPH	40 MPH
HOMESTEAD AVENUE	25 MPH	30 MPH



**MENLO ENGINEERING ASSOCIATES, INC.**  
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 HIGHLAND PARK, NEW JERSEY 08904  
 PHONE: 732.846.8585 FAX: 732.846.9439  
 CERTIFICATE OF AUTHORIZATION: 24GA27951900

*Gregory S. Oman*  
 GREGORY S. OMAN  
 PROFESSIONAL ENGINEER  
 NJ PE#43441

4/14/20  
 DATE

REVISIONS		
No.	DATE	BY
1	1/12/18	ELB
2	12/26/18	ELB
3	4/14/20	ELB

County of Middlesex  
 Department of Transportation  
 Office of Engineering  
 75 Bayard Street, New Brunswick, N.J. 08901

**MODIFICATIONS/UPGRADES TO THE INTERSECTION OF  
 RAHWAY AVENUE & HOMESTEAD AVENUE**  
 TOWNSHIP OF WOODBRIDGE

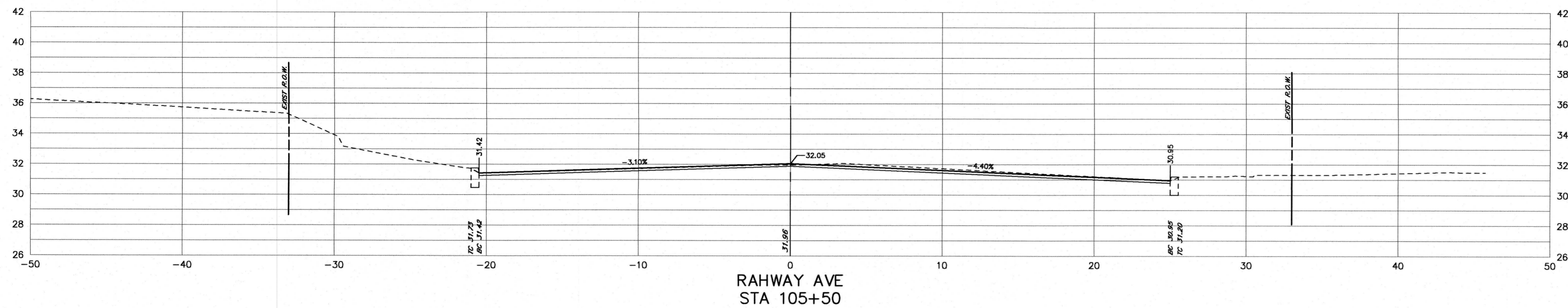
**PROFILES**

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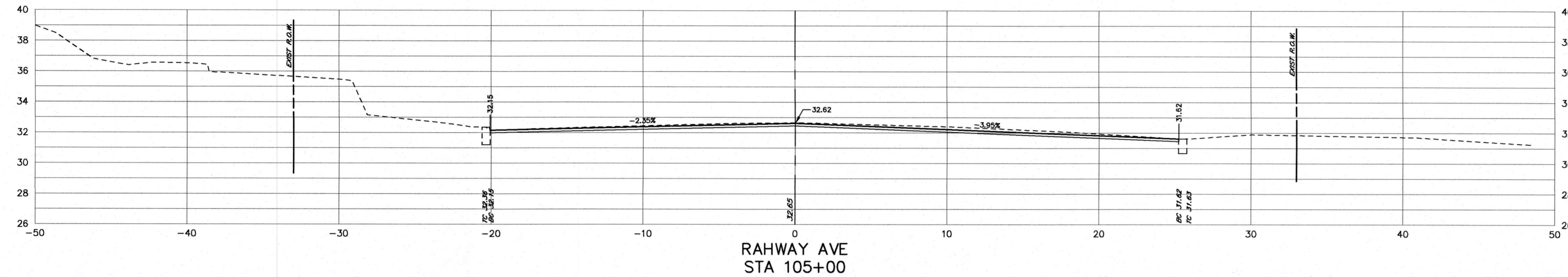
*Ronald M. Sendner*  
 Ronald M. Sendner  
 County Engineer  
 N.J.P.E. No. 24GE03162200

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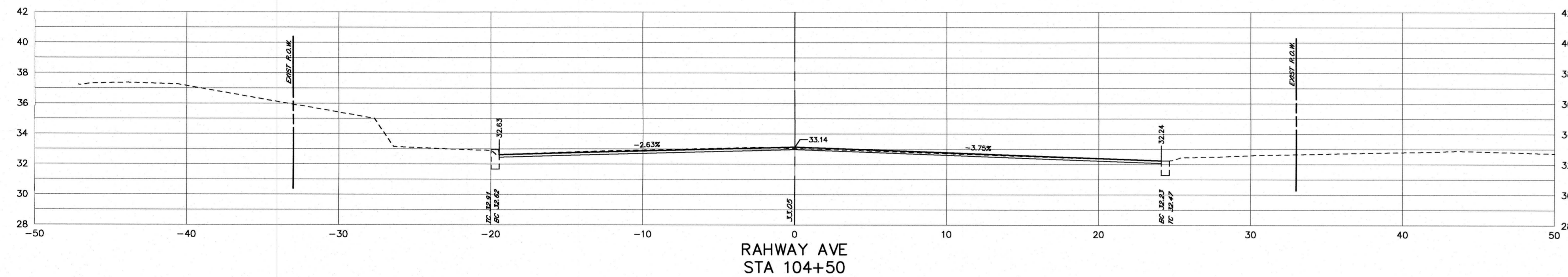
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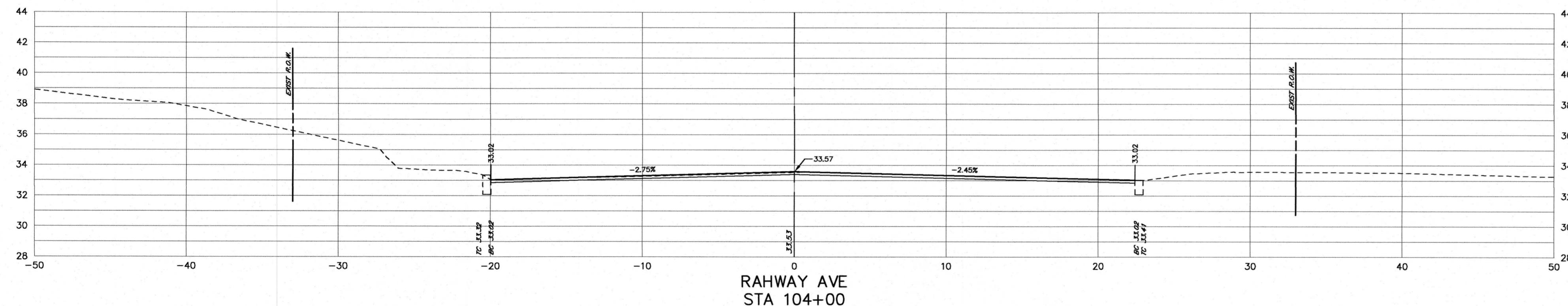
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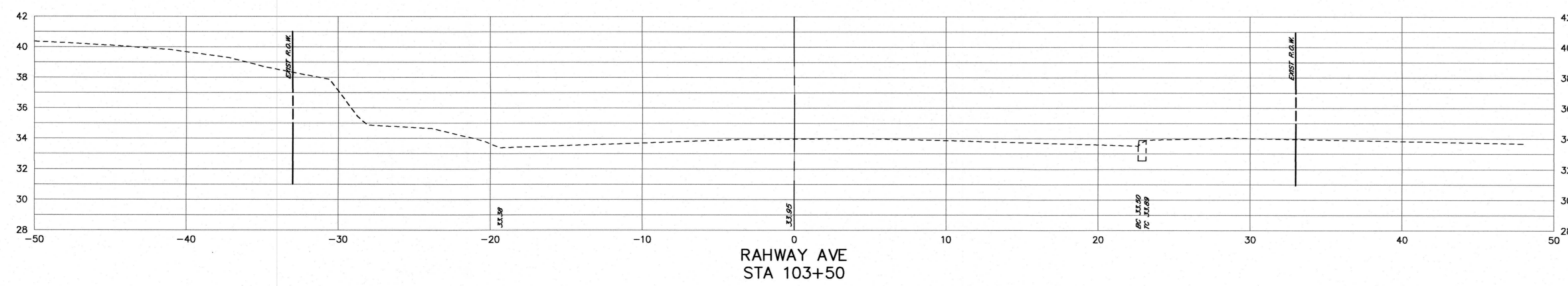
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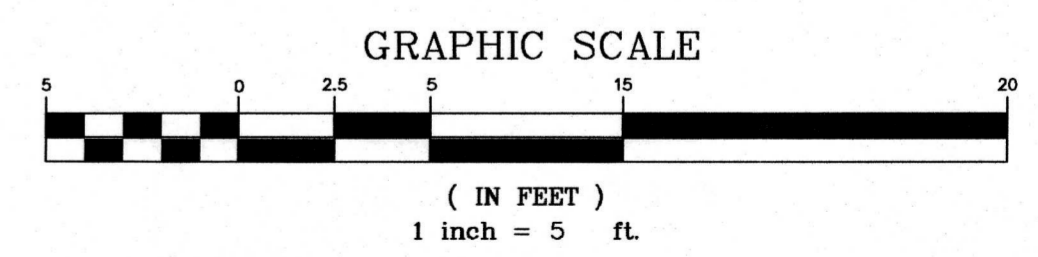
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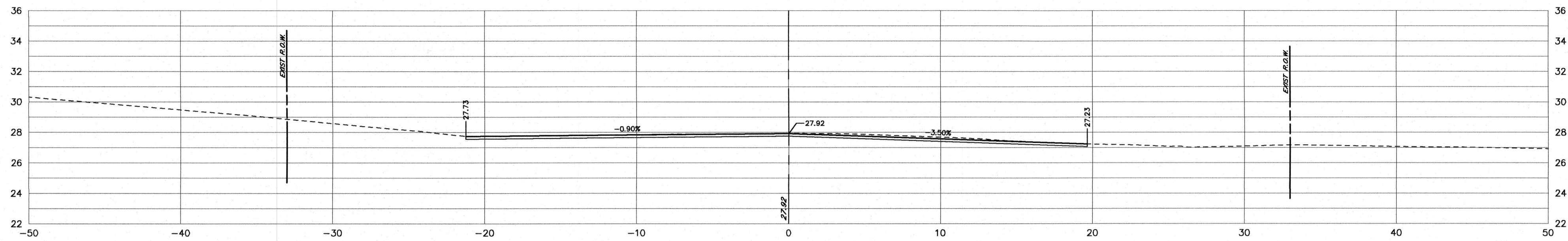
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SEE EARTHWORK SUMMARY SHEET 17

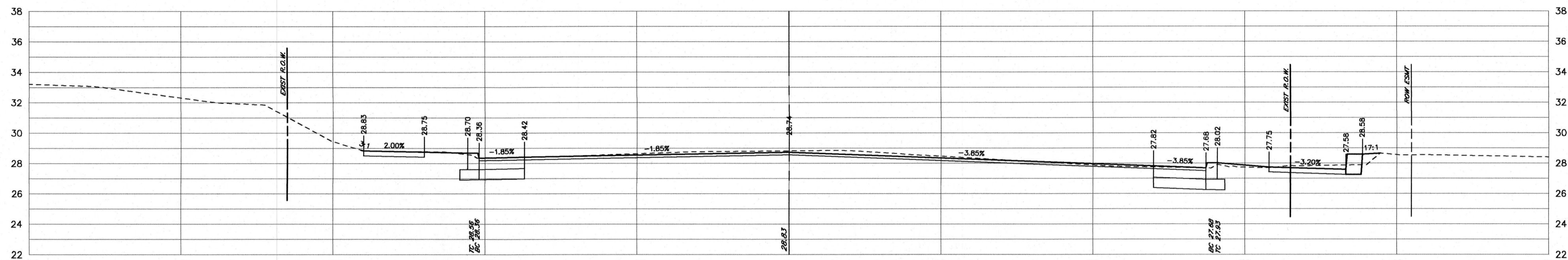


<p> <b>MENLO ENGINEERING ASSOCIATES, INC.</b>          CIVIL ENGINEERS, LAND SURVEYORS &amp; PROFESSIONAL PLANNERS          261 CLEVELAND AVENUE          HIGHLAND PARK, NEW JERSEY 08904          PHONE: 732.846.8585 FAX: 732.846.9439          CERTIFICATE OF AUTHORIZATION: 24GA27951900       </p>	<b>REVISIONS</b>		<p>           County of Middlesex            Department of Transportation            Office of Engineering            75 Bayard Street, New Brunswick, N.J. 08901  <b>MODIFICATIONS/UPGRADES TO THE INTERSECTION OF            RAHWAY AVENUE &amp; HOMESTEAD AVENUE</b>            TOWNSHIP OF WOODBRIDGE         </p>		
	No.    DATE    BY	<b>CROSS SECTIONS</b> <b>RAHWAY AVE STA 103+50 TO 105+50</b>			
	1    8/16/16    ELP 2    1/12/18    ELP 3    12/26/18    ELP 4    4/14/20    ELP	Designed By ELP		Drawn By ELP	Scale: 1"=5' Sheet No: 13 Date: March 11, 2016
	4/14/20 DATE	Checked By VSH		Approved By GSO	Ronald M. Sendner County Engineer N.J.P.E. No. 24GE03162200
GREGORY S. OMAN PROFESSIONAL ENGINEER NJ PE#43441	GREGORY S. OMAN PROFESSIONAL ENGINEER NJ PE#43441				



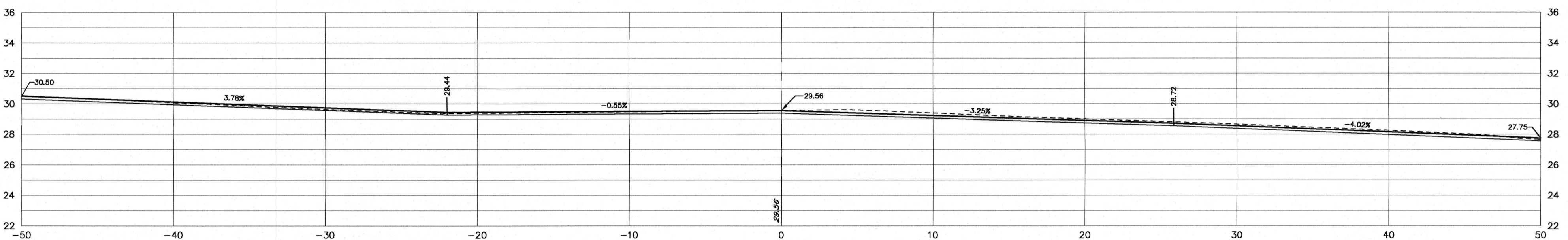
RAHWAY AVE  
STA 108+00

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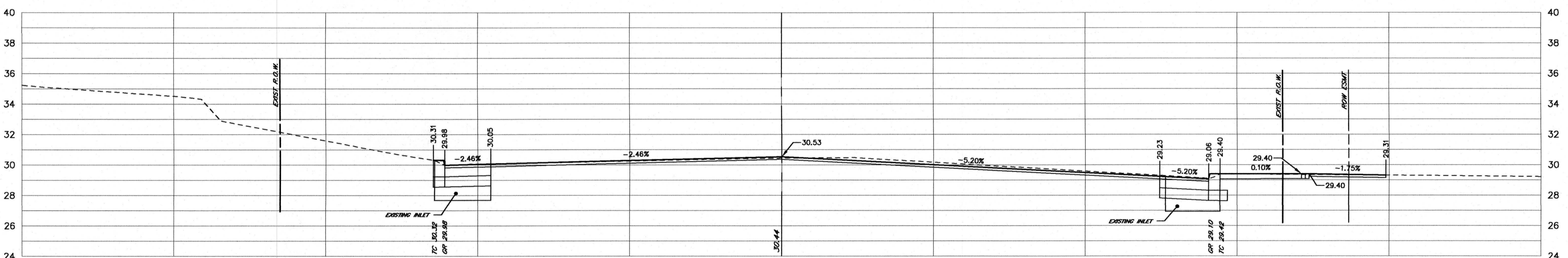
RAHWAY AVE  
STA 107+50

CUT (SF)	FILL (SF)
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RAHWAY AVE  
STA 107+00

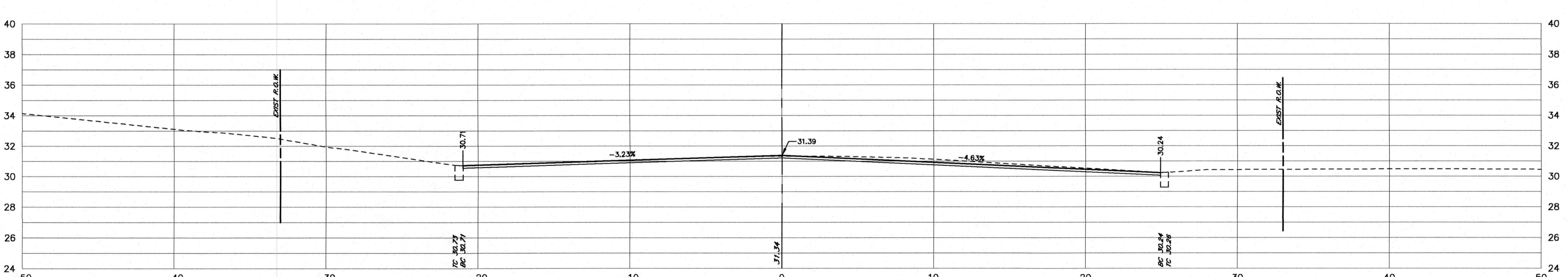
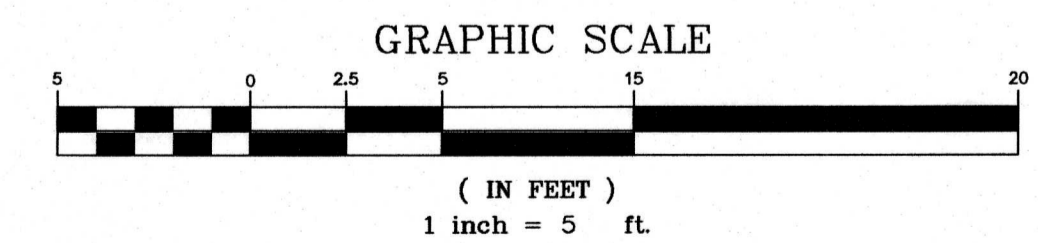
CUT (SF)	FILL (SF)
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RAHWAY AVE  
STA 106+50


CUT (SF)	FILL (SF)
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SEE EARTHWORK SUMMARY SHEET 17



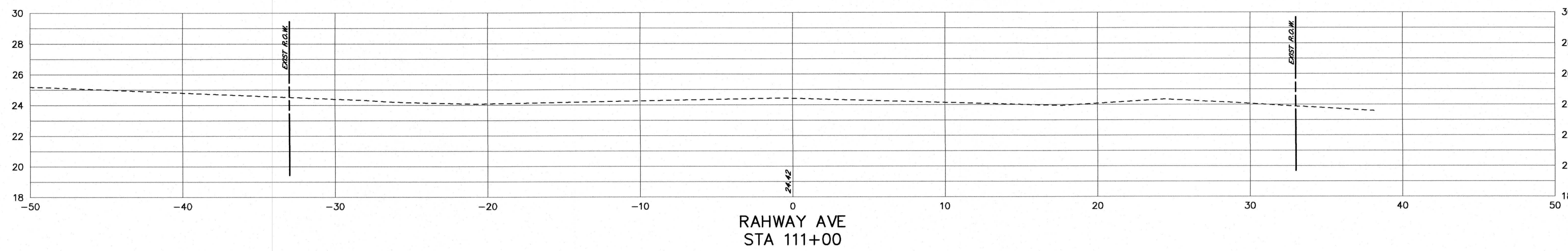
RAHWAY AVE  
STA 106+00

CUT (SF)	FILL (SF)
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 <b>MENLO ENGINEERING ASSOCIATES, INC.</b> CIVIL ENGINEERS, LAND SURVEYORS & PROFESSIONAL PLANNERS 261 CLEVELAND AVENUE HIGHLAND PARK, NEW JERSEY 08904 PHONE: 732.846.8585 FAX: 732.846.9439 CERTIFICATE OF AUTHORIZATION: 24GA27951900	<b>REVISIONS</b> <table border="1"> <thead> <tr> <th>No.</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>8/16/16</td> <td>ELP</td> </tr> <tr> <td>2</td> <td>8/14/17</td> <td>ELP</td> </tr> <tr> <td>3</td> <td>1/12/18</td> <td>ELB</td> </tr> <tr> <td>4</td> <td>12/26/18</td> <td>ELB</td> </tr> <tr> <td>5</td> <td>4/14/20</td> <td>ELB</td> </tr> </tbody> </table>	No.	DATE	BY	1	8/16/16	ELP	2	8/14/17	ELP	3	1/12/18	ELB	4	12/26/18	ELB	5	4/14/20	ELB	County of Middlesex Department of Transportation Office of Engineering 75 Bayard Street, New Brunswick, N.J. 08901 <b>MODIFICATIONS/UPGRADES TO THE INTERSECTION OF          RAHWAY AVENUE &amp; HOMESTEAD AVENUE</b> TOWNSHIP OF WOODBRIDGE <b>CROSS SECTIONS          RAHWAY AVE STA 106+50 TO 108+00</b> Scale: 1"=5' Sheet No: 14 Date: March 11, 2016 <b>Ronald M. Sendner</b> County Engineer N.J.P.E. No. 24CE03162200
	No.	DATE	BY																	
	1	8/16/16	ELP																	
	2	8/14/17	ELP																	
	3	1/12/18	ELB																	
4	12/26/18	ELB																		
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DATE 4/14/20																				
GREGORY S. OMAN PROFESSIONAL ENGINEER NJ PE#43441																				

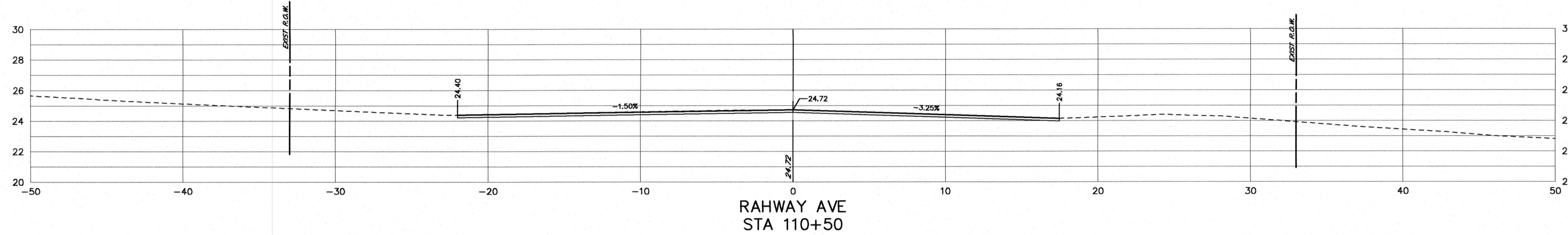
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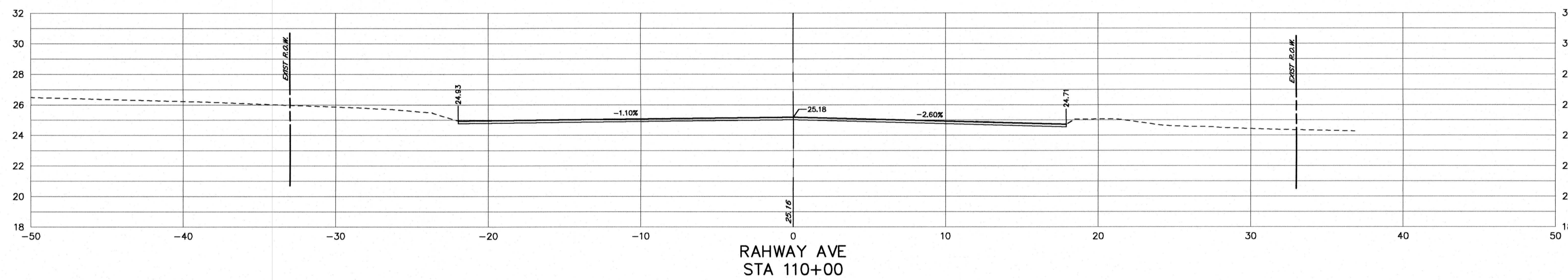
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STA 111+00

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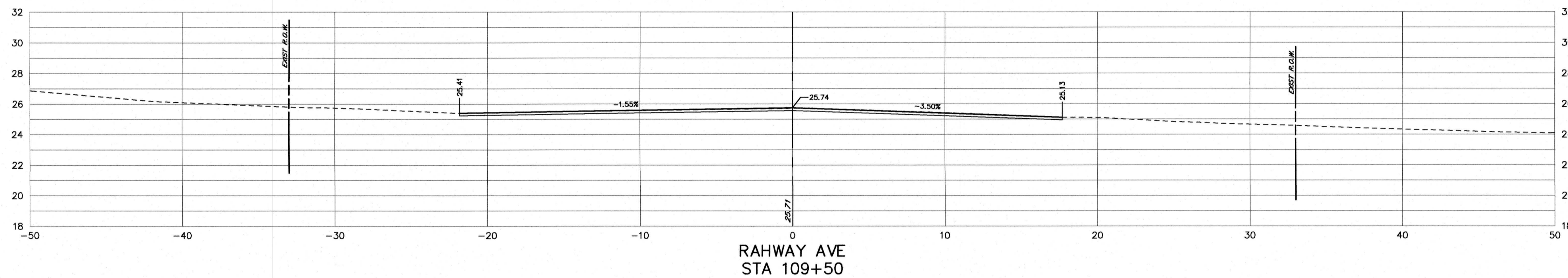
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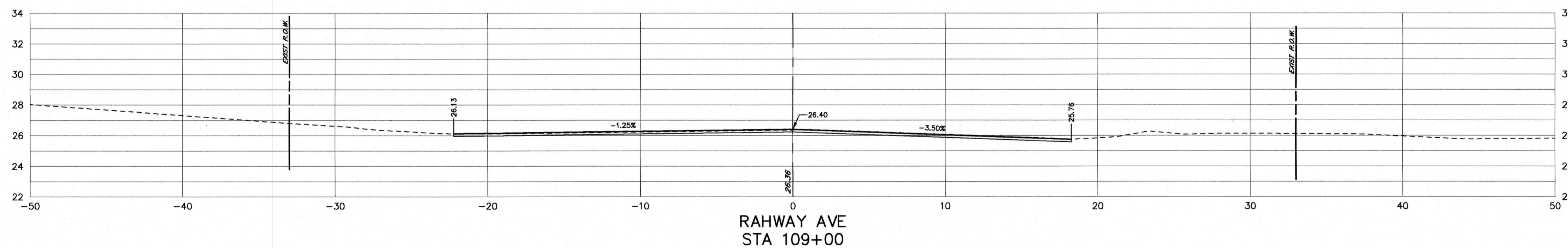
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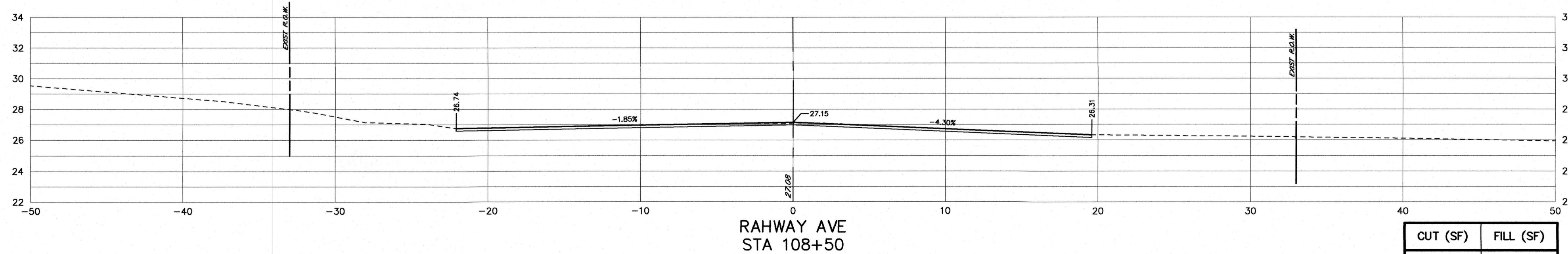
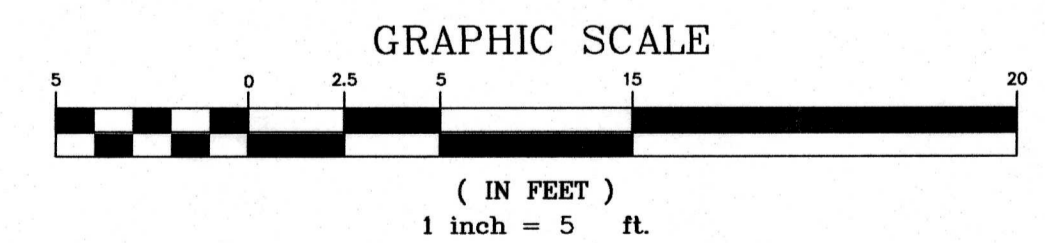
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CUT (SF)	FILL (SF)
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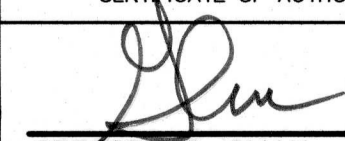
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SEE EARTHWORK SUMMARY SHEET 17

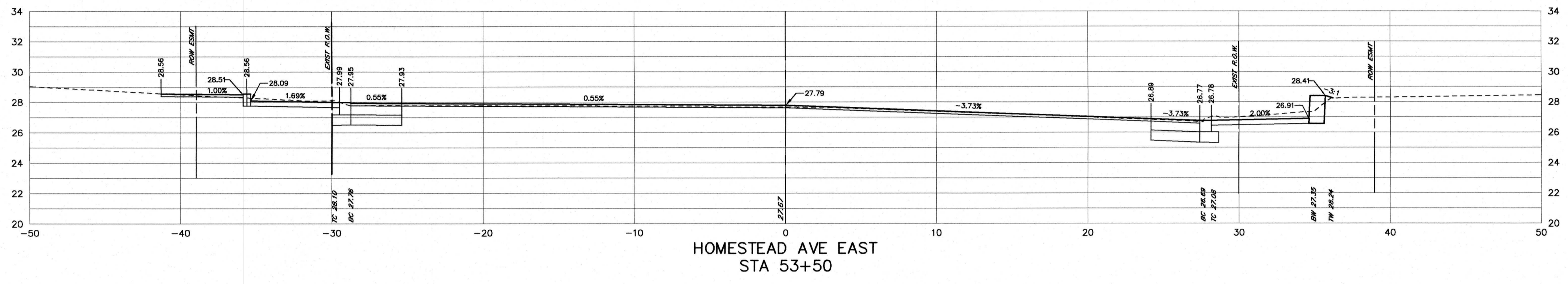


RAHWAY AVE  
STA 108+50

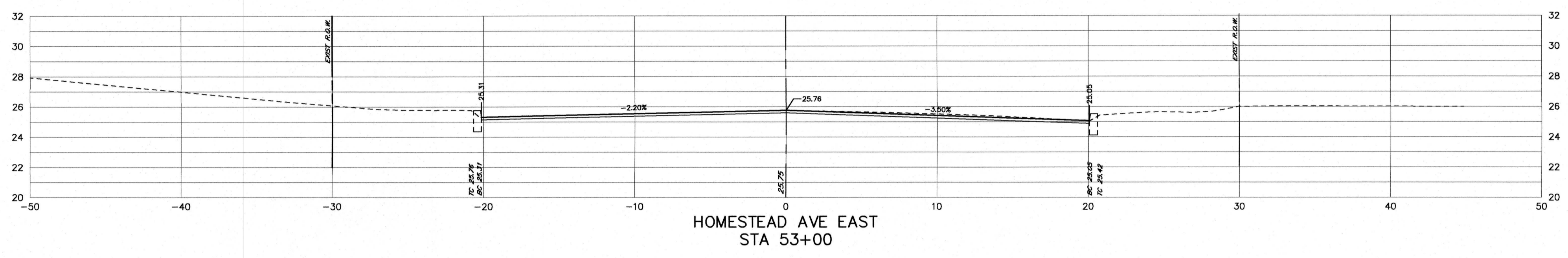
CUT (SF)	FILL (SF)
7	0

 MENLO ENGINEERING ASSOCIATES, INC. CIVIL ENGINEERS, LAND SURVEYORS & PROFESSIONAL PLANNERS 261 CLEVELAND AVENUE HIGHLAND PARK, NEW JERSEY 08904 PHONE: 732.846.8585 FAX: 732.846.9439 CERTIFICATE OF AUTHORIZATION: 24GA27951900	<b>REVISIONS</b> <table border="1"> <thead> <tr> <th>No.</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>8/16/18</td> <td>ELP</td> </tr> <tr> <td>2</td> <td>1/12/18</td> <td>ELB</td> </tr> <tr> <td>3</td> <td>12/26/18</td> <td>ELB</td> </tr> <tr> <td>4</td> <td>4/14/20</td> <td>ELB</td> </tr> </tbody> </table>	No.	DATE	BY	1	8/16/18	ELP	2	1/12/18	ELB	3	12/26/18	ELB	4	4/14/20	ELB	County of Middlesex Department of Transportation Office of Engineering 75 Bayard Street, New Brunswick, N.J. 08901
	No.	DATE	BY														
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 GREGORY S. OMAN PROFESSIONAL ENGINEER NJ PE#43441	4/14/20 DATE	<b>MODIFICATIONS/UPGRADES TO THE INTERSECTION OF          RAHWAY AVENUE &amp; HOMESTEAD AVENUE</b> TOWNSHIP OF WOODBRIDGE															
<b>CROSS SECTIONS          RAHWAY AVE STA 108+50 TO 111+00</b>		Scale: 1"=5' Sheet No: 15 Date: March 11, 2016															
		Ronald M. Sendner County Engineer N.J.P.E. No. 24GE03162200															

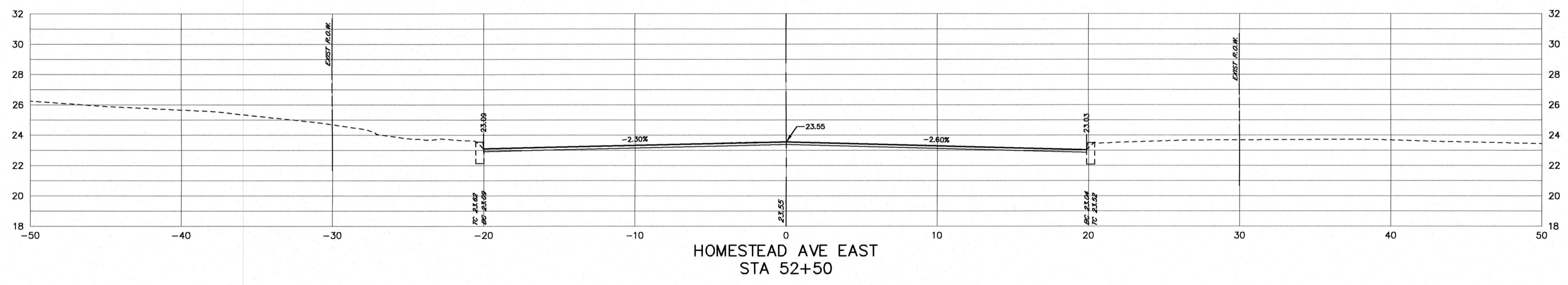
2013.027 # 807 MEA



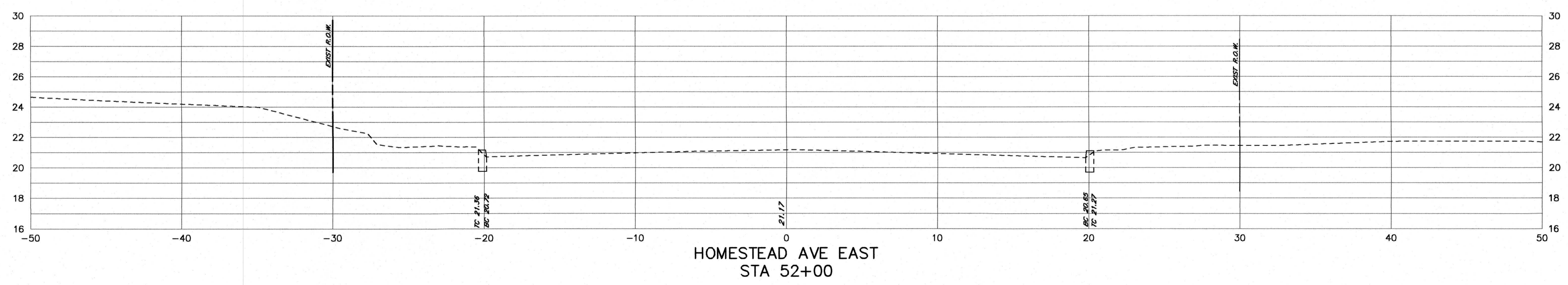
CUT (SF)	FILL (SF)
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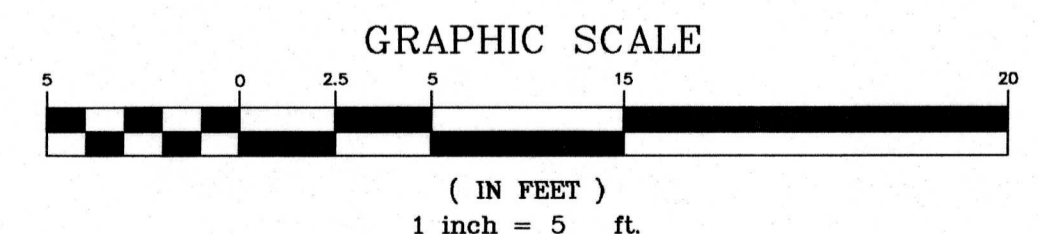
CUT (SF)	FILL (SF)
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CUT (SF)	FILL (SF)
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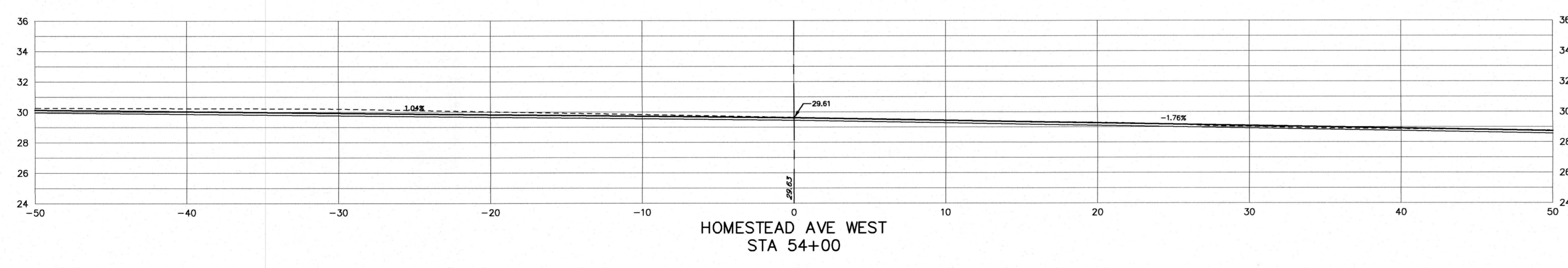
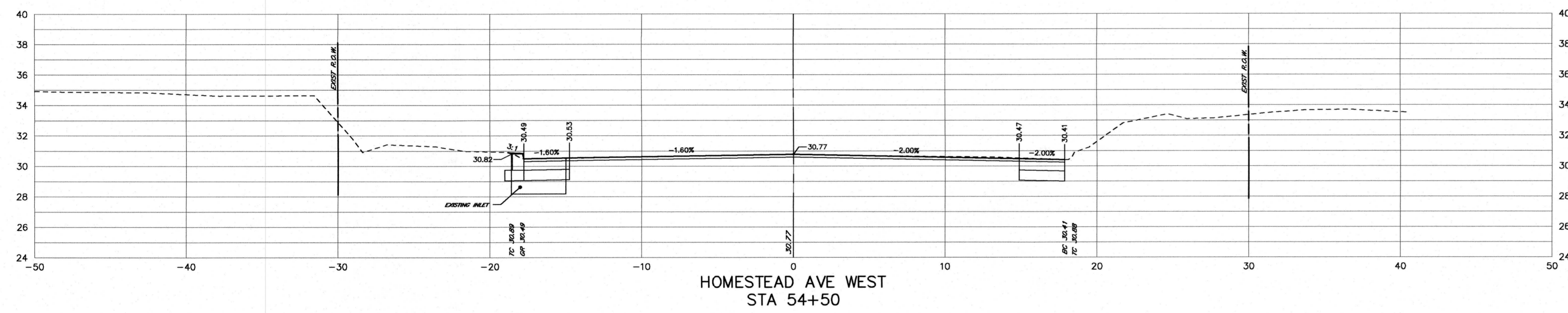
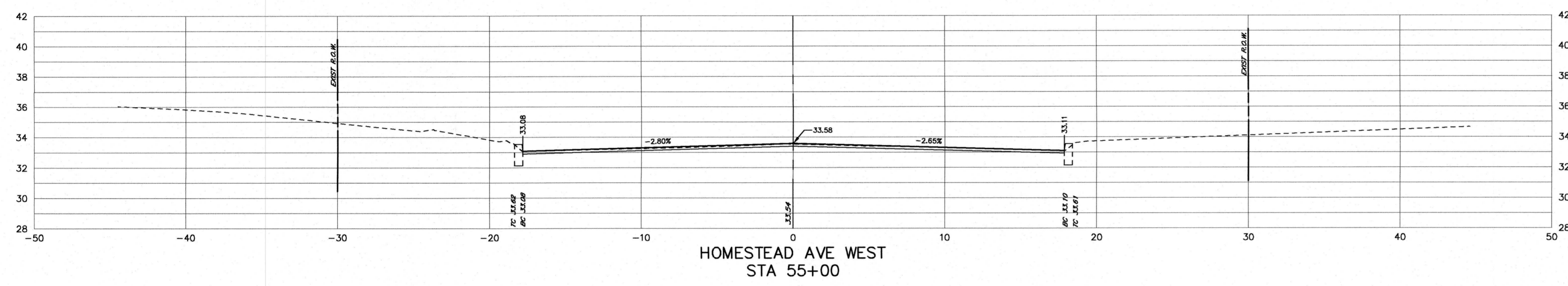
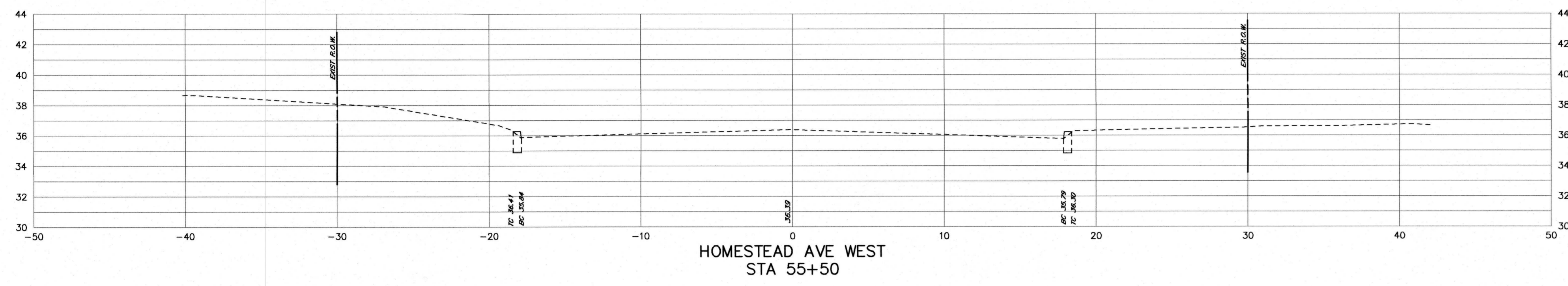


SEE EARTHWORK SUMMARY SHEET 17



 MENLO ENGINEERING ASSOCIATES, INC. CIVIL ENGINEERS, LAND SURVEYORS & PROFESSIONAL PLANNERS 261 CLEVELAND AVENUE HIGHLAND PARK, NEW JERSEY 08904 PHONE: 732.846.8585 FAX: 732.846.9439 CERTIFICATE OF AUTHORIZATION: 24GA27951900	<b>REVISIONS</b> <table border="1"> <thead> <tr> <th>No.</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>8/16/16</td> <td>ELP</td> </tr> <tr> <td>2</td> <td>1/12/18</td> <td>ELB</td> </tr> <tr> <td>3</td> <td>12/26/18</td> <td>ELB</td> </tr> <tr> <td>4</td> <td>4/14/20</td> <td>ELB</td> </tr> </tbody> </table>	No.	DATE	BY	1	8/16/16	ELP	2	1/12/18	ELB	3	12/26/18	ELB	4	4/14/20	ELB	County of Middlesex Department of Transportation Office of Engineering 75 Bayard Street, New Brunswick, N.J. 08901 <b>MODIFICATIONS/UPGRADES TO THE INTERSECTION OF                  RAHWAY AVENUE &amp; HOMESTEAD AVENUE</b> TOWNSHIP OF WOODBRIDGE <b>CROSS SECTIONS                  HOMESTEAD AVE STA 52+00 TO 53+50</b>
	No.	DATE	BY														
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4	4/14/20	ELB															
Designed By: GSO Drawn By: ELP Checked By: VSH DATE: 4/14/20	Scale: 1"=5' Sheet No: 16 Date: March 11, 2016 Ronald M. Sendner County Engineer N.J.P.E. No. 24GE03162200																

2013.092 - BASE - HOMESTEAD - RAHWAY  
 C:\wpa\2013.092 - Base - Homestead - Rahway\2013.092 - base.dwg PLOTTED: 3/1/2016 11:09 AM BY: VALERIE HILLEN  
 2013.092 - SHEET # 17 OF 17

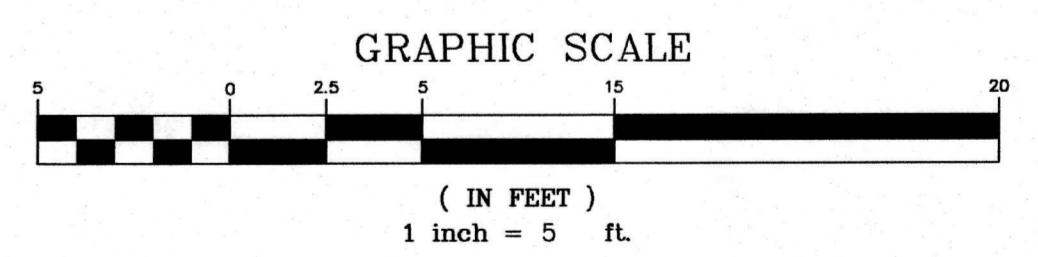


CUT (SF)	FILL (SF)
5	1

CUT (SF)	FILL (SF)
17	1

CUT (SF)	FILL (SF)
25	1

EARTHWORK SUMMARY INTERSECTION OF RAHWAY AVENUE & HOMESTEAD AVENUE	
<b>EXCAVATION, UNCLASSIFIED</b>	
FROM CROSS SECTIONS	505 CY
FROM PLAN SHEETS	79 CY
<b>TOTAL EXCAVATION, UNCLASSIFIED</b>	<b>584 CY</b>
<b>EMBANKMENT</b>	
FROM CROSS SECTIONS	45 CY
FROM PLAN SHEETS	0 CY
<b>TOTAL EMBANKMENT REQUIRED</b>	<b>45 CY</b>
<b>TOPSOIL</b>	
FROM CROSS SECTIONS	0 SY
FROM PLAN SHEETS	103 SY
<b>TOTAL TOPSOIL</b>	<b>103 SY</b>



**MENLO ENGINEERING ASSOCIATES, INC.**  
 CIVIL ENGINEERS, LAND SURVEYORS & PROFESSIONAL PLANNERS  
 261 CLEVELAND AVENUE  
 HIGHLAND PARK, NEW JERSEY 08904  
 PHONE: 732.846.8585 FAX: 732.846.9439  
 CERTIFICATE OF AUTHORIZATION: 24GA27951900

Designed By: *ELP*  
 Drawn By: *ELP*  
 Checked By: *VSH*  
 Approved By: *GSO*

DATE: 4/14/20

GREGORY S. OMAN  
 PROFESSIONAL ENGINEER  
 NJ PE#43441

REVISIONS		
No.	DATE	BY
1	8/16/18	ELP
2	1/12/18	ELB
3	12/26/18	ELB
4	4/14/20	ELB

County of Middlesex  
 Department of Transportation  
 Office of Engineering  
 75 Bayard Street, New Brunswick, N.J. 08901

**MODIFICATIONS/UPGRADES TO THE INTERSECTION OF  
 RAHWAY AVENUE & HOMESTEAD AVENUE**  
 TOWNSHIP OF WOODBRIDGE

**CROSS SECTIONS  
 HOMESTEAD AVE STA 54+50 TO 55+50**

Scale: 1"=5'  
 Sheet No: 17  
 Date: March 11, 2016

Ronald M. Sendner  
 County Engineer  
 N.J.P.E. No. 24CE03162200

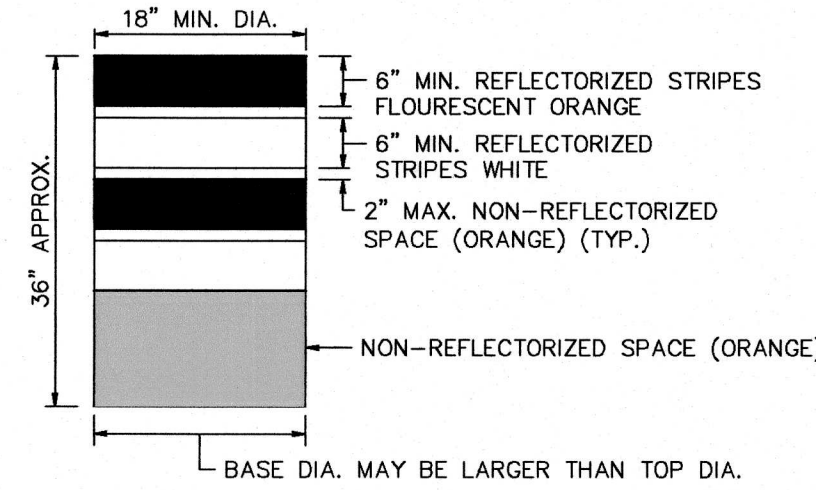
# GENERAL NOTES:

- ADVANCE WARNING SIGNS, DISTANCES, AND TAPER LENGTHS MAY BE EXTENDED, AT DIRECTION OF THE DEPARTMENT, TO ADJUST FOR REDUCED VISIBILITY DUE TO HORIZONTAL AND VERTICAL CURVATURE OF THE ROADWAY.
- THE APPROXIMATE LOCATIONS OF THE ILLUMINATED FLASHING ARROW BOARDS ARE SHOWN ON THE TRAFFIC CONTROL PLANS. THESE LOCATIONS MAY BE MODIFIED AS APPROVED BY THE RE TO ADJUST FOR VISIBILITY DUE TO HORIZONTAL OR VERTICAL CURVATURE OF THE ROADWAY OR TO POSITION AT A SAFER LOCATION. ILLUMINATED FLASHING ARROW BOARDS ARE TO BE USED FOR TEMPORARY LANE CLOSINGS AND AT LOCATIONS SHOWN ON THE TRAFFIC CONTROL PLANS.
- PRIOR TO ANY ROAD CONSTRUCTION, TRAFFIC CONTROL SIGNS AND DEVICES ARE TO BE IN PLACE.
- RAMP AND/OR SIDE STREETS ENTERING THE ROADWAY AFTER THE FIRST ADVANCE WARNING SIGN ARE TO BE PROVIDED WITH AT LEAST ONE W20-IF SIGN (ROAD WORK AHEAD) AS A MINIMUM.
- ALL EXISTING ROAD SIGNS, PAVEMENT MARKINGS AND/OR FLOWABLE PAVEMENT REFLECTORS WHICH CONFLICT WITH THE PROPOSED TRAFFIC CONTROL PLAN ARE TO BE COVERED, REMOVED OR RELOCATED AS DIRECTED BY THE RE.
- CONFLICTING OR NON-OPERATING SIGNAL INDICATIONS ON EITHER THE EXISTING, TEMPORARY, OR PROPOSED TRAFFIC SIGNAL SYSTEMS ARE TO BE BAGGED OR COVERED.
- MAINTENANCE AND PROTECTION OF TRAFFIC TO BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PART VI "STANDARDS AND GUIDES FOR TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE, UTILITY, AND INCIDENT MANAGEMENT OPERATIONS", UNLESS OTHERWISE NOTED IN THE PLANS AND SPECIFICATIONS.
- CONSTRUCTION SIGN W99-2 (GIVE US A BRAKE) TO BE LOCATED 200 FEET IN ADVANCE OF PROJECT LIMITS.
- A W1-6 (ARROW) SIGN MOUNTED ON A BREAKAWAY BARRICADE AND CENTERED ON THE CLOSED WIDTH TO BE LOCATED 100 FEET BEYOND EACH INTERSECTION OR MAIN ACCESS POINT WITHIN THE AREA OF A LANE OR SHOULDER CLOSURE.
- CONSTRUCTION SIGNS R11-4 (ROAD CLOSED TO THRU TRAFFIC) TO BE PLACED AT THE INTERSECTING STREETS WHICH ARE CLOSED TO TRAFFIC BECAUSE OF CONSTRUCTION.
- CONSTRUCTION SIGNS W8-3A (SYMBOL FOR UNEVEN PAVEMENT) AND W8-14A (GROOVED PAVEMENT) TO BE USED WHEN SUCH PAVEMENT CONDITIONS EXIST. THE PLACEMENT OF THESE SIGNS TO BE AS DIRECTED BY THE RE.
- MOVING WORK AREAS IN A LANE CLOSURE REQUIRE A TRAILER MOUNTED ILLUMINATED FLASHING ARROW TO REMAIN AT THE END OF THE TAPER, THE TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION THAT IS TO MOVE WITH THE WORK AREAS TO KEEP A 70 FEET MIN. AND 150 FEET MAX. BUFFER IN ADVANCE OF EACH WORK AREA.
- THE CONTRACTOR TO SUBMIT A PLAN FOR THE SAFE ACCESS OF CONSTRUCTION VEHICLES THROUGHOUT THE WORK SITE WHERE SPACE CONSTRAINTS PREVENT THE USE OF LANE CLOSURES. THE PLAN TO BE SUBMITTED TO THE RE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- BACKFILL ALL EXCAVATED AREAS WITHIN OR ADJACENT TO THE ROADWAY AND PLACE ON AT LEAST 6H:1V SLOPE BEFORE THE END OF EACH WORK DAY. OTHER EXCAVATED AREA WITHIN THE CLEAR ZONE ARE TO BE BACKFILLED.
- WHERE REQUIRED, THE CONTRACTOR IS TO MAKE PROVISIONS FOR MAINTAINING ADA-COMPLIANT PEDESTRIAN CROSSING LOCATIONS AND TYPE AS DIRECTED BY THE ENGINEER.
- BITUMINOUS CONCRETE PLACED DURING THE VARIOUS CONSTRUCTION STAGES TO BE TRANSITIONED ON A MINIMUM 20H:1V SLOPE TO MEET THE ADJACENT EXISTING GRADE AT THE LONGITUDINAL AND TRANSVERSE LIMITS OF THE STAGE CONSTRUCTION AREAS UNLESS OTHERWISE NOTED ON THE STAGE CONSTRUCTION PLANS.
- THE PLACEMENT AND/OR RELOCATION OF CONSTRUCTION BARRIER CURB TO BE DONE DURING APPROVED OFF-PEAK HOURS WHEN TRAFFIC MAY BE REDUCED TO ONE LANE IN EACH DIRECTION.
- THE REDUCED SPEED AHEAD SIGN, W3-5(S) (BLACK ON ORANGE) TO BE LOCATED IN ADVANCE OF SPEED LIMIT R2-1 SIGNS WHICH REDUCE THE NORMAL POSTED SPEED LIMIT THROUGH THE CONSTRUCTION ZONE.
- TRAFFIC FINES DOUBLED IN WORK AREA R(NJ)5-17(S), 4 FEET BY 2.5 FEET SIGN TO BE LOCATED 500 FEET AFTER THE FIRST ADVANCE WARNING SIGN, (W20 SERIES) AT EACH WORK AREA LOCATED WITHIN URBAN AREAS. THIS SIGN IS ALSO TO BE USED ON PROJECTS REQUIRING MOVING OPERATIONS IN WHICH CASE THE SIGN IS TO BE MOUNTED ON A SLOW MOVING CONSTRUCTION VEHICLE.
- DO NOT CONSTRUCT THE FINAL HMA SURFACE PAVEMENT UNTIL THE FINAL STAGE OF THE PROJECT UNLESS OTHERWISE DIRECTED BY THE RE OR INDICATED ON THE PLANS. SET MANHOLES AND INLETS TO FINISHED GRADE AND CONSTRUCT TEMPORARY PAVEMENT RAMP AROUND THEM WITH A MINIMUM 20H:1V SLOPE IN ALL DIRECTIONS USING HOT MIX ASPHALT PAVEMENT. THIS TEMPORARY MATERIAL WILL BE REMOVED IMMEDIATELY PRIOR TO PLACING THE SURFACE COURSE.
- PLACE TRAFFIC CONTROL DEVICES FOR LANE CLOSURES INCLUDING SIGNS, CONES, BARRICADES, ETC. AS SHOWN ON PLANS. NO SIGNS ARE TO BE PLACED WITHOUT ACTUAL LANE CLOSURES AND REMOVE IMMEDIATELY UPON REMOVAL OF THE CLOSURES.
- CONES MAY BE SUBSTITUTED FOR DRUMS AND INSTALLED UPON THE APPROVAL OF THE RE.
- WHERE MILLING OR HMA PAVING IS PERFORMED AND THE LANE IS TO BE RE-OPENED TO TRAFFIC EACH DAY, APPLY TEMPORARY TRAFFIC STRIPES.
- A MINIMUM OF TWO (2) VARIABLE MESSAGE SIGNS SHALL BE PROVIDED FOR THE DURATION OF THE PROJECT.
- ACCESS TO PROPERTIES SHALL BE PROVIDED AT ALL TIMES.
- POLICE TRAFFIC DIRECTORS SHALL BE USED WHEN DEEMED NECESSARY BY THE CONTRACTOR AND WHEN DIRECTED BY THE ENGINEER.
- VEHICULAR DETECTION SHALL BE PROVIDED DURING ALL PHASES OF CONSTRUCTION. SIGNAL SHALL NOT BE PLACED ON FIXED TIMING.
- PRIOR TO CONSTRUCTION WORK, THE UNDERGROUND LOCATIONS SERVICE SHALL BE CALLED. (1-800-272-1000)
- 11' MINIMUM LANE WIDTHS SHALL BE HELD.
- SOIL EROSION MEASURES SHALL BE INSTALLED AND MAINTAINED AS SHOWN ON THE SOIL EROSION AND SEDIMENT CONTROL PLANS AND DETAILS AND AS SPECIFIED IN THE SOIL EROSION CERTIFICATION.
- EACH STAGE OF CONSTRUCTION SHALL BE COMPLETED BEFORE NEXT STAGE BEGINS.

ENSURE DRUMS ARE MADE OF ORANGE PLASTIC WITH A MINIMUM OF FOUR ALTERNATE FLOURESCENT ORANGE AND WHITE RETROREFLECTIVE STRIPES. IF THERE ARE NON-REFLECTORIZED SPACES BETWEEN THE STRIPES, THEY ARE TO BE NO MORE THAN 2" WIDE. ENSURE RETROREFLECTIVE SHEETING FOR STRIPES CONFORMS WITH ASTM D4956 TYPE VII OR VIII WITH S2 REQUIREMENTS.

ENSURE THE TOP OF THE DRUM IS NOT OPEN. CONSTRUCT DRUMS TO INHIBIT ROLLING IF KNOCKED OVER.

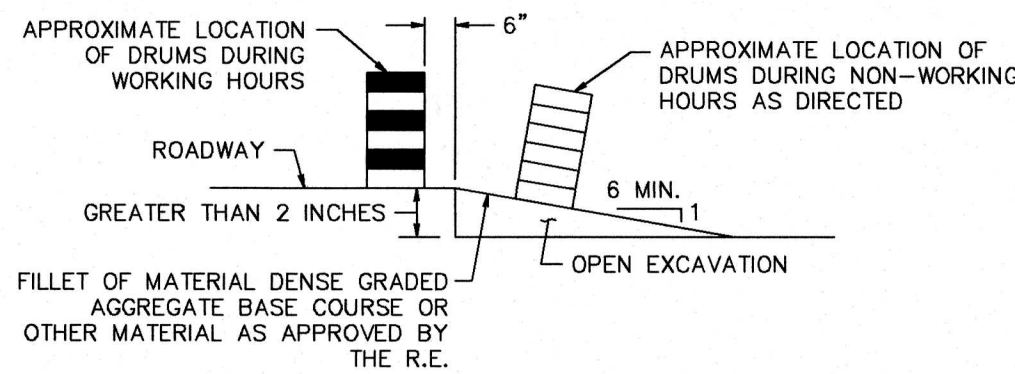
ENSURE THE REFLECTORIZED AREA OF DRUMS IS ROUND EXCEPT THAT OTHER SHAPES, WHICH PROVIDE THE SAME VISIBILITY AS AN 18 INCH DIAMETER ROUND DRUM REGARDLESS OF ORIENTATION, MAY BE USED.



WHEN BALLAST IS REQUIRED BY THE R.E., SAND SHALL BE USED. THE MAXIMUM WEIGHT OF THE BALLAST IS 50 LBS. AND BE LOCATED APPROXIMATELY AT GROUND LEVEL. ALTERNATE TYPES OF BALLAST SHALL BE APPROVED BY THE R.E..

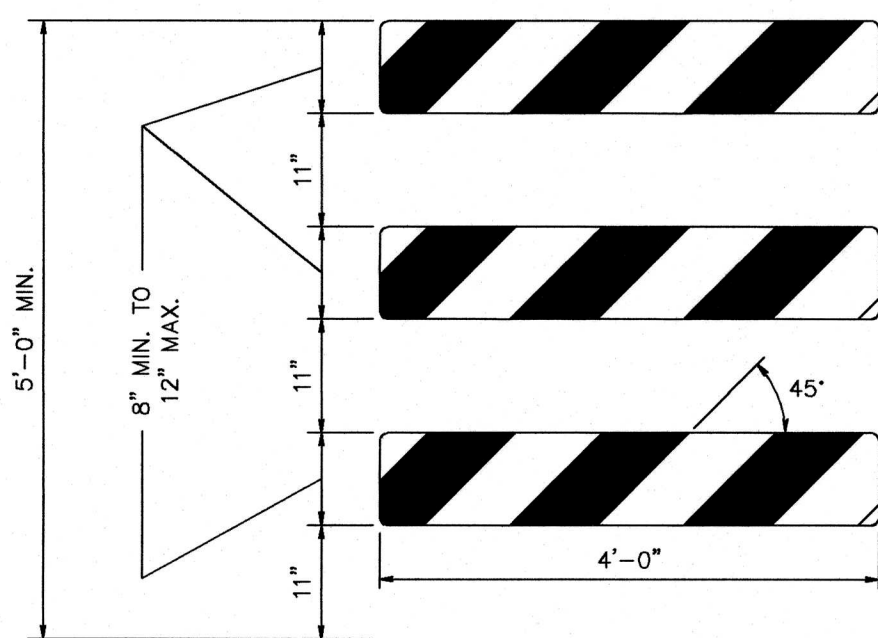
### DRUMS

CD-159-1.1



NOTE:  
ESCAPE RAMPS MUST BE CONSTRUCTED AND MAINTAINED DURING NON-WORKING HOURS WHERE A VERTICAL DROP GREATER THAN 2 INCHES EXISTS ADJACENT TO TRAVELED LANE.

### ESCAPE RAMP DETAIL



TYPE III BARRICADE - FRONT VIEW

#### NOTES:

- THE 8" MIN. x 48", OR 12" MAX. x 48" BARRICADE RAILS TO BE ATTACHED ACCORDING TO THE MANUFACTURER'S RECOMMENDATION.
- ENSURE ORANGE AND SILVER (WHITE) STRIPES TO BE RETROREFLECTIVE SHEETING, ASTM D4956 TYPE III. ALTERNATE ORANGE AND SILVER (WHITE) STRIPES 6" WIDE SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES IN THE DIRECTION TRAFFIC IS TO PASS.
- THE FRAMING, RAILS AND BALLAST FOR BREAKAWAY BARRICADE TO BE NCHRP-350 CRASHED TESTED AND FHWA APPROVED.
- IF NECESSARY, FABRICATE THE BALLAST AND PLACE ACCORDING TO THE MANUFACTURER'S RECOMMENDATION.

### BREAKAWAY BARRICADES

CD-159-1.3

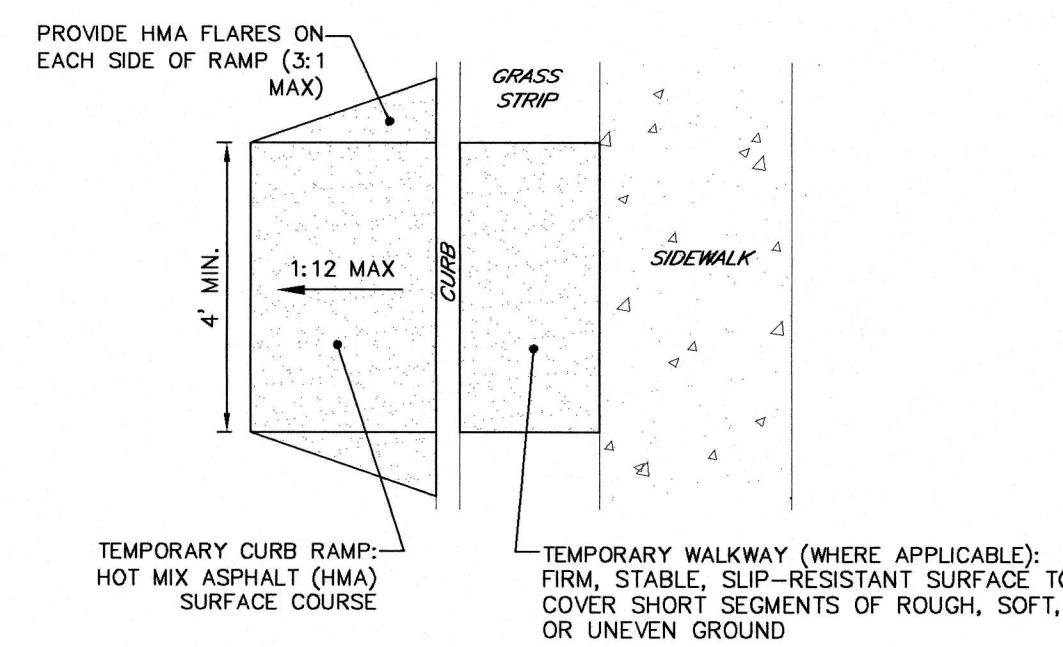
REGULATORY APPROACH SPEED OF TRAFFIC MILES/HOUR	RECOMMENDED SIGHT DISTANCE TO BEGINNING OF CHANNELIZING TAPERS		
	DESIRABLE		MINIMUM
	RURAL FEET	URBAN FEET	RURAL AND URBAN FEET
25	375	525	150
30	450	625	200
35	525	725	250
40	600	825	325
45	675	925	400
50	750	1025	475
55	825	1150	550
60	900	1275	650
65	1050		725

#### NOTES:

- AVOIDANCE MANEUVER IS FOR A SPEED, PATH, AND/OR DIRECTION CHANGE PRIOR TO THE BEGINNING OF CHANNELIZING TAPERS.
- RECOMMENDED DISTANCES BETWEEN TWO SEPARATE LANE CLOSURES ARE DOUBLE THE VALUES SHOWN ABOVE.
- RURAL AND URBAN ROAD DESIGNATIONS SHALL BE AS DEFINED IN THE NJDOT STATE HIGHWAY STRAIGHT LINE DIAGRAMS.
- DESIRABLE VALUES SHALL BE PROVIDED WHEREVER POSSIBLE. IF IT IS NOT FEASIBLE OR PRACTICAL TO PROVIDE DESIRABLE VALUES BECAUSE OF HORIZONTAL OR VERTICAL CURVATURE OR IF RELOCATION OF THE TAPER IS NOT POSSIBLE, THEN MINIMUM VALUES CAN BE APPLIED. WHEN MINIMUM VALUES ARE USED, PAY SPECIAL ATTENTION TO THE USE OF SUITABLE TRAFFIC CONTROL DEVICES WHEN PROVIDING ADVANCED WARNING OF THE CONDITIONS THAT ARE LIKELY TO BE ENCOUNTERED.
- LOCATE TAPERS TO MAXIMIZE THE VISIBILITY OF THEIR LENGTH.

REGULATORY APPROACH SPEED OF TRAFFIC MILES/HOUR	RECOMMENDED TAPER LENGTH AND SPACING FOR CHANNELIZING TAPERS				RECOMMENDED SPACING ALONG TANGENTS
	MINIMUM TAPER RATIO IN LENGTH PER FOOT OF WIDTH	MINIMUM TAPER LENGTH L - FOR LANE WIDTHS		MAXIMUM DEVICE (B) SPACING ALONG TANGENTS IN FEET	
		10'	11'		
25	10.5:1	105	115	125	25
30	15:1	150	165	180	30
35	20.5:1	205	225	245	35
40	27:1	270	300	325	40
45	45:1	450	495	540	45
50	50:1	500	550	600	50
55	55:1	550	605	660	55
60	60:1	600	660	720	60
65	65:1	650	715	780	65

NOTE:  
THE MAXIMUM DEVICE SPACING ALONG CURVES SHALL BE AS DEFINED FOR TAPERS (B) IN THE ABOVE TABLE.



### TEMPORARY CURB RAMP (HOT MIX ASPHALT)

N.T.S.

# LEGEND

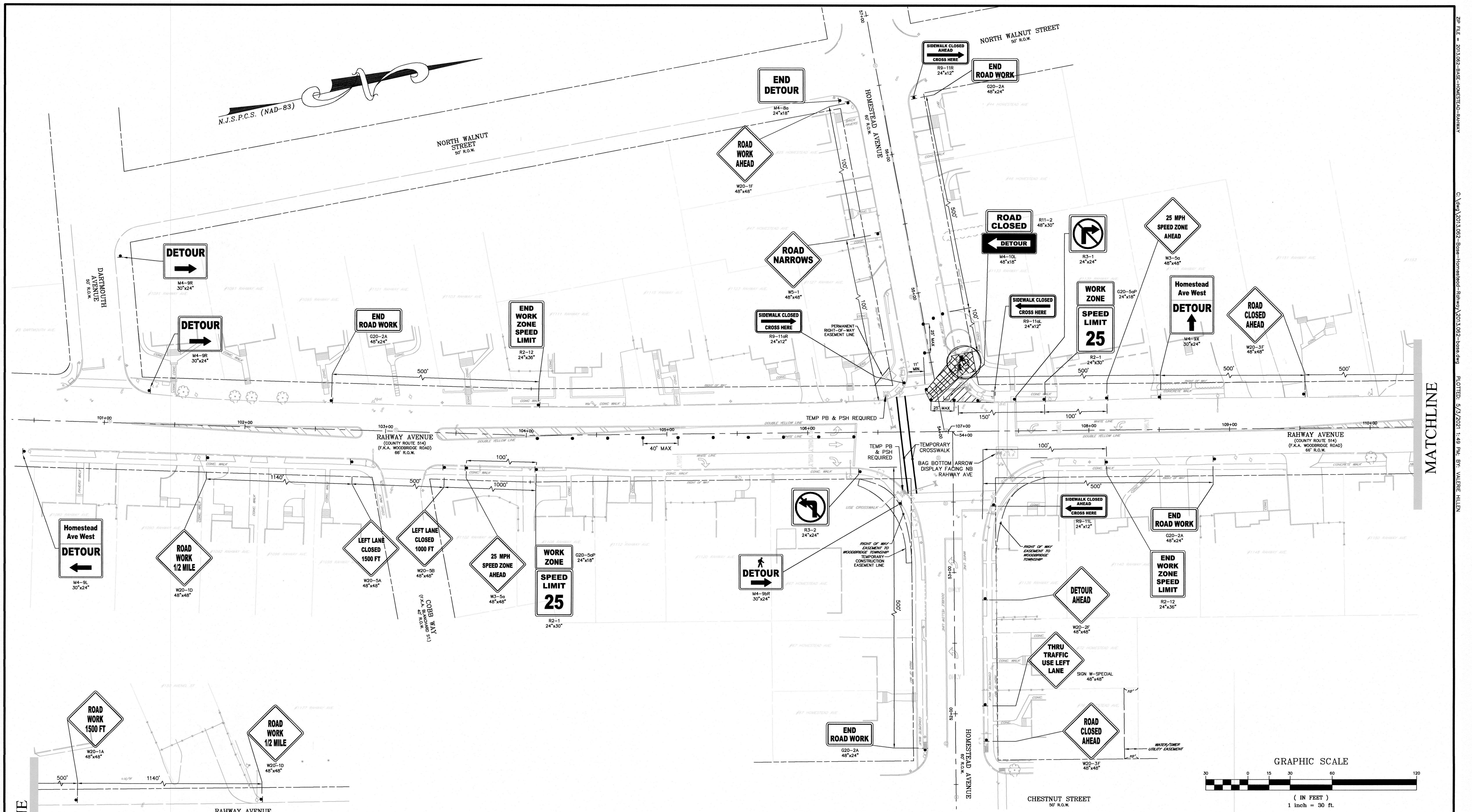
- BREAKAWAY BARRICADES
- BREAKAWAY BARRICADES WITH SIGN
- CONSTRUCTION SIGNS
- DRUMS
- CONE
- PRECAST CONCRETE CURB CONSTRUCTION BARRIER (TYPE SPECIFIED)
- DIRECTION OF TRAFFIC FLOW
- TRAFFIC DIRECTOR, FLAGGER
- TRAILER MOUNTED ARROW BOARD SHOWING CAUTION MODE
- ILLUMINATED FLASHING ARROW MOUNTED ON TOWING VEHICLE SHOWING ARROW PATTERN (LEFT, RIGHT, BOTH)
- TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION AND ARROW BOARD SHOWING CAUTION MODE
- TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION AND ARROW BOARD SHOWING ARROW PATTERN (LEFT, RIGHT, BOTH)
- TEMPORARY CRASH CUSHION, INERTIAL BARRIER SYSTEM
- TEMPORARY CRASH CUSHION, (ALL OTHER APPROVED)
- BUFFER ZONE
- WORK AREA
- PAINT STRIPING TRUCK OR OTHER OPERATING VEHICLE



THE STATE OF NEW JERSEY REQUIRES NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE.

<p>MENLO ENGINEERING ASSOCIATES, INC. CIVIL ENGINEERS, LAND SURVEYORS &amp; PROFESSIONAL PLANNERS 261 CLEVELAND AVENUE HIGHLAND PARK, NEW JERSEY 08904 PHONE: 732.846.8585 FAX: 732.846.9439 CERTIFICATE OF AUTHORIZATION: 24GA27951900</p>	<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>No.</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>8/16/16</td> <td>ELP</td> </tr> <tr> <td>2</td> <td>8/14/17</td> <td>ELP</td> </tr> <tr> <td>3</td> <td>1/12/18</td> <td>ELB</td> </tr> <tr> <td>4</td> <td>12/26/18</td> <td>ELB</td> </tr> <tr> <td>5</td> <td>4/14/20</td> <td>ELB</td> </tr> </tbody> </table>	No.	DATE	BY	1	8/16/16	ELP	2	8/14/17	ELP	3	1/12/18	ELB	4	12/26/18	ELB	5	4/14/20	ELB	<p>County of Middlesex Department of Transportation Office of Engineering 75 Bayard Street, New Brunswick, N.J. 08901</p> <p><b>MODIFICATIONS/UPGRADES TO THE INTERSECTION OF RAHWAY AVENUE &amp; HOMESTEAD AVENUE</b> TOWNSHIP OF WOODBRIDGE</p> <p>TRAFFIC CONTROL NOTES, LEGEND &amp; DETAILS</p>
	No.	DATE	BY																	
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2013.092-BASE-HOMESTEAD-RAHWAY  
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 MEA # 03162200



- PHASE 1 NOTES:**
- RIGHT AND LEFT TURNS OFF RAHWAY AVE ONTO HOMESTEAD AVE WEST TO BE CLOSED AND DETOUR PROVIDED, AS SHOWN, TO ALLOW INSTALLATION AND CONSTRUCTION OF A CURB INLET AND 15" RCP CONNECTING TO THE EXISTING MANHOLE.
  - PROVIDE TEMPORARY PUSHBUTTON AND PEDESTRIAN SIGNAL HEAD ON SOUTHWEST AND SOUTHEAST CORNERS OF THE INTERSECTION.
  - PROVIDE TEMPORARY CROSS WALK FOR PEDESTRIANS TO CROSS RAHWAY AVE, FROM SOUTHEAST TO SOUTHWEST CORNER OF THE INTERSECTION.
  - DURING SITE CLEARING, REMOVE LARGE (36"±) TREE IN NORTHWEST CORNER OF INTERSECTION TO ALLOW FOR CONSTRUCTION OF TRAFFIC SIGNAL EQUIPMENT AND DRAINAGE INLET. INSTALL INLET AND PIPE.
  - BAG BOTTOM ARROW SIGNAL DISPLAY FACING NORTHBOUND RAHWAY AVENUE.

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*Gregory S. Oman*  
**GREGORY S. OMAN**  
 PROFESSIONAL ENGINEER  
 NJ FE#43441

REVISIONS		
No.	DATE	BY
1	8/16/16	ELP
2	8/14/17	ELP
3	1/12/18	ELB
4	12/26/18	ELB
5	4/14/20	ELB
6	4/30/21	VSH

Designed By: ELP  
 Drawn By: ELP  
 Checked By: VSH  
 Approved By: GSO

DATE: 4/30/21

County of Middlesex  
 Department of Transportation  
 Office of Engineering  
 75 Bayard Street, New Brunswick, N.J. 08901

**MODIFICATIONS/UPGRADES TO THE INTERSECTION OF  
 RAHWAY AVENUE & HOMESTEAD AVENUE  
 TOWNSHIP OF WOODBRIDGE**

**TRAFFIC CONTROL PLAN—PHASE 1**

Scale: 1"=30'  
 Sheet No: 19  
 Date: March 11, 2016

*Ronald M. Sendner*  
**Ronald M. Sendner**  
 County Engineer  
 N.J.P.E. No. 24GE03162200

2P FILE # 2013092-BASE-HOMESTEAD-RAHWAY  
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 MEA JOB # 2013092

N.J.S.P.C.S. (NAD-83)

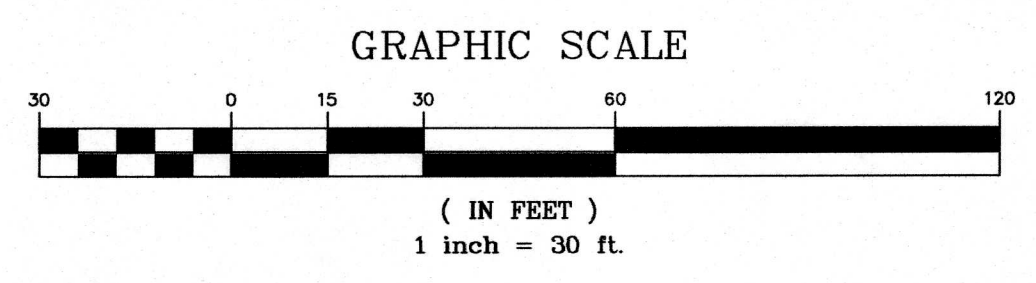
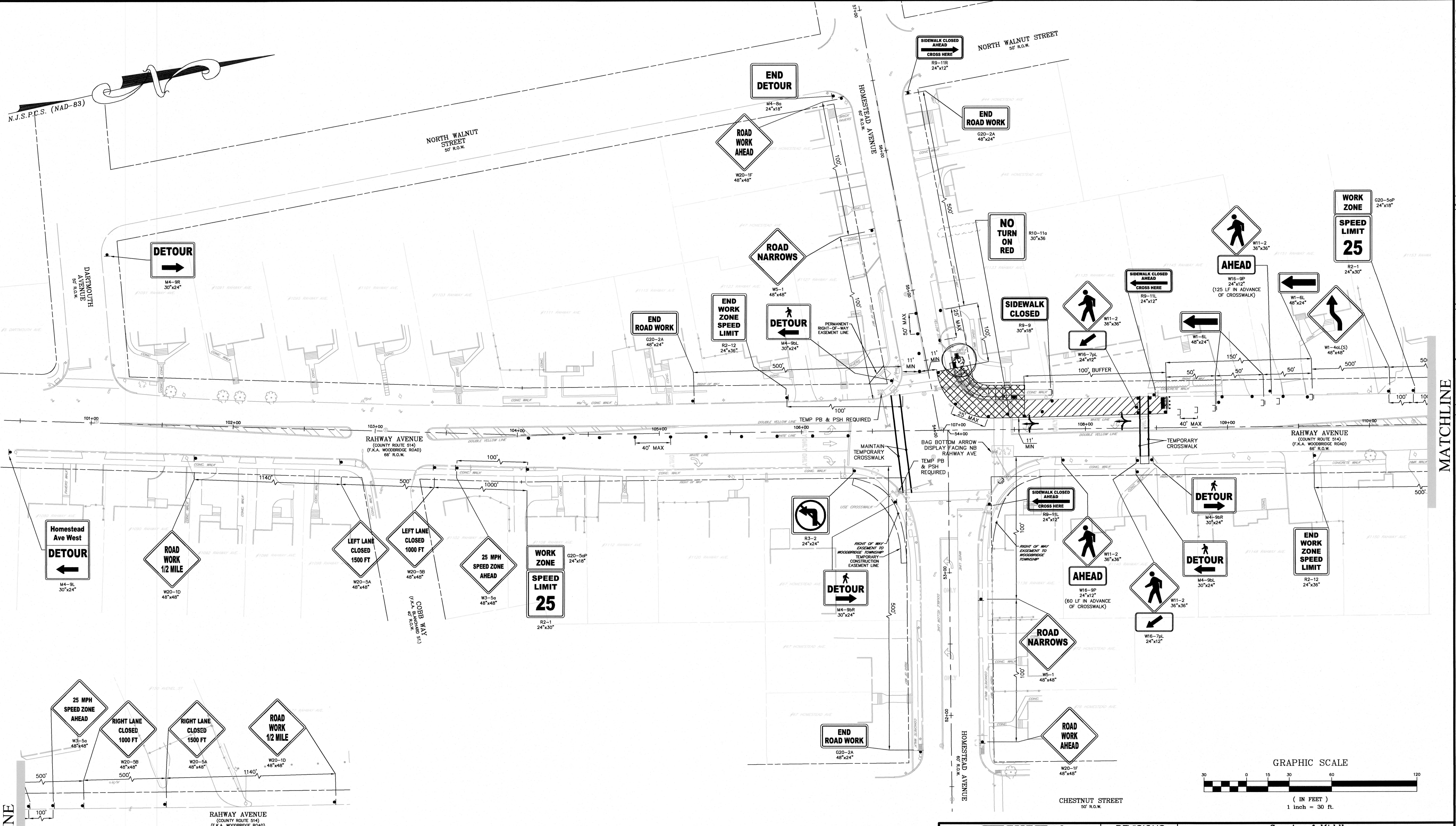
DARTMOUTH AVENUE  
50' R.O.W.

RAHWAY AVENUE  
(COUNTY ROUTE 514)  
(F.K.A. WOODBRIDGE ROAD)  
66' R.O.W.

RAHWAY AVENUE  
(COUNTY ROUTE 514)  
(F.K.A. WOODBRIDGE ROAD)  
66' R.O.W.

MATCHLINE

MATCHLINE



- PHASE 2 NOTES:
1. LEFT TURNS OFF RAHWAY AVE ONTO HOMESTEAD AVE WEST TO REMAIN CLOSED.
  2. MAINTAIN TEMPORARY PUSHBUTTON AND PEDESTRIAN SIGNAL HEAD ON SOUTHWEST AND SOUTHEAST CORNERS OF THE INTERSECTION.
  3. MAINTAIN TEMPORARY CROSS WALK FOR PEDESTRIANS TO CROSS RAHWAY AVE, NORTH OF THE INTERSECTION.
  4. PROVIDE TEMPORARY CROSSWALK AND TEMPORARY CURB RAMP TO CROSS RAHWAY AVE AT STATION 108+42.
  5. CONSTRUCT ALL REMAINING PROPOSED IMPROVEMENTS IN THE NORTHWEST CORNER OF THE INTERSECTION.
  6. BAG BOTTOM ARROW SIGNAL DISPLAY FACING NORTHBOUND RAHWAY AVENUE.

**MENLO ENGINEERING ASSOCIATES, INC.**  
CIVIL ENGINEERS, LAND SURVEYORS & PROFESSIONAL PLANNERS  
261 CLEVELAND AVENUE  
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CERTIFICATE OF AUTHORIZATION: 246A27951900

*Gregory S. Oman*  
**GREGORY S. OMAN**  
PROFESSIONAL ENGINEER  
NJ PE#43441

REVISIONS		
No.	DATE	BY
1	8/16/16	ELP
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County of Middlesex  
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**MODIFICATIONS/UPGRADES TO THE INTERSECTION OF  
RAHWAY AVENUE & HOMESTEAD AVENUE  
TOWNSHIP OF WOODBRIDGE**

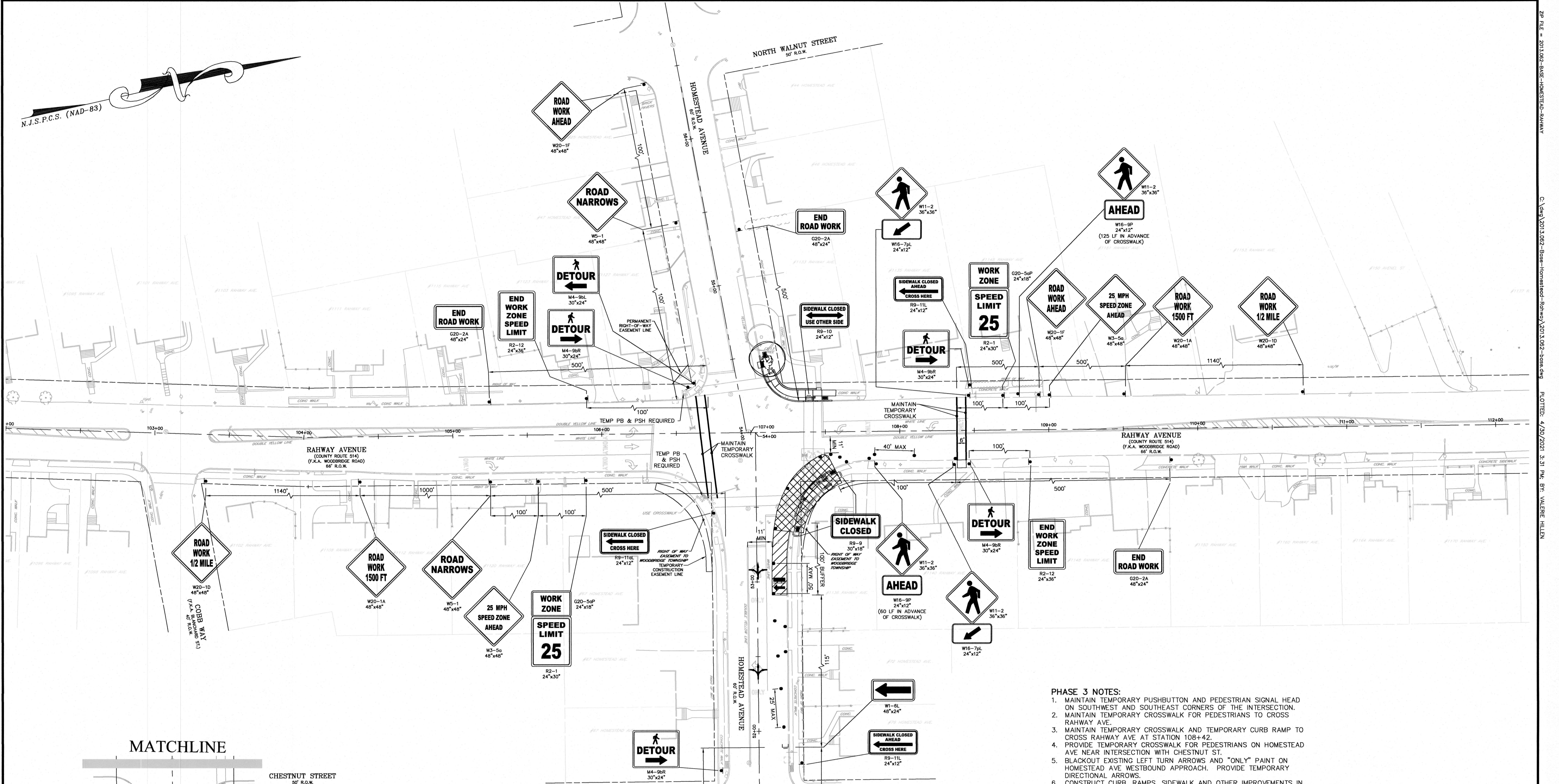
**TRAFFIC CONTROL PLAN-PHASE 2**

*Ronald M. Sendner*  
**Ronald M. Sendner**  
County Engineer  
N.J.P.E. No. 24CE03162200

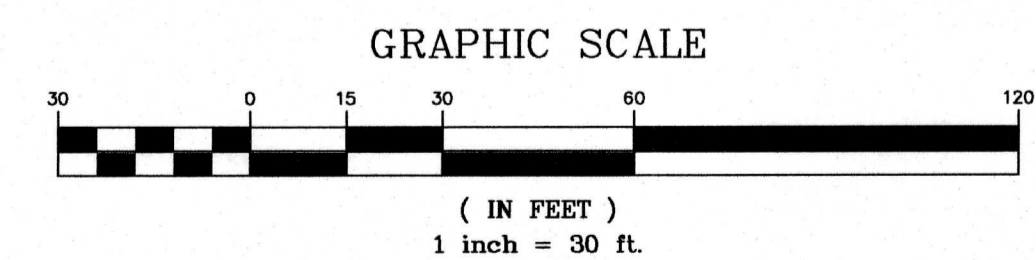
Scale: 1"=30'  
Sheet No: 20  
Date: March 11, 2016

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N.J.S.P.C.S. (NAD-83)

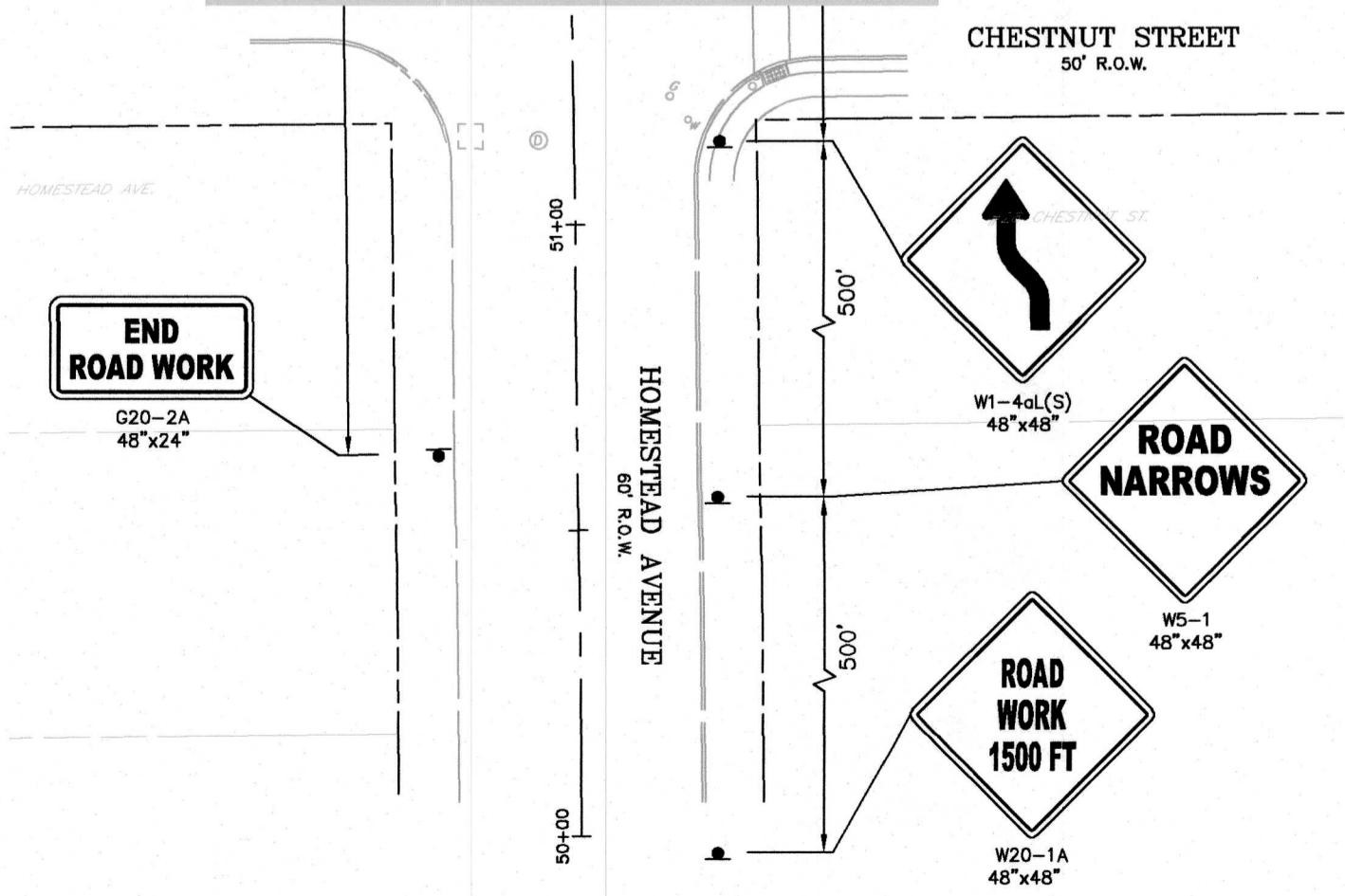


- PHASE 3 NOTES:**
1. MAINTAIN TEMPORARY PUSHBUTTON AND PEDESTRIAN SIGNAL HEAD ON SOUTHWEST AND SOUTHEAST CORNERS OF THE INTERSECTION.
  2. MAINTAIN TEMPORARY CROSSWALK FOR PEDESTRIANS TO CROSS RAHWAY AVE.
  3. MAINTAIN TEMPORARY CROSSWALK AND TEMPORARY CURB RAMP TO CROSS RAHWAY AVE AT STATION 108+42.
  4. PROVIDE TEMPORARY CROSSWALK FOR PEDESTRIANS ON HOMESTEAD AVE NEAR INTERSECTION WITH CHESTNUT ST.
  5. BLACKOUT EXISTING LEFT TURN ARROWS AND "ONLY" PAINT ON HOMESTEAD AVE WESTBOUND APPROACH. PROVIDE TEMPORARY DIRECTIONAL ARROWS.
  6. CONSTRUCT CURB, RAMPS, SIDEWALK AND OTHER IMPROVEMENTS IN NORTHEAST CORNER.



MATCHLINE

MATCHLINE



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 CIVIL ENGINEERS, LAND SURVEYORS & PROFESSIONAL PLANNERS  
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*Gregory S. Oman*  
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 NJ PE#43441

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1	8/16/16	ELP
2	8/14/17	ELP
3	1/12/18	ELB
4	12/26/18	ELB
5	4/14/20	ELB
6	4/30/21	VSH

County of Middlesex  
 Department of Transportation  
 Office of Engineering  
 75 Bayard Street, New Brunswick, N.J. 08901

**MODIFICATIONS/UPGRADES TO THE INTERSECTION OF RAHWAY AVENUE & HOMESTEAD AVENUE TOWNSHIP OF WOODBRIDGE**

**TRAFFIC CONTROL PLAN-PHASE 3**

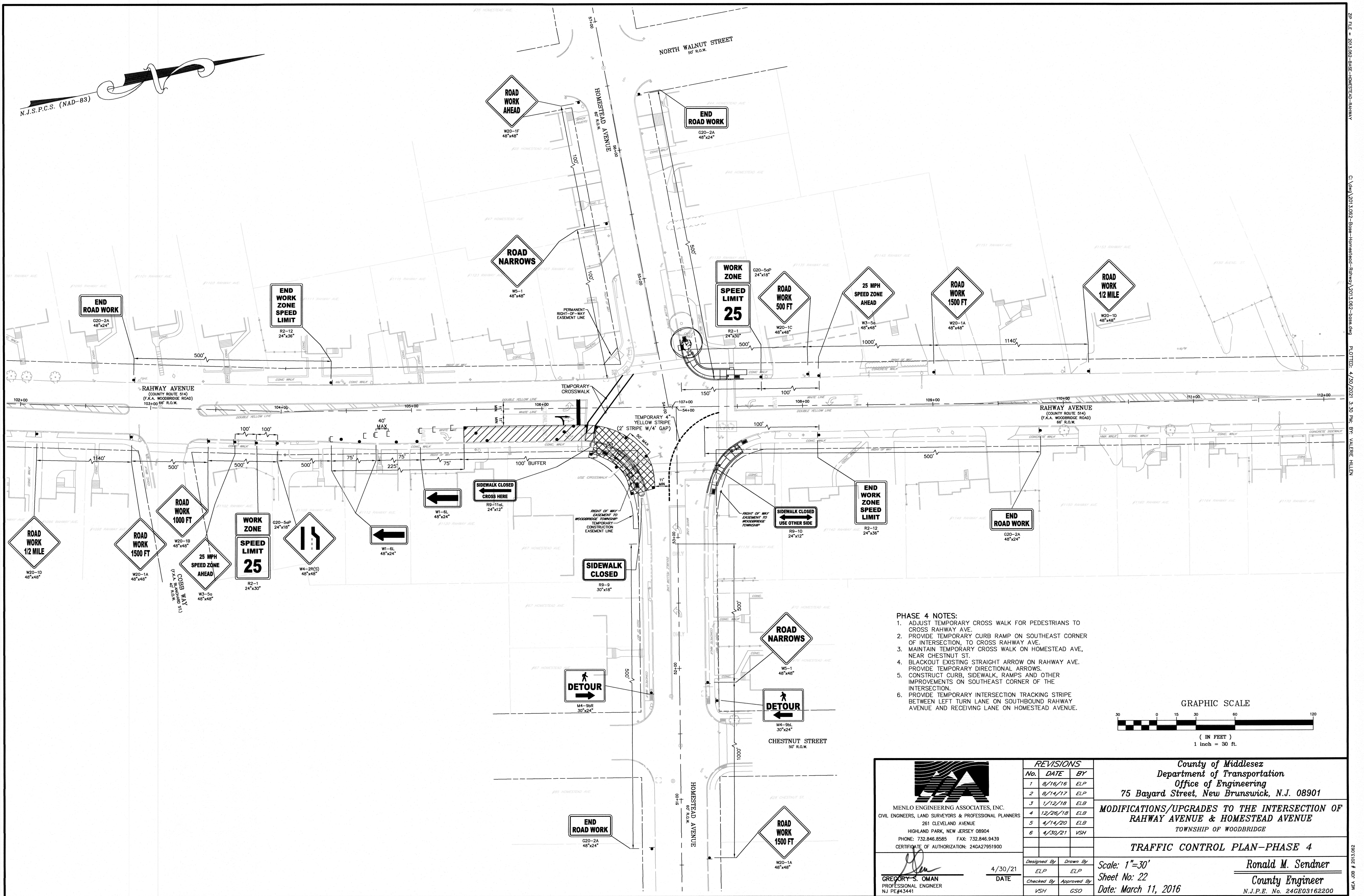
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 Sheet No: 21  
 Date: March 11, 2016

*Ronald M. Sendner*  
 Ronald M. Sendner  
 County Engineer  
 N.J.P.E. No. 24GE03162200

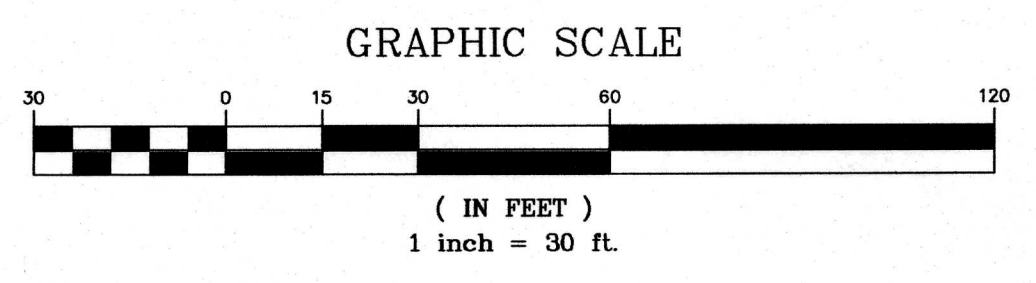
4/30/21  
 DATE

Designed By	Drawn By
ELP	ELP
Checked By	Approved By
VSH	GSD

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 ME JOB # 201309



- PHASE 4 NOTES:**
1. ADJUST TEMPORARY CROSS WALK FOR PEDESTRIANS TO CROSS RAHWAY AVE.
  2. PROVIDE TEMPORARY CURB RAMP ON SOUTHEAST CORNER OF INTERSECTION, TO CROSS RAHWAY AVE.
  3. MAINTAIN TEMPORARY CROSS WALK ON HOMESTEAD AVE, NEAR CHESTNUT ST.
  4. BLACKOUT EXISTING STRAIGHT ARROW ON RAHWAY AVE. PROVIDE TEMPORARY DIRECTIONAL ARROWS.
  5. CONSTRUCT CURB, SIDEWALK, RAMPS AND OTHER IMPROVEMENTS ON SOUTHEAST CORNER OF THE INTERSECTION.
  6. PROVIDE TEMPORARY INTERSECTION TRACKING STRIPE BETWEEN LEFT TURN LANE ON SOUTHBOUND RAHWAY AVENUE AND RECEIVING LANE ON HOMESTEAD AVENUE.



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 PHONE: 732.846.8585 FAX: 732.846.9439  
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**MODIFICATIONS/UPGRADES TO THE INTERSECTION OF  
 RAHWAY AVENUE & HOMESTEAD AVENUE  
 TOWNSHIP OF WOODBRIDGE**

**TRAFFIC CONTROL PLAN-PHASE 4**

Scale: 1"=30'  
 Sheet No: 22  
 Date: March 11, 2016

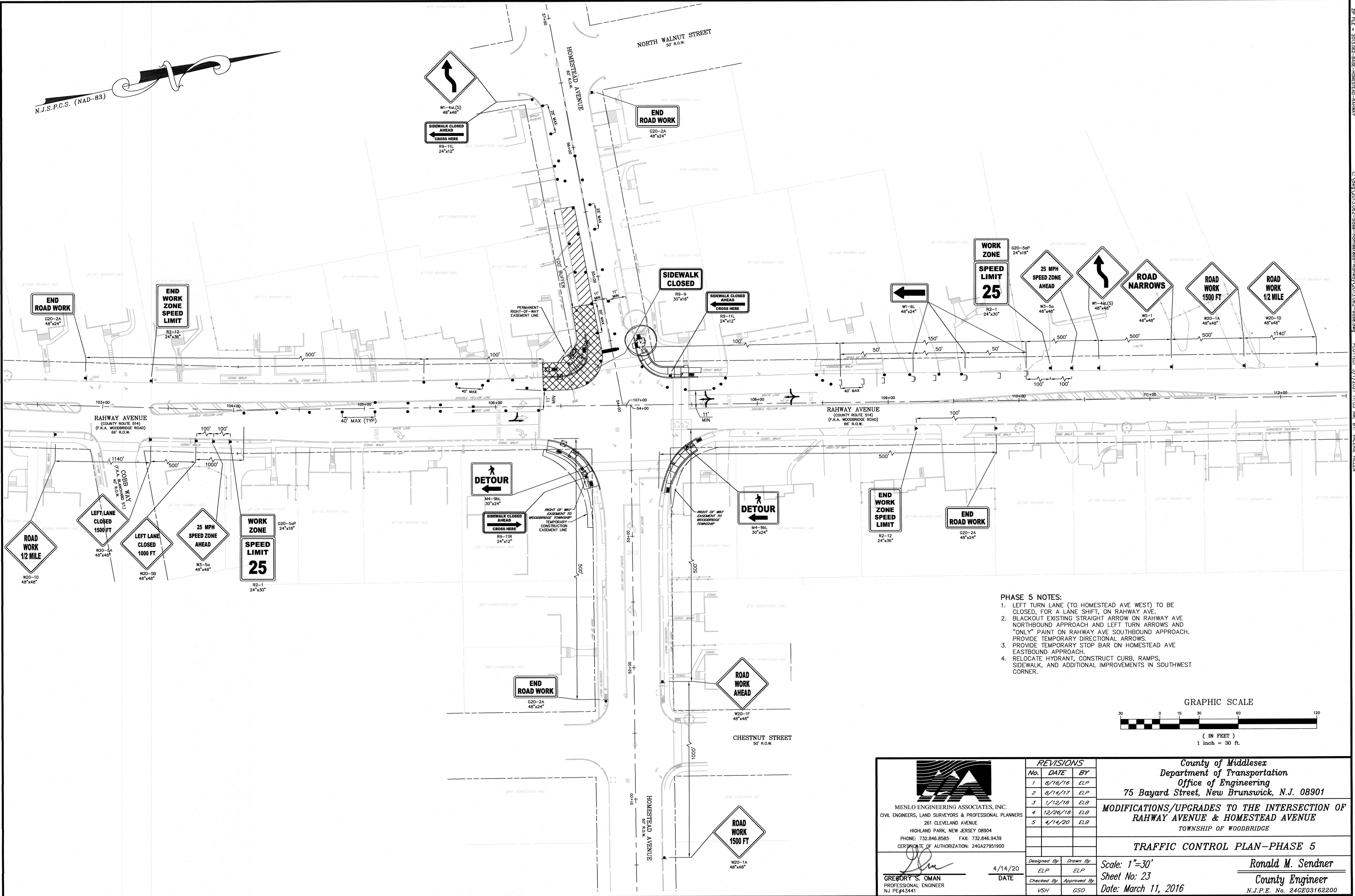
**Ronald M. Sendner**  
 County Engineer  
 N.J.P.E. No. 24GE03162200

Designed By: ELP  
 Drawn By: ELP  
 Checked By: VSH  
 Approved By: GSO

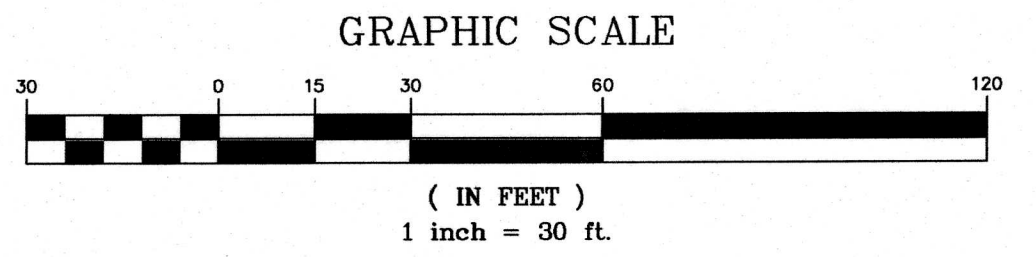
DATE: 4/30/21


GREGORY S. OMAN  
 PROFESSIONAL ENGINEER  
 NJ PE#43441

N.J.S.P.C.S. (NAD-83)



- PHASE 5 NOTES:**
- LEFT TURN LANE (TO HOMESTEAD AVE WEST) TO BE CLOSED, FOR A LANE SHIFT, ON RAHWAY AVE.
  - BLACKOUT EXISTING STRAIGHT ARROW ON RAHWAY AVE NORTHBOUND APPROACH AND LEFT TURN ARROWS AND "ONLY" PAINT ON RAHWAY AVE SOUTHBOUND APPROACH. PROVIDE TEMPORARY DIRECTIONAL ARROWS.
  - PROVIDE TEMPORARY STOP BAR ON HOMESTEAD AVE EASTBOUND APPROACH.
  - RELOCATE HYDRANT, CONSTRUCT CURB, RAMP, SIDEWALK, AND ADDITIONAL IMPROVEMENTS IN SOUTHWEST CORNER.



 <p><b>MENLO ENGINEERING ASSOCIATES, INC.</b>          CIVIL ENGINEERS, LAND SURVEYORS &amp; PROFESSIONAL PLANNERS          261 CLEVELAND AVENUE          HIGHLAND PARK, NEW JERSEY 08904          PHONE: 732.846.8585 FAX: 732.846.9439          CERTIFICATE OF AUTHORIZATION: 24GA27951900</p>	<p><b>REVISIONS</b></p> <table border="1"> <thead> <tr> <th>No.</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>8/16/16</td> <td>ELP</td> </tr> <tr> <td>2</td> <td>8/14/17</td> <td>ELP</td> </tr> <tr> <td>3</td> <td>1/12/18</td> <td>ELB</td> </tr> <tr> <td>4</td> <td>12/26/18</td> <td>ELB</td> </tr> <tr> <td>5</td> <td>4/14/20</td> <td>ELB</td> </tr> </tbody> </table>		No.	DATE	BY	1	8/16/16	ELP	2	8/14/17	ELP	3	1/12/18	ELB	4	12/26/18	ELB	5	4/14/20	ELB	<p>County of Middlesex          Department of Transportation          Office of Engineering          75 Bayard Street, New Brunswick, N.J. 08901</p> <p><b>MODIFICATIONS/UPGRADES TO THE INTERSECTION OF          RAHWAY AVENUE &amp; HOMESTEAD AVENUE</b>          TOWNSHIP OF WOODBRIDGE</p> <p><b>TRAFFIC CONTROL PLAN-PHASE 5</b></p>
	No.	DATE	BY																		
	1	8/16/16	ELP																		
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<p>Designed By          ELP</p>	<p>Drawn By          ELP</p>	<p>Scale: 1"=30'          Sheet No: 23          Date: March 11, 2016</p>																			
<p>Checked By          VSH</p>	<p>Approved By          GSO</p>																				
<p>DATE          4/14/20</p>	<p><b>Ronald M. Sendner</b>          County Engineer          N.J.P.E. No. 24CE03162200</p>																				
<p>PROJECT ENGINEER          GREGORY S. OMAN          NJ PE#43441</p>																					

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### STANDARD FOR PERMANENT VEGETATIVE COVER

- SITE PREPARATION**
  - GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARD FOR LAND GRADING.
  - IMMEDIATELY PRIOR TO SEEDING AND TOPSOIL APPLICATION, THE SUBSOIL SHALL BE EVALUATED FOR COMPACTION IN ACCORDANCE WITH THE STANDARD FOR LAND GRADING.
  - TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING THE SOIL STRUCTURE. A UNIFORM APPLICATION TO A DEPTH OF 5 INCHES (UNSETTLED) IS REQUIRED ON ALL SITES. TOPSOIL SHALL BE AMENDED WITH ORGANIC MATTER, AS NEEDED, WITH THE STANDARD FOR TOPSOILING.
  - INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE-STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.

- SEEDING PREPARATION**
  - UNIFORMLY APPLY GROUND LIMESTONE AND FERTILIZER TO TOPSOIL WHICH HAS BEEN SPREAD AND FIRMED, ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE RUTGERS CO-OPERATIVE EXTENSION OFFICE (609) 955-2300. FERTILIZER SHALL BE APPLIED AT THE RATE OF 50 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE AND INCORPORATED INTO THE SURFACE TO A DEPTH OF 4 INCHES. IF FERTILIZER IS NOT INCORPORATED, APPLY ONE-HALF RATE DESCRIBED ABOVE DURING SEEDBED PREPARATION AND REPEAT ANOTHER ONE-HALF RATE APPLICATION OF THE SAME FERTILIZER WITHIN 3 TO 5 WEEKS AFTER SEEDING.
  - WORK LIME AND FERTILIZER INTO THE TOPSOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING-TOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.
  - HIGH ACID PRODUCING SOILS HAVING A PH OF 4 OR LESS OR CONTAINING IRON SULFIDES, SHALL BE COVERED WITH A MINIMUM OF 12 INCHES OF SOIL HAVING A PH OF 5 OR MORE BEFORE INITIATING SEEDBED PREPARATION. SEE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS FOR SPECIFIC REQUIREMENTS.

- SEEDING**
  - SELECT A MIXTURE FROM TABLE 4-3 OR USE A MIXTURE RECOMMENDED BY RUTGERS CO-OPERATIVE EXTENSION OR NATURAL RESOURCES CONSERVATION SERVICE WHICH IS APPROVED BY THE SOIL CONSERVATION DISTRICT. SEED GERMINATION TEST DATE MORE THAN 12 MONTHS OLD UNLESS RESTRICTED.
  - SEEDING RATES SPECIFIED ARE REQUIRED WHEN A REPORT OF COMPLETION IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. UP TO 50% REDUCTION IN RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO A REPORT OF COMPLIANCE. INCORPORATION OF SEEDS INTO THE SOIL IS NOT A REQUIRED SEEDING ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVER WITH THE SPECIFIED SEED MIXTURE FOR THE SEEDING AREA AND MOWED ONCE.
  - WARM-SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT HIGH TEMPERATURES, GENERALLY 85°F AND ABOVE. SEE TABLE 4-3 MIXTURES 1 TO 7. PLANTING RATES FOR WARM-SEASON GRASSES SHALL BE THE AMOUNT OF PURE LIVE SEED (PLS) AS DETERMINED BY GERMINATION TESTING RESULTS.
  - COOL-SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT TEMPERATURES BELOW 85°F. MANY GRASSES BECOME DORMANT IN WINTER. ADJUSTMENT OF PLANTING RATES TO COMPENSATE FOR THE AMOUNT OF PLS IS NOT REQUIRED FOR COOL SEASON GRASSES.

- MULCHING**
  - CONVENTIONAL SEEDING IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULPACKEER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDED OR CULPACKEER SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDING PREPARATION TO A DEPTH OF 1/4 TO 1/2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COARSE-TEXTURED SOIL.
  - AFTER SEEDING, FIRING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOD, WHEN PERFORMED ON THE CONTOUR. SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.
  - HYDROSEEDING IS A BROADCAST SEEDING METHOD USUALLY INVOLVING A TRUCK OR TRAILER MOUNTED TANK, WITH AN AGITATION SYSTEM AND HYDRAULIC PUMP FOR MIXING SEED, WATER AND FERTILIZER AND SPRAYING THE MIX ONTO THE PREPARED SEEDBED. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH SEED. SHORT FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. (ALSO SEE SECTION 4 MULCHING BELOW). HYDROSEEDING IS NOT A REFINED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL. WHEN POOR SEED TO SOIL CONTACT OCCURS, THERE IS A REDUCED SEED GERMINATION AND GROWTH.

MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL PROTECT AGAINST EROSION BEFORE GRASS IS ESTABLISHED AND WILL PROMOTE FASTER AND EARLIER ESTABLISHMENT. THE EXISTENCE OF VEGETATION SUFFICIENT TO CONTROL SOIL EROSION SHALL BE DEEMED COMPLIANCE WITH THIS MULCHING REQUIREMENT.

A STRAW OR HAY, UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, TO BE APPLIED AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRUMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER (TACKLING OR ADHESIVE AGENT), THE RATE OF APPLICATION IS 3 TONS PER ACRE. MULCH CHOPPER-BLOWERS MUST NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE PRESENCE OF WEED SEEDS.

APPLICATION - SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT AT LEAST 85% OF THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE 70 TO 90 POUNDS WITHIN EACH SECTION.

ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER SEEDING TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS.

1. PEG AND TWINE. DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISS-CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
2. MULCH NETTINGS - STAPLE PAPER, JUTE, COTTON, OR PLASTIC NETTINGS TO THE SOIL SURFACE. USE A DEGRADABLE NETTING IN AREAS TO BE MOWED.
3. CRUMPER (MULCH ANCHORING COLLAR TOOL) - A TRACTOR-DRAWN IMPLEMENT, SOMEWHAT LIKE A DISC HARROW, ESPECIALLY DESIGNED TO PUSH OR CUT SOME OF THE BROADCAST LONG FIBER MULCH 3 TO 4 INCHES INTO THE SOIL SO AS TO ANCHOR IT AND LEAVE PART STANDING UPRIGHT. THIS TECHNIQUE IS LIMITED TO AREAS TRANSVERSABLE BY A TRACTOR, WHICH MUST OPERATE ON THE CONTOUR OF SLOPES. STRAW MULCH RATE MUST BE 3 TONS PER ACRE. NO TACKLING OR ADHESIVE AGENT IS REQUIRED.
4. LIQUID MULCH-BINDERS - MAY BE USED TO ANCHOR SALT HAY, HAY OR STRAW MULCH.

- (a) APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND MAY CATCH THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. THE REMAINDER OF THE AREA SHOULD BE UNIFORM IN APPEARANCE.
- (b) USE ONE OF THE FOLLOWING:
  - (1) ORGANIC AND VEGETABLE BASED BINDERS - NATURALLY OCCURRING, POWDER-BASED, HYDROPHILIC MATERIALS WHEN MIXED WITH WATER FORMULATES A GEL, AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANED NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTOLOGIC EFFECT OR IMPED E GROWTH OF TURF GRASS. USE AT RATES AND WEATHER CONDITIONS AS RECOMMENDED BY THE MANUFACTURER. MANY NEW PRODUCTS ARE AVAILABLE. SOME OF WHICH MAY NEED FURTHER EVALUATION FOR USE IN THIS STATE.
  - (2) SYNTHETIC BINDERS - HIGH POLYMER SYNTHETIC EMULSION, MISIBLE WITH WATER WHEN DILUTED AND, FOLLOWING DRYING AND CURING, SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. BINDER SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.

NOTE: ALL NAMES GIVEN ABOVE ARE REGISTERED TRADE NAMES. THIS DOES NOT CONSTITUTE A RECOMMENDATION OF THESE PRODUCTS TO THE EXCLUSION OF OTHER PRODUCTS.

B. WOOD-FIBER OR PAPER-FIBER MULCH - SHALL BE MADE FROM WOOD, PLANT FIBERS OR PAPER CONTAINING NO GROWTH OR GERMINATION INHIBITING MATERIALS, USED AT THE RATE OF 1,500 POUNDS PER ACRE (OR AS RECOMMENDED BY THE PRODUCT MANUFACTURER) AND MAY BE APPLIED BY A HYDROSEEDER. MULCH SHALL NOT BE MIXED IN THE TANK WITH SEED. USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.

C. PELLETED MULCH - COMPRESSED AND EXTRUDED PAPER AND/OR WOOD FIBER PRODUCT, WHICH MAY CONTAIN CO-POLYMERS, TACKIFIERS, FERTILIZERS, AND COLORING AGENTS. THE DRY PELLETS, WHEN APPLIED TO A SEEDBED AREA AND WATERED, FORM A MULCH MAT. PELLETED MULCH SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MULCH MAY BE APPLIED BY HAND OR MECHANICAL SPREADER AT THE RATE OF 60-75 LBS/1,000 SQUARE FEET AND ACTIVATED WITH 0.2 TO 0.4 INCHES OF WATER. THIS MATERIAL HAS BEEN FOUND TO BE BENEFICIAL FOR USE ON SMALL LAWN OR RENOVATION AREAS. SEEDBED AREAS WHERE WOOD-SEED FREE MULCH IS DESIRED, OR ON SITES WHERE MULCH AND SEED ARE NOT PRACTICAL OR DESIRABLE, APPLYING THE FULL 0.2 TO 0.4 INCHES OF WATER AFTER SPREADING PELLETED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE.

IF SOIL MOISTURE IS DEFICIENT SUPPLY NEW SEEDING WITH ADEQUATE WATER (A MINIMUM OF 1/4 INCH APPLIED UP TO TWICE A DAY UNTIL VEGETATION IS WELL ESTABLISHED). THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE IN ABNORMALLY DRY OR HOT WEATHER OR ON DROUGHTY SITES.

7. ESTABLISHING PERMANENT VEGETATIVE STABILIZATION

THE QUALITY OF PERMANENT VEGETATION RESTS WITH THE CONTRACTOR. THE TIMING OF SEEDING, PREPARING THE SEEDBED, APPLYING NUTRIENTS, MULCH AND OTHER MANAGEMENT ARE ESSENTIAL. THE SEED APPLICATION RATES IN TABLE 4-3 ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. TO SOIL REDUCTION IN APPLICATION RATES WILL BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO REQUESTING A REPORT OF COMPLIANCE FROM THE DISTRICT. THESE RATES APPLY TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVER (OF THE SEEDED SPECIES) AND MOWED ONCE. NOTE THIS DESIGNATION OF MOWED ONCE DOES NOT GUARANTEE THE PERMANENCY OF THE TURF SHOULD OTHER MAINTENANCE FACTORS BE NEGLECTED OR OTHERWISE MISMANAGED.

### CONSTRUCTION SEQUENCE

CONSTRUCTION COMMENCEMENT DATE: TO BE DETERMINED	
1. INSTALLATION OF SILT FENCE ALONG LIMIT OF DISTURBANCE LINE AT SECTION DELINEATED ON "SOIL EROSION CONTROL PLANS" -	1 DAY
2. CLEARING AND GRUBBING -	2 DAYS
3. ROUGH GRADING AND TEMPORARY SEEDING -	3 DAYS
4. INSTALLATION OF UTILITIES AND SIGNAL FOUNDATIONS WITH EROSION CONTROL DEVICES (TEMPORARY SEEDING, INLET PROTECTION AND TEMPORARY STABILIZATION). -	2 WEEKS
5. CURBING -	1 WEEK
6. PAVEMENT SUBBASE -	1 WEEK
7. FINISHED GRADING -	3 DAYS
8. FINAL PAVEMENT -	1 WEEK
9. LANDSCAPING WITH PERMANENT SEEDING -	2 DAYS

THE ABOVE SCHEDULE SUBJECT TO WEATHER CONDITIONS AND MATERIAL AVAILABILITY.

### STANDARD FOR TEMPORARY VEGETATIVE COVER

- SITE PREPARATION**
  - GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARDS FOR LAND GRADING, PG. 19-1.
  - INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.
  - IMMEDIATELY PRIOR TO SEEDING, THE SURFACE SHOULD BE SCARIFIED 6" TO 12" WHERE THERE HAS BEEN SOIL COMPACTION. THIS PRACTICE IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.).

- SEEDING PREPARATION**
  - UNIFORMLY APPLY GROUND LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS CO-OPERATIVE EXTENSION OFFICE (609) 955-2300. FERTILIZER SHALL BE APPLIED AT THE RATE OF 50 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10-20-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE. APPLY LIMESTONE AT THE RATE OF 2 TONS/ACRE UNLESS SOIL TESTING INDICATES OTHERWISE. ALUMINUM CARBONATE IS THE EQUIVALENT STANDARD FOR MEASURING THE ABILITY OF LIMING MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM AND MAGNESIUM TO GRASSES AND LEGUMES.
  - WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING-TOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.
  - INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED IN ACCORDANCE WITH THE ABOVE.
  - SOILS HIGH IN SULFIDES OR HAVING A PH OF 4 OR LESS REFER TO STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, PG. 1-1.

- SEEDING**
  - SELECT SEED FROM RECOMMENDATIONS IN TABLE 7-2.
  - CONVENTIONAL SEEDING. APPLY SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULPACKEER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDED OR CULPACKEER SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL TO A DEPTH OF 1/4 TO 1/2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COARSE TEXTURED SOIL.
  - HYDROSEEDING IS A BROADCAST SEEDING METHOD USUALLY INVOLVING A TRUCK OR TRAILER MOUNTED TANK, WITH AN AGITATION SYSTEM AND HYDRAULIC PUMP FOR MIXING SEED, WATER AND FERTILIZER AND SPRAYING THE MIX ONTO THE PREPARED SEEDBED. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH SEED. SHORT FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. (ALSO SEE SECTION 4 MULCHING BELOW). HYDROSEEDING IS NOT A PREFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL. POOR SEED TO SOIL CONTACT OCCURS REDUCING SEED GERMINATION AND GROWTH. HYDROSEEDING MAY BE USED FOR AREAS WHERE SOIL CONTACT OCCURS REDUCING SEED GERMINATION AND GROWTH. HYDROSEEDING WITH ROCKS, STUMPS, ETC.
  - AFTER SEEDING, FIRING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOD, WHEN PERFORMED ON THE CONTOUR. SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.

MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL INSURE AGAINST EROSION BEFORE GRASS IS ESTABLISHED AND WILL PROMOTE FASTER AND EARLIER ESTABLISHMENT. THE EXISTENCE OF VEGETATION SUFFICIENT TO CONTROL SOIL EROSION SHALL BE DEEMED COMPLIANCE WITH THIS MULCHING REQUIREMENT.

A STRAW OR HAY, UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, APPLIED AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRUMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER (TACKLING OR ADHESIVE AGENT), THE RATE OF APPLICATION IS 3 TONS PER ACRE. MULCH CHOPPER-BLOWERS MUST NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE PRESENCE OF WEED SEEDS.

APPLICATION - SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 85% OF THE SOIL SURFACE WILL BE COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE 70 TO 90 POUNDS WITHIN EACH SECTION.

ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS.

1. PEG AND TWINE. DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISS-CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
2. MULCH NETTINGS - STAPLE PAPER, JUTE, COTTON, OR PLASTIC NETTINGS TO THE SOIL SURFACE. USE A DEGRADABLE NETTING IN AREAS TO BE MOWED.
3. CRUMPER (MULCH ANCHORING COLLAR TOOL) - A TRACTOR-DRAWN IMPLEMENT, SOMEWHAT LIKE A DISC HARROW, ESPECIALLY DESIGNED TO PUSH OR CUT SOME OF THE BROADCAST LONG FIBER MULCH 3 TO 4 INCHES INTO THE SOIL SO AS TO ANCHOR IT AND LEAVE PART STANDING UPRIGHT. THIS TECHNIQUE IS LIMITED TO AREAS TRANSVERSABLE BY A TRACTOR, WHICH MUST OPERATE ON THE CONTOUR OF SLOPES. STRAW MULCH RATE MUST BE 3 TONS PER ACRE. NO TACKLING OR ADHESIVE AGENT IS REQUIRED.
4. LIQUID MULCH-BINDERS - MAY BE USED TO ANCHOR SALT HAY, HAY OR STRAW MULCH.

- (a) APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND MAY CATCH THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. THE REMAINDER OF THE AREA SHOULD BE UNIFORM IN APPEARANCE.
- (b) USE ONE OF THE FOLLOWING:
  - (1) ORGANIC AND VEGETABLE BASED BINDERS - NATURALLY OCCURRING, POWDER-BASED, HYDROPHILIC MATERIALS WHEN MIXED WITH WATER FORMULATES A GEL, AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANED NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTOLOGIC EFFECT OR IMPED E GROWTH OF TURF GRASS. USE AT RATES AND WEATHER CONDITIONS AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH MATERIALS. MANY NEW PRODUCTS ARE AVAILABLE. SOME OF WHICH MAY NEED FURTHER EVALUATION FOR USE IN THIS STATE.
  - (2) SYNTHETIC BINDERS - HIGH POLYMER SYNTHETIC EMULSION, MISIBLE WITH WATER WHEN DILUTED AND, FOLLOWING DRYING AND CURING, SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. BINDER SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.

NOTE: ALL NAMES GIVEN ABOVE ARE REGISTERED TRADE NAMES. THIS DOES NOT CONSTITUTE A RECOMMENDATION OF THESE PRODUCTS TO THE EXCLUSION OF OTHER PRODUCTS.

B. WOOD-FIBER OR PAPER-FIBER MULCH - SHALL BE MADE FROM WOOD, PLANT FIBERS OR PAPER CONTAINING NO GROWTH OR GERMINATION INHIBITING MATERIALS, USED AT THE RATE OF 1,500 POUNDS PER ACRE (OR AS RECOMMENDED BY THE PRODUCT MANUFACTURER) AND MAY BE APPLIED BY A HYDROSEEDER. MULCH SHALL NOT BE MIXED IN THE TANK WITH SEED. USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.

C. PELLETED MULCH - COMPRESSED AND EXTRUDED PAPER AND/OR WOOD FIBER PRODUCT, WHICH MAY CONTAIN CO-POLYMERS, TACKIFIERS, FERTILIZERS, AND COLORING AGENTS. THE DRY PELLETS, WHEN APPLIED TO A SEEDBED AREA AND WATERED, FORM A MULCH MAT. PELLETED MULCH SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MULCH MAY BE APPLIED BY HAND OR MECHANICAL SPREADER AT THE RATE OF 60-75 LBS/1,000 SQUARE FEET AND ACTIVATED WITH 0.2 TO 0.4 INCHES OF WATER. THIS MATERIAL HAS BEEN FOUND TO BE BENEFICIAL FOR USE ON SMALL LAWN OR RENOVATION AREAS. SEEDBED AREAS WHERE WOOD-SEED FREE MULCH IS DESIRED, OR ON SITES WHERE MULCH AND SEED ARE NOT PRACTICAL OR DESIRABLE, APPLYING THE FULL 0.2 TO 0.4 INCHES OF WATER AFTER SPREADING PELLETED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE.

TABLE 7-2  
TEMPORARY VEGETATIVE STABILIZATION GRASSES, SEEDING RATES, DATES AND DEPTH.

SEED SELECTIONS	SEEDING RATE (pounds)		OPTIMUM SEEDING DATE Based on Plant Hardiness Zone 3		OPTIMUM SEED DEPTH (inches)
	Per Acre	Per 1000 Sq. Ft.	ZONE 5b, 6a	ZONE 7a, b	
COOL SEASON GRASSES					
1. PERENNIAL RYEGRASS	100	1.0	3/15- 5/15 8/1- 9/15	3/1- 5/15 5/15- 10/15	2/15- 0.5
2. SPRING OATS	86	2.0	3/15- 6/1 8/15- 9/15	3/1- 5/15 5/15- 10/15	2/15- 1.0
3. WINTER BARLEY	96	2.2	8/15- 9/15	8/15- 10/15	2/15- 0.5
4. ANNUAL RYEGRASS	100	1.0	3/15- 6/1 8/1- 9/15	3/15- 5/1 8/15- 10/15	2/15- 1.0
5. WINTER CEREAL RYE	112	2.8	8/1- 11/1	8/1- 12/15	2/15- 1.0
WARM SEASON GRASSES					
6. PEARL MILLET	20	0.5	6/1- 8/1 8/15- 9/1	5/15- 8/15 8/15- 9/1	1.0
7. MILLET (GERMAN OR HUNGARIAN)	30	0.7	6/1- 8/1 8/15- 9/1	5/15- 8/15 8/15- 9/1	1.0

### SOIL EROSION AND SEDIMENT CONTROL NOTES

1. THE FRESHLOD SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY SOIL DISTURBING ACTIVITY.
2. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES ARE TO BE INSTALLED PRIOR TO SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
3. ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLANS WILL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE DISTRICT FOR RE-CERTIFICATION. THE REVISED PLANS MUST MEET ALL CURRENT STATE SOIL EROSION AND SEDIMENT CONTROL STANDARDS.
4. N.J.S.A. 4:24-39 ET. SEQ. REQUIRES THAT NO CERTIFICATES OF OCCUPANCY BE ISSUED BEFORE THE DISTRICT DETERMINES THAT A PROJECT OR PORTION THEREOF IS IN FULL COMPLIANCE WITH THE CERTIFIED PLAN AND STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL. IN NEW JERSEY AND REPORT OF COMPLIANCE HAS BEEN ISSUED. UPON WRITTEN REQUEST FROM THE APPLICANT, THE DISTRICT MAY ISSUE A REPORT OF COMPLIANCE WITH CONDITIONS ON A LOT-BY-LOT OR SECTION-BY-SECTION BASIS, PROVIDED THAT THE PROJECT OR PORTION THEREOF IS IN SATISFACTORY COMPLIANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL AND TEMPORARY MEASURES FOR STABILIZATION AND SITE WORK.
5. ANY DISTURBED AREAS THAT WILL BE EXPOSED MORE THAN SIXTY (60) DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF 2 TO 3 TONS PER ACRE, ACCORDING TO THE STANDARD FOR STABILIZATION WITH MULCH ONLY.
6. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (I.E. SOIL STOCKPILES, STEEP SLOPES AND ROADWAY EMBANKMENTS) WILL RECEIVE TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AND A MULCH ANCHOR, IN ACCORDANCE WITH THE STANDARD FOR STABILIZATION WITH MULCH ONLY.
7. A SUB-BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS TO STABILIZE STREETS, ROADS, DRIVEWAYS, AND PARKING AREAS, IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUB-BASE SHALL BE INSTALLED WITHIN FIFTEEN (15) DAYS OF THE PRELIMINARY GRADING.
8. THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS REQUIRES THE INSTALLATION OF A PAD OF CLEAN CRUSHED STONE AT POINTS WHERE TRAFFIC WILL BE ACCESSING THE CONSTRUCTION SITE. AFTER INTERIOR ROADWAYS ARE PAVED, INDIVIDUAL LOTS REQUIRE A STABILIZED CONSTRUCTION ACCESS CONSISTING OF ONE INCH TO TWO INCH (1"-2") STONE FOR A MINIMUM LENGTH OF TEN FEET (10') EQUAL TO THE LOT ENTRANCE WIDTH, ALL OTHER ACCESS POINTS SHALL BE LOCKED OFF.
9. ALL SOIL WASHED, DROPPED, SPILLED, OR TRACKED OUTSIDE THE LIMIT OF DISTURBANCE OR ONTO PUBLIC RIGHT-OF-WAYED SHALL BE REMOVED IMMEDIATELY.
10. PERMANENT VEGETATION IS TO BE SEED OR SODDED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING.
11. AT THE TIME THAT SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS GOING TO BE ACCOMPLISHED, ANY SOIL THAT WILL NOT BE USED TO SUPPORT VEGETATION TO SUPPORT VEGETATION TO SUPPORT VEGETATION SHOULD BE REMOVED OR TREATED IN SUCH A MANNER THAT IT WILL PERMANENTLY ADJUST THE SOIL CONDITIONS AND RENDER IT SUITABLE FOR VEGETATIVE GROUND COVER. IF REMOVAL OR TREATMENT OF THE SOIL WILL NOT PROVIDE SUITABLE CONDITIONS, NON-VEGETATIVE GROUND COVER OF PERMANENT GROUND STABILIZATION WILL HAVE TO BE EMPLOYED.
12. IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, ANY SOIL HAVING A PH OF 4 OR LESS OR CONTAINING IRON SULFIDES SHALL BE ULTIMATELY PLACED OR BURIED WITH LIMESTONE APPLIED AT THE RATE OF 10 TONS/ACRE (OR 2.2 LBS/1,000 SQ. FT. OF SURFACE AREA) AND COVERED WITH A MINIMUM OF 12" OF SETTLED SOIL WITH A PH OF 5 OR MORE, OR 24" WHERE TREES OR SHRUBS ARE TO BE PLANTED.
13. CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.
14. UNFILTERED Dewatering IS NOT PERMITTED. NECESSARY PRECAUTIONS MUST BE TAKEN DURING ALL DEWATERING OPERATIONS. ANY Dewatering METHODS USED MUST BE IN ACCORDANCE WITH THE STANDARD FOR DEWATERING.
15. SHOULD THE CONTROL OF DUST AT THE SITE BE NECESSARY, THE SITE WILL BE SPRINKLED UNTIL THE SURFACE IS WET. TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED OR MULCH SHALL BE APPLIED AS REQUIRED BY THE STANDARD FOR VEGETATIVE COVER FOR SOIL STABILIZATION, PG. 4-1.
16. STOCKPILE AND STAGING LOCATIONS ESTABLISHED IN THE FIELD SHALL BE PLACED WITHIN THE LIMIT OF DISTURBANCE ACCORDING TO THE CERTIFIED PLAN. STAGING AND STOCKPILES NOT LOCATED WITHIN THE LIMIT OF DISTURBANCE WILL REQUIRE CERTIFICATION OF A REVISED SOIL EROSION AND SEDIMENT CONTROL PLAN. CERTIFICATION OF A NEW SOIL EROSION AND SEDIMENT CONTROL PLAN MAY BE REQUIRED FOR THESE ACTIVITIES IF AN AREA GREATER THAN 500 SQUARE FEET IS DISTURBED.
17. ALL SOIL STOCKPILES ARE TO BE TEMPORARILY STABILIZED IN ACCORDANCE WITH SOIL EROSION AND SEDIMENT CONTROL NOTE #6.
18. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR BELOW STORMWATER OUTFALLS OR OFFSITE AS A RESULT OF CONSTRUCTION OF THE PROJECT.

### STANDARD FOR TOPSOILING

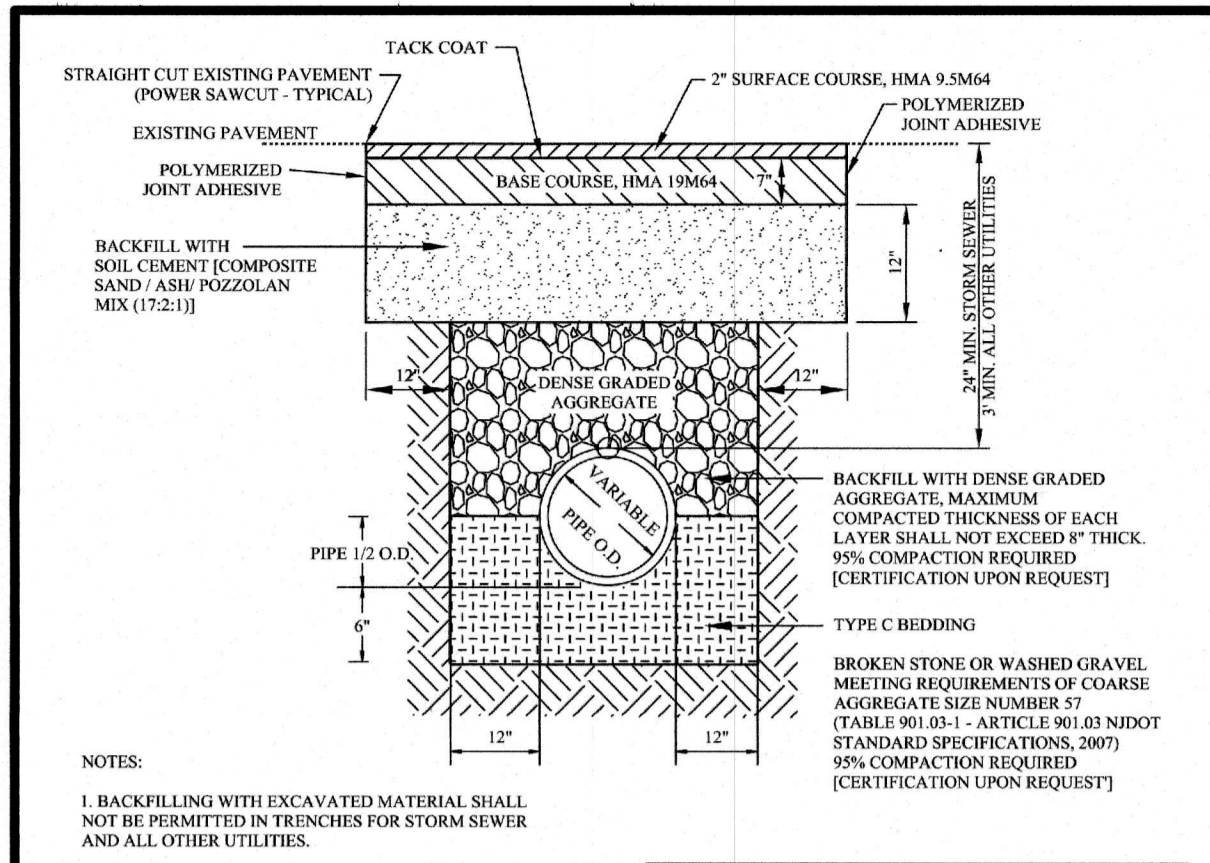
- TOPSOILING ENTAILS THE DISTRIBUTION OF SUITABLE QUALITY SOIL ON AREAS TO BE VEGETATED.
- PURPOSE - TO IMPROVE THE SOIL MEDIUM FOR PLANT ESTABLISHMENT AND MAINTENANCE.
- WATER QUALITY ENHANCEMENT - GROWTH AND ESTABLISHMENT OF A MODUROUS VEGETATIVE COVER IS FACILITATED BY TOPSOIL, PREVENTING SOIL LOSS BY WIND AND RAIN OFFSITE AND INTO STREAMS AND OTHER STORMWATER CONVEYANCES.
- WHERE APPLICABLE - TOPSOIL SHALL BE USED WHERE SOILS ARE TO BE DISTURBED AND WILL BE REVEGETATED.

- METHODS AND MATERIALS**
1. MATERIALS
    - (1) TOPSOIL SHOULD BE FRAGILE, LOAMY, FREE OF DEBRIS, OBJECTIONABLE WEEDS AND STONES, AND CONTAIN NO TOXIC SUBSTANCE OR ADVERSE CHEMICAL OR PHYSICAL CONDITION THAT MAY BE HARMFUL TO PLANT GROWTH. SOULBE A. SOIL SHOULD NOT BE EXCESSIVE (CONDUCTIVITY LESS THAN 0.5 MILLIHOMS PER CENTIMETER, MORE THAN 15 MILLIHOMS MAY DESICcate SEEDLINGS AND ADVERSELY IMPACT GROWTH.) TOPSOIL HAULED IN FROM OFFSITE SHOULD HAVE A MINIMUM ORGANIC MATTER CONTENT OF 2.75 PERCENT. ORGANIC MATTER CONTENT MAY BE RAISED BY ADDITIVES.
    - (2) TOPSOIL SUBSTITUTE IS A SOIL MATERIAL WHICH MAY HAVE BEEN AMENDED WITH SAND, SILT, CLAY, ORGANIC MATTER, FERTILIZER, OR LIME AND HAS THE APPEARANCE OF TOPSOIL. TOPSOIL SUBSTITUTES MAY BE UTILIZED ON SITES WITH INSUFFICIENT TOPSOIL FOR ESTABLISHING PERMANENT VEGETATION. ALL TOPSOIL SUBSTITUTE MATERIALS SHALL MEET THE REQUIREMENTS OF TOPSOIL NOTED ABOVE. SOIL TESTS SHALL BE PERFORMED TO DETERMINE THE COMPONENTS OF SAND, SILT, CLAY, ORGANIC MATTER, SOULBE SALTS AND PH LEVEL.
  2. STRIPPING AND STOCKPILING
    - (a) FIELD EXPLORATION SHOULD BE MADE TO DETERMINE WHETHER QUANTITY AND OR QUALITY OF SURFACE SOIL JUSTIFIES STRIPPING.
    - (b) STRIPPING SHOULD BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA.
  3. WHERE FEASIBLE, LIME MAY BE APPLIED BEFORE STRIPPING AT A RATE DETERMINED BY SOIL TESTS TO BRING THE SOIL PH TO APPROXIMATELY 6.5. IN LIEU OF SOIL TESTS, USE A SEEDBED PREPARATION FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION, PG. 4-1.
  4. A 4-6 INCH STRIPPING DEPTH IS COMMON, BUT MAY VARY DEPENDING ON THE PARTICULAR SOIL.
  5. STOCKPILES OF TOPSOIL SHOULD BE SITUATED SO AS NOT TO OBSTRUCT NATURAL DRAINAGE OR CAUSE OFF-SITE ENVIRONMENTAL DAMAGE.
  6. STOCKPILES SHOULD BE VEGETATED IN ACCORDANCE WITH STANDARDS PREVIOUSLY DESCRIBED HEREIN. SEE STANDARDS FOR PERMANENT VEGETATIVE COVER (PG. 4-1) OR TEMPORARY (PG. 7-1) VEGETATIVE COVER FOR SOIL STABILIZATION. WEEDS SHOULD NOT BE ALLOWED TO GROW ON STOCKPILES.

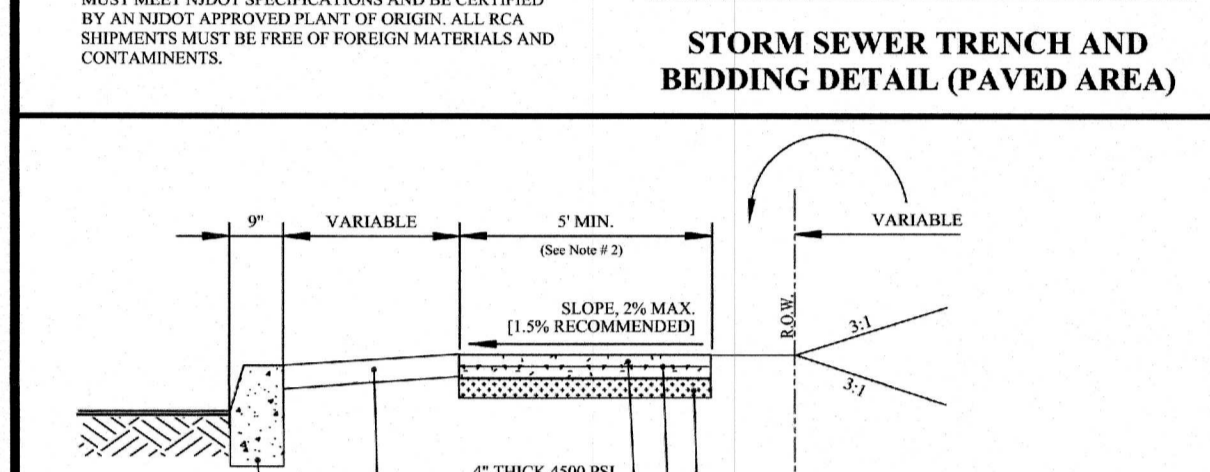
3. SITE PREPARATION
  1. GRADE AT THE ONSET OF THE OPTIMUM SEEDING PERIOD SO AS TO MINIMIZE THE DURATION AND AREA OF EXPOSURE OF DISTURBED SOIL TO EROSION. IMMEDIATELY PROCEED TO ESTABLISH VEGETATIVE COVER IN ACCORDANCE WITH THE SPECIFIED SEED MIXTURE. TIME IS OF THE ESSENCE.
  2. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND ANCHORING, AND MAINTENANCE. SEE THE STANDARD FOR LAND GRADING, PG. 19-1.
  3. AS GUIDANCE FOR IDEAL CONDITIONS, SUBSOIL SHOULD BE TESTED FOR LIME REQUIREMENT. LIMESTONE, IF NEEDED, SHOULD BE APPLIED TO A DEPTH OF 4 INCHES TO A PH OF APPROXIMATELY 6.5 AND INCORPORATED INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES.
  4. IMMEDIATELY PRIOR TO TOPSOILING, THE SURFACE SHOULD BE SCARIFIED 6" TO 12" WHERE THERE HAS BEEN SOIL COMPACTION. THIS WILL HELP INSURE A GOOD BOND BETWEEN THE TOPSOIL AND SUBSOIL. THIS PRACTICE IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.).
  5. EMPLOY NEEDED EROSION CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENTATION BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.
4. APPLYING TOPSOIL
  1. TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING SOIL STRUCTURE, I.E., LESS THAN FIELD CAPACITY (SEE GLOSSARY).
  2. A UNIFORM APPLICATION TO A DEPTH OF 5 INCHES (UNSETTLED) IS RECOMMENDED. SOILS WITH A PH OF 4.0 OR LESS OR CONTAINING IRON SULFIDES SHALL BE COVERED WITH A MINIMUM DEPTH OF 12 INCHES OF SOIL HAVING A PH OF 5.0 OR MORE, IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOIL (PG. 1-1).

1. FRAGILE MEANS EASILY CRUMBLES IN THE FINGERS, AS DEFINED IN MOST SOILS TESTS.

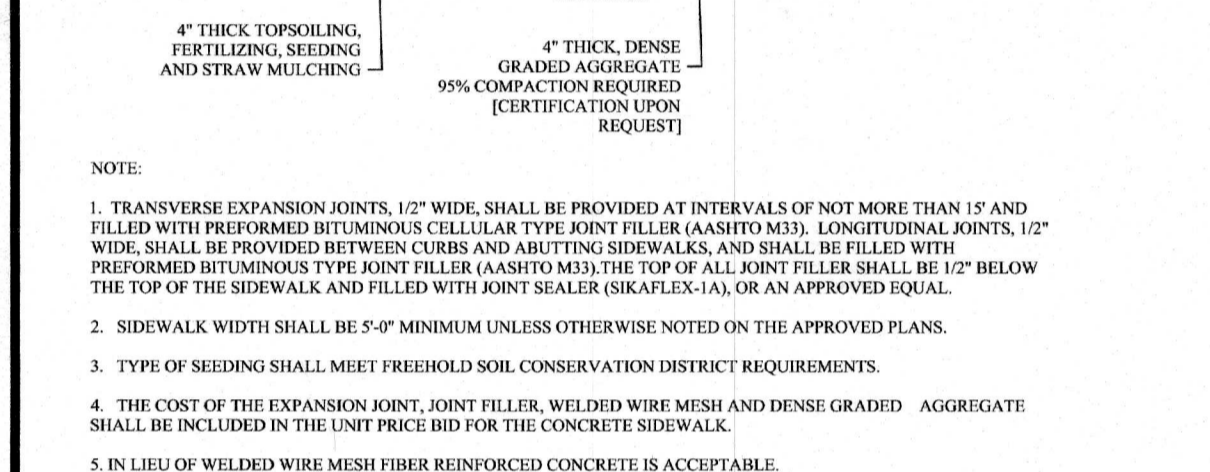
2. LOAMY MEANS TEXTURE GROUPS CONSISTING OF COARSE LOAMY SANDS, SANDY LOAM, FINE AND VERY FINE SANDY LOAM, LOAM, SILT LOAM, CLAY LOAM, SANDY CLAY LOAM AND SILTY CLAY LOAM TEXTURES AND HAVING LESS THAN 35% COARSE FRAGMENTS (PARTICLES LESS THAN 2MM IN SIZE ) AS DEFINED IN THE GLOSSARY OF SOIL SCIENCE TERMS,



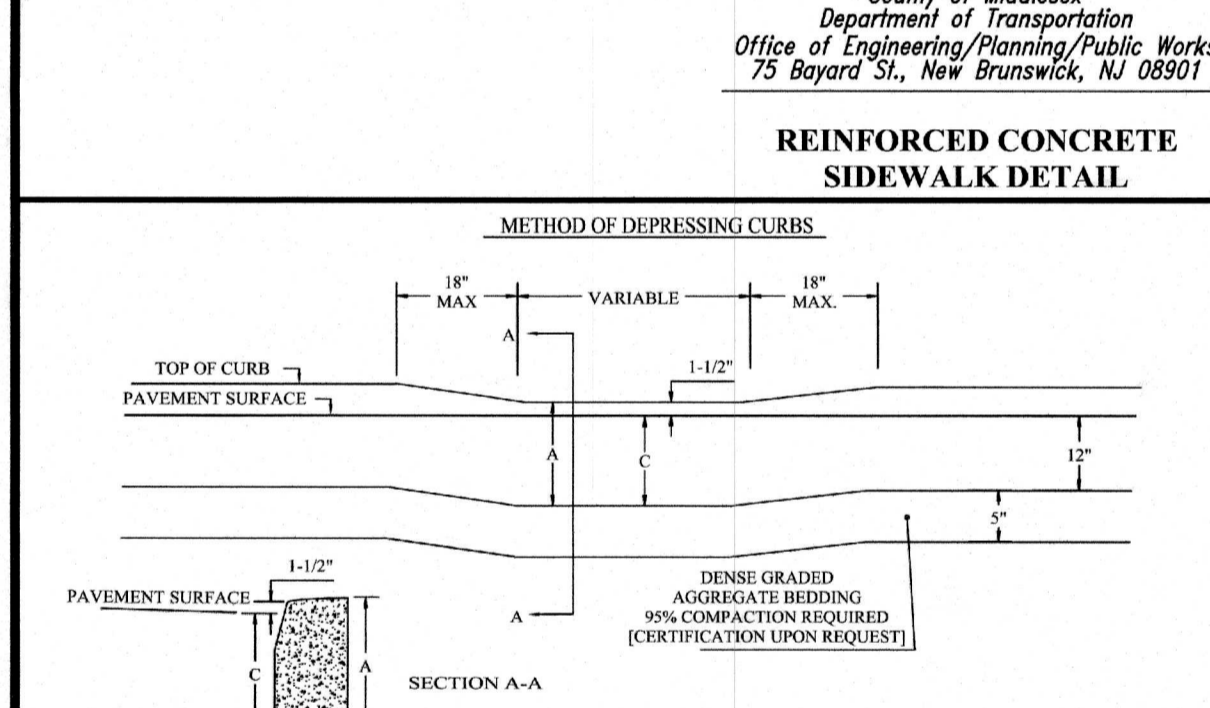
**PEDESTRIAN CURB**  
(ADJACENT TO CURB RAMPS AND LANDINGS)  
N.T.S.



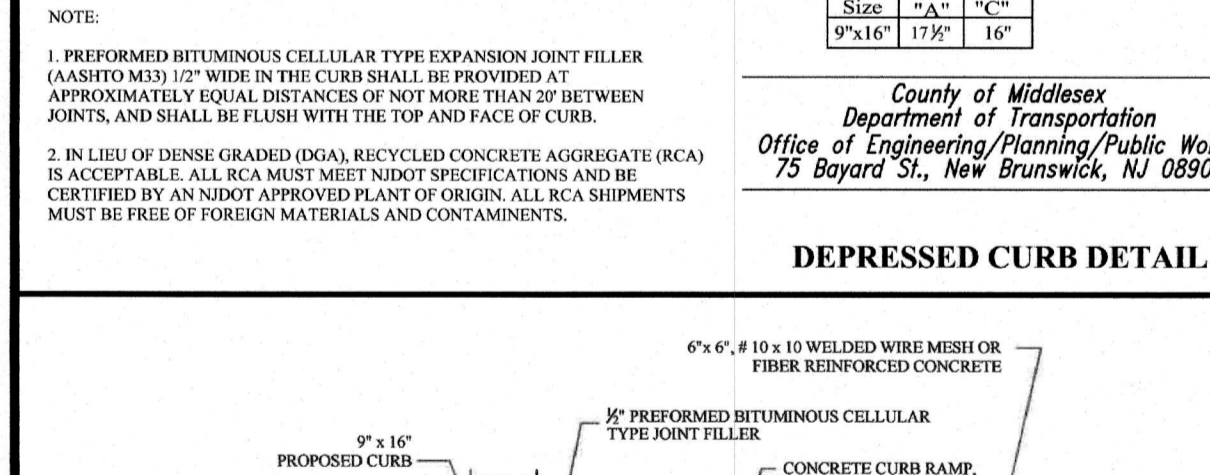
**MODULAR CONCRETE BLOCK RETAINING WALL**  
N.T.S.



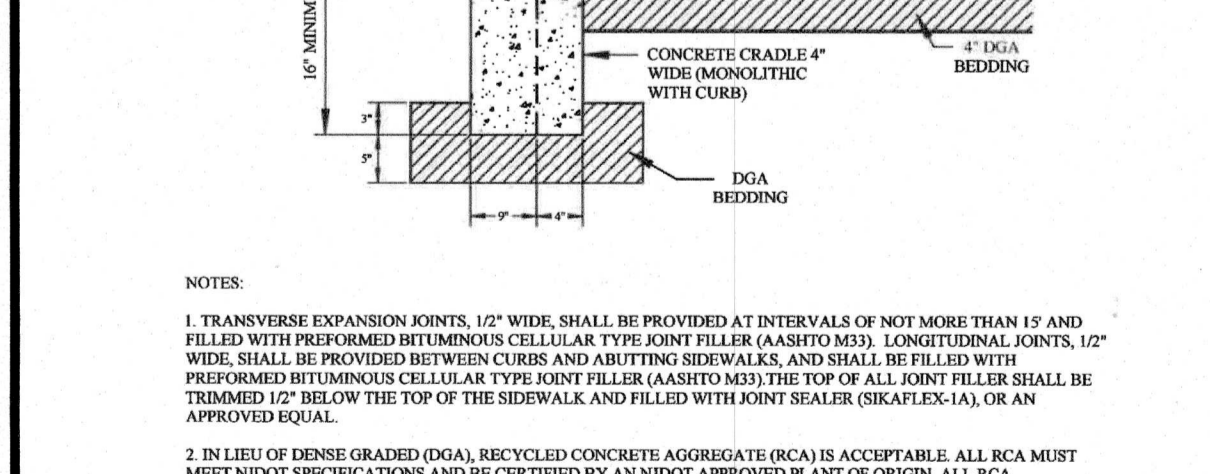
**ADA CURB RAMP**  
MIDDLESEX COUNTY ROADS ONLY  
N.T.S.



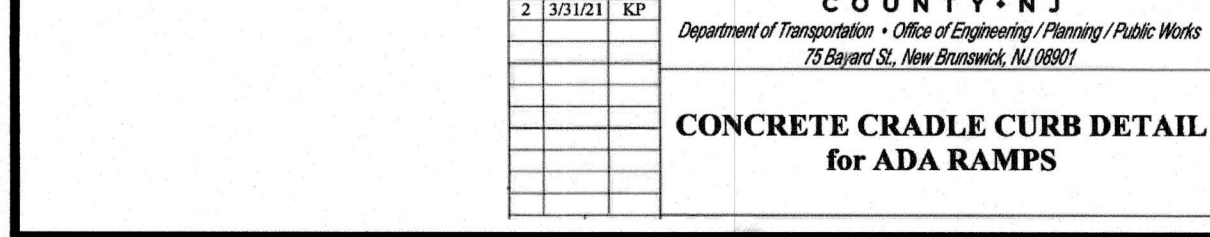
**BICYCLE SAFE GRATE (CAST IRON)**  
CD-602-18



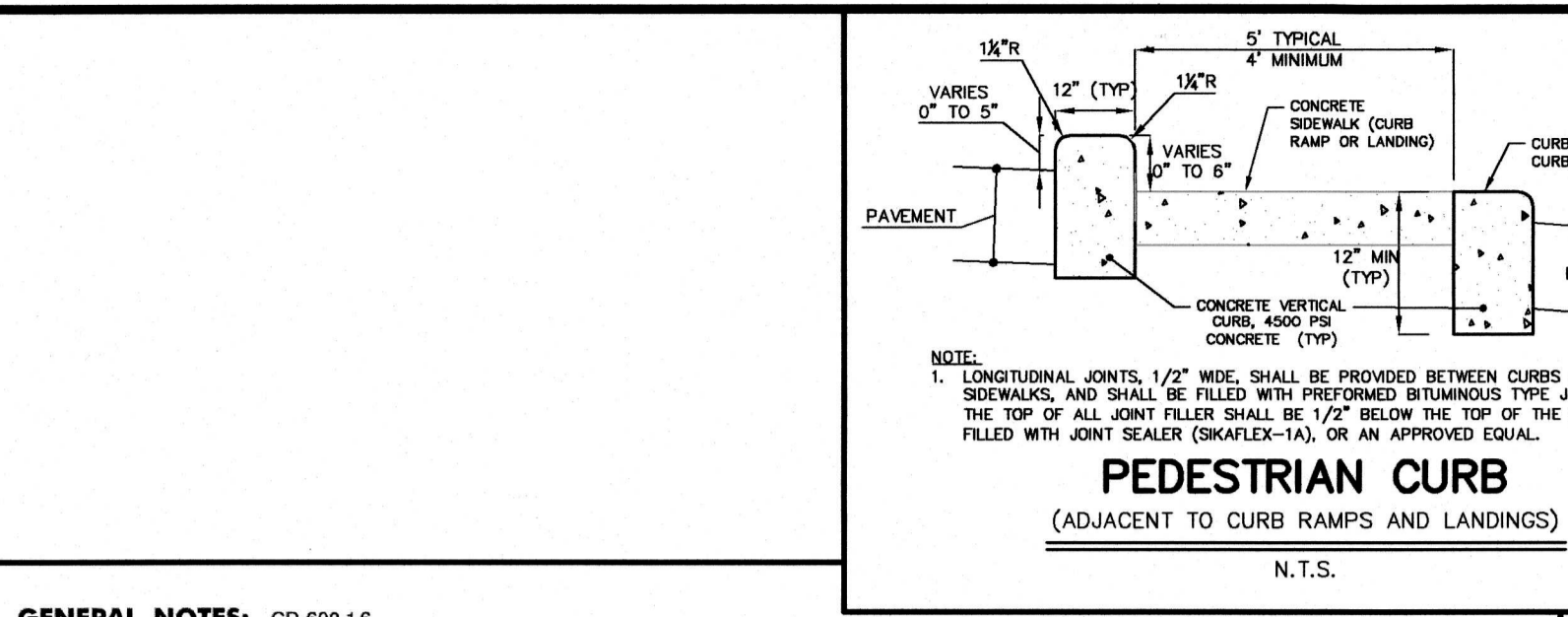
**DEPRESSED CURB DETAIL**



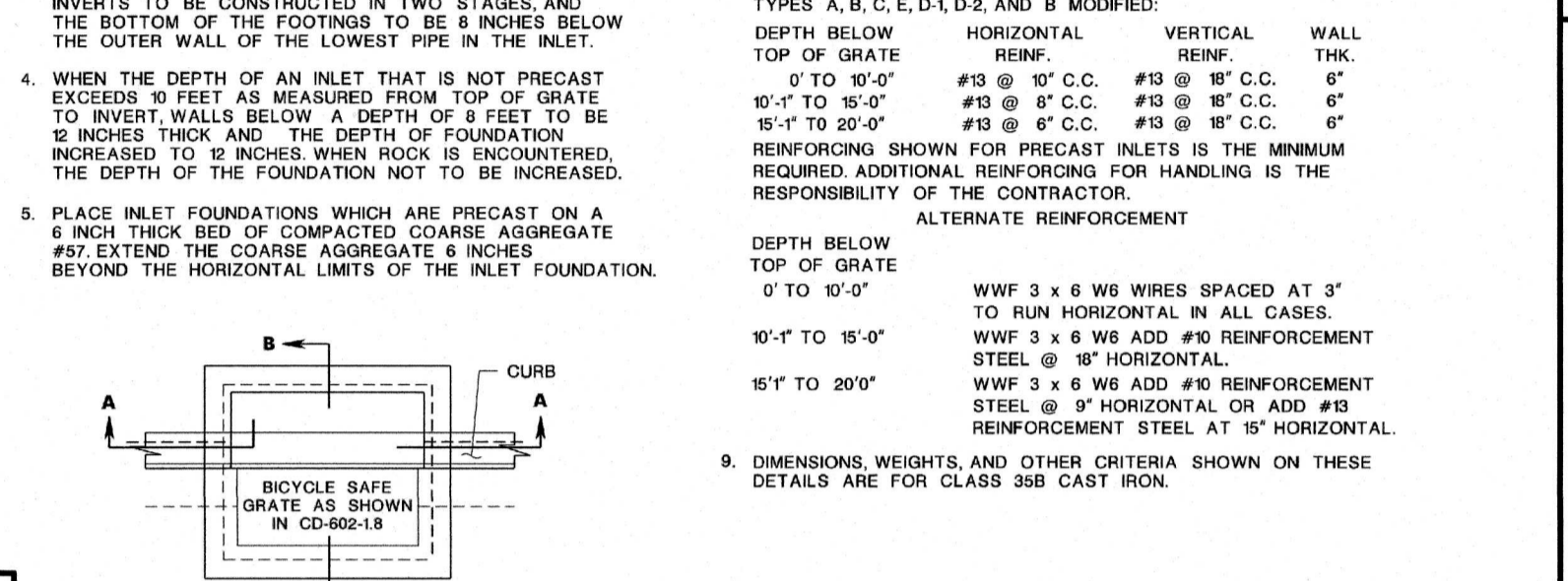
**CONCRETE CURABLE CURB DETAIL**  
for ADA RAMPS



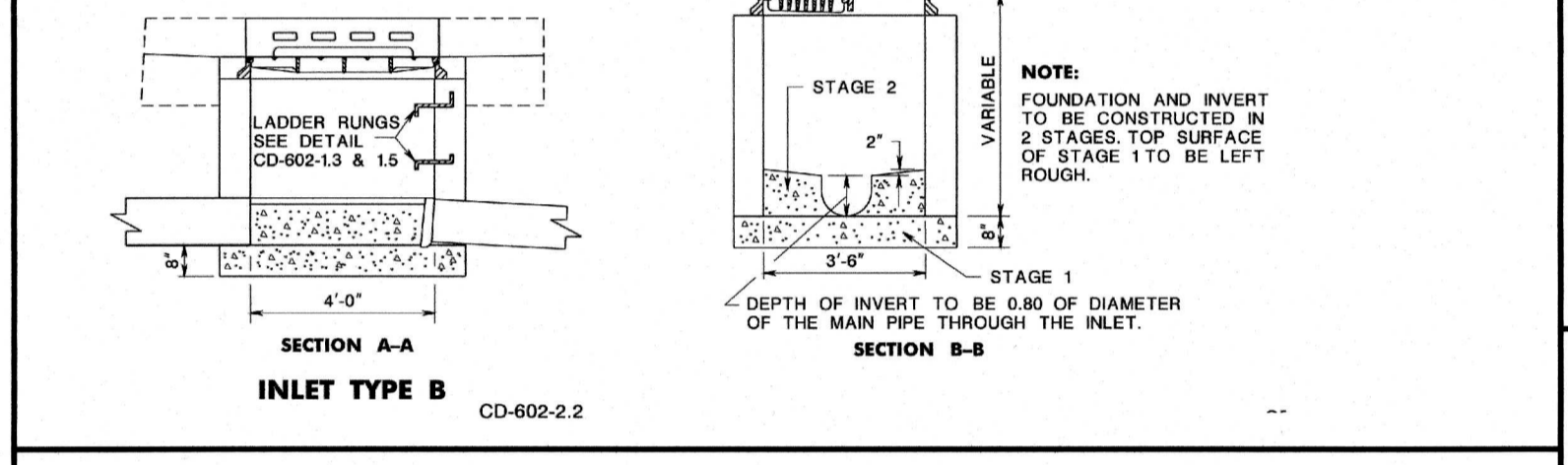
**INLET TYPE B AND TYPE C CASTING**  
CD-602-2.6



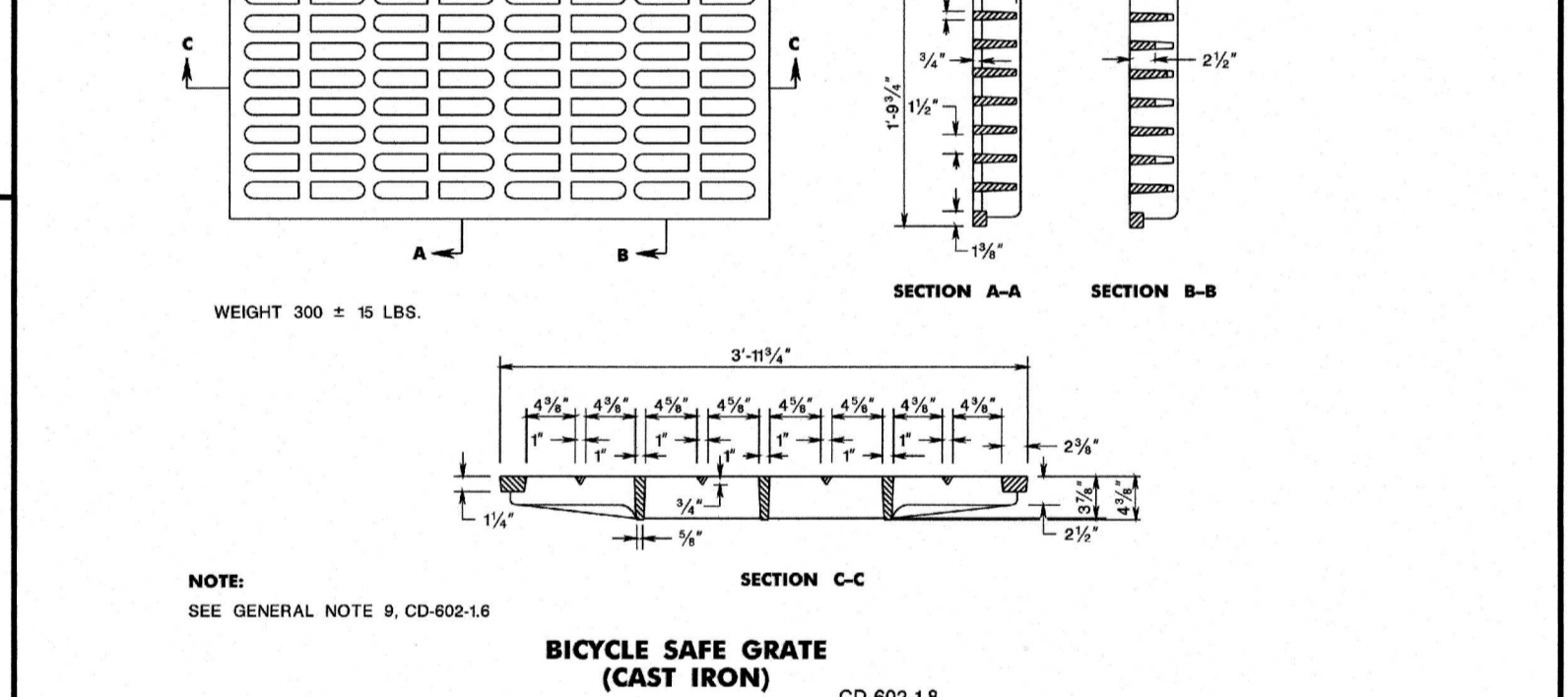
**GENERAL NOTES: CD-602-1.6**



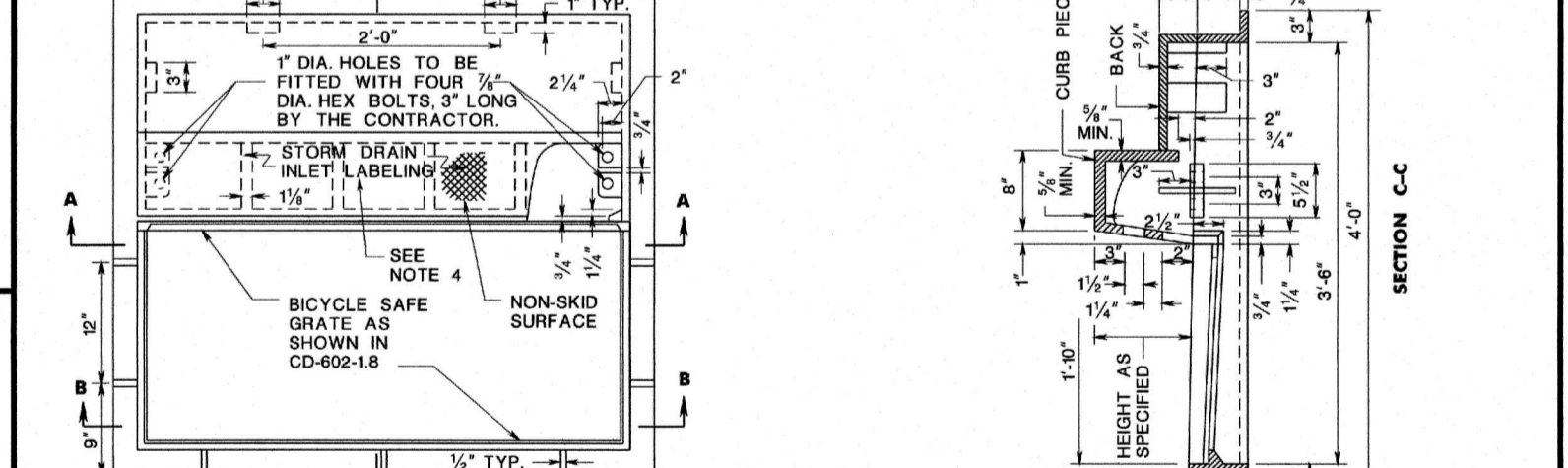
**GENERAL NOTES: CD-602-1.6**



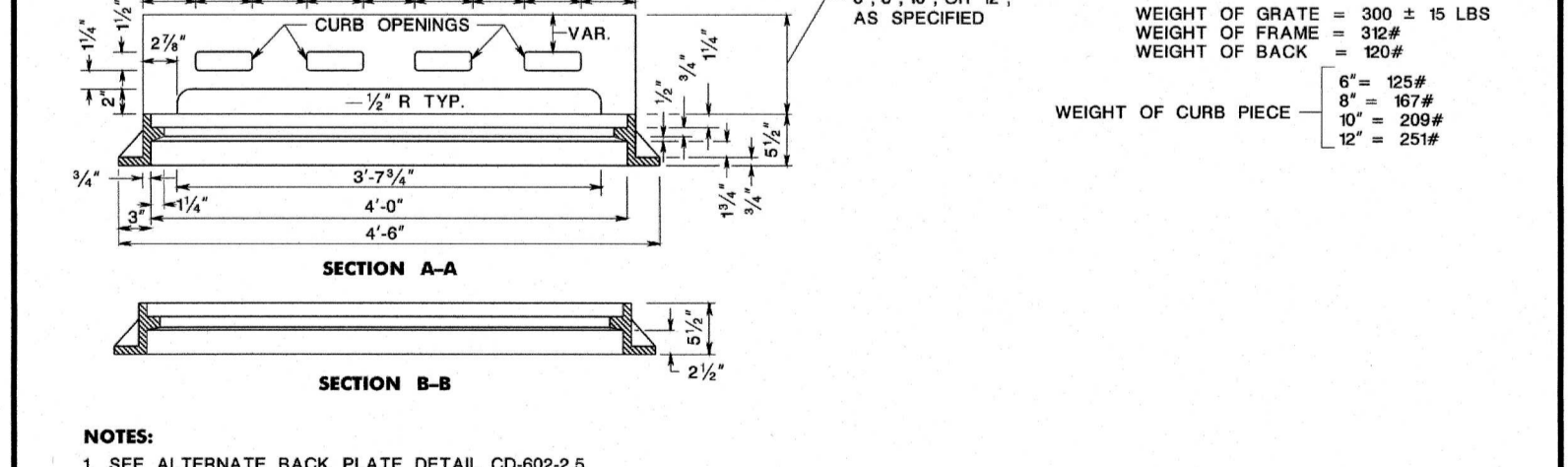
**GENERAL NOTES: CD-602-1.6**



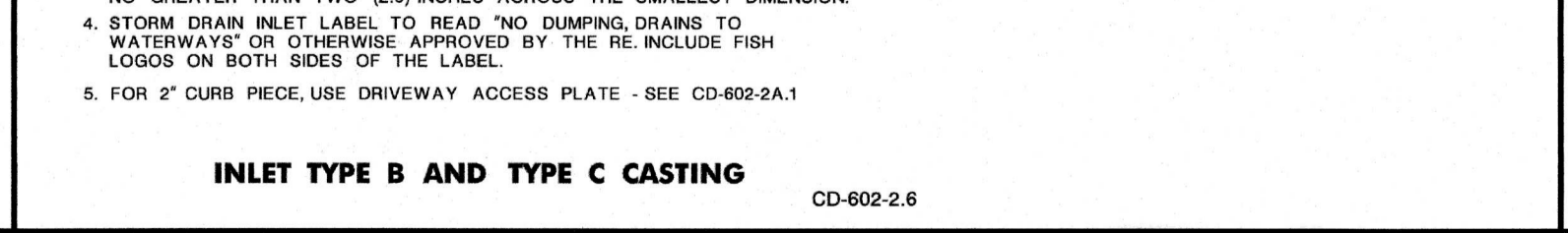
**GENERAL NOTES: CD-602-1.6**



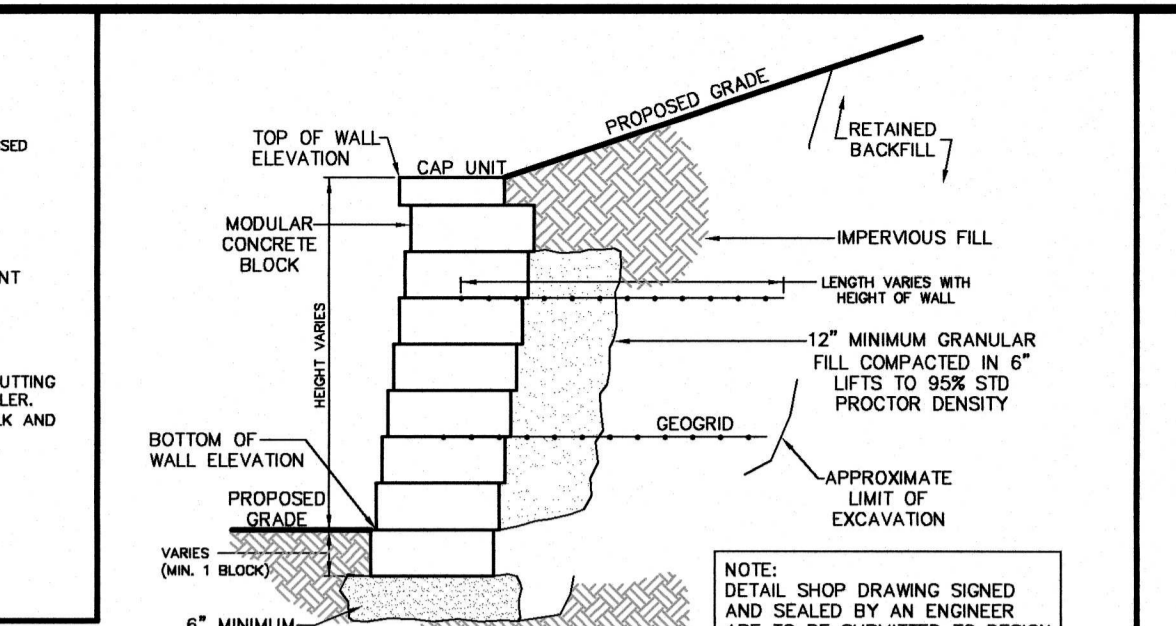
**GENERAL NOTES: CD-602-1.6**



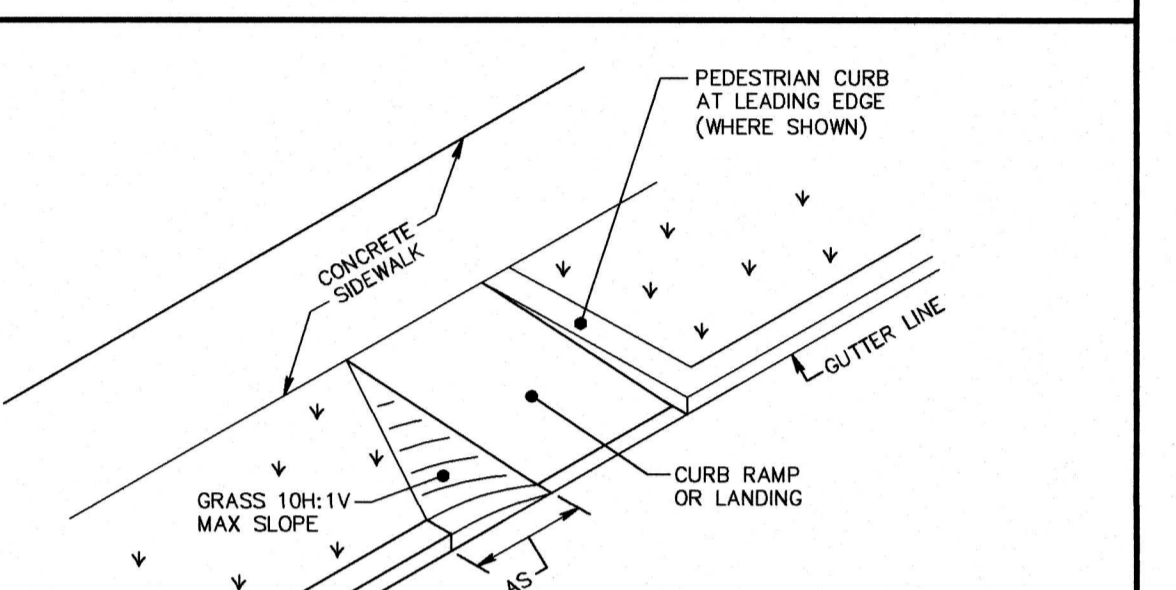
**GENERAL NOTES: CD-602-1.6**



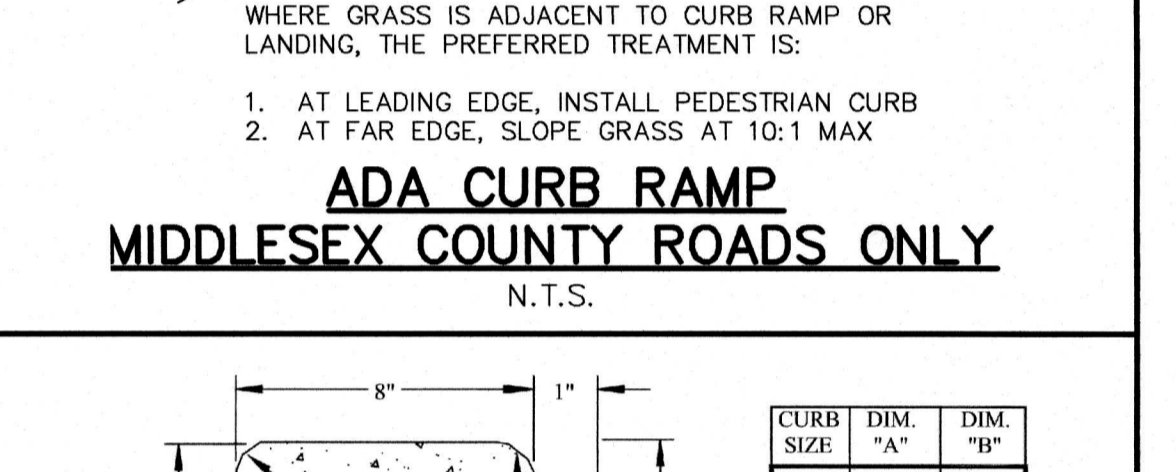
**GENERAL NOTES: CD-602-1.6**



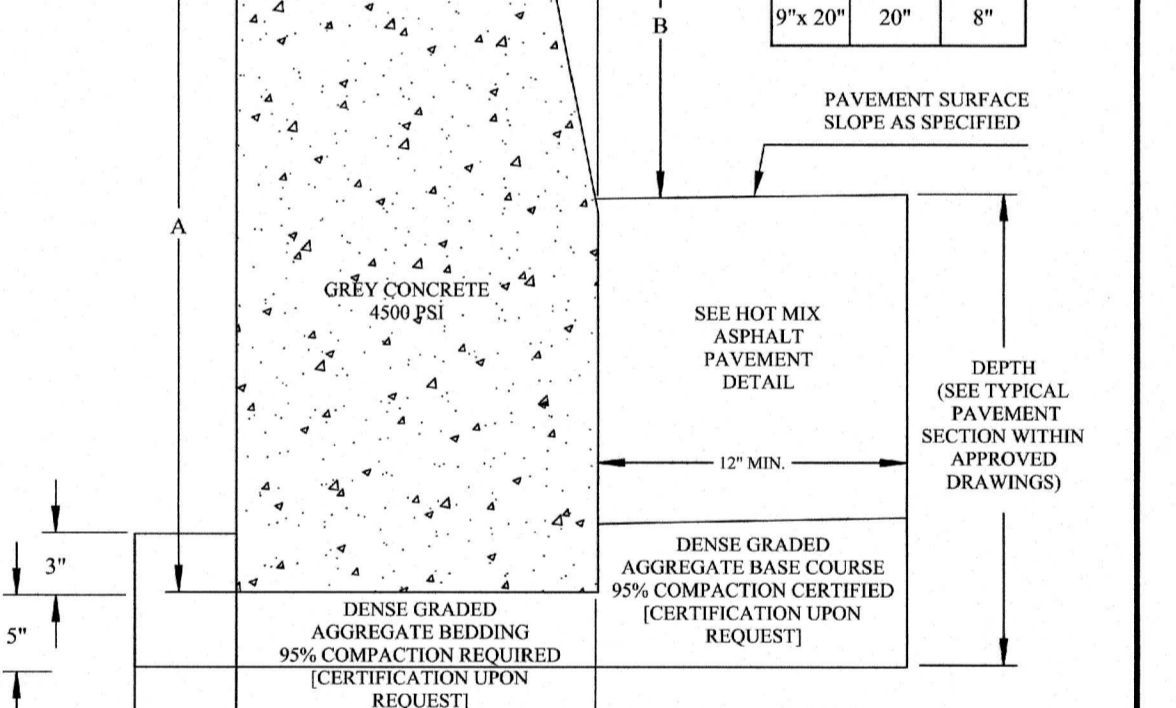
**GENERAL NOTES: CD-602-1.6**



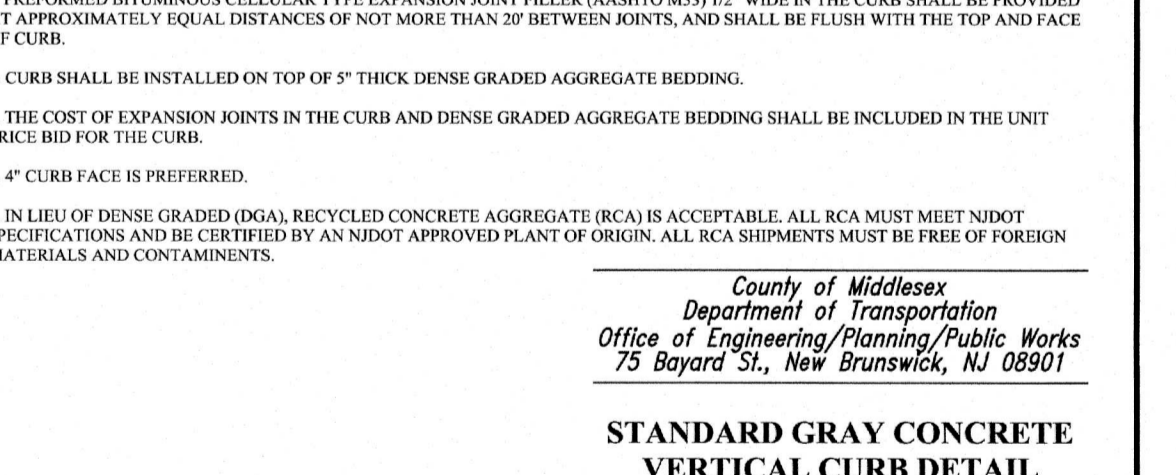
**GENERAL NOTES: CD-602-1.6**



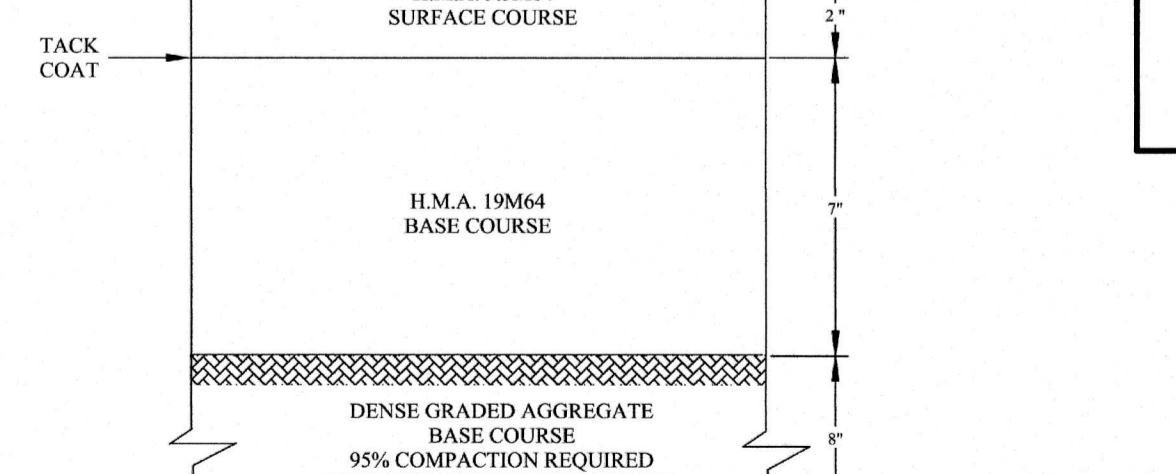
**GENERAL NOTES: CD-602-1.6**



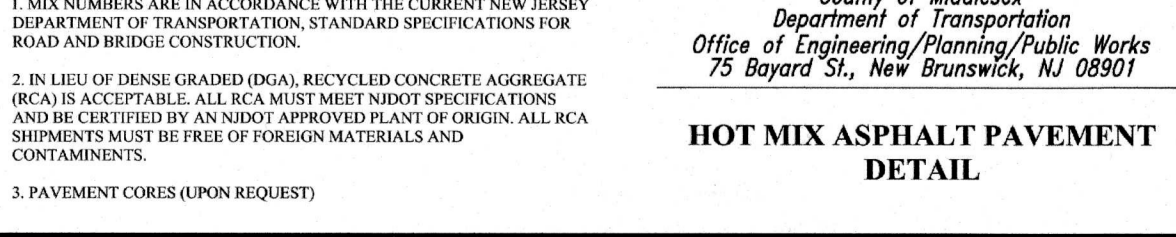
**GENERAL NOTES: CD-602-1.6**



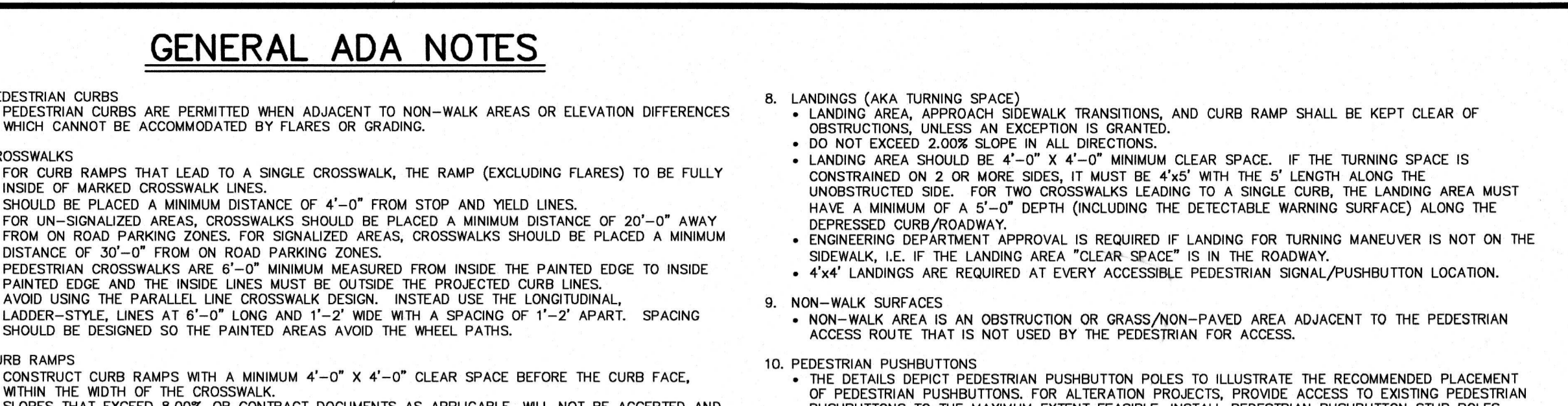
**GENERAL NOTES: CD-602-1.6**



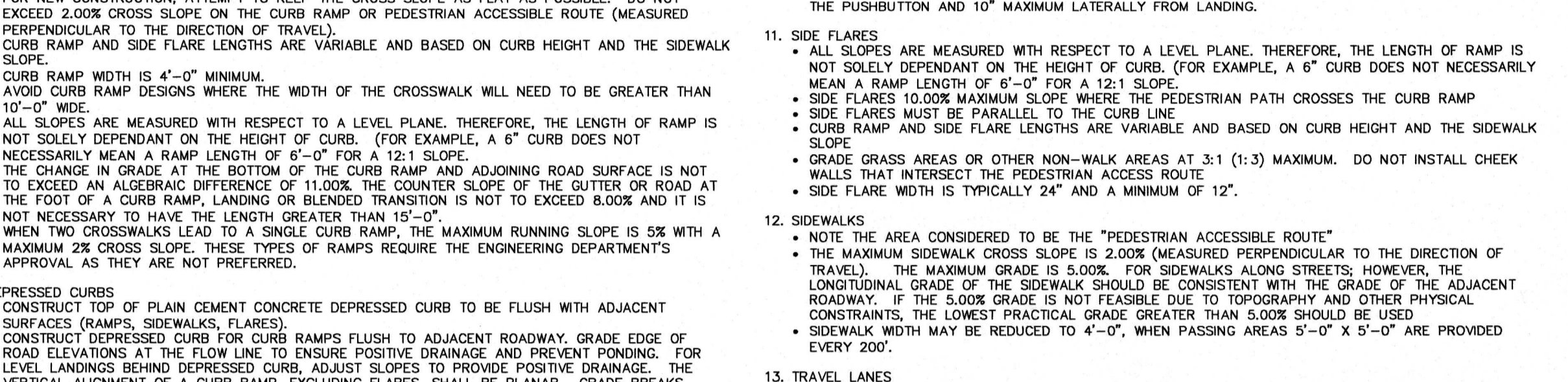
**GENERAL NOTES: CD-602-1.6**



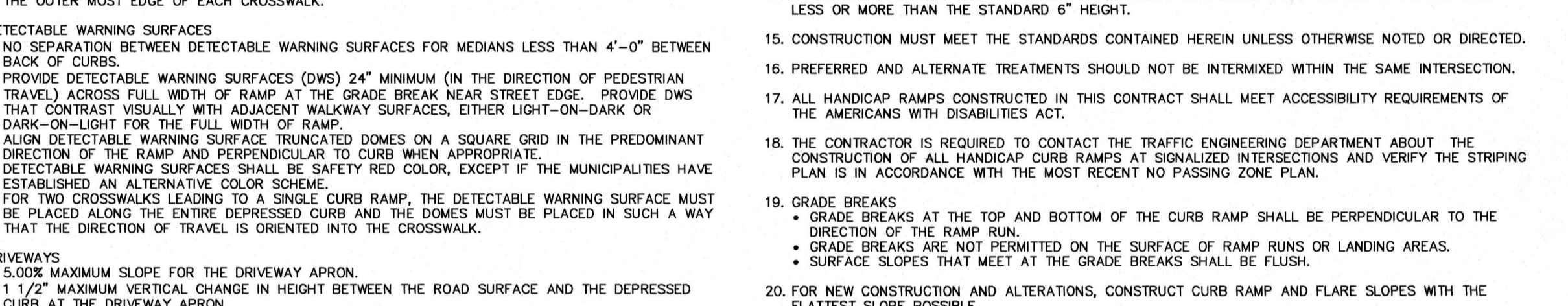
**GENERAL NOTES: CD-602-1.6**



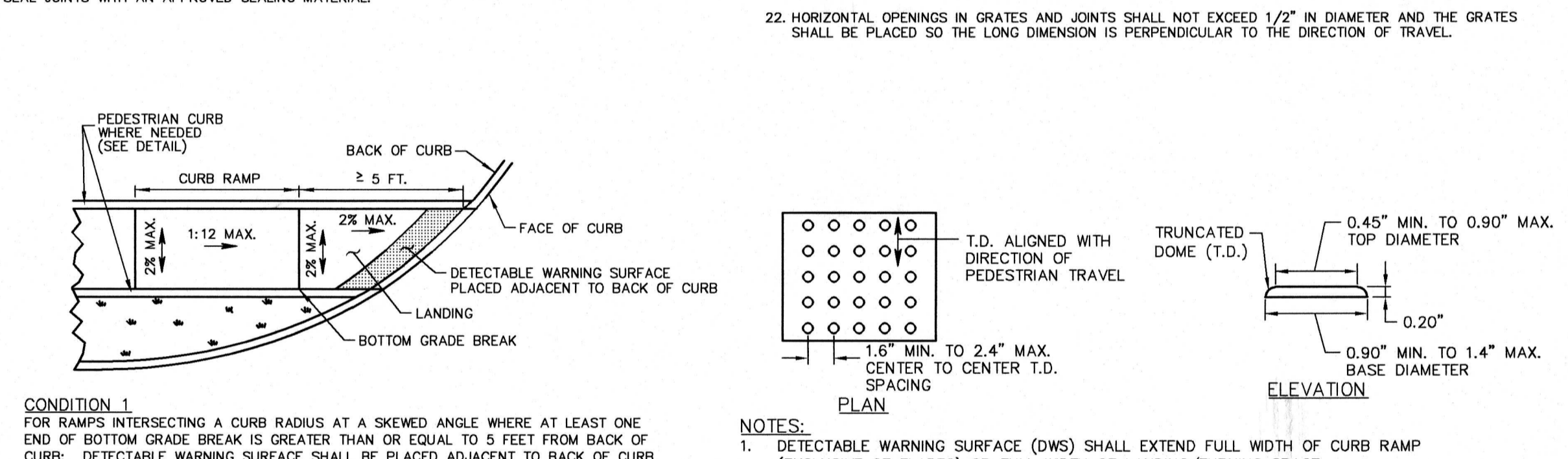
**GENERAL ADA NOTES**



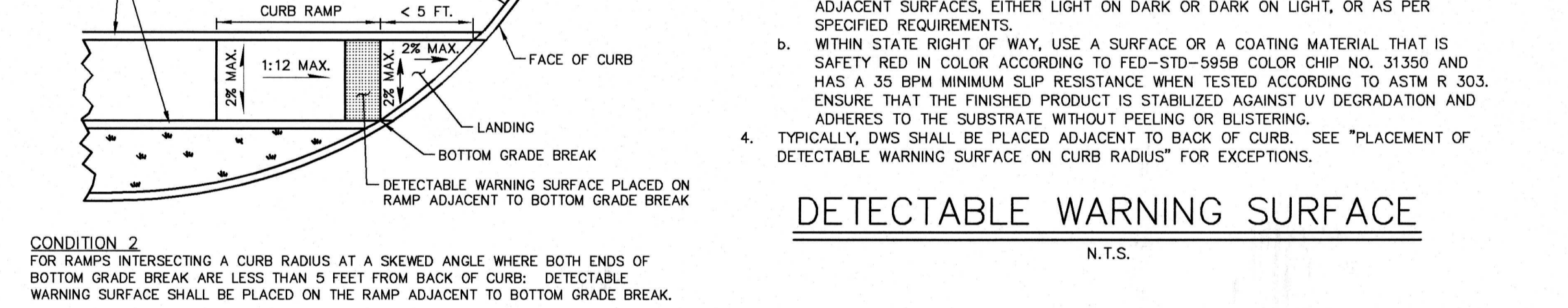
**GENERAL ADA NOTES**



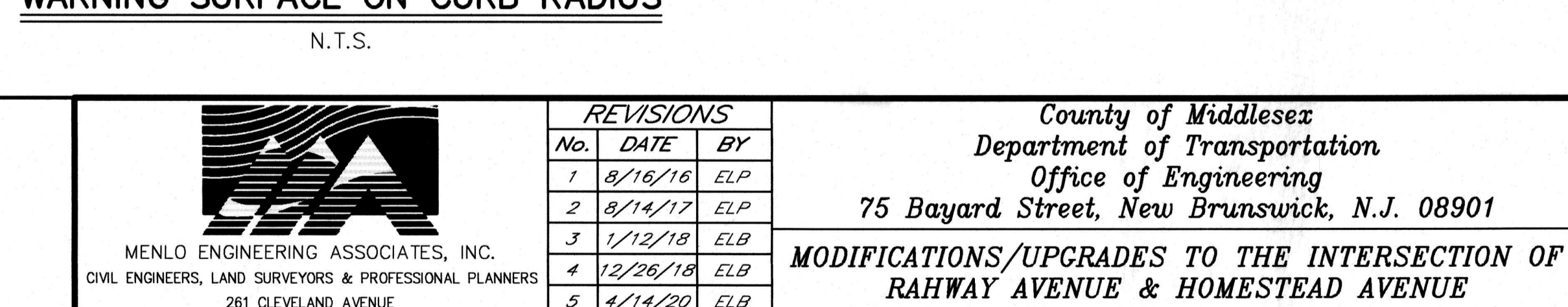
**GENERAL ADA NOTES**



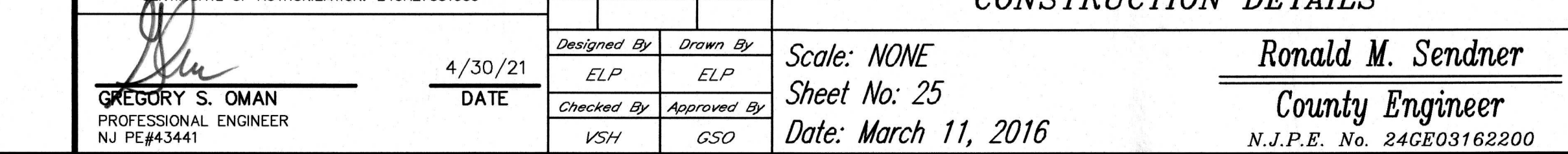
**GENERAL ADA NOTES**



**GENERAL ADA NOTES**



**GENERAL ADA NOTES**



**GENERAL ADA NOTES**

**MENLO ENGINEERING ASSOCIATES, INC.**  
CIVIL ENGINEERS, LAND SURVEYORS & PROFESSIONAL PLANNERS  
261 CLEVELAND AVENUE  
HIGHLAND PARK, NEW JERSEY 08904  
PHONE: 732.846.8585 FAX: 732.846.9439  
CERTIFICATE OF AUTHORIZATION: 24G427951900

REVISIONS		
No.	DATE	BY
1	8/16/18	ELP
2	8/14/17	ELP
3	1/12/18	ELB
4	12/26/18	ELB
5	4/14/20	ELB
6	4/7/21	VSH
7	4/30/21	VSH

Designed By: ELP  
Drawn By: ELP  
Checked By: VSH  
Approved By: GSO

County of Middlesex  
Department of Transportation  
Office of Engineering  
75 Bayard Street, New Brunswick, N.J. 08901

**MODIFICATIONS/UPGRADES TO THE INTERSECTION OF  
RAHWAY AVENUE & HOMESTEAD AVENUE  
TOWNSHIP OF WOODBRIDGE**

**CONSTRUCTION DETAILS**

Scale: NONE  
Sheet No: 25  
Date: March 11, 2016

**Ronald M. Sendner**  
County Engineer  
N.J.P.E. No. 24G03162200