

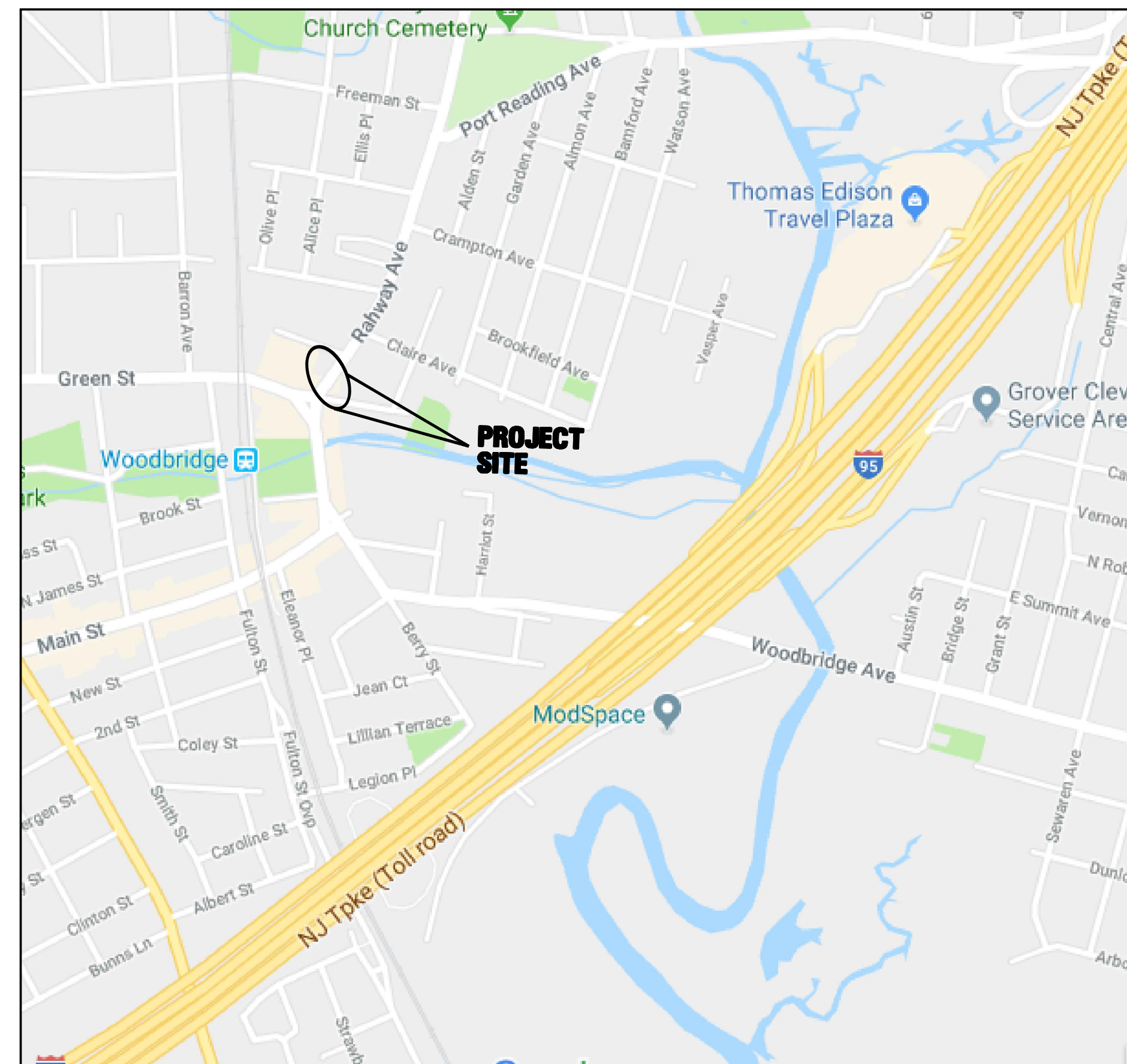
MIDDLESEX COUNTY, NEW JERSEY
OFFICE OF THE COUNTY ENGINEER

REPLACEMENT OF CULVERT 1-C-627

RAHWAY AVENUE OVER A TRIBUTARY OF HEARDS BROOK

LOCATED IN THE TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

UTILITIES	
TELEPHONE	MR. KRZYSZTOF OGRODNIK VERIZON COMMUNICATIONS - NJ 6000 HADLEY ROAD SOUTH PLAINFIELD, NJ 07080 (908) 412-2023
SEWER	RAHWAY VALLEY SEWERAGE AUTHORITY 1050 EAST HAZELWOOD AVENUE RAHWAY, NJ 07065 (732) 388-0868 MR. RICH LORENTZEN SEWER UTILITY DEPARTMENT WOODBRIDGE TOWNSHIP MUNICIPAL BUILDING 1 MAIN STREET WOODBRIDGE, NJ 07095 (732) 602-6048
GAS	MR. GREG BALINT ELIZABETHTOWN GAS 520 GREEN LANE UNION, NJ 07083 (800) 242-5830
CABLE	MR. PETER MANN CABLEVISION OF RARITAN VALLEY 275 CENTENNIAL AVENUE PISCATAWAY, NJ 08854 (732) 356-1300 MR. RICHARD GUTUALSKI COMCAST CABLEVISION 8700 RAHWAY AVENUE UNION, NJ 07083 (732) 602-7444
WATER	MR. ISIDRO BUEN MIDDLESEX WATER COMPANY 1500 RONSON ROAD ISELIN, NJ 08830 (732) 634-1500
ELECTRIC	MR. JAMES QUANVIE PUBLIC SERVICE ELECTRIC & GAS COMPANY ELECTRIC DELIVERY 472 WESTON CANAL ROAD SOMERSET, NJ 08873 (732) 764-3067
	ONE CALL SYSTEM 1-800-272-1000



KEY MAP
N.T.S.

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET AND KEY MAP
2	ESTIMATE/DISTRIBUTION OF QUANTITIES/GENERAL NOTES
3	LEGEND
4	SURVEY BASELINE & TIE SHEET
5	DEMOLITION PLAN
6-7	CROSS SECTIONS
8	CONSTRUCTION PLAN
9-10	CONSTRUCTION DETAILS
11	SOIL EROSION & SEDIMENT CONTROL NOTES & DETAILS
12	MAINTENANCE AND PROTECTION OF TRAFFIC PLAN - STAGE 1
13	MAINTENANCE AND PROTECTION OF TRAFFIC PLAN - STAGE 2
14	MAINTENANCE AND PROTECTION OF TRAFFIC
15	MAINTENANCE AND PROTECTION OF TRAFFIC NOTES
16	TRAFFIC SIGNS AND DETAILS

NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF 2019 (U.S. CUSTOMARY ENGLISH UNITS) AND ALL AMENDMENTS IN THE MIDDLESEX COUNTY FORMAT THERE TO SHALL GOVERN.

THE HEADING OF ARTICLES CONTAINED HEREIN CONFORM TO THE NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION DATED 2019 AND ALL ADDENDA THERE-TO WHICH IS TO BE USED IN THE EXECUTION OF THIS CONTRACT.

THE NEW JERSEY DEPARTMENT OF TRANSPORTATION "STANDARD ROADWAY CONSTRUCTION-TRAFFIC CONTROL-BRIDGE CONSTRUCTION DETAILS" BOOKLET DATED 2016, AND THE NEW JERSEY DEPARTMENT OF TRANSPORTATION "STANDARD ELECTRICAL DETAILS, 2007" SHALL GOVERN, EXCEPT FOR THOSE DETAILS CONTAINED HEREIN.

FINAL

PREPARED BY: RVE REMINGTON & VERNICK ENGINEERS 429 Route 79, Suite 21 (732) 955-8000 Certificate of Authorization: 24 CA 28003300	REVISIONS <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>3/14/22</td> <td>DRB</td> </tr> <tr> <td>2</td> <td>7/20/22</td> <td>WJD</td> </tr> <tr> <td>3</td> <td>4/10/23</td> <td>WJD</td> </tr> <tr> <td>4</td> <td>7/17/23</td> <td>WJD</td> </tr> <tr> <td>5</td> <td>11/13/23</td> <td>WJD</td> </tr> </tbody> </table>	NO.	DATE	BY	1	3/14/22	DRB	2	7/20/22	WJD	3	4/10/23	WJD	4	7/17/23	WJD	5	11/13/23	WJD	County of Middlesex Department of Infrastructure Management Office of Engineering P.O. Box 871, New Brunswick, NJ 08901
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Designed By	Drawn By																			
TJM	CFC																			
Checked By	Approved By																			
TV																				

ESTIMATE / DISTRIBUTION OF QUANTITIES

PAY ITEM NO.	PAY ITEM DESCRIPTION	UNIT	CONSTRUCTION PLAN SHEET 5	M & POT PLAN SHEETS 11-14	PLAN QUANTITY	IF & WHERE DIRECTED	BID QUANTITY
1	Silt Fence (If and Where Directed)	LF				350	350
2	Floating Turbidity Barrier, Type 1	LF				15	15
3	Drums	UN		20	20		20
4	Construction Signs	SF		634	634		634
5	Temporary Crash Cushion Inertial Barrier System, 10 Modules	UN		4	4		4
6	Breakaway Barricade	UN		23	23		23
7	Construction Barrier Curb	LF		300	300		300
8	Traffic Control Truck with Mounted Crash Cushion	UN		1	1		1
9	Temporary Traffic Stripes, 4"	LF		1,225	1,225		1,225
10	Portable Variable Message Sign	UN		2	2		2
11	Police Officers and Vehicles	Allowance			30,000		30,000
12	Asphalt Adjustment	Dollar			2,000		2,000
13	Fuel Adjustment	Dollar			2,000		2,000
14	Clearing Site	LS			1		1
15	Clearing Site, Culvert 1-C-627	LS			1		1
16	Excavation, Unclassified	CY	200		200		200
17	Hot Mix Asphalt, Mx 9.5M64 Surface Course, 2" Thick	TNS	75		75		75
18	Hot Mix Asphalt, Mx 19M64 Base Course, 7" Thick	TNS	225		225		225
19	Dense Graded Aggregate, 8" Thick	SY	450		450		450
20	Tack Coat	GAL	50		50		50
21	9" x 16" Concrete Vertical Curb	LF	110		110		110
22	Concrete Block Cutoff Wall	LF	10		10		10
23	Concrete Sidewalk, 4" Thick	SY	20		20		20
24	Concrete Driveway, 6" Thick	SY	30		30		30
25	Driveway Repair (As Directed)	SY				30	30
26	18" Reinforced Concrete Pipe	LF	50		50		50
27	24" Reinforced Concrete Pipe	LF	40		40		40
28	36" Reinforced Concrete Pipe	LF				40	40
29	Install 4' Dia. Doghouse Manhole	UN	1		1		1
30	Install Precast Shallow Manhole Structure	UN	1		1		1
31	Inlet, Type B	UN	2		2		2
32	Traffic Markings, Thermoplastic	SF	125		125		125
33	Traffic Stripes 4" Wide, Reflective Epoxy	LF	220		220		220
34	Topsoil Spreading, 3" Thick	SY	30		30		30
35	Fertilizing and Seeding, Type A-3	SY	30		30		30
36	Straw Mulching	SY	30		30		30
37	Excavation, Test Pit	CY				5	5
38	Disposal of Regulated Material (If & Where Directed)	TNS				20	20
39	Fabricate & Install Middlesex County Project Identification Sign	UN			1		1

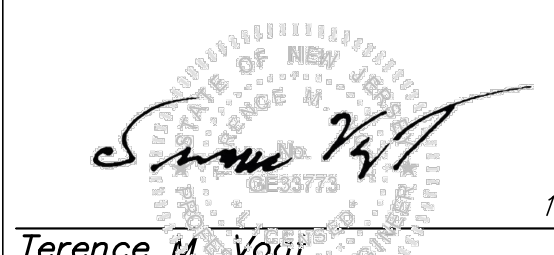
GENERAL NOTES:

- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS IN THE FIELD PRIOR TO THE START OF CONSTRUCTION. ANY ERRORS OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
- LOCATION OF EXISTING UTILITIES ARE APPROXIMATE AND MUST BE VERIFIED IN THE FIELD PRIOR TO THE START OF CONSTRUCTION.
- CONTRACTOR SHALL LOCATE AND PRESERVE ALL UNDERGROUND AND SURFACE UTILITIES AND STRUCTURES AT OR ADJACENT TO THE SITE OF CONSTRUCTION, AND SHALL REPAIR OR REPLACE ANYTHING THAT HE DAMAGES AT HIS EXPENSE.
- THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND SCHEDULE AND COORDINATE ALL WORK INVOLVED WITH UTILITIES.
- ALL PAVED AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO A CONDITION AT LEAST EQUAL TO THAT WHICH EXISTED PRIOR TO START OF CONSTRUCTION UNLESS OTHERWISE SHOWN OR SPECIFIED.
- THE CONTRACTOR SHALL ADHERE TO THE "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY", 2014 EDITION.
- ALL GRASSED AREAS DISTURBED DURING CONSTRUCTION SHALL BE SEEDED UNLESS OTHERWISE SHOWN OR SPECIFIED.
- CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING TREES AND SHRUBS IN THE WORK AREA AND SHALL BE RESPONSIBLE FOR ALL UNAUTHORIZED CUTTING OR DAMAGING OF TREES AND SHRUBS.
- CONTRACTOR SHALL PROVIDE FOR MAINTENANCE AND PROTECTION OF TRAFFIC IN ACCORDANCE WITH THE CONTRACT DOCUMENT AND THE CURRENT VERSION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- THE CONTRACTOR SHALL NOTIFY ALL RESIDENTS AND/OR PROPERTY OWNERS AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF THE START OF CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE DENSE GRADED AGGREGATE FOR "ACCESS RAMP" TO ALL EXISTING DRIVEWAYS DURING CONSTRUCTION.
- THE CONTRACTOR SHALL RESEARCH, OBTAIN, PAY, ABIDE AND SCHEDULE A WOODBRIDGE TOWNSHIP ROAD OPENING PERMIT. SEPARATE PAYMENT WILL NOT BE MADE BUT THE COST SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS OF THE CONTRACT.
- BASELINES HAVE BEEN PROVIDED ON THE PLANS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE THE ROADWAY BASELINE AS SHOWN ON THE PLAN.
- ALL FILL SHALL BE PLACED IN 8" LAYERS AND THOROUGHLY COMPACTED.
- APPROXIMATE SOIL DISTURBANCE FOR THE CULVERT CONSTRUCTION IS 0.08 ACRE.
- THE OVERHEAD UTILITIES SHALL REMAIN IN PLACE AND REMAIN IN SERVICE DURING CONSTRUCTION. THE CONTRACTOR IS OBLIGATED TO COMPLY WITH THE HIGH-VOLTAGE PROXIMITY ACT AND REGULATIONS, AS SUCH, THE USE OF SMALLER (LOW PROFILE) CONSTRUCTION EQUIPMENT MAY BE REQUIRED.
- CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING WITHIN PROXIMITY OF THE SANITARY SEWER AND WATER LINES.
- LOCATION OF UTILITIES AS SHOWN ON THESE PLANS ARE PLOTTED FROM AVAILABLE DATA ON FILE WITH THE UTILITY COMPANIES AND IS NOT GUARANTEED AS TO EXACTNESS. THE CONTRACTOR IS TO CONTACT UTILITY COMPANIES 72 HOURS PRIOR TO CONSTRUCTION TO DETERMINE EXACT LOCATION AND DEPTH OF ALL UTILITIES IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL USE THE UTILITY LOCATIONS AS AN AID IN DETERMINING EXACT LOCATIONS. ONE CALL: 1-800-272-1000
- ALL CONSTRUCTION DETAILS NOT SHOWN SHALL BE IN ACCORDANCE WITH NJDOT STANDARDS AS DETAILED IN:
 - "STANDARD ROADWAY CONSTRUCTION/TRAFFIC CONTROL/BRIDGE CONSTRUCTION DETAILS, 2007"
 - "STANDARD ELECTRICAL DETAILS, 2016"
 INCLUDING ALL APPLICABLE BASELINE DOCUMENT CHANGES AND APPENDICES. THESE DETAILS MAY BE PURCHASED THROUGH THE NJDOT PLANS AND SPECIFICATION DISTRIBUTION CENTER AT:

1035 PARKWAY AVENUE,
TRENTON, NJ
08625-0600
(TELEPHONE: 1-609-530-2098)
- REMOVAL OF CONCRETE CULVERT SHALL BE COMPLETED IN 2 PHASES. CONTRACTOR TO DETERMINE MEANS & METHODS AND SUBMIT TO ENGINEER PRIOR TO CONSTRUCTION. IF FEASIBLE, AND IN AGREEMENT WITH MIDDLESEX COUNTY AND THE TOWNSHIP OF WOODBRIDGE, FULL ROAD CLOSURE MAY BE CONSIDERED FOR CULVERT REMOVAL.
- CONTRACTOR TO PERFORM TEST PITS TO CONFIRM 36" RCP SPACING & EXISTING CONDITIONS, AS DIRECTED, PRIOR TO ORDERING ANY STRUCTURES OR PERFORMING ANY WORK.

FINAL

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Designed By Checked By TV	Drawn By CFC Approved By	Scale: As noted Sheet No. 2 of 16 Date: NOVEMBER 3, 2021		


 Terence M. Vojt
 Licensed Professional Engineer
 License No. 33773
 11/13/23
 Date

LINEAR FEATURES

EXISTING	PROPOSED	DESCRIPTION
W	V	WATER MAIN (SIZE)
G	G	GAS MAIN (SIZE)
T	T	TELEPHONE CONDUIT
E	E	ELECTRIC CONDUIT (HIGHWAY OR UTILITY)
CTV	CTV	CABLE TV
FD	FD	FIBER OPTIC
DHV	DHV	OVERHEAD POWER/COMMUNICATIONS LINE
ITS	ITS	INTELLIGENT TRANSPORTATION SYSTEM (WIRES & CABLES)
(SIZE & TYPE) (OVER 30" = DRAW TO SIZE)	(SIZE & TYPE)	SANITARY SEWERS OR STORM DRAINS
		PAVEMENTS (CONCRETE OR BITUMINOUS)
		SHOULDERS
		CURBS
(F), (C)	(C), (F)	SLOPES (CUT & FILL)
5+00	10+00	BASE LINE
		TWP., CITY, COUNTY LINES
EXISTING R.O.W. LINE	PROPOSED R.O.W. LINE	RIGHT OF WAY LINES (ACCESS PERMITTED)
EXISTING R.O.W. & NO ACCESS LINE	PROP. R.O.W. & NO ACCESS LINE	RIGHT OF WAY LINES (NO ACCESS)
		EASEMENTS
		PROPERTY LINE
x	x	FENCE (SIZE & TYPE)
		RESET FENCE
		BEAM GUIDE RAIL
		RESET BEAM GUIDE RAIL
		NOISE WALLS
		WETLAND LIMIT LINE
		SILT FENCE
		DITCHES
		RAILROAD TRACKS
		TREE LINE

TOPOGRAPHICAL FEATURES

EXISTING	PROPOSED	DESCRIPTION
□	■	INLETS (LABEL TYPE)
□	■	INLETS (TYPE ES)
⊙	●	MANHOLES (LABEL TYPE OR UTILITY)
⊙	⊙	RESET (INLETS OR MANHOLES)
⊙	⊙	RECONSTRUCTED (INLETS OR MANHOLES)
⊙	⊙	CAST IRON EXTENSION (FRAME OR RING) (INLET OR MANHOLE)
⊙	⊙	NEW MANHOLE CASTING, SQUARE FRAME, CIRCULAR COVER
⊙	⊙	R.C. END SECTION OR C.M. HEADWALL
⊙	⊙	HEADWALLS
⊙	⊙	HEADWALLS & APRONS
⊙	⊙	WATER GATE VALVES
⊙	⊙	RESET WATER GATE VALVES
⊙	⊙	GAS GATE VALVES
⊙	⊙	RESET GAS GATE VALVES
⊙	⊙	HYDRANTS
⊙	⊙	RESET HYDRANTS
⊙	⊙	UTILITY POLE (TYPE & NUMBER)
⊙	⊙	TEMPORARY UTILITY POLE
⊙	⊙	TRAFFIC SIGNAL
⊙	⊙	JUNCTION BOX
⊙	⊙	FIBER OPTIC JUNCTION BOX
⊙	⊙	JUNCTION BOX FOUNDATION
⊙	⊙	SIGNS
⊙	⊙	VERTICAL PANELS
⊙	⊙	CAMERA
⊙	⊙	DYNAMIC MESSAGE SIGN (DMS)
⊙	⊙	ACCESSIBLE CURB RAMP

TOPOGRAPHICAL FEATURES

EXISTING	PROPOSED	DESCRIPTION
○	●	GUIDE RAIL END TERMINALS
△	▲	BEAM GUIDE RAIL ANCHORAGES
□	■	MONUMENTS
□	■	ROW MONUMENT (ROW CONTROL POINTS)
⊙	⊙	TEST PIT
⊙	⊙	TEST PIT NUMBER
⊙	⊙	BORINGS (BORING NUMBER)
⊙	⊙	DECIDUOUS TREE (SIZE, KIND)
⊙	⊙	EVERGREENS
⊙	⊙	BUSH
⊙	⊙	HEDGES
⊙	⊙	SWAMP

DOUBLE REFERENCE CODES

EDOR	ESTIMATE AND DISTRIBUTION OF QUANTITIES - ROADWAY
TS	TYPICAL SECTIONS
PSI	PLAN SHEET INDEX
C	CONSTRUCTION PLANS
EP	ENVIRONMENTAL PLANS & SOIL EROSION & SEDIMENT CONTROL PLANS
D	DRAINAGE PLANS
DTL	CONSTRUCTION DETAILS
P	PROFILES
T	TIES
G	GRADES
TC	TRAFFIC CONTROL AND STAGING PLANS
E	ELECTRICAL PLANS
HL	TRAFFIC SIGNAL PLANS
TS	HIGHWAY LIGHTING PLANS
ITS	INTELLIGENT TRANSPORTATION SYSTEM PLANS
SL	SIGN LOCATION PLANS
TSS	TRAFFIC SIGNING AND STRIPING PLANS
STD	SIGN TEXT DETAILS
L	LANDSCAPE PLANS
MS	METHOD OF CROSS SECTIONS
X	CROSS SECTIONS
EOB	ESTIMATE OF QUANTITIES - BRIDGE
B	BRIDGE PLANS

MISCELLANEOUS SYMBOLS

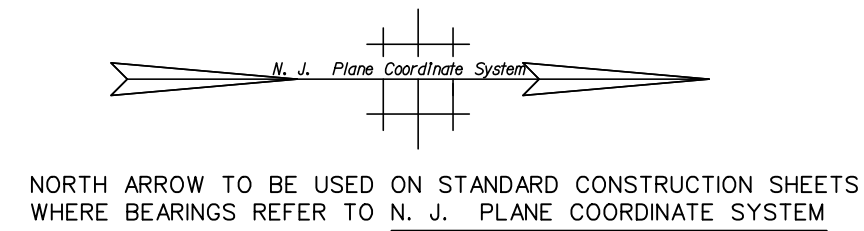
○	ITEMS WITH NO ALTERNATE
□	ALTERNATE ITEMS
□	OR
□	FOR ALTERNATE PIPE ITEMS (C) - CONCRETE (M) - METAL
▨	MILLING
▨	BUILDING TO BE DEMOLISHED
▨	REMOVAL OF CONCRETE BASE COURSE & CONCRETE SURFACE COURSES
▨	BUILDING TO BE REMOVED & PAID FOR UNDER CLEARING SITE
▨	DEMOLITION NO. & PARCEL NO. OF BUILDING TO BE DEMOLISHED
⊙	LEVEL LINE
⊙	HIGH POINT
⊙	LOW POINT
⊙	BENCH MARK

ABBREVIATIONS USED IN THIS CONTRACT

AH., BK.	AHEAD, BACK	J.B.	JUNCTION BOX	RCP, R.C.P.	REINFORCED CONCRETE PIPE
\, B.L.	BASELINE	LT., RT.	LEFT, RIGHT	RM, R.M.C.	RIGID METALLIC CONDUIT
B.M.	BENCH MARK	L.O.P.	LIMIT OF PAVEMENT (PAVING)	RNMC, R.N.M.C.	RIGID NON-METALLIC CONDUIT
B.T.	BELL TELEPHONE	L.O.M.	LIMIT OF MILLING	ROW, R.O.W.	RIGHT OF WAY
BIT., BITUM.	BITUMINOUS	M.B.	MAILBOX	R.R.	RAILROAD
BLDG.	BUILDING	M.P.	MILE POST	RTE., RT.	ROUTE
I, C.L.	CENTERLINE	MAX.	MAXIMUM	SAN.	SANITARY
C.I.P.	CAST IRON PIPE	MIN.	MINIMUM	SDWK.	SIDEWALK
C.M.P.	CORRUGATED METAL PIPE	NO.	NUMBER	S.H.D.	STATE HIGHWAY DEPARTMENT
CONC.	CONCRETE	N.T.S.	NOT TO SCALE	SHLD.	SHOULDER
CULV.	CULVERT	PAVT.	PAVEMENT	I, S.L.	SURVEY LINE
D, DIA.	DIAMETER	PERF.	PERFORATED	S.O.D.	SUBBASE OUTLET DRAIN
D.C.	DROP CURB	P.G.L.	PROFILE GRADE LINE	STY.	STORY
DE	DITCH EXCAVATION	i, P.L.	PROPERTY LINE, PROFILE LINE	T	TANGENT
DEP., DP	DEPRESSED CURB	PK	PARKER KAYLON MASONRY NAIL	TBA	TO BE ABANDONED
DH	DRILL HOLE	POC, P.O.C.	POINT ON CURVE	TBR	TO BE REMOVED
DWY	DRIVEWAY	POL, P.O.L.	POINT ON LINE	TEL.	TELEPHONE
E.B., W.B., N.B., S.B.	EASTBOUND, WESTBOUND	POT, P.O.T.	POINT ON TANGENT	TEMP.	TEMPORARY
	NORTHBOUND, SOUTHBOUND	PRC, P.R.C.	POINT OF REVERSE CURVE	THK., TH.	THICK
EL., ELEV.	ELEVATION	PROP.	PROPOSED	TYP.	TYPICAL
EXIST.	EXISTING	PT, P.T.	POINT OF TANGENCY	U.D.	UNDERDRAIN
GR.	GRATE	PVC, P.V.C.	POLYVINYL CHLORIDE PIPE	UP, U.P.	UTILITY POLE
HC	ACCESSIBLE CURB RAMP		POINT OF VERTICAL CURVATURE	VAR.	VARIABLE, VARIES
HT.	HEIGHT	PVI, P.V.I.	POINT OF VERTICAL INTERSECTION	W.C.V.C.	WHITE CONCRETE VERTICAL CURB
H.W.	HEADWALL	PVT, P.V.T.	POINT OF VERTICAL TANGENCY, PAVEMENT	WM	WATER METER
HYD.	HYDRANT	R	RADIUS	X-SECT	CROSS SECTION
INV.	INVERT	RCCP, R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE		
IP	IRON PIN				

ELECTRICAL PLAN ABBREVIATIONS

CF	CUTOFF LUMINAIRE, TYPE (.....)
E	EXPRESSWAY LUMINAIRE
ID	IMAGE DETECTOR
IDC	IMAGE DETECTOR CABLE
JBF	JUNCTION BOX FOUNDATION
L	LUMINAIRE
LMA-A	LIGHTING MAST ARM, ALUMINUM
LMA-S	LIGHTING MAST ARM, STEEL
LS-A	LIGHTING STANDARD, ALUMINUM
LS-F	LIGHTING STANDARD, FIBERGLASS
LS-S	LIGHTING STANDARD, STEEL
MAS	MAST ARM SIGN
MSC II	MEDIUM SEMI-CUTOFF LUMINAIRE, TYPE 2
MSC III	MEDIUM SEMI-CUTOFF LUMINAIRE, TYPE 3
PB	PUSH BUTTON
PSH	PEDESTRIAN SIGNAL HEAD
PS	PEDESTRIAN SIGNAL STANDARD
RMC	RIGID METALLIC CONDUIT
RNMC	RIGID NON METALLIC CONDUIT
TSH	TRAFFIC SIGNAL HEAD
TMA-A	TRAFFIC SIGNAL MAST ARM, ALUMINUM
TMA-S	TRAFFIC SIGNAL MAST ARM, STEEL
TSS-C	TRAFFIC SIGNAL STANDARD, ALUMINUM "C"
TSS-K	TRAFFIC SIGNAL STANDARD, ALUMINUM "K" OR "K(KE)"
TSS-S	TRAFFIC SIGNAL STANDARD, STEEL
TSS-SC	TRAFFIC SIGNAL STANDARD, STEEL COMBINATION
TSS-T	TRAFFIC SIGNAL STANDARD, ALUMINUM "T"
UL-P	UNDERDECK LIGHTING, TYPE "P"
UL-W	UNDERDECK LIGHTING, TYPE "W"
V	VERTICAL LUMINAIRE



FINAL

PREPARED BY:
RVE REMINGTON & VERNICK
 ENGINEERS
 429 Route 79, Suite 21
 (732) 955-8000
 Certificate of Authorization: 24 CA 28003300

Terence M. Vojit
 Licensed Professional Engineer
 License No. 33773

11/13/23
 Date

REVISIONS		
NO.	DATE	BY
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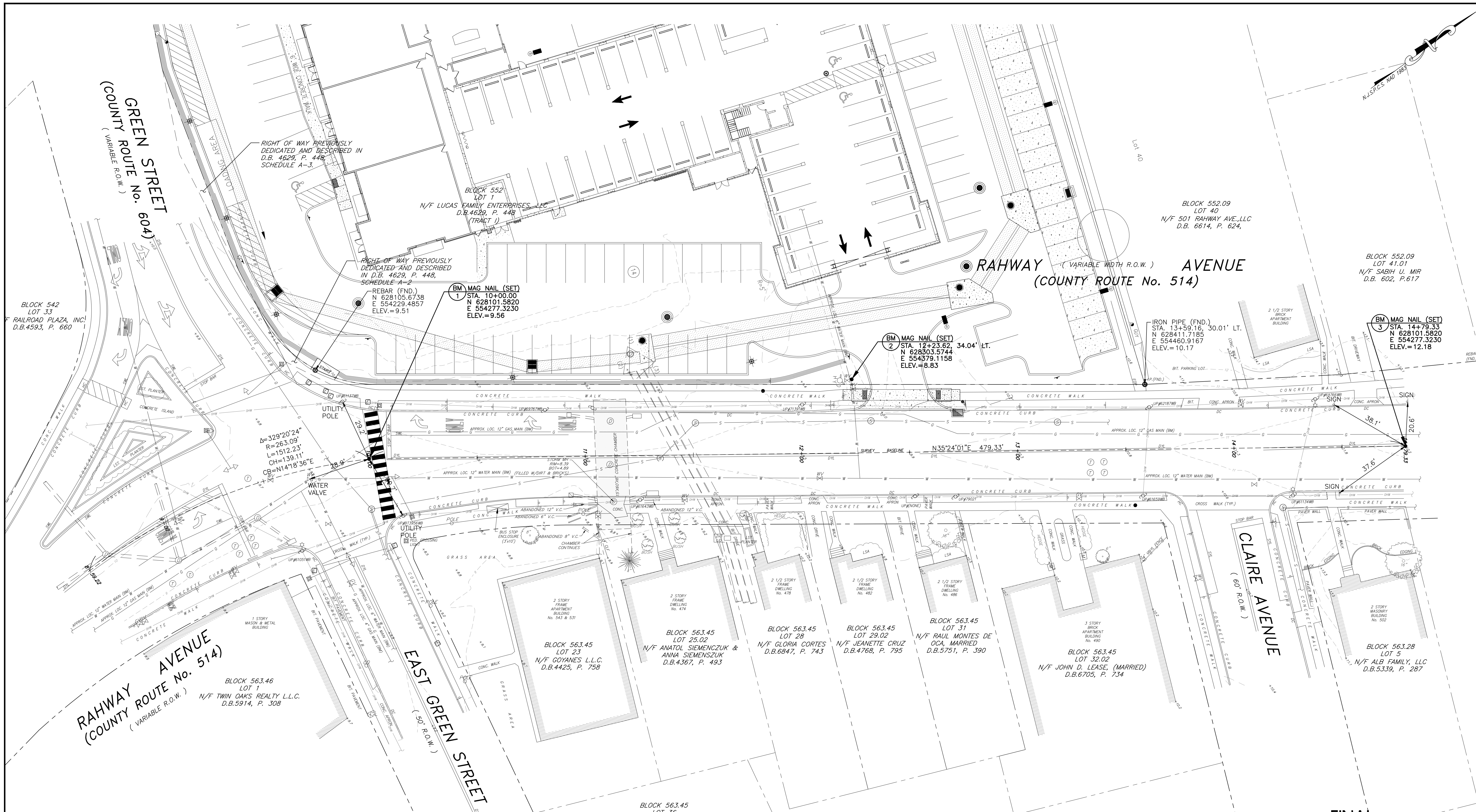
County of Middlesex
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TOWNSHIP OF WOODBRIDGE, MIDDLESEX COUNTY, NEW JERSEY

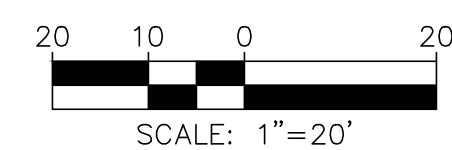
LEGEND

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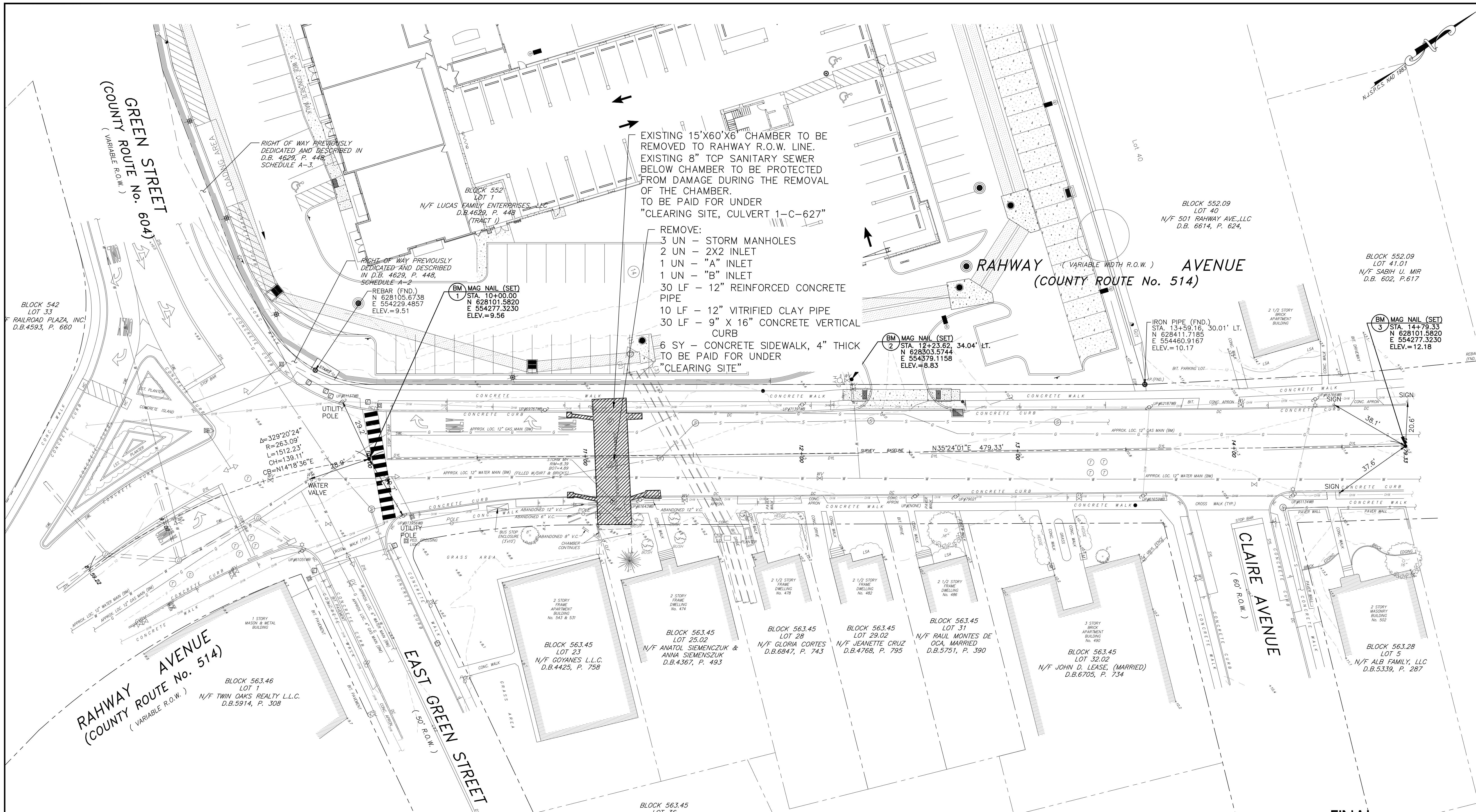
SURVEY NOTES & REFERENCES:

1. THE HORIZONTAL DATUM IS BASED ON THE NEW JERSEY STATE PLANE COORDINATE SYSTEM (NAD-1983) AND THE VERTICAL DATUM IS BASED ON NAVD-1988 (ADD 1.04 FEET TO THESE ELEVATIONS TO CONVERT TO NGVD-1929 DATUM)
2. PROPERTY AND RIGHT-OF-WAY LINES SHOWN ON THESE PLANS ARE ESTABLISHED BY DEEDS AND MAPS OF RECORD AS WELL AS FIELD PROPERTY EVIDENCE FOUND. ADJOINING LOT LINES AND RIGHT OF WAYS ARE APPROXIMATE. LOCATIONS BASED ON THE CURRENT TAX MAPS OF THE TOWNSHIP OF WOODBRIDGE, MIDDLESEX COUNTY, NEW JERSEY.
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4. SOME UTILITY INFORMATION WAS TAKEN FROM A PLAN ENTITLED, "PROPOSED MIXED USE FOR PEP HEARD SQUARE, LLC, 10 GREEN STREET, PREPARED BY AJV ENGINEERING INC, DATED NOVEMBER 8, 2017, FILE NO. 14165.
5. CONCRETE CULVERT AND CHAMBER WITH REVISED PIPE SIZE AND TYPES WERE FIELD VERIFIED BY NATIONAL WATER MAIN CLEANING ON JANUARY 7 AND 8, 2021.



FINAL

PREPARED BY: RVE REMINGTON & VERNICK ENGINEERS 429 Route 79, Suite 21 (732) 955-8000 Certificate of Authorization: 24 CA 28003300		REVISIONS <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>3/14/22</td> <td>DRB</td> </tr> <tr> <td>2</td> <td>7/20/22</td> <td>WJD</td> </tr> <tr> <td>3</td> <td>4/10/23</td> <td>WJD</td> </tr> <tr> <td>4</td> <td>7/17/23</td> <td>WJD</td> </tr> <tr> <td>5</td> <td>11/13/23</td> <td>WJD</td> </tr> </tbody> </table>	NO.	DATE	BY	1	3/14/22	DRB	2	7/20/22	WJD	3	4/10/23	WJD	4	7/17/23	WJD	5	11/13/23	WJD	County of Middlesex Department of Infrastructure Management Office of Engineering P.O. Box 871, New Brunswick, NJ 08901 REPLACEMENT OF CULVERT 1-C-627 RAHWAY AVENUE OVER A TRIBUTARY OF HEARDS BROOK TOWNSHIP OF WOODBRIDGE, MIDDLESEX COUNTY, NEW JERSEY Survey Baseline & Tie Sheet
NO.	DATE	BY																			
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5	11/13/23	WJD																			
Designed By: C.E.A. Checked By: TV	Drawn By: CFC Approved By:	Scale: As noted Sheet No. 4 of 16 Date: NOVEMBER 3, 2021																			



EXISTING 15'X60'X6' CHAMBER TO BE REMOVED TO RAHWAY R.O.W. LINE.
 EXISTING 8" TCP SANITARY SEWER BELOW CHAMBER TO BE PROTECTED FROM DAMAGE DURING THE REMOVAL OF THE CHAMBER.
 TO BE PAID FOR UNDER "CLEARING SITE, CULVERT 1-C-627"

REMOVE:
 3 UN - STORM MANHOLES
 2 UN - 2X2 INLET
 1 UN - "A" INLET
 1 UN - "B" INLET
 30 LF - 12" REINFORCED CONCRETE PIPE
 10 LF - 12" VITRIFIED CLAY PIPE
 30 LF - 9" X 16" CONCRETE VERTICAL CURB
 6 SY - CONCRETE SIDEWALK, 4" THICK TO BE PAID FOR UNDER "CLEARING SITE"

BM MAG NAIL (SET)
 1 STA. 10+00.00
 N 628101.5820
 E 554277.3230
 ELEV.=9.56

BM MAG NAIL (SET)
 2 STA. 12+23.62, 34.04' LT.
 N 628503.5744
 E 554379.1158
 ELEV.=8.83

BM MAG NAIL (SET)
 3 STA. 14+79.33
 N 628101.5820
 E 554277.3230
 ELEV.=12.18

$\Delta = 329^{\circ}20'24"$
 $R = 263.09'$
 $L = 1512.23'$
 $CH = 139.11'$
 $CB = N14^{\circ}18'36"E$

BLOCK 542
 LOT 33
 RAILROAD PLAZA, INC.
 D.B.4593, P. 660

BLOCK 552.09
 LOT 40
 N/F RAHWAY AVE.,LLC
 D.B. 6614, P. 624.

BLOCK 552.09
 LOT 41.01
 N/F SABIH U. MIR
 D.B. 602, P.617

BLOCK 563.45
 LOT 23
 N/F GOYANES L.L.C.
 D.B.4425, P. 758

BLOCK 563.45
 LOT 25.02
 N/F ANATOL SIEMENCZUK &
 ANNA SIEMENCZUK
 D.B.4367, P. 493

BLOCK 563.45
 LOT 28
 N/F GLORIA CORTES
 D.B.6847, P. 743

BLOCK 563.45
 LOT 29.02
 N/F JEANNETTE CRUZ
 D.B.4768, P. 795

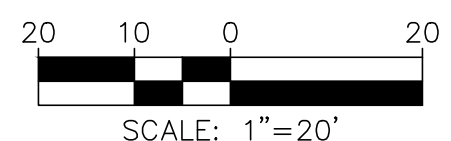
BLOCK 563.45
 LOT 31
 N/F RAUL MONTES DE
 OCA, MARRIED
 D.B.5751, P. 390

BLOCK 563.45
 LOT 32.02
 N/F JOHN D. LEASE, (MARRIED)
 D.B.6705, P. 734

BLOCK 563.28
 LOT 5
 N/F ALB FAMILY, LLC
 D.B.5339, P. 287

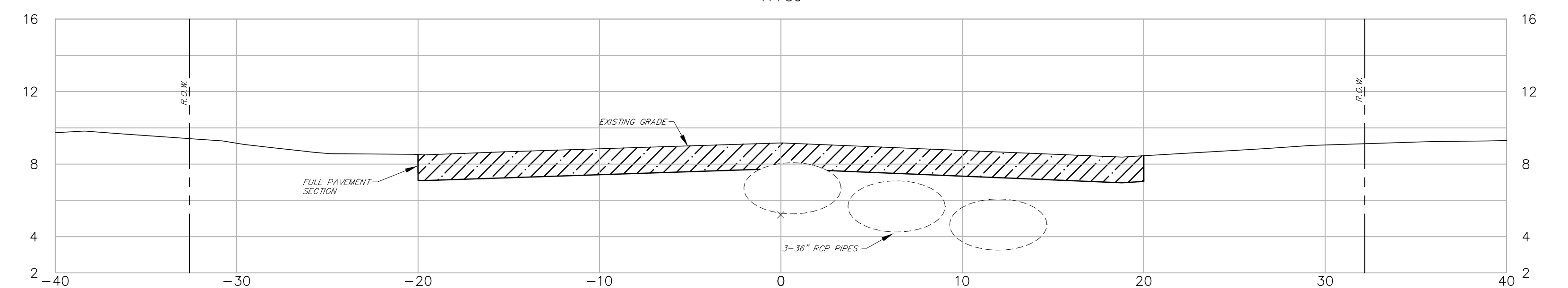
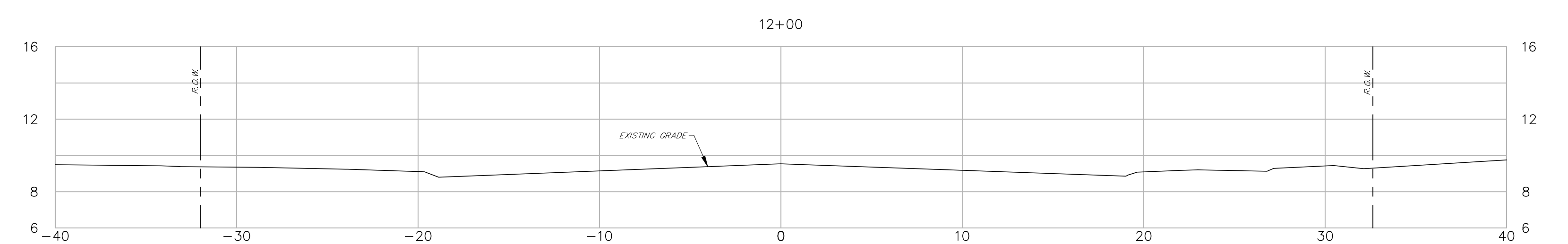
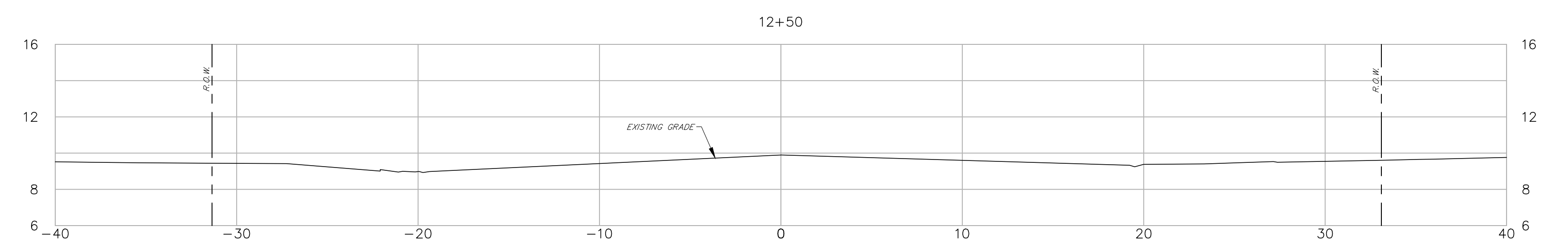
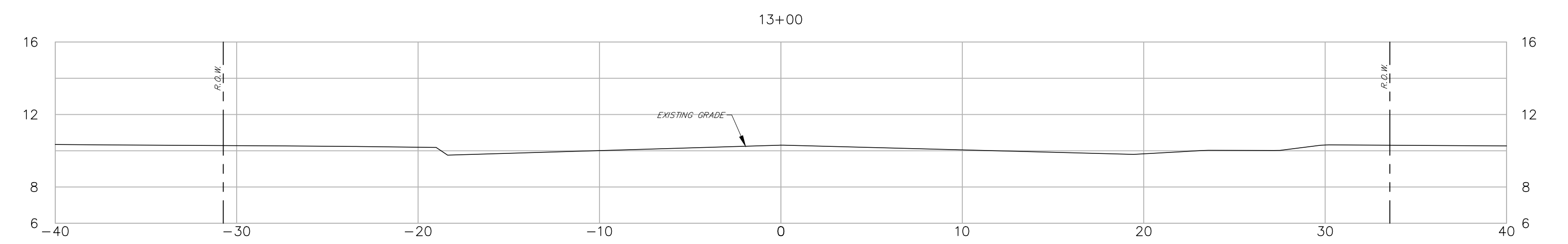
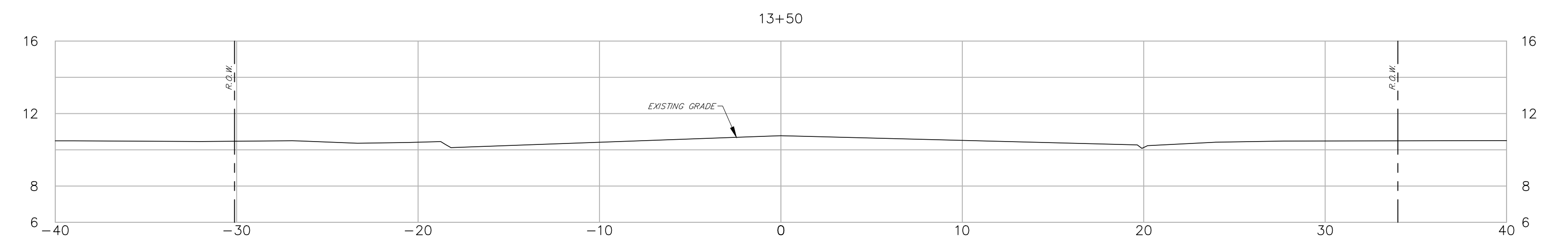
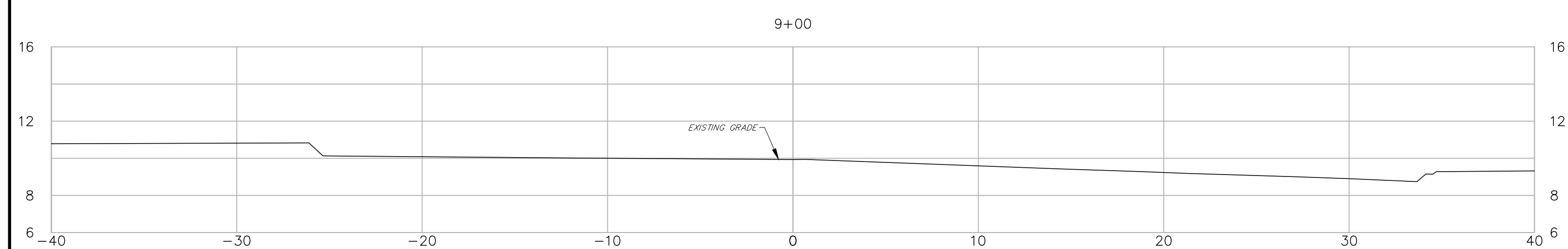
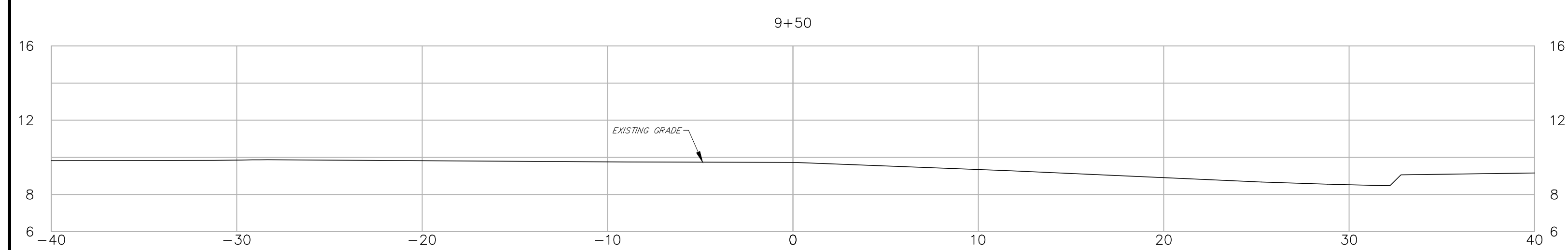
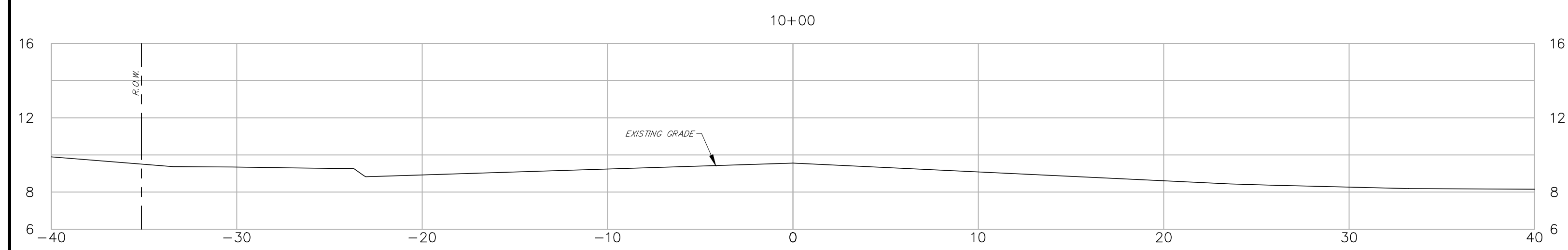
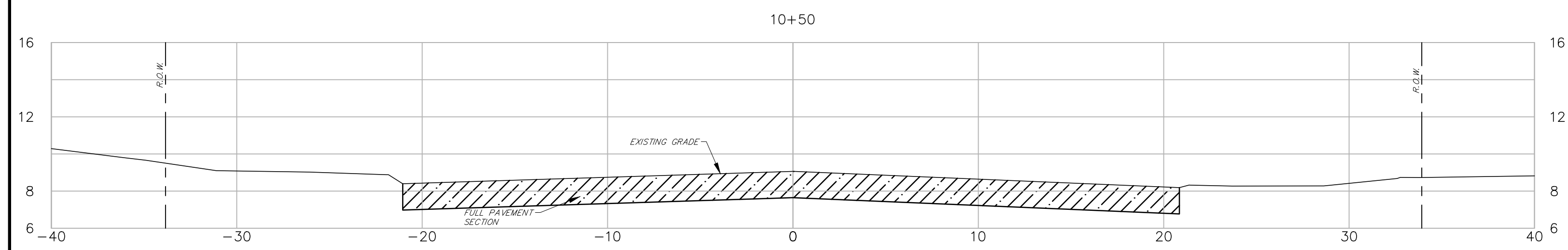
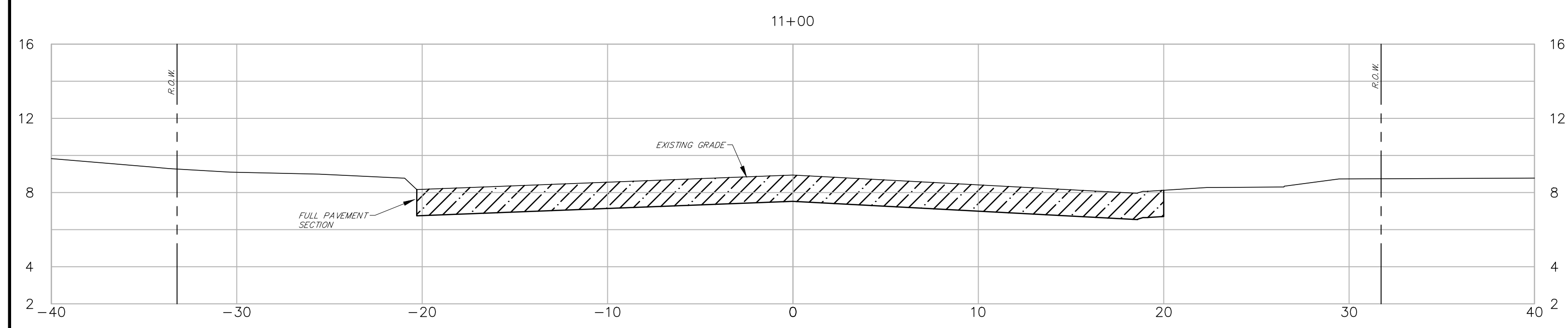
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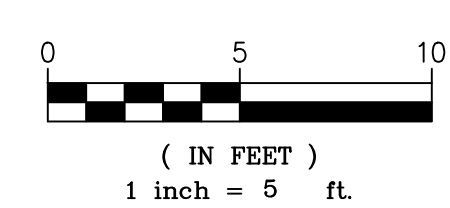


FINAL

PREPARED BY: RV&E REMINGTON & VERNICK ENGINEERS 429 Route 79, Suite 21 (732) 955-8000 Certificate of Authorization: 24 CA 28003300		REVISIONS <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>3/14/22</td> <td>DRB</td> </tr> <tr> <td>2</td> <td>7/20/22</td> <td>WJD</td> </tr> <tr> <td>3</td> <td>4/10/23</td> <td>WJD</td> </tr> <tr> <td>4</td> <td>7/17/23</td> <td>WJD</td> </tr> <tr> <td>5</td> <td>11/13/23</td> <td>WJD</td> </tr> </tbody> </table>	NO.	DATE	BY	1	3/14/22	DRB	2	7/20/22	WJD	3	4/10/23	WJD	4	7/17/23	WJD	5	11/13/23	WJD	County of Middlesex Department of Infrastructure Management Office of Engineering P.O. Box 871, New Brunswick, NJ 08901 REPLACEMENT OF CULVERT 1-C-627 RAHWAY AVENUE OVER A TRIBUTARY OF HEARDS BROOK TOWNSHIP OF WOODBRIDGE, MIDDLESEX COUNTY, NEW JERSEY DEMOLITION PLAN
NO.	DATE	BY																			
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Designed By: C.E.A. Drawn By: CFC Checked By: TV Date: 11/13/23		Scale: As noted Sheet No. 5 of 16 Date: NOVEMBER 3, 2021																			



CROSS SECTION
 SCALE: 1"=5' VERTICAL
 1"=5' HORIZONTAL



PREPARED BY:
RVE REMINGTON & VERNICK ENGINEERS
 429 Route 79, Suite 21
 (732) 955-8000
 Certificate of Authorization 24 GA 28003300

Terence M. Vegg
 11/13/23
 Date

Terence M. Vegg
 Licensed Professional Engineer
 License No. 33773

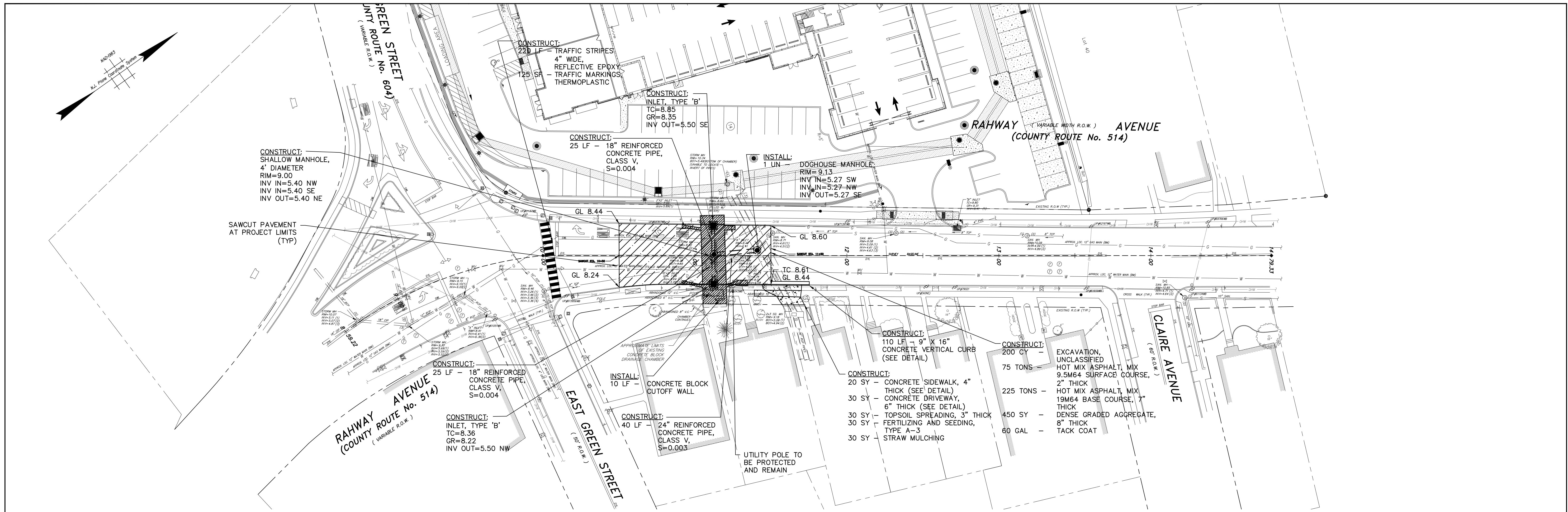
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NO.	DATE	BY
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3	4/10/23	WJD
4	7/17/23	WJD
5	11/13/23	WJD

County of Middlesex
 Department of Infrastructure Management
 Office of Engineering
 P.O. Box 871, New Brunswick, N.J. 08901

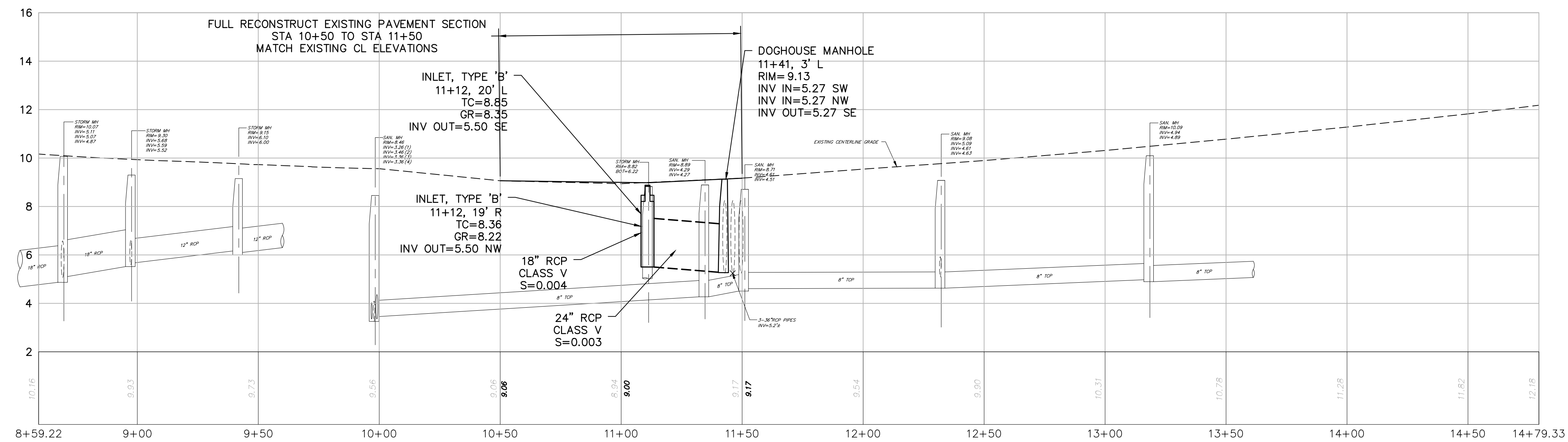
REPLACEMENT OF CULVERT 1-C-627
RAHWAY AVENUE OVER A TRIBUTARY OF HEARDS BROOK
 TOWNSHIP OF WOODBRIDGE, MIDDLESEX COUNTY, NEW JERSEY

CROSS SECTIONS

Scale: 1" = 5'
 Sheet No. 6 OF 16
 Date: September, 2021

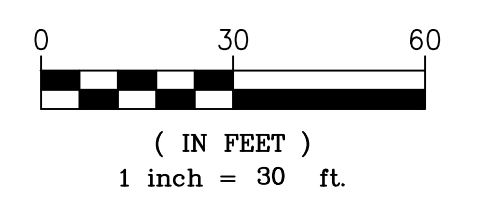


PLAN
SCALE: 1" = 30'



PROFILE
SCALE: 1" = 3' VERT.
SCALE: 1" = 30' HORIZ.

FINAL



PREPARED BY:
RVE REMINGTON & VERNICK ENGINEERS
429 Route 79, Suite 21
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Certificate of Authorization: 24 CA 28003300

Terence M. Vojt
Terence M. Vojt
Licensed Professional Engineer
License No. 33773

11/13/23
Date

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County of Middlesex
Department of Infrastructure Management
Office of Engineering
P.O. Box 871, New Brunswick, NJ 08901

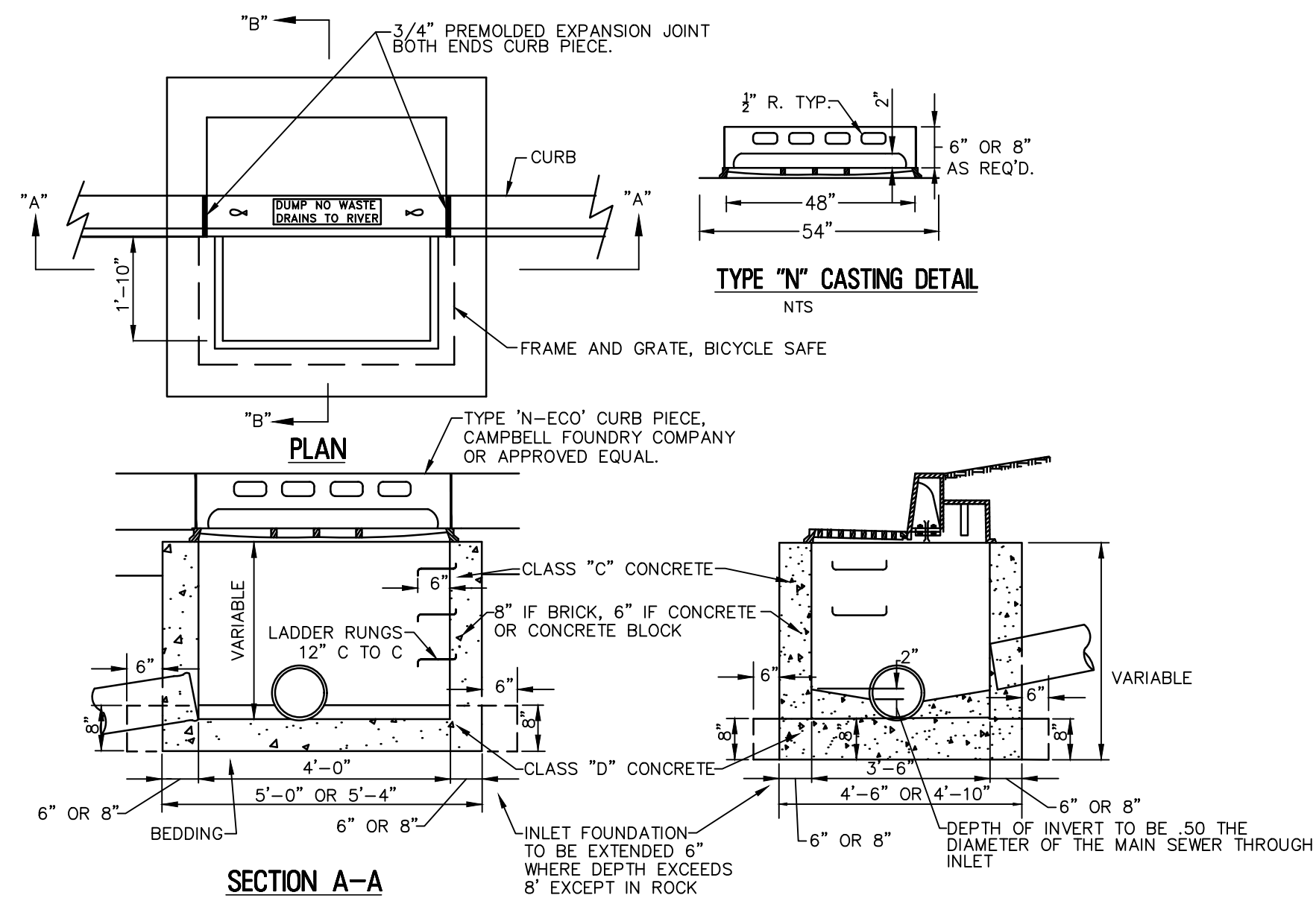
**REPLACEMENT OF CULVERT 1-C-627
RAHWAY AVENUE OVER A TRIBUTARY OF HEARDS BROOK**

TOWNSHIP OF WOODBRIDGE, MIDDLESEX COUNTY, NEW JERSEY

CONSTRUCTION PLAN

Scale: As noted
Sheet No. 8 of 16
Date: NOVEMBER 3, 2021

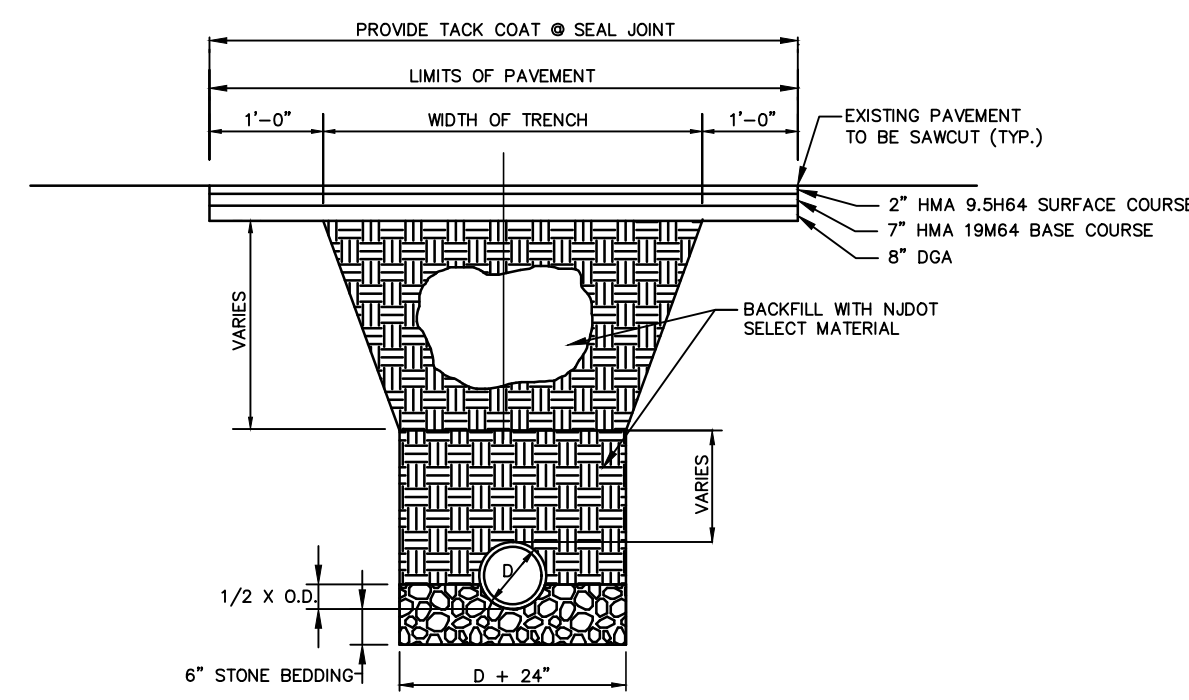
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Drawn By: CFC
Checked By: TV
Approved By: TV



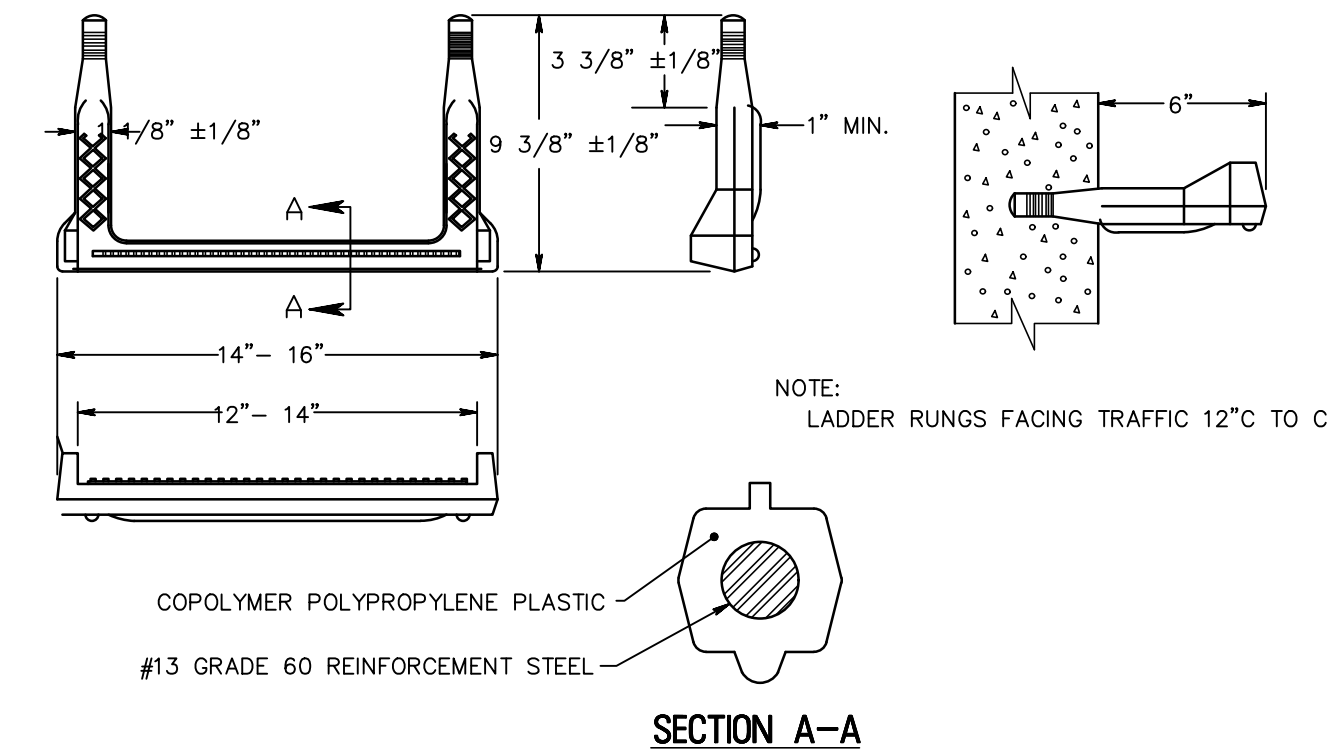
NOTE:
INLET CONSTRUCTION IN ACCORDANCE WITH N.J.D.O.T. STANDARD CONSTRUCTION DETAILS.

TYPE "B" INLET WITH ECO TYPE "N" CASTING DETAIL

N.T.S.

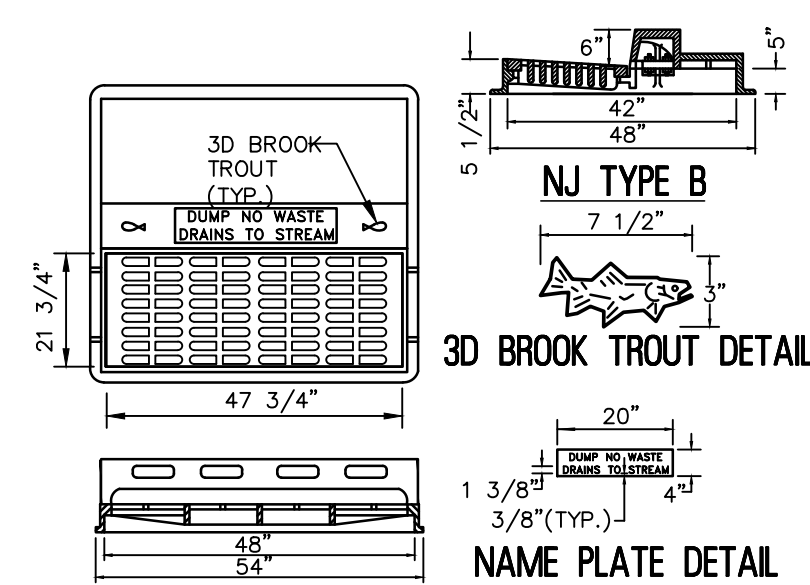


- NOTES:**
1. THE LAY DOWN AREA FOR THE EXCAVATED MATERIAL SHALL BE IMMEDIATELY ADJACENT TO THE TRENCH AND SHALL BE ISOLATED TO THE ASPHALT ROADWAY. TRENCH SHALL BE BACKFILLED AT THE END OF EACH DAY. ALL BASE PAVING SHALL BE COMPLETED EACH FRIDAY FOR ALL WORK COMPLETED THAT WEEK.
 2. SEPARATE PAYMENT WILL NOT BE MADE FOR BACKFILL, BEDDING OR PAVEMENT RESTORATION, BUT SHALL BE INCLUDED IN THE PRICE BID FOR THE PIPES.
 3. SEPARATE PAYMENT WILL NOT BE MADE FOR TEMPORARY COVER MATERIALS, SELECT FILL, DEWATERING, FITTING, SHORING, SHEETING, AND BRACING INVOLVED IN ALL PIPE AND STRUCTURE INSTALLATION, BUT THE COST SHALL BE INCLUDED IN THE VARIOUS PIPE ITEMS OF THE PROPOSAL.
 4. SEPARATE PAYMENT WILL NOT BE MADE FOR EXCAVATION AND DISPOSAL OF REGULATED OR UNCLASSIFIED SOILS OF ANY KIND. THE CONTRACTOR SHALL ASSUME THAT ALL SOILS ON SITE ARE REGULATED. EXCAVATED SOIL SHALL BE REUSED AS BACKFILL MATERIAL.



COPOLYMER POLYPROPYLENE PLASTIC LADDER RUNG

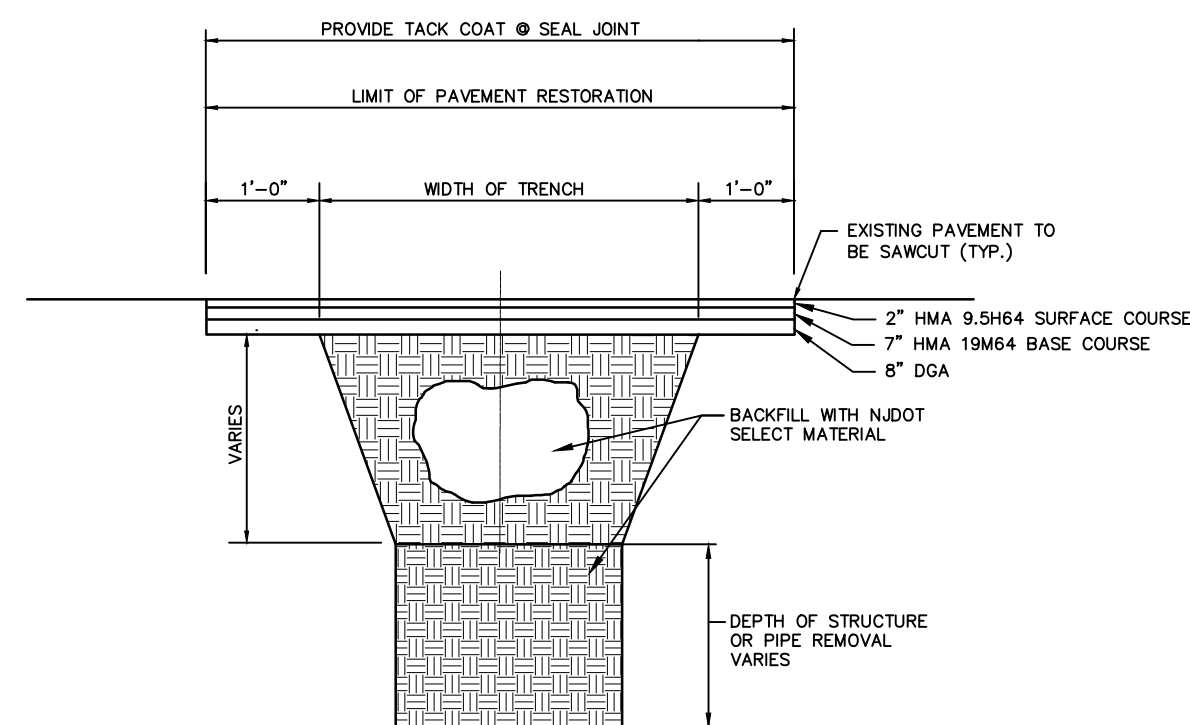
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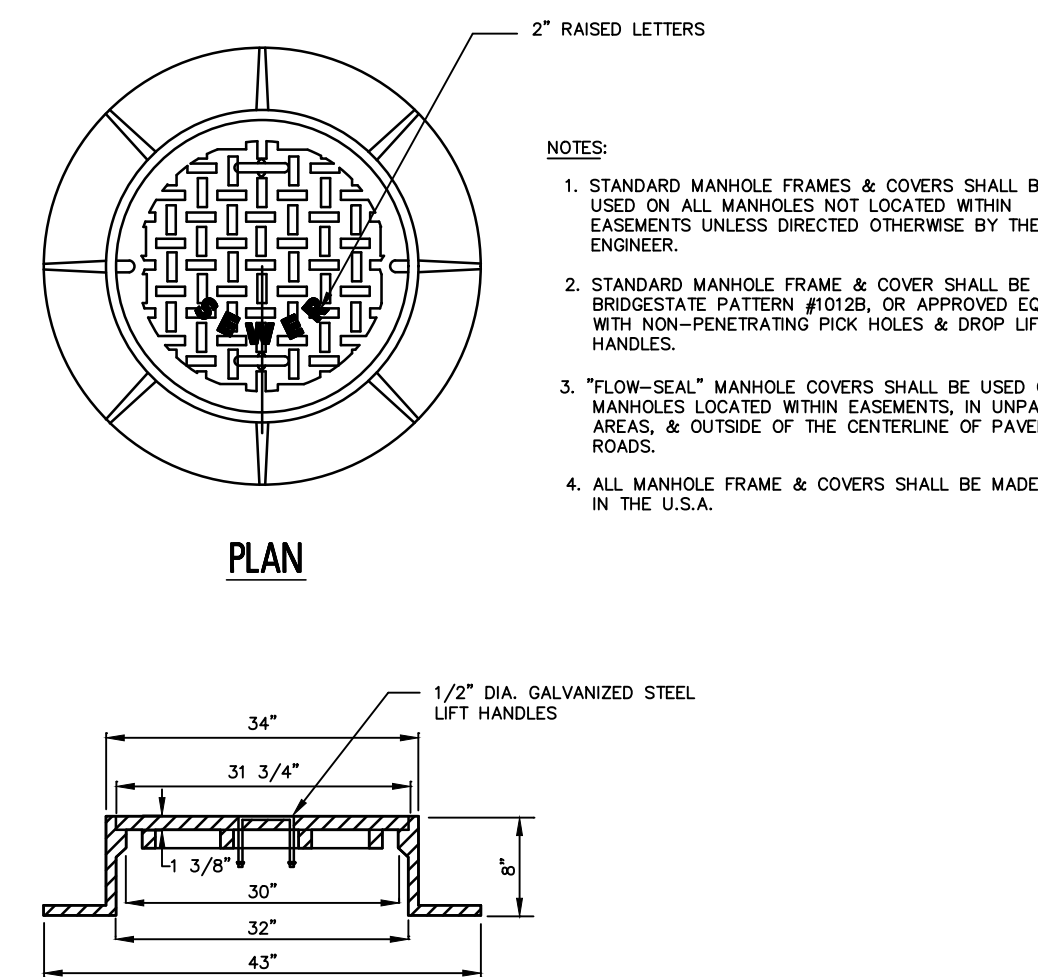
TYPE "B" BICYCLE SAFE GRATE & TYPE "N-ECO" CURB PIECE

N.T.S.

- NOTES:**
1. MATERIAL: GRAY CAST IRON ASTM A48-83, CLASS 30B.
 2. AASHTO HS20-44 HIGHWAY LOADING.
 3. SUPPLIED WITHOUT SURFACE COATING.
 4. GRATE TO BE BRIDGESTATE FOUNDRY CORPORATION #2618 OR APPROVED EQUAL.

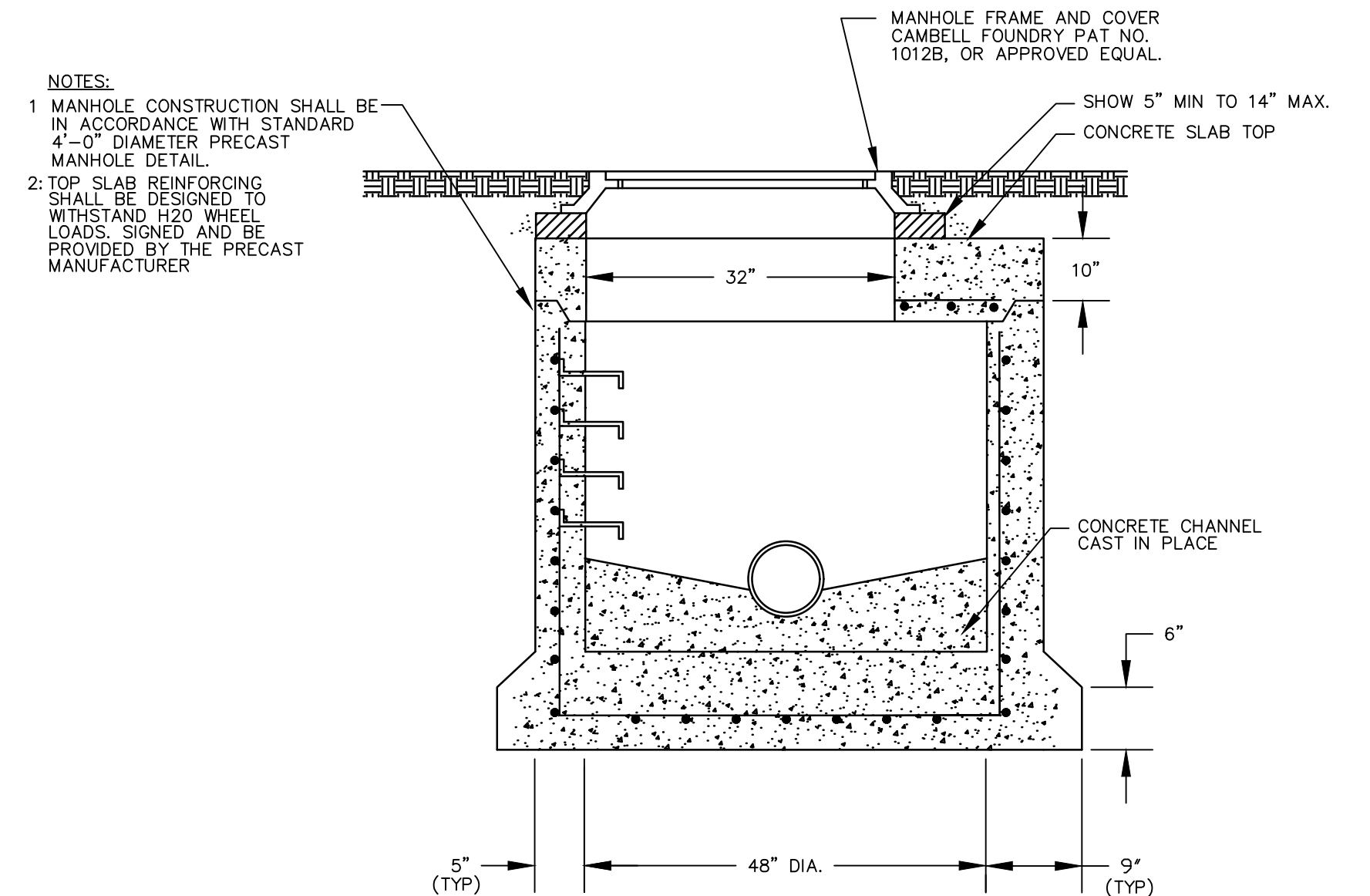


- NOTES:**
1. THE LAY DOWN AREA FOR THE EXCAVATED MATERIAL SHALL BE IMMEDIATELY ADJACENT TO THE TRENCH AND SHALL BE ISOLATED TO THE ASPHALT ROADWAY. TRENCH SHALL BE BACKFILLED AT THE END OF EACH DAY. ALL BASE PAVING SHALL BE COMPLETED EACH FRIDAY FOR ALL WORK COMPLETED THAT WEEK.
 2. SEPARATE PAYMENT WILL NOT BE MADE FOR TEMPORARY COVER MATERIALS, SELECT FILL, DEWATERING, FITTING, SHORING, SHEETING, AND BRACING, BUT THE COST SHALL BE INCLUDED IN THE VARIOUS ITEMS OF THE PROPOSAL.
 3. SEPARATE PAYMENT WILL NOT BE MADE FOR EXCAVATION AND DISPOSAL OF REGULATED OR UNCLASSIFIED SOILS OF ANY KIND. THE CONTRACTOR SHALL ASSUME THAT ALL SOILS ON SITE ARE REGULATED. EXCAVATED SOIL SHALL BE REUSED AS BACKFILL MATERIAL.



STANDARD MANHOLE FRAME AND COVER DETAIL

N.T.S.



CONCRETE SHALLOW MANHOLE DETAIL

N.T.S.

FINAL

PREPARED BY:
RVE REMINGTON & VERNICK ENGINEERS
429 Route 79, Suite 21
(732) 955-8000
Certificate of Authorization: 24 CA 28003300

Terence M. Vojt
Terence M. Vojt
Licensed Professional Engineer
License No. 33773

11/13/23
Date

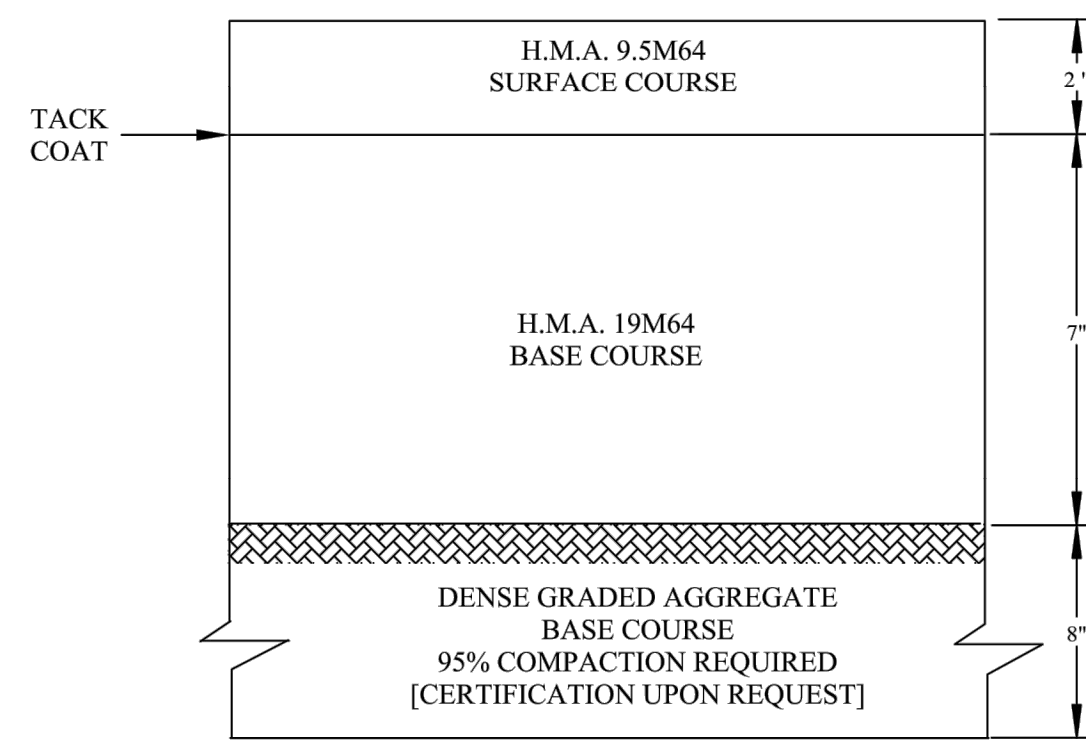
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County of Middlesex
Department of Infrastructure Management
Office of Engineering
P.O. Box 871, New Brunswick, NJ 08901

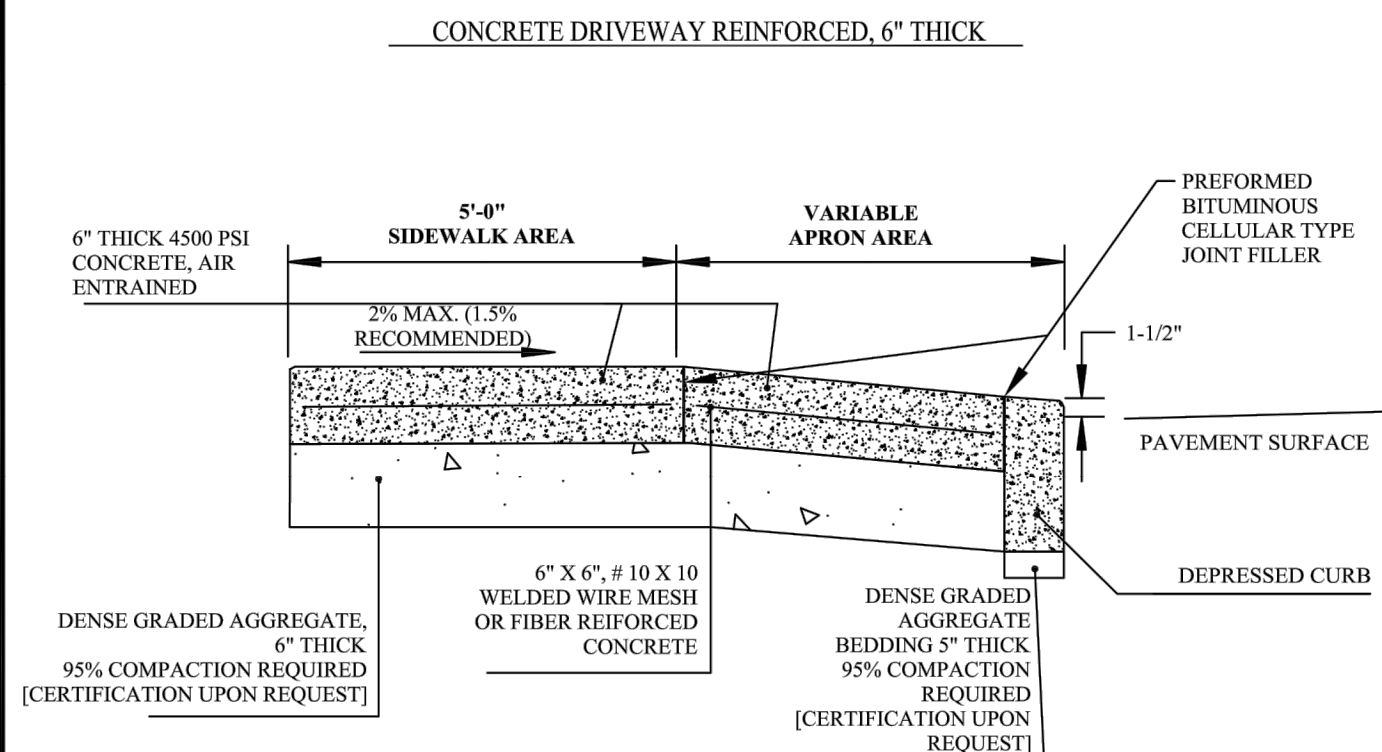
REPLACEMENT OF CULVERT 1-C-627
RAHWAY AVENUE OVER A TRIBUTARY OF HEARDS BROOK
TOWNSHIP OF WOODBRIDGE, MIDDLESEX COUNTY, NEW JERSEY

CONSTRUCTION DETAILS

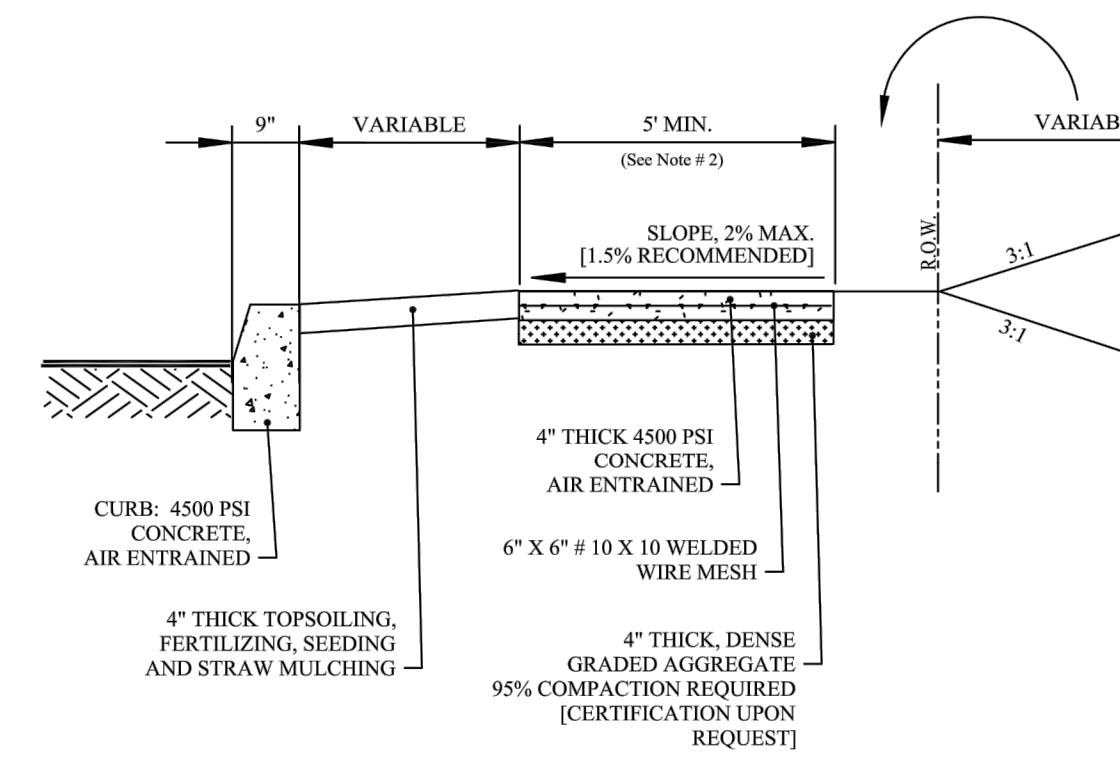
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Sheet No. 9 of 16
Date: NOVEMBER 3, 2021



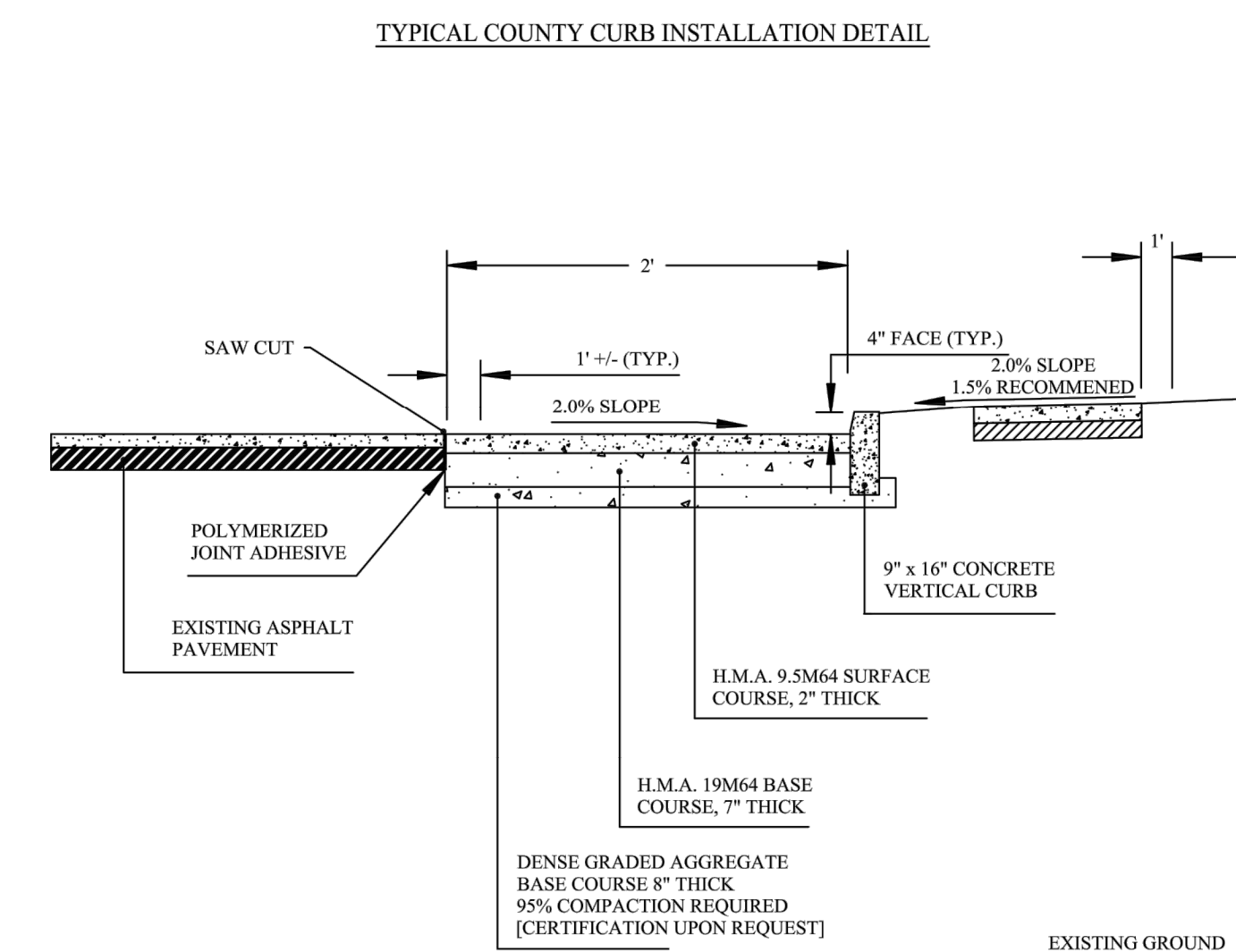
- NOTES:
- MIX NUMBERS ARE IN ACCORDANCE WITH THE CURRENT NEW JERSEY DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
 - IN LIEU OF DENSE GRADED (DGA), RECYCLED CONCRETE AGGREGATE (RCA) IS ACCEPTABLE. ALL RCA MUST MEET NIDOT SPECIFICATIONS AND BE CERTIFIED BY AN NIDOT APPROVED PLANT OF ORIGIN. ALL RCA SHIPMENTS MUST BE FREE OF FOREIGN MATERIALS AND CONTAMINANTS.
 - PAVEMENT CORES (UPON REQUEST)



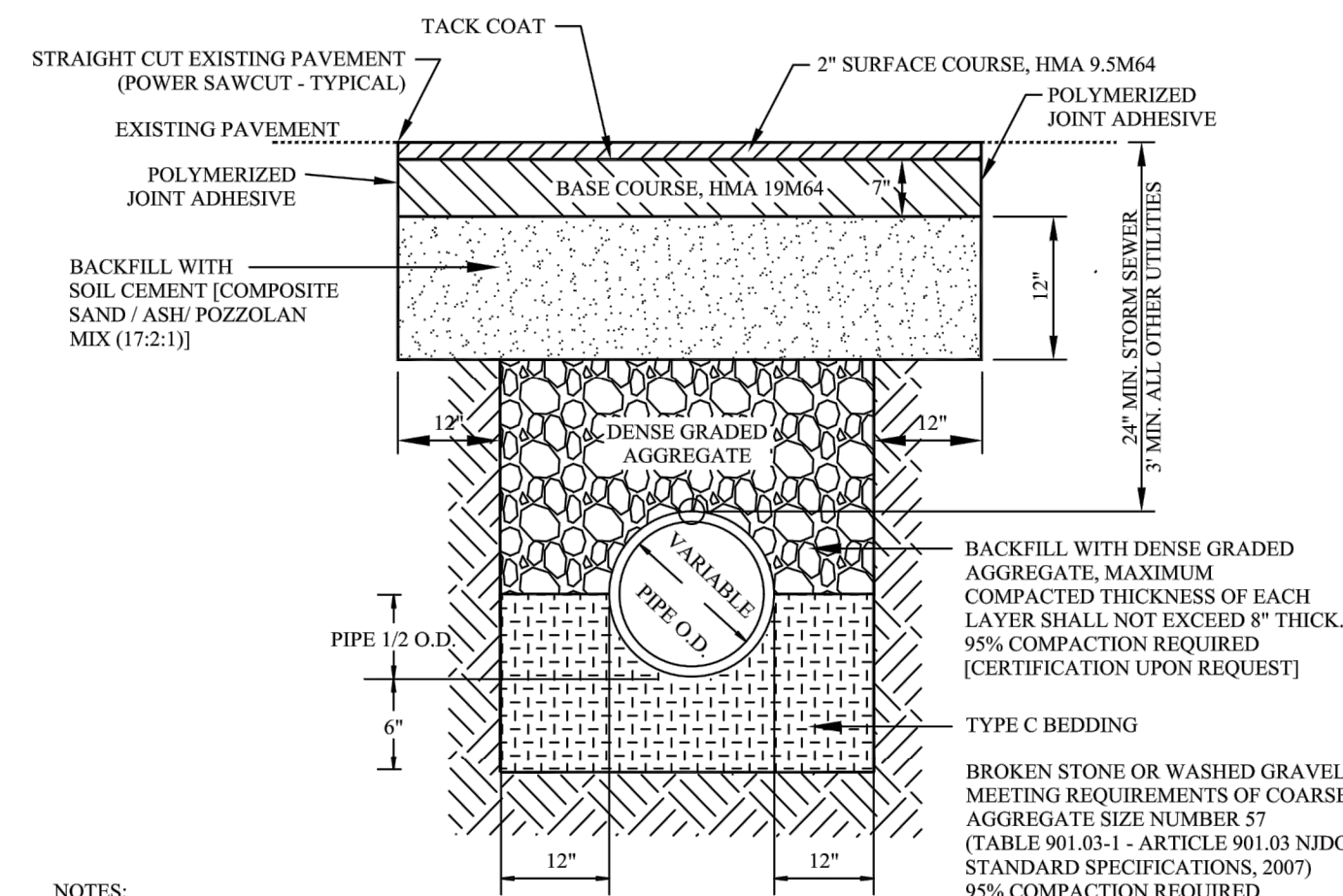
- NOTES:
- TRANSVERSE EXPANSION JOINTS, 1/2" WIDE SHALL BE PROVIDED AT INTERVALS OF NOT MORE THAN 8' AND FILLED WITH PREFORMED BITUMINOUS CELLULAR TYPE JOINT FILLER (AASHTO M33). LONGITUDINAL JOINTS 1/2" WIDE SHALL BE PROVIDED BETWEEN CURBS AND ABUTTING SIDEWALKS, AND SHALL BE FILLED WITH PREFORMED BITUMINOUS CELLULAR TYPE JOINT FILLER (AASHTO M33). THE TOP OF ALL JOINT FILLER SHALL BE TRIMMED 1/2" BELOW THE TOP OF THE SIDEWALK AND FILLED WITH JOINT SEALER (SIKAFLEX-1A OR APPROVED EQUAL).
 - IN LIEU OF DENSE GRADED (DGA), RECYCLED CONCRETE AGGREGATE (RCA) IS ACCEPTABLE. ALL RCA MUST MEET NIDOT SPECIFICATIONS AND BE CERTIFIED BY AN NIDOT APPROVED PLANT OF ORIGIN. ALL RCA SHIPMENTS MUST BE FREE OF FOREIGN MATERIALS AND CONTAMINANTS.



- NOTE:
- TRANSVERSE EXPANSION JOINTS, 1/2" WIDE, SHALL BE PROVIDED AT INTERVALS OF NOT MORE THAN 15' AND FILLED WITH PREFORMED BITUMINOUS CELLULAR TYPE JOINT FILLER (AASHTO M33). LONGITUDINAL JOINTS, 1/2" WIDE, SHALL BE PROVIDED BETWEEN CURBS AND ABUTTING SIDEWALKS, AND SHALL BE FILLED WITH PREFORMED BITUMINOUS CELLULAR TYPE JOINT FILLER (AASHTO M33). THE TOP OF ALL JOINT FILLER SHALL BE 1/2" BELOW THE TOP OF THE SIDEWALK AND FILLED WITH JOINT SEALER (SIKAFLEX-1A), OR AN APPROVED EQUAL.
 - SIDEWALK WIDTH SHALL BE 5'-0" MINIMUM UNLESS OTHERWISE NOTED ON THE APPROVED PLANS.
 - TYPE OF SEEDING SHALL MEET FREEHOLD SOIL CONSERVATION DISTRICT REQUIREMENTS.
 - THE COST OF THE EXPANSION JOINT, JOINT FILLER, WELDED WIRE MESH AND DENSE GRADED AGGREGATE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE CONCRETE SIDEWALK.
 - IN LIEU OF WELDED WIRE MESH FIBER REINFORCED CONCRETE IS ACCEPTABLE.
 - IN LIEU OF DENSE GRADED (DGA), RECYCLED CONCRETE AGGREGATE (RCA) IS ACCEPTABLE. ALL RCA MUST MEET NIDOT SPECIFICATIONS AND BE CERTIFIED BY AN NIDOT APPROVED PLANT OF ORIGIN. ALL RCA SHIPMENTS MUST BE FREE OF FOREIGN MATERIALS AND CONTAMINANTS.



- NOTE:
- PROVIDE SLOPE TOWARDS GUTTER LINE TO ENSURE POSITIVE DRAINAGE.

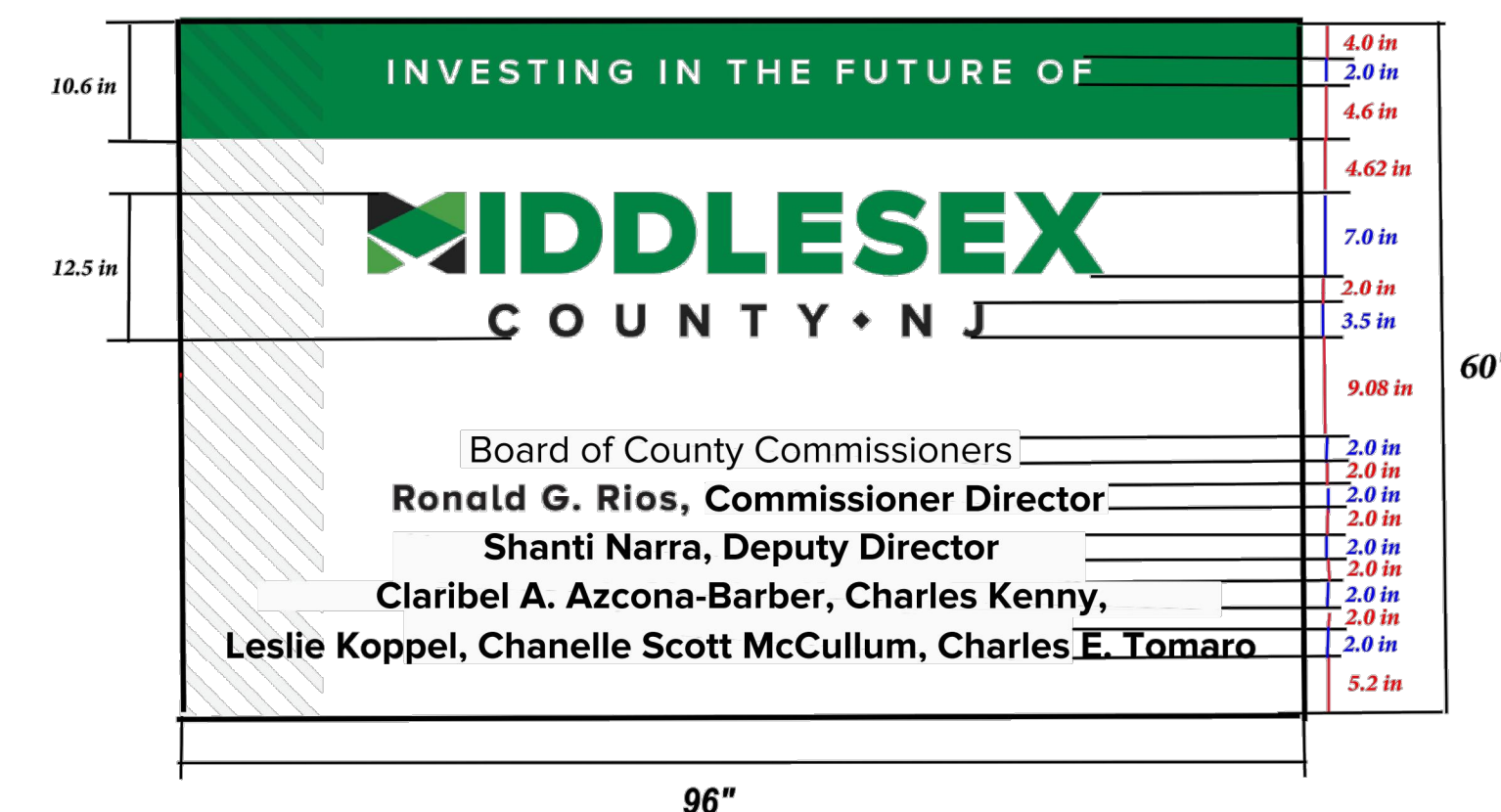


- NOTES:
- BACKFILLING WITH EXCAVATED MATERIAL SHALL NOT BE PERMITTED IN TRENCHES FOR STORM SEWER AND ALL OTHER UTILITIES.
 - REINFORCED CONCRETE PIPE IS REQUIRED WITHIN COUNTY R.O.W.
 - IN LIEU OF DENSE GRADED (DGA), RECYCLED CONCRETE AGGREGATE (RCA) IS ACCEPTABLE. ALL RCA MUST MEET NIDOT SPECIFICATIONS AND BE CERTIFIED BY AN NIDOT APPROVED PLANT OF ORIGIN. ALL RCA SHIPMENTS MUST BE FREE OF FOREIGN MATERIALS AND CONTAMINANTS.

Color Palette

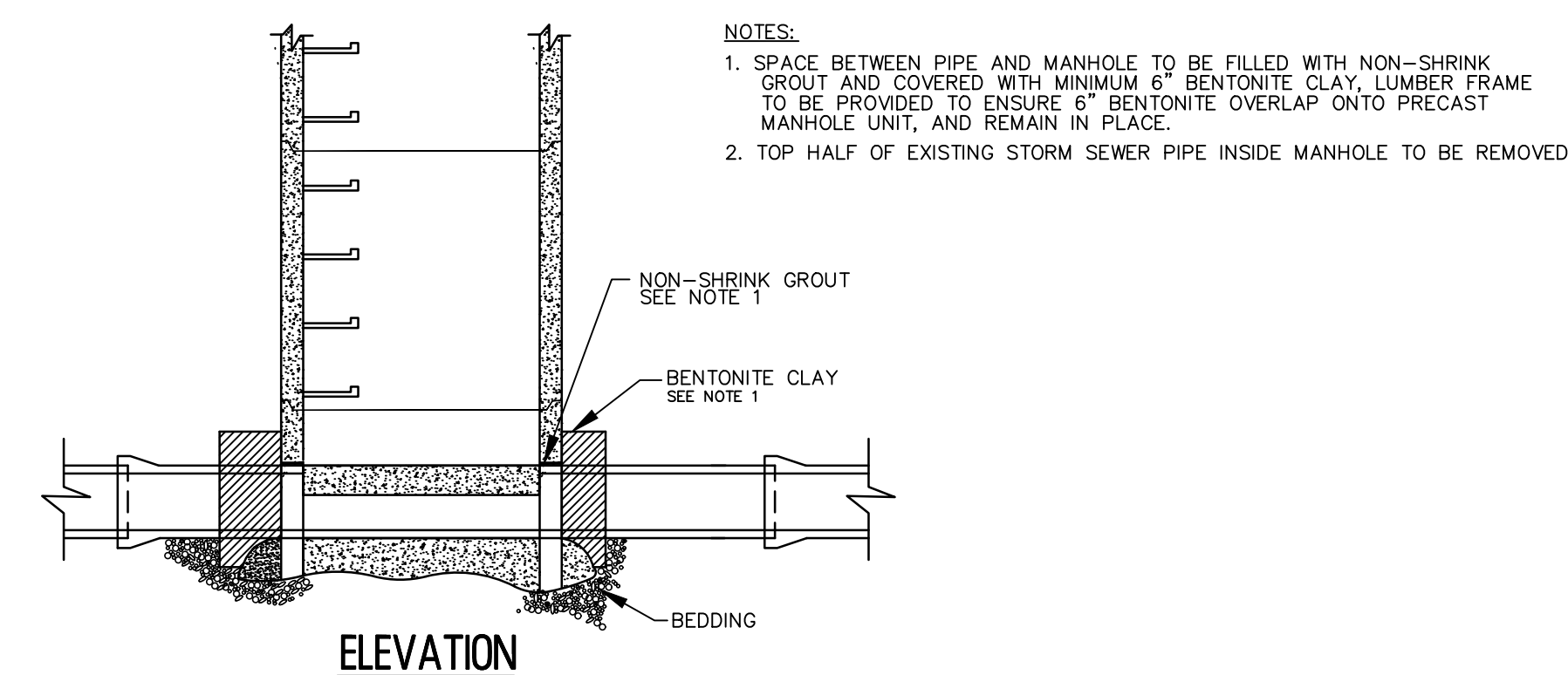
362 C	348 C	419 C	5497 C	7452 C
C 78 M 0 Y 100 K 2	C 96 M 2 Y 100 K 12	C 86 M 70 Y 69 K 95	C 38 M 9 Y 23 K 32	C 17 M 11 Y 97 K 3
R 80 G 158 B 47	R 0 G 152 B 61	R 33 G 35 B 34	R 130 G 153 B 146	R 161 G 224 B 122

* Colors to be used for the sign shall be Pantone 362C, 348C, 419C, and Cool Grey 1

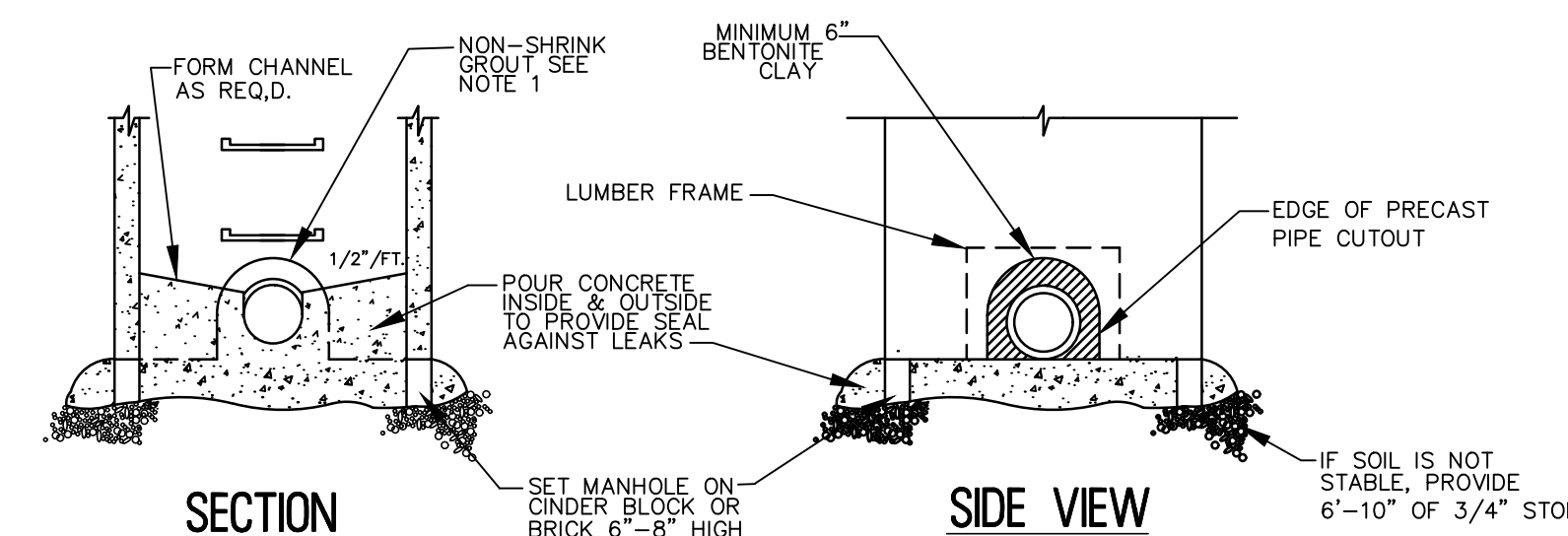


SIZE	MATERIAL	LEGEND	BACKGROUND
96"X60"	0.125" ALUMINUM	BLACK & GREEN	WHITE3M DIAMOND GRADE REFLECTIVE

- NOTES:
- LOCATION TO BE DETERMINED BY MIDDLESEX COUNTY.
 - THE MOST CURRENT MIDDLESEX COUNTY PROJECT IDENTIFICATION SIGN SHALL BE UTILIZED.



- NOTES:
- SPACE BETWEEN PIPE AND MANHOLE TO BE FILLED WITH NON-SHRINK GROUT AND COVERED WITH MINIMUM 6" BENTONITE CLAY. LUMBER FRAME TO BE PROVIDED TO ENSURE 6" BENTONITE OVERLAP ONTO PRECAST MANHOLE UNIT, AND REMAIN IN PLACE.
 - TOP HALF OF EXISTING STORM SEWER PIPE INSIDE MANHOLE TO BE REMOVED.



MANHOLE INSTALLATION OVER EXISTING PIPE (DOGHOUSE MANHOLE)

N.T.S.

FINAL

PREPARED BY: RVE REMINGTON & VERNICK ENGINEERS 429 Route 79, Suite 21 (732) 955-8000 Certificate of Authorization: 24 GA 28003300	REVISIONS <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>3/14/22</td> <td>DRB</td> </tr> <tr> <td>2</td> <td>7/20/22</td> <td>WJD</td> </tr> <tr> <td>3</td> <td>4/10/23</td> <td>WJD</td> </tr> <tr> <td>4</td> <td>7/17/23</td> <td>WJD</td> </tr> <tr> <td>5</td> <td>11/13/23</td> <td>WJD</td> </tr> </tbody> </table>	NO.	DATE	BY	1	3/14/22	DRB	2	7/20/22	WJD	3	4/10/23	WJD	4	7/17/23	WJD	5	11/13/23	WJD	County of Middlesex Department of Infrastructure Management Office of Engineering P.O. Box 871, New Brunswick, NJ 08901
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5	11/13/23	WJD																		
Designed By: TJM Drawn By: CFC Checked By: TV Approved By:	Scale: As noted Sheet No. 10 of 16 Date: NOVEMBER 3, 2021	REPLACEMENT OF CULVERT 1-C-627 RAHWAY AVENUE OVER A TRIBUTARY OF HEARDS BROOK TOWNSHIP OF WOODBRIDGE, MIDDLESEX COUNTY, NEW JERSEY CONSTRUCTION DETAILS																		

STANDARD FOR STABILIZATION WITH MULCH ONLY

Definition
Stabilizing exposed soils with non-vegetative materials.

Purpose
To protect exposed soil surfaces from erosion damage and to reduce off-site environmental damage.

Where Applicable
This practice is applicable to areas subject to erosion, where the season and other conditions may not be suitable for growing an erosion-resistant cover or where stabilization is needed for a short period until more suitable protection can be applied.

Methods and Materials

- Site Preparation**
 - Grade, as needed and feasible, to permit the use of conventional equipment for applying and anchoring mulch. All grading should be done in accordance with Standard for Land Grading, p. 11.
 - Employ needed erosion control practices such as diversions, grade stabilization structures, channel stabilization measures, sediment basins, and waterways. See Standards 4.2 through 4.16.
- Protective Materials**
 - Unrotted small-grain straw, hay, or salt hay at 2.0 to 2.5 tons per acre is spread uniformly at 90 to 115 pounds per 1,000 square feet and anchored with a mulch anchoring tool, liquid mulch binders, or netting tiedown. Other suitable materials may be used if approved by the Soil Conservation District.
 - Asphalt emulsion or cutback asphalt is recommended at the rate of 600 to 1,200 gallons per acre. This is suitable for a limited period of time where travel by people, animals, or machines is not a problem.
 - Synthetic or organic soil stabilizers may be used under suitable conditions and in sufficient quantities.
 - Wood-fiber or paper-fiber mulch at the rate of 1,500 pounds per acre may be applied by a hydrosower or hydromulcher.
 - Mulch types, such as paper, jute, eucalypt, or plastic, may be used.
 - Wood chips applied uniformly to a minimum depth of 2 inches may be used. Wood chips will not be used on areas where flowing water could wash them into an inlet and plug it.
 - Gravel, crushed stone or slag at the rate of 3 cubic yards per 1,000 sq. ft. applied uniformly to a minimum depth of 3 inches may be used. Size 2 or 3 (ASTM C-33) is recommended.
- Mulch Anchoring**
This should be accomplished immediately after placement of hay or straw mulch to minimize erosion. Mulch anchoring is usually available in rolls of 4 feet wide and up to 200 feet long.
- Fast and Tight**
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 square pattern. Secure twine around each peg with two or more round turns.
- Mulch Nettings**
Staple paper, cotton, or plastic nettings over hay or straw mulch. Use a degradable netting in areas where netting is usually available in rolls of 4 feet wide and up to 200 feet long.
- Mulch Anchoring Tool**
A tractor-drawn implement especially designed to punch and anchor mulch into the soil surface. This practice affords maximum erosion control, but it's use is limited to those slopes upon which the tractor can operate safely. Tool penetration should be done about 3 to 4 inches on sloping land, the operation should be done on the contour.
- Liquid Mulch - binders**
 - Applications should be heavier at edges where wind catches the mulch, in valleys, and at crests of banks. Remainder of area should be uniform in appearance.
 - Use one of the following:
 - Emulsified asphalt - (SS-1, CSS-1, CMS-2, MS-2, RS-1, RS-2, CRS-1, and CRS-2). Apply 0.04 gal./sq. yd. or 194 gal./acre on flat slopes and slopes less than 8 feet high. On slopes 8 feet or more high, use .075 gal./sq. yd. or 363 gal./acre.
 - Cutback asphalt - rapid curing (RC-70, RC-250, AND RC-800) or medium curing (MC-250, or MC-800). Apply 0.04 gal./sq. yd. or 194 gal./acre on flat areas and on slopes less than 8 feet high. On slopes 8 feet or more high, use 0.075 gal./sq. yd. or 363 gal./acre.
 - Synthetic or Organic binders - binders such as Curasol, DCA-70, Patro-set, and Ferro-Tack may be used at rates recommended by the manufacturer to anchor mulch materials.

Note: All names given above are registered trade names. This does not constitute a recommendation of these products to the exclusion of other products.

STANDARD FOR MAINTAINING VEGETATION

Definition
The perpetuation of vegetative cover.

Purpose
To assure the continuing function of the vegetative cover in the conservation of soil and water and the enhancement of the environment. It is usually less costly to carry on a maintenance program than it is to make repairs after an extended period of neglect.

Where Applicable
On areas where existing vegetation protects or enhances the environment.

Methods and Materials
A preventive maintenance program anticipates requirements and accomplishes work when it can be done with least effort and expense to insure adequate vegetative cover.

- Mowing is a recurring practice and its intensity depends upon the function of the ground cover. On improved areas, such as lawns, certain recreation fields, and picnic areas, mowing will be frequent. On semi-improved areas, mowing will be infrequent. Unimproved areas may be left unmowed to permit natural succession.
- Fertilizer should be applied as needed to maintain a dense stand of desirable species. Frequently mowed areas and those on sandy soils will require more fertilization.
- Liming requirements should be determined by soil testing every 2 to 3 years. Fertilization increases the need for liming.
- Weed invasion may result from abusive mowing and inadequate fertilization and liming. Brush invasion is a common consequence of lack of mowing. The amount of seeds or brush that can be tolerated in any protective planting depends upon the land category and its intended use. Drainage ways are subject to rapid infestation by weeds and woody plants. Their eradication requires the use of herbicides or mechanical methods.
- Fertilizer and disease control are more necessary on improved areas than on unimproved areas.
- Fire hazard is greater where dry vegetation has accumulated. The taller the vegetation, the greater the hazard.

STANDARD FOR TREE PROTECTION DURING CONSTRUCTION

Definition
Protection of desirable trees from environmental and mechanical injury during construction activities.

Purpose
To protect desirable trees that have value for erosion and sediment control, shade, aesthetics, song birds, other wildlife, dust control, noise abatement, and oxygen production.

Where Applicable
On new development sites containing valuable trees.

Methods and Materials

- The reconnaissance before clearing begins can result in an aesthetically pleasing development with natural vegetation rather than the presence of dead or dying trees. Inventory the site and clearly mark the trees to be saved. Consider relocating streets, houses, or other structures if necessary and feasible. Once clearing begins and damage to the trees occurs, valuable specimens may be lost.
- Characteristics of trees to be protected and saved, the following lists characteristics that should be evaluated before deciding to remove or protect a tree.
 - Tree Vigor**
Vigor is the overall condition of the tree. A tree of low vigor is more susceptible to damage by environmental changes than healthy trees and is more susceptible to insect and disease attacks. Indications of poor vigor include the dying of the tips of the branches and entire limbs, small annual twig growth, stunted leaf size, sparse foliage, and poor foliage color. Avoid saving hollow or rotten trees, trees cracked, split, leaning or crooked, oozing sap, or with broken tops.
 - Tree Age**
Very old, picturesque trees may be more aesthetically valuable than smaller, young trees, but also require more extensive protection measures. If leaving a very old tree, be sure it is sound and healthy.
 - Species**
Many species of trees found in New Jersey woodlands are not suitable for shade tree uses around buildings. Acid protecting trees, such as short-lived, brittle, have soft wood, many leaves, fruit, or are frequently attacked by insects and disease.
 - Resistant to Insects and Disease**
Avoid leaving trees in highly visible areas or specimens that are frequent targets of insects and disease. American Elm, for example, could be lost due to Dutch Elm Disease. White Cherry, another example, is a favorite host of the tent caterpillar, which causes defoliation of the trees in early summer.
 - Tree Aesthetics**
Choose trees that are aesthetically pleasing, exhibiting good shape and form. Avoid leaning, crooked, and misshapen trees. Occasionally, an odd-shaped tree or one of unusual form may add interest to the landscape if strategically located. Be sure the tree is structurally sound and vigorous.
 - Spring and Autumn Coloration**
Species differ in fall color. Some are bright red, others orange and yellow. Other species exhibit no autumn color, such as white, locust, and sycamore.
 - Wildlife Benefits**
Favor trees that are preferred by wildlife for food, cover, and nesting. A mixture of evergreens and deciduous is beneficial. Evergreen trees are important for covering during the winter months. The hardwoods are more valuable for food.
 - Air Pollution Susceptibility**
Tree species vary greatly in this respect. Symptoms vary from browning on the edges of the leaves and needles, to stunting in growth, to death of the tree.
 - Species Longevity**
Favor trees whose life span is long, such as oak, beech, and tulip poplar. Short-lived trees should be avoided for use as shade, lawn, or specimen trees. Although some short-lived trees have an attractive form or pleasing coloration in the spring or fall, such trees may not live for a long time.
- Criteria for protecting remaining trees:
 - Mechanical Damage** - see Figure 3.9-1.
 - Box trees** within 25 feet of a building site to prevent mechanical injury. Fencing or other barrier should be installed at the dip line of the tree branch. See Figure 3.9-1.
 - Roots** will not be tied to trees during building operations.
 - Feeder roots** should not be cut in an area inside the dip line of the tree branches.
 - Damaged trunks or exposed roots** will be pointed immediately with a good grade of "tree point". Care for serious injury should be prescribed by a professional forester or licensed tree expert.
 - Tree limb removal**, where necessary, will be done flush to trunk or main branch and that area pointed with a good grade of tree point.

Note: For more specific data on certain tree characteristics, consult the tree shrub and vine standard in this handbook (pg. 3.6.1) or consult local professional experts. Your local soil conservation district or county agricultural agent can assist you in this.

STANDARD FOR STABILIZED CONSTRUCTION ACCESS

Definition
A stabilized pad of crushed stone located at points where traffic will be accessing a construction site.

Purpose
The purpose of a stabilized construction access is to reduce the tracking or flowing of sediment onto paved roadways (or other impervious surfaces).

Conditions Where Practice Applies
A stabilized construction exit applies to points of construction ingress and egress where sediment may be tracked or flow off the construction site.

Water Quality Enhancement
Needed at all points where construction vehicles access paved roadways from unpaved areas of the site.

Design Criteria
Thickness - not less than six (6) inches.
Width - not less than full width of points of ingress or egress.
Length - 50 feet minimum where the soils are coarse grained (sands or gravels) or 100 feet minimum where soils are fine grained (clays or silts), except where the traveled length is less than 50 or 100 feet respectively. These lengths may be increased where field conditions dictate.
Stormwater from up-slope areas shall be diverted away from the stabilized pad (see Standard for Diversions, pg. 3-1). Where diversion is not possible, the length of the stabilized pad shall be as shown in Table 29-1. The slope of the access road exceeds 5%, a stabilized base course of fine aggregate bituminous concrete (FABC) shall be installed. The type and thickness of the FABC and use of a dense graded aggregate sub-base shall be as prescribed by local municipal ordinance or other governing authority.

SILT FENCE DETAIL
N.T.S.

EMBEDDING DETAIL
N.T.S.

STANDARD FOR TROPICAL SOIL PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION

Definition
Establishment of permanent vegetative cover on exposed soils where perennial vegetation is needed for long term protection.

Purpose
To permanently stabilize the soil, assuring conservation of soil and water, and to enhance the environment.

Water Quality Enhancement
Stays the over land movement of stormwater runoff, increases infiltration and retains soil and nutrients on site, protecting streams or other stormwater conveyances.

Where Applicable
On exposed soils that have a potential for causing off-site environmental damage.

Methods and Materials

- Site Preparation**
 - Grade as needed and feasible to permit the use of conventional equipment for seeded preparation, seeding, mulch application, and mulch anchoring. All grading should be done in accordance with Standard for Land Grading, p. 19-1.
 - Immediately prior to seeding and topsoil application, 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.).
 - 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.
- Seeded Preparation**
 - Apply good limestone and fertilizer according to soil test recommendations such as offered by Rutgers Co-operative Extension. Soil sample matters are available from the local Rutgers Co-operative Extension offices. Fertilizer shall be applied at the rate of 500 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 in accordance with Table 4-1, pg. 4-2 and the results of soil tests. Calcium carbonate shall be used for areas too steep for conventional equipment to transport or apply limestone. Limestone application rates are given in Table 4-1 as a general guideline for limestone application rates.
- Planting**
 - Pulverized dolomitic limestone is preferred for most soils south of the New Brunswick-Trenton line.
 - Work line 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 discing operation should be done on the contour. Continue tillage until a reasonably uniform seedbed is prepared.
 - 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.).
 - High acid producing soil.

Sols having a pH of 4 or less or containing iron sulfide shall be covered with a minimum of 12 inches of soil having a pH of 5 or more before initiating seeded preparation. See Standard for Management of High Acid Producing Soils, pg. 1-1.

Table 4-1
Limestone Application Rate by Soil Texture

SOIL TEXTURE	TONS/ACRE	LBS./1000 SQ. FT.
Clay, clay loam, and high organic soil	3	135
Sandy loam, silt loam	2	90
Loamy sand, sand	1	45

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Where Applicable
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Methods and Materials

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- Criteria for protecting remaining trees:
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 - Box trees** within 25 feet of a building site to prevent mechanical injury. Fencing or other barrier should be installed at the dip line of the tree branch. See Figure 3.9-1.
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Water Quality Enhancement
Needed at all points where construction vehicles access paved roadways from unpaved areas of the site.

Design Criteria
Thickness - not less than six (6) inches.
Width - not less than full width of points of ingress or egress.
Length - 50 feet minimum where the soils are coarse grained (sands or gravels) or 100 feet minimum where soils are fine grained (clays or silts), except where the traveled length is less than 50 or 100 feet respectively. These lengths may be increased where field conditions dictate.
Stormwater from up-slope areas shall be diverted away from the stabilized pad (see Standard for Diversions, pg. 3-1). Where diversion is not possible, the length of the stabilized pad shall be as shown in Table 29-1. The slope of the access road exceeds 5%, a stabilized base course of fine aggregate bituminous concrete (FABC) shall be installed. The type and thickness of the FABC and use of a dense graded aggregate sub-base shall be as prescribed by local municipal ordinance or other governing authority.

TABLE 29-1: Lengths of Construction Exits on Sloping Roadbeds

Percent Slope of Roadway	Length of Stone Required	
	Coarse Grained Soils	Fine Grained Soils
0 to 2%	50 ft.	100 ft.
2 to 5%	50 ft.	100 ft.
>5%	Entire surface stabilized with FABC base course	

SEDIMENT CONTROL BAG FOR DEWATERING
N.T.S.

Table 29-1: Lengths of Construction Exits on Sloping Roadbeds

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0 to 2%	50 ft.	100 ft.
2 to 5%	50 ft.	100 ft.
>5%	Entire surface stabilized with FABC base course	

1. As prescribed by local ordinance or other governing authority.

Where a stabilized construction exit traverses between two buildings, it shall be stoned the entire length of the right-of-way. Movable stone berms placed across the width of the exit may also be required at the transition point between paved and non-paved areas to trap sediments which are carried by stormwater flowing along the curbline.

Individual lot entrance and egress - After interior roadways are paved, individual lot inlets/egress points may require a stabilized construction entrance consisting of no. 3 stone (1/2" to 2") to prevent or minimize tracking of sediments. Width of the stone inlets/egress shall be equal to lot entrance width and shall be a minimum of ten feet in length. If space is limited, vehicle tires may be washed with clean water before entering a paved area. A wash station must be located such that wash water will not flow into paved roadways or into unprotected storm drainage systems.

When the construction access exits onto a major roadway, a paved transition area may be installed between the major roadway and the stoned entrance to prevent loose stones from being transported onto the roadway by heavy equipment entering or leaving the site.

Maintenance
The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto roadways. This may require periodic treading with additional stone or additional length as conditions demand and repair and/or cleaning of any measures used to trap sediment. All sediment spilled, dropped, washed, or tracked onto roadways (public or private) or other impervious surfaces must be removed immediately. Where accumulation of dust/sediment is inadequately cleaned or removed by conventional methods, a power broom or street sweeper will be required to clean paved or impervious surfaces. All other access points which are not stabilized shall be blocked off.

STANDARD FOR SEDIMENT BARRIER

Definition
A temporary barrier installed across or at the toe of a slope.

Purpose
The purpose of a sediment barrier is to intercept and detain small amounts of sediment from unprotected areas of limited extent.

Conditions Where Practice Applies
The sediment barrier is used where:

- No other practice is feasible.
- There is no concentration of water in a channel or other drainage above the barrier, and
- Erosion would occur in the form of sheet or rill erosion.

Design Criteria
All types of sediment barriers:

- Contributing drainage area is less than 1 acre and the length of slope above the barrier is less than 150 feet.
- The slope of the contributing drainage area for at least 30 feet adjacent to the barrier shall not exceed 5%.
- The barrier shall be constructed so water cannot bypass the barrier around the ends.
- Inspection shall be frequent and repair or replacement shall be made promptly as needed.
- The barrier shall be removed when it has served its usefulness so as not to block or impede storm flow or drainage.

Requirements for bode barrier (e.g., straw, hay, or other acceptable vegetative material):

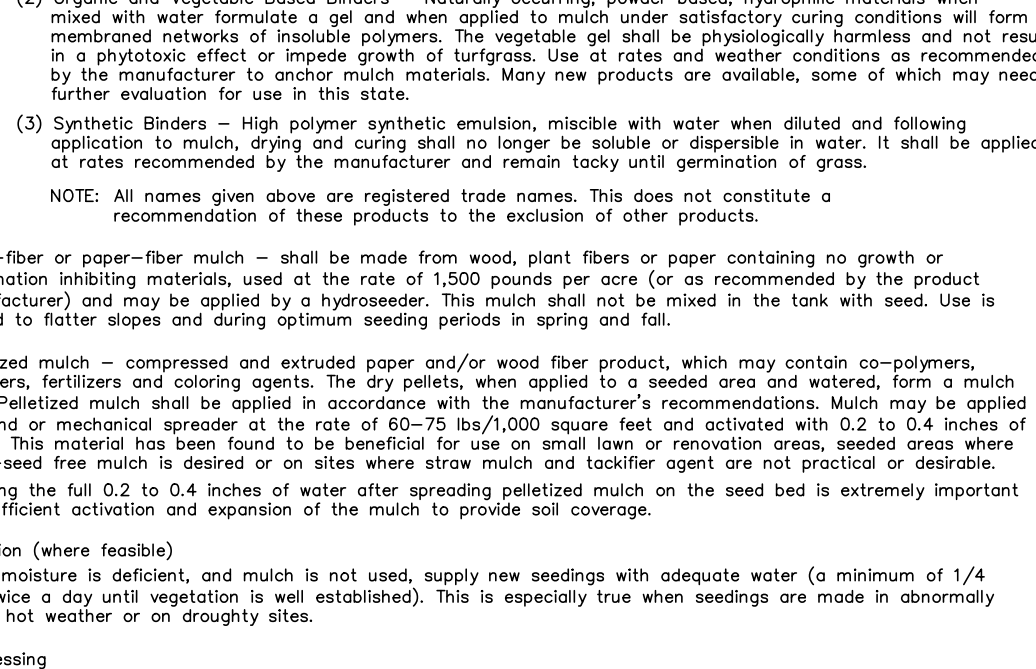
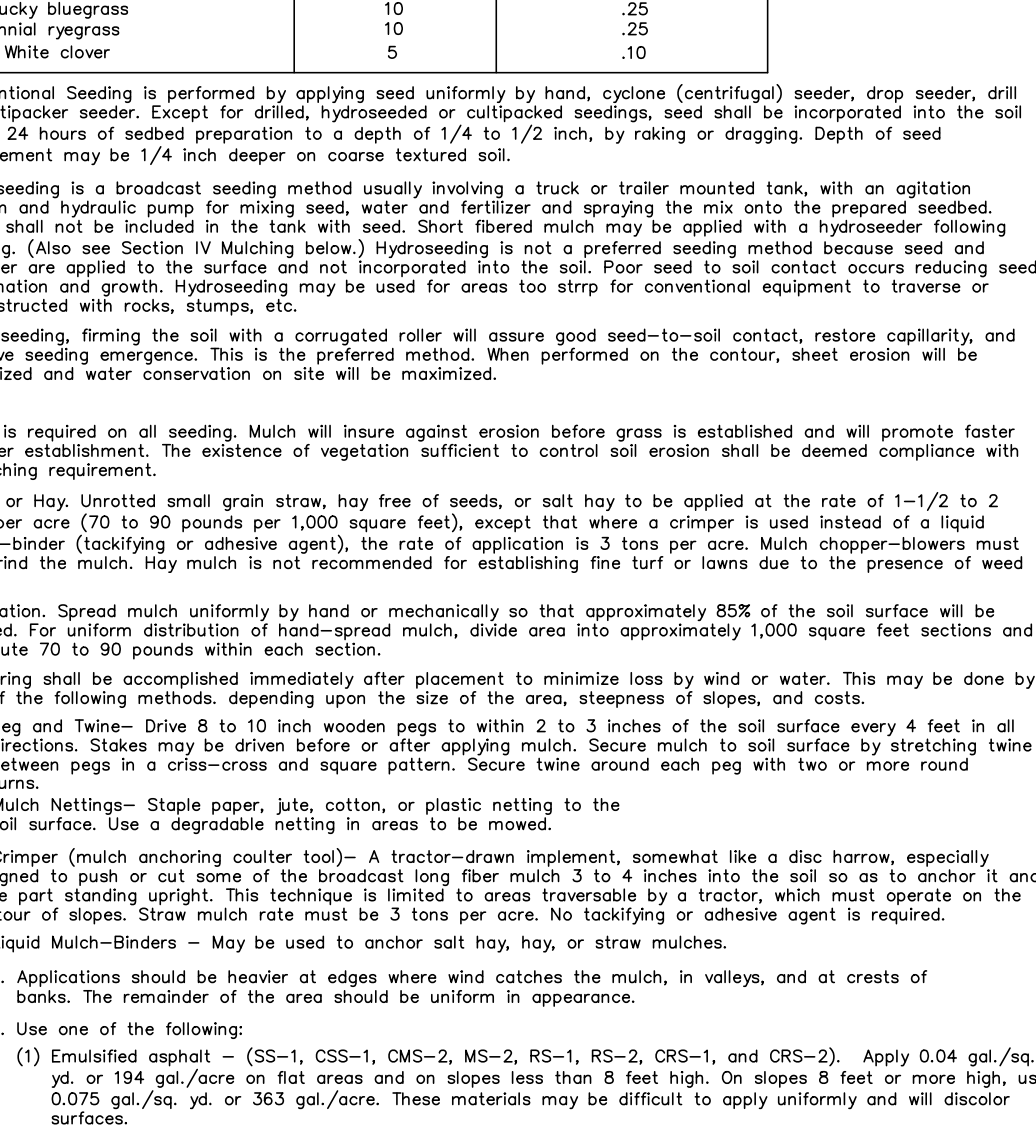
- All bales shall be securely tied and stacked on the contour. See Figure 4.13-1 for details.
- Bales shall be placed in a row with ends tightly abutting the adjacent bales.
- Each bale shall be embedded in the soil a minimum of 4 inches.
- Bales shall be securely anchored in place by two stakes or rebars driven through each bale. The first stake in each bale shall be driven toward previously laid bale to force bales together.

Requirements for silt fence:

- Fence posts shall be spaced 8 feet center-to-center or closer. They shall extend at least 2 feet into the ground. They shall extend at least 2 feet above the ground.
- A metal fence with 6 inch or smaller openings and at least 2 feet high may be utilized, fastened to the fence posts.
- A filter fabric, recommended for such use by the manufacturer, shall be buried at least 6 inches deep in the ground. The filter fabric shall extend at least 2 feet above the ground. Filter fabric may be fastened in place by stake or other accepted means as specified by the district office.

Requirements for stone barrier:

- The stone shall be piled to a natural angle of repose with a height of at least 2 feet.
- The stone shall meet ASTM C-33 size No. 2 or 3.



SEDIMENT CONTROL BAG FOR DEWATERING
N.T.S.

Table 29-1: Lengths of Construction Exits on Sloping Roadbeds

Percent Slope of Roadway	Length of Stone Required	
	Coarse Grained Soils	Fine Grained Soils
0 to 2%	50 ft.	100 ft.
2 to 5%	50 ft.	100 ft.
>5%	Entire surface stabilized with FABC base course	

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Maintenance
The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto roadways. This may require periodic treading with additional stone or additional length as conditions demand and repair and/or cleaning of any measures used to trap sediment. All sediment spilled, dropped, washed, or tracked onto roadways (public or private) or other impervious surfaces must be removed immediately. Where accumulation of dust/sediment is inadequately cleaned or removed by conventional methods, a power broom or street sweeper will be required to clean paved or impervious surfaces. All other access points which are not stabilized shall be blocked off.

STANDARD FOR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

Definition
Establishment of temporary vegetative cover on soils exposed for periods of two to six months through the use of 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 traversable by a tractor, which must operate on the contour of slopes. Straw mulch must be 3 tons per acre. No tackifying or adhesive agent is required.

Purpose
To temporarily stabilize the soil and reduce damage from wind and water erosion until permanent stabilization is accomplished.

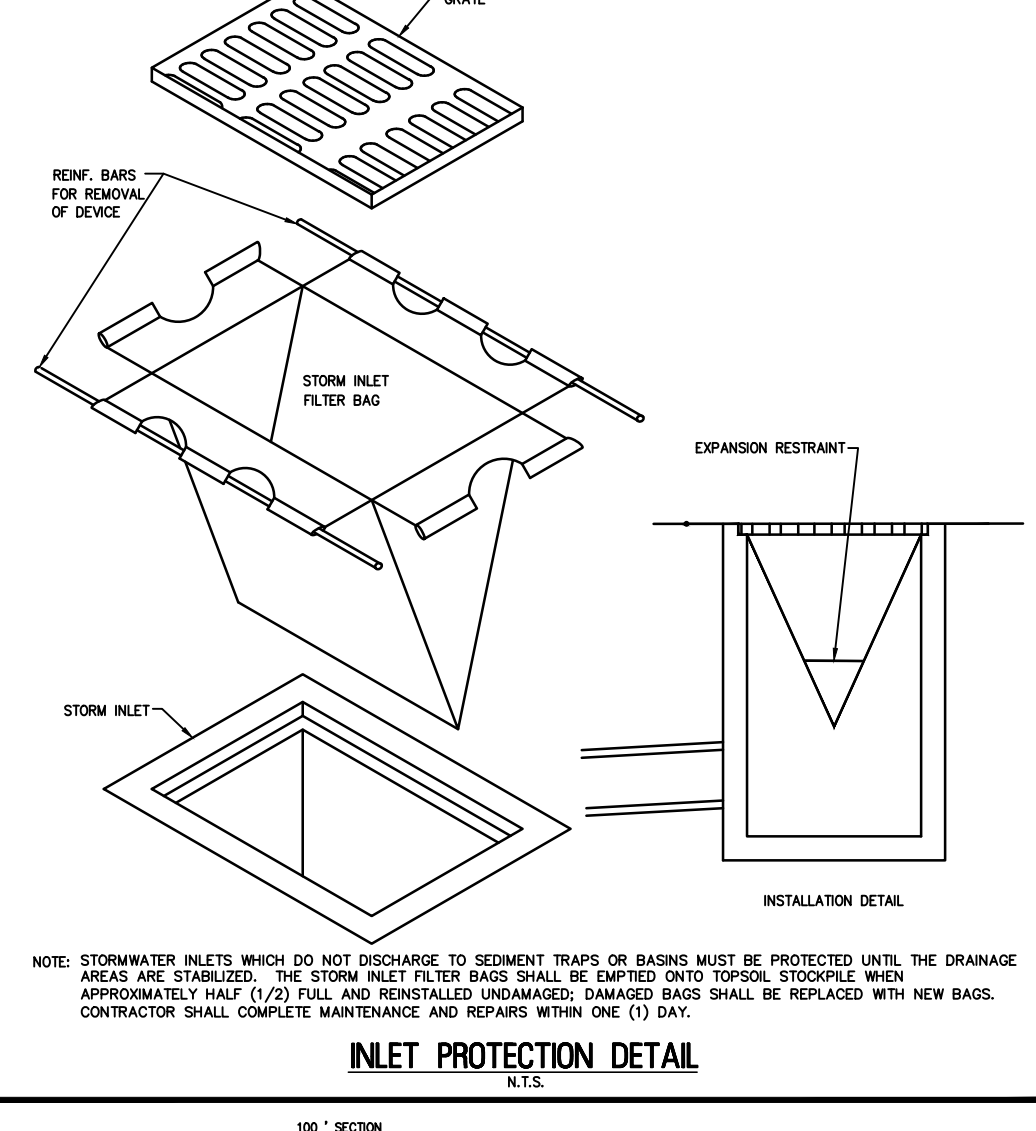
Water Quality Enhancement
Provides temporary protection against the impacts of wind and rain, slows the over land movement of stormwater runoff, increases infiltration and retains soil and nutrients on site, protecting streams or other stormwater conveyances.

Where Applicable
On exposed soils that have the potential for causing off-site environmental damage.

Methods and Materials

- Site Preparation**
 - Grade as needed and feasible to permit the use of conventional equipment for seeded preparation, seeding, mulch application, and mulch anchoring. All grading should be done in accordance with Standard for Land Grading, p. 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.
- Seeded Preparation**
 - Apply good limestone and fertilizer according to soil test recommendations such as offered by Rutgers Co-operative Extension. Soil sample matters are available from the local Rutgers Co-operative Extension offices. Fertilizer shall be applied at the rate of 500 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 in accordance with Table 4-1, pg. 4-2 and the results of soil tests. Calcium carbonate shall be used for areas too steep for conventional equipment to transport or apply limestone. Limestone application rates are given in Table 4-1 as a general guideline for limestone application rates.
- Planting**
 - Pulverized dolomitic limestone is preferred for most soils south of the New Brunswick-Trenton line.
 - Work line 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 discing operation should be done on the general contour. Continue tillage until a reasonably uniform seedbed is prepared.
 - 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.).
 - High acid producing soil.

Sols having a pH of 4 or less or containing iron sulfide shall be covered with a minimum of 12 inches of soil having a pH of 5 or more before initiating seeded preparation. See Standard for Management of High Acid Producing Soils, pg. 1-1.



SOIL EROSION AND SEDIMENT CONTROL NOTES

- The Freehold Soil Conservation District shall be notified forty-eight (48) hours in advance of any soil disturbing activity.
- 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.
- 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.
- 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 Plans and Standards for Soil Erosion and Sediment Control in New Jersey and a Report of Compliance has been filed with the District. Written notification of 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 sequence of development and temporary measures for soil erosion and sediment control have been implemented, including provisions for stabilization and site work.
- Any disturbed areas that will be left 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 shall be mulched with straw, or equivalent material, at a rate of 2 to 2 1/2 tons per acre, according to the Standard for Stabilization with Mulch Only.
- Immediately following initial disturbance or rough grading, all critical areas subject to erosion (i.e. soil stabilizers, 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 State Standards.
- 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.
- 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 blocked off.

REVISIONS

NO.	DATE	BY
1	3/14/22	DRB
2	7/20/22	WJD
3	4/10/23	WJD
4	7/17/23	WJD
5	11/13/23	WJD

Prepared By: **RVE REMINGTON & VERNICK ENGINEERS**
429 Route 79, Suite 21
(732) 955-8000
Certificate of Authorization: 24 CA 28003300

Designed By: **CFC**
Drawn By: **CFC**
Checked By: **TV**
Approved By: **TV**

Date: **11/13/23**

STANDARD FOR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

Definition
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Purpose
To temporarily stabilize the soil and reduce damage from wind and water erosion until permanent stabilization is accomplished.

Water Quality Enhancement
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Where Applicable
On exposed soils that have the potential for causing off-site environmental damage.

Methods and Materials

- Site Preparation**
 - Grade as needed and feasible to permit the use of conventional equipment for seeded preparation, seeding, mulch application, and mulch anchoring. All grading should be done in accordance with Standard for Land Grading, p. 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.
- Seeded Preparation**
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- Planting**
 - Pulverized dolomitic limestone is preferred for most soils south of the New Brunswick-Trenton line.
 - Work line 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 discing operation should be done on the general contour. Continue tillage until a reasonably uniform seedbed is prepared.
 - 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.).
 - High acid producing soil.

Sols having a pH of 4 or less or containing iron sulfide shall be covered with a minimum of 12 inches of soil having a pH of 5 or more before initiating seeded preparation. See Standard for Management of High Acid Producing Soils, pg. 1-1.

Table 7-1
Limestone Application Rate by Soil Texture

SOIL TEXTURE	TONS/ACRE	LBS./1000 SQ. FT.
Clay, clay loam, and high organic soil	3	135
Sandy loam, silt loam	2	90
Loamy sand, sand	1	45

Table 7-1: Lengths of Construction Exits on Sloping Roadbeds

Percent Slope of Roadway	Length of Stone Required	
	Coarse Grained Soils	Fine Grained Soils
0 to 2%	50 ft.	100 ft.
2 to 5%	50 ft.	100 ft.
>5%	Entire surface stabilized with FABC base course	

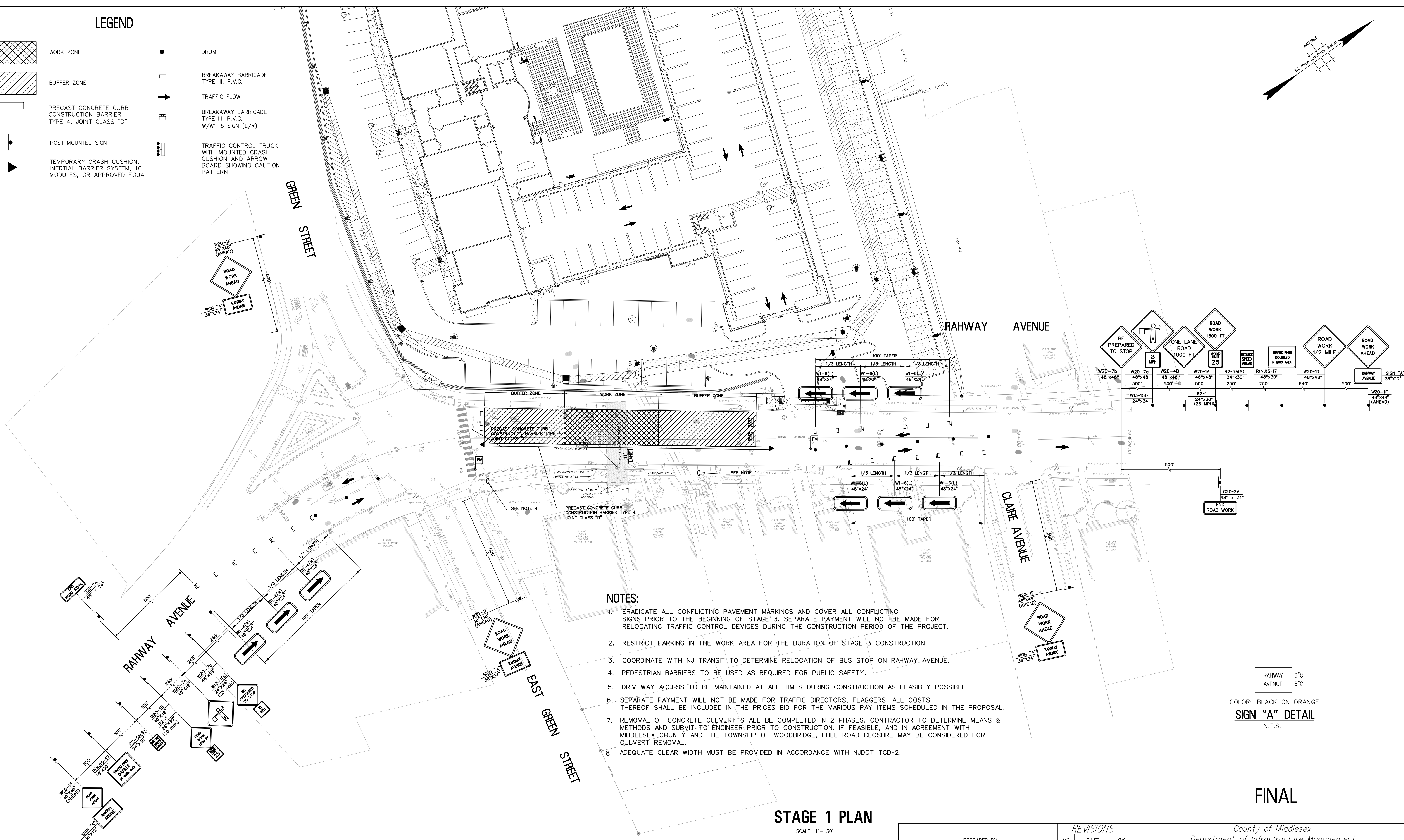
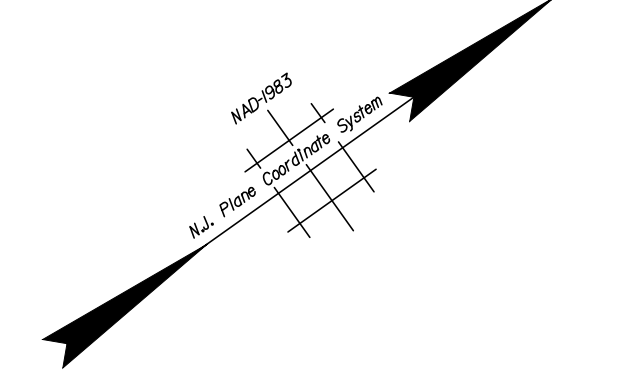
1. As prescribed by local ordinance or other governing authority.

Where a stabilized construction exit traverses between two buildings, it shall be stoned the entire length of the right-of-way. Movable stone berms placed across the width of the exit may also be required at the transition point between paved and non-paved areas to trap sediments which are carried by stormwater flowing along the curbline.

Individual lot entrance and egress - After interior roadways are paved, individual lot inlets/egress points may require a stabilized construction entrance consisting of no. 3 stone (1/2" to 2") to prevent or minimize tracking of sediments. Width of the stone inlets/egress shall be equal to lot entrance width and shall be a minimum of

LEGEND

- WORK ZONE
- BUFFER ZONE
- PRECAST CONCRETE CURB CONSTRUCTION BARRIER TYPE 4, JOINT CLASS "D"
- POST MOUNTED SIGN
- TEMPORARY CRASH CUSHION, INERTIAL BARRIER SYSTEM, 10 MODULES, OR APPROVED EQUAL
- DRUM
- BREAKAWAY BARRICADE TYPE III, P.V.C.
- TRAFFIC FLOW
- BREAKAWAY BARRICADE TYPE III, P.V.C. W/W1-6 SIGN (L/R)
- TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION AND ARROW BOARD SHOWING CAUTION PATTERN

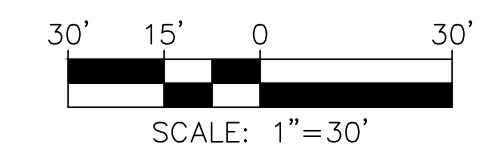


- NOTES:**
1. ERADICATE ALL CONFLICTING PAVEMENT MARKINGS AND COVER ALL CONFLICTING SIGNS PRIOR TO THE BEGINNING OF STAGE 3. SEPARATE PAYMENT WILL NOT BE MADE FOR RELOCATING TRAFFIC CONTROL DEVICES DURING THE CONSTRUCTION PERIOD OF THE PROJECT.
 2. RESTRICT PARKING IN THE WORK AREA FOR THE DURATION OF STAGE 3 CONSTRUCTION.
 3. COORDINATE WITH NJ TRANSIT TO DETERMINE RELOCATION OF BUS STOP ON RAHWAY AVENUE.
 4. PEDESTRIAN BARRIERS TO BE USED AS REQUIRED FOR PUBLIC SAFETY.
 5. DRIVEWAY ACCESS TO BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AS FEASIBLY POSSIBLE.
 6. SEPARATE PAYMENT WILL NOT BE MADE FOR TRAFFIC DIRECTORS, FLAGGERS. ALL COSTS THEREOF SHALL BE INCLUDED IN THE PRICES BID FOR THE VARIOUS PAY ITEMS SCHEDULED IN THE PROPOSAL.
 7. REMOVAL OF CONCRETE CULVERT SHALL BE COMPLETED IN 2 PHASES. CONTRACTOR TO DETERMINE MEANS & METHODS AND SUBMIT TO ENGINEER PRIOR TO CONSTRUCTION. IF FEASIBLE, AND IN AGREEMENT WITH MIDDLESEX COUNTY AND THE TOWNSHIP OF WOODBRIDGE, FULL ROAD CLOSURE MAY BE CONSIDERED FOR CULVERT REMOVAL.
 8. ADEQUATE CLEAR WIDTH MUST BE PROVIDED IN ACCORDANCE WITH NJDOT TCD-2.

RAHWAY AVENUE 6" = 6'
 CLARE AVENUE 6" = 6'
 COLOR: BLACK ON ORANGE
SIGN "A" DETAIL
 N.T.S.

STAGE 1 PLAN
 SCALE: 1" = 30'

LEGEND											
SIGN DESIGNATION	MESSAGE	SIZE (IN. X IN.)	QUANTITY	SIGN DESIGNATION	MESSAGE	SIZE (IN. X IN.)	QUANTITY	SIGN DESIGNATION	MESSAGE	SIZE (IN. X IN.)	QUANTITY
R2-5A(S)	REDUCE SPEED AHEAD	24 x 30	2	W1-6 (R)	RIGHT ARROW (SYMBOL)	48 x 24	3	W20-1F	ROAD WORK AHEAD	48 x 48	5
R(NJ)5-17	TRAFFIC FINES DOUBLED IN WORK AREA	48 x 30	2	W5-1(S)	ROAD NARROWS	36 x 36	0	W20-4B	ONE LANE ROAD 1000 FT	48 x 48	1
R2-1	SPEED LIMIT 25 MPH	48 x 30	2	W13-1(P)	ADVISORY SPEED PLAQUE (25 MPH)	18 x 18	2	W20-7A	FLAGGER (SYMBOL)	48 x 48	2
W1-4a (L)	SHIFT LEFT (SYMBOL)	48 x 48	0	W20-1A	ROAD WORK 1500 FT	48 x 48	0	W20-7B	BE PREPARED TO STOP	48 x 48	2
W1-4a (R)	SHIFT RIGHT (SYMBOL)	48 x 48	0	W20-1B	ROAD WORK 1000 FT	48 x 48	1	G20-2A	END ROAD WORK	48 x 24	2
W1-6 (L)	LEFT ARROW (SYMBOL)	48 x 24	6	W20-1D	ROAD WORK 1/2 MILE	48 x 48	1	"A"	RAHWAY AVENUE	36 x 24	5



PREPARED BY:
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 429 Route 79, Suite 21
 (732) 955-8000
 Certificate of Authorization: 24 CA 28003300

Terence M. Vojt
 Licensed Professional Engineer
 License No. 33773

11/13/23
 Date

REVISIONS		
NO.	DATE	BY
1	3/14/22	DRB
2	7/20/22	WJD
3	4/10/23	WJD
4	7/17/23	WJD
5	11/13/23	WJD

County of Middlesex
 Department of Infrastructure Management
 Office of Engineering
 P.O. Box 871, New Brunswick, NJ 08901

REPLACEMENT OF CULVERT 1-C-627
 RAHWAY AVENUE OVER A TRIBUTARY OF HEARDS BROOK

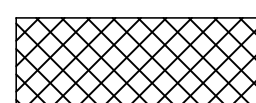
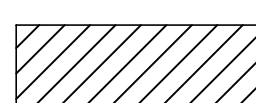
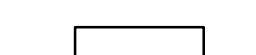

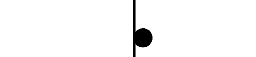





TOWNSHIP OF WOODBRIDGE, MIDDLESEX COUNTY, NEW JERSEY

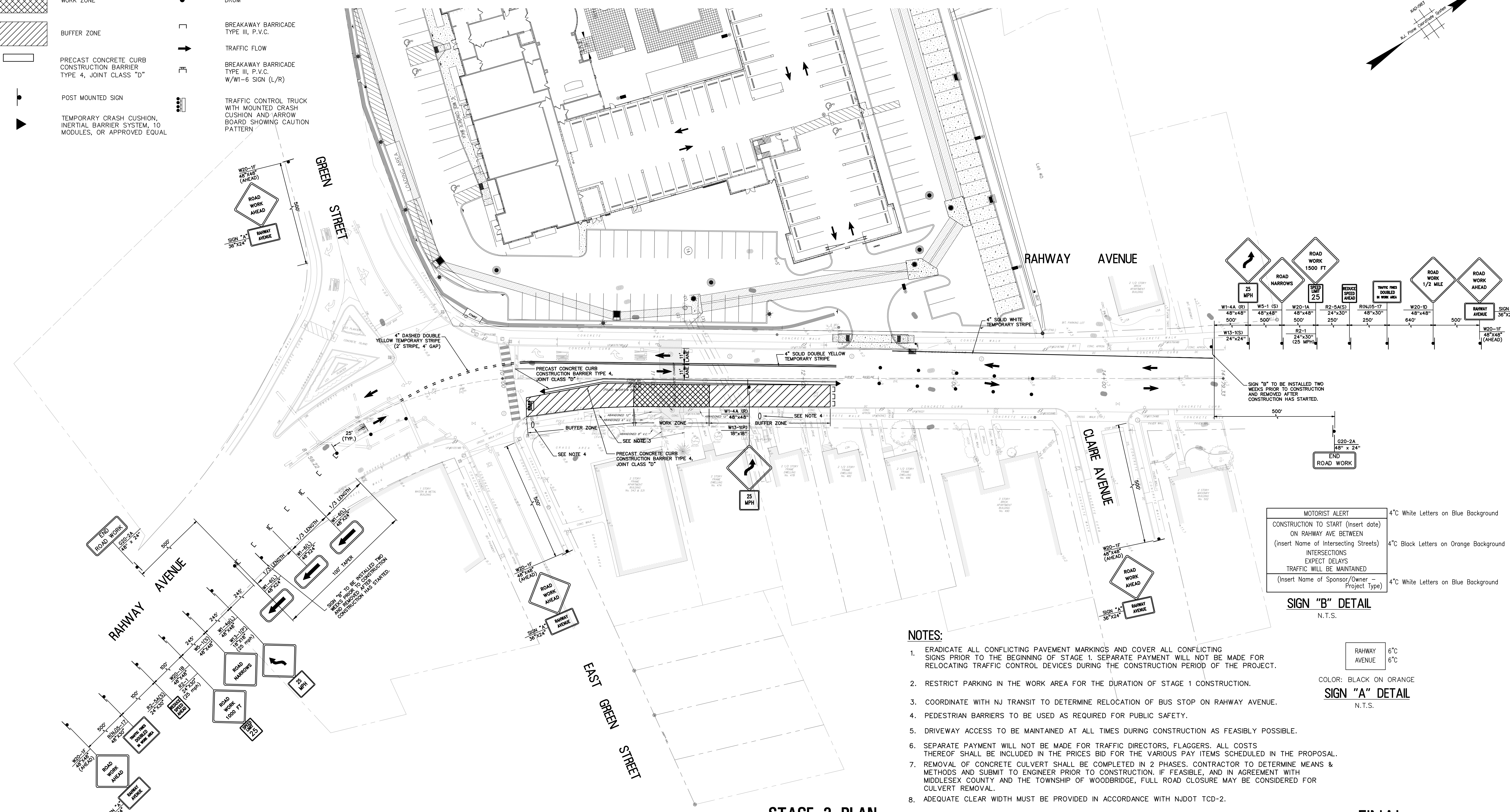
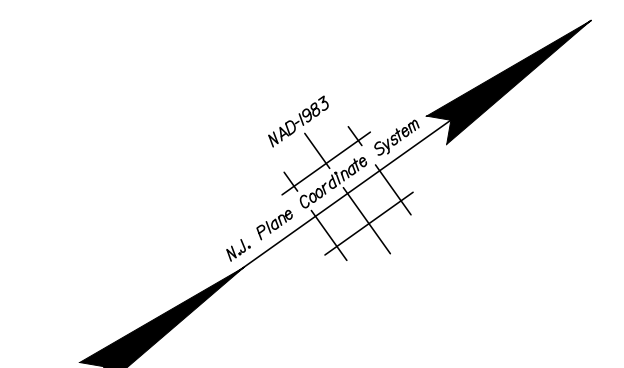
MAINTENANCE & PROTECTION OF TRAFFIC – STAGE 1

Scale: As noted
 Sheet No. 12 of 16
 Date: NOVEMBER 3, 2021

FINAL

LEGEND

-  WORK ZONE
-  BUFFER ZONE
-  PRECAST CONCRETE CURB CONSTRUCTION BARRIER TYPE 4, JOINT CLASS "D"
-  POST MOUNTED SIGN
-  TEMPORARY CRASH CUSHION, INERTIAL BARRIER SYSTEM, 10 MODULES, OR APPROVED EQUAL
-  DRUM
-  BREAKAWAY BARRICADE TYPE III, P.V.C.
-  TRAFFIC FLOW
-  BREAKAWAY BARRICADE TYPE III, P.V.C. W/W1-6 SIGN (L/R)
-  TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION AND ARROW BOARD SHOWING CAUTION PATTERN



STAGE 2 PLAN
SCALE: 1" = 30'

NOTES:

1. ERADICATE ALL CONFLICTING PAVEMENT MARKINGS AND COVER ALL CONFLICTING SIGNS PRIOR TO THE BEGINNING OF STAGE 1. SEPARATE PAYMENT WILL NOT BE MADE FOR RELOCATING TRAFFIC CONTROL DEVICES DURING THE CONSTRUCTION PERIOD OF THE PROJECT.
2. RESTRICT PARKING IN THE WORK AREA FOR THE DURATION OF STAGE 1 CONSTRUCTION.
3. COORDINATE WITH NJ TRANSIT TO DETERMINE RELOCATION OF BUS STOP ON RAHWAY AVENUE.
4. PEDESTRIAN BARRIERS TO BE USED AS REQUIRED FOR PUBLIC SAFETY.
5. DRIVEWAY ACCESS TO BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AS FEASIBLY POSSIBLE.
6. SEPARATE PAYMENT WILL NOT BE MADE FOR TRAFFIC DIRECTORS, FLAGGERS. ALL COSTS THEREOF SHALL BE INCLUDED IN THE PRICES BID FOR THE VARIOUS PAY ITEMS SCHEDULED IN THE PROPOSAL.
7. REMOVAL OF CONCRETE CULVERT SHALL BE COMPLETED IN 2 PHASES. CONTRACTOR TO DETERMINE MEANS & METHODS AND SUBMIT TO ENGINEER PRIOR TO CONSTRUCTION. IF FEASIBLE, AND IN AGREEMENT WITH MIDDLESEX COUNTY AND THE TOWNSHIP OF WOODBRIDGE, FULL ROAD CLOSURE MAY BE CONSIDERED FOR CULVERT REMOVAL.
8. ADEQUATE CLEAR WIDTH MUST BE PROVIDED IN ACCORDANCE WITH NJDOT TCD-2.

SIGN "B" DETAIL
N.T.S.

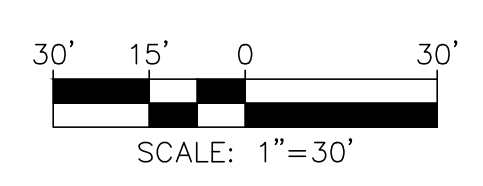
MOTORIST ALERT	4" C White Letters on Blue Background
CONSTRUCTION TO START (Insert date)	
ON RAHWAY AVE BETWEEN	
(insert Name of Intersecting Streets)	4" C Black Letters on Orange Background
INTERSECTIONS	
EXPECT DELAYS	
TRAFFIC WILL BE MAINTAINED	
(Insert Name of Sponsor/Owner - Project Type)	4" C White Letters on Blue Background

SIGN "A" DETAIL
N.T.S.

RAHWAY AVENUE	6" C
	6" C

COLOR: BLACK ON ORANGE

LEGEND											
SIGN DESIGNATION	MESSAGE	SIZE (IN. X IN.)	QUANTITY	SIGN DESIGNATION	MESSAGE	SIZE (IN. X IN.)	QUANTITY	SIGN DESIGNATION	MESSAGE	SIZE (IN. X IN.)	QUANTITY
R2-5A(S)	REDUCE SPEED AHEAD	24 x 30	2	W5-1(S)	ROAD NARROWS	36 x 36	2	G20-2A	END ROAD WORK	48 x 24	2
R(NJ)5-17	TRAFFIC FINES DOUBLED IN WORK AREA	48 x 30	2	W13-1(P)	ADVISORY SPEED PLAQUE (25 MPH)	18 x 18	3	"A"	RAHWAY AVENUE	36 x 24	5
R2-1	SPEED LIMIT 25 MPH	48 x 30	2	W20-1A	ROAD WORK 1500 FT	48 x 48	1	"B"	SEE SIGN DETAIL	72 x 60	2
W1-4a (L)	SHIFT LEFT (SYMBOL)	48 x 48	1	W20-1B	ROAD WORK 1000 FT	48 x 48	1				
W1-4a (R)	SHIFT RIGHT (SYMBOL)	48 x 48	2	W20-1D	ROAD WORK 1/2 MILE	48 x 48	1				
W1-6 (L)	LEFT ARROW (SYMBOL)	48 x 24	3	W20-1F	ROAD WORK AHEAD	48 x 48	5				



PREPARED BY:
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429 Route 79, Suite 21
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Certificate of Authorization: 24 CA 28003300

Terence M. Voigt
11/13/23
Date
Terence M. Voigt
Licensed Professional Engineer
License No. 33773

REVISIONS		
NO.	DATE	BY
1	3/14/22	DRB
2	7/20/22	WJD
3	4/10/23	WJD
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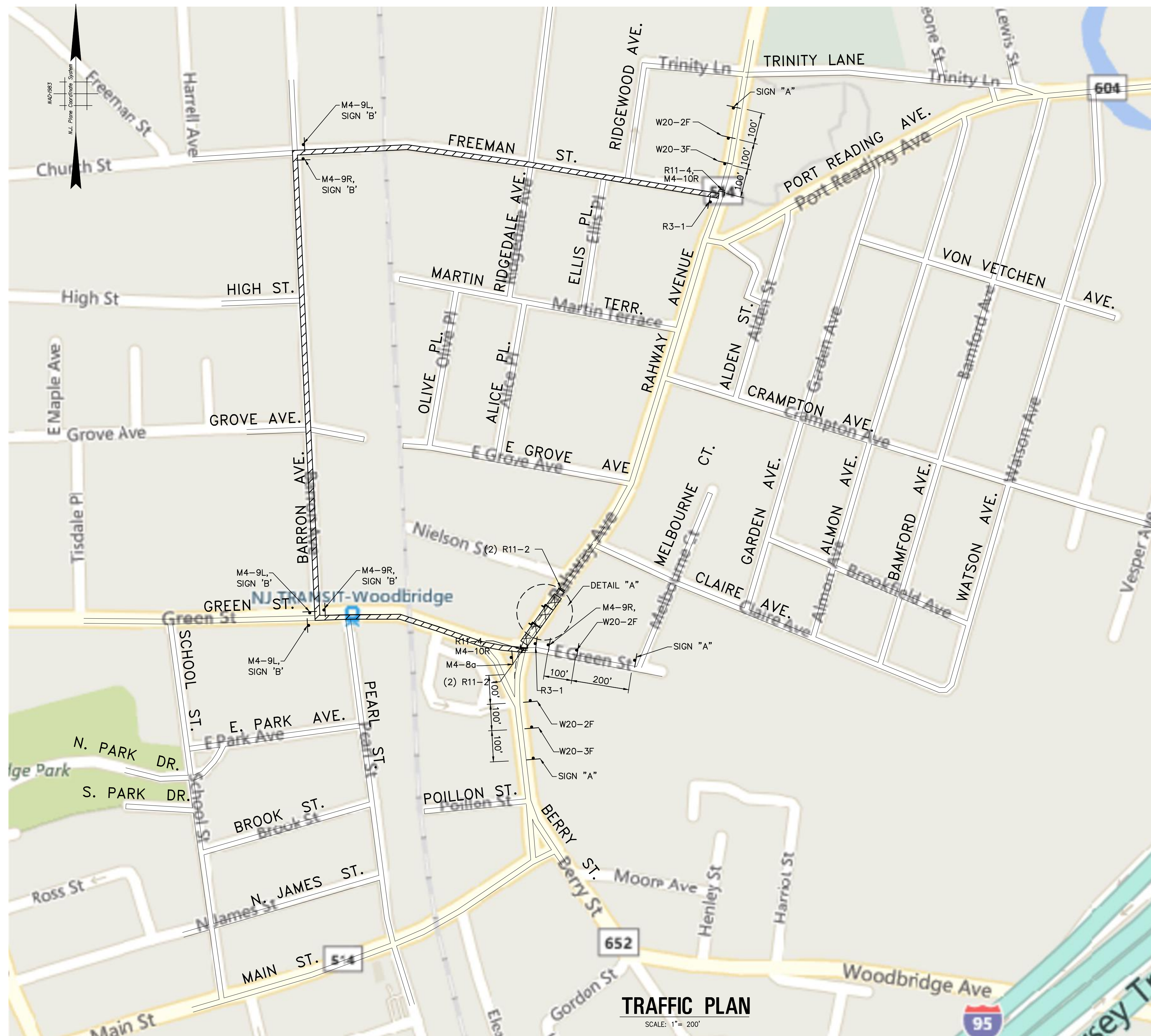
County of Middlesex
Department of Infrastructure Management
Office of Engineering
P.O. Box 871, New Brunswick, NJ 08901

REPLACEMENT OF CULVERT 1-C-627
RAHWAY AVENUE OVER A TRIBUTARY OF HEARDS BROOK

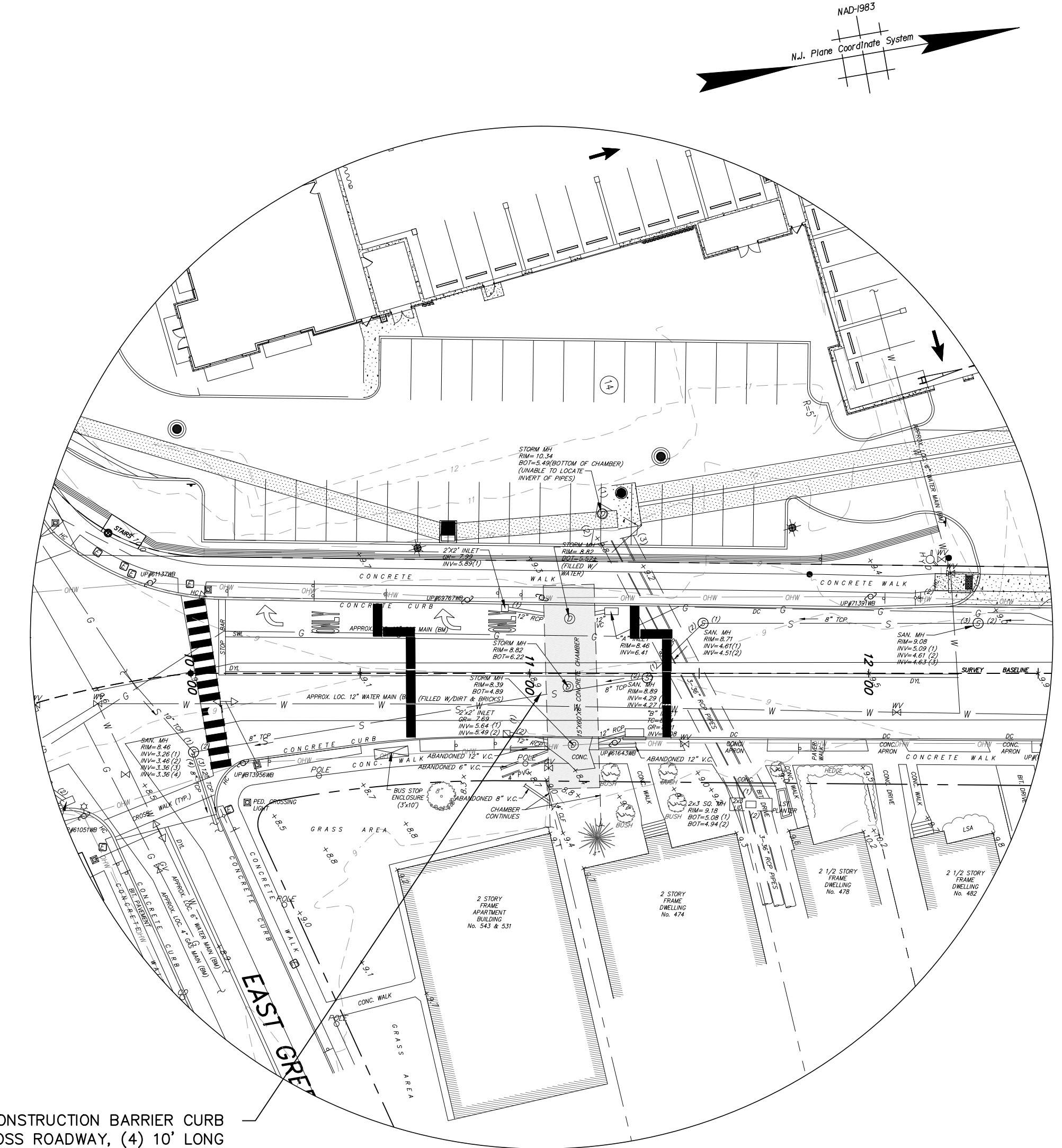
TOWNSHIP OF WOODBRIDGE, MIDDLESEX COUNTY, NEW JERSEY

MAINTENANCE & PROTECTION OF TRAFFIC - STAGE 2

Scale: As noted
Sheet No. 13 of 16
Date: NOVEMBER 3, 2021



TRAFFIC PLAN
SCALE: 1" = 200'



DETAIL "A"
SCALE: 1" = 30'

CONSTRUCTION BARRIER CURB ACROSS ROADWAY, (4) 10' LONG BARRIERS TO PERMIT PASSAGE OF SLOW-MOVING CONSTRUCTION VEHICLES. BARRIERS CLOSED WHEN NOT IN USE AND AFTER CONSTRUCTION HOURS. BARRIERS TO BE REMOVED ONCE NEW CULVERT IS COMPLETED. (TYP.)

NOTES:

1. INSTALL AND ACTIVATE ONE (1) PVMS IN ADVANCE OF THE CONSTRUCTION LIMITS ALONG EACH RAHWAY AVENUE APPROACH TO THE WORK AREA. ACTIVATE PVMS A MINIMUM OF ONE FULL WEEK (7 CALENDAR DAYS) IN ADVANCE OF THE START OF CONSTRUCTION. REMOVE PVMS UPON COMPLETION OF CONSTRUCTION. PVMS SHALL GENERALLY READ THE EXPECTED CLOSURE DATE AND DURATION. THE ACTUAL MESSAGE SHALL BE APPROVED BY THE COUNTY.
2. ADJACENT SCHOOL SHALL BE NOTIFIED IN WRITING BY THE CONTRACTOR FOURTEEN (14) CALENDAR DAYS IN ADVANCE OF THE DETOUR IMPLEMENTATION.
3. CONTRACTOR SHALL PROVIDE FOR SAFE PEDESTRIAN TRAVEL AT ALL TIMES.

LEGEND

- WORK AREA
- DETOUR ROUTE
- CONSTRUCTION BARRIER CURB
- BREAKAWAY BARRICADE W/SIGN
- CONSTRUCTION SIGN
- DIRECTION OF TRAFFIC FLOW

**RAHWAY AVENUE
CLOSED
300 FEET AHEAD
FOLLOW DETOUR**

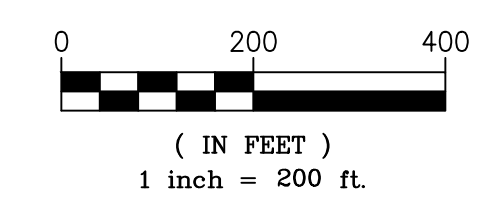
RAHWAY AVENUE
SIGN 'A'
(72" x 48")
SIGN 'B'
(30" x 24")
SIGN DETAIL
N.T.S.

BLACK 6" TEXT ON ORANGE BACKGROUND (TYP.). USE MUTCD STANDARD HIGHWAY 'C' FONT FOR ALL LETTERING

BLACK 6" TEXT ON ORANGE BACKGROUND (TYP.). USE MUTCD STANDARD HIGHWAY 'C' FONT FOR ALL LETTERING

SIGN LEGEND

SIGN DESIGNATION	MESSAGE	SIZE (IN)	QUANTITY
M4-9L	DETOUR, LEFT ARROW	30 X 24	3
M4-9R	DETOUR, RIGHT ARROW	30 X 24	3
M4-10L	DETOUR, LEFT ARROW	48 X 18	0
M4-10R	DETOUR, RIGHT ARROW	48 X 18	2
R3-1	NO RIGHT TURN	24 X 24	2
R3-2	NO LEFT TURN	24 X 24	0
R9-9	SIDEWALK CLOSED	24 X 12	0
R9-11 (MOD.)	SIDEWALK CLOSED AHEAD, USE ELIZABETH STREET	24 X 18	0
R9-11a	SIDEWALK CLOSED, CROSS HERE	24 X 12	0
R11-2	ROAD CLOSED	48 X 30	2
R11-4	ROAD CLOSED TO THRU TRAFFIC	60 X 30	2
W20-2F	DETOUR AHEAD	48 X 48	3
SIGN 'A'	RAHWAY AVENUE CLOSED 300 FEET AHEAD, FOLLOW DETOUR	72 X 48	3
SIGN 'B'	RAHWAY AVENUE	30 X 24	5



FINAL

PREPARED BY:
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Terence M. Vojt
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11/13/23
Date

REVISIONS		
NO.	DATE	BY
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3	4/10/23	WJD
4	7/17/23	WJD
5	11/13/23	WJD

Designed By: CFC
Drawn By:
Checked By: TV
Approved By:

County of Middlesex
Department of Infrastructure Management
Office of Engineering
P.O. Box 871, New Brunswick, NJ 08901

**REPLACEMENT OF CULVERT 1-C-627
RAHWAY AVENUE OVER A TRIBUTARY OF HEARDS BROOK**

TOWNSHIP OF WOODBRIDGE, MIDDLESEX COUNTY, NEW JERSEY

**MAINTENANCE & PROTECTION
OF TRAFFIC**

Scale: As noted
Sheet No. 14 of 16
Date: NOVEMBER 3, 2021

GENERAL NOTES:

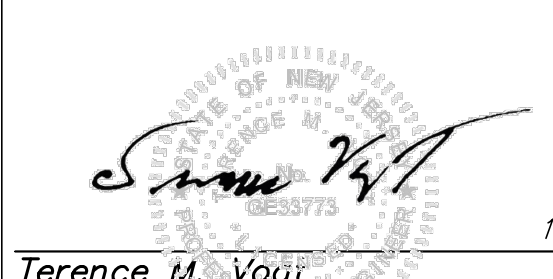
1. ADVANCE WARNING SIGNS DISTANCES, AND TAPER LENGTHS MAY BE EXTENDED, AT DIRECTION OF THE ENGINEER, TO ADJUST FOR REDUCED VISIBILITY DUE TO HORIZONTAL AND VERTICAL CURVATURE OF THE ROADWAY.
2. THE APPROXIMATE LOCATIONS OF THE ILLUMINATED FLASHING ARROW BOARDS ARE SHOWN ON THE TRAFFIC CONTROL PLANS. THESE LOCATIONS MAY BE MODIFIED AS APPROVED BY THE ENGINEER 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.
3. PRIOR TO ANY ROAD CONSTRUCTION, TRAFFIC CONTROL SIGNS AND DEVICES SHALL BE IN PLACE.
4. RAMPS AND/OR SIDE STREETS ENTERING THE ROADWAY AFTER THE FIRST ADVANCE WARNING SIGN SHALL BE PROVIDED WITH AT LEAST ONE W20-IF SIGN (ROAD WORK AHEAD) AS A MINIMUM.
5. ALL EXISTING ROAD SIGNS, PAVEMENT MARKINGS AND/OR FLOWABLE PAVEMENT REFLECTORS WHICH CONFLICT WITH THE PROPOSED TRAFFIC CONTROL PLAN SHALL BE COVERED, REMOVED, OR RELOCATED AS DIRECTED BY THE ENGINEER.
6. MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (CURRENT EDITION) - PART G "TEMPORARY TRAFFIC CONTROL," UNLESS OTHERWISE NOTED IN THE PLANS AND SPECIFICATIONS.
7. CONSTRUCTION SIGN W99-2 (GIVE US A BRAKE) SHALL BE LOCATED 200 FEET IN ADVANCE OF PROJECT LIMITS.
8. A W1-6 (ARROW) SIGN MOUNTED ON A BREAKAWAY BARRICADE AND CENTERED ON THE CLOSED WIDTH SHALL BE LOCATED 100 FEET BEYOND EACH INTERSECTION OR MAIN ACCESS POINT WITHIN THE AREA OF A LANE OR SHOULDER CLOSURE.
9. CONSTRUCTION SIGNS W8-9A (SYMBOL FOR UNEVEN PAVEMENT) AND W8-14A (GROOVED PAVEMENT) SHALL BE USED WHEN SUCH PAVEMENT CONDITIONS EXIST. THE PLACEMENT OF THESE SIGNS SHALL BE AS DIRECTED BY THE ENGINEER.
10. 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 SHALL MOVE WITH THE WORK AREAS TO KEEP A 70 FEET MIN. AND 150 FEET MAX. BUFFER IN ADVANCE OF EACH WORK AREA.
11. THE CONTRACTOR SHALL 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 SHALL BE SUBMITTED TO THE ENGINEER IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
12. ALL EXCAVATED AREAS WITHIN OR ADJACENT TO THE ROADWAY SHALL BE BACKFILLED AND PLACED ON AT LEAST 6H : 1V SLOPE BEFORE THE END OF EACH WORK DAY. OTHER EXCAVATED AREA WITHIN THE CLEAR ZONE SHALL BE BACKFILLED.
13. WHERE REQUIRED, THE CONTRACTOR SHALL MAKE PROVISIONS FOR MAINTAINING PEDESTRIAN CROSSING LOCATIONS AND TYPE AS DIRECTED BY THE ENGINEER.
14. HOT MIX ASPHALT PLACED DURING THE VARIOUS CONSTRUCTION STAGES SHALL 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.
15. THE PLACEMENT AND OR RELOCATION OF PRECAST CONSTRUCTION BARRIER CURB SHALL BE DONE DURING APPROVED OFF-PEAK HOURS WHEN TRAFFIC MAY BE REDUCED TO ONE LANE IN EACH DIRECTION.
16. THE REDUCED SPEED AHEAD SIGN, W3-5(S) (BLACK ON ORANGE) SHALL BE LOCATED IN ADVANCE OF SPEED LIMIT R2-1 SIGNS WHICH REDUCE THE NORMAL POSTED SPEED LIMIT THROUGH THE CONSTRUCTION ZONE.
17. THE FINAL HMA SURFACE PAVEMENT SHALL NOT BE CONSTRUCTED UNTIL THE FINAL STAGE OF THE PROJECT UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR INDICATED ON THE PLANS. MANHOLES AND INLETS SHALL BE SET TO FINISHED GRADE AND TEMPORARY PAVEMENT RAMPS ARE TO BE CONSTRUCTED 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.
18. TRAFFIC CONTROL DEVICES FOR LANE CLOSURES INCLUDING SIGNS, CONES, BARRICADES, CONSTRUCTION BARRIER CURB, DRUMS, AND ALL OTHER TRAFFIC CONTROL MEASURES SHALL BE PLACED AS SHOWN ON THE PLANS. SIGNS SHALL NOT BE PLACED WITHOUT ACTUAL LANE CLOSURES AND SHALL BE IMMEDIATELY REMOVED UPON REMOVAL OF THE CLOSURES.
19. CONES MAY BE SUBSTITUTED FOR DRUMS AND INSTALLED UPON THE APPROVAL OF THE ENGINEER.
20. FOR THE INITIAL START OF WORK THAT REQUIRES "IMPACTS TO NORMAL TRAFFIC FLOW", THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING, ON THE ADVANCE FORM TO-103 PROVIDED BY THE COUNTY, OF THE PROPOSED DATE. THE NOTICE SHALL BE SUBMITTED AT LEAST TWENTY-EIGHT CALENDAR DAYS, BUT NOT MORE THAN SIXTY CALENDAR DAYS, BEFORE THE PROPOSED DATE. START OF WORK THAT IMPACTS NORMAL TRAFFIC FLOW WILL NOT BE PERMITTED PRIOR TO THE DATE STATED IN THE NOTICE. THE CONTRACTOR SHALL CONFIRM, IN WRITING TO THE ENGINEER, THE PROPOSED DATE SEVEN CALENDAR DAYS BEFORE STARTING THE ESTABLISHMENT OF THE TRAFFIC CONTROL MEASURES FOR THE TRAFFIC IMPACT. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IF THE PROPOSED ESTABLISHMENT CAN NOT BE COMPLETED ON THE PROPOSED DATE.
21. FOR A "PERMANENT LANE CLOSURE", THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING, ON ADVANCE FORM TO-103, OF THE PROPOSED DATE A NEW TRAFFIC PATTERN WILL BE ESTABLISHED. THE NOTICE SHALL BE SUBMITTED AT LEAST TWENTY-EIGHT CALENDAR DAYS, BUT NOT MORE THAN SIXTY CALENDAR DAYS, IN ADVANCE OF THE PROPOSED DATE.
22. ALL "IMPACTS TO NORMAL TRAFFIC FLOW" SCHEDULED FOR THE SEVEN DAY PERIOD STARTING ON THE FOLLOWING MONDAY SHALL BE SUBMITTED TO THE ENGINEER BY 9:00 AM OF EACH FRIDAY ON WEEKLY FORM TO-101 PROVIDED BY THE COUNTY. EACH DAY OF "TEMPORARY LANE CLOSURES" SHALL BE SUBMITTED TO THE ENGINEER BY 9:00 AM THE DAY IN ADVANCE OF THE START OF THOSE OPERATIONS ON DAILY FORM TO-101 PROVIDED BY THE COUNTY.
23. DIMENSIONS, COLORS AND DETAILS OF VARIOUS SIZE SIGNS, AND ACCESSORY PANELS TO FOLLOW STANDARDS IN THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" (CURRENT EDITION).
24. LETTERS AND NUMERALS SHALL CONFORM TO THE CURRENT MANUAL, "STANDARD ALPHABETS FOR HIGHWAY SIGNS" U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.
25. THE CONTRACTOR SHALL OBTAIN THE APPROVAL OF THE ENGINEER FOR THE DISTANCE TO BE USED ON THE ADVANCE WARNING SIGNS.
26. ALUMINUM SHALL BE FLAT SHEET OF ALLOY AND TEMPER 5052-H38 OR 6061-T6:
27. A. 0.10" THICK FOR ALL CONSTRUCTION SIGNS EXCEPT SIGNS SHOWN MOUNTED ON BREAKAWAY BARRICADES.
B. 0.024" THICK FOR ALL CONSTRUCTION SIGNS SHOWN MOUNTED ON BREAKAWAY BARRICADES.
28. SIGN SUPPORTS SHALL BE OF WELL SEASONED LUMBER, S4S, FREE OF SPLITS, KNOTS AND WARPS, OR OF STEEL COMPONENTS.
29. WOOD POSTS SHALL HAVE A UNIFORM CROSS-SECTION AND SHALL NOT EXCEED THE FOLLOWING DIMENSIONS FOR:
SINGLE POST = 4" x 6"
TWO POSTS = 3" x 6" OR 4" x 5"
THREE POSTS = 3" x 5" OR 4" x 4"
30. 4" X 6" WOOD POSTS SHALL BE MODIFIED BY DRILLING 1-1/2" INCH DIAMETER HOLES 4 INCHES AND 18 INCHES ABOVE THE GROUND LINE AND PERPENDICULAR TO THE ROADWAY CENTERLINE.
31. NO BRACING IS PERMITTED. VERTICAL CLEARANCES FOR SIGNS MOUNTED ON WOOD SUPPORTS SHALL BE 7 FOOT MINIMUM. EMBEDMENT DEPTH FOR THE WOOD POST SHALL NOT EXCEED 3.5 FEET.
32. STEEL POSTS SHALL BE IN ACCORDANCE WITH THE STANDARD DETAIL FOR U-POST SIGN SUPPORT.
33. TEMPORARY SIGN SUPPORTS NOT MEETING THIS CRITERIA SHALL BE SHIELDED BY A LONGITUDINAL BARRIER OR CRASH CUSHIONS.
34. SIGN FACES SHALL BE ASTM D 4956 TYPE VII OR VIII FLUORESCENT ORANGE SHEETING.
35. ALL SIGNS SHALL BE SECURELY FASTENED TO THEIR SUPPORTS WITH BOLTS, NUTS AND WASHERS IN ACCORDANCE WITH THE SPECIFICATIONS.
36. STAGES OF CONSTRUCTION MAY HAVE TO BE PREPARED AS NECESSARY TO MAINTAIN STREAM AND STORM SEWER FLOW.
37. SEPARATE PAYMENT FOR TEMPORARY ASPHALT PAVEMENT WILL NOT BE MADE, BUT THE COST SHALL BE INCLUDED IN THE PRICES BID FOR THE VARIOUS PAY ITEMS SCHEDULED IN THE PROPOSAL. TEMPORARY ASPHALT PAVEMENT SHALL BE 6 INCHES OF 19.5M64 HOT MIX ASPHALT BASE COURSE.

DRUMS SHALL BE MADE OF ORANGE PLASTIC WITH A MINIMUM OF FOUR ALTERNATE FLUORESCENT ORANGE AND WHITE RETROREFLECTIVE STRIPES. IF THERE ARE NON-REFLECTORIZED SPACES BETWEEN THE STRIPES, THEY SHALL BE NO MORE THAN 2" WIDE. RETROREFLECTIVE SHEETING FOR STRIPES SHALL CONFORM WITH ASTM D 4956 TYPE VII OR VIII WITH S2 REQUIREMENTS.

THE TOP OF THE DRUM SHALL NOT BE OPEN. DRUMS SHALL BE CONSTRUCTED TO INHIBIT ROLLING IF KNOCKED OVER.

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

FINAL

PREPARED BY: RVE REMINGTON & VERNICK ENGINEERS 429 Route 79, Suite 21 (732) 955-8000 Certificate of Authorization: 24 CA 28003300		REVISIONS <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>3/14/22</td> <td>DRB</td> </tr> <tr> <td>2</td> <td>7/20/22</td> <td>WJD</td> </tr> <tr> <td>3</td> <td>4/10/23</td> <td>WJD</td> </tr> <tr> <td>4</td> <td>7/17/23</td> <td>WJD</td> </tr> <tr> <td>5</td> <td>11/13/23</td> <td>WJD</td> </tr> </tbody> </table>	NO.	DATE	BY	1	3/14/22	DRB	2	7/20/22	WJD	3	4/10/23	WJD	4	7/17/23	WJD	5	11/13/23	WJD	County of Middlesex Department of Infrastructure Management Office of Engineering P.O. Box 871, New Brunswick, NJ 08901
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 Terence M. Vojit Licensed Professional Engineer License No. 33773		REVISIONS Designed By: JLD Drawn By: CFC Checked By: TV Approved By:	REPLACEMENT OF CULVERT 1-C-627 RAHWAY AVENUE OVER A TRIBUTARY OF HEARDS BROOK TOWNSHIP OF WOODBRIDGE, MIDDLESEX COUNTY, NEW JERSEY MAINTENANCE & PROTECTION OF TRAFFIC – NOTES																		
Date: 11/13/23		Scale: As noted Sheet No. 15 of 16 Date: NOVEMBER 3, 2021																			

