

# TOWNSHIP OF WOODBRIDGE MIDDLESEX COUNTY, NJ DEPARTMENT OF PUBLIC WORKS - DIVISION OF ENGINEERING SANITARY SEWER IMPROVEMENTS



## CONTRACT NO. 2019-017 FEBRUARY 2020

**JOHN E. McCORMAC - MAYOR**

### TOWNSHIP COUNCIL

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JAMES P. NOLAN, ESQ.	ATTORNEY
GEORGE T. BREW	DIRECTOR OF PUBLIC WORKS
MICHAEL GELIN, P.E.	TOWNSHIP ENGINEER



LOCATION MAP  
1" = 4000'

SOURCE: USGS 7.5 MINUTE QUADRANGLE, PERTH AMBOY, NJ

NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF 2016 AND ALL AMENDMENTS IN WOODBRIDGE TOWNSHIP FORMAT THERETO SHALL GOVERN.

THE HEADING OF THE ARTICLES CONTAINED HEREIN CONFORM TO THE NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, DATED 2016 AND ALL ADDENDA THERETO, 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 "ELECTRICAL BUREAU STANDARD DETAILS" (2007) TO GOVERN, EXCEPT FOR THOSE DETAILS CONTAINED HEREIN.

### PUBLIC UTILITIES

**ONE CALL UNDERGROUND LOCATION SERVICE**  
PLAINFIELD, NJ 07063  
1-800-272-1000

**GAS**  
NJ ELIZABETHTOWN GAS  
520 GREEN LANE, P.O. BOX 3175  
UNION, NJ 07083  
TEL: 908-662-8321

**TELEPHONE/COMMUNICATIONS**  
VERIZON COMMUNICATIONS  
999 WEST MAIN STREET  
FREEHOLD, NJ 07728  
TEL: 908-251-4889

**ELECTRIC**  
PSE&G ELECTRICAL DIVISION  
472 WESTON CANAL ROAD  
SOMERSET, NJ 08873  
TEL: 732-764-3243

**CATV/COMMUNICATIONS**  
COMCAST  
800 RAHWAY AVENUE  
UNION, NJ 07083  
TEL: 908-378-0256

**SANITARY SEWER AND STORM SEWER**  
TOWNSHIP OF WOODBRIDGE  
ONE MAIN STREET  
WOODBRIDGE, NJ 07095  
TEL: 732-602-6047

**WATER**  
MIDDLESEX WATER COMPANY  
1500 RONSON ROAD  
ISELIN, NJ 08830  
TEL: 732-634-1500 EXT 1241

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<p style="text-align: center;"><i>Richard A. Alaimo</i> 2/25/20</p> <p style="text-align: center;">APPROVE: <b>Richard A. Alaimo</b> PROFESSIONAL ENGINEER NEW JERSEY LICENSE NO. 13195</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>REVISIONS</th> <th>DATE</th> <th>BY</th> </tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>	REVISIONS	DATE	BY										<p><b>RICHARD A. ALAIMO ENGINEERING COMPANY</b> Consulting Engineers NJDC 24GA27988800 200 HIGH STREET MOUNT HOLLY, N.J. 2 MARKET STREET PATERSON, N.J.</p>	<p><b>SANITARY SEWER IMPROVEMENTS</b></p> <p style="font-size: 2em; font-weight: bold;">TITLE SHEET</p> <p>SCALE: AS NOTED</p>	<p>CLIENT: <b>TOWNSHIP OF WOODBRIDGE</b></p> <p>PROJECT LOCATION: <b>WOODBRIDGE TOWNSHIP MIDDLESEX COUNTY NEW JERSEY</b></p>	<p>DATE: <b>FEB 2020</b></p> <p>DESIGNED BY: <b>CAF</b></p> <p>DRAWN BY: <b>CAF</b></p> <p>CHECKED BY: <b>CAF</b></p> <p>DEPT. HEAD: <b>CAF</b></p> <p>PROJECT NO.: <b>B-0726-0035-000</b></p> <p>CONTRACT NO.: <b>2019-017</b></p> <p>SHEET NO.: <b>1</b></p> <p>FILE NO.:</p>
REVISIONS	DATE	BY															

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FINAL FOR SEWER DESIGN

GENERAL NOTES:

- THE TERM "OWNER" REFERS TO THE WOODBRIDGE TOWNSHIP, MIDDLESEX COUNTY, NEW JERSEY, OR ITS DESIGNATED REPRESENTATIVE.
- THE TERM "ENGINEER" REFERS TO THE WOODBRIDGE TOWNSHIP'S AUTHORIZED REPRESENTATIVE.
- THE TERM "CONTRACTOR" REFERS TO THE GENERAL CONTRACTOR SELECTED BY THE WOODBRIDGE TOWNSHIP TO EXECUTE THE PROJECT.
- THE TERM "PROJECT" REFERS TO THE SANITARY SEWER IMPROVEMENTS, WOODBRIDGE TOWNSHIP, MIDDLESEX COUNTY, NEW JERSEY.
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY INSURANCE AND BONDS AS REQUIRED BY THE OWNER AND AS SPECIFIED IN THE CONTRACT DOCUMENTS PRIOR TO EXECUTE THE WORK.
- THE CONTRACTOR SHALL UNLESS OTHERWISE PROVIDED IN THE CONTRACT DOCUMENT, SECURE AND PAY FOR THE REQUIRED CONSTRUCTION PERMIT(S), FEES, LICENSES AND INSPECTION NECESSARY FOR THE EXECUTION OF THE WORK.
- ALL DIMENSION INDICATED ON THE DRAWINGS ARE APPROXIMATE AND SUBJECT TO REVISIONS PER ACTUAL FIELD CONDITIONS, AND AT THE DISCRETION OF AND DIRECTED OR APPROVED BY THE OWNER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO STARTING WORK OR ORDERING MATERIALS.
- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IF EXISTING CONDITIONS SIGNIFICANTLY VARY FROM THAT WHICH ARE ON THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL SUBMIT, FOR THE ENGINEER'S APPROVAL, SHOP DRAWINGS OF ALL FABRICATED ITEMS PRIOR TO CONSTRUCTION OR FABRICATION.
- THE CONTRACTOR SHALL INSPECT THE SITE AND MAKE ALL APPROPRIATE INQUIRIES TO DETERMINE ACTUAL SITE CONDITIONS PRIOR TO SUBMISSION OF BIDS, AND SHALL MAKE NO ADDITIONAL CLAIMS REGARDING SITE CONDITIONS THEREAFTER.
- ALL WORK SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE, CITY, AND COUNTY LAWS. CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED IN THE PERFORMANCE OF WORK.
- THE CONTRACTOR SHALL DETERMINE AND VERIFY THE ACTUAL LOCATION OF ANY AND ALL UTILITIES, PIPING AND RELATED ITEMS PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH THE UTILITY COMPANIES. ALL COST INCURRED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- EXPANSION OF THE CONSTRUCTION SITE TO AREAS NOT DESIGNATED WITHIN THE LIMITS ON THESE PLANS WILL NOT BE PERMITTED UNLESS AUTHORIZED BY THE OWNER IN WRITING. THE CONTRACTOR WILL BE RESPONSIBLE TO SECURE THE CONSTRUCTION SITE IN ACCORDANCE WITH ALL APPLICABLE SAFETY STANDARDS.
- THE CONTRACTOR SHALL REMOVE DAILY ALL DEBRIS AND EXCESS CONSTRUCTION MATERIALS TO THE SATISFACTION OF THE OWNER AND THE ENGINEER. THE SITE SHALL BE LEFT BROOM CLEANED AT THE END OF EACH WORKDAY.
- THE CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH THE OWNER AND THE ENGINEER AND ALL OTHER CONTRACTORS TO MINIMIZE INTERRUPTIONS TO NORMAL OWNER OPERATION.
- THE CONTRACTOR SHALL SUBMIT A DETAILED WORK PLAN INCLUDING A SEQUENCE OF OPERATIONS PRIOR TO COMMENCING WORK AND THE WORK PLAN SHALL BE SUBJECT TO APPROVAL OF THE OWNER.
- ITEMS SUSTAINING DAMAGE DURING CONSTRUCTION THROUGH THE NEGLIGENCE OF THE CONTRACTOR SHALL BE REPAIRED AND / OR REPLACED TO THE SATISFACTION AND APPROVAL OF THE OWNER AT THE CONTRACTOR'S EXPENSE.
- THE OWNER RESERVES THE RIGHT TO REQUEST THAT MATERIAL BE TESTED BY AN APPROVED LABORATORY DURING THE COURSE OF THE PROJECT. THE CONTRACTOR SHALL BEAR THE EXPENSE OF THE TESTED MATERIALS NOT CONFORMING TO THE CONTRACT SPECIFICATIONS.
- THE CONTRACTOR SHALL VERIFY AND / OR DETERMINE ANY AND ALL TOPOGRAPHIC DATA NECESSARY TO COMPLETE THE WORK. THE CONTRACTOR SHALL BEAR THE EXPENSE OF DATA ACQUISITION AND VERIFICATION.
- THE CONTRACTOR SHALL FURNISH TO THE OWNER, THE COMPLETE REPRODUCIBLE SET OF "AS-BUILT DRAWINGS" IN THE FORMAT AS DEFINED IN THE CONTRACT SPECIFICATIONS BEFORE RELEASE OF FINAL PAYMENT. THE DRAWINGS SHALL BE CORRECTED TO SHOW WORK AS ACTUALLY BUILT, WITH PARTICULAR ATTENTION TO LOCATION OF PIPING, VALVES, MECHANICAL ITEMS AND SUCH OTHER DETAILS OF WORK AS THE OWNER MAY DIRECT. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE NECESSITY OF KEEPING ACCURATE RECORDS OF ALL CONCEALED WORK SO THAT AS-BUILT DRAWINGS WILL CONTAIN THIS INFORMATION IN CORRECT DETAIL AND LOCATION. "AS-BUILT" SHALL BE CERTIFIED AS PER THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- EACH CONTRACTOR SHALL FURNISH "OPERATION AND MAINTENANCE (O&M) MANUALS" FOR ALL SYSTEMS AND ITEMS OF EQUIPMENT INCLUDED IN EACH SECTION OF THE CONTRACT SPECIFICATIONS. PRELIMINARY COPIES OF THE MANUALS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. THE FINAL O&M MANUALS SHALL BE SUBMITTED TO THE ENGINEER WITHIN ONE MONTH AFTER FINAL APPROVAL OF ALL VENDOR SHOP DRAWINGS. SPECIFIC REQUIREMENTS FOR SUBMITTING OPERATION AND MAINTENANCE MANUALS AND CROSS REFERENCING DOCUMENT SHALL BE IN ACCORDANCE WITH THE SECTION 01 78 23 "OPERATION AND MAINTENANCE DATA" OF THE CONTRACT SPECIFICATIONS.
- THE CONTRACTOR SHALL AT ALL TIMES PROVIDE CONVENIENT, SAFE AND PROPER ACCESS TO FACILITIES FOR THE INSPECTION OF ALL PARTS OF THE WORK. NO WORK, EXCEPT SUCH SHOP WORK AS MAY BE SO PERMITTED, SHALL BE DONE EXCEPT WITH THE CONSENT OF THE OWNER OR A REPRESENTATIVE THEREOF.
- ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO PRESERVE THE MATERIAL BELOW AND BEYOND THE LINES OF ALL EXCAVATION IN THE SOUNDTEST POSSIBLE CONDITION. ANY DAMAGE TO THE WORK DUE TO THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE EXPENSE OF AND BY THE CONTRACTOR.
- NO MATERIAL OF ANY KIND SHALL BE USED IN WORK UNTIL IT HAS BEEN INSPECTED AND ACCEPTED BY THE OWNER. ALL MATERIAL REJECTED SHALL BE IMMEDIATELY REMOVED FROM THE WORK SITE AND SHALL NOT AGAIN OFFERED FOR INSPECTION.
- ANY MATERIALS OR WORKMANSHIP FOUND AT ANY TIME TO BE DEFECTIVE SHALL BE REMEDIATED AT ONCE, REGARDLESS OF PREVIOUS INSPECTION(S). THE INSPECTION AND OBSERVATION OF WORK BY THE ENGINEER IS INTENDED TO ASSIST THE CONTRACTOR IN APPLYING LABOR AND MATERIAL TO AND IN ACCORDANCE WITH THE SPECIFICATION. SUCH INSPECTION(S) SHALL NOT RELEASE THE CONTRACTOR FROM ANY CONTRACTUAL OBLIGATION(S).
- PUBLIC SAFETY AND THE SAFETY OF THE PROPERTY IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL CONDUCT THE WORK IN A SAFE MANNER SO AS TO POSE NO DANGER OR HAZARDS TO PERSON(S) AND / OR TO PROPERTY(IES). WHERE NECESSARY, TEMPORARY SHIELDS OR OTHER PROTECTIVE DEVICES MUST BE UTILIZED TO SAFE GUARD THE PUBLIC INTEREST. THE CONTRACTOR SHALL ASSUME COMPLETE AND FULL RESPONSIBILITY AND EXPENSE OF ANY AND ALL SAFETY MEASURES. THE USE OF EXPLOSIVES IS STRICTLY PROHIBITED. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA AND NEW JERSEY STATE DEPARTMENT OF LABOR REQUIREMENTS.
- THE OWNER'S NOTIFICATION TO THE CONTRACTOR TO PROCEED WITH THE WORK SHALL SUFFICE AS THE CONTRACTOR'S ACCEPTANCE OF TERMS SPECIFIED WHEREIN, AND SHALL BE INCORPORATED INTO ANY AND ALL AGREEMENTS BETWEEN OWNER AND THE CONTRACTOR.
- THE CONTRACTOR SHALL HAVE A COMPETENT REPRESENTATIVE OR FOREMAN PRESENT AT THE SITE WHO SHALL FOLLOW, WITHOUT DELAY, ALL INSTRUCTIONS OF THE ENGINEER OR HIS / HER ASSISTANT(S) IN THE EXECUTION AND COMPLETION OF THE WORK IN CONFORMANCE WITH THE CONTRACT DOCUMENTS, AND SHALL HAVE FULL AUTHORITY TO SUPPLY LABOR AND MATERIAL IMMEDIATELY. THE CONTRACTOR SHALL ALSO HAVE A COMPETENT REPRESENTATIVE AVAILABLE TO RECEIVE TELEPHONE MESSAGES AND PROVIDE A REASONABLE REPLY AS SOON AS POSSIBLE, BUT NO LATER THAN 24 HOURS.
- COMMUNICATION OF ALL WORK UNDER THIS CONTRACT SHALL BE MAINTAINED TO ENSURE THE QUALITY AND TIMELY COMPLETION OF THE WORK.
- THE CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING AS REQUIRED TO COMPLETE THE WORK OR TO MAKE ITS PARTS FIT TOGETHER PROPERLY WITHOUT COMPROMISING THE QUALITY OF THE WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATELY BRACING AND PROTECTING ALL WORK DURING CONSTRUCTION AGAINST DAMAGE, BREAKAGE, COLLAPSE, DISTORTIONS, AND OFF ALIGNMENTS ACCORDING TO ALL APPLICABLE CODES AND INDUSTRY STANDARDS FOR THE GOOD PRACTICE.
- ALL ELECTRICAL INDICATIONS ON SITE CIVIL AND / OR MECHANICAL DRAWINGS ARE FOR LOCATION PURPOSES ONLY.
- WHERE MANUFACTURERS' NAMES AND PRODUCT NUMBERS ARE INDICATED ON THE DRAWINGS, IT SHALL BE CONSTRUED TO MEAN THE ESTABLISHING OF QUALITY AND PERFORMANCE STANDARDS OF SUCH ITEMS. ALL OTHER PRODUCTS MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE PRODUCT DEEMED EQUAL.
- SEE ADDITIONAL NOTES AND CALL OUTS THAT ARE APPLICABLE ON THE PERTINENT CONTRACT DRAWING(S).
- THE COORDINATION OF THE LOCATION OR RELOCATION WHERE REQUIRED OF TELEPHONE, CABLE, ELECTRIC, GAS AND WATER FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR AND SAME SHALL BE COORDINATED TO INSURE COMPLETION WITHIN THE TIME PERMITTED.
- THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN MEANS OF SAFE INGRESS AND EGRESS TO RESIDENTS THROUGHOUT THE COURSE OF THE WORK AND TO PROVIDE FOR THE SAFE MAINTENANCE AND PROTECTION OF TRAFFIC.
- THE CONTRACTOR'S LICENSED SURVEYOR SHALL PROVIDE THE CONSTRUCTION STAKEOUT FOR THE PROJECT.
- THE CONTRACTOR WILL NOT BE PERMITTED TO STOCKPILE EXCAVATED MATERIALS OVER EXISTING UTILITY LINES. THE STOCKPILED MATERIAL SHOULD BE PLACED SUFFICIENTLY AWAY FROM THE EDGE OF ANY EXCAVATION TO PREVENT CAVING OF THE TRENCH WALL AND TO PERMIT SAFE ACCESS ALONG THE TRENCH. WITH SHEETED TRENCHES, A MINIMUM OF FIVE (5) FEET FROM THE EDGE OF SHEETING TO TOE OF SPOIL BANK MUST BE MAINTAINED.
- THE CONTRACTOR SHALL TAKE EVERY PRECAUTION NECESSARY TO PRECLUDE DAMAGE TO EXISTING STRUCTURES, FACILITIES AND UTILITIES DUE TO LOSS OF LATERAL SUPPORT AND/OR CONSTRUCTION LOADINGS. SPECIFIC DETAILS NECESSARY TO ACCOMPLISH SAME SHALL BE SUBMITTED BY THE CONTRACTOR FOR REVIEW AND APPROVAL PRIOR TO COMMENCING CONSTRUCTION OF THE PROPOSED SEWER.
- ALL WORK BY THE CONTRACTOR SHALL BE DONE IN ACCORDANCE WITH THE PROVISIONS OF THE NEW JERSEY STATUTE KNOWN AS CHAPTER 249 OF THE LAWS OF 1949, BEING SECTIONS 34-5-47.1 TO 47.9, INCLUSIVE OF THE REVISED STATUTES OF NEW JERSEY, 1937, AND IN ACCORDANCE WITH THE RULES AND REGULATIONS CONCERNING PRECAUTIONS TO BE TAKEN IN THE PROXIMITY OF HIGH-VOLTAGE LINES FOR THE PREVENTION OF ACCIDENTS PROMULGATED BY THE COMMISSIONER OF THE DEPARTMENT OF LABOR AND INDUSTRY OF THE STATE OF NEW JERSEY EFFECTIVE DECEMBER 28, 1948, ALL AS AMENDED AND SUPPLEMENTED AND IN ACCORDANCE WITH THE PROVISIONS OF THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND OF SUBPART N, PARAGRAPH 1926.550 OF THE RULES AND REGULATIONS ISSUED UNDER SAID ACT.
- THE CONTRACTOR IS HEREIN ADVISED THAT ALL WORK TO BE PERFORMED SHALL BE GOVERNED BY THE LOCAL MUNICIPAL ORDINANCES, THIS SHALL INCLUDE THE PROVISIONS IN THEIR CODES WHICH SET FORTH PERMITTED HOURS OF CONSTRUCTION WITHIN THE MUNICIPALITY.
- THE CONTRACTOR IS RESPONSIBLE TO PAY FOR, ACQUIRE AND COMPLY WITH ANY ROAD OPENING PERMITS IF REQUIRED IN CONJUNCTION WITH THE PROPOSED IMPROVEMENTS.
- THE CONTRACTOR SHALL COMPLY WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES BY THE U.S.D.O.T.
- THE CONTRACTOR IS ADVISED THAT A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION MUST BE MAINTAINED AT ALL TIMES TO THE FULLEST EXTENT POSSIBLE AND THAT ALL TRENCHES MUST BE COMPLETELY BACKFILLED PRIOR TO NON-DAYLIGHT HOURS.
- IN ORDER TO MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION, THE CONTRACTOR MAY FIND IT NECESSARY TO UTILIZE STEEL PLATES OVER TRENCHES AT NO ADDITIONAL COST TO THE OWNER.
- WHEN DISTURBING, REMOVING AND/OR DISPOSING OF ASBESTOS CEMENT PIPE, THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS INCLUDING BUT NOT LIMITED TO CURRENT USEPA REGULATIONS (NESHAP 40 CFR 61 SUBPART M); OSHA REGULATIONS (29 CFR 192658); THE CURRENT NEW JERSEY ASBESTOS HAZARD ABATEMENT SUBCODE (N.J.A.C. 5:23-8); THE CURRENT NJDEP REGULATIONS (N.J.A.C. 7:26-1 ET. SEQ.); AND NOTIFICATION REGULATIONS (N.J.A.C. 5:23-8.6, 40 CFR 61 SUBPART M, AND N.J.A.C. 7:26-1:2).

- THE FREEHOLD SOIL CONSERVATION DISTRICT GOVERNS SOIL EROSION AND SEDIMENT CONTROL MEASURES WITHIN THE PROJECT AREA AND ALL SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED AS PER THE REQUIREMENTS OF THE FREEHOLD SOIL CONSERVATION DISTRICT AND AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL CONTINUOUSLY DEWATER ALL EXCAVATIONS UNTIL BACKFILLING OPERATIONS HAVE BEEN COMPLETED. PRIOR TO DISCHARGE, SILT SHALL BE SETTLED OUT AND/OR REMOVED IN A MANNER APPROVED BY THE FREEHOLD SOIL CONSERVATION DISTRICT.
- THE CONTRACTOR SHALL MAINTAIN THE FLOW OF ALL STREAMS, DRAINAGE DITCHES, STORM SEWERS AND SANITARY SEWERS AT ALL TIMES BY A MEANS ACCEPTABLE TO THE ENGINEER AND ALL THE RESPONSIBLE AGENCIES.
- THE CONTRACTOR SHALL MAINTAIN ALL UTILITY SERVICE FLOWS AND PRESSURES UNLESS WRITTEN APPROVAL BY THE RESPONSIBLE UTILITY COMPANY PERMITS OTHERWISE.
- THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE STATE OF NEW JERSEY WORKER HEALTH AND SAFETY ACT (N.J.A.C. 12:110 ET. SEQ.) AS AMENDED AND THE UNITED STATES OCCUPATIONAL SAFETY & HEALTH ACT (OSHA) (29 CFR 1910) AS AMENDED WITH REGARD TO WORKER AND JOBSITE SAFETY.
- ALL DISTURBED AREAS TO REMAIN VEGETATED SHALL BE RESTORED WITH A MINIMUM THICKNESS OF FIVE INCHES (5") OF TOPSOIL, SEED, FERTILIZER, LIME & MULCH. REFER TO PLANS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

GENERAL NOTES FOR UTILITIES:

- THE LOCATION AND ELEVATION OF ALL UTILITIES SHOWN ON THE DRAWINGS ARE BASED ON THE AVAILABLE INFORMATION FURNISHED BY WOODBRIDGE TOWNSHIP.
- THE CONTRACTOR SHALL OBTAIN UTILITY MARK OUTS IN THE WORK AREA IN ACCORDANCE WITH ALL LOCAL, COUNTY, AND STATE LAWS PRIOR TO EXECUTE THE WORK.
- THE CONTRACTOR SHALL PROVIDE A QUALIFIED INDEPENDENT UTILITY MARK OUT SERVICE SUBCONTRACTOR TO LOCATE AND MARK OUT ALL UTILITIES WITHIN THE LIMITS OF THE WORK USING APPROPRIATE EQUIPMENT AND METHODS PRIOR TO EXECUTE THE WORK.
- THE CONTRACTOR SHALL PREPARE AS-BUILT DRAWINGS OF ALL UNDERGROUND UTILITIES ENCOUNTERED WHILE CONSTRUCTING TEST PITS FOR USE IN THE PERFORMANCE OF WORK UNDER THIS CONTRACT. THESE AS-BUILT DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
- THE CONTRACTOR SHALL RESTORE ASPHALT PAVEMENT AFTER CONSTRUCTION AND UTILITY RELOCATION WORK IS PERFORMED.
- NEW CURBS OR WALKWAYS ARE TO BE REMOVED, ASPHALT SHALL BE SAW CUT OR REMOVED AT THE NEAREST JOINT.
- NEW PAVING SHALL BE APPLIED ONLY WHERE EXISTING SURFACE TO BE COVERED IS DRY AND CLEAN AFTER PAVING IS COMPLETE. THE CONTRACTOR SHALL SEAL ALL THE JOINTS BETWEEN NEW AND EXISTING PAVING WITH LIQUID ASPHALT. ANY LOW SPOTS WHICH COLLECTS WATER AFTER PAVING SHALL BE SAW-CUT AND REPLACED SO THAT THE AREA PROPERLY DRAINS AT NO ADDITIONAL COST TO THE OWNER.
- THE ENTIRE DRAINAGE SYSTEM IN THE VICINITY OF THE PROJECT AREA SHALL BE MAINTAINED AND KEPT IN OPERABLE CONDITION DURING THE CONSTRUCTION. THE EFFECTED SEGMENT OF THE DRAINAGE SYSTEM SHALL BE CLEANED AFTER THE COMPLETION OF THE CONSTRUCTION WORK BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTING TEST PITS AND THE PROTECTION OF THE EXISTING UTILITIES UNDER THIS CONTRACT. UTILITIES OFFSETS WILL BE APPROVED BY THE ENGINEER ONLY IN CASE WHERE IT DEEMED NECESSARY.
- TEMPORARY POWER AND UTILITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- EXCAVATED MATERIAL SHALL BE HAULED OFFSITE. ANY SOIL TO BE STOCKPILED ON-SITE SHALL BE LOCATED IN THE DESIGNATED AREAS AS DEFINED BY THE OWNER (IF APPLICABLE) AND COVERED WITH PVC SHEETS OR TARP. SUCH PILES OF STOCKPILED SOIL SHALL NOT EXCEED SIX (6) FEET IN HEIGHT OR DIAMETER.
- IF CONTRACTOR FINDS ANY DISCREPANCY IN / OR OMISSION FROM THESE DRAWINGS, OR IF CONTRACTOR SHOULD BE IN QUESTION AS TO THEIR MEANING AND /OR INTENT, THE CONTRACTOR SHALL SUBMIT REQUEST FOR CLARIFICATION IN WRITING.
- THE CONTRACTOR SHALL PROMPTLY AND LEGALLY REMOVE ALL ACCUMULATED DEBRIS, GARBAGE, ETC. OUT OF THE WORK AREAS AS SOON AS POSSIBLE.
- THE CONTRACTOR SHALL PROTECT ALL EXPOSED PORTIONS OF THE WORK AND SECURELY STORE ALL MATERIALS. THE CONTRACTOR IS RESPONSIBLE FOR THE SAFE KEEPING OF EQUIPMENTS AND MATERIALS.

PAYMENT NOTES:

- THE COST OF TRENCH RESTORATION IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS SHALL BE INCLUDED IN THE PRICE BID FOR THE PIPE AND SANITARY SEWER LATERAL RECONNECTIONS. SEPARATE PAYMENT WILL BE MADE FOR MILLING AND RESURFACING OF THE ROADWAY.
- THE BID PRICE FOR SANITARY MANHOLES SHALL INCLUDE THE COST OF CONNECTING ALL NEW SANITARY SEWER MAINS AND THE COST OF RECONNECTING ALL EXISTING SANITARY SEWER MAINS. THE COST OF ALL FITTINGS AND ADAPTORS SHALL ALSO BE INCLUDED IN THE BID PRICE.
- SANITARY SEWER MAIN LENGTHS AND SLOPES ARE CALCULATED TO THE CENTER LINE OF MANHOLE STRUCTURES. REFER TO SPECIFICATIONS FOR PAY LIMITS OF SEWER MAIN PIPING.

FIELD SURVEY NOTES:

- EXISTING FEATURES AND TOPOGRAPHY FROM FIELD SURVEY PERFORMED BY RICHARD A. ALAIMO ENGINEERING COMPANY FOR WOODBRIDGE TOWNSHIP JULY AND AUGUST 2019.
- HORIZONTAL DATUM IS NAD 1983. VERTICAL DATUM IS NAVD 1988.

LEGEND		
EXISTING	PROPOSED	ITEM OR FEATURE
SIDEWALK	N/A	BUSH OR TREE & SIZE
15" 40"	N/A	TREE TO BE REMOVED
X	N/A	BRUSH/TREE LINE
~ ~ ~ ~ ~	N/A	UTILITY POLE
— — — — —	N/A	CHAIN LINK FENCE
— — — — —	N/A	DETECTABLE WARNINGS
— — — — —	N/A	STORM INLET
— — — — —	N/A	STORM SEWER MANHOLE
— — — — —	N/A	STORM SEWER*
— — — — —	● (REPLACEMENT)	SANITARY SEWER MANHOLE
— — — — —	⊙ (REHABILITATION)	SANITARY SEWER MAIN*
— — — — —	N/A	GAS MAIN OR SERVICE
— — — — —	N/A	GAS VALVE
— — — — —	N/A	TELEPHONE SERVICE
— — — — —	N/A	WATER MAIN
— — — — —	N/A	WATER SERVICE
— — — — —	N/A	WATER HYDRANT
— — — — —	N/A	WATER VALVE
— — — — —	N/A	CONTOUR (5' INTERVAL)
— — — — —	N/A	CONTOUR (1' INTERVAL)
N/A	x28.06	SPOT GRADE
CONCRETE SIDEWALK	■	CONCRETE SIDEWALK
N/A	□	MILLING & PAVING
		* SEE PLAN FOR SIZE & TYPE OF PIPE

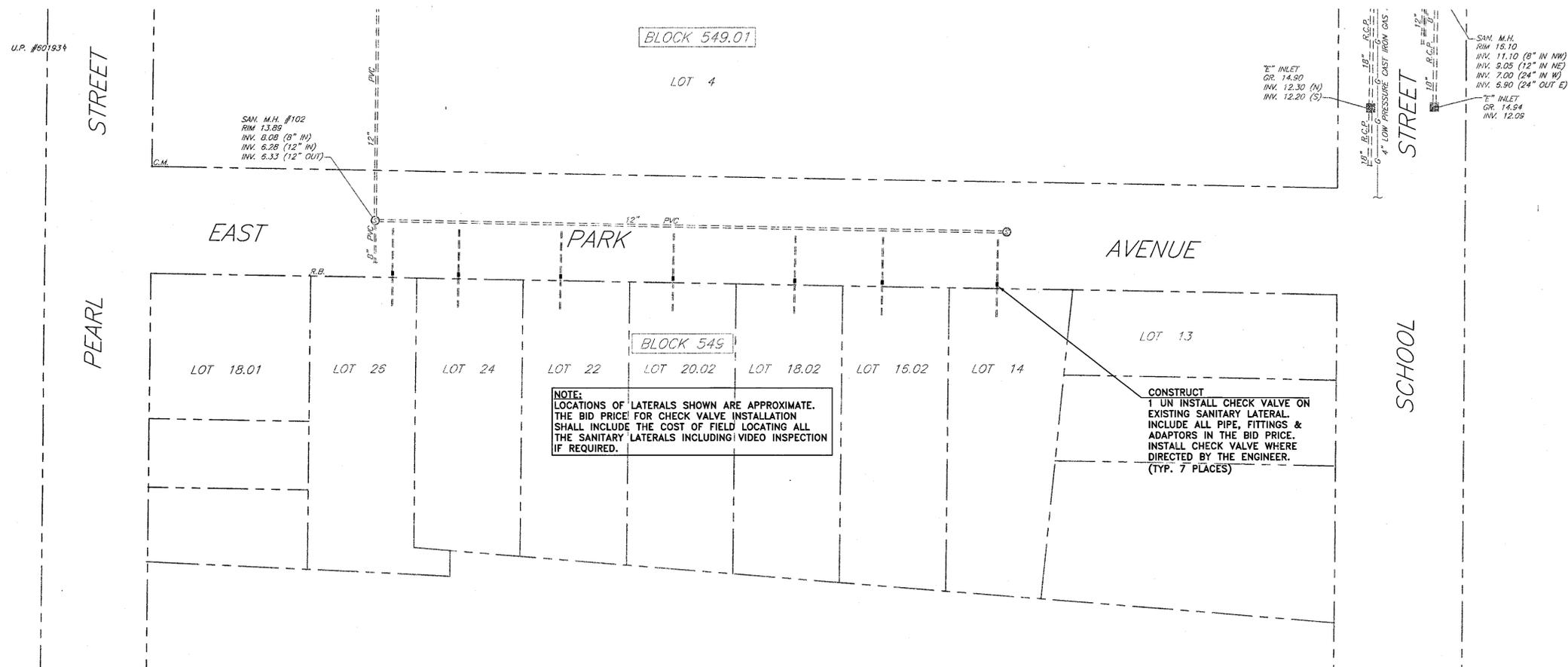
ABBREVIATIONS

APPROX.	APPROXIMATE	L.F.	LINEAR FEET
BITUM.	BITUMINOUS	LS	LUMP SUM
BM	BENCH MARK	MB	MAILBOX
BLK	BLOCK	M.H.	MANHOLE
CCTV	CLOSED CIRCUIT TELEVISION	N	NORTH
CIP	CAST IRON PIPE	PVC	POLYVINYL CHLORIDE
CONC.	CORRUGATED METAL PIPE	RCP	REINFORCED CONCRETE PIPE
DIA.	CONCRETE	S	SOUTH
DIP	DUCTILE IRON PIPE	SAN.	SANITARY
E	EAST	STA.	STATION
ECMP	ELLIPTICAL CORRUGATED METAL PIPE	SY	SQUARE YARD
FP	FIXED PRICE	S/W	SIDEWALK
GR.	GRATE	TCP	TERRA COTTA PIPE
HMA	HOT-MIXED ASPHALT	TYP.	TYPICAL
HYD	HYDRANT	UN	UNIT
INV.	INVERT	U.F.	UTILITY POLE
I.P.	IRON PIPE	VCP	VITRIFIED CLAY PIPE
		W	WEST

 APPROVED: <b>Richard A. Alaimo</b> PROFESSIONAL ENGINEER NEW JERSEY LICENSE NO. 13195	REVISIONS DATE BY	 <b>RICHARD A. ALAIMO ENGINEERING COMPANY</b> Consulting Engineers NJDCA 24GA27988800 200 HIGH STREET MOUNT HOLLY, N.J. 2 MARKET STREET PATERSON, N.J.	SANITARY SEWER IMPROVEMENTS CLIENT: TOWNSHIP OF WOODBRIDGE	DATE: FEB 2020 DESIGNED BY:	SHEET <b>2</b>
	PROJECT LOCATION: WOODBRIDGE TOWNSHIP MIDDLESEX COUNTY NEW JERSEY		PROJECT NO.: B-0726-0035-000 CONTRACT NO.: 2019-017	DRAWN BY: CAF CHECKED BY:	

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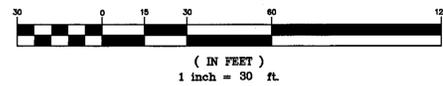


**NOTE:**  
 LOCATIONS OF LATERALS SHOWN ARE APPROXIMATE.  
 THE BID PRICE FOR CHECK VALVE INSTALLATION  
 SHALL INCLUDE THE COST OF FIELD LOCATING ALL  
 THE SANITARY LATERALS INCLUDING VIDEO INSPECTION  
 IF REQUIRED.

**CONSTRUCT**  
 1 UN INSTALL CHECK VALVE ON  
 EXISTING SANITARY LATERAL  
 INCLUDE ALL PIPE, FITTINGS &  
 ADAPTORS IN THE BID PRICE.  
 INSTALL CHECK VALVE WHERE  
 DIRECTED BY THE ENGINEER.  
 (TYP. 7 PLACES)

**PLAN**

GRAPHIC SCALE



**BASELINE**  
 BASELINE COINCIDES WITH THE CENTER OF THE EXISTING SANITARY SEWER.

**EXISTING UTILITIES**  
 NOT ALL EXISTING UTILITIES ARE SHOWN ON THIS PLAN. THE CONTRACTOR IS RESPONSIBLE FOR REQUESTING MARKOUTS FOR ALL EXISTING UTILITIES.

**EXISTING GAS AND WATER MAINS**  
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**SANITARY SEWER SYSTEM CONSTRUCTION**  
 THE CONTRACTOR IS SPECIFICALLY DIRECTED TO ALL APPLICABLE SECTIONS OF THE SPECIFICATIONS FOR PROCEDURES AND REQUIREMENTS RELATING TO THE REMOVAL AND REPLACEMENT OF THE EXISTING SANITARY SEWER SYSTEM AND THE LOCATING AND CONNECTING OF EXISTING SERVICE LATERAL CONNECTIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND INSTALLING CHECK VALVES ON EXISTING SERVICE LATERALS WHERE INDICATED ON THE PLANS.

**SANITARY SEWER PIPING MATERIAL**  
 PVC (4" THROUGH 15") SDR 35 ASTM D-3034  
 PVC (18" THROUGH 48") ASTM F-679  
 DIP (14" THROUGH 24") ANSI/AWWA C151/A21.51 PRESSURE CLASS 250  
 REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION ON PIPE AND REQUIREMENTS FOR FITTINGS.

**WATER MAIN CLEARANCES**  
 WHERE NEITHER A 10' HORIZONTAL SEPARATION FROM WATER MAIN TO SANITARY SEWER NOR A VERTICAL SEPARATION OF 18" BETWEEN BOTTOM OF WATER MAIN AND TOP OF SANITARY SEWER CAN BE MAINTAINED, CONTRACTOR SHALL ENCASE PROPOSED GRAVITY SANITARY SEWER IN CONCRETE AS SHOWN ON THE CONSTRUCTION DETAILS.

ITEM NO.	TO BE CONSTRUCTED	CONTRACT QUANTITY
28	Install Check Valve on Existing Sanitary Lateral	7 UN

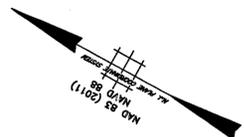
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APPROVED:  <b>Richard A. Alaimo</b> PROFESSIONAL ENGINEER NEW JERSEY LICENSE NO. 13195	REVISIONS DATE BY	 <b>RICHARD A. ALAIMO</b> ENGINEERING COMPANY Consulting Engineers NJDCA 24GA27988800 200 HIGH STREET MOUNT HOLLY, N.J. 2 MARKET STREET PATERSON, N.J.	SANITARY SEWER IMPROVEMENTS EAST PARK AVENUE LATERAL CHECK VALVE INSTALLATION ON EXISTING SANITARY LATERALS	CLIENT: TOWNSHIP OF WOODBRIDGE	DATE: FEB 2020 DESIGNED BY: CAF DRAWN BY: WFL/CAF CHECKED BY:	SHEET 4
	SCALE: H: 1" = 30' V: 1" = 3'		PROJECT LOCATION: WOODBRIDGE TOWNSHIP MIDDLESEX COUNTY NEW JERSEY	PROJECT NO.: B-0726-0035-000 CONTRACT NO.: 2019-017	DEPT. HEAD:	FILE NO.:

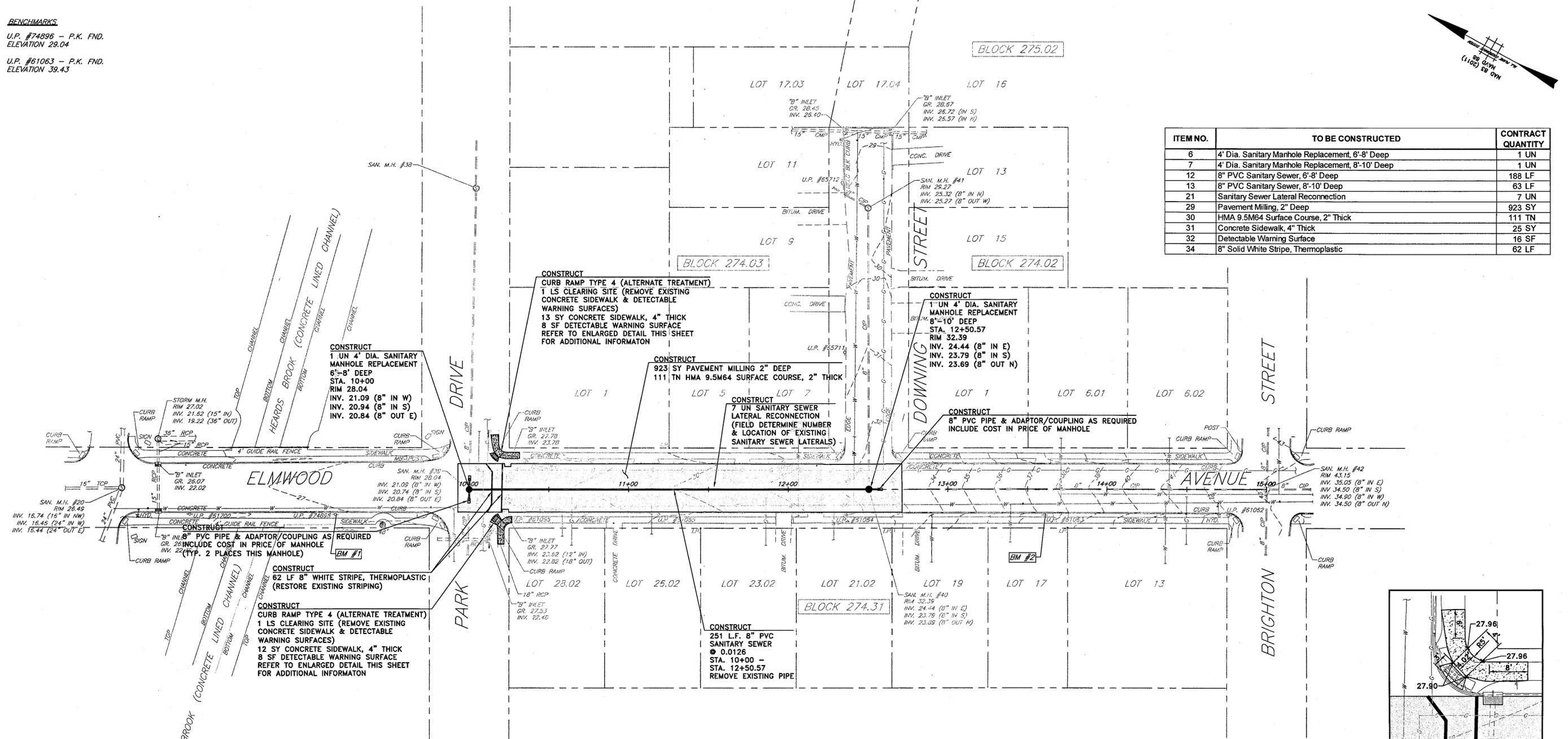
FINAL FOR SEWER DESIGN

**BENCHMARKS**

- BM #1 U.P. #74896 - P.K. FND. ELEVATION 29.04
- BM #2 U.P. #61063 - P.K. FND. ELEVATION 39.43

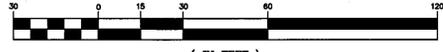


ITEM NO.	TO BE CONSTRUCTED	CONTRACT QUANTITY
6	4' Dia. Sanitary Manhole Replacement, 6'-8" Deep	1 UN
7	4' Dia. Sanitary Manhole Replacement, 8'-10" Deep	1 UN
12	8" PVC Sanitary Sewer, 6'-8" Deep	188 LF
13	8" PVC Sanitary Sewer, 8'-10" Deep	63 LF
21	Sanitary Sewer Lateral Reconnection	7 UN
29	Pavement Milling, 2" Deep	923 SY
30	HMA 9.5M64 Surface Course, 2" Thick	111 TN
31	Concrete Sidewalk, 4" Thick	25 SY
32	Detectable Warning Surface	16 SF
34	8" Solid White Stripe, Thermoplastic	62 LF



**PLAN**

GRAPHIC SCALE



( IN FEET )  
1 inch = 30 ft.

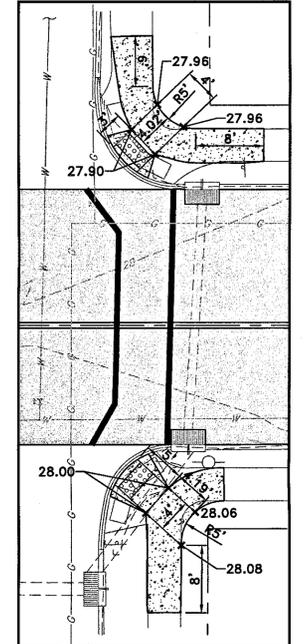
REFER TO SHEET 6 FOR PROFILE

**TEMPORARY BYPASS SYSTEM**  
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PVC (4" THROUGH 15") SDR 35 ASTM D-3034  
PVC (18" THROUGH 48") ASTM F-679  
DIP (14" THROUGH 24") ANSI/AWWA C151/A21.51 PRESSURE CLASS 250  
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**WATER MAIN CLEARANCES**  
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CURB RAMP ENLARGED DETAILS  
1" = 10'

**BASELINE**  
BASELINE COINCIDES WITH THE CENTER OF THE EXISTING SANITARY SEWER.

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APPROVED: *Richard A. Alaimo* 2/25/20  
**Richard A. Alaimo**  
PROFESSIONAL ENGINEER  
NEW JERSEY LICENSE NO. 13195

REVISIONS	DATE	BY

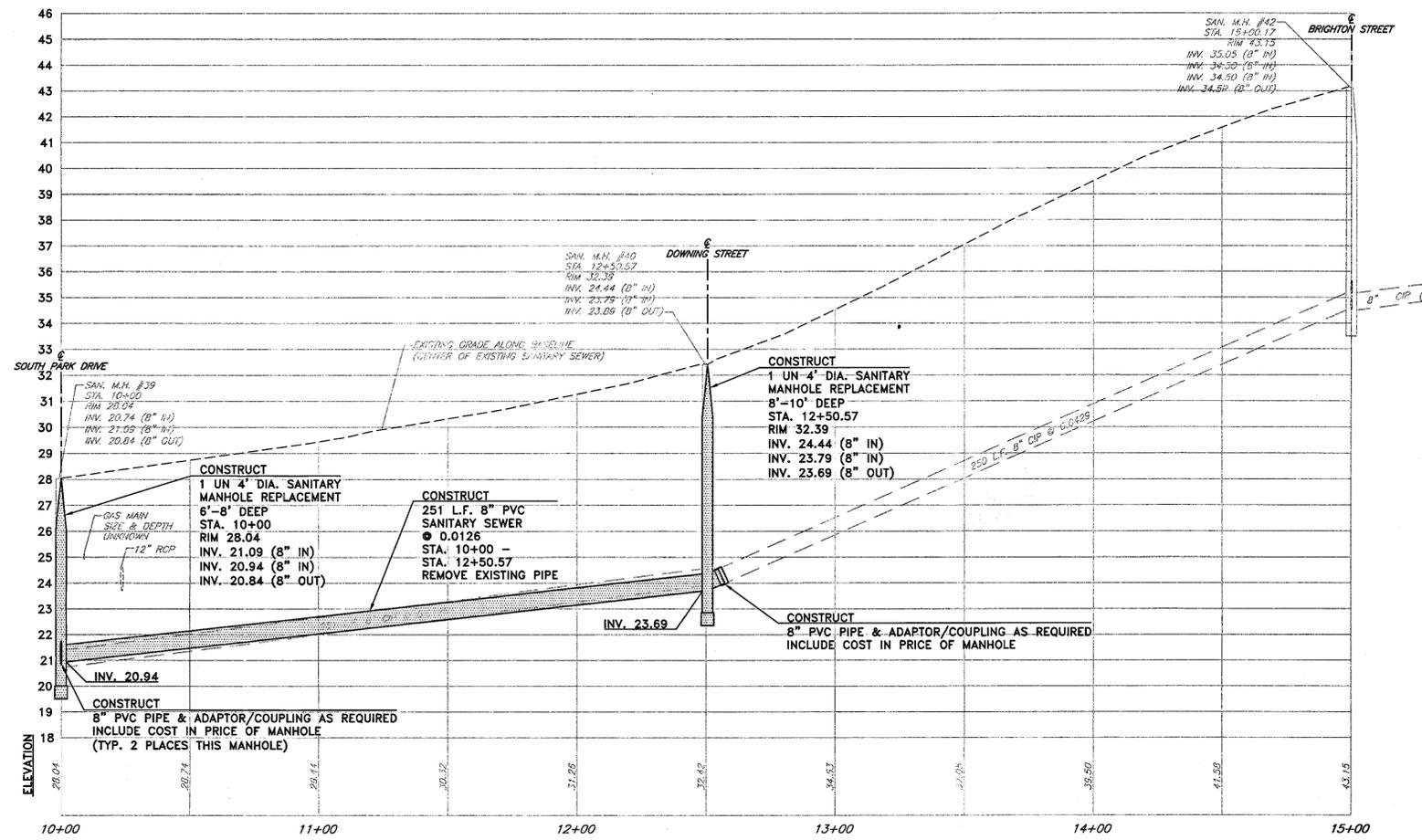


**RICHARD A. ALAIMO**  
ENGINEERING COMPANY  
Consulting Engineers  
NJDEA 24GA27988800  
200 HIGH STREET MOUNT HOLLY, N.J.  
2 MARKET STREET PATERSON, N.J.

**SANITARY SEWER IMPROVEMENTS**  
ELMWOOD AVENUE SANITARY SEWER  
PLAN  
STA. 10+00 - STA. 15+00.17  
SCALE: 1" = 30'

CLIENT: <b>TOWNSHIP OF WOODBRIDGE</b>	DATE: FEB 2020	SHEET <b>5</b>
PROJECT LOCATION: WOODBRIDGE TOWNSHIP MIDDLESEX COUNTY NEW JERSEY	PROJECT NO.: B-0726-0035-000	DESIGNED BY: CAF
CONTRACT NO.: 2019-017	DRAWN BY: WFL/CAF	CHECKED BY:
DEPT. HEAD:	FILE NO.:	

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**PROFILE**

SCALE: 1" = 30' (HORZ.)  
1" = 3' (VERT.)

REFER TO SHEET 5 FOR PLAN

APPROVED: *[Signature]* 2/25/20  
**Richard A. Alaimo**  
PROFESSIONAL ENGINEER  
NEW JERSEY LICENSE NO. 13195

REVISIONS	DATE	BY

**RICHARD A. ALAIMO**  
ENGINEERING COMPANY  
Consulting Engineers  
NJCA 24GA27988800  
200 HIGH STREET MOUNT HOLLY, N.J.  
2 MARKET STREET PATERSON, N.J.

**SANITARY SEWER IMPROVEMENTS**  
ELMWOOD AVENUE SANITARY SEWER  
PROFILE  
STA. 10+00 - STA. 15+00.17  
SCALE: H: 1" = 30' V: 1" = 3'

CLIENT: <b>TOWNSHIP OF WOODBRIDGE</b>	DATE <b>FEB 2020</b>	SHEET <b>6</b>
PROJECT LOCATION: WOODBRIDGE TOWNSHIP MIDDLESEX COUNTY NEW JERSEY	PROJECT NO.: <b>B-0726-0035-000</b>	CHECKED BY: <b>CAF</b>
CONTRACT NO.: <b>2019-017</b>	DEPT. HEAD:	FILE NO.:

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- BENCHMARKS**
- BM #1 U.P. #70964 - P.K. FND. ELEVATION 97.38
  - BM #2 U.P. X-CUT FND. ELEVATION 84.87
  - BM #3 HYDRANT HD-BOLT, X-CUT ELEVATION 84.12
  - BM #4 U.P. #64328 - P.K. FND. ELEVATION 92.02

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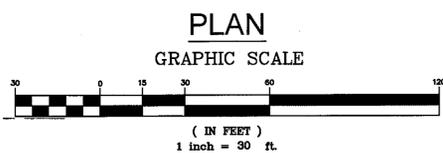
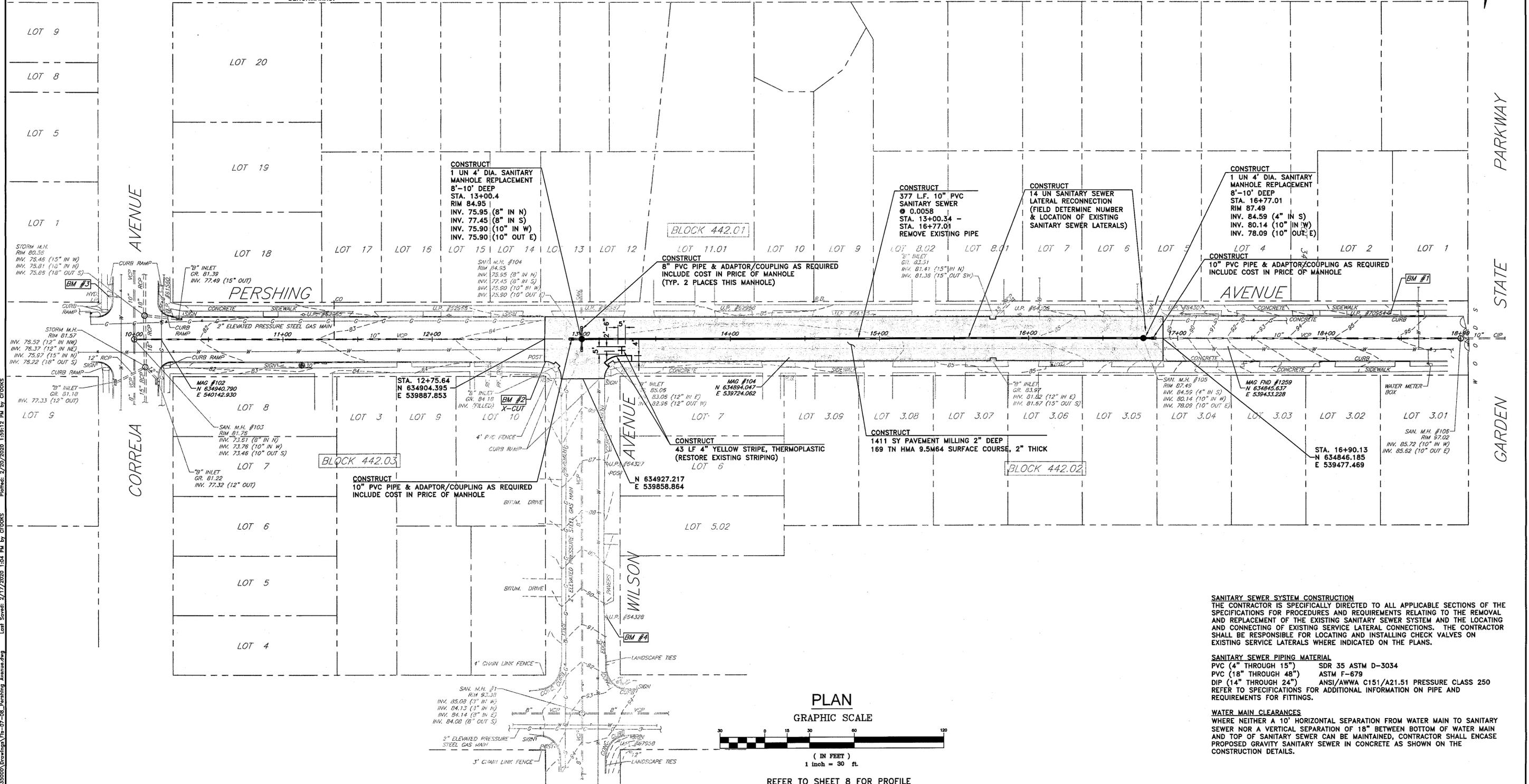
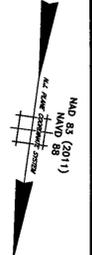
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ITEM NO.	TO BE CONSTRUCTED	CONTRACT QUANTITY
7	4' Dia. Sanitary Manhole Replacement, 8'-10" Deep	2 UN
14	10" PVC Sanitary Sewer, 6'-8" Deep	139 LF
15	10" PVC Sanitary Sewer, 8'-10" Deep	238 LF
21	Sanitary Sewer Lateral Reconnection	14 UN
29	Pavement Milling, 2" Deep	1,411 SY
30	HMA 9.5M64 Surface Course, 2" Thick	169 TN
33	4" Solid Yellow Stripe, Thermoplastic	43 LF



REFER TO SHEET 8 FOR PROFILE

**SANITARY SEWER SYSTEM CONSTRUCTION**  
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APPROVED: *Richard A. Alaimo* 2/25/20  
**Richard A. Alaimo**  
PROFESSIONAL ENGINEER  
NEW JERSEY LICENSE NO. 13195

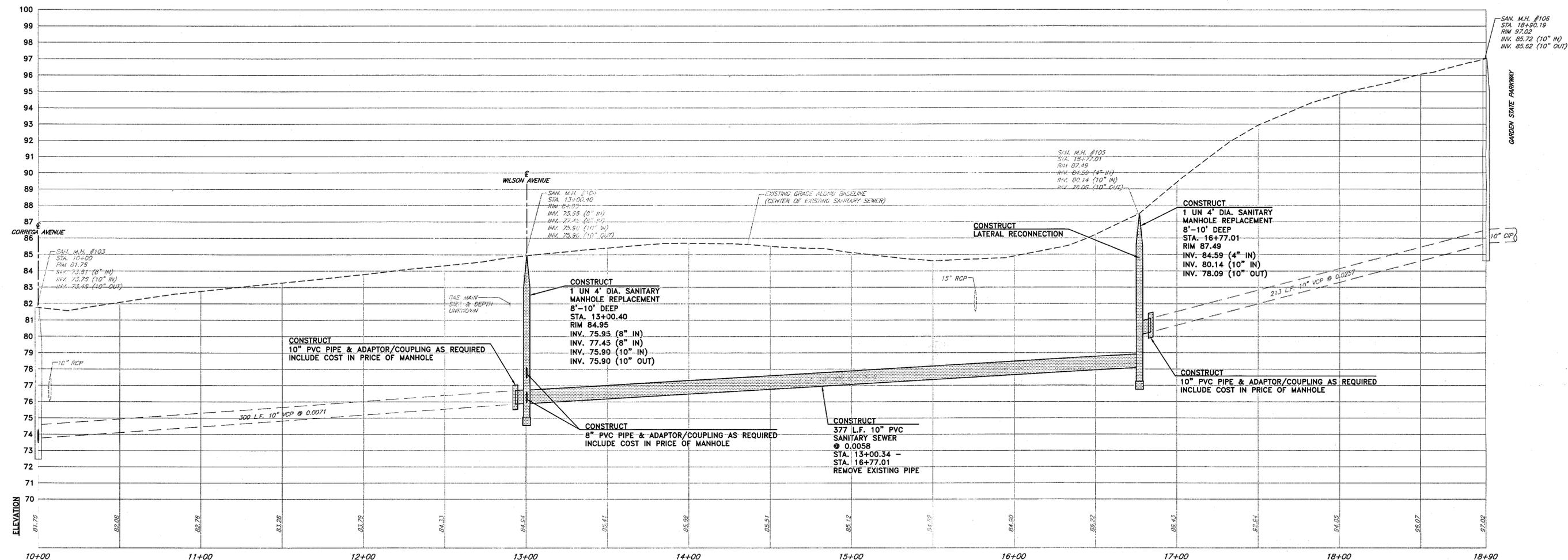
REVISIONS	DATE	BY

**RICHARD A. ALAIMO**  
ENGINEERING COMPANY  
Consulting Engineers  
NJDC 24GA27988800  
200 HIGH STREET MOUNT HOLLY, N.J.  
2 MARKET STREET PATERSON, N.J.

**SANITARY SEWER IMPROVEMENTS**  
PERSHING AVENUE SANITARY SEWER  
PLAN  
STA. 10+00 - STA. 18+90  
SCALE: 1" = 30'

CLIENT: TOWNSHIP OF WOODBRIDGE  
PROJECT LOCATION: WOODBRIDGE TOWNSHIP MIDDLESEX COUNTY NEW JERSEY  
PROJECT NO.: B-0726-0035-000  
CONTRACT NO.: 2019-017  
DATE: FEB 2020  
DESIGNED BY: CAF  
DRAWN BY: WFL/CAF  
CHECKED BY: WFL/CAF  
DEPT. HEAD: WFL/CAF  
SHEET: 7  
FILE NO.:

FINAL FOR SEWER DESIGN



**PROFILE**

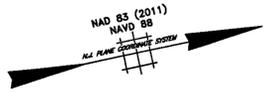
SCALE: 1" = 30' (HORZ.)  
1" = 3' (VERT.)

REFER TO SHEET 7 FOR PLAN

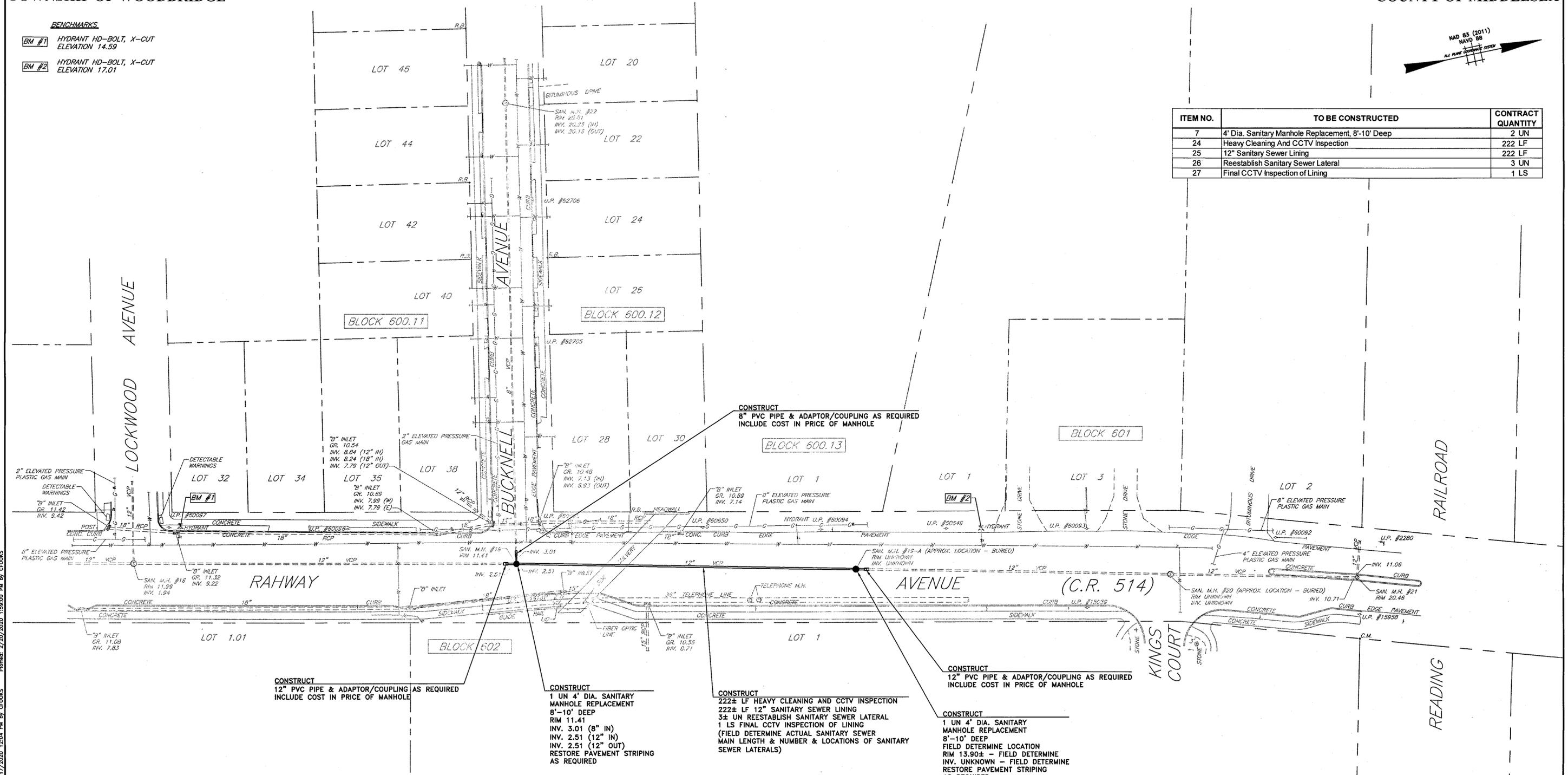
<p>APPROVED: <i>[Signature]</i> 2/25/20</p> <p><b>Richard A. Alaimo</b> PROFESSIONAL ENGINEER NEW JERSEY LICENSE NO. 13195</p>	<table border="1"> <tr><th>REVISIONS</th><th>DATE</th><th>BY</th></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>	REVISIONS	DATE	BY										<p><b>RICHARD A. ALAIMO ENGINEERING COMPANY</b> Consulting Engineers NJDCA 24GA27988800 200 HIGH STREET MOUNT HOLLY, N.J. 2 MARKET STREET PATERSON, N.J.</p>	<p><b>SANITARY SEWER IMPROVEMENTS</b></p> <p><b>PERSHING AVENUE SANITARY SEWER PROFILE</b> STA. 10+00 - STA. 18+90</p> <p>SCALE: H: 1" = 30' V: 1" = 3'</p>	<p>CLIENT: <b>TOWNSHIP OF WOODBRIDGE</b></p> <p>PROJECT LOCATION: <b>WOODBRIDGE TOWNSHIP MIDDLESEX COUNTY NEW JERSEY</b></p>	<p>DATE: <b>FEB 2020</b></p> <p>DESIGNED BY: <b>CAF</b></p> <p>DRAWN BY: <b>CAF</b></p> <p>CHECKED BY: <b>CAF</b></p> <p>DEPT. HEAD: <b>CAF</b></p>	<p>SHEET</p> <p style="font-size: 24pt;"><b>8</b></p> <p>FILE NO.:</p>
REVISIONS	DATE	BY																
<p>PROJECT NO.: <b>B-0726-0035-000</b></p> <p>CONTRACT NO.: <b>2019-017</b></p>				<p>FINAL FOR SEWER DESIGN</p>														

**BENCHMARKS**

- BM #1 HYDRANT HD-BOLT, X-CUT  
ELEVATION 14.59
- BM #2 HYDRANT HD-BOLT, X-CUT  
ELEVATION 17.01



ITEM NO.	TO BE CONSTRUCTED	CONTRACT QUANTITY
7	4' Dia. Sanitary Manhole Replacement, 8'-10' Deep	2 UN
24	Heavy Cleaning And CCTV Inspection	222 LF
25	12" Sanitary Sewer Lining	222 LF
26	Reestablish Sanitary Sewer Lateral	3 UN
27	Final CCTV Inspection of Lining	1 LS



CONSTRUCT  
12" PVC PIPE & ADAPTOR/COUPLING AS REQUIRED  
INCLUDE COST IN PRICE OF MANHOLE

CONSTRUCT  
1 UN 4' DIA. SANITARY  
MANHOLE REPLACEMENT  
8'-10' DEEP  
RIM 11.41  
INV. 3.01 (8" IN)  
INV. 2.51 (12" IN)  
INV. 2.51 (12" OUT)  
RESTORE PAVEMENT STRIPING  
AS REQUIRED

CONSTRUCT  
222± LF HEAVY CLEANING AND CCTV INSPECTION  
222± LF 12" SANITARY SEWER LINING  
3± UN REESTABLISH SANITARY SEWER LATERAL  
1 LS FINAL CCTV INSPECTION OF LINING  
(FIELD DETERMINE ACTUAL SANITARY SEWER  
MAIN LENGTH & NUMBER & LOCATIONS OF SANITARY  
SEWER LATERALS)

CONSTRUCT  
12" PVC PIPE & ADAPTOR/COUPLING AS REQUIRED  
INCLUDE COST IN PRICE OF MANHOLE

CONSTRUCT  
1 UN 4' DIA. SANITARY  
MANHOLE REPLACEMENT  
8'-10' DEEP  
FIELD DETERMINE LOCATION  
RIM 13.90± - FIELD DETERMINE  
INV. UNKNOWN - FIELD DETERMINE  
RESTORE PAVEMENT STRIPING  
AS REQUIRED

**BASELINE**  
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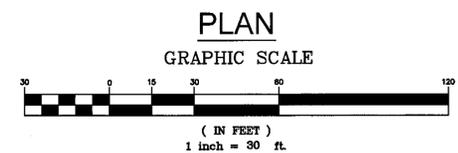
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THE CONTRACTOR SHALL FURNISH AND INSTALL A TEMPORARY BYPASSING SYSTEM IN ORDER TO DIVERT THE FLOW AROUND THE WORK AREA AS REQUIRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING WASTEWATER FLOW FOR THE DURATION OF THE PROJECT. THE TEMPORARY BYPASS SYSTEM SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND SHALL INCLUDE LOCATIONS OF TEMPORARY PIPING, MANHOLE CONNECTIONS, ADDITIONAL STRUCTURES AND BYPASS PUMPS. REFER TO THE SPECIFICATIONS FOR ADDITIONAL DETAILS.

**SANITARY SEWER SYSTEM CONSTRUCTION**  
THE CONTRACTOR IS SPECIFICALLY DIRECTED TO ALL APPLICABLE SECTIONS OF THE SPECIFICATIONS FOR PROCEDURES AND REQUIREMENTS RELATING TO THE REMOVAL AND REPLACEMENT OF THE EXISTING SANITARY SEWER SYSTEM AND THE LOCATING AND CONNECTING OF EXISTING SERVICE LATERAL CONNECTIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND INSTALLING CHECK VALVES ON EXISTING SERVICE LATERALS WHERE INDICATED ON THE PLANS.



**SANITARY SEWER PIPING MATERIAL**  
PVC (4" THROUGH 15") SDR 35 ASTM D-3034  
PVC (18" THROUGH 48") ASTM F-679  
DIP (14" THROUGH 24") ANSI/AWWA C151/A21.51 PRESSURE CLASS 250  
REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION ON PIPE AND REQUIREMENTS FOR FITTINGS.

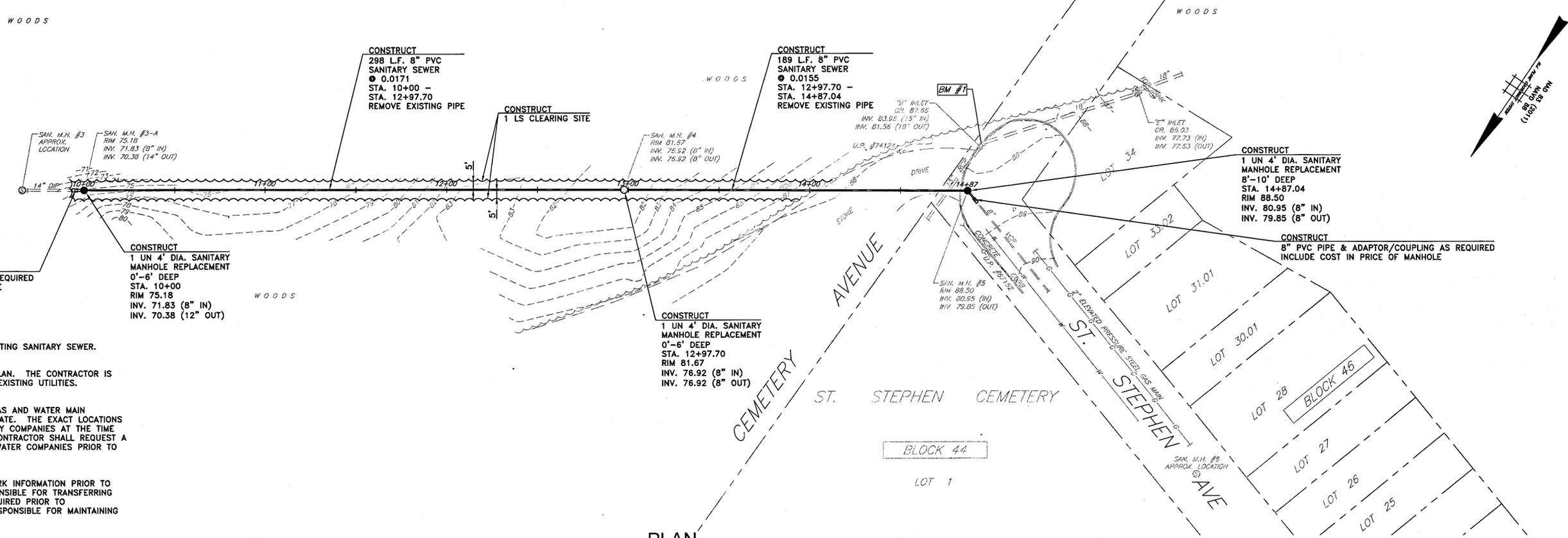
**WATER MAIN CLEARANCES**  
WHERE NEITHER A 10' HORIZONTAL SEPARATION FROM WATER MAIN TO SANITARY SEWER NOR A VERTICAL SEPARATION OF 18" BETWEEN BOTTOM OF WATER MAIN AND TOP OF SANITARY SEWER CAN BE MAINTAINED, CONTRACTOR SHALL ENCASE PROPOSED GRAVITY SANITARY SEWER IN CONCRETE AS SHOWN ON THE CONSTRUCTION DETAILS.

FINAL FOR SEWER DESIGN

 APPROVED: <b>Richard A. Alaimo</b> PROFESSIONAL ENGINEER NEW JERSEY LICENSE NO. 13195	REVISIONS DATE BY	 <b>RICHARD A. ALAIMO ENGINEERING COMPANY</b> Consulting Engineers NJDCA 24GA27988800 200 HIGH STREET MOUNT HOLLY, N.J. 2 MARKET STREET PATERSON, N.J.	SANITARY SEWER IMPROVEMENTS RAHWAY AVENUE SANITARY SEWER CONSTRUCTION PLAN	CLIENT: TOWNSHIP OF WOODBRIDGE	DATE: FEB 2020 DESIGNED BY: CAF DRAWN BY: WFL/CAF CHECKED BY: WFL/CAF DEPT. HEAD:	SHEET 9
	PROJECT LOCATION: WOODBRIDGE TOWNSHIP MIDDLESEX COUNTY NEW JERSEY		PROJECT NO.: B-0726-0035-000 CONTRACT NO.: 2019-017	SCALE: 1" = 30'	FILE NO.:	

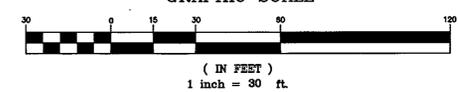
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BENCHMARK  
 BM #1  
 ELEVATION ??.??



PLAN

GRAPHIC SCALE



ITEM NO.	TO BE CONSTRUCTED	CONTRACT QUANTITY
5	4' Dia. Sanitary Manhole Replacement, 0'-6' Deep	2 UN
7	4' Dia. Sanitary Manhole Replacement, 8'-10' Deep	1 UN
11	8" PVC Sanitary Sewer, 0'-6' Deep	262 LF
12	8" PVC Sanitary Sewer, 6'-8' Deep	115 LF
13	8" PVC Sanitary Sewer, 8'-10' Deep	110 LF

**BASELINE**  
 BASELINE COINCIDES WITH THE CENTER OF THE EXISTING SANITARY SEWER.

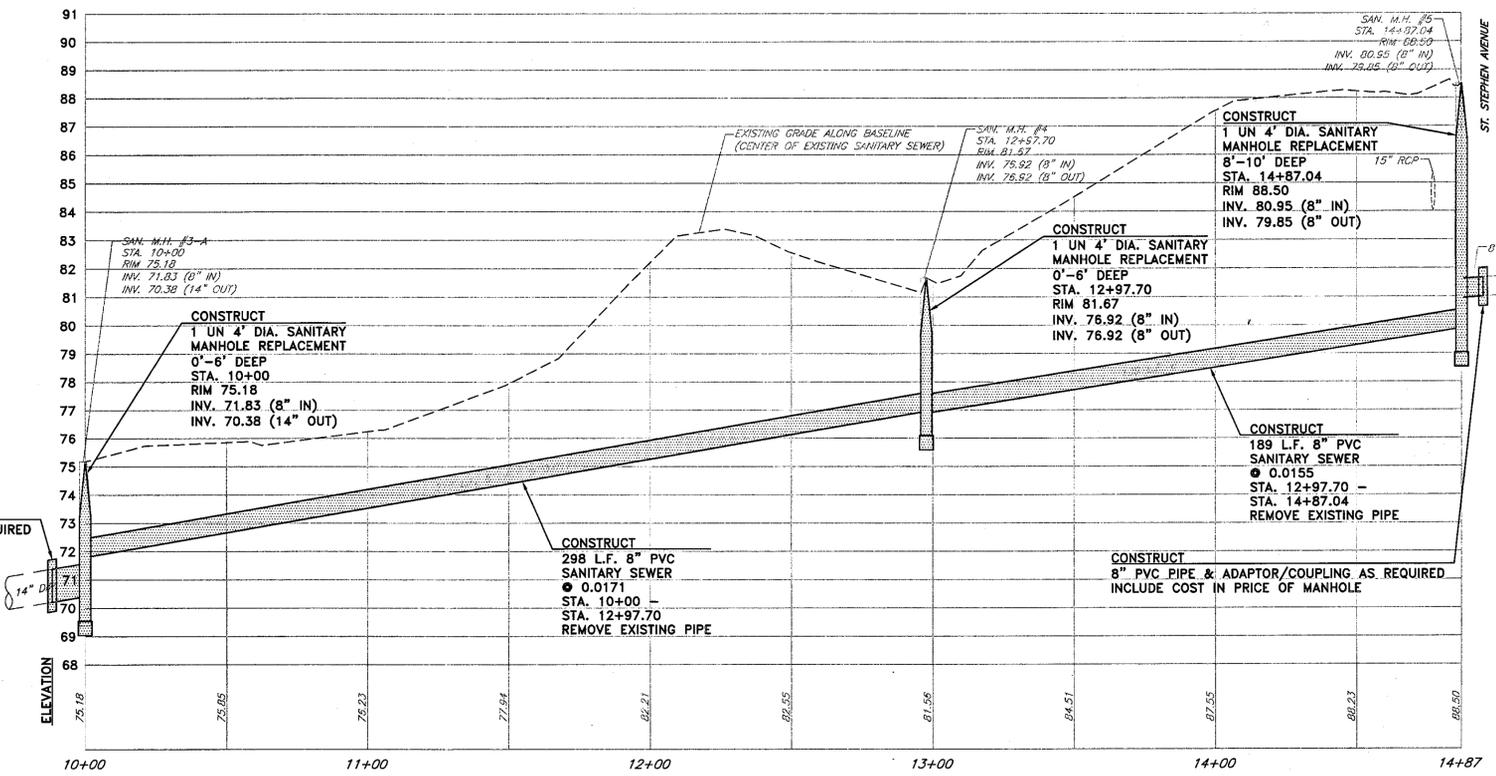
**EXISTING UTILITIES**  
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**SPECIAL PROVISIONS**  
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PROFILE

SCALE: 1" = 30' (HORIZ.)  
 1" = 3' (VERT.)

**TEMPORARY BYPASS SYSTEM**  
 THE CONTRACTOR SHALL FURNISH AND INSTALL A TEMPORARY BYPASSING SYSTEM IN ORDER TO DIVERT THE FLOW AROUND THE WORK AREA AS REQUIRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING WASTEWATER FLOW FOR THE DURATION OF THE PROJECT. THE TEMPORARY BYPASS SYSTEM SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND SHALL INCLUDE LOCATIONS OF TEMPORARY PIPING, MANHOLE CONNECTIONS, ADDITIONAL STRUCTURES AND BYPASS PUMPS. REFER TO THE SPECIFICATIONS FOR ADDITIONAL DETAILS.

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**SANITARY SEWER PIPING MATERIAL**  
 PVC (4" THROUGH 15") SDR 35 ASTM D-3034  
 PVC (18" THROUGH 48") ASTM F-679  
 DIP (14" THROUGH 24") ANSI/AWWA C151/A21.51 PRESSURE CLASS 250  
 REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION ON PIPE AND REQUIREMENTS FOR FITTINGS.

**WATER MAIN CLEARANCES**  
 WHERE NEITHER A 10' HORIZONTAL SEPARATION FROM WATER MAIN TO SANITARY SEWER NOR A VERTICAL SEPARATION OF 18" BETWEEN BOTTOM OF WATER MAIN AND TOP OF SANITARY SEWER CAN BE MAINTAINED, CONTRACTOR SHALL ENCASE PROPOSED GRAVITY SANITARY SEWER IN CONCRETE AS SHOWN ON THE CONSTRUCTION DETAILS.

APPROVED: *Richard A. Alaimo* 2/25/20  
**Richard A. Alaimo**  
 PROFESSIONAL ENGINEER  
 NEW JERSEY LICENSE NO. 13195

REVISIONS	DATE	BY

**RICHARD A. ALAIMO**  
 ENGINEERING COMPANY  
 Consulting Engineers  
 NJDCA 24GA27988800  
 200 HIGH STREET MOUNT HOLLY, N.J.  
 2 MARKET STREET PATERSON, N.J.

**SANITARY SEWER IMPROVEMENTS**  
**ST. STEPHEN AVENUE SANITARY SEWER**  
 PLAN & PROFILE  
 STA. 10+00 - STA. 14+87.04

CLIENT: TOWNSHIP OF WOODBRIDGE  
 PROJECT LOCATION: WOODBRIDGE TOWNSHIP MIDDLESEX COUNTY NEW JERSEY  
 PROJECT NO.: B-0726-0035-000  
 CONTRACT NO.: 2019-017  
 DATE: FEB 2020  
 DESIGNED BY: CAF  
 DRAWN BY: WFL/CAF  
 CHECKED BY:  
 SHEET: 10  
 FILE NO.:

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**BENCHMARKS**

BM #1 U.P. #17289 - P.K. FND.  
ELEVATION 75.33

ITEM NO.	TO BE CONSTRUCTED	CONTRACT QUANTITY
6	4' Dia. Sanitary Manhole Replacement, 6'-8" Deep	1 UN
7	4' Dia. Sanitary Manhole Replacement, 8'-10" Deep	1 UN
16	12" PVC Sanitary Sewer, 6'-8" Deep	131 LF
17	12" PVC Sanitary Sewer, 8'-10" Deep	80 LF
21	Sanitary Sewer Lateral Reconnection	6 UN
29	Pavement Milling, 2" Deep	758 SY
30	HMA 9.5M64 Surface Course, 2" Thick	91 TN
34	8" Solid White Stripe, Thermoplastic	63 LF

**CONSTRUCT**  
1 UN 4' DIA. SANITARY MANHOLE REPLACEMENT  
6'-8" DEEP  
STA. 13+94.76  
RIM 60.69  
INV. 54.49 (12" IN)  
INV. 54.39 (12" OUT)

**CONSTRUCT**  
1 UN 4' DIA. SANITARY MANHOLE REPLACEMENT  
8'-10" DEEP  
STA. 15+98.72  
RIM 74.21  
INV. 66.01 (12" STUB IN)  
INV. 66.01 (12" OUT)

**CONSTRUCT**  
204 L.F. 12" PVC  
SANITARY SEWER  
@ 0.0565  
STA. 13+94.76 -  
STA. 15+98.72  
REMOVE EXISTING PIPE

**CONSTRUCT**  
6 UN SANITARY SEWER  
LATERAL RECONNECTION  
(FIELD DETERMINE NUMBER  
& LOCATION OF EXISTING  
SANITARY SEWER LATERALS)

**CONSTRUCT**  
12" PVC PIPE & ADAPTOR/COUPLING AS REQUIRED  
INCLUDE COST IN PRICE OF MANHOLE

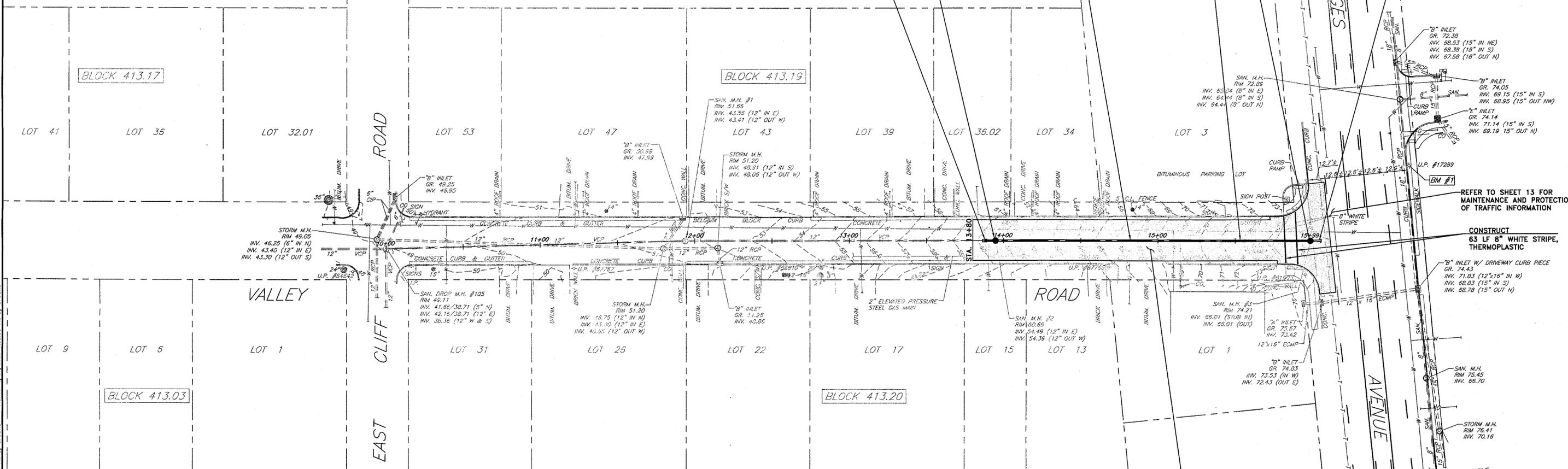
**CONSTRUCT**  
12" PVC SANITARY SEWER STUB  
MATCH EXISTING INVERT & SLOPE  
REMOVE EXISTING PIPE  
INCLUDE PLUG IN COST OF PIPE

REFER TO SHEET 13 FOR  
MAINTENANCE AND PROTECTION  
OF TRAFFIC INFORMATION

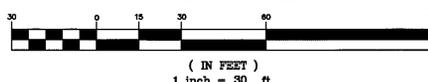
**CONSTRUCT**  
63 LF 8" WHITE STRIPE,  
THERMOPLASTIC

8" INLET W/ DRIVEWAY CURB PIECE  
GR. 74.43  
INV. 71.83 (12"x16" IN W)  
INV. 68.83 (15" IN S)  
INV. 68.78 (15" OUT N)

**NOTE:**  
SAINT GEORGES AVENUE  
(S.H. 35) SPEED LIMIT 40  
MPH



**PLAN**  
GRAPHIC SCALE



REFER TO SHEET 12 FOR PROFILE

**BASELINE**  
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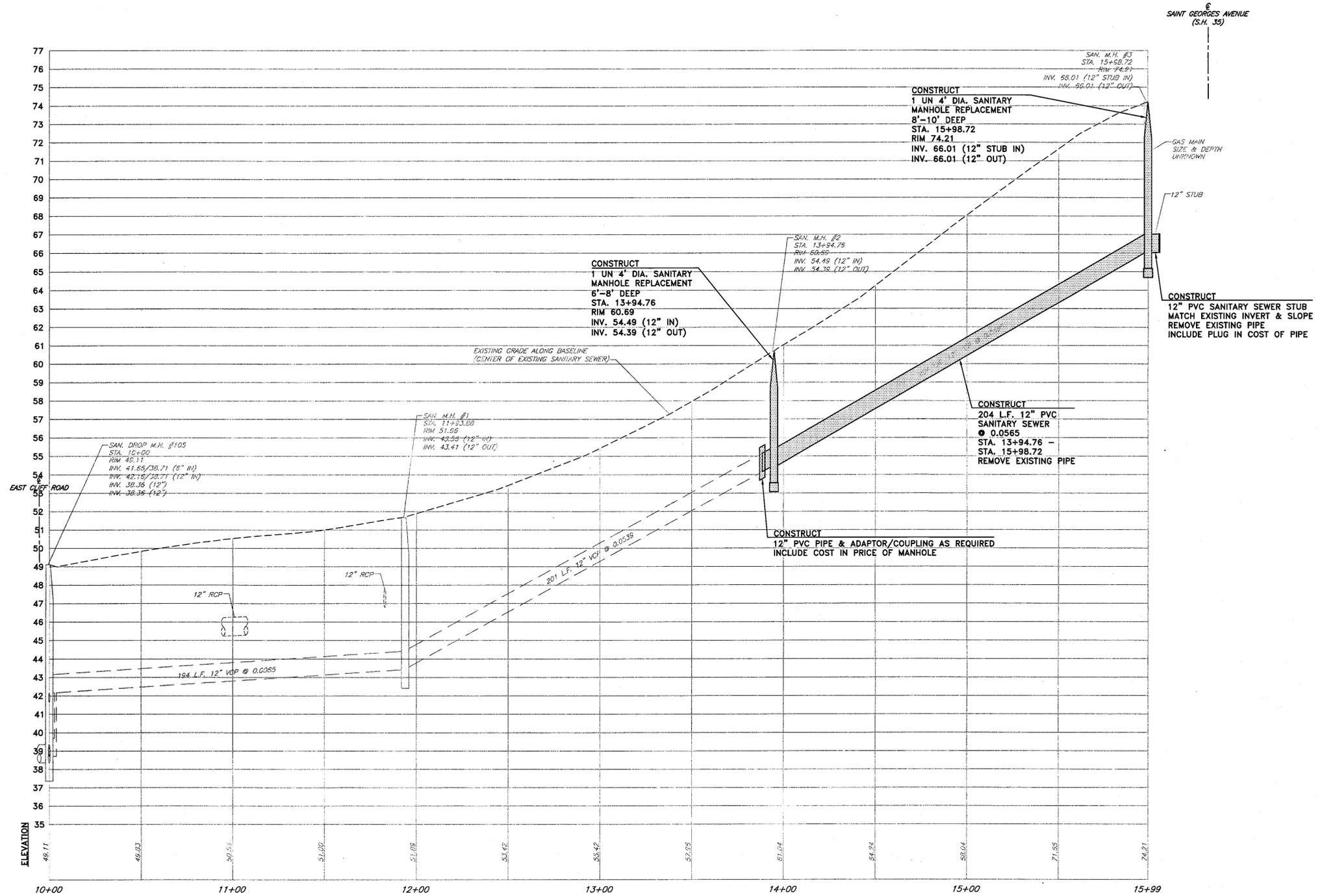
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 APPROVED: <b>Richard A. Alaimo</b> PROFESSIONAL ENGINEER NEW JERSEY LICENSE NO. 13195	REVISIONS DATE BY	 <b>RICHARD A. ALAIMO</b> ENGINEERING COMPANY Consulting Engineers NJDCA 24GA27988800 200 HIGH STREET MOUNT HOLLY, N.J. 2 MARKET STREET PATERSON, N.J.	SANITARY SEWER IMPROVEMENTS VALLEY ROAD SANITARY SEWER PLAN STA. 10+00 - STA. 15+99	CLIENT: TOWNSHIP OF WOODBRIDGE	DATE: FEB 2020 DESIGNED BY: CAF DRAWN BY: WFL/CAF CHECKED BY:	SHEET <b>11</b>
	PROJECT LOCATION: WOODBRIDGE TOWNSHIP MIDDLESEX COUNTY NEW JERSEY		PROJECT NO.: B-0726-0035-000 CONTRACT NO.: 2019-017	SCALE: 1" = 30'	DEPT. HEAD:	FILE NO.:

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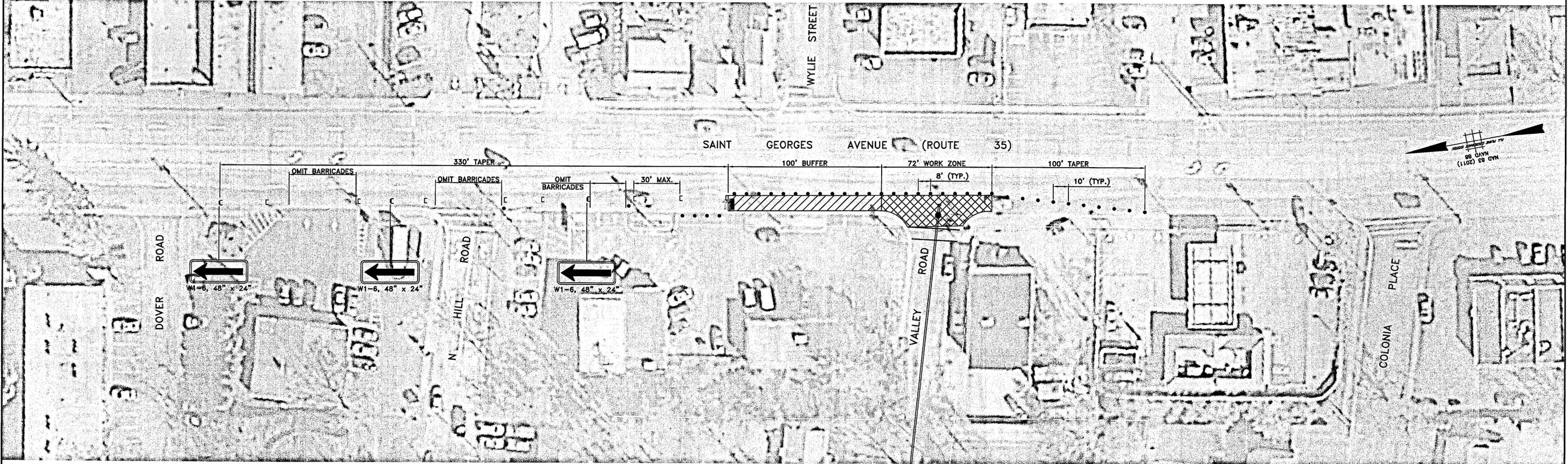
**PROFILE**

SCALE: 1" = 30' (HORZ.)  
1" = 3' (VERT.)

REFER TO SHEET 11 FOR PLAN

APPROVED: <i>[Signature]</i> 2/25/20 <b>Richard A. Alaimo</b> PROFESSIONAL ENGINEER NEW JERSEY LICENSE NO. 13195	REVISIONS DATE BY	RICHARD A. ALAIMO ENGINEERING COMPANY Consulting Engineers NJDCA 24GA27988800 200 HIGH STREET MOUNT HOLLY, N.J. 2 MARKET STREET PATERSON, N.J.	SANITARY SEWER IMPROVEMENTS VALLEY ROAD SANITARY SEWER PROFILE STA. 10+00 - STA. 15+99		CLIENT: TOWNSHIP OF WOODBRIDGE	DATE: FEB 2020	SHEET 12
	PROJECT LOCATION: WOODBRIDGE TOWNSHIP MIDDLESEX COUNTY NEW JERSEY		PROJECT NO.: B-0726-0035-000 CONTRACT NO.: 2019-017	DRAWN BY: CAF CHECKED BY: CAF DEPT. HEAD:	SCALE: H: 1" = 30' V: 1" = 3'	FILE NO.:	

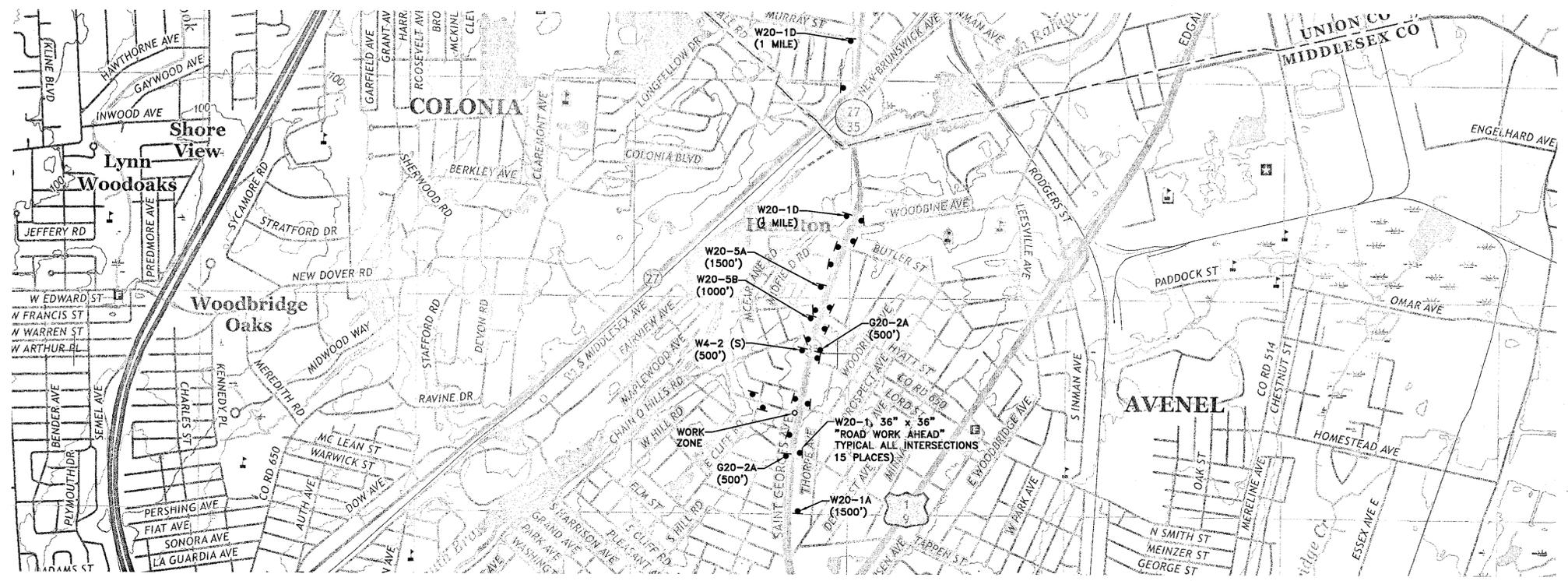
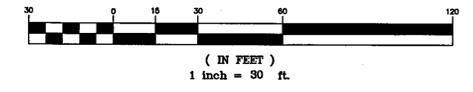
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NOTE:  
SPEED LIMIT IS 40 MPH.

WORK ZONE AREA (4 LANES UNDIVIDED, RIGHT LANE CLOSING)  
1" = 30'

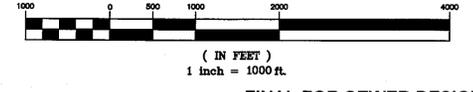
GRAPHIC SCALE



NOTE:  
ALL SIGN DISTANCES ARE FROM THE END OF TAPER ZONE

OVERALL SIGNAGE PLAN (4 LANES UNDIVIDED, RIGHT LANE CLOSING)  
1" = 1000'

GRAPHIC SCALE



- GENERAL NOTES:**
- ALL TRAFFIC CONTROL DEVICES AND SIGNAGE SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC DEVICES (MUTCD), LATEST EDITION.
  - ALL LANE CLOSURES INCLUDING TYPES AND PLACEMENT OF TRAFFIC CONTROL DEVICES AND SIGNAGE SHALL CONFORM TO NEW JERSEY DEPARTMENT OF TRANSPORTATION (NJDOT) TRAFFIC CONTROL DETAILS. REFER TO NJDOT TRAFFIC CONTROL DETAILS FOR LEGEND, NOTES & ADDITIONAL INFO.

APPROVED: *Richard A. Alaimo* 2/25/20  
**Richard A. Alaimo**  
PROFESSIONAL ENGINEER  
NEW JERSEY LICENSE NO. 13195

REVISIONS	DATE	BY

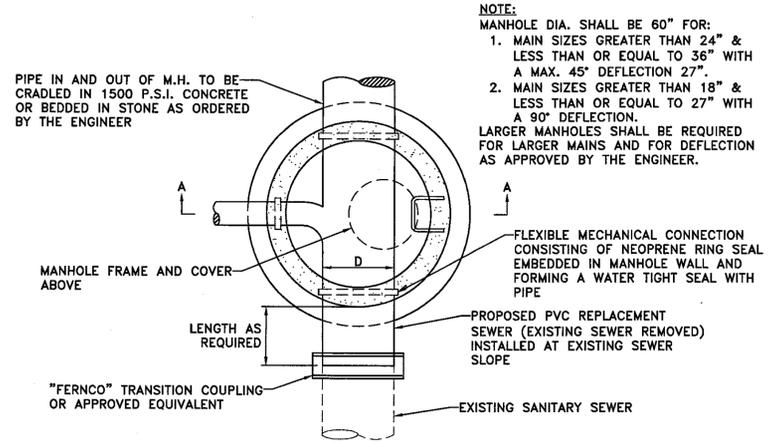


**RICHARD A. ALAIMO**  
ENGINEERING COMPANY  
Consulting Engineers  
NJDCA 24GA27988800  
200 HIGH STREET MOUNT HOLLY, N.J.  
2 MARKET STREET PATERSON, N.J.

**SANITARY SEWER IMPROVEMENTS**  
**MAINTENANCE & PROTECTION OF TRAFFIC**  
**ROUTE 35 (SAINT GEORGES AVE) & VALLEY ROAD**  
SCALE: AS NOTED

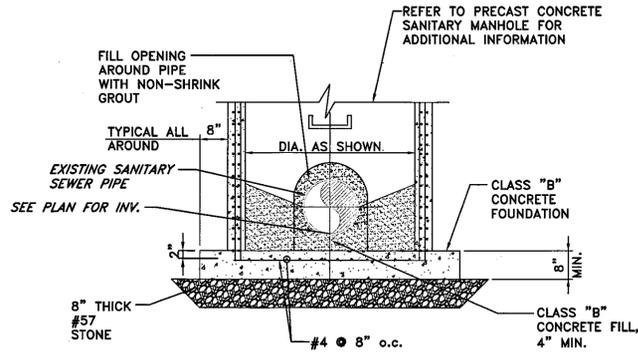
CLIENT: <b>TOWNSHIP OF WOODBRIDGE</b>	DATE: <b>FEB 2020</b>	SHEET <b>13</b>
PROJECT LOCATION: WOODBRIDGE TOWNSHIP MIDDLESEX COUNTY NEW JERSEY	PROJECT NO.: <b>B-0726-0035-000</b> CONTRACT NO.: <b>2019-017</b>	FILE NO.:
DESIGNED BY: <b>CAF</b>	CHECKED BY:	
DRAWN BY:	DEPT. HEAD:	

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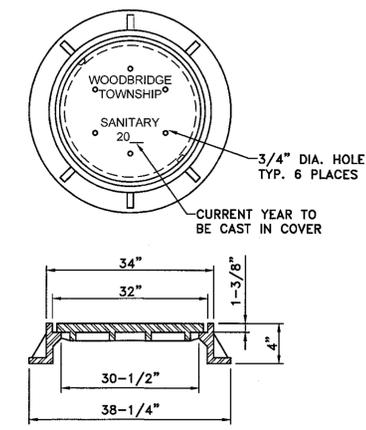
SECTIONAL PLAN AND CONNECTION TO EXISTING SANITARY SEWER

NOTE:  
 MANHOLE DIA. SHALL BE 60" FOR:  
 1. MAIN SIZES GREATER THAN 24" & LESS THAN OR EQUAL TO 36" WITH A MAX. 45° DEFLECTION 27".  
 2. MAIN SIZES GREATER THAN 18" & LESS THAN OR EQUAL TO 27" WITH A 90° DEFLECTION.  
 LARGER MANHOLES SHALL BE REQUIRED FOR LARGER MAINS AND FOR DEFLECTION AS APPROVED BY THE ENGINEER.



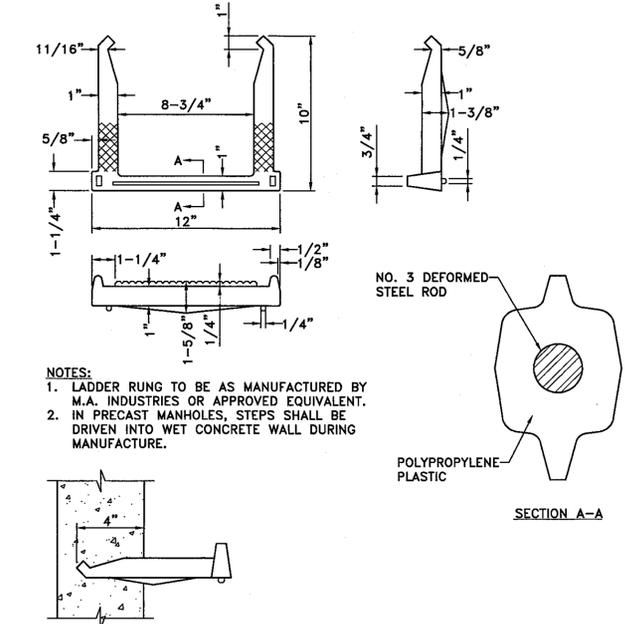
DETAIL 2 SANITARY DOGHOUSE MANHOLE

NOTES:  
 1. ALL MANHOLES SHALL BE FABRICATED WITH AN ANTIMICROBIAL ADDITIVE.  
 2. ALL GROUT USED IN CONNECTIONS OF PIPING TO MANHOLES SHALL HAVE AN ANTIMICROBIAL ADDITIVE.



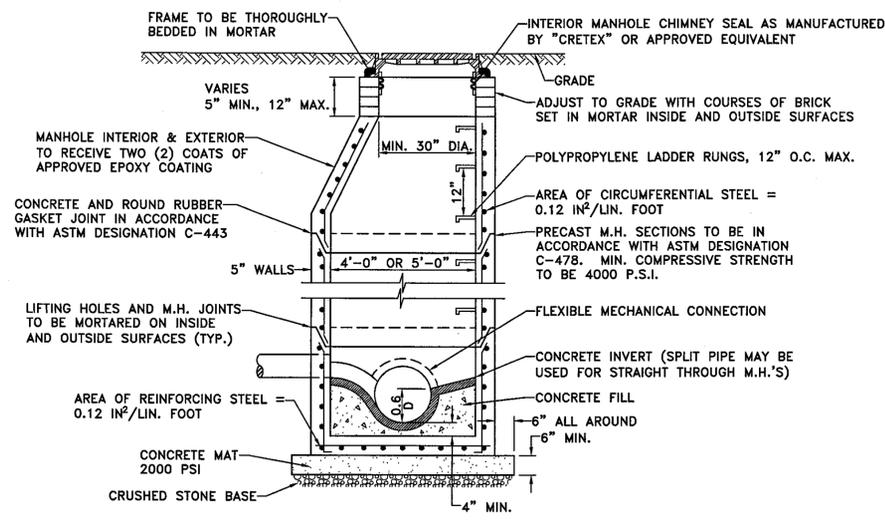
DETAIL 3 TYPICAL SANITARY SEWER MANHOLE FRAME AND COVER

NOTE:  
 THE MANHOLE COVER AND FRAME SHALL BE OF THE HEAVY HIGHWAY TYPE, WITH THE CIRCULAR FLARED TYPE FRAME AND ROUND FLANGE.  
 CAMPBELL FOUNDRY CO. PATTERN NO. 10120 OR APPROVED EQUIVALENT.



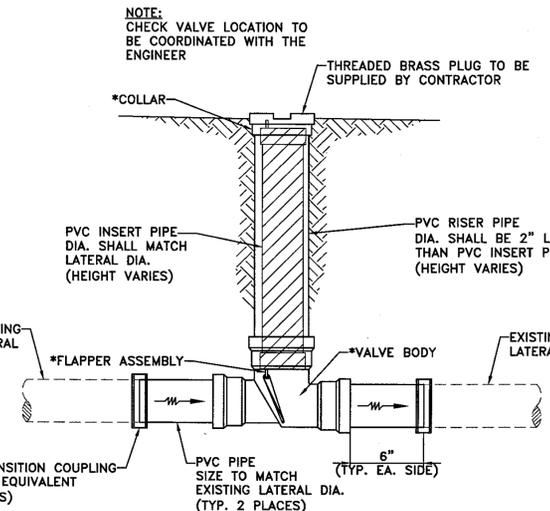
DETAIL 4 MANHOLE LADDER RUNG

NOTES:  
 1. LADDER RUNG TO BE AS MANUFACTURED BY M.A. INDUSTRIES OR APPROVED EQUIVALENT.  
 2. IN PRECAST MANHOLES, STEPS SHALL BE DRIVEN INTO WET CONCRETE WALL DURING MANUFACTURE.



SECTION A-A

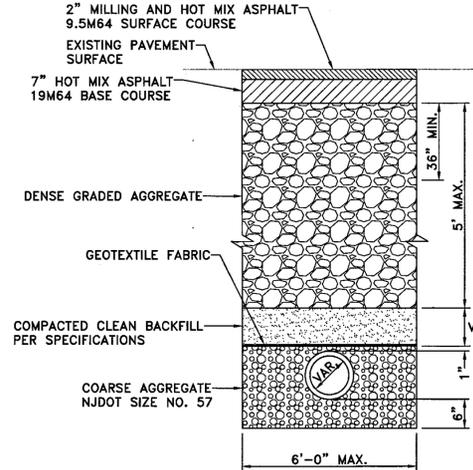
DETAIL 1 PRECAST CONCRETE SANITARY MANHOLE 4 FT & 5 FT DIAMETER



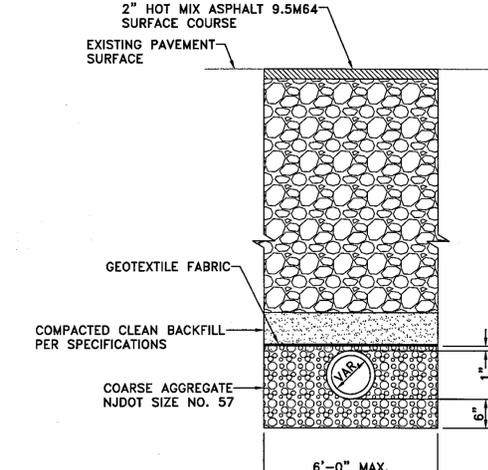
DETAIL 5 CHECK VALVE INSTALLATION ON EXISTING SANITARY LATERAL

\* COLLAR, FLAPPER ASSEMBLY AND VALVE BODY AS MANUFACTURED BY CLEAN CHECK, INC. OR APPROVED EQUIVALENT

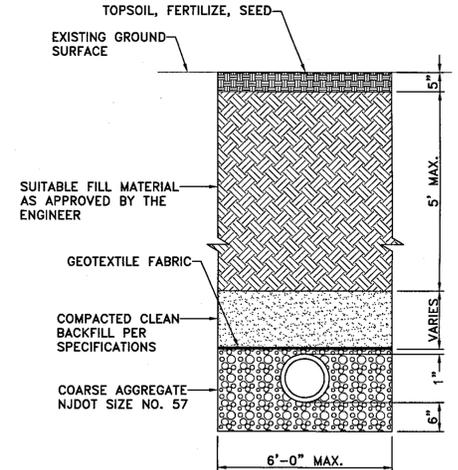
CONSTRUCTION NOTES  
 1. LATERAL "INTO" AND "OUT OF" THE BACKWATER CHECK VALVE SHALL MEET ALL SPECIFICATIONS AND DIMENSIONS REQUIRED BY THE TOWNSHIP.  
 2. CHECK VALVE TO BE INSTALLED AT A LOCATION UPSTREAM OF THE TOWNSHIP'S CURB CLEANOUT, IF ANY, AND WITHIN THE PUBLIC RIGHT-OF-WAY.



ROADWAY TRENCH REPAIR

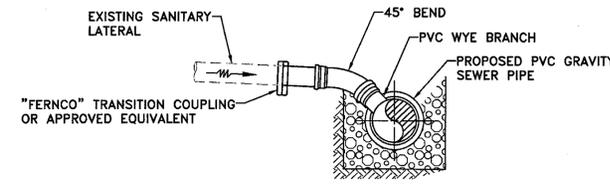


TEMPORARY TRENCH REPAIR



UNPAVED TRENCH REPAIR

DETAIL 6 TYPICAL BEDDING AND TRENCH DETAILS FOR SANITARY SEWER MAINS AND LATERALS

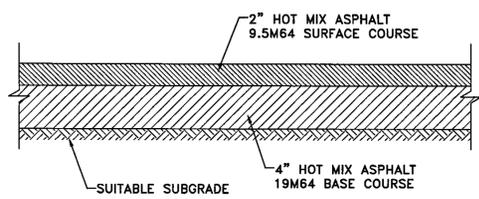


DETAIL 7 SANITARY SEWER LATERAL RECONNECTION

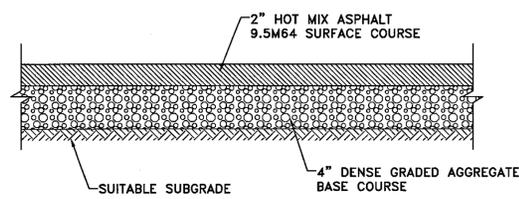
FINAL FOR SEWER DESIGN

 APPROVED: <b>Richard A. Alaimo</b> PROFESSIONAL ENGINEER NEW JERSEY LICENSE NO. 13195	REVISIONS DATE BY	RICHARD A. ALAIMO ENGINEERING COMPANY Consulting Engineers NJDCA 24GA27988800 200 HIGH STREET MOUNT HOLLY, N.J. 2 MARKET STREET PATERSON, N.J.	SANITARY SEWER IMPROVEMENTS CONSTRUCTION DETAILS SCALE: AS NOTED	CLIENT: TOWNSHIP OF WOODBRIDGE PROJECT LOCATION: WOODBRIDGE TOWNSHIP MIDDLESEX COUNTY NEW JERSEY	DATE: FEB 2020 DESIGNED BY: CAF DRAWN BY: CAF CHECKED BY: CAF DEPT. HEAD:	SHEET 14 FILE NO.:
	PROJECT NO.: B-0726-0035-000 CONTRACT NO.: 2019-017	PROJECT LOCATION: WOODBRIDGE TOWNSHIP MIDDLESEX COUNTY NEW JERSEY	PROJECT NO.: B-0726-0035-000 CONTRACT NO.: 2019-017	SCALE: AS NOTED	CLIENT: TOWNSHIP OF WOODBRIDGE	DATE: FEB 2020 DESIGNED BY: CAF DRAWN BY: CAF CHECKED BY: CAF DEPT. HEAD:

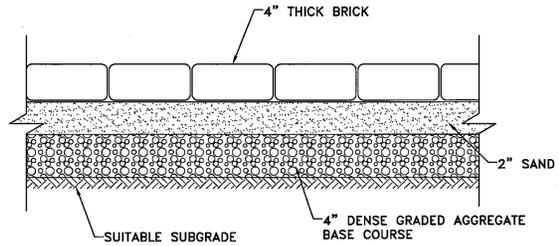
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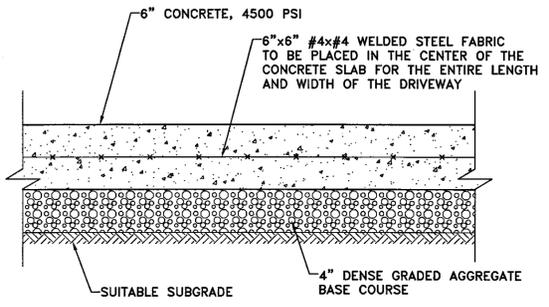
**HOT MIX ASPHALT**  
COMMERCIAL DRIVEWAY & PARKING LOT



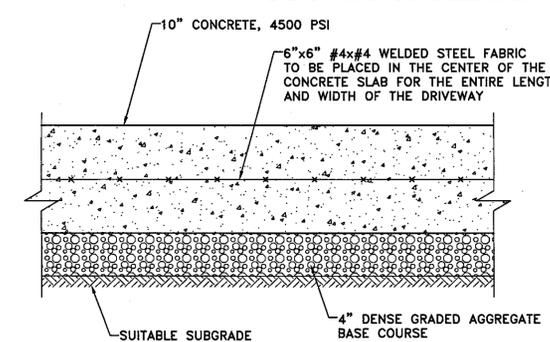
**HOT MIX ASPHALT**  
SINGLE & 2-FAMILY DRIVEWAYS



**BRICK PAVER DRIVEWAY**

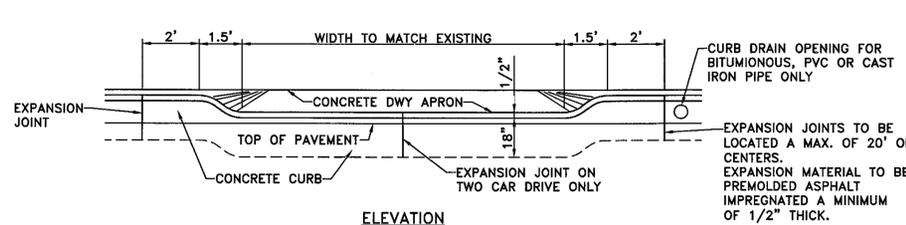


**CONCRETE**  
SINGLE & 2-FAMILY DRIVEWAYS

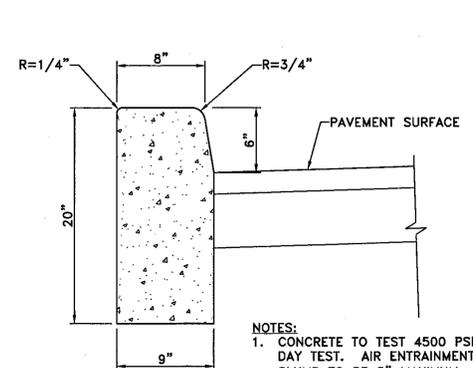


**CONCRETE**  
COMMERCIAL DRIVEWAY & PARKING LOT

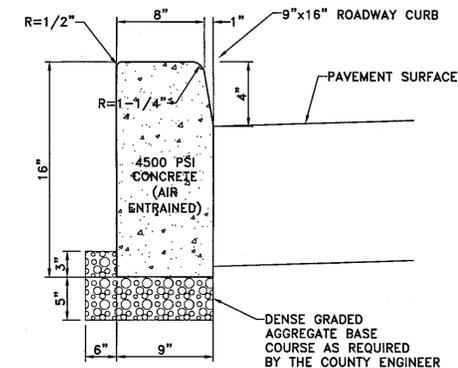
**DETAIL 1 DRIVEWAY REPLACEMENT**  
SCALE: N.T.S.



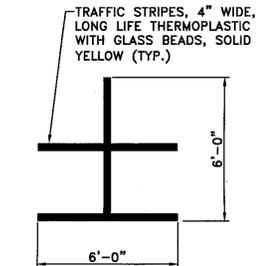
**ELEVATION**



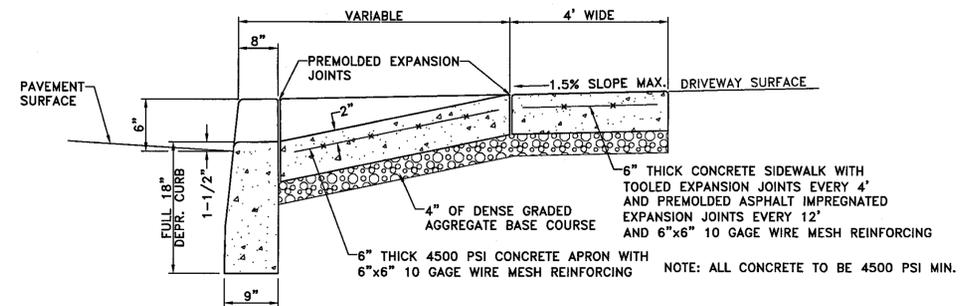
**DETAIL 3 9" x 20" CURB**  
SCALE: N.T.S.



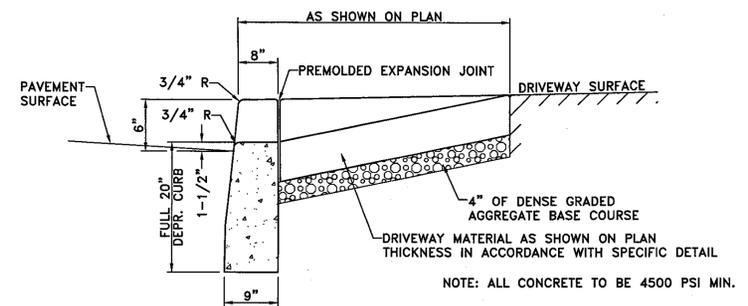
**DETAIL 4 9" x 16" CURB**  
COUNTY ROADS  
SCALE: N.T.S.



**DETAIL 7 FIRE HYDRANT**  
PAVEMENT MARKING  
SCALE: N.T.S.

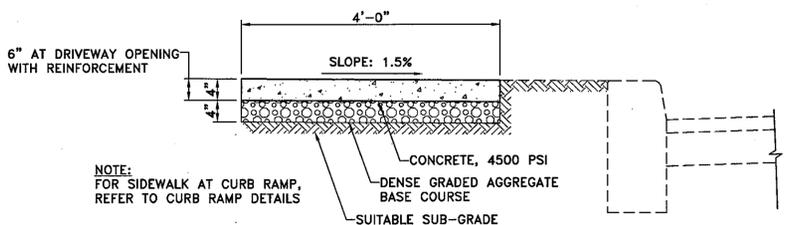


**SECTION WITH SIDEWALK**

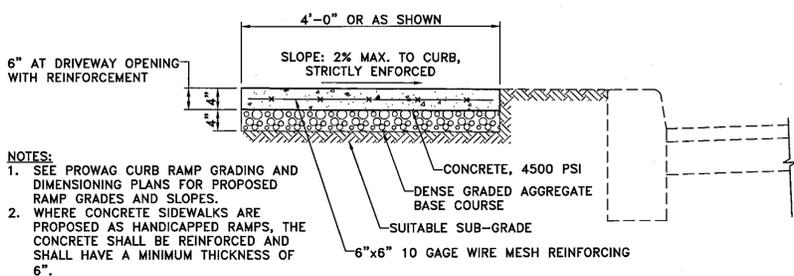


**SECTION WITHOUT SIDEWALK**

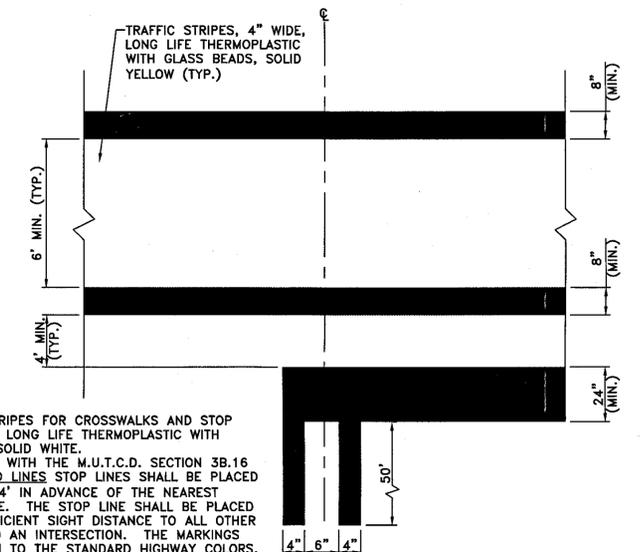
**DETAIL 2 RESIDENTIAL DRIVEWAY ENTRANCE**  
DEPRESSED CURB, DRIVEWAY APRON & SIDEWALK  
SCALE: N.T.S.



**DETAIL 5 CONCRETE SIDEWALK**  
SCALE: N.T.S.



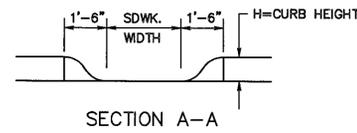
**DETAIL 6 REINFORCED CONCRETE SIDEWALK**  
SCALE: N.T.S.



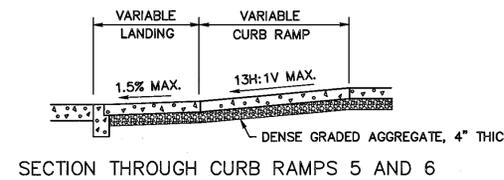
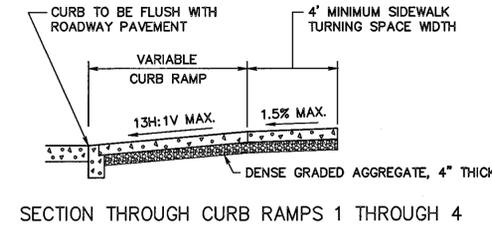
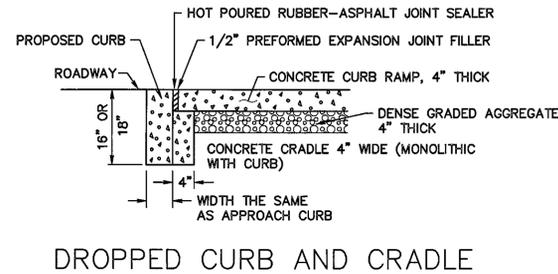
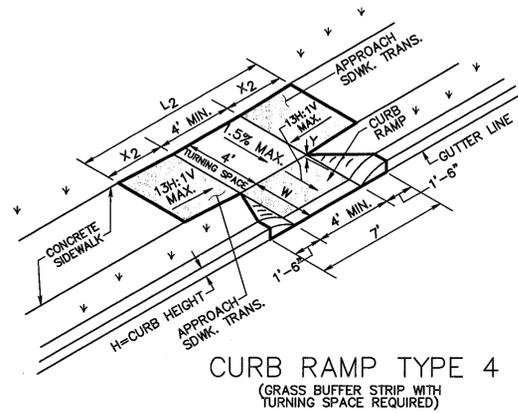
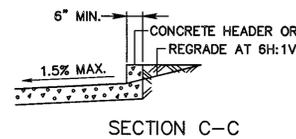
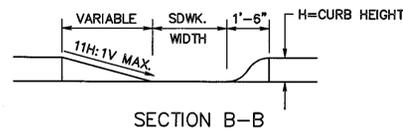
**DETAIL 8 CROSSWALK STRIPING & STOP BAR**  
PAVEMENT MARKING  
SCALE: N.T.S.

 APPROVED: <b>Richard A. Alaimo</b> PROFESSIONAL ENGINEER NEW JERSEY LICENSE NO. 13195	REVISIONS DATE BY	 <b>RICHARD A. ALAIMO</b> ENGINEERING COMPANY Consulting Engineers NJDCA 24GA27988800 200 HIGH STREET MOUNT HOLLY, N.J. 2 MARKET STREET PATERSON, N.J.	SANITARY SEWER IMPROVEMENTS CLIENT: TOWNSHIP OF WOODBRIDGE	DATE: FEB 2020 DESIGNED BY: CAF DRAWN BY: CAF CHECKED BY: CAF DEPT. HEAD:	SHEET <b>15</b> FILE NO.:
	SCALE: AS NOTED		PROJECT LOCATION: WOODBRIDGE TOWNSHIP MIDDLESEX COUNTY NEW JERSEY PROJECT NO.: B-0726-0035-000 CONTRACT NO.: 2019-017	CONSTRUCTION DETAILS	FINAL FOR SEWER DESIGN

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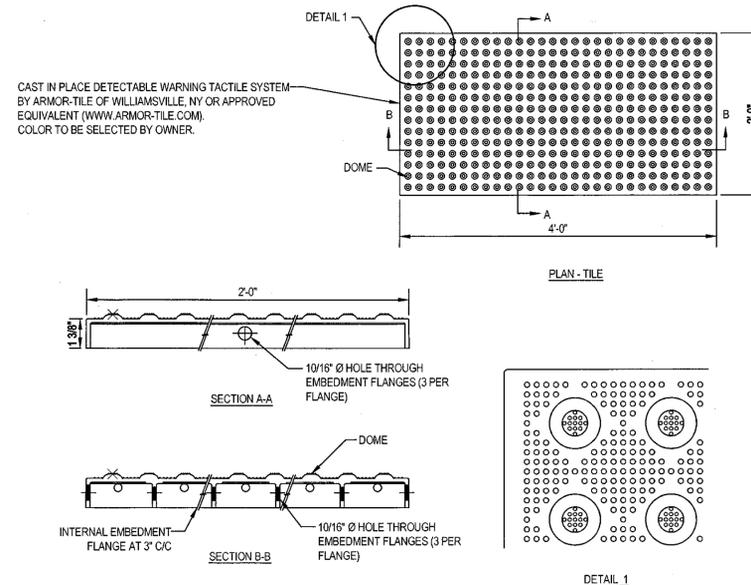
NOTE:  
CURB RAMP OPENING TO BE FLUSH WITH ROADWAY PAVEMENT (CURB RAMP TYPES 5 & 6).



- NOTES:
- KEEP TURNING SPACE, APPROACH SIDEWALK TRANSITIONS, AND CURB RAMP CLEAR OF OBSTRUCTIONS THAT PROTRUDE ABOVE THE SIDEWALK.
  - L<sub>1</sub>, L<sub>2</sub>, W, X AND X<sub>2</sub> DIMENSIONS VARY DEPENDENT UPON SLOPES OF GUTTERLINE, EXISTING/PROPOSED SIDEWALK SLOPE AND DIMENSION BETWEEN CURB AND SIDEWALK.
  - CURB (DROPPED CURB) GUTTERLINE TO BE FLUSH WITH ROADWAY PAVEMENT A MINIMUM OF 4 FEET AT ALL CURB RAMPS.
  - FOR CURB RAMP TYPES 5 AND 6, IF A GRASS BUFFER DOES NOT EXIST, SLOPE CURB TO EQUAL SLOPE OF ADJACENT CURB RAMP.
  - SIDEWALK AND CURB RAMP WITHIN AREA ENCLOSED BY HEAVY LINES INDICATES THE PAY LIMIT FOR CONCRETE SIDEWALK OF THE APPROPRIATE ADJACENT THICKNESS.
  - CURB AND HEADER WITHIN AREA ENCLOSED BY HEAVY LINES INDICATES THE PAY LIMIT FOR VERTICAL CURB OR SLOPING CURB OF THE APPROPRIATE ADJACENT SIZE AND KIND.
  - WHERE THE DISTANCE FROM THE GUTTER LINE TO THE OUTSIDE EDGE OF SIDEWALK IS 6 FEET OR LESS, USE CURB RAMP TYPE 7, INSTEAD OF CURB RAMP TYPE 1 THROUGH 4.
  - CROSSWALKS AND STOP LINES MAY BE MARKED OR UNMARKED. SEE PLANS.
  - THE DIMENSIONS OF THE RAMPS ARE TO BE CALCULATED BASED ON CROSS SLOPES SHOWN.
  - THE 13H:1V MAX SLOPE IS THE RUNNING SLOPE FOR CURB RAMPS, BUT ONLY THE 13H:1V SLOPE MEASURED AS X<sup>2</sup> IS THE RUNNING SLOPE FOR TYPE 3 AND TYPE 4 CURB RAMPS. ENSURE THE RUNNING SLOPE OF CURB RAMPS DOES NOT REQUIRE ITS LENGTH TO EXCEED 15 FEET. THE RUNNING SLOPE MAY EXCEED THE 13H:1V MAX SLOPE SO AS NOT TO EXCEED THE 15 FEET MAXIMUM LENGTH.

MODIFIED FROM N.J.D.O.T. STANDARD DETAIL  
DRAWING CD-606-1 (SHEET 51 OF 146)

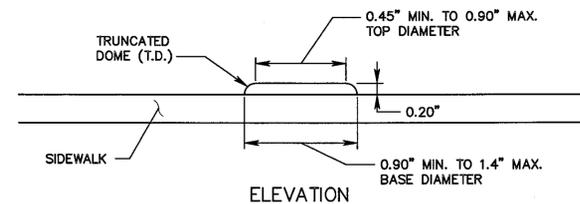
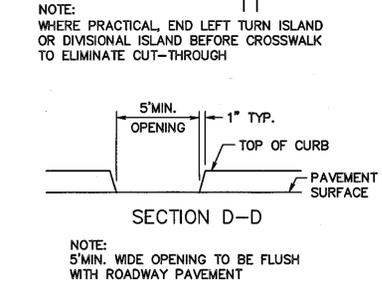
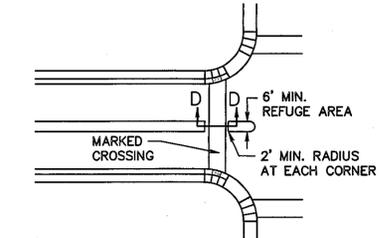
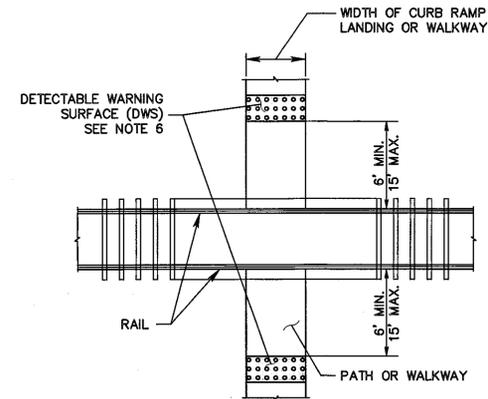
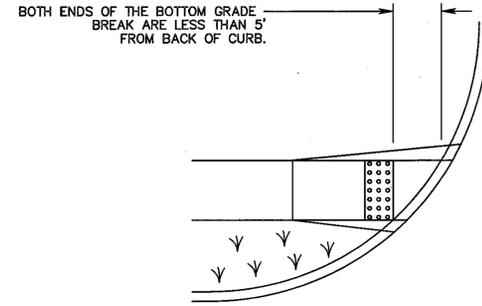
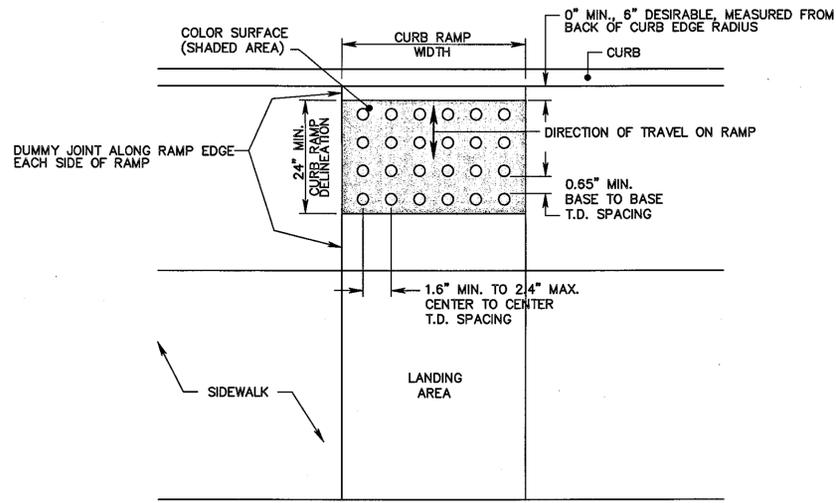
DETAIL 1 CURB RAMPS  
SCALE: N.T.S.



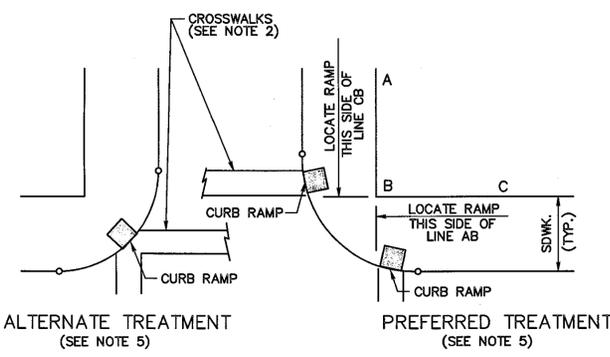
- NOTES:
- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
  - DO NOT SCALE DRAWINGS.

DETAIL 2 DETECTABLE WARNING CAST IN PLACE SYSTEM  
SCALE: N.T.S.

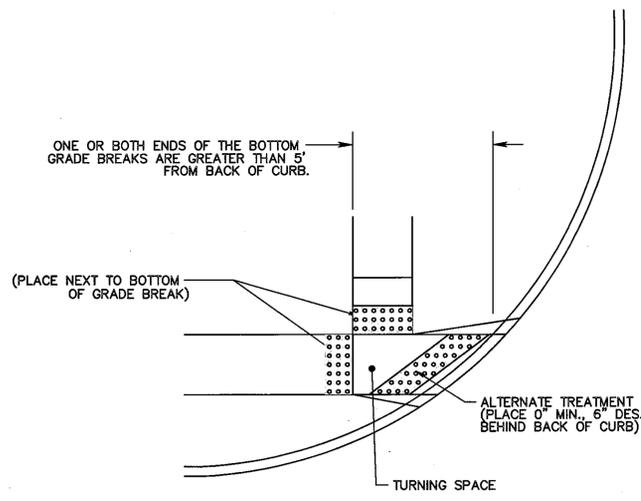
APPROVED:  Richard A. Alaimo PROFESSIONAL ENGINEER NEW JERSEY LICENSE NO. 13195	REVISIONS DATE BY	 RICHARD A. ALAIMO ENGINEERING COMPANY Consulting Engineers NJDCA 24GA27988800 200 HIGH STREET MOUNT HOLLY, N.J. 2 MARKET STREET PATERSON, N.J.	SANITARY SEWER IMPROVEMENTS	CLIENT: TOWNSHIP OF WOODBRIDGE	DATE: FEB 2020	SHEET 16
			CONSTRUCTION DETAILS	PROJECT LOCATION: WOODBRIDGE TOWNSHIP MIDDLESEX COUNTY NEW JERSEY	PROJECT NO.: B-0726-0035-000 CONTRACT NO.: 2019-017	DESIGNED BY: CAF DRAWN BY: CAF CHECKED BY: CAF DEPT. HEAD:



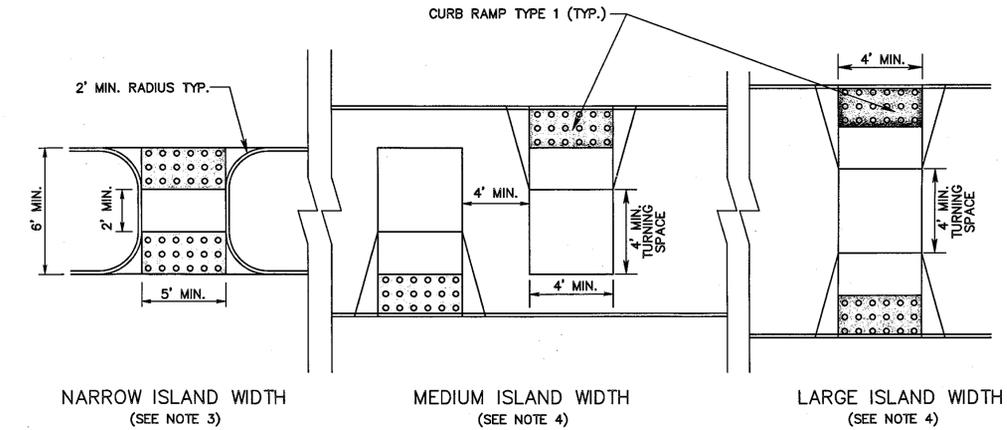
DETECTABLE WARNING SURFACE



LOCATION OF CURB RAMP TYPES 1, 2, 3, 4 & 7 FOR CROSSING PARALLEL AND PERPENDICULAR TO HIGHWAY



PLACEMENT OF DETECTABLE WARNING SURFACE FOR CURB RAMP TYPE 5 AND 6



PEDESTRIAN REFUGE ISLAND

- NOTES:
- KEEP TURNING SPACE, APPROACH SIDEWALK TRANSITIONS, AND CURB RAMP CLEAR OF OBSTRUCTIONS THAT PROTRUDE ABOVE THE SIDEWALK.
  - CROSSWALKS AND STOP LINES MAY BE MARKED OR UNMARKED, SEE PLANS.
  - FOR NARROW ISLAND WIDTH, SEE PEDESTRIAN REFUGE ISLAND WALKWAY OPENING AT INTERSECTIONS DETAIL.
  - FOR MEDIUM AND LARGE ISLAND WIDTH, SEE CURB RAMP TYPE 1 ON SHEET 7.
  - CONSTRUCT CURB RAMP TYPES 1, 2, 3, 4 & 7 PERPENDICULAR TO CURBLINE, AS SHOWN.
  - IF A CURB RAMP IS REQUIRED, THE LOCATION OF THE DETECTABLE WARNING SURFACE MUST BE AT THE BOTTOM OF THE RAMP AND WITHIN THE REQUIRED DISTANCE FROM THE RAIL.

MODIFIED FROM N.J.D.O.T. STANDARD DETAIL DRAWING CD-606-1A (SHEET 51A OF 146)

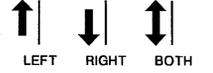
DETAIL 1 CURB RAMPS & DETECTABLE WARNINGS

 APPROVED: <b>Richard A. Alaimo</b> PROFESSIONAL ENGINEER NEW JERSEY LICENSE NO. 13195	REVISIONS DATE BY	 <b>RICHARD A. ALAIMO ENGINEERING COMPANY</b> Consulting Engineers NJDCA 24GA27988800 200 HIGH STREET MOUNT HOLLY, N.J. 2 MARKET STREET PATERSON, N.J.	SANITARY SEWER IMPROVEMENTS  CONSTRUCTION DETAILS	CLIENT: TOWNSHIP OF WOODBRIDGE	DATE: FEB 2020 DESIGNED BY: CAF DRAWN BY: CAF CHECKED BY:	SHEET 17 FILE NO.:
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FINAL FOR SEWER DESIGN

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**LEGEND**

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

**GENERAL NOTES:**

1. ADVANCE WARNING SIGNS DISTANCES AND TAPER LENGTHS MAY BE EXTENDED, AT DIRECTION OF THE DEPARTMENT, TO ADJUST FOR REDUCED VISIBILITY DUE TO HORIZONTAL AND VERTICAL CURVATURE OF THE ROADWAY.
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 RE TO ADJUST FOR VISIBILITY DUE TO HORIZONTAL OR VERTICAL CURVATURE OF THE ROADWAY OR TO POSITION AT A SAFER LOCATION. ILLUMINATED FLASHING ARROW BOARDS ARE TO BE USED FOR TEMPORARY LANE CLOSINGS AND AT LOCATIONS SHOWN ON THE TRAFFIC CONTROL PLANS.
3. PRIOR TO ANY ROAD CONSTRUCTION, TRAFFIC CONTROL SIGNS AND DEVICES ARE TO BE IN PLACE.
4. RAMPS AND/OR SIDE STREETS ENTERING THE ROADWAY AFTER THE FIRST ADVANCE WARNING SIGN ARE TO BE PROVIDED WITH AT LEAST ONE W20-F SIGN (ROAD WORK AHEAD) AS A MINIMUM.
5. ALL EXISTING ROAD SIGNS, PAVEMENT MARKINGS, AND /OR PLOWABLE PAVEMENT REFLECTORS WHICH CONFLICT WITH THE PROPOSED TRAFFIC CONTROL PLAN ARE TO BE COVERED, REMOVED, OR RELOCATED AS DIRECTED BY THE RE.
6. CONFLICTING OR NON-OPERATING SIGNAL INDICATIONS ON EITHER THE EXISTING, TEMPORARY, OR PROPOSED TRAFFIC SIGNAL SYSTEMS ARE TO BE BAGGED OR COVERED.
7. MAINTENANCE AND PROTECTION OF TRAFFIC TO BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES - PART VI "STANDARDS AND GUIDES FOR TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE, UTILITY, AND INCIDENT MANAGEMENT OPERATIONS", UNLESS OTHERWISE NOTED IN THE PLANS AND SPECIFICATIONS.
8. CONSTRUCTION SIGN W99-2 (GIVE US A BRAKE) TO BE LOCATED 200 FEET IN ADVANCE OF PROJECT LIMITS.
9. A W1-6 (ARROW) SIGN MOUNTED ON A BREAKAWAY BARRICADE AND CENTERED ON THE CLOSED WIDTH TO BE LOCATED 100 FEET BEYOND EACH INTERSECTION OR MAIN ACCESS POINT WITHIN THE AREA OF A LANE OR SHOULDER CLOSURE.
10. CONSTRUCTION SIGNS R11-4 (ROAD CLOSED TO THRU TRAFFIC) TO BE PLACED AT THE INTERSECTING STREETS WHICH ARE CLOSED TO TRAFFIC BECAUSE OF CONSTRUCTION.
11. CONSTRUCTION SIGNS W8-9A (SYMBOL FOR UNEVEN PAVEMENT) AND W8-14A (GROOVED PAVEMENT) TO BE USED WHEN SUCH PAVEMENT CONDITIONS EXIST.
12. MOVING WORK AREAS IN A LANE CLOSURE REQUIRE A TRAILER MOUNTED ILLUMINATED FLASHING ARROW TO REMAIN AT THE END OF THE TAPER, THE TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION THAT IS TO MOVE WITH THE WORK AREAS TO KEEP A 70 FEET MIN. AND 150 FEET MAX. BUFFER IN ADVANCE OF EACH WORK AREA.
13. THE CONTRACTOR TO SUBMIT A PLAN FOR THE SAFE ACCESS OF CONSTRUCTION VEHICLES THROUGHOUT THE WORK SITE WHERE SPACE CONSTRAINTS PREVENT THE USE OF LANE CLOSURES. THE PLAN TO BE SUBMITTED TO THE RE AS SPECIFIED IN THE SPECIFICATIONS.
14. BACKFILL ALL EXCAVATED AREAS WITHIN OR ADJACENT TO THE ROADWAY AND PLACE ON AT LEAST 6H:1V SLOPE BEFORE THE END OF EACH WORK DAY. OTHER EXCAVATED AREA WITHIN THE CLEAR ZONE ARE TO BE BACKFILLED.
15. WHERE REQUIRED, THE CONTRACTOR IS TO MAKE PROVISIONS FOR MAINTAINING PEDESTRIAN CROSSING LOCATIONS AND TYPE AS DIRECTED BY THE RE.
16. BITUMINOUS CONCRETE PLACED DURING THE VARIOUS CONSTRUCTION STAGES TO BE TRANSITIONED ON A MINIMUM 20H:1V SLOPE TO MEET THE ADJACENT EXISTING GRADE AT THE LONGITUDINAL AND TRANSVERSE LIMITS OF THE STAGE CONSTRUCTION AREAS UNLESS OTHERWISE NOTED ON THE STAGE CONSTRUCTION PLANS.
17. THE PLACEMENT AND /OR RELOCATION OF CONSTRUCTION BARRIER CURB TO BE DONE DURING ALLOWABLE LANE CLOSURE HOURS.
18. CONSTRUCTION ZONE SPEED LIMIT WILL BE DETERMINED BY THE BUREAU OF TRAFFIC ENGINEERING, REGIONAL TRAFFIC ENGINEER - WORK ZONE, AT THE TIME OF OR DURING CONSTRUCTION, AS REQUESTED BY THE RE.
19. THE SPEED LIMIT, R2-1 (BLACK ON WHITE) WITH ADDED WORK ZONE PLATE (BLACK ON ORANGE) SIGNS TO BE LOCATED THROUGH WORK AREAS AS DIRECTED BY THE BUREAU OF TRAFFIC ENGINEERING, REGIONAL TRAFFIC ENGINEER - WORK ZONE.
20. THE REDUCED SPEED AHEAD SIGN, W3-5(S) (BLACK ON ORANGE) TO BE LOCATED IN ADVANCE OF SPEED LIMIT R2-1 SIGNS WHICH REDUCE THE NORMAL POSTED SPEED LIMIT THROUGH THE CONSTRUCTION ZONE.
21. TRAFFIC FINES DOUBLED IN WORK AREA R(NJ)5-17(S), 4 FEET BY 2.5 FEET SIGN TO BE LOCATED 500 FEET AFTER THE FIRST ADVANCE WARNING SIGN (W20 SERIES) AT EACH WORK AREA LOCATED WITHIN URBAN AREAS. THIS SIGN TO ALSO BE USED ON PROJECTS REQUIRING MOVING OPERATIONS IN WHICH CASE THE SIGN IS TO BE MOUNTED ON A SLOW MOVING CONSTRUCTION VEHICLE.
22. DO NOT CONSTRUCT THE FINAL HMA SURFACE PAVEMENT UNTIL THE FINAL STAGE OF THE PROJECT UNLESS OTHERWISE DIRECTED BY THE RE OR INDICATED ON THE PLANS. SET MANHOLES AND INLETS TO FINISHED GRADE AND CONSTRUCT TEMPORARY PAVEMENT RAMPS 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.
23. PLACE TRAFFIC CONTROL DEVICES FOR LANE CLOSURES INCLUDING SIGNS, CONES, BARRICADES, ETC. AS SHOWN ON PLANS. NO SIGNS ARE TO BE PLACED WITHOUT ACTUAL LANE CLOSURES AND REMOVE IMMEDIATELY UPON REMOVAL OF THE CLOSURES.
24. CONES MAY BE SUBSTITUTED FOR DRUMS AND INSTALLED UPON THE APPROVAL OF THE RE.
25. TRAFFIC IMPACT NOTICES AND CHANGES
  - A. TERMS: WHEN THE FOLLOWING TERMS ARE USED, THE INTENT AND MEANING IS AS FOLLOWS:
    - i. IMPACTS TO NORMAL TRAFFIC FLOW - WORK THAT REQUIRES A PORTION OF THE PAVED ROADWAY BEING BLOCKED OR CLOSED WITH SAFETY DEVICES OR VEHICLES, INCLUDING, BUT NOT LIMITED TO, FULL OR PARTIAL LANE CLOSURES, FULL OR PARTIAL RAMP CLOSURES, SHOULDER CLOSURES, MOVING OPERATIONS SUCH AS TRAFFIC STRIPING OR SWEEPING, LANE SHIFTS, OR ALTERNATING TRAFFIC. THIS APPLIES EVEN WHEN DETOURS ARE PROVIDED.
    - ii. TEMPORARY LANE CLOSURES - WORK DESCRIBED UNDER "IMPACTS TO NORMAL TRAFFIC FLOW" WHICH IS ROUTINELY SET UP AND REMOVED ON A DAILY BASIS.
    - iii. PERMANENT LANE CLOSURES - WORK DESCRIBED UNDER "IMPACTS TO NORMAL TRAFFIC FLOW" WHICH REMAINS IN PLACE CONTINUOUSLY FOR 24 HOURS OR MORE.
  - B. ADVANCE NOTICES
    - FOR THE INITIAL START OF WORK THAT REQUIRES "IMPACTS TO NORMAL TRAFFIC FLOW", THE CONTRACTOR IS TO NOTIFY THE RE IN WRITING, ON THE ADVANCE FORM TO-103 PROVIDED BY THE DEPARTMENT, OF THE PROPOSED DATE. THE NOTICE IS TO 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 IS TO CONFIRM, IN WRITING, TO THE RE, THE PROPOSED DATE SEVEN (AND/OR FOURTEEN) CALENDAR DAYS BEFORE STARTING THE ESTABLISHMENT OF THE TRAFFIC CONTROL MEASURES FOR THE TRAFFIC IMPACT. THE CONTRACTOR IS TO IMMEDIATELY NOTIFY THE RE IF THE PROPOSED ESTABLISHMENT CANNOT BE COMPLETED ON THE PROPOSED DATE.
    - FOR A "PERMANENT LANE CLOSURE", THE CONTRACTOR IS TO NOTIFY THE RE IN WRITING, ON ADVANCE FORM TO-103, OF THE PROPOSED DATE A NEW TRAFFIC PATTERN WILL BE ESTABLISHED. THE NOTICE IS TO BE SUBMITTED AT LEAST TWENTY-EIGHT CALENDAR DAYS, BUT NOT MORE THAN SIXTY CALENDAR DAYS, IN ADVANCE OF THE PROPOSED DATE. START OF A NEW TRAFFIC PATTERN WILL NOT BE PERMITTED PRIOR TO THE DATE STATED IN THE NOTICE. THE CONTRACTOR IS TO CONFIRM, IN WRITING, TO THE RE, THE PROPOSED DATE OF THE NEW TRAFFIC PATTERN SEVEN (AND/OR FOURTEEN) DAYS BEFORE STARTING TRAFFIC CONTROL MEASURES FOR THE ESTABLISHMENT OF THE NEW PATTERN. THE CONTRACTOR IS TO IMMEDIATELY NOTIFY THE RE IF THE PROPOSED ESTABLISHMENT CANNOT BE COMPLETED ON THE PROPOSED DATE.
    - STARTING THE ESTABLISHMENT OF A NEW PERMANENT TRAFFIC PATTERN IS TO BEGIN NO EARLIER THAN 1:00 PM FRIDAY AND BE COMPLETED AND READY FOR OPERATIONS BY 6:00 PM THE FOLLOWING SUNDAY. THE ESTABLISHMENT IS TO BE COMPLETED IN ACCORDANCE WITH THE LANE CLOSURE HOURS SPECIFIED IN THE CONTRACT.
    - ADVANCE NOTICES SENT PRIOR TO THE PRE-CONSTRUCTION MEETING ARE TO BE ADDRESSED TO THE CONTACT PERSON AS SPECIFIED IN SUBSECTION 101.04 OF THE SPECIAL PROVISIONS.
  - C. PROGRESS NOTICES
    - ALL "IMPACTS TO NORMAL TRAFFIC FLOW" SCHEDULED FOR THE SEVEN DAY PERIOD STARTING ON THE FOLLOWING MONDAY ARE TO BE SUBMITTED TO THE RE BY 9:00 AM OF EACH FRIDAY ON WEEKLY FORM TO-100 PROVIDED BY THE DEPARTMENT.
    - EACH DAY OF "TEMPORARY LANE CLOSURES" ARE TO BE SUBMITTED TO THE RE BY 9:00 AM THE DAY IN ADVANCE OF THE START OF THOSE OPERATIONS ON DAILY FORM TO-101 PROVIDED BY THE DEPARTMENT.
    - "TEMPORARY LANE CLOSURES" FOR WEEKENDS ARE TO BE SUBMITTED TO THE RE BY 9:00 AM ON THE IMMEDIATELY PRECEDING FRIDAY ON THE DAILY FORM TO-101 PROVIDED BY THE DEPARTMENT.
  - D. CHANGES TO THE SCHEDULED CLOSURES
    - REQUEST FOR A CHANGE TO THE TRAFFIC CONTROL REQUIREMENTS IN THE CONTRACT DOCUMENTS ARE TO BE SUBMITTED IN WRITING TO THE RE AS FOLLOWS:
      - CHANGES TO THE SCHEDULED HOURS FOR "TEMPORARY LANE CLOSURES" ARE TO BE SUBMITTED TO THE RE AT LEAST EIGHT CALENDAR DAYS IN ADVANCE OF WHEN THE CHANGE IS PROPOSED TO START.
      - OTHER PROPOSED CHANGES TO "TEMPORARY LANE CLOSURES" AND ALL CHANGES TO "PERMANENT LANE CLOSURES" ARE TO BE SUBMITTED TO THE RE AS SPECIFIED IN THE SPECIFICATIONS.
26. WHERE MILLING OR HMA PAVING IS PERFORMED AND THE LANE IS TO BE RE-OPENED TO TRAFFIC EACH DAY, APPLY TRAFFIC STRIPES AS DIRECTED BY THE RE.

**NOTE TO DESIGNER:**

THIS SHEET REQUIRES DESIGN SPECIFIC INFORMATION TO BE ADDED AND INCLUDED IN THE CONTRACT PLANS.

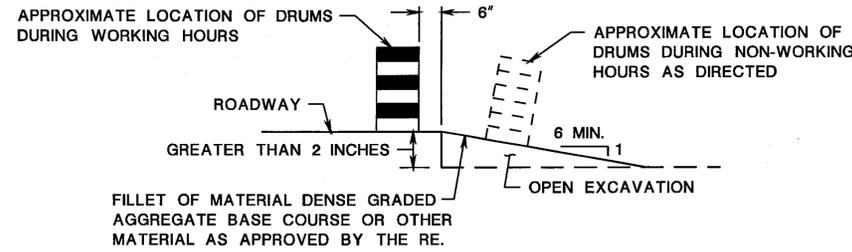
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TCD-1

NEW JERSEY DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL DETAILS**



FILLET OF MATERIAL DENSE GRADED AGGREGATE BASE COURSE OR OTHER MATERIAL AS APPROVED BY THE RE.

**NOTE:**

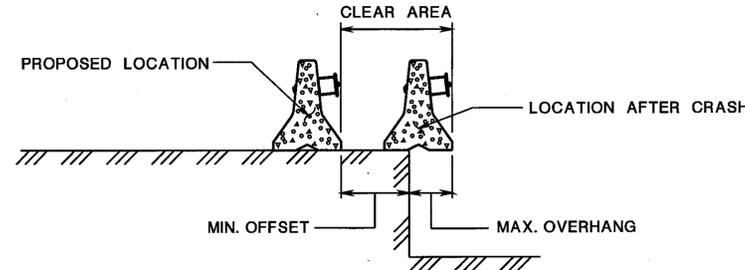
ESCAPE RAMPS MUST BE CONSTRUCTED AND MAINTAINED DURING NON-WORKING HOURS WHERE A VERTICAL DROP GREATER THAN 2 INCHES EXISTS ADJACENT TO TRAVELED LANE.

**ESCAPE RAMP DETAIL**

REGULATORY APPROACH SPEED OF TRAFFIC MILES/HOUR	RECOMMENDED SIGHT DISTANCE TO BEGINNING OF CHANNELIZING TAPERS		
	DESIRABLE		MINIMUM
	RURAL FEET	URBAN FEET	RURAL AND URBAN FEET
25	375	525	150
30	450	625	200
35	525	725	250
40	600	825	325
45	675	925	400
50	750	1025	475
55	875	1150	550
60	1000	1275	650
65	1050		725

**NOTES:**

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



STAGE	LOCATION	CONNECTION TYPE
	RTE. STA. TO STA.	

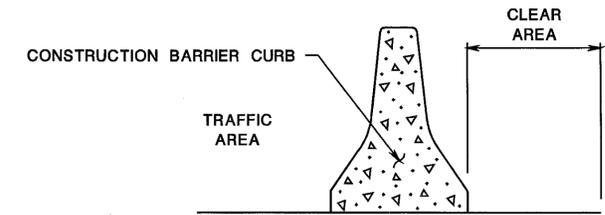
CONNECTION TYPE	MIN. OFFSET	MAX. OVERHANG	CLEAR AREA
B	12"	16"	28"

**OPTIONAL CONNECTION TYPE B TREATMENT AT VERTICAL DROP OFF**

REGULATORY APPROACH SPEED OF TRAFFIC MILES / HOUR	MINIMUM TAPER RATIO IN LENGTH PER FOOT OF WIDTH	RECOMMENDED TAPER LENGTH AND SPACING FOR CHANNELIZING TAPERS			MAXIMUM DEVICE (B) SPACING ALONG TAPERS IN FEET	RECOMMENDED SPACING ALONG TANGENTS
		MINIMUM TAPER LENGTH L - FOR LANE WIDTHS				
		10'	11'	12'		
25	10.5:1	105	115	125	25	50
30	15:1	150	165	180	30	60
35	20.5:1	205	225	245	35	70
40	27:1	270	300	325	40	80
45	45:1	450	495	540	45	90
50	50:1	500	550	600	50	100
55	55:1	550	605	660	55	110
60	60:1	600	660	720	60	120
65	65:1	650	715	780	65	130

**NOTE:**

THE MAXIMUM DEVICE SPACING ALONG CURVES IS DEFINED FOR TAPERS (B) IN THE ABOVE TABLE.



**NOTES:**

- CHANGES TO THE PROPOSED CONNECTION TYPE AT ANY LOCATION MUST BE APPROVED BY THE DEPARTMENT.
- NO ROADWAY DROP OFFS, OBSTRUCTIONS, STORAGE OF MATERIALS, OR WORK WILL BE PERMITTED IN THE CLEAR AREA UNLESS APPROVED BY THE RE. EXCEPT ROADWAY DROP OFFS ARE PERMITTED ONLY WHEN USING THE OPTIONAL CONNECTION TYPE B TREATMENT AT VERTICAL DROP OFF.

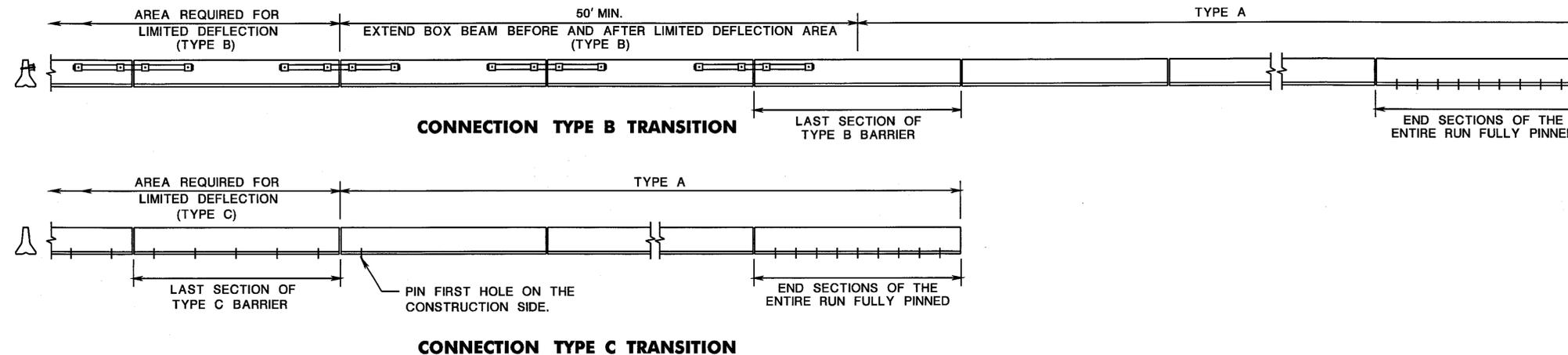
STAGE	LOCATION	CONNECTION TYPE
	RTE. STA. TO STA.	

CONNECTION TYPE	CLEAR AREA
A	41 INCHES
B	28 INCHES
C	11 INCHES

**CONSTRUCTION BARRIER CURB CONNECTION TYPE AND CLEAR AREA**

**NOTE TO DESIGNER:**

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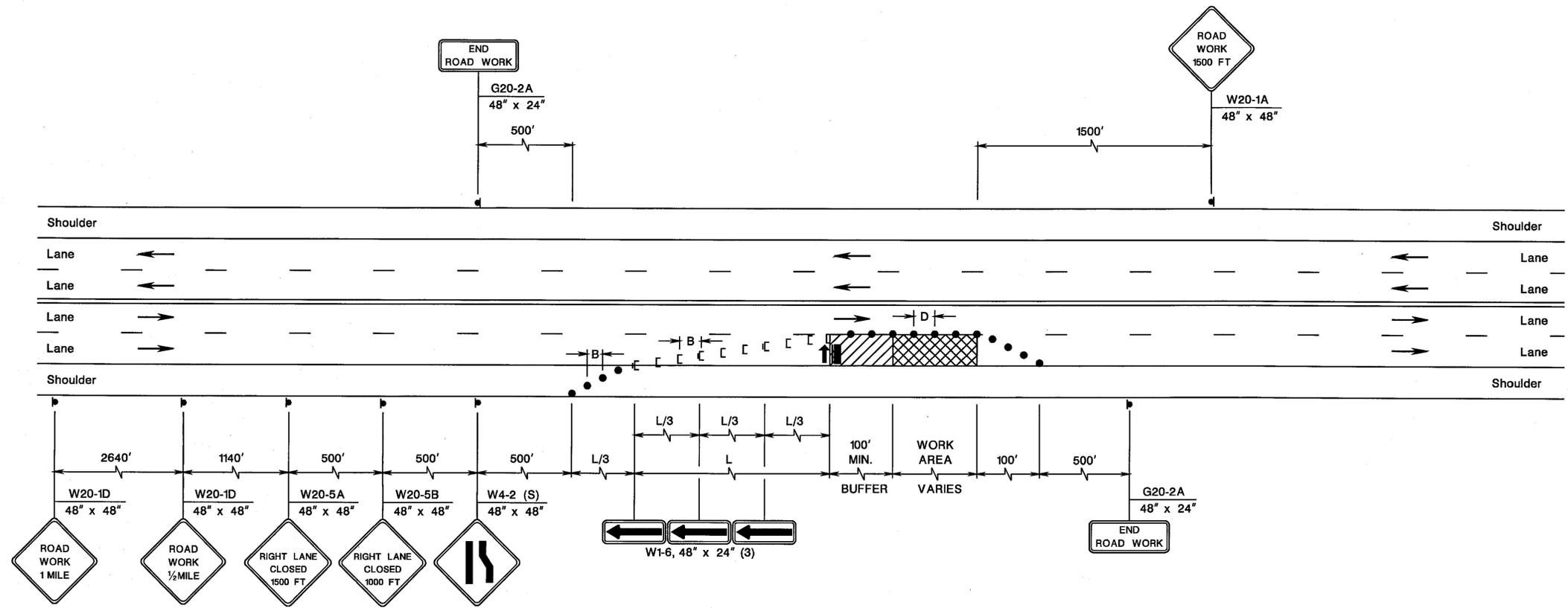
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NEW JERSEY DEPARTMENT OF TRANSPORTATION

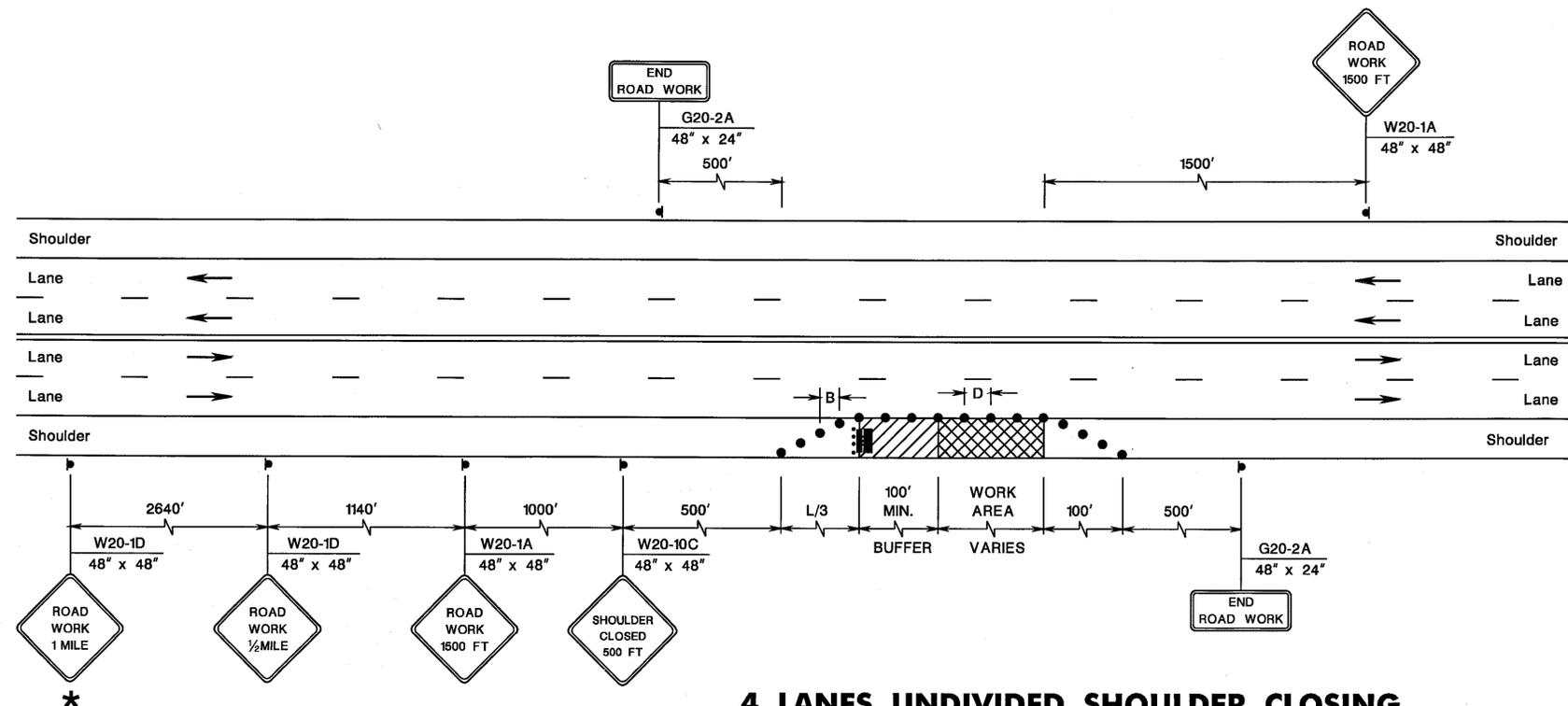
**TRAFFIC CONTROL DETAILS**

TCD-2

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**4 LANES, UNDIVIDED, RIGHT LANE AND SHOULDER CLOSING**



**4 LANES, UNDIVIDED, SHOULDER CLOSING**

\* INSTALL THIS SIGN FOR ROADS WITH A POSTED SPEED LIMIT OF 45 M.P.H. OR GREATER UNLESS OTHERWISE DIRECTED BY THE RE.

**NOTE:**  
 SEE RECOMMENDED TAPER LENGTH AND SPACING TABLE ON SHEET TCD-2 FOR VALUES OF L, B, AND D.

N.T.S.

TCD-8

NEW JERSEY DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL DETAILS**

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