

CERTIFICATIONS/APPROVALS

MUNICIPALITY

THIS PLAN IS HEREBY APPROVED BY THE PLANNING BOARD
OF THE TOWNSHIP WEST ORANGE, NEW JERSEY

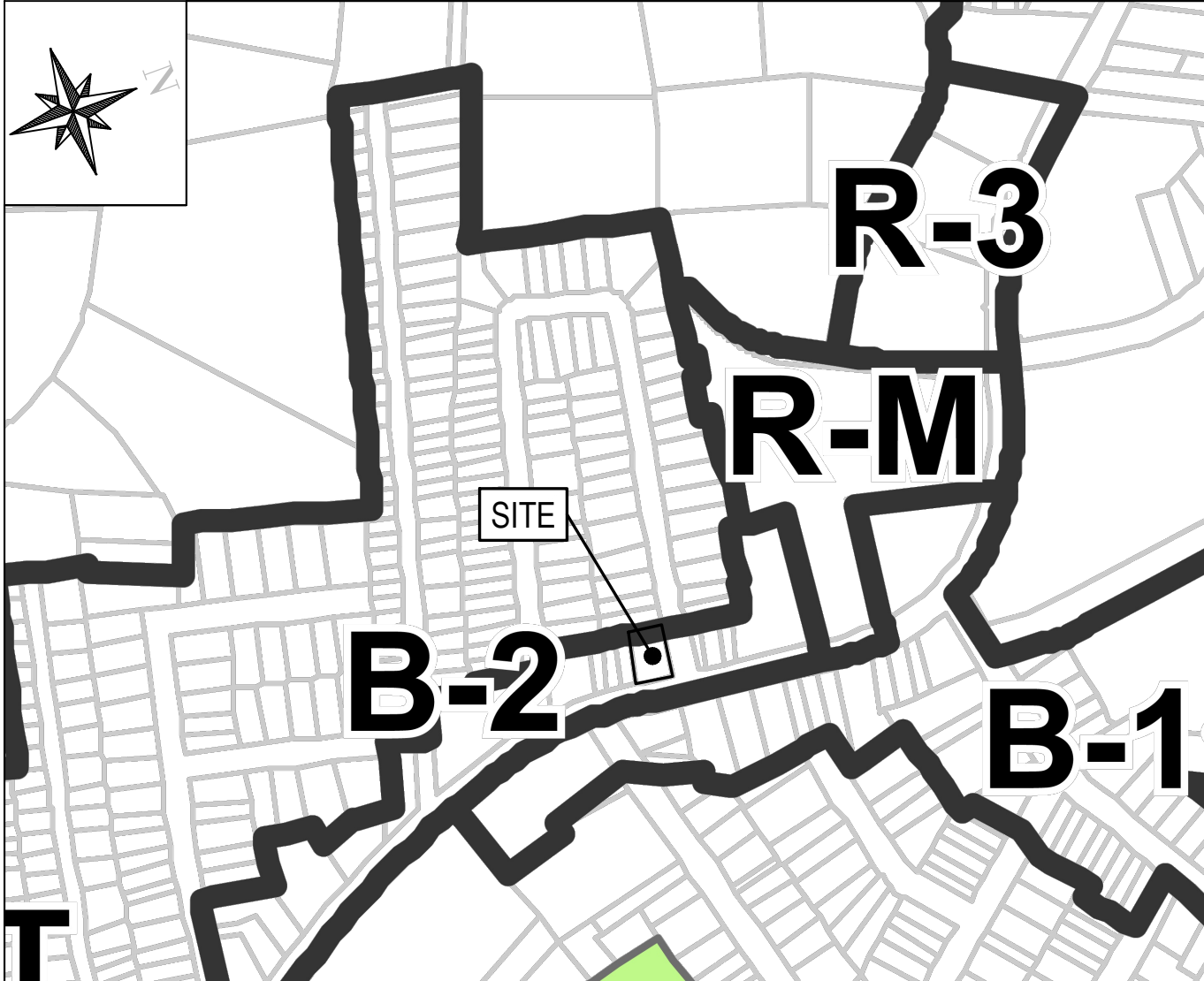
DATE _____ TOWNSHIP CHAIRMAN _____

DATE _____ TOWNSHIP SECRETARY _____

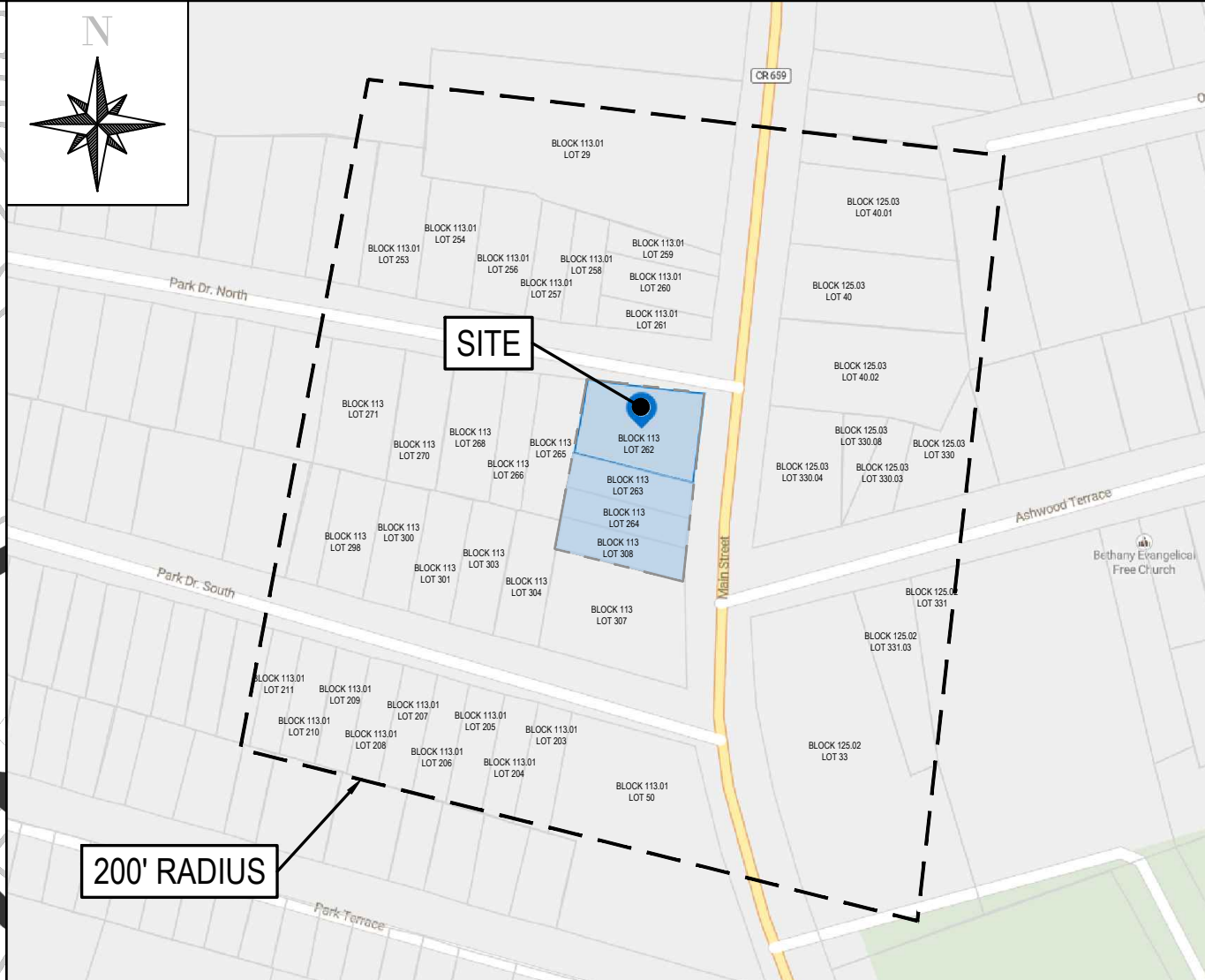
DATE _____ TOWNSHIP ENGINEER _____

I HEREBY CERTIFY THAT I AM THE PRESENT OWNER OF THE
REFERENCED PROPERTY AND THAT I CONSENT TO THE FILING
OF THIS PRELIMINARY SITE PLAN WITH THE PLANNING BOARD OF THE
TOWNSHIP WEST ORANGE

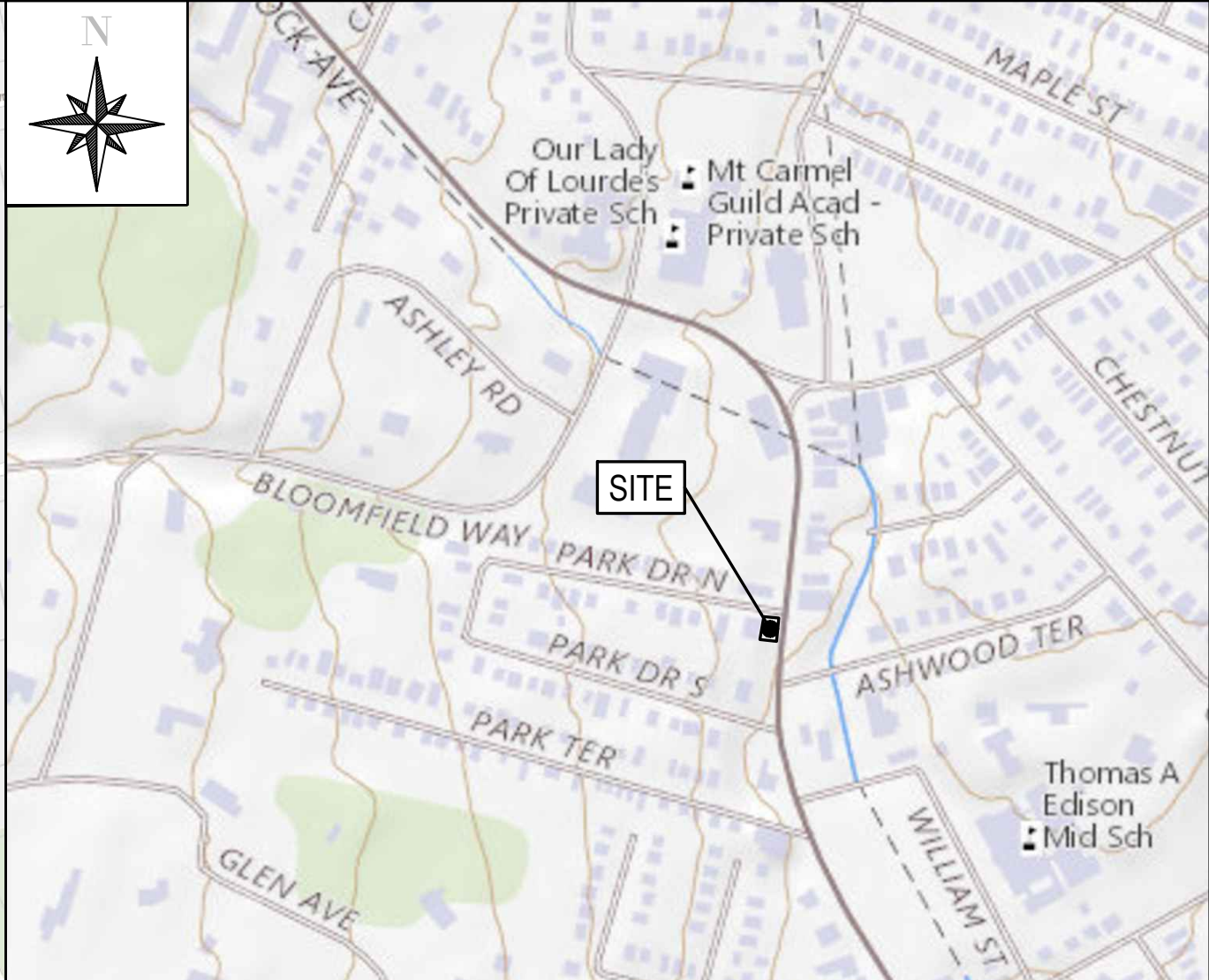
DATE _____ NAME _____



SCALE NTS
ZONING MAP (DISTRICT B-2)



SCALE NTS
TAX MAP SHEET 0061 (BLOCK 113, LOT 262, 263, 264 & 308)



SCALE NTS
USGS MAP

UTILITIES
VERIZON 235 PROSPECT AVE WEST ORANGE, NJ 07052
COMCAST 495 PROSPECT AVE, SUITE 509 WEST ORANGE, NJ 07052
DEPARTMENT OF PUBLIC WORKS 25 LAKESIDE AVE. WEST ORANGE, NJ 07052
PUBLIC SERVICE ELECTRIC & GAS MANAGER-CORPORATE PROPERTIES 80 PARK PLAZA - T6B NEWARK, NJ 07102

GENERAL NOTES:

- LOCATION AND TYPE OF UTILITIES SHOWN HERE-ON ARE FOR GENERAL INFORMATION AND PLANNING PURPOSES ONLY. THEY ARE DERIVED FROM FIELD LOCATION AND UTILITY MAP LOCATION. PRIOR TO ANY EXCAVATION, CONTACT THE WEST ORANGE PUBLIC WORKS DEPARTMENT, VERIZON TELEPHONE COMPANY AND PSEG FOR EXACT LOCATION AND DEPTH.
- TOTAL SITE AREA: 11,934 SQ OR 0.274 ACRES
- ALL ELEVATIONS SHOWN ARE BASED ON DATUM NAVD88.
- NO CERTIFICATION IS MADE AS TO THE LOCATION OF UNDERGROUND UTILITIES SUCH AS ELECTRIC, GAS, TELEPHONE, WATER, ETC. THIS SURVEY REPRESENTS ABOVE GROUND CONDITIONS.

SITE PLAN FOR
PROPOSED 3 STORY BUILDING WITH PARKING AT GROUND FLOOR
AT
410 MAIN STREET, WEST ORANGE

BLOCK 113, LOTS 262, 263, 264 & 308, TAX MAP SHEET 0061
WEST ORANGE, NJ

PREPARED BY
SMBT CONSULTANTS

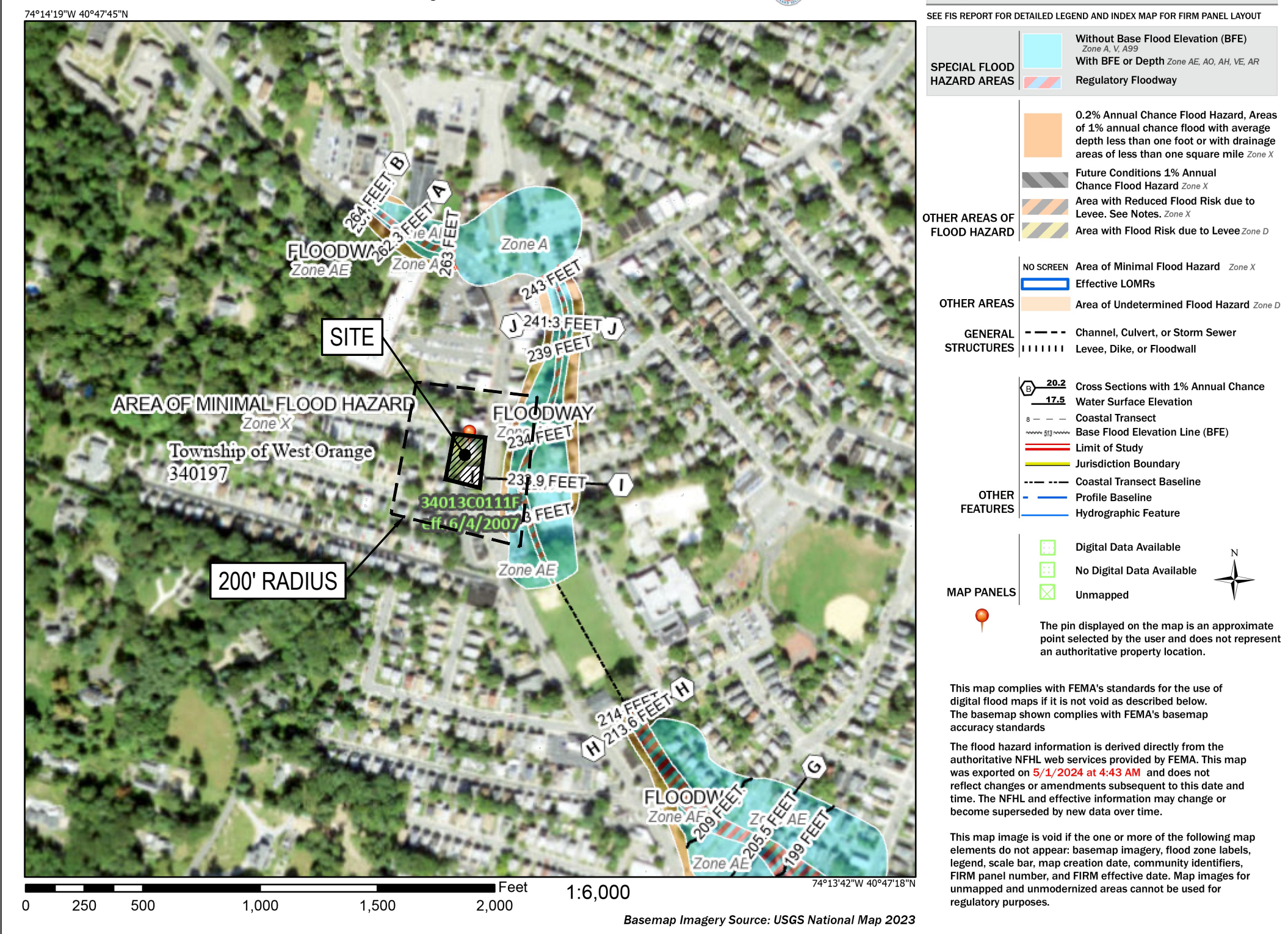
293 RT. 18 SOUTH, #D-152 EAST BRUNSWICK, NJ 08816

SHEET No.	TITLE
1	COVER SHEET
2	EXISTING CONDTION & DEMOLITION PLAN
3	SITE PLAN
4	GRADING PLAN
5	UNDERGROUND PARKING GRADING PLAN
6	DRAINAGE PLAN
7	STORMWATER MANAGEMENT PLAN
8	SITE CONSTRUCTION DETAILS
9	STANDARD DETAIL
10	EROSION & SEDIMENT CONTROL PLAN
11	EROSION & SEDIMENT CONTROL DETAILS
12	STORMWATER MANAGEMENT DETAILS
13	UTILITIES PLAN
14	UTILITIES DETAILS
15	LANDSCAPE PLAN
16	LIGHTING PLAN
17	VEHICLE TURNING PLAN

200' PROPERTY OWNERS LIST BLOCK: 113 LOT: 262, 263, 264, & 308 TOWNSHIP OF WEST ORANGE, NEW JERSEY		
BLOCK	LOT	PROPERTY OWNER ADDRESS
113	265	FARLEY, MATTHEW 43 BIRCHWOOD AVENUE WEST ORANGE, NJ 07052
113	263	BURKE, WILLIAM JR & AGNES 308 SECOND ST HACKETTSTOWN, NJ 07874
113	261	412 MAIN STREET WEST ORANGE LLC 6 NORTHFIELD AVE WEST ORANGE, NJ 07052
125.03	40.02	JOSAPHAT, RONALD & ESTIVENE, FRANTZ 1342 SPRINGFIELD AVENUE IRVINGTON, NJ 07111
125.03	330.04	OUTDOOR SYSTEMS, INC. 185 U. S. HIGHWAY 46 FAIRFIELD, NJ 07004

OWNER/APPLICANT: 410 MAIN ST HOLDINGS LLC
6 EMMA LANE
JACKSON, NJ

National Flood Hazard Layer FIRMette



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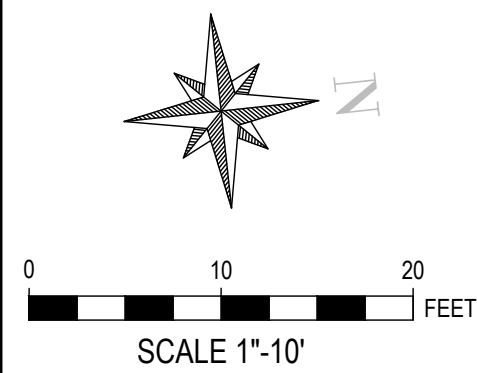
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Underground Utilities
Call Center
811 OR
1-800-272-1000

OUTSIDE AGENCY APPROVALS:

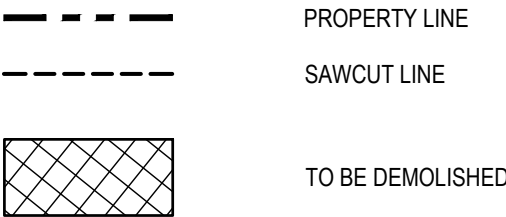
- ESSEX COUNTY PUBLIC WORKS
- HUDSON ESSEX PASSAIC SOIL CONSERVATION DISTRICT

ISSUED FOR PERMIT APPLICATION

				PROPOSED 3-STORY APARTMENT BUILDING								DESIGNED BY: AR		DRAWN BY: DP			
				410 MAIN ST, WEST ORANGE, NJ								CHECKED BY: AR		APPROVED BY: AR			
								COVER SHEET				CIVIL & STRUCTURAL ENGINEERS 293 RT. 18 SOUTH, #D-152 EAST BRUNSWICK, NJ 08816 TEL: 347-762-8364 FAX 201-753-5251 ALIG@SMBTCONSULTANTS.COM CERTIFICATE OF AUTHORIZATION NO.: 24GA28353100				N.J. PROFESSIONAL ENGINEER LIC. NO. 5325	
1		REV. SUBMISSION PER COUNTY COMMENTS DATED 4/18/24		5/16/2024		AR		SHEET: 1		16							
NO.		DESCRIPTION		DATE		BY		DATE: 1/16/2024		SCALE:							



LEGEND



1 EXISTING CONDITIONS & DEMOLITION PLAN
1" = 10'

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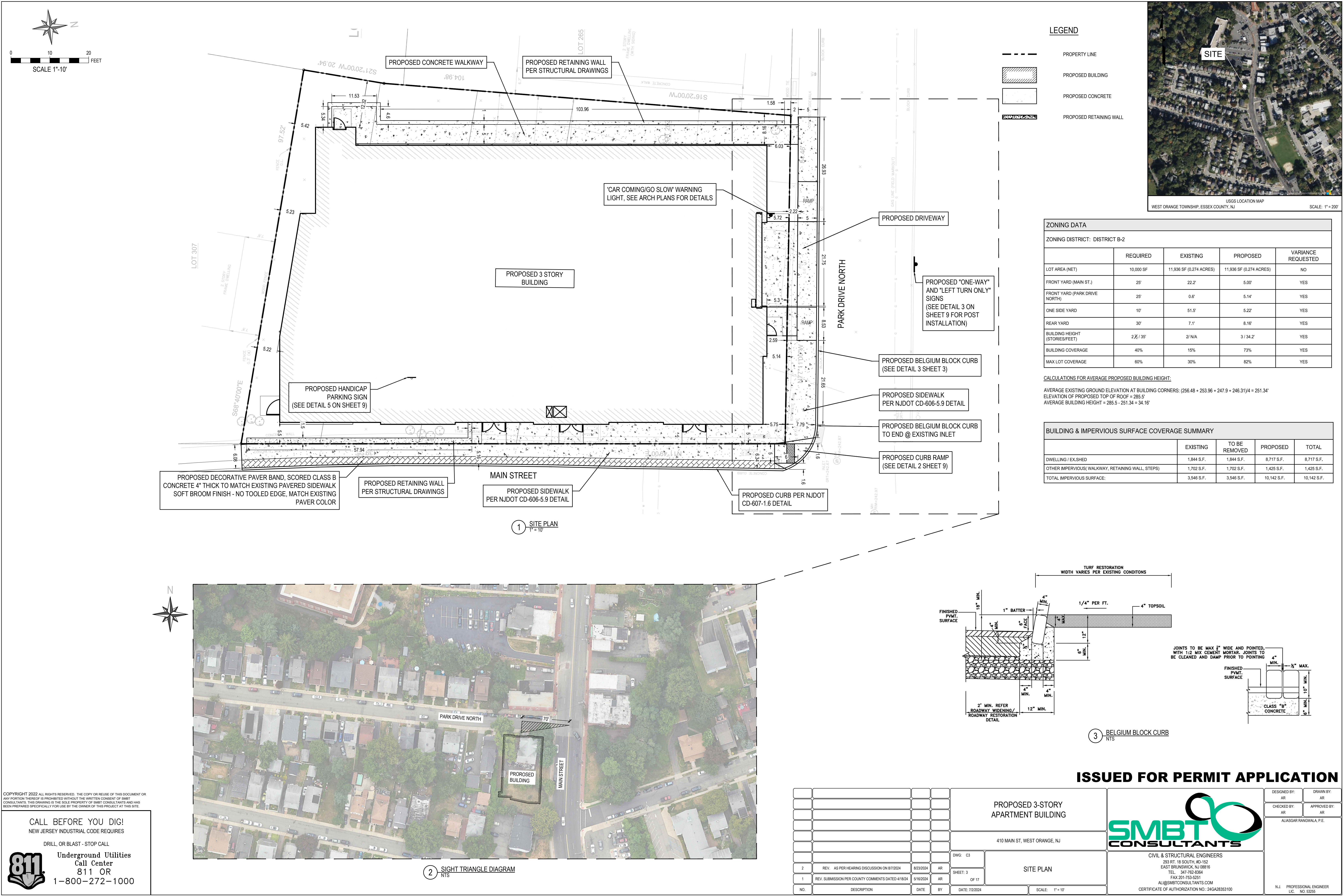
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Call Center
811 OR
1-800-272-1000

ISSUED FOR PERMIT APPLICATION

				PROPOSED 3-STORY APARTMENT BUILDING 410 MAIN ST, WEST ORANGE, NJ DWG: C2 SHEET: 2 OF 17 EXISTING CONDITIONS & DEMOLITION PLAN				 CIVIL & STRUCTURAL ENGINEERS 293 RT. 18 SOUTH, #D-152 EAST BRUNSWICK, NJ 08816 TEL. 347-762-8364 FAX 201-753-5251 ALIG@SMBTCONSULTANTS.COM CERTIFICATE OF AUTHORIZATION NO.: 24GA28353100				DESIGNED BY: AR		DRAWN BY: AR	
												CHECKED BY: AR		APPROVED BY: AR	
												ALIASGAR RANGWALA, P.E.			
												N.J. PROFESSIONAL ENGINEER LIC. NO. 53255			
1 REV. SUBMISSION PER COUNTY COMMENTS DATED 4/18/24				5/16/2024		AR									
NO.		DESCRIPTION		DATE		BY		DATE: 7/2/2024		SCALE: 1" = 10'					



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Call Center
811 OR
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SMTB CONSULTANTS

CIVIL & STRUCTURAL ENGINEERS
283 RT. 18 SOUTH, #D-152
EAST BRUNSWICK, NJ 08816
TEL. 347-762-8364
FAX 201-753-5251
ALIG@SMTBCONSULTANTS.COM
CERTIFICATE OF AUTHORIZATION NO.: 24GA2833100

DESIGNED BY: AR
DRAWN BY: AR
CHECKED BY: AR
APPROVED BY: AR
ALIASGAR RANGWALA, P.E.

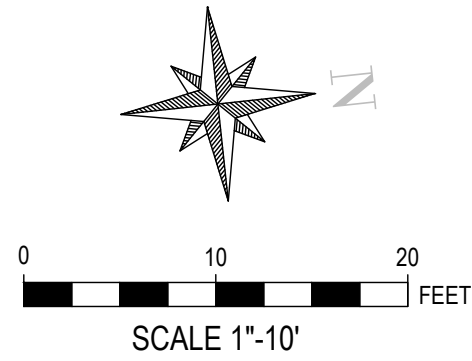
N.J. PROFESSIONAL ENGINEER
LIC. NO. 5325

PROPOSED 3-STORY APARTMENT BUILDING

410 MAIN ST, WEST ORANGE, NJ

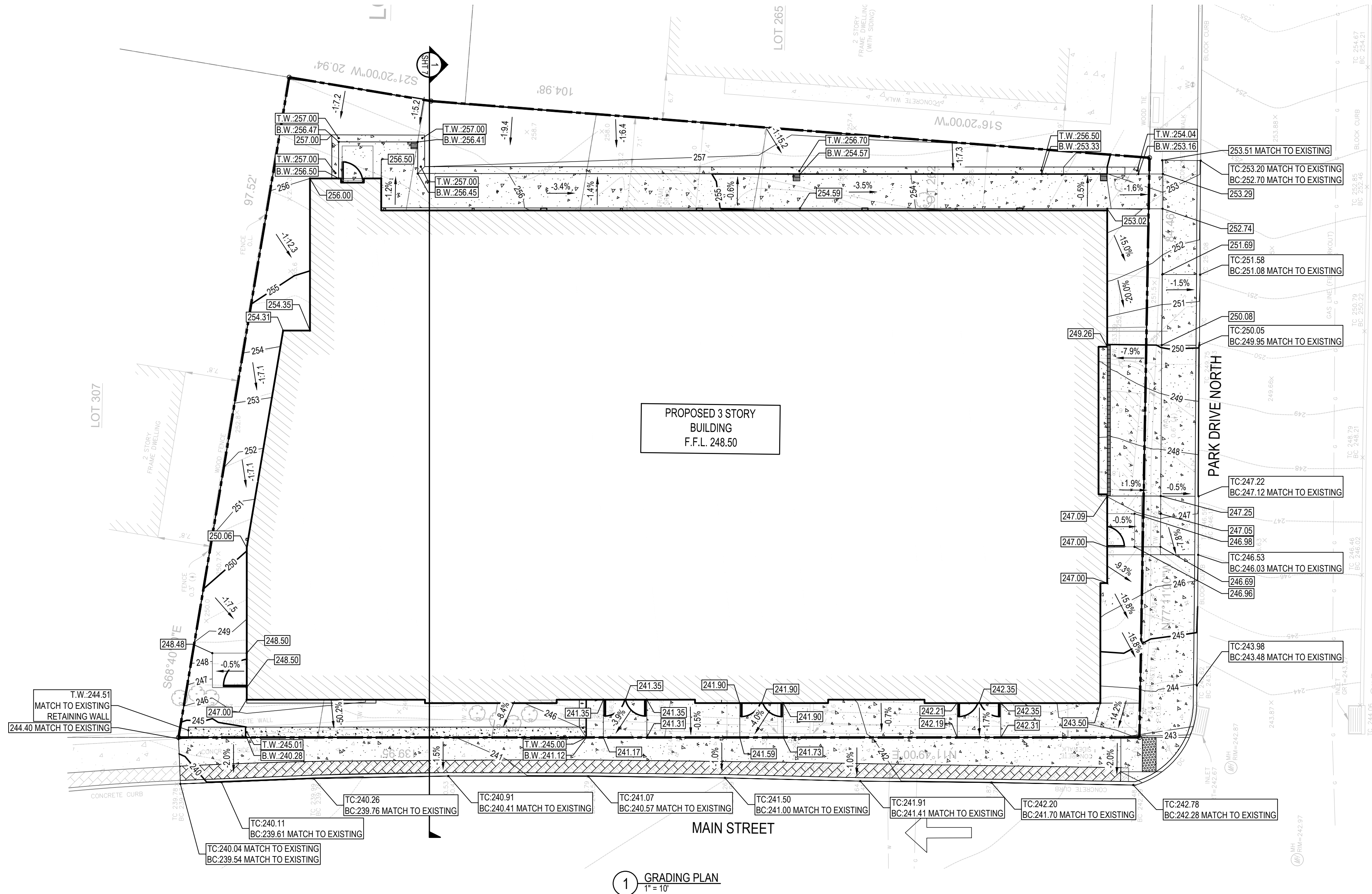
SITE PLAN

DWG: C3
SHEET: 3 OF 17
DATE: 7/2/2024
SCALE: 1"=10'



LEGEND

- PROPERTY LINE
- PROPOSED BUILDING
- PROPOSED CONCRETE
- PROPOSED RETAINING WALL
- T.C. TOP OF CURB
- B.C. BOTTOM OF CURB
- T.W. TOP OF WALL
- B.W. BOTTOM OF WALL



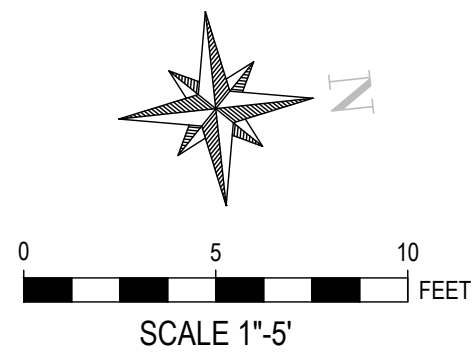
1 GRADING PLAN
1" = 10'

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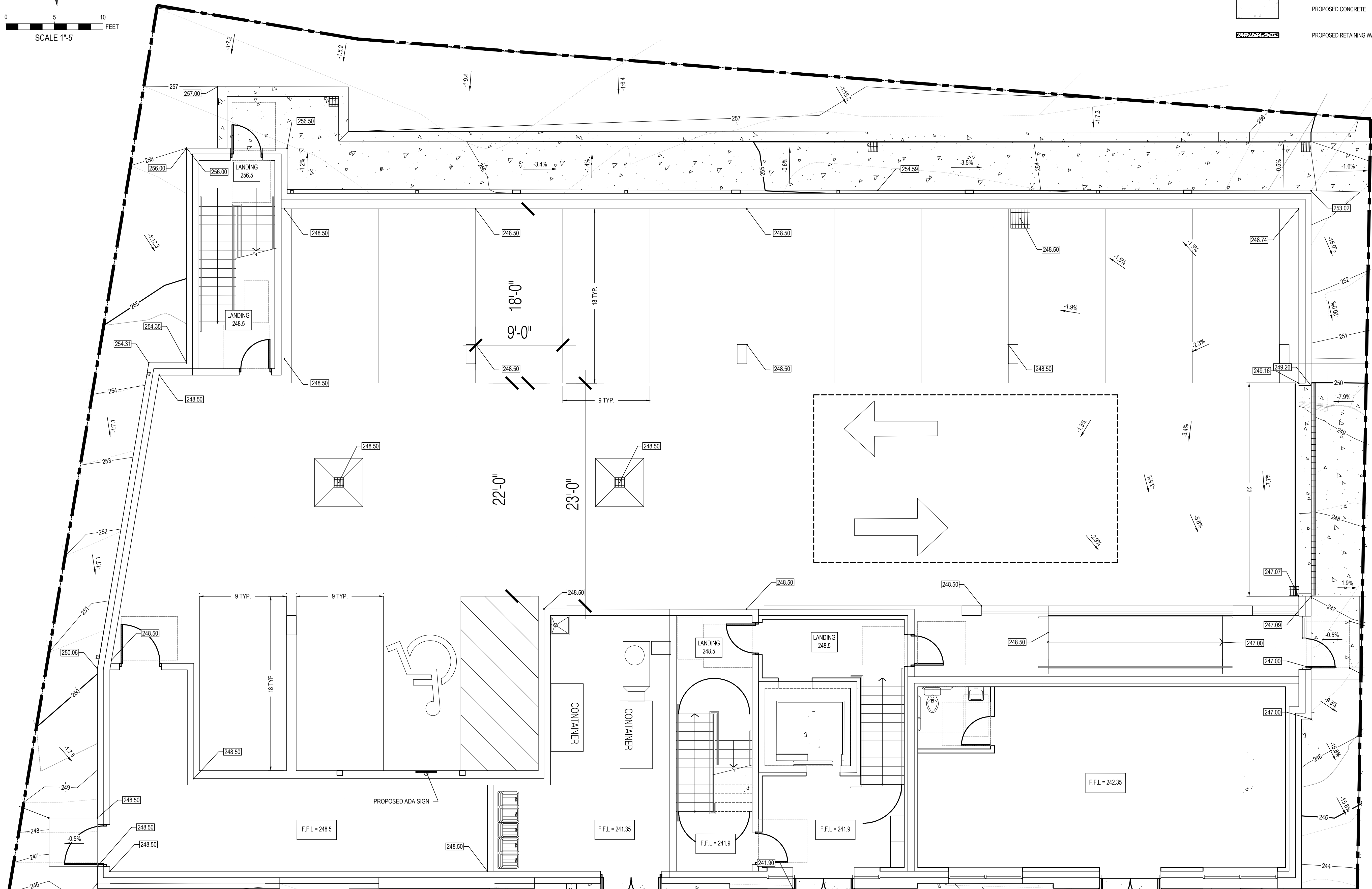
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				PROPOSED 3-STORY APARTMENT BUILDING								DESIGNED BY: AR		DRAWN BY: AR	
												CHECKED BY: AR		APPROVED BY: AR	
												ALIASGAR RANGWALA, P.E.			
				410 MAIN ST. WEST ORANGE, NJ											
				DWG: C4				GRADING PLAN				CIVIL & STRUCTURAL ENGINEERS 293 RT. 18 SOUTH, #D-152 EAST BRUNSWICK, NJ 08816 TEL. 347-762-8364 FAX 201-753-5251 AL@SMBTCONSULTANTS.COM CERTIFICATE OF AUTHORIZATION NO.: 24GA28333100			
				SHEET: 4											
				OF 17											
2		REV. AS PER HEARING DISCUSSION ON 8/7/2024		8/7/2024		AR									
1		REV. SUBMISSION PER COUNTY COMMENTS DATED 4/18/24		5/16/2024		AR									
NO.		DESCRIPTION		DATE		BY		DATE: 7/2/2024		SCALE: 1" = 10'					



LEGEND

- PROPERTY LINE
- PROPOSED CONCRETE
- PROPOSED RETAINING WALL



1 UNDERGROUND PARKING GRADING PLAN
1" = 5'

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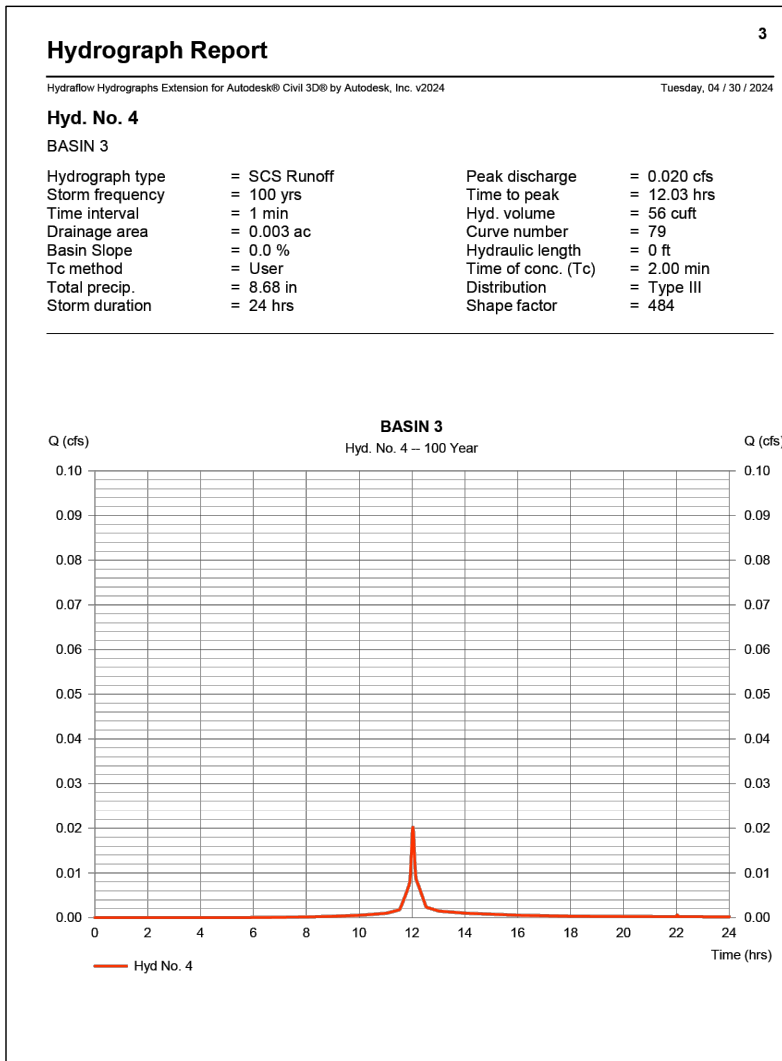
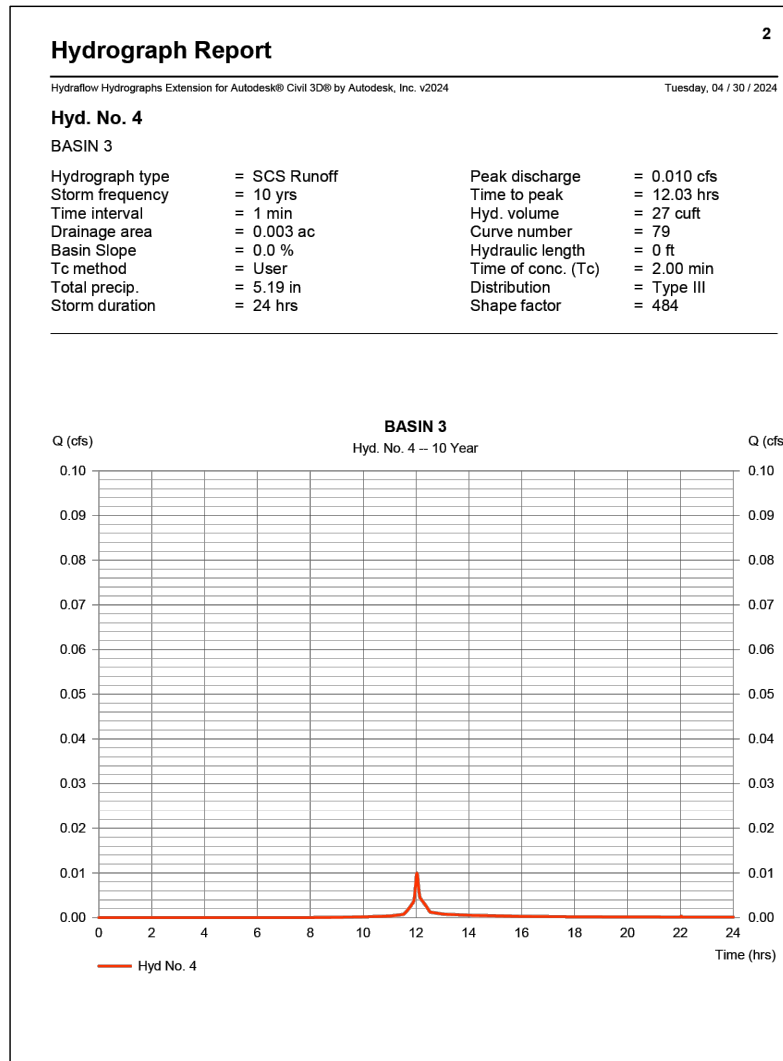
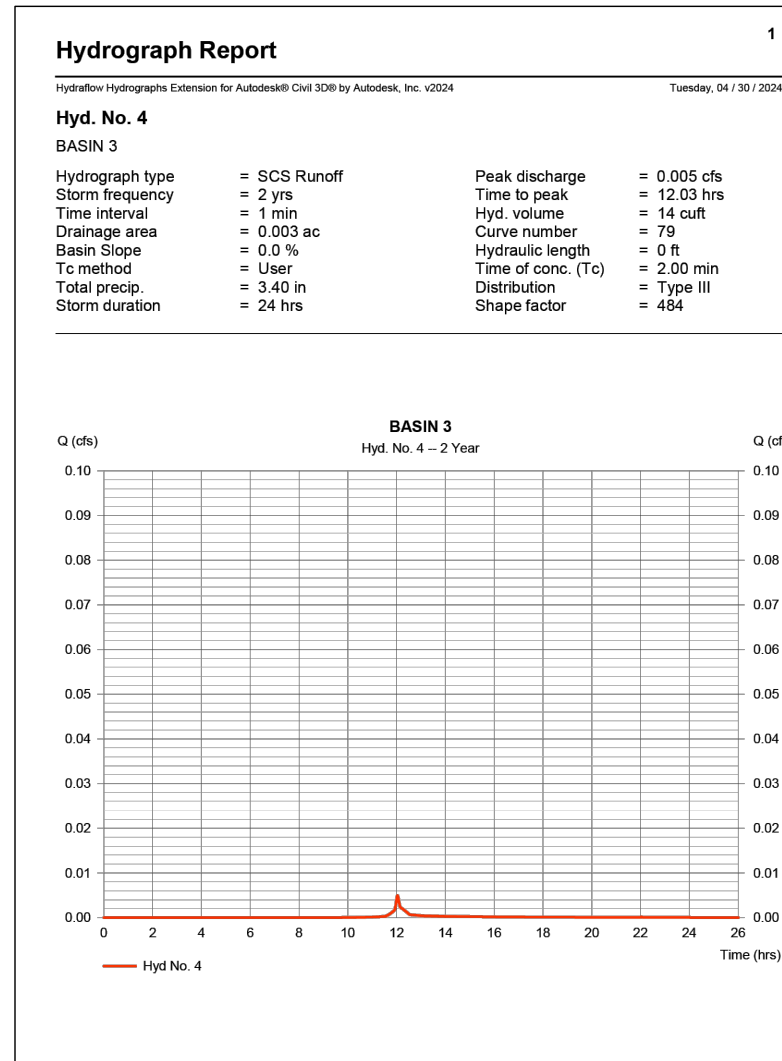
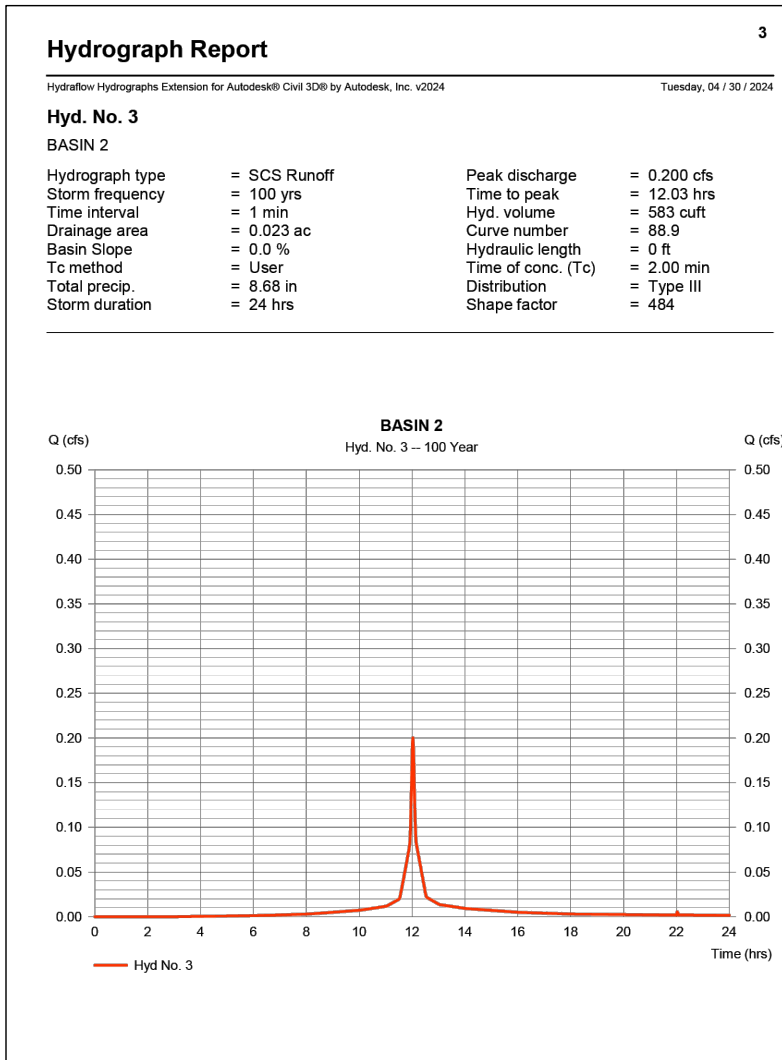
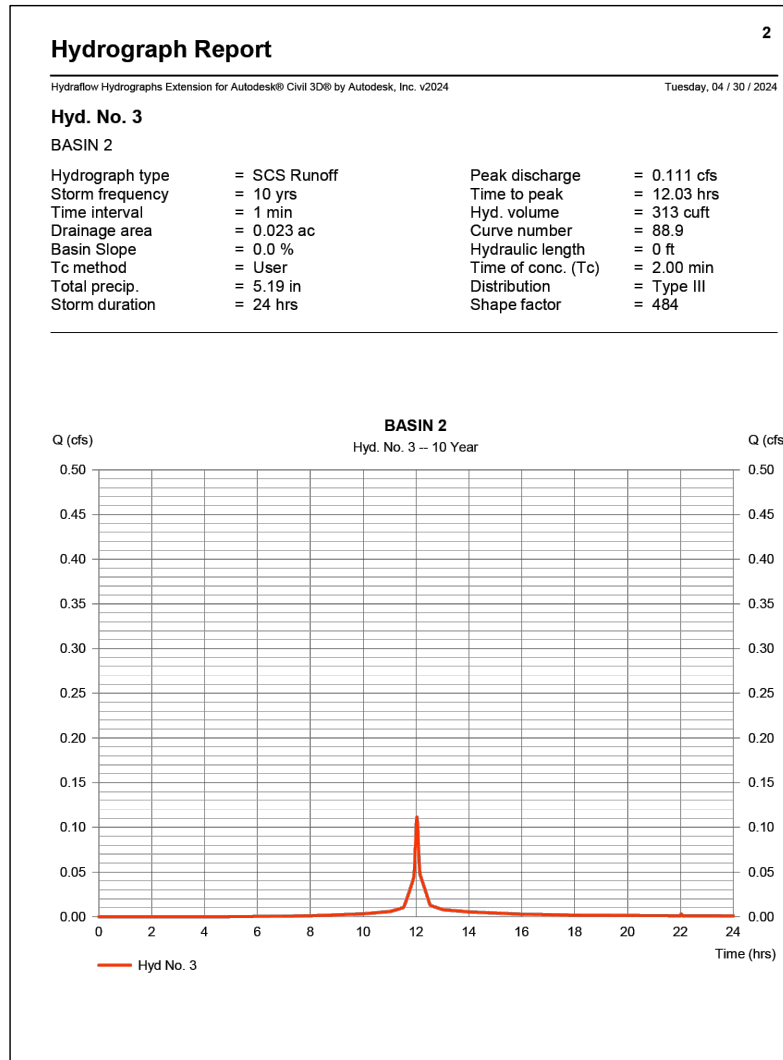
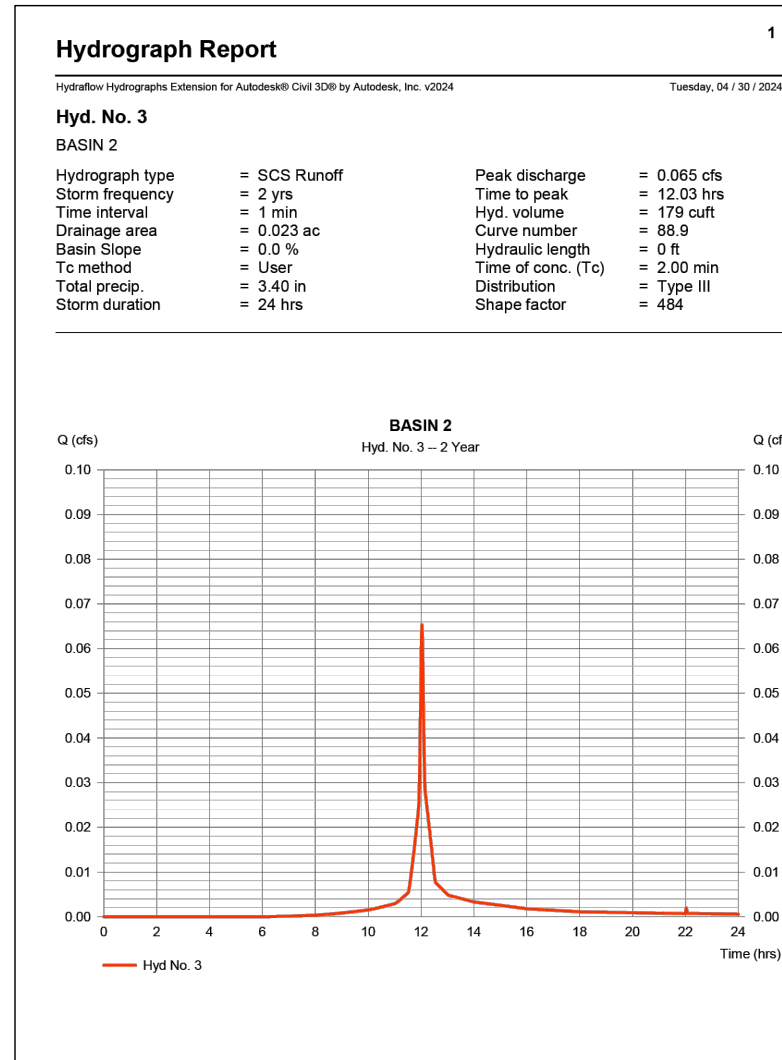
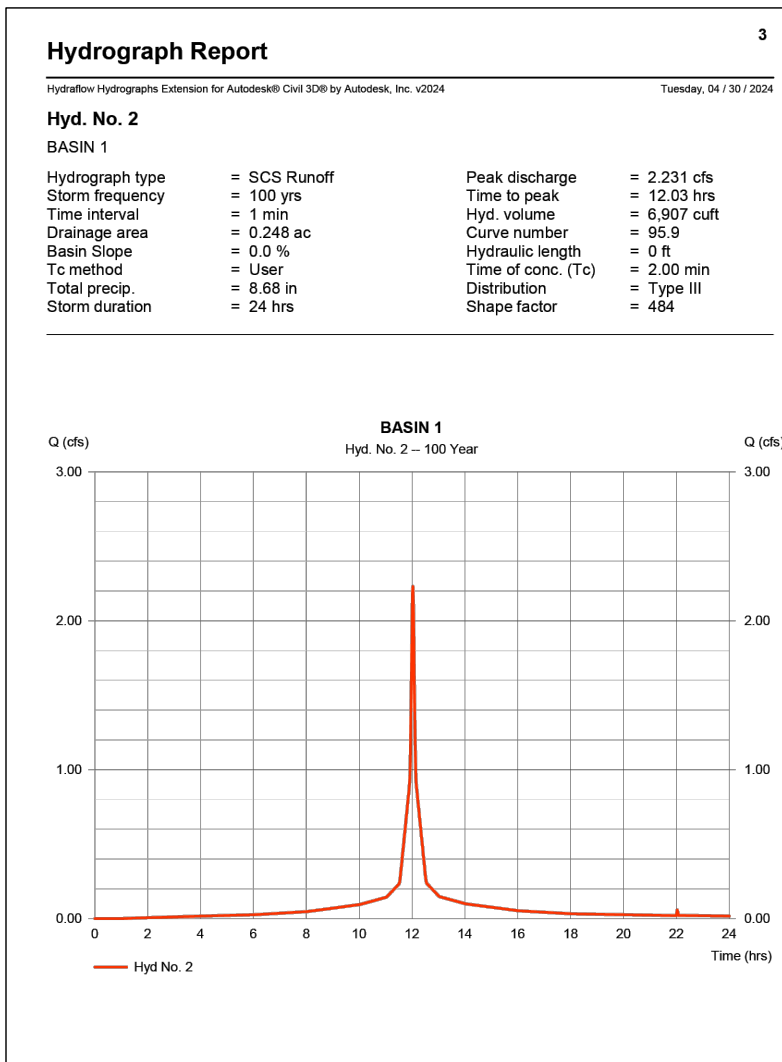
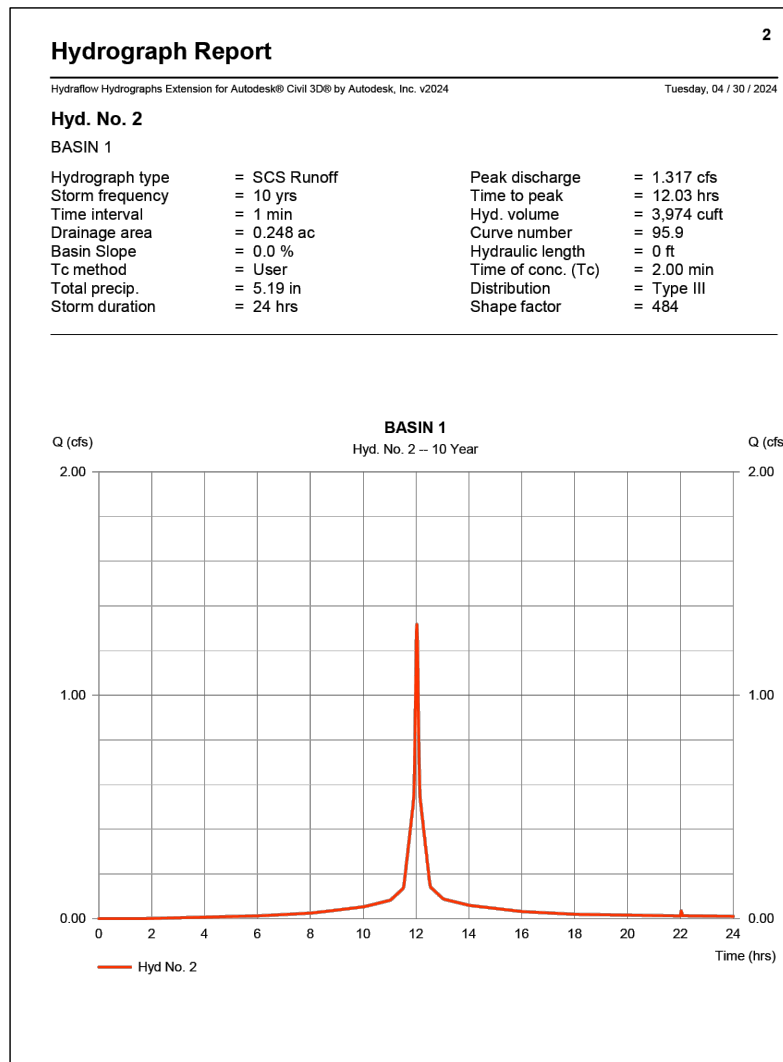
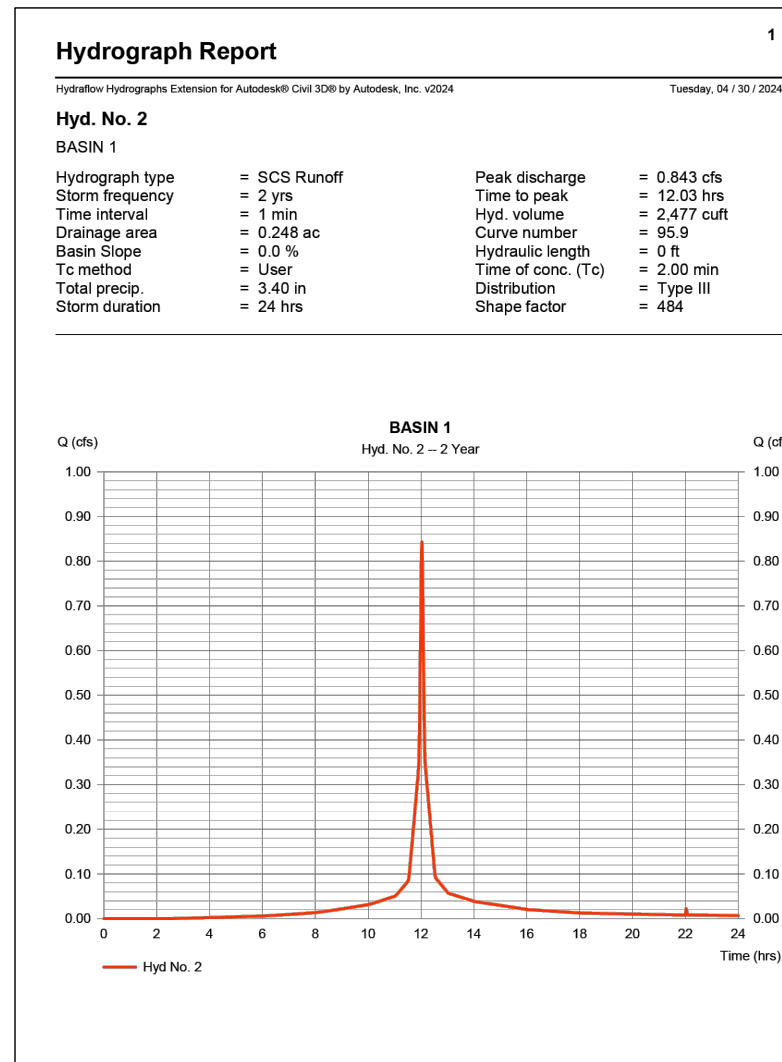
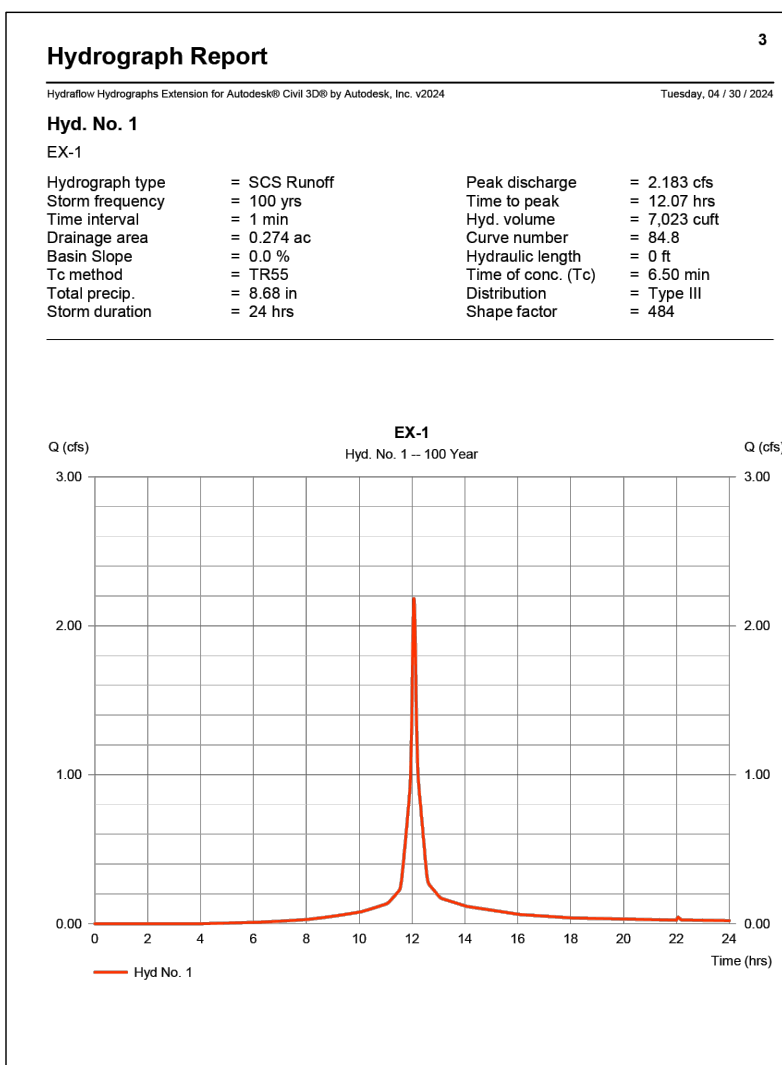
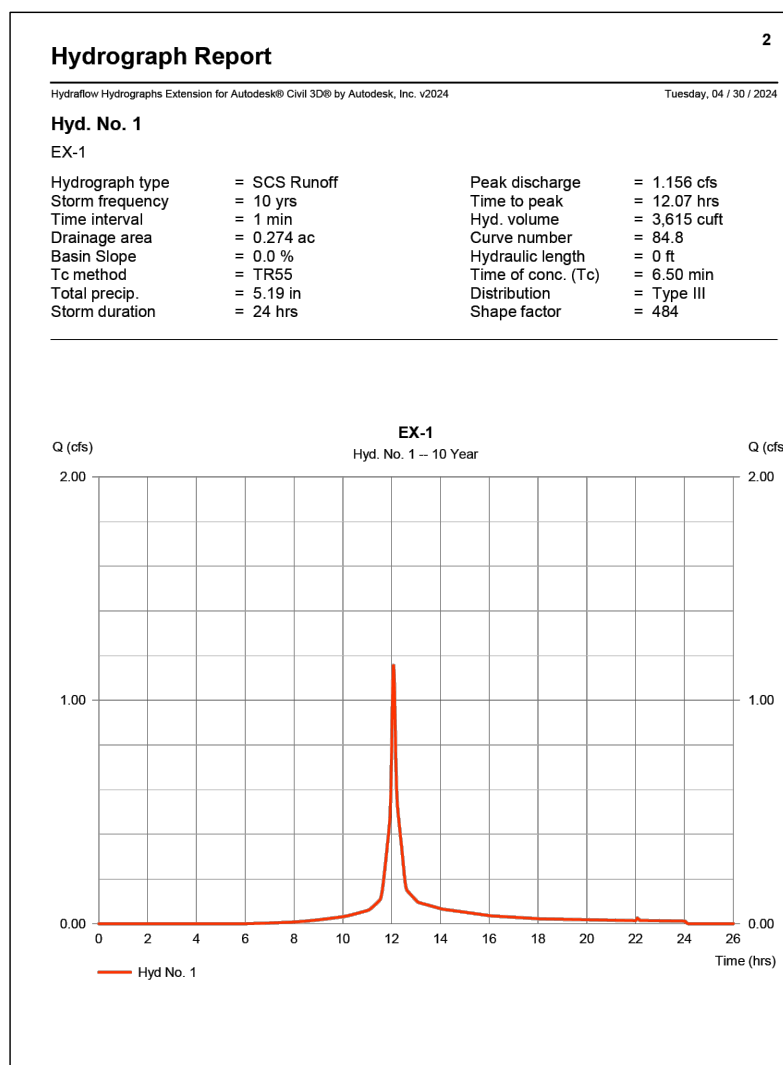
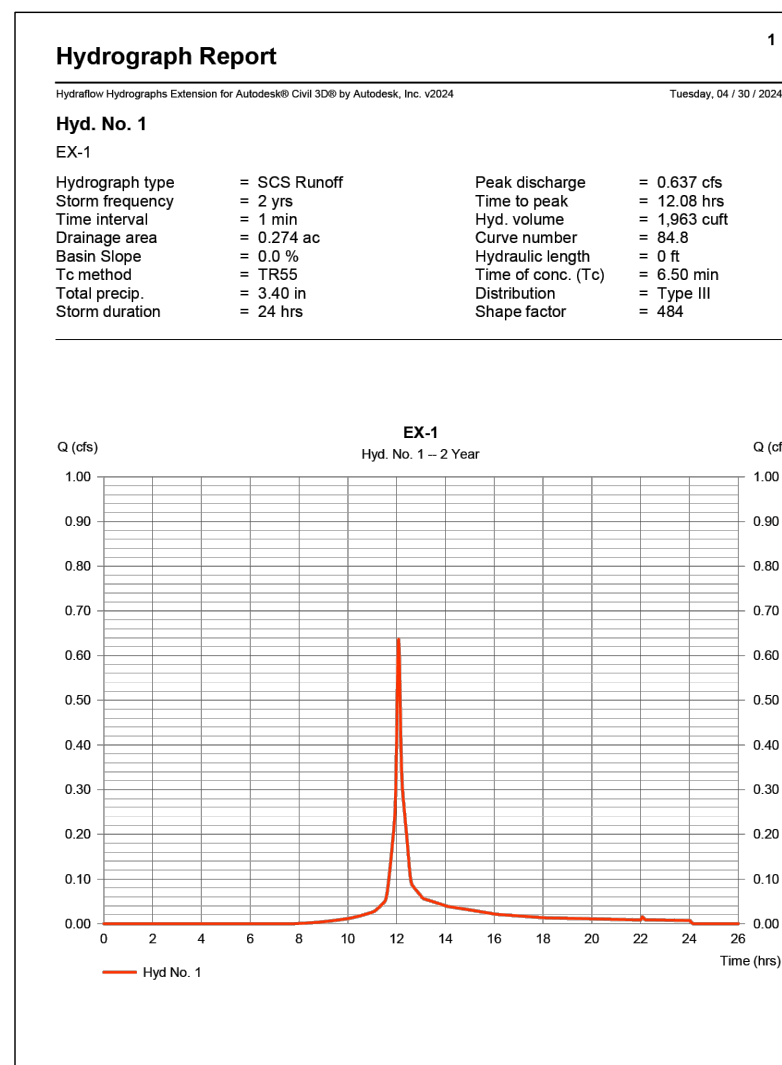
Underground Utilities
Call Center
811 OR
1-800-272-1000

PROPOSED 3-STORY APARTMENT BUILDING			
410 MAIN ST. WEST ORANGE, NJ			
UNDERGROUND PARKING GRADING PLAN			
2	REV. AS PER HEARING DISCUSSION ON 8/7/2024	8/23/2024	AR
1	REV. SUBMISSION PER COUNTY COMMENTS DATED 4/18/24	5/16/2024	AR
NO.	DESCRIPTION	DATE	BY
DWG: C5		DATE: 7/2/2024	SCALE: 1" = 5'
SHEET: 5		OF 17	

SMBT CONSULTANTS

CIVIL & STRUCTURAL ENGINEERS
283 RT. 18 SOUTH, #D-152
EAST BRUNSWICK, NJ 08816
TEL. 347-762-8364
FAX 201-753-5251
ALIG@SMBTCONSULTANTS.COM
CERTIFICATE OF AUTHORIZATION NO.: 24GA2833100

DESIGNED BY:	DRAWN BY:
AR	AR
CHECKED BY:	APPROVED BY:
AR	AR
ALIAGGAR RANGWALA, P.E.	
N.J.	PROFESSIONAL ENGINEER
LC	NO. 5325



ISSUED FOR PERMIT APPLICATION

										PROPOSED 3-STORY APARTMENT BUILDING																				DESIGNED BY: AR				DRAWN BY: AR																			
																														CHECKED BY: AR				APPROVED BY: AR																			
										410 MAIN ST., WEST ORANGE, NJ																				ALIASGAR RANGWALA, P. E.																							
										DWG: C6				DRAINAGE AREA MAP																CIVIL & STRUCTURAL ENGINEERS 293 RT. 18 SOUTH, #D-152 EAST BRUNSWICK, NJ 08816 TEL. 347-762-6364 FAX 201-753-5251 ALI@SMBTCONSULTANTS.COM CERTIFICATE OF AUTHORIZATION NO.: 24GA28353100																N.J. PROFESSIONAL ENGINEER LIC. NO. 5255							
										SHEET: 6																																											
1 REV. SUBMISSION PER COUNTY COMMENTS DATED 4/18/24										5/16/2024				AR		OF 17																																					
NO.		DESCRIPTION								DATE		BY		DATE: 7/2/2024				SCALE: 1" = 10'																																			

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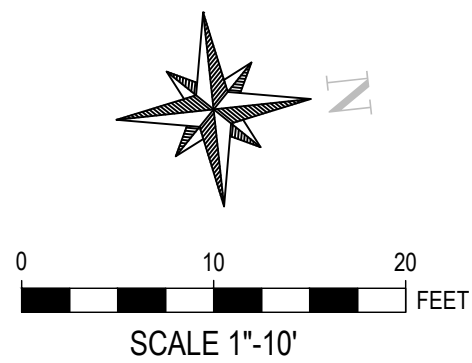
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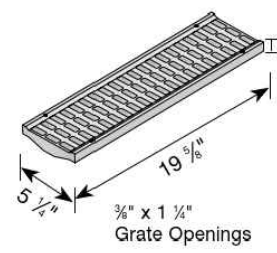
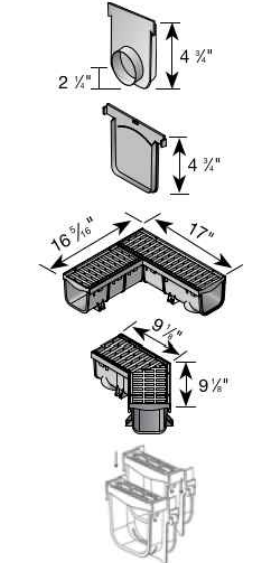
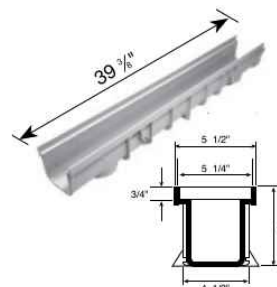
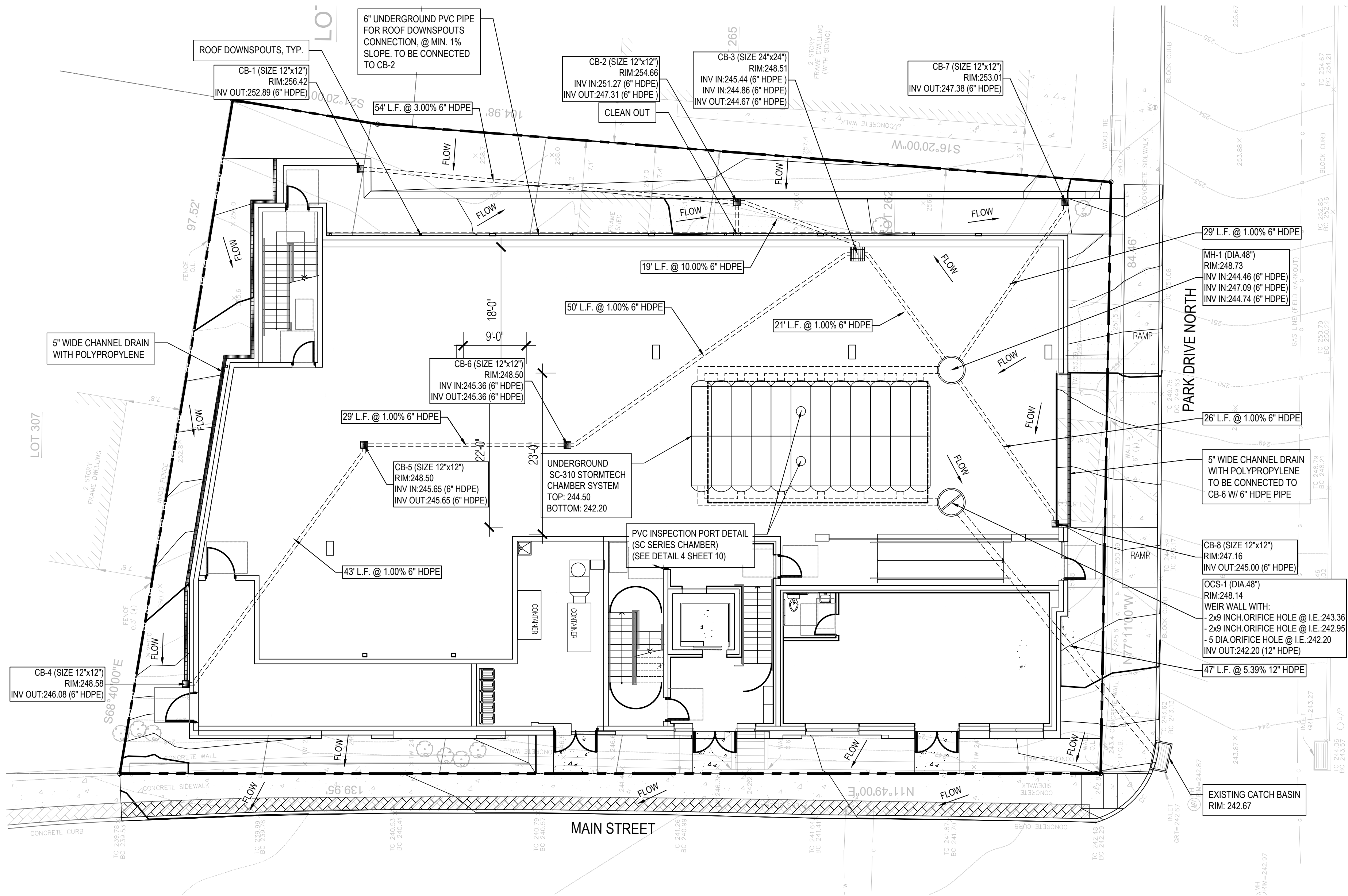
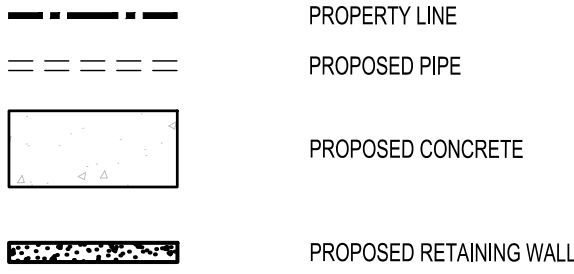


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811 OR
1-800-272-1000

1-800-272-1000



LEGEND



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
800	5' x 1 Meter Deep Profile Channel Drain	Light Gray	10	4.00	25IN	5' wide Deep Profile Channel Drain with interlocking joints, side rebar clips, integrated side and bottom outlet knockouts. Polypropylene.

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
813	5' Deep Profile End Cap/3' S&D Hub & 4' S&D SPT Knockout End Outlet	Light Gray	10	0.40	25IN	5' wide Deep Profile End Cap/End Outlet, PVC.
812	5' Deep Profile End Cap	Light Gray	10	0.13	25IN	5' wide Deep Profile End Cap, PVC.
861	5' Deep Profile Grate & Channel Drain 90° Elbow	Light Gray	1	3.44	25IN	
862	5' Deep Profile Grate & Channel Drain 45° Elbow	Light Gray	1	3.44	25IN	
PSRC-864	Quick-Turn™ 5' Deep Radius Coupling Provides a 6 degree bend left or right	Light Gray	9	0.30	25IN	

Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
814	5' x 20' Light Traffic Channel Grate	Light Gray	10	1.16	25IN	5' wide Structural Foam Polyethylene Light Traffic Channel Grate with UV inhibitors. Open surface area 23.32 square inches per foot, 71.95 GPM per foot.
815	5' x 20' Light Traffic Channel Grate	Green	10	1.16	25IN	
816	5' x 20' Light Traffic Channel Grate	Black	10	1.16	25IN	
817	5' x 20' Light Traffic Channel Grate	Sand	10	1.16	25IN	
818	5' x 20' Light Traffic Channel Grate	Brick Red	10	1.16	25IN	
819	5' x 20' Light Traffic Channel Grate	White	10	1.16	25IN	
824	5' x 20' Galvanized Steel Light Traffic Channel Grate	Galvanized Steel	10	1.14	25IN	2 ft. Galvanized Steel Channel Grate. Open surface area 19.32 square inches per foot, 59.1 GPM per foot.

2 CHANNEL DRAIN SPECIFICATIONS
NTS

- STORMWATER NOTES:
- CONTRACTOR TO FIELD VERIFY POSSIBILITY OF CONNECTION TO EXISTING CATCH BASIN PRIOR TO CONSTRUCTION. IF ANY DISCREPANCY OCCURS THAT AFFECTS THE DESIGN, CONTACT ENGINEER OF PROJECT TO PROVIDE A SITE VISIT AND DESIGN UPDATE.
 - HDPE PIPES TO BE CORRUGATED DOUBLE WALL.

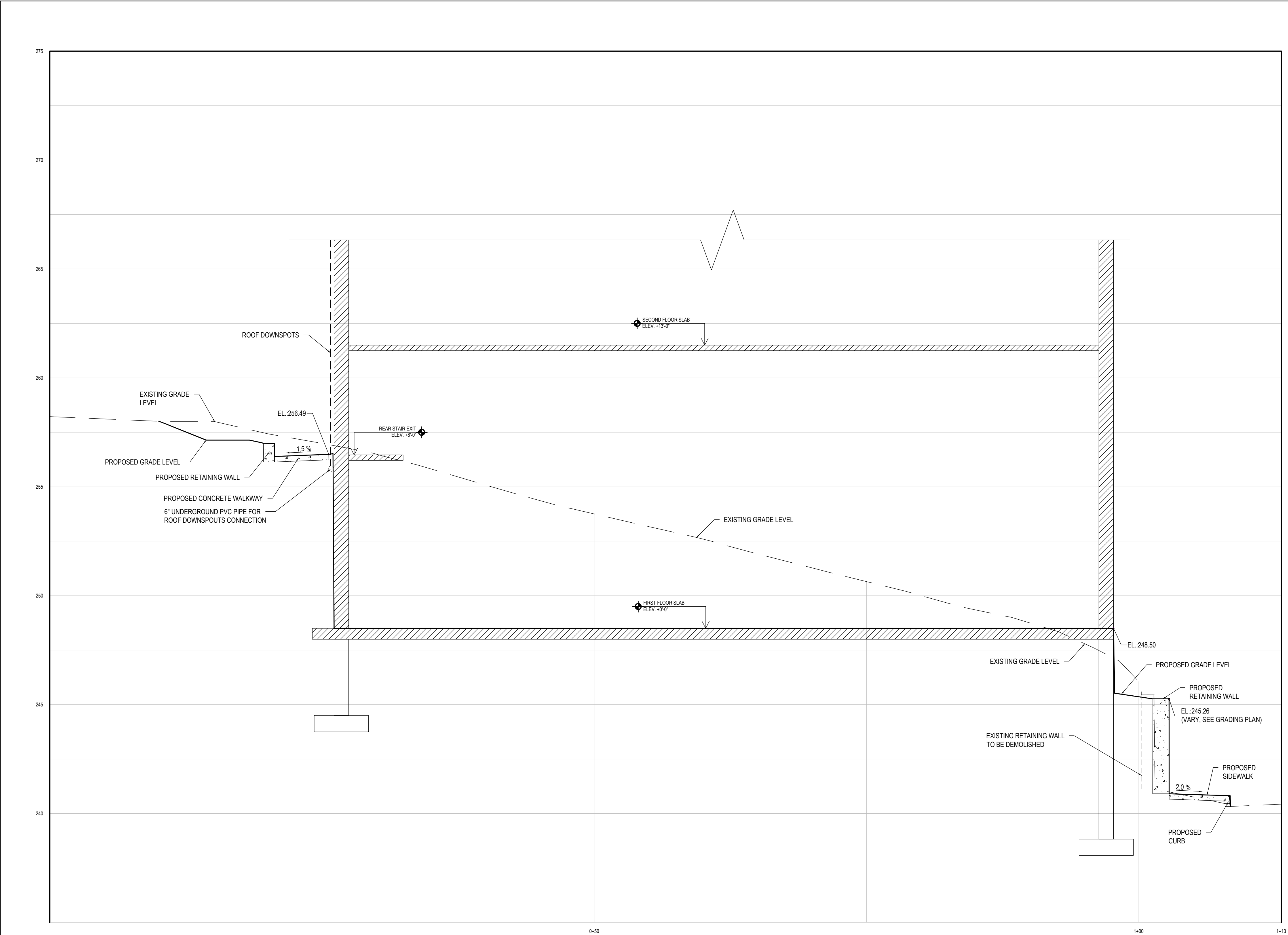
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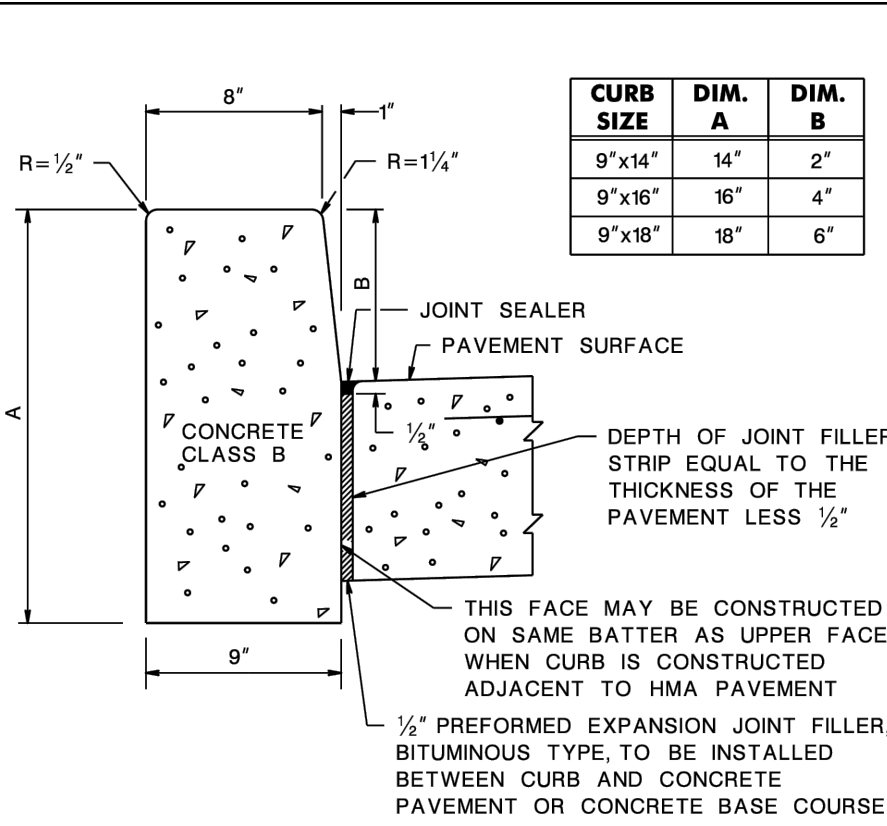
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Call Center
811 OR
1-800-272-1000

PROPOSED 3-STORY APARTMENT BUILDING				410 MAIN ST, WEST ORANGE, NJ		 CIVIL & STRUCTURAL ENGINEERS 283 RT. 18 SOUTH, #D-152 EAST BRUNSWICK, NJ 08816 TEL. 347-762-8364 FAX 201-753-5251 ALIG@SMBTCONSULTANTS.COM CERTIFICATE OF AUTHORIZATION NO.: 24GA28353100		DESIGNED BY: AR	DRAWN BY: AR				
								CHECKED BY: AR	APPROVED BY: AR				
1				REV. SUBMISSION PER COUNTY COMMENTS DATED 4/18/24		5/16/2024		AR	DATE: 7/2/2024	SCALE: 1" = 10'	N.J. PROFESSIONAL ENGINEER LIC. NO. 53265		
NO.				DESCRIPTION		DATE		BY		DATE: 7/2/2024		SCALE: 1" = 10'	



1 SITE CONSTRUCTION DETAILS
VER.: 1" = 2'
HOR.: 1" = 5'



6 CONCRETE CURB DETAIL
NTS

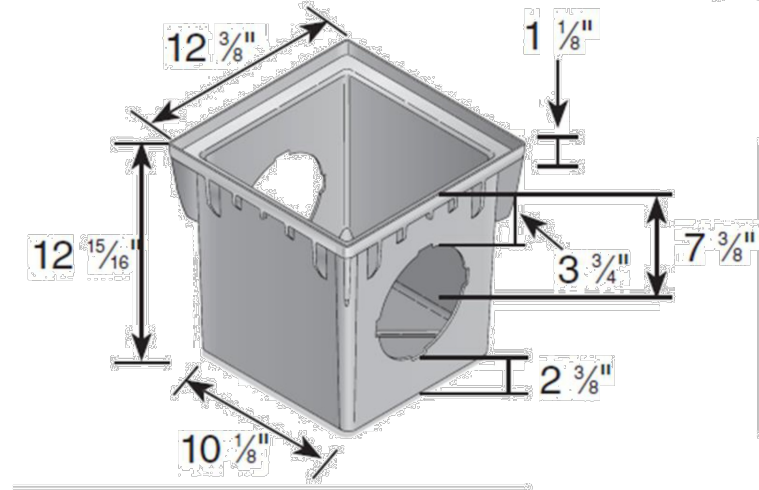


851 N. Harvard Avenue P.O. Box 339 Lindsay, CA 93247
559.562.9888 phone 800.997.5549 toll free www.ndsgpro.com

12" CATCH BASIN
Part #: 1200, 1203, 1207

GRATE CAPACITIES		
Grate Number(s)	Description	Flow Rate with 1/2" Head
1210, 1211, 1212, 1212S	12" x 12" Square Grate	155.28 GPM
1211*	12" x 12" Square Grate	157.79 GPM
1213	12" x 12" Square Cast Iron Grate	113.80 GPM
1215	12" x 12" Square Galvanized Steel Grate	348.07 GPM
1280, 1290	12" x 12" Atrium Grate	154.79 GPM
1218, 1218S, 1218GR, 1218GY	12" Botanical Plastic	74.77 GPM
1218CI	12" Botanical Cast Iron	76.60 GPM
1224, 1224S, 1224GR, 1224GY	12" Wave Plastic	78.53 GPM
1224CI	12" Wave Cast Iron	78.31 GPM

OUTLET FLOW CAPACITIES	
Part #	Flow Rate per Outlet
1242, 1243	78.10
1245	Top: 70.49 GPM Middle: 76.30 GPM Bottom: 83.41 GPM
1266	247.12 GPM
1889	238.20 GPM



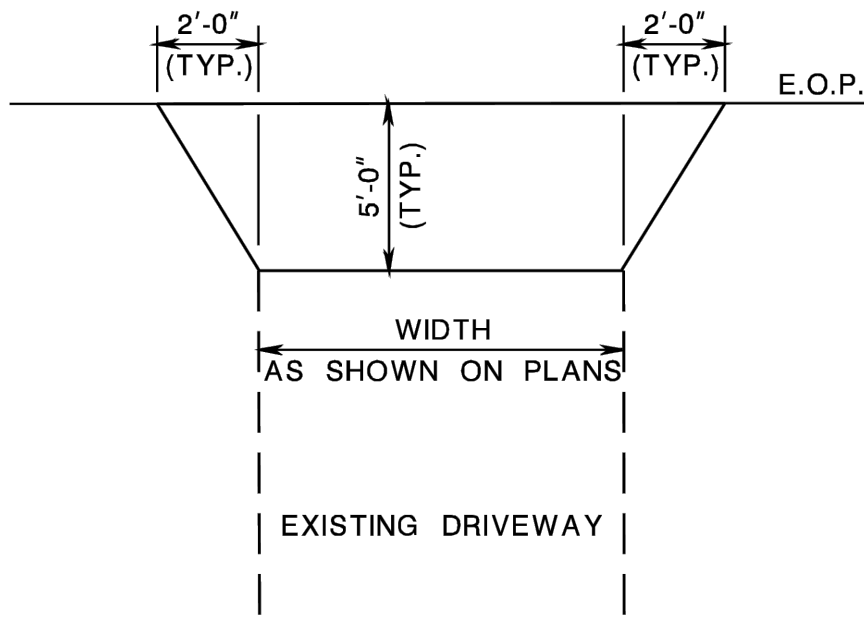
3 of 7

2 CATCH BASIN SPECIFICATIONS
NTS

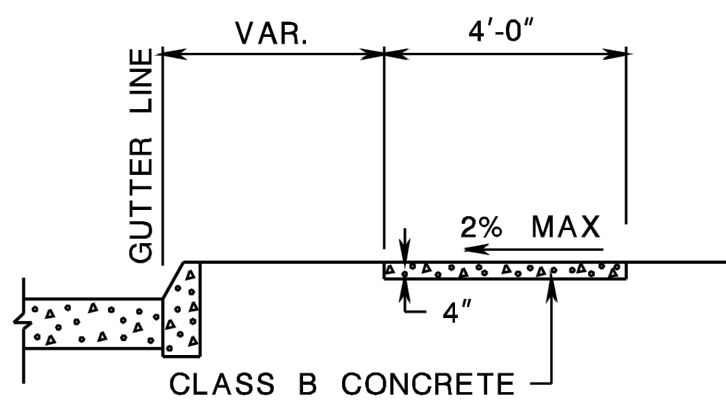
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CALL BEFORE YOU DIG!
NEW JERSEY INDUSTRIAL CODE REQUIRES

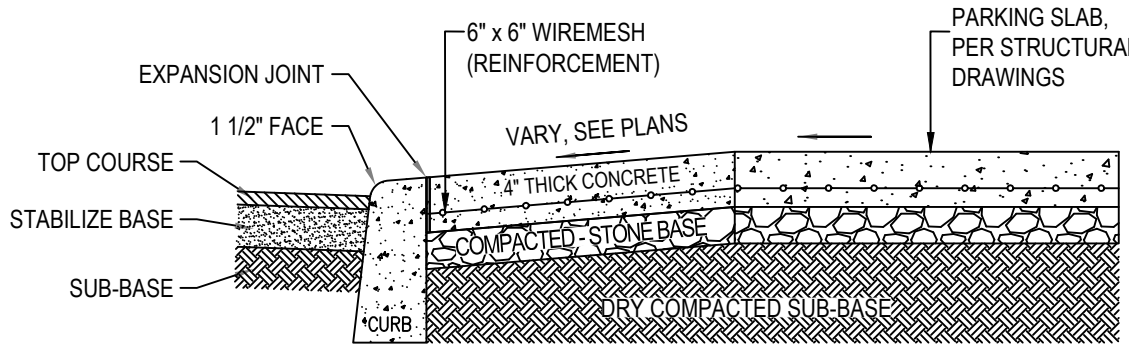
DRILL, OR BLAST - STOP CALL
Underground Utilities
Call Center
811 OR
1-800-272-1000



3 DRIVEWAY DETAIL
NTS



4 CONCRETE SIDEWALK DETAIL
NTS



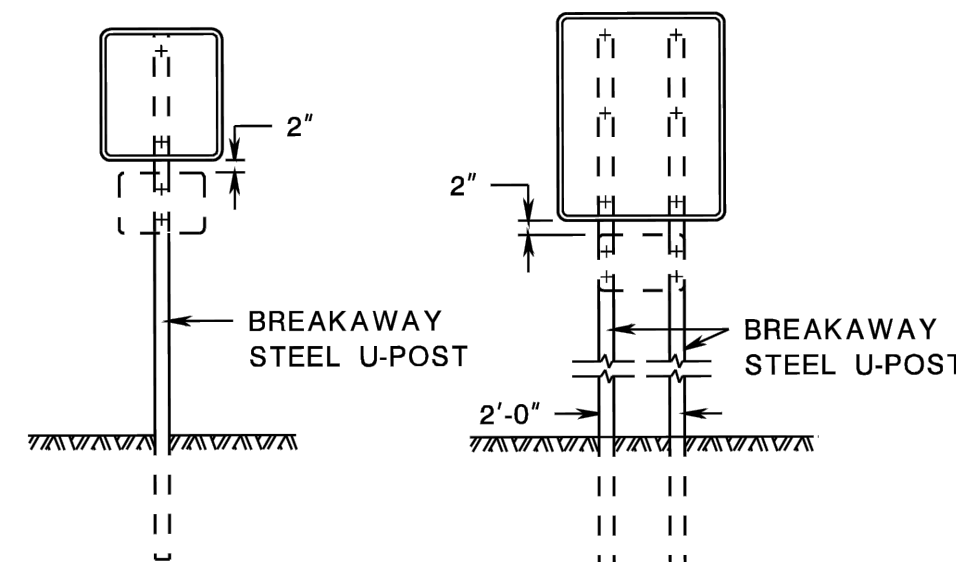
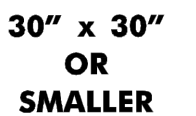
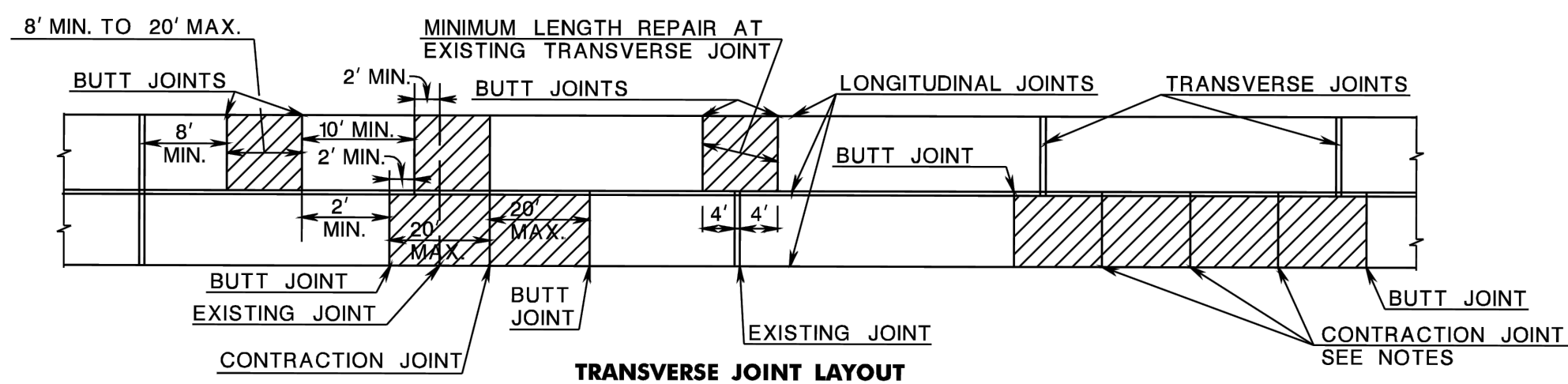
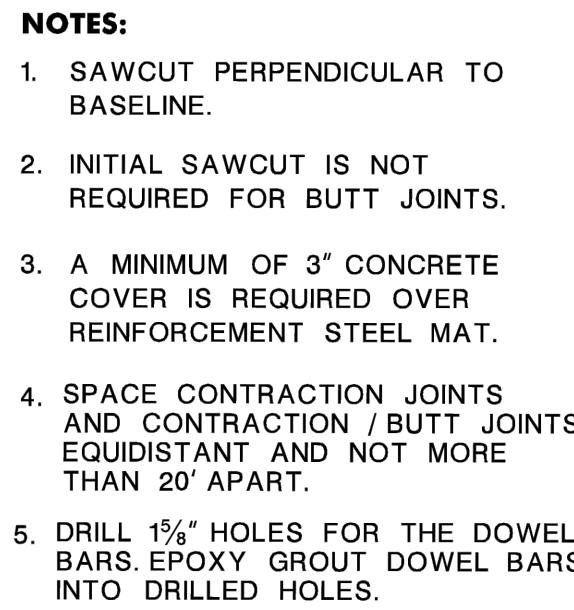
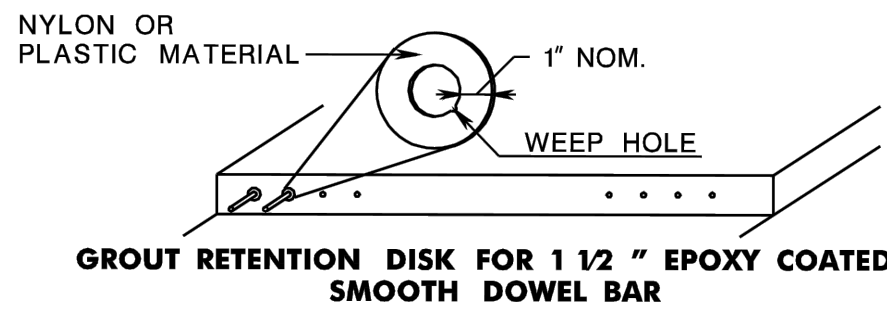
NOTE:
1. USE 4000 P.S.I. CONCRETE TO MEET N.J.D.O.T. STANDARDS.

5 CONCRETE DRIVEWAY APRON DETAIL
NTS

				PROPOSED 3-STORY APARTMENT BUILDING						DESIGNED BY: AR		DRAWN BY: AR	
				410 MAIN ST, WEST ORANGE, NJ						CHECKED BY: AR		APPROVED BY: AR	
										ALIASGAR RANGWALA, P.E.			
										CIVIL & STRUCTURAL ENGINEERS			
										283 RT. 18 SOUTH, #D-152			
										EAST BRUNSWICK, NJ 08816			
										TEL. 347-762-8364			
										FAX 201-753-5251			
										ALIG@SMBTCONSULTANTS.COM			
										CERTIFICATE OF AUTHORIZATION NO.: 24GA28353100			
										N.J. PROFESSIONAL ENGINEER		LIC. NO. 53255	

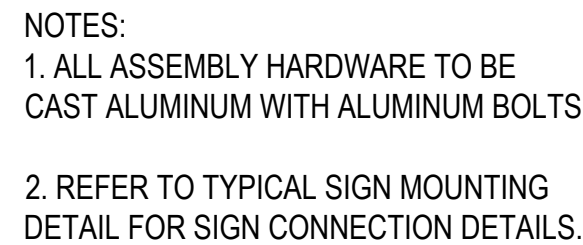
NO.	DESCRIPTION	DATE	BY	DATE: 7/2/2024	SCALE: AS SHOWN
1	REV. SUBMISSION PER COUNTY COMMENTS DATED 4/18/24	5/16/2024	AR	OF 17	

DWG: C8	SHEET: 8
OF 17	

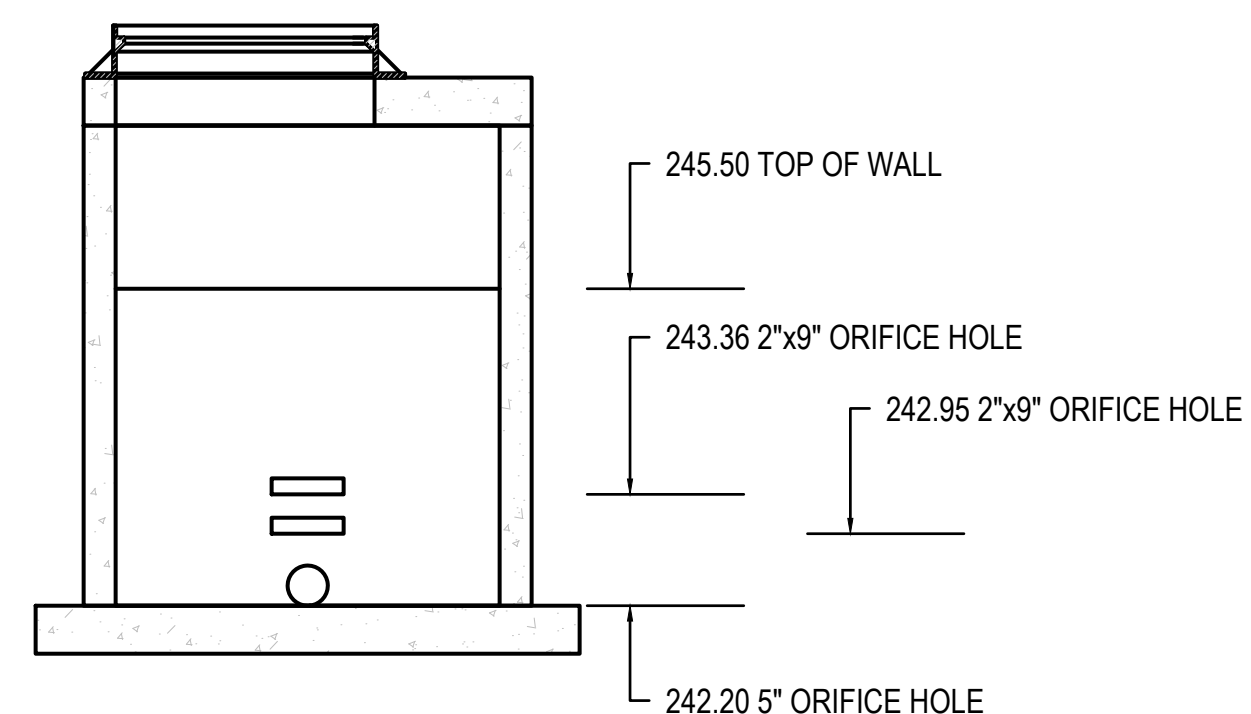


- NOTES:**
1. SAWCUT THE EXISTING PAVEMENT A MINIMUM OF 2'-0" FROM THE SIDES OF THE PROPOSED CROSS DRAIN OR UTILITY TRENCH EXCAVATION ON BOTH SIDES.
 2. ADDITIONAL EXCAVATION REQUIRED WHEN PIPE BEDDING IS DESIGNEED, OR WHEN ROCK OR OTHER HARD MATERIAL IS ENCOUNTERED.
 3. BACKFILL TO BE PLACED SO AS TO ENSURE SUFFICIENT COMPACTION UNDER PIPE HAUNCHES.
 4. THE PIPE OR UTILITY TRENCH TO BE BACKFILLED IN ACCORDANCE WITH THE SPECIFICATIONS FOR BACKFILLING OR WITH AGGREGATE DESIGNATION I-1, I-2, I-3, OR I-13. ENSURE THE WIDTH IS 36" MINIMUM OR THE OUTSIDE DIAMETER OF THE PIPE PLUS 18".

UNDERLYING SOIL	d MIN.	
	CONC. PIPE	ALUMINUM PIPE OR HDPE PIPE
ROCK OR HARD MATERIAL	6"	12"
OTHER MATERIAL	6"	6"



NOTE:
ACCESSIBLE PARKING SIGN SHALL
BE INSTALLED AS SHOWN AT EACH
SPACE RESERVED FOR ACCESSIBLE
PARKING IN ACCORDANCE WITH
CABO/ANSI A117.1



ISSUED FOR PERMIT APPLICATION

										PROPOSED 3-STORY APARTMENT BUILDING																				DESIGNED BY: AR										DRAWN BY: AR																			
																																								CHECKED BY: AR										APPROVED BY: AR									
										410 MAIN ST, WEST ORANGE, NJ																				CIVIL & STRUCTURAL ENGINEERS 230 RT. 18 SOUTH RD-152 EAST BRUNSWICK, NJ 08816 TEL. 347-762-8364 FAX 201-753-8251 ALI@SMBTCONSULTANTS.COM CERTIFICATE OF AUTHORIZATION NO.: 24GA28353100										N.J. PROFESSIONAL ENGINEER LIC. NO. 83556																			
										DWG. C9																																																	
										SHEET: 9										STANDARD DETAILS																																							
										OF 17																																																	
1										REV. SUBMISSION PER COUNTY COMMENTS DATED 4/18/24										5/16/2024										AR																													
NO.										DESCRIPTION										DATE										BY										DATE: 7/2/2024										SCALE: NOT TO SCALE									

SC-310 STORMTECH CHAMBER SPECIFICATIONS

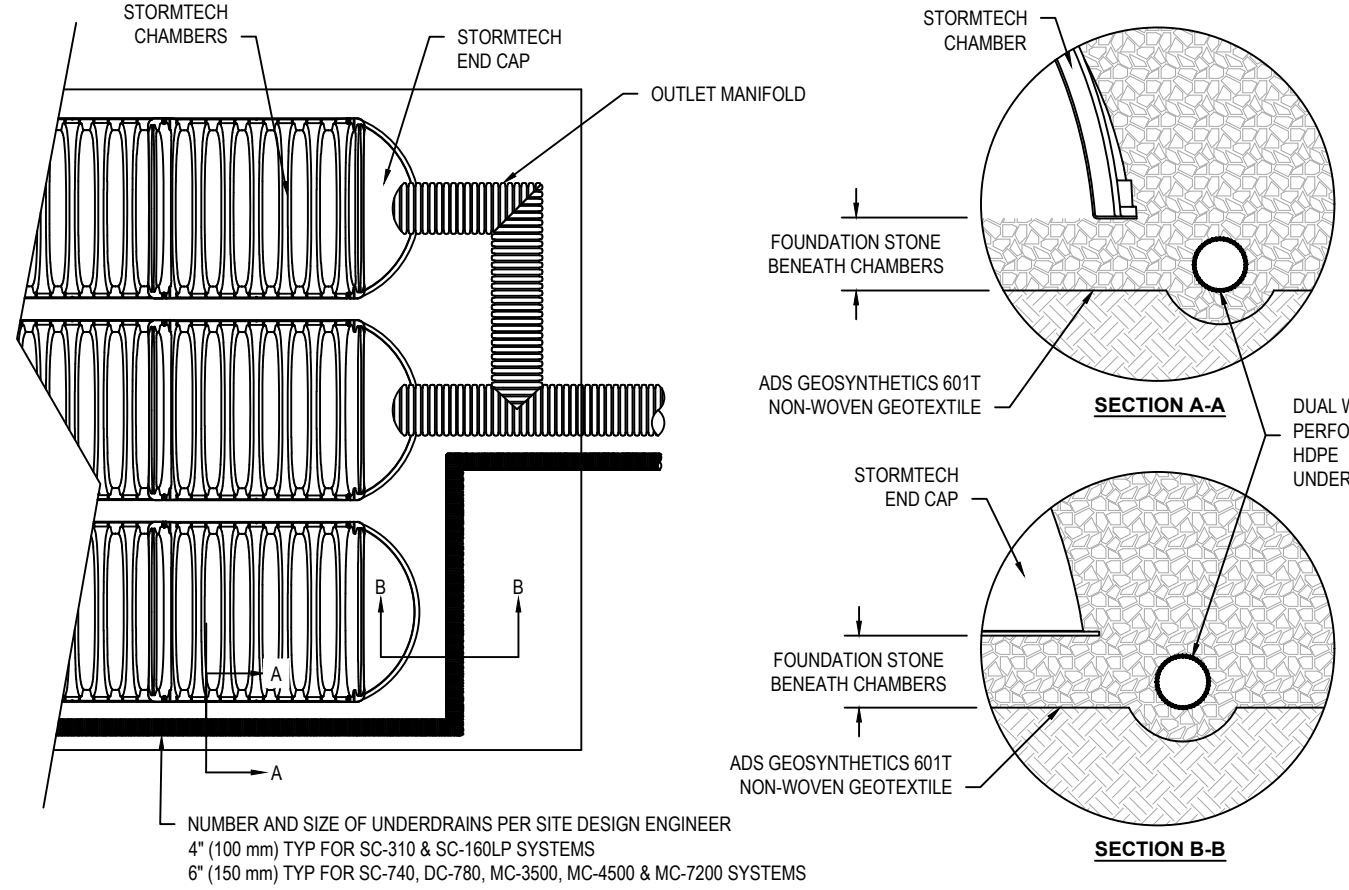
1. CHAMBERS SHALL BE STORMTECH SC-310.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE OR POLYETHYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
- TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 400 LBS/FT². THE ASD IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F/ 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
- THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.96 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2922 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-310 SYSTEM

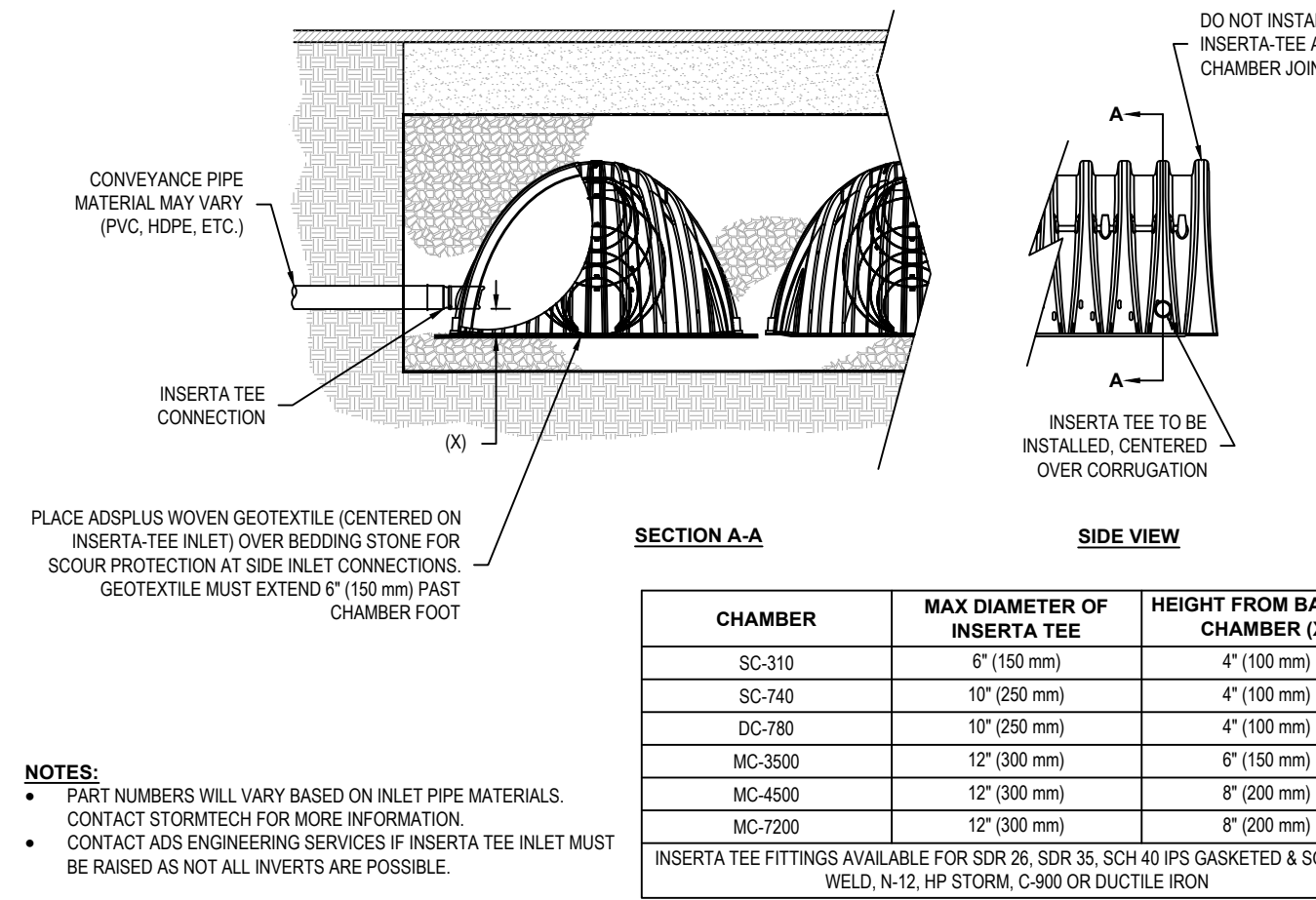
1. STORMTECH SC-310 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-310 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
- STONESHOOTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM 8" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4" (20-50 mm).
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH SC-310 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 & SC-740 CHAMBERS IS LIMITED:
- NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.
- USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.
- CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



UNDERDRAIN DETAIL



INSERTA-TEE SIDE INLET DETAIL

SC-310 TECHNICAL SPECIFICATIONS

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DRILL, OR BLAST - STOP CALL

Underground Utilities
Call Center
811 OR
1-800-272-1000

NO.

DESCRIPTION

DATE

BY

DATE: 7/2/2024

SCALE: NOT TO SCALE

PROPOSED 3-STORY
APARTMENT BUILDING

410 MAIN ST, WEST ORANGE, NJ

STORMWATER
MANAGEMENT DETAILS

CIVIL & STRUCTURAL ENGINEERS
283 RT. 18 SOUTH, #D-152
EAST BRUNSWICK, NJ 08816
TEL: 347-762-8364
FAX 201-753-8251
ALIGSMBTCONSULTANTS.COM
CERTIFICATE OF AUTHORIZATION NO.: 24GA28353100

DESIGNED BY:
AR

DRAWN BY:
AR

CHECKED BY:
AR

APPROVED BY:
AR

ALIASGAR RANGWALA, P.E.

N.J. PROFESSIONAL ENGINEER
LIC. NO. 53255

4" PVC INSPECTION PORT DETAIL (SC SERIES CHAMBER)

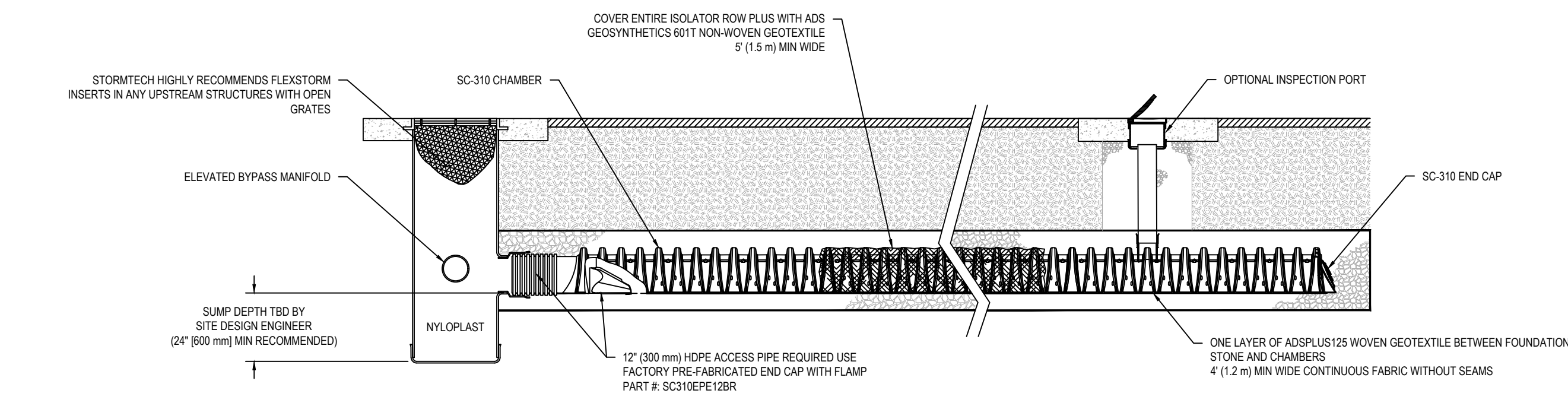
ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145 ¹ A-1, A-2.4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL, AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{1,3}

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
 - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
 - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
 - ONCE LAYER 'C' IS PLACED, ANY SOIL MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLYETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2922 SHALL BE GREATER THAN OR EQUAL TO 400 LBS/FT². AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F/ 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.



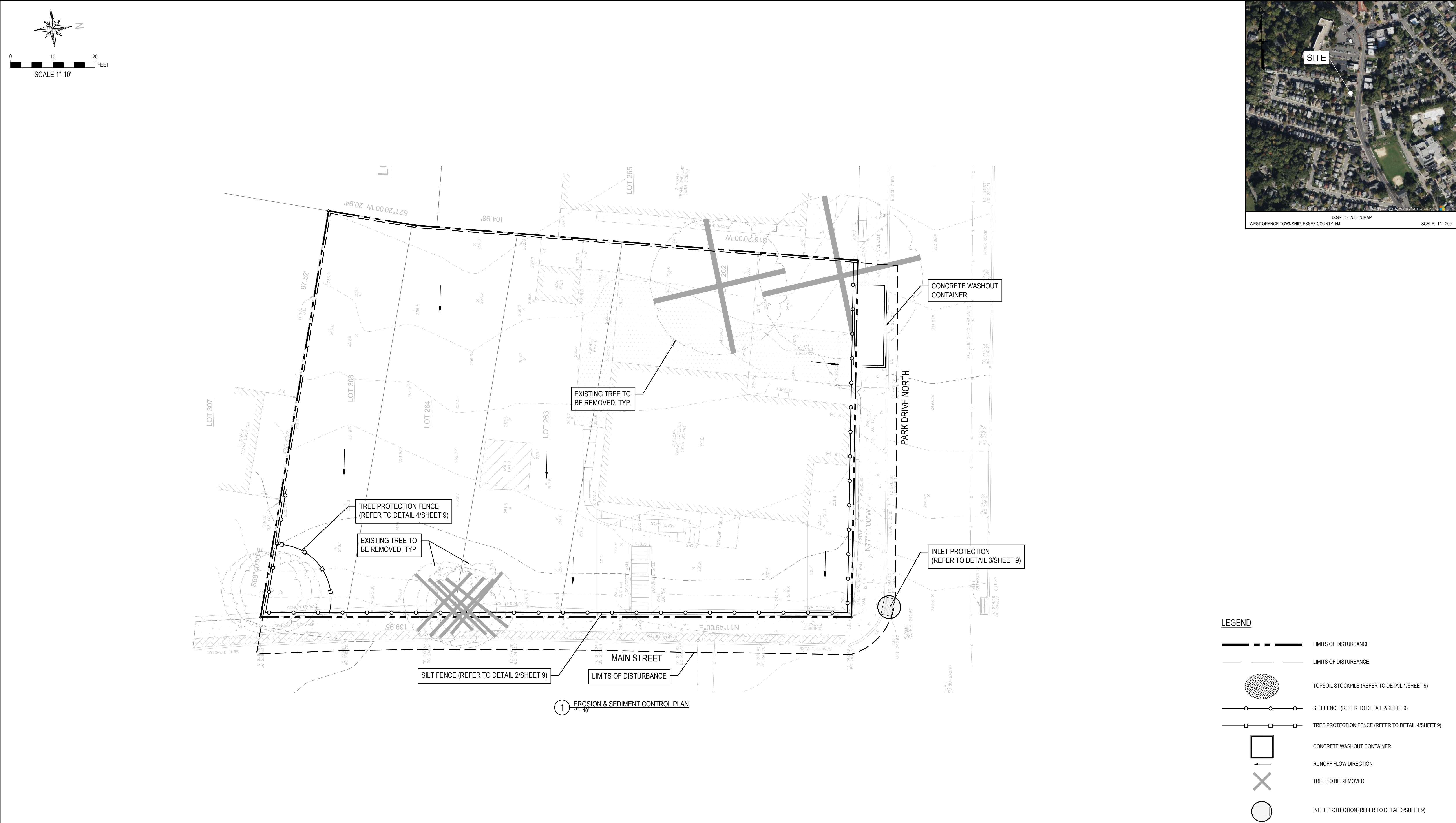
INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
- A.1. REMOVE OPEN END NYLOPLAST INLINE DRAIN
- A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
- A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
- A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
- A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROW PLUS ROWS
- B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
- B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
- i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
- ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
- IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



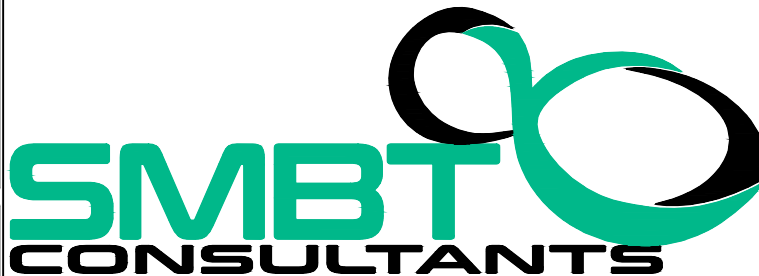


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DRILL, OR BLAST - STOP CALL

Underground Utilities
Call Center
811 OR
1-800-272-1000

				PROPOSED 3-STORY APARTMENT BUILDING				DESIGNED BY: AR		DRAWN BY: AR	
				410 MAIN ST, WEST ORANGE, NJ				CHECKED BY: AR		APPROVED BY: AR	
				EROSION & SEDIMENT CONTROL PLAN		CIVIL & STRUCTURAL ENGINEERS 283 RT. 18 SOUTH, #D-152 EAST BRUNSWICK, NJ 08816 TEL. 347-762-8364 FAX 201-753-5251 ALIG@SMBTCONSULTANTS.COM CERTIFICATE OF AUTHORIZATION NO.: 24GA28333100		N.J. PROFESSIONAL ENGINEER LIC. NO. 5326			
REV. SUBMISSION PER COUNTY COMMENTS DATED 4/18/24		5/16/2024		AR		SHEET: 11 OF 17					
NO.		DESCRIPTION		DATE		BY		DATE: 7/2/2024		SCALE: 1" = 10'	

ISSUED FOR PERMIT APPLICATION

MINIMUM STABILIZATION REQUIREMENTS

- SITE PREPARATION:**
- A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND ANCHORING AND MAINTENANCE. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARDS FOR LAND GRADING.
- B. ESTABLISH NEEDED EROSION CONTROL PRACTICES AND FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS AND WATERWAYS.
- SEEDBED PREPARATION:**
- A. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS THOSE OFFERED BY RUTGERS UNIVERSITY SOIL TESTING LABORATORY. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL COOPERATIVE EXTENSION SERVICE OFFICE. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITE OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE ON 11 INCHES PER 1,000 SQUARE FEET OF 10-20-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE. APPLY LIMESTONE AS FOLLOWS:
- | <u>SOIL TEXTURE</u> | <u>TONS/ACRE</u> | <u>LSB/1,000 SQ. FT.</u> |
|--|------------------|--------------------------|
| CLAY, CLAY LOAM AND HEAVY ORGANIC SOIL | 3 | 135 |
| SANDY LOAM, LOAM, SILT LOAM | 2 | 90 |
| LOAMY SAND, SAND | 1 | 45 |
- PULVERIZED DOMESTIC LIMESTONE IS PREFERRED FOR MOST SOILS SOUTH OF THE NEW BRUNSWICK-TRENTON LINE.
- B. WORK LIME AND FERTILIZER INTO SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING TONGUE HARROW OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM, FINE SEEDBED IS PREPARED. ALL CLAY OR SILTY SOILS AND COARSE SANDS SHOULD BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE.
- C. REMOVE FROM THE SURFACE ALL STONES 2 INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, PIECES OF CONCRETE, CLOUDS, LUMPS OR OTHER UNSUITABLE MATERIAL.
- D. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED AND FIRMED AS ABOVE.

TO RECEIVING BODIES OF WATER USING REMOVABLE PUMPING STATIONS, SUMP PITS, PORTABLE SEDIMENTATION TANKS AND/OR SILT CONTROL BAGS.

- SOIL CULT. CONDITIONS
- ACIDS 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 SEEDBED PREPARATION. THE ADDED SOIL SHALL BE LIMED AS ABOVE.
- III. SEEDING
- A. SEE AGRONOMIC RECOMMENDATIONS OR USE MIXTURE RECOMMENDED BY THE COOPERATIVE EXTENSION SERVICE OR SOIL CONSERVATION SERVICE WHICH IS APPROVED BY THE SOIL CONSERVATION DISTRICT.
- B. APPLY SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL, CULTIPACKER SEEDER OR HYDROSEEDER. THE LATTER MAY BE JUSTIFIABLE FOR LARGE, STEEP AREAS WHERE CONVENTIONAL VEHICLES CANNOT TRAVEL. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH THE SEED. EXCEPT FOR DRILLED, HYDROSEEDER OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL, TO A DEPTH OF 1/4 TO 1/2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/2 INCH DEEPER ON COARSE TEXTURED SOIL.
- C. AFTER SEEDING, FIRING THE SOIL, WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT, RESTORE CAPILLARITY AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOD. WHEN PERFORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.

IV. MULCHING

MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL INSURE AGAINST EROSION BEFORE GRASS IS ESTABLISHED AND WILL PROMOTE FASTER AND EARLIER ESTABLISHMENT. (THE EXISTENCE OF SATISFACTORY PERMANENT VEGETATION AT THE TIME OF PROJECT OR UNIT COMPLETION SHALL BE DEEMED AS COMPLIANCE WITH THIS MULCHING REQUIREMENT).

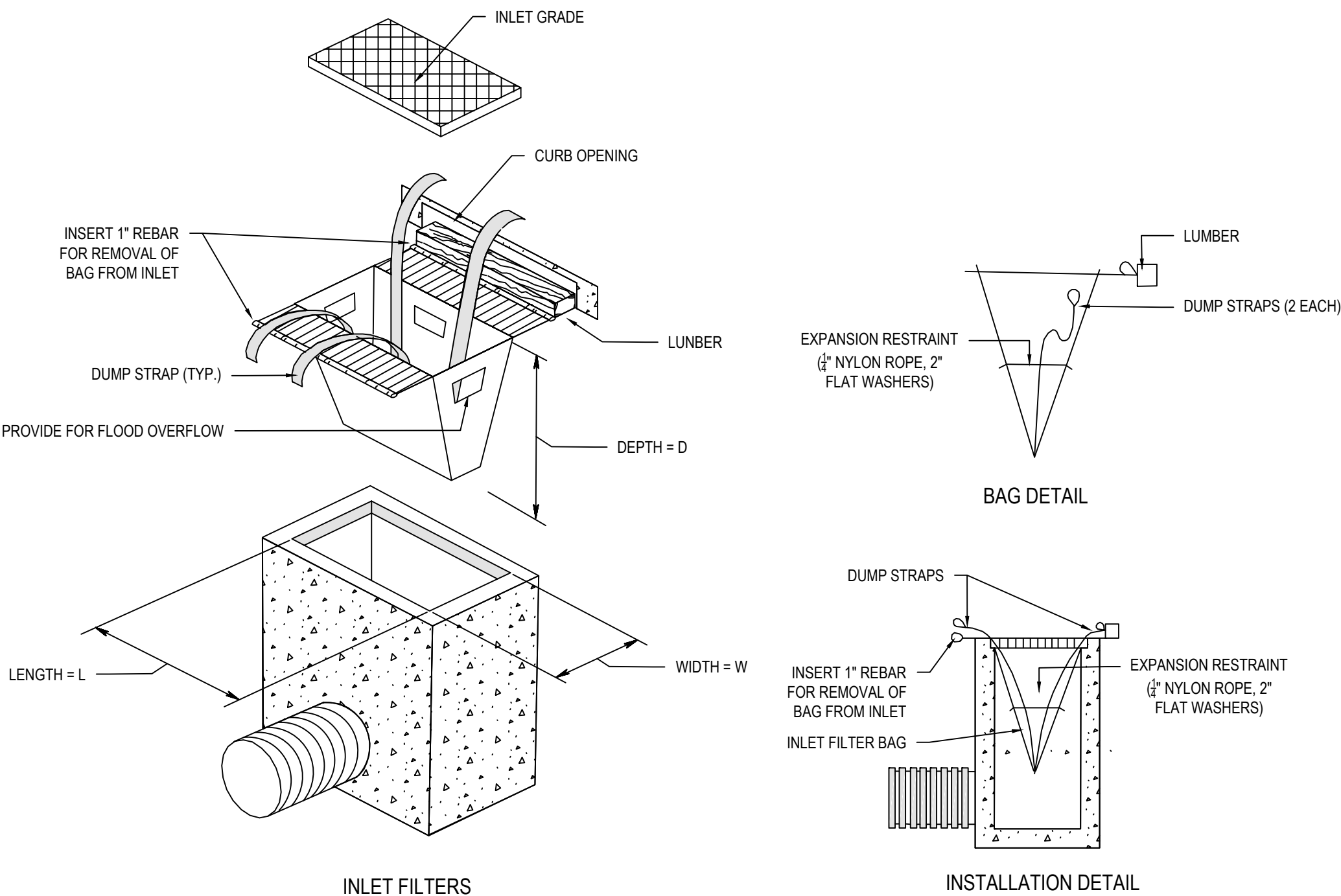
- A. MULCH MATERIALS SHOULD BE UNROOTED SMALL GRAINS OF STRAW, HAY FREE OF SEEDS OR SALT HAY TO BE APPLIED AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER (TACKIFYING OR ADHESIVE ANCHOR), THE RATE OF APPLICATION MUST BE DOUBLE THE LOWER RATE. MULCH CHOPPER-BLOWERS MUST NOT GIRD THE MATERIAL.
- B. SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 75 PERCENT TO 95 PERCENT OF THE SOIL SURFACE WILL BE COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE 70 TO 90 POUNDS WITHIN EACH SECTION.
- C. MULCH ANCHORING SHOULD BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES AND COSTS.
 1. PEG AND TWINE - DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISS-CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
 2. MULCH NETTINGS - STAPLE PAPER, JUTE, COTTON OR PLASTIC NETTINGS TO THE SOIL SURFACE. USE A DEGRADABLE NETTING IN AREAS TO BE MOWED.
 3. CRIMPER (MULCH ANCHORING TOOL) - A TRACTOR-DRAWN IMPLEMENT, SOMEWHAT LIKE A DISC-HARROW, ESPECIALLY DESIGNED TO PUSH OR CUT SOME OF THE BROADCAST LONG FIBER MULCH 3 TO 4 INCHES INTO THE SOIL SO AS TO ANCHOR IT AND LEAVE PART STANDING UPRIGHT. THIS TECHNIQUE IS LIMITED TO AREAS TRAVERSABLE BY A TRACTOR, WHICH MUST OPERATE ON THE CONTOUR OF SLOPES. STRAW MULCH RATE MUST BE 3 TONS PER ACRE. NO TACKIFYING OR ADHESIVE ANCHOR IS REQUIRED.
 4. LIQUID MULCH-BINDERS - MAYBE USED TO ANCHOR SALT HAY, HAY OR STRAW MULCHES.

D. WOOD-FIBER OR PAPER-FIBER MULCH AT THE RATE OF 1,500 POUNDS PER ACRE MAY BE APPLIED BY A HYDROSEEDER. USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.

IF SOIL MOISTURE IS DEFICIENT AND MULCH IS NOT USED, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER (A MINIMUM OF 1/4 INCH TWICE A DAY UNTIL VEGETATION IS WELL ESTABLISHED). THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE IN ABNORMALLY DRY OR HOT WEATHER OR ON DROUGHTY SITES.

- A. SPRING SEEDINGS WILL REQUIRE AN APPLICATION OF FERTILIZER SUCH AS 10-10-10 OR EQUIVALENT AT 400 POUNDS PER ACRE OR 10 POUNDS PER 1,000 SQUARE FEET BETWEEN SEPTEMBER 1 AND OCTOBER 15.
- B. FALL SEEDINGS WILL REQUIRE THE ABOVE BETWEEN MARCH 15 AND MAY 1.
- C. MIXTURES DOMINATED BY WEEPING LOVEGRASS OR LEGUMES MAY NOT NEED TOPDRESSING.
- D. BERMUDAGRASS SHOULD BE TOPDRESSED BEFORE AUGUST 15.

- 1) INSTALL ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON PLANS.
- 2) INSTALL TIRE WASHING SYSTEM AS SHOWN ON PLANS.
- 3) STRIP, STOCKPILE AND STABILIZE TOPSOIL AT LOCATIONS AS SHOWN ON PLANS.
- 4) ROUGH GRADE SITE.
- 5) CONSTRUCT ALL ONSITE UTILITIES. SOIL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AS CONSTRUCTION PROGRESSES.
- 6) CONSTRUCT STRUCTURE(S). SOIL EROSION SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AS CONSTRUCTION PROGRESSES.
- 7) FINE GRADE AND STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH THE MINIMUM STABILIZATION REQUIREMENTS.
- 8) CLEAN AND REGRADE.
- 9) STABILIZE ANY REMAINING DISTURBED AREAS.
- 10) REMOVE ALL SOIL EROSION AND SEDIMENT CONTROL DEVICES.
- 11) INSTALL F.A.B.C. TOP COURSE PAVING AND/OR STONE SURFACE COURSE FOR DRIVEWAY.

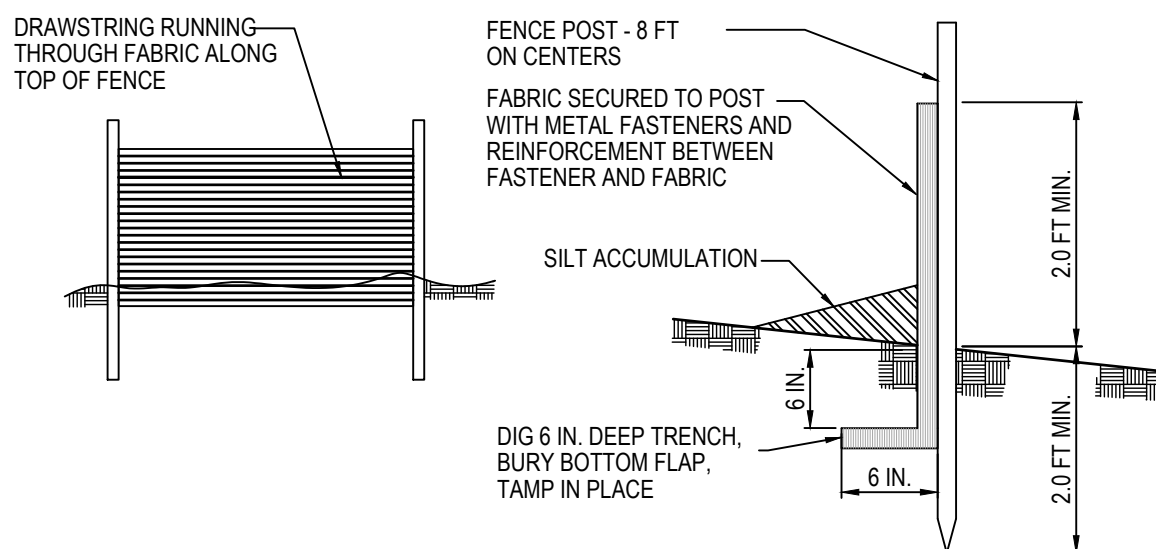


3 INLET PROTECTION DETAIL
NTS



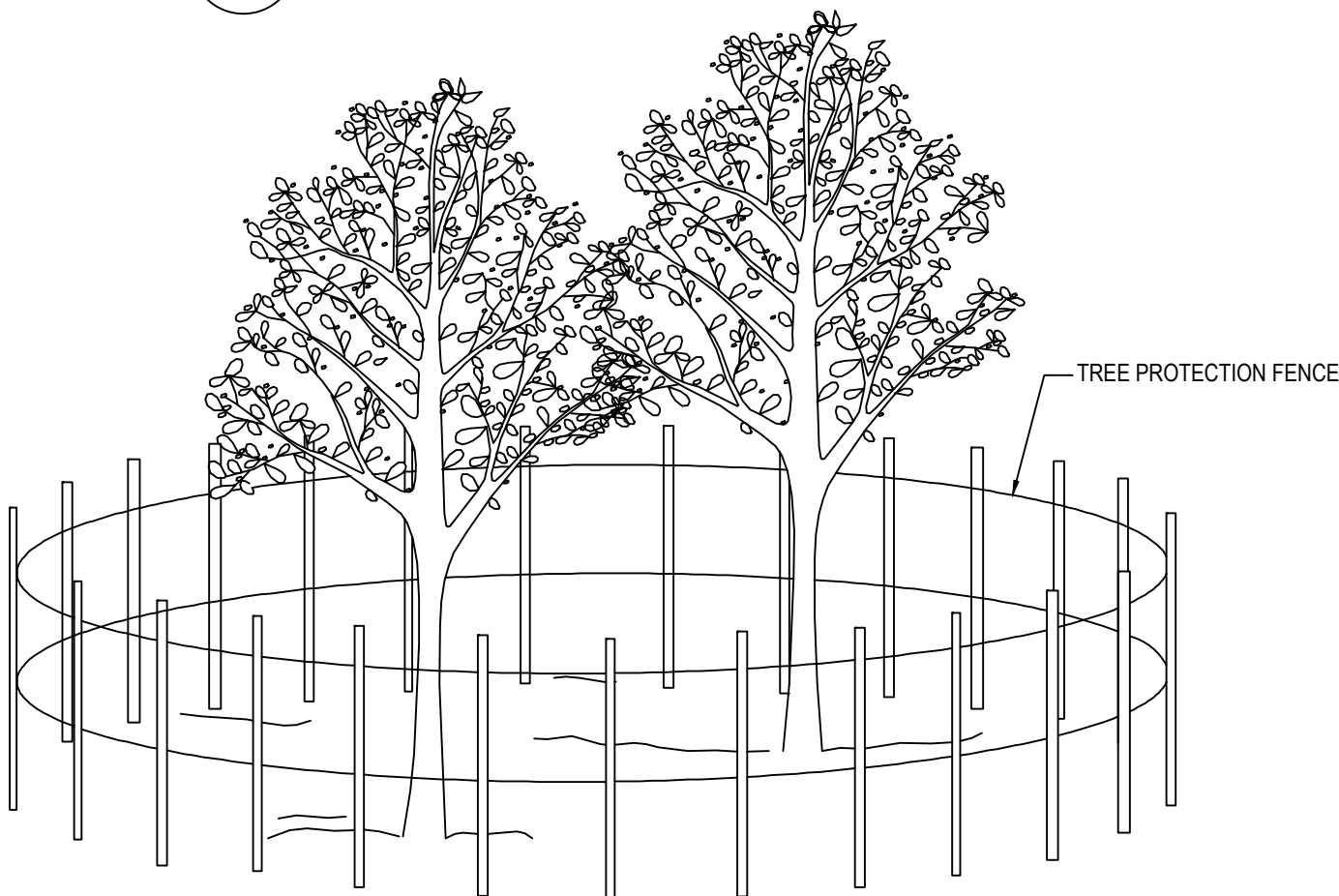
1. PLACE STOCKPILES AT LOCATIONS AS SHOWN ON THE SOIL EROSION AND SEDIMENT CONTROL PLAN.
2. ALL SIDE SLOPES SHALL BE 3 TO 1 OR FLATTER.
3. STOCKPILE SHALL RECEIVE A VEGETATIVE COVER IN ACCORDANCE WITH MINIMUM STABILIZATION REQUIREMENTS.
4. SILT FENCE SHALL BE INSTALLED AS DETAILED HEREON.

1 TOPSOIL STOCKPILE
NTS



- NOTES
1. PLACE SILT FENCE AT LOCATIONS AS SHOWN ON THE SOIL EROSION AND SEDIMENT CONTROL PLAN.
 2. THE SLOPE OF THE LAND FOR AT LEAST 30 FEET ADJACENT TO ANY SILT FENCE SHALL NOT EXCEED 5%.
 3. SILT FENCE SHALL BE INSTALLED SO WATER CANNOT BYPASS THE FENCE AROUND IT'S ENDS.
 4. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE AS PROMPTLY AS POSSIBLE.

2 SILT FENCE CONSTRUCTION AND INSTALLATION DETAILS



PLACE FENCE A MINIMUM OF 1'-0" OUTSIDE DRIP LINE OF EXISTING TREE

4 TREE PROTECTION DETAILS

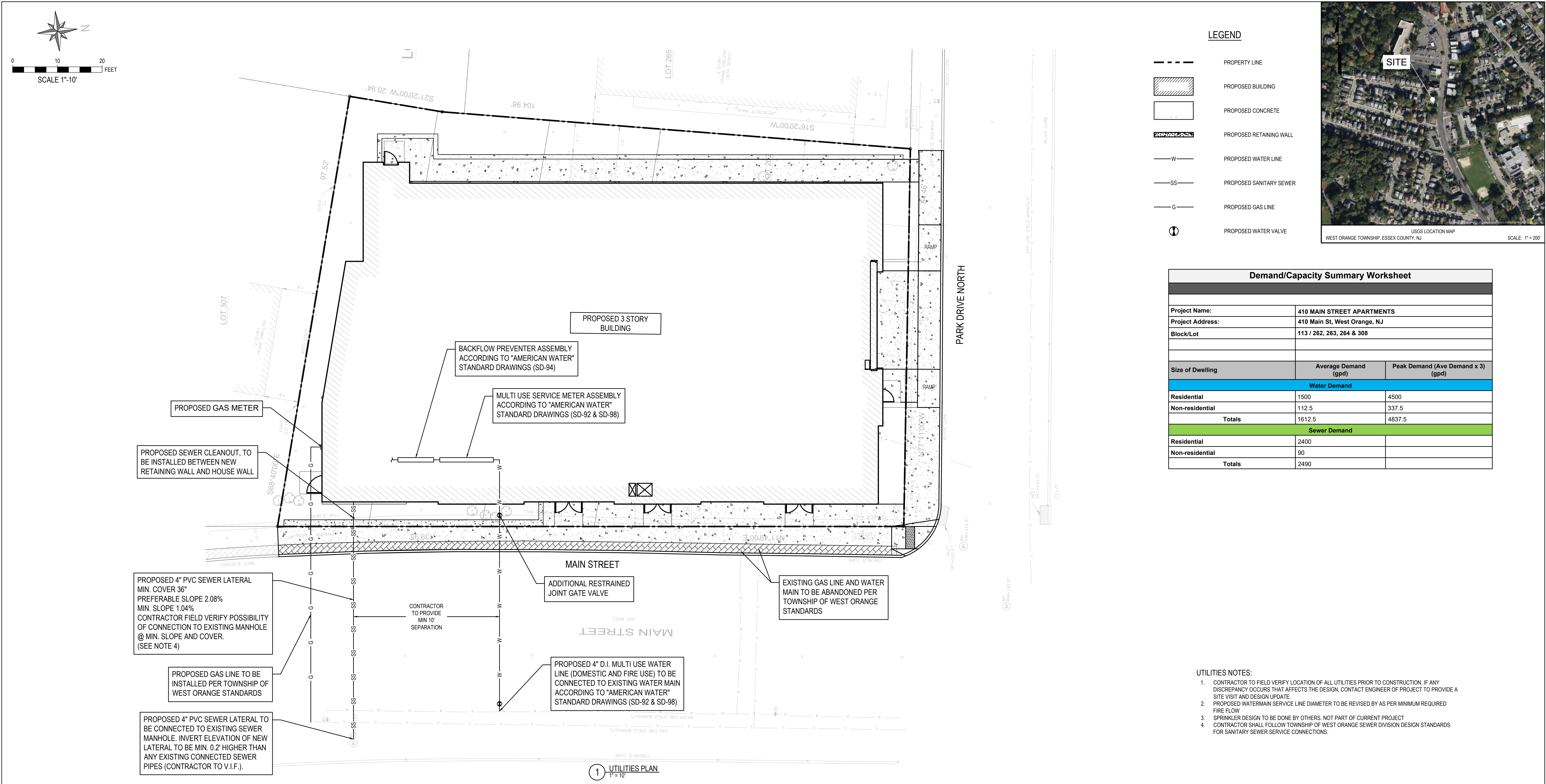
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										PROPOSED 3-STORY APARTMENT BUILDING																				DESIGNED BY: AR DRAWN BY: AR CHECKED BY: AR APPROVED BY: AR									
										410 MAIN ST. WEST ORANGE, NJ																				ALIASGAR RANGWALA, P. E.									
										DWG: C12																				CIVIL & STRUCTURAL ENGINEERS 293 RT. 18 SOUTH, #D-152 EAST BRUNSWICK, NJ 08816 TEL. 347-762-8584 FAX 201-753-5251 AL@SMBTCONSULTANTS.COM									
										SHEET: 12										EROSION & SEDIMENT CONTROL DETAILS										CERTIFICATE OF AUTHORIZATION NO. 24GA2835100									
1 REV. SUBMISSION PER COUNTY COMMENTS DATED 4/19/24										5/6/2024 AR										DATE: 7/2/2024										SCALE: NOT TO SCALE									
NO. DESCRIPTION										DATE BY										DATE: 7/2/2024										SCALE: NOT TO SCALE									



LEGEND

- PROPERTY LINE
- PROPOSED BUILDING
- PROPOSED CONCRETE
- PROPOSED RETAINING WALL
- PROPOSED WATER LINE
- PROPOSED SANITARY SEWER
- PROPOSED GAS LINE
- PROPOSED WATER VALVE



Demand/Capacity Summary Worksheet		
Project Name:	410 MAIN STREET APARTMENTS	
Project Address:	410 Main St, West Orange, NJ	
Block/Lot	113 / 262, 263, 264 & 308	
Size of Dwelling	Average Demand (gpd)	Peak Demand (Ave Demand x 3) (gpd)
Water Demand		
Residential	1500	4500
Non-residential	112.5	337.5
Totals	1612.5	4837.5
Sewer Demand		
Residential	2400	
Non-residential	90	
Totals	2490	

UTILITIES NOTES:

- CONTRACTOR TO FIELD VERIFY LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. IF ANY DISCREPANCY OCCURS THAT AFFECTS THE DESIGN, CONTACT ENGINEER OF PROJECT TO PROVIDE A SITE VISIT AND DESIGN UPDATE.
- PROPOSED WATERMAIN SERVICE LINE DIAMETER TO BE REVISED BY AS PER MINIMUM REQUIRED FIRE FLOW.
- SPRINKLER DESIGN TO BE DONE BY OTHERS, NOT PART OF CURRENT PROJECT.
- CONTRACTOR SHALL FOLLOW TOWNSHIP OF WEST ORANGE SEWER DIVISION DESIGN STANDARDS FOR SANITARY SEWER SERVICE CONNECTIONS.

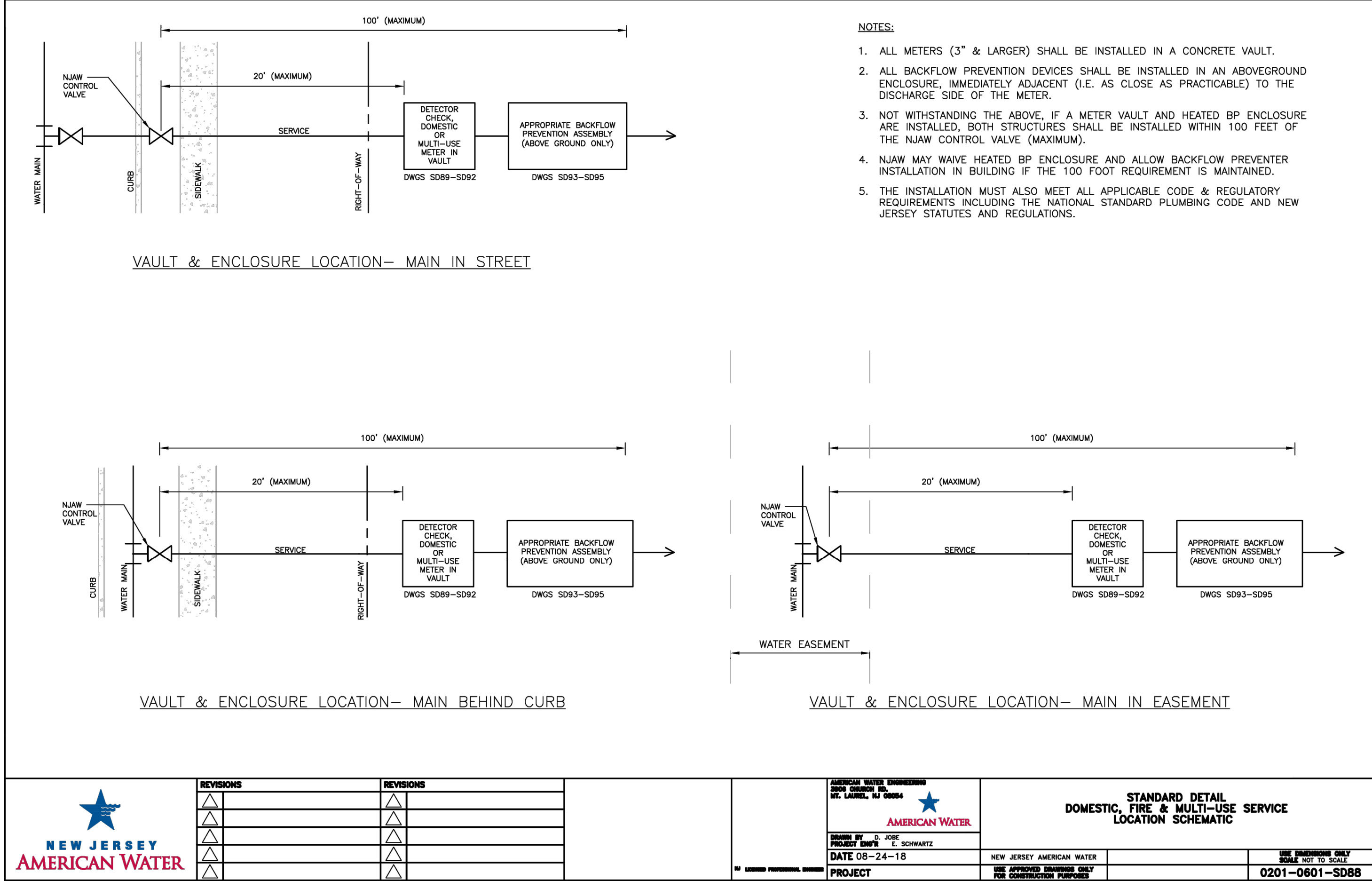
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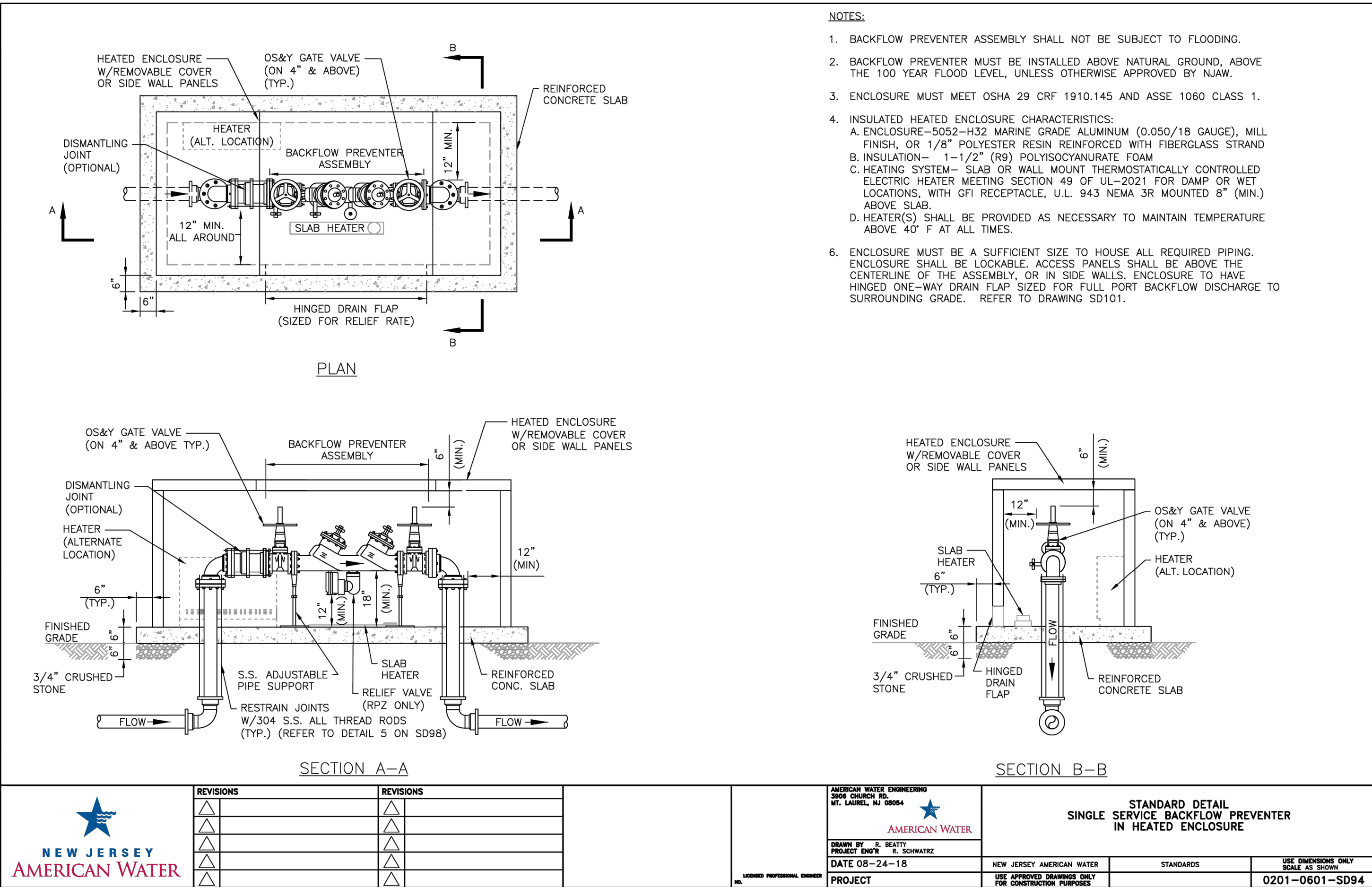
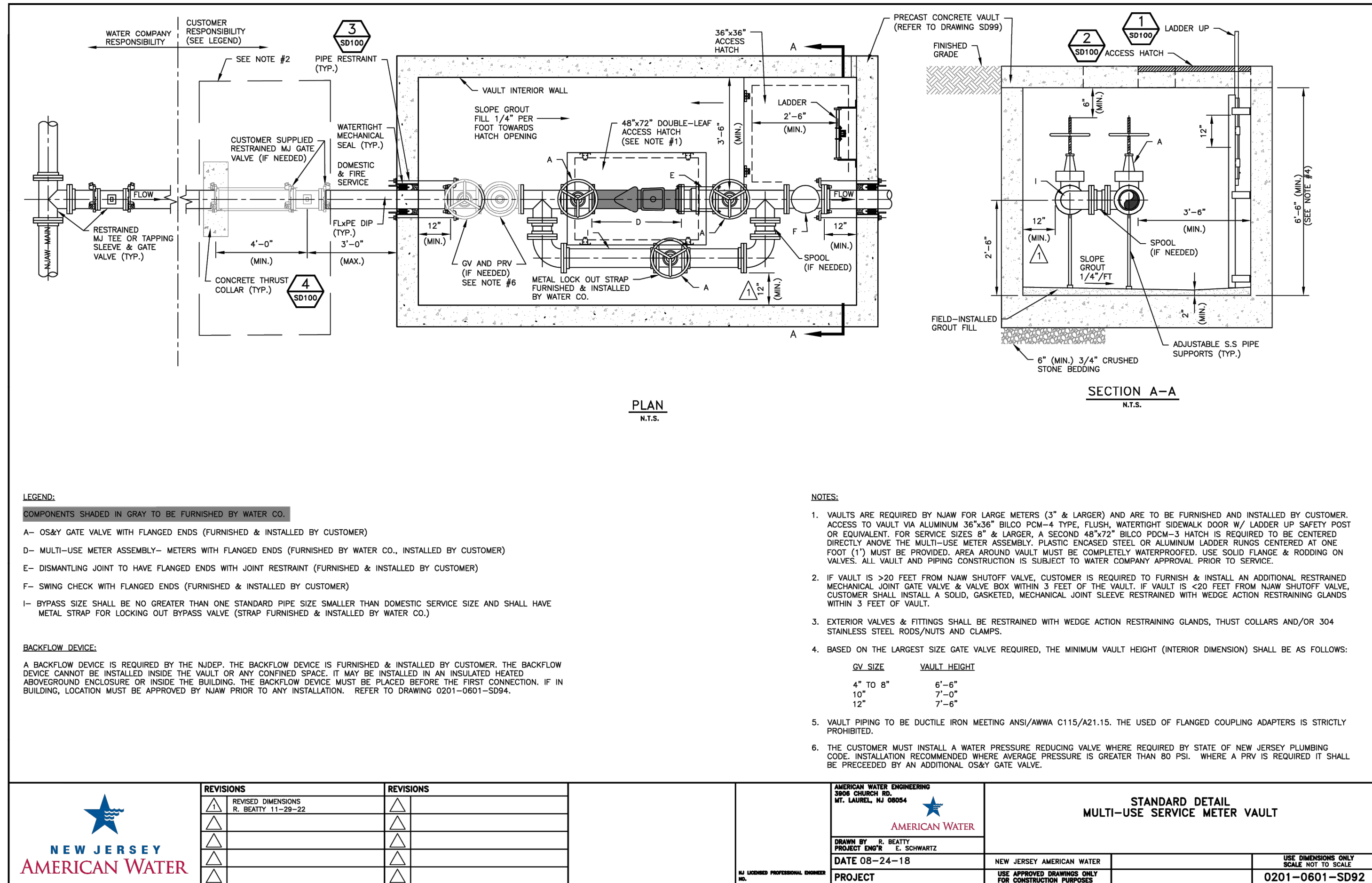
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				410 MAIN ST, WEST ORANGE, NJ				CHECKED BY: AR		APPROVED BY: AR	
						UTILITIES PLAN		CIVIL & STRUCTURAL ENGINEERS 283 RT. 18 SOUTH, #D-152 EAST BRUNSWICK, NJ 08816 TEL. 347-762-8364 FAX 201-753-5251 ALIG@SMBTCONSULTANTS.COM CERTIFICATE OF AUTHORIZATION NO.: 24GA28353100			
2	REVISED TO INCLUDE ADDITIONAL WATER AND SAN S. DETAILS	7/2/2024	AR	DWG: C13					N.J. PROFESSIONAL ENGINEER LIC. NO. 5325		
1	REV. SUBMISSION PER COUNTY COMMENTS DATED 4/18/24	5/16/2024	AR	SHEET: 13 OF 17							
NO.	DESCRIPTION	DATE	BY	DATE: 7/2/2024	SCALE: 1" = 10'						



FITTINGS & EQUIPMENT LAYING LENGTHS

Nominal Service Size	Laying Length (inches)				
	3"	4"	6"	8"	10"
A- Gate Valve (OS&Y)	8	9	10.5	11.5	13
B- Detector Check Valve (DCV)	15	15	21	25	28.75
C- Domestic Compound Meter Assembly (includes spool, strainer, meter & test port)	24	29.5	39.375	42	55
D- Multi-Use Meter Assembly (includes strainer, meter & test port)	-----	43	57.25	63.3125	70
E- Disassembling Joint	9	9	9	9	10
F- Swing Check Valve	9.5	11.5	14	19.5	24.5
G- RPZ Backflow Preventer Assembly (includes gate valves)	42.25	55.125	65.5	78.5	93.625
G- Double Check Backflow Preventer Assembly (includes gate valves)	40.375	52.375	62.875	75	90
H- Pressure Reducing Valve (PRV) (excludes shutoffs)	12	15	20	25.375	29.75
Y-Strainer DI Class 125	10.125	12.125	18.5	21.625	26
Tee (Run)	11	13	16	18	22
Tee (Branch)	5.5	6.5	8	9	11
90° Bend	5.5	6.5	8	9	11
Spool (FLGXFLG) (minimum length available)	-----	4.25	4.5	5	5.5

- NOTES:**
- LAYING LENGTHS SHOWN ABOVE ARE APPROXIMATE AND BASED ON SPECIFIC MANUFACTURER AND MODEL COMPONENTS. DESIGN ENGINEER TO VERIFY ALL DIMENSIONS, BASED ON ACTUAL EQUIPMENT AND FITTINGS PROPOSED.
 - LAYING LENGTHS NOTED ABOVE DO NOT INCLUDE GASKET THICKNESS.
 - THE USE OF FLANGED COUPLING ADAPTERS IS STRICTLY PROHIBITED.



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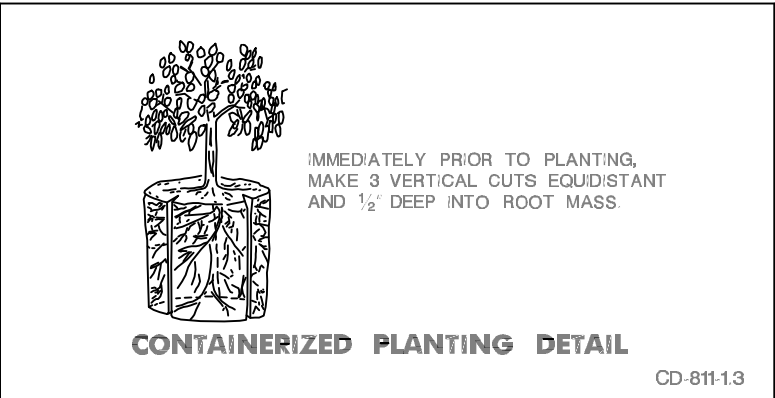
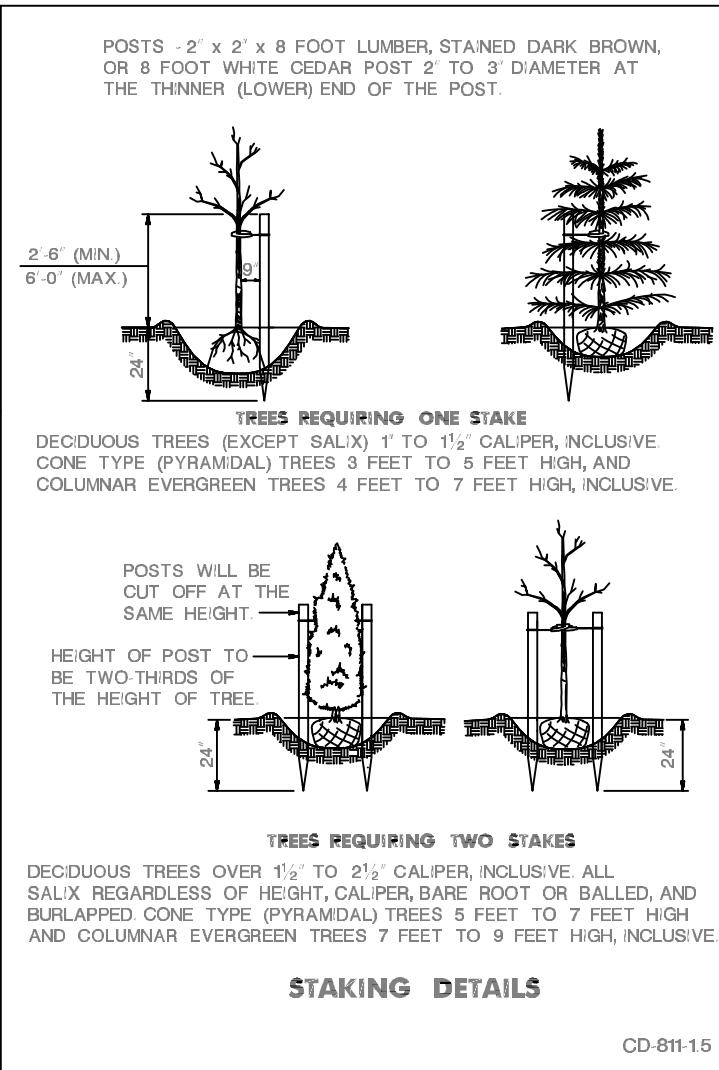
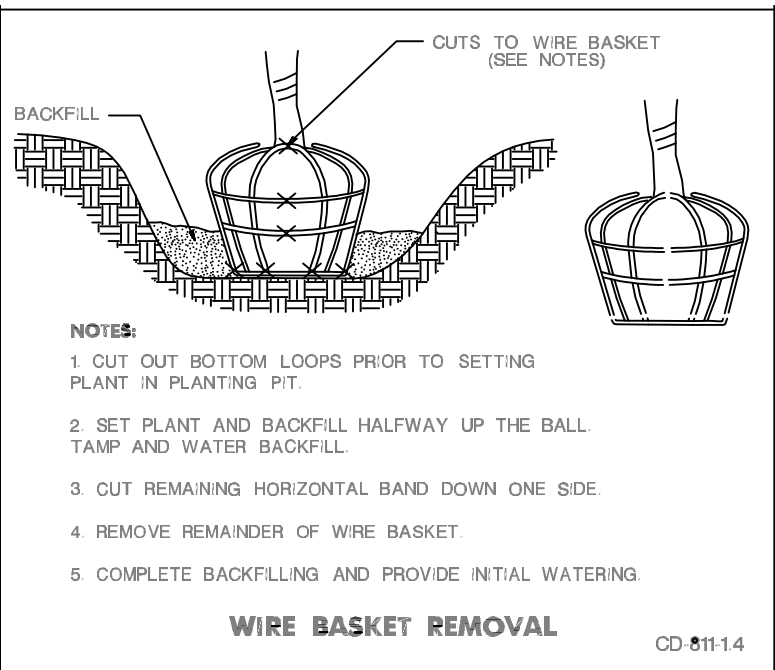
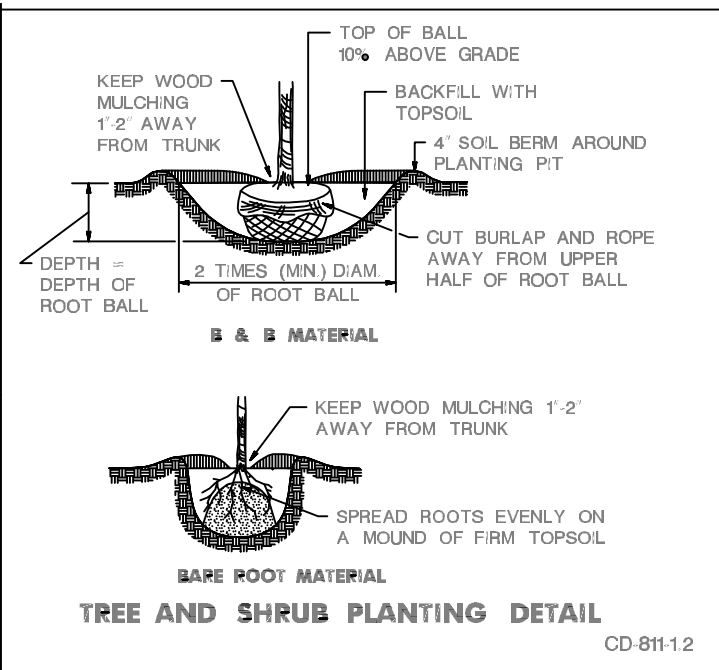
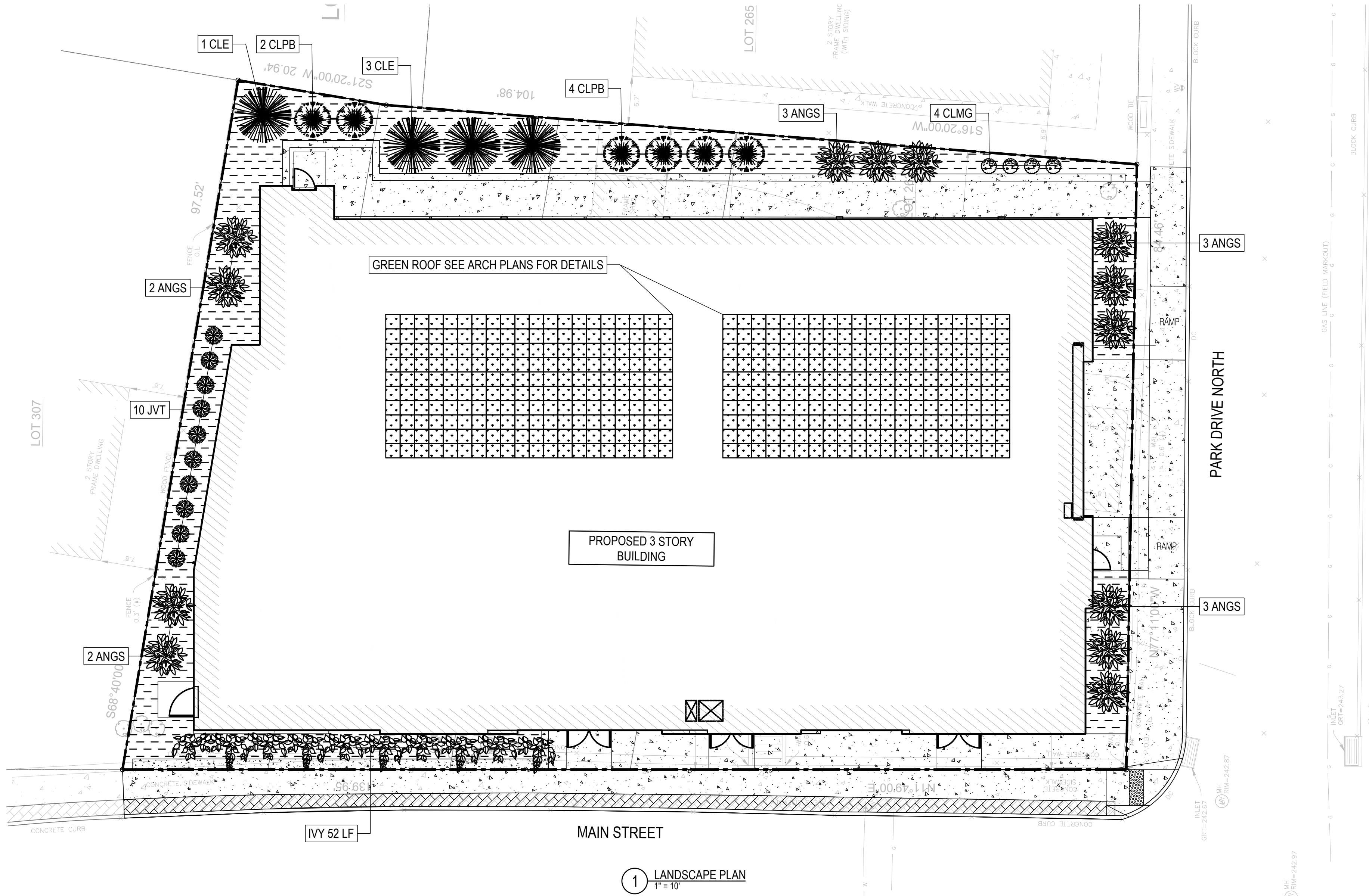
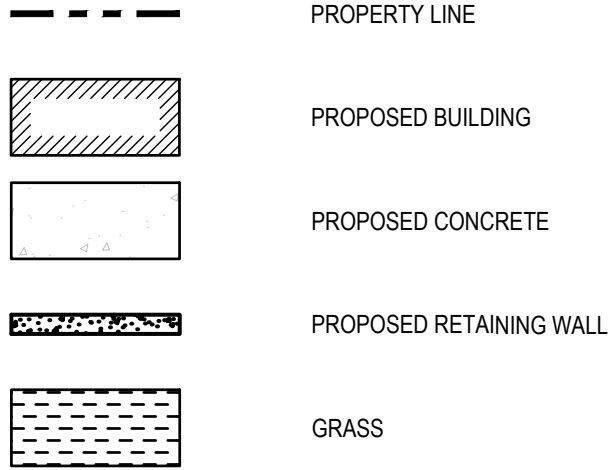
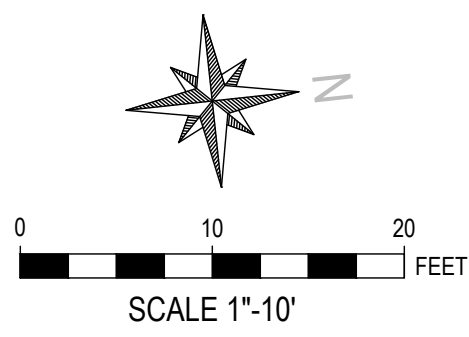
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PROPOSED 3-STORY APARTMENT BUILDING				410 MAIN ST. WEST ORANGE, NJ		UTILITIES DETAILS		CIVIL & STRUCTURAL ENGINEERS 283 RT. 18 SOUTH #D-152 EAST BRUNSWICK, NJ 08816 TEL. 347-762-8364 FAX 201-753-5251 ALIG@SMBTCONSULTANTS.COM CERTIFICATE OF AUTHORIZATION NO.: 24GA28353100		DESIGNED BY: AR DRAWN BY: AR CHECKED BY: AR APPROVED BY: AR ALIASGAR RANGWALA, P.E.													
DWG: C14				SHEET: 14		OF 17		N.J. PROFESSIONAL ENGINEER LIC. NO. 5325															
1 REV. SUBMISSION PER COUNTY COMMENTS DATED 4/18/24				5/16/2024		AR		DATE: 7/20/2024		SCALE: 1" = 10'													
NO.				DESCRIPTION				DATE				BY				DATE				SCALE			



GENERAL LANDSCAPING AND SEEDING NOTES:

1. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WHERE NO OTHER SURFACE TREATMENT IS SPECIFIED SHALL BE SEEDED WITH AUTUMN BENTGRASS (APB ECOTYPE) AT 30 LBS/ACRE.
2. CONTRACTOR SHALL ADJUST PLANT LOCATIONS AS NECESSARY BASED ON LOCATIONS OF UTILITY STRUCTURES. CONTRACTOR SHALL LAYOUT PLANT MATERIALS AND ENGINEER SHALL APPROVE LAYOUT PRIOR TO INSTALLATION.
3. PLANT MATERIAL SHALL BE INSPECTED UPON DELIVERY. PLANT MATERIAL THAT DOES NOT MEET THE SPECIFICATIONS FOR SIZE AND HEALTH SHALL BE REJECTED AND REPLACED AT CONTRACTOR'S EXPENSE.
4. CONTRACTOR SHALL MAINTAIN PLANT MATERIALS FOR A PERIOD OF ONE YEAR FOLLOWING COMPLETION OF PLANT INSTALLATION. DEAD OR DAMAGED MATERIAL SHALL BE REPLACED DURING THE APPROPRIATE GROWING SEASON OR AS DIRECTED BY ENGINEER.
5. PLANT SPECIES IN PLUG/TUBELING FORM TO BE PLANTED ALONG EAST AND WEST TRAILS ARE TO BE LAYED OUT IN FIELD IN DRIFTS. PLUGS/ TUBELING ARE TO BE INSTALLED FIRST AND THEN IMMEDIATELY OVERSEEDED WITH SPECIFIED SEED MIX. BEACHGRASS PLUGS ARE NOT TO BE OVERSEEDED.

PLANT SCHEDULE

FINAL QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING	SPREAD	COMMENTS
SHRUBS AND GROUNDCOVER								
4	CLE	CHAMAECYPARIS LAWSONIANA ELLWOODII	LAWSON CYPRESS	13'-20' HT.		8' O.C.	5'-8'	
6	CLPB	CHAMAECYPARIS LAWSONIANA PEMBURY BLUE	LAWSON CYPRESS	8'-10' HT.		5' O.C.	4'-5'	
4	CLMG	CHAMAECYPARIS LAWSONIANA MINIMA GLAUCA	LAWSON CYPRESS	2'-3' HT.		2' O.C.	1'-2'	
10	JVT	JUNIPERUS VIRGINIANA 'TAYLOR'	TAYLOR JUNIPER	15'-20' HT.		4' O.C.	3'-4'	
13	ANGS	ABIES NORDMANNIANA GOLDEN SPREADER	CAUCASIAN FIR	2'-3' HT.		5' O.C.	4'-5'	
	IVY	PARTHENOCESSUS TRICUSPIDATA	BOSTON IVY	30'-50' HT.		-	5'-10'	
GRASS								
-	-	POA PRATENSIS	KENTUCKY BLUEGRASS	2" HT.		105 OZ./SQ.YD.		
GREEN ROOF								
-	-		SEDUM, BIRDSFOOT TREFLOIL, AND THYMUS	---		TBD		

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APARTMENT BUILDING

410 MAIN ST, WEST ORANGE, NJ



CIVIL & STRUCTURAL ENGINEERS
293 RT. 18 SOUTH, #D-152
EAST BRUNSWICK, NJ 08816
TEL. 347-762-8364
FAX 201-753-5251
ALI@SMBTCONSULTANTS.COM

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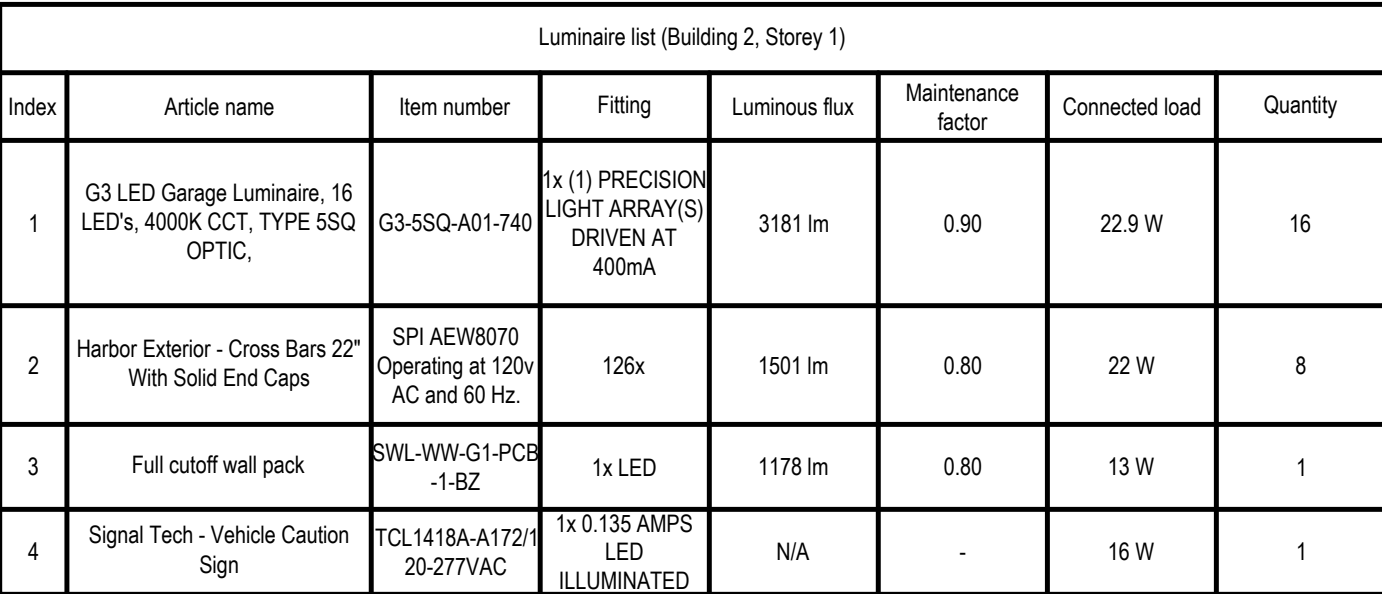
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CHECKED BY:	APPROVED BY:
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AR	AR
ALIASGAR RANGWALA, P.E.	

N.J. PROFESSIONAL ENGINEER
LIC. NO. 53255



#	Name	Parameter	Min	Max	Average	Mean/Min	Max/Min
1	Garage	Perpendicular illuminance (Adaptive)	1.01 fc	10.8 fc	6.78 fc	6.69	10.68
2	Outdoor	Perpendicular illuminance (Adaptive)	0.1 fc	1.3 fc	0.54 fc	5.4	13

NOTE: OUTDOOR LIGHTS SHALL MAINTAIN 60% DIMMING

1 LIGHTING PLAN
1" = 10'

LEGEND

-  PROPERTY LINE
 PROPOSED CONCRETE
 PROPOSED RETAINING WALL

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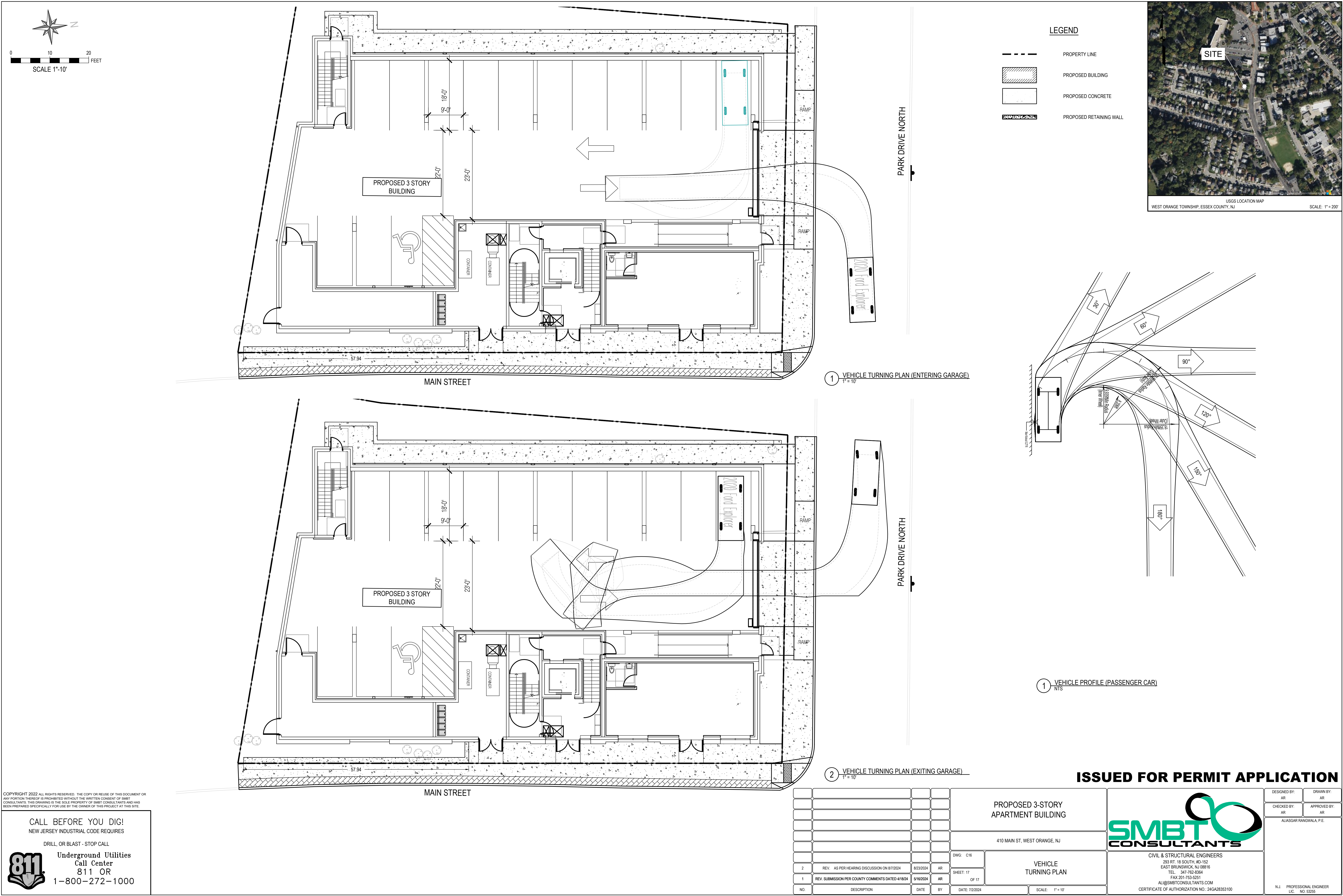
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2 REV. AS PER HEARING DISCUSSION ON 8/7/2024										8/23/2024 AR										LIGHTING PLAN																							
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1-800-272-1000

PROPOSED 3-STORY APARTMENT BUILDING			
410 MAIN ST, WEST ORANGE, NJ			
VEHICLE TURNING PLAN			
2	REV. AS PER HEARING DISCUSSION ON 8/7/2024	8/23/2024	AR
1	REV. SUBMISSION PER COUNTY COMMENTS DATED 4/18/24	5/16/2024	AR
NO.	DESCRIPTION	DATE	BY

DWG: C16

SHEET: 17

OF 17

DATE: 7/2/2024

SCALE: 1" = 10'

ISSUED FOR PERMIT APPLICATION

SMBT CONSULTANTS

CIVIL & STRUCTURAL ENGINEERS
283 RT. 18 SOUTH, #D-152
EAST BRUNSWICK, NJ 08816
TEL. 347-762-8364
FAX 201-753-5251
ALIG@SMBTCONSULTANTS.COM
CERTIFICATE OF AUTHORIZATION NO: 24GA28353100

DESIGNED BY: AR	DRAWN BY: AR
CHECKED BY: AR	APPROVED BY: AR
ALIASGAR RANGWALA, P.E.	
N.J. PROFESSIONAL ENGINEER LIC. NO. 5325	