

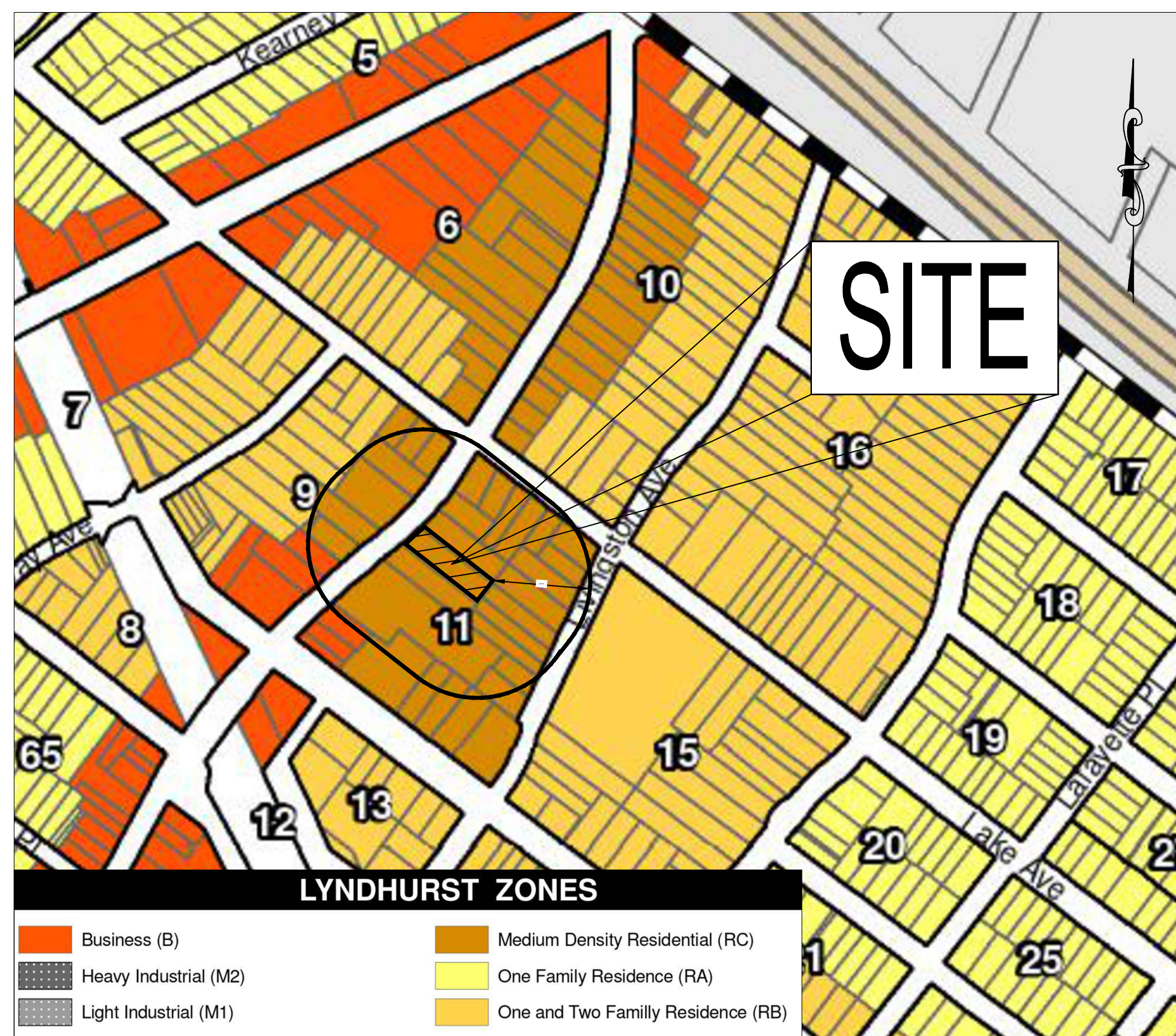
PRELIMINARY AND FINAL SITE PLAN

118 STUYVESANT AVENUE TAX LOT 25, BLOCK 11 TOWNSHIP OF LYNDHURST BERGEN COUNTY, NEW JERSEY

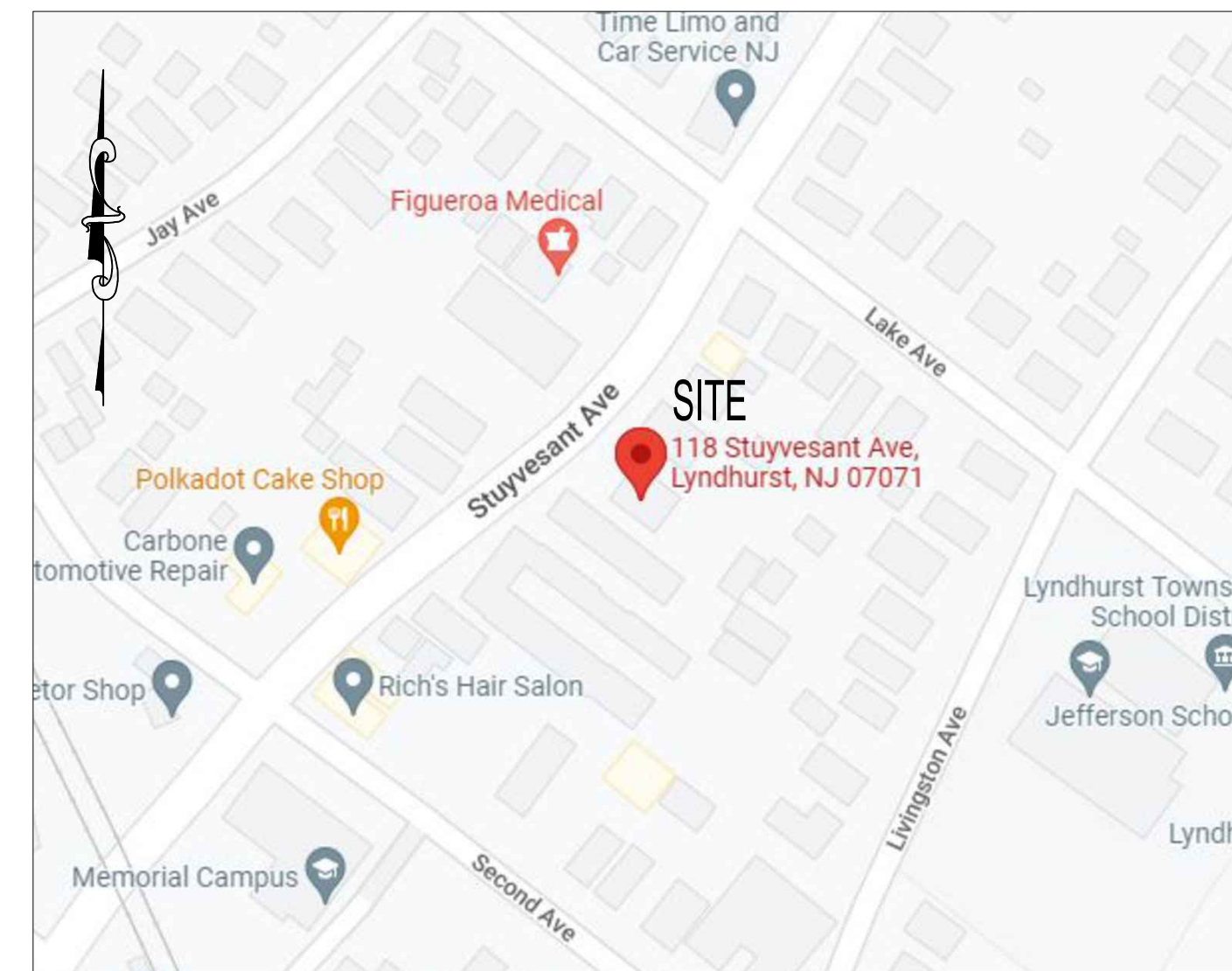
BLOCK	LOT	200 FEET OWNERS LIST	
BLOCK	LOT	PROPERTY LOCATION	PROPERTY OWNER & ADDRESS
9	6	242 LAKE AVE	SERODIO, FERNANDO & LURDES A. LYNDHURST, NJ 07071
9	7	248 LAKE AVE	GARCIA, SUSAN R. & ORLANDO 248 LAKE AVE LYNDHURST, NJ 07071
9	8	252 LAKE AVE	CHEN, QIN ZHONY & ZHAO, WENLI 51 W HOMESTEAD AVENUE PALISADES PARK, NJ 07650
9	9	107 STUYVESANT AVE	107 STUYVESANT LLC P.O. BOX 468 RUTHERFORD, NJ 07070
9	10.1	109-111 STUYVESANT AVE	SEZEN, TURKAN 109-111 STUYVESANT AVE, 1 LYNDHURST, NJ 07071
9	10.1	109-111 STUYVESANT AVE	85 HICKORY HILL BLVD. TOTOVA, NJ 07512
9	10.1	109-111 STUYVESANT AVE	BETTS, STEVEN G 18 SHOSHONE TRAIL WAYNE, NJ 07470
9	10.1	109-111 STUYVESANT AVE	URBANO, ROJLAND P & NAOMI B 109 STUYVESANT 1-D LYNDHURST, NJ 07071
9	10.1	109-111 STUYVESANT AVE	KRASHKO, BLERTA & MERITA 109-111 STUYVESANT AVE, #1E LYNDHURST, NJ 07071
9	10.1	109-111 STUYVESANT AVE	TUMIN, EVAN 109-111 STUYVESANT AVE 2A LYNDHURST, NJ 07071
9	10.1	109-111 STUYVESANT AVE	CHU, KYONG YUP & LEE, JUNG AH 111 STUYVESANT AVE #2B LYNDHURST, NJ 07071
9	10.1	109-111 STUYVESANT AVE	VELAZCO, LINDSAY (ETAL) 109-111 STUYVESANT AVE 2C LYNDHURST, NJ 07071
9	10.1	109-111 STUYVESANT AVE	SCALERO, MARIE 109-111 STUYVESANT AVE 2D LYNDHURST, NJ 07071
9	10.1	109-111 STUYVESANT AVE	WU, ZHAN 10 LINCOLN ROAD KINNELON, NJ 07405
9	11	121 STUYVESANT AVE	SORICA, SALVATORE & ANA MARIA 5 VICTORIAN LANE FAIRFIELD, NJ 07004
9	12	125 STUYVESANT AVE	441 UPPER BLVD RIDGEWOOD, NJ 07450
9	14	129 STUYVESANT AVENUE	GAROFALO, JOHN M & JEAN 129 STUYVESANT AVENUE LYNDHURST, NJ 07071
9	15	137 STUYVESANT AVE	ANT DYL, LLC 147 STUYVESANT AVE LYNDHURST, NJ 07071
9	29	124 JAY AVE	SALERNO, FRANK C. & MATILDA L. 124 JAY AVE LYNDHURST, NJ 07071
9	31	118 JAY AVE	ZIEZULA, GRZEGORZ & MAGDALENA 118 JAY AVE LYNDHURST, NJ 07071
9	32	112 JAY AVE	MEYER, MICHELE & SEAN 112 JAY AVE LYNDHURST, NJ 07071
11	1.01	108 STUYVESANT AVE	P.O. BOX 11 NORMANDY BEACH, NJ 08739
11	1.02	300 LAKE AVE	SHAH, TEJASH & KIM & SUDHIR & PALLAVI 300 LAKE AVENUE LYNDHURST, NJ 07071
11	1.03	304 LAKE AVE	CORNO, PAUL M. 375 SANDFORD AVENUE LYNDHURST, NJ 07071
11	1.04	308 LAKE AVE	FUGEL, MARIE & ROBERT D 308 LAKE AVENUE LYNDHURST, NJ 07071
11	1.05	312 LAKE AVE	TEJADA, (ETALS), NINOSKA 312 LAKE AVE LYNDHURST, NJ 07071
11	2	316 LAKE AVE	MEYER, TERESA M & GERD M 316 LAKE AVE LYNDHURST, NJ 07071

11	3	101 LIVINGSTON AVE	LUBNSKI, WADYSLAW & ZOFTA 101 LIVINGSTON AVENUE LYNDHURST, NJ 07071
11	4	105 LIVINGSTON AVE	MATEUS, JOSE CARLOS SILVA 105 LIVINGSTON AVE LYNDHURST, NJ 07071
11	5	109 LIVINGSTON AVE	NERNEY, DINO & LYNN & ARBUCKLE, K 109 LIVINGSTON AVENUE LYNDHURST, NJ 07071
11	6	113 LIVINGSTON AVE	ALFANO, MICHELE V. 113 LIVINGSTON AVE LYNDHURST, NJ 07071
11	7	117 LIVINGSTON AVE	KENNEDY, MAUREEN L. 117 LIVINGSTON AVE LYNDHURST, NJ 07071
11	8	119 LIVINGSTON AVE	APORTE, WILLIAM J & ANGE 119 LIVINGSTON AVE LYNDHURST, NJ 07071
11	8	119 LIVINGSTON AVE	APORTE, WILLIAM J & ANGE 119 LIVINGSTON AVE LYNDHURST, NJ 07071
11	9	123 LIVINGSTON AVE	MEIER, WILLIAM & LORI 123 LIVINGSTON AVE LYNDHURST, NJ 07071
11	10	125 LIVINGSTON AVE	KRUCZEK, MALGORZATA ETAL 125 LIVINGSTON AVENUE LYNDHURST, NJ 07071
11	12.01	131 LIVINGSTON AVE	TEJADA, PABLO & YVONNE A Q 287 HAZELWOOD ROAD LANGCASTER, PA 17601
11	13	337 SECOND AVE	333 SECOND AVE LLC 333 SECOND AVE AVENUE APT. 3 LYNDHURST, NJ 07071
11	14	331 SECOND AVE	PAOLAZZI, GOLDIE J 723 OLIVE ST LYNDHURST, NJ 07071
11	15	327 SECOND AVE	VALENTE, FRANK 78 W PIERREPONT AVENUE RUTHERFORD, NJ 07070
11	16	323 SECOND AVE	GARAFALO, JOSEPH 323 SECOND AVE LYNDHURST, NJ 07071
11	17	321 SECOND AVE	ADONIRAM TEMPLE ASSN 321 SECOND AVE LYNDHURST, NJ 07071
11	20	136 STUYVESANT AVE	BURNETT, ROBERT S & MARGARET 136 STUYVESANT AVE LYNDHURST, NJ 07071
11	21.01	130-134 STUYVESANT AVE	TAG GARDENS LLC 222 OUTWATER LN GARFIELD, NJ 07026
11	24	122 STUYVESANT AVE	122 STUYVESANT AVENUE HOLDINGS LLC 263 MOLNAR DRIVE ELMWOOD PARK, NJ 07407
11	26	114 STUYVESANT AVE	ANIPAT CORP INC D/O A. TURIELLO 264 POST AVENUE LYNDHURST, NJ 07071

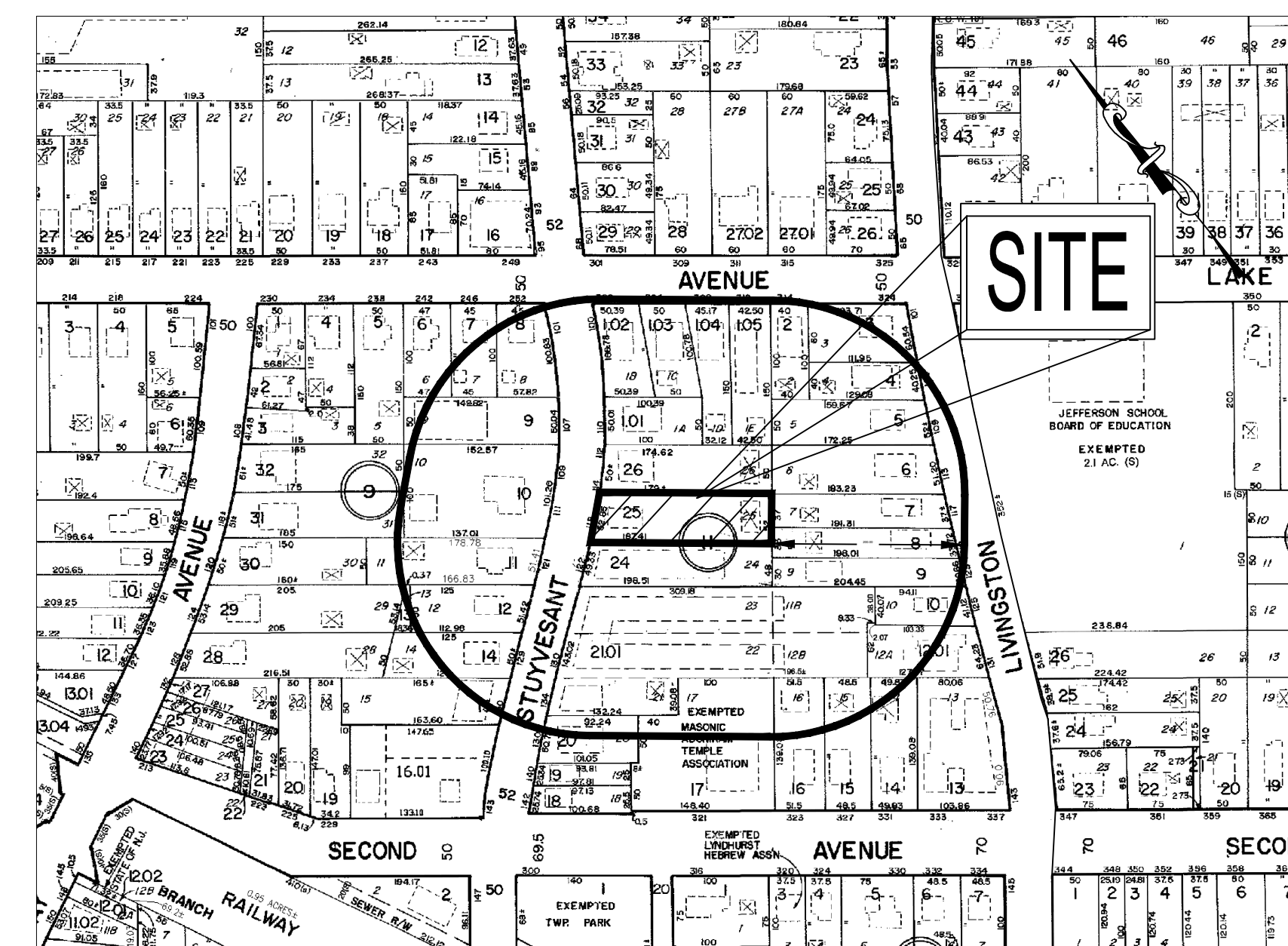
UTILITIES	ADDRESS
TOWNSHIP OF LYNDHURST	367 VALLEY BROOK AVENUE LYNDHURST, NJ 07071
PASSAIC VALLEY WATER	1525 MAIN STREET CLIFTON, NJ 07015
COMCAST CABLEVISION	1701 JFK BLVD. PHILADELPHIA, PA 19103
PASSAIC VALLEY SEWAGE	600 WILSON AVENUE NEWARK, NJ 07105
PSE&G	325 COUNTY AVENUE SECAUCUS, NJ 07094
PASSAIC RIVER COALITION	248 MADISONVILLE ROAD BRADING RIDGE, NJ 07920
NEW JERSEY MEADOWLANDS COMMISSION	ONE DEKORTE PLAZA LYNDHURST, NJ 07071
NEW JERSEY TRANSIT	1 PENN PLAZA EAST NEWARK, NJ 07105
BERGEN COUNTY PLANNING BOARD	ONE BERGEN COUNTY PLAZA, 4TH FLOOR HACKENSACK, NJ 07601
COMMISSIONER OF TRANSPORTATION	DEPARTMENT OF TRANSPORTATION P.O. BOX 600 TRENTON, NJ 08625-0600
STATE PLANNING COMMISSION	DEPARTMENT OF COMMUNITY AFFAIRS P.O. BOX 800 TRENTON, NJ 08625-0600
PORT AUTHORITY OF NY & NJ	225 PARK AVENUE SOUTH NEW YORK, NY 10003



ZONING/ 200' RADIUS MAP
SCALE: ±1"=250'



SITE MAP
SCALE: ±1"=150'



200' TAX MAP
SCALE: 1"= ± 150'

DESIGN WAIVER SCHEDULE LOT 25, BLOCK 11 - 118 STUYVESANT AVENUE - TOWNSHIP OF LYNDHURST		
Code Regulation	Required	Proposed
§ 21-4.4.c Uses Permitted in R-C District.	2. All space not needed for building or parking shall be landscaped. A minimum landscaped open space of 2,000 square feet shall be provided.	1,105.42 sf
§ 21-5.2 Accessory Buildings and Uses in Residential Districts.	d. No accessory buildings except swimming pools shall occupy an area greater than 25% of the area of the required rear yard.	81.53%

PARKING ANALYSIS			
Description	Required	Proposed	Comment
Multi-Family Dwelling			
2 spaces per dwelling unit. (4 Units)	8 Spaces	8 Spaces	Conforming
Total	8 Spaces	8 Spaces	Conforming

APPROVED BY PLANNING BOARD - TOWNSHIP OF LYNDHURST	
BOARD SECRETARY:	DATE:
BOARD CHAIRMAN:	DATE:
BOARD ENGINEER:	DATE:

SCHEDULE OF GENERAL ZONING REQUIREMENTS (ZONE R-C, MEDIUM DENSITY RESIDENTIAL DISTRICT) BLOCK 11 - 118 STUYVESANT AVENUE - TOWNSHIP OF LYNDHURST				
Regulation	General Requirements	Existing Lot 25	Proposed Lot 25	Comment
Principal Permitted Uses	Multi Family Dwelling and Garden Apartment	Two Family Dwelling	Four Family Dwelling	Conforming
Min. Lot Area	6,000 sf	9,506.90 sf	9,506.90 sf	Conforming
Min. Lot Width	60 ft.	52.00 ft. (e)	52.00 ft. (e)	Pre-existing Nonconformity
Min. Lot Depth	100 ft.	182.83 ft.	182.83 ft.	Conforming
Min. Front Yard (Principal Building)	20 ft.	34.28 ft.	10 ft. (V)	Variance is Required
Min. Rear Yard (Principal Building)	20 ft.	97.98 ft.	82.96 ft.	Conforming
Min. Side Yard (Each) (Interior Lot) (Principal Building)	8 ft.*	2.88 ft. (e)	5.00 ft. (V)	Variance is Required
Min. Side Yard (Both) (Interior Lot) (Principal Building)	17 ft.*	12.55 ft. (e)	21.00 ft.	Conforming
Max. Building Coverage (Principal Building)	30%**	17.51%	27.39%	Conforming
Max. Lot Coverage	N/A**	N/A	N/A	Not Applicable
Max. Building Height (ft./stories)	35 ft./3 sty.	<35 ft./1.5 sty.	35 ft./3 sty.	Conforming
Min. Rear Yard (Accessory Building)	3.0 ft.	1.10 ft. (e)	1.10 ft. (e)	Pre-existing Nonconformity
Min. Side Yard (Accessory Building)	3.0 ft.	2.33 ft. (e)	3.19 ft.	Conforming
Max. Building Height (Accessory Building)	15 ft.	<15 ft.	18 ft. (V)	Variance is Required
Max. Rear Yard Area (Accessory Building)**	25%	17.04%	22.32%	Conforming

*For lots which exceed 50 feet in width, the minimum side yard dimensions shall be as follows; (1) Lot width of 51': 7' each side, 16' both sides; (2) Lot width of 52': 8' each side, 17 feet both sides; (3) Lot width of 53': 9' each side, 18 feet both sides; (4) Lot width of 54'-9' feet each side, 19 feet both sides; (5) Lot width of 55 feet or greater: 10 feet each side, 20 feet both sides

**The total lot coverage in R-A and R-B zones shall not exceed 60%. The maximum total lot coverage shall increase 5% for every 500 square feet in area over 5,500 square feet, but in no event shall exceed 70%.

***The rear yard area for accessory building consists of lot area from the rear of principal structure to the rear property line.

Notes:
(e) Pre-existing Nonconformity N/A - Denotes Not Applicable
(V) Variance is Required NA - Denotes Not Available

APPLICANT/OWNER:
STUYVESANT PROPERTY, LLC
118 STUYVESANT AVENUE
LYNDHURST, NJ 07071

SHEET	INDEX OF DRAWINGS	ISSUED	REVISED
1	COVER SHEET	03/06/23	
2	SITE DEVELOPMENT PLAN	03/06/23	
3	GRADING AND UTILITY PLAN	03/06/23	
4	LIGHTING AND LANDSCAPE PLAN	03/06/23	
5	CONSTRUCTION DETAILS	03/06/23	
6	SOIL EROSION AND SEDIMENT CONTROL PLAN	03/06/23	
7	SOIL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS	03/06/23	

ADNAN A. KHAN, P.E., C.M.E.
PROFESSIONAL ENGINEER
DATE: 02/02/23
DESIGNED BY: AK
AK
DATE: 02/02/23
APPROVED BY: AK
AK
DATE: 02/02/23

REVISIONS
NO. DATE BY: APE
1 02/02/23

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ENGINEERS • SCIENTISTS • CONSULTANTS
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Pennsylvania Office: Scranton, PA 18504
Tel: 973-888-7080 Fax: 973-888-7079
www.awzengineering.com e-mail: info@awzengineering.com
New Jersey Certificate of Authorization No.: 24GA28118400
Pennsylvania Certificate of Authority No.: 3771354

TAX LOT 25
BLOCK 11
118 STUYVESANT AVENUE
TOWNSHIP OF LYNDHURST
BERGEN COUNTY, NEW JERSEY

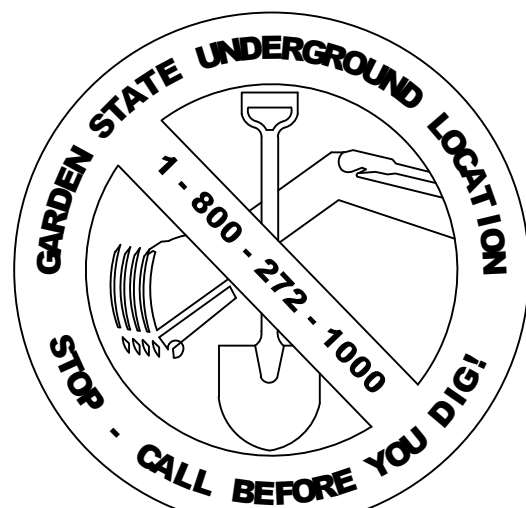
COVER SHEET

JOB NUMBER:
22-1001

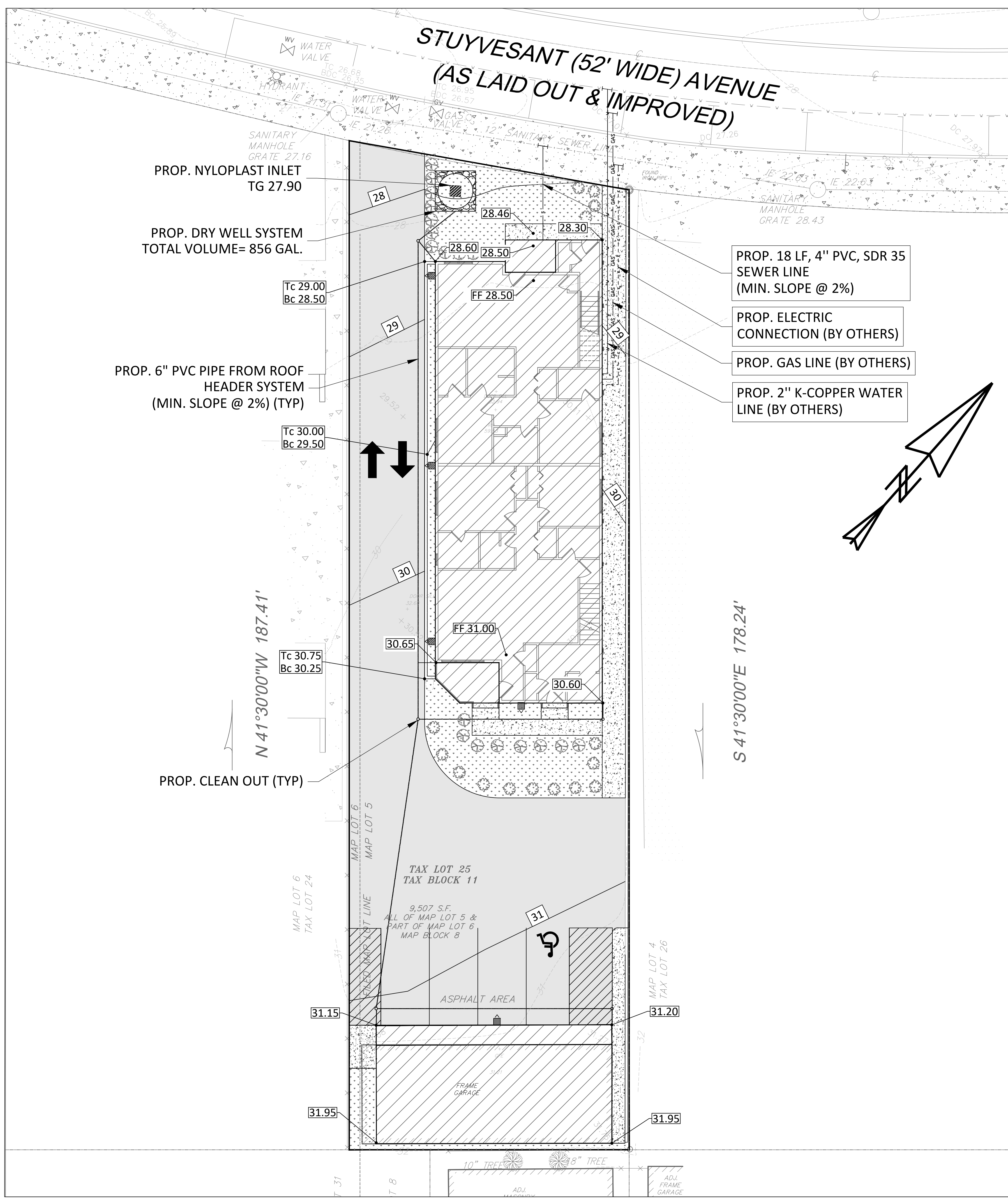
SCALE: AS SHOWN

C-01
SHEET 1 OF 5

PROTECT YOURSELF
A PHONE CALL
CAN BE YOUR INSURANCE POLICY



WHAT YOU DON'T KNOW CAN HURT YOU.
THE STATE OF NEW JERSEY REQUIRES NOTIFICATION OF EXCAVATORS,
DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S
SURFACE ANYWHERE IN THE STATE.



LOT COVERAGE CALCULATIONS		
Block 11, Lot 25		
DESCRIPTION	EXISTING	PROPOSED
Lot Area	9,506.90	9,506.90
Exist. 1.5 Story Frame Dwelling	1,664.81	0.00
Prop. 3 Story Frame Dwelling	0.00	2,525.27
Prop. Covered Deck	0.00	78.63
Detach Garage	852.67	962.98
Total Building	2,517.48	3,566.88
Conc. Sidewalk & Steps	1,160.12	745.72
Trash Enclosure	0.00	40.16
Encroaching Sidewalk	13.75	0.00
Conc. Curb	108.49	128.70
Cellar Door	18.83	0.00
Total Concrete	1,301.19	914.58
Wooden Deck & Steps	74.66	0.00
Total Wood	74.66	0.00
Asphalt	3,354.99	3,853.19
Green Area/Dirt	2,258.58	1,172.26
TOTAL	9,506.90	9,506.90
Pervious	2,258.58	1,172.26
Impervious	7,248.32	8,334.65
Lot Coverage	76.24%	87.67%
Principal Building Coverage	17.51%	27.39%
Accessory Building Rear Yard Coverage	17.04%	22.32%

MAINTENANCE OF UNDERGROUND STORM FACILITIES:

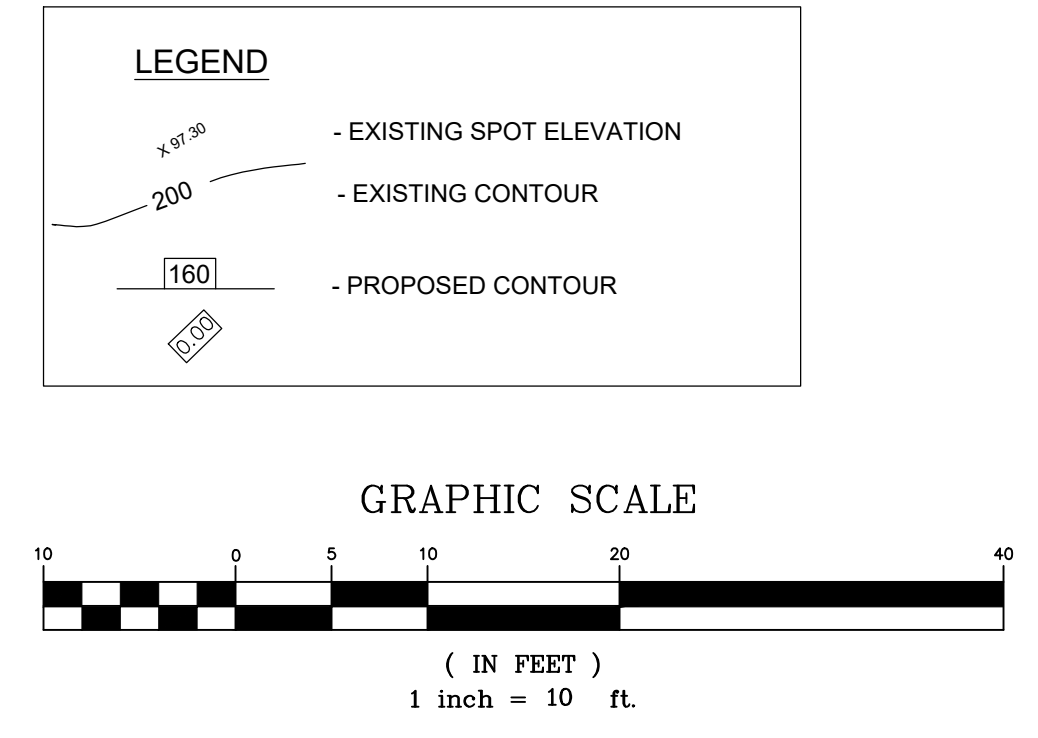
UNDERGROUND STORM SYSTEM - The underground drainage system, including all pipes, manholes, catch basins, inlets and appurtenances must be inspected for clogging and excessive debris and sediment accumulation at least annually as well as after every storm exceeding 2 inches of rainfall. Sediment removal should take place when all runoff has drained from the conveyance network and the systems are reasonably dry. Disposal of debris, trash, sediment, and other waste material should be done at suitable disposal/recycling sites and in compliance with all applicable local, state, and federal waste regulations.

All structural components must be inspected for cracking, subsidence, breaching, wearing, and deterioration at least annually. The condition of surrounding and above lying materials shall be inspected for evidence of potential failures or deterioration.

Two people will be needed to perform routine maintenance of the conveyance systems. The routine equipment to be utilized for the maintenance tasks include a jet vacuum vehicle, shovels, lighting equipment and a wheel barrel or truck for the hauling off of debris. No manufacturer's instructions or user manuals are available for maintenance of these components. Maintenance would only take place in the adjacent components of the system, i.e. the catch basins, pipes, and other units outside the seepage pit system. Water, mosquito control chemicals, and concrete repair materials may also be required depending on the condition of the structure.

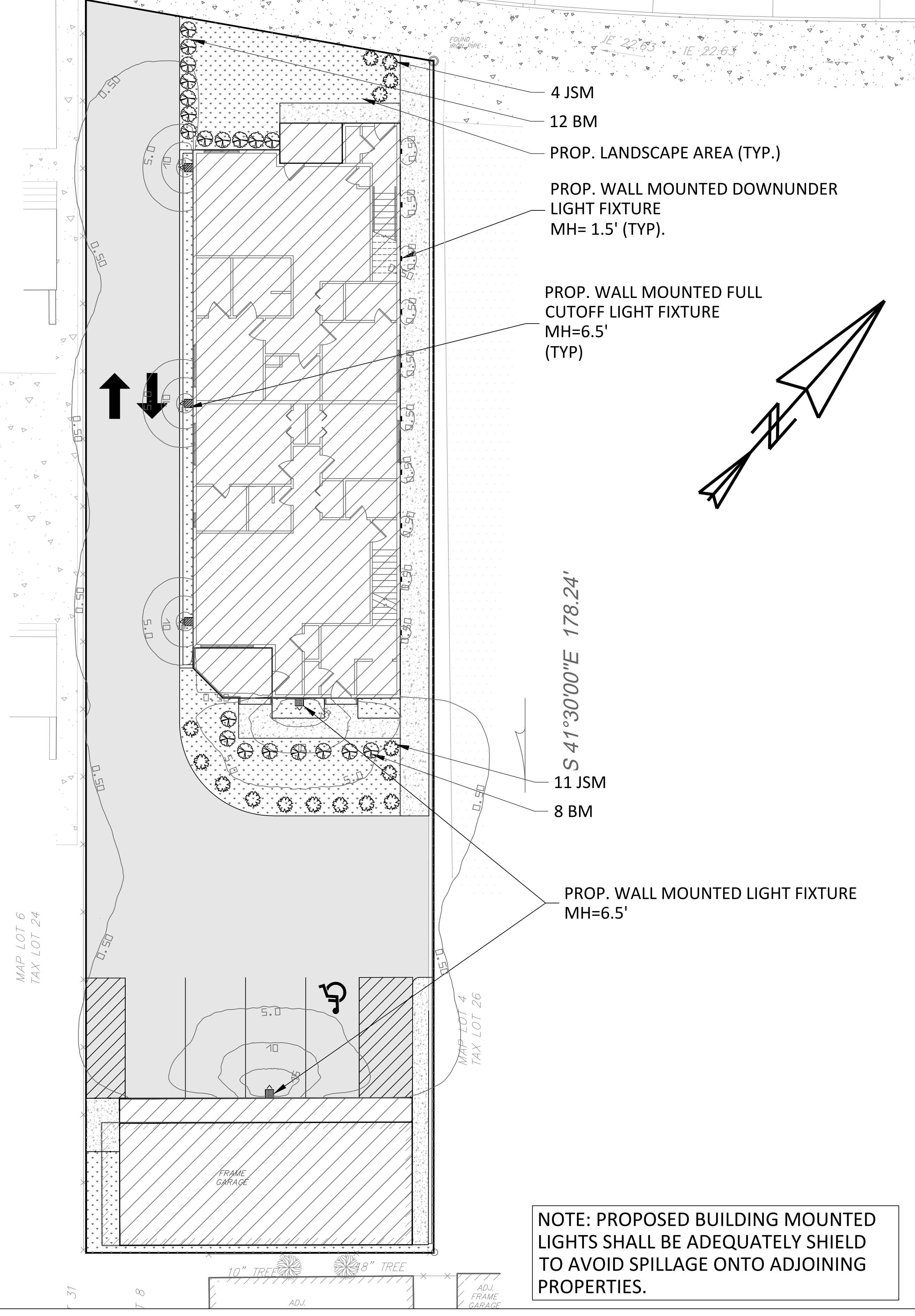
All conveyance systems including cleanouts, manholes, concrete chambers, and pipes are expected to receive and/or accumulate debris and sediment. These systems must be inspected for clogging and excessive debris and sediment accumulation four (4) times annually as well as after every storm exceeding 1 inch of rainfall. Sediment removal should take place when all runoff has drained from conveyance network and the systems are reasonably dry. Disposal of debris, trash, sediment, and other waste material should be done at suitable disposal/recycling sites and in compliance with all applicable local, county, state, and federal waste regulations.

THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE STORMWATER MANAGEMENT SYSTEM AND APPURTENANCES OPERATIONS AND MAINTENANCE ON SITE.



ADNAN A. KHAN, P.E., C.M.E. PROFESSIONAL ENGINEER N.J. LICENSE NO. 39812 P.A. LICENSE NO. 4965E N.Y. LICENSE NO. 08645 M.D. LICENSE NO. 41803	DRAWN BY: LF DATE: 02/02/23
	DESIGNED BY: AK DATE: 02/02/23
APPROVED BY: AK DATE: 02/02/23	REVISIONS NO. DATE BY: APE
AWZ ENGINEERING, INC. ENGINEERS • SCIENTISTS • CONSULTANTS Main Office: 150 River Road, Suite B3, Montville, NJ 07045 Pennsylvania Office: Scranton, PA 18504 Tel: 973-588-7080 Fax: 973-588-7079 www.awzengineering.com e-mail: info@awzengineering.com New Jersey Certificate of Authorization No.: 24GA28118400 Pennsylvania Certificate of Authority No.: 3771354	
TAX LOT 25 BLOCK 11 118 STUYVESANT AVENUE TOWNSHIP OF LYNDHURST BERGEN COUNTY, NEW JERSEY GRADING AND UTILITY PLAN	
JOB NUMBER: 22-1001	
SCALE: AS SHOWN	
C-03 SHEET 3 OF 5	

**STUYVESANT (52' WIDE) AVENUE
(AS LAID OUT & IMPROVED)**



NOTE: PROPOSED BUILDING MOUNTED LIGHTS SHALL BE ADEQUATELY SHIELD TO AVOID SPILLAGE ONTO ADJOINING PROPERTIES.

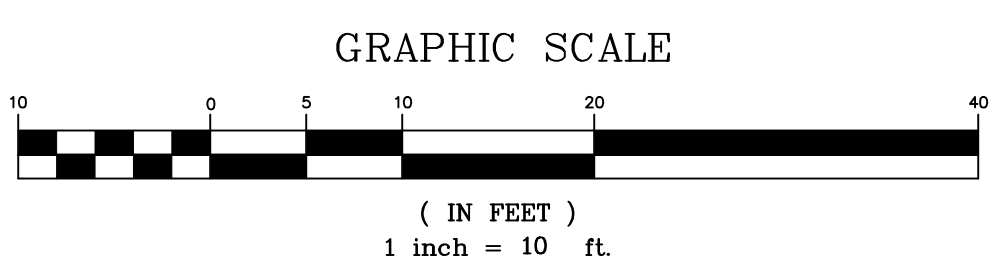
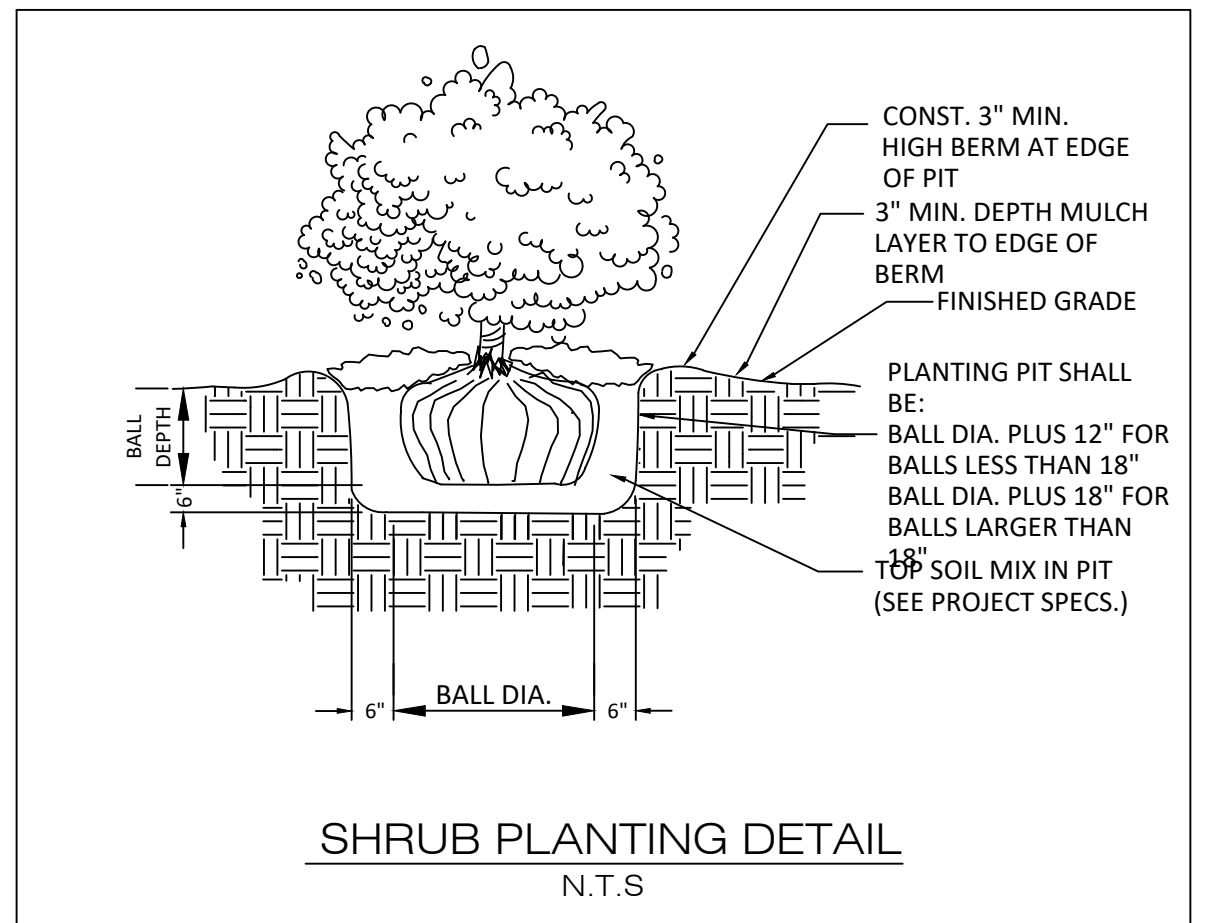
Luminaire list (Site 1)								
Index	Manufacturer	Article name	Item number	Fitting	Luminous flux	Light loss factor	Connected load	Quantity
1	SLV	DOWNUNDER OUT	1002869	1x LED 3000K CRI>80	147 lm	0.80	4.3 W	10
2	Holophane	W4GLEd, 30 LED, 30C PERFORMANCE PACKAGE, 3000K CCT, TYPE 3 OPTICS	W4GLEd 30C1000 30K T3M	1x	7789 lm	0.80	104 W	2
3	Holophane	Wallpack Full Cutoff LED, LED Performance Package P10, 3000 series CCT, Voltage, Asymmetric Diffuse	HLWPC2 P10 30K XX ASYDF	1x	2756 lm	0.80	28 W	3



PROPOSED PLANTING SCHEDULE

KEY	QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
SHRUBS						
JSM	15		JUNIPERUS SCOPULORUM 'MOONGLOW'	MOONGLOW JUNIPER	3-4' HT	B+B
BM	20		BUXUS MICROPHYLLA	WINTER GEM BOXWOOD	24-30"	5 GAL.
TOTAL	35					

NOTE: IF ANY DISCREPANCIES OCCUR BETWEEN AMOUNTS SHOWN IN THE PLAN AND THE PLANT LIST, THE PLAN SHALL DICTATE.



TAX LOT 25 **BLOCK 11**
118 STUYVESANT AVENUE
TOWNSHIP OF LYNDHURST
BERGEN COUNTY, NEW JERSEY
PARKING AREA LIGHTING
AND LANDSCAPE PLAN

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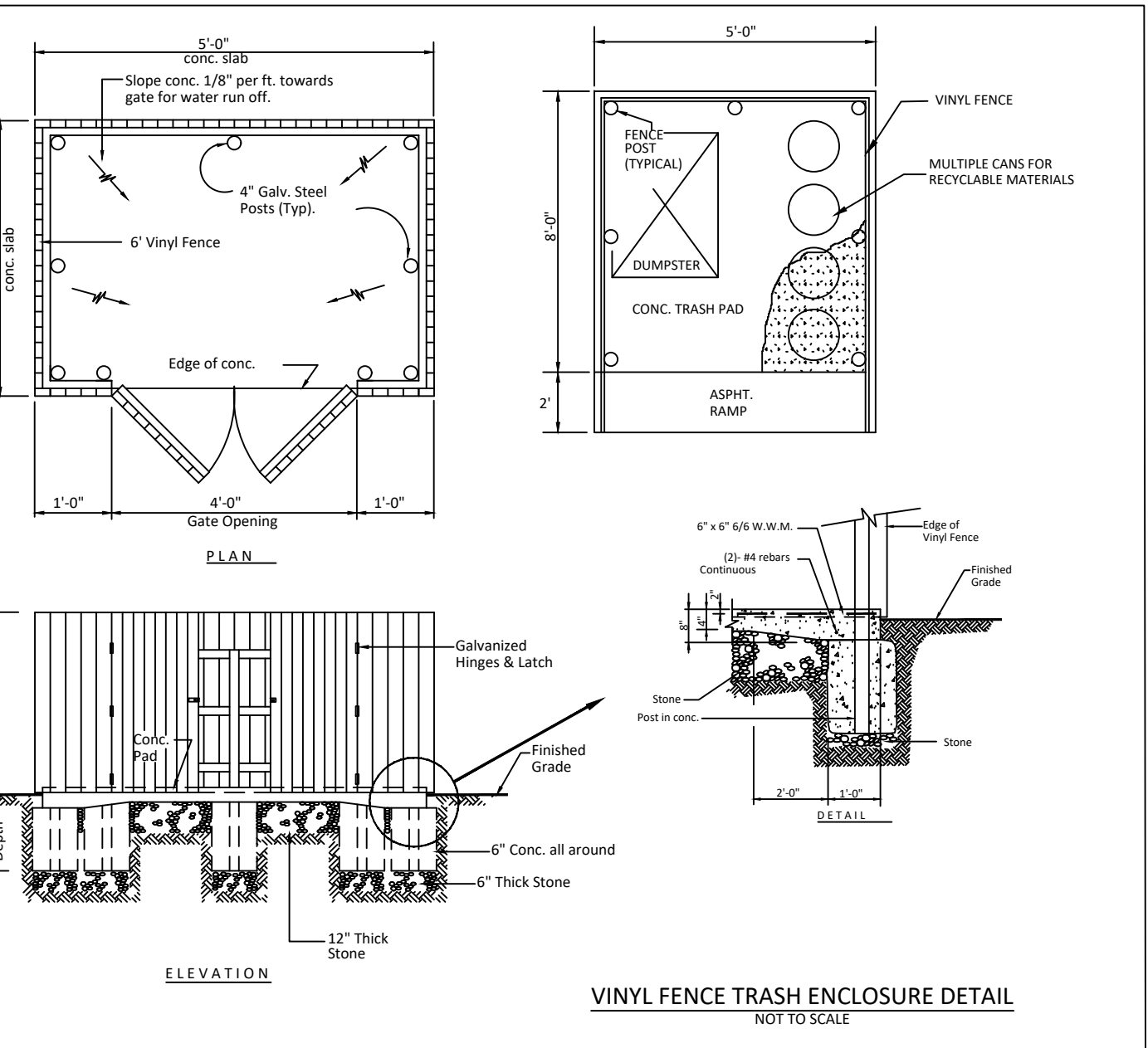
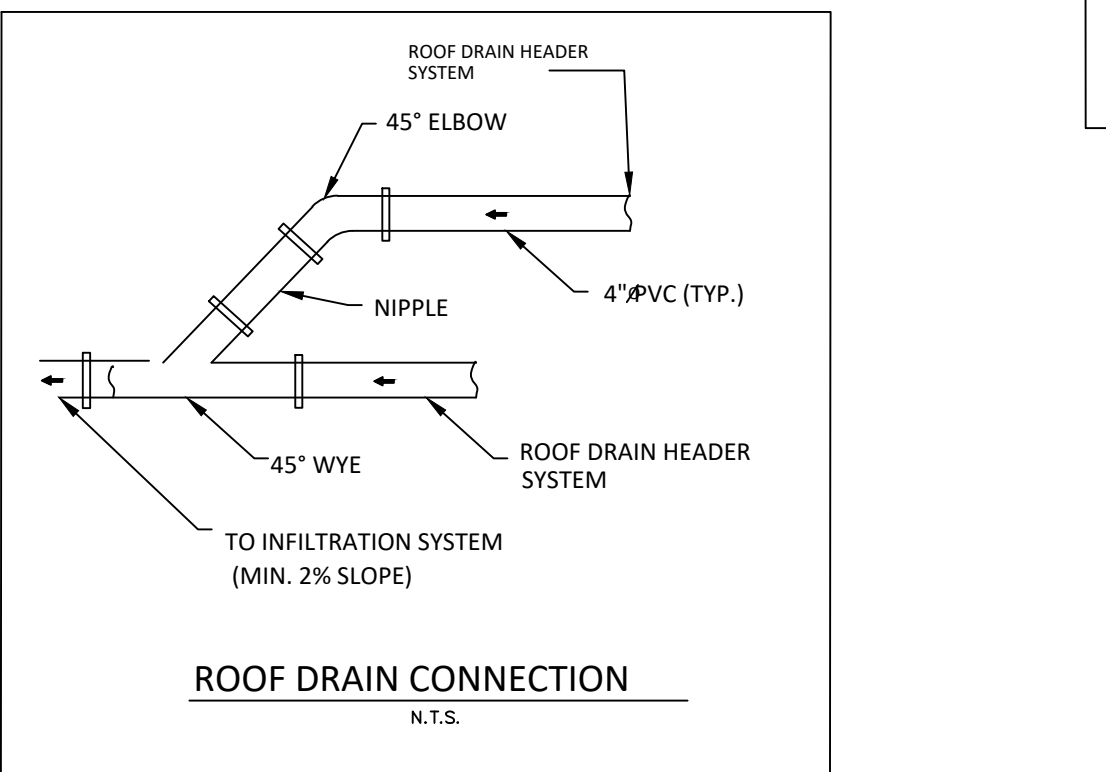
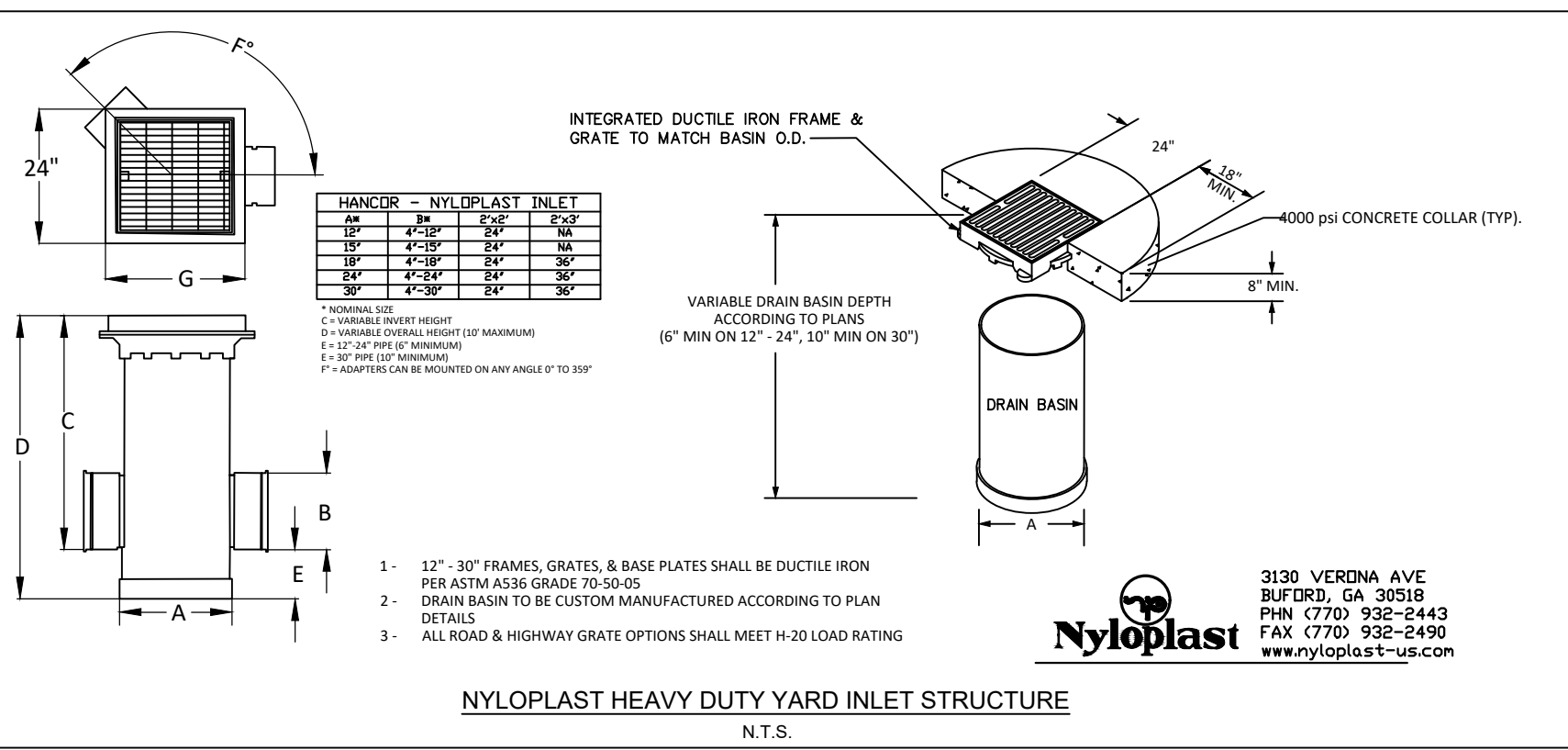
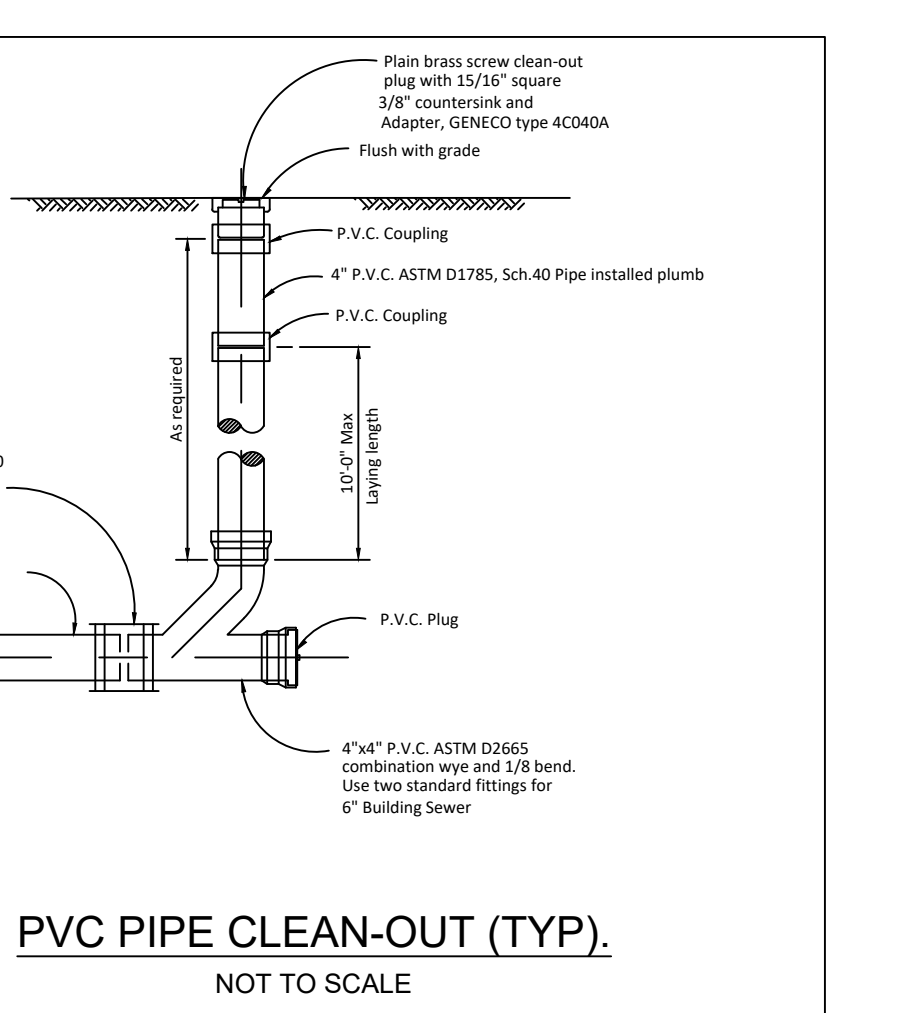
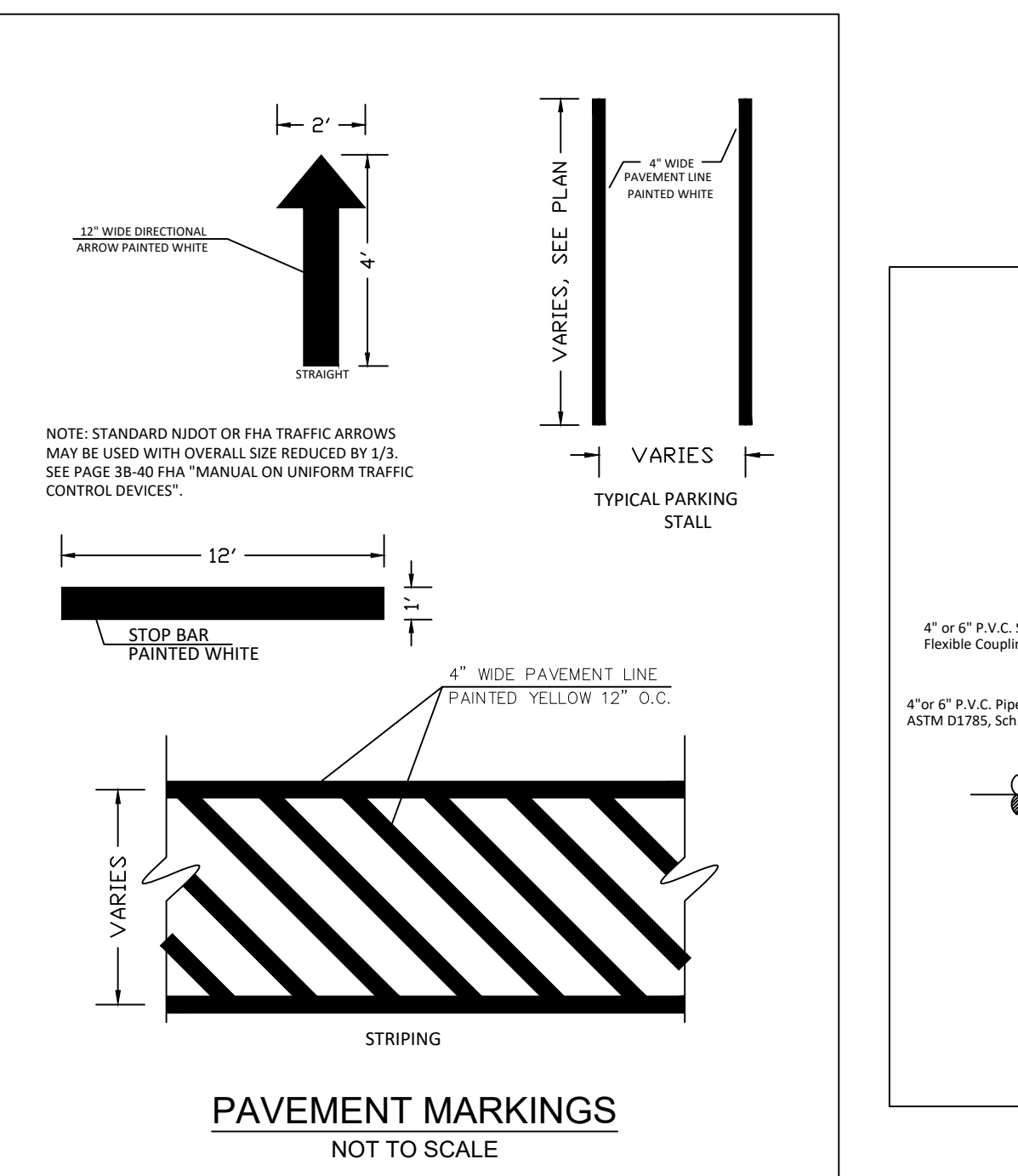
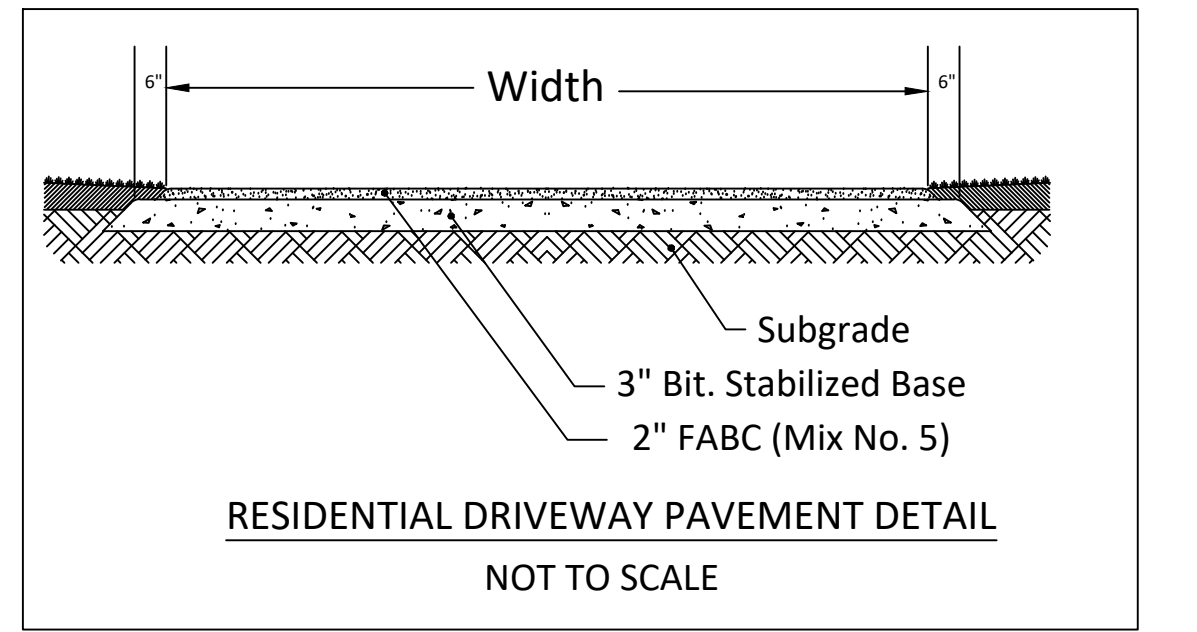
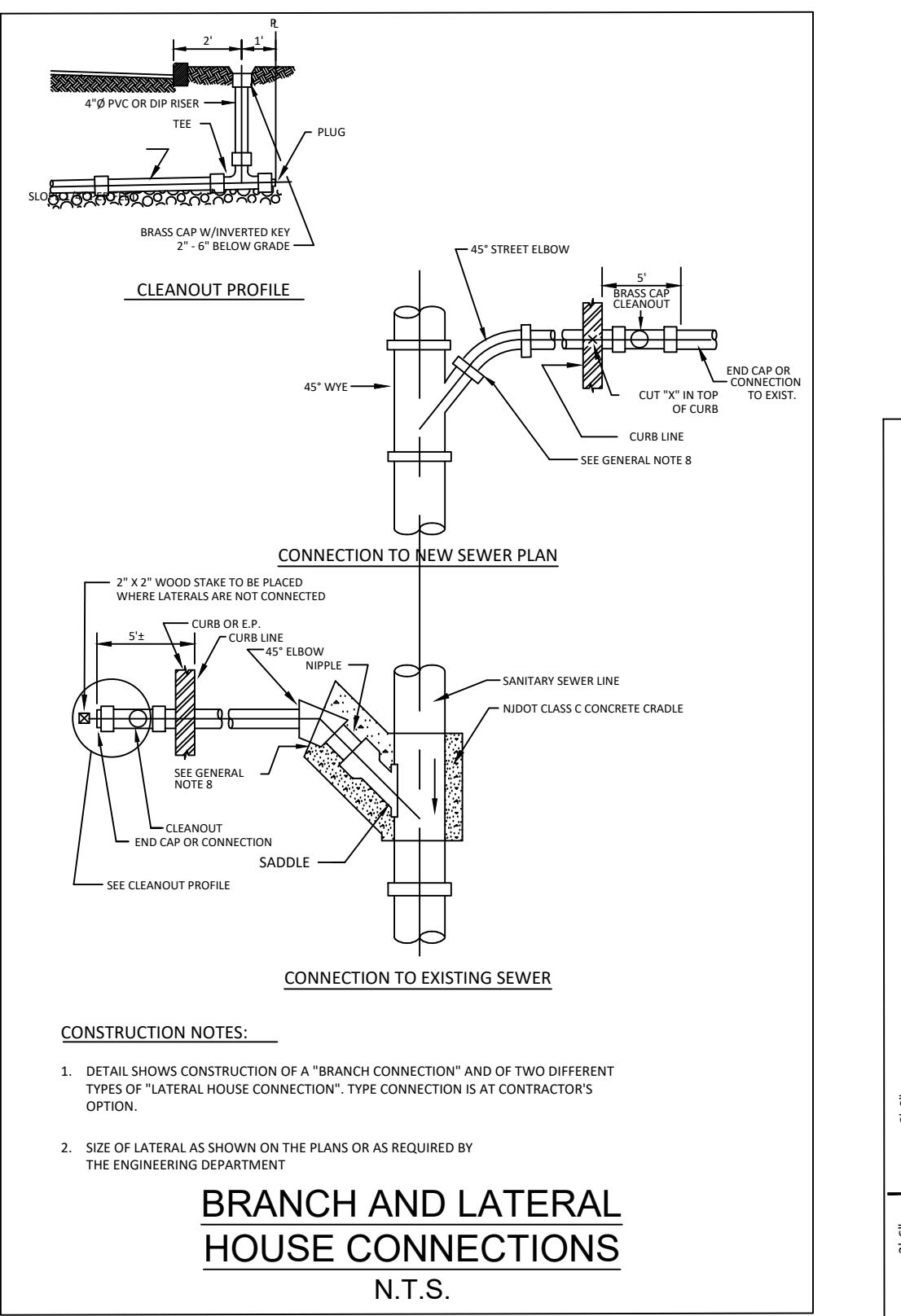
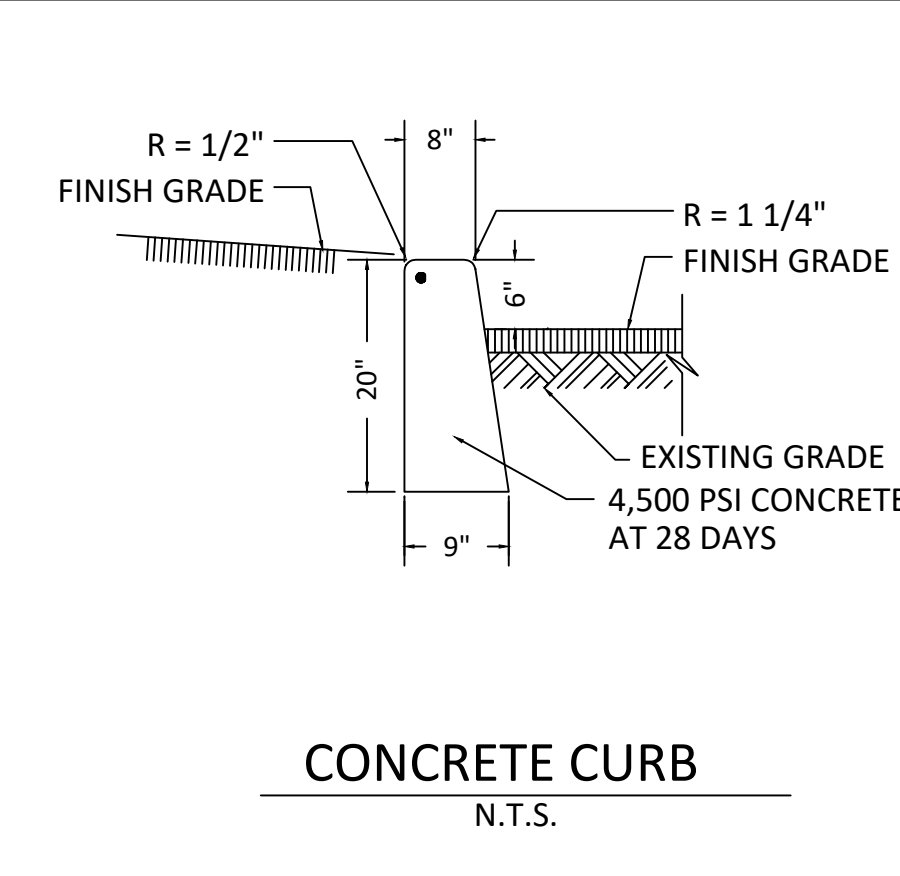
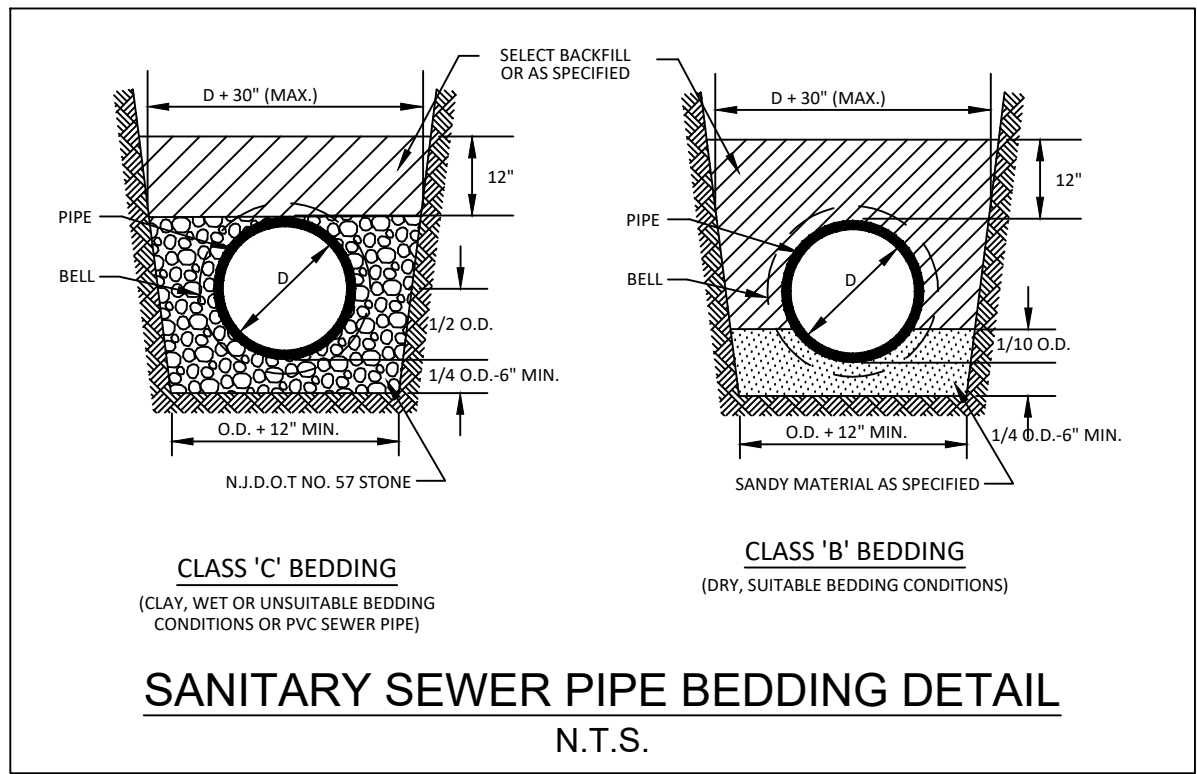
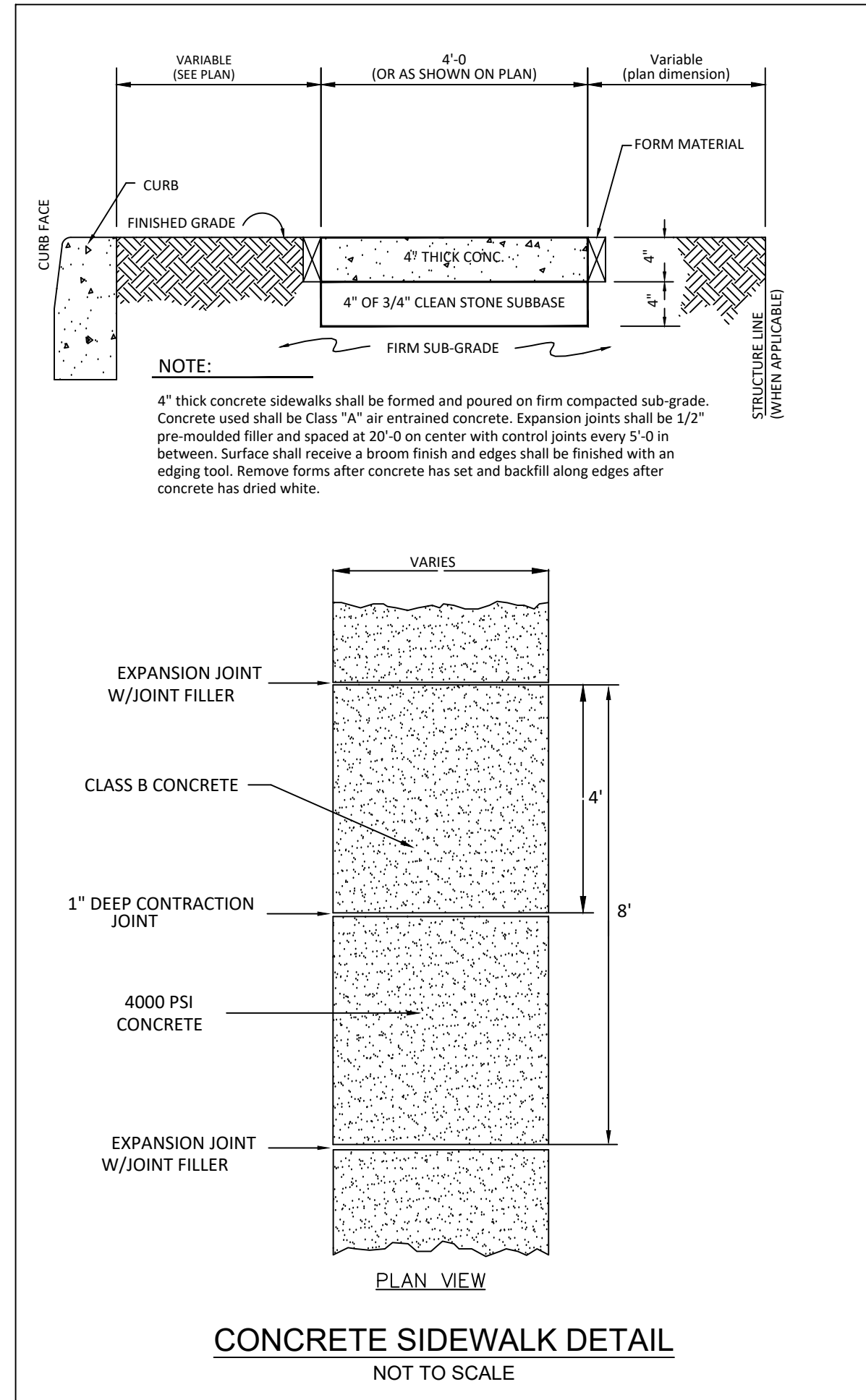
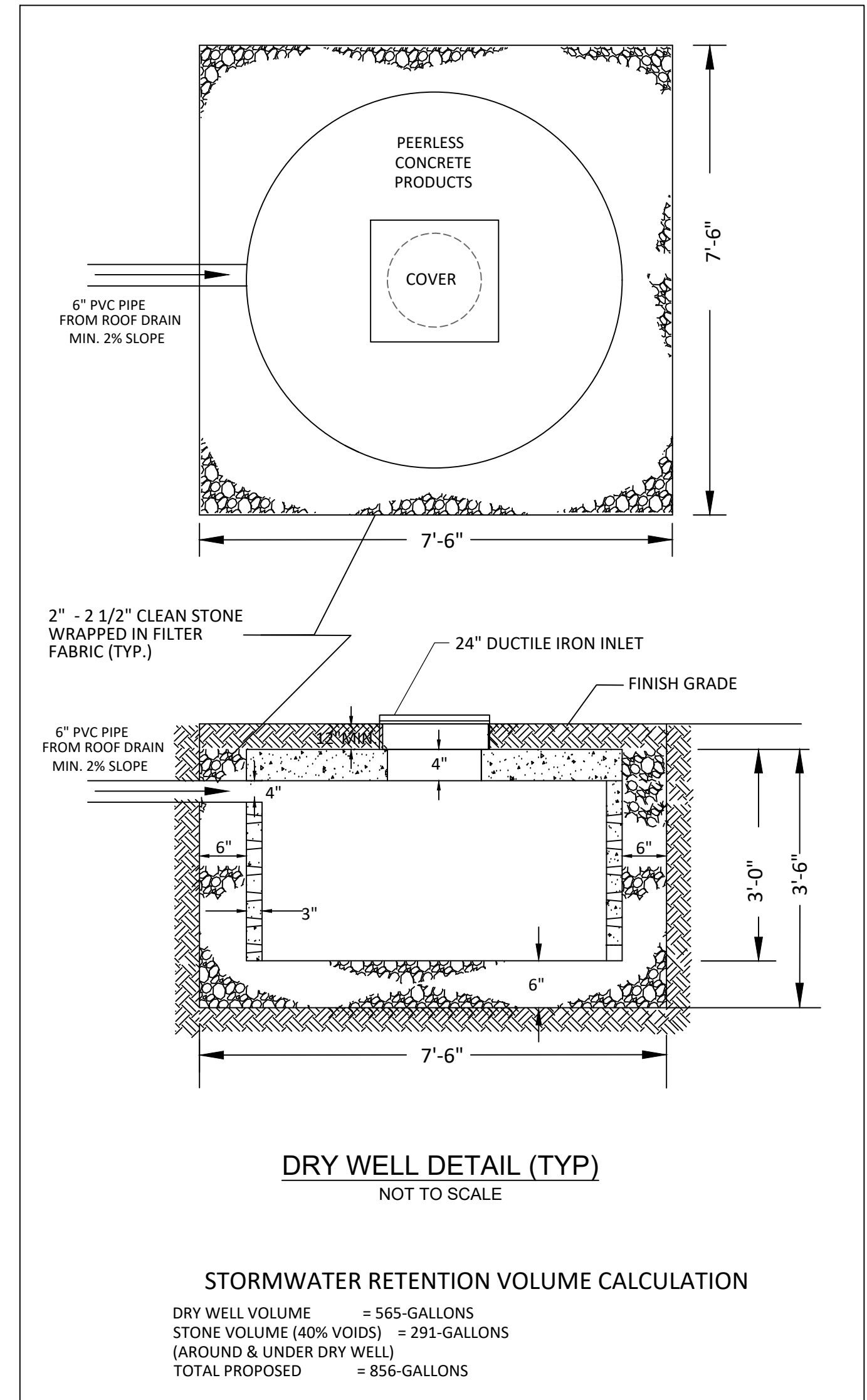
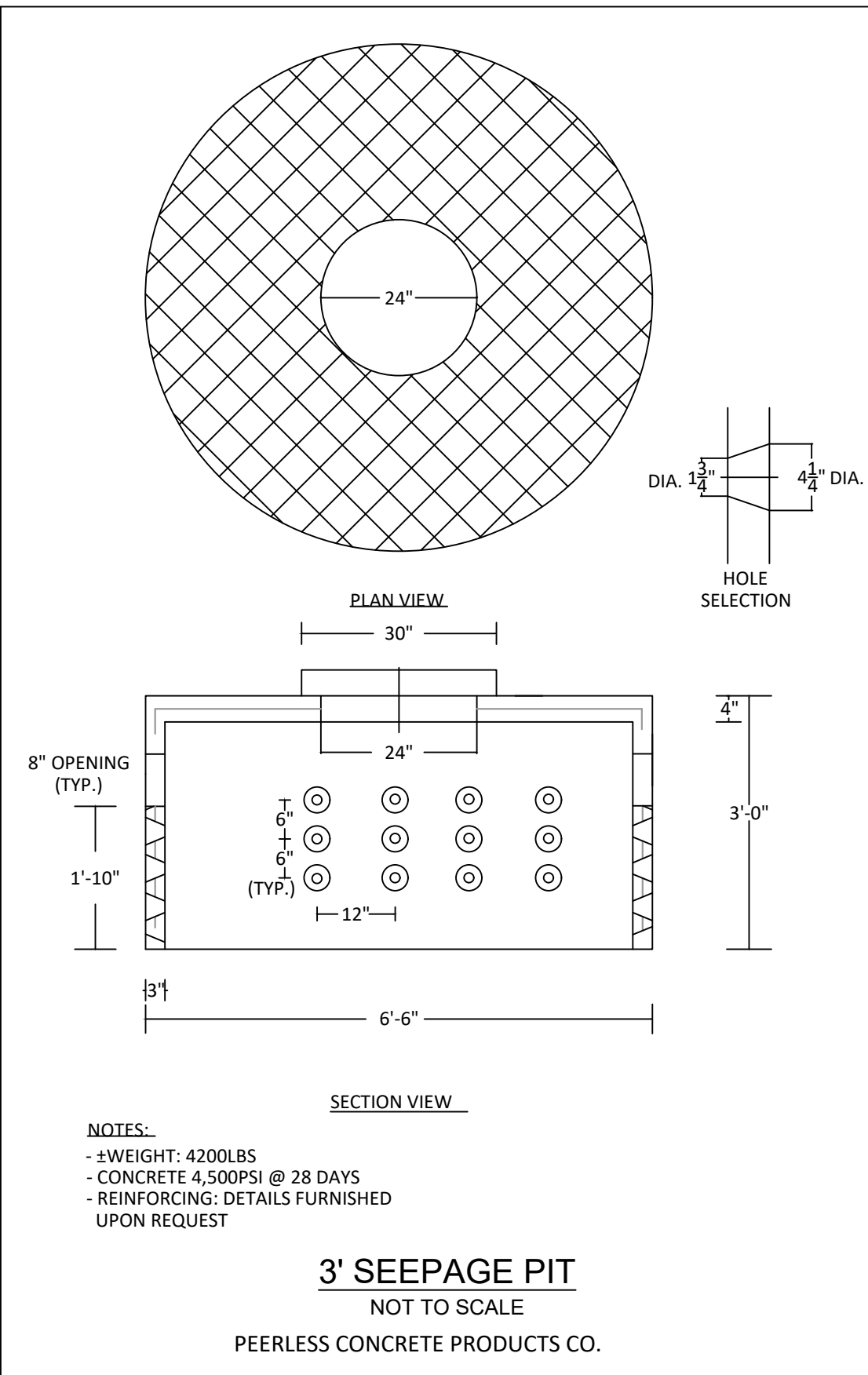
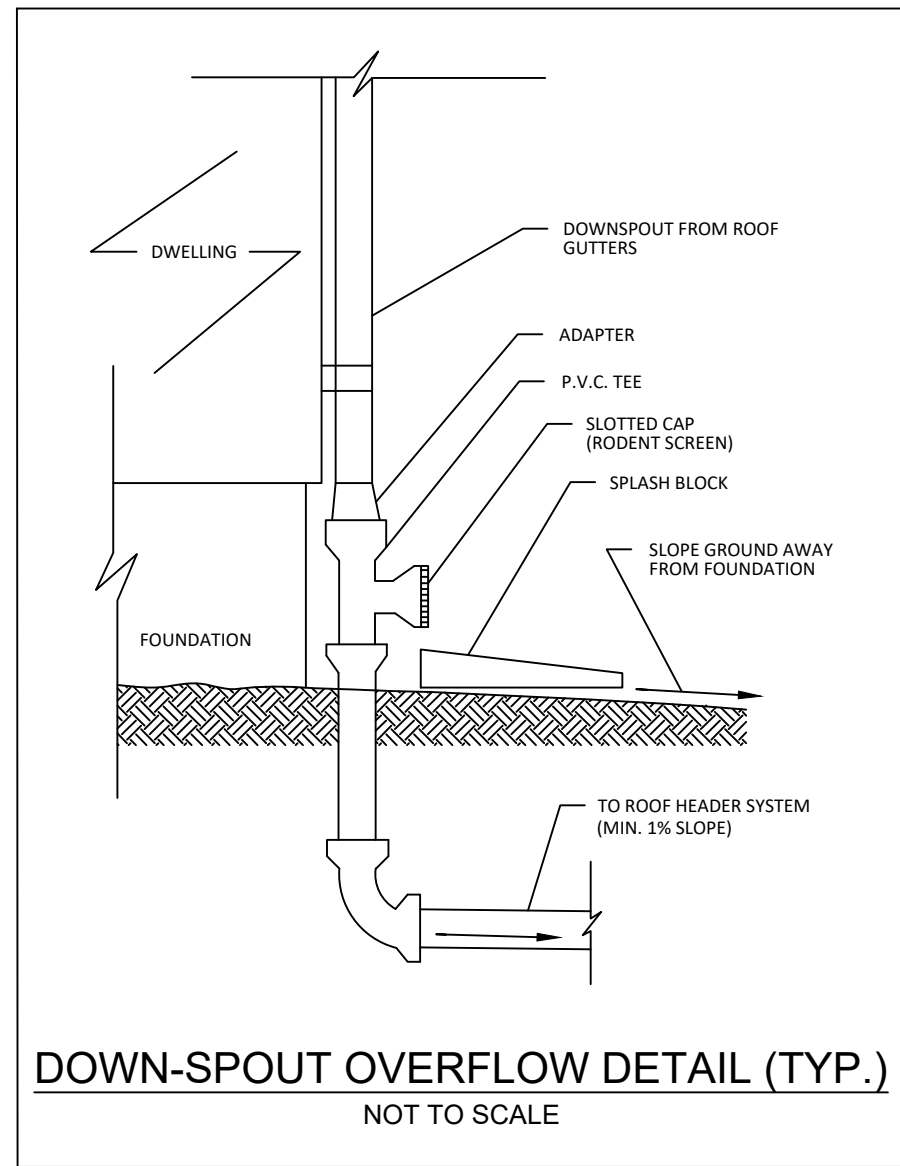
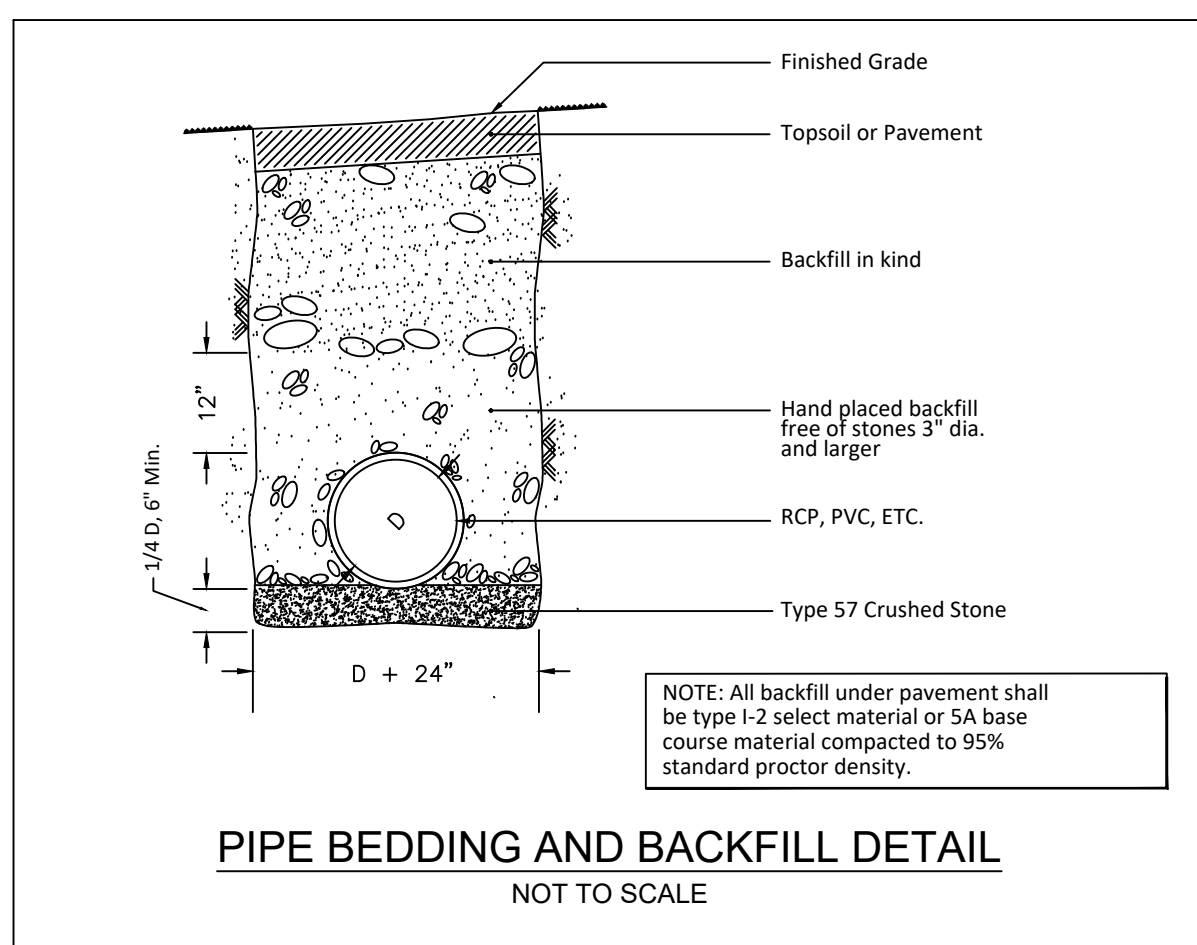
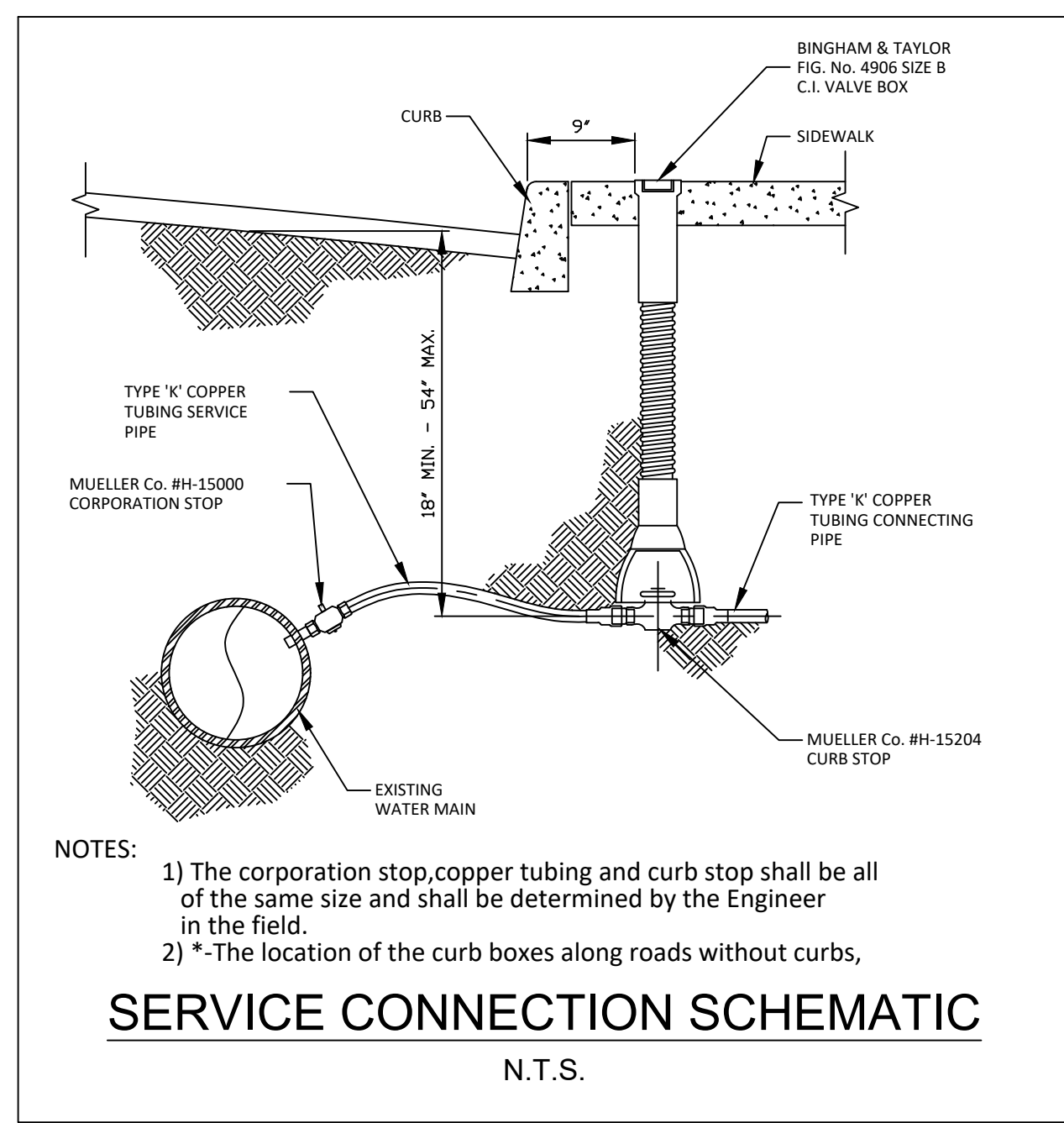
ADNAN A. KHAN, P.E., C.M.E.
 PROFESSIONAL ENGINEER
 DATE: 02/02/23
 DESIGNED BY: AK
 DATE: 02/02/23
 APPROVED BY: AK
 DATE: 02/02/23

REVISIONS
 NO. DATE: BY: APE
 1 02/02/23 [Signature]

JOB NUMBER:
22-1001

SCALE: AS SHOWN

C-04
SHEET 4 OF 5



TAX LOT 25
118 STUYVESANT AVENUE
TOWNSHIP OF LYNDBURST
BERGEN COUNTY, NEW JERSEY

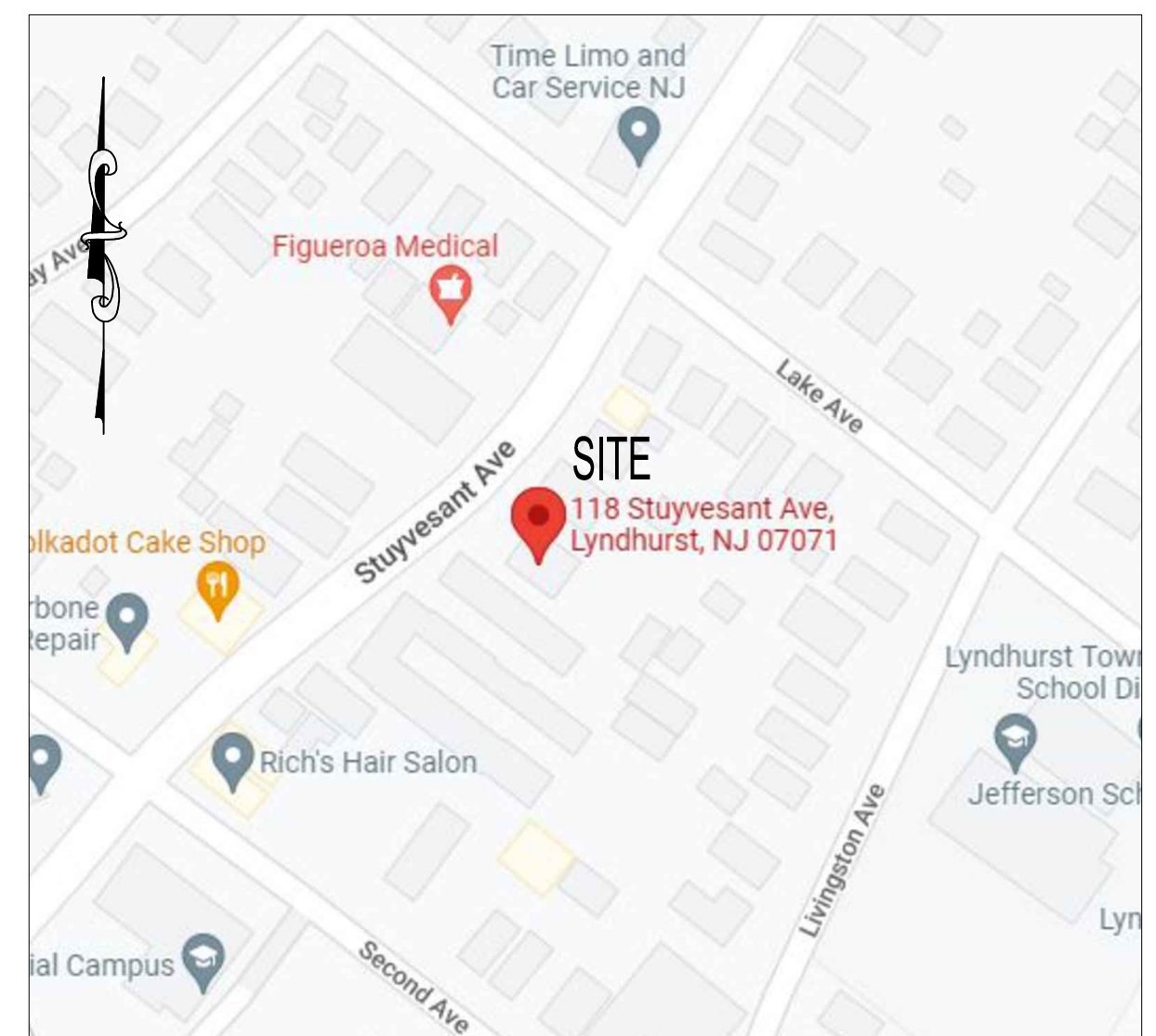
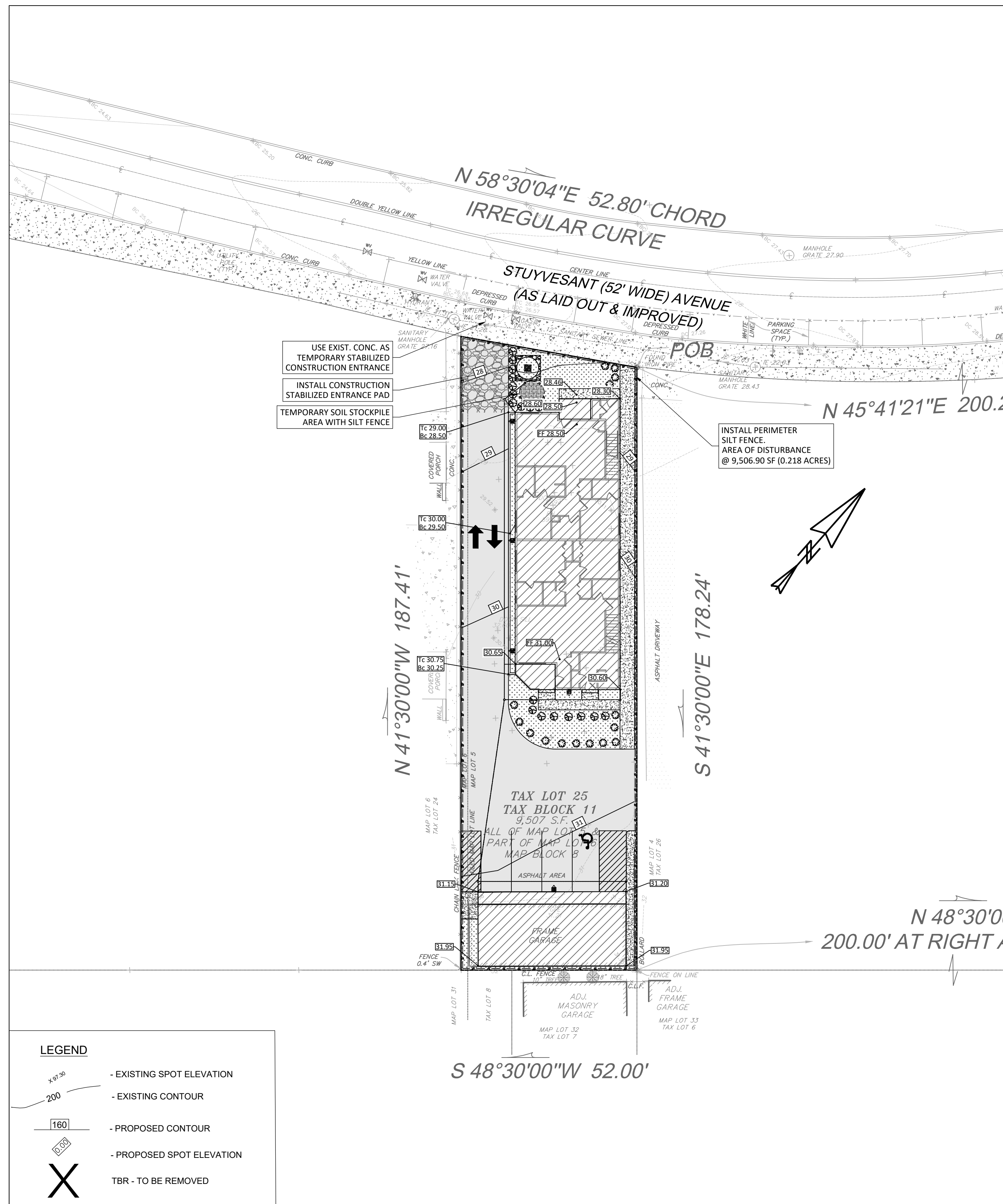
CONSTRUCTION DETAILS

ADNAN A. KHAN, P.E., C.M.E.
 PROFESSIONAL ENGINEER
 DESIGNED BY: *Adnan A. Khan* DATE: 03/06/23
 APPROVED BY: *Adnan A. Khan* DATE: 02/02/23

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 New Jersey Certificate of Authorization No.: 24GA28118400
 Pennsylvania Certificate of Authority No.: 3771354

BLOCK 11
JOB NUMBER:
 22-1001
SCALE: AS SHOWN

C-05
SHEET 5 OF 5



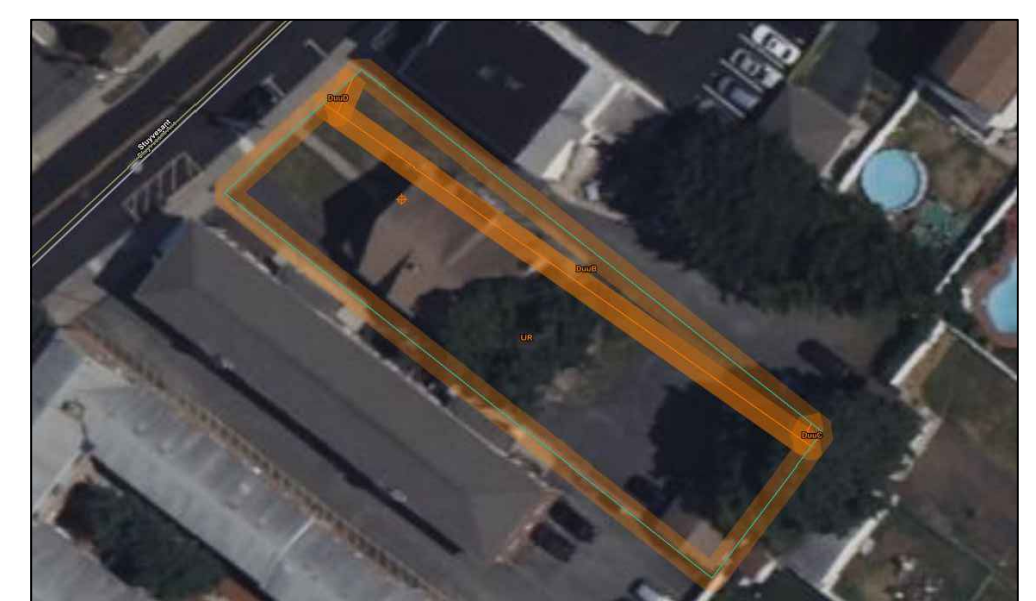
DUST CONTROL NOTES

THE FOLLOWING METHODS SHOULD BE CONSIDERED FOR CONTROLLING DUST: MULCHES - SEE STANDARD FOR STABILIZATION WITH MULCHES ONLY (PG. 5-1) OF STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY. NOTE: ALL PAGE REFERENCES ARE FOR ABOVE DOCUMENT DATED 7/99. VEGETATIVE COVER - SEE STANDARD FOR TEMPORARY VEGETATIVE COVER (PG. 7-1), PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION (PG. 4-1), AND PERMANENT STABILIZATION WITH SOD (PG. 6-1) SPRAY-ON ADHESIVES - ON MINERAL SOILS (NOT EFFECTIVE ON MUCK SOILS). KEEP TRAFFIC OFF THESE AREAS.

TABLE 16-1: DUST CONTROL MATERIALS

MATERIAL	WATER DILUTION	TYPE OF NOZZLE	APPLY GALLONS/ACRE
ANIONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1200
LATEX EMULSION	12.5:1	FINE SPRAY	235
BASIN IN WATER	4:1	FINE SPRAY	300
POLYACRYLAMIDE (PAM) - SPRAY ON	APPLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS.		
POLYACRYLAMIDE (PAM)-SDRY SPRAY	MAY ALSO BE USED AS AN ADDITIVE TO SEDIMENT BASINS TO FLOCCULATE AND PRECIPITATE SUSPENDED COLLOIDS. SEE SEDIMENT BASIN STANDARD (PG.26-1)		
ACIDULATED SOY BEAN SOAP STICK	NONE	COARSE SPRAY	1200

TILLAGE - TO ROUGHEN SURFACE AND BRING CLOUDS TO THE SURFACE. THIS IS A TEMPORARY EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN FLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART, AND SPRING-TOOTHED HARROWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT. SPRINKLING - SITE IS SPRINKLED UNTIL THE SURFACE IS WET. BARRIERS - SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. CALCIUM CHLORIDE - SHALL BE IN THE FORM OF LOOSE, DRY GRANULATES OF FLAKES FINE ENOUGH TO FEED THROUGH COMMONLY USED SPREADERS AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE. IF USED ON STEEPER SLOPES, THEN USE OTHER PRACTICES TO PREVENT WASHING INTO STREAMS, OR ACCUMULATION AROUND PLANTS. STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.



SOIL MANAGEMENT NOTE: ACCORDING TO STATE OF NEW JERSEY LAND USE CLASSIFICATION SYSTEM, THE SITE IS UNDER URBAN REDEVELOPMENT AREA, LAND USE CODE 1,110. THEREFORE, THE PROPOSED PROJECT DOES NOT REQUIRE COMPACTION REMEDIATION, AS PER EXEMPTION #6 UNDER SOIL MANAGEMENT AND PREPARATION STANDARDS FOR SOIL AND SEDIMENT CONTROL IN NEW JERSEY.

ACCORDING TO USDA WEB SOIL SURVEY, THE MAP UNIT SYMBOL FOR 17.7% OF THE SITE IS "DuuB" (DUNELLEN-URBAN LAND COMPLEX, 3 TO 8 PERCENT SLOPES), 0.2% "DuuC" (DUNELLEN-URBAN LAND COMPLEX, 8 TO 15 PERCENT SLOPES), 0.3% "DuuD" (DUNELLEN-URBAN LAND COMPLEX, 15 TO 25 PERCENT SLOPES), AND 81.8% "UR" (URBAN LAND).

BERGEN COUNTY SOIL CONSERVATION DISTRICT SOIL EROSION AND SEDIMENT CONTROL NOTES

1. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY (NJ STANDARDS), AND WILL BE INSTALLED IN PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT STABILIZATION IS ESTABLISHED.
2. ANY DISTURBED AREA THAT WILL BE LEFT EXPOSED FOR MORE THAN THIRTY (30) DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING AND MULCHING. IF THE SEASON PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREA WILL BE MULCHED WITH UNROTTED STRAW AT A RATE OF 2 TONS PER ACRE ANCHORED BY APPROVED METHODS (I.E. PEG AND TWINE, MULCH NETTING, OR LIQUID MULCH BINDER).
3. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AT A RATE OF 2 TONS PER ACRE, ACCORDING TO THE NJ STANDARDS.
4. **STABILIZATION SPECIFICATIONS:**
 - A. TEMPORARY SEEDING AND MULCHING:
 - GROUND LIMESTONE- APPLIED UNIFORMLY ACCORDING TO SOIL TEST RECOMMENDATIONS.
 - FERTILIZER- APPLY 11 LBS. / 1,000 SF OF 10-20-10 OR EQUIVALENT WITH 50 % WATER INSOLUBLE NITROGEN (UNLESS A SOIL TEST INDICATES OTHERWISE) WORKED INTO THE SOIL A MINIMUM OF 4".
 - SEED- PERENNIAL RYEGRASS 100 LBS. / ACRE (2.3 LBS. / 1,000 SF) OR OTHER APPROVED SEED; PLANT BETWEEN MARCH 1 AND MAY 15 OR BETWEEN AUGUST 15 AND OCTOBER 1.
 - MULCH- UNROTTED STRAW OR HAY AT A RATE OF 70 TO 90 LBS. / 1,000 SF APPLIED TO ACHIEVE 95% SOIL SURFACE COVERAGE. MULCH SHALL BE ANCHORED BY APPROVED METHODS (i.e. PEG AND TWINE, MULCH NETTING, OR LIQUID MULCH BINDER).
 - B. PERMANENT SEEDING AND MULCHING:
 - TOPSOIL - UNIFORM APPLICATION TO AN AVERAGE DEPTH OF 5", MINIMUM OF 4" FIRMED IN PLACE IS REQUIRED.
 - GROUND LIMESTONE- APPLIED UNIFORMLY ACCORDING TO SOIL TEST RECOMMENDATIONS.
 - FERTILIZER- APPLY 11 LBS. / 1,000 SF OF 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN (UNLESS A SOIL TEST INDICATES OTHERWISE)
 - SEED - TURF TYPE TALL FESCUE (BLEND OF 3 CULTIVARS) 350 LBS. / ACRE (8 LBS. / 1,000 SF) OR OTHER APPROVED SEED; PLANT BETWEEN MARCH 1 AND OCTOBER 1 (SUMMER SEEDING REQUIRES IRRIGATION)
 - MULCH- UNROTTED STRAW OR HAY AT A RATE OF 70 TO 90 LBS. / 1,000 SF APPLIED TO ACHIEVE 95 % SOIL SURFACE COVERAGE. MULCH SHALL BE ANCHORED BY APPROVED METHODS (i.e. PEG AND TWINE, MULCH NETTING, OR LIQUID MULCH BINDER).
5. THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SUCH THAT ALL STORMWATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
6. SOIL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS, INCLUDING AFTER EVERY STORM EVENT.
7. STOCKPILES ARE NOT TO BE LOCATED WITHIN 50' OF A FLOODPLAIN, SLOPE, ROADWAY OR DRAINAGE FACILITY. THE BASE OF ALL STOCKPILES SHALL BE CONTAINED BY A HAYBALE SEDIMENT BARRIER OR SILT FENCE.
8. A CRUSHED STONE, VEHICLE WHEEL-CLEANING BLANKET WILL BE INSTALLED WHEREVER A CONSTRUCTION ACCESS ROAD INTERSECTS ANY PAVED ROADWAY. SAID BLANKET WILL BE COMPOSED OF 1" - 2 1/2" CRUSHED STONE, 6" THICK, WILL BE AT LEAST 30' X 100' AND SHOULD BE UNDERLAIN WITH A SUITABLE SYNTHETIC SEDIMENT FILTER FABRIC AND MAINTAINED.
9. MAXIMUM SIDE SLOPES OF ALL EXPOSED SURFACES SHALL NOT EXCEED 3:1 UNLESS OTHERWISE APPROVED BY THE DISTRICT.
10. DRIVEWAYS MUST BE STABILIZED WITH 1" - 2 1/2" CRUSHED STONE OR SUB-BASE PRIOR TO INDIVIDUAL LOT CONSTRUCTION.
11. ALL SOIL WASHED, DROPPED, SPILLED OR TRACKED OUTSIDE THE LIMIT OF DISTURBANCE OR ONTO PUBLIC RIGHT-OF-WAYS, WILL BE REMOVED IMMEDIATELY. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.
12. CATCH BASIN INLETS WILL BE PROTECTED WITH AN INLET FILTER DESIGNED IN ACCORDANCE WITH SECTION 28-1 OF THE NJ STANDARDS.
13. STORM DRAINAGE OUTLETS WILL BE STABILIZED, AS REQUIRED, BEFORE THE DISCHARGE POINTS BECOME OPERATIONAL.
14. DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT CONTROL BAG OR OTHER APPROVED FILTER IN ACCORDANCE WITH SECTION 14-1 OF THE NJ STANDARDS.
15. DUST SHALL BE CONTROLLED VIA THE APPLICATION OF WATER, CALCIUM CHLORIDE OR OTHER APPROVED METHOD IN ACCORDANCE WITH SECTION 16-1 OF THE NJ STANDARDS.
16. TREES TO REMAIN AFTER CONSTRUCTION ARE TO BE PROTECTED WITH A SUITABLE FENCE. INSTALLED AT THE DRIP LINE OR BEYOND IN ACCORDANCE WITH SECTION 9-1 OF THE NJ STANDARDS.
17. THE PROJECT OWNER SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR BELOW STORMWATER OUTFALLS OR OFF-SITE AS A RESULT OF CONSTRUCTION OF THE PROJECT.
18. ANY REVISION TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN MUST BE SUBMITTED TO THE DISTRICT FOR REVIEW AND APPROVAL PRIOR TO IMPLEMENTATION IN THE FIELD.
19. A COPY OF THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE THROUGHOUT CONSTRUCTION.
20. THE BERGEN COUNTY SOIL CONSERVATION DISTRICT MUST BE NOTIFIED, IN WRITING, AT LEAST 48 HOURS PRIOR TO ANY LAND DISTURBANCE. BERGEN COUNTY SCD, 700 KINDERKAMACK ROAD, SUITE 106, ORADELL, NJ 07649. TEL: 201-261-4407; FAX: 201-261-7573.
21. THE BERGEN COUNTY SOIL CONSERVATION DISTRICT MAY REQUEST ADDITIONAL MEASURES TO MINIMIZE ON OR OFF-SITE EROSION PROBLEMS DURING CONSTRUCTION.
22. THE OWNER MUST OBTAIN A DISTRICT ISSUED REPORT OF COMPLIANCE PRIOR TO THE ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY. THE DISTRICT REQUIRES AT LEAST ONE WEEK'S NOTICE TO FACILITATE THE SCHEDULING OF ALL REPORT OF COMPLIANCE INSPECTIONS. ALL SITE WORK MUST BE COMPLETED, INCLUDING TEMPORARY/PERMANENT STABILIZATION OF ALL EXPOSED AREAS, PRIOR TO THE ISSUANCE OF A REPORT OF COMPLIANCE BY THE DISTRICT.

TAX LOT 25
TOWNSHIP OF LYNDHURST
BERGEN COUNTY, NEW JERSEY
SOIL EROSION AND SEDIMENT CONTROL PLAN

ADNAN A. KHAN, P.E., C.M.E.
PROFESSIONAL ENGINEER

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Pennsylvania Certificate of Authority No.: 3771354

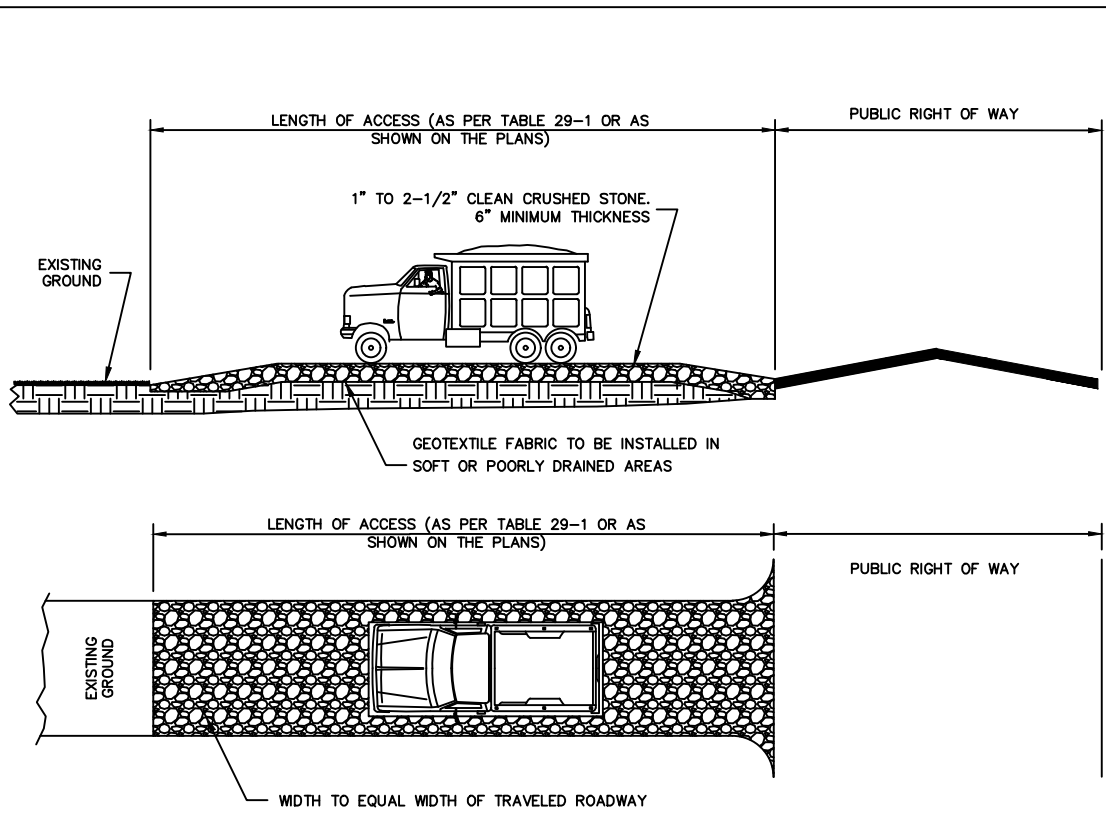
JOB NUMBER:
22-1001

SCALE: AS SHOWN

S-01
SHEET 1 OF 2

THIS PLAN IS TO BE USED FOR SOIL EROSION CONTROL PURPOSES ONLY

THIS PLAN IS TO BE USED FOR SOIL EROSION CONTROL PURPOSES ONLY



LENGTH OF STABILIZED CONSTRUCTION ACCESS (TABLE 29-1)

PERCENT SLOPE OF ROADWAY	LENGTH OF STONE REQUIRED
0 TO 2%	50 FT
2 TO 5%	100 FT
5%	200 FT

Entire surface stabilized with FABC base course per governing authority requirements.

- NOTES:**
- ALL INDIVIDUAL LOT INGRESS/EGRESS POINTS SHALL REQUIRE STABILIZED CONSTRUCTION ENTRANCE ACCESS.
 - PLACE STABILIZED CONSTRUCTION ENTRANCE AT LOCATIONS AS SHOWN ON THE SOIL EROSION AND SEDIMENT CONTROL PLAN.
 - STONE SIZE SHALL BE ASTM C-33, SIZE NO. 2 OR 3, CRUSHED STONE.
 - THE THICKNESS OF THE STABILIZED CONSTRUCTION ENTRANCE SHALL NOT BE LESS THAN 6".
 - THE WIDTH AT THE EXISTING PAVEMENT SHALL NOT BE LESS THAN THE FULL WIDTH OF POINTS OF INGRESS AND EGRESS.
 - THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PERMIT TRACKING OR FLOWING OF SEDIMENT INTO THE ROAD/PAVEMENT; THIS REQUIRES PERIODIC TOP DRESSING WITH ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURE USED TO TRAP SEDIMENT.
 - ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED INTO THE PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
 - WHERE TRACKING OF SOIL INTO ROADWAYS IS A CONTINGUAL OCCURRENCE, ALL CONTRACTORS BOTH SITE AND DWELLING CONTRACTORS, SHALL BE REQUIRED TO BRUSH SWEEP THE ROADWAY AT 2 HOUR INTERVALS MINIMUM AND PRIOR TO LEAVING THE CONSTRUCTION SITE AT THE END OF THE DAY.

STABILIZED CONSTRUCTION ACCESS

- PROPOSED SEQUENCE OF DEVELOPMENT**
- Installation of all sediment and erosion control devices (including silt fences and stabilized construction access) prior to any major soil disturbances or in their proper sequence and maintenance until permanent protection is established. **1 Week**
 - Site demolition, clearing, clear and remove all debris as necessary. All remaining vegetation to be properly protected and to remain in its natural state. **2 Weeks**
 - General and preliminary grading of all pavement areas and storm water management basins. **2 Week**
 - Layout and location of all proposed utilities. **1 Week**
 - Construction of all proposed improvements and drainage facilities. Installation of all erosion control measures effected by said facilities such as inlet sediment barriers. **25 Weeks**
 - Pavement subbase course to be applied immediately following preliminary grading and construction of improvements in order to stabilize pavement areas. **1 Week**
 - Installation of all pavement base material. **1 Week**
 - Fine grading of all lot areas and basins including construction of all soil erosion control as necessary. **1 Week**
 - Stabilization of all off pavement areas. **1 Week**
 - Uniformly apply topsoil to an average depth of 5", minimum of 4", firmed in place. Provide permanent vegetative stabilization of all exposed areas. **1 Week**
 - Complete all landscaping and vegetative cover. **1 Week**
 - Removal of all temporary sediment and erosion control devices. **upon completion**

STANDARD FOR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

DEFINITION
Establishment of temporary vegetative cover on soils exposed for periods of two to six months which are not being graded, not under active construction or not scheduled for permanent seeding within 60 days.

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

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

WHERE APPLICABLE
On exposed soils that have the potential for causing off-site environmental damage.

METHODS AND MATERIALS

SITE PREPARATION

A. Grade as needed and feasible to permit the use of conventional equipment for seeded preparation, seeding, mulch application, and mulch anchoring. All grading should be done in accordance with Standards for Land Grading, page 18-1.

B. Install needed erosion control practices or facilities such as diversions, grade stabilization structures, channel stabilization measures, sediment basins, and waterways. See Standards 11 through 42.

C. Immediately prior to seeding and topsoil application, the surface should be scarified 6" to 12" where there has been soil compaction. This practice is permissible only where there is no danger to underground utilities (cables, irrigation systems, etc.).

D. Topsoil should be handled only when it is dry enough to work without damaging the soil structure. A uniform application to a depth of 5 inches (unsettled) is required on all sites. Topsoil shall be amended with organic matter, as needed, in accordance with the STANDARD FOR TOPSOILING.

E. Install needed erosion control practices or facilities such as diversions, grade stabilization structures, channel stabilization measures, sediment basins, and waterways. See Standards 11 through 42.

SEEDING PREPARATION

A. Apply limestone and fertilizer according to soil test recommendations such as offered by Rutgers Cooperative Extension. Soil sample materials are available from the local Rutgers Cooperative Extension offices. Fertilizer shall be applied at the rate of 500 pounds per acre of 11 lbs. per 1000 square feet of 10-20-10 or equivalent, with 50% water insoluble nitrogen unless a soil test indicates otherwise. Calcium carbonate is the equivalent standard for measuring the ability of liming materials to neutralize soil acidity and supply calcium magnesium to grasses and legumes.

- B. Work lime and fertilizer into the soil as nearly as practical to a depth of 4 inches with a disc, springtooth harrow, or other suitable equipment. The final harrowing or discing operation should be the general contour. Continue tillage until a reasonable uniform seedbed is prepared.
- C. Insect seedbed just before seeding. If traffic has left the soil compacted, the area must be retilled in accordance with the above.
- D. Soils high in sulfides or having a pH of 4 or less refer to Standard for Management of High Acid Producing Soils, pg. 1-1.

TEMPORARY VEGETATIVE STABILIZATION GRASSES, SEEDING RATES, DATES AND DEPTH.

TABLE 7-2

SEED SELECTIONS	SEEDING RATE ¹ (pounds)		OPTIMUM SEEDING DATE ² Based on Plant Hardiness Zone ³			OPTIMUM SEEDING DEPTH ⁴ (inches)
	Per Acre	Per 1000 Sq. Ft.	ZONE 5b,6a	ZONE 6b	ZONE 7a,b	
COLD SEASON GRASSES						
1. Perennial ryegrass	100	1.0	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/15	0.5
2. Spring oats	86	2.0	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/15	1.0
3. Winter Barley	96	2.2	8/1-9/15	8/15-10/1	8/15-10/15	1.0
4. Annual ryegrass	110	1.0	3/15-6/1 8/1-9/15	3/1-5/15 8/1-9/15	2/15-5/1 8/15-10/15	0.5
5. Winter Cereal Rye	112	2.8	8/1-11/1	8/1-11/1	8/1-12/15	1.0
WARM SEASON GRASSES						
6. Pearl Millet	20	0.5	6/1-8/1	5/15-8/15	5/1-9/1	1.0
7. Millet (German or Hungarian)	30	0.7	6/1-8/1	5/15-8/15	5/1-9/1	0.25

1. Seeding rate for warm season grass, selections 5-7 shall be adjusted to reflect the amount of Pure Live Seed (PLS) as determined by a germination test result. No adjustment is required for cool season grasses.
2. May be planted throughout summer if soil moisture is adequate or seeded area can be irrigated. Plant Hardiness Zone (see figure 7-1, pg. 7-4).
4. Twice the depth for sandy soils.
- B. Conventional Seeding. Apply seed uniformly by hand, cyclone (centrifugal) seeder, drop seeder, drill or cultipacker seeder. Except for drilled, hydroseeded or cultipacked seedings, seed shall be incorporated into the soil within 24 hours of seeding preparation to a depth of 1/4 to 1/2 inch, by raking or dragging. Depth of seed placement may be 1/4 inch deeper on coarse textured soil.
- C. Hydroseeding is a broadcast seeding method usually involving a truck or trailer mounted tank, with an agitation system and hydraulic pump for mixing seed, water and fertilizer and spraying the mix onto the prepared seedbed. Mulch shall not be included in the tank with seed. Short fibered mulch may be applied with a hydroseeder following seeding. (also see Section V Mulching) Hydroseeding is not a preferred seeding method because seed and fertilizer are applied to the surface and not incorporated into the soil. Poor seed to soil contact occurs reducing seed germination and growth. Hydroseeding may be used for areas too steep for conventional equipment to traverse or too obstructed with rocks, stumps, etc.
- D. After seeding, firming the soil with a corrugated roller will assure good seed-to-soil contact, restore capillary, and improved seeding emergence. This is the preferred method. When performed on the contour, sheet erosion will be minimized and water conservation on site will be maximized.

- MULCHING**
- Mulching is required on all seedings. Mulch will insure against erosion before grass is established and will promote faster and earlier establishment. The existence of vegetation sufficient to control soil erosion shall be deemed compliance with this mulching requirement.
- Straw or Hay. Unrotted small grain 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 crimp is used instead of a liquid mulch-binder (tackifying or adhesive agent), the rate of application is 3 tons per acre. Mulch choppers-blowers must cut and grind the mulch. Hay mulch is not recommended for establishing fine turf or lawns due to the presence of weed seed.
- Application. Spread mulch uniformly by hand or mechanically so that approximately 85% of the soil surface will be covered. For uniform distribution of hand-spread mulch, divide area into approximately 1,000 square foot sections and distribute 70 to 90 pounds within each section.
- Anchoring shall be accomplished immediately after placement to minimize loss by wind or water. This may be done by one of the following methods, depending upon the size of the area, steepness of slopes, and costs.
- 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 more or more turns.
- Mulch Nettings. Staple paper, jute, cotton, or plastic nettings to the soil surface. Use a degradable netting in areas to be mowed.
- Crimper (mulch anchoring cutter 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 agent is required.

- Liquid Mulch-Binders. May be used to anchor salt hay, hay or straw mulch.
- a. Applications should be heavier at edges where wind may catch the mulch, in valleys, and at crests of banks. The remainder of the area should be uniform in appearance.
- Use one of the following:
- (1) Organic and Vegetable Based Binders - Naturally occurring, powder based, hydrophilic materials when with water formulates a gel and when applied to mulch under satisfactory curing conditions will form membrane networks of insoluble polymers. The vegetable gel shall be physiologically harmless and not result in a phytotoxic effect or impede growth of turf-grass. Use at rates and weather conditions as recommended by the manufacturer to anchor mulch materials. Many new products are available, some of which may need further evaluation for use in this state.
- (2) Synthetic Binders - High polymer synthetic emulsion, miscible with water when diluted and following application to mulch, drying and curing shall no longer be soluble or dispersible in water. It shall be applied at rates recommended by the manufacturer and remain tacky until germination of grass.
- Note: All names given above are registered trade names. This does not constitute a recommendation of these products to the exclusion of other products.

- Wood-fiber or paper-fiber mulch. Shall be made from wood, plant fibers or paper containing no growth or germination inhibiting materials, used at the rate of 1,500 pounds per acre (or as recommended by the product manufacturer) and may be applied by a hydroseeder. This mulch shall not be mixed in the tank with seed. Use is limited to flatter slopes and during optimum seeding periods in spring and fall.
- Pelletized mulch. Compressed and extruded paper and/or wood fiber product, which may contain co-polymers, tackifiers, fertilizers and coloring agents. The dry pellets, when applied to a seeded area and watered, form a mulch mat. Pelletized mulch shall be applied in accordance with the manufacturer's recommendations. Mulch may be applied by hand or mechanical spreader at the rate of 60-75 lbs./1,000 square feet and activated with 0.2 to 0.4 inches of water. This material has been found to be beneficial for use on small lawn or renovation areas, seeded areas where weed-seed free mulch is desired or on sites where straw mulch and tackifier agent are not practical or desirable. Applying the full 0.2 to 0.4 inches of water after spreading pelletized mulch on the seed bed is extremely important for sufficient activation and expansion of the mulch to provide soil coverage.

STANDARD FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION

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

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

WATER QUALITY ENHANCEMENT
Slows the over land movement of stormwater runoff, increases infiltration and retains soil and nutrients on site, protecting streams or other stormwater conveyances.

WHERE APPLICABLE
On exposed soils that have the potential for causing off-site environmental damage.

SITE PREPARATION

A. Grade as needed and feasible to permit the use of conventional equipment for seeded preparation, seeding, mulch application, and mulch anchoring. All grading should be done in accordance with Standards for Land Grading.

B. Immediately prior to seeding and topsoil application, the surface should be scarified 6" to 12" where there has been soil compaction. This practice is permissible only where there is no danger to underground utilities (cables, irrigation systems, etc.).

C. Topsoil should be handled only when it is dry enough to work without damaging the soil structure. A uniform application to a depth of 5 inches (unsettled) is required on all sites. Topsoil shall be amended with organic matter, as needed, in accordance with the STANDARD FOR TOPSOILING.

D. Install needed erosion control practices or facilities such as diversions, grade stabilization structures, channel stabilization measures, sediment basins, and waterways. See Standards 11 through 42.

SEEDING PREPARATION

A. Uniformly apply ground limestone and fertilizer to topsoil which has been spread and firmed, according to soil test recommendations such as offered by Rutgers Cooperative Extension. Soil sample materials are available from the local Rutgers Cooperative Extension offices. Fertilizer shall be applied at the rate of 500 pounds per acre of 11 lbs. per 1000 square feet of 10-20-10 or equivalent with 50% water insoluble nitrogen unless a soil test indicates otherwise and incorporated into the surface 4 inches. If fertilizer is not incorporated, apply one-half the rate described above during seeded preparation and repeat another one-half rate application of the same fertilizer within 3 to 5 weeks after seeding.

- B. Work lime and fertilizer into the soil as nearly as practical to a depth of 4 inches with a disc, springtooth harrow, or other suitable equipment. The final harrowing or discing operation should be the general contour. Continue tillage until a reasonable uniform seedbed is prepared.
- C. High soil producing soils. Soils having a pH of 4 or less or containing iron sulfide shall be covered with a minimum of 12 inches of soil having a pH of 5 or more before initiating seeded preparation. See Standard for Management of High Acid-Producing Soils for specific requirements.

- SEEDING**
- A. Select a mixture from Table 4-3 or use mixture recommended by Rutgers Cooperative Extension or Natural Resources Conservation Service which is approved by the Soil Conservation District. Seed germination should have been tested within 12 months of the planting date. No seed shall be accepted with a germination test date more than 12 months old unless retested.
- (1) Seeding rates specified are required when a report of compliance is requested prior to actual establishment of permanent vegetation. Up to 50% reduction in rates may be used when permanent vegetation is established prior to a report of compliance inspection. These rates apply to all methods of seeding. Establishing permanent vegetation means 80% vegetative coverage with the specified seed mixture for the seeded area and mowed once.
- (2) Warm season mixtures are grasses and legumes which maximize growth at high temperatures, generally 85F and above. See Table 4-3, mixtures 1 to 7. Planting rates for warm season grasses shall be the amount of Pure Live Seed (PLS) as determined by germination testing results.
- (3) Cool Season Mixtures are grasses and legumes which maximize growth at temperatures below 85F. Many grasses become active at 65F. See Table 3, mixtures 8-20. Adjustment of planting rates to compensate for the amount of Pure Live Seed (PLS) is not required for cool season grasses.
- B. Conventional Seeding is performed by applying seed uniformly by hand, cyclone (centrifugal) seeder, drop seeder, drill or cultipacker seeder. Except for drilled, hydroseeded or cultipacked seedings, seed shall be incorporated into the soil within 24 hours of seeding preparation to a depth of 1/4 to 1/2 inch, by raking or dragging. Depth of seed placement may be 1/4 inch deeper on coarse textured soil.
- C. After seeding, firming the soil with a corrugated roller will assure good seed-to-soil contact, restore capillary, and improve seeding emergence. This is the preferred method. When performed on the contour, sheet erosion will be minimized and water conservation on site will be maximized.

- D. Hydroseeding is a broadcast seeding method usually involving a truck or trailer mounted tank, with an agitation system and hydraulic pump for mixing seed, water and fertilizer and spraying the mix onto the prepared seedbed. Mulch shall not be included in the tank with seed. Short fibered mulch may be applied with a hydroseeder following seeding. (also see Section V Mulching) Hydroseeding is not a preferred seeding method because seed and fertilizer are applied to the surface and not incorporated into the soil. Poor seed to soil contact occurs reducing seed germination and growth. Hydroseeding may be used for areas too steep for conventional equipment to traverse or too obstructed with rocks, stumps, etc.
- MULCHING**
- Mulching is required on all seedings. Mulch will insure against erosion before grass is established and will promote faster and earlier establishment. The existence of vegetation sufficient to control soil erosion shall be deemed compliance with this mulching requirement.
- Straw or Hay. Unrotted small grain 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 crimp is used instead of a liquid mulch-binder (tackifying or adhesive agent), the rate of application is 3 tons per acre. Mulch choppers-blowers must cut and grind the mulch. Hay mulch is not recommended for establishing fine turf or lawns due to the presence of weed seed.
- Application. Spread mulch uniformly by hand or mechanically so that approximately 85% of the soil surface will be covered. For uniform distribution of hand-spread mulch, divide area into approximately 1,000 square foot sections and distribute 70 to 90 pounds within each section.
- Anchoring shall be accomplished immediately after placement to minimize loss by wind or water. This may be done by one of the following methods, depending upon the size of the area, steepness of slopes, and costs.
- 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 turns.
- Mulch Nettings. Staple paper, jute, cotton, or plastic nettings to the soil surface. Use a degradable netting in areas to be mowed.
- Crimper (mulch anchoring cutter 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 agent is required.

- Liquid Mulch-Binders. May be used to anchor salt hay, hay or straw mulch.
- a. Applications should be heavier at edges where wind may catch the mulch, in valleys, and at crests of banks. The remainder of the area should be uniform in appearance.
- Use one of the following:
- (1) Organic and Vegetable Based Binders - Naturally occurring, powder based, hydrophilic materials when with water formulates a gel and when applied to mulch under satisfactory curing conditions will form membrane networks of insoluble polymers. The vegetable gel shall be physiologically harmless and not result in a phytotoxic effect or impede growth of turf-grass. Use at rates and weather conditions as recommended by the manufacturer to anchor mulch materials. Many new products are available, some of which may need further evaluation for use in this state.
- (2) Synthetic Binders - High polymer synthetic emulsion, miscible with water when diluted and following application to mulch, drying and curing shall no longer be soluble or dispersible in water. It shall be applied at rates recommended by the manufacturer and remain tacky until germination of grass.
- Note: All names given above are registered trade names. This does not constitute a recommendation of these products to the exclusion of other products.

- Wood-fiber or paper-fiber mulch. Shall be made from wood, plant fibers or paper containing no growth or germination inhibiting materials, used at the rate of 1,500 pounds per acre (or as recommended by the product manufacturer) and may be applied by a hydroseeder. This mulch shall not be mixed in the tank with seed. Use is limited to flatter slopes and during optimum seeding periods in spring and fall.
- Pelletized mulch. Compressed and extruded paper and/or wood fiber product, which may contain co-polymers, tackifiers, fertilizers and coloring agents. The dry pellets, when applied to a seeded area and watered, form a mulch mat. Pelletized mulch shall be applied in accordance with the manufacturer's recommendations. Mulch may be applied by hand or mechanical spreader at the rate of 60-75 lbs./1,000 square feet and activated with 0.2 to 0.4 inches of water. This material has been found to be beneficial for use on small lawn or renovation areas, seeded areas where weed-seed free mulch is desired or on sites where straw mulch and tackifier agent are not practical or desirable. Applying the full 0.2 to 0.4 inches of water after spreading pelletized mulch on the seed bed is extremely important for sufficient activation and expansion of the mulch to provide soil coverage.

- IRRIGATION (where feasible)**
- If soil moisture is deficient, and mulch is not used, apply new seedings with adequate water (a minimum of 1/4 inch twice a day until vegetation is well established). This is especially true when seedlings are made in abnormally dry or hot weather or on droughty sites.
- TOPDRESSING**
- Since soil organic matter content and slow fertilizer (water insoluble) are prescribed in Section 2A. Seeded Preparation in this Standard, no follow-up of topdressing is mandatory. An exception may be made where gross nitrogen deficiency exists to the extent that turf failure may develop. In that instance, topdress with 10 to 20 pounds per acre of 300 pounds per acre or 7 pounds per 1,000 square feet every 3 to 5 weeks until the gross until the gross nitrogen deficiency in the turf is ameliorated.

ESTABLISHING PERMANENT VEGETATIVE STABILIZATION

The quality of permanent vegetation rests with the contractor. The timing of seeding, preparing the seedbed, applying nutrients, mulch and other management are essential. The seed application rates in Table 4-3 are required when a Report of Compliance is requested prior to actual establishment of permanent vegetation. Up to 50% reduction in application rates may be used when permanent vegetation is established prior to a report of compliance inspection. These rates apply to all methods of seeding. Establishing permanent vegetation means 80% vegetative cover (of the seeded areas) and mowed once. Note this designation of mowed once does not guarantee the permanency of the turf should other maintenance factors be neglected or otherwise mismanaged.

TABLE 4-2 PERMANENT STABILIZATION MIXTURES FOR VARIOUS USES

Application	PLANTING MIXTURES BY SOIL DRAINAGE CLASS ¹ (see Table 4-3)		
	Excessively Drained	Well to Moderately Well Drained	Somewhat Poorly to Poorly Drained
Residential/commercial lots	10, 12, 15	6, 10, 12, 13, 14, 15	16
Ponds and channel banks, dikes, berms, and dams	2, 5, 6, 10	5, 6, 7, 8, 9, 15	2, 8, 16, 17
Drainage ditches, swales, detention basins	2, 9, 11	2, 7, 9, 11, 12, 17	2, 9, 16, 17
Filter Strips	12	11, 12	11, 12
Grasses waterway, spillways	2, 3, 9, 10, 12	6, 7, 9, 10, 11, 12	2, 9, 11, 12
Recreation areas, athletic fields	5, 12, 15, 18	12, 13, 14, 15, 18	16
Seeds/Bottom Sites			
Slopes and banks, roadsides, borrow areas	2, 3, 6, 8	18	2, 9, 10, 11, 12
Sand and gravel pits, Sanitary landfills	1, 2, 3, 4, 6, 21	15, 20	2, 8
Dredged material, spoilbanks, borrow areas	2, 3, 6, 20	2, 3, 6, 11	2, 8
Streambanks & shorelines ²	2, 8, 20, 21a	2, 8, 19b, 20, 21a, 21b	2, 8, 19a, 21a,b,c,d
Utility rights-of-way	3, 7, 8, 10, 17	3, 7	8, 9, 17

1. Refer to Soil Surveys for drainage class descriptions.
2. Refer to Soil Bioengineering Standard for additional seed mixtures.
3. Spills only.
4. See Appendix E for description of turf grasses and cultivars.

TABLE 4-3 PERMANENT VEGETATIVE MIXTURES, PLANTING RATES AND PLANTING DATES¹

SEED MIXTURE ²	PLANTING RATE ³	PLANTING DATES			MAINTENANCE LEVEL ⁴	REMARKS
		PLANT HARDINESS ZONES (see Figure 4-1)				
		Zone 5b, 6a	Zone 6b	Zone 7a, 7b		
WARM SEASON SEED MIXTURES						
1. FIVE FINGERED OAK LEAF BLENDED MIXTURE (SEE TABLE 4.1 PG. 4.1 OF THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY)	15 .35				C-D	
2. COASTAL PANICGRASS OR FLATPEA	15 .35					
3. SWITCHGRASS	10 .25					
4. BLUESTEM BERMUDAGRASS	10 .25					
5. BERMUDAGRASS (SEED)	15 .35				A-D	
6. BERMUDAGRASS (SPRIG)	30 .70					
COOL SEASON SEED MIXTURES						
7. FINE FINGERED OAK LEAF BLENDED MIXTURE (SEE TABLE 4.1 PG. 4.1 OF THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY)	45 .10				B-D	
8. CRIMPER (SEE TABLE 4.1 PG. 4.1 OF THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY)	10 .50					
9. CRIMPER (SEE TABLE 4.1 PG. 4.1 OF THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY)	5 .10					
10. STRONG GREENING RYE	130 .3				B-D	
11. STRONG GREENING RYE	50 .1					
12. STRONG GREENING RYE	20 .5					
13. STRONG GREENING RYE	10 .25					
14. STRONG GREENING RYE	5 .10					
15. TALL FESCUE (PURE TYPE)	30 .70				B-D	
16. TALL FESCUE (PURE TYPE)	30 .70					
17. TALL FESCUE (PURE TYPE)	25 .60					
18. DEERTONGUE OR HOLO PINE (ELMIAS)	20 .45				C-D	
19. DEERTONGUE OR HOLO PINE (ELMIAS)	15 .35					
20. DEERTONGUE OR HOLO PINE (ELMIAS)	10 .25					
21. TALL FESCUE (PURE TYPE)	265 .5				B-D	
22. TALL FESCUE (PURE TYPE)	5 .10					
23. TALL FESCUE (PURE TYPE)	45 .1				C-D	
24. TALL FESCUE (PURE TYPE)	22 .5					
25. TALL FESCUE (PURE TYPE)	10 .25					
26. TURF-TYPE BLENDED MIXTURE (CULTIVARS)	350 .8				C-D	
27. HARD FESCUE AND/OR BERMUDAGRASS (SEE TABLE 4.1 PG. 4.1 OF THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY)	175 .4				A-C	
28. HARD FESCUE AND/OR BERMUDAGRASS (SEE TABLE 4.1 PG. 4.1 OF THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY)	45 .1					
29. HARD FESCUE AND/OR BERMUDAGRASS (SEE TABLE 4.1 PG. 4.1 OF THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY)	20 .50				A-B	
30. HARD FESCUE AND/OR BERMUDAGRASS (SEE TABLE 4.1 PG. 4.1 OF THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY)	130 .3				C-D	
31. HARD FESCUE AND/OR BERMUDAGRASS (SEE TABLE 4.1 PG. 4.1 OF THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY)	45 .1					
32. HARD FESCUE AND/OR BERMUDAGRASS (SEE TABLE 4.1 PG. 4.1 OF THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY)	45 .1				B-D	
33. HARD FESCUE AND/OR BERMUDAGRASS (SEE TABLE 4.1 PG. 4.1 OF THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY)	45 .1					
34. HARD FESCUE AND/OR BERMUDAGRASS (SEE TABLE 4.1 PG. 4.1 OF THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY)	25 .60				C-D	
35. HARD FESCUE AND/OR BERMUDAGRASS (SEE TABLE 4.1 PG. 4.1 OF THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY)	12 .35					
36. TALL FESCUE (PURE TYPE)	veg				D	
37. TALL FESCUE (PURE TYPE)	veg	Before 7/1				
38. TALL FESCUE (PURE TYPE)	veg		Before 7/1			
39. TALL FESCUE (PURE TYPE)	veg			Before 4/1		
40. TALL FESCUE (PURE TYPE)	veg			Before 5/1		
41. PURPLE ROSE SHAW	veg				D	
42. PURPLE ROSE SHAW	veg					