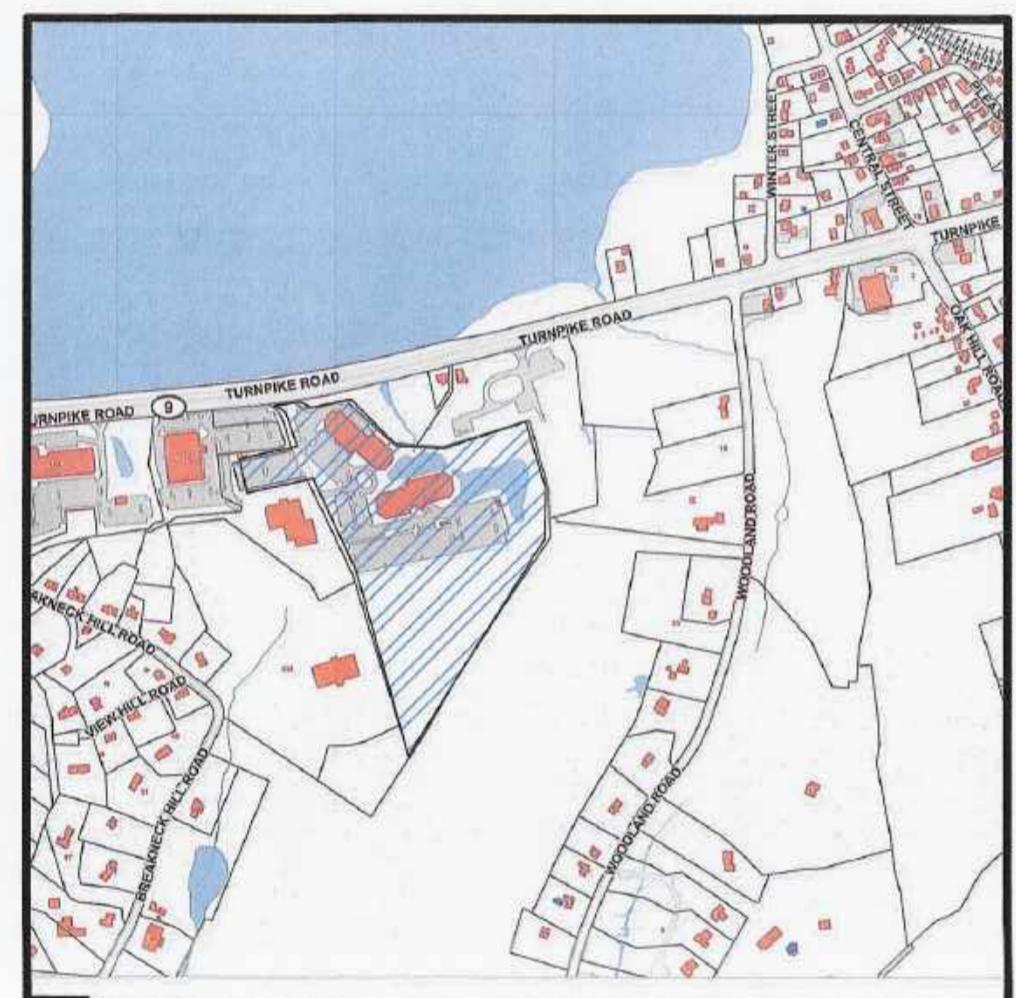


SITE PLAN OF LAND AT 120 TURNPIKE ROAD

IN
SOUTHBOROUGH, MASSACHUSETTS



LOCUS MAP

1" = 1,000'

ZONING COMPLIANCE TABLE

THE SITE IS LOCATED IN THE RESIDENTIAL ZONING DISTRICT. THE FOLLOWING TABLE COMPARES THE RESIDENTIAL ZONING REQUIREMENTS AND DIMENSIONS PROPOSED AT THIS SITE:

DIMENSION	REQUIREMENT	PROPOSED
MIN. LOT AREA	43,560	349,526 S.F.
MIN. FRONTAGE	150'	0'
MIN. FRONT YARD	35'	1,202(TO TURNPIKE RD)
MIN. SIDE YARD	25'	78'
MIN. REAR YARD	50'	30'
MAX. FLOOR AREA RATIO	0.18	0.24
MAX. BUILDING HEIGHT	35'	43.5'

PROPOSED SCOPE:

RESIDENTIAL:	
ONE BEDROOM FLATS:	37
TWO BEDROOM FLATS:	17
THREE BEDROOM FLATS:	6
TOTAL UNITS:	60
TOTAL BEDROOMS:	89

OFF-STREET PARKING:	
PARKING SPACES PROVIDED - RESIDENTIAL	114
PARKING SPACES PROVIDED	
GARAGES	20
SURFACE SPACES	94

TOTAL:	114
HC SPACES REQUIRED:	5

HC SPACES PROVIDED: 5 (ALL VAN ACCESSIBLE)

UNIT SUMMARY						
STYLE	BEDROOMS	BATHROOMS	AREA(S.F.)	DISTRIBUTION BY AREA	NUMBER	DISTRIBUTION BY TYPE
UNIT A	1	1	915	53.1%	37	61.7%
UNIT B	2	2	1,178	5.5%	3	5.0%
UNIT C	2	2	1,273	16.0%	8	13.3%
UNIT D	2	2	1,292	6.1%	3	5.0%
UNIT E	2	2	1,346	6.3%	3	5.0%
UNIT F	3	2	1,355	6.4%	3	5.0%
UNIT G	3	2	1,386	6.5%	3	5.0%
TOTAL	89	83	63,710	--	60	--

OWNER & APPLICANT:

FD 120 TURNPIKE, LLC
118 TURNPIKE ROAD, SUITE 300
SOUTHBOROUGH, MASSACHUSETTS 01772

CLIENT NUMBER: 502
JOB NUMBER: 245-502
DRAWING : 250TURNPIKECURRENT.dwg

PREPARED BY

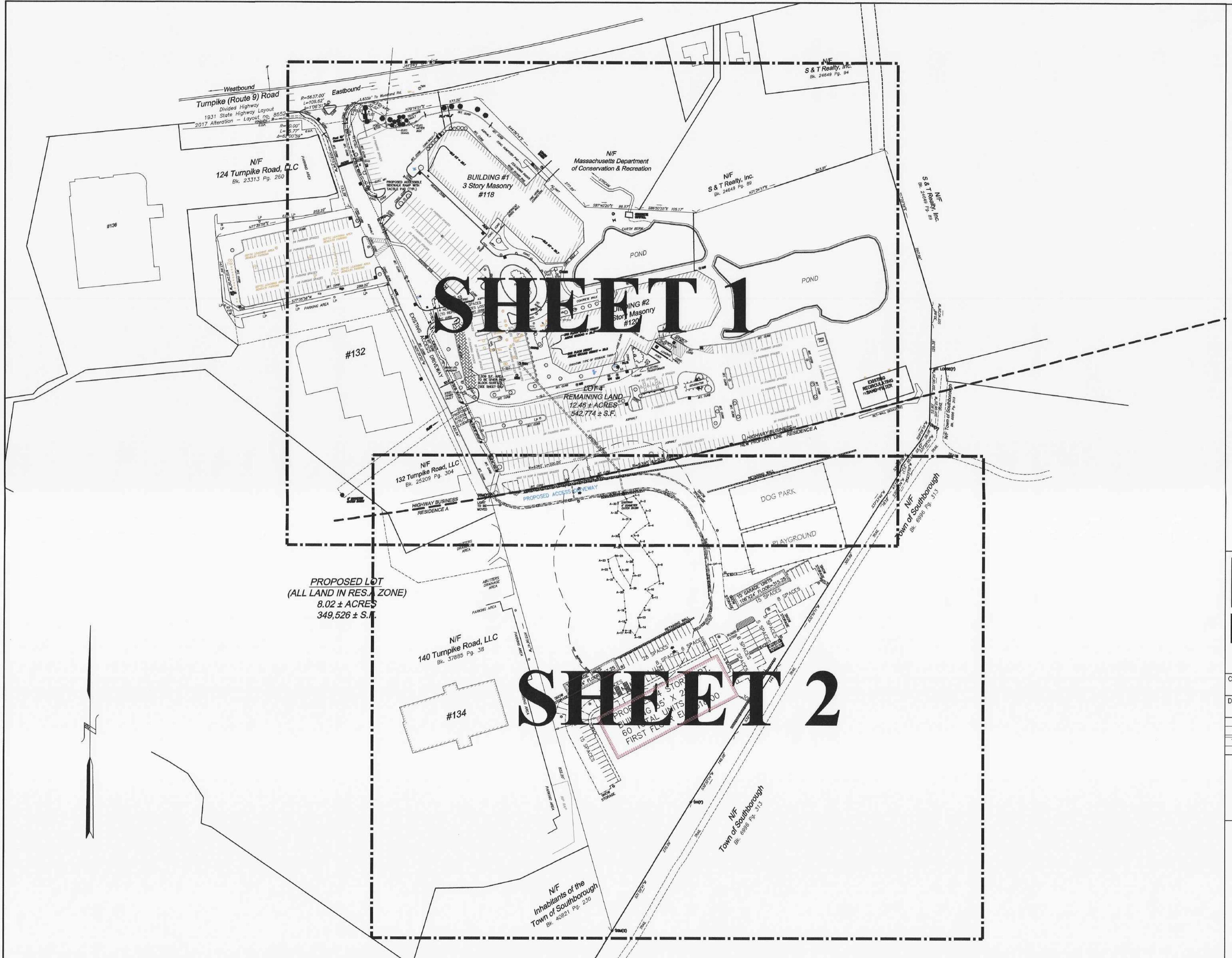
AZIMUTH LAND DESIGN, LLC
118 TURNPIKE ROAD, SUITE 200
SOUTHBOROUGH, MASSACHUSETTS 01772
TELEPHONE (508) 485-0137
EMAIL: jamest@azimuthlanddesign.co

COMPREHENSIVE PERMIT PLAN APPROVED BY
THE SOUTHBOROUGH ZONING BOARD OF
APPEALS ON _____

SHEET DIRECTORY

TITLE SHEET	(THIS SHEET)
KEY SHEET	
EXISTING CONDITIONS PLAN	E1 - E2
SITE LAYOUT PLAN	S1 - S2
GRADING & DRAINAGE PLAN	G1 - G2
UTILITY PLAN	U1 - U2
EROSION & SEDIMENTATION CONTROL PLAN	ESC1 - ESC2
PLAN AND PROFILE OF DRIVEWAY	P1
LANDSCAPING & LIGHTING PLANS (UNCHANGED)	LS1 - LS2
DETAIL SHEETS	D1 - D5





COMPREHENSIVE PERMIT PLAN APPROVED BY
THE SOUTHBOROUGH ZONING BOARD OF
APPEALS ON _____.



SITE PLAN OF LAND

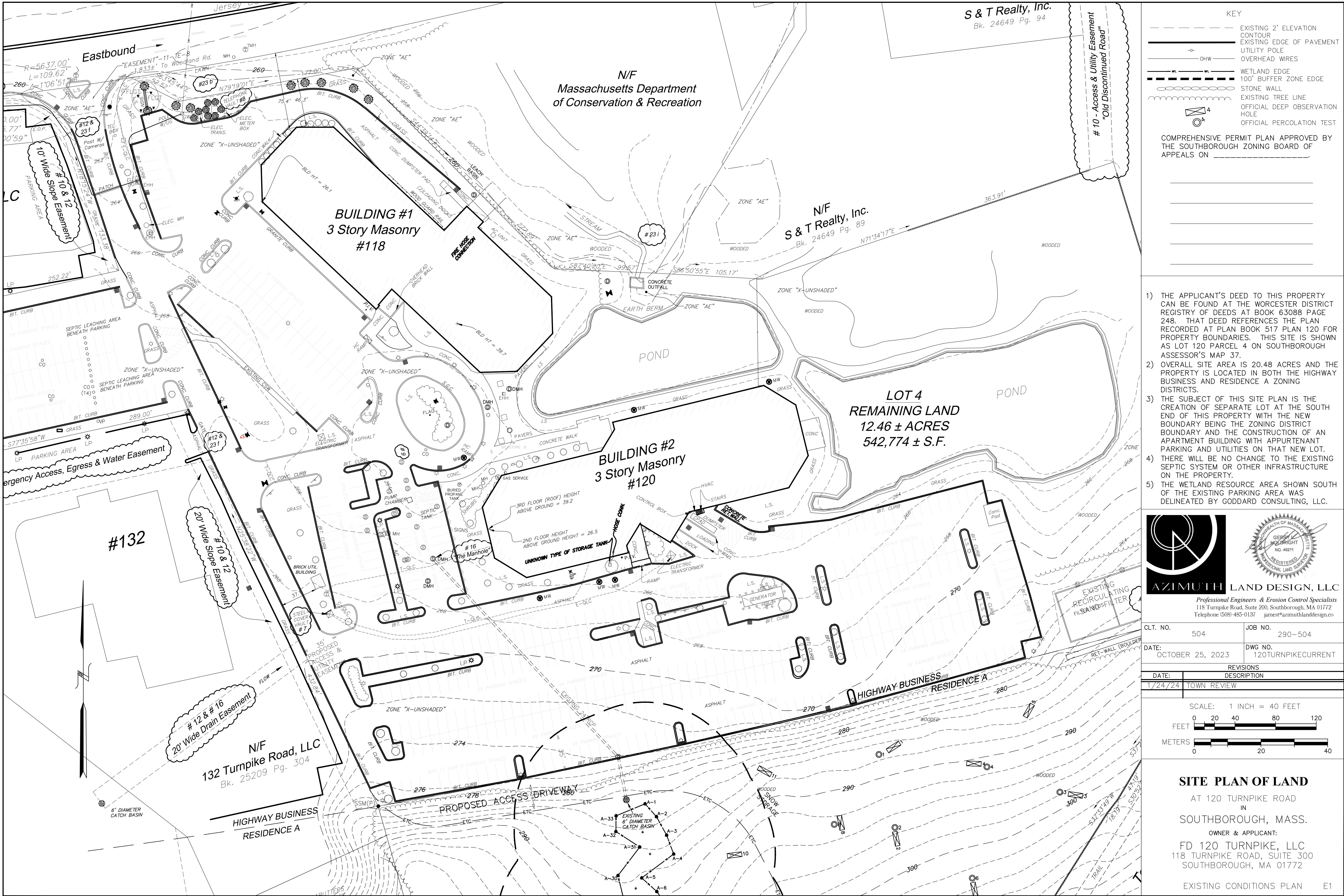
AT 120 TURNPIKE ROAD

IN

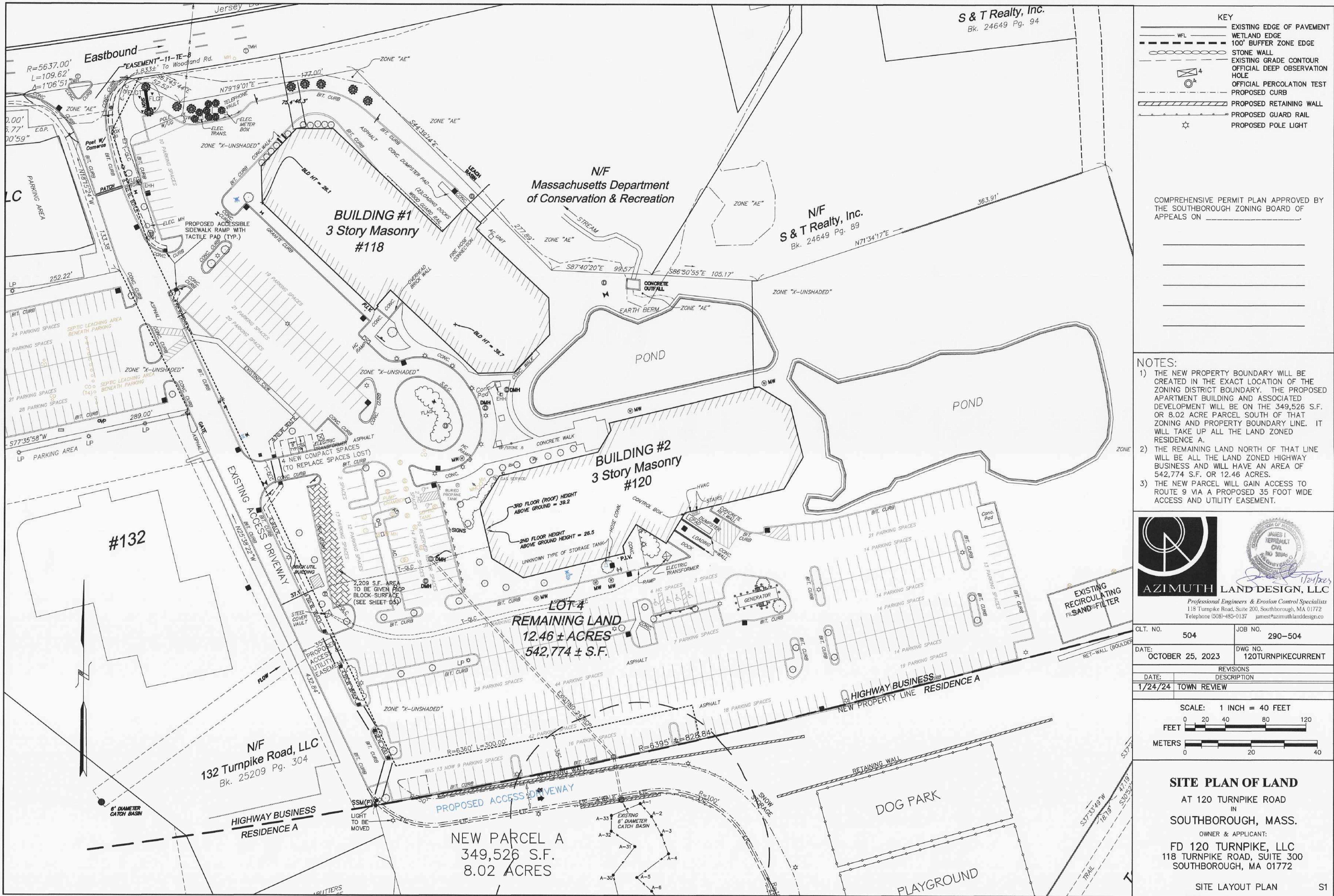
THBOROUGH, M

OWNER & APPLICANT:
FD 120 TURNPIKE, LLC
118 TURNPIKE ROAD, SUITE 300
SOUTHBOROUGH MA 01772

KEY SHEET







COMPREHENSIVE PERMIT PLAN APPROVED BY
THE SOUTHBOROUGH ZONING BOARD OF
APPEALS ON _____.

NOTES:

- 1) THE NEW PROPERTY BOUNDARY WILL BE CREATED IN THE EXACT LOCATION OF THE ZONING DISTRICT BOUNDARY. THE PROPOSED APARTMENT BUILDING AND ASSOCIATED DEVELOPMENT WILL BE ON THE 349,526 S.F. OR 8.02 ACRE PARCEL SOUTH OF THAT ZONING AND PROPERTY BOUNDARY LINE. IT WILL TAKE UP ALL THE LAND ZONED RESIDENCE A.
- 2) THE REMAINING LAND NORTH OF THAT LINE WILL BE ALL THE LAND ZONED HIGHWAY BUSINESS AND WILL HAVE AN AREA OF 542,774 S.F. OR 12.46 ACRES.
- 3) THE NEW PARCEL WILL GAIN ACCESS TO ROUTE 9 VIA A PROPOSED 35 FOOT WIDE ACCESS AND UTILITY EASEMENT.



Professional Engineers & Erosion Control Specialists
118 Turnpike Road, Suite 200, Southborough, MA 01772
Telephone (508)-485-0137 jamest@azimuthlanddesign.co

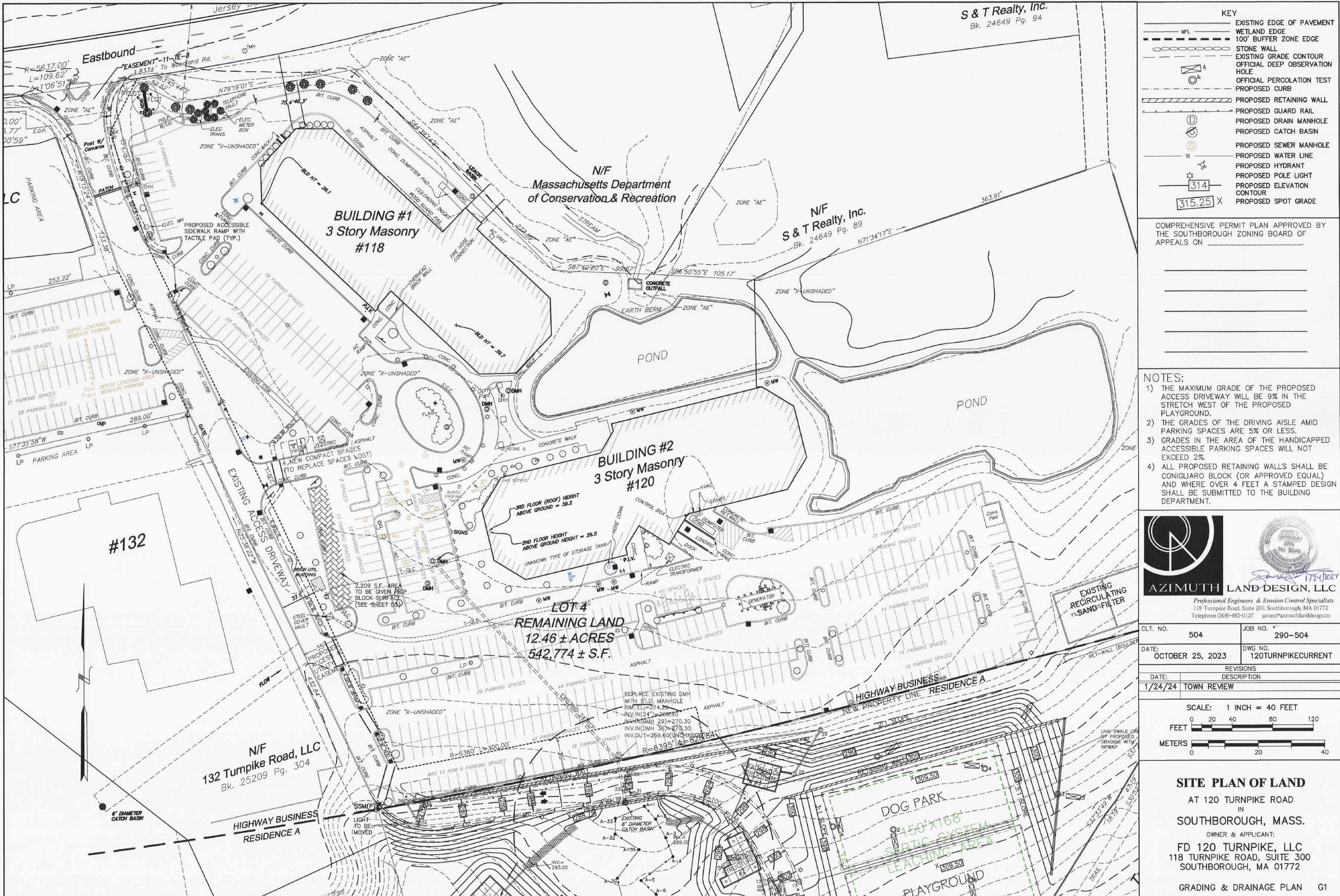
CLT. NO.	504	JOB NO.	290-504		
DATE:	OCTOBER 25, 2023	DWG NO.			
		120TURNPIKECURRENT			
REVISIONS					
DATE:	DESCRIPTION				
1/24/24	TOWN REVIEW				
SCALE: 1 INCH = 40 FEET					
FEET	0	20	40	80	120
METERS	0	20	30	40	50

SITE PLAN OF LAND

AT 120 TURNPIKE ROAD
IN
SOUTHBOROUGH, MASS.

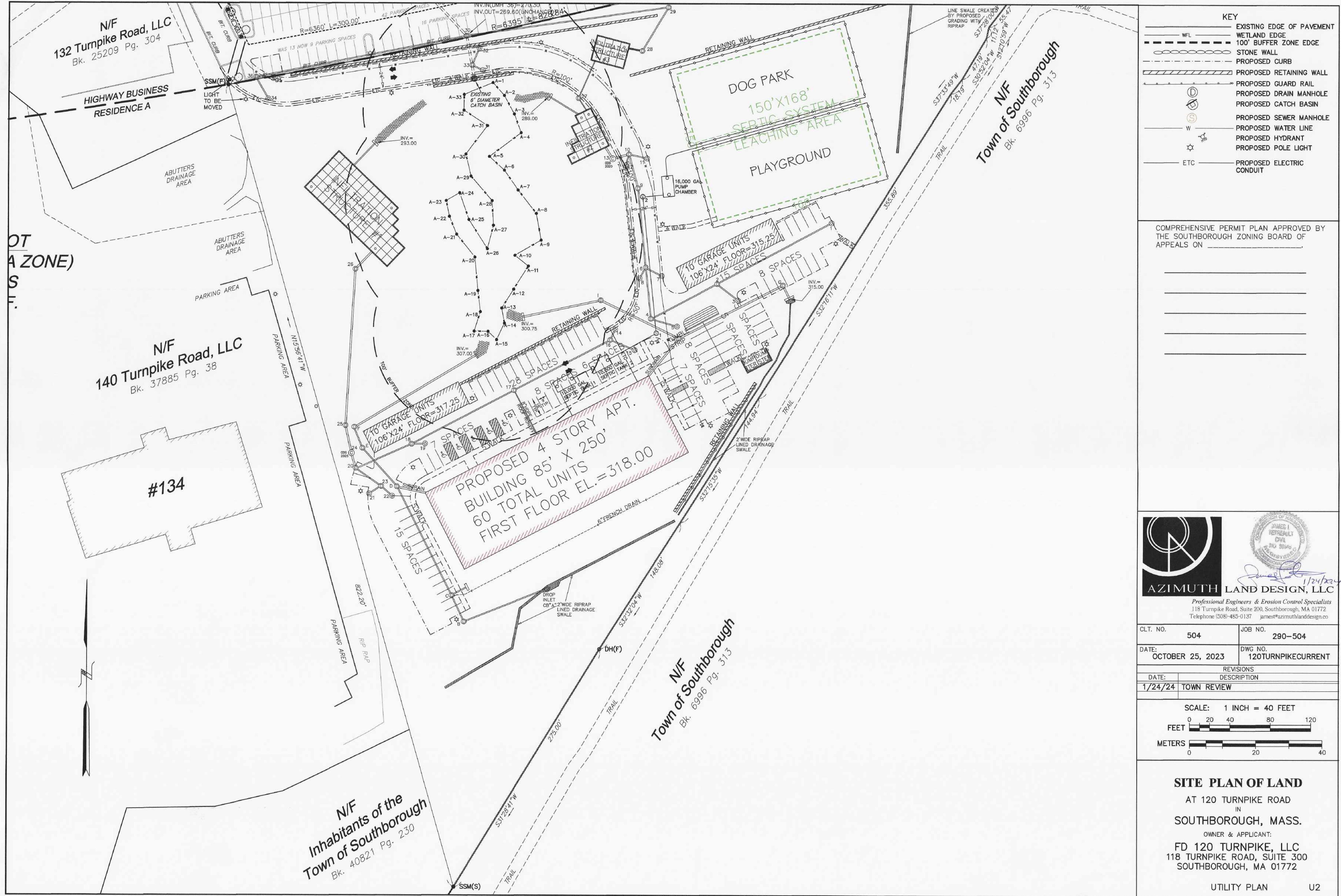
SOUTHBOROUGH, MASS.
OWNER & APPLICANT:
FD 120 TURNPIKE, LLC
118 TURNPIKE ROAD, SUITE 300
SOUTHBOROUGH, MA 01772

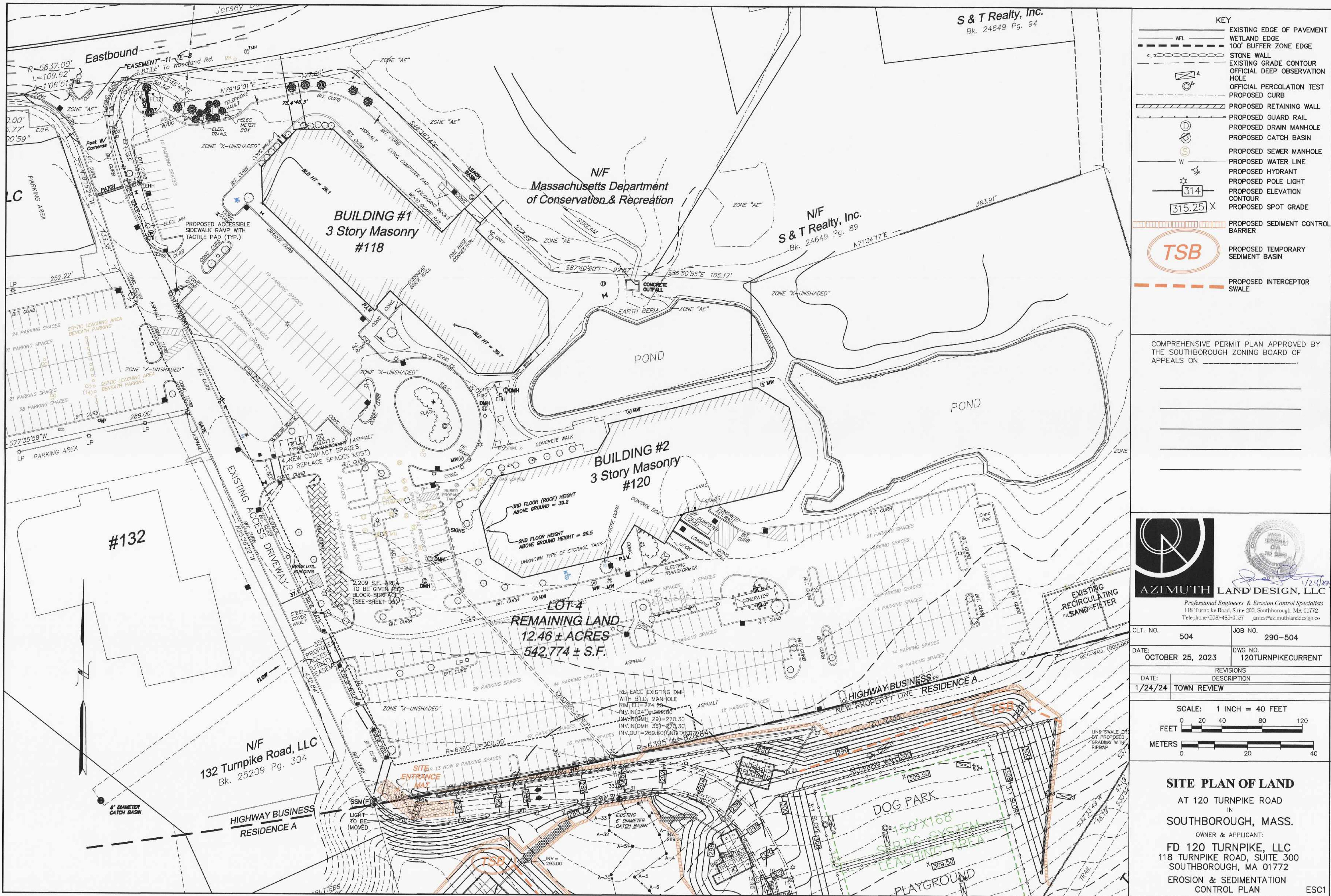




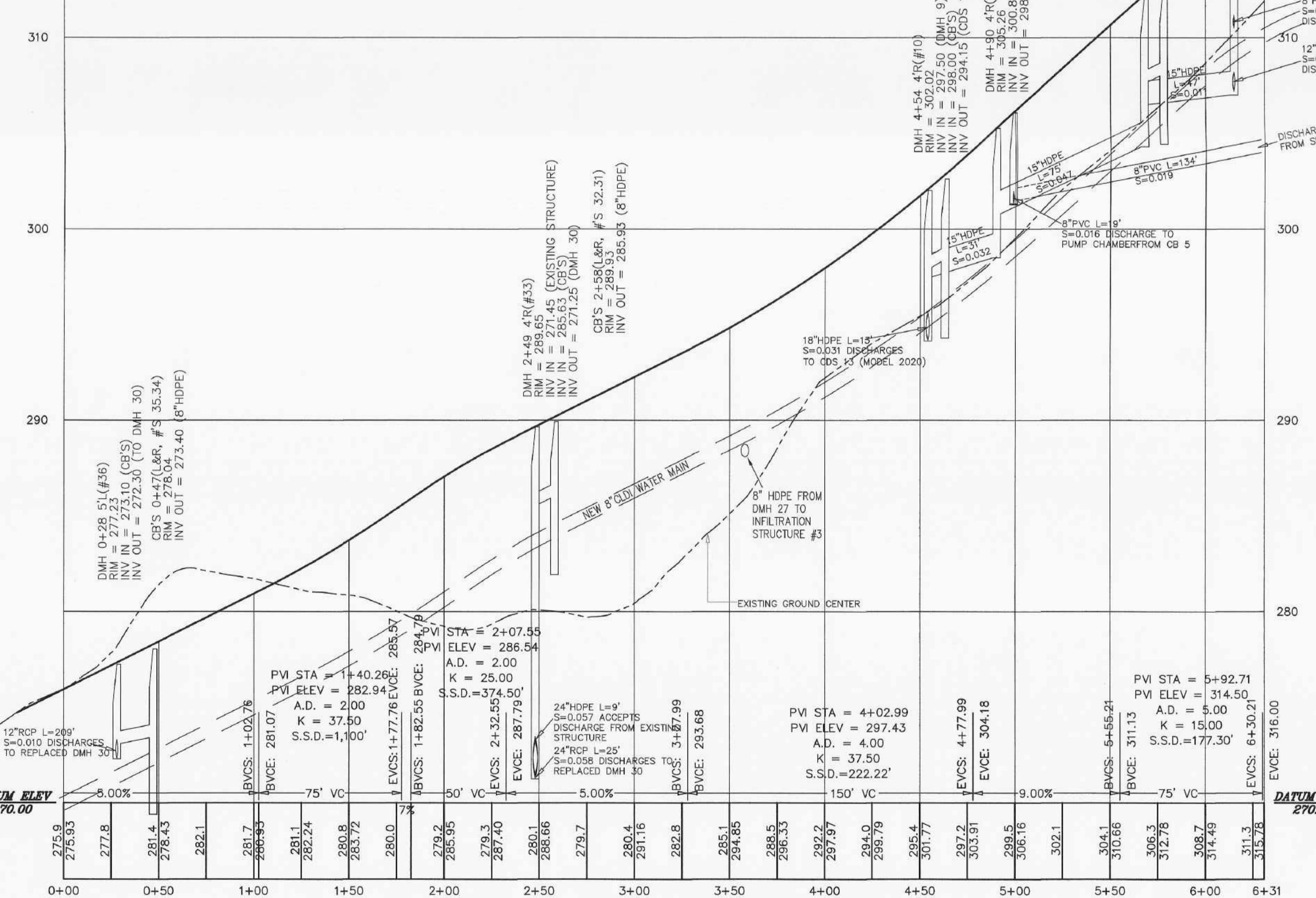
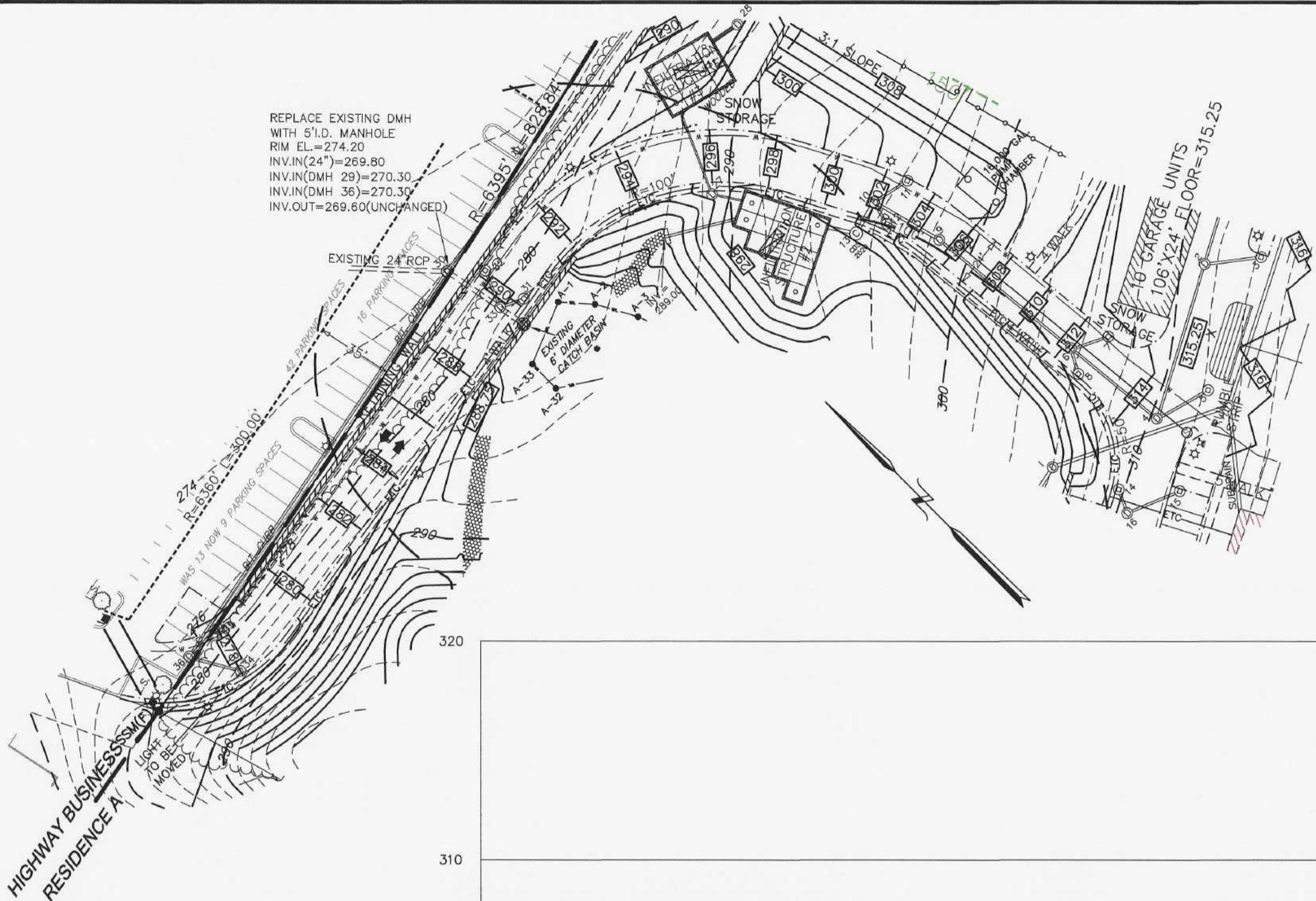




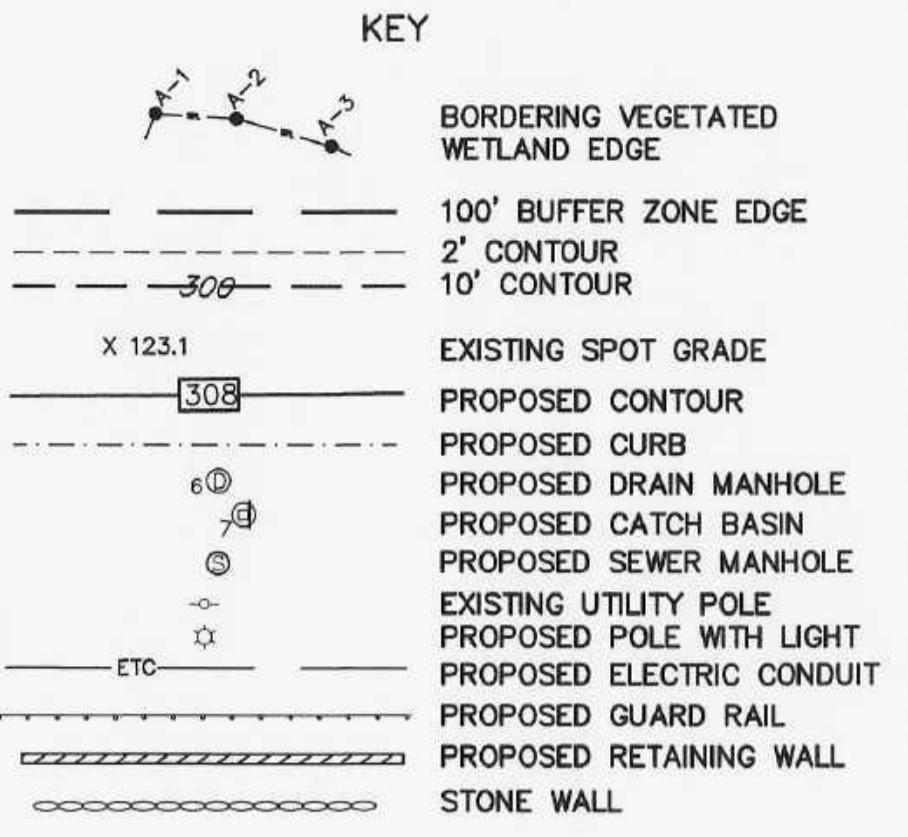








ACCESS DRIVEWAY



COMPREHENSIVE PERMIT PLAN APPROVED BY
THE SOUTHBOROUGH ZONING BOARD OF
APPEALS ON _____



Professional Engineers & Erosion Control Specialists
118 Turnpike Road, Suite 200, Southborough, MA 01772
Telephone (508) 485-0137 azimuthlanddesign.co

CLT. NO. 502 JOB NO. 245-502
DATE: JANUARY 24, 2024 DWG. NO. 120TURNPIKECURRENT

REVISIONS
DATE: DESCRIPTION

HORIZONTAL SCALE: 1 INCH = 40 FEET
VERTICAL SCALE: 1 INCH = 4 FEET
0 10 20 40 1 80 120
FEET METERS
0 5 10 20 30 40

SITE PLAN OF LAND

AT 120 TURNPIKE ROAD

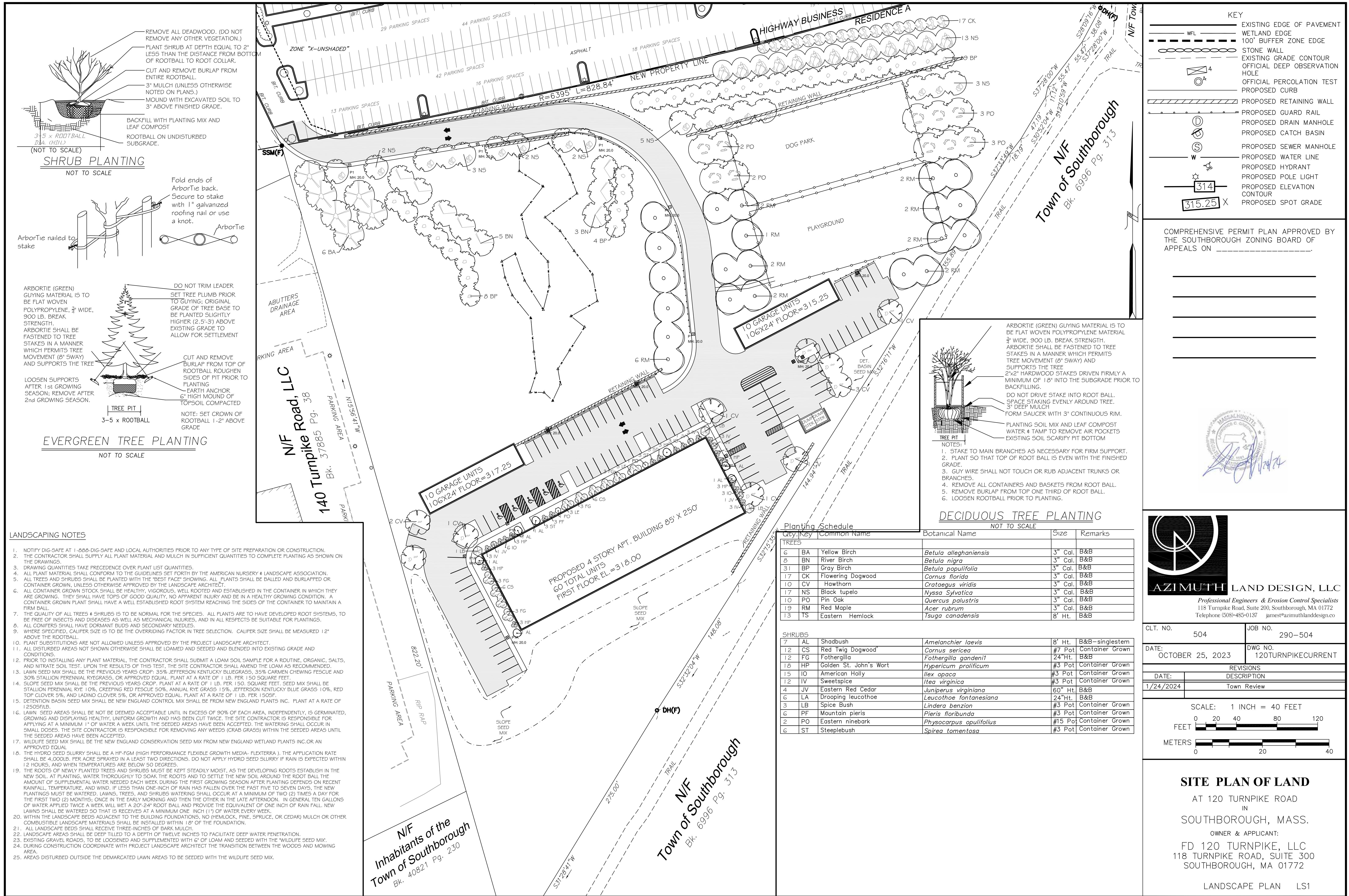
IN

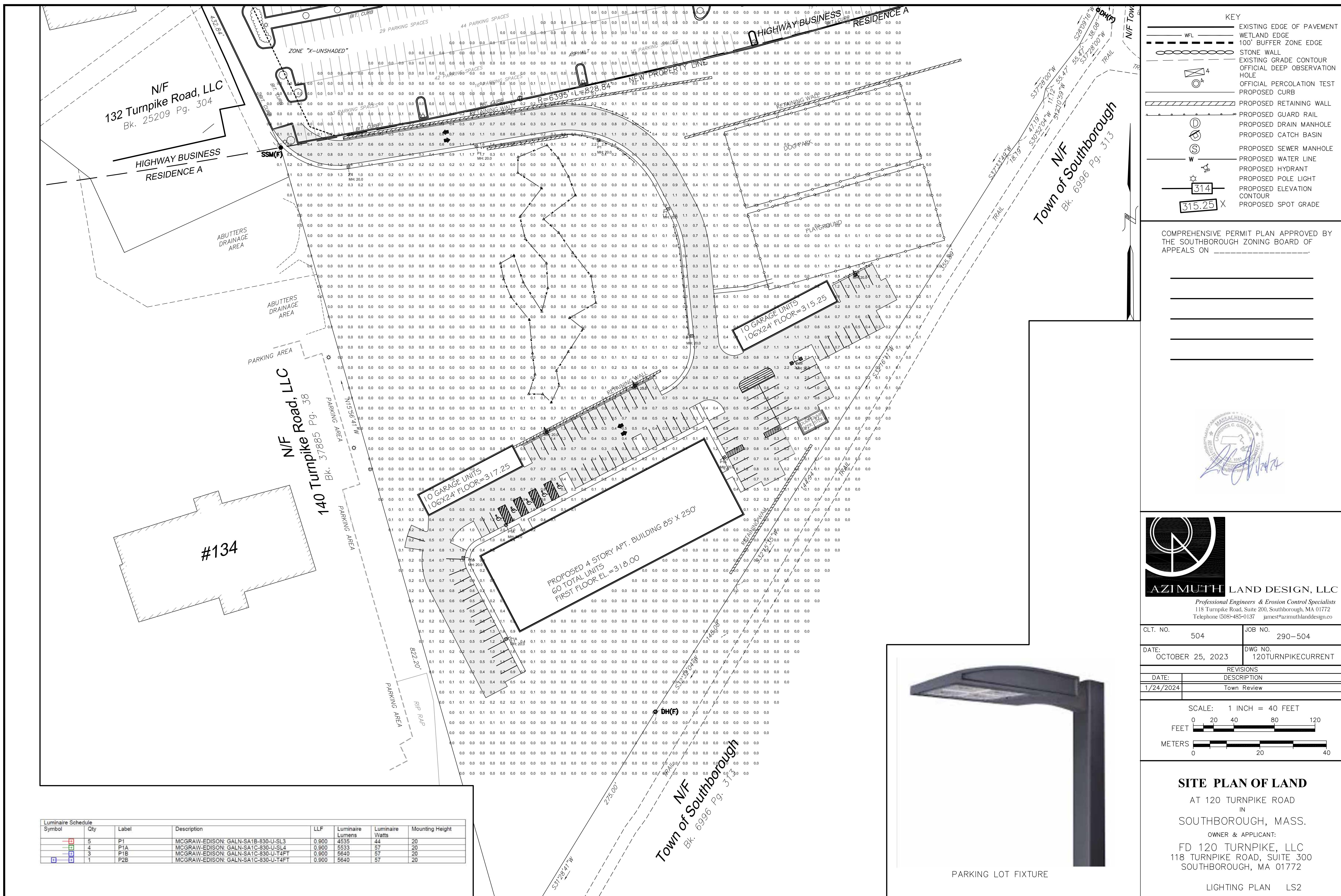
SOUTHBOROUGH, MASS.

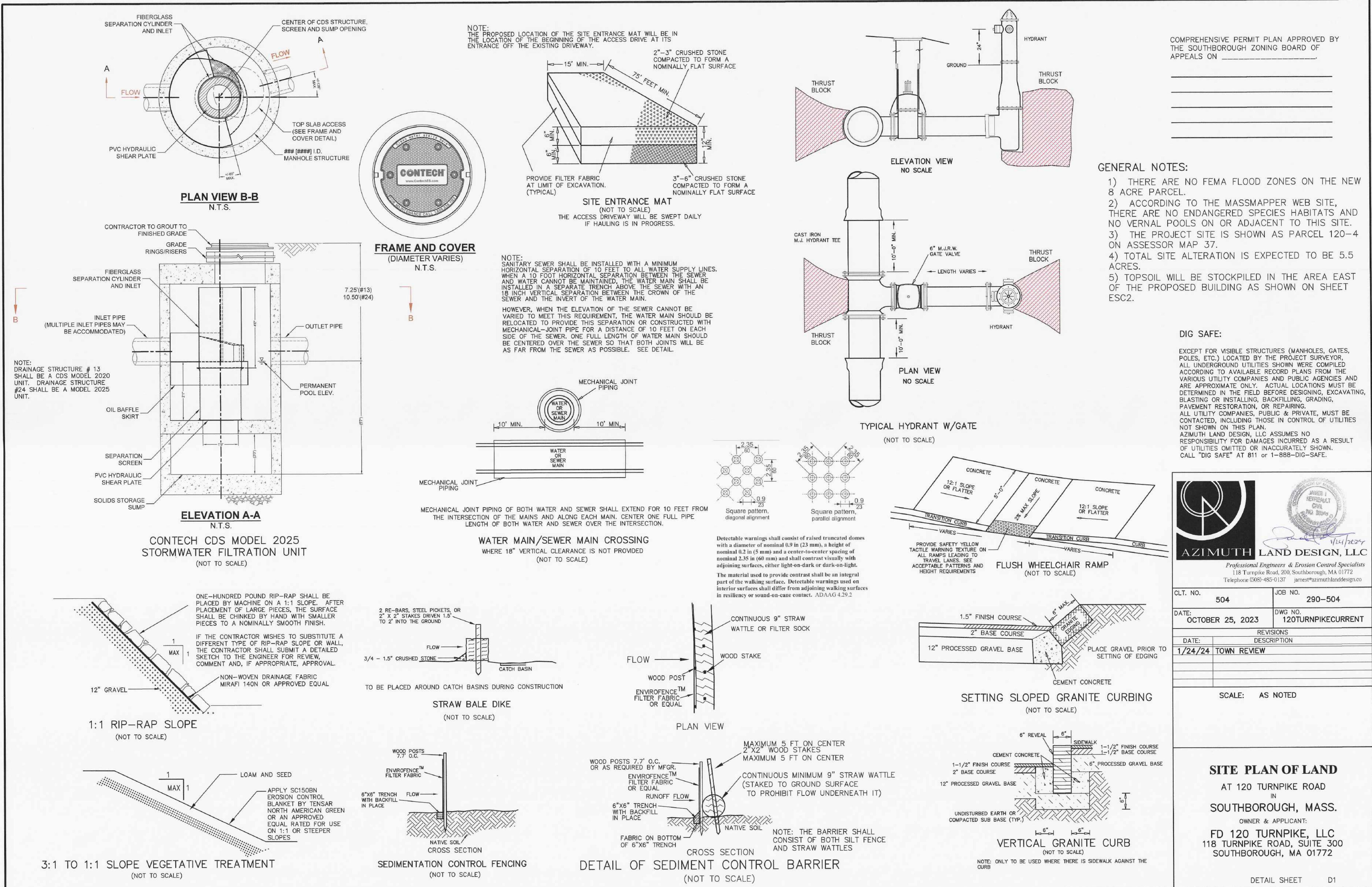
OWNER & APPLICANT:

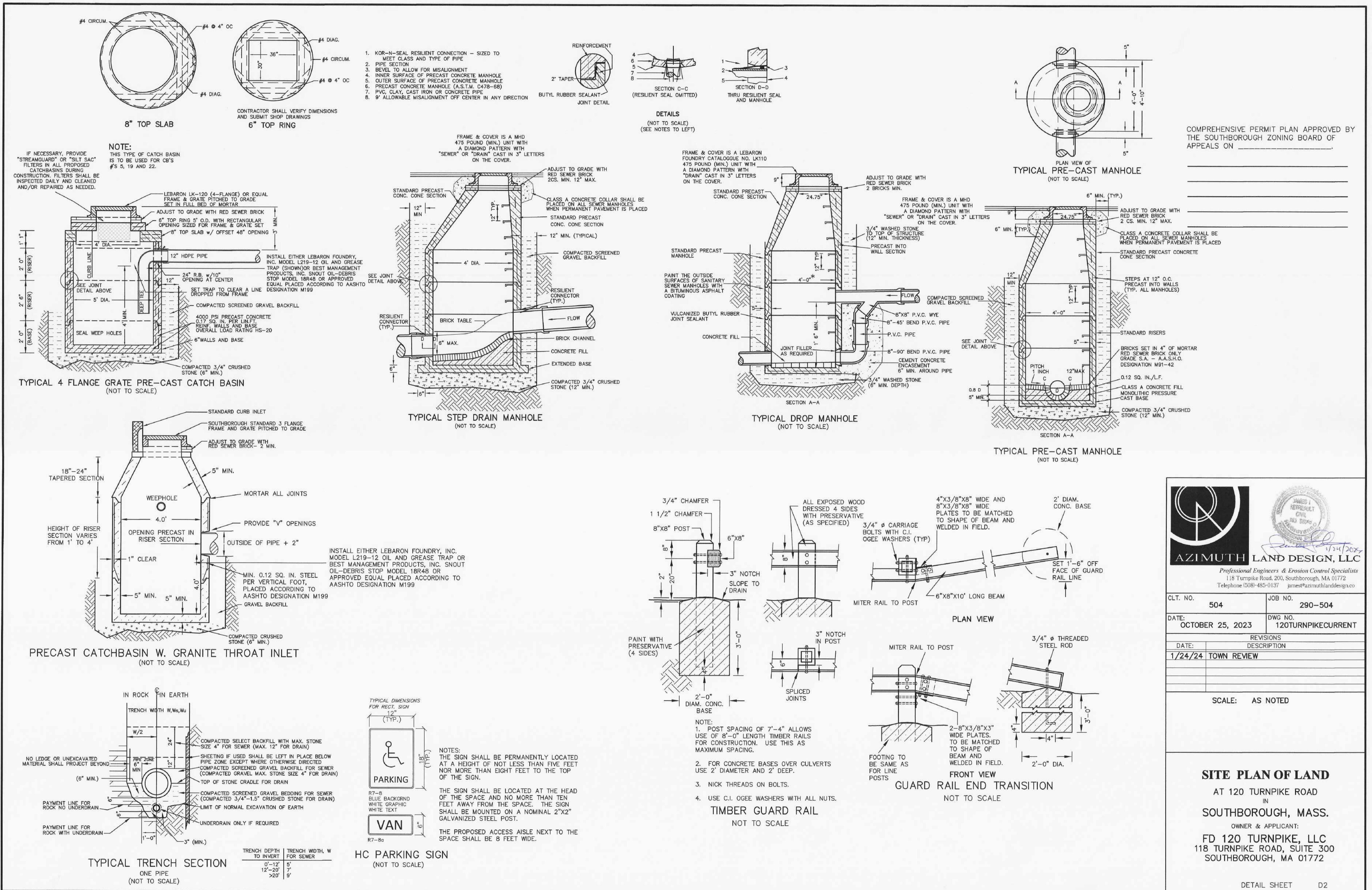
FD 120 TURNPIKE, LLC
118 TURNPIKE ROAD, SUITE 300
SOUTHBOROUGH, MA 01772

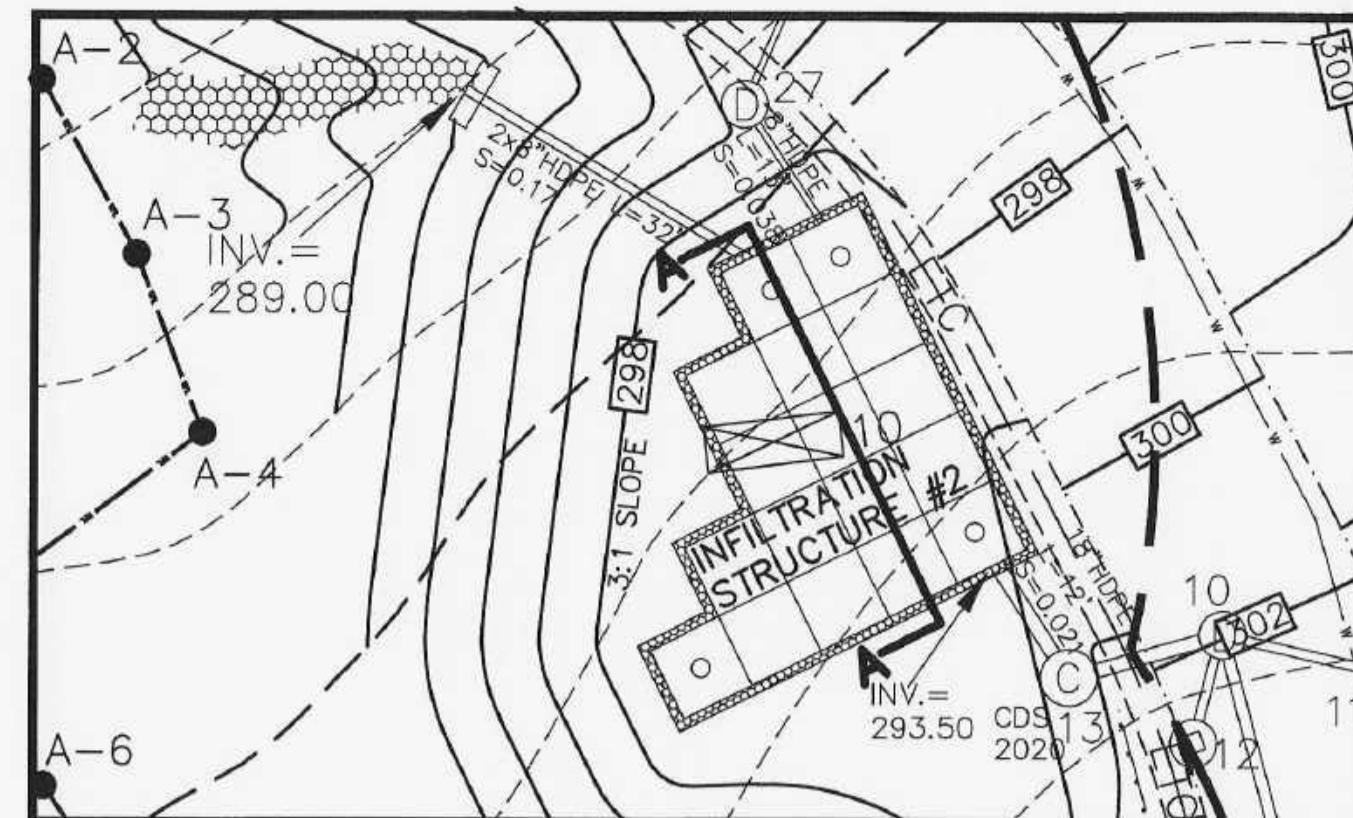
PLAN AND PROFILE OF ACCESS DRIVEWAY
P1



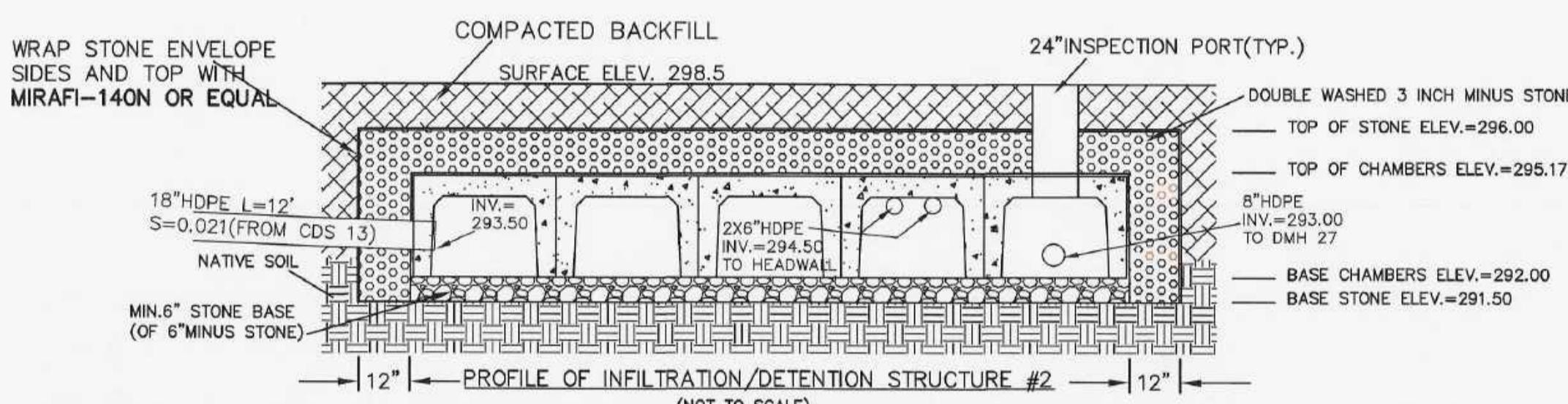








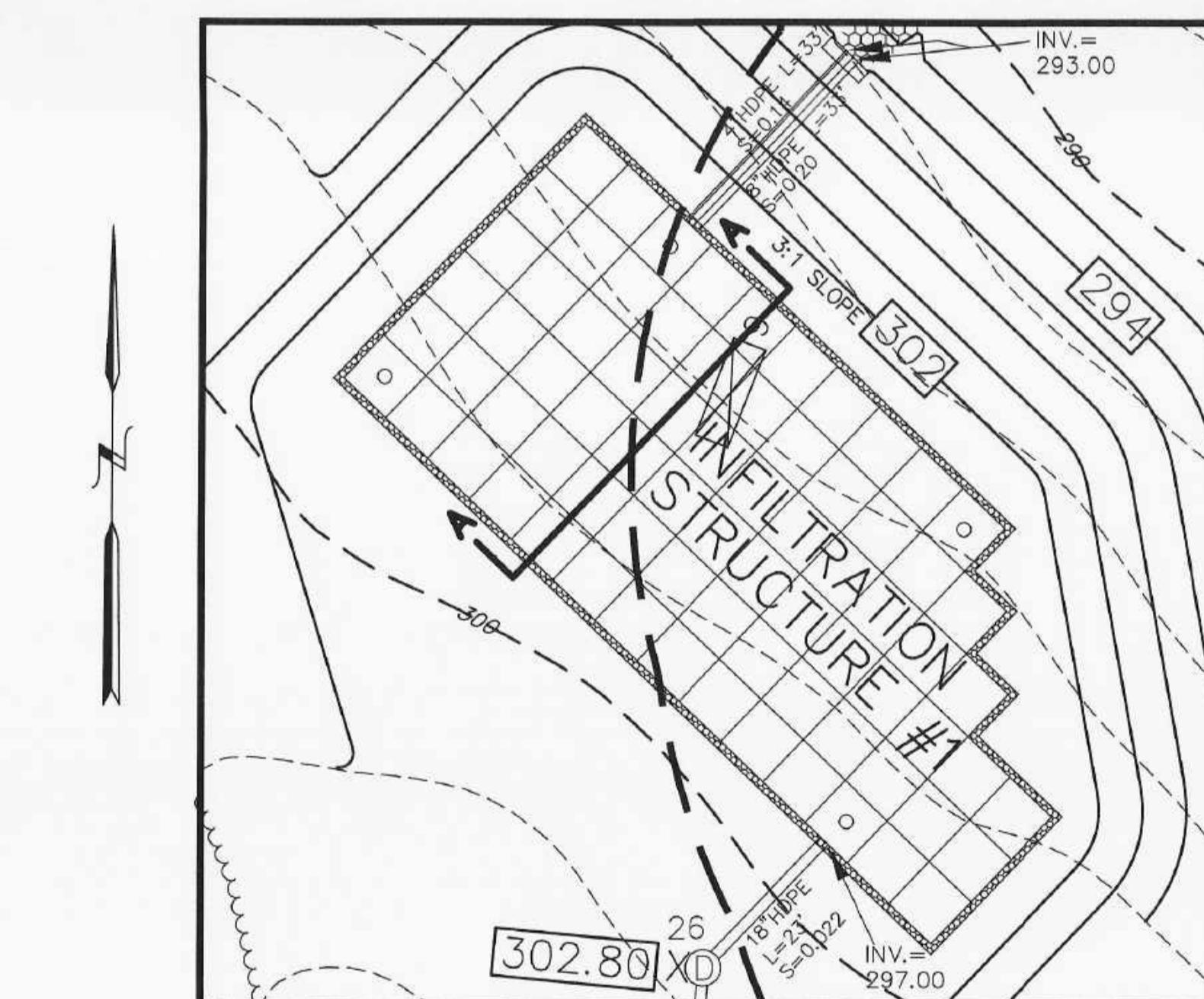
PLAN VIEW OF INFILTRATION STRUCTURE #2
(SCALE: 1" = 20')



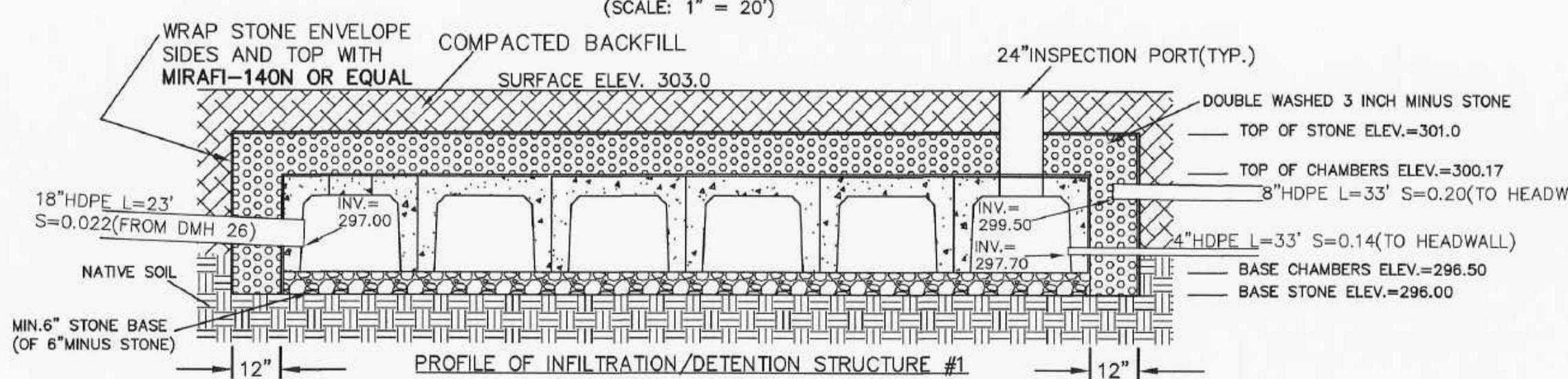
DETENTION/INFILTRATION STRUCTURE 2 SHALL CONSIST OF 17 8'x8'x3' HIGH RETAIN-IT CONCRETE MODULES (36"INSIDE HEIGHT, 44"TOP OF MODULE HEIGHT) WITHIN A STONE ENVELOPE 4.5 FEET HIGH AND HAVING A POLYGON SHAPED FOOTPRINT OF 1,252 SQUARE FEET.

THE UNITS SHALL BE OPEN BOTTOMED EXCEPT FOR THE MODULE AT THE POINT WHERE FLOW IS DISCHARGED INTO THE STRUCTURE, WHICH SHALL HAVE A FLOOR TO ALLOW FOR POSSIBLE ADDITIONAL CLEANOUT. THERE SHALL BE 6 INCHES OF STONE BEHIND THE MODULES AND 12 INCHES OF STONE OUTSIDE OF THEM.

ALL TOPSOIL("A" HORIZON SOIL) AND SUBSOIL("B" HORIZON SOIL) SHALL BE REMOVED FROM BEHIND THE STONE ENVELOPE AND ANY OTHER DELETERIOUS MATERIAL. ADDITIONAL STONE BASE SHALL BE PLACED BEHIND THE CHAMBERS TO REPLACE SUCH MATERIAL. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO AVOID COMPACTING THE SOIL WITHIN THE FOOTPRINT OF THE INFILTRATION STRUCTURE IN THE COURSE OF CONSTRUCTION.



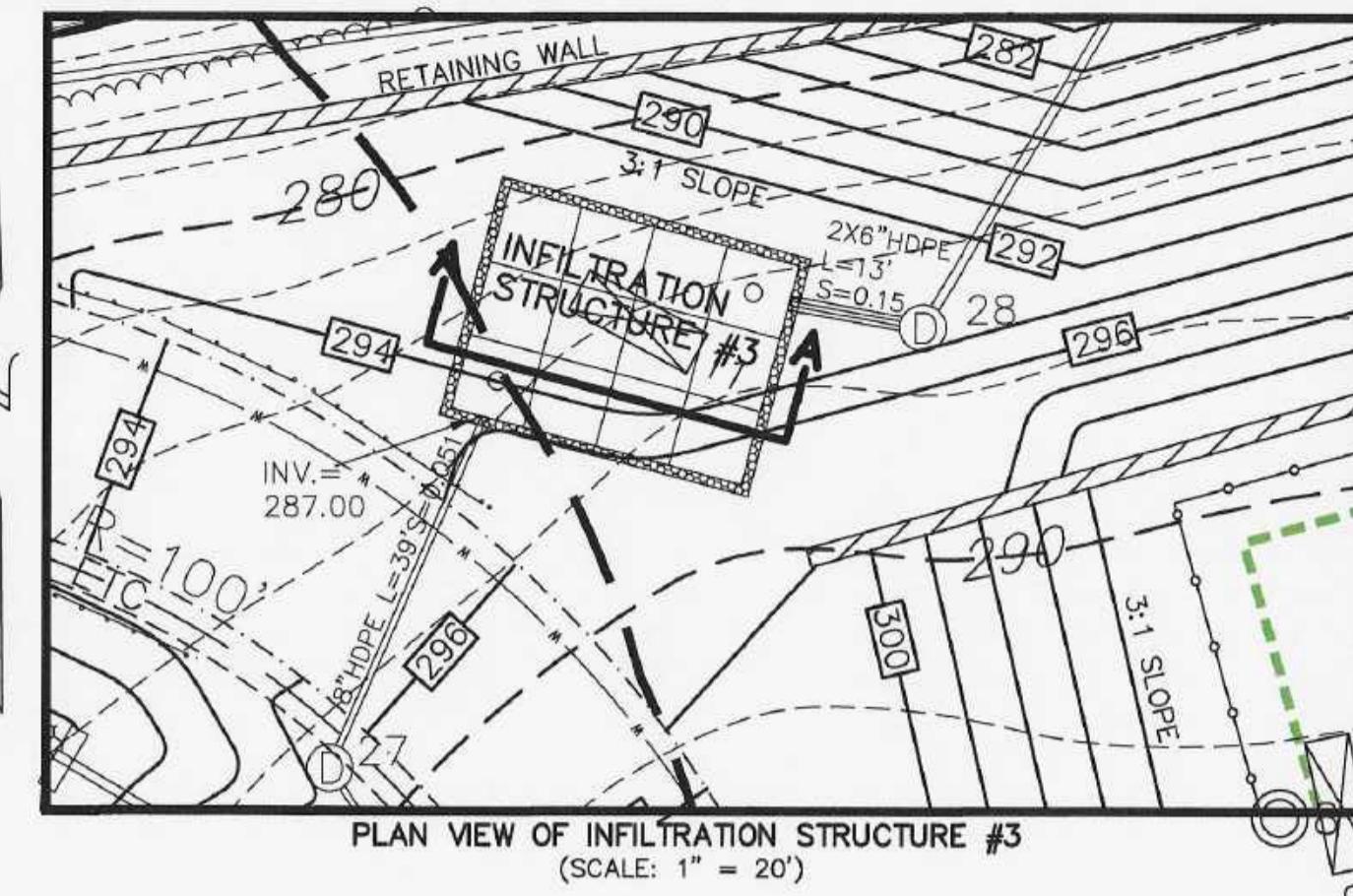
PLAN VIEW OF INFILTRATION STRUCTURE #1
(SCALE: 1" = 20')



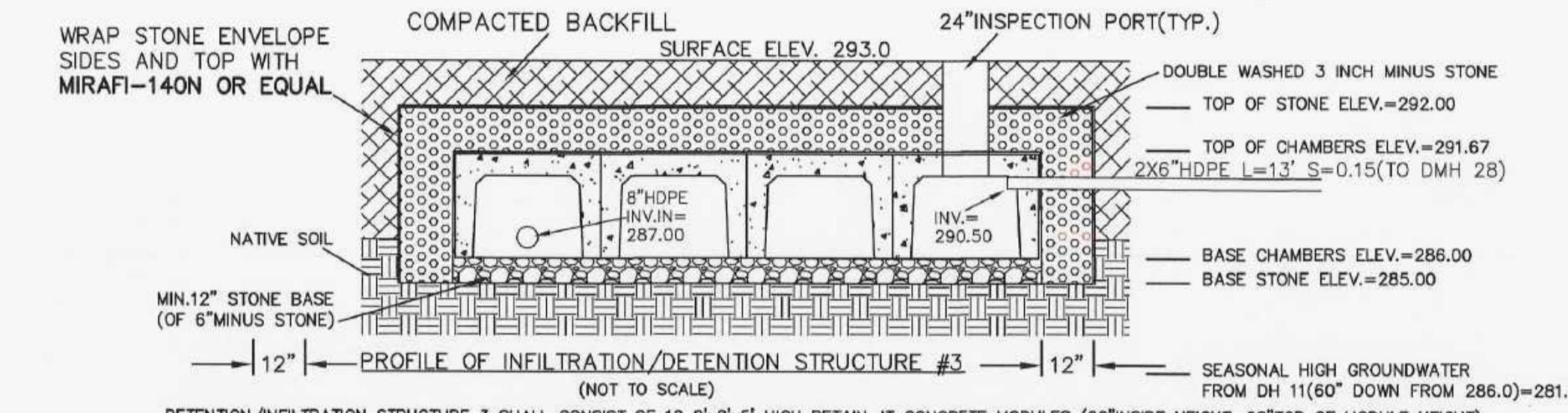
DETENTION/INFILTRATION STRUCTURE #1 SHALL CONSIST OF 75 8'x8'x3' HIGH RETAIN-IT CONCRETE MODULES (36"INSIDE HEIGHT, 44"TOP OF MODULE HEIGHT) WITHIN A STONE ENVELOPE 5 FEET HIGH AND HAVING A POLYGON SHAPED FOOTPRINT OF 5,124 SQUARE FEET.

THE UNITS SHALL BE OPEN BOTTOMED EXCEPT FOR THE MODULE AT THE POINT WHERE FLOW IS DISCHARGED INTO THE STRUCTURE, WHICH SHALL HAVE A FLOOR TO ALLOW FOR POSSIBLE ADDITIONAL CLEANOUT. THERE SHALL BE 6 INCHES OF STONE BEHIND THE MODULES AND 12 INCHES OF STONE OUTSIDE OF THEM.

ALL TOPSOIL("A" HORIZON SOIL) AND SUBSOIL("B" HORIZON SOIL) SHALL BE REMOVED FROM BEHIND THE STONE ENVELOPE AND ANY OTHER DELETERIOUS MATERIAL. ADDITIONAL STONE BASE SHALL BE PLACED BEHIND THE CHAMBERS TO REPLACE SUCH MATERIAL. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO AVOID COMPACTING THE SOIL WITHIN THE FOOTPRINT OF THE INFILTRATION STRUCTURE IN THE COURSE OF CONSTRUCTION.



PLAN VIEW OF INFILTRATION STRUCTURE #3
(SCALE: 1" = 20')



DETENTION/INFILTRATION STRUCTURE 3 SHALL CONSIST OF 12 8'x8'x3' HIGH RETAIN-IT CONCRETE MODULES (60"INSIDE HEIGHT, 68"TOP OF MODULE HEIGHT) WITHIN A STONE ENVELOPE 7 FEET HIGH AND HAVING A RECTANGULAR SHAPED FOOTPRINT OF 884 SQUARE FEET.

THE UNITS SHALL BE OPEN BOTTOMED EXCEPT FOR THE MODULE AT THE POINT WHERE FLOW IS DISCHARGED INTO THE STRUCTURE, WHICH SHALL HAVE A FLOOR TO ALLOW FOR POSSIBLE ADDITIONAL CLEANOUT. THERE SHALL BE 12 INCHES OF STONE BEHIND THE MODULES AND 12 INCHES OF STONE OUTSIDE OF THEM.

ALL TOPSOIL("A" HORIZON SOIL) AND SUBSOIL("B" HORIZON SOIL) SHALL BE REMOVED FROM BEHIND THE STONE ENVELOPE AND ANY OTHER DELETERIOUS MATERIAL. ADDITIONAL STONE BASE SHALL BE PLACED BEHIND THE CHAMBERS TO REPLACE SUCH MATERIAL. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO AVOID COMPACTING THE SOIL WITHIN THE FOOTPRINT OF THE INFILTRATION STRUCTURE IN THE COURSE OF CONSTRUCTION.

SANITARY SEWER PIPE AND INVERT TABLE

FROM	PIPE	TO						
STRUCTURE	RIM/GRATE	INVERT OUT	LENGTH (FT.)	SIZE (IN.)	SLOPE (FT/FT)	TYPE	STRUCTURE	INVERT IN
BUILDING	N/A	315.00	28'	6"	0.029	PVC	SEPTIC TANK 1	314.20
S.TANK 1	316.50	313.95	20'	6"	0.020	PVC	SEPTIC TANK 2	313.55
S.TANK 2	315.80	313.30	52'	6"	0.083	PVC	SMH 1	309.00
SMH 1	315.20	304.00	134'	8"	0.019	PVC	SMH 2	301.50
SMH 2	306.00	301.30	19'	8"	0.016	PVC	PUMP CHAMBER	301.00

DRAINAGE PIPE AND INVERT TABLE

FROM	PIPE	TO						
STRUCTURE	RIM/GRATE	INVERT OUT	LENGTH (FT.)	SIZE (IN.)	SLOPE (FT/FT)	TYPE	STRUCTURE	INVERT IN
TO DISCHARGE AT HEADWALL SOUTH OF WETLAND FLAG A17								
DICB A	332.10	326.10	85'	12"	0.125	HDPE	DMH B	315.50
DMH B	319.80	315.20	25'	15"	0.028	HDPE	DMH C	314.50
HEADWALL	N/A	314.50	16'	18"	0.031	HDPE	DMH D	314.00
DMH C	318.25	315.25	117'	18"	0.018	HDPE	DMH E	312.00
BLDG SUBDRAIN A	314.50	314.50	8"	8"	0.024	HDPE	DMH F	310.80
DMH D	317.00	311.80	47'	18"	0.021	HDPE	DMH G	310.80
DMH E	316.00	310.55	18'	18"	0.028	HDPE	DMH H	310.05
DMH F	315.25	309.50	140'	18"	0.018	HDPE	HEADWALL	307.00
TO DISCHARGE AT HEADWALL SOUTHEAST OF WETLAND FLAG A14								
HEADWALL	N/A	315.00	14'	12"	0.321	HDPE	DMH G	310.50
DMH G	314.50	310.30	112'	12"	0.012	HDPE	DMH H	309.00
BLDG SUBDRAIN N/A	314.50	314.50	48"	8"	0.087	HDPE	DMH I	310.50
DMH H	315.85	308.75	82'	15"	0.010	HDPE	DMH J	301.75
DMH I	306.00	301.75	83'	15"	0.012	HDPE	HEADWALL	300.75
TO PROPOSED IN GROUND INFILTRATION AREA #2 EAST OF WETLAND FLAG A4								
CB 1	313.50	309.50	125'	12"	0.010	HDPE	DMH 2	308.30
CB 3	315.30	313.10	22'	12"	0.014	HDPE	DMH 4	311.00
CB 5	315.00	311.00	23'	12"	0.022	HDPE	DMH 6	310.50
CB 7	312.30	308.00	14'	12"	0.021	HDPE	DMH 8	307.70
CB 8	312.30	308.00	8'	12"	0.038	HDPE	DMH 9	307.70
DMH 6	312.20	304.30	75'	12"	0.022	HDPE	DMH 10	300.80
DMH 9	305.20	298.50	31'	12"	0.022	HDPE	DMH 11	298.00
CB 11	302.70	293.30	14'	12"	0.021	HDPE	DMH 12	298.00
CB 12	302.70	298.30	8'	12"	0.038	HDPE	DMH 13	298.00
DMH 10	302.00	294.15	13'	18"	0.031	HDPE	CDS 2020 13	293.75
CDS2020 13	301.00	293.75	12'	18"	0.021	HDPE	INFILTRATION 2	293.50
TO PROPOSED IN GROUND INFILTRATION AREA #1 EAST OF WETLAND FLAG A23								
CB 14	314.70	310.70	8'	8"	0.038	HDPE	DMH 16	310.40
CB 15	314.70	310.70	22'	8"	0.014	HDPE	DMH 17	309.00
BLDG ROOF	N/A	310.00	104'	12"	0.010	HDPE	DMH 18	312.00
DMH 17	317.10	303.80	117'	15"	0.027	HDPE	DMH 19	313.00
CB 19	316.50	312.50	10'	8"	0.030	HDPE	DMH 20	312.20
DMH 18	316.90	307.70	57'	8"	0.011	HDPE	DMH 21	307.10
CB 21	318.80	312.80	10'	8"	0.030	HDPE	DMH 22	312.50
CB 22	318.80	312.80	11'	8"	0.027	HDPE	DMH 23	312.80
DMH 23	316.90	312.00	27'	12"	0.011	HDPE	DMH 24	311.70
DMH 20	317.60	306.90	11'	18"	0.018	HDPE	CDS2025 24	306.70
CDS2025 24	317.20	306.70	24'	18"	0.021	HDPE	DMH 25	306.20
DMH 26	302.80	297.50	23'	18"	0.022	HDPE	INFILTRATION 1	297.00
BETWEEN INFILTRATION 2 AND INFILTRATION 3								
INFILTRATION 2	N/A	293.00	13'	8"	0.038	HDPE	DMH 27	292.50
DMH 27	295.50	289.00	39'	8"	0.051	HDPE	INFILTRATION 3	287.00
BETWEEN INFILTRATION 3 AND EXISTING DRAINAGE SYSTEM								
INFILTRATION 3	N/A	290.50	13'	2X6"	0.154	HDPE	DMH 28	288.50
DMH 28	293.75	274.40	46'	12"	0.041	HDPE	DMH 29	272.50
DMH 29	276.50	272.30	199'	12"	0.010	HDPE	DMH 30	270.30
IN DRIVEWAY AT DISCHARGE FROM EXISTING STRUCTURE								
CB 31	290.10	286.10	9'	8"	0.038	HDPE	DMH 33	285.80
CB 32	290.10	286.10	14'	8"	0.021	HDPE	DMH 34	285.80
EXIST.STRUCTURE	N/A	271.95	9'	24"	0.057	HDPE	DMH 35	271.45
DMH 33	289.70	271.25	25'	24"	0.058	HDPE	DMH 36	269.80
AT BEGINNING OF DRIVEWAY TO EXISTING DRAINAGE SYSTEM								
CB 34	277.90	273.40	21'</					

POLLUTION PREVENTION PLAN

FOR

120 TURNPIKE ROAD, SOUTHBOROUGH, MA

PROJECT DESCRIPTION

This is a proposal to develop this site and construct an apartment building having 60 units along with associated parking and driving aisles and necessary utility infrastructure on this 8.0 acre site.

Construction will take place in a single phase and is expected to last from the spring 2024 into the summer of 2026. Total site alteration will be approximately 5.5 acres.

Construction Process

Before construction begins, erosion control barriers consisting of silt fencing attached to posts and backed by staked straw wattles will be placed at the limit of work as shown on the Erosion & Sediment Control Plans, Sheets ESC1-ESC2.

The first step of the construction process will be the cutting of trees within the limits of proposed development. After this has been accomplished in the demarcated areas, clearing and grubbing will take place and loam will be stockpiled in the area indicated on sheet ESC2. Stumps will be ground on site to use the grindings as temporary stabilization. Temporary settling basins will be installed downstream of work in the locations shown on sheets ESC1 and ESC2.

The time of construction requiring the most attention and care occurs between the stripping of natural overburden and the stabilization of construction areas. Cut and fill areas create additional risk by increasing the possibility of stormwater runoff causing erosion.

The contractor will, to the extent possible, leave natural cover untouched at the edges of the property and surrounding the wetland. The contractor will limit to the shortest time possible the time that areas are exposed. The landscaping will be completed as early as weather and building construction allow. During the times between clearing and landscaping, soils will be stabilized with a combination of stump grindings, wood chips, hay/straw mulch, temporary grass seeding and other measures as necessary to prevent any significant erosion of soils.

Soil stockpile areas will be kept out of the 100 foot buffer zone associated with the delineated wetland on site. Soil stockpiles shall be surrounded by staked silt fence placed at least 5 foot off the toe of slope of the stockpile. One suitable stockpile location is in the area northwest of the existing home and in front of proposed building #1.

In conjunction with the site grading process, a number of sedimentation control procedures will be followed. The object of the procedures is to prevent the erosion of soils and the transport of sediments to adjacent properties and eventually to wetland resource areas off site.

Stabilization

Temporary and permanent stabilization of disturbed surfaces is the most reliable method of preventing the erosion and transport of site soils. Toward that end, the areas that are disturbed will be provided temporary stabilization within two weeks after the last disturbance when:

- Work is not complete in that area,
- Work will remain incomplete for a period of three weeks or more,
- The planting season has not been reached in areas which will be re-vegetated.

Permanent stabilization will take place when:

- Work is complete in that area and
- The planting season has been reached and areas can be revegetated.

Best Management Practices Employed

To guard against the transport of soils offsite several Best Management Practices (BMP's) may be employed. Sediment control barriers, sediment sumps, temporary settling basins, straw bale check dikes, swales, a site entrance mat, flocculants in both crystal and block forms, and organic media for capture of silt below flocculants may be used on this site as appropriate. All of these measures are temporary. The site's permanent protection against erosion and the deposition of sediment off site at resource areas is the permanent stabilization of formerly exposed surfaces with pavement, lawn and other landscaping.

Soils

According to the MassMapper web site the soils underlying this site are mostly Woodbridge series soils which are categorized as hydrologic soil group C soils. However, official and unofficial soil tests on site showed more gravel and a better soil texture than typically seen in areas of Woodbridge series soils.

Resource Areas

There is a bordering vegetated wetland associated with an intermittent stream flow running northerly just west of the center of the new parcel.

SITE PLAN DEVELOPMENT

As part of the Site Plans submitted to the Town of Southborough, Azimuth Land Design, LLC has prepared this erosion and sediment control plan calling for permanent and temporary erosion control measures. The site has an existing drainage system at the northerly end of it collection drainage flowing to the north and conveying it to the drainage system under the parking area on the developed portion of 120 Turnpike Road.

PHASING

Construction of the project will take place in one phase. Total site alteration will be approximately 5.5 acres.

POLLUTION PREVENTION SITE PLAN

The Site Plans prepared by Azimuth Land Design, LLC contain Erosion & Sediment Control Plans. Various Best Management Practices (BMP's) are described herein and/or shown on the Erosion & Sediment Control Plans or the Detail Sheets and will be used to prevent or to mitigate erosion and pollution.

INSPECTION AND MAINTENANCE OF EROSION CONTROLS

1. At all times, siltation fabric fencing, straw wattles or straw bales and stakes sufficient to construct an erosion control barrier a minimum 25 feet long will be stockpiled on the site in order to repair established barriers which may have been damaged or breached.

2. The Developer will designate an Inspector a person or entity other than the site supervisor. The Inspector must be accessible seven days a week and be responsible for inspecting and coordinating the maintenance and repair of all erosion control systems on the site.

3. An inspection of all erosion control measures shall be conducted by the Inspector at least once each week until the completion of construction of the subdivision. The Contractor shall inspect all erosion control systems daily and shall notify the Inspector of any breaches or failures. In case of any noted breach or failure, the Contractor shall immediately make appropriate repairs.

4. The Inspector shall inspect all erosion control systems on the site before, during and after any storm event reaching one of the following thresholds:

- a. Any storm in which rain is predicted to last for 12 consecutive hours or more.
- b. Any storm for which a flash flood watch or warning is issued.
- c. Any single storm predicted to have a cumulative rainfall greater than 1/2 inch.
- d. Any storm event not meeting the previous three thresholds but which would mark the third consecutive day of measurable rainfall.

5. The Inspector shall inspect erosion control measures at times of significant increase in runoff due to rapid thawing when the risk of failure of those measures is significant.

6. In such instances as remedial action is necessary, the Inspector shall cause to be repaired within seven days, any and all significant deficiencies in erosion control measures.

7. The Southborough Conservation Commission shall be notified of any significant failure of erosion control measures and shall be notified of any release of pollutants.

SEPTIC SYSTEM DESIGN:

1) THE 60 PROPOSED UNITS WILL HAVE A TOTAL OF 89 BEDROOMS. UNDER TITLE 5, THIS CREATES A SEWAGE FLOW GENERATION OF 89X110=9,790 GALLONS PER DAY.

2) PERCOLATION TESTS #'S 2, 4, 6, 7 AND 8 IN THE PROPOSED SOIL ABSORPTION SYSTEM AREA, HAD OFFICIALLY OBSERVED PERCOLATION RATES OF 3, 15, 5, 7, 3 AND 4 MINUTES PER INCH. THE SYSTEM DESIGN WILL BE BASED ON A 15 MINUTE PER INCH PERCOLATION RATE WHICH, ACCORDING TO THE TABLE AT 310CMR 15.242(1) GIVES A LONG TERM ACCEPTANCE RATE OF 0.56 GPD/S.F. TO THE PROPOSED SOIL ABSORPTION SYSTEM.

3) 9,790 GPD REQUIRES A SYSTEM SURFACE AREA OF 9,790/0.56 =17,482 S.F. USING 2' WIDE AND 2' DEEP TRENCHES, EACH 1' LENGTH OF TRENCH HAS 6 S.F. OF SURFACE AREA. SO 17,482/6=2,914 FEET OF TRENCH THAT IS REQUIRED.

4) SO, OUR DESIGN WILL PROPOSE 42 TRENCHES EACH 70 FEET LONG, SPLIT HALF NORTH AND HALF SOUTH OF A CENTRAL MANIFOLD THAT WILL BE FED FROM A PUMP CHAMBER. WITH RESERVE TRENCHES IN BETWEEN, 21 TRENCHES REQUIRES A WIDTH OF 168 FEET, WITH A SPACE OF 10 FEET IN BETWEEN EACH GROUP OF TRENCHES, NORTH AND SOUTH, THE REQUIRED AREA FOR THE SOIL ABSORPTION SYSTEM IS 150'X168'.

EROSION CONTROL DEVICES OR PROCESSES

1. Sediment Control Barrier

The sediment control barrier will consist of an approved siltation fabric fencing installed on posts and backed by staked straw wattles. The barriers will be placed in a manner that prevents the passage of soil materials under, around or over it. Sediment will be removed from against the barrier when the accumulated sediment has reached one third of the original installed height of the barrier.

2. Straw Bale Diversion Dike

Straw bales will be placed in other locations on the site in order to further prevent the flow of sediment from the site or reduce the velocity of runoff crossing open land or running off stockpile or fill areas. Straw bale diversion dikes will also be placed within developing rills to reduce surface runoff velocities and to shift the path of the water flow. The locations where straw bale diversion dikes are installed will be determined in the field at the Inspector's discretion.

3. Slope Stabilization

Slopes or surfaces that are created due to excavation or filling along the edge of the parking or loading areas will be temporarily stabilized with one or more of the following:

- Hay or straw mulch with tackifier

- Soft wood and hard wood chips or stump grindings.

Permanent stabilization of slopes and surfaces will employ one or more of the following:

- 6 inches of loam and grass

- Sod

- Riprap

- Erosion control blankets such as Tensar North American Green SC150BN or approved equal and vegetation

- Mulch and landscaping plantings

- A combination of grasses, riprap and/or plants and shrubbery

- In areas that will be steeper than 2:1, after construction, the slope will be stabilized by the placement of heavy riprap or by the installation of erosion control matting specifically rated by the manufacturer for use on a 1:1 slope. The riprap slope will be formed by placing heavy stone on a one foot thick layer of gravel that is covered by an approved filter fabric.

4. Diversion Swale

Runoff diversion swales may be provided in order to intercept sheet and concentrated flows above areas of cut, above abutting properties or Rice Road. The swales will direct runoff to sediment sumps or temporary settling basins. The swales will be approximately 5 feet wide and one foot deep. Straw bale diversion dikes may be installed on the downhill side of the swales to assist in containing the water flow.

5. Sediment Sumps

Sediment sumps are excavated depressions of 10 foot diameter and 2 foot depth. The sumps will collect runoff from unfinished drives and slopes and will allow sediment to settle out before flow continues to a detention area or siltation control barrier. Sediment sumps will be cleaned whenever the accumulated sediment has reached one half of the original depth of the sump.

6. Temporary Settling Basins

Temporary settling basins (TSB's) are larger excavations made at locations that will receive significant stormwater runoff flow. They are used to capture and detain stormwater in the construction phase to settle out some eroded material and to lessen the rate of flow of stormwater from construction phase work areas.

Temporary settling basins are larger than sediment sumps and shall have silt fence or straw bale dikes at their entrance and exit to control flow. They shall be sized according to the DEP Stormwater management standards which requires that they have sufficient capacity to hold 1 inch of runoff from the watershed contributing flow to them. For example, a TSB receiving flow from 1 acre of land should have a volume capacity of at least 3,630 square feet. TSB's should have flocculant blocks and at least three layers of jute mesh matting at their outlet. TSB's should be cleaned out whenever the accumulated sediment has reached more than 6 inches deep. No TSB shall be located where the proposed infiltration structures are proposed. Expected locations for TSB's are shown on the Erosion & Sediment Control Plans.

7. Flocculants

If the capture of flows in sediment sumps and temporary settling basins does not sufficiently reduce the turbidity of runoff before it leaves the site, flocculant blocks shall be installed at the outlet of any sediment sump, TSB or swale discharge flow to the site's drainage system. Immediately downstream of the flocculant blocks, a suitable organic media such as jute mesh matting shall be installed over stone for runoff that has contacted the flocculant blocks to flow. This will allow capture of silts.

In addition, crystal flocculants may be used to reduce turbidity of captured runoff in sediment sumps and temporary settling basins.

SEQUENCE OF INSTALLATION AND CONSTRUCTION

The following is a sequence for the construction of the project. The actual schedule may vary somewhat from that stated if site or weather conditions require.

An example of a logical change to the schedule would be deviating from the sequence below to allow the laying of berms prior to a freeze in order to better control the site drainage.

1. The Developer will hold a preconstruction meeting with representatives of the Town of Southborough in order to review permits, procedures and construction methods.

2. The Developer will hold a preconstruction meeting with the Engineer, Contractor's employees and the Inspector in order to review permits, procedures and construction methods.

3. Establish the construction entrance to the site off the south end of the existing access drive running north to Turnpike Road.

4. Install the site entrance mat in the location of the proposed entrance off the end of that access drive and sediment control barriers at the limit of work as shown on the Erosion & Sediment Control Plans.

5. Cut trees as necessary for the proposed development but no further. Chip wood and then remove existing pavement and dispose of it at an appropriate facility. Then, clear and grub where trees were cut. Grind stumps for use of the grindings as a temporary stabilization cover.

6. Stockpile and compact excavated loam in an area surrounded by staked straw bales or siltation fencing. We suggest the proposed location of units 35&36. Place the straw bales or fencing at least five feet from the base of the loam pile.

7. Begin earthwork to bring grades to the subgrade elevations for the proposed driving aisles and parking areas.

8. Begin construction of the apartment building and install the utility connections to the proposed apartment building.

9. Install the new drainage system, new septic system, new water line services to the building and new electric connections and, when complete, lay the binder course of pavement.

10. Continue construction of the building.

11. Permanently stabilize exposed slopes with riprap, 6 inches of loam and grass, other vegetation and landscaping.

12. Finish interior construction of the proposed building and lay a finish course of pavement. Install new sidewalks from the beginning of the new driveway north to the entrance off Turnpike Road.

13. Remove accumulated sediment and temporary erosion control measures after all slopes have been permanently stabilized and the risk of erosion has passed.

14. Prepare and submit an as-built survey of the work to the Town of Southborough.

COMPREHENSIVE PERMIT PLAN APPROVED BY
THE SOUTHBOROUGH ZONING BOARD OF
APPEALS ON _____



Professional Engineers & Erosion Control Specialists
118 Turnpike Road, 200, Southborough, MA 01772
Telephone (508)-485-0137 jamest@azimuthlanddesign.co

CLT. NO. 504 JOB NO. 290-504
DATE: OCTOBER 25, 2023 DWG NO. 120TURNPIKECURRENT

REVISIONS
DATE: 1/24/24 DESCRIPTION: TOWN REVIEW

SCALE: AS NOTED

SITE PLAN OF LAND

AT 120 TURNPIKE ROAD

IN

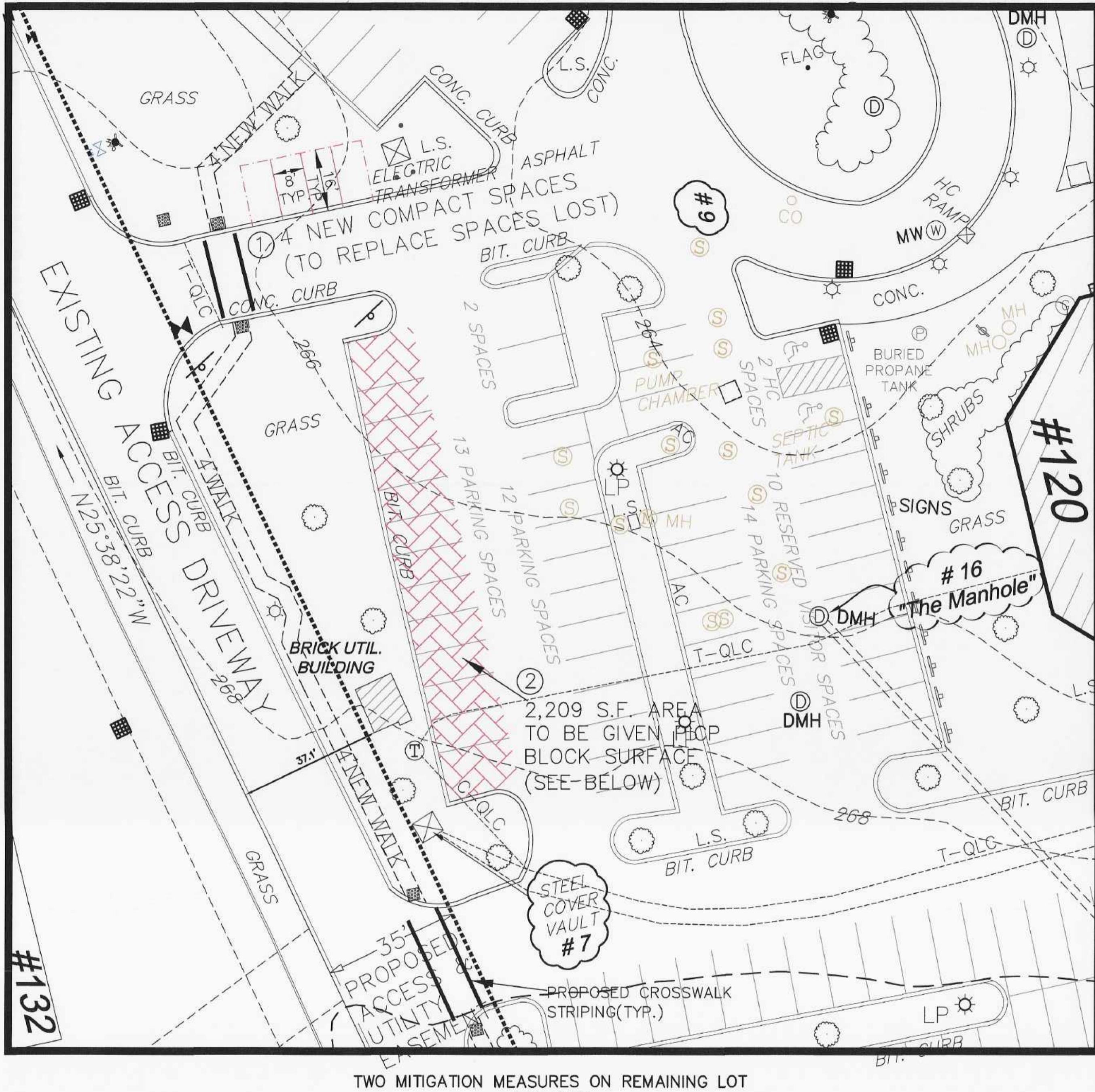
SOUTHBOROUGH, MASS.

OWNER & APPLICANT:

FD 120 TURNPIKE, LLC
118 TURNPIKE ROAD, SUITE 300
SOUTHBOROUGH, MA 01772

PARKING

60 UNITS ARE PROPOSED, CONSISTING OF 37 ONE BEDROOM UNITS, 17 TWO BEDROOM UNITS AND 6 THREE BEDROOM UNITS. 112 PARKING SPACES ARE PROPOSED (INCLUDING 5 VAN ACCESSIBLE HC SPACES), A RATIO OF 1.87 PER UNIT.



LIST OF WAIVERS FROM TOWN REGULATIONS:

ZONING

THE APPLICANT IS REQUESTING SEVERAL WAIVERS FROM THE ZONING BYLAW FOR THE CONSTRUCTION OF THIS PROJECT. THEY ARE AS FOLLOWS:

- 1) SECTION 174-8.2.B(9) ALLOWING MULTIFAMILY HOUSING ONLY WITH A SPECIAL PERMIT AS PART OF A MAJOR RESIDENTIAL DEVELOPMENT. THIS COMPREHENSIVE PERMIT PROJECT WOULD NOT BE POSSIBLE UNDER THAT REGULATION.
- 2) SECTION 174-8.2.D(2) REQUIRING 150' FRONTAGE IN THE RESIDENCE A DISTRICT. THIS LOT HAS NO FRONTAGE AND THE PROJECT WOULD NOT BE POSSIBLE UNDER THAT REGULATION.
- 3) SECTION 174-8.2.D(3) REQUIRING A 50 FOOT REAR SETBACK. THIS WAIVER IS REQUESTED TO LOCATE THE BUILDING AND PARKING SOUTH OF THE DELINEATED WETLAND AND AVOID ANY WETLAND ALTERATION.
- 4) SECTION 174-8.2.D(4) REQUIRING BUILDING HEIGHTS NO MORE THAN 35 FEET OR 2.5 STORIES. THE PROPOSED BUILDING IS 4 STORIES TALL TO MINIMIZE ITS FOOTPRINT AND FIT WITH PARKING AND UTILITIES ON THIS SITE WITHOUT ALTERING WETLANDS.
- 5) SECTION 174-8.2.D(5) REQUIRING A MAXIMUM FLOOR AREA RATIO OF 0.18. THE PROPOSED DEVELOPMENT WILL HAVE A FLOOR AREA RATIO OF 0.24 AS PART OF CREATING THIS DEVELOPMENT WHICH HAS ADEQUATE SPACE FOR PARKING AND UTILITY INFRASTRUCTURE ON THIS PROPERTY.
- 6) SECTION 174-8.2.D(6) REQUIRING VARIOUS LOT WIDTH AND SHAPE STANDARDS. THIS PROJECT CANNOT MEET THESE STANDARDS BECAUSE THE LOT HAS NO FRONTAGE AND WOULD NOT BE POSSIBLE UNDER THAT REGULATION.
- 7) SECTION 174-12.C(2) REQUIRING THAT PARKING SPACES MEASURE 9.5'WIDE AND 18'DEEP. THE PROPOSED SPACES ARE 9 FEET WIDE. THIS IS A COMMON STANDARD WHICH SAVES SOME SPACE WITHOUT COMPROMISING SAFETY OR CONVENIENCE.
- 8) SECTION 174-12.E(1) REQUIRING 2 PARKING SPACES FOR EACH 1 OR 2 BR UNIT AND 3 FOR EACH 3 BR UNIT. THE PROJECT WILL PROVIDE PARKING SPACES AT A RATIO OF 1.87 PER UNIT AND THIS HAS PROVED ADEQUATE ON OTHER DEVELOPMENTS ALLOWING US TO MINIMIZE THE DEVELOPMENT'S FOOTPRINT.
- 9) SECTION 174-13 LANDSCAPING STANDARDS. THE PROJECT'S LANDSCAPE ARCHITECT HAS PREPARED A DETAILED LANDSCAPING PLAN THAT HE BELIEVES IS APPROPRIATE TO THIS SITE THOUGH IT DEVIATES IN SOME WAYS FROM THOSE STANDARDS.

COMPREHENSIVE PERMIT PLAN APPROVED BY THE SOUTHBOROUGH ZONING BOARD OF APPEALS ON _____

SUBDIVISION DESIGN STANDARDS

THE APPLICANT IS REQUESTING A WAIVER FROM THE SUBDIVISION DESIGN STANDARDS FOR THE CONSTRUCTION OF THIS PROJECT. IT IS AS FOLLOWS:

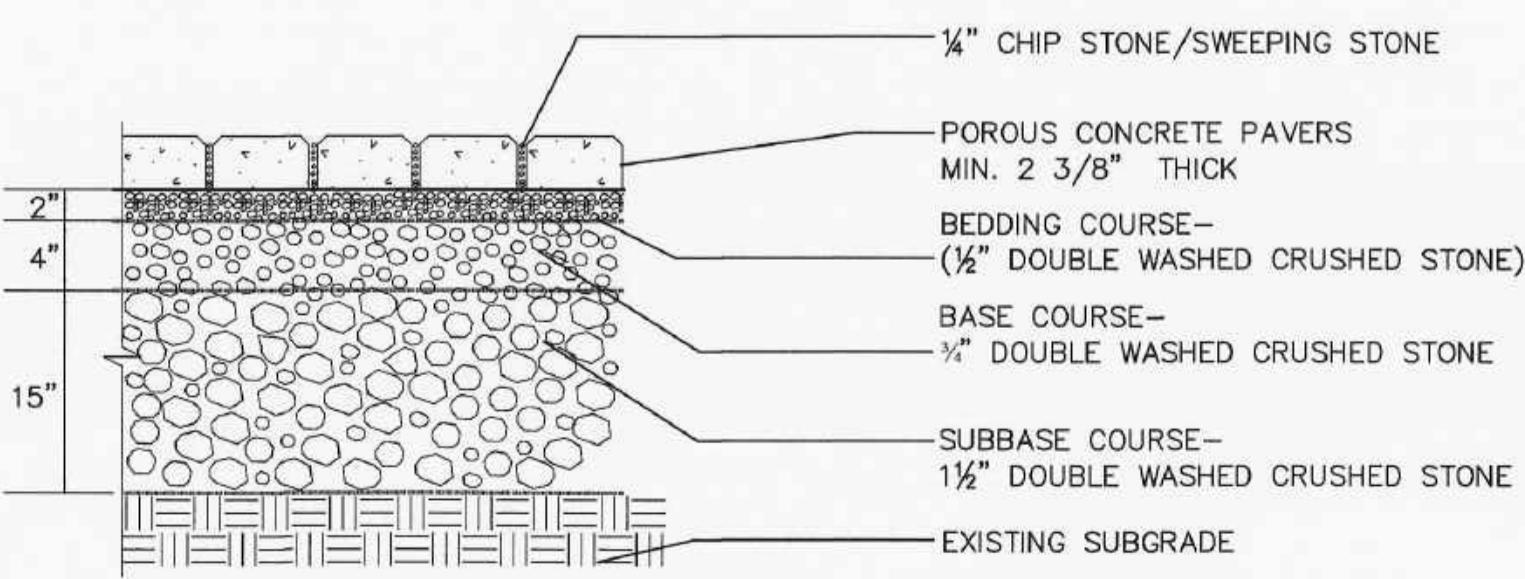
- 1) SECTION 244-16.B(2) REQUIRING THAT THE MINIMUM SIZE OF A STREET DRAIN PIPE BE 12 INCHES. THE APPLICANT PROPOSES 8 INCH HDPE PIPES TO CONVEY FLOW FROM CATCH BASINS TO DRAIN MANHOLES AS THEY ARE MORE THAN ADEQUATE TO CONVEY THE FLOW THAT CAN ENTER THE CATCH BASIN GRATES.

SOUTHBOROUGH WETLANDS BYLAW

THE APPLICANT IS REQUESTING A WAIVER FROM THE SOUTHBOROUGH WETLANDS BYLAW STANDARDS FOR THE CONSTRUCTION OF THIS PROJECT AS FOLLOWS:

- 1) SECTION 170 OF THE SOUTHBOROUGH ADMINISTRATIVE CODE, THE SOUTHBOROUGH WETLANDS BYLAW AND ITS VARIOUS REQUIREMENTS INCLUDING A 20 FOOT NO DISTURB ZONE OUTSIDE OF WETLAND RESOURCE AREAS. THE APPLICANT WILL NOT ALTER ANY WETLAND RESOURCE AREAS, WILL MEET DEP'S STORMWATER MANAGEMENT STANDARDS AND OTHER REQUIREMENTS WHICH PROVIDE ADEQUATE PROTECTION.

- 1) THE PROPOSED EXTENSION OF THE EXISTING DRIVEWAY INTO THE PART OF THE SITE ZONED RESIDENCE A WILL CAUSE THE ELIMINATION OF 4 EXISTING PARKING SPACES, 4 NEW SPACES HAVE TO BE CREATED. THE APPLICANT WILL CREATE 4 COMPACT SPACES ON THE SOUTH SIDE OF AN EXISTING LANDSCAPED ISLAND.
- 2) PROPOSED ADDITIONAL SIDEWALKS ON THE REMAINING LOT CREATING PEDESTRIAN ACCESS TO TURNPIKE ROAD FROM THE NEW PROJECT WILL RESULT IN THE CONVERSION OF 2,148 SQ.FT. OF LAWN SURFACE TO IMPERVIOUS SIDEWALK. IN COMPENSATION, THE APPLICANT SHALL RESURFACE 2,209 SQ.FT. OF EXISTING PARKING AREA WITH PERMEABLE INTERLOCKING CONCRETE PAVING BLOCKS (PICP'S) TO AVOID AN INCREASE IN STORMWATER RUNOFF. A CROSS SECTION DETAIL OF THE PAVING BLOCKS AND STONE BASE IS BELOW.



NOTES
 1. PAVERS TO IDEAL PAVERS AQUA-BRICK OR APPROVED EQUAL INSTALLED
 IN A BASKET WEAVE PATTERN
 2. JOINT BETWEEN THE PAVERS SHALL BE BETWEEN 1/16"-3/16" JOINT
PERMEABLE INTERLOCKING CONCRETE PAVING BLOCK DETAIL

NOT TO SCALE

OPEN SPACE:

SECTION 244-14 OF THE SOUTHBOROUGH CODE CALLS FOR SUBDIVISIONS TO SET ASIDE PARK SPACE COMPRISING 10% OR MORE OF A SUBDIVISION'S GROSS AREA FOR PARKS OR TO SET ASIDE 10% OF PROJECT AREA WITH PROHIBITIONS AGAINST ANY FUTURE DEVELOPMENT. THE PROPOSED DOG PARK AND PLAYGROUND AREAS AND ADJACENT LAWN BETWEEN THEM AND THE ACCESS DRIVE COVER 38,500 SQ.FT. OR 11.0% OF THE 349,526 SQ.FT. PARCEL IN THE RESIDENCE A ZONING DISTRICT ON WHICH THIS COMPREHENSIVE PERMIT PROJECT WILL BE LOCATED.



CLT. NO.	JOB NO.
504	290-504
DATE: JANUARY 24, 2024	DWG NO. 120TURNPIKECURRENT
REVISIONS	
DATE: _____	DESCRIPTION: _____
SCALE: AS NOTED	

SITE PLAN OF LAND

AT 120 TURNPIKE ROAD

IN

SOUTHBOROUGH, MASS.

OWNER & APPLICANT:

FD 120 TURNPIKE, LLC
 118 TURNPIKE ROAD, SUITE 300
 SOUTHBOROUGH, MA 01772

DETAIL SHEET

D5