Commonwealth of Massachusetts

Title 5 Official Inspection Form

Subsurface Sewage Disposal System Form - Not for Voluntary Assessments

Wixon School, 901 MA-134
Property Address

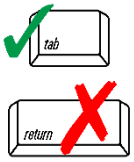
Town of Dennis
Owner's Name

Owner information is required for every page.

Dennis	MA	02660	April 9, 2024
City/Town	State	Zip Code	Date of Inspection

Inspection results must be submitted on this form. Inspection forms may not be altered in any way. Please see completeness checklist at the end of the form.

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Inspector Information

William R. Maher, PE
Name of Inspector

Nitsch Engineering
Company Name

2 Center Plaza, Suite 430
Company Address

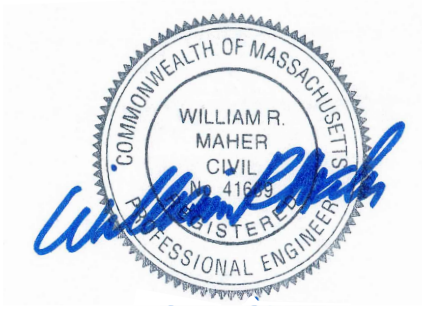
Boston	MA	02108
City/Town	State	Zip Code

617-338-0063	SI851
Telephone Number	License Number

B. Certification

I certify that: **I am a DEP approved system inspector in full compliance with Section 15.340 of Title 5 (310 CMR 15.000);** I have personally inspected the sewage disposal system at the property address listed above; the information reported below is true, accurate and complete as of the time of my inspection; and the inspection was performed based on my training and experience in the proper function and maintenance of on-site sewage disposal systems. After conducting this inspection I have determined that the system:

1. ☐ Passes
2. ☒ Conditionally Passes
3. ☐ Needs Further Evaluation by the Local Approving Authority
4. ☐ Fails



William R Maher
Inspector's Signature

July 24, 2024
Date

The system inspector shall submit a copy of this inspection report to the Approving Authority (Board of Health or DEP) within 30 days of completing this inspection. If the system has a design flow of 10,000 gpd or greater, the inspector and the system owner shall submit the report to the appropriate regional office of the DEP. The original form should be sent to the system owner and copies sent to the buyer, if applicable, and the approving authority.

Please note: This report only describes conditions at the time of inspection and under the conditions of use at that time. This inspection does not address how the system will perform in the future under the same or different conditions of use.

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C. Inspection Summary

Inspection Summary: Complete 1, 2, 3, or 5 and all of 4 and 6.

1) System Passes:

☐ I have not found any information which indicates that any of the failure criteria described in 310 CMR 15.303 or in 310 CMR 15.304 exist. Any failure criteria not evaluated are indicated below.

Comments:

2) System Conditionally Passes:

☒ One or more system components as described in the "Conditional Pass" section need to be replaced or repaired. The system, upon completion of the replacement or repair, as approved by the Board of Health, will pass.

Check the box for "yes", "no" or "not determined" (Y, N, ND) for the following statements. If "not determined," please explain.

The septic tank is metal and over 20 years old*** or** the septic tank (whether metal or not) is structurally unsound, exhibits substantial infiltration or exfiltration or tank failure is imminent. System will pass inspection if the existing tank is replaced with a complying septic tank as approved by the Board of Health.

***** A metal septic tank will pass inspection if it is structurally sound, not leaking and if a Certificate of Compliance indicating that the tank is less than 20 years old is available.

☐ Y ☐ N ☐ ND (Explain below):

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C. Inspection Summary (cont.)

2) System Conditionally Passes (cont.)**:**

☐ Pump Chamber pumps/alarms not operational. System will pass with Board of Health approval if pumps/alarms are repaired.

☐ Observation of sewage backup or break out or high static water level in the distribution box due to broken or obstructed pipe(s) or due to a broken, settled or uneven distribution box. System will pass inspection if (with approval of Board of Health):

☒	broken pipe(s) are replaced	☒ Y	☐ N	☐ ND (Explain below):	
☒	obstruction is removed	☒ Y	☐ N	☐ ND (Explain below):	
☐	distribution box is leveled or replaced	☐ Y	☐ N	☐ ND (Explain below):	

A video inspection was performed of a portion of the building's interior sanitary sewer lines as well as the exterior sewer lines servicing the two (2) smaller septic systems. A good portion of the building's interior sewer lines were found to be scaley, debris was found to be in the pipes and many sections of the sewer pipe were found to have rotted bottom sections.

☐ The system required pumping more than 4 times a year due to broken or obstructed pipe(s). The system will pass inspection if (with approval of the Board of Health):

☐	broken pipe(s) are replaced	☐ Y	☐ N	☐ ND (Explain below):
☐	obstruction is removed	☐ Y	☐ N	☐ ND (Explain below):

3) Further Evaluation is Required by the Board of Health:

☐ Conditions exist which require further evaluation by the Board of Health in order to determine if the system is failing to protect public health, safety or the environment.

a. System will pass unless Board of Health determines in accordance with 310 CMR 15.303(1)(b) that the system is not functioning in a manner which will protect public health, safety and the environment:

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C. Inspection Summary (cont.)

☐ Cesspool or privy is within 50 feet of a surface water

☐ Cesspool or privy is within 50 feet of a bordering vegetated wetland or a salt marsh

b. System will fail unless the Board of Health (and Public Water Supplier, if any) determines that the system is functioning in a manner that protects the public health, safety and environment:

☐ The system has a septic tank and soil absorption system (SAS) and the SAS is within 100 feet of a surface water supply or tributary to a surface water supply.
☐ The system has a septic tank and SAS and the SAS is within a Zone 1 of a public water supply.
☐ The system has a septic tank and SAS and the SAS is within 50 feet of a private water supply well.
☐ The system has a septic tank and SAS and the SAS is less than 100 feet but 50 feet or more from a private water supply well**.
Method used to determine distance: _____

****** This system passes if the well water analysis, performed at a DEP certified laboratory, for fecal coliform bacteria indicates absent and the presence of ammonia nitrogen and nitrate nitrogen is equal to or less than 5 ppm, provided that no other failure criteria are triggered. A copy of the analysis must be attached to this form.

c. Other:

4) System Failure Criteria Applicable to All Systems:

You must indicate "Yes" or "No" to each of the following for all inspections:

Yes	No	
☐	☒	Backup of sewage into facility or system component due to overloaded or clogged SAS or cesspool
☐	☒	Discharge or ponding of effluent to the surface of the ground or surface waters due to an overloaded or clogged SAS or cesspool

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C. Inspection Summary (cont.)

4) System Failure Criteria Applicable to All Systems: (cont.)

Yes	No	
☐	☒	Static liquid level in the distribution box above outlet invert due to an overloaded or clogged SAS or cesspool
☐	☒	Liquid depth in cesspool is less than 6" below invert or available volume is less than ½ day flow
☐	☒	Required pumping more than 4 times in the last year ***NOT*** due to clogged or obstructed pipe(s). Number of times pumped: _____.
☐	☒	Any portion of the SAS, cesspool or privy is below high ground water elevation.
☐	☒	Any portion of cesspool or privy is within 100 feet of a surface water supply or tributary to a surface water supply.
☐	☒	Any portion of a cesspool or privy is within a Zone 1 of a public water supply well.
☐	☒	Any portion of a cesspool or privy is within 50 feet of a private water supply well.
☐	☒	Any portion of a cesspool or privy is less than 100 feet but greater than 50 feet from a private water supply well with no acceptable water quality analysis. **[This system passes if the well water analysis, performed at a DEP certified laboratory, for fecal coliform bacteria indicates absent and the presence of ammonia nitrogen and nitrate nitrogen is equal to or less than 5 ppm, provided that no other failure criteria are triggered. A copy of the analysis and chain of custody must be attached to this form.]**
☐	☒	The system is a cesspool serving a facility with a design flow of 2000 gpd-10,000 gpd.
☐	☒	**The system <u>fails</u>.** I have determined that one or more of the above failure criteria exist as described in 310 CMR 15.303, therefore the system fails. The system owner should contact the Board of Health to determine what will be necessary to correct the failure.

5) Large Systems: To be considered a large system the system must serve a facility with a design flow of 10,000 gpd to 15,000 gpd.
For large systems, you must indicate either "yes" or "no" to each of the following, in addition to the questions in Section C.4.

Yes	No	
☐	☐	the system is within 400 feet of a surface drinking water supply
☐	☐	the system is within 200 feet of a tributary to a surface drinking water supply
☐	☐	the system is located in a nitrogen sensitive area (Interim Wellhead Protection Area – IWPA) or a mapped Zone II of a public water supply well

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C. Inspection Summary (cont.)

If you have answered "yes" to any question in Section C.5 the system is considered a significant threat, or answered "yes" to any question in Section C.4 above the large system has failed. The owner or operator of any large system considered a significant threat under Section C.5 or failed under Section C.4 shall upgrade the system in accordance with 310 CMR 15.304. The system owner should contact the appropriate regional office of the Department.

6. **You must indicate "yes" or "no" for each of the following for *all* inspections:**

Yes	No	
☒	☐	Pumping information was provided by the owner, occupant, or Board of Health
☐	☒	Were any of the system components pumped out in the previous two weeks?
☐	☒	Has the system received normal flows in the previous two week period?
☐	☒	Have large volumes of water been introduced to the system recently or as part of this inspection?
☒	☐	Were as built plans of the system obtained and examined? (If they were not available note as N/A)
☒	☐	Was the facility or dwelling inspected for signs of sewage back up?
☒	☐	Was the site inspected for signs of break out?
☒	☐	Were all system components, excluding the SAS, located on site?
☒	☐	Were the septic tank manholes uncovered, opened, and the interior of the tank inspected for the condition of the baffles or tees, material of construction, dimensions, depth of liquid, depth of sludge and depth of scum?
☒	☐	Was the facility owner (and occupants if different from owner) provided with information on the proper maintenance of subsurface sewage disposal systems?
		The **size and location of the Soil Absorption System (SAS)** on the site has been determined based on:
☒	☐	Existing information. For example, a plan at the Board of Health.
☒	☐	Determined in the field (if any of the failure criteria related to Part C is at issue approximation of distance is unacceptable) [310 CMR 15.302(5)]

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D. System Information

1. **Residential Flow Conditions:**

Number of bedrooms (design): _____ Number of bedrooms (actual): _____

DESIGN flow based on 310 CMR 15.203 (for example: 110 gpd x # of bedrooms): _____

Description:

Number of current residents: _____

Does residence have a garbage grinder? ☐ Yes ☐ No

Does residence have a water treatment unit? ☐ Yes ☐ No

If yes, discharges to: _____

Is laundry on a separate sewage system? (Include laundry system inspection information in this report.) ☐ Yes ☐ No

Laundry system inspected? ☐ Yes ☐ No

Seasonal use? ☐ Yes ☐ No

Water meter readings, if available (last 2 years usage (gpd)): _____

Detail:

Sump pump? ☐ Yes ☐ No

Last date of occupancy: _____ Date

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D. System Information (cont.)

2. **Commercial/Industrial Flow Conditions:**

Type of Establishment: Elementary School

Design flow (based on 310 CMR 15.203): 3,600 and 2,784 Gallons per day (gpd)

Basis of design flow (seats/persons/sq.ft., etc.): Persons

Grease trap present? ☒ Yes ☐ No

Water treatment unit present? ☐ Yes ☒ No

If yes, discharges to: _____

Industrial waste holding tank present? ☐ Yes ☒ No

Non-sanitary waste discharged to the Title 5 system? ☐ Yes ☒ No

Water meter readings, if available: _____

Last date of occupancy/use: 2022-2023 School Year
Date

Other (describe below):

Refer to Sheet U1 for basis of design flows for each septic system.

3. **Pumping Records:**

Source of information: Robert B. Our (Pumping contractor)

Was system pumped as part of the inspection? ☒ Yes ☐ No

If yes, volume pumped: 6,000 & 4,500 gallons

How was quantity pumped determined? By pumping contractor

Reason for pumping: Inspection of septic structures

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D. System Information (cont.)

4. **Type of System:**

- ☒ Septic tank, distribution box, soil absorption system
- ☐ Single cesspool
- ☐ Overflow cesspool
- ☐ Privy
- ☐ Shared system (yes or no) (if yes, attach previous inspection records, if any)
- ☐ Innovative/Alternative technology. Attach a copy of the current operation and maintenance contract (to be obtained from system owner) and a copy of latest inspection of the I/A system by system operator under contract
- ☐ Tight tank. Attach a copy of the DEP approval.
- ☐ Other (describe):

Approximate age of all components, date installed (if known) and source of information:

Approximately 35 years for the Grease Trap at the rear of the existing school and the two (2) septic system located on the southwesterly side of the existing school.

Were sewage odors detected when arriving at the site? ☐ Yes ☒ No

5. **Building Sewer** (locate on site plan):

Depth below grade: 2.5-3 feet

Material of construction:

☒ cast iron ☐ 40 PVC ☒ other (explain): PVC Pipe

Distance from private water supply well or suction line: N/A feet

Comments (on condition of joints, venting, evidence of leakage, etc.):

No evidence of leaking. Many areas of the PVC sewer lines to the septic system components are sagged and hold water. All areas of cast iron are compromised and deep scaling was observed.

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D. System Information (cont.)

6. **Septic Tank** (locate on site plan):

Depth below grade: Top of Tanks are approximately 1' below grade.

Material of construction:

☒ concrete ☐ metal ☐ fiberglass ☐ polyethylene ☐ other (explain)

Concrete tanks are approximately 35 years of age.

If tank is metal, list age: _____ years

Is age confirmed by a Certificate of Compliance? (attach a copy of certificate) ☐ Yes ☒ No

Dimensions: 17'x7'x7' and 15'x9x7'

Sludge depth:

Distance from top of sludge to bottom of outlet tee or baffle

Scum thickness

Distance from top of scum to top of outlet tee or baffle

Distance from bottom of scum to bottom of outlet tee or baffle

How were dimensions determined? Field and Design Plans

Comments (on pumping recommendations, inlet and outlet tee or baffle condition, structural integrity, liquid levels as related to outlet invert, evidence of leakage, etc.):
The water level in the tanks was not observed to be at the outlet invert pipe elevation. No scum was observed in each tank and there was approximately 3-4 inches of sludge at the bottom of each tank.

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D. System Information (cont.)

7. **Grease Trap** (locate on site plan):

Depth below grade: Apprximately 1' +/- feet

Material of construction:

☒ concrete ☐ metal ☐ fiberglass ☐ polyethylene ☐ other (explain):

Dimensions: 15'x7'x7'9"

Scum thickness 0"

Distance from top of scum to top of outlet tee or baffle 0"

Distance from bottom of scum to bottom of outlet tee or baffle 0"

Date of last pumping: Date

Comments (on pumping recommendations, inlet and outlet tee or baffle condition, structural integrity, liquid levels as related to outlet invert, evidence of leakage, etc.):
Piping from the building to the tank was in bad shape. There was no inlet tee in the tank and there was no outlet pipe visible.

8. **Tight or Holding Tank** (tank must be pumped at time of inspection) (locate on site plan):

Depth below grade:

Material of construction:

☐ concrete ☐ metal ☐ fiberglass ☐ polyethylene ☐ other (explain):

Dimensions:

Capacity: gallons

Design Flow: gallons per day

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D. System Information (cont.)

8. **Tight or Holding Tank** (cont.)

Alarm present: ☐ Yes ☐ No

Alarm level: _____ Alarm in working order: ☐ Yes ☐ No

Date of last pumping: _____
Date

Comments (condition of alarm and float switches, etc.):

* Attach copy of current pumping contract (required). Is copy attached? ☐ Yes ☐ No

9. **Distribution Box** (if present must be opened) (locate on site plan):

Depth of liquid level above outlet invert 0"

Comments (note if box is level and distribution to outlets equal, any evidence of solids carryover, any evidence of leakage into or out of box, etc.):
Each D-Box appeared to be in good condition. Roots were observed in the interior of the D-Box at some of the pipe connections for the septic system in front of the school.

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D. System Information (cont.)

10. **Pump Chamber** (locate on site plan):

Pumps in working order: ☒ Yes ☐ No*

Alarms in working order: ☐ Yes ☐ No*

Comments (note condition of pump chamber, condition of pumps and appurtenances, etc.):

* If pumps or alarms are not in working order, system is a conditional pass.

11. **Soil Absorption System** (SAS) (locate on site plan, excavation not required):

If SAS not located, explain why:

Leaching pits were observed with manholes covers at each location. The SAS consists of five (5) leaching pits at one location and four (4) at the other location for a total of nine (9).

Type:

☒	leaching pits	number:	Nine (9)
☐	leaching chambers	number:	
☐	leaching galleries	number:	
☐	leaching trenches	number, length:	
☐	leaching fields	number, dimensions:	
☐	overflow cesspool	number:	
☐	innovative/alternative system		

Type/name of technology:

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D. System Information (cont.)

11. **Soil Absorption System** (SAS) (cont.)

Comments (note condition of soil, signs of hydraulic failure, level of ponding, damp soil, condition of vegetation, etc.):
No signs of hydraulic failure, ponding, etc. were observed for any of the septic systems and grease trap.

12. **Cesspools** (cesspool must be pumped as part of inspection) (locate on site plan):

Number and configuration

Depth – top of liquid to inlet invert

Depth of solids layer

Depth of scum layer

Dimensions of cesspool

Materials of construction

Indication of groundwater inflow ☐ Yes ☐ No

Comments (note condition of soil, signs of hydraulic failure, level of ponding, condition of vegetation, etc.):

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D. System Information (cont.)

13. **Privy** (locate on site plan):

Materials of construction: _____

Dimensions _____

Depth of solids _____

Comments (note condition of soil, signs of hydraulic failure, level of ponding, condition of vegetation, etc.):

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D. System Information (cont.)

14. **Sketch Of Sewage Disposal System:**
Provide a view of the sewage disposal system, including ties to at least two permanent reference landmarks or benchmarks. Locate all wells within 100 feet. Locate where public water supply enters the building. Check one of the boxes below:

☐ hand-sketch in the area below
☒ drawing attached separately

NOTE:
Please refer to the existing conditions survey plans (Sheets EX-3, 7 & 8 of 8 sheets) attached to the end of this report indicating the locations of the two (2) existing smaller septic systems on the site.

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D. System Information (cont.)

15. **Site Exam**:

☒ Check Slope

☐ Surface water

☒ Check cellar

☐ Shallow wells

Estimated depth to high ground water: >15 feet +/- (Systems on SW side of Building Only)

Please indicate all methods used to determine the high ground water elevation:

☒ Obtained from system design plans on record

If checked, date of design plan reviewed: July 6, 1989 (Date)

☒ Observed site (abutting property/observation hole within 150 feet of SAS)

☐ Checked with local Board of Health - explain:

☐ Checked with local excavators, installers - (attach documentation)

☐ Accessed USGS database - explain:

You **must** describe how you established the high ground water elevation:

Reviewed the septic design plans for the two (2) septic systems located on the southwesterly side of the building only. Information was provided from a Plan Set entitled, "Addition and Alterations to the Wixon Middle School, Dennis, Massachusetts, C.A. Crowley Engineering Inc. dated July 6, 1989 (Sheets U1 and P1).

Before filing this Inspection Report, please see Report Completeness Checklist on next page.

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E. Report Completeness Checklist

Complete all applicable sections of this form inclusive of:

☒ A. Inspector Information: Complete all fields in this section.

☒ B. Certification: Signed & Dated and 1, 2, 3, or 4 checked

☒ C. Inspection Summary:

1, 2, 3, or 5 completed as appropriate

4 (Failure Criteria) and 6 (Checklist) completed

☒ D. System Information:

For 8: Tight/Holding Tank – Pumping contract attached

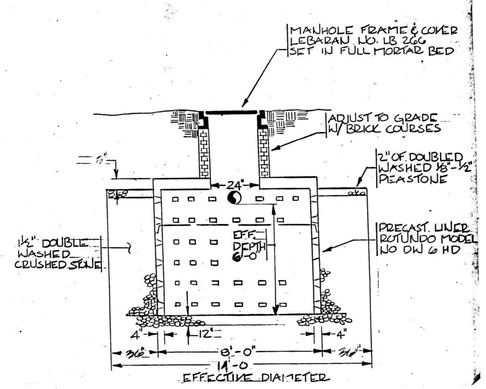
For 14: Sketch of Sewage Disposal System drawn on pg. 16 or attached

For 15: Explanation of estimated depth to high groundwater included

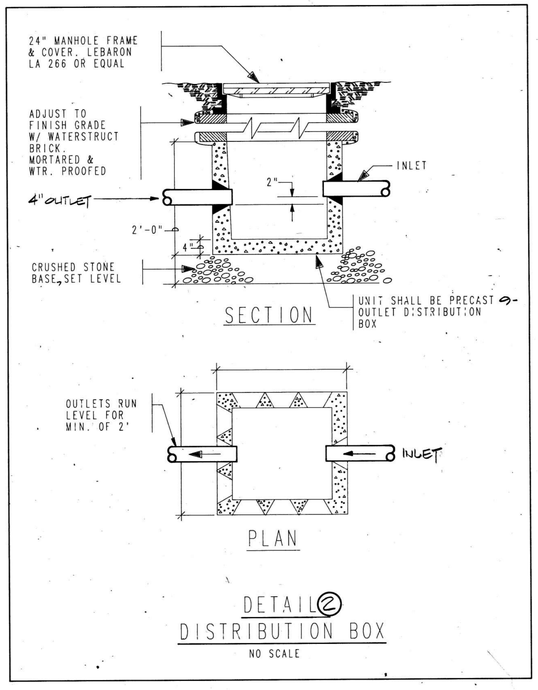
LEGEND

--50--	EXISTING COUNTOUR
[50]	PROPOSED CONTOUR
—G—	GAS SERVICE
—W—	WATER SERVICE
CTB	CONCRETE THRUST BLOCK

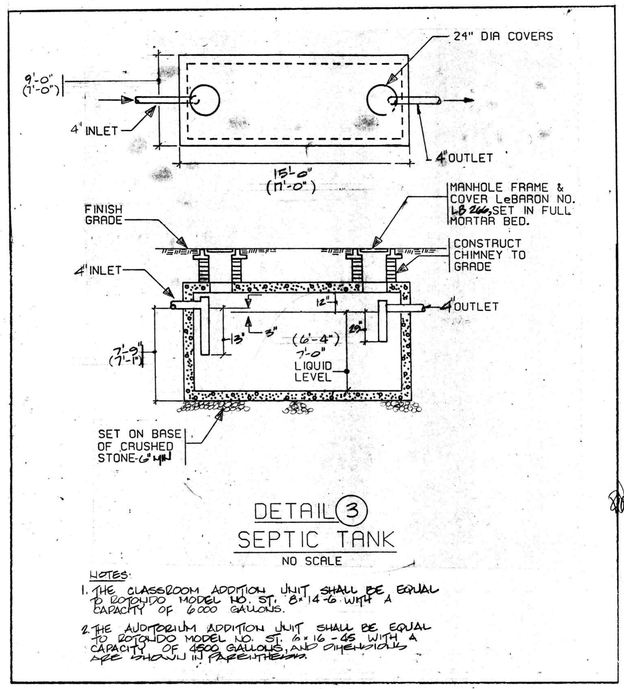
SCHEDULE OF LEACHING PITS		
NO.	INV. ELEV.	BOT. ELEV.
1	45.7'	40.1'
2	45.9'	39.9'
3	45.8'	39.8'
4	45.9	39.9'
5	46.0'	40.0'
6	56.2'	50.2'
7	56.4'	50.4'
8	56.2'	50.2'
9	56.4'	50.4'



DETAIL ①
LEACHING PIT
NO SCALE

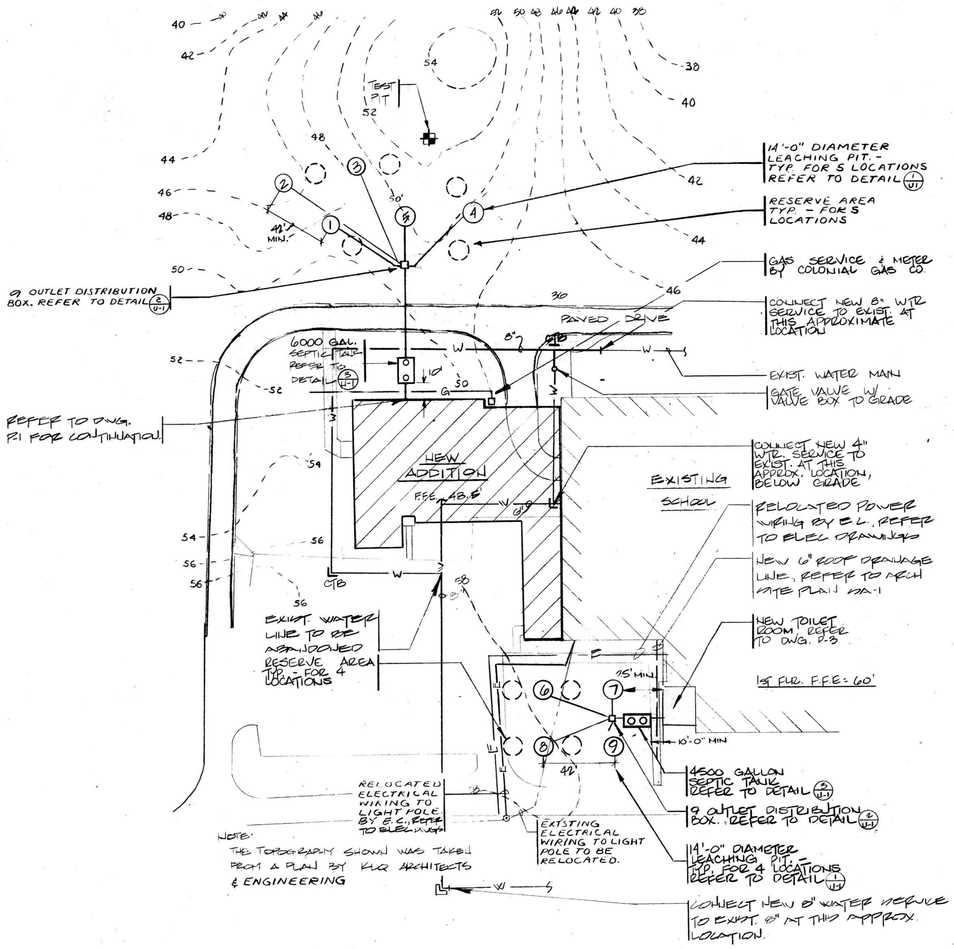


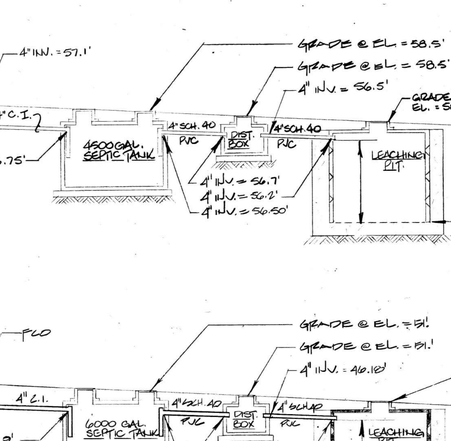
DETAIL ②
DISTRIBUTION BOX
NO SCALE



DETAIL ③
SEPTIC TANK
NO SCALE

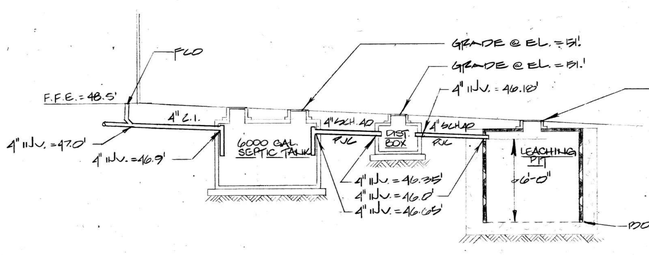
NOTES:
1. THE CLASSROOM ADDITION UNIT SHALL BE EQUAL TO ROTUNDO MODEL NO. ST. 8'x14'-6" WITH A CAPACITY OF 6000 GALLONS.
2. THE AUDTORIUM ADDITION UNIT SHALL BE EQUAL TO ROTUNDO MODEL NO. ST. 9'x16'-45 WITH A CAPACITY OF 4500 GALLONS, AND DIMENSIONS ARE SHOWN IN PARENTHESIS.





TEST PIT
NTS

NOTE:
1. NO WATER WAS ENCOUNTERED.



NOTE: VERIFY 4'-0" OF MATERIAL TO GROUNDWATER, BEFORE INSTALLATION.

PROFILES OF SEWAGE DISPOSAL SYSTEMS
NO SCALE

SEWAGE DISPOSAL SYSTEM:

Design

12 classrooms x 30 pupils/classroom = 360 pupils

360 pupils x 10 gal./person/day = 3600 GPD
Percolation rate of 2 minutes per inch

Septic Tank

3600 x 1.5 = 5400 gallons
Utilize a 6000 gallon tank

Leaching Pits

Per leaching pit:
Sidewall capacity = 3.14 x 14'-0" x 6'-0" x 2.5 gals./sq. ft = 659.40 gallons
Bottom capacity = 3.14 x (6'-0")^2 x 1.0 gals./sq. ft. = 153.9 gallons
Total Capacity of Leaching Pit = 813.3 gallons

36000 GPD
--------- = 4.4 leaching pits
813.3/gals./pit

Utilize 5 leaching pits

AUDITORIUM/GYMNASIUM TOILET ROOM

DESIGN

928 SPECTATORS x 3 GALS/PERSON/DAY = 2784 GPD
PERCOLATION RATE OF 2 MINUTES PER INCH

SEPTIC TANK

2784 x 1.5 = 4176 GALLONS
UTILIZE A 4500 GALLON TANK

LEACHING PITS

PER LEACHING PIT = 813.3 GALLONS

2784 / 813.3 = 3.4; UTILIZE 4 PITS

GENERAL:

1. ALL SEWAGE DISPOSAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH D.E.S.E. TITLE 5, AND THE TOWN OF DENNIS; PAY ALL FEES AND OBTAIN ALL PERMITS.
2. THE CONCRETE THRUST CONSTRUCTION SHALL BE IN ACCORDANCE WITH DETAIL ON PLUMBING DRAWING P-1.
3. THE DESIGN ENGINEER AND THE DENNIS BOARD OF HEALTH SHALL INSPECT THE SYSTEM PRIOR TO BACKFILLING, FOR COMPLIANCE WITH APPLICABLE REQUIREMENTS.
4. ALL MANHOLE COVERS SHALL BE SET FLUSH WITH THE FINISH GRADE AT THAT LOCATION.

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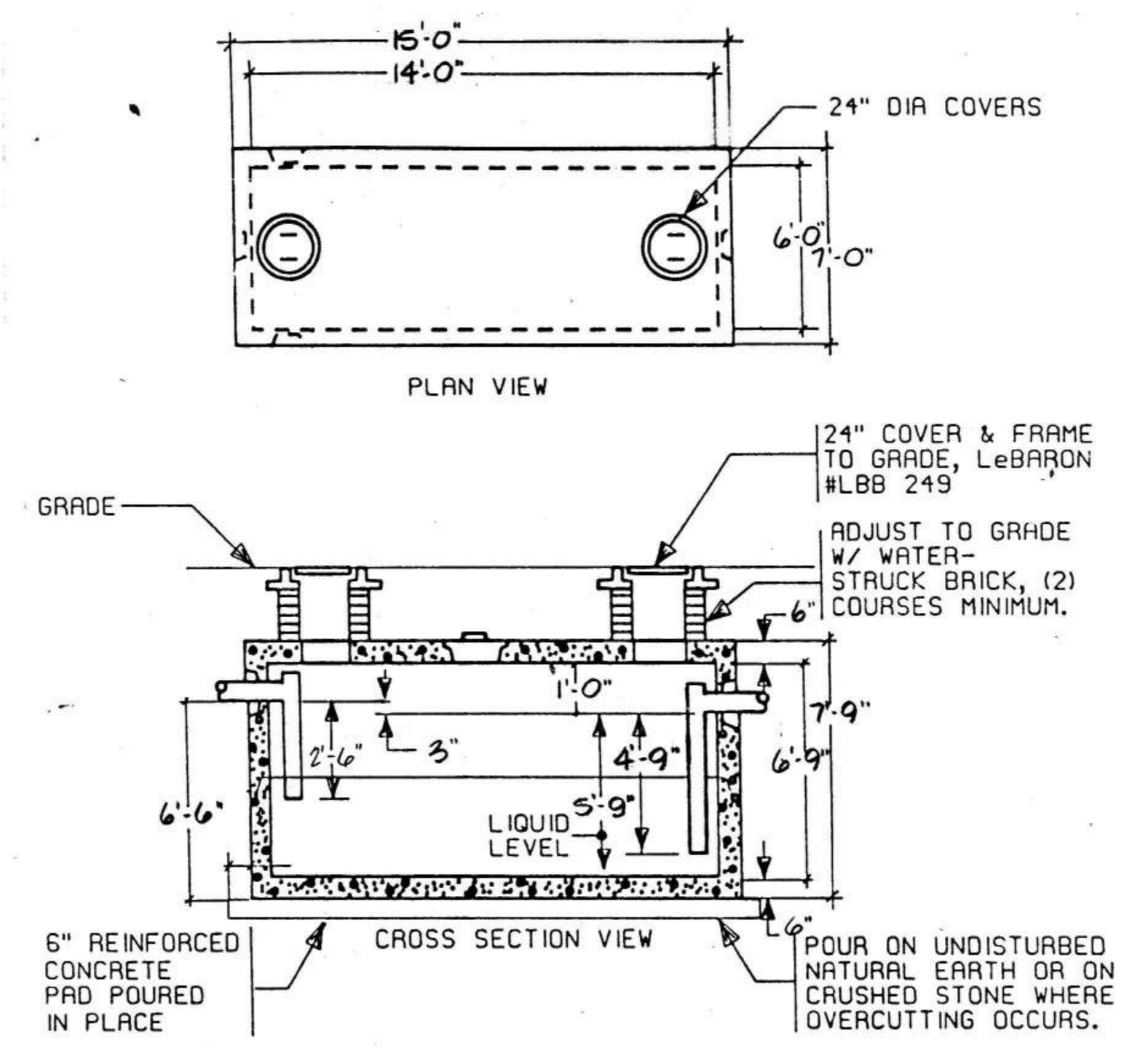
ARCHITECTS & ENGINEERS
20 VERNON STREET
Norwood, Mass. 02062

ADDITION AND ALTERATIONS to the WIXON MIDDLE SCHOOL DENNIS, MASSACHUSETTS

title: UTILITIES PLAN - SEWAGE DISPOSAL SYSTEMS
scale: AS NOTED
drawn: JAJ
project no.
checked: CPFF
date: 7-1-83
approved: NHA
revision:

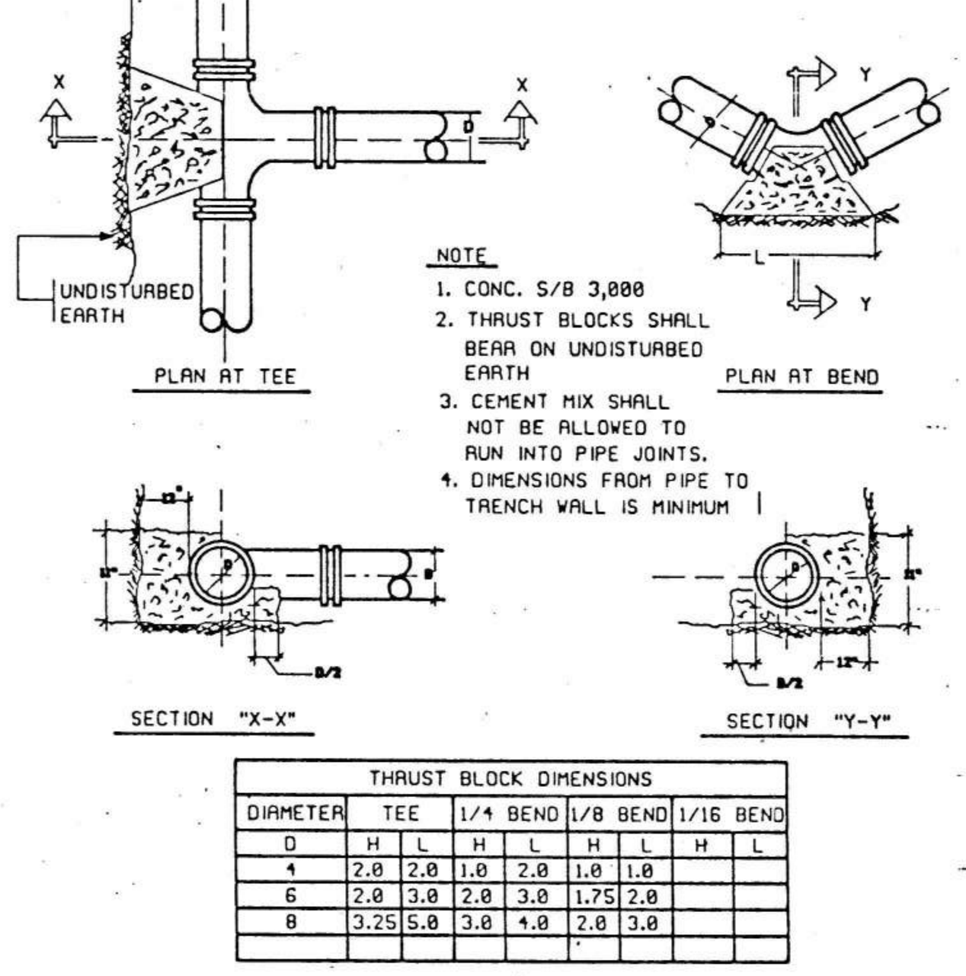
U1

JOB NAME: W1P2ST
JOB NO. 21393

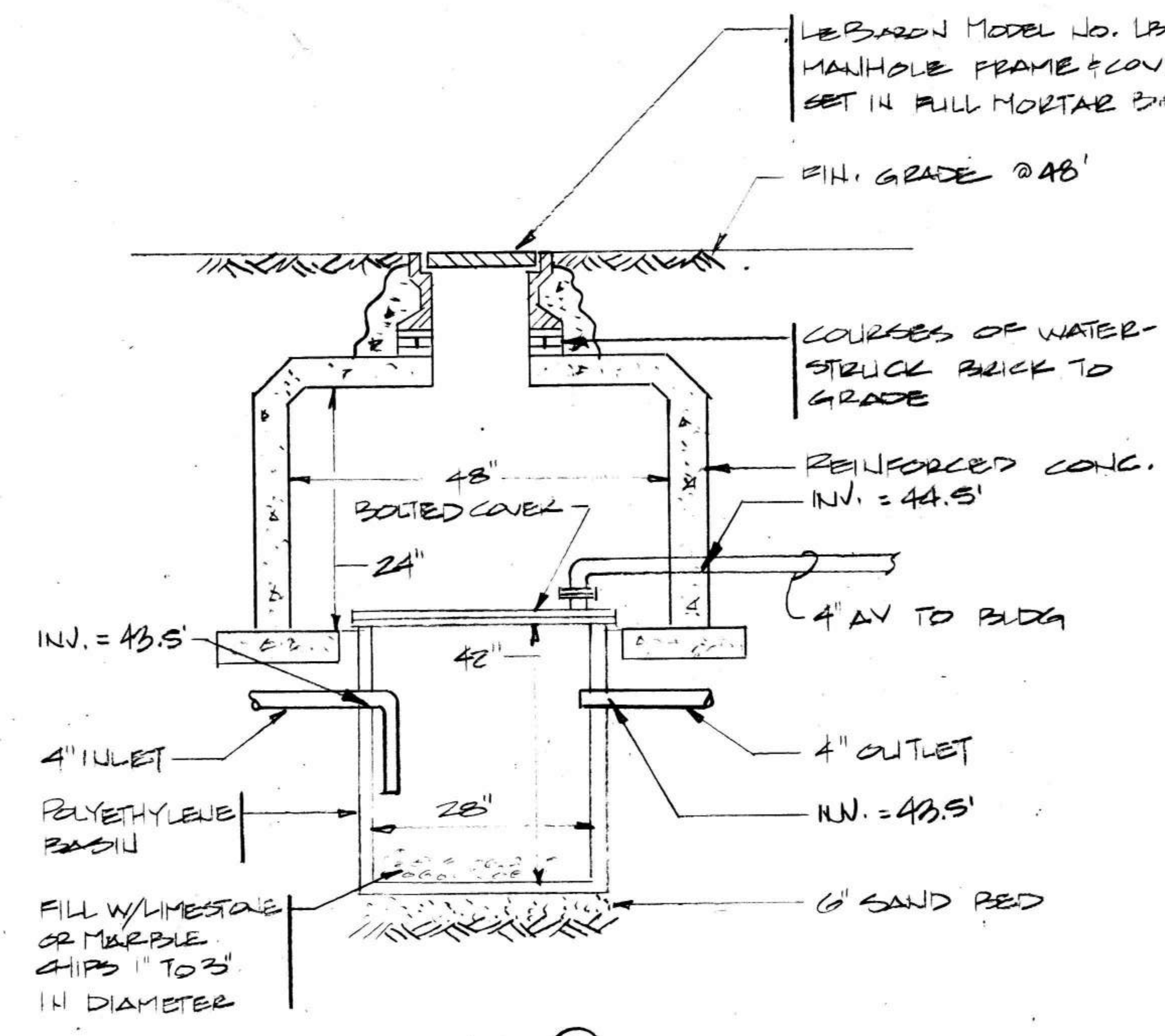


GREASE TRAP (1)
NO SCALE

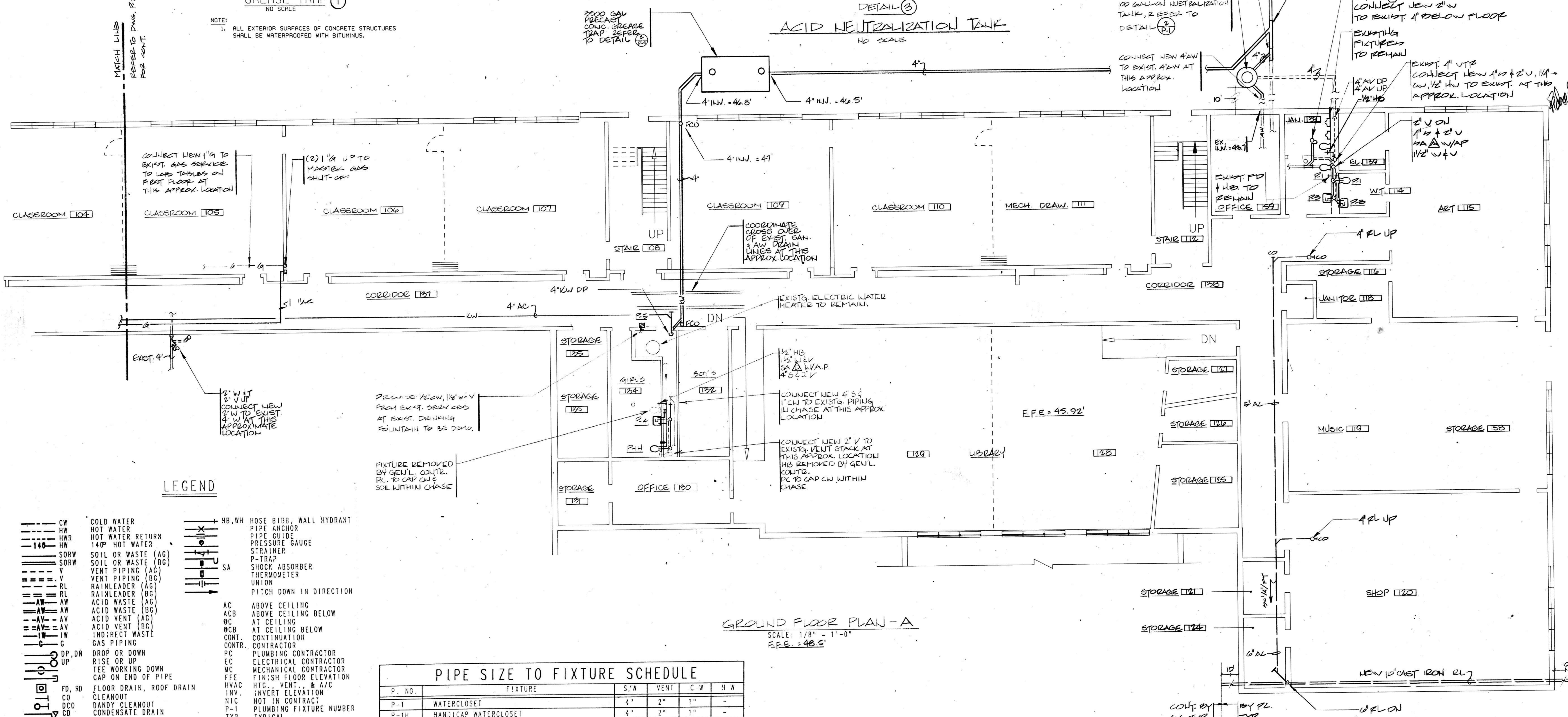
NOTE:
1. ALL EXTERIOR SURFACES OF CONCRETE STRUCTURES SHALL BE WATERPROOFED WITH BITUMINUS.



CONCRETE THRUST BLOCKS DETAIL (2)
NO SCALE



DETAIL (3)
ACID NEUTRALIZATION TANK
NO SCALE



LEGEND

Symbol	Description	Symbol	Description
CW	COLD WATER	HB, WH	HOSE BIBB, WALL HYDRANT
HW	HOT WATER		PIPE ANCHOR
HWR	HOT WATER RETURN		PIPE GUIDE
HW	140° HOT WATER		PRESSURE GAUGE
SORW	SOIL OR WASTE (AG)		STRAINER
SORW	SOIL OR WASTE (BG)		P-TRAP
V	VENT PIPING (AG)	SA	SHOCK ABSORBER
V	VENT PIPING (BG)		THERMOMETER
RL	RAINLEADER (AG)		UNION
RL	RAINLEADER (BG)		PITCH DOWN IN DIRECTION
AW	ACID WASTE (AG)	AC	ABOVE CEILING
AW	ACID WASTE (BG)	ACB	ABOVE CEILING BELOW
AV	ACID VENT (AG)	@C	AT CEILING
AV	ACID VENT (BG)	@CB	AT CEILING BELOW
IW	INDIRECT WASTE	CONT.	CONTINUATION
G	GAS PIPING	CONTR.	CONTRACTOR
DP, DN	DROP OR DOWN	PC	PLUMBING CONTRACTOR
UP	RISE OR UP	EC	ELECTRICAL CONTRACTOR
	TEE WORKING DOWN	MC	MECHANICAL CONTRACTOR
	CAP ON END OF PIPE	FFE	FINISH FLOOR ELEVATION
FD, RD	FLOOR DRAIN, ROOF DRAIN	HVAC	HTG., VENT., & A/C
CO	CLEANOUT	INV.	INVERT ELEVATION
DCO	DANDY CLEANOUT	NIC	NOT IN CONTRACT
CD	CONDENSATE DRAIN	P-1	PLUMBING FIXTURE NUMBER
FCO	FLOOR CLEANOUT	TYP	TYPICAL
	BALANCING VALVE	VTR	VENT THRU ROOF
	BALL VALVE	AVTR	ACID VENT THRU ROOF
	BUTTERFLY VALVE	AP	ACCESS PANEL
	CHECK VALVE	AFF	ABOVE FINISHED FLOOR
D.O.V.	DRAIN OFF VALVE	AG	ABOVE GRADE
	GAS COCK	BG	BELOW GRADE
	GAS COCK LUBRICATED	KW	KITCHEN WASTE
	GATE VALVE		
	GLOBE VALVE		
	O, S & Y GATE VALVE		
PRV	PRESSURE REDUCING VALVE		
	STOP & WASTE VALVE		
V.I.V.	VALVE IN VERTICAL		
	EXPANSION LOOPS		
	FLOW IN DIRECTION OF ARROW		
	FLEXIBLE CONNECTION		

PIPE SIZE TO FIXTURE SCHEDULE

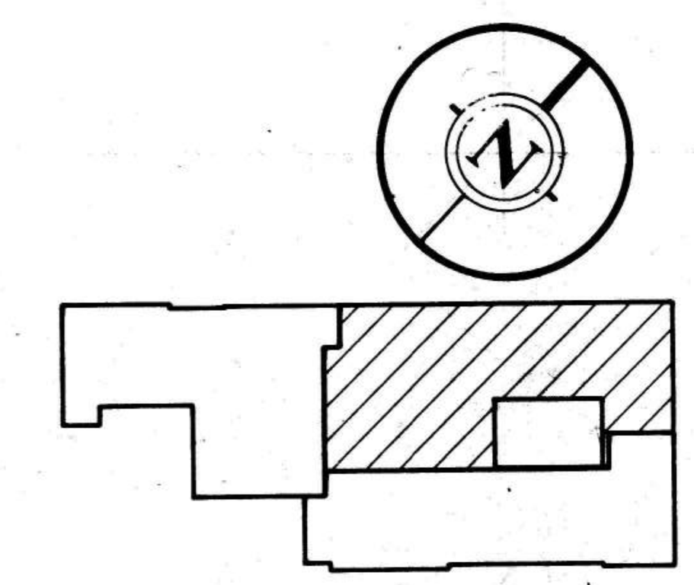
P. NO.	FIXTURE	S/W	VENT	C W	H W
P-1	WATERCLOSET	4"	2"	1"	-
P-1H	HANDICAP WATERCLOSET	4"	2"	1"	-
P-2	URINAL	2"	2"	3/4"	-
P-2H	HANDICAP URINAL	2"	2"	3/4"	-
P-3	LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"
P-4	HANDICAP LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"
P-5	ELECTRIC WATER COOLER	1-1/2"	1-1/2"	1/2"	1/2"
P-6	CLASSROOM SINK	1-1/2"	1-1/2"	1/2"	1/2"
P-7	MOP RECEPTOR	3"	2"	1/2"	1/2"
P-8	DRINKING FOUNTAIN & CUSPIDOR	1-1/2"	1-1/2"	1/2"	—
P-9	HANDICAP SHOWER	—	—	1/2"	1/2"
P-10	SHOWER	—	—	1/2"	1/2"

DRAIN SCHEDULE

SYMBOL	TYPE	MFGR	MODEL	OUTLET	STRAINER	REMARKS
A	FD	J.R. SMITH	2010A	CAULK	NICKEL/BRZ	
B	RD	J.R. SMITH	1010ERC	CAULK	NON FERROUS	

SHOCK ABSORBER SCHEDULE

SYMBOL	A	B	C	D	E
JOSAM	75001	75002	75003	75004	75005
SMITH	5005	5010	5020	5030	5040
ZURN	1700-100	1700-200	1700-300	1700-400	1700-500



KEY PLAN
NTS

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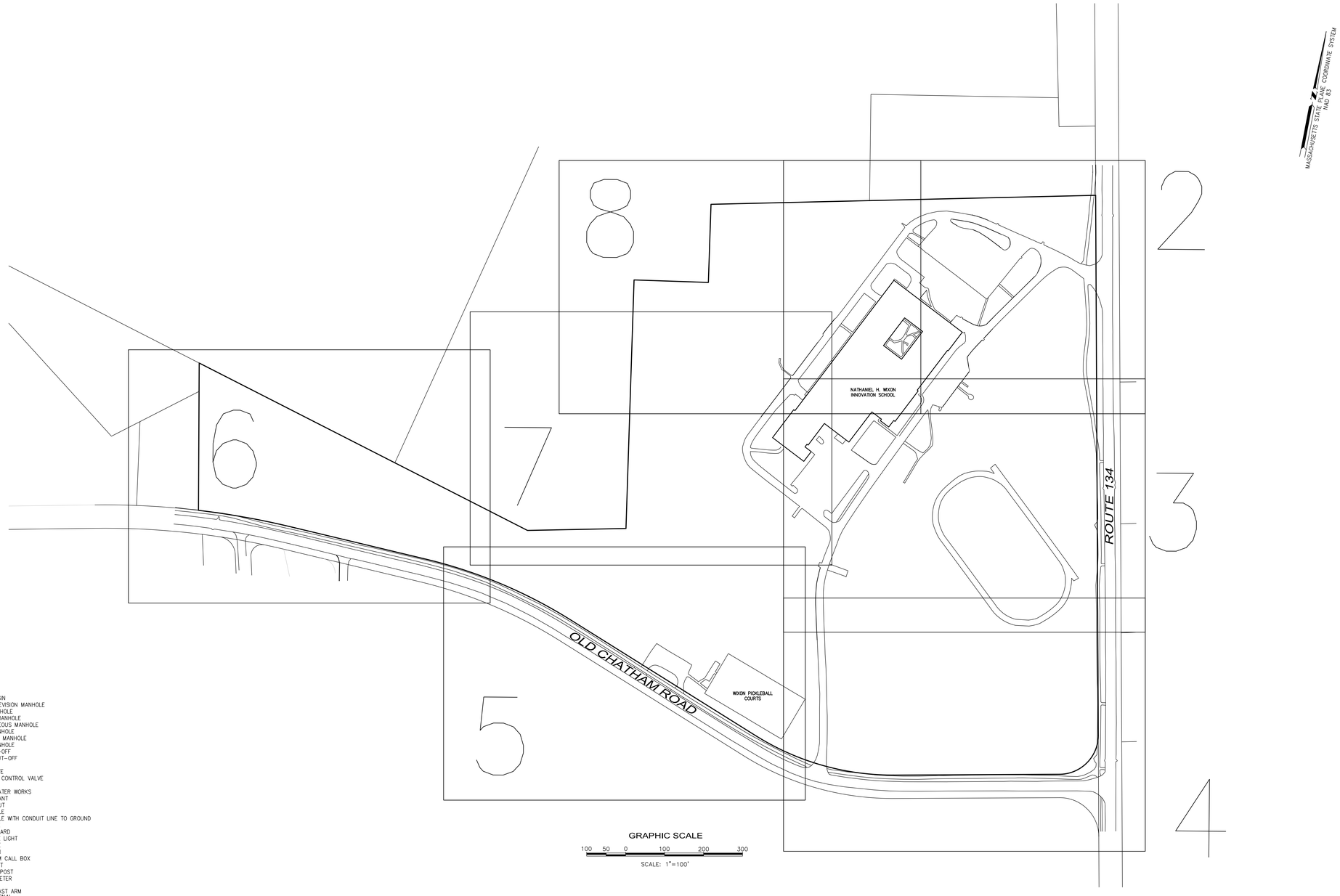
Norwood, Mass. 02062

ADDITION and ALTERATIONS to the
WIXON MIDDLE SCHOOL
DENNIS, MASSACHUSETTS

title: GROUND FLOOR PLAN-A - PLUMBING
scale: AS NOTED
project no.
date: 7-6-03
drawn: JAV
checked: DFR
approved: MJH
revision:

P 1

JOB NAME: WIXUAGF
JOB NO: 32095



LEGEND

	CATCH BASIN
CB	CABLE TELEVISION MANHOLE
D	DRAIN MANHOLE
E	ELECTRIC MANHOLE
M	MISCELLANEOUS MANHOLE
S	SEWER MANHOLE
T	TELEPHONE MANHOLE
W	WATER MANHOLE
GSO	GAS SHUT-OFF
WSO	WATER SHUT-OFF
GG	GAS GATE
WG	WATER GATE
ICV	IRRIGATION CONTROL VALVE
CLEANOUT	CLEANOUT
BWW	BOSTON WATER WORKS
	FIRE HYDRANT
DS	DOWN SPOUT
UP	UTILITY POLE
UP W/ UE	UTILITY POLE WITH CONDUIT LINE TO GROUND
	LIGHT POLE
LB	LIGHT BOLLARD
LL	LANDSCAPE LIGHT
HH	HAND HOLE
TC	TRASH CAN
FACB	FIRE ALARM CALL BOX
MP	METAL POST
CP	CONCRETE POST
PM	PARKING METER
S	SIGN POST
TMA	TRAFFIC MAST ARM
TRSG	TRAFFIC SIGNAL
PED	PEDESTRIAN SIGNAL
12"	DECIDUOUS TREE WITH TRUNK DIAMETER
12"	CONIFEROUS TREE WITH TRUNK DIAMETER
	HANDICAP PARKING
60|+43	SPOT ELEVATION
CLF	CHAIN LINK FENCE
BB	BITUMINOUS CONCRETE BERM
SGC	SLOPED GRANITE CURB
VGC	VERTICAL GRANITE CURB
VCC	VERTICAL CONCRETE CURB
WCR	WHEELCHAIR RAMP
LST	LANDSCAPE TIMBER
R=	RIM ELEVATION EQUALS
I=	INVERT ELEVATION EQUALS
TH=	TOP OF HOOD ELEVATION EQUALS
NPV	NO PIPES VISIBLE
TOW=	TOP OF WATER
TCB	TRAFFIC CONTROL BOX
ULD	UNDERGROUND LOOP DETECTOR
DWP	DETECTABLE WARNING PANEL
60|+63TW	TOP OF WALL ELEVATION
CATV	UNDERGROUND CABLE TELEVISION LINE
D	UNDERGROUND DRAIN LINE
E	UNDERGROUND ELECTRIC LINE
G	UNDERGROUND GAS LINE
S	UNDERGROUND SEWER LINE
T	UNDERGROUND TELEPHONE LINE
W	UNDERGROUND WATER LINE
OHW	OVERHEAD WIRES
	MONITORING WELL
	BENCH MARK

GRAPHIC SCALE

100 50 0 100 200 300

SCALE: 1"=100'

NOTES

1. THIS DOCUMENT IS AN INSTRUMENT OF SERVICE OF NITSCH ENGINEERING. IT IS ISSUED TO THE TOWN OF DENNIS FOR PURPOSES RELATED DIRECTLY AND SOLELY TO NITSCH ENGINEERING'S SCOPE OF SERVICES UNDER CONTRACT WITH THE TOWN OF DENNIS FOR WIXON SCHOOL. ANY USE OR REUSE OF THIS DOCUMENT FOR ANY REASON BY ANY PARTY FOR PURPOSES UNRELATED DIRECTLY AND SOLELY TO SAID CONTRACT AND PROJECT SHALL BE AT THE USER'S SOLE AND EXCLUSIVE RISK AND LIABILITY, INCLUDING LIABILITY FOR VIOLATION OF COPYRIGHT LAWS, UNLESS WRITTEN AUTHORIZATION IS GIVEN THEREFOR BY NITSCH ENGINEERING.

2. THE PURPOSE OF THIS PLAN IS TO SHOW EXISTING CONDITIONS AS THE RESULT OF AN ON-THE-GROUND INSTRUMENT SURVEY WHICH OCCURRED MARCH 2024.

3. HORIZONTAL COORDINATES REFER TO MASSACHUSETTS STATE PLANE (NAD 83) BASED ON RTK GPS OBSERVATIONS.

4. ELEVATION REFERS TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) VERTICAL BASED ON RTK GPS OBSERVATIONS.

5. THE INFORMATION CONTAINED ON THE DISK OR ELECTRONIC DRAWING FILE ACCOMPANYING THIS PLAN MUST BE COMPARED TO THE SEALED AND SIGNED HARD COPY OF THE PLAN TO ENSURE THE ACCURACY OF ALL INFORMATION AND TO ENSURE NO CHANGES, ALTERATIONS, OR MODIFICATIONS HAVE BEEN MADE. RELIANCE SHALL NOT BE MADE ON A DOCUMENT TRANSMITTED BY COMPUTER OR OTHER ELECTRONIC MEANS UNLESS FIRST COMPARED TO THE ORIGINAL SEALED DOCUMENT ISSUED AT THE TIME OF THE SURVEY. DUE TO THE CRITICAL NATURE OF SURVEYING, DATA ACQUISITION, AND AUTOCAD PLAN DEVELOPMENT, IF CRITICAL DIMENSIONAL INFORMATION IS NEEDED AND IS NOT SPECIFICALLY SHOWN ON THE ELECTRONIC DRAWING FILE, PLEASE CONTACT NITSCH ENGINEERING.

UTILITY INFORMATION STATEMENT

1. THE SUB-SURFACE UTILITY INFORMATION SHOWN HEREON IS COMPILED BASED ON FIELD SURVEY INFORMATION, RECORD INFORMATION AS SUPPLIED BY THE APPROPRIATE UTILITY COMPANIES, AND PLAN INFORMATION SUPPLIED BY THE CLIENT, IF ANY; THEREFORE WE CANNOT GUARANTEE THE ACCURACY OF SAID COMPILED SUB-SURFACE INFORMATION TO ANY CERTAIN DEGREE OF STATED TOLERANCE. ONLY PHYSICALLY LOCATED SUB-SURFACE UTILITY FEATURES FALL WITHIN NORMAL STANDARD OF CARE ACCURACIES.

2. THE LOCATIONS OF UNDERGROUND PIPES, CONDUITS, AND STRUCTURES HAVE BEEN DETERMINED FROM SAID INFORMATION, AND ARE APPROXIMATE ONLY. COMPILED LOCATIONS OF ANY UNDERGROUND STRUCTURES, NOT VISIBLY OBSERVED AND LOCATED, CAN VARY FROM THEIR ACTUAL LOCATIONS.

3. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED.

4. THE STATUS OF UTILITIES, WHETHER ACTIVE, ABANDONED, OR REMOVED, IS AN UNKNOWN CONDITION AS FAR AS OUR COMPILATION OF THIS INFORMATION.

5. IT IS INCUMBENT UPON INDIVIDUALS USING THIS INFORMATION TO UNDERSTAND THAT COMPILING UTILITY INFORMATION IS NOT EXACT, AND IS SUBJECT TO CHANGE BASED UPON VARYING PLAN INFORMATION RECEIVED AND ACTUAL LOCATIONS.

6. THE ACCURACY OF MEASURED UTILITY INVERTS AND PIPE SIZES IS SUBJECT TO FIELD CONDITIONS, THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS AND OTHER MATTERS.

7. THE PROPER UTILITY ENGINEERING/COMPANY SHOULD BE CONSULTED AND THE ACTUAL LOCATIONS OF SUBSURFACE STRUCTURES SHOULD BE VERIFIED IN THE FIELD (V.I.F.) BEFORE PLANNING FUTURE CONNECTIONS. CONTACT THE DIG SAFE CALL CENTER AT 1-888-344-7233, SEVENTY-TWO HOURS PRIOR TO EXCAVATION, BLASTING, GRADING, AND/OR PAVING.

8. AS OF THE DATE OF THIS PLAN RECORD INFORMATION HAS NOT BEEN RECEIVED BY NITSCH ENGINEERING FOR THE FOLLOWING UTILITIES: COMCAST CABLE CORPORATION, EVERSOURCE FIBER, MASS COASTAL RAILROAD, DENNIS WASTEWATER, DENNIS WATER DISTRICT

COMMONWEALTH OF MASSACHUSETTS
DENIS R. SEGUIN
#37058
REGISTERED PROFESSIONAL LAND SURVEYOR

DENIS R. SEGUIN, PLS — DATE
MASSACHUSETTS REG. No. 37058
REGISTERED PROFESSIONAL LAND SURVEYOR

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- GIS

PROJECT #	15582.1
FILE:	15582.1_TOPO.dwg
SCALE:	1"=20'
DATE:	MARCH 2024
PROJECT MANAGER:	
FIELD BOOK:	822
DRAFTED BY:	JTJ
CHECKED BY:	

REV.	COMMENTS	DATE
B	SEPTIC TANK BY CONCESSION BUILDING	4/17/2024
A	ADDITIONAL UTILITY INFORMATION	4/11/2024

REVISIONS

EXISTING CONDITIONS PLAN

NATHANIEL H. WIXON INNOVATION SCHOOL
901 MA-134, SOUTH DENNIS, MA 02660

PREPARED FOR:
TOWN OF DENNIS
685 ROUTE 134, SOUTH DENNIS, MA 02660

SHEET:
EX-1
OF 8 REV. B

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A	ADDITIONAL UTILITY INFORMATION	4/11/2024

REVISIONS

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DRAFTED BY: JTJ
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REV.	COMMENTS	DATE
A	ADDITIONAL UTILITY INFORMATION	4/11/2024

REVISIONS

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PREPARED FOR:
TOWN OF DENNIS
685 ROUTE 134, SOUTH DENNIS, MA 02660

SHEET:
EX-3
OF 8
REV. B

SEE SHEET EX-3

SEE SHEET EX-5

901 ROUTE 134
N/F
TOWN OF DENNIS
NATHANIEL WIXON SCHOOL
BK 1276 PG 515
PL BK 1185 PL 71
PID 217-1
1,926,592 SF±
44.22 AC±

850 ROUTE 134
N/F
DENNIS BASKIN, LLC
BK 30749 PG 229
PL BK 532 PG 59
PID 218-25

812 ROUTE 134
N/F
TOWN OF DENNIS
MELPET HOUSING
LCC 159052
LOP 39747-B
PID 203-23

815 ROUTE 134
N/F
TOWN OF DENNIS
OAK RIDGE CEMETARY
PID 202-1

EAST-WEST DENNIS ROAD
ROUTE 134
PUBLIC
60' WIDTH (1926 L.O.)

OLD CHATHAM ROAD
PUBLIC
60' WIDTH (1967 L.O.)

EAST-WEST DENNIS ROAD
ROUTE 134
PUBLIC
60' WIDTH (1926 L.O.)

S11°07'58"E 1385.33'

S11°07'58"E 609.00'

S78°52'02"W 425.00'

N78°52'02"E 425.00'

R=660.72' L=372.41' Δ=32°18'16"

R=720.17' L=406.26'

R=100.00' L=57.08' Δ=89°59'57"

R=100.00' L=57.08'

R=50.16
FULL OF DEBRIS
BOT=48.5 (NPV)

R=43.51
DEBRIS=40.5(NPV)

R=49.68
I=46.7

R=47.93
A I=45.1
B I=46.4

R=47.97
I=45.7

TENNIS COURT
AREA 48,300 SQ FT ±
PER PLAN OF IRA
THATCHER, DEC. 1972
TOWN OF DENNIS
ARTICLE 62, 1975

BENCH MARK:
X-CUT IN HYDRANT BOLT
ELEVATION=49.82'(NAVD88)
FIELD BOOK 822 PAGE 62
SET ON 03/06/2024

#1 CBND DISK(F)
HELD

HELD INTERSECTION
PER PLAN

PIPE HAS STEEP
DOWNWARD ANGLE

MASSACHUSETTS STATE PLANE COORDINATE SYSTEM
NAD 83

GRAPHIC SCALE
20 10 0 20 40 60
SCALE: 1"=20'

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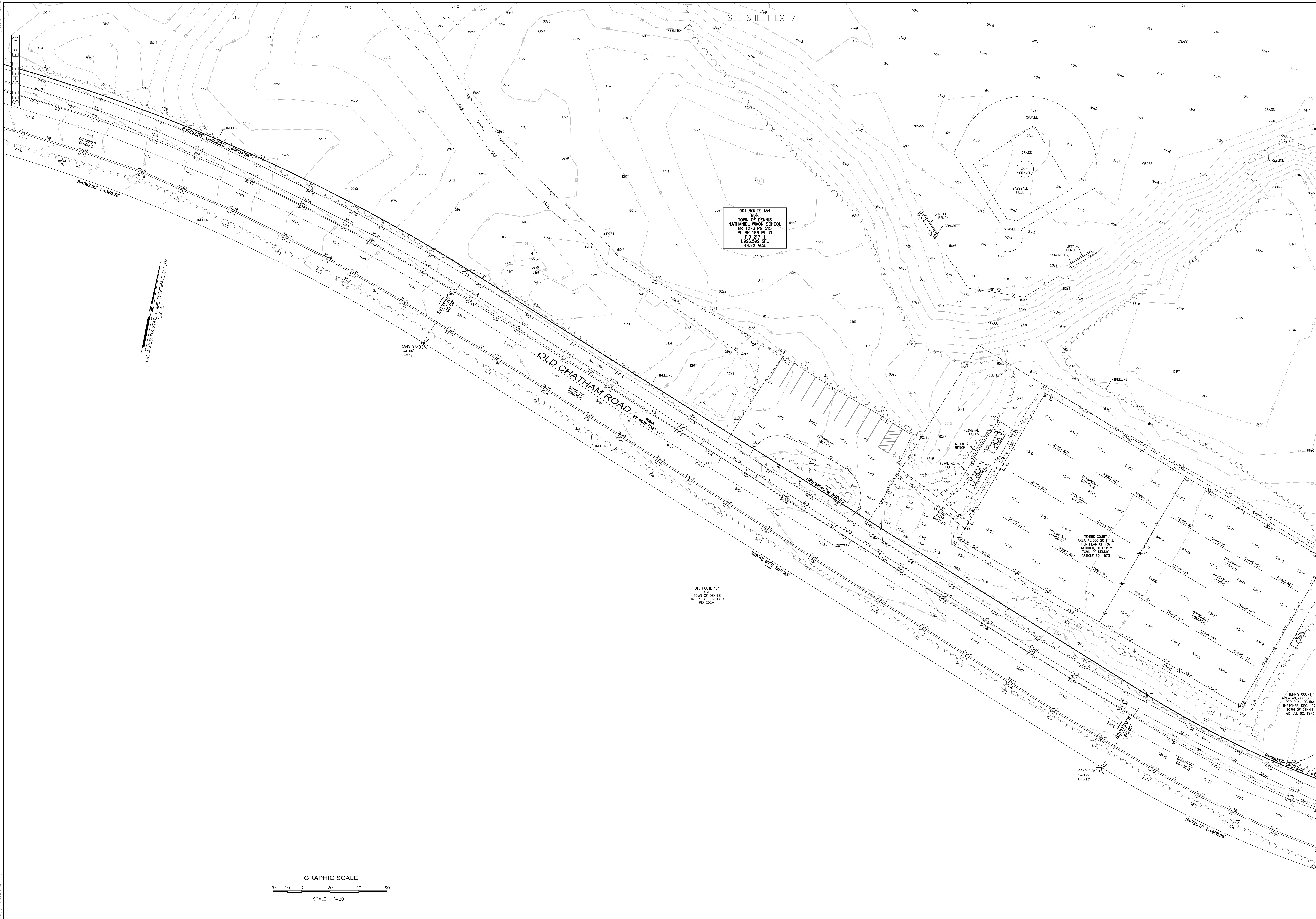
PROJECT #	15582.1
FILE:	15582.1_TOPO.dwg
SCALE:	1"=20'
DATE:	MARCH 2024
PROJECT MANAGER:	
FIELD BOOK:	822
DRAFTED BY:	JTJ
CHECKED BY:	

REV.	COMMENTS	DATE
	REVISIONS	
B	SEPTIC TANK BY CONCESSION BUILDING	4/17/2024
A	ADDITIONAL UTILITY INFORMATION	4/11/2024

EXISTING CONDITIONS PLAN
NATHANIEL H. WIXON INNOVATION SCHOOL
901 MA-134, SOUTH DENNIS, MA 02660

PREPARED FOR:
TOWN OF DENNIS
685 ROUTE 134, SOUTH DENNIS, MA 02660

SHEET:
EX-4
OF 8 REV. B



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REV.	COMMENTS	DATE
A	ADDITIONAL UTILITY INFORMATION	4/11/2024

REVISIONS

EXISTING CONDITIONS PLAN

NATHANIEL H. WIXON INNOVATION SCHOOL
901 MA-134, SOUTH DENNIS, MA 02660

PREPARED FOR:
TOWN OF DENNIS
685 ROUTE 134, SOUTH DENNIS, MA 02660

SHEET:
EX-5
OF 8 REV. B

4/17/2024 2:09 PM

0 OLD BASS RIVER ROAD
N/F
DENNIS WATER DISTRICT
PID 215-19

0 GRASSY POND DRIVE
N/F
DENNIS WATER DISTRICT
BK 1189 PG 214
PL BK 174 PL 101
PID 215-22

0 GRASSY POND DRIVE
N/F
DENNIS WATER DISTRICT
BK 1361 PG 417
PL BK 210 PL 1
PL BK 214 PL 121
PID 216-10

MASSACHUSETTS STATE PLANE COORDINATE SYSTEM
NAD 83

30 OLD CHATHAM ROAD
N/F
AMIE KAYE GILBERT
LCC 223178
LCP 42836-B
PID 215-35

CBDH(F)
HELD

CBDH(F)
W=0.06'
N=0.18'

CBDH(F)
S=0.28'
W=0.30'

N10°34'19"W 378.06'

S73°49'25"E
945.41'

6'CLF

DIRT

GRASS

SOLAR PANEL ARRAY

ICV

TO LC. RD.(F)
PLAN 428306
L=268.50'

TREELINE

INV=36.8

BIT. CONC.

ANCHOR

R=2036.17' L=238.60' Δ=6°42'50"

CBND DISK(F)
S=0.21'
E=1.89'

R=38.79
DEBRIS=34.8(NPV)

R=38.91
TW=36.2
BOT=35.2

BITUMINOUS CONCRETE

GUTTER

EOP

901 ROUTE 134
N/F
TOWN OF DENNIS
NATHANIEL WIXON SCHOOL
BK 1276 PG 515
PL BK 188 PL 71
PID 217-1
1,926,592 SF±
44.22 AC±

NB7°23'34"W 357.14'

S2°36'26"W
60.00'
R.O.W. LINE

CBND DISK(F)
N=0.03'
W=0.15'
HELD LINE
FROM #1 CBND DISK(F)

ENERGY SWITCHES AND TRANSFORMER ON CONCRETE PAD

OLD CHATHAM ROAD
PUBLIC
60' WIDTH (1967 L.O.)

OCONNOR LANE

KELLEY WAY

4 CARRIAGE DRIVE
N/F
JEFFREY A. WEINER
LLC 232326
LCP 34126-B
PID 216-1

3 OCONNOR LANE
N/F
ROBERT B. RICKETSON
LCC 173827
LCP 36665-B
PID 216-4

4 OCONNOR LANE
N/F
PAULA A. LIEBERWIRTH AND
JUDITH C. LIEBERWIRTH
LCC 210903
LCP 36665-B
PID 216-6

1 KELLEY WAY
N/F
THOMAS G. BEDARD AND
LAURIE A. BEDARD
LCC 200802
LCP 36665-B
PID 216-8

815 ROUTE 134
N/F
TOWN OF DENNIS
OAK RIDGE CEMETARY
PID 202-1

R=1192.55' L=388.76'

SEE SHEET EX-7

SEE SHEET EX-5

SEE SHEET EX-3

GRAPHIC SCALE
20 10 0 20 40 60
SCALE: 1"=20'

Nitsch Engineering
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F: (617) 338-6472

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- Structural Engineering
- Green Infrastructure
- Planning
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PROJECT #	15582.1
FILE:	15582.1_TOPO.dwg
SCALE:	1"=20'
DATE:	MARCH 2024
PROJECT MANAGER:	
FIELD BOOK:	822
DRAFTED BY:	JTJ
CHECKED BY:	

REV.	COMMENTS	DATE
	REVISIONS	
A		4/11/2024

EXISTING CONDITIONS PLAN
NATHANIEL H. WIXON INNOVATION SCHOOL
901 MA-134, SOUTH DENNIS, MA 02660

PREPARED FOR:
TOWN OF DENNIS
685 ROUTE 134, SOUTH DENNIS, MA 02660

SHEET:
EX-6
OF 8 REV. B

J:\15500-15599\15582.1 wixon school\survey\cad\15582.1_topo.dwg

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A	ADDITIONAL UTILITY INFORMATION	4/11/2024

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SHEET: EX-8
OF 8 REV. B