ST. PAUL'S SCHOOL
NEW SQUASH CENTER

87 DUNBARTON ROAD
CONCORD, NEW HAMPSHIRE

SITE ENGINEER
NOBIS GROUP. - CONCORD, NH
ARCHITECT
SASAKI - BOSTON, MA
SURVEYOR
RICHARD D. BARTLETT & ASSOCIATES, LLC - CONCORD, NH
LANDSCAPE ARCHITECT
SASAKI - BOSTON, MA
SITE LIGHTING
HLB - NEW YORK, NY
OWNER/APPLICANT
ST. PAUL'S SCHOOL - CONCORD, NH

CITY OF CONCORD APPROVALS/REQUESTS:

THE ZONING BOARD OF ADJUSTMENT OF THE CITY OF CONCORD, GRANTED THE FOLLOWING VARIANCES ON NOVEMBER 4, 2024. (ZBA-0230-2024)

ARTICLE 28-4-3(c)(1) - WETLAND BUFFERS AND SETBACKS- CERTAIN USES PROHIBITED IN BUFFERS: TO ALLOW CONSTRUCTION OF A BUILDING OR STRUCTURE IN 8,200 SQUARE FEET OF WETLAND BUFFER WHERE CONSTRUCTION OF A BUILDING IN A WETLAND IS PROHIBITED

ARTICLE 28-7-2(e)(B) - TABLE OF OFF-STREET PARKING REQUIREMENTS: TO ALLOW 96 PARKING SPACES WHERE 1,334 PARKING SPACES ARE REQUIRED.

ARTICLE 28-7-5 - REQUIREMENTS FOR HANDICAPPED ACCESSIBLE PARKING SPACES: TO ALLOW 5 ACCESSIBLE PARKING SPACES WHERE 24 ACCESSIBLE PARKING SPACES ARE REQUIRED.

THE FOLLOWING CONDITIONAL USE PERMIT AND WAIVERS ARE REQUESTED FROM THE PLANNING BOARD OF THE CITY OF CONCORD.

CONDITIONAL USE PERMITS REQUESTED FOR SITE PLAN APPROVAL
ARTICLE 28-4-3(d) - DISTURBANCE TO A WETLAND BUFFER

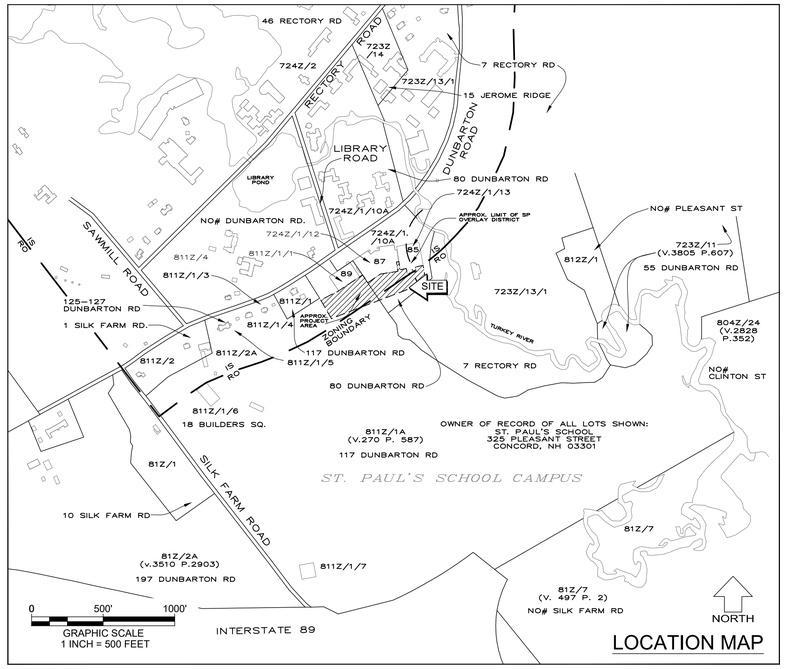
WAIVERS REQUESTED FOR SITE PLAN APPROVAL

1. SECTION 12.02(1)(a)
2. SECTION 12.04(4)
3. SECTION 12.07
4. SECTION 15.02(8)
5. SECTION 15.03(1)
6. SECTION 15.03(2)
7. SECTION 15.03(18)
8. SECTION 15.03(19)
9. SECTION 15.03(22)
10. SECTION 15.03(23)(c)
11. SECTION 15.04(1)
12. SECTION 15.04(2)
13. SECTION 15.04(22)
14. SECTION 15.04(27)
15. SECTION 16.02(7)
16. SECTION 16.02(22)
17. SECTION 18.13
18. SECTION 18.17
19. SECTION 29-1-2(a)(1)

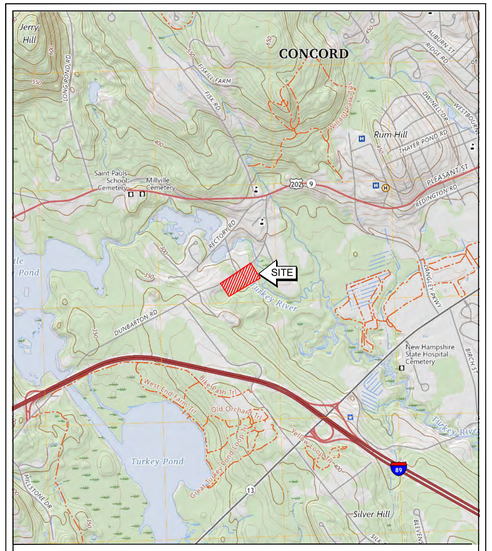
APPROVED
UNDER THE PROVISIONS OF R.S.A. 674:35 & R.S.A. 674:36
CITY PLANNING BOARD
CITY OF CONCORD, NEW HAMPSHIRE
in accordance with vote of the board dated:

Approval of this plan is limited to the lots as shown

Chair Clerk



LOCATION MAP



VICINITY MAP
USGS TOPOGRAPHIC MAP
CONCORD, NH 2025

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SEPTEMBER 17, 2025

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NOBIS PROJECT NO. 100811.040

J:\100811.040 SPS - New Squash Center - Sasaki\CAD\DWG\100811.040-C-001-COVER.dwg 9/17/2025 4:07 PM

LEGEND

EXISTING	PROPOSED	
		SUBJECT PROPERTY LINE
		OTHER PROPERTY LINE
		SETBACKS
		EASEMENT
		STONE WALL
		RETAINING WALL
		EDGE OF WETLAND
		STREAM / RIVER
		TREE LINE
		CHAIN LINK FENCE
		STOCKADE FENCE
		GUARDRAIL (STEEL)
		GUARDRAIL (WOOD)
		CENTERLINE
		EDGE OF GRAVEL
		EDGE OF PAVEMENT
SGC	SGC	SLOPED GRANITE CURB
VGC	VGC	VERTICAL GRANITE CURB
VCC	VCC	VERTICAL CONCRETE CURB
BCC	BCC	BITUMINOUS CONCRETE CURB
CC	CC	CONCRETE CURB
CCB	CCB	CAPE COD BERM
TD	TD	TIP DOWN
100	100	MAJOR CONTOUR
98	98	MINOR CONTOUR
D	D	DRAIN LINE
RD	RD	ROOF DRAIN
UD	UD	UNDER DRAIN
FD	FD	FOUNDATION DRAIN
		SWALE FLOW DIRECTION
X	X	SILT FENCE / WATTLE
OHW	OHW	OVERHEAD UTILITY WIRE
UGE	UGE	UNDERGROUND ELECTRIC
T	T	UNDERGROUND TELECOM
S	S	SANITARY SEWER LINE
SS	SS	SANITARY SEWER SERVICE
FM	FM	SANITARY SEWER FORCE MAIN
W	W	WATER LINE
WS	WS	WATER SERVICE
G	G	GAS LINE
ST	ST	STEAM LINE
FO	FO	FIBER OPTIC LINE
		ZONING BOUNDARY LINE
		FLOOD ZONE LINE

EXISTING	PROPOSED	
	D	DRAIN MANHOLE
	CB	CATCH BASIN
		UTILITY POLE
	T	PAD MOUNTED TRANSFORMER
	S	SANITARY SEWER MANHOLE
	CO	SANITARY SEWER CLEAN-OUT
		HYDRANT
	WV	WATER VALVE
	SV	WATER SHUT OFF
W	W	WATER SUPPLY WELL
	GV	GAS SHUT OFF
	GM	GAS METER
× 100.0	× 100.0	SPOT GRADE
× 100.0 / 100.5	× 100.0 / 100.5	CURB SPOT GRADE
		SIGN POST
		LIGHT POLE
		TREE
		CONCRETE
		GRAVEL
		RIP RAP
		WETLAND
		WETLAND IMPACT
		FLOW DIRECTION
		STONE CHECK DAM
		INLET PROTECTION
	2%	SLOPE & DIRECTION
	TP	TEST PIT LOCATION
	B	BORING LOCATION
	MW	MONITORING WELL LOCATION
	PT	PERC. TEST LOCATION
	1	PHOTO LOCATION / DIRECTION
	MH	MANHOLE
	T	TELECOM MANHOLE
	E	ELECTRIC MANHOLE
		STEEP SLOPE

GENERAL NOTES:

1. THESE DRAWINGS SHOULD BE REVIEWED IN CONJUNCTION WITH THE ACCOMPANYING DESIGN REPORT TITLED "STORMWATER MANAGEMENT REPORT FOR ST. PAUL'S SCHOOL NEW SQUASH CENTER, 87 DUNBARTON ROAD, CONCORD, NH" DATED SEPTEMBER 17, 2025 PREPARED BY NOBIS GROUP.
2. EXISTING CONDITIONS, TOPOGRAPHICAL INFORMATION, NORTH ORIENTATION, NORTH ARROW, AND COORDINATE VALUES DEPICTED ON THESE DRAWINGS ARE BASED ON PLANS TITLED "EXISITING CONDITIONS PLAT PREPARED FOR ST. PAUL'S SCHOOL", DATED AUGUST 8, 2025, PROVIDED TO NOBIS GROUP BY RICHARD D. BARTLETT & ASSOCIATES, LLC.
3. THESE DRAWINGS AND ACCOMPANYING TEXT HAVE BEEN PREPARED FOR ST. PAUL NEW SQUASH CENTER, FOR REVIEW BY THE CITY OF CONCORD PLANNING BOARD, CODE ENFORCEMENT, GENERAL SERVICES, POLICE, AND FIRE DEPARTMENTS.
4. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF CONCORD'S CONSTRUCTION STANDARDS AND DETAILS (LATEST EDITION), AND CITY STANDARDS SHALL TAKE PRECEDENCE IN CASE OF ANY DETAILS OR PLANS IN CONFLICT.
5. THE IMPROVEMENTS BUILT AND CONSTRUCTED AS PART OF AN APPROVED SITE PLAN SHALL BE MAINTAINED IN PERPETUITY IN ACCORDANCE WITH ALL STATE AND FEDERAL RULES AND REGULATIONS, AND THE MAINTENANCE AND OPERATIONS PLAN SET FORTH IN SECTION 22.05 OF THE CITY OF CONCORD'S CONSTRUCTION STANDARDS AND DETAILS (LATEST EDITION), AS WELL AS ANY MANUFACTURER'S SPECIFICATIONS.
6. ALL UTILITIES SHALL BE INSTALLED UNDERGROUND IN ACCORDANCE WITH SECTION 25.02(1) OF THE SITE PLAN REGULATIONS.
7. UPON COMPLETION OF CONSTRUCTION THE CONTRACTOR SHALL SUBMIT AS-BUILT DRAWINGS TO THE ENGINEERING SERVICES DIVISION PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
8. THE CONTRACTOR SHALL SET UP A PRECONSTRUCTION MEETING WITH THE ENGINEERING SERVICES DIVISION TO DISCUSS CONSTRUCTION REQUIREMENTS, SITE INSPECTIONS, ASSOCIATED FEES, SCHEDULES, ETC.
9. THE CONTRACTOR SHALL OBTAIN UTILITY CONNECTION PERMITS FROM THE ENGINEERING SERVICES DIVISION FOR THE PROPOSED WATER SERVICE, SEWER SERVICE, AND STORM DRAIN CONNECTION(S). INDIVIDUAL PERMITS WILL BE REQUIRED FOR EACH CONNECTION.

SPECIFICATION REFERENCES:

1. REFERENCE TO CITY STANDARDS SHALL MEAN THE CITY OF CONCORD. CONSTRUCTIONS STANDARDS AND DETAILS, AS MOST RECENTLY PUBLISHED.
2. REFERENCE TO STATE SPECIFICATIONS SHALL MEAN STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION, AS MOST RECENTLY PROMULGATED.
3. REFERENCE TO MUTCD SHALL MEAN THE MANUAL ON UNIFORM TRAFFIC. CONTROL DEVICES FOR STREETS AND HIGHWAYS, PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, AS MOST RECENTLY PUBLISHED.
4. REFERENCE TO THE CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE NHDES SHALL MEAN THE CONSTRUCTION STANDARDS FOR SANITARY SEWER AND WATER SUPPLY SYSTEMS OF THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES, AS MOST RECENTLY ADOPTED.
5. REFERENCE TO THE ARCHITECTURAL BARRIER FREE CODE SHALL MEAN THE ACCESSIBLE AND USEABLE BUILDING AND FACILITIES CODE OF THE INTERNATIONAL CODE COUNCIL, AS MOST RECENTLY ADOPTED BY THE CITY.
6. REFERENCE TO THE ALTERATIONS OF TERRAIN STANDARDS SHALL MEAN THE NH DEPARTMENT OF ENVIRONMENTAL SERVICES ALTERATION OF TERRAIN (AOT) (CHAPTER ENV-WQ 1500).
7. REFERENCE TO STANDARDS FOR SEWER DISCHARGE PERMITS SHALL MEAN THE NH DEPARTMENT OF ENVIRONMENTAL SERVICES STANDARDS OF DESIGN AND CONSTRUCTION FOR SEWERAGE AND WASTEWATER TREATMENT FACILITIES (CHAPTER ENV-WQ 700).
8. REFERENCE TO STANDARDS FOR SEPTIC SYSTEMS SHALL MEAN THE NH DEPARTMENT OF ENVIRONMENTAL SERVICES SUBDIVISION AND INDIVIDUAL SEWAGE DISPOSAL SYSTEM DESIGN RULES (CHAPTER ENV-WQ 1000).
9. REFERENCE TO STANDARDS FOR POTABLE WELLS SHALL MEAN NH WATER WELL BOARD STANDARDS FOR THE CONSTRUCTION, MAINTENANCE AND ABANDONMENT OF WELLS (CHAPTER ENV-WQ 600).
10. REFERENCE TO THE ARCHITECTURAL DESIGN REVIEW GUIDELINES SHALL MEAN THE GUIDELINES ADOPTED BY THE CITY OF CONCORD, PLANNING BOARD AS SET FORTH HEREIN, IN SECTION 33.07, ARCHITECTURAL DESIGN GUIDELINES.

CONSTRUCTION SEQUENCE:

1. CONSTRUCT TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO ANY EARTH MOVING OPERATIONS. INSPECT EROSION AND SEDIMENT CONTROL MEASURES WEEKLY AND WITHIN 24 HOURS OF ANY SIGNIFICANT RAINFALL EVENT (1/2" OF RAIN OR MORE). PERFORM ANY NEEDED MAINTENANCE AND STABILIZATION AS NEEDED.
2. DISTURBANCES OF AREAS SHALL BE MINIMIZED. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED FOR LONGER THAN TWO WEEKS DURING THE GROWING SEASON. AREAS WHICH WILL NOT BE PERMANENTLY SEEDED WITHIN TWO WEEKS OF DISTURBANCE SHALL BE TEMPORARILY SEEDED AND MULCHED. ALL AREAS SHALL BE STABILIZED WITH SEED MULCH AND TACKIFIER WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE AND PRIOR TO THE END OF THE GROWING SEASON.
3. PERFORM DEMOLITION OF EXISTING SITE FEATURES AS SHOWN ON DEMOLITION PLAN.
4. PERFORM CLEARING AND GRUBBING TO LIMITS SHOWN ON DEMOLITION PLAN.
5. REMOVE AND TEMPORARILY STOCKPILE LOAM AND TOPSOIL FOR REUSE, IF NEEDED, ON SITE. SEED AND/OR MULCH STOCKPILES AND ENCIRCLE WITH SILT FENCE.
6. CONDUCT ALL UNDERGROUND UTILITY STRUCTURE AND PIPING INSTALLATION, BACKFILL, AND COMPACTING.
7. CONSTRUCT BUILDING FOUNDATION AND FOOTINGS.
8. PLACE AND COMPACT NEW GRAVEL COURSES IN THE PARKING, SIDEWALK, AND GRAVEL ACCESS DRIVE AREAS.
9. PLACE, GRADE, AND STABILIZE DISTURBED AREAS WITH TEMPORARY SEEDING AND MULCHING.
10. BEGIN CONSTRUCTION OF BUILDING AND REMAINING SITE WORK.
11. PLACE PAVEMENT COURSES, SIDEWALKS, AND CURBING.
12. ALL CUT AND FILL SLOPES SHALL BE STABILIZED, LOAMED, SEEDED, AND MULCHED.
13. COMPLETE PERMANENT SEEDING AND LANDSCAPING IN ACCORDANCE WITH THE LANDSCAPE DESIGN AND DETAILS.
14. SWEEP COMPLETED PAVEMENT AND CLEAN OUT CATCH BASINS AND DRAINAGE PIPES DURING CONSTRUCTION CLOSE-OUT PROCEDURES. PROPERLY DISPOSE OF COLLECTED SEDIMENT AND DEBRIS.
15. REMOVE TEMPORARY EROSION CONTROL MEASURES AND PROPERLY DISPOSE OF FOLLOWING CONSTRUCTION AND ONCE FULL GROUND COVER HAS BEEN ESTABLISHED.

CAUTION

NEW HAMPSHIRE FISH AND GAME AOT PERMIT CONDITIONS RELATED TO THREATENED AND ENDANGERED SPECIES:

1. ALL MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS, EXCEPT FOR SILT FENCE INSTALLED IN ACCORDANCE WITH ENV-WQ 1506.04, UTILIZED FOR, BUT NOT LIMITED TO, SLOPE PROTECTION, RUNOFF DIVERSION, SLOPE INTERRUPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHALL NOT CONTAIN WELDED PLASTIC, PLASTIC, OR MULTI-FILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH.
2. ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES SHALL BE REPORTED IMMEDIATELY TO THE NEW HAMPSHIRE FISH AND GAME DEPARTMENT NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV. EMAIL SUBJECT LINE: NHB25-0298, ST. PAUL'S SCHOOL NEW SQUASH CENTER, WILDLIFE SPECIES OBSERVATION. PHOTOGRAPHS SHALL BE PROVIDED FOR VERIFICATION AS FEASIBLE.
3. PHOTOGRAPHS OF THE OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHALL BE PROVIDED TO NHF&G IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION, AS FEASIBLE;
4. IN THE EVENT A THREATENED OR ENDANGERED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO CONSULTATION WITH NHF&G AND IMPLEMENTATION OF CORRECTIVE ACTIONS RECOMMENDED BY NHF&G, IF ANY, TO ASSURE THE PROJECT DOES NOT APPRECIABLY JEOPARDIZE THE CONTINUED EXISTENCE OF THREATENED AND ENDANGERED SPECIES AS DEFINED IN FIS 1002.04; AND
5. THE NHF&G, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT.

EROSION CONTROL NOTES:

CATCH BASINS: CARE SHOULD BE TAKEN TO ENSURE THAT SEDIMENTS DO NOT ENTER CATCH BASINS DURING EXCAVATION FOR PIPE TRENCHES, DITCHES AND SWALES. THE CONTRACTOR SHOULD PLACE NON-WOVEN GEOTEXTILE FABRIC FOR INLET PROTECTION OVER INLETS IN AREAS OF SOIL DISTURBANCE, WHICH ARE SUBJECT TO SEDIMENT CONTAMINATION.

PLACE INLET PROTECTION DEVICES, IN CATCH BASINS AND MAINTAIN UNTIL ALL CONSTRUCTION ACTIVITIES HAVE CEASED AND THE SURROUNDING AREAS ARE WELL VEGETATED.

SEDIMENT TRAPS AND/OR BASINS SHOULD BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL BASINS/PONDS ARE STABILIZED.

ALL SWALES AND PONDS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF INTO THEM.

SCHEDULE OF WORK
THIS WORK IS ANTICIPATED TO BEGIN IN THE SPRING 2026 WITH A FINAL COMPLETION DATE IN SUMMER 2027. NO WINTER EARTH DISTURBANCE IS EXPECTED FOR THIS PROJECT. SHOULD WINTER WORK BE REQUIRED, THIS PLAN AND THE ACCOMPANYING STORM WATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE MODIFIED ACCORDINGLY.

ADEQUATE MEASURES SHOULD BE TAKEN TO MINIMIZE AIR BORNE DUST PARTICLES ARISING FROM SOIL DISTURBANCE AND CONSTRUCTION.

* DISTURBANCE OF AREAS SHOULD BE MINIMIZED AND NOT EXCEED 100,000 SQUARE FEET IN AREA AT ANY ONE TIME.
* NO DISTURBED AREA SHOULD BE LEFT UNSTABILIZED FOR LONGER THAN TWO WEEKS DURING THE GROWING SEASON.
* PERMANENT EROSION CONTROL FEATURES SHOULD BE INCORPORATED INTO THE PROJECT AT THE EARLIEST PRACTICABLE TIME, AS SPECIFIED ON THE CONTRACT PLANS.
* WITHIN 14 DAYS OF COMPLETING WORK IN AN AREA, AND PRIOR TO ANTICIPATED RAIN EVENTS, APPLY HAY/STRAW MULCH AND TACKIFIER ON ALL DISTURBED SOIL AREAS. APPLICATION RATES OF 2 TONS OF STRAW OR HAY PER ACRE SHOULD BE USED TO PREVENT EROSION UNTIL VEGETATIVE COVER CAN BE ESTABLISHED. ALTERNATIVELY, APPLY WOOD CHIPS OR GROUND BARK MULCH 2 TO 6 INCHES DEEP AT A RATE OF 10 TO 20 TONS PER ACRE.
* WHEN EROSION IS LIKELY TO BE A PROBLEM, GRUBBING OPERATION SHOULD BE SCHEDULED AND PERFORMED SUCH THAT GRADING OPERATION AND PERMANENT EROSION CONTROL FEATURES CAN FOLLOW IMMEDIATELY THEREAFTER.
* AS WORK PROGRESSES, PATCH SEEDING AND MULCHING SHOULD BE DONE AS REQUIRED ON AREAS PREVIOUSLY TREATED TO MAINTAIN OR ESTABLISH PROTECTIVE COVER.
* REMOVE ACCUMULATED SEDIMENTS AND DEBRIS WHEN SEDIMENT CONTAINMENT DEVICES REACH 33% CAPACITY.

EROSION CONTROL IMPLEMENTATION SCHEDULE
THE FOLLOWING GENERAL SCHEDULE IDENTIFIES THE PROPOSED SOIL EROSION AND SEDIMENT CONTROL AND STORM WATER MANAGEMENT MEASURES THAT ARE TO BE IMPLEMENTED PRIOR TO AND DURING CONSTRUCTION:

* PERFORM LIMITED GRUBBING, STRIPPING AND SITE GRADING ONLY AS NEEDED TO COMPLETE IMMEDIATE WORK GOALS.
* BLOCK STORM WATER FLOW AS NECESSARY TO INSTALL ALL STORM WATER STRUCTURES IN THE DRY.
* INSTALL PERMANENT STORM DRAIN SYSTEM.
* INSTALL TEMPORARY SOIL STABILIZATION MEASURE INCLUDING SEED, MULCH, FERTILIZER, MATTING, ETC.
* REDIRECT FLOWS INTO FINISHED STRUCTURES PRIOR TO FILL OPERATIONS.
* PLACE HUMUS AND CONDUCT PERMANENT SEEDING AND MULCHING OF ALL DISTURBED GROUND.

TEMPORARY STABILIZATION:
EROSION CONTROL MEASURES SHALL BE IMPLEMENTED, AS WRITTEN HEREIN AND AS DEPICTED ON THE ACCOMPANYING PLAN, FROM THE COMMENCEMENT OF CONSTRUCTION ACTIVITY UNTIL FINAL STABILIZATION IS COMPLETE:

TEMPORARY GRADING: TEMPORARY GRADING DURING CONSTRUCTION SHOULD BE PERFORMED IN SUCH A MANNER TO FACILITATE MAXIMUM INFILTRATION OF STORMWATER AND MINIMIZE OR ELIMINATE STORMWATER RUNOFF FROM THE SITE.

MULCH: MULCHING WITH LOOSE HAY OR STRAW, AT A RATE OF 2 TONS PER ACRE, SHALL BE DONE IMMEDIATELY AFTER EACH AREA HAS BEEN FINAL GRADED. WHEN SEED FOR EROSION CONTROL IS SOWN PRIOR TO PLACING THE MULCH, THE MULCH SHOULD BE PLACED ON THE SEEDED AREAS WITHIN 48 HOURS AFTER SEEDING.

TACKIFIER: PLACEMENT OF SOIL TACKIFIER HAS PROVEN TO BE AN EFFECTIVE METHOD OF PREVENTING SOIL AND ADHERING MULCH IN PLACE. THE PLACEMENT OF A SOIL TACKIFIER SHOULD BE PERFORMED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS AND SHOULD BE REAPPLIED AS NECESSARY TO CONTROL AIR BORN DUST AND SOIL, AND MULCH LOSS UNTIL PERMANENT VEGETATION IS ESTABLISHED.

ROAD CLEANING: THE CONTRACTOR SHALL SWEEP ROADS DAILY, OR AS NEEDED TO MAINTAIN CLEAN PAVED SURFACES AT ALL CONSTRUCTION ACCESS/EGRESS POINTS.

DUST CONTROL: THE CONTRACTOR SHALL IMPLEMENT DUST CONTROL MEASURES AS NEEDED TO PREVENT AIRBORNE DUST PARTICLES FROM LEAVING THE SITE. DUST CONTROL MEASURES SHALL CONSIST OF USE OF A WATER TRUCK EQUIPPED WITH A SPRAY-BAR THAT DISSIPATES THE WATER EVENLY OVER THE SURFACE.

PERMANENT STABILIZATION: GRASS, TREES, SHRUBS AND MULCHED PLANTING BEDS WILL BE CONSTRUCTED AND MAINTAINED IN LOCATIONS AS SHOWN ON THE DRAWINGS TO STABILIZE AREAS NOT WITHIN THE PARKING LOT/BUILDING FOOTPRINT. THE CONTRACTOR WILL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL FOR ONE YEAR AFTER COMPLETION.

AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
1. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
2. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
3. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED;
4. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

ALL ROADWAYS/PARKING AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

CONSTRUCTION SHALL BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

EXCAVATION DEWATERING:
SHOULD EXCAVATION DEWATERING BE REQUIRED, THE CONTRACTOR MUST INSURE THAT ANY EXCAVATION DEWATERING DISCHARGES ARE NOT CONTAMINATED. NOTE: THE WATER IS CONSIDERED UNCONTAMINATED IF THERE IS NO GROUNDWATER CONTAMINATION WITHIN 1,000 FEET OF THE DISCHARGE.

THE CONTRACTOR MUST TREAT ANY UNCONTAMINATED EXCAVATION DEWATERING AS NECESSARY TO REMOVE SUSPENDED SOLIDS AND TURBIDITY DURING CONSTRUCTION. THE DISCHARGES MUST BE SAMPLED AT A LOCATION PRIOR TO MIXING WITH STORM WATER OR STREAM FLOW AT LEAST ONCE PER WEEK DURING WEEKS WHEN DISCHARGES OCCUR. THE SAMPLES MUST BE ANALYZED FOR TOTAL SUSPENDED SOLIDS (TSS) AND MUST MEET MONTHLY AVERAGE AND MAXIMUM DAILY TSS LIMITATIONS OF 50 MILLIGRAMS PER LITER (MG/L), RESPECTIVELY.

SPECIFICATIONS FOR TEMPORARY AND PERMANENT SEEDING:

GRASS SEED MIXES SHALL CONSIST OF THE MIXTURES AS DETAILED IN THE FOLLOWING TABLES, WITH 98% PURITY:

EROSION CONTROL SEED MIX		
SEED	BY % MASS	% GERMINATION (MIN.)
WINTER RYE 80 (MIN.)	80 (MIN.)	85
RED FESCUE (CREEPING)	4 (MIN.)	80
PERENNIAL RYE GRASS	3 (MIN.)	90
RED CLOVER	3 (MIN.)	90
OTHER CROP GRASS	0.5 (MAX.)	
NOXIOUS WEED SEED	0.5 (MAX.)	
INERT MATTER	1.0 (MAX.)	

PERMANENT SEED MIX		
SEED	BY % MASS	% GERMINATION (MIN.)
RED FESCUE (CREEPING)	50	85
KENTUCKY BLUE	25	85
PERENNIAL RYE GRASS	10	90
RED TOP	10	85
LANDINO CLOVER	5	85

WINTER CONSTRUCTION NOTES:

ALL PROPOSED POST-DEVELOPMENT VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE ELSEWHERE. MULCH REMAINING IN THE SPRING SHALL BE REMOVED AND REPLACED AT RATE OF 2 TONS PER ACRE. THE PLACEMENT OF EROSION CONTROL BLANKETS OR MULCH AND TACKIFIER SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND.

ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

AFTER OCTOBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3-INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3 OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT.

SASAKI
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P 617 926 330 F 617 924 2748 W SASAKI.COM

nobis
Nobis Group®
18 Chenell Drive
Concord, NH 03301
T(603) 224-4182
www.nobis-group.com

NOT ISSUED FOR CONSTRUCTION

No.	Description	Date

DRAWING ISSUE & REVISION HISTORY

Seal

STATE OF NEW HAMPSHIRE
JOHN CHRIS NADEAU
No. 9294
LICENSED
PROFESSIONAL ENGINEER
9/17/2025

ST. PAUL'S SCHOOL NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD CONCORD, NEW HAMPSHIRE

TAX MAP:
MAP 724Z/ LOT 1-10A
MAP 811Z LOT 1-A

OWNER/APPLICANT:
ST. PAUL'S SCHOOL
325 PLEASANT STREET
CONCORD, NEW HAMPSHIRE

Nobis Project No: **100811.040**
Sasaki Project No: **250018.00**
Drawn By: **NOBIS - MGD/CMB**
Checked By: **NOBIS - JCN/NCP**
Approved By: **NOBIS - JCN**
Issue Date: **09.17.2025**

SCALE:
AS NOTED

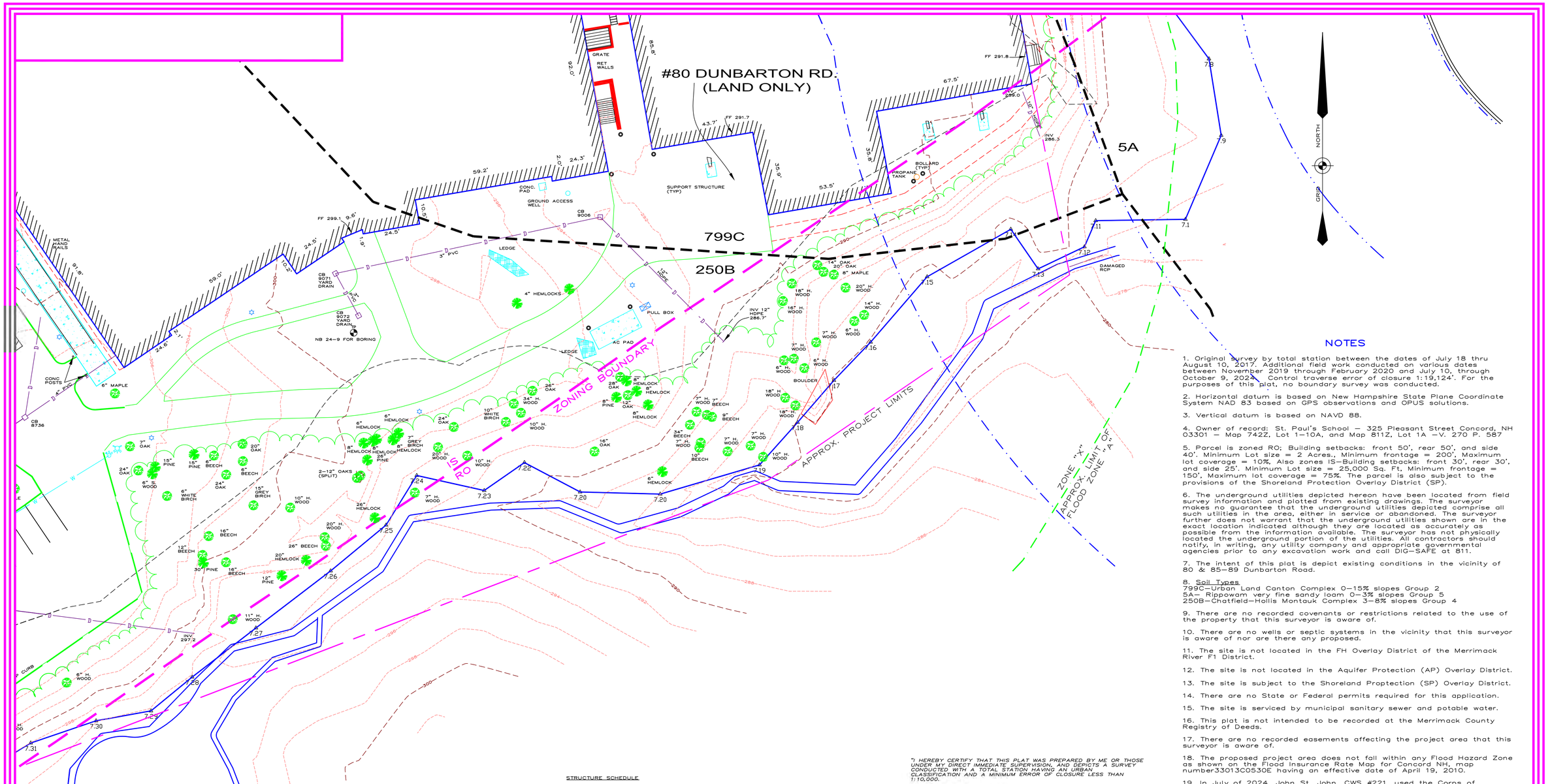
SHEET TITLE

GENERAL NOTES AND LEGEND

SHEET
G-1

MATCH TO SHEET 2

MATCH TO SHEET 3



NOTES

1. Original survey by total station between the dates of July 18 thru August 10, 2017. Additional field work conducted on various dates between November 2019 through February 2020 and July 10, through October 9, 2024. Control traverse error of closure 1:19,124'. For the purposes of this plat, no boundary survey was conducted.

2. Horizontal datum is based on New Hampshire State Plane Coordinate System NAD 83 based on GPS observations and OPUS solutions.

3. Vertical datum is based on NAVD 88.

4. Owner of record: St. Paul's School – 325 Pleasant Street Concord, NH 03301 – Map 742Z, Lot 1–10A, and Map 811Z, Lot 1A –V. 270 P. 587

5. Parcel is zoned RO; Building setbacks: front 50', rear 50', and side 40'. Minimum Lot size = 2 Acres., Minimum frontage = 200', Maximum lot coverage = 10%. Also zones IS–Building setbacks: front 30', rear 30', and side 25'. Minimum Lot size = 25,000 Sq. Ft, Minimum frontage = 150', Maximum lot coverage = 75%. The parcel is also subject to the provisions of the Shoreland Protection Overlay District (SP).

6. The underground utilities depicted hereon have been located from field survey information and plotted from existing drawings. The surveyor makes no guarantee that the underground utilities depicted comprise all such utilities in the area, either in service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated although they are located as accurately as possible from the information available. The surveyor has not physically located the underground portion of the utilities. All contractors should notify, in writing, any utility company and appropriate governmental agencies prior to any excavation work and call DIG–SAFE at 811.

7. The intent of this plat is depict existing conditions in the vicinity of 80 & 85–89 Dunbarton Road.

8. Soil Types
799C–Urban Land Canton Complex 0–15% slopes Group 2
5A– Rippowam very fine sandy loam 0–3% slopes Group 5
250B–Chatfield–Hollis Montauk Complex 3–8% slopes Group 4

9. There are no recorded covenants or restrictions related to the use of the property that this surveyor is aware of.

10. There are no wells or septic systems in the vicinity that this surveyor is aware of nor are there any proposed.

11. The site is not located in the FH Overlay District of the Merrimack River F1 District.

12. The site is not located in the Aquifer Protection (AP) Overlay District.

13. The site is subject to the Shoreland Proptection (SP) Overlay District.

14. There are no State or Federal permits required for this application.

15. The site is serviced by municipal sanitary sewer and potable water.

16. This plat is not intended to be recorded at the Merrimack County Registry of Deeds.

17. There are no recorded easements affecting the project area that this surveyor is aware of.

18. The proposed project area does not fall within any Flood Hazard Zone as shown on the Flood Insurance Rate Map for Concord NH, map number3301C0530E having an effective date of April 19, 2010.

19. In July of 2024, John St. John, CWS #221, used the Corps of Engineers Wetlands Delineation Manual, Technical Report Y–87–1 and the latest soil indicators and plant list to determine the extent of juridictional wetlands.

20. This surveyor is not aware of any historic structures or sites listed or eligible for the National or State Historic Places.

21. There are no previous relevant subdivisions or surveys in the proximity of the proposed project area.

22. There are no existing external solid waste disposal facilities and there are no outside storage areas on site.

STRUCTURE SCHEDULE

CB 8733
RIM 306.61
INV 302.21 12" HDPE(NE)
INV 302.20 12" HDPE(SW)
SUMP 299.5

CB 8734
RIM 306.62
INV 301.57 12" HDPE(NE)
INV 302.75 12" HDPE(E)
INV 301.02 12" HDPE(SW)
INV 300.75 15" HDPE(NW)
SUMP 298.6

DMH 8735 (TANK)
RIM 306.83
INV 300.90 15" HDPE(SE)
SUMP 294.7

DMH 8736 (TANK)
RIM 307.01
INV 301.66 TOP OF 15" CMP
DROP INLET
SUMP 294.9

DMH 8737 (TANK)
RIM 307.11
INV 300.42 15" CMP(SE)
SUMP 295.0

CB 8738
RIM 305.92
INV 301.67 6" PVC(N)
INV 301.57 15" HDPE(NE)
INV 301.61 12" HDPE(NW)
SUMP 298.8

CB 8739
RIM 306.77
INV 301.62 12" HDPE(SE)
INV 301.54 12" HDPE(NW)
SUMP 298.8

CB 8740
RIM 310.71
INV 303.71 12" HDPE(E)
INV 303.76 12" HDPE(SE)
INV 305.20 12" HDPE(NW)
SUMP 301.0

CB 8936
RIM 306.88
INV 303.73 4" PVC(N)
INV 303.83 4" PVC(NE)
INV 302.66 12" HDPE(SW)
SUMP 300.1

CB 9006
RIM 291.78
INV 287.36 12" HDPE(SE)
INV 287.53 3" PVC(SW)
SUMP 284.8

CB 9071–YARD DRAIN
RIM 298.13
INV AT TEE 296.78 3" PVC (N & E)

CB 9072–YARD DRAIN
RIM 297.99
INV 296.84 3" PVC (N)

STATE OF NEW HAMPSHIRE
JOHN J. ST. JOHN
25/09/17
No. 221
CERTIFIED WETLAND SCIENTIST

"I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED BY ME OR THOSE UNDER MY DIRECT IMMEDIATE SUPERVISION, AND DEPICTS A SURVEY CONDUCTED WITH A TOTAL STATION HAVING AN URBAN CLASSIFICATION AND A MINIMUM ERROR OF CLOSURE LESS THAN 1:10,000.

SIGNATURE	LICENSE NO.	DATE
	859	9/16/25

NO.	DATE	REVISION

STATE OF NEW HAMPSHIRE
NO. 859
DANIEL J. MUHLEN
SIGNATURE
LICENSED LAND SURVEYOR

FOR: RICHARD D. BARTLETT & ASSOCIATES, LLC

RICHARD D. BARTLETT & ASSOCIATES, LLC
214 North State Street
Concord, N.H. 03301
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info@richarddbartlett.com
www.richarddbartlett.com
LICENSED LAND SURVEYORS

EXISTING CONDITIONS PLAT prepared for ST. PAUL'S SCHOOL

325 PLEASANT ST CONCORD NH 03301

PROJECT LOCATION: MAP 724Z LOT 1–10A, MAP 811Z LOT 1A – 80,85–89 DUNBARTON RD CONCORD NH

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

DATE: AUG 8, 2025

JOB NO.: 624.156

SHEET S–1

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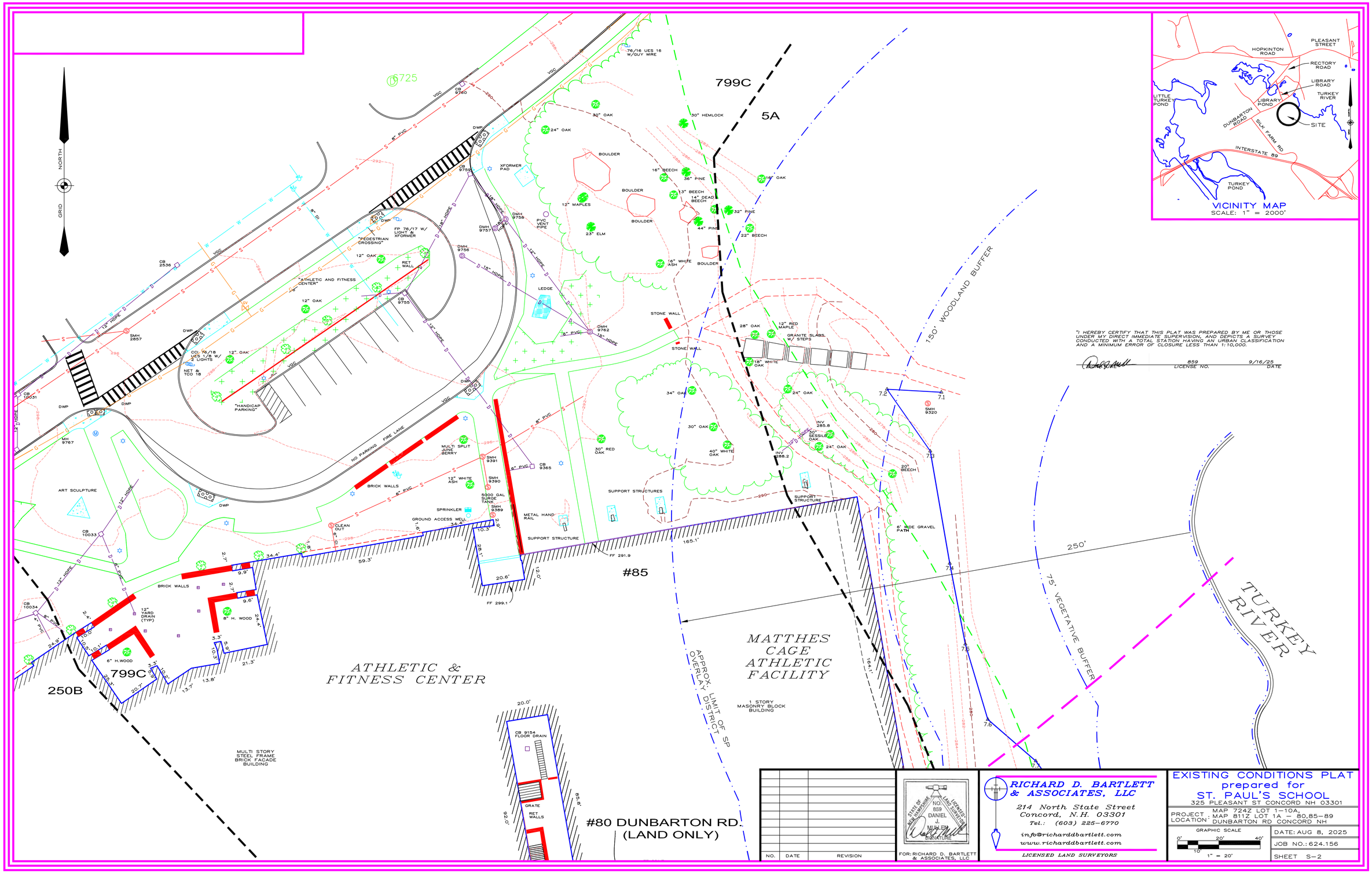

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859 — LICENSE NO.
9/16/25 — DATE

NO.	DATE	REVISION

STATE OF NEW HAMPSHIRE — NO. 859 — DANIEL J. MULKERN — LICENSED LAND SURVEYOR — SIGNATURE

FOR: RICHARD D. BARTLETT & ASSOCIATES, LLC

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SHEET S-2

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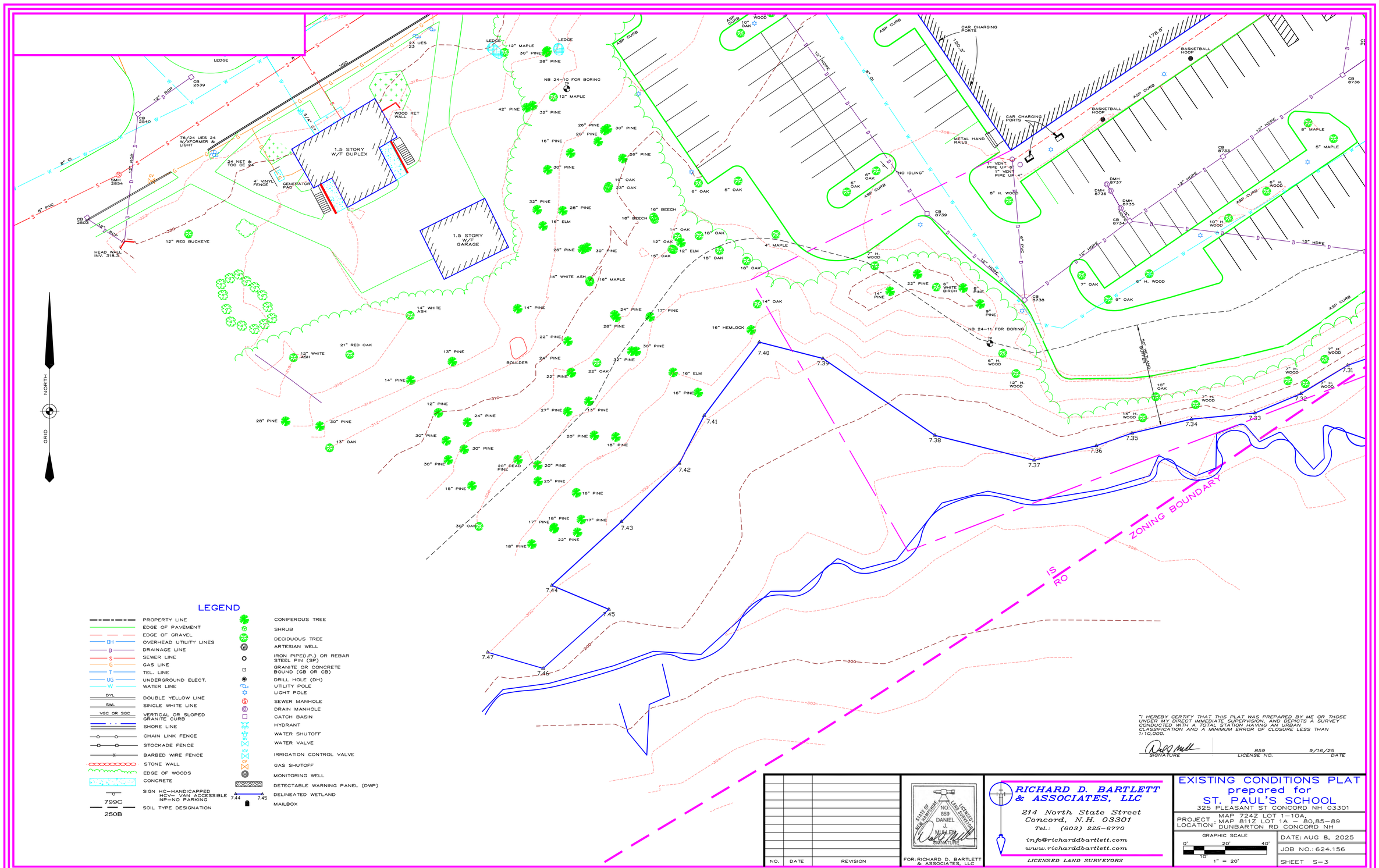
MATCH TO SHEET 4



MATCH TO SHEET 1

LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- OVERHEAD UTILITY LINES
- DRAINAGE LINE
- SEWER LINE
- GAS LINE
- TEL. LINE
- UNDERGROUND ELECT.
- WATER LINE
- DYL — DOUBLE YELLOW LINE
- SWL — SINGLE WHITE LINE
- VGC OR SGC — VERTICAL OR SLOPED GRANITE CURB
- SHORE LINE
- CHAIN LINK FENCE
- STOCKADE FENCE
- BARBED WIRE FENCE
- STONE WALL
- EDGE OF WOODS
- CONCRETE
- SIGN HC—HANDICAPPED, HCV— VAN ACCESSIBLE, NP—NO PARKING
- 799C / 250B — SOIL TYPE DESIGNATION
- CONIFEROUS TREE
- SHRUB
- DECIDUOUS TREE
- ARTESIAN WELL
- IRON PIPE(I.P.) OR REBAR STEEL PIN (SP)
- GRANITE OR CONCRETE BOUND (GB OR CB)
- DRILL HOLE (DH)
- UTILITY POLE
- LIGHT POLE
- SEWER MANHOLE
- DRAIN MANHOLE
- CATCH BASIN
- HYDRANT
- WATER SHUTOFF
- WATER VALVE
- IRRIGATION CONTROL VALVE
- GAS SHUTOFF
- MONITORING WELL
- DETECTABLE WARNING PANEL (DWP)
- DELINEATED WETLAND (7.44 — 7.45)
- MAILBOX

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SIGNATURE	LICENSE NO.	DATE
	859	9/16/25

NO.	DATE	REVISION

STATE OF NEW HAMPSHIRE — NO. 859 — DANIEL J. MULHEM — LICENSED LAND SURVEYOR — SIGNATURE

FOR: RICHARD D. BARTLETT & ASSOCIATES, LLC

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LICENSED LAND SURVEYORS

EXISTING CONDITIONS PLAT prepared for ST. PAUL'S SCHOOL

325 PLEASANT ST CONCORD NH 03301

PROJECT LOCATION: MAP 724Z LOT 1-10A, MAP 811Z LOT 1A – 80,85-89 DUNBARTON RD CONCORD NH

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

DATE: AUG 8, 2025

JOB NO.: 624.156

SHEET S-3

PLANNING BOARD CONDITIONS

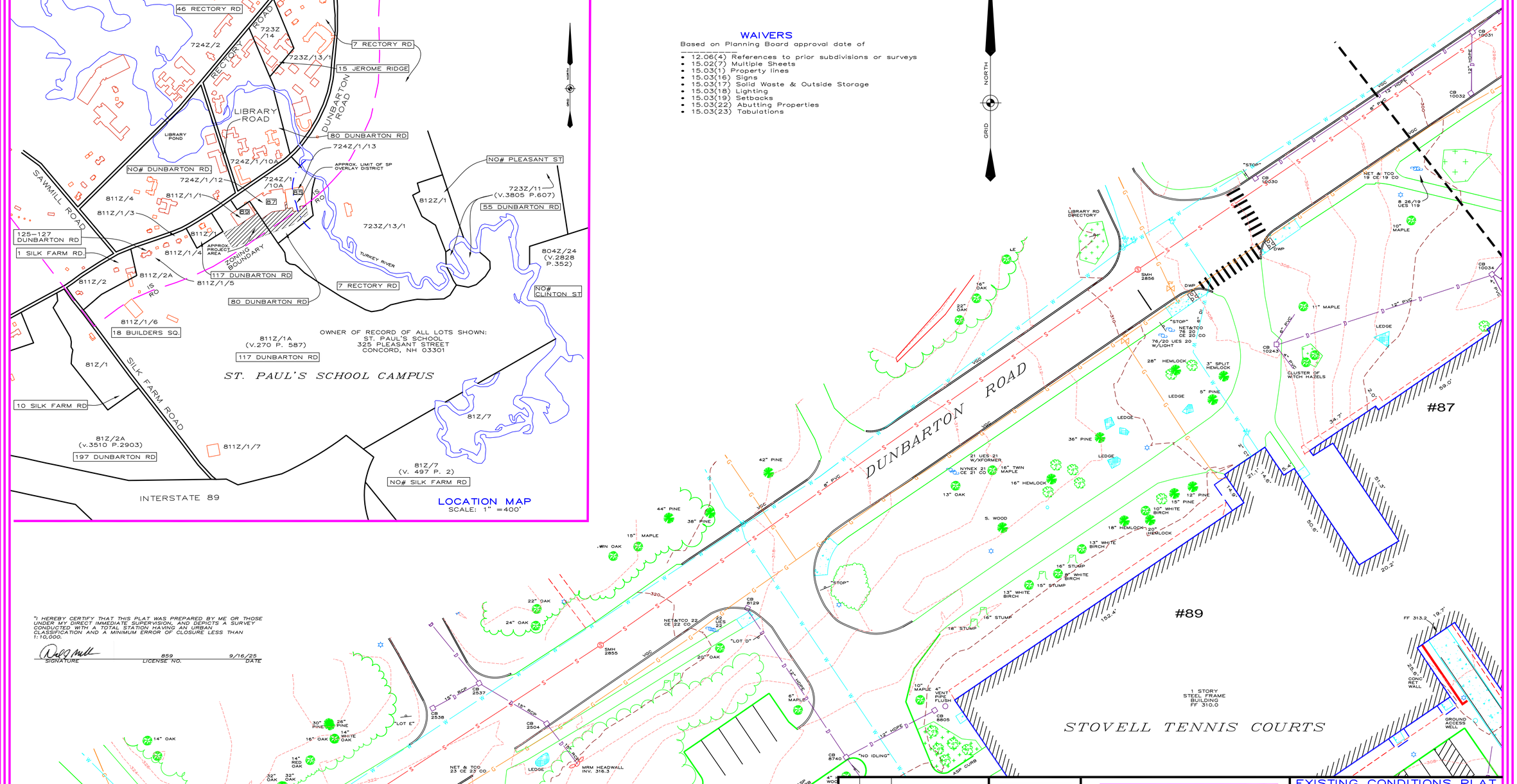
The development is subject to all subsequent conditions of Planning Board approval Case _____ dated _____.

WAIVERS

Based on Planning Board approval date of _____

- 12.06(4) References to prior subdivisions or surveys
- 15.02(7) Multiple Sheets
- 15.03(1) Property lines
- 15.03(16) Signs
- 15.03(17) Solid Waste & Outside Storage
- 15.03(18) Lighting
- 15.03(19) Setbacks
- 15.03(22) Abutting Properties
- 15.03(23) Tabulations

LOCATION MAP
SCALE: 1" =400'



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SIGNATURE	LICENSE NO.	DATE
	859	9/16/25

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325 PLEASANT ST CONCORD NH 03301

PROJECT: MAP 724Z LOT 1-10A, MAP 811Z LOT 1A - 80,85-89
LOCATION: DUNBARTON RD CONCORD NH

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

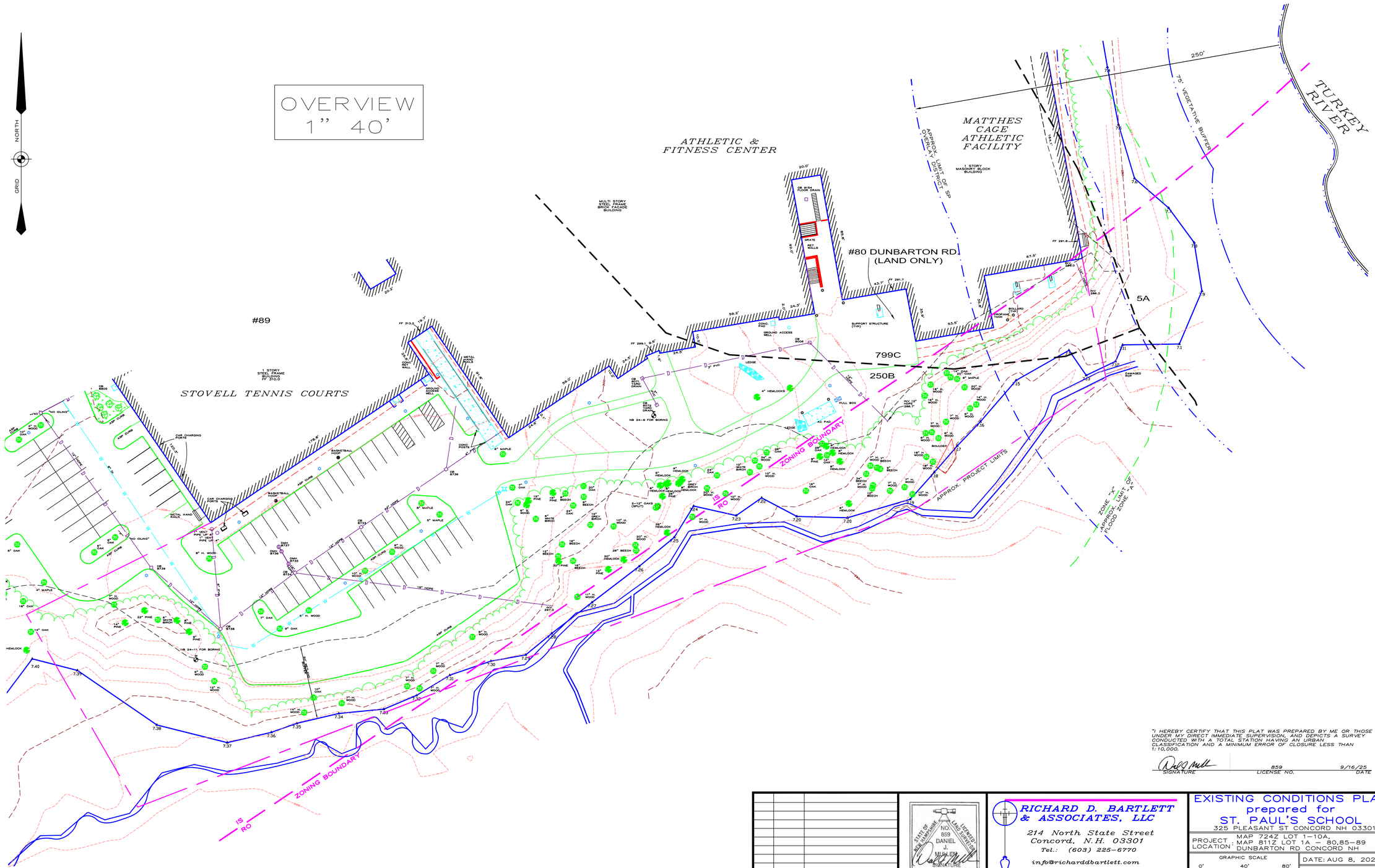
DATE: AUG 8, 2025

JOB NO.: 624.156

SHEET S-4

MATCH TO SHEET 2

MATCH TO SHEET 3



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SIGNATURE	LICENSE NO.	DATE
	859	9/16/25

NO.	DATE	REVISION

STATE OF NEW HAMPSHIRE NO. 859 DANIEL J. MUELLER LICENSED LAND SURVEYOR SIGNATURE

FOR: RICHARD D. BARTLETT & ASSOCIATES, LLC

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EXISTING CONDITIONS PLAT
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ST. PAUL'S SCHOOL
325 PLEASANT ST CONCORD NH 03301

PROJECT LOCATION: MAP 724Z LOT 1-10A, MAP 811Z LOT 1A – 80,85-89 DUNBARTON RD CONCORD NH

GRAPHIC SCALE 0' 40' 80' 10' 1" = 40'

DATE: AUG 8, 2025

JOB NO.: 624.156

SHEET S-5

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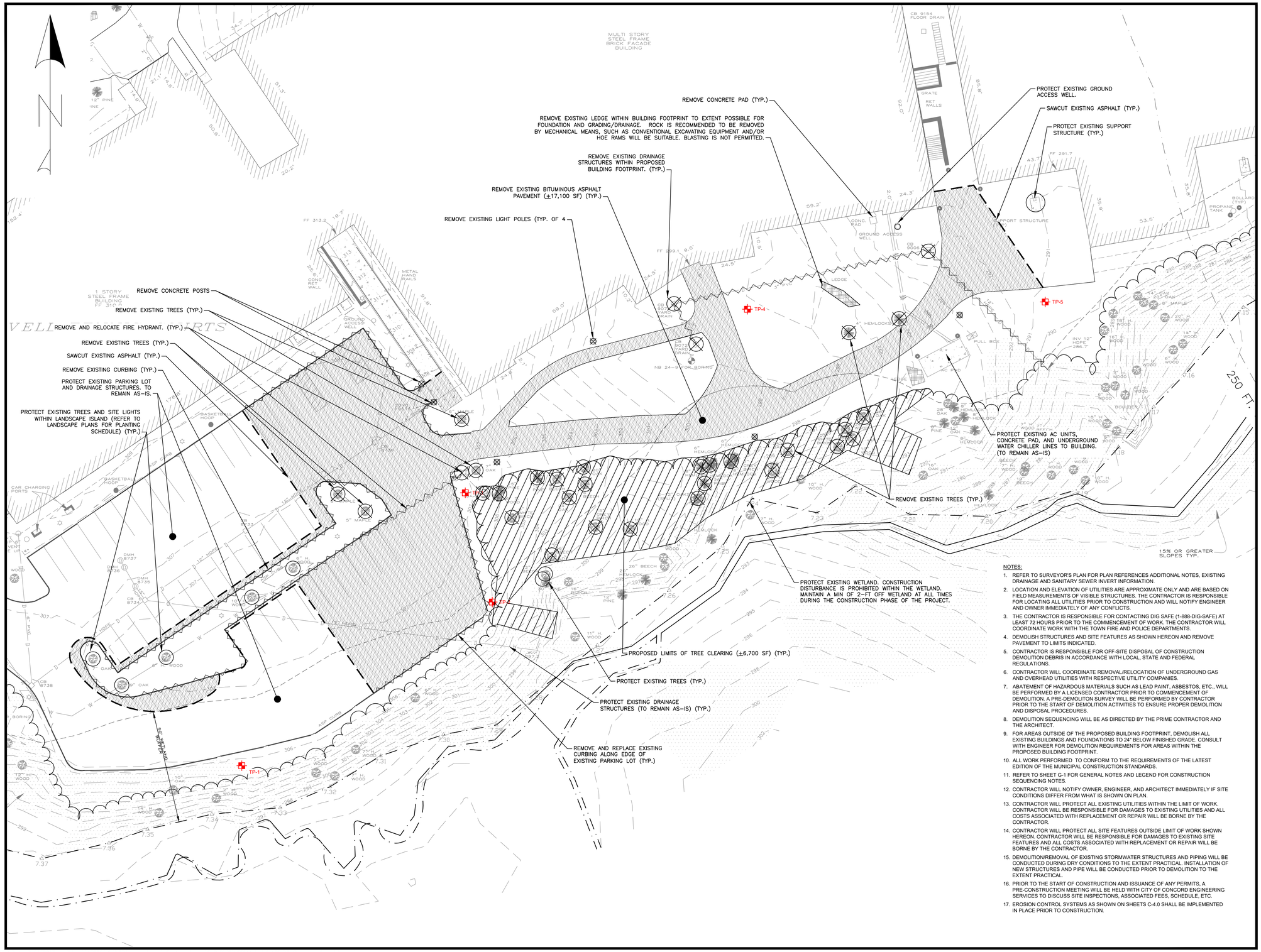

NOTES:

1. REFER TO SURVEYOR'S PLAN FOR PLAN REFERENCES ADDITIONAL NOTES, EXISTING DRAINAGE AND SANITARY SEWER INVERT INFORMATION.
2. LOCATION AND ELEVATION OF UTILITIES ARE APPROXIMATE ONLY AND ARE BASED ON FIELD MEASUREMENTS OF VISIBLE STRUCTURES. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UTILITIES PRIOR TO CONSTRUCTION AND WILL NOTIFY ENGINEER AND OWNER IMMEDIATELY OF ANY CONFLICTS.
3. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING DIG SAFE (1-888-DIG-SAFE) AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF WORK. THE CONTRACTOR WILL COORDINATE WORK WITH THE TOWN FIRE AND POLICE DEPARTMENTS.
4. DEMOLISH STRUCTURES AND SITE FEATURES AS SHOWN HEREON AND REMOVE PAVEMENT TO LIMITS INDICATED.
5. CONTRACTOR IS RESPONSIBLE FOR OFF-SITE DISPOSAL OF CONSTRUCTION DEMOLITION DEBRIS IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
6. CONTRACTOR WILL COORDINATE REMOVAL/RELOCATION OF UNDERGROUND GAS AND OVERHEAD UTILITIES WITH RESPECTIVE UTILITY COMPANIES.
7. ABATEMENT OF HAZARDOUS MATERIALS SUCH AS LEAD PAINT, ASBESTOS, ETC., WILL BE PERFORMED BY A LICENSED CONTRACTOR PRIOR TO COMMENCEMENT OF DEMOLITION. A PRE-DEMOLITON SURVEY WILL BE PERFORMED BY CONTRACTOR PRIOR TO THE START OF DEMOLITION ACTIVITIES TO ENSURE PROPER DEMOLITION AND DISPOSAL PROCEDURES.
8. DEMOLITION SEQUENCING WILL BE AS DIRECTED BY THE PRIME CONTRACTOR AND THE ARCHITECT.
9. FOR AREAS OUTSIDE OF THE PROPOSED BUILDING FOOTPRINT, DEMOLISH ALL EXISTING BUILDINGS AND FOUNDATIONS TO 24" BELOW FINISHED GRADE. CONSULT WITH ENGINEER FOR DEMOLITION REQUIREMENTS FOR AREAS WITHIN THE PROPOSED BUILDING FOOTPRINT.
10. ALL WORK PERFORMED TO CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF THE MUNICIPAL CONSTRUCTION STANDARDS.
11. REFER TO SHEET G-1 FOR GENERAL NOTES AND LEGEND FOR CONSTRUCTION SEQUENCING NOTES.
12. CONTRACTOR WILL NOTIFY OWNER, ENGINEER, AND ARCHITECT IMMEDIATELY IF SITE CONDITIONS DIFFER FROM WHAT IS SHOWN ON PLAN.
13. CONTRACTOR WILL PROTECT ALL EXISTING UTILITIES WITHIN THE LIMIT OF WORK. CONTRACTOR WILL BE RESPONSIBLE FOR DAMAGES TO EXISTING UTILITIES AND ALL COSTS ASSOCIATED WITH REPLACEMENT OR REPAIR WILL BE BORNE BY THE CONTRACTOR.
14. CONTRACTOR WILL PROTECT ALL SITE FEATURES OUTSIDE LIMIT OF WORK SHOWN HEREON. CONTRACTOR WILL BE RESPONSIBLE FOR DAMAGES TO EXISTING SITE FEATURES AND ALL COSTS ASSOCIATED WITH REPLACEMENT OR REPAIR WILL BE BORNE BY THE CONTRACTOR.
15. DEMOLITION/REMOVAL OF EXISTING STORMWATER STRUCTURES AND PIPING WILL BE CONDUCTED DURING DRY CONDITIONS TO THE EXTENT PRACTICAL. INSTALLATION OF NEW STRUCTURES AND PIPE WILL BE CONDUCTED PRIOR TO DEMOLITION TO THE EXTENT PRACTICAL.
16. PRIOR TO THE START OF CONSTRUCTION AND ISSUANCE OF ANY PERMITS, A PRE-CONSTRUCTION MEETING WILL BE HELD WITH CITY OF CONCORD ENGINEERING SERVICES TO DISCUSS SITE INSPECTIONS, ASSOCIATED FEES, SCHEDULE, ETC.
17. EROSION CONTROL SYSTEMS AS SHOWN ON SHEETS C-4.0 SHALL BE IMPLEMENTED IN PLACE PRIOR TO CONSTRUCTION.

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P 617 926 330 F 617 924 2748 W SASAKI.COM

nobis
Nobis Group®
18 Chenell Drive
Concord, NH 03301
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NOT ISSUED FOR CONSTRUCTION

No.	Description	Date

DRAWING ISSUE & REVISION HISTORY

Seal

STATE OF NEW HAMPSHIRE
JOHN CHRIS NADEAU
No. 9294
LICENSED
PROFESSIONAL ENGINEER
9/17/2025

ST. PAUL'S SCHOOL NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD
CONCORD, NEW HAMPSHIRE

TAX MAP:
MAP 724Z/ LOT 1-10A
MAP 811Z LOT 1-A

OWNER/APPLICANT:
ST. PAUL'S SCHOOL
325 PLEASANT STREET
CONCORD, NEW HAMPSHIRE

Nobis Project No: **100811.040**
Sasaki Project No: **250018.00**
Drawn By: **NOBIS - MGD/CMB**
Checked By: **NOBIS - JCN/NCP**
Approved By: **NOBIS - JCN**
Issue Date: **09.17.2025**

0 20' 40'
GRAPHIC SCALE
1 INCH = 20 FEET

SHEET TITLE

DEMOLITION PLAN

SHEET
C-1

CITY OF CONCORD APPROVALS/REQUESTS:

THE ZONING BOARD OF ADJUSTMENT OF THE CITY OF CONCORD, GRANTED THE FOLLOWING VARIANCES ON NOVEMBER 4, 2024. (ZBA-0230-2024)

ARTICLE 28-4-3(c)(1) - WETLAND BUFFERS AND SETBACKS- CERTAIN USES PROHIBITED IN BUFFERS: TO ALLOW CONSTRUCTION OF A BUILDING OR STRUCTURE IN 8,200 SQUARE FEET OF WETLAND BUFFER WHERE CONSTRUCTION OF A BUILDING IN A WETLAND IS PROHIBITED

ARTICLE 28-7-2(e)(B) - TABLE OF OFF-STREET PARKING REQUIREMENTS: TO ALLOW 96 PARKING SPACES WHERE 1,334 PARKING SPACES ARE REQUIRED.

ARTICLE 28-7-5 - REQUIREMENTS FOR HANDICAPPED ACCESSIBLE PARKING SPACES: TO ALLOW 5 ACCESSIBLE PARKING SPACES WHERE 24 ACCESSIBLE PARKING SPACES ARE REQUIRED.

THE FOLLOWING CONDITIONAL USE PERMIT AND WAIVERS ARE REQUESTED FROM THE PLANNING BOARD OF THE CITY OF CONCORD.

CONDITIONAL USE PERMITS REQUESTED FOR SITE PLAN APPROVAL

ARTICLE 28-4-3(d) - DISTURBANCE TO A WETLAND BUFFER

WAIVERS REQUESTED FOR SITE PLAN APPROVAL

1. SECTION 12.02(1)(a)
2. SECTION 12.04(4)
3. SECTION 12.07
4. SECTION 15.02(8)
5. SECTION 15.03(1)
6. SECTION 15.03(2)
7. SECTION 15.03(18)
8. SECTION 15.03(19)
9. SECTION 15.03(22)
10. SECTION 15.03(23)(c)
11. SECTION 15.04(1)
12. SECTION 15.04(2)
13. SECTION 15.04(22)
14. SECTION 15.04(27)
15. SECTION 16.02(7)
16. SECTION 16.02(22)
17. SECTION 18.13
18. SECTION 18.17
19. SECTION 29-1-2(a)(1)

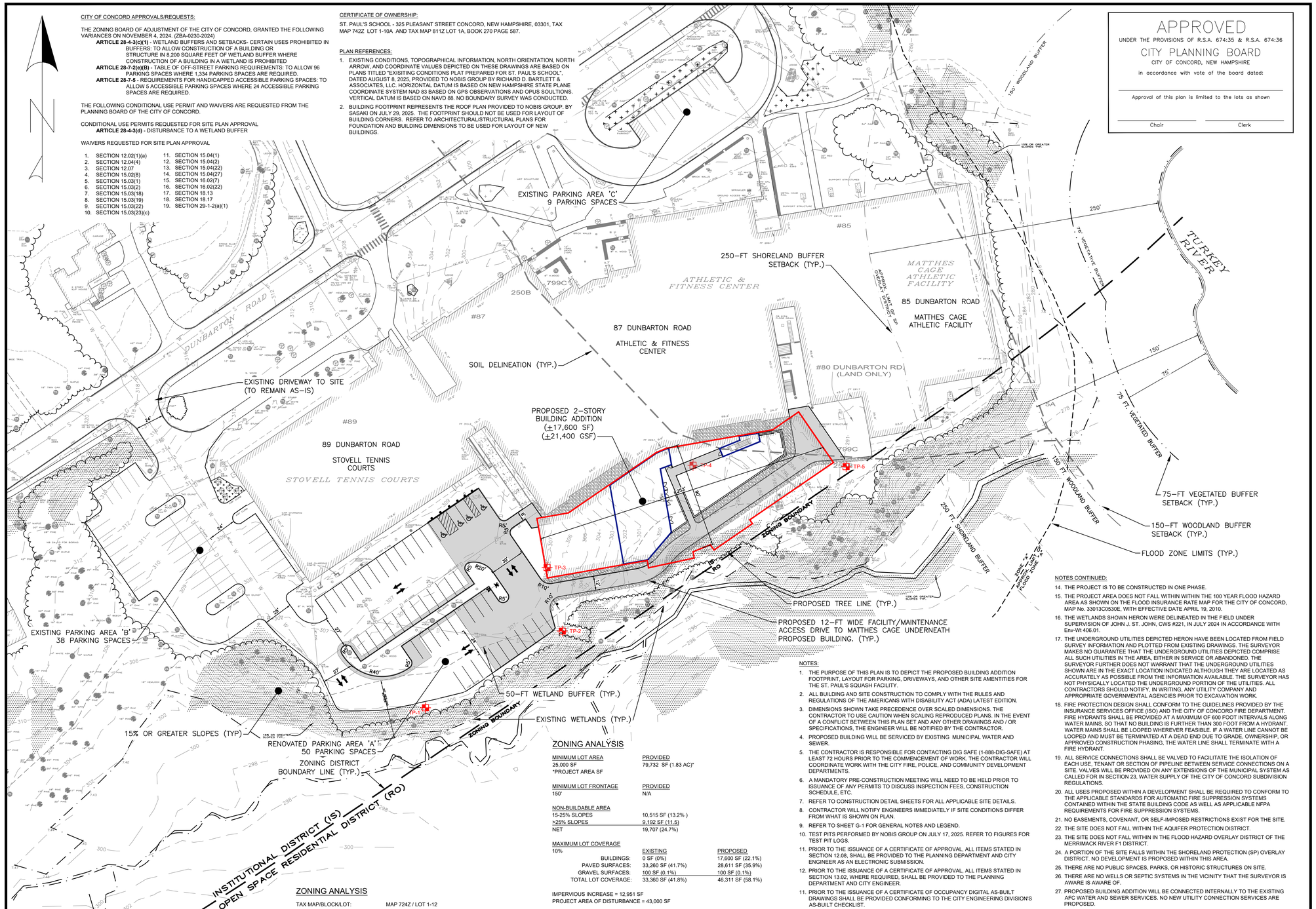
CERTIFICATE OF OWNERSHIP:

ST. PAUL'S SCHOOL - 325 PLEASANT STREET CONCORD, NEW HAMPSHIRE, 03301, TAX MAP 742Z LOT 1-10A AND TAX MAP 811Z LOT 1A, BOOK 270 PAGE 587.

PLAN REFERENCES:

1. EXISTING CONDITIONS, TOPOGRAPHICAL INFORMATION, NORTH ORIENTATION, NORTH ARROW, AND COORDINATE VALUES DEPICTED ON THESE DRAWINGS ARE BASED ON PLANS TITLED "EXISITING CONDITIONS PLAT PREPARED FOR ST. PAUL'S SCHOOL", DATED AUGUST 8, 2025, PROVIDED TO NOBIS GROUP BY RICHARD D. BARTLETT & ASSOCIATES, LLC. HORIZONTAL DATUM IS BASED ON NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM NAD 83 BASED ON GPS OBSERVATIONS AND OPUS SOULTIONS. VERTICAL DATUM IS BASED ON NAVD 88. NO BOUNDARY SURVEY WAS CONDUCTED.
2. BUILDING FOOTPRINT REPRESENTS THE ROOF PLAN PROVIDED TO NOBIS GROUP. BY SASAKI ON JULY 29, 2025. THE FOOTPRINT SHOULD NOT BE USED FOR LAYOUT OF BUILDING CORNERS. REFER TO ARCHITECTURAL/STRUCTURAL PLANS FOR FOUNDATION AND BUILDING DIMENSIONS TO BE USED FOR LAYOUT OF NEW BUILDINGS.

APPROVED
UNDER THE PROVISIONS OF R.S.A. 674:35 & R.S.A. 674:36
CITY PLANNING BOARD
CITY OF CONCORD, NEW HAMPSHIRE
in accordance with vote of the board dated:
Approval of this plan is limited to the lots as shown
Chair | Clerk



NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE PROPOSED BUILDING ADDITION FOOTPRINT, LAYOUT FOR PARKING, DRIVEWAYS, AND OTHER SITE AMENTITIES FOR THE ST. PAUL'S SQUASH FACILITY.
2. ALL BUILDING AND SITE CONSTRUCTION TO COMPLY WITH THE RULES AND REGULATIONS OF THE AMERICANS WITH DISABILITY ACT (ADA) LATEST EDITION.
3. DIMENSIONS SHOWN TAKE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR TO USE CAUTION WHEN SCALING REPRODUCED PLANS. IN THE EVENT OF A CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWINGS AND / OR SPECIFICATIONS, THE ENGINEER WILL BE NOTIFIED BY THE CONTRACTOR.
4. PROPOSED BUILDING WILL BE SERVICED BY EXISTING MUNICIPAL WATER AND SEWER.
5. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING DIG SAFE (1-888-DIG-SAFE) AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF WORK. THE CONTRACTOR WILL COORDINATE WORK WITH THE CITY FIRE, POLICE, AND COMMUNITY DEVELOPMENT DEPARTMENTS.
6. A MANDATORY PRE-CONSTRUCTION MEETING WILL NEED TO BE HELD PRIOR TO ISSUANCE OF ANY PERMITS TO DISCUSS INSPECTION FEES, CONSTRUCTION SCHEDULE, ETC.
7. REFER TO CONSTRUCTION DETAIL SHEETS FOR ALL APPLICABLE SITE DETAILS.
8. CONTRACTOR WILL NOTIFY ENGINEERS IMMEDIATELY IF SITE CONDITIONS DIFFER FROM WHAT IS SHOWN ON PLAN.
9. REFER TO SHEET G-1 FOR GENERAL NOTES AND LEGEND.
10. TEST PITS PERFORMED BY NOBIS GROUP ON JULY 17, 2025. REFER TO FIGURES FOR TEST PIT LOGS.
11. PRIOR TO THE ISSUANCE OF A CERTIFICATE OF APPROVAL, ALL ITEMS STATED IN SECTION 12.08, SHALL BE PROVIDED TO THE PLANNING DEPARTMENT AND CITY ENGINEER AS AN ELECTRONIC SUBMISSION.
12. PRIOR TO THE ISSUANCE OF A CERTIFICATE OF APPROVAL, ALL ITEMS STATED IN SECTION 13.02, WHERE REQUIRED, SHALL BE PROVIDED TO THE PLANNING DEPARTMENT AND CITY ENGINEER.
11. PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY DIGITAL AS-BUILT DRAWINGS SHALL BE PROVIDED CONFORMING TO THE CITY ENGINEERING DIVISION'S AS-BUILT CHECKLIST.
12. PRIOR TO THE ISSUANCE OF A CERTIFICATE OF APPROVAL, DIGITAL INFORMATION FROM THE SITE PLAN DRAWINGS SHALL BE PROVIDED TO THE CITY ENGINEER FOR INCORPORATION INTO THE CITY OF CONCORD'S GEOGRAPHIC INFORMATION SYSTEM (GIS) AND TAX MAPS AS SPECIFIED IN SECTION 12.08 (SPR).
13. THE FOLLOWING STATE AND FEDERAL PERMITS ARE REQUIRED FOR THIS PROJECT.

13.1. NHDES ALTERATION OF TERRAIN PERMIT

ZONING ANALYSIS

MINIMUM LOT AREA	PROVIDED
25,000 SF	79,732 SF (1.83 AC)*
*PROJECT AREA SF	

MINIMUM LOT FRONTAGE	PROVIDED
150'	N/A

NON-BUILDABLE AREA	
15-25% SLOPES	10,515 SF (13.2%)
>25% SLOPES	9,192 SF (11.5)
NET	19,707 (24.7%)

MAXIMUM LOT COVERAGE

10%	EXISTING	PROPOSED
BUILDINGS:	0 SF (0%)	17,600 SF (22.1%)
PAVED SURFACES:	33,260 SF (41.7%)	28,611 SF (35.9%)
GRAVEL SURFACES:	100 SF (0.1%)	100 SF (0.1%)
TOTAL LOT COVERAGE:	33,360 SF (41.8%)	46,311 SF (58.1%)

IMPERVIOUS INCREASE = 12,951 SF
PROJECT AREA OF DISTURBANCE = 43,000 SF

INTERIOR LANDSCAPE	EXISTING	PROPOSED
5%	2,610 SF (7.8%)	2,252 SF (7.8%)

REQUIRED PARKING SPACES

	REQUIRED	EXISTING	PROPOSED
TOTAL SPACES:	1,334	90	97
ACCESSIBLE SPACES:	24	5	5

ZONING ANALYSIS

TAX MAP/BLOCK/LOT:	MAP 724Z / LOT 1-12
ADDRESS:	87 DUNBARTON RD CONCORD, NH
ZONING DISTRICT:	INSTITUTIONAL (IS) DISTRICT OPEN SPACE RESIDENTIAL (RO) DISTRICT SHORELAND PROTECTION (SP) OVERLAY DISTRICT
SITE USE:	
EXISITING:	RECREATION OR SPORTS FACILITY WITH SPECTATOR SEATING
PROPOSED:	RECREATION OR SPORTS FACILITY WITH SPECTATOR SEATING

NOTES CONTINUED:

14. THE PROJECT IS TO BE CONSTRUCTED IN ONE PHASE.
15. THE PROJECT AREA DOES NOT FALL WITHIN WITHIN THE 100 YEAR FLOOD HAZARD AREA AS SHOWN ON THE FLOOD INSURANCE RATE MAP FOR THE CITY OF CONCORD, MAP No. 33013C0530E, WITH EFFECTIVE DATE APRIL 19, 2010.
16. THE WETLANDS SHOWN HERON WERE DELINEATED IN THE FIELD UNDER SUPERVISION OF JOHN J. ST. JOHN, CWS #221, IN JULY 2024 IN ACCORDANCE WITH Env-Wt 406.01.
17. THE UNDERGROUND UTILITIES DEPICTED HERON HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND PLOTTED FROM EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES DEPICTED COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND PORTION OF THE UTILITIES. ALL CONTRACTORS SHOULD NOTIFY, IN WRITING, ANY UTILITY COMPANY AND APPROPRIATE GOVERNMENTAL AGENCIES PRIOR TO EXCAVATION WORK.
18. FIRE PROTECTION DESIGN SHALL CONFORM TO THE GUIDELINES PROVIDED BY THE INSURANCE SERVICES OFFICE (ISO) AND THE CITY OF CONCORD FIRE DEPARTMENT. FIRE HYDRANTS SHALL BE PROVIDED AT A MAXIMUM OF 600 FOOT INTERVALS ALONG WATER MAINS, SO THAT NO BUILDING IS FURTHER THAN 300 FOOT FROM A HYDRANT. WATER MAINS SHALL BE LOOPED WHEREVER FEASIBLE. IF A WATER LINE CANNOT BE LOOPED AND MUST BE TERMINATED AT A DEAD END DUE TO GRADE, OWNERSHIP, OR APPROVED CONSTRUCTION PHASING, THE WATER LINE SHALL TERMINATE WITH A FIRE HYDRANT.
19. ALL SERVICE CONNECTIONS SHALL BE VALVED TO FACILITATE THE ISOLATION OF EACH USE, TENANT OR SECTION OF PIPELINE BETWEEN SERVICE CONNECTIONS ON A SITE. VALVES WILL BE PROVIDED ON ANY EXTENSIONS OF THE MUNICIPAL SYSTEM AS CALLED FOR IN SECTION 23, WATER SUPPLY OF THE CITY OF CONCORD SUBDIVISION REGULATIONS.
20. ALL USES PROPOSED WITHIN A DEVELOPMENT SHALL BE REQUIRED TO CONFORM TO THE APPLICABLE STANDARDS FOR AUTOMATIC FIRE SUPPRESSION SYSTEMS CONTAINED WITHIN THE STATE BUILDING CODE AS WELL AS APPLICABLE NFPA REQUIREMENTS FOR FIRE SUPPRESSION SYSTEMS.
21. NO EASEMENTS, COVENANT, OR SELF-IMPOSED RESTRICTIONS EXIST FOR THE SITE.
22. THE SITE DOES NOT FALL WITHIN THE AQUIFER PROTECTION DISTRICT.
23. THE SITE DOES NOT FALL WITHIN IN THE FLOOD HAZARD OVERLAY DISTRICT OF THE MERRIMACK RIVER F1 DISTRICT.
24. A PORTION OF THE SITE FALLS WITHIN THE SHORELAND PROTECTION (SP) OVERLAY DISTRICT. NO DEVELOPMENT IS PROPOSED WITHIN THIS AREA.
25. THERE ARE NO PUBLIC SPACES, PARKS, OR HISTORIC STRUCTURES ON SITE.
26. THERE ARE NO WELLS OR SEPTIC SYSTEMS IN THE VICINITY THAT THE SURVEYOR IS AWARE IS AWARE OF.
27. PROPOSED BUILDING ADDITION WILL BE CONNECTED INTERNALLY TO THE EXISTING AFC WATER AND SEWER SERVICES. NO NEW UTILITY CONNECTION SERVICES ARE PROPOSED.
28. ROOF TOP MECHANICAL EQUIPMENT IS PROPOSED.
29. GROUND MOUNTED MECHANICAL EQUIPMENT IS NOT PROPOSED.
30. NO OUTSIDE STORAGE AREAS ARE EXISTING OR PROPOSED.
31. REFER TO SHEET G-1 FOR GENERAL NOTES AND LEGEND.
32. NO EXTERNAL SOLID WASTE DISPOSAL FACILITIES ARE EXISITING OR PROPOSED AND THE EXISTING SOLID WASTE FACILITY WILL BE UTILIZED.
33. SNOW WILL BE STOCKPILED ONSITE WITHIN PARKING STALLS AND WILL BE REMOVED OFFSITE BY SPS FACILITIES AND MAINTENCE STAFF PERIODICALLY IF NEEDED. SNOW STORAGE IS PROHIBITED WITHIN THE 50-FT WETLAND BUFFER.

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NOT ISSUED FOR CONSTRUCTION

No.	Description	Date

DRAWING ISSUE & REVISION HISTORY

Seal

STATE OF NEW HAMPSHIRE
JOHN CHRIS NADEAU
No. 9094
LICENSED
PROFESSIONAL ENGINEER
9/17/2025

ST. PAUL'S SCHOOL NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD
CONCORD, NEW HAMPSHIRE

TAX MAP:
MAP 724Z/ LOT 1-10A
MAP 811Z LOT 1-A

OWNER/APPLICANT:
ST. PAUL'S SCHOOL
325 PLEASANT STREET
CONCORD, NEW HAMPSHIRE

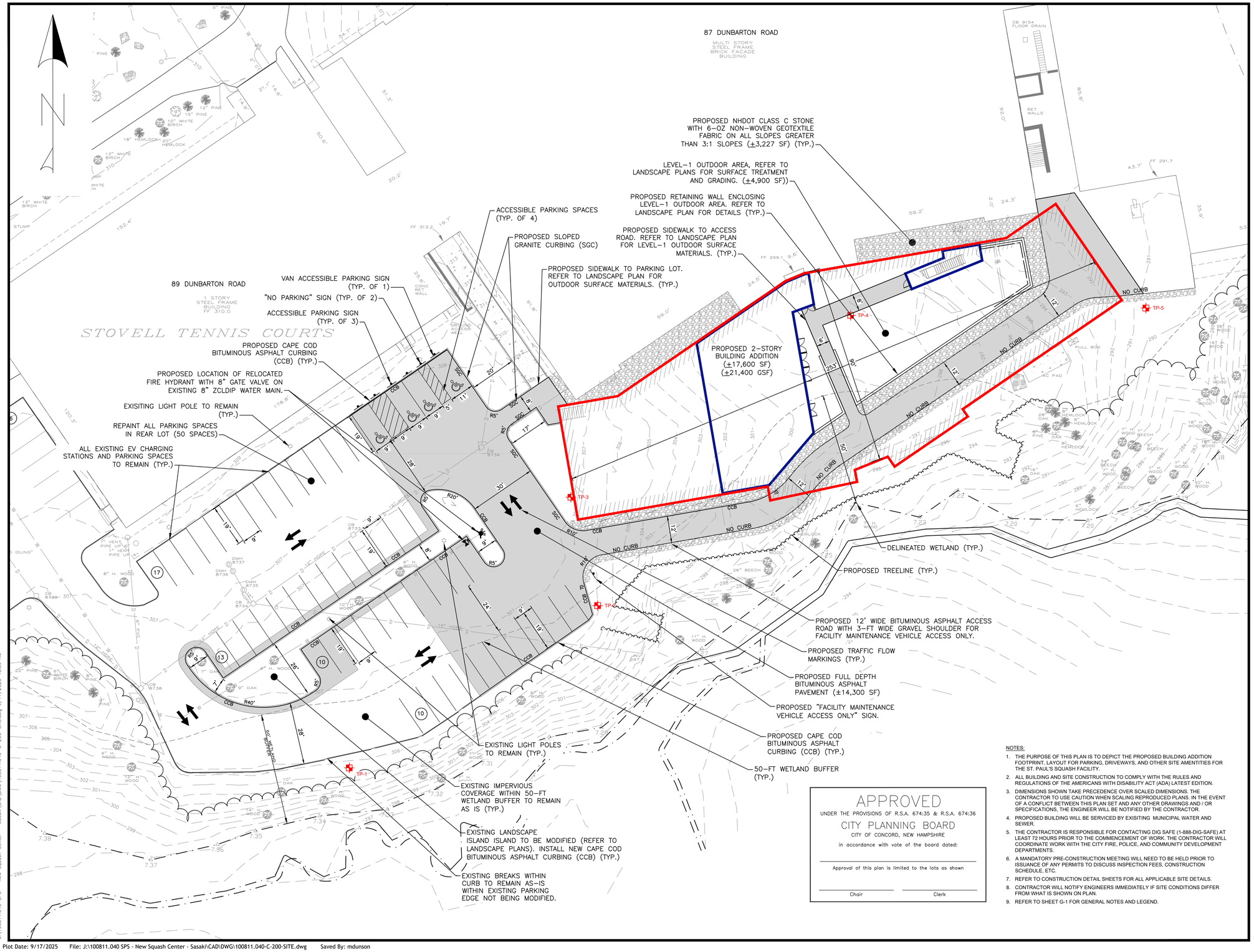
Nobis Project No: **100811.040**
Sasaki Project No: **250018.00**
Drawn By: **NOBIS - MGD/CMB**
Checked By: **NOBIS - JCN/NCP**
Approved By: **NOBIS - JCN**
Issue Date: **09.17.2025**

0 40' 80'
GRAPHIC SCALE
1 INCH = 20 FEET

SHEET TITLE

PROPOSED SITE PLAN OVERVIEW

SHEET
C-2.0



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UNDER THE PROVISIONS OF R.S.A. 674:35 & R.S.A. 674:36
CITY PLANNING BOARD
CITY OF CONCORD, NEW HAMPSHIRE
in accordance with vote of the board dated:

Approval of this plan is limited to the lots as shown

Chair | Clerk

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JOHN CHRIS NADEAU
No. 9894
LICENSED
PROFESSIONAL ENGINEER
9/17/2025

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0 20' 40'
GRAPHIC SCALE
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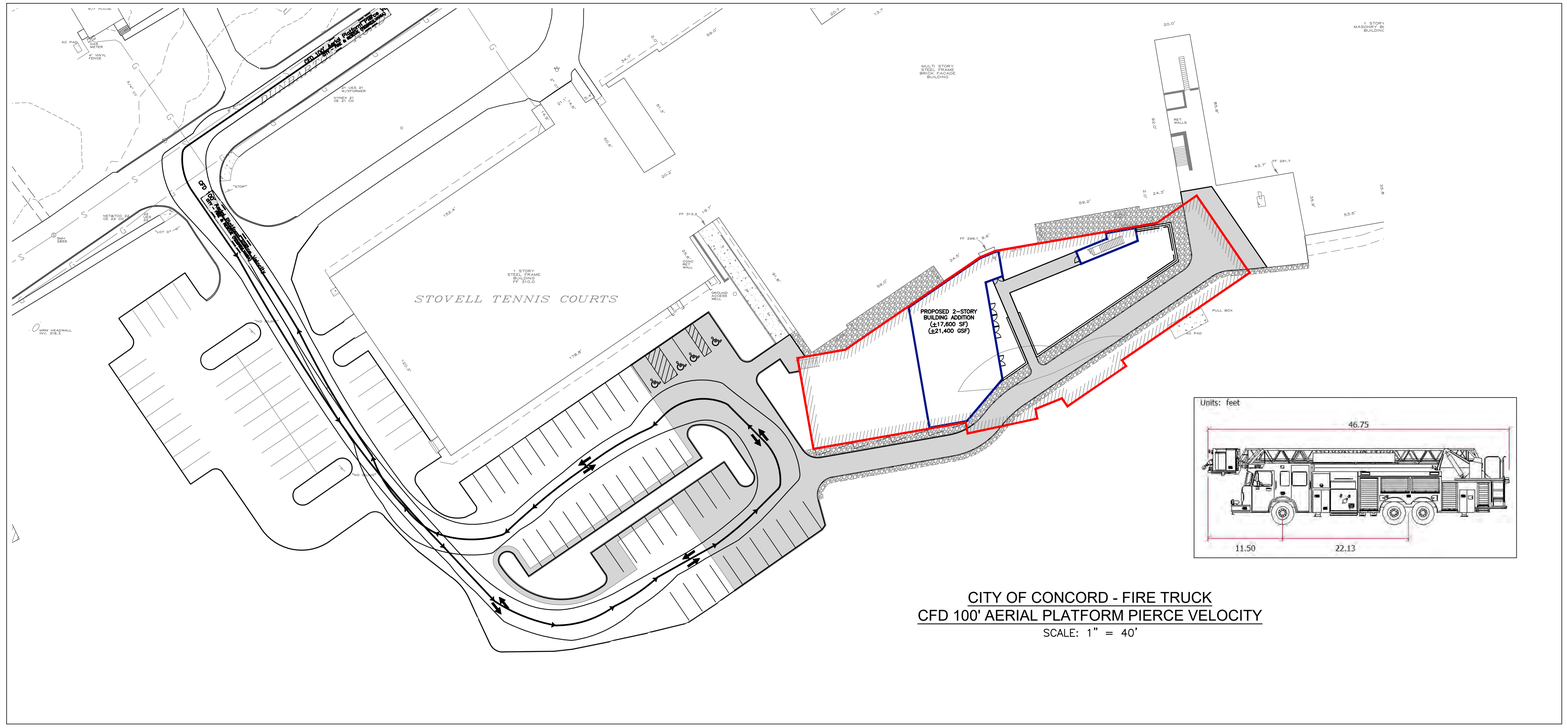
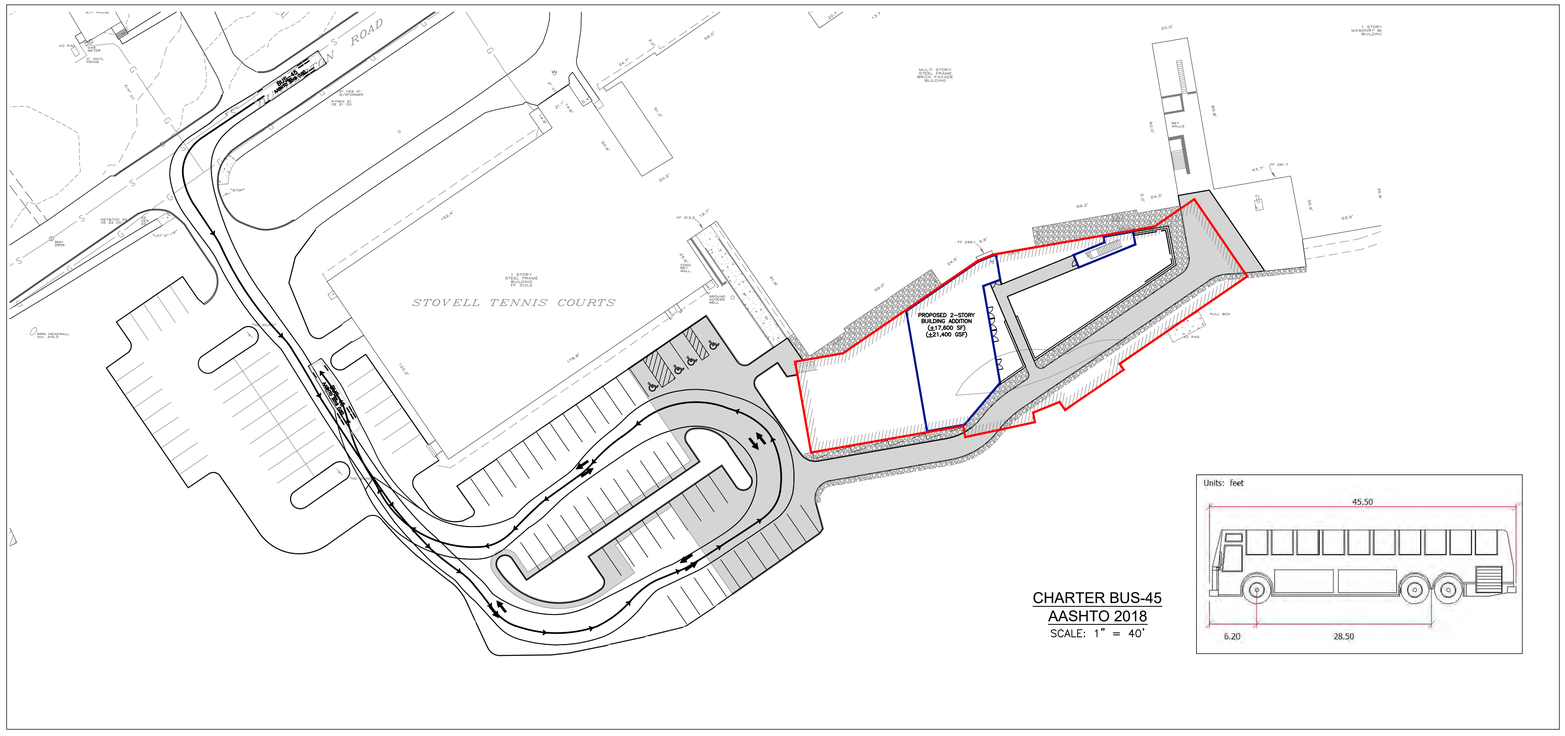
SHEET TITLE

PROPOSED SITE PLAN

SHEET
C-2.1



CITY OF CONCORD - FIRE TRUCK
CFD 100' AERIAL PLATFORM PIERCE VELOCITY
SCALE: 1" = 40'



CHARTER BUS-45
AASHTO 2018
SCALE: 1" = 40'

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STATE OF NEW HAMPSHIRE
JOHN CHRIS NADEAU
No. 9294
LICENSED
PROFESSIONAL ENGINEER
9/17/2025

ST. PAUL'S SCHOOL
NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD
CONCORD, NEW HAMPSHIRE

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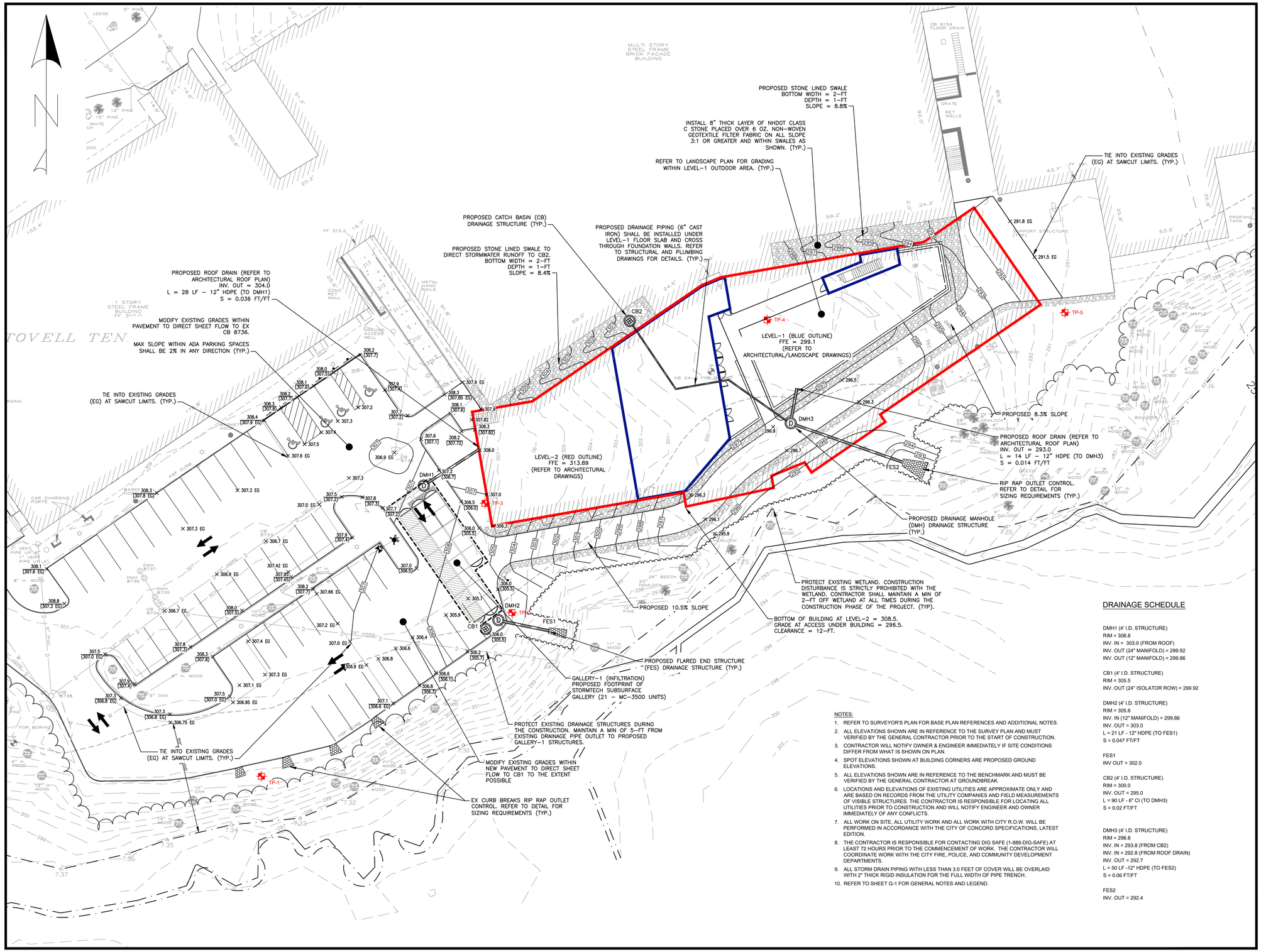
0 40' 80'
GRAPHIC SCALE
1 INCH = 40 FEET

SHEET TITLE

TURNING MOTION PLAN

SHEET
C-2.2



DRAINAGE SCHEDULE

DMH1 (4' I.D. STRUCTURE)
RIM = 306.8
INV. IN = 303.0 (FROM ROOF)
INV. OUT (24" MANIFOLD) = 299.92
INV. OUT (12" MANIFOLD) = 299.86

CB1 (4' I.D. STRUCTURE)
RIM = 305.5
INV. OUT (24" ISOLATOR ROW) = 299.92

DMH2 (4' I.D. STRUCTURE)
RIM = 305.6
INV. IN (12" MANIFOLD) = 299.86
INV. OUT = 303.0
L = 21 LF - 12" HDPE (TO FES1)
S = 0.047 FT/FT

FES1
INV OUT = 302.0

CB2 (4' I.D. STRUCTURE)
RIM = 300.0
INV. OUT = 295.0
L = 90 LF - 6" CI (TO DMH3)
S = 0.02 FT/FT

DMH3 (4' I.D. STRUCTURE)
RIM = 296.8
INV. IN = 293.8 (FROM CB2)
INV. IN = 292.8 (FROM ROOF DRAIN)
INV. OUT = 292.7
L = 50 LF -12" HDPE (TO FES2)
S = 0.06 FT/FT

FES2
INV. OUT = 292.4

NOTES:

1. REFER TO SURVEYOR'S PLAN FOR BASE PLAN REFERENCES AND ADDITIONAL NOTES.
2. ALL ELEVATIONS SHOWN ARE IN REFERENCE TO THE SURVEY PLAN AND MUST VERIFIED BY THE GENERAL CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
3. CONTRACTOR WILL NOTIFY OWNER & ENGINEER IMMEDIATELY IF SITE CONDITIONS DIFFER FROM WHAT IS SHOWN ON PLAN.
4. SPOT ELEVATIONS SHOWN AT BUILDING CORNERS ARE PROPOSED GROUND ELEVATIONS.
5. ALL ELEVATIONS SHOWN ARE IN REFERENCE TO THE BENCHMARK AND MUST BE VERIFIED BY THE GENERAL CONTRACTOR AT GROUNDBREAK.
6. LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES ARE APPROXIMATE ONLY AND ARE BASED ON RECORDS FROM THE UTILITY COMPANIES AND FIELD MEASUREMENTS OF VISIBLE STRUCTURES. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UTILITIES PRIOR TO CONSTRUCTION AND WILL NOTIFY ENGINEER AND OWNER IMMEDIATELY OF ANY CONFLICTS.
7. ALL WORK ON SITE, ALL UTILITY WORK AND ALL WORK WITH CITY R.O.W. WILL BE PERFORMED IN ACCORDANCE WITH THE CITY OF CONCORD SPECIFICATIONS, LATEST EDITION.
8. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING DIG SAFE (1-888-DIG-SAFE) AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF WORK. THE CONTRACTOR WILL COORDINATE WORK WITH THE CITY FIRE, POLICE, AND COMMUNITY DEVELOPMENT DEPARTMENTS.
9. ALL STORM DRAIN PIPING WITH LESS THAN 3.0 FEET OF COVER WILL BE OVERLAID WITH 2" THICK RIGID INSULATION FOR THE FULL WIDTH OF PIPE TRENCH.
10. REFER TO SHEET G-1 FOR GENERAL NOTES AND LEGEND.

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OWNER/APPLICANT:
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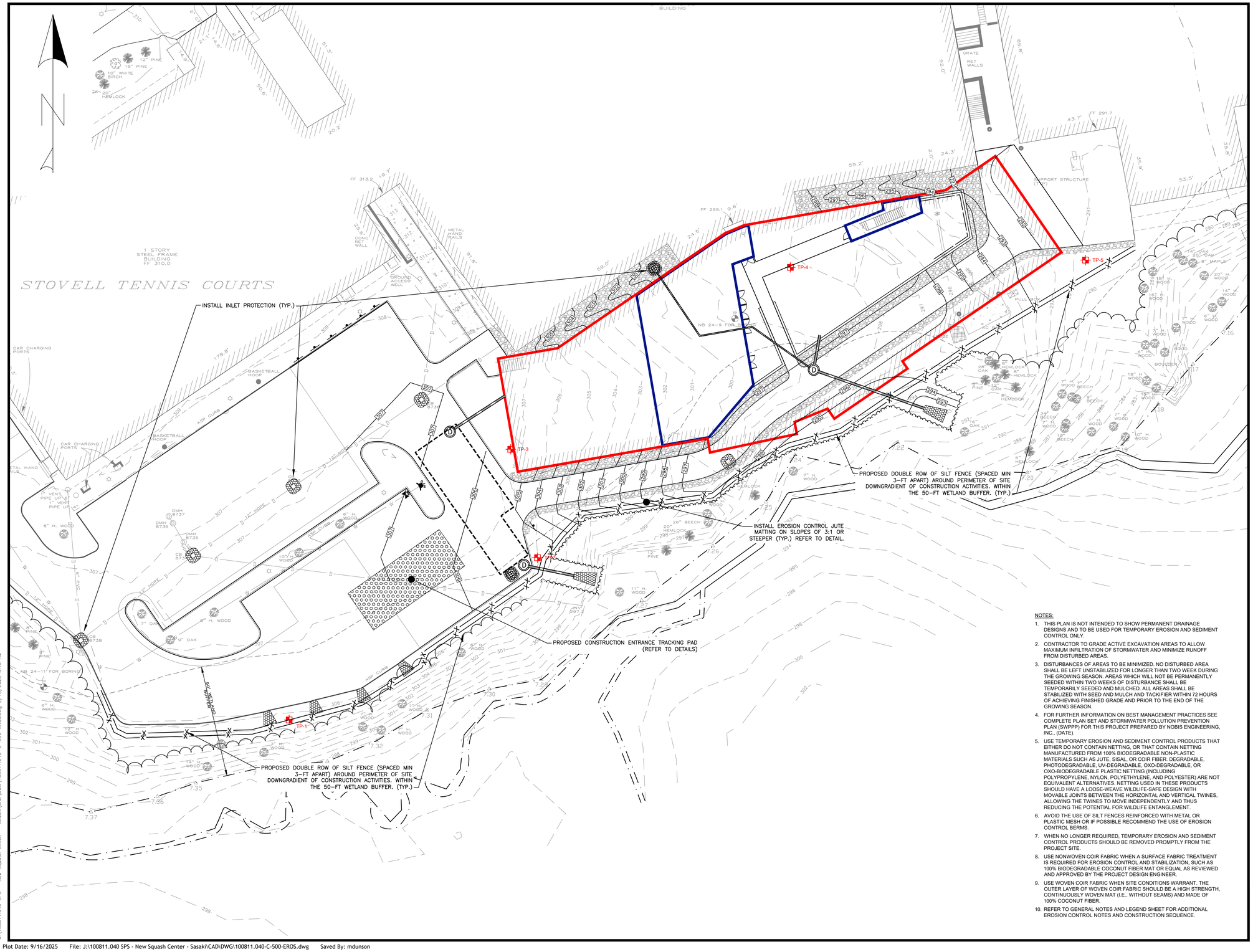
Nobis Project No: **100811.040**
Sasaki Project No: **250018.00**
Drawn By: **NOBIS - MGD/CMB**
Checked By: **NOBIS - JCN/NCP**
Approved By: **NOBIS - JCN**
Issue Date: **09.17.2025**

0 20' 40'
GRAPHIC SCALE
1 INCH = 20 FEET

SHEET TITLE

GRADING AND DRAINAGE PLAN

SHEET
C-3.0



NOTES:

1. THIS PLAN IS NOT INTENDED TO SHOW PERMANENT DRAINAGE DESIGNS AND TO BE USED FOR TEMPORARY EROSION AND SEDIMENT CONTROL ONLY.
2. CONTRACTOR TO GRADE ACTIVE EXCAVATION AREAS TO ALLOW MAXIMUM INFILTRATION OF STORMWATER AND MINIMIZE RUNOFF FROM DISTURBED AREAS.
3. DISTURBANCES OF AREAS TO BE MINIMIZED. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED FOR LONGER THAN TWO WEEK DURING THE GROWING SEASON. AREAS WHICH WILL NOT BE PERMANENTLY SEEDED WITHIN TWO WEEKS OF DISTURBANCE SHALL BE TEMPORARILY SEEDED AND MULCHED. ALL AREAS SHALL BE STABILIZED WITH SEED AND MULCH AND TACKIFIER WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE AND PRIOR TO THE END OF THE GROWING SEASON.
4. FOR FURTHER INFORMATION ON BEST MANAGEMENT PRACTICES SEE COMPLETE PLAN SET AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR THIS PROJECT PREPARED BY NOBIS ENGINEERING, INC., (DATE).
5. USE TEMPORARY EROSION AND SEDIMENT CONTROL PRODUCTS THAT EITHER DO NOT CONTAIN NETTING, OR THAT CONTAIN NETTING MANUFACTURED FROM 100% BIODEGRADABLE NON-PLASTIC MATERIALS SUCH AS JUTE, SISAL, OR COIR FIBER. DEGRADABLE, PHOTODEGRADABLE, UV-DEGRADABLE, OXO-DEGRADABLE, OR OXO-BIODEGRADABLE PLASTIC NETTING (INCLUDING POLYPROPYLENE, NYLON, POLYETHYLENE, AND POLYESTER) ARE NOT EQUIVALENT ALTERNATIVES. NETTING USED IN THESE PRODUCTS SHOULD HAVE A LOOSE-WEAVE WILDLIFE-SAFE DESIGN WITH MOVABLE JOINTS BETWEEN THE HORIZONTAL AND VERTICAL TWINES, ALLOWING THE TWINES TO MOVE INDEPENDENTLY AND THUS REDUCING THE POTENTIAL FOR WILDLIFE ENTANGLEMENT.
6. AVOID THE USE OF SILT FENCES REINFORCED WITH METAL OR PLASTIC MESH OR IF POSSIBLE RECOMMEND THE USE OF EROSION CONTROL BERMS.
7. WHEN NO LONGER REQUIRED, TEMPORARY EROSION AND SEDIMENT CONTROL PRODUCTS SHOULD BE REMOVED PROMPTLY FROM THE PROJECT SITE.
8. USE NONWOVEN COIR FABRIC WHEN A SURFACE FABRIC TREATMENT IS REQUIRED FOR EROSION CONTROL AND STABILIZATION, SUCH AS 100% BIODEGRADABLE COCONUT FIBER MAT OR EQUAL AS REVIEWED AND APPROVED BY THE PROJECT DESIGN ENGINEER.
9. USE WOVEN COIR FABRIC WHEN SITE CONDITIONS WARRANT. THE OUTER LAYER OF WOVEN COIR FABRIC SHOULD BE A HIGH STRENGTH, CONTINUOUSLY WOVEN MAT (I.E., WITHOUT SEAMS) AND MADE OF 100% COCONUT FIBER.
10. REFER TO GENERAL NOTES AND LEGEND SHEET FOR ADDITIONAL EROSION CONTROL NOTES AND CONSTRUCTION SEQUENCE.

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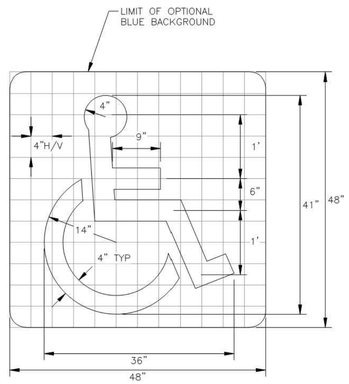
SHEET TITLE

EROSION CONTROL PLAN

SHEET
C-4.0



SYMBOL SHALL BE WHITE WITH AN OPTIONAL BLUE BACKGROUND

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: SITE/STREET
–	–	–	ACCESSIBLE PARKING SPACE PAVEMENT MARKING	DRAWING NO. M–5
–	–	–		DATE: 12/08 PAGE: 1
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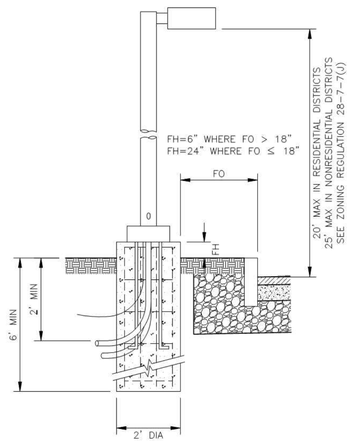
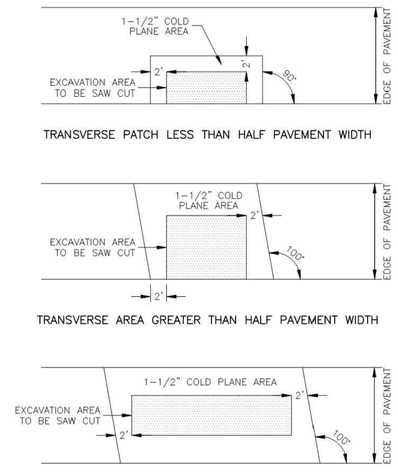


THIS INFORMATION MAY NOT CONTAIN ALL DETAILS REQUIRED FOR CONSTRUCTION. APPROPRIATE MODIFICATION MAY BE REQUIRED TO ENSURE SUITABILITY OF THESE DRAWINGS FOR THE SPECIFIC APPLICATION. IT IS THE USERS RESPONSIBILITY TO ENSURE INSTALLATION OF THE EQUIPMENT/SYSTEM IN ACCORDANCE WITH BUILDING/PROJECT SPECIFICATIONS, APPLICABLE CODES AND STANDARDS.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: ROADWAY
–	–	–	TYPICAL LIGHT POLE AND FOUNDATION	DRAWING NO. M–13
–	–	–		DATE: 01/14 PAGE: 1
–	–	–		
–	–	–		



NOTE: WHERE LIMITS OF ADJACENT COLD PLANED AREAS ARE LESS THAN OR EQUAL TO 20', THE AREA BETWEEN SHALL BE COLD PLANED AND RESURFACED

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: SITE/STREET
1	DRAWING NO.	11.11	SAWCUT REQUIREMENTS	DRAWING NO. R–12
2	MULTIPLE	12.15		DATE: 12/08 PAGE: 1
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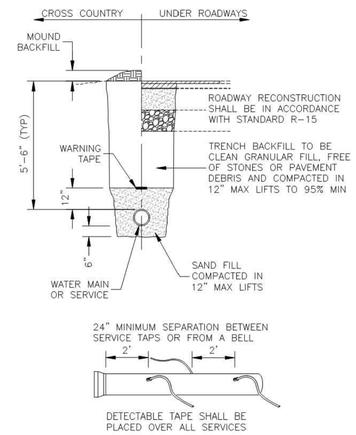
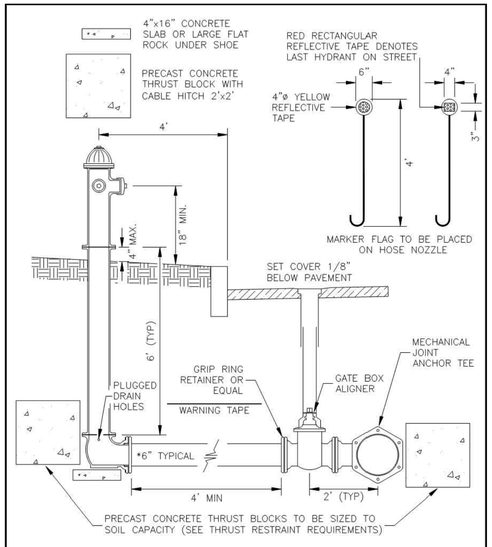
–	–	–		

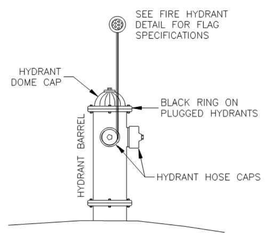


NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: WATER
1	NEW FORMAT	4.15	WATER MAIN/SERVICE TRENCH	DRAWING NO. W–1
2	STANDARD REFERENCE	01.19		DATE: 12/08 PAGE: 1
–	–	–		
–	–	–		



* SHOULD THE HYDRANT BE MORE THAN 20' FROM THE MAIN, THE HYDRANT SERVICE SHALL BE 8" TO A POINT IMMEDIATELY ADJACENT TO THE HYDRANT WHERE THE SERVICE WILL BE REDUCED TO 6"

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: WATER
1	FLANGE HEIGHT	11.11	FIRE HYDRANT	DRAWING NO. W–2
2	DRAFTING	11.11		DATE: 12/08 PAGE: 1
3	Nozzle Height	02.19		
–	–	–		



HYDRANT PAINTING

SERVICE PRESSURE	HYDRANT BARREL	HYDRANT DOME CAP	HYDRANT HOSE CAPS
HIGH PRESSURE:			
PUBLIC	OSHA ORANGE	CHROME ALUMINUM	OSHA ORANGE
PRIVATE	GLOSS YELLOW	CHROME ALUMINUM	GLOSS YELLOW
EXTRA HIGH PRESSURE:			
PUBLIC	OSHA ORANGE	CHROME ALUMINUM	CHROME ALUMINUM
PRIVATE	GLOSS YELLOW	CHROME ALUMINUM	CHROME ALUMINUM
NON–POTABLE WATER SUPPLIES:			
PUBLIC	OSHA ORANGE	GLOSS GREEN	GLOSS GREEN
PRIVATE	GLOSS YELLOW	GLOSS GREEN	GLOSS GREEN

NOTES:
1. THE CONTRACTOR/DEVELOPER SHALL BE RESPONSIBLE FOR THE PAINTING OF THE HYDRANTS.
2. AT THE CONTRACTORS OPTION, IF REQUESTED, GENERAL SERVICES WILL PAINT THE HYDRANTS AT A NOMINAL CHARGE

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: WATER
1	DRAFTING	4.15	HYDRANT PAINTING & MARKER FLAGS	DRAWING NO. W–3
1	COLORS	4.15		DATE: 12/08 PAGE: 1
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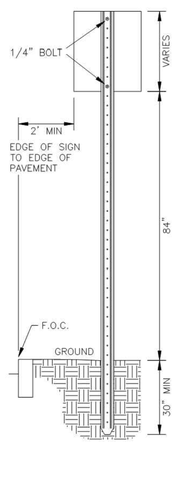
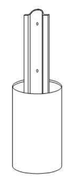


NOTES:
1. POSTS SHALL BE PLUMB. ANY POST BENT OR OTHERWISE DAMAGED SHALL BE REMOVED AND REPLACED. CUTTING THE DAMAGED PORTION OUT AND SPLICING THE POST TOGETHER IS NOT ACCEPTABLE.
2. WHEN POSTS ARE SET, THE HOLES SHALL BE DUG TO THE PROPER DEPTH. AFTER INSERTING POSTS, THE HOLES SHALL BE BACK FILLED WITH SUITABLE MATERIAL IN LAYERS NOT EXCEEDING 6" DEEP WHEN COMPACTED. CARE BEING TAKEN TO PRESERVE THE ALIGNMENT OF THE POST.
3. WHEN POSTS ARE DRIVEN, A SUITABLE DRIVING CAP SHALL BE USED. AFTER DRIVING, THE TOP OF THE POST SHALL HAVE THE SAME CROSS–SECTIONAL DIMENSION AS THE BODY OF THE POST. BATTERED HEADS WILL NOT BE ACCEPTED.
4. POSTS SHALL NOT BE DRIVEN WITH THE SIGN ATTACHED TO THE POST.
5. SIGNS SHALL BE ERECTED IN CONFORMANCE WITH THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES"
6. WHEN SIGN IS IN PLACE, NO PART OF THE POST SHALL EXTEND ABOVE SIGN.



GREEN ENAMEL, 2.5#/FT MINIMUM FLANGED CHANNEL STEEL POST

PVC OR STEEL SLEEVE REQUIRED IN PAVED OR CONCRETE LOCATIONS

SLEEVE WILL BE LARGE ENOUGH TO ALLOW FOR REPLACEMENT POST

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: SITE/STREET
1	DRAFTING	11/11	ROAD SIGN POST and SLEEVE – URBAN	DRAWING NO. M–1
2	POST #/FT	8/13		DATE: 12/08 PAGE: 1
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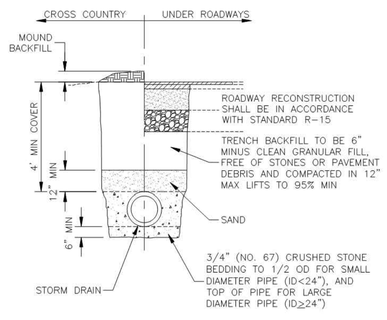

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: STORM
1	Standard Reference	01.19	STORM DRAIN TRENCH	DRAWING NO. SD–1
–	–	–		DATE: 04/15 PAGE: 1
–	–	–		
–	–	–		

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Concord, NH 03301
T(603) 224-4182
www.nobis-group.com

NOT ISSUED FOR CONSTRUCTION

No.	Description	Date

DRAWING ISSUE & REVISION HISTORY

Seal

ST. PAUL'S SCHOOL NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD CONCORD, NEW HAMPSHIRE

TAX MAP:
MAP 724Z/ LOT 1-10A
MAP 811Z LOT 1-A

OWNER/APPLICANT:
ST. PAUL'S SCHOOL
325 PLEASANT STREET
CONCORD, NEW HAMPSHIRE

Nobis Project No: **100811.040**
Sasaki Project No: **250018.00**
Drawn By: **NOBIS - MGD/CMB**
Checked By: **NOBIS - JCN/NCP**
Approved By: **NOBIS - JCN**
Issue Date: **09.17.2025**

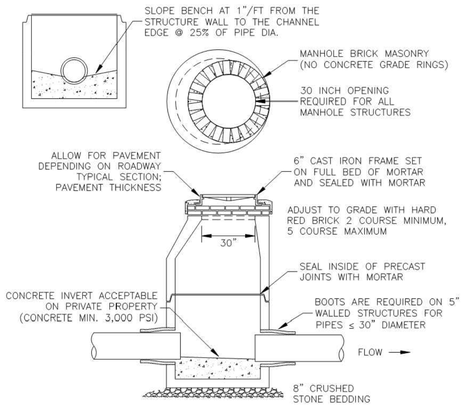
SCALE: AS NOTED

SHEET TITLE

CONSTRUCTION DETAILS

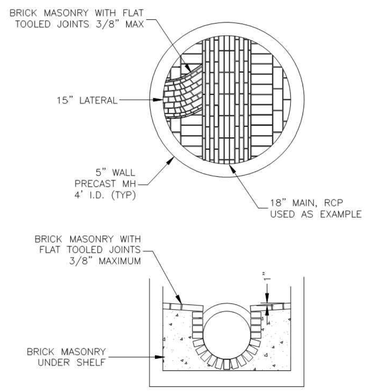
SHEET

C-5.0



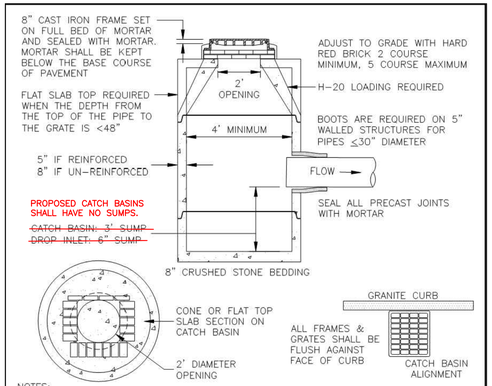
NOTES:
1. CONCRETE: 4,000 PSI AFTER 28 DAYS
2. H-20 LOADING REQUIRED
3. 5" MINIMUM WALL THICKNESS IF REINFORCED, 8" IF UN-REINFORCED
4. SEAL ALL PRECAST JOINTS WITH BITUMASTIC SEAL
5. LIFT HOLES AND BOOT RECESSES ARE TO BE SEALED WITH MORTAR FLUSH TO THE OUTSIDE STRUCTURE WALL PRIOR TO BACKFILLING
6. ALL STRUCTURES WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 12" OF INSIDE SURFACE BETWEEN HOLES. NO MORE THAN 75% OF A HORIZONTAL CROSS-SECTION SHALL BE HOLES, AND THERE SHALL BE NO HOLES CLOSER THAN 3" TO JOINTS
7. MANHOLES AND TRAFFIC SIGNAL LOOPS SHALL BE SEPARATED BY A MINIMUM OF 2' TO ALLOW FOR MAINTENANCE OF STRUCTURE

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: STORM DRAIN	
–	–	–	STORM DRAIN MANHOLE (PRIVATE)	DRAWING NO. SD-3	
–	–	–		DATE: 02/19	PAGE: 1
–	–	–			
–	–	–			



NOTES:
1. FOR 12" TO 15", CONSTRUCT INVERT THROUGH LOWER HALF OF PIPE
   12" PIPE – 9 BRICK MINIMUM
   15" PIPE – 11 BRICK MINIMUM
2. FOR MAINS GREATER THAN 15", CONSTRUCT INVERT TO TOP OF PIPE
3. MAINTAIN TROUGH WIDTH THROUGH STRUCTURE
4. TYPICAL BRICK, ASTM DESIGNATION: C321-93

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: STORM	
–	–	–	STORM DRAIN BRICK SHELF CONSTRUCTION	DRAWING NO. SD-4	
–	–	–		DATE: 03/15	PAGE: 1
–	–	–			
–	–	–			



NOTES:
1. CONCRETE SHALL BE 4,000 PSI AFTER 28 DAYS.
2. SEAL ALL PRECAST JOINTS WITH BITUMASTIC SEAL.
3. LIFT HOLES AND BOOT RECESSES ARE TO BE SEALED WITH MORTAR FLUSH TO THE OUTSIDE STRUCTURE WALL PRIOR TO BACKFILLING.
4. MINIMUM DEPTH FROM RIM TO INVERT OF THE HIGHEST PIPE SHALL BE:
   12"Φ=3.7', 15"Φ=3.9', 18"Φ=4.2', 24"Φ=4.8', 30"Φ=5.3', 36"Φ=5.8'
5. ALL STRUCTURES WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 12" OF INSIDE SURFACE BETWEEN HOLES. NO MORE THAN 75% OF A HORIZONTAL CROSS-SECTION SHALL BE HOLES AND THERE SHALL BE NO HOLES CLOSER THAN 3" TO JOINTS.
6. MANHOLES AND TRAFFIC SIGNAL LOOPS SHALL BE SEPARATED BY A MINIMUM OF 2' TO ALLOW FOR MAINTENANCE OF STRUCTURE.
7. THREE FLANGED FRAMES SHALL BE USED FOR INSTALLATIONS ADJACENT TO VERTICAL GRANITE CURB.
8. NHDOT TYPE "F" GRATE REQUIRED FOR ROADWAYS HAVING SLOPES EQUAL TO OR GREATER THAN 3%. TYPE "F" SHALL BE BICYCLE SAFE.
9. BRICK WORK SHALL BE RECTANGULAR AND CONFORM TO THE DIMENSIONS OF THE GRATE BEING USED. TYPE "B" GRATES SHALL BE ALIGNED WITH THE 22" DIMENSION AGAINST THE CURB.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: STORM DRAIN	
1	DRAFTING	11/11	CATCH BASIN / DROP INLET	DRAWING NO. SD-6	
2	SUMP DIM.	3/19		DATE: 12/08	PAGE: 1
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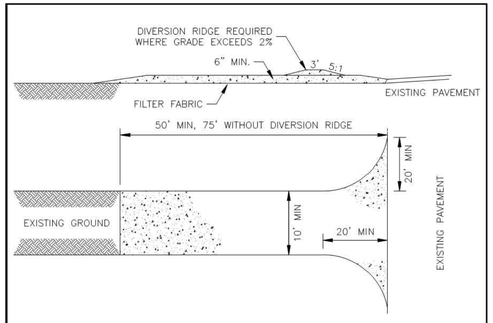

CONSTRUCTION REQUIREMENTS

1. STONE SIZE – 3" COARSE AGGREGATE.
2. THICKNESS – 6" MIN
5. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. LENGTH – NOT LESS THAN 50'. EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MIN LENGTH WOULD APPLY.
7. WIDTH – 10' MIN, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
8. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE.
9. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
10. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
11. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: EPSC	
–	–	–	CONSTRUCTION ENTRANCE DETAIL	DRAWING NO. E-1	
–	–	–		DATE: 01/08	PAGE: 1
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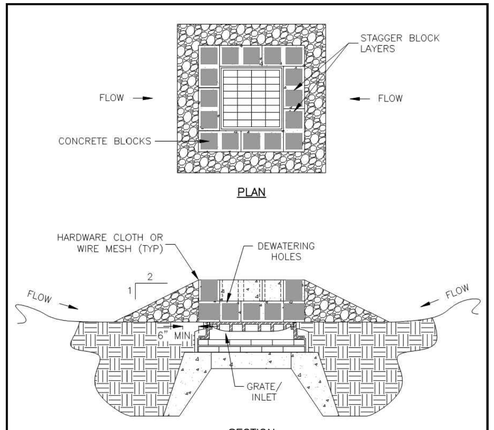

CONSTRUCTION REQUIREMENTS

1. LAY FIRST COURSE OF BLOCK ON ITS SIDE FOR DEWATERING. PLACE BLOCKS AGAINST FRAME FOR SUPPORT.
2. PLACE HARDWARE CLOTH OR WIRE MESH OVER BLOCK OPENINGS TO SUPPORT STONE.
3. PLACE STONE ON A 2:1 OR FLATTER SLOPE UP TO THE TOP OF BLOCK.
4. REMOVE STONE AND BLOCKS, AS DIRECTED, WHEN NO LONGER NEEDED. BEFORE STONE AND BLOCKS ARE REMOVED, STABILIZE ANY SEDIMENT WHICH IS PERMITTED TO STAY IN PLACE WITH VEGETATION.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: EPSC	
–	–	–	STONE & BLOCK GRATE INLET PROTECTION DETAILS	DRAWING NO. E-2	
–	–	–		DATE: 01/09	PAGE: 1
–	–	–			
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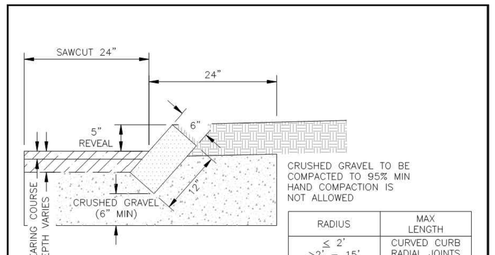

MIN LENGTH OF STRAIGHT CURB STONES 18"
MAX LENGTH OF STRAIGHT CURB STONES 8'
MAX LENGTH OF STRAIGHT CURB STONES LAID ON CURVES – SEE CHART

ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATE LENGTH.

RADIUS	MAX LENGTH
≤ 2'	CURVED CURB RADIAL JOINTS
>2' – 15'	18"
16' – 28'	2'
29' – 41'	3'
42' – 55'	4'
56' – 68'	5'
69' – 82'	6'
83' – 96'	7'
97' – 110'	8'
OVER 110'	

FINISH SURFACE AND TOLERANCES FOR SLOPED GRANITE CURB

AREA	FINISH SURFACE	TOLERANCE
ARRIS LINES	STRAIGHT AND TRUE ON TOP; FRONT AND ENDS. DRILL HOLES NOT DEEPER THAN ¼" ALLOWED IN ARRIS LINES.	+¼" TO –¼"
FACES EXPOSED PART	PLANES; NO DRILL HOLES IN FACES LONGER THAN 8" OR DEEPER THAN ¼".	+1" TO –1"
CONCEALED PART	DRILL HOLES NOT OBJECTIONABLE.	
ENDS	SQUARE WITH FACE EXCEPT AS INDICATED.	
JOINTS	ON TANGENT, MAXIMUM WIDTH: 1".	+½" TO –½"
	ON CURVES OVER 15' RADIUS, WIDEN TOP OR BOTTOM FROM 1" AS NECESSARY.	+½" TO –½"
	ON CURVES WITH 15' RADIUS AND UNDER, USE RADIAL JOINTS OR CURVED CURB AS INDICATED. OPTIMUM WIDTH: 1"	+½" TO –½"

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: SITE/STREET	
1	DRAFTING	11.11	SLOPED GRANITE CURB	DRAWING NO. C-2	
2	REMOVED FF	12.15		DATE: 12/08	PAGE: 1
3	SAWCUT	5.19			
–	–	–			

M.U.T.C.D. NUMBER	SPECIFICATION WIDTH	SPECIFICATION HEIGHT	MOUNTING HEIGHT	SIGN
R7-8	12"	18"	7'-0"	RESERVED PARKING
R7-8A	12"	6"	6'-5"	VAN ACCESSIBLE
R8-3A	12"	18"	7'-0"	NO PARKING

NOTE:
1. MOUNTING HEIGHT IS THE CLEARANCE OF THE BOTTOM OF THE SIGN TO THE NEAREST EDGE OF PAVEMENT.

2. ALL SIGN POSTS SHALL BE 2.5#/FT. U-CHANNEL POSTS, PAINTED GREEN AND CONFORM TO NHDOT SPECIFICATION 615.2.5.3.

3. ALL SIGNS SHALL BE FABRICATED OF DIAMOND GRADE SHEETING.

SIGN SUMMARY

NOT TO SCALE

SASAKI
110 CHAUNCY STREET BOSTON MA 02111 USA
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Nobis Group®
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Concord, NH 03301
T(603) 224-4182
www.nobis-group.com

NOT ISSUED FOR CONSTRUCTION

No.	Description	Date

DRAWING ISSUE & REVISION HISTORY

Seal

ST. PAUL'S SCHOOL NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD CONCORD, NEW HAMPSHIRE

TAX MAP:
MAP 724Z/ LOT 1-10A
MAP 811Z LOT 1-A

OWNER/APPLICANT:
ST. PAUL'S SCHOOL
325 PLEASANT STREET
CONCORD, NEW HAMPSHIRE

Nobis Project No: **100811.040**
Sasaki Project No: **250018.00**
Drawn By: **NOBIS - MGD/CMB**
Checked By: **NOBIS - JCN/NCP**
Approved By: **NOBIS - JCN**
Issue Date: **09.17.2025**

SCALE: AS NOTED

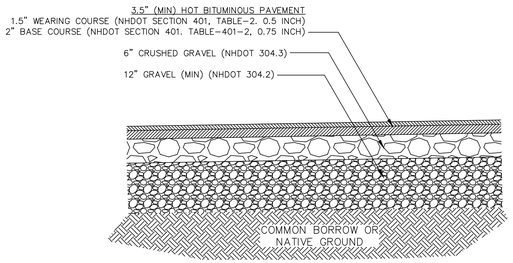
SHEET TITLE

CONSTRUCTION DETAILS

SHEET

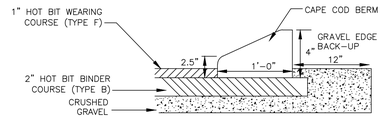
C-5.1

J:\100811.040 SPS - New Squash Center - Sasaki\CAD\DWG\100811.040-C-700-DETAILS.dwg 9/17/2025 9:37 AM



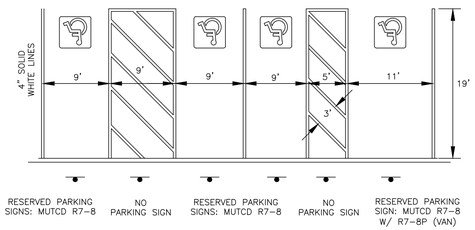
TYPICAL NEW BITUMINOUS ASPHALT PAVEMENT

NOT TO SCALE

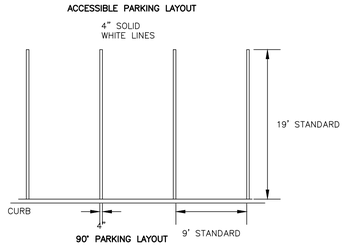


CAPE COD BERM DETAIL

NOT TO SCALE



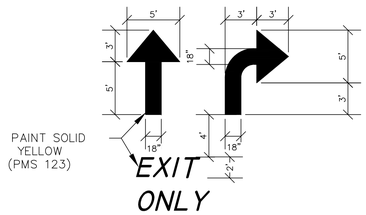
ACCESSIBLE PARKING LAYOUT



90° PARKING LAYOUT

PARKING SPACE LAYOUT

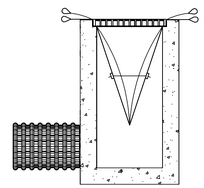
NOT TO SCALE



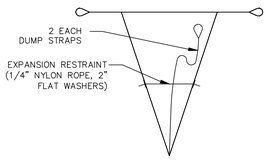
NOTE: ARROWS AND WORDS CAN BE ARRANGED IN OTHER COMBINATIONS THAN THOSE ILLUSTRATED HERE TO ACHIEVE DESIRED RESULT.

TYPICAL PAVEMENT MARKINGS

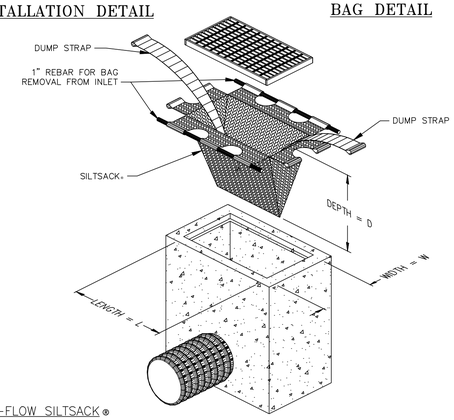
NOT TO SCALE



INSTALLATION DETAIL



BAG DETAIL



HI-FLOW SILTSACK®

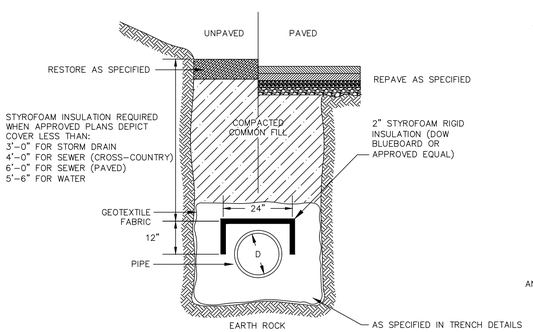
SPECIFICATIONS*

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1

*NOTE: HIGH-FLOW SILTSACK TO BE INSTALLED ONLY AFTER PAVEMENT IS INSTALLED. PRIOR TO PAVING, COVER INLET WITH AN IMPERMEABLE WATER TIGHT BARRIER TO KEEP STORMWATER AND SEDIMENT FROM ENTERING BASIN.

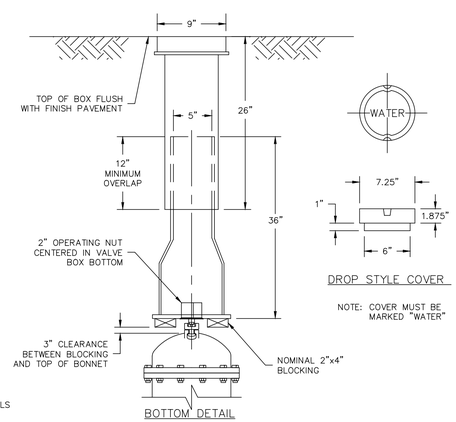
HI-FLOW SILTSACK DETAIL

NOT TO SCALE



INSULATED PIPE DETAIL

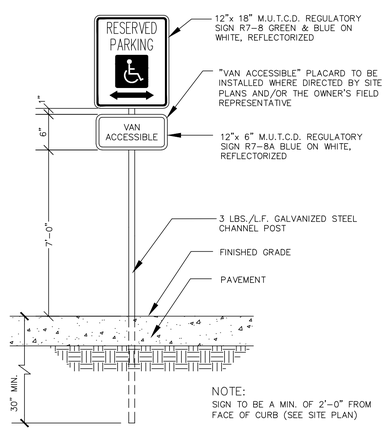
NOT TO SCALE



BOTTOM DETAIL

VALVE BOX DETAIL

NOT TO SCALE



NOTE:
SIGN TO BE A MIN. OF 2'-0" FROM FACE OF CURB (SEE SITE PLAN)

RESERVED PARKING SIGN

NOT TO SCALE

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No.	Description	Date

DRAWING ISSUE & REVISION HISTORY

Seal

STATE OF NEW HAMPSHIRE
JOHN CHRIS NADEAU
No. 8094
LICENSED
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ST. PAUL'S SCHOOL
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TAX MAP:
MAP 724Z/ LOT 1-10A
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CONCORD, NEW HAMPSHIRE

Nobis Project No: **100811.040**
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Approved By: **NOBIS - JCN**
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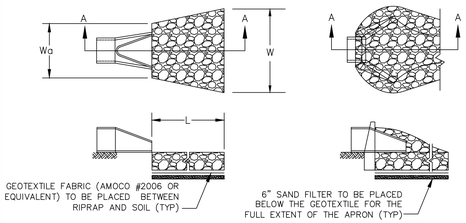
SCALE:
AS NOTED

SHEET TITLE

CONSTRUCTION DETAILS

SHEET
C-5.2



SECTION A–A

PIPE OUTLET TO FLAT AREA WITH NO DEFINED CHANNEL

SECTION A–A

PIPE OUTLET TO WELL–DEFINED CHANNEL

STRUCTURE	Wa	W	L	RIP RAP SIZE D50 (INCHES)
FES–1	3	3	8	9
FES–2	3	11	8	9
EX CURB BREAKS	3	4	4	9

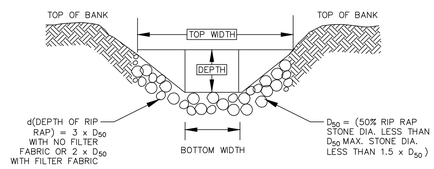
TABLE 7–24––RECOMMENDED RIPRAP GRADATION RANGES		
THICKNESS OF RIPRAP = (2.25xd50) FEET (6"min)		
d50 SIZE= X FEET X INCHES		
% OF WEIGHT SMALLER THAN THE GIVEN d50 SIZE	SIZE OF STONE (INCHES) FROM	TO
100%	(1.5xd50)	(2.0xd50)
85%	(1.3xd50)	(1.8xd50)
50%	(1.0xd50)	(1.5xd50)
15%	(0.3xd50)	(0.5xd50)

NOTES:

1. THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIPRAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE RIPRAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIPRAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR THE RIPRAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
5. OUTLETS TO A DEFINED CHANNEL SHALL HAVE 2:1 OR FLATTER SIDE SLOPES AND SHOULD BEGIN AT THE TOP OF THE CULVERT AND TAPER DOWN TO THE CHANNEL BOTTOM THROUGH THE LENGTH OF THE APRON.
6. MAINTENANCE: THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIPRAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE CHANNEL IMMEDIATELY BELOW THE OUTLET SHOULD BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO OUTLET PROTECTION.

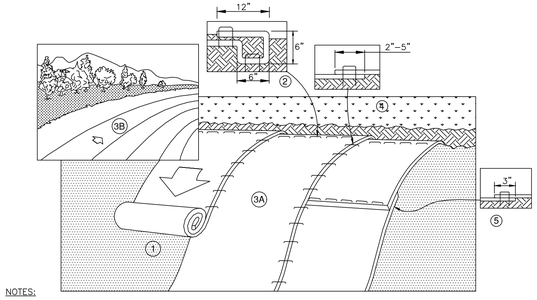
RIP RAP OUTLET PROTECTION APRON

NOT TO SCALE



TYPICAL RIP RAP SWALE

NOT TO SCALE



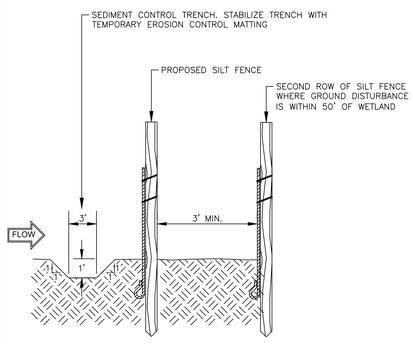
NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL–O–SEED DO NOT SEED PREPARED AREA. CELL–O–SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP BY 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP–SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEMπ, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"–5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH. NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

NORTH AMERICAN GREEN
14649 HIGHWAY 41 NORTH
EVANSVILLE, INDIANA 47725
1–800–772–2040

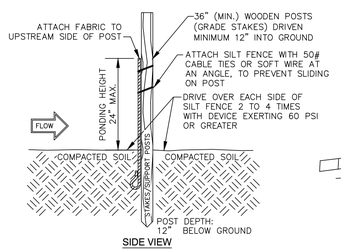
EROSION CONTROL BLANKET SLOPE INSTALLATION (NORTH AMERICAN GREEN)

NOT TO SCALE

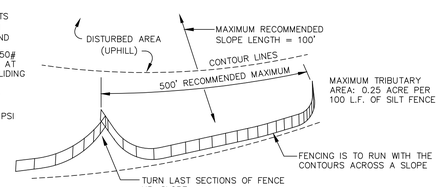


DOUBLE ROW SILT FENCE

NOT TO SCALE



SIDE VIEW

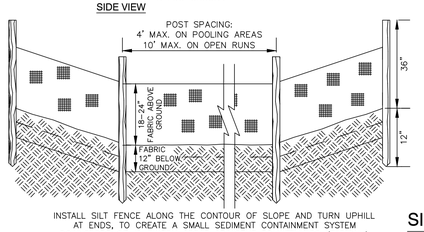


TYPICAL SILT FENCE LAYOUT

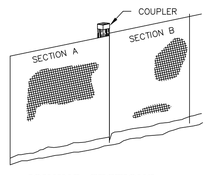
NOT TO SCALE

SPECIFICATIONS FOR SILT FENCE INSTALLATION

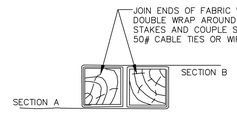
1. INSTALL POSTS 4 FEET APART IN CRITICAL WATER RETENTION AREAS AND 6–10 FEET APART ON STANDARD APPLICATIONS.
2. INSTALL POSTS 12 INCHES DEEP ON THE DOWN HILL SIDE OF THE SILT FENCE, AND AS CLOSE AS POSSIBLE TO THE FABRIC.
3. SECURELY ATTACH THE FABRIC TO EACH POST WITH TIES SECURED WITHIN THE TOP 8" OF THE FABRIC. ATTACH EACH TIE DIAGONALLY 45 DEGREES THROUGH THE FABRIC, WITH EACH PUNCTURE AT LEAST 2" VERTICALLY APART.
4. WRAP APPROXIMATELY 6 INCHES OF FABRIC AROUND THE END POSTS AND SECURE WITH 3 TIES.
5. THE INSTALLATION SHOULD BE CHECKED AND CORRECTED FOR ANY DEVIATIONS BEFORE COMPACTION. USE A FLAT–BLADED SHOVEL TO TUCK FABRIC DEEPER INTO THE SILT IF NECESSARY.
6. COMPACTING IS VITALLY IMPORTANT FOR EFFECTIVE RESULTS. COMPACT THE SOIL IMMEDIATELY NEXT TO THE SILT FENCE FABRIC WITH THE FRONT WHEEL OF THE TRACTOR, SKID STEER, OR ROLLER EXERTING AT LEAST 60 POUNDS PER SQUARE INCH.



INSTALL SILT FENCE ALONG THE CONTOUR OF SLOPE AND TURN UPHILL AT ENDS, TO CREATE A SMALL SEDIMENT CONTAINMENT SYSTEM DOWNSLOPE OF ALL WORK AREAS ADJACENT TO WETLANDS (TYPICAL.)



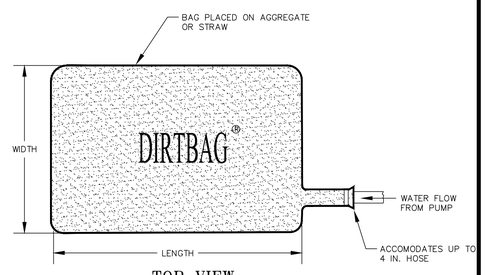
JOINING SECTIONS



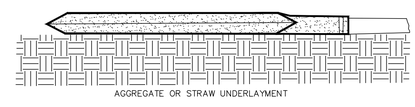
FABRIC END JOINT

SILT FENCE INSTALLATION

NOT TO SCALE



TOP VIEW



SIDE VIEW

NOTES:

1. PLACE THE BAG ON A LEVEL STABILIZED AREA OVER DENSE STRAW OR GRAVEL.
2. INSERT DISCHARGE HOSE FROM PUMP A MINIMUM OF SIX INCHES AND TIGHTLY SECURE WITH ATTACHED STRAP.
3. REPLACE THE UNIT WHEN ONE HALF (1/2) FULL OF SEDIMENT OR WHEN SEDIMENT HAS REDUCED THE FLOW TO AN IMPRACTICAL RATE
4. REMOVE UNIT FROM ENVIRONMENTALLY SENSITIVE AREAS AND DISPOSE OF THE SEDIMENT AT AN APPROPRIATE SITE.

DIRTBAG

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No.	Description	Date

DRAWING ISSUE & REVISION HISTORY

Seal

STATE OF NEW HAMPSHIRE
JOHN CHRIS NADEAU
No. 9094
LICENSED
PROFESSIONAL ENGINEER
9/17/2025

ST. PAUL'S SCHOOL NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD CONCORD, NEW HAMPSHIRE

TAX MAP:
MAP 724Z/ LOT 1-10A
MAP 811Z LOT 1-A

OWNER/APPLICANT:
ST. PAUL'S SCHOOL
325 PLEASANT STREET
CONCORD, NEW HAMPSHIRE

Nobis Project No: **100811.040**
Sasaki Project No: **250018.00**
Drawn By: **NOBIS - MGD/CMB**
Checked By: **NOBIS - JCN/NCP**
Approved By: **NOBIS - JCN**
Issue Date: **09.17.2025**

SCALE: AS NOTED

SHEET TITLE

CONSTRUCTION DETAILS

SHEET

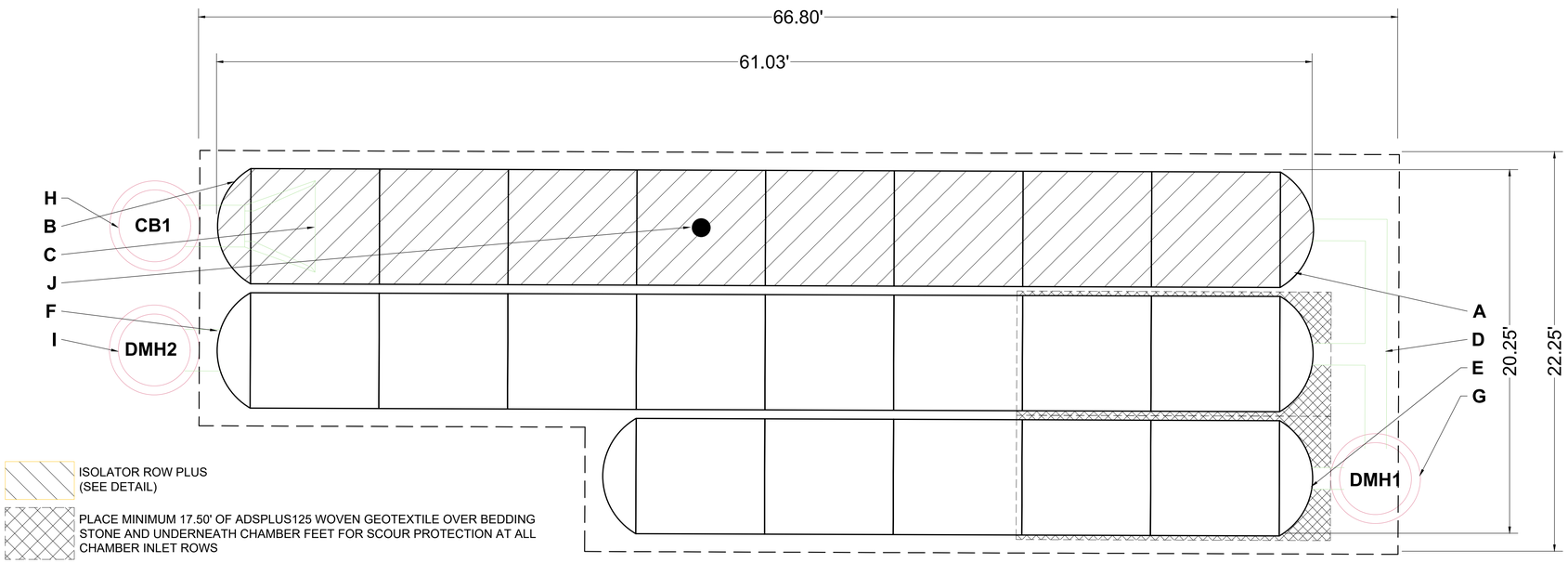
C-5.3

PROPOSED LAYOUT: GALLERY-1	
21	STORMTECH MC-3500 CHAMBERS
6	STORMTECH MC-3500 END CAPS
12	STONE ABOVE (in)
9	STONE BELOW (in)
40	STONE VOID
4382	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)
1338	SYSTEM AREA (SF)
178.1	SYSTEM PERIMETER (ft)

ELEVATIONS: GALLERY-1	
MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	12.50
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	6.50
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	6.00
MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	6.00
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	6.00
TOP OF STONE:	5.50
TOP OF MC-3500 CHAMBER:	4.50
24" ISOLATOR ROW PLUS INVERT:	0.92
24" BOTTOM CONNECTION INVERT:	0.92
12" x 12" BOTTOM MANIFOLD INVERT:	0.86
12" BOTTOM CONNECTION INVERT:	0.86
BOTTOM OF MC-3500 CHAMBER:	0.75
BOTTOM OF STONE:	0.00

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED END CAP	A	12" BOTTOM PRE-CORED END CAP, PART#: MC3500IEPP12B / TYP OF ALL 12" BOTTOM CONNECTIONS	1.35"	
PREFABRICATED END CAP	B	24" BOTTOM PRE-CORED END CAP, PART#: MC3500IEPP24BC / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	2.06"	
FLAMP	C	INSTALL FLAMP ON 24" ACCESS PIPE / PART#: MCFLAMP		
MANIFOLD	D	12" x 12" BOTTOM MANIFOLD, ADS N-12	1.35"	
PIPE CONNECTION	E	12" BOTTOM CONNECTION	1.35"	
PIPE CONNECTION	F	24" BOTTOM CONNECTION	2.06"	
CONCRETE STRUCTURE	G	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		7.4 CFS IN
CONCRETE STRUCTURE	H	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		
CONCRETE STRUCTURE	I	OCS (DESIGN BY ENGINEER / PROVIDED BY OTHERS)		7.0 CFS OUT
INSPECTION PORT	J	4" SEE DETAIL		



NOTES
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- **NOT FOR CONSTRUCTION**: THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

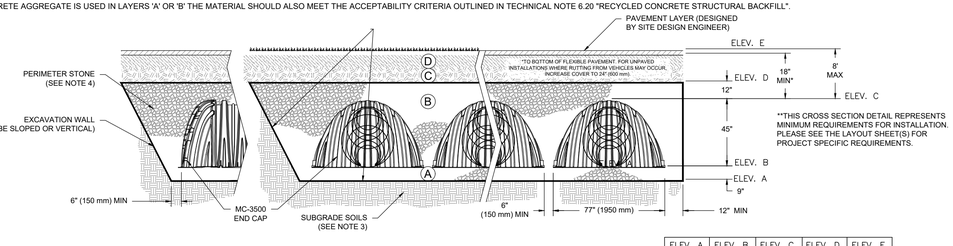
ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".

NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.



ELEV. A	ELEV. B	ELEV. C	ELEV. D	ELEV. E
299.0	299.75	303.5	304.5	305.5

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No.	Description	Date

DRAWING ISSUE & REVISION HISTORY

Seal

STATE OF NEW HAMPSHIRE JOHN CHRIS NADEAU No. 9894 LICENSED PROFESSIONAL ENGINEER
9/17/2025

ST. PAUL'S SCHOOL
NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD
CONCORD, NEW HAMPSHIRE

TAX MAP:
MAP 724Z/ LOT 1-10A
MAP 811Z LOT 1-A

OWNER/APPLICANT:
ST. PAUL'S SCHOOL
325 PLEASANT STREET
CONCORD, NEW HAMPSHIRE

Nobis Project No: **100811.040**
Sasaki Project No: **250018.00**
Drawn By: **NOBIS - MGD/CMB**
Checked By: **NOBIS - JCN/NCP**
Approved By: **NOBIS - JCN**
Issue Date: **09.17.2025**

SCALE:
AS NOTED

SHEET TITLE

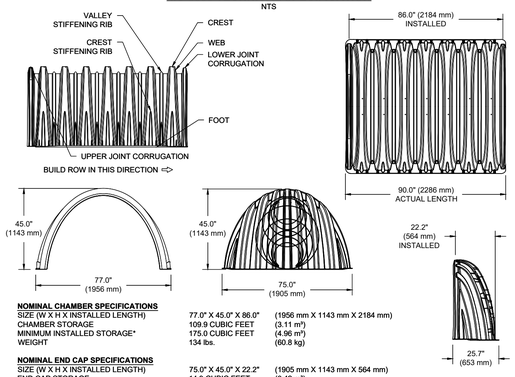
CONSTRUCTION DETAILS

SHEET
C-5.4

J:\100811.040 SPS - New Squash Center - Sasaki\CAD\DWG\100811.040-C-700-DETAILS.dwg 9/16/2025 9:37 AM

MC-3500 TECHNICAL SPECIFICATION

NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	77.0" X 45.0" X 86.0"	(1956 mm X 1143 mm X 2184 mm)
CHAMBER STORAGE	109.9 CUBIC FEET	(3.11 m^3)
MINIMUM INSTALLED STORAGE*	175.0 CUBIC FEET	(4.96 m^3)
WEIGHT	134 lbs.	(60.8 kg)

NOMINAL END CAP SPECIFICATIONS

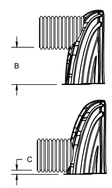
SIZE (W X H X INSTALLED LENGTH)	75.0" X 45.0" X 22.2"	(1905 mm X 1143 mm X 564 mm)
END CAP STORAGE	14.9 CUBIC FEET	(0.42 m^3)
MINIMUM INSTALLED STORAGE*	45.1 CUBIC FEET	(1.28 m^3)
WEIGHT	49 lbs.	(22.2 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION, 6" SPACING BETWEEN CHAMBERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY

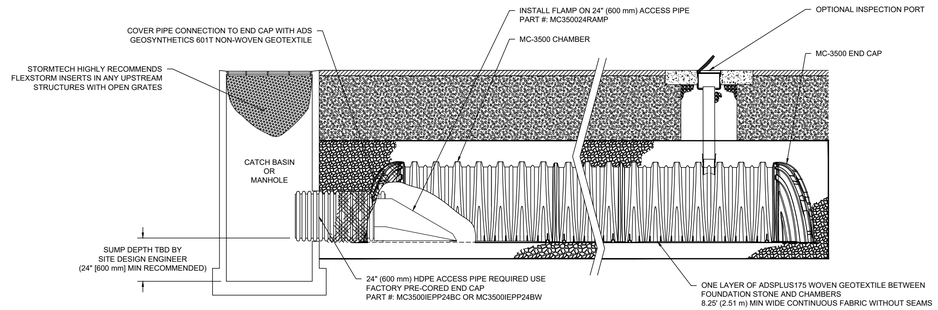
STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A WELDED CROWN PLATE END WITH "C"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC3500IEPP06T	6" (150 mm)	33.21" (844 mm)	---
MC3500IEPP06B		---	0.66" (17 mm)
MC3500IEPP08T	8" (200 mm)	31.16" (791 mm)	---
MC3500IEPP08B		---	0.81" (21 mm)
MC3500IEPP10T	10" (250 mm)	29.04" (738 mm)	---
MC3500IEPP10B		---	0.93" (24 mm)
MC3500IEPP12T	12" (300 mm)	26.36" (670 mm)	---
MC3500IEPP12B		---	1.35" (34 mm)
MC3500IEPP15T	15" (375 mm)	23.39" (594 mm)	---
MC3500IEPP15B		---	1.50" (38 mm)
MC3500IEPP18TC	18" (450 mm)	20.03" (509 mm)	---
MC3500IEPP18TW			
MC3500IEPP18BC		---	1.77" (45 mm)
MC3500IEPP18BW			
MC3500IEPP24TC	24" (600 mm)	14.48" (368 mm)	---
MC3500IEPP24TW			
MC3500IEPP24BC		---	2.06" (52 mm)
MC3500IEPP24BW			
MC3500IEPP30BC	30" (750 mm)	---	2.75" (70 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

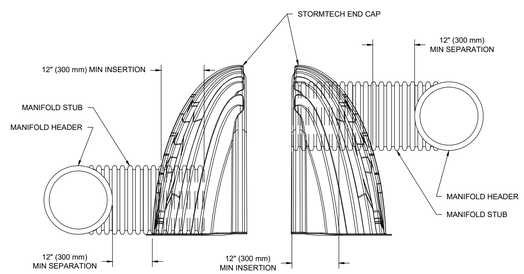


MC-3500 ISOLATOR ROW PLUS DETAIL

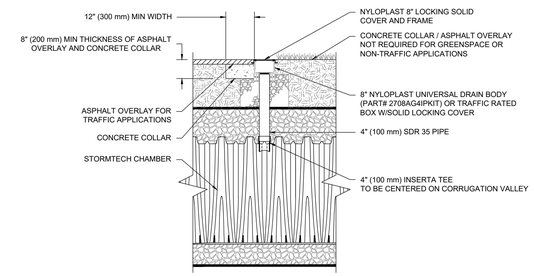
NTS

MC-SERIES END CAP INSERTION DETAIL

NTS



NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.



NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.

4" PVC INSPECTION PORT DETAIL (MC SERIES CHAMBER)

NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

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

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No.	Description	Date

DRAWING ISSUE & REVISION HISTORY

Seal

STATE OF NEW HAMPSHIRE JOHN CHRIS NADEAU No. 9294 LICENSED PROFESSIONAL ENGINEER

9/17/2025

ST. PAUL'S SCHOOL NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD CONCORD, NEW HAMPSHIRE

TAX MAP:
MAP 724Z/ LOT 1-10A
MAP 811Z LOT 1-A

OWNER/APPLICANT:
ST. PAUL'S SCHOOL
325 PLEASANT STREET
CONCORD, NEW HAMPSHIRE

Nobis Project No: **100811.040**
Sasaki Project No: **250018.00**
Drawn By: **NOBIS - MGD/CMB**
Checked By: **NOBIS - JCN/NCP**
Approved By: **NOBIS - JCN**
Issue Date: **09.17.2025**

SCALE: AS NOTED

SHEET TITLE

CONSTRUCTION DETAILS

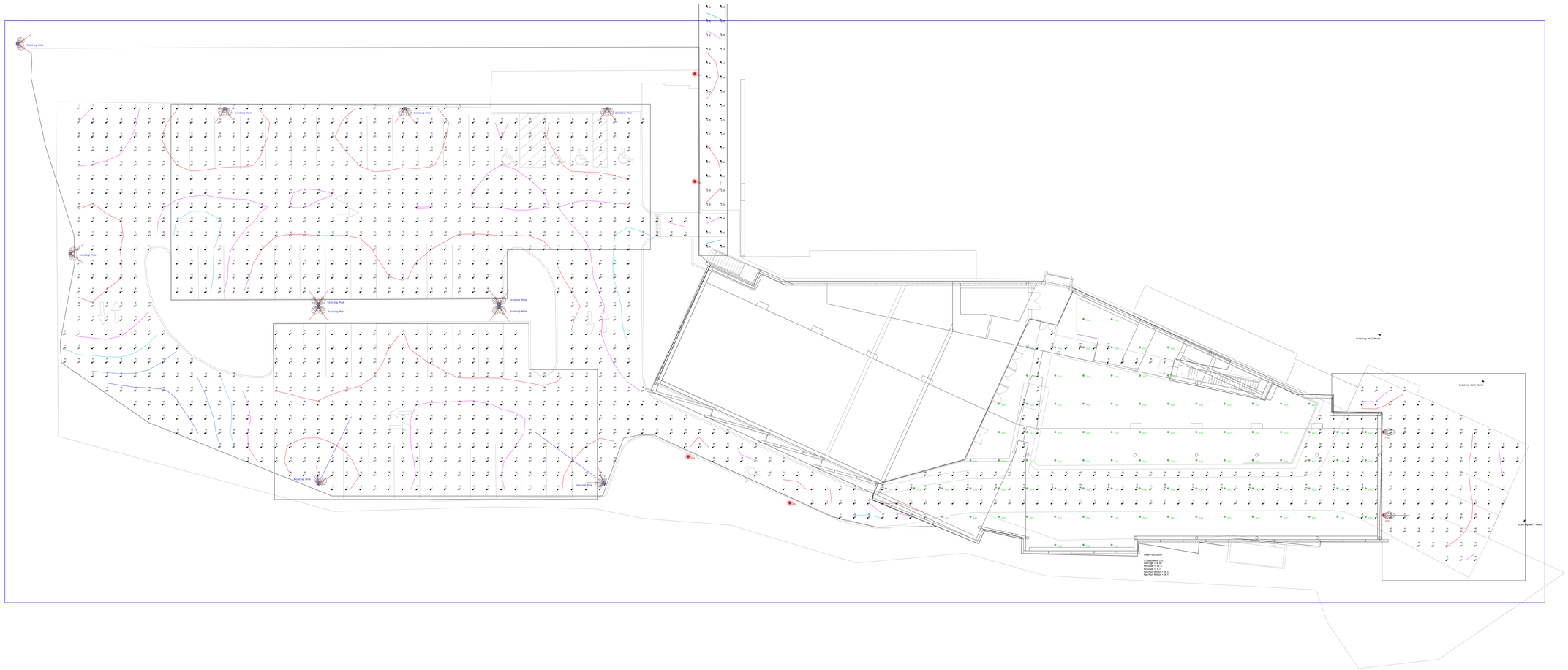
SHEET

C-5.5

SCHEDULE

FX2	Under Building Exterior	4"4" aperture round recessed flanged LED wet listed downlight. Dimensions Housing: 9" Length x 4 39/64" Width x 3 169/256" Height	Standard Finish by Architect	LED	3500K	80 CRI	L90 @ 90,000h	1,282 lm	Remote	DIM	0-10V	15.0 W	EA	ELT listed for wet locations, IP66	we-ef DOC110 134-6102
FX3	Small Parking Lot	Facade mounted exterior wall luminaire with asymmetric optic. Dimensions Fixture: 8 7/8" Length x 1' - 7 1/4" Width x 4" Height	Standard Finish by Architect	LED	3500	80+ CRI	L70 @ 60,000h	6,672 lm	Integral	DIM	0-10V	61.0 W	EA	IP65	Bega Wall Luminaire - Asymmetric B24816
FX4	Exterior Path	Campus standard post-top luminaire with symmetric optic. Dimensions Fixture: 10' - 0" Pole	Standard Finish by Architect	LED	3500K	80+ CRI	L70 @ 60,000h	3,370 lm	Integral	DIM	0-10V	36.0 W	EA	IP65	Bega Pole-top Luminaire -Symmetric B77164

Calculation Summary					
Label	Avg	Max	Min	Avg/Min	Max/Min
Parking Area - North	1.81	5.1	0.2	9.05	25.50
Parking Area - South	1.77	3.9	0.6	2.95	6.50
Ramp	1.51	3.3	0.3	5.03	11.00
Small Parking	3.22	10.0	0.5	6.44	20.00
Under-building	8.02	16.5	1.7	4.72	9.71



HLB
New York
HLBlighting.com

St. Paul's Squash Center

Project Name Line 2
250061.000
Concord, New Hampshire

Δ	Date	Description

Scale	N/A
Issuance	100% DD
Issued	09/17/25

SITE LIGHTING ANALYSIS

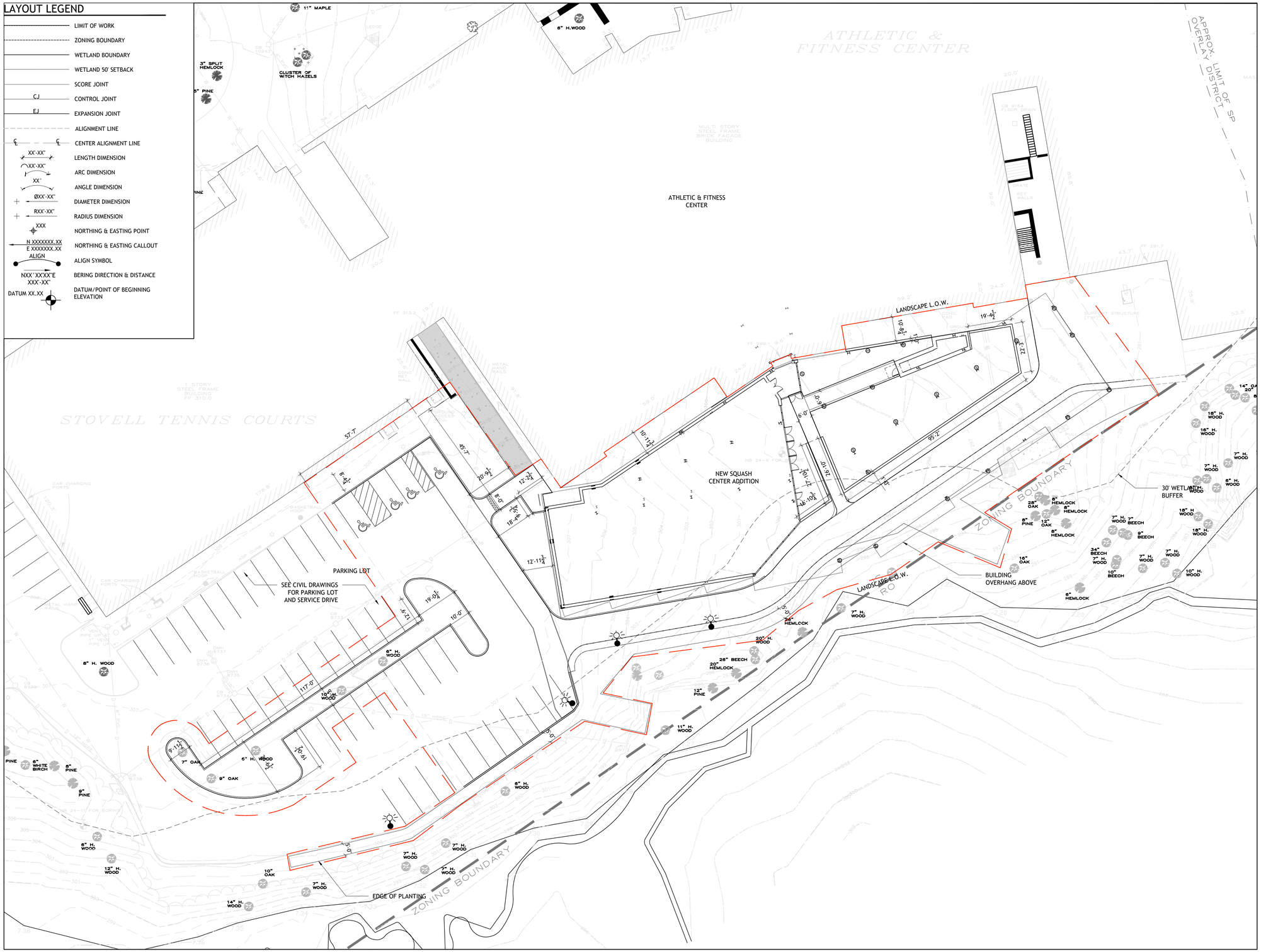
NOT FOR CONSTRUCTION

LTG-109

9/17/2025 3:35:06 PM Autodesk Docs://St. Paul's School Squash Center_25-250018/SPSSQ_Lighting.rvt

LAYOUT LEGEND

- LIMIT OF WORK
- ZONING BOUNDARY
- WETLAND BOUNDARY
- WETLAND 50' SETBACK
- SCORE JOINT
- CJ — CONTROL JOINT
- EJ — EXPANSION JOINT
- ALIGNMENT LINE
- ℄ ℄ — CENTER ALIGNMENT LINE
- XX'-XX" — LENGTH DIMENSION
- XX'-XX" — ARC DIMENSION
- XX° — ANGLE DIMENSION
- ØXX'-XX" — DIAMETER DIMENSION
- RXX'-XX" — RADIUS DIMENSION
- XXX — NORTHING & EASTING POINT
- N XXXXXXX.XX E XXXXXXX.XX — NORTHING & EASTING CALLOUT
- ALIGN — ALIGN SYMBOL
- NXX° XX'XX"E XXX'-XX" — BERING DIRECTION & DISTANCE
- DATUM XX.XX — DATUM/POINT OF BEGINNING ELEVATION



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NOT ISSUED FOR CONSTRUCTION

No.	Description	Date

DRAWING ISSUE & REVISION HISTORY

Seal: LICENSED LANDSCAPE ARCHITECT — ANDREW JAMES GUTTERMAN — 00203 — STATE OF NEW HAMPSHIRE — 9/17/25

ST. PAUL'S SCHOOL
NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD
CONCORD, NEW HAMPSHIRE

TAX MAP:
MAP 724Z/ LOT 1-10A
MAP 811Z LOT 1-A

OWNER/APPLICANT:
ST. PAUL'S SCHOOL
325 PLEASANT STREET
CONCORD, NEW HAMPSHIRE

Nobis Project No: 100811.040
Sasaki Project No: 250018.00
Drawn By: SASAKI - KAF
Checked By: SASAKI - AG
Approved By: SASAKI - ZC
Issue Date: 09.20.2025

North

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

SHEET TITLE

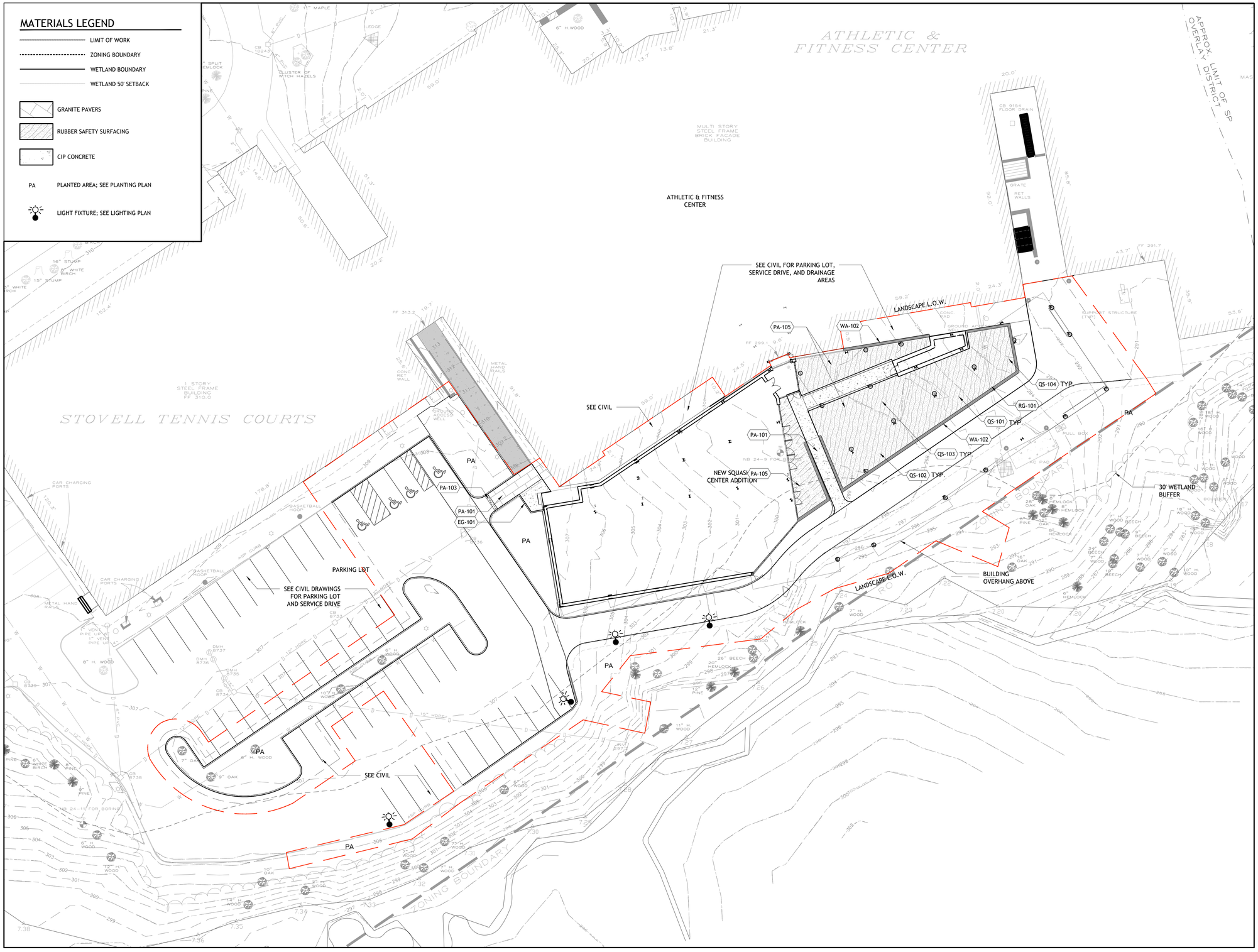
LANDSCAPE LAYOUT

SHEET

L2-01

MATERIALS LEGEND

- LIMIT OF WORK
- ZONING BOUNDARY
- WETLAND BOUNDARY
- WETLAND 50' SETBACK
- GRANITE PAVERS
- RUBBER SAFETY SURFACING
- CIP CONCRETE
- PA — PLANTED AREA; SEE PLANTING PLAN
- LIGHT FIXTURE; SEE LIGHTING PLAN



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NOT ISSUED FOR CONSTRUCTION

No.	Description	Date

DRAWING ISSUE & REVISION HISTORY

Seal: LICENSED LANDSCAPE ARCHITECT ANDREW JAMES GUTTERMAN 00203 STATE OF NEW HAMPSHIRE 9/17/25

ST. PAUL'S SCHOOL
NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD
CONCORD, NEW HAMPSHIRE

TAX MAP:
MAP 724Z/ LOT 1-10A
MAP 811Z LOT 1-A

OWNER/APPLICANT:
ST. PAUL'S SCHOOL
325 PLEASANT STREET
CONCORD, NEW HAMPSHIRE

Nobis Project No: **100811.040**
Sasaki Project No: **250018.00**
Drawn By: **SASAKI - KAF**
Checked By: **SASAKI - AG**
Approved By: **SASAKI - ZC**
Issue Date: **09.20.2025**

North

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

SHEET TITLE

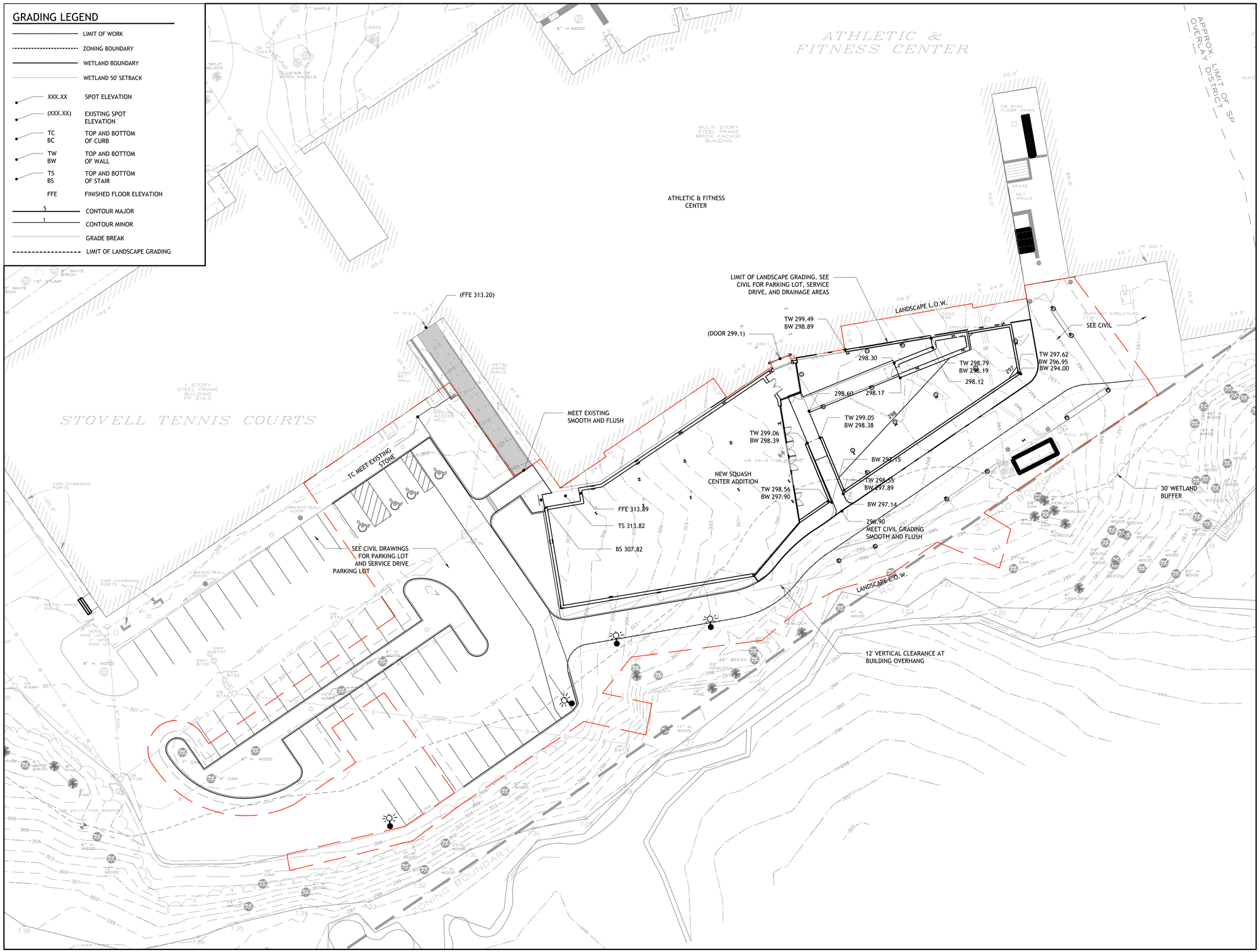
MATERIALS

SHEET

L3-01

GRADING LEGEND

	LIMIT OF WORK
	ZONING BOUNDARY
	WETLAND BOUNDARY
	WETLAND 50' SETBACK
XXX.XX	SPOT ELEVATION
(XXX.XX)	EXISTING SPOT ELEVATION
TC BC	TOP AND BOTTOM OF CURB
TW BW	TOP AND BOTTOM OF WALL
TS BS	TOP AND BOTTOM OF STAIR
FFE	FINISHED FLOOR ELEVATION
5	CONTOUR MAJOR
1	CONTOUR MINOR
	GRADE BREAK
	LIMIT OF LANDSCAPE GRADING



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DRAWING ISSUE & REVISION HISTORY

Seal

LICENSED LANDSCAPE ARCHITECT
9/17/25
ANDREW JAMES GUTTERMAN
00203
STATE OF NEW HAMPSHIRE

ST. PAUL'S SCHOOL NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD
CONCORD, NEW HAMPSHIRE

TAX MAP:
MAP 724Z/ LOT 1-10A
MAP 811Z LOT 1-A

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ST. PAUL'S SCHOOL
325 PLEASANT STREET
CONCORD, NEW HAMPSHIRE

Nobis Project No: 100811.040
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Drawn By: SASAKI - KAF
Checked By: SASAKI - AG
Approved By: SASAKI - ZC
Issue Date: 09.20.2025

North

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

SHEET TITLE

LANDSCAPE GRADING

SHEET

L4-01

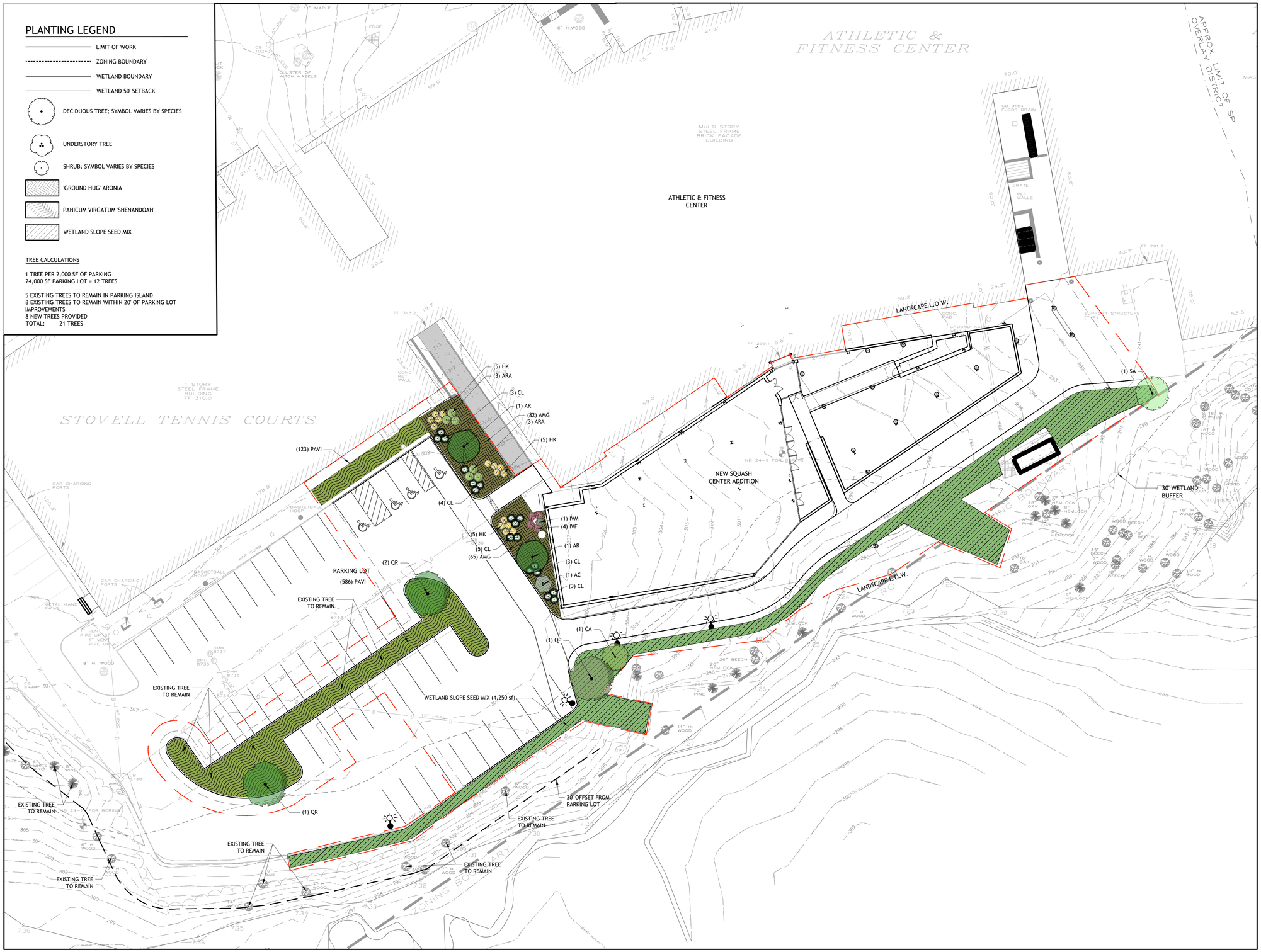
PLANTING LEGEND

- LIMIT OF WORK
- ZONING BOUNDARY
- WETLAND BOUNDARY
- WETLAND 50' SETBACK
- DECIDUOUS TREE; SYMBOL VARIES BY SPECIES
- UNDERSTORY TREE
- SHRUB; SYMBOL VARIES BY SPECIES
- 'GROUND HUG' ARONIA
- PANICUM VIRGATUM 'SHENANDOAH'
- WETLAND SLOPE SEED MIX

TREE CALCULATIONS

1 TREE PER 2,000 SF OF PARKING
24,000 SF PARKING LOT = 12 TREES

5 EXISTING TREES TO REMAIN IN PARKING ISLAND
8 EXISTING TREES TO REMAIN WITHIN 20' OF PARKING LOT IMPROVEMENTS
8 NEW TREES PROVIDED
TOTAL: 21 TREES



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No.	Description	Date

DRAWING ISSUE & REVISION HISTORY

Seal: LICENSED LANDSCAPE ARCHITECT 9/17/25 ANDREW JAMES GUTTERMAN 00203 STATE OF NEW HAMPSHIRE

ST. PAUL'S SCHOOL
NEW SQUASH CENTER

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Approved By: SASAKI - ZC
Issue Date: 09.20.2025

North
0' 10' 20' 40'
SCALE: 1" = 20'

SHEET TITLE

PLANTING PLAN

SHEET

L5-01

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER		QTY	HARDINESS ZONES	SOIL TOLERANCES	SUN EXPOSURE	MATURE HEIGHT	MATURE WIDTH
DECIDUOUS TREES												
	AR	ACER RUBRUM	RED MAPLE	3"-3.5" CAL	B&B		2	3 - 9	ACIDIC, NEUTRAL, WELL-DRAINED, MOIST	PART SHADE, FULL SUN	40 - 65FT. HT.	25 - 40FT. W.
	CA	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	2"-2.5" CAL	B&B		1	3 - 9	CLAY, SILTY, SANDY, ORGANIC, ALKALINE, WELL-DRAINED, MOIST	SHADE, PART SHADE, FULL SUN	25 - 40FT. HT.	25 - 40FT. W.
	QP	QUERCUS PALUSTRIS	PIN OAK	3"-3.5" CAL	B&B		1	4 - 8	CLAY, SILTY, SANDY, LOAMY, SALTY, ACIDIC, NEUTRAL, MOIST, FLOODED	FULL SUN	40 - 65FT. HT.	25 - FT. W.
	QR	QUERCUS RUBRA	NORTHERN RED OAK	3"-3.5" CAL	B&B		2	3 - 8	CLAY, SANDY, LOAMY, ACIDIC, NEUTRAL, ALKALINE, WELL-DRAINED, MOIST	PART SHADE, FULL SUN	40 - 65FT. HT.	40 - 65FT. W.
	SA	SASSAFRAS ALBIDUM	SASSAFRAS	2.5"-3" CAL	B&B		1	4 - 9	ROCKY, CLAY, SANDY, ACIDIC, NEUTRAL, WELL-DRAINED	PART SHADE, FULL SUN	25 - 40FT. HT.	15 - 25FT. W.
UNDERSTORY TREES												
	AC	AMELANCHIER CANADENSIS - MULTISTEM	CANADIAN SERVICEBERRY - MULTISTEM	8'-10' HT.	B&B		1	3 - 8	WELL-DRAINED, MOIST	PART SHADE, FULL SUN	15 - 25FT. HT.	10 - FT. W.
SHRUBS												
	ARA	ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA'	RED CHOKEBERRY	#5			6	4 - 9	CLAY, SILTY, SANDY, DRY, MOIST	PART SHADE, FULL SUN	6 - 10FT. HT.	3 - 6FT. W.
	CL	CLETHRA ALNIFOLIA 'HUMMINGBIRD'	COASTAL SWEET PEPPERBUSH	#3			18	4 - 9	CLAY, SANDY, ACIDIC, MOIST	SHADE, PART SHADE, FULL SUN		
	HK	HYPERICUM KALMIANUM	KALM'S ST. JOHN'S WORT	#3			15	3 - 8	ROCKY, CLAY, SILTY, SANDY, ALKALINE, WELL-DRAINED, DRY, MOIST	SHADE, PART SHADE	3 - 6FT. HT.	3 - 6FT. W.
	IVM	ILEX VERTICILLATA 'JIM DANDY'	WINTERBERRY - MALE CULTIVAR	#3			1	3 - 9	CLAY, ORGANIC, ACIDIC, WELL-DRAINED, MOIST	PART SHADE, FULL SUN	6 - 10FT. HT.	6 - 10FT. W.
	IVF	ILEX VERTICILLATA 'RED SPRITE'	WINTERBERRY - FEMALE CULTIVAR	#3			4	3 - 9	CLAY, ORGANIC, ACIDIC, WELL-DRAINED, MOIST	PART SHADE, FULL SUN	6 - 10FT. HT.	6 - 10FT. W.
SYMBOL	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING	QTY	HARDINESS ZONES	SOIL TOLERANCES	SUN EXPOSURE	MATURE HEIGHT	MATURE WIDTH
GROUND COVERS												
	AMG	ARONIA MELANOCARPA 'GROUND HUG'	BLACK CHOKEBERRY	#2		36" o.c.	147	3 - 8	WELL-DRAINED	PART SHADE, FULL SUN	6 - 10FT. HT.	
	PAVI	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCH GRASS	#2		24" o.c.	709	5 - 9	CLAY, SANDY, SALTY, ALKALINE, MOIST, FLOODED	PART SHADE, FULL SUN	3 - 6FT. HT.	1 - 3FT. W.
		WETLAND SLOPE SEED MIX ERNST SEED RAIN GARDEN MIX		SEED		20 LBS/AC	4,129 SF	5-9		PART SHADE, FULL SUN	VARIES BY SP.	VARIES BY SP.

SCHEDULE NOTES

ALL PROPOSED SPECIES ARE NATIVE TO NEW HAMPSHIRE OR NEARBY AREAS OF THE US; NONE ARE INVASIVE.
THE PROJECT IS LOCATED IN USDA HARDINESS ZONE 5B.

NOTES

1. Preservation of Existing Trees: The methods for the preservation of existing trees shall be noted on the landscape plan and efforts shall be made to minimize the potential for serious damage due to wind, grade changes, and soil compaction. No construction materials, equipment, vehicles, or temporary soil deposits shall be located within the dripline of trees that are to be preserved. Protective barriers such as silt fencing or construction fencing shall be installed around each plant and/or groups of plants that are to remain onsite. The applicant shall be responsible for replacing any trees proposed to be retained which have been damaged or destroyed by construction activities.

2. Placement of Landscape Material: Landscape improvements shall be placed to avoid interference with pedestrian and vehicular movement, underground and overhead utilities, and snow storage. Plant material shall be located to enhance the overall attractiveness of the site and to ensure long term viability of the plantings and other landscape improvements.

(1) Distribution: Plant material shall be reasonably distributed throughout the site, with careful attention to the road frontage and views from the public right-of-way, entrances to buildings, signs, required buffers/screens, and parking lot landscaping. Street trees shall be planted between twenty (20) feet and forty (40) feet apart, or as otherwise approved by the Planning Board.

3. Required Landscaping Improvements: Landscaping shall be provided as required herein and as required in the City of Concord Zoning Ordinance. Landscaping shall be provided to supplement the natural features which are preserved within the site plan and to enhance those portions of the site plan in which natural features and vegetation are destroyed by construction. The following landscape improvements shall be required as applicable by the Planning Board.

4. Planting Specifications: All plant materials shall be planted in accordance with the City of Concord's Construction Standards and Details.

5. Organic mulch shall be used to retain soil moisture and moderate temperature, however, the thick application of mulch around the root collar of the tree will not be allowed.

6. Mulch: Non-organic mulch, stone, or landscaped fabric is not allowed in required landscape areas. Non-organic mulch, stone or other ground covering is acceptable in other areas of the site, if landscape fabric is used it will be considered an impervious surface.

7. Maintenance: The applicant or their successors shall be responsible for the regular maintenance of all plantings and other landscape features. Plant materials shall be maintained alive, healthy and free from pests and disease. Tree stakes and guys shall be removed after the first growing season.

8. Financial Guarantee: The Planning Board may require a financial guarantee for up to two (2) years to ensure the viability and/or replacement of required landscaping.

9. Undesirable Growth and Debris: Existing invasive species shall be removed from the developed area. All trash, construction material and debris shall be removed from each lot. Dead and dying trees which present a potential hazard to existing and proposed structures shall be removed.

10. Erosion Control: Erosion control measures shall be installed and maintained to prevent sediment from leaving the site, entering the City or State storm drainage system, intermittent or perennial streams, wetlands, ponds and other surface waters. All disturbed areas shall be revegetated and all sediment shall be retained on site. Disturbed areas shall be restored pursuant to the City of Concord Construction Standards and Details, the State of New Hampshire Department of Environmental Protection (DES) regulations, and the US Environmental Protection Agency's NPDES (National Pollution Discharge Elimination System) requirements.

(1) Erosion Control Plan: Prior to any clearing of a site, an Erosion Control Plan shall be submitted and shall be reviewed and approved by the City Engineer.

(2) Disturbed Areas: Appropriate erosion and sedimentation control measures shall be installed prior to soil disturbance. The limits of disturbance shall be clearly marked with tape, signs, or orange construction fencing prior to the start of clearing of the site or phase of development. Wherever practical, natural vegetation shall be retained. The approved Erosion Control Plan shall specify the areas to disturbed, and disturbed areas shall be limited to those phases or portion of the site where active construction is occurring. Disturbed areas remaining idle for more than twenty one (21) days shall be stabilized, including soil stockpiles.

Concord, NH Site Plan Regulations

Amendments Filed with City Clerk on 5/17/19 Page 91

(3) Site Restoration: Grading shall be completed in accordance with the approved site plan. All disturbed land shall be recovered with loam with a minimum depth of six (6) inches. The loam shall be fertile, natural soil, typical of the locality, free from large stones, roots, sticks, clay, peat, weeds and sod, and obtained from a naturally well drained area, nor contain toxic materials to plants. The loam shall not contain particles over two (2) inches in diameter. When possible, topsoil from the proposed development shall be redistributed so as to provide the required cover. All disturbed areas shall be seeded in accordance with the City of Concord Construction Standards and Details. The Planning Board may require the planting of trees and shrubs in areas to be restored.

(4) Monitoring and Maintenance: Sedimentation and erosion control measures shall be installed prior to the start of construction, and shall be monitored and maintained during construction, and removed after final site stabilization in accordance with City, NH DES and NPDES requirements.

(5) Final Stabilization: A site shall be deemed to be stabilized when it is in a condition in which the soils on the site will not erode under the conditions of a ten (10) year storm. Temporary sediment and erosion control devices shall not be removed until permanent stabilization is established for the entire site or phase of the development. All temporary erosion and sediment control measures shall be removed after the completion of construction.

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NOT ISSUED
FOR
CONSTRUCTION

No.	Description	Date

DRAWING ISSUE & REVISION HISTORY

Seal

LICENSED LANDSCAPE ARCHITECT
9/17/25
ANDREW
JAMES
GUTTERMAN
00203
STATE OF NEW HAMPSHIRE

ST. PAUL'S SCHOOL
NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD
CONCORD, NEW HAMPSHIRE

TAX MAP:
MAP 724Z/ LOT 1-10A
MAP 811Z LOT 1-A

OWNER/APPLICANT:
ST. PAUL'S SCHOOL
325 PLEASANT STREET
CONCORD, NEW HAMPSHIRE

Nobis Project No: **100811.040**
Sasaki Project No: **250018.00**
Drawn By: **SASAKI - KAF**
Checked By: **SASAKI - AG**
Approved By: **SASAKI - ZC**
Issue Date: **09.20.2025**

North

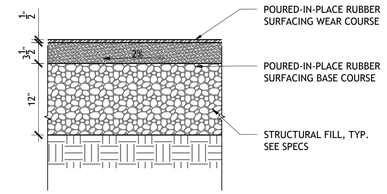
0' 10' 20' 40'
SCALE: 1" = 20'

SHEET TITLE

PLANTING SCHEDULE AND NOTES

SHEET

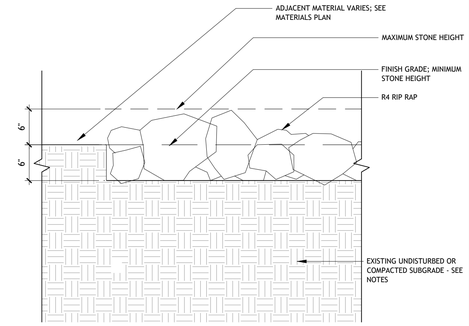
L5-02



NOTES:
1. SURFACE COLOR MIX VARIES
2. BASIS OF DESIGN IS ADVENTURE TURF POURED-IN-PLACE TWO LAYER SYSTEM. SEE SPECIFICATIONS FOR MORE INFORMATION.

7 POURED-IN-PLACE RUBBER SAFETY SURFACING PA-105

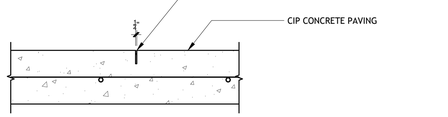
1" = 1'-0" P-25-STP-58



NOTES
1. WHERE RIP RAP IS APPLIED TO SLOPES >10%, COMPACT MIN. 6" SUBGRADE

4 RIP RAP PA-104

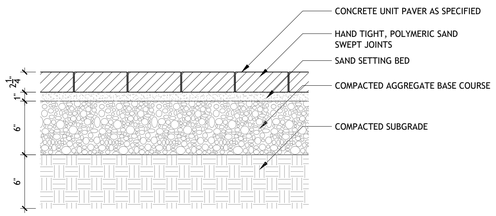
1" = 1'-0" P-25-STP-57



NOTES:
1. REFER TO LAYOUT PLAN FOR JOINT SPACING
2. REFER TO MATERIALS PLAN FOR TYPE OF CIP CONCRETE PAVING
3. JOINT SEALANT COLOR SHALL MATCH COLOR OF CONCRETE AND SHALL BE APPROVED BY ARCHITECT

6 CONCRETE CONTROL JOINT JT-102

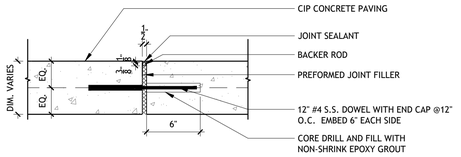
1 1/2" = 1'-0" P-25-STP-31



NOTES:
1. CONCRETE UNIT PAVER COLOR, FINISH, AND SIZE TO BE DETERMINED
2. PAVER PATTERN TO BE DETERMINED
3. REFER TO PLANS FOR EXTENTS
4. AGGREGATE BASE COURSE TO BE COMPACTED TO 95%
5. COMPACT NATIVE SOILS OR ENGINEERED FILL TO 95%

2 CONCRETE UNIT PAVERS PA-102

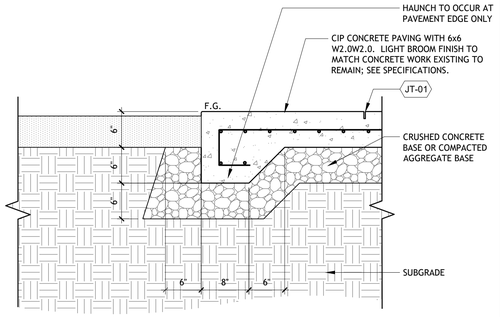
1 1/2" = 1'-0" P-25-STP-05



NOTES:
1. REFER TO LAYOUT PLAN FOR JOINT PATTERN AND SPACING
2. REFER TO MATERIALS PLAN FOR TYPE OF CIP CONCRETE PAVING
3. JOINT SEALANT COLOR SHALL MATCH COLOR OF CONCRETE AND SHALL BE APPROVED BY ARCHITECT

5 EXPANSION JOINT JT-101

1 1/2" = 1'-0" P-25-STP-13



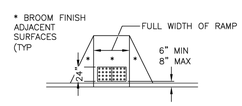
NOTES:
1. REFER TO LAYOUT PLAN FOR JOINTING LOCATION AND PATTERNS

1 CIP CONCRETE PAVING (PED) PA-101

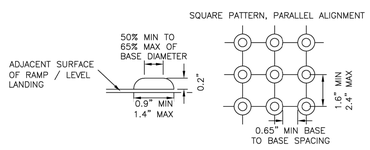
1" = 1'-0" P-25-STP-16

Go To Details

Go To TOC



DETECTABLE WARNING PLACEMENT



DETECTABLE WARNING DETAILS

NOTES:

1. DETECTABLE WARNING SURFACES SHALL BE CAST IRON WITHIN THE CITY R.O.W.
2. CONCRETE ADJACENT TO ALL DETECTABLE WARNINGS SHALL HAVE A BROOM FINISH.
3. THE COLOR OF THE DETECTABLE WARNING SHALL PROVIDE A VISUAL CONTRAST TO THE SURROUNDING SURFACE AND SHALL BE AS SPECIFIED ON THE PLANS.
4. WHERE A RAMP OR LEVEL LANDING MEETS A CURB RADIUS, ALIGN THE EDGE OF THE DETECTABLE WARNING AREA PARALLEL TO THE CURB TO THE MAXIMUM EXTENT FEASIBLE.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: SITE/STREET
1	REV STYLE	11-09	DETECTABLE WARNING PANEL DETAILS	DRAWING NO. CR-1
–	–	–		DATE: 12/08 PAGE: 1
–	–	–		
APPROVED BY:				

CR1-CR13_RDWY-Curb Ramps_10.dwg

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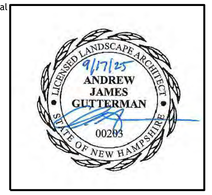
No.	Description	Date

DRAWING ISSUE & REVISION HISTORY

Seal



ST. PAUL'S SCHOOL
NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD
CONCORD, NEW HAMPSHIRE

TAX MAP:
MAP 724Z/ LOT 1-10A
MAP 811Z LOT 1-A

OWNER/APPLICANT:
ST. PAUL'S SCHOOL
325 PLEASANT STREET
CONCORD, NEW HAMPSHIRE

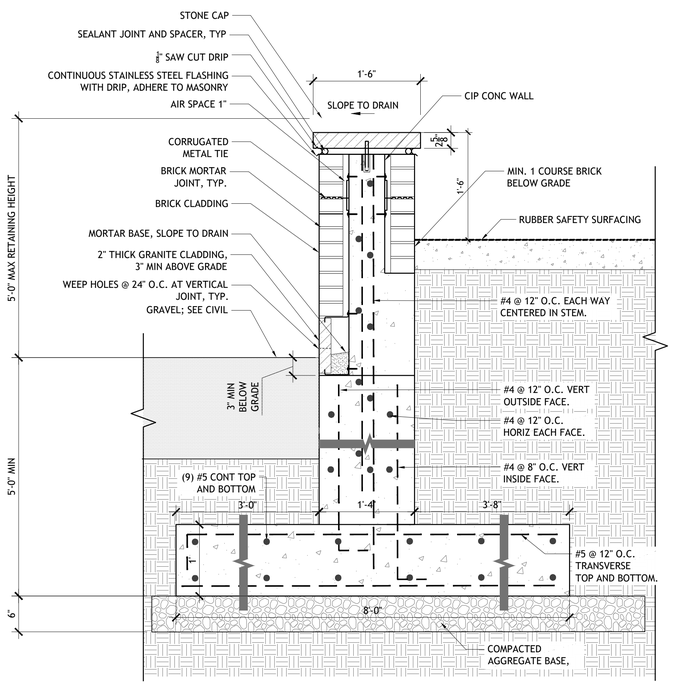
Nobis Project No: **100811.040**
Sasaki Project No: **250018.00**
Drawn By: **SASAKI - KAF**
Checked By: **SASAKI - AG**
Approved By: **SASAKI - ZC**
Issue Date: **09.20.2025**

SHEET TITLE

PAVING DETAILS

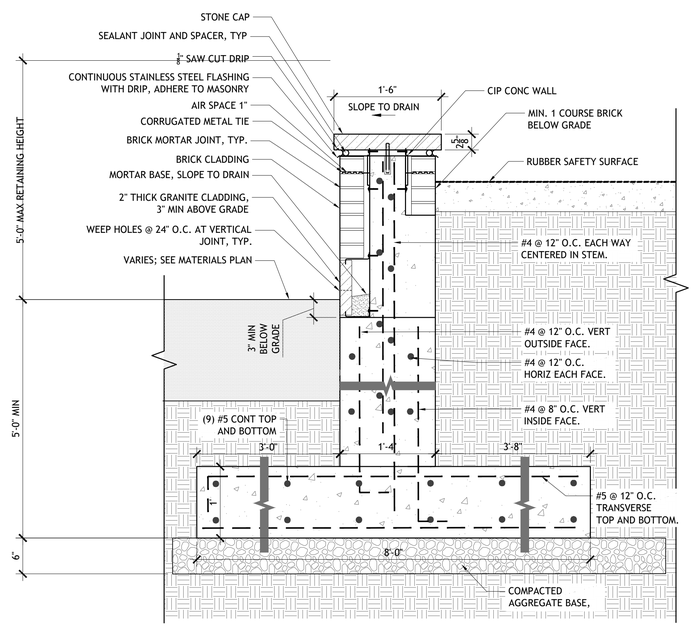
SHEET

L8-01



NOTES:
1. ASSUME 5FT FOR FROST DEPTH, GC TO RECONFIRM WITH LOCAL CODE
2. HEIGHT OF WALL VARIES. REFER TO GRADING PLANS.
3. FOOTINGS TO BE COORDINATED WITH STRUCTURAL AND EXISTING FOUNDATION

2 BRICK KNEE WALL WA-102
1" = 1'-0" P-25-STP-65



NOTES:
1. ASSUME 5FT FOR FROST DEPTH, GC TO RECONFIRM WITH LOCAL CODE
2. HEIGHT OF WALL VARIES. REFER TO GRADING PLANS.
3. WHERE WALL HEIGHT IS GREATER THAN 30", FALL PROTECTION RAILING REQUIRED.
4. FOUNDATIONS TO BE COORDINATED WITH STRUCTURAL AND EXISTING FOUNDATIONS.

1 BRICK WALL WA-101
1" = 1'-0" P-25-STP-64

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No.	Description	Date

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Seal

ST. PAUL'S SCHOOL NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD CONCORD, NEW HAMPSHIRE

TAX MAP:
MAP 724Z/ LOT 1-10A
MAP 811Z LOT 1-A

OWNER/APPLICANT:
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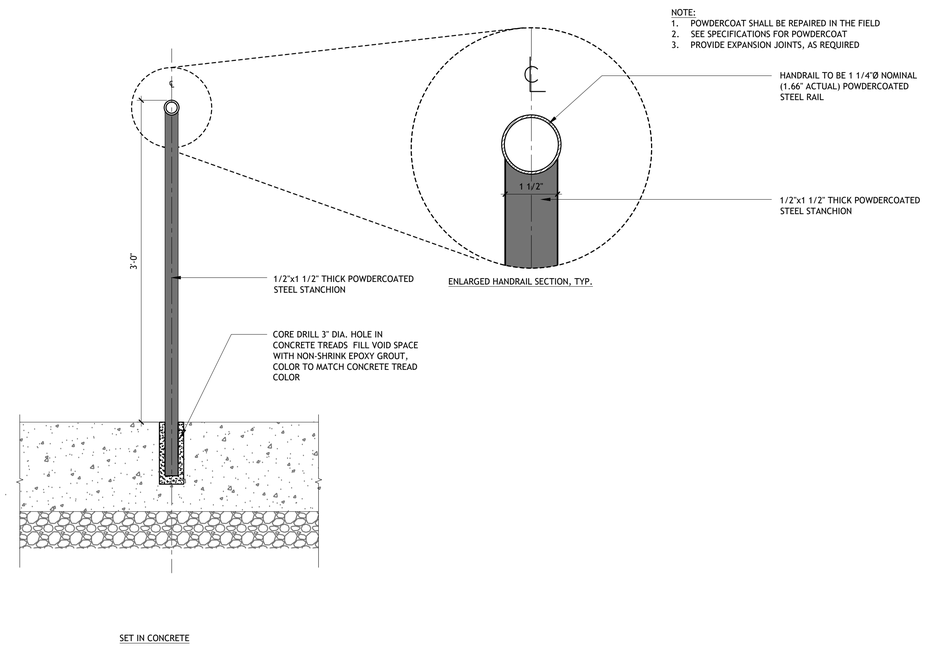
SHEET TITLE

WALL DETAILS

SHEET

L8-20



1 GUARDRAIL
1 1/2" = 1'-0"

RG-101
P-25-STP-62

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No.	Description	Date

DRAWING ISSUE & REVISION HISTORY

Seal

LICENSED LANDSCAPE ARCHITECT
9/17/25
ANDREW JAMES GUTTERMAN
00203
STATE OF NEW HAMPSHIRE

ST. PAUL'S SCHOOL
NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD
CONCORD, NEW HAMPSHIRE

TAX MAP:
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MAP 811Z LOT 1-A

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Approved By: **SASAKI - ZC**
Issue Date: **09.20.2025**

SHEET TITLE

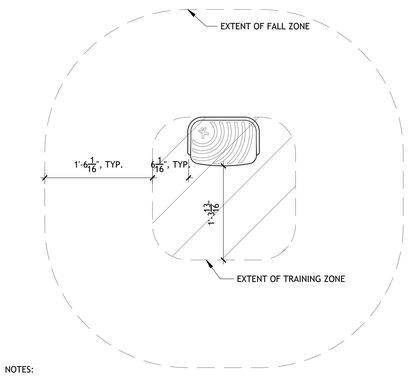
RAILING DETAILS

SHEET

L8-21

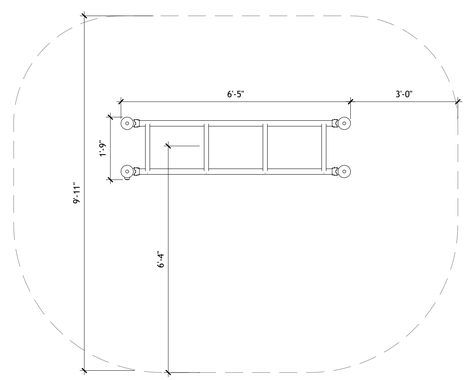
NOTES:
1. BOD: MOVESTRONG BATTLE ROPE STATION
2. INSTALL PER MANUFACTURERS INSTRUCTIONS

4 BATTLE ROPE QS-104
NTS P-25-STP-67



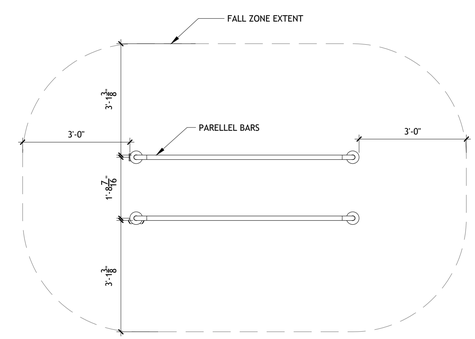
NOTES:
1. BOD: KOMPAN STEP. STEP HEIGHT AND MODEL VARIES:
   1.1. 8" STEP: FAZ30101
   1.2. 16" STEP: FAZ30201
   1.3. 24" STEP: FAZ30301
2. NO EQUIPMENT, OBSTRUCTIONS, OR VERTICAL SURFACES TO BE WITHIN FALL ZONE
3. ENTIRETY OF FALL ZONE MUST BE COMPOSED OF SAFETY SURFACING WITH SLOPE AND CROSS-SLOPE <2%
4. INSTALL PER MANUFACTURERS INSTRUCTIONS

2 EXERCISE STEP QS-102
1" = 1'-0" P-25-STP-61



NOTES:
1. BOD: KOMPAN DIP BENCH FSW20200
2. NO EQUIPMENT, OBSTRUCTIONS, OR VERTICAL SURFACES TO BE WITHIN FALL ZONE
3. ENTIRETY OF FALL ZONE MUST BE COMPOSED OF SAFETY SURFACING WITH SLOPE AND CROSS-SLOPE <2%
4. INSTALL PER MANUFACTURERS INSTRUCTIONS

3 DIP BENCH QS-103
1/2" = 1'-0" P-25-STP-66



NOTES:
1. BOD: KOMPAN PARALLEL BARS FSW201
2. NO EQUIPMENT, OBSTRUCTIONS, OR VERTICAL SURFACES TO BE WITHIN FALL ZONE
3. ENTIRETY OF FALL ZONE MUST BE COMPOSED OF SAFETY SURFACING WITH SLOPE AND CROSS-SLOPE <2%
4. INSTALL PER MANUFACTURERS INSTRUCTIONS

1 PARALLEL BARS QS-101
1/2" = 1'-0" P-25-STP-60

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DRAWING ISSUE & REVISION HISTORY

Seal

LICENSED LANDSCAPE ARCHITECT
9/17/25
ANDREW JAMES GUTTERMAN
00203
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Approved By: **SASAKI - ZC**
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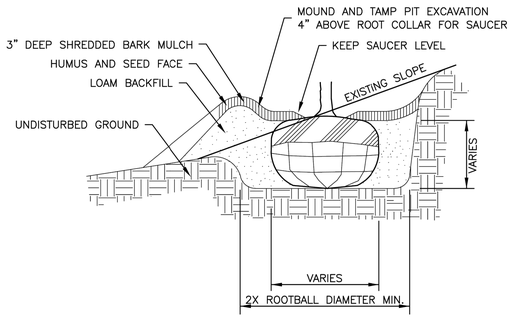
SHEET TITLE

FURNISHING DETAILS

SHEET

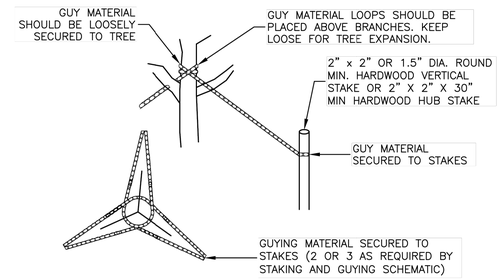
L8-40



TYPICAL PLANTING PIT ON SLOPE
4:1 OR GREATER

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: LANDSCAPE
–	–	–	TREE PLANTING ON SLOPE	DRAWING NO. L–6
–	–	–		DATE: 12/08 PAGE: 1
–	–	–		
–	–	–		

L1–L9_LDSC Landscape



NOTE:
ONLY USE PLASTIC CHAINLOCK (LANDSCAPE QUALITY AND SUITABLE FOR GUYING TREES) OR EQUIVALENT GUYING MATERIAL.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: LANDSCAPE
–	–	–	DECIDUOUS TREE – GUYING & STAKING	DRAWING NO. L–2
–	–	–		DATE: 12/08 PAGE: 1
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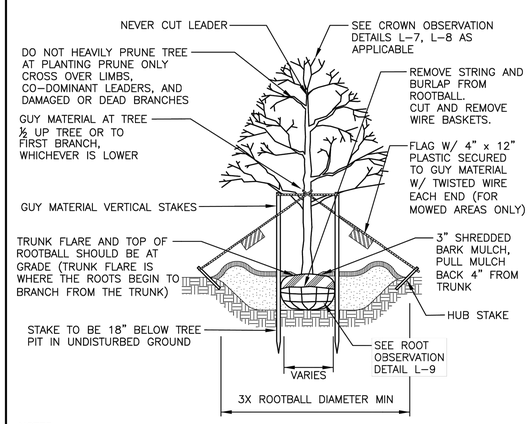
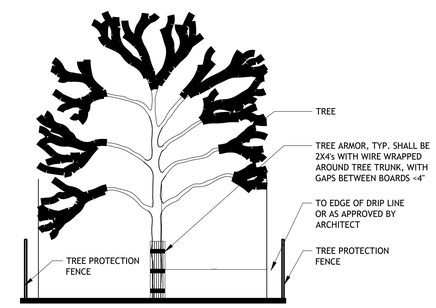
L1–L9_LDSC Landscape



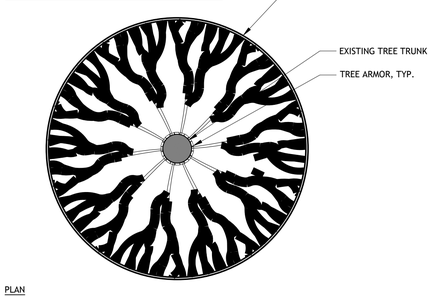
NOTES:
1. GUYING AND STAKING TO BE DETERMINED IN THE FIELD BY THE LANDSCAPE ARCHITECT. LOCAL FIELD CONDITIONS AS WELL AS PLANT CHARACTERISTICS WILL DETERMINE THE NECESSITY OF GUYING AND STAKING.
2. TYPICALLY ONLY TREES WITH A 3" OR GREATER CALIPER NEED TO BE STAKED. TREES WITH LESS THAN A 3" CALIPER NEED TO BE STAKED ONLY AS REQUIRED BY LANDSCAPE ARCHITECT.
3. ONLY WRAP TREE TRUNKS AS REQUIRED BY LANDSCAPE ARCHITECT.
4. TREE SHALL BE SET PLUMB, AFTER SETTLEMENT.
5. LOAM FOR BACKFILLING SHALL BE AMENDED AS REQUIRED BY LANDSCAPE ARCHITECT.
6. CITY TREES PLANTED ON PRIVATE PROPERTY, ADJACENT TO A PUBLIC RIGHT–OF–WAY, NEED TO BE PLANTED A MINIMUM OF 10 FEET FROM THE EDGE OF THE CITY SIDEWALK.
7. ALL NURSERY TAGS, TAPE, AND SIMILAR MATERIALS SHALL BE REMOVED.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: LANDSCAPE
1	NOTES	4.15	DECIDUOUS TREE PLANTING	DRAWING NO. L–1
–	–	–		DATE: 12/08 PAGE: 1
–	–	–		
–	–	–		

L1–L9_LDSC Landscape



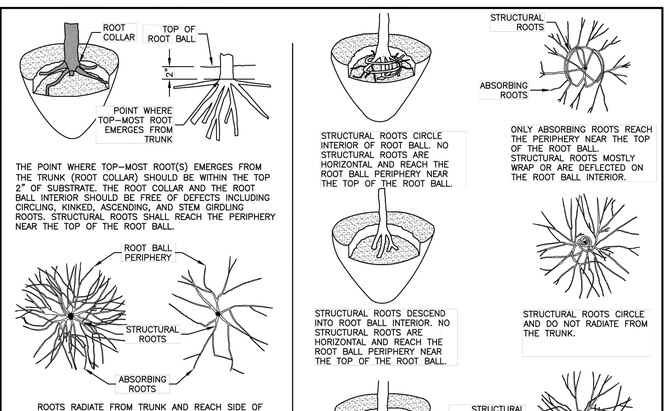
SECTION: FENCE OUTSIDE DRIP LINE (BASE CONDITION)



PLAN

NOTES:
1. ARCHITECT TO APPROVE FINAL TREE AND SHRUB PROTECTION FENCING IN FIELD PRIOR TO CONSTRUCTION.
4. ARBORIST TO BE CONSULTED PRIOR TO CONDUCTING ANY WORK WITHIN DRIP LINE OF EXISTING TREES TO BE PROTECTED.
5. TREE PROTECTION FENCE TO BE GALVANIZED CHAIN LINK FENCING, 6'-0" HIGH. FENCE POST ANCHOR SYSTEM SHALL NOT DAMAGE TREE ROOT SYSTEM.
6. WHERE WORK IS REQUIRED WITHIN THE DRIP LINE, ONLY HAND WORK SHALL BE PERMITTED. ALL EXCAVATION WITHIN DRIP LINE TO BE CONDUCTED USING AN AIR SPADE.

1 TREE PROTECTION
1" = 1'-0"
P-25-STP-59



THE POINT WHERE TOP–MOST ROOT(S) EMERGES FROM THE TRUNK (ROOT COLLAR) SHOULD BE WITHIN THE TOP 2" OF SUBSTRATE. THE ROOT COLLAR AND THE ROOT BALL INTERIOR SHOULD BE FREE OF DEFECTS INCLUDING CIRCLING, KINKED, ASCENDING, AND STEM GIRDLING ROOTS. STRUCTURAL ROOTS SHALL REACH THE PERIPHERY NEAR THE TOP OF THE ROOT BALL.

ROOTS RADIATE FROM TRUNK AND REACH SIDE OF ROOT BALL WITHOUT DEFECTING DOWN OR AROUND.

ACCEPTABLE

STRUCTURAL ROOTS CIRCLE INTERIOR OF ROOT BALL. NO STRUCTURAL ROOTS ARE HORIZONTAL AND REACH THE ROOT BALL PERIPHERY NEAR THE TOP OF THE ROOT BALL.

ONLY ABSORBING ROOTS REACH THE PERIPHERY NEAR THE TOP OF THE ROOT BALL. STRUCTURAL ROOTS MOSTLY WRAP OR ARE DEFLECTED ON THE ROOT BALL INTERIOR.

STRUCTURAL ROOTS DESCEND INTO ROOT BALL INTERIOR. NO STRUCTURAL ROOTS ARE HORIZONTAL AND REACH THE ROOT BALL PERIPHERY NEAR THE TOP OF THE ROOT BALL.

STRUCTURAL ROOTS CIRCLE AND DO NOT RADIATE FROM THE TRUNK.

STRUCTURAL ROOTS PRIMARILY GROW TO ONE SIDE

STRUCTURAL ROOTS MISSING FROM ONE SIDE, AND/OR GROW TANGENT TO TRUNK

REJECTABLE

NOTES:
1. OBSERVATIONS OF ROOTS SHALL OCCUR PRIOR TO ACCEPTANCE. ROOTS AND SOIL MAY BE REMOVED DURING THE OBSERVATION PROCESS; SUBSTRATE/SOIL SHALL BE REPLACED AFTER THE OBSERVATIONS HAVE BEEN COMPLETED.
2. SEE SPECIFICATIONS FOR OBSERVATION PROCESS AND REQUIREMENTS.
3. DETAIL DEVELOPED BY THE URBAN TREE FOUNDATION AND IS OPEN SOURCE AND FREE TO USE BY OTHERS.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: LANDSCAPE
–	–	–	ROOT OBSERVATIONS BALLED AND BURLAPPED	DRAWING NO. L–9
–	–	–		DATE: 04/15 PAGE: 1
–	–	–		
–	–	–		

L1–L9_LDSC Landscape Plang

SASAKI
110 CHAUNCY STREET BOSTON MA 02111 USA
P 617 926 330 F 617 924 2748 W SASAKI.COM

NOT ISSUED FOR CONSTRUCTION

No.	Description	Date

DRAWING ISSUE & REVISION HISTORY

Seal

ST. PAUL'S SCHOOL
NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD
CONCORD, NEW HAMPSHIRE

TAX MAP:
MAP 724Z/ LOT 1-10A
MAP 811Z LOT 1-A

OWNER/APPLICANT:
ST. PAUL'S SCHOOL
325 PLEASANT STREET
CONCORD, NEW HAMPSHIRE

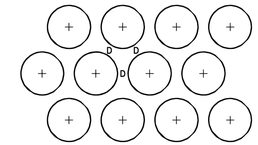
Nobis Project No: **100811.040**
Sasaki Project No: **250018.00**
Drawn By: **SASAKI - KAF**
Checked By: **SASAKI - AG**
Approved By: **SASAKI - ZC**
Issue Date: **09.20.2025**

SHEET TITLE

PLANTING DETAILS

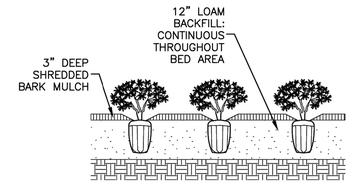
SHEET

L9-00



TYPICAL BED PLANT SPACING

D = DIMENSION OF PLANT SPACING (SHRUB OR GROUNDCOVER AS INDICATED ON PLANS)



GROUNDCOVER BED PLANTING

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: LANDSCAPE	
–	–	–	GROUNDCOVER PLANTING	DRAWING NO. L–5	
–	–	–		DATE: 12/08	PAGE: 1
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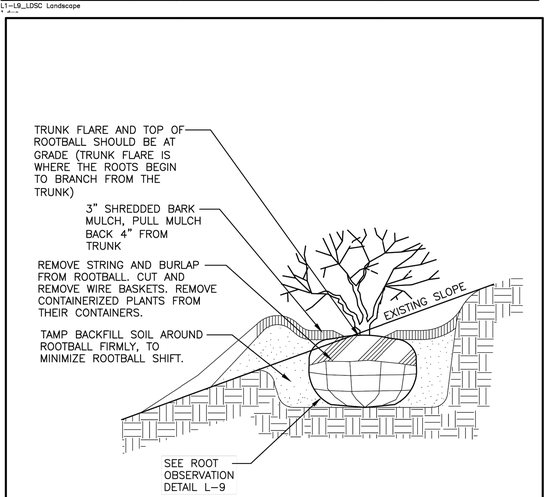
–	–	–			

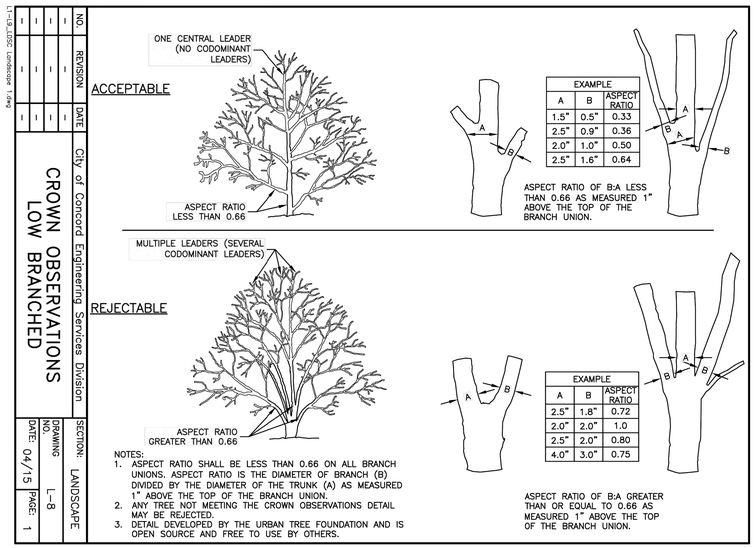
L1–L9_LDSC Landscape



NOTES:
1. DO NOT HEAVILY PRUNE SHRUB AT PLANTING, PRUNE ONLY CROSSOVER LIMBS AND DAMAGED OR DEAD BRANCHES.
2. BACKFILL WITH LOAM, AMEND AS REQUIRED BY LANDSCAPE ARCHITECT.
3. SHRUBS & GROUNDCOVER PLANTED ADJACENT TO CITY SIDEWALKS NEED TO BE PLACED SO THE PLANTS, AT THEIR MATURE HEIGHT & WIDTH, WILL NOT ENCROACH INTO THE CITY'S SIDEWALK.
4. TREE TO BE SET PLUMB, AFTER SETTLEMENT.
5. ALL NURSERY TAGS, TAPE, AND SIMILAR MATERIALS SHALL BE REMOVED.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: LANDSCAPE	
1	NOTES	4.15	SHRUB PLANTING	DRAWING NO. L–4	
–	–	–		DATE: 12/08	PAGE: 1
–	–	–			
–	–	–			

L1–L9_LDSC Landscape



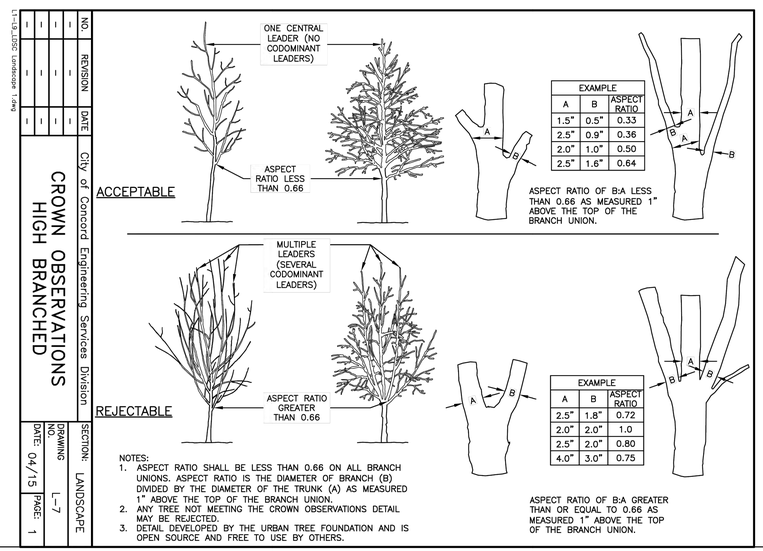
EXAMPLE		
A	B	ASPECT RATIO
1.5"	0.5"	0.33
2.5"	0.9"	0.36
2.0"	1.0"	0.50
2.5"	1.6"	0.64

EXAMPLE		
A	B	ASPECT RATIO
2.5"	1.8"	0.72
2.0"	2.0"	1.0
2.5"	2.0"	0.80
4.0"	3.0"	0.75

NOTES:
1. ASPECT RATIO SHALL BE LESS THAN 0.66 ON ALL BRANCH UNIONS. ASPECT RATIO IS THE DIAMETER OF BRANCH (B) DIVIDED BY THE DIAMETER OF THE TRUNK (A) AS MEASURED 1" ABOVE THE TOP OF THE BRANCH UNION.
2. ANY TREE NOT MEETING THE CROWN OBSERVATIONS DETAIL MAY BE REJECTED.
3. DETAIL DEVELOPED BY THE URBAN TREE FOUNDATION AND IS OPEN SOURCE AND FREE TO USE BY OTHERS.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: LANDSCAPE
–	–	–	CROWN OBSERVATIONS LOW BRANCHED	DRAWING NO. L–8
–	–	–		DATE: 04/15 PAGE: 1
–	–	–		
–	–	–		

L1–L9_LDSC Landscape 1.dwg



EXAMPLE		
A	B	ASPECT RATIO
1.5"	0.5"	0.33
2.5"	0.9"	0.36
2.0"	1.0"	0.50
2.5"	1.6"	0.64

EXAMPLE		
A	B	ASPECT RATIO
2.5"	1.8"	0.72
2.0"	2.0"	1.0
2.5"	2.0"	0.80
4.0"	3.0"	0.75

NOTES:
1. ASPECT RATIO SHALL BE LESS THAN 0.66 ON ALL BRANCH UNIONS. ASPECT RATIO IS THE DIAMETER OF BRANCH (B) DIVIDED BY THE DIAMETER OF THE TRUNK (A) AS MEASURED 1" ABOVE THE TOP OF THE BRANCH UNION.
2. ANY TREE NOT MEETING THE CROWN OBSERVATIONS DETAIL MAY BE REJECTED.
3. DETAIL DEVELOPED BY THE URBAN TREE FOUNDATION AND IS OPEN SOURCE AND FREE TO USE BY OTHERS.

NO.	REVISION	DATE	City of Concord Engineering Services Division	SECTION: LANDSCAPE
–	–	–	CROWN OBSERVATIONS HIGH BRANCHED	DRAWING NO. L–7
–	–	–		DATE: 04/15 PAGE: 1
–	–	–		
–	–	–		

L1–L9_LDSC Landscape 1.dwg

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Seal

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OWNER/APPLICANT:
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Nobis Project No: **100811.040**
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Drawn By: **SASAKI - KAF**
Checked By: **SASAKI - AG**
Approved By: **SASAKI - ZC**
Issue Date: **09.20.2025**

SHEET TITLE

PLANTING DETAILS

SHEET

L9-01

SECTION 015639

TEMPORARY TREE AND SOIL PROTECTION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 WORK INCLUDED

A. Protection of existing trees, plants and soil from damage as a result of the Contractor's operations including, but not limited to:

1. Tree protection plan.
2. Tree and soils protection fencing.
3. Critical root zone protection.
4. Pre-construction root invigoration and deep root watering by certified arborist
5. Pre-construction root pruning by certified arborist
6. Fertilization of preserved trees.
7. Root pruning and construction pruning.
8. Fencing of areas designated for tree or or plant removals.

B. Contractor is directed to prevent construction activities from occurring on soil to the greatest extent possible and redirect them to paved areas. Where construction activities must take place on soils, those activities shall be constrained within the limits reviewed with the Owner and Architect.

C. Much of the work required under this Section will be performed by a Certified Arborist. This Arborist will be approved by the Owner and paid for by the Contractor.

1.3 RELATED REQUIREMENTS

A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:

1. Section 311300, SELECTIVE TREE REMOVAL AND TRIMMING.
2. Section 312300, SITE EXCAVATING, BACKFILLING AND COMPACTING.
3. Section 312317 SPECIALIZED SOIL EXCAVATION; work within existing tree critical root zones.
4. Section 329300, PLANTING; New plant material.

1.4 REFERENCED STANDARDS

A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.

1. American National Standards Institute (ANSI):

Z133.1	Safety Requirements for Pruning, Trimming, Repairing, Maintaining and Removing Trees, and for Cutting Brush.

2. International Society of Arboriculture (ISA):

Guide	Guide for Establishing Values of Trees and Other Plants

3. National Arborist Association (NAA):

Ref. 1	Pruning Standards for Shade Trees

1.5 DEFINITIONS

A. Certified Arborist: An individual engaged in the profession of arboriculture who, through experience, education and related training, possesses the competence to provide for, or supervise the management of, trees and other woody ornamentals, approved by the Owner, and hired by the Contractor, with a minimum five years experience, who has successfully completed a certification program equal to the Certified Arborist program/examination sponsored by the International Society of Arboriculture (ISA).

B. Critical Root Zone (CRZ): The minimum volume of roots necessary for maintenance of tree health and stability, typically determined by measuring the tree diameter 4.5 ft. above grade and multiplying by 12 in., a minimum radius of 10' from the trunk, or at the tree's dripline, whichever is farthest from the trunk, or as otherwise indicated on the Drawings, or established in the field. CRZ will be determined/established on a case by case basis by the Arborist and approval by the Architect.

C. Compacted Soil: A high density soil lacking structure and porosity characterized by restricted water infiltration and percolation (drainage), and limited root penetration.

D. Dripline; an imaginary line defined by the branch spread; the farthest extension of the tree branches (dripline).

1.6 SUBMITTALS

A. Prepare and submit a "Logistics Plan for Tree and Soil Protection", indicating the extent of tree and soils protection fencing required, and areas where soil compaction prevention measures shall be implemented. Show all areas of proposed staging, vehicle or equipment access, trenching, excavating, or other disturbance to soils.

1. Proposed plan will be reviewed and approval by the Owner. No work of this Section shall commence prior to approval.

B. Proposed methods, materials, and schedule for effecting tree and soil protection within the limits indicated on the Logistics Plan for Tree and Soil Protection.

C. Mitigation or preventative maintenance operations such as root pruning and tree fertilization
shall be submitted by Certified Arborist for Owner's approval.

1.7 MODIFICATIONS TO TREE AND SOIL PROTECTION PLAN

A. Modifications deemed necessary by the Contractor to the approved Logistics Plan for Tree and Soil Protection shall be submitted to the Architect and Owner for review and approval prior to implementing any changes to tree and soil protection areas, materials and methods. All modifications shall be submitted by Contractor in written form, approved by the Owner and signed by all parties.

1.8 PRECONSTRUCTION CONFERENCE

A. Pre-Construction Conference: Prior to implementing tree and soil protection measures, conduct meeting with Owner and Architect to verify and review the following:

1. Project requirements for tree and soil protection measures as set out in Contract Documents.
2. Manufacturer's product data including application instructions.
3. Limits where tree protection measures shall be implemented.
4. Limits where soil protection measures shall be implemented.
5. Areas of proposed staging, vehicle or equipment access, trenching, excavating, or other disturbance to soils.

1.9 QUALITY ASSURANCE

A. Work of this section shall be completed by a professional ISA Certified Arborist with a minimum five years experience, who has successfully completed an exam and education program equal to the International Society of Arboriculture (ISA) Certification Program, sponsored by the International Society of Arboriculture 2009, P.O. Box 3129, Champaign, IL 61826 (217) 355-9411; Email: isa@isa-arbor.com.

B. Arborist shall have the following minimum qualifications:

1. Membership in:
   a. NAA – National Arborist Association
   b. ISA – International Society of Arborists
2. Meet state requirements for insurance.
3. Licenses for application and use of pesticides.

C. Mitigation or preventative maintenance operations such as root pruning and tree fertilization shall be performed in accordance with ANSI A300 Tree Management standards specification writing guidelines.

1.10 DAMAGE PENALTIES

A. Specimen tree loss will result in fines assessed at $10,000 per tree. Damage to all other trees on the property will be assessed at the rate of $200 per inch caliper of the tree.

B. A fine of $1,000 will be levied against the Contractor for each incident of construction inside tree protection areas.

C. Damages to trees and shrubs during construction activities will be assessed by the Architect, in accordance with the Council of Tree and Landscape Appraiser 9th Edition Guide for Plant Appraisal.

D. Trees or roots visibly damaged will cause the Owner to withhold from the Contractor an assessed amount conforming to the requirements stipulated above for a period of two years. After that period the impact of the damage to any tree will be assessed accordingly.

E. If any trees or shrubs designated to be saved are damaged and replacement is required, a number and diameter of trees or shrubs of the same species and variety, as specified by the Owner and Architect, shall be furnished and planted by the Contractor. The total inch diameter of the replacement trees or shrubs shall equal the diameter of the tree or shrub to be replaced.

PART 2 PRODUCTS

2.1 TREE AND SOIL PROTECTION FENCING AND SIGNAGE

A. Tree and soil protection fencing shall be the following:

1. Galvanized chain link fencing, 6 ft. high.
2. Fabric shall be a good commercial quality of steel wire of 2 in. mesh and 11 gage.
3. Fittings shall be malleable iron casting, wrought iron forgings, or pressed steel and provided with pin connections. Equipment shall be designed to carry 100% overload.
4. Piping shall be steel conforming to ASTM A 120 except that pipe shall be unthreaded and untested for water pressure.

B. Stakes for fencing shall be 9 ft. galvanized steel posts. Fence panels shall be clamped and bolted.

C. For fencing within the drip line of trees, surface mounted post anchors may be acceptable. Review with Architect and Owner and obtain written approval prior to installing. Post installation shall not damage tree root systems.

D. For fencing within the drip line of trees that does not have proper clearance under the tree canopy for 6' fence, review alternative approach with Architect and Owner and obtain written approval prior to installing.

E. Unless otherwise indicated, warning signs will be provided by the Owner.

F. If signs are not provided by the Owner, then provide signs conforming to the following requirements:

1. A warning sign shall be displayed on the street side and/or walkway side of the fence. The size of the sign must be no less than 8.5 x 11 inches. The sign must clearly state in bold red lettering: "Tree and Soil Protection Zone". The sign shall clearly list the name and current contact information of the project owner or authorized representative.

2.2 TREE TRUNK PROTECTION

A. Tree armor shall be the following:

1. 2x4s butted side to side completely around the tree trunk, to a height of 10' or lowest branch
2. Wire wrap around trees. Do not nail or in any way penetrate tree bark.

2.3 SOILS AND CRITICAL ROOT ZONE PROTECTION

A. To prevent soil compaction within this protected zone, there should be no nonessential activity. Construction backfill material, construction stockpiles of material, and utility structures should not be stored (or construction equipment parked) in or around the bases of existing trees or within the protected zones.

B. Soils and root zone protection shall include one of the following materials on an as needed basis, subject to review and approval by the Owner and Architect during the course of construction, incidental to an unforeseen need for construction access.

1. Road Mats: Critical root zones shall be protected with AlturnaMats, 1/2" thick recycled polyethylene mats capable of supporting vehicles and equipment weighing up to 60 tons, manufactured by AlturnaMats, Inc., 701 E. Spring Street, Mailbox #9, Titusville, PA 16354 • Phone: 888.544.6287 • Fax: 866-723-2903 , or approved equal.
2. Steel Plates: ½ in. thick steel plates shall be placed on top of wooden cribbing to allow for air and gas exchange in soils.
3. Crushed Stone: shall be an angular, washed, durable, dense graded 3/4". crushed stone, crushed and screened through a 3/4" square screen. Following the crushing and screening of the crushed stone, it shall be cleaned extensively to ensure that it is free from stone dust and other residues.
4. Mulch: shall be 100% wood and bark chips free from dye, debris and stones, shredded and stockpiled no less than six months and no more than two years before use.

2.4 ROOT PRUNING MATERIALS

A. Root pruning materials will be determined and applied by a Certified Arborist.

PART 3 EXECUTION

3.1 FIELD VERIFICATION

A. Based on approved Logistics Plan for Tree and Soil Protection, conduct the following:

1. Flag trees to be preserved in accordance with approved Logistics Plan for Tree and Soil Protection.
2. Flag trees to be removed in accordance with approved Logistics Plan for Tree and Soil Protection.
3. Stake out extents of construction disturbance for review and approval by Owner and Architect, in accordance with approved Logistics Plan for Tree and Soil Protection.

3.2 CRITICAL ROOT ZONE IMPACTS

A. Unless otherwise directed by the Certified Arborist, trees impacted shall have a minimum of a six (6) inch layer of mulch placed and maintained over the critical root zone and the undisturbed area within the dripline.

1. Immediate pruning and fertilization shall occur per the pruning and fertilization sections of this specification.
2. Provide water in a slow drip manner to impacted trees as approved by the Architect and Owner.
3. Provide water to apply equivalent to 1 inch once per week to deeply soak in over the area within the dripline of the tree during periods of hot, dry weather.
4. Spray tree crowns periodically to reduce dust accumulation on the leaves.

B. No disturbance shall occur closer to the tree than inside the radius of the CRZ or within ten
(10) feet of the tree, whichever is greater, and not without approval by the Architect and Owner.

C. Trimming of roots shall be performed by Certified Arborist.

3.3 PROTECTION FOR EXISTING TREES AND SOIL TO BE PRESERVED

A. All trees and soil to be preserved on the property shall be protected against damage from construction operations.

1. Includes associated understory.

B. Only those trees located within the limits of improvements to be constructed as indicated, shall be removed.

1. All trees to remain shall be flagged for review after the location of improvements to be constructed are staked in the field.
2. Any tree to be removed shall be reviewed by the Owner and Architect for approval prior to removal.
3. Obtain approval of installation of tree barricade fencing from Owner and Architect prior to the initiation of any removal of vegetation and construction.

C. Erect fencing and armor prior to beginning any clearing, demolition or construction activity, and unless otherwise instructed, maintain in place until construction is completed.

1. Fencing shall be installed at the tree and soil protection areas indicated on the Drawings and approved submittals.
2. Fencing shall be installed on a tree by tree basis, beyond the drip line of trees to be protected or as shown on Construction Drawings, unless otherwise approved by the Owner and Architect.
   a. For trees 10 inch caliper and less, the minimum distance the barrier shall be erected is ten (10) feet from the trunk of tree or clump of trees.

SASAKI

NOT ISSUED
FOR
CONSTRUCTION

Seal

LICENSED LANDSCAPE ARCHITECT
9/17/25
ANDREW
JAMES
GUTTERMAN
00203
STATE OF NEW HAMPSHIRE

ST. PAUL'S SCHOOL
NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD
CONCORD, NEW HAMPSHIRE

TAX MAP:
MAP 724Z/ LOT 1-10A
MAP 811Z LOT 1-A

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Approved By: **SASAKI - ZC**
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3. Tree protection fencing to be installed over tunnels, vaults or other underground structures or utilities with less than 30 in. of cover shall be installed using surface anchors. No poles or stakes shall be driven into the ground at these locations.

4. Tree and soil protection signage shall be installed on fencing at locations indicated on the Drawings or determined in the field by the Owner.

5. Where branches protrude beyond the extent of tree protection fencing, 5' lengths of high-visibility flagging is to be affixed to the ends of branches, to a height of 12'.

6. Obtain approval of installation of tree fencing from Architect and Owner prior to the initiation of any removal of vegetation and construction.
7. Trees immediately adjacent to or within 25 ft. of any construction activities shall be protected by barricade fencing and tree armor; subject to approval of the Architect and Owner.

8. The tree and soil protection barricade shall be placed before any excavating, trenching or grading is begun and maintained in repair for the duration of the construction work unless otherwise directed in writing by the Architect and Owner.

9. No material shall be stored or construction operation shall be carried on within the tree and soil protection barricade.

10. Tree and soil protection barricades shall remain in place until all work is completed and removal is permitted by the Architect and Owner.

11. Remove tree protection barricade at commencement of finish grading.

12. Remove tree armor immediately prior to Substantial Completion.

D. Protect trees that are to remain, whether within barricade fencing or not, from the following (Refer to EXCAVATING AROUND TREES paragraph for additional information):

1. Compaction of soils by equipment or material storage; construction materials shall not be stored within the CRZ.
2. The proposed finished grade within the critical root zone of any preserved tree shall not be raised or lowered more than one and one half (1-1/2) inches. No soils within the CRZ shall be raised or lowered without prior on-site approval from the Owner. Review proposed grade with Architect prior to commencing work.
   a. Retaining methods can be used to protect and/or provide lateral support to the area outside the critical root zone.
3. Trunk damage by moving equipment, material storage, nailing or bolting.
4. Girdling or abrading by tying ropes or guy wires to the tree trunk or large branches.
5. Poisoning by pouring solvents, gas, paint, chemical solutions applied in masonry washing, etc., on or around tree soils and roots.
6. Drought from failure to water or by cutting or changing normal drainage patterns past roots, or disconnection, breakage or shut off of existing irrigation system. Contractor shall provide means as necessary to ensure adequate watering and positive drainage.
7. Changes of soil pH factor by disposal of lime base materials such as concrete, plaster, lime treatment at pavement subgrade, etc. When installing concrete adjacent to the root zone of a tree, use a minimum 6 mil. plastic vapor barrier behind the concrete to prohibit leaching of lime into the soil.
8. Do not cut roots 3/4" in diameter or over without approval of the Owner or direction by a certified arborist. All excavation and earthwork within the CRZ of trees shall be done by hand or as directed. See Section 312317 SPECIALIZED SOIL EXCAVATION.
9. No vehicular traffic shall occur within the drip line of any tree or in protected soil zones; including parking of vehicles.
10. No soil shall be spread, spoiled or otherwise disposed of under any tree within the CRZ.

E. Any damage done to existing tree crowns or root systems shall be repaired by the Certified Arborist to the satisfaction of the Owner and Architect.

1. Broken branches shall be pruned in accordance with industry standards.
2. Roots shall be exposed with an airspade or other means approved by the Architect and cut cleanly.

F. Damages to trees caused through negligence of Contractor or his employees will be assessed as described in Paragraph 1.10.

3.4 EXCAVATING AROUND TREES

A. Excavate within the dripline of trees only where required and when absolutely necessary and with prior written approval from the Owner and Architect.

1. Any excavation within the CRZ of trees shall be under the direction of the Certified Arborist.
2. A Certified Arborist shall be at site prior to and for periodic observation while excavation is occurring within the CRZ.
3. Air spade operations of all removals within the CRZ are by Certified Arborist as directed by the Owner and Architect.
4. Refer to CRITICAL ROOT ZONE (CRZ).
5. Refer to 312317 SPECIALIZED SOIL EXCAVATION.

B. When excavating for new construction is required within the CRZ, air spade and hand excavate to minimize damage to root systems.

1. Air spade operations shall be performed by Certified Arborist.
2. Use narrow tine spading forks and comb soil to expose roots.
3. Relocate roots back into backfill areas wherever possible.
4. If large main lateral roots are encountered, expose beyond excavation limits as required to bend and relocate without breaking.
5. If root relocation is not practical, clean cut roots using sharp hand saw approximately three (3) inches back from new construction.

C. Where existing grade is above new finish grade, carefully excavate within the dripline to the new finish grade.

1. Carefully hand excavate an additional six (6) inches below the finish grade.
2. Use narrow tine spading forks to comb the soil to expose the roots, and prune the exposed root structure as recommended by the Arborist.
3. Keep the exposed roots damp.
4. Treat the cut roots as specified and as recommended by the Certified Arborist.
5. After pruning and treatment of the root structure is complete, backfill to finish grade with eight (8) inches of approved plant mix, or structural soil.

D. Where noted on plan, use airspade to expose roots for required cutting to accommodate hardscape elements. Landscape Architect to verify all cuts prior to proceeding.

E. Temporarily support and protect roots against damage until permanently relocated and covered with recommended landscape material.

3.5 ROOT PRUNING

A. Where construction will occur within drip line of existing trees designated to remain, roots shall be pruned in accordance with ANSI A300.

B. All root pruning shall be done by Certified Arborist only. Trenching, vibrating plow, and stump grinding are NOT suitable means for root pruning.

C. Roots greater than 1 in. diameter shall be pruned by means of a hand saw, or other approved means.

D. Install root protection measures as prescribed by Certified Arborist.

3.6 CROWN PRUNING

A. Pruning of tree crowns shall not be permitted.

3.7 FERTILIZATION OF PRESERVED TREES

A. All existing trees to be preserved, and impacted by construction activities taking place within the dripline, including but not limited to trenching and grading, shall be fertilized as determined by a soils analysis report, as approved by Owner.

B. Subsurface deep root fertilization of the existing trees to be impacted by construction shall be accomplished in accordance with the following specifications and performed by Certified Arborist under direction from the Owner:

1. Fertilization shall be completed prior to construction of permanent improvements adjacent to all trees including site fill or paving including trenching operations.
2. Liquid tree fertilizer applied with a standard hydraulic sprayer at a pressure of 100 to 200 psi shall be injected in slightly slanted holes approximately 6 to 8 inches in depth.
3. Concentration of suspension to be forty (40) pounds of fertilizer for trees in each 100 gallons of water. Application rate: six (6) pounds of actual nitrogen per 1,000 square feet of area under drip-line.
4. Holes are to be made in concentric circles and 3' on center around the tree with the last ring located at the dripline of the foliage of the trees.
5. Area beneath the dripline of the trees is to be well watered after the fertilization is placed.

3.8 CLEANUP

A. Wood and debris shall become property of the Contractor and shall be removed from the site. Cost of disposal shall be paid by Contractor.

B. If acceptable to Owner, wood from tree removal and pruning activities can be double shredded/grinded and used on site as mulch at locations approved by the Owner.

3.9 REMOVAL OF PROTECTION AND SIGNAGE

A. All protection measures shall remain in place throughout the construction period. Remove protection devices only after written permission has been granted by the Architect.

B. Signage shall be removed and returned to the Owner.

END OF SECTION

SASAKI

NOT ISSUED
FOR
CONSTRUCTION

Seal

ST. PAUL'S SCHOOL
NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD
CONCORD, NEW HAMPSHIRE

TAX MAP:
MAP 724Z/ LOT 1-10A
MAP 811Z LOT 1-A

OWNER/APPLICANT:
ST. PAUL'S SCHOOL
325 PLEASANT STREET
CONCORD, NEW HAMPSHIRE

Nobis Project No: **100811.040**
Sasaki Project No: **250018.00**
Drawn By: **SASAKI - KAF**
Checked By: **SASAKI - AG**
Approved By: **SASAKI - ZC**
Issue Date: **09.20.2025**

SHEET TITLE

LANDSCAPE SPECIFICATIONS

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L10-01

SECTION 311300

SELECTIVE TREE REMOVAL AND TRIMMING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 WORK INCLUDED

A. Provide all work necessary to perform selective clearing within the limits indicated on the Drawings and as specified herein. Selective clearing work shall include, but not be limited to, the following:

1. Tree pruning.
2. Cabling and guying of trees.
3. Flush cutting shrubs and trees, and grinding of stumps and backfilling of holes with clean fill and topdress with 6 in. loam.
4. Weeping tree crotches and cavities.
5. Removal of deadwood and brush.
6. Removal of all rubbish, debris, and other materials to be disposed of as a result of the work of this section.

1.3 RELATED WORK

A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:

1. Section 014000, QUALITY REQUIREMENTS; Inspection and testing.
2. Section 015639, TEMPORARY TREE AND SOIL PROTECTION.
3. Section 017419, CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.
4. Section 024113, SELECTIVE SITE DEMOLITION AND REMOVALS; Clearing and grubbing and removal and disposal of felled trees and stumps outside of the work limits of this section.
5. Section 312317, SPECIALIZED SOIL EXCAVATION

1.4 REFERENCES

A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.

1. American National Standards Institute (ANSI):

A300	Best management practices Tree Support Systems: Cabling, Bracing, and Guying
Z133.1	Safety Requirements for Pruning, Trimming, Repairing, Maintaining and Removing Trees, and for Cutting Brush
Z133A	Best Management Practices Tree and Shrub Fertilization

2. Tree Care Industry Association, 3537 Stratford Rd., Wantagh, NY 11793 (TCIA):

Ref. 1	Pruning Standards for Shade Trees
Ref. 2	Standard for Fertilizing Shade and Ornamental Trees
Ref. 3	Bracing, Cabling and Guying Standard for Shade Trees.

1.5 SUBMITTALS

A. The Contractor shall submit to the Architect for review, proposed methods and materials for selective clearing, including a schedule indicating specific dates for implementing specific work items in each major work area.

1.6 QUALITY ASSURANCE

A. Selective clearing methods shall conform to the applicable requirements of ANSI Z133.1

B. Selective pruning methods shall conform to the applicable requirements of ANSI Z133.1.

C. Work of this section shall be completed by a professional ISA Certified Arborist with a minimum five years experience, who has successfully completed an exam and education program equal to the International Society of Arboriculture (ISA) Certification Program, sponsored by the International Society of Arboriculture 2009, P.O. Box 3129, Champaign, IL 61826 (217) 355-9411; Email: isa@isa-arbor.com.

PART 2 PRODUCTS

2.1 CABLES AND GUYING MATERIALS:

A. Materials for guying and cabling trees shall conform to NAA Ref. 2.

PART 3 EXECUTION

3.1 TREE PRUNING

A. Tree pruning shall be "Class II Medium Pruning" conforming to TCIA Ref. 1.unless otherwise noted. Work shall conform to the requirements of ANSI Z133.1.

1. Class II Pruning: Medium Pruning the removal of dead, dying, diseased, interfering, objectionable, obstructing, and weak branches,a s well as selective thinning to lessen wind resistance; an occasional branch as described , up to 1 in. diameter may remain within the main leaf area up to its full length when it is not practical to remove it.

B. Schedule of trees to be pruned and extent of pruning shall be as indicated on the Drawings. Tree pruning shall be as directed and approved by the Architect and Owner.

3.2 CROWN PRUNING (Compensation for Root Zone Damage)

A. To compensate for root zone damage due to trenching, tunneling or other construction operations, Certified Arborist shall prune top of tree to approximate per cent of root zone area that has been damaged.

B. Crown pruning shall consist of pruning the tree crown to compensate for root zone damage due to construction operations. Crown pruning shall include a fertilization/insecticide program. Tree crown should be pruned to the approximate percent of the root zone that has been damaged.

3.3 GOVERNING STANDARDS - PRUNING

A. Work procedures will be guided by the current provisions of the American National Standard Institute. Complete detail of the provisions are to be found in the references listed. The three basic objectives of the pruning operation shall include:

1. Hazard Reduction Pruning: Hazard reduction pruning shall be completed to remove visible hazards in a tree. Hazard pruning shall consist of one or more of the maintenance pruning types.
2. Crown Reduction Pruning: shall be performed in accordance with ANSI A300 Part 1 Pruning standards using the Reduce Method (7.4). A written description that details the location and size of branches to be removed shall be approved by the Architect and Certified Arborist prior to the start of work.
3. Maintenance Pruning: Maintenance pruning shall be completed to maintain and improve tree health and structure and includes hazard and crown reduction pruning.

3.4 MAINTENANCE PRUNING TYPES

A. Both hazard reduction pruning and maintenance pruning shall consist of one or more of the following pruning types in accordance with ANSI A300:

1. Crown Cleaning: Crown cleaning shall consist of the selective removal of one or more of the following items: dead, dying, or diseased branches, weak branches, water sprouts and stubbed branches.
2. Crown Thinning: Crown thinning shall consist of the selective removal of branches to increase light penetration, air movement, and reduce weight.
3. Crown Raising: Crown raising shall consist of the removal of the lower branches of a tree to provide clearance.
4. Crown Reduction, or Crown Shaping: Crown reduction shall consist of decreasing the height and/or spread of a tree.
5. Vista Pruning: Vista pruning shall consist of selective thinning of framework limbs or specific areas of the crown.
6. Crown Restoration: Crown restoration pruning shall improve the structure, form and appearance of a tree which has been severely headed, vandalized, storm damaged or improperly pruned.

3.5 UTILITY PRUNING

A. Utility pruning shall consist of one or more of the following items:

1. Trees Underneath: Pruning trees growing directly under and growing into the facility/utility space.
2. Trees Along Side: Pruning of trees growing directly along side and growing into or toward the facility/utility space.

3.6 TREE REMOVAL

A. Trees indicated on the Drawings as "Remove" or trees tagged in the field by the Landscape Architect to be removed shall be felled.

1. Tags of each felled tree shall be saved and returned to the Architect.

B. Remove trees to permit installation of new construction.

1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
2. Trees shall be cut and stumps shall be removed to their full depth. Trees may be able to be pushed over, exposing complete root system; dig entire root mass and completely remove.
   a. Stumps shall be legally disposed of off-site.
3. Chip removed tree branches and legally dispose of off-site, or coordinate on-site reuse with Owner and Architect.

C. Fill depressions caused by tree removal operations with satisfactory soil material unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches (200 mm), and compact each layer to a density equal to adjacent original ground.

D. Do not apply herbicide to remaining stumps or plant life to inhibit growth.

E. Burning shall not be permitted on-site.

3.7 TREE CABLING AND GUYING

A. Cabling and guying methods shall conform to ANSI A300, Best Management Practices Tree Support Systems: Cabling, Bracing, and Guying.

1. Provide cabling and guying systems to accomplish structural support of the tree as scheduled on the Drawings.

3.8 PRUNING GIRDLING ROOTS

A. Where specified in the schedule, the Contractor shall remove girdling roots from base of trees. Removal shall include sawing and splitting as required to remove roots.

3.9 VINE REMOVAL

A. Vines shall be removed from trees.

3.10 DEADWOOD AND BRUSH REMOVAL

A. Deadwood and brush within the limits of work indicated on the Drawings shall be disposed of as follows:

1. Brush, limbs, and other material less than 6 in. in diameter shall be chipped and stockpiled on-site in an area designated by the Architect.
2. All deadwood shall be chipped and stockpiled as specified above.
3. Limbs 6 in. and larger shall, at the Contractor's option, be disposed of as follows:
   a. Material shall become the property of the Contractor and be disposed of off-site, or;
   b. Material shall be cut to 4 ft. lengths and stacked in an on-site location designated by the Architect.

B. All debris material not otherwise indicated shall be legally disposed of off-site.

END OF SECTION

SASAKI

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LICENSED LANDSCAPE ARCHITECT
9/17/25
ANDREW JAMES GUTTERMAN
00203
STATE OF NEW HAMPSHIRE

ST. PAUL'S SCHOOL
NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD
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SECTION 329300

PLANTING

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

A. Provide all materials and equipment, and do all work required to complete the planting, including trees, shrubs, and ground covers, as indicated on the Drawings and as specified.

B. The work of this Section also includes providing all equipment and materials and doing all work necessary to supply and place planting soils as indicated on the Contract Documents and as specified. Supplying and placement of planting soils shall include, but not be limited to:

1. Sampling and testing of topsoil, loam borrow and planting soil.
2. Supplying, placing, spreading and grading of planting soil.

1.3 RELATED WORK

A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:

1. Provision of waste management: Section 017419, Construction Waste Management and Disposal.
2. Section 02 4113, SITE DEMOLITION.
3. Section 31 1000, SITE CLEARING.
4. Section 31 2317, SPECIALIZED SOIL EXCAVATION; Work around existing trees.
5. Section 31 3000, EARTH MOVING; Excavation, backfill; establishment of subgrade elevations.
6. Section 32 9119, LANDSCAPE GRADING.

1.4 REFERENCES

A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern. All standards shall include the latest additions and amendments as of the date of advertisement for bids.

1. American National Standards Institute, Inc. (ANSI):

Z60.1	American Standard for Nursery Stock (Sponsor: American Nursery and Landscape Association)
A 300	American National Standards for Tree Care Operations

2. American Society for Testing and Materials (ASTM):

C 136	Sieve Analysis of Fine and Coarse Aggregates
D 422	Particle-Size Analysis of Soils
E 11	Wire-Cloth Sieves for Testing Purposes
F 405	Corrugated Polyethylene (Pe) Tubing and Fittings

3. "Hortus Third", A Concise Dictionary of Plants Cultivated in the United States and Canada, Cornell University, L.H. Bailey Hortorium, MacMillian Publishing Co., New York, NY.

1.5 DEFINITIONS

A. Finish Grade: Elevation of finished surfaces.

B. Subgrade: Surface or elevation of subgrade soil remaining after completing excavation, or top surface of a fill or backfill immediately beneath planting soil.

C. Topsoil: Soil that is present at the top layer of the existing soil profile at the Project site.

D. Loam: Soil that contains a combination of particles typically almost equal in parts sand, silt and clay and including organic matter.

E. Loam Borrow: Soil that contains a combination of particles typically almost equal in parts sand, silt and clay and including organic matter obtained from off-site sources.

F. Planting Soil: Unless otherwise indicated throughout this Section, the term “Planting Soil” shall apply to on-site blended topsoil or loam modified with planting soil components and soil amendments to meet the specific Planting Soil mix recommendations submitted by the testing laboratory.

1.6 SUBMITTALS

A. Samples: The following samples shall be submitted:

Material	Sample Size or Quantity
Mulch	one 1-gallong bag
Compost	one 1-gallon bag
Tree stake	24 in. length

B. Manufacturer's Product Data: Manufacturer's product data shall be submitted for the following materials:

Aluminum Sulfate
Fertilizer
Fungicide
Herbicide
Insecticide
Compost

C. Certificates: Labels from the manufacturer certifying that the product meets the specified requirements shall be submitted for the following materials:

Commercial fertilizer
Limestone
Compost

D. Test Reports: Test reports from an approved testing agency indicating compliance with the specifications shall be submitted for existing topsoil, amended planting soil and any other materials designated by the Architect.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful establishment of plants. Installer shall provide evidence of the following credentials:

1. Professional Membership: Installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
2. Experience: Ten years' experience in landscape installation with a minimum of three successfully completed projects of similar size and scope as this Project.
3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.

1.8 OWNER'S INSPECTION AND TESTING

A. Work will be subject to inspection at all times by the Owner and Architect. The Owner reserves the right to engage an independent testing laboratory in accordance with requirements of Section 014000, QUALITY REQUIREMENTS to analyze and test materials used in the construction of the work. Where directed by the Architect, the testing laboratory will make material analyses and will report to the Architect whether materials conform to the requirements of this specification.

1. Cost of tests and material analyses made by the testing laboratory will be borne by the Owner when they indicate compliance with the specification, and by the Contractor when they indicate non-compliance.
2. Testing equipment will be provided by and tests performed by the testing laboratory.

1.9 CONTRACTOR'S INSPECTION AND TESTING

A. The Contractor shall engage an independent testing laboratory, experienced in the testing of agricultural soils and acceptable to the Architect, to perform the topsoil and planting soil tests and analyses specified herein. All costs associated with testing shall be the Contractor's responsibility.

1. Particle size analysis shall include the following gradient of mineral content:

USDA Designation	Size in mm
Gravel	+ 2 mm
Very coarse sand	1-2 mm
Coarse sand	0.5-1 mm
Medium sand	0.25-0.5 mm
Fine sand	0.1-0.25 mm
Very fine sand	0.05-0.1 mm
Silt	0.002-0.05 mm
Clay	< 0.002 mm

2. Chemical analysis shall include the following:
   a. pH and buffer pH
   b. percentage of organic content by oven-dried weight
   c. Nutrient levels by parts per million, including phosphorus, potassium, magnesium, manganese, iron, zinc, and calcium. Nutrient test shall include testing laboratory recommendations for supplemental additions to the soil, if necessary, based on the requirements for locally-adapted ornamental horticultural plants. Recommendations shall include rates at which additives are to be applied.
   d. Soluble salt by electrical conductivity of a 1:2 soil/water sample.

1.10 SOURCE QUALITY CONTROL

A. Identification of plant names shall be as listed in "Hortus Third".

B. Selection of Plant Materials: Submit to the Architect the names and locations of nurseries and/or re-wholesalers or distributors proposed as sources of acceptable plant material. Inspect all plant materials to determine that they meet the requirements of this section. Proposed materials shall be flagged at the nurseries by the Contractor prior to viewing by the Architect.

1. Contractor shall photograph flagged material and submit to Architect for approval prior to scheduling tagging trip to nurseries.
2. Upon Architect’s approval of photographed material, schedule with the Architect a time for viewing plant material at the nursery and/or re-wholesaler or distributor facilities. Trips shall be efficiently arranged to allow Architect to maximize viewing time. A minimum of four weeks shall be allowed for this viewing prior to time that plants are to be transported to the project site.
3. Architect may choose to attach a seal to each plant, or representative samples.
4. If re-wholesalers or distributors are proposed as sources of plant material, the Contractor shall supply the Architect with names and locations of nurseries from which plants were obtained.
5. Viewing and/or sealing of plant materials by the Architect prior to shipping does not preclude the Architect's right to reject material for non-conformance to specifications at the site of planting.

1.11 PLANT MATERIAL QUANTITIES

A. In the event of a discrepancy in plant material quantities between the Drawings and the Plant List(s), the larger quantity shall be required.

1.12 UNAVAILABILITY OF PLANT MATERIALS

A. Before changes or substitutions can be considered due to unavailability of plant material, the contractor shall submit written evidence that he has advertised for at least a one month period in a trade journal such as the "Landscape Materials Information Service", with no response or has undertaken other methods of locating plant material acceptable to the Architect.

1.13 DELIVERY, STORAGE, AND HANDLING

A. Digging Plant Material: Plants shall not be dug at the nursery or approved source until the Contractor is ready to transport them from their original locations to the site of the work or acceptable storage location with enough time to preclude shock. All plants shall be sun acclimated.

B. Transportation of Plant Material: Plants transported to the project in open vehicles shall be covered with tarpaulins or other suitable covers securely fastened to the body of the vehicle to prevent injury to the plants. Closed vehicles shall be adequately ventilated to prevent
overheating of the plants. Plants shall not remain in darkened enclosed trailer for more than 48 hours cumulative.

1. Plants shall be kept moist, fresh, and protected at all times. Such protection shall encompass the entire period during which the plants are in transit, being handled, or are in temporary storage.
2. Unless otherwise authorized by the Architect, notify the Architect at least two working days in advance of the anticipated delivery date of any plant material. A legible copy of the bill of lading, showing the quantities, kinds, and sizes of materials included for each shipment shall be furnished to the Architect, if requested.

C. Storage: Unless specific authorization is obtained from the Architect, unprotected plants shall not remain on the site of work longer than three days prior to being planted.

1. Plants that are not planted immediately shall be protected as follows:
   a. Earth balls shall be kept moist, not be allowed to dry or freeze, and their solidity carefully preserved.
2. Both the duration and method of storage of plant materials shall be subject to the approval of the Architect.

D. Handling of Plant Materials: Exercise care in handling plant materials to avoid damage or stress.

1.14 REJECTION OF MATERIALS

A. Evidence of inadequate protection following digging, carelessness while in transit, or improper handling or storage, shall be cause for rejection.

B. Upon arrival at the temporary storage location or the site of the work, plants shall be inspected for proper shipping procedures. Plants with roots dried out, large branches broken, balls of earth broken or loosened, or areas of bark torn shall be subject to rejection by the Architect.

C. Rejected plants shall be removed from the area of work and replaced with same species of the required size and quality.

1.15 DIGGING/PLANTING SEASONS

A. Planting shall only be performed when weather and soil conditions are suitable for planting the material specified, in accordance with locally accepted practice, approval of the Architect, and to maintain the Contractor’s guarantee.

1. Spring Digging: Spring digging of plant materials may commence as soon as the ground has thawed and weather conditions make it practicable to dig at the nursery.
   a. Deciduous plants shall not be dug after they have leafed out.
   b. Broadleaf evergreens and conifers shall not be dug after new growth or candle push is visible.
2. Fall Digging: Fall digging of plant materials may commence after dormancy has begun and shall continue until such time as the ground has frozen or weather conditions make it impractical to work.
3. Planting Hazards: Season Sensitive species such as Oaks shall be planted only in Spring Season. Contractor shall coordinate the timing of all season sensitive planting with Owner and Landscape Architect.

B. Contractor shall provide schedule for conducting planting operations for review and approval by Owner.

1.16 ACCEPTANCE FOR SUBSTANTIAL COMPLETION

A. The Architect shall inspect all work of this Section for Acceptance for Substantial Completion upon receipt of written notice of completion by the Contractor. The request shall be received at least ten calendar days before the anticipated date of inspection.

B. Acceptance of plant material by the Architect shall be for general conformance to specified size, character, and quality, and shall not diminish responsibility for full conformance to the Contract Documents.

C. Upon completion and reinspection of all repairs or renewals necessary in the judgement of the Architect, the Architect shall recommend that Acceptance for Substantial Completion of the work of this Section be given by the Owner.

D. Owner will have the opportunity to inspect all work of this Section for acceptance, and request repairs and renewals as necessary, prior to granting Acceptance for Substantial Completion.

E. Acceptance in Part

1. The work may be Accepted in parts when it is deemed to be in the Owner's best interest to do so, and when permission is given to the Contractor in writing to complete the work in parts.
2. Acceptance and use of such areas by the Owner shall not waive any other provisions of this Contract.

1.17 MAINTENANCE

A. The Contractor shall maintain plant material until the completion of the guarantee period and Final Acceptance of work, as described in this Section.

1.18 GUARANTEE

A. The Planning Board may require a financial guarantee for up to two (2) years to ensure the viability and/or replacement of required landscaping. Otherwise, plants shall be guaranteed for a period of one year after the date of Acceptance by the Owner.

1. When the work is Accepted in parts, the guarantee periods shall extend from each

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LICENSED LANDSCAPE ARCHITECT
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STATE OF NEW HAMPSHIRE

ST. PAUL'S SCHOOL
NEW SQUASH CENTER

85, 87, 89 DUNBARTON ROAD
CONCORD, NEW HAMPSHIRE

TAX MAP:
MAP 724Z/ LOT 1-10A
MAP 811Z LOT 1-A

OWNER/APPLICANT:
ST. PAUL'S SCHOOL
325 PLEASANT STREET
CONCORD, NEW HAMPSHIRE

Nobis Project No: 100811.040
Sasaki Project No: 250018.00
Drawn By: SASAKI - KAF
Checked By: SASAKI - AG
Approved By: SASAKI - ZC
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of the partial Acceptances to the terminal date of the last guarantee period. Thus, all guarantee periods terminate at one time.

B. Plants shall be healthy, free of pests and disease, and in flourishing condition at the end of the guarantee period. Plants shall be free of dead and dying branches and branch tips, and shall bear foliage of normal density, size, and color.

C. Replace dead plants and all plants not in a vigorous, thriving condition, as determined by the Architect during and at the end of the guarantee period, without cost to the Owner, as soon as weather conditions permit and within the specified planting period.

1. Replacements shall closely match adjacent specimens of the same species. Replacements shall be subject to all requirements stated in this Specification.
2. Make all necessary repairs due to plant replacements. Such repairs shall be done at no extra cost to the Owner.
3. The guarantee of all replacement plants shall extend for an additional one year period from the date of their Acceptance after replacement. In the event that a replacement plant is not acceptable during or at the end of the said extended guarantee period, the Owner may elect one more replacement or credit for each item.

D. At the end of the guarantee period, and no less than five days prior to final inspection, staking and guying materials shall be removed from the site.

1.19 FINAL INSPECTION AND FINAL ACCEPTANCE

A. At the end of the guarantee period, the Architect shall, upon receipt of written notice of end of guarantee period, inspect the work for Final Acceptance. Request shall be received at least ten calendar days before the anticipated date for Final Inspection.

B. Upon completion and reinspection of full repairs or replacements necessary in the judgment of the Architect at that time, the Architect shall recommend to the Owner that Final Acceptance of the work of this Section be given.

PART 2 - PRODUCTS

2.1 PLANTS

A. Except as otherwise specified, size and grade of plant materials and their root balls shall conform to ANSI Z60.1.

1. Plants shall have been grown under climatic conditions similar to those of the project for at least two years, unless specifically noted otherwise.

B. Plants shall have outstanding form; symmetrical, heavily branched with an even branch distribution, densely foliated and/or budded, and a strong, straight, distinct leader where this is characteristic of species. Plants shall possess a normal balance for the species between height and spread. The Architect will be the final arbiter of acceptability of plant form.

1. Shade Trees: Single-stem trees with straight trunk, well-balanced crown, and intact leader, of height and caliper indicated, complying with ANSI Z60.1 for type of trees required.
2. Small Trees: Branched or pruned naturally according to species and type, with relationship of caliper, height, and branching according to ANSI Z60.1; stem form.
3. Multistem Trees: Branched or pruned naturally according to species and type, with relationship of caliper, height, and branching according to ANSI Z60.1; stem.
4. Deciduous Shrubs: Form and Size: Deciduous shrubs with not less than the minimum number of canes required by and measured according to ANSI Z60.1 for type, shape, and height of shrub.
5. Broadleaf Evergreens: Form and Size: Normal-quality, well-balanced, broadleaf evergreens, of type, height, spread, and shape required, complying with ANSI Z60.1.

C. Plants shall be healthy and vigorous, free of disease, insect pests and their eggs, and larvae.

D. Plants shall have a well-developed fibrous root system.

E. Plants shall be free of physical damage such as scrapes, broken or split branches, scars, bark abrasions, sunscalds, fresh limb cuts, disfiguring knots, or other defects.

F. Plants shall meet the sizes indicated on the Plant List. Plants larger or smaller than specified may be used only if accepted in writing by the Architect.

G. Where a size or caliper range is stated, at least 50% of the material shall be closer in size to the top of the range stated.

H. Plants shall not be pruned before delivery.

I. All trees and shrubs shall be labeled. Labels shall be durable and legible, stating the correct plant name and size in weather-resistant ink or embossed process. Labels shall be securely attached to all plants prior to delivery to the site, being careful not to restrict growth.

J. Plants indicated as "B&B" shall be balled and burlapped. A holding period shall be established with the Owner for B&B stock before delivery to avoid shock.

1. Unless otherwise permitted by the Architect, plants shall be nursery grown.
2 Plants shall be grown for at least two years under climatic conditions similar to those in the locality of the Project.
3. Nursery grown plants shall be dug in the current planting season. No heeled in plants or plants from cold storage that were dug in the previous season shall be accepted.

K. Container grown plants shall be well rooted and established in the container in which they were grown. They shall have grown in the container for a sufficient length of time for the root system to hold the planting medium when taken from the container, but not long enough to become root bound. Container grown plants exceeding the sizes indicated in ANSI Z60.1 shall have containers which are not less than 75% of the ball sizes for comparable B&B plant material. Each container plant shall be inspected and circling roots loosened or pruned as needed.

L. Canes or Trunk(s) and Branches:

1. Very well formed and sturdy with distinct leader and no crotches that may interfere with growth of leader. Trees with included bark in crotches shall be avoided.
2. Branching well spaced and uniformly distributed both vertically and around the circumference to form a well balanced plant.
3. Scars shall be free of rot and not exceed ¼ the diameter of the wood beneath in greatest dimension unless completely healed (except pruning scars).
4. Pruning scars clean cut leaving little or no protrusion from the trunk or branch.
5. Graft union completely healed.
6. No mechanical or pest damage.
7. No extreme succulence.
8. Evidence of adequate twig growth in the past 2-4 years, and well-formed buds.

M. Foliage:

1. Densely supplied with healthy, vigorous leaves of normal size, shape, color and texture (except shrubs moved bare-root or deciduous shrubs when dormant).
2. No chlorosis.
3. No more than 5% of total foliage affected by pest or mechanical damage.

N. Root System:

1. Sturdily established and evenly distributed.
2. Container grown plants shall be well developed and hold the soil ball together when removed from the container.
3. Container grown plants shall not be excessively rootbound (except if deliberately grown rootbound to produce a dwarf plant).

O. Ground covers: Provide healthy, field-grown plants from a commercial nursery, of species and variety shown or listed.

2.2 PLANTING SOIL

A. Existing Topsoil

1. Existing topsoil from on-site source(s) may be used for planting soil, to the extent available, if it meets the requirements of this Section for planting soil, or if approved by the Architect.

B. Planting Soil

1. Planting soil shall be composed of a natural, fertile, friable soil typical of cultivated topsoils of the locality, suitable for the germination of seeds and support of vegetative growth, with additives, if required, to achieve particle distribution and organic content specifications. Topsoil shall be taken from a well-drained, arable site, free of subsoil, large stones, earth clods, sticks, stumps, clay lumps, roots, other objectionable, extraneous matter or debris nor contain toxic substances. Planting soil shall have a pH value between 4.7 and 6.0 and organic matter content of 3 to 8% of total dry weight.
2. Planting soil shall have the following mechanical analysis (see paragraph 1.8 for particle sizes):

Approximate Particle Distribution	
Gravel	Less than 5%
Coarse to medium sand	40 – 55%
Fine to very fine sand	15 – 25%
Silt	10 – 25%
Clay	15 -- 25%

3. Minimum planting soil nutrient levels shall be: Nitrogen @ 5% average of organic matter, Phosphorus @ .02 to .05% average of total soil content, Potassium @ 1.2% average of total soil content, by weight.
4. The Contractor shall provide the Architect with planting soil test results, as specified in Paragraph 1.8, before the start of planting operations. If planting soil does not fall within the required particle distribution, organic content, or pH range, it shall be adjusted to meet the specifications through the addition of sand, compost, limestone, or aluminum sulfate to bring it within the specified limits.
5. Compost, mycorrhizae, root stimulator, fertilizer, expanded shale clay, or other engineered soil components shall not be added to tree planting soils without approval from Owner or Architect.

2.3 COMPOST

A. Compost shall be derived from organic wastes such as food and agricultural residues, animal manures, mixed solid waste and biosolids (treated sewage sludge) that meet all State Environmental Agency requirements. The product shall be well composted, free of viable weed seeds and contain material of a generally humus nature capable of sustaining growth of vegetation, with no materials toxic to plant growth.

1. Compost shall have the following properties:

Parameters	Range
pH	6.0 – 8.0
Moisture Content	35% - 55%
Soluble Salts	) 4.0 mmhos (dS)
C:N ratio	15 – 30:1
Particle Size	< 1"
Organic Matter Content	> 30% (dry weight)
Bulk Density	< 1000 lbs./cubic yard
Foreign Matter	< 1% (dry weight)

2. One hundred percent of the material shall pass a 5/8-inch screen. Debris such as metal, glass, plastic, wood (other than residual chips), asphalt or masonry shall not be visible and shall not exceed one percent dry weight.
3. Compost manufacturer shall also provide minimum available nitrogen and other macro and micro nutrients to determine fertilizer requirements.
4. Guidelines for quantity of compost required to achieve suitable soil organic content in soil mixes for ornamental horticultural planting shall be as recommended by the compost manufacturer based on soil test results.

2.4 LIMESTONE

A. Limestone shall be an approved agricultural limestone containing no less than 50% of total carbonates, and 25% total magnesium with a neutralizing value of at least 100%. The material shall be ground to such a fineness that 40% will pass through a No. 100 U.S. Standard Sieve, and 98% will pass through a No. 20 U.S. Standard Sieve. The lime shall be uniform in composition, dry and free flowing, and shall be delivered to the site in the original unopened containers, each bearing the manufacturer's guaranteed analysis. Any lime which becomes caked or otherwise damaged making it unsuitable for use, will be rejected.

2.5 ALUMINUM SULFATE

A. Aluminum sulfate shall be unadulterated and shall be delivered in containers with the name of the material and manufacturer and net weight of contents.

2.6 WATER

A. Water shall be suitable for irrigation and shall be free from ingredients harmful to plant life.

2.7 FERTILIZER

A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency. Manufacturer's literature shall be submitted for approval.

B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.

2.8 SUPERPHOSPHATE

A. Superphosphate shall be composed of finely ground phosphate rock as commonly used for agricultural purposes, and containing not less than 20% available phosphoric acid. The superphosphate shall be delivered to the site in the original unopened containers, each bearing the manufacturer's guaranteed analysis. Any superphosphate which becomes caked or otherwise damaged making it unsuitable for use, will be rejected.

2.9 MULCH

A. Mulch for beds shall be organic mulch of uniform size and free from rot, twigs, debris, stones, or any material harmful to plant growth. Mulch shall have been shredded and stockpiled no less than six months and no more than two years before use. No chunks 3 in. or more in size, and thicker than 1/4 in. shall be left on site.

2.10 STAKING MATERIALS

A. Stakes: Stainless steel T-stakes, painted dark green.

B. Strapping: Arbortie, manufactured by DeepRoot Green Infrastructure, LLC, 530 Washington Street, San Francisco, CA 94111Tel: 800 458 7668 or 415 781 9700; Fax: 800
277 7668 or 415 781 0191, or approved equal.

PART 3 - EXECUTION

3.1 SOIL PREPARATION

A. Examine subgrade and rough grading before planting. Alert Architect to unacceptable rough grading or subgrade conditions.

B. Inspect all graded surfaces to check for consistent soil conditions, including soil texture, unstable areas, and areas requiring additional grading or de-compaction. During the inspection, use a soil probe to assess soil quality with depth to be certain that uniform soil texture extends at least 12 to 18 inches below the soil surface, and that no compacted layers exist, or that buried debris is within 18 inches of the surface.

C. Test drainage of five planting pits in locations as directed by the Architect. Pits shall be filled with water twice in succession. The time at which water is put into the pit for a second filling shall be noted. Architect shall then be notified of the time it takes for pit to drain completely. Planting operations shall not proceed until Architect has reviewed test drainage results.

D. The Contractor shall notify the Architect in writing of all soil or drainage conditions that are considered detrimental to growth of plant material. Submit proposal and cost estimate for correction of the conditions for Architect's approval before starting work.

E. The landscape contractor assumes responsibility for all subgrade work and conditions upon beginning soil installation operations.

F. The landscape contractor shall be responsible to ensure no soil disturbance will occur from construction traffic or other construction activities after preparation and conditioning of planting soil is complete. Damage caused by construction equipment or other construction activities will be repaired by the landscape contractor at no additional cost to the owner.

G. Verify that the surface moisture content is suitable for soil conditioning. Under no circumstances shall the landscape contractor mix compost when the soil is wet (greater than 22percent moisture by volume). Do not mix or disturb any planting soil during precipitation events.

3.2 LAYOUT OF PLANTING AREAS

A. Preliminary layout is required to confirm planting layout and alignment. Contractor shall provide Architect seven days minimum notice prior to proposed layout review on site. Contractor shall mark up layout of proposed plantings using stakes, paint, tape or other temporary measures sufficient for Architect and Owner to review and approve layout and alignment prior to construction.

B. Individual trees shall be located in the field as indicated on the Drawings for Architect's and Owner's approval prior to planting. Locations shall be staked and labeled with species code.

C. Individual shrub locations and outlines of shrub and ground cover areas to be planted shall be staked by the Contractor in ample time to allow inspection by the Architect and Owner.

D. Digging shall not begin until locations are approved by the Architect.

3.3 PREPARATION OF SUBGRADE

A. Subgrade shall be brought to true and uniform grade and shall be cleared of stones

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greater than 2 in., sticks, and other extraneous material. Scarify to 6 in. depth.

3.4 PLANT PIT EXCAVATION

A. Planting pits for trees and shrubs shall be excavated to the depth and dimensions indicated on the Drawings.

B. Excavation shall not begin until locations are approved by the Architect.

3.5 SOIL PLACEMENT - GENERAL

A. Notify the Contracting Officer of soil placement operations at least seven calendar days prior to the beginning of work.

B. Plan work to limit traffic on and compaction of soil during and after installation.

C. Prevention of compacted soils can be accomplished by beginning the work in the center of planting area locations, against walls, or the center of isolated beds, and progressing outwards towards the borders.

1. Only low-pressure, tracked equipment that exerts less than 5 psi pressure shall be used for placement of soils, and repeated traffic will be limited to defined pathways that will be restored/reconditioned with completion of soil placement in each work area.

2. Traffic on or installation of wet soils is expressly prohibited.

D. The Contractor shall not remove tree location stakes until trees and/or shrubs have been placed on site for review by the Contracting Officer.

E. Placement of soil by back-blading is not acceptable. Back-blading causes sealing of the soil surface and inhibits air and moisture from penetrating the planting soil mix.

3.6 PLACEMENT OF PLANTING SOILS

A. Planting soil shall be spread and placed to required depths, as indicated on the drawings.

B. Surfaces shall be graded and smoothed, eliminating all sharp breaks by rounding, scraping off bumps and ridges, and filling in holes and cuts.

C. Planting soil shall not be overcompacted. Planting soil shall not be handled when wet. Protect planting soil from vehicular traffic or excessive foot traffic after placement.

3.7 PLANTING

A. Tree, shrub, perennial and groundcover beds shall be excavated to the depth and widths indicated on the Drawings. If the planting pit for any tree is dug too deep, soil shall be added to bring it to correct level, and the soil shall be thoroughly tamped. Walls of plant pits shall be dug so that they are sloped as shown on the Drawings, and scarified. Do not excavate compacted subgrades of adjacent pavement or structures.

B. Plants shall be set as indicated on Drawings. Plants shall be set so that the root flare is at, or slightly above, finished grade. Plants shall have the same relationship to finished grade as in the nursery.

C. Plants shall be turned to the desired orientation when required by Architect.

D. Containerized plants shall be removed from container taking care not to damage roots. The side of the root ball shall be scarified to prevent root-bound condition before positioning in planting pit.

1. Check root ball after removing plant from its container. Encircling roots need to be gently loosened from the tight mat of root-bound plants. If roots are very dense at bottom of pot, slice off the bottom 1". If roots are seriously disturbed when planting, cut back some foliage to reduce the water stress that will occur. Plant at the same soil level as the plant was in its container.
2. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.
3. Plant at the same soil level as the plant was in its container.

E. Planting shall be positioned in center of planting pit, set plumb, and rigidly braced in position until all planting soil has been tamped solidly around the ball.

F. Tree pits shall be backfilled with soil from the tree pit. Soil shall be worked carefully into voids and pockets, tamping lightly every 6 in.

1. When pit is two-thirds full, plants shall be watered thoroughly, and water left to soak in before proceeding.
2. At this time, ropes or strings on top of ball shall be cut. Burlap, rope, and string shall be removed entirely from root ball if possible.
3. Wire baskets shall be completely cut away from sides of root ball, and removed from pit. Remove entirely if possible.
4. Remove nursery plant identification tags.
5. Backfilling and tamping shall then be finished and a saucer formed around plant pits as indicated on the Drawings.
6. Saucer shall be filled with water and water left to soak in. Saucer shall then be filled with water again.

G. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.

H. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

3.8 FERTILIZER APPLICATION

A. Fertilizer, if required, shall be applied at the rates recommended by soil testing results, as specified in paragraph 2.2. Fertilizer shall not be applied to tree pits without approval from the owner or Architect.

3.9 FUNGICIDE

A. At the first sign of fungal infection, all trunks of affected trees and all trunks of trees of the same species as affected trees within 1000 feet shall be sprayed with fungicide, applied as directed by chemical manufacturer.

3.10 POST- EMERGENT HERBICIDE

A. Upon the appearance of weeds within planted areas, post-emergent herbicide shall be applied to ornamental shrub beds and around base of trees in areas where weeds are observed, in strict accordance with chemical manufacturer's printed instructions.

3.11 INSECTICIDE

A. Upon the appearance of insect problems, trunks of infected trees and trunks of trees of the same species within 1000 feet shall be sprayed with insecticide, applied as directed by chemical manufacturer.

3.12 STAKING

A. Plants shall stand vertical and plumb after planting. Only in conditions where root ball is unable to hold tree in place shall stakes be used.
1. Set vertical stakes and space to avoid penetrating root balls or root masses. Ensure that stake penetrates undisturbed subgrade below prepared planting soil or pit. Affix Arbortie loosely such that bark and cambium are not restrained. Allow enough slack to avoid rigid restraint of tree.
2. 3 stakes shall be used per tree.
3. Staking shall not be used as a means to straighten trees.
4. Stakes shall not be placed to the southwest side of a tree trunk.

3.13 MULCHING - PLANTINGS

A. Mulch shall be applied as follows (entire area listed shall be mulched):

Plant Type	Mulch Area	Mulch Depth, in.
Tree	Saucer or as indicated in drawings	3
Shrub	Saucer or Bed	2
Ground Cover	Bed	2

Mulch shall not be allowed to cover the base of trunks or stems.

3.14 PRUNING

A. Each tree and shrub shall be pruned only to preserve the natural character of the plant. Pruning shall be done after delivery of plants and after plants have been inspected and approved by the Architect. Pruning procedures shall be reviewed with Architect before proceeding.

B. Pruning shall be done with clean, sharp tools. Cuts shall be made flush, leaving no stubs. No tree paint shall be used.

C. Dead wood, suckers, and broken, weak, interfering and badly bruised branches shall be removed.

3.15 MAINTENANCE OF PLANTING

A. Maintenance shall begin immediately after each plant is planted and shall continue until Final Acceptance as described in this document.

B. Maintenance shall consist of pruning, watering, cultivating, weeding, mulching, fertilizing, removal of dead material, repairing and replacing of tree stakes, tightening and repairing of guys, adjusting and replacing of damaged tree wrap material, resetting plants to proper grades and upright position, and furnishing and applying such sprays as are necessary to keep plantings free of insects and disease, and in a healthy growing condition.

C. Planting areas shall be kept free of weeds, grass, and other undesired vegetative growth.

END OF SECTION

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