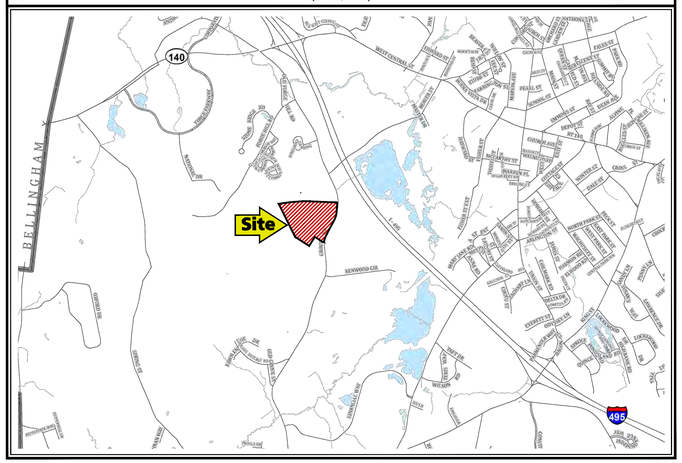
GROVE STREET RESIDENCES

121 GROVE STREET - FRANKLIN, MA

DRAWING INDEX			
DRAWING DATE	LAST REVISION	DRAWING	DRAWING DESCRIPTION
10/30/2023	02/12/2024	C-0	COVER SHEET
05/25/2022	11/09/2023	1 OF 1	EXISTING CONDITIONS SITE PLAN (PREPARED BY GUERRIERE & HALNON, INC.)
10/30/2023	02/12/2024	OS-1	OVERALL SITE PLAN
10/30/2023	02/12/2024	C-1A	DEMOLITION AND EROSION CONTROL PLAN
10/30/2023	02/12/2024	C-1B	DEMOLITION AND EROSION CONTROL PLAN
10/30/2023	02/12/2024	C-2A	GRADING AND DRAINAGE PLAN
10/30/2023	02/12/2024	C-2B	GRADING AND DRAINAGE PLAN
12/18/2023	02/12/2024	C-2C	WETLAND REPLICATION PLAN
10/30/2023	02/12/2024	C-3A	UTILITY PLAN
10/30/2023	02/12/2024	C-3B	UTILITY PLAN
10/30/2023	02/12/2024	C-4A	PARKING AND TRAFFIC CONTROL PLAN
10/30/2023	02/12/2024	C-4B	PARKING AND TRAFFIC CONTROL PLAN
10/30/2023	02/12/2024	C-5	SITE DETAILS - I
10/30/2023	02/12/2024	C-6	SITE DETAILS - II
10/30/2023	02/12/2024	C-7	SITE DETAILS - III
10/30/2023	02/12/2024	C-8	SITE DETAILS - IV
10/30/2023	02/12/2024	C-9	SITE DETAILS - V
10/30/2023	02/12/2024	C-10	SITE DETAILS - VI
10/30/2023	02/12/2024	C-11	SITE DETAILS - VII
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02/02/2024	02/12/2024	C-15	RETAINING WALL CROSS SECTIONS
10/30/2023	02/12/2024	FT-1	FIRE TRUCK TURNING PLAN
02/05/2024	02/12/2024	TT-1	MOVING TRUCK TURNING PLAN
02/05/2024	02/12/2024	TT-2	GARBAGE/RECYCLE TRUCK TURNING PLAN
10/30/2023	02/05/2023	L100-L103	LANDSCAPE PLANTING PLANS
10/30/2023	02/05/2023	L200-L203	LANDSCAPE LIGHTING PLAN
10/30/2023	02/05/2023	L300	LANDSCAPE DETAILS
10/30/2023	02/05/2023	L301	LANDSCAPE LIGHTING CUTSHEETS
10/30/2023	02/05/2023	L400-L403	LANDSCAPE PHOTOMETRIC PLANS

LOCUS MAP
(1"=2,000')



REVISED PER ZBA PEER REVIEW COMMENTS
02/12/2024

RJOC

RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
PHONE: 781.279.0180 RJOCONNELL.COM

PREPARED FOR:

FAIRFIELD RESIDENTIAL COMPANY LLC
30 BRAINTREE HILL OFFICE PARK
SUITE 105
BRAINTREE, MA 02184

OWNER:

BRYN SMITH
106 MENDON STREET
BELLINGHAM, MA 02019
PARCEL ID 295-001 AND 294-007

DESIGN TEAM

CIVIL ENGINEERING:
RJ O'CONNELL & ASSOCIATES, INC.
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PHONE: (508) 528-3221

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PHONE: (508) 528-5300

MANAGEMENT CONSULTANT:
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P.O.BOX 1217
CONCORD, MA 01742
ATTN: JOHN SHIPE, P.E.
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QUINCY, MA 02169
ATTN: CHRISTOPHER M. LUCAS,
PRINCIPAL, PWS, CWS, RPSS
CERTIFIED WETLAND SCIENTIST/
PROFESSIONAL SOIL SCIENTIST
PHONE: (617) 405-4140

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NORTHEAST GEOTECHNICAL, INC.
166 RAYMOND HALL DRIVE
NORTH ATTLEBOROUGH, MA 02760
ATTN: GLENN A. OLSON, P.E.
PRINCIPAL ENGINEER
PHONE: (508) 598-3510

NOT FOR CONSTRUCTION

GOVERNMENT/UTILITY CONTACTS

BUILDING AND INSPECTIONS DEPARTMENT:
MUNICIPAL BUILDING
355 EAST CENTRAL STREET
FRANKLIN, MA 02038
ATTN: LLOYD BROWN,
BUILDING COMMISSIONER
PHONE: (508) 520-4926

CONSERVATION COMMISSION:
MUNICIPAL BUILDING
355 EAST CENTRAL STREET
FRANKLIN, MA 02038
ATTN: BREEKA LI GOODLANDER, CWS
CONSERVATION AGENT
PHONE: (508) 520-4847

ENGINEERING DEPARTMENT:
DPW ADMINISTRATION BUILDING
257 FISHER STREET
FRANKLIN, MA 02038
ATTN: MIKE MAGLIO, TOWN ENGINEER
PHONE: (508) 520-4910

FIRE DEPARTMENT:
40 WEST CENTRAL STREET
FRANKLIN, MA 02038
ATTN: JAMES McLAUGHLIN, FIRE CHIEF
PHONE: (508) 528-2323

HEALTH DEPARTMENT:
MUNICIPAL BUILDING
355 EAST CENTRAL STREET
FRANKLIN, MA 02038
ATTN: CATHLEEN LIBERTY, MPH
HEALTH DIRECTOR
PHONE: (508) 520-4905

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MUNICIPAL BUILDING
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FRANKLIN, MA 02038
ATTN: AMY LOVE, TOWN PLANNER
PHONE: (508) 520-4907

POLICE DEPARTMENT:
911 PANTHER WAY
FRANKLIN, MA 02038
ATTN: THOMAS J. LYNCH,
CHIEF OF POLICE
PHONE: (508) 528-1212

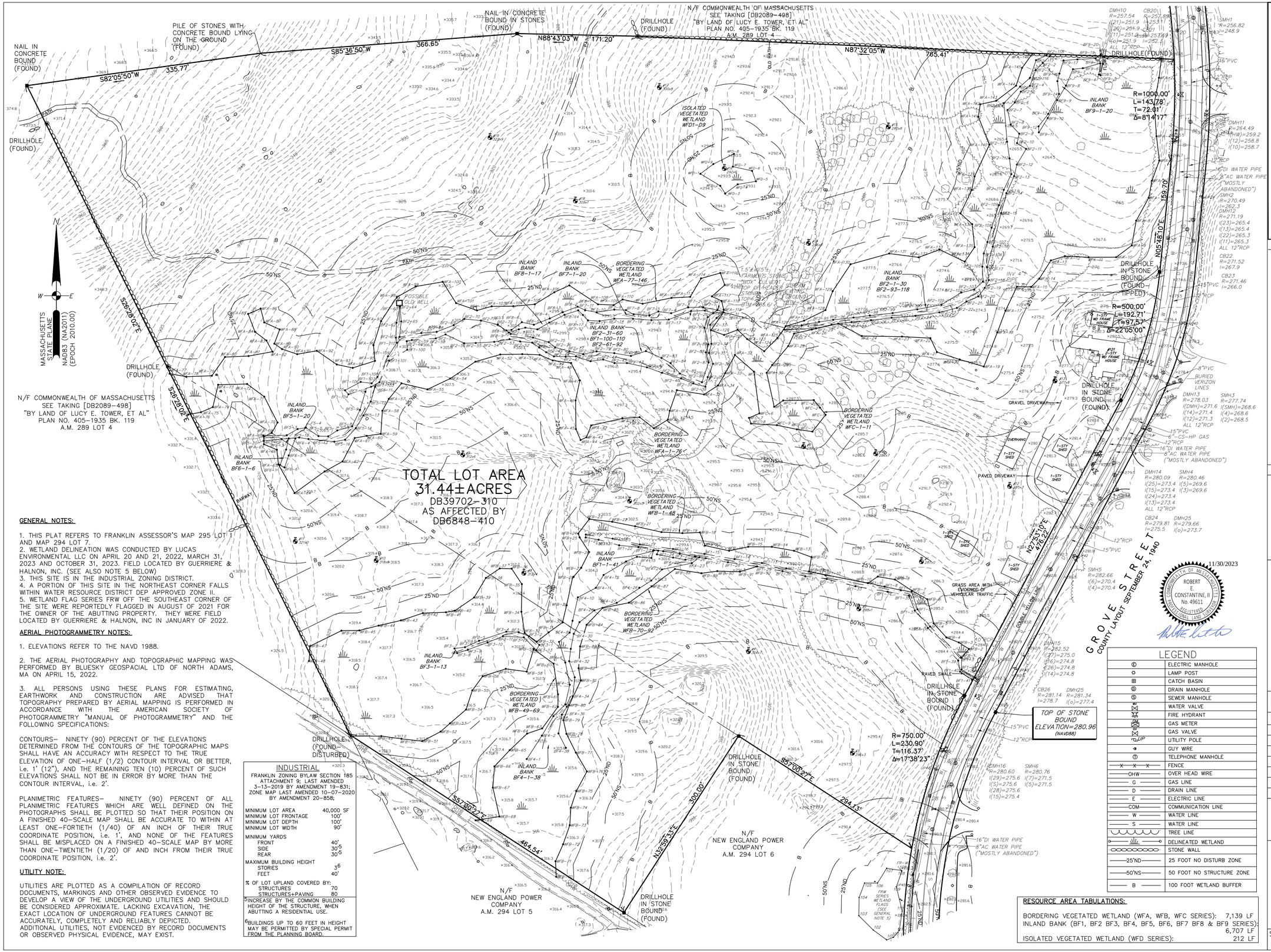
PUBLIC WORKS:
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257 FISHER STREET
FRANKLIN, MA 02038
ATTN: ROBERT A. CANTOREGGI,
DIRECTOR
PHONE: (508) 520-4910

WATER AND SEWER DIVISION:
DPW ADMINISTRATION BUILDING
357 FISHER STREET
FRANKLIN, MA 02038
ATTN: DOUG MARTIN, P.E.
SUPERINTENDENT
PHONE: (508) 520-4910

DRAWING NUMBER: **C-0**

PROJECT NUMBER: 22016

Drawing name: G:\MA\Franklin\Fairfield Residential\121 Grove Street\Main\22016_C-0 Cover Sheet.dwg
Feb 12, 2024 - 18:45pm


NAIL IN CONCRETE BOUND (FOUND)
PILE OF STONES WITH CONCRETE BOUND LYING ON THE GROUND (FOUND)
NAIL IN CONCRETE BOUND IN STONES (FOUND)
DRILLHOLE (FOUND)
N/F COMMONWEALTH OF MASSACHUSETTS SEE TAKING [DB2089-498] "BY LAND OF LUCY E. TOWER, ET AL" PLAN NO. 405-1935 BK. 119 A.M. 289 LOT 4
S82°05'50"W 335.77'
S85°36'50"W 366.65'
N88°43'03"W 171.20'
N87°32'05"W 765.41'
S26°28'02"E
N05°48'10"E 159.70'
N27°33'10"E 416.62'
S57°00'27"E 464.54'
S57°00'27"E 294.13'
N32°59'33"E 300.00'
R=1000.00' L=143.78' T=72.01' Δ=8°14'17"
R=500.00' L=192.71' T=97.57' Δ=22°05'00"
R=750.00' L=230.90' T=116.37' Δ=17°38'23"
GROVE STREET
COUNTY LAYOUT SEPTEMBER 24, 1940
GRAVEL DRIVEWAY
PAVED DRIVEWAY
PAVED SWALE
GRASS AREA WITH EVIDENCE OF VEHICULAR TRAFFIC
OVERHANG
1-STY SHED
1-STY WD FRAME HOUSE
INLAND BANK BF9-1-20
INLAND BANK BF8-1-17
INLAND BANK BF7-1-20
INLAND BANK BF2-1-30 BF2-93-118
INLAND BANK BF2-51-60 BF1-100-110 BF2-61-92
INLAND BANK BF5-1-20
INLAND BANK BF6-1-6
INLAND BANK BF1-1-41
INLAND BANK BF3-1-13
INLAND BANK BF4-1-38
ISOLATED VEGETATED WETLAND WFD1-09
BORDERING VEGETATED WETLAND WFA-77-146
BORDERING VEGETATED WETLAND WFA-1-76
BORDERING VEGETATED WETLAND WFB-1-48
BORDERING VEGETATED WETLAND WFB-70-92
BORDERING VEGETATED WETLAND WFB-49-69
BORDERING VEGETATED WETLAND WFC-1-11
POSSIBLE OLD WELL
TOP OF STONE BOUND ELEVATION=280.96 (NAVD88)
DRILLHOLE IN STONE BOUND (FOUND-TIPPED)
DRILLHOLE IN STONE BOUND (FOUND)
DRILLHOLES (FOUND-DISTURBED)
N/F NEW ENGLAND POWER COMPANY A.M. 294 LOT 6
N/F NEW ENGLAND POWER COMPANY A.M. 294 LOT 5
DMH10 R=257.54 I(21)=251.9 I(26)=256.9 I(11)=251.4 I(4)=251.9 ALL 12"RCP
CB20 R=257.89 I=253.1
SMH1 R=256.82 I=248.9
DMH11 R=264.49 I(HW)=259.2 I(12)=258.8 I(10)=258.7
SMH2 R=270.49 I=262.3
DMH12 R=271.19 I(23)=265.4 I(13)=265.4 I(22)=265.3 I(11)=265.3 ALL 12"RCP
CB22 R=271.52 I=267.9
CB23 R=271.46 I=266.0
DMH13 R=278.03 I(DMH)=271.6 I(14)=271.4 I(12)=271.3 ALL 12"RCP
SMH3 R=277.74 I(SMH)=268.6 I(4)=268.6 I(2)=268.5
DMH14 R=280.09 I(25)=273.4 I(15)=273.4 I(24)=273.4 I(13)=273.4 ALL 12"RCP
SMH4 R=280.46 I(5)=269.6 I(3)=269.6
CB24 R=279.81 I=275.5
DMH25 R=279.66 I(o)=273.7
SMH5 R=282.66 I(6)=270.4 I(4)=270.4
DMH15 R=282.52 I(27)=275.0 I(16)=274.8 I(26)=274.8 I(14)=274.8
CB26 R=281.14 I=278.7
DMH25 R=281.34 I(o)=277.4
DMH16 R=280.60 I(29)=275.6 I(5)=275.6 I(28)=275.6 I(15)=275.4
SMH6 R=280.76 I(7)=271.5 I(5)=271.5
8"PVC BURIED VERIZON LINES
15"PVC
6"-CS-HP GAS
12"RCP
16"DI WATER PIPE
8"AC WATER PIPE ("MOSTLY ABANDONED")
6"DI WATER PIPE
8"AC WATER PIPE ("MOSTLY ABANDONED")
12"RCP
15"PVC
15"RCP
12"RCP
FRW SERIES WETLAND FLAGS (SEE GENERAL NOTE 5)
INV 4"PVC
INV 6"PVC
INV 8"PVC
INV 10"PVC
INV 12"RCP
INV 15"RCP
INV 18"RCP
INV 24"RCP
INV 30"RCP
INV 36"RCP
INV 48"RCP
INV 60"RCP
INV 72"RCP
INV 84"RCP
INV 96"RCP
INV 108"RCP
INV 120"RCP
INV 132"RCP
INV 144"RCP
INV 156"RCP
INV 168"RCP
INV 180"RCP
INV 192"RCP
INV 204"RCP
INV 216"RCP
INV 228"RCP
INV 240"RCP
INV 252"RCP
INV 264"RCP
INV



NOTES:

1. TOTAL PARKING PROVIDED = 574 SPACES
2. AS SHOWN ON THE PLAN, THE PROPERTY CAPTURES A SMALL PORTION OF THE WATER RESOURCES OVERLAY DISTRICT. NO WORK IS PROPOSED IN THIS AREA AS PART OF THE RESIDENTIAL COMMUNITY.

NOT FOR CONSTRUCTION

80 0 40 80 160

GRAPHIC SCALE IN FEET

RJOC

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NO.	REVISION	DATE
3.	REVISED PER ZBA PEER REVIEW COMMENTS	02/12/2024
2.	REVISED PER ZBA PEER REVIEW COMMENTS	02/02/2024
1.	REVISED PER ONSITE SOIL TESTING RESULTS/NOI SUBMISSION	12/18/2023

DESIGNED BY:	MAC
DRAWN BY:	MCR
REVIEWED BY:	BJM
SCALE:	1" = 80'

PREPARED FOR:

FAIRFIELD GROVE STREET LLC
30 BRAINTREE HILL OFFICE PARK
SUITE 105
BRAINTREE, MA 02184

SEAL:

COMMONWEALTH OF MASSACHUSETTS
BRIAN P. DUNDON
CIVIL
No. 41625
REGISTERED PROFESSIONAL ENGINEER
2-12-2024

PREPARED BY:

RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
PHONE: 781.279.0180 RJOCONNELL.COM

DRAWING NAME: OVERALL SITE PLAN

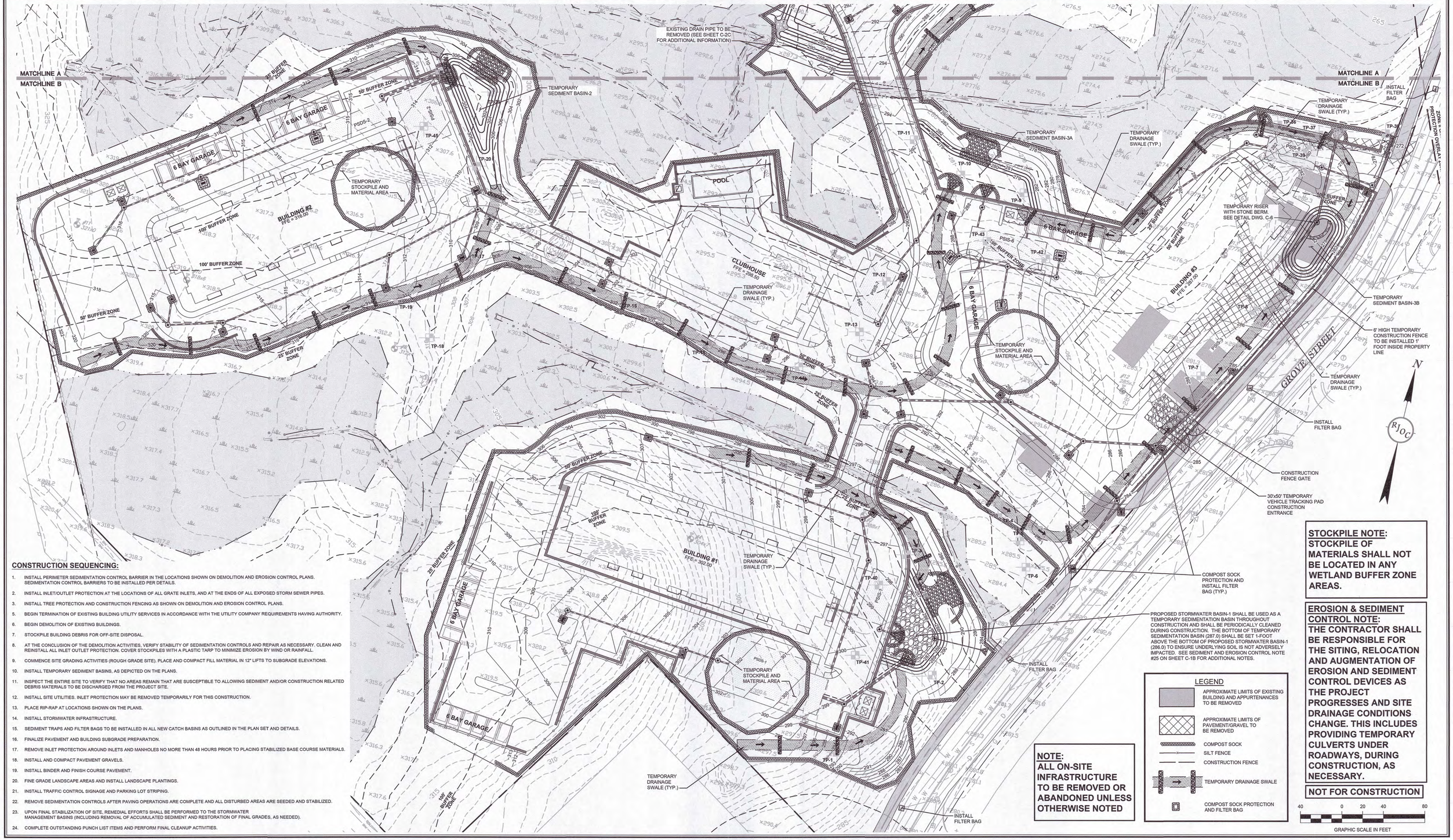
PROJECT NAME: GROVE STREET RESIDENCES
FRANKLIN, MA

DRAWING NUMBER: **OS-1**

DATE: 10/30/2023 PROJECT NO.: 22016

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Drawing name: G:\MA\Franklin\Fairfield Residential\121 Grove Street\Main\22016_OS-1 Overall Site Plan.dwg
Feb 12, 2024 - 18:38pm



CONSTRUCTION SEQUENCING:

1. INSTALL PERIMETER SEDIMENTATION CONTROL BARRIER IN THE LOCATIONS SHOWN ON DEMOLITION AND EROSION CONTROL PLANS. SEDIMENTATION CONTROL BARRIERS TO BE INSTALLED PER DETAILS.
2. INSTALL INLET/OUTLET PROTECTION AT THE LOCATIONS OF ALL GRATE INLETS, AND AT THE ENDS OF ALL EXPOSED STORM SEWER PIPES.
3. INSTALL TREE PROTECTION AND CONSTRUCTION FENCING AS SHOWN ON DEMOLITION AND EROSION CONTROL PLANS.
5. BEGIN TERMINATION OF EXISTING BUILDING UTILITY SERVICES IN ACCORDANCE WITH THE UTILITY COMPANY REQUIREMENTS HAVING AUTHORITY.
6. BEGIN DEMOLITION OF EXISTING BUILDINGS.
7. STOCKPILE BUILDING DEBRIS FOR OFF-SITE DISPOSAL.
8. AT THE CONCLUSION OF THE DEMOLITION ACTIVITIES, VERIFY STABILITY OF SEDIMENTATION CONTROLS AND REPAIR AS NECESSARY. CLEAN AND REINSTALL ALL INLET OUTLET PROTECTION. COVER STOCKPILES WITH A PLASTIC TARP TO MINIMIZE EROSION BY WIND OR RAINFALL.
9. COMMENCE SITE GRADING ACTIVITIES (ROUGH GRADE SITE). PLACE AND COMPACT FILL MATERIAL IN 12" LIFTS TO SUBGRADE ELEVATIONS.
10. INSTALL TEMPORARY SEDIMENT BASINS, AS DEPICTED ON THE PLANS.
11. INSPECT THE ENTIRE SITE TO VERIFY THAT NO AREAS REMAIN THAT ARE SUSCEPTIBLE TO ALLOWING SEDIMENT AND/OR CONSTRUCTION RELATED DEBRIS MATERIALS TO BE DISCHARGED FROM THE PROJECT SITE.
12. INSTALL SITE UTILITIES. INLET PROTECTION MAY BE REMOVED TEMPORARILY FOR THIS CONSTRUCTION.
13. PLACE RIP-RAP AT LOCATIONS SHOWN ON THE PLANS.
14. INSTALL STORMWATER INFRASTRUCTURE.
15. SEDIMENT TRAPS AND FILTER BAGS TO BE INSTALLED IN ALL NEW CATCH BASINS AS OUTLINED IN THE PLAN SET AND DETAILS.
16. FINALIZE PAVEMENT AND BUILDING SUBGRADE PREPARATION.
17. REMOVE INLET PROTECTION AROUND INLETS AND MANHOLES NO MORE THAN 48 HOURS PRIOR TO PLACING STABILIZED BASE COURSE MATERIALS.
18. INSTALL AND COMPACT PAVEMENT GRAVELS.
19. INSTALL BINDER AND FINISH COURSE PAVEMENT.
20. FINE GRADE LANDSCAPE AREAS AND INSTALL LANDSCAPE PLANTINGS.
21. INSTALL TRAFFIC CONTROL SIGNAGE AND PARKING LOT STRIPING.
22. REMOVE SEDIMENTATION CONTROLS AFTER PAVING OPERATIONS ARE COMPLETE AND ALL DISTURBED AREAS ARE SEEDED AND STABILIZED.
23. UPON FINAL STABILIZATION OF SITE, REMEDIAL EFFORTS SHALL BE PERFORMED TO THE STORMWATER MANAGEMENT BASINS (INCLUDING REMOVAL OF ACCUMULATED SEDIMENT AND RESTORATION OF FINAL GRADES, AS NEEDED).
24. COMPLETE OUTSTANDING PUNCH LIST ITEMS AND PERFORM FINAL CLEANUP ACTIVITIES.

STOCKPILE NOTE:
STOCKPILE OF MATERIALS SHALL NOT BE LOCATED IN ANY WETLAND BUFFER ZONE AREAS.

EROSION & SEDIMENT CONTROL NOTE:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SITING, RELOCATION AND AUGMENTATION OF EROSION AND SEDIMENT CONTROL DEVICES AS THE PROJECT PROGRESSES AND SITE DRAINAGE CONDITIONS CHANGE. THIS INCLUDES PROVIDING TEMPORARY CULVERTS UNDER ROADWAYS, DURING CONSTRUCTION, AS NECESSARY.

NOTE:
ALL ON-SITE INFRASTRUCTURE TO BE REMOVED OR ABANDONED UNLESS OTHERWISE NOTED

LEGEND
- APPROXIMATE LIMITS OF EXISTING BUILDING AND APPURTENANCES TO BE REMOVED
- APPROXIMATE LIMITS OF PAVEMENT/GRAVEL TO BE REMOVED
- COMPOST SOCK
- SILT FENCE
- CONSTRUCTION FENCE
- TEMPORARY DRAINAGE SWALE
- COMPOST SOCK PROTECTION AND FILTER BAG

NOT FOR CONSTRUCTION

40 0 20 40 80
GRAPHIC SCALE IN FEET

NO.	REVISION	DATE
3.	REVISED PER ZBA PEER REVIEW COMMENTS	02/12/2024
2.	REVISED PER ZBA PEER REVIEW COMMENTS	02/02/2024
1.	REVISED PER ONSITE SOIL TESTING RESULTS/NOI SUBMISSION	12/18/2023

DESIGNED BY:	MAC
DRAWN BY:	MCR
REVIEWED BY:	BJM
SCALE:	1" = 40'

PREPARED FOR:
FAIRFIELD GROVE STREET LLC
30 BRAINTREE HILL OFFICE PARK
SUITE 105
BRAINTREE, MA 02184

SEAL:
COMMONWEALTH OF MASSACHUSETTS
BRIAN P. DUNDON
CIVIL
No. 41505
REGISTERED PROFESSIONAL ENGINEER
2-12-2024

PREPARED BY:
RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
PHONE: 781.279.0180 RJOCONNELL.COM

PROJECT NAME:
GROVE STREET RESIDENCES
FRANKLIN, MA

DRAWING NAME:
DEMOLITION AND EROSION CONTROL PLAN

DRAWING NUMBER:
C-1A

DATE: 10/30/2023 PROJECT NO.: 22016

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Drawing name: G:\MA\Franklin\Fairfield Residential\121 Grove Street\Main\22016_C-1 Demolition and Erosion Control Plan.dwg
Feb 12, 2024 - 17:49pm

SEDIMENT AND EROSION CONTROL NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIG SAFE" (1-800-344-7233) AT LEAST 72 BUSINESS HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCH MARKS NECESSARY FOR THE WORK.
3. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH MASSACHUSETTS EROSION AND SEDIMENTATION CONTROL GUIDELINES, FOR URBAN AND SUBURBAN AREAS MARCH 1997, THE U.S.D.A. S.C.S. EROSION AND SEDIMENT CONTROL IN SITE DEVELOPMENT, MASSACHUSETTS CONSERVATION GUIDE, SEPTEMBER 1983, LOCAL MUNICIPAL REGULATIONS AND THE PERMIT REQUIREMENTS FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION RELATED ACTIVITIES AS OUTLINED IN THE MOST RECENT NPDES GENERAL PERMIT.
4. STOCKPILES SHALL BE SURROUNDED ON THEIR PERIMETERS WITH STAKED COMPOST WATTLES/SOCKS AND/OR SILTATION FENCE TO PREVENT AND/OR CONTROL SILTATION AND EROSION.
5. TOPS OF STOCKPILES SHALL BE COVERED IN SUCH A MANNER THAT STORMWATER DOES NOT INFILTRATE THE MATERIALS AND THEREBY RENDER THE SAME UNSUITABLE FOR FILL USE.
6. EARTHWORK ACTIVITY ON THE SITE SHALL BE DONE IN A MANNER SUCH THAT RUNOFF IS DIRECTED TO THE TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES AS DEPICTED ON CIVIL EROSION CONTROL PLAN.
7. FILTER BAGS SHALL BE PLACED UNDERNEATH THE GRATES OF EXISTING AND PROPOSED CATCH BASINS AND MAINTAINED AS OUTLINED IN THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
8. ALL 3H:1V SLOPES OR STEEPER WILL BE STABILIZED WITH A CURLEX EROSION CONTROL MATTING BY AMERICAN EXCELSIOR COMPANY (OR ENGINEER APPROVED EQUAL) PRIOR TO HYDROSEEDING AND PROTECTED FROM EROSION.
9. THE CONTRACTOR SHALL KEEP ON SITE AT ALL TIMES ADDITIONAL COMPOST WATTLES/SOCKS, FILTER BAGS AND EXTRA SILTATION FENCING FOR INSTALLATION AT THE DIRECTION OF THE ENGINEER TO MITIGATE ANY EMERGENCY CONDITION.
10. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING FOR ANY PERMITS AND/OR CONNECTION FEES REQUIRED TO CARRY OUT THE WORK INCLUDING BUT NOT LIMITED TO DEMOLITION.
11. THE LIMIT OF WORK LINE SHALL BE THE SAME AS THE LIMIT OF WORK LINE NECESSARY FOR GRADING PURPOSES, (I.E., THE GRADING LIMITS AROUND THE PERIMETER OF THE PROJECT AREA).
12. THE AREA OR AREAS OF ENTRANCE AND EXIT TO AND FROM THE SITE SHALL BE CLEARED OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL AS DETERMINED BY THE ENGINEER OR OWNER'S REPRESENTATIVE.
13. THE AREA OR AREAS OF ENTRANCE AND EXIT TO AND FROM THE SITE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO THE PUBLIC RIGHT-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO THE PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.
14. CATCH BASINS WITH TEMPORARY FILTER BAGS MUST BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RAINFALL EVENT. SEDIMENT WILL BE REMOVED FROM FILTER BAG IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
15. UPON COMPLETION OF ALL SITE WORK CONSTRUCTION, SITE CONTRACTOR SHALL INSPECT ALL ON-SITE CATCH BASINS, SWALES, SEDIMENT FOREBAYS AND BASINS, AND REMOVE ALL SEDIMENT AND TRASH DEBRIS THAT HAS ACCUMULATED WITHIN EACH BMP STRUCTURE DURING THE COURSE OF CONSTRUCTION. ALL ON-SITE CATCH BASINS AND WATER QUALITY STRUCTURES SHALL BE VACUUMED CLEAN PRIOR TO THE ISSUANCE OF AN OCCUPANCY PERMIT.
16. ALL CONSTRUCTION SHALL MEET OR EXCEED THE TOWN OF FRANKLIN'S ENGINEERING AND DPW DEPARTMENT SPECIFICATIONS.
17. TO MINIMIZE THE MIGRATION OF DUST AND SILT FROM THE CONSTRUCTION SITE, THE FOLLOWING MEASURES SHALL BE IMPLEMENTED AS REQUIRED:
    - SPRAY DISTURBED AREAS WITH WATER DURING DRY AND WINDY DAYS.
    - WASH WHEELS OF VEHICLES BEFORE LEAVING THE SITE.
    - PERIODICALLY CLEAN SURROUNDING ROADWAYS NEAR THE ENTRANCE TO THE SITE.
    - ALL VEHICLES HAULING MATERIAL TO AND FROM THE SITE SHALL PLACE SECURE COVERS OVER THEIR LOADS.
18. THE CONTRACTOR SHALL BE AWARE THAT THE ON-SITE SOILS AT THIS SITE MAKE IT PARTICULARLY SUSCEPTIBLE TO SOIL EROSION AND SENSITIVE TO IT'S CONSEQUENCES. IT SHOULD BE NOTED THAT THE EROSION CONTROL MEASURES AS SHOWN ON THE DRAWINGS DEPICT THE MINIMUM REQUIRED AND ARE REPRESENTATIVE OF A SINGLE STAGE OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SITING, RELOCATION AND AUGMENTATION OF EROSION CONTROL DEVICES AS THE PROJECT PROGRESSES AND AS SITE DRAINAGE CONDITIONS CHANGE.
19. THE CONTRACTOR SHALL ANTICIPATE AND MODIFY EROSION CONTROL MEASURES BASED ON PAST AND CURRENT WEATHER CONDITIONS AND ANTICIPATED CONSTRUCTION ACTIVITIES.
20. THE CONTRACTOR SHALL MINIMIZE THE AREA OF DISTURBED SOIL. EFFORTS SHALL BE MADE TO LIMIT THE TIME OF EXPOSURE OF DISTURBED AREAS.
21. THE CONTRACTOR SHALL NOTIFY THE TOWN OF FRANKLIN PLANNING AND CONSERVATION DEPARTMENT AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF ANY SITEWORK AND BEFORE EACH OF THE FOLLOWING:
    - INSTALLATION OF SEDIMENT AND EROSION CONTROL MEASURES.
    - START OF CONSTRUCTION.
    - COMPLETION OF SITE CLEARING.
    - COMPLETION OF ROUGH GRADING.
    - INSTALLATION OF STORMWATER CONTROLS.
    - CLOSE OF THE CONSTRUCTION SEASON.
    - COMPLETION OF FINAL LANDSCAPING.
22. PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES AT THE SITE, THE CONTRACTOR SHALL ENGAGE AN INDIVIDUAL WITH SPECIFIC PROFESSIONAL TRAINING AND EXPERTISE IN EROSION AND SEDIMENT CONTROL. THE EROSION CONTROL MONITOR SHALL PREPARE A WEEKLY REPORT WHICH SHALL BE KEPT ON SITE AT ALL TIMES AND SHALL BE SHOWN TO LOCAL, STATE AND FEDERAL AGENTS UPON REQUEST. THIS REPORT SHALL INDICATE THE STATUS OF THE EROSION CONTROLS AND ANY MAINTENANCE REQUIRED AND PERFORMED. THIS REPORT SHALL CONFORM TO THE REQUIREMENTS OF THE EPA'S NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR DISCHARGE FROM CONSTRUCTION ACTIVITIES.
23. THE LOCATION OF COMPOST WATTLES/SOCKS AND FILTER BAGS SHALL BE FIELD VERIFIED DURING SITE PREPARATION OPERATIONS BY THE ENGINEER AT RECORD.
24. ANY DEWATERING ACTIVITIES PERFORMED IN CONJUNCTION WITH CONSTRUCTING THE SITE SHALL MAKE USE OF A SETTLING POND OR SIMILAR DEVICE TO REMOVE SEDIMENT BEFORE WATER IS RELEASED. THERE SHALL BE NO DIRECT DISCHARGE OF WATER TO CATCH BASINS AND/OR THE MUNICIPAL DRAINAGE SYSTEM.
25. AFTER CONSTRUCTION STABILIZATION HAS OCCURRED, THE CONTRACTOR SHALL CLEAN AND REMOVE A MINIMUM OF 18" INCHES FROM THE BOTTOM OF THE TEMPORARY SEDIMENTATION BASIN WHERE PROPOSED STORMWATER BASIN-1 IS TO BE CONSTRUCTED. AS NOTED ON C-1A, THE BOTTOM OF THE TEMPORARY SEDIMENTATION BASIN AT THIS LOCATION SHALL BE SET 1-FOOT ABOVE THE BOTTOM OF PROPOSED STORMWATER BASIN-1 TO ENSURE THE UNDERLYING SOIL IS NOT ADVERSELY IMPACTED. ADDITIONALLY, THE PROPOSED CRUSHED STONE PROPOSED AT THE BOTTOM OF STORMWATER BASIN-1 SHALL NOT BE INSTALLED UNTIL AFTER SITE STABILIZATION AND THE CLEANING/DREDGING OF THE TEMPORARY SEDIMENT BASIN.
26. WINTER CONSTRUCTION AND STABILIZATION
    THE WINTER CONSTRUCTION PERIOD IS FROM NOVEMBER 1 THROUGH APRIL 15

SEDIMENT BARRIERS: DURING FROZEN CONDITIONS, SEDIMENT BARRIERS MAY CONSIST OF EROSION CONTROL MIX BERMS OR ANY OTHER RECOGNIZED SEDIMENT BARRIERS AS FROZEN SOIL PREVENTS THE PROPER INSTALLATION OF COMPOST WATTLES/SOCKS OR SILT FENCES.

MULCHING: ALL AREAS SHALL BE CONSIDERED TO BE DENUDED UNTIL SEEDED AND MULCHED. HAY AND STRAW MULCH SHALL BE APPLIED AT A RATE OF 150 LB. PER 1000 SF OR 3 TONS/ACRE (TWICE THE NORMAL ACCEPTED RATE) AND SHALL BE PROPERLY ANCHORED. EROSION CONTROL MIX MUST BE APPLIED WITH A MINIMUM 4 INCH THICKNESS. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW. THE SNOW WILL BE REMOVED DOWN TO A 1-INCH DEPTH OR LESS PRIOR TO APPLICATION. AFTER EACH DAY OF FINAL GRADING, THE AREA WILL BE PROPERLY STABILIZED WITH ANCHORED HAY OR STRAW OR EROSION CONTROL MATTING. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED OR ADEQUATELY ANCHORED SO THAT GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. BETWEEN NOVEMBER 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY EITHER MULCH NETTING, ASPHALT EMULSION CHEMICAL, OR WOOD CELLULOSE FIBER. THE COVER WILL BE CONSIDERED SUFFICIENT WHEN THE GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. AFTER NOVEMBER 1ST, MULCH AND ANCHORING OF ALL EXPOSED SOIL SHALL OCCUR AT THE END OF EACH WORKDAY DURING FINAL GRADING ACTIVITIES.

SOIL STOCKPILING: STOCKPILES OF SOIL OR SUBSOIL WILL BE MULCHED FOR WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR WITH A 4-INCH LAYER OF EROSION CONTROL MIX. THIS WILL BE DONE WITHIN 24 HOURS OF STOCKING AND REESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL.

SEEDING: BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES FINISHED AREAS SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1ST AND IF THE EXPOSED AREA HAS BEEN LOOMED, FINAL GRADED WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED. DORMANT SEEDING MAY BE PLACED PRIOR TO THE PLACEMENT OF MULCH OR EROSION CONTROL BLANKETS. IF DORMANT SEEDING IS USED FOR THE SITE, ALL DISTURBED AREAS SHALL RECEIVE 4" OF LOAM AND SEED AT AN APPLICATION RATE OF 5 LBS/1000 SF. ALL AREAS SEEDED DURING THE WINTER WILL BE INSPECTED IN THE SPRING BY REPLACING LOAM, SEED AND MULCH. IF DORMANT SEEDING IS NOT USED FOR THE SITE, ALL DISTURBED AREAS SHALL BE RE-VEGETATED IN THE SPRING.

WINTER STABILIZATION OF DITCHES AND CHANNELS: ALL STONE-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15. ALL GRASS-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY SEPTEMBER 1. IF A DITCH OR CHANNEL IS NOT GRASS-LINED BY SEPTEMBER 1, THEN ONE OF THE FOLLOWING ACTIONS MUST BE TAKEN TO STABILIZE THE DITCH:

INSTALL A SOD LINING IN THE DITCH: A DITCH MUST BE LINED WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES: PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD ONTO AND UNDERLYING SOIL, WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL, AND ANCHORING SOD AT THE BASE OF THE DITCH WITH JUTE OR PLASTIC MESH TO PREVENT THE SOD FROM SLOUGHING DURING FLOW CONDITIONS.

INSTALL A STONE LINING IN THE DITCH: A DITCH MUST BE LINED WITH STONE RIP RAP BY NOVEMBER 15. CONTACT REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE AND LINING THICKNESS NEEDED TO WITHSTAND THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHIN THE DITCH.

WINTER STABILIZATION OF DISTURBED SLOPES: ALL STONE-COVERED SLOPES GREATER THAN 15% MUST BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15, AND ALL SLOPES TO BE VEGETATED MUST BE SEEDED AND MULCHED BY SEPTEMBER 1. IF A SLOPE TO BE VEGETATED IS NOT STABILIZED BY SEPTEMBER 1, THEN ONE OF THE FOLLOWING ACTIONS MUST BE TAKEN TO STABILIZE THE SLOPE.

TEMPORARY VEGETATION AND EROSION CONTROL MATS: BY OCTOBER 1 THE DISTURBED SLOPE MUST BE SEEDED WITH WINTER RYE AT A SEEDING RATE OF 3 LBS PER 1000 SF AND THEN INSTALL EROSION CONTROL MATS OR ANCHORED MULCH OVER THE SEEDING. IF THE RYE FAILS TO GROW AT LEAST 3 INCHES OR FAILS TO COVER AT LEAST 75% OF THE SLOPE BY NOVEMBER 1, THEN THE CONTRACTOR WILL COVER THE SLOPE WITH A LAYER OF EROSION CONTROL MIX OR WITH STONE RIPRAP.

SOD: THE DISTURBED SLOPE MUST BE STABILIZED WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES THE CONTRACTOR PINNING THE SOD ONTO THE SLOPE WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL. THE CONTRACTOR WILL NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33% OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.

EROSION CONTROL MIX: EROSION CONTROL MIX MUST BE PROPERLY INSTALLED BY NOVEMBER 15. THE CONTRACTOR WILL NOT USE EROSION CONTROL MIX TO STABILIZE SLOPES HAVING GRADES GREATER THAN 50% OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.

STONE RIP RAP: PLACE A LAYER OF STONE RIP RAP ON THE SLOPE BY NOVEMBER 15. CONTACT THE PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY ON THE SLOPE AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP.

WINTER STABILIZATION OF DISTURBED SOILS: BY SEPTEMBER 15, ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15% MUST BE SEEDED AND MULCHED. IF THE DISTURBED AREAS ARE NOT STABILIZED BY THIS DATE, THEN ONE OF THE FOLLOWING ACTIONS MUST BE TAKEN:

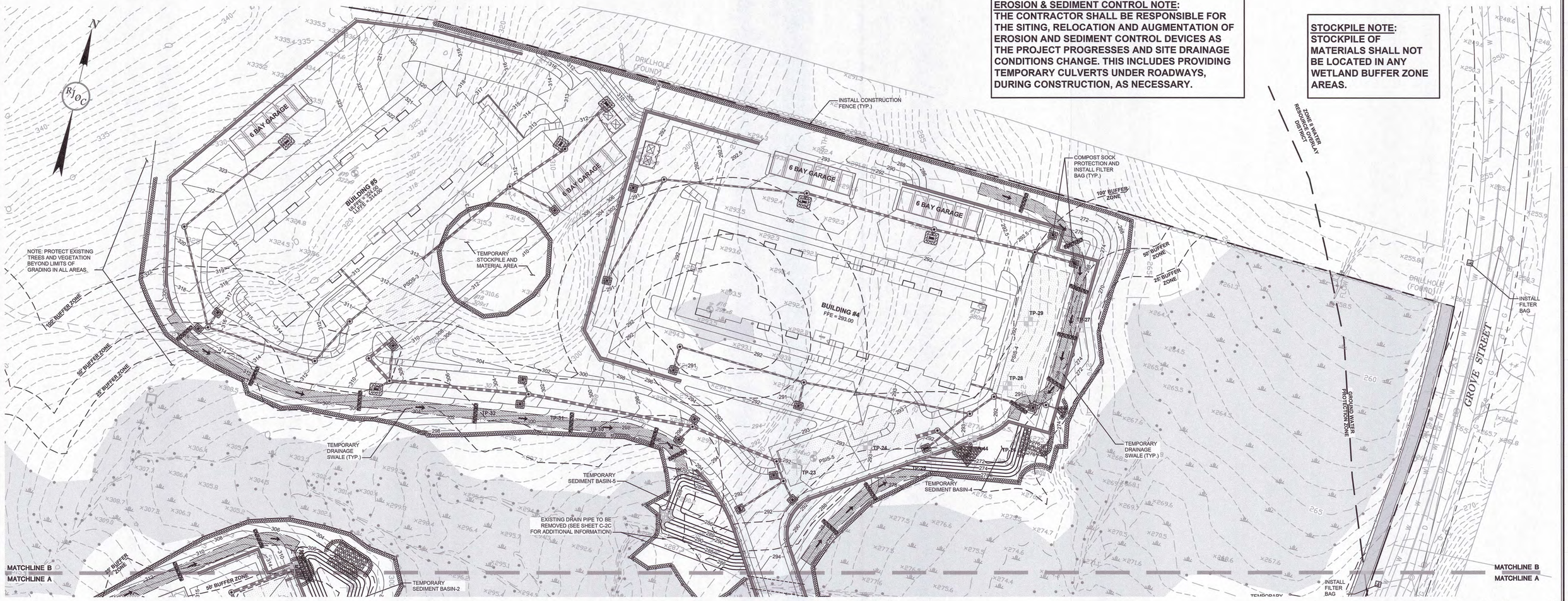
TEMPORARY VEGETATION: BY OCTOBER 1, SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3 LBS PER 1000 SF, LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 POUNDS PER 1000 SF, AND ANCHOR THE MULCH WITH PLASTIC NETTING. MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST 3 INCHES OR FAILS TO COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 1, THEN MULCH THE AREA FOR WINTER PROTECTION AS DESCRIBED BELOW.

SOD: STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1. PROPER INSTALLATION INCLUDES PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL.

MULCH: BY NOVEMBER 15, MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 LBS PER 1000 SF ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. IMMEDIATELY AFTER APPLYING THE MULCH, ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

EROSION & SEDIMENT CONTROL NOTE:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SITING, RELOCATION AND AUGMENTATION OF EROSION AND SEDIMENT CONTROL DEVICES AS THE PROJECT PROGRESSES AND SITE DRAINAGE CONDITIONS CHANGE. THIS INCLUDES PROVIDING TEMPORARY CULVERTS UNDER ROADWAYS, DURING CONSTRUCTION, AS NECESSARY.

STOCKPILE NOTE:
STOCKPILE OF MATERIALS SHALL NOT BE LOCATED IN ANY WETLAND BUFFER ZONE AREAS.



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40 0 20 40 80
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NO.	REVISION	DATE
3.	REVISED PER ZBA PEER REVIEW COMMENTS	02/12/2024
2.	REVISED PER ZBA PEER REVIEW COMMENTS	02/02/2024
1.	REVISED PER ONSITE SOIL TESTING RESULTS/NOI SUBMISSION	12/18/2023

DESIGNED BY:	MAC
DRAWN BY:	MCR
REVIEWED BY:	BJM
SCALE:	1" = 40'

PREPARED FOR:
FAIRFIELD GROVE STREET LLC
30 BRAINTREE HILL OFFICE PARK
SUITE 105
BRAINTREE, MA 02184

SEAL:
COMMONWEALTH OF MASSACHUSETTS
BRIAN P. DUNDON
CIVIL
No. 41505
REGISTERED PROFESSIONAL ENGINEER
2-12-2024

PREPARED BY:
RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
PHONE: 781.279.0180 RJOCONNELL.COM

PROJECT NAME:
GROVE STREET RESIDENCES
FRANKLIN, MA

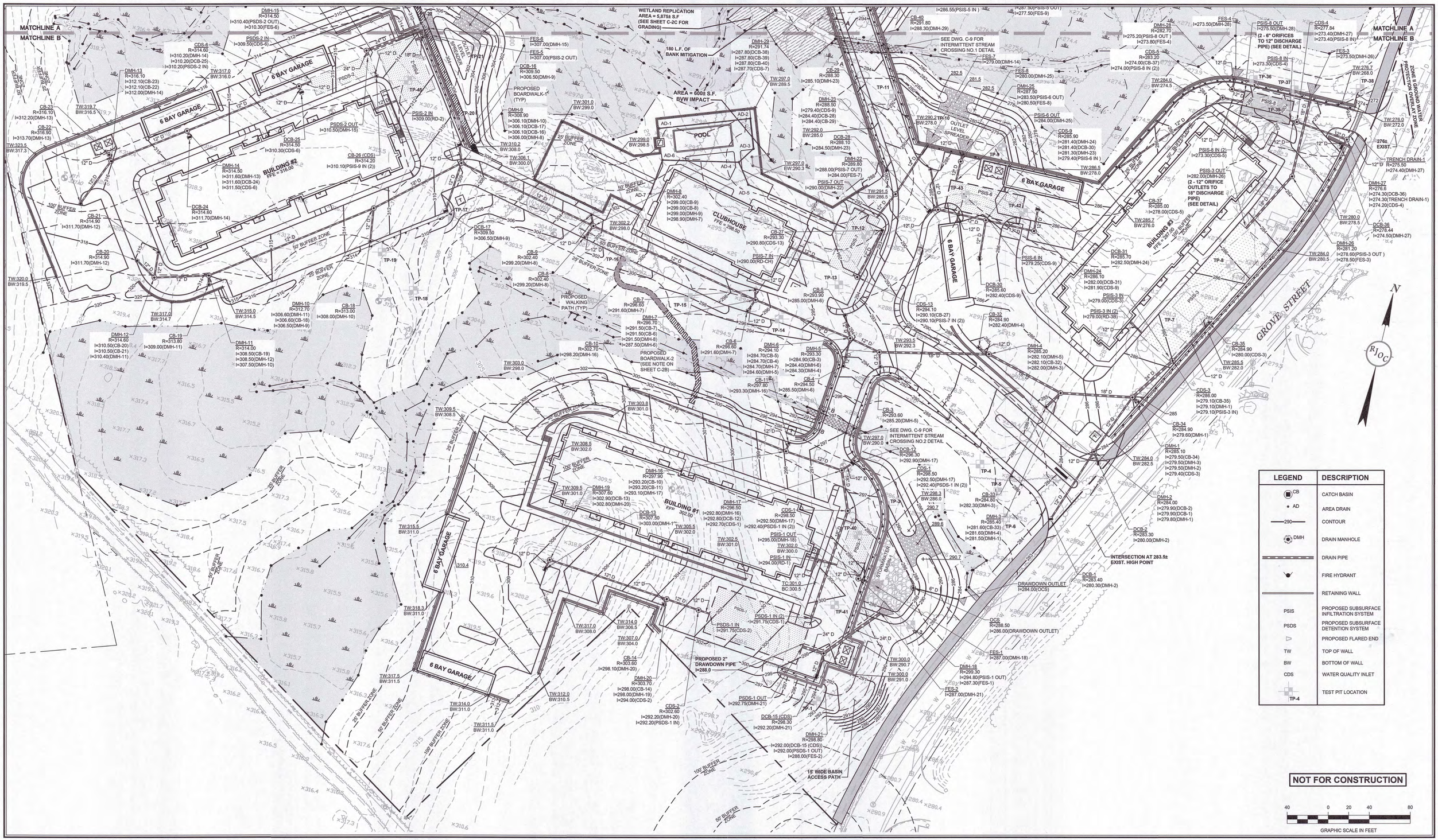
DRAWING NAME:
DEMOLITION AND EROSION CONTROL PLAN

DRAWING NUMBER:
C-1B

DATE: 10/30/2023 PROJECT NO.: 22016

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Feb 12, 2024 - 17:49pm



LEGEND	DESCRIPTION
CB	CATCH BASIN
AD	AREA DRAIN
290	CONTOUR
DMH	DRAIN MANHOLE
	DRAIN PIPE
	FIRE HYDRANT
	RETAINING WALL
PSIS	PROPOSED SUBSURFACE INFILTRATION SYSTEM
PSDS	PROPOSED SUBSURFACE DETENTION SYSTEM
	PROPOSED FLARED END
TW	TOP OF WALL
BW	BOTTOM OF WALL
CDS	WATER QUALITY INLET
TP-4	TEST PIT LOCATION

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DESIGNED BY: MAC
DRAWN BY: MCR
REVIEWED BY: BJM
SCALE: 1" = 40'

PREPARED FOR:
FAIRFIELD GROVE STREET LLC
30 BRAINTREE HILL OFFICE PARK
SUITE 105
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SEAL: BRIAN R. DUNDON CIVIL No. 41505 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
2-12-2024

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PHONE: 781.279.0180 RJOCONNELL.COM

PROJECT NAME:
GROVE STREET RESIDENCES
FRANKLIN, MA

DRAWING NAME:
GRADING AND DRAINAGE PLAN

DRAWING NUMBER:
C-2A

DATE: 10/30/2023 PROJECT NO.: 22016

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Drawing name: G:\MA\Franklin\Fairfield Residential\121 Grove Street\Main\22016_C-2 Grading and Drainage Plan.dwg
Feb 12, 2024 - 17:56pm

LEGEND	DESCRIPTION
CB	CATCH BASIN
290	CONTOUR
DMH	DRAIN MANHOLE
	DRAIN PIPE
	FIRE HYDRANT
	RETAINING WALL
PSIS	PROPOSED SUBSURFACE INFILTRATION SYSTEM
	PROPOSED FLARED END
TW	TOP OF WALL
BW	BOTTOM OF WALL
CDS	WATER QUALITY INLET
TP-4	TEST PIT LOCATION

GRADING AND DRAINAGE NOTES

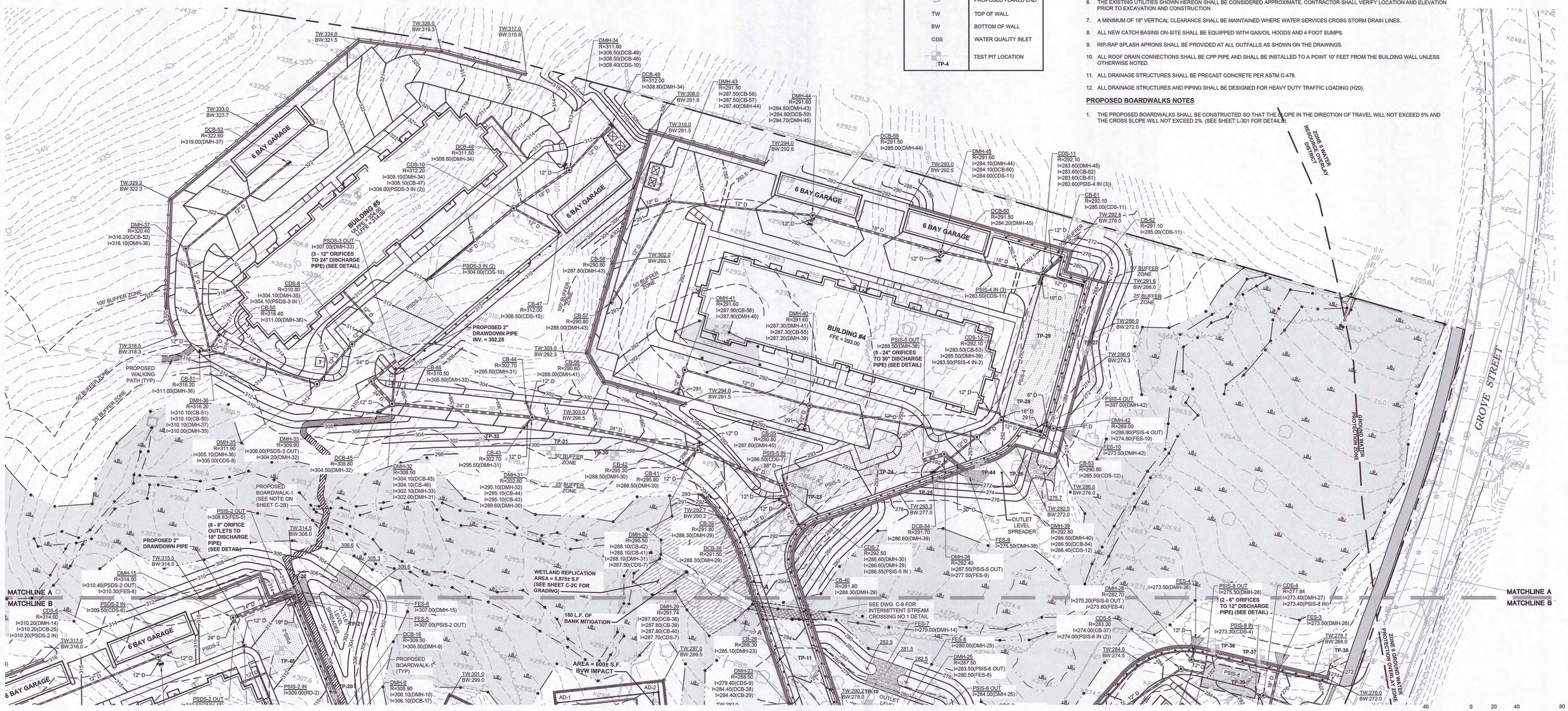
1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIG SAFE" AT LEAST 72 BUSINESS HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. EXISTING SITE FEATURES AND TOPOGRAPHY SHOWN HEREON IS TAKEN FROM A SURVEY PLAN TITLED "EXISTING CONDITIONS SITE PLAN 121 GROVE STREET, FRANKLIN, MA" BY GUERRIERE & HANLON, INC. DATED 05/20/2022, REVISED THROUGH 11/09/2023.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL HORIZONTAL CONTROL POINTS AND ELEVATION BENCH MARKS NECESSARY FOR THE WORK.
4. ALL STORM DRAINAGE PIPING SHALL BE REINFORCED CONCRETE PIPE, UNLESS NOTED OTHERWISE IN STORMWATER INFILTRATION/DETENTION BASINS. REINFORCED CONCRETE PIPE (RCP) SHALL BE CLASS III IN ACCORDANCE WITH ASTM C-76. GASKETS SHALL BE O-RING TYPE IN ACCORDANCE WITH ASTM C-443. CLASS V RCP SHALL BE USED IN AREAS WITH LESS THAN 42" VERTICAL COVER FROM TOP OF PIPE TO FINISHED GRADE.
5. CORRUGATED PLASTIC PIPE (CPP) SHALL CONFORM WITH AASHTO DESIGNATIONS M294 AND M252, SHALL BE MANUFACTURED WITH HIGH DENSITY POLYETHYLENE PLASTIC AND SHALL BE ADS N-12 PIPE OR APPROVED EQUAL UNLESS OTHERWISE NOTED ON DETAILS.
6. THE EXISTING UTILITIES SHOWN HEREON SHALL BE CONSIDERED APPROXIMATE. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION PRIOR TO EXCAVATION AND CONSTRUCTION.
7. A MINIMUM OF 18" VERTICAL CLEARANCE SHALL BE MAINTAINED WHERE WATER SERVICES CROSS STORM DRAIN LINES.
8. ALL NEW CATCH BASINS ON-SITE SHALL BE EQUIPPED WITH GAS/OIL HOODS AND 4 FOOT SUMPS.
9. RIP-RAP SPLASH APRONS SHALL BE PROVIDED AT ALL OUTFALLS AS SHOWN ON THE DRAWINGS.
10. ALL ROOF DRAIN CONNECTIONS SHALL BE CPP PIPE AND SHALL BE INSTALLED TO A POINT 10' FEET FROM THE BUILDING WALL UNLESS OTHERWISE NOTED.
11. ALL DRAINAGE STRUCTURES SHALL BE PRECAST CONCRETE PER ASTM C-478.
12. ALL DRAINAGE STRUCTURES AND PIPING SHALL BE DESIGNED FOR HEAVY DUTY TRAFFIC LOADING (H20).

PROPOSED BOARDWALKS NOTES

1. THE PROPOSED BOARDWALKS SHALL BE CONSTRUCTED SO THAT THE SLOPE IN THE DIRECTION OF TRAVEL WILL NOT EXCEED 5% AND THE CROSS SLOPE WILL NOT EXCEED 2%. (SEE SHEET L-301 FOR DETAILS).

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SCALE:	1" = 40'

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PROJECT NAME:

GROVE STREET RESIDENCES
FRANKLIN, MA

DRAWING NAME:

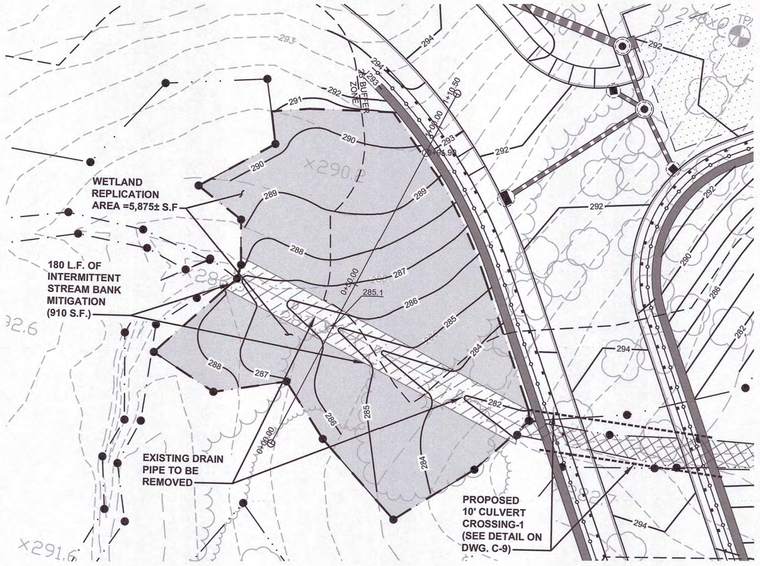
GRADING AND DRAINAGE PLAN

DRAWING NUMBER:

C-2B

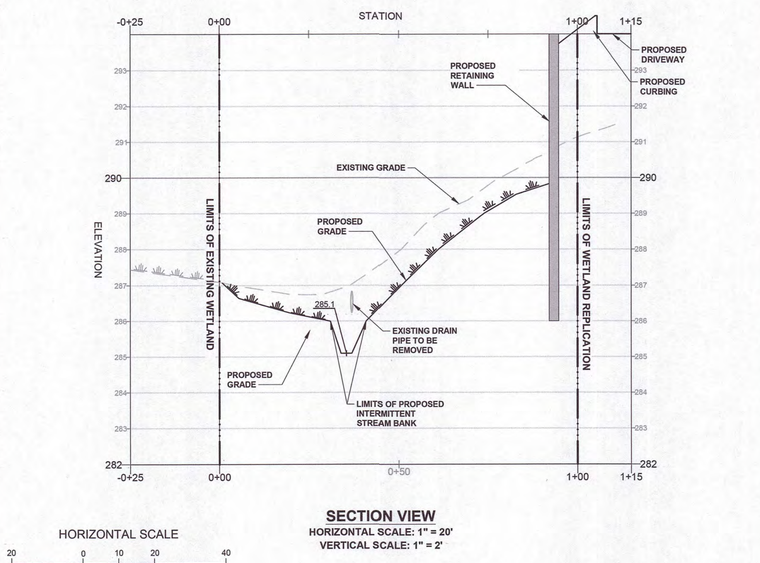
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PLAN VIEW
1" = 20'

20 0 10 20 40
GRAPHIC SCALE IN FEET



SECTION VIEW
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'

HORIZONTAL SCALE
20 0 10 20 40
2 0 1 2 4
VERTICAL SCALE
(IN FEET)

8.1 REPLICATION AREA CONSTRUCTION SEQUENCE

THIS SECTION DESCRIBES THE SEQUENCE OF CONSTRUCTION ACTIVITIES AND PROVIDES INFORMATION REGARDING GRADING, PLANTING, AND SEEDING. IT ALSO CONTAINS EROSION AND SEDIMENTATION CONTROL MEASURES THAT WILL BE UTILIZED THROUGHOUT CONSTRUCTION ACTIVITIES. THE CONSERVATION COMMISSION WILL BE NOTIFIED PRIOR TO THE COMMENCEMENT OF WORK, TO SCHEDULE INSPECTION OF THE WORK, TO DISCUSS DEPTH OF SOIL REMOVAL, AND RE-GRADING OF EXCESS SOIL WITHIN UPLAND AREAS. THE PWS WILL DOCUMENT CONDITIONS RELATIVE TO VEGETATION COMPOSITION AND STRUCTURE, TOPOGRAPHY, AND SOILS BOTH BEFORE AND AFTER RESTORATION.

EROSION AND SEDIMENT CONTROLS

PRIOR TO THE COMMENCEMENT OF THE REPLICATION AREA CONSTRUCTION, EROSION AND SEDIMENTATION CONTROLS (I.E., COMPOST FILTER SOCK/SILT FENCE) WILL BE INSTALLED AS SHOWN ON THE SITE PLANS. THE EROSION CONTROLS WILL BE INSPECTED DURING CONSTRUCTION TO MAINTAIN THEIR EFFECTIVENESS IN RETAINING SEDIMENTS.

CLEARING, GRADING, AND SOILS

IN ORDER FOR THE WETLAND MITIGATION AREA TO BECOME SUCCESSFUL THE FINAL GRADES NEED TO BE SET APPROXIMATELY 6 TO 12 INCHES ABOVE GROUNDWATER ELEVATIONS. MINOR ADJUSTMENTS IN FINAL GRADE MAY BE MADE IN THE FIELD BY THE SUPERVISING PWS. IF SUBSTANTIAL CHANGES IN THE REPLICATION AREA PLAN ARE NECESSARY, THE APPLICANT WILL SEEK APPROVAL FROM THE CONSERVATION COMMISSION PRIOR TO IMPLEMENTING ANY REVISIONS.

THE REPLICATION AREA WILL BE CLEARED AND GRUBBED, AND WILL BE EXCAVATED TO A DEPTH OF 18 INCHES BELOW THE FINAL DESIGN ELEVATIONS. SOILS EXCAVATED FROM THE WETLAND IMPACT AREAS ARE OFTEN STOCKPILED AND REUSED IN A PROPOSED REPLICATION AREA IF FEASIBLE AND LACKING IN INVASIVE SPECIES, OTHERWISE A PREPARED TOPSOIL WILL BE REQUIRED. THE SUPERVISING PWS WILL INSPECT THE SUB-GRADE OF THE REPLICATION AREA TO ENSURE THAT THE PROPER HYDROLOGY HAS BEEN ESTABLISHED. MINOR MODIFICATIONS TO THIS GRADING PLAN MAY BE MADE IN THE FIELD BY THE QUALIFIED PWS IN RESPONSE TO SUBSURFACE HYDROLOGIC CONDITIONS.

THE GOAL FOR SOILS AT THE WETLAND REPLICATION AREA IS TO CREATE SOIL PROFILES THAT APPROXIMATE AS CLOSELY AS POSSIBLE THE SOIL PROFILES AT THE NEAREST UNDISTURBED EXISTING WETLAND. THIS MEANS THAT A SURFACE HORIZON IS CREATED THAT APPROXIMATES THE A OR O-HORIZON AT THE UNDISTURBED WETLAND SITE AND THAT AT A MINIMUM, CONTAINS 6-12 INCHES OF A OR O MATERIAL. BENEATH THE A OR O THERE SHOULD BE A B-HORIZON (SUBSOIL) THAT APPROXIMATES THE DEPTH AND TEXTURE OF THE B-HORIZON AT THE UNDISTURBED WETLAND (OR A SUITABLE COMPOSITION OF THE C-HORIZON). THE ON-SITE PWS WILL EXAMINE THE DEPTH OF THE B-HORIZON TO ENSURE IT IS ADEQUATE. IF INADEQUATE, SUITABLE B-HORIZON SOIL MATERIAL WILL BE ADDED TO OBTAIN A MINIMUM DEPTH OF SIX (6) INCHES PRIOR TO PLACING THE TOPSOIL. THE REPLICATION AREA WILL THEN BE BACKFILLED WITH A PREPARED TOPSOIL TO A MINIMUM DEPTH OF TWELVE (12) INCHES. THE PREPARED TOPSOIL IS TO CONSIST OF A 1:1 MIXTURE (OR EQUAL VOLUMES) OF ORGANIC AND MINERAL MATERIALS, THAT CONTAINS AT LEAST 12-PERCENT ORGANIC CARBON CONTENT BY WEIGHT.

WHERE ABUTTING AN EXISTING WETLAND, THE REPLICATION AREA WILL BE GRADED TO THE SAME ELEVATION AS THE ADJACENT WETLAND TO MAINTAIN A HYDROLOGIC CONNECTION. AFTER SOILS HAVE BEEN PLACED AND TILLED, THE REPLICATION AREA WILL BE PLANTED WITH THE NATIVE SHRUBS AND TREES LISTED IN THE FOLLOWING SECTION AND THE SEED MIX WILL BE APPLIED. ANY FINE GRADING WILL BE CONDUCTED, AND EROSION CONTROLS WILL BE LEFT IN PLACE UNTIL VEGETATION IS ESTABLISHED.

SHRUB AND TREE PLANTING

THE SHRUBS AND TREES USED FOR RE-VEGETATION OF THE REPLICATION SITE WILL BE OBTAINED FROM A REPUTABLE WETLAND PLANT NURSERY. SHRUBS WILL MEASURE APPROXIMATELY AT LEAST 24 INCHES IN HEIGHT (ONE-GALLON CONTAINERS), AND TREE SAPLINGS WILL HAVE A MINIMUM CALIPER SIZE OF ONE-INCH WITH ROOT BALLS SECURED WITH BURLAP. ROOTSTOCK WILL BE GROUPED WITHIN THE REPLICATION SITE TO APPROXIMATE NATURAL COMMUNITIES AND PROVIDE FOOD AND/OR COVER FOR WILDLIFE.

PLANTINGS SHOULD BE PLACED BY HAND UNDER THE SUPERVISION OF A QUALIFIED PWS. THE PLANTINGS SHALL BE RELOCATED TO LOCATIONS WITH SUITABLE HYDROLOGY AND SOILS AND WHERE APPROPRIATE STRUCTURAL CONTEXT WITH OTHER PLANTINGS CAN BE MAINTAINED. TABLE 8_1 REPRESENTS THE COMPOSITION AND ABUNDANCE OF PLANT SPECIES TO BE PLANTED WITHIN THE REPLICATION AREA.

TABLE 8-1
REPLICATION AREA PLANTING SCHEDULE

Common Name	Scientific Name	Status	Minimum Size	Quantity
Trees = 26				
Red Maple	*Acer rubrum*	FAC	1-2" caliper	7
Yellow Birch	*Betula alleghaniensis*	FAC	1-2" caliper	7
Gray Birch	*Betula populifolia*	FAC	1-2" caliper	6
Pussy Willow	*Salix discolor*	FACW	1-2" caliper	6
Shrubs = 40				
Speckled Alder	*Almus rugosa*	FACW+	24" minimum	8
Northern Arrow-wood	*Viburnum recognitum*	FAC	24" minimum	8
Northern Spicebush	*Lindera benzoin*	FACW	24" minimum	8
Highbush Blueberry	*Vaccinium corymbosum*	FACW	24" minimum	8
Common Winterberry	*Ilex verticillata*	FACW	24" minimum	8
Ground Cover				
New England Wetland Seed Mix (or equivalent)		Varies	1 lb./2,500 s.f.	**3 lbs.**

Note: Trees and shrubs shall be spaced throughout replication area to simulate natural growth patterns.

SEEDING

A NEW ENGLAND WETLAND SEED MIX (OR EQUIVALENT) WILL BE USED FOR THE REPLICATION AREA. THE NEW ENGLAND WETLAND SEED MIX, CONTAINS A SELECTION OF NATIVE SEEDS WHICH ARE SUITABLE FOR MOST WETLAND REPLICATION SITES THAT ARE NOT PERMANENTLY INUNDATED. THESE SPECIES ARE BEST SUITED TO MOIST DISTURBED GROUND AS FOUND IN MOST WET MEADOWS, SCRUB SHRUB, OR FORESTED WETLAND REPLICATION AREAS. THE SEEDS WILL NOT GERMINATE UNDER INUNDATED CONDITIONS. IF PLANTED DURING THE FALL MONTHS, THE SEED MIX WILL GERMINATE THE FOLLOWING SPRING.

DURING THE FIRST SEASON OF GROWTH, SEVERAL SPECIES WILL PRODUCE SEEDS, WHILE OTHER SPECIES WILL PRODUCE SEEDS AFTER THE SECOND GROWING SEASON. NOT ALL SPECIES WILL GROW IN ALL WETLAND SITUATIONS. THIS MIX IS COMPOSED OF THE WETLAND SPECIES MOST LIKELY TO GROW IN CREATED/RESTORED WETLANDS AND SHOULD PRODUCE MORE THAN 75% GROUND COVER IN TWO FULL GROWING SEASONS. THE MIX SHOULD BE APPLIED ON CLEAN BARE SOIL VIA HYDRO-SEEDING, MECHANICAL SPREADER, OR SPREAD BY HAND (ON SMALLER SITES). THE AREAS WHERE THE MIX IS APPLIED SHOULD BE LIGHTLY RAKED OR ROLLED TO ENSURE PROPER SOIL-SEED CONTACT. THE BEST RESULTS ARE OBTAINED WHEN SEEDING IS APPLIED DURING THE SPRING, WHEREAS LATE SPRING AND SUMMER SEEDING WILL BENEFIT WITH A LIGHT MULCHING OF CLEAN WEED-FREE STRAW TO CONSERVE MOISTURE.

IF CONDITIONS ARE DRIER THAN USUAL, WATERING MAY BE REQUIRED. LATE FALL AND WINTER DORMANT SEEDING REQUIRE AN INCREASE IN THE SEEDING RATE. FERTILIZATION IS NOT RECOMMENDED AND THE PREPARATION OF A CLEAN, WEED FREE SOIL SURFACE IS NECESSARY FOR OPTIMAL RESULTS.

TABLE 8-2 CONTAINS A LIST OF SPECIES IN THE NEW ENGLAND WETLAND SEED MIX PROPOSED TO BE USED (OR EQUIVALENT) IN THE REPLICATION AREA. APPROXIMATELY THREE POUNDS (DEPENDING ON TIME OF YEAR) OF THE NEW ENGLAND WETLAND SEED MIX WILL BE REQUIRED WITHIN THE REPLICATION AREA (ONE POUND PER 2,500 SQUARE FEET).

TABLE 8-2
NEW ENGLAND WETLAND SEED MIXTURE

Species	Latin Name	Indicator Status
Swamp Milkweed	*Asclepias incarnata*	OBL
Starved/Calico Aster	*Aster lateriflorus*	FACW
Beggar Ticks	*Bidens frondosa*	FACW
Fringed/Nodding Sedge	*Carex crinita*	OBL
Hop Sedge	*Carex lupulina*	OBL
Lurid/Shallow Sedge	*Carex lurida*	OBL
Blunt Broom Sedge	*Carex scoparia*	FACW
Fox Sedge	*Carex vulpinoidea*	OBL
Spotted Joe Pye Weed	*Eutrochium maculatum*	OBL
American Mannagrass	*Glyceria grandis*	OBL
Blue Flag	*Iris versicolor*	OBL
Fowl Bluegrass	*Poa palustris*	FACW
Soft Rush	*Juncus effusus*	FACW
Square Stemmed Monkey Flower	*Mimulus ringens*	OBL
Green Bulrush	*Scirpus atrovirens*	OBL
New York Ironweed	*Veronia noveboracensis*	FACW

PLANNED HYDROLOGY

THE PROPOSED LOCATION OF THE REPLICATION AREA IS ADJACENT TO WETLAND A. THE BVW BORDERS ON AN INTERMITTENT STREAM AND IS LOCATED ALONG A SLOPE. HYDROLOGY WITHIN THE BVW IS PROVIDED BY GROUNDWATER PRESENT IN THE SLOPE GROUNDWATER DRAINAGE. HYDROLOGY WITHIN THE REPLICATION AREA WILL BE DRIVEN BY THE SHALLOW DEPTH OF GROUNDWATER, AS WELL AS PRECIPITATION.

IRRIGATION

IF NECESSARY, THE REPLICATION AREA WILL BE IRRIGATED WITH AN APPROVED WATER SOURCE IF NATURAL HYDROLOGICAL CYCLES DO NOT PROVIDE SUFFICIENT WATER TO INITIALLY SUSTAIN THE NEWLY PLANTED VEGETATION. IRRIGATION PRACTICES WILL ONLY BE USED IN DROUGHT SITUATIONS OR IF OTHER UNFORESEEN SITUATIONS WARRANT THE NEED FOR IRRIGATION PRACTICES. AFTER PLANTING AND SEEDING, THE REPLICATION AREA SHALL BE MULCHED WITH STRAW. THE MULCH SHALL PROVIDE SUFFICIENT COVER FOR MOISTURE RETENTION, SEED PROTECTION, AND SOIL STABILIZATION. THE MULCH WILL BE FREE OF WEEDS, REEDS, TWIGS, CHAFF, DEBRIS, AND EXCESSIVE AMOUNTS OF SEED AND GRAIN.

8.1 WETLAND RESTORATION

THERE ARE SEVERAL AREAS OF THE SITE WHERE THE EXISTING WETLANDS ARE BEING ACTIVELY AND LEGALLY MAINTAINED AS AGRICULTURAL AND MOWED FIELDS. THESE AREA ARE IDENTIFIED ON THE EXISTING WETLAND DISTURBANCE EXHIBIT (SHEET EX-DIST) INCLUDED IN SECTION III - FIGURES OF THE NOTICE OF INTENT APPLICATION. APPROXIMATELY 12,485 SQUARE FEET OF THESE WETLAND AREAS WILL BE RESTORED. RESTORATION WILL INCLUDE SEEDING PER THE SPECIFICATIONS IN THE PREVIOUS SECTION.

8.2 BUFFER ZONE RESTORATION

TEMPORARILY IMPACTED AREAS OF THE 25-FOOT BUFFER ZONE AND THE 100-FOOT BUFFER ZONE WILL BE RESTORED FOLLOWING COMPLETION OF CONSTRUCTION. THESE AREAS ARE IDENTIFIED ON THE WETLAND & BUFFER ZONE IMPACT EXHIBIT (SHEET BZ-EX) INCLUDED IN SECTION III - FIGURES FOR THE NOTICE OF INTENT APPLICATION. WORK GENERALLY INCLUDES GRADING AND CLEARING FOR CONSTRUCTION OF THE ROADWAYS, RETAINING WALLS, PARKING AREAS, AND OTHER INFRASTRUCTURE. APPROXIMATELY 41,575 SQUARE FEET OF THE 25-FOOT BUFFER ZONE WILL BE RESTORED UPON COMPLETION OF WORK. APPROXIMATELY 113,150 SQUARE FEET OF THE 100-FOOT BUFFER ZONE WILL BE RESTORED UPON COMPLETION OF WORK.

THE NEW ENGLAND SHOWY WILDFLOWER MIX PROVIDES A PERMANENT COVER OF GRASSES, WILDFLOWERS, AND LEGUMES FOR BOTH GOOD EROSION CONTROL AND WILDLIFE HABITAT VALUE. THE MIX IS DESIGNED TO BE A NO MAINTENANCE SEEDING, AND IS APPROPRIATE FOR CUT AND FILL SLOPES, DETENTION BASIN SIDE SLOPES, AND DISTURBED AREAS ADJACENT TO COMMERCIAL AND RESIDENTIAL PROJECTS.

THE MIX SHOULD BE APPLIED ON CLEAN BARE SOIL VIA HYDRO-SEEDING OR MECHANICAL SPREADER. THE AREAS WHERE THE MIX IS APPLIED SHOULD BE LIGHTLY RAKED OR ROLLED TO ENSURE PROPER SOIL-SEED CONTACT. THE BEST RESULTS ARE OBTAINED WHEN SEEDING IS APPLIED DURING THE SPRING, WHEREAS LATE SPRING AND SUMMER SEEDING WILL BENEFIT WITH A LIGHT MULCHING OF CLEAN WEED-FREE STRAW TO CONSERVE MOISTURE.

IF CONDITIONS ARE DRIER THAN USUAL, WATERING MAY BE REQUIRED. LATE FALL AND WINTER DORMANT SEEDING REQUIRE AN INCREASE IN THE SEEDING RATE. FERTILIZATION IS NOT RECOMMENDED AND THE PREPARATION OF A CLEAN, WEED FREE SOIL SURFACE IS NECESSARY FOR OPTIMAL RESULTS.

TABLE 8-3 CONTAINS A LIST OF SPECIES IN THE NEW ENGLAND SHOWY WILDFLOWER SEED MIX SEED MIX PROPOSED TO BE USED (OR EQUIVALENT) IN THE RESTORATION AREA.

TABLE 8-3
SHOWY WILDFLOWER SEED MIX

Species	Latin Name	Indicator Status
Little Bluestem	*Schizachyrium scoparium*	FACU
Partridge Pea	*Chamaecrista fasciculata*	FACU
Indian Grass	*Sorghastrum nutans*	UPL
Creeping Red Fescue	*Festuca rubra*	FACU
Canada Wild Rye	Elymus canadensis	FACU+
Riverbank Wild Rye	*Elymus riparius*	FACW
Ox Eye Sunflower	*Heliopsis helianthoides*	UPL
Lance Leaved Coreopsis	*Coreopsis lanceolata*	FACU
Black Eyed Susan	*Rudbeckia hirta*	FACU-
Marsh Blazing Star	*Liatris spicata*	FAC+
Common Milkweed	*Asclepias syriaca*	FACU-
New York Ironweed	*Vernonia noveboracensis*	FACW+
New England Aster	*Aster novae-angliae*	FACW-
Purple Joe Pye Weed	*Eupatorium purpureum*	FAC
Butterfly Milkweed	*Asclepias tuberosa*	NI
Early Goldenrod	*Solidago juncea*	NI
Boneset	*Eupatorium perfoliatum*	FACW

8.4 STREAM RESTORATION

THE APPLICANT IS PROPOSING TO DAYLIGHT APPROXIMATELY 180 LINEAR FEET OF THE CULVERTED STREAM WEST OF THE PROPOSED NORTHERN STREAM CROSSING, ENCOMPASSING AN AREA OF APPROXIMATELY 910 SQUARE FEET WITHIN THE PROPOSED WETLAND REPLICATION AREA. THE SITE PLANS INCLUDE THE DETAILS FOR THE PROPOSED DAYLIGHTING OF THE STREAM.

8.5 MONITORING

MONITORING OF THE RESTORATION/REPLICATION AREAS WILL BE PERFORMED BY A QUALIFIED PWS TO ENSURE SUCCESSFUL PLANT ESTABLISHMENT FOR A MINIMUM TWO YEARS IN ACCORDANCE WITH ALL APPLICABLE PERMIT CONDITIONS. THE FIRST INSPECTION WILL TAKE PLACE AFTER THE FIRST GROWING SEASON OR 180 GROWING SEASON DAYS AFTER PLANTING. TWO INSPECTIONS WILL OCCUR EACH YEAR, ONE IN THE LATE SPRING AND ANOTHER IN THE EARLY FALL. A YEARLY MONITORING REPORT WILL BE PREPARED AND SUBMITTED TO THE APPROPRIATE REGULATORY AGENCIES AND WILL DESCRIBE THE WORK COMPLETED AND VEGETATION WITHIN THE RESTORED SITE AS WELL AS ANY ACTION TO BE TAKEN TO REPAIR, RESTORE, OR REPLANT THE AREA IF NEEDED.

AFTER THE INSPECTIONS, THE CONTRACTOR WILL REPLACE ALL PLANTS THAT HAVE NOT BECOME ESTABLISHED AND RE-SEED AREAS THAT HAVE NOT REACHED THE DESIRED 75% PERCENT COVER OF NATIVE VEGETATION. ONCE ALL AREAS HAVE BEEN STABILIZED WITH VEGETATION AND MONITORING IS COMPLETE, THE EROSION CONTROL AND SILTATION BARRIERS SHALL BE REMOVED. IF CONDITIONS DEVELOP THAT IMPEDE THE SUCCESS OF THE RESTORATION/REPLICATION EFFORTS, CORRECTIVE ACTION SHALL BE TAKEN. IF THE REQUIRED CORRECTIVE MEASURES ARE MINOR IN NATURE, INCLUDING ADDITIONAL EROSION CONTROLS, REMOVAL OF UNDESIRABLE INVASIVE PLANTS, OR MINOR RE GRADING/RE-SEEDING, THEN THE WORK SHALL BE PERFORMED AS REQUIRED.

NOT FOR CONSTRUCTION

RJOC

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2.	REVISED PER ZBA PEER REVIEW COMMENTS	02/12/2024
1.	REVISED PER ZBA PEER REVIEW COMMENTS	02/02/2024

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DRAWN BY: MCR
REVIEWED BY: BJM
SCALE: AS NOTED

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PROJECT NAME:
GROVE STREET RESIDENCES
FRANKLIN, MA

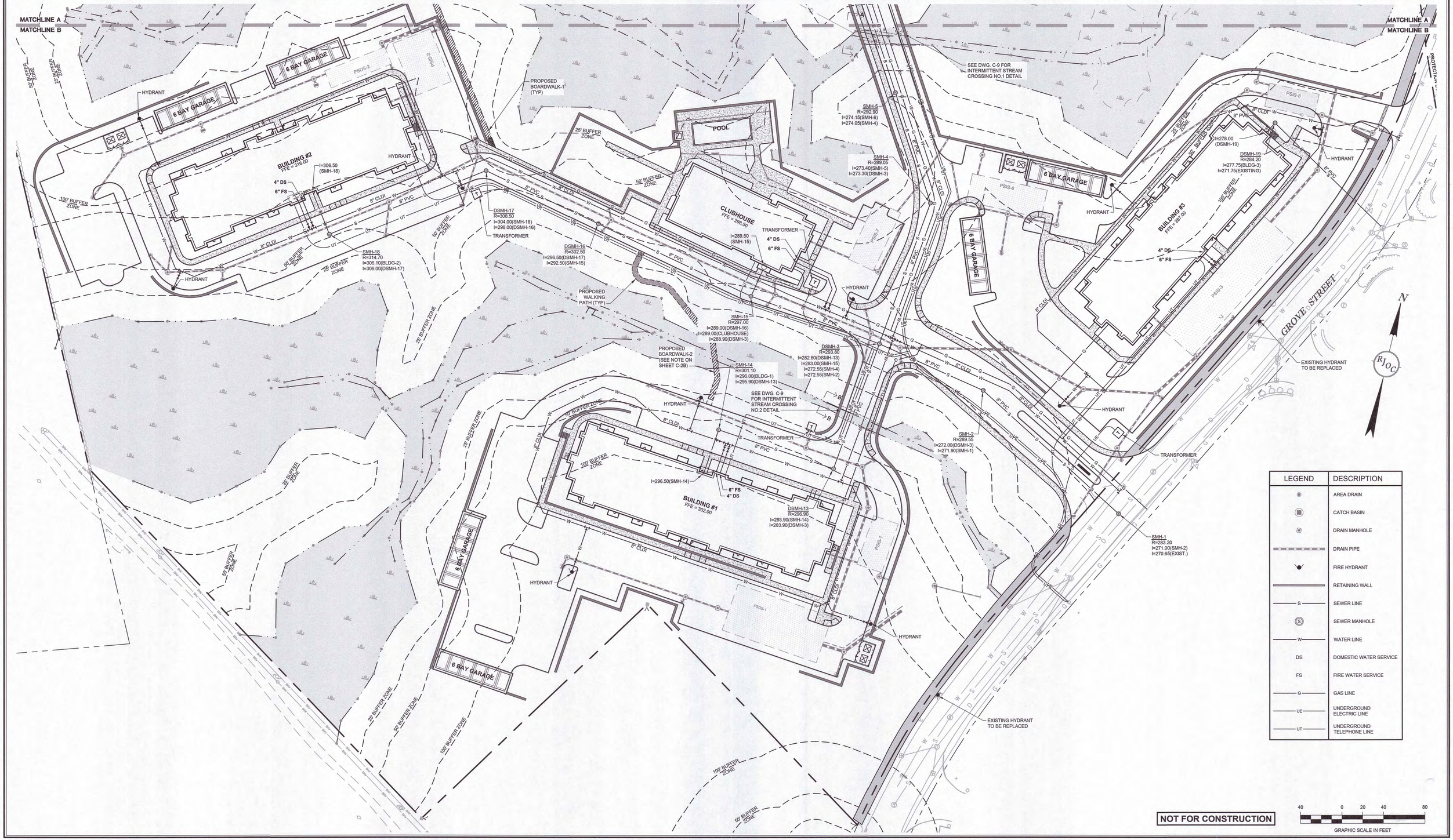
DRAWING NAME:
WETLAND REPLICATION PLAN

DRAWING NUMBER:
C-2C

DATE: 12/18/2023 PROJECT NO.: 22016

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Drawing name: G:\MA\Franklin\Fairfield Residential\121 Grove Street\Main\22016_C-2C Wetland Replication Plan.dwg
Feb 12, 2024 - 17:58pm



LEGEND	DESCRIPTION
	AREA DRAIN
	CATCH BASIN
	DRAIN MANHOLE
	DRAIN PIPE
	FIRE HYDRANT
	RETAINING WALL
S	SEWER LINE
S	SEWER MANHOLE
W	WATER LINE
DS	DOMESTIC WATER SERVICE
FS	FIRE WATER SERVICE
G	GAS LINE
UE	UNDERGROUND ELECTRIC LINE
UT	UNDERGROUND TELEPHONE LINE

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40 0 20 40 80
GRAPHIC SCALE IN FEET

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3.	REVISED PER ZBA PEER REVIEW COMMENTS	02/12/2024
2.	REVISED PER ZBA PEER REVIEW COMMENTS	02/02/2024
1.	REVISED PER ONSITE SOIL TESTING RESULTS/NOI SUBMISSION	12/18/2023

DESIGNED BY:	MAC
DRAWN BY:	MCR
REVIEWED BY:	BJM
SCALE:	1" = 40'

PREPARED FOR:
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SEAL:
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BRIAN R. DUNDON
CIVIL
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PROJECT NAME:
GROVE STREET RESIDENCES
FRANKLIN, MA

DRAWING NAME:
UTILITY PLAN

DRAWING NUMBER:
C-3A

DATE: 10/30/2023 PROJECT NO.: 22016

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Drawing name: G:\MA\Franklin\Fairfield Residential\121 Grove Street\Main\220216_C-3 Utility Plan.dwg
Feb 12, 2024 - 18:01pm

LEGEND	DESCRIPTION
	AREA DRAIN
	CATCH BASIN
	DRAIN MANHOLE
	DRAIN PIPE
	FIRE HYDRANT
	RETAINING WALL
S	SEWER LINE
S	SEWER MANHOLE
W	WATER LINE
DS	DOMESTIC WATER SERVICE
FS	FIRE WATER SERVICE
G	GAS LINE
UE	UNDERGROUND ELECTRIC LINE
UT	UNDERGROUND TELEPHONE LINE

UTILITY NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIG SAFE" (1-800-344-7233) AT LEAST 72 BUSINESS HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLAN
2. EXISTING SITE FEATURES AND TOPOGRAPHY SHOWN HEREON IS TAKEN FROM A SURVEY PLAN TITLED "EXISTING CONDITIONS SITE PLAN, 121 GROVE STREET, FRANKLIN, MA" BY GUERRIERE & HANLON, INC. DATED 05/20/2022, REVISED THROUGH 11/09/2023.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL HORIZONTAL CONTROL POINTS AND ELEVATION BENCH MARKS NECESSARY FOR THE WORK.

GAS NOTES

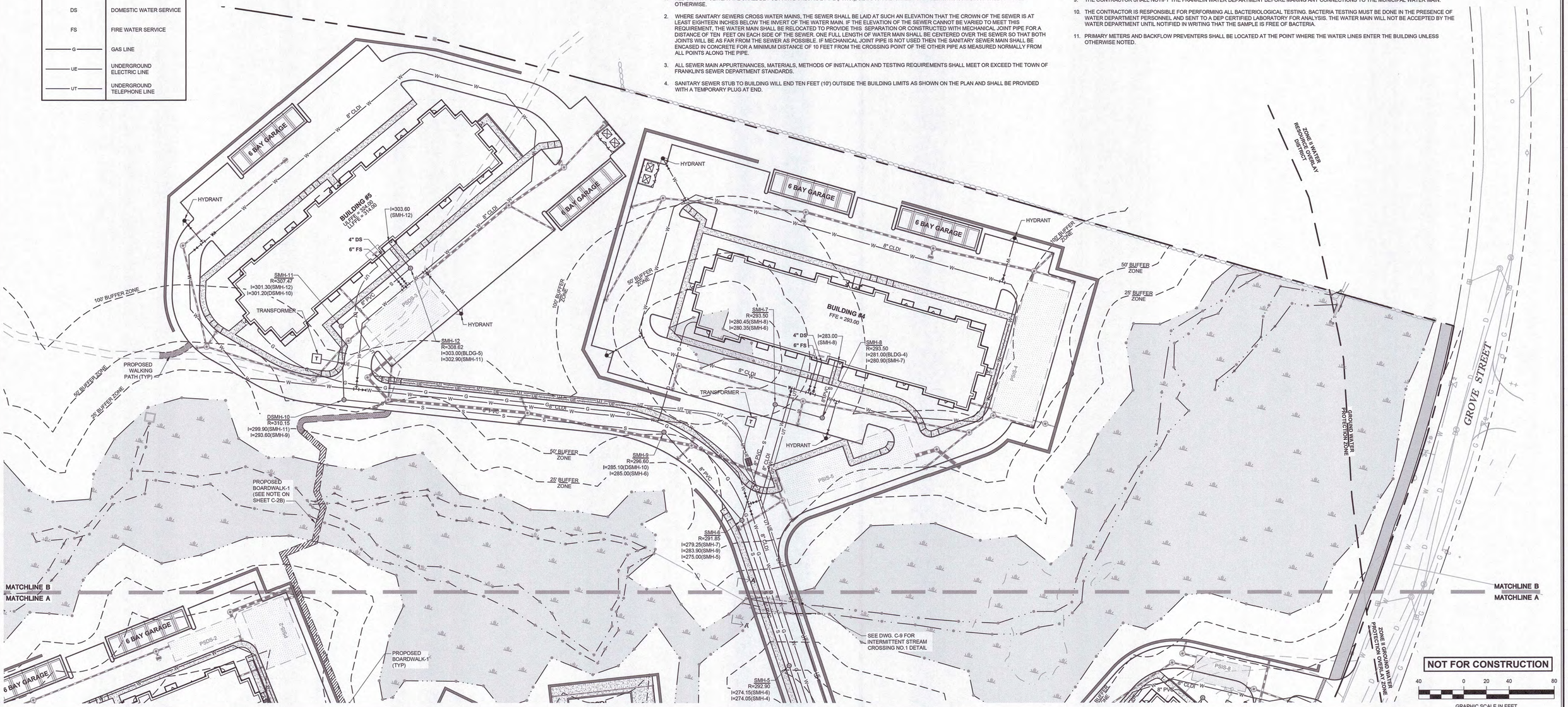
1. THE PROPOSED GAS SERVICE LOCATION IS APPROXIMATE ONLY. THE CONTRACTOR SHALL GIVE THE GAS COMPANY ADVANCE NOTICE OF WHEN THE GAS LINE CAN BE INSTALLED. THE CONTRACTOR IS RESPONSIBLE FOR EXCAVATION, BACKFILL AND COMPACTION OF THE GAS LINE IN ACCORDANCE WITH THE SITE WORK AND/OR GAS COMPANY SPECIFICATIONS (MORE STRINGENT SPECIFICATIONS WILL APPLY). THE CONTRACTOR IS ALSO RESPONSIBLE FOR FURNISHING AND INSTALLING PIPE BOLLARDS AS REQUIRED BY THE GAS COMPANY AND/OR LOCAL INSPECTOR IN ORDER TO PROTECT ABOVE GROUND GAS EQUIPMENT.

SEWER NOTES

1. ALL GRAVITY SEWER PIPE SHALL BE POLYVINYL CHLORIDE PIPE (P.V.C.), S.D.R. 35 AND SHALL CONFORM WITH ASTM-D3034 UNLESS NOTED OTHERWISE.
2. WHERE SANITARY SEWERS CROSS WATER MAINS, THE SEWER SHALL BE LAID AT SUCH AN ELEVATION THAT THE CROWN OF THE SEWER IS AT LEAST EIGHTEEN INCHES BELOW THE INVERT OF THE WATER MAIN. IF THE ELEVATION OF THE SEWER CANNOT BE VARIED TO MEET THIS REQUIREMENT, THE WATER MAIN SHALL BE RELOCATED TO PROVIDE THIS SEPARATION OR CONSTRUCTED WITH MECHANICAL JOINT PIPE FOR A DISTANCE OF TEN FEET ON EACH SIDE OF THE SEWER. ONE FULL LENGTH OF WATER MAIN SHALL BE CENTERED OVER THE SEWER SO THAT BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE. IF MECHANICAL JOINT PIPE IS NOT USED THEN THE SANITARY SEWER MAIN SHALL BE ENCASED IN CONCRETE FOR A MINIMUM DISTANCE OF 10 FEET FROM THE CROSSING POINT OF THE OTHER PIPE AS MEASURED NORMALLY FROM ALL POINTS ALONG THE PIPE.
3. ALL SEWER MAIN APPURTENANCES, MATERIALS, METHODS OF INSTALLATION AND TESTING REQUIREMENTS SHALL MEET OR EXCEED THE TOWN OF FRANKLIN'S SEWER DEPARTMENT STANDARDS.
4. SANITARY SEWER STUB TO BUILDING WILL END TEN FEET (10') OUTSIDE THE BUILDING LIMITS AS SHOWN ON THE PLAN AND SHALL BE PROVIDED WITH A TEMPORARY PLUG AT END.

WATER NOTES

1. ALL WATER MAINS SHALL BE INSTALLED WITH A MINIMUM OF 5 FEET OF COVER AND A MAXIMUM OF 6 FEET OF COVER EXCEPT AS NOTED OR DETAILED OTHERWISE. GREATER DEPTHS ARE PERMITTED WHERE REQUIRED TO AVOID CONFLICTS WITH OTHER UTILITIES.
2. GENERALLY, WATER MAIN FITTINGS IDENTIFIED ON THIS DRAWING ARE SHOWN FOR INSTALLATION LOCATION PURPOSES. THE CONTRACTOR SHALL NOTE THAT NOT ALL FITTINGS REQUIRED UNDER THE CONTRACT ARE NOTED, SHOWN, OR INDICATED.
3. A MINIMUM OF 10 FEET CLEAR HORIZONTALLY SHALL BE MAINTAINED BETWEEN SANITARY SEWER MAINS AND WATER MAINS. WHENEVER CONDITIONS PREVENT A LATERAL SEPARATION OF 10 FEET TO A WATER MAIN, THE WATER MAIN SHALL BE LAID IN A SEPARATE TRENCH AND THE ELEVATION OF THE CROWN OF THE SEWER SHALL BE AT LEAST 18 INCHES BELOW THE INVERT OF THE WATER MAIN.
4. DOMESTIC WATER SERVICE 3" OR SMALLER SHALL BE TYPE K COPPER TUBING AND SHALL BE INSTALLED WITH APPROPRIATELY SIZED CORPORATION STOP WITH APPROVED SADDLE, CURB STOP, AND BOX. DOMESTIC WATER MAIN SHALL BE INSTALLED OVER SEWER MAIN WITH A MINIMUM VERTICAL SEPARATION OF EIGHTEEN INCHES (18") AT THEIR CROSSING.
5. ALL WATER MAINS 4" AND LARGER SHALL BE CEMENT LINED DUCTILE IRON CLASS 52 AND SHALL BE INSTALLED WITH APPROPRIATELY SIZED FITTINGS AND GATE VALVES.
6. ALL WATER MAIN APPURTENANCES, MATERIALS, METHODS OF INSTALLATION AND TESTING REQUIREMENTS SHALL MEET OR EXCEED THE TOWN OF FRANKLIN WATER STANDARDS.
7. PRESSURE AND LEAKAGE TEST, DISINFECTION AND FLUSHING SHALL BE IN ACCORDANCE WITH THE TOWN OF FRANKLIN WATER DEPARTMENT STANDARDS AND REQUIREMENTS. IN THE ABSENCE OF STANDARDS, THEY SHALL CONFORM TO THE REQUIREMENTS OF THE SITE SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS IN CONNECTION WITH UTILITY TESTS, FLUSHING AND INSPECTIONS AS REQUIRED BY THE TOWN OF FRANKLIN'S WATER DEPARTMENT. COPIES OF TEST RESULTS WILL BE SUBMITTED TO THE FRANKLIN WATER DEPARTMENT FOR THEIR RECORDS.
8. ALL WATER LEADS TO THE BUILDING WILL TERMINATE TEN FEET (10') OUTSIDE THE BUILDING LIMITS AS SHOWN ON THE PLAN AND SHALL BE PROVIDED WITH A TEMPORARY PLUG AT END.
9. THE CONTRACTOR SHALL NOTIFY THE FRANKLIN WATER DEPARTMENT BEFORE MAKING ANY CONNECTIONS TO THE MUNICIPAL WATER MAIN.
10. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL BACTERIOLOGICAL TESTING. BACTERIA TESTING MUST BE DONE IN THE PRESENCE OF WATER DEPARTMENT PERSONNEL AND SENT TO A DEP CERTIFIED LABORATORY FOR ANALYSIS. THE WATER MAIN WILL NOT BE ACCEPTED BY THE WATER DEPARTMENT UNTIL NOTIFIED IN WRITING THAT THE SAMPLE IS FREE OF BACTERIA.
11. PRIMARY METERS AND BACKFLOW PREVENTERS SHALL BE LOCATED AT THE POINT WHERE THE WATER LINES ENTER THE BUILDING UNLESS OTHERWISE NOTED.



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DESIGNED BY:	MAC
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SCALE:	1" = 40'

PREPARED FOR:
FAIRFIELD GROVE STREET LLC
30 BRAINTREE HILL OFFICE PARK
SUITE 105
BRAINTREE, MA 02184

SEAL:
COMMONWEALTH OF MASSACHUSETTS
BRIAN P. DUNDON
CIVIL
No. 41505
REGISTERED PROFESSIONAL ENGINEER
2-12-2024

PREPARED BY:
RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
PHONE: 781.279.0180 RJOCONNELL.COM

PROJECT NAME:
GROVE STREET RESIDENCES
FRANKLIN, MA

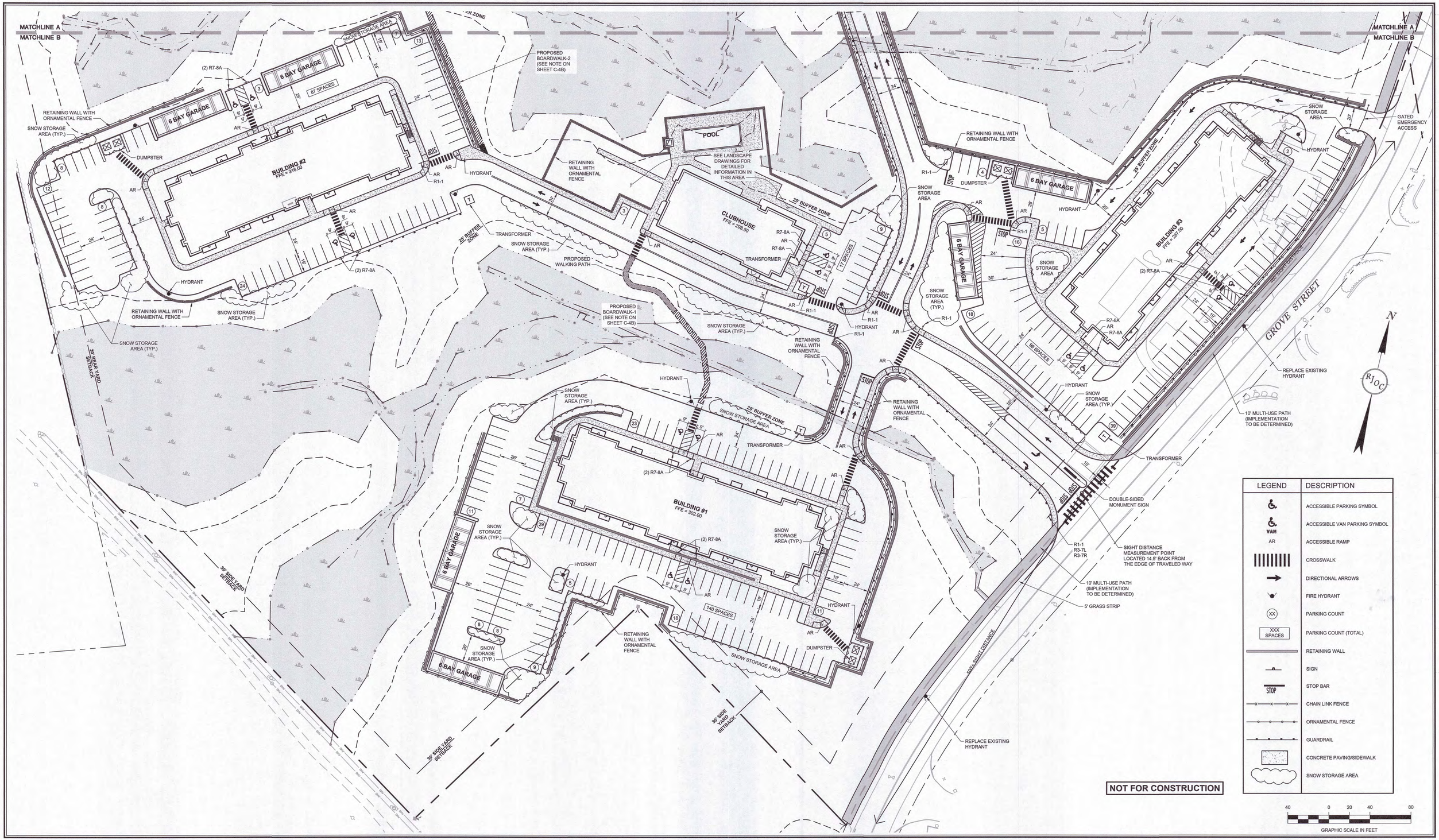
DRAWING NAME:
UTILITY PLAN

DRAWING NUMBER:
C-3B

DATE: 10/30/2023 PROJECT NO.: 22016

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Feb 12, 2024 - 16:01pm



LEGEND	DESCRIPTION
	ACCESSIBLE PARKING SYMBOL
VAN	ACCESSIBLE VAN PARKING SYMBOL
AR	ACCESSIBLE RAMP
	CROSSWALK
	DIRECTIONAL ARROWS
	FIRE HYDRANT
XX	PARKING COUNT
XXX SPACES	PARKING COUNT (TOTAL)
	RETAINING WALL
	SIGN
STOP	STOP BAR
	CHAIN LINK FENCE
	ORNAMENTAL FENCE
	GUARDRAIL
	CONCRETE PAVING/SIDEWALK
	SNOW STORAGE AREA

NOT FOR CONSTRUCTION

40 0 20 40 80
GRAPHIC SCALE IN FEET

Drawing name: G:\MA\Franklin\Fairfield Residential\121 Grove Street\Main\22016_C-4 Parking and Traffic Control Plan.dwg
Feb 12, 2024 - 18:05pm

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NO.	REVISION	DATE
3.	REVISED PER ZBA PEER REVIEW COMMENTS	02/12/2024
2.	REVISED PER ZBA PEER REVIEW COMMENTS	02/02/2024
1.	REVISED PER ONSITE SOIL TESTING RESULTS/NOI SUBMISSION	12/18/2023

DESIGNED BY:	MAC
DRAWN BY:	MCR
REVIEWED BY:	BJM
SCALE:	1" = 40'

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PROJECT NAME:
GROVE STREET RESIDENCES
FRANKLIN, MA

DRAWING NAME:
PARKING & TRAFFIC CONTROL PLAN

DRAWING NUMBER:
C-4A

DATE: 10/30/2023 PROJECT NO.: 22016

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TRAFFIC CONTROL SCHEDULE

SIGN NUMBER	SIGN	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	DESCRIPTION	MOUNT TYPE	MOUNT HEIGHT	REMARKS
R1-1	STOP	30"	30"	WHITE ON RED	3" POST	7'-0"	REFLECTORIZED SIGN
R7-8	RESERVED	12"	18"	BLUE & GREEN ON WHITE	3" POST	7'-0"	REFLECTORIZED SIGN
R7-8A	VAN ACCESSIBLE	12"	6"	WHITE ON BLUE	3" POST	6'-6"	REFLECTORIZED SIGN
W11-2		30"	30"	YELLOW ON BLACK	3" POST	8'-6"	REFLECTORIZED SIGN
W16-7P		24"	12"	YELLOW ON BLACK	3" POST	6'-0"	REFLECTORIZED SIGN
R3-7L	LEFT LANE MUST TURN LEFT	30"	30"	BLACK ON WHITE	CHANNEL	7'-0"	REFLECTORIZED SIGN
R3-7R	RIGHT LANE MUST TURN RIGHT	30"	30"	BLACK ON WHITE	CHANNEL	7'-0"	REFLECTORIZED SIGN

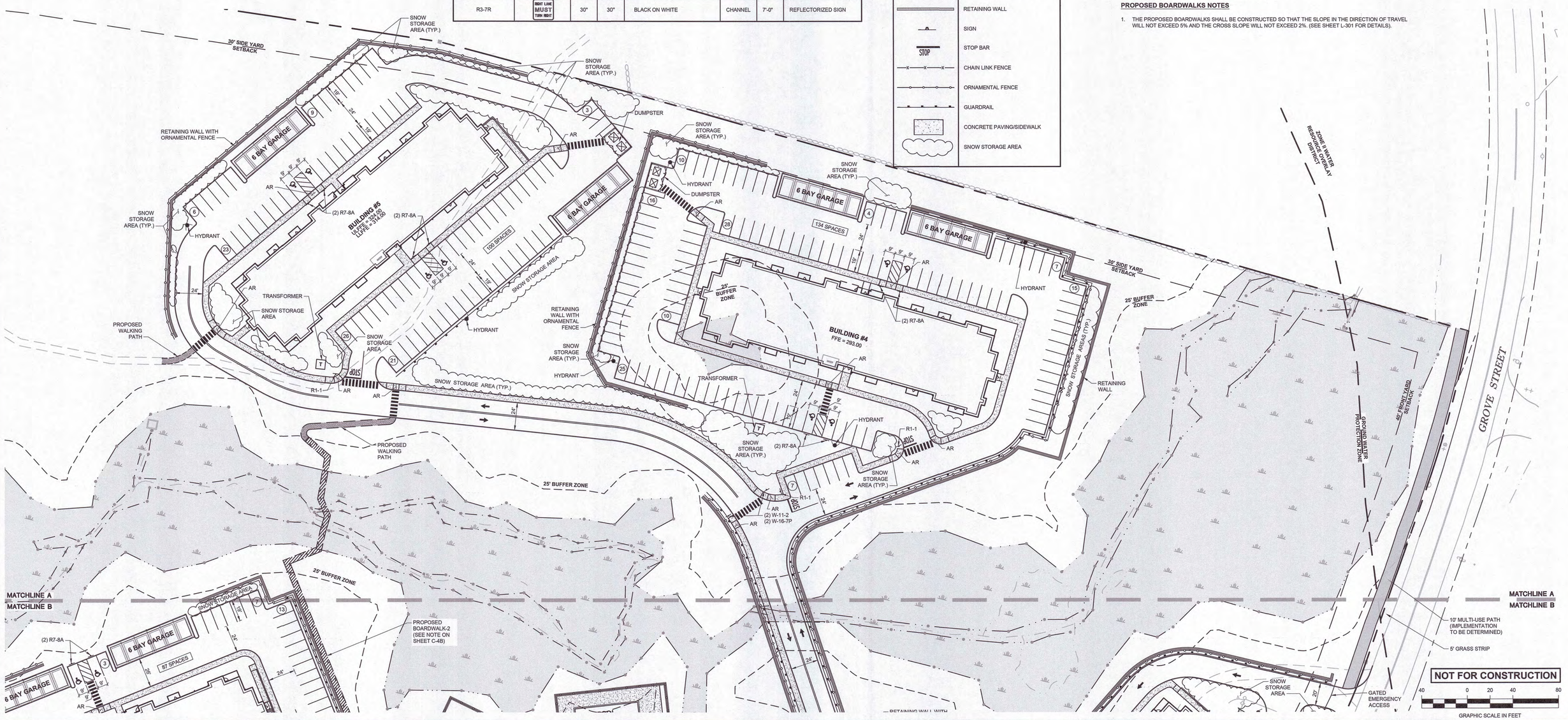
LEGEND	DESCRIPTION
	ACCESSIBLE PARKING SYMBOL
VAN	ACCESSIBLE VAN PARKING SYMBOL
AR	ACCESSIBLE RAMP
	CROSSWALK
	DIRECTIONAL ARROWS
	FIRE HYDRANT
XX	PARKING COUNT
XXX SPACES	PARKING COUNT (TOTAL)
	RETAINING WALL
	SIGN
STOP	STOP BAR
	CHAIN LINK FENCE
	ORNAMENTAL FENCE
	GUARDRAIL
	CONCRETE PAVING/SIDEWALK
	SNOW STORAGE AREA

PARKING AND TRAFFIC CONTROL NOTES

1. HANDICAP ACCESSIBLE PARKING SPACES SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (A.D.A.) OF 1990, REVISED SEPT. 15, 2010 AND THE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD OF REGULATIONS, 521 CMR UNLESS OTHERWISE NOTED.
2. ALL PARKING LOT CURBING SHALL BE PRECAST CONCRETE, UNLESS NOTED OR DETAILED OTHERWISE.
3. ALL LIMITS OF PAVEMENT SHALL BE CURBED UNLESS NOTED OR DETAILED OTHERWISE.
4. ALL ADA PARKING, CROSS HATCH AREAS AND STANDARD PARKING SPACES SHALL BE 9-FEET IN WIDTH BY 19-FEET IN LENGTH.
5. ALL PAVEMENT STRIPING SHALL BE PAINTED WITH 2 COATS OF WHITE PAINT.
6. CONTRACTOR SHALL REFER TO ARCHITECTURAL/BUILDING PLANS FOR EXACT LOCATIONS, DETAILS AND DIMENSIONS OF CONCRETE SIDEWALKS, EXIT PORCHES, RAMPS, PRECISE BUILDING DIMENSIONS, CONCRETE PADS AND EXACT UTILITY ENTRANCE LOCATIONS.
7. PARKING AND TRAFFIC CONTROL PLANS ARE SCHEMATIC AND FOR LOCATION OF MARKINGS ONLY. SPECIFIC DETAILS FOR INSTALLATION OF PAVEMENT MARKINGS ARE PROVIDED AS PART OF THIS PLAN SET.
8. FOR PARKING LOT PAVEMENT SECTION SEE DETAILS.

PROPOSED BOARDWALKS NOTES

1. THE PROPOSED BOARDWALKS SHALL BE CONSTRUCTED SO THAT THE SLOPE IN THE DIRECTION OF TRAVEL WILL NOT EXCEED 5% AND THE CROSS SLOPE WILL NOT EXCEED 2%. (SEE SHEET L-301 FOR DETAILS).



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DRAWN BY:	MCR
REVIEWED BY:	BJM
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SEAL: COMMONWEALTH OF MASSACHUSETTS — BRIAN P. DUNDON — CIVIL — No. 41505 — REGISTERED PROFESSIONAL ENGINEER — 2-12-2024

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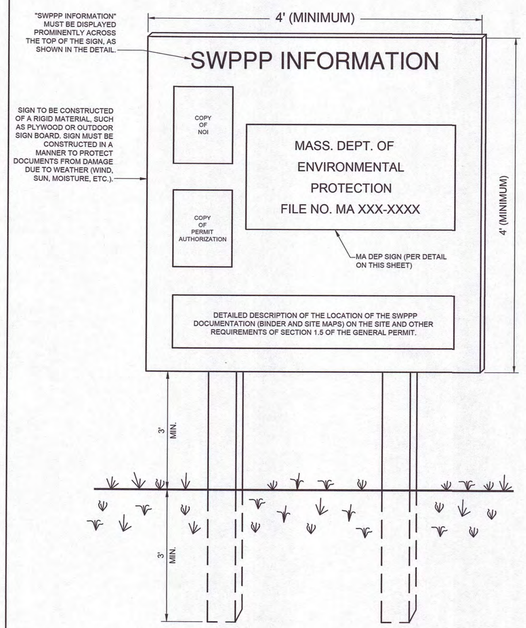
DRAWING NAME:
PARKING & TRAFFIC CONTROL PLAN

DRAWING NUMBER:
C-4B

DATE: 10/30/2023 PROJECT NO.: 22016

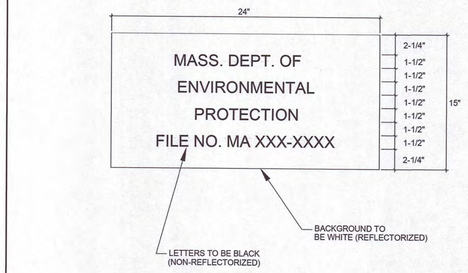
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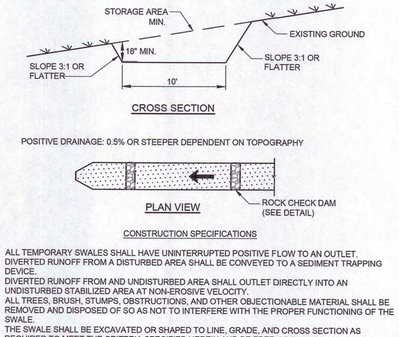


NOTES:
1) THE SWPPP INFORMATION SIGN MUST BE LOCATED NEAR THE CONSTRUCTION EXIT OF THE SITE, SUCH THAT IT IS ACCESSIBLE AND VIEWABLE BY THE GENERAL PUBLIC, BUT NOT OBSTRUCTING VIEWS AS TO CAUSE A SAFETY HAZARD.
2) ALL POSTED DOCUMENTS MUST BE MAINTAINED IN A CLEARLY READABLE CONDITION AT ALL TIMES THROUGHOUT CONSTRUCTION AND UNTIL THE NOTICE-OF-TERMINATION (NOT) IS FILED FOR THE PERMIT.
3) CONTRACTOR SHALL POST OTHER STORM WATER AND/OR EROSION AND SEDIMENT CONTROL RELATED PERMITS ON THE SIGN AS REQUIRED BY THE GOVERNING AGENCY.
4) SIGN SHALL BE LOCATED OUTSIDE OF PUBLIC RIGHT-OF-WAY AND EASEMENTS UNLESS APPROVED BY THE GOVERNING AGENCY.
5) CONTRACTOR IS RESPONSIBLE FOR ENSURING STABILITY OF THE SWPPP INFORMATION SIGN.

SWPPP INFORMATION SIGN
SCALE: N.T.S.



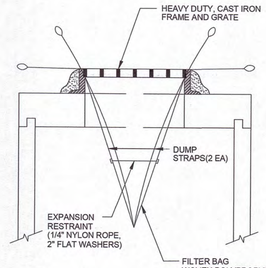
TYPICAL MASSACHUSETTS DEP SIGN DETAIL
SCALE: N.T.S.



CONSTRUCTION SPECIFICATIONS

1. ALL TEMPORARY SWALES SHALL HAVE UNINTERRUPTED POSITIVE FLOW TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AND UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSIVE VELOCITY.
4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE.
5. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
6. FILLS SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
7. ALL EARTH REMOVED AND NOT NEEDED FOR CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE SWALE.
8. STABILIZATION SHALL BE FOR SLOPES GREATER THAN 2%.
9. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT AND AS REQUIRED BY THE PERMIT.

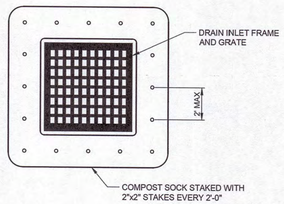
TEMPORARY SWALE DETAIL
SCALE: N.T.S.



NOTES:
1. INSTALL SILT BAG IN ACCORDANCE WITH MANUFACTURES INSTRUCTIONS.
2. WHEN EXPANSION RESTRAINT CORD IS NO LONGER VISIBLE, THE SILT BAG IS FULL AND SHOULD BE EMPTIED
3. REMOVE SILT BAG PER MANUFACTURES INSTRUCTIONS.

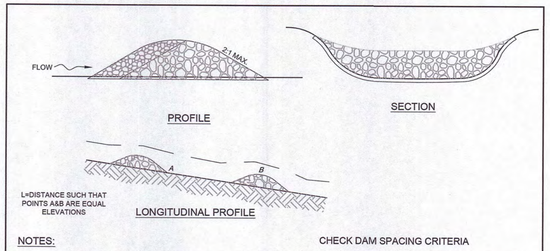
TYPICAL FILTER BAG DETAIL
SCALE: N.T.S.

NOTE:
THIS DETAIL IS TO BE USED WHEN PARKING AREAS ARE AT SUBGRADE ELEVATION.



NOTES:
1. COMPOST SOCK SHALL BE PLACED IN A ROW WITH THE ENDS TIGHTLY ABUTTING THE ADJACENT COMPOST SOCK.
2. COMPOST SOCK SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR RE-BARS DRIVEN THROUGH THE COMPOST SOCK.
3. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

TYPICAL COMPOST SOCK INLET PROTECTION DETAIL
SCALE: N.T.S.



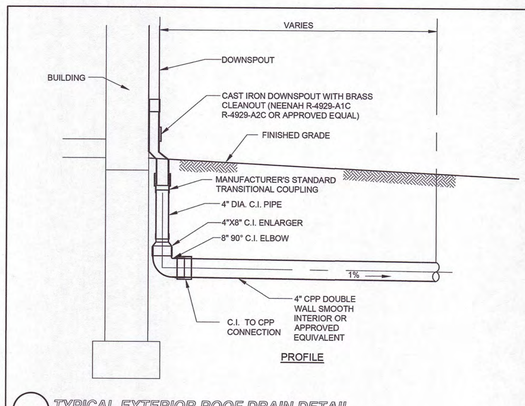
NOTES:
1. THE MAXIMUM HEIGHT OF THE CHECK DAM AT THE CENTER SHALL NOT EXCEED ONE HALF THE DEPTH OF THE CHANNEL.
2. MAXIMUM SPACING SHALL BE SO THE TOE OF THE UPSTREAM DAM IS THE SAME ELEVATION AS THE TOP OF THE DOWNSTREAM DAM.
3. REMOVE SEDIMENT WHEN ACCUMULATION IS 25% THE HEIGHT OF THE WEIR.
4. REMOVE CHECK DAMS WHEN SITE STABILIZATION IS ACHIEVED.

CHECK DAM SPACING CRITERIA

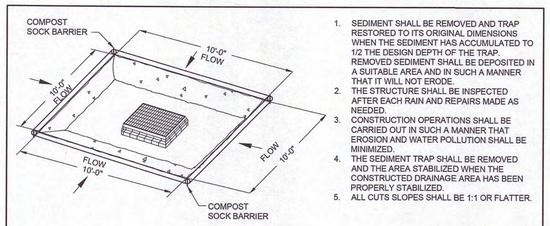
SPILLWAY HEIGHT	CHANNEL SLOPE	CHECK DAM SPACING
1.5	1%	150 FT.
2.0	1%	200 FT.
1.5	2%	75 FT.
2.0	2%	100 FT.
1.5	3%	50 FT.
2.0	3%	67 FT.
1.5	4%	38 FT.
2.0	4%	50 FT.
1.5	5%	30 FT.
2.0	5%	40 FT.

*ASSUME CHANNEL DEPTH IS 2 TIMES SPILLWAY HEIGHT

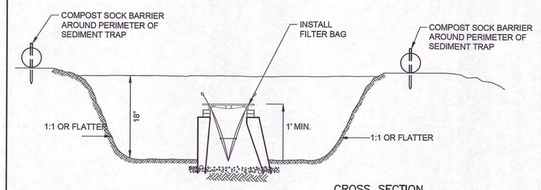
ROCK CHECK DAM DETAIL
SCALE: N.T.S.



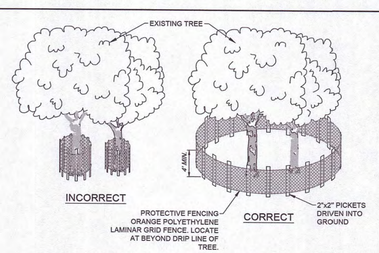
TYPICAL EXTERIOR ROOF DRAIN DETAIL
SCALE: N.T.S.



1. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
2. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
3. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION SHALL BE MINIMIZED.
4. THE SEDIMENT TRAP SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE CONSTRUCTED DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
5. ALL CUTS SLOPES SHALL BE 1:1 OR FLATTER.



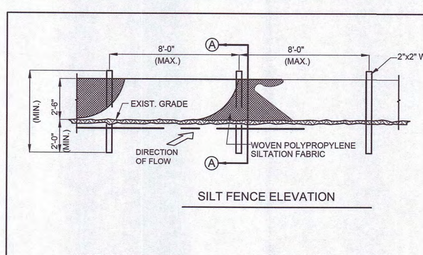
STORM INLET SEDIMENT TRAP
SCALE: N.T.S.



BARRIER TO BE INSTALLED AT DRIP LINE OF TREE BRANCHES. USE HIGHLY VISIBLE "HAZARD" FENCE IN VIBRANT COLOR (YELLOW OR ORANGE).

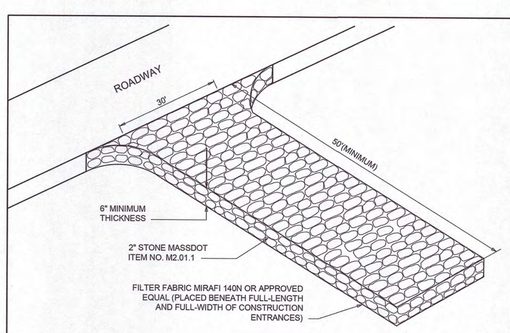
NOTES:
1. TREE PROTECTION BARRIERS MUST BE PLACED AROUND TREES TO BE RETAINED WITHIN AN AREA WHERE LAND ALTERATION AND CONSTRUCTION ACTIVITIES WILL OCCUR. TREES TO REMAIN SHALL BE INDICATED ON THE PLANS.
2. TREE PROTECTION BARRIER MUST REMAIN IN PLACE UNTIL GRADING AND CONSTRUCTION ACTIVITY IS COMPLETE OR UNTIL COMMENCEMENT OF FINISH GRADING AND SODDING.
3. BARRIERS SHALL BE PLACED AROUND TREES AT THE DRIPLINE EXCEPT WHERE LAND ALTERATION OR CONSTRUCTION ACTIVITIES ARE APPROVED WITHIN THE DRIPLINE.
4. THE DRIPLINE OF A TREE IS THE IMAGINARY VERTICAL LINE THAT EXTENDS DOWNWARD FROM THE OUTERMOST TIPS OF THE TREE'S BRANCHES TO THE GROUND.
5. AREAS SURROUNDED BY THE TREE PROTECTION BARRIERS SHALL BE PROTECTED FROM VEGETATION REMOVAL, PLACEMENT OF SOIL, DEBRIS, SOLVENTS, CONSTRUCTION MATERIAL, MACHINERY OR OTHER EQUIPMENT OF ANY KIND.
6. ALL TREE ROOTS WITHIN AREA TO BE GRADED AND ORIGINATING FROM A PROTECTED TREE SHALL BE SEVERED CLEANLY AT THE LIMITS OF THE PROTECTED AREA.
7. ALL TREE PRUNING AND TRIMMING ON ANY TREE TO BE RETAINED SHALL BE PERFORMED BY AN ARBORIST CERTIFIED BY THE AMERICAN SOCIETY OF ARBORICULTURE (ASA).
8. 2'x2' TREE PROTECTION SIGNS SPACED A MINIMUM OF ON SIGN EVERY 300' SHALL CONTAIN THE WORDING "TREE PROTECTION ZONE - KEEP OUT".

TREE PROTECTION BARRIER
SCALE: N.T.S.



NOTE:
IN AREAS WHERE ANCHOR TRENCH CANNOT BE DUG, FABRIC WILL BE LAID ON SURFACE AND COVERED WITH A MINIMUM OF 6" DEPTH OF SOIL.

SILTATION FENCE DETAIL
SCALE: N.T.S.



VEHICLE TRACKING PAD
SCALE: N.T.S.

NOT FOR CONSTRUCTION

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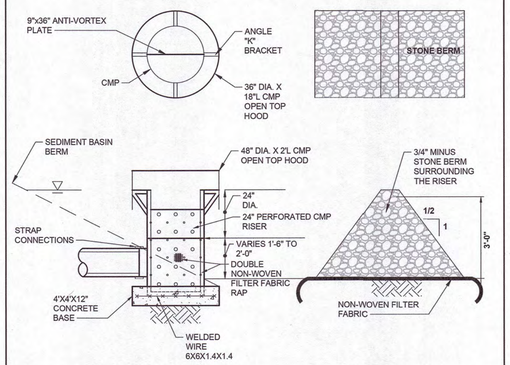
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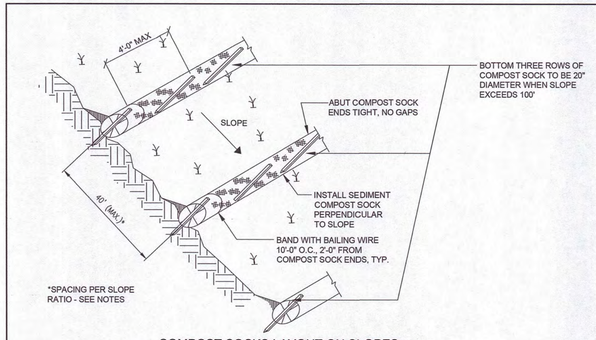
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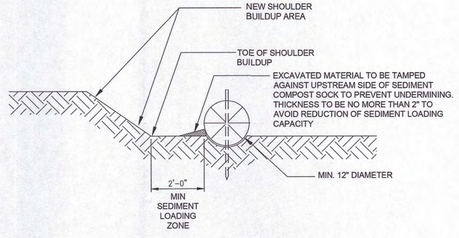
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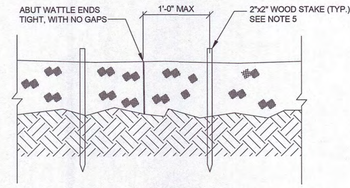
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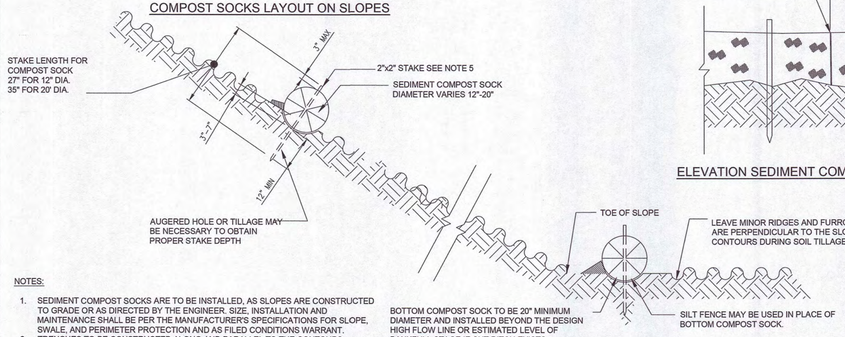
COMPOST SOCKS LAYOUT ON SLOPES



SECTION SEDIMENT COMPOST SOCKS



ELEVATION SEDIMENT COMPOST SOCKS CONNECTION



SECTION - COMPOST SOCKS LAYOUT ON SLOPES

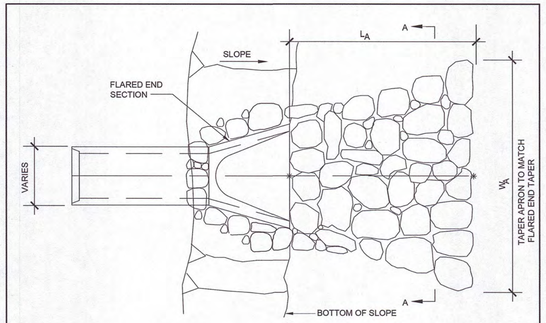
NOTES:

1. SEDIMENT COMPOST SOCKS ARE TO BE INSTALLED, AS SLOPES ARE CONSTRUCTED TO GRADE OR AS DIRECTED BY THE ENGINEER. SIZE, INSTALLATION AND MAINTENANCE SHALL BE PER THE MANUFACTURER'S SPECIFICATIONS FOR SLOPE, SWALE, AND PERIMETER PROTECTION AND AS FILED CONDITIONS WARRANT.
2. TRENCHES TO BE CONSTRUCTED ALONG AND PARALLEL TO THE CONTOURS. TRENCH DEPTH TO BE ⅓ THE THICKNESS OF THE SEDIMENT COMPOST SOCK. PLACE EXCAVATED MATERIAL ON UPHILL SIDE OF TRENCH.
3. LOCATE SEDIMENT COMPOST SOCKS AS INDICATED ON PLANS OR AS DIRECTED BY THE ENGINEER. SPACE COMPOST SOCK TRENCHES ACCORDING TO THE FOLLOWING SCHEDULE:

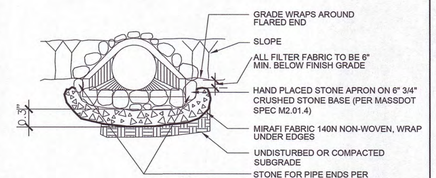
SLOPE RATIO	MAX SPACING INTERVALS
1:1 AND STEEPER, APPLY MINIBENCHING OR OTHER SUITABLE BMP'S.	
2:1	10'-0"
3:1	20'-0"
4:1	30'-0"
5:1	40'-0"
6:1	40'-0"

4. SEDIMENT COMPOST SOCKS TO BE IN CONTINUOUS CONTACT WITH TRENCH BOTTOM AND SIDES. NO DAYLIGHT SHOULD BE SEEN UNDER THE COMPOST SOCK. DO NOT OVERLAP THE ENDS ON TOP OF EACH OTHER.
5. STAKES TO PENETRATE SOIL OF TRENCH BOTTOM 12" MINIMUM. STAKES TO BE EXPOSED 3" MAXIMUM ABOVE THE TOP OF COMPOST SOCK. SPACE STAKES 4'-0" O.C. MAX., 1'-0" MAX. AT COMPOST SOCK ENDS. A 20" DIAMETER COMPOST SOCK MAY NEED TO BE MADE FROM 2-3 ROLLED EXCELSIOR OR STRAW BLANKETS.
6. REPAIR ANY RILLS OR GULLIES PROMPTLY.
7. THE INSTALLATION AND MAINTENANCE OF SEDIMENT COMPOST SOCK BMP'S SHALL NOT NEGATIVELY IMPACT TRAFFIC SAFETY.

COMPOST SOCK EROSION AND SILTATION BARRIER
SCALE: N.T.S.

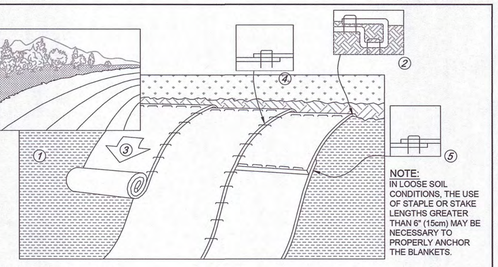


PLAN VIEW



SECTION A-A

FLARED END SECTION WITH STONE APRON
SCALE: N.T.S.



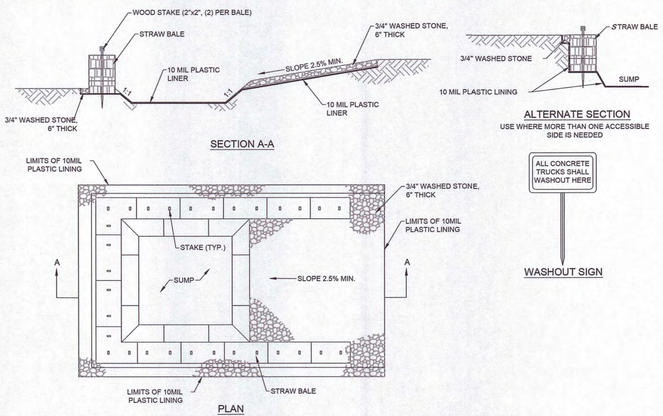
NOTES:

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" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACK FILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO PREPARED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF THE BLANKET BACK OVER SEED AND SOIL. SECURE BLANKET OVER SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS DOWN ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH THE 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
4. GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
5. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm) 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.
6. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.
7. EROSION CONTROL BLANKETS SHALL BE INSTALLED FOLLOWING MANUFACTURERS SPECIFICATIONS.

EROSION CONTROL BLANKET DETAIL FOR SLOPE INSTALLATION
SCALE: N.T.S.

NOTES:

1. PIT IS SPECIFICALLY DESIGNATED, DIKED AND IMPERVIOUS CONTAINMENT TO PREVENT CONTACT BETWEEN CONCRETE WASH AND STORMWATER.
2. WASH WATER SHALL NOT BE ALLOWED TO FLOW TO SURFACE WATER.
3. FACILITY MUST HOLD SUFFICIENT VOLUME TO CONTAIN CONCRETE WASTE WITH A MINIMUM FREEBOARD OF 12."
4. FACILITY SHALL NOT BE FILLED BEYOND 75% CAPACITY UNLESS A NEW FACILITY IS CONSTRUCTED.
5. SAW CUT PORTLAND CEMENT CONCRETE, RESIDUE FROM SAWCUT & GRINDING TO BE DISPOSED OF IN THE PIT.
6. CONCRETE WASHOUTS SHALL BE LOCATED A MINIMUM OF 100' FROM DRAINAGE WAYS, INLETS, & SURFACE WATERS.
7. MANUFACTURED CONCRETE WASHOUT DEVICES MAY BE USED IF REMOVED FROM THE SITE WHEN 95% FULL CAPACITY.



CONCRETE WASHOUT AREA
SCALE: N.T.S.

NOT FOR CONSTRUCTION

Drawing name: G:\MA\Franklin\Fairfield Residential\121 Grove Street\Main\22016_C-6 Site Details - II.dwg
Feb 12, 2024 - 8:17pm

RJOC

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NO.	REVISION	DATE
3.	REVISED PER ZBA PEER REVIEW COMMENTS	02/12/2024
2.	REVISED PER ZBA PEER REVIEW COMMENTS	02/02/2024
1.	REVISED PER ONSITE SOIL TESTING RESULTS/NOI SUBMISSION	12/18/2023

DESIGNED BY:	MAC
DRAWN BY:	MCR
REVIEWED BY:	BJM
SCALE:	N.T.S.

PREPARED FOR:
FAIRFIELD GROVE STREET LLC
30 BRAINTREE HILL OFFICE PARK
SUITE 105
BRAINTREE, MA 02184

SEAL:
COMMONWEALTH OF MASSACHUSETTS
BRIAN P. DUNDON
CIVIL
No. 41505
REGISTERED PROFESSIONAL ENGINEER
2-12-2024

PREPARED BY:
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CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
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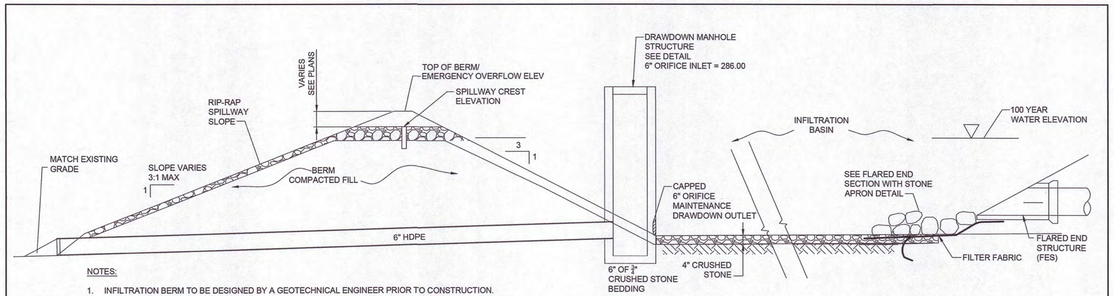
PROJECT NAME:
GROVE STREET RESIDENCES
FRANKLIN, MA

DRAWING NAME:
SITE DETAILS - II

DRAWING NUMBER:
C-6

DATE: 10/30/2023 PROJECT NO.: 22016

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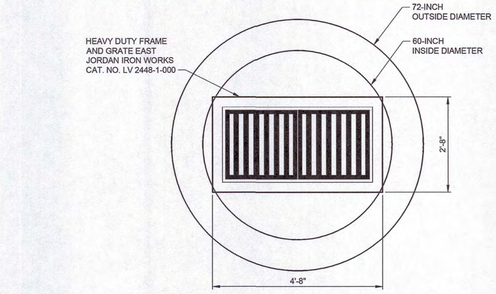


NOTES:

1. INFILTRATION BERM TO BE DESIGNED BY A GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION.
2. THE CONSTRUCTION OF ALL INFILTRATION BASINS SHALL PRECEDE ALL OTHER CONSTRUCTION.
3. MONITORING WELL SHALL BE INSTALLED TO A DEPTH OF 20 FEET BELOW THE BOTTOM OF BASIN.
4. DRAWDOWN OUTLET TO BE INSTALLED AS DEPICTED ON GRADING & DRAINAGE PLANS IN THIS PLAN SET.

BASIN No.	TOP OF BERM/EMERGENCY OVERFLOW ELEV.	TOP OF SPILLWAY ELEV.	100 YR WATER ELEV.	ESHGW
1	290.70	289.60	289.67	281.25 (TP-02)

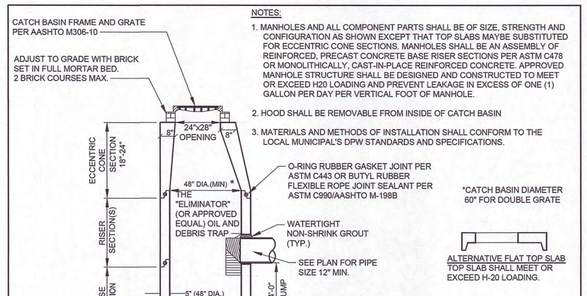
TYPICAL STORMWATER BASIN-1 SECTION
SCALE: N.T.S.



NOTES:

1. CATCH BASIN CONCRETE COVER SLAB TO BE CAST WITH 22" x 47½" OPENING TO ACCOMMODATE FRAME AND GRATE.
2. COVER SLAB TO MEET OR EXCEED H-20 LOADING.

TYPICAL DOUBLE CATCH BASIN GRATE DETAIL
SCALE: N.T.S.



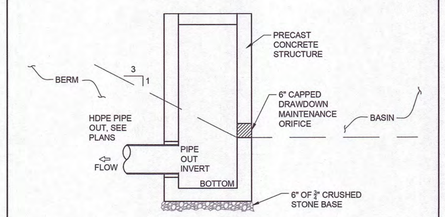
NOTES:

1. MANHOLES AND ALL COMPONENT PARTS SHALL BE OF SIZE, STRENGTH AND CONFIGURATION AS SHOWN EXCEPT THAT TOP SLABS MAYBE SUBSTITUTED FOR ECCENTRIC CONE SECTIONS. MANHOLES SHALL BE AN ASSEMBLY OF REINFORCED, PRECAST CONCRETE BASE RISER SECTIONS PER ASTM C478 OR MONOLITHICALLY, CAST-IN-PLACE REINFORCED CONCRETE. APPROVED MANHOLE STRUCTURE SHALL BE DESIGNED AND CONSTRUCTED TO MEET OR EXCEED H20 LOADING AND PREVENT LEAKAGE IN EXCESS OF ONE (1) GALLON PER DAY PER VERTICAL FOOT OF MANHOLE.
2. HOOD SHALL BE REMOVABLE FROM INSIDE OF CATCH BASIN
3. MATERIALS AND METHODS OF INSTALLATION SHALL CONFORM TO THE LOCAL MUNICIPAL'S DPW STANDARDS AND SPECIFICATIONS.

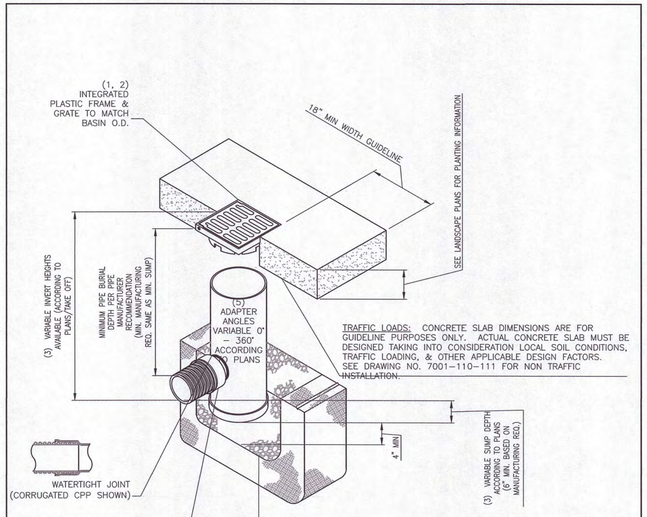
*CATCH BASIN DIAMETER 60" FOR DOUBLE GRATE

ALTERNATIVE FLAT TOP SLAB
TOP SLAB SHALL MEET OR EXCEED H-20 LOADING.

TYPICAL CATCH BASIN WITH HOOD
SCALE: N.T.S.



DRAWDOWN MANHOLE STRUCTURE
SCALE: N.T.S.



TRAFFIC LOADS: CONCRETE SLAB DIMENSIONS ARE FOR GUIDELINE PURPOSES ONLY. ACTUAL CONCRETE SLAB MUST BE DESIGNED TAKING INTO CONSIDERATION LOCAL SOIL CONDITIONS, TRAFFIC LOADING, & OTHER APPLICABLE DESIGN FACTORS. SEE DRAWING NO. 7001-110-111 FOR NON TRAFFIC INSTALLATION.

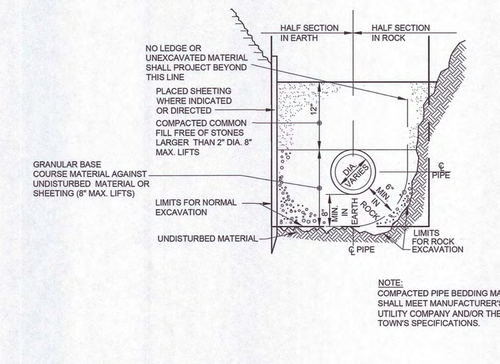
(4) VARIOUS TYPES OF INLET & OUTLET ADAPTERS AVAILABLE: 4" – 12" FOR CORRUGATED CPP (ADS N-12/HANCOR DUAL WALL, ADS/HANCOR SINGLE WALL), N-12 HP, PVC SEWER (EX: SDR 35), PVC DWV (EX: SCH 40), PVC C900/C905, CORRUGATED & RIBBED PVC

THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MEETS H-10	1299CGP	7001-110-202
STANDARD	MEETS H-20	1299CGS	7001-110-203
SOLID COVER	MEETS H-20	1299CGC	7001-110-204
PEDESTRIAN BRONZE	N/A	1299CGPB	7001-110-205
DOME	N/A	1299CGD	7001-110-206
DROP IN GRATE	LIGHT DUTY	1201DI	7001-110-021

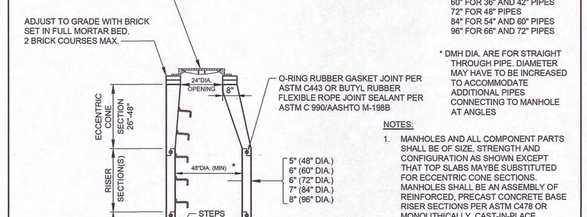
1 – GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05, WITH THE EXCEPTION OF THE BRONZE GRATE.
2 – FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3 – DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065
4 – DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER.
5 – ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.

NYLOPLAST 12" AREA DRAIN GRATE ASSEMBLY DETAIL
SCALE: N.T.S.



NOTE:
COMPACTED PIPE BEDDING MATERIAL SHALL MEET MANUFACTURER'S, UTILITY COMPANY AND/OR THE TOWN'S SPECIFICATIONS.

TYPICAL DRAINAGE TRENCH DETAIL
SCALE: N.T.S.



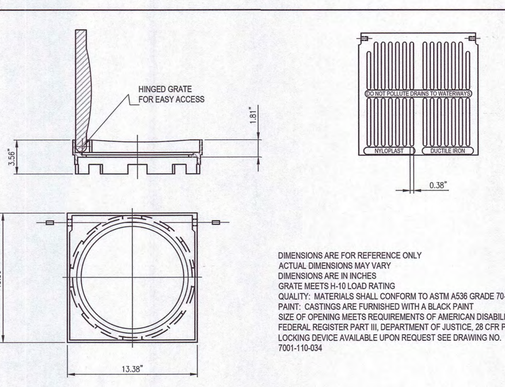
* DMH DIAMETER
48" FOR PIPES UP TO 30"
60" FOR 36" AND 42" PIPES
72" FOR 48" PIPES
84" FOR 54" AND 60" PIPES
96" FOR 66" AND 72" PIPES

* DMH DIA. ARE FOR STRAIGHT THROUGH PIPE. DIAMETER MAY HAVE TO BE INCREASED TO ACCOMMODATE ADDITIONAL PIPES CONNECTING TO MANHOLE AT ANGLES

NOTES:

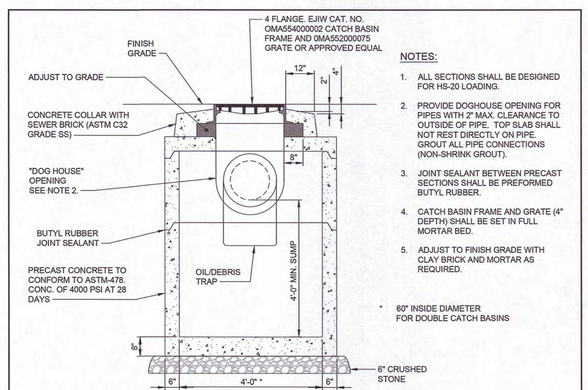
1. MANHOLES AND ALL COMPONENT PARTS SHALL BE OF SIZE, STRENGTH AND CONFIGURATION AS SHOWN EXCEPT THAT TOP SLABS MAYBE SUBSTITUTED FOR ECCENTRIC CONE SECTIONS. MANHOLES SHALL BE AN ASSEMBLY OF REINFORCED, PRECAST CONCRETE BASE RISER SECTIONS PER ASTM C478 OR MONOLITHICALLY, CAST-IN-PLACE REINFORCED CONCRETE. APPROVED MANHOLE STRUCTURE SHALL BE DESIGNED AND CONSTRUCTED TO MEET OR EXCEED H20 LOADING AND PREVENT LEAKAGE IN EXCESS OF ONE (1) GALLON PER DAY PER VERTICAL FOOT OF MANHOLE.
2. MATERIALS AND METHODS OF INSTALLATION TO MEET OR EXCEED LOCAL MUNICIPAL'S DPW SPECIFICATIONS.

TYPICAL PRECAST CONCRETE DRAIN MANHOLE (DMH)
SCALE: N.T.S.



DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY
DIMENSIONS ARE IN INCHES
GRATE MEETS H-10 LOAD RATING
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
SIZE OF OPENING MEETS REQUIREMENTS OF AMERICAN DISABILITY ACT AS STATED IN FEDERAL REGISTER PART III, DEPARTMENT OF JUSTICE, 28 CFR PART 36.
LOCKING DEVICE AVAILABLE UPON REQUEST SEE DRAWING NO. 7001-110-034

NYLOPLAST 12" AREA DRAIN DETAIL
SCALE: N.T.S.



NOTES:

1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. PROVIDE DOGHOUSE OPENING FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. TOP SLAB SHALL NOT REST DIRECTLY ON PIPE. GROUT ALL PIPE CONNECTIONS (NON-SHRINK GROUT).
3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
4. CATCH BASIN FRAME AND GRATE (4" DEPTH) SHALL BE SET IN FULL MORTAR BED.
5. ADJUST TO FINISH GRADE WITH CLAY BRICK AND MORTAR AS REQUIRED.

* 60" INSIDE DIAMETER FOR DOUBLE CATCH BASINS

CATCH BASIN SHALLOW COVER WITH OIL/DEBRIS TRAP
SCALE: N.T.S.

NOT FOR CONSTRUCTION

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NO.	REVISION	DATE
3.	REVISED PER ZBA PEER REVIEW COMMENTS	02/12/2024
2.	REVISED PER ZBA PEER REVIEW COMMENTS	02/02/2024
1.	REVISED PER ONSITE SOIL TESTING RESULTS/NOI SUBMISSION	12/18/2023

DESIGNED BY:	MAC
DRAWN BY:	MCR
REVIEWED BY:	BJM
SCALE:	N.T.S.

PREPARED FOR:
FAIRFIELD GROVE STREET LLC
30 BRAINTREE HILL OFFICE PARK
SUITE 105
BRAINTREE, MA 02184

SEAL:
COMMONWEALTH OF MASSACHUSETTS
BRIAN P. DUNDON
CIVIL
No. 41505
REGISTERED PROFESSIONAL ENGINEER
2-12-2024

PREPARED BY:
RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
PHONE: 781.279.0180 RJOCONNELL.COM

PROJECT NAME:
GROVE STREET RESIDENCES
FRANKLIN, MA

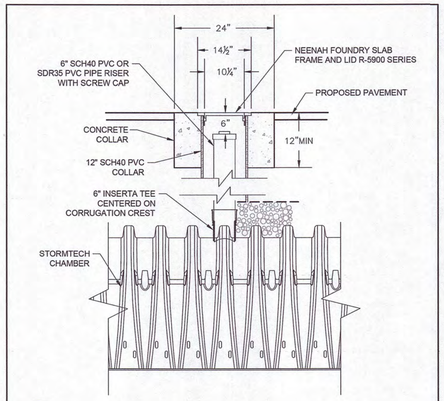
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SITE DETAILS - III

DRAWING NUMBER:
C-7

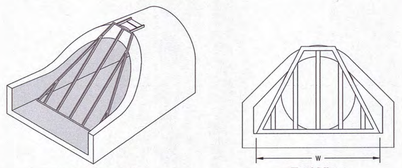
DATE: 10/30/2023 PROJECT NO.: 22016

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Drawing name: G:\MA\Franklin\Fairfield Residential\121 Grove Street\Main\22016_C-7 Site Details - III.dwg
Feb 12, 2024 - 18:20pm



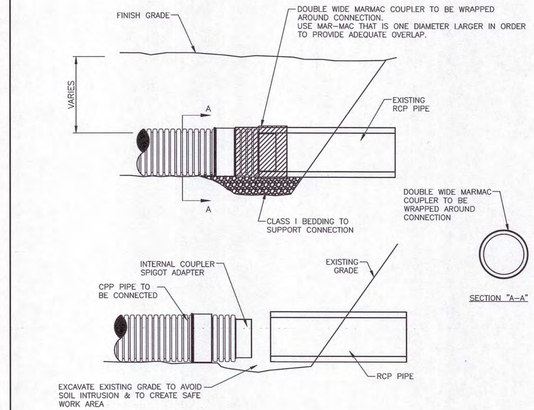
OBSERVATION PORT
SCALE: N.T.S.



Pipe Diameter	Grate Width W (in.)	GRATE Length L (in.)	Total # of Bars B	Bar Spacing S (in.)
18"	33.00"	34.00"	3	8.0"
24"	40.00"	47.50"	5	8.0"
30"	55.00"	63.00"	5	9.0"
36"	58.00"	71.25"	6	8.0"

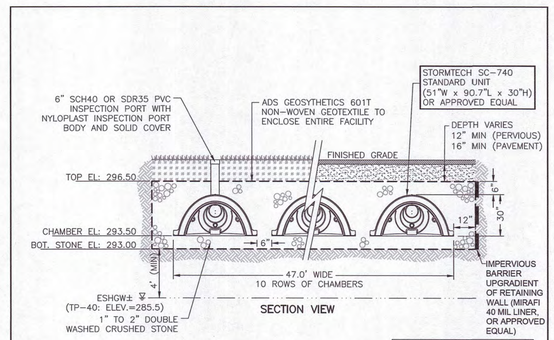
NOTE:
1. TO BE INSTALLED AT THE DISCHARGE OR INLET END OF ALL DRAINS 18" IN DIAMETER OR LARGER.

FLARED END GRATE DETAIL
SCALE: N.T.S.



NOTES:
1. CONNECTION AND PIPE TO BE BACKFILLED PER ASTM D2321, LATEST EDITION.
2. IN LIEU OF AN INTERNAL CYLINDER, AN HDPE WATERTIGHT REPAIR COUPLER CAN BE USED.
3. INTERNAL CYLINDER ADAPTER IS NOT RECOMMENDED FOR DOWNSTREAM CONNECTIONS.

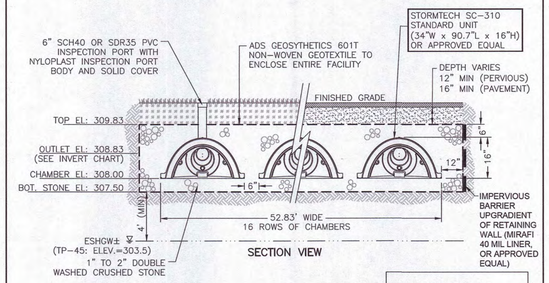
CPP TO RCP CONNECTION (MARMAC) DETAIL
SCALE: N.T.S.



INVERT CHART	
INLET ELEVATION:	294.00
OUTLET ELEVATION:	295.00*
* (1) – 12" OUTLET	

NOTES:
1. INSTALLED CHAMBER LENGTH IS 22.98'.
2. PROVIDE MINIMUM 4 FEET SEPARATION BETWEEN BOTTOM OF THE 6 INCH DOUBLE WASHED STONE LAYER AND SEASONAL HIGH GROUNDWATER TABLE.
3. REMOVE ALL TOPSOIL AND SUBSOIL IN AREA OF PROPOSED INFILTRATION FACILITY AND REPLACE WITH SAND CONFORMING TO 310 CMR 15.255(3), MASSACHUSETTS STATE ENVIRONMENTAL CODE, TITLE 5 AS NECESSARY IN FILL CONDITIONS.
4. SYSTEM COMPRISED OF 10 ROWS OF 3 CHAMBERS WITH A TOTAL OF 30 CHAMBERS.
5. CRUSHED STONE SYSTEM FOOTPRINT: 49.00' WIDE x 24.98' LONG.
6. SEE INVERT CHART FOR OUTLET QUANTITIES, SIZES AND ELEVATIONS.

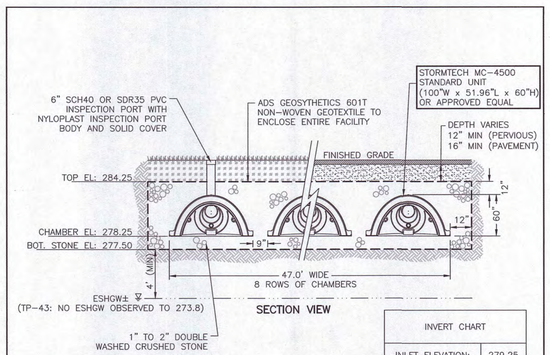
SUBSURFACE INFILTRATION SYSTEM-1 (PSIS-1)
SCALE: N.T.S.



INVERT CHART	
INLET ELEVATION:	309.00
OUTLET ELEVATION:	308.83*
* (8) – 6" OUTLETS TO CONNECT TO 18" DISCHARGE PIPE TO FES	

NOTES:
1. INSTALLED CHAMBER LENGTH IS 36.80'.
2. PROVIDE MINIMUM 4 FEET SEPARATION BETWEEN BOTTOM OF THE 6 INCH DOUBLE WASHED STONE LAYER AND SEASONAL HIGH GROUNDWATER TABLE.
3. REMOVE ALL TOPSOIL AND SUBSOIL IN AREA OF PROPOSED INFILTRATION FACILITY AND REPLACE WITH SAND CONFORMING TO 310 CMR 15.255(3), MASSACHUSETTS STATE ENVIRONMENTAL CODE, TITLE 5 AS NECESSARY IN FILL CONDITIONS.
4. SYSTEM COMPRISED OF 16 ROWS OF 5 CHAMBERS WITH A TOTAL OF 80 CHAMBERS.
5. CRUSHED STONE SYSTEM FOOTPRINT: 54.83' WIDE x 38.80' LONG.
6. SEE INVERT CHART FOR OUTLET QUANTITIES, SIZES AND ELEVATIONS.

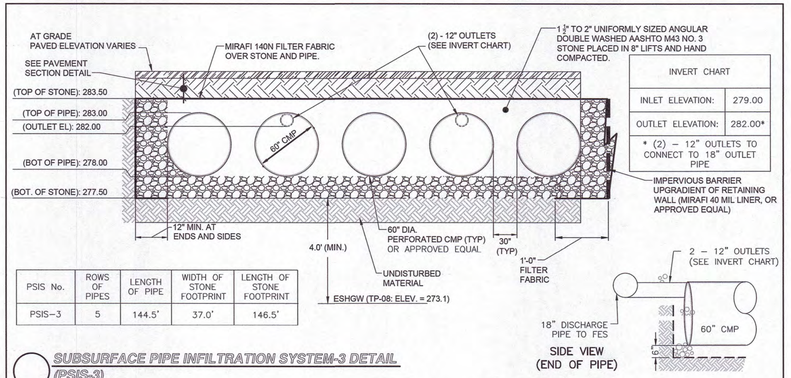
SUBSURFACE INFILTRATION SYSTEM-2 (PSIS-2)
SCALE: N.T.S.



INVERT CHART	
INLET ELEVATION:	279.25
OUTLET ELEVATION:	284.00*
* (1) – 12" OUTLET	

NOTES:
1. INSTALLED CHAMBER LENGTH IS 22.98".
2. PROVIDE MINIMUM 4 FEET SEPARATION BETWEEN BOTTOM OF THE 6 INCH DOUBLE WASHED STONE LAYER AND SEASONAL HIGH GROUNDWATER TABLE.
3. REMOVE ALL TOPSOIL AND SUBSOIL IN AREA OF PROPOSED INFILTRATION FACILITY AND REPLACE WITH SAND CONFORMING TO 310 CMR 15.255(3), MASSACHUSETTS STATE ENVIRONMENTAL CODE, TITLE 5 AS NECESSARY IN FILL CONDITIONS.
4. SYSTEM COMPRISED OF 8 ROWS OF 5 CHAMBERS WITH A TOTAL OF 40 CHAMBERS.
5. CRUSHED STONE SYSTEM FOOTPRINT: 73.92' WIDE x 27.59' LONG.
6. SEE INVERT CHART FOR OUTLET QUANTITIES, SIZES AND ELEVATIONS.

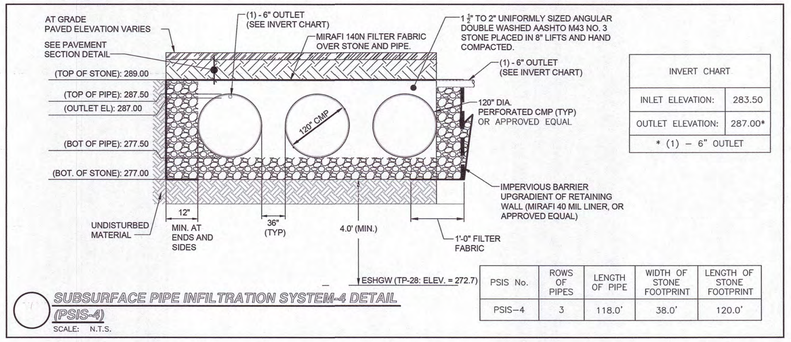
SUBSURFACE INFILTRATION INFILTRATION-6 (PSIS-6)
SCALE: N.T.S.



INVERT CHART	
INLET ELEVATION:	279.00
OUTLET ELEVATION:	282.00*
* (2) – 12" OUTLETS TO CONNECT TO 18" OUTLET PIPE	

PSIS No.	ROWS OF PIPES	LENGTH OF PIPE	WIDTH OF STONE FOOTPRINT	LENGTH OF STONE FOOTPRINT
PSIS–3	5	144.5'	37.0'	146.5'

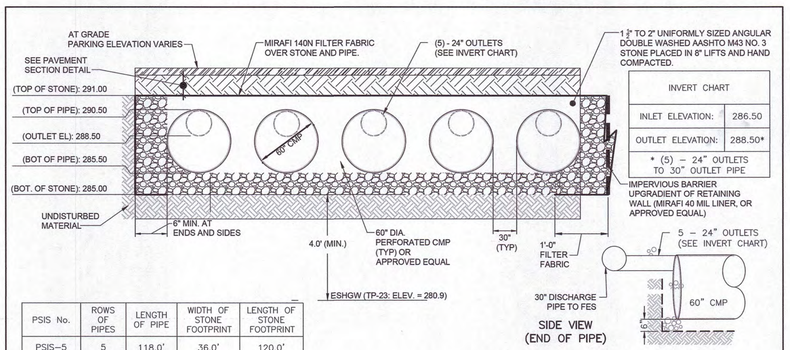
SUBSURFACE PIPE INFILTRATION SYSTEM-3 DETAIL (PSIS-3)
SCALE: N.T.S.



INVERT CHART	
INLET ELEVATION:	283.50
OUTLET ELEVATION:	287.00*
* (1) – 6" OUTLET	

PSIS No.	ROWS OF PIPES	LENGTH OF PIPE	WIDTH OF STONE FOOTPRINT	LENGTH OF STONE FOOTPRINT
PSIS–4	3	118.0'	38.0'	120.0'

SUBSURFACE PIPE INFILTRATION SYSTEM-4 DETAIL (PSIS-4)
SCALE: N.T.S.



INVERT CHART	
INLET ELEVATION:	286.50
OUTLET ELEVATION:	288.50*
* (5) – 24" OUTLETS TO 30" OUTLET PIPE	

PSIS No.	ROWS OF PIPES	LENGTH OF PIPE	WIDTH OF STONE FOOTPRINT	LENGTH OF STONE FOOTPRINT
PSIS–5	5	118.0'	36.0'	120.0'

SUBSURFACE PIPE INFILTRATION SYSTEM-5 DETAIL (PSIS-5)
SCALE: N.T.S.

NOT FOR CONSTRUCTION

Drawing name: G:\MA\Franklin\Fairfield Residential\121 Grove Street\Main\22016_C-8 Site Details - IV.dwg
Feb 12, 2024 - 16:21pm

RJOC

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NO.	REVISION	DATE
3.	REVISED PER ZBA PEER REVIEW COMMENTS	02/12/2024
2.	REVISED PER ZBA PEER REVIEW COMMENTS	02/02/2024
1.	REVISED PER ONSITE SOIL TESTING RESULTS/NOI SUBMISSION	12/18/2023

DESIGNED BY:	MAC
DRAWN BY:	MCR
REVIEWED BY:	BJM
SCALE:	N.T.S.

PREPARED FOR:
FAIRFIELD GROVE STREET LLC
30 BRAINTREE HILL OFFICE PARK
SUITE 105
BRAINTREE, MA 02184

SEAL:
COMMONWEALTH OF MASSACHUSETTS
BRIAN P. DUNDON
CIVIL
No. 41505
REGISTERED PROFESSIONAL ENGINEER
2-12-2024

PREPARED BY:
RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
PHONE: 781.279.0180 RJOCONNELL.COM

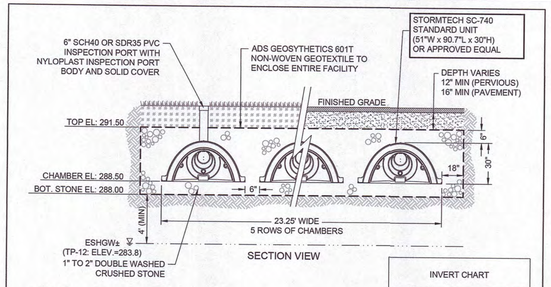
PROJECT NAME:
GROVE STREET RESIDENCES
FRANKLIN, MA

DRAWING NAME:
SITE DETAILS - IV

DRAWING NUMBER:
C-8

DATE: 10/30/2023 PROJECT NO.: 22016

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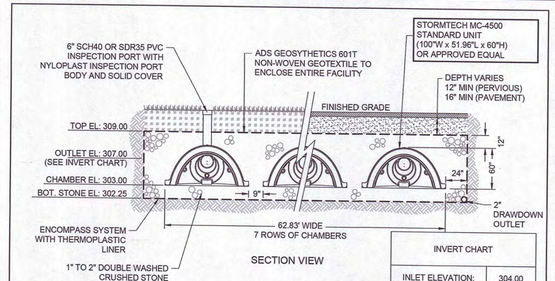
INVERT CHART	
INLET ELEVATION:	290.00
OUTLET ELEVATION:	290.00*
* (1) - 12" OUTLET	

NOTES:

1. INSTALLED CHAMBER LENGTH IS 58.58'.
2. PROVIDE MINIMUM 4 FEET SEPARATION BETWEEN BOTTOM OF THE 6 INCH DOUBLE WASHED STONE LAYER AND SEASONAL HIGH GROUNDWATER TABLE.
3. REMOVE ALL TOPSOIL AND SUBSOIL IN AREA OF PROPOSED INFILTRATION FACILITY AND REPLACE WITH SAND CONFORMING TO 310 CMR 15.255(3), MASSACHUSETTS STATE ENVIRONMENTAL CODE, TITLE 5 AS NECESSARY IN FILL CONDITIONS.
4. SYSTEM COMPRISED OF 5 ROWS OF 8 CHAMBERS WITH A TOTAL OF 40 CHAMBERS.
5. CRUSHED STONE SYSTEM FOOTPRINT: 26.25' WIDE x 61.58' LONG.
6. SEE INVERT CHART FOR OUTLET QUANTITIES, SIZES AND ELEVATIONS.

SUBSURFACE INFILTRATION SYSTEM-7 (PSIS-7)

SCALE: N.T.S.



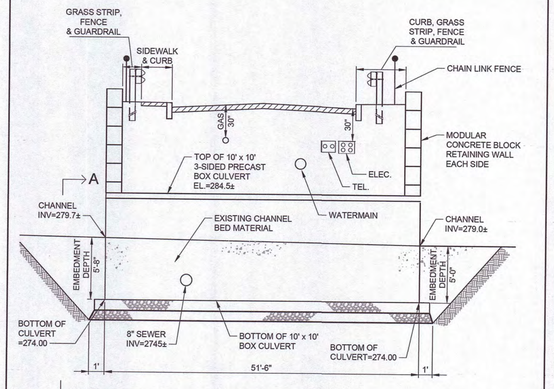
INVERT CHART	
INLET ELEVATION:	304.00
OUTLET ELEVATION:	307.00*
DRAWDOWN OUTLET ELEVATION:	302.25**
* (3) - 12" OUTLETS TO 24" DISCHARGE PIPE TO DMH-33	
** (1) - 2" OUTLET TO DMH-32	

NOTES:

1. INSTALLED CHAMBER LENGTH IS 62.83'.
2. LIMITS OF DETENTION SYSTEM CRUSHED STONE TO BE ENCOMPASSED WITH THERMOPLASTIC LINER (TO BE DESIGNED BY OTHERS).
3. REMOVE ALL TOPSOIL AND SUBSOIL IN AREA OF PROPOSED INFILTRATION FACILITY AND REPLACE WITH SAND CONFORMING TO 310 CMR 15.255(3), MASSACHUSETTS STATE ENVIRONMENTAL CODE, TITLE 5 AS NECESSARY IN FILL CONDITIONS.
4. SYSTEM COMPRISED OF 7 ROWS OF 8 CHAMBERS WITH A TOTAL OF 56 CHAMBERS.
5. CRUSHED STONE SYSTEM FOOTPRINT: 64.83' WIDE x 39.67' LONG.
6. SEE INVERT CHART FOR OUTLET QUANTITIES, SIZES AND ELEVATIONS.

SUBSURFACE DETENTION SYSTEM-3 (PSDS-3)

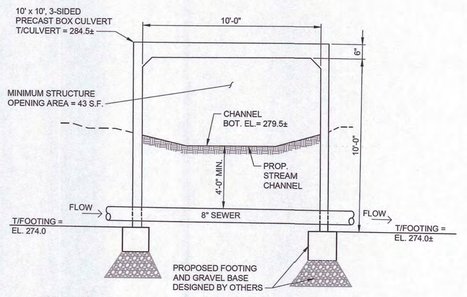
SCALE: N.T.S.



ELEVATION

NOTES:

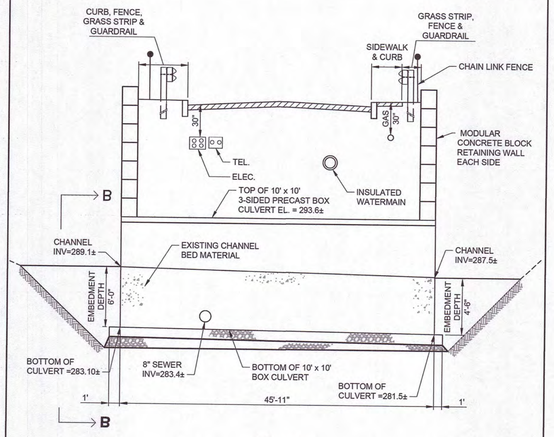
1. EXCAVATE EXISTING CHANNEL BED MATERIAL AS REQUIRED AND PUT IN STOCKPILE FOR FUTURE USE TO RECREATE.
2. SEE ROADWAY SECTION AT INTERMITTENT STREAM CROSSING No. 1 ON THIS SHEET FOR ADDITIONAL ROADWAY INFORMATION.



SECTION A-A

INTERMITTENT STREAM CROSSING No. 1

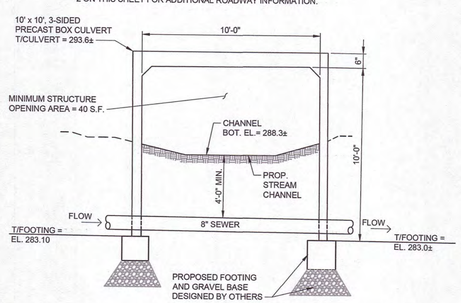
SCALE: N.T.S.



ELEVATION

NOTES:

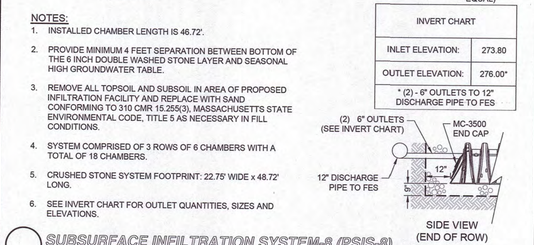
1. EXCAVATE EXISTING CHANNEL BED MATERIAL AS REQUIRED AND PUT IN STOCKPILE FOR FUTURE USE TO RECREATE.
2. SEE ROADWAY SECTION AT INTERMITTENT STREAM CROSSING No. 2 ON THIS SHEET FOR ADDITIONAL ROADWAY INFORMATION.



SECTION B-B

INTERMITTENT STREAM CROSSING No. 2

SCALE: N.T.S.



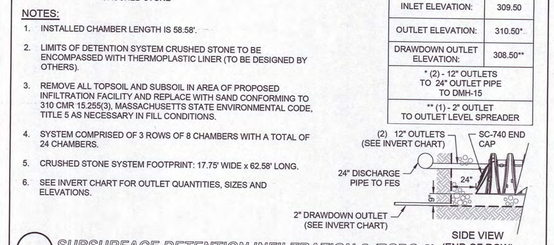
INVERT CHART	
INLET ELEVATION:	273.80
OUTLET ELEVATION:	276.00*
* (2) - 6" OUTLETS TO 12" DISCHARGE PIPE TO FES	

NOTES:

1. INSTALLED CHAMBER LENGTH IS 46.72'.
2. PROVIDE MINIMUM 4 FEET SEPARATION BETWEEN BOTTOM OF THE 6 INCH DOUBLE WASHED STONE LAYER AND SEASONAL HIGH GROUNDWATER TABLE.
3. REMOVE ALL TOPSOIL AND SUBSOIL IN AREA OF PROPOSED INFILTRATION FACILITY AND REPLACE WITH SAND CONFORMING TO 310 CMR 15.255(3), MASSACHUSETTS STATE ENVIRONMENTAL CODE, TITLE 5 AS NECESSARY IN FILL CONDITIONS.
4. SYSTEM COMPRISED OF 3 ROWS OF 6 CHAMBERS WITH A TOTAL OF 18 CHAMBERS.
5. CRUSHED STONE SYSTEM FOOTPRINT: 22.75' WIDE x 48.72' LONG.
6. SEE INVERT CHART FOR OUTLET QUANTITIES, SIZES AND ELEVATIONS.

SUBSURFACE INFILTRATION SYSTEM-6 (PSIS-6)

SCALE: N.T.S.



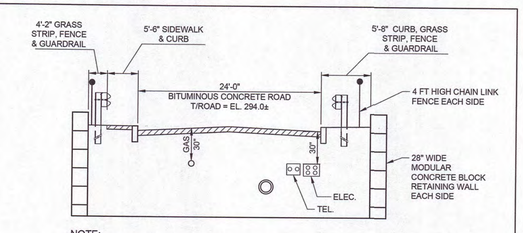
INVERT CHART	
INLET ELEVATION:	309.50
OUTLET ELEVATION:	310.50*
DRAWDOWN OUTLET ELEVATION:	308.50**
* (2) - 12" OUTLETS TO 24" OUTLET PIPE TO DMH-15	
** (1) - 2" OUTLET TO OUTLET LEVEL SPREADER	

NOTES:

1. INSTALLED CHAMBER LENGTH IS 58.58'.
2. LIMITS OF DETENTION SYSTEM CRUSHED STONE TO BE ENCOMPASSED WITH THERMOPLASTIC LINER (TO BE DESIGNED BY OTHERS).
3. REMOVE ALL TOPSOIL AND SUBSOIL IN AREA OF PROPOSED INFILTRATION FACILITY AND REPLACE WITH SAND CONFORMING TO 310 CMR 15.255(3), MASSACHUSETTS STATE ENVIRONMENTAL CODE, TITLE 5 AS NECESSARY IN FILL CONDITIONS.
4. SYSTEM COMPRISED OF 3 ROWS OF 8 CHAMBERS WITH A TOTAL OF 24 CHAMBERS.
5. CRUSHED STONE SYSTEM FOOTPRINT: 17.75' WIDE x 62.58' LONG.
6. SEE INVERT CHART FOR OUTLET QUANTITIES, SIZES AND ELEVATIONS.

SUBSURFACE DETENTION INFILTRATION-2 (PSDS-2)

SCALE: N.T.S.

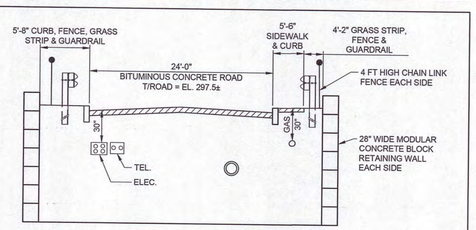


NOTE:

SEE INTERMITTENT STREAM CROSSING No. 1 ON THIS SHEET FOR ADDITIONAL CULVERT INFORMATION

ROADWAY SECTION @ INTERMITTENT STREAM CROSSING No. 1

SCALE: N.T.S.

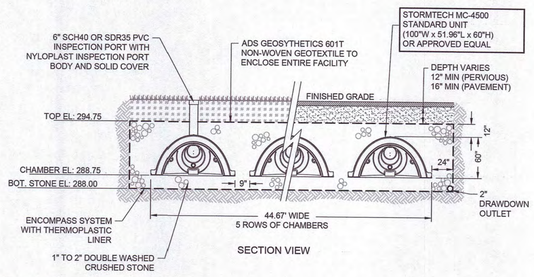


NOTE:

SEE INTERMITTENT STREAM CROSSING No. 2 ON THIS SHEET FOR ADDITIONAL CULVERT INFORMATION

ROADWAY SECTION @ INTERMITTENT STREAM CROSSING No. 2

SCALE: N.T.S.



INVERT CHART	
INLET ELEVATION:	291.75
OUTLET ELEVATION:	293.25*
DRAWDOWN OUTLET ELEVATION:	288.00**
* (2) - 12" OUTLETS	
** (1) - 2" OUTLET	

NOTES:

1. INSTALLED CHAMBER LENGTH IS 94.02'.
2. LIMITS OF DETENTION SYSTEM CRUSHED STONE TO BE ENCOMPASSED WITH THERMOPLASTIC LINER (TO BE DESIGNED BY OTHERS).
3. REMOVE ALL TOPSOIL AND SUBSOIL IN AREA OF PROPOSED INFILTRATION FACILITY AND REPLACE WITH SAND CONFORMING TO 310 CMR 15.255(3), MASSACHUSETTS STATE ENVIRONMENTAL CODE, TITLE 5 AS NECESSARY IN FILL CONDITIONS.
4. SYSTEM COMPRISED OF 5 ROWS OF 22 CHAMBERS WITH A TOTAL OF 110 CHAMBERS.
5. CRUSHED STONE SYSTEM FOOTPRINT: 46.67' WIDE x 96.02' LONG.
6. SEE INVERT CHART FOR OUTLET QUANTITIES, SIZES AND ELEVATIONS.

SUBSURFACE DETENTION SYSTEM-1 (PSDS-1)

SCALE: N.T.S.

NOT FOR CONSTRUCTION

RJOC

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NO.	REVISION	DATE
3.	REVISED PER ZBA PEER REVIEW COMMENTS	02/12/2024
2.	REVISED PER ZBA PEER REVIEW COMMENTS	02/02/2024
1.	REVISED PER ONSITE SOIL TESTING RESULTS/NOI SUBMISSION	12/18/2023

DESIGNED BY:	MAC
DRAWN BY:	MCR
REVIEWED BY:	BJM
SCALE:	N.T.S.

PREPARED FOR:

FAIRFIELD GROVE STREET LLC
30 BRAINTREE HILL OFFICE PARK
SUITE 105
BRAINTREE, MA 02184

SEAL:

COMMONWEALTH OF MASSACHUSETTS
BRIAN P. DUNDON
CIVIL
No. 41605
REGISTERED PROFESSIONAL ENGINEER
2-12-2024

PREPARED BY:

RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
PHONE: 781.279.0180 RJOCONNELL.COM

PROJECT NAME:

GROVE STREET RESIDENCES
FRANKLIN, MA

DRAWING NAME:

SITE DETAILS - V

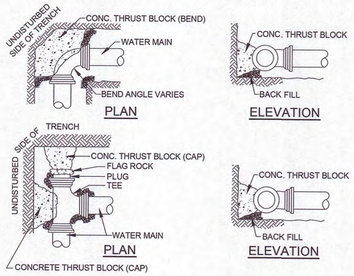
DRAWING NUMBER:

C-9

DATE: 10/30/2023 PROJECT NO.: 22016

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Drawing name: G:\MA\Franklin\Fairfield Residential\121 Grove Street\Main\22016_C-9 Site Details - V.dwg
Feb 12, 2024 - 18:22pm

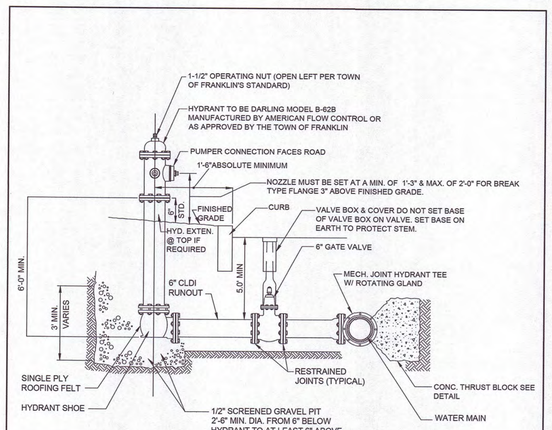


MINIMUM THRUST BLOCKING BEARING AREAS IN SQUARE FEET					
PIPE DIA.	TEES/CAP/HYD	90° BEND	45° BEND	22.5° BEND	11.25° BEND
4"	2	2	2	2	1
6"	4	5	3	2	1
8"	6	8	5	3	1
10"	9	13	7	3	2
12"	13	18	10	4	3
14"	18	25	14	6	4
16"	23	32	18	8	6

NOTES:

1. ALL WATER MAIN FITTINGS, BENDS, TEES, PLUGS ETC. SHALL BE RESTRAINED W/ THRUST BLOCKS EXCEPT WHERE NOTED.
2. ALL THRUST BLOCKS & COLLARS SHALL BE INSTALLED SO THAT THEY BEAR AGAINST UNDISTURBED EARTH.
3. SIZE OF CONCRETE THRUST BLOCKS AS NOTED BELOW.
4. MINIMUM COMPRESSIVE STRENGTH OF THRUST BLOCK CONCRETE SHALL BE 4,000 P.S.I.
5. MINIMUM BEARING AREA BASED ON 2000 LB/SF ALLOWABLE SOIL BEARING PRESSURE WITH A 1.5 SAFETY FACTOR.
6. A MINIMUM OF 1/3 CUBIC YARD OF CONCRETE MUST BE USED FOR THRUST BLOCKS
7. MATERIALS, METHOD INSTALLATION SHALL CONFORM TO THE TOWN OF FRANKLIN'S WATER/SEWER DEPARTMENT'S SPECIFICATIONS.

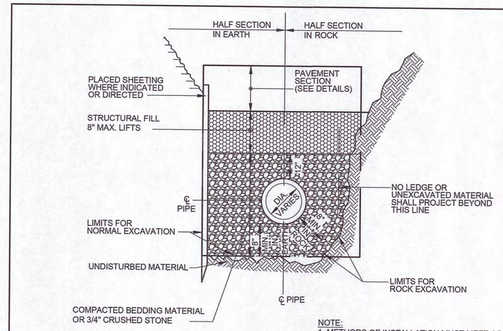
TYPICAL THRUST BLOCK DETAIL
SCALE: N.T.S.



NOTE:

1. HYDRANT MATERIALS AND INSTALLATION SHALL MEET OR EXCEED THE TOWN OF FRANKLIN'S WATER AND/OR FRANKLIN FIRE DEPARTMENT'S SPECIFICATIONS.
2. HYDRANT TO BE FACTORY PAINTED PER THE TOWN OF FRANKLIN'S REQUIREMENTS.
3. HYDRANTS SHALL BE INSTALLED NOT LESS THAN 34 INCHES FROM GROUND AND NOT MORE THAN 40 INCHES HIGH.

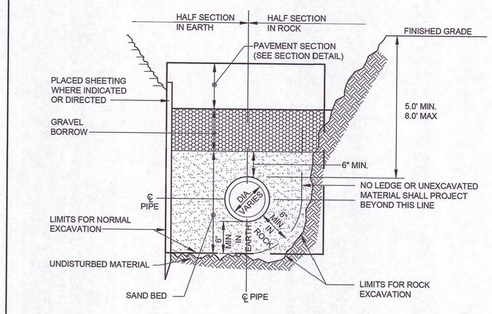
TYPICAL FIRE HYDRANT CONNECTION DETAIL
SCALE: N.T.S.



NOTE:

1. METHODS OF INSTALLATION MUST MEET OR EXCEED THE TOWN OF FRANKLIN'S SEWER DEPARTMENT AND PIPE MANUFACTURER'S SPECIFICATION'S.
2. ALL BUILDING SEWERS AND SEWER LINES SHALL HAVE A METALLIC TRACE TAPE IN THE TRENCH ONE FOOT BELOW FINISHED GRADE.

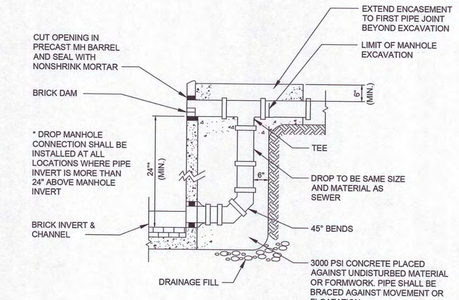
TYPICAL SEWER TRENCH DETAIL
SCALE: N.T.S.



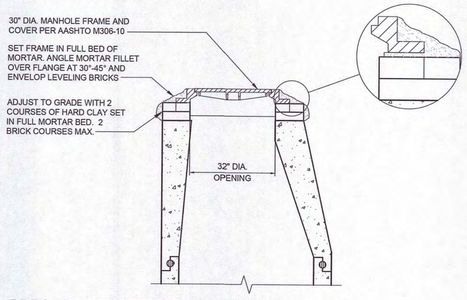
NOTE:
WHERE MORE STRINGENT, CONTRACTOR SHALL COMPLY WITH LOCAL REQUIREMENTS.

TYPICAL WATER TRENCH DETAIL
SCALE: N.T.S.

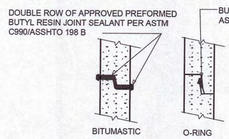
NOTE:
DIMENSIONS AND CONSTRUCTION OF DROP MANHOLE TO BE SIMILAR TO TYPICAL MANHOLE EXCEPT AS SHOWN.



TYPICAL EXTERIOR DROP SEWER MANHOLE CONNECTION DETAIL
SCALE: N.T.S.



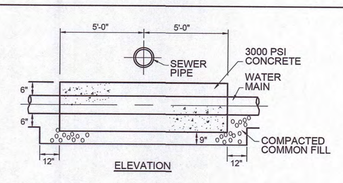
PRECAST CONCRETE SEWER MANHOLE (SMH) CASTING DETAIL
SCALE: N.T.S.



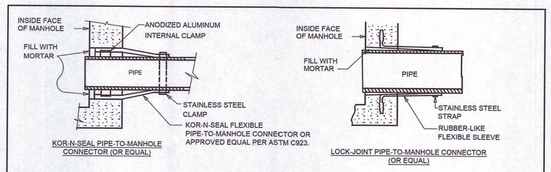
NOTES:

1. HORIZONTAL JOINTS BETWEEN PRECAST CONCRETE MANHOLE SECTIONS SHALL BE OF A TYPE APPROVED BY THE ENGINEER. JOINTS SHALL BE MADE WATERTIGHT WITH A BUTYL RUBBER O-RING PER ASTM C443 OR A DOUBLE ROW OF BUTYL RESIN JOINT SEALANT IN ROPE FORM CONFORMING TO AASHTO 198 B/ASTM C990.
2. ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS
3. FOR BITUMASTIC TYPE JOINTS THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY.
4. MATERIALS AND METHOD OF INSTALLATION SHALL CONFORM TO THE TOWN OF FRANKLIN'S SPECIFICATIONS.

DETAIL 'A' SEWER MANHOLE JOINTING METHODS
SCALE: N.T.S.



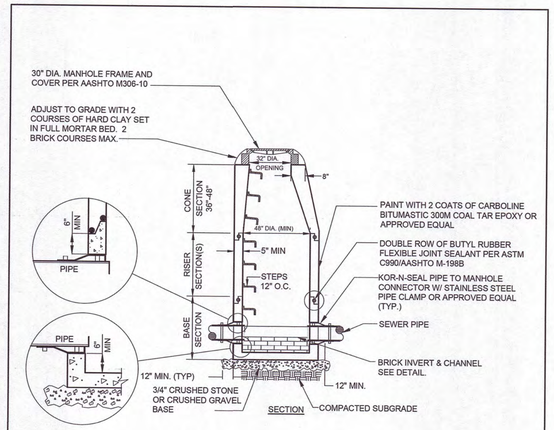
CONCRETE ENCASEMENT DETAIL
SCALE: N.T.S.



NOTES:

1. PIPE TO MANHOLE CONNECTIONS SHALL BE ONLY AS APPROVED BY THE ENGINEER AND SHALL BE WATERTIGHT.
2. MATERIALS, METHOD OF INSTALLATION SHALL CONFORM TO TOWN OF FRANKLIN'S SPECIFICATIONS.

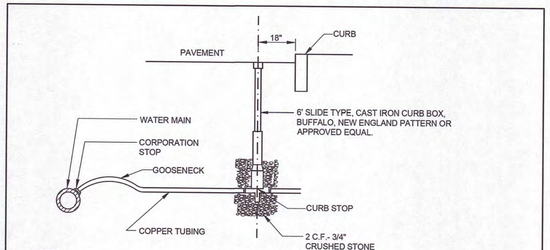
PIPE CONNECTIONS TO SEWER MANHOLE DETAIL
SCALE: N.T.S.



NOTES:

1. MANHOLES AND ALL COMPONENT PARTS SHALL BE OF SIZE, STRENGTH AND CONFIGURATION AS SHOWN EXCEPT THAT TOP SLABS MAYBE SUBSTITUTED FOR ECCENTRIC CONE SECTIONS. MANHOLES SHALL BE AN ASSEMBLY OF REINFORCED, PRECAST CONCRETE BASE RISER SECTIONS PER ASTM C478 OR MONOLITHICALLY, CAST-IN-PLACE REINFORCED CONCRETE. APPROVED MANHOLE STRUCTURE SHALL BE DESIGNED AND CONSTRUCTED TO MEET OR EXCEED H-20 LOADING AND PREVENT LEAKAGE IN EXCESS OF ONE (1) GALLON PER DAY PER VERTICAL FOOT OF MANHOLE.
2. MANHOLE STEPS TO BE STEEL REINFORCED, CO-PLYMER, POLY-PROPLYLENE PLASTIC CONFORMING TO ASTM D4101. STEEL REINFORCING SHALL BE A DEFORMED 1/2" ROD, GRADE 60, ASTM A615. ALIGN STEPS WITH MANHOLE OPENING.

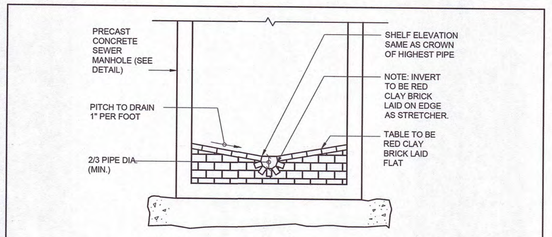
PRECAST CONC. SEWER MANHOLE (SMH) WITH BRICK INVERT
SCALE: N.T.S.



NOTE:

1. INSTALLATION AND MATERIALS TO BE IN ACCORDANCE WITH TOWN OF FRANKLIN'S SPECIFICATIONS.
2. WATER SERVICES LARGER THAN 1" ARE TO BE RESTRAINED TO MAIN W/ APPROVED SADDLE.

TYPICAL WATER SERVICE CONNECTION DETAIL
SCALE: N.T.S.



NOTES:

1. MATERIALS, METHOD OF INSTALLATION SHALL CONFORM TO THE TOWN OF FRANKLIN'S SPECIFICATIONS

TYPICAL BRICK INVERT SECTION FOR SEWER AND DRAIN MANHOLE
SCALE: N.T.S.

NOT FOR CONSTRUCTION

RJOC

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NO.	REVISION	DATE
3.	REVISED PER ZBA PEER REVIEW COMMENTS	02/12/2024
2.	REVISED PER ZBA PEER REVIEW COMMENTS	02/02/2024
1.	REVISED PER ONSITE SOIL TESTING RESULTS/NOI SUBMISSION	12/18/2023
NO.	REVISION	DATE

DESIGNED BY:	MAC
DRAWN BY:	MCR
REVIEWED BY:	BJM
SCALE:	N.T.S.

PREPARED FOR:

FAIRFIELD GROVE STREET LLC
30 BRAINTREE HILL OFFICE PARK
SUITE 105
BRAINTREE, MA 02184

SEAL:

COMMONWEALTH OF MASSACHUSETTS
BRIAN P. DUNDON
CIVIL
No. 41505
REGISTERED PROFESSIONAL ENGINEER
2-12-2024

PREPARED BY:

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CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
PHONE: 781.279.0180 RJOCONNELL.COM

PROJECT NAME:

GROVE STREET RESIDENCES
FRANKLIN, MA

DRAWING NAME:

SITE DETAILS - VI

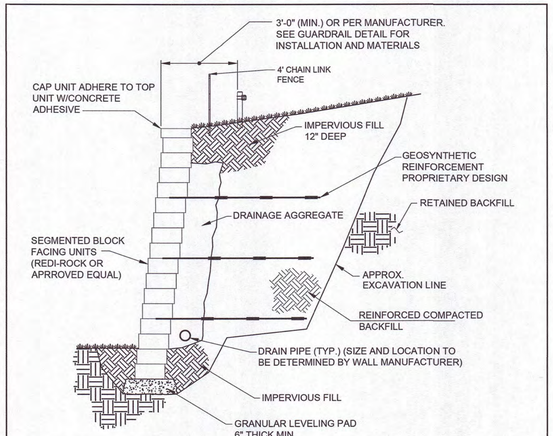
DRAWING NUMBER:

C-10

DATE: 10/30/2023 PROJECT NO.: 22016

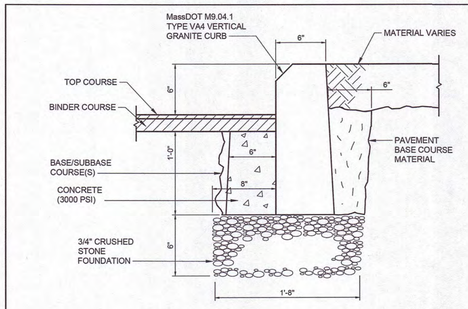
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Feb 12, 2024 - 18:24pm

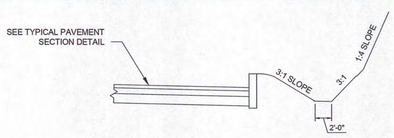


NOTE:
CONTRACTOR SHALL SUBMIT DETAILED DESIGN DRAWINGS OF THE RETAINING WALLS ON THIS SITE FOR THE SITE SPECIFIC CONDITIONS. DESIGN SHALL TAKE INTO ACCOUNT PROXIMITY OF PAVED AREAS, GUIDE RAIL, FENCING AND UTILITIES. DESIGN OF WALL SHALL INCLUDE A GLOBAL STABILITY ANALYSIS USING FEDERAL HIGHWAY ADMINISTRATION CRITERIA. DRAWINGS SHALL BE PREPARED AND SEALED BY A PROFESSIONAL ENGINEER FOR APPROVAL

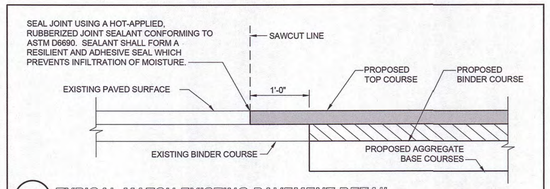
SEGMENTED BLOCK RETAINING WALL
SCALE: N.T.S.



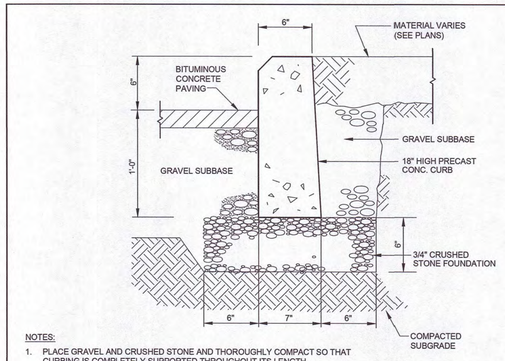
VERTICAL GRANITE CURB DETAIL
SCALE: N.T.S.



LEDGE CUT DETAIL
SCALE: N.T.S.

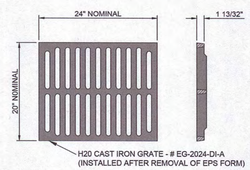


TYPICAL MATCH EXISTING PAVEMENT DETAIL
SCALE: N.T.S.



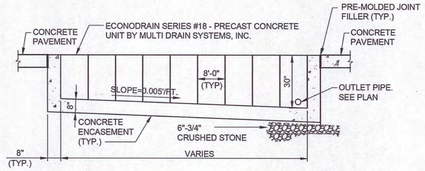
NOTES:
1. PLACE GRAVEL AND CRUSHED STONE AND THOROUGHLY COMPACT SO THAT CURBING IS COMPLETELY SUPPORTED THROUGHOUT ITS LENGTH.
2. CURBING SHALL BE FITTED TOGETHER AS CLOSELY AS POSSIBLE, JOINTS FILLED WITH CEMENT MORTAR AND NEATLY POINTED ON THE TOP AND FRONT EXPOSED PORTIONS. AFTER POINTING, CURBING SHALL BE CLEANED OF ALL EXCESS MORTAR FORCED OUT OF JOINTS.

PRE-CAST CONCRETE CURB DETAIL
SCALE: N.T.S.

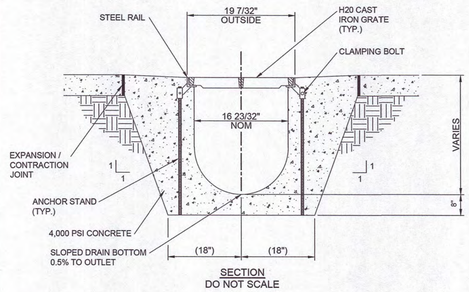


NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.
2. A TRENCH SHALL BE EXCAVATED A MINIMUM OF 12" WIDER THAN THE OVERALL WIDTH OF THE STEEL FRAME(6" MINIMUM ON EACH SIDE)AND A MINIMUM OF 6 INCHES DEEPER THAN THE OVERALL DEPTH OF THE ECONODRAIN EPS FORM.

GRATE



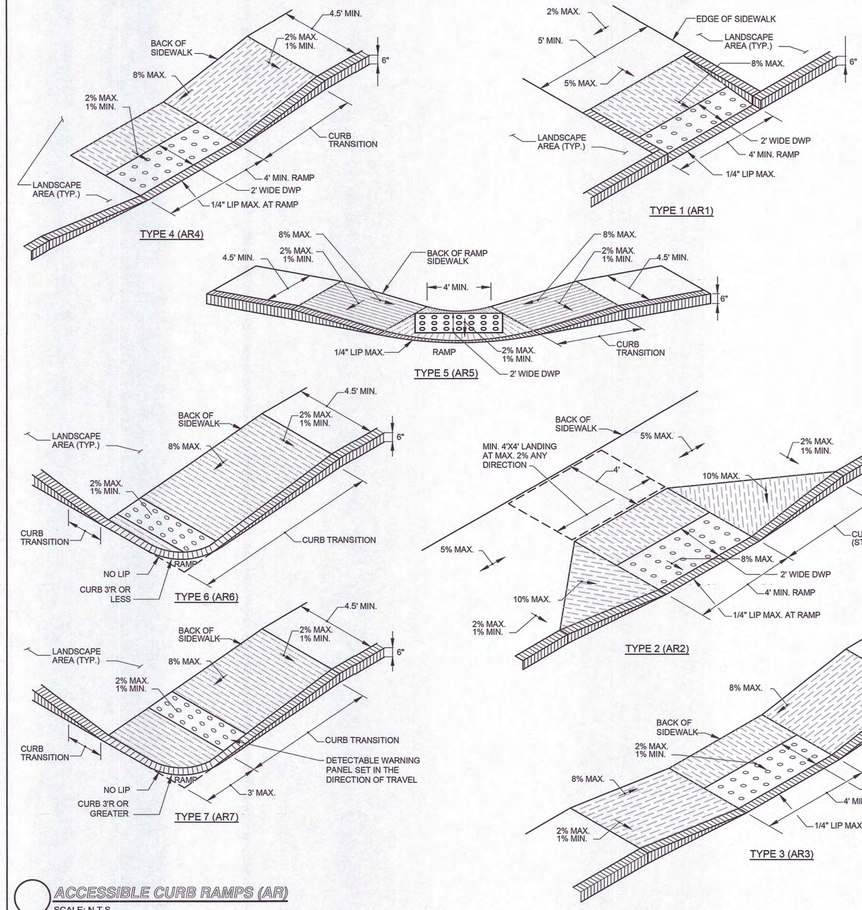
SECTION A-A



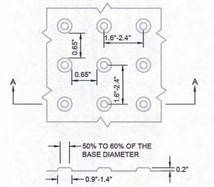
SECTION
DO NOT SCALE

NOTES:
1. VIBRATE CONCRETE TO ELIMINATE AIR POCKETS.
2. THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX. 1/8" ABOVE THE TOP OF THE CHANNEL EDGE.
3. REFER TO MULTI DRAIN LATEST INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS.
4. SEE PLAN FOR INVERT ELEVATIONS AND LENGTHS OF TRENCH DRAINS.
5. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

TYPICAL TRENCH DRAIN DETAIL
SCALE: N.T.S.

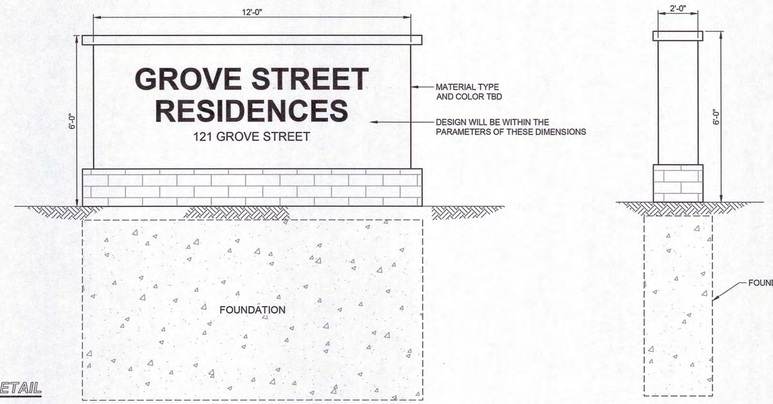


NOTES:
1. SEE PLANS FOR CURB TYPE.
2. CURBS AND WALKS ALONG ACCESSIBLE ROUTES SHALL MEET OR EXCEED THE APPLICABLE MA REGULATIONS AND ADA.
3. THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 2% (1% MIN).
4. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
5. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE CURB RAMPS SHALL BE 8%.
6. MAINTAIN A MINIMUM OF 3 FEET CLEAR AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS ETC.)
7. GRADE BASE OF RAMP TO PREVENT PONDING.
8. RAMP CONSTRUCTION SHALL CONFORM TO TYPICAL SIDEWALK SECTION.
9. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5'X5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
10. ALL CURBING AT RAMPS SHALL BE VERTICAL CURBING SET FLUSH WHERE IT ABUTS ROADWAY.
11. ALL RAMPS SHALL BE CEMENT CONCRETE WITH BROOM NON-SLIP SURFACE.
12. ALL RAMPS SHALL HAVE A 24" WIDE DETECTABLE WARNING PANEL EXTENDING THE FULL WIDTH OF THE FLUSH RAMP EDGE.
13. DETECTABLE WARNING PANEL SHALL BE PERPENDICULAR TO THE DIRECTION OF TRAVEL TO THE MAXIMUM EXTENT PRACTICABLE.



DETECTABLE WARNING PANEL (DWP)

ACCESSIBLE CURB RAMPS (AR)
SCALE: N.T.S.



NOTE
SIGN TO BE EITHER INTERNAL ILLUMINATED OR EXTERNAL ILLUMINATED BASED ON FINAL DESIGN. INTERIOR LIGHTING SHALL BE NON -EXPOSED. EXTERNAL LIGHTING SHALL BE SHIELDED AND DIRECTED SOLELY AT THE SIGN.

TYPICAL CONCRETE SIDEWALK DETAIL
SCALE: N.T.S.

NOT FOR CONSTRUCTION

RJOC

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3.	REVISED PER ZBA PEER REVIEW COMMENTS	02/12/2024
2.	REVISED PER ZBA PEER REVIEW COMMENTS	02/02/2024
1.	REVISED PER ONSITE SOIL TESTING RESULTS/NOI SUBMISSION	12/18/2023

DESIGNED BY:	MAC
DRAWN BY:	MCR
REVIEWED BY:	BJM
SCALE:	N.T.S.

PREPARED FOR:
FAIRFIELD GROVE STREET LLC
30 BRAINTREE HILL OFFICE PARK
SUITE 105
BRAINTREE, MA 02184

SEAL:
COMMONWEALTH OF MASSACHUSETTS
BRIAN P. DUNDON
CIVIL
No. 41605
REGISTERED PROFESSIONAL ENGINEER
2-12-2024

PREPARED BY:
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CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
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PHONE: 781.279.0180 RJOCONNELL.COM

PROJECT NAME:
GROVE STREET RESIDENCES
FRANKLIN, MA

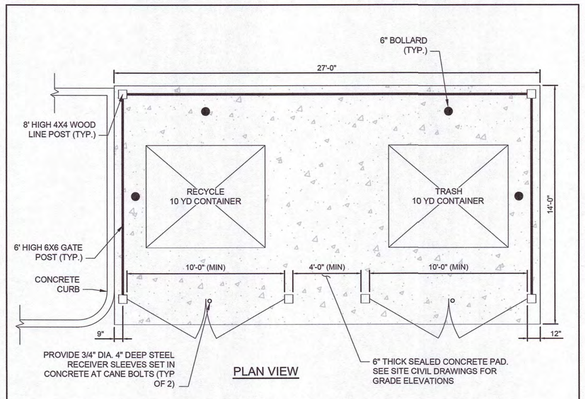
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C-11

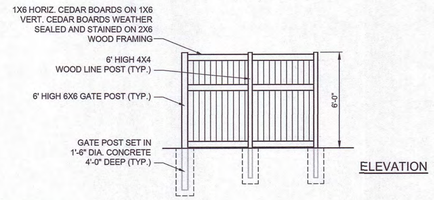
DATE: 10/30/2023 PROJECT NO.: 22016

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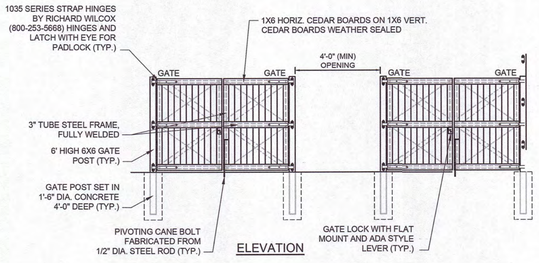
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Feb 12, 2024 - 18:25pm



PLAN VIEW

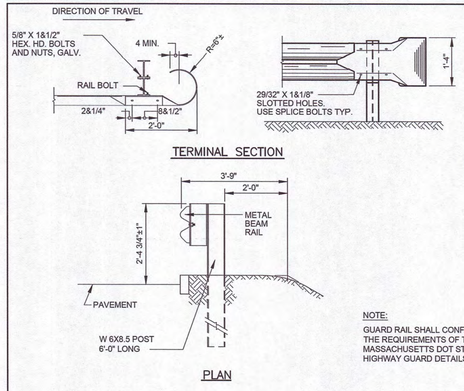


ELEVATION



ELEVATION

DUMPSTER AREA ENCLOSURE DETAIL
SCALE: N.T.S.

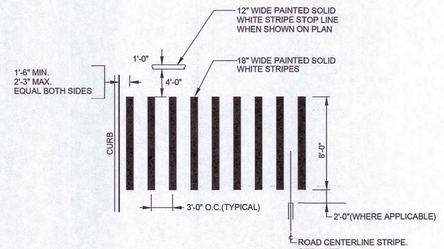


TERMINAL SECTION

PLAN

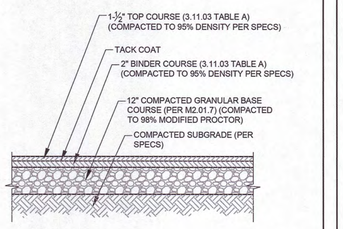
NOTE:
GUARD RAIL SHALL CONFORM TO THE REQUIREMENTS OF THE MASSACHUSETTS DOT STANDARD HIGHWAY GUARD DETAILS

TYPICAL W-BEAM GUARDRAIL/TERMINAL SECTION DETAIL
SCALE: N.T.S.



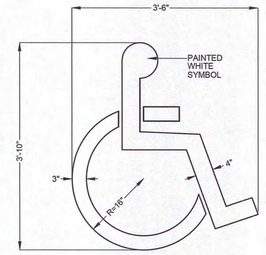
NOTE:
ROAD CENTERLINE (STRIPE) TO ALIGN WITH STRIPE OR SPACE CENTERLINE (SPACE SHOWN)

TYPICAL 18" WIDE 90° PAINTED CROSSWALK DETAIL
SCALE: N.T.S.

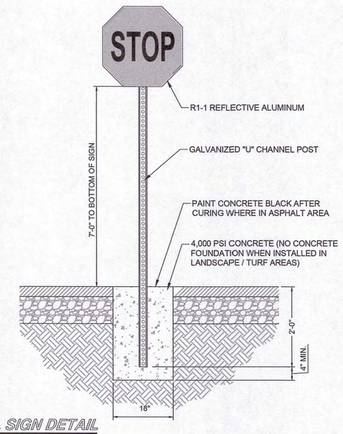


NOTE:
FOR PAVEMENT MATERIALS REFER TO MassDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGES, LATEST EDITIONS.

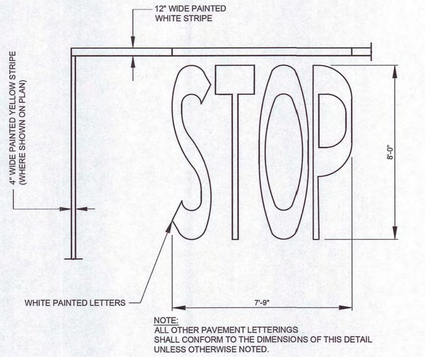
ASPHALT PAVEMENT SECTION
SCALE: N.T.S.



TYPICAL PAINTED HANDICAP SYMBOL DETAIL
SCALE: N.T.S.

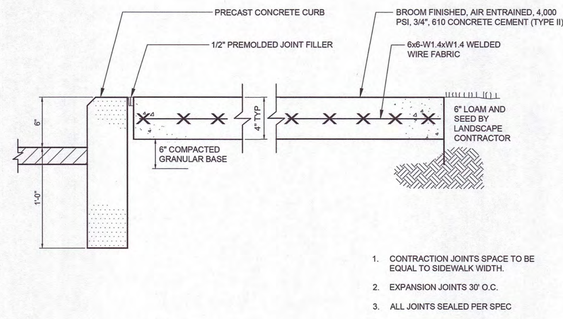


TYPICAL SIGN DETAIL
SCALE: N.T.S.



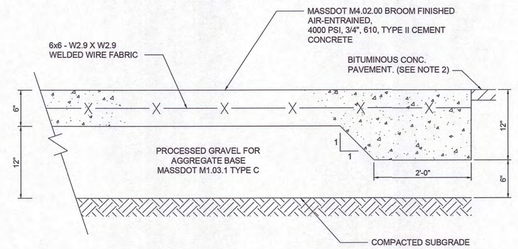
NOTE:
ALL OTHER PAVEMENT LETTERINGS SHALL CONFORM TO THE DIMENSIONS OF THIS DETAIL UNLESS OTHERWISE NOTED.

TYPICAL PAINTED "STOP" DETAIL
SCALE: N.T.S.



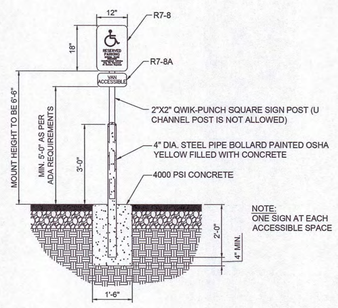
1. CONTRACTION JOINTS SPACE TO BE EQUAL TO SIDEWALK WIDTH.
2. EXPANSION JOINTS 30' O.C.
3. ALL JOINTS SEALED PER SPEC

TYPICAL CONCRETE SIDEWALK DETAIL
SCALE: N.T.S.



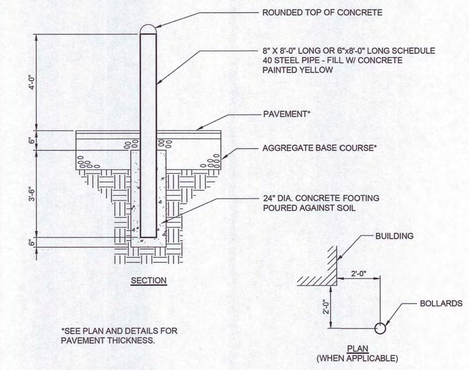
NOTES:
1. CONSTRUCTION AND MATERIALS PER GEOTECHNICAL ANALYSIS.
2. WHERE CONCRETE PAVEMENT ABUTS BITUMINOUS CONCRETE PAVEMENT, INCREASE THE OUTER 2' OF THE CONCRETE PAVEMENT TO 12".

TYPICAL CONCRETE PAVEMENT SECTION - DUMPSTER PAD
SCALE: N.T.S.



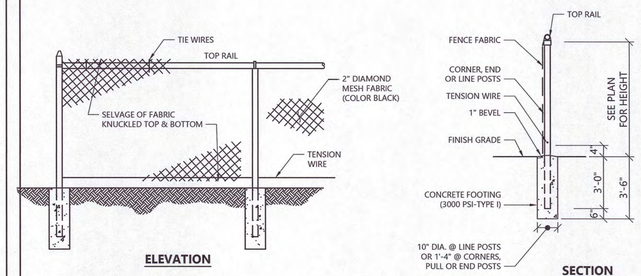
NOTE:
ONE SIGN AT EACH ACCESSIBLE SPACE

BOLLARD MOUNTED ACCESSIBLE PARKING SIGN DETAIL
SCALE: N.T.S.



*SEE PLAN AND DETAILS FOR PAVEMENT THICKNESS.

TYPICAL 6-INCH OR 8-INCH BOLLARD DETAIL
SCALE: N.T.S.



NOTES
1. MATERIALS TO BE SUPPLIED AND INSTALLED IN CONFORMANCE WITH "CHAIN LINK MANUFACTURER'S INSTITUTE" PRODUCT MANUAL.
2. ALL POSTS, RAILS, FABRIC AND COMPONENTS SHALL BE BLACK VINYL COATED.

TYPICAL CHAIN LINK FENCE DETAIL
SCALE: N.T.S.

NOT FOR CONSTRUCTION

RJOC

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DESIGNED BY:	MAC
DRAWN BY:	MCR
REVIEWED BY:	BJM
SCALE:	N.T.S.

PREPARED FOR:
FAIRFIELD GROVE STREET LLC
30 BRAINTREE HILL OFFICE PARK
SUITE 105
BRAINTREE, MA 02184

SEAL:
COMMONWEALTH OF MASSACHUSETTS
BRIAN P. DUNDON
CIVIL
No.41505
REGISTERED PROFESSIONAL ENGINEER
1-12-2024

PREPARED BY:
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PHONE: 781.279.0180 RJOCONNELL.COM

PROJECT NAME:
GROVE STREET RESIDENCES
FRANKLIN, MA

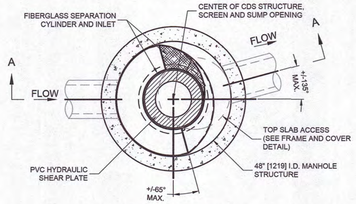
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SITE DETAILS - VIII

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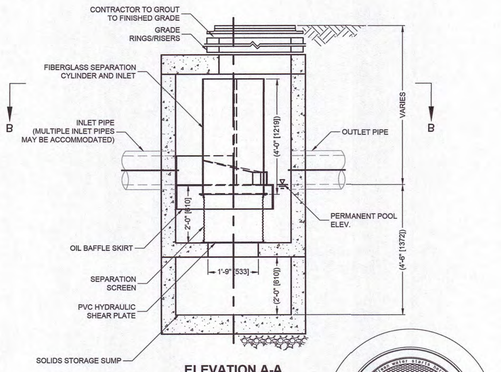
DATE: 10/30/2023 PROJECT NO.: 22016

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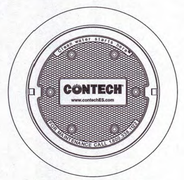
Drawing name: G:\MA\Franklin\Fairfield Residential\121 Grove Street\Main\22016_C-12 Site Details - VIII.dwg
Feb 12, 2024 - 18:26pm



PLAN VIEW B-B
N.T.S.



ELEVATION A-A
N.T.S.

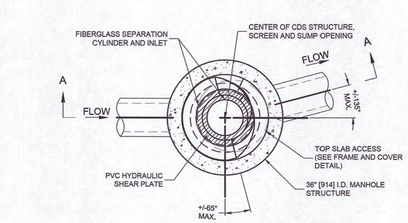


FRAME AND COVER
N.T.S.

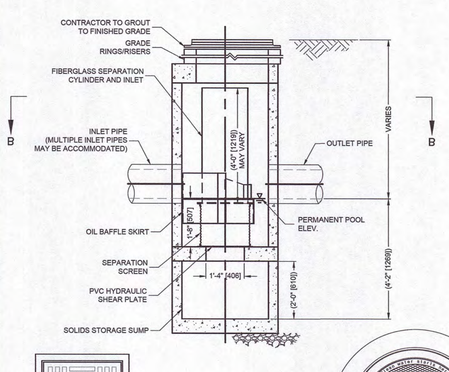
GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
6. CDS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CDS-2 (CDS2015-4-C) DETAIL
SCALE: N.T.S.



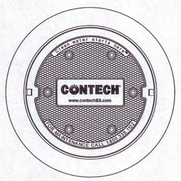
PLAN VIEW B-B
N.T.S.



ELEVATION A-A
N.T.S.



FRAME AND GRATE
(MAY VARY)
NOT TO SCALE

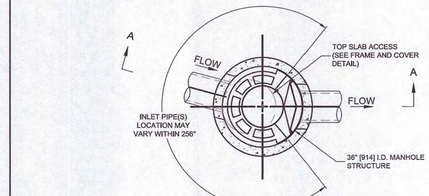


FRAME AND COVER
N.T.S.

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
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5. IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
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INSTALLATION NOTES
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B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
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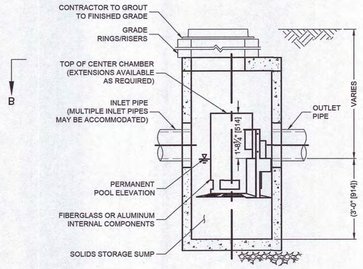
CDS-1, 4-6, 8, 10, 12-14 (CDS1515-3-C) DETAIL
SCALE: N.T.S.



PLAN VIEW B-B
NOT TO SCALE



FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

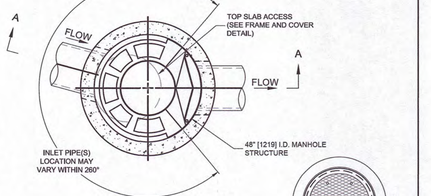


ELEVATION A-A
NOT TO SCALE

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4. CASCADE SEPARATOR STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2' [610], AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. CASCADE SEPARATOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. ALTERNATE UNITS ARE SHOWN IN MILLIMETERS [mm].

INSTALLATION NOTES
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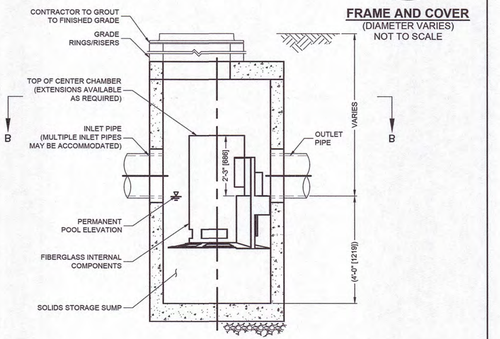
CDS-9 (CS-3) CASCADE SEPARATOR STANDARD DETAIL
SCALE: N.T.S.



PLAN VIEW B-B
NOT TO SCALE



FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

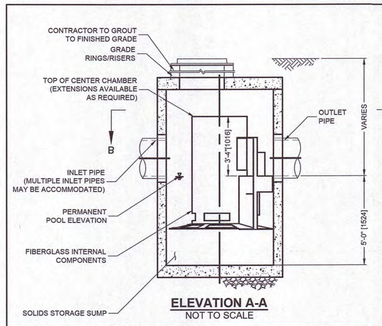


ELEVATION A-A
NOT TO SCALE

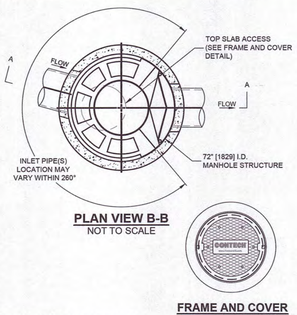
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5. CASCADE SEPARATOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. ALTERNATE UNITS ARE SHOWN IN MILLIMETERS [mm].

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E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CDS-11 (CS-4) CASCADE SEPARATOR STANDARD DETAIL
SCALE: N.T.S.



ELEVATION A-A
NOT TO SCALE



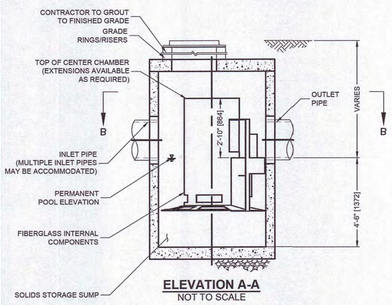
PLAN VIEW B-B
NOT TO SCALE

FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

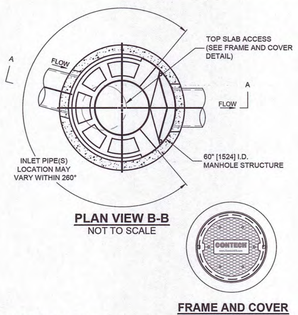
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5. CASCADE SEPARATOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. ALTERNATE UNITS ARE SHOWN IN MILLIMETERS [mm].

INSTALLATION NOTES
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E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CDS-7 (CS-6) CASCADE SEPARATOR STANDARD DETAIL
SCALE: N.T.S.



ELEVATION A-A
NOT TO SCALE



PLAN VIEW B-B
NOT TO SCALE

FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

GENERAL NOTES
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CDS-3 (CS-5) CASCADE SEPARATOR STANDARD DETAIL
SCALE: N.T.S.

NOT FOR CONSTRUCTION

Drawing name: G:\MA\Franklin\Fairfield Residential\121 Grove Street\Main\22016_C-13 Site Details - IX.dwg
Feb 12, 2024 - 18:47pm

RJOC

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NO.	REVISION	DATE
2.	REVISED PER ZBA PEER REVIEW COMMENTS	02/12/2024
1.	REVISED PER ZBA PEER REVIEW COMMENTS	02/02/2024

DESIGNED BY:	MAC
DRAWN BY:	MCR
REVIEWED BY:	BJM
SCALE:	N.T.S.

PREPARED FOR:
FAIRFIELD GROVE STREET LLC
30 BRAINTREE HILL OFFICE PARK
SUITE 105
BRAINTREE, MA 02184

SEAL:
COMMONWEALTH OF MASSACHUSETTS
BRIAN P. DUNDON
CIVIL
No. 41505
REGISTERED PROFESSIONAL ENGINEER
2-12-2024

PREPARED BY:
RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
PHONE: 781.279.0180 RJOCONNELL.COM

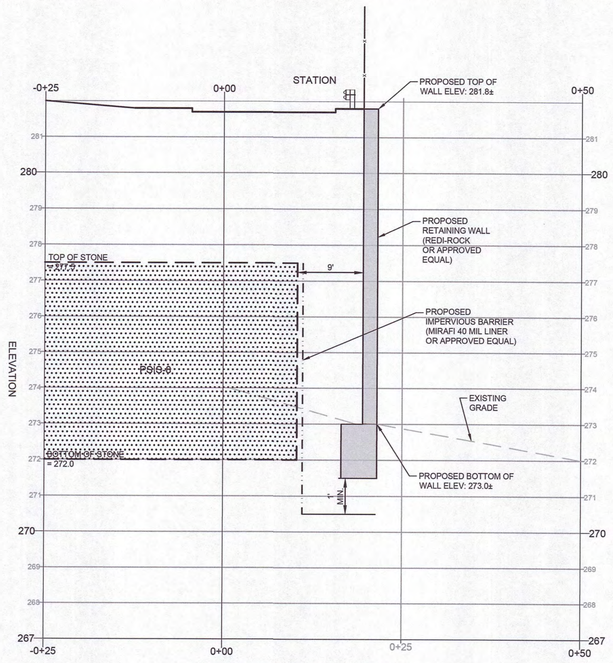
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SITE DETAILS - IX

PROJECT NAME:
GROVE STREET RESIDENCES
FRANKLIN, MA

DRAWING NUMBER:
C-13

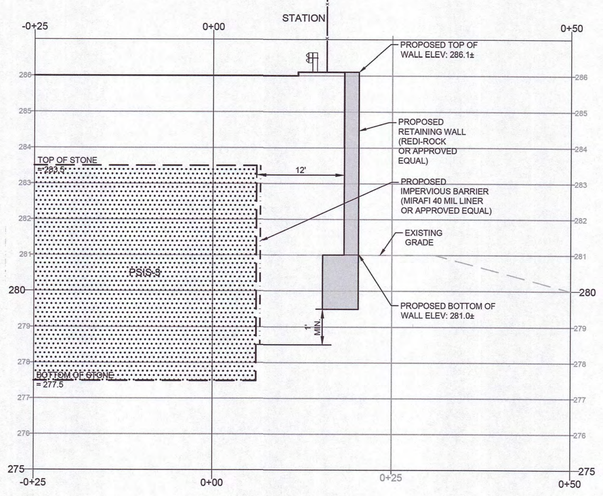
DATE: 02/02/2024 PROJECT NO.: 22016

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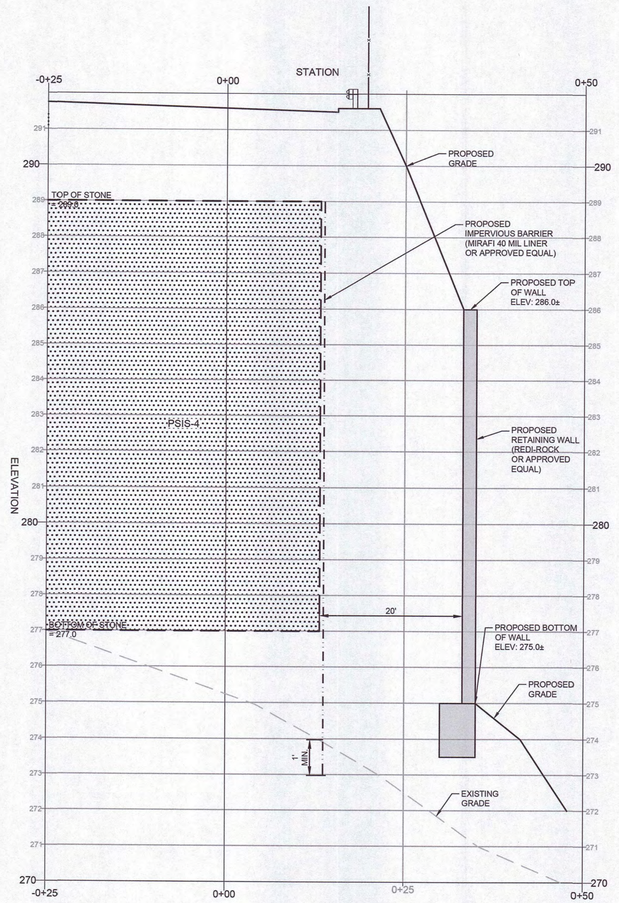
PROPOSED CROSS SECTION A-A

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VERTICAL SCALE: 1" = 1'



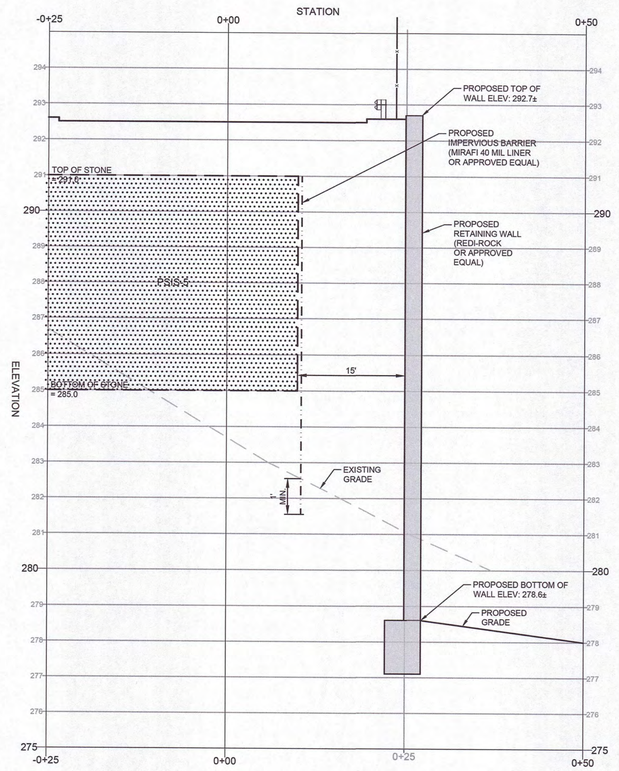
PROPOSED CROSS SECTION B-B

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1'



PROPOSED CROSS SECTION C-C

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1'



PROPOSED CROSS SECTION D-D

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1'

NOT FOR CONSTRUCTION

20 0 10 20 40
GRAPHIC SCALE IN FEET

Drawing name: G:\MA\Franklin\Fairfield Residential\121 Grove Street\Main\22016_C-14 Wall Cross Sections.dwg
Feb 12, 2024 - 16:31pm

RJOC

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NO.	REVISION	DATE
2.	REVISED PER ZBA PEER REVIEW COMMENTS	02/12/2024
1.	REVISED PER ZBA PEER REVIEW COMMENTS	02/02/2024

DESIGNED BY:	MAC
DRAWN BY:	MCR
REVIEWED BY:	BJM
SCALE:	AS NOTED

PREPARED FOR:
FAIRFIELD GROVE STREET LLC
30 BRAINTREE HILL OFFICE PARK
SUITE 105
BRAINTREE, MA 02184

SEAL:
COMMONWEALTH OF MASSACHUSETTS
BRIAN P. DUNDON
CIVIL
No.41505
REGISTERED
PROFESSIONAL ENGINEER
2-12-2024

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PHONE: 781.279.0180 RJOCONNELL.COM

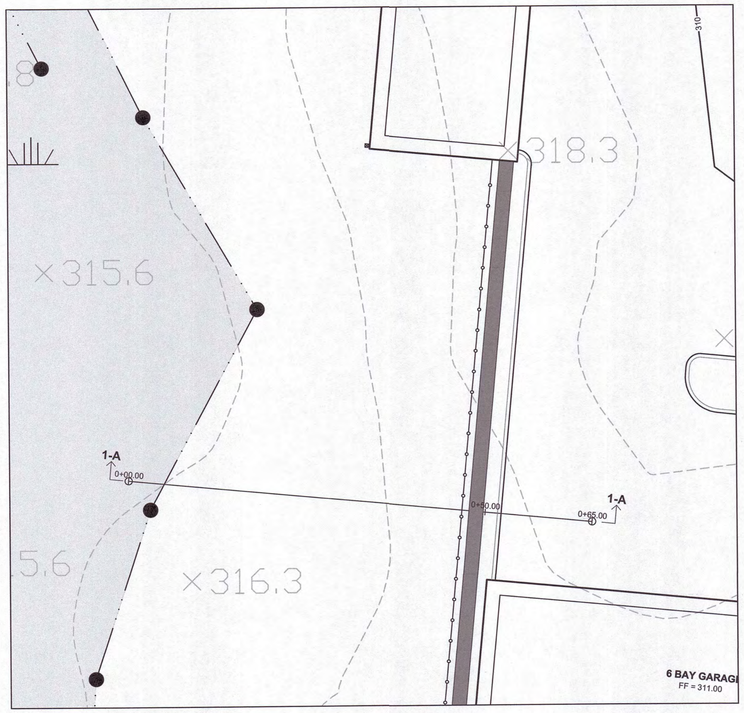
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GROVE STREET RESIDENCES
FRANKLIN, MA

DRAWING NAME:
RETAINING WALL CROSS SECTION PLAN

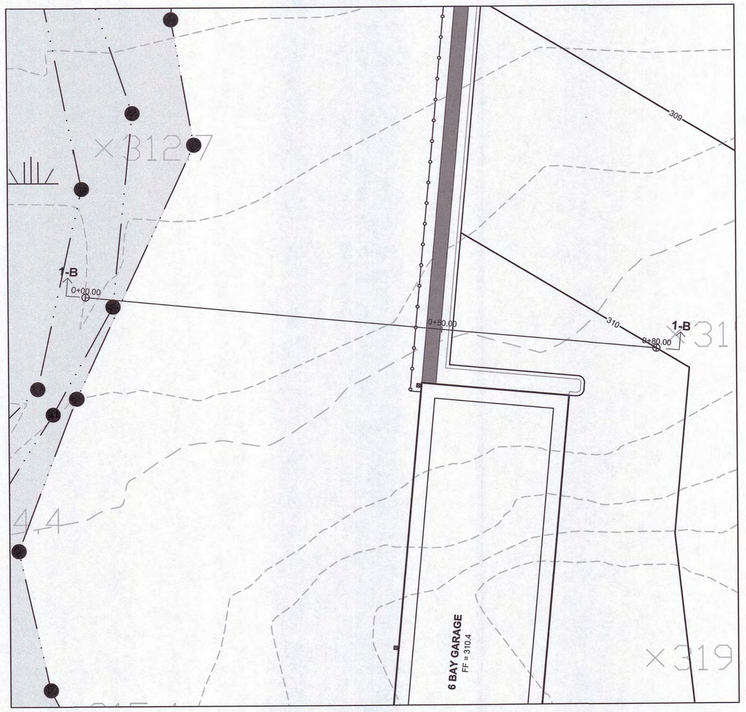
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C-14

DATE: 02/02/2024 PROJECT NO.: 22016

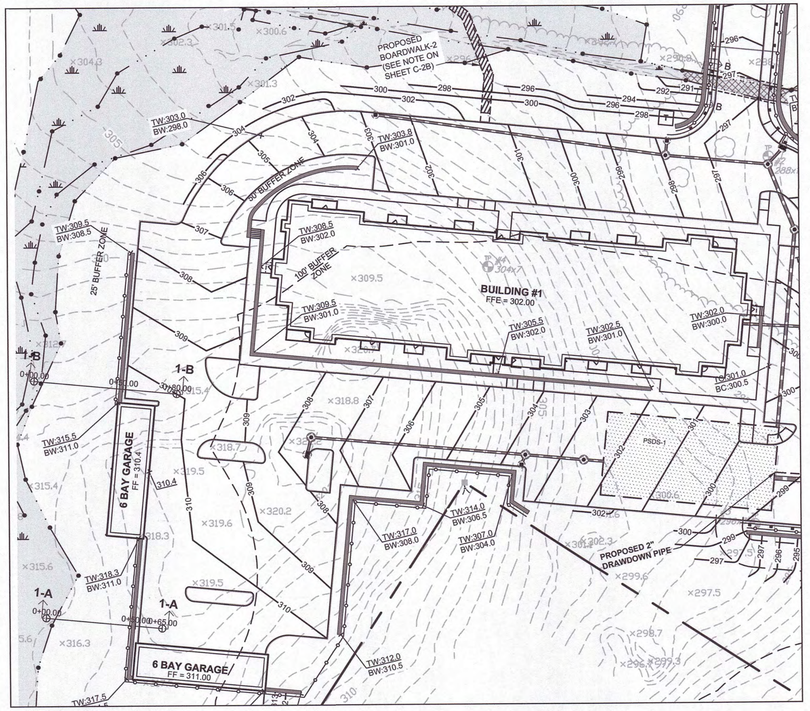
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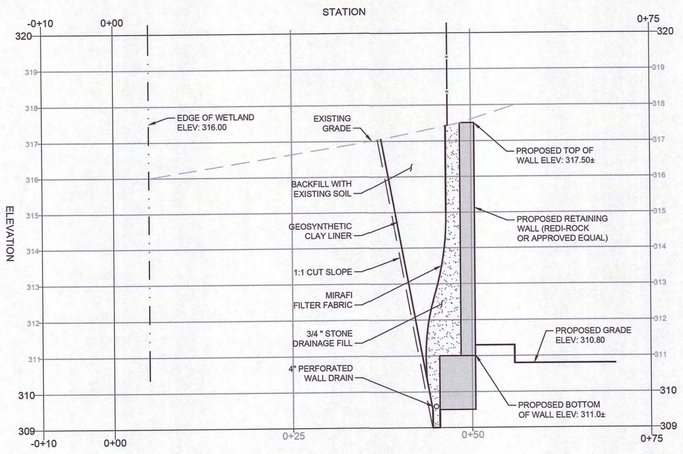
PLAN VIEW 1A-1A
SCALE: 1" = 10'



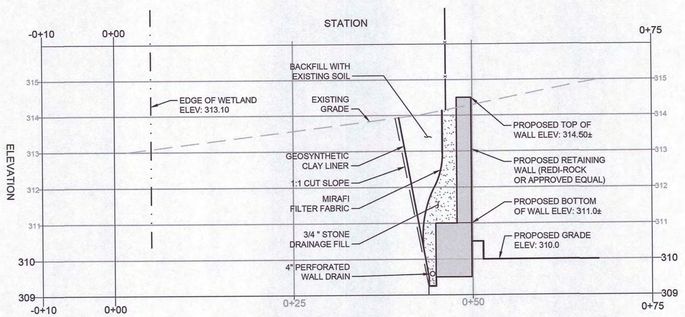
PLAN VIEW 1B-1B
SCALE: 1" = 10'



PROPOSED BUILDING 1
SCALE: 1" = 40'



PROPOSED CROSS SECTION 1A-1A
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1'



PROPOSED CROSS SECTION 1B-1B
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1'

NOT FOR CONSTRUCTION

10 0 5 10 20
GRAPHIC SCALE IN FEET

Drawing name: G:\MA\Franklin\Fairfield Residential\121 Grove Street\Main\22016_C-15 Wall Cross Sections.dwg
Feb 12, 2024 - 10:33pm

RJOC

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NO.	REVISION	DATE
2.	REVISED PER ZBA PEER REVIEW COMMENTS	02/12/2024
1.	REVISED PER ZBA PEER REVIEW COMMENTS	02/02/2024

DESIGNED BY:	MAC
DRAWN BY:	MCR
REVIEWED BY:	BJM
SCALE:	AS NOTED

PREPARED FOR:
FAIRFIELD GROVE STREET LLC
30 BRAINTREE HILL OFFICE PARK
SUITE 105
BRAINTREE, MA 02184

SEAL:
COMMONWEALTH OF MASSACHUSETTS
BRIAN P. DUNDON
CIVIL
No. 41505
REGISTERED PROFESSIONAL ENGINEER
2-12-2024

PREPARED BY:
RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
PHONE: 781.279.0180 RJOCONNELL.COM

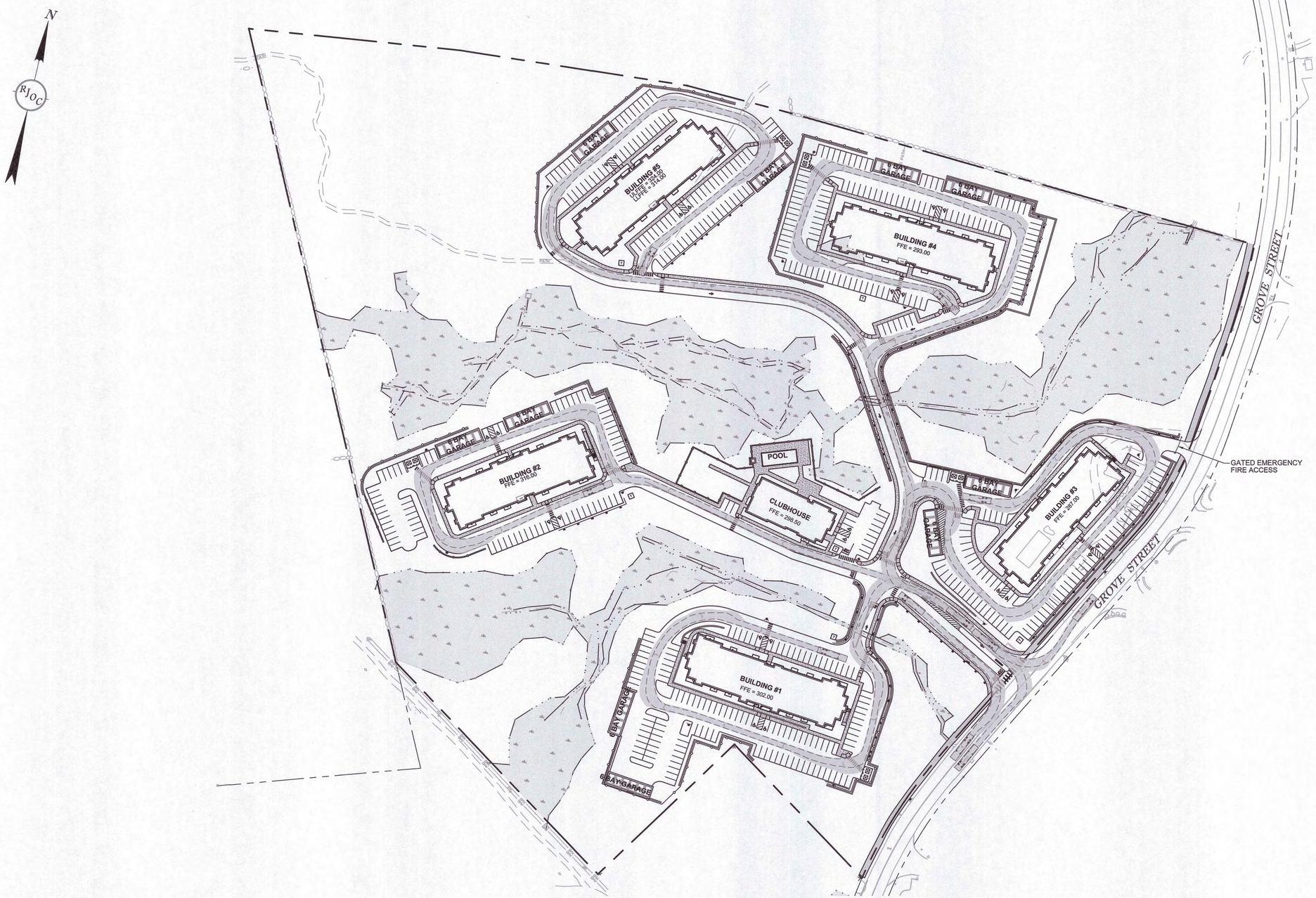
PROJECT NAME:
GROVE STREET RESIDENCES
FRANKLIN, MA

DRAWING NAME:
RETAINING WALL CROSS SECTION PLAN

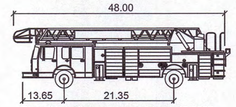
DRAWING NUMBER:
C-15

DATE: 02/02/2024 PROJECT NO.: 22016

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FRANKLIN FIRE TRUCK



Overall Length	48.000ft
Overall Width	10.000ft
Overall Body Height	7.715ft
Min Body Ground Clearance	0.627ft
Track Width	8.000ft
Lock-to-lock time	5.00s
Curb to Curb Turning Radius	36.583ft

NOT FOR CONSTRUCTION

80 0 40 80 160

GRAPHIC SCALE IN FEET

RJOC

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NO.	REVISION	DATE
3.	REVISED PER ZBA PEER REVIEW COMMENTS	02/12/2024
2.	REVISED PER ZBA PEER REVIEW COMMENTS	02/02/2024
1.	REVISED PER ONSITE SOIL TESTING RESULTS/NOI SUBMISSION	12/18/2023

DESIGNED BY:	MAC
DRAWN BY:	MCR
REVIEWED BY:	MAC
SCALE:	1" = 80'

PREPARED FOR:

FAIRFIELD GROVE STREET LLC
30 BRAINTREE HILL OFFICE PARK
SUITE 105
BRAINTREE, MA 02184

SEAL:

COMMONWEALTH OF MASSACHUSETTS
BRIAN P. DUNDON
CIVIL
No. 41695
REGISTERED PROFESSIONAL ENGINEER
2-12-2024

PREPARED BY:

RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
PHONE: 781.279.0180 RJOCONNELL.COM

PROJECT NAME:

GROVE STREET RESIDENCES
FRANKLIN, MA

DRAWING NAME:

FIRE TRUCK TURNING PLAN

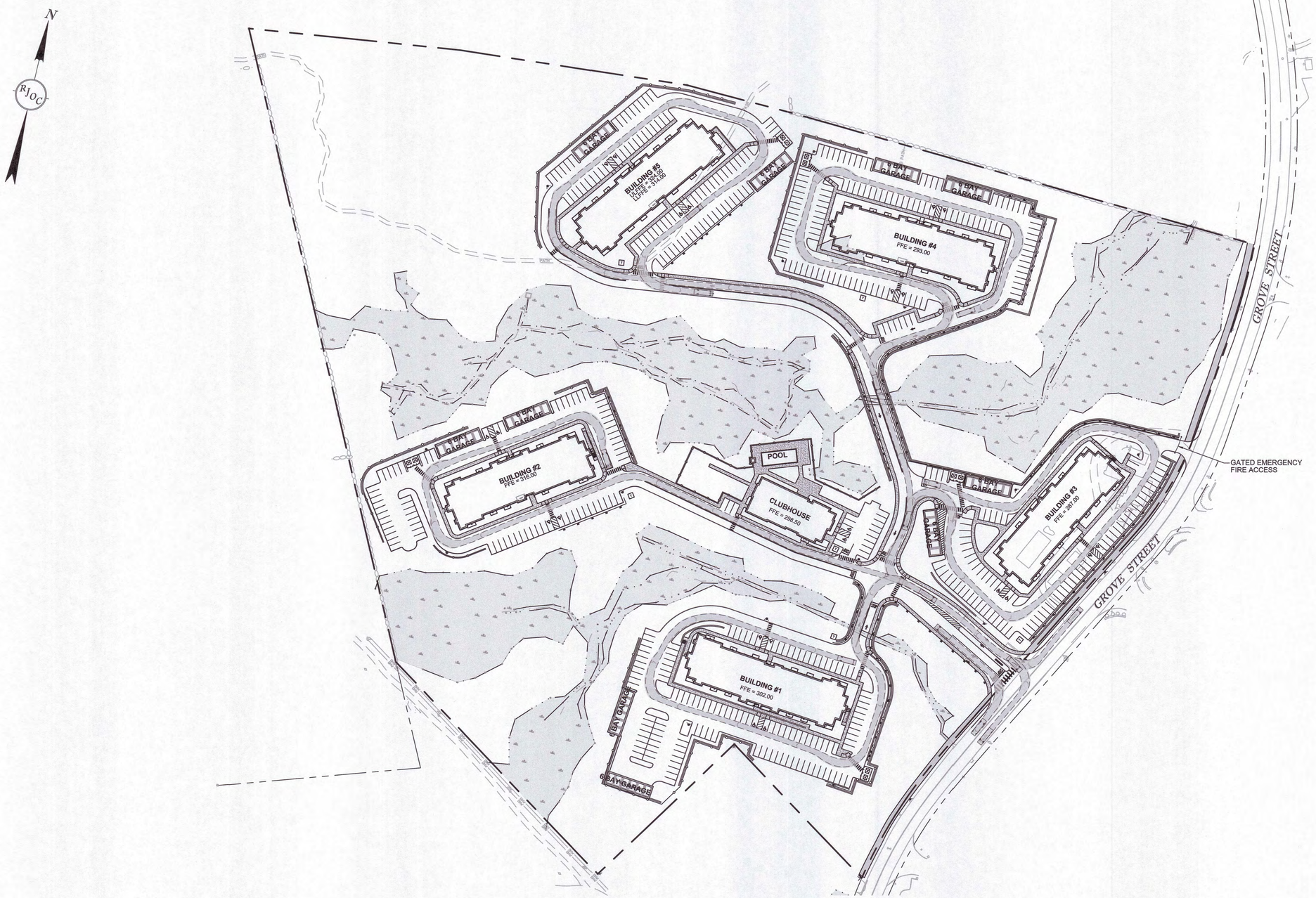
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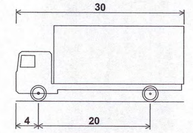
FT-1

DATE: 10/30/2023 PROJECT NO.: 22016

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Drawing name: G:\MA\Franklin\Fairfield Residential\121 Grove Street\Main\22016_FT-1 Fire Truck Turning Plan.dwg
Feb 12, 2024 - 18:36pm





SU-30 - Single Unit Truck

Overall Length	30.000ft
Overall Width	8.000ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.367ft
Track Width	8.000ft
Lock-to-lock time	5.00s
Max Steering Angle (Virtual)	31.80°

NOT FOR CONSTRUCTION

80 0 40 80 160

GRAPHIC SCALE IN FEET

Drawing name: G:\MA\Franklin\Fairfield Residential\121 Grove Street\Main\22016_TT-1 Moving Truck Turning Plan.dwg
Feb 12, 2024 - 18:42pm

RJOC

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NO.	REVISION	DATE
2.	REVISED PER ZBA PEER REVIEW COMMENTS	02/12/2024
1.	REVISED PER ZBA PEER REVIEW COMMENTS	02/02/2024

DESIGNED BY:	MAC
DRAWN BY:	MCR
REVIEWED BY:	MAC
SCALE:	1" = 80'

PREPARED FOR:

FAIRFIELD GROVE STREET LLC
30 BRAINTREE HILL OFFICE PARK
SUITE 105
BRAINTREE, MA 02184

SEAL:

COMMONWEALTH OF MASSACHUSETTS
BRIAN P. DUNDON
CIVIL
No. 41905
REGISTERED
PROFESSIONAL ENGINEER
2-12-2024

PREPARED BY:

RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
PHONE: 781.279.0180 RJOCONNELL.COM

PROJECT NAME:

GROVE STREET RESIDENCES
FRANKLIN, MA

DRAWING NAME:

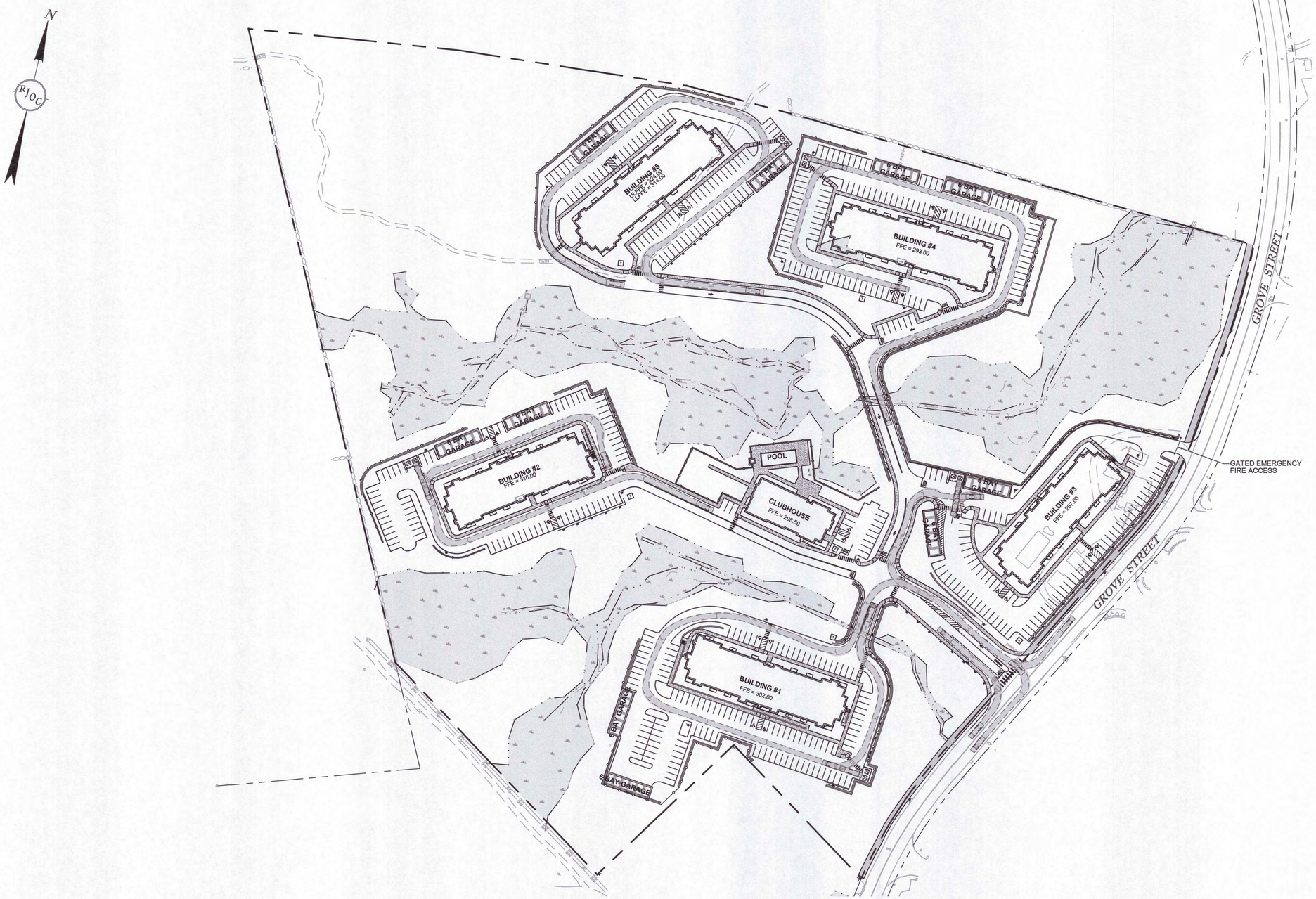
MOVING TRUCK TURNING PLAN

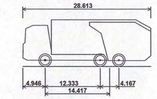
DRAWING NUMBER:

TT-1

DATE: 02/02/2024 PROJECT NO.: 22016

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Trash/Recycle Truck	
Overall Length	28.613ft
Overall Width	8.000ft
Overall Body Height	10.481ft
Min Body Ground Clearance	1.311ft
Track Width	8.000ft
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	33.500ft

NOT FOR CONSTRUCTION

80 0 40 80 160

GRAPHIC SCALE IN FEET

RJOC

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NO.	REVISION	DATE
2.	REVISED PER ZBA PEER REVIEW COMMENTS	02/12/2024
1.	REVISED PER ZBA PEER REVIEW COMMENTS	02/02/2024

DESIGNED BY:	MAC
DRAWN BY:	MCR
REVIEWED BY:	MAC
SCALE:	1" = 80'

PREPARED FOR:

FAIRFIELD GROVE STREET LLC
30 BRAINTREE HILL OFFICE PARK
SUITE 105
BRAINTREE, MA 02184

SEAL:

COMMONWEALTH OF MASSACHUSETTS
BRIAN P. DUNDON
CIVIL
No. 41505
REGISTERED PROFESSIONAL ENGINEER

2-12-2024

PREPARED BY:

RJO'CONNELL & ASSOCIATES, INC.
CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
80 MONTVALE AVENUE, SUITE 201 STONEHAM, MA 02180
PHONE: 781.279.0180 RJOCONNELL.COM

PROJECT NAME:

GROVE STREET RESIDENCES
FRANKLIN, MA

DRAWING NAME:

TRASH/RECYCLE TRUCK TURNING PLAN

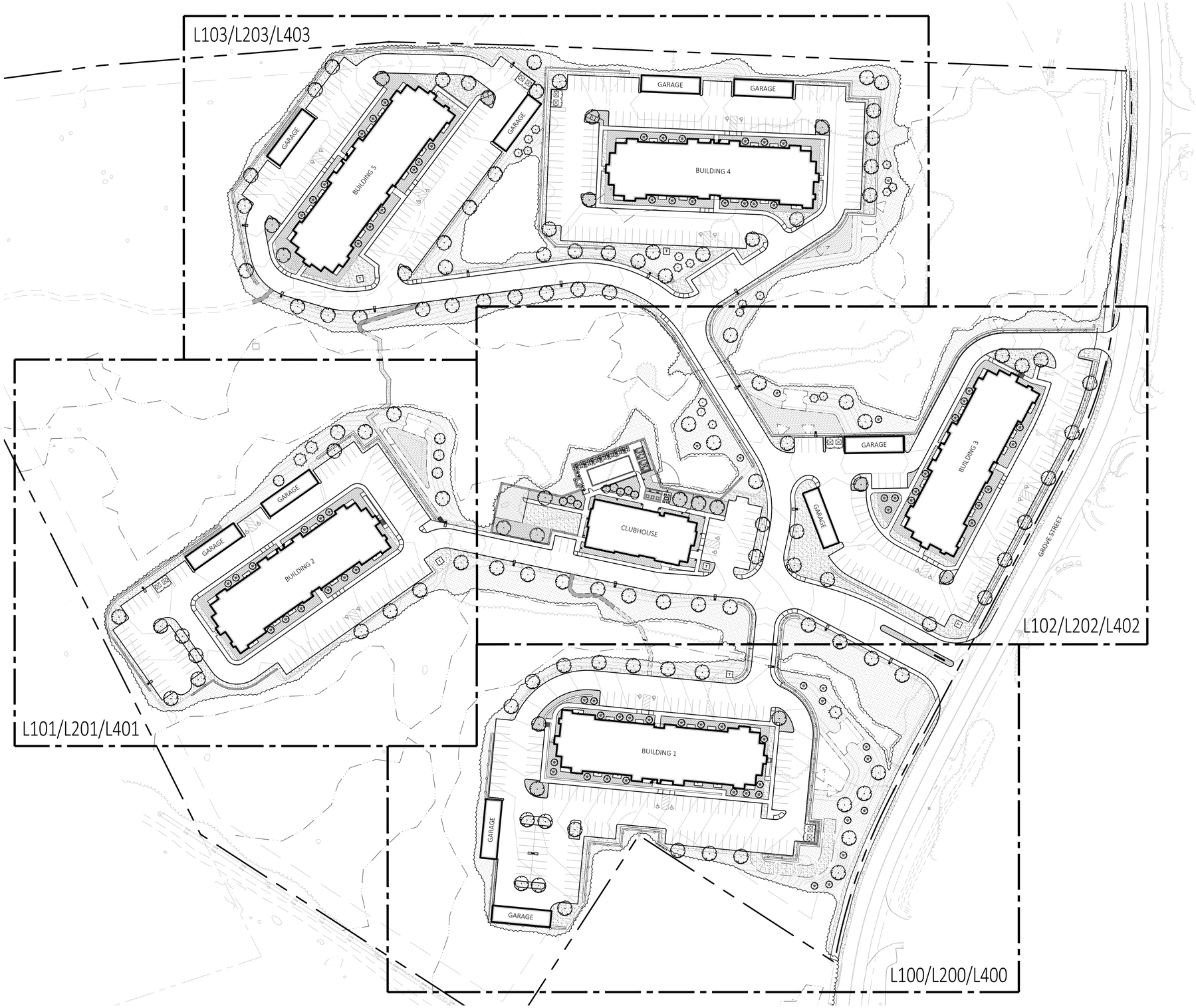
DRAWING NUMBER:

TT-2

DATE: 02/02/2024 PROJECT NO.: 22016

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Drawing name: G:\MA\Franklin\Fairfield Residential\121 Grove Street\Main\22016_TT-2 Trash Recycle Truck Turning Plan.dwg
Feb 12, 2024 - 18:43pm



1 LANDSCAPE KEY PLAN
SCALE: 1" = 60'-0"

0 30 60 120
SCALE IN FEET

LANDSCAPE SHEET LIST

L000 - LANDSCAPE KEY PLAN
L100 - LANDSCAPE PLANTING PLAN
L101 - LANDSCAPE PLANTING PLAN
L102 - LANDSCAPE PLANTING PLAN
L103 - LANDSCAPE PLANTING PLAN
L200 - LANDSCAPE LIGHTING PLAN
L201 - LANDSCAPE LIGHTING PLAN
L202 - LANDSCAPE LIGHTING PLAN
L203 - LANDSCAPE LIGHTING PLAN
L300 - LANDSCAPE DETAILS
L400 - LANDSCAPE PHOTOMETRIC PLAN
L401 - LANDSCAPE PHOTOMETRIC PLAN
L402 - LANDSCAPE PHOTOMETRIC PLAN
L403 - LANDSCAPE PHOTOMETRIC PLAN

MDLA
MICHAEL D'ANGELO landscape architecture

MICHAEL D'ANGELO
LANDSCAPE ARCHITECTURE LLC

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GROVE STREET RESIDENCES
FRANKLIN, MA

STAMP

MASSACHUSETTS
MICHAEL D'ANGELO
NO. 40098
REGISTERED LANDSCAPE ARCHITECT

REV. NO.	DATE	DESCRIPTION
1	5/1/23	VE
2	9/23/23	REV 1
3	10/31/23	REV 2
4	12/18/23	SEU PER ONSITE SOIL TESTING RESULTS AND SUBMISSION
5	2/5/24	REVISED PER ZBA REVIEW COMMENTS

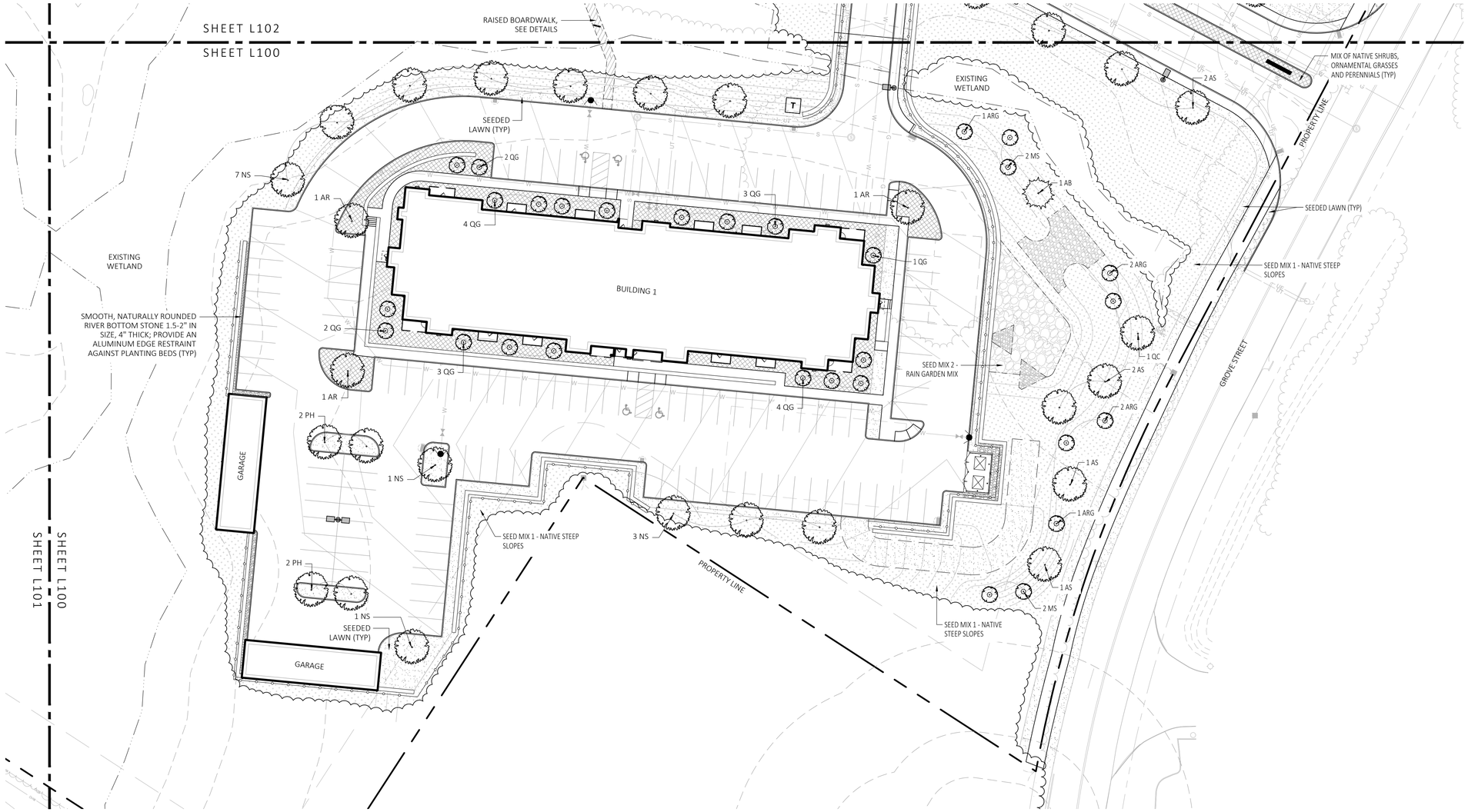
NOT FOR CONSTRUCTION

LANDSCAPE KEY PLAN

DRAWN: NC, AA	L000
CHECKED: NC	
SCALE: AS NOTED	
DATE: 12/18/23	

SHEET 1 OF 14

plot date: 2/2/2024



1 LANDSCAPE PLANTING PLAN

SCALE: 1" = 30'-0"

0 15 30 60
SCALE IN FEET

SEE SHEET L300 FOR PLANTING SCHEDULE

PLANTING NOTES:

1. DURING CONSTRUCTION, PROTECT ALL EXISTING SITE FEATURES, STRUCTURES AND UTILITIES.
2. PLANTS SHALL BE TRUE TO SPECIES AND VARIETY SPECIFIED AND NURSERY GROWN IN ACCORDANCE WITH THE AMERICAN STANDARD FOR NURSERY STOCK UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT. SUBSTITUTIONS WILL BE PERMITTED ONLY IF APPROVED BY THE LANDSCAPE ARCHITECT.
3. ALL EXPOSED BURLAP, WIRE BASKETS AND OTHER MATERIALS ATTACHED TO PLANTS SHALL BE REMOVED PRIOR TO PLANTING. CARE SHALL BE TAKEN NOT TO DISTURB THE ROOT BALL OF PLANTS.
4. THOROUGHLY WATER ALL PLANTS IMMEDIATELY AFTER PLANTING.
5. TRANSPLANTING SHALL BE DONE IN ACCORDANCE WITH THE AMERICAN STANDARD FOR NURSERY STOCK.
6. LOAM USED IN PLANT BEDS SHALL BE UNIFORM IN COMPOSITION, FREE FROM SUBSOIL, STONES LARGER THAN 1", NOXIOUS SEEDS AND SUITABLE FOR THE SUPPORT OF VEGETATIVE GROWTH. THE pH VALUE SHALL BE BETWEEN 5.5 AND 6.5.
7. MULCH IN TREE AND SHRUB BEDS SHALL BE NATURAL, NATIVE HEMLOCK MULCH FREE OF GROWTH OR GERMINATION INHIBITING INGREDIENTS. SUBMIT SAMPLES FOR APPROVAL.
8. LOCATIONS FOR PLANTS AND/OR OUTLINE OF AREAS TO BE PLANTED ARE TO BE STAKED OUT AT THE SITE FOR APPROVAL BY THE LANDSCAPE ARCHITECT.
9. SOIL DEPTHS: a.) SHRUBS AND PERENNIAL BEDS: 18" MIN.; b.) GROUNDCOVER: 6" MIN.; c.) TREES: SEE DETAIL; d.) SOD/SEED: 6"MIN.
10. PROVIDE A SUBSURFACE ROOTBALL ANCHOR BY PLATIPUS EARTH ANCHORS OR EQUAL, SIZE FOR CALIPER

GENERAL IRRIGATION NOTES:

1. THE DESIGN/BUILD IRRIGATION SUB-CONTRACTOR SHALL PROVIDE A COMPLETE SYSTEM FOR THE IRRIGATION AREAS SHOWN ON THE PLAN, WHICH INCLUDES NEW AND EXISTING TRANSPLANTED PLANT MATERIALS. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR FINAL LAYOUT OF IRRIGATION SHOWING LOCATIONS AND SIZES OF MAIN LINES AND LATERAL LINES, ZONES, RAIN AND SOIL SENSORS, AND CUT SHEETS FOR CONTROLLER SYSTEM AND COMPONENTS. INCLUDE ANY NECESSARY SLEEVING ON A DIAGRAM.
2. IRRIGATION TO BE COORDINATED WITH GENERAL CONTRACTOR TO LOCATE THE NECESSARY PVC SLEEVING TO COMPLETE IRRIGATION PROGRAM.
3. IRRIGATION CONTRACTOR SHALL VERIFY PSI/GPM REQUIREMENTS AT THE SITE BEFORE STARTING CONSTRUCTION.
4. TREES SHOULD BE ON A SEPARATE ZONE.
5. ALL TREES, SHRUBS, PERENNIALS, ORNAMENTAL GRASSES, AND GROUNDCOVER SHALL BE DRIP IRRIGATED. CONTRACTOR SHALL BE AWARE THAT THE IRRIGATION SYSTEM SHALL BE ROUTED TO THE PYLON SIGN PLANTER AND PLANTERS AT THE BUILDING.
6. ALL LAWN AREAS SHALL BE SPRAY HEAD IRRIGATED. THE HEADS SHALL BE LOCATED FOR HEAD TO HEAD COVERAGE WITH ABSOLUTELY NO OVER SPRAY ONTO THE PAVEMENT.
7. INSTALL DRIP TUBING, .6GPH, 12" CENTERS, STAKED EVERY TURN OR EVERY 4'
8. THE CONTRACTOR SHALL BE EXTREMELY CAREFUL DURING THE INSTALLATION PROCESS NOT TO DISTURB NEW OR EXISTING PLANT MATERIALS. THE CONTRACTOR IS TO COORDINATE HIS WORK WITH OTHER SUB-CONTRACTORS.
9. THE IRRIGATION CONTRACTOR SHALL CONFORM TO ANY LOCAL CODES OR ORDINANCES THAT MAY BE REQUIRED TO COMPLETE THE WORK.
10. WATER SUPPLY AND CONTROLLER: COORDINATE CONNECTION TO WATER SUPPLY WITH GENERAL CONTRACTOR. COORDINATE CONTROLLER LOCATION WITH GENERAL CONTRACTOR.
11. MEP CONTRACTOR TO PROVIDE BACK FLOW PREVENTION.
12. THE IRRIGATION CONTRACTOR SHALL TEST WATER SOURCE FOR WATER QUALITY INCLUDING MINERALS THAT MAY CAUSE STAINING OF CONCRETE AND PAVING SURFACES.
13. INSTALLER SHALL INSTALL MOISTURE SENSORS. CONTRACTOR SHALL INSTALL PER MANUFACTURERS'S SPECIFICATIONS AND SHALL BE RESPONSIBLE TO PROGRAM RELATED HYDROZONES TO RESPECTIVE SOIL MOISTURE SENSORS. PROVIDE ONE FOR EACH IRRIGATION ZONE WITH AUTOMATIC SHUT-OFF ONCE MOISTURE REQUIREMENTS ARE MET.

MDLA
MICHAEL D'ANGELO landscape architecture

MICHAEL D'ANGELO
LANDSCAPE ARCHITECTURE LLC

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SUITE 203A
BOSTON, MA 02127
t. 203.592.4788
www.m-d-l-a.com

GROVE STREET RESIDENCES
FRANKLIN, MA

STAMP

MASSACHUSETTS
MICHAEL D'ANGELO
NO. 4006
REGISTERED LANDSCAPE ARCHITECT

REV. NO.	DATE	DESCRIPTION
1	5/1/23	VE
2	9/23/23	REV 1
3	10/31/23	REV 2
4	12/18/23	REV PER ONSITE SOIL TESTING RESULTS/ED SUBMISSION
5	2/5/24	REVISED PER ZBA REVIEW COMMENTS

NOT FOR CONSTRUCTION

LANDSCAPE PLANTING PLAN

DRAWN: NC, AA	L100
CHECKED: NC	
SCALE: AS NOTED	
DATE: 12/18/23	

SHEET 2 OF 14

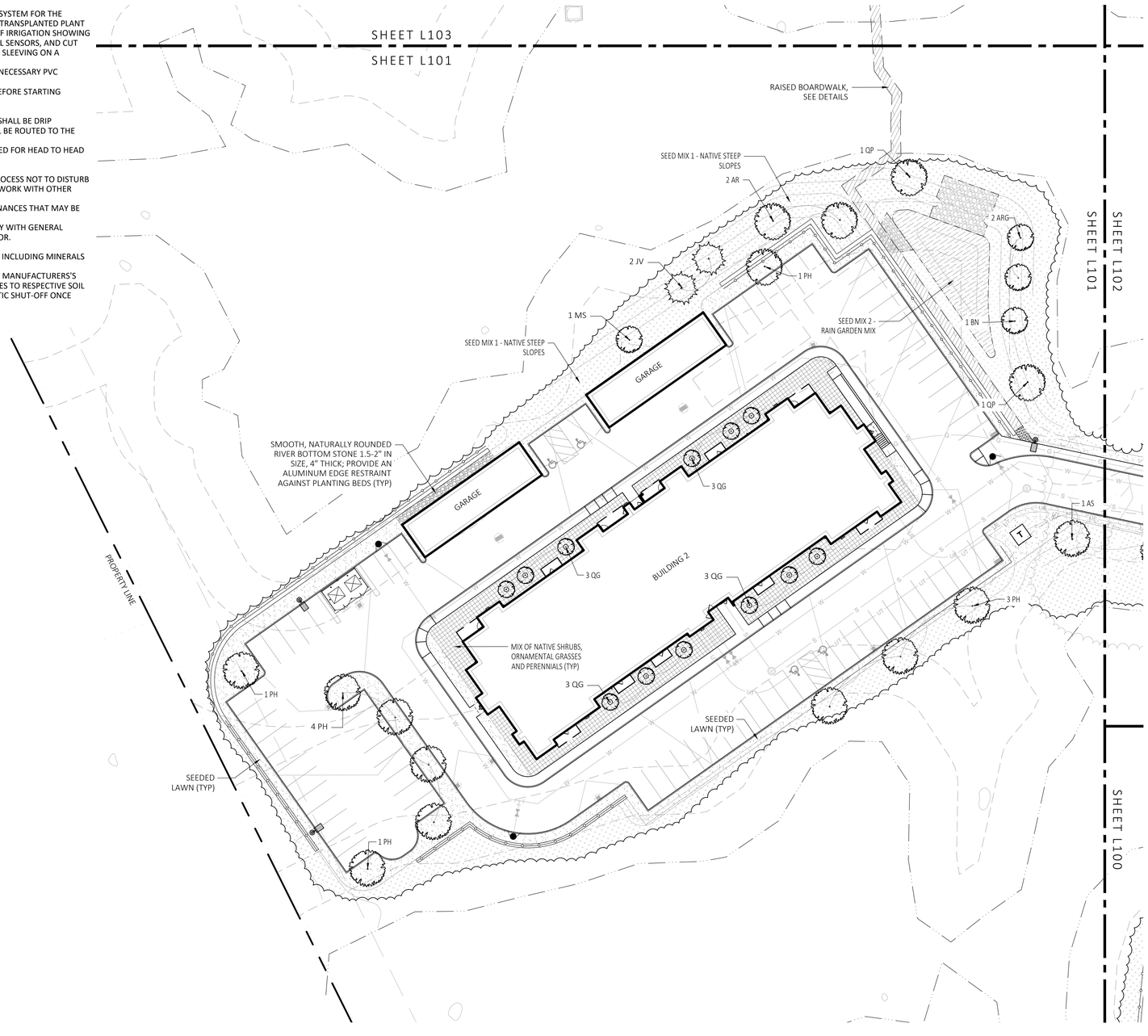
plot date: 2/2/2024

PLANTING NOTES:

1. DURING CONSTRUCTION, PROTECT ALL EXISTING SITE FEATURES, STRUCTURES AND UTILITIES.
2. PLANTS SHALL BE TRUE TO SPECIES AND VARIETY SPECIFIED AND NURSERY GROWN IN ACCORDANCE WITH THE AMERICAN STANDARD FOR NURSERY STOCK UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT. SUBSTITUTIONS WILL BE PERMITTED ONLY IF APPROVED BY THE LANDSCAPE ARCHITECT.
3. ALL EXPOSED BURLAP, WIRE BASKETS AND OTHER MATERIALS ATTACHED TO PLANTS SHALL BE REMOVED PRIOR TO PLANTING. CARE SHALL BE TAKEN NOT TO DISTURB THE ROOT BALL OF PLANTS.
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7. MULCH IN TREE AND SHRUB BEDS SHALL BE NATURAL, NATIVE HEMLOCK MULCH FREE OF GROWTH OR GERMINATION INHIBITING INGREDIENTS. SUBMIT SAMPLES FOR APPROVAL.
8. LOCATIONS FOR PLANTS AND/OR OUTLINE OF AREAS TO BE PLANTED ARE TO BE STAKED OUT AT THE SITE FOR APPROVAL BY THE LANDSCAPE ARCHITECT.
9. SOIL DEPTHS: a.) SHRUBS AND PERENNIAL BEDS: 18" MIN.; b.) GROUNDCOVER: 6" MIN.; c.) TREES: SEE DETAIL; d.) SOD/SEED: 6"MIN.
10. PROVIDE A SUBSURFACE ROOTBALL ANCHOR BY PLATIPUS EARTH ANCHORS OR EQUAL, SIZE FOR CALIPER

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7. INSTALL DRIP TUBING, .6GPH, 12" CENTERS, STAKED EVERY TURN OR EVERY 4'
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1 LANDSCAPE PLANTING PLAN
SCALE: 1" = 30'-0"

0 15 30 60
SCALE IN FEET

SEE SHEET L300 FOR PLANTING SCHEDULE

MDLA
MICHAEL D'ANGELO landscape architecture

MICHAEL D'ANGELO
LANDSCAPE ARCHITECTURE LLC

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BOSTON, MA 02127
t. 203.592.4788
www.m-d-l-a.com

GROVE STREET RESIDENCES
FRANKLIN, MA

STAMP

MASSACHUSETTS
MICHAEL D'ANGELO
NO. 4005
REGISTERED LANDSCAPE ARCHITECT

REV. NO.	DATE	DESCRIPTION
1	5/1/23	VE
2	9/23/23	REV 1
3	10/31/23	REV 2
4	12/18/23	REV PER ONSITE SOIL TESTING RESULTS-NOI SUBMISSION
5	2/5/24	REVISED PER DRA REVIEW COMMENTS

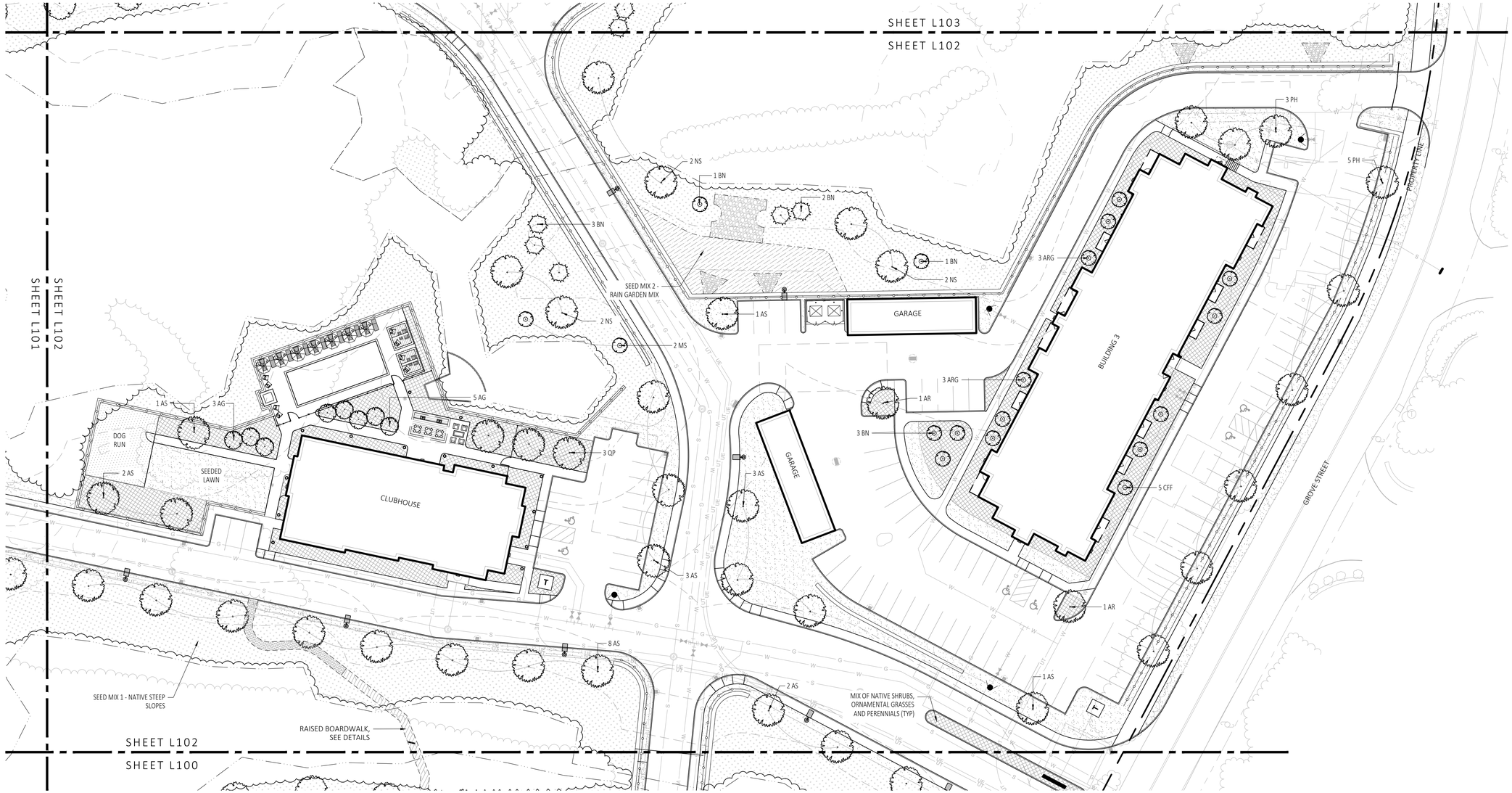
NOT FOR CONSTRUCTION

LANDSCAPE PLANTING PLAN

DRAWN: NC, AA	L101
CHECKED: NC	
SCALE: AS NOTED	
DATE: 12/18/23	

SHEET 3 OF 14

plot date: 2/2/2024



1 LANDSCAPE PLANTING PLAN

SCALE: 1" = 30'-0"

0 15 30 60
SCALE IN FEET

SEE SHEET L300 FOR PLANTING SCHEDULE

PLANTING NOTES:

1. DURING CONSTRUCTION, PROTECT ALL EXISTING SITE FEATURES, STRUCTURES AND UTILITIES.
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6. LOAM USED IN PLANT BEDS SHALL BE UNIFORM IN COMPOSITION, FREE FROM SUBSOIL, STONES LARGER THAN 1", NOXIOUS SEEDS AND SUITABLE FOR THE SUPPORT OF VEGETATIVE GROWTH. THE pH VALUE SHALL BE BETWEEN 5.5 AND 6.5.
7. MULCH IN TREE AND SHRUB BEDS SHALL BE NATURAL, NATIVE HEMLOCK MULCH FREE OF GROWTH OR GERMINATION INHIBITING INGREDIENTS. SUBMIT SAMPLES FOR APPROVAL.
8. LOCATIONS FOR PLANTS AND/OR OUTLINE OF AREAS TO BE PLANTED ARE TO BE STAKED OUT AT THE SITE FOR APPROVAL BY THE LANDSCAPE ARCHITECT.
9. SOIL DEPTHS: a.) SHRUBS AND PERENNIAL BEDS: 18" MIN.; b.) GROUNDCOVER: 6" MIN.; c.) TREES: SEE DETAIL; d.) SOD/SEED: 6"MIN.
10. PROVIDE A SUBSURFACE ROOTBALL ANCHOR BY PLATIPUS EARTH ANCHORS OR EQUAL, SIZE FOR CALIPER

GENERAL IRRIGATION NOTES:

1. THE DESIGN/BUILD IRRIGATION SUB-CONTRACTOR SHALL PROVIDE A COMPLETE SYSTEM FOR THE IRRIGATION AREAS SHOWN ON THE PLAN, WHICH INCLUDES NEW AND EXISTING TRANSPLANTED PLANT MATERIALS. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR FINAL LAYOUT OF IRRIGATION SHOWING LOCATIONS AND SIZES OF MAIN LINES AND LATERAL LINES, ZONES, RAIN AND SOIL SENSORS, AND CUT SHEETS FOR CONTROLLER SYSTEM AND COMPONENTS. INCLUDE ANY NECESSARY SLEEVING ON A DIAGRAM.
2. IRRIGATION TO BE COORDINATED WITH GENERAL CONTRACTOR TO LOCATE THE NECESSARY PVC SLEEVING TO COMPLETE IRRIGATION PROGRAM.
3. IRRIGATION CONTRACTOR SHALL VERIFY PSI/GPM REQUIREMENTS AT THE SITE BEFORE STARTING CONSTRUCTION.
4. TREES SHOULD BE ON A SEPARATE ZONE.
5. ALL TREES, SHRUBS, PERENNIALS, ORNAMENTAL GRASSES, AND GROUNDCOVER SHALL BE DRIP IRRIGATED. CONTRACTOR SHALL BE AWARE THAT THE IRRIGATION SYSTEM SHALL BE ROUTED TO THE PYLON SIGN PLANTER AND PLANTERS AT THE BUILDING.
6. ALL LAWN AREAS SHALL BE SPRAY HEAD IRRIGATED. THE HEADS SHALL BE LOCATED FOR HEAD TO HEAD COVERAGE WITH ABSOLUTELY NO OVER SPRAY ONTO THE PAVEMENT.
7. INSTALL DRIP TUBING, .6GPH, 12" CENTERS, STAKED EVERY TURN OR EVERY 4'
8. THE CONTRACTOR SHALL BE EXTREMELY CAREFUL DURING THE INSTALLATION PROCESS NOT TO DISTURB NEW OR EXISTING PLANT MATERIALS. THE CONTRACTOR IS TO COORDINATE HIS WORK WITH OTHER SUB-CONTRACTORS.
9. THE IRRIGATION CONTRACTOR SHALL CONFORM TO ANY LOCAL CODES OR ORDINANCES THAT MAY BE REQUIRED TO COMPLETE THE WORK.
10. WATER SUPPLY AND CONTROLLER: COORDINATE CONNECTION TO WATER SUPPLY WITH GENERAL CONTRACTOR. COORDINATE CONTROLLER LOCATION WITH GENERAL CONTRACTOR.
11. MEP CONTRACTOR TO PROVIDE BACK FLOW PREVENTION.
12. THE IRRIGATION CONTRACTOR SHALL TEST WATER SOURCE FOR WATER QUALITY INCLUDING MINERALS THAT MAY CAUSE STAINING OF CONCRETE AND PAVING SURFACES.
13. INSTALLER SHALL INSTALL MOISTURE SENSORS. CONTRACTOR SHALL INSTALL PER MANUFACTURERS'S SPECIFICATIONS AND SHALL BE RESPONSIBLE TO PROGRAM RELATED HYDROZONES TO RESPECTIVE SOIL MOISTURE SENSORS. PROVIDE ONE FOR EACH IRRIGATION ZONE WITH AUTOMATIC SHUT-OFF ONCE MOISTURE REQUIREMENTS ARE MET.

MDLA
MICHAEL D'ANGELO landscape architecture

MICHAEL D'ANGELO
LANDSCAPE ARCHITECTURE LLC

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t. 203.592.4788
www.m-d-l-a.com

GROVE STREET RESIDENCES
FRANKLIN, MA

STAMP

MASSACHUSETTS
MICHAEL D'ANGELO
NO. 4095
REGISTERED LANDSCAPE ARCHITECT

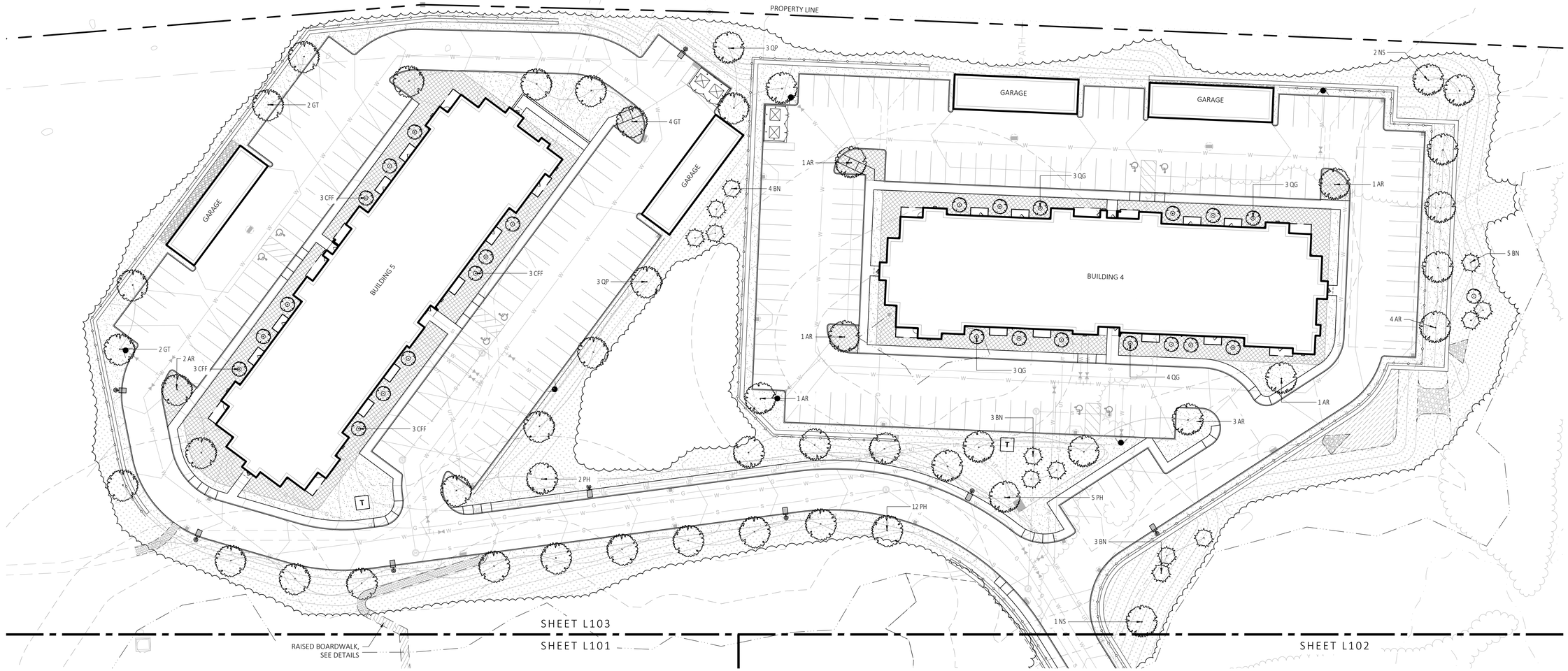
REV. NO.	DATE	DESCRIPTION
1	5/1/23	VE
2	9/23/23	REV 1
3	10/31/23	REV 2
4	12/18/23	REV PER ONSITE SOIL TESTING RESULTS/ND SUBMISSION
5	2/5/24	REVISED PER ZBA REVIEW COMMENTS

NOT FOR CONSTRUCTION

LANDSCAPE PLANTING PLAN

DRAWN: NC, AA	L102
CHECKED: NC	
SCALE: AS NOTED	
DATE: 12/18/23	

plot date: 2/2/2024



1 LANDSCAPE PLANTING PLAN

SCALE: 1" = 30'-0"

0 15 30 60

SCALE IN FEET

SEE SHEET L300 FOR PLANTING SCHEDULE

PLANTING NOTES:

1. DURING CONSTRUCTION, PROTECT ALL EXISTING SITE FEATURES, STRUCTURES AND UTILITIES.
2. PLANTS SHALL BE TRUE TO SPECIES AND VARIETY SPECIFIED AND NURSERY GROWN IN ACCORDANCE WITH THE AMERICAN STANDARD FOR NURSERY STOCK UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT. SUBSTITUTIONS WILL BE PERMITTED ONLY IF APPROVED BY THE LANDSCAPE ARCHITECT.
3. ALL EXPOSED BURLAP, WIRE BASKETS AND OTHER MATERIALS ATTACHED TO PLANTS SHALL BE REMOVED PRIOR TO PLANTING. CARE SHALL BE TAKEN NOT TO DISTURB THE ROOT BALL OF PLANTS.
4. THOROUGHLY WATER ALL PLANTS IMMEDIATELY AFTER PLANTING.
5. TRANSPLANTING SHALL BE DONE IN ACCORDANCE WITH THE AMERICAN STANDARD FOR NURSERY STOCK.
6. LOAM USED IN PLANT BEDS SHALL BE UNIFORM IN COMPOSITION, FREE FROM SUBSOIL, STONES LARGER THAN 1", NOXIOUS SEEDS AND SUITABLE FOR THE SUPPORT OF VEGETATIVE GROWTH. THE pH VALUE SHALL BE BETWEEN 5.5 AND 6.5.
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GROVE STREET RESIDENCES
FRANKLIN, MA

STAMP

MASSACHUSETTS
MICHAEL D'ANGELO
NO. 4095
REGISTERED LANDSCAPE ARCHITECT

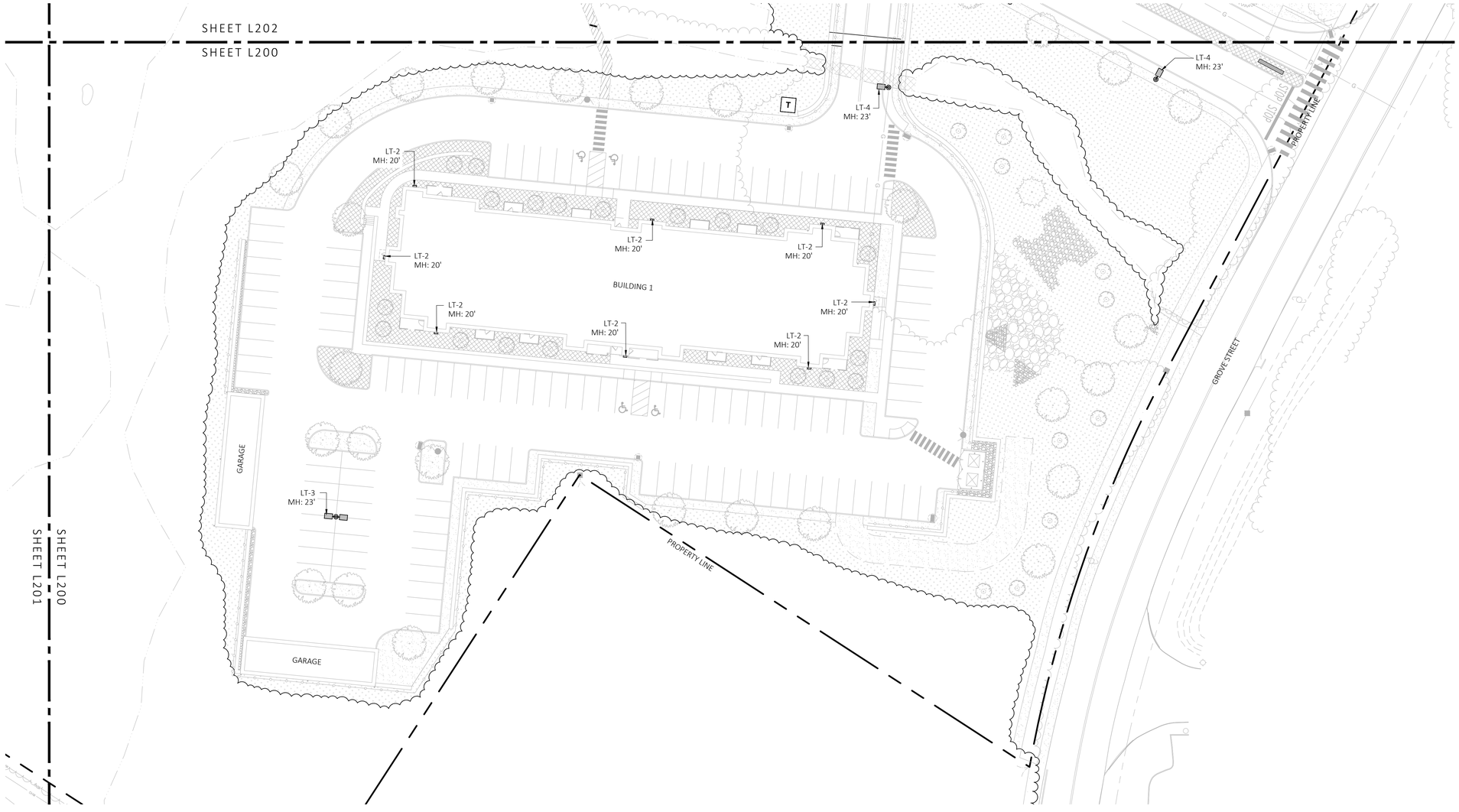
REV. NO.	DATE	DESCRIPTION
1	5/1/23	VE
2	9/23/23	REV 1
3	10/31/23	REV 2
4	12/18/23	REV PER ONSITE SOIL TESTING RESULTS/ND SUBMISSION
5	2/5/24	REVISED PER ZBA REVIEW COMMENTS

NOT FOR CONSTRUCTION

LANDSCAPE PLANTING PLAN

DRAWN: NC, AA	L103
CHECKED: NC	
SCALE: AS NOTED	
DATE: 12/18/23	

plot date: 2/2/2024



1 LANDSCAPE LIGHTING PLAN

SCALE: 1" = 30'-0"

0 15 30 60
SCALE IN FEET

LIGHT SCHEDULE					
SYMBOL	LABEL	DESCRIPTION	MOUNT	OPTIONS	REP
	LT-1	BOLLARD LIGHT	CONCRETE FOOTING	COLOR: BLK	ILLUMINATE 617-947-8996 STEVE PRUDHOMME
	LT-2	BLDG LIGHT	BUILDING MOUNTED	COLOR: BLK	
	LT-3	2-SIDED POLE LIGHT	POLE WITH CONCRETE FOOTING; KEEP 24" ABOVE GRADE IN ASPHALT KEEP 3" ABOVE GRADE IN PLANTING	COLOR: BLK	
	LT-4	1-SIDED POLE LIGHT	POLE WITH CONCRETE FOOTING; KEEP 24" ABOVE GRADE IN ASPHALT KEEP 3" ABOVE GRADE IN PLANTING	COLOR: BLK	

NOTE: MH = MOUNTING HEIGHT

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GROVE STREET RESIDENCES
FRANKLIN, MA

STAMP

MASSACHUSETTS
MICHAEL D'ANGELO
NO. 4005
REGISTERED LANDSCAPE ARCHITECT

REV. NO.	DATE	DESCRIPTION
1	5/1/23	VE
2	9/23/23	REV 1
3	10/31/23	REV 2
4	12/18/23	REV PER ONSITE SOIL TESTING RESULTS/ND SUBMISSION
5	2/5/24	REVISED PER ZBA REVIEW COMMENTS

NOT FOR CONSTRUCTION

LANDSCAPE LIGHTING PLAN

DRAWN: NC, AA	L200
CHECKED: NC	
SCALE: AS NOTED	
DATE: 12/18/23	

SHEET 6 OF 14

plot date: 2/2/2024

LIGHT SCHEDULE					
SYMBOL	LABEL	DESCRIPTION	MOUNT	OPTIONS	REP
	LT-1	BOLLARD LIGHT	CONCRETE FOOTING	COLOR: BLK	ILLUMINATE 617-947-8996 STEVE PRUDHOMME
	LT-2	BLDG LIGHT	BUILDING MOUNTED	COLOR: BLK	
	LT-3	2-SIDED POLE LIGHT	POLE WITH CONCRETE FOOTING; KEEP 24" ABOVE GRADE IN ASPHALT KEEP 3" ABOVE GRADE IN PLANTING	COLOR: BLK	
	LT-4	1-SIDED POLE LIGHT	POLE WITH CONCRETE FOOTING; KEEP 24" ABOVE GRADE IN ASPHALT KEEP 3" ABOVE GRADE IN PLANTING	COLOR: BLK	

NOTE: MH = MOUNTING HEIGHT



1 LANDSCAPE LIGHTING PLAN
SCALE: 1" = 30'-0"

0 15 30 60
SCALE IN FEET

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GROVE STREET RESIDENCES
FRANKLIN, MA

STAMP

MASSACHUSETTS
MICHAEL D'ANGELO
NO. 4009
REGISTERED LANDSCAPE ARCHITECT

REV. NO.	DATE	DESCRIPTION
1	5/1/23	VE
2	9/23/23	REV 1
3	10/31/23	REV 2
4	12/18/23	REV PER ONSITE SOIL TESTING RESULTS/ADJ SUBMISSION
5	2/5/24	REVISED PER ZBA REVIEW COMMENTS

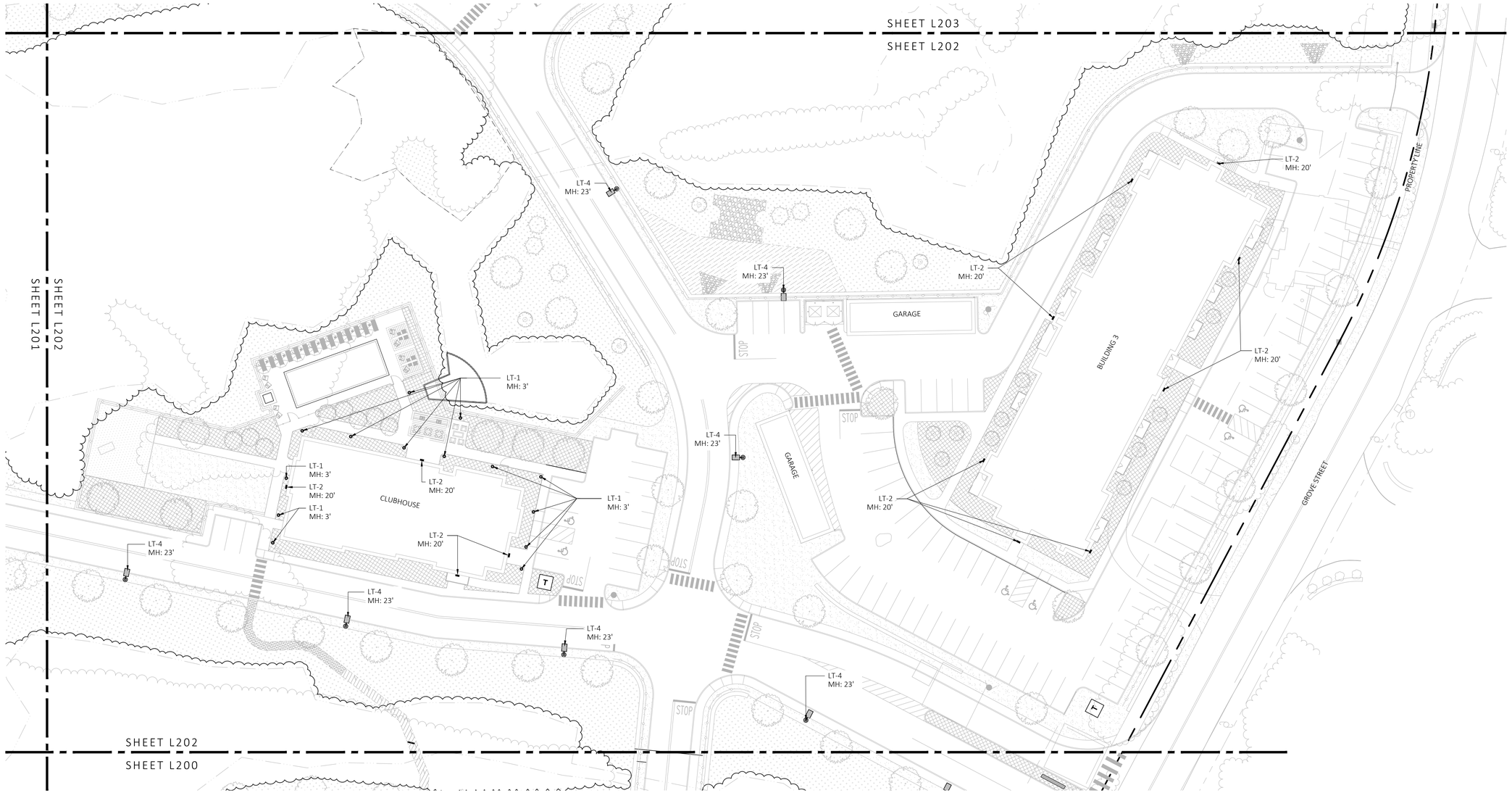
NOT FOR CONSTRUCTION

LANDSCAPE LIGHTING PLAN

DRAWN: NC, AA	L201
CHECKED: NC	
SCALE: AS NOTED	
DATE: 12/18/23	

SHEET 7 OF 14

plot date: 2/2/2024



1 LANDSCAPE LIGHTING PLAN
SCALE: 1" = 30'-0"

0 15 30 60
SCALE IN FEET

LIGHT SCHEDULE					
SYMBOL	LABEL	DESCRIPTION	MOUNT	OPTIONS	REP
	LT-1	BOLLARD LIGHT	CONCRETE FOOTING	COLOR: BLK	ILLUMINATE 617-947-8996 STEVE PRUDHOMME
	LT-2	BLDG LIGHT	BUILDING MOUNTED	COLOR: BLK	
	LT-3	2-SIDED POLE LIGHT	POLE WITH CONCRETE FOOTING; KEEP 24" ABOVE GRADE IN ASPHALT KEEP 3" ABOVE GRADE IN PLANTING	COLOR: BLK	
	LT-4	1-SIDED POLE LIGHT	POLE WITH CONCRETE FOOTING; KEEP 24" ABOVE GRADE IN ASPHALT KEEP 3" ABOVE GRADE IN PLANTING	COLOR: BLK	

NOTE: MH = MOUNTING HEIGHT

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GROVE STREET RESIDENCES
FRANKLIN, MA

STAMP

MASSACHUSETTS
MICHAEL D'ANGELO
NO. 4006
REGISTERED LANDSCAPE ARCHITECT

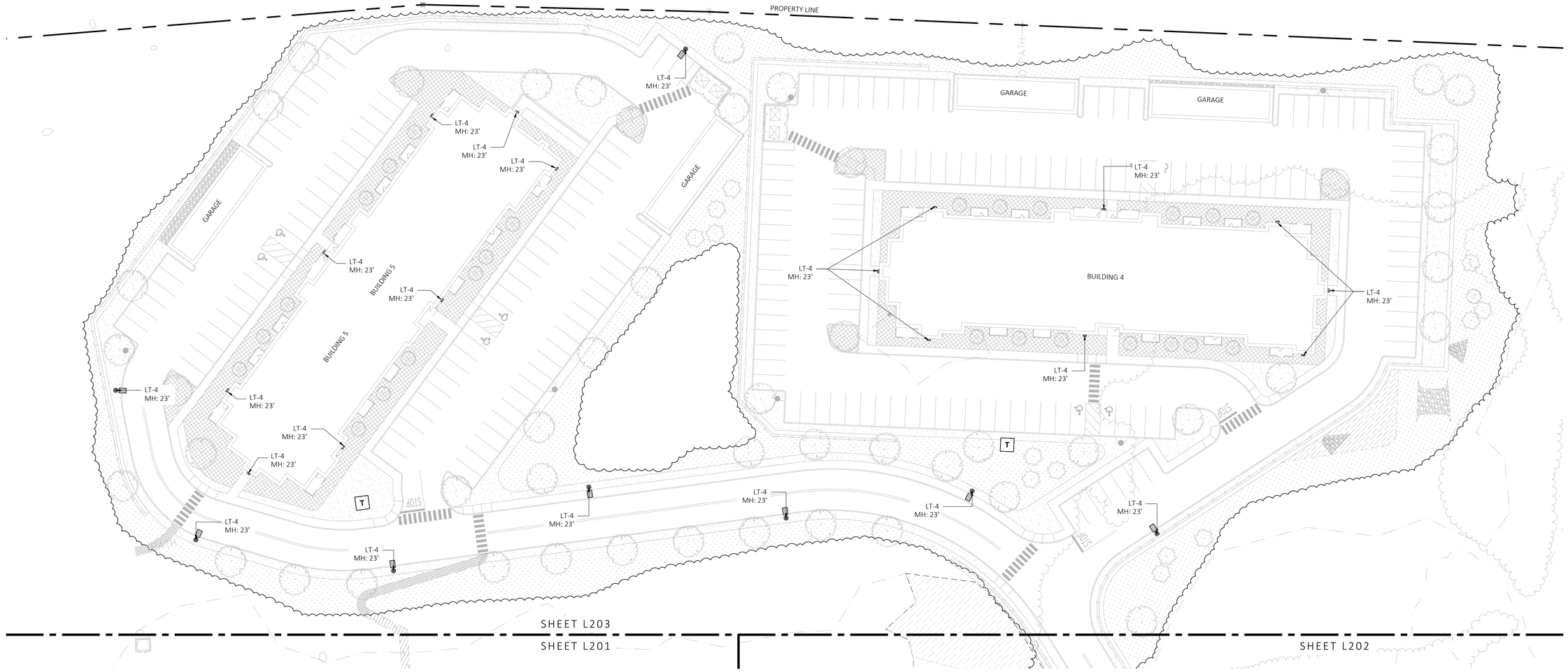
REV. NO.	DATE	DESCRIPTION
1	5/1/23	VE
2	9/23/23	REV 1
3	10/31/23	REV 2
4	12/18/23	REV PER ONSITE SOIL TESTING RESULTS/NOI SUBMISSION
5	2/5/24	REVISED PER ZBA REVIEW COMMENTS

NOT FOR CONSTRUCTION

LANDSCAPE LIGHTING PLAN

DRAWN: NC, AA	L202
CHECKED: NC	
SCALE: AS NOTED	
DATE: 12/18/23	

plot date: 2/2/2024



1 LANDSCAPE LIGHTING PLAN

SCALE: 1" = 30'-0"

0 15 30 60
SCALE IN FEET

LIGHT SCHEDULE					
SYMBOL	LABEL	DESCRIPTION	MOUNT	OPTIONS	REP
	LT-1	BOLLARD LIGHT	CONCRETE FOOTING	COLOR: BLK	ILLUMINATE 617-947-8996 STEVE PRUDHOMME
	LT-2	BLDG LIGHT	BUILDING MOUNTED	COLOR: BLK	
	LT-3	2-SIDED POLE LIGHT	POLE WITH CONCRETE FOOTING; KEEP 24" ABOVE GRADE IN ASPHALT KEEP 3" ABOVE GRADE IN PLANTING	COLOR: BLK	
	LT-4	1-SIDED POLE LIGHT	POLE WITH CONCRETE FOOTING; KEEP 24" ABOVE GRADE IN ASPHALT KEEP 3" ABOVE GRADE IN PLANTING	COLOR: BLK	

NOTE: MH = MOUNTING HEIGHT

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GROVE STREET RESIDENCES
FRANKLIN, MA

STAMP

MASSACHUSETTS
MICHAEL D'ANGELO
NO. 4006
REGISTERED LANDSCAPE ARCHITECT

REV. NO.	DATE	DESCRIPTION
1	5/1/23	VE
2	9/23/23	REV 1
3	10/31/23	REV 2
4	12/18/23	REV PER ONSITE SOIL TESTING RESULTS NO SUBMISSION
5	2/5/24	REVISED PER ZBA REVIEW COMMENTS

NOT FOR CONSTRUCTION

LANDSCAPE LIGHTING PLAN

DRAWN: NC, AA	L203
CHECKED: NC	
SCALE: AS NOTED	
DATE: 12/18/23	

SHEET 9 OF 14

plot date: 2/2/2024

Ernst Conservation Seeds
8884 Mercer Pike
Meadville, PA 16335
(800) 873-3321 Fax (814) 336-5191
www.ernstseed.com

Spring

Date: August 28, 2018

Native Steep Slope Mix w/Grain Oats - ERNMX-181-1

	Botanical Name	Common Name	Price/lb
40.00 %	*Avena sativa, Variety Not Stated*	Oats, Variety Not Stated	0.22
20.40 %	*Sorghastrum nutans, NY4 Ecotype*	Indiangrass, NY4 Ecotype	12.90
8.10 %	*Andropogon gerardii, 'Niagara'*	Big Bluestem, 'Niagara'	13.06
7.50 %	*Elymus virginicus, PA Ecotype*	Virginia Wildrye, PA Ecotype	7.72
5.20 %	*Elymus canadensis*	Canada Wildrye	12.87
4.50 %	*Schizachyrium scoparium, Fort Indiantown Gap-PA Ecotype*	Little Bluestem, Fort Indiantown Gap-PA Ecotype	12.00
3.70 %	*Tridens flavus, Fort Indiantown Gap-PA Ecotype*	Purpletop, Fort Indiantown Gap-PA Ecotype	18.78
3.00 %	*Agrostis perennans, Albany Pine Bush-NY Ecotype*	Autumn Bentgrass, Albany Pine Bush-NY Ecotype	14.00
2.30 %	*Panicum virgatum, 'Shawnee'*	Switchgrass, 'Shawnee'	7.51
1.10 %	*Chamaecrista fasciculata, PA Ecotype*	Partridge Pea, PA Ecotype	10.00
1.00 %	*Echinacea purpurea*	Purple Coneflower	36.00
0.80 %	*Gaillardia aristata*	Perennial Gaillardia (Blanketflower)	32.00
0.80 %	*Rudbeckia hirta*	Blackeyed Susan	20.00
0.70 %	*Heliopsis helianthoides, PA Ecotype*	Oxeye Sunflower, PA Ecotype	42.00
0.40 %	*Aster novae-angliae, PA Ecotype*	New England Aster, PA Ecotype	360.00
0.20 %	*Asclepias syriaca, PA Ecotype*	Common Milkweed, PA Ecotype	196.00
0.20 %	*Liatris spicata*	Marsh (Dense) Blazing Star (Spiked Gayfeather)	210.00
0.10 %	*Penstemon digitalis*	Tall White Beardtongue	160.00
100.00 %		**Mix Price/lb Bulk:**	**$10.45**

Seeding Rate: 75 lb per acre
Erosion Control & Revegetation

Use this formula with grain oats as a cover crop in the spring and summer (until September 1st). Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.

Price quotes guaranteed for 30 days.
All prices are FOB Meadville, PA.
Please check our web site at www.ernstseed.com
for current pricing when placing orders.

7 SEED MIX 1 - NATIVE STEEP SLOPES (SPRING)
SCALE: N.T.S.

Ernst Conservation Seeds
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Meadville, PA 16335
(800) 873-3321 Fax (814) 336-5191
www.ernstseed.com

Fall

Date: August 28, 2018

Native Steep Slope Mix w/Grain Rye - ERNMX-181-2

	Botanical Name	Common Name	Price/lb
40.00 %	*Secale cereale, Variety Not Stated*	Grain Rye, Variety Not Stated	0.21
20.40 %	*Sorghastrum nutans, PA Ecotype*	Indiangrass, PA Ecotype	10.60
8.10 %	*Andropogon gerardii, 'Niagara'*	Big Bluestem, 'Niagara'	13.06
7.50 %	*Elymus virginicus, PA Ecotype*	Virginia Wildrye, PA Ecotype	7.72
5.20 %	*Elymus canadensis*	Canada Wildrye	12.87
4.50 %	*Schizachyrium scoparium, 'Camper'*	Little Bluestem, 'Camper'	12.59
3.70 %	*Tridens flavus*	Purpletop	18.56
3.00 %	*Agrostis perennans, Albany Pine Bush-NY Ecotype*	Autumn Bentgrass, Albany Pine Bush-NY Ecotype	14.00
2.30 %	*Panicum virgatum, 'Shawnee'*	Switchgrass, 'Shawnee'	7.51
1.10 %	*Chamaecrista fasciculata, PA Ecotype*	Partridge Pea, PA Ecotype	10.00
1.00 %	*Echinacea purpurea*	Purple Coneflower	36.00
0.80 %	*Gaillardia aristata*	Perennial Gaillardia (Blanketflower)	32.00
0.80 %	*Rudbeckia hirta*	Blackeyed Susan	20.00
0.70 %	*Heliopsis helianthoides, PA Ecotype*	Oxeye Sunflower, PA Ecotype	42.00
0.40 %	*Aster bleterifolrus*	Calico Aster	300.00
0.30 %	*Liatris spicata*	Marsh (Dense) Blazing Star (Spiked Gayfeather)	210.00
0.20 %	*Asclepias syriaca, PA Ecotype*	Common Milkweed, PA Ecotype	196.00
100.00 %		**Mix Price/lb Bulk:**	**$9.88**

Seeding Rate: 75 lb per acre
Erosion Control & Revegetation

Use this formula with grain rye as a cover crop (from August 1st-February 15th). Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.

Price quotes guaranteed for 30 days.
All prices are FOB Meadville, PA.
Please check our web site at www.ernstseed.com
for current pricing when placing orders.

6 SEED MIX 1 - NATIVE STEEP SLOPES (FALL)
SCALE: N.T.S.

Ernst Conservation Seeds
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Meadville, PA 16335
(800) 873-3321 Fax (814) 336-5191
www.ernstseed.com

Date: August 28, 2018

Rain Garden Mix - ERNMX-180

	Botanical Name	Common Name	Price/lb
31.50 %	*Schizachyrium scoparium, Albany Pine Bush-NY Ecotype*	Little Bluestem, Albany Pine Bush-NY Ecotype	12.02
20.00 %	*Elymus virginicus, PA Ecotype*	Virginia Wildrye, PA Ecotype	7.72
10.00 %	*Carex vulpinoidea, PA Ecotype*	Fox Sedge, PA Ecotype	24.00
10.00 %	*Panicum rigidulum, Coastal Plain NC Ecotype*	Redtop Panicgrass, Coastal Plain NC Ecotype	48.60
5.00 %	*Echinacea purpurea*	Purple Coneflower	36.00
3.00 %	*Coreopsis lanceolata*	Lanceleaf Coreopsis	24.60
3.00 %	*Rudbeckia hirta*	Blackeyed Susan	20.00
2.00 %	*Carex scoparia, PA Ecotype*	Blunt Broom Sedge, PA Ecotype	72.00
2.00 %	*Chamaecrista fasciculata, PA Ecotype*	Partridge Pea, PA Ecotype	10.00
2.00 %	*Eupatorium coelestinum, VA Ecotype*	Mistflower, VA Ecotype	128.00
2.00 %	*Heliopsis helianthoides, PA Ecotype*	Oxeye Sunflower, PA Ecotype	42.00
2.00 %	*Penstemon digitalis, PA Ecotype*	Tall White Beardtongue, PA Ecotype	160.00
1.00 %	*Asclepias incarnata, PA Ecotype*	Swamp Milkweed, PA Ecotype	160.00
1.00 %	*Juncus effusus*	Soft Rush	40.00
1.00 %	*Juncus tenuis, PA Ecotype*	Path Rush, PA Ecotype	66.00
1.00 %	*Liatris spicata*	Marsh (Dense) Blazing Star (Spiked Gayfeather)	210.00
0.80 %	*Aster novae-angliae, PA Ecotype*	New England Aster, PA Ecotype	360.00
0.70 %	*Aster laevis, NY Ecotype*	Smooth Blue Aster, NY Ecotype	320.00
0.50 %	*Rudbeckia fulgida var. fulgida, Northern VA Ecotype*	Orange Coneflower, Northern VA Ecotype	300.00
0.50 %	*Senna hebecarpa, VA & WV Ecotype*	Wild Senna, VA & WV Ecotype	24.00
0.40 %	*Monarda fistulosa, Fort Indiantown Gap-PA Ecotype*	Wild Bergamot, Fort Indiantown Gap-PA Ecotype	160.00
0.30 %	*Pycnanthemum tenuifolium*	Narrowleaf Mountainmint	140.00
0.30 %	*Solidago juncea, PA Ecotype*	Early Goldenrod, PA Ecotype	280.00
100.00 %		**Mix Price/lb Bulk:**	**$37.29**

Seeding Rate: 20 lb per acre with a cover crop of grain rye at 30 lb per acre
Uplands & Meadows

The native perennial forbs and grasses provide food and cover for rain garden biodiversity. Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.

Price quotes guaranteed for 30 days.
All prices are FOB Meadville, PA.
Please check our web site at www.ernstseed.com
for current pricing when placing orders.

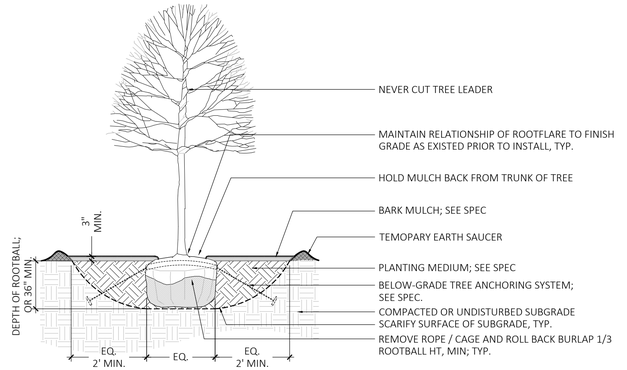
5 SEED MIX 2 - RAIN GARDEN MIX
SCALE: N.T.S.

PLANT SCHEDULE PALETTE					
SYM	LATIN NAME	COMMON NAME	SIZE	NOTES	GRAPHIC
SHADE TREES					
AR	ACER RUBRUM 'RED SUNSET'	RED SUNSET MAPLE	3"-3.5" CAL.	B&B, 6' CLEAR BRANCHING	
ARG	ACER RUBRUM 'JFS-KW78'	ARMSTRONG GOLD MAPLE	3"-3.5" CAL.	B&B, 6' CLEAR BRANCHING	
AS	ACER SACCHRUM	SUGAR MAPLE	3"-3.5" CAL.	B&B, 6' CLEAR BRANCHING	
CFF	CARPINUS 'FRANS FONTAINE'	FRANS FONTAINE HORNBEAM	3"-3.5" CAL.	B&B; BRANCH TO GROUND	
GT	GLEDITSIA TRIACANTHOS	HONEY LOCUST	3"-3.5" CAL.	B&B, 6' CLEAR BRANCHING	
QC	QUERCUS COCCINEA	SCARLET OAK	3"-3.5" CAL.	B&B, 6' CLEAR BRANCHING	
QG	QUERCUS PALUSTRIS 'GREEN PILLAR'	GREEN PILLAR PIN OAK	3"-3.5" CAL.	B&B, BRANCH TO GROUND	
QP	QUERCUS PALUSTRIS	PIN OAK	3"-3.5" CAL.	B&B, 6' CLEAR BRANCHING	
NS	NYSSA SYLVATICA	BLACK TUPELO	3"-3.5" CAL.	B&B, 6' CLEAR BRANCHING	
PH	PLATANUS OCCIDENTALIS	SYCAMORE	3"-3.5" CAL.	B&B, 6' CLEAR BRANCHING	
ORNAMENTAL TREES					
AG	AMELANCHIER 'AUTUMN BRILLIANCE'	SERVICEBERRY	7' TALL	B&B, MULTI-STEM	
BN	BETULA NIGRA 'HERITAGE'	RIVER BIRCH	10' TALL	B&B, MULTI-STEM	
CF	CORNUS FLORIDA	FLOWERING DOGWOOD	6' TALL	B&B, SPECIMEN	
MS	MAGNOLIA STELLATA	STAR MAGNOLIA	6' TALL	B&B, SPECIMEN	
EVERGREEN TREES					
JV	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	8'-9' TALL	B&B	
AB	ABIES BALSAMEA	BALSAM FIR	8'-9' TALL	B&B	
PS	PINUS STROBUS	EASTERN WHITE PINE	8'-9' TALL	B&B	
SEED MIX					
	ERNST SEEDS 800-873-3321	ERNST MIX (ERNMX-181-1 & 181-2) SEED MIX 1 -NATIVE STEEP SLOPE MIX	75 LB/ACRE	APPLY COVER CROP; FALL: GRAIN RYE, SPRING: OAT; SEE SPEC SHEET	
	ERNST SEEDS 800-873-3321	ERNST MIX (ERNMX-180) SEED MIX 2 - RAIN GARDEN MIX	20 LB/ACRE	APPLY COVER CROP OF GRAIN RYE; SEE SPEC SHEET	

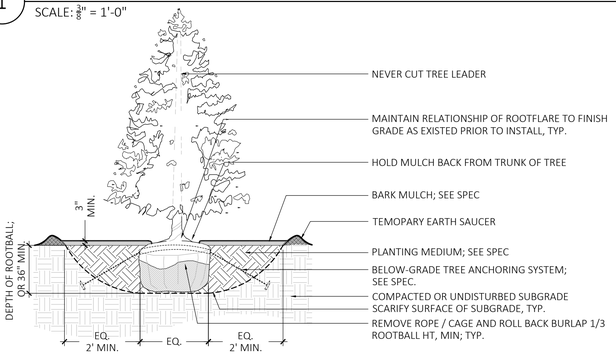
NOTE:
1. TREE LOCATIONS AND QUANTITIES AS SHOWN, MEET THE 1 TREE PER 10 PARKING SPACES RATIO REQUIREMENT FOR LOTS OVER 20 SPACES, AS OUTLINED IN THE FRANKLIN ZONING BYLAWS
2. ALL PROPOSED PLANTINGS ARE SELECTED FROM FRANKLIN'S BEST DEVELOPMENT PRACTICES GUIDEBOOK (§185-31.C.(K)

SYM		LATIN NAME	COMMON NAME	SIZE	NOTES	GRAPHIC
SHRUB PALETTE						
FG		FOTHERGILLA GARDENII	DWARF FOTHERGILLA	3 GALLON	48" O.C. B&B	
HQ		HYDRANGEA QUERCIFOLIA	OAKLEAF HYDRANGEA	3 GALLON	48" O.C. B&B	
IG		ILEX GLABRA	INKBERRY	3 GALLON	48" O.C. B&B	
IV		ILEX VERTICILLATA	WINTERBERRY	3 GALLON	48" O.C. B&B	
RG		RHUS AROMATICA 'GRO LOW'	GRO LOW SUMAC	3 GALLON	48" O.C. B&B	
TM		TAXUS X MEDIA 'HICKSII'	HICKS YEW	3 GALLON	48" O.C. B&B	
PERENNIALS & ORNAMENTAL GRASSES						
AC		ASTILBE CHINENSIS PURPURKERZE	ASTILBE	1 GAL	24" O.C. CONTAINER	
EP		ECHINACEA PURPUREA	PURPLE CONEFLOWER	1 GAL	18" O.C. CONTAINER	
PA		PENNISETUM ALOPECUROIDES	FOUNTAIN GRASS	1 GAL	24" O.C. CONTAINER	
PL		PEROVSKIA A. 'LITTLE SPIRE'	LITTLE SPIRE RUSSIAN SAGE	1 GAL	18" O.C. CONTAINER	
PV		PANICUM VIRGATUM 'SHENANDOAH'	SWITCH GRASS	1 GAL	30" O.C. CONTAINER	
RF		RUDBECKIA FULGIDA 'GOLDSTURM'	BLACK EYE SUSAN	1 GAL	18" O.C. CONTAINER	
SS		SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	1 GAL	30" O.C. CONTAINER	

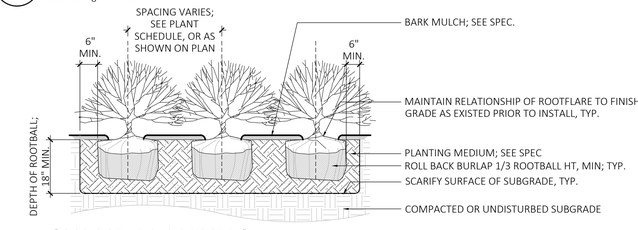
8 PLANT SCHEDULE
SCALE: N.T.S.



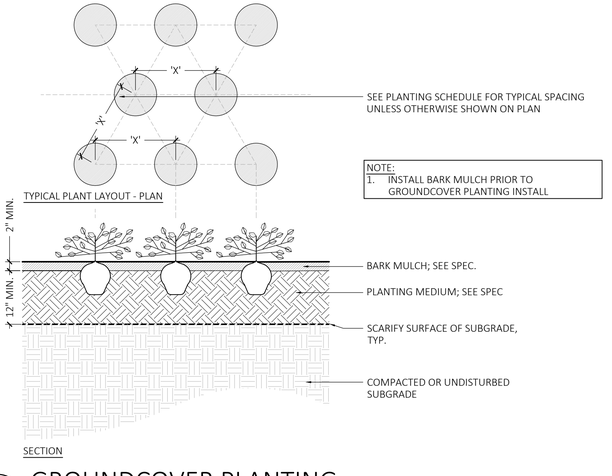
1 DECIDUOUS TREE PLANTING
SCALE: $\frac{3}{8}$" = 1'-0"



2 EVERGREEN TREE PLANTING
SCALE: $\frac{3}{8}$" = 1'-0"



3 SHRUB PLANTING
SCALE: $\frac{3}{8}$" = 1'-0"



4 GROUNDCOVER PLANTING
SCALE: $\frac{3}{4}$" = 1'-0"

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REV. NO.	DATE	DESCRIPTION
1	5/1/23	VE
2	9/23/23	REV 1
3	10/31/23	REV 2
4	12/18/23	REV PER ONSITE SOIL TESTING RESULTS/NO SUBMISSION
5	2/5/24	REVISED PER Z64 REVIEW COMMENTS

NOT FOR CONSTRUCTION

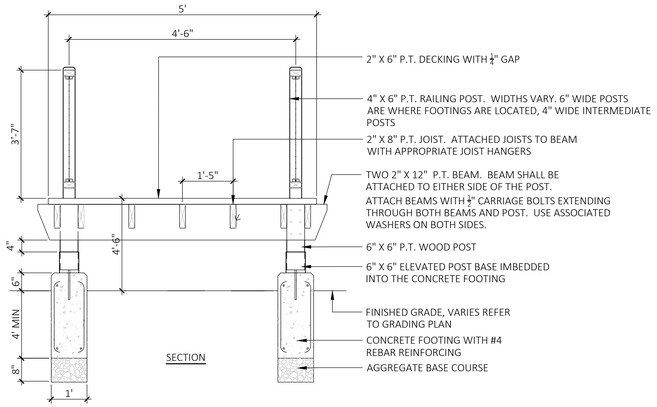
LANDSCAPE DETAILS

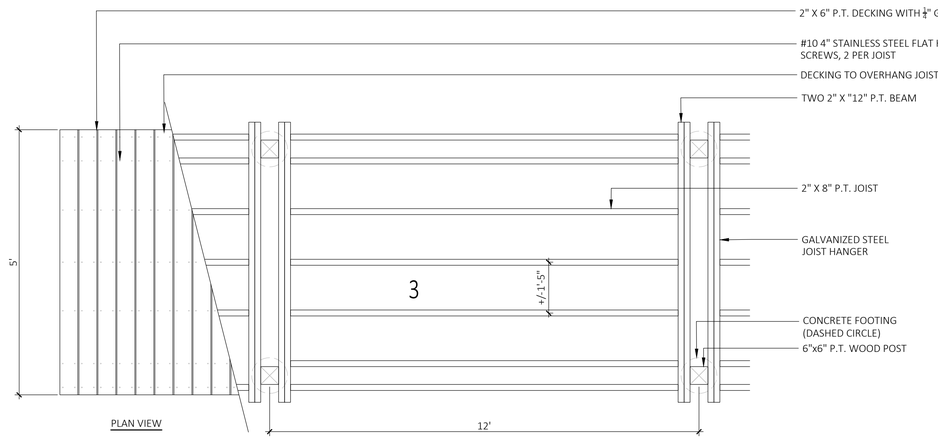
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SCALE:	AS NOTED
DATE:	12/18/23

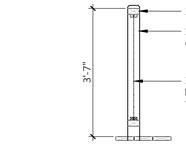
L300

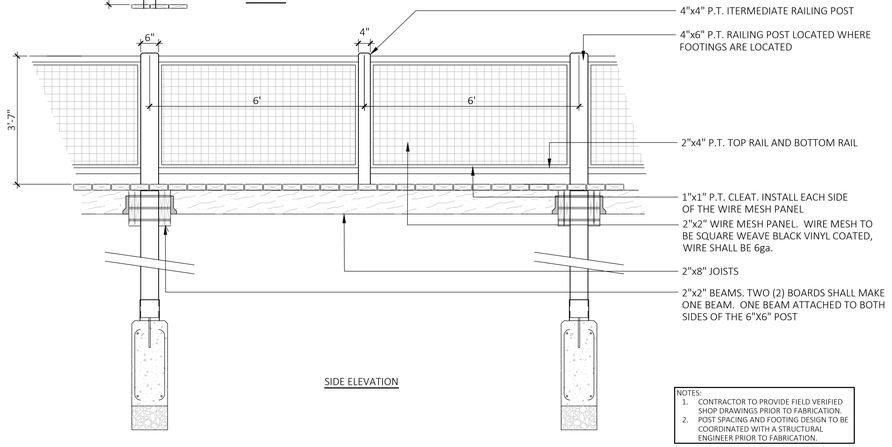
SHEET 10 OF 14

plot date: 2/2/2024









NOTES:
1. CONTRACTOR TO PROVIDE FIELD VERIFIED SHOP DRAWINGS PRIOR TO FABRICATION.
2. POST SPACING AND FOOTING DESIGN TO BE COORDINATED WITH A STRUCTURAL ENGINEER PRIOR TO FABRICATION.

3 RAISED BOARDWALK
SCALE: 1/2" = 1'-0"

Shielded bollard - asymmetric wide beam **BEGA**

Application
The fully shielded design of this bollard provides visual comfort while illuminating ground surfaces. Provided with mounting system that allows the luminaire to be adjusted independent of anchor bolt orientation.

Materials
Luminaire housing constructed of die-cast marine grade, copper free (≤0.3% copper content) A360.0 aluminum alloy
Clear safety glass
Reflector made of pure anodized aluminum
Silicone applied robotically to casting, plasma treated for increased adhesion
NRTL listed to North American Standards, suitable for wet locations
Protection class IP65
Weight: 12.8 lbs

Electrical

Operating voltage	120-277V AC
Minimum start temperature	-30° C
LED module wattage	11.5 W
System wattage	16.0 W
Controllability	0-10V, TRIAC, and ELV dimmable
Color rendering index	Ra> 80
Luminaire lumens	1,475 lumens (4000K)
LED service life (L70)	50,000 hours

LED color temperature
4000K - Product number + **K4**
3500K - Product number + **K35**
3000K - Product number + **K3**
2700K - Product number + **K27**

BEGA can supply you with suitable LED replacement modules for up to 20 years after the purchase of LED luminaires - see website for details

Finish
All BEGA standard finishes are matte, textured powder coat with minimum 3 mil thickness. BEGA Unidure® finish, a fluoropolymer technology, provides superior fade protection in Black, Bronze, and Silver. BEGA standard White, as well as optionally available RAL and custom colors, are a polyester powder.

Available colors	Black (BLK)	White (WHT)	RAL:
	Bronze (BRZ)	Silver (SLV)	CUS :

Type:
BEGA Product:
Project:
Modified:

Available options
70 895 Direct burial anchorage



Shielded bollard - asymmetric wide beam

	LED	A	B	Anchorage
84 220	11.5 W	6¼	37⅛	**70 817**

BEGA 1000 BEGA Way, Carpinteria, CA 93013 (805) 684-0533 info@bega-us.com

Due to the dynamic nature of lighting products and the associated technologies, luminaire data on this sheet is subject to change at the discretion of BEGA North America. For the most current technical data, please refer to bega-us. com
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Updated 07/13/21

1 LT-1 BOLLARD LIGHT
SCALE: N.T.S.

BEACON
design. specify. beacon. lighting.

DATE: | LOCATION:
TYPE: | PROJECT:
CATALOG #:

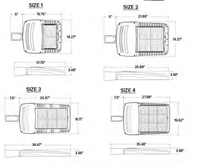
VIPER Area/Site
VIPER LUMINAIRE

OPTICS
MICROSTRIKE | STRIKE



FEATURES
- Low profile LED area/site luminaire with a variety of IES distributions for lighting applications such as auto dealership, retail, commercial, and campus parking lots
- Featuring two different optical technologies, Strike and Micro Strike Optics, which provide the best distribution patterns for retrofit or new construction
- Rated for high vibration applications including bridges and overpasses. All sizes are rated for 1.5G
- Control options including photo control, occupancy sensing, NX Lighting Controls™, LightGRID® and 7-Pin with networked controls
- New customizable lumen output feature allows for the wattage and lumen output to be customized in the factory to meet whatever specification requirements may entail
- Field interchangeable mounting provides additional flexibility after the fixture has shipped

c UL us IP65 DLC LISTED DLC LISTED PREMIUM ida DARK SKY COMPLIANT BAA TAA



CONTROL TECHNOLOGY
NX CONNECT NX NX WIRELESS LIGHTGRID®

SERVICE PROGRAMS
STOCK QS10

SPECIFICATIONS

CONSTRUCTION
- Die-cast housing with hidden vertical heat fins are optimal for heat dissipation while keeping a clean smooth outer surface
- Corrosion resistant, die-cast aluminum housing with 1000 hour powder coat paint finish
- External hardware is corrosion resistant

OPTICS
- Micro Strike Optics (160, 320, 480, or 720 LED counts) maximize uniformity in applications and come standard with mid-power LEDs which evenly illuminate the entire luminous surface area to provide a low glare appearance. Catalog logic found on page 2
- Strike Optics (36, 72, 108, or 162 LED counts) provide best in class distributions and maximum pole spacing in new applications with high powered LEDs. Strike optics are held in place with a polycarbonate bezel to mimic the appearance of the Micro Strike Optics so both solutions can be combined on the same application. Catalog logic found on page 3
- Both optics maximize target zone illumination with minimal losses at the house-side, reducing light trespass issues. Additional backlight control shields and house side shields can be added for further reduction of illumination behind the pole
- One-piece silicone gasket ensures a weatherproof seal
- Zero up-light at 0 degrees of tilt
- Field rotatable optics

INSTALLATION
- Mounting patterns for each arm can be found on page 11
- Optional universal mounting block for ease of installation during retrofit applications. Available as an option (ASQA) or accessory for square and round poles
- All mounting hardware included
- Knuckle arm fitter option available for 2-3/8" OD tenon
- For products with EPA less than 1 mounted to a pole greater that 20ft, a vibration damper is recommended

ELECTRICAL
- Universal 120-277 VAC or 347-480 VAC input voltage, 50/60 Hz
- Ambient operating temperature -40°C to 40°C
- Drivers have greater than 90% power factor and less than 20% THD
- LED drivers have output power over-voltage, over-current protection and short circuit protection with auto recovery
- Field replaceable surge protection device provides 20kA protection meeting ANSI/ IEEE C62.41.2 Category C High and Surge Location Category C3; Automatically takes fixture off-line for protection when device is compromised
- Dual Driver option provides 2 drivers within luminaire but only one set of leads exiting the luminaire, where Dual Power Feed provides two drivers which can be wired independently as two sets of leads are extended from the luminaire. Both options cannot be combined

CONTROLS
- Photo control, occupancy sensor programmable controls, and Zigbee wireless controls available for complete on/off and dimming control
- Please consult brand or sales representative when combining control and electrical options as some combinations may not operate as anticipated depending on your application
- 7-pin ANSI C136.41-2013 photocontrol receptacle option available for twist lock photocontrols or wireless control modules (control accessories sold separately)

CONTROLS (CONTINUED)
- 0-10V Dimming Drivers are standard and dimming leads are extended out of the luminaire unless control options require connection to the dimming leads. Must specify if wiring leads are to be greater than the 6" standard
- NX Lighting Controls™ available with in fixture wireless control module, features dimming and occupancy sensor
- LightGRID® available with in fixture wireless control module, features dimming and occupancy sensor. Also available in 7-pin configuration

EPA

	VIP1 (Size 3)	VIP2 (Size 2)	VIP3 (Size 3)	VIP4 (Size 4)	Config.
Single Fixture	0.454	0.555	0.655	0.698	
Two at 90°	0.908	1.110	1.310	1.396	
Two at 180°	0.583	0.711	0.857	0.948	
Three at 90°	1.037	1.266	1.512	1.646	
Three at 120°	0.943	1.155	1.382	1.680	
Four at 90°	1.165	1.422	1.714	1.896	

CERTIFICATIONS
- DLC® DesignLights Consortium Qualified), with some Premium Qualified configurations. Not all product variations listed in this document are DLC® qualified. Refer to http://www.designlights.org for the most up-to-date list.
- Listed to UL1598 and CSA C22.2#250.0-24 for wet locations and 40°C ambient temperatures
- 1.5 G rated for ANSI C136.31 high vibration applications
- Fixture is IP65 rated
- Meets IDA recommendations using 3K CCT configuration at 0 degrees of tilt
- This product meets federal procurement law requirements under the Buy American Act (FAR 52.225-11) and Trade Agreements Act (FAR 52.225-11). See Buy America(n) Solutions (link to https://www.currentlighting.com/resources/america-solutions)

WARRANTY
- 5 year warranty

Current

currentlighting.com/beacon

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Page 1 of 14
Rev: 10/05/23
BEA_VIPERSPEC_R07

2 LT-2, LT-3, LT-4 POLE/WALL MOUNTED LIGHT
SCALE: N.T.S.

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840 SUMMER STREET
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FRANKLIN, MA

STAMP
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MICHAEL D'ANGELO
NO. 4095
REGISTERED LANDSCAPE ARCHITECT

REV. NO.	DATE	DESCRIPTION
1	5/1/23	VE
2	9/23/23	REV 1
3	10/31/23	REV 2
4	12/18/23	REV PER ONSITE SOIL TESTING RESULTS/NOI SUBMISSION
5	2/5/24	REVISED PER ZBA REVIEW COMMENTS

NOT FOR CONSTRUCTION

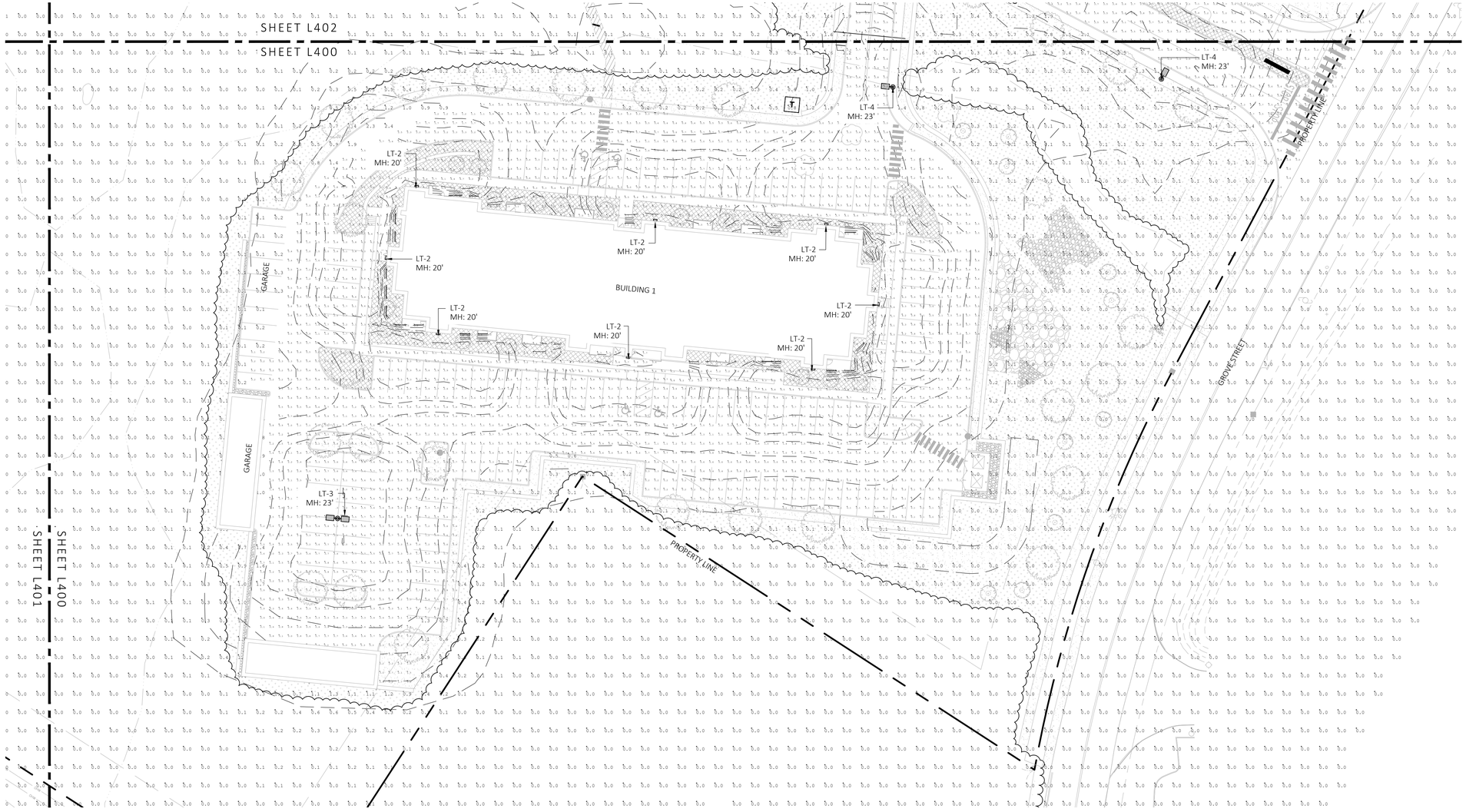
LANDSCAPE LIGHTING CUTSHEETS

DRAWN: NC, AA
CHECKED: NC
SCALE: AS NOTED
DATE: 12/18/23

L301

SHEET 11 OF 14

plot date: 2/2/2024



1 LANDSCAPE PHOTOMETRIC PLAN

SCALE: 1" = 30'-0"

0 15 30 60
SCALE IN FEET

Luminaire Schedule

Symbol	Qty	Label	Arrangement	LLF	Lum. Lumens
	11	LT-1	Single	0.900	1430
	44	LT-2	Single	1.000	15440
	1	LT-3	Back-Back	0.900	15440
	21	LT-4	Single	0.900	15440

Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
LNADSCAPE AREA 1	Illuminance	Fc	2.99	5.4	0.0	N.A.	N.A.
LNADSCAPE AREA 2	Illuminance	Fc	2.47	4.9	0.0	N.A.	N.A.
LNADSCAPE AREA 3	Illuminance	Fc	2.74	5.4	0.0	N.A.	N.A.
LNADSCAPE AREA 4	Illuminance	Fc	2.61	4.9	0.0	N.A.	N.A.
LNADSCAPE AREA 5	Illuminance	Fc	3.15	6.9	0.0	N.A.	N.A.
PARKING AND ROADWAYS	Illuminance	Fc	1.82	9.5	0.0	N.A.	N.A.
SPILL LIGHT	Illuminance	Fc	0.16	32.6	0.0	N.A.	N.A.

NOTE: MH = MOUNTING HEIGHT

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www.m-d-l-a.com

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FRANKLIN, MA

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MICHAEL D'ANGELO
NO. 4006
REGISTERED LANDSCAPE ARCHITECT

REV. NO.	DATE	DESCRIPTION
1	5/1/23	VE
2	9/23/23	REV 1
3	10/31/23	REV 2
4	12/18/23	PER ONSITE SOIL TESTING RESULTS/NOI SUBMISSION
5	2/5/24	REVISED PER ZBA REVIEW COMMENTS

NOT FOR CONSTRUCTION

LANDSCAPE PHOTOMETRIC PLAN

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CHECKED: NC	
SCALE: AS NOTED	
DATE: 12/18/23	

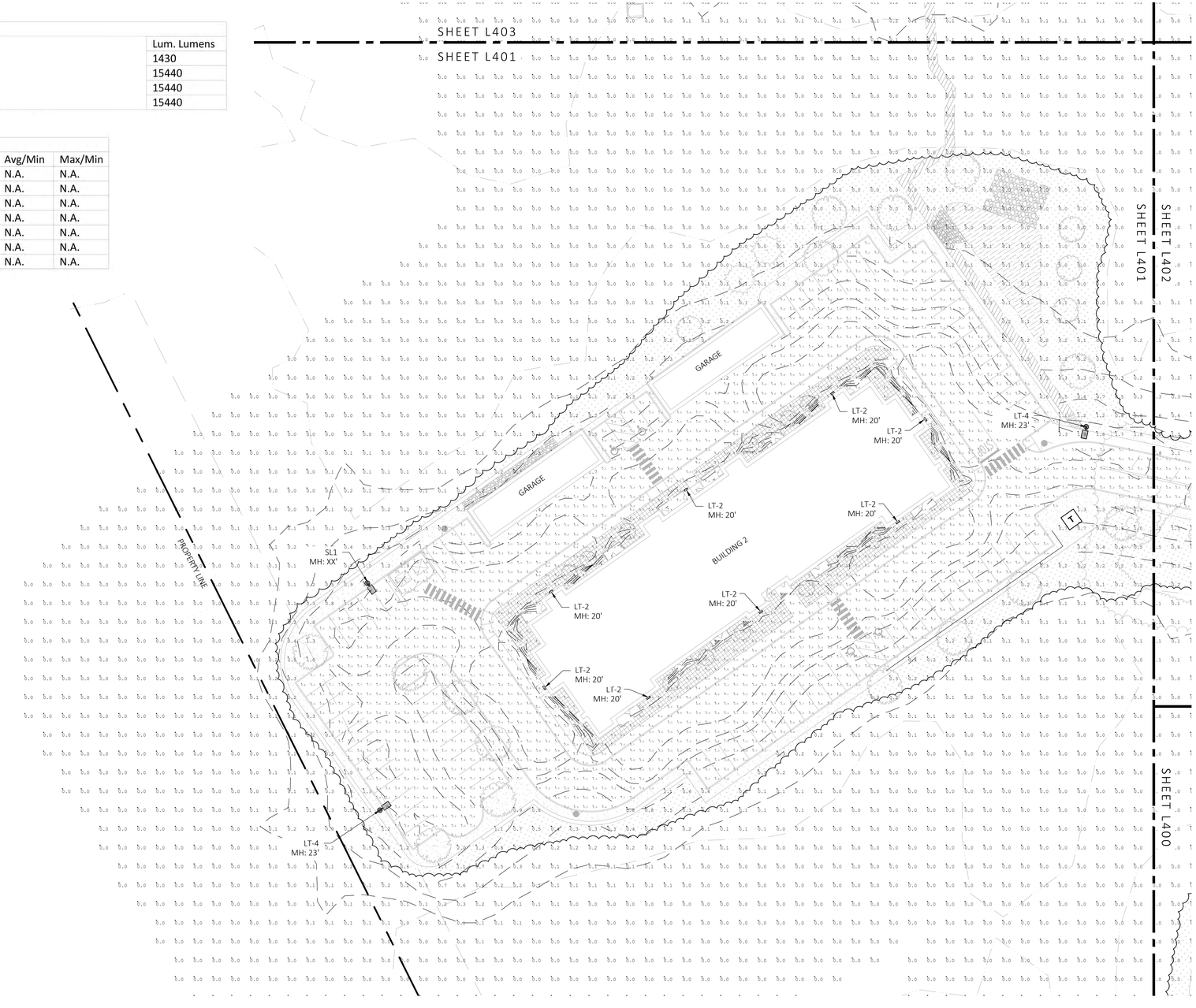
SHEET 11 OF 14

plot date: 2/2/2024

Luminaire Schedule					
Symbol	Qty	Label	Arrangement	LLF	Lum. Lumens
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	44	LT-2	Single	1.000	15440
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Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
LNADSCAPE AREA 1	Illuminance	Fc	2.99	5.4	0.0	N.A.	N.A.
LNADSCAPE AREA 2	Illuminance	Fc	2.47	4.9	0.0	N.A.	N.A.
LNADSCAPE AREA 3	Illuminance	Fc	2.74	5.4	0.0	N.A.	N.A.
LNADSCAPE AREA 4	Illuminance	Fc	2.61	4.9	0.0	N.A.	N.A.
LNADSCAPE AREA 5	Illuminance	Fc	3.15	6.9	0.0	N.A.	N.A.
PARKING AND ROADWAYS	Illuminance	Fc	1.82	9.5	0.0	N.A.	N.A.
SPILL LIGHT	Illuminance	Fc	0.16	32.6	0.0	N.A.	N.A.

NOTE: MH = MOUNTING HEIGHT



1 LANDSCAPE PHOTOMETRIC PLAN
SCALE: 1" = 30'-0"

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MICHAEL D'ANGELO
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4	12/18/23	SEU PER ONSITE SOIL TESTING RESULTS AND SUBMISSION
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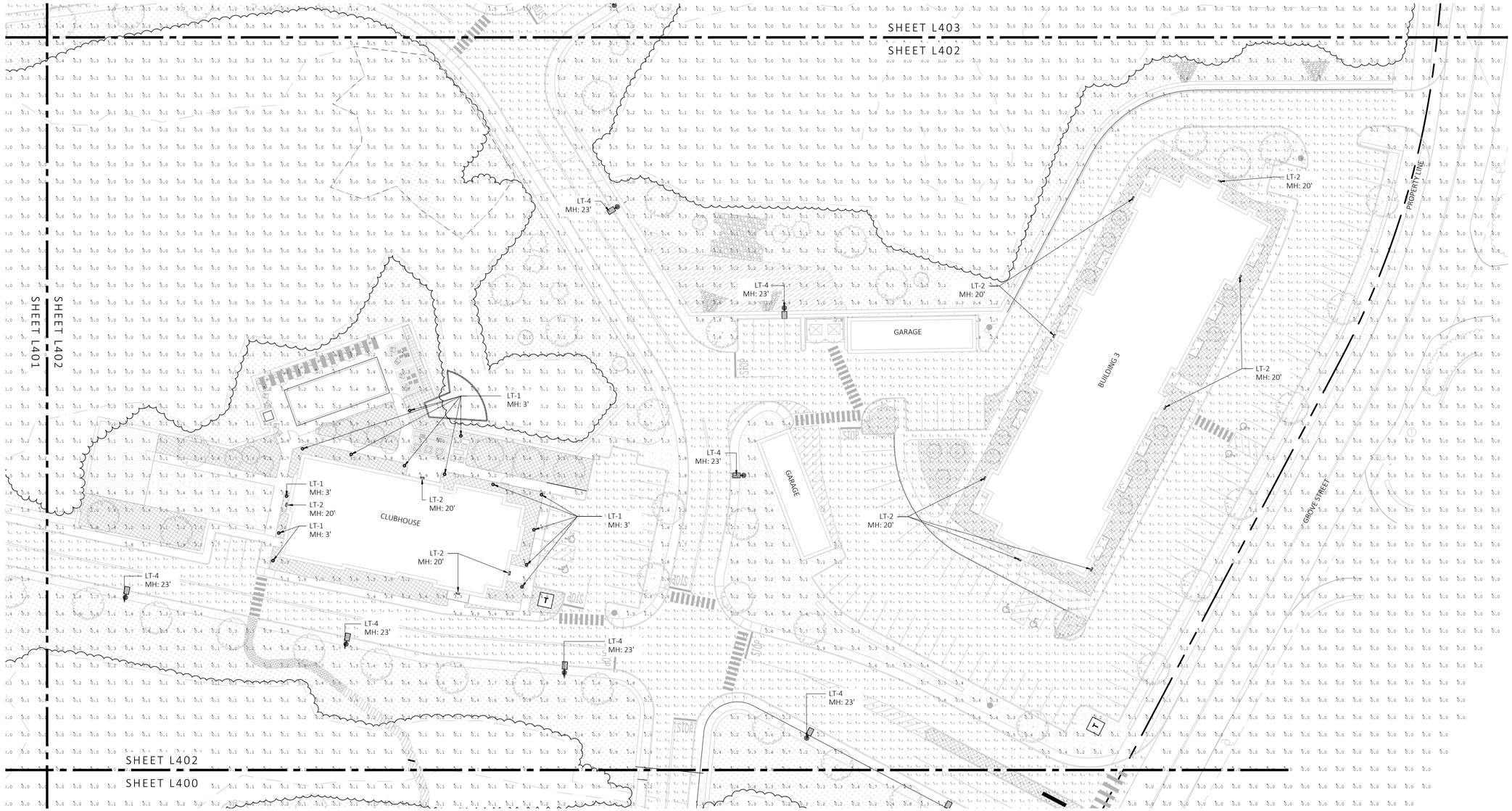
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LANDSCAPE PHOTOMETRIC PLAN

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CHECKED: NC	
SCALE: AS NOTED	
DATE: 12/18/23	

SHEET 12 OF 14

plot date: 2/2/2024



1 LANDSCAPE PHOTOMETRIC PLAN

SCALE: 1" = 30'-0"

0 15 30 60
SCALE IN FEET

Luminaire Schedule

Symbol	Qty	Label	Arrangement	LLF	Lum. Lumens
	11	LT-1	Single	0.900	1430
	44	LT-2	Single	1.000	15440
	1	LT-3	Back-Back	0.900	15440
	21	LT-4	Single	0.900	15440

Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
LNADSCAPE AREA 1	Illuminance	Fc	2.99	5.4	0.0	N.A.	N.A.
LNADSCAPE AREA 2	Illuminance	Fc	2.47	4.9	0.0	N.A.	N.A.
LNADSCAPE AREA 3	Illuminance	Fc	2.74	5.4	0.0	N.A.	N.A.
LNADSCAPE AREA 4	Illuminance	Fc	2.61	4.9	0.0	N.A.	N.A.
LNADSCAPE AREA 5	Illuminance	Fc	3.15	6.9	0.0	N.A.	N.A.
PARKING AND ROADWAYS	Illuminance	Fc	1.82	9.5	0.0	N.A.	N.A.
SPILL LIGHT	Illuminance	Fc	0.16	32.6	0.0	N.A.	N.A.

NOTE: MH = MOUNTING HEIGHT

MDLA
MICHAEL D'ANGELO landscape architecture

MICHAEL D'ANGELO
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GROVE STREET RESIDENCES
FRANKLIN, MA

STAMP

MASSACHUSETTS
MICHAEL D'ANGELO
NO. 4009
REGISTERED LANDSCAPE ARCHITECT

REV. NO.	DATE	DESCRIPTION
1	5/1/23	VE
2	9/23/23	REV 1
3	10/31/23	REV 2
4	12/18/23	REV PER ONSITE SOIL TESTING RESULTS/NOI SUBMISSION
5	2/5/24	REVISED PER ZBA REVIEW COMMENTS

NOT FOR CONSTRUCTION

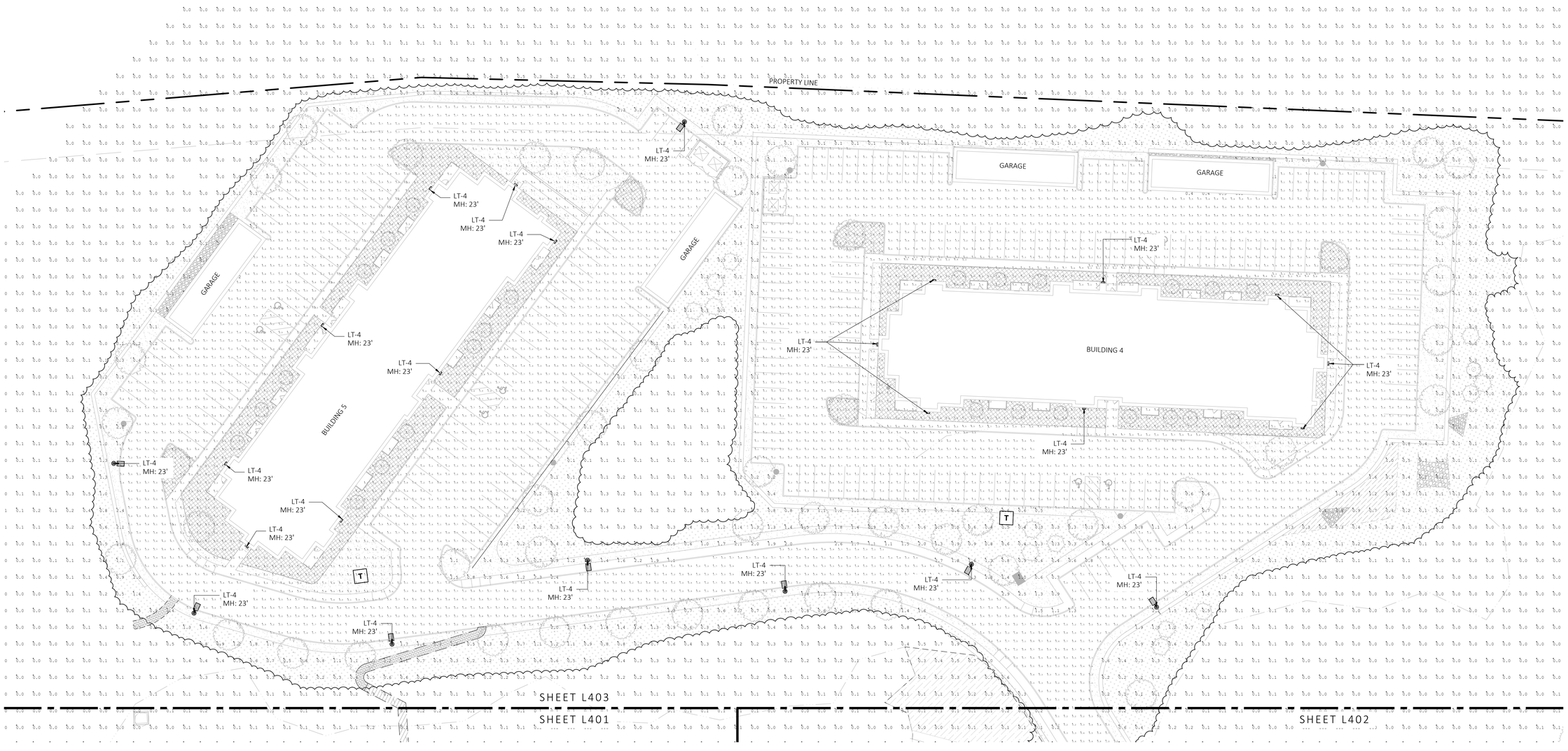
LANDSCAPE PHOTOMETRIC PLAN

DRAWN: NC, AA
CHECKED: NC
SCALE: AS NOTED
DATE: 12/18/23

L402

SHEET 13 OF 14

plot date: 2/2/2024



1 LANDSCAPE PHOTOMETRIC PLAN

SCALE: 1" = 30'-0"

0 15 30 60
SCALE IN FEET

Luminaire Schedule

Symbol	Qty	Label	Arrangement	LLF	Lum. Lumens
	11	LT-1	Single	0.900	1430
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	1	LT-3	Back-Back	0.900	15440
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Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
LNADSCAPE AREA 1	Illuminance	Fc	2.99	5.4	0.0	N.A.	N.A.
LNADSCAPE AREA 2	Illuminance	Fc	2.47	4.9	0.0	N.A.	N.A.
LNADSCAPE AREA 3	Illuminance	Fc	2.74	5.4	0.0	N.A.	N.A.
LNADSCAPE AREA 4	Illuminance	Fc	2.61	4.9	0.0	N.A.	N.A.
LNADSCAPE AREA 5	Illuminance	Fc	3.15	6.9	0.0	N.A.	N.A.
PARKING AND ROADWAYS	Illuminance	Fc	1.82	9.5	0.0	N.A.	N.A.
SPILL LIGHT	Illuminance	Fc	0.16	32.6	0.0	N.A.	N.A.

NOTE: MH = MOUNTING HEIGHT

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STAMP

MASSACHUSETTS
MICHAEL D'ANGELO
NO. 4005
REGISTERED LANDSCAPE ARCHITECT

REV. NO.	DATE	DESCRIPTION
1	5/1/23	VE
2	9/23/23	REV 1
3	10/31/23	REV 2
4	12/18/23	REV PER ONSITE SOIL TESTING RESULTS-NOI SUBMISSION
5	2/5/24	REVISED PER ZBA REVIEW COMMENTS

NOT FOR CONSTRUCTION

LANDSCAPE PHOTOMETRIC PLAN

DRAWN: NC, AA
CHECKED: NC
SCALE: AS NOTED
DATE: 12/18/23

L403

SHEET 14 OF 14

plot date: 2/2/2024