February 7, 2024

Franklin Conservation Commission
Franklin Municipal Building
355 East Central Street
Franklin MA, 02038

Re: Peer Review Comment Response
15 Liberty Way, Franklin MA (DEP File No. 159-1282)

Dear Franklin Conservation Commission,

Goddard Consulting, LLC, (Goddard) is pleased to submit this response letter and revised site plans on behalf of Atlantic Oliver 15 Liberty Way LLC (the Applicant), to provide responses to the project review comments issued by BETA Group, Inc. on January 2, 2024, in regard to the Notice of Intent (NOI) filed for 15 Liberty Way, Franklin MA.

Two hard copies have been mailed and a digital copy has been submitted for the Commission's review and approval. If you have any questions, please feel free to contact Chris Frattaroli at (617) 620-2740.

Sincerely,
Goddard Consulting, LLC

Chris Frattaroli
Wetland Scientist

CC: Mike Shunta, Oliver Street Capital, 125 High St, Boston, MA 02110
Dan Campbell, Level Design Group, 249 South St, Plainville, MA 02762
Elyse Tripp, BETA Group, Inc., 315 Norwood Park South, 2nd Floor, Norwood, MA 02062

List of Attachments

Attachment A: **BETA Group Comment Responses**

Attachment B: **Invasive Species Management Plan**
Prepared by Goddard Consulting LLC, last revised 2/7/2024

Attachment C: **50-100' Buffer Zone Cover Comparison**
Prepared by Goddard Consulting LLC, dated 2/6/2024

Attachment D: **Proposed Stormwater Basin Impacts**
Prepared by Goddard Consulting LLC, dated 2/6/2024

Attachment E: **Proposed Basin Planting Plan**
Prepared by Goddard Consulting LLC, dated 2/7/2024

Attachment F: **Photo Exhibit**
Prepared by Goddard Consulting LLC, dated 2/6/2024

Attachment G: **Revised Site Plan Set –** *Liberty Parking Expansion*
Prepared by Level Design Group, last revised 2/1/2024

1.0 BETA GROUP COMMENT RESPONSES

Goddard and the project's engineer, Level Design Group (LDG), reviewed the BETA Group's comments and offer the following responses to BETA's comments from the third iteration of peer review for this project. BETA's comments from this iteration are denoted as "BETA3". Previously unresolved comments remain, denoted with "BETA2". Previously resolved comments that do not include a "BETA3" response have been omitted.

	BETA Peer Review Comment	**Goddard Response**
ADMINISTRATIVE AND PLAN COMMENTS		
A1	*BETA3: The NOI has been filed with MassDEP and a File Number has been issued (File No. 159-1282) with no technical comments.*	No further comment.
A3	*BETA3: Buffer Zones have been depicted on the plans but are missing labels. In addition, it appears that Buffer Zones have been offset from the boundaries of non-jurisdictional swales within the center of the Site. Buffer Zones should be revised to be accurate and labeled in accordance with the Act and the Bylaw. Comment remains.*	Site plans have been revised to depict the relevant Buffer Zones more clearly.
WETLAND RESOURCE AREAS AND REGULATORY REVIEW		
Intro	*BETA3: The Applicant has filed with MassDEP and received a MassDEP file number with no technical comment; however, compliance with the Stormwater Management Standards has not been demonstrated through the concurrent Planning Board review process. Additional information is required to adequately describe the proposed invasive species management plan and to comply with the Bylaw, including details on the proposed methods of treatment and considerations for working within a maintained easement. Prior to further revisions to the proposed invasive species management plan, BETA recommends that the Commission determine if the proposed mitigation is sufficient as mitigation for the filling of Bylaw-jurisdictional wetlands.*	Review of project compliance with the Stormwater Management Standards is ongoing with Planning Board. The Applicant intends to confirm with the Commission that the proposed mitigation is sufficient for project impacts.

W10	*BETA2: BETA defers to the Commission for approval of silt fence as an erosion control measure.* *BETA3: Comment remains.*	Goddard and Level Design Group maintain that the erosion controls depicted are appropriate for this project.
W11	*BETA2: Based on the Project plans, the proposed invasive species management area appears to be located within existing drainage and utility easements. As noted by the Applicant, native herbaceous cover will be established at this location due to anticipated future maintenance of the easements (i.e., mowing). BETA offers the following comments on the provided invasive species management plan.* *a. Section 2.2 "Cut-Stem Treatment" requires that target plants be cut flush with the ground and that the cut stems treated with herbicide. When performing cut-stem treatment, however, approximately five (5) inches of the stem should be retained in case resprouting occurs. This will allow for enough material to remain for a second treatment.* *b. The time of year for the proposed treatment should be identified in the invasive species management plan. Cut-stem herbicide treatment is most effective in the late summer or early fall.* *c. Additional species identified in the invasive species management plan such as multiflora rose (Rosa multiflora) and honeysuckle (Locinera spp.) could also be treated using cut-stem method. This method would result in less soil disturbance than grubbing and would ensure a higher kill rate for the undesirable species. The Applicant should indicate if use of this method for treatment of those species was reviewed, and if so, why it is not the preferred treatment method for those species.* *BETA3: Comments W11.a. through c. have not been addressed. Comment remains.* *BETA understands that a portion of the proposed invasive species management will occur within a Town sewer easement and that the Applicant has coordinated with the Town of Franklin Department of Public Works (DPW) regarding the Project. It is also BETA's understanding that woody plantings are not*	a. Section 2.2 has been revised to indicate that ~5" of stem will remain to allow for follow-up treatments. b. The invasive species management plan has been revised to encourage late summer or early fall treatments. c. Other species such as multiflora rose, and honeysuckle are indeed viable candidates for cut-stem treatment. Manual removal was specified to minimize the amount of herbicide required. The invasive species management plan has been revised to allow for cut-stem treatment of these species as well, in order to reduce soil disturbance and improve the kill rate, assuming the maximum application rate is not exceeded. The invasive species management plan has been revised to call for multiple rounds of seeding if necessary. The Applicant will accept a Special Condition requiring the submittal and approval of a planting plan once remaining native species cover has been assessed.

	permitted by the Town within the sewer easement. It is recommended that the invasive species management plan be revised to incorporated multiple rounds of seeding with a native seed mixture, as the mowing schedule may impact certain species' abilities to establish seed heads and self-seed. *In addition, the Applicant notes that a formal planting plan within the areas subject to the invasive species management plan will only be prepared once mitigation efforts are underway and it is determined which native species will be preserved. The Commission could consider including a Special Condition in the Order of Conditions requiring the Applicant to submit a formal planting plan for review and approval by the Commission prior to construction, after an inventory of native species to remain is performed.*	
BYLAW REGULATORY COMMENTS		
W12	*BETA2: BETA defers to the Commission for approval of the Variance Request for work proposed within the IVW, the 0-25' Buffer Zone, and 25-50' Buffer Zone.* *BETA3: Comment remains.*	Substantial invasive species management is proposed. This invasive species management is intended as mitigation for resource area and buffer zone impacts. Additionally, the existing stormwater basin/IVW is proposed to be enhanced and enlarged to provide improved treatment and infiltration of stormwater on the site. Goddard believes the proposed invasive species management and stormwater management features will provide environmental benefits sufficient to mitigate for the proposed impacts to resource areas and buffer zones.
W13	*BETA2: Comment not addressed. The Applicant should provide the percentage of impervious surface increase associated with the 18,894 sf of impervious surface proposed in the 50-100' Buffer Zone. BETA defers to the Commission for a determination on whether the proposed mitigation is sufficient for the proposed impacts.* *BETA3: Comment remains.*	The total area of the 50-100' Buffer Zone on site is 63,447 square feet. Currently, 11,116 square feet (approximately 17.5%) of the 50-100' Buffer Zone is impervious. Proposed impervious cover in the 50-100' Buffer Zone will be 30,287 square feet (approximately 47.7%), an increase of 19,171 square feet. See attached graphic titled "50-100' Buffer Zone Cover Comparison". Runoff from the entirety of the proposed impervious area will be captured and treated by proposed stormwater management features.

W14	*BETA3: Comment remains. BETA defers to the Commission for a determination on whether the proposed mitigation is sufficient for the proposed impacts, with the understanding that restoration within the sewer easement will only consist of the application of a native seed mixture in lieu of woody plantings.*	The Applicant intends to confirm with the Commission that the proposed mitigation is sufficient for project impacts.
STORMWATER MANAGEMENT		
	BETA3: Comment remains. BETA most recently submitted a peer review letter to the Franklin Planning Board on December 14, 2023, outlining remaining issues with the proposed stormwater design. The remaining stormwater comments are primarily related to the documented high groundwater at the Site, and the Applicant's proposal to artificially lower groundwater elevations around an infiltration system in order to meet the 2-foot separation to groundwater requirement. It is anticipated that additional stormwater management system design changes will be required, as the Applicant's proposal does not currently provide the level of recharge required to meet the Standards.	Review of project compliance with the Stormwater Management Standards is ongoing with Planning Board. Revised materials were submitted on 2/5/2024. As part of the revisions made to the stormwater management design, a new infiltration basin is now proposed in the southwest portion of the work area. This stormwater basin will provide a greater capacity for stormwater treatment and improved functionality, while expanding the size of the stormwater basin/IVW onsite. The expanded stormwater basin/IVW will be planted with appropriate wetland species to aid in removal of contaminants and uptake of water, while replicating the functions and characteristics of the lost stormwater basin/IVW. Impacts to the B- and H-series IVWs total approximately 3,719 square feet. The proposed basin measures approximately 6,755 square feet. Photos of this area can be found in the attached Photo Exhibit. Additional graphics are attached detailing the impacts of the proposed basin, and the proposed planting scheme for the basin.

GODDARD CONSULTING
Strategic Ecological Consulting

Invasive Species Management Plan

for
15 Liberty Way
Franklin, MA
(Map 320, Lot 4)

September 7, 2023
Revised: October 24, 2023
Revised: November 14, 2023
Revised: February 7, 2024

ADDRESSED TO:
Municipal Building
Franklin Conservation Commission
355 E. Central Street
Franklin, MA 02038

PREPARED BY:
Goddard Consulting LLC
291 Main Street, Suite 8
Northborough, MA 01532

PREPARED FOR:
Atlantic Oliver 15 Liberty Way LLC
c/o Oliver Street Capital
125 High Street, Suite 220
Boston, MA 02110

1.0 INTRODUCTION

As described in the Notice of Intent submission, invasive species management is proposed as mitigation for impacts to the 25' Buffer Zone, which total 16,553sf, and impacts to Isolated Vegetated Wetlands, which total 2,680sf. The area proposed for invasive species management is partially within the easement area located at the west of the project site, as shown on the attached graphic, and totals 46,374sf. Because the easement area is mowed semiregularly by Franklin DPW, planting of woody vegetation is proposed only in areas outside of the mowed easement access. This area totals approximately 33,000 square feet.

The primary invasive species on the site consist of oriental bittersweet (*Celastrus orbiculatus*), multiflora rose (*Rosa multiflora*), purple loosestrife (*Lythrum salicaria*), common reed (*Phragmites australis*), and honeysuckle (*Lonicera spp.*) These species are known to outcompete native plant species that are important to native wildlife for food and habitat. Management of these species will allow native vegetation present in the area to thrive. It is Goddard's opinion that the proposed mitigation will result in a net improvement of habitat value in the area.

Figure 1: View of invasive plant species in proposed invasive species management area.

Figure 2: View of invasive Phragmites reeds to be treated.

2.0 SUPERVISION AND METHODS

All activities in the invasive species management area (ISMA) will be supervised by a qualified wetland scientist with experience in invasive species management. Before work begins, the wetland scientist will coordinate with the selected contractor to flag or otherwise clearly identify the limits of work for the entirety of the invasive species management area. All proposed invasive species management activities will be conducted by hand only. The use of machines in this area is likely to result in increased impacts. Grubbing and cut-stem herbicide treatments as described below will be conducted by hand.

2.1 MANUAL REMOVAL

Grubbing is the simplest invasive species management technique. This technique is most effective on species that do not have expansive root systems. Species proposed to be managed with this approach include honeysuckle shrubs and multiflora rose. Simply digging out the plant and the majority of its root system with hand tools is effective in achieving long-term control. Repeated cutting of the above-ground portions of the plant is also an effective method to achieve control. Any invasive species present onsite that are not explicitly addressed in this plan will be managed with manual removal techniques.

2.2 CUT-STEM TREATMENT

A cut stem herbicide treatment is proposed for the remaining species that are not adequately addressed with manual grubbing. These species include Phragmites, purple loosestrife, and oriental bittersweet. These species have extensive root systems, and root material not physically removed is likely to resprout, resulting in ineffective control. All species proposed for manual removal may also be managed with a cut-stem treatment assuming that the maximum herbicide application rate is not exceeded.

The herbicide product to be used is EPA-approved for aquatic use – RoundUp Custom (EPA Reg. No. 524-343). This is a simple method that consists of cutting the target plant and applying a 50% diluted RoundUp formulation to the cut stem. The stem should be cut approximately 5" above the ground, to allow room for future cuts if follow-up treatment is necessary. The herbicide will be absorbed by the plant and transported throughout the plant tissue, effectively killing the plant from the inside. This method is exceptionally effective and rarely requires substantial follow-up treatments. All herbicide use will be overseen by a MA Licensed Pesticide Applicator. All stipulations of the product's label will be followed at all times. Cut-stem treatments are most effective in the late summer and early fall and should be conducted at this time of year if possible. Year-round treatments are acceptable but may result in less effective control.

Herbicide application shall not occur during rain events, to ensure effective treatments and reduce any potential for the herbicide to travel offsite. As mentioned above, the method of application will consist of only targeted cut-stem treatments. This method enables the use of a very minimal amount of active herbicide ingredient and allows for precise application with very little potential for off-target impacts. No broadcast herbicide application will be used, as this method has a strong potential for off-target impacts and overspray.

2.3 DISPOSAL

All cut plant material will be exported from the site and disposed of appropriately. In order to minimize the spread of invasive plant seeds or roots, cut plant material will be moved to an impervious surface as soon as possible (i.e., by the end of the workday). No soils originating from areas known to support invasive plant species will be moved elsewhere on site.

2.4 REVEGETATION

All upland areas within the ISMA will be seeded with the New England Conservation/Wildlife Mix from New England Wetland Plants at the recommended rate of 1lb/1750sf. All wetland areas within the ISMA, including the proposed basin, will be seeded with the New England Wetmix from New England Wetland Plants at the recommended rate of 1lb/2500sf. The seed will be spread after the initial invasive removal effort and raked into the soil. This will establish high-quality herbaceous vegetation that will aid in preventing the spread of invasive species. Reseeding of the easement path may be necessary, as mowing may inhibit the self-seeding ability of the species sown. Reseeding shall be conducted as necessary until the revegetation criteria outlined in section 2.5 of this report has been met.

Because the ISMA does have areas with quality native vegetation present, precise quantities of trees and shrubs to be replanted have not been determined at this point. However, the entire ISMA outside of the mowed easement area will be revegetated with appropriate native woody vegetation. The area outside of the mowed easement area to be replanted measures approximately 32,000sf. Planting quantities and species selection will be determined by a qualified wetland scientist to ensure appropriate placement and achieve the revegetation criteria described in section 2.5 of this report as described below. There will be no less than 6 different species chosen for planting to ensure appropriate species diversity. Plantings for these areas will be selected from the following list:

Upland Planting Areas	**Wetland Planting Areas**
White pine (*Pinus strobus*)	Silky dogwood (*Cornus amomum*)
Black cherry (*Prunus serotina*)	Northern Arrowwood (*Viburnum dentatum*)
Serviceberry (*Amalanchier canadensis*)	Highbush blueberry (*Vaccinium corymbosum*)
Black chokeberry (*Aronia melanocarpa*)	Bur-reed (*Sparganium americanum*)
Lowbush blueberry (*Vaccinium angustifolium*)	Woolgrass (*Scirpus cyperinus*)
Witch hazel (*Hammamelis virginiana*)	Cattail (*Typha latifolia*)
*Depending on nursery availability, other appropriate species not listed here may be selected for planting with Conservation Agent approval.	

2.5 MONITORING AND REPORTING

As described above, the ISMP areas will be inspected for invasive species during the spring and fall growing seasons during each year of implementation. Monitoring reports shall be prepared for the ISMP by a qualified wetland scientist once a year with the results of the spring and fall inspections. If the report has deemed the management successful,

treatment may cease. If the management has been unsuccessful, adjusted spring and fall treatments will be scheduled and the qualified wetland scientist will inspect the site the following spring.

Monitoring reports will include photographs and details about the vitality of the success of the invasive species management in the area and shall be submitted to the issuing authority by December of each monitoring year. Monitoring reports shall describe, using narratives, plans, and color photographs, the physical characteristics of the management area. Any invasive species present will be noted, flagged, and removed or treated.

For this ISMP to be deemed successful, 75% of the present invasive species cover must be removed, with the regeneration of native plant species in their place. If these terms are not met, the applicant shall submit a remediation plan to the issuing authority for approval that will achieve management/restoration goals under the supervision of a wetland specialist. This plan must include an analysis of why the areas have not successfully re-vegetated with native species and how the Applicant intends to resolve the problem.

This ISMP is for the removal of invasive plants in the area identified on the attached map within the subject parcel, with a goal of establishing a primarily native plant community and improving wildlife habitat adjacent to the soon to be developed portions of the site. To achieve these goals, this plan has proposed an approach consisting of physical and chemical management methods.

It is our professional opinion that the distinction in removal methods specified previously in this report will allow for the efficient removal of invasive species from the area while affording maximum protection to wetland resource areas, and that the proposed plantings will allow for appropriate revegetation to provide ideal forage and habitat value for wildlife. We therefore respectfully request that the Commission approve this ISMP in conjunction with Notice of Intent for the project at 15 Liberty Way in Franklin, MA.

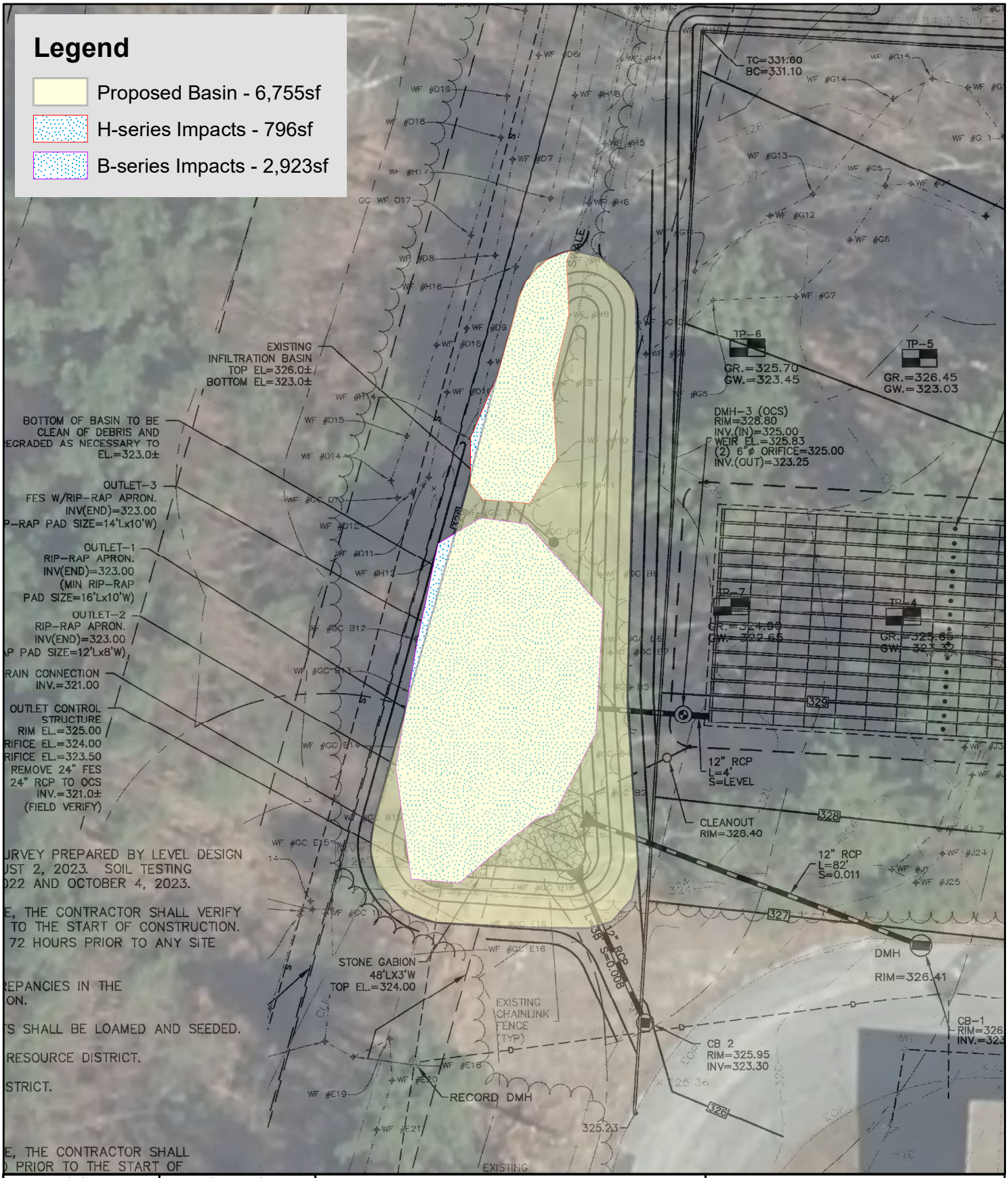
If there are any questions concerning this ISMP, please do not hesitate to contact us.

Sincerely,

Goddard Consulting LLC

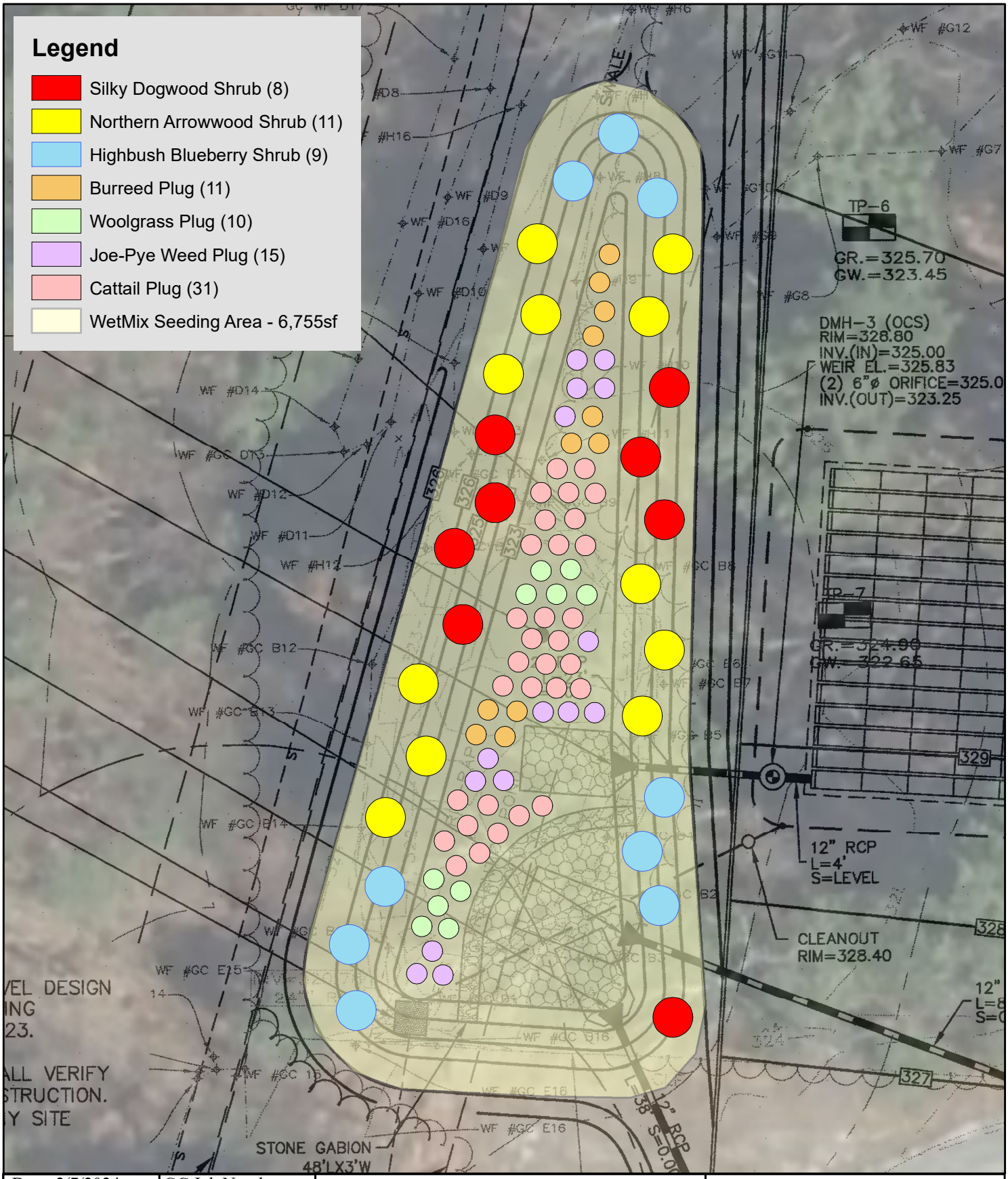
Chris Frattaroli
Wetland Scientist

Date: 2/6/2024	GC Job Number: 101-082	50-100' Buffer Zone Cover Comparison	0 37.5 75 Feet
GODDARD CONSULTING Strategic Ecological Consulting		15 Liberty Way Franklin MA	1 in = 75 ft Map: 320, Lot: 4 N W E S



Date: 2/6/2024	GC Job Number: 101-082	Proposed Stormwater Basin Impacts	0 15 30 Feet
GODDARD CONSULTING Strategic Ecological Consulting		15 Liberty Way Franklin MA	1 in = 30 ft Map: 320, Lot: 4

N W E S



Date: 2/7/2024	GC Job Number: 101-082	Proposed Basin Planting Plan	0 10 20 Feet
GODDARD CONSULTING Strategic Ecological Consulting		15 Liberty Way Franklin MA	1 in = 20 ft Map: 320, Lot: 4 N W E S

Photo Exhibit – 2/7/2024

Photo 1. View of stormwater basin/IVW to be enhanced. Riprap lining of the basin is visible at left.

Photo 2: View of stormwater basin/IVW to be enhanced. Concrete flared end section outlet is visible at center.

NO	DATE	REVISIONS
1	10/17/2023	RESOURCE AREA FLAGS
2	11/22/2023	REVIEW COMMENTS
3	02/01/2024	REVIEW COMMENTS

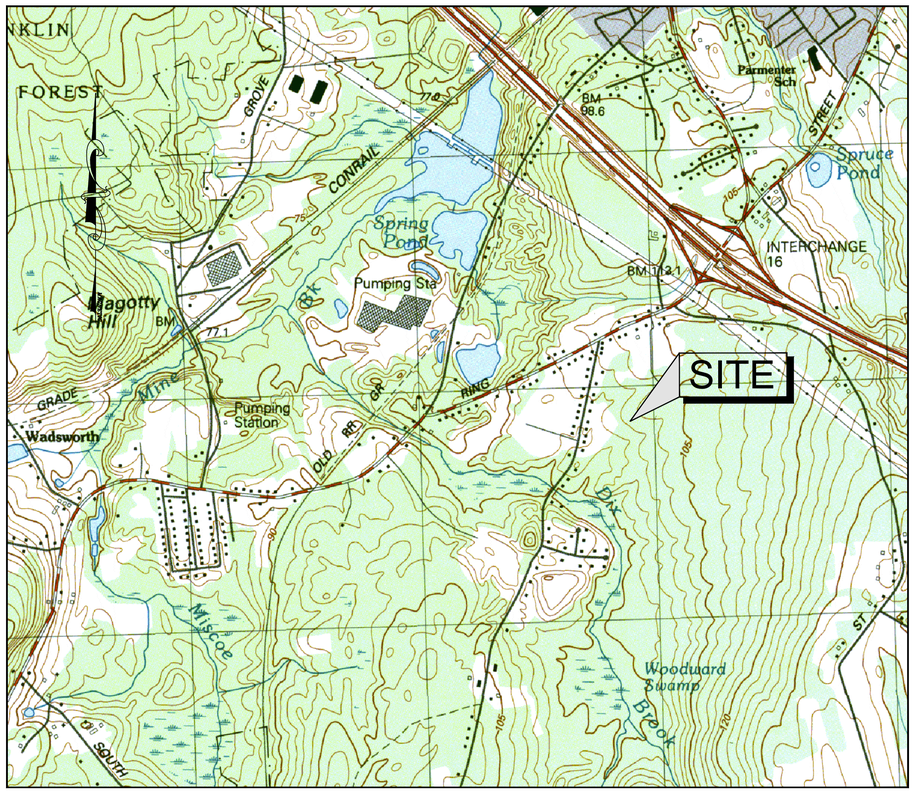
LIBERTY PARKING EXPANSION

OLIVER STREET CAPITAL

15 LIBERTY WAY

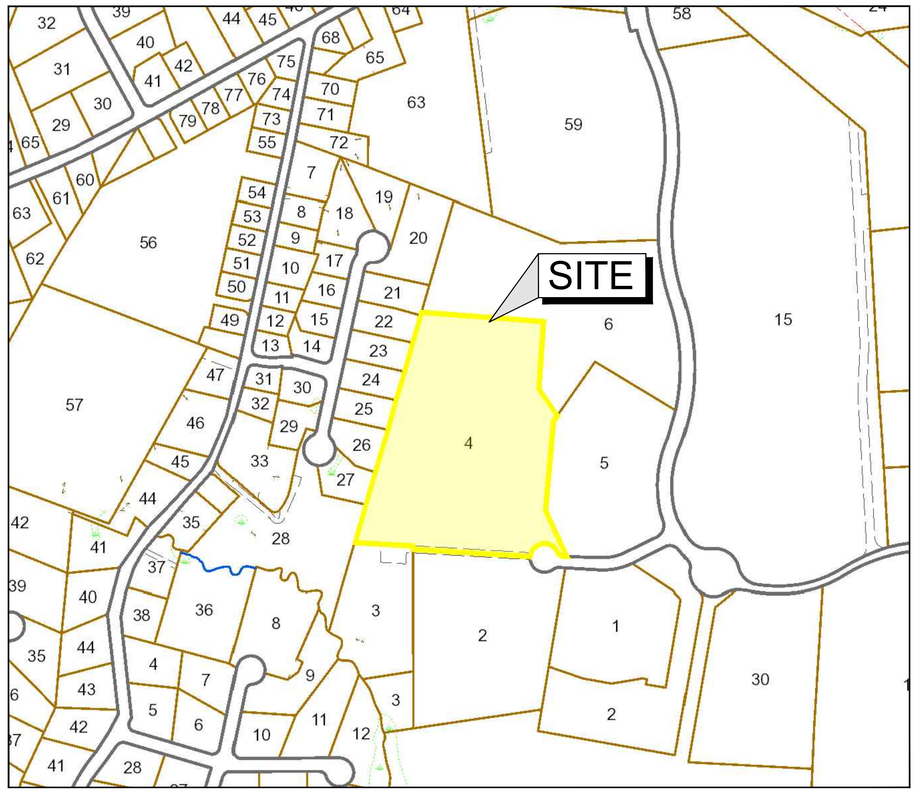
FRANKLIN, MASSACHUSETTS

DATE: JANUARY 13, 2023
REVISED: FEBRUARY 1, 2024



USGS MAP

SCALE: 1"= 1,000'±



ASSESSORS MAP

SCALE: 1"= 300'±

APPLICANT:

OLIVER STREET CAPITAL
125 HIGH STREET, SUITE 220
BOSTON, MA 02110

CIVIL ENGINEER:

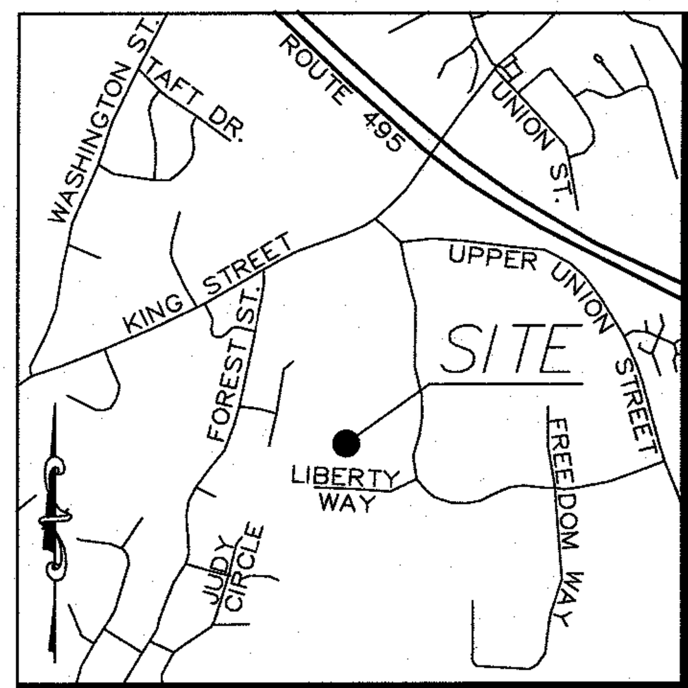
LEVEL DESIGN GROUP
Civil Engineers & Land Surveyors
CIVIL ENGINEERING / LAND SURVEYING
249 SOUTH STREET
UNIT 1
PLAINVILLE, MA 02762
TEL. (508) 695-2221 FAX. (508) 695-2219

PROPERTY ADDRESS:
15 LIBERTY WAY
FRANKLIN, MASSACHUSETTS

ASSESSORS MAP/PARCEL:
MAP 320 , PARCEL 004

ZONING DISTRICT:
INDUSTRIAL

DRAWING LIST:



LOCUS MAP
not to scale

PLAN NO. 879 OF 1994
50' WETLAND BUFFER
25' WETLAND BUFFER
LOT B-211
N/F
IRON MOUNTAIN INFORMATION MANAGEMENT, LLC
PARCEL ID 320-006
DB 32508 PG 480
PLAN NO. 659 OF 1998
77 CONSTITUTION BLVD.
N/F
COOKE
PARCEL 320-021
DB 11508 PG 376
4 RACHAEL CIRCLE
N/F
HARDING & MURPHY
PARCEL 320-022
DB 10636 PG 581
6 RACHAEL CIRCLE
N/F
SMITH
PARCEL 320-023
DB 10681 PG 633
8 RACHAEL CIRCLE
N/F
PISANI
PARCEL 320-024
DB 15863 PG 178
10 RACHAEL CIRCLE
DRAINAGE SWALE
SEDIMENT FOREBAY
SWALE
BUILDING SETBACK LINE
100' WETLAND BUFFER
50' WETLAND BUFFER
25' WETLAND BUFFER
GENERAL RESIDENTIAL "V" ZONING DISTRICT
INDUSTRIAL ZONING DISTRICT
N15°40'14"E
992.77'
259.6'±
283.36'
S03°38'59"W
149.3'±
S36°18'00"E
135.39'
25' WIDE WATER MAIN EASEMENT
40' WIDE DRAIN EASEMENT
20' WIDE UTILITY EASEMENT
35' WIDE DRAINAGE EASEMENT
BIT. PAVEMENT
EXISTING ONE STORY WAREHOUSE
BUILDING HEIGHT=24'±
#15
FFE=328.02
LOT B-21A
653,400± S.F.
=15.000± ACRES
PARCEL ID 320-004
DB 39279 PG 298
PLAN NO. 879 OF 1994
15 LIBERTY WAY
50' WETLAND BUFFER
100' WETLAND BUFFER
SMH
RIM=322.11
TO LIBERTY WAY
LOT B-2
N/F
101 CONSTITUTION BLVD., L
PARCEL ID 320-005
DB 32978 PG 87
PLAN NO. 926 OF 1986
101 CONSTITUTION BLVD.
375.44'
S05°00'00"W
TP-1
GR.=334.70
GW.=331.78
TP-2
GR.=331.05
GW.=328.38
TP-3
GR.=328.50
GW.=326.00
TP-4
GR.=325.65
GW.=323.
TP-5
GR.=326.45
GW.=323.03
GR.=325.70
GW.=323.45
TP-7
GR.=324.90
GW.=322.65
DMH
RIM=326.41
DMH
RIM=327.67

LEGEND

B	BOLLARD
BIT.	BITUMINOUS
CLF	CHAIN LINK FENCE
–D–	UNDERGROUND DRAIN LINE
DB	DEED BOOK
DMH	DRAIN MANHOLE
ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
FES	FLARED END SECTION
FFE	FINISHED FLOOR ELEVATION
HYD	FIRE HYDRANT
INV	INVERT
N/F	NOW OR FORMERLY
RBF	REBAR FOUND
–S–	UNDERGROUND SEWER LINE
SMH	SEWER MANHOLE
PG	PAGE
RCP	REINFORCED CONCRETE PIPE
–W–	UNDERGROUND WATER LINE
WG	WATER GATE

ZONING DISTRICT

INDUSTRIAL

MINIMUM BUILDING SETBACKS

FRONT=40 FEET
SIDE=30 FEET*
REAR=30 FEET*

* INCREASE BY THE COMMON BUILDING HEIGHT OF THE STRUCTURE WHEN ABUTTING A RESIDENTIAL USE.

DEED REFERENCES

ATLANTIC OLIVER 15 LIBERTY WAY, LLC
DEED BOOK 39279 PAGE 278

PLAN REFERENCES

PLAN NO. 879 OF 1994
PLAN NO. 878 OF 1994
PLAN NO. 47 OF 1995

NOTES

1. THIS SURVEY AND PLAN ARE BASED UPON AN ACTUAL ON THE GROUND INSTRUMENT SURVEY PERFORMED BETWEEN NOVEMBER 2, 2022 AND AUGUST 2, 2023.
2. LEGAL STATUS OF THE STREETS AND/OR WAYS SHOWN HEREON, WHETHER THEY ARE PUBLIC OR PRIVATE, WERE NOT MADE PART OF THIS SURVEY.
3. ALL FLOWERING PLANTS, SHRUBS, OR TREES MAY NOT BE SHOWN WITHIN LANDSCAPING AREAS. IT IS MEANT FOR ILLUSTRATIVE PURPOSES ONLY AND NOT MEANT AS A COMPLETE INVENTORY OF ALL VEGETATION THAT MAY EXIST. SIZES REFLECT APPROXIMATE TRUNK DIAMETER AT BREAST HEIGHT OR APPROXIMATE DIAMETER OF SHRUB WIDTH.
4. THE LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE ONLY, AND ARE NOT WARRANTED TO BE CORRECT. UNDERGROUND UTILITIES ARE SHOWN BASED ON EITHER RECORD DATA PROVIDED BY THE OPERATING AUTHORITIES, VISUAL INSPECTION OF AVAILABLE ABOVEGROUND STRUCTURES, PHYSICAL SURFACE MARKINGS FOUND, OR DATA PROVIDED BY OTHERS. ADDITIONAL UTILITIES MAY EXIST WHICH ARE NOT INDICATED ON THESE PLANS. ALL EXISTING UTILITIES SHALL BE VERIFIED FOR SERVICE, SIZE, INVERT ELEVATION, LOCATIONS, ETC. PRIOR TO NEW CONNECTIONS TO OR RELOCATION OF SAME. CONTRACTOR MUST NOTIFY DIG-SAFE AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO ANY CONSTRUCTION. NOTIFY THIS FIRM IN WRITING OF ANY AND ALL DISCREPANCIES PRIOR TO COMMENCING ANY WORK.
5. THE SUBJECT PROPERTY DOES NOT FALL IN A SPECIAL FLOOD HAZARD ZONE AS THE SUBJECT PROPERTY IS PLOTTED BY SCALE ONTO THE FLOOD INSURANCE RATE MAP FOUND AS,

COUNTY	NORFOLK
COMMUNITY	TOWN OF FRANKLIN
PANEL	250240 0317E
EFFECTIVE DATE	JULY 17, 2012
ZONE	"X"

6. THE SUBJECT PROPERTY DOES NOT FALL IN THE TOWN OF FRANKLIN'S WATER RESOURCE PROTECTION DISTRICT.

DATUM NOTES

HORIZONTAL DATUM:
MASSACHUSETTS STATE PLANE – MAINLAND ZONE NAD83 (2011) EPOCH 2010.00 – US FEET

VERTICAL DATUM:
NORTH AMERICAN VERTICAL DATUM OF 1988 (GEOID 12B) – US FEET

ON-THE-GROUND OBSERVATIONS WERE PERFORMED USING A LEICA TS13 (3") ROBOTIC TOTAL STATION AND WITH A SOKKIA GCX3 GPS RECEIVER USING THE MASSACHUSETTS CONTINUOUSLY OPERATING REFERENCE STATION (MaCORS) RTK NETWORK.

I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED IN ACCORDANCE WITH THE PROCEDURAL AND TECHNICAL STANDARDS FOR THE PRACTICE OF LAND SURVEYING IN THE COMMONWEALTH OF MASSACHUSETTS, TITLE 250 CMR 6.00.

ROBERT R. LITCHFIELD, PLS #47615 DATE

NO	DATE	REVISIONS
1	10/17/2023	RESOURCE AREA FLAGS
2	11/22/2023	REVIEW COMMENTS
3	02/01/2024	REVIEW COMMENTS

SEAL
COMMONWEALTH OF MASSACHUSETTS
DANIEL R. CAMPBELL
CIVIL
No. 46245
REGISTERED PROFESSIONAL ENGINEER
2/1/24

DATE :	JANUARY 13, 2023
DRAWN :	AH / DRC
SCALE :	1" = 40'

LIBERTY PARKING EXPANSION

MAP SHEET 320, PARCEL 004
15 LIBERTY WAY
FRANKLIN, MASSACHUSETTS

LEVEL DESIGN GROUP
Civil Engineers & Land Surveyors
249 SOUTH STREET, UNIT 1
PLAINVILLE, MA 02762
TEL. (508) 695-2221 FAX. (508) 695-2219

EXISTING CONDITIONS

C-1.0

SHEET 2 OF 8

0' 20' 40' 80'

2081.00

ZONING DISTRICT

ZONED: INDUSTRIAL
USE: 3.10 WAREHOUSE, DISTRIBUTION FACILITY (EXISTING)

MINIMUM BUILDING SETBACKS

FRONT=40
FEET SIDE=30 FEET
REAR=30 FEET

DEED REFERENCES

ATLANTIC OLIVER 15 LIBERTY WAY, LLC
DEED BOOK 39279 PAGE 278

PLAN REFERENCES

PLAN NO. 879 OF 1994
PLAN NO. 878 OF 1994
PLAN NO. 47 OF 1995

ZONING REQUIREMENTS			
ZONING DISTRICT: INDUSTRIAL			
	REQUIRED	EXISTING	PROPOSED
MIN. LOT AREA	40,000 S.F.	653,400± S.F.	653,400± S.F.
FRONTAGE	175'	946.73'	946.73'
FRONT YARD SETBACK	40'	95.9'***	95.9'***
SIDE YARD SETBACK	30'	149.3'	149.3'
REAR YARD SETBACK	30'	259.6'	259.6'
BUILDING COVERAGE	70% MAX.	14.6%**	14.6%**
IMPERVIOUS COVERAGE	80% MAX.	46.7%***	57.4%***
MAX. BUILDING HEIGHT	3 STORIES*	1 STORY/24'	1 STORY/24'
PARKING REQUIREMENTS			
USE: EXISTING WAREHOUSE: ONE SPACE PER 1,000 SF OF GROSS FLOOR AREA.	95,475 SF /1,000 SF =96 SPACES	98	(98) EXISTING

* BUILDINGS UP TO 60' IN HEIGHT MAY BE PERMITTED BY A SPECIAL PERMIT FROM THE PLANNING BOARD.
** BUILDING AREA IS BASED ON FRANKLIN ASSESSORS RECORDS
*** TAKEN FROM THE RECORD SURVEY IN ADDITION TO AERIAL IMAGERY.

PLAN NOTES:

1. EXISTING CONDITIONS WERE OBTAINED FROM FIELD SURVEY PREPARED BY LEVEL DESIGN GROUP, LLC BETWEEN NOVEMBER 2, 2022 AND AUGUST 2, 2023. SOIL TESTING COMPLETED BY ADAM P. HUNT ON NOVEMBER 16, 2022 AND OCTOBER 4, 2023.
2. THE LOCATION OF EXISTING UTILITIES IS APPROXIMATE, THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES IN THE FIELD PRIOR TO THE START OF CONSTRUCTION. NOTIFY "DIG-SAFE" AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO ANY SITE DEMOLITION OR EXCAVATION.
3. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES IN THE DESIGN PLANS PRIOR TO THE START OF CONSTRUCTION.
4. ALL DISTURBED AREAS NOT RECEIVING IMPROVEMENTS SHALL BE LOAMED AND SEEDED.
5. THE SITE IS NOT LOCATED WITHIN A ZONE II WATER RESOURCE DISTRICT.
6. THE SITE IS NOT LOCATED WITHIN A FLOOD PLAIN DISTRICT.

CONSTRUCTION NOTES:

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4. ALL EXISTING PAVEMENT, CURB, WALKS, UTILITIES, LIGHT POLES, TREES, SHRUBS, ETC., SHALL BE REMOVED FROM THE AREAS TO BE DEVELOPED. ALL SUCH ITEMS NOT WITHIN THE WORK AREA SHALL BE PROTECTED AND UNDISTURBED.
5. ALL DISTURBED AREAS NOT RECEIVING IMPROVEMENTS SHALL BE LOAMED AND SEEDED.
6. ALL CONSTRUCTION AND CONSTRUCTION ACTIVITIES SHALL CONFORM TO STATE AND LOCAL REQUIREMENTS. INCLUDING BUT NOT LIMITED TO THE TOWN OF FRANKLIN, THE COMMONWEALTH OF MASSACHUSETTS AND ANY OTHER AGENCIES HAVING JURISDICTION.
7. MATERIAL TO BE EXPORTED FROM THE SITE WILL BE LIMITED TO TOPSOIL IN AREAS TO BE PAVED AND ANY DELETERIOUS MATERIAL ENCOUNTERED DURING EXCAVATION. MATERIAL TO BE EXPORTED WILL BE LIMITED TO GRAVEL BASE AND SEPTIC AGGREGATE.

SITE PLAN NOTES:

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NO	DATE	REVISIONS
1	10/17/2023	RESOURCE AREA FLAGS
2	11/22/2023	REVIEW COMMENTS
3	02/01/2024	REVIEW COMMENTS

SEAL

2/1/24
COMMONWEALTH OF MASSACHUSETTS
DANIEL R. CAMPBELL
CIVIL
No. 46245
REGISTERED PROFESSIONAL ENGINEER

DATE :	JANUARY 13, 2023
DRAWN :	AH / DRC
SCALE :	1" = 50'

LIBERTY PARKING EXPANSION

MAP SHEET 320, PARCEL 004
15 LIBERTY WAY
FRANKLIN, MASSACHUSETTS

LEVEL DESIGN GROUP
Civil Engineers & Land Surveyors
249 SOUTH STREET, UNIT 1
PLAINVILLE, MA 02762
TEL. (508) 695-2221 FAX. (508) 695-2219

OVERALL SITE PLAN

C-2.0

SHEET 3 OF 9

0' 25' 50' 100'

2081.00

ZONING DISTRICT

ZONED: INDUSTRIAL
USE: 3.10 WAREHOUSE, DISTRIBUTION FACILITY (EXISTING)

MINIMUM BUILDING SETBACKS

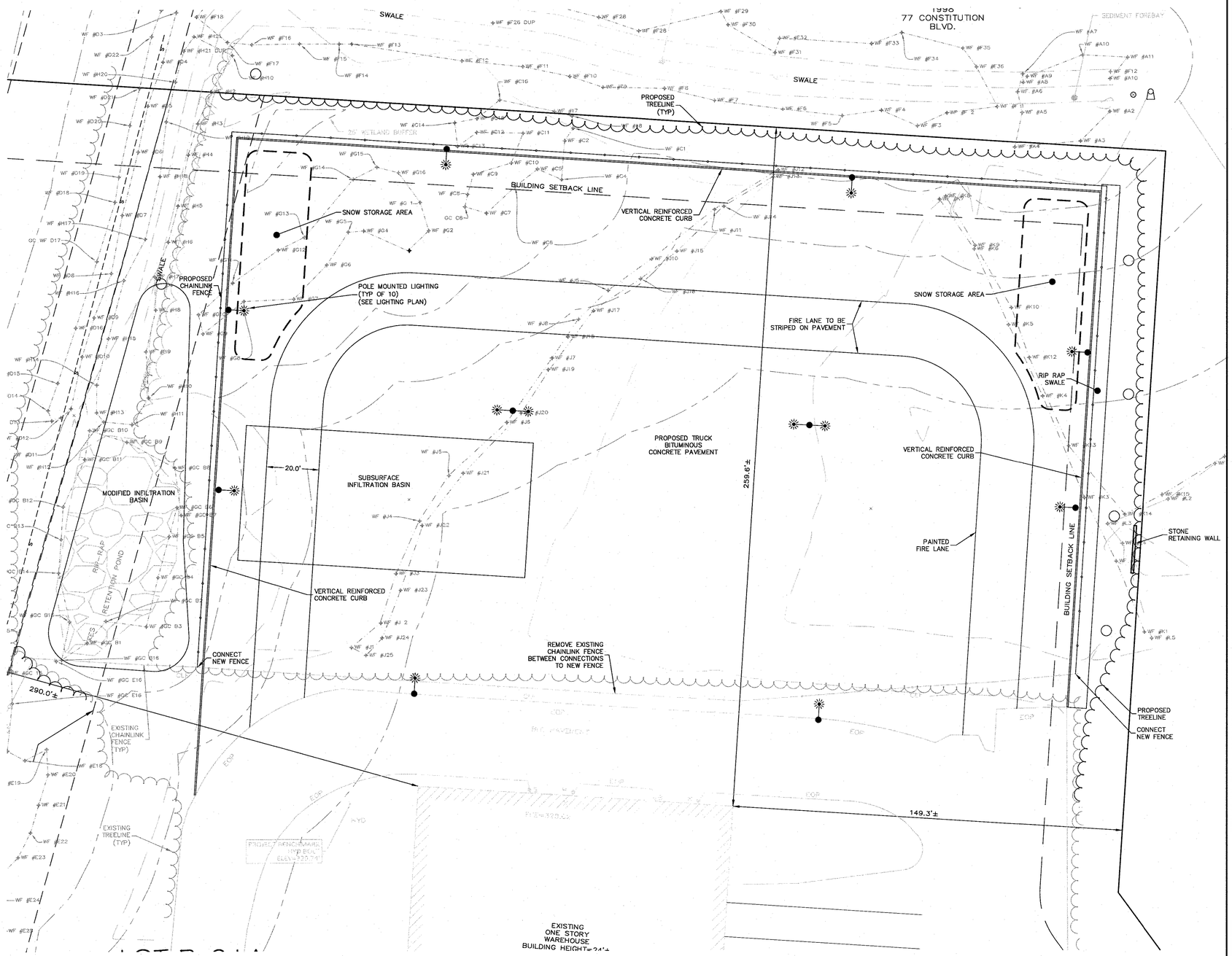
FRONT=40
FEET SIDE=30 FEET
REAR=30 FEET

DEED REFERENCES

ATLANTIC OLIVER 15 LIBERTY WAY, LLC
DEED BOOK 39279 PAGE 278

PLAN REFERENCES

PLAN NO. 879 OF 1994
PLAN NO. 878 OF 1994
PLAN NO. 47 OF 1995



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SEAL

COMMONWEALTH OF MASSACHUSETTS
DANIEL R. CAMPBELL
CIVIL
No. 46245
REGISTERED PROFESSIONAL ENGINEER
2/1/24

DATE : JANUARY 13, 2023
DRAWN : AH / DRC
SCALE : 1" = 20'

LIBERTY PARKING EXPANSION

MAP SHEET 320, PARCEL 004
15 LIBERTY WAY
FRANKLIN, MASSACHUSETTS

LEVEL DESIGN GROUP
Civil Engineers & Land Surveyors
249 SOUTH STREET, UNIT 1
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LAYOUT & MATERIALS

C-3.0

SHEET 4 OF 9

0' 10' 20' 40'

2081.00

ZONING DISTRICT

ZONED: INDUSTRIAL
USE: 3.10 WAREHOUSE, DISTRIBUTION FACILITY (EXISTING)

MINIMUM BUILDING SETBACKS

FRONT=40
FEET SIDE=30 FEET
REAR=30 FEET

DEED REFERENCES

ATLANTIC OLIVER 15 LIBERTY WAY, LLC
DEED BOOK 39279 PAGE 278

PLAN REFERENCES

PLAN NO. 879 OF 1994
PLAN NO. 878 OF 1994
PLAN NO. 47 OF 1995

LOT B-211
N/F
IRON MOUNTAIN
INFORMATION
MANAGEMENT, LLC
PARCEL ID 320-006
DB 32508 PG 480
PLAN NO. 659 OF
1998
77 CONSTITUTION
BLVD.

RECONSTRUCT SWALE
RECONSTRUCT SEDIMENT FOREBAY
SWALE
SEDIMENT FOREBAY
FES INV=330.6
FES INV=335.15
TC=331.60
BC=331.10
TC=335.50
BC=335.00
334.20
332.65
334.15
STONE GABION CHECK DAM TOP EL.=334.05
RIP RAP SWALE L=200' S=0.029
331.15
332.65
STONE GABION CHECK DAM TOP EL.=332.50
329.70
331.20
STONE GABION CHECK DAM TOP EL.=331.00
328.20
STONE GABION CHECK DAM TOP EL.=329.50
329.25
DISCHARGE FROM SWALE
TC=329.70
BC=329.20
TD-1 (HIGH END)
RIM=329.20
INV.=328.70
329.7
EXISTING INFILTRATION BASIN TOP EL=326.0± / BOTTOM EL=323.0±
BOTTOM OF BASIN TO BE CLEAN OF DEBRIS AND REGRADED AS NECESSARY TO EL.=323.0±
OUTLET-3
FES W/RIP-RAP APRON.
INV(END)=323.00
(MIN RIP-RAP PAD SIZE=14'Lx10'W)
OUTLET-1
RIP-RAP APRON.
INV(END)=323.00
(MIN RIP-RAP PAD SIZE=16'Lx10'W)
OUTLET-2
RIP-RAP APRON.
INV(END)=323.00
(MIN RIP-RAP PAD SIZE=12'Lx8'W)
CURTIAN DRAIN CONNECTION INV.=321.00
60"X60" OUTLET CONTROL STRUCTURE
RIM EL.=325.00
10"Hx20"W ORIFICE EL.=324.00
6"HX32"W ORIFICE EL.=323.50
REMOVE 24" FES
AND EXTEND 24" RCP TO OCS
INV.=321.0±
(FIELD VERIFY)
12" RCP L=23' S=0.011
12" RCP L=4 S=LEVEL
CLEANOUT RIM=328.40
12" RCP L=82' S=0.011
STONE GABION 48'LX3'W TOP EL.=324.00
EXISTING CHAINLINK FENCE (TYP)
RECORD DMH
CB 2 RIM=325.95 INV=323.30
DMH RIM=326.41
CB-1 RIM=326.90 INV=323.90
DMH RIM=327.67
TP-6 GR.=325.70 GW.=323.45
TP-5 GR.=326.45 GW.=323.03
TP-7 GR.=324.96 GW.=302.66
TP-4 GR.=325.66 GW.=323.42
TP-3 GR.=328.50 GW.=326.00
TP-2 GR.=331.05 =328.38
TP-1 GR.=334.70 GW.=331.78
INSPECTION PORT (TYP. OF 15)
CURTAIN DRAIN L=366' S=LEVEL INV.=321.00 (SEE DETAIL SHEET C-6.2)
DMH-3 (OCS) RIM=328.80 INV.(IN)=325.00 WEIR EL.=325.83 (2) 6"ø ORIFICE=325.00 INV.(OUT)=323.25
SSI-1 STC-310 (225 UNITS) TOS=326.33 TOC=325.83 BOC=324.50 BOS=324.00
INSPECTION PORT (TYP. OF 4)
DMH-2 (CDS 2015-4) RIM=328.90 INV.(IN)=324.60 INV.(OUT)=324.50
12" RCP L=58' S=0.010
DMH-1 (DEEP SUMP) RIM=327.95 INV.(IN)=327.63 (TD-1) INV.(OUT)=325.20 SUMP=321.20
TD-1 (LOW END) RIM=327.95 INV.=327.10
TRENCH DRAIN-1 L=159' S=0.010
PROJECT BENCHMARK TOP NUT ELEV.=329.74
EXISTING TREELINE (TYP)
WIDE DRAINAGE EASEMENT
LOT B-21A
653,400± S.F.
=15.000± ACRES
PARCEL ID 320-004
50' WETLAND BUFFER
100' WETLAND BUFFER
EXISTING ONE STORY WAREHOUSE BUILDING HEIGHT=24'± #15

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SEAL

COMMONWEALTH OF MASSACHUSETTS
DANIEL R. CAMPBELL
CIVIL
No. 49245
REGISTERED PROFESSIONAL ENGINEER
2/1/24

DATE: JANUARY 13, 2023
DRAWN: AH / DRC
SCALE: 1" = 20'

LIBERTY PARKING EXPANSION

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GRADING & DRAINAGE

C-4.0

SHEET 5 OF 9

0' 10' 20' 40'

2081.00

ZONING DISTRICT

ZONED: INDUSTRIAL
USE: 3.10 WAREHOUSE, DISTRIBUTION FACILITY (EXISTING)

MINIMUM BUILDING SETBACKS

FRONT=40
FEET SIDE=30 FEET
REAR=30 FEET

DEED REFERENCES

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DEED BOOK 39279 PAGE 278

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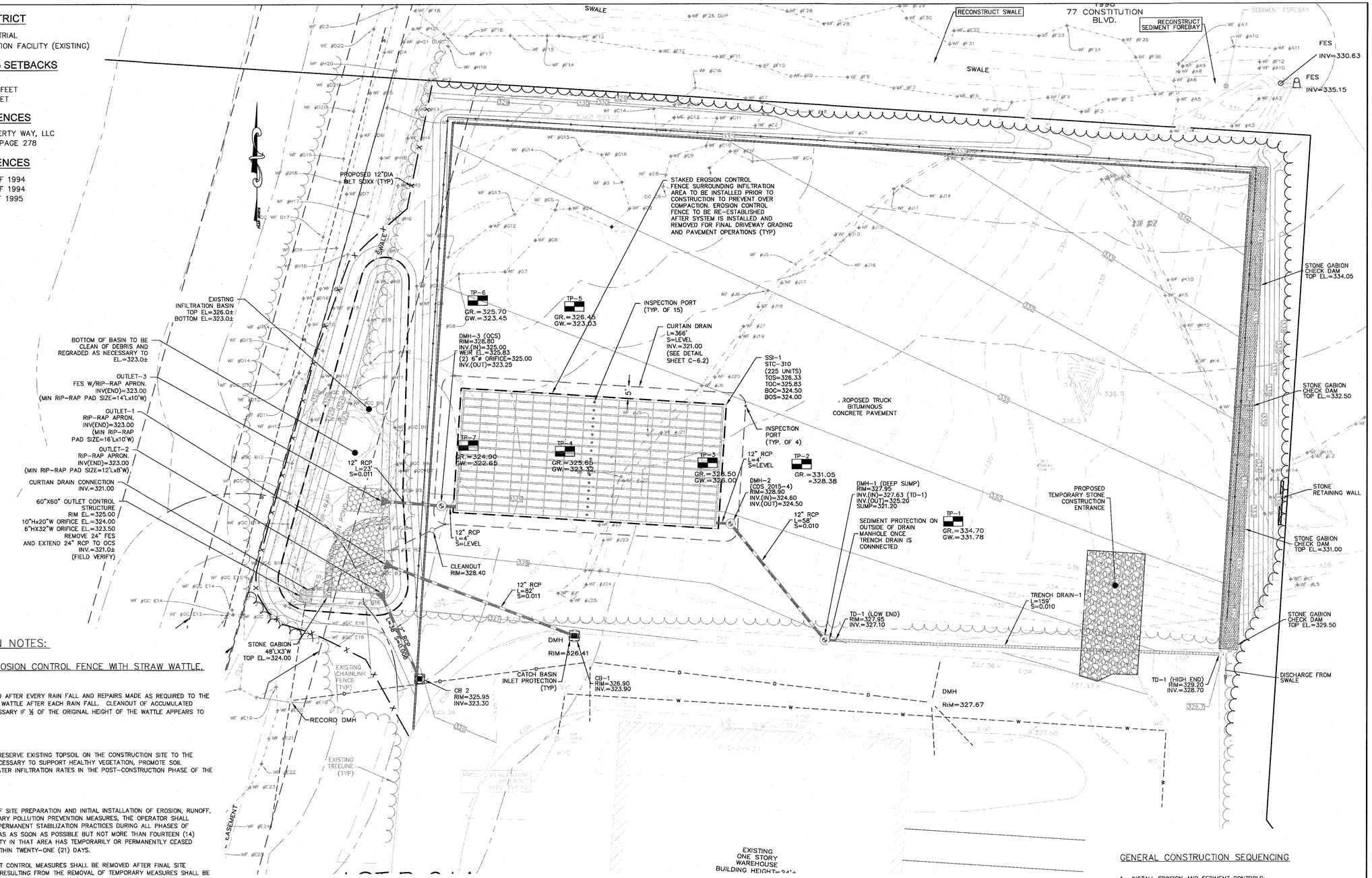

EROSION CONTROL PLAN NOTES:

SILTATION CONTROL USING EROSION CONTROL FENCE WITH STRAW WATTLE, OR APPROVED EQUAL

SILTSOXX IS TO BE VISUALLY INSPECTED AFTER EVERY RAIN FALL AND REPAIRS MADE AS REQUIRED TO THE SILTATION CONTROL FENCE AND STRAW WATTLE AFTER EACH RAIN FALL. CLEANOUT OF ACCUMULATED SEDIMENT BEHIND THE WATTLE IS NECESSARY IF ½ OF THE ORIGINAL HEIGHT OF THE WATTLE APPEARS TO HAVE BEEN INUNDATED WITH SEDIMENT.

PRESERVE TOPSOIL

SITE OWNERS AND OPERATORS MUST PRESERVE EXISTING TOPSOIL ON THE CONSTRUCTION SITE TO THE MAXIMUM EXTENT FEASIBLE AND AS NECESSARY TO SUPPORT HEALTHY VEGETATION, PROMOTE SOIL STABILIZATION, AND INCREASE STORMWATER INFILTRATION RATES IN THE POST-CONSTRUCTION PHASE OF THE PROJECT.

STABILIZATION OF SOILS

UPON COMPLETION AND ACCEPTANCE OF SITE PREPARATION AND INITIAL INSTALLATION OF EROSION, RUNOFF, AND SEDIMENT CONTROLS AND TEMPORARY POLLUTION PREVENTION MEASURES, THE OPERATOR SHALL INITIATE APPROPRIATE TEMPORARY OR PERMANENT STABILIZATION PRACTICES DURING ALL PHASES OF CONSTRUCTION ON ALL DISTURBED AREAS AS SOON AS POSSIBLE BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREA HAS TEMPORARILY OR PERMANENTLY CEASED UNLESS THE ACTIVITY IS TO RESUME WITHIN TWENTY-ONE (21) DAYS.

ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AFTER FINAL SITE STABILIZATION. DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED WITHIN 30 DAYS OF REMOVAL.

ONLY AREAS THAT CAN BE REASONABLY EXPECTED TO HAVE ACTIVE CONSTRUCTION WORK BEING PERFORMED WITHIN 14 DAYS OF DISTURBANCE WILL BE CLEARED/GRUBBED AT ANY ONE TIME. IT IS NOT ACCEPTABLE TO GRUB AND STRIP TOP SOIL THE ENTIRE CONSTRUCTION SITE IF PORTIONS WILL NOT BE ACTIVE WITHIN THE 14-DAY TIME FRAME. PROPER PHASING OF CLEARING AND GRUBBING ACTIVITIES SHALL INCLUDE TEMPORARY STABILIZATION TECHNIQUES FOR AREAS CLEARED AND GRUBBED THAT WILL NOT BE ACTIVE WITHIN THE 14-DAY TIME FRAME.

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STEEP SLOPES SHALL NOT BE LEFT UNATTENDED OR EXPOSED FOR EXCESSIVE PERIODS OF TIME SUCH AS THE INACTIVE WINTER SEASON. THE CONTRACTOR SHALL INITIATE APPROPRIATE VEGETATIVE PRACTICES ON ALL DISTURBED AREAS IN AREAS OF STEEP SLOPES AS SOON AS POSSIBLE BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREA HAS TEMPORARILY OR PERMANENTLY CEASED, UNLESS THE ACTIVITY IS TO RESUME WITHIN TWENTY-ONE (21) DAYS. ONCE AN STEEP SLOPE AREA HAS BEEN TEMPORARY AND/OR FINAL SEEDED IT SHALL BE PROTECTED WITH 4' HIGH ORANGE CONSTRUCTION TO PREVENT FURTHER DISTURBANCE OF THE AREA.

THE TEMPORARY SEEDING DESIGN MIX SHALL BE COMPRISED OF THE FOLLOWING:

TYPE	% BY WEIGHT
ANNUAL RYE GRASS	40
PERENNIAL RYE GRASS	60

STORMWATER INLET PROTECTION

INLET PROTECTION – WILL BE UTILIZED TO PREVENT SOIL AND DEBRIS FROM ENTERING STORM DRAIN INLETS. THESE MEASURES ARE USUALLY TEMPORARY AND ARE IMPLEMENTED BEFORE A SITE IS DISTURBED. ALL STORMWATER INLETS &/OR CATCH BASINS THAT ARE OPERATIONAL DURING CONSTRUCTION AND HAVE THE POTENTIAL TO RECEIVE SEDIMENT-LADEN STORMWATER FLOW FROM THE CONSTRUCTION SITE MUST BE PROTECTED USING CONTROL MEASURES OUTLINED IN THE STORMWATER POLLUTION PREVENTION PLAN. EROSION CONTROL FENCE WITH STRAW WATTLES ARE TO BE PLACED AT TO OPENING OF ALL ROUGH GRADED SEDIMENT FOREBAYS UNTIL THE FOREBAY AND BASIN HAS BEEN STABILIZED AND BROUGHT ON-LINE.

MAINTENANCE – THE OPERATOR MUST CLEAN, OR REMOVE AND REPLACE THE INLET PROTECTION MEASURES AS SEDIMENT ACCUMULATES, THE FILTER BECOMES CLOGGED, AND/OR AS PERFORMANCE IS COMPROMISED. ACCUMULATED SEDIMENT ADJACENT TO THE INLET PROTECTION MEASURES SHOULD BE REMOVED BY THE END OF THE SAME WORK DAY IN WHICH IT IS FOUND OR BY THE END OF THE FOLLOWING WORK DAY IF REMOVAL BY THE SAME WORK DAY IS NOT FEASIBLE.

INFILTRATION BASINS – ALL AREAS CONTAINING INFILTRATION BASINS (ABOVE OR BELOW GROUND) SHALL BE PROTECTED THROUGHOUT CONSTRUCTION. THESE AREAS ARE NOT BE USED FOR MATERIAL STOCKPILES OR FOR PARKING EQUIPMENT. SURFACE BASINS ARE TO BE ROUGH GRADED AND PROTECTED UNTIL STABILIZED AND BROUGHT ON-LINE FOR STORMWATER MANAGEMENT OF THE STABILIZED SITE.

CONSTRUCTION ENTRANCES

CONSTRUCTION ENTRANCES SHALL BE ESTABLISHED PRIOR TO REMOVAL OF EXISTING DRIVEWAY PAVEMENT TO BE USED IN CONJUNCTION WITH THE STABILIZATION OF CONSTRUCTION ROADS TO REDUCE THE AMOUNT OF SEDIMENT TRACKING OFF THE PROJECT. ANY CONSTRUCTION SITE ACCESS POINT MUST EMPLOY THE CONTROL MEASURES ON THE APPROVED SITE PLANS AND IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN. CONSTRUCTION ENTRANCES SHALL BE USED IN CONJUNCTION WITH THE STABILIZATION OF CONSTRUCTION ROADS TO REDUCE THE AMOUNT OF MUD PICKED UP BY CONSTRUCTION VEHICLES. ALL CONSTRUCTION ACCESS ROADS SHALL BE CONSTRUCTED PRIOR TO ANY ROADWAY ACCEPTING CONSTRUCTION TRAFFIC.

THE SITE OWNER AND OPERATOR MUST WILL RESTRICT VEHICLE USE TO PROPERLY DESIGNATED EXIT POINTS, USE PROPERLY DESIGNED AND CONSTRUCTED CONSTRUCTION ENTRANCES AT ALL POINTS THAT EXIT ONTO PAVED ROADS SO THAT SEDIMENT REMOVAL OCCURS PRIOR TO VEHICLE EXIT. WHEN AND WHERE NECESSARY, USE ADDITIONAL CONTROLS TO REMOVE SEDIMENT FROM VEHICLE TIRES PRIOR TO EXIT (I.E. WHEEL WASHING RACKS, RUMBLE STRIPS, AND RATTLE PLATES). WHERE SEDIMENT HAS BEEN TRACKED OUT FROM THE CONSTRUCTION SITE ONTO THE SURFACE OF OFFSET STREETS, OTHER PAVED AREAS, AND SIDEWALKS, THE DEPOSITED SEDIMENT MUST BE REMOVED BY THE END OF THE SAME WORK DAY IN WHICH THE TRACK OUT OCCURS. TRACK-OUT MUST BE REMOVED BY SWEEPING, SHOVELING, OR VACUUMING THESE SURFACES, OR BY USING OTHER SIMILARLY EFFECTIVE MEANS OF SEDIMENT REMOVAL.

STOCKPILE CONTAINMENT

SHALL BE USED ON-SITE TO MINIMIZE OR ELIMINATE THE DISCHARGE OF SOIL, TOPSOIL, BASE MATERIAL OR RUBBLE, FROM ENTERING DRAINAGE SYSTEMS OR SURFACE WATERS. ALL STOCKPILES MUST BE LOCATED WITHIN THE LIMIT OF DISTURBANCE, PROTECTED FROM RUN-ON WITH THE USE OF TEMPORARY SEDIMENT BARRIERS AND PROVIDED WITH COVER OR STABILIZATION TO AVOID CONTACT WITH PRECIPITATION AND WIND WHERE AND WHEN PRACTICAL. STOCK PILE MANAGEMENT CONSISTS OF PROCEDURES AND PRACTICES DESIGNED TO MINIMIZE OR ELIMINATE THE DISCHARGE OF STOCKPILED MATERIAL (SOIL, TOPSOIL, BASE MATERIAL, RUBBLE) FROM ENTERING DRAINAGE SYSTEMS OR SURFACE WATERS.
FOR ANY STOCKPILES OR LAND CLEARING DEBRIS COMPOSED, IN WHOLE OR IN PART, OF SEDIMENT OR SOIL, YOU MUST COMPLY WITH THE FOLLOWING REQUIREMENTS – LOCATE PILES WITHIN THE DESIGNATED LIMITS OF DISTURBANCE OUTSIDE OF THE 100-FOOT BUFFER ZONE, PROTECT FROM CONTACT WITH STORMWATER (INCLUDING RUN-ON) USING A TEMPORARY PERIMETER SEDIMENT BARRIER; WHERE PRACTICABLE, PROVIDE COVER OR APPROPRIATE TEMPORARY VEGETATIVE OR STRUCTURAL STABILIZATION TO AVOID DIRECT CONTACT WITH PRECIPITATION OR TO MINIMIZE SEDIMENT DISCHARGE; NEVER HOSE DOWN OR SWEEP SOIL OR SEDIMENT ACCUMULATED ON PAVEMENT OR OTHER IMPERVIOUS SURFACES INTO ANY STORMWATER CONVEYANCE, STORM DRAIN INLET, OR SURFACE WATER; TO THE MAXIMUM EXTENT PRACTICABLE, CONTAIN AND SECURELY PROTECT FROM WIND.

GENERAL CONSTRUCTION SEQUENCING

1. INSTALL EROSION AND SEDIMENT CONTROLS;
2. CLEAR, GRUB AND ROUGH GRADE AREAS SHOWN TO BE REGRADED;
3. DEMO EXISTING FEATURES IN WORK AREA NOT SHOWN TO BE SAVED AND CUT AND CAP UTILITIES AS NEEDED;
4. INSTALL STORMWATER MANAGEMENT SYSTEM AND SITE UTILITIES;
5. INSTALL BINDER COAT PAVING;
6. INSTALL LANDSCAPING;
7. FINE GRADE SITE AND LOAM AND SEED ALL DISTURBED AREAS;
8. INSTALL TOP COAT PAVEMENT;
9. PROJECT CLOSE OUT.

PLAN NOTES:

1. EXISTING CONDITIONS WERE OBTAINED FROM FIELD SURVEY PREPARED BY LEVEL DESIGN GROUP, LLC BETWEEN NOVEMBER 2, 2022 AND NOVEMBER 16, 2022. THERE ARE NO RESOURCE AREAS, IN ACCORDANCE WITH 310 CMR 10.00 WITHIN 100' OF PROPOSED SYSTEM.
2. THE LOCATION OF EXISTING UTILITIES IS APPROXIMATE, THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES IN THE FIELD PRIOR TO THE START OF CONSTRUCTION. NOTIFY "DIG-SAFE" AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO ANY SITE DEMOLITION OR EXCAVATION.
3. SEE STORMWATER POLLUTION PREVENTION PLAN PREPARED FOR CONSTRUCTION ACTIVITIES AT 15 LIBERTY WAY FRANKLIN, MA 02038, FOR ADDITIONAL EROSION AND SEDIMENT CONTROL PRACTICES AND PROCEDURES.

NO	DATE	REVISIONS
1	10/17/2023	RESOURCE AREA FLAGS
2	11/22/2023	REVIEW COMMENTS
3	02/01/2024	REVIEW COMMENTS

SEAL

COMMONWEALTH OF MASSACHUSETTS
DANIEL R. CAMPBELL
CIVIL
No. 46245
REGISTERED
PROFESSIONAL ENGINEER
2/1/24

DATE : JANUARY 13, 2023
DRAWN : AH / DRC
SCALE : 1" = 20'

LIBERTY PARKING EXPANSION

MAP SHEET 320, PARCEL 004
15 LIBERTY WAY
FRANKLIN, MASSACHUSETTS

LEVEL DESIGN GROUP
Civil Engineers & Land Surveyors
249 SOUTH STREET UNIT 1
PLAINVILLE, MA 02762
TEL. (508) 695-2221 FAX. (508) 695-2219

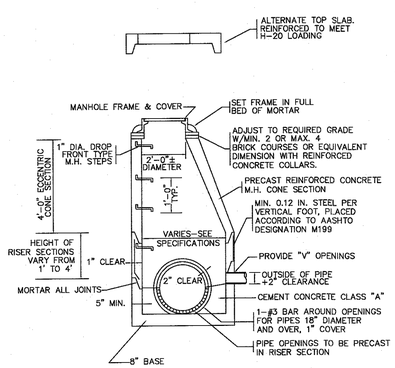
EROSION CONTROL

C-5.0

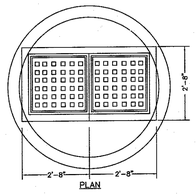
SHEET 6 OF 9

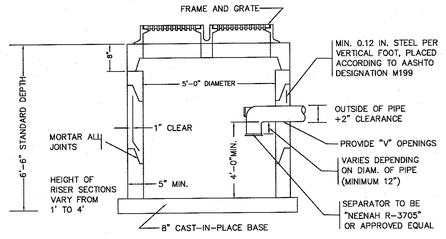
0' 10' 20' 40'

2081.00

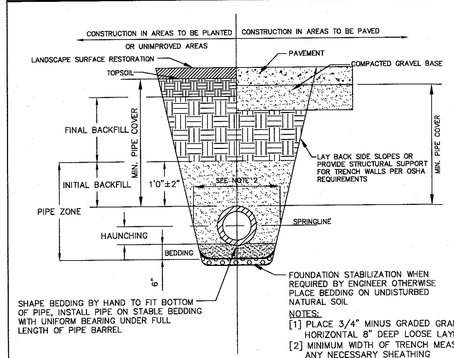


PRECAST CONCRETE DRAIN MANHOLE
NOT TO SCALE





PRECAST CONCRETE DOUBLE CATCH BASIN WITH GAS AND OIL SEPARATOR
NOT TO SCALE



FOUNDATION, BEDDING AND BACKFILL MATERIALS		
PIPE MATERIAL	HDP, PVC	RC, DI
FOUNDATION STABILIZATION	NOTE [6]	[6]
BEDDING	[1]	[1]
HAUNCHING	[1]	[1]
INITIAL BACKFILL	[4]	[4]
FINAL BACKFILL	[4]	[4]
PIPE COVER	[5]	[5]

NOTES:
[1] PLACE 3/4" MINUS GRADED GRANULAR BACKFILL AT OPTIMUM MOISTURE IN HORIZONTAL 8" DEEP LOOSE LAYERS, COMPACT TO 95% PER ASTM D-1557
[2] MINIMUM WIDTH OF TRENCH MEASURED AT SPRINGLINE OF PIPE, INCLUDING ANY NECESSARY SHEATHING

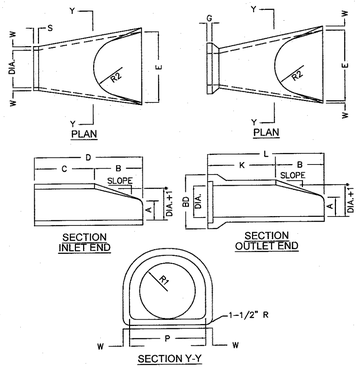
PIPE I.D.	WIDTH
LESS THAN 21"	O.D. + 12"
21" TO 42"	O.D. + 24"
GREATER THAN 42"	O.D. + 30"

[3] INSTALL PIPE IN CENTER OF TRENCH.
[4] IN PLANTED OR UNIMPROVED AREAS, USE ON-SITE EXCAVATED MATERIAL FOR FINAL BACKFILL. COMPACT TO 95% PER ASTM D-1557. IN PAVED AREAS, OBTAIN ENGINEER APPROVAL OF ON-SITE EXCAVATED MATERIALS FOR USE AS FINAL BACKFILL
[5] MINIMUM COVER OVER TOP OF PIPE

PIPE MATERIAL	HDP, PVC	RC, DI
WATER	5' - 0"	5' - 0"
SEWER	4' - 0"	4' - 0"
DRAIN	2' - 0"	1' - 6"

[6] FOR FOUNDATION STABILIZATION, USE 2" MINUS CRUSHED STONE

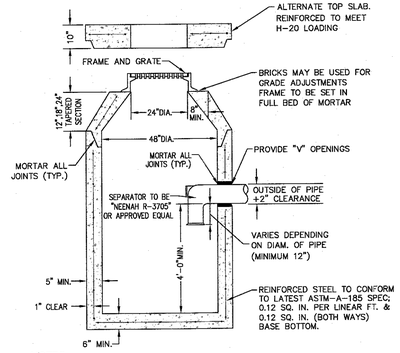
UTILITY TRENCH
NOT TO SCALE



DIA.	W	A	B	C	D	E	BD
12"	2"	4"	2'-0"	4'-0 7/8"	6'-1 3/8"	2'-0"	20"
15"	2-1/4"	6"	2'-3"	3'-10"	6'-1 1/2"	2'-6"	24"
18"	2-1/2"	9"	2'-3"	3'-10"	6'-1"	3'-0"	28"
21"	2-3/4"	9"	2'-11"	3'-2"	6'-1"	3'-6"	32"
24"	3"	9-1/2"	3'-71/2"	3'-2"	6'-1"	4'-0"	36"

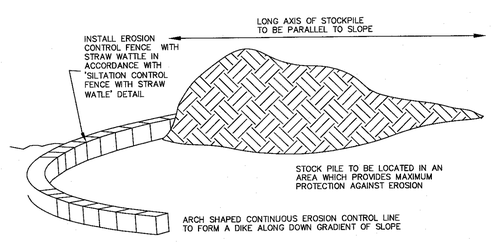
DIA.	K	L	P	DIA.+1"	R1	R2	S	G	SLOPE
12"	4'-6 1/8"	6'-6 1/8"	19 5/16"	13"	10 1/8"	9"	4"	2 1/2"	3:1
15"	4'-3 11/16"	6'-6 11/16"	24 5/16"	16"	12 1/2"	11"	4"	2 1/2"	3:1
18"	4'-3 7/8"	6'-6 7/8"	29"	19"	15 1/2"	12"	4"	2 3/4"	3:1
21"	3'-8 5/16"	6'-7 5/16"	31 5/8"	22"	16 1/8"	13"	4"	2 3/4"	3:1
24"	3'-0 1/2"	6'-8"	33 3/16"	25"	16 13/16"	14"	4"	3"	3:1

REINFORCED CONCRETE PIPE FLARED END
NOT TO SCALE

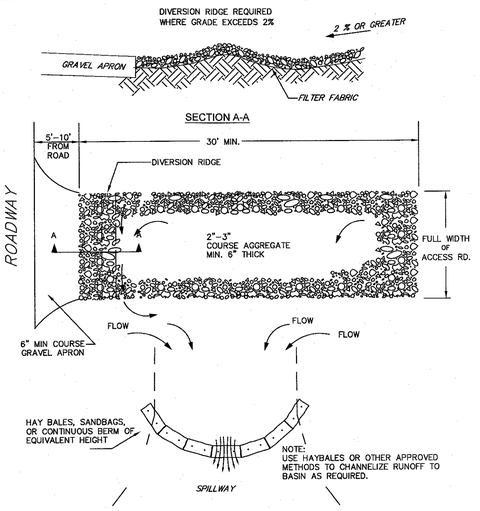


NOTES:
1. CONCRETE TO BE 4,000 PSI MIN. PER ASTM C-478(6.1).
2. REINFORCING TO MEET OR EXCEED H-20 LOADING REQUIREMENTS.

PRECAST CONCRETE CATCH BASIN WITH GAS AND OIL SEPARATOR
NOT TO SCALE

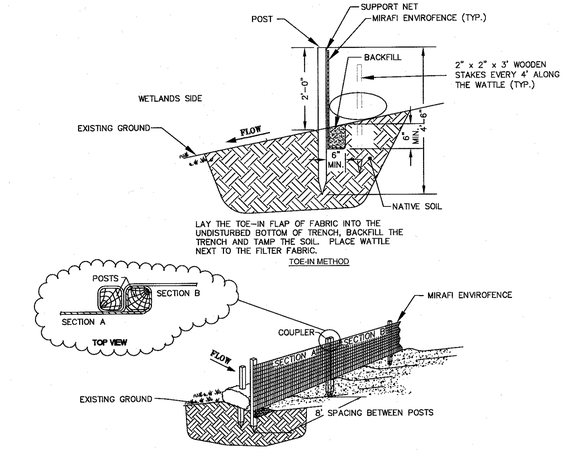


TEMPORARY MATERIAL STOCKPILE
NOT TO SCALE

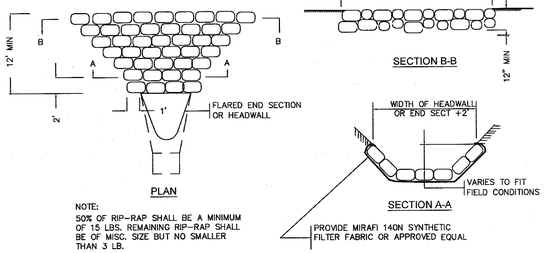


NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITIONS THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS TO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

TEMPORARY CONSTRUCTION ENTRANCE/EXIT DETAIL
NOT TO SCALE

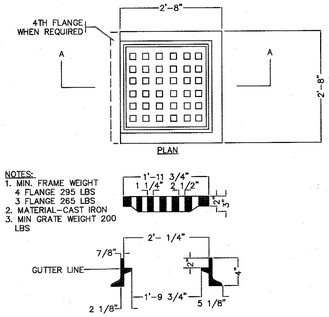


EROSION CONTROL FENCE WITH STRAW WATTLE
NOT TO SCALE



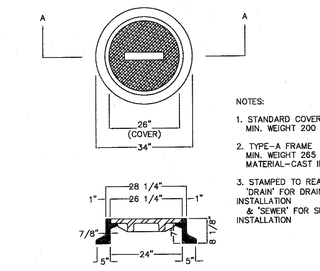
NOTE:
50% OF RIP-RAP SHALL BE A MINIMUM OF 15 LBS. REMAINING RIP-RAP SHALL BE OF MISC. SIZE BUT NO SMALLER THAN 3 LB.

RIP RAP APRON AT PIPE ENDS
NOT TO SCALE



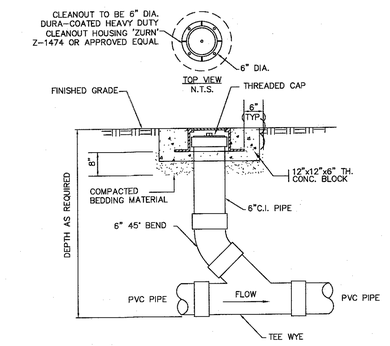
NOTES:
1. MIN. FRAME WEIGHT 4 FLANGE 295 LBS 3 FLANGE 265 LBS
2. MATERIAL-CAST IRON
3. MIN GRATE WEIGHT 200 LBS

STANDARD CATCH BASIN FRAME & GRATE
NOT TO SCALE

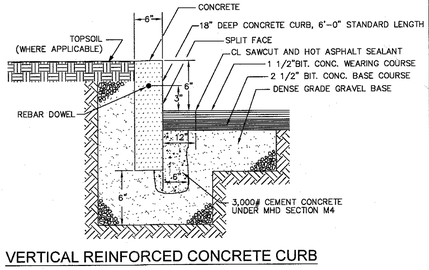


NOTES:
1. STANDARD COVER MIN. WEIGHT 200 LBS.
2. TYPE-A FRAME MIN. WEIGHT 265 LBS. MATERIAL-CAST IRON
3. STAMPED TO READ 'DRAIN' FOR DRAIN MANHOLE INSTALLATION & 'SEWER' FOR SEWER MANHOLE INSTALLATION

STANDARD MANHOLE FRAME & COVER
NOT TO SCALE



CLEANOUT AT GRADE
NOT TO SCALE



VERTICAL REINFORCED CONCRETE CURB
NOT TO SCALE

NO	DATE	REVISIONS
1	10/17/2023	RESOURCE AREA FLAGS
2	11/22/2023	REVIEW COMMENTS
3	02/01/2024	REVIEW COMMENTS

SEAL

2/1/24

COMMONWEALTH OF MASSACHUSETTS
DANIEL R. CAMPBELL
CIVIL
No. 45246
REGISTERED PROFESSIONAL ENGINEER

DATE : JANUARY 13, 2023
DRAWN : AH / DRC
SCALE : AS NOTED

EXPANSION

LIBERTY PARKING

MAP SHEET 320, PARCEL 004
15 LIBERTY WAY
FRANKLIN, MASSACHUSETTS

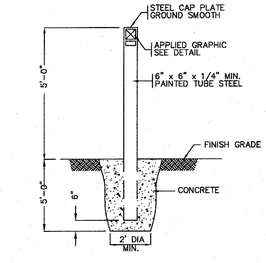
LEVEL DESIGN GROUP
Civil Engineers & Land Surveyors
249 SOUTH STREET, UNIT 1
PLAINVILLE, MA 02762
TEL. (508) 695-2221 FAX. (508) 695-2219

TYPICAL DETAILS

C-6.0

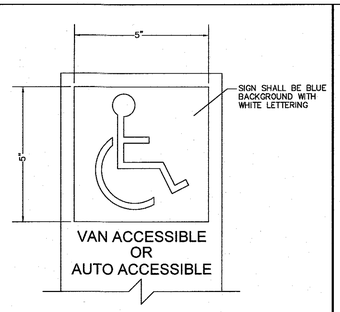
SHEET 7 OF 9

2081.00

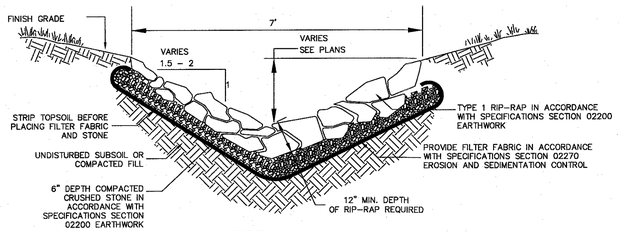


NOTES:
1. ALL CONCRETE TO BE 2500 PSI MIN.
2. SEE PLANS FOR LOCATIONS.
3. WHEN PLACED IN SERIES SIGNS SHALL BE SET AT SAME ELEVATION.

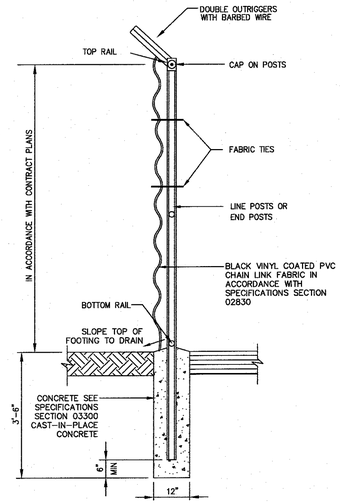
SIGNAGE BOLLARD
NOT TO SCALE



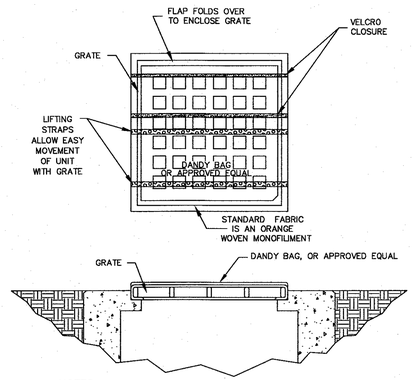
SIGNAGE GRAPHIC
NOT TO SCALE



RIPRAP SWALE
NOT TO SCALE



CHAIN LINK FENCE SECTION (TYPICAL)
NOT TO SCALE

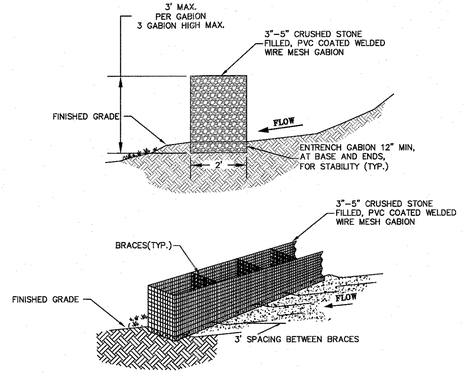


NOTES:

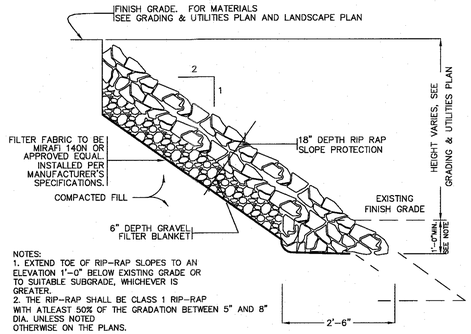
INSTALLATION: THE EMPTY DANDY BAG, OR APPROVED EQUAL, SHOULD BE PLACED OVER THE GRATE AS THE GRATE STANDS ON END. IF USING OPTIONAL OIL ABSORBENTS; PLACE ABSORBENT PILLOW IN POUCH, ON THE BOTTOM (BELOW–GRADE SIDE) OF THE UNIT. ATTACH ABSORBENT PILLOW TO TETHER LOOP. TUCK THE ENCLOSURE FLAP INSIDE TO COMPLETELY ENCLOSE THE GRATE. HOLDING THE LIFTING DEVICES (DO NOT RELY ON LIFTING DEVICES TO SUPPORT THE ENTIRE WEIGHT OF THE GRATE), PLACE THE GRATE INTO ITS FRAME.

MAINTENANCE: REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM SURFACE AND VICINITY OF UNIT AFTER EACH STORM EVENT. REMOVE SEDIMENT THAT HAS ACCUMULATED WITHIN THE CONTAINMENT AREA OF THE DANDY BAG AS NEEDED. IF USING OPTIONAL OIL ABSORBENTS; REMOVE AND REPLACE ABSORBENT PILLOW WHEN NEAR SATURATION.

CATCH BASIN INLET PROTECTION
NOT TO SCALE

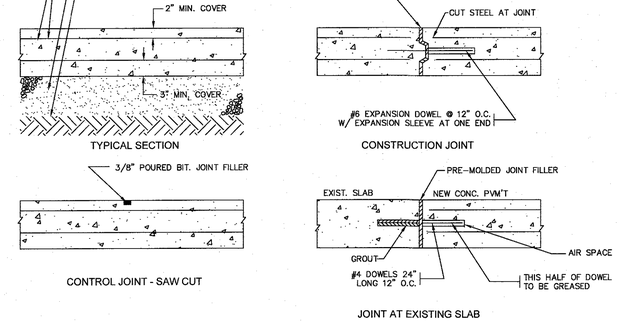


GABION SEDIMENT BAFFLE
NOT TO SCALE

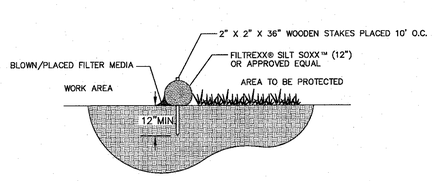


NOTES:
1. EXTEND TOE OF RIP–RAP SLOPES TO AN ELEVATION 1'–0" BELOW EXISTING GRADE OR TO SUITABLE SUBGRADE, WHICHEVER IS GREATER.
2. THE RIP–RAP SHALL BE CLASS 1 RIP–RAP WITH ATLEAST 50% OF THE GRADATION BETWEEN 5" AND 8" DIA. UNLESS NOTED OTHERWISE ON THE PLANS.

TYPICAL SECTION FOR RIP RAP SLOPE PROTECTION
NOT TO SCALE

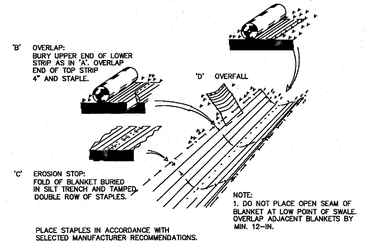


8" THICK CONCRETE LANDING STRIP
NOT TO SCALE

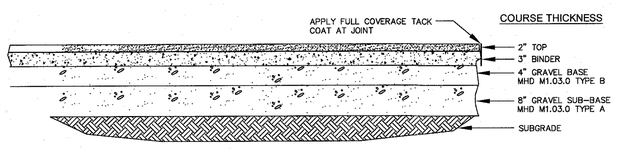


NOTES:
1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. SILT SOXX™ FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE.

FILTREXX SILT SOXX
NOT TO SCALE



EROSION CONTROL BLANKET
NOT TO SCALE



TRUCK AREAS - BITUMINOUS CONCRETE PAVEMENT
NOT TO SCALE

NO	DATE	REVISIONS
1	10/17/2023	RESOURCE AREA FLAGS
2	11/22/2023	REVIEW COMMENTS
3	02/01/2024	REVIEW COMMENTS

SEAL

COMMONWEALTH OF MASSACHUSETTS
DANIEL R. CAMPBELL
CIVIL
No. 49245
REGISTERED PROFESSIONAL ENGINEER
2/1/24

DATE : JANUARY 13, 2023
DRAWN : AH / DRC
SCALE : AS NOTED

LIBERTY PARKING EXPANSION

MAP SHEET 320, PARCEL 004
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LEVEL DESIGN GROUP
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249 SOUTH STREET, UNIT 1
PLAINVILLE, MA 02762
TEL. (508) 695-2221 FAX. (508) 695-2219

TYPICAL DETAILS

C-6.1

SHEET 8 OF 9

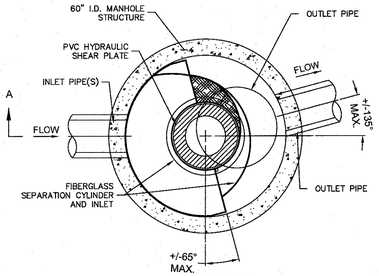
2081.00

GENERAL NOTES

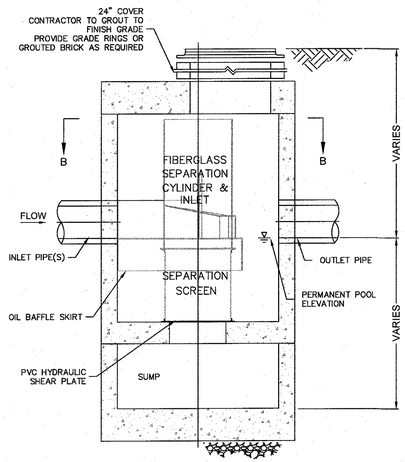
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. CONTRACTOR SHALL REQUEST SHOP DRAWINGS OF EACH INDIVIDUAL CDS STORMWATER TREATMENT UNIT AND SHALL SUBMIT THEM FOR REVIEW AND APPROVAL TO THE DESIGN ENGINEER PRIOR TO UNITS BEING ORDERED OR ENTERING PRODUCTION.
3. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
4. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH CONSTRUCTION PRODUCTS REPRESENTATIVE. www.contech-cpi.com
5. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
6. STRUCTURE SHALL MEET AASHTO H20 AND CASTINGS SHALL MEET AASHTO M306 LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
7. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES

1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
2. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
3. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
4. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
5. 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.

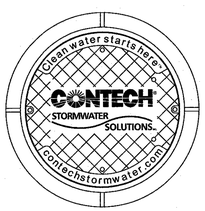


PLAN VIEW B-B

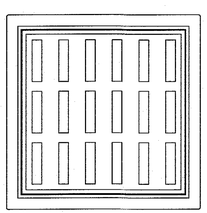


ELEVATION VIEW

STORM WATER TREATMENT UNIT



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.



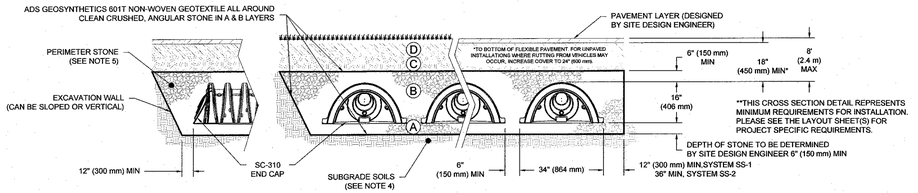
FRAME AND GRATE
(24" SQUARE)
N.T.S.

CDS STORMWATER TREATEMENT UNITS
NOT TO SCALE

ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 CHAMBER SYSTEMS

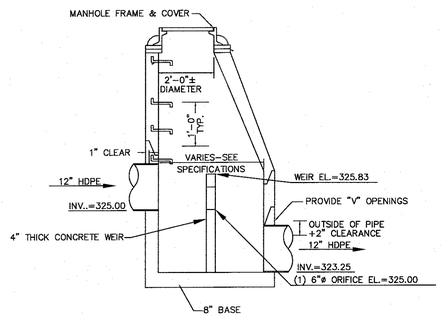
	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[4] A-1, A-2-4, A-3 OR AASHTO M43[4] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[4] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[4] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

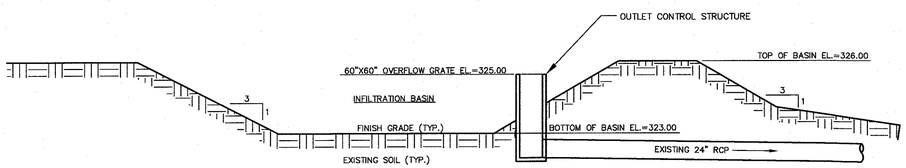


SYSTEM CROSS SECTION

STORMTECH SC-310 DETAILS
NOT TO SCALE

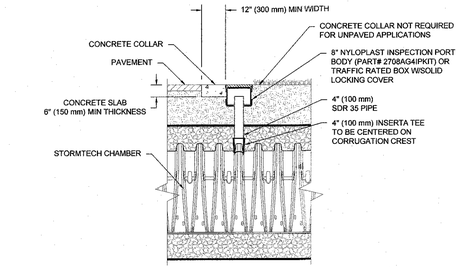


DRAIN MANHOLE-3 W/OUTLET STRUCTURE
NOT TO SCALE



CROSS SECTION

INFILTRATION BASIN
NOT TO SCALE

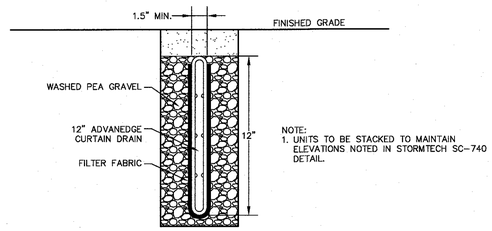


NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION CREST.

INSPECTION PORT

NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2922 SHALL BE GREATER THAN OR EQUAL TO 400 LBS/FT/% AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.



SECTION

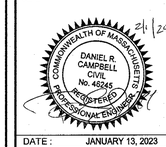
NOTES:
1. TRENCH MUST BE NO LESS THAN 4" WIDE
2. MINIMUM COVER SHALL BE NO LESS THAN 4"
3. ALL PIPE FITTINGS SHALL BE MADE OF POLY ETHYLENE WITH A MINIMUM CELL CLASSIFICATION OF 424420C AS DEFINED AND DESCRIBED IN ASTM D3350.
4. GEOTEXTILE SHALL MEET THE REQUIREMENTS OF CLASS B GEOCOMPOSITE AS DEFINED IN ASTM D7001.

ELEVATION

ADVANEDGE CURTAIN DRAIN
NOT TO SCALE

NO	DATE	REVISIONS
1	10/17/2023	RESOURCE AREA FLAGS
2	11/22/2023	REVIEW COMMENTS
3	02/01/2024	REVIEW COMMENTS

SEAL



DATE : JANUARY 13, 2023
DRAWN : AH / DRC
SCALE : AS NOTED

LIBERTY PARKING EXPANSION

MAP SHEET 320, PARCEL 004
15 LIBERTY WAY
FRANKLIN, MASSACHUSETTS

LEVEL DESIGN GROUP
Civil Engineers & Land Surveyors
249 SOUTH STREET, UNIT 1
PLAINVILLE, MA 02762
TEL. (508) 695-2221 FAX. (508) 695-2219

TYPICAL DETAILS

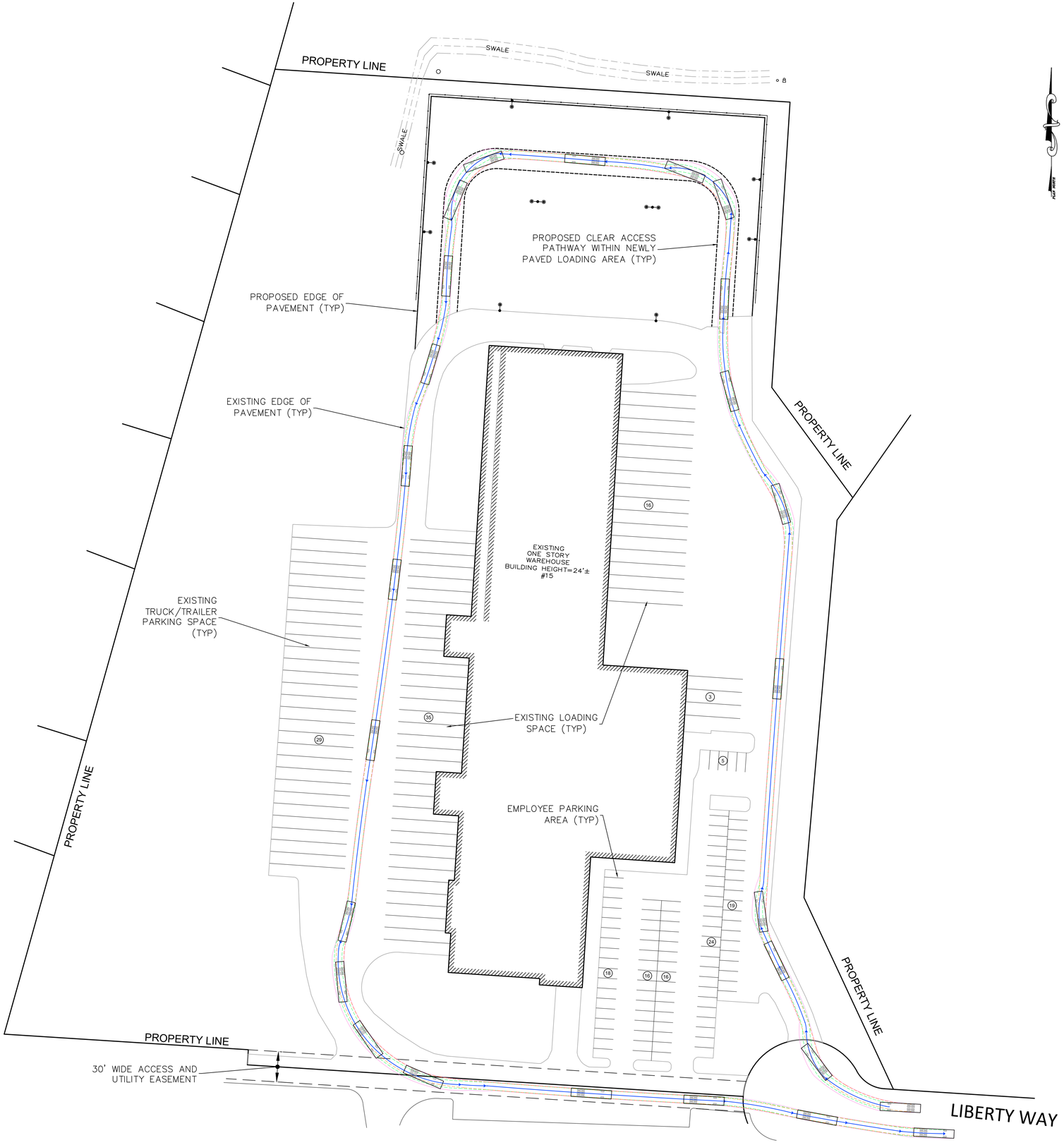
C-6.2

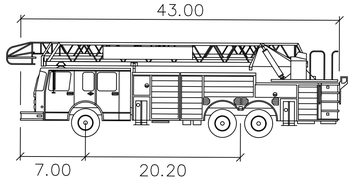
SHEET 9 OF 9

2081.00

PLAN NOTES:

1. EXISTING CONDITIONS WERE OBTAINED FROM FIELD SURVEY PREPARED BY LEVEL DESIGN GROUP, LLC BETWEEN NOVEMBER 2, 2022 AND NOVEMBER 16, 2022.





FRANKLIN – AERIAL

	feet
Width	: 8.25
Track	: 8.25
Lock to Lock Time	: 6.0
Steering Angle	: 35.6

TRUCK PATHWAY
TRUCK BODY
FRONT TIRES
REAR REAR

NO	DATE	REVISIONS

SEAL

DATE :	JANUARY 13, 2023
DRAWN :	NF
SCALE :	1" = 50'

LIBERTY PARKING EXPANSION

MAP SHEET 320, PARCEL 004
15 LIBERTY WAY
FRANKLIN, MASSACHUSETTS

LEVEL DESIGN GROUP
Civil Engineers & Land Surveyors
249 SOUTH STREET, UNIT 1
PLAINVILLE, MA 02762
TEL. (508) 695-2221 FAX. (508) 695-2219

EMERGENCY VEHICLE ACCESS

SK-1.0

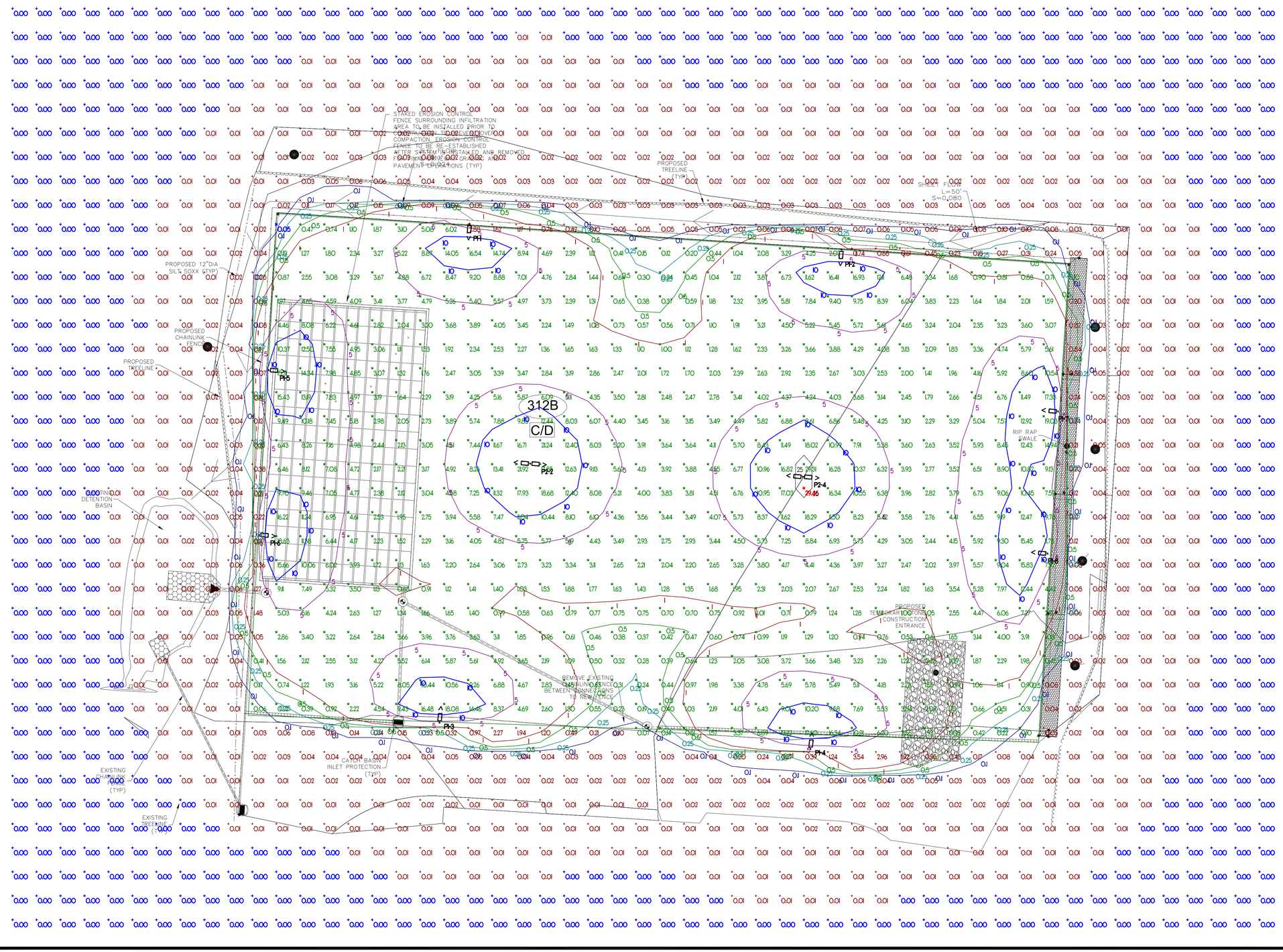
0' 25' 50' 100'

2081.00

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
TRAILER PARKING	+	4.69 fc	29.46 fc	0.05 fc	589.2:1	93.8:1

Schedule									
Symbol	Label	QTY	Manufacturer	Catalog	Description	Number Lamps	Lamp Output	LLF	Input Power
^	P1	8	PHILIPS GARDCO	ECF-L-80L-1A-NW-G2-BLC	EcoForm Area LED ECF - Large, 80 4000K CCT, TYPE BLC OPTIC,	LED'S,	24081	1	260.493
^	P2	2	SIGNIFY GARDCO	ECF-L-80L-1A-NW-G2-4	EcoForm Area LED ECF - Large, 80 4000K CCT, TYPE 4 OPTIC, No Shield	LED'S,	33656	1	529.9496

ALL FIXTURES ARE SHOWN AT 18'-0" ABOVE FINISHED GRADE



VINCENT A. DiIORIO, INC.
CONSULTING ENGINEERS
89 Access Rd. Suite 18
Norwood, MA 02062
(781)255-9754 | vadjr@vadeng.com
www.vadeng.com

REVISIONS:

REV.:	DATE:	DESCRIPTION:

CLIENT:
LEVEL DESIGN GROUP
249 SOUTH ST., UNIT 1
PLAINVILLE, MA 02762

PROJECT:
LIBERTY PARKING EXPANSION
15 LIBERTY WAY
FRANKLIN, MA

DRAWING TITLE
PHOTOMETRIC SITE LIGHTING

DRAWN:	CDO
CHECKED:	VAD Jr
SCALE:	1" = 20'-0"
DATE:	3/13/23

PH1.1

GARDCO by Signify

Site & Area

EcoForm

ECF–L large area luminaire

Gardco EcoForm Gen-2 combines economy with performance in an LED area luminaire. Capable of delivering up to 52,500 lumens or more in a compact, low profile LED luminaire, EcoForm offers a new level of customer value. EcoForm features an innovative retrofit arm kit, simplifying site conversions to LED by eliminating the need to drill additional holes in most existing poles. Integral control systems available for further energy savings. Includes Service Tag, our innovative way to provide assistance throughout the life of the product.

Project:
Location:
Cat.No:
Type:
Lamps: Qty:
Notes:

Ordering guide

example: ECF–L–96L–1A–CW–AR–AFR–90–120–DD–PCB–F1–SP1–TB–RPA–HIS–BK

Prefix	Number of LEDs	Drive Current	LED Driver - Generation	Mounting	Distribution	Voltage
ECF–L						
ECF–L EcoForm site and area, large	80L 80 LEDs (8 modules)	900 900mA 1A 1,200mA	WW–G2 Warm White 3000K, 70CRI Generation 2 NW–G2 Neutral White 4000K, 70CRI Generation 2 CW–G2 Cool White 6000K, 70CRI Generation 2	AR[1] Arm Mount (standard) The following mounting kits must be ordered separately (See accessories) SP[2] Slip Fitter Mount (Fits to 3¼" O.D. tenon) WB Wall mount with surface conduit rear entry perforated RAM[3] Retrofit arm mount kit	Type 2 2 Type 2 2–90 Rotated left 90° 2–270 Rotated right 270° Type 3 3 Type 3 3–90 Rotated left 90° 3–270 Rotated right 270° Type 4 4 Type 4 4–90 Rotated left 90° 4–270 Rotated right 270° Type 5 5 Type 5 5W Type 5W AFR Auto Front Row AFR–90 Auto Front Row, Rotated left 90° AFR–270 Auto Front Row, Rotated right 270° BLC Back Light Control BLC–90 Back Light Control rotated at 90° BLC–270 Back Light Control rotated at 270°	120 120V 208 208V 240 240V 277 277V 347 347V 480 480V UNV 120–277V (50/60Hz) HVU 347–480V (50/60Hz)

Options						
Dimming controls	Motion sensing, lens	Photocontrol	Electrical	Luminaire	Finish	
DD[4,16] 0–10V External dimming (for controls by others) DOD[4,5,6,16] Dual Circuit Control FAWB[4,5,16] Field Adjustable Wattage Selector LLD[4,5,6,16] Integral wireless module BL[4,7,16] Bi-level functionality SRDR[4,5,6,8,17] SR driver connected to Zhaga socket DynaDimmer: Automatic Profile Dimming DSBD[4,5] Safety 50% Dimming, 7 hours DMSD[4,5] Median 50% Dimming, 8 hours DSSD[4,5] Safety 30% Dimming, 7 hours DMSD[4,5] Median 30% Dimming, 8 hours	94SB[9] Integral with #8 lens 94SF[9] Integral with #7 lens	PCB[5,6] Photocontrol Button TLRD[5,10,17] Twist Lock Receptacle 5 Pin TLR07[5,17] Twist Lock Receptacle 7 Pin TLRPO[5,10,16,17] Twist Lock Receptacle w/Photocell	Fusing F1[5] Single (120, 277, 347VAC) F2[5] Double (208, 240, 480VAC) Pole Mount Fusing FP1[5] Single (120, 277, 347VAC) FP2[5] Double (208, 240, 480VAC) FP3[5] Canadian Double Pull (208, 240, 480VAC) Surge Protection (10kA standard) SP2 Increased 20kA	Square Pole Adapter Included in standard product TB[11] Terminal Block RPA[18] Round Pole Adapter (Fits to 3"– 3.8" O.D. pole) HSB[18] Internal House Side Shield	Textured BK Black WH White BZ Bronze DGY Dark Grey MGY Medium Grey Customer specified RAL Specify optional color or RAL (ex: RAL7024) OC Custom color (Must supply color chip for required factory quote)	

1. BLc-MR3/7 equipped with out-boarded sensor housing when voltage is HVU (347–480V).
2. Mounts to a 4" round pole with adapter included for square poles.
3. Limited to a maximum of 45 degrees aiming above horizontal.
4. Not available with other dimming control options.
5. Not available with motion sensor.
6. Not available with photocontrol.
7. Must specify a motion sensor lens.
8. Not available in 347 or 480V.
9. Must specify input voltage.
10. TLRD6, TLRD7 and TLRPO receptacle pins 4 & 5 are capped off when ordered with any of the Dimming controls DD or FAWB or LLD.
11. Not available in 480V. Order photocell separately with TLRD6/7.
12. Not available with DOD.
13. Not available with BF and WB. RPAs provided with black finish standard.
14. HSB not available with Type 5, 5W, BLC, BLC–90, or BLC–270.
15. Not available with DD, DCC, and FAWB dimming control options.
16. Not available with DD, DOD, FAWB and LLD dimming control options.
17. When ordering SRDR, controller (by others) to be used on socket must be SR compatible (See specifications for more details). Consult factory for lead time. All 7 pins in NEMA receptacle are connected to SR driver. SRDR not available with TLRD6 or TLRPO.
18. 0–10V dimming driver standard.
19. 120V or 277V only, not available with SRDR or any DynaDimmer options (due to driver limitations).

ECF–L EcoForm large

Area luminaire

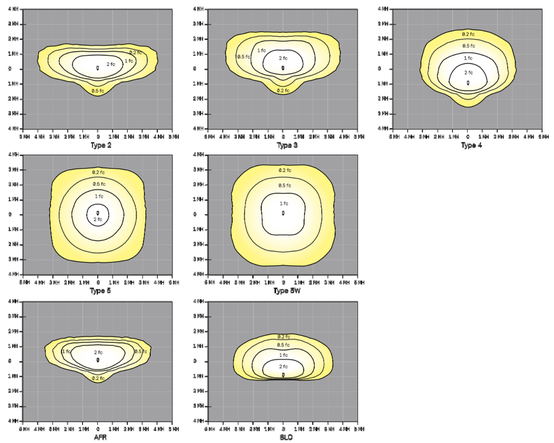
Predicted Lumen Depreciation Data

Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology.
Actual experience may vary due to field application conditions. L_{70} is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11. Published L_{70} hours limited to 6 times actual LED test hours

Ambient Temperature °C	Driver mA	Calculated L_{70} Hours	L_{70} per TM-21	Lumen Maintenance % at 60,000 hrs
25°C	up to 1400 mA	>100,000 hours	>90,000 hours	>96%

Optical Distributions

Based on configuration ECF–L–96L–1.2A–NW–G2 (85W) mounted at 40ft.



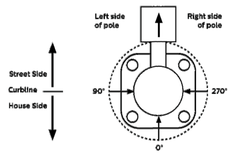
ECF–L EcoForm large

Area luminaire

Optical Orientation Information

Standard Optic Position

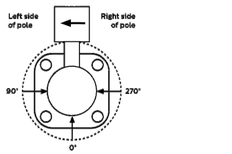
Luminaires ordered with asymmetric optical systems in the standard optic position will have the optical system oriented as shown below:



Note: The hand hole will normally be located on the pole at the 0° point.

Optic Rotated Left (90°) Optic Position

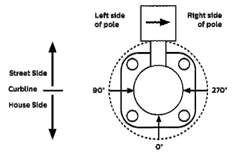
Luminaires ordered with optical systems in the Optic Rotated Left (90°) optic position will have the optical system oriented as shown below (Type 5 and 5W optics are not available with factory set rotatable optics):



Note: The hand hole will normally be located on the pole at the 0° point.

Optic Rotated Right (270°) Optic Position

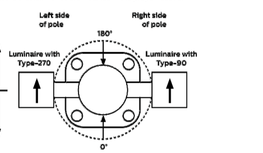
Luminaires ordered with optical systems in the Optic Rotated Right (270°) optic position will have the optical system oriented as shown below (Type 5 and 5W optics are not available with factory set rotatable optics):



Note: The hand hole will normally be located on the pole at the 0° point.

Twin Luminaire Assemblies with Type–90/Type–270 Rotated Optical Systems

Twin luminaire assemblies installed with rotated optical systems are an excellent way to direct light toward the interior of the site (Street Side) without additional equipment. It is important, however, that care be exercised to insure that luminaires are installed in the proper location.



Luminaires with Optic Rotated Right (270°) are installed on the LEFT Side of Pole

Luminaires with Optic Rotated Left (90°) are installed on the RIGHT Side of Pole

Note: The hand hole location will depend on the drilling configuration ordered for the pole.

ECF–L EcoForm large

Area luminaire

3000K LED Wattage and Lumen Values

Ordering Code	Total LEDs	LED Current (mA)	Color Temp.	Average System Watts	Type 2 Lumen Output	Type 2 BUG Rating	Type 2 Efficacy (LPW)	Type 3 Lumen Output	Type 3 BUG Rating	Type 3 Efficacy (LPW)	Type 4 Lumen Output	Type 4 BUG Rating	Type 4 Efficacy (LPW)	Type 5 Lumen Output	Type 5 BUG Rating	Type 5 Efficacy (LPW)	Type 5W Lumen Output	Type 5W BUG Rating	Type 5W Efficacy (LPW)
ECF–L–80L–900–WW–S2–x	80	900	3000	226	29,908	B3–U0–G3	126	27,834	B3–U0–G4	124	28,348	B3–U0–G4	126	29,156	B3–U0–G4	130	28,844	B5–U0–G4	128
ECF–L–80L–1A–WW–G2–x	80	1050	3000	265	31,927	B4–U0–G4	120	31,396	B3–U0–G4	118	31,974	B3–U0–G5	121	32,884	B5–U0–G4	124	32,534	B5–U0–G4	123
ECF–L–80L–1.2A–WW–S2–x	80	1300	3000	289	35,377	B4–U0–G4	122	34,630	B3–U0–G5	120	35,269	B3–U0–G5	122	36,272	B5–U0–G4	125	35,886	B5–U0–G4	124
ECF–L–96L–800–WW–G2–x	96	800	3000	238	30,570	B4–U0–G4	128	30,011	B3–U0–G4	126	30,617	B3–U0–G5	129	31,467	B5–U0–G4	132	31,191	B5–U0–G4	131
ECF–L–96L–1A–WW–S2–x	96	1050	3000	316	39,058	B4–U0–G4	123	37,432	B3–U0–G5	118	38,116	B3–U0–G5	120	39,300	B5–U0–G4	124	38,755	B5–U0–G5	123
ECF–L–96L–1.2A–WW–G2–x	96	1200	3000	365	41,398	B4–U0–G4	113	40,709	B4–U0–G5	112	41,460	B3–U0–G5	114	42,640	B5–U0–G4	117	42,186	B5–U0–G5	116
ECF–L–96L–1.4A–WW–S2–x	96	1370	3000	423	44,568	B4–U0–G4	106	46,173	B4–U0–G5	109	48,813	B4–U0–G5	108	48,848	B5–U0–G5	111	48,590	B5–U0–G5	108

Ordering Code	Total LEDs	LED Current (mA)	Color Temp.	Average System Watts	Type AFR Lumen Output	Type AFR BUG Rating	Type AFR Efficacy (LPW)	BLC Lumen Output	BLC BUG Rating	BLC Efficacy (LPW)
ECF–L–80L–900–WW–S2–x	80	900	3000	226	29,065	B4–U0–G3	128	18,749	B1–U0–G5	83
ECF–L–80L–1A–WW–G2–x	80	1050	3000	265	32,784	B4–U0–G3	124	22,276	B1–U0–G4	83
ECF–L–80L–1.2A–WW–S2–x	80	1300	3000	289	86,160	B4–U0–G3	133	24,573	B1–U0–G4	85
ECF–L–96L–800–WW–G2–x	96	800	3000	238	31,391	B4–U0–G3	132	21,264	B1–U0–G4	89
ECF–L–96L–1A–WW–S2–x	96	1050	3000	316	38,080	B4–U0–G4	124	26,554	B1–U0–G4	86
ECF–L–96L–1.2A–WW–G2–x	96	1200	3000	365	42,509	B4–U0–G4	116	28,885	B1–U0–G4	80
ECF–L–96L–1.4A–WW–S2–x	96	1370	3000	423	48,542	B4–U0–G4	116	36,323	B1–U0–G5	86

4000K LED Wattage and Lumen Values

Ordering Code	Total LEDs	LED Current (mA)	Color Temp.	Average System Watts	Type 2 Lumen Output	Type 2 BUG Rating	Type 2 Efficacy (LPW)	Type 3 Lumen Output	Type 3 BUG Rating	Type 3 Efficacy (LPW)	Type 4 Lumen Output	Type 4 BUG Rating	Type 4 Efficacy (LPW)	Type 5 Lumen Output	Type 5 BUG Rating	Type 5 Efficacy (LPW)	Type 5W Lumen Output	Type 5W BUG Rating	Type 5W Efficacy (LPW)
ECF–L–80L–900–WW–S2–x	80	900	4000	226	38,796	B5–U0–G3	153	39,399	B3–U0–G4	130	39,840	B3–U0–G5	133	93,689	B5–U0–G4	138	80,963	B5–U0–G4	155
ECF–L–80L–1A–NW–G2–x	80	1050	4000	265	33,607	B4–U0–G4	127	33,048	B3–U0–G5	125	33,687	B3–U0–G5	127	34,615	B5–U0–G4	131	34,245	B5–U0–G4	129
ECF–L–80L–1.2A–WW–S2–x	80	1300	4000	289	97,070	B4–U0–G4	128	86,453	B3–U0–G5	126	87,135	B3–U0–G5	128	88,181	B5–U0–G4	132	87,775	B5–U0–G4	131
ECF–L–96L–800–NW–G2–x	96	800	4000	238	32,179	B4–U0–G4	135	31,590	B3–U0–G4	133	32,228	B3–U0–G5	136	33,144	B5–U0–G4	139	32,791	B5–U0–G4	138
ECF–L–96L–1A–NW–G2–x	96	1050	4000	316	40,081	B4–U0–G4	127	39,896	B3–U0–G5	124	40,122	B3–U0–G5	127	41,583	B5–U0–G4	130	40,834	B5–U0–G5	129
ECF–L–96L–1.2A–WW–G2–x	96	1200	4000	365	43,577	B4–U0–G4	119	42,852	B4–U0–G5	117	43,642	B3–U0–G5	120	44,894	B5–U0–G4	123	44,408	B5–U0–G5	122
ECF–L–96L–1.4A–WW–G2–x	96	1370	4000	423	49,779	B4–U0–G4	118	49,897	B4–U0–G5	118	49,811	B4–U0–G5	117	50,847	B5–U0–G5	120	49,221	B5–U0–G5	117

Ordering Code	Total LEDs	LED Current (mA)	Color Temp.	Average System Watts	Type AFR Lumen Output	Type AFR BUG Rating	Type AFR Efficacy (LPW)	BLC Lumen Output	BLC BUG Rating	BLC Efficacy (LPW)
ECF–L–80L–900–WW–S2–x	80	900	4000	226	30,998	B4–U0–G3	136	21,180	B1–U0–G4	94
ECF–L–80L–1A–NW–G2–x	80	1050	4000	265	34,509	B4–U0–G3	130	24,082	B1–U0–G4	92
ECF–L–80L–1.2A–WW–S2–x	80	1300	4000	289	36,066	B4–U0–G3	133	26,565	B1–U0–G4	93
ECF–L–96L–800–NW–G2–x	96	800	4000	238	33,043	B4–U0–G3	139	23,020	B1–U0–G4	98
ECF–L–96L–1A–NW–S2–x	96	1050	4000	316	41,197	B4–U0–G4	130	28,707	B1–U0–G4	92
ECF–L–96L–1.2A–NW–G2–x	96	1200	4000	365	44,749	B4–U0–G4	123	31,226	B1–U0–G4	87
ECF–L–96L–1.4A–WW–S2–x	96	1370	4000	423	53,478	B4–U0–G4	124	39,065	B3–U0–G5	93

Values from photometric tests performed in accordance with IESNA LM-79 and are representative of the configurations shown.
Actual performance may vary due to installation and environmental variables. LED and driver tolerances, and field measurement considerations
It is highly recommended to confirm performance with a photometric layout.
NOTE: Some data may be scaled based on tests of similar (but not identical) luminaires. Contact factory for configurations not shown.

VINCENT A. DiIORIO, INC.
est. 1972
CONSULTING ENGINEERS
89 Access Rd. Suite 18
Norwood, MA 02062
(781)255-9754 | vadjr@vadeng.com
www.vadeng.com

REVISIONS:

REV.:	DATE:	DESCRIPTION:

CLIENT:
LEVEL DESIGN GROUP
249 SOUTH ST., UNIT 1
PLAINVILLE, MA 02762

PROJECT:
LIBERTY PARKING EXPANSION
15 LIBERTY WAY
FRANKLIN, MA

DRAWING TITLE
PHOTOMETRY LIGHTING SPEC'S

DRAWN:	CDO
CHECKED:	VAD Jr
SCALE:	NOT TO SCALE
DATE:	3/13/23

PH2.1

Plant Schedule

Feb 5 2024

Sym.	Botanical Name	Common Name	Qty.	Size, Comments
Trees				
AG	Amelanchier 'Autumn Brilliance'	Autumn Brilliance Serviceberry	10	8-10' B+B m/s
BN	Betula nigra 'Heritage'	Heritage River Birch	3	12-14' B+B, m/s
Shrubs				
Ca	Clethra alnifolia	Summersweet	8	#10
Ci	Cornus alba 'Ivory Halo'	Red-twig Dogwood	10	2-3' B+B
Rs	Amelanchier alnifolia 'Regent'	Regent Serviceberry	12	#7
Tm	Taxus med. 'Densiformis'	Densiformis Yew	8	18-24"
Vd	Viburnum dentatum	Arrowwood Viburnum	14	2-3' B+B

General Planting Notes

1. All plants shall be the highest quality, heavy nursery-grown stock and sized according to Massachusetts Nurseryman's Association Standards. No substitutions will be permitted without the prior approval of the Landscape Architect.
2. Topsoil for plant beds and pits shall be good quality sandy loam devoid of roots, clods, stones, rubbish, glass, brick, or asphalt. Soil should be between pH 6 and 7, and have good fertility and organic content.
3. Plant beds shall have a minimum soil depth of 10" unless otherwise specified and be mulched with 2-3" of finely shredded pine bark mulch. Groundcover area should have a 1 ½ - 2" mulch depth.
4. All plant material shall be guaranteed for one full year from the completion of the installation.
5. All seeded and sodded areas shall have 6" of screened loam, spread and finely graded according to the plans. All areas indicated of the drawings and disturbed areas not otherwise indicated, shall receive 6" of loam previously stripped and stockpiled with the addition of 3" loam borrow tilled together and finely graded over all areas to receive seed. Loam borrow shall consist of friable soil typical of locally cultivated soils containing a minimum of 2% decayed organic matter, no clods, sticks and debris; and have a pH of 6 to 7. Test soil for acidity, fertility and texture by a reputable soils testing lab. Amend soil with lime and fertilizers accordingly. Rake until surface is smooth, friable, and uniform in texture to the elevations indicated on the drawings. Seed evenly at a rate of 5 lbs. per 1000 square feet or according to the manufacturers instructions. Lay sod with hand-tight joints. Irrigate immediately and as necessary to provide one inch of water per week while the seed germinates and sod takes root until the grass is thoroughly established.

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PLAN NOTES:

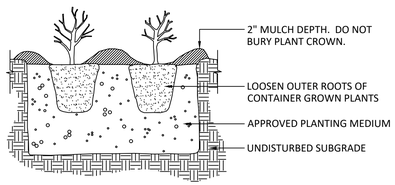
1. EXISTING CONDITIONS WERE OBTAINED FROM FIELD SURVEY PREPARED BY LEVEL DESIGN GROUP, LLC BETWEEN NOVEMBER 2, 2022 AND NOVEMBER 16, 2022. SOIL TESTING COMPLETED BY ADAM P. HUNT ON NOVEMBER 16, 2022.
2. THE LOCATION OF EXISTING UTILITIES IS APPROXIMATE, THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES IN THE FIELD PRIOR TO THE START OF CONSTRUCTION. NOTIFY "DIG-SAFE" AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO ANY SITE DEMOLITION OR EXCAVATION.
3. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES IN THE DESIGN PLANS PRIOR TO THE START OF CONSTRUCTION.
4. ALL DISTURBED AREAS NOT RECEIVING IMPROVEMENTS SHALL BE LOAMED AND SEEDED.
5. THE SITE IS NOT LOCATED WITHIN A ZONE II WATER RESOURCE DISTRICT.
6. THE SITE IS NOT LOCATED WITHIN A FLOOD PLAIN DISTRICT.

CONSTRUCTION NOTES:

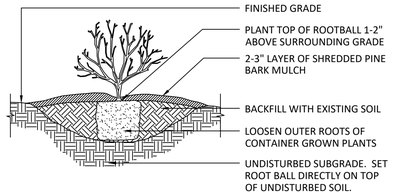
1. THE LOCATION OF EXISTING UTILITIES IS APPROXIMATE, THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES IN THE FIELD PRIOR TO THE START OF CONSTRUCTION. NOTIFY "DIG-SAFE" AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO ANY SITE DEMOLITION OR EXCAVATION.
2. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES IN THE DESIGN PLANS PRIOR TO THE START OF CONSTRUCTION.
3. ALL EXISTING PAVEMENT SHALL BE SAWCUT PRIOR TO REMOVAL.
4. ALL EXISTING PAVEMENT, CURB, WALKS, UTILITIES, LIGHT POLES, TREES, SHRUBS, ETC., SHALL BE REMOVED FROM THE AREAS TO BE DEVELOPED. ALL SUCH ITEMS NOT WITHIN THE WORK AREA SHALL BE PROTECTED AND UNDISTURBED.
5. ALL DISTURBED AREAS NOT RECEIVING IMPROVEMENTS SHALL BE LOAMED AND SEEDED.
6. ALL CONSTRUCTION AND CONSTRUCTION ACTIVITIES SHALL CONFORM TO STATE AND LOCAL REQUIREMENTS. INCLUDING BUT NOT LIMITED TO THE TOWN OF FRANKLIN, THE COMMONWEALTH OF MASSACHUSETTS AND ANY OTHER AGENCIES HAVING JURISDICTION.
7. MATERIAL TO BE EXPORTED FROM THE SITE WILL BE LIMITED TO TOPSOIL IN AREAS TO BE PAVED AND ANY DELETERIOUS MATERIAL ENCOUNTERED DURING EXCAVATION. MATERIAL TO BE EXPORTED WILL BE LIMITED TO GRAVEL BASE AND SEPTIC AGGREGATE.

SITE PLAN NOTES:

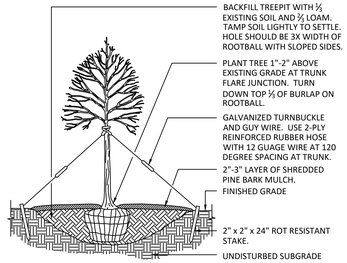
1. THIS PLAN SET HAS BEEN ISSUED FOR PERMITTING ONLY. A FULL CONSTRUCTION PLAN SET SHALL BE ISSUED ONCE ALL LOCAL, STATE, AND FEDERAL PERMIT APPROVALS HAVE BEEN GRANTED.



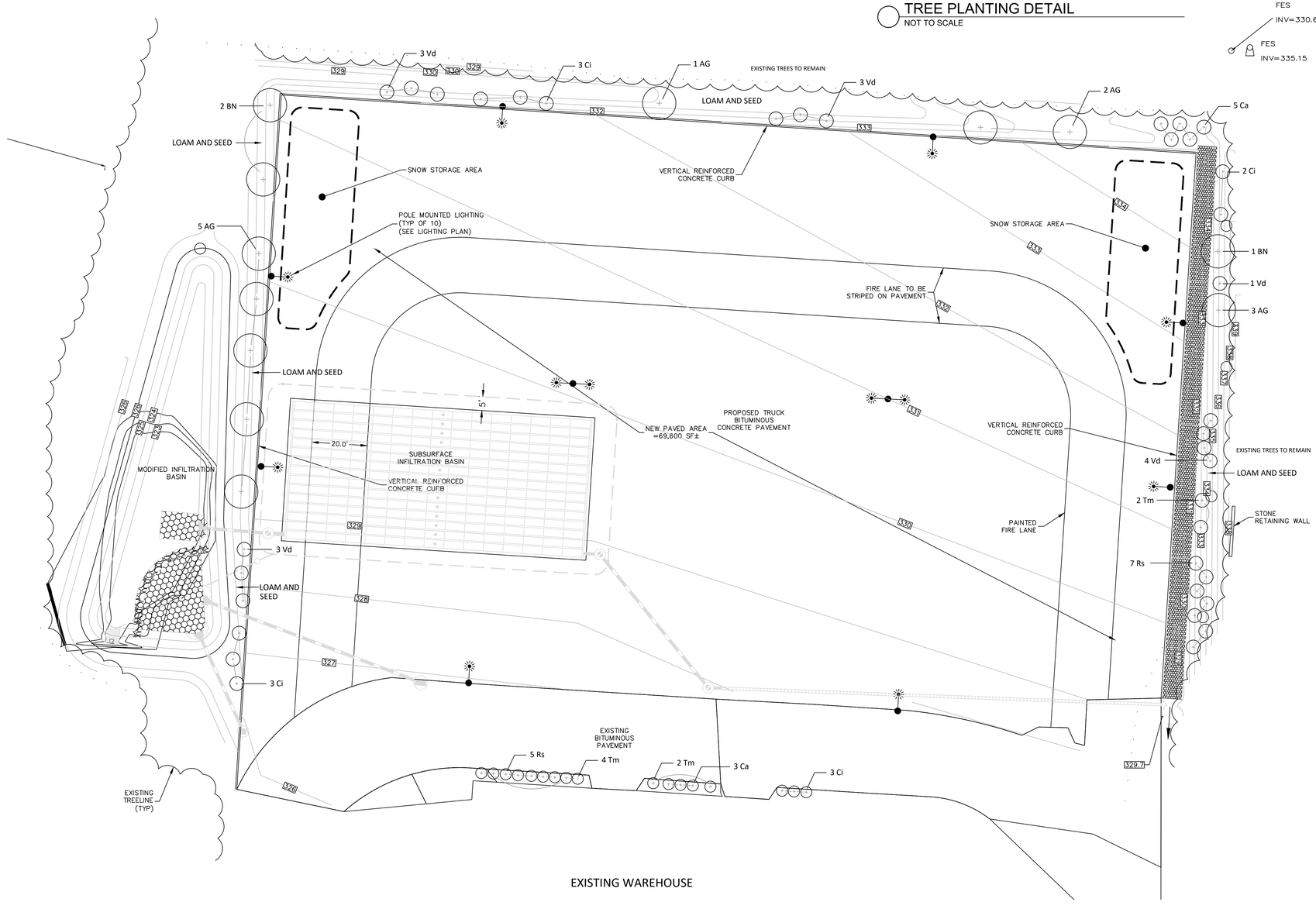
PERENNIAL/GROUNDCOVER PLANTING
NOT TO SCALE



SHRUB PLANTING DETAIL
NOT TO SCALE



TREE PLANTING DETAIL
NOT TO SCALE



IRRIGATION NOTES

1. The Landscape Contractor shall provide a drip irrigation system for all planted islands.
2. The Landscape Contractor shall submit an irrigation plan with zone boxes, valve boxes,clock, and backflow preventer locations to the Owner.
3. Once the irrigation system has been installed, the Landscape Contractor shall provide an as-built plan to the Owner with all irrigation equipment shown on the plan, including sub-surface sleeves, conduit and valve boxes.

NO	DATE	REVISIONS

SEAL

DATE :	FEB 5 2024
DRAWN :	EB
SCALE :	1" = 20'

LIBERTY PARKING EXPANSION

MAP SHEET 320, PARCEL 004
15 LIBERTY WAY
FRANKLIN, MASSACHUSETTS

ELLIOTT BRUNDAGE
LANDSCAPE ARCHITECTURE
978 470 4970
190 High Plain Road Andover MA
elliottbrundage.com

LANDSCAPE PLAN

L-1.0

SHEET 1 OF 1

0' 10' 20' 40'

2081.00