

TOWNSHIP OF BERNARDS
PLANNING BOARD
APPLICATION STATUS FORM

Application No: PB20-005 Block: 9301 Lot: 33 Zone: R-2

Applicant: FELLOWSHIP SENIOR LIVING INC

Address of Property: 8000 FELLOWSHIP ROAD

Description: PRELIMINARY - FINAL MAJOR SITE PLAN

APPLICATION CHECKLIST

☒ Original + 3 copies of Application
☐ Remaining 17 copies of Application
☒ W-9
☒ Site Inspection Form (A)
☒ Ownership Form (B)
☒ Property Owners List (C)
☒ Tax Certification (D)
☒ Public Notice (E)
☒ Outside Agencies Form (F)
☒ Tree Removal Form (G)

☒ Contributions Form (H)
☒ Engineering Plan/Plot Plan
☒ Architectural Plan
☐ Survey
☐ Wetlands Report/LOI
☐ Application Fee
☐ Escrow Deposit
☐ Imaging Fee
☐ Tax Map Revision Fee
☒ Checklist

SCHEDULING

12.21.20 Original Submission Date 60*
02.19.21 Completeness Deadline (45 days)
____ Incomplete Date
____ Resubmission Date
____ Date Complete 60*
____ Time to Act (45/95/120 days)

HEARING

____ Notice to Property Owners
____ Date of Publication
02.16.21 Completeness Hearing
4.6 Public Hearing
____ Carried to Date
____ Decision - Approved/Denied
____ Resolution Memorialized
____ Resolution Published

DISTRIBUTION

12.21.20 Environmental Commission
____ Fire Official
____ LCFAS
____ Police

NOTES

09/29/2020

* COVID E.O.

December 21, 2020

VIA HAND DELIVERY

Township of Bernards Planning Board
Attn: Cyndi Kiefer, Board Secretary
Municipal Building
1 Collyer Lane
Basking Ridge, New Jersey 07920

Re: Fellowship Senior Living, Inc. ("Applicant")
Application for Preliminary and Final Site Plan Approval ("Application")
Block 9301, Lot 33

Dear Ms. Kiefer:

This office represents Fellowship Senior Living, Inc., the owner of certain property located at 8000 Fellowship Road and known on the tax maps of the Township of Bernards as Block 9301, Lot 33 (the "Property"). The Property is located within the R-2 residential zoning district.

Applicant seeks preliminary and final major site plan approval from the Township of Bernards Planning Board to make certain improvements to Fellowship Village, which is a continuing care retirement community that currently operates at the Property, as further detailed in the enclosed Project Description.

In support of this Application, the following are enclosed for your review:

- Four (4) sets of the Township of Bernards Planning Board Application, including the applicable checklist, to which the following Exhibits are attached:
 - **Exhibit A:** Project Description;
 - **Exhibit B:** Statement of Ownership;
 - **Exhibit C:** Original 200' Property Owners' List;
 - **Exhibit D:** Certification as to Paid Taxes;
 - **Exhibit E:** Site Inspection Consent;
 - **Exhibit F:** List of Other Required Approvals;
 - **Exhibit G:** Tree Removal Permit;
 - **Exhibit H:** Contribution Disclosure Statements;

December 21, 2020

Page 2

- **Exhibit I:** Notice for Service and Publication;
 - **Exhibit J:** Calculation of Fees and Escrow;
 - **Exhibit K:** List of Professionals;
 - **Exhibit L:** Prior Resolutions;
 - **Exhibit M:** Deed, Deed Restrictions and Easements;
 - **Exhibit N:** Applicant's Certificate of Authority, dated September 13, 1993;
 - **Exhibit O:** Letter from NJ Department of Community Affairs, dated November 13, 2020; and
 - **Exhibit P:** Applicant's Lifecare Retirement Community Disclosure Statement (without exhibits);
- Four (4) full size signed and sealed copies of Site Plans, prepared by Marathon Engineering and Environmental Services, dated December 11, 2020, including sheets C0001, C0002, C0101, C0102, C0103, C0301, C0302, C0303, C1101, C1201, C1202, C1203, C1301, and C1302;
 - Stormwater Management Report, prepared by Marathon Engineering & Environmental Services, dated November 23, 2020;
 - Stormwater Management Facilities Maintenance Manual, prepared by Marathon Engineering and Environmental Services, dated November 23, 2020; and
 - Four (4) full size signed and sealed copies of Architectural Plans, prepared by KDA Architects, dated November 23, 2020 including sheets A0.1 through A0.5.

Additionally, enclosed please find one (1) copy of Applicant's W-9 Form. Applicant will be hand delivering the following checks today under separate cover:

- One (1) check in the amount of \$3,278.29 for payment of the application fee; and
- One (1) check in the amount \$6,747.64 for payment of the escrow fee for application.

GIBBONS P.C.

December 21, 2020

Page 3

If you or the Board should require anything further before deeming the Application complete, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Jennifer Phillips Smith", written over the printed name and title.

Jennifer Phillips Smith
Director

cc: Brian Lawrence (via e-mail)
Bill Schramm (via e-mail)
Albie Day (via e-mail)

TOWNSHIP OF BERNARDS

2020 PLANNING BOARD APPLICATION

☐ Minor Subdivision
☐ Major Subdivision - Preliminary
☐ Major Subdivision - Final
☒ Conditional Use

☒ Site Plan - Preliminary
☒ Site Plan - Final
☐ Informal Review
☐ Other (specify): _____

1. APPLICANT: Fellowship Senior Living, Inc.

Address: 8000 Fellowship Road

Phone: (home) _____ (work) 908-580-3805 (mobile) 908-966-0892

Email (will be used for official notifications): BLawrence@fellowshipls.org

2. OWNER (if different from applicant): Same as Applicant.

Address: _____

Phone: _____ **Email (will be used for official notifications):** _____

3. ATTORNEY: Jennfer Phillips Smith

Address: Gibbons P.C. One Gateway Center Newark, NJ 07102

Phone: 973-596-4477 **Email (will be used for official notifications):** jsmith@gibbonslaw.com

4. OTHER PROFESSIONALS (Engineer, Architect, etc. Attach additional sheet if necessary):

Name: See Exhibit K - List of Professionals.

Profession: _____

Address: _____

Phone: _____ **Email (will be used for official notifications):** _____

5. PROPERTY INFORMATION: Block(s): 9301 Lot(s): 33 Zone: R-2

Street Address: 8000 Fellowship Road **Total Area (square feet/acres):** 72.569 acres

6. ARE THERE ANY PENDING OR PRIOR PLANNING BOARD OR BOARD OF ADJUSTMENT APPLICATIONS INVOLVING THE PROPERTY? ☐ No ☒ Yes (if yes, explain or attach Board resolution) Please see Exhibit L - List of Prior Approvals.

7. ARE THERE CURRENTLY ANY VIOLATIONS OF THE ZONING ORDINANCE INVOLVING THE PROPERTY? ☒ No ☐ Yes (if yes, explain) Please refer to the attached 2016 Resolution.

8. ARE THERE ANY DEED RESTRICTIONS OR EASEMENTS AFFECTING THE PROPERTY?
☐ No ☒ Yes (if yes, explain and attach copy) Please see Exhibit M - List of Deed Restrictions and Easements.

9. DESCRIPTION OF THE EXISTING PROPERTY AND THE PROPOSAL/REQUEST: _____

Fellowship Village, a continuing care retirement community, currently operates at the Property. Please see the attached Project Description (Exhibit A) for an explanation of Applicant's proposed improvements at the Property.

10. DESCRIPTION OF REQUESTED VARIANCES OR EXCEPTIONS (include Ordinance section no.): _____

Please see the attached Project Description (Exhibit A).

11. THE FOLLOWING ARGUMENTS ARE MADE IN SUPPORT OF THE APPLICATION: _____

Please see the attached Project Description (Exhibit A) for arguments in support of the application.

12. NOTARIZED SIGNATURES (ALL APPLICANTS AND OWNERS MUST SIGN):

APPLICANT(S) SIGN HERE:

I/we, Brian G. Lawrence and _____ hereby depose and say that all of the above statements and the statements contained in the materials submitted herewith are true and correct.

FELLOWSHIP SENIOR LIVING, INC.

Signature of Applicant(s): Brian G. Lawrence and _____

By: Brian G. Lawrence Title: President and CEO

Sworn and subscribed before me, this 23rd day of November, 2020

Notary

Jennifer P. Smith
Attorney at Law, State of NJ

OWNER(S) SIGN HERE (IF APPLICANT IS NOT THE OWNER):

If the application is made by a person or entity other than the property owner, or by less than all of the property owners, then the property owner or the additional owners must complete the following:

I/we, _____ the owner(s) of the property described in this application,

hereby authorize _____ to act as my/our agent for purposes of making and prosecuting this application and I/we hereby consent to the variance relief (if any) granted and all conditions of approval thereof.

Signature of owner(s): _____

Sworn and subscribed before me, this _____ day of _____, 20__.

Notary



**Fellowship Senior Living, Inc.
Block 9301, Lot 33**

Project Description

December 18, 2020

Fellowship Senior Living, Inc. ("Applicant") is seeking preliminary and final major site plan approval in connection with proposed improvements to the Fellowship Village continuing care retirement community ("Fellowship Village"). Fellowship Village currently operates at 8000 Fellowship Road, known on the tax maps as Block 9301, Lot 33 in the Township of Bernards (the "Property"). The Property is located within the R-2 residential zoning district, where Fellowship Village is a permitted conditional use. The Property is an approximately 72-acre lot that has frontage on Allen Road (County Route 652) and Martinsville Road (County Route 525).

Fellowship Village is comprised of numerous buildings and related site improvements, including, but not limited to, residences, a vibrant community center, health center, parking areas, and stormwater management facilities. The community was constructed in the mid-1990s and has received previous approvals from the Planning Board since then, including approval in 2016 to expand and make other improvements to the community and Property.

The improvements to Fellowship Village proposed by this Application are as follows:

Fitness Center and Salon

Applicant proposes the construction of a new, two-floor, 14,447 square foot structure to serve as a fitness center and salon. The upper level of this proposed addition will connect to the main floor of the community center. The lower level is largely below grade (underground) except for the western area, which has windows. The upper level will contain a fitness studio, including a separate room for group fitness classes. The lower level will contain a salon and barber shop. The existing salon and massage services will be relocated to this new addition.

Club Locker Rooms Renovations

The men's and women's changing/bathrooms are currently on one side of the existing pool. There is currently only one shower available, which is located inside the pool area, visible to everyone. As currently constituted, these changing/bathrooms, which could also be considered locker rooms, do not allow ample space for individuals to shower and change after exercise. Applicant proposes to expand the men's club locker room by using the footprint of the old changing/bathrooms and incorporating the existing area of an adjacent independent living unit. As for the women's clubroom, Applicant proposes to expand the space through a renovation of the existing fitness center and a small, 180 s.f. addition. These renovations will result in the loss of one independent living unit, bringing the overall total of independent living units from 257 to 256.

Outdoor Trails and Observation Deck

Applicant proposes to add trails within the area of the conservation easement and wetlands. The area is currently open meadow with scattered small trees. In total, Applicant proposes approximately ¼ miles of trails, made up with a combination of 5' wide gravel paths and 5' wide elevated walkways. Applicant proposes several sitting areas along the trails. The elevated walkways are proposed over the wetland area. Applicant additionally proposes two observation decks along the trail to serve as a bird blind and sitting area. The larger observation deck will be an open overhead structure. These improvements, to the extent they are located with the conservation easement, will also require approval from the Township Council.

Dog Park

Applicant proposes to add a dog park in the upland area outside of the conservation area just off the loop walkway and access driveway. The area of the proposed dog park will be cleared and converted to lawn. The proposed dog park will be 1,545 square feet and enclosed using 4' heavy duty wire fence and a secure sally port at the entrance. Within the park, Applicant proposes to include a waste station and water fountain, movable seating, and dog play structures.

Recreational Courts

Applicant proposes the following recreational courts near the existing pool and renovated club locker rooms: pickleball, bocce ball, and shuffleboard. There are existing shaded areas within the vicinity of these proposed courts to allow for shading for spectators. A pergola will also be added around the outside of the pool to provide additional protection.

Spruce Grove Improvements

Within Fellowship Village, there is a shady grove of mature spruce trees referred to as "Spruce Grove." Applicant proposes to make certain improvements to Spruce Grove, including the addition of (i) two sitting areas, (ii) 5' wide gravel paths to replace the existing asphalt paths, (iii) rustic stone piers at both entrances; and (iv) low level illumination. Pursuant to Section 21-14.4(c)2(a)(1) of the Township's Stream Buffer Conservation Requirements, the modest improvements to this recreational trail system and private parkland are permitted as-of-right within Zone 2.

Ephesus Pond Deck

Applicant proposes to add a 14' x 16' deck at the edge of Ephesus Pond. There will be some low level illumination installed on the deck surface. The proposed deck will complement the recently installed landscape upgrades on the pond banks, and the proposed location is highly accessible to residents, visitors and staff.

Conditional Use Criteria

As a conditional use with the R-2 zone, Applicant is required to comply with the Township's conditional use standards. The chart below lists each of the conditional use requirements, as set forth in Sec. 21-12.3(l), and the Applicant's compliance with each.

Conditional Use Requirements – Continuing Care Community in R-2 zone (§21-12.3(l))	Compliance
(1) Before the development is occupied, the developer shall produce to the Zoning Officer either a certificate of authority for the CCRC issued pursuant to N.J.S.A. 52:27D-330 et seq. (P.L. 1986, c. 103), as amended from time to time, or a letter of nonapplicability pursuant to N.J.A.C. 5:19-2.3, as amended from time to time.	Certificate of Authority issued to Fellowship Village by the Department of Community Affairs on September 13, 1993 is annexed as Exhibit N.
(2) Before receiving final site plan approval, the developer shall produce a writing from the Commissioner of the Department of Community Affairs stating that any lien which the Department has filed or may file under N.J.S.A. 52:27D-341 (P.L. 1986, c.103, §12) shall be subordinated to any lien for unpaid taxes on real property or other municipal charges, whether existing now or in the future.	The November 13, 2020 letter from the Department of Community Affairs (DCA) stating that DCA has not filed a lien against Fellowship Village is annexed as Exhibit O.
(3) Reserved	N/A
(4) The development may include the following: (a) Independent-living units; (b) Assisted-living units; (c) Nursing units; (d) Congregate-care units; (e) Long-term-care units; (f) Sub-acute units; and (g) Memory-care units.	Fellowship Village includes independent living units, assisted living units, and nursing/long term care units.
(5) The development shall include at least some level of each of the following uses and services for residents, which may also be available to nonresidents of the CCRC, provided that all such uses shall be entirely contained within buildings exclusively owned and controlled by the CCRC, that no residents shall be denied access to such uses and services, and that sufficient parking shall be provided in accordance with Subsection 21-22.1: (a) Health care, therapy, clinical, medical, and wellness service facilities and services that may be on site or off site; such facilities may be an existing or new off-site location (subject to zoning requirements) if the applicant shows adequate plans to provide residents of the development with reasonable access;	As will be explained in testimony, Applicant provides all of these uses, and will be expanding the recreation facilities offered through a new on-site fitness center. No residents are denied access to these uses.

<p>(b) Facilities and services for providing meals for residents, with or without common dining facilities;</p> <p>(c) Therapy facilities and services;</p> <p>(d) Meeting rooms; and</p> <p>(e) Recreation facilities;</p> <p>The development may include personal, cultural, religious and other ancillary services customary to a CCRC. These services may include uses such as clinics, therapies, wellness and educational programs, theaters, performing arts programs, restaurants, and salons.</p>	<p>Sufficient parking is provided, as shown on the submitted site plans and explained further below.</p>
<p>(6) The application for development shall include a statement generally describing the health-care services, meal services for assisted-living care or nursing care and therapy services that will be provided. Such statement may be, but is not required to be, in the developer's disclosure statement (or a portion of it) which is required by N.J.S.A. 52:27D-336 (P.L. 1986, c.103, §7.</p>	<p>The relevant portion of Applicant's Disclosure Statement, with a March 12, 2020 Effective Date of the Fourth Amendment, is annexed as Exhibit P and generally describes the healthcare services, meal services, nursing services, and therapy services provided.</p>
<p>(7) Reserved</p>	<p>N/A</p>
<p>(8) It shall be a condition of final subdivision or final site plan approval that residency in the CCRC shall be age restricted to persons at least 62 years of age, with or without a spouse or other members of such person's housekeeping unit, or to surviving members of that housekeeping unit in the event of death of such resident. This condition shall not be construed as requiring the CCRC to permit surviving members below the age of 62 to remain in residence following such death. Health-care services may also be provided to individuals allowed under applicable state and federal law.</p>	<p>Applicant complies with this condition.</p>
<p>(9) Permissible accessory uses and structures shall include garages, sheds, fences, swimming pools, recreational facilities, maintenance buildings, gatehouses, employee living quarters, child-care centers, retail and personal services facilities and other uses and facilities customarily associated with and ancillary to a CCRC, so long as such accessory uses are subordinate to and serve only the conditional use for residents and nonresidents.</p>	<p>The current accessory uses at Fellowship Village, along with the accessory uses proposed through this Application, are permissible.</p>
<p>(10) Area and setback requirements:</p> <p>(a) Minimum Lot Area: 60 acres.</p> <p>(b) Minimum Lot Width: 200 feet.</p> <p>(c) Minimum Tract setback (buffered):</p> <p>(1) Front Yard:</p> <p>(a) For buildings: 100 feet.</p>	<p>All Comply.</p> <p>(a) 72.569 acres</p> <p>(b) 1568.27 ft.</p> <p>(c) (1) (a) 100 ft.</p> <p>(b) 75 ft.</p>

<p>(b) For parking: 75 feet.</p> <p>(2) Side Yard:</p> <p>(a) For buildings: 100 feet from exterior street.</p> <p>(b) For buildings: 75 feet from boundary line.</p> <p>(c) For parking: 75 feet.</p> <p>(3) Rear Yard:</p> <p>(a) For buildings: 100 feet.</p> <p>(b) For parking: 75 feet.</p> <p>(d) Maximum Impervious Lot Coverage: 40%</p> <p>(e) Maximum Building Coverage: 20%</p> <p>(f) Maximum Building Height: 35 feet, except that height may be increased to a maximum of 50 ft., provided that, for each additional foot of building height above 35 feet, two additional feet of setback shall be required from the exterior tract buffer. Building height shall be measured from the average finished grade level surrounding the building measured five feet from the building wall to the top of the roof.</p>	<p>(c)(2)(b) 75 ft.</p> <p>(c) 75 ft.</p> <p>(c)(3)(a) 100 ft.</p> <p>(b) 75 ft.</p> <p>(d) 27.2%</p> <p>(e) 15%</p> <p>(f) 49.7 ft.</p>
<p>(11) Maximum and Minimum Number of Units</p> <p>(a) The maximum number of independent living and assisted-living units shall be five units per gross acre.</p> <p>(b) A minimum of four independent living units shall be provided for each nursing unit.</p> <p>(c) Assisted-living units shall be counted as independent living units in meeting the 4 to 1 ratio requirement in Subsection 21-12.3.11(b) above.</p> <p>(d) The maximum number of detached single-family dwellings shall not exceed 30% of the total permitted number of independent-living units.</p>	<p>The modified unit count for Fellowship Village will be as follows:</p> <p>256 Independent Living Units;</p> <p>86 Assisted Living Units; and</p> <p>67 Nursing/Long Term Care Beds.</p>
<p>(12) Parking Requirements. Sufficient off-street parking shall be required to meet the needs of the residents, employees and guests in accordance with the following minimum requirements:</p> <p>(a) Independent living units: 1 per dwelling unit</p> <p>(b) Assisted-living units, congregate-care, long-term care, sub-acute and memory-care units: .35 per dwelling unit.</p> <p>(c) Nursing beds: .35 per bed</p> <p>(d) Staff: one off-street parking space per full time staff, plus one for every two part-time staff, on the maximum shift</p> <p>(e) Visitors: an additional 10% above the total required parking</p>	<p>Parking Requirements – All Comply.</p> <p>(a) Independent living – $1 \times 256 = 256$ spaces</p> <p>(b) Assisted Living - $.35 \times 86 = 30.1$ spaces</p> <p>(c) Long-term care/nursing - $.35 \times 67 = 23.5$ spaces</p> <p>(d) Staff (full time, max shift) – $1 \times 165 = 165$ spaces</p> <p>Staff (part-time) - $.5 \times$</p>

	<p>20 = 10 spaces</p> <p>(e) Visitors - $.10 \times 485 = 48.5$ spaces</p> <p>Auditorium parking - $240/3 = 80$ spaces</p> <p>Total required = 613.1 spaces</p> <p>Total provided on-site = 617 spaces</p>
<p>(13) Design and Development Regulations for Multifamily Residential Buildings. The minimum distance between residential buildings shall be as follows:</p> <p>(a) Windowless wall to windowless wall: One story – 15 feet; Two Stories – 20 feet.</p> <p>(b) Window wall to windowless wall: One story – 20 feet; Two Stories – 30 feet.</p> <p>(c) Window wall to window wall: Front to front – 75 feet; rear to rear – 50 feet; end to end – 30 feet.</p> <p>(d) Front building face to common parking area: One story – 10 feet; Two stories – 20 feet.</p> <p>(e) Rear or side building face to common area: One story – 10 feet; Two stories – 15 feet.</p> <p>The Planning Board may reduce the above distances by not more than 20% if there is an angle of 20 degrees or more between buildings and if extensive landscaping and buffers, which provide necessary screening and shielding, are placed between buildings</p>	<p>All criteria remain compliant and unchanged, except for the distance between the residential buildings and the common area building (criteria e), which will be greater than 30' (even with the new fitness center addition) and which remains compliant.</p>
<p>(14) Design and Development Regulations for Single-Family Detached Housing.</p> <p>(a) Minimum lot size: 5,000 s.f.</p> <p>(b) Minimum lot width: 50 ft.</p> <p>(c) Minimum yard requirements:</p> <p>(1) Front: 25 ft.</p> <p>(2) Side: five feet (one); 15 feet (both);</p> <p>(3) Rear: 25 feet.</p>	<p>N/A</p>
<p>(15) Design and Development Regulations for Other Structures:</p> <p>(a) Minimum distance between residential buildings and other buildings: 30 feet</p>	<p>(a) >30'</p> <p>(b) N/A</p>

<p>(b) Minimum distance between accessory buildings and principal buildings: 10 feet</p> <p>(c) Minimum distance between parking areas and buildings: 10 feet</p>	(c) N/A
<p>(16) Buffering and Screening: All CCRC's shall be landscaped and buffered in accordance with Section 21-43. A landscaped buffer not less than 25 feet shall be planted or installed around the perimeter of the developed areas of any CCRC site.</p>	Complies.
<p>(17) Other Requirements</p> <p>(a) Water: No site plan for a CCRC shall be approved unless it provides for water to be supplied to the development by a public utility company.</p> <p>(b) Sanitary sewers: No site plan for a CCRC shall be approved unless it provides for the treatment of wastewater from the development in one of the following manners:</p> <p>(1) The treatment plant of the Township of Bernards Sewerage Authority, if the site is in the sewer service area;</p> <p>(2) Another municipality's publicly owned treatment plant;</p> <p>(3) A treatment plant owned by a public utility;</p> <p>(4) A package treatment plant; or</p> <p>(5) Such other means as may be approved by NJDEP for community wastewater disposal; provided, however, that the means of treatment if under Paragraph I, Subparagraphs 17(b)(1) through (5) above, shall not require the Township or its Sewerage Authority to serve as co-permittee or otherwise to assume any liability of any nature; and provided, further, that any means of wastewater treatment does not conflict with the Bernards Township Wastewater Management Plan; and provided, further, that if municipal consent is required for any means of wastewater treatment, nothing in this chapter shall be construed as granting such consent or as compelling either the Township or its Sewerage Authority to grant such consent.</p> <p>(c) A CCRC shall have frontage and direct access to a state or county roadway.</p>	<p>(a) Applicant's water is supplied by NJ American Water Company.</p> <p>(b) Applicant's wastewater is treated by the Township of Bernards Sewerage Authority.</p> <p>(c) Fellowship Village has access to Allen Road (County Route 652) and Martinsville Road (County Route 525).</p>

Applicant reserves the right to amend or supplement the list of relief required during the review of the application.

Submit 21 copies TOTAL

STATEMENT OF OWNERSHIP

Corporate or Partnership

Name of Applicant Fellowship Senior Living, Inc.Address 8000 Fellowship Road Basking Ridge, NJ 07920

The following is a list of all shareholders and/or partners owning beneficially or having registered in their names not less than ten percent (10%) of the stock of the corporation or interest in a partnership involved in an application hereinabove referred to:

No ownership - Fellowship Senior Living is a 501 c(3) non-profit organization

Name _____

Name _____

Address: _____

Address: _____

Name _____

Name _____

Address: _____

Address: _____

Name _____

Name _____

Address: _____

Address: _____

Name _____

Name _____

Address: _____

Address: _____

I hereby certify under penalty of perjury that the foregoing is true:

Signature: _____

By: Brian G. Lawrence
Title: President & CEO

Date: _____

10/7/2020

**FELLOWSHIP SENIOR LIVING, INC.
RESOLUTION**

The undersigned, the Secretary of Fellowship Senior Living, Inc., a New Jersey nonprofit corporation (the "Corporation"), hereby certifies that the following is a resolution duly adopted by the Board of Trustees of the Corporation at a meeting thereof, that at such meeting a quorum was present and acting throughout, and that said copy has been compared by me with the original resolution and said copy is a true transcript therefrom and that such resolution has not been modified, amended or repealed and is in full force and effect of the date hereof

WHEREAS, the Board of Directors has determined that the Corporation may undertake various improvements to the Corporation's facilities (the "New Improvements") as follows:

- Construction of a trail walkway system that is on the ground and raised with seating areas and bird blinds through wetlands areas;
- Construction of a dog park;
- Construction of a seating area and fire pit in the spruce grove in Shiloh Court;
- Construction of a walkway and deck overlooking Ephesus pond;
- Construction of a shuffle board and bocce court on either side of the pool;
- Construction of a pickleball court behind the pool;
- Construction of a new building (approximately 14,500 square feet) with two floors consisting of a main level for a Fitness Center and a lower level (below grade) for a Salon/Spa;
- Construction of a woman's locker room to replace the former fitness center which will be modified for the new use and expanded by approximately 250 square feet;
- Renovation of apartment 2102 and the two pool bathrooms to accommodate the construction of a men's locker room – located generally opposite of the woman's locker room on the other side of the pool;
- Renovation of the existing medical center to accommodate the construction of a MediSpa;
- Relocation of the Art Studio to replace the former Salon/resident office; and
- Relocation of the medical center to the former activity room, store, card room, and billiard room.

RESOLVED, that the Corporation is authorized to undertake such improvements, investigations, and other actions as

are necessary or advisable to determine whether the Corporation shall undertake any or all of the New Improvements, including, without limitation, zoning analysis, site condition testing and evaluation, wetlands delineation and other environmental investigations, and architectural and cost review; and

RESOLVED, that the Corporation is hereby authorized to file such applications and permits and authorizations as are necessary or advisable for the New Improvements, including, without limitation, applications for site plan approval, wetlands delineation and building permits; and

RESOLVED, that the Corporation and the President, any Executive Vice President, any Vice President, the Treasurer, the Assistant Secretary and the Secretary of the Corporation (each an "Authorized Officer"), and each of them, are hereby authorized to execute and deliver all such certificates, documents, instruments and agreements necessary or advisable to carry out or implement the actions herein contemplated; and

RESOLVED, that this Resolution shall be filed in the Minute Book of the Corporation.

IN WITNESS WHEREOF, the undersigned has executed this Certification as of October 14, 2020.


Ann Marie Hurtado, Secretary



OFFICE OF THE ASSESSOR

TOWNSHIP OF BERNARDS

ONE COLLYER LANE

BASKING RIDGE, NJ 07920

(908) 204-3082 Fax (908) 766-1644

*** 200 Foot Property Search ***

** VALID FOR 90 DAYS **

Date: 10/15/2020

Block: 9301 **Lot(s):** 33 **Qual:**

Property Location: 33 Allen Rd

Applicant: Brendan J. Kelly, Esq

Phone : (973) 596-4771 **Fax:** (973) 639-6289 **Email:** bkelly@gibbonslaw.com

PROPERTY OWNER INFORMATION

Name: Fellowship Senior Living, Inc

Address: 8000 Fellowship Rd

City, State, Zip: Basking Ridge, NJ 07920

Due to the location of the referenced

Block and Lot, the following

Fire Company Should be notified:



Liberty Corner Fire Company

P.O. Box 98, Church St.

Liberty Corner, NJ 07938

Mail Report To:

Name: Brendan J. Kelly, Esq

Address: One Gateway Center

City, State, Zip: Newark, NJ 07102

CERTIFIED BY:

David Centrelli, Assessor - Township Of Bernards

Amount Paid: \$10.00

Paid By: Check (No. 95477)

Bernards Township

Parcel Offset List

Target Parcel(s): Block-Lot: 9301-33
FELLOWSHIP SENIOR LIVING INC
33 ALLEN RD

20 parcels fall within 200 feet of this parcel(s).

Block-Lot: 11201-8

HBB PROPERTY LLC C/O ALLEN RD LLC
PO BOX 74
LIBERTY CORNER NJ 07938
RE: 50 ALLEN RD

Block-Lot: 9401-9

BRISTLECONE, INC.
P.O. BOX 328
LIBERTY CORNER NJ 07938
RE: 55 ALLEN RD

Block-Lot: 11201-9

JLJ PROPERTY INVESTMENTS LLC
2051 SE 3RD ST UNIT 508
DEERFIELD BEACH FL 33441
RE: 701 MARTINSVILLE RD

Block-Lot: 9204-2

BERNARDS TWP SEWERAGE AUTHORITY
MARTINSVILLE RD; BOX 247
LIBERTY CORNER NJ 07938
RE: 726 MARTINSVILLE RD

Block-Lot: 9301-35

LEONARDO, RAFAEL C & MILAGROS B
100 SHANNON HILL RD
BASKING RIDGE NJ 07920
RE: 100 SHANNON HILL RD

Block-Lot: 9301-34

SHANNON HILL FARMS HOMEOWNERS ASSOC
. 00000
RE: 102 SHANNON HILL RD

Block-Lot: 9401-7

SCHEHERAZADE ENTERPRISES INC
15 SHANNON HILL RD
BASKING RIDGE NJ 07920
RE: 15 SHANNON HILL RD

Block-Lot: 9301-36

BRADLEY, KENNETH O & ANDERSON, LYNNE A
92 SHANNON HILL RD
BASKING RIDGE NJ 07920
RE: 92 SHANNON HILL RD

Block-Lot: 9301-38

GALUSHA, CHRISTOPHER M & ALYSON E
80 SHANNON HILL RD
BASKING RIDGE NJ 07920
RE: 80 SHANNON HILL RD

Block-Lot: 9301-37

BARR, LARRY & JUNE
86 SHANNON HILL RD
BASKING RIDGE NJ 07920
RE: 86 SHANNON HILL RD

Block-Lot: 9301-39

BUWEN, JAMES & LEIGH
76 SHANNON HILL RD
BASKING RIDGE NJ 07920
RE: 76 SHANNON HILL RD

Block-Lot: 9301-40

KLIPPEL, JON & CROWE, MARGARET F
70 SHANNON HILL RD
BASKING RIDGE NJ 07920
RE: 70 SHANNON HILL RD

Block-Lot: 9301-32

FELLOWSHIP DEACONRY INC
PO BOX 204
LIBERTY CORNER NJ 07938
RE: 3575 VALLEY RD

Block-Lot: 9301-9.01

ENGLISH FARM ASSOCIATES, LP
PO BOX 183
LIBERTY CORNER NJ 07938
RE: 3613 VALLEY RD

Block-Lot: 9401-8

PINSON, ELLEN
658 HOYDEN HILL RD
FAIRFIELD CT 06824
RE: 99 ALLEN RD

Block-Lot: 9204-1

BRISTLECONE INC
PO BOX 328
LIBERTY CORNER NJ 07938
RE: 706 MARTINSVILLE RD

Block-Lot: 9204-2-CELL

BERNARDS TWP SEWERAGE AUTHORITY
MARTINSVILLE RD; BOX 247
LIBERTY CORNER NJ 07938
RE: 726 MARTINSVILLE RD

Block-Lot: 9401-7-Q0065

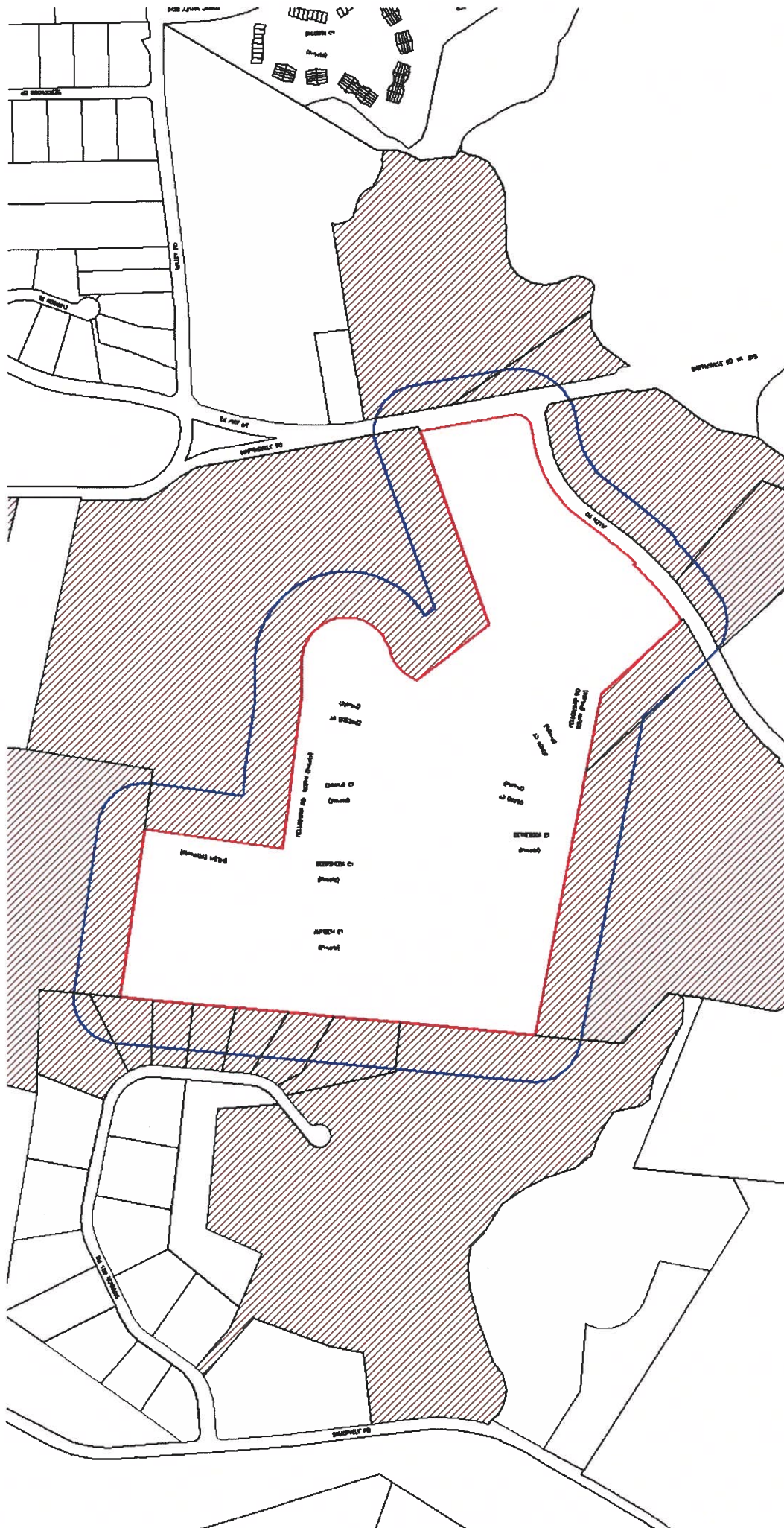
SCHEHERAZADE ENTERPRISES INC
PO BOX 139
LIBERTY CORNER NJ 07938
RE: 15 SHANNON HILL RD

Block-Lot: 9301-9.01-Q0012

ENGLISH FARM ASSOCIATES, LP
PO BOX 183
LIBERTY CORNER NJ 07938
RE: CHURCH ST

Block-Lot: 9401-8-Q0036

PINSON, ELLEN
658 HOYDEN HILL RD
FAIRFIELD CT 06824
RE: 99 ALLEN RD





OFFICE OF THE ASSESSOR

TOWNSHIP OF BERNARDS

ONE COLLYER LANE

BASKING RIDGE, NJ 07920

(908)-204-3082 FAX (908)-766-1644

200 FOOT PROPERTY SEARCH

List of names and addresses of all owners of property as shown on the current tax duplicate located within 200 feet of any part of the property affected by this application. The Township of Bernards accepts no liability for errors hereon. ***The attached list was compiled by the Engineering Department.***

If the property is within 200 feet of an adjoining municipality, the Township Clerk of that municipality should be notified. In addition, the applicant must also obtain the names and addresses of the owners of the land in such adjoining municipalities that are located within 200 feet of the subject premises.

The following is a list of utility companies located within Bernards Township. It is not to be construed as utilities being on or within 200 feet of the property being searched.

- | | | |
|--|---|---|
| 1. ALGONQUIN GAS TRANSMISSION CO
1 Lindbergh Rd
Stony Point, NY 10980
(908) 757-1212 | 6. NEW JERSEY AMERICAN WATER CO
Donna Short, GIS Supervisor
NJ-American Water Company, Inc.
1025 Laurel Oak Rd
Voorhees, NJ 08043 | 10. NEW JERSEY BELL TELEPHONE CO
Edward D. Young III, Secretary
Verizon Legal Dept.
540 Broad St – Room 2001
Newark, NJ 07101
(201) 649-2233 |
| 2. BELL ATLANTIC CORPORATION
Secretary, 46 th Floor
1717 Arch
Philadelphia, PA 19102 | 7. CABLEVISION OF RARITAN VALLEY
275 Centennial Ave; CN6805
Piscataway, NJ 08855
Attn: Margurite Prenderville
Construction Dept | 11. TRANSCONTINENTAL GAS PIPELINE
Division Office
3200 S Wood Ave
Linden, NJ 07036 |
| 3. JCP & L/ GPU
Service Tax Dept
PO Box 1911
Morristown, NJ 07962-1911 | 8. BERNARDS TWP SEWERAGE AUTHORITY
1 Collyer Ln
Basking Ridge, NJ 07920
(908) 204-3002 | 12. VERIZON BUSINESS/MCI
Right of Way Dept.
2400 N Glenville Dr
Richardson, TX 75082 |
| 4. PUBLIC SERVICE ELECTRIC & GAS
Manager – Corporate Properties
80 Park Plaza, T6B
Newark, NJ 07102 | 9. ENVIRONMENTAL DISPOSAL CORP
William Halsey, President
601 State Hwy 202/206
Bedminster, NJ 07921
(908) 234-0677 | |
| 5. VERIZON COMMUNICATIONS
Engineering
290 W Mt Pleasant Ave; Ste 1400
Livingston, NJ 07039-2763 | | |

PLEASE NOTE :
Numbers 1,3,4,5 and 7 are
registered with the Township and
REQUIRE NOTIFICATION

If the property is adjacent to a State Highway, the
COMMISSIONER OF TRANSPORTATION
must be notified at

NEW JERSEY DEPT OF TRANSPORTATION
1035 Parkway Ave., CN600
Trenton, NJ 08625

If the property is adjacent to a County Road, the
SOMERSET COUNTY PLANNING BOARD
must be notified at

SOMERSET COUNTY PLANNING BOARD
PO Box 3000
Somerville, NJ 08876

Submit 3 copies TOTAL

FORM D

FORM TO BE SENT TO TAX COLLECTOR, ONE COLLYER LANE,
BASKING RIDGE, NEW JERSEY, 07920 (908) 204-3078
FOR CERTIFICATION OF CURRENT PROPERTY TAX PAYMENTS.
CERTIFICATION WILL BE MAILED TO YOU WHEN IT IS COMPLETED.
DO NOT SUBMIT APPLICATION WITHOUT PROOF OF TAXES PAID.

CERTIFICATION OF CURRENT PROPERTY TAX PAYMENTS

BLOCK 9301 LOT 33

PROPERTY LOCATION: 8000 Fellowship Road

ASSESSED TO: Fellowship Senior Living, Inc.

ADDRESS: Same as above.


REQUESTED BY: Gibbons P.C. - Brendan J. Kelly, Esq.

PHONE NUMBER: 973-596-4771

MAIL CERTIFICATION TO: Gibbons P.C. One Gateway Center Newark, NJ 07102

Please also email, if possible, to bkelly@gibbonslaw.com and jsmith@gibbonslaw.com

I CERTIFY THAT THE PROPERTY TAXES ARE CURRENT, PAID
THROUGH September 30, 2020


PEGGY WARREN,
TAX COLLECTOR

Submit 21 copies TOTAL

FORM E

**TOWNSHIP OF BERNARDS
PLANNING BOARD / BOARD OF ADJUSTMENT**

SITE INSPECTION CONSENT FORM

Applicant: Fellowship Senior Living, Inc. **Application:** Minor Site Plan

Block: 9301 **Lot:** 33

Street Address: 8000 Fellowship Road

Brian G. Lawrence, President and CEO
I, of Fellowship Senior Living, Inc., who is the owner of the above property, hereby acknowledge that, upon determination of completeness of the application, a site inspection may be scheduled with the Board for a mutually convenient date and time. I hereby authorize members of the Planning Board/Board of Adjustment and their representatives and consultants to enter onto the property at the time of the site inspection for the purpose of evaluating the application.

Signature:  **Date:** 11/23/20
By: Brian G. Lawrence
Title: President & CEO

Submit 21 copies TOTAL

FORM F

**ADDENDUM TO THE BERNARDS TOWNSHIP
PLANNING BOARD APPLICATION**

**APPROVALS REQUIRED BY LOCAL, COUNTY,
STATE AND OTHER AGENCIES**

PERMITS	APPLICABLE	N/A	PENDING	RECEIVED
Somerset County Planning Bd.***	✓			
Somerset County Road Opening Permit		✓		
Bernards Sewerage Authority		✓		
NJDEP:				
a) Stream encroachment		✓		
b) Filing Floodplain		✓		
c) Other	✓			
Army Corp of Engineers:		✓		
a) Section 404		✓		
b) Other		✓		
NJDOT:		✓		
a) Road opening permit		✓		
b) Drainage permit		✓		

***** All applications for subdivision or site plan, whether Preliminary, Final, Minor or Major, must be submitted to Somerset County Planning Board by the applicant and proof of submittal must be received by Bernards Township prior to the scheduling of the application for the first hearing before the Bernards Township Planning Board.**


Applicant's Engineer

24GE03321600
PE Number

12/15/2020
Date

Submit 21 copies TOTAL

FORM G

**TOWNSHIP OF BERNARDS
APPLICATION FOR TREE REMOVAL PERMIT**

DATE: 10/07/2020

1. Name and address of the owner of the premises and status of legal entity (individual, partnership, corporation of this or any other state, etc.) _____

Fellowship Senior Living, Inc. / 501 c(3) non-profit corporation

8000 Fellowship Road Basking Ridge, NJ 07920

2. Status of the applicant with respect to land (owner, lessee, tenant, purchaser, under contract, etc.) Owner

3. Name and address of the applicant for the permit if other than the owner (attach owner's written consent) _____

4. Description of the premises where tree removal is to take place, including lot and block numbers and street address _____

8000 Fellowship Road Basking Ridge, NJ 07920 / Block 9301 Lot 33

Back of Community Center of Fellowship Village flanked by Health Center and Residential Building

5. A list of all trees to be removed with a DBH equal to or greater than six inches identified by size and species, including total number of each species to be removed (attach separate sheet if necessary) (6) 10" Pin Oak Trees, (1) 6" Crabapple Tree

6. Purpose for tree removal (construction, street or roadway, driveway, utility easement, recreation areas, patio, parking lot, etc.) _____

Construction of Fitness Center and Salon/Spa

7. Proof that there are no delinquent property taxes or assessments due on the property for which the application is submitted (attach certification from tax collector).

8. Trees that had been removed within the past two years Covered under separate
previous permitting activities and/or N/A.

Submit 3 copies TOTAL

FORM H

**TOWNSHIP OF BERNARDS
PLANNING BOARD / BOARD OF ADJUSTMENT**

CONTRIBUTION DISCLOSURE STATEMENT

Contribution Disclosure Statement Required. Pursuant to Bernards Township Ordinance Section 21-7A (Ordinance #1745, adopted October 26, 2004), Contribution Disclosure Statements are required for certain types of development applications that include a request for a variance or other relief. When required, a Contribution Disclosure Statement must be submitted by all applicants and property owners, as well as all professionals who apply for or provide testimony, plans or reports in support of the application. See Section 21-7A for details.

Applicant: Fellowship Senior Living **Application:** _____

Pursuant to Bernards Township Ordinance Section 21-7A, I hereby certify that I, or the firm or entity with which I am associated, made the following contributions to or on behalf of a candidate, candidate committee, joint candidates committee, political committee, continuing political committee or political party committee of, or pertaining to, the Township of Bernards, within one year prior to the filing of the above application.

☒ I made no contributions.

☐ I made the following contributions:

Date: _____	Amount: _____	Recipient: _____
Date: _____	Amount: _____	Recipient: _____
Date: _____	Amount: _____	Recipient: _____
Date: _____	Amount: _____	Recipient: _____

Signature:



Date: 10/07/20

Name:

Rick Ricciardi

Title:

President

Firm:

Marathon Engineering & Environmental Services, Inc.

Address:

3 Kildeer Court, Suite 302

Swedesboro, NJ 08085

Submit 3 copies TOTAL

FORM H

**TOWNSHIP OF BERNARDS
PLANNING BOARD / BOARD OF ADJUSTMENT**

CONTRIBUTION DISCLOSURE STATEMENT

Contribution Disclosure Statement Required. Pursuant to Bernards Township Ordinance Section 21-7A (Ordinance #1745, adopted October 26, 2004), Contribution Disclosure Statements are required for certain types of development applications that include a request for a variance or other relief. When required, a Contribution Disclosure Statement must be submitted by all applicants and property owners, as well as all professionals who apply for or provide testimony, plans or reports in support of the application. See Section 21-7A for details.

Applicant: Fellowship Senior Living, Inc. Application: _____

Pursuant to Bernards Township Ordinance Section 21-7A, I hereby certify that I, or the firm or entity with which I am associated, made the following contributions to or on behalf of a candidate, candidate committee, joint candidates committee, political committee, continuing political committee or political party committee of, or pertaining to, the Township of Bernards, within one year prior to the filing of the above application.

☒ I made no contributions.

☐ I made the following contributions:

Date: _____	Amount: _____	Recipient: _____
Date: _____	Amount: _____	Recipient: _____
Date: _____	Amount: _____	Recipient: _____
Date: _____	Amount: _____	Recipient: _____

Signature: _____

Name: _____

Title: _____

Firm: _____

Address: _____

Brian G. Lawrence

Date: _____

11/23/20

Brian G. Lawrence

President & CEO

Fellowship Senior Living

8000 Fellowship Road

Basking Ridge, NJ 07920

Submit 3 copies TOTAL

FORM II

**TOWNSHIP OF BERNARDS
PLANNING BOARD / BOARD OF ADJUSTMENT**

CONTRIBUTION DISCLOSURE STATEMENT

Contribution Disclosure Statement Required. Pursuant to Bernards Township Ordinance Section 21-7A (Ordinance #1745, adopted October 26, 2004), Contribution Disclosure Statements are required for certain types of development applications that include a request for a variance or other relief. When required, a Contribution Disclosure Statement must be submitted by all applicants and property owners, as well as all professionals who apply for or provide testimony, plans or reports in support of the application. See Section 21-7A for details.

Applicant: Fellowship Senior Living Inc. Application: _____

Pursuant to Bernards Township Ordinance Section 21-7A, I hereby certify that I, or the firm or entity with which I am associated, made the following contributions to or on behalf of a candidate, candidate committee, joint candidates committee, political committee, continuing political committee or political party committee of, or pertaining to, the Township of Bernards, within one year prior to the filing of the above application.

☒ I made no contributions.

☐ I made the following contributions:

Date: _____	Amount: _____	Recipient: _____
Date: _____	Amount: _____	Recipient: _____
Date: _____	Amount: _____	Recipient: _____
Date: _____	Amount: _____	Recipient: _____


Signature: _____

Name: _____

Title: _____

Firm: _____

Address: _____


DAVID FOWLES
PRINCIPAL
KDA ARCHITECTS
227 LAUREL RD
SUITE 200
VOORHEES, NJ
08013

Date: 10/8/2020

**TOWNSHIP OF BERNARDS
PLANNING BOARD/ZONING BOARD OF ADJUSTMENT**

CONTRIBUTION DISCLOSURE STATEMENT

Contribution Disclosure Statement Required. Pursuant to Bernards Township Ordinance Section 21-7A (Ordinance #1745, adopted October 26, 2004), Contribution Disclosure Statements are required for certain types of development applications that include a request for a variance or other relief. When required, a Contribution Disclosure Statement must be submitted by all applicants and property owners, as well as all professionals who apply for or provide testimony, plans or reports in support of the application. See Section 21-7A for details.

Applicant: Fellowship Senior Living Inc.

Pursuant to Bernards Township Ordinance Section 21-7A, I hereby certify that I, or the firm or entity with which I am associated, made the following contributions to or on behalf of a candidate, candidate committee, joint candidates committee, political committee, continuing political committee or political party committee of, or pertaining to, the Township of Bernards, within one year prior to the filing of the above application.

☒ I made no contributions.

☐ I made the following contributions:

Date: _____	Amount: _____	Recipient: _____
Date: _____	Amount: _____	Recipient: _____
Date: _____	Amount: _____	Recipient: _____
Date: _____	Amount: _____	Recipient: _____

Signature: Jennifer Phillips Smith

Date: 10/8/2020

Name: _____

Title: _____

Firm: _____

Address: _____

Gibbons PC
One Gateway Center
Newark, NJ 07102

PUBLIC NOTICE

PLEASE TAKE NOTICE THAT the Planning Board of the Township of Bernards (the "Board") will hold a hearing on _____ at 7:30 PM at the Municipal Building, located at 1 Collyer Lane, Basking Ridge, New Jersey 07920 for the purposes of reviewing and taking action upon the application of Fellowship Senior Living, Inc. ("Applicant"), for preliminary and final site plan approval (the "Application") for the development of certain property having a street address of 8000 Fellowship Road, known on the tax maps as Block 9301, Lot 33 (the "Property"). Fellowship Village, a continuing care retirement community, currently operates at the Property. The Property is located within the R-2 residential zoning district, where Fellowship Village is a permitted conditional use.

Applicant is seeking preliminary and final major site plan approval in connection with proposed improvements to Fellowship Village. Applicant proposes to construct a new fitness center and salon addition, and add certain outdoor improvements. Applicant proposes the construction of a new, two-floor, 14,447 square foot structure to serve as a fitness center and salon. This addition will be connected to the main floor of the existing community center, with the main level serving as the fitness center and the lower, below grade level serving as the salon. Applicant additionally proposes minor expansions of the men's and women's changing/bathrooms, which are currently on one side of the existing pool. Applicant proposes to expand the men's changing/bathroom by incorporating the existing area of an adjacent apartment unit, and expand the women's changing/bathroom through a small, 180 s.f. addition.

Applicant proposes outdoor improvements, including approximately ¼ miles of 5' wide gravel paths and 5' wide elevated walkways within the conservation easement and wetlands area of the Property. The elevated walkway is proposed over the wetland area, and Applicant is also proposing semi-enclosed observation decks along the elevated walkway trail to serve as bird blinds and sitting areas.

Applicant additionally proposes to add an enclosed dog park in the upland area outside of the conservation area just off the loop walkway and access driveway at the Property. Further, Applicant proposes pickleball, bocce ball, and shuffleboard courts near the existing pool and renovated clubrooms.

Finally, Applicant proposes certain improvements to "Spruce Grove" and Ephesus Pond. Spruce Grove is a shady grove of mature spruce trees at the Property, and Applicant proposes to add sitting areas, replace the existing paths, add stone piers at the entrances, and add low level illumination. As to Ephesus Pond, Applicant proposes to add a 14' x 16' deck at the edge of the pond that will include some low level illumination on the deck surface.

Applicant does not request any variances as part of the Application, and the Application complies with the applicable conditional use requirements.

Applicant seeks any variances, deviations, design exceptions/waivers, submission waivers, interpretations, modifications of prior imposed conditions, and other approvals reflected on the filed plans (as same may be further amended from time to time without further notice) and as may be determined to be necessary during the review and processing of the Application.

The meeting will be held in person in the Warren Craft Meeting Room within the Municipal Building. In addition, the public will be able to view the meetings live on Optimum/Cablevision TV Channel 15 and Verizon FIOS TV Channel 35, and the meetings will also be streamed live for those interested in watching on their computers. The link to access the stream will be available at 7:30 PM by clicking on the "Watch the Meeting Live" icon on the Bernards Township website homepage. Questions and comments from the public will be accepted only during the public questions and comments periods of the meeting. Those questions or comments may be offered in person at the hearing or by calling 908-202-6426. If you are calling in, please turn off your computer/television and use Google "Duo" for your call. You will be required to provide your name and address and be sworn in prior to making comments.

When the Application is called, interested parties may appear at the hearing or any adjournment thereof either in person or by attorney, ask questions, and present evidence and offer statements or documentation that may be relevant to the Application. Interested parties may attend the in-person meeting or participate virtually using the procedures outlined in the previous paragraph. The hearing may be continued without further notice on such additional or other dates as the Board may determine.

The Application, maps, plans and related supporting materials are on file with the Board at its office in the Municipal Building, 1 Collyer Lane, Basking Ridge, New Jersey 07920. Any individual seeking to review copies of such application materials should contact the Board Secretary, Cyndi Kiefer, at 908-204-30226, Monday through Friday, 8:30AM to 4:30PM.

Fellowship Senior Living, Inc.
By: Jennifer Phillips Smith, Esq.
GIBBONS P.C.
One Gateway Center
Newark, New Jersey 07102
(973) 596-4477

FEE AND ESCROW CALCULATIONS

Fellowship Senior Living, Inc.

Preliminary and Final Major Site Plan Approval and Conditional Use Approval

Application Fees

Based on New Addition of 14,447 s.f. on the 72.569 acre property

Preliminary Major Site Plan	\$2,603.17
*\$500 + .02/s.f. of building floor area +\$25/acre	
Final Major Site Plan	\$2,258.70
*\$300 + \$.01/s.f. of building floor area +\$25/acre	
Conditional Use	\$1,694.70
*\$250 + \$.10/s.f. of conditional use building	

TOTAL	\$6,556.57
--------------	-------------------

MINUS (Nonprofit organization waiver) *1/2 fee -	\$3,278.29
---	-------------------

<i>TOTAL APPLICATION FEES</i>	<i>\$3,278.29</i>
--------------------------------------	--------------------------

Escrow Deposit

Preliminary Major Site Plan	\$4,747.64
*\$2,500 + .03/s.f. of building floor area + \$25/acre	
Final Major Site Plan	\$1,500.00
Conditional Use	\$500.00

<i>TOTAL ESCROW DEPOSIT</i>	<i>\$6,747.64</i>
------------------------------------	--------------------------



**Fellowship Senior Living, Inc.
Block 9301, Lot 33**

List of Professionals

November 24, 2020

- Bill Schramm
KDA Architects
One Echelon Plaza
227 Laurel Rd., Suite 200
Voorhees, NJ 08043
Phone: 856-770-1060
Email: schramm@kd-arch.com
- David Fowles
KDA Architects
One Echelon Plaza
227 Laurel Rd., Suite 200
Voorhees, NJ 08043
Phone: 856-770-1060
Email: fowles@kd-arch.com
- Rick Ricciardi
Marathon Engineering & Environmental Services, Inc.
3 Killdeer Court, Suite 302
Swedesboro, New Jersey 08085
Phone: 856-241-9705
Email: RRicciardi@marathonconsultants.com
- Albie Day
Marathon Engineering & Environmental Services, Inc.
3 Killdeer Court, Suite 302
Swedesboro, New Jersey 08085
Phone: 856-241-9705
Email: Albie.day@marathonconsultants.com



**Fellowship Senior Living, Inc.
Block 9301, Lot 33**

List of Prior Approvals

October 29, 2020

Below is a list of prior approvals concerning the Property to which Applicant has knowledge:

- 5/18/1993 - Preliminary and Final Site Plan Approval and Conditional Use application.
- 5/17/1994 – Amended Final Site Plan Approval.
- 2/3/1998 – Amended Preliminary and Final Site Plan Approval and Preliminary and Final Major Subdivision.
- 5/8/2007 – Amended Preliminary and Final Site Plan Approval for addition, car pavilion and increased parking.
- 4/7/2009 – Amended Preliminary and Final Site Plan Approval to enclose porches and solar roof panels.
- 6/27/2010 – Amended Preliminary and Final Site Plan Approval for expansion of dining room facilities.
- 10/18/2016 – Preliminary and Final Site Plan Approval, Conditional Use Approval, and Modification of Prior Approval for expansion of community center, health center, reconfiguration and expansion of parking areas for those center, and addition of two underground stormwater detention systems and modifications to stormwater retention basin located south of health center.
 - A copy of the memorializing resolution is attached.

Submit 3 copies TOTAL.

FORM D

FORM TO BE SENT TO TAX COLLECTOR, ONE COLLYER LANE,
BASKING RIDGE, NEW JERSEY, 07920 (908) 204-3078
FOR CERTIFICATION OF CURRENT PROPERTY TAX PAYMENTS.
CERTIFICATION WILL BE MAILED TO YOU WHEN IT IS COMPLETED.
DO NOT SUBMIT APPLICATION WITHOUT PROOF OF TAXES PAID.

CERTIFICATION OF CURRENT PROPERTY TAX PAYMENTS

Date of Request: February 8, 2021

BLOCK 9301 LOT 33

PROPERTY LOCATION: 8000 Fellowship Road

ASSESSED TO: Fellowship Senior Living, Inc.

ADDRESS: Same as above.

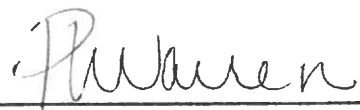
REQUESTED BY: Gibbons P.C. - Brendan J. Kelly, Esq.

PHONE NUMBER: 973-596-4771

MAIL CERTIFICATION TO: Gibbons P.C. One Gateway Center Newark, NJ 07102

Please also email, if possible, to bkelly@gibbonslaw.com and jsmith@gibbonslaw.com.

I CERTIFY THAT THE PROPERTY TAXES ARE CURRENT, PAID
THROUGH 1Q 2021 as of 2/9/2021


PEGGY WARREN,
TAX COLLECTOR

APPENDIX B, ARTICLE III

Checklist

Application for Preliminary Approval of a Major Subdivision or Site Plan (See Article VII for Details)

Important: Each item must be marked Submitted, Not Applicable or Waiver Requested

No.	Item	Submitted	Not Applicable	Waiver Requested
1	A completed application form and checklist(s). If the application involves a wireless telecommunications tower and/or antennas, all items listed on the Wireless Telecommunications Facilities Checklist must be also be submitted.	x		
2	A certificate from the tax collector indicating that taxes are paid.	x		
3	All required application and escrow deposit fees.	x		
4	Names and addresses of property owners within 200' of the subject property, as disclosed by current tax records and identified by block & lot numbers.	x		
5	Title block indicating:	x		
	a. Name of development and street location.	x		
	b. Name and address of applicant, owner and authorized agent, if any.	x		
	c. Name and address of professional(s) preparing plans including signature, date, license number and seal.	x		
	d. Tax map block and lot numbers.	x		
	e. Date of plan preparation and revision box with date of each revision.	x		
	f. Development application number.			
	g. Written and graphic scale.	x		
6	Signature of applicant and, if applicant is not owner, signed consent of the owner.			
7	Name and address of the attorney representing parties, if any, and the name of each client represented.			
8	Signature blocks as required by the Map Filing Law.	x		
9	North arrow giving reference meridian.	x		
10	Copies of any protective covenants or deed restrictions applying to the subject property, including a statement as to whether such covenants or deeds are of record. A copy or abstract of the deed or deeds or other instruments by which title is derived with the names of all owners must also be provided.	x		
11	A key map showing the entire tract and its relation to the surrounding areas, including all roads, zone boundaries and municipal boundaries within one-half (1/2) mile of the subject property at a scale of one (1) inch equals not more than two thousand (2,000) feet.	x		
12	A zoning schedule indicating the zone(s) within which the property is located and required, existing & proposed conditions relative to lot area, width, frontage, yard setbacks, lot coverage, height, floor area, floor area ratio, density, open space, parking, loading, signs, etc.	x		
13	A list of required and obtained regulatory approvals and permits.	x		
14	A list of requested variances and exceptions.		x	
15	The location and dimensions of existing & proposed property lines, existing streets, streets shown on the Township's official map or master plan, structures (indicating the use of each structure and whether existing structures will remain or be removed), building setbacks, rights-of-way, easements, parking & loading areas, driveways, railroads, bridges, culverts, drain pipes, gas transmission lines, overhead utilities, historic sites/structures, wooded areas, watercourses, flood plains, wetlands or other environmentally sensitive areas on and within 200' of the subject property.	x		
16	A wetlands delineation or wetlands absence determination prepared by a qualified consultant and verified by a letter of interpretation from the New Jersey Department of Environmental Protection, if required pursuant to § 21-14.1.a.			x

No.	Item	Submitted	Not Applicable	Waiver Requested
17	Plans & profiles of proposed utility layouts, including water supply, sewage disposal, stormwater drainage, gas, telephone and electricity, showing feasible connections to existing or proposed systems. Plans for individual on-site water supply and/or sewage disposal systems shall be accompanied by the necessary local, county and/or state agency approvals. If service will be provided by an existing utility company, a letter from that company stating that service will be available before occupancy is required.		X	
18	The locations of percolation tests on each existing/proposed lot and a copy of the written approval of the tests and locations from the Bernards Township Health Department, if sewage disposal is to be handled by individual septic system(s). For each lot, the applicant shall submit test locations and written approvals from the Health Department for both a primary and secondary septic disposal field. The applicant must show on the development plan the locations and dimensions of both septic disposal fields.		X	
19	All means of vehicular and pedestrian access to the site from public streets, including locations and dimensions of driveways and curbcuts and any traffic signs, signals, channelization, acceleration and deceleration lanes or other traffic control devices.	X		
20	Site identification sign and street sign locations and details.		X	
21	Existing & proposed topographic contour intervals based on U.S.C. & G.S. datum on and within 200' of the subject property as follows: - up to 3% grade = 1' intervals - over 3% grade = 2' intervals	X		
22	A steep slope map in accordance with § 21-14.2.b, if the property contains any existing slopes of 15% or greater.			X
23	Spot and finished elevations at all property corners.		X	
24	A landscaping plan showing shade trees, screening, buffering, existing vegetation and limits of clearing, a planting schedule, details of plantings, landscape treatments and other amenities, etc. (see § 21-54.4 for detailed requirements).	X		
25	A tree identification plan and an application for tree removal permit including the following (see § 21-45.3 for detailed requirements):	X		
	a. Location of existing tree canopy and labeling of the canopy areas to be removed and to be preserved.			X
	b. Location of individual trees with a DBH equal to or greater than six inches identified by size and species within the limit of disturbance and 30 feet beyond the limit of disturbance, labeled to be removed or to be preserved.			X
	c. Location of individual trees with a DBH equal to or greater than ten inches identified by size and species within the property boundaries, labeled to be removed or to be preserved.			X
	d. Tree protection details.	X		
	e. A list of all trees to be removed and, if replacement trees are required, a schedule in accordance with the table in § 21-45.1 indicating the number of replacement trees required and the number of replacement trees proposed.	X		
26	A lighting plan in accordance with Section 21-41, including the location, type, height, graphic details and specifications of all existing & proposed lighting. The plan shall show the proposed illumination in footcandle values throughout the site and shall identify the average maintained horizontal illumination in vehicular areas and in sidewalk areas.			X
27	A soil erosion and sediment control plan, if required pursuant to Section 21-27.	X		
28	A solid waste management plan and a recycling plan, including locations and details of outdoor refuse and recycling storage areas and means of screening, in accordance with Sections 21-40 and 21-40A.			X

No.	Item	Submitted	Not Applicable	Waiver Requested
29	Plans and profiles of proposed driveways.		X	
30	Plans, typical cross-sections, centerline profiles, tentative grades, curb radii and details of all streets on the site or off the site which are proposed to be improved, including curbing, sidewalks and drainage structures.		X	
31	Construction details in accordance with Township standards.	X		
32	Existing & proposed easements or land reserved for or dedicated to public use, utility use or for the common use of property owners in the development, including a statement of the limits and purpose of the easement rights or dedicated land.		X	
33	Existing & proposed sight triangles.		X	
34	Development staging plans.		X	
35	Existing & proposed block and lot numbers.	X		
36	The area in square feet and to the nearest tenth of an acre of all existing and proposed lots.	X		
37	A sketch of the proposed or possible layout or disposition of remaining lands, if any.		X	
38	General soil information including soil logs.	X		
39	Source and date of the current property survey and a copy of the survey showing all existing tract boundary or lot lines with lengths of courses to hundredths of a foot and bearings to half minutes, the error of closure not to exceed one (1) to ten thousand (10,000). The tract boundary or lot lines shall be clearly delineated. All bearings shall be in the New Jersey Plane Coordinate System, with coordinates shown on at least three (3) corners.		X	
40	Appropriate certification blocks as required by the Map Filing Law		X	
41	Monumentation as specified by the Map Filing Law.		X	
42	Metes and bounds description showing dimensions, bearings, curve data, length of tangents, radii, arcs, chords and central angles for all centerlines and rights-of-way and centerline curves on streets.		X	
43	Plans and computations for any storm drainage systems, including locations, details and specifications of all storm sewer lines, catch basins, inlets, manholes, culverts, headwalls, dry wells, ground water recharge basins, detention basins, etc. and existing and proposed drainage area maps.	X		
44	When a stream is proposed for alteration, improvement or relocation or when a drainage structure or fill is proposed over, under, in or along a running stream, intermittent stream, swale or drainageway, evidence of approval or of the request for approval, required modifications or lack of jurisdiction over the improvement by the New Jersey Department of Environmental Protection shall accompany the application (see § 21-54.4 for additional required details).		X	
45	When ditches, streams or watercourses are to be altered, improved or relocated, the method of stabilizing slopes and measures to control erosion and siltation, as well as typical ditch sections and profiles, shall be shown.		X	
46	For a site plan, preliminary elevations and plans of all buildings and structures, showing windows, doors, architectural treatment, roof treatment, roof appurtenances and screening, floor elevations and proposed methods of energy conservation and the locations, dimension and legend(s) of all proposed signs. For a subdivision, the approximate basement and first floor elevation for each house.	X		
47	A list of names and addresses of all stockholders or individual partners owning at least 10% of its stock of any class or at least 10% of the interest in the partnership, as the case may be.	X		

No.	Item	Submitted	Not Applicable	Waiver Requested
48	A Project Report, which may be submitted separately or as part of the Environmental Impact Assessment, including the following (see § 21-54.6 for details). Where individual maps or exhibits are submitted separately to satisfy other checklist requirements, they may be referenced in the Project Report.			x
	a. Project Description and Statistics Report.			
	b. Land Classification Map and Report.			
	c. Natural Features Report.			
	d. Open Space Plan and Report.			
	e. Land Coverage and Drainage Plan and Report.			
	f. Soil Erosion and Sedimentation Control Plan and Report.			
	g. Sewer and Water Plan and Report.			
	h. Circulation Plan and Traffic Report.			
	i. Utilities Plan and Report.			
	j. Development Schedule Plan.			
	k. Variances and Exceptions Report.			
	l. Easements and Covenants Report.			
49	An Environmental Impact Assessment, including the following (see § 21-54.6.m for details).			x
	a. Plan and description of the development plan.			
	b. Inventory of existing natural resources.			
	c. Assessment of environmental impacts.			
	d. Unavoidable adverse environmental impacts.			
	e. Steps to minimize environmental damage.			
	f. Alternatives.			
	g. Details and matters to be evaluated:			
	(1) Sewerage facilities.			
	(2) Water supply.			
	(3) Storm water.			
	(4) Stream encroachments.			
	(5) Floodplains.			
	(6) Solid waste disposal.			
	(7) Air pollution.			
	(8) Traffic.			
	(9) Social/economic factors.			
	(10) Aesthetics.			
	(11) Licenses, permits, etc.			
	(12) A copy of the development plan and application form.			
50	Delineations of existing and proposed stream buffer conservation areas and stream buffer management plans, if required pursuant to Section 21-14.4.b.	x		
51	Contribution Disclosure Statement, if required pursuant to Section 21-7A.	x		
52	A plan showing all the details required in the procedures of Table 401-A, entitled Maximum Permitted Lot Yield & Minimum Improvable Lot Area Standards, Residential Development, R-1 Through R-7 Zones.		x	
53	For each proposed dwelling, cross sections shall be provided from the center of the road to the rear of the house in existing and proposed conditions; cross sections shall be provided perpendicular to the road through the center of the dwelling to a point 50' to the rear of the dwelling; the cross section shall be provided at a scale of 1" = 10' horizontal and 1" = 10' vertical.		x	
54	A fire service plan, showing on a separate plan sheet(s) information relating to fire safety and emergency response, including: existing and proposed water lines, fire department connections, hydrants and cisterns; widths and turning radii of streets, driveways, parking aisles, emergency access roads and fire lanes; public building entrances; parking spaces; and stormwater drainage basins.	x		

Submit 3 copies TOTAL.

FORM D

FORM TO BE SENT TO TAX COLLECTOR, ONE COLLYER LANE,
BASKING RIDGE, NEW JERSEY, 07920 (908) 204-3078
FOR CERTIFICATION OF CURRENT PROPERTY TAX PAYMENTS.
CERTIFICATION WILL BE MAILED TO YOU WHEN IT IS COMPLETED.
DO NOT SUBMIT APPLICATION WITHOUT PROOF OF TAXES PAID.

CERTIFICATION OF CURRENT PROPERTY TAX PAYMENTS

Date of Request: February 8, 2021

BLOCK 9301 LOT 33

PROPERTY LOCATION: 8000 Fellowship Road

ASSESSED TO: Fellowship Senior Living, Inc.

ADDRESS: Same as above.

REQUESTED BY: Gibbons P.C. - Brendan J. Kelly, Esq.

PHONE NUMBER: 973-596-4771

MAIL CERTIFICATION TO: Gibbons P.C. One Gateway Center Newark, NJ 07102

Please also email, if possible, to bkelly@gibbonslaw.com and jsmith@gibbonslaw.com.

I CERTIFY THAT THE PROPERTY TAXES ARE CURRENT, PAID
THROUGH 1Q 2021 as of 2/9/2021


PEGGY WARREN,
TAX COLLECTOR

APPENDIX C, ARTICLE III

Checklist

Application for Final Approval of a Major Subdivision or Site Plan

(See Article VII for Details)

Important: Each item must be marked Submitted, Not Applicable or Waiver Requested

No.	Item	Submitted	Not Applicable	Waiver Requested
1	All items required for preliminary approval as set forth in § 21-54.4, unless previously waived by the Board.	X		
2	All additional items required by the Board as a condition of preliminary approval.		X	
3	A certificate from the tax collector indicating that taxes are paid.	X		
4	All required application and escrow deposit fees.	X		
5	Final detailed architectural renderings of each building and sign, including front, side and rear elevations.	X		
6	Final cross-sections, profiles and established grades of all streets, aisles, lanes and driveways and construction documents for all public improvements.		X	
7	Final plans and profiles of all storm sewers.	X		
8	Final plans and profiles of all sanitary sewers.	X		
9	Final plans and profiles of all water mains.	X		
10	All dimensions of the exterior boundaries of any subdivision, balanced and closed to a precision of one to 10,000, and the dimensions of all lot lines to within one to 20,000. All dimensions, angles and bearings must be tied to at least two permanent monuments not less than 300 feet apart and all information shall be indicated on the plat. At least one corner of the subdivision shall be tied to U.S.C. and G.S. benchmarks with data on the plat as to how the bearings were determined.		X	
11	Proposed street names.		X	
12	A Final Application Comparison Report, including:		X	
	a. The number and type of dwelling units.			
	b. The amount of nonresidential floor space.			
	c. The type of community facilities and/or structures.			
	d. The amount of open space to be preserved.			
	e. The nature and cost of public improvements.			
	f. The anticipated value of residential and nonresidential construction.			
	g. Finalized landscaping and tree removal information pursuant to Sections 21-43 through 21-45.			
	h. A comparison to the preliminary development approval, indicating the nature and reasons for any changes to the preliminary approval.			

No.	Item	Submitted	Not Applicable	Waiver Requested
13	Organization documents, including:	×		
	a. Articles of incorporation, by-laws and membership rules/regulations for any homeowner's association, condominium association or other organization to maintain the common open space or community facilities.			
	b. A copy of the master deed detailing the rights and privileges of individual owners of common property.			
	c. A copy of all materials submitted to the Department of Community Affairs as required by the New Jersey Planned Real Estate Development Full Disclosure Act Regulations and evidence of the status of acceptance of and/or approval by the Department of Community Affairs.			
	d. Covenants or easements restricting the use of the common open space or elements.			
	e. Covenants or agreements requiring homeowners or residents to pay the organization for the maintenance of the common open space and/or community facilities. This shall include a proposed schedule of membership fees for at least the first three years of operation.			
14	All easements or covenants affecting any land in the development.		×	
15	All maintenance agreements under which private roads and other facilities will be maintained, refuse collected and other supplementary services provided, if there is to be no homeowners' association, condominium association, open space organization or similar arrangement.		×	
16	An offer of dedication including all legal requirements for valid dedication to the Township or, where appropriate, to another governmental body of roads or other improvements intended for public ownership.		×	

APPENDIX C, ARTICLE III

Checklist

Application for Final Approval of a Major Subdivision or Site Plan

(See Article VII for Details)

Important: Each item must be marked Submitted, Not Applicable or Waiver Requested

No.	Item	Submitted	Not Applicable	Waiver Requested
1	All items required for preliminary approval as set forth in § 21-54.4, unless previously waived by the Board.	×		
2	All additional items required by the Board as a condition of preliminary approval.		×	
3	A certificate from the tax collector indicating that taxes are paid.	×		
4	All required application and escrow deposit fees.	×		
5	Final detailed architectural renderings of each building and sign, including front, side and rear elevations.	×		
6	Final cross-sections, profiles and established grades of all streets, aisles, lanes and driveways and construction documents for all public improvements.		×	
7	Final plans and profiles of all storm sewers.	×		
8	Final plans and profiles of all sanitary sewers.	×		
9	Final plans and profiles of all water mains.	×		
10	All dimensions of the exterior boundaries of any subdivision, balanced and closed to a precision of one to 10,000, and the dimensions of all lot lines to within one to 20,000. All dimensions, angles and bearings must be tied to at least two permanent monuments not less than 300 feet apart and all information shall be indicated on the plat. At least one corner of the subdivision shall be tied to U.S.C. and G.S. benchmarks with data on the plat as to how the bearings were determined.		×	
11	Proposed street names.		×	
12	A Final Application Comparison Report, including:		×	
	a. The number and type of dwelling units.			
	b. The amount of nonresidential floor space.			
	c. The type of community facilities and/or structures.			
	d. The amount of open space to be preserved.			
	e. The nature and cost of public improvements.			
	f. The anticipated value of residential and nonresidential construction.			
	g. Finalized landscaping and tree removal information pursuant to Sections 21-43 through 21-45.			
	h. A comparison to the preliminary development approval, indicating the nature and reasons for any changes to the preliminary approval.			

No.	Item	Submitted	Not Applicable	Waiver Requested
13	Organization documents, including:	X		
	a. Articles of incorporation, by-laws and membership rules/regulations for any homeowner's association, condominium association or other organization to maintain the common open space or community facilities.			
	b. A copy of the master deed detailing the rights and privileges of individual owners of common property.			
	c. A copy of all materials submitted to the Department of Community Affairs as required by the New Jersey Planned Real Estate Development Full Disclosure Act Regulations and evidence of the status of acceptance of and/or approval by the Department of Community Affairs.			
	d. Covenants or easements restricting the use of the common open space or elements.			
	e. Covenants or agreements requiring homeowners or residents to pay the organization for the maintenance of the common open space and/or community facilities. This shall include a proposed schedule of membership fees for at least the first three years of operation.			
14	All easements or covenants affecting any land in the development.		X	
15	All maintenance agreements under which private roads and other facilities will be maintained, refuse collected and other supplementary services provided, if there is to be no homeowners' association, condominium association, open space organization or similar arrangement.		X	
16	An offer of dedication including all legal requirements for valid dedication to the Township or, where appropriate, to another governmental body of roads or other improvements intended for public ownership.		X	

Stormwater Management Facilities Maintenance Manual

Inspection, Maintenance and Control Plan

For

***Fellowship Senior Living, Inc.
PROPOSED FITNESS CENTER EXPANSION & REC. AREAS***

***Block 9301, Lot 33
Basking Ridge / Township of Bernards
Somerset County, New Jersey***

November 23, 2020

Prepared for:
Fellowship Senior Living, Inc.
8000 Fellowship Road
Basking Ridge, NJ 07920

Prepared by:
**Marathon Engineering &
Environmental Services, Inc.**
3 Killdeer Court, Suite 302
Swedesboro, New Jersey 08085
856-241-9705



David J. Fleming, P.E.
Professional Engineer
New Jersey License No. 24GE03321600
Certificate of Authorization No. 24GA2799570



INSPECTION AND MAINTENANCE CONTROL PLAN FOR CJ TMI / PROPOSED BUILDING EXPANSION

PROJECT INFORMATION

a) DRAWINGS OF STORMWATER MANAGEMENT MEASURES

The proposed Facility's Stormwater Management Plans are included in its Preliminary and Final Site Development Plans which are included herein by reference.

b) LOCATION OF STORMWATER MANAGEMENT MEASURES BY MEANS OF LATITUDE AND LONGITUDE AND BLOCK AND LOT:

The proposed Facility's Best Management Practices Stormwater Management Facility is located on Block 9301, Lot 33 in the Township of Bernards, New Jersey. The center of the proposed facility is approximately:

LAT: 40° 34' 25.70" LONG: -74° 34' 58.42"

c) PREVENTATIVE CORRECTIVE MAINTENANCE TASKS AND SCHEDULES:

Refer to SECTION III for Summary of Maintenance Procedures.

d) COST ESTIMATE:

Refer to SECTION IV, Cost of Stormwater Management Facility Maintenance Tasks

e) NAME OF PERSON RESPONSIBLE FOR INSPECTIONS AND MAINTENANCE:

Company / Individual: Fellowship Senior Living, Inc.
Chris Black—(908-580-3800)

Address: 8000 Fellowship Road
Basking Ridge, NJ 07920

PREVENTATIVE MAINTENANCE PROCEDURES

I. OBJECTIVES

The purpose of this preventative maintenance schedule is to assure that the Stormwater Management Facility (SWMF) remains operational and safe at all times, while minimizing the need for emergency or corrective procedures.

II. OVERVIEW

This comprehensive Stormwater Management Maintenance Program is comprised of several related requirements including:

1. Providing adequate funding, staffing, equipment, and materials.
2. Performing routine maintenance procedures on a regular basis.
3. Performing emergency maintenance procedures and repairs in a timely manner.
4. Conducting SWMF inspections to determine the need for and effectiveness of the maintenance work.
5. Providing training and instruction to maintenance personnel and inspectors.
6. Conducting periodic program reviews and evaluations to determine the overall effectiveness of the maintenance programs and the need for revised or additional maintenance procedures, personnel, and equipment.
7. Instilling pride of workmanship and a commitment to excellence in program personnel.

III. SUMMARY OF MAINTENANCE PROCEDURES

A. PREVENTATIVE MAINTENANCE PROCEDURES

1. Grass Cutting

A regularly scheduled program of mowing and trimming of the grass at SWMF during the growing season will help to maintain a tightly knit turf and will also help to prevent diseases, pests, and the intrusion of weeds. The actual mowing requirements of an area should be tailored to the specific site conditions, grass type, and seasonal variations in the climate. In general, grass should not be allowed to grow more than 1 to 2 inches between cuttings. Allowing the grass to grow more than this amount prior to cutting it may result in damage to the grass growing points and limit its continued healthy growth. At a minimum, once per month (if needed) mow the side slopes and berm area of the basin. Agencies such as the Somerset County Soil Conservation District can provide valuable assistance in determining optimum mowing requirements.

2. Grass Maintenance

Grassed areas require periodic fertilizing, de-thatching, and soil conditioning in order to maintain healthy growth. Additionally, provisions should be made to re-seed and re-establish grass cover in areas damaged by sediment accumulation, stormwater flow, or other causes. Agencies such as the Somerset County Soil Conservation District can provide valuable assistance in establishing a suitable grass maintenance program.

3. Vegetative Cover

Trees, shrubs, and ground cover require periodic maintenance, including fertilizing, pruning, and pest control in order to maintain healthy growth. Agencies such as the Somerset County Soil Conservation District can be of assistance in establishing a preventative maintenance program.

4. Removal and Disposal of Trash and Debris

A regularly scheduled program of debris and trash removal from SWMFs will reduce the chance of the spillway and other basin components becoming clogged and inoperable during storm events. Additionally, removal of trash and debris will prevent possible damage to vegetated areas and eliminate potential mosquito breeding habitats. Disposal of debris and trash must comply with all local, county, state, and federal waste flow control regulations. Only suitable disposal and recycling sites should be utilized. Agencies such as the Division of Solid Waste Management of the New Jersey Department of Environmental Protection should be contacted for information on disposal regulations.

5. Sediment Removals and Disposal

Accumulated sediment should be removed before it threatens the operation or storage volume of a SWMF. Disposal of sediment must comply with all local, county, state, and federal regulations. Only suitable disposal sites should be utilized. The sediment removal program in infiltration facilities must also include provisions for monitoring the porosity of the sub-base, and replacement or cleansing of the pervious materials as necessary. Agencies such as the Division of Solid Waste Management of the New Jersey Department of Environmental Protection should be contacted for information on disposal regulations.

6. Elimination of Potential Mosquito Breeding Habitats

The most effective mosquito control program is one that eliminates potential breeding habitats. Almost any stagnant pool of water can be attractive to mosquitoes, and the source of a large mosquito population. Ponded water in areas such as open cans and bottles, debris and sediment accumulations and areas of ground settlement provide ideal locations for mosquito breeding. A maintenance program dedicated to eliminating potential breeding areas is certainly preferable to controlling the health and nuisance effects of flying mosquitoes. The Somerset County Mosquito Control Commission can provide valuable information on establishing this maintenance program.

7. Basin Maintenance

A program of monitoring the proper functioning of the infiltration basin should be established. Silt and or sediment accumulation, vegetative growth, and animal populations should be monitored on a regular basis. The timely removal of silt or sediment accumulation, proper mowing of grass and observation of animal damage can prevent more serious problems from occurring. After every storm exceeding one (1) inch of rainfall: Ensure that complete infiltration will occur within the required seventy-two (72) hour time period. If stored water fails to infiltrate seventy-two (72) hours after the end of the storm, corrective measures shall be taken. Raking or tilling by light equipment can assist in maintaining infiltration capacity and break up clogged surfaces.

As a minimum, four (4) times per year (quarterly): Inspect for clogging and excessive debris and sediment accumulation. Remove sediment (if needed) when basin is completely dry.

As a minimum, two (2) times per year: Inspect for signs of damage to structures, repair eroded areas, check for signs of petroleum contamination and remediate.

As a minimum, once per year: Inspect basin for unwanted tree growth and remove as necessary, disc or otherwise aerate the bottom of the basin to a minimum depth of six (6) inches.

After every storm exceeding one (1) inch of rainfall, inspect and, if necessary, remove and replace the K5 sand layer and accumulated sediment, to restore the original infiltration rate.

7A. Drainage piping and structures

All structural components must be inspected, at least once annually , for cracking, subsidence, spalling, erosion and deterioration. Any structural deficiencies shall be addressed in a timely manner.

Components expected to receive and/or trap debris and sediment must be inspected for clogging at least four times annually, as well as after every storm exceeding 1" of rainfall.

Disposal of debris, trash, sediment and other waste material must be done at suitable disposal/recycling sites and in compliance with all applicable local, state and federal waste regulations.

8. Inspection

Regularly scheduled inspections of the SWMF should be performed by qualified inspectors. The primary purpose of the inspections is to ascertain the operational condition of embankments, outlet structure, and other safety-related aspects. Inspections will also provide information on the effectiveness of regularly scheduled preventative and aesthetic maintenance procedures and will help to identify where changes are warranted. Finally, the facility inspections should be used to determine the need for and timing of corrective maintenance procedures. In addition to regularly scheduled

inspections, an informal inspection should be performed during every visit to a SWMF by maintenance or supervisory personnel. An inspection checklist and is included as part of this maintenance plan. See Infiltration Basin Maintenance for regularly scheduled maintenance inspection times.

9. Reporting

The recording of all maintenance work and inspections provide valuable data on the SWMF condition. Along with the written reports, a chain of command for reporting and solving maintenance problems and addressing maintenance needs should be established. All inspection reports and records shall be retained on-site for a minimum of five (5) years.

B. CORRECTIVE MAINTENANCE PROCEDURES

1. Removal of Debris and Sediment

Sediment, debris, and trash should be removed immediately and properly disposed of in a timely manner. At a minimum, once per month (if needed) remove litter and debris. Equipment and personnel must be available to perform the removal work on short notice. The lack of an available disposal site should not delay the removal of trash, debris, and sediment. Temporary disposal sites may be utilized if necessary.

2. Structural Repairs

Structural damage to outlet and inlet structures, piping and headwalls from vandalism, flood events, or other causes must be repaired promptly. At a minimum, once per month (if needed) stabilize eroded banks and repair erosion at structures. Equipment, material, and personnel must be available to perform these repairs on short notice. The analysis of structural damage and the design and performance of structural repairs shall only be undertaken by qualified personnel.

3. Embankment and Slope Repairs

Damage to embankments, and side slopes must be repaired promptly. At a minimum, once per month (if needed) stabilize eroded banks. Typical problems include settlement, scouring, cracking, sloughing, seepage and rutting. Equipment, materials and personnel must be available to perform these repairs on short notice. The immediacy of the repairs will depend upon the nature of the damage and its effects on the safety and operation of the facility. The analysis of damage and the design and performance of geotechnical repairs should only be undertaken by qualified personnel.

4. Dewatering

It may be necessary to remove ponded water from within a malfunctioning SWMF. This ponding may be the result of a blocked principal outlet (detention facility), inoperable low level outlet (retention facility), loss of infiltration capacity (infiltration facility), or poor bottom drainage. Portable pumps may be necessary to remove the ponded water temporarily until a permanent solution can be implemented.

5. Extermination of Mosquitoes

If neglected, a SWMF can readily become an ideal mosquito breeding area. Extermination of mosquitoes will usually require the services of an expert, such as the Somerset County Mosquito Commission. Proper procedures carried out by trained personnel can control the mosquitoes with a minimum of damage or disturbance to the environment. If mosquito control in a facility becomes necessary, the preventative maintenance program should be re-evaluated, and more emphasis placed on control of mosquito breeding habitats.

6. Erosion Repair

Vegetative cover or other protective measures are necessary to prevent the loss of soil from the erosive forces of wind and water. Where a re-seeding program has not been effective in maintaining a non-erosive vegetative cover, or other factors have exposed soils, to erosion, corrective steps should be initiated to prevent further loss of soil and any subsequent danger to the stability of the facility. Soil loss can be controlled by a variety of materials and methods, including riprap, gabion lining, sod, seeding, concrete lining, and re-grading. The Somerset County Conservation District can provide assistance in recommending materials and methodologies to control erosion.

7. Elimination of Trees, Brush, Roots, and Animal Burrows

Large roots can impair the stability of dams, embankments and side slopes and animal burrows. Burrows can present a safety hazard for maintenance personnel. Trees and brush with extensive woody root systems should be completely removed from dams and embankments to prevent their destabilization and the creation of seepage routes. Roots should also be completely removed to prevent their decomposition within the dam or embankment. Root voids and burrows should be plugged by filling with material similar to the existing material, and capped just below grade with stone, concrete, or other material. If plugging of the burrows does not discourage the animals from returning, further measures should be taken to either remove the animal population or to make critical areas of the facility unattractive to them.

8. Snow and Ice Removal

Accumulations of snow and ice can threaten the functioning of a SWMF, particularly at inlets, outlets, and emergency spillways. Providing the equipment, materials, and personnel to monitor and remove snow and ice from these critical areas is necessary to assure the continued functioning of the facility during the winter months.

C. AESTHETIC MAINTENANCE PROCEDURES

1. Grass Trimming

Trimming of the grass edges around structures will provide for a neat and attractive appearance of the facility. At a minimum, once per month (if needed) mow the side slopes and berm area of the basin.

2. Control of Weeds

Although a regular grass maintenance program will keep weed intrusion to a minimum, some weeds will appear. Periodic weeding, either chemically or mechanically, will not only help to maintain a healthy turf, but will also keep grassed areas attractive.

3. Details

Careful, meticulous and frequent attention to the performance of maintenance items such as painting, tree pruning, leaf collection, debris removal, and grass cutting will result in a SWMF that remains both functional and attractive.

D. CHECKLISTS AND LOGS

Included in this report are Tables and Sample Checklists and Logs regarding various aspects of SWMF maintenance and inspection.

III. MAINTENANCE EQUIPMENT AND MATERIALS

A. GRASS MAINTENANCE EQUIPMENT

1. Tractor-Mounted Mowers
2. Riding Mowers
3. Hand Mowers
4. Gas Powered Trimmers
5. Gas Powered Edgers
6. Seed Spreaders
7. Fertilizer Spreaders
8. De-Thatching Equipment
9. Pesticide and Herbicide Application Equipment
10. Grass Clipping and Leaf Collection Equipment

B. VEGETATIVE COVER MAINTENANCE EQUIPMENT

1. Saws
2. Pruning Shears
3. Hedge Trimmers
4. Wood Chippers

C. TRANSPORTATION EQUIPMENT

1. Trucks for Transportation of Materials
2. Trucks for Transportation of Equipment
3. Vehicles for Transportation of Personnel

D. DEBRIS, TRASH AND SEDIMENT REMOVAL EQUIPMENT

1. Loader
2. Backhoe
3. Grader

E. MISCELLANEOUS EQUIPMENT

1. Shovels
2. Rakes
3. Picks
4. Wheelbarrows
5. Fence Repair Tools
6. Painting Equipment
7. Gloves
8. Standard Mechanics Tools
9. Tools for Maintenance of Equipment
10. Office Space
11. Office Equipment
12. Telephones
13. Safety Equipment
14. Tools for Concrete Work (Mixers, Form Materials, etc.)
15. Welding Equipment (for Repair of Trash Racks, etc.)

F. MATERIALS

1. Topsoil
2. Fill
3. Seed
4. Soil Amenities (Fertilizer, Lime, etc.)

5. Chemicals (Pesticides, Herbicides, etc.)
6. Mulch
7. Spare Parts for Equipment
8. Oil and Grease for Equipment and SWMF Components
9. Concrete

III. SWMF MAINTENANCE EQUIPMENT AND MATERIAL COSTS

This estimate is taken from NJDEP Stormwater Management Facilities Manual Table 6-1:

GRASS MAINTENANCE EQUIPMENT

	Purchase (dollars)	Rent (per day) (dollars)
Hand Mower	300 - 500	25 - 40
Riding Mower	3,000 - 5,000	75 - 100
Tractor Mower	15,000 - 20,000	100 - 300
Trimmer / Edger	200 - 500	25 - 35
Spreader	100 - 200	20 - 30
Chemical Sprayer	200 - 500	25 - 40

VEGETATIVE COVER MAINTENANCE EQUIPMENT

	Purchase (dollars)	Rent (per day) (dollars)
Hand Saw	15	5
Chain Saw	300 - 500	15 - 35
Pruning Shears	25	5
Shrub Trimmer	200	25 - 35
Brush Chipper	1,000 - 5,000	50 - 150

TRANSPORTATION EQUIPMENT

	Purchase (dollars)	Lease (per month) (dollars)	Rent (per day) (dollars)
Van	10,000 - 15,000	400	50 - 70
Pickup Truck	10,000 - 15,000	400	50 - 70
Dump Truck	30,000 - 50,000	1,200	75 - 150
Light Duty Trailer	3,000 - 5,000	150	30 - 50
Heavy Duty Trailer	10,000 - 20,000	500	100 - 200

DEBRIS, TRASH AND SEDIMENT REMOVAL EQUIPMENT

	Purchase (dollars)	Lease (per month) (dollars)	Rent (per day) (dollars)
Front End Loader	50,000 - 100,000	1,500 - 2,000	200 - 400
Backhoe	30,000 - 50,000	1,200	150 - 300
Excavator	100,000+	2,000	400 - 1,000
Grader	100,000+	2,000	400 - 1,000

MISCELLANEOUS EQUIPMENT

	Purchase (dollars)	Rent (per day) (dollars)
Shovel	15	5
Leaf Rake	15	5
Soil Rake	15	5
Pick	15	5
Wheelbarrow	100 - 200	10
Gloves	5	N / A
Portable Compressor	500 - 1,000	50 - 100
Portable Generator	500 - 1,000	50 - 100
Concrete Mixer	500 - 1,000	25 - 50
Welding Equipment	500 - 1,500	35 - 70

MATERIALS

	Purchase (dollars)
Topsoil	35 / cubic yard
Fill Soil	15 / cubic yard
Grass Seed	5 / pound
Soil Amenities (Fertilizer, Lime, etc)	0.05 / sq ft
Chemicals (Pesticides, Herbicides, etc)	10 / gallon
Mulch	25 / cubic yard
Machine / Motor Lubricants	5 / gallon
Dry Mortar Mix	4 / 50 pound bag
Concrete Delivered to Site	60 – 100 / cubic yard

Notes:

1. This estimate is an approximation of the probable construction cost in 2019 dollars. It is based upon previous construction experience and should be used as an approximate budget figure only. Marathon Engineering and Environmental Services, Inc. cannot and does not guarantee that proposals, bids, or actual costs will not vary from this opinion of probable cost.
2. Estimated equipment costs are based upon Industrial / Commercial grade equipment.

IV. COST OF SWMF MAINTENANCE TASKS

Taken from NJDEP Stormwater Management Facilities Manual Table 6-2

PREVENTATIVE MAINTENANCE TASKS

	Small Facility (Man-Hours)	Large Facility (Man-Hours)
Grass Cutting	1	1 – 2
Grass Maintenance	0.5	1
Trash & Debris Removal	0.5	1
Sediment Removal	4	8
Mobilization	1	1
Inspection & Reporting	1	2

CORRECTIVE MAINTENANCE TASKS

	Small Facility (Man-Hours)	Large Facility (Man-Hours)
Trash & Debris Removal	4	8
Structural Repairs	2-4	40
Dewatering	4	8
Mosquito Extermination	1	2-4
Erosion Repair	4	8
Snow & Ice Removal	1	2
Mobilization	2	2

AESTHETIC MAINTENANCE TASKS

	Small Facility (Man-Hours)	Large Facility (Man-Hours)
Grass Trimming	0.5	2
Weed Control	0.5	2
Landscape Maintenance	1 - 2	2 – 4

Notes:

1. This estimate is an approximation of the man-hours as provided in the NJDEP Stormwater Facility Maintenance Manual. It is based upon previous construction experience and should be used as an approximate budget figure only. Marathon Engineering and Environmental Services, Inc. cannot and does not guarantee that proposals, bids, or actual costs will not vary from this opinion of probable cost.
2. Cost estimates are presented in terms of man-hours. These values should be used in conjunction with applicable personnel rates to determine labor costs for a specific program or facility.

V. MAINTENANCE AND INSPECTION LOGS AND CHECKLISTS

SWM Maintenance List

Page 1 of 2

Maintenance Work Order and Checklist for Stormwater Maintenance Facilities

Name of Facility: _____

Location: _____ Date: _____

Crew:		Work Started:		Time:	
Equipment:		Work Completed:		Time:	
Weather:		Total Man-hours for Work::			

A. Preventative Maintenance

1. Grass Cutting

	Items Required √	Items Done √	Comments and Special Instructions
A. Swales and Grass Areas			
B. Embankments and Side Slopes			
C. Perimeter Areas			
D. Access Areas and Roads			
E. Other			

2. Grass Maintenance

	Items Required √	Items Done √	Comments and Special Instructions
A. Fertilizing			
B. Re-Seeding			
C. De-Thatching			
D. Pest Control			
E. Other			

3. Vegetative Cover

	Items Required √	Items Done √	Comments and Special Instructions
A. Fertilizing			
B. Pruning			
C. Pest Control			
D. Other			

4. Trash and Debris Removal

	Items Required √	Items Done √	Comments and Special Instructions
A. Swales and Grass Areas			
B. Embankments and Side Slopes			
C. Perimeter Areas			
D. Access Areas and Drives			
E. Inlets & Endwalls			
F. Spillway			
G. Other			

5. Sediment Removal

	Items Required √	Items Done √	Comments and Special Instructions
A. Swales and Grass Areas			
B. Inlets & Endwalls			
C. Spillway			
D. Other			

6. Elimination of Potential Mosquito Breeding HabitatsItems
Required
√Items
Done
√

Comments and Special Instructions

A.			
B.			
C.			
D.			

7. Other Preventative MaintenanceItems
Required
√Items
Done
√

Comments and Special Instructions

A.			
B.			
C.			
D.			

B. Corrective MaintenanceItems
Required
√Items
Done
√

Work Item

Location, Comments, and Special Instructions

A. Removal of Debris & Sediment			
B. Embankment & slope Repair			
C. Dewatering			
D. Control of Mosquitoes			
E. Erosion Repair			
F. Tree, Brush & Animal Burrow Removal			
G. Snow & Ice Removal			
H. Other			

C. Aesthetic MaintenanceItems
Required
√Items
Done
√

Work Item

Comments and Special Instructions

A. Grass Trimming			
B. Weeding			
C. Other			

Remarks: (Refer to Item No, If Applicable)

Work Order Prepared

By: _____

Work Completed By: _____

Maintenance Log Stormwater Maintenance Facilities

Name of Facility: _____

Location: _____ Date: _____

A. Preventative Maintenance

Date:

--	--	--	--	--	--	--	--	--	--

 Work Item (√) Completed

1. Grass Cutting

A. Swales and Grass Areas										
B. Embankments and Side Slopes										
C. Perimeter Areas										
D. Access Areas and Roads										
E. Other										

2. Grass Maintenance

A. Fertilizing										
B. Re-Seeding										
C. De-Thatching										
D. Pest Control										
E. Other										

3. Vegetative Cover

A. Fertilizing										
B. Pruning										
C. Pest Control										
D. Other										

4. Trash and Debris Removal

A. Swales and Grass Areas										
B. Embankments and Side Slopes										
C. Perimeter Areas										
D. Access Areas and Roads										
E. Inlets and Endwalls										
F. Spillway										
G. Other										

5. Sediment Removal

A. Swales and Grass Areas										
B. Inlets and Endwalls										
C. Spillway										
D. Other										

Date:										
Work Item	(√) Completed									

6. Elimination of Potential Mosquito Breeding Habits

A.										
B.										
C.										
D.										

7. Other Preventative Maintenance

A.										
B.										
C.										
D.										

B. Corrective Maintenance

Date:										
Work Item	(√) Completed									

A. Removal of Debris & Sediment										
B. Embankment & Slope Repair										
C. Dewatering										
D. Control of Mosquitoes										
E. Erosion Repair										
F. Tree, Brush & Animal Burrow Removal										
G. Snow & Ice Removal										
H. Other										

C. Aesthetic Maintenance

Date:										
Work Item	(√) Completed									

A. Grass Trimming										
B. Weeding										
C. Other										

Remarks: (Refer to Item No, If Applicable)

Work Order Prepared

By: _____

Work Completed By: _____

Inspection Checklist for Stormwater Maintenance Facilities

Name of Facility: _____

Location: _____ Date: _____

Weather: _____

Facility Item	OK ¹	Routine ²	Urgent ³	Comments ⁴
1. Embankments and Side Slopes				
A. Vegetation				
B. Linings				
C. Erosion				
D. Settlement				
E. Sloughing				
F. Trash And Debris				
G. Seepage				
H. Aesthetics				
I. Other				
2. Swales				
A. Vegetation				
B. Linings				
C. Erosion				
D. Settlement				
E. Standing Water				
F. Trash and Debris				
G. Sediment				
H. Other				
3. Perimeter				
A. Vegetation				
B. Erosion				
C. Trash & Debris				
D. Aesthetics				
E. Other				
4. Miscellaneous				
A. Effectiveness of Exist. Maint. Program				
B. Potential Mosquito Habitats				
C. Mosquitoes				
D. Other				

1. The item checked is in good condition and the maintenance program is adequate.
2. The item checked requires attention but does not present an immediate threat to the facility function or other facility components.
3. The item checked requires immediate attention to keep the facility operational or to prevent damage to other facility components.
4. Provide explanation and details if columns 2 or 3 are checked.

Remarks: (Refer to Item No, If Applicable)

Inspector: _____

Maintenance Log Stormwater Maintenance Facilities

Name of Facility: _____

Location: _____ Date: _____

Date:

--	--	--	--	--	--	--	--	--	--

Facility Item

Indicate Condition (i.e. 1, 2, or 3)

1. Embankments and Side Slopes

A. Vegetation										
B. Linings										
C. Erosion										
D. Settlement										
E. Sloughing										
F. Trash and Debris										
G. Seepage										
H. Aesthetics										
I. Other										

2. Swales

A. Vegetation										
B. Linings										
C. Erosion										
D. Settlement										
E. Standing Water										
F. Trash and Debris										
G. Sediment										
H. Other										

3. Perimeter

A. Vegetation										
B. Erosion										
C. Trash & Debris										
D. Aesthetics										
E. Other										

4. Miscellaneous

A. Effectiveness of Exist. Maintenance Program										
B. Potential Mosquito Habitats										
C. Mosquitoes										
D. Other										

1 The item checked is in good condition and the maintenance program is adequate.

2 The item checked requires attention, but does not present an immediate threat to the facility function or other facility components.

3 The item checked requires immediate attention to keep the facility operational or to prevent damage to other facility components.

Remarks: (Refer to Item No, If Applicable)

Prepared By: _____

Stormwater Management Report

For

***Fellowship Senior Living, Inc.
PROPOSED FITNESS CENTER EXPANSION & REC. AREAS***

***Block 9301, Lot 33
Basking Ridge / Township of Bernards
Somerset County, New Jersey***

**REVISED February 12, 2021
November 23, 2020**

Prepared for:
Fellowship Senior Living, Inc.
8000 Fellowship Road
Basking Ridge, NJ 07920

Prepared by:
**Marathon Engineering &
Environmental Services, Inc.**
3 Killdeer Court, Suite 302
Swedesboro, New Jersey 08085
856-241-9705



David J. Fleming, P.E.
Professional Engineer
New Jersey License No. 24GE03321600
Certificate of Authorization No. 24GA2799570



MARATHON

Engineering & Environmental Services

WWW.MARATHONCONSULTANTS.COM

ALL DOCUMENTS PREPARED BY MARATHON ENGINEERING & ENVIRONMENTAL SERVICES ARE INSTRUMENTS OF SERVICE WITH RESPECT TO THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY THE OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY MARATHON ENGINEERING & ENVIRONMENTAL SERVICES FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO MARATHON ENGINEERING & ENVIRONMENTAL SERVICES; AND OWNER SHALL INDEMNIFY AND HOLD HARMLESS MARATHON ENGINEERING & ENVIRONMENTAL SERVICES FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM.

TABLE OF CONTENTS

- 1.0 Project Summary
- 2.0 Existing Conditions HydroCAD Summary
- 3.0 Developed Conditions HydroCAD Summary
- 4.0 Water Quality

Appendices

- A. Existing Conditions HydroCAD Analysis
- B. Proposed Conditions HydroCAD Analysis
- C. NRCS Soil Report

1.0 Project Summary

The project is located adjacent to the intersection of Liberty Corner Road and Allen Road, on Fellowship Road in the township of Bernards (Basking Ridge) Somerset County, New Jersey. The project development tract on the Bernards Township Tax Maps is known as Block 9301, Lot 33 containing 72.569 acres.

The project is proposing several areas of expansion, of which two (2) will require stormwater attenuation: a Fitness Center Addition of approximately 7,270SF and the addition of several recreation courts to include a Pickleball Court, Bocce, and Shuffleboard area. The stormwater management has been designed to handle the increased runoff from these impervious surfaces, through the use of a surface infiltration basin at the recreation court areas, and a subsurface chamber infiltration system at the Fitness Center Addition. The developable portions of Lot 33 consist of primarily Hydrologic Soil Group C.

Due to the extremely minimal nature of the proposed development, the impact is expected to be negligible and the proposed stormwater BMPs proposed with this report are appropriate to reduce both the flow and quantity of runoff from the development areas. This design is compliant with the the Stormwater Management BMP.

2.0 Existing Conditions HydroCAD Summary Analysis

Two separate areas have been analyzed in this report, the Fitness Center Area and the Recreation/Court Area.

Table 1 – Fitness Center Area – Peak Flow (Existing Condition)

Storm Event (years)	Peak Existing Discharge/ (Allowable Discharge) (cfs)
2	0.21 cfs / (0.11 cfs)
10	0.49 cfs / (0.37 cfs)
100	1.11 cfs / (0.89 cfs)
NJDEP WQ	0.01 cfs / (N/A)

Table 2 – Recreation/Court Area – Peak Flow (Existing Condition)

Storm Event (years)	Peak Existing Elevation (ft) / Storage (cf)
2	0.08 cfs / (0.04 cfs)
10	0.18 cfs / (0.14 cfs)
100	0.41 cfs / (0.33 cfs)
NJDEP WQ	0.01 cfs / (N/A)

3.0 Developed Conditions HydroCAD Summary Analysis

All inflow hydrographs to the proposed stormwater management facilities were computed using United States Department of Agriculture (USDA) National Resource Conservation Service (NRCS) methodology as implemented within HydroCAD, version 10.00 desktop software package, by HydroCAD Software Solutions. The analysis included the use of the Delmarva Unit Hydrograph and New Jersey 24 Hour Rainfall Frequency Data, as published in Chapter 2 of the Engineering Field Handbook New Jersey Supplement, released August 2012. The NRCS Type III 24 hour distribution was used for all calculations. Curve number (CN) values were computed using the NRCS Technical Release No. 55 (TR-55), Urban Hydrology for Small Watersheds, June of 1986, within the HydroCAD software. Times of Concentration utilized for the project are based on estimated storm sewer flows or the minimum allowable time of 6 minutes as allowed by TR-55.

This report will demonstrate post development drainage areas for the site will be less than existing conditions as required. The minimum Tc utilized is 6 minutes or where higher times of concentration exist, the Tc's will be based on length/ slope and coverage condition based on TR-55 design methodology.

Two separate areas have been analyzed in this report, the Fitness Center Area and the Recreation/Court Area. *(For the Fitness Center – the peak storage is achieved with the proposed chambers, and designed infiltration at 1"/hr within the subsurface system.)*

Table 3 – Fitness Center Area – Peak Flow (Proposed Condition)

Storm Event (years)	Peak Existing Discharge/ (Allowable Discharge) (cfs)
2	0.06 cfs / (0.11 cfs)
10	0.06 cfs / (0.37 cfs)
100	0.07 cfs / (0.89 cfs)
NJDEP WQ	0.00 cfs / (N/A)

Table 4 – Recreation/Court Area – Peak Flow (Proposed Condition)

Storm Event (years)	Peak Existing Elevation (ft) / Storage (cf)
2	0.02 cfs / (0.04 cfs)
10	0.02 cfs / (0.14 cfs)
100	0.21 cfs / (0.33 cfs)
NJDEP WQ	0.00 cfs / (N/A)

4.0 Water Quality

In accordance with N.J.A.C. 7:8-5.5, the water quality regulations require the removal of 80% of the Total Suspended Solids (TSS) from the runoff from the increase in vehicle trafficked impervious surface generated by the water quality design storm (defined as 1.25 inches of rainfall over 2 hours).

Site TSS Removal Summary

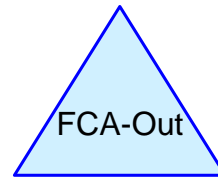
The runoff from the recreation courts is proposed to be attenuated in an infiltration basin which provides 80% TSS Removal. The runoff from the fitness center building expansion is considered “clean” and does not require TSS Removal.

Appendix A

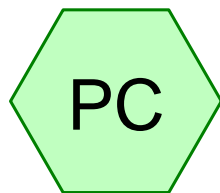
Existing Conditions HydroCAD Analysis



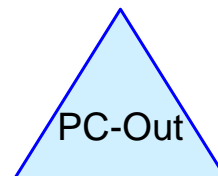
Fitness Center Area



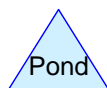
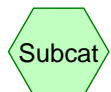
FCA Discharge



Pickleball Court Area



Pickleball Area
Discharge



2020-11_FVG00101_Ex

Prepared by Marathon Consultants

Printed 11/23/2020

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Page 2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
880	71	Bocce & Concrete Walk (PC)
7,270	71	Grass Area - Fitness Center Addition (FCA)
1,580	71	Grass Area - Fitness Center Walk (FCA)
1,905	71	Pickleball Court & Walk (PC)
480	71	Shuffleboard & Walk (PC)
12,115	71	TOTAL AREA

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

Printed 11/23/2020

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Page 3

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
0	HSG C	
0	HSG D	
12,115	Other	FCA, PC
12,115		TOTAL AREA

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

Printed 11/23/2020

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Page 4

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
0	0	0	0	880	880	Bocce & Concrete Walk
0	0	0	0	7,270	7,270	Grass Area - Fitness Center Addition
0	0	0	0	1,580	1,580	Grass Area - Fitness Center Walk
0	0	0	0	1,905	1,905	Pickleball Court & Walk
0	0	0	0	480	480	Shuffleboard & Walk
0	0	0	0	12,115	12,115	TOTAL AREA

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

Type III 24-hr 2yr Somerset Rainfall=3.34"

Printed 11/23/2020

Page 5

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points x 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment FCA: Fitness Center Area

Runoff Area=8,850 sf 0.00% Impervious Runoff Depth=0.96"

Tc=6.0 min CN=71 Runoff=0.21 cfs 711 cf

Subcatchment PC: Pickleball Court Area

Runoff Area=3,265 sf 0.00% Impervious Runoff Depth=0.96"

Tc=6.0 min CN=71 Runoff=0.08 cfs 262 cf

Pond FCA-Out: FCA Discharge

Inflow=0.21 cfs 711 cf

Primary=0.21 cfs 711 cf

Pond PC-Out: Pickleball Area Discharge

Inflow=0.08 cfs 262 cf

Primary=0.08 cfs 262 cf

Total Runoff Area = 12,115 sf Runoff Volume = 973 cf Average Runoff Depth = 0.96"
100.00% Pervious = 12,115 sf 0.00% Impervious = 0 sf

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

Type III 24-hr 2yr Somerset Rainfall=3.34"

Printed 11/23/2020

Page 6

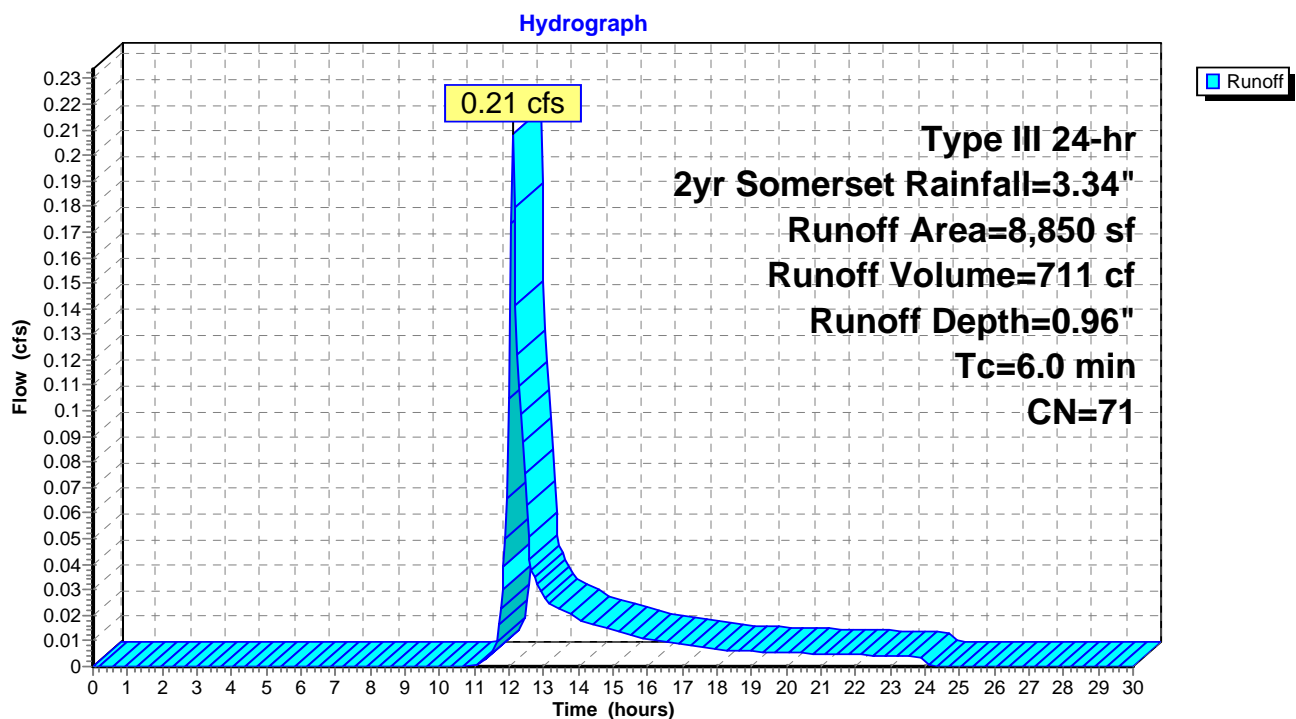
Summary for Subcatchment FCA: Fitness Center Area

Runoff = 0.21 cfs @ 12.10 hrs, Volume= 711 cf, Depth= 0.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Somerset Rainfall=3.34"

	Area (sf)	CN	Description
*	7,270	71	Grass Area - Fitness Center Addition
*	1,580	71	Grass Area - Fitness Center Walk
	8,850	71	Weighted Average
	8,850		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Roof Drains

Subcatchment FCA: Fitness Center Area

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

Type III 24-hr 2yr Somerset Rainfall=3.34"

Printed 11/23/2020

Page 7

Hydrograph for Subcatchment FCA: Fitness Center Area

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.34	0.96	0.00
0.50	0.02	0.00	0.00	26.50	3.34	0.96	0.00
1.00	0.03	0.00	0.00	27.00	3.34	0.96	0.00
1.50	0.05	0.00	0.00	27.50	3.34	0.96	0.00
2.00	0.07	0.00	0.00	28.00	3.34	0.96	0.00
2.50	0.08	0.00	0.00	28.50	3.34	0.96	0.00
3.00	0.10	0.00	0.00	29.00	3.34	0.96	0.00
3.50	0.12	0.00	0.00	29.50	3.34	0.96	0.00
4.00	0.14	0.00	0.00	30.00	3.34	0.96	0.00
4.50	0.17	0.00	0.00				
5.00	0.19	0.00	0.00				
5.50	0.21	0.00	0.00				
6.00	0.24	0.00	0.00				
6.50	0.27	0.00	0.00				
7.00	0.30	0.00	0.00				
7.50	0.34	0.00	0.00				
8.00	0.38	0.00	0.00				
8.50	0.43	0.00	0.00				
9.00	0.49	0.00	0.00				
9.50	0.55	0.00	0.00				
10.00	0.63	0.00	0.00				
10.50	0.72	0.00	0.00				
11.00	0.83	0.00	0.00				
11.50	1.00	0.01	0.01				
12.00	1.67	0.15	0.10				
12.50	2.34	0.42	0.06				
13.00	2.50	0.49	0.03				
13.50	2.62	0.55	0.02				
14.00	2.71	0.60	0.02				
14.50	2.79	0.64	0.02				
15.00	2.85	0.68	0.01				
15.50	2.91	0.71	0.01				
16.00	2.96	0.74	0.01				
16.50	3.00	0.76	0.01				
17.00	3.04	0.78	0.01				
17.50	3.07	0.80	0.01				
18.00	3.10	0.82	0.01				
18.50	3.13	0.83	0.01				
19.00	3.15	0.85	0.01				
19.50	3.17	0.86	0.01				
20.00	3.20	0.88	0.01				
20.50	3.22	0.89	0.01				
21.00	3.24	0.90	0.00				
21.50	3.26	0.91	0.00				
22.00	3.28	0.92	0.00				
22.50	3.29	0.93	0.00				
23.00	3.31	0.94	0.00				
23.50	3.33	0.95	0.00				
24.00	3.34	0.96	0.00				
24.50	3.34	0.96	0.00				
25.00	3.34	0.96	0.00				
25.50	3.34	0.96	0.00				

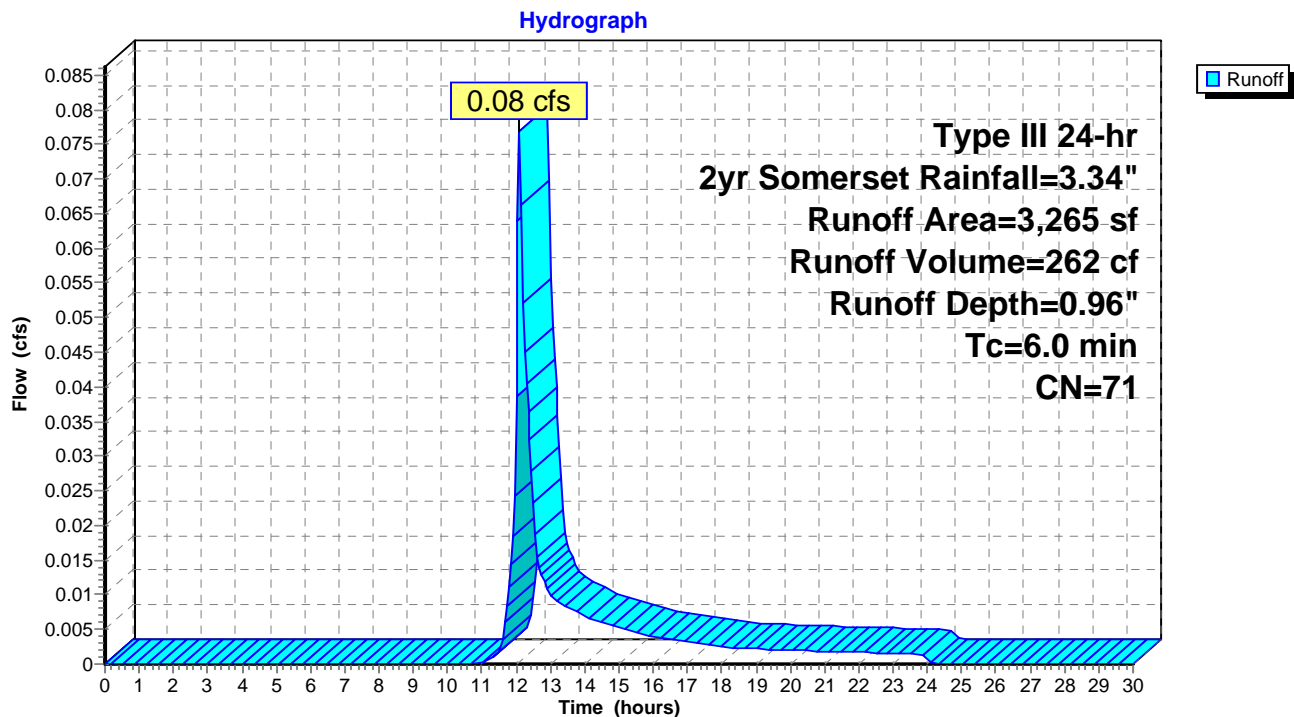
Summary for Subcatchment PC: Pickleball Court Area

Runoff = 0.08 cfs @ 12.10 hrs, Volume= 262 cf, Depth= 0.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Somerset Rainfall=3.34"

	Area (sf)	CN	Description
*	1,905	71	Pickleball Court & Walk
*	480	71	Shuffleboard & Walk
*	880	71	Bocce & Concrete Walk
	3,265	71	Weighted Average
	3,265		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Pickleball Court

Subcatchment PC: Pickleball Court Area

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

Type III 24-hr 2yr Somerset Rainfall=3.34"

Printed 11/23/2020

Page 9

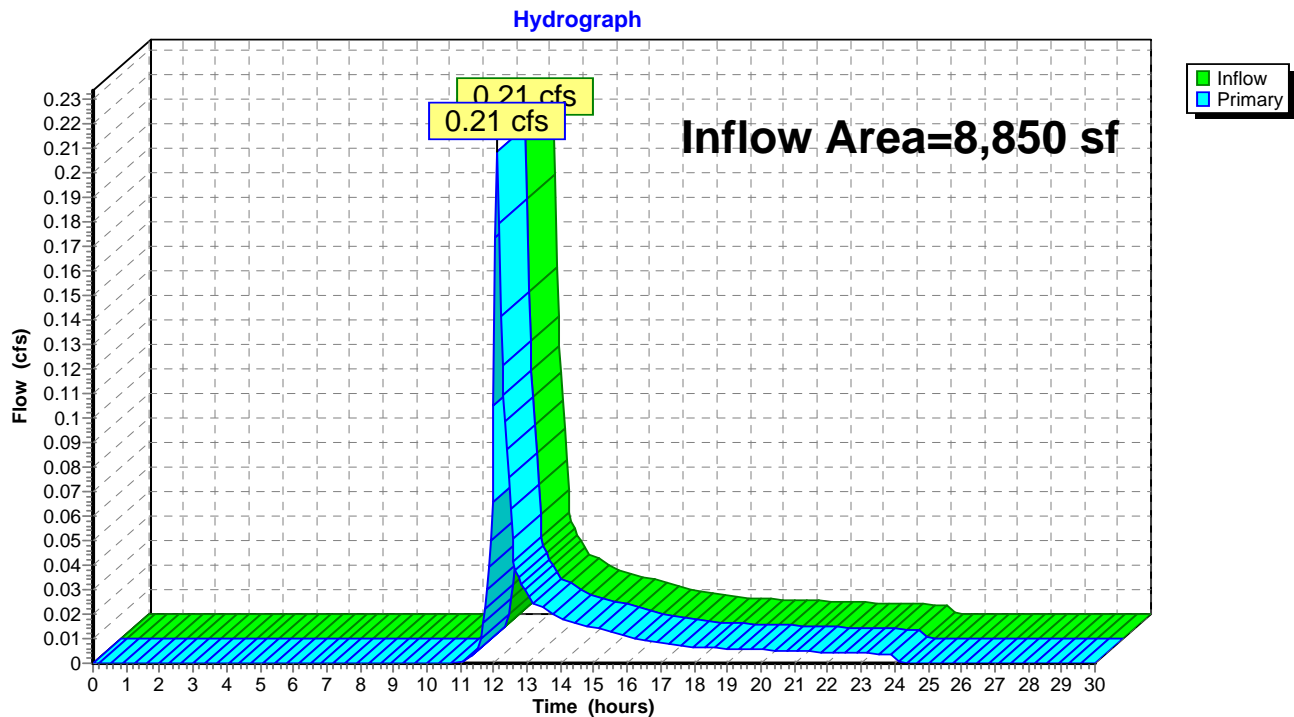
Hydrograph for Subcatchment PC: Pickleball Court Area

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.34	0.96	0.00
0.50	0.02	0.00	0.00	26.50	3.34	0.96	0.00
1.00	0.03	0.00	0.00	27.00	3.34	0.96	0.00
1.50	0.05	0.00	0.00	27.50	3.34	0.96	0.00
2.00	0.07	0.00	0.00	28.00	3.34	0.96	0.00
2.50	0.08	0.00	0.00	28.50	3.34	0.96	0.00
3.00	0.10	0.00	0.00	29.00	3.34	0.96	0.00
3.50	0.12	0.00	0.00	29.50	3.34	0.96	0.00
4.00	0.14	0.00	0.00	30.00	3.34	0.96	0.00
4.50	0.17	0.00	0.00				
5.00	0.19	0.00	0.00				
5.50	0.21	0.00	0.00				
6.00	0.24	0.00	0.00				
6.50	0.27	0.00	0.00				
7.00	0.30	0.00	0.00				
7.50	0.34	0.00	0.00				
8.00	0.38	0.00	0.00				
8.50	0.43	0.00	0.00				
9.00	0.49	0.00	0.00				
9.50	0.55	0.00	0.00				
10.00	0.63	0.00	0.00				
10.50	0.72	0.00	0.00				
11.00	0.83	0.00	0.00				
11.50	1.00	0.01	0.00				
12.00	1.67	0.15	0.04				
12.50	2.34	0.42	0.02				
13.00	2.50	0.49	0.01				
13.50	2.62	0.55	0.01				
14.00	2.71	0.60	0.01				
14.50	2.79	0.64	0.01				
15.00	2.85	0.68	0.01				
15.50	2.91	0.71	0.00				
16.00	2.96	0.74	0.00				
16.50	3.00	0.76	0.00				
17.00	3.04	0.78	0.00				
17.50	3.07	0.80	0.00				
18.00	3.10	0.82	0.00				
18.50	3.13	0.83	0.00				
19.00	3.15	0.85	0.00				
19.50	3.17	0.86	0.00				
20.00	3.20	0.88	0.00				
20.50	3.22	0.89	0.00				
21.00	3.24	0.90	0.00				
21.50	3.26	0.91	0.00				
22.00	3.28	0.92	0.00				
22.50	3.29	0.93	0.00				
23.00	3.31	0.94	0.00				
23.50	3.33	0.95	0.00				
24.00	3.34	0.96	0.00				
24.50	3.34	0.96	0.00				
25.00	3.34	0.96	0.00				
25.50	3.34	0.96	0.00				

Summary for Pond FCA-Out: FCA Discharge

Inflow Area = 8,850 sf, 0.00% Impervious, Inflow Depth = 0.96" for 2yr Somerset event
Inflow = 0.21 cfs @ 12.10 hrs, Volume= 711 cf
Primary = 0.21 cfs @ 12.10 hrs, Volume= 711 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2

Pond FCA-Out: FCA Discharge

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

Type III 24-hr 2yr Somerset Rainfall=3.34"

Printed 11/23/2020

Page 11

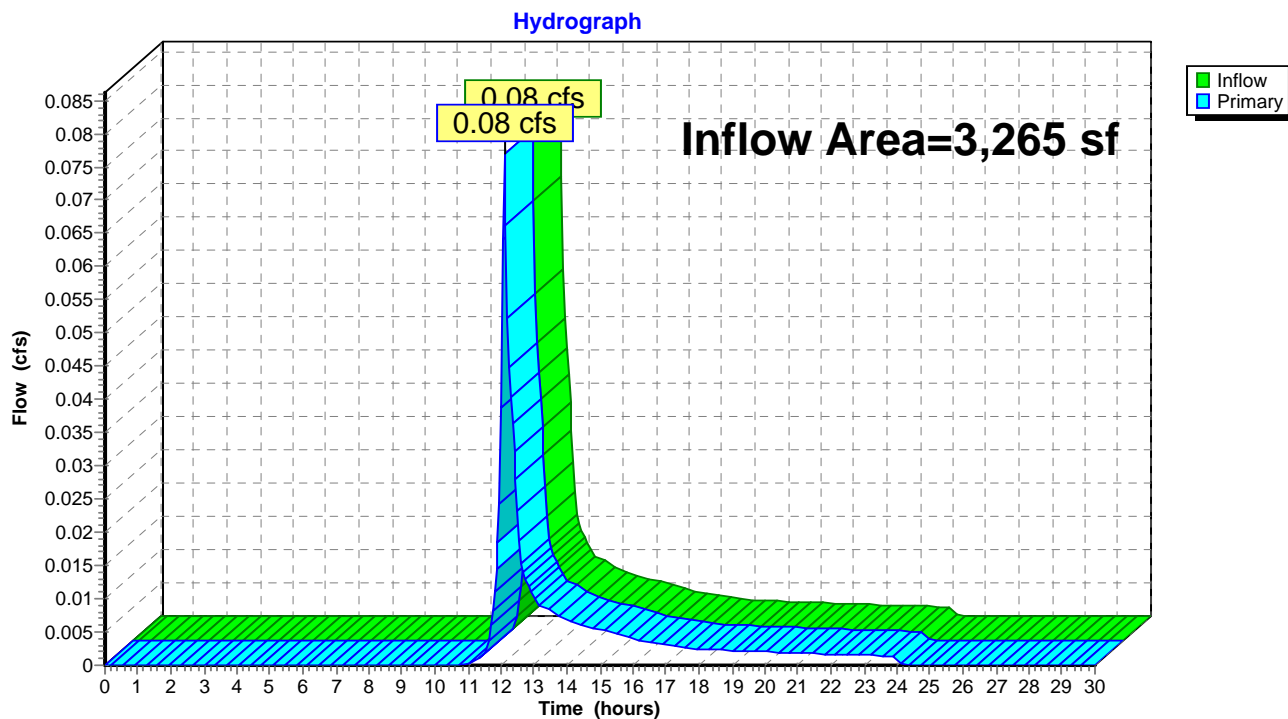
Hydrograph for Pond FCA-Out: FCA Discharge

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	26.00	0.00		0.00
0.50	0.00		0.00	26.50	0.00		0.00
1.00	0.00		0.00	27.00	0.00		0.00
1.50	0.00		0.00	27.50	0.00		0.00
2.00	0.00		0.00	28.00	0.00		0.00
2.50	0.00		0.00	28.50	0.00		0.00
3.00	0.00		0.00	29.00	0.00		0.00
3.50	0.00		0.00	29.50	0.00		0.00
4.00	0.00		0.00	30.00	0.00		0.00
4.50	0.00		0.00				
5.00	0.00		0.00				
5.50	0.00		0.00				
6.00	0.00		0.00				
6.50	0.00		0.00				
7.00	0.00		0.00				
7.50	0.00		0.00				
8.00	0.00		0.00				
8.50	0.00		0.00				
9.00	0.00		0.00				
9.50	0.00		0.00				
10.00	0.00		0.00				
10.50	0.00		0.00				
11.00	0.00		0.00				
11.50	0.01		0.01				
12.00	0.10		0.10				
12.50	0.06		0.06				
13.00	0.03		0.03				
13.50	0.02		0.02				
14.00	0.02		0.02				
14.50	0.02		0.02				
15.00	0.01		0.01				
15.50	0.01		0.01				
16.00	0.01		0.01				
16.50	0.01		0.01				
17.00	0.01		0.01				
17.50	0.01		0.01				
18.00	0.01		0.01				
18.50	0.01		0.01				
19.00	0.01		0.01				
19.50	0.01		0.01				
20.00	0.01		0.01				
20.50	0.01		0.01				
21.00	0.00		0.00				
21.50	0.00		0.00				
22.00	0.00		0.00				
22.50	0.00		0.00				
23.00	0.00		0.00				
23.50	0.00		0.00				
24.00	0.00		0.00				
24.50	0.00		0.00				
25.00	0.00		0.00				
25.50	0.00		0.00				

Summary for Pond PC-Out: Pickleball Area Discharge

Inflow Area = 3,265 sf, 0.00% Impervious, Inflow Depth = 0.96" for 2yr Somerset event
Inflow = 0.08 cfs @ 12.10 hrs, Volume= 262 cf
Primary = 0.08 cfs @ 12.10 hrs, Volume= 262 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2

Pond PC-Out: Pickleball Area Discharge

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

Type III 24-hr 2yr Somerset Rainfall=3.34"

Printed 11/23/2020

Page 13

Hydrograph for Pond PC-Out: Pickleball Area Discharge

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	26.00	0.00		0.00
0.50	0.00		0.00	26.50	0.00		0.00
1.00	0.00		0.00	27.00	0.00		0.00
1.50	0.00		0.00	27.50	0.00		0.00
2.00	0.00		0.00	28.00	0.00		0.00
2.50	0.00		0.00	28.50	0.00		0.00
3.00	0.00		0.00	29.00	0.00		0.00
3.50	0.00		0.00	29.50	0.00		0.00
4.00	0.00		0.00	30.00	0.00		0.00
4.50	0.00		0.00				
5.00	0.00		0.00				
5.50	0.00		0.00				
6.00	0.00		0.00				
6.50	0.00		0.00				
7.00	0.00		0.00				
7.50	0.00		0.00				
8.00	0.00		0.00				
8.50	0.00		0.00				
9.00	0.00		0.00				
9.50	0.00		0.00				
10.00	0.00		0.00				
10.50	0.00		0.00				
11.00	0.00		0.00				
11.50	0.00		0.00				
12.00	0.04		0.04				
12.50	0.02		0.02				
13.00	0.01		0.01				
13.50	0.01		0.01				
14.00	0.01		0.01				
14.50	0.01		0.01				
15.00	0.01		0.01				
15.50	0.00		0.00				
16.00	0.00		0.00				
16.50	0.00		0.00				
17.00	0.00		0.00				
17.50	0.00		0.00				
18.00	0.00		0.00				
18.50	0.00		0.00				
19.00	0.00		0.00				
19.50	0.00		0.00				
20.00	0.00		0.00				
20.50	0.00		0.00				
21.00	0.00		0.00				
21.50	0.00		0.00				
22.00	0.00		0.00				
22.50	0.00		0.00				
23.00	0.00		0.00				
23.50	0.00		0.00				
24.00	0.00		0.00				
24.50	0.00		0.00				
25.00	0.00		0.00				
25.50	0.00		0.00				

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

Type III 24-hr 10yr Somerset Rainfall=5.01"

Printed 11/23/2020

Page 14

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points x 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment FCA: Fitness Center Area

Runoff Area=8,850 sf 0.00% Impervious Runoff Depth=2.12"

Tc=6.0 min CN=71 Runoff=0.49 cfs 1,566 cf

Subcatchment PC: Pickleball Court Area

Runoff Area=3,265 sf 0.00% Impervious Runoff Depth=2.12"

Tc=6.0 min CN=71 Runoff=0.18 cfs 578 cf

Pond FCA-Out: FCA Discharge

Inflow=0.49 cfs 1,566 cf

Primary=0.49 cfs 1,566 cf

Pond PC-Out: Pickleball Area Discharge

Inflow=0.18 cfs 578 cf

Primary=0.18 cfs 578 cf

Total Runoff Area = 12,115 sf Runoff Volume = 2,144 cf Average Runoff Depth = 2.12"
100.00% Pervious = 12,115 sf 0.00% Impervious = 0 sf

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

Type III 24-hr 10yr Somerset Rainfall=5.01"

Printed 11/23/2020

Page 15

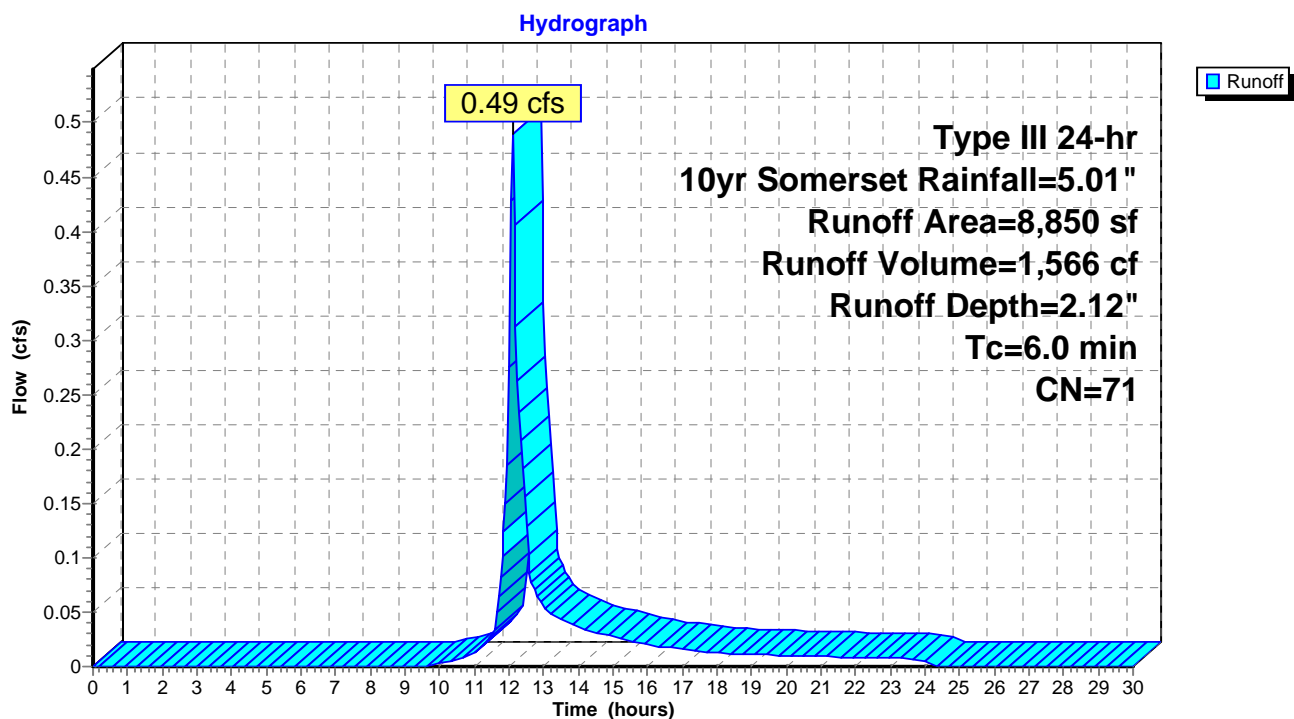
Summary for Subcatchment FCA: Fitness Center Area

Runoff = 0.49 cfs @ 12.10 hrs, Volume= 1,566 cf, Depth= 2.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Somerset Rainfall=5.01"

	Area (sf)	CN	Description
*	7,270	71	Grass Area - Fitness Center Addition
*	1,580	71	Grass Area - Fitness Center Walk
	8,850	71	Weighted Average
	8,850		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Roof Drains

Subcatchment FCA: Fitness Center Area

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

Type III 24-hr 10yr Somerset Rainfall=5.01"

Printed 11/23/2020

Page 16

Hydrograph for Subcatchment FCA: Fitness Center Area

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.01	2.12	0.00
0.50	0.03	0.00	0.00	26.50	5.01	2.12	0.00
1.00	0.05	0.00	0.00	27.00	5.01	2.12	0.00
1.50	0.08	0.00	0.00	27.50	5.01	2.12	0.00
2.00	0.10	0.00	0.00	28.00	5.01	2.12	0.00
2.50	0.13	0.00	0.00	28.50	5.01	2.12	0.00
3.00	0.15	0.00	0.00	29.00	5.01	2.12	0.00
3.50	0.18	0.00	0.00	29.50	5.01	2.12	0.00
4.00	0.22	0.00	0.00	30.00	5.01	2.12	0.00
4.50	0.25	0.00	0.00				
5.00	0.28	0.00	0.00				
5.50	0.32	0.00	0.00				
6.00	0.36	0.00	0.00				
6.50	0.40	0.00	0.00				
7.00	0.45	0.00	0.00				
7.50	0.51	0.00	0.00				
8.00	0.57	0.00	0.00				
8.50	0.64	0.00	0.00				
9.00	0.73	0.00	0.00				
9.50	0.83	0.00	0.00				
10.00	0.95	0.00	0.00				
10.50	1.08	0.02	0.01				
11.00	1.25	0.04	0.01				
11.50	1.49	0.10	0.03				
12.00	2.50	0.49	0.28				
12.50	3.52	1.07	0.13				
13.00	3.76	1.23	0.06				
13.50	3.93	1.34	0.04				
14.00	4.06	1.44	0.04				
14.50	4.18	1.52	0.03				
15.00	4.28	1.59	0.03				
15.50	4.37	1.65	0.02				
16.00	4.44	1.70	0.02				
16.50	4.50	1.75	0.02				
17.00	4.56	1.79	0.02				
17.50	4.61	1.82	0.01				
18.00	4.65	1.86	0.01				
18.50	4.69	1.88	0.01				
19.00	4.73	1.91	0.01				
19.50	4.76	1.94	0.01				
20.00	4.79	1.96	0.01				
20.50	4.83	1.99	0.01				
21.00	4.86	2.01	0.01				
21.50	4.89	2.03	0.01				
22.00	4.91	2.05	0.01				
22.50	4.94	2.07	0.01				
23.00	4.96	2.09	0.01				
23.50	4.99	2.11	0.01				
24.00	5.01	2.12	0.01				
24.50	5.01	2.12	0.00				
25.00	5.01	2.12	0.00				
25.50	5.01	2.12	0.00				

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

Type III 24-hr 10yr Somerset Rainfall=5.01"

Printed 11/23/2020

Page 17

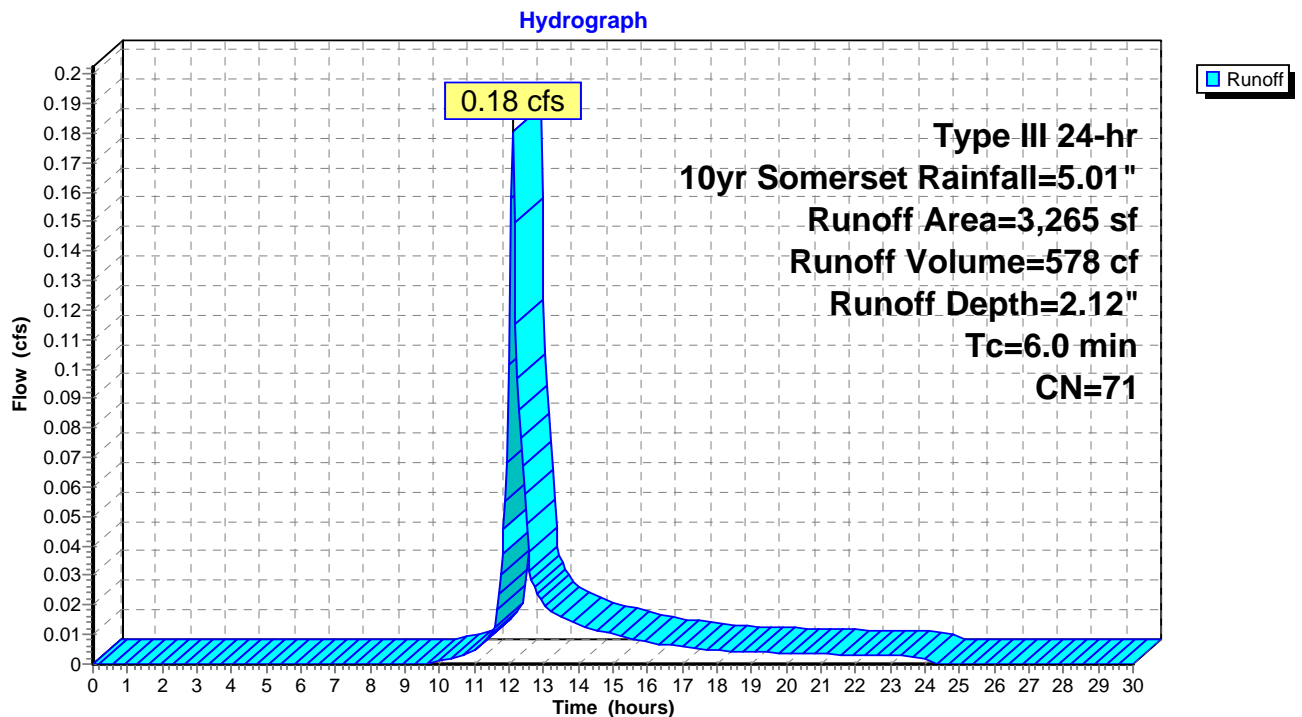
Summary for Subcatchment PC: Pickleball Court Area

Runoff = 0.18 cfs @ 12.10 hrs, Volume= 578 cf, Depth= 2.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Somerset Rainfall=5.01"

	Area (sf)	CN	Description
*	1,905	71	Pickleball Court & Walk
*	480	71	Shuffleboard & Walk
*	880	71	Bocce & Concrete Walk
	3,265	71	Weighted Average
	3,265		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Pickleball Court

Subcatchment PC: Pickleball Court Area

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

Type III 24-hr 10yr Somerset Rainfall=5.01"

Printed 11/23/2020

Page 18

Hydrograph for Subcatchment PC: Pickleball Court Area

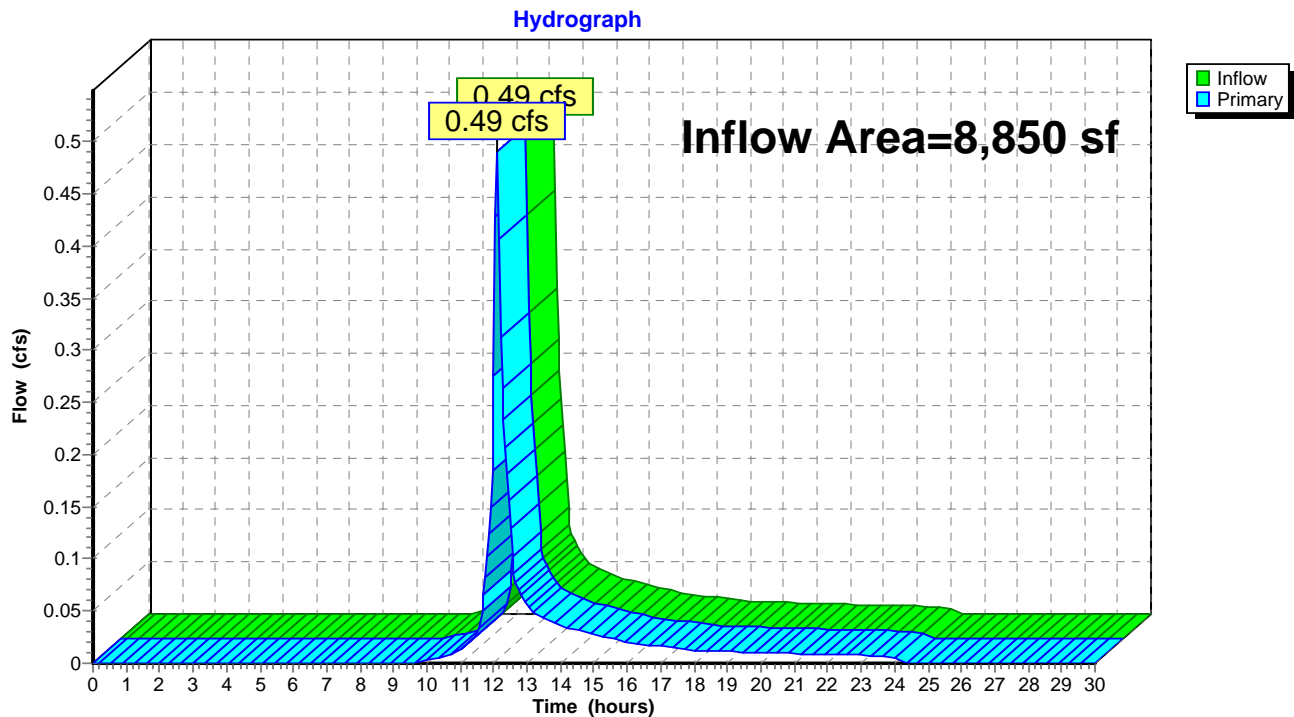
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.01	2.12	0.00
0.50	0.03	0.00	0.00	26.50	5.01	2.12	0.00
1.00	0.05	0.00	0.00	27.00	5.01	2.12	0.00
1.50	0.08	0.00	0.00	27.50	5.01	2.12	0.00
2.00	0.10	0.00	0.00	28.00	5.01	2.12	0.00
2.50	0.13	0.00	0.00	28.50	5.01	2.12	0.00
3.00	0.15	0.00	0.00	29.00	5.01	2.12	0.00
3.50	0.18	0.00	0.00	29.50	5.01	2.12	0.00
4.00	0.22	0.00	0.00	30.00	5.01	2.12	0.00
4.50	0.25	0.00	0.00				
5.00	0.28	0.00	0.00				
5.50	0.32	0.00	0.00				
6.00	0.36	0.00	0.00				
6.50	0.40	0.00	0.00				
7.00	0.45	0.00	0.00				
7.50	0.51	0.00	0.00				
8.00	0.57	0.00	0.00				
8.50	0.64	0.00	0.00				
9.00	0.73	0.00	0.00				
9.50	0.83	0.00	0.00				
10.00	0.95	0.00	0.00				
10.50	1.08	0.02	0.00				
11.00	1.25	0.04	0.00				
11.50	1.49	0.10	0.01				
12.00	2.50	0.49	0.10				
12.50	3.52	1.07	0.05				
13.00	3.76	1.23	0.02				
13.50	3.93	1.34	0.02				
14.00	4.06	1.44	0.01				
14.50	4.18	1.52	0.01				
15.00	4.28	1.59	0.01				
15.50	4.37	1.65	0.01				
16.00	4.44	1.70	0.01				
16.50	4.50	1.75	0.01				
17.00	4.56	1.79	0.01				
17.50	4.61	1.82	0.01				
18.00	4.65	1.86	0.00				
18.50	4.69	1.88	0.00				
19.00	4.73	1.91	0.00				
19.50	4.76	1.94	0.00				
20.00	4.79	1.96	0.00				
20.50	4.83	1.99	0.00				
21.00	4.86	2.01	0.00				
21.50	4.89	2.03	0.00				
22.00	4.91	2.05	0.00				
22.50	4.94	2.07	0.00				
23.00	4.96	2.09	0.00				
23.50	4.99	2.11	0.00				
24.00	5.01	2.12	0.00				
24.50	5.01	2.12	0.00				
25.00	5.01	2.12	0.00				
25.50	5.01	2.12	0.00				

Summary for Pond FCA-Out: FCA Discharge

Inflow Area = 8,850 sf, 0.00% Impervious, Inflow Depth = 2.12" for 10yr Somerset event
 Inflow = 0.49 cfs @ 12.10 hrs, Volume= 1,566 cf
 Primary = 0.49 cfs @ 12.10 hrs, Volume= 1,566 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2

Pond FCA-Out: FCA Discharge



2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

Type III 24-hr 10yr Somerset Rainfall=5.01"

Printed 11/23/2020

Page 20

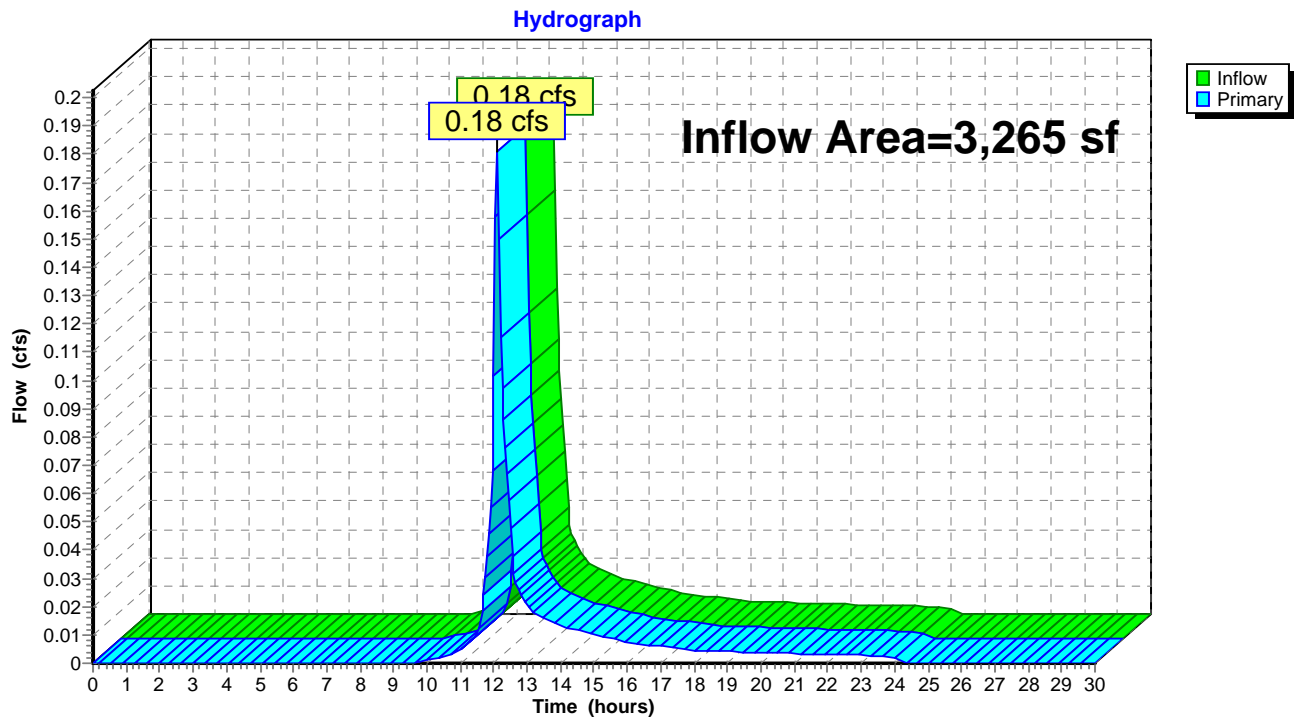
Hydrograph for Pond FCA-Out: FCA Discharge

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	26.00	0.00		0.00
0.50	0.00		0.00	26.50	0.00		0.00
1.00	0.00		0.00	27.00	0.00		0.00
1.50	0.00		0.00	27.50	0.00		0.00
2.00	0.00		0.00	28.00	0.00		0.00
2.50	0.00		0.00	28.50	0.00		0.00
3.00	0.00		0.00	29.00	0.00		0.00
3.50	0.00		0.00	29.50	0.00		0.00
4.00	0.00		0.00	30.00	0.00		0.00
4.50	0.00		0.00				
5.00	0.00		0.00				
5.50	0.00		0.00				
6.00	0.00		0.00				
6.50	0.00		0.00				
7.00	0.00		0.00				
7.50	0.00		0.00				
8.00	0.00		0.00				
8.50	0.00		0.00				
9.00	0.00		0.00				
9.50	0.00		0.00				
10.00	0.00		0.00				
10.50	0.01		0.01				
11.00	0.01		0.01				
11.50	0.03		0.03				
12.00	0.28		0.28				
12.50	0.13		0.13				
13.00	0.06		0.06				
13.50	0.04		0.04				
14.00	0.04		0.04				
14.50	0.03		0.03				
15.00	0.03		0.03				
15.50	0.02		0.02				
16.00	0.02		0.02				
16.50	0.02		0.02				
17.00	0.02		0.02				
17.50	0.01		0.01				
18.00	0.01		0.01				
18.50	0.01		0.01				
19.00	0.01		0.01				
19.50	0.01		0.01				
20.00	0.01		0.01				
20.50	0.01		0.01				
21.00	0.01		0.01				
21.50	0.01		0.01				
22.00	0.01		0.01				
22.50	0.01		0.01				
23.00	0.01		0.01				
23.50	0.01		0.01				
24.00	0.01		0.01				
24.50	0.00		0.00				
25.00	0.00		0.00				
25.50	0.00		0.00				

Summary for Pond PC-Out: Pickleball Area Discharge

Inflow Area = 3,265 sf, 0.00% Impervious, Inflow Depth = 2.12" for 10yr Somerset event
Inflow = 0.18 cfs @ 12.10 hrs, Volume= 578 cf
Primary = 0.18 cfs @ 12.10 hrs, Volume= 578 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2

Pond PC-Out: Pickleball Area Discharge

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

Type III 24-hr 10yr Somerset Rainfall=5.01"

Printed 11/23/2020

Page 22

Hydrograph for Pond PC-Out: Pickleball Area Discharge

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	26.00	0.00		0.00
0.50	0.00		0.00	26.50	0.00		0.00
1.00	0.00		0.00	27.00	0.00		0.00
1.50	0.00		0.00	27.50	0.00		0.00
2.00	0.00		0.00	28.00	0.00		0.00
2.50	0.00		0.00	28.50	0.00		0.00
3.00	0.00		0.00	29.00	0.00		0.00
3.50	0.00		0.00	29.50	0.00		0.00
4.00	0.00		0.00	30.00	0.00		0.00
4.50	0.00		0.00				
5.00	0.00		0.00				
5.50	0.00		0.00				
6.00	0.00		0.00				
6.50	0.00		0.00				
7.00	0.00		0.00				
7.50	0.00		0.00				
8.00	0.00		0.00				
8.50	0.00		0.00				
9.00	0.00		0.00				
9.50	0.00		0.00				
10.00	0.00		0.00				
10.50	0.00		0.00				
11.00	0.00		0.00				
11.50	0.01		0.01				
12.00	0.10		0.10				
12.50	0.05		0.05				
13.00	0.02		0.02				
13.50	0.02		0.02				
14.00	0.01		0.01				
14.50	0.01		0.01				
15.00	0.01		0.01				
15.50	0.01		0.01				
16.00	0.01		0.01				
16.50	0.01		0.01				
17.00	0.01		0.01				
17.50	0.01		0.01				
18.00	0.00		0.00				
18.50	0.00		0.00				
19.00	0.00		0.00				
19.50	0.00		0.00				
20.00	0.00		0.00				
20.50	0.00		0.00				
21.00	0.00		0.00				
21.50	0.00		0.00				
22.00	0.00		0.00				
22.50	0.00		0.00				
23.00	0.00		0.00				
23.50	0.00		0.00				
24.00	0.00		0.00				
24.50	0.00		0.00				
25.00	0.00		0.00				
25.50	0.00		0.00				

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

Type III 24-hr 100yr Somerset Rainfall=8.21"

Printed 11/23/2020

Page 23

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points x 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment FCA: Fitness Center Area

Runoff Area=8,850 sf 0.00% Impervious Runoff Depth=4.76"

Tc=6.0 min CN=71 Runoff=1.11 cfs 3,512 cf

Subcatchment PC: Pickleball Court Area

Runoff Area=3,265 sf 0.00% Impervious Runoff Depth=4.76"

Tc=6.0 min CN=71 Runoff=0.41 cfs 1,296 cf

Pond FCA-Out: FCA Discharge

Inflow=1.11 cfs 3,512 cf

Primary=1.11 cfs 3,512 cf

Pond PC-Out: Pickleball Area Discharge

Inflow=0.41 cfs 1,296 cf

Primary=0.41 cfs 1,296 cf

Total Runoff Area = 12,115 sf Runoff Volume = 4,808 cf Average Runoff Depth = 4.76"
100.00% Pervious = 12,115 sf 0.00% Impervious = 0 sf

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

Type III 24-hr 100yr Somerset Rainfall=8.21"

Printed 11/23/2020

Page 24

Summary for Subcatchment FCA: Fitness Center Area

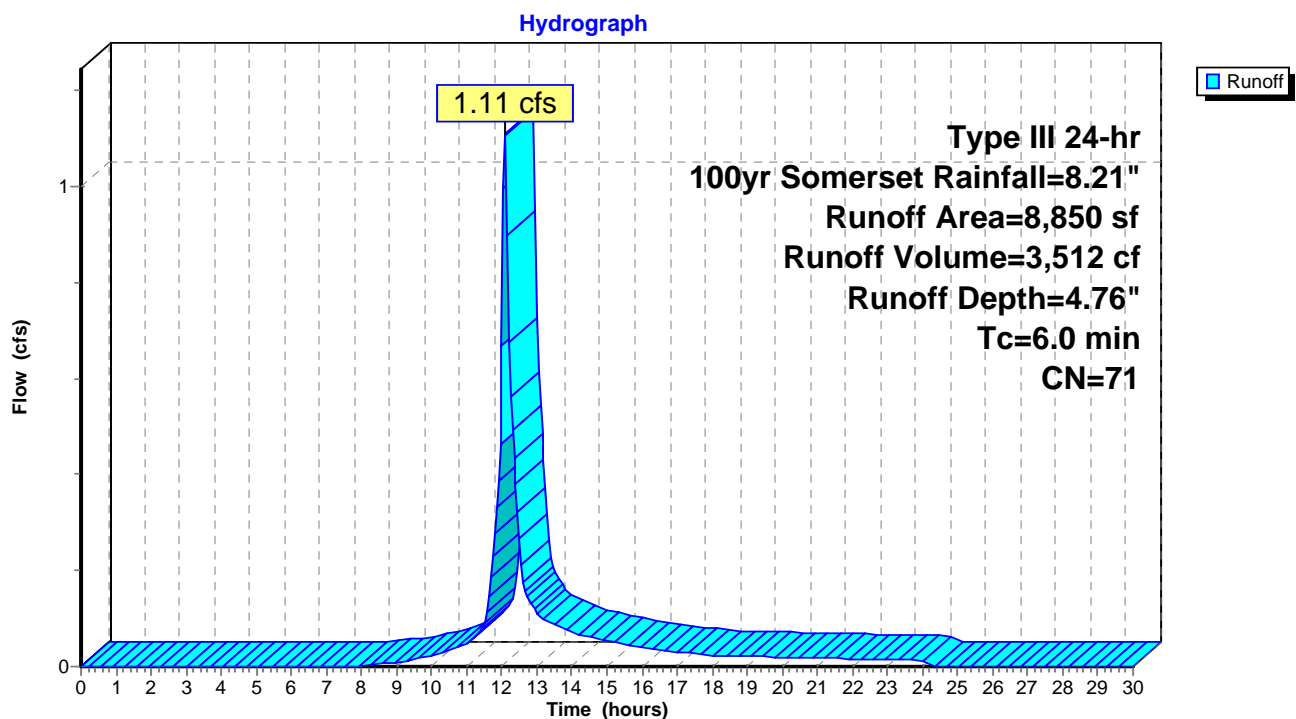
Runoff = 1.11 cfs @ 12.09 hrs, Volume= 3,512 cf, Depth= 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Somerset Rainfall=8.21"

	Area (sf)	CN	Description
*	7,270	71	Grass Area - Fitness Center Addition
*	1,580	71	Grass Area - Fitness Center Walk
	8,850	71	Weighted Average
	8,850		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Roof Drains

Subcatchment FCA: Fitness Center Area



2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

Type III 24-hr 100yr Somerset Rainfall=8.21"

Printed 11/23/2020

Page 25

Hydrograph for Subcatchment FCA: Fitness Center Area

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	8.21	4.76	0.00
0.50	0.04	0.00	0.00	26.50	8.21	4.76	0.00
1.00	0.08	0.00	0.00	27.00	8.21	4.76	0.00
1.50	0.12	0.00	0.00	27.50	8.21	4.76	0.00
2.00	0.16	0.00	0.00	28.00	8.21	4.76	0.00
2.50	0.21	0.00	0.00	28.50	8.21	4.76	0.00
3.00	0.25	0.00	0.00	29.00	8.21	4.76	0.00
3.50	0.30	0.00	0.00	29.50	8.21	4.76	0.00
4.00	0.35	0.00	0.00	30.00	8.21	4.76	0.00
4.50	0.41	0.00	0.00				
5.00	0.47	0.00	0.00				
5.50	0.53	0.00	0.00				
6.00	0.59	0.00	0.00				
6.50	0.66	0.00	0.00				
7.00	0.74	0.00	0.00				
7.50	0.83	0.00	0.00				
8.00	0.94	0.00	0.00				
8.50	1.05	0.01	0.01				
9.00	1.20	0.03	0.01				
9.50	1.36	0.06	0.01				
10.00	1.55	0.11	0.02				
10.50	1.78	0.18	0.03				
11.00	2.05	0.29	0.05				
11.50	2.45	0.46	0.09				
12.00	4.10	1.47	0.67				
12.50	5.76	2.71	0.27				
13.00	6.16	3.03	0.11				
13.50	6.43	3.25	0.09				
14.00	6.66	3.44	0.07				
14.50	6.85	3.60	0.06				
15.00	7.01	3.73	0.05				
15.50	7.16	3.85	0.05				
16.00	7.27	3.96	0.04				
16.50	7.38	4.04	0.03				
17.00	7.47	4.12	0.03				
17.50	7.55	4.19	0.03				
18.00	7.62	4.25	0.02				
18.50	7.68	4.31	0.02				
19.00	7.74	4.36	0.02				
19.50	7.80	4.41	0.02				
20.00	7.86	4.46	0.02				
20.50	7.91	4.50	0.02				
21.00	7.96	4.54	0.02				
21.50	8.01	4.59	0.02				
22.00	8.05	4.62	0.02				
22.50	8.09	4.66	0.02				
23.00	8.14	4.70	0.01				
23.50	8.17	4.73	0.01				
24.00	8.21	4.76	0.01				
24.50	8.21	4.76	0.00				
25.00	8.21	4.76	0.00				
25.50	8.21	4.76	0.00				

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

Type III 24-hr 100yr Somerset Rainfall=8.21"

Printed 11/23/2020

Page 26

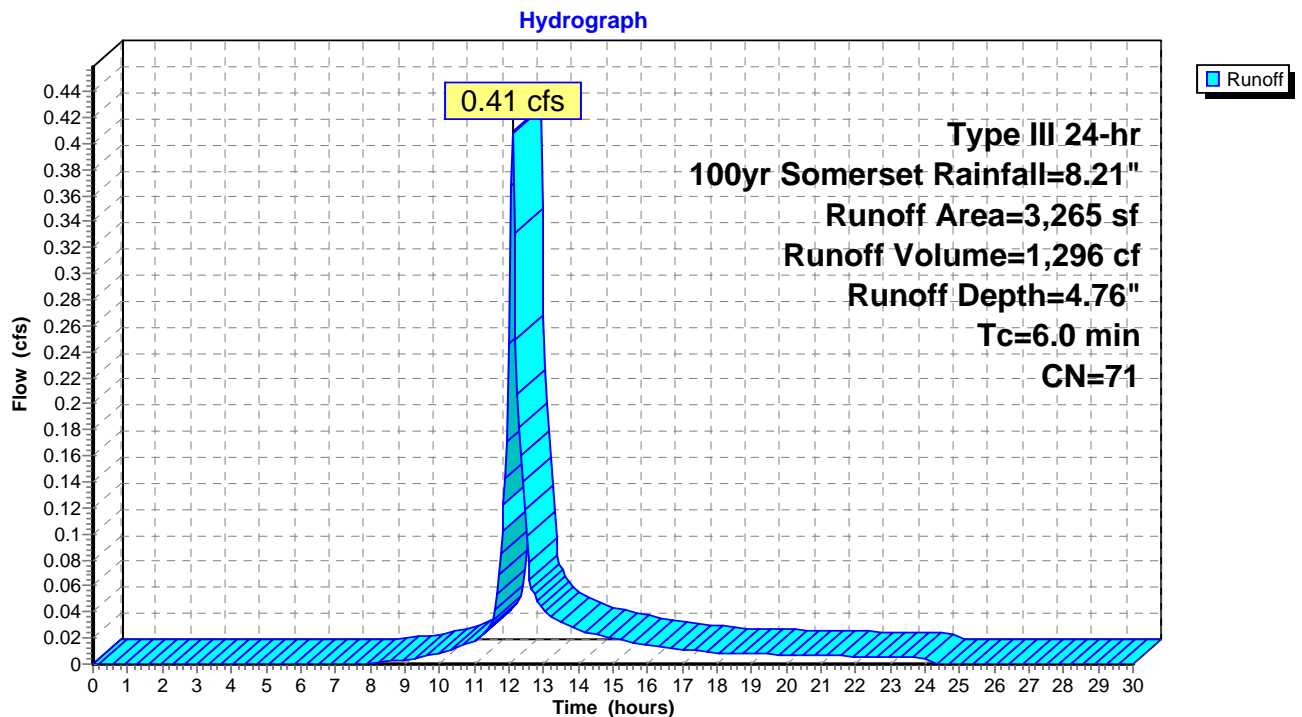
Summary for Subcatchment PC: Pickleball Court Area

Runoff = 0.41 cfs @ 12.09 hrs, Volume= 1,296 cf, Depth= 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Somerset Rainfall=8.21"

	Area (sf)	CN	Description
*	1,905	71	Pickleball Court & Walk
*	480	71	Shuffleboard & Walk
*	880	71	Bocce & Concrete Walk
	3,265	71	Weighted Average
	3,265		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Pickleball Court

Subcatchment PC: Pickleball Court Area

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

Type III 24-hr 100yr Somerset Rainfall=8.21"

Printed 11/23/2020

Page 27

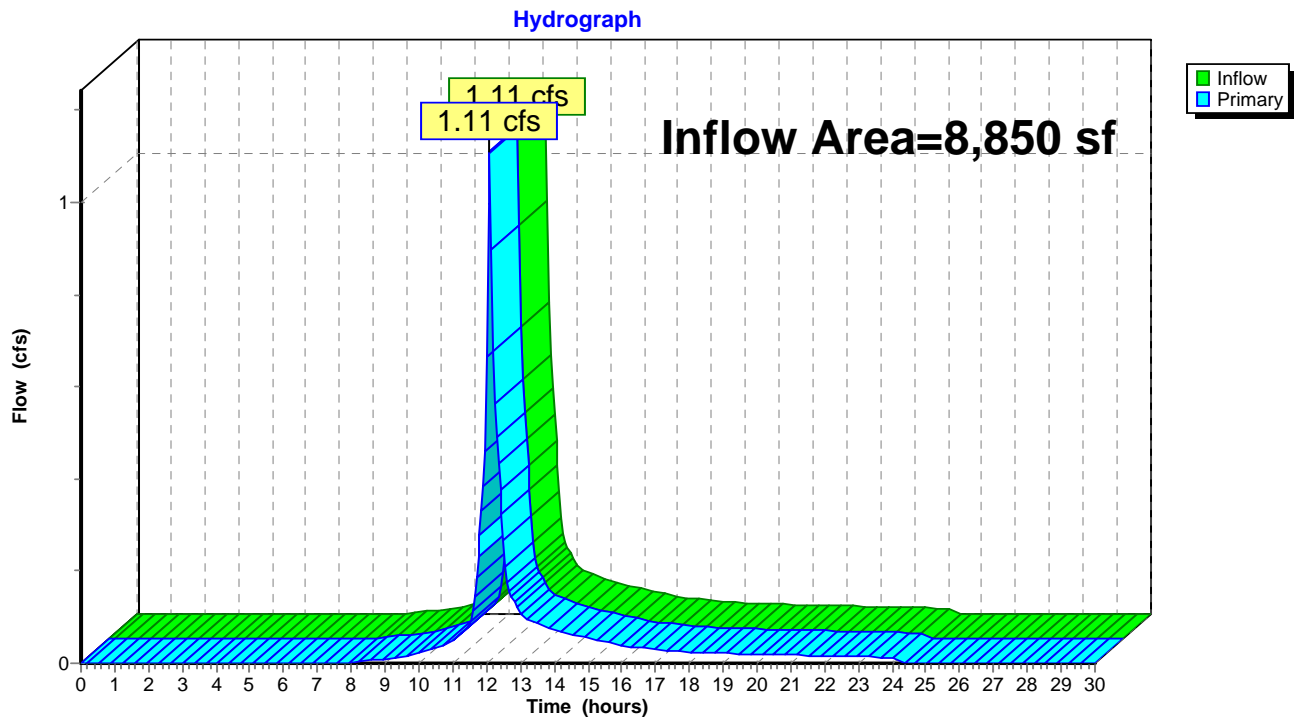
Hydrograph for Subcatchment PC: Pickleball Court Area

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	8.21	4.76	0.00
0.50	0.04	0.00	0.00	26.50	8.21	4.76	0.00
1.00	0.08	0.00	0.00	27.00	8.21	4.76	0.00
1.50	0.12	0.00	0.00	27.50	8.21	4.76	0.00
2.00	0.16	0.00	0.00	28.00	8.21	4.76	0.00
2.50	0.21	0.00	0.00	28.50	8.21	4.76	0.00
3.00	0.25	0.00	0.00	29.00	8.21	4.76	0.00
3.50	0.30	0.00	0.00	29.50	8.21	4.76	0.00
4.00	0.35	0.00	0.00	30.00	8.21	4.76	0.00
4.50	0.41	0.00	0.00				
5.00	0.47	0.00	0.00				
5.50	0.53	0.00	0.00				
6.00	0.59	0.00	0.00				
6.50	0.66	0.00	0.00				
7.00	0.74	0.00	0.00				
7.50	0.83	0.00	0.00				
8.00	0.94	0.00	0.00				
8.50	1.05	0.01	0.00				
9.00	1.20	0.03	0.00				
9.50	1.36	0.06	0.01				
10.00	1.55	0.11	0.01				
10.50	1.78	0.18	0.01				
11.00	2.05	0.29	0.02				
11.50	2.45	0.46	0.03				
12.00	4.10	1.47	0.25				
12.50	5.76	2.71	0.10				
13.00	6.16	3.03	0.04				
13.50	6.43	3.25	0.03				
14.00	6.66	3.44	0.03				
14.50	6.85	3.60	0.02				
15.00	7.01	3.73	0.02				
15.50	7.16	3.85	0.02				
16.00	7.27	3.96	0.01				
16.50	7.38	4.04	0.01				
17.00	7.47	4.12	0.01				
17.50	7.55	4.19	0.01				
18.00	7.62	4.25	0.01				
18.50	7.68	4.31	0.01				
19.00	7.74	4.36	0.01				
19.50	7.80	4.41	0.01				
20.00	7.86	4.46	0.01				
20.50	7.91	4.50	0.01				
21.00	7.96	4.54	0.01				
21.50	8.01	4.59	0.01				
22.00	8.05	4.62	0.01				
22.50	8.09	4.66	0.01				
23.00	8.14	4.70	0.01				
23.50	8.17	4.73	0.00				
24.00	8.21	4.76	0.00				
24.50	8.21	4.76	0.00				
25.00	8.21	4.76	0.00				
25.50	8.21	4.76	0.00				

Summary for Pond FCA-Out: FCA Discharge

Inflow Area = 8,850 sf, 0.00% Impervious, Inflow Depth = 4.76" for 100yr Somerset event
Inflow = 1.11 cfs @ 12.09 hrs, Volume= 3,512 cf
Primary = 1.11 cfs @ 12.09 hrs, Volume= 3,512 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2

Pond FCA-Out: FCA Discharge

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

Type III 24-hr 100yr Somerset Rainfall=8.21"

Printed 11/23/2020

Page 29

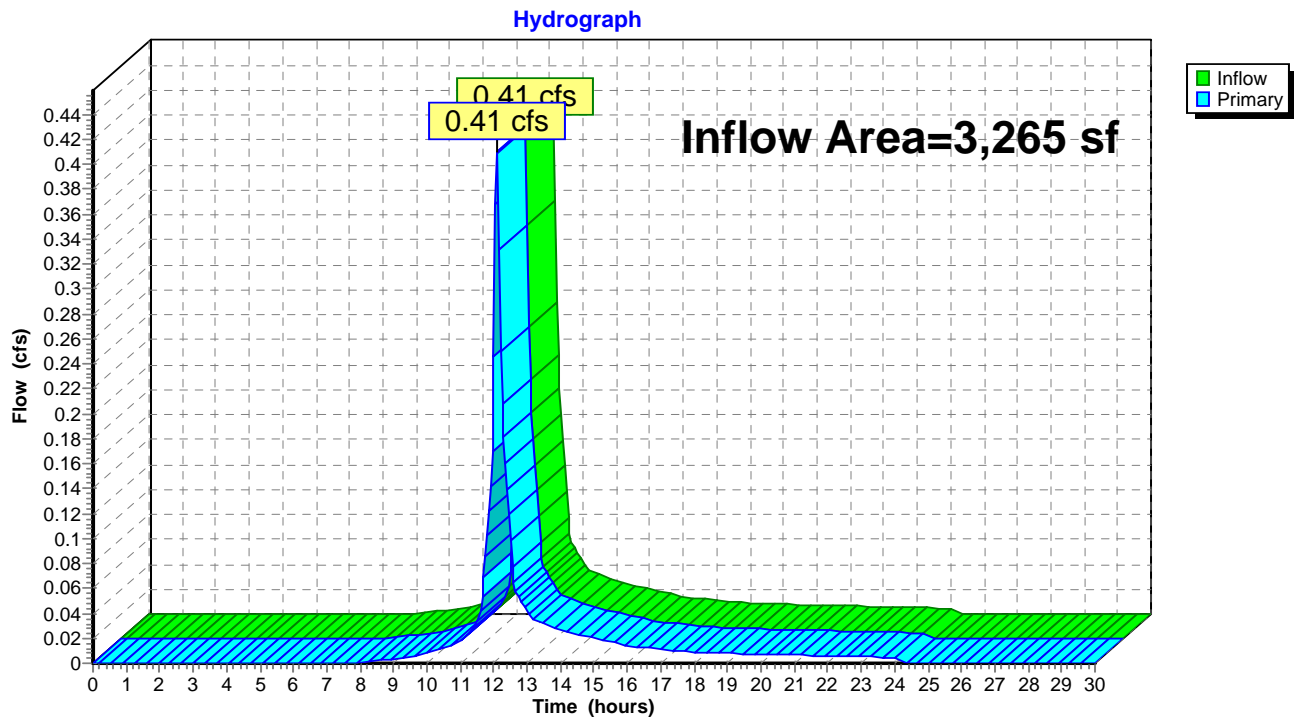
Hydrograph for Pond FCA-Out: FCA Discharge

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	26.00	0.00		0.00
0.50	0.00		0.00	26.50	0.00		0.00
1.00	0.00		0.00	27.00	0.00		0.00
1.50	0.00		0.00	27.50	0.00		0.00
2.00	0.00		0.00	28.00	0.00		0.00
2.50	0.00		0.00	28.50	0.00		0.00
3.00	0.00		0.00	29.00	0.00		0.00
3.50	0.00		0.00	29.50	0.00		0.00
4.00	0.00		0.00	30.00	0.00		0.00
4.50	0.00		0.00				
5.00	0.00		0.00				
5.50	0.00		0.00				
6.00	0.00		0.00				
6.50	0.00		0.00				
7.00	0.00		0.00				
7.50	0.00		0.00				
8.00	0.00		0.00				
8.50	0.01		0.01				
9.00	0.01		0.01				
9.50	0.01		0.01				
10.00	0.02		0.02				
10.50	0.03		0.03				
11.00	0.05		0.05				
11.50	0.09		0.09				
12.00	0.67		0.67				
12.50	0.27		0.27				
13.00	0.11		0.11				
13.50	0.09		0.09				
14.00	0.07		0.07				
14.50	0.06		0.06				
15.00	0.05		0.05				
15.50	0.05		0.05				
16.00	0.04		0.04				
16.50	0.03		0.03				
17.00	0.03		0.03				
17.50	0.03		0.03				
18.00	0.02		0.02				
18.50	0.02		0.02				
19.00	0.02		0.02				
19.50	0.02		0.02				
20.00	0.02		0.02				
20.50	0.02		0.02				
21.00	0.02		0.02				
21.50	0.02		0.02				
22.00	0.02		0.02				
22.50	0.02		0.02				
23.00	0.01		0.01				
23.50	0.01		0.01				
24.00	0.01		0.01				
24.50	0.00		0.00				
25.00	0.00		0.00				
25.50	0.00		0.00				

Summary for Pond PC-Out: Pickleball Area Discharge

Inflow Area = 3,265 sf, 0.00% Impervious, Inflow Depth = 4.76" for 100yr Somerset event
Inflow = 0.41 cfs @ 12.09 hrs, Volume= 1,296 cf
Primary = 0.41 cfs @ 12.09 hrs, Volume= 1,296 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2

Pond PC-Out: Pickleball Area Discharge

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

Type III 24-hr 100yr Somerset Rainfall=8.21"

Printed 11/23/2020

Page 31

Hydrograph for Pond PC-Out: Pickleball Area Discharge

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	26.00	0.00		0.00
0.50	0.00		0.00	26.50	0.00		0.00
1.00	0.00		0.00	27.00	0.00		0.00
1.50	0.00		0.00	27.50	0.00		0.00
2.00	0.00		0.00	28.00	0.00		0.00
2.50	0.00		0.00	28.50	0.00		0.00
3.00	0.00		0.00	29.00	0.00		0.00
3.50	0.00		0.00	29.50	0.00		0.00
4.00	0.00		0.00	30.00	0.00		0.00
4.50	0.00		0.00				
5.00	0.00		0.00				
5.50	0.00		0.00				
6.00	0.00		0.00				
6.50	0.00		0.00				
7.00	0.00		0.00				
7.50	0.00		0.00				
8.00	0.00		0.00				
8.50	0.00		0.00				
9.00	0.00		0.00				
9.50	0.01		0.01				
10.00	0.01		0.01				
10.50	0.01		0.01				
11.00	0.02		0.02				
11.50	0.03		0.03				
12.00	0.25		0.25				
12.50	0.10		0.10				
13.00	0.04		0.04				
13.50	0.03		0.03				
14.00	0.03		0.03				
14.50	0.02		0.02				
15.00	0.02		0.02				
15.50	0.02		0.02				
16.00	0.01		0.01				
16.50	0.01		0.01				
17.00	0.01		0.01				
17.50	0.01		0.01				
18.00	0.01		0.01				
18.50	0.01		0.01				
19.00	0.01		0.01				
19.50	0.01		0.01				
20.00	0.01		0.01				
20.50	0.01		0.01				
21.00	0.01		0.01				
21.50	0.01		0.01				
22.00	0.01		0.01				
22.50	0.01		0.01				
23.00	0.01		0.01				
23.50	0.00		0.00				
24.00	0.00		0.00				
24.50	0.00		0.00				
25.00	0.00		0.00				
25.50	0.00		0.00				

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

NJ DEP 2-hr NJDEP 2hr Rainfall=1.25"

Printed 11/23/2020

Page 32

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points x 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment FCA: Fitness Center Area

Runoff Area=8,850 sf 0.00% Impervious Runoff Depth=0.04"

Tc=6.0 min CN=71 Runoff=0.01 cfs 31 cf

Subcatchment PC: Pickleball Court Area

Runoff Area=3,265 sf 0.00% Impervious Runoff Depth=0.04"

Tc=6.0 min CN=71 Runoff=0.01 cfs 11 cf

Pond FCA-Out: FCA Discharge

Inflow=0.01 cfs 31 cf

Primary=0.01 cfs 31 cf

Pond PC-Out: Pickleball Area Discharge

Inflow=0.01 cfs 11 cf

Primary=0.01 cfs 11 cf

Total Runoff Area = 12,115 sf Runoff Volume = 42 cf Average Runoff Depth = 0.04"
100.00% Pervious = 12,115 sf 0.00% Impervious = 0 sf

Summary for Subcatchment FCA: Fitness Center Area

Runoff = 0.01 cfs @ 1.26 hrs, Volume= 31 cf, Depth= 0.04"

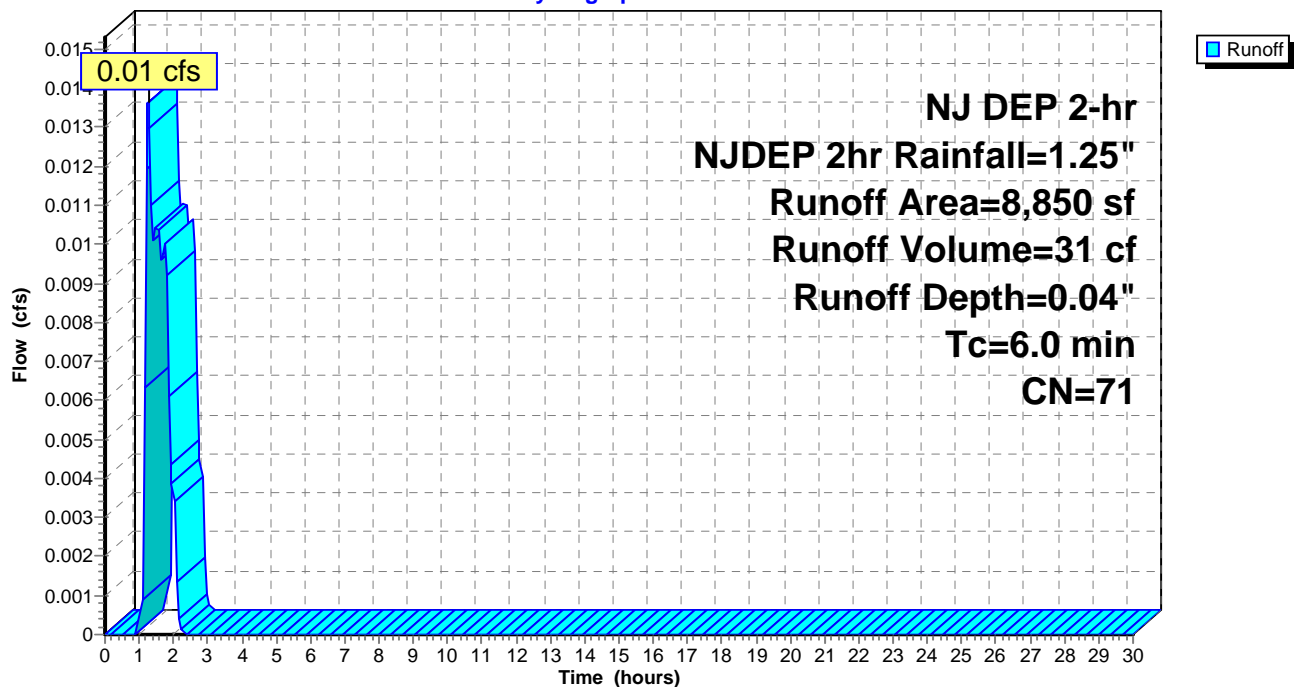
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 NJ DEP 2-hr NJDEP 2hr Rainfall=1.25"

	Area (sf)	CN	Description
*	7,270	71	Grass Area - Fitness Center Addition
*	1,580	71	Grass Area - Fitness Center Walk
	8,850	71	Weighted Average
	8,850		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Roof Drains

Subcatchment FCA: Fitness Center Area

Hydrograph



2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

NJ DEP 2-hr NJDEP 2hr Rainfall=1.25"

Printed 11/23/2020

Page 34

Hydrograph for Subcatchment FCA: Fitness Center Area

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	1.25	0.04	0.00
0.50	0.10	0.00	0.00	26.50	1.25	0.04	0.00
1.00	0.63	0.00	0.00	27.00	1.25	0.04	0.00
1.50	1.15	0.03	0.01	27.50	1.25	0.04	0.00
2.00	1.25	0.04	0.00	28.00	1.25	0.04	0.00
2.50	1.25	0.04	0.00	28.50	1.25	0.04	0.00
3.00	1.25	0.04	0.00	29.00	1.25	0.04	0.00
3.50	1.25	0.04	0.00	29.50	1.25	0.04	0.00
4.00	1.25	0.04	0.00	30.00	1.25	0.04	0.00
4.50	1.25	0.04	0.00				
5.00	1.25	0.04	0.00				
5.50	1.25	0.04	0.00				
6.00	1.25	0.04	0.00				
6.50	1.25	0.04	0.00				
7.00	1.25	0.04	0.00				
7.50	1.25	0.04	0.00				
8.00	1.25	0.04	0.00				
8.50	1.25	0.04	0.00				
9.00	1.25	0.04	0.00				
9.50	1.25	0.04	0.00				
10.00	1.25	0.04	0.00				
10.50	1.25	0.04	0.00				
11.00	1.25	0.04	0.00				
11.50	1.25	0.04	0.00				
12.00	1.25	0.04	0.00				
12.50	1.25	0.04	0.00				
13.00	1.25	0.04	0.00				
13.50	1.25	0.04	0.00				
14.00	1.25	0.04	0.00				
14.50	1.25	0.04	0.00				
15.00	1.25	0.04	0.00				
15.50	1.25	0.04	0.00				
16.00	1.25	0.04	0.00				
16.50	1.25	0.04	0.00				
17.00	1.25	0.04	0.00				
17.50	1.25	0.04	0.00				
18.00	1.25	0.04	0.00				
18.50	1.25	0.04	0.00				
19.00	1.25	0.04	0.00				
19.50	1.25	0.04	0.00				
20.00	1.25	0.04	0.00				
20.50	1.25	0.04	0.00				
21.00	1.25	0.04	0.00				
21.50	1.25	0.04	0.00				
22.00	1.25	0.04	0.00				
22.50	1.25	0.04	0.00				
23.00	1.25	0.04	0.00				
23.50	1.25	0.04	0.00				
24.00	1.25	0.04	0.00				
24.50	1.25	0.04	0.00				
25.00	1.25	0.04	0.00				
25.50	1.25	0.04	0.00				

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

NJ DEP 2-hr NJDEP 2hr Rainfall=1.25"

Printed 11/23/2020

Page 35

Summary for Subcatchment PC: Pickleball Court Area

Runoff = 0.01 cfs @ 1.26 hrs, Volume= 11 cf, Depth= 0.04"

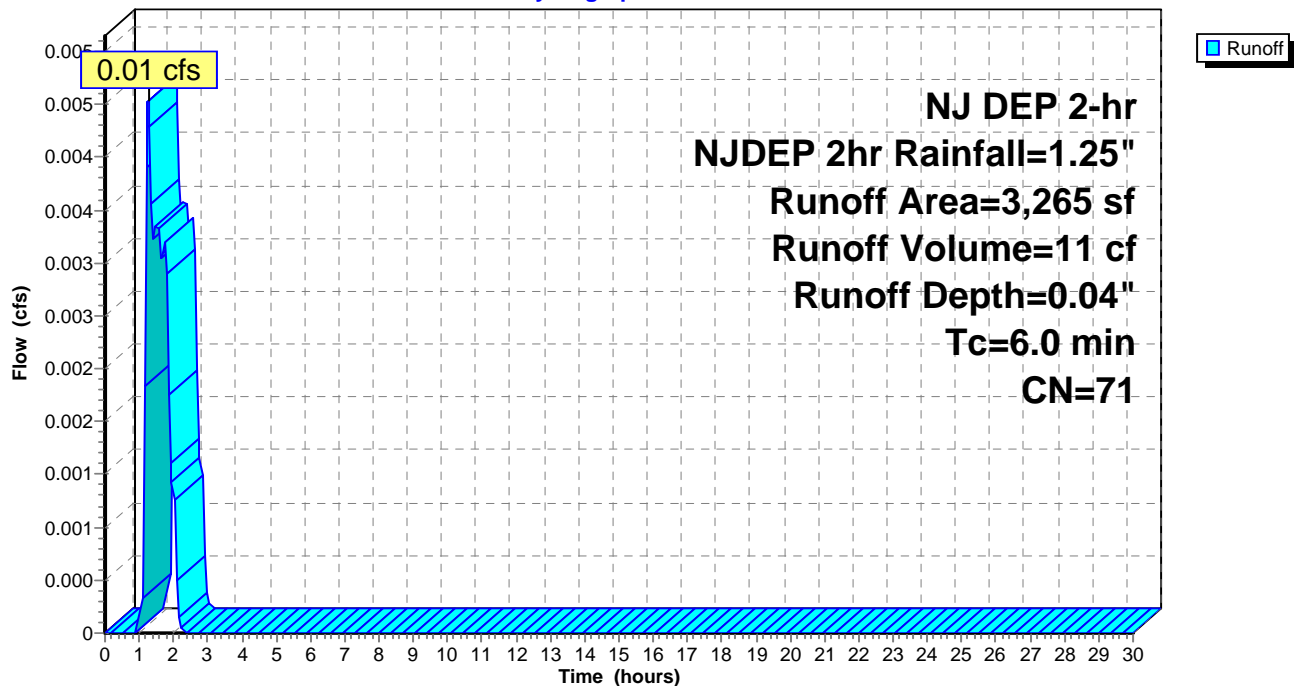
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr NJDEP 2hr Rainfall=1.25"

	Area (sf)	CN	Description
*	1,905	71	Pickleball Court & Walk
*	480	71	Shuffleboard & Walk
*	880	71	Bocce & Concrete Walk
	3,265	71	Weighted Average
	3,265		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Pickleball Court

Subcatchment PC: Pickleball Court Area

Hydrograph



2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

NJ DEP 2-hr NJDEP 2hr Rainfall=1.25"

Printed 11/23/2020

Page 36

Hydrograph for Subcatchment PC: Pickleball Court Area

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	1.25	0.04	0.00
0.50	0.10	0.00	0.00	26.50	1.25	0.04	0.00
1.00	0.63	0.00	0.00	27.00	1.25	0.04	0.00
1.50	1.15	0.03	0.00	27.50	1.25	0.04	0.00
2.00	1.25	0.04	0.00	28.00	1.25	0.04	0.00
2.50	1.25	0.04	0.00	28.50	1.25	0.04	0.00
3.00	1.25	0.04	0.00	29.00	1.25	0.04	0.00
3.50	1.25	0.04	0.00	29.50	1.25	0.04	0.00
4.00	1.25	0.04	0.00	30.00	1.25	0.04	0.00
4.50	1.25	0.04	0.00				
5.00	1.25	0.04	0.00				
5.50	1.25	0.04	0.00				
6.00	1.25	0.04	0.00				
6.50	1.25	0.04	0.00				
7.00	1.25	0.04	0.00				
7.50	1.25	0.04	0.00				
8.00	1.25	0.04	0.00				
8.50	1.25	0.04	0.00				
9.00	1.25	0.04	0.00				
9.50	1.25	0.04	0.00				
10.00	1.25	0.04	0.00				
10.50	1.25	0.04	0.00				
11.00	1.25	0.04	0.00				
11.50	1.25	0.04	0.00				
12.00	1.25	0.04	0.00				
12.50	1.25	0.04	0.00				
13.00	1.25	0.04	0.00				
13.50	1.25	0.04	0.00				
14.00	1.25	0.04	0.00				
14.50	1.25	0.04	0.00				
15.00	1.25	0.04	0.00				
15.50	1.25	0.04	0.00				
16.00	1.25	0.04	0.00				
16.50	1.25	0.04	0.00				
17.00	1.25	0.04	0.00				
17.50	1.25	0.04	0.00				
18.00	1.25	0.04	0.00				
18.50	1.25	0.04	0.00				
19.00	1.25	0.04	0.00				
19.50	1.25	0.04	0.00				
20.00	1.25	0.04	0.00				
20.50	1.25	0.04	0.00				
21.00	1.25	0.04	0.00				
21.50	1.25	0.04	0.00				
22.00	1.25	0.04	0.00				
22.50	1.25	0.04	0.00				
23.00	1.25	0.04	0.00				
23.50	1.25	0.04	0.00				
24.00	1.25	0.04	0.00				
24.50	1.25	0.04	0.00				
25.00	1.25	0.04	0.00				
25.50	1.25	0.04	0.00				

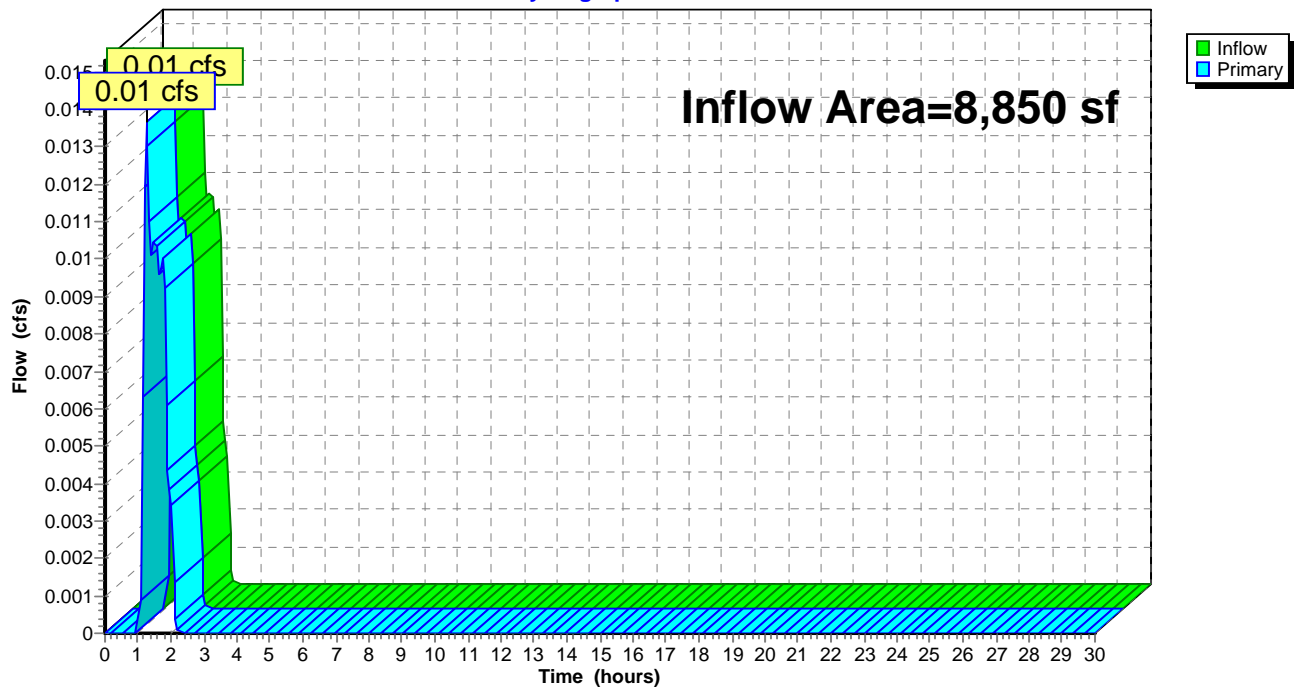
Summary for Pond FCA-Out: FCA Discharge

Inflow Area = 8,850 sf, 0.00% Impervious, Inflow Depth = 0.04" for NJDEP 2hr event
 Inflow = 0.01 cfs @ 1.26 hrs, Volume= 31 cf
 Primary = 0.01 cfs @ 1.26 hrs, Volume= 31 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2

Pond FCA-Out: FCA Discharge

Hydrograph



2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

NJ DEP 2-hr NJDEP 2hr Rainfall=1.25"

Printed 11/23/2020

Page 38

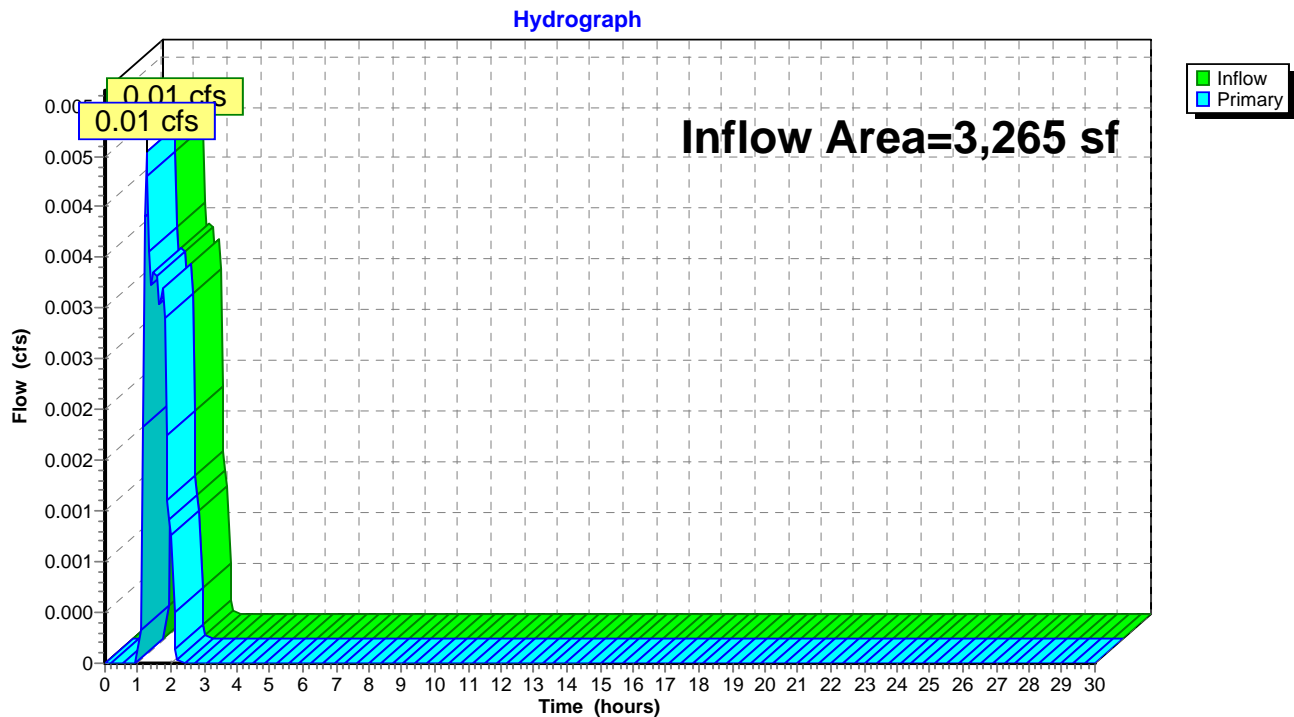
Hydrograph for Pond FCA-Out: FCA Discharge

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	26.00	0.00		0.00
0.50	0.00		0.00	26.50	0.00		0.00
1.00	0.00		0.00	27.00	0.00		0.00
1.50	0.01		0.01	27.50	0.00		0.00
2.00	0.00		0.00	28.00	0.00		0.00
2.50	0.00		0.00	28.50	0.00		0.00
3.00	0.00		0.00	29.00	0.00		0.00
3.50	0.00		0.00	29.50	0.00		0.00
4.00	0.00		0.00	30.00	0.00		0.00
4.50	0.00		0.00				
5.00	0.00		0.00				
5.50	0.00		0.00				
6.00	0.00		0.00				
6.50	0.00		0.00				
7.00	0.00		0.00				
7.50	0.00		0.00				
8.00	0.00		0.00				
8.50	0.00		0.00				
9.00	0.00		0.00				
9.50	0.00		0.00				
10.00	0.00		0.00				
10.50	0.00		0.00				
11.00	0.00		0.00				
11.50	0.00		0.00				
12.00	0.00		0.00				
12.50	0.00		0.00				
13.00	0.00		0.00				
13.50	0.00		0.00				
14.00	0.00		0.00				
14.50	0.00		0.00				
15.00	0.00		0.00				
15.50	0.00		0.00				
16.00	0.00		0.00				
16.50	0.00		0.00				
17.00	0.00		0.00				
17.50	0.00		0.00				
18.00	0.00		0.00				
18.50	0.00		0.00				
19.00	0.00		0.00				
19.50	0.00		0.00				
20.00	0.00		0.00				
20.50	0.00		0.00				
21.00	0.00		0.00				
21.50	0.00		0.00				
22.00	0.00		0.00				
22.50	0.00		0.00				
23.00	0.00		0.00				
23.50	0.00		0.00				
24.00	0.00		0.00				
24.50	0.00		0.00				
25.00	0.00		0.00				
25.50	0.00		0.00				

Summary for Pond PC-Out: Pickleball Area Discharge

Inflow Area = 3,265 sf, 0.00% Impervious, Inflow Depth = 0.04" for NJDEP 2hr event
Inflow = 0.01 cfs @ 1.26 hrs, Volume= 11 cf
Primary = 0.01 cfs @ 1.26 hrs, Volume= 11 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2

Pond PC-Out: Pickleball Area Discharge

2020-11_FVG00101_Ex

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Existing - Fellowship Village Expansion_Nov 2020

NJ DEP 2-hr NJDEP 2hr Rainfall=1.25"

Printed 11/23/2020

Page 40

Hydrograph for Pond PC-Out: Pickleball Area Discharge

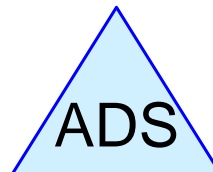
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	26.00	0.00		0.00
0.50	0.00		0.00	26.50	0.00		0.00
1.00	0.00		0.00	27.00	0.00		0.00
1.50	0.00		0.00	27.50	0.00		0.00
2.00	0.00		0.00	28.00	0.00		0.00
2.50	0.00		0.00	28.50	0.00		0.00
3.00	0.00		0.00	29.00	0.00		0.00
3.50	0.00		0.00	29.50	0.00		0.00
4.00	0.00		0.00	30.00	0.00		0.00
4.50	0.00		0.00				
5.00	0.00		0.00				
5.50	0.00		0.00				
6.00	0.00		0.00				
6.50	0.00		0.00				
7.00	0.00		0.00				
7.50	0.00		0.00				
8.00	0.00		0.00				
8.50	0.00		0.00				
9.00	0.00		0.00				
9.50	0.00		0.00				
10.00	0.00		0.00				
10.50	0.00		0.00				
11.00	0.00		0.00				
11.50	0.00		0.00				
12.00	0.00		0.00				
12.50	0.00		0.00				
13.00	0.00		0.00				
13.50	0.00		0.00				
14.00	0.00		0.00				
14.50	0.00		0.00				
15.00	0.00		0.00				
15.50	0.00		0.00				
16.00	0.00		0.00				
16.50	0.00		0.00				
17.00	0.00		0.00				
17.50	0.00		0.00				
18.00	0.00		0.00				
18.50	0.00		0.00				
19.00	0.00		0.00				
19.50	0.00		0.00				
20.00	0.00		0.00				
20.50	0.00		0.00				
21.00	0.00		0.00				
21.50	0.00		0.00				
22.00	0.00		0.00				
22.50	0.00		0.00				
23.00	0.00		0.00				
23.50	0.00		0.00				
24.00	0.00		0.00				
24.50	0.00		0.00				
25.00	0.00		0.00				
25.50	0.00		0.00				

Appendix B

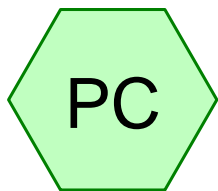
Proposed Condition HydroCAD Analysis



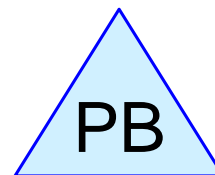
Fitness Center Addition



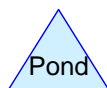
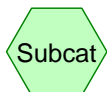
ADS MC4500



Pickleball Court



Proposed Basin



2020-11_FVG00101_Pr

Prepared by Marathon Consultants

Printed 11/23/2020

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Page 2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
880	98	Bocce & Concrete Walk (PC)
7,270	98	Fitness Center Roof (FCA)
1,580	98	Fitness Center Walk (FCA)
1,905	98	Pickleball Court & Walk (PC)
480	98	Shuffleboard & Walk (PC)
12,115	98	TOTAL AREA

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

Printed 11/23/2020

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Page 3

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
0	HSG C	
0	HSG D	
12,115	Other	FCA, PC
12,115		TOTAL AREA

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

Printed 11/23/2020

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Page 4

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Subca Numb
0	0	0	0	880	880	Bocce & Concrete Walk	
0	0	0	0	7,270	7,270	Fitness Center Roof	
0	0	0	0	1,580	1,580	Fitness Center Walk	
0	0	0	0	1,905	1,905	Pickleball Court & Walk	
0	0	0	0	480	480	Shuffleboard & Walk	
0	0	0	0	12,115	12,115	TOTAL AREA	

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 2yr Somerset Rainfall=3.34"

Printed 11/23/2020

Page 5

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points x 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment FCA: Fitness Center

Runoff Area=8,850 sf 100.00% Impervious Runoff Depth=3.11"

Tc=6.0 min CN=98 Runoff=0.64 cfs 2,291 cf

Subcatchment PC: Pickleball Court

Runoff Area=3,265 sf 100.00% Impervious Runoff Depth=3.11"

Tc=6.0 min CN=98 Runoff=0.24 cfs 845 cf

Pond ADS: ADS MC4500

Peak Elev=242.38' Storage=981 cf Inflow=0.64 cfs 2,291 cf

Outflow=0.06 cfs 2,293 cf

Pond PB: Proposed Basin

Peak Elev=248.24' Storage=441 cf Inflow=0.24 cfs 845 cf

Discarded=0.02 cfs 830 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 830 cf

Total Runoff Area = 12,115 sf Runoff Volume = 3,137 cf Average Runoff Depth = 3.11"
0.00% Pervious = 0 sf 100.00% Impervious = 12,115 sf

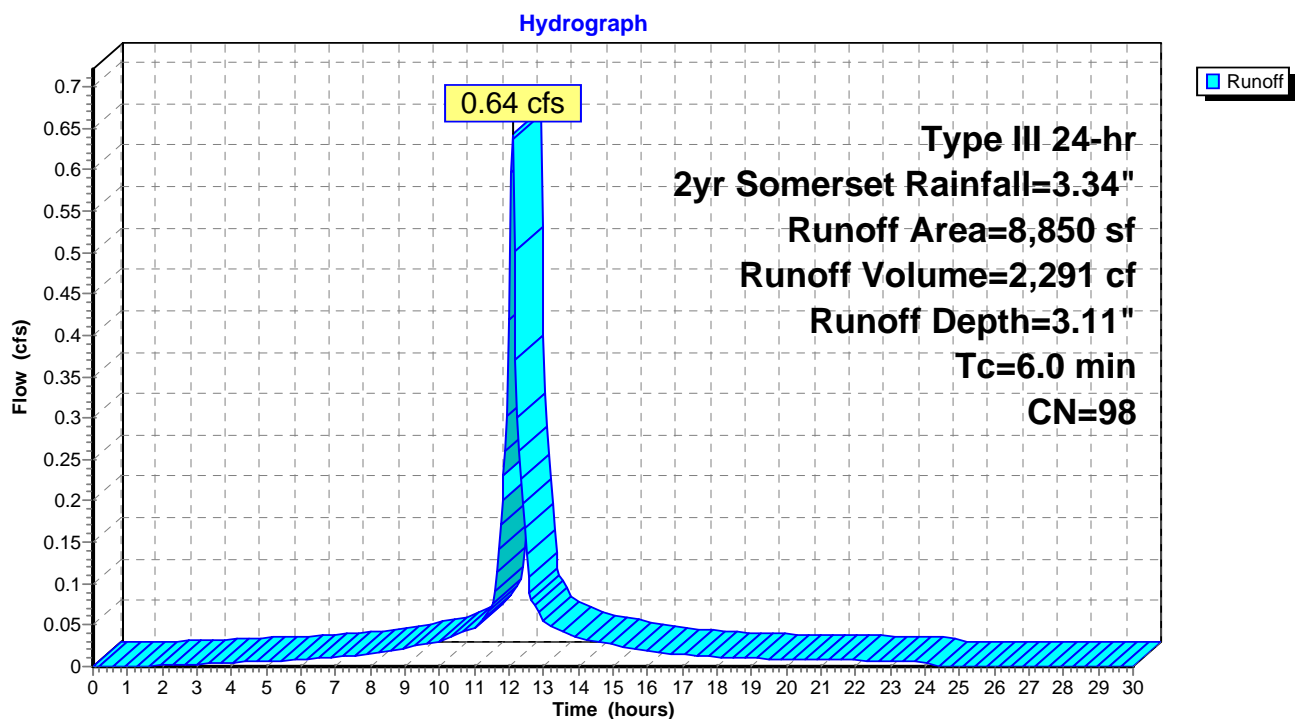
Summary for Subcatchment FCA: Fitness Center Addition

Runoff = 0.64 cfs @ 12.09 hrs, Volume= 2,291 cf, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Somerset Rainfall=3.34"

	Area (sf)	CN	Description
*	7,270	98	Fitness Center Roof
*	1,580	98	Fitness Center Walk
	8,850	98	Weighted Average
	8,850		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Roof Drains

Subcatchment FCA: Fitness Center Addition

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 2yr Somerset Rainfall=3.34"

Printed 11/23/2020

Page 7

Hydrograph for Subcatchment FCA: Fitness Center Addition

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.34	3.11	0.00
0.50	0.02	0.00	0.00	26.50	3.34	3.11	0.00
1.00	0.03	0.00	0.00	27.00	3.34	3.11	0.00
1.50	0.05	0.00	0.00	27.50	3.34	3.11	0.00
2.00	0.07	0.00	0.00	28.00	3.34	3.11	0.00
2.50	0.08	0.01	0.00	28.50	3.34	3.11	0.00
3.00	0.10	0.01	0.00	29.00	3.34	3.11	0.00
3.50	0.12	0.02	0.00	29.50	3.34	3.11	0.00
4.00	0.14	0.03	0.00	30.00	3.34	3.11	0.00
4.50	0.17	0.05	0.01				
5.00	0.19	0.06	0.01				
5.50	0.21	0.08	0.01				
6.00	0.24	0.10	0.01				
6.50	0.27	0.12	0.01				
7.00	0.30	0.15	0.01				
7.50	0.34	0.18	0.01				
8.00	0.38	0.21	0.01				
8.50	0.43	0.25	0.02				
9.00	0.49	0.31	0.02				
9.50	0.55	0.37	0.03				
10.00	0.63	0.44	0.03				
10.50	0.72	0.53	0.04				
11.00	0.83	0.63	0.05				
11.50	1.00	0.79	0.07				
12.00	1.67	1.45	0.42				
12.50	2.34	2.12	0.14				
13.00	2.50	2.28	0.06				
13.50	2.62	2.39	0.04				
14.00	2.71	2.48	0.03				
14.50	2.79	2.55	0.03				
15.00	2.85	2.62	0.03				
15.50	2.91	2.68	0.02				
16.00	2.96	2.73	0.02				
16.50	3.00	2.77	0.02				
17.00	3.04	2.81	0.01				
17.50	3.07	2.84	0.01				
18.00	3.10	2.87	0.01				
18.50	3.13	2.89	0.01				
19.00	3.15	2.92	0.01				
19.50	3.17	2.94	0.01				
20.00	3.20	2.96	0.01				
20.50	3.22	2.99	0.01				
21.00	3.24	3.01	0.01				
21.50	3.26	3.02	0.01				
22.00	3.28	3.04	0.01				
22.50	3.29	3.06	0.01				
23.00	3.31	3.08	0.01				
23.50	3.33	3.09	0.01				
24.00	3.34	3.11	0.01				
24.50	3.34	3.11	0.00				
25.00	3.34	3.11	0.00				
25.50	3.34	3.11	0.00				

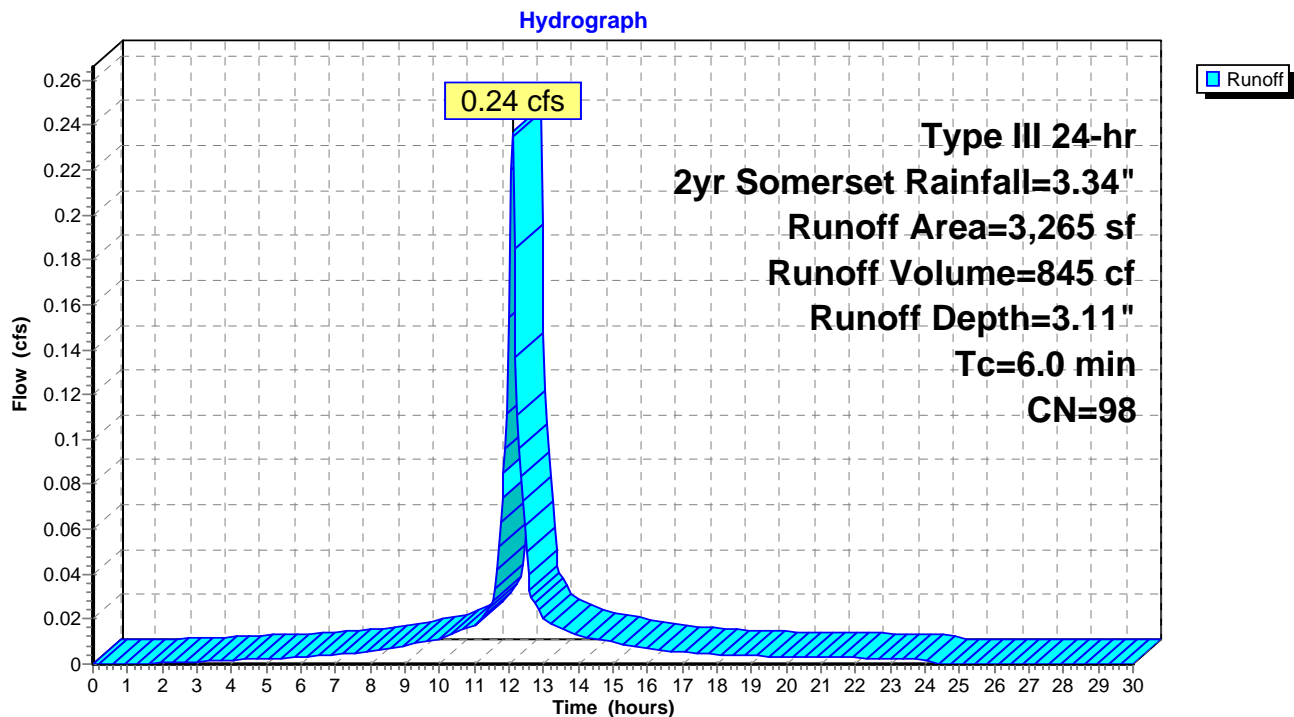
Summary for Subcatchment PC: Pickleball Court

Runoff = 0.24 cfs @ 12.09 hrs, Volume= 845 cf, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Somerset Rainfall=3.34"

	Area (sf)	CN	Description
*	1,905	98	Pickleball Court & Walk
*	480	98	Shuffleboard & Walk
*	880	98	Bocce & Concrete Walk
	3,265	98	Weighted Average
	3,265		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Pickleball Court

Subcatchment PC: Pickleball Court

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 2yr Somerset Rainfall=3.34"

Printed 11/23/2020

Page 9

Hydrograph for Subcatchment PC: Pickleball Court

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.34	3.11	0.00
0.50	0.02	0.00	0.00	26.50	3.34	3.11	0.00
1.00	0.03	0.00	0.00	27.00	3.34	3.11	0.00
1.50	0.05	0.00	0.00	27.50	3.34	3.11	0.00
2.00	0.07	0.00	0.00	28.00	3.34	3.11	0.00
2.50	0.08	0.01	0.00	28.50	3.34	3.11	0.00
3.00	0.10	0.01	0.00	29.00	3.34	3.11	0.00
3.50	0.12	0.02	0.00	29.50	3.34	3.11	0.00
4.00	0.14	0.03	0.00	30.00	3.34	3.11	0.00
4.50	0.17	0.05	0.00				
5.00	0.19	0.06	0.00				
5.50	0.21	0.08	0.00				
6.00	0.24	0.10	0.00				
6.50	0.27	0.12	0.00				
7.00	0.30	0.15	0.00				
7.50	0.34	0.18	0.00				
8.00	0.38	0.21	0.01				
8.50	0.43	0.25	0.01				
9.00	0.49	0.31	0.01				
9.50	0.55	0.37	0.01				
10.00	0.63	0.44	0.01				
10.50	0.72	0.53	0.01				
11.00	0.83	0.63	0.02				
11.50	1.00	0.79	0.03				
12.00	1.67	1.45	0.15				
12.50	2.34	2.12	0.05				
13.00	2.50	2.28	0.02				
13.50	2.62	2.39	0.02				
14.00	2.71	2.48	0.01				
14.50	2.79	2.55	0.01				
15.00	2.85	2.62	0.01				
15.50	2.91	2.68	0.01				
16.00	2.96	2.73	0.01				
16.50	3.00	2.77	0.01				
17.00	3.04	2.81	0.01				
17.50	3.07	2.84	0.00				
18.00	3.10	2.87	0.00				
18.50	3.13	2.89	0.00				
19.00	3.15	2.92	0.00				
19.50	3.17	2.94	0.00				
20.00	3.20	2.96	0.00				
20.50	3.22	2.99	0.00				
21.00	3.24	3.01	0.00				
21.50	3.26	3.02	0.00				
22.00	3.28	3.04	0.00				
22.50	3.29	3.06	0.00				
23.00	3.31	3.08	0.00				
23.50	3.33	3.09	0.00				
24.00	3.34	3.11	0.00				
24.50	3.34	3.11	0.00				
25.00	3.34	3.11	0.00				
25.50	3.34	3.11	0.00				

Summary for Pond ADS: ADS MC4500

Inflow Area = 8,850 sf, 100.00% Impervious, Inflow Depth = 3.11" for 2yr Somerset event
 Inflow = 0.64 cfs @ 12.09 hrs, Volume= 2,291 cf
 Outflow = 0.06 cfs @ 18.60 hrs, Volume= 2,293 cf, Atten= 91%, Lag= 390.8 min
 Discarded = 0.06 cfs @ 18.60 hrs, Volume= 2,293 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 242.38' @ 12.97 hrs Surf.Area= 2,483 sf Storage= 981 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 153.8 min (909.3 - 755.5)

Volume	Invert	Avail.Storage	Storage Description
#1	240.75'	286 cf	Bottom Stone (Prismatic) Listed below (Recalc) 714 cf Overall x 40.0% Voids
#2	241.50'	971 cf	Stone Around Chamber (Prismatic) Listed below (Recalc) 4,760 cf Overall x 20.4% Voids
#3	241.50'	2,124 cf	ADS_StormTech MC-4500 +Cap @ 77.57' L Effective Size= 90.4"W x 60.0"H => 26.46 sf x 77.57'L = 2,052.3 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap Cap Storage= +35.7 cf x 2 x 1 rows = 71.4 cf
#4	246.50'	381 cf	Top Stone (Prismatic) Listed below (Recalc) 952 cf Overall x 40.0% Voids
3,761 cf			Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.75	952	0	0
241.50	952	714	714

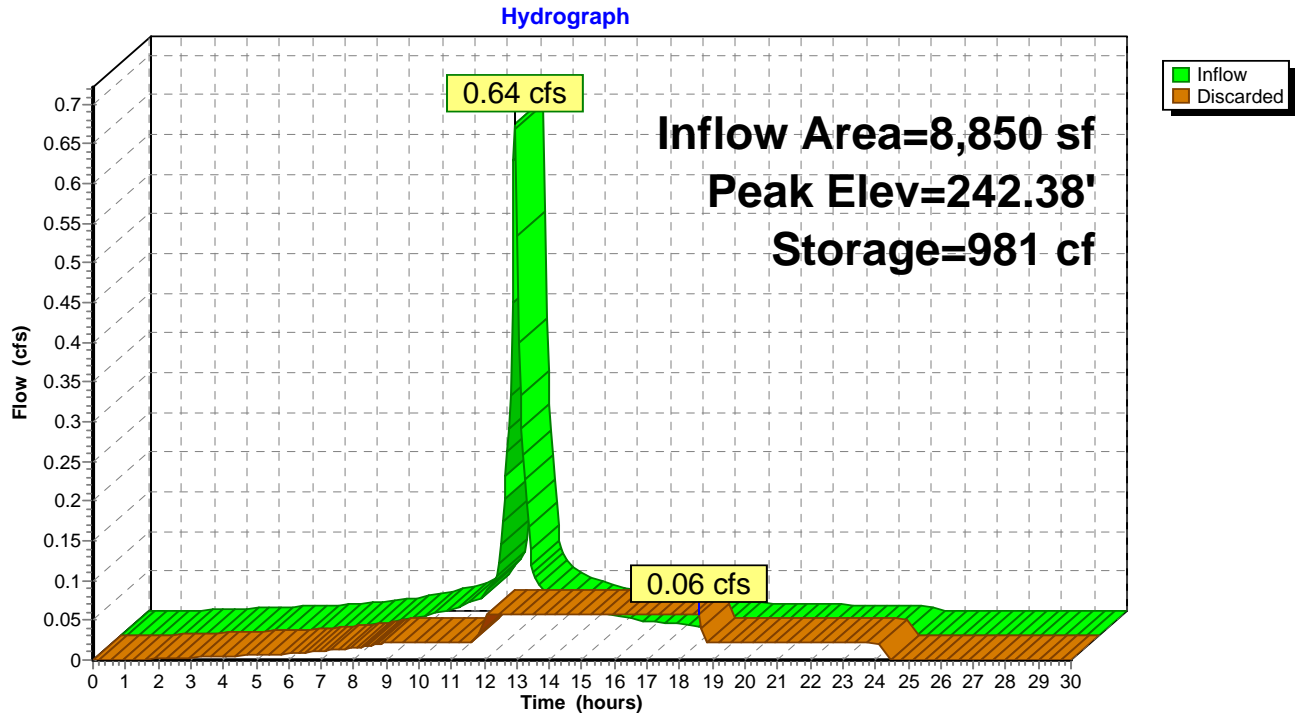
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
241.50	952	0	0
246.50	952	4,760	4,760

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.50	952	0	0
247.50	952	952	952

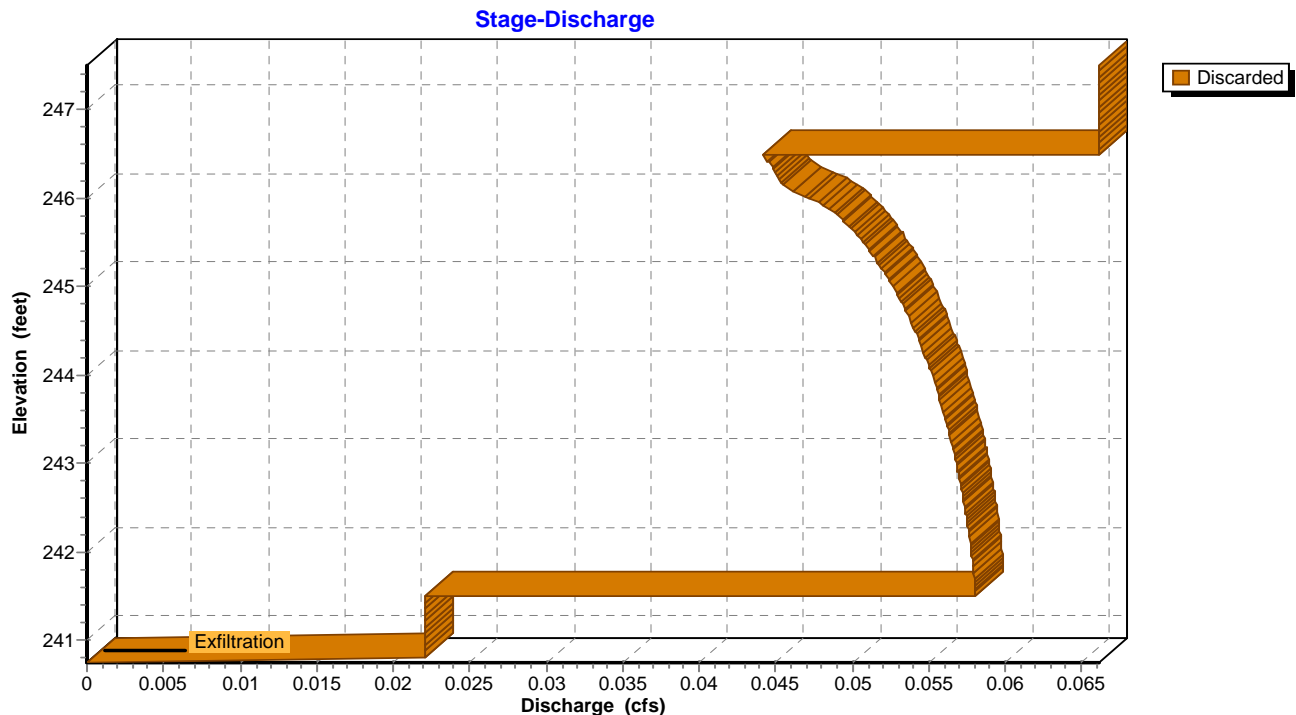
Device	Routing	Invert	Outlet Devices
#1	Discarded	240.75'	1.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.06 cfs @ 18.60 hrs HW=241.51' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.06 cfs)

Pond ADS: ADS MC4500



Pond ADS: ADS MC4500



2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

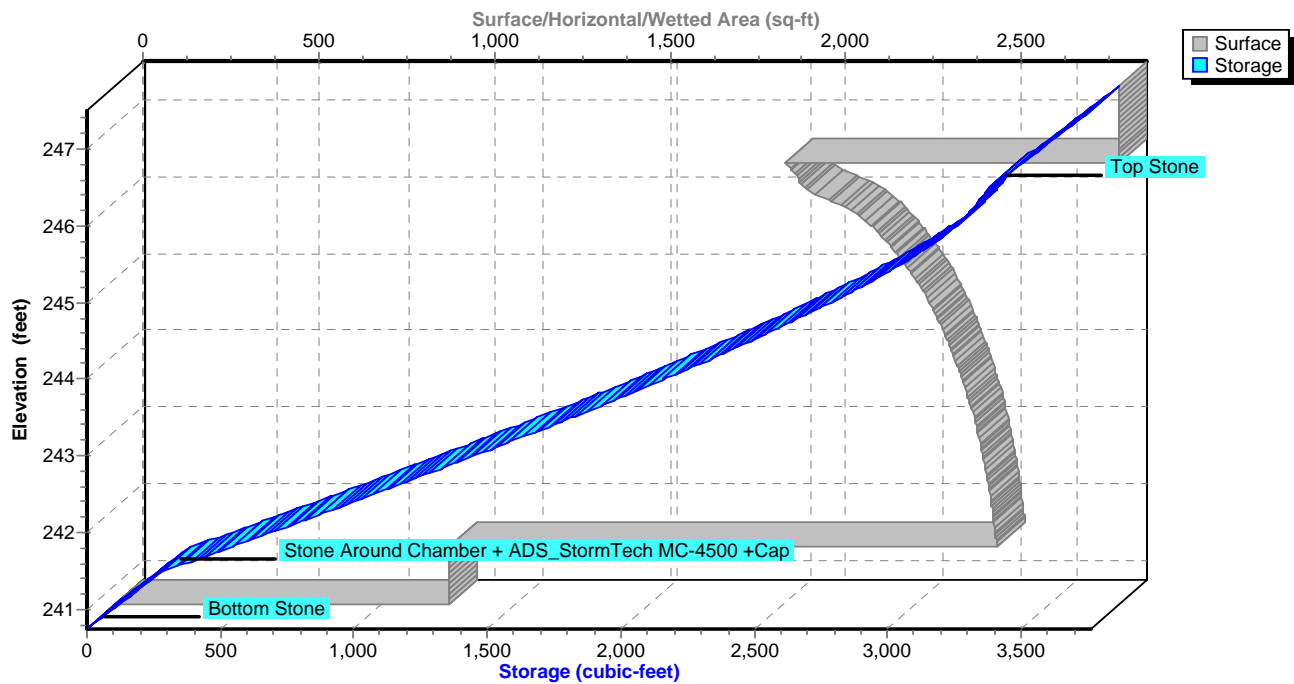
Type III 24-hr 2yr Somerset Rainfall=3.34"

Printed 11/23/2020

Page 12

Pond ADS: ADS MC4500

Stage-Area-Storage



2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 2yr Somerset Rainfall=3.34"

Printed 11/23/2020

Page 13

Hydrograph for Pond ADS: ADS MC4500

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	240.75	0.00
1.00	0.00	0	240.75	0.00
2.00	0.00	0	240.75	0.00
3.00	0.00	0	240.75	0.00
4.00	0.00	0	240.75	0.00
5.00	0.01	0	240.75	0.01
6.00	0.01	0	240.75	0.01
7.00	0.01	0	240.75	0.01
8.00	0.01	0	240.75	0.01
9.00	0.02	0	240.75	0.02
10.00	0.03	16	240.79	0.02
11.00	0.05	74	240.94	0.02
12.00	0.42	414	241.66	0.06
13.00	0.06	981	242.38	0.06
14.00	0.03	930	242.32	0.06
15.00	0.03	832	242.19	0.06
16.00	0.02	704	242.03	0.06
17.00	0.01	555	241.84	0.06
18.00	0.01	393	241.63	0.06
19.00	0.01	270	241.46	0.02
20.00	0.01	225	241.34	0.02
21.00	0.01	177	241.21	0.02
22.00	0.01	125	241.08	0.02
23.00	0.01	71	240.94	0.02
24.00	0.01	14	240.79	0.02
25.00	0.00	0	240.75	0.00
26.00	0.00	0	240.75	0.00
27.00	0.00	0	240.75	0.00
28.00	0.00	0	240.75	0.00
29.00	0.00	0	240.75	0.00
30.00	0.00	0	240.75	0.00

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 2yr Somerset Rainfall=3.34"

Printed 11/23/2020

Page 14

Stage-Discharge for Pond ADS: ADS MC4500

Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)
240.75	0.00	242.83	0.06	244.91	0.05	246.99	0.07
240.79	0.02	242.87	0.06	244.95	0.05	247.03	0.07
240.83	0.02	242.91	0.06	244.99	0.05	247.07	0.07
240.87	0.02	242.95	0.06	245.03	0.05	247.11	0.07
240.91	0.02	242.99	0.06	245.07	0.05	247.15	0.07
240.95	0.02	243.03	0.06	245.11	0.05	247.19	0.07
240.99	0.02	243.07	0.06	245.15	0.05	247.23	0.07
241.03	0.02	243.11	0.06	245.19	0.05	247.27	0.07
241.07	0.02	243.15	0.06	245.23	0.05	247.31	0.07
241.11	0.02	243.19	0.06	245.27	0.05	247.35	0.07
241.15	0.02	243.23	0.06	245.31	0.05	247.39	0.07
241.19	0.02	243.27	0.06	245.35	0.05	247.43	0.07
241.23	0.02	243.31	0.06	245.39	0.05	247.47	0.07
241.27	0.02	243.35	0.06	245.43	0.05		
241.31	0.02	243.39	0.06	245.47	0.05		
241.35	0.02	243.43	0.06	245.51	0.05		
241.39	0.02	243.47	0.06	245.55	0.05		
241.43	0.02	243.51	0.06	245.59	0.05		
241.47	0.02	243.55	0.06	245.63	0.05		
241.51	0.06	243.59	0.06	245.67	0.05		
241.55	0.06	243.63	0.06	245.71	0.05		
241.59	0.06	243.67	0.06	245.75	0.05		
241.63	0.06	243.71	0.06	245.79	0.05		
241.67	0.06	243.75	0.06	245.83	0.05		
241.71	0.06	243.79	0.06	245.87	0.05		
241.75	0.06	243.83	0.06	245.91	0.05		
241.79	0.06	243.87	0.06	245.95	0.05		
241.83	0.06	243.91	0.06	245.99	0.05		
241.87	0.06	243.95	0.06	246.03	0.05		
241.91	0.06	243.99	0.06	246.07	0.05		
241.95	0.06	244.03	0.06	246.11	0.05		
241.99	0.06	244.07	0.06	246.15	0.05		
242.03	0.06	244.11	0.05	246.19	0.05		
242.07	0.06	244.15	0.05	246.23	0.05		
242.11	0.06	244.19	0.05	246.27	0.05		
242.15	0.06	244.23	0.05	246.31	0.04		
242.19	0.06	244.27	0.05	246.35	0.04		
242.23	0.06	244.31	0.05	246.39	0.04		
242.27	0.06	244.35	0.05	246.43	0.04		
242.31	0.06	244.39	0.05	246.47	0.04		
242.35	0.06	244.43	0.05	246.51	0.07		
242.39	0.06	244.47	0.05	246.55	0.07		
242.43	0.06	244.51	0.05	246.59	0.07		
242.47	0.06	244.55	0.05	246.63	0.07		
242.51	0.06	244.59	0.05	246.67	0.07		
242.55	0.06	244.63	0.05	246.71	0.07		
242.59	0.06	244.67	0.05	246.75	0.07		
242.63	0.06	244.71	0.05	246.79	0.07		
242.67	0.06	244.75	0.05	246.83	0.07		
242.71	0.06	244.79	0.05	246.87	0.07		
242.75	0.06	244.83	0.05	246.91	0.07		
242.79	0.06	244.87	0.05	246.95	0.07		

Summary for Pond PB: Proposed Basin

Inflow Area = 3,265 sf, 100.00% Impervious, Inflow Depth = 3.11" for 2yr Somerset event
 Inflow = 0.24 cfs @ 12.09 hrs, Volume= 845 cf
 Outflow = 0.02 cfs @ 13.34 hrs, Volume= 830 cf, Atten= 93%, Lag= 75.1 min
 Discarded = 0.02 cfs @ 13.34 hrs, Volume= 830 cf
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 248.24' @ 13.34 hrs Surf.Area= 728 sf Storage= 441 cf

Plug-Flow detention time= 312.9 min calculated for 829 cf (98% of inflow)
 Center-of-Mass det. time= 301.4 min (1,057.0 - 755.5)

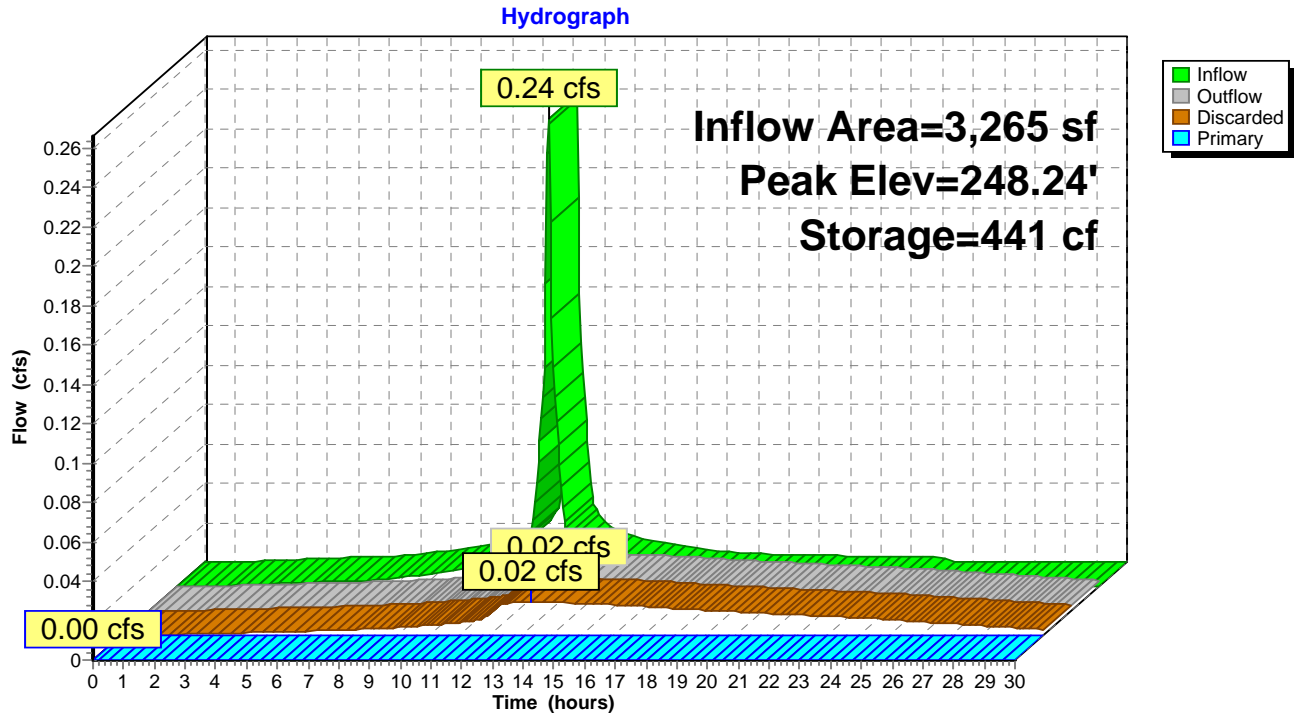
Volume	Invert	Avail.Storage	Storage Description
#1	247.00'	2,900 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
247.00	27	0	0
248.00	548	288	288
249.00	1,293	921	1,208
249.50	1,689	746	1,954
250.00	2,098	947	2,900

Device	Routing	Invert	Outlet Devices
#1	Discarded	247.00'	1.000 in/hr Exfiltration over Surface area
#2	Primary	248.85'	15.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

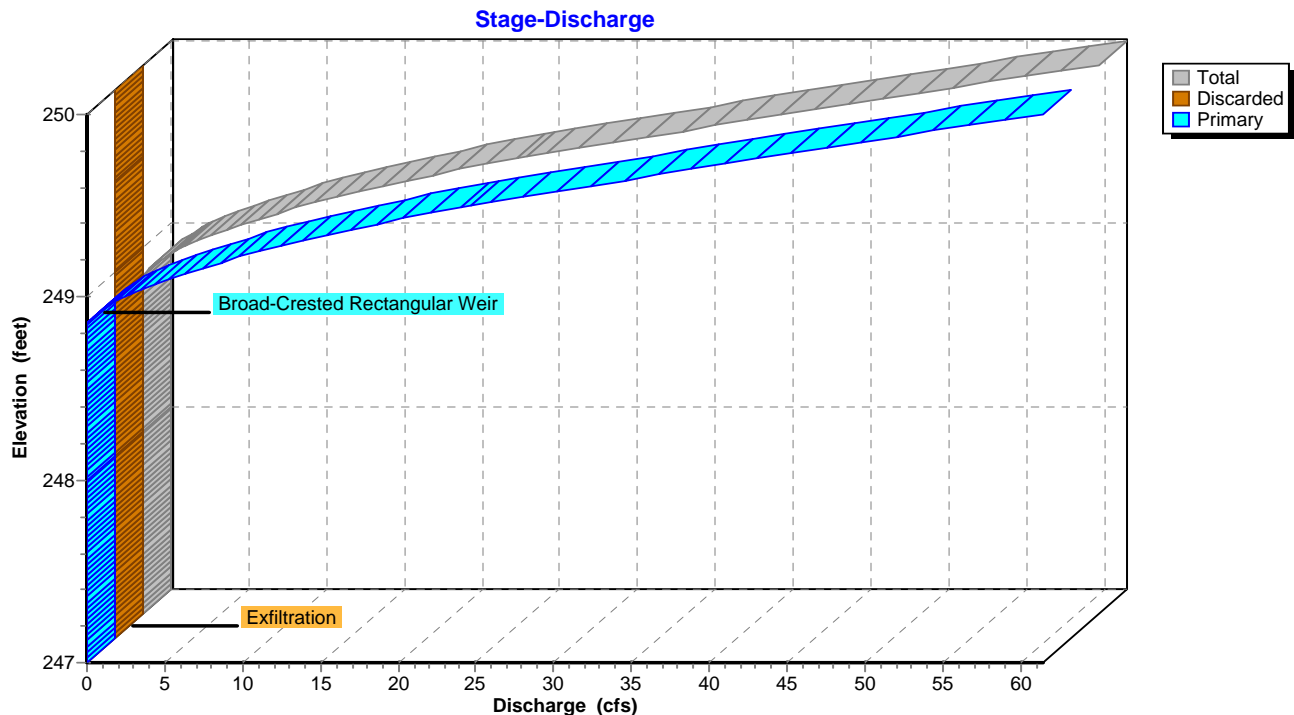
Discarded OutFlow Max=0.02 cfs @ 13.34 hrs HW=248.24' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=247.00' (Free Discharge)
 ↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond PB: Proposed Basin



Pond PB: Proposed Basin



2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

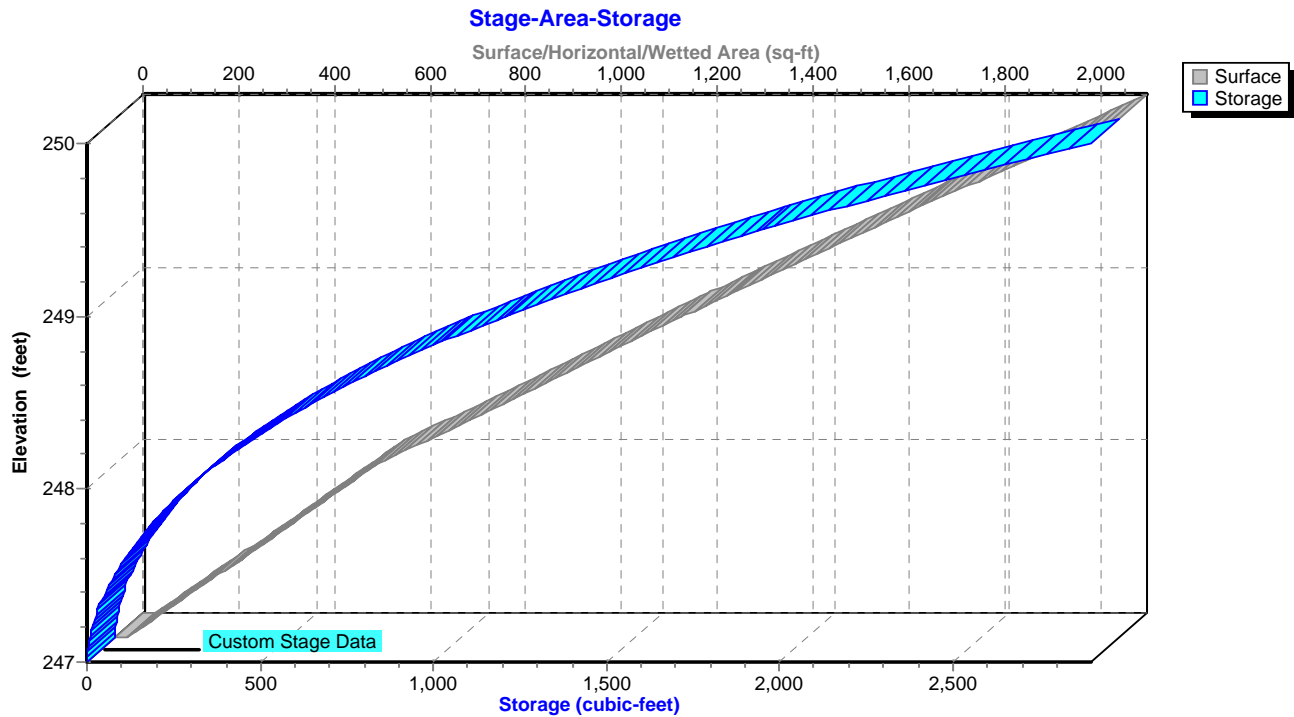
Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 2yr Somerset Rainfall=3.34"

Printed 11/23/2020

Page 17

Pond PB: Proposed Basin



2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 2yr Somerset Rainfall=3.34"

Printed 11/23/2020

Page 18

Hydrograph for Pond PB: Proposed Basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	247.00	0.00	0.00	0.00
1.00	0.00	0	247.00	0.00	0.00	0.00
2.00	0.00	0	247.00	0.00	0.00	0.00
3.00	0.00	1	247.02	0.00	0.00	0.00
4.00	0.00	2	247.05	0.00	0.00	0.00
5.00	0.00	4	247.09	0.00	0.00	0.00
6.00	0.00	7	247.12	0.00	0.00	0.00
7.00	0.00	11	247.16	0.00	0.00	0.00
8.00	0.01	18	247.22	0.00	0.00	0.00
9.00	0.01	30	247.29	0.00	0.00	0.00
10.00	0.01	48	247.38	0.01	0.01	0.00
11.00	0.02	77	247.50	0.01	0.01	0.00
12.00	0.15	209	247.85	0.01	0.01	0.00
13.00	0.02	440	248.24	0.02	0.02	0.00
14.00	0.01	437	248.23	0.02	0.02	0.00
15.00	0.01	417	248.21	0.02	0.02	0.00
16.00	0.01	390	248.17	0.02	0.02	0.00
17.00	0.01	357	248.12	0.01	0.01	0.00
18.00	0.00	323	248.06	0.01	0.01	0.00
19.00	0.00	289	248.00	0.01	0.01	0.00
20.00	0.00	257	247.94	0.01	0.01	0.00
21.00	0.00	227	247.88	0.01	0.01	0.00
22.00	0.00	198	247.82	0.01	0.01	0.00
23.00	0.00	170	247.76	0.01	0.01	0.00
24.00	0.00	145	247.70	0.01	0.01	0.00
25.00	0.00	115	247.61	0.01	0.01	0.00
26.00	0.00	88	247.53	0.01	0.01	0.00
27.00	0.00	64	247.45	0.01	0.01	0.00
28.00	0.00	44	247.36	0.01	0.01	0.00
29.00	0.00	28	247.28	0.00	0.00	0.00
30.00	0.00	16	247.20	0.00	0.00	0.00

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 2yr Somerset Rainfall=3.34"

Printed 11/23/2020

Page 19

Stage-Discharge for Pond PB: Proposed Basin

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
247.00	0.00	0.00	0.00	249.60	31.66	0.04	31.62
247.05	0.00	0.00	0.00	249.65	35.46	0.04	35.42
247.10	0.00	0.00	0.00	249.70	38.89	0.04	38.85
247.15	0.00	0.00	0.00	249.75	42.44	0.04	42.39
247.20	0.00	0.00	0.00	249.80	46.09	0.04	46.04
247.25	0.00	0.00	0.00	249.85	49.85	0.05	49.80
247.30	0.00	0.00	0.00	249.90	53.63	0.05	53.58
247.35	0.00	0.00	0.00	249.95	57.50	0.05	57.45
247.40	0.01	0.01	0.00	250.00	61.46	0.05	61.42
247.45	0.01	0.01	0.00				
247.50	0.01	0.01	0.00				
247.55	0.01	0.01	0.00				
247.60	0.01	0.01	0.00				
247.65	0.01	0.01	0.00				
247.70	0.01	0.01	0.00				
247.75	0.01	0.01	0.00				
247.80	0.01	0.01	0.00				
247.85	0.01	0.01	0.00				
247.90	0.01	0.01	0.00				
247.95	0.01	0.01	0.00				
248.00	0.01	0.01	0.00				
248.05	0.01	0.01	0.00				
248.10	0.01	0.01	0.00				
248.15	0.02	0.02	0.00				
248.20	0.02	0.02	0.00				
248.25	0.02	0.02	0.00				
248.30	0.02	0.02	0.00				
248.35	0.02	0.02	0.00				
248.40	0.02	0.02	0.00				
248.45	0.02	0.02	0.00				
248.50	0.02	0.02	0.00				
248.55	0.02	0.02	0.00				
248.60	0.02	0.02	0.00				
248.65	0.02	0.02	0.00				
248.70	0.02	0.02	0.00				
248.75	0.03	0.03	0.00				
248.80	0.03	0.03	0.00				
248.85	0.03	0.03	0.00				
248.90	0.50	0.03	0.47				
248.95	1.36	0.03	1.33				
249.00	2.47	0.03	2.44				
249.05	3.79	0.03	3.76				
249.10	5.34	0.03	5.31				
249.15	7.08	0.03	7.05				
249.20	9.01	0.03	8.98				
249.25	11.12	0.03	11.08				
249.30	13.44	0.04	13.40				
249.35	15.95	0.04	15.91				
249.40	18.64	0.04	18.60				
249.45	21.51	0.04	21.47				
249.50	24.68	0.04	24.64				
249.55	28.06	0.04	28.02				

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 10yr Somerset Rainfall=5.01"

Printed 11/23/2020

Page 20

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points x 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment FCA: Fitness Center

Runoff Area=8,850 sf 100.00% Impervious Runoff Depth=4.77"

Tc=6.0 min CN=98 Runoff=0.97 cfs 3,520 cf

Subcatchment PC: Pickleball Court

Runoff Area=3,265 sf 100.00% Impervious Runoff Depth=4.77"

Tc=6.0 min CN=98 Runoff=0.36 cfs 1,299 cf

Pond ADS: ADS MC4500

Peak Elev=243.36' Storage=1,716 cf Inflow=0.97 cfs 3,520 cf

Outflow=0.06 cfs 3,521 cf

Pond PB: Proposed Basin

Peak Elev=248.56' Storage=712 cf Inflow=0.36 cfs 1,299 cf

Discarded=0.02 cfs 1,208 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 1,208 cf

Total Runoff Area = 12,115 sf Runoff Volume = 4,819 cf Average Runoff Depth = 4.77"
0.00% Pervious = 0 sf 100.00% Impervious = 12,115 sf

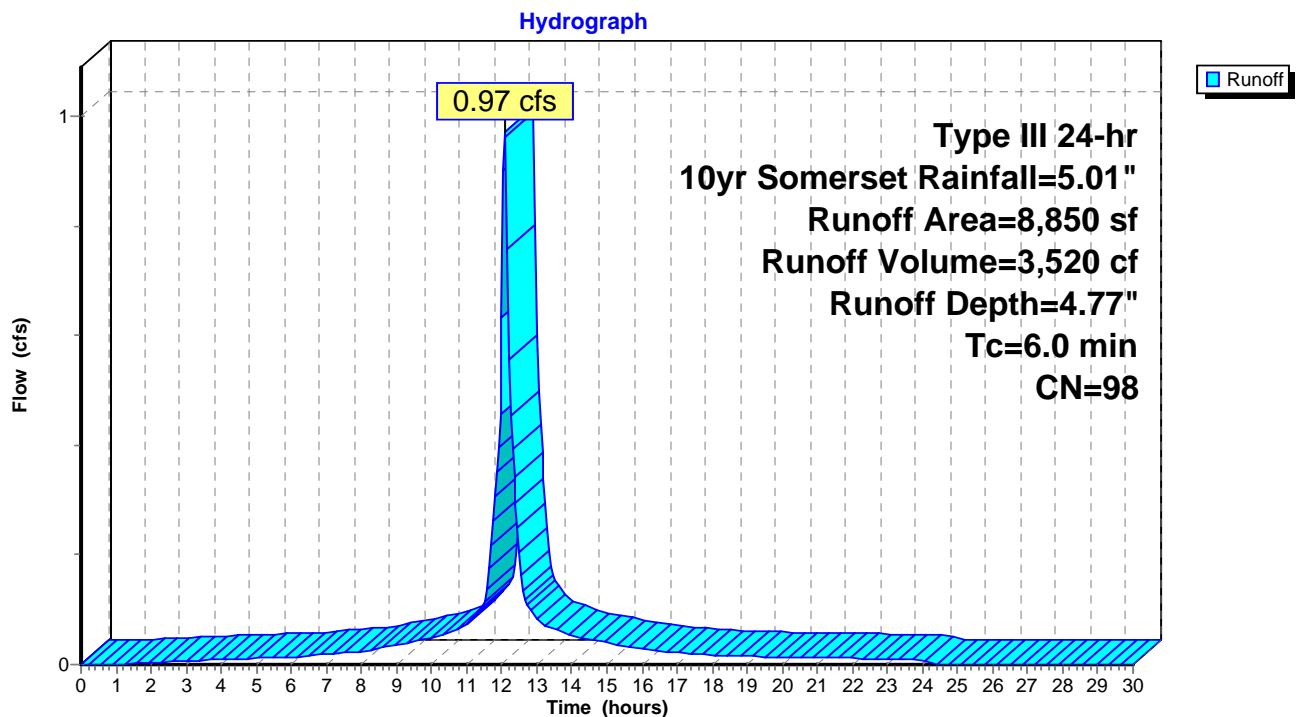
Summary for Subcatchment FCA: Fitness Center Addition

Runoff = 0.97 cfs @ 12.09 hrs, Volume= 3,520 cf, Depth= 4.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Somerset Rainfall=5.01"

	Area (sf)	CN	Description
*	7,270	98	Fitness Center Roof
*	1,580	98	Fitness Center Walk
	8,850	98	Weighted Average
	8,850		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Roof Drains

Subcatchment FCA: Fitness Center Addition

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 10yr Somerset Rainfall=5.01"

Printed 11/23/2020

Page 22

Hydrograph for Subcatchment FCA: Fitness Center Addition

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.01	4.77	0.00
0.50	0.03	0.00	0.00	26.50	5.01	4.77	0.00
1.00	0.05	0.00	0.00	27.00	5.01	4.77	0.00
1.50	0.08	0.00	0.00	27.50	5.01	4.77	0.00
2.00	0.10	0.01	0.00	28.00	5.01	4.77	0.00
2.50	0.13	0.03	0.01	28.50	5.01	4.77	0.00
3.00	0.15	0.04	0.01	29.00	5.01	4.77	0.00
3.50	0.18	0.06	0.01	29.50	5.01	4.77	0.00
4.00	0.22	0.08	0.01	30.00	5.01	4.77	0.00
4.50	0.25	0.11	0.01				
5.00	0.28	0.13	0.01				
5.50	0.32	0.16	0.01				
6.00	0.36	0.20	0.01				
6.50	0.40	0.23	0.02				
7.00	0.45	0.28	0.02				
7.50	0.51	0.33	0.02				
8.00	0.57	0.38	0.02				
8.50	0.64	0.45	0.03				
9.00	0.73	0.53	0.04				
9.50	0.83	0.63	0.04				
10.00	0.95	0.74	0.05				
10.50	1.08	0.87	0.06				
11.00	1.25	1.04	0.07				
11.50	1.49	1.27	0.11				
12.00	2.50	2.28	0.63				
12.50	3.52	3.28	0.21				
13.00	3.76	3.52	0.08				
13.50	3.93	3.69	0.06				
14.00	4.06	3.83	0.05				
14.50	4.18	3.94	0.05				
15.00	4.28	4.04	0.04				
15.50	4.37	4.13	0.03				
16.00	4.44	4.20	0.03				
16.50	4.50	4.26	0.02				
17.00	4.56	4.32	0.02				
17.50	4.61	4.37	0.02				
18.00	4.65	4.41	0.02				
18.50	4.69	4.45	0.02				
19.00	4.73	4.49	0.01				
19.50	4.76	4.52	0.01				
20.00	4.79	4.56	0.01				
20.50	4.83	4.59	0.01				
21.00	4.86	4.62	0.01				
21.50	4.89	4.65	0.01				
22.00	4.91	4.68	0.01				
22.50	4.94	4.70	0.01				
23.00	4.96	4.73	0.01				
23.50	4.99	4.75	0.01				
24.00	5.01	4.77	0.01				
24.50	5.01	4.77	0.00				
25.00	5.01	4.77	0.00				
25.50	5.01	4.77	0.00				

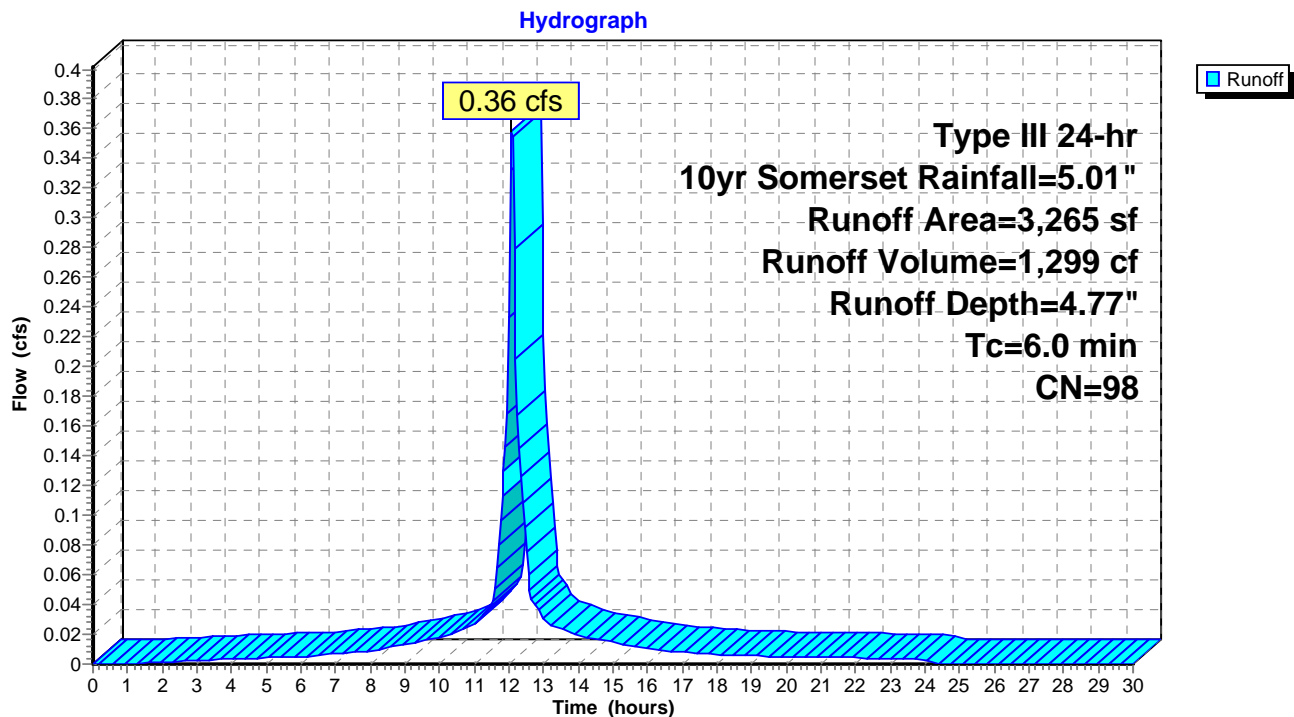
Summary for Subcatchment PC: Pickleball Court

Runoff = 0.36 cfs @ 12.09 hrs, Volume= 1,299 cf, Depth= 4.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr Somerset Rainfall=5.01"

	Area (sf)	CN	Description
*	1,905	98	Pickleball Court & Walk
*	480	98	Shuffleboard & Walk
*	880	98	Bocce & Concrete Walk
	3,265	98	Weighted Average
	3,265		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Pickleball Court

Subcatchment PC: Pickleball Court

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 10yr Somerset Rainfall=5.01"

Printed 11/23/2020

Page 24

Hydrograph for Subcatchment PC: Pickleball Court

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.01	4.77	0.00
0.50	0.03	0.00	0.00	26.50	5.01	4.77	0.00
1.00	0.05	0.00	0.00	27.00	5.01	4.77	0.00
1.50	0.08	0.00	0.00	27.50	5.01	4.77	0.00
2.00	0.10	0.01	0.00	28.00	5.01	4.77	0.00
2.50	0.13	0.03	0.00	28.50	5.01	4.77	0.00
3.00	0.15	0.04	0.00	29.00	5.01	4.77	0.00
3.50	0.18	0.06	0.00	29.50	5.01	4.77	0.00
4.00	0.22	0.08	0.00	30.00	5.01	4.77	0.00
4.50	0.25	0.11	0.00				
5.00	0.28	0.13	0.00				
5.50	0.32	0.16	0.00				
6.00	0.36	0.20	0.01				
6.50	0.40	0.23	0.01				
7.00	0.45	0.28	0.01				
7.50	0.51	0.33	0.01				
8.00	0.57	0.38	0.01				
8.50	0.64	0.45	0.01				
9.00	0.73	0.53	0.01				
9.50	0.83	0.63	0.02				
10.00	0.95	0.74	0.02				
10.50	1.08	0.87	0.02				
11.00	1.25	1.04	0.03				
11.50	1.49	1.27	0.04				
12.00	2.50	2.28	0.23				
12.50	3.52	3.28	0.08				
13.00	3.76	3.52	0.03				
13.50	3.93	3.69	0.02				
14.00	4.06	3.83	0.02				
14.50	4.18	3.94	0.02				
15.00	4.28	4.04	0.01				
15.50	4.37	4.13	0.01				
16.00	4.44	4.20	0.01				
16.50	4.50	4.26	0.01				
17.00	4.56	4.32	0.01				
17.50	4.61	4.37	0.01				
18.00	4.65	4.41	0.01				
18.50	4.69	4.45	0.01				
19.00	4.73	4.49	0.01				
19.50	4.76	4.52	0.01				
20.00	4.79	4.56	0.00				
20.50	4.83	4.59	0.00				
21.00	4.86	4.62	0.00				
21.50	4.89	4.65	0.00				
22.00	4.91	4.68	0.00				
22.50	4.94	4.70	0.00				
23.00	4.96	4.73	0.00				
23.50	4.99	4.75	0.00				
24.00	5.01	4.77	0.00				
24.50	5.01	4.77	0.00				
25.00	5.01	4.77	0.00				
25.50	5.01	4.77	0.00				

Summary for Pond ADS: ADS MC4500

Inflow Area = 8,850 sf, 100.00% Impervious, Inflow Depth = 4.77" for 10yr Somerset event
 Inflow = 0.97 cfs @ 12.09 hrs, Volume= 3,520 cf
 Outflow = 0.06 cfs @ 24.40 hrs, Volume= 3,521 cf, Atten= 94%, Lag= 738.8 min
 Discarded = 0.06 cfs @ 24.40 hrs, Volume= 3,521 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 243.36' @ 13.84 hrs Surf.Area= 2,432 sf Storage= 1,716 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 271.4 min (1,019.4 - 748.0)

Volume	Invert	Avail.Storage	Storage Description
#1	240.75'	286 cf	Bottom Stone (Prismatic) Listed below (Recalc) 714 cf Overall x 40.0% Voids
#2	241.50'	971 cf	Stone Around Chamber (Prismatic) Listed below (Recalc) 4,760 cf Overall x 20.4% Voids
#3	241.50'	2,124 cf	ADS_StormTech MC-4500 +Cap @ 77.57' L Effective Size= 90.4"W x 60.0"H => 26.46 sf x 77.57'L = 2,052.3 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap Cap Storage= +35.7 cf x 2 x 1 rows = 71.4 cf
#4	246.50'	381 cf	Top Stone (Prismatic) Listed below (Recalc) 952 cf Overall x 40.0% Voids
		3,761 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.75	952	0	0
241.50	952	714	714

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
241.50	952	0	0
246.50	952	4,760	4,760

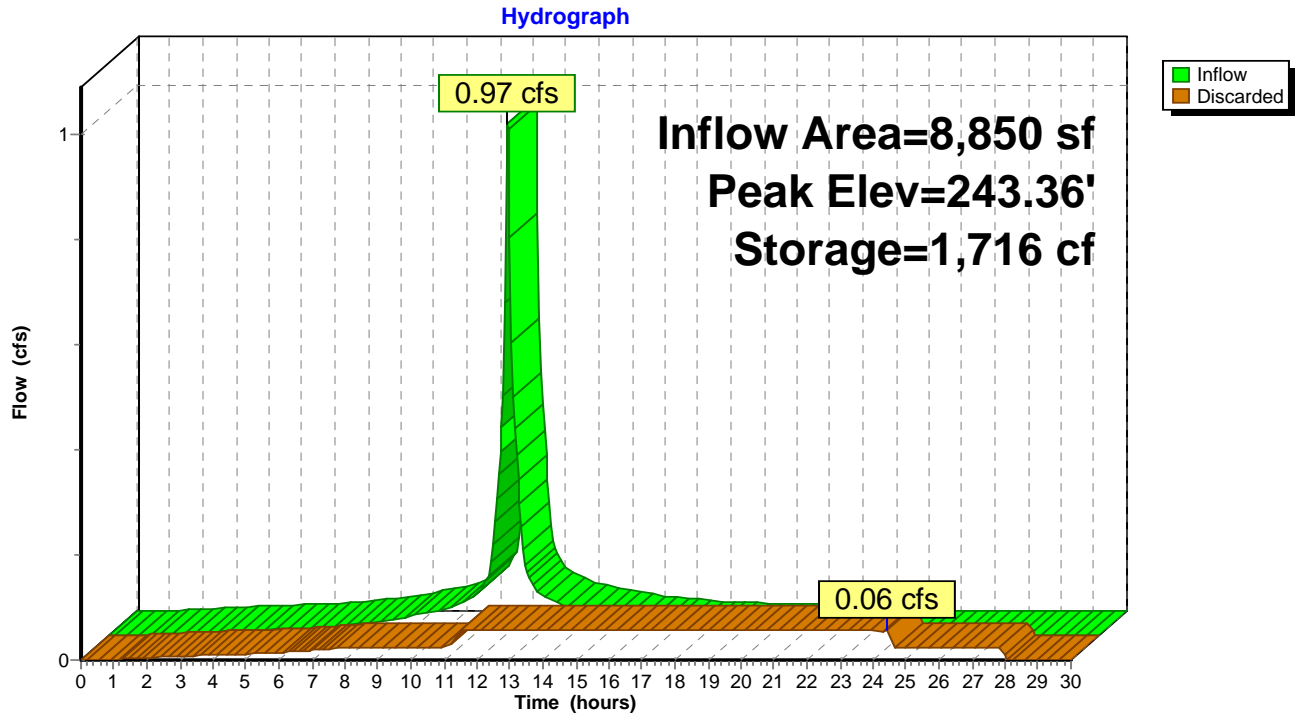
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.50	952	0	0
247.50	952	952	952

Device	Routing	Invert	Outlet Devices
#1	Discarded	240.75'	1.000 in/hr Exfiltration over Surface area

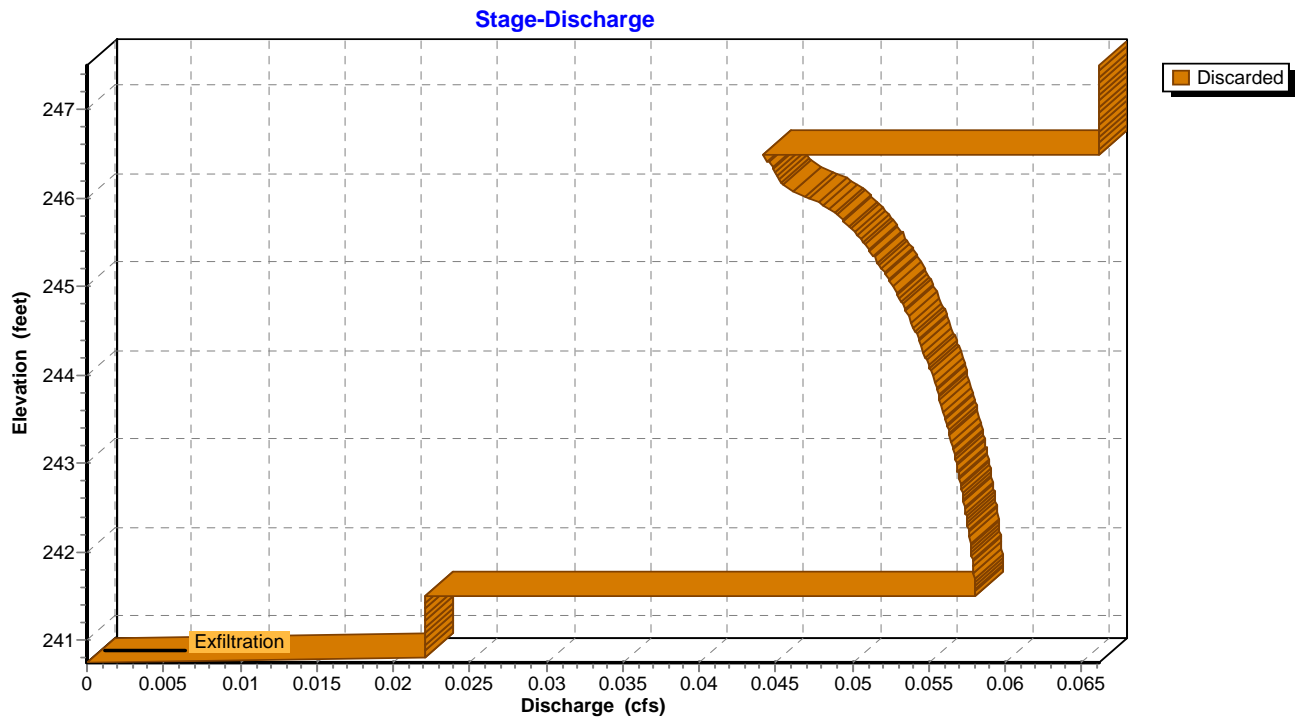
Discarded OutFlow Max=0.06 cfs @ 24.40 hrs HW=241.50' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Pond ADS: ADS MC4500



Pond ADS: ADS MC4500



2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

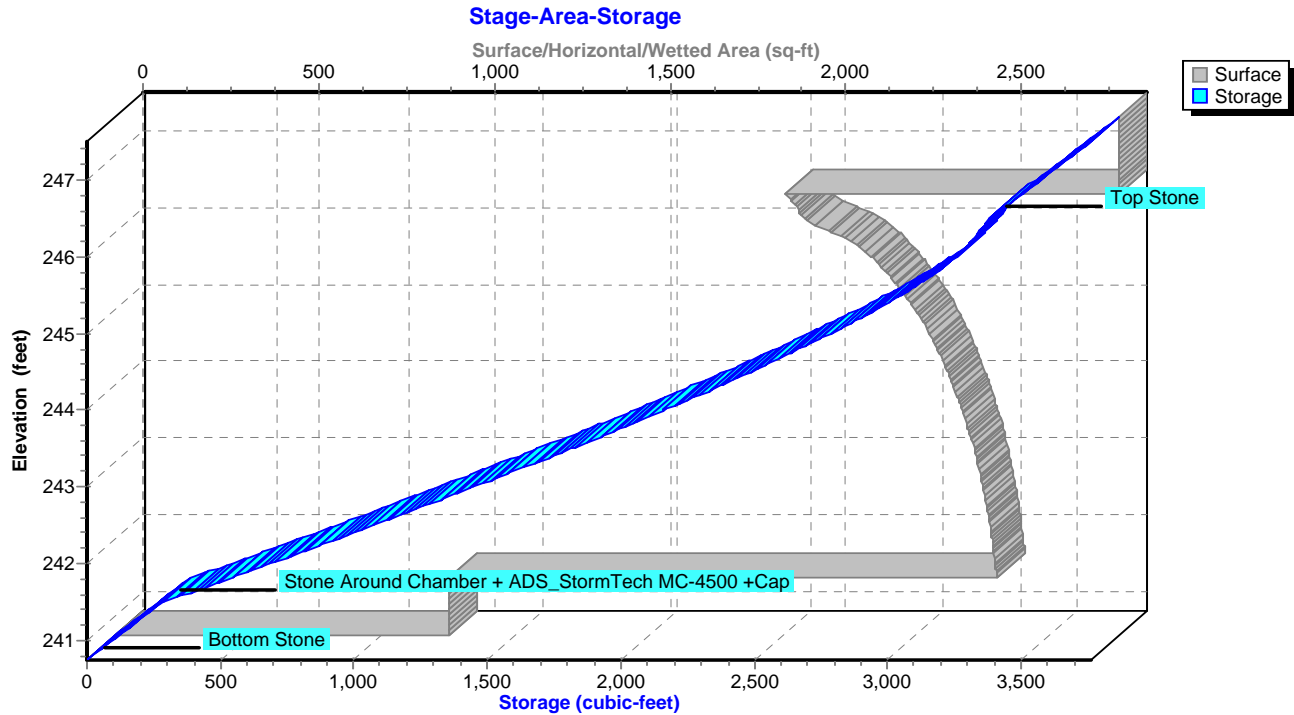
Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 10yr Somerset Rainfall=5.01"

Printed 11/23/2020

Page 27

Pond ADS: ADS MC4500



2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 10yr Somerset Rainfall=5.01"

Printed 11/23/2020

Page 28

Hydrograph for Pond ADS: ADS MC4500

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	240.75	0.00
1.00	0.00	0	240.75	0.00
2.00	0.00	0	240.75	0.00
3.00	0.01	0	240.75	0.01
4.00	0.01	0	240.75	0.01
5.00	0.01	0	240.75	0.01
6.00	0.01	0	240.75	0.01
7.00	0.02	0	240.75	0.02
8.00	0.02	2	240.75	0.02
9.00	0.04	28	240.82	0.02
10.00	0.05	98	241.01	0.02
11.00	0.07	230	241.35	0.02
12.00	0.63	719	242.05	0.06
13.00	0.08	1,683	243.32	0.06
14.00	0.05	1,715	243.36	0.06
15.00	0.04	1,676	243.31	0.06
16.00	0.03	1,594	243.20	0.06
17.00	0.02	1,478	243.04	0.06
18.00	0.02	1,343	242.86	0.06
19.00	0.01	1,195	242.66	0.06
20.00	0.01	1,040	242.46	0.06
21.00	0.01	879	242.25	0.06
22.00	0.01	713	242.04	0.06
23.00	0.01	543	241.82	0.06
24.00	0.01	368	241.60	0.06
25.00	0.00	237	241.37	0.02
26.00	0.00	158	241.16	0.02
27.00	0.00	78	240.96	0.02
28.00	0.00	0	240.75	0.01
29.00	0.00	0	240.75	0.00
30.00	0.00	0	240.75	0.00

Stage-Discharge for Pond ADS: ADS MC4500

Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)
240.75	0.00	242.83	0.06	244.91	0.05	246.99	0.07
240.79	0.02	242.87	0.06	244.95	0.05	247.03	0.07
240.83	0.02	242.91	0.06	244.99	0.05	247.07	0.07
240.87	0.02	242.95	0.06	245.03	0.05	247.11	0.07
240.91	0.02	242.99	0.06	245.07	0.05	247.15	0.07
240.95	0.02	243.03	0.06	245.11	0.05	247.19	0.07
240.99	0.02	243.07	0.06	245.15	0.05	247.23	0.07
241.03	0.02	243.11	0.06	245.19	0.05	247.27	0.07
241.07	0.02	243.15	0.06	245.23	0.05	247.31	0.07
241.11	0.02	243.19	0.06	245.27	0.05	247.35	0.07
241.15	0.02	243.23	0.06	245.31	0.05	247.39	0.07
241.19	0.02	243.27	0.06	245.35	0.05	247.43	0.07
241.23	0.02	243.31	0.06	245.39	0.05	247.47	0.07
241.27	0.02	243.35	0.06	245.43	0.05		
241.31	0.02	243.39	0.06	245.47	0.05		
241.35	0.02	243.43	0.06	245.51	0.05		
241.39	0.02	243.47	0.06	245.55	0.05		
241.43	0.02	243.51	0.06	245.59	0.05		
241.47	0.02	243.55	0.06	245.63	0.05		
241.51	0.06	243.59	0.06	245.67	0.05		
241.55	0.06	243.63	0.06	245.71	0.05		
241.59	0.06	243.67	0.06	245.75	0.05		
241.63	0.06	243.71	0.06	245.79	0.05		
241.67	0.06	243.75	0.06	245.83	0.05		
241.71	0.06	243.79	0.06	245.87	0.05		
241.75	0.06	243.83	0.06	245.91	0.05		
241.79	0.06	243.87	0.06	245.95	0.05		
241.83	0.06	243.91	0.06	245.99	0.05		
241.87	0.06	243.95	0.06	246.03	0.05		
241.91	0.06	243.99	0.06	246.07	0.05		
241.95	0.06	244.03	0.06	246.11	0.05		
241.99	0.06	244.07	0.06	246.15	0.05		
242.03	0.06	244.11	0.05	246.19	0.05		
242.07	0.06	244.15	0.05	246.23	0.05		
242.11	0.06	244.19	0.05	246.27	0.05		
242.15	0.06	244.23	0.05	246.31	0.04		
242.19	0.06	244.27	0.05	246.35	0.04		
242.23	0.06	244.31	0.05	246.39	0.04		
242.27	0.06	244.35	0.05	246.43	0.04		
242.31	0.06	244.39	0.05	246.47	0.04		
242.35	0.06	244.43	0.05	246.51	0.07		
242.39	0.06	244.47	0.05	246.55	0.07		
242.43	0.06	244.51	0.05	246.59	0.07		
242.47	0.06	244.55	0.05	246.63	0.07		
242.51	0.06	244.59	0.05	246.67	0.07		
242.55	0.06	244.63	0.05	246.71	0.07		
242.59	0.06	244.67	0.05	246.75	0.07		
242.63	0.06	244.71	0.05	246.79	0.07		
242.67	0.06	244.75	0.05	246.83	0.07		
242.71	0.06	244.79	0.05	246.87	0.07		
242.75	0.06	244.83	0.05	246.91	0.07		
242.79	0.06	244.87	0.05	246.95	0.07		

Summary for Pond PB: Proposed Basin

Inflow Area = 3,265 sf, 100.00% Impervious, Inflow Depth = 4.77" for 10yr Somerset event
 Inflow = 0.36 cfs @ 12.09 hrs, Volume= 1,299 cf
 Outflow = 0.02 cfs @ 13.67 hrs, Volume= 1,208 cf, Atten= 94%, Lag= 94.9 min
 Discarded = 0.02 cfs @ 13.67 hrs, Volume= 1,208 cf
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 248.56' @ 13.67 hrs Surf.Area= 966 sf Storage= 712 cf

Plug-Flow detention time= 366.8 min calculated for 1,208 cf (93% of inflow)
 Center-of-Mass det. time= 328.5 min (1,076.5 - 748.0)

Volume	Invert	Avail.Storage	Storage Description
#1	247.00'	2,900 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

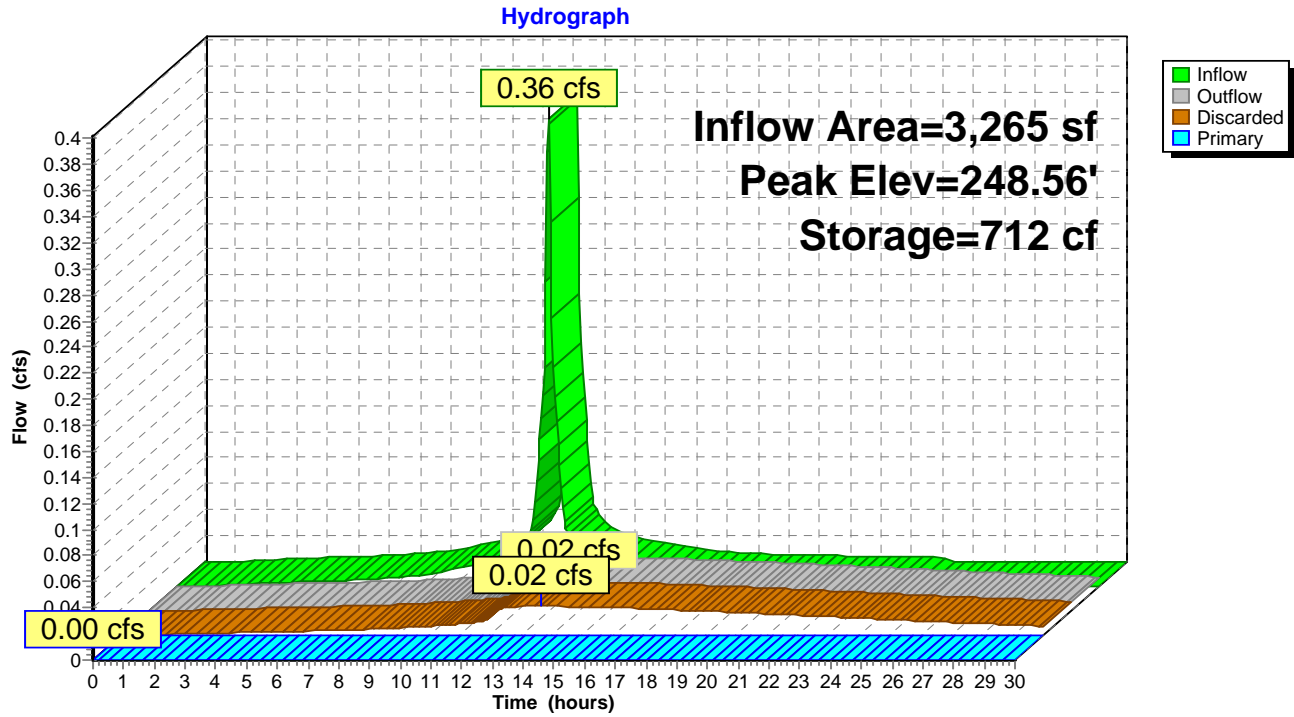
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
247.00	27	0	0
248.00	548	288	288
249.00	1,293	921	1,208
249.50	1,689	746	1,954
250.00	2,098	947	2,900

Device	Routing	Invert	Outlet Devices
#1	Discarded	247.00'	1.000 in/hr Exfiltration over Surface area
#2	Primary	248.85'	15.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

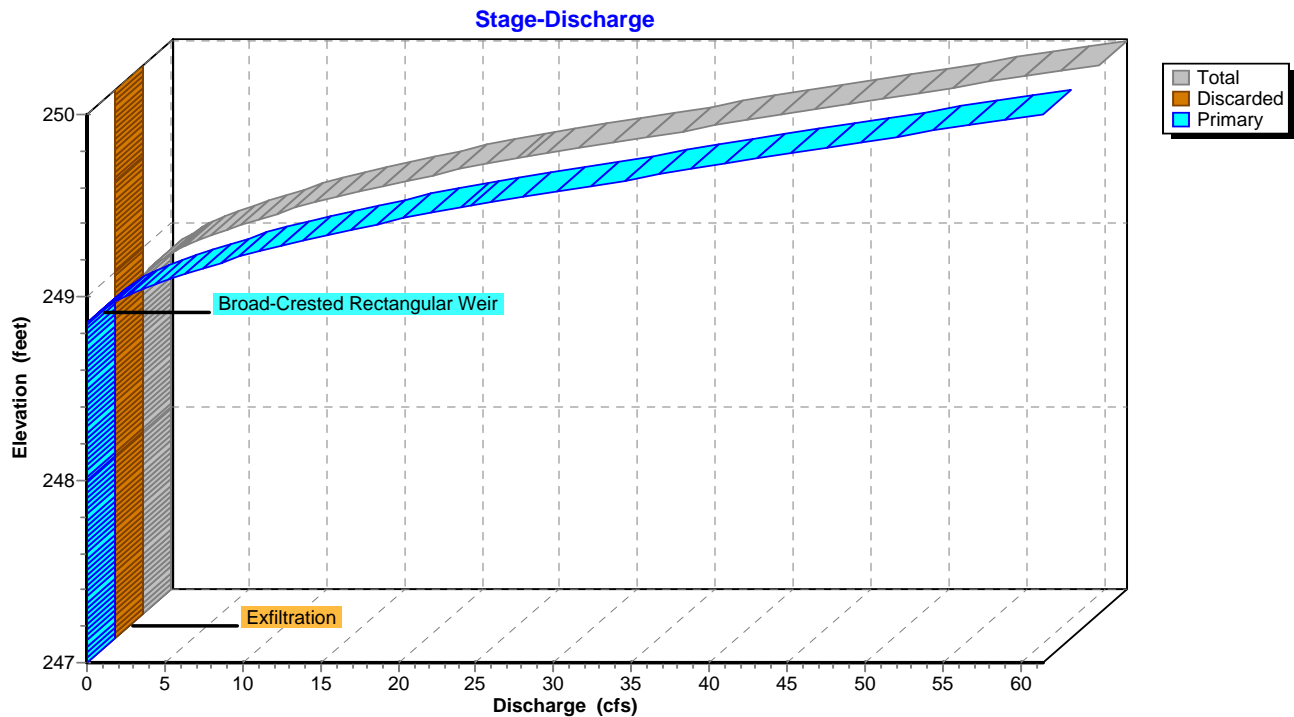
Discarded OutFlow Max=0.02 cfs @ 13.67 hrs HW=248.56' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=247.00' (Free Discharge)
 ↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond PB: Proposed Basin



Pond PB: Proposed Basin



2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

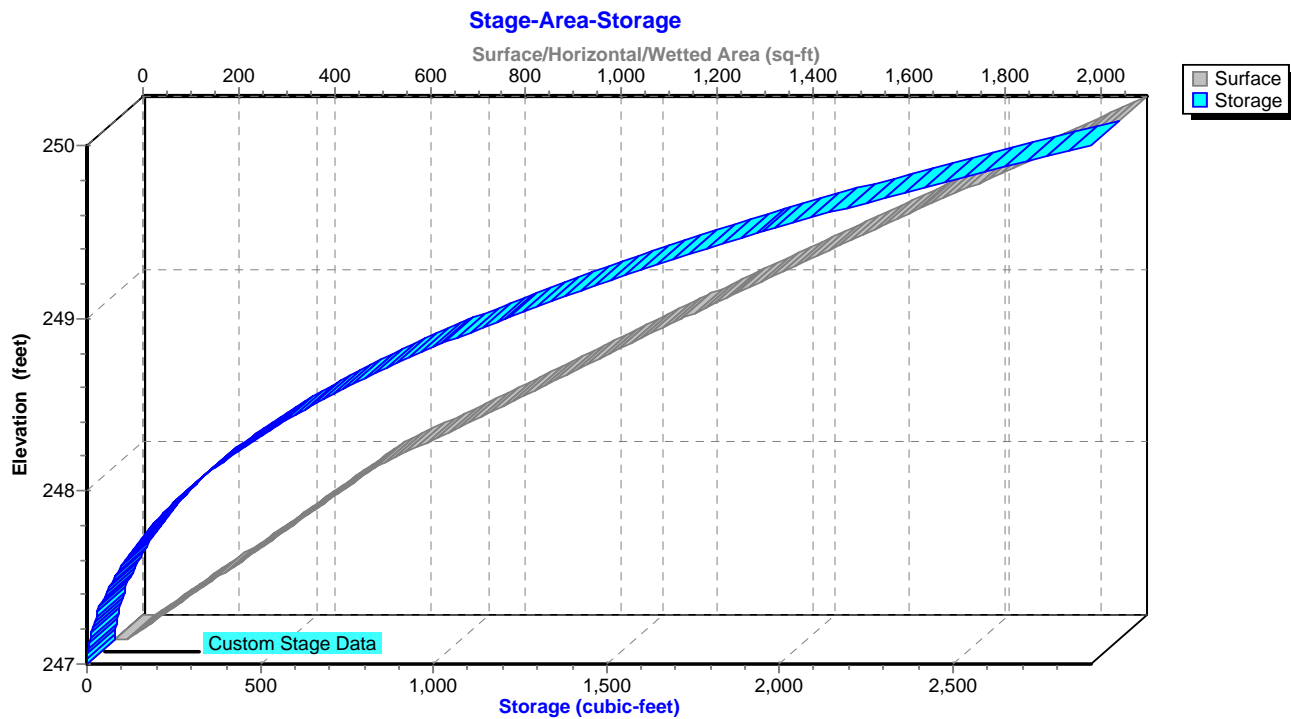
Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 10yr Somerset Rainfall=5.01"

Printed 11/23/2020

Page 32

Pond PB: Proposed Basin



2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 10yr Somerset Rainfall=5.01"

Printed 11/23/2020

Page 33

Hydrograph for Pond PB: Proposed Basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	247.00	0.00	0.00	0.00
1.00	0.00	0	247.00	0.00	0.00	0.00
2.00	0.00	1	247.02	0.00	0.00	0.00
3.00	0.00	3	247.07	0.00	0.00	0.00
4.00	0.00	7	247.13	0.00	0.00	0.00
5.00	0.00	13	247.17	0.00	0.00	0.00
6.00	0.01	19	247.22	0.00	0.00	0.00
7.00	0.01	27	247.27	0.00	0.00	0.00
8.00	0.01	40	247.34	0.00	0.00	0.00
9.00	0.01	60	247.43	0.01	0.01	0.00
10.00	0.02	92	247.54	0.01	0.01	0.00
11.00	0.03	141	247.69	0.01	0.01	0.00
12.00	0.23	347	248.10	0.01	0.01	0.00
13.00	0.03	704	248.55	0.02	0.02	0.00
14.00	0.02	710	248.56	0.02	0.02	0.00
15.00	0.01	691	248.54	0.02	0.02	0.00
16.00	0.01	658	248.50	0.02	0.02	0.00
17.00	0.01	615	248.46	0.02	0.02	0.00
18.00	0.01	568	248.40	0.02	0.02	0.00
19.00	0.01	520	248.34	0.02	0.02	0.00
20.00	0.00	474	248.29	0.02	0.02	0.00
21.00	0.00	430	248.22	0.02	0.02	0.00
22.00	0.00	387	248.16	0.02	0.02	0.00
23.00	0.00	347	248.10	0.01	0.01	0.00
24.00	0.00	310	248.04	0.01	0.01	0.00
25.00	0.00	265	247.96	0.01	0.01	0.00
26.00	0.00	223	247.87	0.01	0.01	0.00
27.00	0.00	185	247.79	0.01	0.01	0.00
28.00	0.00	150	247.71	0.01	0.01	0.00
29.00	0.00	119	247.62	0.01	0.01	0.00
30.00	0.00	91	247.54	0.01	0.01	0.00

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 10yr Somerset Rainfall=5.01"

Printed 11/23/2020

Page 34

Stage-Discharge for Pond PB: Proposed Basin

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
247.00	0.00	0.00	0.00	249.60	31.66	0.04	31.62
247.05	0.00	0.00	0.00	249.65	35.46	0.04	35.42
247.10	0.00	0.00	0.00	249.70	38.89	0.04	38.85
247.15	0.00	0.00	0.00	249.75	42.44	0.04	42.39
247.20	0.00	0.00	0.00	249.80	46.09	0.04	46.04
247.25	0.00	0.00	0.00	249.85	49.85	0.05	49.80
247.30	0.00	0.00	0.00	249.90	53.63	0.05	53.58
247.35	0.00	0.00	0.00	249.95	57.50	0.05	57.45
247.40	0.01	0.01	0.00	250.00	61.46	0.05	61.42
247.45	0.01	0.01	0.00				
247.50	0.01	0.01	0.00				
247.55	0.01	0.01	0.00				
247.60	0.01	0.01	0.00				
247.65	0.01	0.01	0.00				
247.70	0.01	0.01	0.00				
247.75	0.01	0.01	0.00				
247.80	0.01	0.01	0.00				
247.85	0.01	0.01	0.00				
247.90	0.01	0.01	0.00				
247.95	0.01	0.01	0.00				
248.00	0.01	0.01	0.00				
248.05	0.01	0.01	0.00				
248.10	0.01	0.01	0.00				
248.15	0.02	0.02	0.00				
248.20	0.02	0.02	0.00				
248.25	0.02	0.02	0.00				
248.30	0.02	0.02	0.00				
248.35	0.02	0.02	0.00				
248.40	0.02	0.02	0.00				
248.45	0.02	0.02	0.00				
248.50	0.02	0.02	0.00				
248.55	0.02	0.02	0.00				
248.60	0.02	0.02	0.00				
248.65	0.02	0.02	0.00				
248.70	0.02	0.02	0.00				
248.75	0.03	0.03	0.00				
248.80	0.03	0.03	0.00				
248.85	0.03	0.03	0.00				
248.90	0.50	0.03	0.47				
248.95	1.36	0.03	1.33				
249.00	2.47	0.03	2.44				
249.05	3.79	0.03	3.76				
249.10	5.34	0.03	5.31				
249.15	7.08	0.03	7.05				
249.20	9.01	0.03	8.98				
249.25	11.12	0.03	11.08				
249.30	13.44	0.04	13.40				
249.35	15.95	0.04	15.91				
249.40	18.64	0.04	18.60				
249.45	21.51	0.04	21.47				
249.50	24.68	0.04	24.64				
249.55	28.06	0.04	28.02				

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 100yr Somerset Rainfall=8.21"

Printed 11/23/2020

Page 35

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points x 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment FCA: Fitness Center

Runoff Area=8,850 sf 100.00% Impervious Runoff Depth=7.97"

Tc=6.0 min CN=98 Runoff=1.60 cfs 5,878 cf

Subcatchment PC: Pickleball Court

Runoff Area=3,265 sf 100.00% Impervious Runoff Depth=7.97"

Tc=6.0 min CN=98 Runoff=0.59 cfs 2,169 cf

Pond ADS: ADS MC4500

Peak Elev=246.50' Storage=3,380 cf Inflow=1.60 cfs 5,878 cf

Outflow=0.07 cfs 4,396 cf

Pond PB: Proposed Basin

Peak Elev=248.88' Storage=1,054 cf Inflow=0.59 cfs 2,169 cf

Discarded=0.03 cfs 1,666 cf Primary=0.18 cfs 262 cf Outflow=0.21 cfs 1,929 cf

Total Runoff Area = 12,115 sf Runoff Volume = 8,046 cf Average Runoff Depth = 7.97"
0.00% Pervious = 0 sf 100.00% Impervious = 12,115 sf

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 100yr Somerset Rainfall=8.21"

Printed 11/23/2020

Page 36

Summary for Subcatchment FCA: Fitness Center Addition

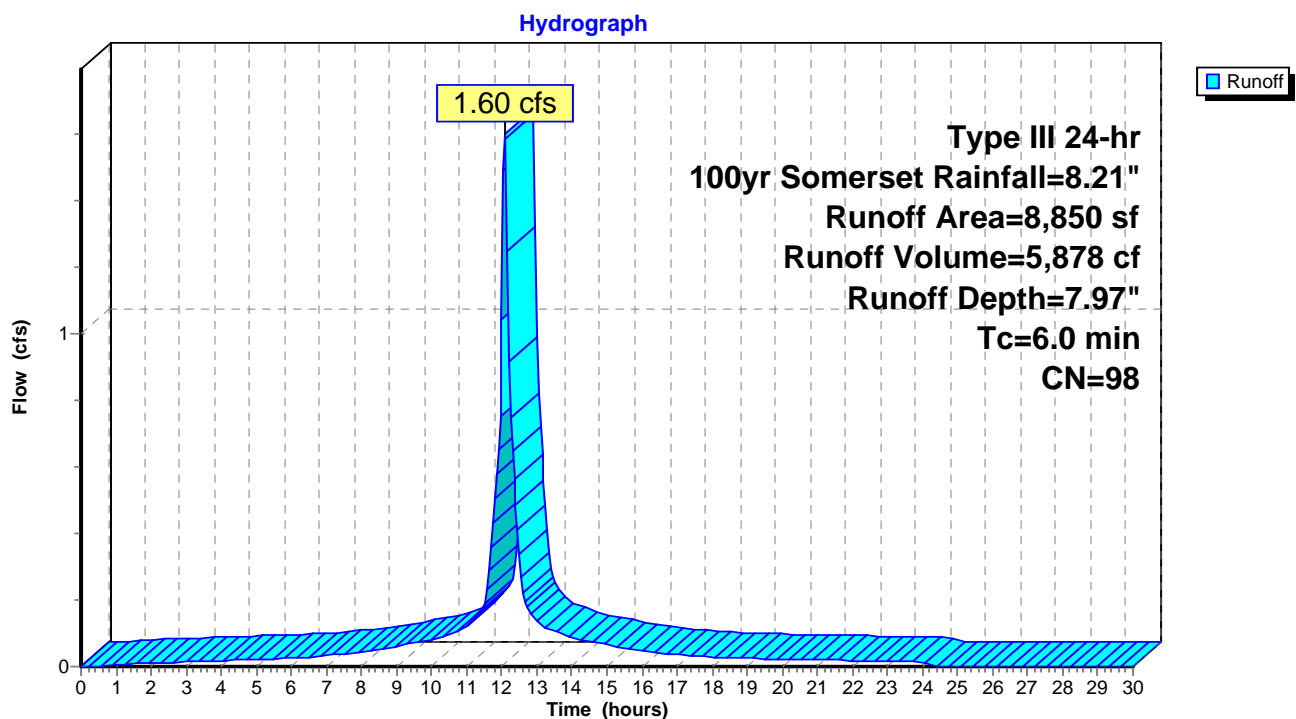
Runoff = 1.60 cfs @ 12.09 hrs, Volume= 5,878 cf, Depth= 7.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Somerset Rainfall=8.21"

	Area (sf)	CN	Description
*	7,270	98	Fitness Center Roof
*	1,580	98	Fitness Center Walk
	8,850	98	Weighted Average
	8,850		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Roof Drains

Subcatchment FCA: Fitness Center Addition



2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 100yr Somerset Rainfall=8.21"

Printed 11/23/2020

Page 37

Hydrograph for Subcatchment FCA: Fitness Center Addition

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	8.21	7.97	0.00
0.50	0.04	0.00	0.00	26.50	8.21	7.97	0.00
1.00	0.08	0.01	0.00	27.00	8.21	7.97	0.00
1.50	0.12	0.02	0.01	27.50	8.21	7.97	0.00
2.00	0.16	0.05	0.01	28.00	8.21	7.97	0.00
2.50	0.21	0.07	0.01	28.50	8.21	7.97	0.00
3.00	0.25	0.11	0.01	29.00	8.21	7.97	0.00
3.50	0.30	0.15	0.02	29.50	8.21	7.97	0.00
4.00	0.35	0.19	0.02	30.00	8.21	7.97	0.00
4.50	0.41	0.24	0.02				
5.00	0.47	0.29	0.02				
5.50	0.53	0.34	0.02				
6.00	0.59	0.40	0.02				
6.50	0.66	0.47	0.03				
7.00	0.74	0.54	0.03				
7.50	0.83	0.63	0.04				
8.00	0.94	0.73	0.04				
8.50	1.05	0.84	0.05				
9.00	1.20	0.98	0.06				
9.50	1.36	1.14	0.07				
10.00	1.55	1.33	0.08				
10.50	1.78	1.55	0.10				
11.00	2.05	1.83	0.12				
11.50	2.45	2.22	0.18				
12.00	4.10	3.87	1.04				
12.50	5.76	5.53	0.34				
13.00	6.16	5.92	0.14				
13.50	6.43	6.19	0.11				
14.00	6.66	6.42	0.09				
14.50	6.85	6.61	0.07				
15.00	7.01	6.77	0.06				
15.50	7.16	6.92	0.06				
16.00	7.27	7.03	0.05				
16.50	7.38	7.14	0.04				
17.00	7.47	7.23	0.04				
17.50	7.55	7.31	0.03				
18.00	7.62	7.38	0.03				
18.50	7.68	7.44	0.03				
19.00	7.74	7.50	0.02				
19.50	7.80	7.56	0.02				
20.00	7.86	7.62	0.02				
20.50	7.91	7.67	0.02				
21.00	7.96	7.72	0.02				
21.50	8.01	7.77	0.02				
22.00	8.05	7.81	0.02				
22.50	8.09	7.86	0.02				
23.00	8.14	7.90	0.02				
23.50	8.17	7.93	0.02				
24.00	8.21	7.97	0.01				
24.50	8.21	7.97	0.00				
25.00	8.21	7.97	0.00				
25.50	8.21	7.97	0.00				

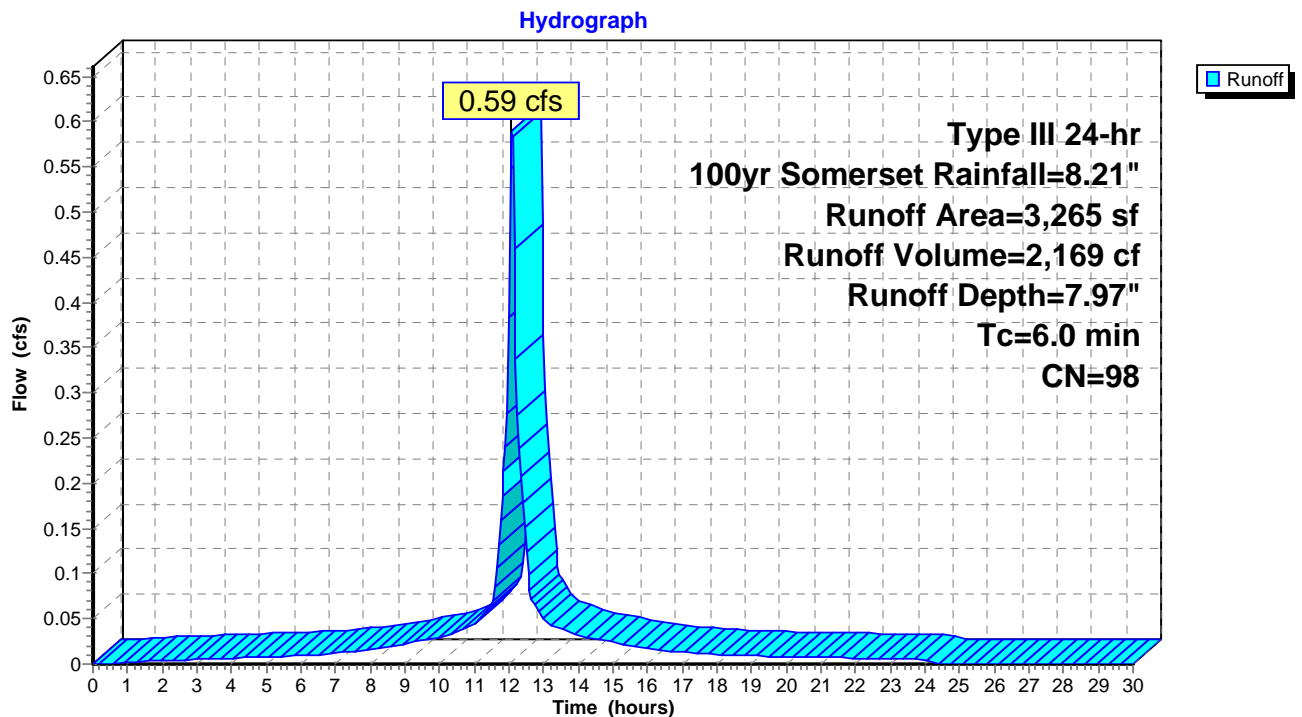
Summary for Subcatchment PC: Pickleball Court

Runoff = 0.59 cfs @ 12.09 hrs, Volume= 2,169 cf, Depth= 7.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Somerset Rainfall=8.21"

	Area (sf)	CN	Description
*	1,905	98	Pickleball Court & Walk
*	480	98	Shuffleboard & Walk
*	880	98	Bocce & Concrete Walk
	3,265	98	Weighted Average
	3,265		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Pickleball Court

Subcatchment PC: Pickleball Court

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 100yr Somerset Rainfall=8.21"

Printed 11/23/2020

Page 39

Hydrograph for Subcatchment PC: Pickleball Court

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	8.21	7.97	0.00
0.50	0.04	0.00	0.00	26.50	8.21	7.97	0.00
1.00	0.08	0.01	0.00	27.00	8.21	7.97	0.00
1.50	0.12	0.02	0.00	27.50	8.21	7.97	0.00
2.00	0.16	0.05	0.00	28.00	8.21	7.97	0.00
2.50	0.21	0.07	0.00	28.50	8.21	7.97	0.00
3.00	0.25	0.11	0.01	29.00	8.21	7.97	0.00
3.50	0.30	0.15	0.01	29.50	8.21	7.97	0.00
4.00	0.35	0.19	0.01	30.00	8.21	7.97	0.00
4.50	0.41	0.24	0.01				
5.00	0.47	0.29	0.01				
5.50	0.53	0.34	0.01				
6.00	0.59	0.40	0.01				
6.50	0.66	0.47	0.01				
7.00	0.74	0.54	0.01				
7.50	0.83	0.63	0.01				
8.00	0.94	0.73	0.02				
8.50	1.05	0.84	0.02				
9.00	1.20	0.98	0.02				
9.50	1.36	1.14	0.03				
10.00	1.55	1.33	0.03				
10.50	1.78	1.55	0.04				
11.00	2.05	1.83	0.04				
11.50	2.45	2.22	0.07				
12.00	4.10	3.87	0.38				
12.50	5.76	5.53	0.12				
13.00	6.16	5.92	0.05				
13.50	6.43	6.19	0.04				
14.00	6.66	6.42	0.03				
14.50	6.85	6.61	0.03				
15.00	7.01	6.77	0.02				
15.50	7.16	6.92	0.02				
16.00	7.27	7.03	0.02				
16.50	7.38	7.14	0.01				
17.00	7.47	7.23	0.01				
17.50	7.55	7.31	0.01				
18.00	7.62	7.38	0.01				
18.50	7.68	7.44	0.01				
19.00	7.74	7.50	0.01				
19.50	7.80	7.56	0.01				
20.00	7.86	7.62	0.01				
20.50	7.91	7.67	0.01				
21.00	7.96	7.72	0.01				
21.50	8.01	7.77	0.01				
22.00	8.05	7.81	0.01				
22.50	8.09	7.86	0.01				
23.00	8.14	7.90	0.01				
23.50	8.17	7.93	0.01				
24.00	8.21	7.97	0.01				
24.50	8.21	7.97	0.00				
25.00	8.21	7.97	0.00				
25.50	8.21	7.97	0.00				

Summary for Pond ADS: ADS MC4500

Inflow Area = 8,850 sf, 100.00% Impervious, Inflow Depth = 7.97" for 100yr Somerset event
 Inflow = 1.60 cfs @ 12.09 hrs, Volume= 5,878 cf
 Outflow = 0.07 cfs @ 14.98 hrs, Volume= 4,396 cf, Atten= 96%, Lag= 173.5 min
 Discarded = 0.07 cfs @ 14.98 hrs, Volume= 4,396 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 246.50' @ 14.95 hrs Surf.Area= 2,856 sf Storage= 3,380 cf

Plug-Flow detention time= 433.5 min calculated for 4,389 cf (75% of inflow)
 Center-of-Mass det. time= 346.0 min (1,086.9 - 740.9)

Volume	Invert	Avail.Storage	Storage Description
#1	240.75'	286 cf	Bottom Stone (Prismatic) Listed below (Recalc) 714 cf Overall x 40.0% Voids
#2	241.50'	971 cf	Stone Around Chamber (Prismatic) Listed below (Recalc) 4,760 cf Overall x 20.4% Voids
#3	241.50'	2,124 cf	ADS_StormTech MC-4500 +Cap @ 77.57' L Effective Size= 90.4"W x 60.0"H => 26.46 sf x 77.57'L = 2,052.3 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap Cap Storage= +35.7 cf x 2 x 1 rows = 71.4 cf
#4	246.50'	381 cf	Top Stone (Prismatic) Listed below (Recalc) 952 cf Overall x 40.0% Voids
		3,761 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.75	952	0	0
241.50	952	714	714

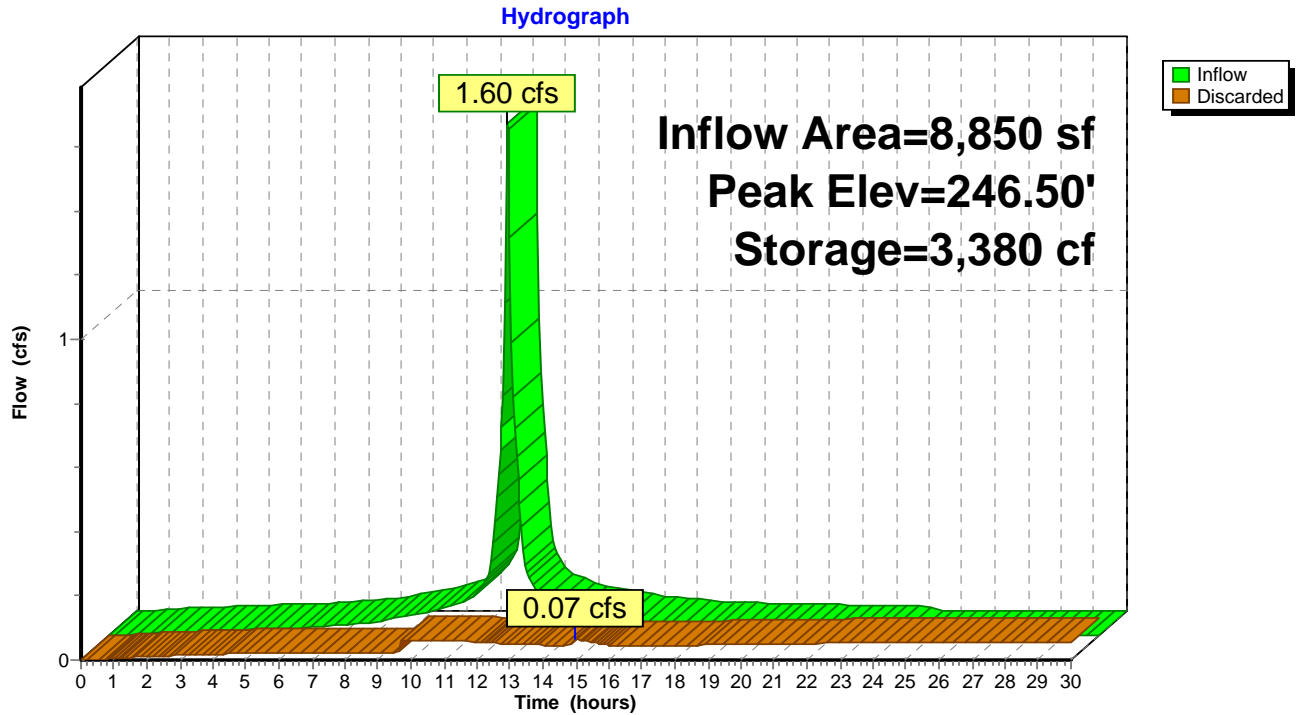
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
241.50	952	0	0
246.50	952	4,760	4,760

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.50	952	0	0
247.50	952	952	952

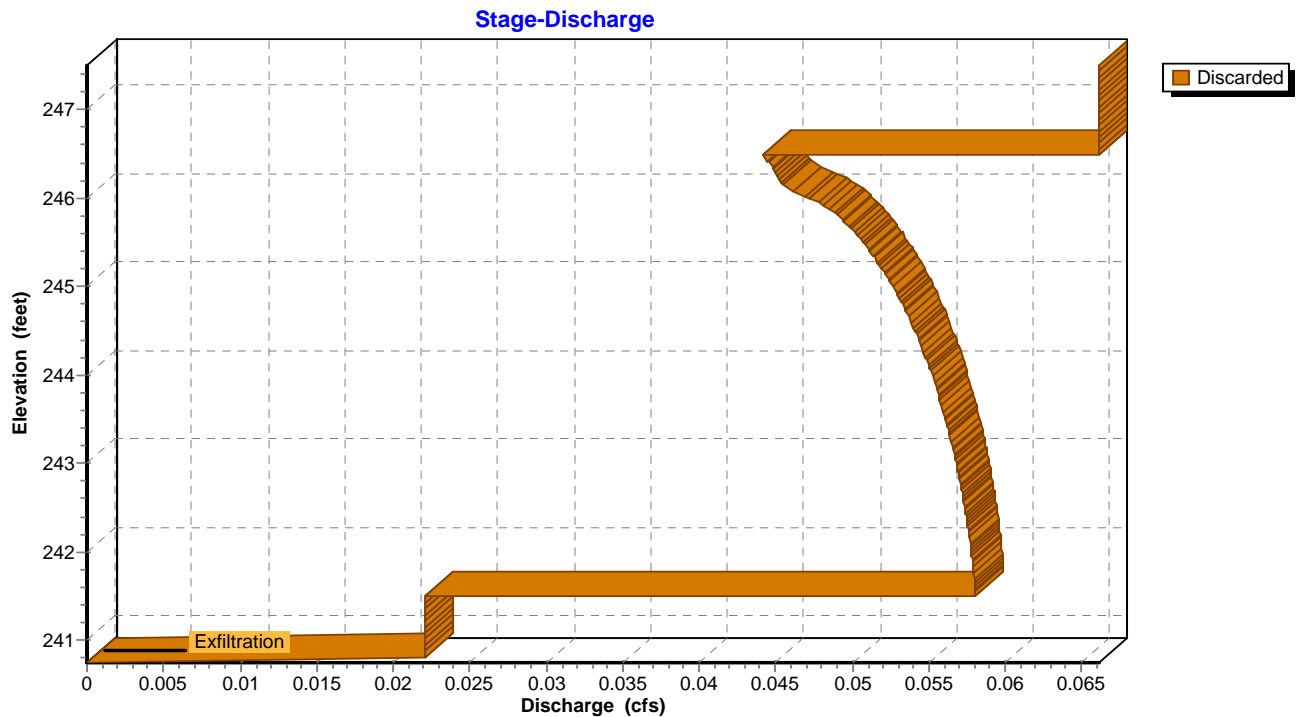
Device	Routing	Invert	Outlet Devices
#1	Discarded	240.75'	1.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.07 cfs @ 14.98 hrs HW=246.50' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.07 cfs)

Pond ADS: ADS MC4500



Pond ADS: ADS MC4500



2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

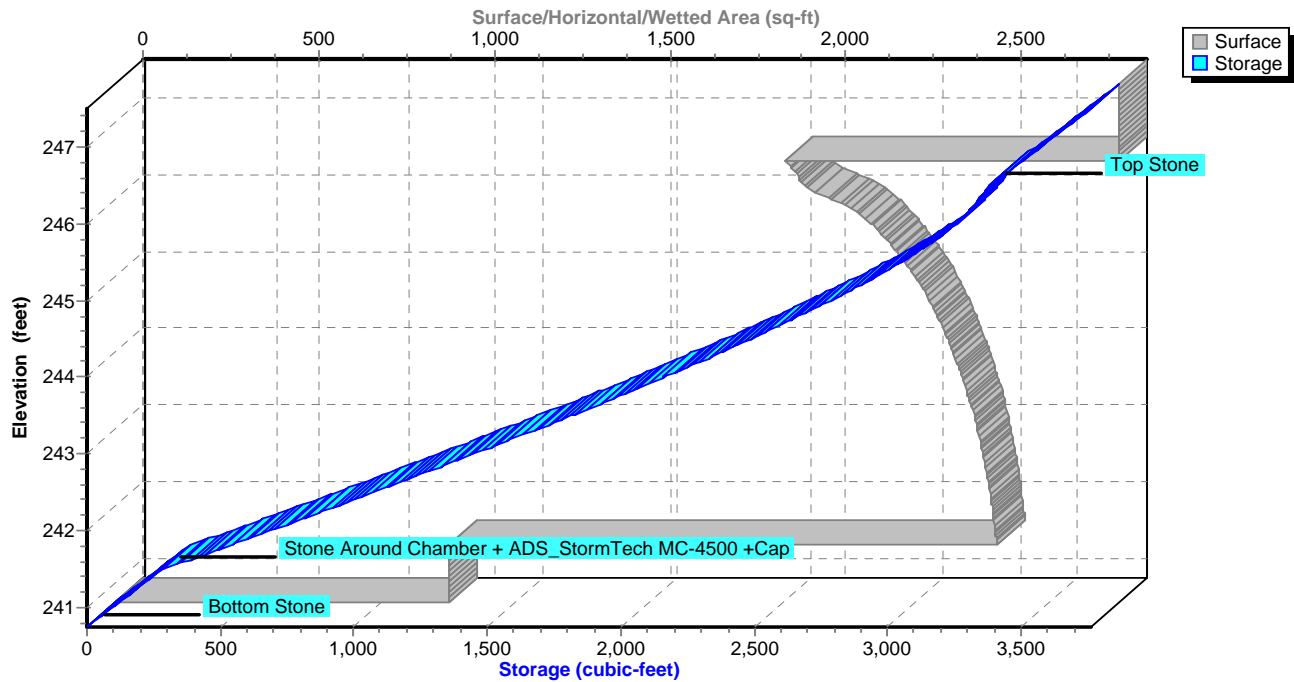
Type III 24-hr 100yr Somerset Rainfall=8.21"

Printed 11/23/2020

Page 42

Pond ADS: ADS MC4500

Stage-Area-Storage



2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 100yr Somerset Rainfall=8.21"

Printed 11/23/2020

Page 43

Hydrograph for Pond ADS: ADS MC4500

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	240.75	0.00
1.00	0.00	0	240.75	0.00
2.00	0.01	0	240.75	0.01
3.00	0.01	0	240.75	0.01
4.00	0.02	0	240.75	0.02
5.00	0.02	0	240.75	0.02
6.00	0.02	4	240.76	0.02
7.00	0.03	27	240.82	0.02
8.00	0.04	81	240.96	0.02
9.00	0.06	183	241.23	0.02
10.00	0.08	311	241.53	0.06
11.00	0.12	454	241.71	0.06
12.00	1.04	1,340	242.85	0.06
13.00	0.14	3,070	245.54	0.05
14.00	0.09	3,279	246.07	0.05
15.00	0.06	3,380	246.50	0.07
16.00	0.05	3,380	246.50	0.05
17.00	0.04	3,366	246.43	0.04
18.00	0.03	3,319	246.22	0.05
19.00	0.02	3,247	245.97	0.05
20.00	0.02	3,156	245.73	0.05
21.00	0.02	3,051	245.50	0.05
22.00	0.02	2,936	245.27	0.05
23.00	0.02	2,811	245.04	0.05
24.00	0.01	2,676	244.81	0.05
25.00	0.00	2,487	244.50	0.05
26.00	0.00	2,291	244.19	0.05
27.00	0.00	2,093	243.90	0.06
28.00	0.00	1,892	243.61	0.06
29.00	0.00	1,690	243.33	0.06
30.00	0.00	1,487	243.05	0.06

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 100yr Somerset Rainfall=8.21"

Printed 11/23/2020

Page 44

Stage-Discharge for Pond ADS: ADS MC4500

Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)
240.75	0.00	242.83	0.06	244.91	0.05	246.99	0.07
240.79	0.02	242.87	0.06	244.95	0.05	247.03	0.07
240.83	0.02	242.91	0.06	244.99	0.05	247.07	0.07
240.87	0.02	242.95	0.06	245.03	0.05	247.11	0.07
240.91	0.02	242.99	0.06	245.07	0.05	247.15	0.07
240.95	0.02	243.03	0.06	245.11	0.05	247.19	0.07
240.99	0.02	243.07	0.06	245.15	0.05	247.23	0.07
241.03	0.02	243.11	0.06	245.19	0.05	247.27	0.07
241.07	0.02	243.15	0.06	245.23	0.05	247.31	0.07
241.11	0.02	243.19	0.06	245.27	0.05	247.35	0.07
241.15	0.02	243.23	0.06	245.31	0.05	247.39	0.07
241.19	0.02	243.27	0.06	245.35	0.05	247.43	0.07
241.23	0.02	243.31	0.06	245.39	0.05	247.47	0.07
241.27	0.02	243.35	0.06	245.43	0.05		
241.31	0.02	243.39	0.06	245.47	0.05		
241.35	0.02	243.43	0.06	245.51	0.05		
241.39	0.02	243.47	0.06	245.55	0.05		
241.43	0.02	243.51	0.06	245.59	0.05		
241.47	0.02	243.55	0.06	245.63	0.05		
241.51	0.06	243.59	0.06	245.67	0.05		
241.55	0.06	243.63	0.06	245.71	0.05		
241.59	0.06	243.67	0.06	245.75	0.05		
241.63	0.06	243.71	0.06	245.79	0.05		
241.67	0.06	243.75	0.06	245.83	0.05		
241.71	0.06	243.79	0.06	245.87	0.05		
241.75	0.06	243.83	0.06	245.91	0.05		
241.79	0.06	243.87	0.06	245.95	0.05		
241.83	0.06	243.91	0.06	245.99	0.05		
241.87	0.06	243.95	0.06	246.03	0.05		
241.91	0.06	243.99	0.06	246.07	0.05		
241.95	0.06	244.03	0.06	246.11	0.05		
241.99	0.06	244.07	0.06	246.15	0.05		
242.03	0.06	244.11	0.05	246.19	0.05		
242.07	0.06	244.15	0.05	246.23	0.05		
242.11	0.06	244.19	0.05	246.27	0.05		
242.15	0.06	244.23	0.05	246.31	0.04		
242.19	0.06	244.27	0.05	246.35	0.04		
242.23	0.06	244.31	0.05	246.39	0.04		
242.27	0.06	244.35	0.05	246.43	0.04		
242.31	0.06	244.39	0.05	246.47	0.04		
242.35	0.06	244.43	0.05	246.51	0.07		
242.39	0.06	244.47	0.05	246.55	0.07		
242.43	0.06	244.51	0.05	246.59	0.07		
242.47	0.06	244.55	0.05	246.63	0.07		
242.51	0.06	244.59	0.05	246.67	0.07		
242.55	0.06	244.63	0.05	246.71	0.07		
242.59	0.06	244.67	0.05	246.75	0.07		
242.63	0.06	244.71	0.05	246.79	0.07		
242.67	0.06	244.75	0.05	246.83	0.07		
242.71	0.06	244.79	0.05	246.87	0.07		
242.75	0.06	244.83	0.05	246.91	0.07		
242.79	0.06	244.87	0.05	246.95	0.07		

Summary for Pond PB: Proposed Basin

Inflow Area = 3,265 sf, 100.00% Impervious, Inflow Depth = 7.97" for 100yr Somerset event
 Inflow = 0.59 cfs @ 12.09 hrs, Volume= 2,169 cf
 Outflow = 0.21 cfs @ 12.37 hrs, Volume= 1,929 cf, Atten= 64%, Lag= 17.0 min
 Discarded = 0.03 cfs @ 12.37 hrs, Volume= 1,666 cf
 Primary = 0.18 cfs @ 12.37 hrs, Volume= 262 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 248.88' @ 12.37 hrs Surf.Area= 1,201 sf Storage= 1,054 cf

Plug-Flow detention time= 352.0 min calculated for 1,926 cf (89% of inflow)
 Center-of-Mass det. time= 298.8 min (1,039.7 - 740.9)

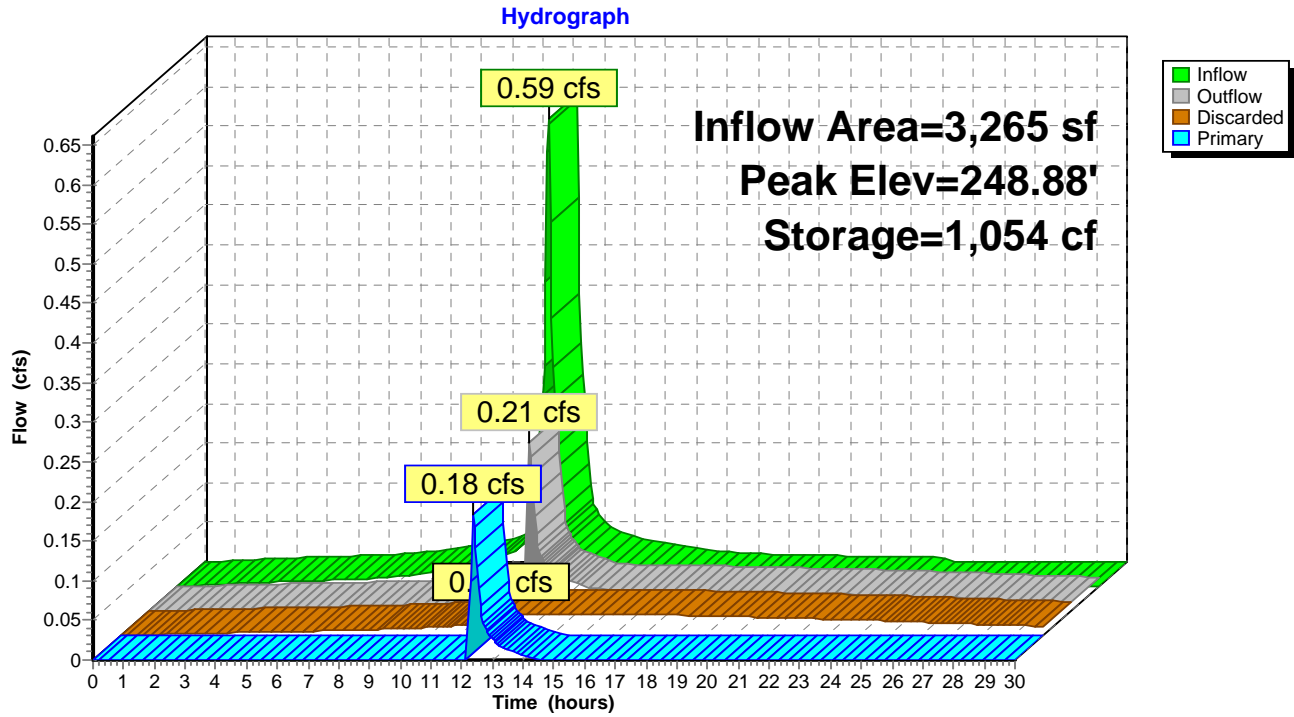
Volume	Invert	Avail.Storage	Storage Description
#1	247.00'	2,900 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
247.00	27	0	0
248.00	548	288	288
249.00	1,293	921	1,208
249.50	1,689	746	1,954
250.00	2,098	947	2,900

Device	Routing	Invert	Outlet Devices
#1	Discarded	247.00'	1.000 in/hr Exfiltration over Surface area
#2	Primary	248.85'	15.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

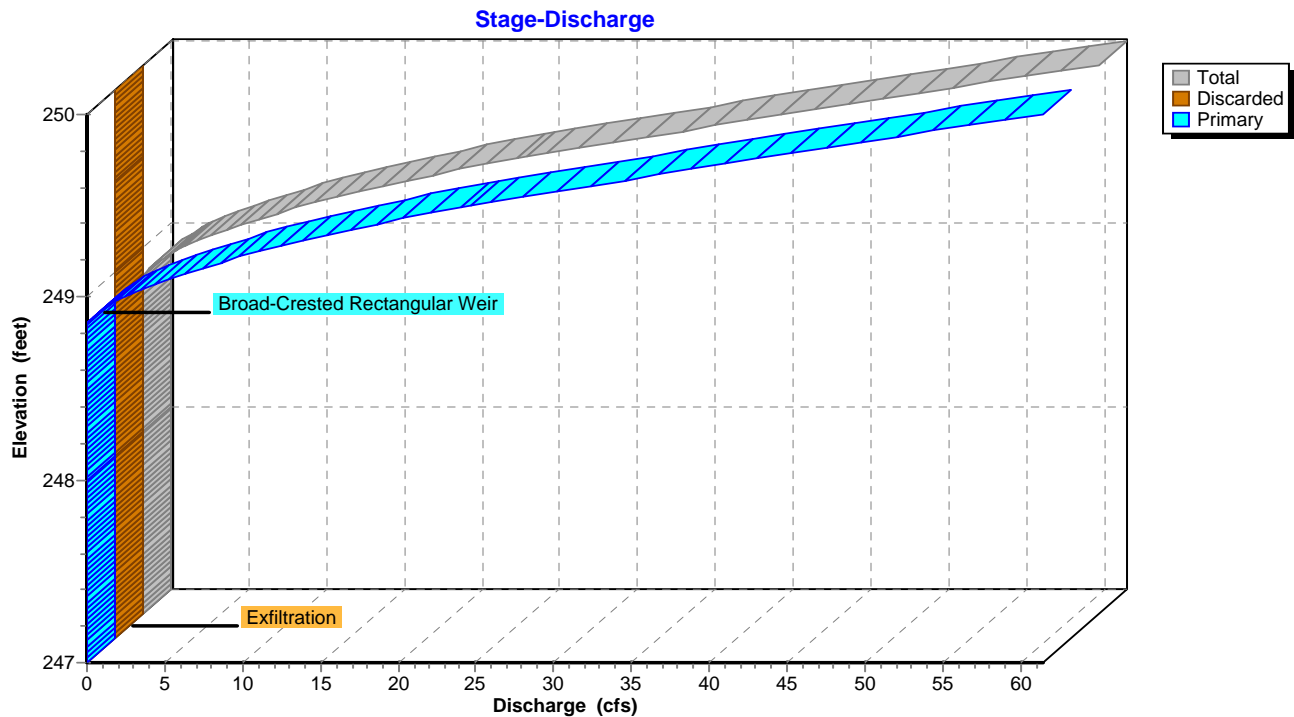
Discarded OutFlow Max=0.03 cfs @ 12.37 hrs HW=248.88' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.17 cfs @ 12.37 hrs HW=248.88' (Free Discharge)
 ↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 0.17 cfs @ 0.45 fps)

Pond PB: Proposed Basin



Pond PB: Proposed Basin



2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

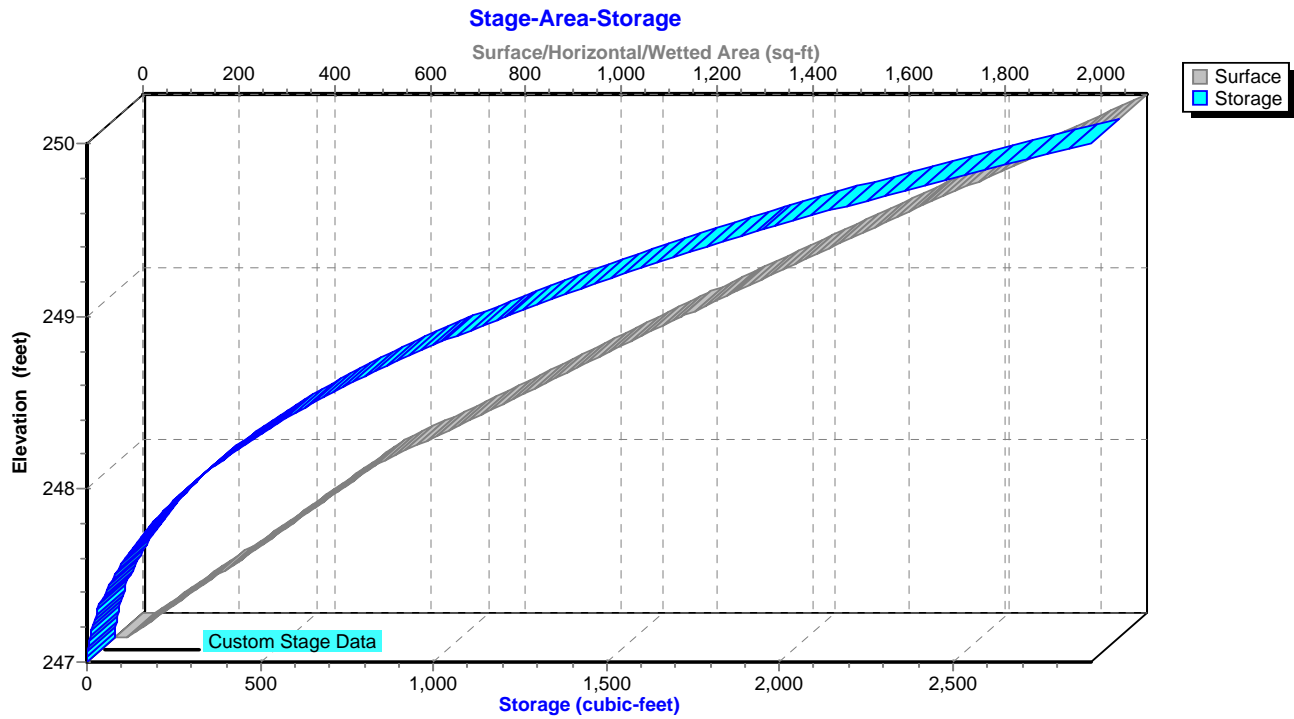
Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 100yr Somerset Rainfall=8.21"

Printed 11/23/2020

Page 47

Pond PB: Proposed Basin



2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 100yr Somerset Rainfall=8.21"

Printed 11/23/2020

Page 48

Hydrograph for Pond PB: Proposed Basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	247.00	0.00	0.00	0.00
1.00	0.00	0	247.01	0.00	0.00	0.00
2.00	0.00	6	247.10	0.00	0.00	0.00
3.00	0.01	13	247.18	0.00	0.00	0.00
4.00	0.01	23	247.25	0.00	0.00	0.00
5.00	0.01	35	247.32	0.00	0.00	0.00
6.00	0.01	48	247.38	0.01	0.01	0.00
7.00	0.01	66	247.45	0.01	0.01	0.00
8.00	0.02	91	247.54	0.01	0.01	0.00
9.00	0.02	130	247.66	0.01	0.01	0.00
10.00	0.03	188	247.80	0.01	0.01	0.00
11.00	0.04	278	247.98	0.01	0.01	0.00
12.00	0.38	627	248.47	0.02	0.02	0.00
13.00	0.05	1,031	248.86	0.05	0.03	0.03
14.00	0.03	1,026	248.85	0.03	0.03	0.01
15.00	0.02	1,020	248.85	0.03	0.03	0.00
16.00	0.02	996	248.83	0.03	0.03	0.00
17.00	0.01	953	248.79	0.03	0.03	0.00
18.00	0.01	902	248.74	0.03	0.03	0.00
19.00	0.01	846	248.69	0.02	0.02	0.00
20.00	0.01	790	248.64	0.02	0.02	0.00
21.00	0.01	735	248.58	0.02	0.02	0.00
22.00	0.01	680	248.53	0.02	0.02	0.00
23.00	0.01	626	248.47	0.02	0.02	0.00
24.00	0.01	574	248.41	0.02	0.02	0.00
25.00	0.00	507	248.33	0.02	0.02	0.00
26.00	0.00	444	248.24	0.02	0.02	0.00
27.00	0.00	385	248.16	0.02	0.02	0.00
28.00	0.00	332	248.08	0.01	0.01	0.00
29.00	0.00	284	247.99	0.01	0.01	0.00
30.00	0.00	241	247.91	0.01	0.01	0.00

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

Type III 24-hr 100yr Somerset Rainfall=8.21"

Printed 11/23/2020

Page 49

Stage-Discharge for Pond PB: Proposed Basin

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
247.00	0.00	0.00	0.00	249.60	31.66	0.04	31.62
247.05	0.00	0.00	0.00	249.65	35.46	0.04	35.42
247.10	0.00	0.00	0.00	249.70	38.89	0.04	38.85
247.15	0.00	0.00	0.00	249.75	42.44	0.04	42.39
247.20	0.00	0.00	0.00	249.80	46.09	0.04	46.04
247.25	0.00	0.00	0.00	249.85	49.85	0.05	49.80
247.30	0.00	0.00	0.00	249.90	53.63	0.05	53.58
247.35	0.00	0.00	0.00	249.95	57.50	0.05	57.45
247.40	0.01	0.01	0.00	250.00	61.46	0.05	61.42
247.45	0.01	0.01	0.00				
247.50	0.01	0.01	0.00				
247.55	0.01	0.01	0.00				
247.60	0.01	0.01	0.00				
247.65	0.01	0.01	0.00				
247.70	0.01	0.01	0.00				
247.75	0.01	0.01	0.00				
247.80	0.01	0.01	0.00				
247.85	0.01	0.01	0.00				
247.90	0.01	0.01	0.00				
247.95	0.01	0.01	0.00				
248.00	0.01	0.01	0.00				
248.05	0.01	0.01	0.00				
248.10	0.01	0.01	0.00				
248.15	0.02	0.02	0.00				
248.20	0.02	0.02	0.00				
248.25	0.02	0.02	0.00				
248.30	0.02	0.02	0.00				
248.35	0.02	0.02	0.00				
248.40	0.02	0.02	0.00				
248.45	0.02	0.02	0.00				
248.50	0.02	0.02	0.00				
248.55	0.02	0.02	0.00				
248.60	0.02	0.02	0.00				
248.65	0.02	0.02	0.00				
248.70	0.02	0.02	0.00				
248.75	0.03	0.03	0.00				
248.80	0.03	0.03	0.00				
248.85	0.03	0.03	0.00				
248.90	0.50	0.03	0.47				
248.95	1.36	0.03	1.33				
249.00	2.47	0.03	2.44				
249.05	3.79	0.03	3.76				
249.10	5.34	0.03	5.31				
249.15	7.08	0.03	7.05				
249.20	9.01	0.03	8.98				
249.25	11.12	0.03	11.08				
249.30	13.44	0.04	13.40				
249.35	15.95	0.04	15.91				
249.40	18.64	0.04	18.60				
249.45	21.51	0.04	21.47				
249.50	24.68	0.04	24.64				
249.55	28.06	0.04	28.02				

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

NJ DEP 2-hr NJDEP 2hr Rainfall=1.25"

Printed 11/23/2020

Page 50

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points x 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment FCA: Fitness Center

Runoff Area=8,850 sf 100.00% Impervious Runoff Depth=1.03"

Tc=6.0 min CN=98 Runoff=0.59 cfs 763 cf

Subcatchment PC: Pickleball Court

Runoff Area=3,265 sf 100.00% Impervious Runoff Depth=1.03"

Tc=6.0 min CN=98 Runoff=0.22 cfs 281 cf

Pond ADS: ADS MC4500

Peak Elev=241.81' Storage=536 cf Inflow=0.59 cfs 763 cf

Outflow=0.06 cfs 764 cf

Pond PB: Proposed Basin

Peak Elev=247.90' Storage=237 cf Inflow=0.22 cfs 281 cf

Discarded=0.01 cfs 281 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 281 cf

Total Runoff Area = 12,115 sf Runoff Volume = 1,044 cf Average Runoff Depth = 1.03"
0.00% Pervious = 0 sf 100.00% Impervious = 12,115 sf

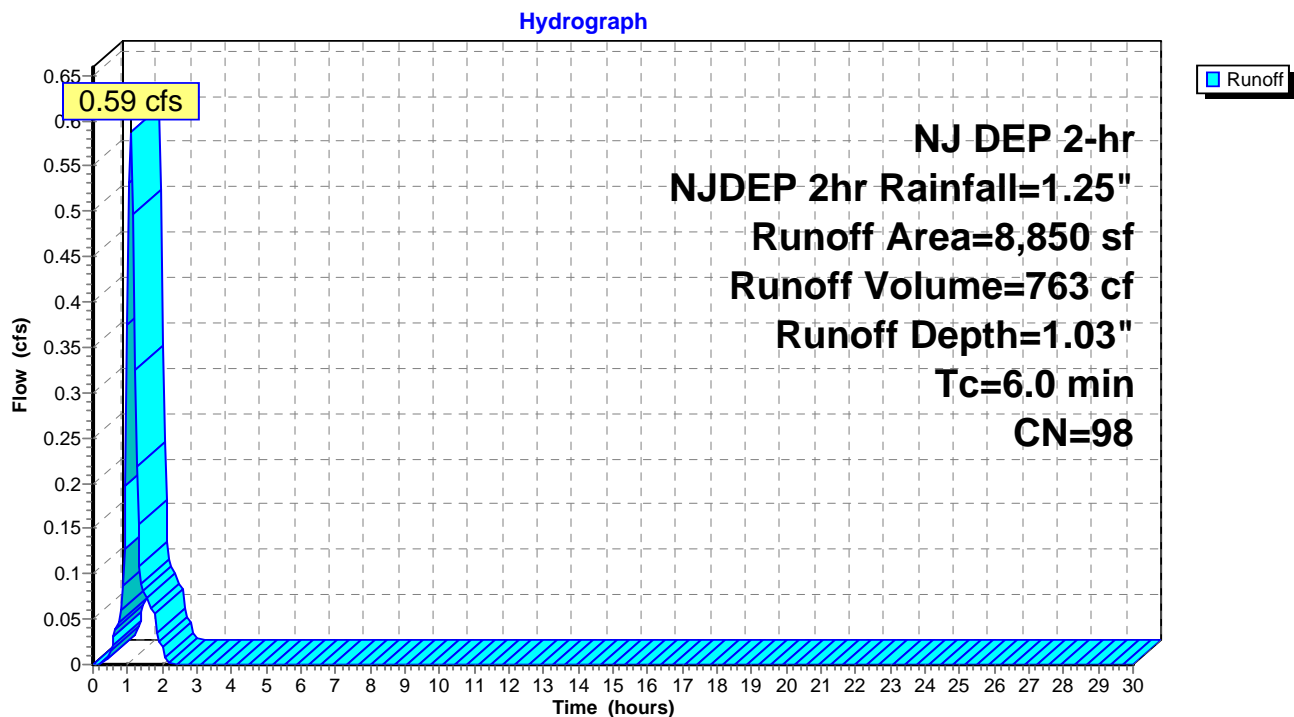
Summary for Subcatchment FCA: Fitness Center Addition

Runoff = 0.59 cfs @ 1.09 hrs, Volume= 763 cf, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 NJ DEP 2-hr NJDEP 2hr Rainfall=1.25"

	Area (sf)	CN	Description
*	7,270	98	Fitness Center Roof
*	1,580	98	Fitness Center Walk
	8,850	98	Weighted Average
	8,850		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Roof Drains

Subcatchment FCA: Fitness Center Addition

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

NJ DEP 2-hr NJDEP 2hr Rainfall=1.25"

Printed 11/23/2020

Page 52

Hydrograph for Subcatchment FCA: Fitness Center Addition

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	1.25	1.03	0.00
0.50	0.10	0.01	0.01	26.50	1.25	1.03	0.00
1.00	0.63	0.43	0.37	27.00	1.25	1.03	0.00
1.50	1.15	0.94	0.08	27.50	1.25	1.03	0.00
2.00	1.25	1.03	0.02	28.00	1.25	1.03	0.00
2.50	1.25	1.03	0.00	28.50	1.25	1.03	0.00
3.00	1.25	1.03	0.00	29.00	1.25	1.03	0.00
3.50	1.25	1.03	0.00	29.50	1.25	1.03	0.00
4.00	1.25	1.03	0.00	30.00	1.25	1.03	0.00
4.50	1.25	1.03	0.00				
5.00	1.25	1.03	0.00				
5.50	1.25	1.03	0.00				
6.00	1.25	1.03	0.00				
6.50	1.25	1.03	0.00				
7.00	1.25	1.03	0.00				
7.50	1.25	1.03	0.00				
8.00	1.25	1.03	0.00				
8.50	1.25	1.03	0.00				
9.00	1.25	1.03	0.00				
9.50	1.25	1.03	0.00				
10.00	1.25	1.03	0.00				
10.50	1.25	1.03	0.00				
11.00	1.25	1.03	0.00				
11.50	1.25	1.03	0.00				
12.00	1.25	1.03	0.00				
12.50	1.25	1.03	0.00				
13.00	1.25	1.03	0.00				
13.50	1.25	1.03	0.00				
14.00	1.25	1.03	0.00				
14.50	1.25	1.03	0.00				
15.00	1.25	1.03	0.00				
15.50	1.25	1.03	0.00				
16.00	1.25	1.03	0.00				
16.50	1.25	1.03	0.00				
17.00	1.25	1.03	0.00				
17.50	1.25	1.03	0.00				
18.00	1.25	1.03	0.00				
18.50	1.25	1.03	0.00				
19.00	1.25	1.03	0.00				
19.50	1.25	1.03	0.00				
20.00	1.25	1.03	0.00				
20.50	1.25	1.03	0.00				
21.00	1.25	1.03	0.00				
21.50	1.25	1.03	0.00				
22.00	1.25	1.03	0.00				
22.50	1.25	1.03	0.00				
23.00	1.25	1.03	0.00				
23.50	1.25	1.03	0.00				
24.00	1.25	1.03	0.00				
24.50	1.25	1.03	0.00				
25.00	1.25	1.03	0.00				
25.50	1.25	1.03	0.00				

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

NJ DEP 2-hr NJDEP 2hr Rainfall=1.25"

Printed 11/23/2020

Page 53

Summary for Subcatchment PC: Pickleball Court

Runoff = 0.22 cfs @ 1.09 hrs, Volume= 281 cf, Depth= 1.03"

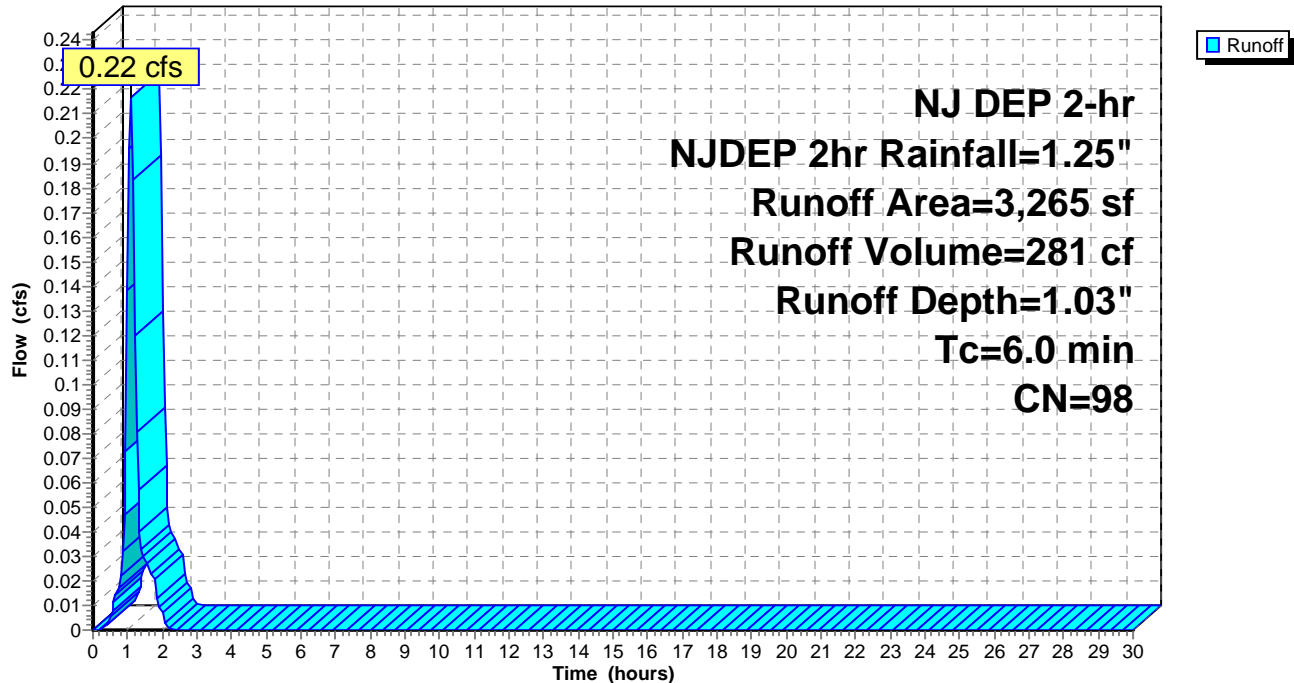
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NJ DEP 2-hr NJDEP 2hr Rainfall=1.25"

	Area (sf)	CN	Description
*	1,905	98	Pickleball Court & Walk
*	480	98	Shuffleboard & Walk
*	880	98	Bocce & Concrete Walk
	3,265	98	Weighted Average
	3,265		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, Pickleball Court

Subcatchment PC: Pickleball Court

Hydrograph



2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

NJ DEP 2-hr NJDEP 2hr Rainfall=1.25"

Printed 11/23/2020

Page 54

Hydrograph for Subcatchment PC: Pickleball Court

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	1.25	1.03	0.00
0.50	0.10	0.01	0.01	26.50	1.25	1.03	0.00
1.00	0.63	0.43	0.14	27.00	1.25	1.03	0.00
1.50	1.15	0.94	0.03	27.50	1.25	1.03	0.00
2.00	1.25	1.03	0.01	28.00	1.25	1.03	0.00
2.50	1.25	1.03	0.00	28.50	1.25	1.03	0.00
3.00	1.25	1.03	0.00	29.00	1.25	1.03	0.00
3.50	1.25	1.03	0.00	29.50	1.25	1.03	0.00
4.00	1.25	1.03	0.00	30.00	1.25	1.03	0.00
4.50	1.25	1.03	0.00				
5.00	1.25	1.03	0.00				
5.50	1.25	1.03	0.00				
6.00	1.25	1.03	0.00				
6.50	1.25	1.03	0.00				
7.00	1.25	1.03	0.00				
7.50	1.25	1.03	0.00				
8.00	1.25	1.03	0.00				
8.50	1.25	1.03	0.00				
9.00	1.25	1.03	0.00				
9.50	1.25	1.03	0.00				
10.00	1.25	1.03	0.00				
10.50	1.25	1.03	0.00				
11.00	1.25	1.03	0.00				
11.50	1.25	1.03	0.00				
12.00	1.25	1.03	0.00				
12.50	1.25	1.03	0.00				
13.00	1.25	1.03	0.00				
13.50	1.25	1.03	0.00				
14.00	1.25	1.03	0.00				
14.50	1.25	1.03	0.00				
15.00	1.25	1.03	0.00				
15.50	1.25	1.03	0.00				
16.00	1.25	1.03	0.00				
16.50	1.25	1.03	0.00				
17.00	1.25	1.03	0.00				
17.50	1.25	1.03	0.00				
18.00	1.25	1.03	0.00				
18.50	1.25	1.03	0.00				
19.00	1.25	1.03	0.00				
19.50	1.25	1.03	0.00				
20.00	1.25	1.03	0.00				
20.50	1.25	1.03	0.00				
21.00	1.25	1.03	0.00				
21.50	1.25	1.03	0.00				
22.00	1.25	1.03	0.00				
22.50	1.25	1.03	0.00				
23.00	1.25	1.03	0.00				
23.50	1.25	1.03	0.00				
24.00	1.25	1.03	0.00				
24.50	1.25	1.03	0.00				
25.00	1.25	1.03	0.00				
25.50	1.25	1.03	0.00				

Summary for Pond ADS: ADS MC4500

Inflow Area = 8,850 sf, 100.00% Impervious, Inflow Depth = 1.03" for NJDEP 2hr event
 Inflow = 0.59 cfs @ 1.09 hrs, Volume= 763 cf
 Outflow = 0.06 cfs @ 3.10 hrs, Volume= 764 cf, Atten= 90%, Lag= 120.3 min
 Discarded = 0.06 cfs @ 3.10 hrs, Volume= 764 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 241.81' @ 1.76 hrs Surf.Area= 2,501 sf Storage= 536 cf

Plug-Flow detention time= 114.4 min calculated for 762 cf (100% of inflow)
 Center-of-Mass det. time= 115.0 min (185.3 - 70.3)

Volume	Invert	Avail.Storage	Storage Description
#1	240.75'	286 cf	Bottom Stone (Prismatic) Listed below (Recalc) 714 cf Overall x 40.0% Voids
#2	241.50'	971 cf	Stone Around Chamber (Prismatic) Listed below (Recalc) 4,760 cf Overall x 20.4% Voids
#3	241.50'	2,124 cf	ADS_StormTech MC-4500 +Cap @ 77.57' L Effective Size= 90.4"W x 60.0"H => 26.46 sf x 77.57'L = 2,052.3 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap Cap Storage= +35.7 cf x 2 x 1 rows = 71.4 cf
#4	246.50'	381 cf	Top Stone (Prismatic) Listed below (Recalc) 952 cf Overall x 40.0% Voids
		3,761 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.75	952	0	0
241.50	952	714	714

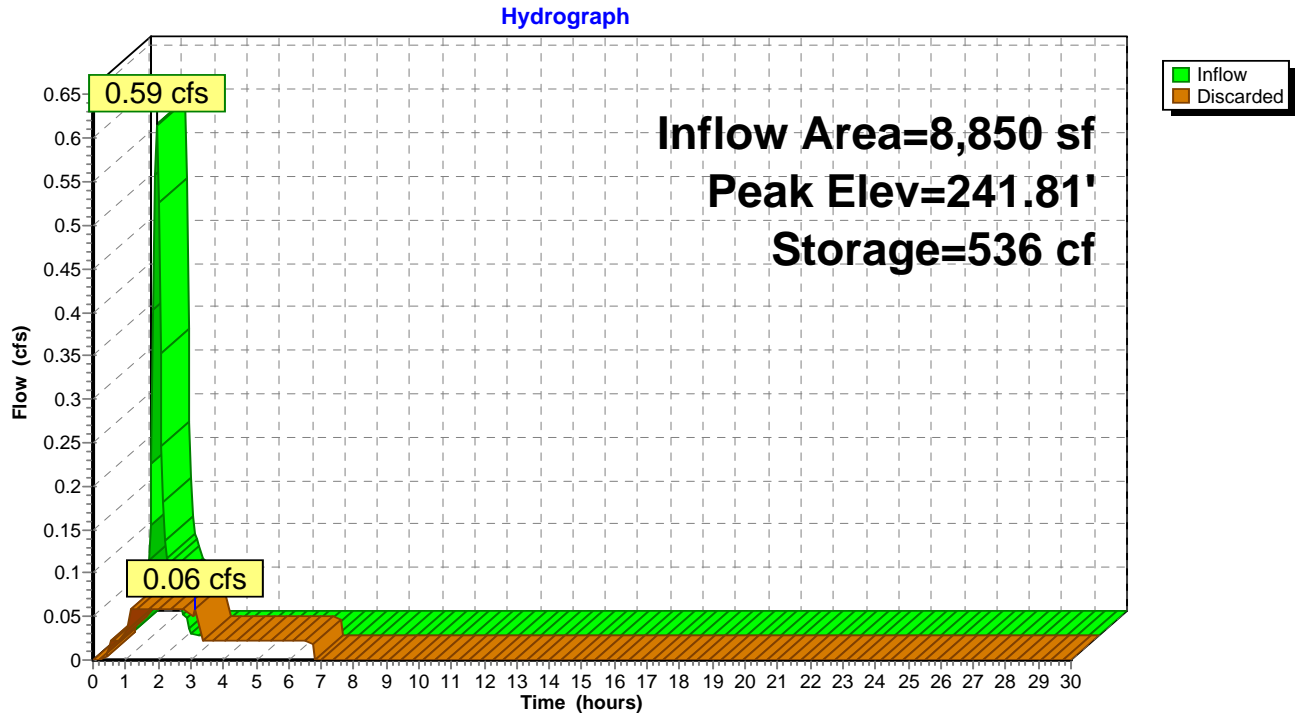
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
241.50	952	0	0
246.50	952	4,760	4,760

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.50	952	0	0
247.50	952	952	952

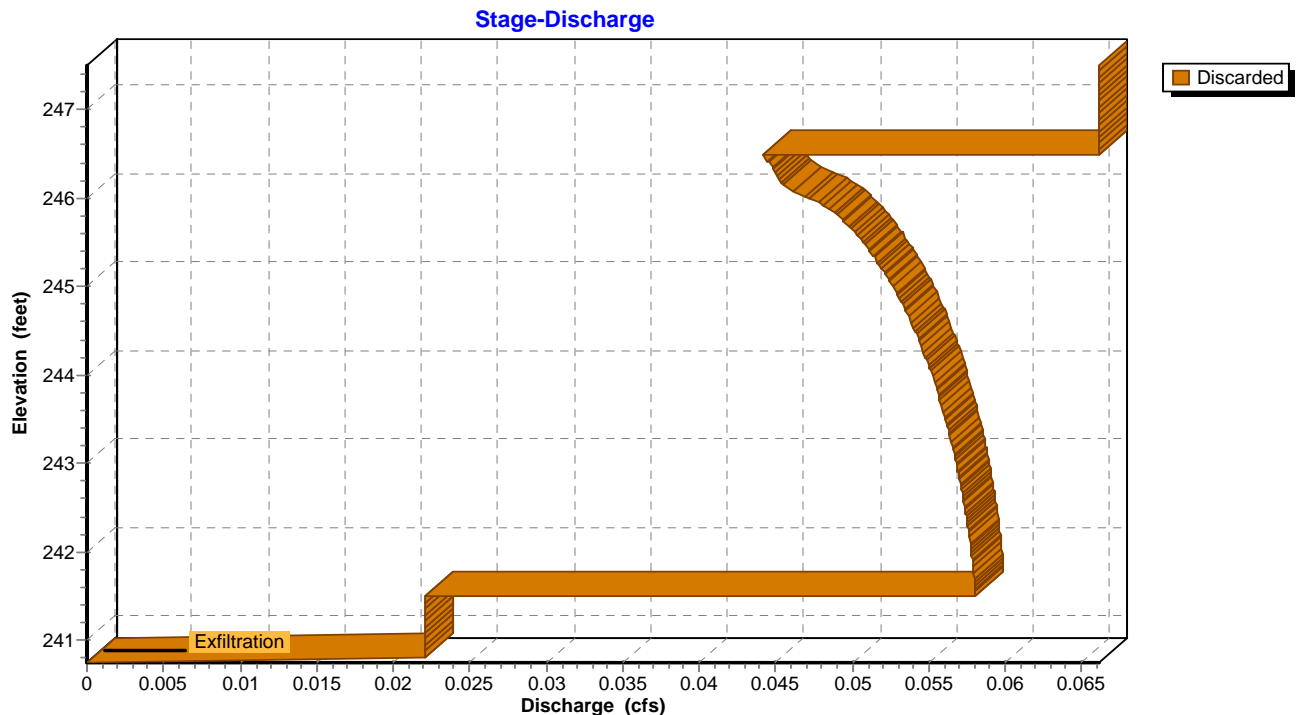
Device	Routing	Invert	Outlet Devices
#1	Discarded	240.75'	1.000 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.06 cfs @ 3.10 hrs HW=241.51' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Pond ADS: ADS MC4500



Pond ADS: ADS MC4500



2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

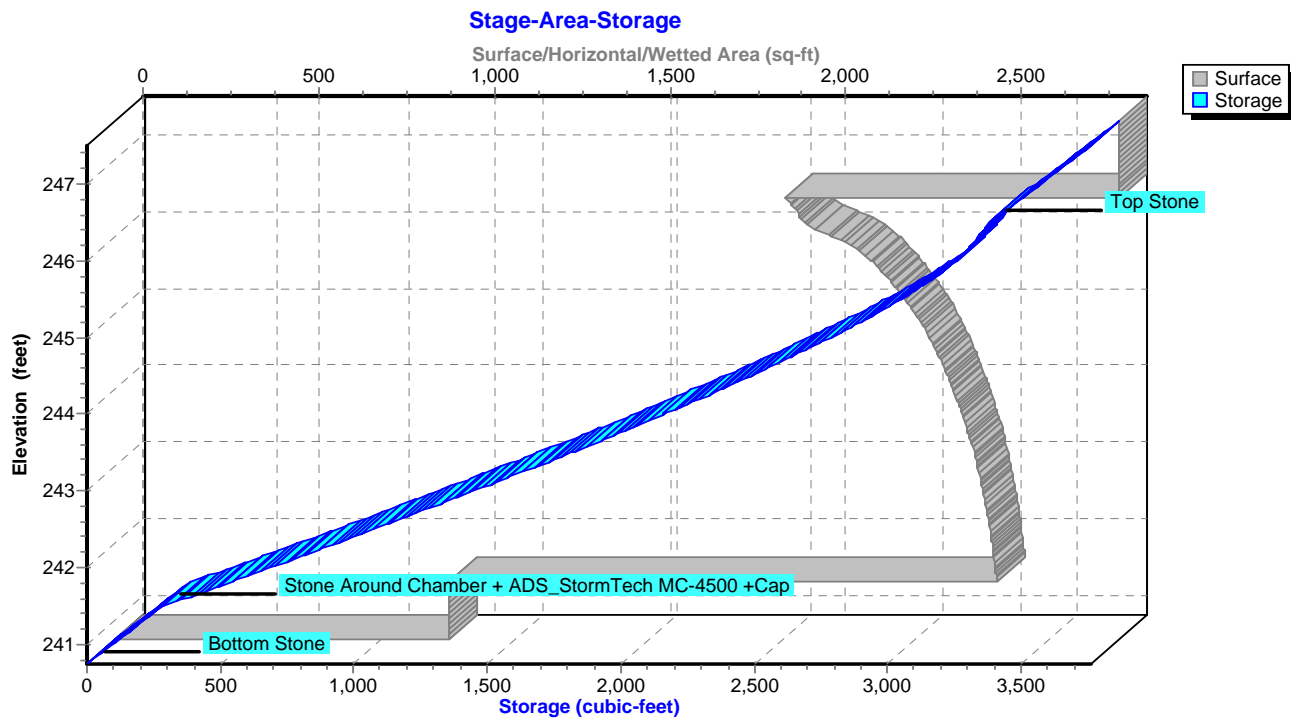
Proposed - Fellowship Village Expansion_Nov 2020

NJ DEP 2-hr NJDEP 2hr Rainfall=1.25"

Printed 11/23/2020

Page 57

Pond ADS: ADS MC4500



2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

NJ DEP 2-hr NJDEP 2hr Rainfall=1.25"

Printed 11/23/2020

Page 58

Hydrograph for Pond ADS: ADS MC4500

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	240.75	0.00
1.00	0.37	115	241.05	0.02
2.00	0.02	515	241.79	0.06
3.00	0.00	313	241.53	0.06
4.00	0.00	218	241.32	0.02
5.00	0.00	138	241.11	0.02
6.00	0.00	59	240.90	0.02
7.00	0.00	0	240.75	0.00
8.00	0.00	0	240.75	0.00
9.00	0.00	0	240.75	0.00
10.00	0.00	0	240.75	0.00
11.00	0.00	0	240.75	0.00
12.00	0.00	0	240.75	0.00
13.00	0.00	0	240.75	0.00
14.00	0.00	0	240.75	0.00
15.00	0.00	0	240.75	0.00
16.00	0.00	0	240.75	0.00
17.00	0.00	0	240.75	0.00
18.00	0.00	0	240.75	0.00
19.00	0.00	0	240.75	0.00
20.00	0.00	0	240.75	0.00
21.00	0.00	0	240.75	0.00
22.00	0.00	0	240.75	0.00
23.00	0.00	0	240.75	0.00
24.00	0.00	0	240.75	0.00
25.00	0.00	0	240.75	0.00
26.00	0.00	0	240.75	0.00
27.00	0.00	0	240.75	0.00
28.00	0.00	0	240.75	0.00
29.00	0.00	0	240.75	0.00
30.00	0.00	0	240.75	0.00

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

Printed 11/23/2020

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Page 59

Stage-Discharge for Pond ADS: ADS MC4500

Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)
240.75	0.00	242.83	0.06	244.91	0.05	246.99	0.07
240.79	0.02	242.87	0.06	244.95	0.05	247.03	0.07
240.83	0.02	242.91	0.06	244.99	0.05	247.07	0.07
240.87	0.02	242.95	0.06	245.03	0.05	247.11	0.07
240.91	0.02	242.99	0.06	245.07	0.05	247.15	0.07
240.95	0.02	243.03	0.06	245.11	0.05	247.19	0.07
240.99	0.02	243.07	0.06	245.15	0.05	247.23	0.07
241.03	0.02	243.11	0.06	245.19	0.05	247.27	0.07
241.07	0.02	243.15	0.06	245.23	0.05	247.31	0.07
241.11	0.02	243.19	0.06	245.27	0.05	247.35	0.07
241.15	0.02	243.23	0.06	245.31	0.05	247.39	0.07
241.19	0.02	243.27	0.06	245.35	0.05	247.43	0.07
241.23	0.02	243.31	0.06	245.39	0.05	247.47	0.07
241.27	0.02	243.35	0.06	245.43	0.05		
241.31	0.02	243.39	0.06	245.47	0.05		
241.35	0.02	243.43	0.06	245.51	0.05		
241.39	0.02	243.47	0.06	245.55	0.05		
241.43	0.02	243.51	0.06	245.59	0.05		
241.47	0.02	243.55	0.06	245.63	0.05		
241.51	0.06	243.59	0.06	245.67	0.05		
241.55	0.06	243.63	0.06	245.71	0.05		
241.59	0.06	243.67	0.06	245.75	0.05		
241.63	0.06	243.71	0.06	245.79	0.05		
241.67	0.06	243.75	0.06	245.83	0.05		
241.71	0.06	243.79	0.06	245.87	0.05		
241.75	0.06	243.83	0.06	245.91	0.05		
241.79	0.06	243.87	0.06	245.95	0.05		
241.83	0.06	243.91	0.06	245.99	0.05		
241.87	0.06	243.95	0.06	246.03	0.05		
241.91	0.06	243.99	0.06	246.07	0.05		
241.95	0.06	244.03	0.06	246.11	0.05		
241.99	0.06	244.07	0.06	246.15	0.05		
242.03	0.06	244.11	0.05	246.19	0.05		
242.07	0.06	244.15	0.05	246.23	0.05		
242.11	0.06	244.19	0.05	246.27	0.05		
242.15	0.06	244.23	0.05	246.31	0.04		
242.19	0.06	244.27	0.05	246.35	0.04		
242.23	0.06	244.31	0.05	246.39	0.04		
242.27	0.06	244.35	0.05	246.43	0.04		
242.31	0.06	244.39	0.05	246.47	0.04		
242.35	0.06	244.43	0.05	246.51	0.07		
242.39	0.06	244.47	0.05	246.55	0.07		
242.43	0.06	244.51	0.05	246.59	0.07		
242.47	0.06	244.55	0.05	246.63	0.07		
242.51	0.06	244.59	0.05	246.67	0.07		
242.55	0.06	244.63	0.05	246.71	0.07		
242.59	0.06	244.67	0.05	246.75	0.07		
242.63	0.06	244.71	0.05	246.79	0.07		
242.67	0.06	244.75	0.05	246.83	0.07		
242.71	0.06	244.79	0.05	246.87	0.07		
242.75	0.06	244.83	0.05	246.91	0.07		
242.79	0.06	244.87	0.05	246.95	0.07		

Summary for Pond PB: Proposed Basin

Inflow Area = 3,265 sf, 100.00% Impervious, Inflow Depth = 1.03" for NJDEP 2hr event
 Inflow = 0.22 cfs @ 1.09 hrs, Volume= 281 cf
 Outflow = 0.01 cfs @ 1.87 hrs, Volume= 281 cf, Atten= 95%, Lag= 46.5 min
 Discarded = 0.01 cfs @ 1.87 hrs, Volume= 281 cf
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 247.90' @ 1.87 hrs Surf.Area= 498 sf Storage= 237 cf

Plug-Flow detention time= 237.6 min calculated for 281 cf (100% of inflow)
 Center-of-Mass det. time= 238.2 min (308.5 - 70.3)

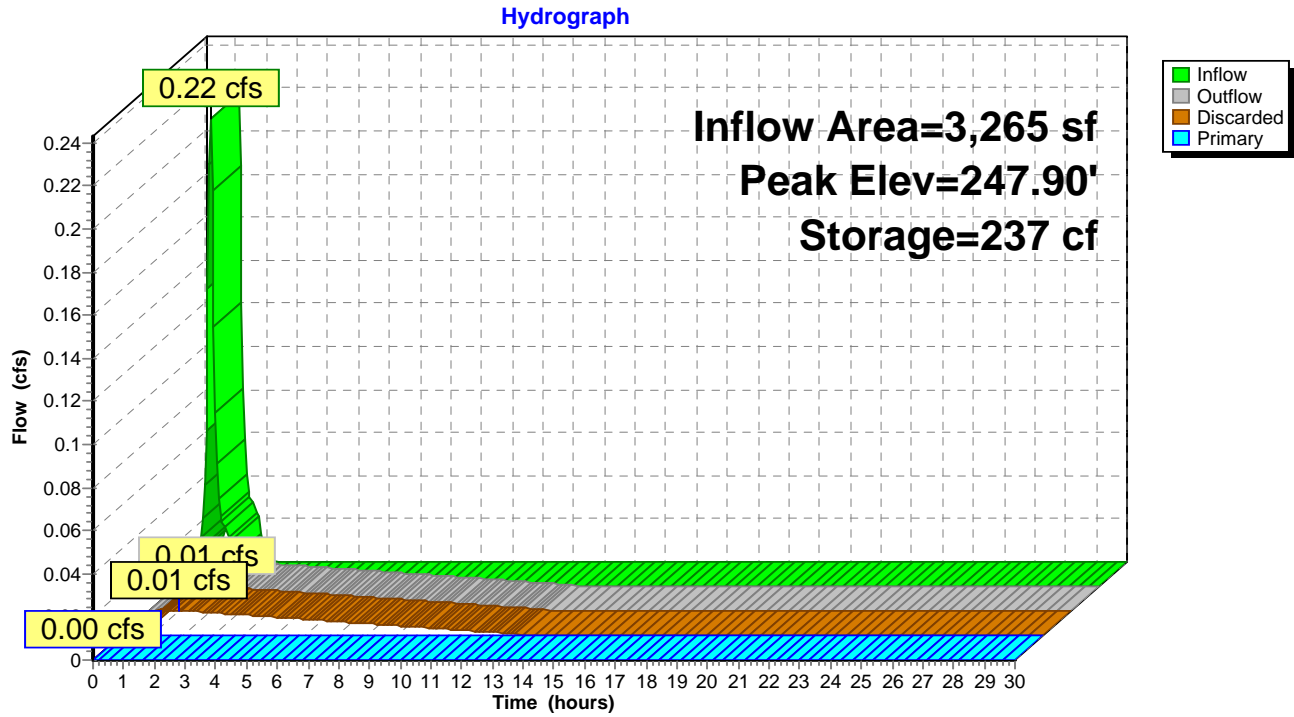
Volume	Invert	Avail.Storage	Storage Description
#1	247.00'	2,900 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
247.00	27	0	0
248.00	548	288	288
249.00	1,293	921	1,208
249.50	1,689	746	1,954
250.00	2,098	947	2,900

Device	Routing	Invert	Outlet Devices
#1	Discarded	247.00'	1.000 in/hr Exfiltration over Surface area
#2	Primary	248.85'	15.0' long x 0.5' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00
			Coef. (English) 2.80 2.92 3.08 3.30 3.32

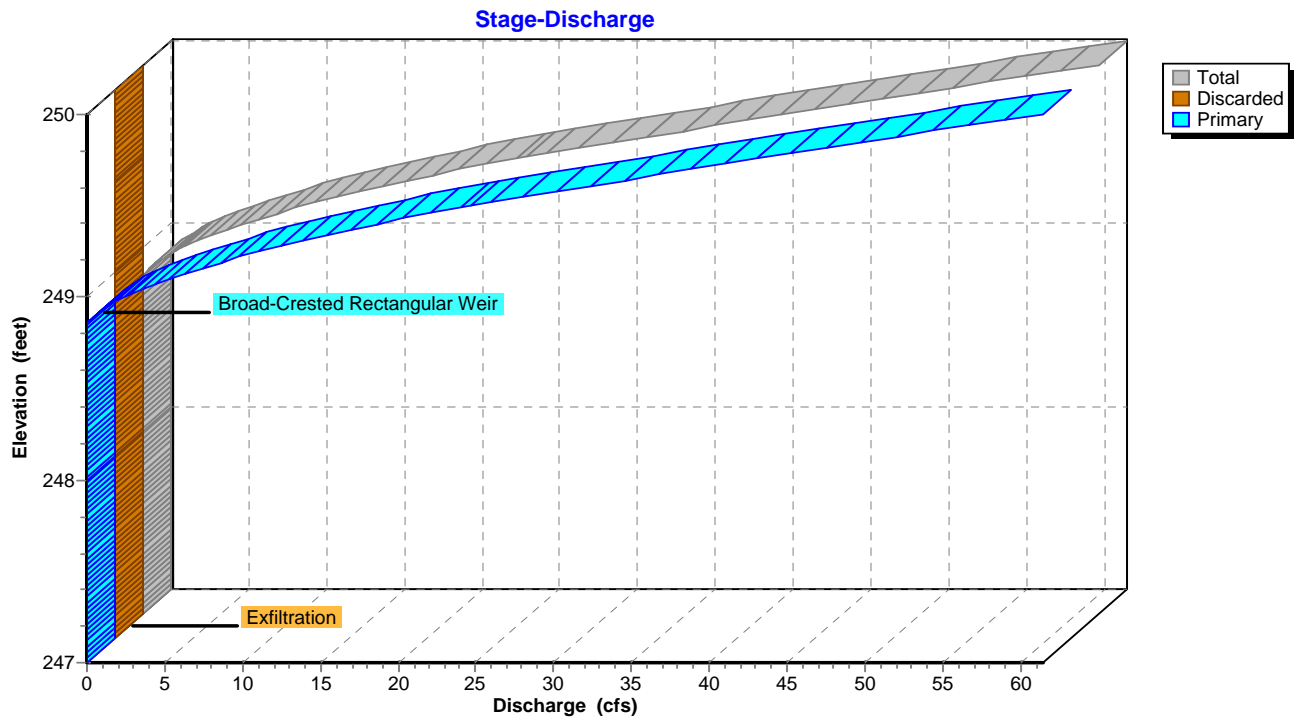
Discarded OutFlow Max=0.01 cfs @ 1.87 hrs HW=247.90' (Free Discharge)
 ↑ **1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=247.00' (Free Discharge)
 ↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond PB: Proposed Basin



Pond PB: Proposed Basin



2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

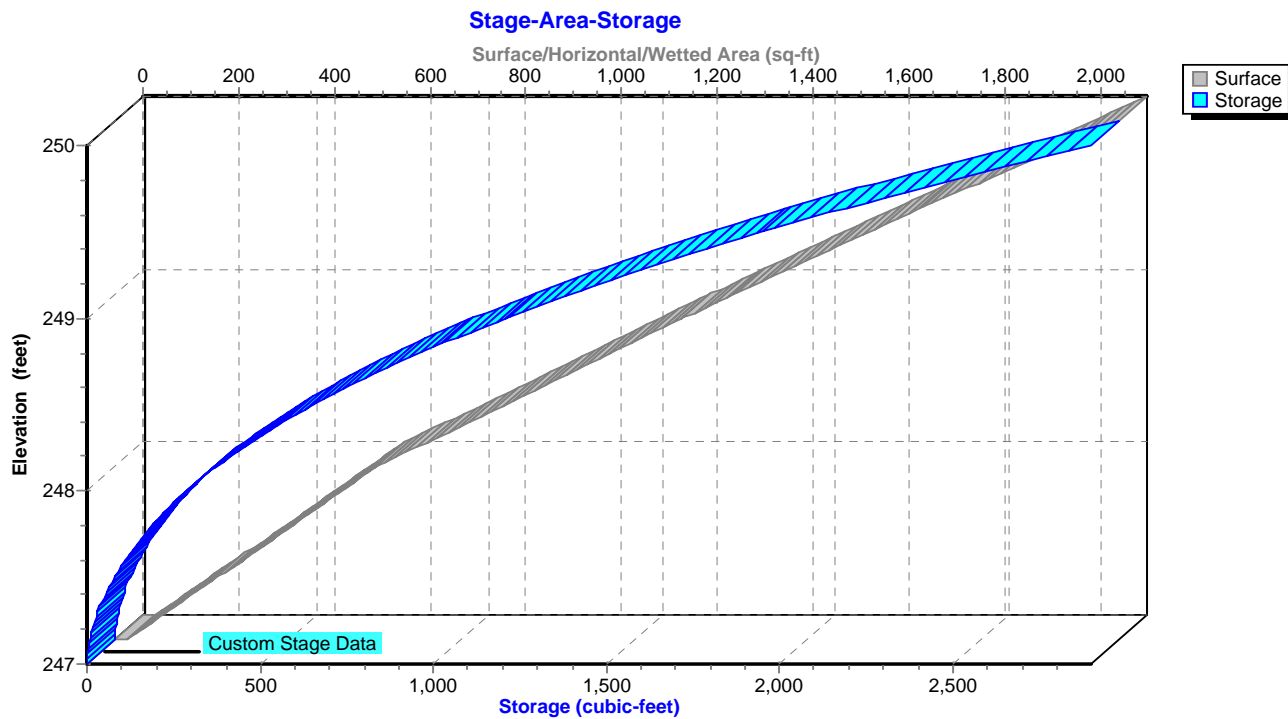
Proposed - Fellowship Village Expansion_Nov 2020

NJ DEP 2-hr NJDEP 2hr Rainfall=1.25"

Printed 11/23/2020

Page 62

Pond PB: Proposed Basin



2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

NJ DEP 2-hr NJDEP 2hr Rainfall=1.25"

Printed 11/23/2020

Page 63

Hydrograph for Pond PB: Proposed Basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	247.00	0.00	0.00	0.00
1.00	0.14	53	247.40	0.01	0.01	0.00
2.00	0.01	236	247.90	0.01	0.01	0.00
3.00	0.00	199	247.82	0.01	0.01	0.00
4.00	0.00	162	247.74	0.01	0.01	0.00
5.00	0.00	130	247.66	0.01	0.01	0.00
6.00	0.00	101	247.57	0.01	0.01	0.00
7.00	0.00	76	247.49	0.01	0.01	0.00
8.00	0.00	54	247.41	0.01	0.01	0.00
9.00	0.00	36	247.32	0.00	0.00	0.00
10.00	0.00	21	247.24	0.00	0.00	0.00
11.00	0.00	11	247.16	0.00	0.00	0.00
12.00	0.00	3	247.07	0.00	0.00	0.00
13.00	0.00	0	247.00	0.00	0.00	0.00
14.00	0.00	0	247.00	0.00	0.00	0.00
15.00	0.00	0	247.00	0.00	0.00	0.00
16.00	0.00	0	247.00	0.00	0.00	0.00
17.00	0.00	0	247.00	0.00	0.00	0.00
18.00	0.00	0	247.00	0.00	0.00	0.00
19.00	0.00	0	247.00	0.00	0.00	0.00
20.00	0.00	0	247.00	0.00	0.00	0.00
21.00	0.00	0	247.00	0.00	0.00	0.00
22.00	0.00	0	247.00	0.00	0.00	0.00
23.00	0.00	0	247.00	0.00	0.00	0.00
24.00	0.00	0	247.00	0.00	0.00	0.00
25.00	0.00	0	247.00	0.00	0.00	0.00
26.00	0.00	0	247.00	0.00	0.00	0.00
27.00	0.00	0	247.00	0.00	0.00	0.00
28.00	0.00	0	247.00	0.00	0.00	0.00
29.00	0.00	0	247.00	0.00	0.00	0.00
30.00	0.00	0	247.00	0.00	0.00	0.00

2020-11_FVG00101_Pr

Prepared by Marathon Consultants

HydroCAD® 10.00-26 s/n 03796 © 2020 HydroCAD Software Solutions LLC

Proposed - Fellowship Village Expansion_Nov 2020

NJ DEP 2-hr NJDEP 2hr Rainfall=1.25"

Printed 11/23/2020

Page 64

Stage-Discharge for Pond PB: Proposed Basin

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
247.00	0.00	0.00	0.00	249.60	31.66	0.04	31.62
247.05	0.00	0.00	0.00	249.65	35.46	0.04	35.42
247.10	0.00	0.00	0.00	249.70	38.89	0.04	38.85
247.15	0.00	0.00	0.00	249.75	42.44	0.04	42.39
247.20	0.00	0.00	0.00	249.80	46.09	0.04	46.04
247.25	0.00	0.00	0.00	249.85	49.85	0.05	49.80
247.30	0.00	0.00	0.00	249.90	53.63	0.05	53.58
247.35	0.00	0.00	0.00	249.95	57.50	0.05	57.45
247.40	0.01	0.01	0.00	250.00	61.46	0.05	61.42
247.45	0.01	0.01	0.00				
247.50	0.01	0.01	0.00				
247.55	0.01	0.01	0.00				
247.60	0.01	0.01	0.00				
247.65	0.01	0.01	0.00				
247.70	0.01	0.01	0.00				
247.75	0.01	0.01	0.00				
247.80	0.01	0.01	0.00				
247.85	0.01	0.01	0.00				
247.90	0.01	0.01	0.00				
247.95	0.01	0.01	0.00				
248.00	0.01	0.01	0.00				
248.05	0.01	0.01	0.00				
248.10	0.01	0.01	0.00				
248.15	0.02	0.02	0.00				
248.20	0.02	0.02	0.00				
248.25	0.02	0.02	0.00				
248.30	0.02	0.02	0.00				
248.35	0.02	0.02	0.00				
248.40	0.02	0.02	0.00				
248.45	0.02	0.02	0.00				
248.50	0.02	0.02	0.00				
248.55	0.02	0.02	0.00				
248.60	0.02	0.02	0.00				
248.65	0.02	0.02	0.00				
248.70	0.02	0.02	0.00				
248.75	0.03	0.03	0.00				
248.80	0.03	0.03	0.00				
248.85	0.03	0.03	0.00				
248.90	0.50	0.03	0.47				
248.95	1.36	0.03	1.33				
249.00	2.47	0.03	2.44				
249.05	3.79	0.03	3.76				
249.10	5.34	0.03	5.31				
249.15	7.08	0.03	7.05				
249.20	9.01	0.03	8.98				
249.25	11.12	0.03	11.08				
249.30	13.44	0.04	13.40				
249.35	15.95	0.04	15.91				
249.40	18.64	0.04	18.60				
249.45	21.51	0.04	21.47				
249.50	24.68	0.04	24.64				
249.55	28.06	0.04	28.02				



ADVANCED DRAINAGE SYSTEMS, INC.

SiteASSIST
by Stormtech
FOR STORMTECH
INSTRUCTIONS,
DOWNLOAD THE
INSTALLATION APP



Fellowship Village - Fitness Center

Bernards, NJ

STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-4500 OR APPROVED EQUAL.
2. CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
4. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
5. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
6. CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
7. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
 - a. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY AASHTO FOR THERMOPLASTIC PIPE.
 - b. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET. THE 50 YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418 MUST BE USED AS PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
 - c. STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
8. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-4500 CHAMBER SYSTEM

1. STORMTECH MC-4500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS.
STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOOTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm) MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
10. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
11. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-4500 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER Tired LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

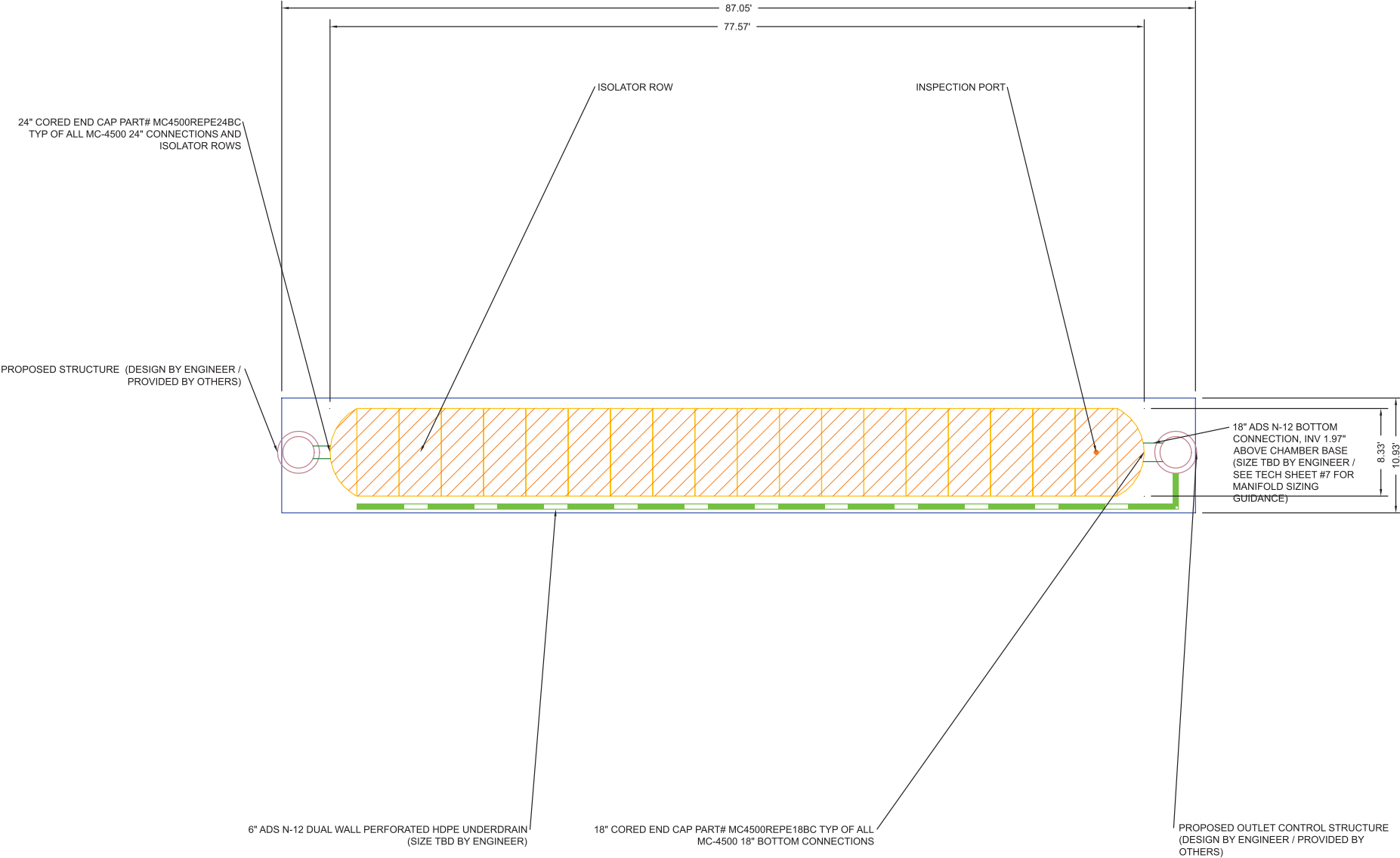
USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

CONCEPTUAL LAYOUT

(18) STORMTECH MC-4500 CHAMBERS
(2) STORMTECH MC-4500 END CAPS
INSTALLED WITH 12 " COVER STONE, 9 " BASE STONE, 40% STONE VOID
INSTALLED SYSTEM VOLUME: 3763 CF
AREA OF SYSTEM: 952 FT²
PERIMETER OF SYSTEM: 196 FT

COMPUTER GENERATED CONCEPTUAL LAYOUT - NOT FOR CONSTRUCTION



Fellowship Village - Fitness Center Bernards, NJ	
DATE: 11/02/2020	DRAWN: AD
PROJECT #: Tool	CHECKED: ---

REV	DRW	CHK	DESCRIPTION



StormTech
Distribution - Professional - Better Quality
70 INWOOD ROAD, SUITE 3 | ROCKY HILL, CT 06067
860-528-4100 | 888-892-2864 | WWW.STORMTECH.COM



DS
ADVANCED DRAINAGE SYSTEMS, INC.
4640 TRUEMAN BLVD
HILLIARD, OH 43026
1-800-733-7473

NOT TO SCALE

SHEET
2 OF 6

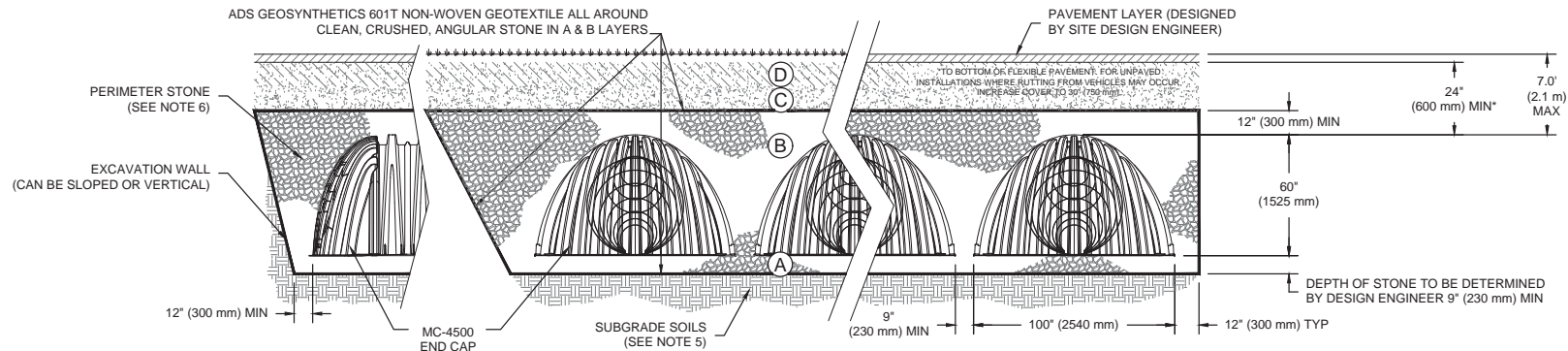
THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE PRODUCT(S) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS AND PROJECT REQUIREMENTS.

ACCEPTABLE FILL MATERIALS: STORMTECH MC-4500 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 PLAN. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 ¹ A-1, A-2-4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4-2 INCH (20-50 mm)	AASHTO M43 ¹ 3, 4	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4-2 INCH (20-50 mm)	AASHTO M43 ¹ 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

PLEASE NOTE:

1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



NOTES:

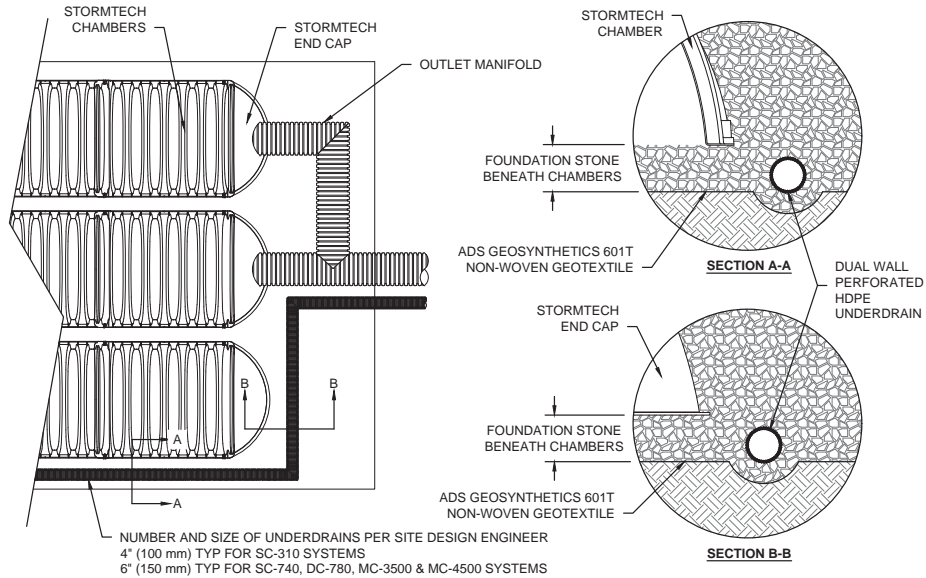
1. MC-4500 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. MC-4500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE "SITE DESIGN ENGINEER" REFERS TO THE ENGINEER RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE STORMTECH CHAMBERS FOR THIS PROJECT.
5. 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.
6. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
7. 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.

[illegible]



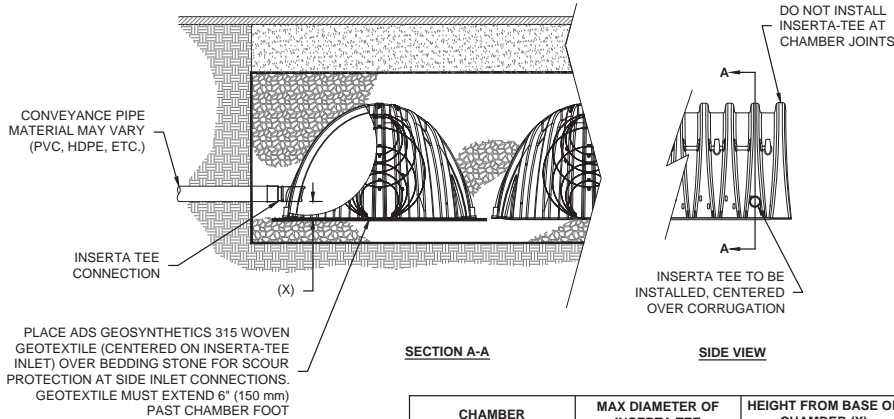
UNDERDRAIN DETAIL

NTS



INSERTA TEE DETAIL

NTS



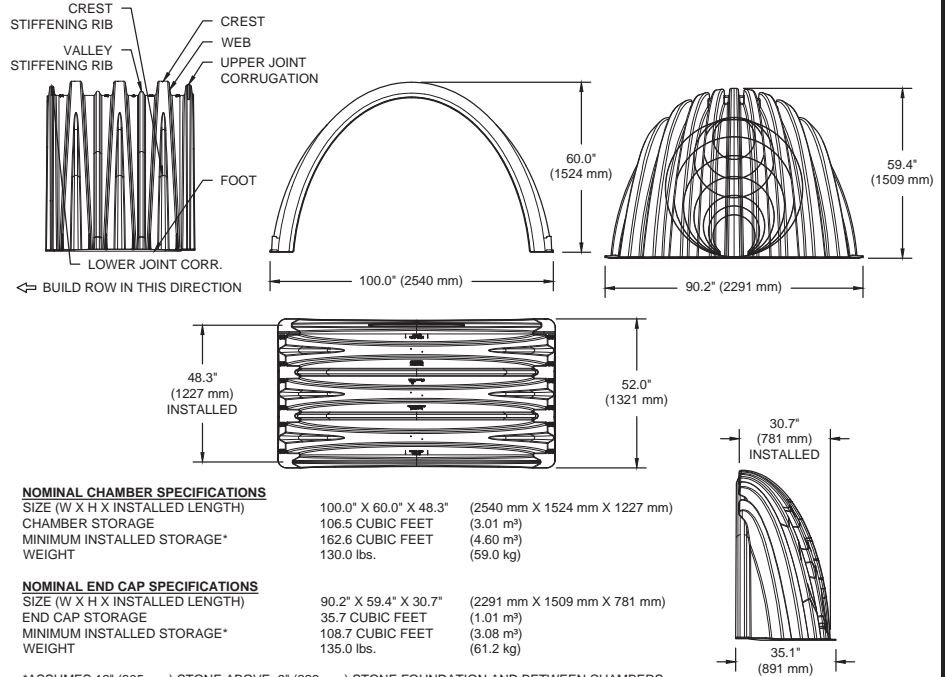
CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)

INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON

NOTE:
PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.

MC-4500 TECHNICAL SPECIFICATION

NTS



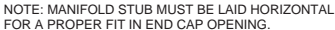
STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

PART #	STUB	B	C
MC4500REPE06T	6" (150 mm)	42.54" (1.081 m)	---
MC4500REPE06B	---	---	0.86" (22 mm)
MC4500REPE08T	8" (200 mm)	40.50" (1.029 m)	---
MC4500REPE08B	---	---	1.01" (26 mm)
MC4500REPE10T	10" (250 mm)	38.37" (975 mm)	---
MC4500REPE10B	---	---	1.33" (34 mm)
MC4500REPE12T	12" (300 mm)	35.69" (907 mm)	---
MC4500REPE12B	---	---	1.55" (39 mm)
MC4500REPE15T	15" (375 mm)	32.72" (831 mm)	---
MC4500REPE15B	---	---	1.70" (43 mm)
MC4500REPE18TC	18" (450 mm)	29.36" (746 mm)	---
MC4500REPE18BC	---	---	1.97" (50 mm)
MC4500REPE24TC	24" (600 mm)	23.05" (585 mm)	---
MC4500REPE24BC	---	---	2.26" (57 mm)
MC4500REPE30BC	30" (750 mm)	---	2.95" (75 mm)
MC4500REPE36BC	36" (900 mm)	---	3.25" (83 mm)
MC4500REPE42BC	42" (1050 mm)	---	3.55" (90 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

CUSTOM PRECURED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-4500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

NTS



 **StormTech**
Destruction Remediation • Better Quality

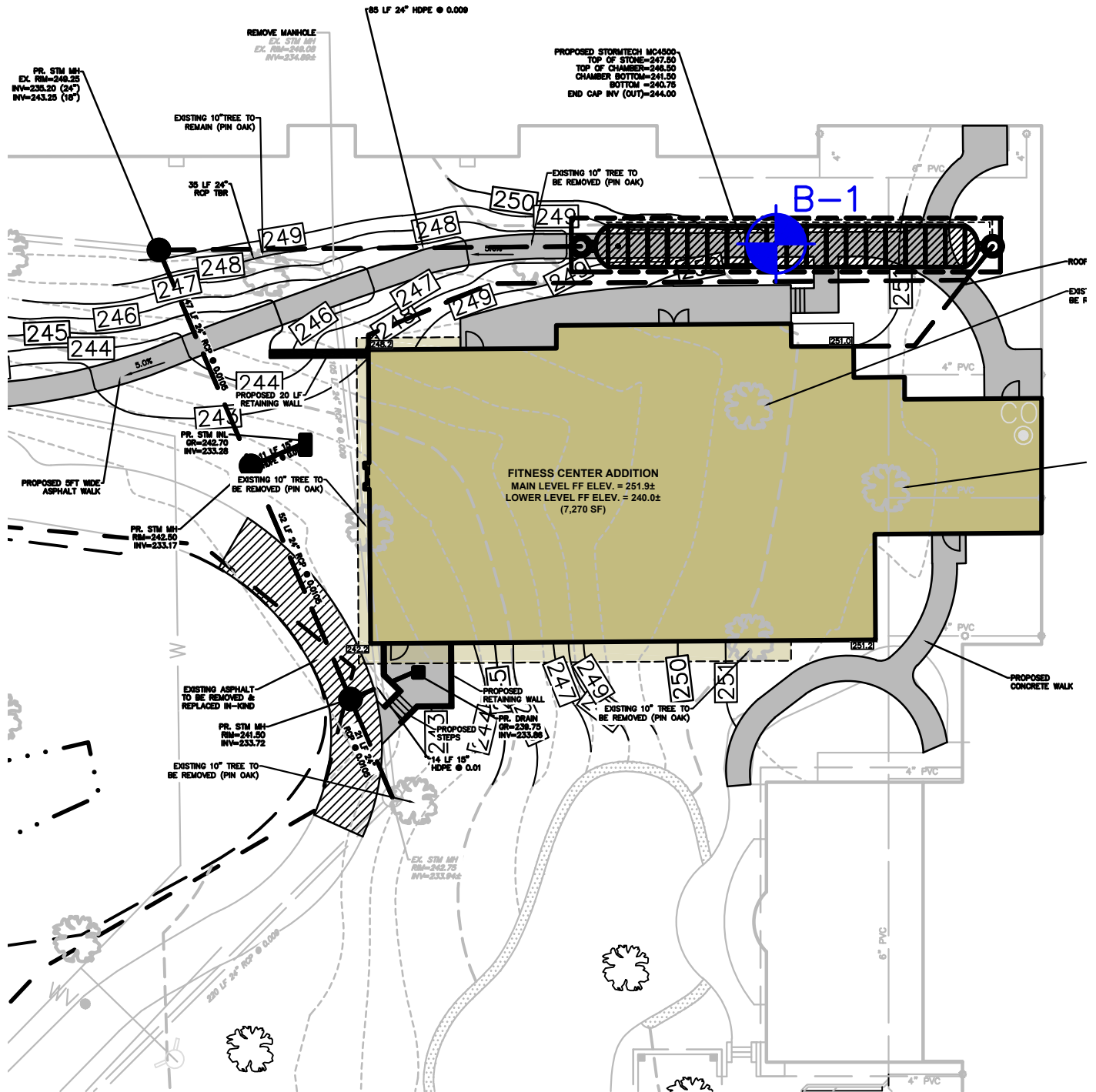
70 INWOOD ROAD, SUITE 3 | ROCKY HILL, CT | 860.677.3050
30-529-8158 | 868.892-2084 | WWW.STORMTECH.COM

Fellowship Village - Fitness Center
Bernards, NJ

DATE:	11/02/2020	DRAWN: AD
PROJECT #:	Tool	CHECKED: ----

THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE PRODUCT(S) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.

Appendix C
NRCS Soil Report



FVG001.01

3 Killdeer Court
Suite 302
Swedesboro
New Jersey 08085



MARATHON
Engineering & Environmental Services

Certificate of Authorization #24GA27995700

ph (856) 241-9705
fax (856) 241-9709

LOCATION PLAN

DATE:

11/13/21

SCALE:

NO SCALE

DRAWN BY:

ACD

Date: September 18, 2020	
Method: Hand Auger	
Surroundings: Maintained grass	
Depth (in) below existing grade	Sample Depth (in)
0	
7	Very dark grayish-brown (10YR 3/2) loamy sand; subangular blocky structure; friable
47	Yellowish-brown (10YR 5/6) loamy sand; subangular blocky structure; friable
71	Yellowish-brown (10YR 5/6) sandy loam; subangular blocky structure; friable
87+	Pale brown (10YR 6/3) loamy sand; common medium, distinct, dark yellowish-brown (10YR 4/6) mottles; subangular blocky structure; friable;
<div style="text-align: right;"> Depth (in) below existing grade Seasonal High Water Table: 71 Ground Water: N/A </div>	
Sample codes: *No samples were collected for this investigation.	
MARATHON ENGINEERING & ENVIRONMENTAL SERVICES, INC. 3 KILLDEER COURT, SUITE 302 SWEDESBORO, N.J. 08085	Fellowship Village
SOIL LOG B-1	



MARATHON
Engineering & Environmental Services
Certificate of Authorization #24GA279957

LOCATION PLAN

ACD

Date: September 18, 2020	
Method: Hand Auger	
Surroundings: Maintained grass	
Depth (in) below existing grade	Sample Depth (in)
0	
11	Dark yellowish-brown (10YR 4/4) loamy sand; subangular blocky structure; friable
32	Yellowish-brown (10YR 5/6) loamy sand; subangular blocky structure; friable
63	Light brown (7.5YR 6/4) sandy loam; subangular blocky structure; friable
68	Dark yellowish-brown (10YR 4/6) sandy loam; subangular blocky structure; friable
83+	Yellowish-brown (10YR 5/6) sandy loam; common medium, distinct, strong brown (7.5YR 4/6) mottles; subangular blocky structure; friable;
<div style="text-align: right;"> Depth (in) below existing grade Seasonal High Water Table: 68 Ground Water: 77+ </div>	
Sample codes: *No samples were collected for this investigation.	
MARATHON ENGINEERING & ENVIRONMENTAL SERVICES, INC. 3 KILLDEER COURT, SUITE 302 SWEDESBORO, N.J. 08085	Fellowship Village
SOIL LOG B-2	

Date: September 18, 2020	
Method: Hand Auger	
Surroundings: Maintained grass	
Depth (in) below existing grade	Sample Depth (in)
0	
9	Very dark grayish-brown (10YR 3/2) loamy sand; subangular blocky structure; friable
29	Yellowish-brown (10YR 5/6) loamy sand; subangular blocky structure; friable
61	Brownish-yellow (10YR 6/8) sandy loam; subangular blocky structure; friable
69	Dark yellowish-brown (10YR 4/6) sandy loam; subangular blocky structure; friable
75+	Yellowish-brown (10YR 5/4) loamy sand; common medium, distinct, strong brown (7.5YR 4/6) mottles; subangular blocky structure; friable;
<div style="text-align: right;"> Depth (in) below existing grade Seasonal High Water Table: 69 Ground Water: 71+ </div>	
Sample codes: *No samples were collected for this investigation.	
MARATHON ENGINEERING & ENVIRONMENTAL SERVICES, INC. 3 KILLDEER COURT, SUITE 302 SWEDESBORO, N.J. 08085	Fellowship Village
SOIL LOG B-3	



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Somerset County, New Jersey**

Fellowship Village



November 13, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

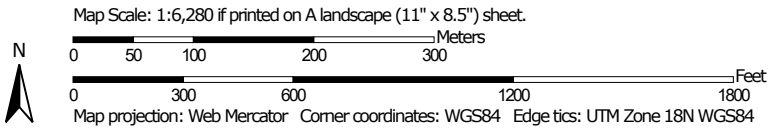
Contents

Preface	2
Soil Map	5
Soil Map.....	6
Legend.....	7
Map Unit Legend.....	8
Map Unit Descriptions.....	8
Somerset County, New Jersey.....	10
PbpAt—Parsippany silt loam, 0 to 3 percent slopes, frequently flooded.....	10
PeoB—Penn channery silt loam, 2 to 6 percent slopes.....	11
PeoC—Penn channery silt loam, 6 to 12 percent slopes.....	12
RehA—Reaville silt loam, 0 to 2 percent slopes.....	14
WATER—Water.....	15
References	17

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


Custom Soil Resource Report Soil Map




Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot


 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole


 Slide or Slip


 Sodic Spot

 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot


 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Somerset County, New Jersey
Survey Area Data: Version 18, Jun 1, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 26, 2019—Jul 31, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PbpAt	Parsippany silt loam, 0 to 3 percent slopes, frequently flooded	2.4	3.3%
PeoB	Penn channery silt loam, 2 to 6 percent slopes	35.4	48.8%
PeoC	Penn channery silt loam, 6 to 12 percent slopes	10.5	14.5%
RehA	Reaville silt loam, 0 to 2 percent slopes	23.9	32.9%
WATER	Water	0.4	0.5%
Totals for Area of Interest		72.6	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

Custom Soil Resource Report

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Somerset County, New Jersey

PbpAt—Parsippany silt loam, 0 to 3 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 1j501
Elevation: 150 to 220 feet
Mean annual precipitation: 30 to 64 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 131 to 178 days
Farmland classification: Not prime farmland

Map Unit Composition

Parsippany, frequently flooded, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Parsippany, Frequently Flooded

Setting

Landform: Lake terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine glaciolacustrine deposits derived from basalt, shale and granitic gneiss material

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A1 - 1 to 4 inches: silt loam
A2 - 4 to 7 inches: silt loam
BAt - 7 to 11 inches: silty clay loam
Btg1 - 11 to 17 inches: silty clay loam
Btg2 - 17 to 22 inches: silty clay
Bt1 - 22 to 32 inches: silty clay
Bt2 - 32 to 36 inches: silty clay
BCg - 36 to 41 inches: fine sandy loam
Cg1 - 41 to 53 inches: loamy fine sand
Cg2 - 53 to 64 inches: loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: FrequentNone
Frequency of ponding: Frequent
Available water capacity: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: D

Hydric soil rating: Yes

Minor Components

Great piece

Percent of map unit: 10 percent
Landform: Outwash plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

PeoB—Penn channery silt loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 1j52v
Elevation: 250 to 1,300 feet
Mean annual precipitation: 30 to 64 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 131 to 178 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Penn and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Penn

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Fine-loamy residuum weathered from acid reddish shale, siltstone, and fine-grain sandstone

Typical profile

Ap - 0 to 9 inches: channery silt loam
Bt - 9 to 22 inches: channery silt loam
C - 22 to 30 inches: very channery loam
R - 30 to 80 inches: weathered bedrock

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)

Custom Soil Resource Report

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Klinesville

Percent of map unit: 5 percent
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Reaville

Percent of map unit: 5 percent
Landform: Interfluves
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Bucks

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

PeoC—Penn channery silt loam, 6 to 12 percent slopes

Map Unit Setting

National map unit symbol: 1j52w
Elevation: 250 to 1,300 feet
Mean annual precipitation: 30 to 64 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 131 to 178 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Penn and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Penn

Setting

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Fine-loamy residuum weathered from acid reddish shale, siltstone, and fine-grain sandstone

Typical profile

Ap - 0 to 8 inches: channery silt loam

Bt - 8 to 20 inches: channery silt loam

C - 20 to 25 inches: very channery silt loam

R - 25 to 80 inches: weathered bedrock

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: 20 to 39 inches to lithic bedrock

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Hydric soil rating: No

Minor Components

Klinesville

Percent of map unit: 5 percent

Landform: Hills

Landform position (two-dimensional): Shoulder

Down-slope shape: Linear

Across-slope shape: Convex

Hydric soil rating: No

Reaville

Percent of map unit: 5 percent

Landform: Interfluves

Down-slope shape: Convex

Across-slope shape: Linear

Hydric soil rating: No

Readington

Percent of map unit: 5 percent

Landform: Hillsides

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

RehA—Reaville silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 1j535
Elevation: 300 to 1,000 feet
Mean annual precipitation: 30 to 64 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 131 to 178 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Reaville and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Reaville

Setting

Landform: Interfluves
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Interbedded fine-grained fine-loamy residuum weathered from sandstone and siltstone and/or shale

Typical profile

A - 0 to 10 inches: silt loam
BA - 10 to 15 inches: channery silt loam
Bt - 15 to 22 inches: channery silt loam
C - 22 to 28 inches: very channery silt loam
R - 28 to 80 inches: weathered bedrock

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C

Custom Soil Resource Report

Hydric soil rating: No

Minor Components

Readington

Percent of map unit: 4 percent
Landform: Hillsides
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Bucks

Percent of map unit: 4 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Reaville, poorly drained

Percent of map unit: 4 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Croton

Percent of map unit: 3 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

WATER—Water

Map Unit Setting

National map unit symbol: Idsl
Mean annual precipitation: 30 to 64 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 131 to 178 days
Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>



MARATHON

Engineering & Environmental Services

WWW.MARATHONCONSULTANTS.COM

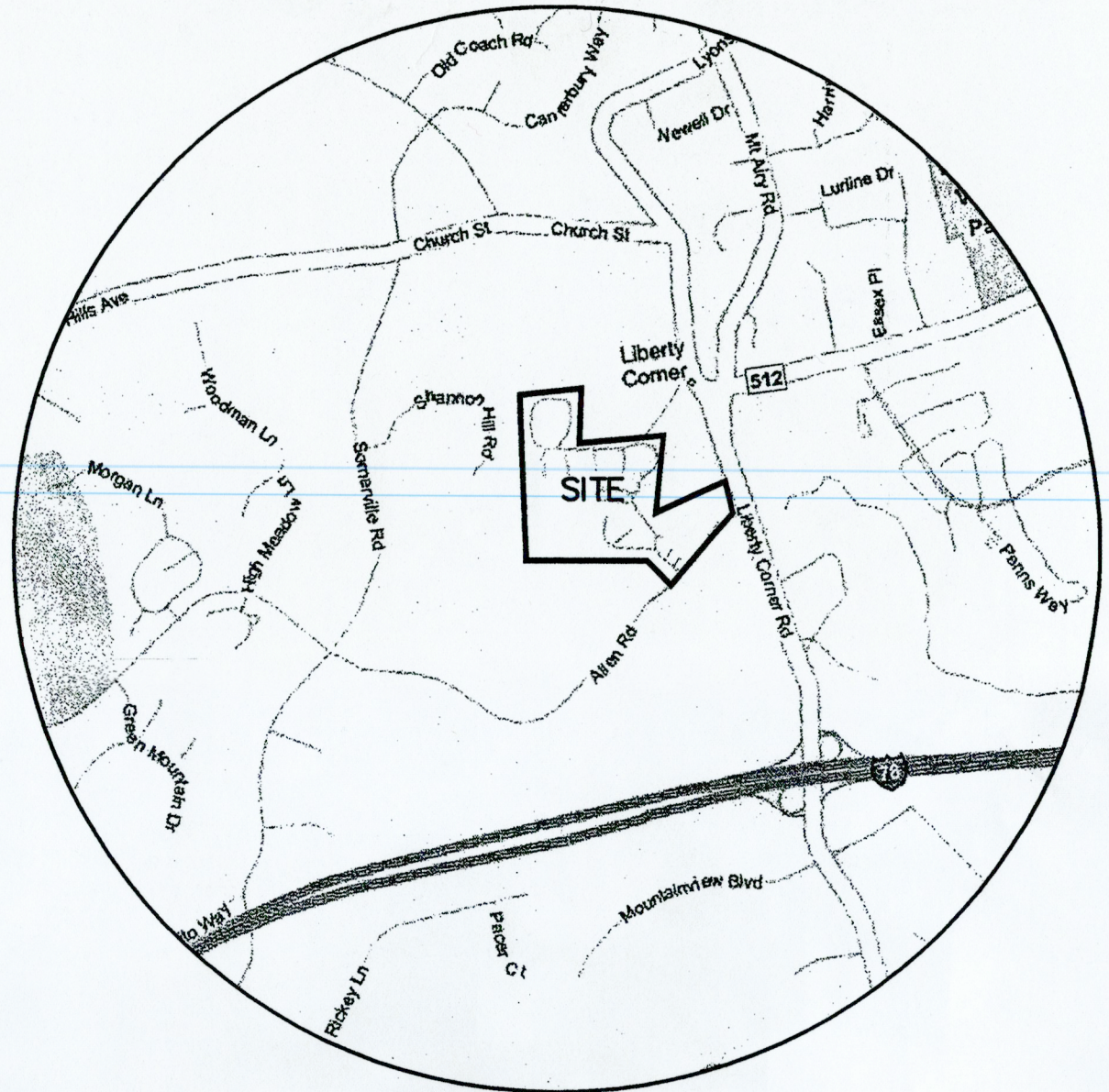
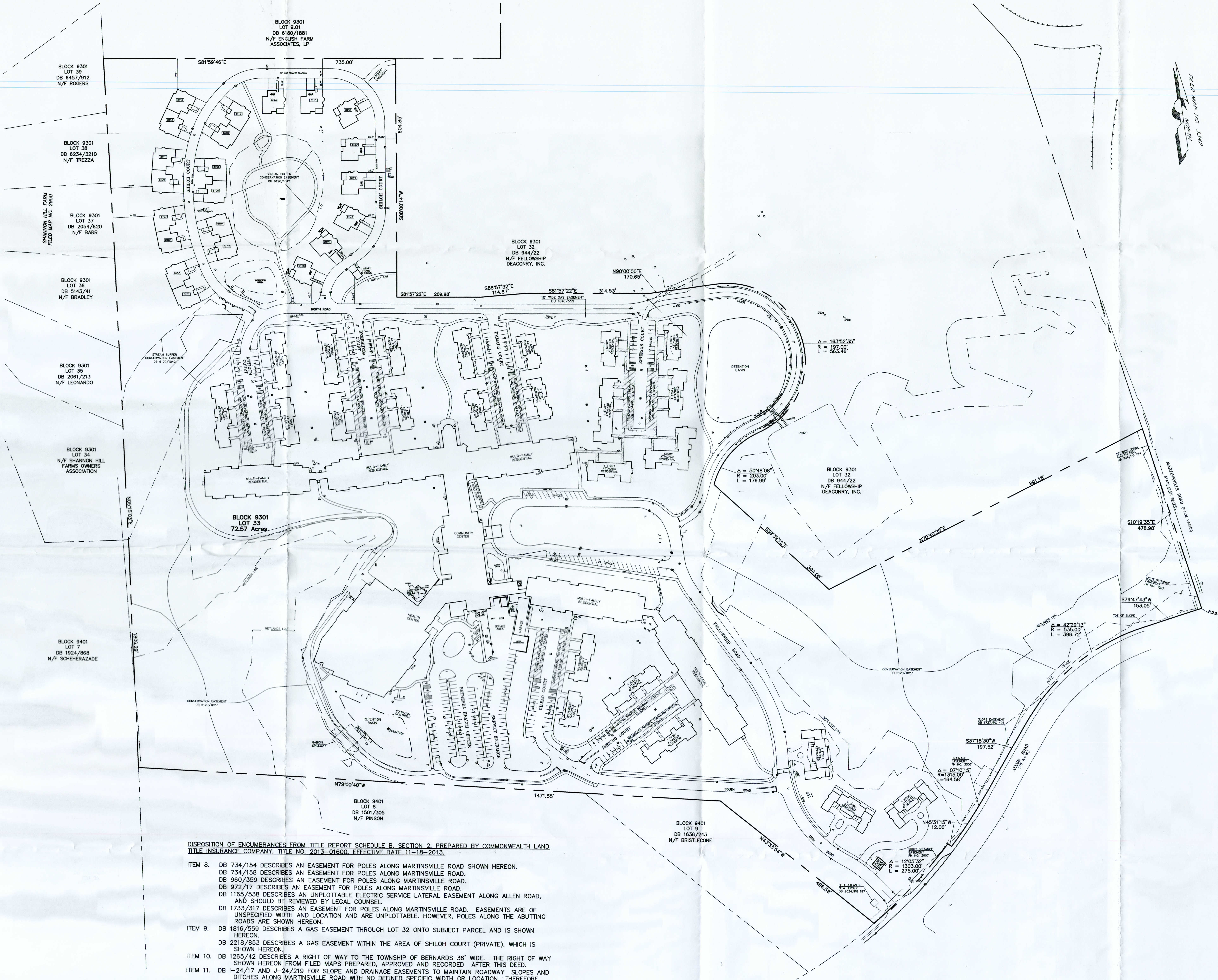
MEMORANDUM

TO: TOWNSHIP OF BERNARDS PLANNING BOARD
FROM: MARATHON ENGINEERING
SUBJECT: FELLOWSHIP VILLAGE – WETLANDS APPLICABILITY
DATE: FEB. 12, 2021
JOB NO: FVG001.01

Our office has prepared an analysis of the wetlands on-site at the Fellowship Village Senior Living Community, located on Block 9301, Lot 33 in the Township of Bernards.

Pursuant to visual field investigation, the previously delineated wetlands on the subject property, appear to be valid and the previously approved location and resource value(s) will be relied upon for the proposed permitting activities.

Based on our review of the regulations, and permitting activities required, as well as OPRA document requests performed with NJDEP, it appears that the disturbance thresholds have not been reached under the Freshwater Wetlands General Permit program, and that the necessary NJDEP approvals for construction of the activities shown on the site plans at this time, can be obtained from NJDEP.



VICINITY MAP
N.T.S.

Property Description

A tract of land known as Lot 33, Block 9301, Bernards Township, Somerset County, New Jersey being Lot 43.01, Block 175 as shown on a map entitled, "Final Subdivision Map, Fellowship Village" recorded as Filed Map No. 3342 of the Somerset County Clerk's Office and being more particularly described as follows:

Beginning at the intersection of the westerly line of Martinsville Road as shown on said Filed Map No. 3342 with the northerly line of Allen Road; thence,

1. Along said northerly line South 79° 47' 43" West 153.05'; thence,
2. Continuing along said northerly line along a curve to the left having a radius of 535.00', an arc length of 396.72', a central angle of 42° 29' 13"; thence,
3. Continuing along said northerly line South 37° 18' 30" West 197.52'; thence,
4. Along a curve to the right having a radius of 1315.00', an arc length of 164.58', a central angle of 07° 10' 15"; thence,
5. North 45° 31' 15" West 12.00'; thence,
6. Along a curve to the right having a radius of 1303.00', an arc length of 275.00', a central angle of 12° 05' 32" to the easterly line of Lot 9, Block 9401; thence,
7. Along said easterly line North 45° 33' 54" West 496.58'; thence,
8. North 79° 00' 40" West 1471.55' to the easterly line of Lot 7, Block 9401; thence,
9. Along said easterly line and along a portion of the easterly line of Shannon Hill Farm, a subdivision recorded as Filed Map No. 2950 North 05° 15' 03" East 1806.29'; thence,
10. Along the southerly line of Lot 9, Block 9301 South 81° 59' 46" East 735.00'; thence,
11. Along the westerly and southerly lines of Lot 32, Block 9301 being Lot 42.01, Block 175 as shown on said Filed Map No. 3342 the following 9 courses South 08° 00' 14" West 604.85'; thence,
12. South 81° 57' 22" East 209.98'; thence,
13. South 86° 57' 32" East 114.67'; thence,
14. South 81° 57' 22" East 314.53'; thence,
15. North 90° 00' 00" East 170.65'; thence,
16. Along a curve to the right having a radius of 197.00', an arc length of 563.46', a central angle of 163° 52' 35"; thence,
17. Along a curve to the left having a radius of 203.00', an arc length of 179.99', a central angle of 50° 48' 08"; thence,
18. South 39° 39' 12" East 394.06'; thence,
19. North 70° 40' 25" East 891.18' to the westerly line of the aforementioned Martinsville Road; thence,
20. Along said westerly line South 10° 19' 35" East 478.98' to the POINT OF BEGINNING of the herein described tract containing 72.57 acres more or less.

CERTIFICATION

I HEREBY CERTIFY TO PUBLIC FINANCE AUTHORITY, RBS CITIZENS, NATIONAL ASSOCIATION, COMPASS MORTGAGE CORPORATION, PEAPACK-GLADSTONE BANK, FELLOWSHIP SENIOR LIVING, INC., THE BANK OF NEW YORK MELLON, AS TRUSTEE, CARELLA, BYRNE, CECCHI, OLSTEIN, BRODY & AGNELLO, P.C., AND COMMONWEALTH LAND TITLE INSURANCE COMPANY THAT THIS SURVEY WAS ACTUALLY MADE UPON THE GROUND AND THAT IT AND THE INFORMATION, COURSES AND DISTANCES SHOWN HEREON ARE CORRECT; THAT THE TITLE LINES AND ACTUAL POSSESSION ARE THE SAME, EXCEPT AS SHOWN HEREON; THAT THE SIZE, LOCATION AND TYPE OF BUILDINGS AND IMPROVEMENTS ARE AS SHOWN AND ALL ARE WITHIN THE BOUNDARY LINES OF THE PROPERTY; THAT THERE ARE NO VIOLATIONS OF ZONING ORDINANCES, RESTRICTIONS OR OTHER RULES AND REGULATIONS WITH REFERENCE TO THE LOCATION OF SAID BUILDING AND IMPROVEMENTS; THAT THERE ARE NO EASEMENTS, ENCROACHMENTS OR USE AFFECTING THIS PROPERTY APPEARING FROM A PHYSICAL INSPECTION OF THE SAME, OTHER THAN THOSE SHOWN AND DEPICTED HEREON; AND THAT A PORTION OF THE PARCEL DESCRIBED HEREON LIES WITHIN THE FLOOD HAZARD AREA "ZONE AE" AND FLOOD AREA "ZONE X" IN ACCORDANCE WITH THE DOCUMENT ENTITLED "FLOOD INSURANCE RATE MAP, SOMERSET COUNTY, NEW JERSEY, PANEL NO. 340428064E, EFFECTIVE DATE 9-28-07". THIS SURVEY IS MADE IN ACCORDANCE WITH THE "MINIMUM STANDARD DETAIL REQUIREMENTS FOR LAND TITLE SURVEYS" JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND ACSM.

- REV. 11/23/16: RELEASED FOR APPROVAL (NO REVISION THIS SHEET)
REV. 11-20-14 REVISE PARKING COUNT
REV. 05-05-14 REVISE PARKING COUNT
REV. 12-18-13 UPDATE ALTA/ACSM SURVEY
REV. 11-18-08 ADD CERTIFICATIONS AND DESCRIPTION

ALTA/ACSM LAND TITLE SURVEY
FELLOWSHIP VILLAGE
BLOCK 9301 - LOT 33
BERNARDS TOWNSHIP, SOMERSET COUNTY, N.J.

KSS KENNON SURVEYING SERVICES, INC.
5 POWDER HORN DRIVE, SUITE 4
P.O. BOX 4477
WARREN, NEW JERSEY 07059
PHONE 732-564-1010 FAX 732-564-9909
DATE 11-20-14 Scale 1" = 100' proj. no. 960703 sheet 1 of 1

KENNY D. KENNON, P.L.S.
PROFESSIONAL LAND SURVEYOR LICENSE NO. 37195
11-20-14

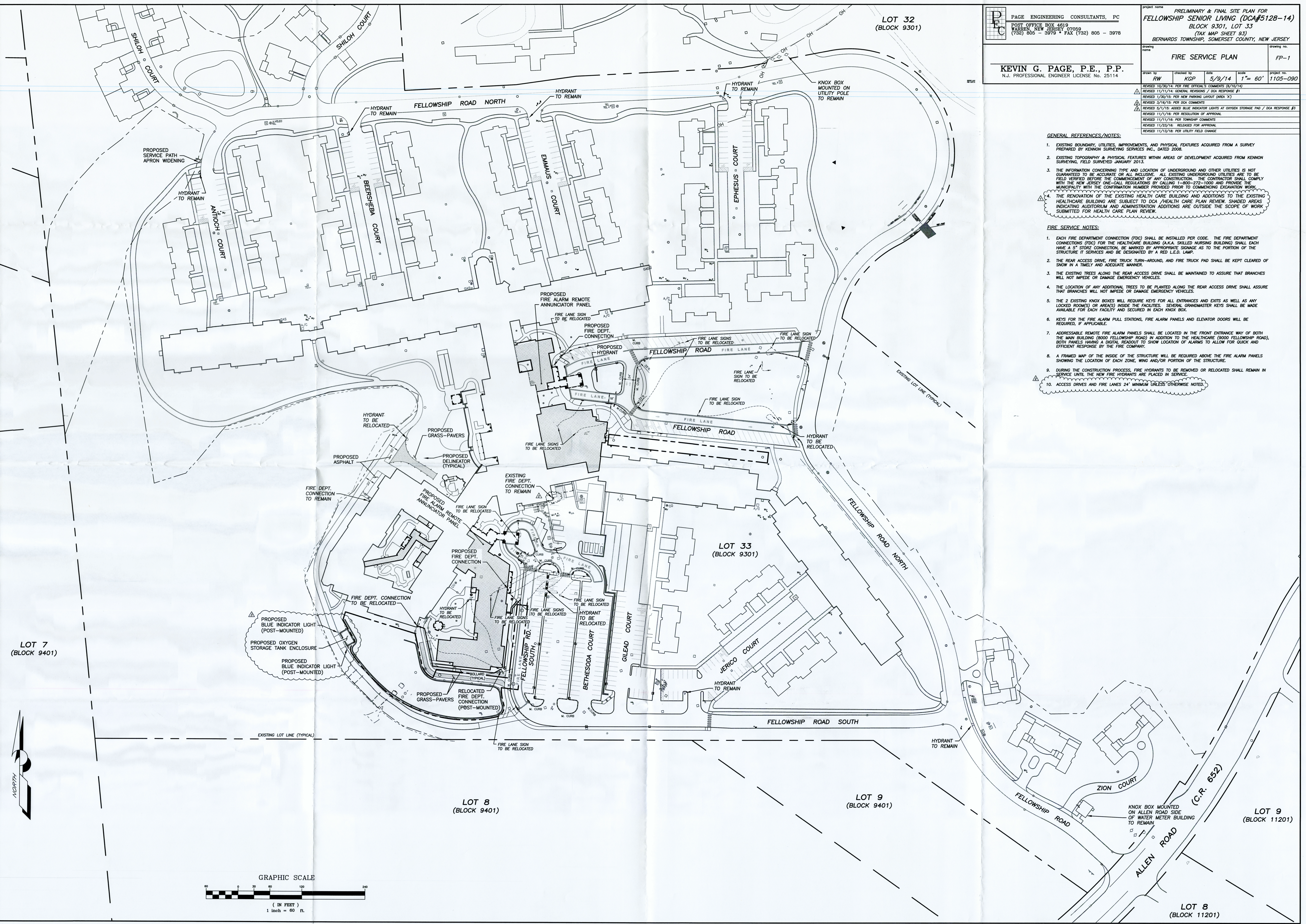
PARKING SUMMARY
256 OPEN
56 GARAGES (28X2)
162 COVERED
25 HANDICAP
499 TOTAL

NOTES

1. BOUNDARY, WETLANDS AND STATE OPEN WATERS INFORMATION SHOWN HEREON FROM FILED MAP NO. 3342, "FELLOWSHIP VILLAGE".
2. NO CORNER MARKERS SET PER CONTRACTUAL AGREEMENT.

DISPOSITION OF ENCUMBRANCES FROM TITLE REPORT SCHEDULE B, SECTION 2, PREPARED BY COMMONWEALTH LAND TITLE INSURANCE COMPANY, TITLE NO. 2013-01600, EFFECTIVE DATE 11-18-2013.

- ITEM 8. DB 734/154 DESCRIBES AN EASEMENT FOR POLES ALONG MARTINSVILLE ROAD SHOWN HEREON.
DB 734/158 DESCRIBES AN EASEMENT FOR POLES ALONG MARTINSVILLE ROAD.
DB 960/359 DESCRIBES AN EASEMENT FOR POLES ALONG MARTINSVILLE ROAD.
DB 972/17 DESCRIBES AN EASEMENT FOR POLES ALONG MARTINSVILLE ROAD.
DB 1165/538 DESCRIBES AN UNPLOTTABLE ELECTRIC SERVICE LATERAL EASEMENT ALONG ALLEN ROAD, AND SHOULD BE REVIEWED BY LEGAL COUNSEL.
DB 1733/317 DESCRIBES AN EASEMENT FOR POLES ALONG MARTINSVILLE ROAD. EASEMENTS ARE OF UNSPECIFIED WIDTH AND LOCATION AND ARE UNPLOTTABLE. HOWEVER, POLES ALONG THE ADJUTING ROADS ARE SHOWN HEREON.
- ITEM 9. DB 1616/559 DESCRIBES A GAS EASEMENT THROUGH LOT 32 ONTO SUBJECT PARCEL AND IS SHOWN HEREON.
DB 2218/853 DESCRIBES A GAS EASEMENT WITHIN THE AREA OF SHILOH COURT (PRIVATE), WHICH IS SHOWN HEREON.
- ITEM 10. DB 1265/42 DESCRIBES A RIGHT OF WAY TO THE TOWNSHIP OF BERNARDS 36' WIDE. THE RIGHT OF WAY SHOWN HEREON FROM FILED MAPS PREPARED, APPROVED AND RECORDED AFTER THIS DEED.
- ITEM 11. DB I-24/17 AND J-24/219 FOR SLOPE AND DRAINAGE EASEMENTS TO MAINTAIN ROADWAY SLOPES AND DITCHES ALONG MARTINSVILLE ROAD WITH NO DEFINED SPECIFIC WIDTH OR LOCATION THEREFORE UNPLOTTABLE.
DB 1737/496 SLOPE EASEMENT ALONG ALLEN ROAD SHOWN HEREON.
- ITEM 12. DB 1959/343 CONTAINS AGREEMENTS FOR DETENTION BASIN ACCESS AND MAINTENANCE. LOCATION IS UNDEFINED AND THEREFORE UNPLOTTABLE, MAINTENANCE AGREEMENT SHOULD BE REVIEWED BY LEGAL COUNSEL.
- ITEM 13. DB 2024/197 EASEMENT FOR BELL ATLANTIC CABINET SHOWN HEREON.
- ITEM 14. DB 2176/501 DESCRIBES AN EASEMENT FOR THE USE OF FELLOWSHIP DRIVE, SHOWN HEREON, FOR ACCESS TO OTHER PARCELS AND PHASES OF THE SITE AND SHOULD BE REVIEWED BY LEGAL COUNSEL.
- ITEM 15. DB 2195/502 PARCEL SUBJECT TO RECONSTRUCTION OF LIBERTY CORNER ROAD AND MARTINSVILLE ROAD. THE IMPROVEMENTS TO THIS INTERSECTION WERE COMPLETED PRIOR TO THE FIELD INVESTIGATION FOR THIS SURVEY AND ARE REFLECTED HEREON.
- ITEM 16. DB 6120/1027 DESCRIBE CONSERVATION EASEMENTS SHOWN HEREON.
- ITEM 17. DB 6120/1042 DESCRIBES STREAM BUFFER CONSERVATION EASEMENTS SHOWN HEREON.
- ITEM 18. PARCEL SUBJECT TO WATER COURSES, SHOWN HEREON, AND RIGHTS SHOULD BE REVIEWED BY LEGAL COUNSEL.
- ITEM 19. PARCEL SUBJECT TO RIGHTS OF OCCUPANTS AND SHOULD BE REVIEWED BY LEGAL COUNSEL.
- ITEM 20. PARCEL SUBJECT VARIOUS WETLANDS, STATE OPEN WATERS, SIGHT EASEMENTS AND DRAINAGE EASEMENTS SHOWN HEREON FROM FILED MAPS #3007 & #3342.



PROJECT NAME

FELLOWSHIP SENIOR LIVING (DCA#5128-14)

PROJECT NO.

1105-090

DRAWING NO.

FP-1

DATE

5/9/14

SCALE

1" = 60'

PROJECT NO.

1105-090

PROJECT NAME

FELLOWSHIP SENIOR LIVING (DCA#5128-14)

PROJECT NO.

1105-090

DRAWING NO.

FP-1

DATE

5/9/14

SCALE

1" = 60'

PROJECT NO.

1105-090

REVISIONS

REVISED 10/20/14: PER FIRE OFFICIALS COMMENTS (6/10/14)

REVISED 11/11/14: GENERAL REVISIONS / DCA RESPONSE #1

REVISED 1/20/15: PER NEW PARKING LAYOUT (AREA 'X')

REVISED 3/16/15: PER DCA COMMENTS

REVISED 5/17/15: ADDED BLUE INDICATOR LIGHTS AT OXYGEN STORAGE PAD / DCA RESPONSE #3

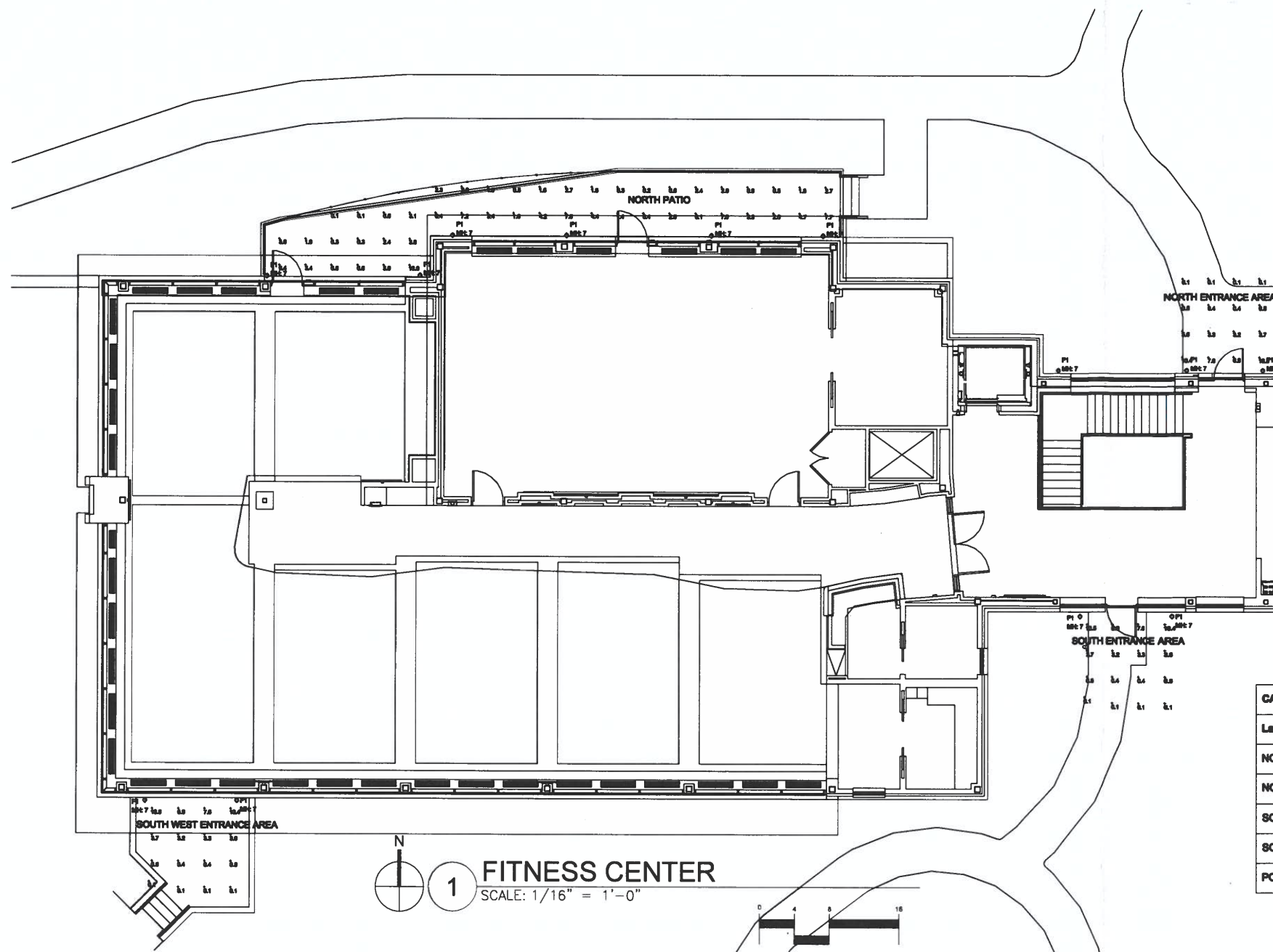
REVISED 11/17/15: PER RESOLUTION OF APPROVAL

REVISED 11/11/16: PER TOWNSHIP COMMENTS

REVISED 11/23/16: RELEASED FOR APPROVAL

REVISED 11/13/18: PER UTILITY FIELD CHANGE

- GENERAL REFERENCES/NOTES:**
- EXISTING BOUNDARY, UTILITIES, IMPROVEMENTS, AND PHYSICAL FEATURES ACQUIRED FROM A SURVEY PREPARED BY KENNON SURVEYING SERVICES INC., DATED 2008.
 - EXISTING TOPOGRAPHY & PHYSICAL FEATURES WITHIN AREAS OF DEVELOPMENT ACQUIRED FROM KENNON SURVEYING, FIELD SURVEYED JANUARY 2013.
 - THE INFORMATION CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. ALL EXISTING UNDERGROUND UTILITIES ARE TO BE FIELD VERIFIED BEFORE THE COMMENCEMENT OF ANY CONSTRUCTION. THE CONTRACTOR SHALL COMPLY WITH THE NEW JERSEY ONE-CALL REGULATIONS BY CALLING 1-800-272-1000 AND PROVIDE THE MUNICIPALITY WITH THE CONFIRMATION NUMBER PROVIDED PRIOR TO COMMENCING EXCAVATION WORK.
 - THE RENOVATION OF THE EXISTING HEALTH CARE BUILDING AND ADDITIONS TO THE EXISTING HEALTHCARE BUILDING ARE SUBJECT TO DCA HEALTH CARE PLAN REVIEW. SHADDED AREAS INDICATING AUDITORIUM AND ADMINISTRATION ADDITIONS ARE OUTSIDE THE SCOPE OF WORK SUBMITTED FOR HEALTH CARE PLAN REVIEW.
- FIRE SERVICE NOTES:**
- EACH FIRE DEPARTMENT CONNECTION (FDC) SHALL BE INSTALLED PER CODE. THE FIRE DEPARTMENT CONNECTIONS (FDC) FOR THE HEALTHCARE BUILDING (A.K.A. SKILLED NURSING BUILDING) SHALL EACH HAVE A 5" STORGE CONNECTION, BE MARKED BY APPROPRIATE SIGNAGE AS TO THE PORTION OF THE STRUCTURE IT SERVES AND BE DESIGNATED BY A RED L.E.D. LAMP.
 - THE REAR ACCESS DRIVE, FIRE TRUCK TURN-AROUND, AND FIRE TRUCK PAD SHALL BE KEPT CLEARED OF SNOW IN A TIMELY AND ADEQUATE MANNER.
 - THE EXISTING TREES ALONG THE REAR ACCESS DRIVE SHALL BE MAINTAINED TO ASSURE THAT BRANCHES WILL NOT IMPEDE OR DAMAGE EMERGENCY VEHICLES.
 - THE LOCATION OF ANY ADDITIONAL TREES TO BE PLANTED ALONG THE REAR ACCESS DRIVE SHALL ASSURE THAT BRANCHES WILL NOT IMPEDE OR DAMAGE EMERGENCY VEHICLES.
 - THE 2 EXISTING KNOX BOXES WILL REQUIRE KEYS FOR ALL ENTRANCES AND EXITS AS WELL AS ANY LOCKED ROOM(S) OR AREA(S) INSIDE THE FACILITIES. SEVERAL GRANDMASTER KEYS SHALL BE MADE AVAILABLE FOR EACH FACILITY AND SECURED IN EACH KNOX BOX.
 - KEYS FOR THE FIRE ALARM PULL STATIONS, FIRE ALARM PANELS AND ELEVATOR DOORS WILL BE REQUIRED, IF APPLICABLE.
 - ADDRESSABLE REMOTE FIRE ALARM PANELS SHALL BE LOCATED IN THE FRONT ENTRANCE WAY OF BOTH THE MAIN BUILDING (8000 FELLOWSHIP ROAD) AND ADDITION TO THE HEALTHCARE (8000 FELLOWSHIP ROAD), BOTH PANELS HAVING A DIGITAL READOUT TO SHOW LOCATION OF ALARMS TO ALLOW FOR QUICK AND EFFICIENT RESPONSE BY THE FIRE COMPANY.
 - A FRAMED MAP OF THE INSIDE OF THE STRUCTURE WILL BE REQUIRED ABOVE THE FIRE ALARM PANELS SHOWING THE LOCATION OF EACH ZONE, WING AND/OR PORTION OF THE STRUCTURE.
 - DURING THE CONSTRUCTION PROCESS, FIRE HYDRANTS TO BE REMOVED OR RELOCATED SHALL REMAIN IN SERVICE UNTIL THE NEW FIRE HYDRANTS ARE PLACED IN SERVICE.
 - ACCESS DRIVES AND FIRE LANES 24' MINIMUM UNLESS OTHERWISE NOTED.



POND DECK

2 POND DECK AT EPHEBUS POND
SCALE: 1/16" = 1'-0"

CALCULATION SUMMARY									
Label	CeleType	Units	Avg	Max	Min	Avg/Min	Max/Min	PtSpLr	PtSpTb
NORTH PATIO	Illuminance	Fc	2.88	10.0	0.1	28.80	100.00	3	3
NORTH ENTRANCE AREA	Illuminance	Fc	3.21	10.5	0.1	32.10	105.00	3	3
SOUTH ENTRANCE AREA	Illuminance	Fc	3.21	10.5	0.1	32.10	105.00	3	3
SOUTHWEST ENTRANCE AREA	Illuminance	Fc	3.21	10.5	0.1	32.10	105.00	3	3
POND DECK	Illuminance	Fc	2.05	5.8	0.1	20.50	58.00	3	3

LUMINAIRE SCHEDULE **REFER TO LIGHTING FIXTURE CUTSHEETS FOR COMPLETE CATALOG NUMBERS**									
Symbol	Qty	Fixture Type	Fixture Description	Manufacturer	Catalog Number	LLF	Total Watts	Delivered Lumens	Photometric File Name
	9	FX	LED POST-MTD PETITE SCONCE DNLT, 1-1/2IN WIDE, 3-1/2IN TALL, 80 D	AuroraLight Inc	LQWM-L1-90-27D-FINISHH	0.900	3,264.82	145	LQPL-1-27 (2700K).ies
	9	F1	LED 4IN DIA CYLINDER UP-DN SCONCE, 8IN TALL	LEDRA Brands	EXT-4UD-30K-80-UNV-FINISH	0.900	18.49	1411	105010.ies

DATE: 12/11/2020, 1:41:00 PM, 12/11/2020

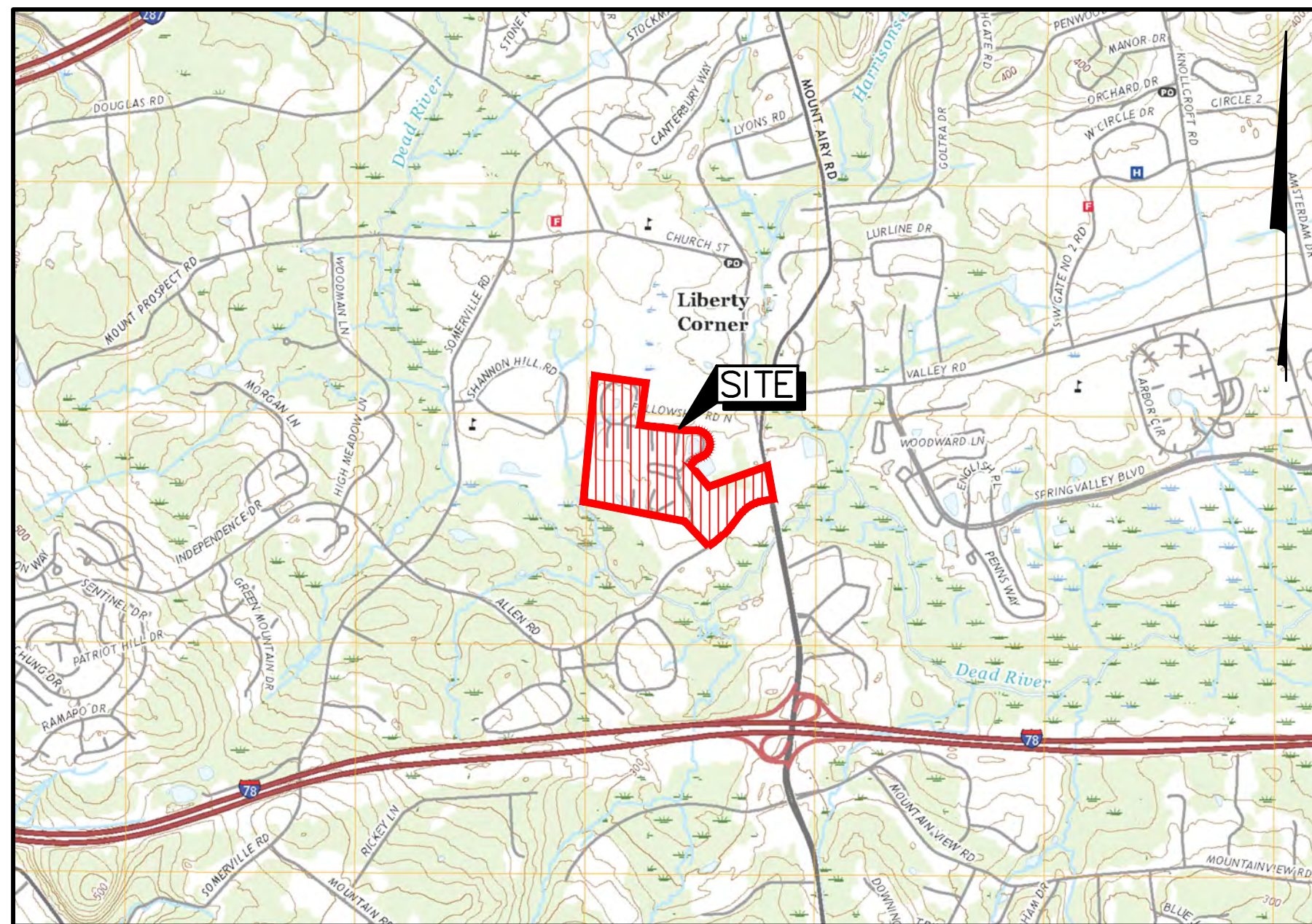
PRELIMINARY & FINAL SITE PLAN

SHEET 93, BLOCK 9301, LOT 33

TOWNSHIP OF BERNARDS, SOMERSET COUNTY, NEW JERSEY



AERIAL MAP
SCALE: 1" = 500'



USGS QUAD MAP
SCALE: 1" = 2000'

APPLICANT:

FELLOWSHIP SENIOR LIVING, INC.

8000 FELLOWSHIP ROAD

BASKING RIDGE, NJ 07920



MARATHON

Engineering & Environmental Services

3 Killdeer Court, Suite 302, Swedesboro, NJ 08085

1616 Pacific Avenue, Suite 501, Atlantic City, NJ 08401

EXISTING UTILITY INFORMATION SHOWN ON THESE PLANS IS FURNISHED BY THE UTILITY COMPANIES AND/OR THE SURVEYOR AND THE ACCURACY THEREOF IS NOT THE RESPONSIBILITY OF MARATHON ENGINEERING & ENVIRONMENTAL SERVICES, INC. IT IS THE RESPONSIBILITY OF THE OWNERS AND/OR CONTRACTOR TO CALL 1-800-272-1000 FOR FIELD LOCATION OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.

OWNER/APPLICANT

FELLOWSHIP SENIOR LIVING, INC.
8000 FELLOWSHIP ROAD
BASKING RIDGE, NJ 07920
PHONE: 908-580-3800

APPLICANT'S INTENT

THE APPLICANT, FELLOWSHIP SENIOR LIVING, INC. SEEKS PRELIMINARY AND FINAL SITE PLAN APPROVAL TO CONSTRUCT AN ADDITION TO FUNCTION AS A FITNESS CENTER, CREATE AN OUTDOOR WALKING TRAIL FOR RECREATION, DOG PARK, AS WELL AS MODIFY THE SEATING AREA AT THE "SPRUCE GROVE" AND CONSTRUCT AN OVERLOOK DECK PLATFORM AT THE ENTRANCE BASIN POND, ON THE PROPERTY SHOWN ON TAX MAP SHEET 93, BLOCK 9301, LOT 33, SITUATED IN TOWNSHIP OF BERNARDS, SOMERSET COUNTY, NEW JERSEY.

CERTIFICATION OF APPROVALS

SITE PLAN OF PRELIMINARY & FINAL SITE PLAN
LOT 33 BLOCK 9301 ZONE CCRC
DATE 11/13/2020 SCALE AS NOTED
APPLICANT FELLOWSHIP SENIOR LIVING, INC.
ADDRESS 8000 FELLOWSHIP ROAD
BASKING RIDGE, NJ 07920
SITE PLAN CONTROL NO.

I HEREBY CERTIFY THAT THIS SITE PLAN HAS BEEN APPROVED BY RESOLUTION OF THE TOWNSHIP OF BERNARDS PLANNING BOARD.

CHAIRPERSON
SECRETARY
BOARD ENGINEER
TOWNSHIP CLERK

DATE
DATE
DATE
DATE

I HEREBY CERTIFY THAT I AM THE OWNER OF RECORD OF THE PROPERTY HEREIN DEPICTED AND THAT I CONCUR WITH THIS PLAN. I CONSENT TO THE FILING OF THIS SITE PLAN WITH THE PLANNING BOARD OF TOWNSHIP OF BERNARDS.

OWNER: DATE
OWNER: DATE
OWNER: DATE

THIS SITE PLAN IS HEREBY APPROVED BY THE SOMERSET COUNTY PLANNING BOARD.

CHAIRPERSON
SECRETARY

DATE
DATE
DATE

SHEET INDEX		
SHEET NO.	DWG. NO.	SHEET TITLE
1 OF 14	C0001	COVER SHEET
2 OF 14	C0002	ZONING & OVERVIEW PLAN
3 OF 14	C0101	SITE PLAN - FITNESS CENTER ADDITION
4 OF 14	C0102	SITE PLAN - RECREATION & SPRUCE GROVE
5 OF 14	C0103	SITE PLAN - DOG PARK & WALKING TRAILS
6 OF 14	C0301	GRADING & UTILITY PLAN - FITNESS CENTER ADDITION
7 OF 14	C0302	GRADING & UTILITY PLAN - RECREATION & SPRUCE GROVE
8 OF 14	C0303	GRADING & UTILITY PLAN - DOG PARK & WALKING TRAILS
9 OF 14	C1101	SITE DETAILS
10 OF 14	C1201	SOIL EROSION & SEDIMENT CONTROL PLAN - FITNESS CENTER ADDITION
11 OF 14	C1202	SOIL EROSION & SEDIMENT CONTROL PLAN - RECREATION & SPRUCE GROVE
12 OF 14	C1203	SOIL EROSION & SEDIMENT CONTROL PLAN - DOG PARK & WALKING TRAILS
13 OF 14	C1301	SOIL EROSION AND SEDIMENT CONTROL NARRATIVE SHEET
14 OF 14	C1302	SOIL EROSION AND SEDIMENT CONTROL DETAIL SHEET

12/11/2020	1	INITIAL SUBMISSION	ACD	DF
ISSUE DATE	ISSUE NO.	SUBMISSION/REVISION	BY	APPR.

PRELIMINARY & FINAL SITE PLAN

SHEET 93, BLOCK 9301, LOT 33
TOWNSHIP OF BERNARDS, SOMERSET COUNTY, NEW JERSEY

COVER SHEET

FELLOWSHIP SENIOR LIVING, INC.

8000 FELLOWSHIP ROAD
BASKING RIDGE, NJ 07920

DAVID J. FLEMING, P.E.

PROFESSIONAL ENGINEER
NEW JERSEY LICENSE NO. 245E03321600

12/11/2020

FVG 001.01



MARATHON
Engineering & Environmental Services
Swedesboro Office

3 Killdeer Court, Suite 302, Swedesboro, NJ 08085
ph (856) 241-9705 fax (856) 241-9709
Certificate of Authorization #24GA27995700

ALL DOCUMENTS PREPARED BY MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. ARE INTENDED TO BE USED IN CONNECTION WITH THE PROJECT AND NOT FOR ANY OTHER PURPOSE. ANY REUSE, WITHOUT WRITTEN PERMISSION, OF ANY PART OF THIS DOCUMENT IS PROHIBITED. MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. SHALL INDEMNIFY AND HOLD HARMLESS MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. FROM ALL CLAIMS, DAMAGES, LOSSES, AND EXPENSES ARISING OUT OF OR IN CONNECTION WITH THIS PROJECT.

SCALE AS SHOWN
DRAWN BY SK
APPROVED JDD
SHEET 1 OF 14

C0001



A. GENERAL SITE NOTES

1. TRACT FOR DEVELOPMENT CONSISTS OF SHEET 93, BLOCK 9301, LOT 33 OF THE OFFICIAL TAX MAP OF BERNARDS TOWNSHIP.
2. TRACT FOR DEVELOPMENT IS ZONED CCR AS INDICATED ON THE OFFICIAL ZONING MAP OF BERNARDS TOWNSHIP.
3. TOTAL AREA OF TRACT = 72.56± ACRES AS LANCED.
4. THE PROPOSED DEVELOPMENT SHALL BE SERVED BY PUBLIC SEWER AND WATER.
5. THE PROPOSED DEVELOPMENT SHALL COMPLY WITH THE CURRENT RECYCLING PROGRAM IN EFFECT IN BERNARDS TOWNSHIP.
6. THE OWNER, OR HIS REPRESENTATIVE, SHALL DESIGNATE AN INDIVIDUAL RESPONSIBLE FOR CONSTRUCTION SITE SAFETY DURING THE COURSE OF SITE IMPROVEMENTS PURSUANT TO N.J.A.C. 5:23-2.21 (E) OF THE N.J. UNIFORM CONSTRUCTION CODE AND CFR 1926.32 (F) (OSHA COMPETENT PERSON).
7. GRADING AROUND BUILDING AND FINISHED FLOOR ELEVATION IS SUBJECT TO CHANGE UPON REVIEW OF CONSTRUCTION PLANS OF PROPOSED BUILDING.
8. T.C. AND B.C. DESIGNATIONS INDICATE TOP OF CURB ELEVATIONS AND BOTTOM OF CURB ELEVATIONS AT THE STREET GRADE.
9. ALL BARRIER FREE DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST A.D.A. AND N.J.D.O.T. STANDARDS.
10. ANY EXISTING PLANS MUST BE AUTHORIZED BY THE DESIGN ENGINEER AND APPROVED BY THE TOWNSHIP ENGINEER.
11. THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL EACH PLAN HAS BEEN REVISED TO INDICATE "ISSUED FOR CONSTRUCTION".
12. CONSTRUCTION DOCUMENTS SHALL BE UTILIZED BY THE CONTRACTOR SHALL BE REVIEWED AND APPROVED BY THE TOWNSHIP ENGINEER.
13. THIS SET OF DRAWINGS AND ALL INFORMATION CONTAINED HEREIN IS AUTHORIZED FOR THE USE ONLY BY THE PARTY FOR WHOM THE WORK IS CONTRACTED OR WHOM IT IS CERTIFIED. THIS SET OF DRAWINGS MAY BE REPRODUCED, REPRODUCED, DISCLOSED, OR RELED UPON FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN CONSENT OF MARATHON ENGINEERING & ENVIRONMENTAL SERVICES, INC.
14. ANY DEMOLITION MATERIAL SHALL BE PROPERLY DISPOSED OF AND NO ON-SITE BURIAL IS PERMITTED.
15. THE APPLICANT SHALL NOTIFY THE BERNARDS TOWNSHIP ENGINEER A MINIMUM OF 24 HOURS PRIOR TO THE START OF ANY CONSTRUCTION.

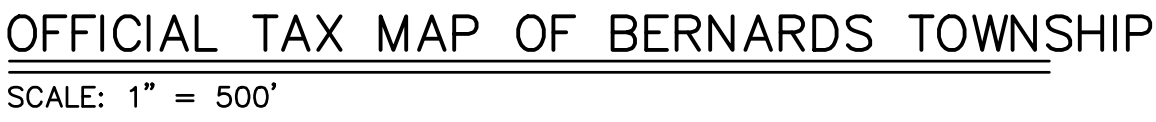
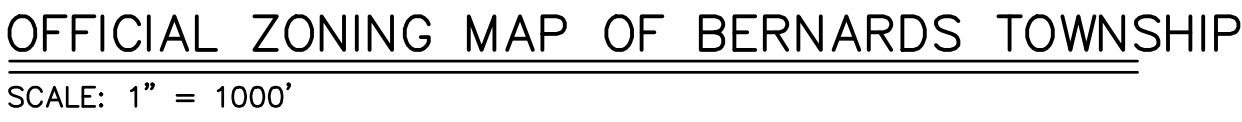
1. VERTICAL DATUM IS IN FEET AND APPROXIMATES NGVD 1929 (SUBTRACT 1.145 FEET TO ADJUST TO NAVD 1988, PER CORPSCON 6.0.1).

ZONE	CCRC	PERMITTED OR REQUIRED	EXISTING	PROPOSED IMPROVEMENTS	CONFORMITY STATUS
MIN. LOT AREA		60 AC.	72.569 AC.	72.569 AC.	CONFORMS
MIN. LOT WIDTH		200 FT	1568.27 FT	1568.27 FT	CONFORMS
MIN. TRACT FRONT SETBACK (BUILDINGS)		100 FT	100 FT	100 FT	CONFORMS
MIN. TRACT FRONT SETBACK (PARKING)		75 FT	75 FT	75 FT	CONFORMS
MIN. TRACT SIDE SETBACK (BUILDING)		75 FT	75 FT	75 FT	CONFORMS
MIN. TRACT SIDE SETBACK (PARKING)		75 FT	75 FT	75 FT	CONFORMS
MIN. REAR TRACT SETBACK (BUILDING)		100 FT	100 FT	100 FT	CONFORMS
MIN. REAR TRACT SETBACK (PARKING)		75 FT	75 FT	75 FT	CONFORMS
MAX. IMPERVIOUS COVERAGE (%)		40 %	26.8 %	27.2 %	CONFORMS
MAX. BUILDING COVERAGE (%)		20 %	14.8 %	15.0 %	CONFORMS
MAX. BUILDING HEIGHT		35 FT 50 FT	49.7 FT	49.7 FT	CONFORMS
MAX. INDEPENDENT & ASSISTED UNITS/ACRE		5	4.72	4.71	CONFORMS
MIN. INDEPENDENT UNITS / NURSING UNITS		4	5.2	5.10	CONFORMS
MAX. % SINGLE UNITS TO INDEPENDENT		30%	2.3 %	2.3 %	CONFORMS
MIN. TOTAL PARKING		613.1	614	617	CONFORMS
MIN. PARKING SETBACK		75 FT	75 FT	75 FT	CONFORMS
MIN. BUFFER		25 FT	25 FT	25 FT	CONFORMS

PARKING REQUIREMENTS:

- | | | | |
|---|------------------|--------------|----------------|
| • INDEPENDENT LIVING | 1.0 SPACES/UNIT | 1.0 x 256 = | 256 SPACES |
| • ASSISTED LIVING | 0.35 SPACES/UNIT | 0.35 x 86 = | 30.1 SPACES |
| • LONG-TERM CARE / NURSING | 0.35 SPACES/BED | 0.35 x 67 = | 23.5 SPACES |
| • STAFF (FULL TIME, MAX SHIFT) | 1.0 SPACE/EMP. | 1.0 x 165 = | 165 SPACES |
| • STAFF (PART-TIME) | 0.5 SPACES/EMP. | 0.5 x 20 = | 10 SPACES |
| • +10% FOR VISITOR PARKING | 10% REQUIRED | 0.10 x 485 = | 48.5 SPACES |
| • AUDITORIUM PARKING | 1 SPACE/3 SEATS | 240 / 3 = | 80 SPACES |
| TOTAL REQUIRED PARKING SPACES (PER ORDINANCE) | | | = 613.1 SPACES |
| TOTAL PARKING PROVIDED ON-SITE | | | = 617 SPACES |

EXISTING UTILITY INFORMATION SHOWN ON THESE PLANS IS FURNISHED BY THE UTILITY COMPANIES AND/OR THE SURVEYOR AND THE ACCURACY THEREOF IS NOT THE RESPONSIBILITY OF MARATHON ENGINEERING & ENVIRONMENTAL SERVICES, INC. IT IS THE RESPONSIBILITY OF THE OWNERS AND/OR CONTRACTOR TO CALL 1-800-272-1000 FOR FIELD LOCATION OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.



ALGONQUIN GAS TRANSMISSION CO.
LINCOLN ROAD
BOSTON POINT, NY 10980
(908) 757-1212

VERIZON COMMUNICATIONS
ENGINEERING
6000 HADLEY ROAD
SOUTH PLAINFIELD, NJ 07080

OCRA/PA
SERVICE, TAX DEPT.
P.O. BOX 1911
MORRISTOWN, NJ 07962-1911

CABLEVISION OF RARITAN VALLEY
275 CENTENNIAL AVE., ONEB80
PISCATAWAY, NJ 08855
ATTN: MARGUERITE PRENDERVEHE
CONSTRUCTION DEPT.

PUBLIC SERVICE ELECTRIC & GAS
MANAGEMENT - CORPORATE PROPERTIES
80 PARK PLAZA, 708
NEWARK, NJ 07102

LIBERTY CORNER FIRE COMPANY
P.O. BOX 98, CHURCH STREET
LIBERTY CORNER, NJ 07938

Block-Lot: 11201-8
18B PROPERTY LLC C/O ALLEN RD LLC PO BOX 74
LIBERTY CORNER NJ 07938
RE: 50 ALLEN RD"

Block-Lot: 9401-9
BRISTLECONE, INC.
P.O. BOX 328
LIBERTY CORNER NJ 07938 RE: 55 ALLEN RD"

Block-Lot: 11201-9
701 PROPERTY INVESTMENTS LLC 2051 SE 3RD ST UNIT 508
SHERFIELD BEACH FL 33441
RE: 70 MARTINSVILLE RD"

Block-Lot: 9204-2
BERNARDOS TWP SEWERAGE AUTHORITY MARTINSVILLE RD; BOX 247
LIBERTY CORNER NJ 07938
RE: 726 MARTINSVILLE RD"

Block-Lot: 9301-35
LEONARDO, RAFAEL C & MILAGROS B 100 SHANNON HILL RD
LIBERTY CORNER NJ 07938
RE: 100 SHANNON HILL RD"

Block-Lot: 9301-34
SHANNON HILL FARMS HOMEOWNERS ASSOC
RE: 102 SHANNON HILL RD"

Block-Lot: 9401-7
SCHEHERAZADE ENTERPRISES INC 15 SHANNON HILL RD
LIBERTY CORNER NJ 07938
RE: 15 SHANNON HILL RD"

Block-Lot: 9301-36
BARADLEY, KENNETH O & SANDERSON, LYNN E 92 SHANNON HILL RD
LIBERTY CORNER NJ 07938
RE: 92 SHANNON HILL RD"

Block-Lot: 9301-38
GALUSI, CHRISTOPHER M & ALYSON E 80 SHANNON HILL RD
LIBERTY CORNER NJ 07938
RE: 80 SHANNON HILL RD"

Block-Lot: 9301-37 BARR, LARRY & JUNE 86 SHANNON HILL RD
LIBERTY CORNER NJ 07938
RE: 86 SHANNON HILL RD"

Block-Lot: 9301-39 BUENY, JAMES & LEIGH 76 SHANNON HILL
RD BASKING RIDGE NJ 07920
RE: 76 SHANNON HILL RD"

Block-Lot: 9301-40
KLUPPKE, JON & CROWE, MARGARET F 70 SHANNON HILL
RD BASKING RIDGE NJ 07920
RE: 70 SHANNON HILL RD"

Block-Lot: 9301-32 FELLOWSHIP DEACONY INC PO BOX 204
LIBERTY CORNER NJ 07938
RE: 3075 VALLEY RD"

Block-Lot: 9301-901
ENGLISH FARM ASSOCIATES, LP PO BOX 183
LIBERTY CORNER NJ 07938
RE: 3613 VALLEY RD"

Block-Lot: 9401-8
PINSON, ELLEN
658 HYDEN HILL RD FAIRFIELD CT 06824 RE: 99 ALLEN RD"

Block-Lot: 9204-1 BRISTLECONE INC PO BOX 328
LIBERTY CORNER NJ 07938
RE: 706 MARTINSVILLE RD"

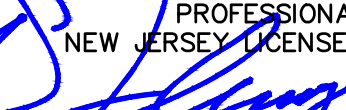

Block-Lot: 9204-2-CELL
BERNARDOS TWP SEWERAGE AUTHORITY MARTINSVILLE RD; BOX 24
LIBERTY CORNER NJ 07938
RE: 726 MARTINSVILLE RD"

Block-Lot: 9401-7-00065 SCHEHERAZADE ENTERPRISES INC P
BOX 139
LIBERTY CORNER NJ 07938
RE: 15 SHANNON HILL RD"

Block-Lot: 9301-9.01-00012 ENGLISH FARM ASSOCIATES, LP P
BOX 183
LIBERTY CORNER NJ 07938
RE: CHURCH ST"

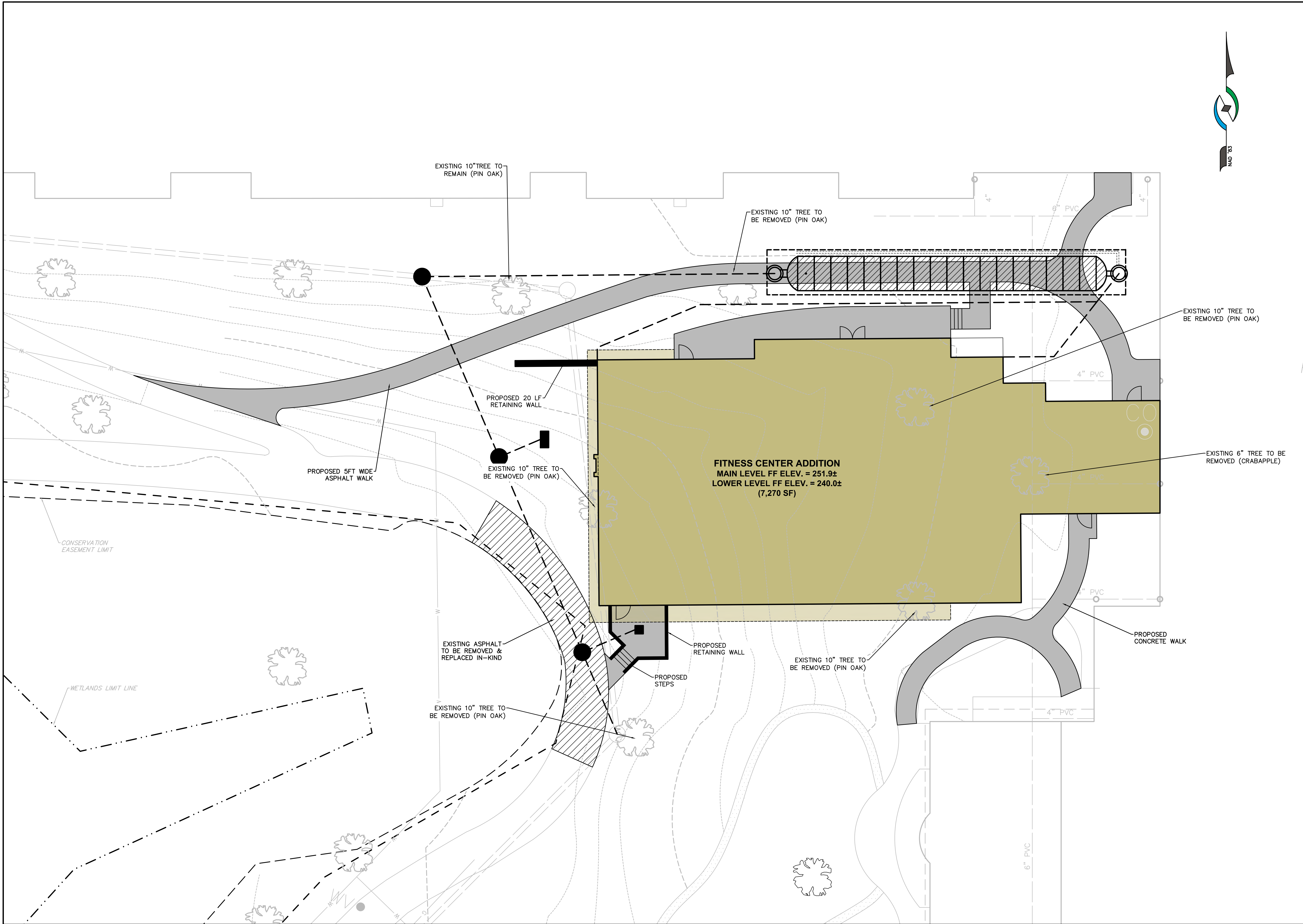
Block-Lot: 9401-8-00036
PINSON, ELLEN
658 HYDEN HILL RD FAIRFIELD CT 06824 RE: 99 ALLEN RD"



12/11/2020	1	INITIAL SUBMISSION	ACD	DF
ISSUE DATE	ISSUE NO.	SUBMISSION/REVISION	BY	APPR.
PRELIMINARY & FINAL SITE PLAN				
SHEET 93, BLOCK 9301, LOT 33 TOWNSHIP OF BERNARDS, SOMERSET COUNTY, NEW JERSEY				
ZONING & OVERVIEW PLAN				
FELLOWSHIP SENIOR LIVING, INC.				
8000 FELLOWSHIP ROAD BASKING RIDGE, NJ 07920				
DAVID J. FLEMING, P.E. PROFESSIONAL ENGINEER NEW JERSEY LICENSE NO. 246023321600 			 MARATHON Engineering & Environmental Services Swedesboro Office 3 Kildreer Court, Suite 302, Swedesboro, NJ 08085 ph (856) 241-8705 fax (856) 241-8709 Certificate of Authorization #24GAZ7995700	
<u>12/11/2020</u> FVG_001.01			ALL DOCUMENTS PREPARED BY MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. ARE THE PROPERTY OF MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES IN RESPECT TO THE PROJECT. THEY ARE NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. ANY UNAUTHORIZED USE OR REPRODUCTION OF THESE DOCUMENTS IS PROHIBITED AND WILL BE CONSIDERED A VIOLATION OF APPLICABLE LAWS. MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. ACCEPTS NO LIABILITY FOR ERRORS OR OMISSIONS. THE USER ASSUMES ALL RESPONSIBILITY FOR THE ACCURACY AND COMPLETENESS OF THE INFORMATION PROVIDED HEREIN. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY INSURANCE COVERAGE. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY BONDS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY FEES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY COSTS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY EXPENSES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY DAMAGES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY LOSSES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY SUFFERINGS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY TORTS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY CRIMES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY VIOLATIONS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY BREACHES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY CONTRACTS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY AGREEMENTS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY WARRANTIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY GUARANTEES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY REPRESENTATIONS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY DISCLOSURES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY STATEMENTS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY DECLARATIONS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY CERTIFICATIONS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY attestations. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY VERIFICATIONS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY VALIDATIONS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY CORROBORATIONS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY SUBSTANTiations. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY CONFIRMATIONS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY ACKNOWLEDGMENTS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY RATIFICATIONS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY APPROVALS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY ENDORSEMENTS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY SANCTIONS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY BENEDICTIONS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY INDULGENCES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY REMISSIONS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY AMNISTIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY ABOLITIONS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY EXEMPTIONS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY DISPENSATIONS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY RELIEFS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY FACULTIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PRIVILEGES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY IMMUNITIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY EXEMPTIONS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY DISPENSATIONS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY RELIEFS. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY FACULTIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PRIVILEGES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY IMMUNITIES.	
			SCALE AS NOTED NORTH ACD	APPROVED DJF SHEET 2 OF 14
			DRAWING NO. C0002	

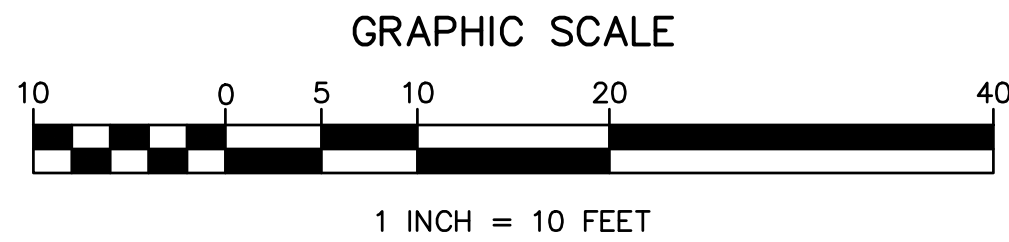
DATE: 12/11/2020, 12/11/2020, 12/11/2020

12/11/2020, 12/11/2020, 12/11/2020



FITNESS CENTER ADDITION PLAN VIEW
SCALE: 1"=10'

EXISTING UTILITY INFORMATION SHOWN ON THESE PLANS IS FURNISHED BY THE UTILITY COMPANIES AND/OR THE SURVEYOR AND THE ACCURACY THEREOF IS NOT THE RESPONSIBILITY OF MARATHON ENGINEERING & ENVIRONMENTAL SERVICES, INC. IT IS THE RESPONSIBILITY OF THE OWNERS AND/OR CONTRACTOR TO CALL 1-800-272-1000 FOR FIELD LOCATION OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.

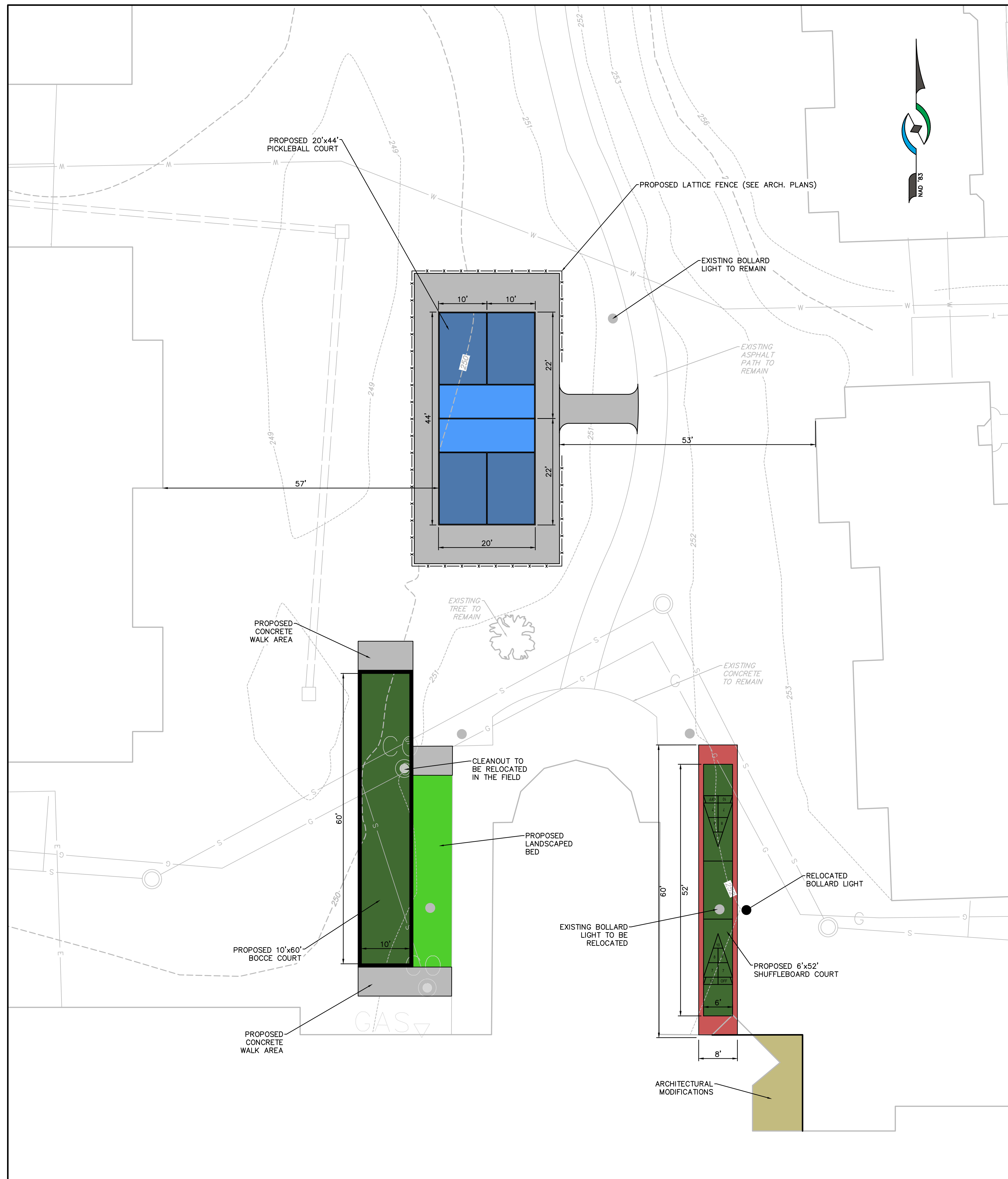


12/11/2020	1	INITIAL SUBMISSION	ACD	DF
ISSUE DATE	ISSUE NO.	SUBMISSION/REVISION	BY	APPR.
PRELIMINARY & FINAL SITE PLAN				
SHEET 93, BLOCK 9301, LOT 33 TOWNSHIP OF BERNARDS, SOMERSET COUNTY, NEW JERSEY				
SITE PLAN				
FITNESS CENTER ADDITION				
FELLOWSHIP SENIOR LIVING, INC.				
8000 FELLOWSHIP ROAD BASKING RIDGE, NJ 07920				
DAVID J. FLEMING, P.E.				
NEW JERSEY LICENSE NO. 246E03321600				
12/11/2020				
FVG 001.01				

MARATHON
Engineering & Environmental Services
Swedesboro Office
3 Killdeer Court, Suite 302, Swedesboro, NJ 08085
ph (856) 241-9705 fax (856) 241-9709
Certificate of Authorization #24GA27995700

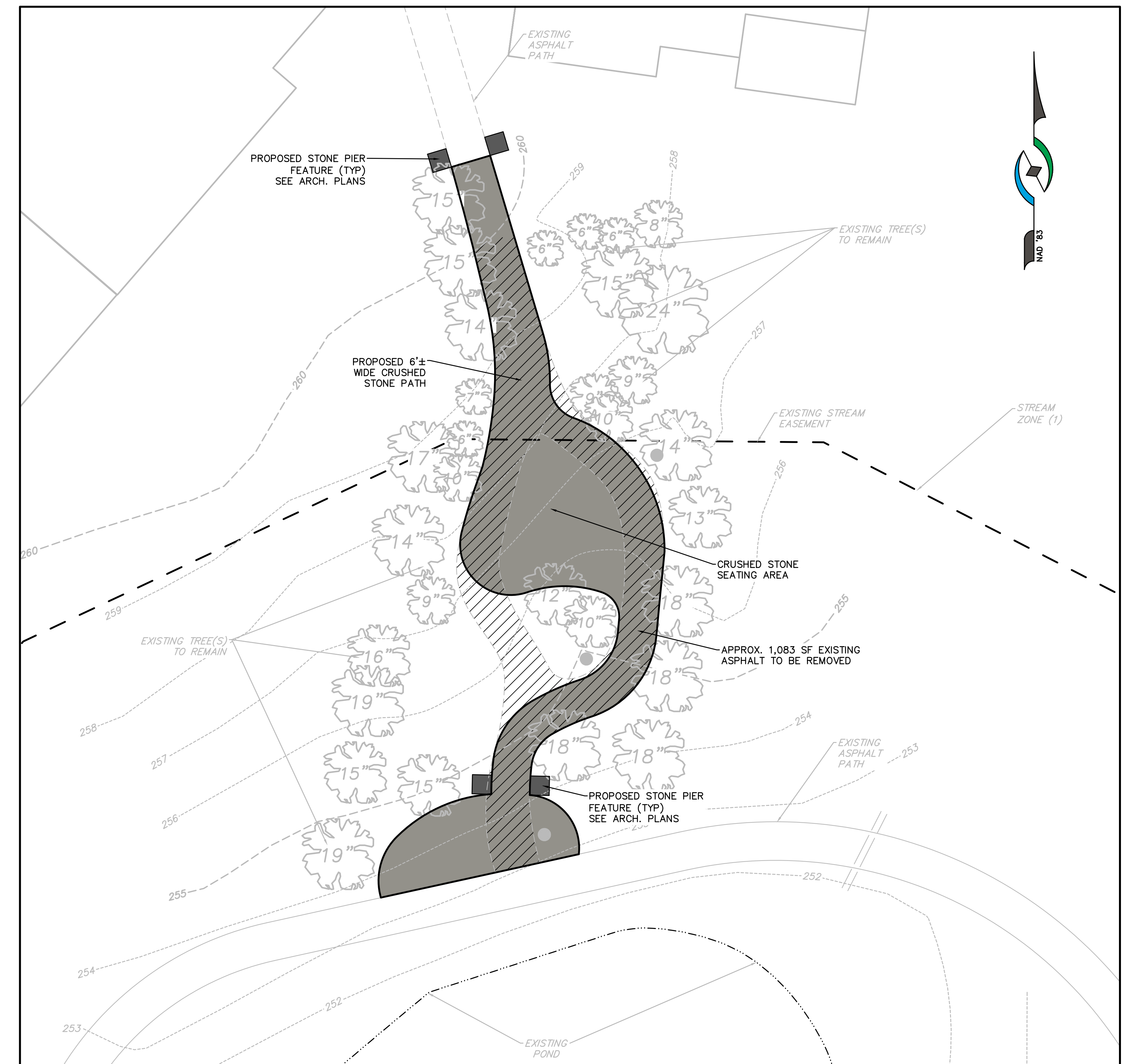
SCALE	APPROVED
1"=10'	D.J.F.
ACD	3 OF 14
BY	APPR.
DRAWING NO. C0101	

ALL DOCUMENTS PREPARED BY MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. ARE THE PROPERTY OF MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. AND ARE NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. SHALL NOT BE LIABLE FOR ANY DAMAGES, LOSSES, AND EXPENSES ARISING FROM OR OUT OF THE USE OF THESE PLANS.

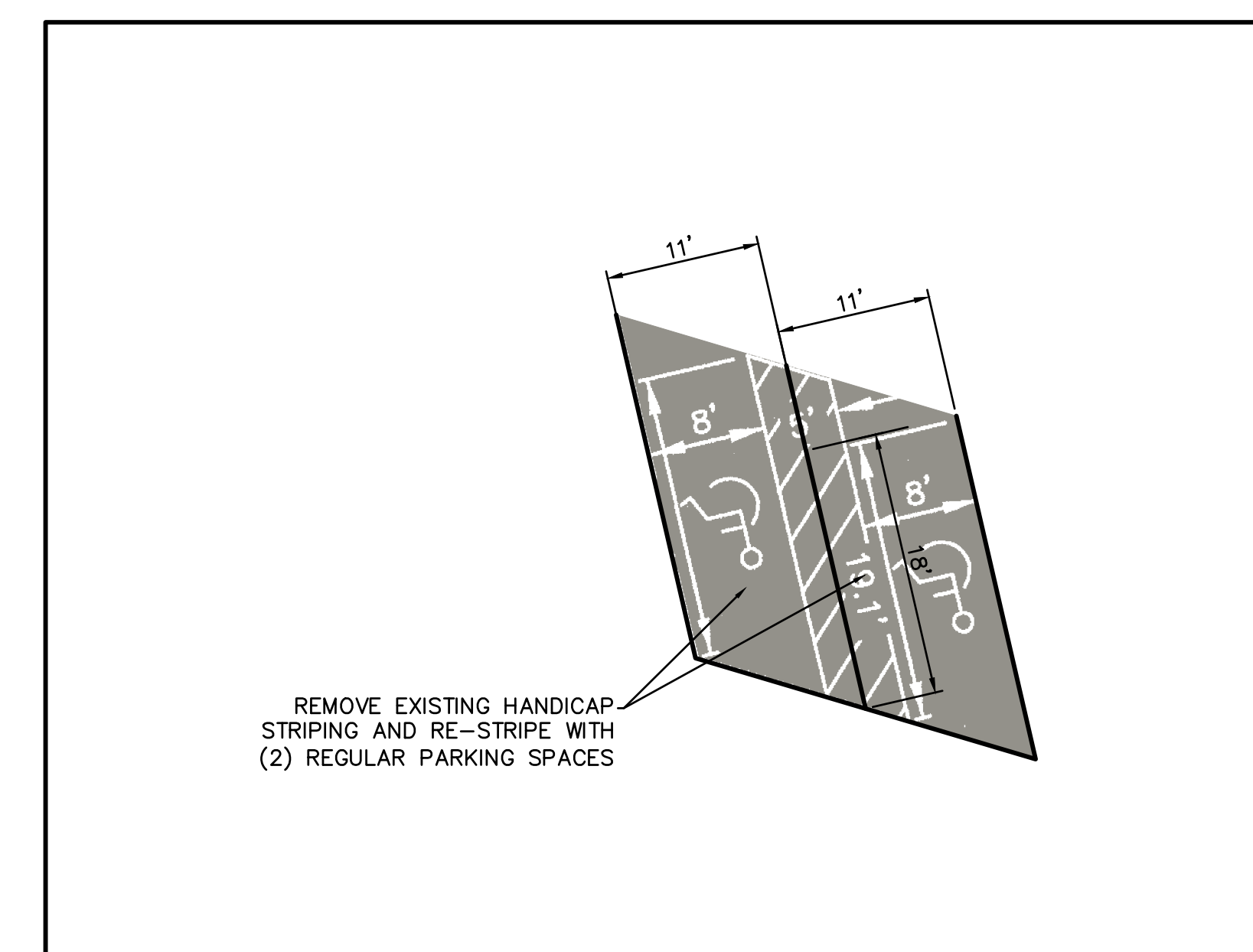


OUTDOOR RECREATION PLAN VIEW
SCALE: 1"=10'

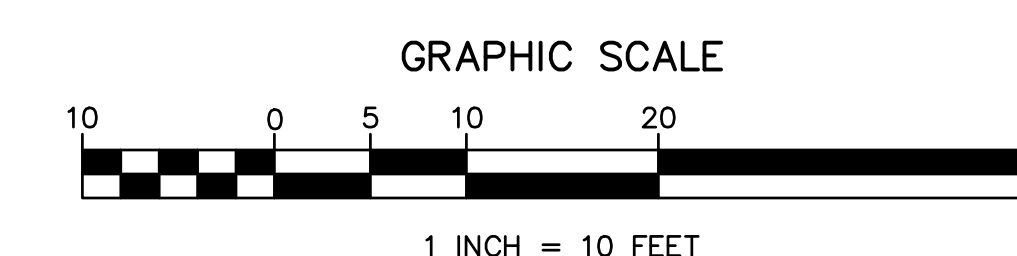
EXISTING UTILITY INFORMATION SHOWN ON THESE PLANS IS FURNISHED BY THE UTILITY COMPANIES AND/OR THE SURVEYOR AND THE ACCURACY THEREOF IS NOT THE RESPONSIBILITY OF MARATHON ENGINEERING & ENVIRONMENTAL SERVICES, INC. IT IS THE RESPONSIBILITY OF THE OWNERS AND/OR CONTRACTOR TO CALL 1-800-272-1000 FOR FIELD LOCATION OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.

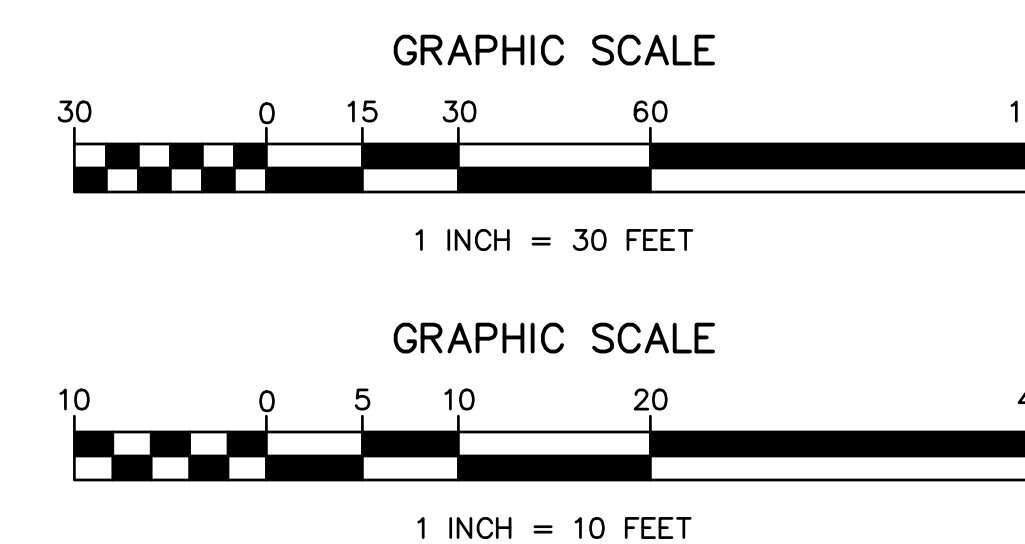
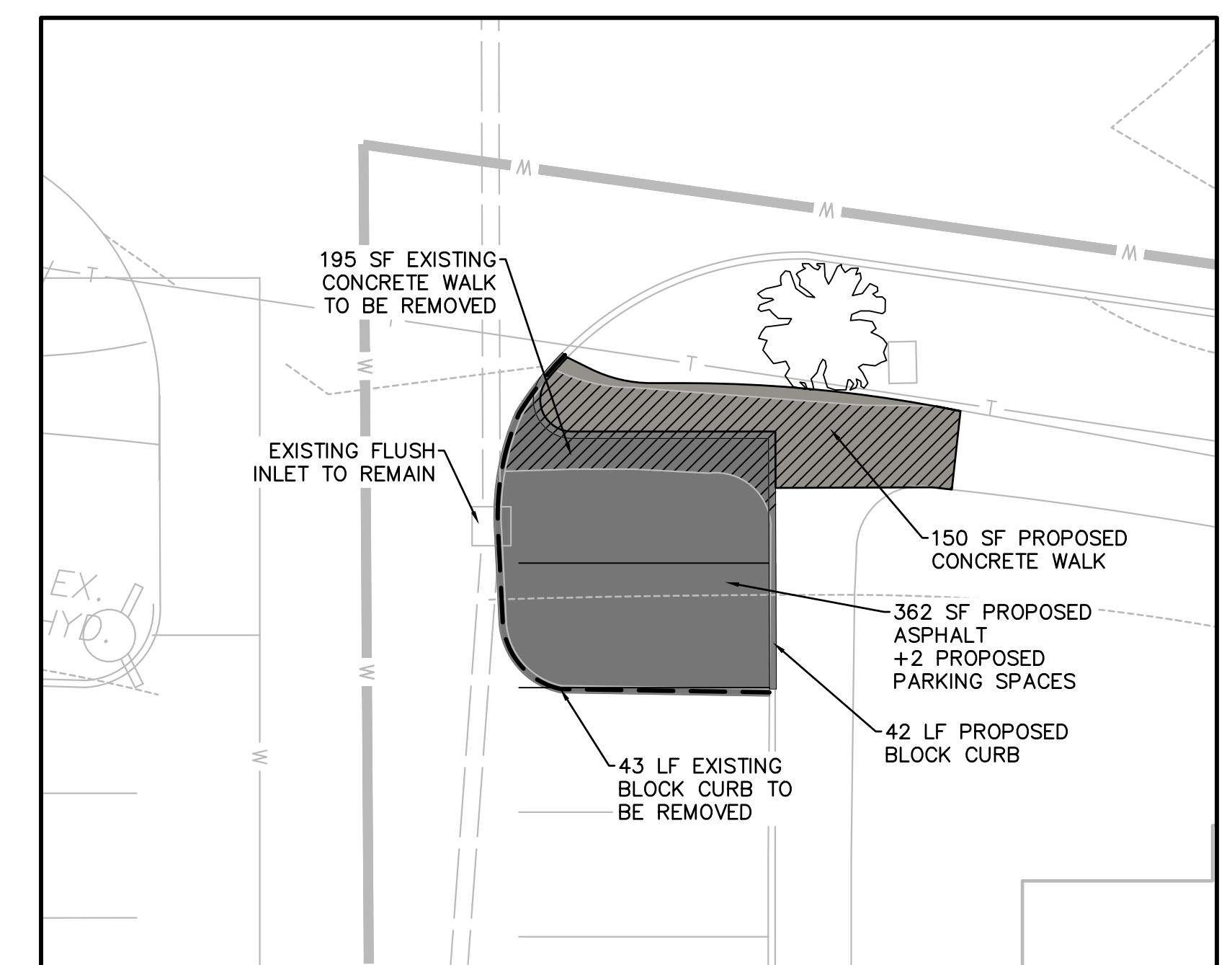
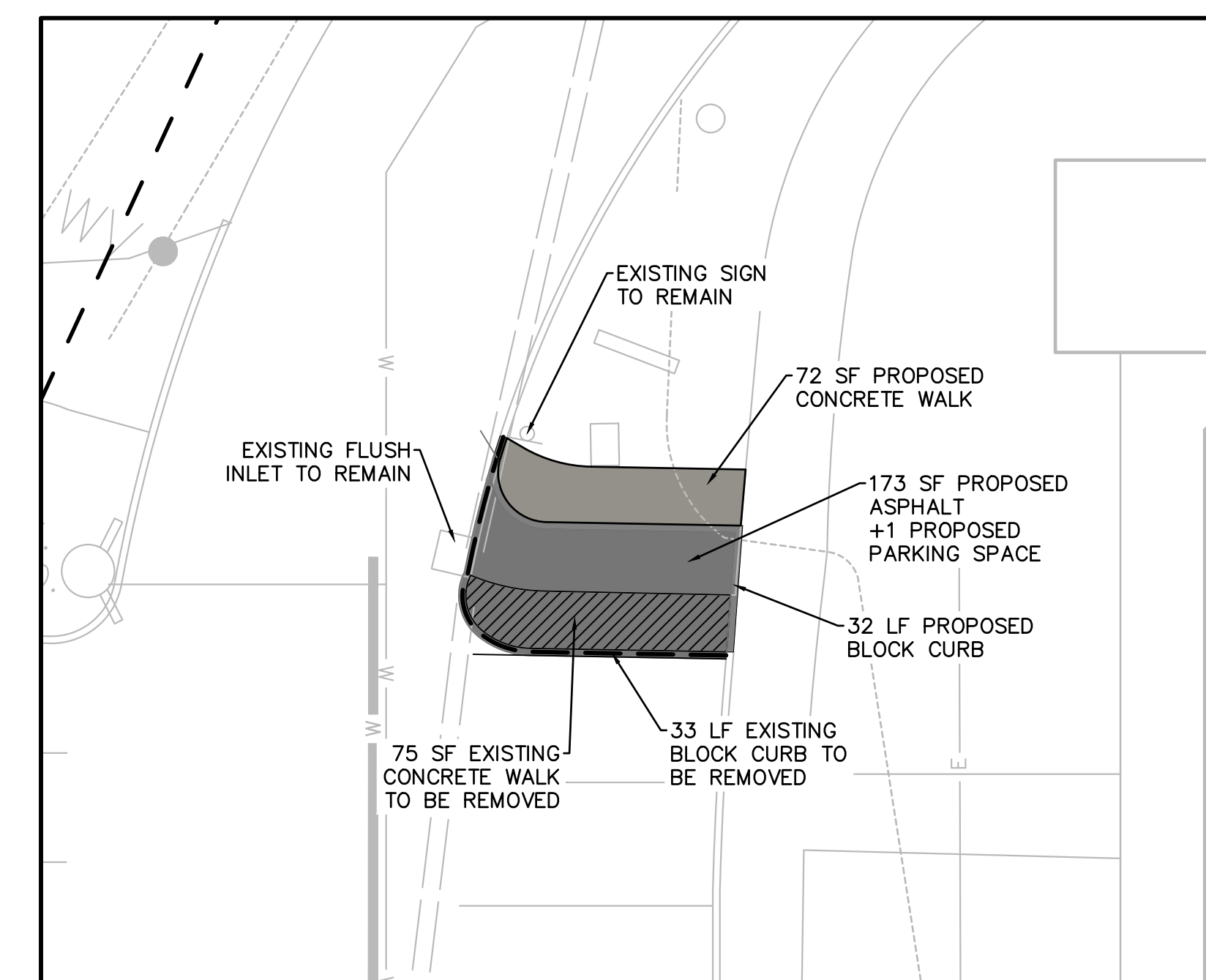
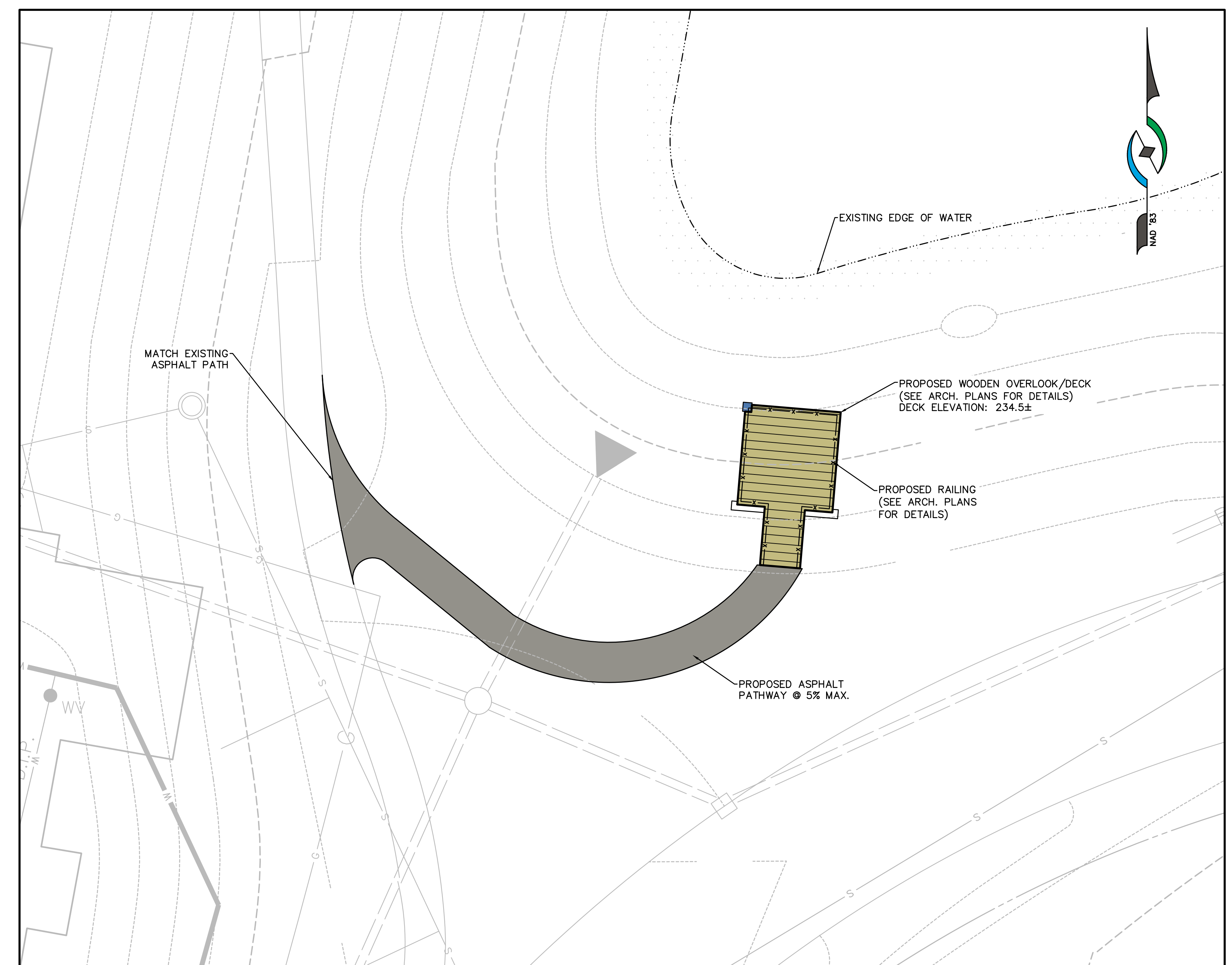
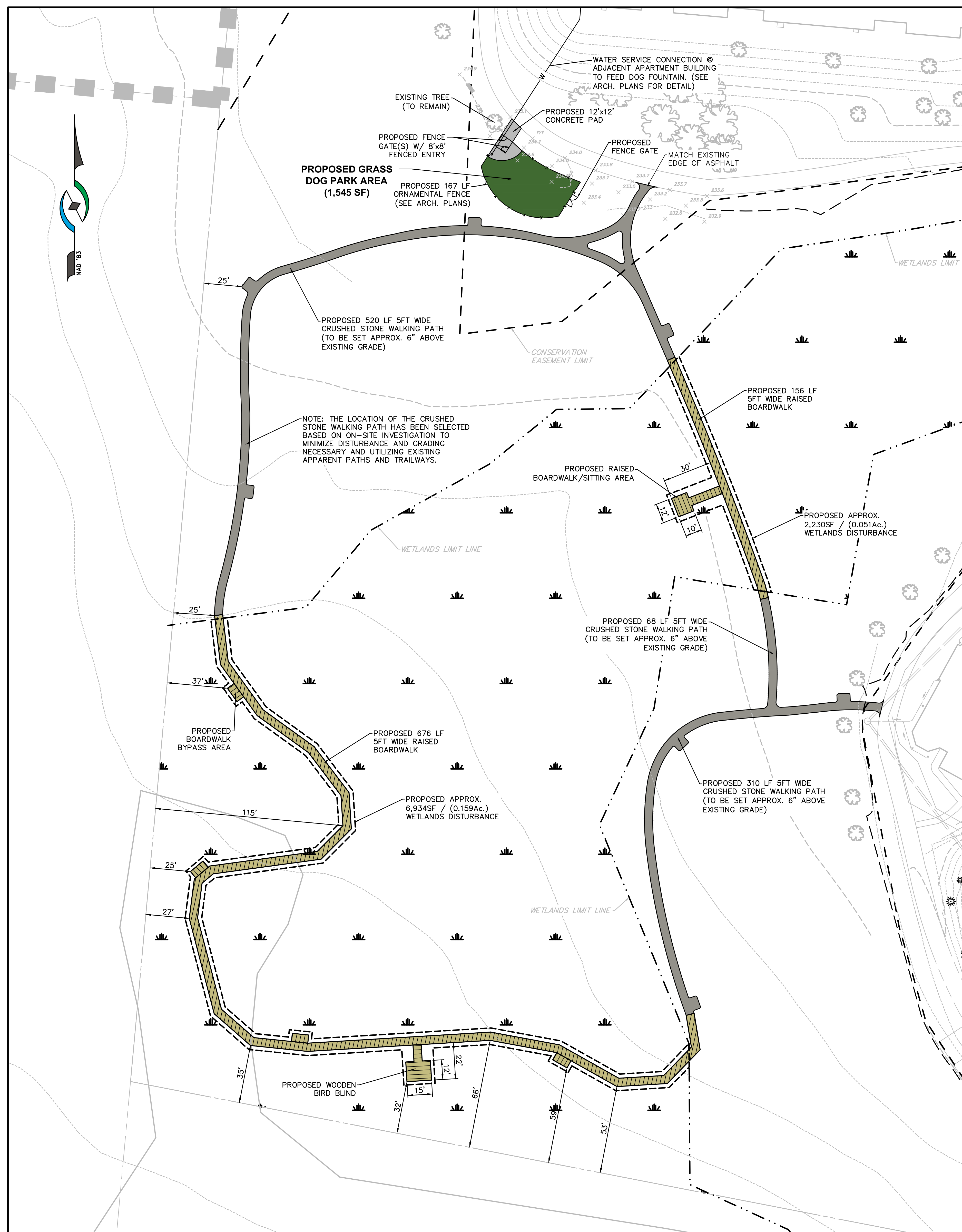


"SPRUCE GROVE" PLAN VIEW
SCALE: 1"=10'



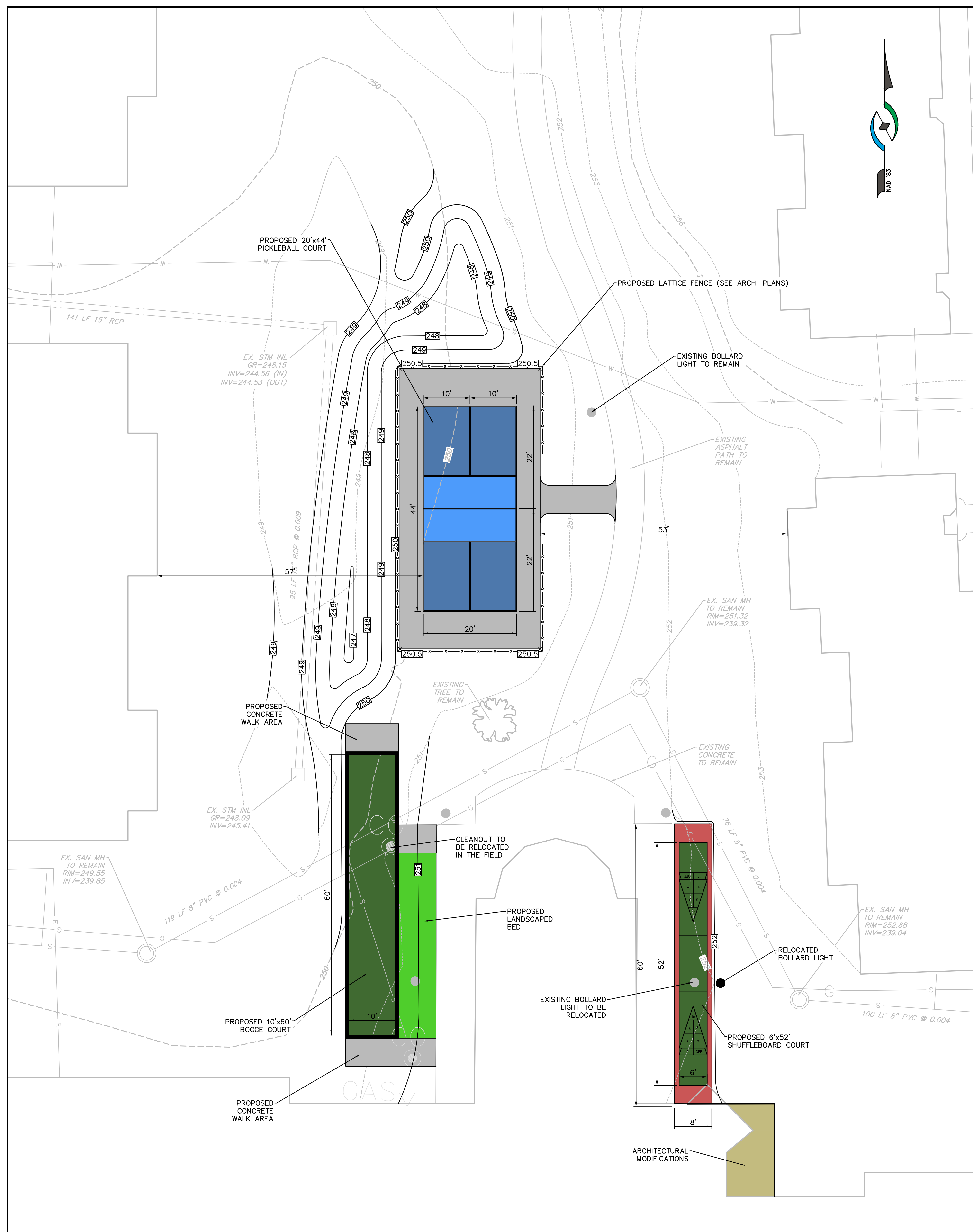
ENTRANCE PARKING MODIFICATION
SCALE: 1"=10'

[illegible]



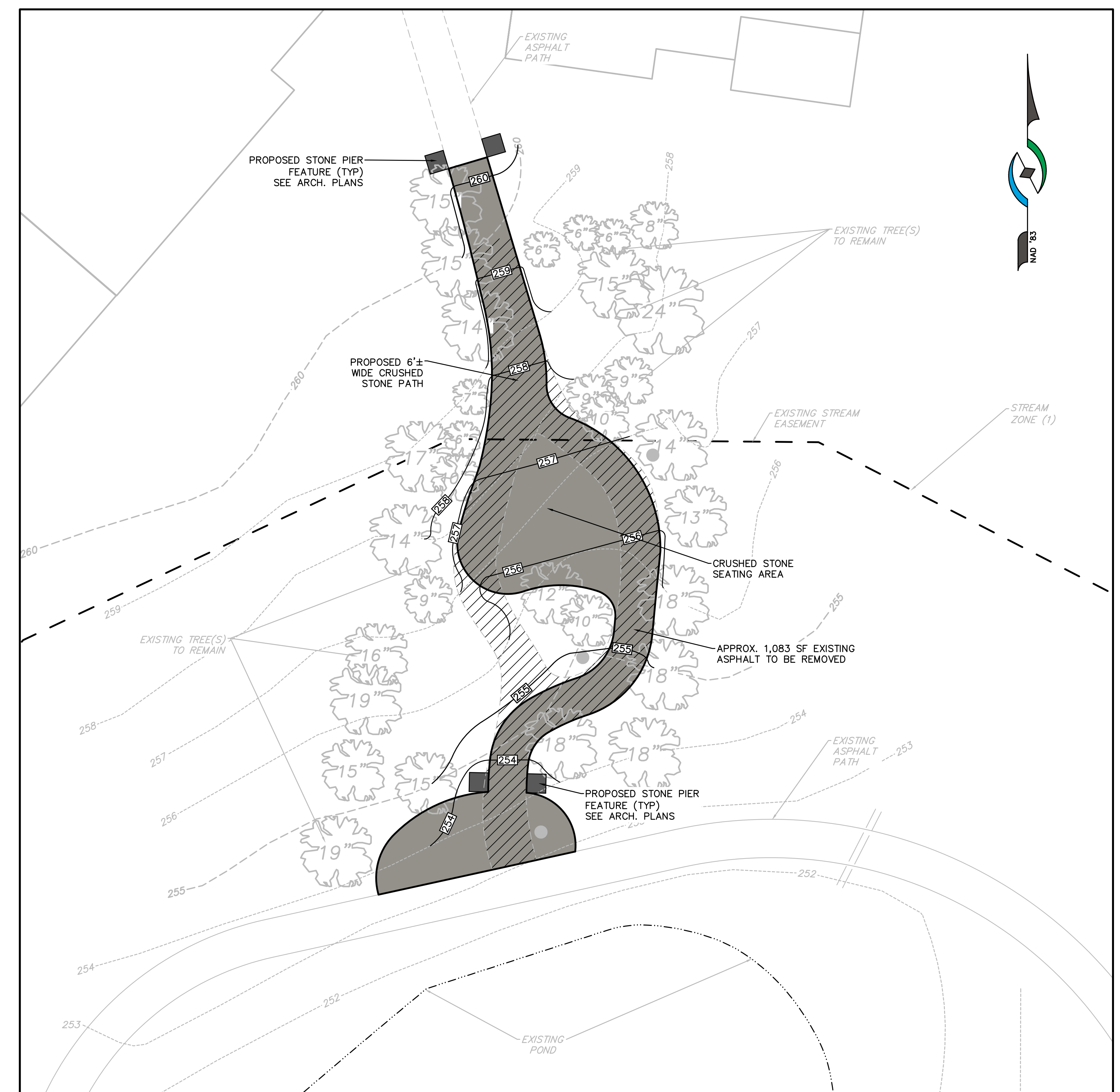
EXISTING UTILITY INFORMATION SHOWN ON THESE PLANS IS FURNISHED BY THE UTILITY COMPANIES AND/OR THE SURVEYOR AND THE ACCURACY THEREOF IS NOT THE RESPONSIBILITY OF MARATHON ENGINEERING & ENVIRONMENTAL SERVICES, INC. IT IS THE RESPONSIBILITY OF THE OWNERS AND/OR CONTRACTOR TO CALL 1-800-272-1000 FOR FIELD LOCATION OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.

[illegible]

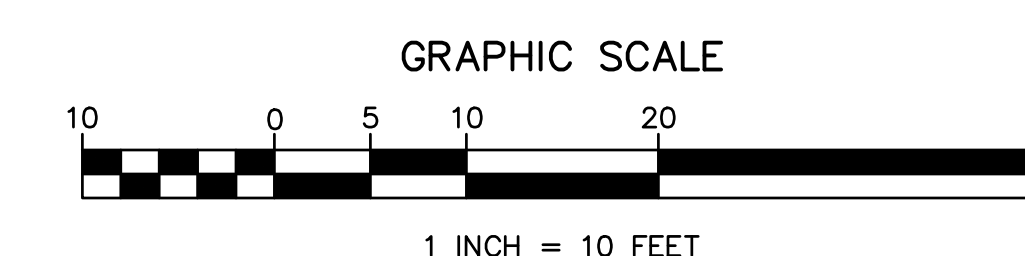




OUTDOOR RECREATION PLAN VIEW
SCALE: 1"=10'

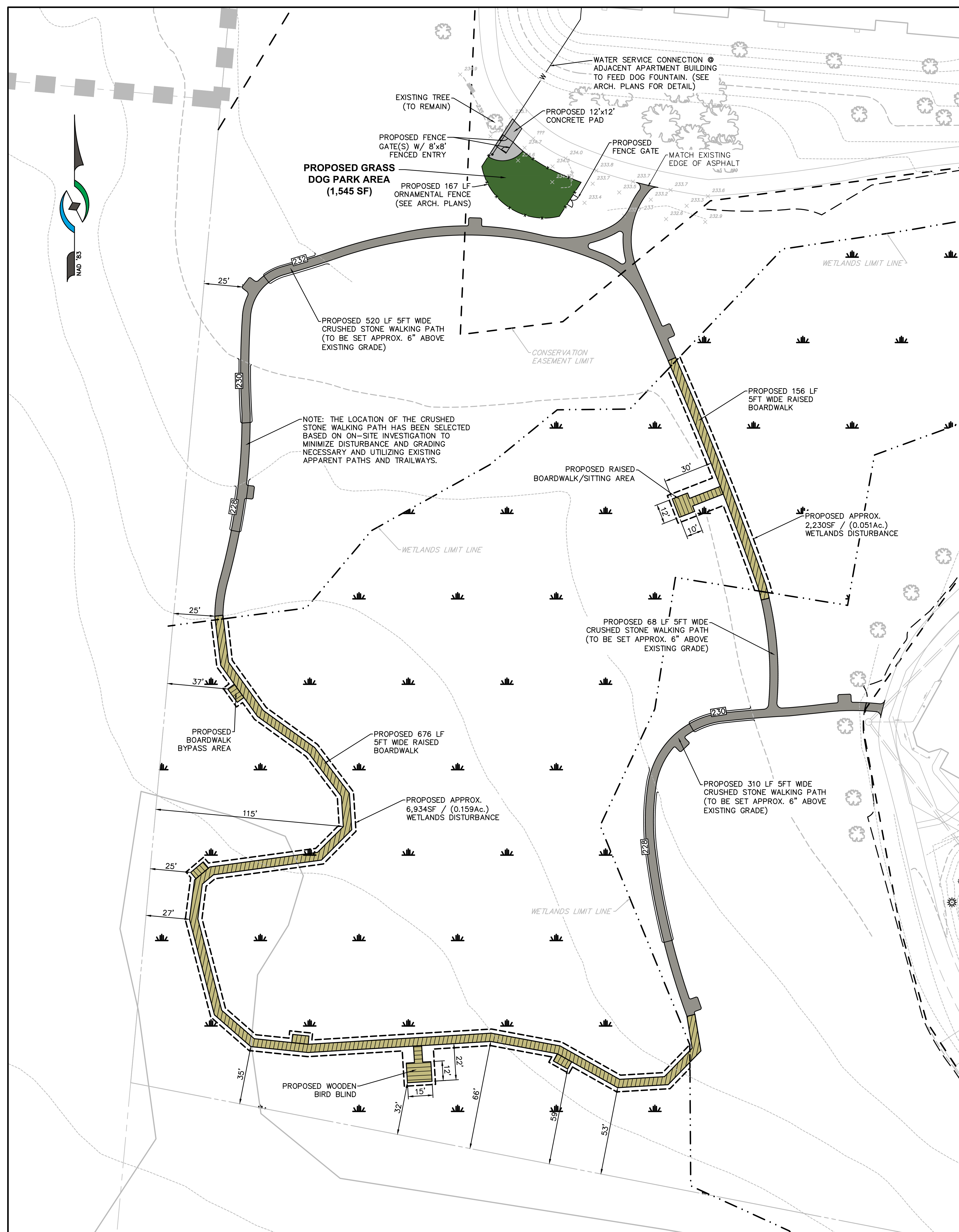
EXISTING UTILITY INFORMATION SHOWN ON THESE PLANS IS FURNISHED BY THE UTILITY COMPANIES AND/OR THE SURVEYOR AND THE ACCURACY THEREOF IS NOT THE RESPONSIBILITY OF MARATHON ENGINEERING & ENVIRONMENTAL SERVICES, INC. IT IS THE RESPONSIBILITY OF THE OWNERS AND/OR CONTRACTOR TO CALL 1-800-272-1000 FOR FIELD LOCATION OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.



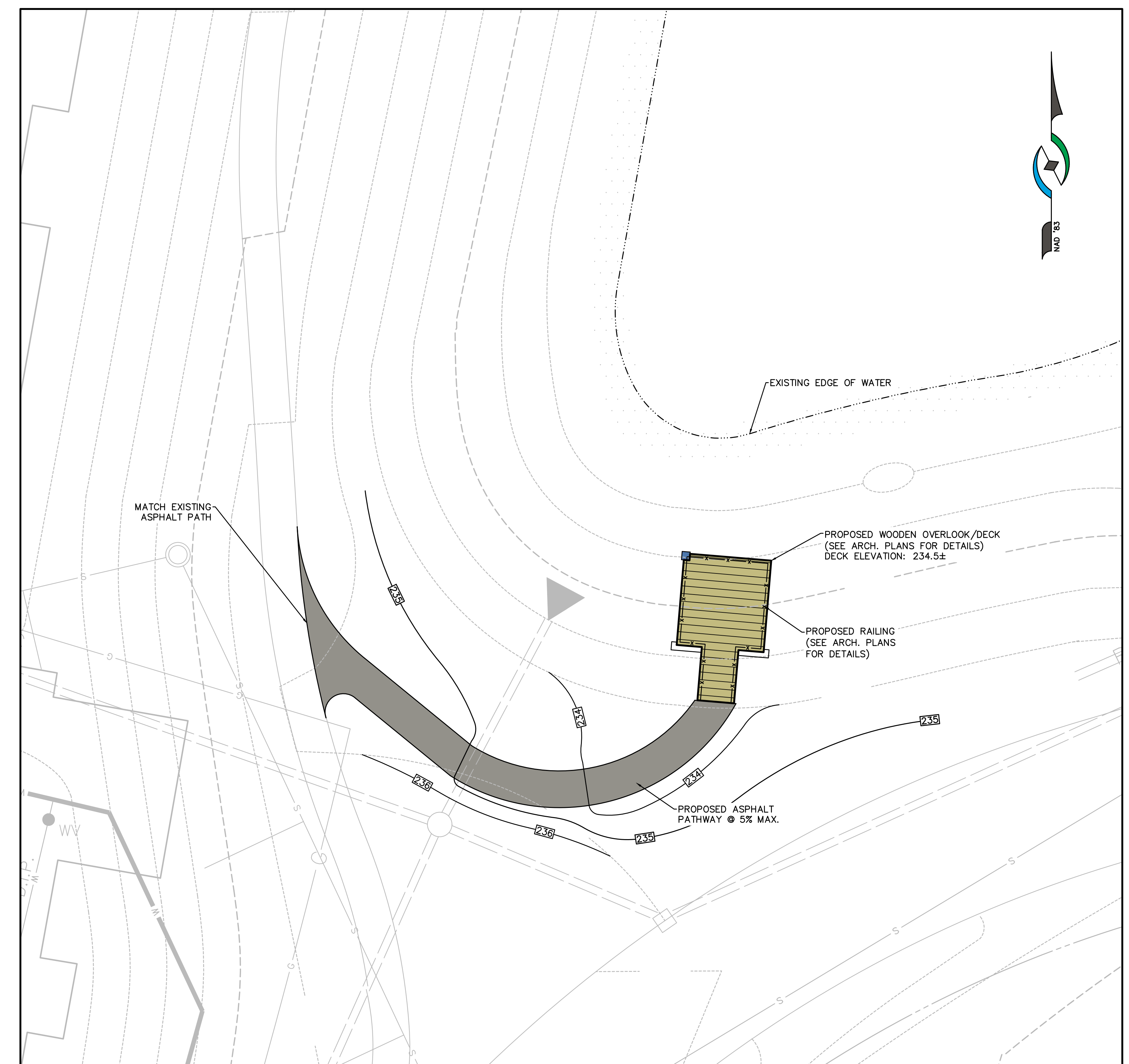
"SPRUCE GROVE" PLAN VIEW
SCALE: 1"=10'



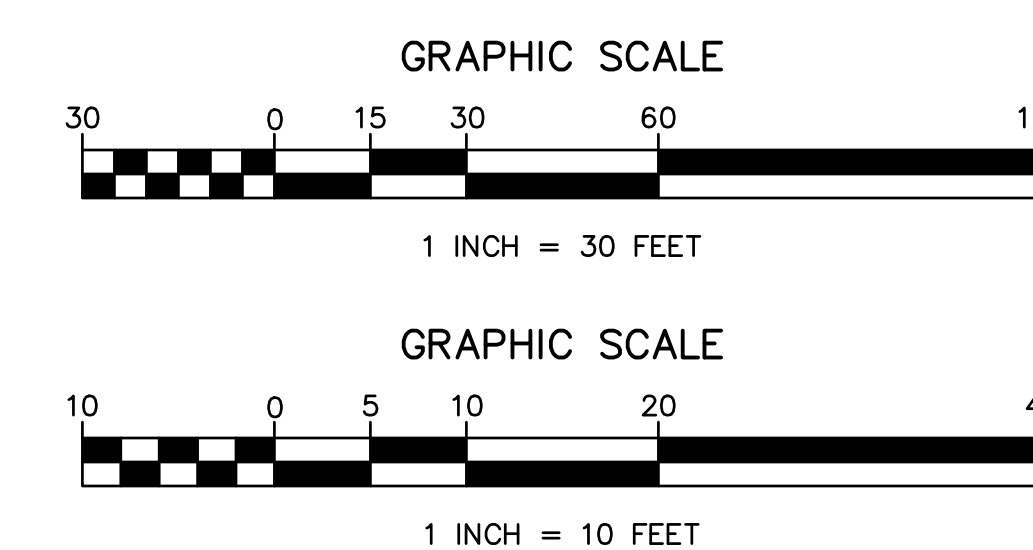
12/11/2020	1	INITIAL SUBMISSION	ACD	DF
ISSUE DATE	ISSUE NO.	SUBMISSION/REVISION	BY	APPR
PRELIMINARY & FINAL SITE PLAN SHEET 93, BLOCK 9301, LOT 33 TOWNSHIP OF BERNARDS, SOMERSET COUNTY, NEW JERSEY			 MARATHON Engineering & Environmental Services Swedesboro Office 3 Kildner Court, Suite 302, Swedesboro, NJ 08085 ph (856) 241-8705 fax (856) 241-8708 Certificate of Authorization #246GAZ799570	
GRADING & UTILITY PLAN RECREATION & SPRUCE GROVE FELLOWSHIP SENIOR LIVING, INC. 8000 FELLOWSHIP ROAD BASKING RIDGE, NJ 07920			SCALE 1"=10' APPROVED DJF DRAWN BY SHEET 93 OF 14 DRAWING NO. C0302	
DAVID J. FLEMING, P.E. PROFESSIONAL ENGINEER NEW JERSEY LICENSE NO. 246E03321600 			ALL DOCUMENTS PREPARED BY MARATHON ENGINEERING & ENVIRONMENTAL SERVICES, INC. ARE THE PROPERTY OF MARATHON ENGINEERING & ENVIRONMENTAL SERVICES, INC. AND ARE NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF MARATHON ENGINEERING & ENVIRONMENTAL SERVICES, INC. FOR THE SPECIFIC PROJECT AND/OR MODEL. IF YOU ARE A CLIENT OF MARATHON ENGINEERING & ENVIRONMENTAL SERVICES, INC., YOU MAY MAKE A LIMITED NUMBER OF COPIES OF THIS DOCUMENT FOR YOUR OWN USE ONLY. ANY OTHER USE, INCLUDING REPRODUCTION, TRANSMISSION, OR DISTRIBUTION, IS STRICTLY PROHIBITED. MARATHON ENGINEERING & ENVIRONMENTAL SERVICES, INC. ACCEPTS NO LIABILITY FOR ANY ERRORS OR OMISSIONS IN THIS DOCUMENT. THE USER OF THIS DOCUMENT SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES, AGENCIES AND OFFICIALS. ANY USE OF THIS DOCUMENT FOR ANY OTHER PROJECT OR PURPOSE IS STRICTLY PROHIBITED.	
12/11/2020 FWS 001.01				



DOG PARK & WALKING TRAIL PLAN VIEW
SCALE: 1"=30'



DECK OVERLOOK PLAN VIEW
SCALE: 1"=10'



EXISTING UTILITY INFORMATION SHOWN ON THESE PLANS IS FURNISHED BY THE UTILITY COMPANIES AND/OR THE SURVEYOR AND THE ACCURACY THEREOF IS NOT THE RESPONSIBILITY OF MARATHON ENGINEERING & ENVIRONMENTAL SERVICES, INC. IT IS THE RESPONSIBILITY OF THE OWNERS AND/OR CONTRACTOR TO CALL 1-800-272-1000 FOR FIELD LOCATION OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.

[illegible]

-
- ADD GEOSYNTHETICS 6011 NON-WOVEN GEOTEXTILE ALL AROUND CLEAN, CRUSHED, ANGULAR STONE IN A & B LAYERS
- PERIMETER STONE (SEE NOTE 6)
- EXCAVATION WALL (CAN BE SLOPED OR VERTICAL)
- 12' (300 mm) MIN
- MC-4500
- SUBGRADE SOILS
- TO BOTTOM OF FLEXIBLE PAVEMENT FOR UNPAVED INSTALLATION REFER TO THE ROAD AGENCY FOR THE MIN. WORKABLE COVERED MIN. (150 mm)
- PAVEMENT LAYER (DESIGNED BY SITE DESIGN ENGINEER)
- 34' (2.1 m) MIN
- 60' (1525 mm)
- 12' (300 mm) MIN
- 9' (230 mm) MIN
- 100' (2540 mm)
- 12' (300 mm) TYP
- DEPTH OF STONE TO BE DETERMINED BY DESIGN ENGINEER 9' (230 mm) MIN

1. MC-400 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".¹

2. MC-400 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".²

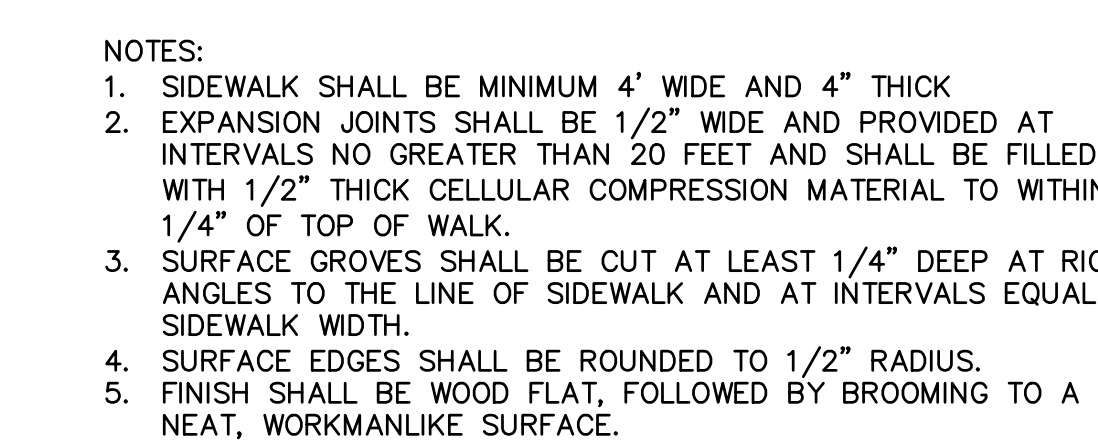
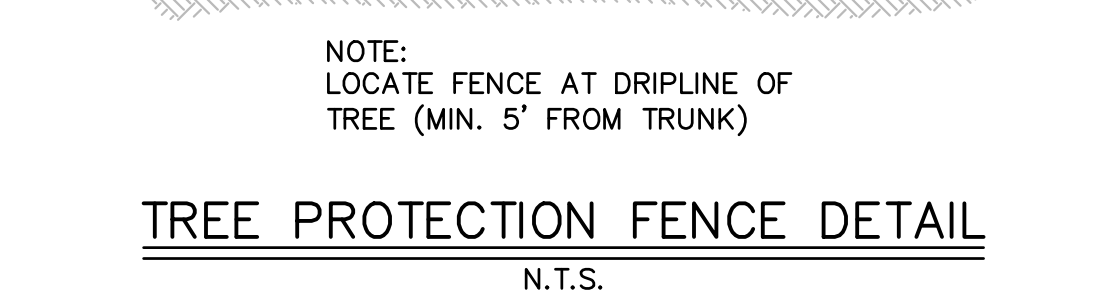
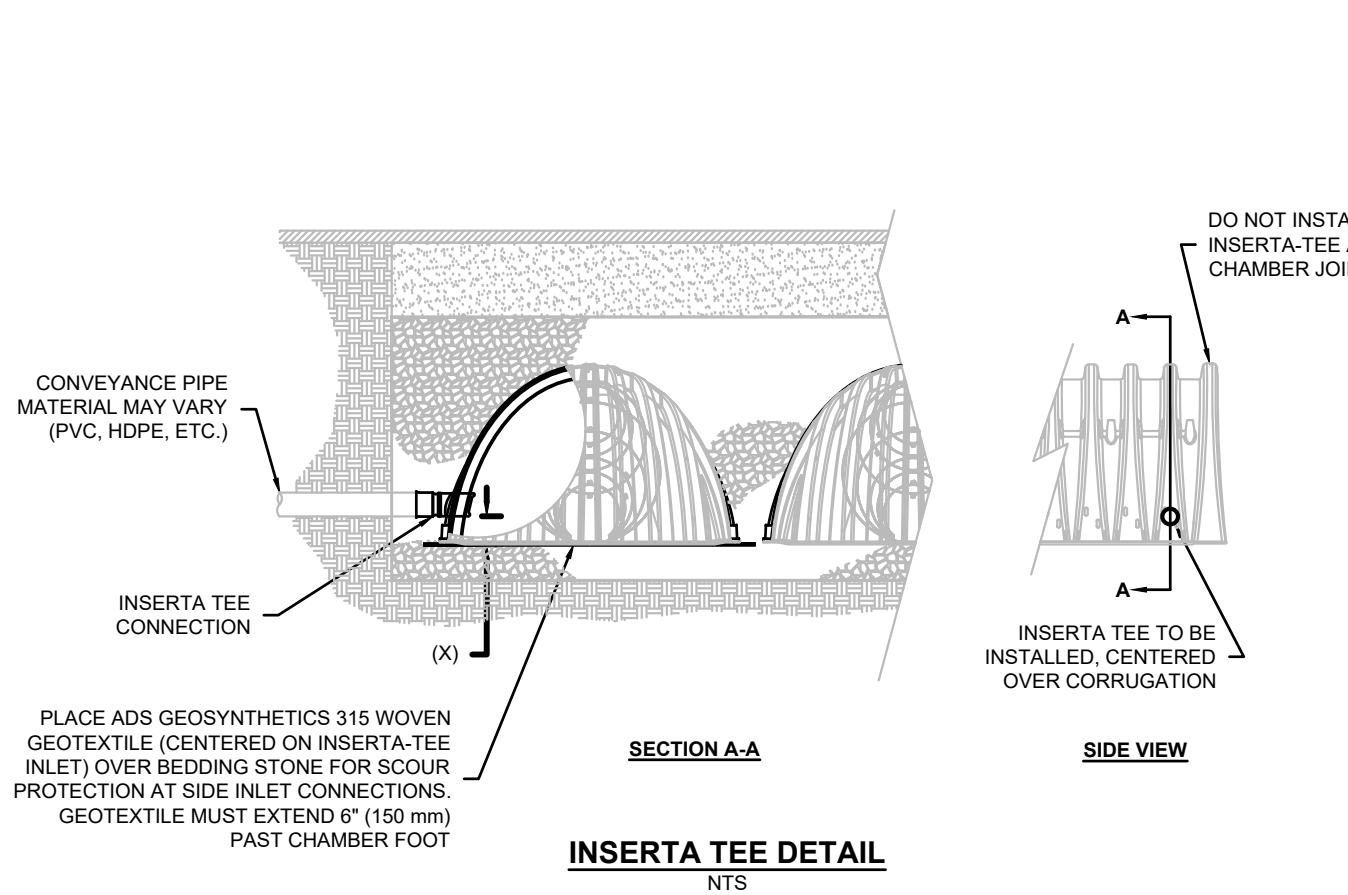
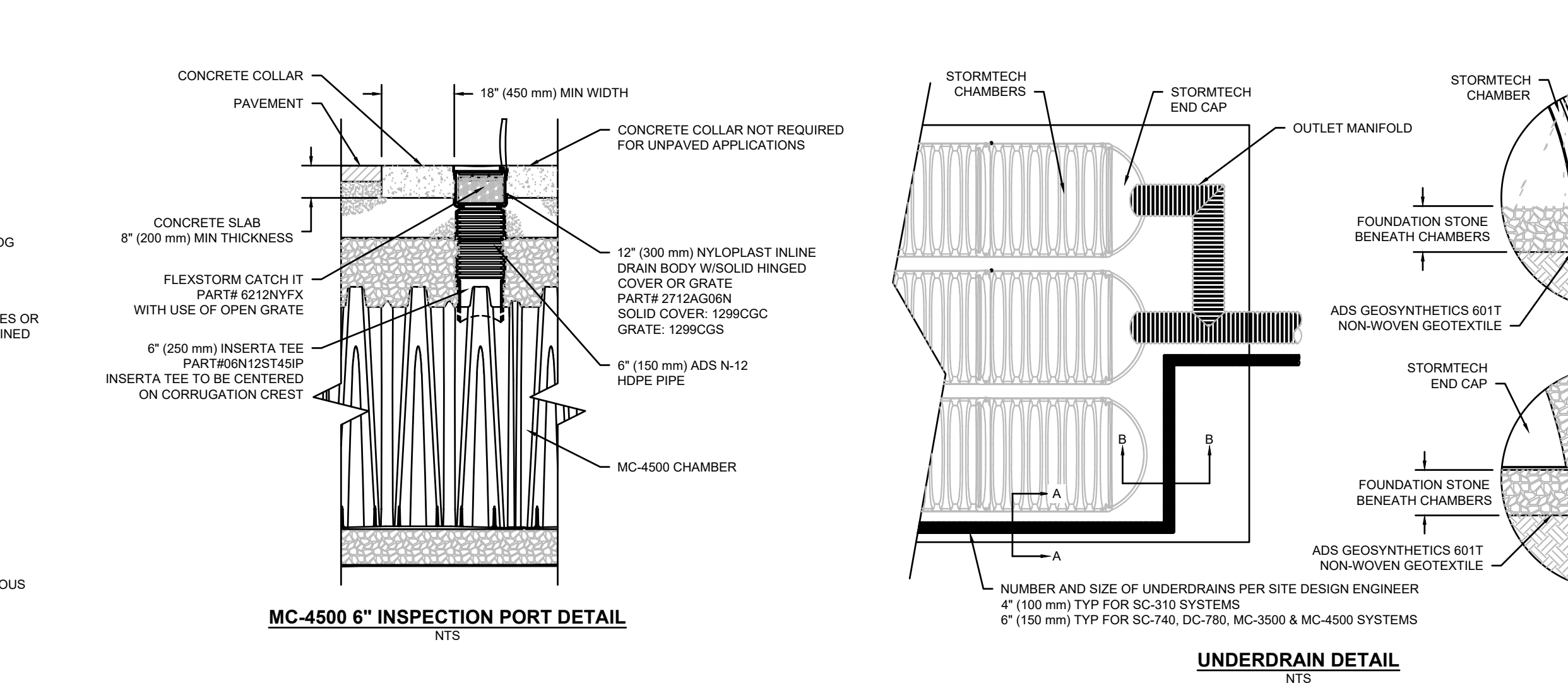
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDEDMENT, AND FILL MATERIALS.³

4. THE "SITE DESIGN ENGINEER" REFERS TO THE ENGINEER RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE STORMCHIEF CHAMBERS FOR THIS PROJECT.⁴

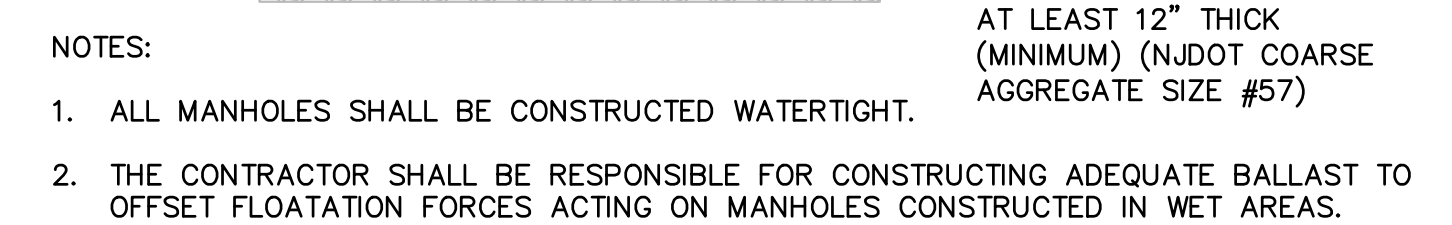
5. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING CAPACITY OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.⁵

6. PERMITTER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.

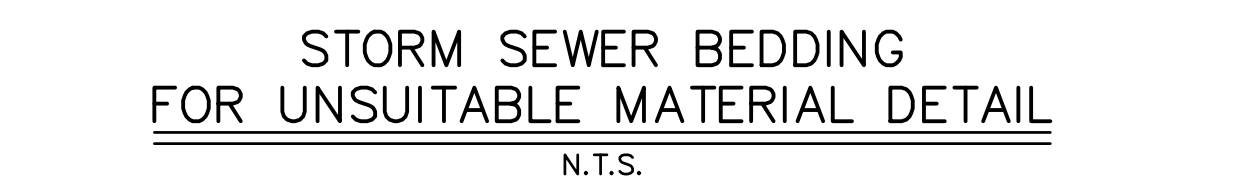
7. ONCE LAYER "C" IS PLACED, ANY SOLID MATERIAL CAN BE PLACED IN LAYER "D" UP TO THE FINISHED GRADE. MOST MOVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER "C" OR "D" AT THE SITE DESIGN ENGINEER'S DISCRETION.



N.T.S.



N.T.S.



1. STORMWATER MANAGEMENT SHALL

- STORM SEWER BEDDING
FOR SUITABLE MATERIAL DETAIL
NTS

N.T.S.



N T S

[illegible]









GRAPHIC SCALE

10 0 5 10 20 40

1 INCH = 10 FEET



SOIL EROSION LEGEND

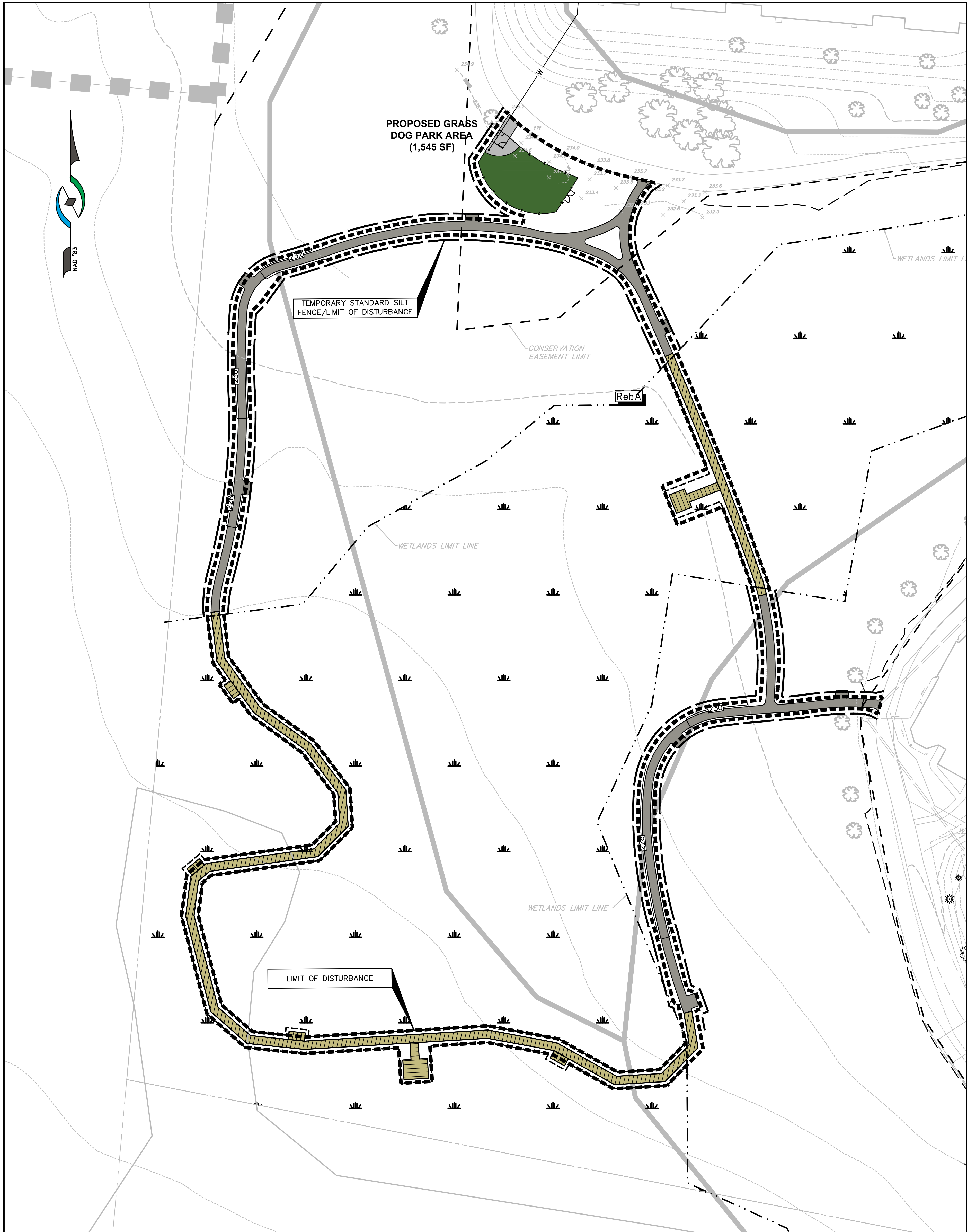
- | | |
|---|--|
|  | TEMPORARY STANDARD SILT FENCE/LIMIT OF DISTURBANCE |
|  | TEMPORARY SUPER SILT FENCE/LIMIT OF DISTURBANCE |
|  | LIMIT OF DISTURBANCE |
|  | SOILS LIMIT LINE |
|  | TEMPORARY STABILIZED CONSTRUCTION ENTRANCE |
|  | TEMPORARY STOCKPILE AREA |

TOTAL AREA OF PROPOSED DISTURBANCE = **1.50 AC.**

[illegible]

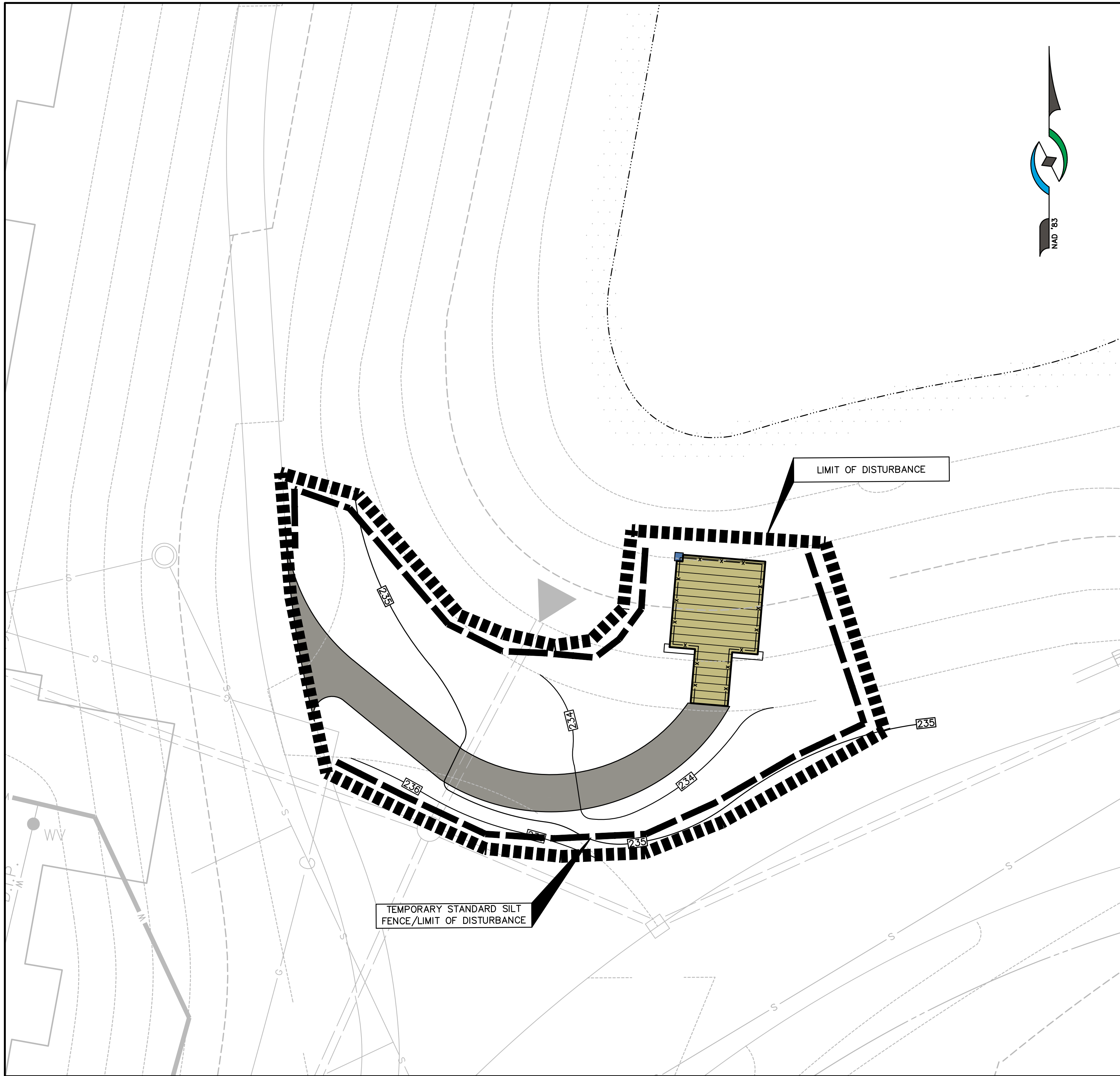
DATE: 12/11/2020, 1:54 PM, 12/11/2020

12/11/2020, 1:54 PM, 12/11/2020



DOG PARK & WALKING TRAIL PLAN VIEW
SCALE: 1"=30'

EXISTING UTILITY INFORMATION SHOWN ON THESE PLANS IS FURNISHED BY THE UTILITY COMPANIES AND/OR THE SURVEYOR AND THE ACCURACY THEREOF IS NOT THE RESPONSIBILITY OF MARATHON ENGINEERING & ENVIRONMENTAL SERVICES, INC. IT IS THE RESPONSIBILITY OF THE OWNERS AND/OR CONTRACTOR TO CALL 1-800-272-1000 FOR FIELD LOCATION OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.



DECK OVERLOOK PLAN VIEW
SCALE: 1"=10'

EROSION NOTES

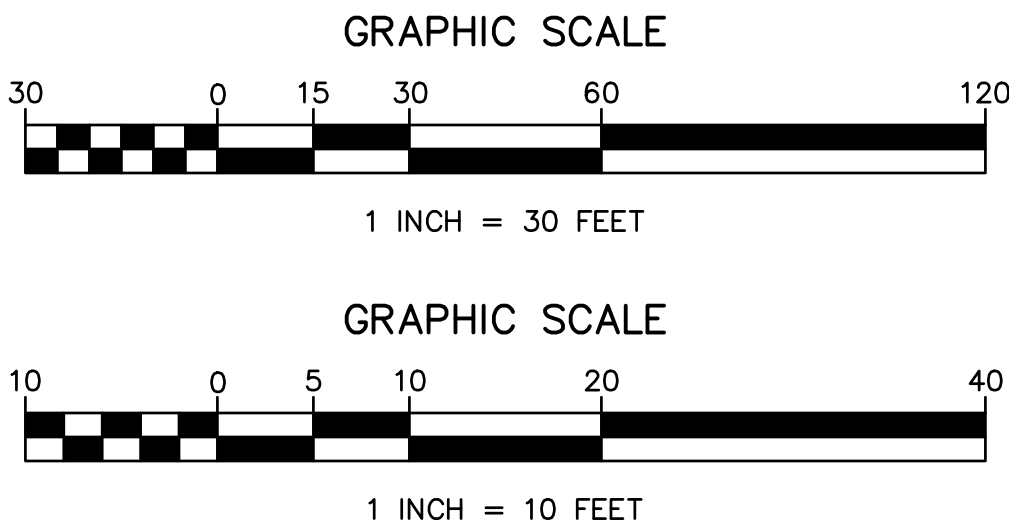
1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL APPLY TO SUBSEQUENT OWNERS IF TITLE IS CONVEYED.
2. THIS PLAN IS TO BE USED FOR SOIL EROSION AND SEDIMENT CONTROL PURPOSES ONLY.
3. SOIL EROSION AND SEDIMENT CONTROL IMPLEMENTATION SHALL BE IN ACCORDANCE WITH STANDARDS SET FORTH BY THE CUMBERLAND SALEM CONSERVATION DISTRICT.
4. ALL TOPSOIL STORAGE AREAS SHALL BE REMOVED PRIOR TO FINAL OCCUPANCY OF THE BUILDING AND AREA RESTORED TO PRE-DEVELOPMENT CONDITIONS.
5. SOIL HAVING A PH OF 4.0 OR LESS OR CONTAINING IRON SULFIDE MUST BE COVERED WITH A MINIMUM OF 12 INCHES OF SOIL HAVING A PH OF 5.0 OR MORE BEFORE SEEDBED PREPARATION.
6. NJSA 4:24-39, ET SEQ, REQUIRES THAT UPON PERMANENT SITE STABILIZATION AND COMPLETION OF CONSTRUCTION THE CONTRACTOR SHALL APPLY TO THE SOIL CONSERVATION DISTRICT FOR FINAL COMPLIANCE INSPECTION TO CHECK THAT ALL THE PROVISIONS OF THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN HAVE BEEN COMPLIED WITH FOR PERMANENT MEASURES.
7. SEE DRAWING NUMBER C1301 FOR SOIL EROSION AND SEDIMENT CONTROL NOTES.
8. SEE DRAWING NUMBER C1302 FOR SOIL EROSION AND SEDIMENT CONTROL DETAILS.

SOIL EROSION LEGEND

- TEMPORARY STANDARD SILT FENCE/LIMIT OF DISTURBANCE
- TEMPORARY SUPER SILT FENCE/LIMIT OF DISTURBANCE
- LIMIT OF DISTURBANCE
- SOILS LIMIT LINE
- TEMPORARY STABILIZED CONSTRUCTION ENTRANCE
- TEMPORARY STOCKPILE AREA

LIMIT OF DISTURBANCE

TOTAL AREA OF PROPOSED DISTURBANCE = 1.50 AC.



12/11/2020	1	INITIAL SUBMISSION	ACD	DF
ISSUE DATE	ISSUE NO.	SUBMISSION/REVISION	BY	APPR.
PRELIMINARY & FINAL SITE PLAN				
SHEET 93, BLOCK 9301, LOT 33 TOWNSHIP OF BERNARDS, SOMERSET COUNTY, NEW JERSEY				
SOIL EROSION & SEDIMENT CONTROL PLAN				
DOG PARK & WALKING TRAILS				
FELLOWSHIP SENIOR LIVING, INC.				
8000 FELLOWSHIP ROAD BASKING RIDGE, NJ 07920				
DAVID J. FLEMING, P.E.				
NEW JERSEY LICENSE NO. 246E03321600				
12/11/2020				
FVG 001.01				
MARATHON Engineering & Environmental Services Swedesboro Office 3 Killdeer Court, Suite 302, Swedesboro, NJ 08085 ph (856) 241-9705 fax (856) 241-9709 Certificate of Authorization #24GA27995700				
ALL DOCUMENTS PREPARED BY MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. ARE THE PROPERTY OF MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. AND ARE NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. ANY UNAUTHORIZED REPRODUCTION OR TRANSMISSION OF ANY PART OF THIS DOCUMENT IS STRICTLY PROHIBITED. MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. SHALL NOT BE LIABLE FOR ANY DAMAGES, INCLUDING CONSEQUENTIAL DAMAGES, ARISING OUT OF OR FROM THE USE OF THIS DOCUMENT.				
SCALE	AS NOTED	APPROVED	D.J.F.	
DATE	12/11/2020	BY	DF	
DRAWING NO. C1203				

CHANGES IN UTILITIES SHOWN ARE BASED ON 12/11/2020

12/11/2020

GENERAL NOTES

1. THE SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED 48 HOURS PRIOR TO ANY LAND DISTURBANCE.

SOMERSET-UNION COUNTY SOIL CONSERVATION DISTRICT
308 MILLTOWN ROAD
BRIDGEWATER, NJ 08807
PHONE (908) 525-2701
FAX (908) 575-3577
2. SOIL EROSION AND SEDIMENT CONTROL PRACTICES ON THIS PLAN SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.
3. A COPY OF THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN INCLUDING REVISION THEREOF MUST BE MAINTAINED ON THE PROJECT SITE DURING CONSTRUCTION.
4. IN NO CASE SHALL THE CERTIFICATION OF THE PROJECT BY THE DISTRICT EXTEND BEYOND THREE AND ONE HALF YEARS OF THE ORIGINAL CERTIFICATION DATE.
5. PRIOR TO ANY GRADING OPERATION AND/OR INSTALLATION OF PROPOSED STRUCTURES OR UTILITIES, A NOTICES REQUEST FOR AUTHORIZATION (RFA) FORM FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITY MUST BE FILED WITH NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION ("NJDEP") IF THE CONSTRUCTION WILL DISTURB MORE THAN ONE ACRE. THE APPLICATION MUST BE COMPLETED BY THE ENTITY RESPONSIBLE FOR MAINTENANCE OF SOIL EROSION CONTROL MEASURES DURING CONSTRUCTION, TYPICALLY THE DEVELOPER OR CONTRACTOR. THE APPLICATION IS A SIMPLE FORM FILED ON THE NJDEP WEBSITE USING PROJECT CODES PROVIDED BY THE SOIL CONSERVATION DISTRICT. IF REQUIRED, THE ENGINEER WILL ASSIST THE DEVELOPER OR CONTRACTOR BY PROVIDING TECHNICAL INFORMATION TO COMPLETE THE APPLICATION.
6. ALL APPLICABLE SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE IN PLACE PRIOR TO ANY GRADING OPERATION AND/OR INSTALLATION OF PROPOSED STRUCTURES OR UTILITIES.
7. ANY CHANGES TO THE SITE PLAN WILL REQUIRE THE SUBMISSION OF A REVISED SOIL EROSION AND SEDIMENT CONTROL PLAN TO THE DISTRICT. THE REVISED PLAN MUST BE IN ACCORDANCE WITH THE CURRENT NEW JERSEY STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL.
8. THE CONTRACTOR SHALL PERFORM ALL WORK, FURNISH ALL MATERIALS AND INSTALL ALL MEASURES REQUIRED TO REASONABLY CONTROL SOIL EROSION RESULTING FROM CONSTRUCTION OPERATIONS AND PREVENT EXCESSIVE FLOW OF SEDIMENT FROM THE CONSTRUCTION SITE.
9. THE DISTRICT MAY REQUIRE ADDITIONAL SOIL EROSION MEASURES TO BE INSTALLED, AS DETERMINED BY THE DISTRICT
10. OFFSITE LAND DISTURBANCE MAY REQUIRE ADDITIONAL SOIL EROSION AND SEDIMENT CONTROL MEASURES TO BE DETERMINED BY THE DISTRICT.
11. STAGED CONSTRUCTION METHODS TO MINIMIZE EXPOSED SURFACES, WHERE APPLICABLE.
12. THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SUCH THAT STORMWATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
13. SOIL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS AND AFTER EVERY STORM EVENT.
14. APPLICABLE SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE LEFT IN PLACE UNTIL CONSTRUCTION IS COMPLETED AND/OR THE AREA IS STABILIZED.
15. NUSA 4:24-39, ET SEQ., REQUIRES THAT NO CERTIFICATE OF OCCUPANCY, TEMPORARY OR PERMANENT, BE ISSUED BEFORE ALL PROVISIONS OF THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN HAVE BEEN COMPLIED WITH PERMANENT MEASURES. ALL SITE WORK FOR THE PROJECT MUST BE COMPLETED PRIOR TO THE DISTRICT ISSUING A REPORT OF COMPLIANCE AS A PREREQUISITE TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY BY THE MUNICIPALITY. INSPECTION FOR A CERTIFICATE OF OCCUPANCY MUST BE SCHEDULED AT LEAST A WEEK IN ADVANCE.
16. NUSA 4:24-39, ET SEQ., REQUIRES THAT UPON PERMANENT SITE STABILIZATION AND COMPLETION OF THE CONTRACTOR SHALL APPLY TO THE DISTRICT FOR FINAL COMPLIANCE INSPECTION TO CHECK THAT ALL THE PROVISIONS OF THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN HAVE BEEN COMPLIED WITH FOR PERMANENT MEASURES.
17. ANY CONVEYANCE OF THIS PROJECT, OR PORTION THEREOF, PRIOR TO ITS COMPLETION WILL TRANSFER FULL RESPONSIBILITY FOR COMPLIANCE WITH THE CERTIFIED PLAN TO ANY SUBSEQUENT OWNERS. THE DISTRICT MUST BE NOTIFIED IN WRITING OF ANY CHANGE IN OWNERSHIP.
18. A CRUSHED STONE, TIRE CLEANING PAD WILL BE INSTALLED WHEREVER A CONSTRUCTION ACCESS EXISTS. THE STABILIZED PAD WILL BE INSTALLED ACCORDING TO THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS. THE PAD MUST BE 100 FEET IN LENGTH AND THE STONE MUST BE 1.5 - 4 INCHES IN SIZE, PLACED 12" THICK AND THE FULL WIDTH OF THE ENTRANCE. THE PAD SHALL BE UNDERLAIN WITH A SUITABLE SYNTHETIC FILTER FABRIC AND MAINTAINED. IF A CONSTRUCTION ACCESS IS TO BE USED AS AN EXIT FROM A MAJOR HIGHWAY, A THIRTY (30) PAVED TRANSITION AREA SHALL BE INSTALLED. CONSTRUCTION ACCESS ONTO INDIVIDUAL LOTS MUST BE STABILIZED WITH 2.5" CRUSHED STONE OR SUBBASE.
19. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.
20. ALL CATCH BASIN INLETS WILL BE PROTECTED ACCORDING TO THE CERTIFIED PLAN.
21. ALL STORM DRAINAGE OUTLETS SHALL BE STABILIZED AS REQUIRED BEFORE THE DISCHARGE POINT BECOMES OPERATION.
22. NATURAL VEGETATION AND SPECIES SHALL BE RETAINED WHERE SPECIFIED ON THE LANDSCAPE PLAN.
23. ADJOINING PROPERTIES SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS ON THE CONSTRUCTION SITE.
24. THE DEVELOPER SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR BELOW STORMWATER OUTFALLS OR OFFSITE AS A RESULT OF CONSTRUCTION OF THE PROJECT.
25. IMMEDIATELY AFTER THE COMPLETION OF STRIPPING AND STOCKPILING OF TOPSOIL, THE STOCKPILE MUST BE STABILIZED ACCORDING TO THE STANDARD FOR TEMPORARY VEGETATIVE COVER. STABILIZE TOPSOIL PILE WITH STRAW MULCH FOR PROTECTION IF THE SEASON DOES NOT PERMIT THE APPLICATION AND ESTABLISHMENT OF TEMPORARY SEEDING.
26. ALL SOIL STOCKPILES ARE NOT TO BE LOCATED WITHIN FIFTY (50) FEET OF A FLOODPLAIN, SLOPE, ROADWAY OR DRAINAGE FACILITY AND THE BASE MUST BE PROTECTED WITH SEDIMENT BARRIER.
27. MAXIMUM SIDE SLOPES OF ALL EXPOSED SURFACES SHALL NOT BE CONSTRUCTED STEEPER THAN 3:1 UNLESS OTHERWISE APPROVED BY THE SOIL CONSERVATION DISTRICT.
28. ALL CRITICAL AREAS SUBJECT TO SOIL EROSION WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH AT A RATE OF 92 POUNDS PER 1000 SQUARE FEET ACCORDING TO THE NEW JERSEY STANDARDS IMMEDIATELY FOLLOWING ROUGH GRADING.
29. TEMPORARY AND PERMANENT SEEDING MEASURES MUST BE APPLIED ACCORDING TO THE NEW JERSEY STANDARDS, AND MULCHED WITH SALT HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE NEW JERSEY STANDARDS (I.E. PEG AND TWINE, MULCH NETTING OR LIQUID MULCH BINDER)
30. MAXIMUM SIDE SLOPES OF ALL EXPOSED SURFACES SHALL NOT BE CONSTRUCTED STEEPER THAN 3:1 UNLESS OTHERWISE APPROVED BY THE SOIL CONSERVATION DISTRICT.
31. ANY DISTURBED AREA THAT IS TO BE LEFT EXPOSED FOR MORE THAN THIRTY (30) DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING AND FERTILIZATION IN ACCORDANCE WITH THE NEW JERSEY STANDARDS AND THEIR RATES SHOULD BE IN ACCORDANCE WITH THE TEMPORARY SEEDING SPECIFICATION. THE SEASON PROHIBITS TEMPORARY SEEDING. THE DISTURBED AREAS WILL BE MULCHED WITH SALT HAY OR THE EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE NEW JERSEY STANDARDS (I.E. PEG AND TWINE, MULCH NETTING OR LIQUID MULCH BINDER).
32. MULCHING IS REQUIRED ON ALL SEEDED AREAS TO ENSURE AGAINST SOIL EROSION BEFORE GRASS IS ESTABLISHED TO PROMOTE EARLIER VEGETATION COVER.
33. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO PROVIDE CONFIRMATION OF LIME, FERTILIZER AND SEED APPLICATION AND RATES OF APPLICATION AT THE REQUEST OF THE SOIL CONSERVATION DISTRICT.
34. ALL VEGETATIVE MATERIAL SHALL BE SELECTED IN ACCORDANCE WITH AMERICAN STANDARDS FOR NURSERY STOCK OF THE AMERICAN ASSOCIATION OF THE NURSERYMEN AND IN ACCORDANCE WITH THE NEW JERSEY STANDARDS.
35. ALL DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT FILTER AREA. THE SEDIMENT FILTER SHOULD BE COMPOSED OF A SUITABLE FILTER FABRIC. (SEE DETAIL) THE SEDIMENT FILTER MUST BE CAPABLE OF FILTERING THE SEDIMENT AND BE PLACED SO AS NOT TO CAUSE EROSION OF THE DOWNSTREAM AREA. FIELD PLACEMENT AND USE OF THE STRUCTURE MUST BE APPROVED BY THE DISTRICT PRIOR TO COMMENCEMENT OF DEWATERING ACTIVITIES. THE WATER QUALITY BASIN MUST BE DEWATERED TO NORMAL POOL WITHIN 10 DAYS OF THE DESIGN STORM.
36. DUST IS TO BE CONTROLLED BY AN APPROVED METHOD ACCORDING TO THE NEW JERSEY STANDARDS AND INCLUDE WATERING WITH A SOLUTION OF CALCIUM CHLORIDE AND WATER.
37. METHODS FOR THE MANAGEMENT OF HIGH ACID PRODUCING SOILS SHALL BE IN ACCORDANCE WITH THE NEW JERSEY STANDARDS. HIGH ACID PRODUCING SOILS ARE THOSE FOUND TO CONTAIN IRON SULFIDES OR HAVE A PH OF 4 OR LESS.

EXISTING UTILITY INFORMATION SHOWN ON THESE PLANS IS FURNISHED BY THE UTILITY COMPANIES AND/OR THE DEVELOPER AND THE ACCURACY THEREOF IS NOT THE RESPONSIBILITY OF MARATHON ENGINEERING & ENVIRONMENTAL SERVICES, INC. IT IS THE RESPONSIBILITY OF THE OWNERS AND/OR CONTRACTOR TO CALL 1-800-272-1000 FOR FIELD LOCATION OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.

WORK HOURS AND NOISE CONTROL

1. CONSTRUCTION HOURS
A. MONDAY THRU FRIDAY: 7:00AM-6:00PM
B. SATURDAY: 8:00AM-4:30PM
C. SUNDAY: NO WORK TO BE PERFORMED.
D. THE HOURS STATED SHALL BE ADHERED TO UNLESS DUE TO WEATHER AND/OR SCHEDULE CHANGES. THE CITY OF ABSECON SHALL BE NOTIFIED OF ALL TIME CHANGES.
2. NOISE CONTROL EQUIPMENT TO BE UTILIZED SHALL BE STANDARD EARTH MOVING EQUIPMENT, CRANES, MERRERS, ETC. WHICH MEET STANDARDS ESTABLISHED BY STATE AND FEDERAL LAWS REGARDING THE AMOUNT OF NOISE PRODUCED.

DETAILED CONSTRUCTION SEQUENCE

1. INSTALL SILT FENCE AND SOIL EROSION MEASURES.
2. STRIP TOPSOIL FROM EXISTING GRASS AREAS.
3. STRIP TOPSOIL AND STOCKPILE WHERE INDICATED ON PLAN IN ACCORDANCE WITH STOCKPILE DETAIL.
4. CONSTRUCTION OF BASIN.
5. BEGIN ROADWAY AND SITE ROUGH GRADING.
6. BEGIN BUILDING CONSTRUCTION (INCLUDING CURBS, AND FINAL PAVING).
7. PRIOR TO FINAL GRADING, TOPSOILING AND STABILIZATION OF GRASSED SWALES, GRASSED AREAS AND OTHER PEROUS AREAS, DECOMPACTION SHALL TAKE PLACE AND BE APPROVED BY THE GOSCD INSPECTOR.
8. INSTALL LANDSCAPING AS INDICATED.
9. CONSTRUCTED BASIN WILL BE CLEARED OF ALL SEDIMENT AND STABILIZED.
10. UPON FINAL APPROVAL OF THE SOMERSET-UNION COUNTY SOIL CONSERVATION DISTRICT, ALL TEMPORARY MEASURES SHALL BE REMOVED.

TEMPORARY AND PERMANENT STABILIZATION

STABILIZATION COVER SHALL BE ACCOMPLISHED BY THE FOLLOWING METHODS AND MATERIALS:

- A. SITE PREPARATION
1) PREPARE SUBGRADE AS NEEDED AND FEASIBLE TO ALLOW USE OF CONVENTIONAL EQUIPMENT FOR TOPSOILING, SEEDED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING.
2) INSTALL NEEDED SOIL EROSION CONTROL PRACTICES OR MEASURES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.
3) THE SUBGRADE SHALL BE FREE OF EXCESSIVE COMPACTION TO A DEPTH OF 6 INCHES TO ENHANCE THE ESTABLISHMENT OF VEGETATIVE COVER. IF TESTING INDICATES EXCESSIVE SUBGRADE COMPACTION, THE SUBGRADE SHALL BE DE-COMPACTED TO A DEPTH OF 6 INCHES PRIOR TO THE APPLICATION OF TOPSOIL. THE SUBGRADE SHALL BE SCARIFIED TO A DEPTH OF 6" TO 12" WHERE THERE HAS BEEN EXCESSIVE SOIL COMPACTION. THIS PRACTICE IS PERMISSIBLE ONLY IN AREAS WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.).
4) THE SUBGRADE SHALL BE TESTED TO DETERMINE WHETHER COMPACTION EXCEEDS THE MAXIMUM THRESHOLDS INDICATED FOR THE SIMPLIFIED TESTING METHODS. THE TEST SHALL BE PERFORMED AT ONE-HALF ACRE INTERVALS FOR SITES ONE ACRE OR MORE. FOR SITES LESS THAN ONE ACRE, AT LEAST TWO TESTS ARE REQUIRED REGARDLESS OF THE SIZE. CONTIGUOUS AREAS OF 500 SQUARE FEET OR LESS ARE EXEMPT FROM TESTING OR REMEDIATION. COMPACTION TESTING METHODS SHALL INCLUDE (1) PROBING WIRE TEST, (2) HAND-HELD PENETROMETER TEST, (3) TUBE BULK DENSITY TEST, OR (4) NUCLEAR DENSITY TEST. THE MAXIMUM THRESHOLD FOR THE PROBING WIRE TEST IS DETERMINED IF A 15 GAGE WIRE BENDS WHEN INSERTED INTO THE SUBGRADE TO A DEPTH OF 6 INCHES OR FOR THE PENETROMETER TEST IF THE PRESSURE AT A DEPTH OF 6 INCHES IS 300 PSI OR MORE. IF COMPACTION EXCEEDS THE MAXIMUM THRESHOLD, THE CONTRACTOR SHALL HAVE THE OPTION TO PERFORM EITHER (1) COMPACTION MITIGATION OVER THE ENTIRE MITIGATION AREA, OR (2) PERFORM ADDITIONAL MORE DETAILED TESTING TO ESTABLISH THE LIMITS OF EXCESSIVE COMPACTION WHEREUPON ONLY THE EXCESSIVELY COMPACTED AREAS WOULD REQUIRE COMPACTION MITIGATION. ADDITIONAL DETAILED TESTING SHALL BE PERFORMED BY A TRAINED, LICENSED PROFESSIONAL.
5) STOCKPILES OF TOPSOIL SHOULD BE SITUATED SO AS NOT TO OBSTRUCT NATURAL DRAINAGE OR CAUSE OFF-SITE ENVIRONMENTAL DAMAGE.
- B. STRIPPING AND STOCKPILING
1) FIELD EXPLORATION SHOULD BE MADE TO DETERMINE WHETHER QUANTITY AND/OR QUALITY OF SURFACE SOIL JUSTIFIES STRIPPING.
2) STRIPPING SHOULD BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA.
3) WHERE FEASIBLE, LIME MAY BE APPLIED BEFORE STRIPPING AT A RATE DETERMINED BY SOIL TEST TO BRING THE SOIL PH TO APPROXIMATELY 6.5. IN LIEU OF SOIL TEST, SEE LINE RATE GUIDE IN SEEDED PREPARATION.
4) A 4 TO 6 INCH STRIPPING DEPTH IS COMMON, BUT MAY VARY DEPENDING ON THE PARTICULAR SOIL.
5) STOCKPILES OF TOPSOIL SHOULD BE SITUATED SO AS NOT TO OBSTRUCT NATURAL DRAINAGE OR CAUSE OFF-SITE ENVIRONMENTAL DAMAGE.
6) STOCKPILES OF TOPSOIL SHOULD BE VEGETATED IN ACCORDANCE WITH STANDARDS FOR PERMANENT OR TEMPORARY STABILIZATION. WEEDS SHOULD NOT BE ALLOWED TO GROW ON STOCKPILES.
- C. TOPSOILING - THE CONTRACTOR SHALL PREPARE AREAS TO BE STABILIZED WITH PERMANENT VEGETATIVE COVER BY APPLYING TOPSOIL TO A UNIFORM DEPTH OF 6 INCHES. TOPSOIL SHOULD BE FRIABLE, LOAMY, FREE OF DEBRIS, OBJECTIONABLE WEEDS AND STONES, AND CONTAIN NO TOXIC SUBSTANCE OR ADVERSE CHEMICAL OR PHYSICAL CONDITION THAT MAY BE HARMFUL TO PLANT GROWTH. SOLUBLE SALTS SHOULD NOT BE EXCESSIVE (CONDUCTIVITY LESS THAN 0.5 MILLIMHOS PER CENTIMETER. MORE THAN 0.5 MILLIMHOS MAY DESICATE SEEDLINGS AND ADVERSELY IMPACT GROWTH). TOPSOIL HAULED IN FROM OFFSITE SHOULD HAVE A MINIMUM ORGANIC MATTER CONTENT OF 2.75 PERCENT. ORGANIC MATTER CONTENT MAY BE RAISED BY ADDITIVES. TOPSOIL SUBSTITUTES MAY BE UTILIZED ON SITES WITH INSUFFICIENT TOPSOIL FOR ESTABLISHING PERMANENT VEGETATION. TOPSOIL SUBSTITUTES ARE A SOIL MATERIAL WHICH MAY HAVE BEEN AMENDED WITH SAND, SILT, CLAY, ORGANIC MATTER, FERTILIZER OR LIME AND HAS THE APPEARANCE OF TOPSOIL. ALL TOPSOIL SUBSTITUTE MATERIALS SHALL MEET THE REQUIREMENTS OF TOPSOIL NOTED ABOVE. SOIL TESTS SHALL BE PERFORMED TO DETERMINE THE COMPONENTS OF SAND, SILT, CLAY, ORGANIC MATTER, SOLUBLE SALTS AND PH LEVEL.
D. SEEDED PREPARATION - APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TESTS SUCH AS THOSE OFFERED BY RUTGERS UNIVERSITY SOIL TESTING LABORATORY. SOILS SAMPLE MAILERS ARE AVAILABLE FOR CHECKOUT FROM THE RUTGERS UNIVERSITY SERVICE OFFICE. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, THE CONTRACTOR MAY APPLY PULVERIZED DOLOMITIC LIMESTONE AT THE RATE OF 90 POUNDS PER 1000 SQUARE FEET. APPLY 10-20-10 FERTILIZER OR EQUIVALENT AT THE RATE OF 11 POUNDS PER 1000 SQUARE FEET. IN ADDITION, 300 POUNDS 38-0-0 PER ACRE OR EQUIVALENT OF SLOW RELEASE NITROGEN MAY BE USED IN LIEU OF TOPDRESSING. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDES) AS FOLLOWS:

SOIL TEXTURE	TONS / ACRE
CLAY, CLAY LOAM & HIGH ORGANIC SOIL	4
SANDY LOAM, LOAM & SILT LOAM	3
LOAMY SAND, SAND	2

THE LIME AND FERTILIZER SHALL THEN BE "WORKED" INTO THE SOIL TO A DEPTH OF 4" WITH A DISC, SPRINGTOOTH HARROW OR OTHER SUITABLE EQUIPMENT.
- E. TEMPORARY VEGETATION SEEDING - ESTABLISH TEMPORARY VEGETATIVE COVER ON SOILS EXPOSED FOR PERIODS OF TWO TO SIX MONTHS WHICH ARE NOT BEING GRADED, NOT UNDER ACTIVE CONSTRUCTION OR NOT SCHEDULED FOR PERMANENT SEEDING WITHIN 60 DAYS. SEEDING SHALL CONSIST OF PERENNIAL RYEGRASS APPLIED AT THE RATE OF 1 POUND PER 1000 SQUARE FEET DURING COOL SEASON OR WEEPING LOVEGRASS AT 5 LBS. PER ACRE DURING WARM SEASON PLANTING.
- F. PERMANENT VEGETATION SEEDING - IMMEDIATELY FOLLOWING THE COMPLETION OF CONSTRUCTION ACTIVITIES AT THE SITE, THE CONTRACTOR SHALL STABILIZE WITH PERMANENT VEGETATIVE COVER, ALL EXPOSED AND DISTURBED SOILS.

#15 MIXTURE (LAWN)	LBS/ACRE	LBS/1000 S.F.
HARD FESCUE	130	3.00

CHEWING FESCUE	45	1.00
STRONG CREEPING RED FESCUE	45	1.00
PERENNIAL RYEGRASS	10	0.25

#11 MIXTURE (SWALE)	LBS/ACRE	LBS/1000 S.F.
KENTUCKY BLUEGRASS	45	1.00
TURF-TYPE TALL FESCUE	22	0.50

IF HYDROSEEDING IS USED ALL SEEDING RATES SHALL BE INCREASED BY 25%. IF SODDING IS USED SEE SOD SPECIFICATIONS.

- G. SEEDING DATES - SEEDING DATES FOR VEGETATION SHALL OCCUR BETWEEN MARCH 1 AND APRIL 30 (OPTIMAL PLANTING PERIOD) BETWEEN AUGUST 15 AND NOVEMBER 15. IF SEED IS NOT PLANTED WITHIN THESE DATES, THE CONTRACTOR SHALL STABILIZE WITH MULCH AS SPECIFIED ABOVE.
- E. MULCHING - THE CONTRACTOR SHALL MULCH ALL NEWLY SEEDDED AREAS WITH UNROTTED SMALL GRAIN STRAW OR HAY FREE OF SEEDS AT THE RATE OF 70 TO 90 POUNDS PER 1,000 SQUARE FEET. IT SHALL BE ANCHORED THROUGH THE USE OF THE PEG AND TWINE METHOD. THE PEG AND TWINE METHOD OF MULCH ANCHORING SHALL CONSIST OF DRIVING 8-10 INCH WOODEN PEGS TO WITHIN 2-3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISS-CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
- F. SODDING
1) CULTIVATED SOD IS PREFERRED OVER NATIVE SOD. SPECIFY "CERTIFIED SOD", OR OTHER HIGH QUALITY CULTIVATED SOD. SOD SHOULD BE FREE OF WEEDS AND UNDESIRABLE COARSE WEEDY GRASSES. SOD SHOULD BE OF UNIFORM THICKNESS, APPROXIMATELY 5/8 INCH, PLUS OR MINUS 1/4 INCH, AT TIME OF CUTTING. (EXCLUDES TOP GROWTH). SOD SHOULD BE VIGOROUS AND DENSE AND BE ABLE TO RETAIN ITS OWN SHAPE AND WEIGHT WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP FROM THE UPPER 10 PERCENT OF THE STRIP. BROKEN PADS OR TORN OR UNEVEN EDGES WILL NOT BE ACCEPTED. FOR DROUGHTY SITES, A SOD OF KENTUCKY 311 TALL FESCUE AND BLUEGRASS IS PREFERRED OVER A STRAIGHT BLUEGRASS SOD. ONLY MOIST, FRESH, UNHEATED SOD SHOULD BE USED. SOD SHOULD BE HARVESTED, DELIVERED AND INSTALLED WITHIN A PERIOD OF 36 HOURS.

- 2) REMOVE FROM THE SURFACE ALL OBJECTS THAT WOULD PREVENT GOOD SOD TO SOIL CONTACT AND REMOVE ALL OTHER DEBRIS SUCH AS WIRE, CABLE, TREE ROOTS, PIECES OF CONCRETE, CLODS, LUMPS OR OTHER UNSUITABLE MATERIAL.

- 3) INSPECT SITE JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED AND FIRMED AS ABOVE.

- 4) SOD PLACEMENT:

- A) SOD STRIPS SHOULD BE LAID ON THE CONTOUR, NEVER UP AND DOWN THE SLOPE, STARTING AT THE BOTTOM OF THE SLOPE AND WORKING UP. ON STEEP SLOPES, THE USE OF LADDERS WILL FACILITATE THE WORK AND PREVENT DAMAGE TO THE SOD. DURING PERIODS OF HIGH TEMPERATURE, LIGHTLY IRRIGATE THE SOIL IMMEDIATELY PRIOR TO LAYING THE SOD.

- B) PLACE SOD STRIPS WITH SNUG, EVEN JOINTS THAT ARE STAGGERED. OPEN SPACES INVITE EROSION.

- C) ROLL OR TAMP SOD IMMEDIATELY FOLLOWING PLACEMENT TO INSURE SOLID CONTACT OF ROOT MAT AND SOIL SURFACE. DO NOT OVERLAP SOD. ALL JOINTS SHOULD BE BUTTED TIGHTLY IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE DRYING OF THE ROOTS.

- D) ON SLOPES GREATER THAN 3:1, SECURE SOD TO SURFACE SOIL WITH WOOD PEGS, WIRE STAPLES, OR SPLIT SHINGLES (8" TO 10" LONG BY 3/4" WIDE).

SURFACE WATER CANNOT ALWAYS BE DIVERTED FROM FLOWING OVER THE FACE OF THE SLOPE, BUT A CAPPING STRIP OF HEAVY JUTE OR PLASTIC NETTING, PROPERLY SECURED, ALONG THE CROWN OF THE SLOPE AND EDGES WILL PROVIDE EXTRA PROTECTION AGAINST LIFTING AND UNDERCUTTING OF SOD. THE SAME TECHNIQUE CAN BE USED TO ANCHOR SOD IN WATER-CARRYING CHANNELS AND OTHER CRITICAL AREAS. WIRE STAPLES MUST BE USED TO ANCHOR NETTING IN CHANNEL WORK.

- E) IMMEDIATELY FOLLOWING INSTALLATION, SOD SHOULD BE WATERED UNTIL MOISTURE PENETRATES THE SOIL LAYER BENEATH SOD TO A DEPTH OF 4 INCHES. MAINTAIN OPTIMUM MOISTURE FOR AT LEAST TWO WEEKS.

- F) TOPDRESSING - IF SLOW RELEASE NITROGEN (300 POUNDS 38-0-0 PER ACRE OR EQUIVALENT) IS USED IN ADDITION TO SUGGESTED FERTILIZER, THEN A FOLLOW-UP OF TOPDRESSING IS NOT MANDATORY.

FALL INSTALLATION OF SOD WILL REQUIRE AN APPLICATION OF FERTILIZER SUCH AS 10-20-10 TO 400 POUNDS PER ACRE OR 10 POUNDS PER 1000 SQUARE FEET BETWEEN SEPTEMBER 1 AND OCTOBER 15.

MANAGEMENT OF HIGH ACID-PRODUCING SOILS

HIGH ACID-PRODUCING SOILS ARE SOILS WITH A PH OF 4.0 OR LESS OR CONTAIN IRON SULFIDE. HIGH ACID-PRODUCING SOILS MAY BE PRESENT IN UNDISTURBED SOILS AT VARYING DEPTHS, INCLUDING NEAR THE SOIL SURFACE TO EXCAVATIONS OR DEEP DISTURBANCES. ITS PRESENCE ON A SITE MAY BE SIGNIFICANT OR LIMITED IN THE SOIL PROFILE. HIGH ACID-PRODUCING SOILS ARE COMMONLY BLACK, DARK BROWN, GRAY OR GREENISH WITH SILVERY PYRITE OR MARCASITE NUGGETS OR FLAKES. ALTERNATIVELY, SANDY SOILS OR REDDISH, YELLOWISH OR LIGHT TO MEDIUM BROWN SOIL MATERIALS ARE USUALLY FREE OF HIGH ACID-PRODUCING DEPOSITS.

TO PREVENT OR LIMIT EXPOSURE AREA, TIME, AND SPREADING BY EQUIPMENT OR RAINFALL ON- AND OFF-SITE AND TO MINIMIZE EROSION, SEDIMENTATION AND ACID LEACHATE-RELATED DAMAGES. HIGH ACID-PRODUCING SOIL MAY BE EXPOSED DURING EXCAVATION AND LAND GRADING ACTIVITIES, OR MAY BE INTRODUCED IN DREDGED SEDIMENT, SOILS AND SEDIMENT CONTAINING IRON SULFIDES, CHARACTERIZED BY PYRITE OR MARCASITE NUGGETS OR GREENSANDS, ARE CHEMICALLY OXIDIZED WHEN EXPOSED TO AIR, PRODUCING SULFURIC ACID AND RESULT IN SOIL PH LEVELS FALLING TO PH 4.0 AND LOWER. MOST VEGETATION IS INCAPABLE OF GROWTH AT THIS PH LEVEL. ADJACENT LAND AND RECEIVING WATERS WILL BE NEGATIVELY IMPACTED BY THE ACID LEACHATE. CALCIUM-CONTAINING MATERIALS SUCH AS SIDEWALKS, CULVERTS AND OTHER STRUCTURES AND SOME METALLIC MATERIALS ARE ALSO SUSCEPTIBLE TO DEGRADATION. AGRICULTURAL LIMESTONE MATERIALS APPLIED AT RATES OF 8 TONS PER ACRE WILL RESULT IN ONLY A TEMPORARY BUFFERING EFFECT, AND "LIMING-ONLY" IS THEREFORE NOT CONSIDERED AN ACCEPTABLE MITIGATION PRACTICE.

METHODS AND MATERIALS OF MANAGING HIGH ACID-PRODUCING SOILS

1. LIMIT THE EXCAVATION AREA AND EXPOSURE TIME WHEN HIGH ACID-PRODUCING SOILS ARE ENCOUNTERED.
2. TOPSOIL STRIPPED FROM THE SITE SHALL BE STORED SEPARATELY FROM TEMPORARILY STOCKPILED HIGH ACID-PRODUCING SOILS.
3. STOCKPILES OF HIGH ACID-PRODUCING SOIL SHOULD BE LOCATED ON LEVEL LAND TO MINIMIZE ITS MOVEMENT, ESPECIALLY WHEN THIS MATERIAL HAS A HIGH CLAY CONTENT.
4. TEMPORARILY STOCKPILED HIGH ACID-PRODUCING SOIL MATERIAL TO BE STORED MORE THAN 48 HOURS SHOULD BE COVERED WITH PROPERLY ANCHORED, HEAVY GRADE SHEETS OF POLYETHYLENE. WHERE POSSIBLE, IF NOT POSSIBLE, STOCKPILES SHALL BE COVERED WITH A MINIMUM OF 3 TO 6 INCHES OF WOOD CHIPS TO MINIMIZE EROSION OF THE STOCKPILE. SILT FENCE SHALL BE INSTALLED AT THE TOE OF THE SLOPE TO CONTAIN MOVEMENT OF THE STOCKPILED MATERIAL. TOPSOIL SHALL NOT BE APPLIED TO THE STOCKPILES TO PREVENT TOPSOIL CONTAMINATION WITH HIGH ACID-PRODUCING SOIL.
5. HIGH ACID-PRODUCING SOILS WITH A PH OF 4.0 OR LESS OR CONTAINING IRON SULFIDE (INCLUDING BODROW FROM CUTS OR DREDGED SEDIMENT) SHALL BE ULTIMATELY PLACED OR BURIED WITH LIMESTONE APPLIED AT THE RATE OF 10 TONS PER ACRE (OR 450 POUNDS PER 1,000 SQUARE FEET OF SURFACE AREA) AND COVERED WITH A MINIMUM OF 12 INCHES OF SETTLED SOIL WITH A PH OF 5.0 OR MORE EXCEPT AS FOLLOWS:
A. AREAS WHERE TREES OR SHRUBS ARE TO BE PLANTED SHALL BE COVERED WITH A MINIMUM OF 24 INCHES OF SOIL WITH A PH OF 5 OR MORE.
B. DISPOSAL AREAS SHALL NOT BE LOCATED WITHIN 24 INCHES OF ANY SURFACE OF A SLOPE OR BANK, SUCH AS BERMS, STREAM BANKS, DITCHES, AND OTHERS, TO PREVENT POTENTIAL LATERAL LEACHING DAMAGES.
6. EQUIPMENT USED FOR MOVEMENT OF HIGH ACID-PRODUCING SOILS SHOULD BE CLEANED AT THE END OF EACH DAY TO PREVENT SPREADING OF HIGH ACID-PRODUCING SOIL MATERIALS TO OTHER PARTS OF THE SITE, INTO STREAMS OR STORMWATER CONVEYANCES, AND TO PROTECT MACHINERY FROM ACCELERATED RUSTING.
7. NON-VEGETATIVE EROSION CONTROL PRACTICES (STONE TRACKING PADS, STRATEGICALLY PLACED LIMESTONE CHECK DAM, SEDIMENT BARRIER, WOOD CHIPS) SHOULD BE INSTALLED TO LIMIT THE MOVEMENT OF HIGH ACID-PRODUCING SOILS FROM, AROUND, OR OFF THE SITE.
8. FOLLOWING BURIAL OR REMOVAL OF HIGH ACID-PRODUCING SOIL, TOPSOILING AND SEEDING

OF THE SITE (SEE TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION, PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION, AND TOPSOILING). MONITORING MUST CONTINUE FOR A MINIMUM OF 6 MONTHS TO ENSURE THERE IS ADEQUATE STABILIZATION AND THAT NO HIGH ACID-PRODUCING SOIL PROBLEMS EMERGE. IF PROBLEMS STILL EXIST, THE AFFECTED AREA MUST BE TREATED AS INDICATED ABOVE TO CORRECT THE PROBLEM.

DUST CONTROL:

DUST CONTROL SHALL BE ACCOMPLISHED BY THE METHODS DESCRIBED BELOW.

MATERIAL	WATER DILUTION	TYPE OF NOZZLE	APPLY GALLONS/AC
ANIONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1200
LATEX EMULSION	12.5:1	FINE SPRAY	235
RESIN IN WATER	4:1	FINE SPRAY	300
POLYACRYLAMIDE (PAM) - SPRAY ON POLYACRYLAMIDE (PAM) - DRY SPREAD		APPLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS. MAY ALSO BE USED AS AN ADDITIVE TO SEDIMENT BASINS TO FLOCCULATE AND PRECIPITATE SUSPENDED COLLOIDS. SEE SEDIMENT BASIN STANDARD, P. 26-1	
ACIDULATED SOY BEAN SOAP STICK	NONE	COARSE SPRAY	1200

TILLAGE: TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS A TEMPORARY EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS PLACED ABOUT 12 INCHES APART, AND SPRING TOOTHED HARROWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.

SPRINKLING: SITE IS SPRINKLED UNTIL THE SURFACE IS WET.

BARRIERS: SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.

CALCIUM CHLORIDE: SHALL BE IN THE FORM OF LOOSE, DRY GRANULES OR FLAKES FINE ENOUGH TO FEED THROUGH COMMONLY USED SPREADERS AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE. IF USED ON STEEPER SLOPES, THEN USE OTHER PRACTICES TO PREVENT WASHING INTO STREAMS, OR ACCUMULATION AROUND PLANTS.

STONE: COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

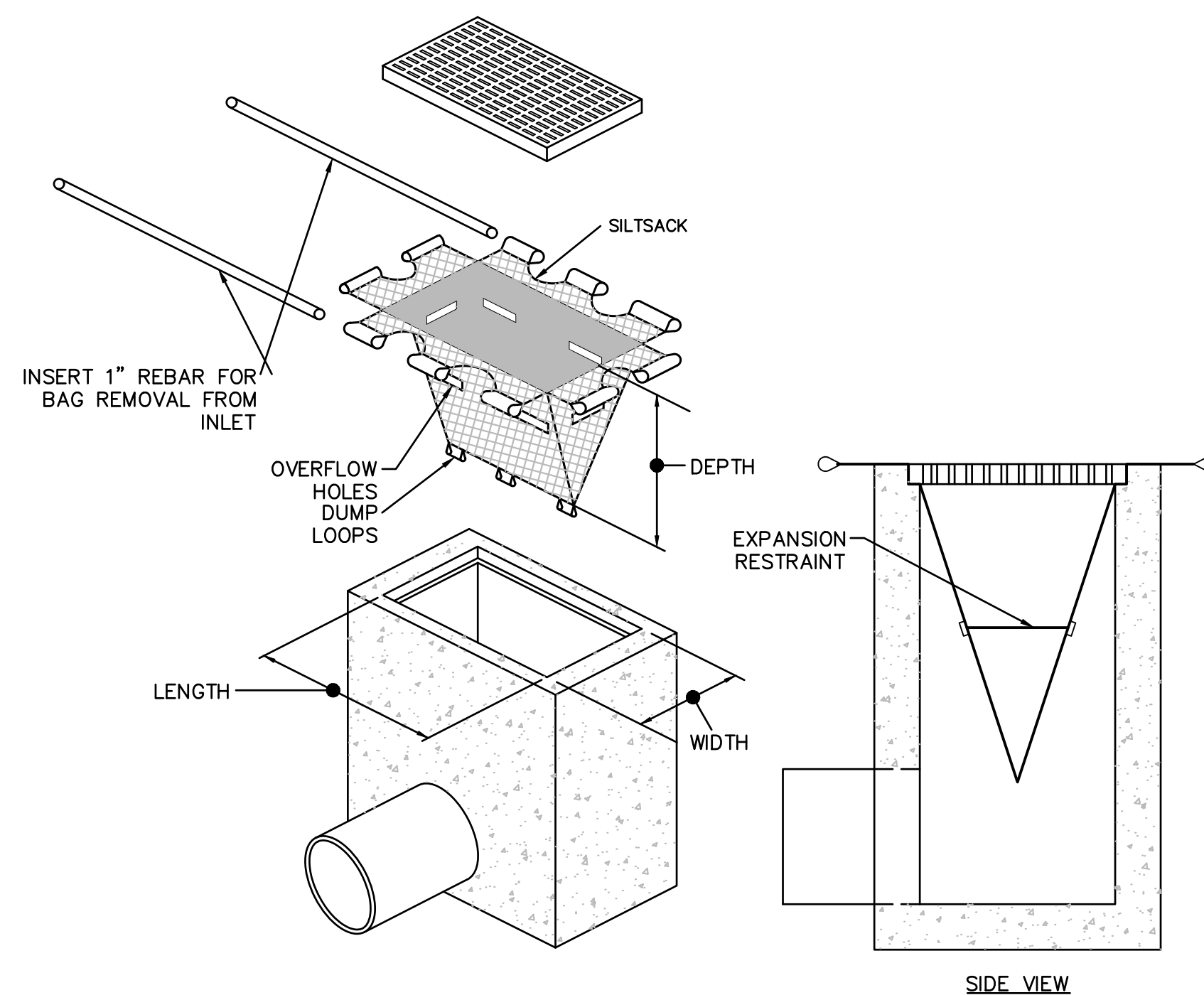
12/11/2020	1	INITIAL SUBMISSION	ACD	DF
ISSUE DATE	ISSUE NO.	SUBMISSION/REVISION	BY	APPR.
PRELIMINARY & FINAL SITE PLAN				
SHEET 93, BLOCK 9301, LOT 33 TOWNSHIP OF BERNARDS, SOMERSET COUNTY, NEW JERSEY				
SOIL EROSION AND SEDIMENT CONTROL NARRATIVE SHEET				
FELLOWSHIP SENIOR LIVING, INC. 8000 FELLOWSHIP ROAD BASKING RIDGE, NJ 07920 Certificate of Authorization #24GAZ7995700				
DAVID J. FLEMING, P.E. PROFESSIONAL ENGINEER NEW JERSEY LICENSE NO. 246E03321600				
ALL DOCUMENTS PREPARED BY MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. ARE THE PROPERTY OF MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. AND ARE NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. ANY UNAUTHORIZED REPRODUCTION OR TRANSMISSION OF THIS DOCUMENT IS PROHIBITED. MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. SHALL INDEMNIFY AND HOLD HARMLESS MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. FROM AND AGAINST ALL CLAIMS, DAMAGES, LOSSES, AND EXPENSES, INCLUDING REASONABLE ATTORNEY'S FEES, INCURRED BY MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. IN CONNECTION WITH THE PROVISION OF THESE SERVICES.				
SCALE	AS SHOWN	APPROVED	AS SHOWN	D.J.F.
BY	ACD	DF	BY	DF
DRAWING NO. C1301				
12/11/2020 FVG-001.01				

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

NOTE:
IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY
BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

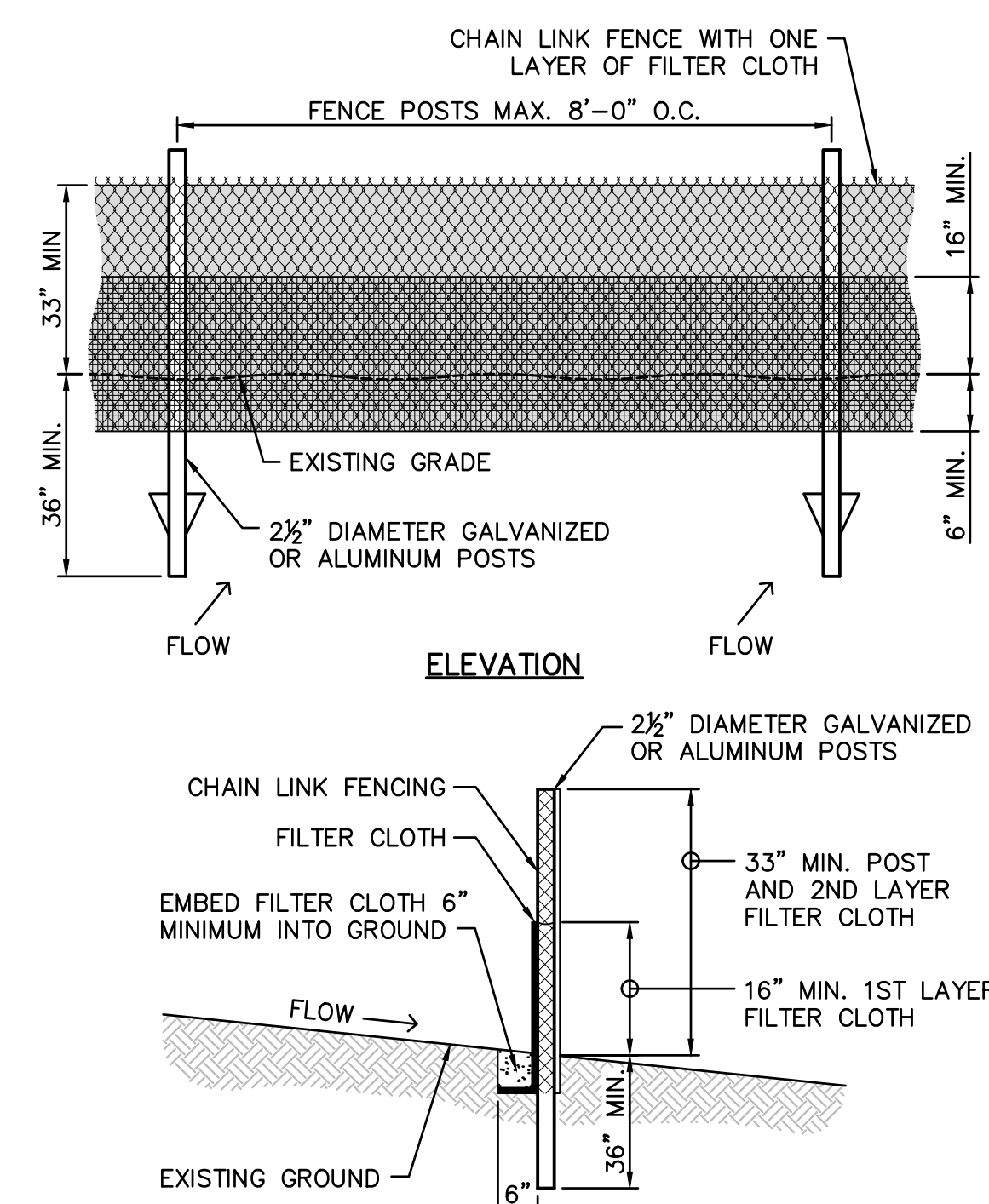
SLOPE BLANKET INSTALLATION DETAIL

N.T.S.



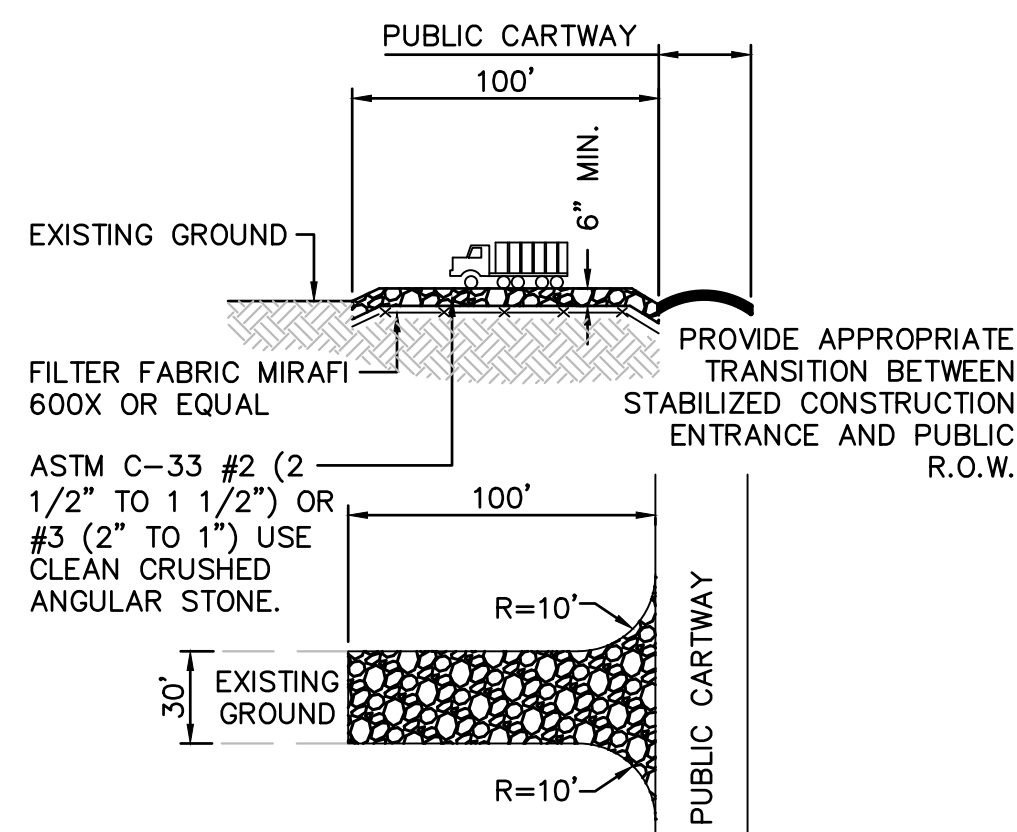
ACF ENVIRONMENTAL INLET SEDIMENT
CONTROL DEVICE OR APPROVED EQUAL
INLET PROTECTION DETAIL

N.T.S



SUPER SILT FENCE DETAIL

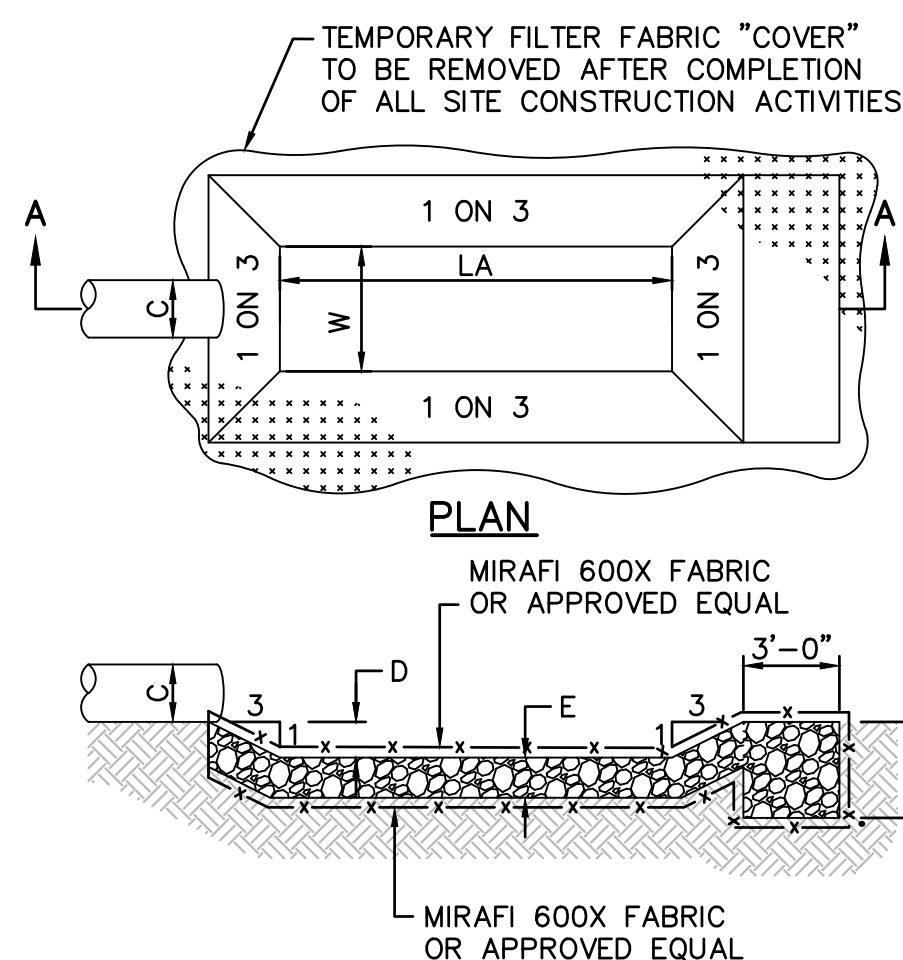
N.T.S.



MAINTENANCE
THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

N.T.S.



SECTION A-A

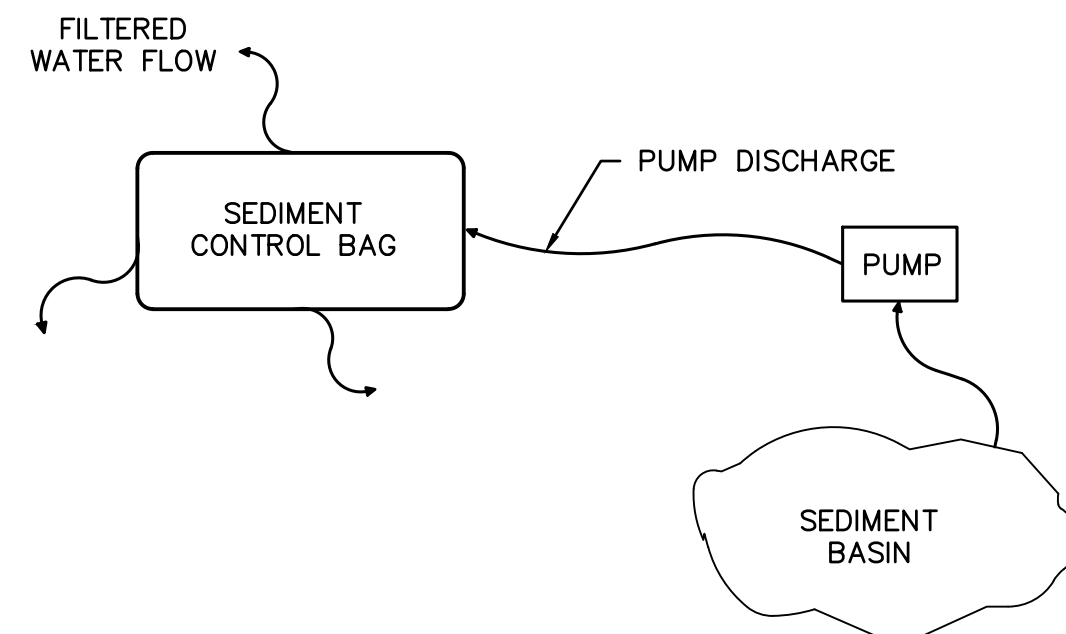
PREFORMED SCOUR HOLE DETAIL

N.T.S.

PREFORMED SCOUR HOLE TABLE						
ENDWALL	LA	W	C	D	D50	E
FES-1	xx.x'	xx.x'	xx"	xx"	4"	8"

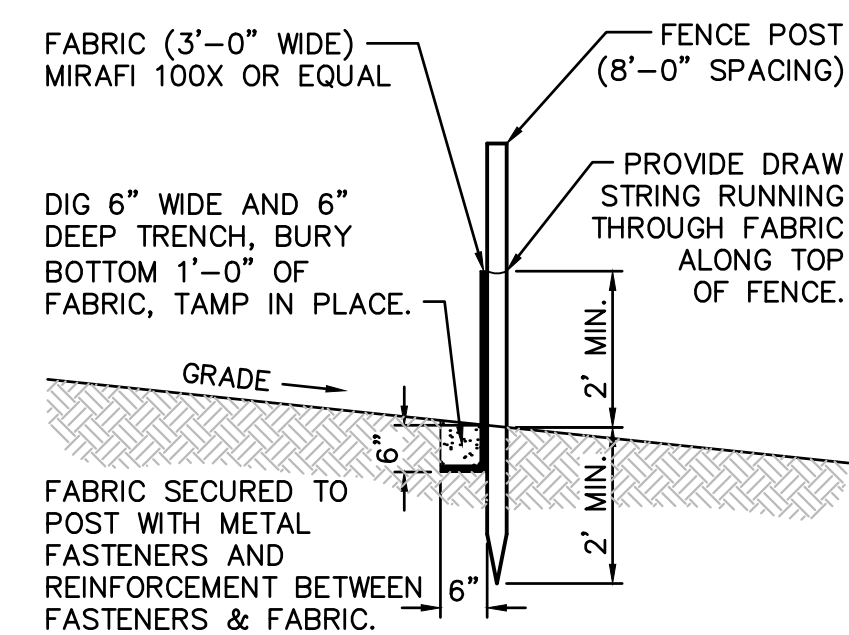
NOTES

- NOTES**
1. FIFTY PERCENT, BY WEIGHT, OF THE RIP-RAP MIXTURE SHALL BE SMALLER THAN MEDIUM STONE SIZE DESIGNATED AS D₅₀. THE LARGEST STONE SIZE IN THE MIXTURE SHALL BE 1.5 TIMES THE D₅₀ SIZE.
 2. A THREE FOOT WIDE BY THREE FOOT DEEP TIE WALL SHALL BE CONSTRUCTED AT THE END OF THE SCOUR HOLE.
 3. THE D₅₀ SIZE SHOWN IS THE MINIMUM SIZE CALCULATED.



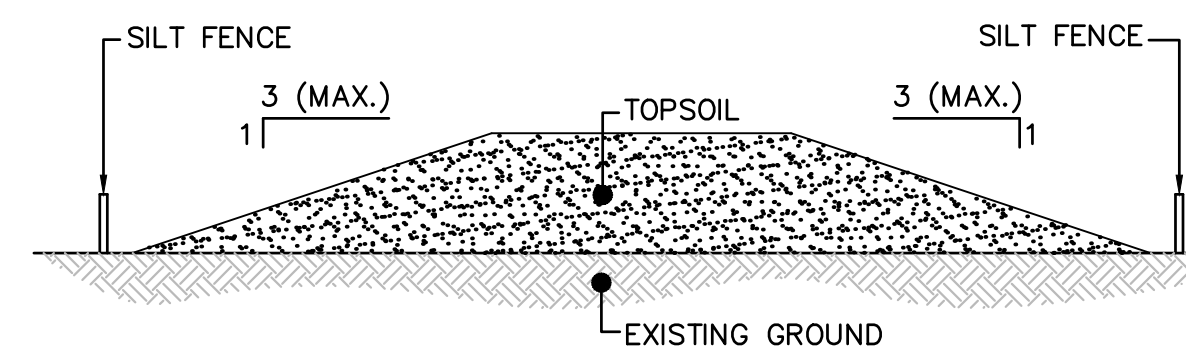
SEDIMENT CONTROL BAG
FOR DEWATERING DETAIL

N.T.S



STANDARD SILT FENCE DETAIL


N.T.S.



TOPSOIL STOCKPILE DETAIL

N.T.S.

- NOTES**
1. TOPSOIL STOCKPILE SHALL BE SURROUNDED BY SILT FENCE.
 2. STOCKPILE SHALL RECEIVE TEMPORARY VEGETATIVE STABILIZATION IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY IMMEDIATELY AFTER COMPLETION OF STOCKPILE.
 3. STOCKPILES ARE NOT TO BE LOCATED WITHIN FIFTY FEET OF A FLOODPLAIN, SLOPES, ROADWAY, OR DRAINAGE FACILITY.

12/11/2020	1	INITIAL SUBMISSION	ACD	DF
ISSUE DATE	ISSUE NO.	SUBMISSION/REVISION	BY	APPR.
<h1>PRELIMINARY & FINAL SITE PLAN</h1> <p>SHEET 95, BLOCK 9301, LOT 33 TOWNSHIP OF BERNARDS, SOMERSET COUNTY, NEW JERSEY</p> <h2>SOIL EROSION AND SEDIMENT CONTROL DETAIL SHEET</h2> <h3>FELLOWSHIP SENIOR LIVING, INC.</h3> <p>8000 FELLOWSHIP ROAD BASKING RIDGE, NJ 07920</p>			 <h1>MARATHON</h1> <p>Engineering & Environmental Services Sweedsboro Office</p> <p>3 Kildeer Court, Suite 302, Sweedsboro, NJ 08085 ph (855) 241-8755 fax (855) 241-8709 Certificate of Authorization #24GA279500</p>	
<p>DAVID J. FLEMING, P.E. PROFESSIONAL ENGINEER NEW JERSEY LICENSE NO. 246023321600</p> <p><i>[Signature]</i></p>			<p>ALL DOCUMENTS PREPARED BY MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. OR ITS AFFILIATES OR SUBSIDIARIES OR CONTRACTORS OR AGENTS OR EMPLOYEES OR SERVICE PROVIDERS IN RESPECT TO THE PROJECT, MAY BE USED IN WHOLE OR IN PART, WITHOUT THE WRITTEN CONSENT OF MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. OR ITS AFFILIATES OR SUBSIDIARIES OR CONTRACTORS OR AGENTS OR EMPLOYEES OR SERVICE PROVIDERS. ANY UNAUTHORIZED USE OF ANY OF THE INFORMATION CONTAINED HEREIN FOR ANY PURPOSES OTHER THAN THAT AUTHORIZED BY MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. OR ITS AFFILIATES OR SUBSIDIARIES OR CONTRACTORS OR AGENTS OR EMPLOYEES OR SERVICE PROVIDERS IS STRICTLY PROHIBITED. MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. AND ITS AFFILIATES, SUBSIDIARIES, CONTRACTORS, AGENTS, EMPLOYEES, AND SERVICE PROVIDERS SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION CONTAINED HEREIN. MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES, INC. AND ITS AFFILIATES, SUBSIDIARIES, CONTRACTORS, AGENTS, EMPLOYEES, AND SERVICE PROVIDERS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION CONTAINED HEREIN.</p> <p>DATE: 11/11/2020</p> <p>FVG 001.01</p>	
<p>AS SHOWN DRAWN BY ACD</p>			<p>APPROVED DJF SHEET 14 OF 14</p>	
<p>DRAWING NO.</p>			<p>C1302</p>	

Renovations, Additions and Outdoor Amenities

8000 Fellowship Road
 Barnards Township, Somerset County
 New Jersey

Block 9301, Lot 33

Issued for:
STATE PLAN APPLICATION
 Date: 11.23.2020

QUESTIONS	REVISIONS
-----------	-----------

Proj. No: 1161.07.33/43

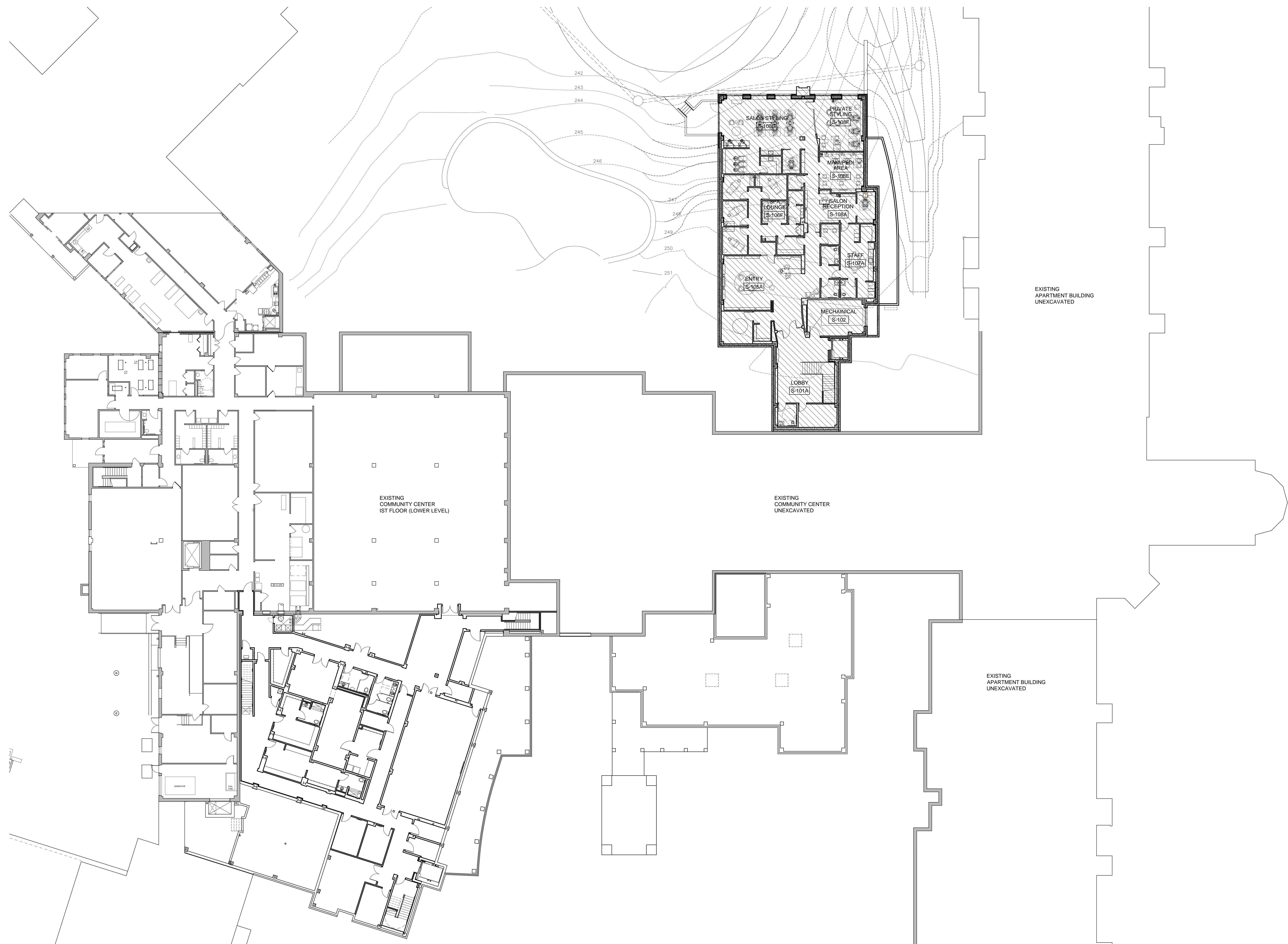
Drawing Title:


FIRST FLOOR PLAN
LOWER LEVEL

A0.1



JOSEPH M. SCANLON, AIA
NJ-21A11669 PA-RA009944-X



 **FLOOR PLAN - 1ST FLOOR / LOWER LEVEL**
1
A0.1 1/16" = 1' - 0"

NEW FLOOR AREA BREAKDOWN BY USE:

FITNESS/SALON BUILDING ADDITION:

2ND FLOOR (UPPER/MAIN COMMONS LEVEL):
FITNESS STUDIO
GROUP FITNESS STUDIO
STORAGE
FITNESS RECEPTION AND OFFICE
FITNESS LOBBY

1ST FLOOR (LOWER LEVEL):

SALON SUITE
SALON RECEPTION
SALON SUPPORT SPACES
MASSAGE ROOMS
MECHANICAL AND ELECTRICAL

WOMENS CLUB LOCKER ROOM:
LOUNGE AREA
SAUNA
LOCKER AREA
SHOWER AND TOILET STALLS

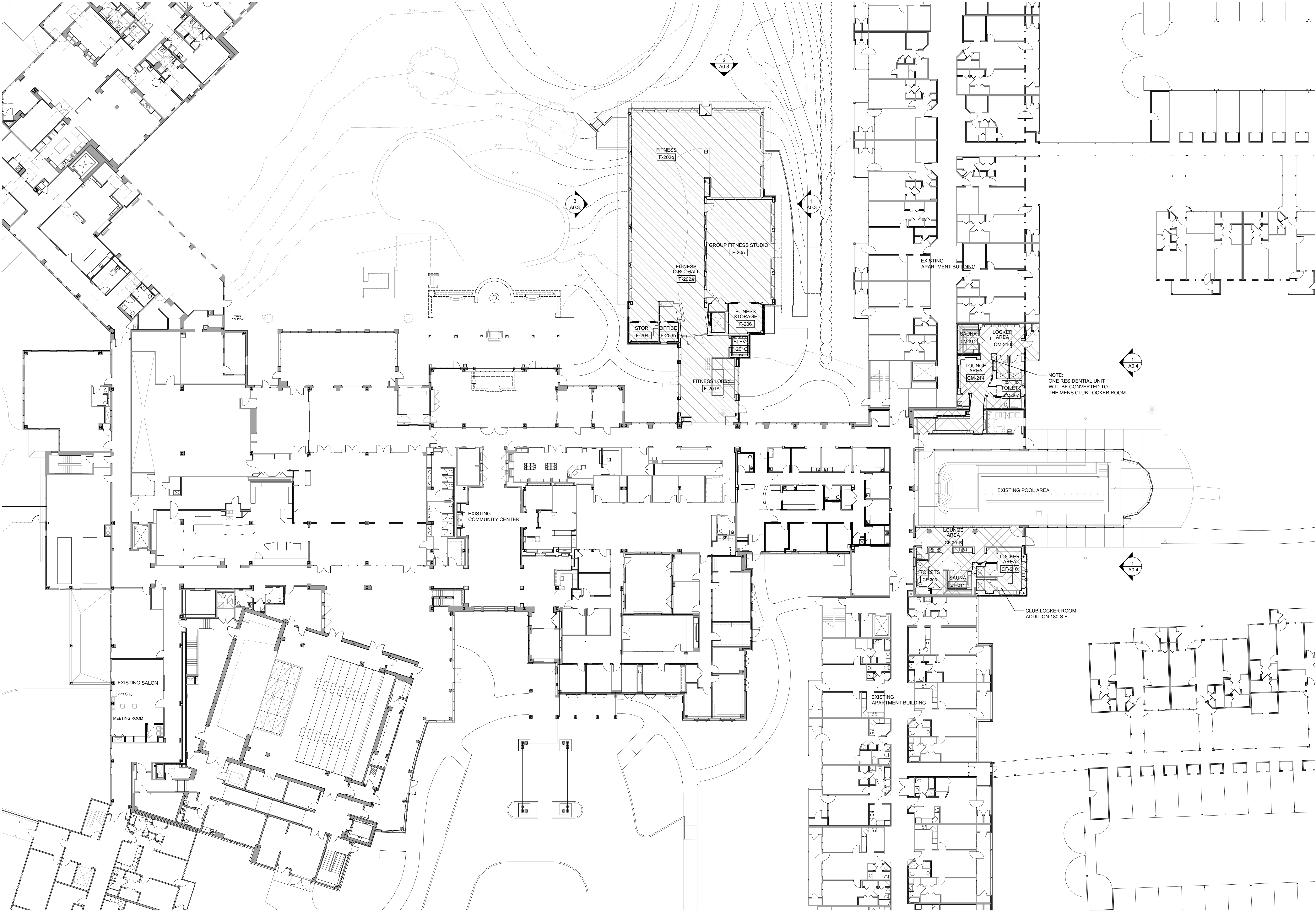
BUILDING AREA SUMMARY:

FLOOR AREA (SF):

<u>FITNESS/SALON BUILDING ADDITION:</u>	
1ST FLOOR (LOWER LEVEL)	7,187 S.F.
2ND FLOOR (UPPER/MAIN LEVEL)	7,260 S.F.
BUILDING ADDITION TOTAL	14,447 S.F.
FITNESS PATIO AREA	1,256 S.F.

**NEW WOMEN'S CLUB LOCKER ROOM:
NEW ADDITION AREA TO EXISTING COM**

 AREA OF NEW ADDITION AREA OF NEW RENOVATION



FLOOR PLAN - 2ND FLOOR / MAIN LEVEL
1/16" = 1' - 0"

NEW FLOOR AREA BREAKDOWN BY USE:	
FITNESS/SALON BUILDING ADDITION:	
2ND FLOOR (UPPER/MAIN COMMONS LEVEL):	
FITNESS STUDIO	7,187 S.F.
GROUP FITNESS STUDIO	7,260 S.F.
STORAGE	14,447 S.F.
FITNESS RECEPTION AND OFFICE	
FITNESS LOBBY	
1ST FLOOR (LOWER LEVEL):	
SALON SUITE	
SALON RECEPTION	
SALON SUPPORT SPACES	
MASSAGE ROOMS	
MECHANICAL AND ELECTRICAL	
WOMEN'S CLUB LOCKER ROOM:	
LOUNGE AREA	
SAUNA	
LOCKER AREA	
SHOWER AND TOILET STALLS	

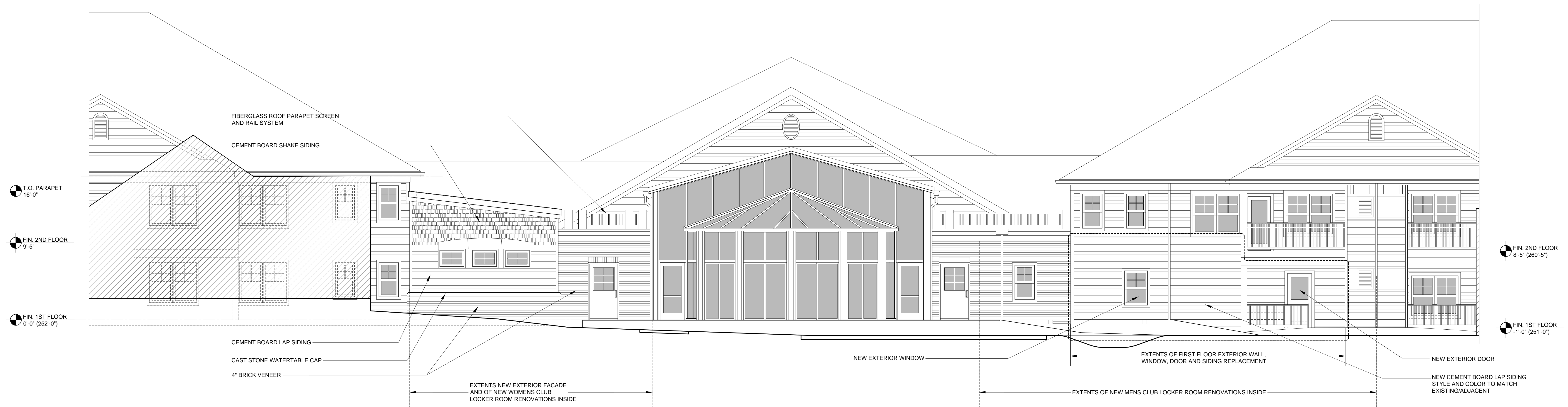
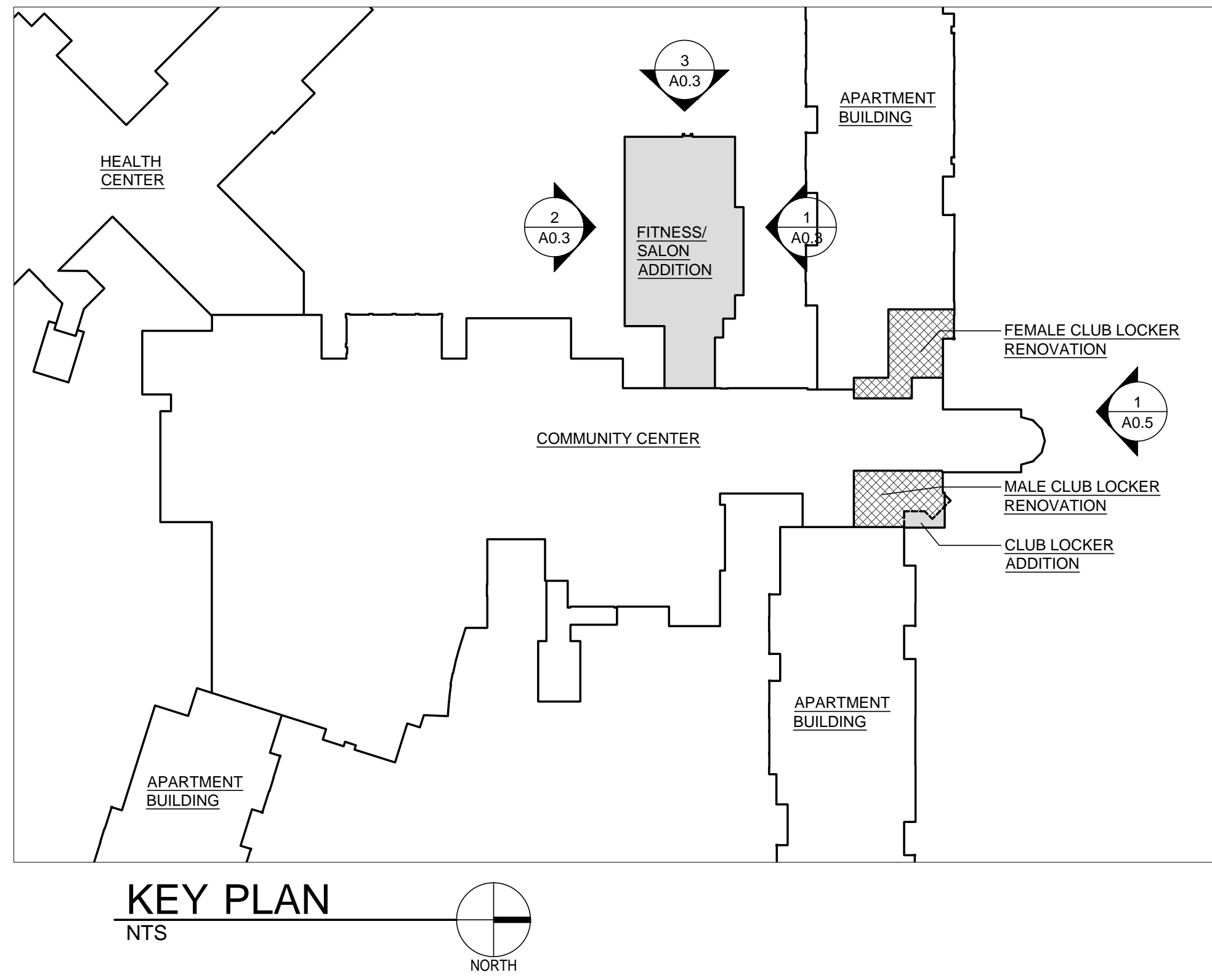
BUILDING AREA SUMMARY:	
FLOOR AREA (SF):	
FITNESS/SALON BUILDING ADDITION:	
1ST FLOOR (LOWER LEVEL)	7,187 S.F.
2ND FLOOR (UPPER/MAIN LEVEL)	7,260 S.F.
BUILDING ADDITION TOTAL	14,447 S.F.
FITNESS PATIO AREA	1,256 S.F.
NEW WOMEN'S CLUB LOCKER ROOM:	
SALON RECEPTION	
SALON SUPPORT SPACES	
MASSAGE ROOMS	
MECHANICAL AND ELECTRICAL	
NEW ADDITION AREA TO EXISTING COMMONS AREA 1B	180 S.F.

AREA OF NEW ADDITION

AREA OF NEW RENOVATION







1
A0.5
EXTERIOR ELEVATION - NORTH SIDE OF POOL AND NEW CLUB LOCKER ROOMS
3/16\"/>



Fellowship Village

Renovations, Additions and Outdoor Amenities

8000 Fellowship Road
Bernards Township, Somerset County
New Jersey

Block 9301, Lot 33

Issued for:
SITE PLAN APPLICATION
Date: 11.23.2020

ISSUES REVISIONS

Proj. No: 1161.07.33/43

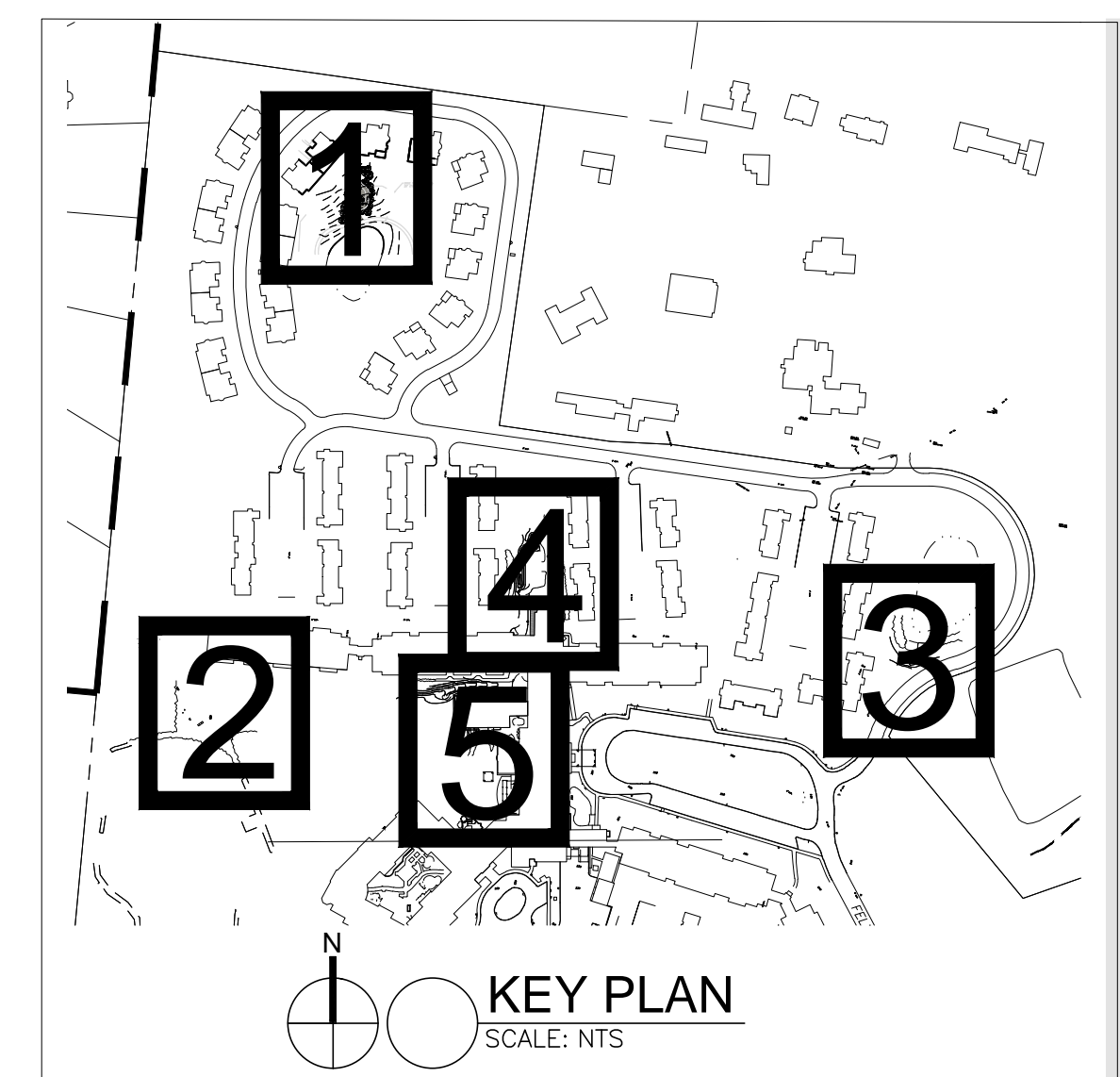
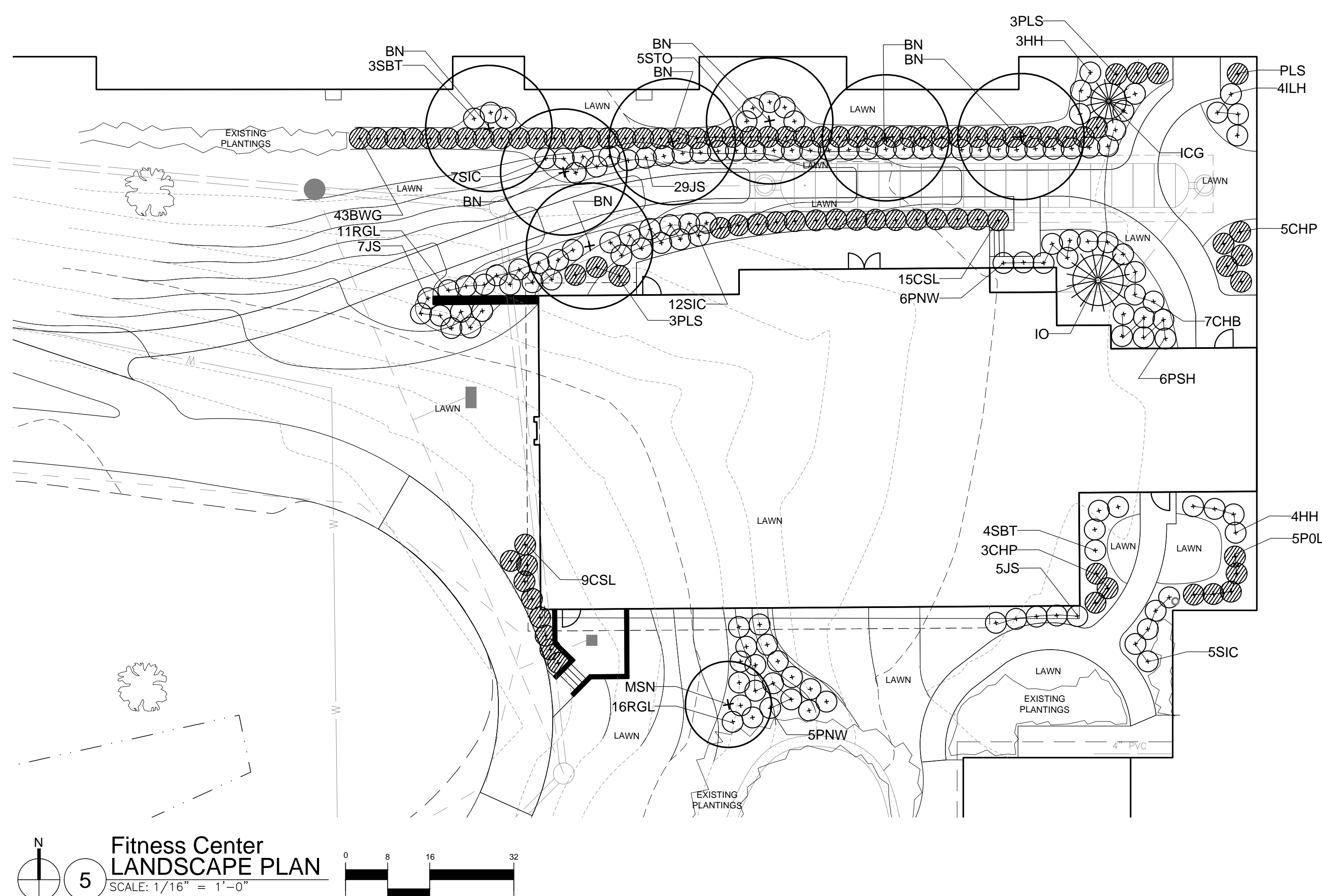
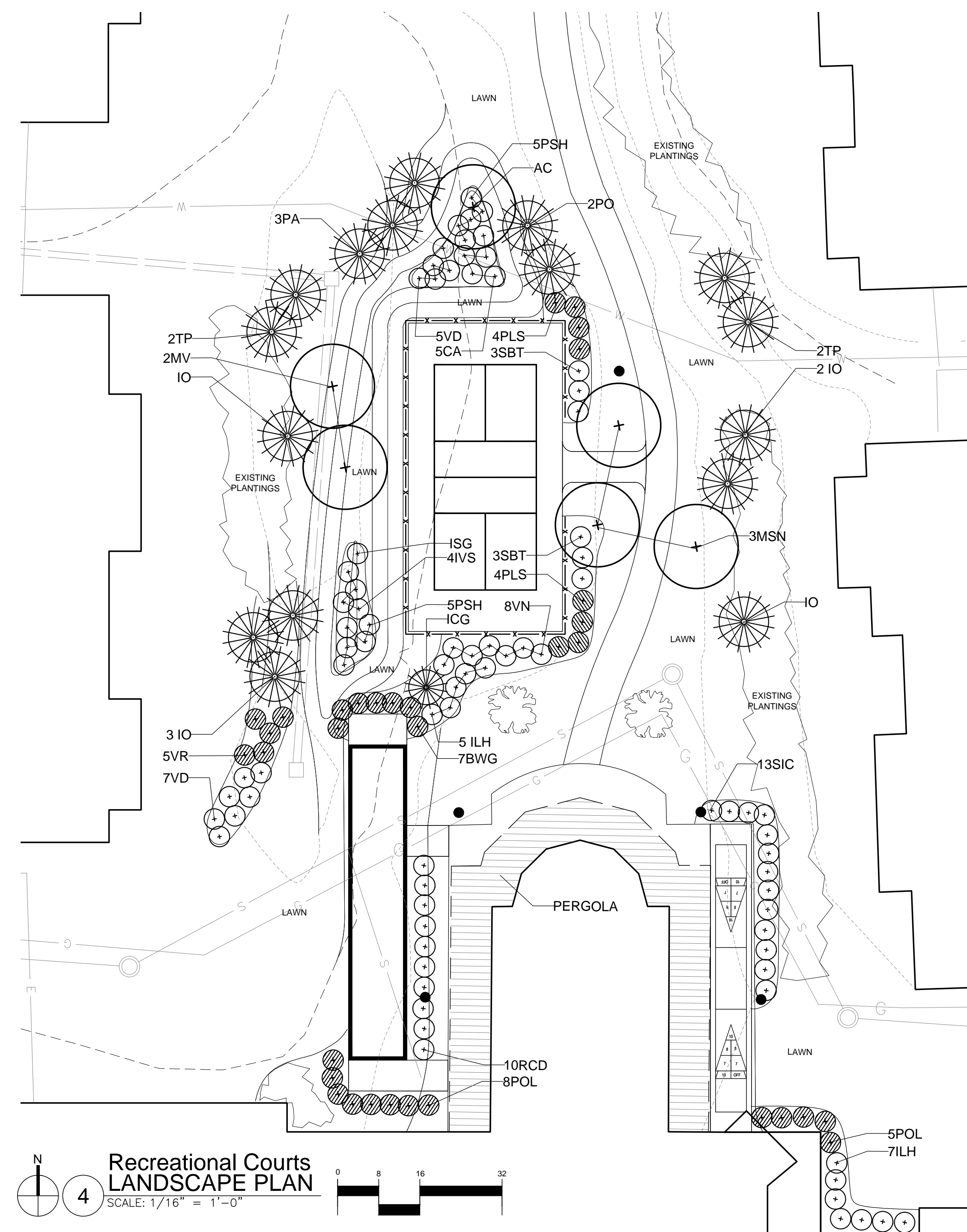
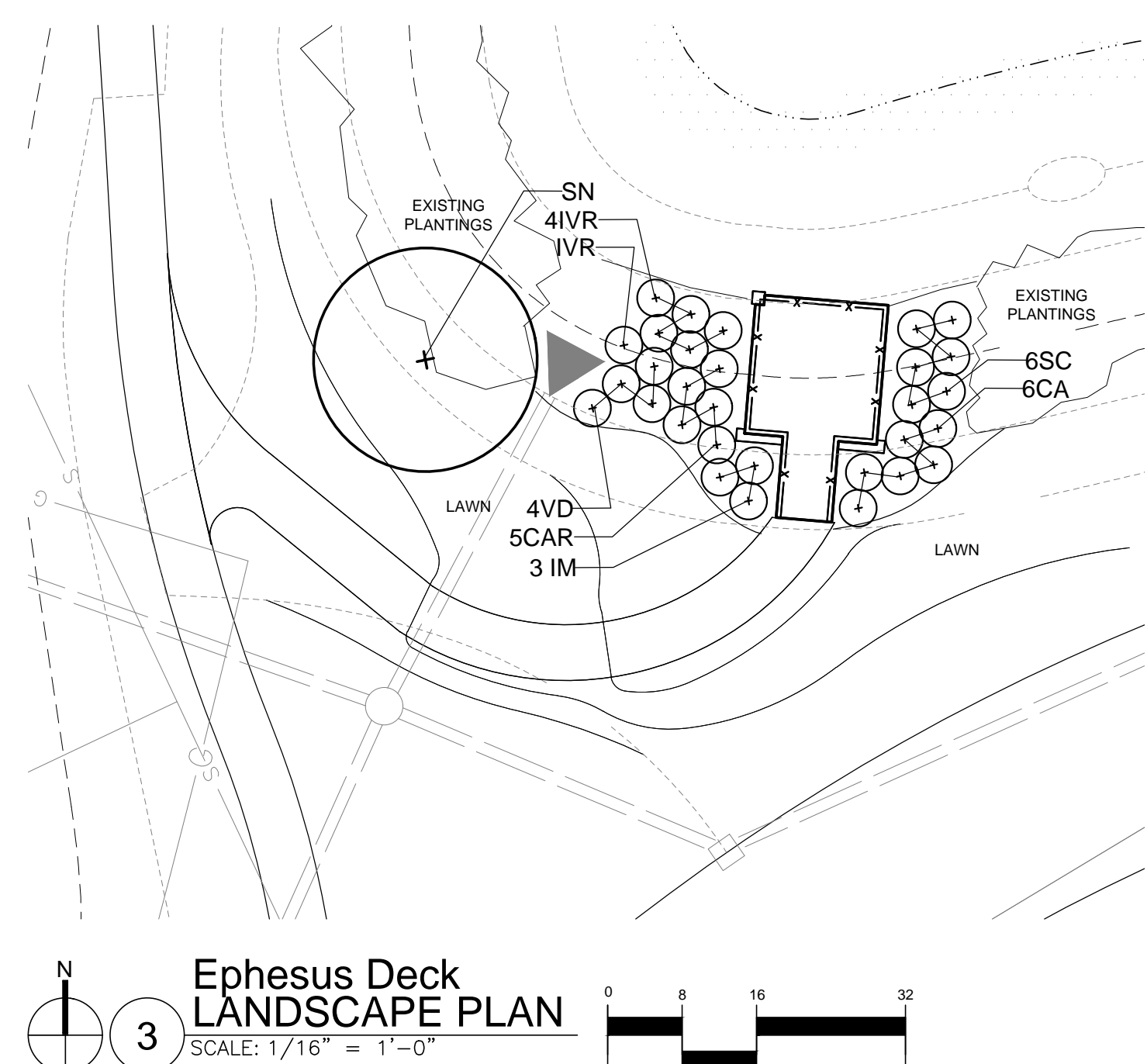
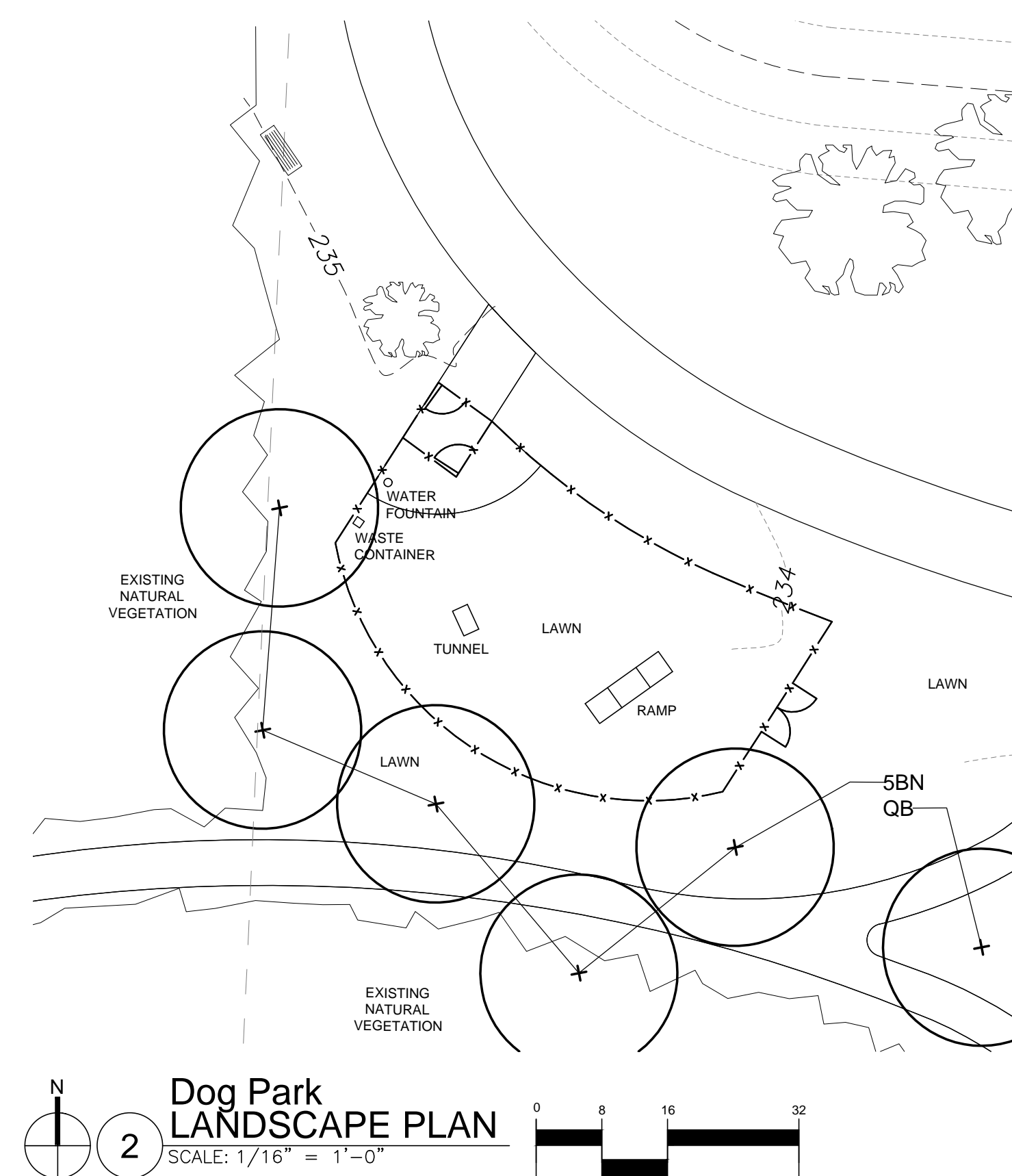
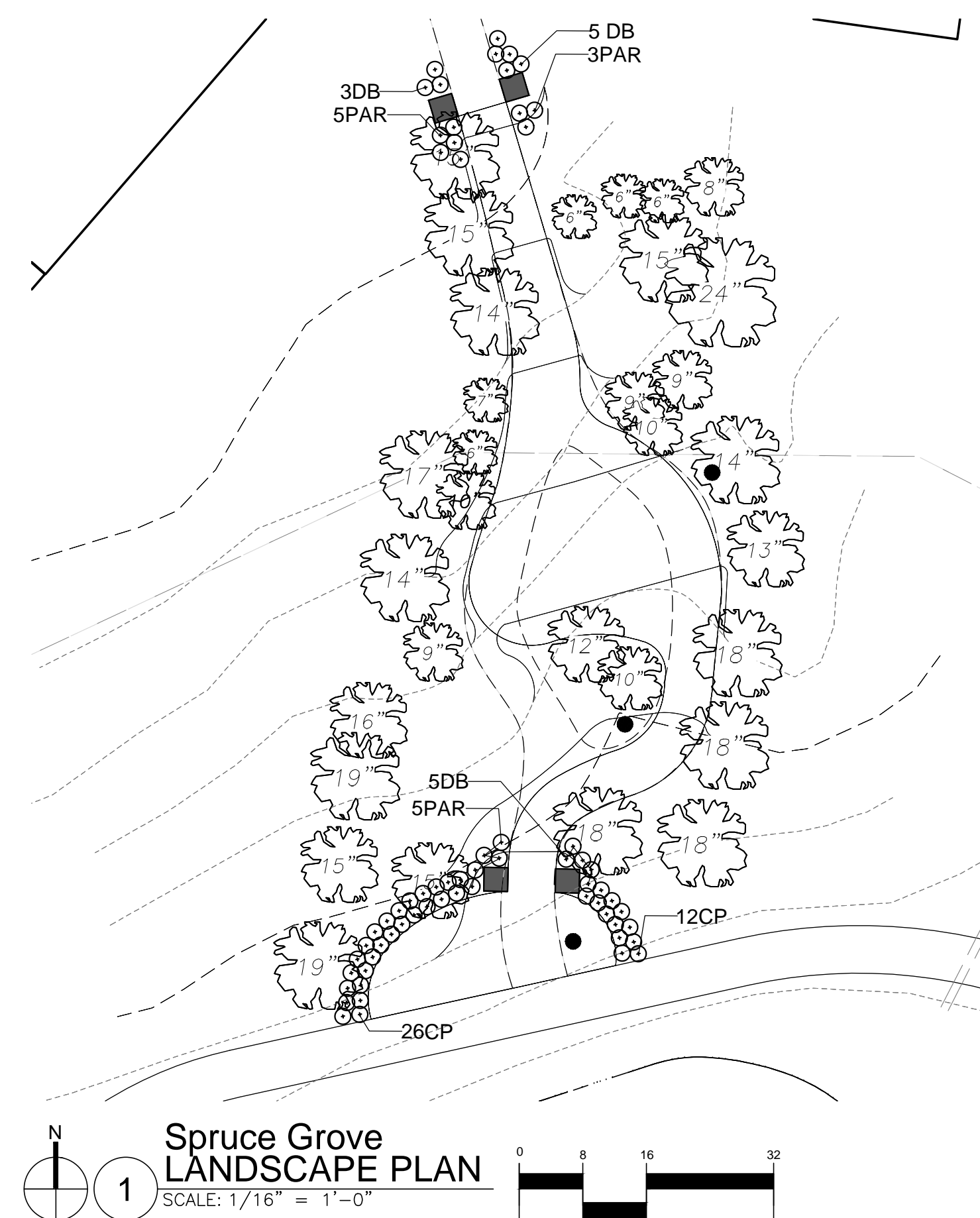
Drawing Title:

CLUB LOCKER ROOMS
EXTERIOR
ELEVATIONS

A0.5

DAVID S. FOWLES, AIA
JOSEPH M. SCANLON, AIA

DAVID S. FOWLES, AIA
JOSEPH M. SCANLON, AIA



**Fellowship
Village**

Renovations, Additions and Outdoor Amenities

8000 Fellowship Road
Bernards Township, Somerset County
New Jersey

Block 9301, Lot 33

Issued for:
SITE PLAN APPLICATION
Date: 11.23.2020


ISSUES	REVISIONS


Proj. No: 1161.07.33/43

Drawing Title:

LANDSCAPE PLAN

L0.0


DAVID S. FOWLES, AIA
NJ-21A07161700


JOSEPH M. SCANLON, AIA
NJ-21A11666 PA-RA09944-X

PLANT MATERIAL

- ## PROTECTION

- ## UTILITIES

2. The contractor shall review architectural/engineering plans to become familiar with grading and surface utilities.

6. Should location of trees be within 5' of underground utilities, relocate said trees to a minimum of 5' from ball to utilities.

4. All planting backfill soils shall receive certified weed-free fully composted leaf mold soil amendment at a rate of 33% (1 part compost to 2 parts planting soil). Submit compost certification & product data prior to ordering for approval.

17. Trees and shrubs must be planted only when the soil is frost- free and friable.

1. Areas designated topsoil & seed shall receive minimum 6" of topsoil and specified seed mix. Lawns over 2:1 slope shall be protected with erosion control fabric.

2. All unbacked

5. See seeding specifications for lawn restoration and new seeding information.
6. Unless otherwise noted, all disturbed landscape areas not being planted, shall be seeded

7. Seeding rate shall be 8 lbs. Per 1,000.00 sq. ft.
8. All seeding shall be hydro-seeded with the following engineered wood fiber hydromulch as

- per manufacturer's specifications. Submit sample & product data for approval prior to ordering.

9. Alternate bid - unless otherwise noted, all disturbed landscape areas not being planted or mulched, shall be sodded with a turf-type tall fescue blend sod product.

10. Contractor shall submit source, sample, and certified seed analysis for landscape architect approval prior to ordering.

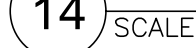
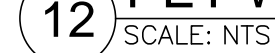
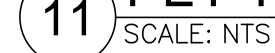
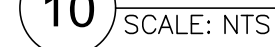
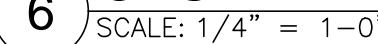
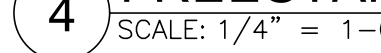
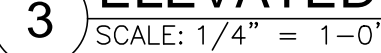
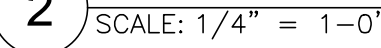
TREE PROTECTION

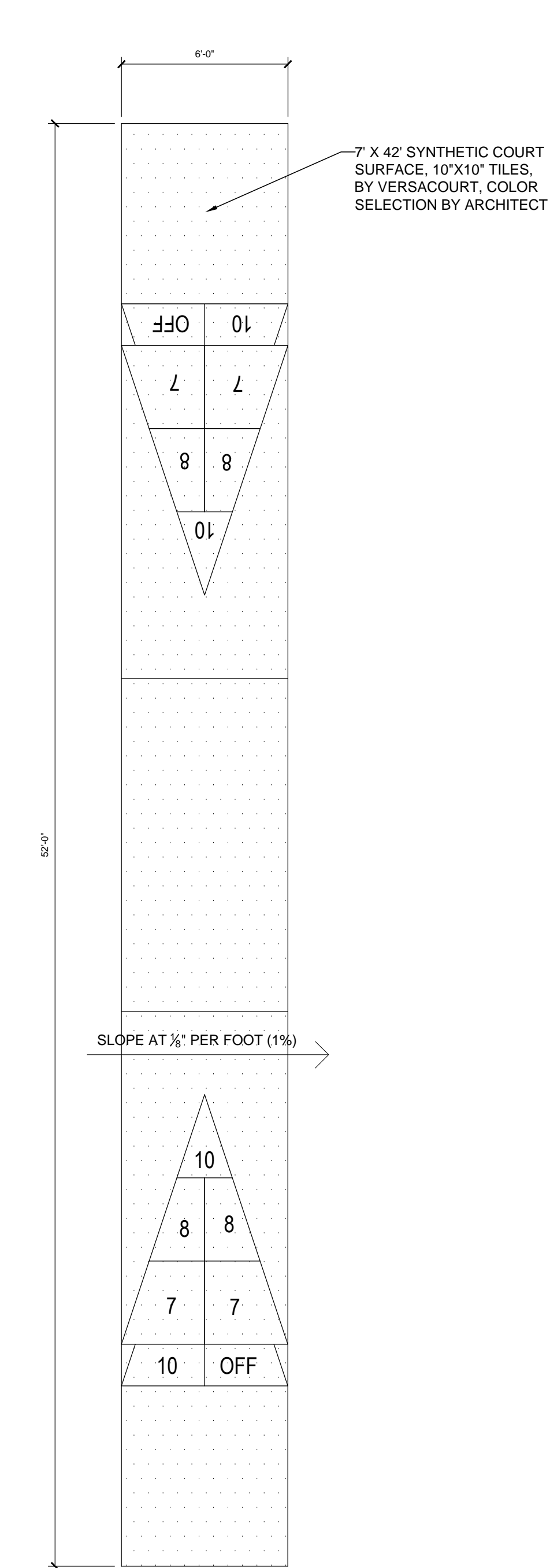
1. Existing trees to remain shall be protected with temporary construction fence. Erect fence at edge of the tree dripline prior to start of construction.
2. Contractor shall not operate vehicles within the tree protection area. Contractor shall not store vehicles or materials, or dispose of any waste materials, within the tree protection area.
3. Damage to existing trees caused by the contractor shall be repaired by a certified arborist at the contractor's expense.
4. No unauthorized tree removals, unless as specified on contract documents, approved by local municipalities, and architect.
5. Edge of woods clearing
6. Existing trees to remain shall be protected with temporary erosion control fence and hay bale barrier. Erect barrier at edge of the earthwork cut line prior to tree clearing. Lay out this line by field survey.



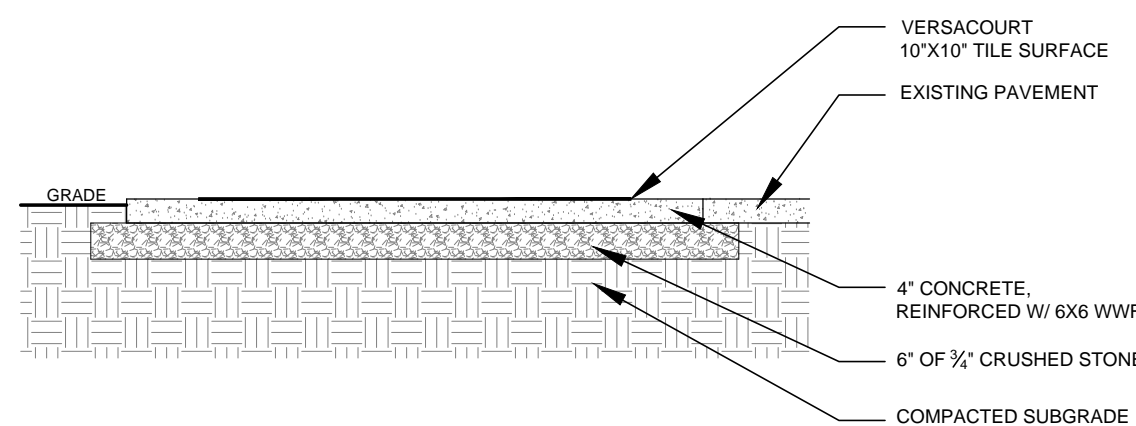


1) SCALE: 1/4" = 1'-0"

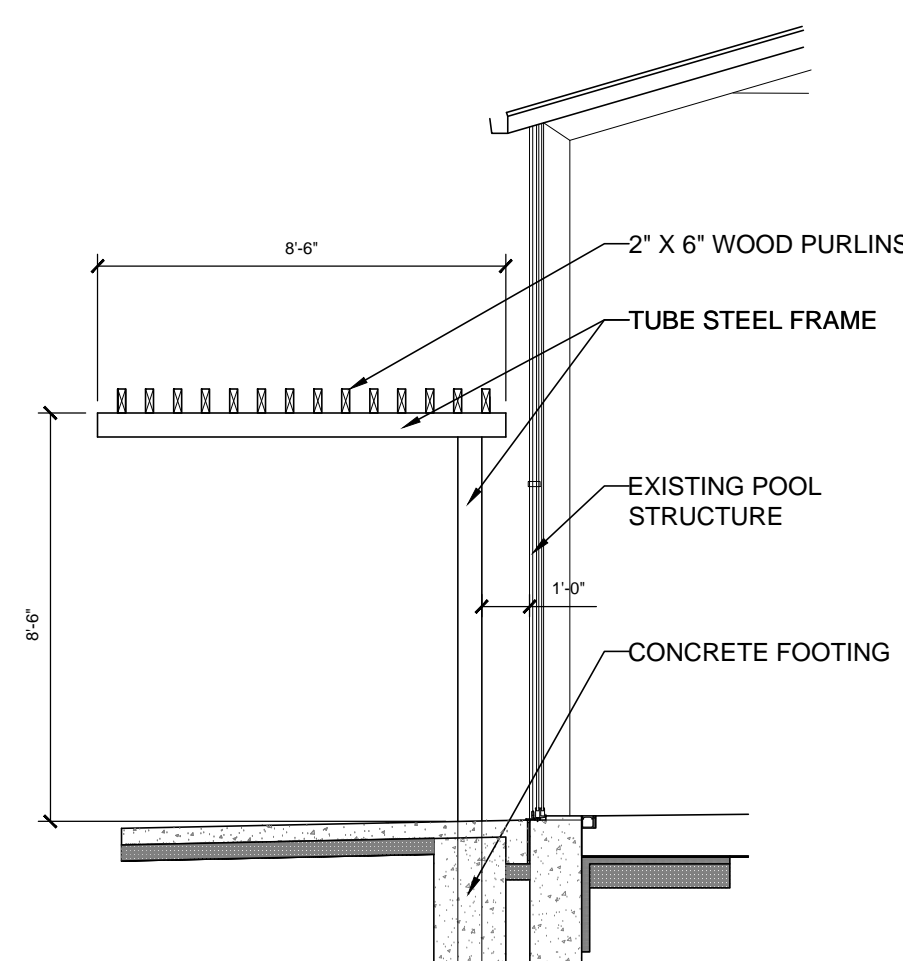




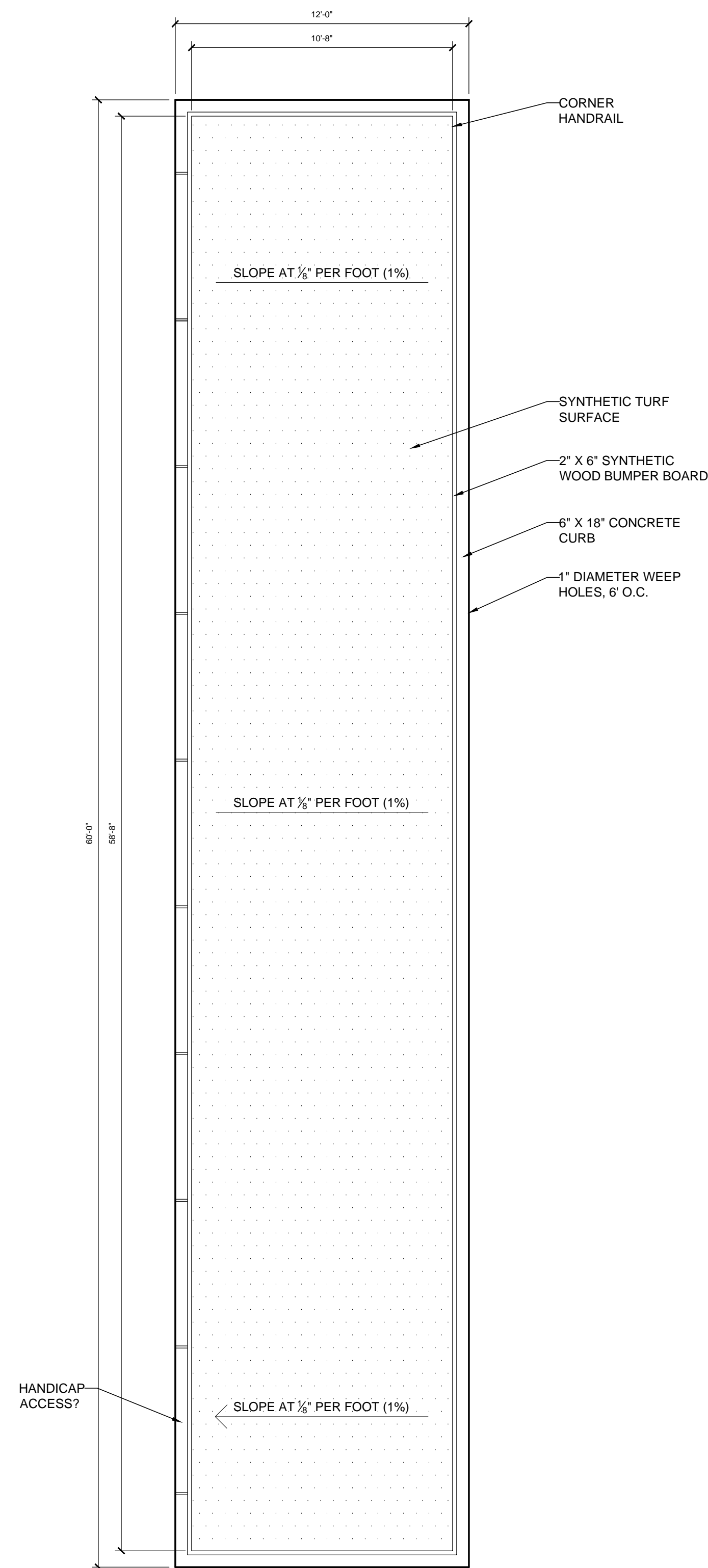
1 SHUFFLEBOARD COURT PLAN DETAIL
SCALE: 1/4" = 1'-0"



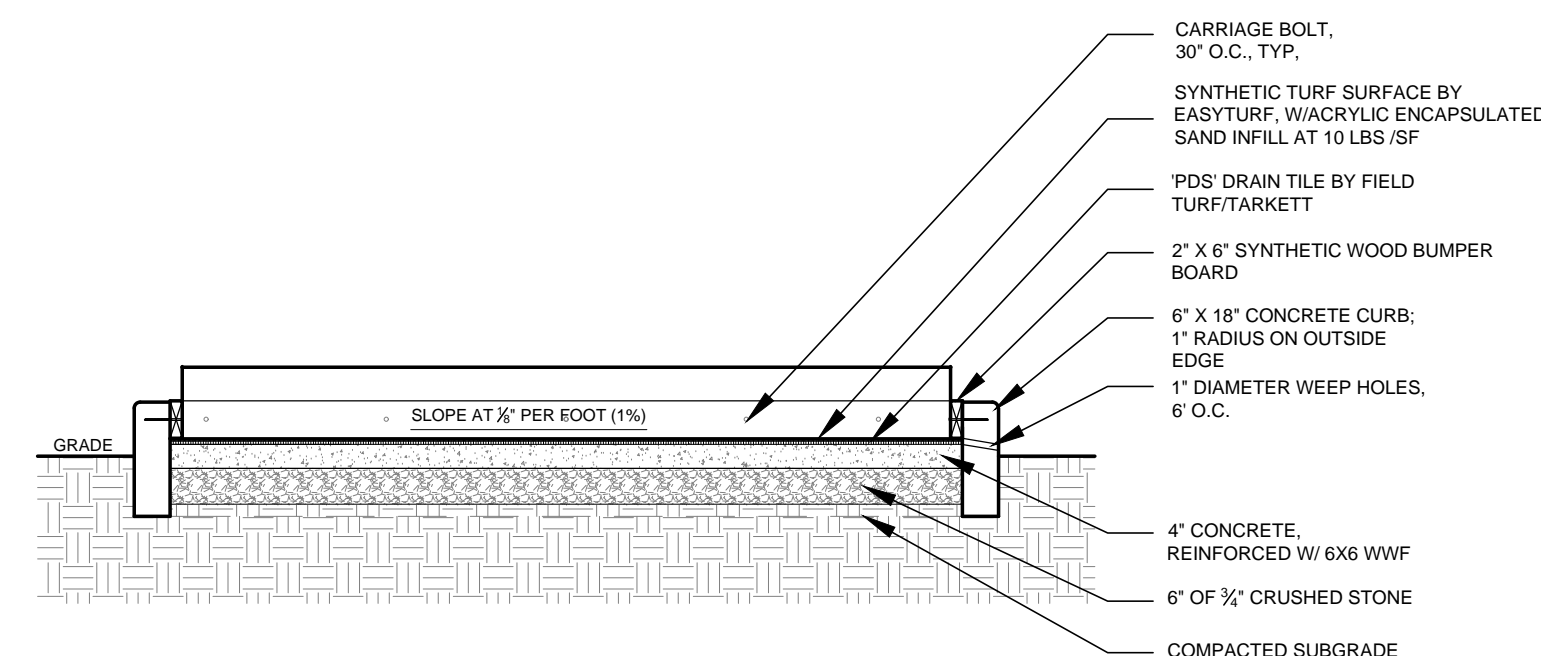
2 SHUFFLEBOARD COURT SECTION DETAIL
SCALE: 3/8" = 1'-0"



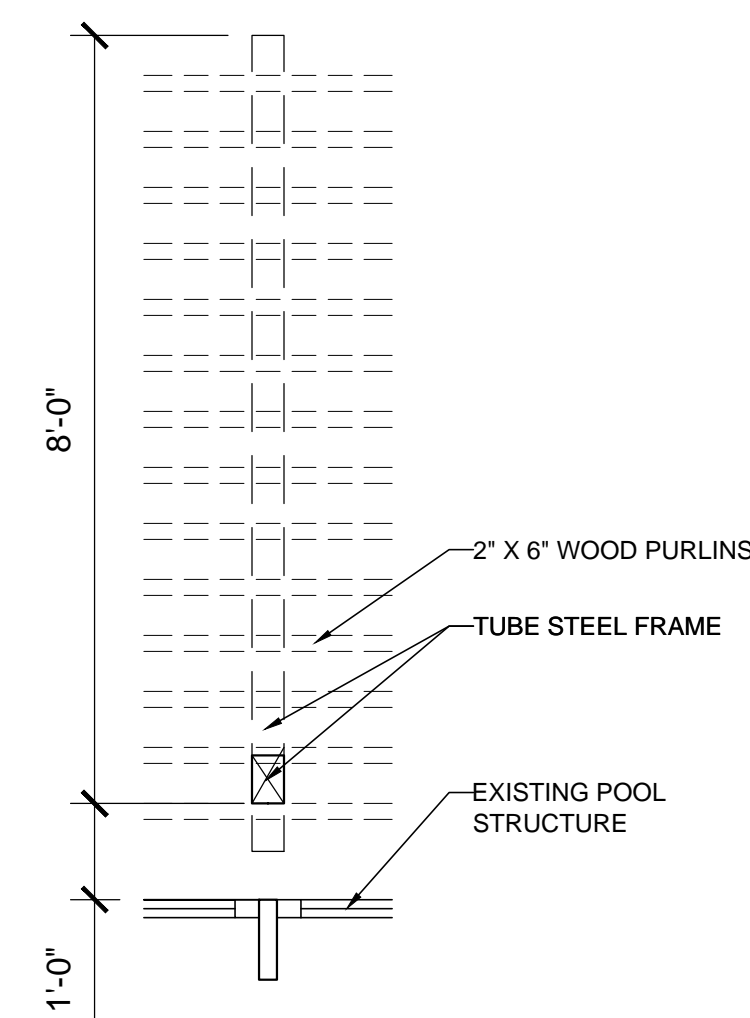
5 PERGOLA SECTION DETAIL
SCALE: 1/4" = 1'-0"



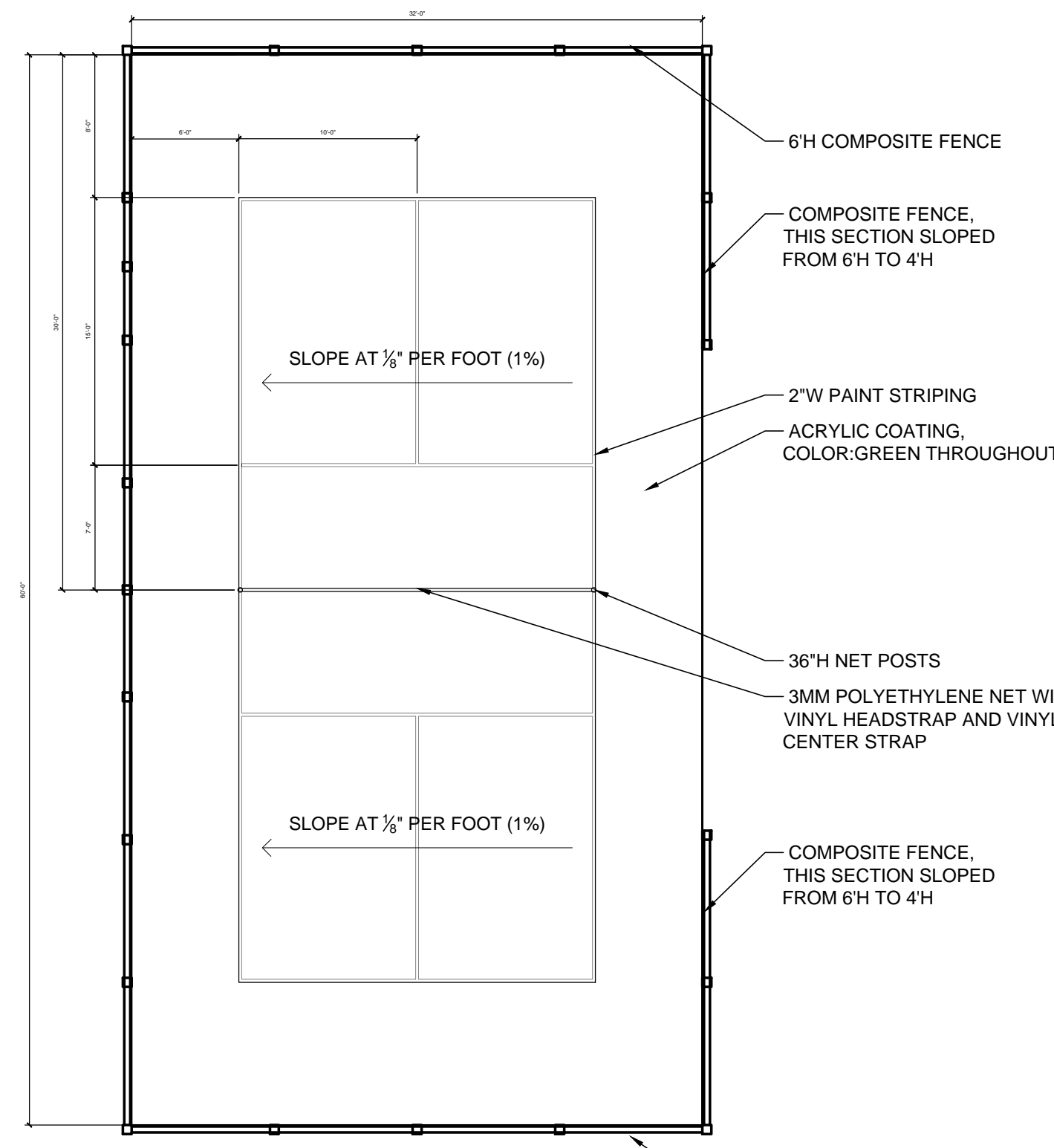
3 BOCCE COURT PLAN DETAIL
SCALE: 1/4" = 1'-0"



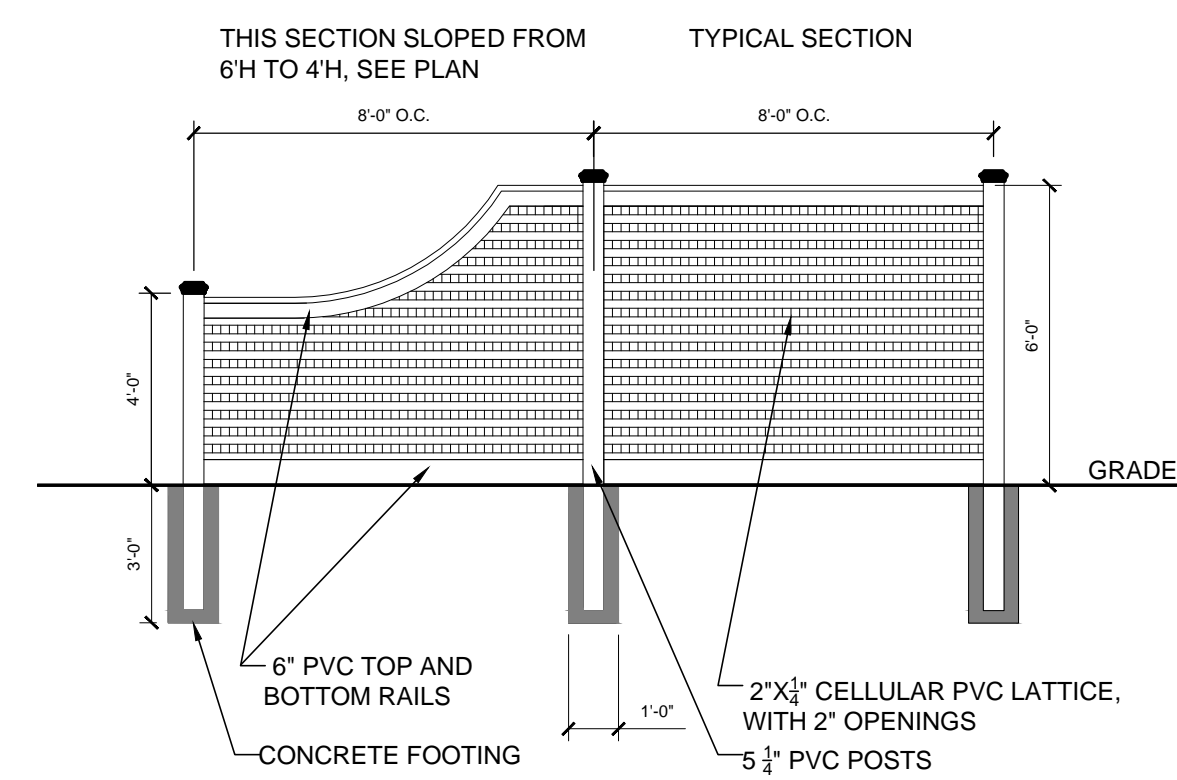
4 BOCCE COURT SECTION DETAIL
SCALE: 3/8" = 1'-0"



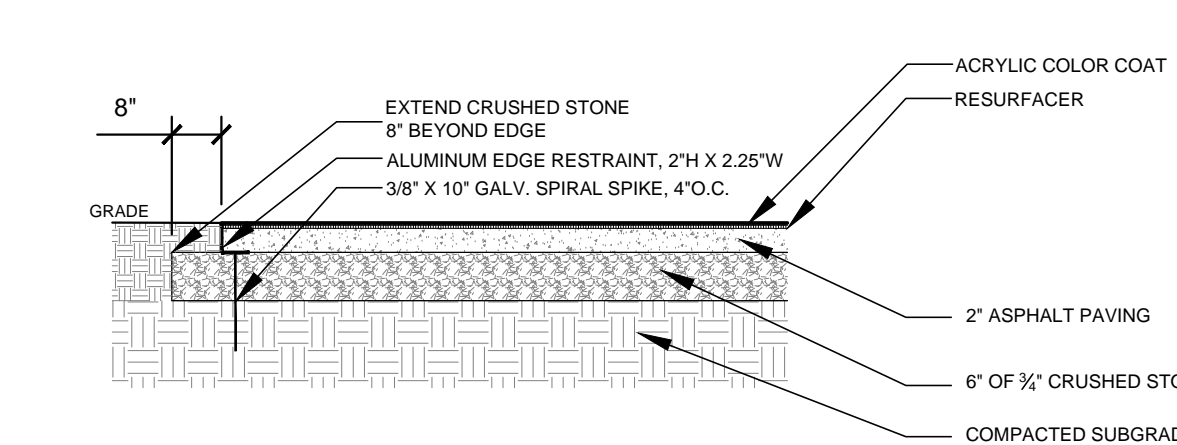
6 PERGOLA PLAN DETAIL
SCALE: 1/4" = 1'-0"



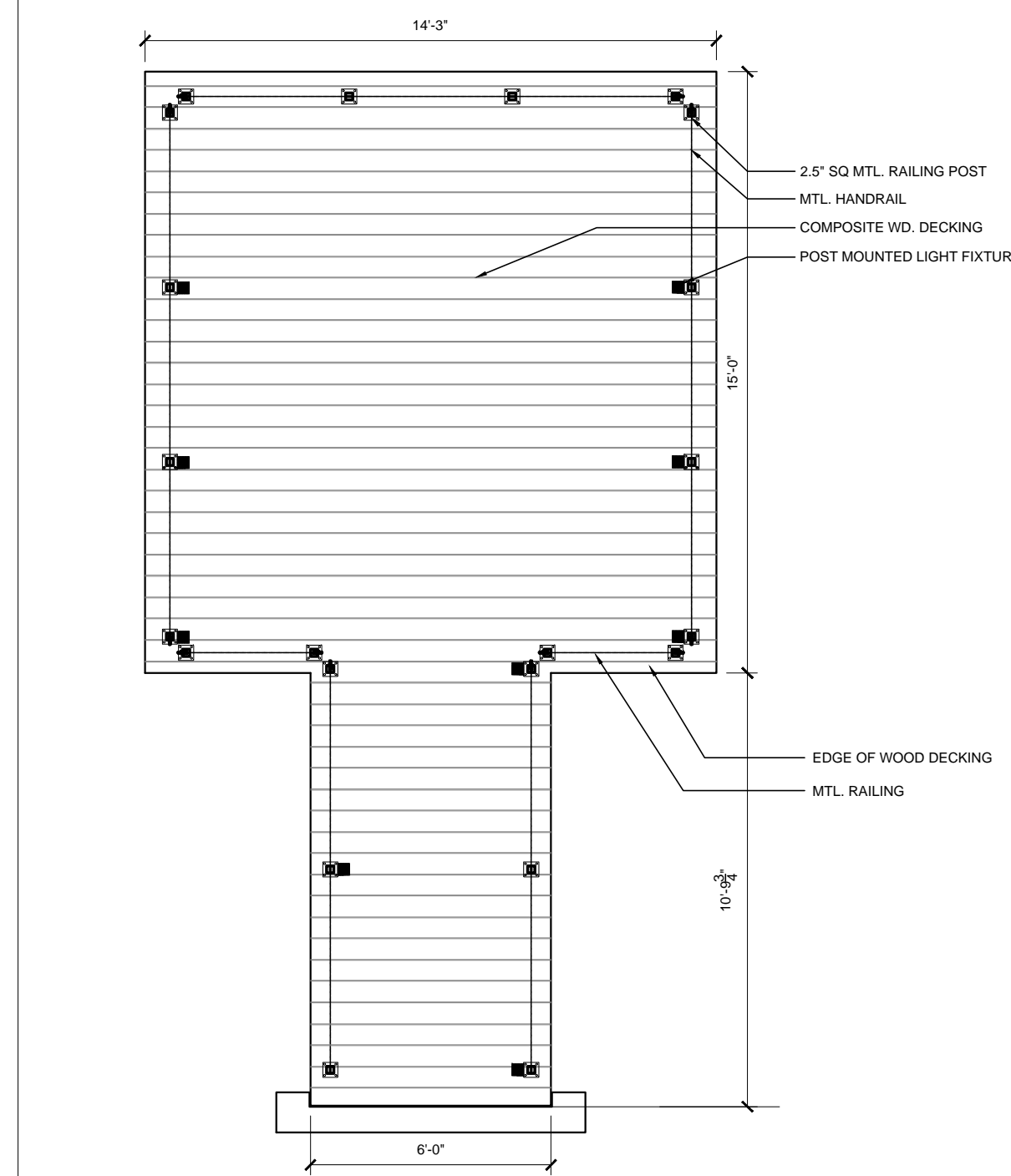
7 PICKLEBALL COURT DETAIL
SCALE: NTS



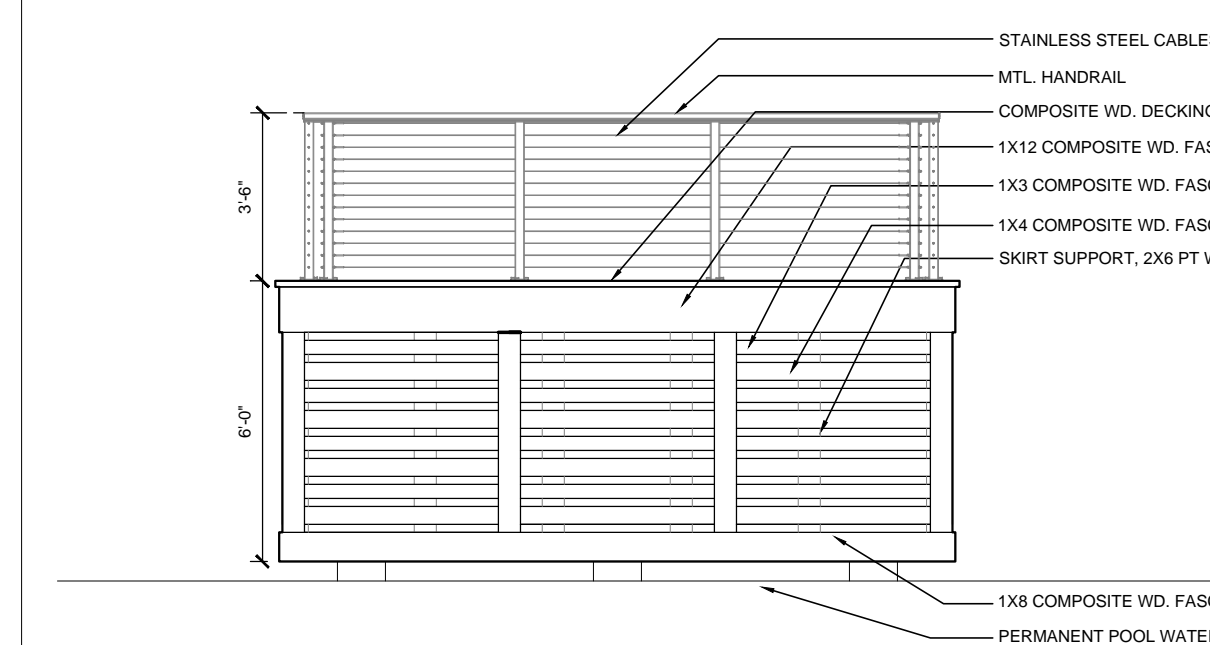
8 PICKLEBALL COURT FENCE DETAIL
SCALE: NTS



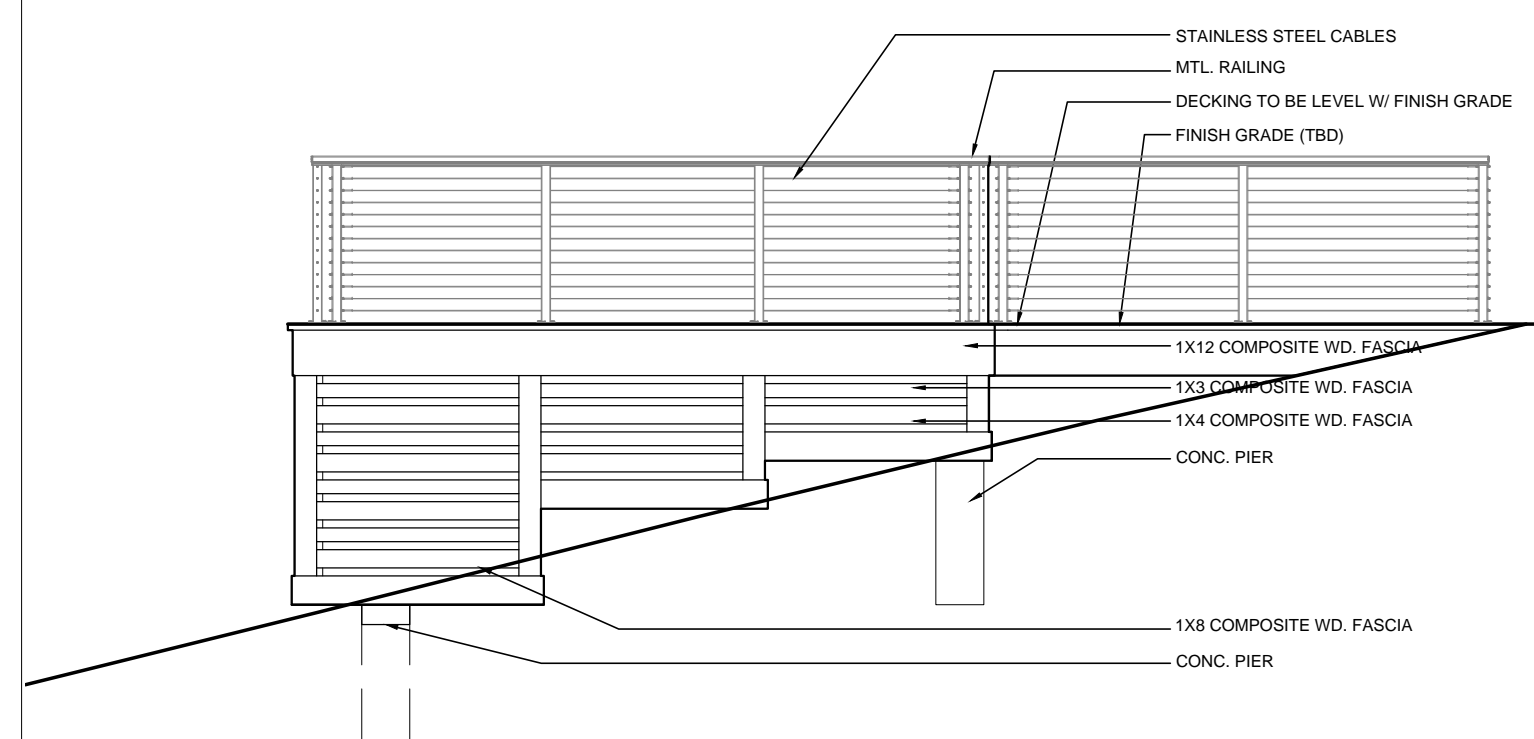
9 PICKLEBALL COURT DETAIL
SCALE: NTS



10 EPHEBUS POND DECK - PLAN
SCALE: 1/4" = 1'-0"



11 EPHEBUS POND DECK - FRONT ELEVATION
SCALE: 1/4" = 1'-0"



12 EPHEBUS POND DECK - TYPICAL SIDE ELEVATION
SCALE: 1/4" = 1'-0"



SPECIFICATIONS	
Certifications/Qualifications	
Prop65	Yes
	www.kichler.com/warranty
Dimensions	
Height	6.00"
Length	1.50"
Width	1.50"
Electrical	
Operating Voltage	12 VAC
Range	
Voltage	12V
Mounting/Installation	
Lead Wire Length	72
Location Rating	Wet

FIXTURE ATTRIBUTES	
Housing	
Primary Material	BRASS
Product/Ordering Information	
SKU	15066CBR
Finish	Centennial Brass
UPC	783927586344

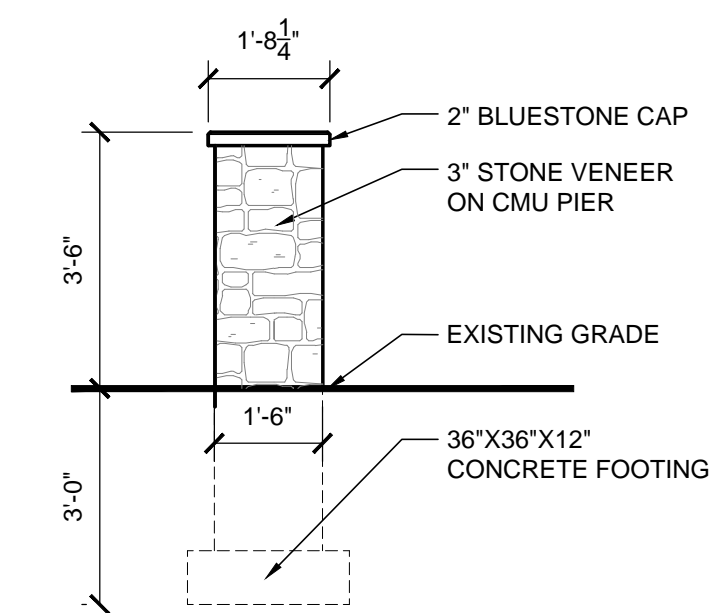
EPHEBUS POND DECK POST MOUNTED LIGHT FIXTURE	
SCALE: NTS	
1.5" SQ x 6.5" L DOWNWARD FACING LIGHT FIXTURES MOUNTED ON RAILING POSTS AT 36" ABOVE DECK SURFACE; 6.5 WATT XENON BULB	

ALSO IN THIS FAMILY	
----------------------------	--

EPHEBUS POND DECK POST MOUNTED LIGHT FIXTURE	
SCALE: NTS	
1.5" SQ x 6.5" L DOWNWARD FACING LIGHT FIXTURES MOUNTED ON RAILING POSTS AT 36" ABOVE DECK SURFACE; 6.5 WATT XENON BULB	

13 EPHEBUS POND DECK POST MOUNTED LIGHT FIXTURE
SCALE: NTS

14 SPRUCE GROVE MASONRY PIER DETAIL
SCALE: 1/4" = 1'-0"



14 SPRUCE GROVE MASONRY PIER DETAIL
SCALE: 1/4" = 1'-0"

ISSUES	REVISIONS