

Michelle Russo

From: RvLarch <rvlarch@aol.com>
Sent: Thursday, December 15, 2022 2:16 PM
To: Michelle Russo
Cc: Peter Miley
Subject: Re: 52 W Main Street

RECEIVED

NOV 15 2022

Zoning Board of Appeals
Village/Town of Mount Kisco

Michelle,

On behalf of my client, Nat Cambereri (52 N Main St.) I request the application in front of the ZBA be held over to the January meeting.

thank you,

Roger

Roger van Loveren, AIA
RvL Architecture
(914) 234 7823 off
(914) 234 7534 fax
(914) 588 5309 mobile

-----Original Message-----

From: Michelle Russo <planning@mountkisco.ny.gov>
To: RvLarch <rvlarch@aol.com>
Cc: Peter Miley <pmiley@mountkisco.ny.gov>
Sent: Wed, Nov 9, 2022 2:39 pm
Subject: RE: 52 W Main Street

Thank you!

Michelle K. Russo

Planning & Zoning Secretary
Village/Town of Mount Kisco
104 Main Street
Mount Kisco, NY 10549
(914)864-0022 (direct)
(914)864-1085 (fax)

From: RvLarch <rvlarch@aol.com>
Sent: Wednesday, November 9, 2022 2:39 PM
To: Michelle Russo <planning@mountkisco.ny.gov>
Cc: Peter Miley <pmiley@mountkisco.ny.gov>
Subject: Re: 52 W Main Street

Here you go.

Roger

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November 26, 2022

Via E-Mail: RGaudioso@snyderlaw.net

Robert D. Gaudio, Esq.
Snyder & Snyder, LLP
94 White Plains Road
Tarrytown, New York 10591

RE: Application of Homeland/Verizon Wireless ("Applicants" for Special Permit,
Site Plan and Steep Slope Permits and Application for Variances ("Applications")
180 So. Bedford Road, Mt Kisco NY (P/O Tax ID # 80.44-1-1)

Dear Mr. Gaudio:

The purpose of this letter is to formally document that the parties to agree to extend the regulatory time frames set forth in the Declaratory Ruling dated November 18, 2009 adopted by the Federal Communications Commission ("FCC"), WT Docket No. 08-165 and/or 47 CFR §1.6003 (collectively the "Orders") (also referred to as the "Shot Clock").

Previously the parties agreed to extend the Shot Clock to November 25, 2022. The parties hereby agree to further extend the Shot Clock to January 27, 2023. The parties further agree that the foregoing extension of time will continue to be used by the Village to determine whether to enter into conditional lease with Homeland for an area within Leonard Park. During the extension period, the Planning Board and Zoning Board shall continue to adjourn the public hearing dates for such application, except as needed to take action on the application within the shot clock period on notice to the applicant. Notwithstanding the aforesaid, it is anticipated that The Planning Board will entertain the application on December 13th, 2022 for continued review and public comment, and the Zoning Board will entertain the application on December 20th, 2022.

Robert D. Gaudio, Esq.
Snyder & Snyder, LLP
November 26, 2022
Page 2

During this extension, the Board of Trustees will make final determinations on final lease terms and a final decision on whether to enter into a conditional lease for the Leonard Park site. Additionally, the parties will continue to negotiate final provisions with Homeland.

Sincerely,

Whitney Singleton

Whitney Singleton, as counsel to and on behalf
of the Village/Town of Mount Kisco, Planning
Board, Zoning Board of Appeals and Building
Inspector

Extension Agreed to:

**Homeland Towers, LLC and
New York SMSA Limited Partnership d/b/a Verizon Wireless**

By:



Robert D. Gaudio, as attorney

MEMORANDUM

TO: Wayne Spector, Chairman of the ZBA
Members of the Zoning Board of Appeals
FROM: Rex M. Pietrobono
DATE: December 13, 2022

RE: 180 South Bedford Road, Homeland Towers, LLC

I must ask your Board to act with fairness and equity in carrying out your sworn duties to safeguard the Mount Kisco Code protections afforded in its provisions with regard to residential buffers and setbacks; specifically, as it relates to our property located at 2 Sarles Street, Mount Kisco, New York 10549.

Two sides of our property are contiguous with the 25-acre parcel at 180 South Bedford Road. It is out of that entire 25-acre parcel that Homeland selected their approximate 4,000 sq ft site which is adjacent to our home, the Marsh/Preserve, and South Bedford Road. Homeland's cell tower and base station are presently proposed at approximately the following distances:

- 74 ft from base compound to our family's westerly property line
- 109 ft from cell tower to property line
- 353 ft from base compound to residential dwelling
- 388 ft from cell tower to residential dwelling

The vast bulk of the record of ongoing opposition by my family, The Marsh Sanctuary /Preserve, and others, has been made before the Planning Board as part of the ongoing "Continued Public Hearing." This Memorandum derives from the "tolling letter" between the Village Attorney and Homeland's Counsel (Planning Board 12/13/22 agenda packet, pages 169-170) which expressly states **". . . the Zoning Board will entertain the [Homeland] application on December 20, 2022."**

It is no exaggeration to contend that Homeland Towers, LLC is seeking your permission to destroy my family's collective welfare by eviscerating the codified protections relied upon by us at the time of our acquisition of this property in 1996, for subsequent decisions by us to make vast improvements to our property, reliance's made for our future here, as well as our family's generations to come. It is one thing for an applicant to seek a reduction of a residential buffer zone from 1,000 ft to, say, 500 ft—it is quite another to request your Board to excessively reduce it to zero: for a commercial venture under what might be viewed at best as a quizzical amendment to allow such a use in the CD Zoning District so as to create a private if not a public nuisance.

A plaintiff asserting a claim for a private nuisance must establish: (1) an interference substantial in nature, (2) intentional in origin, (3) unreasonable in character, (4) with a person's property right to use and enjoy land, (5) caused by another's conduct in acting or failure to act. *Curry v. Matranga*, 194 A.D.3d 1011, 1012–13, 144 N.Y.S.3d 594, 595 (2d Dep't 2021), quoting *Copart Indus. v. Consolidated Edison Co. of N.Y.*, 41 N.Y.2d 564, 570, 394 N.Y.S.2d 169, 362 N.E.2d 968 (1977); see *Massaro v. Jaina Network Sys., Inc.*, 106 A.D.3d 701, 703, 964 N.Y.S.2d 588 (2d Dep't 2013).

As laid out below, the “interference” from a variance at that location would be “substantial in nature” or “unreasonable in character.” Homeland leased their proposed site knowing full well it would be battling to push its square peg into a round legal hole without any thought or respect for the Village Code or the neighboring properties.

The ZBA Should Deny Homeland an Area Variance:

The Area Variance Balancing Test

Section 267-b(3)(b) of the New York State Town Law, and Article XII, sets forth the following “balancing test” to be applied by the Zoning Board in its review of this application for property line variances to accommodate the cell tower proposed here.

In making its determination, the zoning board of appeals shall take into consideration the detriment to the health, safety and welfare of the neighborhood or community as weighed against the benefit to the applicant if the variance were granted. In making such determination, the Board shall consider:

- (1) whether an undesirable change will be produced in the character of the neighborhood or a detriment to nearby properties will be created by the granting of the area variance;
- (2) whether the benefit sought by the applicant can be achieved by some method, feasible for the applicant to pursue, other than an area variance;
- (3) whether the requested area variance is substantial;
- (4) whether the proposed variance will have an adverse effect or impact on the physical or environmental conditions in the neighborhood or district; and
- (5) whether the alleged difficulty was self-created, which consideration shall be relevant to the decision of the board of appeals, but shall not necessarily preclude the granting of the area variance.

The Mount Kisco Code 110-43 Powers and Duties, provides:

B. Variances.

- (1) The Board of Appeals shall have the power and duty to authorize, upon appeal made within 30 days of a denial of a building permit, change of use permit or special permit, a variation from the terms of this chapter as will not be contrary to the public interest where, owing to exceptional and extraordinary circumstances, there are practical difficulties or unnecessary hardships in the way of carrying out the strict letter of this chapter, subject to terms and conditions to be fixed by the Board of Appeals; provided, however, that no such variance shall be granted unless said Board finds that:

(a) There are practical difficulties in the physical development of the parcel, fully described in the findings of said Board, applying to the land or building for which the variance is sought, which conditions are peculiar to such land or building **and have not resulted from any act of the applicant or any prior owner; and**

(b) For reasons fully set forth in the findings of said Board, the aforesaid circumstances or conditions are such that the strict application of the provisions of this chapter would create unnecessary hardships and thus deprive the applicant of the reasonable use of such land or building and that the granting of the variance is necessary for the reasonable use of the land or building **and that the variance as granted by said Board is the minimum variance that will accomplish this purpose.**

(2) Other conditions relating to the issuance of variances.

(a) The granting of the variance under such conditions as said Board may deem necessary or desirable to apply thereto shall be in harmony with the general purpose and intent of this chapter **and shall not represent a radical departure therefrom, shall not be injurious to the neighborhood and shall not change the character thereof and shall not be otherwise detrimental to the public welfare.**

(b) In all cases where the Board of Appeals grants a variance from the strict application of the requirements of this chapter, **it shall be the duty of such Board to attach such conditions and safeguards as may be required in order that the result of its action may be as nearly as possible in accordance with the spirit and intent of this chapter.**

(Emphasis added.)

Homeland's Site Selection is a Self-Created Hardship

Homeland's proposed space is a postage stamp size lot in comparison to the entire 25-acre parcel within which its proposed site sits. It is a proposed location that astoundingly is in violation of codified buffers, setbacks, steep slopes, adverse visual impacts to surrounding areas, expanded "driveway," and excessive removal of trees, among other objectionable aspects.

Homeland Towers, LLC selected this 180 SBR location—it is a **self-created hardship**. By their applications before the ZBA and the Planning Board, this applicant seeks to shift its own responsibility for its lack of due diligence and limited site selection, onto the Village of Mount Kisco and the neighboring properties.

Homeland has decades of specialized experience in this singular area of law and regulations. Homeland knew full well what it was getting into before entering its lease(s). It's worth noting that Homeland has yet to produce its lease(s) to the Planning Board despite its demand for same. To unabashedly push its untenable proposal, Homeland broadly wields the Telecommunications

Act as both sword and shield. However, the Village of Mount Kisco does not have to yield to such heavy-handed statutory emphasis. The Village has enough substantive materials and presentations in the record made before the Planning Board during the last 3 years to deny Homeland's application for a variance on the merits.

Alternative Locations on 25-acre Parcel Were Apparently Available to Applicant:

Alternative locations on this parcel apparently were available to Homeland. But rather than provide the requested actuals lease(s), the applicant has refused to do so with its oft repeated refrain "it's irrelevant." Homeland even refused to answer the straight-forward pertinent question as to whether there were alternative locations on this parcel available to Homeland prior to the presently proposed site near South Bedford Road.

The cell tower appeared on an early solar farm filing and was proposed to be located at the northeast corner much further up the driveway from its present location near SBR. See also attached Incite Engineering map filed as part of SCS application on or about July 2, 2020, showing **"Potential future Homeland Tower Lease Parcel (4,000 SF)"** up the driveway at a different location than the present one, again, at the **northeast corner** of the parcel.

Furthermore, Klaus Wimmer, Regional Manager for Homeland Towers, LLC, acknowledged in his August 14, 2020, letter to the Mount Kisco Planning Board (last page, 2nd through 4th paragraphs) that while the parcel met the coverage objectives, he himself appears to take credit for selecting the current SBR location:

"Having identified a leasable property [180 South Bedford Road] that also meets the coverage objectives, I evaluated the best location on the property to mitigate the visual impact and also maximize the setback requirements to residential dwellings, considering the disturbance, environmental impact, constructability and availability. The proposed location meets these criteria as the existing trees will shield the wireless service and equipment compound [requiring a high concrete pad due to the steep slopes in that spot to establish a 'finished grade' and then erect the 145' monopole above that height] from adjacent residential dwellings and along Route 172 through existing tree lines. Please see the visual Assessment Report by Saratoga Associates as part of this application.

Additionally, and in order to mitigate the visual impact we are proposing that the facility be constructed using modern stealth tree technologies and antenna "socks" to maximize the integration of the facility with the surrounding mature trees.

Finally, for the reason above and given the limitation of siting possibilities and the environmental and visual impact of the proposed facility would cause at another location on the property **I determined that the proposed location would be best suited for the proposed personal wireless service facility.**" (Emphasis and bracketed text added.)

Klaus Wimmer, Regional Manager for Homeland Towers, LLC, “Alternative Site Report” attached hereto dated August 14, 2020, last page, par. 2, 3 and 4. (Emphasis added.)

It cannot be honestly contended that Homeland’s proposed site at 180 SBR is the least intrusive location out of the entire 25-acre parcel. Homeland’s contention that it was limited solely to that site was its choice to proceed at its own peril. Moreover, other locations off-site should have been more fully explored as part of its due diligence.

Interestingly, while the whole 25-acre property “meets the coverage objectives”, the present location chosen by Mr. Wimmer makes no mention of *least intrusive means* for filling any gap in coverage for the area—only aesthetic and popularism considerations. Homeland did not leave that decision up to the Planning Board, but instead decided it for themselves and have ever since consistently claimed it ‘*is*,’ not ‘*was*,’ the only spot available to them. Homeland’s convenient and self-limiting transaction with the landlord does not automatically equal the least intrusive location on the 25-acre parcel. It is merely the consequence of their own self-governance and self-interest.

Homeland’s assertion that its proposed site is the least restrictive site is further contradicted by a possible cell tower having appeared at a different location on the parcel previously. Also, Homeland’s claim to be strictly limited to its site has been recently belied by its seeking off-site parking outside of their situs (see below) alongside our property line and well within the buffer zone where parking is uniformly prohibited. This means that Homeland can access additional space when convenient for them and yet deny such availability when convenient.

Homeland Submissions Propose Detached Parking Spaces Beyond its 4,000 sq ft Site

The still-pending solar application before the Planning Board with its proposed parking for its solar project, as well as surprisingly supportive and participative (*via* sub-lease, consent, or other agreement) reflected with the August 10, 2021, Homeland Towers stealthy submission seeking separate and detached ‘off-site’ parking situated entirely outside of their own 4,000 sq ft site and wholly within the supposed exclusive solar leased area in the northern buffer zone. As you are aware, our Mount Kisco Code §110-59 specifically prohibits, among other encroachments, parking within a buffer zone:

“BUFFER

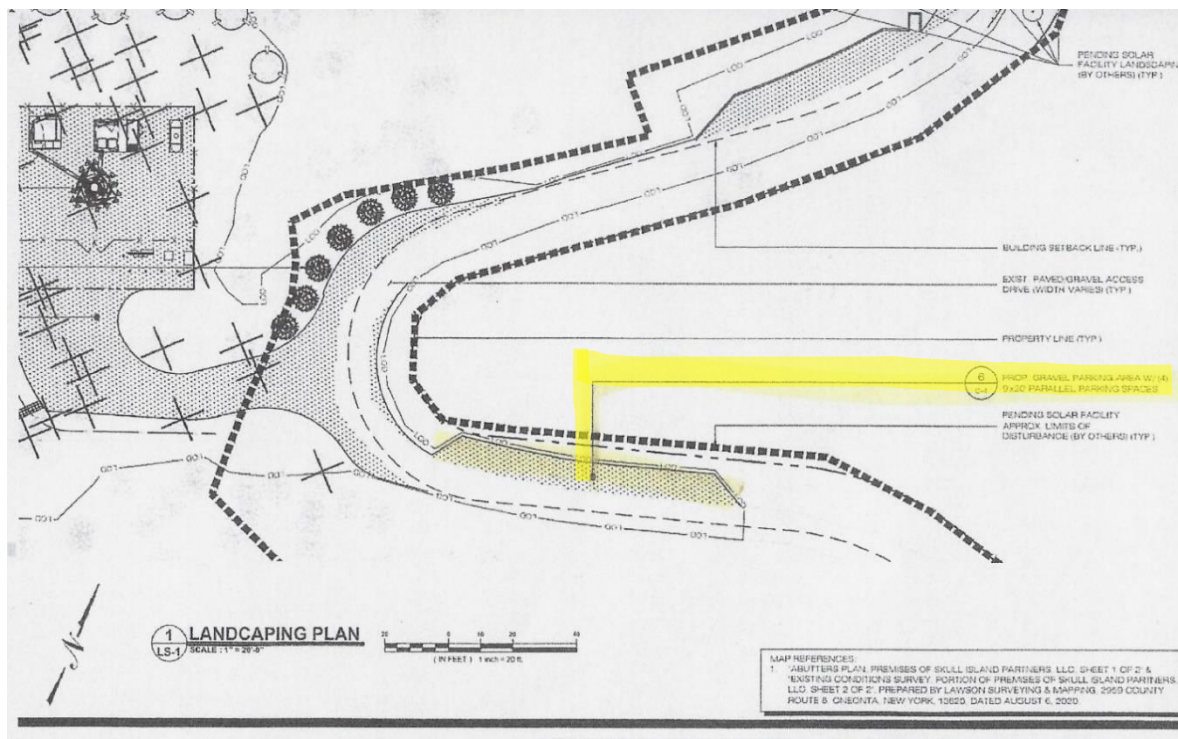
A strip of land along the perimeter of the parcel, identified on a site plan, established to separate one type of land use from another. **No structure, parking or loading is permitted in any "buffer."** "Buffers" are to be landscaped and kept as open space, except that driveways and walkways providing access through the "buffer" to a structure or parking on the lot are permitted.” (Emphasis added.)

Id. at §110-59.

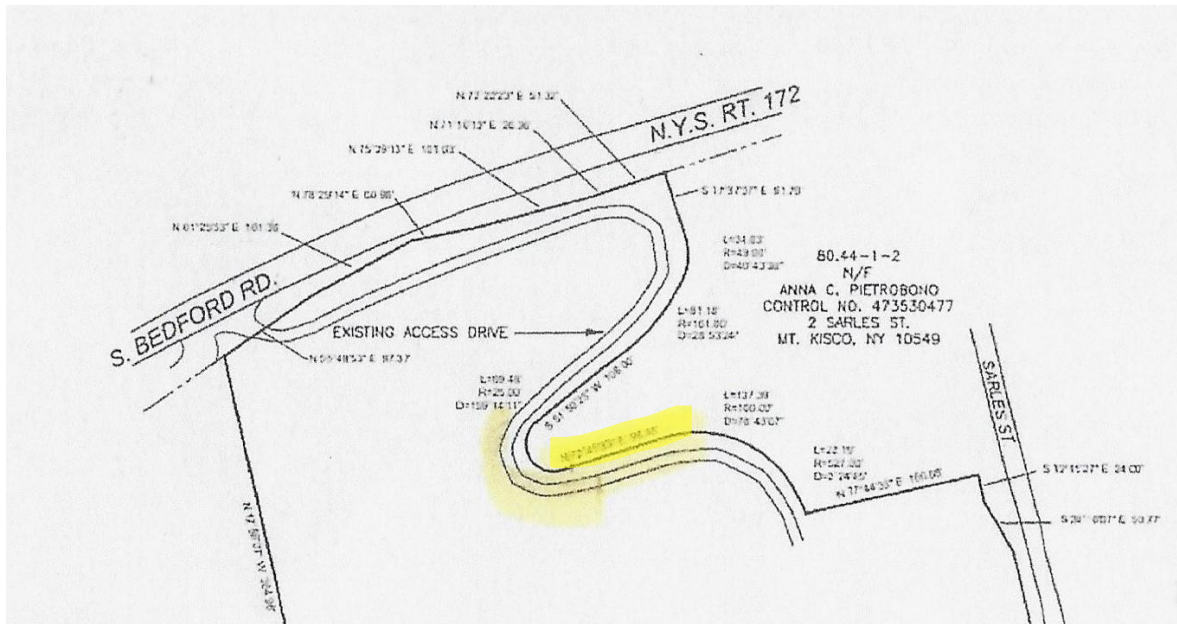
Homeland is cavalierly seeking to carve out additional detached parking spaces outside of its own approximate 4,000 sq ft site within the 25-acre parcel. A plan was ‘innocuously’ submitted by Homeland which creates four (4) 9’x20’ gravel parking spaces right up to our family’s southwestern property line. And, while you will see on LS-1 below that Homeland’s proposal

closely resembles the solar applicant's so-called "pull-overs" at the lower portion of the 180 South Bedford Road driveway, it is NOT a pull-over. (See images below.)

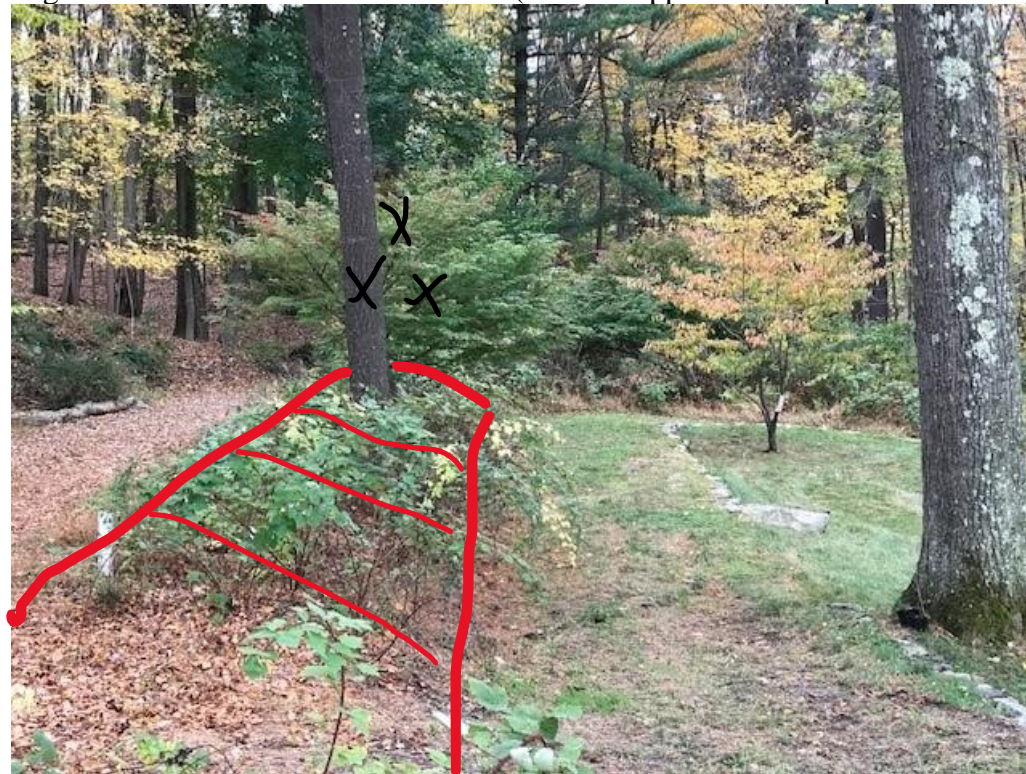
Homeland's submission proposes its new parking area (violative of the northern buffer) on their Landscaping Plan referenced as "PROP GRAVEL PARKING AREA W/(4) 9'x20' PARRALELL PARKING SPACES"). This proposed off-site parking follows Homeland's contradictory repeated claims of confinement to its small space within the 25-acres, notwithstanding parking spaces being expressly prohibited in buffer zones under the Mount Kisco Code.



Homeland LS-1; Pg 402, 08/10/21 PB Packet, parking masked as a 'pull-over' (emphasis is added.)



Page 379 of the 08/10/2021 PB Packet (above cropped with emphasis is added.)



This image taken November 3, 2021, from our family property shows Homeland's proposed detached off-site (i.e., outside of their 4,000 sq ft location) parking spaces within the northern buffer zone (encroaches right up to our property boundary line, as well as, eliminating three large specimen trees and shrubs (i.e., our three tall trees and shrubs) which would serve as screening from SCS's use of driveway and proposed cell tower.)

The Homeland parking proposal not only would produce further blatant encroachment upon our family's property's buffers and setbacks, but also require the removal of tall pines and smaller specimen trees (some of which I planted, such as a large dogwood and plum tree).

We count on your Board now to *right the legal, procedural and ethical; ship* and deny Homeland's application for area setback/buffer variances with the belief the Planning Board will follow suit. Homeland should be compelled to move its location, either off the parcel entirely or re-sited to a more remote area not encroaching on neighboring residential properties and the buffer zones protecting those neighboring residential properties and the *least intrusive means* of addressing their purported gap.

Granting a Variance Would Be a Radical Departure From Mount Kisco Code, Injurious to Neighborhood, Change the Character Thereof, and Be a Detriment to the Public Welfare

The 25-acre parcel had been historically zoned for a single family (see attached Seller's listing sheet around the time the property was acquired by its current owner) and was previously used as such. In the photograph below, you can see the west facing rear yard of the single-family mansion. South Bedford Road can be observed in the upper left of the photograph.



When ultimately considering both the Homeland and the still pending solar applications together without segmentation to determine the totality of impact cumulatively upon the same parcel and the neighboring properties, it is inconceivable and legally impermissible for a solar field on the same CD parcel with a cell tower proposed on the steepest of slopes, devouring 60+ more trees within the northern buffer zone, while imposing themselves and devaluing neighboring properties and eastern gateway travelers alike simply to allow Homeland's unscreened base structure and cell tower because it is Homeland's easiest "fix".

There is No Effective Screening of a Cell Tower at The Proposed 180 SBR Location

Due to the topography and proximity to the aforesaid surrounding properties, there can be no effective screening at Homeland's proposed location. In my experience having lived next door to this 25-acre parcel since 1996 and being fully familiar with this 25-acre parcel --there is no effective screening for a cell tower at the proposed 180 SBR site.

- (1) a new tree's root ball must be water-soaked about every two days for 5 minutes per tree;
- (2) there is no water source next door to supply the much-needed water;
- (3) the infestation of choking vines must be removed every couple of months as they continue to regrow;
- (4) each tree must be professionally treated against insects;
- (5) each tree should be wrapped to protect against deer rubbing against them or eating them outright;
- (6) each tree must receive a series of treatments to help prevent damaging foliar diseases on susceptible hosts; and
- (7) each tree must continually be cared for as described above or they die—it's as simple as that. Our family uses Savatree for some of the foregoing treatments.

The existing tall trees Homeland fallaciously claims *are* effective screening are already dead or dying due to age, insects, disease, and choking vines. Different locations both off-site and even on the 25-acre parcel can offer much more robust natural and sustainable screening.

In the images shown below we can see the vines choking the existing "screening" trees surrounding the 180 SBR proposed cell site. The green leaves seen around the trees are choking vines.



And these existing trees are part of Homeland Towers' proposed tree line screening.



The existing old trees are dying off and the few new ones are being decimated by choking vines. Virtually every tree which Homeland Towers tells you in its application will be part of its proposed screening is either dead or dying. In a short time, there will be zero tree coverage for a 145 ft behemoth of a cell tower. Without the existing trees, its steel rib cage and base compound will be fully exposed to all passers-by through the eastern “Welcome to Mount Kisco” corridor on Route 172. The purported screening only serves to shield the true onerous nature of the proposed site on the paper presentation of Homeland Towers and to salve the conscience of those approving same but falls well short of truly being effective screening.

It is uncontroverted that there is no proposed screening of the 145 ft cell tower itself at this site. In fact, you can see that the view from our home shown below relies upon a single tall white pine (tagged 37) to offer any screening at all--which said tree is slated to be removed due to the proposed driveway expansion at that apex of the turn.



Central main tree mentioned on tour by Homeland as principal screen is tagged number 37.

Below is a westerly view of the proposed cell tower and base station from our property where our family spends the most time outdoors. Without that single old growth pine tree (#37), the entire steel pole would be completely visible from virtually any location on our property and every window on the west side of our home.



VP39 - 2 Saratoga Street
SIMULATED CONDITION - ALTERNATIVE TOWER TYPE: 140FT MONOPOLE (BROWN COLOR)

SARATOGA
ASSOCIATES

Photograph Information

Date: November 21, 2020
Time: 8:25 AM
Focal Length: 50 mm
Camera: Canon EOS 6D Mark II

Photo Location: 41° 11' 58.9803" N
73° 42' 44.8168" W
Distance to Tower: 280 Feet

FIGURE C-11D

PHOTO SIMULATIONS
180 SOUTH BEDFORD ROAD
MT. KISCO, NEW YORK

New York State Environmental Quality Review Act (SEQRA):

The ZBA's analysis of the proposed layout of the property is similar to a lead agency's analysis of alternatives under SEQRA, which requires a lead agency to consider a reasonable range of feasible alternatives. *Comm. to Stop Airport Expansion v. Wilkinson*, 126 A.D.3d 788, 789, 5 N.Y.S.3d 274, 276 (2d Dep't 2015); citing *Save Open Space v. Plan. Bd. of Town of Newburgh*, 74 A.D.3d 1350, 1352, 904 N.Y.S.2d 188, 190 (2d Dep't 2010).

It is respectfully contended that contrary to the position advanced by the applicant, the New York State Environmental Quality Review Act (SEQRA) applies to this application and should be strictly followed *prior* to any action being taken on the application. Skipping a positive SEQRA determination when the other applicant on the same 25-acre parcel was found to be subject to a Positive Declaration requiring a scoping session prior to the submission of a DEIS (and that application before the Planning Board has not been withdrawn at this time) would be legally misguided.

The argument advanced by the applicant that somehow SEQRA is preempted by, *inter alia*, the underlying FCC regulations and that as a result SEQRA does not need to be followed in this case is simply not genuinely supportable. While there are certain advantages provided to a cell tower applicant under Federal Law, a free pass around SEQRA is not one of them.

The record before the Planning Board is replete with the substantive materials, arguments, considerations, consultations, and deliberations, needed to outright deny Homeland's application seeking a special use permit for their site which literally abuts two residential properties, a nature preserve, and the eastern gateway to Mount Kisco. There are numerous significant environmental impacts that the cell tower (*and* a solar power plant) would have on the environment, a denial of Homeland's variance is clearly mandated in relation to Homeland's application

To its credit the Planning Board has already, *sua sponte*, recommended that the tower be re-sited elsewhere (**Planning Board Memo dated September 8, 2021 attached herein**) which impliedly recognizes the 180 SBR site would result in flagrant infringements, including vast encroachments of statutory residential buffers and setbacks designed to protect neighboring families' health, welfare, use, and enjoyment of their properties, constant adverse visual impacts for neighboring properties and passerby along Mount Kisco's SBR Eastern Gateway, require building upon some of the steepest slopes on the entire 25-acre parcel, improper driveway expansion, excessive removal of trees (virtually all of which are relied upon for 'screening'), devaluation of adjoining properties, and even off-site prohibited parking spaces submitted within the buffer zone and running contiguously alongside of our southwestern property line.

Whether or not the proposed monopole would be ultimately re-sited in the backwoods of Leonard Park or some other suitable location compliant with the Mount Kisco Code, it is clear that the present one selected by Homeland Towers, LLC, is not the least intrusive means of addressing any *alleged* gap in coverage particularly as relates to possible site availability elsewhere amongst the entire 25-acre parcel. Additionally, there appears to have been procedural deficiencies before the Planning Board, such as, applicant's failure to produce copies of its lease(s) relating to the parcel as requested previously by the Planning Board, and to keep their Village application escrow fund

current. Moreover, there are still dual applications pending which create prohibited two principal uses upon the same 25-acre parcel, in a CD Zone specifically created to protect these 25 acres. Homeland should not be rewarded or excused by the ZBA for its non-compliance with the Planning Board procedure which has a deleterious effect on the entire record and process.

Maximum Excessive Area Variance is Being Sought by Homeland

The variance requested is the maximum size possible which will trample community character and neighboring residents' welfare, as well as passer-by, and thus should be denied accordingly.

The State Statute and local Town Code both provide that local zoning boards of appeals, in granting area variances, shall grant the *minimum* variance that it deems necessary and adequate while preserving and protecting the character of the neighborhood and the health, safety and welfare of the community. N.Y. Town Law § 267-b(3)(c).

The State Statute also requires that the zoning board of appeals shall consider whether *the benefit sought* by applicant can be achieved by some method, feasible for the applicant to pursue, other than an area variance (Emphasis added). N.Y. Town Law §267-b(3)(b)(2).

Accordingly, there may be alternative places to locate the cell tower that would not require an area variance or at least, a minimum variance and still achieve the desired benefit sought coverage of the proffered gap in service.

In fact, the Planning Board itself recommended to the Village Board of Trustees (*see attached Planning Board Memo dated September 8, 2021*) an alternative site at a location in the backwoods of Leonard Park impliedly finding that the benefit sought by Homeland could be achieved by a feasible alternative method which had a rational basis in the record before it. Notwithstanding, efforts at re-siting of the cell tower elsewhere keeps getting steered back to this proposed site even though Homeland has conceded that other locations on the larger parcel could likewise satisfy the benefit they seek with a more reasonable lesser variance needed, if any.

Conclusion

I respectfully encourage this Board not to abandon its statutorily required mandate. The weakest link in defense of Mount Kisco's municipal power and independence is *resolve*. No one will give it to this Village—it must be fought for. If not, you will lose it and set bad internal precedence for the Village, i.e., *capitulation* instead of engagement. That is capitulation of process, principle, fairness, due process, oaths, and powers.

The Village participated in the foundation of this ongoing conflict at 180 SBR. That 25-acres never should have been rezoned to allow the two ill-conceived proposed industrial projects to be shoehorned into a parcel in a Conservation District (CD). The Village should mitigate the consequences thereof fairly and equitably. You are each “just one vote.” But that vote will be cast either to validate or invalidate all the wrongs concomitant with this project.

If Homeland is granted a variance at the proposed 180 SBR location, that tower may serve well as a monument of failure of the entire Mount Kisco Village governmental process at the expense of our family, the Marsh/Preserve, rights of individual residents--which in-turn transgresses the collective rights of all of us, daily travelers passing through the eastern gateway to the Village, and the Village's own integrity, independence, and reputation. The only winner in that case would be the for-profit organization, Homeland Towers, LLC, that bought the property knowing its limitations.

September 8, 2021

To: Village/Town Board of Mount Kisco

RE: Application of Homeland/Verizon for Special Permit,
Site Plan and Steep Slope Permits and Application for Variances
180 So. Bedford Road, Mt. Kisco NY (P/O Tax ID # 80.44-1-1)

Dear Mayor Picinich & Village Board of Trustees:

Given the Independent Radio Frequency Regarding Proposed Wireless Communications Facility For Homeland Towers LLC prepared by PierCon Solutions LLC dated January 2, 2019, The Planning Board believes the Leonard Park location cited per Exhibits A-1,2, B-1,2 and C-1,2, covering multiple frequencies (i.e., 700 & 1200 MHz) and multiple frequency bands (i.e., 700, Cellular, PCS and AWS) provides an equivalent, and more likely a much better alternate site to the current Homeland application at 180 S Bedford Rd.

Given the most recent technical information from CityScape, and the Planning Board's technical consultants BFJ Planning, HDR Inc and RLA Communications, the Planning Board strongly believes there is a more optimal solution for the Village of Mount Kisco than the current site at 180 S Bedford Rd. To begin with, the Leonard Park location addresses the coverage gap, and capacity issue, within one site location compared to a 180 S Bedford location that does not alleviate the capacity issue within Mount Kisco proper, thereby necessitating a 2nd site within the Village to resolve capacity shortfalls. And recommending a dual site solution to Homeland comprised of 180 S Bedford Rd and the hospital rooftop does not optimally address all the attendant decision-making criteria before the Planning Board as well as the Leonard Park location site (i.e., steep slopes, access road, setbacks to nearby residential homes (albeit two), and more obtrusive visual assessment at 180 S Bedford Rd. Meaning, we refer to Cityscape's analysis and the high propensity for further growth in macro (and small cell) installations in Mount Kisco. The Leonard Park location resolves the coverage gap and capacity shortfall in one location currently, and, keeps another subsequent cell tower application at Northern Westchester Hospital as a viable capacity option in the future.

To achieve the above scenario, the Planning Board favors a scenario whereby revenues from the Leonard Park location would be used to service the purchase/funding of the 180 S Bedford parcel, effectively directing Homeland/Verizon and co-locators to an already more favorable site, and, thereby eliminating ANY cell tower placement from 180 S Bedford Rd, and, the fierce public opposition. Long-term, the 25+ acres at 180 S Bedford Rd could return to the community post-solar field dismantling, if the solar project proposed by SCS Sarles Street is actually and ultimately approved by the Planning Board.

The Planning Board recognizes that the Park location would require off-setting mitigation in the form of additional parkland be added to Leonard Park pursuant to the Public Trust Doctrine. If this could be achieved through acquisition of the 180 S Bedford Road site this would result in a far better long-term solution. Not only would this scenario result in approximately a net gain of 25 to 1 acreage gain in parkland, it would mitigate visual impacts from almost every location within the Village and result in a far greater separation from the nearest home (more than 1,000 feet, as compared to the current 200 foot separation).

As such, the Planning Board strongly urges the Village Board to consider our optimal scenario described above as in the best interests of all Village residents as wireless facilities proliferate in the Village (i.e., ... minimizing tall "macro" site installations that are not going

away per CityScape, while being able to control small cell installations within the Village). Should your Board desire, the Planning Board is amenable to having a joint meeting to discuss same.

Sincerely,

Michael Bonforte
Acting Chairman

PROP. COMPOUND ACCESS FROM SOUTH BEDFORD ROAD ALONG EXIST. AVENUE/GRAVEL DRIVEWAY (APPROX 685'±) & PROP. GRAVEL DRIVE (APPROX 100'±).

EXIST. COMMERCIAL BUILDING

PROP. 140'± AGL MONOPINE
PROP. 56'x62' (3,472± SF) LEASE AREA & 41'x62' (2,542± SF) 8' HIGH CHAIN LINK FENCED COMPOUND AREA (TYP.)

SECTION: 80.51 BLOCK: 2 LOT: 1
114 S. BEDFORD RD.
N/F
WILDLIFE PRESERVE INC
NATURE PRESERVE

SUBJECT PARCEL:
SECTION: 80.44 BLOCK: 1 LOT: 1
180 S. BEDFORD RD.

SECTION: 83.05 BLOCK: 1 LOT: 6
TOWN OPEN SPACE
N/F
TOWN OF BEDFORD
OPEN SPACE

SOUTH BEDFORD ROAD
(28'± WIDE)

SECTION: 83.9 BLOCK: 1 LOT: 19
220 S. BEDFORD RD.
N/F
CHABAD OF BEDFORD INC
RESIDENTIAL

SECTION: 80.44
BLOCK: 1 LOT: 2
2 SARLES ST.
N/F
ANNA C.
PIETROBONO & JOHN
G. PIETROBONO

SECTION: 83.9 BLOCK: 1 LOT: 18
22 SARLES ST.
N/F
ABDELOUAHAB EL BOUHALLI &
NANCY EL BOUHALLI
RESIDENTIAL

SECTION: 83.9 BLOCK: 1 LOT: 16
43 LINDEN LN.
N/F
LAWRENCE LEE & DABY LEE

ZONE PD
ZONE CD

20' SIDE YARD SETBACK

15'± FROM TOWER
TO PROPERTY LINE
127'± FROM COMPOUND
TO PROPERTY LINE

388'± FROM TOWER TO
RESIDENTIAL DWELLING

74'± FROM COMPOUND
TO PROPERTY LINE

109'± FROM TOWER TO
PROPERTY LINE

1,083'± FROM COMPOUND TO PROPERTY LINE
1,107'± FROM TOWER TO PROPERTY LINE

30'
FRONT
YARD
SETBACK

20' SIDE
YARD
SETBACK

SARLES STREET
(18'± WIDE)

TOWN OF
BEDFORD



HOMELAND TOWERS

August 14, 2020

Honorable Chairman Hertz and
Members of the Planning Board
Village of Mt Kisco
104 Main St
Mount Kisco, NY 10549

RE: Alternate Site Report

Hon. Chairman Hertz and Members of the Planning Board:

I am the Regional Manager for Homeland Towers, LLC. I was responsible for identifying a suitable location for a telecommunications facility that would remedy Verizon Wireless' significant gap in reliable wireless service throughout this area of Mount Kisco specifically in this area of downtown Mt Kisco, Route 117 and along Route 172 and adjoining commercial and residential areas.

In consultation with Verizon Wireless based on coverage needs in the area, I began exploring the area for a facility location taking into account the Village's Zoning Code, collocation opportunities, land uses, potential environmental impacts, leasing and construction feasibility.

Zoning code Section 110-27.1 establishes an Overlay District (see Exhibit A) for Personal Wireless Service Facilities ("Overlay District") and states as follows:

- A. *Purpose and intent. The Personal Wireless Service Facilities Overlay District is an overlay district intended to provide a suitable choice of locations for establishment, construction and maintenance of personal wireless service facilities.*
- B. *Permitted uses. Except as specified in § 110-27H (Special permits for sites outside the Personal Wireless Service Facilities Overlay District), all new personal wireless service facilities, and all additions and/or modifications to currently existing personal wireless service facilities, shall be allowed only in the Personal Wireless Service Facilities Overlay District and only pursuant to a special permit issued by the Planning Board in accordance with the criteria set forth in this section and in § 110-46 of the Zoning Law.*

Zoning code Section 110-27.1 E states as follows: *Criteria for special permit applications. Applicants for special permits for establishment or construction of personal wireless service facilities shall meet all of the following criteria:*

(1) Necessity. The proposed personal wireless service facility is required to provide service to locations which the applicant is not able to serve with existing facilities which are located within and outside the Village, by colocation and otherwise.



HOMELAND TOWERS

(2) Colocation. The colocation of existing personal wireless service facilities only within the Personal Wireless Service Facilities Overlay District shall be strongly preferred to the construction of new personal wireless service facilities. If a new site for a personal wireless service facility is proposed, the applicant shall submit a report setting forth in detail an inventory of existing personal wireless service facilities within the Personal Wireless Service Facilities Overlay District which are within a reasonable distance from the proposed facility with respect to coverage, an inventory of existing personal wireless service facilities in other municipalities which can be utilized or modified in order to provide coverage to the locations the applicant is seeking to serve and a report on the possibilities and opportunities for colocation as an alternative to a new site. The applicant must demonstrate that the proposed personal wireless service facility cannot be accommodated on an existing facility within the Personal Wireless Service Facilities Overlay District or on an existing facility in another municipality due to one or more of the following reasons.

First, I performed a series of field visits to determine if there are any existing “personal wireless service facilities” in the Overlay District that would be suitable for co-location and that would provide adequate coverage for the service gap and found the following existing facilities. (see Exhibit A, existing site location map)

1. In the Overlay District, about 1.3 miles west of the proposed site at 304 Lexington Ave, Mt Kisco, is an approximately 150' tall tower. Verizon Wireless already has antennas on this tower and has determined that this site does not provide adequate coverage to the service gap area. Please see the RF Report prepared by V-Comm Telecommunications Engineers as part of this application.

Second, not having been able to find an existing facility in the Overlay District I tried to find an existing facility outside the Overlay District and / or other municipality that would be suitable for co-location and that would provide adequate coverage for the service gap and found the following existing facilities: (see Exhibit A, existing site location map)

2. Outside the Overlay District about 1.6 miles north west of the proposed site, at 1 Mountain Rd, Mt Kisco is an approximately 100' tall tower in the CD zone. Verizon already has antennas at this tower and has determined that this site does not provide adequate coverage to the service gap area. Please see the RF Report prepared by V-Comm Telecommunications Engineers as part of this application.
3. In an adjacent municipality, about 1.4 miles to the east of the proposed site at the Park & Ride, I-684 and Rte 172, Bedford is an approximately 150' tower. Verizon Wireless already has antennas at this tower and has determined that this site does not provide adequate coverage to the service gap area. Please see the RF Report prepared by V-Comm Telecommunications Engineers as part of this application.



HOMELAND TOWERS

4. In an adjacent municipality, about 0.75 miles to the north east of the proposed site at Guard Hill Park, Guard Hill Rd, Bedford, NY is an approximately 100' tower owned by Westchester County and Town of Bedford Emergency Communications Services. During the period of November 2018 to March 2019 Homeland Towers worked with the stakeholders and offered to re-enforce and rebuild this tower at its sole cost so that it could be available for private communications carriers to co-locate. This offer was not accepted.

Based on my findings there are no existing "personal wireless service facilities" in the Overlay District or another municipality suitable for colocation that would also meet the coverage objective.

Third, I determined that in order to meet the coverage objective for the service gap, a new wireless service facility would have to be built and that due to the location and vicinity of the existing wireless service facility at 304 Lexington Ave, the elevation and topographic conditions a new personal wireless service facility within the Overlay District could not provide coverage to the existing service gap. Please see the RF Report prepared by V-Comm Telecommunications Engineers as part of this application.

In accordance to Code Section 110-27.1 E 1 & 2 above and considering the existing facility locations, coverage objective, environmental impact, constructability and setback requirements, I evaluated and sent lease proposals to the following properties: (see Exhibit B for property location map and Exhibit C for copies of the proposal letters)

1. Leonard Park, Main St, Mt Kisco, Parcels 80.66-1-1, 80.65-2-1 and 80.64-2-6. A proposal letter was sent by certified mail on 11/29/17 to the owner at Village of Mt Kisco, 104 Main St. Mount Kisco, NY 10594, Attn: Ed Brancati, Village Manager. These are Village of Mt Kisco owned properties. In follow up discussions with the Village it was determined to provide extensive due diligence materials, including visual analysis for Rolling Ridge Ct parcel 80.67-3-2.2, to help with the evaluations of these locations. In a public Village Board meeting on 11/19/18 the Village Trustees voted against our proposals.
2. Laurel Dr, Mt Kisco, Parcel 80.42-4-3. A proposal letter was sent by certified mail on 11/29/17 to the owner at Boys & Girls Club Northern Westchester, 351 E Main St, Mt Kisco, NY 10549, Attn: Alyzza C Ozer, CEO. We did receive an initial response, but the owner was subsequently not interested in our proposal.
3. 12 McInain St, Bedford, NY Parcel 82.12-1-4. A proposal letter was sent by certified mail on 11/29/17 to the owner at Northern Westchester Professional Park II, 18 Black Swan Ct, Brookfield, CT 06804. We did not receive a response to our proposal.
4. 28 McInain St, Bedford, NY Parcel 82.12-1-3. A proposal letter was sent by certified mail on 11/29/17 to the owner at McLean Street Associates, LLC, 485 Commerce St, Hawthorne, NY 10532. We did not receive a response to our proposal.



HOMELAND TOWERS

5. 103-105 South Bedford Rd, Mt Kisco, Parcel 82.12-1-5. A proposal letter was sent by certified mail on 11/29/17 to the owner at HMOB of Mt Kisco Owner LLC, 85 Harristown Rd, Glen Rock, NJ 07652 We did not receive a response to our proposal.
6. Glassbury Court, Mt Kisco, Parcel 80.42-3-1.4. A proposal letter was sent by certified mail on 11/29/17 to the owner at Woodcrest at Leonard Park HOA, c/o McGrath Management Services, 444D Old Post Rd, Bedford, NY 10506, Attn: Greg Lewis, Manager We did not receive a response to our proposal.
7. 421 Main St, Mt Kisco, Parcel 80.50-4-3. A proposal letter was sent by certified mail on 2/13/19 to the owner at Roemer Betty, Roemer Stefanie, c/o CVS Health # 1997-01, 1 CVS Dr, Woosocket, RI 02895 We did not receive a response to our proposal.
8. 34 S Bedford Rd, Mt Kisco, Parcel 80.50-4-2. A proposal letter was sent by certified mail on 2/13/19 to the owner at IPERS 34 S Bedford Rd. Inc, c/o Ryan LLC Tax Compliance Dept 207, PO Box 4900, Scottsdale, AZ 85261-4900. We did not receive a response to our proposal.
9. 540 Main St, Mt Kisco, Parcel 80.57-4-5. A proposal letter was sent by certified mail on 2/13/19 to the owner at Nicholas David, PO Box 770, Mahopac, NY 10541. We did not receive a response to our proposal.
10. 489 Main St, Mt Kisco, Parcel 80.57-3-2. A proposal letter was sent by certified mail on 2/13/19 to the owner at Friendly Silverman Holding Corp, c/o Silverman Realty Group, 237 Mamaroneck Ave, White Plains, NY 10605-1319. We did not receive a response to our proposal.
11. 506 Main St, Mt Kisco, Parcel 80.57-2-11. A proposal letter was sent by certified mail on 2/13/19 to the owner at 506 Main Street LLC, c/o Larstrand Corporation, 500 Park Ave, 11th Floor, New York, NY 10022 We did not receive a response to our proposal.
12. 90 & 110 S Bedford Rd, Mt Kisco, Parcels 80.50-3-1 & 80.51-1-1. A proposal was submitted to Diamond Properties, Leasing Manager for the owner HP Mt Kisco 90 & 110 LLC and 100 South Bedford LLC in 4/19 by telephone & email. While there was initial tentative interest, the owner decided not to pursue our proposal.
13. 100 S Bedford Rd, Mt Kisco, Parcel 80.50-3-3 A proposal was submitted to Diamond Properties, Leasing Manager for the owner 100 South Bedford LLC in 4/19 by telephone & email. While there was initial tentative interest, the owner decided not to pursue our proposal.
14. 180 S Bedford Rd, Mount Kisco, Parcel 80.44-1-1. A proposal letter was sent by certified mail on 2/13/19 to the owner at Skull Island Partners, LLC c/o David Seldin, 1571



HOMELAND TOWERS

Oceanview Dr., Tierra Verde, FL 33715-2538. This property is subject of the proposed wireless services facility.

The only property that was interested in leasing space and that also provides coverage for the Verizon Wireless service gap, is the proposed site.

Having identified a leasable property that also meets the coverage objectives, I evaluated the best location on the property to mitigate the visual impact and also maximize the setback requirements to residential dwellings, considering disturbance, environmental impact, constructability and availability. The proposed location meets these criteria as the existing trees will shield the wireless service facility and equipment compound from adjacent residential dwellings and along Route 172 through existing tree lines. Please see the Visual Assessment Report by Saratoga Associates as part of this application.

Additionally, and in order to mitigate the visual impact we are proposing that the facility be constructed using modern stealth tree technologies and antenna "socks" to maximize the integration of the facility with the surrounding mature trees.

Finally, for all the reasons above and given the limitation of siting possibilities and the environmental and visual impact the proposed facility would cause at another location on the property I determined that the proposed location would be best suited for the proposed personal wireless service facility.

Conclusion:

There are no existing "personal wireless service facilities" in or outside the Overlay District suitable for colocation that would also meet the coverage objective. Moreover, the proposed location is the only property interested in leasing space that also provides coverage for the service gap. Having researched all potential siting locations as required and since this location is approved by Verizon Wireless, Homeland Towers, LLC entered into an agreement with the property owner and is seeking approval for the facility.

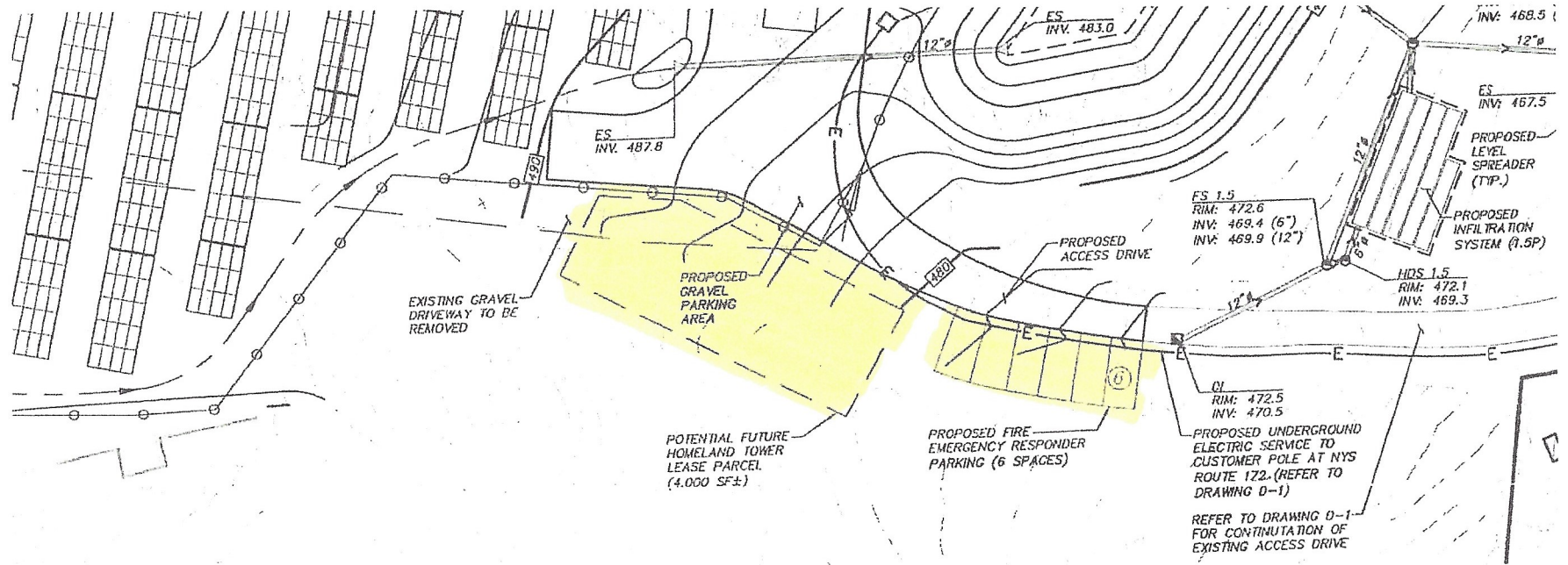
Based on its location and the surrounding area, including the Zoning Code requirements, the proposed site is the most suitable and least intrusive to remedy Verizon Wireless' significant gap in service.

Respectfully,

Klaus Wimmer

Klaus Wimmer
Regional Manager
Homeland Towers, LLC.

Z:\19192100 Sunrise Solar\Wisc Drawing Files\01 FIG.1.dwg, 7/2/2020 10:07:01 AM, mutter, 1:1

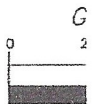


PROJECT: SCS SARLES STREET
COMMUNITY SOLAR FARM
GROUND MOUNT SOLAR ARRAY
 180 S. BEDFORD RD., TOWN OF MOUNT KISCO, WESTCHESTER CO., NY

DRAWING: FIRE ACCESS & POTENTIAL
LEASE PARCEL PLAN

PREPARED BY:

INSITE
 ENGINEERING, SURVEYING &
 LANDSCAPE ARCHITECTURE, P.C.
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REPLY TO:
TARRYTOWN OFFICE

August 24, 2021

Honorable Chairman Harold Boxer
and Members of the Zoning Board of Appeals
Village of Mount Kisco
104 Main Street
Mount Kisco, New York 10549

Re: 180 S. Bedford Road
Public Utility Wireless Telecommunications Facility
Homeland Towers, LLC & Verizon Wireless

Honorable Chairman and
Members of the Zoning Board of Appeals:

As you are aware, we are the attorneys for Homeland Towers, LLC ("Homeland Towers") and Verizon Wireless (together "Applicants") in connection with their application to place a public utility wireless telecommunications facility ("Facility") at the above referenced property ("Property").

Enclosed please find 10 copies a driveway geotechnical report confirming the adequacy of the driveway for construction and fire department equipment.

We thank you for your consideration. If you have any questions or require any additional documentation, please do not hesitate to contact me at 914-333-0700.

Snyder & Snyder, LLP

By: 

Robert D. Gaudio

Enclosures
RDG/djk

cc: Planning Board
Applicants

Z:\SSDATA\WPDATA\SS3\RDG\Homelandtowers\Mount Kisco\NY172\ZBA Letter 8.24.21 (driveway).rtf



**DOWN TO EARTH
CONSULTING, LLC**

GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

August 23, 2021
File No. 0032-046.01

Mr. Robert C. Burns, P.E.
APT Engineering
567 Vauxhall Street Extension – Suite 311
Waterford, Connecticut 06385

Via email: rburns@allpointstech.com

Re: Geotechnical Engineering Report
Slope Evaluation and Recommendations
Proposed Telecommunications Tower Access Road
Mount Kisco, New York

Dear Mr. Burns:

Down To Earth Consulting, LLC (DTE) is pleased to submit this report summarizing the results of our geotechnical engineering evaluation associated with an existing access road that will be reconstructed as part of a proposed telecommunications tower project located at 180 South Bedford Road in Mount Kisco, New York (Site). The site location is shown on the attached Area Plan (Figure 1 in Appendix 1). The objective of our services was to complete geotechnical subsurface explorations, prepare slope stability analyses, and to develop construction recommendations for the project.

This report was prepared in general accordance with our proposal, dated January 5, 2021, and is subject to the limitations attached as Appendix A. Geotechnical design and construction recommendations associated with the proposed tower compound are not included in our current scope. Elevations (El.) indicated in this report are in feet and reference the provided Homeland Towers, LLC, Wireless Telecommunications Facility Drawings, prepared by the Client, revision dated July 14, 2021.

Our recommendations reference, in part, the New York Department of Transportation (NYSDOT) May 2021 Standard Specifications.

BACKGROUND

A new telecommunications tower will be located at 180 South Bedford Road (NYS Route 172) in Mount Kisco, New York. A portion of an existing paved access road (approximately 350 feet long) will be reconstructed to accommodate entry to the proposed tower compound area. The access road will be widened in isolated areas to accommodate construction equipment and fire equipment access. We understand that the proposed horizontal and vertical roadway alignments will closely match the existing alignments.

Existing Site conditions consist of an approximate 40- to 55-foot embankment with the proposed tower construction access road at its crest and South Bedford Road at its toe. Existing site grades vary where the proposed tower construction accessway meets the existing driveway (from about El. 440) which slopes down towards South Bedford Road at approximate El. 384 to 400. Resulting slope geometries vary from about 3 Horizontal to 1 Vertical (3H:1V) to 2H: 1V.



SUBSURFACE CONDITIONS

Geologic Information

Published surficial and bedrock geological map data (1:125,000 scale, *Surficial Geologic Map of New York, Lower Hudson Sheet, Donald H. Cadwell, 1989 and Bedrock Geological Map of New York, Lower Hudson Sheet, Donald W. Fisher, 1970*) was reviewed.

The surficial material within the Site area is mapped as a variable mixture of gravel, sand, silt, and clay that is intermixed with cobbles and boulders (Glacial Till) overlying bedrock that is classified as light and dark banded Gneiss of the Fordham Formation. Sands are also mapped at the entrance to the site.

Subsurface Explorations

We observed and logged seven test borings (R-1 through R-7) drilled by Associated Borings Co., Inc., on February 8, 2021. Boring locations are depicted on Figure 2 (in Appendix 1) and the logs are included in Appendix 2. The borings were located in the field by taping/pacing from existing site features, thus, their locations and elevations should be considered approximate.

The borings were drilled to explore the soil, bedrock (if encountered), and groundwater conditions along the existing access road alignment. Hollow-stem auger drilling methods were used to advance borings to depths ranging from about 3 to 11 feet below existing grades.

Representative soil samples were obtained for soil classification by split barrel sampling procedures in general accordance with ASTM D-1586. The split-spoon sampling procedure utilizes a standard 2-inch O.D. split-barrel sampler that is driven into the bottom of the boring with a 140-pound hammer falling a distance of 30 inches. The number of blows required to advance the sampler the middle 12-inches of a normal 24-inch penetration is recorded as the Standard Penetration Resistance Value (N). The blows (i.e., "N-Value") are indicated on the boring logs at their depth of occurrence and provide an indication of the relative consistency of the material.

Groundwater levels were measured using a weighted tape in open drill holes or inferred from wet soil samples during drilling (if encountered).

Generalized Subsurface Profile

Based on the subsurface explorations completed at the Site, the general soil profile consists of Fill overlying natural Glacial Till Deposits and Bedrock. Silty Gravelly Sand was also encountered in Boring R-1 (i.e., at the site entrance). Weathered Rock was encountered in most borings (except for R-1 and R-6) below the Glacial Till and just prior to encountering drilling refusal. These strata are described below in order of increasing depth.

- *Fill* – Fill was encountered below an approximate 1 to 2.5-inch layer of asphalt at each of the exploration locations. This stratum ranged in thickness from about 1 to 8 feet thick and generally consisted of loose to medium dense, dark-brown to brown, fine to coarse sand with varying amounts of gravel and silt. The thickness, character, and consistency of the Fill will vary between exploration locations.



- *Silty Gravelly Sand Deposits (R-1)* – Silty Gravelly Sand was observed below the asphalt in Boring R-1. This stratum generally consisted of brown, medium dense, fine to coarse sand with varying (10 to 35%) amounts of silt and (10 to 60%) gravel.
- *Glacial Till* - Glacial Till was observed below the Fill stratum in each boring except for R-1. This material generally consisted of fine to coarse sand with varying amounts of silt (10 to 35%) and gravel (10 to 50%). Cobbles and boulders were inferred in this stratum based on drill rig behavior and observed auger chatter. Decomposed Rock was encountered below the Glacial Till Deposits ranging from about 3 (R-2) to 7 (R-7) feet bgs, where encountered.

Groundwater was observed in a few of the borings (i.e., R-1, R-5, and R-6) ranging from about 3.5 to 7 feet below grade. Water levels measured in the boreholes may not have had sufficient time to stabilize during the explorations and should be considered approximate. Groundwater levels will vary depending on factors such as temperature, season, precipitation, construction activity, and other conditions, which may be different from those at the time of these measurements.

GEOTECHNICAL DISCUSSION

Our geotechnical engineering objective was to assess the stability of the existing access road and associated slopes. We understand that proposed access road features (e.g., pull-offs) may encroach on the existing slopes, which would necessitate assessing slope stability under new loading conditions and proposed construction/fire equipment loads.

Based on our observations and the provided topographic survey, the existing slope grade varies from about 3 Horizontal to 1 Vertical (3H:1V) to 2H:1V. In general, the steepest proposed slopes (i.e., 2H:1V) are found where proposed pull-offs and widened turns will be located.

Slope stability analyses were developed to analyze the existing and proposed grading to accommodate the project. A critical cross-section was determined along the proposed pull-off adjacent to South Bedford Road. The results of our analyses are discussed further in the subsequent section.

SLOPE STABILITY ANALYSES

General

Global slope stability is analyzed by comparing the difference between driving and resisting forces within potential soil and soil/bedrock interface slip surfaces. Slope instability occurs when driving forces exceed resisting forces, which results when the factor of safety is less than 1.0.

Stability Model Parameters

The existing and proposed grading conditions developed by APT Engineering were evaluated for global stability. A critical cross section was developed and is shown on Figures 3 and 4. This location was selected based on the proposed access road encroachment to the existing slope. Ground surface elevations, soil and bedrock strata geometries, and groundwater levels were estimated from the representative subsurface data discussed above.



Soil and bedrock materials were reviewed and representative strength and density parameters were selected from a combination of material descriptions, Standard Penetration Resistance Values, back calculation of existing conditions, published correlations, and experience with similar materials. A sensitivity analysis was also performed on the model parameters.

Results

The results of our preliminary analyses for the existing and proposed slope alternatives are summarized below. Based on these results and assuming the modifications are constructed in accordance with our recommendations contained herein, the proposed access road modifications will satisfy Code stability requirements. The global slope stability results are presented in Figures 3 and 4.

Condition	Minimum Calculated Factor of Safety
	Static Loading Conditions
Existing Conditions (Figure 3)	2.0
Proposed Conditions (Figure 4)	1.4

Note: Minimum Allowable Factor of Safety = 1.3

GEOTECHNICAL CONSTRUCTION RECOMMENDATIONS

Slopes

Based on the provided drawings, it appears that proposed embankments along the access road will be graded no steeper than 3 Horizontal to 1 Vertical (3H:1V). These slopes are expected to be stable based on the available information and completed global stability analyses. We recommend that slopes be constructed in accordance with NYSDOT Standard 203-3.03.

Subgrade Preparation

We recommend complete removal of unsuitable bearing materials (e.g., organics, topsoil, and existing fill) and densifying proposed access road and/or embankment subgrades with a minimum of six passes with a vibratory drum roller having a minimum dynamic force of 5,000 lbs per foot of drum width. Proof compaction with smaller vibratory equipment may be used in areas where there is a concern that heavy vibratory equipment could damage buried utilities or other nearby structures.

The subgrade should be observed by an experienced geotechnical engineer during improvement. Areas exhibiting instability and/or containing disturbed or deleterious material should receive additional compaction and/or be over-excavated and replaced with Select Granular Fill under the observation of the geotechnical engineer.

MATERIALS

On-site Materials

Excavated materials are not anticipated to be suitable for re-use as select granular fill but may be reused as common fill material. The elevated fines content (i.e., soil particles passing the No. 200



sieve) of existing soils could make them difficult to place and compact. Success in using these materials will depend on their moisture content and prevailing weather conditions when they are excavated, placed, and compacted.

Select Granular Fill

Select Granular Fill shall consist of NYSDOT 733-11. Select Granular Fill should be compacted to a minimum of 95 percent of its maximum dry density, as determined by AASHTO T180, Method D.

CLOSURE

Based on the proposed grading, encountered subsurface conditions, anticipated construction/fire equipment surcharge loads, and the geotechnical recommendations contained within this report, the proposed access road will be globally stable. We trust the information presented herein is sufficient for your use to progress design of the proposed telecommunications tower access road. Please do not hesitate to call us if you have any questions.

Sincerely,

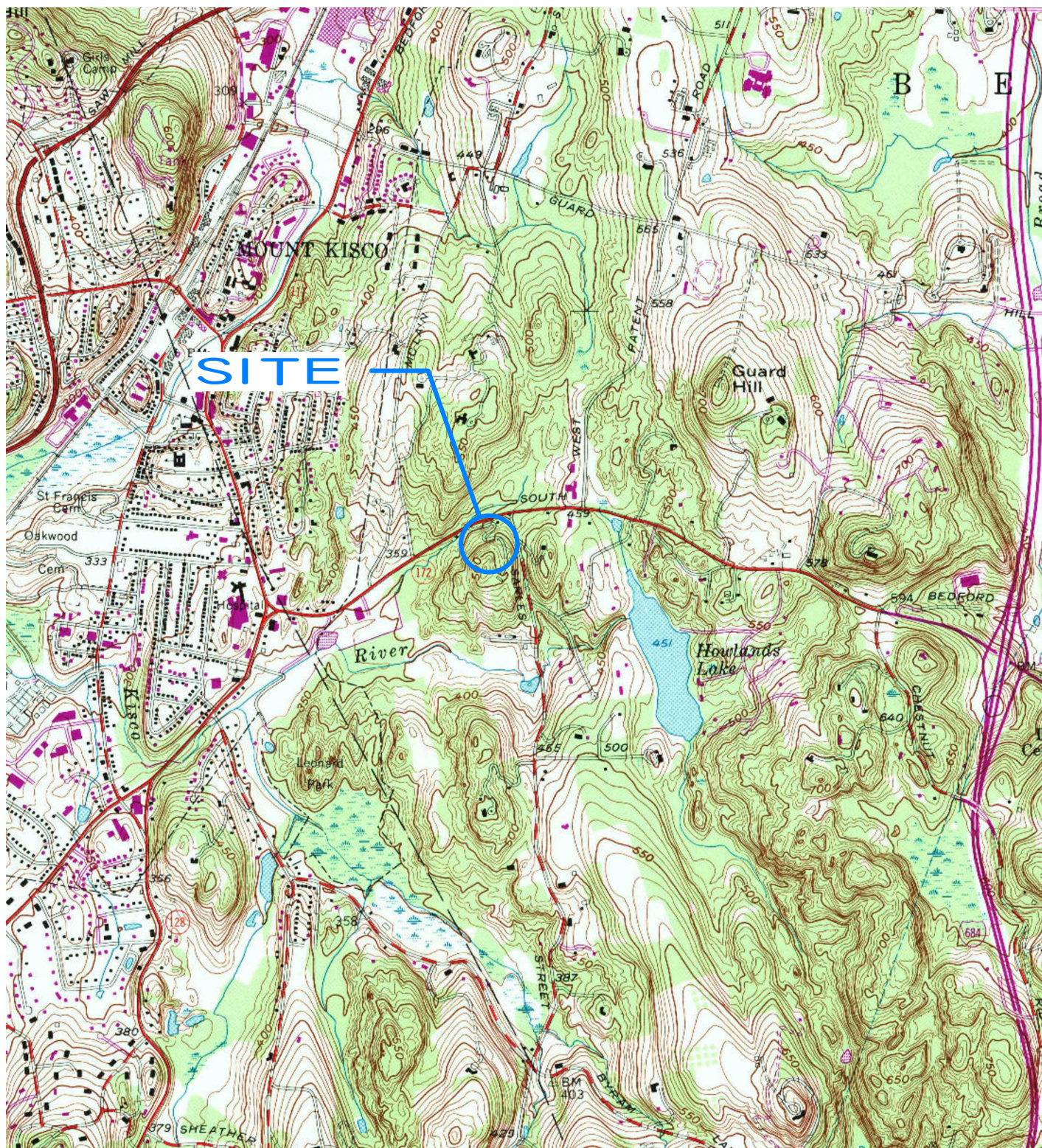


Raymond P. Janeiro, P.E.
Principal

Thomas Orszulak, P.E.
Reviewer/Project Manager

Attachments: Figure 1 – Area Plan
Figure 2 – Site and Boring Location Plan
Figure 3 – Slope Stability Analysis (Existing Conditions)
Figure 4 – Slope Stability Analysis (Proposed Grading)
Appendix A – Limitations
Appendix B – Exploration Logs





**DOWN TO EARTH
CONSULTING, LLC**
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

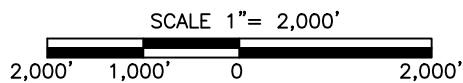
122 CHURCH STREET
NAUGATUCK, CONNECTICUT 06770



QUADRANGLE LOCATION

AREA PLAN
PROPOSED TELECOMMUNICATIONS
TOWER ACCESS ROAD
180 S. BEDFORD ROAD, MT. KISCO, NY

REFERENCE:
USGS TOPOGRAPHIC QUADRANGLE: MOUNT KISCO, NY



DRAWN BY: RPJ

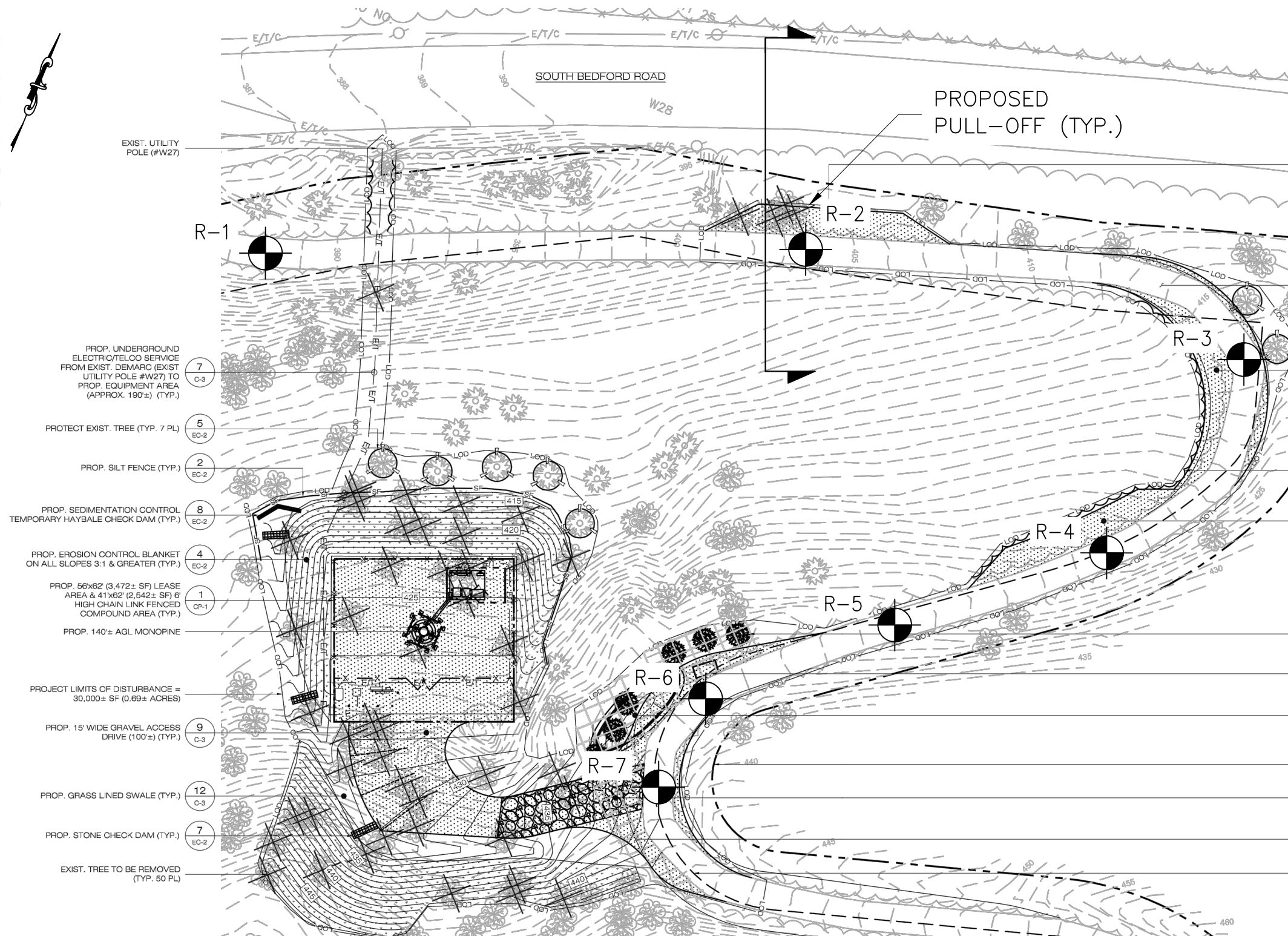
REVIEWED BY: RPJ

PROJECT NO. 0032-046.01

DATE: 08/18/21

FIGURE NO. 1

G:\My Drive\ITE Root Drive\Client Folders\0032 - All-Points Technology\046 - Mount Kisco Tower Road, NY\CADD\0032-046.00.dwg Raymond Janeiro 8/19/2021 4:38 PM



LEGEND

- R-1
- TEST BORING NO. AND LOCATION BY DOWN TO EARTH CONSULTING, LLC
- SLOPE STABILITY SECTION (SEE FIGURES 3 AND 4)

NOTES:

1) BASE MAP DEVELOPED FROM AN ELECTRONIC FILE PREPARED BY APT ENGINEERING, ENTITLED "PARTIAL SITE PLAN, HOMELAND TOWERS MOUNT KISCO, 180 SOUTH BEDFORD ROAD, MOUNT KISCO, NEW YORK". REVISION DATED DECEMBER 22, 2020. ORIGINAL SCALE 1" = 20'.

2) BORINGS WERE COMPLETED BY ASSOCIATED BORINGS COMPANY, INC. AND OBSERVED BY DOWN TO EARTH CONSULTING, LLC.

3) THE LOCATIONS OF THE EXPLORATIONS WERE DETERMINED BY TAPING AND VISUAL ESTIMATES FROM EXISTING SITE FEATURES. THESE LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

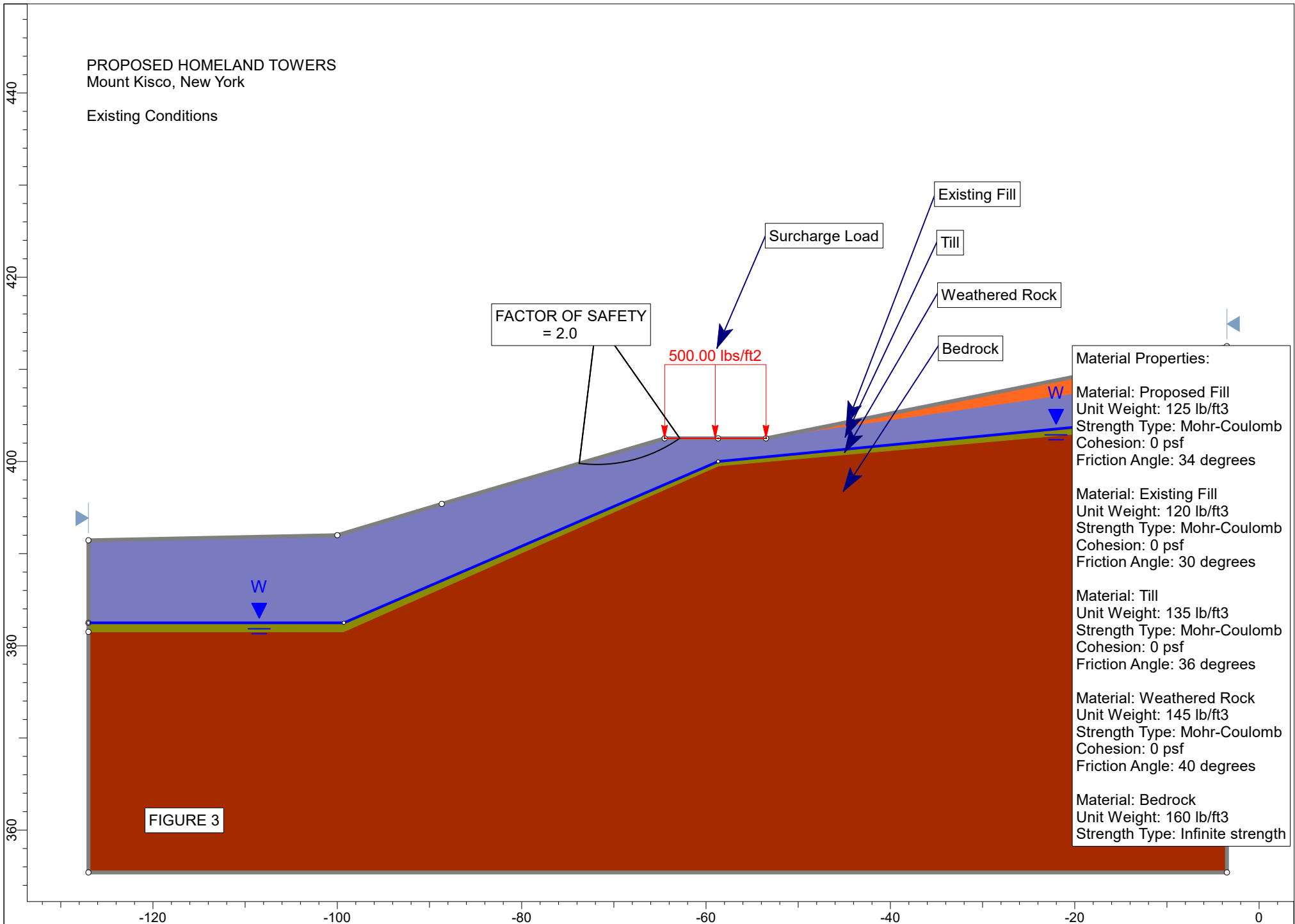
DESIGNED BY OTHERS						
DRAWN BY RPJ						
CHECKED BY DFL						
APPROVED BY RPJ						
NO.	DATE		DRWN.	CHKD	APPVD	
REVISIONS						

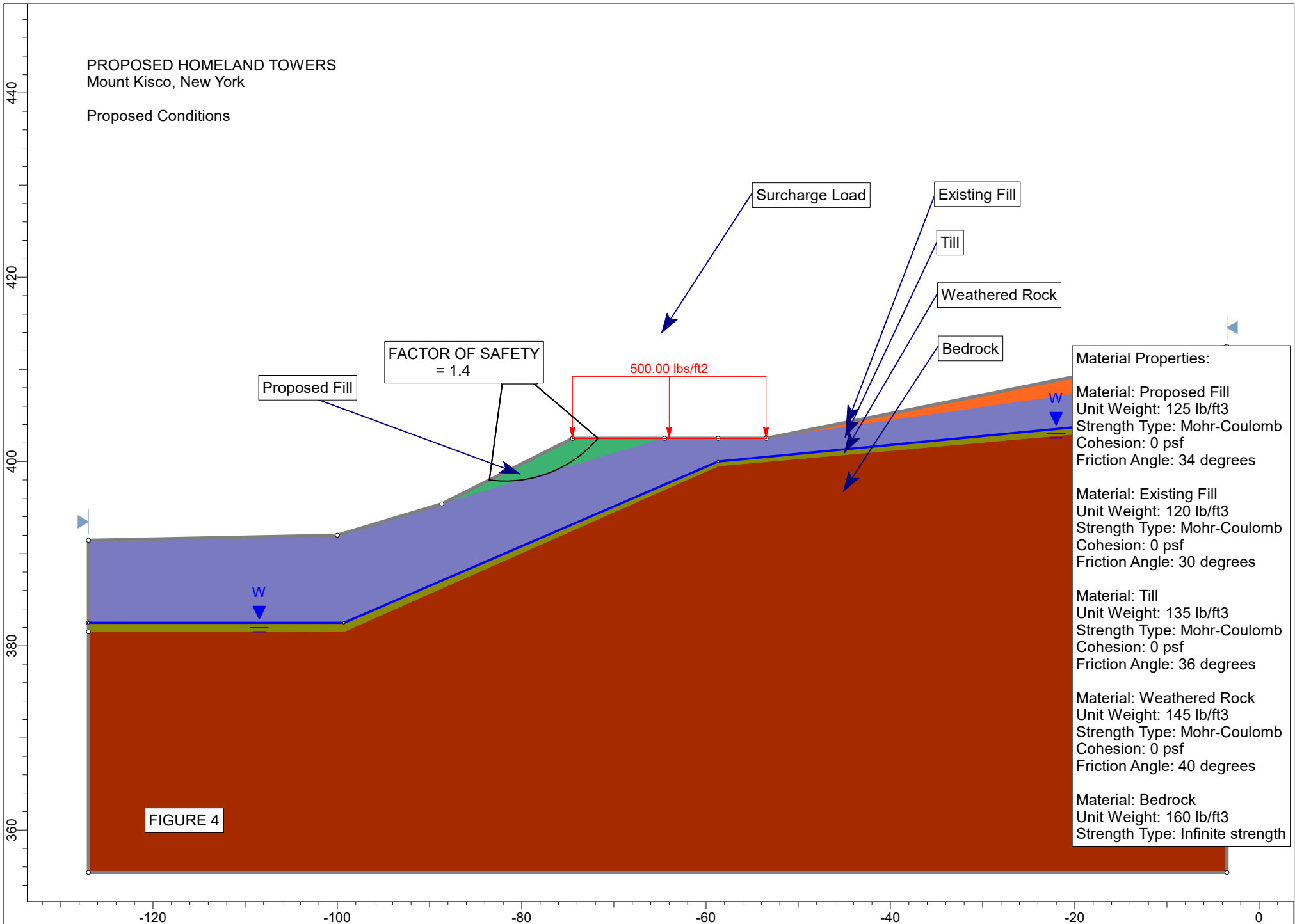
SCALE 1" = 40'

40' 20' 0 40'



PROJECT	PROPOSED TELECOMMUNICATIONS TOWER ACCESS ROAD	FILE NO.	0032-046.01
180 S. BEDFORD ROAD, MT. KISCO, NY		SCALE	DATE
DWG. TITLE.	SITE AND BORING LOCATION PLAN	AS NOTED	8/18/21
		FIGURE NO.	2







**APPENDIX A -
LIMITATIONS**

LIMITATIONS

Explorations

1. The analyses and recommendations submitted in this report are based in part upon the data obtained from subsurface explorations by Down To Earth Consulting, LLC (DTE) and others. The nature and extent of variations between these explorations may not become evident until construction. If variations then appear evident, it will be necessary to reevaluate the recommendations of this report.
2. The generalized soil profile described in the text is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretations of widely spaced explorations and samples; actual soil transitions are probably more erratic. For specific information, refer to the boring logs.
3. Water level readings have been made in the drill holes at times and under conditions stated on the boring logs. These data have been reviewed and interpretations have been made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, tidal, temperature, and other factors occurring since the time measurements were made.

Review

4. In the event that any changes in the nature, design or location of the proposed roadway improvements are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing by DTE. It is recommended that this firm be provided the opportunity for a general review of final design and specifications in order that earthwork and foundation recommendations may be properly interpreted and implemented in the design and specifications.

Construction

5. It is recommended that this firm be retained to provide soil engineering services during construction of the earthworks and foundation phases of the work. This is to observe compliance with the design concepts, specifications, and recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to start of construction.

Use of Report

6. This report has been prepared for the exclusive use of APT Engineering for specific application to the project noted in this geotechnical report in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made.
7. This soil and foundation engineering report has been prepared for this project by DTE. This report is for design purposes only and is not sufficient to prepare an accurate bid. Contractors wishing a copy of the report may secure it with the understanding that its scope is limited to design considerations only.
8. This report may contain comparative cost estimates for the purpose of evaluating alternative foundation schemes. These estimates may also involve approximate quantity evaluations. It should be noted that quantity estimates may not be accurate enough for construction bids. Since DTE has no control over labor and materials cost and design, the estimates of construction costs have been made on the basis of experience. DTE does not guarantee the accuracy of cost estimates as compared to contractor's bids for construction costs.



**APPENDIX B -
EXPLORATION LOGS**



**DOWN TO EARTH
CONSULTING, LLC**
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT

PROPOSED TELECOMMUNICATIONS TOWER ACCESS ROAD

180 SOUTH BEDFORD ROAD

MOUNT KISCO, NEW YORK

BORING NO. R-1
SHEET 1 of 1
FILE NO. 0032-046.00
CHKD. BY RPJ

Boring Co. Associated Borings Company, Inc. Boring Location See Boring Location Plan
Driller Jamie Lloret Ground Surface El. 388' +/- Datum NAVD 88
Logged By Ray Janeiro, P.E. Date Start 2/8/2021 Date End 2/8/2021

Hammer Type: Safety Hammer Driven by Cathead
Sampler Size: 1-3/8" I.D. Split Spoon
Type Drill Rig: Truck CME 45
Drilling Method: 2.25-inch I.D. Hollow-Stem Augers

DEPTH (ft)	Casing Blows (ft)	SAMPLE INFORMATION					SAMPLE DESCRIPTION	STRATA DESCRIPTION
		Type & No.	REC/PEN (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	Core Time (min./ft)		
1								2" Asphalt Millings
2		S-1	6/24	1 to 3	16-12-31-13		Dense, brown fine to coarse SAND, some fine Gravel, little Silt	SILTY GRAVELLY SAND
3								
4		S-2	4/24	3 to 5	14-15-11-17		Medium dense, brown fine to coarse GRAVEL and SAND, little Silt	
5								
6		S-3	5/24	5 to 7	20-20-10-8		Medium dense, brown fine to coarse SAND, some fine to coarse Gravel, some Silt, wet	
7								SILTY GRAVELLY SAND
8		S-4	7/24	7 to 9	8-7-4-3		Medium dense, brown fine to coarse SAND, some Silt, little fine Gravel	
9								
10							END OF EXPLORATION AT 9 FEET BELOW GRADE	
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose 5 to 10 - Loose 11 to 30 - Medium Dense 31 to 50 - Dense Over 50 - Very Dense	0 to 2 - Very Soft 3 to 4 - Soft 5 to 8 - Medium Stiff 9 to 15 - Stiff 16 to 30 - Very Stiff Over 30 - Hard	Trace = 0 to 10% Little = 10 to 20% Some = 20 to 35% And = 35 to 50%	1. S denotes split-barrel sampler. 2. ST denotes 3-inch O.D. undisturbed sample. 3. UO denotes 3-inch Osterberg undisturbed sample. 4. PEN denotes penetration length of sampler. 5. REC denotes recovered length of sample. 6. SPT denotes Standard Penetration Test.	7. WH denotes weight of hammer 8. WR denotes weight of rods 9. PP denotes Pocket Penetrometer. 10. FVST denotes field vane shear test. 11. RQD denotes Rock Quality Designation. 12. C denotes core run number.

FIELD NOTES: 1) Stratification lines represent approximate boundaries between soil types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations may occur due to other factors.



**DOWN TO EARTH
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GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT

PROPOSED TELECOMMUNICATIONS TOWER ACCESS ROAD

180 SOUTH BEDFORD ROAD

MOUNT KISCO, NEW YORK

BORING NO. R-2
SHEET 1 of 1
FILE NO. 0032-046.00
CHKD. BY RPJ

Boring Co. Associated Borings Company, Inc. Boring Location See Boring Location Plan
Driller Jamie Lloret Ground Surface El. 404' +/- Datum NAVD 88
Logged By Ray Janeiro, P.E. Date Start 2/8/2021 Date End 2/8/2021

Hammer Type: Safety Hammer Driven by Cathead
Sampler Size: 1-3/8" I.D. Split Spoon
Type Drill Rig: Truck CME 45
Drilling Method: 2.25-inch I.D. Hollow-Stem Augers

D E P T H	Casing Blows (ft)	SAMPLE INFORMATION					SAMPLE DESCRIPTION	STRATA DESCRIPTION
		Type & No.	REC/PEN (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	Core Time (min./ft)		

1								1" Asphalt Millings
2		S-1	8/17	1.3 to 2.7	8-14-50/5"		Very dense, Top 4": brown fine to medium SAND and SILT, trace (-) Roots, moist; Bottom 4": gray/white decomposed ROCK fragments	TILL
3								WEATH. ROCK
4							END OF EXPLORATION (SAMPLER REFUSAL) AT 2.7 FEET BELOW GRADE	
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose 5 to 10 - Loose 11 to 30 - Medium Dense 31 to 50 - Dense Over 50 - Very Dense	0 to 2 - Very Soft 3 to 4 - Soft 5 to 8 - Medium Stiff 9 to 15 - Stiff 16 to 30 - Very Stiff Over 30 - Hard	Trace = 0 to 10% Little = 10 to 20% Some = 20 to 35% And = 35 to 50%	1. S denotes split-barrel sampler. 2. ST denotes 3-inch O.D. undisturbed sample. 3. UO denotes 3-inch Osterberg undisturbed sample. 4. PEN denotes penetration length of sampler. 5. REC denotes recovered length of sample. 6. SPT denotes Standard Penetration Test.	7. WH denotes weight of hammer 8. WR denotes weight of rods 9. PP denotes Pocket Penetrometer. 10. FVST denotes field vane shear test. 11. RQD denotes Rock Quality Designation. 12. C denotes core run number.

FIELD NOTES: 1) Stratification lines represent approximate boundaries between soil types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations may occur due to other factors.



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GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT

PROPOSED TELECOMMUNICATIONS TOWER ACCESS ROAD

180 SOUTH BEDFORD ROAD

MOUNT KISCO, NEW YORK

BORING NO. R-3
SHEET 1 of 1
FILE NO. 0032-046.00
CHKD. BY RPJ

Boring Co. Associated Borings Company, Inc. Boring Location See Boring Location Plan
Driller Jamie Lloret Ground Surface El. 417'+/- Datum NAVD 88
Logged By Ray Janeiro, P.E. Date Start 2/8/2021 Date End 2/8/2021

Hammer Type: Safety Hammer Driven by Cathead
Sampler Size: 1-3/8" I.D. Split Spoon
Type Drill Rig: Truck CME 45
Drilling Method: 2.25-inch I.D. Hollow-Stem Augers

DEPTH (ft)	Casing Blows (ft)	SAMPLE INFORMATION					SAMPLE DESCRIPTION	STRATA DESCRIPTION
		Type & No.	REC/PEN (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	Core Time (min./ft)		

1								1.5" Asphalt
2		S-1	6/24	1.5 to 3.5	20-7-5-4		Medium dense, brown fine to medium SAND and SILT, trace (-) Roots, moist	FILL
3								
4		S-2	7/15	3.5 to 4.8	11-46-50/3"		Very dense, Top 3": brown fine to coarse SAND, some fine Gravel, little Silt; Bottom 4": gray/white decomposed ROCK fragments	TILL
5							END OF EXPLORATION (SAMPLER REFUSAL) AT 4.8 FEET BELOW GRADE	WEATH. ROCK
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose 5 to 10 - Loose 11 to 30 - Medium Dense 31 to 50 - Dense Over 50 - Very Dense	0 to 2 - Very Soft 3 to 4 - Soft 5 to 8 - Medium Stiff 9 to 15 - Stiff 16 to 30 - Very Stiff Over 30 - Hard	Trace = 0 to 10% Little = 10 to 20% Some = 20 to 35% And = 35 to 50%	1. S denotes split-barrel sampler. 2. ST denotes 3-inch O.D. undisturbed sample. 3. UO denotes 3-inch Osterberg undisturbed sample. 4. PEN denotes penetration length of sampler. 5. REC denotes recovered length of sample. 6. SPT denotes Standard Penetration Test.	7. WH denotes weight of hammer 8. WR denotes weight of rods 9. PP denotes Pocket Penetrometer. 10. FVST denotes field vane shear test. 11. RQD denotes Rock Quality Designation. 12. C denotes core run number.

FIELD NOTES: 1) Stratification lines represent approximate boundaries between soil types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations may occur due to other factors.
3) Drilling refusal encountered at about 1 foot below grade on inferred boulder. Boring offset about 2 feet north.



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GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT

PROPOSED TELECOMMUNICATIONS TOWER ACCESS ROAD

180 SOUTH BEDFORD ROAD

MOUNT KISCO, NEW YORK

BORING NO. R-4
SHEET 1 of 1
FILE NO. 0032-046.00
CHKD. BY RPJ

Boring Co. Associated Borings Company, Inc. Boring Location See Boring Location Plan
Driller Jamie Lloret Ground Surface El. 425'+/- Datum NAVD 88
Logged By Ray Janeiro, P.E. Date Start 2/8/2021 Date End 2/8/2021

Hammer Type: Safety Hammer Driven by Cathead
Sampler Size: 1-3/8" I.D. Split Spoon
Type Drill Rig: Truck CME 45
Drilling Method: 2.25-inch I.D. Hollow-Stem Augers

D E P T H	Casing Blows (ft)	SAMPLE INFORMATION					SAMPLE DESCRIPTION	STRATA DESCRIPTION
		Type & No.	REC/PEN (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	Core Time (min./ft)		

1								2.5" Asphalt
2		S-1	5/24	1 to 3	10-9-5-5		Medium dense, brown fine to coarse SAND, some Silt, trace fine Gravel	FILL
3								
4		S-2	7/24	3 to 5	5-3-2-9		Loose, dark brown fine to coarse SAND, some Silt, little fine Gravel, with clay pipe fragments	
5								
6		S-3	11/15	5 to 6.3	11-24-50/3"		Very dense, gray/brown to brown fine to coarse SAND, little Silt, with decomposed rock fragments at sample tip	TILL
7							END OF EXPLORATION (SAMPLER REFUSAL) AT 6.3 FEET BELOW GRADE	WEATH. ROCK
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose 5 to 10 - Loose 11 to 30 - Medium Dense 31 to 50 - Dense Over 50 - Very Dense	0 to 2 - Very Soft 3 to 4 - Soft 5 to 8 - Medium Stiff 9 to 15 - Stiff 16 to 30 - Very Stiff Over 30 - Hard	Trace = 0 to 10% Little = 10 to 20% Some = 20 to 35% And = 35 to 50%	1. S denotes split-barrel sampler. 2. ST denotes 3-inch O.D. undisturbed sample. 3. UO denotes 3-inch Osterberg undisturbed sample. 4. PEN denotes penetration length of sampler. 5. REC denotes recovered length of sample. 6. SPT denotes Standard Penetration Test.	7. WH denotes weight of hammer 8. WR denotes weight of rods 9. PP denotes Pocket Penetrometer. 10. FVST denotes field vane shear test. 11. RQD denotes Rock Quality Designation. 12. C denotes core run number.

FIELD NOTES: 1) Stratification lines represent approximate boundaries between soil types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations may occur due to other factors.



**DOWN TO EARTH
CONSULTING, LLC**
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT

PROPOSED TELECOMMUNICATIONS TOWER ACCESS ROAD

180 SOUTH BEDFORD ROAD

MOUNT KISCO, NEW YORK

BORING NO. R-5
SHEET 1 of 1
FILE NO. 0032-046.00
CHKD. BY RPJ


Boring Co. Associated Borings Company, Inc. Boring Location See Boring Location Plan
Driller Jamie Lloret Ground Surface El. 431'±/- Datum NAVD 88
Logged By Ray Janeiro, P.E. Date Start 2/8/2021 Date End 2/8/2021

Hammer Type: Safety Hammer Driven by Cathead
Sampler Size: 1-3/8" I.D. Split Spoon
Type Drill Rig: Truck CME 45
Drilling Method: 2.25-inch I.D. Hollow-Stem Augers

DEPTH (ft)	Casing Blows (ft)	SAMPLE INFORMATION					SAMPLE DESCRIPTION	STRATA DESCRIPTION
		Type & No.	REC/PEN (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	Core Time (min./ft)		
1								2.5" Asphalt
2		S-1	13/24	1.5 to 3.5	9-12-15-18		Medium dense, gray-brown fine to coarse SAND, some Silt, some fine Gravel, moist	TILL
3								
4		S-2	6/8	3.5 to 4.2	19-50/2"		Very dense, gray-brown fine to coarse SAND, some Silt, little fine Gravel, with decomposed rock fragments at sample tip, wet	
5							END OF EXPLORATION (SAMPLER REFUSAL) AT 4.2 FEET BELOW GRADE	
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose 5 to 10 - Loose 11 to 30 - Medium Dense 31 to 50 - Dense Over 50 - Very Dense	0 to 2 - Very Soft 3 to 4 - Soft 5 to 8 - Medium Stiff 9 to 15 - Stiff 16 to 30 - Very Stiff Over 30 - Hard	Trace = 0 to 10% Little = 10 to 20% Some = 20 to 35% And = 35 to 50%	1. S denotes split-barrel sampler. 2. ST denotes 3-inch O.D. undisturbed sample. 3. UO denotes 3-inch Osterberg undisturbed sample. 4. PEN denotes penetration length of sampler. 5. REC denotes recovered length of sample. 6. SPT denotes Standard Penetration Test.	7. WH denotes weight of hammer 8. WR denotes weight of rods 9. PP denotes Pocket Penetrometer. 10. FVST denotes field vane shear test. 11. RQD denotes Rock Quality Designation. 12. C denotes core run number.

FIELD NOTES: 1) Stratification lines represent approximate boundaries between soil types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations may occur due to other factors.

 DOWN TO EARTH CONSULTING, LLC <small>GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING</small>	PROJECT			BORING NO. <u>R-6</u>
	<u>PROPOSED TELECOMMUNICATIONS TOWER ACCESS ROAD</u>			SHEET <u>1</u> of <u>1</u>
	<u>180 SOUTH BEDFORD ROAD</u>			FILE NO. <u>0032-046.00</u>
	<u>MOUNT KISCO, NEW YORK</u>			CHKD. BY <u>RPJ</u>

Boring Co. <u>Associated Borings Company, Inc.</u>	Boring Location <u>See Boring Location Plan</u>
Driller <u>Jamie Lloret</u>	Ground Surface El. <u>436' +/-</u>
Logged By <u>Ray Janeiro, P.E.</u>	Date Start <u>2/8/2021</u>
	Datum <u>NAVD 88</u>
	Date End <u>2/8/2021</u>

Hammer Type: <u>Safety Hammer Driven by Cathead</u>	Groundwater Readings (from ground surface)				
Sampler Size: <u>1-3/8" I.D. Split Spoon</u>	Date	Time	Depth (ft)	Elev.	Stabilization Time
Type Drill Rig: <u>Truck CME 45</u>	<u>2/8/21</u>	<u>-</u>	<u>7</u>	<u>429' +/-</u>	<u>wet sample</u>
Drilling Method: <u>2.25-inch I.D. Hollow-Stem Augers</u>					

D E P T H	Casing Blows (ft)	SAMPLE INFORMATION					SAMPLE DESCRIPTION	STRATA DESCRIPTION
		Type & No.	REC/PEN (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	Core Time (min./ft)		
1								2" Asphalt
2		S-1	4/24	1 to 3	46-14-5-4		Medium dense, dark brown fine to coarse SAND, little fine to coarse Gravel, little Silt	FILL
3								
4		S-2	8/24	3 to 5	4-8-7-9			
5								
6		S-3	11/24	5 to 7	6-3-1-3		Loose, brown fine to coarse SAND, some Silt, little fine Gravel	TILL
7								
8		S-4	12/24	7 to 9	3-4-7-8			
9								
10		S-5	10/24	9 to 11	11-17-10-12		Medium dense, brown fine to coarse SAND, some fine Gravel, little Silt, with decomposed rock fragments at sample tip	
11							END OF EXPLORATION AT 11 FEET BELOW GRADE	
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose 5 to 10 - Loose 11 to 30 - Medium Dense 31 to 50 - Dense Over 50 - Very Dense	0 to 2 - Very Soft 3 to 4 - Soft 5 to 8 - Medium Stiff 9 to 15 - Stiff 16 to 30 - Very Stiff Over 30 - Hard	Trace = 0 to 10% Little = 10 to 20% Some = 20 to 35% And = 35 to 50%	1. S denotes split-barrel sampler. 2. ST denotes 3-inch O.D. undisturbed sample. 3. UO denotes 3-inch Osterberg undisturbed sample. 4. PEN denotes penetration length of sampler. 5. REC denotes recovered length of sample. 6. SPT denotes Standard Penetration Test.	7. WH denotes weight of hammer 8. WR denotes weight of rods 9. PP denotes Pocket Penetrometer. 10. FVST denotes field vane shear test. 11. RQD denotes Rock Quality Designation. 12. C denotes core run number.

FIELD NOTES: 1) Stratification lines represent approximate boundaries between soil types, transitions may be gradual.

2) Water level readings have been made at times and under conditions stated, fluctuations may occur due to other factors.

3) Sampler broke in borehole during advancement of S-3. Boring offset about 2 feet north and advanced to 5 feet below grade prior to resampling S-3.



**DOWN TO EARTH
CONSULTING, LLC**
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT

PROPOSED TELECOMMUNICATIONS TOWER ACCESS ROAD

180 SOUTH BEDFORD ROAD

MOUNT KISCO, NEW YORK

BORING NO. R-7
SHEET 1 of 1
FILE NO. 0032-046.00
CHKD. BY RPJ

Boring Co. Associated Borings Company, Inc. Boring Location See Boring Location Plan
Driller Jamie Lloret Ground Surface El. 439'+/- Datum NAVD 88
Logged By Ray Janeiro, P.E. Date Start 2/8/2021 Date End 2/8/2021

Hammer Type: Safety Hammer Driven by Cathead
Sampler Size: 1-3/8" I.D. Split Spoon
Type Drill Rig: Truck CME 45
Drilling Method: 2.25-inch I.D. Hollow-Stem Augers

E P T H	Casing Blows (ft)	SAMPLE INFORMATION					SAMPLE DESCRIPTION	STRATA DESCRIPTION		
		Type & No.	REC/PEN (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	Core Time (min./ft)				
1								2" Asphalt		
2		S-1	8/24	1 to 3	36-38-15-21		Very dense, dark brown fine to coarse SAND, some fine to coarse Gravel, little Silt			
3										
4	S-2	3/24	3 to 5	14-10-5-5		Medium dense, brown fine to coarse SAND, some fine Gravel, little Silt				
5										
6	S-3	12/22	5 to 6.8	18-20-18-50/4"			Dense, Top 6": gray/brown fine to coarse SAND and fine to coarse GRAVEL, little Silt; Bottom 6": gray decomposed ROCK fragments	TILL		
7						WEATH. ROCK				
8						END OF EXPLORATION (SAMPLER REFUSAL) AT 6.8 FEET BELOW GRADE				
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SPT N-Values		SPT N-Values		Proportions				SYMBOL KEY		
0 to 4 - Very Loose		0 to 2 - Very Soft		Trace = 0 to 10%				1. S denotes split-barrel sampler.		7. WH denotes weight of hammer
5 to 10 - Loose		3 to 4 - Soft		Little = 10 to 20%		2. ST denotes 3-inch O.D. undisturbed sample.		8. WR denotes weight of rods		
11 to 30 - Medium Dense		5 to 8 - Medium Stiff		Some = 20 to 35%		3. UO denotes 3-inch Osterberg undisturbed sample.		9. PP denotes Pocket Penetrometer.		
31 to 50 - Dense		9 to 15 - Stiff		And = 35 to 50%		4. PEN denotes penetration length of sampler.		10. FVST denotes field vane shear test.		
Over 50 - Very Dense		16 to 30 - Very Stiff				5. REC denotes recovered length of sample.		11. RQD denotes Rock Quality Designation.		
		Over 30 - Hard				6. SPT denotes Standard Penetration Test.		12. C denotes core run number.		

FIELD NOTES: 1) Stratification lines represent approximate boundaries between soil types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations may occur due to other factors.

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REPLY TO:
TARRYTOWN OFFICE

July 15, 2021

Honorable Chairman Boxer
and Members of the Zoning Board of Appeals
Village of Mount Kisco
104 Main Street
Mount Kisco, New York 10549

Re: 180 S. Bedford Road
Public Utility Wireless Telecommunications Facility
Homeland Towers, LLC & Verizon Wireless

Honorable Chairman Boxer and
Members of the Zoning Board of Appeals:

As you are aware, we are the attorneys for Homeland Towers, LLC ("Homeland Towers") and Verizon Wireless (together "Applicants") in connection with their application to place a public utility wireless telecommunications facility ("Facility") at the above referenced property ("Property").

Enclosed please find ten (10) copies of the materials filed by the Applicants with the Planning Board. If you have any questions or require any additional documentation, please do not hesitate to contact me at 914-333-0700.

Snyder & Snyder, LLP

By: 

Robert D. Gaudioso

RDG/cae

Enclosures

cc: Applicants

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REPLY TO:
TARRYTOWN OFFICE

July 15, 2021

Honorable Chairman Bonforte
and Members of the Planning Board
Village of Mount Kisco
104 Main Street
Mount Kisco, New York 10549

Re: 180 S. Bedford Road
Public Utility Wireless Telecommunications Facility
Homeland Towers, LLC & Verizon Wireless

Honorable Chairman Bonforte and
Members of the Planning Board:

As you are aware, we are the attorneys for Homeland Towers, LLC ("Homeland Towers") and Verizon Wireless (together "Applicants") in connection with their application to place a public utility wireless telecommunications facility ("Facility") at the above referenced property ("Property").

It is our understanding that AT&T intends to file a separate application to collocate on the Facility. Although AT&T's proposal is separate from the Applicants' proposal, Homeland Towers has amended its materials to account for AT&T as detailed below.

In furtherance of the foregoing, enclosed please find fourteen (14) copies the following:

- 1) Revised Pinnacle Report dated June 11, 2021 demonstrating that cumulatively the facilities will meet FCC regulations regarding radio frequency exposure;
- 2) Supplemental RF Justification Report from VCOMM Engineering dated July 13, 2021, in response to comments received from HDR, the Village's Wireless Consultant. Please note that the Applicants respectfully submit that drive test data is not required by the Village Code and is not necessary. However, based on the Planning Board insistence, the enclosed report includes drive test data and dropped call data that further substantiates the need for the Facility and that the proposed height is the minimum height necessary;
- 3) Report from K. Wimmer of Homeland Towers dated July 1, 2021, detailing the access road to the Mountain Avenue Tower;
- 4) Report from K. Wimmer of Homeland Towers dated July 13, 2021, regarding 21 Linden

Lane speculative alternative site and detailing why such location is more intrusive than the proposed Facility.

- 5) Letter from APT Engineering dated July 13, 2021 responding to the Fire Department comments and detailing revisions to the stormwater calculations and Site Plan;
- 6) Letter from APT Engineering dated July 13, 2021 detailing that the New York State Building and Fire Prevention Code does not apply to the Facility since it is a freestanding tower;
- 7) Revised Stormwater Management Report by APT Engineering revised July 2021; and
- 8) Revised Site Plan.

We thank you for your consideration, and look forward to discussing this matter with the Planning Board at the August 10, 2021 public hearing. If you have any questions or require any additional documentation, please do not hesitate to contact me at 914-333-0700.

Snyder & Snyder, LLP

By: 

Robert D. Gaudio

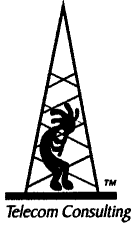
RDG/cae

Enclosures

cc: Zoning Board (10 copies, under separate cover letter)

Applicants

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PINNACLE TELECOM GROUP

Professional and Technical Services

ANTENNA SITE FCC RF COMPLIANCE ASSESSMENT AND REPORT

HOMELAND TOWERS, LLC

**SITE "NY172 – MT. KISCO"
180 SOUTH BEDFORD ROAD
MT. KISCO, NY**

JUNE 11, 2021

14 RIDGEDALE AVENUE, SUITE 260 • CEDAR KNOLLS, NJ 07927 • 973-451-1630

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CERTIFICATION

APPENDIX A. BACKGROUND ON THE FCC MPE LIMIT

INTRODUCTION AND SUMMARY

At the request of Homeland Towers, LLC, Pinnacle Telecom Group has performed an independent expert assessment of radiofrequency (RF) levels and related FCC compliance for proposed wireless antenna operations on a new 140-foot monopole to be located at 180 South Bedford Road in Mt. Kisco, NY.

Homeland Towers refers to the prospective site as “NY172 – Mt. Kisco”, and the proposed monopole will accommodate the directional panel antennas of up to three wireless carriers. At this time, Verizon Wireless plans to occupy the highest antenna mounting position on the monopole, followed by AT&T.

The FCC requires wireless antenna operators to perform an assessment of the RF levels from all the transmitting antennas at a site whenever antenna operations are added or modified, and ensure compliance with the FCC Maximum Permissible Exposure (MPE) limit in areas of unrestricted public access, i.e., at street level around the site.

In this case, the compliance assessment will include the RF effects of a worst-case hypothetical collocation by T-Mobile.

The analysis will conservatively assume all the wireless carriers are operating at maximum capacity and maximum power in each of their FCC-licensed frequency bands. With that extreme degree of conservatism incorporated in the analysis, we can have great confidence that the actual RF effects from any combination of wireless operators, however they might actually be positioned on the monopole, would be in compliance with the FCC’s MPE limit.

This assessment of antenna site compliance is based on the FCC limit for general population “maximum permissible exposure” (MPE), a limit established as safe for continuous exposure to RF fields by humans of either sex, all ages and sizes, and under all conditions.

The result of an FCC compliance assessment can be described in layman’s terms by expressing the calculated RF levels as simple percentages of the FCC

MPE limit. In that way, the figure 100 percent serves as the reference for compliance, and calculated RF levels below 100 percent indicate compliance with the MPE limit. An equivalent way to describe the calculated results is to relate them to a “times-below-the-limit” factor. Here, we will apply both descriptions.

The result of the FCC compliance assessment in this case is as follows:

- ❑ At street level around the site, the conservatively calculated maximum RF level caused by the combination of antenna operations is 6.1139 percent of the FCC general population MPE limit, well below the 100-percent reference for compliance. In other words, even with calculations designed to significantly overstate the RF levels versus those that could actually occur at the site, the worst-case calculated RF level in this case is still more than 15 times below the limit defined by the federal government as safe for continuous exposure of the general public.
- ❑ The results of the calculations provide a clear demonstration that the RF levels from as many as three wireless carriers, even under worst-case collocation circumstances, would satisfy the FCC requirement for controlling potential human exposure to RF fields. Moreover, because of the conservative methodology and assumptions applied in this analysis, RF levels actually caused by any combination of wireless operators’ antenna operations at this site will be even less significant than the calculation results here indicate.

The remainder of this report provides the following:

- ❑ relevant technical data on the parameters for the three wireless carriers;
- ❑ a description of the applicable FCC mathematical model for assessing compliance with the MPE limit, and application of the relevant technical data to that model; and
- ❑ analysis of the results of the calculations, and the compliance conclusion for the proposed site.

In addition, Appendix A provides background on the FCC MPE limit, along with a list of key FCC references on MPE compliance.

ANTENNA AND TRANSMISSION DATA

As described, the proposed 140-foot monopole will be able to accommodate as many as three wireless carriers' antennas. Verizon Wireless proposes to occupy the highest mounting position on the monopole. This analysis will include an assumption of "worst-case" collocation by two other wireless carriers – AT&T and T-Mobile.

The worst-case collocation methodology basically involves taking the carriers with the most available spectrum and the opportunity for higher power levels and hypothetically positioning them at the lower points on the monopole – thus matching the most power with the shorter distances to the ground.

Typically, the vertical spacing between different wireless carriers' antennas on a monopole is 10 feet. In this case, the Verizon Wireless antennas will mount at a center line of 137 feet, and we will assign antenna centerline-heights to the two other assumed wireless collocators at 127 feet and 117 feet.

The transmission parameters for each of the wireless carriers are described below.

Verizon Wireless is licensed to operate in the 746 MHz, 869 MHz, 1900 MHz, 2100 MHz and 3.5 GHz frequency bands. In the 746 MHz band, Verizon uses four 40-watt channels per antenna sector. In the 869 MHz band, Verizon uses four 40-watt channels per sector. In the 1900 MHz band, Verizon uses four 40-watt channels per antenna sector. In the 2100 MHz band, Verizon uses four 40-watt channels per sector. In the 3.5 GHz band, Verizon uses two 0.622-watt channels per sector.

AT&T is licensed to operate in the 700, 850, 1900, 2100, and 2300 MHz frequency bands. In the 700 MHz band, AT&T uses 370 watts of input power per sector. In the 850 MHz band, AT&T uses 160 watts of input power per sector. In

the 1900 MHz band, AT&T uses 160 watts of input power per sector. In the 2100 MHz band, AT&T uses 160 watts of input power per sector. Lastly, in the 2300 MHz band, AT&T uses 100 watts of input power per sector.

T-Mobile is licensed to operate in the 600 MHz, 700 MHz, 1900 MHz, 2100 MHz and 2500 MHz frequency bands. In the 600 MHz band, T-Mobile uses four 40-watt channels per sector. In the 700 MHz band, T-Mobile uses one 40-watt channel per sector. In the 1900 MHz band, T-Mobile uses one 40-watt channel and four 30-watt channels per sector. In the 2100 MHz band, T-Mobile uses one 40-watt channel and two 60-watt channels per sector. Lastly, In the 2500 MHz band, T-Mobile uses one 40-watt channel and one 80-watt channel per sector.

The proposed mounting heights are as follows:

- Verizon Wireless: 137 feet
- AT&T: 127 feet
- T-Mobile: 117 feet

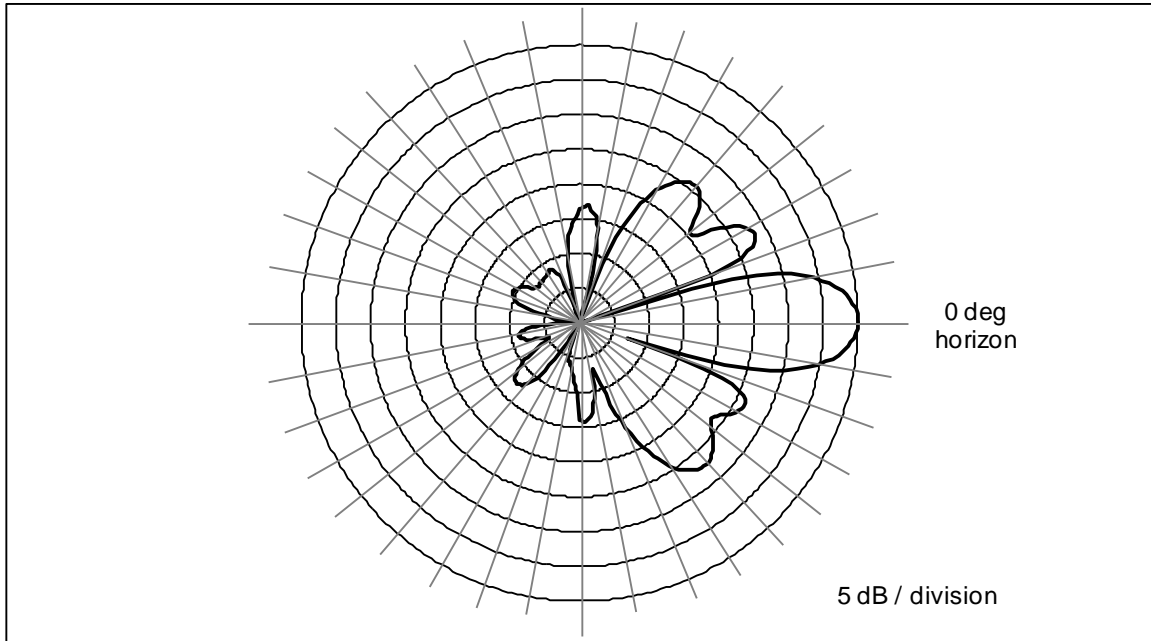
The area below the antennas, at street level, is of interest in terms of potential “uncontrolled” exposure of the general public, so the antenna’s vertical-plane emission characteristic is used in the calculations, as it is a key determinant in the relative level of RF emissions in the “downward” direction.

By way of illustration, Figure 1, below, shows the vertical-plane pattern of a typical 1900 MHz panel antenna. The antenna is effectively pointed at the three o’clock position (the horizon) and the pattern at different angles is described using decibel units. The use of a decibel scale incidentally visually understates the relative directionality characteristic of the antenna in the vertical plane. Where the antenna pattern reads 20 dB, the relative RF energy emitted at the corresponding downward angle is 1/100th of the maximum that occurs in the main beam (at 0 degrees); at 30 dB, the energy is 1/1000th of the maximum.

Note that the automatic pattern-scaling feature of our internal software may skew side-by-side visual comparisons of different antenna models, or even different

parties' depictions of the same antenna model.

Figure 1. 1900 MHz Directional Panel Antenna – Vertical-plane Pattern



Compliance Analysis

FCC Office of Engineering and Technology Bulletin 65 (“OET Bulletin 65”) provides guidelines for mathematical models to calculate potential RF exposure levels at various points around transmitting antennas.

Around an antenna site at ground level (in what is called the “far field” of the antennas), the RF levels are directly proportional to the total antenna input power and the relative antenna gain (focusing effect) in the downward direction of interest – and the levels are otherwise inversely proportional to the square of the straight-line distance to the antenna. Conservative calculations also assume the potential RF exposure is enhanced by reflection of the RF energy from the intervening ground. Our calculations will assume a 100% “perfect”, mirror-like reflection, which is the absolute worst-case approach.

The formula for ground-level MPE compliance assessment of any given wireless antenna operation is as follows:

$$\text{MPE\%} = (100 * \text{TxPower} * 10^{(\text{Gmax-Vdisc})/10} * 4) / (\text{MPE} * 4\pi * R^2)$$

where

MPE%	=	RF level, expressed as a percentage of the FCC MPE limit applicable to continuous exposure of the general public
100	=	factor to convert the raw result to a percentage
TxPower	=	maximum net power into antenna sector, in milliwatts, a function of the number of channels per sector, the transmitter power per channel, and line loss
$10^{(\text{Gmax-Vdisc})/10}$	=	numeric equivalent of the relative antenna gain in the direction of interest downward toward ground level
4	=	factor to account for a 100-percent-efficient energy reflection from the ground, and the squared relationship between RF field strength and power density ($2^2 = 4$)
MPE	=	FCC general population MPE limit
R	=	straight-line distance from the RF source to the point of interest, centimeters

The MPE% calculations are normally performed out to a distance of 500 feet from the facility to points 6.5 feet (approximately two meters, the FCC-recommended standing height) off the ground, as illustrated in Figure 2 on the next page.

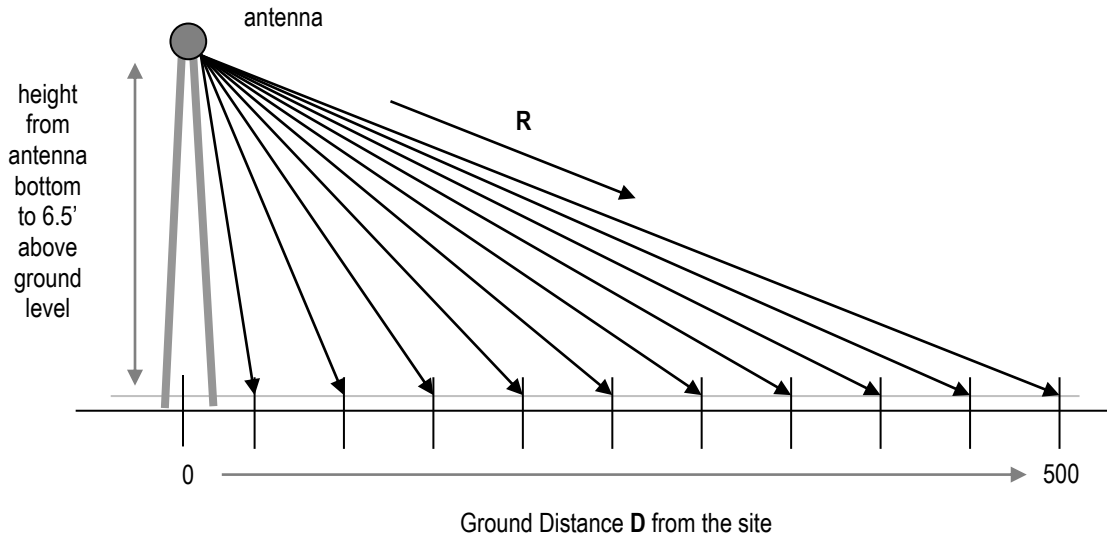


Figure 2. Street-level MPE% Calculation Geometry

It is popularly thought that the farther away one is from an antenna, the lower the RF level – which is generally but not universally correct. The results of MPE% calculations fairly close to the site will reflect the variations in the vertical-plane antenna pattern as well as the variation in straight-line distance to the antennas. Therefore, RF levels may actually increase slightly with increasing distance within the range of zero to 500 feet from the site. As the distance approaches 500 feet and beyond, though, the antenna pattern factor becomes less significant, the RF levels become primarily distance-controlled and, as a result, the RF levels generally decrease with increasing distance. In any case, the RF levels more than 500 feet from a wireless antenna site are well understood to be sufficiently low and always in compliance.

FCC compliance for a collocated antenna site is assessed in the following manner. At each distance point away from the site, an MPE% calculation is made for each antenna operation, including the individual components of dual-band operations. Then, at each point, the sum of the individual MPE% contributions is compared to 100 percent, where the latter figure serves as a normalized reference for compliance with the MPE limit. We refer to the sum of the individual MPE% contributions as “total MPE%”, and any calculated total MPE% result exceeding 100 percent is, by definition, higher than the limit and

represent non-compliance and a need to take action to mitigate the RF levels. If all results are below 100 percent, that indicates compliance with the federal regulations on controlling exposure.

Note that the following conservative methodology and assumptions are incorporated into the MPE% calculations on a general basis:

1. The antennas are assumed to be operating continuously at maximum RF power – i.e., with the maximum number of channels and the maximum transmitter power per channel.
2. The power-attenuation effects of any shadowing or visual obstruction to a line-of-sight path from the antennas to the points of interest at ground level are ignored.
3. The calculations intentionally minimize the distance factor (R) by assuming a 6'6" human and performing the calculations from the bottom (rather than the centerline) of the antenna.
4. The potential RF exposure at ground level is assumed to be 100-percent enhanced (increased) via a "perfect" field reflection from the intervening ground.

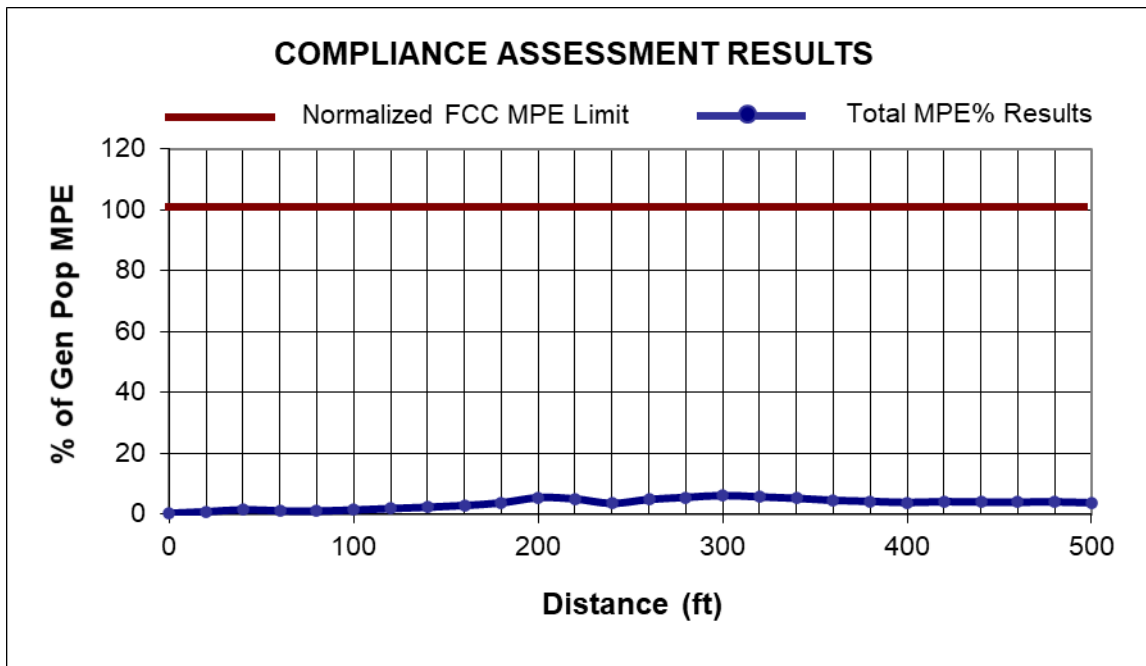
The net result of these assumptions is to intentionally and significantly overstate the calculated RF levels relative to the RF levels that will actually occur – and the purpose of this conservatism is to allow "safe-side" conclusions about compliance with the MPE limit.

The table that follows provides the results of the MPE% calculations for each antenna operation, with the worst-case overall result highlighted in bold in the last column.

Ground Distance (ft)	Verizon Wireless MPE%	AT&T MPE%	T-Mobile MPE%	Total MPE%
0	0.0416	0.0830	0.3838	0.5084
20	0.1445	0.0873	0.7704	1.0022
40	0.1266	0.1878	1.3247	1.6391
60	0.1849	0.2172	0.8659	1.2680
80	0.3614	0.3630	0.4522	1.1766
100	0.2482	0.8939	0.3798	1.5219
120	0.2120	1.0575	0.7428	2.0123
140	0.3864	0.6826	1.3458	2.4148
160	0.6643	0.2386	2.0530	2.9559
180	0.7193	0.1175	2.9560	3.7928
200	0.5304	0.1861	4.6988	5.4153
220	0.2359	0.2326	4.5843	5.0528
240	0.0650	0.1963	3.3526	3.6139
260	0.0751	0.1172	4.6724	4.8647
280	0.1527	0.1288	5.2163	5.4978
300	0.1883	0.1769	5.7487	6.1139
320	0.2279	0.2423	5.2132	5.6834
340	0.2064	0.3141	4.7116	5.2321
360	0.1754	0.3918	4.0109	4.5781
380	0.1483	0.4843	3.6183	4.2509
400	0.1401	0.6049	3.1453	3.8903
420	0.1595	0.7594	3.2386	4.1575
440	0.1465	0.6965	3.1901	4.0331
460	0.1995	0.8643	2.9332	3.9970
480	0.2928	1.0357	2.7691	4.0976
500	0.2713	0.9588	2.5619	3.7920

As indicated, the overall worst-case calculated result is 6.1139 percent of the FCC general population MPE limit – well below the 100-percent reference for compliance, particularly given the significant conservatism incorporated in the analysis.

A graph of the overall calculation results, provided on the next page, provides perhaps a clearer *visual* illustration of the relative compliance of the calculated RF levels. The line representing the overall calculation results shows an obviously clear, consistent margin to the FCC MPE limit.



Compliance Conclusion

The FCC MPE limit has been constructed in such a manner that continuous human exposure to RF fields up to and including 100 percent of the MPE limit is acceptable and completely safe.

The conservatively calculated maximum RF effect at street level from the assumed worst-case collocation of as many as three wireless carriers is 6.1139 percent of the FCC general population MPE limit. In other words, even with an extremely conservative analysis intended to dramatically overstate the RF effects of any wireless collocation scenario at the site, the calculated worst-case RF level is still more than 15 times below the FCC MPE limit.

The results of the calculations indicate clear compliance with the FCC regulations and the related MPE limit. Because of the conservative calculation methodology and operational assumptions applied in this analysis, the RF levels actually caused by any more realistic collocation of antennas at this site would be even less significant than the calculation results here indicate, and compliance would be achieved by an even larger margin.

CERTIFICATION

The undersigned verify as follows:

1. We have read and are familiar with the FCC regulations concerning RF safety and the control of human exposure to RF fields (47 CFR 1.1301 *et seq*).
2. To the best of our knowledge, the statements and information disclosed in this report are true, complete and accurate.
3. The analysis of site RF compliance provided herein is consistent with the applicable FCC regulations, additional guidelines issued by the FCC, and industry practice.
4. The results of the assessment indicate that the subject antenna operations were in full compliance with the FCC regulations concerning the control of potential RF exposure on the date tested.


Daniel J. Collins
Chief Technical Officer

6/11/21
Date


Peter M. Longo,
Principal
PML Consulting Engineers, 081318
New York License No. 081318



6/14/21
Date

Appendix A. Background on the FCC MPE Limit

As directed by the Telecommunications Act of 1996, the FCC has established limits for maximum continuous human exposure to RF fields.

The FCC maximum permissible exposure (MPE) limits represent the consensus of federal agencies and independent experts responsible for RF safety matters. Those agencies include the National Council on Radiation Protection and Measurements (NCRP), the Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), the American National Standards Institute (ANSI), the Environmental Protection Agency (EPA), and the Food and Drug Administration (FDA). In formulating its guidelines, the FCC also considered input from the public and technical community – notably the Institute of Electrical and Electronics Engineers (IEEE).

The FCC's RF exposure guidelines are incorporated in Section 1.301 *et seq* of its Rules and Regulations (47 CFR 1.1301-1.1310). Those guidelines specify MPE limits for both occupational and general population exposure.

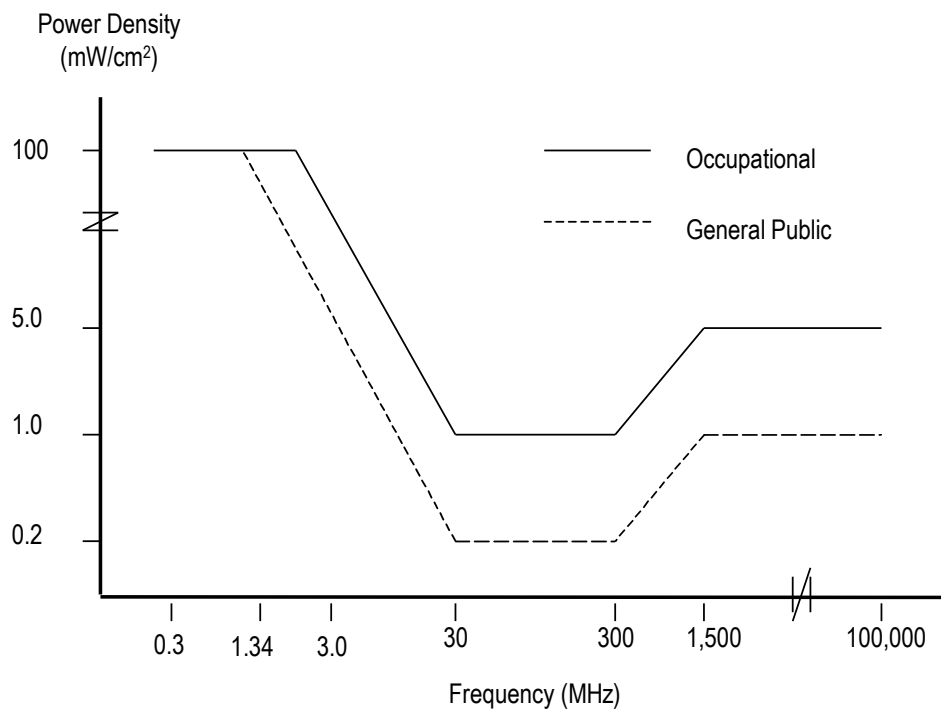
The specified continuous exposure MPE limits are based on known variation of human body susceptibility in different frequency ranges, and a Specific Absorption Rate (SAR) of 4 watts per kilogram, which is universally considered to accurately represent human capacity to dissipate incident RF energy (in the form of heat). The occupational MPE guidelines incorporate a safety factor of 10 or greater with respect to RF levels known to represent a health hazard, and an additional safety factor of five is applied to the MPE limits for general population exposure. Thus, the general population MPE limit has a built-in safety factor of more than 50. Continuous exposure at levels equal to or below the applicable MPE limits is considered to result in no adverse health effects on humans.

The reason for *two* tiers of MPE limits is based on an understanding and assumption that members of the general public are unlikely to have had appropriate RF safety training and may not be aware of the exposures they receive; occupational exposure in controlled environments, on the other hand, is assumed to involve individuals who have had such training, are aware of the exposures, and know how to maintain a safe personal work environment.

The FCC's RF exposure limits are expressed in two equivalent forms, using alternative units of field strength (expressed in volts per meter, or V/m), and power density (expressed in milliwatts per square centimeter, or mW/cm²). The table on the next page lists the FCC limits for both occupational and general population exposures, using the mW/cm² reference, for the different radio frequency ranges.

Frequency Range (F) (MHz)	Occupational Exposure (mW/cm ²)	General Public Exposure (mW/cm ²)
0.3 - 1.34	100	100
1.34 - 3.0	100	$180 / F^2$
3.0 - 30	$900 / F^2$	$180 / F^2$
30 - 300	1.0	0.2
300 - 1,500	$F / 300$	$F / 1500$
1,500 - 100,000	5.0	1.0

The diagram below provides a graphical illustration of both the FCC's occupational and general population MPE limits.



Because the FCC's RF exposure limits are frequency-shaped, the exact MPE limits applicable to the instant situation depend on the frequency range used by the systems of interest.

The most appropriate method of determining RF compliance is to calculate the RF power density attributable to a particular system and compare that to the MPE limit applicable to the operating frequency in question. The result is usually expressed as a percentage of the MPE limit.

For potential exposure from multiple systems, the respective percentages of the MPE limits are added, and the total percentage compared to 100 (percent of the limit). If the result is less than 100, the total exposure is in compliance; if it is more than 100, exposure mitigation measures are necessary to achieve compliance.

References on FCC Compliance

47 CFR, FCC Rules and Regulations, Part 1 (Practice and Procedure), Section 1.1310 (Radiofrequency radiation exposure limits).

FCC Second Memorandum Opinion and Order and Notice of Proposed Rulemaking (FCC 97-303), *In the Matter of Procedures for Reviewing Requests for Relief From State and Local Regulations Pursuant to Section 332(c)(7)(B)(v) of the Communications Act of 1934 (WT Docket 97-192), Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation (ET Docket 93-62), and Petition for Rulemaking of the Cellular Telecommunications Industry Association Concerning Amendment of the Commission's Rules to Preempt State and Local Regulation of Commercial Mobile Radio Service Transmitting Facilities*, released August 25, 1997.

FCC First Memorandum Opinion and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released December 24, 1996.

FCC Report and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released August 1, 1996.

FCC Report and Order, Notice of Proposed Rulemaking, Memorandum Opinion and Order (FCC 19-126), *Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields; Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies*, released December 4, 2019.

FCC Office of Engineering and Technology (OET) Bulletin 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", Edition 97-01, August 1997.

FCC Office of Engineering and Technology (OET) Bulletin 56, "Questions and Answers About Biological Effects and Potential Hazards of RF Radiation", edition 4, August 1999.

"RF Field Measurements for Antenna Sites", (video), Richard Tell Associates Inc., 1997.

"EME Awareness for Antenna Site Safety", (video), Motorola (produced in association with Richard Tell Associates Inc.), 1997.



HOMELAND TOWERS, LLC

NY172 MOUNT KISCO 4 SITE

**180 S BEDFORD ROAD
MOUNT KISCO
WESTCHESTER COUNTY, NY**

THIRD RF SUPPLEMENTAL REPORT

JULY 13, 2021

**DOMINIC C. VILLECCO
DAVID K. STERN**



Third Supplemental Report
NY172 Mount Kisco 4 Site
Mount Kisco, NY
July 13, 2021

THIRD SUPPLEMENTAL RF REPORT

V-COMM, L.L.C. has been retained by Homeland Towers, LLC to provide expert analysis in association with Verizon Wireless for its proposed wireless communications facility located at 180 S Bedford Road, Mount Kisco, NY.

This third supplemental report is provided in response to the Memorandum (“Memo”) dated March 2021 in response to the Homeland Towers, Alternate Site Analysis Report, 2nd Supplemental RF report submitted on 17th of March 2021, to the Planning Board. This report will contain drive test analysis for both Scanner and CW data, an analysis of key performance indicator (KPI) data for existing sites neighboring the identified gap in coverage, and an alternate site analysis for 21 Linden Lane.

SCANNER AND CW DRIVE TEST ANALYSIS

V-COMM collected on-air scanner data from the area around the Village covered by the Mount Kisco and Bedford 3 sites to document how these sites are performing today. A calibrated PCTel SeeGull IBflex scanner was configured to measure Verizon’s existing 700 MHz and 2100 MHz LTE channels. The RSRP and SINR data were collected for Verizon’s 700 MHz and 2100 MHz LTE channels.

V-COMM performed Continuous Wave (CW) testing to simulate the coverage from the proposed site at 180 S. Bedford Road. To perform this, a CW signal generator and an antenna were hoisted by a crane to the antenna centerline of the proposed installation. The signal generator was configured to radiate at a power level and frequency that would be equivalent to the RSRP level of the proposed installation. The targeted coverage area around the site was driven to collect the received power levels of the generated signal. The CW test was performed at three different heights to validate the minimum height needed to fill the coverage gap.

Results from the Scanner and CW drive test are attached in Appendix A. The on-air scanner data shows that RSRP for both 700 MHz and 2100 MHz performs below the -95 dBm target level that Verizon uses for allowing for adequate in-building and in-vehicle coverage. The 700 MHz RSRP map (Channel 5230, page 4 of Appendix A) and the 2100 MHz RSRP map (Channel 2050, page 6 of Appendix A) show that there is a coverage gap in the Village along Rt. 117 from Lexington Ave to Rt. 172 and along Rt. 172 to Darlington Rd. This map also shows that the coverage gap also extends south along Byram Lake Rd. and along Sarles St. on the border with the Town of Bedford. These maps also show a coverage gap along McLain St., W. Patent Rd., and Darlington Rd. between Rt. 172 and Guard Hill Rd. There is also a gap in coverage along Stratford Dr., Carlton Dr. and other small streets within this development.

Signal to Interference and Noise Ratio (SINR) data was also collected with the scanner during the drive test. This data shows how dominant a signal is over neighboring sites or other sources of interference. It is typical for SINR to be 10 dB greater than the noise and interference to have



adequate performance on the LTE channel. As the SINR drops below this level, capacity on the LTE channel is reduced as the maximum data rates are reduced with lower SINR. The 700 MHz SINR map (Channel 5230, page 5 of Appendix A) and the 2100 MHz SINR map (Channel 2050, page 7 of Appendix A) show that SINR levels are below the targeted threshold along Rt. 172 to Darlington Rd.; extending south along Byram Lake Rd. and along Sarles St. on the border with the Township of Bedford; along McLain St., W. Patent Rd., and Darlington Rd. between Rt. 172 and Guard Hill Rd; and also along Carlton Dr. and other small streets within this development.

CW Testing was performed at three heights. Both 700 MHz and 2100 MHz were tested at 87 feet, 107 feet, and 137 feet. The 700 MHz CW for testing results for all three centerline heights are shown pages 8 through 10 of Appendix A. The 2100 MHz CW testing results for all three centerline heights are shown on pages 11 through 13 of Appendix A.

The 700 MHz CW test results show that 137 feet (Appendix A page 10), the proposed site can provide reliable in-building coverage (shown by the green dots representing -95 dBm or better) along Rt 117 from Armonk Rd to Rt 172, and along Rt 172 to Darlington Rd. At a 137 foot centerline, the proposed site will fill in coverage in Leonard Park as well as residential areas along Glassbury Ct and Terrace Pl.

As the height drops to a 107 foot centerline (Appendix A page 9), the reliable coverage area along Rt 172 goes from Byram Lake Rd to Linden. The residences around Terrace Pl are also not covered with reliable in-building coverage. As the height drops to an 87 foot centerline (Appendix A page 8), the reliable coverage along Rt 172 shrinks to the area around Leonard Park to W. Patent Rd.

The scanner testing results show that there is an identified gap in coverage along Rt 172 and surrounding residential communities in the Village. The CW test results show that the proposed 137 foot centerline is required to fill the identified gap in coverage to provide reliable in-building and in-vehicle services to areas along Rt 172, Rt 117, and Leonard Park.



LTE KPI DATA

V-COMM has reviewed key performance indicator (KPI) data for Dropped Call Rates for the Mount Kisco site, located at 304 Lexington Avenue, Mount Kisco, and the Bedford 3 site, located at I-684 & Route 172, Bedford, from April through June 2020. Figure 4 details the LTE Dropped Call Rate per day for all three sectors of Mount Kisco (site 266). Figure 5 details the LTE Dropped Call Rate per day for all four sectors of Bedford 3 (site 56).

Verizon uses a threshold of 1% for Dropped Call rates to maintain reliable service, which is in line with industry standards. The Mount Kisco Beta sector (blue line in Figure 4) shows the daily LTE Dropped Call rate is between 3% and 4%, exceeding the threshold for reliable service.

The Bedford 3 Gamma sector (blue line in Figure 5) shows that the Dropped Call data is between 0.4% and 1.8 percent, averaging around 1%. Bedford 3 Gamma has started to exceed the Dropped Call threshold to maintain reliable service.

With the Dropped Call Rate threshold exceeded for Mount Kisco Beta sector (site 266), which faces east across the Village, and the Bedford 3 Gamma sector (site 56), which faces west along Rt 172 facing the Village, Verizon requires a new site to improve coverage east of the Mount Kisco site. The proposed site at 180 S. Bedford Road will enhance coverage on the eastern side of the Village of Mount Kisco and along the Rt 172 corridor, reducing the Dropped Call rate reported by Mount Kisco (site 266) and Bedford 3 (site 56).

Figure 4 – Mount Kisco (Site 266) LTE Dropped Call Rate

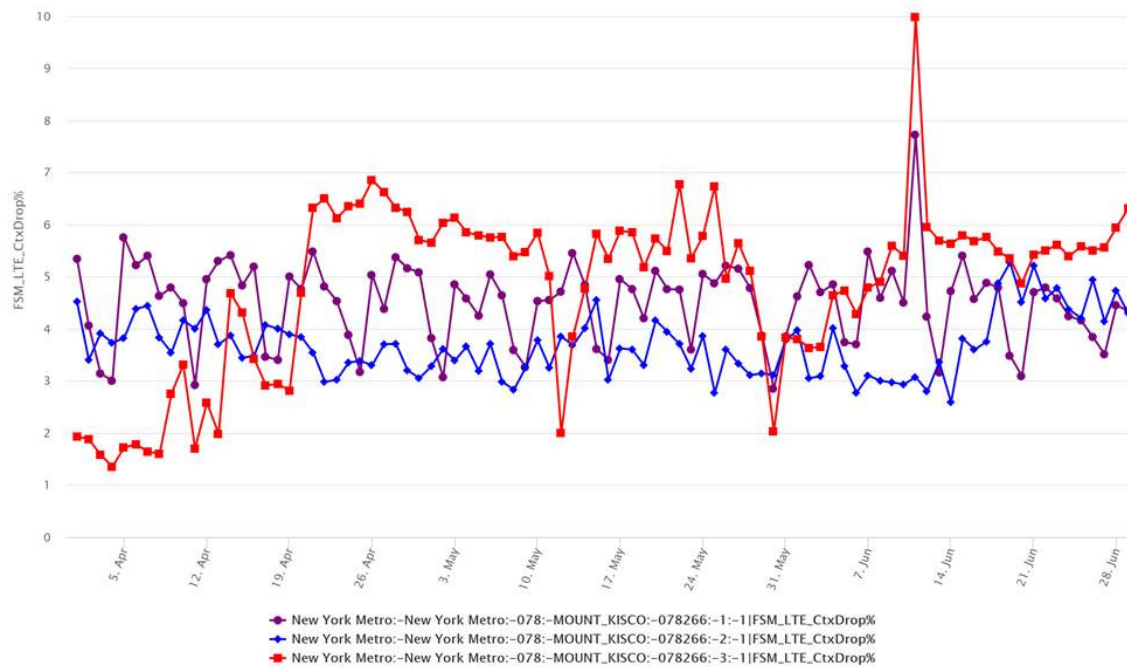
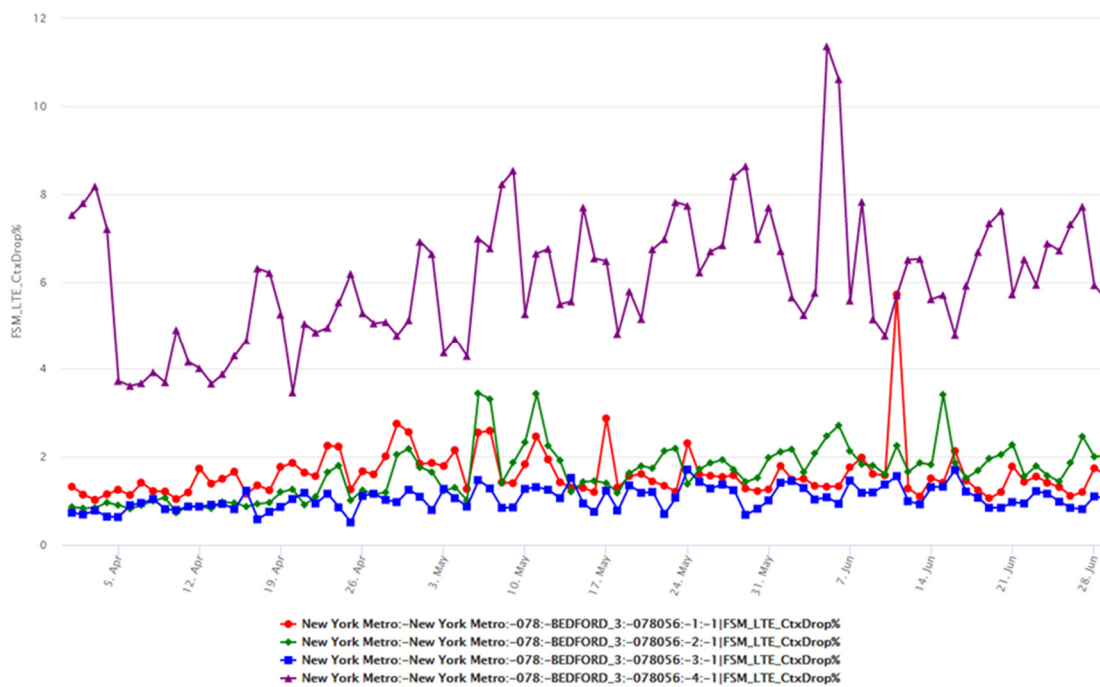


Figure 5 – Bedford 3 (Site 56) LTE Dropped Call Rate





ALTERNATE SITE ANALYSIS

The memorandum has requested an analysis of the property at 21 Linden Lane location, also to determine the lowest height necessary to meet the coverage goals from the location. The Town of Bedford allows for a maximum height of 150 feet in their ordinance for wireless telecommunications facilities. Based on the proposed antennas, the hypothetical centerline of 147 feet would be the maximum height that could be used for this facility.

V-COMM reviewed the location and determined that an antenna centerline of 147 ft at this location would not meet the coverage goals of our proposed site. A hypothetical site at the 21 Linden Lane leaves a gap in coverage to the west on S. Bedford Road, which is a crucial coverage gap area for Verizon. The traffic to and from Mount Kisco and the hospital through the S Bedford Road corridor will suffer from the lack of quality coverage if a new site is not built at the proposed 180 S. Bedford location. This gap in coverage occurs along Rt 172 between Stratford Drive and W. Patent Road, and along portions of Stratford Drive and McLain Street. This gap in coverage also remains along Rt 117 and areas around Leonard Park.

Lowering the height of the antennas below 147 ft at the hypothetical 21 Linden Lane site would not remedy this coverage gap as the antennas would be closer to clutter and have less visibility to the roadway. The terrain at the 180 S Bedford property blocks coverage from the 21 Linden Ln west towards the village of Mt. Kisco, increasing the size of the unremedied gap in coverage along Rt 172 and Rt 117. The list below details the predictive coverage propagations included in this report.

- Map 32 – 21 Linden Lane Coverage at 700 MHz – 147 ft CL
- Map 33 – 21 Linden Lane Coverage at 700 MHz – 137 ft CL
- Map 34 – 21 Linden Lane Coverage at 700 MHz – 107 ft CL
- Map 35 – 21 Linden Lane Coverage at 700 MHz – 87 ft CL

- Map 36 – 21 Linden Lane Coverage at 2100 MHz – 147 ft CL
- Map 37 – 21 Linden Lane Coverage at 2100 MHz – 137 ft CL
- Map 38 – 21 Linden Lane Coverage at 2100 MHz – 107 ft CL
- Map 39 – 21 Linden Lane Coverage at 2100 MHz – 87 ft CL



CONSUMER DEVICE SIGNAL BAR REPORT

Recently, a public commenter submitted a report containing photographs of the signal bars reported by the end user's device at various locations around the Village of Mt. Kisco. The claim was that these pictures show that there is adequate coverage throughout the Village.

First, it is unclear which service provider the public commenter is using. Each service provider can have towers in different locations with antennas oriented in different directions. This will affect each service providers' coverage differently. Without knowing which service provider this commenter used, the results cannot be accurately evaluated. V-COMM's RF reports on file with the Board are detailing how Verizon's network is operating in the area of the Village of Mt. Kisco, and how the proposed site at 180 S. Bedford Rd. will address the gap in coverage.

Second, the signal bars on a user device are not an accurate tool for engineering design purposes. They are not calibrated measuring tools and are not considered scientifically dependable measuring instruments. These are only meant to provide users with an idea of how the signal is performing in a given area. Engineering tools such as propagation plots and calibrated scanner tests are how RF Engineers evaluate where a site is needed and how to design the site to service the need. V-COMM's RF reports have detailed how these tools are used, what the industry standards for minimum service requirements are, and how the proposed site at 180 S. Bedford Rd. will address the service needs in this gap in coverage. V-COMM's Scanner and CW Drive Test report (attached as an appendix) was generated with calibrated measuring tools to validate the existing and proposed coverage in and around the Village of Mount Kisco.

Third, the signal bars on a user device do not supply the frequency band information. It is unclear if this device is measuring at 700 MHz, at 2100 MHz, or at any other frequency this public commenter's device has access to using. Service providers, including Verizon, have to provide adequate coverage across all frequency bands that they have licensed. Therefore, when testing coverage in a drive test, it is required to lock a device to a specific frequency band to accurately evaluate the coverage data properly. V-COMM's scanner drive test discussed earlier in this report was locked to 700 MHz and 2100 MHz to measure each channel separately throughout the Village.

Last, the signal bars on a user device do not show any capacity data. The phone could hypothetically be showing great signal, but if the network is having capacity issues, the user's data session will be slow and unreliable. V-COMM's previous RF reports have detailed the capacity issues of the Mount Kisco site and how the proposed site is planned to remedy them.



Third Supplemental Report
NY172 Mount Kisco 4 Site
Mount Kisco, NY
July 13, 2021

CONCLUSION

V-COMM reviewed the materials provided by Verizon Wireless and prepared an analysis of the existing cell sites, their respective RF coverage, and System Data usage. With the existing sites, there is a significant gap in coverage and capacity. The maps demonstrate the gap in Verizon's coverage in this area and that the hypothetical alternate site facility at 21 Linden will not provide the additional coverage to significantly fill this gap.

It is our expert opinion that Verizon's proposed site on the 140 ft. proposed monopole located at 180 S. Bedford Road in Mount Kisco, NY will satisfy the coverage and capacity needs of Verizon Wireless and its subscribers in this portion of the Town/Village of Mount Kisco.

Dominic C. Villecco
President, V-COMM, L.L.C.

7/13/2021

David K. Stern
Vice President, V-COMM, L.L.C.

7/13/2021

Peter Longo, P.E.
NY Professional Engineer License #081318
PML Consulting Engineers, LLC

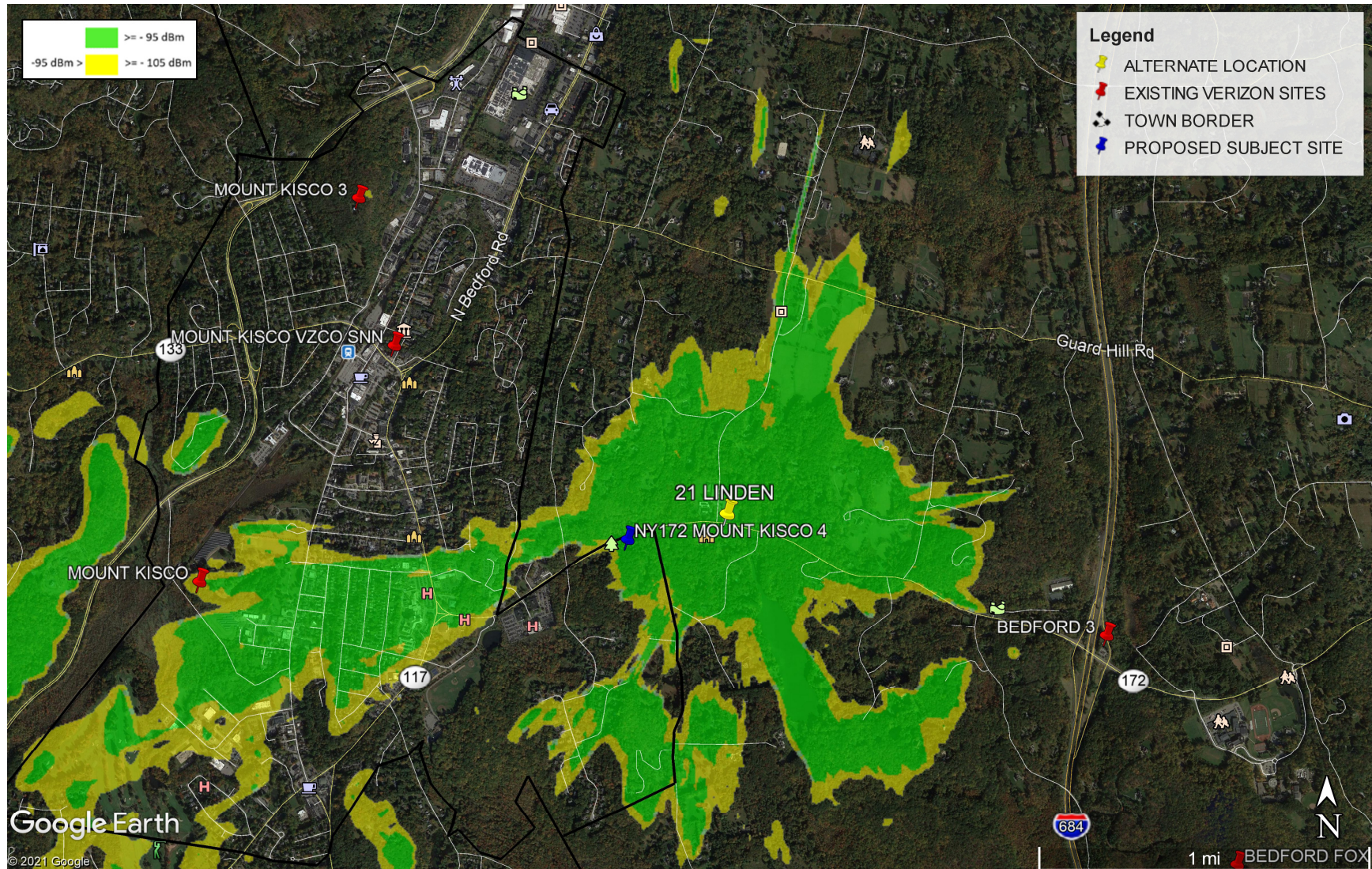


7/13/21

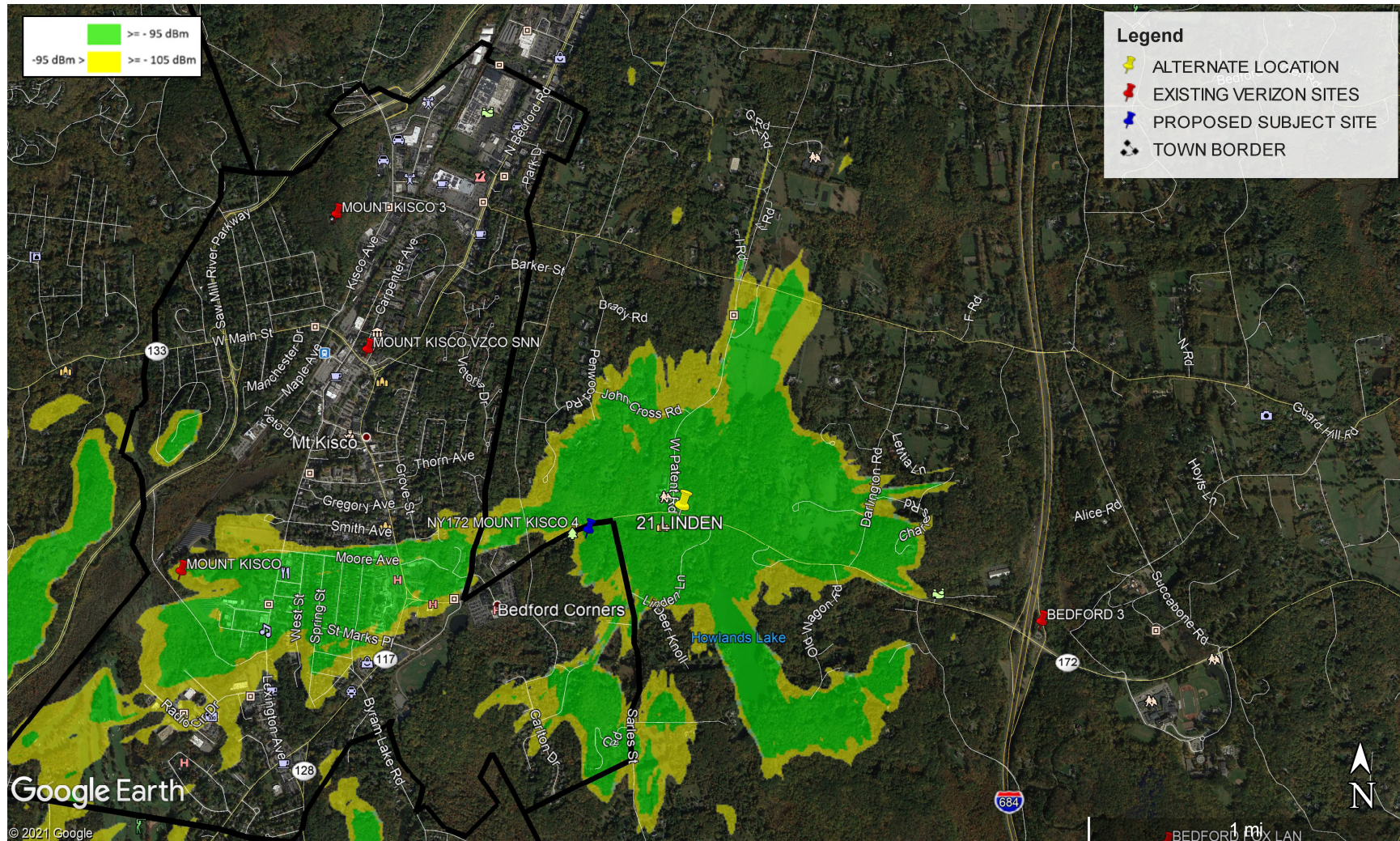
Date

Mr. Longo has reviewed the V-COMM, L.L.C. Third Supplemental RF Report for NY172 Mount Kisco 4 and concurs with the report conclusions.

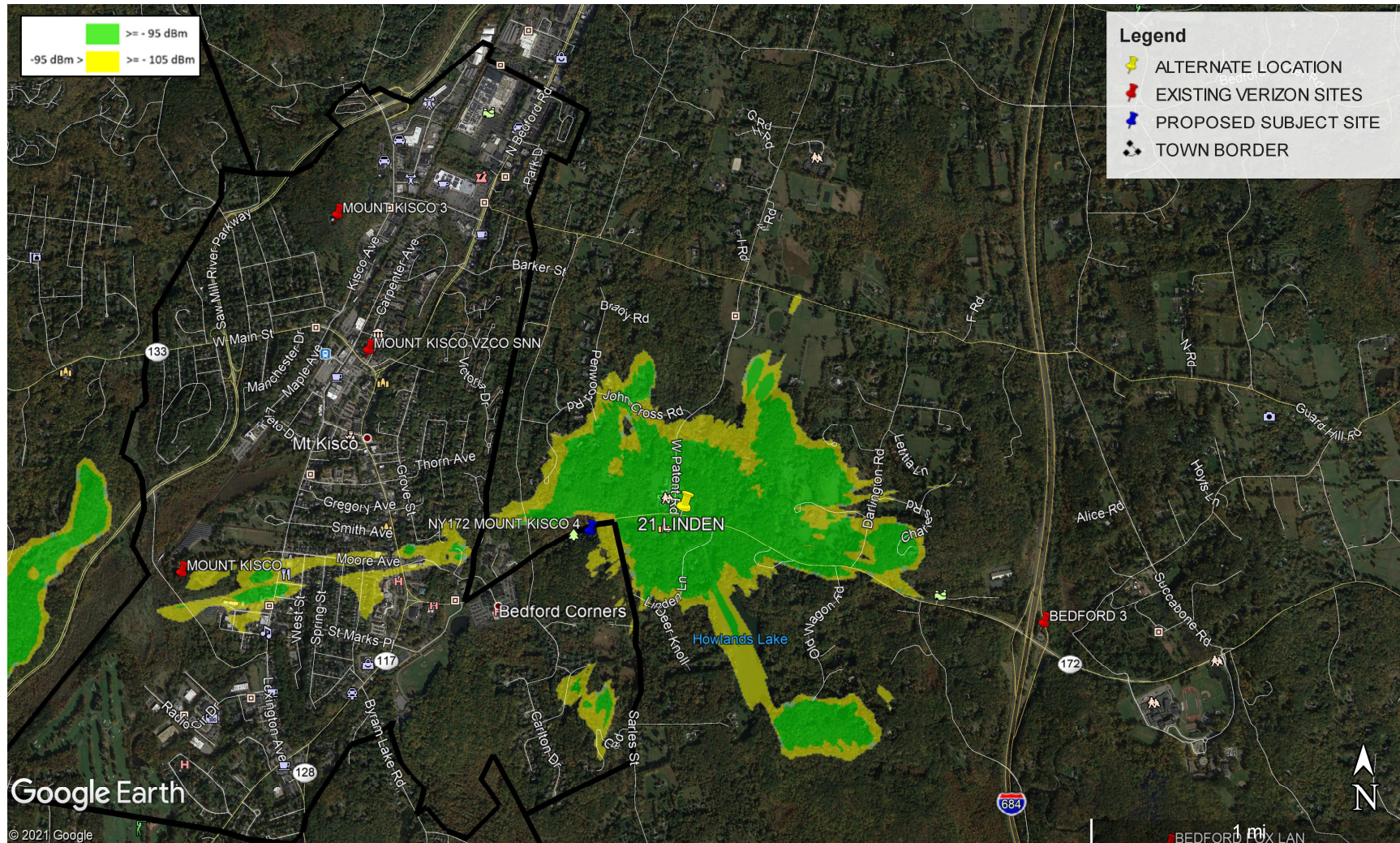
MAP 32 – 21 LINDEN LANE COVERAGE AT 147 FT. C/L – 700 MHZ



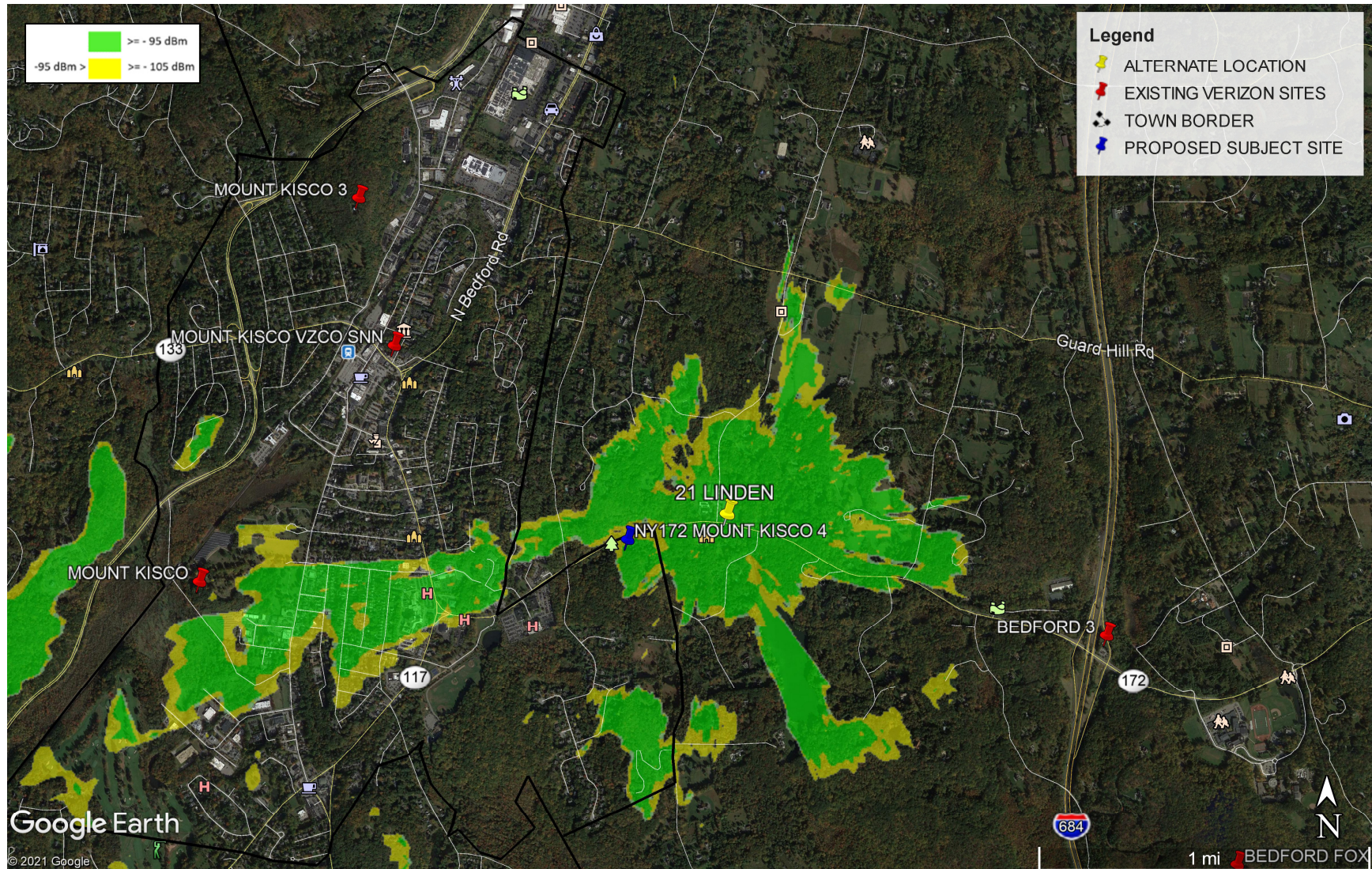
MAP 33 – 21 LINDEN LANE COVERAGE AT 137 FT. C/L – 700 MHZ



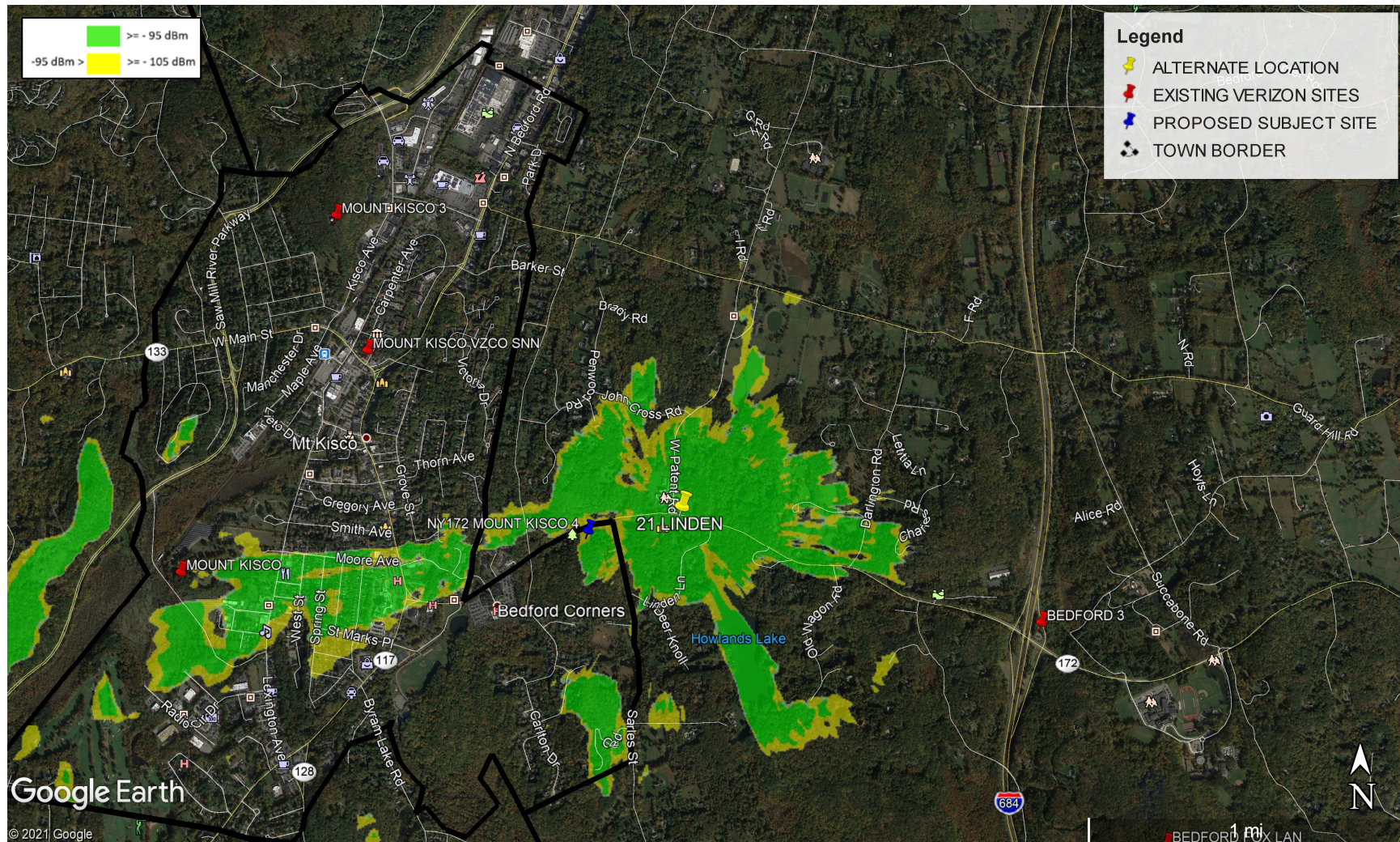
MAP 35 – 21 LINDEN LANE COVERAGE AT 87 FT. C/L – 700 MHZ



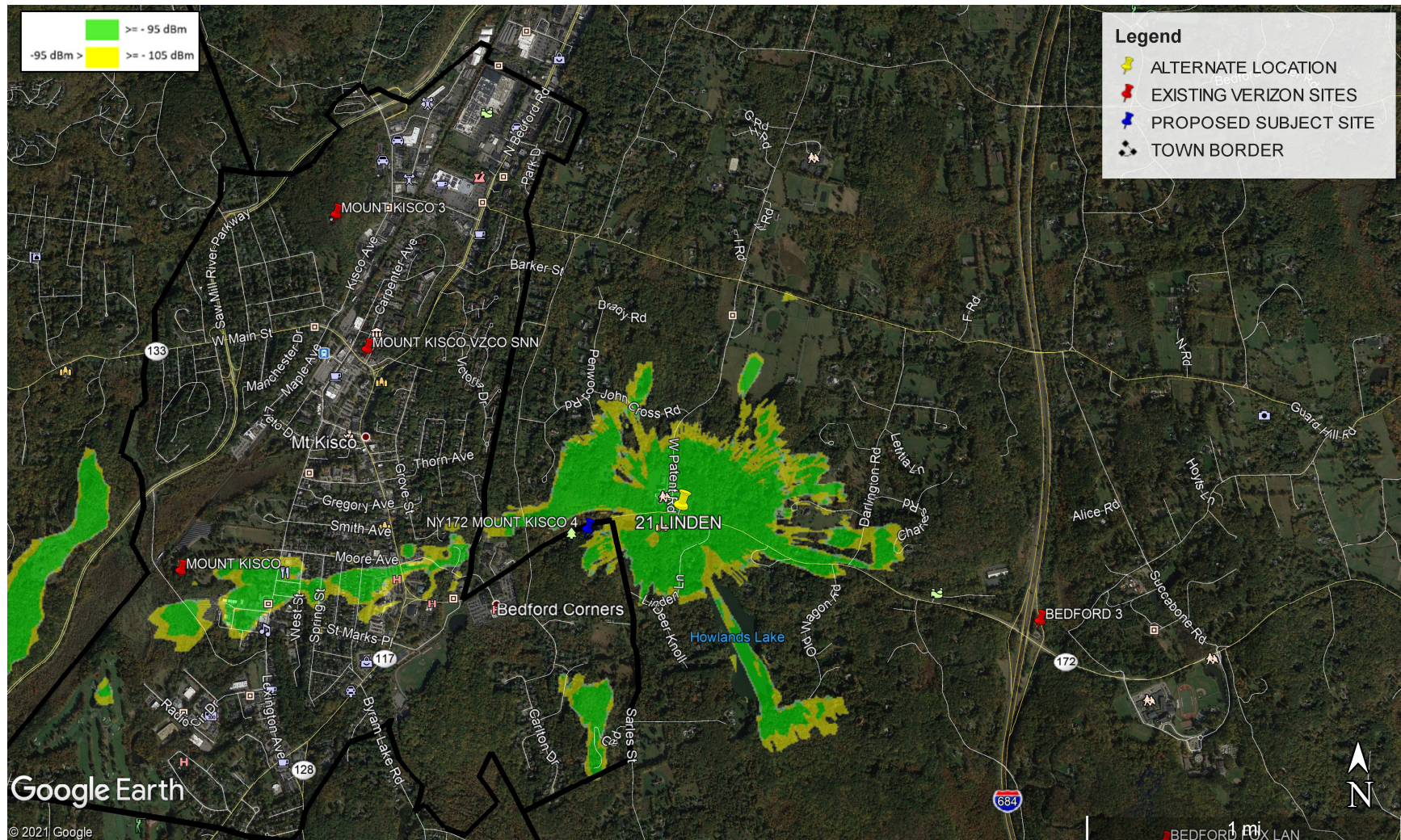
MAP 36 – 21 LINDEN LANE COVERAGE AT 147 FT. C/L – 2100 MHZ



MAP 37 – 21 LINDEN LANE COVERAGE AT 137 FT. C/L – 2100 MHZ



MAP 38 – 21 LINDEN LANE COVERAGE AT 107 FT. C/L – 2100 MHZ





Third Supplemental Report
NY172 Mount Kisco 4 Site
Mount Kisco, NY
July 13, 2021

APPENDIX A

Mount Kisco 4 Scanner and CW Test Results

RF Drive Test

July 12, 2021



Proposed Verizon Wireless Site

Mount Kisco 4

180 South Bedford Road,

Mount Kisco, NY 10549

Mount Kisco 4 – Data Collection Parameters

Site Location:

Lat: N 41° 11' 58.66"

Long: W 73° 42' 48.55"

Antenna Heights:

Crane Test: 87 feet, 107 feet, 137 feet
Above Ground Level

CW Test Setup – 700 MHz

Tx Antenna Gain = 6 dBi

Rx Antenna Gain = 0 dBi

Rx Antenna Mounted on Vehicle Roof

Site RS Tx Power = 30.9 dBm EIRP

CW Test Setup – 2100 MHz

Tx Antenna Gain = 7 dBi

Rx Antenna Gain = 0 dBi

Rx Antenna Mounted on Vehicle Roof

Site RS Tx Power = 30.8 dBm EIRP

On-Air Measurements

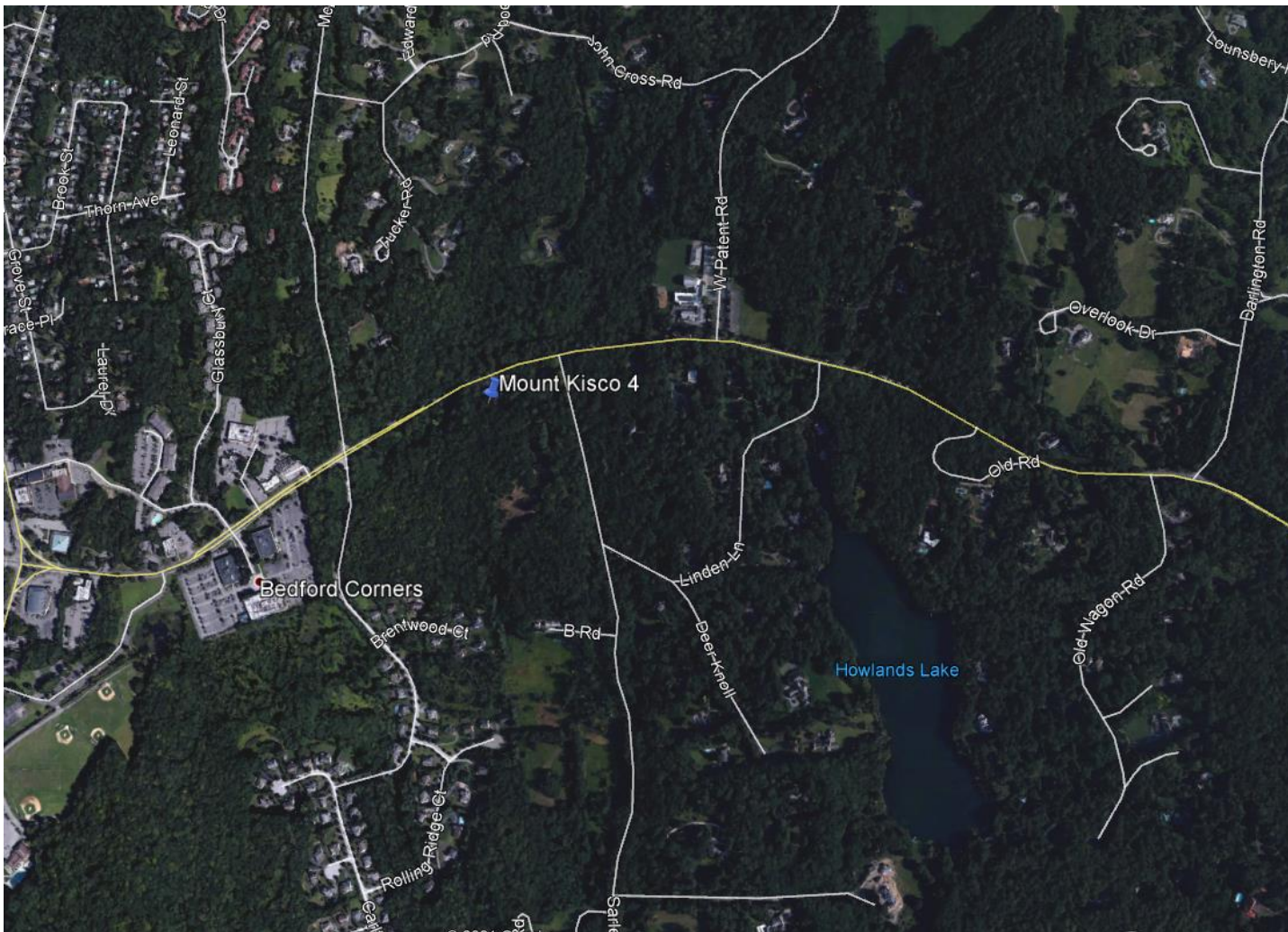
Rx Antenna Mounted on Vehicle Roof

Test Date

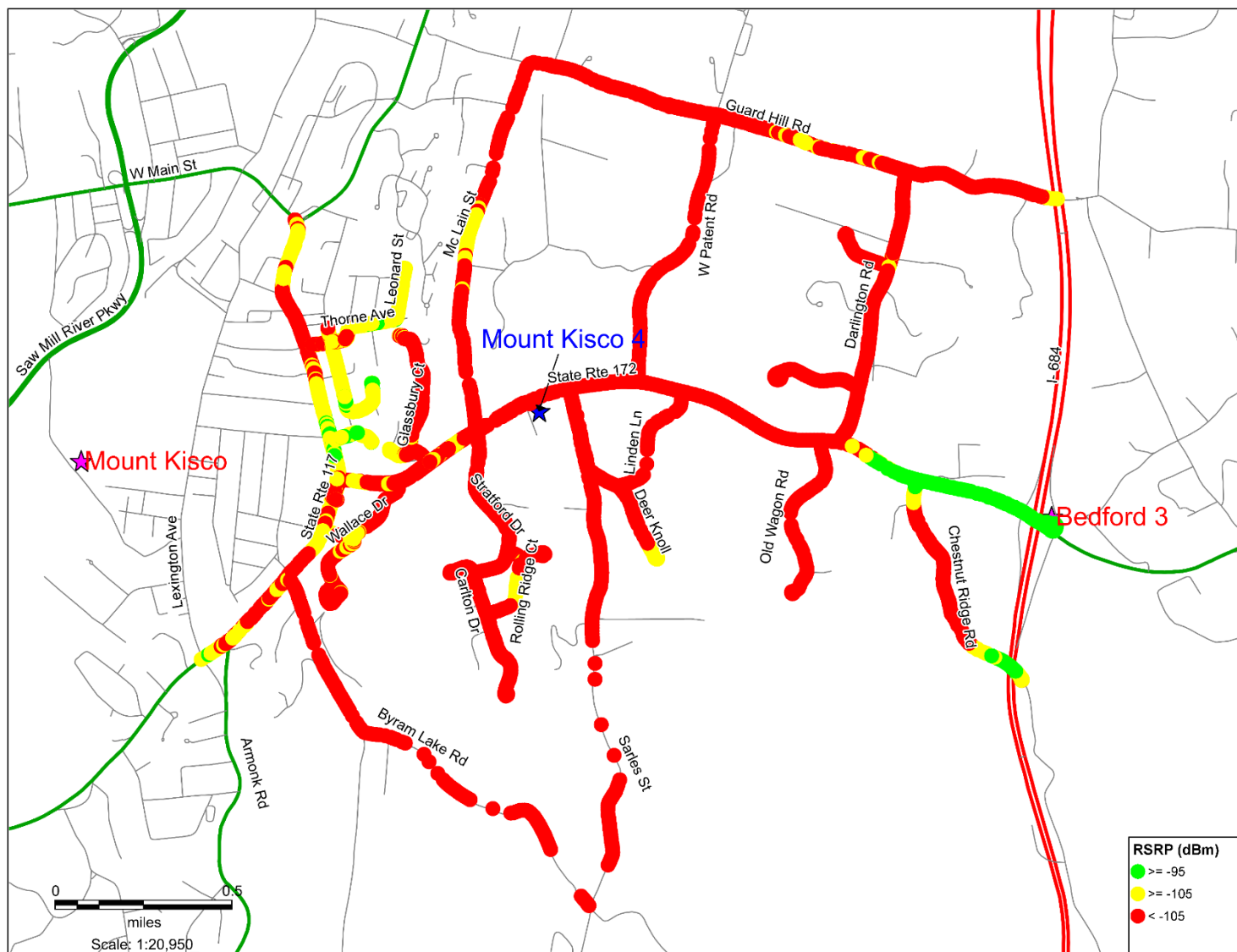
June 24, 2021

8:00 a.m. to 5:30 p.m.

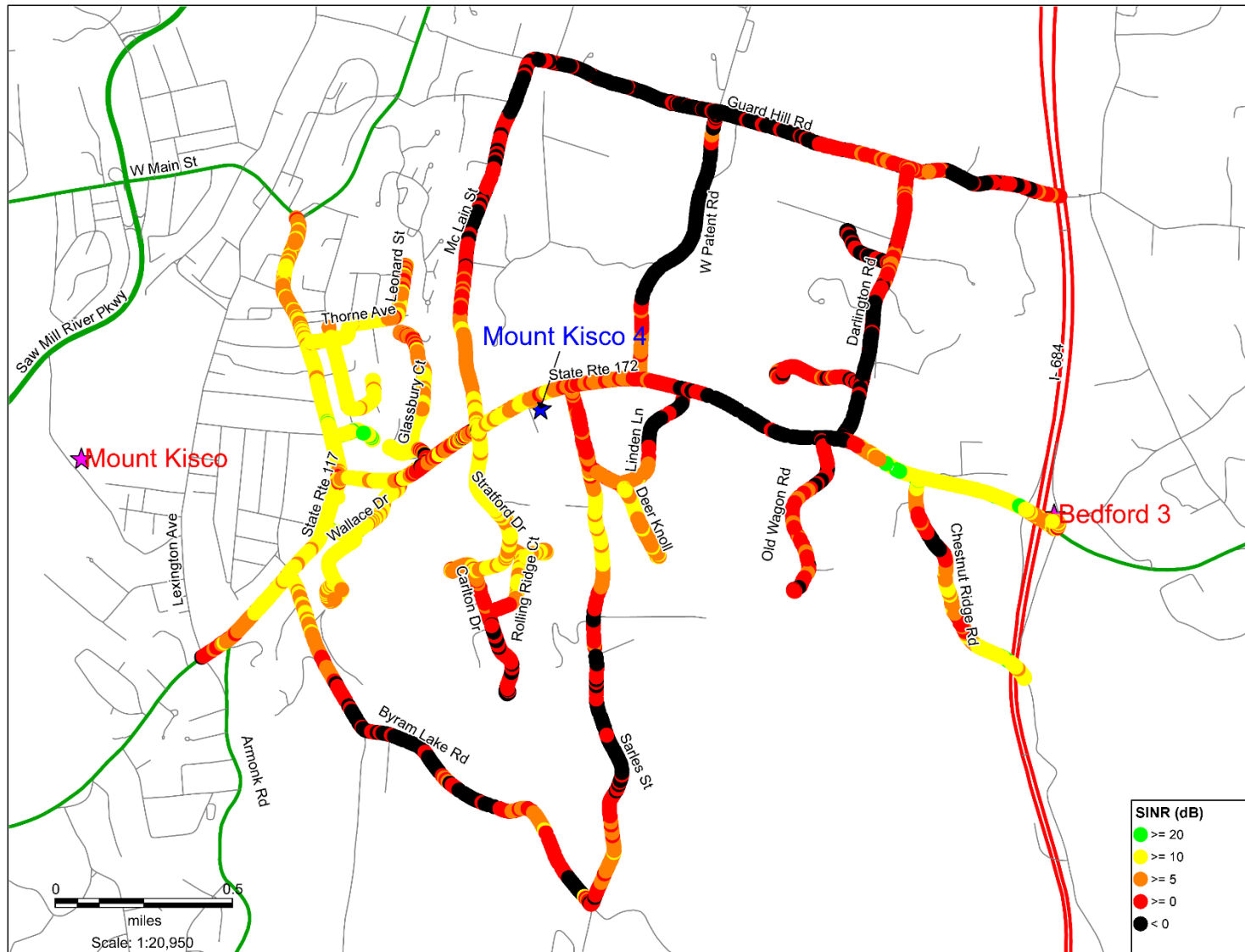
Mount Kisco 4 – Site Location



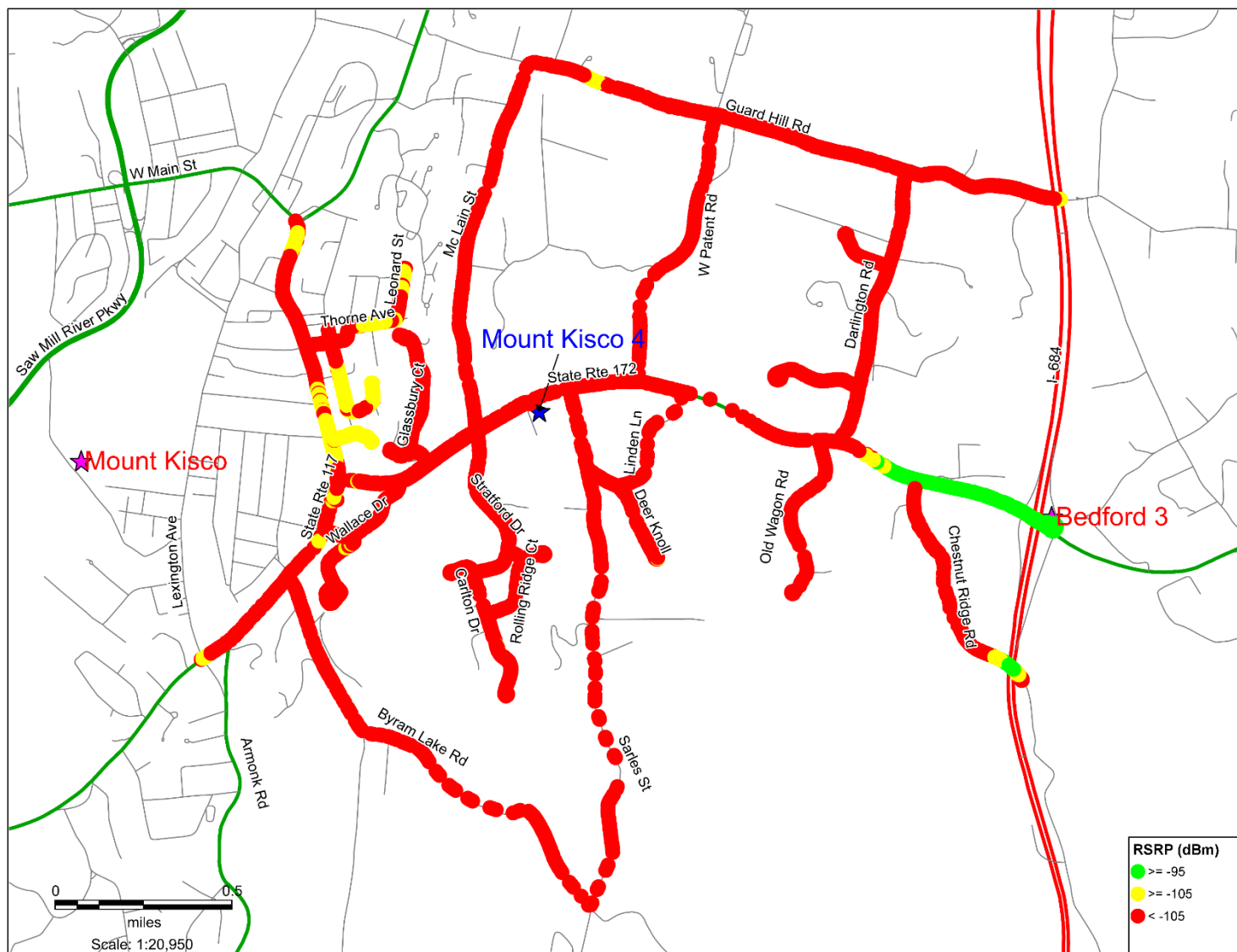
Mount Kisco 4 On-Air 700 MHz LTE (Channel 5230) – RSRP Level



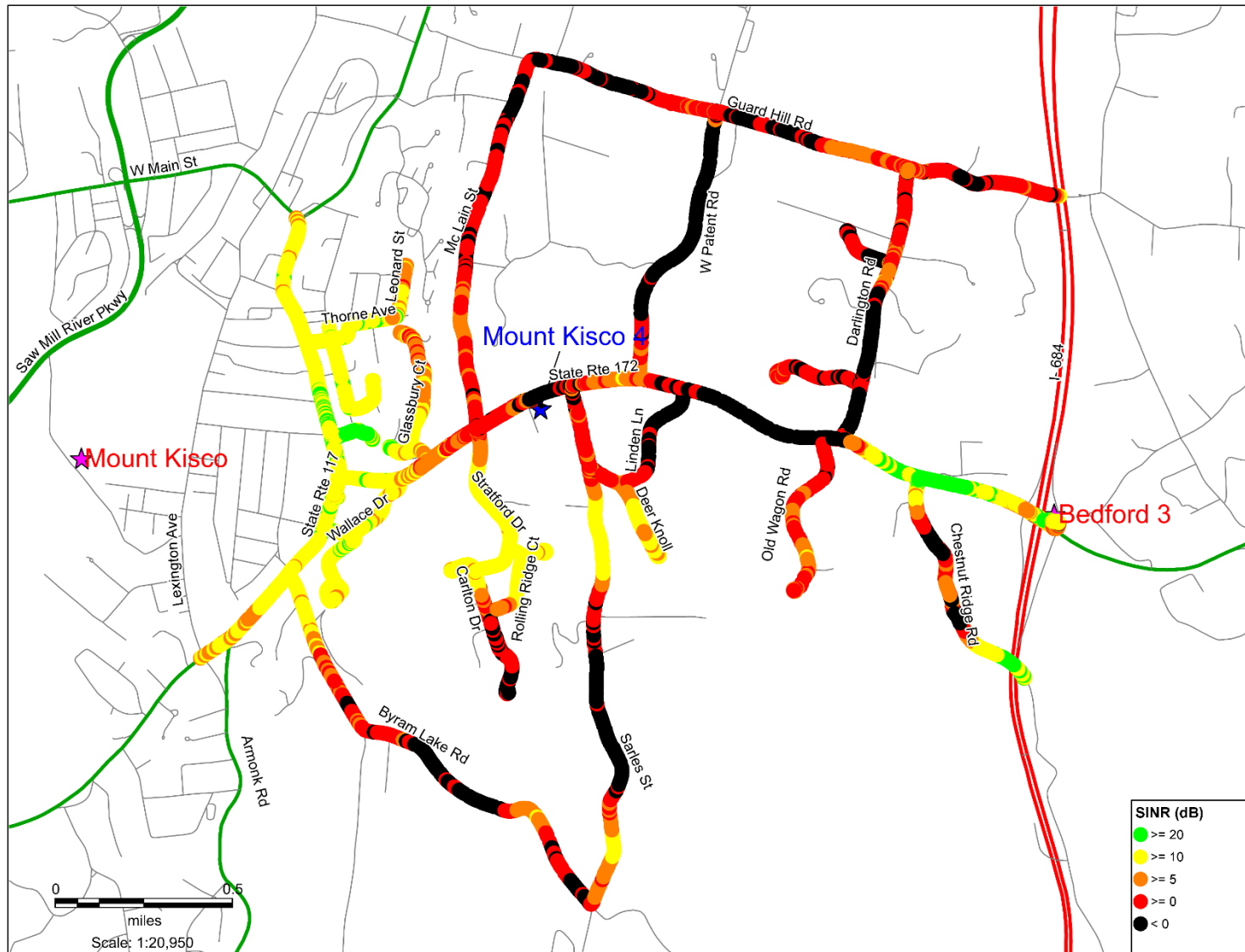
Mount Kisco 4 On-Air 700 MHz LTE (Channel 5230) – SINR Level



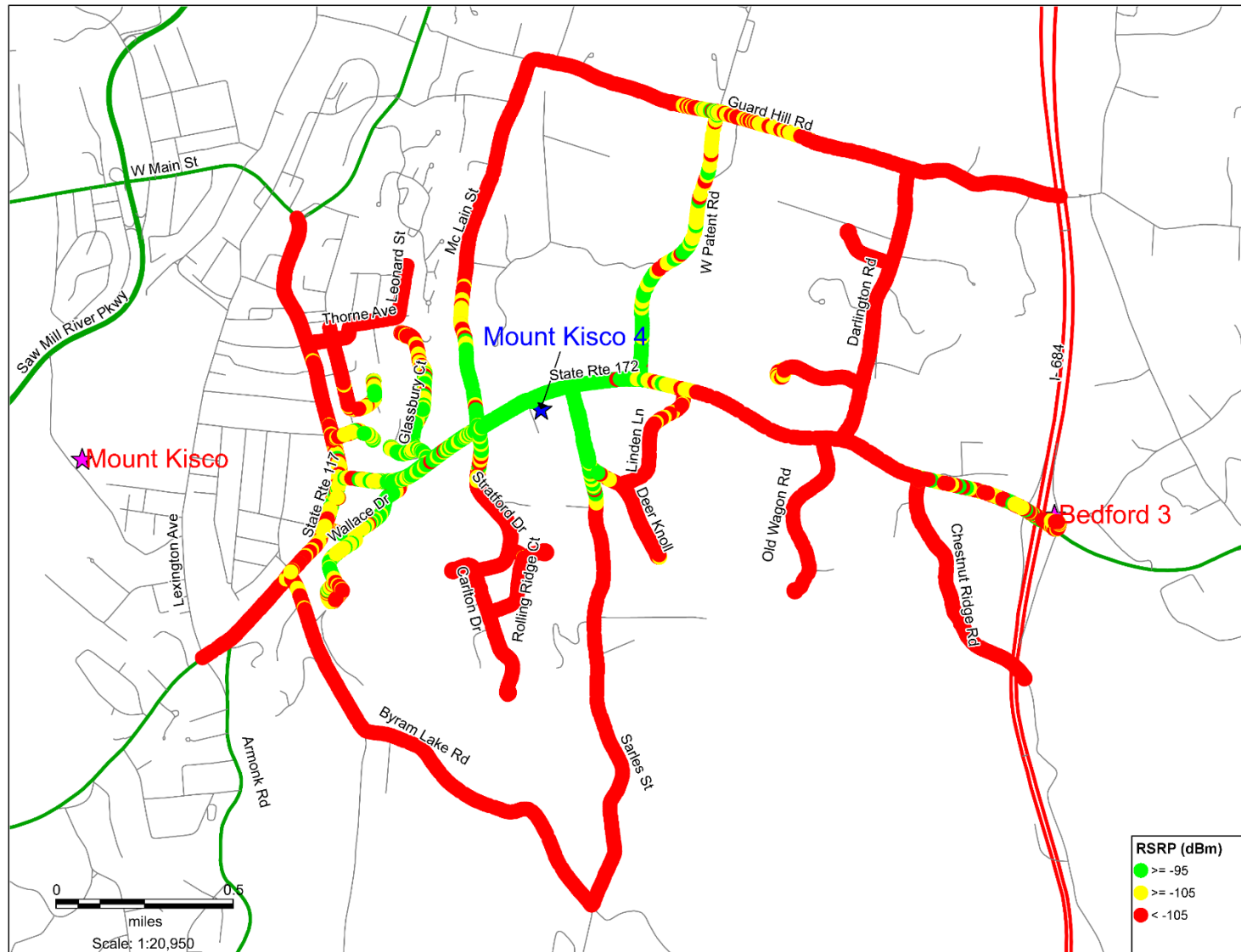
Mount Kisco 4 On-Air 2100 MHz LTE (Channel 2050) – RSRP Level



Mount Kisco 4 On-Air 2100 MHz LTE (Channel 2050) – SINR Level

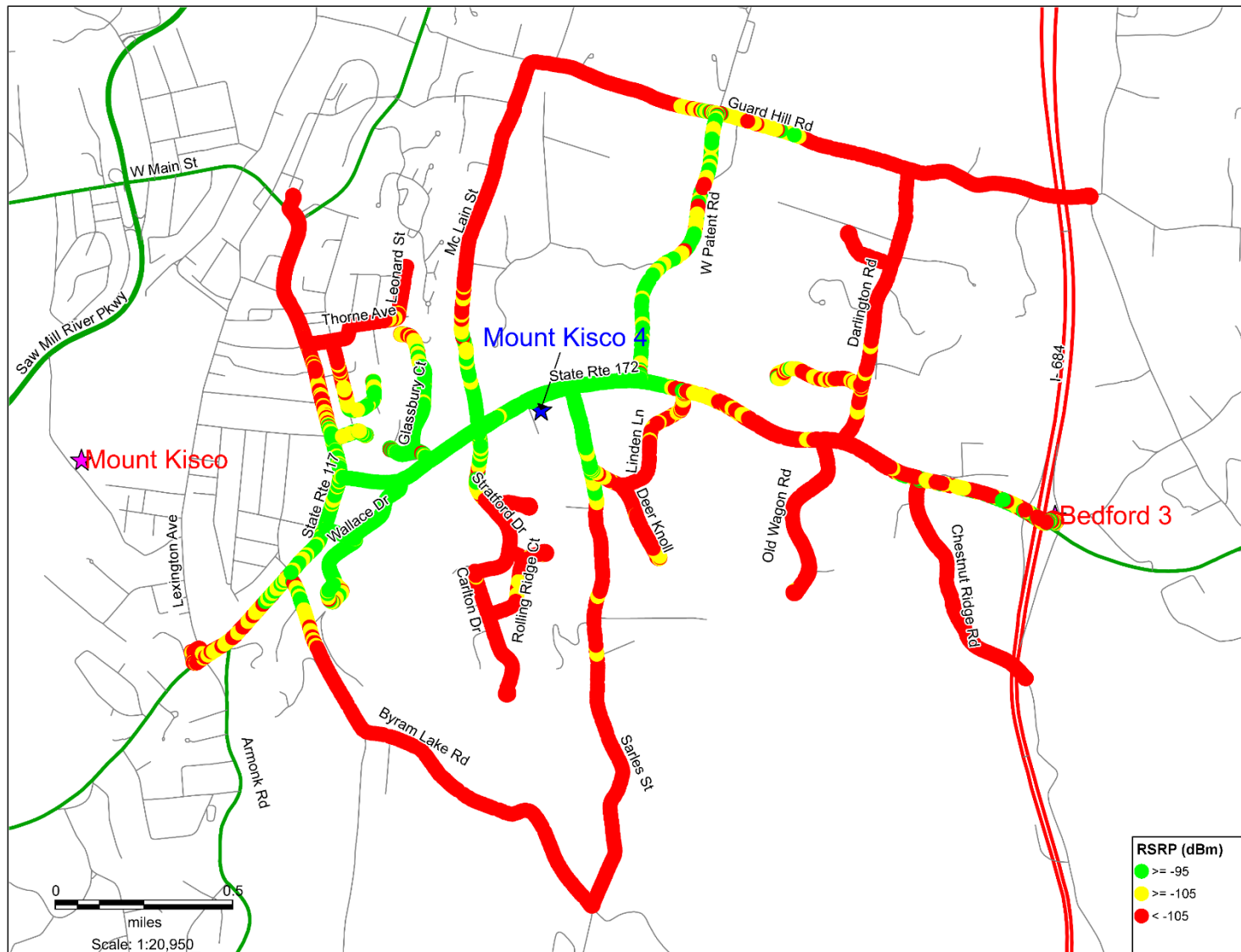


Mount Kisco 4 CW Testing 700 MHz (756.5 MHz) – 87' C/L



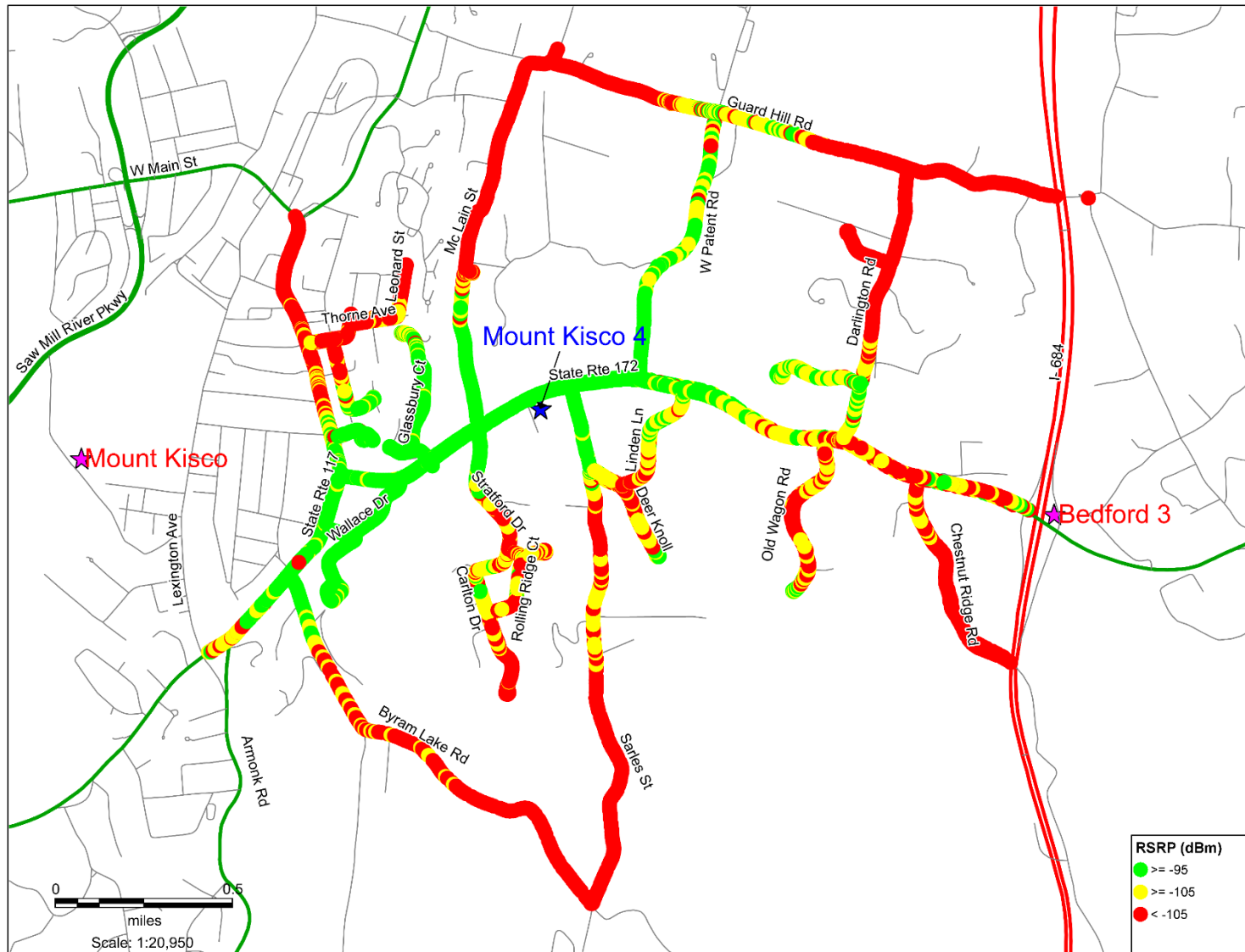
Mount Kisco 4 CW Testing

700 MHz (756.5 MHz) – 107' C/L



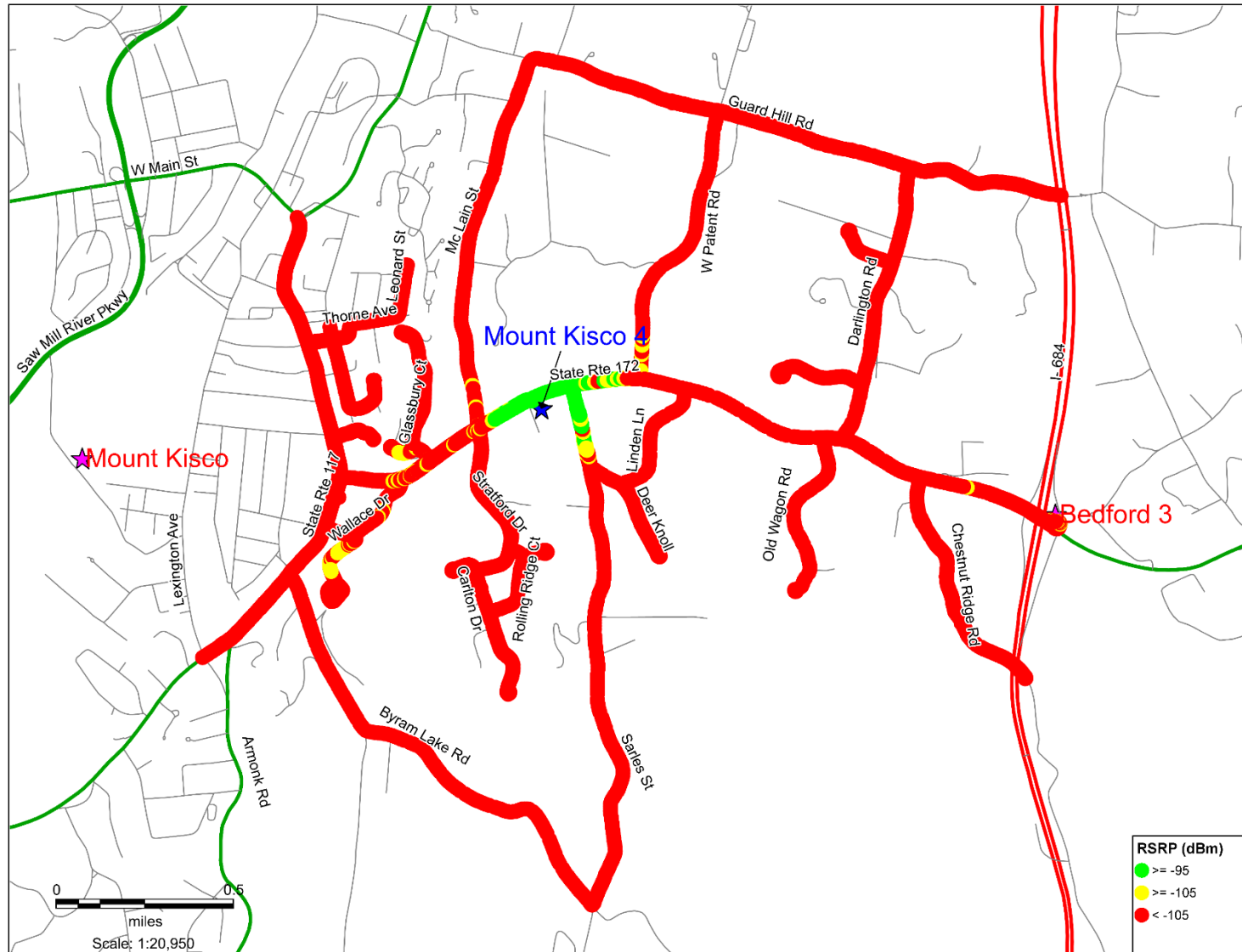
Mount Kisco 4 CW Testing

700 MHz (756.5 MHz) – 137' C/L



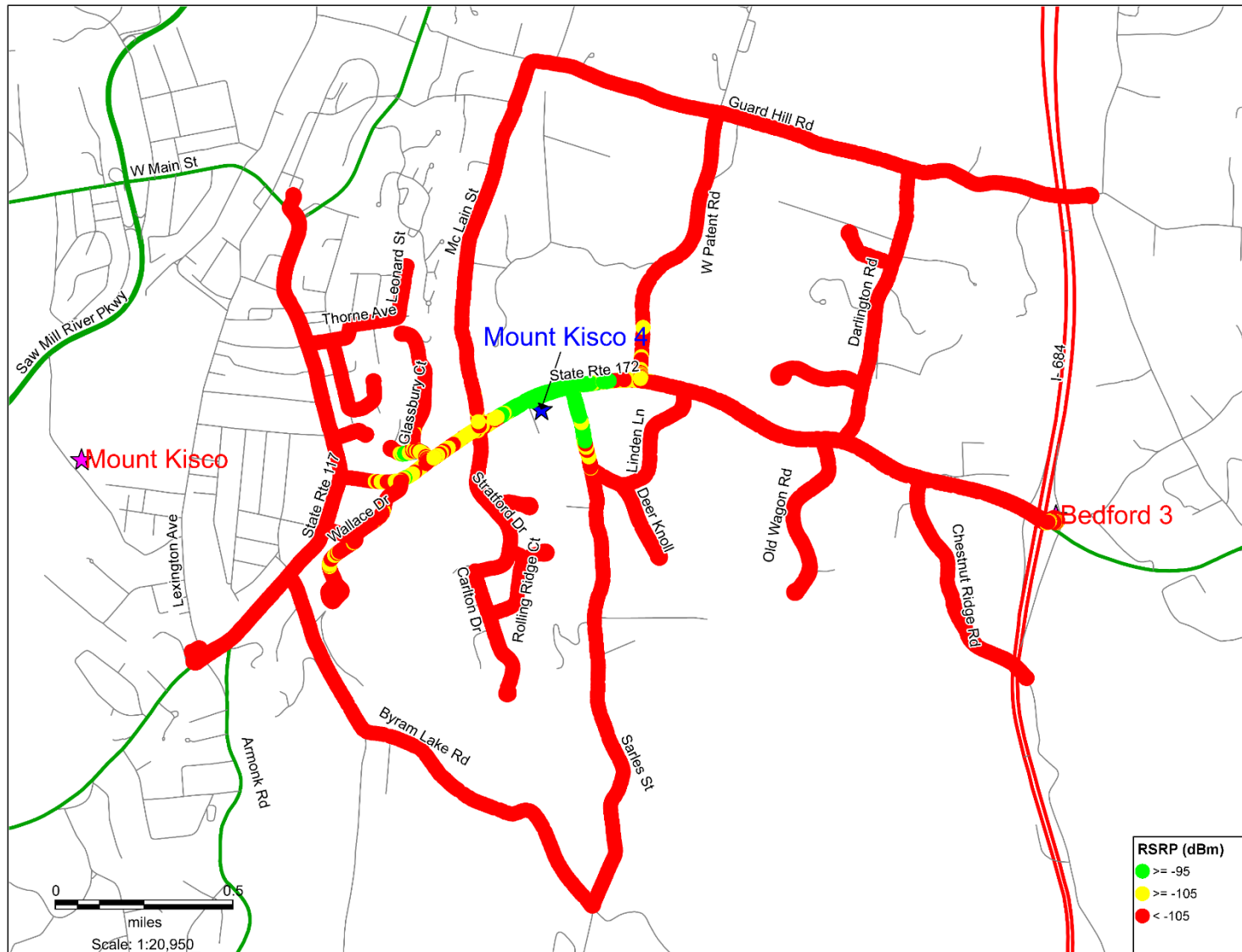
Mount Kisco 4 CW Testing

2100 MHz (2110.5 MHz) – 87' C/L



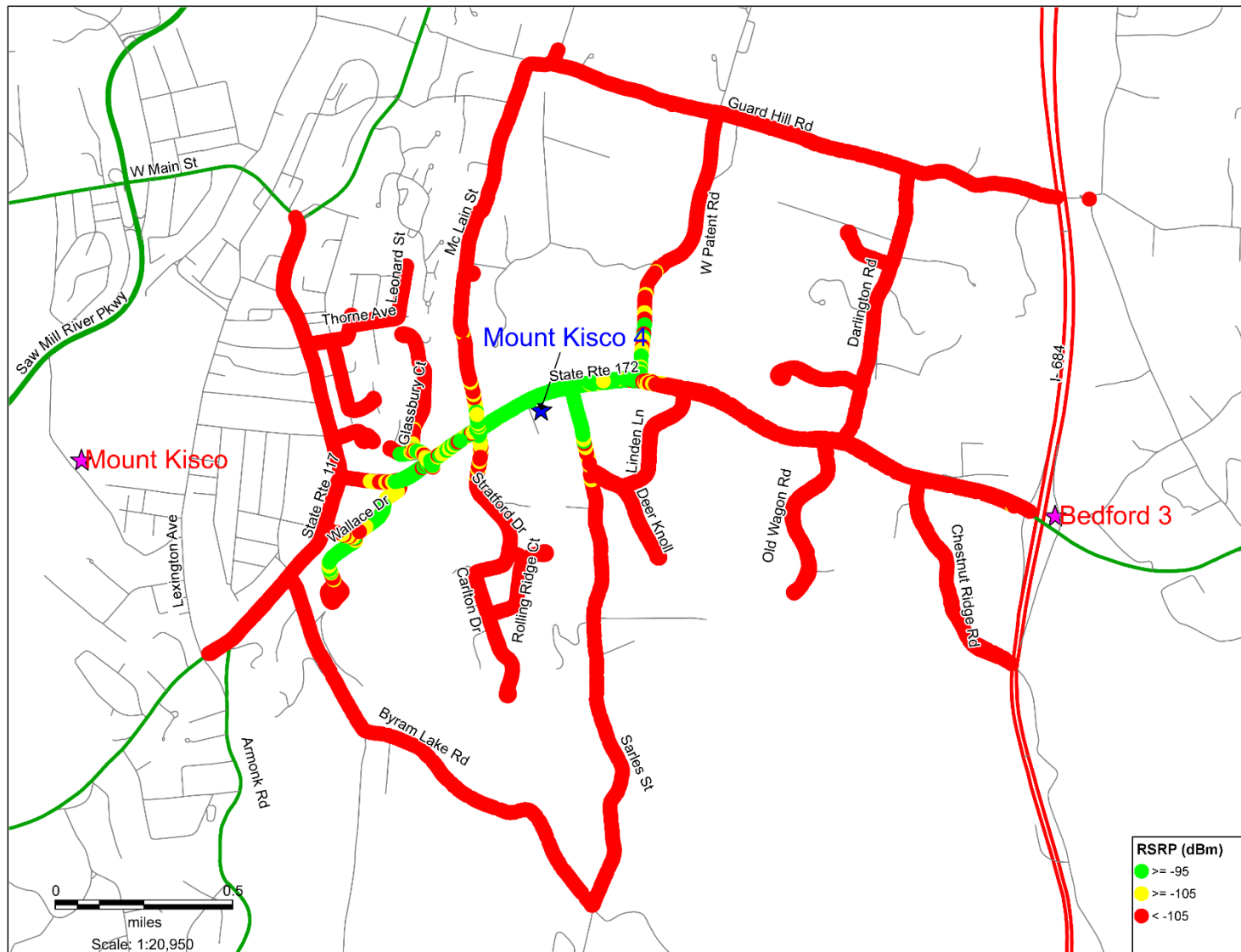
Mount Kisco 4 CW Testing

2100 MHz (2110.5 MHz) – 107' C/L



Mount Kisco 4 CW Testing

2100 MHz (2110.5 MHz) – 137' C/L





July 1, 2021

Hon. Chairman and Members of the Planning Board
Village of Mt Kisco
104 Main St
Mt Kisco, NY 10549

Re: comparative access drive assessment to the
Wireless Telecommunications Facility on Village property
at 1 Mountain Ave, Mount Kisco, NY 10459

Hon. Chairman and Members of the Planning Board:

In response to comments made by the Fire Department regarding the adequacy of the access drive to the proposed site at 180 S Bedford Road, I have prepared a comparative access drive assessment to the Wireless Telecommunications Facility located on Village property at 1 Mountain Ave, Mt Kisco, NY 10459.

In a review memo dated October 6, 2020 the Fire Department states:

1. Ingress to the site is only "one directional". Fire trucks are only able to access site while heading east on S. Bedford Road. Applicant should demonstrate that fire apparatuses are able to access site coming from both directions, east and west.

As is shown in Exhibit A attached hereto, the existing access road to the Mountain Ave site can only be accessed coming straight from Mountain Ave. and not from Emery Street without making a multipoint turn in addition to the narrow gate at the entrance.

2. Applicant should demonstrate that fire apparatuses are able to access site within a reasonable distance without blocking the only access road. Existing access roads are too narrow and turns appear too sharp.

As is shown in Exhibit B attached hereto, the existing access road to the Mountain Ave site is approximately 10 ft wide and at no point wide enough that a parked fire apparatus would not be blocking the only access road and could be passed by another vehicle. As is also shown in Exhibit A the existing access road to the Mountain Ave site has a very similar sharp turn which is much sharper than the proposed site.

3. Compound facility turn-around appears too small for a fire apparatus to be able to turn around and not have to back out the entire way to S. Bedford Road.



As is shown in Exhibit C attached hereto, the existing compound at the Mountain Ave site has no turn around at all and a fire apparatus would not be able to turn around and would have to back out the entire way to Mountain Ave.

4. Parking areas for incoming fire apparatuses and staging areas should be able to accommodate, at a minimum: one tanker truck, one fire pumper truck, two 15 ft x 15 ft pools on a level surface and an area for additional arriving firefighters. Area should be large enough to enable tanker truck swap during a fire.

As is shown in Exhibit D attached hereto, the existing site compound at the Mountain Ave site has no parking area or staging area. There is no demonstration that fire apparatus would even be able to access the site at Mountain Ave.

In a review memo dated January 19, 2021 the Fire Department states:

1. Please note The New York State Fire Code permits the authority having jurisdiction to require two - separate access roads (refer to 2020 NYSFC 503.1.2 "Additional access." The fire code official is authorized to require more than one fire apparatus access road based on the potential for impairment of a single road by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access). Having only one proposed access road that leads to the proposed facility site, access to site, should not be further reduced. If access is limited to arriving emergency crews to only one direction, plan should be revised to include a second emergency access road off of Sarles Street.*

As is shown in Exhibit E the existing site at Mountain Ave site has only one single access drive and no secondary emergency access road.

2. Proposed access road appears too narrow and the turns appear to be too sharp. Proposed should be able to demonstrate that all Mount Kisco Fire Trucks are able to access site to - or within a reasonable distance from the compound without blocking the only access road.

As is shown in Exhibit A attached hereto, the existing access road to the Mountain Ave site has a similar sharp turn which is sharper than the proposed site. As is also shown in Exhibit A, the existing access road to the Mountain Ave site is approximately 10 ft wide and at no point wide enough that a parked Mount Kisco Fire Truck would not block the only access road and could be passed by another vehicle.

3. The proposed supply pools location should not be staged directly within the compound. Proposed should include an area away from the compound that is large enough for two 15 X 15 ft. supply pools located in close proximity however, far enough away from the actual compound which would be the anticipated origin of a fire. The area for the supply pools should be large enough for a pumper truck can be located next to the pool, and enough additional area



should be provided for a tanker truck to access the pools and fill them with water, leave site to refill tank, and return to fill on a rotating basis.

As is shown in Exhibit D attached hereto, the existing site compound at the Mountain Ave site has no area for two 15 ft x 15 ft supply pools, any area large enough for a pumper truck and enough additional area for a tanker truck to access the pools and fill them with water, leave the site to refill the tank and return to fill on a rotating basis. There is no indication that the water tank could be used. It is not shown that a fire apparatus would be able to access the site at Mountain Ave.

4. The proposed area for arriving fire fighters is located too close to the compound and in an area that will be necessary for fire truck access and positioning. Parking for arriving fire fighters should be located further away from the compound.

As is shown in Exhibit D attached hereto, there is no parking for firefighters anywhere along the access road near the site compound.

5. Applicant should demonstrate that the access roads and staging areas are designed to support multiple types of fire apparatuses.

As is shown in Exhibit D attached hereto, it is not shown that the access road for the site at Mountain Ave is designed to support multiple types of fire apparatuses, has any staging area or that a fire apparatus would be able to access the site at all.

6. The Aerial Fire Truck (43.00 ft.) utilized to demonstrate access and turnaround on site is too small. The Mount Kisco Fire Department utilizes a Tower Ladder that is in excess of 56 feet long.

As is shown in Exhibit B, C & D attached hereto, it is not shown that the access road for the site at Mountain Ave is designed for a 56 ft long fire apparatus or has any turnaround on site for any fire apparatus.

7. Applicant should demonstrate on the drawing FD-1 that "pass-by" lanes along the access road are adequately sized for fire trucks to pass one another.

As is shown in Exhibit B attached hereto, it is not shown that the access road for the site at Mountain Ave has any pass-by lanes along the access road anywhere along the road.

Conclusion:

In conclusion, it appears the comments made by the Fire Department regarding the adequacy of the access road are arbitrary and that no uniform standard for emergency vehicle access is being applied, particularly with respect to other wireless facilities.



Respectfully,

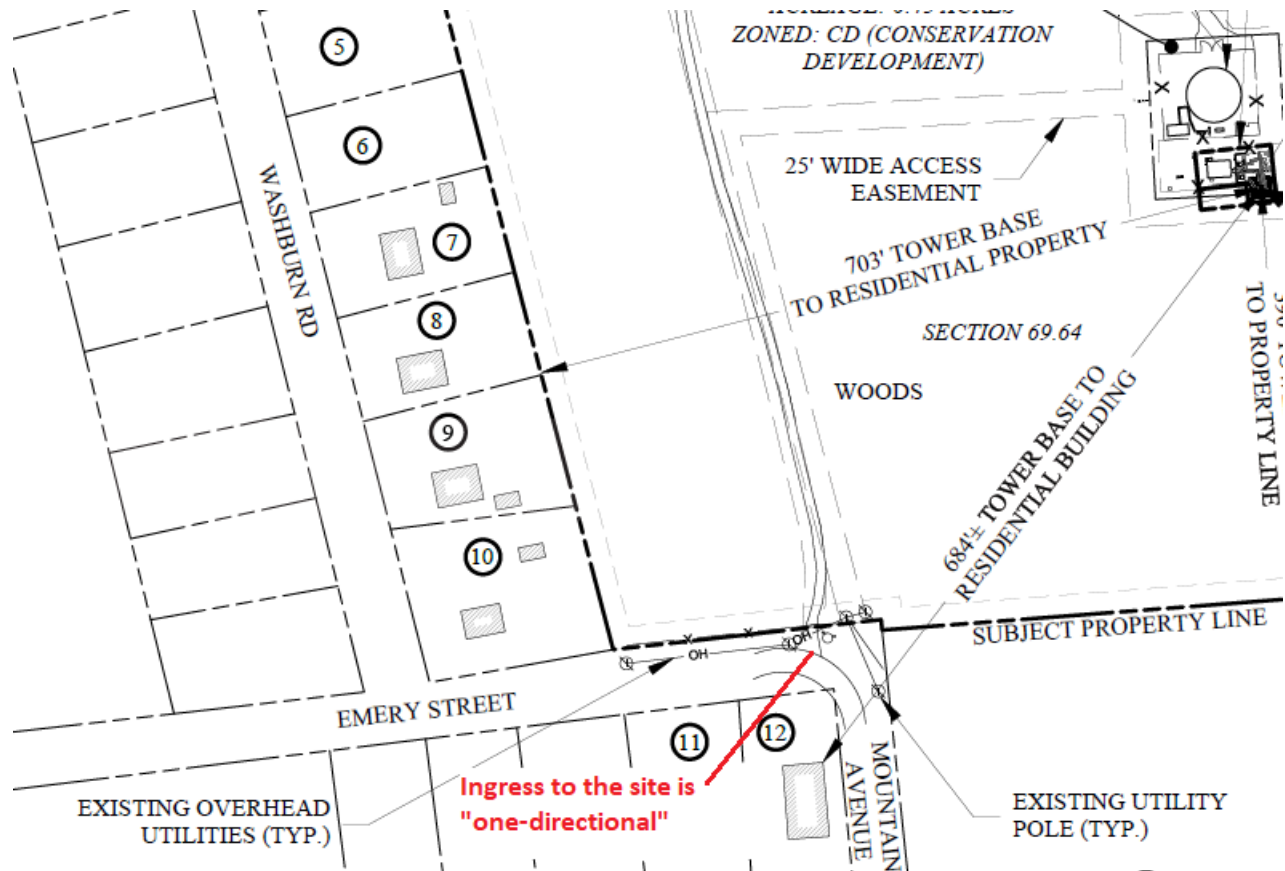
Klaus Wimmer

Klaus Wimmer
Regional Manager
Homeland Towers, LLC

cc: Zoning Board

EXHIBIT A

Ingress to the site is "one-directional"



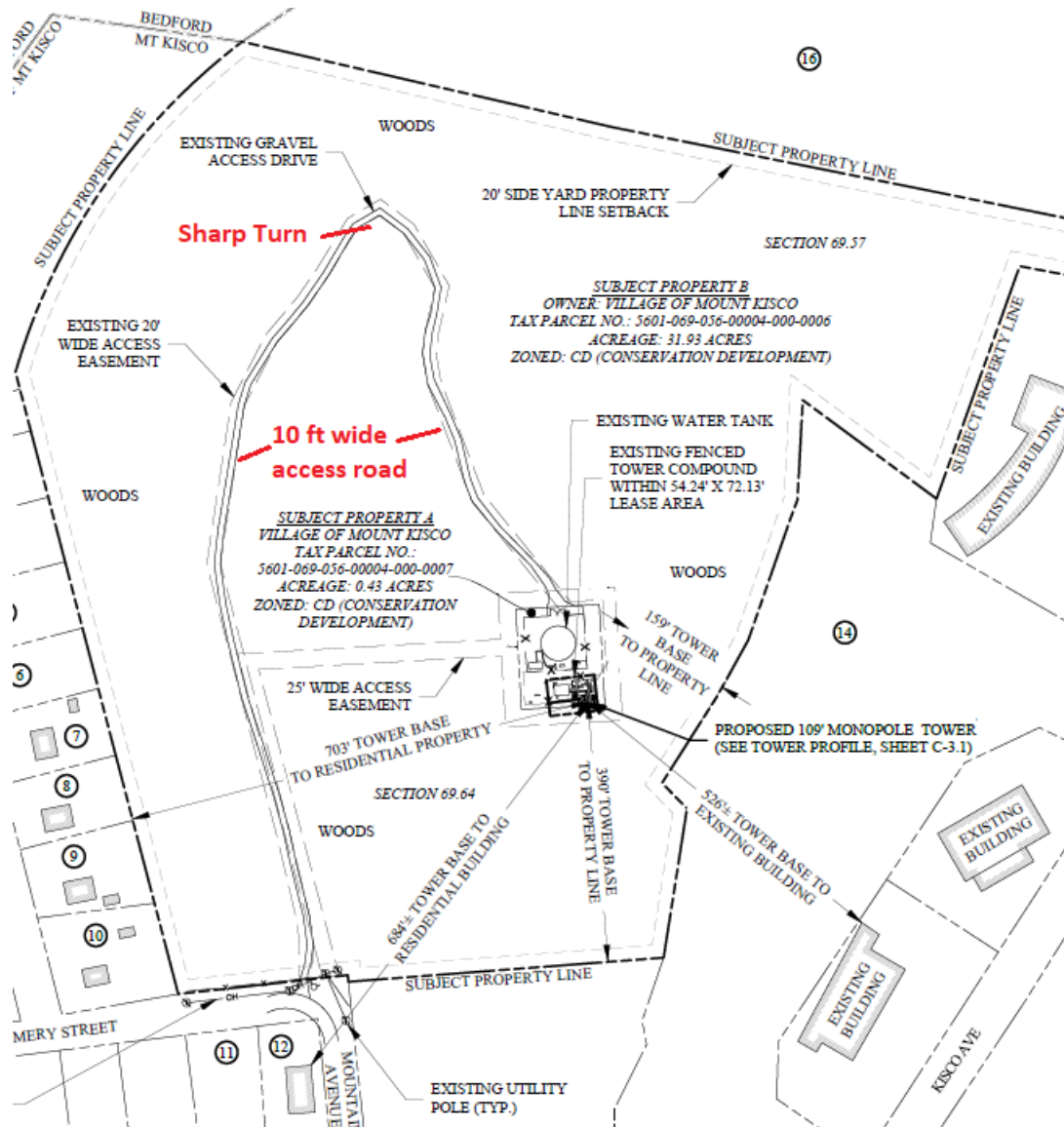
Access from Emery Street (from right) only with multipoint turn



EXHIBIT B

Site Plan for Mountain Ave Wireless Communications Site

Showing 10 ft wide access drive and sharp turn



10 ft wide access road – not wide enough to park without blocking road

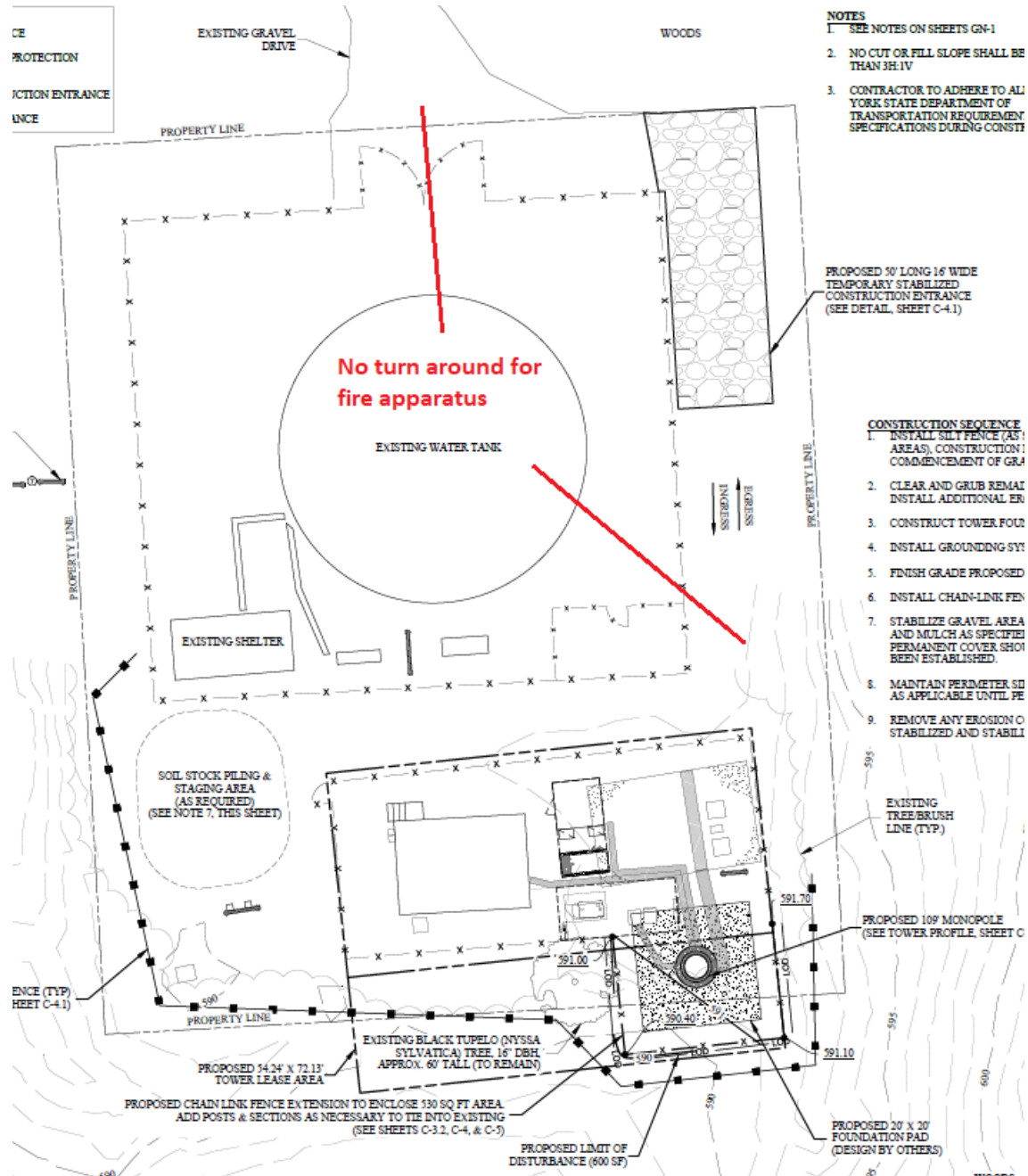


Sharp turn similar to access drive to proposed site



EXHIBIT C

No turn around for fire apparatus

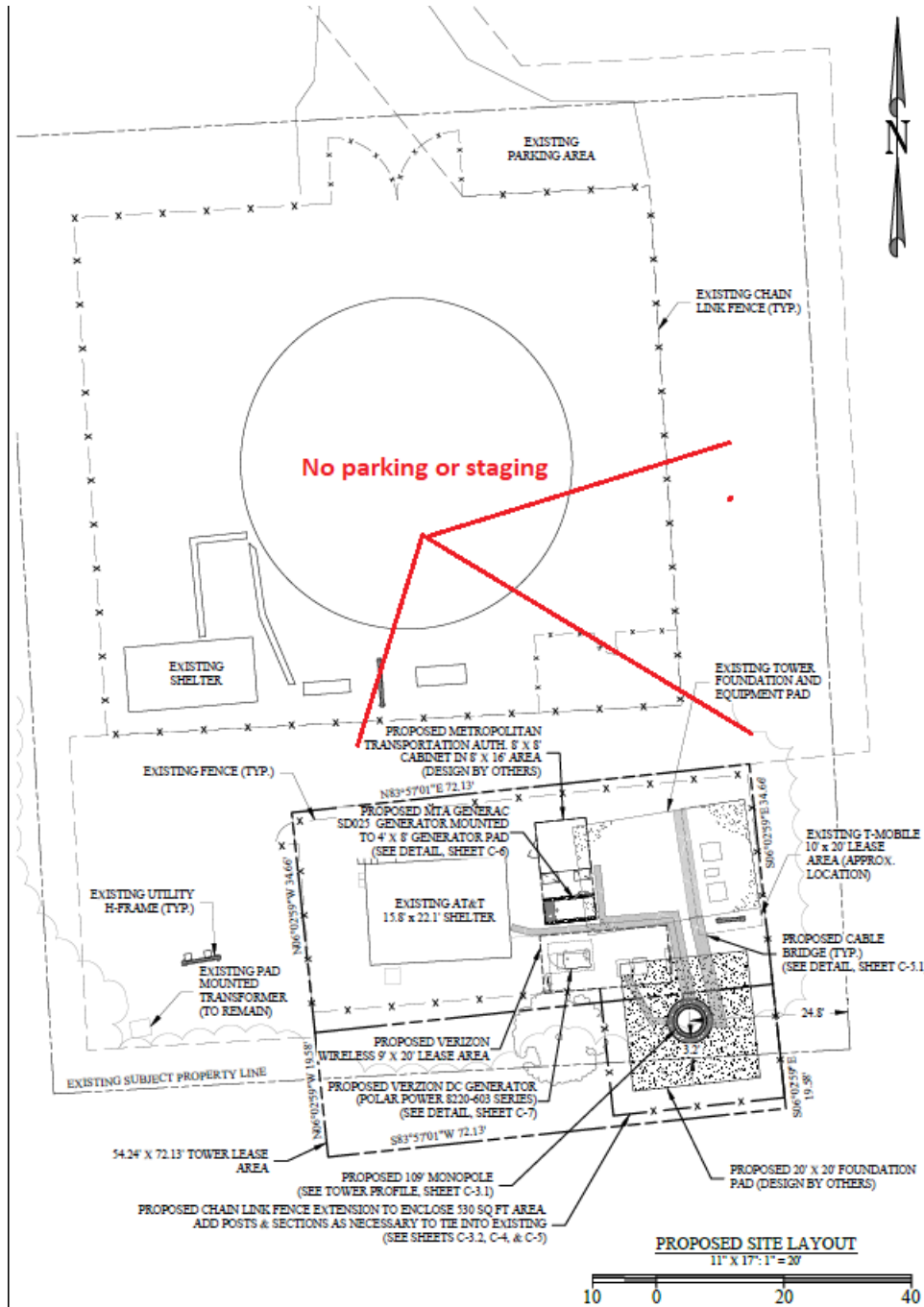


No turn around for fire apparatus



EXHIBIT D

No parking or staging

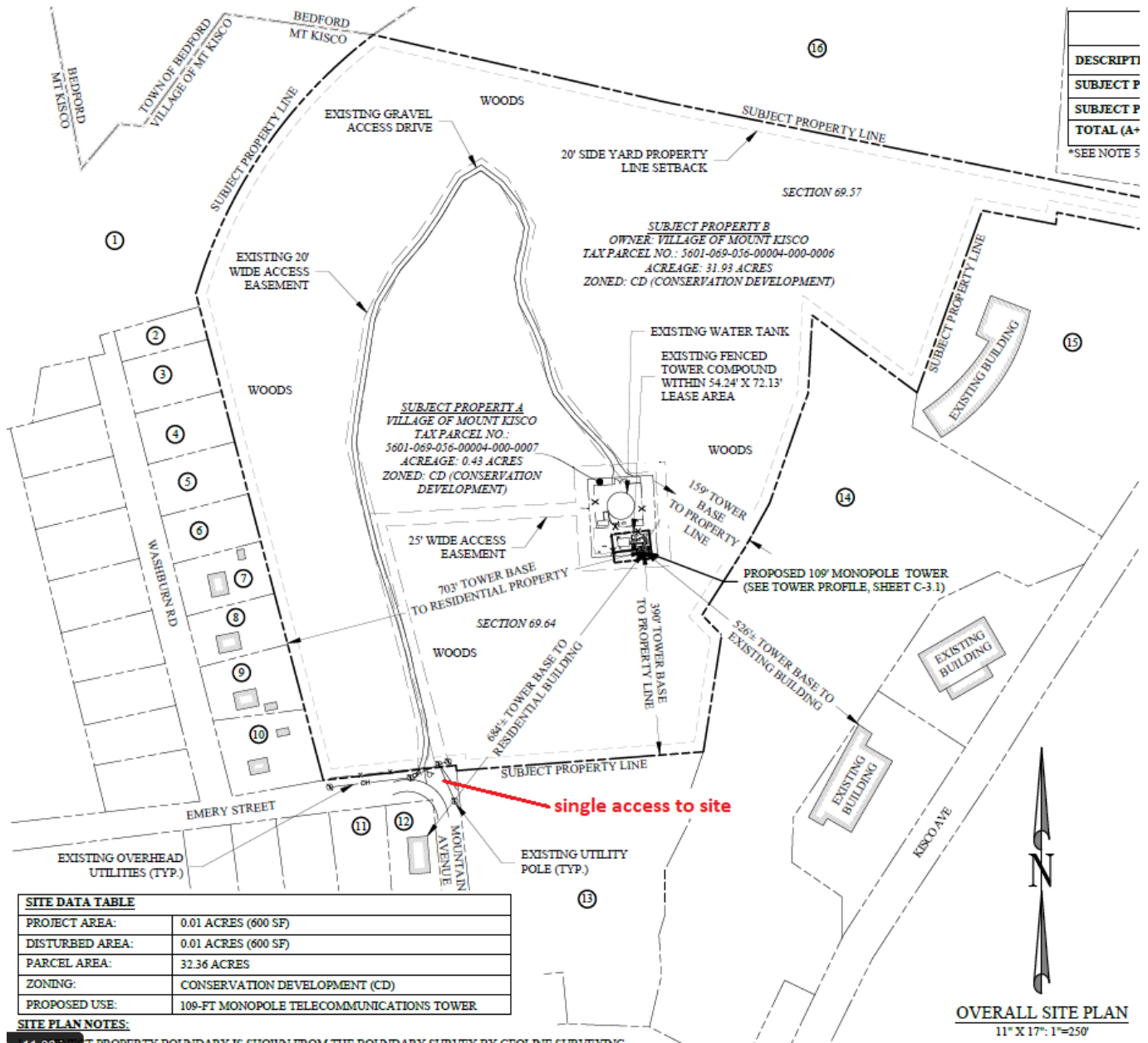


No parking or staging



EXHIBIT E

One single access to Mountain Ave site





July 13, 2021

Honorable Chairman Bonaforte and
Members of the Planning Board
Village of Mount Kisco
104 Main St
Mount Kisco, NY 10549

RE: Homeland Towers/ Verizon Wireless Telecommunications Facility
response letter to HDR memo of February 4, 2021
regarding alternate site analysis of 21 Linden Ln, Bedford, NY

Hon. Chairman and Members of the Planning Board:

I am the Regional Manager for Homeland Towers, LLC. As such I was responsible for identifying a suitable location for a telecommunications facility that would remedy the significant gap in reliable wireless service throughout the eastern portion of Mount Kisco in the vicinity and along Route 172.

In section 1. "Alternate Site Analysis" of Mr. Musso's, HDR review memo of February 4, 2021 Mr. Musso states: *(italic added for emphasis)*

a. A letter of interest to accommodate a wireless facility was recently submitted to Homeland and the Village Planning Board for a 4-acre (+/-) property located approximately 1200-1300 ft east of the currently proposed tower location, along the south side of Route 172 in the Town of Bedford (21 Linden Lane; see letter from property owner attorney dated January 25, 2021).

i. As discussed with the applicant, this property must be evaluated in detail as a viable alternative, including submittal of a technical report that includes:

1. Documentations of property owner outreach and correspondences;

Please see copies of owner outreach and correspondences attached hereto in Exhibit A

2. Coverage potential – including assumptions for tower height and location on the property (Verizon 145 ACL, 155 ACL should be evaluated, at minimum); coverage maps consistent in scale, frequencies (low and high band), and signal strengths as presented in the V-Comm October 2020 RF assessments that have been provided for 180 S. Bedford Road.



The alternate site at 21 Linden Lane, Bedford, NY does not meet the required coverage objective. Please see the V-Comm Third Supplemental Report dated July 12, 2021 as part of this application.

3. Constraints or opportunities that are noted during the applicant's evaluation of this alternate.

On March 16, 2021 we conducted an on-site meeting with the owner of 21 Linden Lane and APT Engineering to determine a suitable location for a potential site and prepare a preliminary layout and design. On March 31, 2021 we had a site visit with Ecological Solutions to delineate the wetlands located on the property. Please see a copy of the preliminary layout attached in Exhibit B. An initial review of the Bedford zoning code determined the following permitting constraints:

- The Town of Bedford Code Chapter 122. Wetlands § 122-9. (6) (b) states: "Location of construction or area proposed to be disturbed and its relation to property lines, buildings, roads and watercourses within 250 feet". The proposed site is +/- 141 ft from an existing stream therefore a wetlands permit would be required.

- Section 125-85.2(BB) of the zoning code sets the following location priorities:

(1) Applications for special use permits for large wireless facilities shall locate, site and erect said wireless telecommunications facilities in accordance with the following priorities, (a) being the highest priority and (g) being the lowest priority.

(a) Co-location on existing wireless telecommunications facilities on lands owned or controlled by the Town, not including the public right-of-way;

(b) Co-location on a site with existing wireless telecommunications facilities or other tall structures in the Town;

(c) On other lands owned or controlled by the Town, including, but not limited to, the Town public right-of-way;

(d) On lands owned or controlled by other municipal corporations within the Town, to the extent permitted by such other municipal corporation;

(e) On nonresidential zoned properties;

(f) On residential zoned properties; and

(g) No large wireless facilities shall be permitted in the Bedford Historic District, Katonah Historic District, or on any property designated as a Tier I or Tier II property,



HOMELAND TOWERS

unless the applicant demonstrates to the Planning Board's satisfaction that the selected site is necessary to provide adequate service and no feasible alternative site exists. Approval shall be required from the Bedford Village Historic District Review Commission, the Katonah Historic District Advisory Commission, or the Historic Building Preservation Commission, as appropriate, before any large wireless facility is approved in the Bedford Historic District, Katonah Historic District, or on any property designated as a Tier I or Tier II property.

(2) If the proposed site is not proposed for the highest priority listed above, then a detailed explanation must be provided as to why a site of a higher priority was not selected. The person seeking such an exception must satisfactorily demonstrate the reason or reasons why such a special use permit should be granted for the proposed site and the hardship that would be incurred by the applicant if the permit were not granted for the proposed site.

(3) An applicant may not bypass sites of higher priority by stating the site proposed is the only site leased or selected. An application shall address co-location as an option. If such option is not proposed, the applicant must explain to the reasonable satisfaction of the Planning Board why co-location is commercially impracticable.

- 21 Linden Lane is located in the 4A (4 acres residential) zoning district and thereby falls under the category (f) lowest priority designation which requires a detailed explanation and justification as to why a site of a higher priority was not selected.
- Section 125-85.2(DD) of the zoning code establishes the following Height and Setback requirements:

“All large wireless facilities, including any support structures and accessory equipment, located outside the public right-of-way shall be set back from the property line of the lot on which they are located a distance equal to not less than the total height of the facility, including support structure, measured from the highest point of such support structure to the finished grade elevation of the ground on which it is situated, plus 10% of such total height. The Planning Board may reduce such setback requirements based upon consideration of lot size, topographic conditions, adjoining land uses, landscaping, other forms of screening and/or structural characteristics of the proposed support structure.”

The height of the proposed tower is shown at 150 ft (the maximum height – see below) which requires a setback from any property line of no less than 165 ft (height of structure plus 10%). In the event the Planning Board does not reduce the setback requirement a variance from the Zoning Board of Appeals for the setback to the property line to the north (+/- 103 ft) and the west (+/- 120 ft) would be required.



- Section 125-85.2(CC) states that “wireless telecommunications facility support structures shall be no higher than the minimum height necessary. The proposed height, which may be in excess of the maximum height permitted for other structures in the applicable zone, shall address any additional height necessary to accommodate co-location by additional antenna arrays, but under no circumstances is the height to be in excess of 150 feet.”

As is stated in the V-Comm Third Supplemental Report dated July 12, 2021 which is part of this application, the proposed site does not meet the required coverage objective at 150 ft height. As is stated in this code section “under no circumstances is the height to be in excess of 150 feet.”

Conclusion:

As is stated herein the alternate location at 21 Linden Lane, Bedford, NY does not meet the coverage objective of the site. In addition, a review of the Town of Bedford Zoning Code finds that a wetland permit is required and the site would not meet the height or 2 setback requirements of the Bedford Code.

As detailed in my “Supplemental Site Justification Report” dated February 12, 2021 Exhibit I, about 16 residences and 3 commercial buildings would be within a ¼ mile distance from a site at 21 Linden Lane as opposed to only 8 residences that would be located within a ¼ mile distance of the proposed site at 180 S. Bedford Road as shown in Exhibit F of the same report.

Moreover, the visual renderings attached hereto as Exhibit C demonstrate that a facility at 21 Linden Lane would be extremely visible, particularly from West Patent Road, Route 172 and the neighboring residential community as predicted by Mr. John Stockbridge.

The speculative alternative site at 21 Linden Lane in the neighboring Town of Bedford is not a feasible alternative site and is not a less intrusive alternative to remedy the significant gap in service in the Village of Mount Kisco as compared to the proposed site at 180 S. Bedford Road, Mount Kisco.

Respectfully,

Klaus Wimmer

Klaus Wimmer
Regional Manager
Homeland Towers, LLC.



EXHIBIT A

Copies of correspondence with the owner and owner's attorney

FAX

Date:	01/25/2021
--------------	------------

Pages including cover sheet:	3
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To:	9143330743@rcfax.com
Phone	
Fax Phone	(914) 333-0743

From:	Anthony Cassese
	The Law Offices of Anthony J. Cassese
	7-11 S. Broadway
	White Plains
	NY 10601
Phone	(888) 468-9981 * 101
Fax Phone	18884476385

NOTE:

Transmitted herewith please find my letter of January 25, 2021

FROM: Anthony Casseese FAX: 914-333-0743 TO: 914-333-0743 Page: 2 of 3 01/25/2021 2:55 PM

ANTHONY J. CASSESE, ESQ.

ATTORNEY AT LAW

ANTHONY J. CASSESE, ESQ. • †
ANTHONY@CASSESLAW.COM

7-11 S. BROADWAY - SUITE 308
WHITE PLAINS, NY 10601

+1 914.533.3030 NY

+1 888.447.6385

• MEMBER OF NY BAR

† MEMBER OF CT BAR

Via Facsimile – 914-333-0743
January 25, 2021

Homeland Towers, LLC
C/O Snyder and Snyder, LLP
94 White Plains Road
Tarrytown, New York 10591

Re: Cell Phone Tower Application;
Route 172 adjacent to Marsh Sanctuary

Dear Sir/Madam:

My client has recently become aware of your client's cell tower application on a parcel in Mount Kisco along Route 172, next to Marsh Sanctuary. The tower's proposed location is located west of a property that my client owns, known as 21 Linden Lane in Bedford. It is also my client's understanding that you are seeking alternate locations.

After careful consideration, my client believes his property may be a viable alternate to the proposed site, as it is located along the 172 corridor and close to (approximately 1,200 feet east) the currently proposed location. Unlike the sanctuary parcel, my client's parcel is bordered by Route 172, the Unitarian Church, Linden Lane and a wetlands parcel incapable of any development. My client's four-plus acre parcel has over 350 feet of frontage along Route 172 which is densely screened with mature plantings, is roughly the same or higher elevation than your current site, is relatively flat (the 4+ acres range in elevation between 470 and 486 feet and has no steep slopes, wetlands or flood plains. The nearest house to the location that we would anticipate you locating the facility is well over 700 feet.

The proposed subject Premises has dual access between the Premises on Linden Lane and gated access on Route 172. My client's Premises is about the midpoint in the gap in your signal coverage along Route 172.

I am writing this letter to make you aware of my client's interest to accommodate a wireless facility at the above-referenced property, and he interested in speaking with the applicant with respect to options. Kindly contact my office at your earliest convenience to discuss this more fully.

Very truly yours,


Anthony J. Cassese

Cc: Client
Mt. Kisco Planning Board

Klaus Wimmer

From: Klaus Wimmer
Sent: Wednesday, January 27, 2021 3:23 PM
To: anthony@casseselaw.com
Subject: 21 Linden Lane Bedford / Mt Kisco
Attachments: 21 Linden Lane Bedford 1-26-21.pdf; 21 Linden Ln Tax map.pdf

Good Afternoon Mr. Cassese,

I am responding to the fax you sent to attorney Robert Gaudioso regarding 21 Linden Lane, Bedford and the owner's interest to lease us space for a cell tower. We will certainly evaluate your client's property as a possible location. As part of our site due diligence we'll have to perform a coverage analysis. I have attached a tax map of the property. Kindly mark off where the owner would like to locate the site and email it back to me.

Please contact me with any questions or to discuss. I look forward to hear back from you.

Thanks

Klaus Wimmer

Regional Manager



HOMELAND TOWERS

9 Harmony Street, 2nd Floor
Danbury, CT 06810

Office: (203) 297-6345 | **Cell:** (845) 242-3814

Email: kw@homelandtowers.us

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Klaus Wimmer

From: Klaus Wimmer
Sent: Tuesday, July 13, 2021 4:17 PM
To: Klaus Wimmer
Subject: FW: 21 Linden Lane Bedford / Mt Kisco
Attachments: 21 Linden Lane Bedford 1-26-21.pdf; 21 Linden Ln Tax map.pdf

From: Klaus Wimmer
Sent: Monday, February 1, 2021 1:34 PM
To: anthony@casseselaw.com
Cc: Robert Gaudio <RGaudio@snyderlaw.net>
Subject: FW: 21 Linden Lane Bedford / Mt Kisco

Mr. Cassese,

I am following up on the attached letter you sent to attorney Robert Gaudio (copied) regarding a wireless facility at 21 Linden Lane. Please indicate where on the property this facility should be placed so we can evaluate this location. I look forward to hear back from you at your earliest convenience.

Klaus Wimmer

Regional Manager



HOMELAND TOWERS

9 Harmony Street, 2nd Floor
Danbury, CT 06810

Office: (203) 297-6345 | **Cell:** (845) 242-3814

Email: kw@homelandtowers.us

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Klaus Wimmer

From: Klaus Wimmer
Sent: Tuesday, July 13, 2021 3:12 PM
To: Klaus Wimmer
Subject: FW: 21 Linden Lane Bedford / Mt Kisco
Attachments: 20210127_155417_resized.jpg

From: Anthony Cassese <anthony@casseselaw.com>
Sent: Monday, February 1, 2021 1:39 PM
To: Klaus Wimmer <kw@homelandtowers.us>
Cc: Robert Gaudio <RGaudio@snyderlaw.net>
Subject: RE: 21 Linden Lane Bedford / Mt Kisco

Klaus, please see approximate locations in the attached JPG. I am out of the office today, however I will be available tomorrow at 9:30am. Kindly advise if that works for you. If so, we will put it on the calendar.

Best Regards,

Anthony J. Cassese, Esq.
The Law Offices of Anthony J. Cassese, PLLC
7-11 S. Broadway - Suite 308
White Plains, NY 10601
Ofc: (914) 533-3030
Fax: (888) 447-6385

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Klaus Wimmer

From: Klaus Wimmer
Sent: Tuesday, July 13, 2021 4:20 PM
To: Klaus Wimmer
Subject: FW: 21 Linden Lane Bedford / Mt Kisco

From: Klaus Wimmer
Sent: Monday, February 1, 2021 1:45 PM
To: Anthony Cassese <anthony@casseselaw.com>
Cc: Robert Gaudio <RGaudio@snyderlaw.net>
Subject: RE: 21 Linden Lane Bedford / Mt Kisco

Great, thank you. Yes I am available tomorrow for a call at 9:30
Looking forward.

Klaus Wimmer

Regional Manager



HOMELAND TOWERS

9 Harmony Street, 2nd Floor
Danbury, CT 06810

Office: (203) 297-6345 | **Cell:** (845) 242-3814

Email: kw@homelandtowers.us

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Klaus Wimmer

From: Klaus Wimmer
Sent: Tuesday, July 13, 2021 4:20 PM
To: Klaus Wimmer
Subject: FW: 21 Linden Lane Bedford / Mt Kisco

From: Anthony Cassese <anthony@casseselaw.com>
Sent: Monday, February 1, 2021 1:48 PM
To: Klaus Wimmer <kw@homelandtowers.us>
Cc: Robert Gaudio <RGaudio@snyderlaw.net>; Carelisse Barbosa <carelisse@casseselaw.com>
Subject: RE: 21 Linden Lane Bedford / Mt Kisco

Thank you Klaus. I will call you at 9:30am.

Carelisse, please put this on the calendar.

Best Regards,

Anthony J. Cassese, Esq.
The Law Offices of Anthony J. Cassese, PLLC
7-11 S. Broadway - Suite 308
White Plains, NY 10601
Ofc: (914) 533-3030
Fax: (888) 447-6385

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Klaus Wimmer

From: Klaus Wimmer
Sent: Tuesday, July 13, 2021 4:21 PM
To: Klaus Wimmer
Subject: FW: 21 Linden Lane Bedford / Mt Kisco

From: Anthony Cassese <anthony@casseselaw.com>
Sent: Tuesday, February 2, 2021 10:23 AM
To: Klaus Wimmer <kw@homelandtowers.us>
Cc: Robert Gaudio <RGaudio@snyderlaw.net>
Subject: RE: 21 Linden Lane Bedford / Mt Kisco

Klaus, It was good speaking with you this morning.

Kindly advise as to the results of your due diligence. I look forward to speaking with you soon.

Best Regards,

Anthony J. Cassese, Esq.
The Law Offices of Anthony J. Cassese, PLLC
7-11 S. Broadway - Suite 308
White Plains, NY 10601
Ofc: (914) 533-3030
Fax: (888) 447-6385

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Klaus Wimmer

From: Klaus Wimmer
Sent: Tuesday, July 13, 2021 4:21 PM
To: Klaus Wimmer
Subject: FW: 21 Linden Lane Bedford / Mt Kisco

From: Klaus Wimmer
Sent: Tuesday, February 2, 2021 10:38 AM
To: Anthony Cassese <anthony@casseselaw.com>
Cc: Robert Gaudio <RGaudio@snyderlaw.net>
Subject: RE: 21 Linden Lane Bedford / Mt Kisco

Hi Anthony, likewise. We'll get back with you as soon as we know more.

Klaus Wimmer

Regional Manager



HOMELAND TOWERS

9 Harmony Street, 2nd Floor
Danbury, CT 06810

Office: (203) 297-6345 | **Cell:** (845) 242-3814

Email: kw@homelandtowers.us

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Klaus Wimmer

From: Klaus Wimmer
Sent: Tuesday, July 13, 2021 4:22 PM
To: Klaus Wimmer
Subject: FW: 21 Linden Lane Bedford / Mt Kisco

From: Anthony Cassese <anthony@casseselaw.com>
Sent: Tuesday, February 2, 2021 10:44 AM
To: Klaus Wimmer <kw@homelandtowers.us>
Cc: Robert Gaudio <RGaudio@snyderlaw.net>
Subject: RE: 21 Linden Lane Bedford / Mt Kisco

Thank you Klaus.

Best Regards,

Anthony J. Cassese, Esq.
The Law Offices of Anthony J. Cassese, PLLC
7-11 S. Broadway - Suite 308
White Plains, NY 10601
Ofc: (914) 533-3030
Fax: (888) 447-6385

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Klaus Wimmer

From: Klaus Wimmer
Sent: Monday, March 8, 2021 4:15 PM
To: Anthony Cassese
Subject: 21 Linden Lane Bedford
Attachments: NY172 Mt Kisco - 21 Linden Ln Lease DRAFT 3-8-21.docx

Good afternoon Anthony,

Attached please find a draft of a proposed lease agreement. Kindly review and let me know if you have any comments or questions regarding any of the terms or conditions of the agreement. Please note that we have not yet determined whether 21 Linden Lane is a feasible alternative site and we are in the process of performing our due diligence and need to know if the terms and conditions in the attached lease are acceptable to your client. Please also confirm the name of your client.

As part of our due diligence we would like to schedule a site and design visit to the property to consider a preliminary design. The Town of Bedford and its consultants would also be invited. Please let me know dates and times that would be acceptable. We are available anytime later this week or any day next week. We ask that the property owner attend this visit.

I look forward to hearing back from you.

Klaus Wimmer

Regional Manager



HOMELAND TOWERS

9 Harmony Street, 2nd Floor
Danbury, CT 06810

Office: (203) 297-6345 | **Cell:** (845) 242-3814

Email: kw@homelandtowers.us

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Klaus Wimmer

From: Klaus Wimmer
Sent: Tuesday, July 13, 2021 4:23 PM
To: Klaus Wimmer
Subject: FW: 21 Linden Lane Bedford

From: Anthony Cassese <anthony@casseselaw.com>
Sent: Monday, March 8, 2021 4:21 PM
To: Klaus Wimmer <kw@homelandtowers.us>
Subject: RE: 21 Linden Lane Bedford

Thank you Klaus. I will discuss with my client immediately and advise.

Best Regards,

Anthony J. Cassese, Esq.
The Law Offices of Anthony J. Cassese, PLLC
7-11 S. Broadway - Suite 308
White Plains, NY 10601
Ofc: (914) 533-3030
Fax: (888) 447-6385

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Klaus Wimmer

From: Klaus Wimmer
Sent: Tuesday, July 13, 2021 4:24 PM
To: Klaus Wimmer
Subject: FW: 21 Linden Lane Bedford
Attachments: NY172 Mt Kisco - 21 Linden Ln Lease DRAFT 3-8-21.docx

From: Klaus Wimmer
Sent: Monday, March 8, 2021 4:23 PM
To: Anthony Cassese <anthony@casseselaw.com>
Subject: RE: 21 Linden Lane Bedford

Anthony,

Revised lease draft attached. Please delete the first copy I just sent, it contained a typo.

Thanks

Klaus Wimmer

Regional Manager



HOMELAND TOWERS

9 Harmony Street, 2nd Floor
Danbury, CT 06810

Office: (203) 297-6345 | **Cell:** (845) 242-3814

Email: kw@homelandtowers.us

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Klaus Wimmer

From: Klaus Wimmer
Sent: Tuesday, July 13, 2021 4:24 PM
To: Klaus Wimmer
Subject: FW: 21 Linden Lane Bedford

From: Klaus Wimmer
Sent: Wednesday, March 10, 2021 4:30 PM
To: Anthony Cassese <anthony@casseselaw.com>
Subject: RE: 21 Linden Lane Bedford

Hi Anthony,
Any word when we can schedule the visit and do you have any comments or questions on the lease ?
We are hoping to get this done expeditiously.

Please let me know.

Thanks

Klaus Wimmer

Regional Manager



HOMELAND TOWERS

9 Harmony Street, 2nd Floor
Danbury, CT 06810

Office: (203) 297-6345 | **Cell:** (845) 242-3814

Email: kw@homelandtowers.us

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Klaus Wimmer

From: Klaus Wimmer
Sent: Tuesday, July 13, 2021 4:24 PM
To: Klaus Wimmer
Subject: FW: 21 Linden Lane Bedford

From: Anthony Cassese <anthony@casseselaw.com>
Sent: Wednesday, March 10, 2021 4:32 PM
To: Klaus Wimmer <kw@homelandtowers.us>
Subject: RE: 21 Linden Lane Bedford

Good afternoon Klaus. I am reviewing with my client and will have a response to you within a couple of days.

I will have dates and times for the walk through for you shortly.

Best Regards,

Anthony J. Cassese, Esq.
The Law Offices of Anthony J. Cassese, PLLC
7-11 S. Broadway - Suite 308
White Plains, NY 10601
Ofc: (914) 533-3030
Fax: (888) 447-6385

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Klaus Wimmer

From: Klaus Wimmer
Sent: Tuesday, July 13, 2021 4:25 PM
To: Klaus Wimmer
Subject: FW: 21 Linden Lane Bedford

From: Klaus Wimmer
Sent: Wednesday, March 10, 2021 4:35 PM
To: Anthony Cassese <anthony@casseselaw.com>
Subject: RE: 21 Linden Lane Bedford

Ok, thank you !

Klaus Wimmer

Regional Manager



HOMELAND TOWERS

9 Harmony Street, 2nd Floor
Danbury, CT 06810

Office: (203) 297-6345 | **Cell:** (845) 242-3814

Email: kw@homelandtowers.us

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Klaus Wimmer

From: Klaus Wimmer
Sent: Tuesday, July 13, 2021 4:25 PM
To: Klaus Wimmer
Subject: FW: 21 Linden Lane Bedford

From: Anthony Cassese <anthony@casseselaw.com>
Sent: Thursday, March 11, 2021 11:11 AM
To: Klaus Wimmer <kw@homelandtowers.us>
Subject: RE: 21 Linden Lane Bedford

Good morning Klaus. I hope all is well.

My client is currently working from home and his schedule is quite flexible. He can be at the property on 15 minutes notice. To make scheduling easier, he has authorized me to provide you with his contact info so you can contact him directly. My client is Neil B Rice and his number is 917 560 0323.

He is looking forward to your call.

Best Regards,

Anthony J. Cassese, Esq.
The Law Offices of Anthony J. Cassese, PLLC
7-11 S. Broadway - Suite 308
White Plains, NY 10601
Ofc: (914) 533-3030
Fax: (888) 447-6385

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Klaus Wimmer

From: Klaus Wimmer
Sent: Tuesday, July 13, 2021 4:26 PM
To: Klaus Wimmer
Subject: FW: 21 Linden Lane Bedford

From: Klaus Wimmer
Sent: Thursday, March 11, 2021 12:30 PM
To: Anthony Cassese <anthony@casseselaw.com>
Subject: RE: 21 Linden Lane Bedford

Thank you Anthony. I'll check what day works with my team and then contact your client to schedule a visit.

Thanks again !
Klaus

Klaus Wimmer

From: Klaus Wimmer
Sent: Tuesday, July 13, 2021 4:26 PM
To: Klaus Wimmer
Subject: FW: 21 Linden Lane Bedford

From: Klaus Wimmer
Sent: Friday, March 12, 2021 10:59 AM
To: Anthony Cassese <anthony@casseselaw.com>
Subject: RE: 21 Linden Lane Bedford

Hi Anthony, I just spoke to Neil and we scheduled a visit for Tuesday 3/16 at 10 am.

Thank you for your assistance.

Klaus Wimmer

Regional Manager



HOMELAND TOWERS

9 Harmony Street, 2nd Floor
Danbury, CT 06810

Office: (203) 297-6345 | **Cell:** (845) 242-3814

Email: kw@homelandtowers.us

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Klaus Wimmer

From: Klaus Wimmer
Sent: Friday, March 26, 2021 5:32 PM
To: realtyking72@aol.com
Cc: Anthony Cassese
Subject: 21 Linden Lane site visit
Attachments: Bedford - Gaudioso Letter - 21 Linden Lane 3-24-21.pdf

Hi Neil,

As discussed, I have scheduled a visit for next Wednesday 3/31 at 11 am with our environmental engineer to delineate the wetlands to make sure we are outside the buffer.

As requested in the attached letter we have informed Mr. Gordon / Town of Bedford of this visit. Please call me with any questions

Hope all is well !

Klaus Wimmer

Regional Manager



HOMELAND TOWERS

9 Harmony Street, 2nd Floor
Danbury, CT 06810

Office: (203) 297-6345 | **Cell:** (845) 242-3814

Email: kw@homelandtowers.us

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Klaus Wimmer

From: Klaus Wimmer
Sent: Friday, March 26, 2021 5:33 PM
To: realityking72@aol.com
Subject: FW: 21 Linden Lane site visit
Attachments: Bedford - Gaudio Letter - 21 Linden Lane 3-24-21.pdf

Trying again, I think I had the wrong email address

From: Klaus Wimmer
Sent: Friday, March 26, 2021 5:32 PM
To: 'realityking72@aol.com' <realityking72@aol.com>
Cc: 'Anthony Cassese' <anthony@casseselaw.com>
Subject: 21 Linden Lane site visit

Hi Neil,

As discussed, I have scheduled a visit for next Wednesday 3/31 at 11 am with our environmental engineer to delineate the wetlands to make sure we are outside the buffer.

As requested in the attached letter we have informed Mr. Gordon / Town of Bedford of this visit. Please call me with any questions

Hope all is well !

Klaus Wimmer

Regional Manager



HOMELAND TOWERS

9 Harmony Street, 2nd Floor
Danbury, CT 06810

Office: (203) 297-6345 | **Cell:** (845) 242-3814

Email: kw@homelandtowers.us

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Klaus Wimmer

From: Klaus Wimmer
Sent: Tuesday, July 13, 2021 4:39 PM
To: Klaus Wimmer
Subject: FW: 21 Linden Lane site visit

From: Klaus Wimmer
Sent: Thursday, April 8, 2021 11:09 AM
To: realityking72@aol.com
Subject: RE: 21 Linden Lane site visit

Hi Neil, please send me a pdf copy of your survey as discussed.

Thanks

Klaus Wimmer

Regional Manager



HOMELAND TOWERS

9 Harmony Street, 2nd Floor
Danbury, CT 06810

Office: (203) 297-6345 | **Cell:** (845) 242-3814

Email: kw@homelandtowers.us

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Klaus Wimmer

From: Klaus Wimmer
Sent: Tuesday, July 13, 2021 4:39 PM
To: Klaus Wimmer (kw@homelandtowers.us)
Subject: FW: 21 Linden Lane site visit
Attachments: NY172 Mt Kisco - 21 Linden Ln Lease DRAFT 3-8-21.docx; Mt Kisco Linden Lane LE Rev0 04-16-2021.pdf; Rent Escalator 45y \$ 2000 with 2% esc or 35% (\$3500 carrier).pdf

From: Klaus Wimmer
Sent: Thursday, May 6, 2021 12:21 PM
To: realityking72@aol.com
Cc: Anthony Cassese <anthony@casseselaw.com>
Subject: RE: 21 Linden Lane site visit

Neil,
As discussed attached is the lease draft, preliminary layout and a 45 year income projection matrix. Please review and call me with any questions.

Thanks

Klaus Wimmer

Regional Manager



HOMELAND TOWERS

9 Harmony Street, 2nd Floor
Danbury, CT 06810

Office: (203) 297-6345 | **Cell:** (845) 242-3814

Email: kw@homelandtowers.us

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EXHIBIT B

Preliminary design and layout of site



APT
ENGINEERING

567 VAUXHAL STREET EXTENSION SUITE 311
WATERFORD, CT 06385
WWW.ALLPOINTSTECH.COM

PHONE: (860)-663-1697
FAX: (860)-663-0935

APT FILING NUMBER: NY283830

LE-1

SCALE: AS NOTED

DRAWN BY: ELZ

DATE: 04/16/2021

CHECKED BY: RCB



HOMELAND TOWERS, LLC
9 HARMONY STREET
2nd FLOOR
DANBURY, CT 06810

**HOMELAND TOWERS:
NY172**

**MOUNT KISCO ALT. SITE
21 LINDEN LANE
BEDFORD, NY 10594**

SUBJECT PARCEL:
PARCEL #83.9-1-11
N/F
NBR PROPERTIES LLC
4.6 ACRES
ZONE: R-4A



EXIST. STREAM CENTERLINE

PROP. 150'± AGL
MONOPOLE

PROP. 75' x 75' (5,625± SF)
LEASE AREA & 50' x 50'
(2,500± SF) FENCED
GRAVEL COMPOUND AREA

EXIST. POND

PROP. COMPOUND ACCESS
FROM POND HILL ROAD
ALONG EXIST. GRAVEL
DRIVE TO PROP. COMPOUND
(APPROX 480'±)

PROP. UNDERGROUND ELEC.
& TELCO SERVICE FROM EXIST.
UTILITY POLE (#W23927) TO
PROP. COMPOUND (APPROX.
520'±)

EXIST. UTILITY POLE
(#W23927)

EXIST. GRAVEL ACCESS
DRIVEWAY

EXIST. RESIDENCE
PROPERTY LINE (TYP.)



1 SITE PLAN
LE-1 SCALE: 1" = 150'-0"

NOTE: EXACT LOCATION AND ORIENTATION OF PROPOSED LEASE AREA PENDING SITE SURVEY & FURTHER ENGINEERING REVIEW AND ANALYSIS. PROPOSED UTILITY ROUTING AND R.O.W. EXTENTS TO BE DETERMINED BY LOCAL UTILITY PROVIDERS.



APT
ENGINEERING

567 VAUXHAL STREET EXTENSION SUITE 311
WATERFORD, CT 06385
WWW.ALLPOINTSTECH.COM
PHONE: (860)-663-1697
FAX: (860)-663-0935

APT FILING NUMBER: NY283830

LE-2

SCALE: AS NOTED

DRAWN BY: ELZ

DATE: 04/16/2021

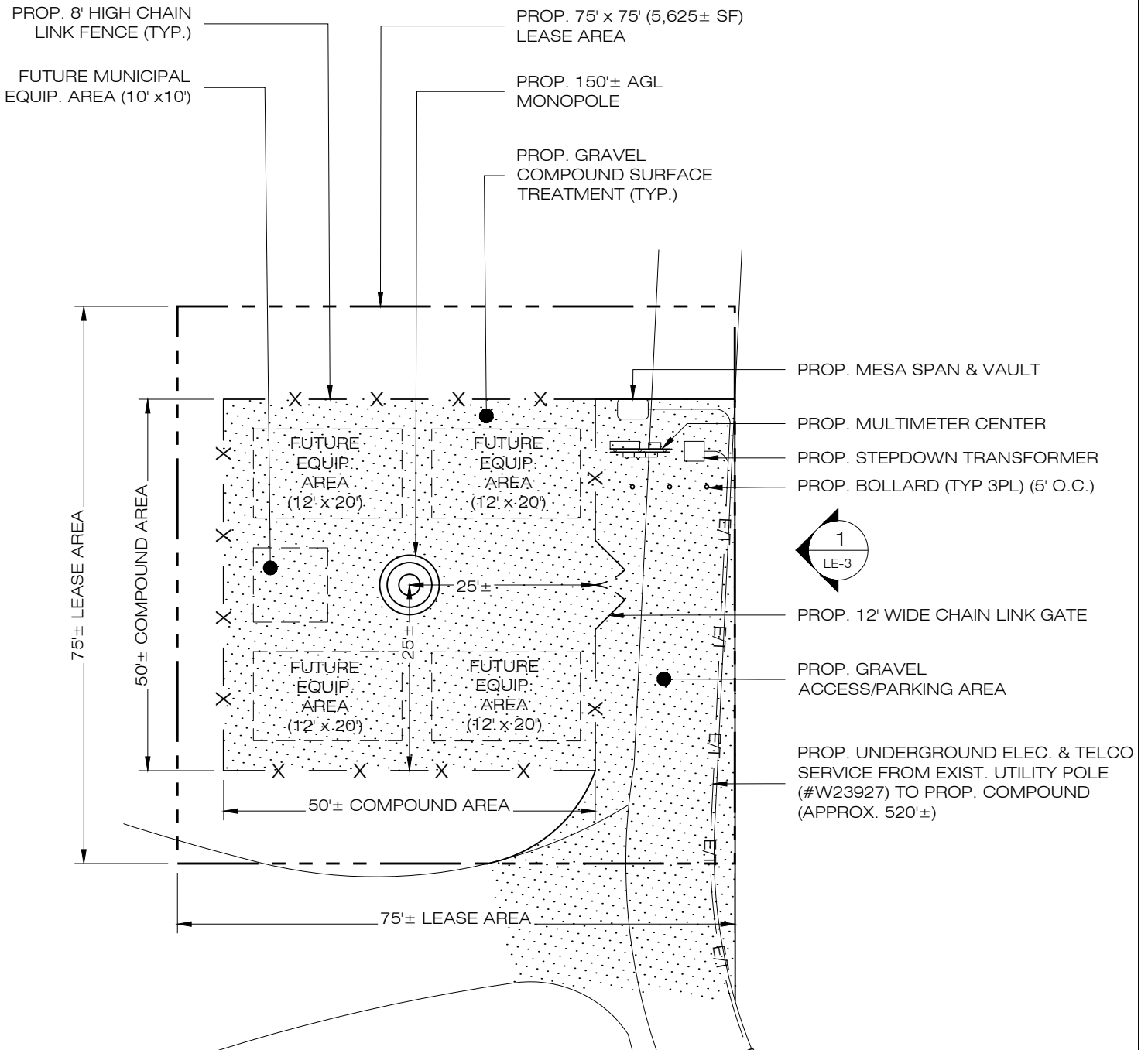
CHECKED BY: RCB



HOMELAND TOWERS, LLC
9 HARMONY STREET
2nd FLOOR
DANBURY, CT 06810

**HOMELAND TOWERS:
NY172**

**MOUNT KISCO ALT. SITE
21 LINDEN LANE
BEDFORD, NY 10594**



1
LE-2 **COMPOUND PLAN**
SCALE: 1" = 20'-0"

NOTE: EXACT LOCATION AND ORIENTATION OF PROPOSED LEASE AREA PENDING SITE SURVEY & FURTHER ENGINEERING REVIEW AND ANALYSIS. PROPOSED UTILITY ROUTING AND R.O.W. EXTENTS TO BE DETERMINED BY LOCAL UTILITY PROVIDERS.



APT
ENGINEERING

567 VAUXHAL STREET EXTENSION SUITE 311
WATERFORD, CT 06385
WWW.ALLPOINTSTECH.COM
PHONE: (860)-663-1697
FAX: (860)-663-0935

APT FILING NUMBER: NY283830

LE-3

SCALE: AS NOTED

DRAWN BY: ELZ

DATE: 04/16/2021

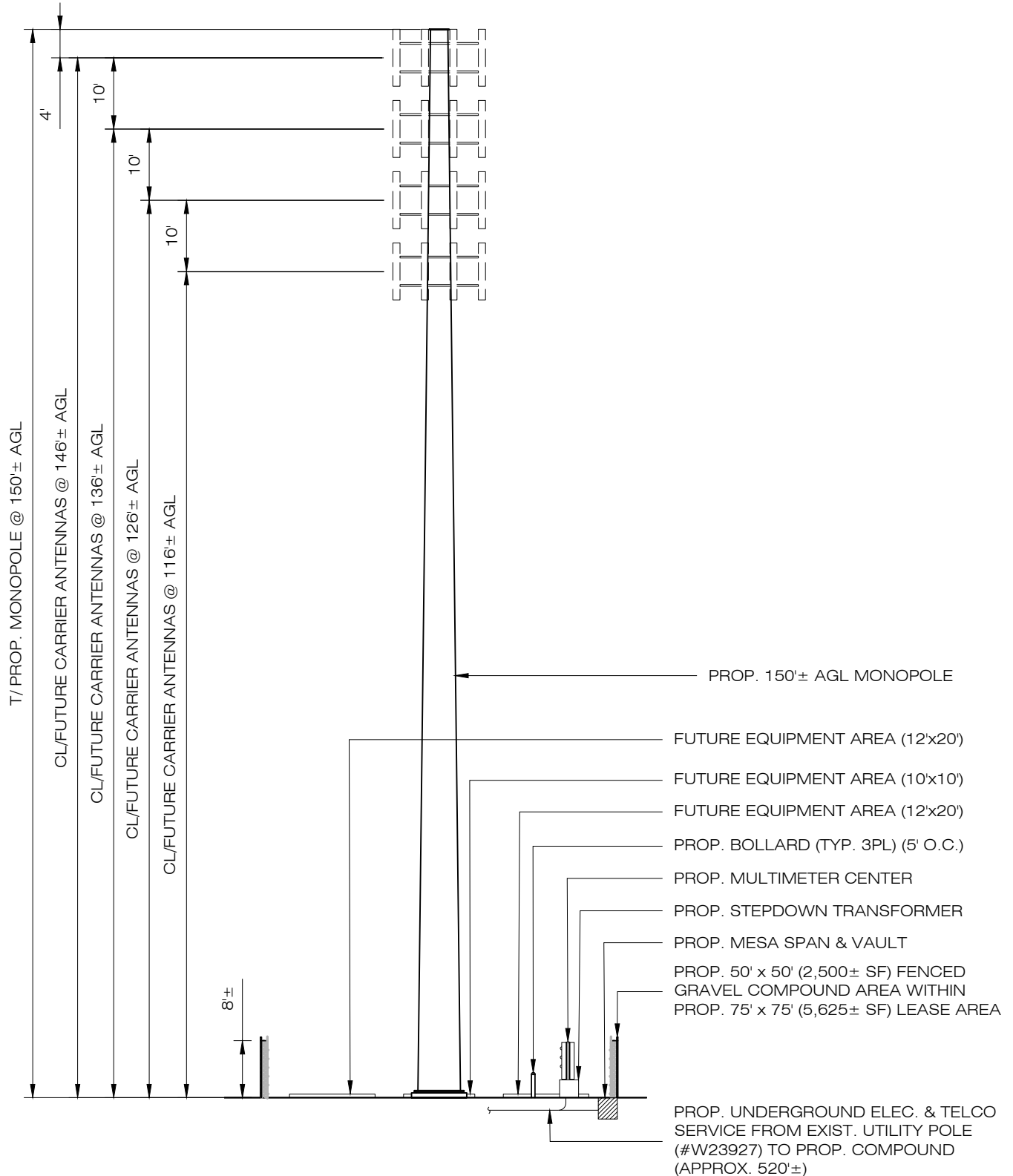
CHECKED BY: RCB



HOMELAND TOWERS, LLC
9 HARMONY STREET
2nd FLOOR
DANBURY, CT 06810

**HOMELAND TOWERS:
NY172**

**MOUNT KISCO ALT. SITE
21 LINDEN LANE
BEDFORD, NY 10594**



1 WESTERN ELEVATION
LE-3 SCALE : 1" = 20'-0"

NOTE: EXACT LOCATION AND ORIENTATION OF PROPOSED LEASE AREA PENDING SITE SURVEY & FURTHER ENGINEERING REVIEW AND ANALYSIS. PROPOSED UTILITY ROUTING AND R.O.W. EXTENTS TO BE DETERMINED BY LOCAL UTILITY PROVIDERS.

EXHIBIT C

Photo-simulations of 21 Linden Lane



South Bedford Road at Linden Lane
EXISTING CONDITION



South Bedford Road at Linden Lane
SIMULATED CONDITION - 150FT MONOPINE



South Bedford Road at Linden Lane
SIMULATED CONDITION - 150FT MONOPINE



West Patent Road at Rippowan Cisqua School
EXISTING CONDITION

FIGURE 5A

PHOTO SIMULATIONS
21 LINDEN LANE
Town of Bedford, New York



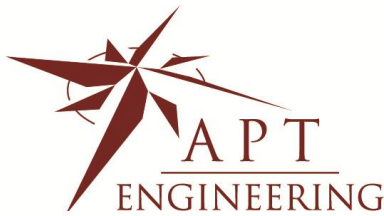
West Patent Road at Rippowan Cisqua School
SIMULATED CONDITION - 150FT MONOPINE



West Patent Road at Rippowan Cisqua School
SIMULATED CONDITION - 150FT MONOPINE

FIGURE 5C

PHOTO SIMULATIONS
21 LINDEN LANE
Town of Bedford, New York



Honorable Chairman
and Members of the Planning Board
Village of Mount Kisco
104 Main Street
Mount Kisco, New York 10549

July 13, 2021

RE: Homeland Towers Site Name: Mt. Kisco NY172
180 S. Bedford Road
Mt. Kisco, NY 10594
Response to Comments

Honorable Chairman and Members of the Board:

Please see the below responses to the comments (in red) from the Anthony Olivieri, P.E. comment memo dated March 9, 2021:

1. A determination regarding consistency with §110-33.1; particularly the standard that states "construction activities shall not be permitted on very steep slopes unless there is no viable alternative", and the applicant's response stating that there are "no viable options that avoid very steep slopes", will need to be made by the Planning Board.
No response required.
2. The submission notes that the comments from Fire Chief David Hughes regarding fire access sufficiency, is "currently being reviewed and revised material will be submitted at a later date"; considering this, it is noted that any resulting changes to the access drive may impact stormwater design and overall disturbance areas and steep slopes. The revised fire access plan will need to be reviewed and found to be acceptable to the fire department.
No response required.
3. The proposed fire department pool areas are not shown on the compound plan or grading plan sheets.
The fire department pool areas have been added to the Grading & Drainage Plan (SP-4) and the Compound Plan (CP-1).
4. We note that the design engineer has indicated that a geotechnical investigation was planned to determine truck loading capacity of the existing access driveway; this information has not yet been provided. The plan currently depicts the existing driveway pavement to remain.
The Applicant is in the process of reviewing the Geotechnical Report to determine if any changes to the composition of the existing access drive are warranted.
5. It is noted that NYCDEP has issued a determination that the SWPPP does not require their approval; once final disturbance areas are determined, a confirmation regarding this must be provided.
No response required.
6. The stone check dams provided at the swale surrounding the equipment compound are a concern in that they do not seem to be sufficiently spaced per NYSDEC guidelines to effectively reduce velocities of conveyed stormwater. There is also concern as to potential of erosion at the proposed discharge point onto steep slope areas.
The number of stone check dams within the proposed grass lined swale have been increased (see Drawing SP-4).
7. Details for the proposed infiltration units along the access drive has not been provided.
Details for the proposed infiltration units have been added to Drawings C-5 and C-8.

8. Cross sections should be provided at the proposed infiltration systems, along the access driveway including the road widening and adjacent steep slopes (note that infiltration should not be proposed in slopes >15%).
Cross sections of the proposed infiltration systems have been added to Drawing C-8 and Drawing SS-1.
9. Proposed "type c" catch basins along the access drive are noted as "flow splitter" structures in the SWPPP and on the solar panel application; this needs to be coordinated and details provided demonstrating how these will function effectively to separate flows with water entering from the above grate.
Details for the Flow Splitter structures have been added to Drawing C-8.
10. The proposed gravel equipment compound is shown to provide stormwater detention and infiltration, thus acting and functioning as an infiltration practice under NYSDEC design guidelines. The following are our comments:
- The SWPPP notes 12" of gravel while the details seem to only show 8" (4" of additional fill is shown above).
The proposed compound area is composed of 12" of gravel (see Detail 1 on Drawing C-4).
 - Infiltration practices should only be located on slopes less than 15%, it appears that there are slopes exceeding this in the footprint.
The infiltration design at the proposed compound has been revised. An underground infiltration system has been placed on existing slopes less than 15% (see Drawing SP-4 and Detail 4 on Drawing C-5).
 - Infiltration must occur into the existing soil strata, not what would appear to be a layer of fill beneath the gravel.
The infiltration design at the proposed compound has been revised. An underground infiltration system has been placed below the proposed compound on existing soils. A 6" perforated pipe will capture the runoff collected within the gravel compound and will flow into the infiltration system with (16) Infiltration units. (see Drawing SP-4 and Detail 4 on Drawing C-5).
 - There is a concern that seepage will occur at the base of the filled slopes downhill of the compound area. Infiltration should occur at a lower elevation within the proposed compound cross section.
The infiltration design at the proposed compound has been revised to be below the proposed compound. (see Drawing SP-4 and Detail 4 on Drawing C-5).
 - A cross section better defining the fill materials should be provided through the compound area.
The cross section on Drawing SS-1 has been updated to show the revised infiltration design.
 - We recommend sizing of the stormwater detention system utilizing the 100 year storm event as the driveway infiltration practices are sized. This will help provide additional volume to prevent discharges from the system to adjacent steep slopes where erosion is a concern.
The stormwater detention system has been revised utilizing the 100 year storm event (see revised Stormwater Management Report).

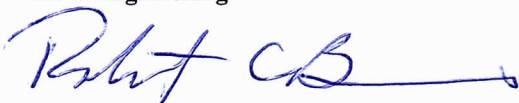
Misc. Items:

- The proposed updated Solar Facility design has been added to the updated Zoning Drawing set.
- AT&T's proposed installation has been added to the updated Zoning Drawing set.

Should you have any questions, please do not hesitate to call me at (860) 552-2036.

Sincerely,

APT Engineering



Robert C. Burns
Program Manager



Honorable Chairman
and Members of the Planning Board
Village of Mount Kisco
104 Main Street
Mount Kisco, New York 10549

RE: Homeland Towers Site Name: Mt. Kisco NY172
180 S. Bedford Road
Mt. Kisco, NY 10594
Code Applicability Letter

July 13, 2021

Honorable Chairman and Members of the Board:

APT Engineering (APT) is in receipt of the Mount Kisco Volunteer Fire Department comment memo dated January 19, 2021. The comment memo was issued as part of the Village of Mount Kisco's review of the above referenced proposed telecommunication facility application pending before the Village Planning Board. The memo questions the adequacy of the proposed site access for emergency response in the unlikely event of a fire at the Facility.

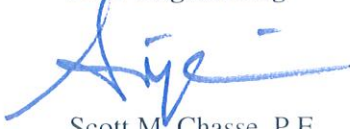
As part of the response to the Fire Department's comments, the Applicant has confirmed that all the comments contained therein have been addressed (see APT's Response to Comment Letter dated December 18, 2020).

For the Board's reference, pursuant to the 2018 International Building Code (IBC) adopted by New York State – Chapter 3, Section 312, "Towers" fall under the Occupancy classification Group U. Group U is defined as "Buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy shall be constructed, equipped and maintained to conform to the requirements of this code commensurate with the fire and life hazard incidental to their occupancy." However, under the 2020 New York State Uniform Fire Prevention and Building Code; Chapter 1, Section 101.2.4, "Structures such as radio and television transmission, communication and wind generation towers, and ground-mounted photovoltaic arrays that are neither a building appurtenance nor are attached to a building shall not be subject to this code" and are therefore exempt from the requirements of the 2018 International Fire Code and 2018 International Building Code, including requirements regarding fire apparatus access.

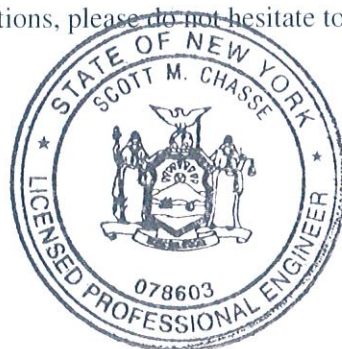
Notwithstanding the inapplicability of the New York State Uniform Fire Prevention and Building Code for this application, the applicant has clearly demonstrated that in the unlikely event fire/emergency apparatus would need to be mobilized to the Site, adequate space is available to accommodate the largest Fire Department Apparatus specified by the Mount Kisco Volunteer Fire Department. It is important to note that there are hundreds of thousands of wireless telecommunications towers nationwide and fires involving wireless telecommunications towers are a rare occurrence.

Should you have any questions, please do not hesitate to call me at (860) 663-1697, x101.

Sincerely,
APT Engineering

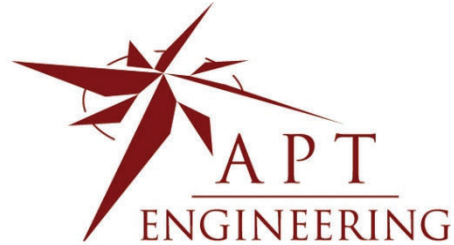


Scott M. Chasse, P.E.
Principal



APT ENGINEERING

567 VAUVHALL STREET EXTENSION, SUITE 311 · WATERFORD, CT 06385 · PHONE 860-663-1697 · FAX 860-663-0935



STORMWATER MANAGEMENT REPORT

**PROPOSED WIRELESS
TELECOMMUNICATIONS FACILITY**

**MOUNT KISCO
180 S. BEDFORD ROAD
MOUNT KISCO, NEW YORK 10594**

Prepared for:

**Homeland Towers, LLC
9 Harmony Street, 9th Floor
Danbury, CT**

Prepared by:

**APT Engineering, P.C.
567 Vauxhall Street Extension, Suite 311
Waterford, CT 06385**

November 2020

Revised:

January 2021

July 2021



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Introduction

At the request of Homeland Towers, LLC, APT Engineering, P.C. (“APT”) has undertaken analysis of and design to address stormwater impacts resulting from development of a proposed wireless telecommunications facility at 180 S. Bedford Road in Mount Kisco, New York (the “Project”). The Project, known as Mount Kisco, involves the installation of a fenced 2,542 SF gravel telecommunications equipment compound with a 140’ AGL Monopine and associated utilities off an existing gravel/paved driveway at 180 S. Bedford Road in Mount Kisco, New York (“Site”).

The purpose of this report is to provide an analysis of the potential stormwater drainage impacts associated with the Project, as well as a description of the design to mitigate such potential stormwater drainage impacts. The design is intended to be in full compliance with the State and Town regulations while taking prevailing site conditions and practical factors into account.

Existing Site Conditions

The Site is a privately-owned irregular shaped parcel located at 180 S. Bedford Road in Mount Kisco, New York, that consists of approximately 25± acres of mostly undeveloped forested land. The center of the lot has a cleared area where a former camp ground was located.

The Site’s existing topography generally slopes downward in all directions from high points in the middle of the parcel. Within the project area, the topography slopes downward to the north from a high point to the south and includes slopes that range from approximately 0 to 50 percent throughout. Elevations within the Site range from approximately 530 feet AMSL in the middle portion of the site to approximately 402 feet AMSL in the southeast corner, 408 in the southwest corner and 386 feet AMSL in the northwest corner of the site. Elevations within the project area range from approximately 446 feet AMSL to the south of the project area to approximately 414 feet AMSL on the north side of the project area.

Developed Site Conditions

The Project will be constructed off an existing gravel/paved access drive in the northwestern area of the Site in an existing forested area. Access to the Site will be provided via an existing gravel/paved access drive off S. Bedford Road. The Project includes the installation of 41’x62’ (2,542± SF) fenced gravel equipment compound with a 140’ AGL Monopine and associated utilities. The project will be located in an existing wooded area to the west of the existing access drive. 50 trees will need to be removed within the project area.

Stormwater Management

Analysis Methodology

The hydrologic analysis was performed using the HydroCAD stormwater modeling system computer program developed by HydroCAD Software Solutions, LLC.

Hydrographs for each watershed were developed using the SCS Synthetic Unit Hydrograph Method with a Type III rainfall distribution. Hydrographs were developed for the NOAA Atlas 14, Volume 10, Version 2 Precipitation 2-, 10-, 25-, and 100-year storm event with rainfall depths of 3.50, 5.36, 6.52 and 8.30 inches respectively.

The existing and proposed drainage areas used in the calculations are illustrated on the Existing and Proposed Drainage Area Plans (EDA-1 & PDA-1). These maps and the corresponding HydroCAD output are attached.

Existing Drainage Patterns

The proposed Project area drains from the south of the project area overland through existing woodland to the north of the project area and eventually to the existing gravel/paved access drive. The access drive eventually drains to the S. Bedford Road drainage system.

The Site was modeled at one (1) Analysis Point (“AP-1”). AP-1 is the top of the existing slope above the existing access drive to the north of the Project area. Peak discharges have been computed at the point of study for the 2-, 10-, 25-, and 100-year storm events.

The project site soils identified by the United States Department of Agriculture (USDA) Natural Resources Conservation Service consist of Map Unit Symbol ChB, named “Charlton fine sandy loam, 3 to 8 percent slopes,” CsD, named “Chatfield-Charlton complex, 15 to 35 percent slopes, very rocky” and CrC, named “Chatfield-Charlton complex, 0 to 15 percent slopes, very rocky”. Map Unit Symbol ChB, CsD and CrC are classified in the HSG rating of “B”.

The pre-developed discharges at the Analysis Point are tabulated in Table 1-1.

Table 1-1

<i>Analysis Point</i>	Pre-developed Peak Storm Runoff (Q), cubic feet per second (cfs)			
	2-year	10-year	25-year	100-year
AP-1	0.19	1.03	1.76	3.04

Proposed Drainage Patterns

The Project will require the removal of an existing grass area and the installation of 41’x62’ (2,542± SF) fenced gravel equipment compound with a 140’ AGL Monopine and associated utilities.

To manage the increase in post-development runoff due to the change in cover type associated with converting woodland to grass, gravel and concrete equipment pads, the gravel equipment compound has been designed to be 12” thick crushed stone with 40% voids. The compound will then drain into an underground infiltration system via a 6” perforated PVC pipe located at the north end of the compound. The infiltration system will store the increased runoff created by the

change in ground cover and allow the runoff to infiltrate into the ground and discharge through an outlet control structure which matches or reduces the existing discharges.

The underground infiltration system is modeled as an ADS StormTech Infiltration system utilizing two (2) rows of eight (8) StormTech SC-740 chambers with end caps surrounded by 6" of crushed stone with 40% voids. The system discharges through an outlet control structure manhole to a riprap apron located to the northwest of the compound. The infiltration system is set on native soils so the infiltration rates of the existing soils can be utilized.

The infiltration rate for the underground infiltration system is modeled with a rate of 1.45 inch/hour. The infiltration rate were determined from the Saturated Hydraulic Conductivity Maps by the United States Department of Agriculture (USDA) Natural Resources Conservation Service. The infiltration rates for the CsD soil in the area of the infiltration system are shown to be 1.45 inches/hour (10.1993 micrometers per second).

Since the proposed development mimics the existing conditions, the post-development condition was modeled using the same Analysis Point. Peak discharges have been computed at the point of study for the 2-year, 10-year, 25-year, and 100-year storm events. The post-development discharges at each point of study are tabulated in Table 1-2.

Table 1-2

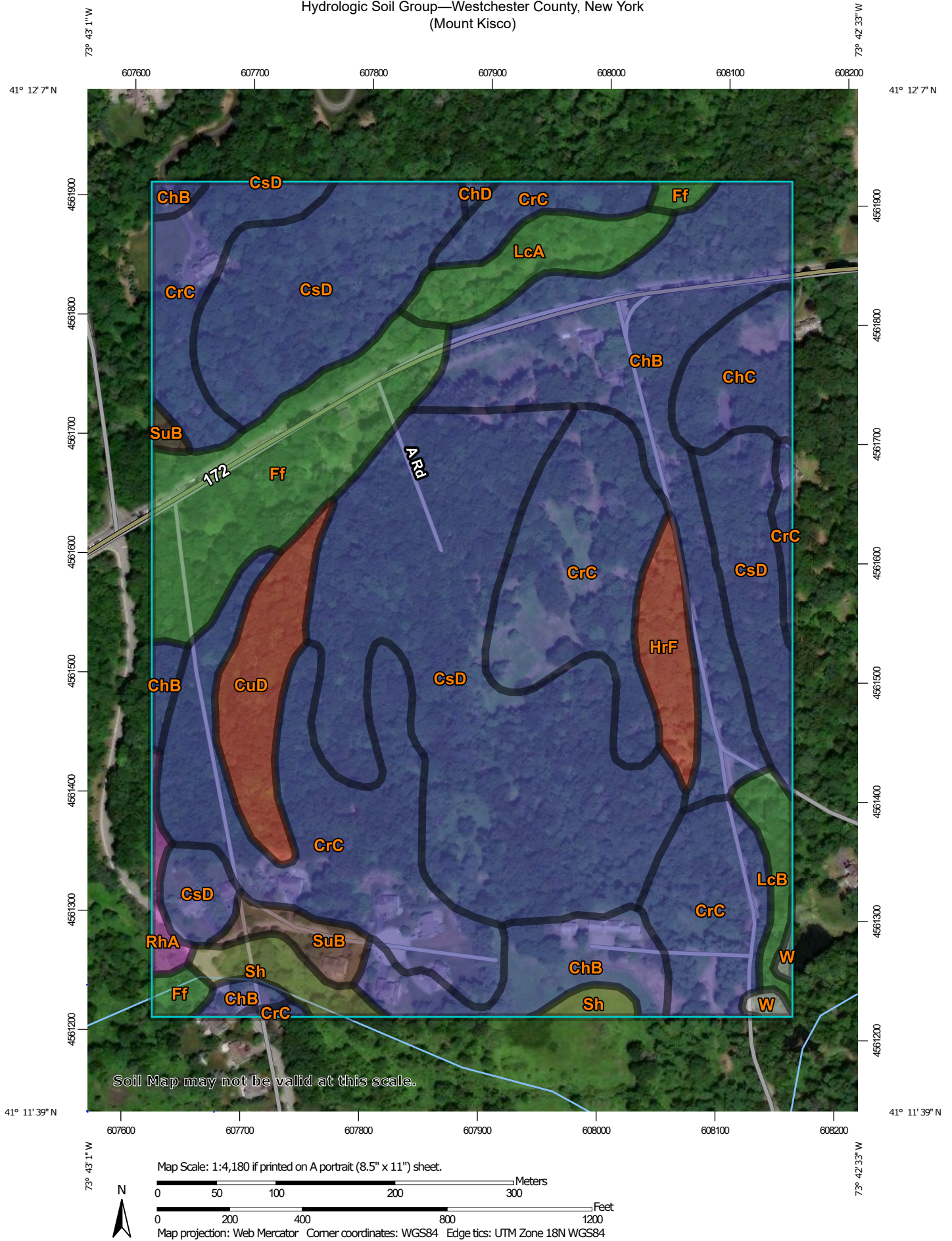
<i>Analysis Point</i>	Post-developed Peak Storm Runoff (Q), cubic feet per second (cfs)			
	2-year	10-year	25-year	100-year
AP-1	0.17	0.99	1.72	3.04

Conclusion

The stormwater management for the proposed site has been designed such that the post-development peak discharges to the waters of the State of New York for the 2-, 5-, 10-, and 25-year storm events are less than the pre-development peak discharges. As a result, the proposed telecommunication facility will not result in any adverse conditions to the surrounding areas and properties.

APPENDIX A: NRCS SOIL SURVEY

Hydrologic Soil Group—Westchester County, New York (Mount Kisco)



MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils

Soil Rating Polygons





 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

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 1:12,000.

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: Westchester County, New York
 Survey Area Data: Version 16, Jun 11, 2020

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

Date(s) aerial images were photographed: Dec 31, 2009—Oct 16, 2017

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
ChB	Charlton fine sandy loam, 3 to 8 percent slopes	B	15.5	16.5%
ChC	Charlton fine sandy loam, 8 to 15 percent slopes	B	2.5	2.7%
ChD	Charlton fine sandy loam, 15 to 25 percent slopes	B	0.1	0.1%
CrC	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	25.3	27.0%
CsD	Chatfield-Charlton complex, 15 to 35 percent slopes, very rocky	B	30.1	32.2%
CuD	Chatfield-Hollis-Rock outcrop complex, 15 to 35 percent slopes	D	3.2	3.4%
Ff	Fluvaquents-Udfluvents complex, frequently flooded	A/D	7.7	8.2%
HrF	Hollis-Rock outcrop complex, 35 to 60 percent slopes	D	1.9	2.0%
LcA	Leicester loam, 0 to 3 percent slopes, stony	A/D	2.5	2.6%
LcB	Leicester loam, 3 to 8 percent slopes, stony	A/D	1.2	1.2%
RhA	Riverhead loam, 0 to 3 percent slopes	A	0.6	0.6%
Sh	Sun loam	C/D	1.7	1.8%
SuB	Sutton loam, 3 to 8 percent slopes	B/D	1.3	1.4%
W	Water		0.3	0.3%
Totals for Area of Interest			93.7	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

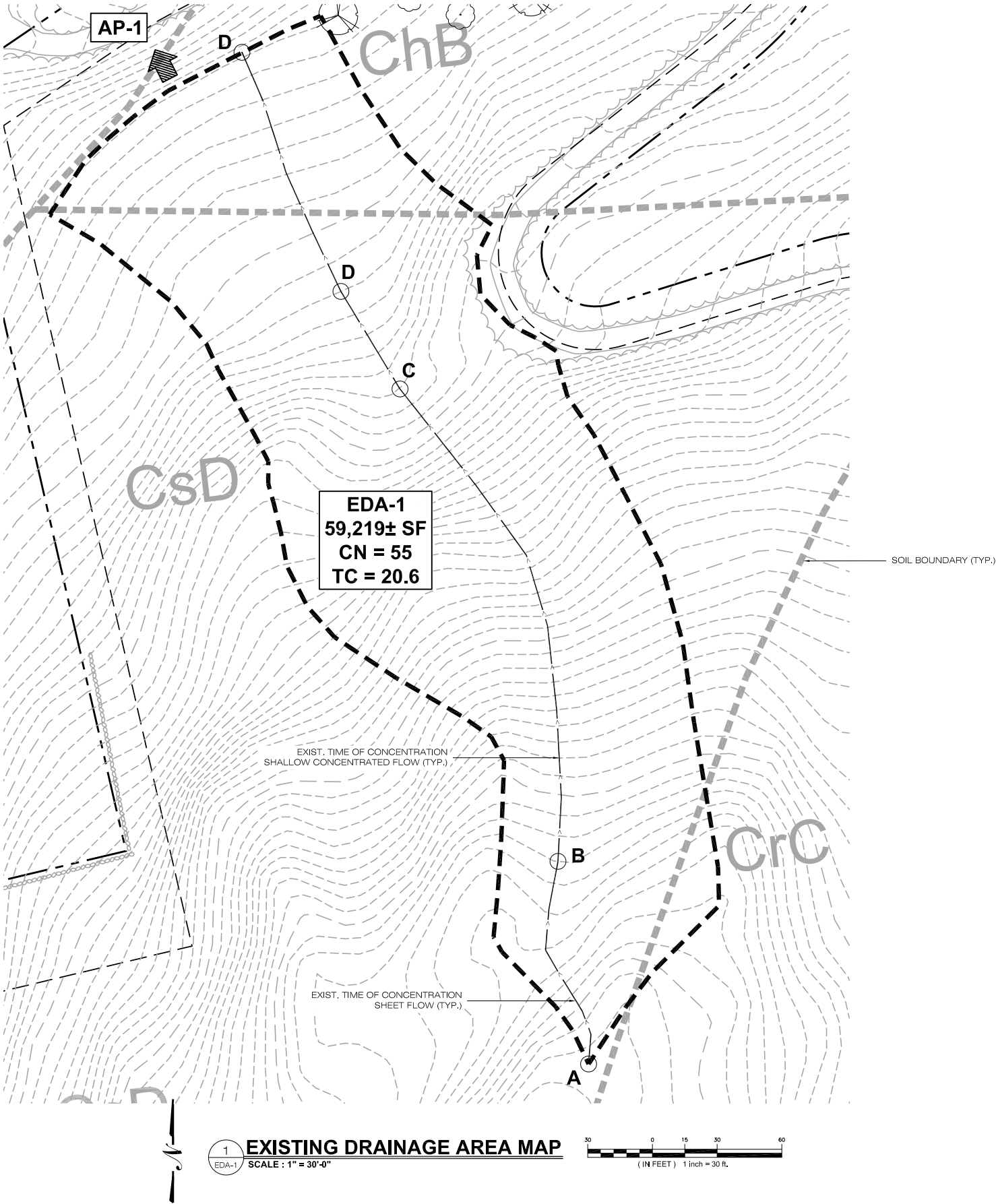
Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX B: EXISTING DRAINAGE AREA MAP (EDA-1) & HYDROLOGIC COMPUTATION (HYDROCAD)

EXISTING DRAINAGE AREAS			
	TOTAL AREA (SF)	COMPOSITE CN	TC (MINS.)
EDA-1	59,219	55	20.6



HOMELAND TOWERS, LLC
9 HARMONY STREET
2nd FLOOR
DANBURY, CT 06810
(203) 297-6345

4 CENTEROCK ROAD
WEST NYACK, NY 10994

340 MOUNT KEMBLE AVENUE
MORRISTOWN, NEW JERSEY 07960

APT
ENGINEERING

567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PH: (860)-663-1697
WWW.ALLPOINTS TECH.COM FAX: (860)-663-0935

PERMITTING DOCUMENTS		
NO	DATE	REVISION
0	11/11/20	FOR REVIEW: RCB
1	07/15/21	FOR REVIEW: RCB

DESIGN PROFESSIONALS OF RECORD

PROF: SCOTT M. CHASSE P.E.
COMP: APT ENGINEERING
ADD: 567 VAUXHALL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

DEVELOPER: HOMELAND TOWERS, LLC
ADDRESS: 9 HARMONY STREET
2ND FLOOR
DANBURY, CT 06810

NOTE:
IT IS A VIOLATION OF NEW YORK STATE
EDUCATION LAW ARTICLE 145, SECTION
7209 (2) FOR ANY PERSON, UNLESS
ACTING UNDER THE DIRECTION OF A
LICENSED PROFESSIONAL ENGINEER OR
LAND SURVEYOR, TO ALTER AN ITEM IN
ANY WAY, IF AN ITEM BEARING THE SEAL
OF AN ENGINEER OR LAND SURVEYOR IS
ALTERED, THE ALTERING ENGINEER OR
LAND SURVEYOR SHALL AFFIX TO THE
ITEM HIS SEAL AND THE NOTATION
"ALTERED BY" FOLLOWED BY THE
SIGNATURE AND THE DATE OF SUCH
ALTERATION, AND A SPECIFIC
DESCRIPTION OF THE ALTERATION.

HOMELAND TOWERS
MOUNT KISCO

SITE
180 S. BEDFORD RD.
ADDRESS: MT. KISCO, NY 10594

APT FILING NUMBER: NY283830

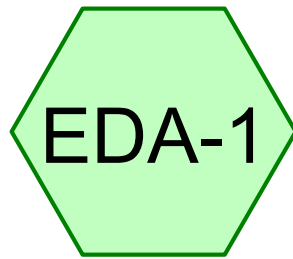
DATE: 11/11/20	DRAWN BY: CSH
	CHECKED BY: RCB

SHEET TITLE:

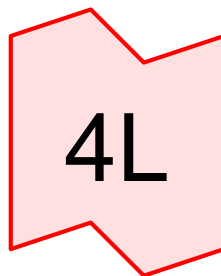
EXISTING DRAINAGE
AREA MAP

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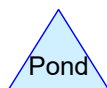
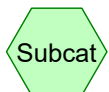
EDA-1



EDA-1



AP 1



Routing Diagram for Mount Kisco

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Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.359	55	Woods, Good, HSG B (EDA-1)
1.359	55	TOTAL AREA

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Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
1.359	HSG B	EDA-1
0.000	HSG C	
0.000	HSG D	
0.000	Other	
1.359		TOTAL AREA

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Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	1.359	0.000	0.000	0.000	1.359	Woods, Good	EDA-1
0.000	1.359	0.000	0.000	0.000	1.359	TOTAL	
						AREA	

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Type III 24-hr 2-yr Rainfall=3.50"

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

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

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EDA-1: EDA-1

Runoff Area=59,219 sf 0.00% Impervious Runoff Depth=0.35"
Flow Length=513' Tc=20.6 min CN=55 Runoff=0.19 cfs 0.039 af

Link 4L: AP 1

Inflow=0.19 cfs 0.039 af
Primary=0.19 cfs 0.039 af

Total Runoff Area = 1.359 ac Runoff Volume = 0.039 af Average Runoff Depth = 0.35"
100.00% Pervious = 1.359 ac 0.00% Impervious = 0.000 ac

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Type III 24-hr 2-yr Rainfall=3.50"

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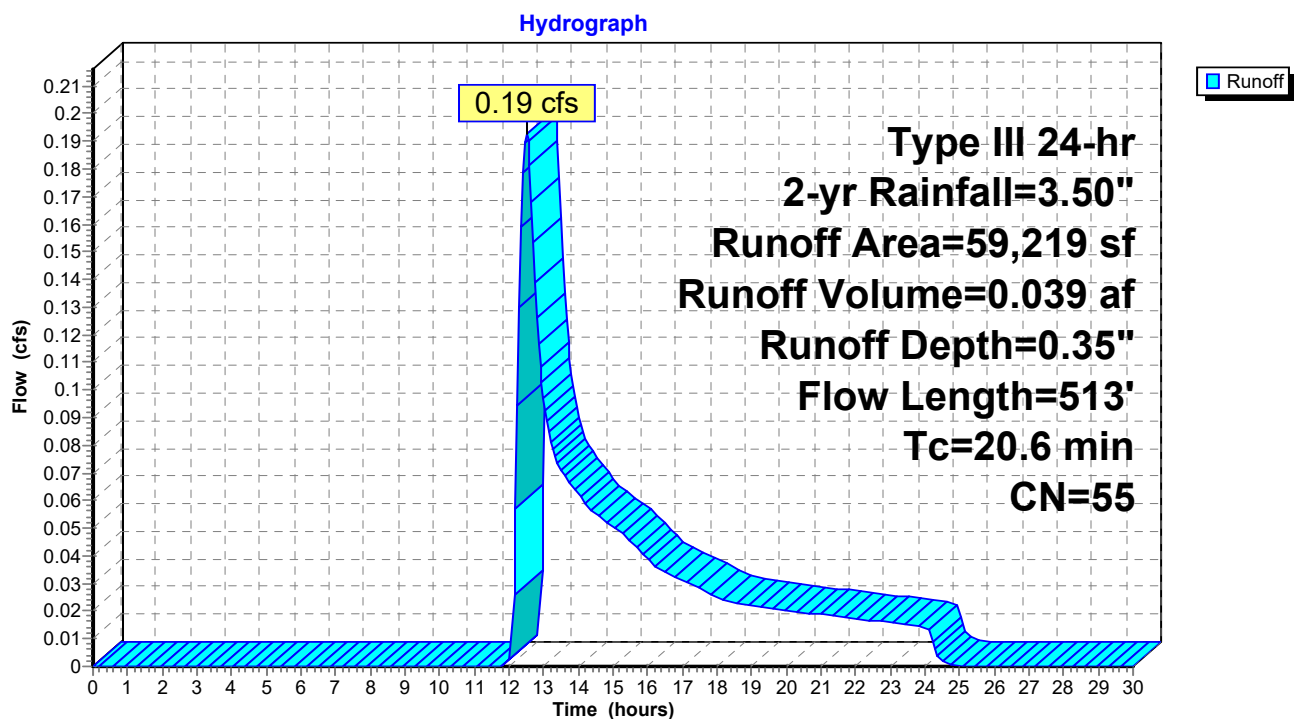
Summary for Subcatchment EDA-1: EDA-1

Runoff = 0.19 cfs @ 12.50 hrs, Volume= 0.039 af, Depth= 0.35"

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 2-yr Rainfall=3.50"

Area (sf)	CN	Description
59,219	55	Woods, Good, HSG B
59,219		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	100	0.1900	0.11		Sheet Flow, A-B Woods: Dense underbrush n= 0.800 P2= 3.50"
3.2	240	0.2534	1.26		Shallow Concentrated Flow, B-C Forest w/Heavy Litter Kv= 2.5 fps
0.8	53	0.1887	1.09		Shallow Concentrated Flow, C-D Forest w/Heavy Litter Kv= 2.5 fps
2.1	120	0.1500	0.97		Shallow Concentrated Flow, D-E Forest w/Heavy Litter Kv= 2.5 fps
20.6	513	Total			

Subcatchment EDA-1: EDA-1

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Type III 24-hr 2-yr Rainfall=3.50"

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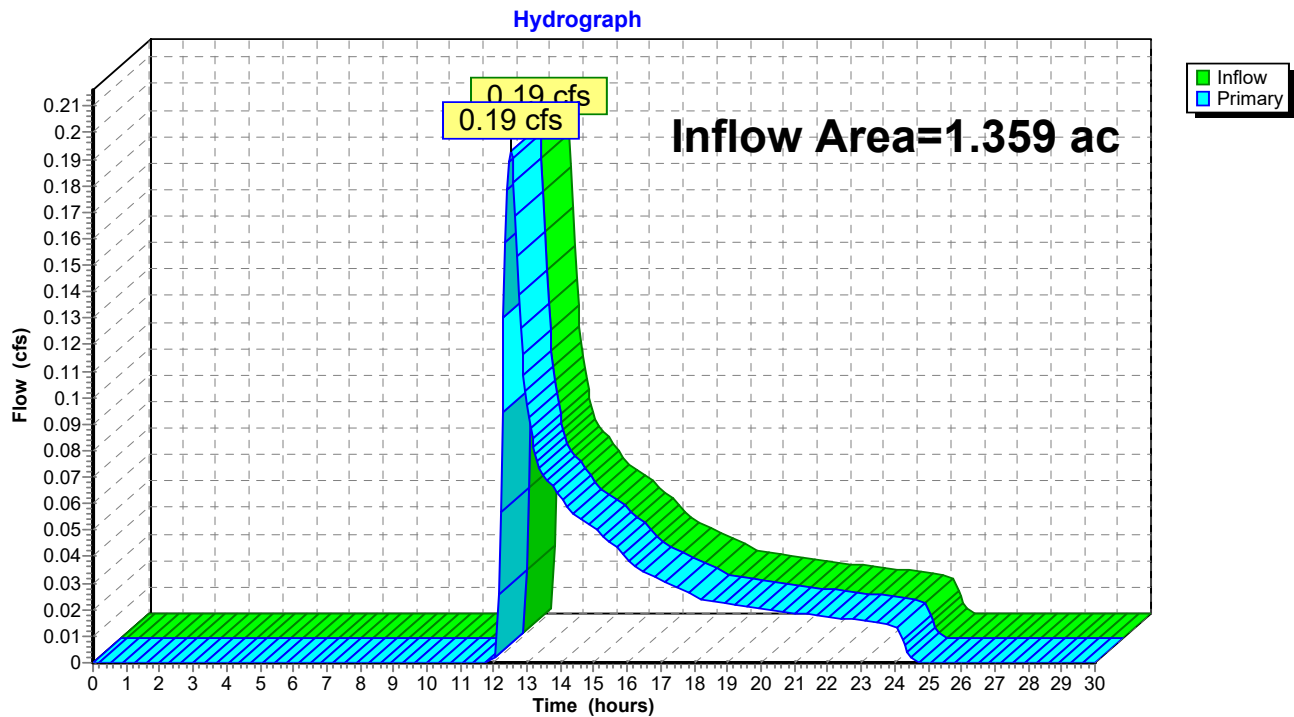
Page 7

Summary for Link 4L: AP 1

Inflow Area = 1.359 ac, 0.00% Impervious, Inflow Depth = 0.35" for 2-yr event
Inflow = 0.19 cfs @ 12.50 hrs, Volume= 0.039 af
Primary = 0.19 cfs @ 12.50 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 4L: AP 1



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Type III 24-hr 10-yr Rainfall=5.36"

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

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

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EDA-1: EDA-1

Runoff Area=59,219 sf 0.00% Impervious Runoff Depth=1.16"
Flow Length=513' Tc=20.6 min CN=55 Runoff=1.03 cfs 0.132 af

Link 4L: AP 1

Inflow=1.03 cfs 0.132 af
Primary=1.03 cfs 0.132 af

Total Runoff Area = 1.359 ac Runoff Volume = 0.132 af Average Runoff Depth = 1.16"
100.00% Pervious = 1.359 ac 0.00% Impervious = 0.000 ac

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Type III 24-hr 10-yr Rainfall=5.36"

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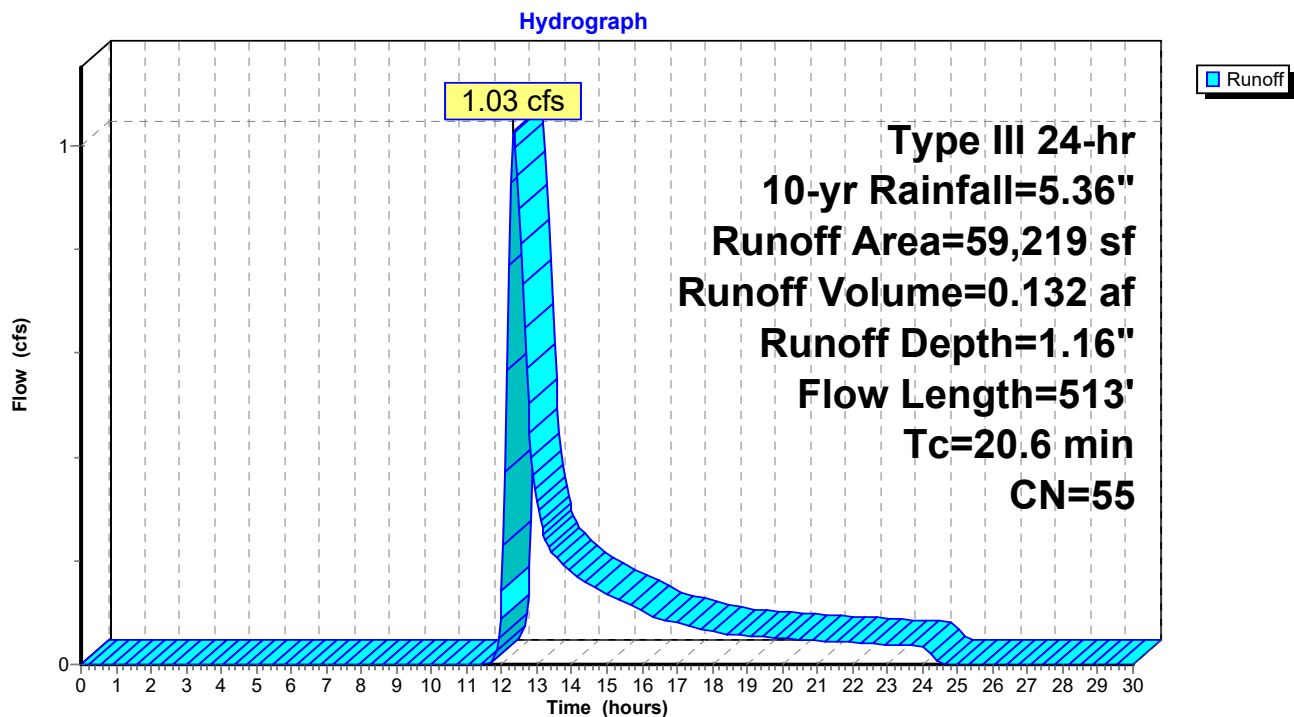
Summary for Subcatchment EDA-1: EDA-1

Runoff = 1.03 cfs @ 12.34 hrs, Volume= 0.132 af, Depth= 1.16"

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 10-yr Rainfall=5.36"

Area (sf)	CN	Description
59,219	55	Woods, Good, HSG B
59,219		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	100	0.1900	0.11		Sheet Flow, A-B Woods: Dense underbrush n= 0.800 P2= 3.50"
3.2	240	0.2534	1.26		Shallow Concentrated Flow, B-C Forest w/Heavy Litter Kv= 2.5 fps
0.8	53	0.1887	1.09		Shallow Concentrated Flow, C-D Forest w/Heavy Litter Kv= 2.5 fps
2.1	120	0.1500	0.97		Shallow Concentrated Flow, D-E Forest w/Heavy Litter Kv= 2.5 fps
20.6	513	Total			

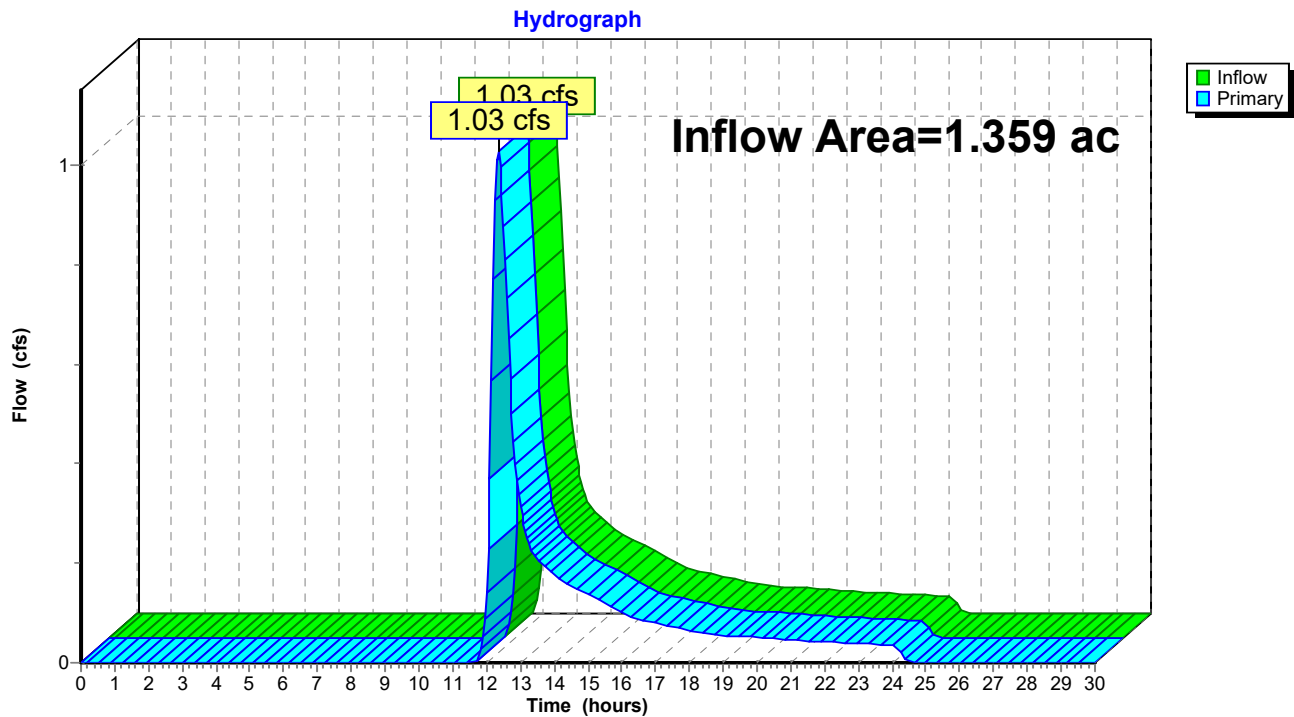
Subcatchment EDA-1: EDA-1

Summary for Link 4L: AP 1

Inflow Area = 1.359 ac, 0.00% Impervious, Inflow Depth = 1.16" for 10-yr event
 Inflow = 1.03 cfs @ 12.34 hrs, Volume= 0.132 af
 Primary = 1.03 cfs @ 12.34 hrs, Volume= 0.132 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 4L: AP 1



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Type III 24-hr 25-yr Rainfall=6.52"

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

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

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EDA-1: EDA-1

Runoff Area=59,219 sf 0.00% Impervious Runoff Depth=1.83"
Flow Length=513' Tc=20.6 min CN=55 Runoff=1.76 cfs 0.207 af

Link 4L: AP 1

Inflow=1.76 cfs 0.207 af
Primary=1.76 cfs 0.207 af

Total Runoff Area = 1.359 ac Runoff Volume = 0.207 af Average Runoff Depth = 1.83"
100.00% Pervious = 1.359 ac 0.00% Impervious = 0.000 ac

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Type III 24-hr 25-yr Rainfall=6.52"

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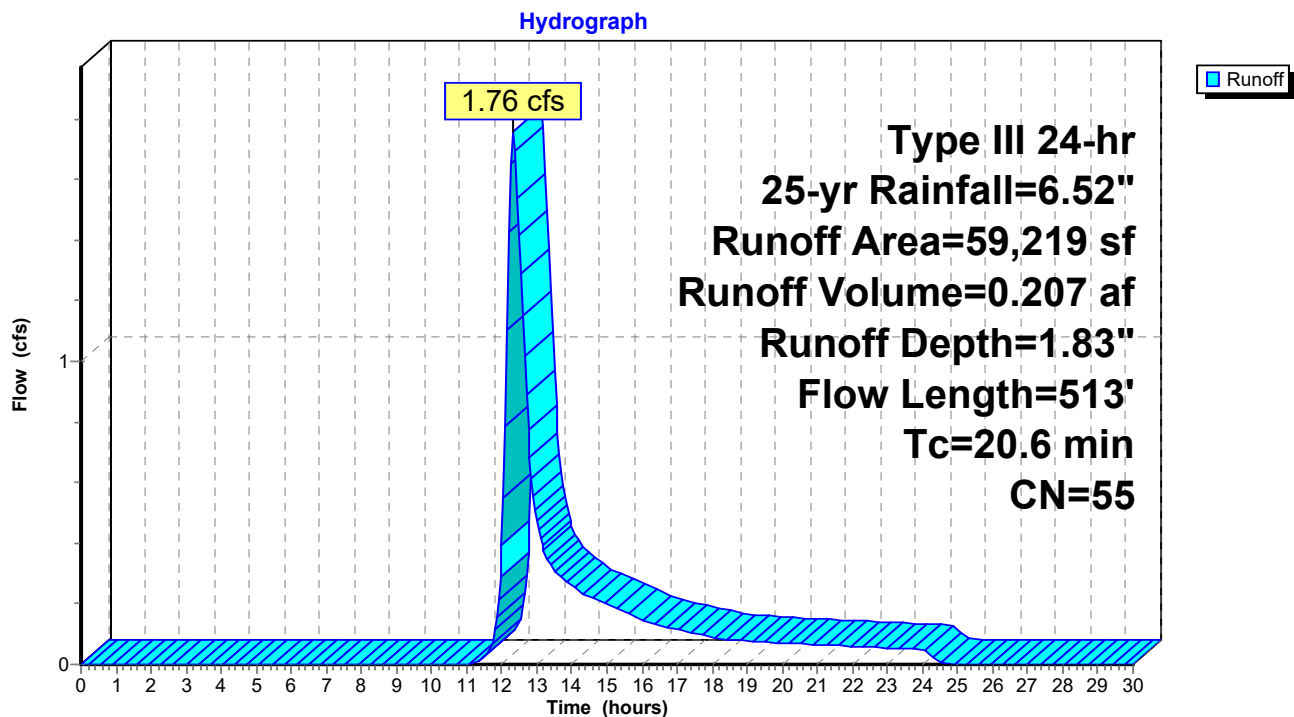
Summary for Subcatchment EDA-1: EDA-1

Runoff = 1.76 cfs @ 12.32 hrs, Volume= 0.207 af, Depth= 1.83"

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 25-yr Rainfall=6.52"

Area (sf)	CN	Description
59,219	55	Woods, Good, HSG B
59,219		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	100	0.1900	0.11		Sheet Flow, A-B Woods: Dense underbrush n= 0.800 P2= 3.50"
3.2	240	0.2534	1.26		Shallow Concentrated Flow, B-C Forest w/Heavy Litter Kv= 2.5 fps
0.8	53	0.1887	1.09		Shallow Concentrated Flow, C-D Forest w/Heavy Litter Kv= 2.5 fps
2.1	120	0.1500	0.97		Shallow Concentrated Flow, D-E Forest w/Heavy Litter Kv= 2.5 fps
20.6	513	Total			

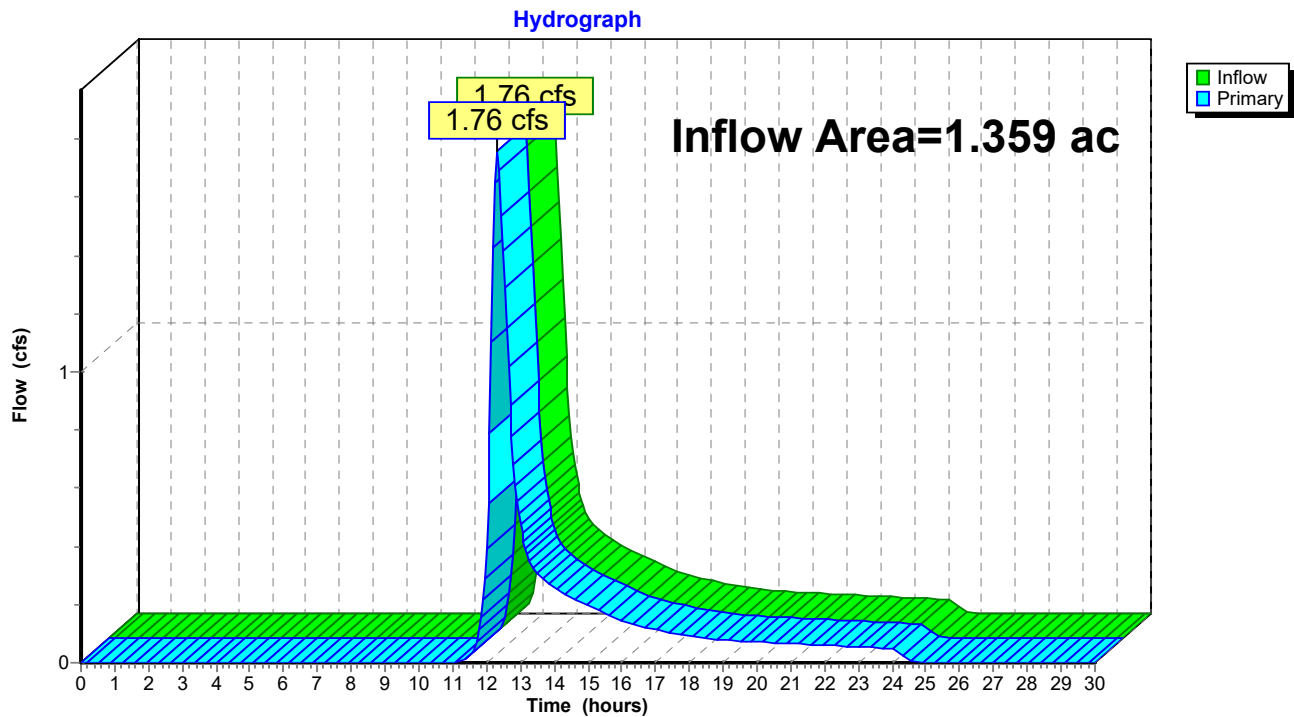
Subcatchment EDA-1: EDA-1

Summary for Link 4L: AP 1

Inflow Area = 1.359 ac, 0.00% Impervious, Inflow Depth = 1.83" for 25-yr event
 Inflow = 1.76 cfs @ 12.32 hrs, Volume= 0.207 af
 Primary = 1.76 cfs @ 12.32 hrs, Volume= 0.207 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 4L: AP 1



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Type III 24-hr 100-yr Rainfall=8.30"

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

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

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EDA-1: EDA-1

Runoff Area=59,219 sf 0.00% Impervious Runoff Depth=2.99"
Flow Length=513' Tc=20.6 min CN=55 Runoff=3.04 cfs 0.339 af

Link 4L: AP 1

Inflow=3.04 cfs 0.339 af
Primary=3.04 cfs 0.339 af

Total Runoff Area = 1.359 ac Runoff Volume = 0.339 af Average Runoff Depth = 2.99"
100.00% Pervious = 1.359 ac 0.00% Impervious = 0.000 ac

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Type III 24-hr 100-yr Rainfall=8.30"

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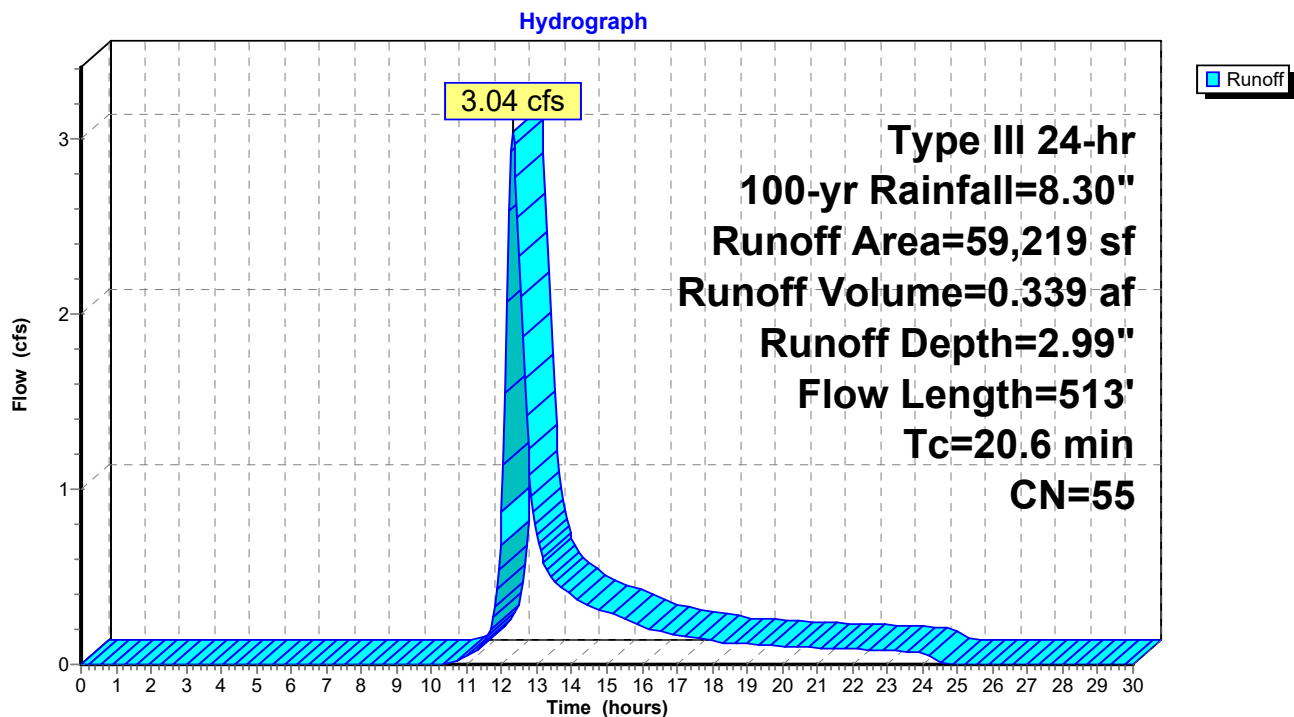
Summary for Subcatchment EDA-1: EDA-1

Runoff = 3.04 cfs @ 12.31 hrs, Volume= 0.339 af, Depth= 2.99"

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 100-yr Rainfall=8.30"

Area (sf)	CN	Description
59,219	55	Woods, Good, HSG B
59,219		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	100	0.1900	0.11		Sheet Flow, A-B Woods: Dense underbrush n= 0.800 P2= 3.50"
3.2	240	0.2534	1.26		Shallow Concentrated Flow, B-C Forest w/Heavy Litter Kv= 2.5 fps
0.8	53	0.1887	1.09		Shallow Concentrated Flow, C-D Forest w/Heavy Litter Kv= 2.5 fps
2.1	120	0.1500	0.97		Shallow Concentrated Flow, D-E Forest w/Heavy Litter Kv= 2.5 fps
20.6	513	Total			

Subcatchment EDA-1: EDA-1

Mount Kisco

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Type III 24-hr 100-yr Rainfall=8.30"

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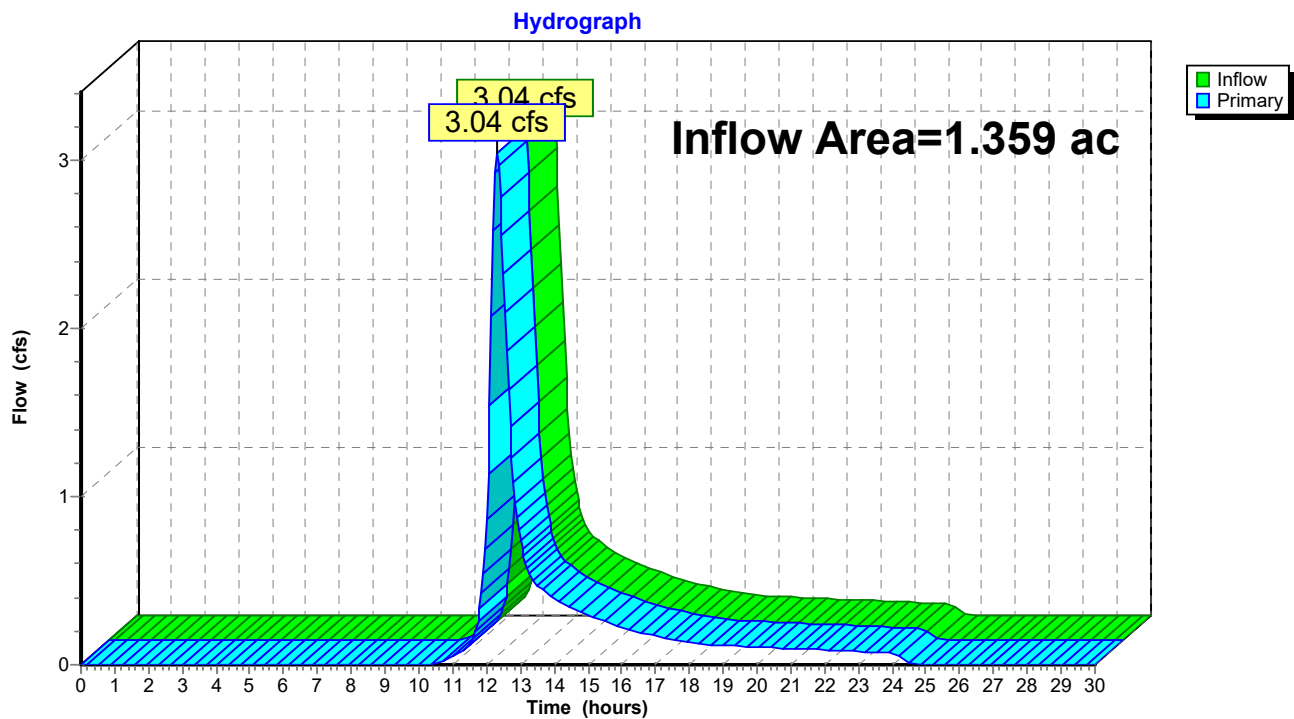
Page 16

Summary for Link 4L: AP 1

Inflow Area = 1.359 ac, 0.00% Impervious, Inflow Depth = 2.99" for 100-yr event
Inflow = 3.04 cfs @ 12.31 hrs, Volume= 0.339 af
Primary = 3.04 cfs @ 12.31 hrs, Volume= 0.339 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 4L: AP 1

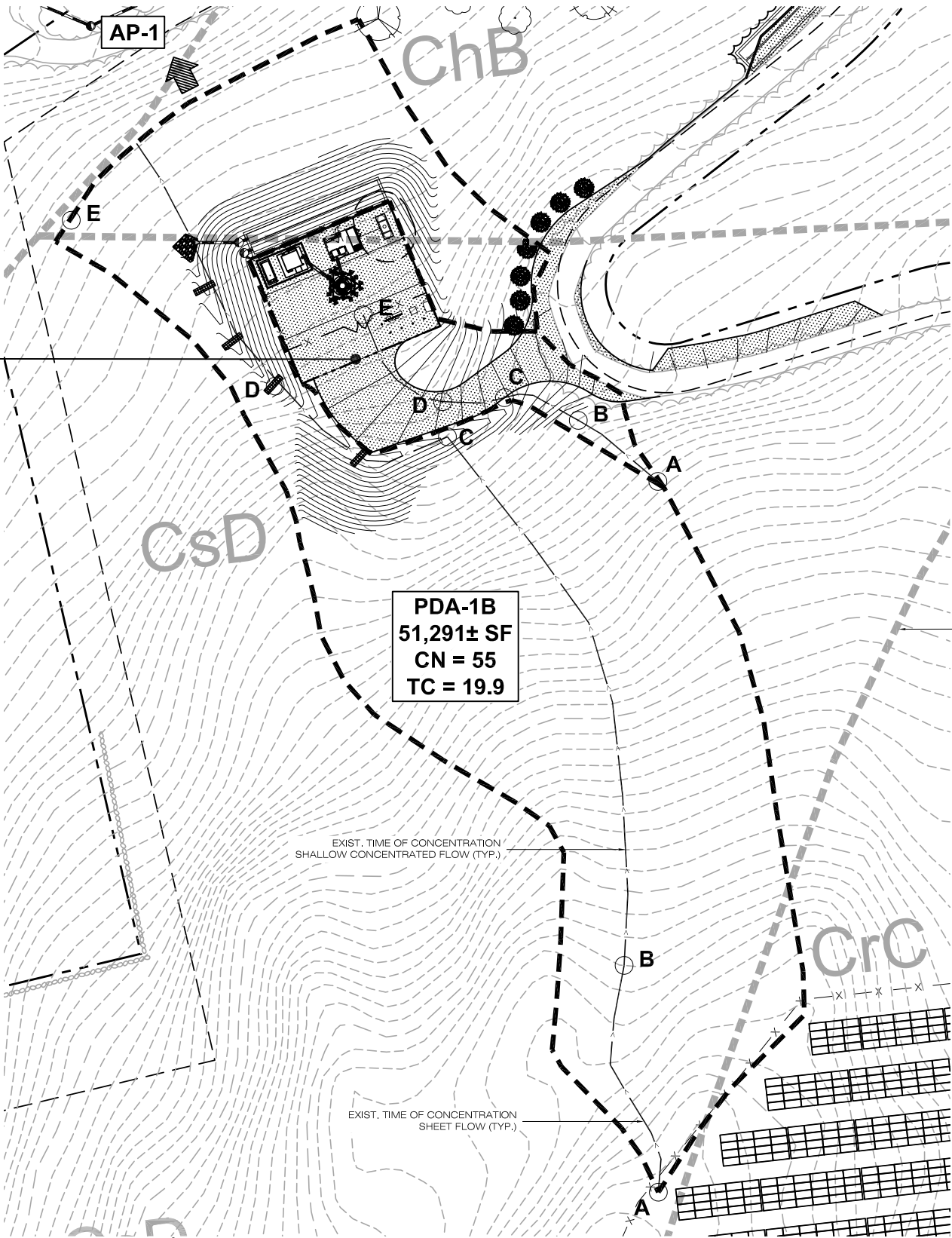


APPENDIX C: PROPOSED DRAINAGE AREA MAP (PDA-1) & HYDROLOGIC COMPUTATION (HYDROCAD)

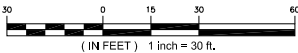
PROPOSED DRAINAGE AREAS			
	TOTAL AREA (SF)	COMPOSITE CN	TC (MINS.)
PDA-1A	7,948	80	5.6
PDA-1B	51,291	55	19.9

PDA-1A
7,948± SF
CN = 80
TC = 5.6

PDA-1B
51,291± SF
CN = 55
TC = 19.9



1
PDA-1
PROPOSED DRAINAGE AREA MAP
SCALE : 1" = 30'-0"



HOMELAND TOWERS, LLC
9 HARMONY STREET
2nd FLOOR
DANBURY, CT 06810
(203) 297-6345



4 CENTEROCK ROAD
WEST NYACK, NY 10994



340 MOUNT KEMBLE AVENUE
MORRISTOWN, NEW JERSEY 07960



567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PH: (860)-663-1697
WWW.ALLPOINTS TECH.COM FAX: (860)-663-0935

PERMITTING DOCUMENTS

NO	DATE	REVISION
0	11/11/20	FOR REVIEW: RCB
1	07/15/21	FOR REVIEW: RCB

DESIGN PROFESSIONALS OF RECORD

PROF: SCOTT M. CHASSE P.E.
COMP: APT ENGINEERING
ADD: 567 VAUXHALL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

DEVELOPER: HOMELAND TOWERS, LLC
ADDRESS: 9 HARMONY STREET
2ND FLOOR
DANBURY, CT 06810

NOTE:
IT IS A VIOLATION OF NEW YORK STATE
EDUCATION LAW ARTICLE 145, SECTION
7209 (2) FOR ANY PERSON, UNLESS
ACTING UNDER THE DIRECTION OF A
LICENSED PROFESSIONAL ENGINEER OR
LAND SURVEYOR, TO ALTER AN ITEM IN
ANY WAY. IF AN ITEM BEARING THE SEAL
OF AN ENGINEER OR LAND SURVEYOR IS
ALTERED, THE ALTERING ENGINEER OR
LAND SURVEYOR SHALL AFFIX TO THE
ITEM HIS SEAL AND THE NOTATION
"ALTERED BY" FOLLOWED BY THE
SIGNATURE AND THE DATE OF SUCH
ALTERATION, AND A SPECIFIC
DESCRIPTION OF THE ALTERATION.

HOMELAND TOWERS
MOUNT KISCO

SITE 180 S. BEDFORD RD.
ADDRESS: MT. KISCO, NY 10594

APT FILING NUMBER: NY283830

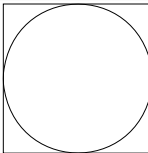
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	CHECKED BY: RCB

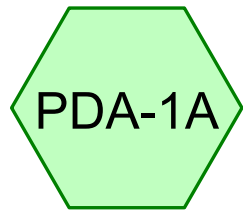
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**PROPOSED DRAINAGE
AREA MAP**

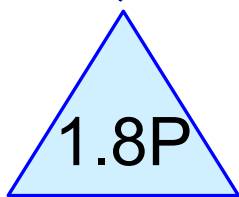
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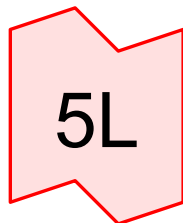




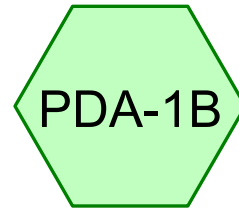
PDA-1A



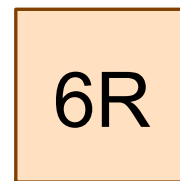
STORMTECH
INFILTRATION
SYSTEM



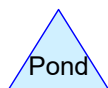
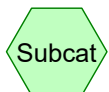
AP-1



PDA-1B



Grass Swale



Routing Diagram for Mount Kisco

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Mount Kisco

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Page 2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.036	61	>75% Grass cover, Good, HSG B (PDA-1A)
0.115	85	Gravel roads, HSG B (PDA-1A)
0.021	98	Unconnected pavement, HSG B (PDA-1A)
1.189	55	Woods, Good, HSG B (PDA-1A, PDA-1B)
1.360	58	TOTAL AREA

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Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
1.360	HSG B	PDA-1A, PDA-1B
0.000	HSG C	
0.000	HSG D	
0.000	Other	
1.360		TOTAL AREA

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Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.036	0.000	0.000	0.000	0.036	>75% Grass cover, Good	PDA-1A
0.000	0.115	0.000	0.000	0.000	0.115	Gravel roads	PDA-1A
0.000	0.021	0.000	0.000	0.000	0.021	Unconnected pavement	PDA-1A
0.000	1.189	0.000	0.000	0.000	1.189	Woods, Good	PDA-1A, PDA-1B
0.000	1.360	0.000	0.000	0.000	1.360	TOTAL AREA	

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Type III 24-hr 2-yr Rainfall=3.50"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PDA-1A: PDA-1A

Runoff Area=7,948 sf 11.32% Impervious Runoff Depth=1.57"
Flow Length=154' Tc=5.6 min UI Adjusted CN=79 Runoff=0.33 cfs 0.024 af

Subcatchment PDA-1B: PDA-1B

Runoff Area=51,291 sf 0.00% Impervious Runoff Depth=0.35"
Flow Length=535' Tc=19.9 min CN=55 Runoff=0.17 cfs 0.034 af

Reach 6R: Grass Swale

Avg. Flow Depth=0.05' Max Vel=1.69 fps Inflow=0.17 cfs 0.034 af
n=0.031 L=100.0' S=0.0800 '/' Capacity=48.26 cfs Outflow=0.17 cfs 0.034 af

Pond 1.8P: STORMTECH INFILTRATION

Peak Elev=417.09' Storage=0.010 af Inflow=0.33 cfs 0.024 af
Discarded=0.03 cfs 0.024 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.024 af

Link 5L: AP-1

Inflow=0.17 cfs 0.034 af
Primary=0.17 cfs 0.034 af

Total Runoff Area = 1.360 ac Runoff Volume = 0.058 af Average Runoff Depth = 0.51"
98.48% Pervious = 1.339 ac 1.52% Impervious = 0.021 ac

Mount Kisco

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Type III 24-hr 2-yr Rainfall=3.50"

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Summary for Subcatchment PDA-1A: PDA-1A[49] Hint: $T_c < 2dt$ may require smaller dt

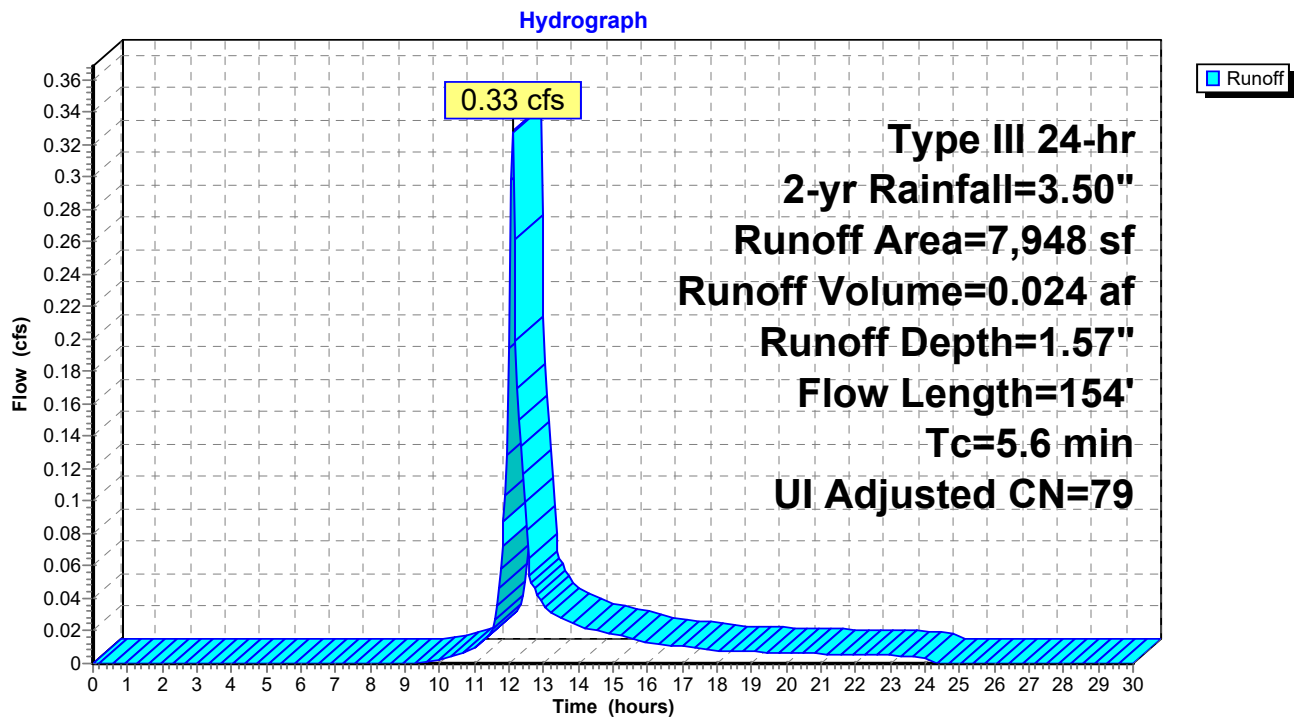
Runoff = 0.33 cfs @ 12.09 hrs, Volume= 0.024 af, Depth= 1.57"

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 2-yr Rainfall=3.50"

Area (sf)	CN	Adj	Description
5,008	85		Gravel roads, HSG B
1,547	61		>75% Grass cover, Good, HSG B
493	55		Woods, Good, HSG B
900	98		Unconnected pavement, HSG B
7,948	80	79	Weighted Average, UI Adjusted
7,048			88.68% Pervious Area
900			11.32% Impervious Area
900			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	42	0.3810	0.22		Sheet Flow, A-B Woods: Light underbrush $n=0.400$ $P2=3.50"$
2.0	34	0.2647	0.28		Sheet Flow, B-C Grass: Dense $n=0.240$ $P2=3.50"$
0.2	26	0.1153	2.21		Sheet Flow, C-D Smooth surfaces $n=0.011$ $P2=3.50"$
0.2	52	0.1154	5.47		Shallow Concentrated Flow, D-E Unpaved $K_v=16.1$ fps
5.6	154	Total			

Subcatchment PDA-1A: PDA-1A



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Type III 24-hr 2-yr Rainfall=3.50"

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Summary for Subcatchment PDA-1B: PDA-1B

Runoff = 0.17 cfs @ 12.49 hrs, Volume= 0.034 af, Depth= 0.35"

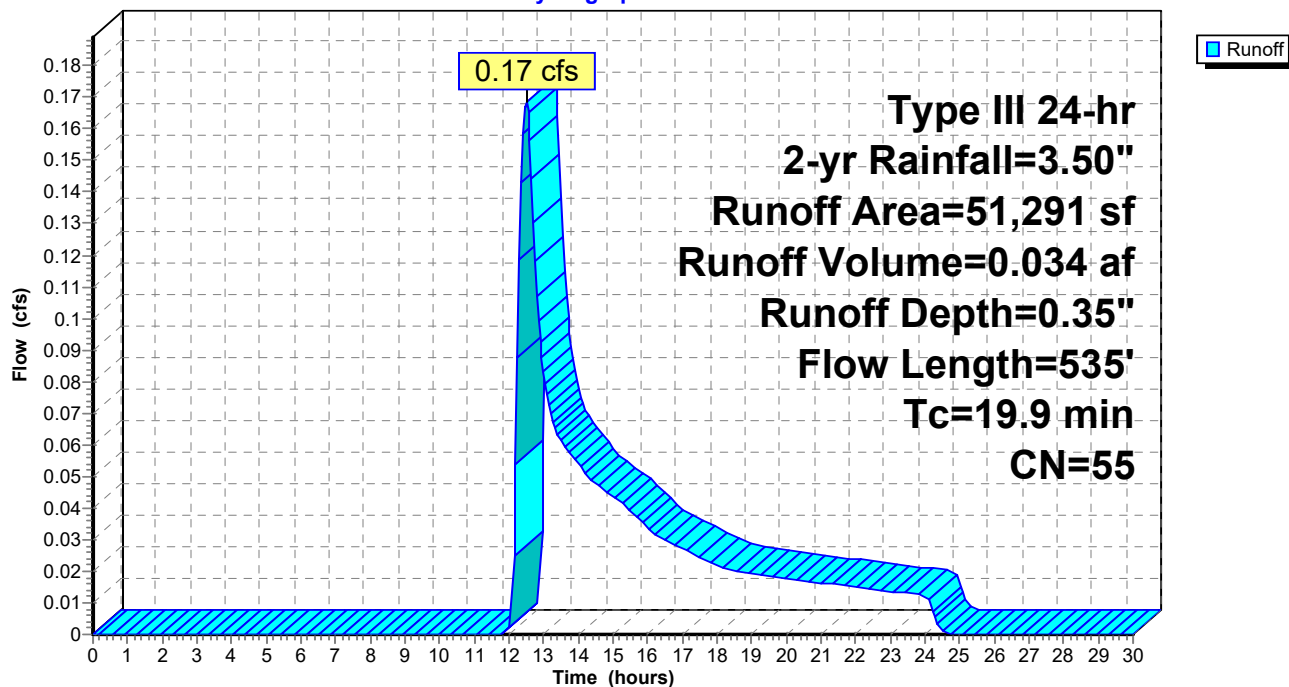
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.50"

Area (sf)	CN	Description
51,291	55	Woods, Good, HSG B
51,291		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	100	0.1900	0.11		Sheet Flow, A-B Woods: Dense underbrush n= 0.800 P2= 3.50"
3.2	240	0.2534	1.26		Shallow Concentrated Flow, B-C Forest w/Heavy Litter Kv= 2.5 fps
0.3	85	0.0800	4.24		Shallow Concentrated Flow, C-D Grassed Waterway Kv= 15.0 fps
1.9	110	0.1500	0.97		Shallow Concentrated Flow, D-E Forest w/Heavy Litter Kv= 2.5 fps
19.9	535	Total			

Subcatchment PDA-1B: PDA-1B

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.50"

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Summary for Reach 6R: Grass Swale

Inflow Area = 1.177 ac, 0.00% Impervious, Inflow Depth = 0.35" for 2-yr event
Inflow = 0.17 cfs @ 12.49 hrs, Volume= 0.034 af
Outflow = 0.17 cfs @ 12.52 hrs, Volume= 0.034 af, Atten= 0%, Lag= 1.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.69 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 0.86 fps, Avg. Travel Time= 1.9 min

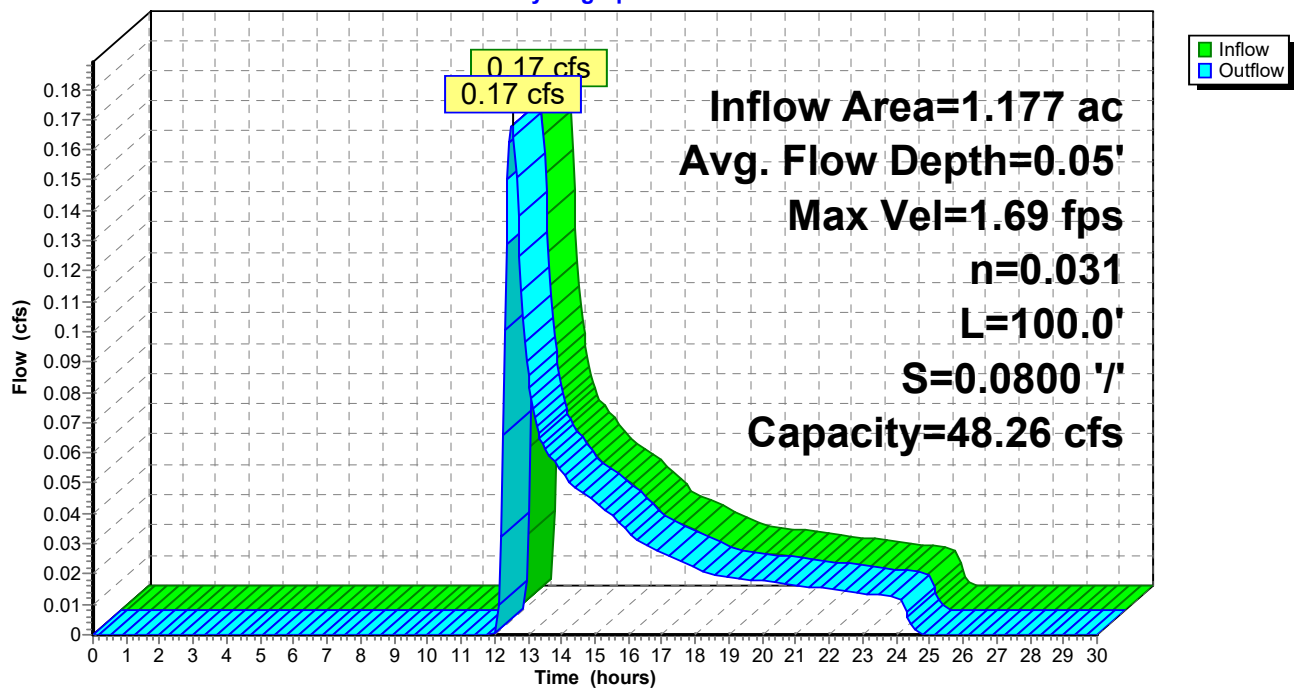
Peak Storage= 10 cf @ 12.50 hrs
Average Depth at Peak Storage= 0.05'
Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 48.26 cfs

2.00' x 1.00' deep channel, n= 0.031
Side Slope Z-value= 3.0 '/' Top Width= 8.00'
Length= 100.0' Slope= 0.0800 '/'
Inlet Invert= 433.00', Outlet Invert= 425.00'



Reach 6R: Grass Swale

Hydrograph



Mount Kisco

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Type III 24-hr 2-yr Rainfall=3.50"

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Summary for Pond 1.8P: STORMTECH INFILTRATION SYSTEM

Inflow Area = 0.182 ac, 11.32% Impervious, Inflow Depth = 1.57" for 2-yr event
 Inflow = 0.33 cfs @ 12.09 hrs, Volume= 0.024 af
 Outflow = 0.03 cfs @ 13.70 hrs, Volume= 0.024 af, Atten= 92%, Lag= 96.7 min
 Discarded = 0.03 cfs @ 13.70 hrs, Volume= 0.024 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 417.09' @ 13.70 hrs Surf.Area= 0.015 ac Storage= 0.010 af

Plug-Flow detention time= 163.7 min calculated for 0.024 af (100% of inflow)
 Center-of-Mass det. time= 163.4 min (1,004.4 - 840.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	416.00'	0.015 af	11.00'W x 60.58'L x 3.50'H Field A 0.054 af Overall - 0.017 af Embedded = 0.037 af x 40.0% Voids
#2A	416.50'	0.017 af	ADS_StormTech SC-740 +Cap x 16 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 2 Rows of 8 Chambers
		0.032 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	416.50'	12.0" Round Culvert L= 17.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 416.50' / 415.50' S= 0.0588 ' S= 0.0588 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Discarded	416.00'	1.450 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 410.00'
#3	Device 1	417.50'	3.0" Vert. Orifice/Grate C= 0.600
#4	Device 1	419.25'	3.0" Vert. Orifice/Grate C= 0.600

Discarded OutFlow Max=0.03 cfs @ 13.70 hrs HW=417.09' (Free Discharge)↑ **2=Exfiltration** (Controls 0.03 cfs)**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=416.00' (Free Discharge)↑ **1=Culvert** (Controls 0.00 cfs)↑ **3=Orifice/Grate** (Controls 0.00 cfs)↑ **4=Orifice/Grate** (Controls 0.00 cfs)

Pond 1.8P: STORMTECH INFILTRATION SYSTEM - Chamber Wizard Field A**Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)**

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

8 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 58.58' Row Length +12.0" End Stone x 2 = 60.58' Base Length

2 Rows x 51.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.00' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

16 Chambers x 45.9 cf = 735.0 cf Chamber Storage

2,332.2 cf Field - 735.0 cf Chambers = 1,597.2 cf Stone x 40.0% Voids = 638.9 cf Stone Storage

Chamber Storage + Stone Storage = 1,373.9 cf = 0.032 af

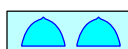
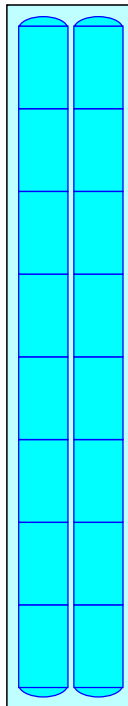
Overall Storage Efficiency = 58.9%

Overall System Size = 60.58' x 11.00' x 3.50'

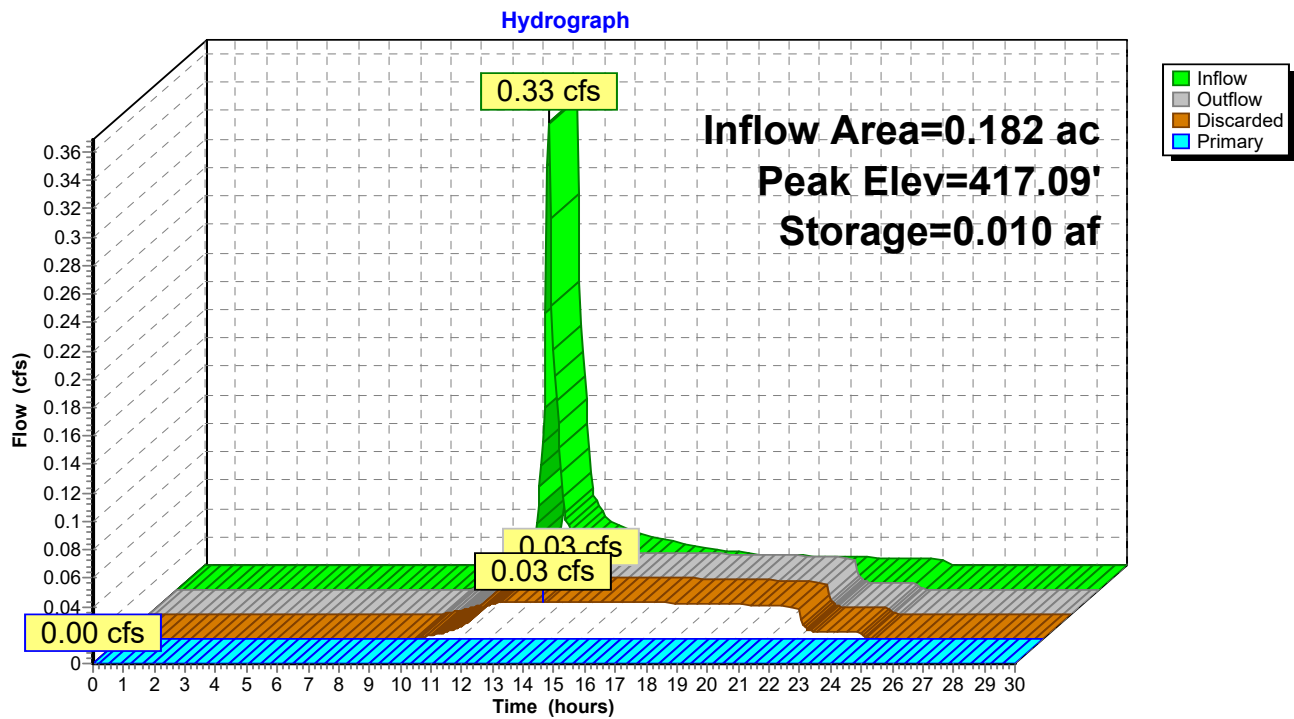
16 Chambers

86.4 cy Field

59.2 cy Stone



Pond 1.8P: STORMTECH INFILTRATION SYSTEM



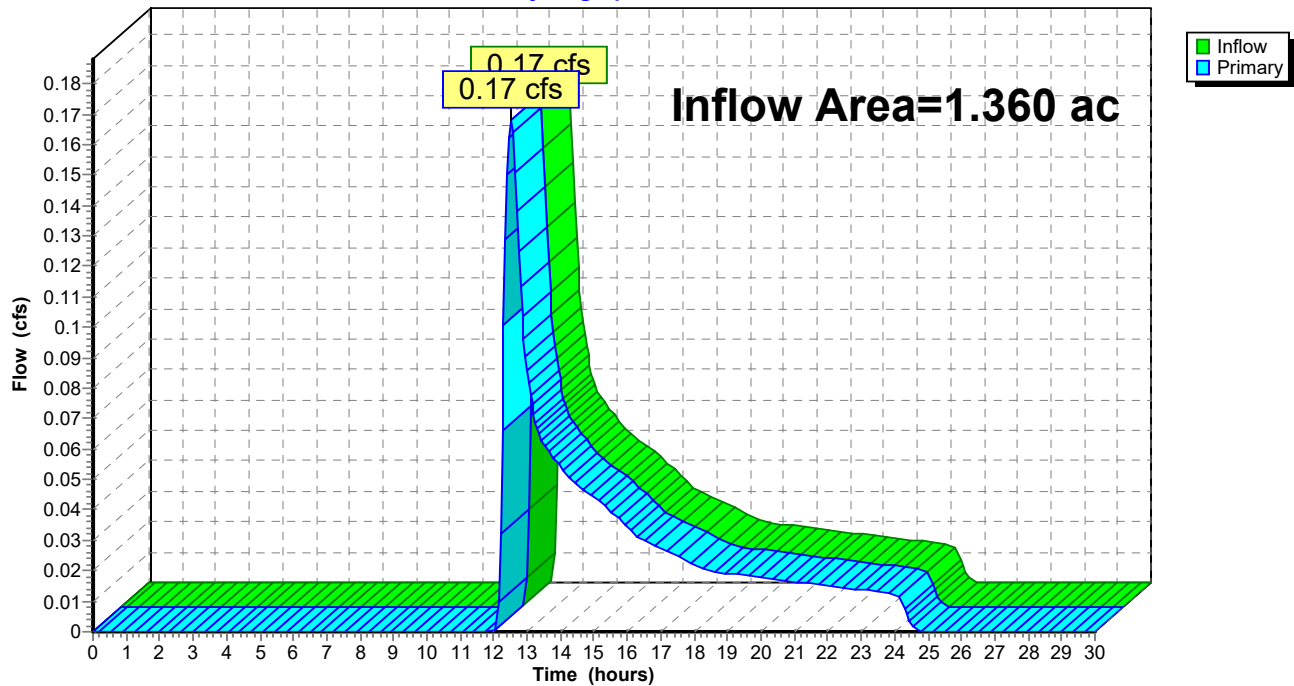
Summary for Link 5L: AP-1

Inflow Area = 1.360 ac, 1.52% Impervious, Inflow Depth = 0.30" for 2-yr event
 Inflow = 0.17 cfs @ 12.52 hrs, Volume= 0.034 af
 Primary = 0.17 cfs @ 12.52 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 5L: AP-1

Hydrograph



Mount Kisco

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Type III 24-hr 10-yr Rainfall=5.36"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PDA-1A: PDA-1A

Runoff Area=7,948 sf 11.32% Impervious Runoff Depth=3.11"
Flow Length=154' Tc=5.6 min UI Adjusted CN=79 Runoff=0.66 cfs 0.047 af

Subcatchment PDA-1B: PDA-1B

Runoff Area=51,291 sf 0.00% Impervious Runoff Depth=1.16"
Flow Length=535' Tc=19.9 min CN=55 Runoff=0.90 cfs 0.114 af

Reach 6R: Grass Swale

Avg. Flow Depth=0.12' Max Vel=3.04 fps Inflow=0.90 cfs 0.114 af
n=0.031 L=100.0' S=0.0800 '/' Capacity=48.26 cfs Outflow=0.90 cfs 0.114 af

Pond 1.8P: STORMTECH INFILTRATION

Peak Elev=417.86' Storage=0.019 af Inflow=0.66 cfs 0.047 af
Discarded=0.03 cfs 0.037 af Primary=0.11 cfs 0.011 af Outflow=0.14 cfs 0.047 af

Link 5L: AP-1

Inflow=0.99 cfs 0.125 af
Primary=0.99 cfs 0.125 af

Total Runoff Area = 1.360 ac Runoff Volume = 0.162 af Average Runoff Depth = 1.43"
98.48% Pervious = 1.339 ac 1.52% Impervious = 0.021 ac

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Type III 24-hr 10-yr Rainfall=5.36"

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Summary for Subcatchment PDA-1A: PDA-1A[49] Hint: $T_c < 2dt$ may require smaller dt

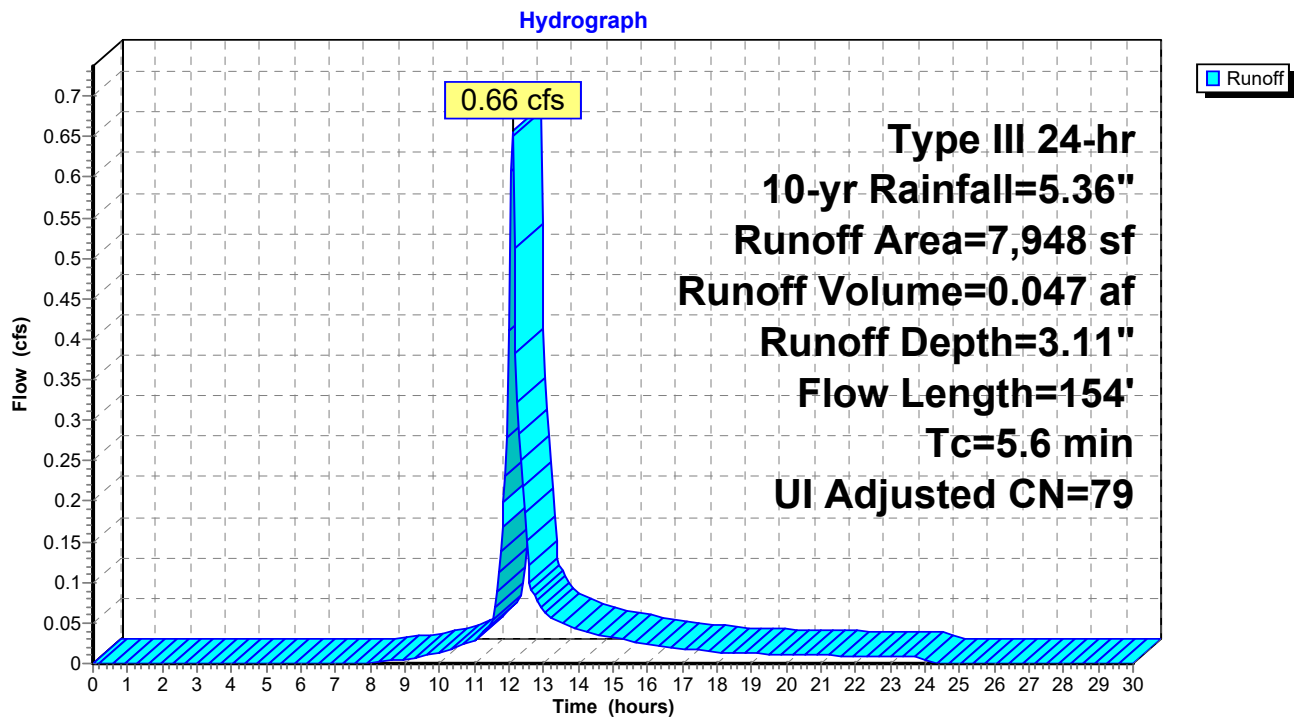
Runoff = 0.66 cfs @ 12.09 hrs, Volume= 0.047 af, Depth= 3.11"

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 10-yr Rainfall=5.36"

Area (sf)	CN	Adj	Description
5,008	85		Gravel roads, HSG B
1,547	61		>75% Grass cover, Good, HSG B
493	55		Woods, Good, HSG B
900	98		Unconnected pavement, HSG B
7,948	80	79	Weighted Average, UI Adjusted
7,048			88.68% Pervious Area
900			11.32% Impervious Area
900			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	42	0.3810	0.22		Sheet Flow, A-B Woods: Light underbrush $n=0.400$ $P2=3.50"$
2.0	34	0.2647	0.28		Sheet Flow, B-C Grass: Dense $n=0.240$ $P2=3.50"$
0.2	26	0.1153	2.21		Sheet Flow, C-D Smooth surfaces $n=0.011$ $P2=3.50"$
0.2	52	0.1154	5.47		Shallow Concentrated Flow, D-E Unpaved $K_v=16.1$ fps
5.6	154	Total			

Subcatchment PDA-1A: PDA-1A



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Type III 24-hr 10-yr Rainfall=5.36"

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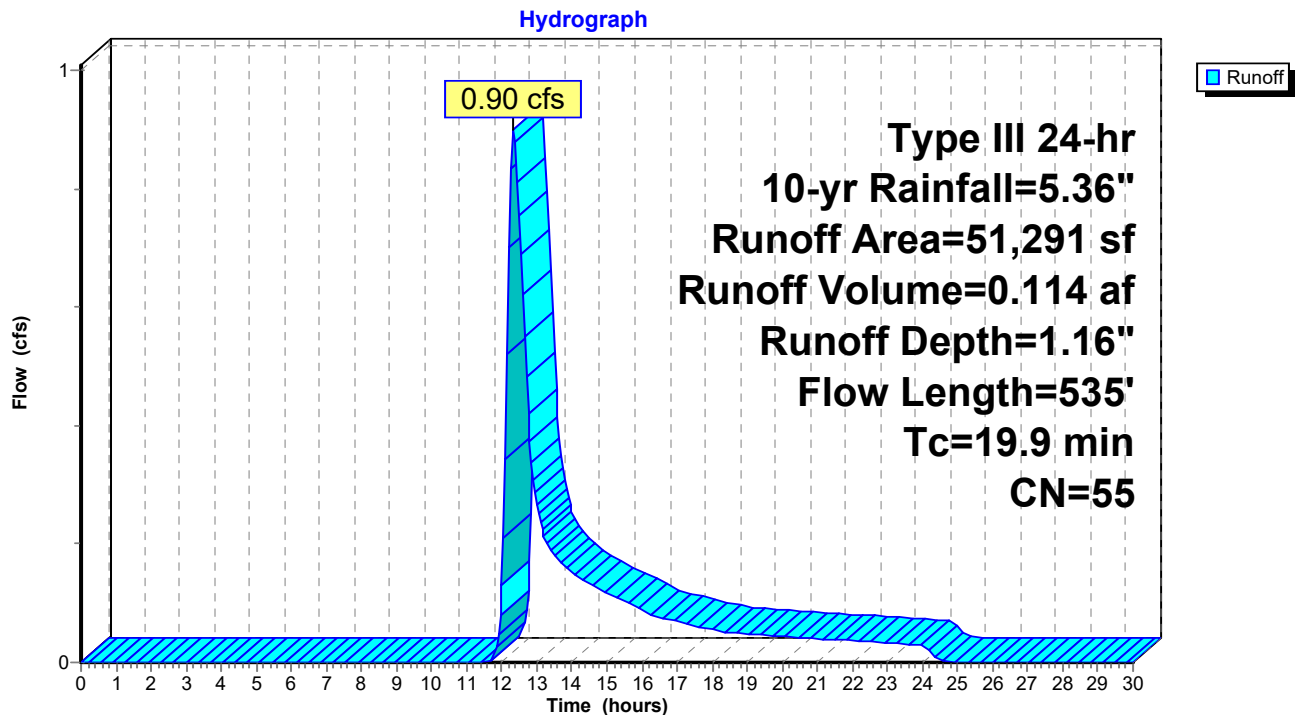
Summary for Subcatchment PDA-1B: PDA-1B

Runoff = 0.90 cfs @ 12.33 hrs, Volume= 0.114 af, Depth= 1.16"

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 10-yr Rainfall=5.36"

Area (sf)	CN	Description
51,291	55	Woods, Good, HSG B
51,291		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	100	0.1900	0.11		Sheet Flow, A-B Woods: Dense underbrush n= 0.800 P2= 3.50"
3.2	240	0.2534	1.26		Shallow Concentrated Flow, B-C Forest w/Heavy Litter Kv= 2.5 fps
0.3	85	0.0800	4.24		Shallow Concentrated Flow, C-D Grassed Waterway Kv= 15.0 fps
1.9	110	0.1500	0.97		Shallow Concentrated Flow, D-E Forest w/Heavy Litter Kv= 2.5 fps
19.9	535	Total			

Subcatchment PDA-1B: PDA-1B

Mount Kisco

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Type III 24-hr 10-yr Rainfall=5.36"

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Summary for Reach 6R: Grass Swale

Inflow Area = 1.177 ac, 0.00% Impervious, Inflow Depth = 1.16" for 10-yr event
Inflow = 0.90 cfs @ 12.33 hrs, Volume= 0.114 af
Outflow = 0.90 cfs @ 12.35 hrs, Volume= 0.114 af, Atten= 0%, Lag= 1.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.04 fps, Min. Travel Time= 0.5 min
Avg. Velocity= 1.24 fps, Avg. Travel Time= 1.3 min

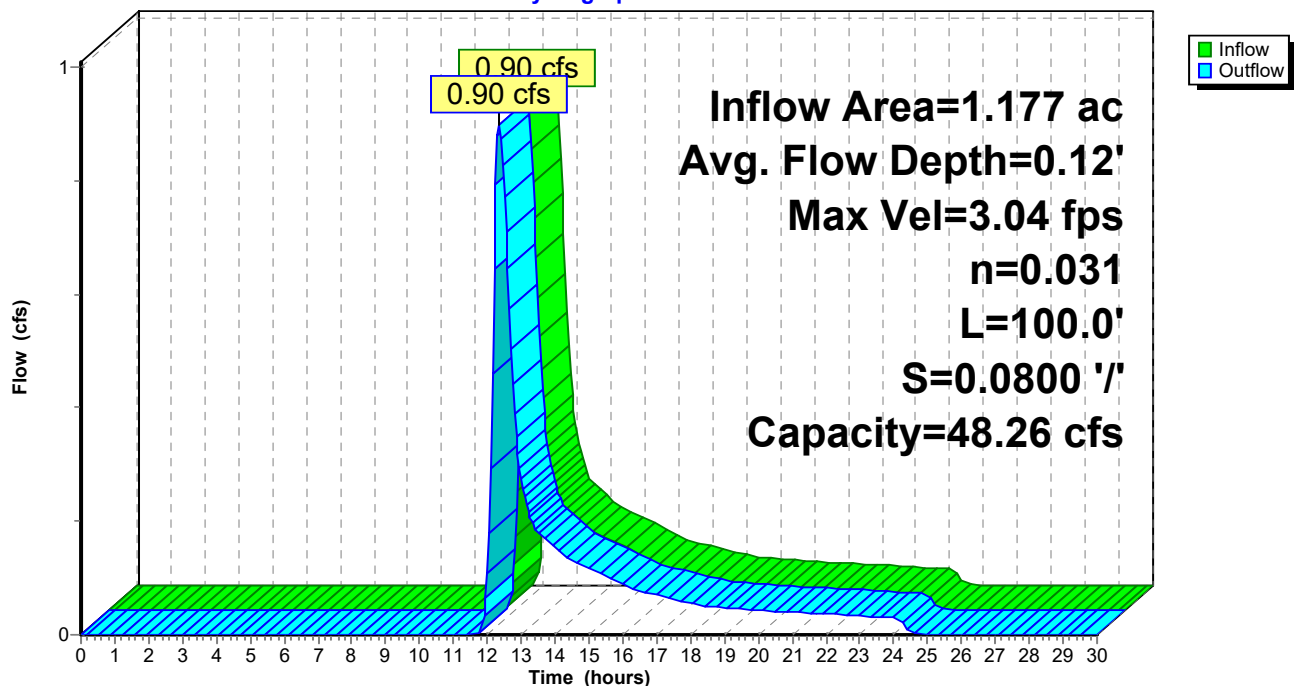
Peak Storage= 30 cf @ 12.34 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 48.26 cfs

2.00' x 1.00' deep channel, n= 0.031
Side Slope Z-value= 3.0 '/' Top Width= 8.00'
Length= 100.0' Slope= 0.0800 '/'
Inlet Invert= 433.00', Outlet Invert= 425.00'



Reach 6R: Grass Swale

Hydrograph



Summary for Pond 1.8P: STORMTECH INFILTRATION SYSTEM

Inflow Area = 0.182 ac, 11.32% Impervious, Inflow Depth = 3.11" for 10-yr event
 Inflow = 0.66 cfs @ 12.09 hrs, Volume= 0.047 af
 Outflow = 0.14 cfs @ 12.51 hrs, Volume= 0.047 af, Atten= 78%, Lag= 25.6 min
 Discarded = 0.03 cfs @ 12.51 hrs, Volume= 0.037 af
 Primary = 0.11 cfs @ 12.51 hrs, Volume= 0.011 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 417.86' @ 12.51 hrs Surf.Area= 0.015 ac Storage= 0.019 af

Plug-Flow detention time= 199.9 min calculated for 0.047 af (100% of inflow)
 Center-of-Mass det. time= 199.9 min (1,020.9 - 821.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	416.00'	0.015 af	11.00'W x 60.58'L x 3.50'H Field A 0.054 af Overall - 0.017 af Embedded = 0.037 af x 40.0% Voids
#2A	416.50'	0.017 af	ADS_StormTech SC-740 +Cap x 16 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 2 Rows of 8 Chambers
		0.032 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	416.50'	12.0" Round Culvert L= 17.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 416.50' / 415.50' S= 0.0588 ' S= 0.0588 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Discarded	416.00'	1.450 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 410.00'
#3	Device 1	417.50'	3.0" Vert. Orifice/Grate C= 0.600
#4	Device 1	419.25'	3.0" Vert. Orifice/Grate C= 0.600

Discarded OutFlow Max=0.03 cfs @ 12.51 hrs HW=417.86' (Free Discharge)

↑ **2=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.11 cfs @ 12.51 hrs HW=417.86' (Free Discharge)

↑ **1=Culvert** (Passes 0.11 cfs of 3.51 cfs potential flow)

↑ **3=Orifice/Grate** (Orifice Controls 0.11 cfs @ 2.33 fps)

↑ **4=Orifice/Grate** (Controls 0.00 cfs)

Pond 1.8P: STORMTECH INFILTRATION SYSTEM - Chamber Wizard Field A**Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)**

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

8 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 58.58' Row Length +12.0" End Stone x 2 = 60.58' Base Length

2 Rows x 51.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.00' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

16 Chambers x 45.9 cf = 735.0 cf Chamber Storage

2,332.2 cf Field - 735.0 cf Chambers = 1,597.2 cf Stone x 40.0% Voids = 638.9 cf Stone Storage

Chamber Storage + Stone Storage = 1,373.9 cf = 0.032 af

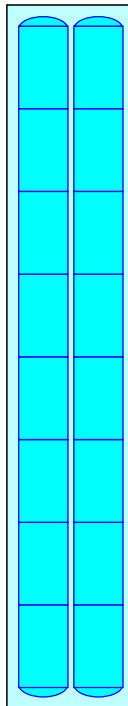
Overall Storage Efficiency = 58.9%

Overall System Size = 60.58' x 11.00' x 3.50'

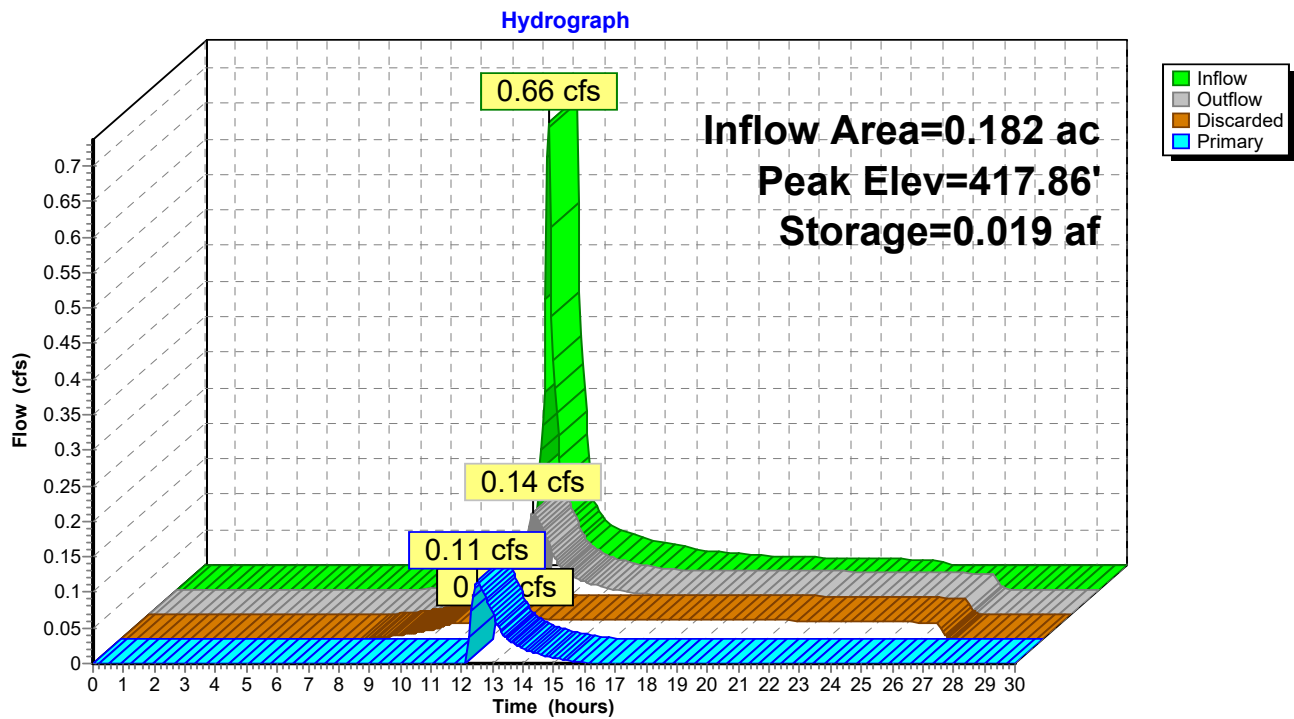
16 Chambers

86.4 cy Field

59.2 cy Stone



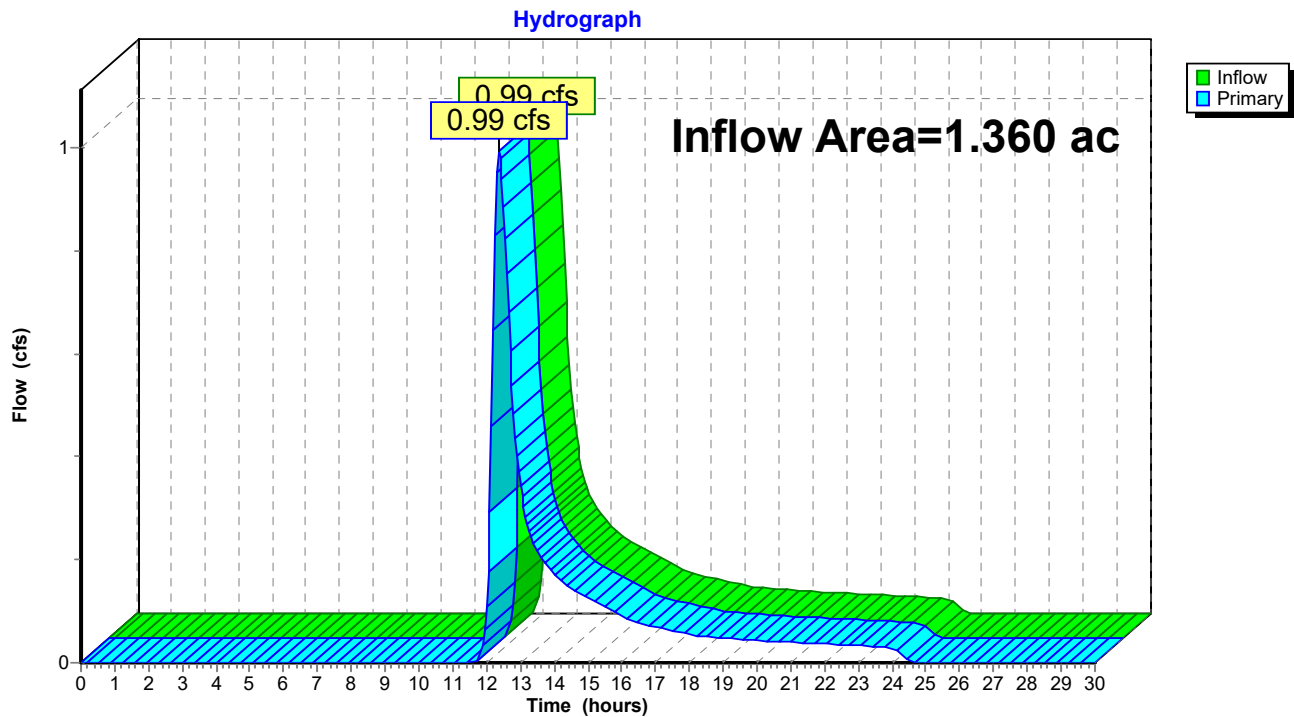
Pond 1.8P: STORMTECH INFILTRATION SYSTEM



Summary for Link 5L: AP-1

Inflow Area = 1.360 ac, 1.52% Impervious, Inflow Depth = 1.10" for 10-yr event
Inflow = 0.99 cfs @ 12.36 hrs, Volume= 0.125 af
Primary = 0.99 cfs @ 12.36 hrs, Volume= 0.125 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 5L: AP-1

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Type III 24-hr 25-yr Rainfall=6.52"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PDA-1A: PDA-1A

Runoff Area=7,948 sf 11.32% Impervious Runoff Depth=4.15"
Flow Length=154' Tc=5.6 min UI Adjusted CN=79 Runoff=0.87 cfs 0.063 af

Subcatchment PDA-1B: PDA-1B

Runoff Area=51,291 sf 0.00% Impervious Runoff Depth=1.83"
Flow Length=535' Tc=19.9 min CN=55 Runoff=1.54 cfs 0.179 af

Reach 6R: Grass Swale

Avg. Flow Depth=0.17' Max Vel=3.63 fps Inflow=1.54 cfs 0.179 af
n=0.031 L=100.0' S=0.0800 '/' Capacity=48.26 cfs Outflow=1.54 cfs 0.179 af

Pond 1.8P: STORMTECH INFILTRATION

Peak Elev=418.35' Storage=0.023 af Inflow=0.87 cfs 0.063 af
Discarded=0.03 cfs 0.041 af Primary=0.20 cfs 0.022 af Outflow=0.23 cfs 0.063 af

Link 5L: AP-1

Inflow=1.72 cfs 0.202 af
Primary=1.72 cfs 0.202 af

Total Runoff Area = 1.360 ac Runoff Volume = 0.242 af Average Runoff Depth = 2.14"
98.48% Pervious = 1.339 ac 1.52% Impervious = 0.021 ac

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Type III 24-hr 25-yr Rainfall=6.52"

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Summary for Subcatchment PDA-1A: PDA-1A[49] Hint: $T_c < 2dt$ may require smaller dt

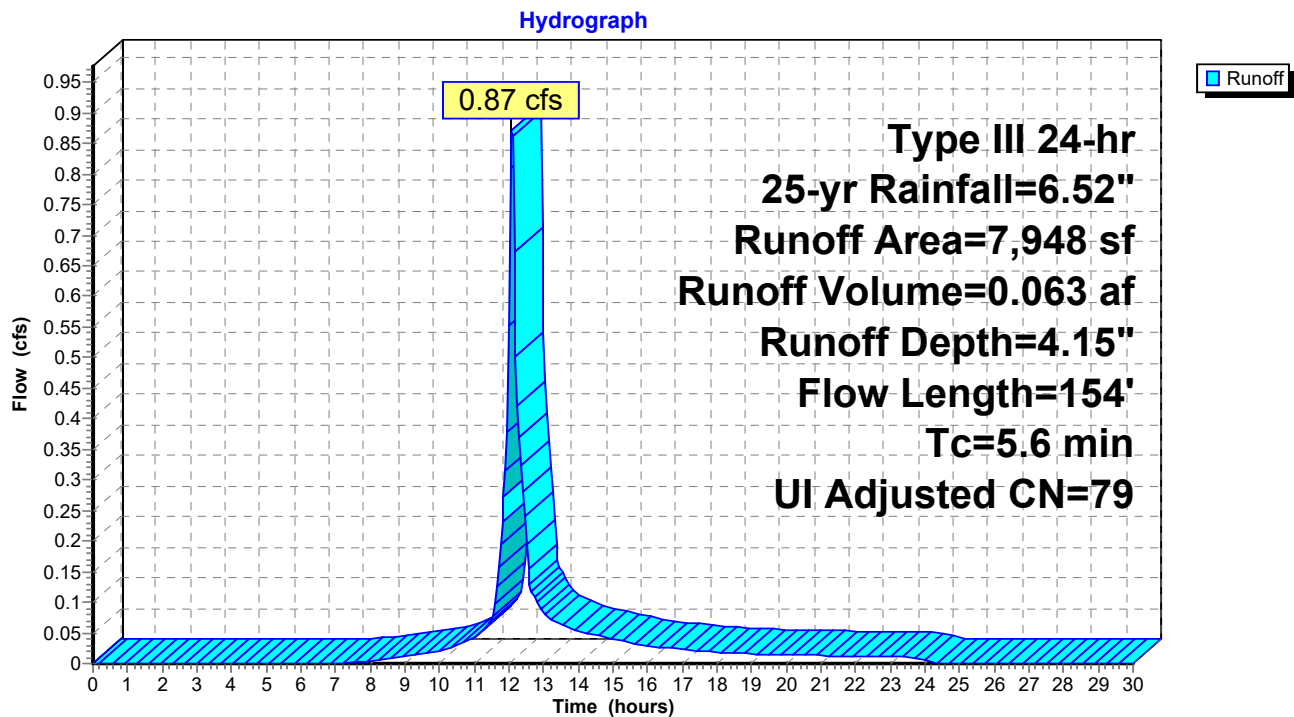
Runoff = 0.87 cfs @ 12.09 hrs, Volume= 0.063 af, Depth= 4.15"

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 25-yr Rainfall=6.52"

Area (sf)	CN	Adj	Description
5,008	85		Gravel roads, HSG B
1,547	61		>75% Grass cover, Good, HSG B
493	55		Woods, Good, HSG B
900	98		Unconnected pavement, HSG B
7,948	80	79	Weighted Average, UI Adjusted
7,048			88.68% Pervious Area
900			11.32% Impervious Area
900			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	42	0.3810	0.22		Sheet Flow, A-B Woods: Light underbrush $n=0.400$ $P2=3.50"$
2.0	34	0.2647	0.28		Sheet Flow, B-C Grass: Dense $n=0.240$ $P2=3.50"$
0.2	26	0.1153	2.21		Sheet Flow, C-D Smooth surfaces $n=0.011$ $P2=3.50"$
0.2	52	0.1154	5.47		Shallow Concentrated Flow, D-E Unpaved $K_v=16.1$ fps
5.6	154	Total			

Subcatchment PDA-1A: PDA-1A



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Type III 24-hr 25-yr Rainfall=6.52"

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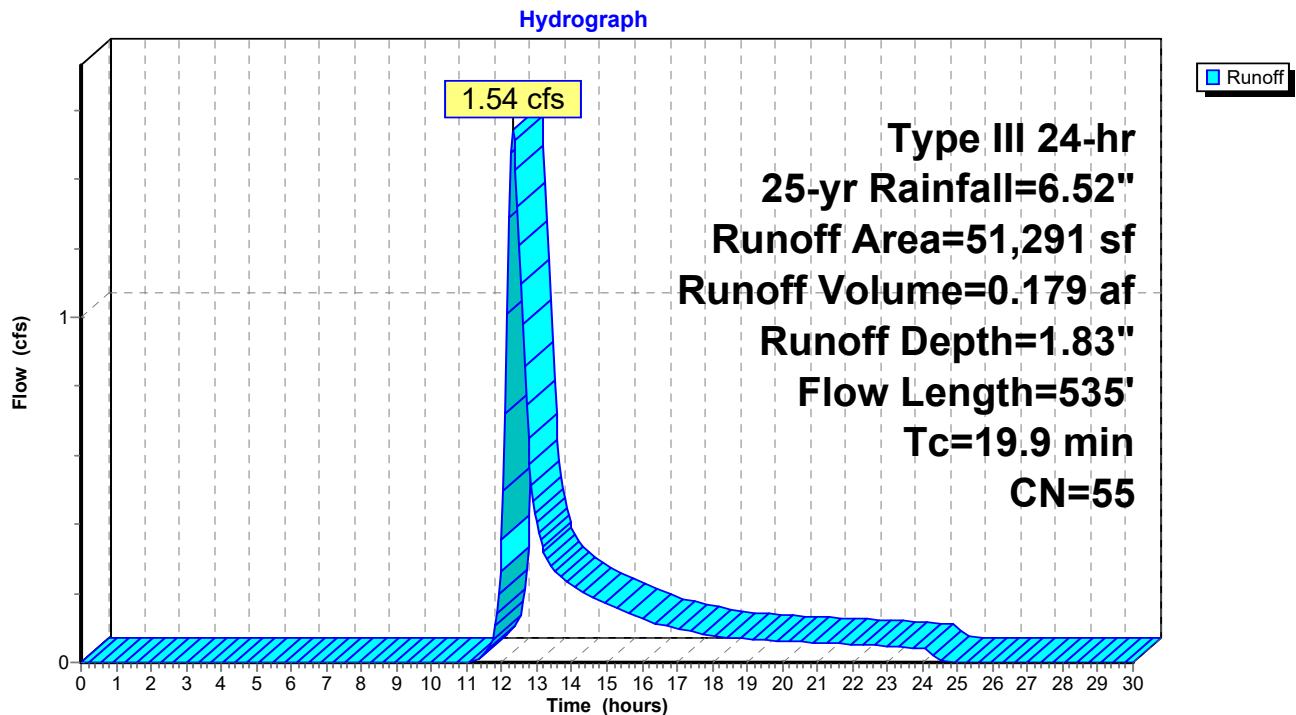
Summary for Subcatchment PDA-1B: PDA-1B

Runoff = 1.54 cfs @ 12.31 hrs, Volume= 0.179 af, Depth= 1.83"

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 25-yr Rainfall=6.52"

Area (sf)	CN	Description
51,291	55	Woods, Good, HSG B
51,291		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	100	0.1900	0.11		Sheet Flow, A-B Woods: Dense underbrush n= 0.800 P2= 3.50"
3.2	240	0.2534	1.26		Shallow Concentrated Flow, B-C Forest w/Heavy Litter Kv= 2.5 fps
0.3	85	0.0800	4.24		Shallow Concentrated Flow, C-D Grassed Waterway Kv= 15.0 fps
1.9	110	0.1500	0.97		Shallow Concentrated Flow, D-E Forest w/Heavy Litter Kv= 2.5 fps
19.9	535	Total			

Subcatchment PDA-1B: PDA-1B

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Type III 24-hr 25-yr Rainfall=6.52"

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Summary for Reach 6R: Grass Swale

Inflow Area = 1.177 ac, 0.00% Impervious, Inflow Depth = 1.83" for 25-yr event
Inflow = 1.54 cfs @ 12.31 hrs, Volume= 0.179 af
Outflow = 1.54 cfs @ 12.32 hrs, Volume= 0.179 af, Atten= 0%, Lag= 0.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.63 fps, Min. Travel Time= 0.5 min
Avg. Velocity= 1.41 fps, Avg. Travel Time= 1.2 min

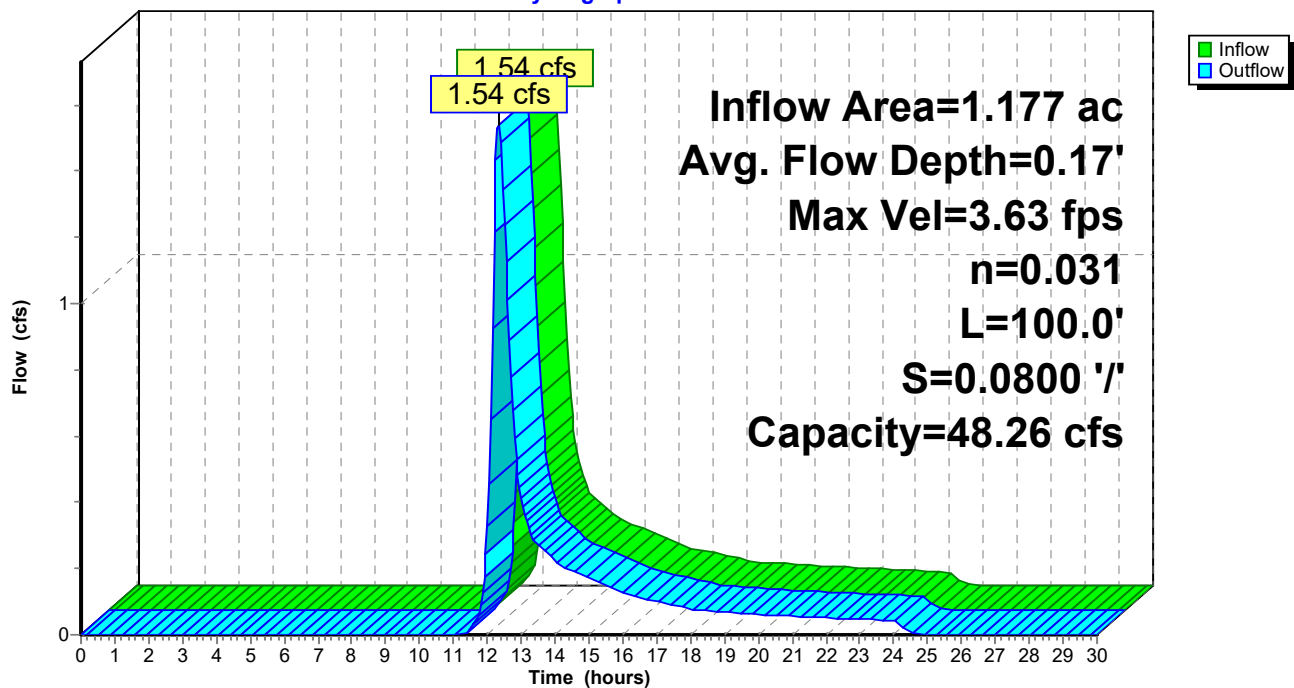
Peak Storage= 43 cf @ 12.31 hrs
Average Depth at Peak Storage= 0.17'
Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 48.26 cfs

2.00' x 1.00' deep channel, n= 0.031
Side Slope Z-value= 3.0 '/' Top Width= 8.00'
Length= 100.0' Slope= 0.0800 '/'
Inlet Invert= 433.00', Outlet Invert= 425.00'



Reach 6R: Grass Swale

Hydrograph



Summary for Pond 1.8P: STORMTECH INFILTRATION SYSTEM

Inflow Area = 0.182 ac, 11.32% Impervious, Inflow Depth = 4.15" for 25-yr event
 Inflow = 0.87 cfs @ 12.09 hrs, Volume= 0.063 af
 Outflow = 0.23 cfs @ 12.46 hrs, Volume= 0.063 af, Atten= 73%, Lag= 22.4 min
 Discarded = 0.03 cfs @ 12.46 hrs, Volume= 0.041 af
 Primary = 0.20 cfs @ 12.46 hrs, Volume= 0.022 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 418.35' @ 12.46 hrs Surf.Area= 0.015 ac Storage= 0.023 af

Plug-Flow detention time= 173.6 min calculated for 0.063 af (100% of inflow)
 Center-of-Mass det. time= 173.5 min (986.4 - 812.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	416.00'	0.015 af	11.00'W x 60.58'L x 3.50'H Field A 0.054 af Overall - 0.017 af Embedded = 0.037 af x 40.0% Voids
#2A	416.50'	0.017 af	ADS_StormTech SC-740 +Cap x 16 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 2 Rows of 8 Chambers
		0.032 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	416.50'	12.0" Round Culvert L= 17.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 416.50' / 415.50' S= 0.0588 ' S= 0.0588 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Discarded	416.00'	1.450 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 410.00'
#3	Device 1	417.50'	3.0" Vert. Orifice/Grate C= 0.600
#4	Device 1	419.25'	3.0" Vert. Orifice/Grate C= 0.600

Discarded OutFlow Max=0.03 cfs @ 12.46 hrs HW=418.34' (Free Discharge)

↑ **2=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.20 cfs @ 12.46 hrs HW=418.34' (Free Discharge)

↑ **1=Culvert** (Passes 0.20 cfs of 4.38 cfs potential flow)

↑ **3=Orifice/Grate** (Orifice Controls 0.20 cfs @ 4.08 fps)

↑ **4=Orifice/Grate** (Controls 0.00 cfs)

Pond 1.8P: STORMTECH INFILTRATION SYSTEM - Chamber Wizard Field A**Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)**

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

8 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 58.58' Row Length +12.0" End Stone x 2 = 60.58' Base Length

2 Rows x 51.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.00' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

16 Chambers x 45.9 cf = 735.0 cf Chamber Storage

2,332.2 cf Field - 735.0 cf Chambers = 1,597.2 cf Stone x 40.0% Voids = 638.9 cf Stone Storage

Chamber Storage + Stone Storage = 1,373.9 cf = 0.032 af

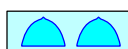
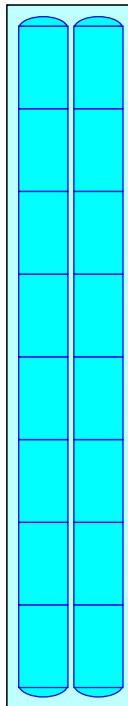
Overall Storage Efficiency = 58.9%

Overall System Size = 60.58' x 11.00' x 3.50'

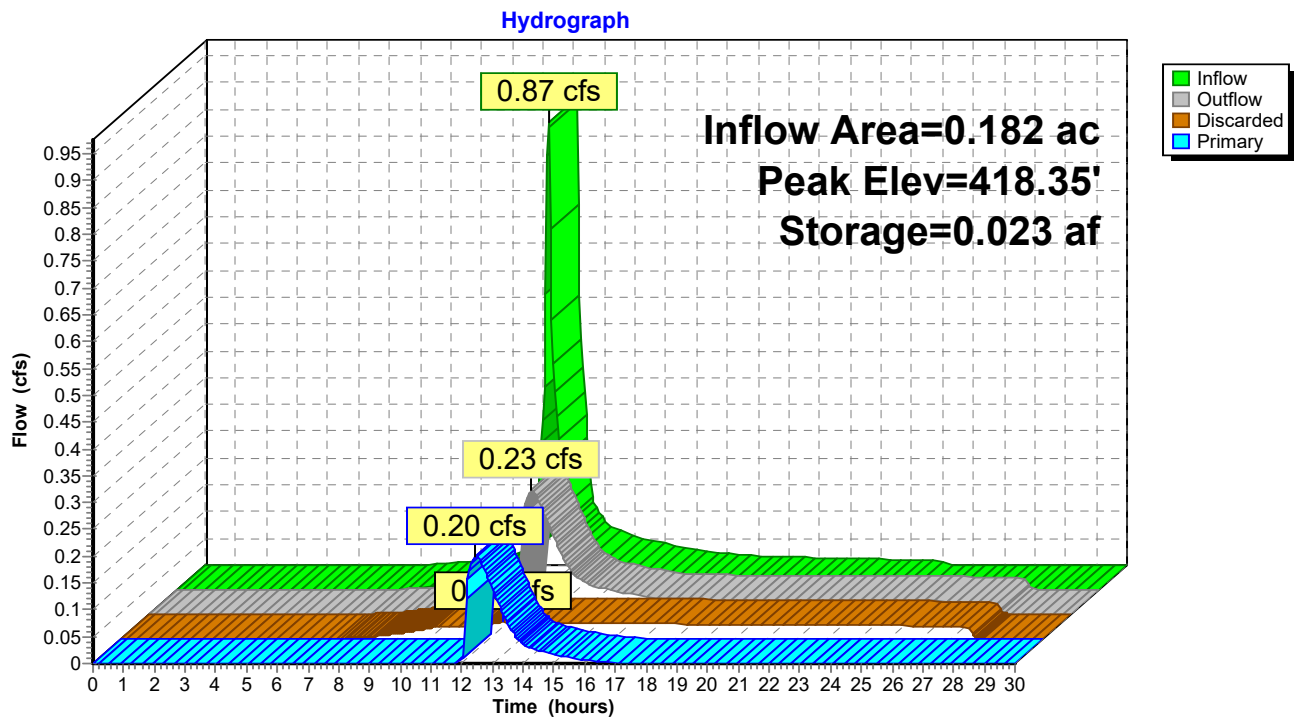
16 Chambers

86.4 cy Field

59.2 cy Stone



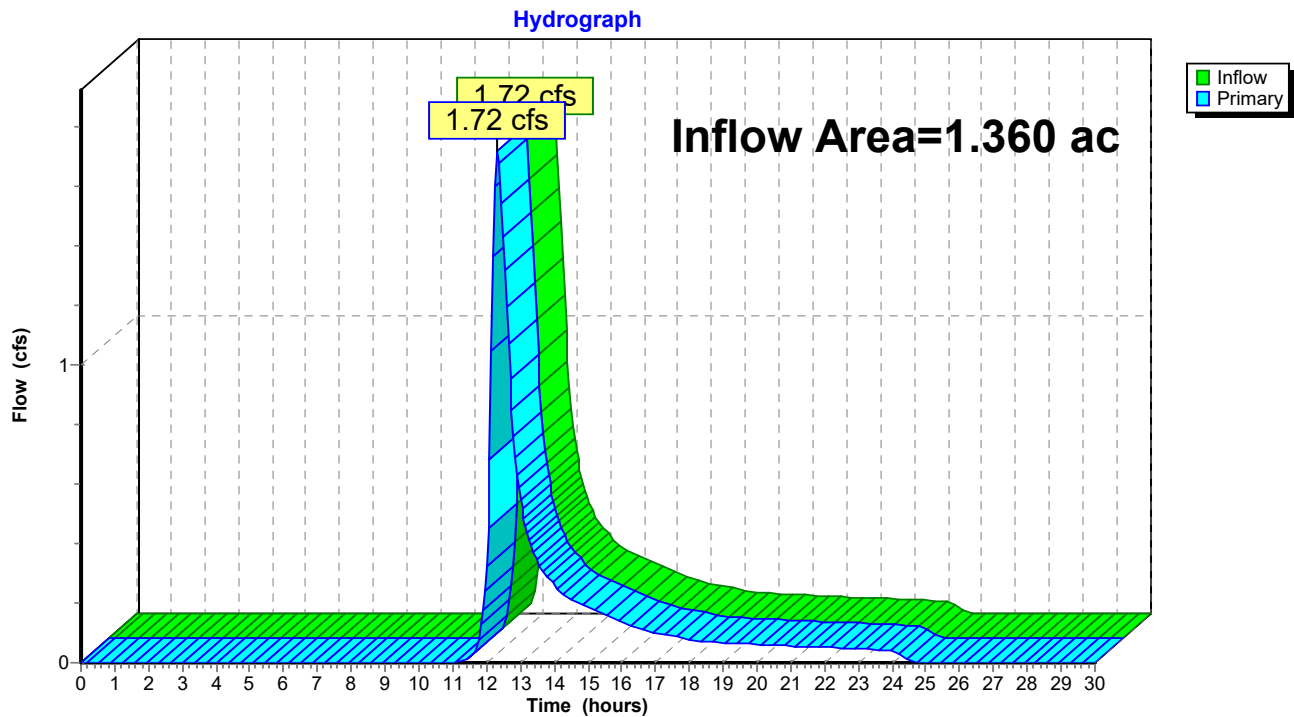
Pond 1.8P: STORMTECH INFILTRATION SYSTEM



Summary for Link 5L: AP-1

Inflow Area = 1.360 ac, 1.52% Impervious, Inflow Depth = 1.78" for 25-yr event
Inflow = 1.72 cfs @ 12.33 hrs, Volume= 0.202 af
Primary = 1.72 cfs @ 12.33 hrs, Volume= 0.202 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 5L: AP-1

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Type III 24-hr 100-yr Rainfall=8.30"

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Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PDA-1A: PDA-1A

Runoff Area=7,948 sf 11.32% Impervious Runoff Depth=5.79"
Flow Length=154' Tc=5.6 min UI Adjusted CN=79 Runoff=1.20 cfs 0.088 af

Subcatchment PDA-1B: PDA-1B

Runoff Area=51,291 sf 0.00% Impervious Runoff Depth=2.99"
Flow Length=535' Tc=19.9 min CN=55 Runoff=2.67 cfs 0.293 af

Reach 6R: Grass Swale

Avg. Flow Depth=0.23' Max Vel=4.31 fps Inflow=2.67 cfs 0.293 af
n=0.031 L=100.0' S=0.0800 '/' Capacity=48.26 cfs Outflow=2.66 cfs 0.293 af

Pond 1.8P: STORMTECH INFILTRATION

Peak Elev=419.47' Storage=0.031 af Inflow=1.20 cfs 0.088 af
Discarded=0.04 cfs 0.046 af Primary=0.39 cfs 0.042 af Outflow=0.43 cfs 0.088 af

Link 5L: AP-1

Inflow=3.04 cfs 0.336 af
Primary=3.04 cfs 0.336 af

Total Runoff Area = 1.360 ac Runoff Volume = 0.381 af Average Runoff Depth = 3.37"
98.48% Pervious = 1.339 ac 1.52% Impervious = 0.021 ac

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Type III 24-hr 100-yr Rainfall=8.30"

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Summary for Subcatchment PDA-1A: PDA-1A[49] Hint: $T_c < 2dt$ may require smaller dt

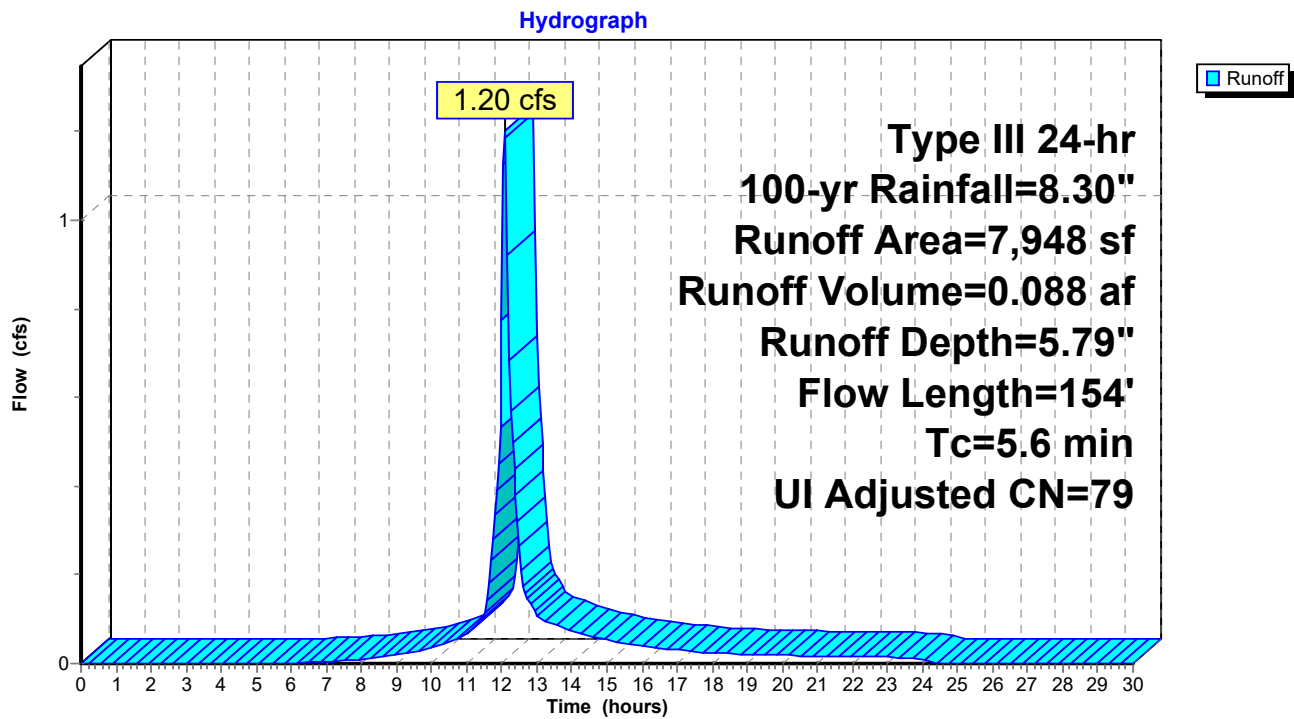
Runoff = 1.20 cfs @ 12.08 hrs, Volume= 0.088 af, Depth= 5.79"

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 100-yr Rainfall=8.30"

Area (sf)	CN	Adj	Description
5,008	85		Gravel roads, HSG B
1,547	61		>75% Grass cover, Good, HSG B
493	55		Woods, Good, HSG B
900	98		Unconnected pavement, HSG B
7,948	80	79	Weighted Average, UI Adjusted
7,048			88.68% Pervious Area
900			11.32% Impervious Area
900			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	42	0.3810	0.22		Sheet Flow, A-B Woods: Light underbrush $n=0.400$ $P2=3.50"$
2.0	34	0.2647	0.28		Sheet Flow, B-C Grass: Dense $n=0.240$ $P2=3.50"$
0.2	26	0.1153	2.21		Sheet Flow, C-D Smooth surfaces $n=0.011$ $P2=3.50"$
0.2	52	0.1154	5.47		Shallow Concentrated Flow, D-E Unpaved $K_v=16.1$ fps
5.6	154	Total			

Subcatchment PDA-1A: PDA-1A



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Type III 24-hr 100-yr Rainfall=8.30"

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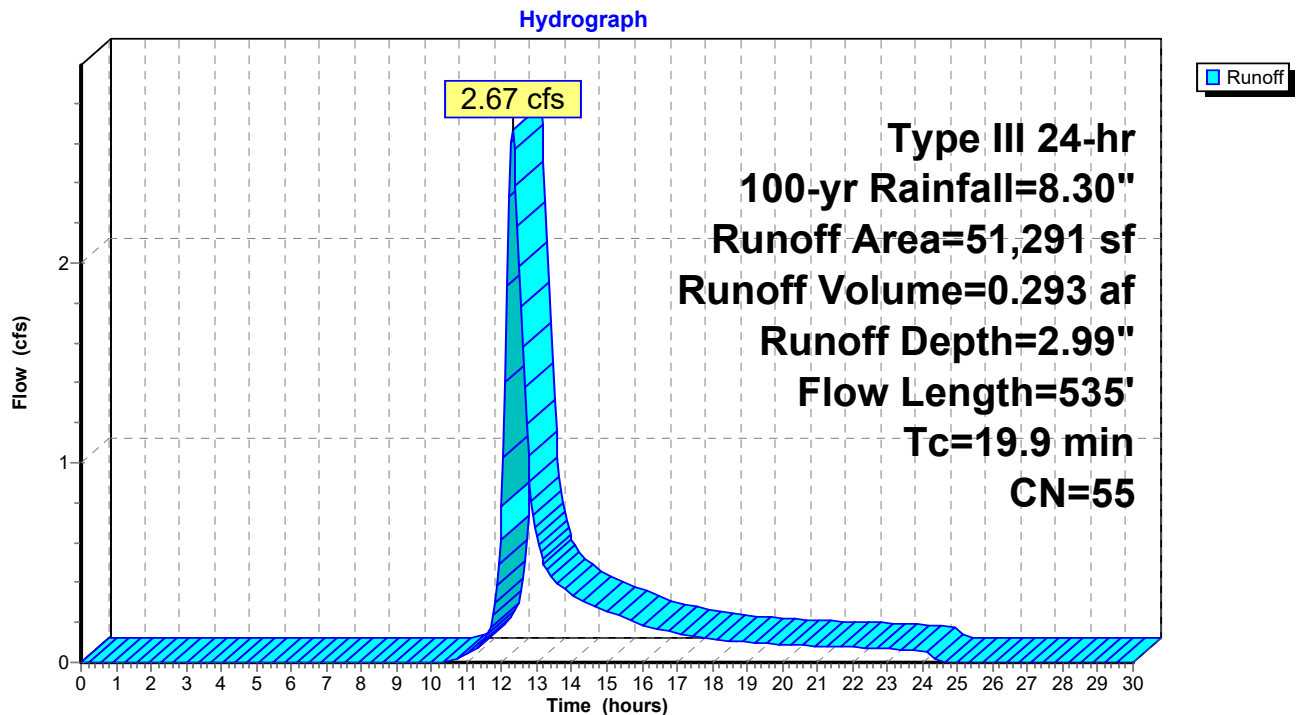
Summary for Subcatchment PDA-1B: PDA-1B

Runoff = 2.67 cfs @ 12.30 hrs, Volume= 0.293 af, Depth= 2.99"

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 100-yr Rainfall=8.30"

Area (sf)	CN	Description
51,291	55	Woods, Good, HSG B
51,291		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	100	0.1900	0.11		Sheet Flow, A-B Woods: Dense underbrush n= 0.800 P2= 3.50"
3.2	240	0.2534	1.26		Shallow Concentrated Flow, B-C Forest w/Heavy Litter Kv= 2.5 fps
0.3	85	0.0800	4.24		Shallow Concentrated Flow, C-D Grassed Waterway Kv= 15.0 fps
1.9	110	0.1500	0.97		Shallow Concentrated Flow, D-E Forest w/Heavy Litter Kv= 2.5 fps
19.9	535	Total			

Subcatchment PDA-1B: PDA-1B

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Type III 24-hr 100-yr Rainfall=8.30"

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Summary for Reach 6R: Grass Swale

Inflow Area = 1.177 ac, 0.00% Impervious, Inflow Depth = 2.99" for 100-yr event
Inflow = 2.67 cfs @ 12.30 hrs, Volume= 0.293 af
Outflow = 2.66 cfs @ 12.31 hrs, Volume= 0.293 af, Atten= 0%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.31 fps, Min. Travel Time= 0.4 min
Avg. Velocity= 1.61 fps, Avg. Travel Time= 1.0 min

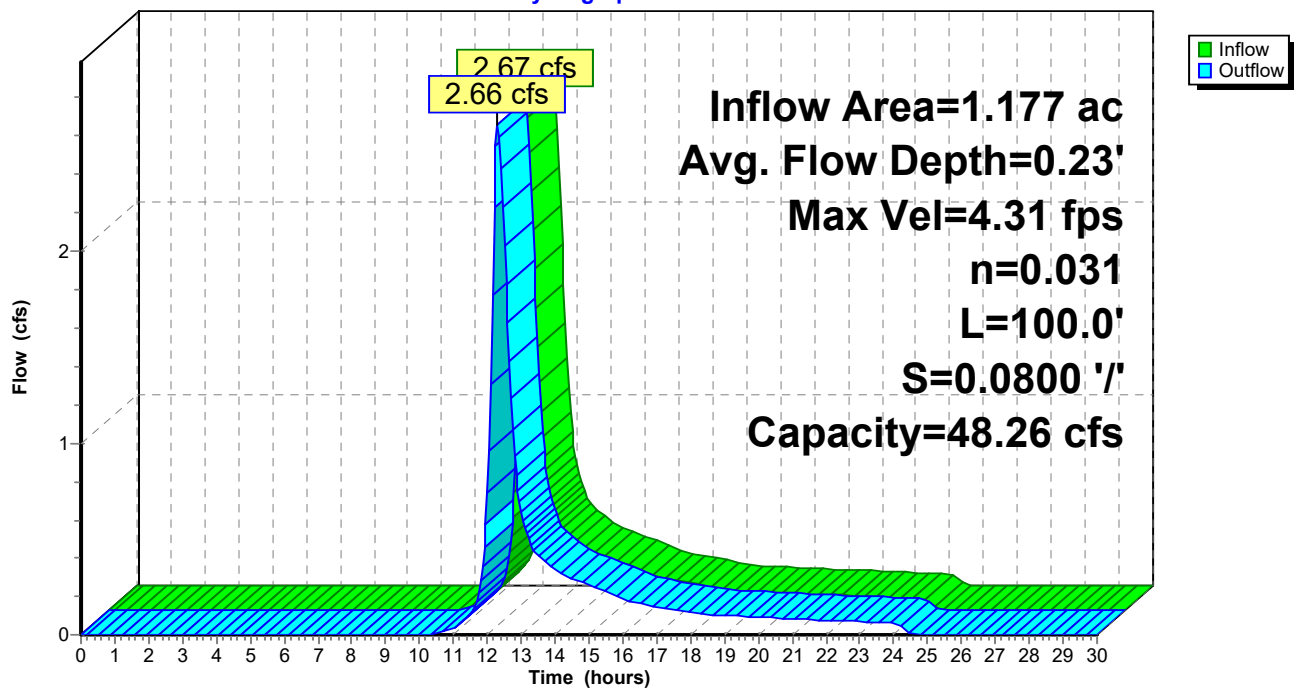
Peak Storage= 62 cf @ 12.30 hrs
Average Depth at Peak Storage= 0.23'
Bank-Full Depth= 1.00' Flow Area= 5.0 sf, Capacity= 48.26 cfs

2.00' x 1.00' deep channel, n= 0.031
Side Slope Z-value= 3.0 '/' Top Width= 8.00'
Length= 100.0' Slope= 0.0800 '/'
Inlet Invert= 433.00', Outlet Invert= 425.00'



Reach 6R: Grass Swale

Hydrograph



Summary for Pond 1.8P: STORMTECH INFILTRATION SYSTEM

Inflow Area = 0.182 ac, 11.32% Impervious, Inflow Depth = 5.79" for 100-yr event
 Inflow = 1.20 cfs @ 12.08 hrs, Volume= 0.088 af
 Outflow = 0.43 cfs @ 12.36 hrs, Volume= 0.088 af, Atten= 64%, Lag= 16.7 min
 Discarded = 0.04 cfs @ 12.36 hrs, Volume= 0.046 af
 Primary = 0.39 cfs @ 12.36 hrs, Volume= 0.042 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 419.47' @ 12.36 hrs Surf.Area= 0.015 ac Storage= 0.031 af

Plug-Flow detention time= 149.1 min calculated for 0.088 af (100% of inflow)
 Center-of-Mass det. time= 149.3 min (952.8 - 803.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	416.00'	0.015 af	11.00'W x 60.58'L x 3.50'H Field A 0.054 af Overall - 0.017 af Embedded = 0.037 af x 40.0% Voids
#2A	416.50'	0.017 af	ADS_StormTech SC-740 +Cap x 16 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 2 Rows of 8 Chambers
		0.032 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	416.50'	12.0" Round Culvert L= 17.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 416.50' / 415.50' S= 0.0588 ' S= 0.0588 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#2	Discarded	416.00'	1.450 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 410.00'
#3	Device 1	417.50'	3.0" Vert. Orifice/Grate C= 0.600
#4	Device 1	419.25'	3.0" Vert. Orifice/Grate C= 0.600

Discarded OutFlow Max=0.04 cfs @ 12.36 hrs HW=419.47' (Free Discharge)

↑ **2=Exfiltration** (Controls 0.04 cfs)

Primary OutFlow Max=0.39 cfs @ 12.36 hrs HW=419.47' (Free Discharge)

↑ **1=Culvert** (Passes 0.39 cfs of 5.94 cfs potential flow)

↑ **3=Orifice/Grate** (Orifice Controls 0.32 cfs @ 6.53 fps)

↑ **4=Orifice/Grate** (Orifice Controls 0.07 cfs @ 1.58 fps)

Pond 1.8P: STORMTECH INFILTRATION SYSTEM - Chamber Wizard Field A**Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)**

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

8 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 58.58' Row Length +12.0" End Stone x 2 = 60.58' Base Length

2 Rows x 51.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.00' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

16 Chambers x 45.9 cf = 735.0 cf Chamber Storage

2,332.2 cf Field - 735.0 cf Chambers = 1,597.2 cf Stone x 40.0% Voids = 638.9 cf Stone Storage

Chamber Storage + Stone Storage = 1,373.9 cf = 0.032 af

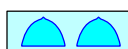
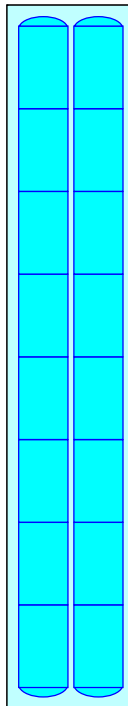
Overall Storage Efficiency = 58.9%

Overall System Size = 60.58' x 11.00' x 3.50'

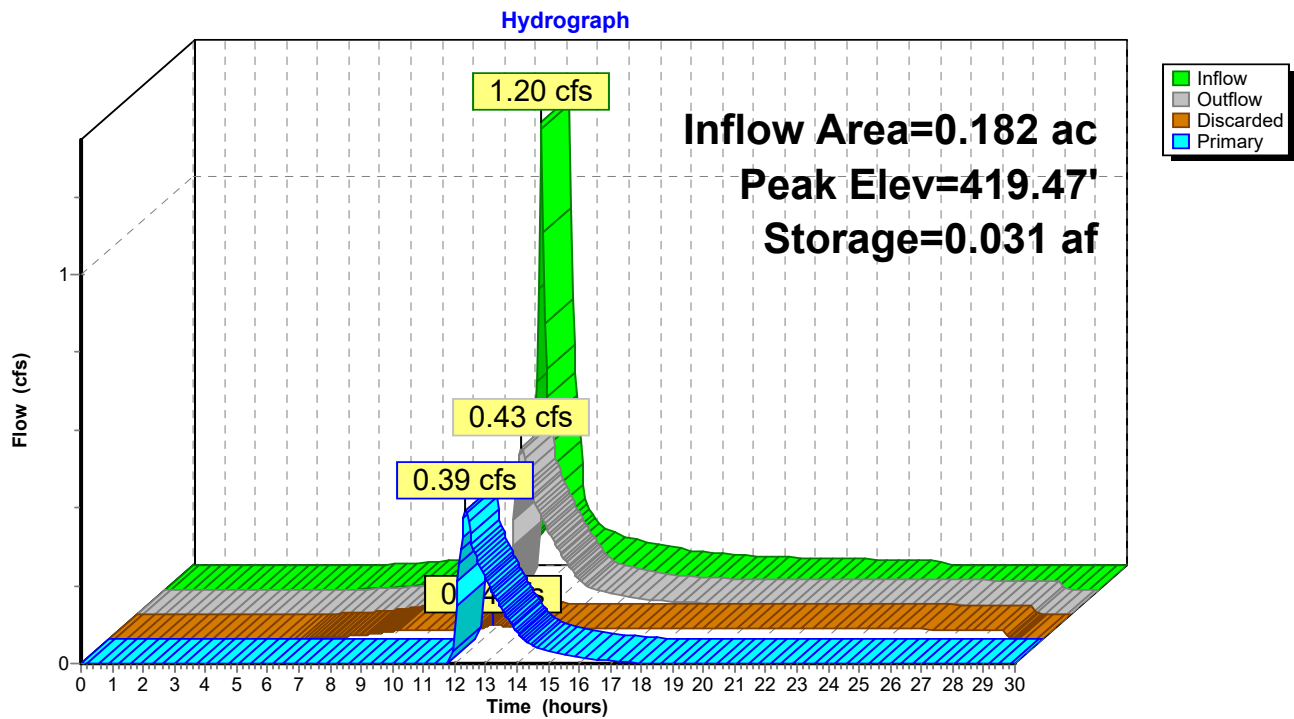
16 Chambers

86.4 cy Field

59.2 cy Stone



Pond 1.8P: STORMTECH INFILTRATION SYSTEM



Mount Kisco

Prepared by APT ENGINEERING

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Type III 24-hr 100-yr Rainfall=8.30"

Printed 7/9/2021

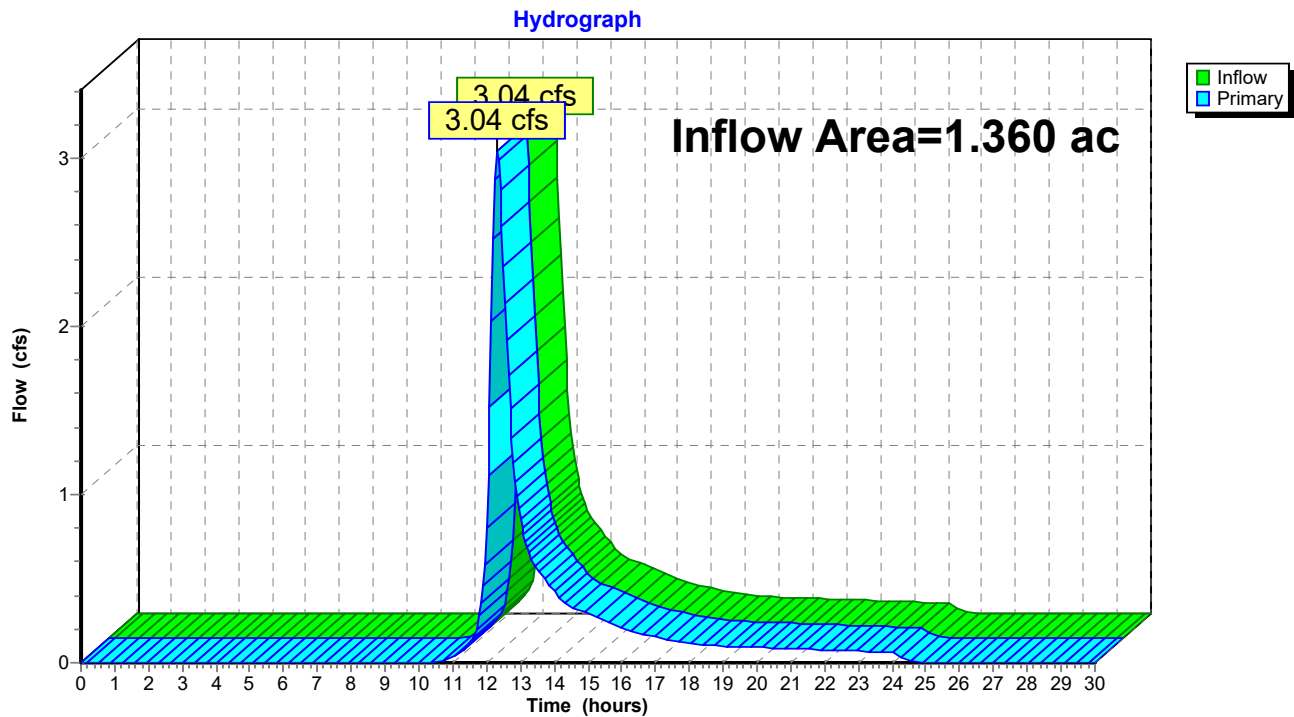
Page 40

Summary for Link 5L: AP-1

Inflow Area = 1.360 ac, 1.52% Impervious, Inflow Depth = 2.96" for 100-yr event
Inflow = 3.04 cfs @ 12.31 hrs, Volume= 0.336 af
Primary = 3.04 cfs @ 12.31 hrs, Volume= 0.336 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 5L: AP-1



APPENDIX D: NOAA ATLAS 14 PRECIPITATION FREQUENCY TABLE



NOAA Atlas 14, Volume 10, Version 3
Location name: Mount Kisco, New York, USA*
Latitude: 41.1981°, Longitude: -73.7128°
Elevation: 509.72 ft**
 * source: ESRI Maps
 ** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aeriels](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.357 (0.280-0.446)	0.417 (0.327-0.522)	0.515 (0.402-0.647)	0.596 (0.463-0.752)	0.708 (0.531-0.926)	0.793 (0.583-1.06)	0.881 (0.625-1.21)	0.975 (0.659-1.37)	1.10 (0.717-1.60)	1.21 (0.764-1.78)
10-min	0.505 (0.397-0.632)	0.590 (0.463-0.739)	0.729 (0.570-0.916)	0.844 (0.656-1.07)	1.00 (0.753-1.31)	1.12 (0.825-1.50)	1.25 (0.886-1.71)	1.38 (0.933-1.94)	1.57 (1.02-2.27)	1.71 (1.08-2.53)
15-min	0.594 (0.467-0.744)	0.694 (0.545-0.870)	0.858 (0.671-1.08)	0.993 (0.772-1.25)	1.18 (0.886-1.54)	1.32 (0.971-1.76)	1.47 (1.04-2.01)	1.62 (1.10-2.29)	1.84 (1.20-2.67)	2.01 (1.27-2.97)
30-min	0.840 (0.660-1.05)	0.980 (0.769-1.23)	1.21 (0.945-1.52)	1.40 (1.09-1.77)	1.66 (1.25-2.17)	1.86 (1.37-2.48)	2.07 (1.46-2.83)	2.28 (1.54-3.20)	2.56 (1.67-3.72)	2.78 (1.76-4.12)
60-min	1.09 (0.853-1.36)	1.27 (0.993-1.59)	1.56 (1.22-1.96)	1.81 (1.40-2.28)	2.14 (1.61-2.80)	2.40 (1.76-3.19)	2.66 (1.88-3.64)	2.93 (1.98-4.12)	3.29 (2.13-4.77)	3.56 (2.25-5.26)
2-hr	1.42 (1.13-1.77)	1.65 (1.31-2.06)	2.03 (1.60-2.54)	2.34 (1.83-2.94)	2.77 (2.09-3.60)	3.10 (2.29-4.10)	3.44 (2.44-4.67)	3.78 (2.57-5.29)	4.25 (2.77-6.13)	4.62 (2.93-6.78)
3-hr	1.64 (1.30-2.04)	1.91 (1.52-2.37)	2.36 (1.86-2.93)	2.72 (2.13-3.40)	3.22 (2.44-4.17)	3.61 (2.67-4.75)	4.00 (2.86-5.42)	4.41 (3.00-6.14)	4.99 (3.26-7.16)	5.43 (3.46-7.95)
6-hr	2.05 (1.64-2.52)	2.41 (1.92-2.97)	3.00 (2.39-3.71)	3.50 (2.76-4.34)	4.17 (3.18-5.37)	4.68 (3.49-6.14)	5.21 (3.76-7.06)	5.80 (3.96-8.02)	6.64 (4.34-9.47)	7.31 (4.67-10.6)
12-hr	2.48 (1.99-3.03)	2.97 (2.38-3.63)	3.77 (3.01-4.62)	4.43 (3.52-5.46)	5.34 (4.10-6.86)	6.03 (4.53-7.89)	6.75 (4.91-9.14)	7.58 (5.19-10.4)	8.81 (5.78-12.5)	9.82 (6.29-14.2)
24-hr	2.88 (2.33-3.49)	3.50 (2.83-4.25)	4.51 (3.63-5.50)	5.36 (4.28-6.56)	6.52 (5.04-8.32)	7.38 (5.58-9.62)	8.30 (6.10-11.2)	9.40 (6.46-12.8)	11.0 (7.27-15.6)	12.4 (7.98-17.8)
2-day	3.24 (2.64-3.91)	3.98 (3.23-4.80)	5.17 (4.19-6.26)	6.17 (4.96-7.50)	7.53 (5.86-9.57)	8.55 (6.51-11.1)	9.64 (7.13-13.0)	11.0 (7.56-14.9)	13.0 (8.56-18.1)	14.7 (9.45-20.9)
3-day	3.52 (2.88-4.23)	4.31 (3.52-5.18)	5.61 (4.56-6.76)	6.69 (5.40-8.10)	8.17 (6.38-10.3)	9.26 (7.08-12.0)	10.4 (7.75-14.0)	11.9 (8.21-16.1)	14.1 (9.30-19.6)	15.9 (10.3-22.6)
4-day	3.77 (3.09-4.52)	4.61 (3.77-5.52)	5.97 (4.87-7.18)	7.11 (5.76-8.58)	8.66 (6.78-10.9)	9.82 (7.52-12.6)	11.1 (8.22-14.8)	12.6 (8.70-17.0)	14.9 (9.84-20.6)	16.8 (10.9-23.8)
7-day	4.48 (3.69-5.33)	5.39 (4.44-6.43)	6.89 (5.65-8.23)	8.13 (6.62-9.76)	9.83 (7.73-12.3)	11.1 (8.53-14.2)	12.5 (9.27-16.5)	14.1 (9.78-18.9)	16.5 (11.0-22.8)	18.5 (12.0-26.1)
10-day	5.17 (4.28-6.13)	6.13 (5.07-7.28)	7.71 (6.35-9.19)	9.02 (7.38-10.8)	10.8 (8.53-13.5)	12.2 (9.37-15.5)	13.6 (10.1-17.9)	15.3 (10.6-20.4)	17.7 (11.8-24.4)	19.8 (12.8-27.7)
20-day	7.29 (6.07-8.59)	8.38 (6.97-9.88)	10.2 (8.41-12.0)	11.6 (9.56-13.8)	13.7 (10.8-16.8)	15.2 (11.7-19.0)	16.8 (12.4-21.7)	18.5 (13.0-24.5)	20.8 (14.0-28.5)	22.7 (14.8-31.6)
30-day	9.09 (7.60-10.7)	10.3 (8.57-12.1)	12.2 (10.1-14.4)	13.8 (11.4-16.3)	16.0 (12.7-19.5)	17.7 (13.6-22.0)	19.4 (14.3-24.8)	21.1 (14.8-27.8)	23.4 (15.7-31.8)	25.2 (16.4-34.9)
45-day	11.3 (9.53-13.3)	12.6 (10.6-14.8)	14.7 (12.3-17.3)	16.5 (13.7-19.4)	18.9 (15.0-23.0)	20.8 (16.1-25.7)	22.6 (16.7-28.7)	24.4 (17.2-32.0)	26.7 (18.0-36.1)	28.4 (18.5-39.2)
60-day	13.3 (11.2-15.4)	14.6 (12.3-17.1)	16.9 (14.2-19.8)	18.8 (15.6-22.1)	21.4 (17.0-25.9)	23.4 (18.1-28.8)	25.4 (18.8-32.0)	27.3 (19.3-35.6)	29.6 (20.0-39.9)	31.2 (20.4-43.0)

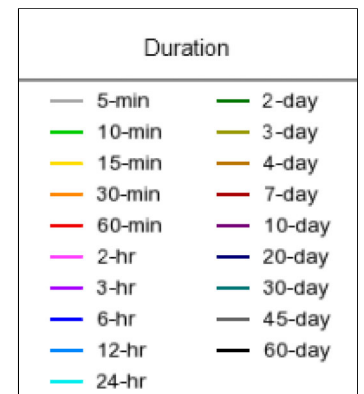
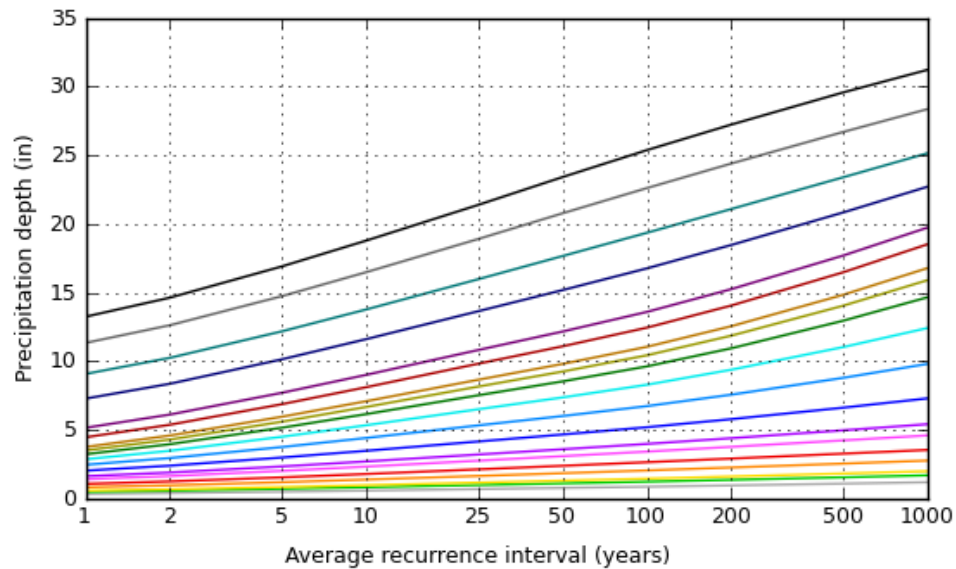
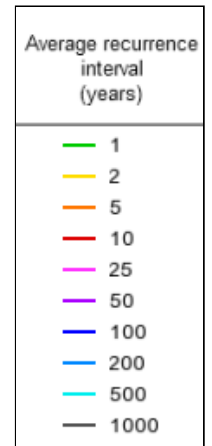
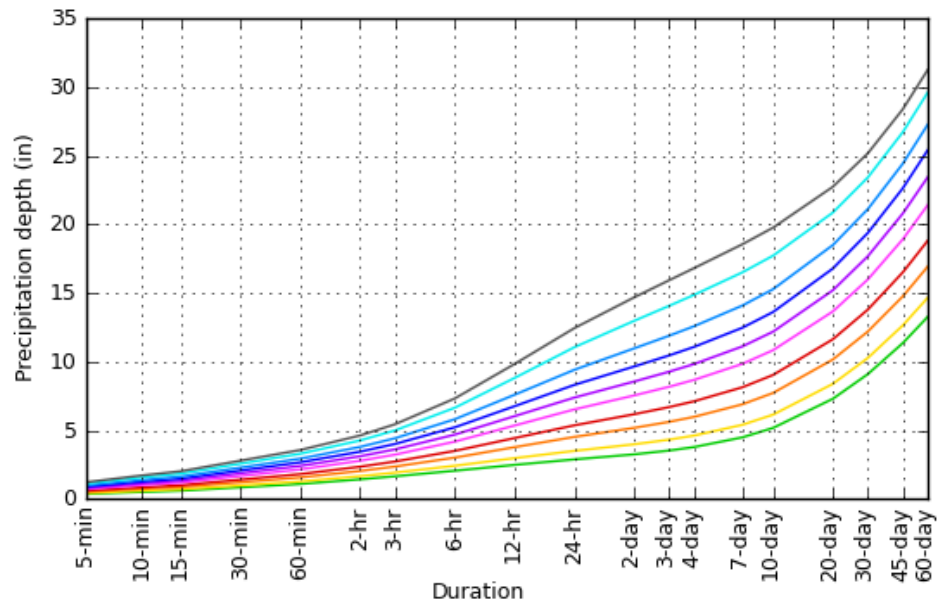
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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PF graphical

PDS-based depth-duration-frequency (DDF) curves

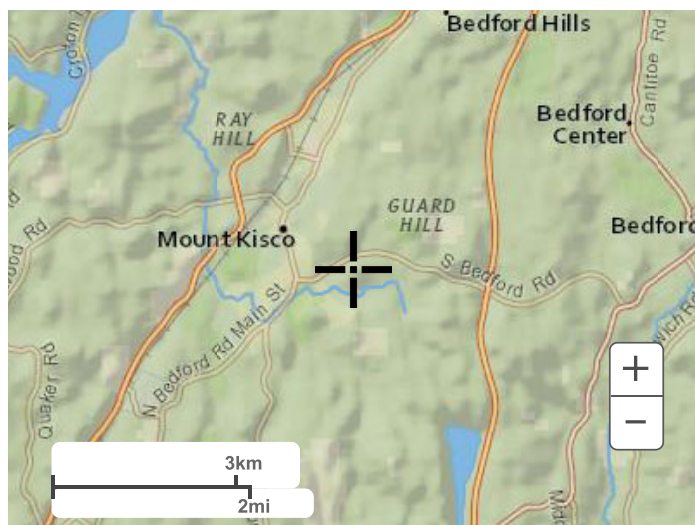
Latitude: 41.1981°, Longitude: -73.7128°



NOAA Atlas 14, Volume 10, Version 3

Created (GMT): Mon Sep 14 16:18:54 2020

[Back to Top](#)**Maps & aerials****Small scale terrain**



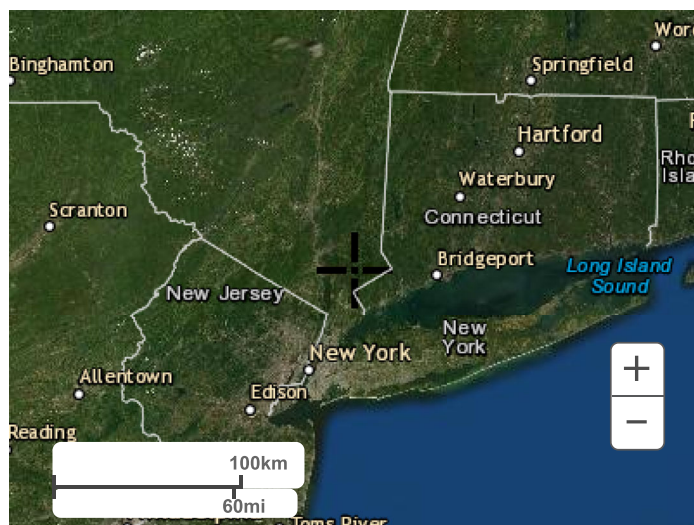
Large scale terrain



Large scale map



Large scale aerial



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[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)

APPENDIX E: NRCS SATURATED HYDRAULIC CONDUCTIVITY


Saturated Hydraulic Conductivity (Ksat)—Westchester County, New York
(Mount Kisco)



Saturated Hydraulic Conductivity (Ksat)—Westchester County, New York
(Mount Kisco)







MAP LEGEND

Area of Interest (AOI)







 Area of Interest (AOI)

Soils







Soil Rating Polygons

-  ≤ 2.1341
-  > 2.1341 and ≤ 13.0322
-  > 13.0322 and ≤ 51.2895
-  > 51.2895 and ≤ 70.7458
-  > 70.7458 and ≤ 84.5000
-  Not rated or not available

Soil Rating Lines

-  ≤ 2.1341
-  > 2.1341 and ≤ 13.0322
-  > 13.0322 and ≤ 51.2895
-  > 51.2895 and ≤ 70.7458
-  > 70.7458 and ≤ 84.5000
-  Not rated or not available






Soil Rating Points

-  ≤ 2.1341
-  > 2.1341 and ≤ 13.0322
-  > 13.0322 and ≤ 51.2895
-  > 51.2895 and ≤ 70.7458
-  > 70.7458 and ≤ 84.5000
-  Not rated or not available


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 1:12,000.

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: Westchester County, New York
Survey Area Data: Version 16, Jun 11, 2020

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

Date(s) aerial images were photographed: Dec 31, 2009—Oct 16, 2017

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.

Saturated Hydraulic Conductivity (Ksat)

Map unit symbol	Map unit name	Rating (micrometers per second)	Acres in AOI	Percent of AOI
ChB	Charlton fine sandy loam, 3 to 8 percent slopes	10.0000	15.5	16.5%
ChC	Charlton fine sandy loam, 8 to 15 percent slopes	10.0000	2.5	2.7%
ChD	Charlton fine sandy loam, 15 to 25 percent slopes	10.0000	0.1	0.1%
CrC	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	12.1818	25.3	27.0%
CsD	Chatfield-Charlton complex, 15 to 35 percent slopes, very rocky	10.1993	30.1	32.2%
CuD	Chatfield-Hollis-Rock outcrop complex, 15 to 35 percent slopes	10.1993	3.2	3.4%
Ff	Fluvaquents-Udfluvents complex, frequently flooded	70.7458	7.7	8.2%
HrF	Hollis-Rock outcrop complex, 35 to 60 percent slopes	13.0322	1.9	2.0%
LcA	Leicester loam, 0 to 3 percent slopes, stony	51.2895	2.5	2.6%
LcB	Leicester loam, 3 to 8 percent slopes, stony	51.2895	1.2	1.2%
RhA	Riverhead loam, 0 to 3 percent slopes	84.5000	0.6	0.6%
Sh	Sun loam	2.1341	1.7	1.8%
SuB	Sutton loam, 3 to 8 percent slopes	10.0000	1.3	1.4%
W	Water		0.3	0.3%
Totals for Area of Interest			93.7	100.0%

Description

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.

Rating Options

Units of Measure: micrometers per second

Aggregation Method: Dominant Component

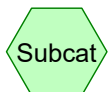
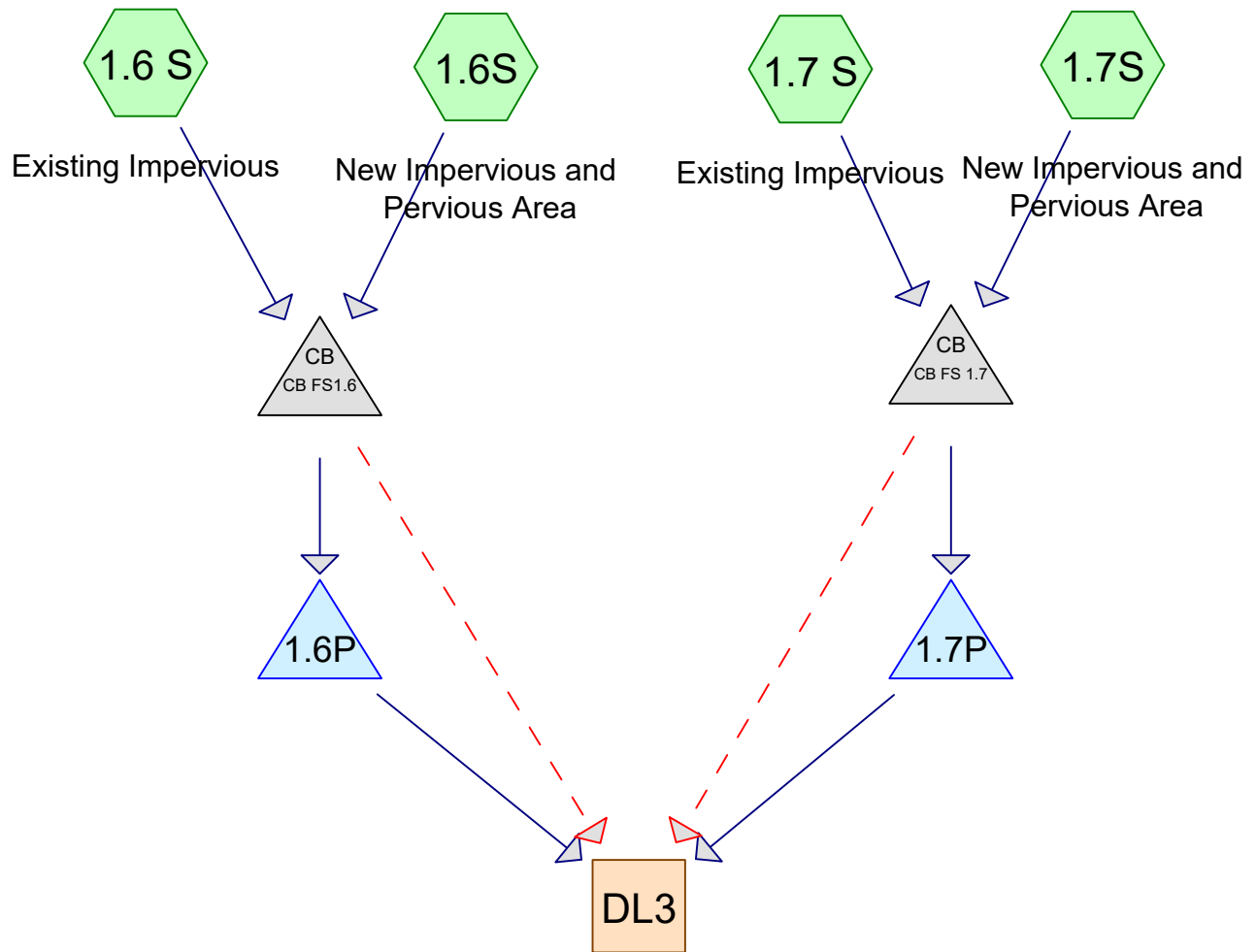
Component Percent Cutoff: None Specified

Tie-break Rule: Fastest

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): All Layers (Weighted Average)

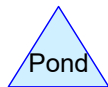
APPENDIX F: PROPOSED DRIVEWAY DRAINAGE HYDROLOGIC COMPUTATION (HYDROCAD)



Subcat



Reach



Pond



Link

Routing Diagram for Mount Kisco - Driveway Drainage
 Prepared by APT ENGINEERING, Printed 1/20/2021
 HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

Mount Kisco - Driveway Drainage

Prepared by APT ENGINEERING

HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

Type III 24-hr 1-yr Rainfall=2.88"

Printed 1/20/2021

Page 2

Summary for Subcatchment 1.6 S: Existing Impervious

Runoff = 0.39 cfs @ 12.10 hrs, Volume= 0.033 af, Depth= 2.65"

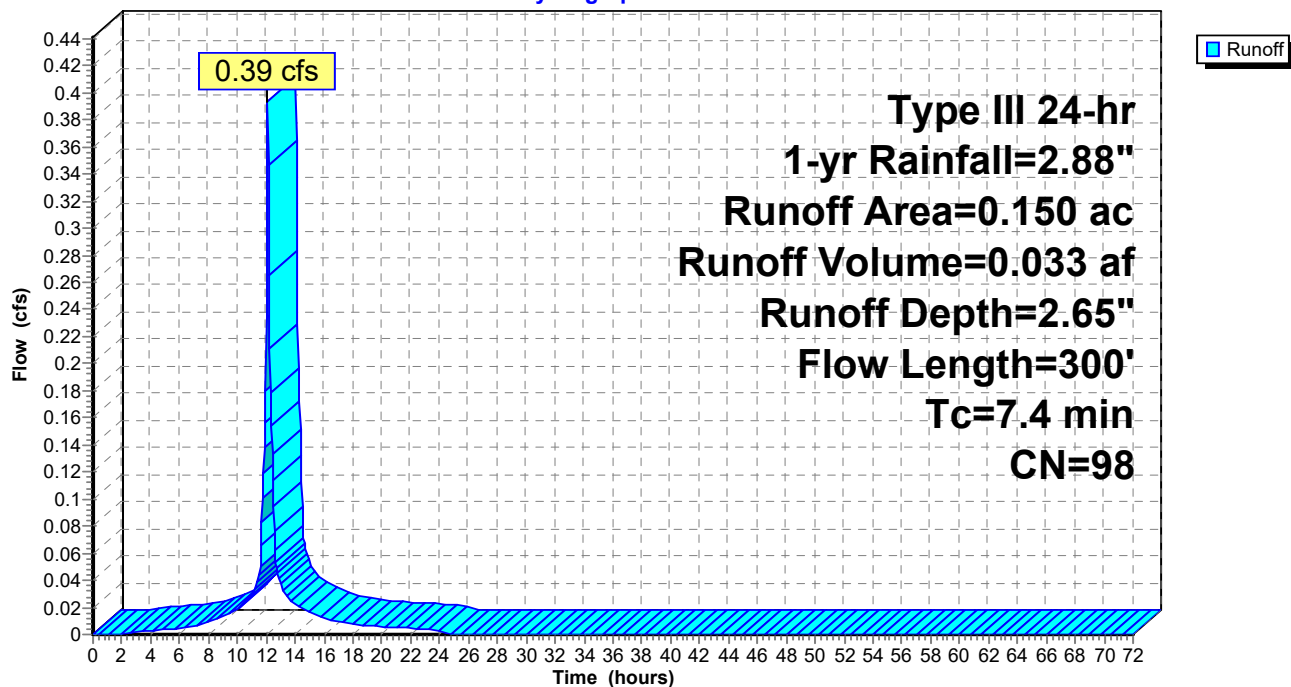
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.88"

Area (ac)	CN	Description
0.150	98	Paved parking, HSG B
0.150		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	50	0.0800	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
0.1	20	0.2000	2.24		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	40	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.3	140	0.2000	6.71		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
0.1	50	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.4	300	Total			

Subcatchment 1.6 S: Existing Impervious

Hydrograph



Mount Kisco - Driveway Drainage

Prepared by APT ENGINEERING

HydroCAD® 10.00-22 s/n 07402 © 2018 HydroCAD Software Solutions LLC

Type III 24-hr 1-yr Rainfall=2.88"

Printed 1/20/2021

Page 3

Summary for Subcatchment 1.6S: New Impervious and Pervious Area

Runoff = 0.11 cfs @ 12.16 hrs, Volume= 0.014 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.88"

Area (ac)	CN	Description
0.050	98	Paved parking, HSG B
0.150	55	Woods, Good, HSG B
0.250	61	>75% Grass cover, Good, HSG B
0.450	63	Weighted Average
0.400		88.89% Pervious Area
0.050		11.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	50	0.0800	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
0.1	20	0.2000	2.24		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	40	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.3	140	0.2000	6.71		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
0.1	50	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.4	300	Total			

Mount Kisco - Driveway Drainage

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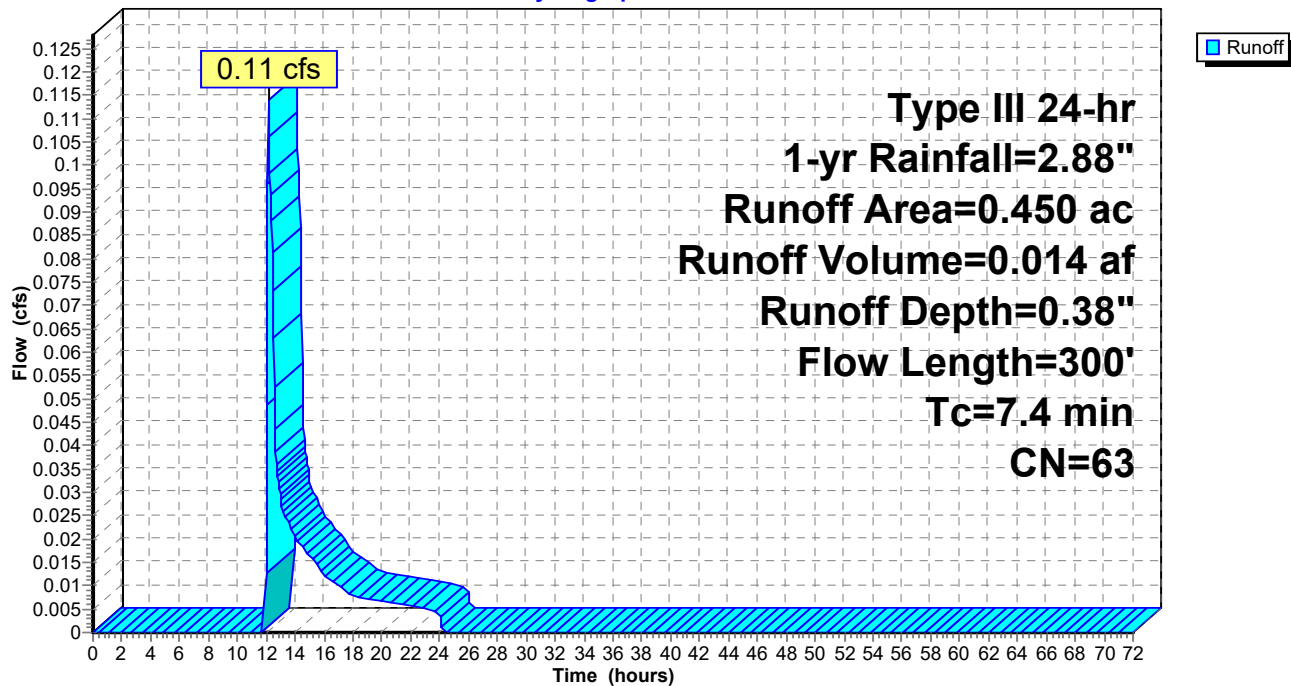
Type III 24-hr 1-yr Rainfall=2.88"

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Subcatchment 1.6S: New Impervious and Pervious Area

Hydrograph



Mount Kisco - Driveway Drainage

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Summary for Subcatchment 1.7 S: Existing Impervious

Runoff = 0.13 cfs @ 12.10 hrs, Volume= 0.011 af, Depth= 2.65"

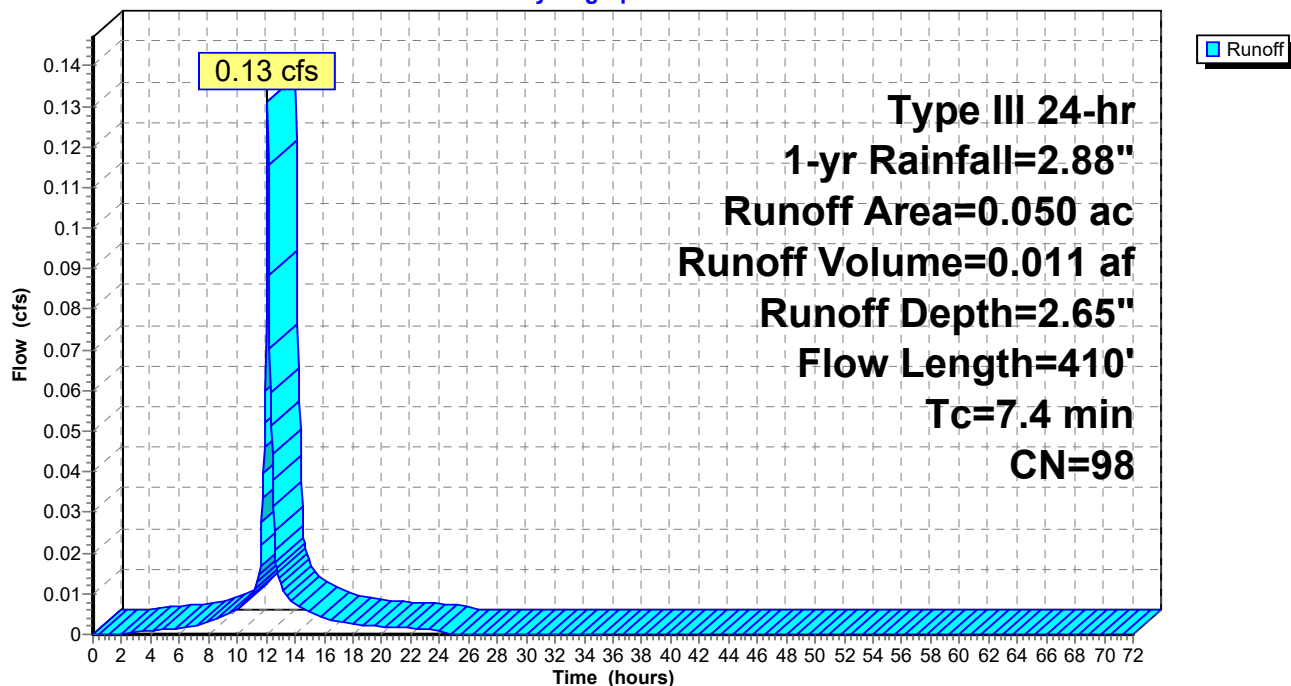
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.88"

Area (ac)	CN	Description
0.050	98	Paved parking, HSG B
0.050		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	45	0.1000	0.13		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.0	140	0.2200	2.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.7	225	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.4	410	Total			

Subcatchment 1.7 S: Existing Impervious

Hydrograph



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Summary for Subcatchment 1.7S: New Impervious and Pervious Area

Runoff = 0.12 cfs @ 12.15 hrs, Volume= 0.013 af, Depth= 0.45"

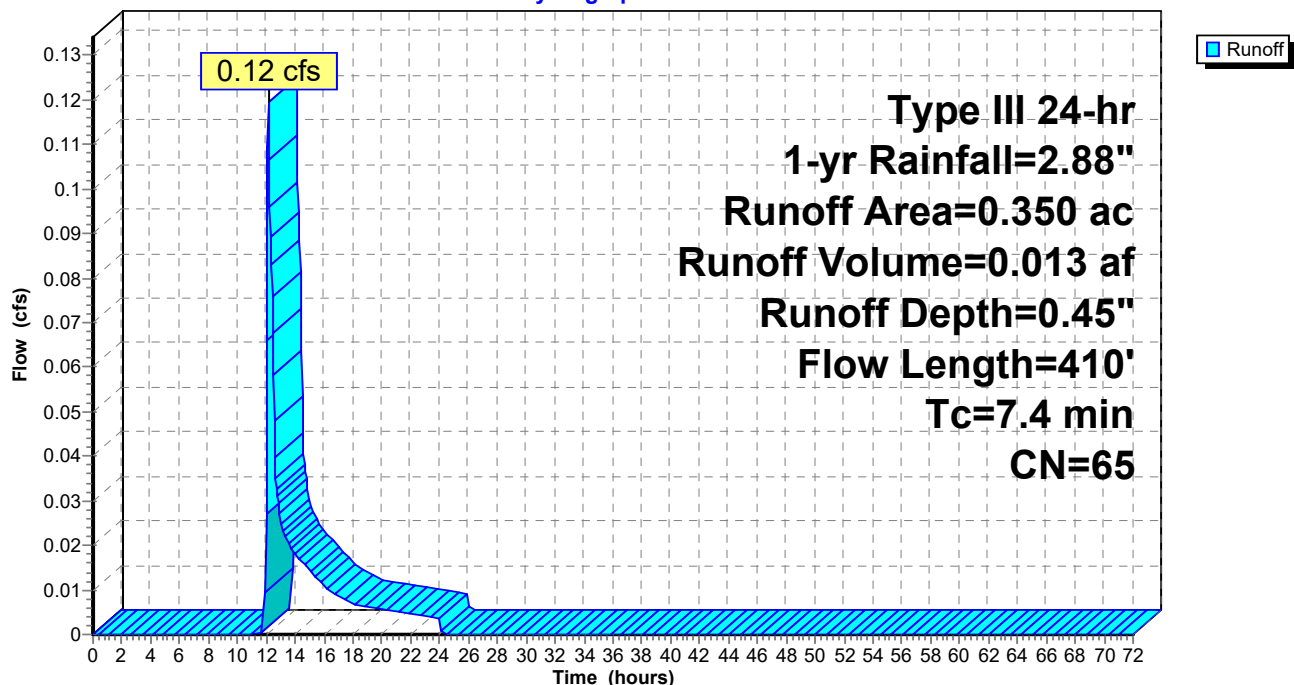
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-yr Rainfall=2.88"

Area (ac)	CN	Description
0.050	98	Paved parking, HSG B
0.150	61	>75% Grass cover, Good, HSG B
0.150	58	Meadow, non-grazed, HSG B
0.350	65	Weighted Average
0.300		85.71% Pervious Area
0.050		14.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	45	0.1000	0.13		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.0	140	0.2200	2.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.7	225	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.4	410	Total			

Subcatchment 1.7S: New Impervious and Pervious Area

Hydrograph



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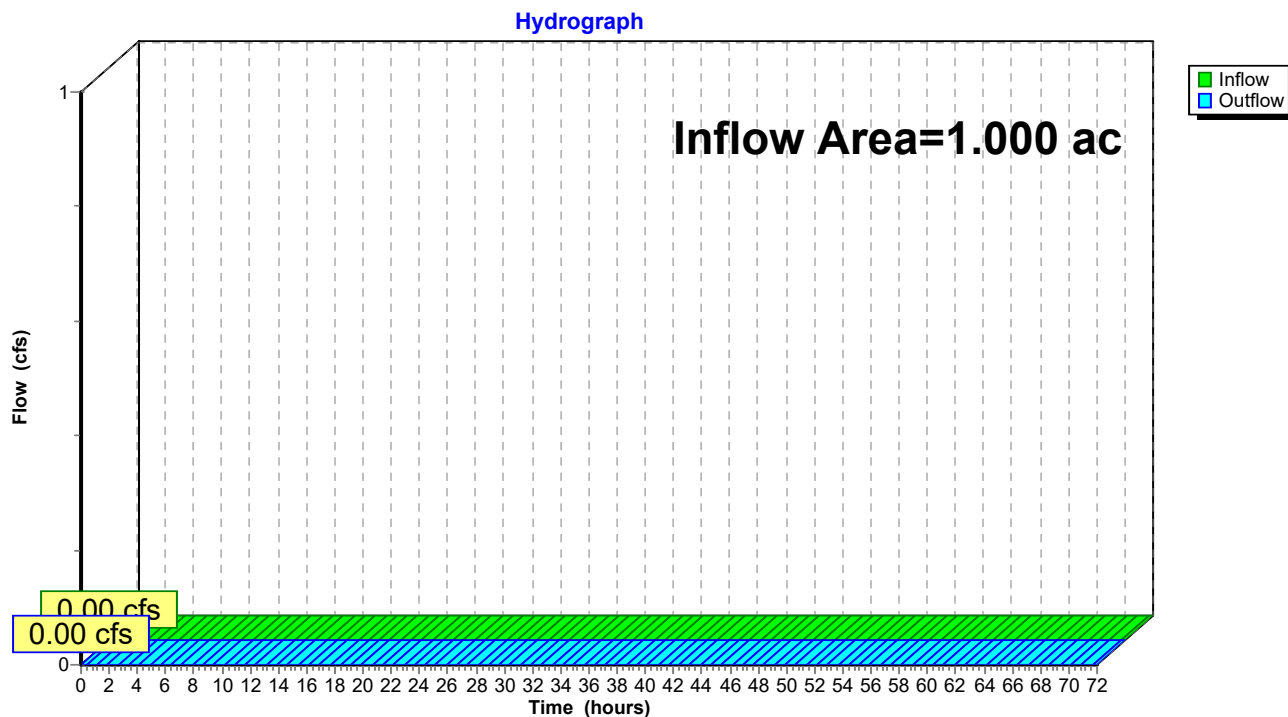
Summary for Reach DL3:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.000 ac, 30.00% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach DL3:



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Summary for Pond 1.6P:

Inflow Area = 0.600 ac, 33.33% Impervious, Inflow Depth = 0.95" for 1-yr event
Inflow = 0.50 cfs @ 12.11 hrs, Volume= 0.048 af
Outflow = 0.31 cfs @ 12.05 hrs, Volume= 0.048 af, Atten= 38%, Lag= 0.0 min
Discarded = 0.31 cfs @ 12.05 hrs, Volume= 0.048 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 418.22' @ 12.26 hrs Surf.Area= 0.013 ac Storage= 0.002 af

Plug-Flow detention time= 1.4 min calculated for 0.047 af (100% of inflow)
Center-of-Mass det. time= 1.4 min (809.5 - 808.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	417.80'	0.013 af	11.00'W x 52.29'L x 3.50'H Field A 0.046 af Overall - 0.015 af Embedded = 0.031 af x 40.0% Voids
#2A	418.30'	0.015 af	ADS_StormTech SC-740 +Cap x 14 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 2 Rows of 7 Chambers
		0.027 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	417.80'	23.000 in/hr Exfiltration over Horizontal area Phase-In= 0.05'
#2	Primary	420.30'	6.0" Round 6.0" Round Culvert L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 420.30' / 419.80' S= 0.0100 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.31 cfs @ 12.05 hrs HW=417.88' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.31 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=417.80' (Free Discharge)
↑**2=6.0" Round Culvert** (Controls 0.00 cfs)

Mount Kisco - Driveway Drainage

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Type III 24-hr 1-yr Rainfall=2.88"

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Pond 1.6P: - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

7 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 51.46' Row Length +5.0" End Stone x 2 = 52.29' Base Length

2 Rows x 51.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.00' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

14 Chambers x 45.9 cf = 643.2 cf Chamber Storage

2,013.2 cf Field - 643.2 cf Chambers = 1,370.0 cf Stone x 40.0% Voids = 548.0 cf Stone Storage

Chamber Storage + Stone Storage = 1,191.2 cf = 0.027 af

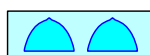
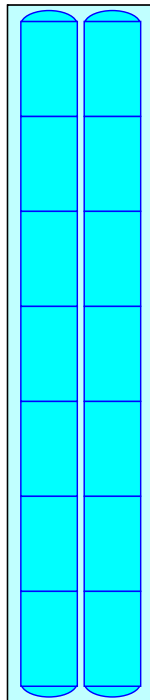
Overall Storage Efficiency = 59.2%

Overall System Size = 52.29' x 11.00' x 3.50'

14 Chambers

74.6 cy Field

50.7 cy Stone



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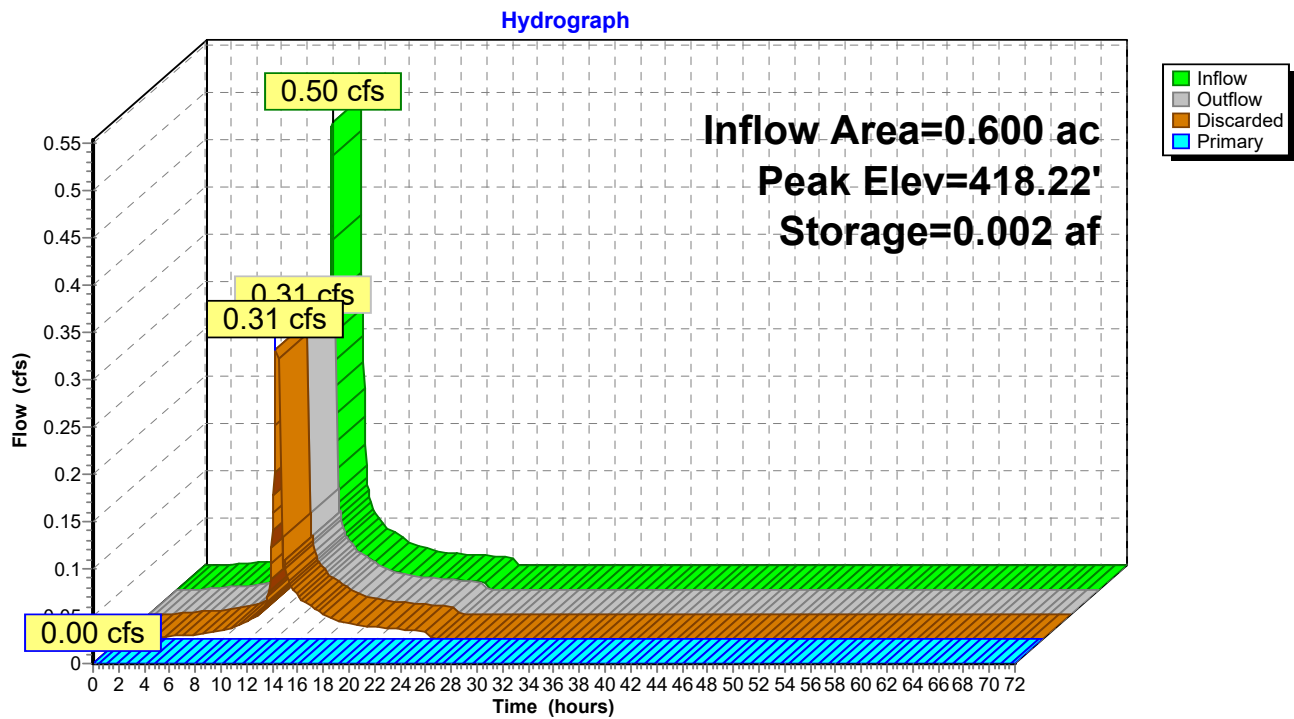
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Type III 24-hr 1-yr Rainfall=2.88"

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Pond 1.6P:



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Stage-Area-Storage for Pond 1.6P:

Elevation (feet)	Horizontal (acres)	Storage (acre-feet)	Elevation (feet)	Horizontal (acres)	Storage (acre-feet)
417.80	0.013	0.000	420.45	0.013	0.023
417.85	0.013	0.000	420.50	0.013	0.023
417.90	0.013	0.001	420.55	0.013	0.023
417.95	0.013	0.001	420.60	0.013	0.024
418.00	0.013	0.001	420.65	0.013	0.024
418.05	0.013	0.001	420.70	0.013	0.024
418.10	0.013	0.002	420.75	0.013	0.024
418.15	0.013	0.002	420.80	0.013	0.025
418.20	0.013	0.002	420.85	0.013	0.025
418.25	0.013	0.002	420.90	0.013	0.025
418.30	0.013	0.003	420.95	0.013	0.025
418.35	0.013	0.003	421.00	0.013	0.026
418.40	0.013	0.004	421.05	0.013	0.026
418.45	0.013	0.004	421.10	0.013	0.026
418.50	0.013	0.005	421.15	0.013	0.027
418.55	0.013	0.005	421.20	0.013	0.027
418.60	0.013	0.006	421.25	0.013	0.027
418.65	0.013	0.006	421.30	0.013	0.027
418.70	0.013	0.007			
418.75	0.013	0.007			
418.80	0.013	0.008			
418.85	0.013	0.008			
418.90	0.013	0.009			
418.95	0.013	0.009			
419.00	0.013	0.010			
419.05	0.013	0.010			
419.10	0.013	0.011			
419.15	0.013	0.011			
419.20	0.013	0.012			
419.25	0.013	0.012			
419.30	0.013	0.013			
419.35	0.013	0.013			
419.40	0.013	0.014			
419.45	0.013	0.014			
419.50	0.013	0.015			
419.55	0.013	0.015			
419.60	0.013	0.016			
419.65	0.013	0.016			
419.70	0.013	0.016			
419.75	0.013	0.017			
419.80	0.013	0.017			
419.85	0.013	0.018			
419.90	0.013	0.018			
419.95	0.013	0.019			
420.00	0.013	0.019			
420.05	0.013	0.020			
420.10	0.013	0.020			
420.15	0.013	0.020			
420.20	0.013	0.021			
420.25	0.013	0.021			
420.30	0.013	0.022			
420.35	0.013	0.022			
420.40	0.013	0.022			

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Summary for Pond 1.7P:

Inflow Area = 0.400 ac, 25.00% Impervious, Inflow Depth = 0.73" for 1-yr event
Inflow = 0.25 cfs @ 12.12 hrs, Volume= 0.024 af
Outflow = 0.05 cfs @ 11.95 hrs, Volume= 0.024 af, Atten= 80%, Lag= 0.0 min
Discarded = 0.05 cfs @ 11.95 hrs, Volume= 0.024 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 396.07' @ 12.72 hrs Surf.Area= 0.010 ac Storage= 0.005 af

Plug-Flow detention time= 31.1 min calculated for 0.024 af (100% of inflow)
Center-of-Mass det. time= 31.1 min (871.7 - 840.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	395.10'	0.009 af	11.00'W x 38.05'L x 3.50'H Field A 0.034 af Overall - 0.011 af Embedded = 0.023 af x 40.0% Voids
#2A	395.60'	0.011 af	ADS_StormTech SC-740 +Cap x 10 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 2 Rows of 5 Chambers
		0.020 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	395.10'	5.000 in/hr Exfiltration over Horizontal area Phase-In= 0.05'
#2	Primary	397.60'	6.0" Round 6.0" Round Culvert L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 397.60' / 397.10' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.05 cfs @ 11.95 hrs HW=395.17' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=395.10' (Free Discharge)
↑**2=6.0" Round Culvert** (Controls 0.00 cfs)

Mount Kisco - Driveway Drainage

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Pond 1.7P: - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

5 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 37.22' Row Length +5.0" End Stone x 2 = 38.05' Base Length

2 Rows x 51.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.00' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

10 Chambers x 45.9 cf = 459.4 cf Chamber Storage

1,464.9 cf Field - 459.4 cf Chambers = 1,005.5 cf Stone x 40.0% Voids = 402.2 cf Stone Storage

Chamber Storage + Stone Storage = 861.6 cf = 0.020 af

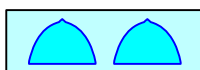
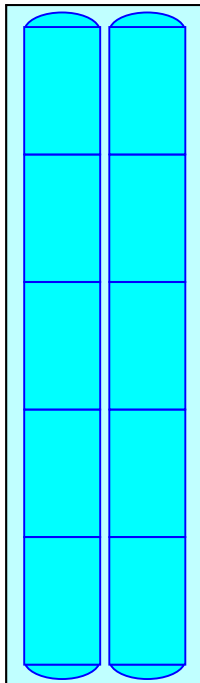
Overall Storage Efficiency = 58.8%

Overall System Size = 38.05' x 11.00' x 3.50'

10 Chambers

54.3 cy Field

37.2 cy Stone



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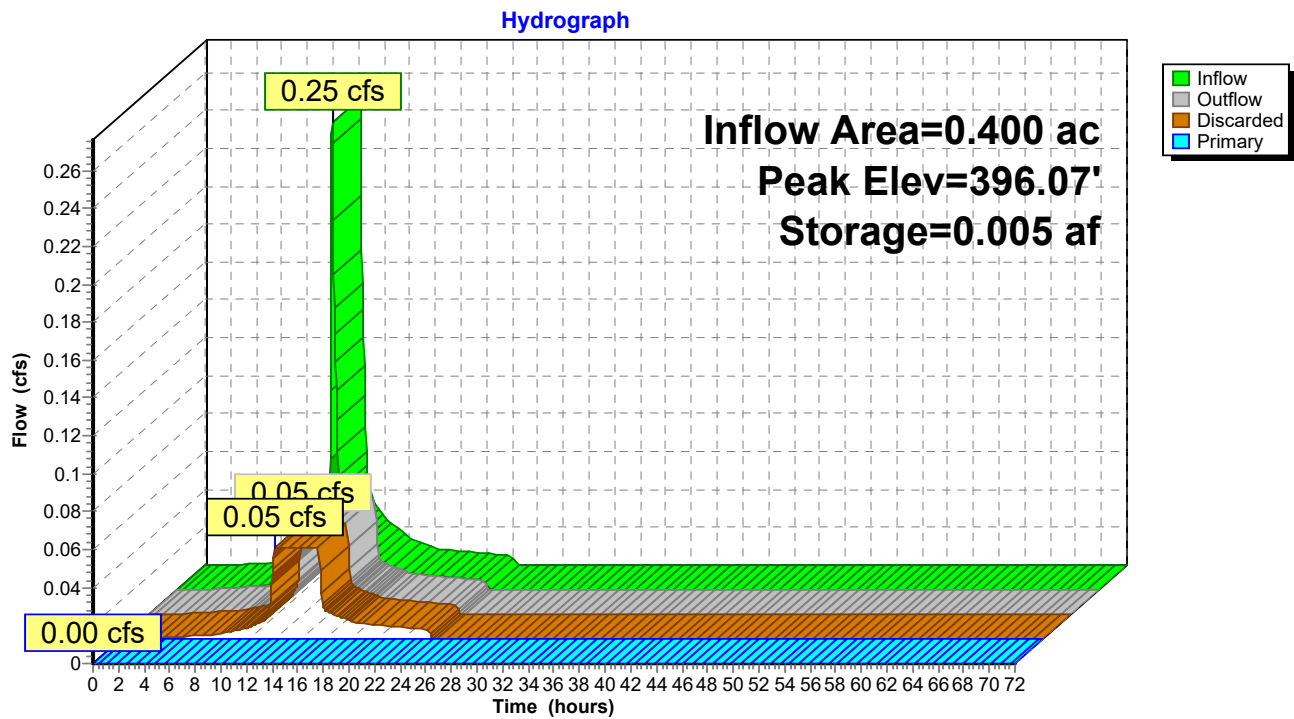
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Pond 1.7P:



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Stage-Area-Storage for Pond 1.7P:

Elevation (feet)	Horizontal (acres)	Storage (acre-feet)	Elevation (feet)	Horizontal (acres)	Storage (acre-feet)
395.10	0.010	0.000	397.75	0.010	0.016
395.15	0.010	0.000	397.80	0.010	0.017
395.20	0.010	0.000	397.85	0.010	0.017
395.25	0.010	0.001	397.90	0.010	0.017
395.30	0.010	0.001	397.95	0.010	0.017
395.35	0.010	0.001	398.00	0.010	0.017
395.40	0.010	0.001	398.05	0.010	0.018
395.45	0.010	0.001	398.10	0.010	0.018
395.50	0.010	0.002	398.15	0.010	0.018
395.55	0.010	0.002	398.20	0.010	0.018
395.60	0.010	0.002	398.25	0.010	0.018
395.65	0.010	0.002	398.30	0.010	0.019
395.70	0.010	0.003	398.35	0.010	0.019
395.75	0.010	0.003	398.40	0.010	0.019
395.80	0.010	0.003	398.45	0.010	0.019
395.85	0.010	0.004	398.50	0.010	0.019
395.90	0.010	0.004	398.55	0.010	0.020
395.95	0.010	0.005	398.60	0.010	0.020
396.00	0.010	0.005			
396.05	0.010	0.005			
396.10	0.010	0.006			
396.15	0.010	0.006			
396.20	0.010	0.006			
396.25	0.010	0.007			
396.30	0.010	0.007			
396.35	0.010	0.007			
396.40	0.010	0.008			
396.45	0.010	0.008			
396.50	0.010	0.008			
396.55	0.010	0.009			
396.60	0.010	0.009			
396.65	0.010	0.010			
396.70	0.010	0.010			
396.75	0.010	0.010			
396.80	0.010	0.011			
396.85	0.010	0.011			
396.90	0.010	0.011			
396.95	0.010	0.012			
397.00	0.010	0.012			
397.05	0.010	0.012			
397.10	0.010	0.013			
397.15	0.010	0.013			
397.20	0.010	0.013			
397.25	0.010	0.013			
397.30	0.010	0.014			
397.35	0.010	0.014			
397.40	0.010	0.014			
397.45	0.010	0.015			
397.50	0.010	0.015			
397.55	0.010	0.015			
397.60	0.010	0.016			
397.65	0.010	0.016			
397.70	0.010	0.016			

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Summary for Pond CB FS 1.7:

[57] Hint: Peaked at 398.31' (Flood elevation advised)

Inflow Area = 0.400 ac, 25.00% Impervious, Inflow Depth = 0.73" for 1-yr event
 Inflow = 0.25 cfs @ 12.12 hrs, Volume= 0.024 af
 Outflow = 0.25 cfs @ 12.12 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.25 cfs @ 12.12 hrs, Volume= 0.024 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 398.31' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	398.00'	6.0" Round 6.0" Round Culvert L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 398.00' / 397.80' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Secondary	397.50'	12.0" Round Culvert L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 397.50' / 397.00' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	398.40'	2.5' 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

Primary OutFlow Max=0.24 cfs @ 12.12 hrs HW=398.31' (Free Discharge)

↑1=6.0" Round Culvert (Inlet Controls 0.24 cfs @ 1.89 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=397.50' (Free Discharge)

↑2=Culvert (Controls 0.00 cfs)

↑3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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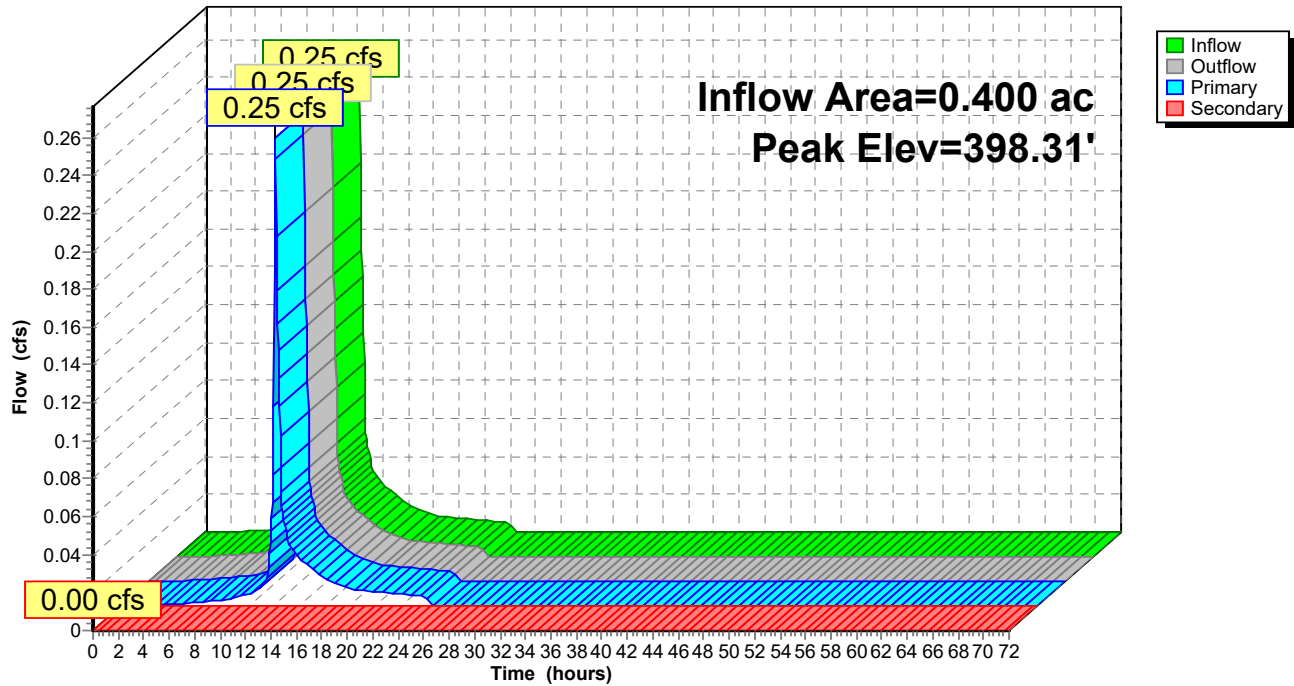
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Pond CB FS 1.7:

Hydrograph



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Stage-Area-Storage for Pond CB FS 1.7:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
397.50	0	398.03	0
397.51	0	398.04	0
397.52	0	398.05	0
397.53	0	398.06	0
397.54	0	398.07	0
397.55	0	398.08	0
397.56	0	398.09	0
397.57	0	398.10	0
397.58	0	398.11	0
397.59	0	398.12	0
397.60	0	398.13	0
397.61	0	398.14	0
397.62	0	398.15	0
397.63	0	398.16	0
397.64	0	398.17	0
397.65	0	398.18	0
397.66	0	398.19	0
397.67	0	398.20	0
397.68	0	398.21	0
397.69	0	398.22	0
397.70	0	398.23	0
397.71	0	398.24	0
397.72	0	398.25	0
397.73	0	398.26	0
397.74	0	398.27	0
397.75	0	398.28	0
397.76	0	398.29	0
397.77	0	398.30	0
397.78	0	398.31	0
397.79	0	398.32	0
397.80	0	398.33	0
397.81	0	398.34	0
397.82	0	398.35	0
397.83	0	398.36	0
397.84	0	398.37	0
397.85	0	398.38	0
397.86	0	398.39	0
397.87	0	398.40	0
397.88	0	398.41	0
397.89	0	398.42	0
397.90	0	398.43	0
397.91	0	398.44	0
397.92	0	398.45	0
397.93	0	398.46	0
397.94	0	398.47	0
397.95	0	398.48	0
397.96	0	398.49	0
397.97	0	398.50	0
397.98	0		
397.99	0		
398.00	0		
398.01	0		
398.02	0		

Mount Kisco - Driveway Drainage

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Type III 24-hr 1-yr Rainfall=2.88"

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Summary for Pond CB FS1.6:

[57] Hint: Peaked at 421.20' (Flood elevation advised)

Inflow Area = 0.600 ac, 33.33% Impervious, Inflow Depth = 0.95" for 1-yr event
Inflow = 0.50 cfs @ 12.11 hrs, Volume= 0.048 af
Outflow = 0.50 cfs @ 12.11 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.0 min
Primary = 0.50 cfs @ 12.11 hrs, Volume= 0.048 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 421.20' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	420.50'	6.0" Round 6.0" Culvert L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 420.50' / 420.40' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Secondary	420.00'	12.0" Round Culvert L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 420.00' / 419.00' S= 0.0400 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	421.20'	4.0' 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

Primary OutFlow Max=0.47 cfs @ 12.11 hrs HW=421.17' (Free Discharge)

↑**1=6.0" Culvert** (Barrel Controls 0.47 cfs @ 2.40 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=420.00' (Free Discharge)

↑**2=Culvert** (Controls 0.00 cfs)

↑**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Mount Kisco - Driveway Drainage

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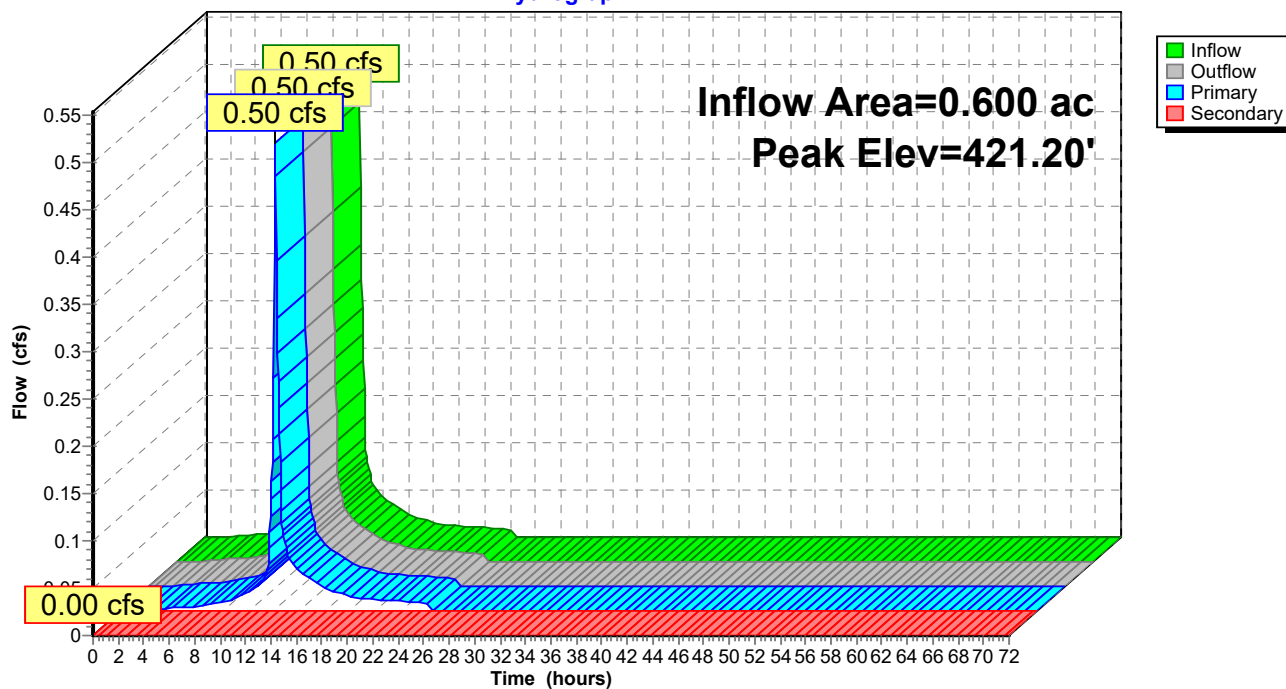
Type III 24-hr 1-yr Rainfall=2.88"

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Pond CB FS1.6:

Hydrograph



Mount Kisco - Driveway Drainage

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Type III 24-hr 1-yr Rainfall=2.88"

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Stage-Area-Storage for Pond CB FS1.6:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
420.00	0	420.53	0	421.06	0
420.01	0	420.54	0	421.07	0
420.02	0	420.55	0	421.08	0
420.03	0	420.56	0	421.09	0
420.04	0	420.57	0	421.10	0
420.05	0	420.58	0	421.11	0
420.06	0	420.59	0	421.12	0
420.07	0	420.60	0	421.13	0
420.08	0	420.61	0	421.14	0
420.09	0	420.62	0	421.15	0
420.10	0	420.63	0	421.16	0
420.11	0	420.64	0	421.17	0
420.12	0	420.65	0	421.18	0
420.13	0	420.66	0	421.19	0
420.14	0	420.67	0	421.20	0
420.15	0	420.68	0		
420.16	0	420.69	0		
420.17	0	420.70	0		
420.18	0	420.71	0		
420.19	0	420.72	0		
420.20	0	420.73	0		
420.21	0	420.74	0		
420.22	0	420.75	0		
420.23	0	420.76	0		
420.24	0	420.77	0		
420.25	0	420.78	0		
420.26	0	420.79	0		
420.27	0	420.80	0		
420.28	0	420.81	0		
420.29	0	420.82	0		
420.30	0	420.83	0		
420.31	0	420.84	0		
420.32	0	420.85	0		
420.33	0	420.86	0		
420.34	0	420.87	0		
420.35	0	420.88	0		
420.36	0	420.89	0		
420.37	0	420.90	0		
420.38	0	420.91	0		
420.39	0	420.92	0		
420.40	0	420.93	0		
420.41	0	420.94	0		
420.42	0	420.95	0		
420.43	0	420.96	0		
420.44	0	420.97	0		
420.45	0	420.98	0		
420.46	0	420.99	0		
420.47	0	421.00	0		
420.48	0	421.01	0		
420.49	0	421.02	0		
420.50	0	421.03	0		
420.51	0	421.04	0		
420.52	0	421.05	0		

Mount Kisco - Driveway Drainage

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Type III 24-hr 10-yr Rainfall=5.13"

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Summary for Subcatchment 1.6 S: Existing Impervious

Runoff = 0.71 cfs @ 12.10 hrs, Volume= 0.061 af, Depth= 4.89"

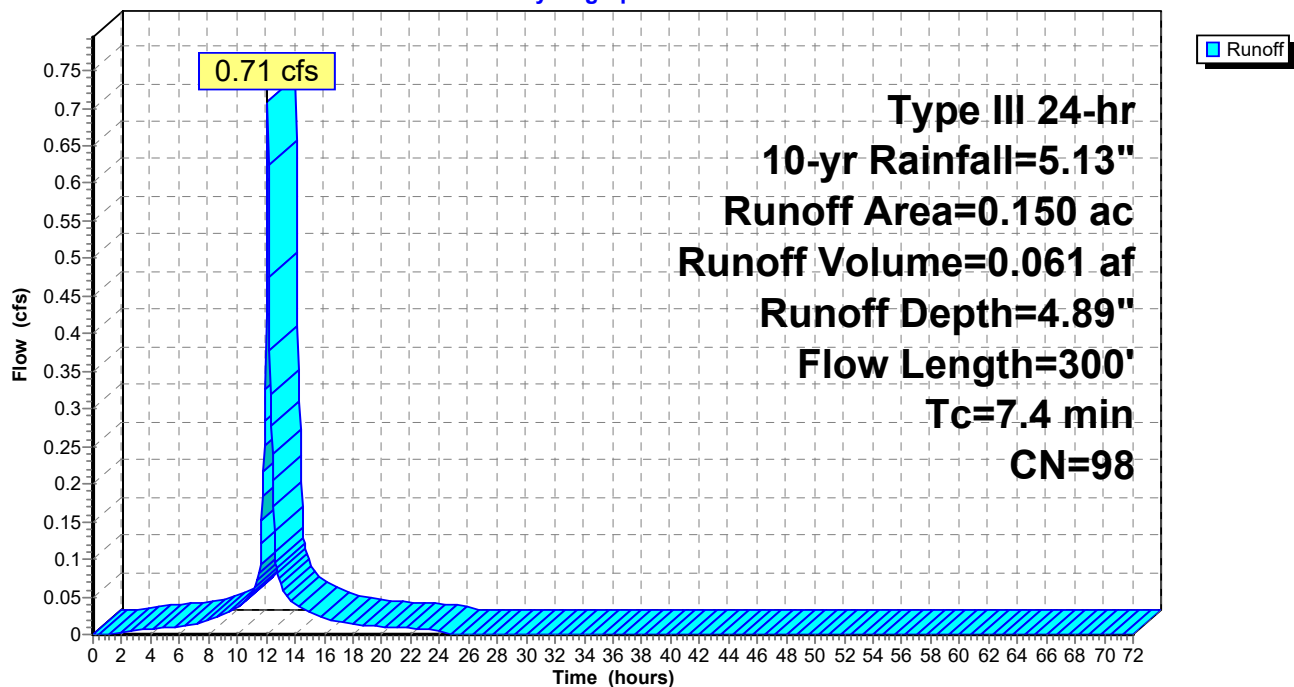
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.13"

Area (ac)	CN	Description
0.150	98	Paved parking, HSG B
0.150		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	50	0.0800	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
0.1	20	0.2000	2.24		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	40	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.3	140	0.2000	6.71		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
0.1	50	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.4	300	Total			

Subcatchment 1.6 S: Existing Impervious

Hydrograph



Mount Kisco - Driveway Drainage

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Type III 24-hr 10-yr Rainfall=5.13"

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Summary for Subcatchment 1.6S: New Impervious and Pervious Area

Runoff = 0.74 cfs @ 12.12 hrs, Volume= 0.060 af, Depth= 1.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.13"

Area (ac)	CN	Description
0.050	98	Paved parking, HSG B
0.150	55	Woods, Good, HSG B
0.250	61	>75% Grass cover, Good, HSG B
0.450	63	Weighted Average
0.400		88.89% Pervious Area
0.050		11.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	50	0.0800	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
0.1	20	0.2000	2.24		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	40	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.3	140	0.2000	6.71		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
0.1	50	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.4	300	Total			

Mount Kisco - Driveway Drainage

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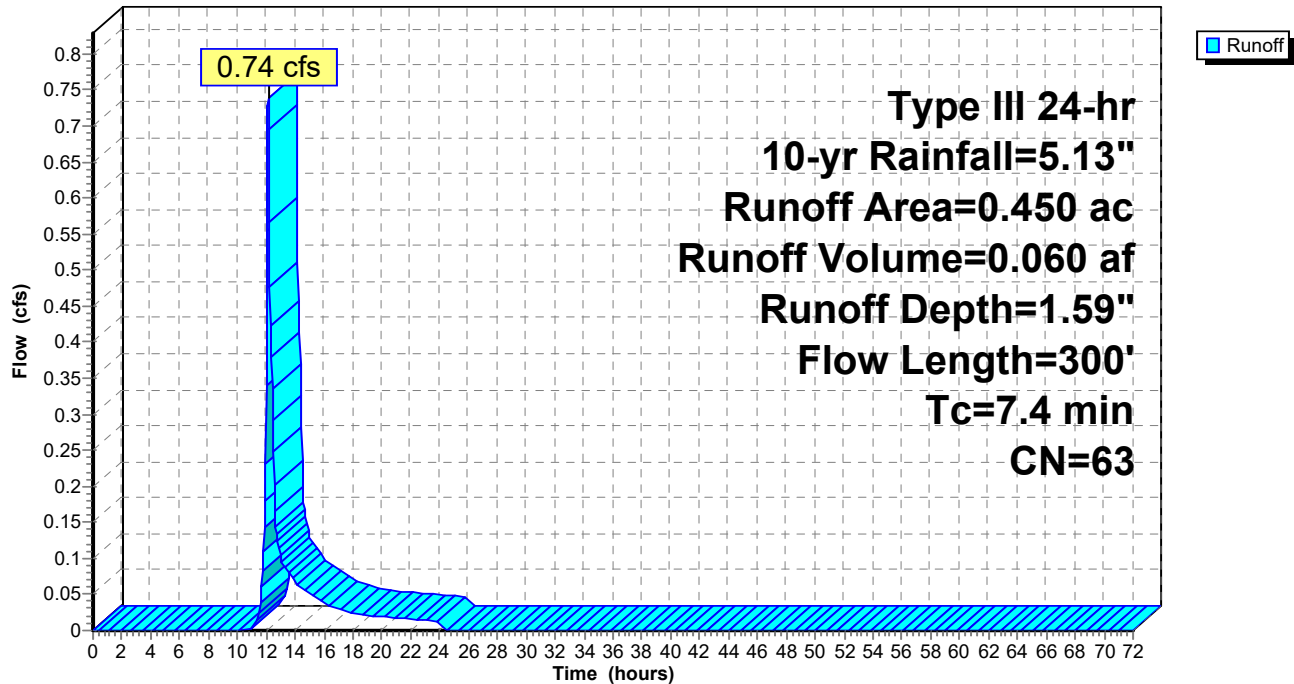
Type III 24-hr 10-yr Rainfall=5.13"

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Subcatchment 1.6S: New Impervious and Pervious Area

Hydrograph



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Type III 24-hr 10-yr Rainfall=5.13"

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Summary for Subcatchment 1.7 S: Existing Impervious

Runoff = 0.24 cfs @ 12.10 hrs, Volume= 0.020 af, Depth= 4.89"

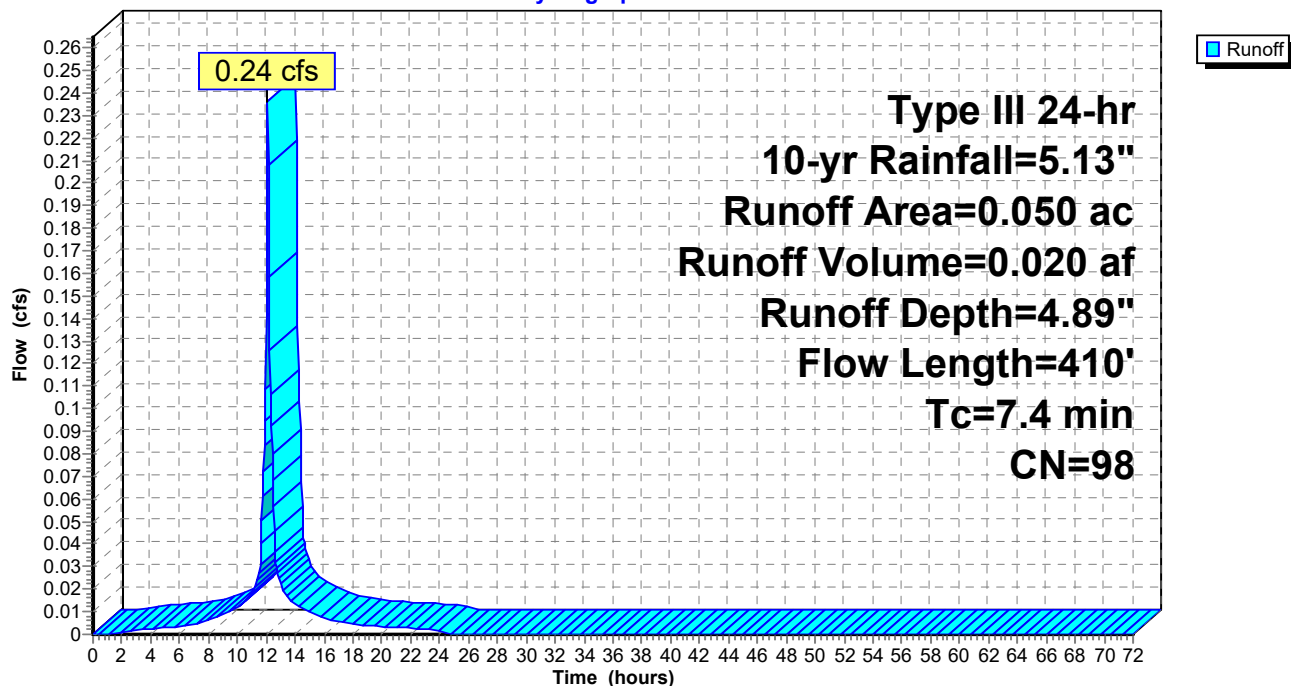
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.13"

Area (ac)	CN	Description
0.050	98	Paved parking, HSG B
0.050		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	45	0.1000	0.13		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.0	140	0.2200	2.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.7	225	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.4	410	Total			

Subcatchment 1.7 S: Existing Impervious

Hydrograph



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Summary for Subcatchment 1.7S: New Impervious and Pervious Area

Runoff = 0.64 cfs @ 12.12 hrs, Volume= 0.051 af, Depth= 1.74"

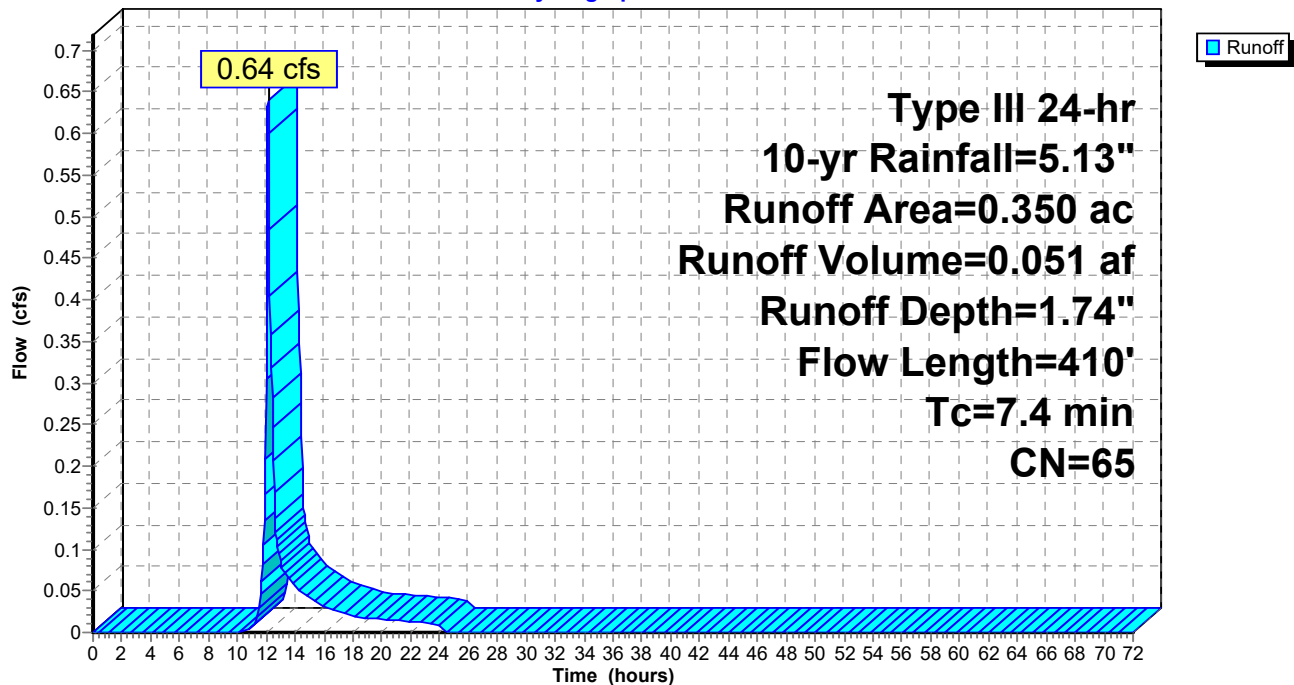
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.13"

Area (ac)	CN	Description
0.050	98	Paved parking, HSG B
0.150	61	>75% Grass cover, Good, HSG B
0.150	58	Meadow, non-grazed, HSG B
0.350	65	Weighted Average
0.300		85.71% Pervious Area
0.050		14.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	45	0.1000	0.13		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.0	140	0.2200	2.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.7	225	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.4	410	Total			

Subcatchment 1.7S: New Impervious and Pervious Area

Hydrograph



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Type III 24-hr 10-yr Rainfall=5.13"

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Summary for Reach DL3:

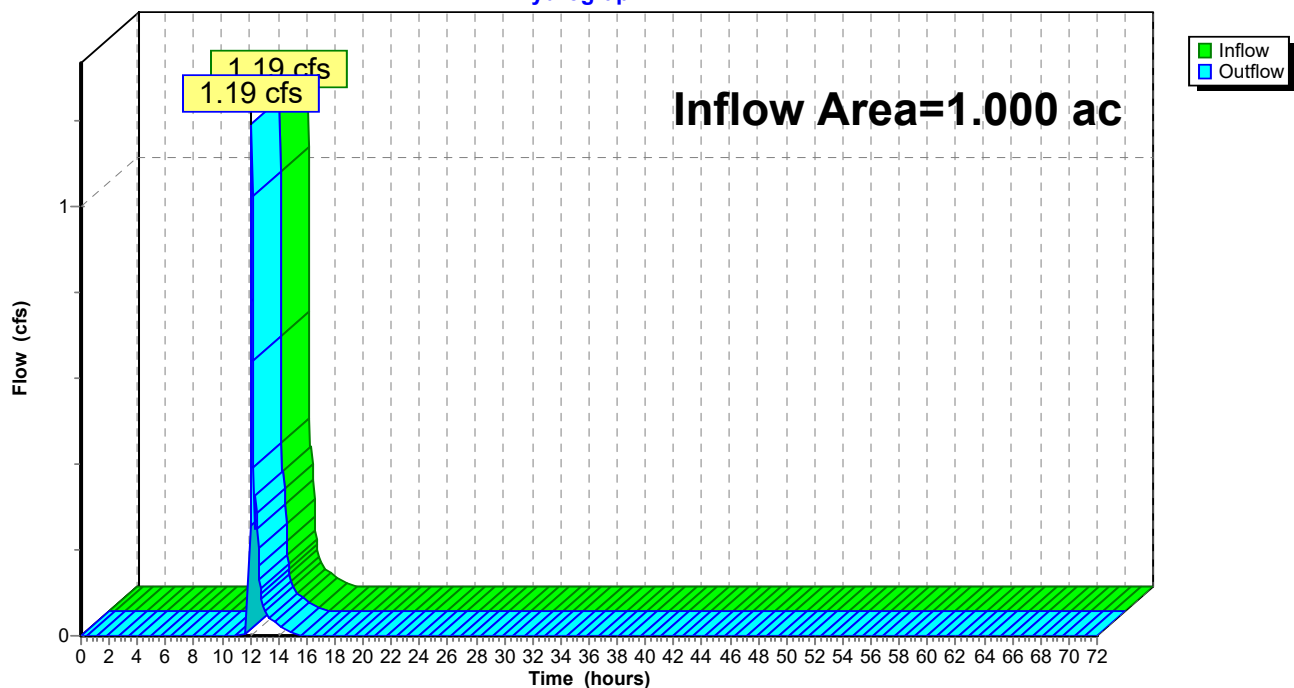
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.000 ac, 30.00% Impervious, Inflow Depth = 0.39" for 10-yr event
Inflow = 1.19 cfs @ 12.11 hrs, Volume= 0.033 af
Outflow = 1.19 cfs @ 12.11 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach DL3:

Hydrograph



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Type III 24-hr 10-yr Rainfall=5.13"

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Summary for Pond 1.6P:

Inflow Area = 0.600 ac, 33.33% Impervious, Inflow Depth = 2.13" for 10-yr event
 Inflow = 0.62 cfs @ 12.11 hrs, Volume= 0.106 af
 Outflow = 0.31 cfs @ 11.85 hrs, Volume= 0.106 af, Atten= 51%, Lag= 0.0 min
 Discarded = 0.31 cfs @ 11.85 hrs, Volume= 0.106 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 419.36' @ 12.58 hrs Surf.Area= 0.013 ac Storage= 0.013 af

Plug-Flow detention time= 8.3 min calculated for 0.106 af (100% of inflow)
 Center-of-Mass det. time= 8.3 min (825.7 - 817.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	417.80'	0.013 af	11.00'W x 52.29'L x 3.50'H Field A 0.046 af Overall - 0.015 af Embedded = 0.031 af x 40.0% Voids
#2A	418.30'	0.015 af	ADS_StormTech SC-740 +Cap x 14 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 2 Rows of 7 Chambers
		0.027 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	417.80'	23.000 in/hr Exfiltration over Horizontal area Phase-In= 0.05'
#2	Primary	420.30'	6.0" Round 6.0" Round Culvert L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 420.30' / 419.80' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.31 cfs @ 11.85 hrs HW=417.91' (Free Discharge)
 ↑**1=Exfiltration** (Exfiltration Controls 0.31 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=417.80' (Free Discharge)
 ↑**2=6.0" Round Culvert** (Controls 0.00 cfs)

Mount Kisco - Driveway Drainage

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Type III 24-hr 10-yr Rainfall=5.13"

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Pond 1.6P: - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

7 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 51.46' Row Length +5.0" End Stone x 2 = 52.29' Base Length

2 Rows x 51.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.00' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

14 Chambers x 45.9 cf = 643.2 cf Chamber Storage

2,013.2 cf Field - 643.2 cf Chambers = 1,370.0 cf Stone x 40.0% Voids = 548.0 cf Stone Storage

Chamber Storage + Stone Storage = 1,191.2 cf = 0.027 af

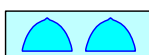
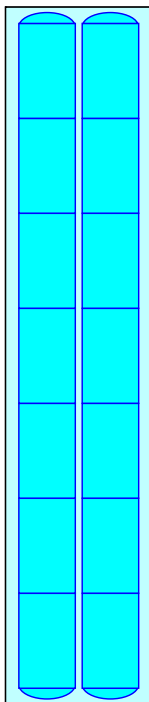
Overall Storage Efficiency = 59.2%

Overall System Size = 52.29' x 11.00' x 3.50'

14 Chambers

74.6 cy Field

50.7 cy Stone



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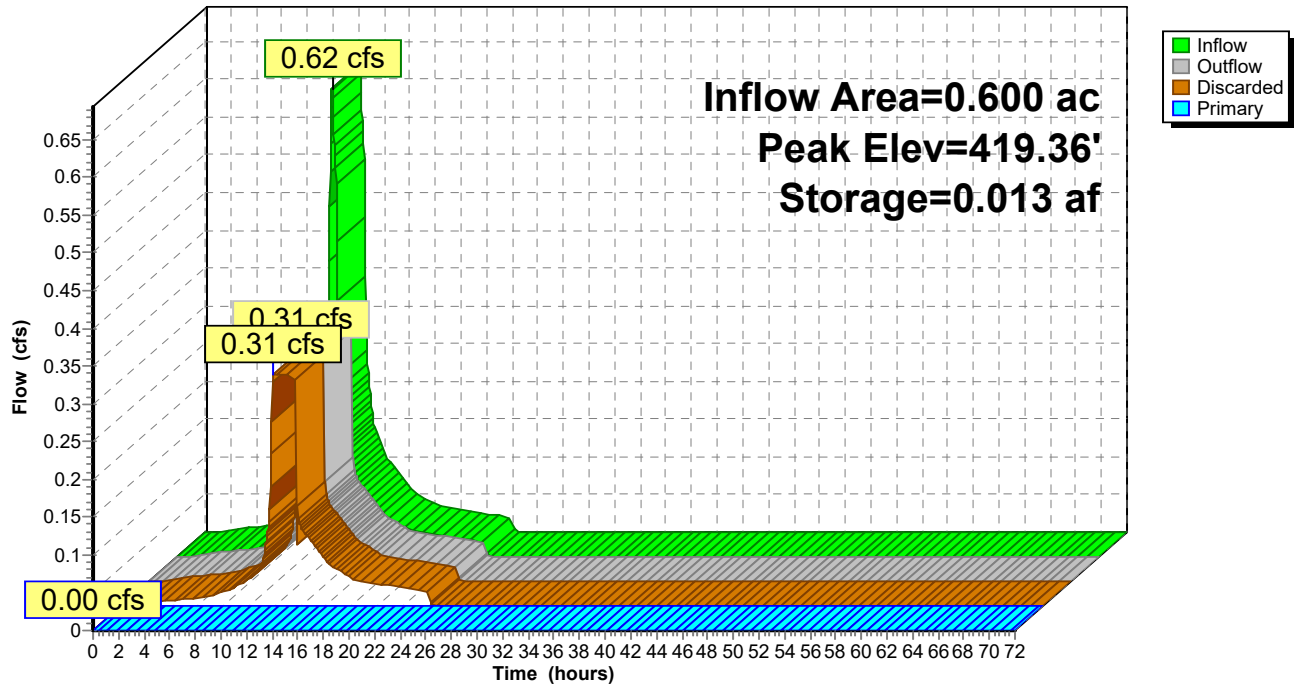
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Pond 1.6P:

Hydrograph



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Stage-Area-Storage for Pond 1.6P:

Elevation (feet)	Horizontal (acres)	Storage (acre-feet)	Elevation (feet)	Horizontal (acres)	Storage (acre-feet)
417.80	0.013	0.000	420.45	0.013	0.023
417.85	0.013	0.000	420.50	0.013	0.023
417.90	0.013	0.001	420.55	0.013	0.023
417.95	0.013	0.001	420.60	0.013	0.024
418.00	0.013	0.001	420.65	0.013	0.024
418.05	0.013	0.001	420.70	0.013	0.024
418.10	0.013	0.002	420.75	0.013	0.024
418.15	0.013	0.002	420.80	0.013	0.025
418.20	0.013	0.002	420.85	0.013	0.025
418.25	0.013	0.002	420.90	0.013	0.025
418.30	0.013	0.003	420.95	0.013	0.025
418.35	0.013	0.003	421.00	0.013	0.026
418.40	0.013	0.004	421.05	0.013	0.026
418.45	0.013	0.004	421.10	0.013	0.026
418.50	0.013	0.005	421.15	0.013	0.027
418.55	0.013	0.005	421.20	0.013	0.027
418.60	0.013	0.006	421.25	0.013	0.027
418.65	0.013	0.006	421.30	0.013	0.027
418.70	0.013	0.007			
418.75	0.013	0.007			
418.80	0.013	0.008			
418.85	0.013	0.008			
418.90	0.013	0.009			
418.95	0.013	0.009			
419.00	0.013	0.010			
419.05	0.013	0.010			
419.10	0.013	0.011			
419.15	0.013	0.011			
419.20	0.013	0.012			
419.25	0.013	0.012			
419.30	0.013	0.013			
419.35	0.013	0.013			
419.40	0.013	0.014			
419.45	0.013	0.014			
419.50	0.013	0.015			
419.55	0.013	0.015			
419.60	0.013	0.016			
419.65	0.013	0.016			
419.70	0.013	0.016			
419.75	0.013	0.017			
419.80	0.013	0.017			
419.85	0.013	0.018			
419.90	0.013	0.018			
419.95	0.013	0.019			
420.00	0.013	0.019			
420.05	0.013	0.020			
420.10	0.013	0.020			
420.15	0.013	0.020			
420.20	0.013	0.021			
420.25	0.013	0.021			
420.30	0.013	0.022			
420.35	0.013	0.022			
420.40	0.013	0.022			

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Summary for Pond 1.7P:

[79] Warning: Submerged Pond CB FS 1.7 Primary device # 1 OUTLET by 0.15'

Inflow Area = 0.400 ac, 25.00% Impervious, Inflow Depth = 1.98" for 10-yr event
Inflow = 0.51 cfs @ 12.11 hrs, Volume= 0.066 af
Outflow = 0.33 cfs @ 12.44 hrs, Volume= 0.066 af, Atten= 35%, Lag= 19.8 min
Discarded = 0.05 cfs @ 11.55 hrs, Volume= 0.053 af
Primary = 0.28 cfs @ 12.44 hrs, Volume= 0.013 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 397.95' @ 12.44 hrs Surf.Area= 0.010 ac Storage= 0.017 af

Plug-Flow detention time= 113.5 min calculated for 0.066 af (100% of inflow)
Center-of-Mass det. time= 113.5 min (950.2 - 836.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	395.10'	0.009 af	11.00'W x 38.05'L x 3.50'H Field A 0.034 af Overall - 0.011 af Embedded = 0.023 af x 40.0% Voids
#2A	395.60'	0.011 af	ADS_StormTech SC-740 +Cap x 10 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 2 Rows of 5 Chambers
		0.020 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	395.10'	5.000 in/hr Exfiltration over Horizontal area Phase-In= 0.05'
#2	Primary	397.60'	6.0" Round 6.0" Round Culvert L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 397.60' / 397.10' S= 0.0100 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.05 cfs @ 11.55 hrs HW=395.17' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.28 cfs @ 12.44 hrs HW=397.95' (Free Discharge)

↑**2=6.0" Round Culvert** (Barrel Controls 0.28 cfs @ 2.68 fps)

Mount Kisco - Driveway Drainage

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Pond 1.7P: - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

5 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 37.22' Row Length +5.0" End Stone x 2 = 38.05' Base Length

2 Rows x 51.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.00' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

10 Chambers x 45.9 cf = 459.4 cf Chamber Storage

1,464.9 cf Field - 459.4 cf Chambers = 1,005.5 cf Stone x 40.0% Voids = 402.2 cf Stone Storage

Chamber Storage + Stone Storage = 861.6 cf = 0.020 af

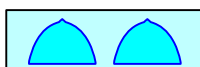
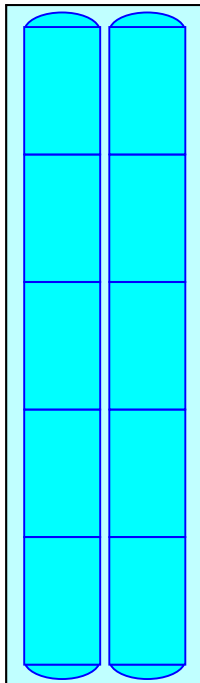
Overall Storage Efficiency = 58.8%

Overall System Size = 38.05' x 11.00' x 3.50'

10 Chambers

54.3 cy Field

37.2 cy Stone



Mount Kisco - Driveway Drainage

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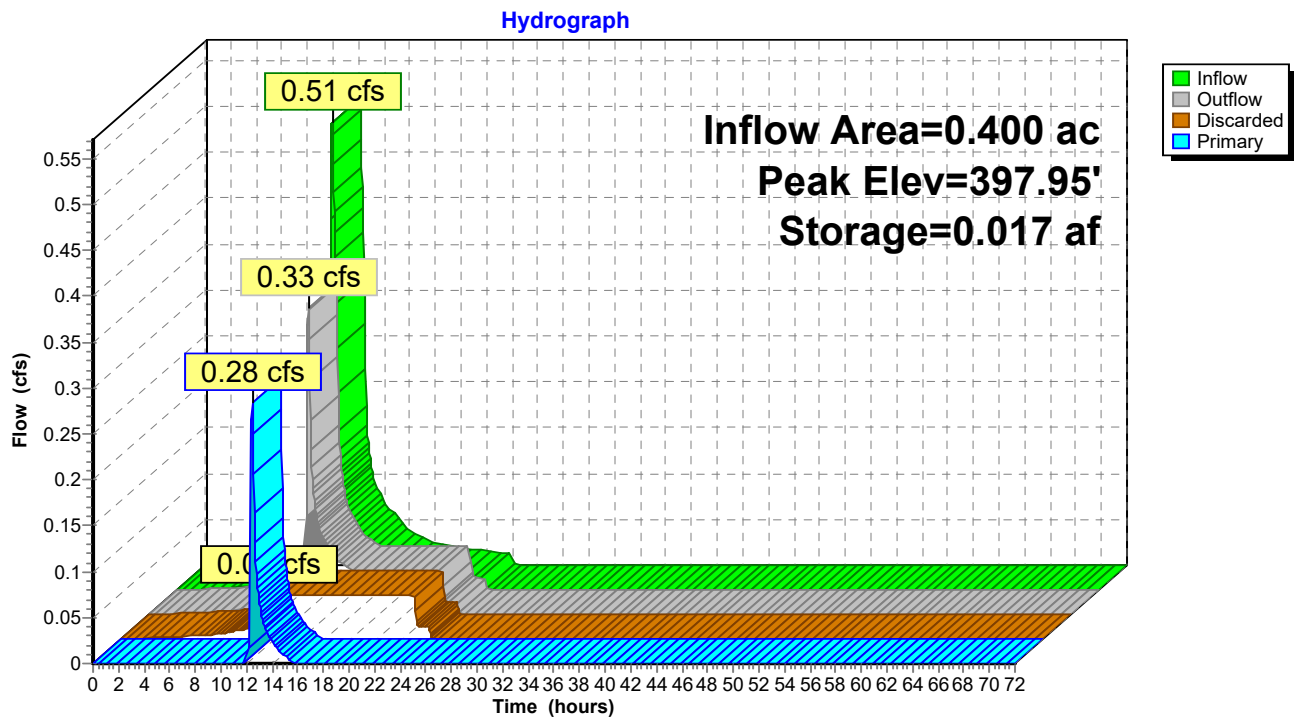
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Pond 1.7P:



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Stage-Area-Storage for Pond 1.7P:

Elevation (feet)	Horizontal (acres)	Storage (acre-feet)	Elevation (feet)	Horizontal (acres)	Storage (acre-feet)
395.10	0.010	0.000	397.75	0.010	0.016
395.15	0.010	0.000	397.80	0.010	0.017
395.20	0.010	0.000	397.85	0.010	0.017
395.25	0.010	0.001	397.90	0.010	0.017
395.30	0.010	0.001	397.95	0.010	0.017
395.35	0.010	0.001	398.00	0.010	0.017
395.40	0.010	0.001	398.05	0.010	0.018
395.45	0.010	0.001	398.10	0.010	0.018
395.50	0.010	0.002	398.15	0.010	0.018
395.55	0.010	0.002	398.20	0.010	0.018
395.60	0.010	0.002	398.25	0.010	0.018
395.65	0.010	0.002	398.30	0.010	0.019
395.70	0.010	0.003	398.35	0.010	0.019
395.75	0.010	0.003	398.40	0.010	0.019
395.80	0.010	0.003	398.45	0.010	0.019
395.85	0.010	0.004	398.50	0.010	0.019
395.90	0.010	0.004	398.55	0.010	0.020
395.95	0.010	0.005	398.60	0.010	0.020
396.00	0.010	0.005			
396.05	0.010	0.005			
396.10	0.010	0.006			
396.15	0.010	0.006			
396.20	0.010	0.006			
396.25	0.010	0.007			
396.30	0.010	0.007			
396.35	0.010	0.007			
396.40	0.010	0.008			
396.45	0.010	0.008			
396.50	0.010	0.008			
396.55	0.010	0.009			
396.60	0.010	0.009			
396.65	0.010	0.010			
396.70	0.010	0.010			
396.75	0.010	0.010			
396.80	0.010	0.011			
396.85	0.010	0.011			
396.90	0.010	0.011			
396.95	0.010	0.012			
397.00	0.010	0.012			
397.05	0.010	0.012			
397.10	0.010	0.013			
397.15	0.010	0.013			
397.20	0.010	0.013			
397.25	0.010	0.013			
397.30	0.010	0.014			
397.35	0.010	0.014			
397.40	0.010	0.014			
397.45	0.010	0.015			
397.50	0.010	0.015			
397.55	0.010	0.015			
397.60	0.010	0.016			
397.65	0.010	0.016			
397.70	0.010	0.016			

Mount Kisco - Driveway Drainage

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Type III 24-hr 10-yr Rainfall=5.13"

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Summary for Pond CB FS 1.7:

[57] Hint: Peaked at 398.54' (Flood elevation advised)

Inflow Area = 0.400 ac, 25.00% Impervious, Inflow Depth = 2.13" for 10-yr event
 Inflow = 0.88 cfs @ 12.11 hrs, Volume= 0.071 af
 Outflow = 0.88 cfs @ 12.11 hrs, Volume= 0.071 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.51 cfs @ 12.11 hrs, Volume= 0.066 af
 Secondary = 0.37 cfs @ 12.11 hrs, Volume= 0.005 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 398.54' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	398.00'	6.0" Round 6.0" Round Culvert L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 398.00' / 397.80' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Secondary	397.50'	12.0" Round Culvert L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 397.50' / 397.00' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	398.40'	2.5' 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

Primary OutFlow Max=0.50 cfs @ 12.11 hrs HW=398.54' (Free Discharge)↑**1=6.0" Round Culvert** (Inlet Controls 0.50 cfs @ 2.57 fps)**Secondary OutFlow** Max=0.35 cfs @ 12.11 hrs HW=398.54' (Free Discharge)↑**2=Culvert** (Passes 0.35 cfs of 2.77 cfs potential flow)↑**3=Broad-Crested Rectangular Weir** (Weir Controls 0.35 cfs @ 1.03 fps)

Mount Kisco - Driveway Drainage

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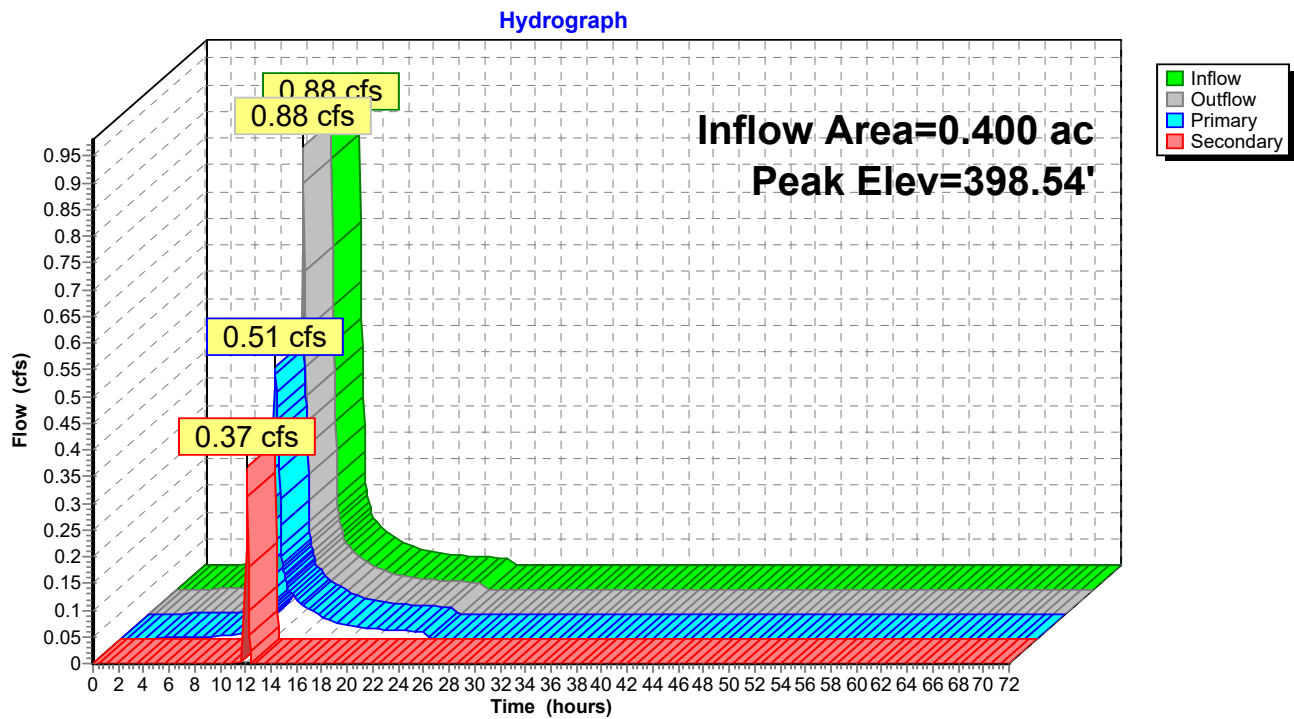
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Type III 24-hr 10-yr Rainfall=5.13"

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Pond CB FS 1.7:



Mount Kisco - Driveway Drainage

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Type III 24-hr 10-yr Rainfall=5.13"

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Stage-Area-Storage for Pond CB FS 1.7:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
397.50	0	398.03	0
397.51	0	398.04	0
397.52	0	398.05	0
397.53	0	398.06	0
397.54	0	398.07	0
397.55	0	398.08	0
397.56	0	398.09	0
397.57	0	398.10	0
397.58	0	398.11	0
397.59	0	398.12	0
397.60	0	398.13	0
397.61	0	398.14	0
397.62	0	398.15	0
397.63	0	398.16	0
397.64	0	398.17	0
397.65	0	398.18	0
397.66	0	398.19	0
397.67	0	398.20	0
397.68	0	398.21	0
397.69	0	398.22	0
397.70	0	398.23	0
397.71	0	398.24	0
397.72	0	398.25	0
397.73	0	398.26	0
397.74	0	398.27	0
397.75	0	398.28	0
397.76	0	398.29	0
397.77	0	398.30	0
397.78	0	398.31	0
397.79	0	398.32	0
397.80	0	398.33	0
397.81	0	398.34	0
397.82	0	398.35	0
397.83	0	398.36	0
397.84	0	398.37	0
397.85	0	398.38	0
397.86	0	398.39	0
397.87	0	398.40	0
397.88	0	398.41	0
397.89	0	398.42	0
397.90	0	398.43	0
397.91	0	398.44	0
397.92	0	398.45	0
397.93	0	398.46	0
397.94	0	398.47	0
397.95	0	398.48	0
397.96	0	398.49	0
397.97	0	398.50	0
397.98	0	398.51	0
397.99	0	398.52	0
398.00	0	398.53	0
398.01	0	398.54	0
398.02	0		

Mount Kisco - Driveway Drainage

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Type III 24-hr 10-yr Rainfall=5.13"

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Summary for Pond CB FS1.6:

[57] Hint: Peaked at 421.38' (Flood elevation advised)

Inflow Area = 0.600 ac, 33.33% Impervious, Inflow Depth = 2.42" for 10-yr event
Inflow = 1.45 cfs @ 12.11 hrs, Volume= 0.121 af
Outflow = 1.45 cfs @ 12.11 hrs, Volume= 0.121 af, Atten= 0%, Lag= 0.0 min
Primary = 0.62 cfs @ 12.11 hrs, Volume= 0.106 af
Secondary = 0.83 cfs @ 12.11 hrs, Volume= 0.014 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 421.38' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	420.50'	6.0" Round 6.0" Culvert L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 420.50' / 420.40' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Secondary	420.00'	12.0" Round Culvert L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 420.00' / 419.00' S= 0.0400 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	421.20'	4.0' 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

Primary OutFlow Max=0.62 cfs @ 12.11 hrs HW=421.37' (Free Discharge)

↑**1=6.0" Culvert** (Barrel Controls 0.62 cfs @ 3.14 fps)

Secondary OutFlow Max=0.80 cfs @ 12.11 hrs HW=421.37' (Free Discharge)

↑**2=Culvert** (Passes 0.80 cfs of 3.53 cfs potential flow)

↑**3=Broad-Crested Rectangular Weir** (Weir Controls 0.80 cfs @ 1.16 fps)

Mount Kisco - Driveway Drainage

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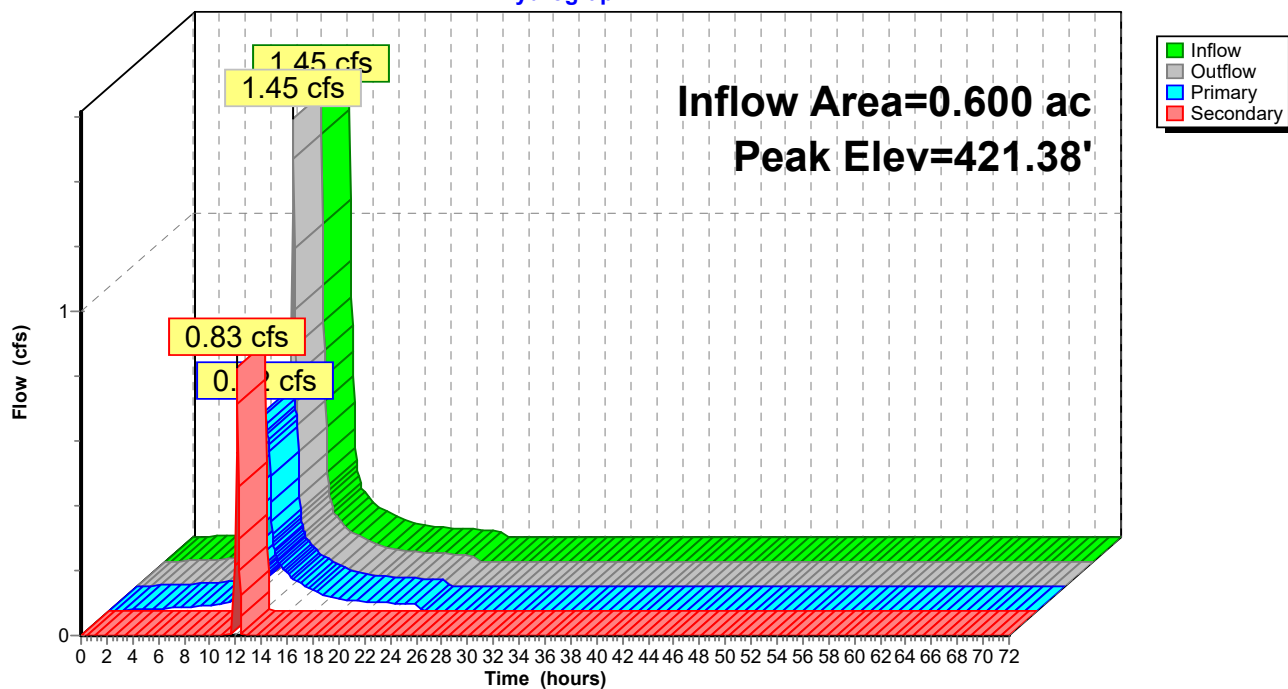
Type III 24-hr 10-yr Rainfall=5.13"

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Pond CB FS1.6:

Hydrograph



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Type III 24-hr 10-yr Rainfall=5.13"

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Stage-Area-Storage for Pond CB FS1.6:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
420.00	0	420.53	0	421.06	0
420.01	0	420.54	0	421.07	0
420.02	0	420.55	0	421.08	0
420.03	0	420.56	0	421.09	0
420.04	0	420.57	0	421.10	0
420.05	0	420.58	0	421.11	0
420.06	0	420.59	0	421.12	0
420.07	0	420.60	0	421.13	0
420.08	0	420.61	0	421.14	0
420.09	0	420.62	0	421.15	0
420.10	0	420.63	0	421.16	0
420.11	0	420.64	0	421.17	0
420.12	0	420.65	0	421.18	0
420.13	0	420.66	0	421.19	0
420.14	0	420.67	0	421.20	0
420.15	0	420.68	0	421.21	0
420.16	0	420.69	0	421.22	0
420.17	0	420.70	0	421.23	0
420.18	0	420.71	0	421.24	0
420.19	0	420.72	0	421.25	0
420.20	0	420.73	0	421.26	0
420.21	0	420.74	0	421.27	0
420.22	0	420.75	0	421.28	0
420.23	0	420.76	0	421.29	0
420.24	0	420.77	0	421.30	0
420.25	0	420.78	0	421.31	0
420.26	0	420.79	0	421.32	0
420.27	0	420.80	0	421.33	0
420.28	0	420.81	0	421.34	0
420.29	0	420.82	0	421.35	0
420.30	0	420.83	0	421.36	0
420.31	0	420.84	0	421.37	0
420.32	0	420.85	0	421.38	0
420.33	0	420.86	0		
420.34	0	420.87	0		
420.35	0	420.88	0		
420.36	0	420.89	0		
420.37	0	420.90	0		
420.38	0	420.91	0		
420.39	0	420.92	0		
420.40	0	420.93	0		
420.41	0	420.94	0		
420.42	0	420.95	0		
420.43	0	420.96	0		
420.44	0	420.97	0		
420.45	0	420.98	0		
420.46	0	420.99	0		
420.47	0	421.00	0		
420.48	0	421.01	0		
420.49	0	421.02	0		
420.50	0	421.03	0		
420.51	0	421.04	0		
420.52	0	421.05	0		

Mount Kisco - Driveway Drainage

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Type III 24-hr 100-yr Rainfall=8.30"

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Summary for Subcatchment 1.6 S: Existing Impervious

Runoff = 1.15 cfs @ 12.10 hrs, Volume= 0.101 af, Depth= 8.06"

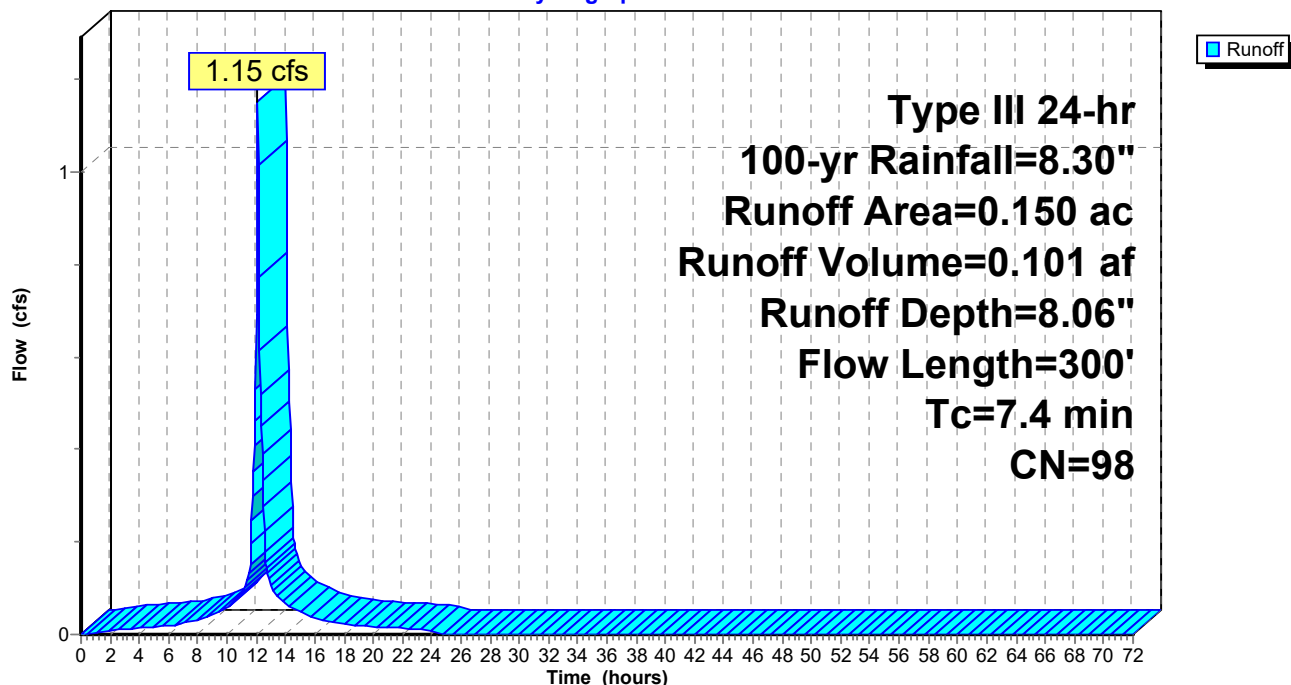
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.30"

Area (ac)	CN	Description
0.150	98	Paved parking, HSG B
0.150		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	50	0.0800	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
0.1	20	0.2000	2.24		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	40	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.3	140	0.2000	6.71		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
0.1	50	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.4	300	Total			

Subcatchment 1.6 S: Existing Impervious

Hydrograph



Mount Kisco - Driveway Drainage

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Type III 24-hr 100-yr Rainfall=8.30"

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Summary for Subcatchment 1.6S: New Impervious and Pervious Area

Runoff = 1.93 cfs @ 12.11 hrs, Volume= 0.146 af, Depth= 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.30"

Area (ac)	CN	Description
0.050	98	Paved parking, HSG B
0.150	55	Woods, Good, HSG B
0.250	61	>75% Grass cover, Good, HSG B
0.450	63	Weighted Average
0.400		88.89% Pervious Area
0.050		11.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	50	0.0800	0.12		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
0.1	20	0.2000	2.24		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	40	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.3	140	0.2000	6.71		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
0.1	50	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.4	300	Total			

Mount Kisco - Driveway Drainage

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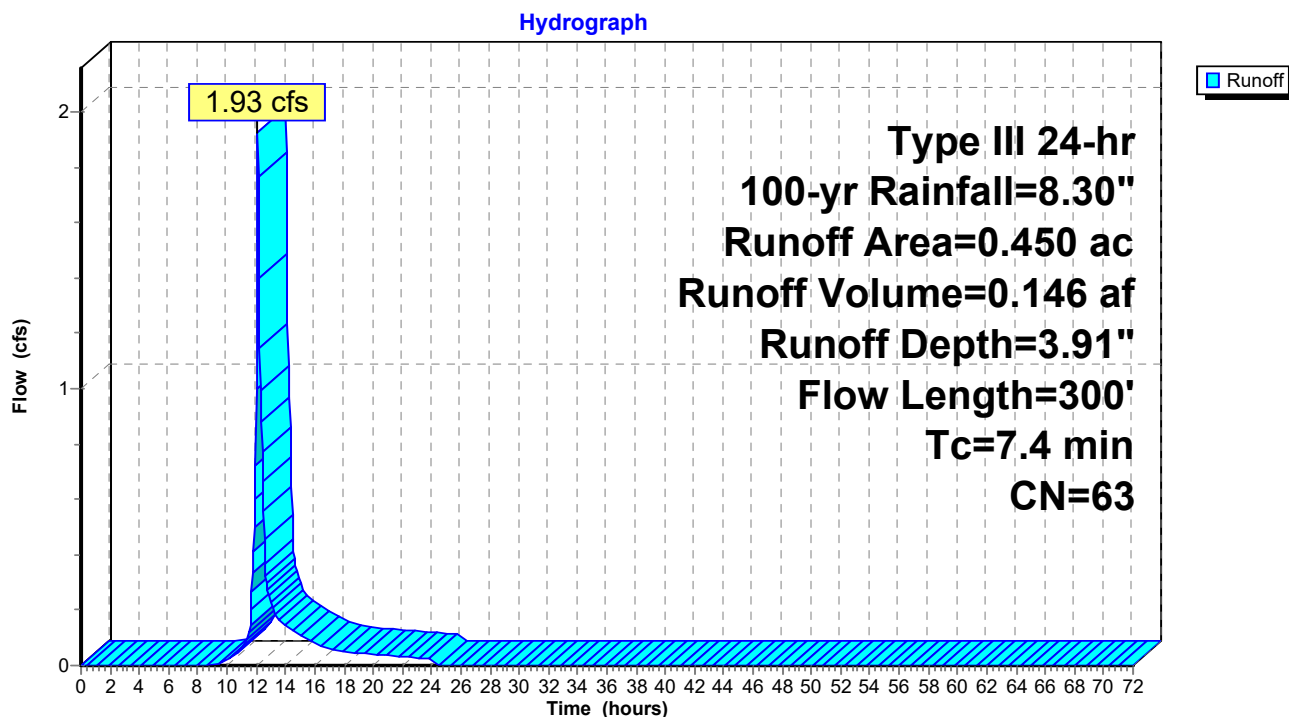
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Type III 24-hr 100-yr Rainfall=8.30"

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Subcatchment 1.6S: New Impervious and Pervious Area



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Type III 24-hr 100-yr Rainfall=8.30"

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Summary for Subcatchment 1.7 S: Existing Impervious

Runoff = 0.38 cfs @ 12.10 hrs, Volume= 0.034 af, Depth= 8.06"

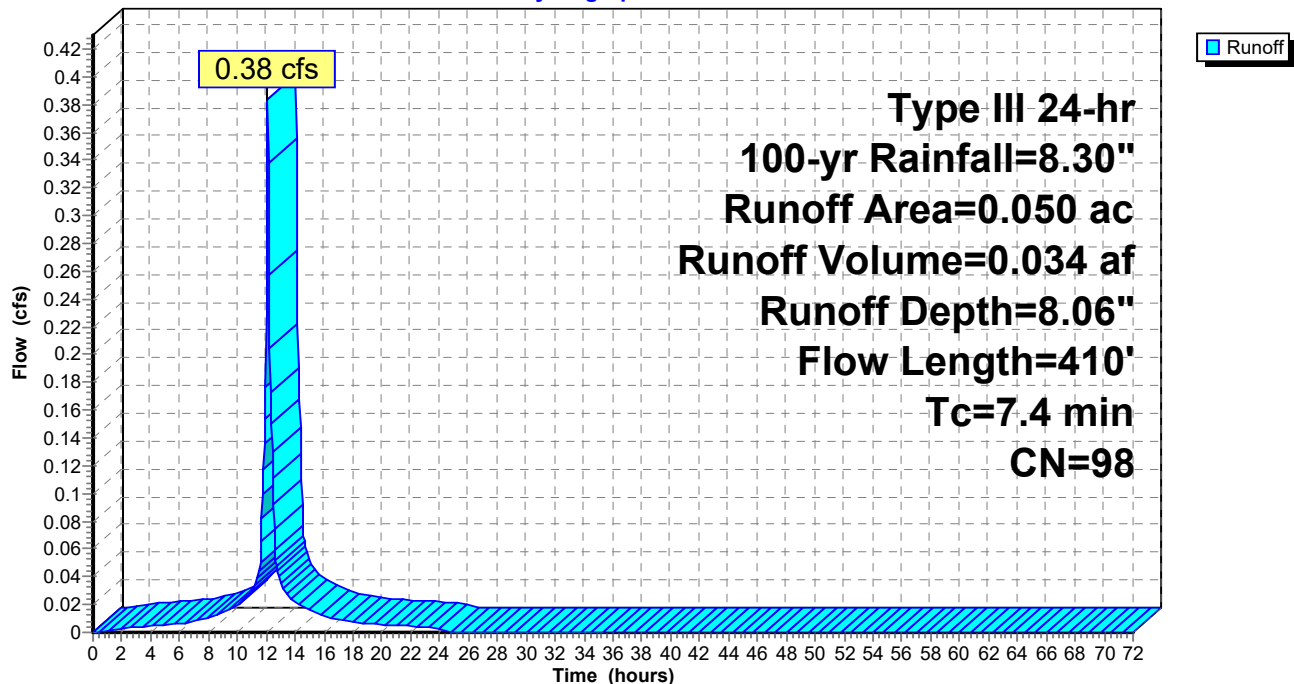
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.30"

Area (ac)	CN	Description
0.050	98	Paved parking, HSG B
0.050		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	45	0.1000	0.13		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.0	140	0.2200	2.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.7	225	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.4	410	Total			

Subcatchment 1.7 S: Existing Impervious

Hydrograph



Mount Kisco - Driveway Drainage

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Type III 24-hr 100-yr Rainfall=8.30"

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Summary for Subcatchment 1.7S: New Impervious and Pervious Area

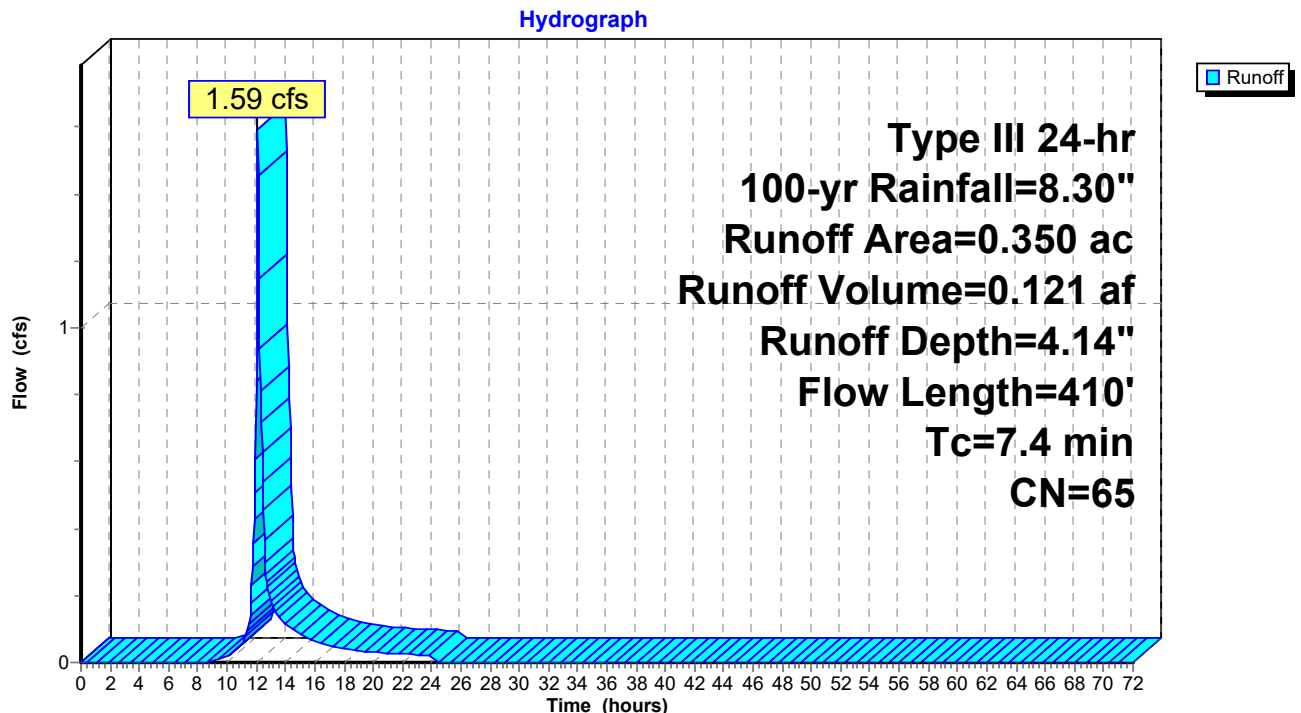
Runoff = 1.59 cfs @ 12.11 hrs, Volume= 0.121 af, Depth= 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.30"

Area (ac)	CN	Description
0.050	98	Paved parking, HSG B
0.150	61	>75% Grass cover, Good, HSG B
0.150	58	Meadow, non-grazed, HSG B
0.350	65	Weighted Average
0.300		85.71% Pervious Area
0.050		14.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	45	0.1000	0.13		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.50"
1.0	140	0.2200	2.35		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.7	225	0.0800	5.74		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.4	410	Total			

Subcatchment 1.7S: New Impervious and Pervious Area



Mount Kisco - Driveway Drainage

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Type III 24-hr 100-yr Rainfall=8.30"

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Summary for Reach DL3:

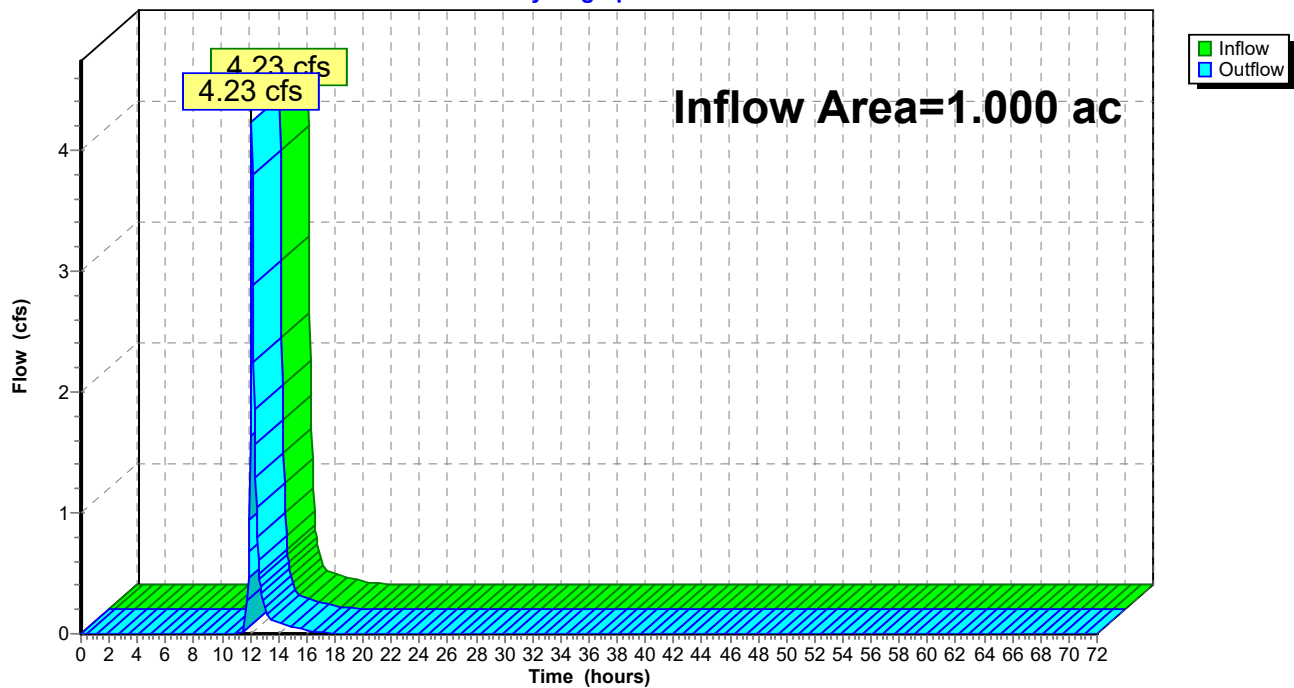
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.000 ac, 30.00% Impervious, Inflow Depth = 1.79" for 100-yr event
Inflow = 4.23 cfs @ 12.11 hrs, Volume= 0.149 af
Outflow = 4.23 cfs @ 12.11 hrs, Volume= 0.149 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach DL3:

Hydrograph



Mount Kisco - Driveway Drainage

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Type III 24-hr 100-yr Rainfall=8.30"

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Summary for Pond 1.6P:

[79] Warning: Submerged Pond CB FS1.6 Primary device # 1 INLET by 0.05'

Inflow Area = 0.600 ac, 33.33% Impervious, Inflow Depth = 3.72" for 100-yr event
Inflow = 0.72 cfs @ 12.11 hrs, Volume= 0.186 af
Outflow = 0.46 cfs @ 12.68 hrs, Volume= 0.186 af, Atten= 36%, Lag= 34.1 min
Discarded = 0.31 cfs @ 11.65 hrs, Volume= 0.182 af
Primary = 0.15 cfs @ 12.68 hrs, Volume= 0.005 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 420.55' @ 12.68 hrs Surf.Area= 0.013 ac Storage= 0.023 af

Plug-Flow detention time= 18.4 min calculated for 0.186 af (100% of inflow)
Center-of-Mass det. time= 18.3 min (841.1 - 822.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	417.80'	0.013 af	11.00'W x 52.29'L x 3.50'H Field A 0.046 af Overall - 0.015 af Embedded = 0.031 af x 40.0% Voids
#2A	418.30'	0.015 af	ADS_StormTech SC-740 +Cap x 14 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 2 Rows of 7 Chambers
		0.027 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	417.80'	23.000 in/hr Exfiltration over Horizontal area Phase-In= 0.05'
#2	Primary	420.30'	6.0" Round 6.0" Round Culvert L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 420.30' / 419.80' S= 0.0100 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.31 cfs @ 11.65 hrs HW=417.91' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.31 cfs)

Primary OutFlow Max=0.15 cfs @ 12.68 hrs HW=420.55' (Free Discharge)

↑**2=6.0" Round Culvert** (Barrel Controls 0.15 cfs @ 2.31 fps)

Mount Kisco - Driveway Drainage

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Type III 24-hr 100-yr Rainfall=8.30"

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Pond 1.6P: - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

7 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 51.46' Row Length +5.0" End Stone x 2 = 52.29' Base Length

2 Rows x 51.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.00' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

14 Chambers x 45.9 cf = 643.2 cf Chamber Storage

2,013.2 cf Field - 643.2 cf Chambers = 1,370.0 cf Stone x 40.0% Voids = 548.0 cf Stone Storage

Chamber Storage + Stone Storage = 1,191.2 cf = 0.027 af

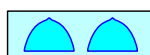
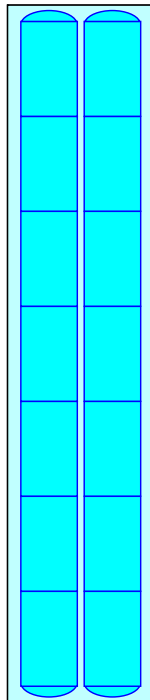
Overall Storage Efficiency = 59.2%

Overall System Size = 52.29' x 11.00' x 3.50'

14 Chambers

74.6 cy Field

50.7 cy Stone



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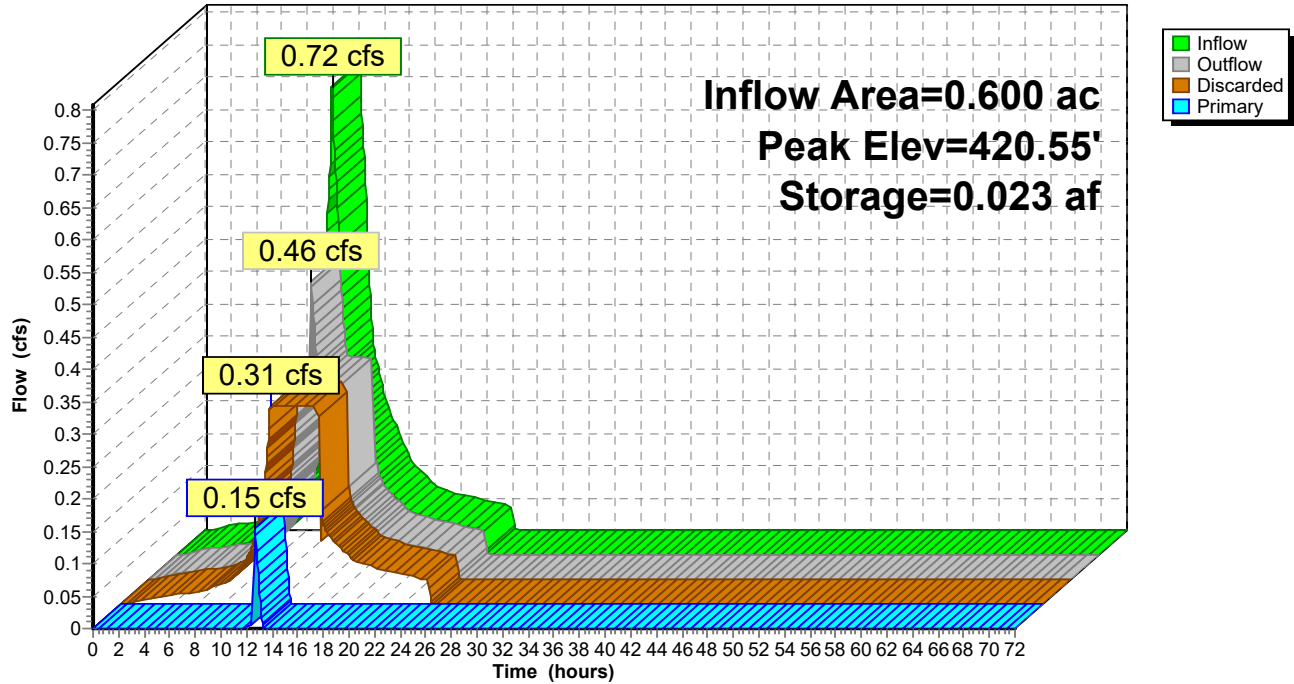
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Pond 1.6P:

Hydrograph



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Stage-Area-Storage for Pond 1.6P:

Elevation (feet)	Horizontal (acres)	Storage (acre-feet)	Elevation (feet)	Horizontal (acres)	Storage (acre-feet)
417.80	0.013	0.000	420.45	0.013	0.023
417.85	0.013	0.000	420.50	0.013	0.023
417.90	0.013	0.001	420.55	0.013	0.023
417.95	0.013	0.001	420.60	0.013	0.024
418.00	0.013	0.001	420.65	0.013	0.024
418.05	0.013	0.001	420.70	0.013	0.024
418.10	0.013	0.002	420.75	0.013	0.024
418.15	0.013	0.002	420.80	0.013	0.025
418.20	0.013	0.002	420.85	0.013	0.025
418.25	0.013	0.002	420.90	0.013	0.025
418.30	0.013	0.003	420.95	0.013	0.025
418.35	0.013	0.003	421.00	0.013	0.026
418.40	0.013	0.004	421.05	0.013	0.026
418.45	0.013	0.004	421.10	0.013	0.026
418.50	0.013	0.005	421.15	0.013	0.027
418.55	0.013	0.005	421.20	0.013	0.027
418.60	0.013	0.006	421.25	0.013	0.027
418.65	0.013	0.006	421.30	0.013	0.027
418.70	0.013	0.007			
418.75	0.013	0.007			
418.80	0.013	0.008			
418.85	0.013	0.008			
418.90	0.013	0.009			
418.95	0.013	0.009			
419.00	0.013	0.010			
419.05	0.013	0.010			
419.10	0.013	0.011			
419.15	0.013	0.011			
419.20	0.013	0.012			
419.25	0.013	0.012			
419.30	0.013	0.013			
419.35	0.013	0.013			
419.40	0.013	0.014			
419.45	0.013	0.014			
419.50	0.013	0.015			
419.55	0.013	0.015			
419.60	0.013	0.016			
419.65	0.013	0.016			
419.70	0.013	0.016			
419.75	0.013	0.017			
419.80	0.013	0.017			
419.85	0.013	0.018			
419.90	0.013	0.018			
419.95	0.013	0.019			
420.00	0.013	0.019			
420.05	0.013	0.020			
420.10	0.013	0.020			
420.15	0.013	0.020			
420.20	0.013	0.021			
420.25	0.013	0.021			
420.30	0.013	0.022			
420.35	0.013	0.022			
420.40	0.013	0.022			

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Summary for Pond 1.7P:

[79] Warning: Submerged Pond CB FS 1.7 Primary device # 1 INLET by 0.21'

Inflow Area = 0.400 ac, 25.00% Impervious, Inflow Depth = 3.70" for 100-yr event
Inflow = 0.65 cfs @ 12.11 hrs, Volume= 0.123 af
Outflow = 0.62 cfs @ 12.17 hrs, Volume= 0.123 af, Atten= 5%, Lag= 3.8 min
Discarded = 0.05 cfs @ 10.40 hrs, Volume= 0.071 af
Primary = 0.57 cfs @ 12.17 hrs, Volume= 0.052 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 398.22' @ 12.17 hrs Surf.Area= 0.010 ac Storage= 0.018 af

Plug-Flow detention time= 93.2 min calculated for 0.123 af (100% of inflow)
Center-of-Mass det. time= 93.2 min (929.4 - 836.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	395.10'	0.009 af	11.00'W x 38.05'L x 3.50'H Field A 0.034 af Overall - 0.011 af Embedded = 0.023 af x 40.0% Voids
#2A	395.60'	0.011 af	ADS_StormTech SC-740 +Cap x 10 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 2 Rows of 5 Chambers
		0.020 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	395.10'	5.000 in/hr Exfiltration over Horizontal area Phase-In= 0.05'
#2	Primary	397.60'	6.0" Round 6.0" Round Culvert L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 397.60' / 397.10' S= 0.0100 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Discarded OutFlow Max=0.05 cfs @ 10.40 hrs HW=395.18' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.57 cfs @ 12.17 hrs HW=398.21' (Free Discharge)

↑**2=6.0" Round Culvert** (Barrel Controls 0.57 cfs @ 3.00 fps)

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Pond 1.7P: - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

5 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 37.22' Row Length +5.0" End Stone x 2 = 38.05' Base Length

2 Rows x 51.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.00' Base Width

6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

10 Chambers x 45.9 cf = 459.4 cf Chamber Storage

1,464.9 cf Field - 459.4 cf Chambers = 1,005.5 cf Stone x 40.0% Voids = 402.2 cf Stone Storage

Chamber Storage + Stone Storage = 861.6 cf = 0.020 af

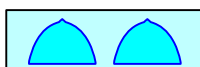
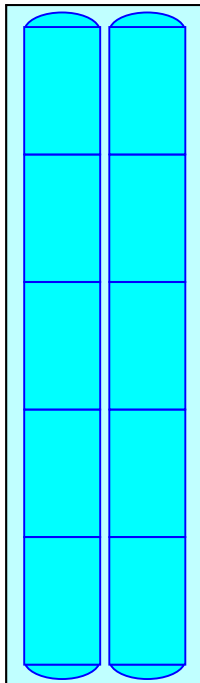
Overall Storage Efficiency = 58.8%

Overall System Size = 38.05' x 11.00' x 3.50'

10 Chambers

54.3 cy Field

37.2 cy Stone



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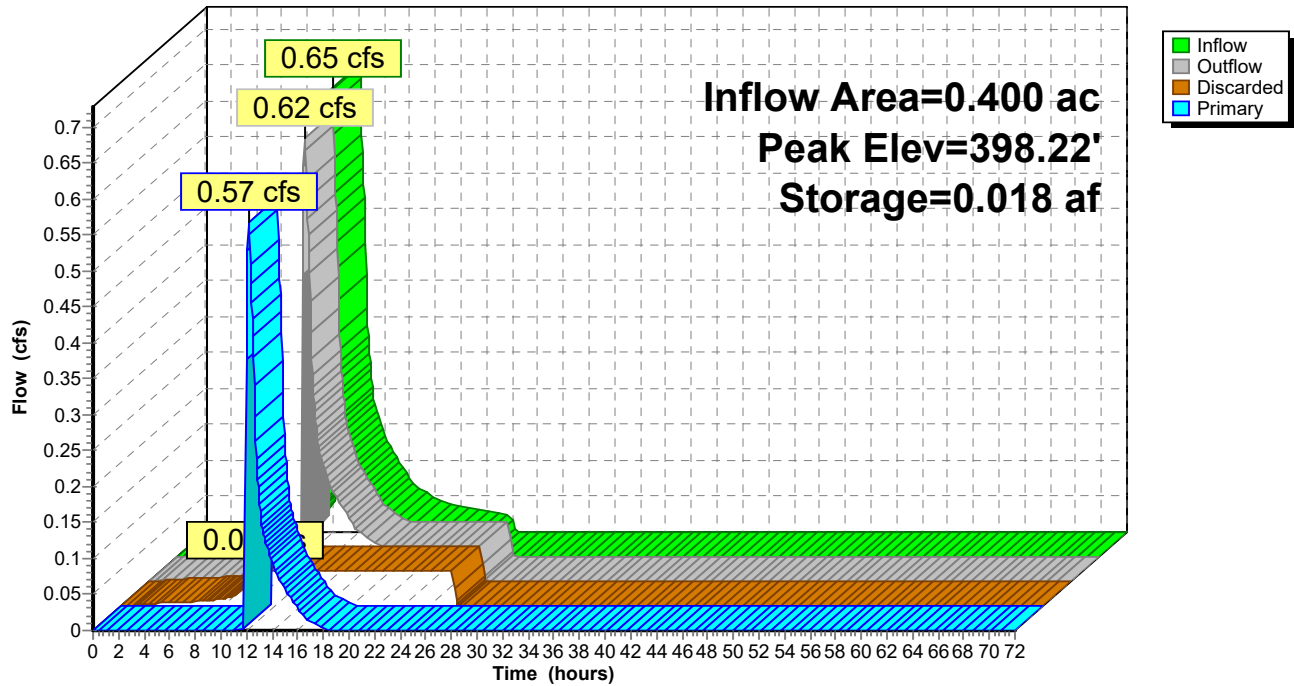
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Pond 1.7P:

Hydrograph



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Stage-Area-Storage for Pond 1.7P:

Elevation (feet)	Horizontal (acres)	Storage (acre-feet)	Elevation (feet)	Horizontal (acres)	Storage (acre-feet)
395.10	0.010	0.000	397.75	0.010	0.016
395.15	0.010	0.000	397.80	0.010	0.017
395.20	0.010	0.000	397.85	0.010	0.017
395.25	0.010	0.001	397.90	0.010	0.017
395.30	0.010	0.001	397.95	0.010	0.017
395.35	0.010	0.001	398.00	0.010	0.017
395.40	0.010	0.001	398.05	0.010	0.018
395.45	0.010	0.001	398.10	0.010	0.018
395.50	0.010	0.002	398.15	0.010	0.018
395.55	0.010	0.002	398.20	0.010	0.018
395.60	0.010	0.002	398.25	0.010	0.018
395.65	0.010	0.002	398.30	0.010	0.019
395.70	0.010	0.003	398.35	0.010	0.019
395.75	0.010	0.003	398.40	0.010	0.019
395.80	0.010	0.003	398.45	0.010	0.019
395.85	0.010	0.004	398.50	0.010	0.019
395.90	0.010	0.004	398.55	0.010	0.020
395.95	0.010	0.005	398.60	0.010	0.020
396.00	0.010	0.005			
396.05	0.010	0.005			
396.10	0.010	0.006			
396.15	0.010	0.006			
396.20	0.010	0.006			
396.25	0.010	0.007			
396.30	0.010	0.007			
396.35	0.010	0.007			
396.40	0.010	0.008			
396.45	0.010	0.008			
396.50	0.010	0.008			
396.55	0.010	0.009			
396.60	0.010	0.009			
396.65	0.010	0.010			
396.70	0.010	0.010			
396.75	0.010	0.010			
396.80	0.010	0.011			
396.85	0.010	0.011			
396.90	0.010	0.011			
396.95	0.010	0.012			
397.00	0.010	0.012			
397.05	0.010	0.012			
397.10	0.010	0.013			
397.15	0.010	0.013			
397.20	0.010	0.013			
397.25	0.010	0.013			
397.30	0.010	0.014			
397.35	0.010	0.014			
397.40	0.010	0.014			
397.45	0.010	0.015			
397.50	0.010	0.015			
397.55	0.010	0.015			
397.60	0.010	0.016			
397.65	0.010	0.016			
397.70	0.010	0.016			

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Type III 24-hr 100-yr Rainfall=8.30"

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Summary for Pond CB FS 1.7:

[57] Hint: Peaked at 398.72' (Flood elevation advised)

Inflow Area = 0.400 ac, 25.00% Impervious, Inflow Depth = 4.63" for 100-yr event
Inflow = 1.98 cfs @ 12.11 hrs, Volume= 0.154 af
Outflow = 1.98 cfs @ 12.11 hrs, Volume= 0.154 af, Atten= 0%, Lag= 0.0 min
Primary = 0.65 cfs @ 12.11 hrs, Volume= 0.123 af
Secondary = 1.33 cfs @ 12.11 hrs, Volume= 0.031 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 398.72' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	398.00'	6.0" Round 6.0" Round Culvert L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 398.00' / 397.80' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Secondary	397.50'	12.0" Round Culvert L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 397.50' / 397.00' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	398.40'	2.5' 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

Primary OutFlow Max=0.65 cfs @ 12.11 hrs HW=398.72' (Free Discharge)

↑**1=6.0" Round Culvert** (Inlet Controls 0.65 cfs @ 3.30 fps)

Secondary OutFlow Max=1.29 cfs @ 12.11 hrs HW=398.72' (Free Discharge)

↑**2=Culvert** (Passes 1.29 cfs of 3.21 cfs potential flow)

↑**3=Broad-Crested Rectangular Weir** (Weir Controls 1.29 cfs @ 1.62 fps)

Mount Kisco - Driveway Drainage

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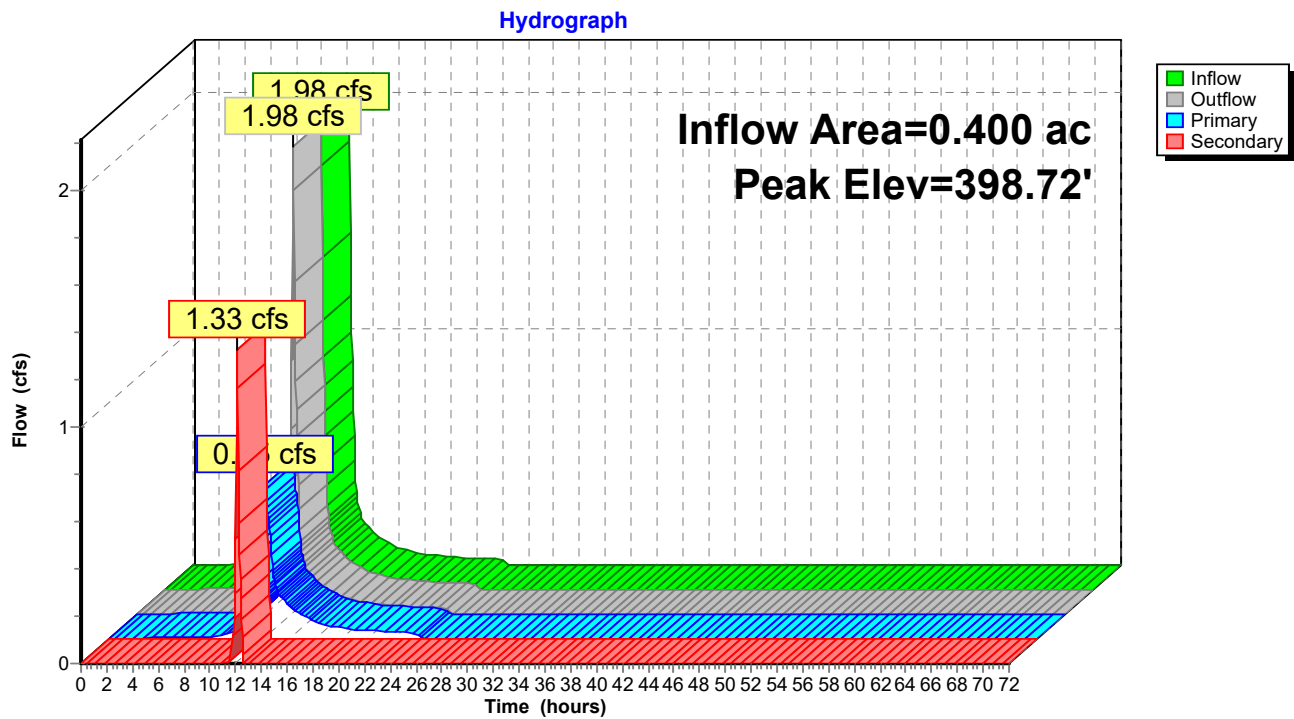
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Pond CB FS 1.7:



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Stage-Area-Storage for Pond CB FS 1.7:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
397.50	0	398.03	0	398.56	0
397.51	0	398.04	0	398.57	0
397.52	0	398.05	0	398.58	0
397.53	0	398.06	0	398.59	0
397.54	0	398.07	0	398.60	0
397.55	0	398.08	0	398.61	0
397.56	0	398.09	0	398.62	0
397.57	0	398.10	0	398.63	0
397.58	0	398.11	0	398.64	0
397.59	0	398.12	0	398.65	0
397.60	0	398.13	0	398.66	0
397.61	0	398.14	0	398.67	0
397.62	0	398.15	0	398.68	0
397.63	0	398.16	0	398.69	0
397.64	0	398.17	0	398.70	0
397.65	0	398.18	0	398.71	0
397.66	0	398.19	0	398.72	0
397.67	0	398.20	0	398.73	0
397.68	0	398.21	0		
397.69	0	398.22	0		
397.70	0	398.23	0		
397.71	0	398.24	0		
397.72	0	398.25	0		
397.73	0	398.26	0		
397.74	0	398.27	0		
397.75	0	398.28	0		
397.76	0	398.29	0		
397.77	0	398.30	0		
397.78	0	398.31	0		
397.79	0	398.32	0		
397.80	0	398.33	0		
397.81	0	398.34	0		
397.82	0	398.35	0		
397.83	0	398.36	0		
397.84	0	398.37	0		
397.85	0	398.38	0		
397.86	0	398.39	0		
397.87	0	398.40	0		
397.88	0	398.41	0		
397.89	0	398.42	0		
397.90	0	398.43	0		
397.91	0	398.44	0		
397.92	0	398.45	0		
397.93	0	398.46	0		
397.94	0	398.47	0		
397.95	0	398.48	0		
397.96	0	398.49	0		
397.97	0	398.50	0		
397.98	0	398.51	0		
397.99	0	398.52	0		
398.00	0	398.53	0		
398.01	0	398.54	0		
398.02	0	398.55	0		

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Summary for Pond CB FS1.6:

[57] Hint: Peaked at 421.55' (Flood elevation advised)

Inflow Area = 0.600 ac, 33.33% Impervious, Inflow Depth = 4.94" for 100-yr event
Inflow = 3.08 cfs @ 12.11 hrs, Volume= 0.247 af
Outflow = 3.08 cfs @ 12.11 hrs, Volume= 0.247 af, Atten= 0%, Lag= 0.0 min
Primary = 0.72 cfs @ 12.11 hrs, Volume= 0.186 af
Secondary = 2.36 cfs @ 12.11 hrs, Volume= 0.061 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 421.55' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	420.50'	6.0" Round 6.0" Culvert L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 420.50' / 420.40' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Secondary	420.00'	12.0" Round Culvert L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 420.00' / 419.00' S= 0.0400 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	421.20'	4.0' 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

Primary OutFlow Max=0.72 cfs @ 12.11 hrs HW=421.54' (Free Discharge)

↑**1=6.0" Culvert** (Barrel Controls 0.72 cfs @ 3.66 fps)

Secondary OutFlow Max=2.30 cfs @ 12.11 hrs HW=421.54' (Free Discharge)

↑**2=Culvert** (Passes 2.30 cfs of 3.86 cfs potential flow)

↑**3=Broad-Crested Rectangular Weir** (Weir Controls 2.30 cfs @ 1.69 fps)

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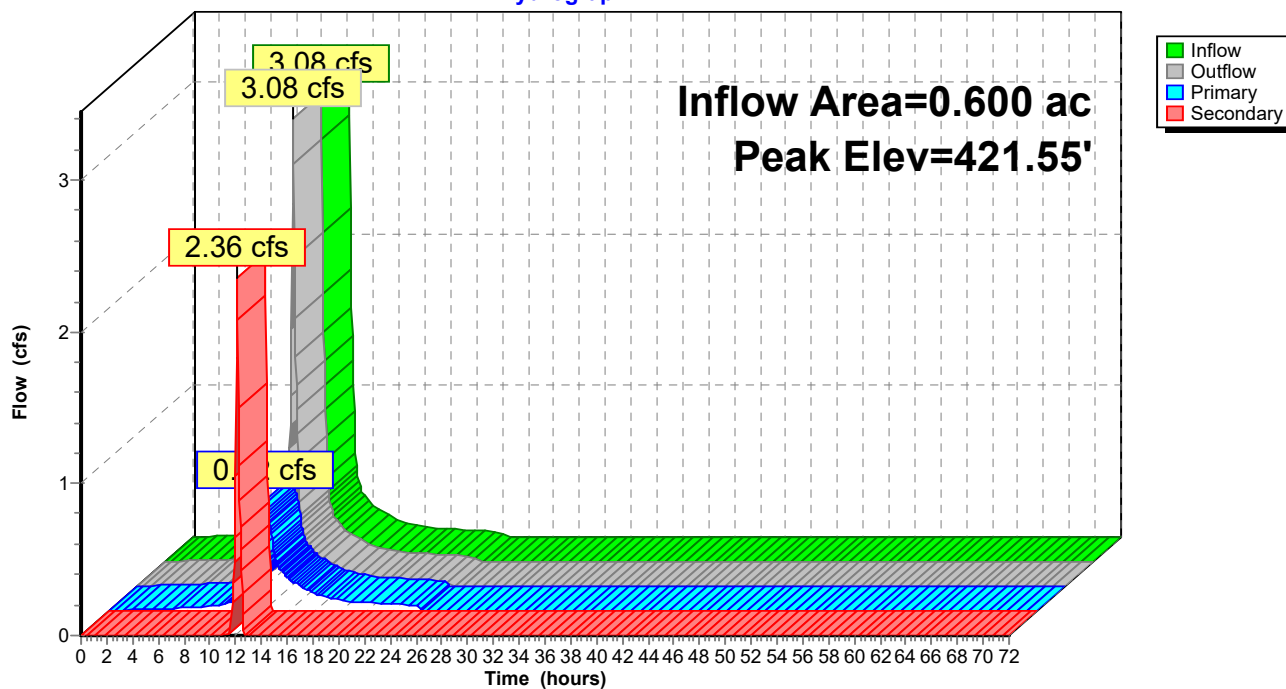
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Pond CB FS1.6:

Hydrograph



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Type III 24-hr 100-yr Rainfall=8.30"

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Stage-Area-Storage for Pond CB FS1.6:

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
420.00	0	420.53	0	421.06	0
420.01	0	420.54	0	421.07	0
420.02	0	420.55	0	421.08	0
420.03	0	420.56	0	421.09	0
420.04	0	420.57	0	421.10	0
420.05	0	420.58	0	421.11	0
420.06	0	420.59	0	421.12	0
420.07	0	420.60	0	421.13	0
420.08	0	420.61	0	421.14	0
420.09	0	420.62	0	421.15	0
420.10	0	420.63	0	421.16	0
420.11	0	420.64	0	421.17	0
420.12	0	420.65	0	421.18	0
420.13	0	420.66	0	421.19	0
420.14	0	420.67	0	421.20	0
420.15	0	420.68	0	421.21	0
420.16	0	420.69	0	421.22	0
420.17	0	420.70	0	421.23	0
420.18	0	420.71	0	421.24	0
420.19	0	420.72	0	421.25	0
420.20	0	420.73	0	421.26	0
420.21	0	420.74	0	421.27	0
420.22	0	420.75	0	421.28	0
420.23	0	420.76	0	421.29	0
420.24	0	420.77	0	421.30	0
420.25	0	420.78	0	421.31	0
420.26	0	420.79	0	421.32	0
420.27	0	420.80	0	421.33	0
420.28	0	420.81	0	421.34	0
420.29	0	420.82	0	421.35	0
420.30	0	420.83	0	421.36	0
420.31	0	420.84	0	421.37	0
420.32	0	420.85	0	421.38	0
420.33	0	420.86	0	421.39	0
420.34	0	420.87	0	421.40	0
420.35	0	420.88	0	421.41	0
420.36	0	420.89	0	421.42	0
420.37	0	420.90	0	421.43	0
420.38	0	420.91	0	421.44	0
420.39	0	420.92	0	421.45	0
420.40	0	420.93	0	421.46	0
420.41	0	420.94	0	421.47	0
420.42	0	420.95	0	421.48	0
420.43	0	420.96	0	421.49	0
420.44	0	420.97	0	421.50	0
420.45	0	420.98	0	421.51	0
420.46	0	420.99	0	421.52	0
420.47	0	421.00	0	421.53	0
420.48	0	421.01	0	421.54	0
420.49	0	421.02	0	421.55	0
420.50	0	421.03	0		
420.51	0	421.04	0		
420.52	0	421.05	0		

APPENDIX G: HYDRODYNAMICS SEPARATOR SIZING AND MAINTENANCE



State of New Jersey

PHILIP D. MURPHY
Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION

CATHERINE R. McCABE
Acting Commissioner

SHEILA Y. OLIVER
Lt. Governor

Mail Code – 401-02B
Division of Water Quality
Bureau of Nonpoint Pollution Control
P.O. Box 420 – 401 E. State St.
Trenton, NJ 08625-0420
Phone: (609) 633-7021 / Fax: (609) 777-0432
http://www.state.nj.us/dep/dwq/bnpc_home.htm

March 27, 2018

Graham Bryant, M.Sc., P.E.
President
Hydroworks, LLC
136 Central Avenue
Clark, NJ 07066

Re: MTD Lab Certification
HydroStorm Hydrodynamic Separator by Hydroworks, LLC
Online Installation

TSS Removal Rate 50%

Dear Mr. Bryant:

The Stormwater Management rules under N.J.A.C. 7:8-5.5(b) and 5.7 (c) allow the use of manufactured treatment devices (MTDs) for compliance with the design and performance standards at N.J.A.C. 7:8-5 if the pollutant removal rates have been verified by the New Jersey Corporation for Advanced Technology (NJCAT) and have been certified by the New Jersey Department of Environmental Protection (NJDEP). Hydroworks, LLC has requested an MTD Laboratory Certification for the Hydroworks HydroStorm Hydrodynamic Separator.

The project falls under the “Procedure for Obtaining Verification of a Stormwater Manufactured Treatment Device from New Jersey Corporation for Advance Technology” dated January 25, 2013. The applicable protocol is the “New Jersey Laboratory Testing Protocol to Assess Total Suspended Solids Removal by a Hydrodynamic Sedimentation Manufactured Treatment Device” dated January 25, 2013.

NJCAT verification documents submitted to the NJDEP indicate that the requirements of the aforementioned protocol have been met or exceeded. The NJCAT letter also included a recommended certification TSS removal rate and the required maintenance plan. The NJCAT Verification Report with the Verification Appendix (dated February 2018) for this device is published online at <http://www.njcat.org/verification-process/technology-verification-database.html>.

The NJDEP certifies the use of the HydroStorm by Hydroworks, LLC at a TSS removal rate of 50% when designed, operated, and maintained in accordance with the information provided in the Verification Appendix and the following conditions:

1. The maximum treatment flow rate (MTFR) for the manufactured treatment device (MTD) is calculated using the New Jersey Water Quality Design Storm (1.25 inches in 2 hrs) in N.J.A.C. 7:8-5.5.
2. The HydroStorm shall be installed using the same configuration reviewed by NJCAT and shall be sized in accordance with the criteria specified in item 6 below.
3. This HydroStorm cannot be used in series with another MTD or a media filter (such as a sand filter) to achieve an enhanced removal rate for total suspended solids (TSS) removal under N.J.A.C. 7:8-5.5.
4. Additional design criteria for MTDs can be found in Chapter 9.6 of the New Jersey Stormwater Best Management Practices (NJ Stormwater BMP) Manual, which can be found online at www.njstormwater.org.
5. The maintenance plan for a site using this device shall incorporate, at a minimum, the maintenance requirements for the Hydrostorm. A copy of the maintenance plan is attached to this certification. However, it is recommended to review the maintenance website at <http://www.hydroworks.com/hydrostormo&m.pdf> for any changes to the maintenance requirements.
6. Sizing Requirement:

The example below demonstrates the sizing procedure for the Hydrostorm:

Example: A 0.25-acre impervious site is to be treated to 50% TSS removal using a HydroStorm. The impervious site runoff (Q) based on the New Jersey Water Quality Design Storm was determined to be 0.79 cfs.

Maximum Treatment Flow Rate (MTFR) Evaluation:

The site runoff (Q) was based on the following:

time of concentration = 10 minutes

i = 3.2 in/hr (page 5-8, Fig. 5-3 of the NJ Stormwater BMP Manual)

c = 0.99 (runoff coefficient for impervious)

$Q = ciA = 0.99 \times 3.2 \times 0.25 = 0.79 \text{ cfs}$

Given the site runoff is 0.79 cfs and based on Table 1 below, the HydroStorm Model HS4 with a MTFR of 0.88 cfs could be used for this site to remove 50% of the TSS from the impervious area without exceeding the MTFR.

The sizing table corresponding to the available system models is noted below. Additional specifications regarding each model can be found in the Verification Appendix under Table A-1.

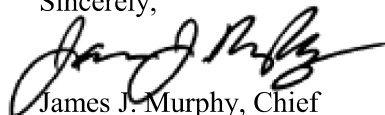
Table 1 HydroStorm Sizing Information

HydroStorm Model	NJDEP 50% TSS Maximum Treatment Flow Rate (cfs)	Treatment Area (ft²)	Hydraulic Loading Rate (gpm/ft²)	50% Maximum Sediment Storage (ft³)
HS3	0.50	7.1	31.4	3.6
HS4	0.88	12.6	31.4	6.3
HS5	1.37	19.6	31.4	9.8
HS6	1.98	28.3	31.4	14.2
HS7	2.69	38.5	31.4	19.3
HS8	3.52	50.3	31.4	25.2
HS9	4.45	63.6	31.4	31.8
HS10	5.49	78.5	31.4	39.3
HS11	6.65	95.0	31.4	47.5
HS12	7.91	113.0	31.4	56.5

A detailed maintenance plan is mandatory for any project with a Stormwater BMP subject to the Stormwater Management Rules, N.J.A.C. 7:8. The plan must include all of the items identified in the Stormwater Management Rules, N.J.A.C. 7:8-5.8. Such items include, but are not limited to, the list of inspection and maintenance equipment and tools, specific corrective and preventative maintenance tasks, indication of problems in the system, and training of maintenance personnel. Additional information can be found in Chapter 8: Maintenance and Retrofit of Stormwater Management Measures.

If you have any questions regarding the above information, please contact Brian Salvo or Nick Grotts of my office at (609) 633-7021.

Sincerely,



James J. Murphy, Chief
Bureau of Nonpoint Pollution Control

Attachment: Maintenance Plan

cc: Chron File
Richard Magee, NJCAT
Vince Mazzei, NJDEP - DLUR
Ravi Patraju, NJDEP - BES
Gabriel Mahon, NJDEP - BNPC
Brian Salvo, NJDEP – BNPC
Nick Grotts, NJDEP – BNPC



Hydroworks® HydroStorm

Operations & Maintenance Manual

Version 1.0

Please call Hydroworks at 888-290-7900 or email us at support@hydroworks.com if you have any questions regarding the Inspection Checklist. Please fax a copy of the completed checklist to Hydroworks at 888-783-7271 for our records.

Introduction

The HydroStorm is a state of the art hydrodynamic separator. Hydrodynamic separators remove solids, debris and lighter than water (oil, trash, floating debris) pollutants from stormwater. Hydrodynamic separators and other water quality measures are mandated by regulatory agencies (Town/City, State, Federal Government) to protect storm water quality from pollution generated by urban development (traffic, people) as part of new development permitting requirements.

As storm water treatment structures fill up with pollutants they become less and less effective in removing new pollution. Therefore, it is important that storm water treatment structures be maintained on a regular basis to ensure that they are operating at optimum performance. The HydroStorm is no different in this regard and this manual has been assembled to provide the owner/operator with the necessary information to inspect and coordinate maintenance of their HydroStorm.

Hydroworks® HydroStorm Operation

The Hydroworks HydroStorm (HS) separator is a unique hydrodynamic by-pass separator. It incorporates a protected submerged pretreatment zone to collect larger solids, a treatment tank to remove finer solids, and a dual set of weirs to create a high flow bypass. High flows are conveyed directly to the outlet and do not enter the treatment area, however, the submerged pretreatment area still allows removal of coarse solids during high flows.

Under normal or low flows, water enters an inlet area with a horizontal grate. The area underneath the grate is submerged with openings to the main treatment area of the separator. Coarse solids fall through the grate and are either trapped in the pretreatment area or conveyed into the main treatment area depending on the flow rate. Fines are transported into the main treatment area. Openings and weirs in the pretreatment area allow entry of water and solids into the main treatment area and cause water to rotate in the main treatment area creating a vortex motion. Water in the main treatment area is forced to rise along the walls of the separator to discharge from the treatment area to the downstream pipe.

The vortex motion forces solids and floatables to the middle of the inner chamber. Floatables are trapped since the inlet to the treatment area is submerged. The design maximizes the retention of settled solids since solids are forced to the center of the inner chamber by the vortex motion of water while water must flow up the walls of the separator to discharge into the downstream pipe.

A set of high flow weirs near the outlet pipe create a high flow bypass over both the pretreatment area and main treatment chamber. The rate of flow into the treatment area is regulated by the number and size of openings into the treatment chamber and the height of by-pass weirs. High flows flow over the weirs directly to the outlet pipe preventing the scour and resuspension of any fines collected in the treatment chamber.



A central access tube is located in the structure to provide access for cleaning. The arrangement of the inlet area and bypass weirs near the outlet pipe facilitate the use of multiple inlet pipes.

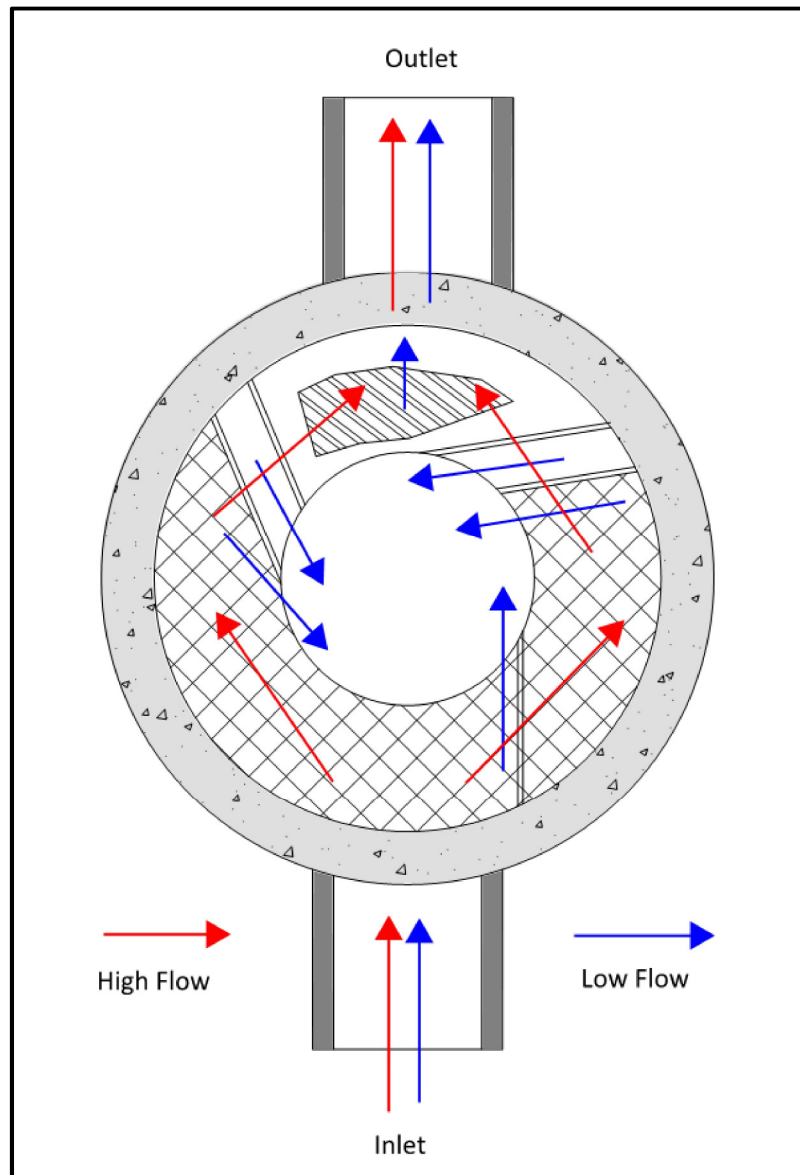


Figure 1. Hydroworks HydroStorm Operation – Plan View

Figure 2 is a profile view of the HydroStorm separator showing the flow patterns for low and high flows.

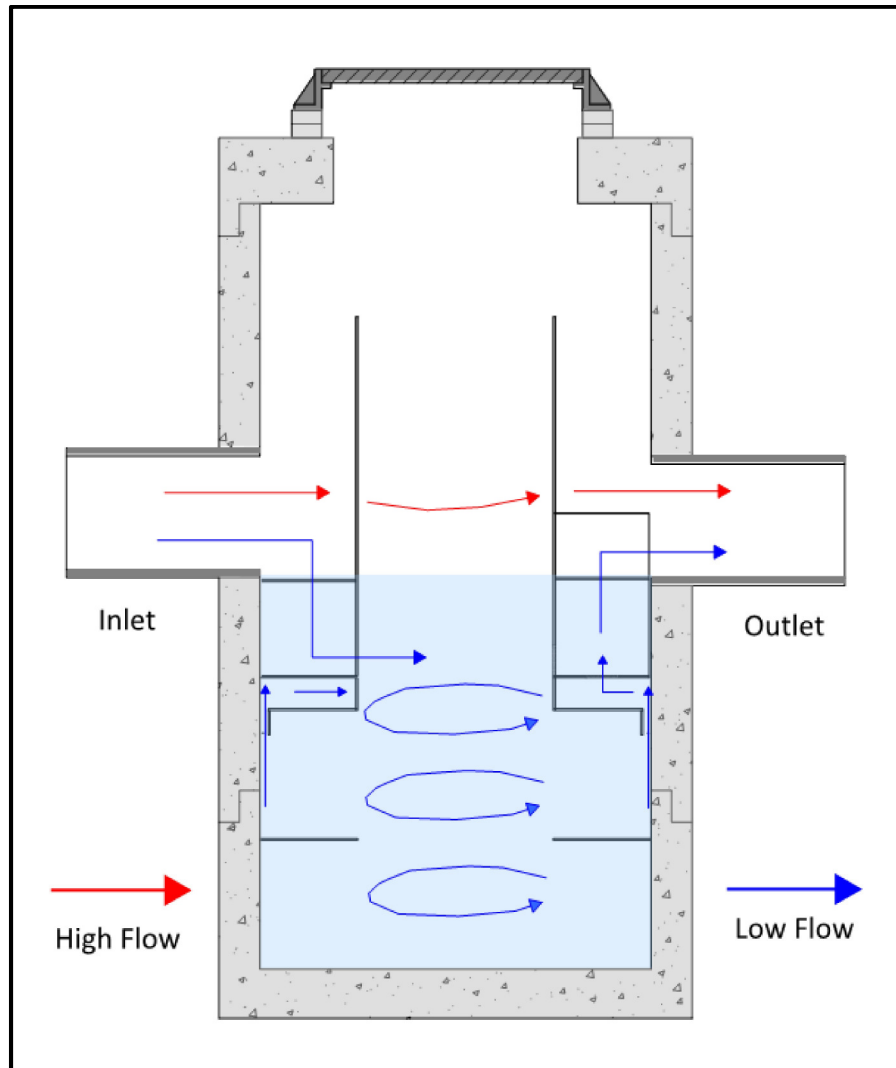


Figure 2. Hydroworks HydroStorm Operation – Profile View

The HS 4i is an inlet version of the HS 4 separator. There is a catch-basin grate on top of the HS 4i. A funnel sits underneath the grate on the frame and directs the water to the inlet side of the separator to ensure all low flows are properly treated. The whole funnel is removed for inspection and cleaning.

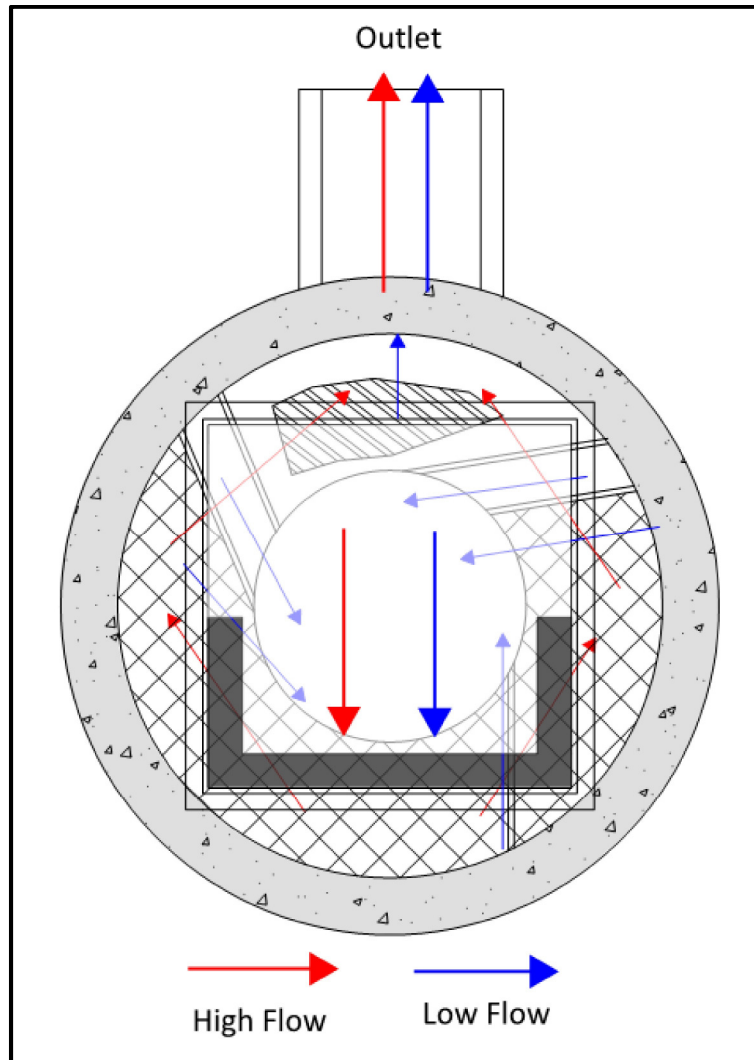


Figure 3. Hydroworks HS 4i Funnel

Inspection

Procedure

Floatables

A visual inspection can be conducted for floatables by removing the covers and looking down into the center access tube of the separator. Separators with an inlet grate (HS 4i or custom separator) will have a plastic funnel located under the grate that must be removed from the frame prior to inspection or maintenance. If you are missing a funnel please contact Hydroworks at the numbers provided at the end of this document.

TSS/Sediment

Inspection for TSS build-up can be conducted using a Sludge Judge®, Core Pro®, AccuSludge® or equivalent sampling device that allows the measurement of the depth of TSS/sediment in the unit. These devices typically have a ball valve at the bottom of the tube that allows water and TSS to flow into the tube when lowering the tube into the unit. Once the unit touches the bottom of the device, it is quickly pulled upward such that the water and TSS in the tube forces the ball valve closed allowing the user to see a full core of water/TSS in the unit. The unit should be inspected for TSS through each of the access covers. Several readings (2 or 3) should be made at each access cover to ensure that an accurate TSS depth measurement is recorded.

Frequency

Construction Period

The HydroStorm separator should be inspected every four weeks and after every large storm (over 0.5" (12.5 mm) of rain) during the construction period.

Post-Construction Period

The Hydroworks HydroStorm separator should be inspected during the first year of operation for normal stabilized sites (grassed or paved areas). If the unit is subject to oil spills or runoff from unstabilized (storage piles, exposed soils) areas the HydroStorm separator should be inspected more frequently (4 times per year). The initial annual inspection will indicate the required future frequency of inspection and maintenance if the unit was maintained after the construction period.

Reporting

Reports should be prepared as part of each inspection and include the following information:

1. Date of inspection
2. GPS coordinates of Hydroworks unit
3. Time since last rainfall
4. Date of last inspection
5. Installation deficiencies (missing parts, incorrect installation of parts)
6. Structural deficiencies (concrete cracks, broken parts)
7. Operational deficiencies (leaks, blockages)
8. Presence of oil sheen or depth of oil layer
9. Estimate of depth/volume of floatables (trash, leaves) captured
10. Sediment depth measured
11. Recommendations for any repairs and/or maintenance for the unit
12. Estimation of time before maintenance is required if not required at time of inspection



A sample inspection checklist is provided at the end of this manual.

Maintenance

Procedure

The Hydroworks HydroStorm unit is typically maintained using a vacuum truck. There are numerous companies that can maintain the HydroStorm separator. Maintenance with a vacuum truck involves removing all of the water and sediment together. The water is then separated from the sediment on the truck or at the disposal facility.

A central access opening (24" or greater) is provided to the gain access to the lower treatment tank of the unit. This is the primary location to maintain by vacuum truck. The pretreatment area can also be vacuumed and/or flushed into the lower treatment tank of the separator for cleaning via the central access once the water level is lowered below the pretreatment floor.

In instances where a vacuum truck is not available other maintenance methods (i.e. clamshell bucket) can be used, but they will be less effective. If a clamshell bucket is used the water must be decanted prior to cleaning since the sediment is under water and typically fine in nature. Disposal of the water will depend on local requirements. Disposal options for the decanted water may include:

1. Discharge into a nearby sanitary sewer manhole
2. Discharge into a nearby LID practice (grassed swale, bioretention)
3. Discharge through a filter bag into a downstream storm drain connection

The local municipality should be consulted for the allowable disposal options for both water and sediments prior to any maintenance operation. Once the water is decanted the sediment can be removed with the clamshell bucket.

Disposal of the contents of the separator depend on local requirements. Maintenance of a Hydroworks HydroStorm unit will typically take 1 to 2 hours based on a vacuum truck and longer for other cleaning methods (i.e. clamshell bucket).



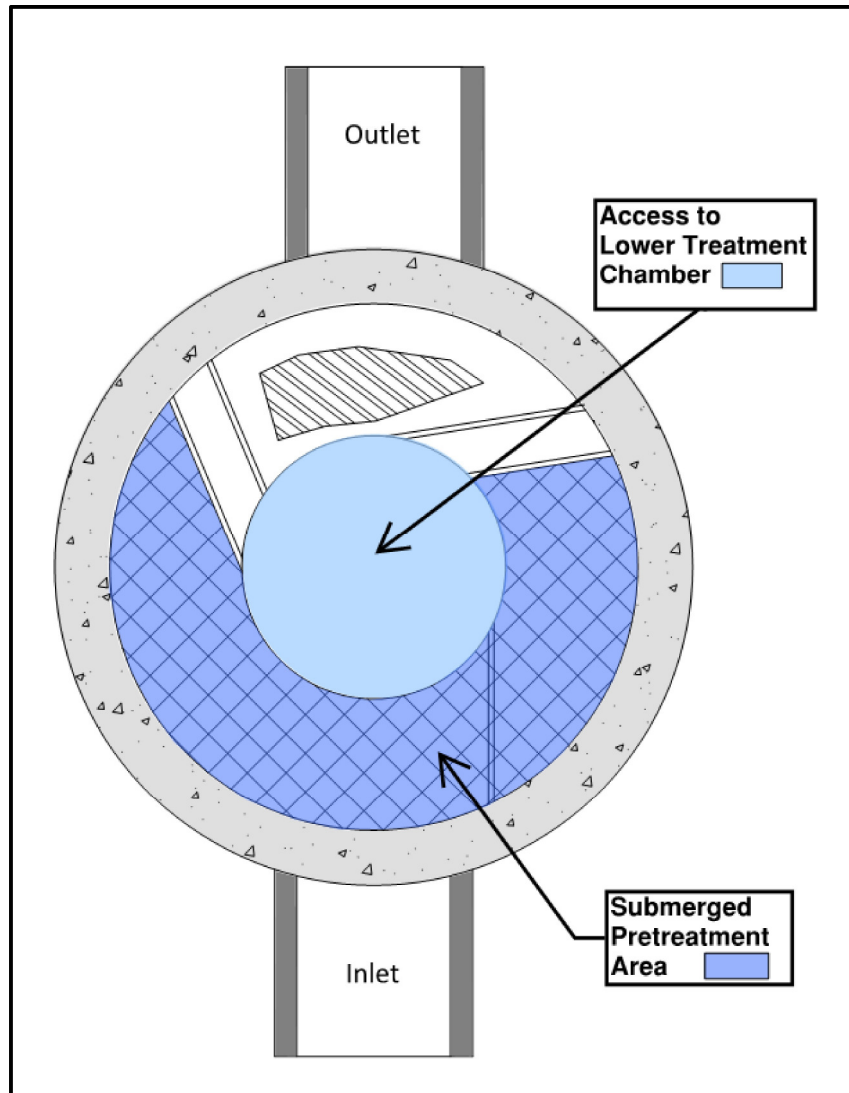


Figure 3. Maintenance Access

Frequency

Construction Period

A HydroStorm separator can fill with construction sediment quickly during the construction period. The HydroStorm must be maintained during the construction period when the depth of TSS/sediment reaches 24" (600 mm). It must also be maintained during the construction period if there is an appreciable depth of oil in the unit (more than a sheen) or if floatables other than oil cover over 50% of the area of the separator

The HydroStorm separator should be maintained at the end of the construction period, prior to operation for the post-construction period.

Post-Construction Period

The HydroStorm was independently tested by Alden Research Laboratory in 2017. A HydroStorm HS 4 was tested for scour with a 50% sediment depth of 0.5 ft. Therefore, maintenance for sediment accumulation is required if the depth of sediment is 1 ft or greater in separators with standard water (sump) depths (Table 1).

There will be designs with increased sediment storage based on specifications or site-specific criteria. A measurement of the total water depth in the separator through the central access tube should be taken and compared to water depth given in Table 1. The standard water depth from Table 1 should be subtracted from the measured water depth and the resulting extra depth should be added to the 1 ft to determine the site-specific sediment maintenance depth for that separator.

For example, if the measured water depth in the HS-7 is 7 feet, then the sediment maintenance depth for that HS-7 is 2 ft ($= 1 + 7 - 6$) and the separator does not need to be cleaned for sediment accumulation until the measure sediment depth is 2 ft.

The HydroStorm separator must also be maintained if there is an appreciable depth of oil in the unit (more than a sheen) or if floatables other than oil cover over 50% of the water surface of the separator.

Table 1 Standard Dimensions for Hydroworks HydroStorm Models

Model	Diameter (ft)	Total Water Depth (ft)	Sediment Maintenance Depth for Table 1 Total Water Depth(ft)
HS-3	3	3	1
HS-4	4	4	1
HS-5	5	4	1
HS-6	6	4	1
HS-7	7	6	1
HS-8	8	7	1
HS-9	9	7.5	1
HS-10	10	8	1
HS-11	11	9	1
HS-12	12	9.5	1



HYDROSTORM INSPECTION SHEET

Date _____
Date of Last Inspection _____

Site _____
City _____
State _____
Owner _____

GPS Coordinates _____

Date of last rainfall _____

Site Characteristics

	Yes	No
Soil erosion evident	<input type="checkbox"/>	<input type="checkbox"/>
Exposed material storage on site	<input type="checkbox"/>	<input type="checkbox"/>
Large exposure to leaf litter (lots of trees)	<input type="checkbox"/>	<input type="checkbox"/>
High traffic (vehicle) area	<input type="checkbox"/>	<input type="checkbox"/>

HydroStorm

	Yes	No
Obstructions in the inlet or outlet	<input type="checkbox"/> *	<input type="checkbox"/>
Missing internal components	<input type="checkbox"/> **	<input type="checkbox"/>
Improperly installed inlet or outlet pipes	<input type="checkbox"/> ***	<input type="checkbox"/>
Internal component damage (cracked, broken, loose pieces)	<input type="checkbox"/> **	<input type="checkbox"/>
Floating debris in the separator (oil, leaves, trash)	<input type="checkbox"/>	<input type="checkbox"/>
Large debris visible in the separator	<input type="checkbox"/> *	<input type="checkbox"/>
Concrete cracks/deficiencies	<input type="checkbox"/> ***	<input type="checkbox"/>
Exposed rebar	<input type="checkbox"/> **	<input type="checkbox"/>
Water seepage (water level not at outlet pipe invert)	<input type="checkbox"/> ***	<input type="checkbox"/>
Water level depth below outlet pipe invert _____"		

Routine Measurements

Floating debris depth	< 0.5" (13mm)	<input type="checkbox"/>	>0.5" 13mm)	<input type="checkbox"/> *
Floating debris coverage	< 50% of surface area	<input type="checkbox"/>	> 50% surface area	<input type="checkbox"/> *
Sludge depth	< 12" (300mm)	<input type="checkbox"/>	> 12" (300mm)	<input type="checkbox"/> *

* Maintenance required
** Repairs required
*** Further investigation is required





Hydroworks® HydroStorm

One Year Limited Warranty

Hydroworks, LLC warrants, to the purchaser and subsequent owner(s) during the warranty period subject to the terms and conditions hereof, the Hydroworks HydroStorm to be free from defects in material and workmanship under normal use and service, when properly installed, used, inspected and maintained in accordance with Hydroworks written instructions, for the period of the warranty. The standard warranty period is 1 year.

The warranty period begins once the separator has been manufactured and is available for delivery. Any components determined to be defective, either by failure or by inspection, in material and workmanship will be repaired, replaced or remanufactured at Hydroworks' option provided, however, that by doing so Hydroworks, LLC will not be obligated to replace an entire insert or concrete section, or the complete unit. This warranty does not cover shipping charges, damages, labor, any costs incurred to obtain access to the unit, any costs to repair/replace any surface treatment/cover after repair/replacement, or other charges that may occur due to product failure, repair or replacement.

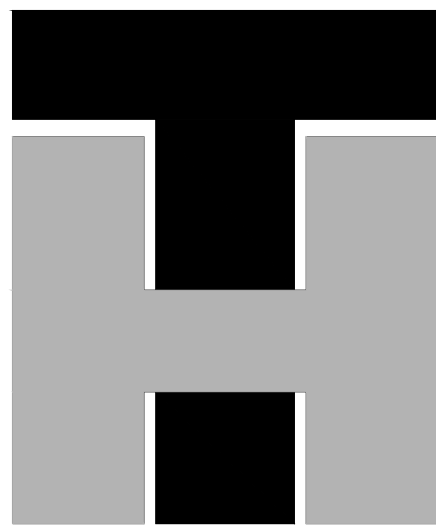
This warranty does not apply to any material that has been disassembled or modified without prior approval of Hydroworks, LLC, that has been subjected to misuse, misapplication, neglect, alteration, accident or act of God, or that has not been installed, inspected, operated or maintained in accordance with Hydroworks, LLC instructions and is in lieu of all other warranties expressed or implied. Hydroworks, LLC does not authorize any representative or other person to expand or otherwise modify this limited warranty.

The owner shall provide Hydroworks, LLC with written notice of any alleged defect in material or workmanship including a detailed description of the alleged defect upon discovery of the defect. Hydroworks, LLC should be contacted at 136 Central Ave., Clark, NJ 07066 or any other address as supplied by Hydroworks, LLC. (888-290-7900).

This limited warranty is exclusive. There are no other warranties, express or implied, or merchantability or fitness for a particular purpose and none shall be created whether under the uniform commercial code, custom or usage in the industry or the course of dealings between the parties. Hydroworks, LLC will replace any goods that are defective under this warranty as the sole and exclusive remedy for breach of this warranty.

Subject to the foregoing, all conditions, warranties, terms, undertakings or liabilities (including liability as to negligence), expressed or implied, and howsoever arising, as to the condition, suitability, fitness, safety, or title to the Hydroworks HydroStorm are hereby negated and excluded and Hydroworks, LLC gives and makes no such representation, warranty or undertaking except as expressly set forth herein. Under no circumstances shall Hydroworks, LLC be liable to the Purchaser or to any third party for product liability claims; claims arising from the design, shipment, or installation of the HydroStorm, or the cost of other goods or services related to the purchase and installation of the HydroStorm. For this Limited Warranty to apply, the HydroStorm must be installed in accordance with all site conditions required by state and local codes; all other applicable laws; and Hydroworks' written installation instructions.

Hydroworks, LLC expressly disclaims liability for special, consequential or incidental damages (even if it has been advised of the possibility of the same) or breach of expressed or implied warranty. Hydroworks, LLC shall not be liable for penalties or liquidated damages, including loss of production and profits; labor and materials; overhead costs; or other loss or expense incurred by the purchaser or any third party. Specifically excluded from limited warranty coverage are damages to the HydroStorm arising from ordinary wear and tear; alteration, accident, misuse, abuse or neglect; improper maintenance, failure of the product due to improper installation of the concrete sections or improper sizing; or any other event not caused by Hydroworks, LLC. This limited warranty represents Hydroworks' sole liability to the purchaser for claims related to the HydroStorm, whether the claim is based upon contract, tort, or other legal basis.



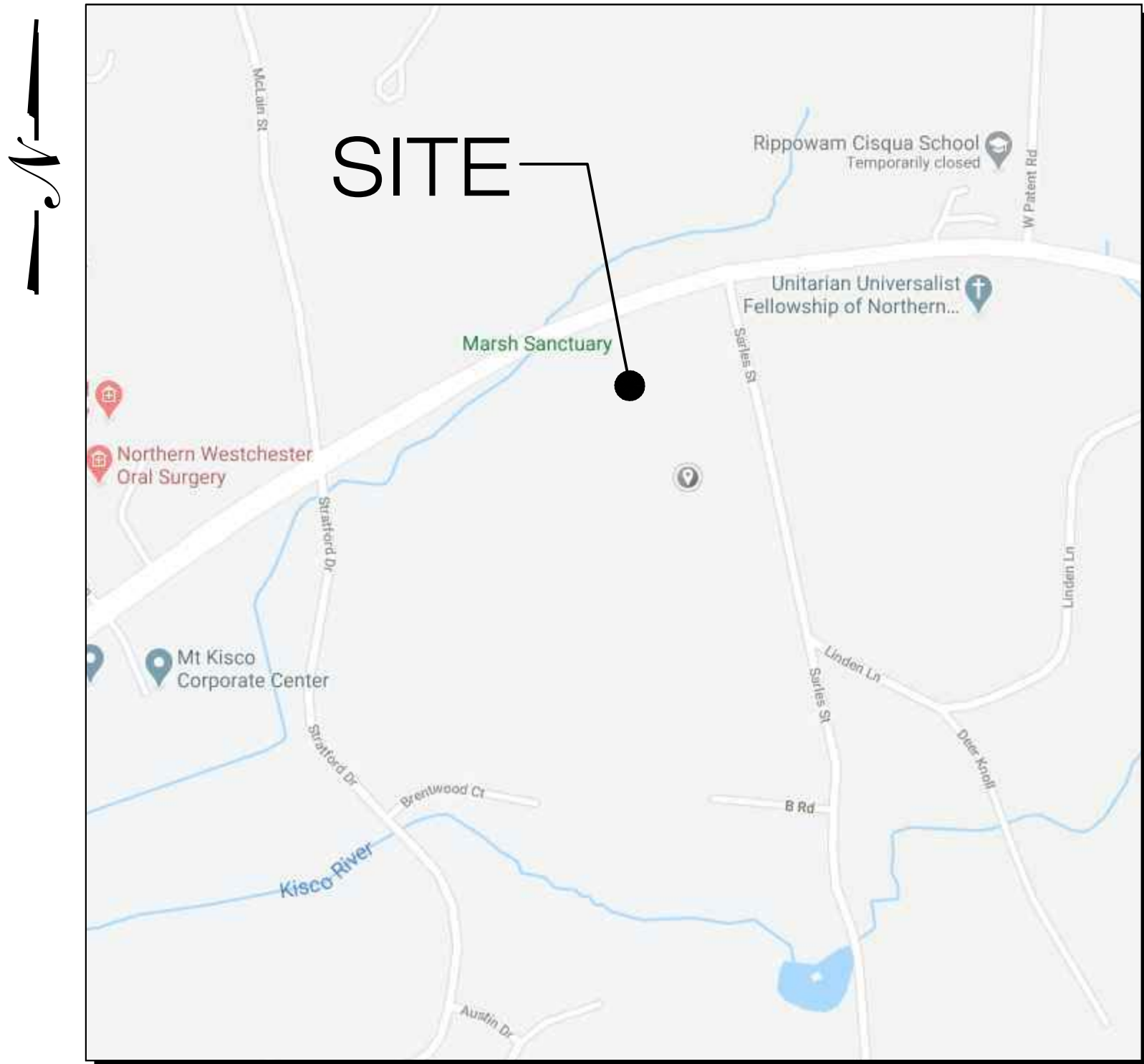
HOMELAND TOWERS, LLC

WIRELESS TELECOMMUNICATIONS FACILITY

MOUNT KISCO

180 S. BEDFORD RD.

MT. KISCO, NY 10594



LOCATION MAP

SCALE: 1" = 500'

DRAWING INDEX

T-1 TITLE SHEET & INDEX

1 OF 2 ABUTTERS PLAN

2 OF 2 PARTIAL EXISTING CONDITIONS SURVEY

R-1 500' RADIUS MAP & PROPERTY OWNERS

TR-1 1,600' TOWER RADIUS MAP

SP-1 SITE PLAN

SP-2 PARTIAL SITE PLAN

SP-3 PARTIAL SITE PLAN

SP-4 GRADING & DRAINAGE PLAN

CP-1 COMPOUND PLAN

A-1 - A-3 ELEVATIONS & ALTERNATE MONOPOLE ELEVATIONS

EC-1 - EC-2 EROSION CONTROL NOTES & DETAILS

C-1 - C-3 VERIZON EQUIPMENT, ANTENNA & LIGHTING PLANS & DETAILS

C-4 - C-5 SITE DETAILS

C-6 - C-7 AT&T EQUIPMENT & ANTENNA PLANS & DETAILS

C-8 DRAINAGE DETAILS (BY OTHERS)

SS-1 STEEP SLOPE PLAN

LS-1 LANDSCAPING & TREE PROTECTION PLAN

FD-1 FIRE TRUCK TURNING PLAN

SITE INFORMATION

PROJECT LOCATION: 180 S. BEDFORD RD.
MT. KISCO, NY 10594

PROJECT DESCRIPTION: RAWLAND SITE W/ GROUND EQUIPMENT
WITHIN 2,542± SF TELECOMMUNICATIONS
COMPOUND W/ NEW 140'± AGL MONOPINE.

PROPERTY DEVELOPER: HOMELAND TOWERS, LLC
9 HARMONY STREET
2ND FLOOR
DANBURY, CT 06810

DEVELOPER CONTACT: KLAUS WIMMER
(203) 297-6345

ENGINEER CONTACT: ROBERT C. BURNS
(860) 552-2036

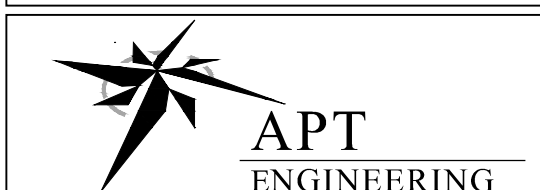
LATITUDE: 41° 11' 58.66"N
LONGITUDE: 73° 42' 48.55"W
ELEVATION: 426± AMSL

SECTION: 80.44
BLOCK: 1
LOT: 1
ZONE: CD -CONSERVATION DEVELOPMENT DISTRICT


HOMELAND TOWERS, LLC
9 HARMONY STREET
2nd FLOOR
DANBURY, CT 06810
(203) 297-6345


4 CENTEROCK ROAD
WEST NYACK, NY 10994


340 MOUNT KEMBLE AVENUE
MORRISTOWN, NEW JERSEY 07960


567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PH: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

PERMITTING DOCUMENTS		
NO	DATE	REVISION
0	08/13/20	FOR REVIEW: RCB
1	08/14/20	CLIENT REVS: RCB
2	11/03/20	TOWN COMMENTS: RCB
3	12/22/20	TOWN COMMENTS: RCB
4	01/25/21	TOWN COMMENTS: RCB
5	03/19/21	TOWN COMMENTS: RCB
6	07/12/21	TOWN COMMENTS: RCB
7	07/13/21	TOWN COMMENTS: RCB
8	07/14/21	TOWN COMMENTS: RCB

DESIGN PROFESSIONALS OF RECORD

PROF: SCOTT M. CHASSE P.E.
COMP: APT ENGINEERING
ADD: 567 VAUXHALL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

DEVELOPER: HOMELAND TOWERS, LLC
ADDRESS: 9 HARMONY STREET
2ND FLOOR
DANBURY, CT 06810

NOTE:
IT IS A VIOLATION OF NEW YORK STATE
EDUCATION LAW ARTICLE 145, SECTION
7209 (2) FOR ANY PERSON, UNLESS
ACTING UNDER THE DIRECTION OF A
LICENSED PROFESSIONAL ENGINEER OR
LAND SURVEYOR, TO ALTER AN ITEM IN
ANY WAY. IF AN ITEM BEARING THE SEAL
OF AN ENGINEER OR LAND SURVEYOR IS
ALTERED, THE ALTERING ENGINEER OR
LAND SURVEYOR SHALL AFFIX TO THE
ITEM HIS SEAL AND THE NOTATION
"ALTERED BY" FOLLOWED BY THE
SIGNATURE AND THE DATE OF SUCH
ALTERATION, AND A SPECIFIC
DESCRIPTION OF THE ALTERATION.

HOMELAND TOWERS MOUNT KISCO

SITE 180 S. BEDFORD RD.

ADDRESS: MT. KISCO, NY 10594

APT FILING NUMBER: NY283830

DATE: 08/13/20 DRAWN BY: CSH

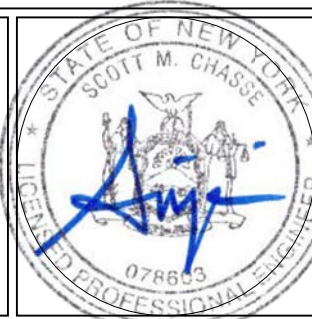
CHECKED BY: RCB

SHEET TITLE:

TITLE SHEET
& INDEX

SHEET NUMBER:

T-1



OWNER:
SKULL ISLAND PARTNERS LLC
C/O DAVID SELDIN
1571 OCEANVIEW DRIVE
TIERRA VERDE, FL 33715-2538

APPLICANTS:
HOMELAND TOWERS, LLC
9 HARMONY STREET
2ND FLOOR
DANBURY, CT 06810
KLAUS WIMMER
(203) 297-6345
VERIZON
4 CENTEROCK RD.
WEST NYACK, NY 10994

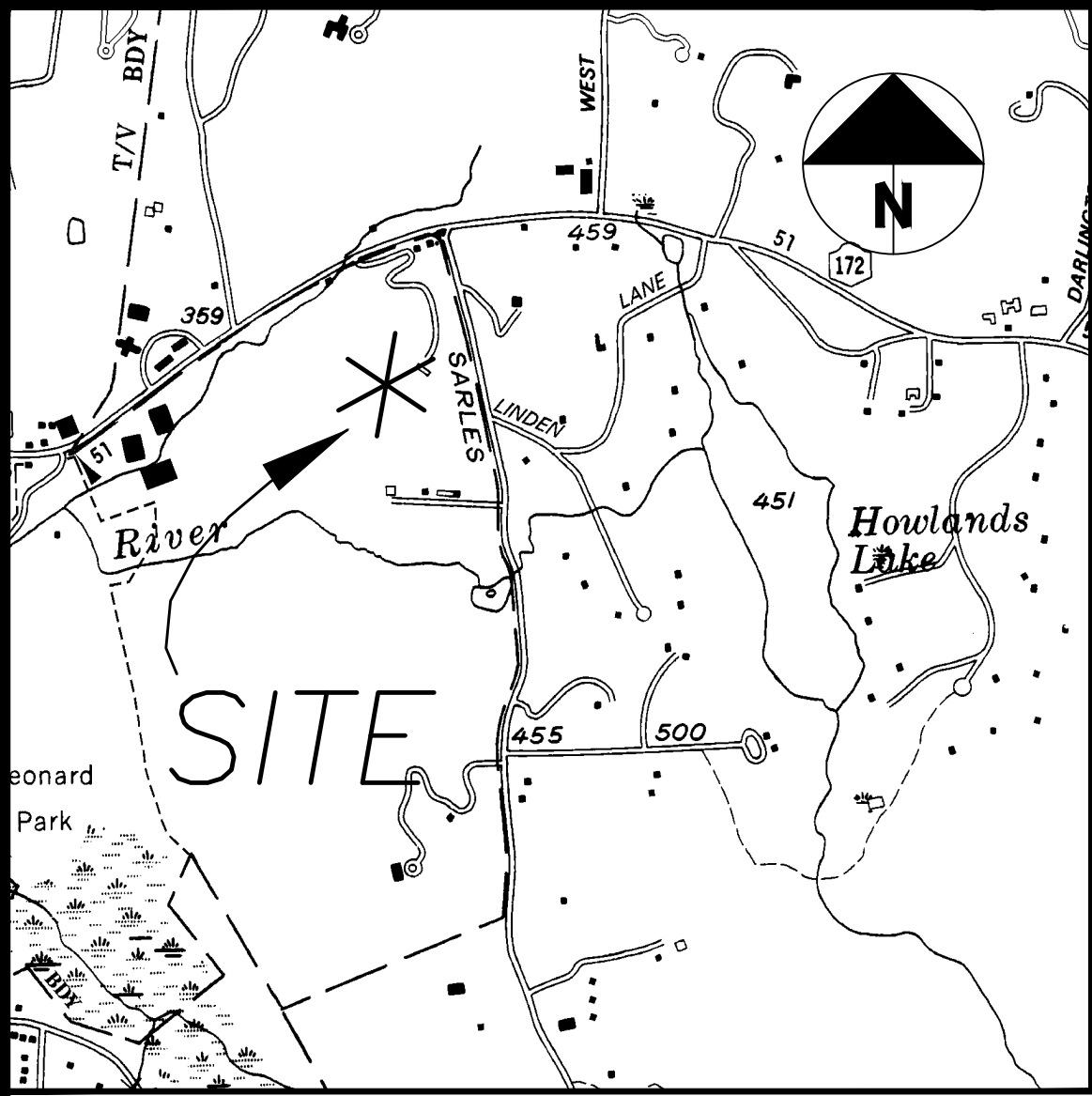
HOMELAND PROJECT ATTORNEY:
SNYDER & SNYDER, LLP
94 WHITE PLAINS ROAD
TARRYTOWN, NY 10591
(914) 333-0700

POWER PROVIDER:
CONEDISON: (800) 752-6633

TELCO PROVIDER:
VERIZON (914) 890-0200

DIG SAFELY NEW YORK:
(800) 962-7962

GOVERNING CODES:
2020 NEW YORK STATE UNIFORM
FIRE PREVENTION & BUILDING CODE
NATIONAL ELECTRIC CODE
TIA-222-H



LOCATION MAP
Source: N.Y.S.D.O.T. Quadrangle Sheet — Mt. Kisco, NY

"Copies from the original of this survey map not marked with an original of the land surveyor's inked seal or embossed seal shall not be considered to be a valid true copy."

Alterations not conforming to section 7209, subdivision 2, of the State Education Law, are prohibited.



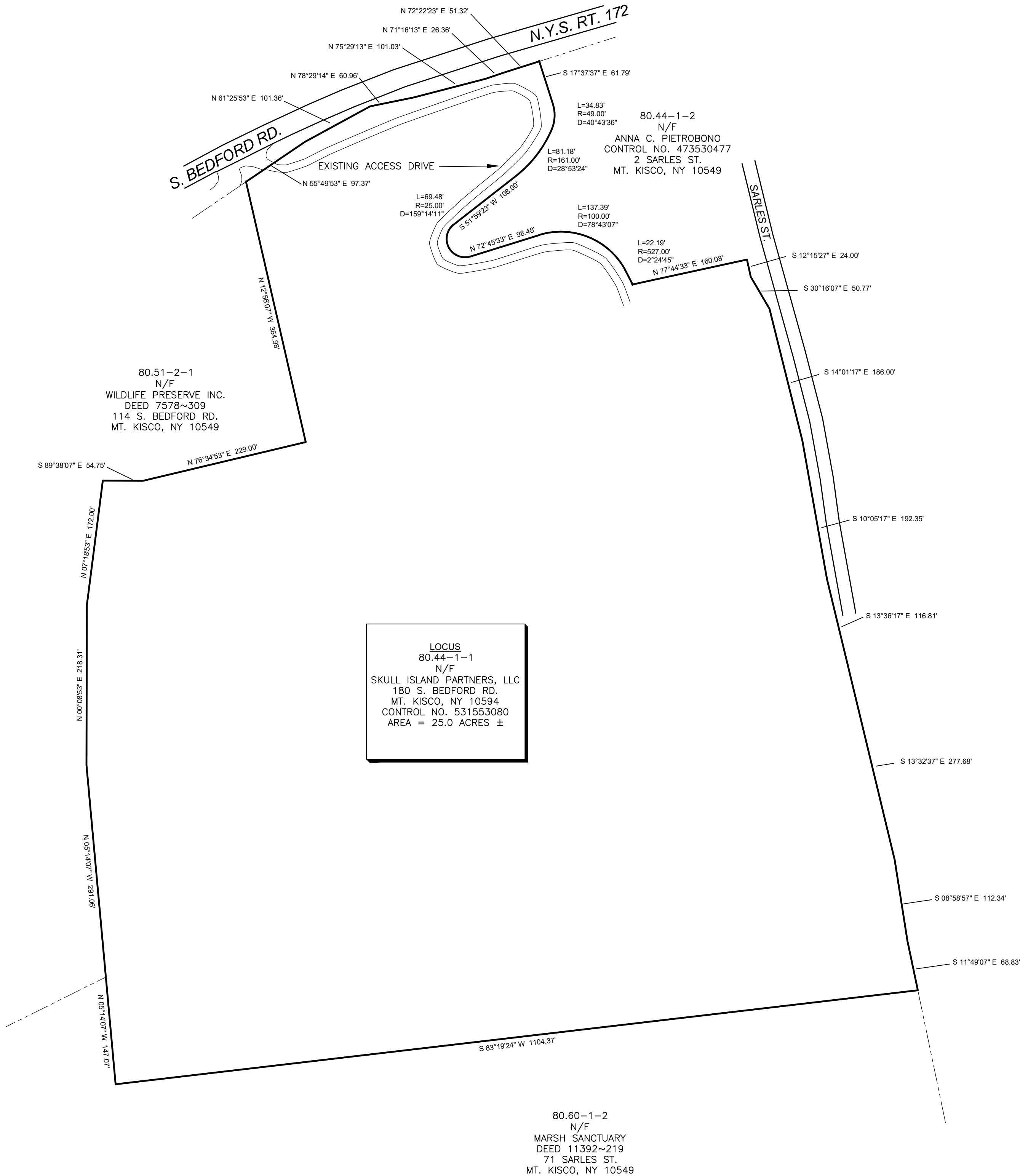
True North
@ West Longitude

SURVEY NOTES

1. NO TITLE REPORT WAS REFERENCED FOR THIS SURVEY.
2. AREA 25.0 ± ACRES
3. SUBJECT TO THE RIGHTS OF THE PUBLIC OVER SOUTH BEDFORD RD.
4. BASIS OF BEARINGS - TRUE NORTH @ 74° 30' WEST LONGITUDE.
5. UNDERGROUND FEATURES, FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN LOCATED FROM AVAILABLE RECORDS, FIELD LOCATIONS OF ASSOCIATED ABOVE GROUND STRUCTURES, ANY MARKINGS PROVIDED BY THE CLIENT. THEREFORE, THESE LOCATIONS MUST BE CONSIDERED APPROXIMATE. THERE MAY BE OTHER UNDERGROUND FEATURES, FACILITIES, STRUCTURES AND UTILITIES, THE LOCATION OR EXISTENCE OF WHICH IS NOT PRESENTLY KNOWN. LOCATION OF UNDERGROUND FEATURES, FACILITIES AND STRUCTURES ARE NOT CERTIFIED.
6. IN THE EVENT THAT THERE IS A DISCREPANCY BETWEEN THE CONTENTS OF THE SIGNED AND SEALED HARD COPY DRAWING AND THE CORRESPONDING DIGITAL DRAWING FILE, THE HARD COPY WITH AN ORIGINAL STAMP AND SIGNATURE SHALL BE THE CONTROLLING DOCUMENT. BE SURE TO COMPARE THE TWO DOCUMENTS BEFORE USING THE DIGITAL FILE.
7. THIS DRAWING HAS BEEN PREPARED FOR A 24"x36" FORMAT. DO NOT SCALE THIS DRAWING IF PLOTTED ON ANY OTHER FORMAT.
8. VERTICAL DATUM: NAVD83.
9. CONTOUR INTERVAL: 1 FOOT.

LEGEND

- ⊗ Evidence Found, Labeled
- Boundary Line
- - - County Tax Parcel Line
- 80.44-1-1 County Tax Map Parcel I.D. Number



SITE SPECIFIC NOTES

1. FIELD SURVEY DATE: AUGUST 6, 2020
2. HORIZONTAL DATUM: NORTH AMERICAN DATUM OF 1983 (NAD83)
3. VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
4. OWNER: SKULL ISLAND PARTNERS, LLC
263 13TH AVE. SOUTH SUITE 340
ST. PETERSBURG, FL. 33701
5. SITE NUMBER: NY172
6. SITE ADDRESS: 180 S. BEDFORD RD.
MT. KISCO, NY 10594
7. APPLICANT: HOMELAND TOWERS
8. JURISDICTION: VILLAGE OF MT. KISCO
WESTCHESTER COUNTY, NY
9. TAX ID: 80.44-1-1
10. DEED REFERENCE: CONTROL NO. 531553080
11. ZONING DISTRICT: CD CONSERVATION DEVELOPMENT DISTRICT
12. THE HORIZONTAL DATUM AND VERTICAL DATUM WERE DERIVED FROM A DUAL FREQUENCY GPS SURVEY.
13. ALL UNDERGROUND UTILITY INFORMATION PRESENTED HEREON WAS DETERMINED FROM SURFACE EVIDENCE AND PLANS OF RECORD. ALL UNDERGROUND UTILITIES SHOULD BE LOCATED IN THE FIELD PRIOR TO COMMENCEMENT OF ALL SITE WORK. CALL DIGSAFELY NEW YORK: 1-800-962-7962 A MINIMUM OF 72 HOURS PRIOR TO PLANNED ACTIVITY.
14. ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY MAPS, THE PROPOSED IMPROVEMENTS ON THIS PROPERTY ARE LOCATED IN AN AREA DESIGNATED AS ZONE X (UNSHADED), AREA OF MINIMAL FLOODING. COMMUNITY PANEL NO. 36119 C 0154 F
EFFECTIVE DATE: SEPTEMBER 28, 2007.
15. FIELD SURVEY BY EDM TOTAL STATION.
16. THIS IS NOT A BOUNDARY SURVEY. METES AND BOUNDS SHOWN HEREON ARE COMPILED FROM THE SUBJECT REFERENCED SITE PLAN. DIRECTIONS HAVE BEEN ROTATED INTO MAP DATUM (NAD 83) BASED ON FOUND EVIDENCE AS NOTED. NO BOUNDARY SURVEY WAS PERFORMED.
17. ALL PROPERTY LINES SHOWN ARE FROM DEEDS, PLANS OF RECORD AND WESTCHESTER COUNTY, NY GIS DATABASE AND ARE APPROXIMATE ONLY.
18. ABUTTING PROPERTY LINES AND STREET LINES ARE TAKEN FROM THE REFERENCE PLANS AND THE WESTCHESTER COUNTY, NY GIS DATABASE AND ARE APPROXIMATE ONLY.

Abutters Plan
Premises of

Skull Island Partners, LLC

Control No. 531553080

Village of Mount Kisco, County of Westchester
State of New York

No.	Date	Description

LAWSON SURVEYING & MAPPING

Boundary ~ Topographic ~ Control ~ Deformation ~ Construction ~ C.I.S. ~ Subdivision ~ C.P.S.
2959 County Route 6 ♦ Oneonta, New York 13820
Phone: (807) 432-3300
Facsimile: (807) 432-4313
www.lawsonsurveying.com

LSM



DATE: August 6, 2020
W.O. No.: 6969
SCALE: 1 inch = 100 feet
DRAWN BY: J.D.J.
CHECKED BY: R.J.L.
FIELD CHECKED BY: J.D.J.
DWG FILE: 6969.DWG
MAP No.: M 24-1241
SHEET No.: 1 of 2

"Copies from the original of this survey map not marked with an original of the land surveyor's inked seal or embossed seal shall not be considered to be a valid true copy."

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SURVEY NOTES

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8. VERTICAL DATUM: NAVD83.
9. CONTOUR INTERVAL: 1 FOOT.

LEGEND

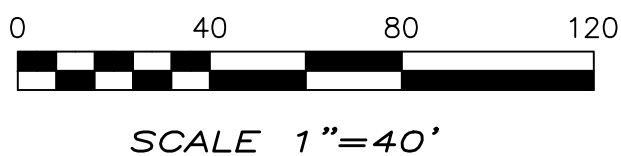
- ⊗ Evidence Found, Labeled
- Boundary Line
- County Tax Parcel Line
- ⊙ Utility Pole
- + Guy Anchor
- E/T/C— Utility Line, Electric/Telephone/Cable T.V.
- 80.44-1-1 County Tax Map Parcel I.D. Number
- Deciduous Tree >4"
- Coniferous Tree >4"

Existing Conditions Survey
Portion of
Premises of

Skull Island Partners, LLC

Control No. 531553080

Village of Mount Kisco, County of Westchester
State of New York



LAWSON SURVEYING & MAPPING

LSM

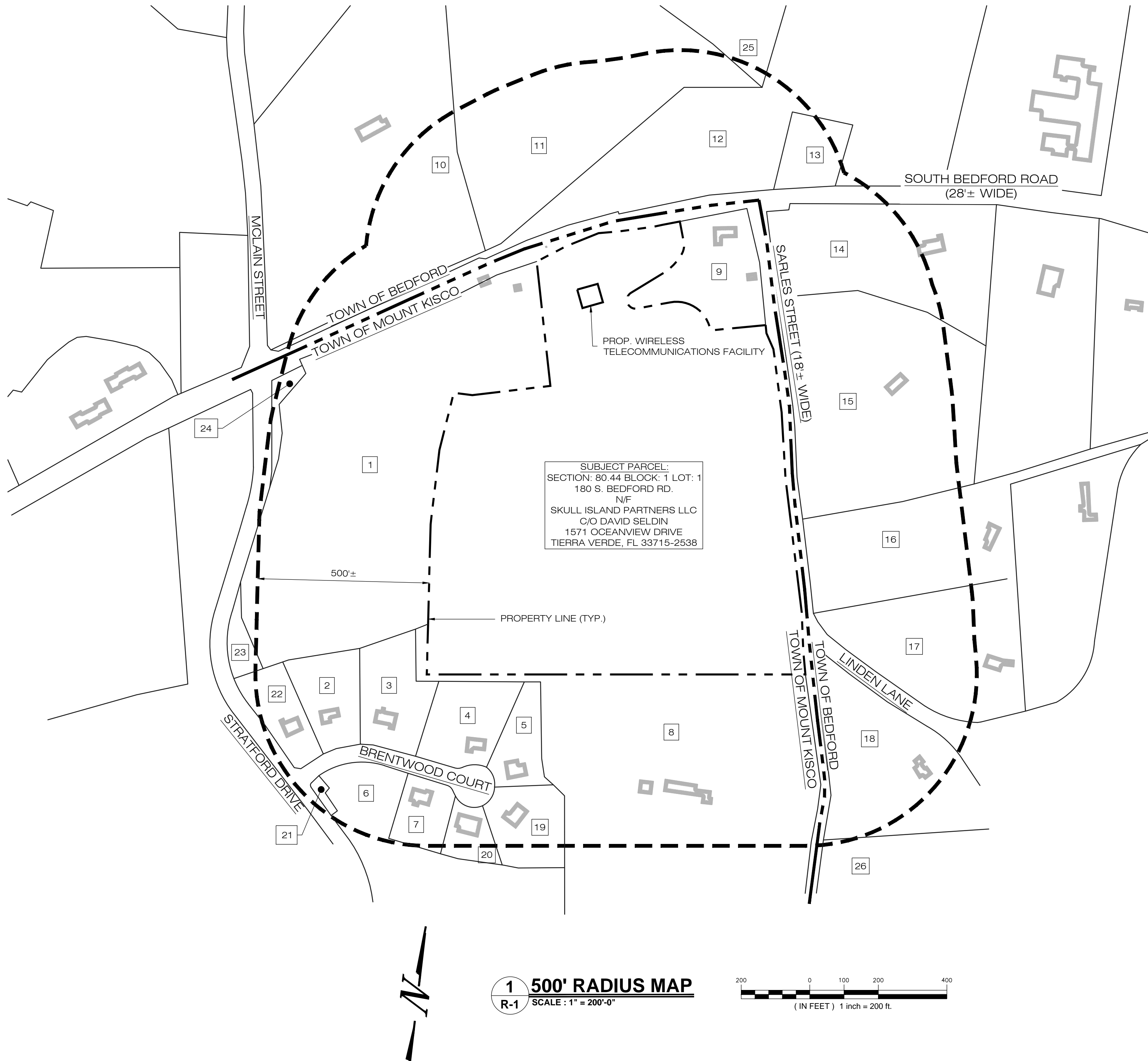


DATE:	August 6, 2020
W.O. No.:	6969
SCALE:	1 inch = 40 feet
DRAWN BY:	J.D.J.
CHECKED BY:	R.J.L.
FIELD CHECKED BY:	J.D.J.
DWG FILE:	6969.DWG
MAP No.:	M 24-1241
SHEET No.:	2 of 2

REVISIONS

No.	Date	Description

Boundary ~ Topographic ~ Control ~ Deformation ~ Construction ~ C.I.S. ~ Subdivision ~ C.P.S.
2959 County Route 8 ♦ Oneonta, New York 13820
Phone: (807) 482-3300
Facsimile: (807) 482-4813
www.lawsonsurveying.com



VILLAGE OF MOUNT KISCO WESTCHESTER COUNTY 500' RADIUS PROPERTY OWNERS						
MAP ID	SECTION	BLOCK	LOT	PROPERTY ADDRESS	OWNER NAME	OWNER ADDRESS
1	80.51	2	1	114 S. BEDFORD RD, MOUNT KISCO, NY 10549	WILDLIFE PRESERVE INC.	71 SARLES ST, MOUNT KISCO, NY 10549
2	80.51	2	3	3 BRENTWOOD CT, MOUNT KISCO, NY 10549	MICHAEL J. INSERRA & MADLYN INSERRA	3 BRENTWOOD CT, MOUNT KISCO, NY 10549
3	80.51	2	4	5 BRENTWOOD CT, MOUNT KISCO, NY 10549	GEORGE COPPOLA & ELLEN MOLLOY	5 BRENTWOOD CT, MOUNT KISCO, NY 10549
4	80.51	2	5	7 BRENTWOOD CT, MOUNT KISCO, NY 10549	MARYANN M. TARNOK	7 BRENTWOOD CT, MOUNT KISCO, NY 10549
5	80.51	2	6	9 BRENTWOOD CT, MOUNT KISCO, NY 10549	FRANK PACCETTI & BARBARA PACCETTI	9 BRENTWOOD CT, MOUNT KISCO, NY 10549
6	80.59	1	1.17	STRATFORD DR, MOUNT KISCO, NY 10549	MT. KISCO CHASE HOA INC	P.O. BOX 265, SOMERS, NY 10589
7	80.51	2	9	6 BRENTWOOD CT, MOUNT KISCO, NY 10549	KARAN GAREWAL & PRATIBHA GAREWAL	6 BRENTWOOD CT, MOUNT KISCO, NY 10549
8	80.60	1	2	71 SARLES ST, MOUNT KISCO, NY 10549	MARSH SANCTUARY INC	71 SARLES ST, MOUNT KISCO, NY 10549
9	80.44	1	2	2 SARLES ST, MOUNT KISCO, NY 10549	ANNA C. PIETROBONO & JOHN G. PIETROBONO	2 SARLES ST, MOUNT KISCO, NY 10549
19	80.51	2	7	10 BRENTWOOD CT, MOUNT KISCO, NY 10549	DAVID M. SCHWARTZ & HOLLY Y. SCHWARTZ	10 BRENTWOOD CT, MOUNT KISCO, NY 10549
20	80.51	2	8	8 BRENTWOOD CT, MOUNT KISCO, NY 10549	GERARD ROMSKI & BETH ROMSKI	8 BRENTWOOD CT, MOUNT KISCO, NY 10549
21	N/A	N/A	N/A	N/A	N/A	N/A
22	80.51	2	2	1 BRENTWOOD CT, MOUNT KISCO, NY 10549	ELIZABETH JACOBS	1 BRENTWOOD CT, MOUNT KISCO, NY 10549
23	N/A	N/A	N/A	N/A	N/A	N/A
24	N/A	N/A	N/A	N/A	N/A	N/A

TOWN OF BEDFORD WESTCHESTER COUNTY 500' RADIUS PROPERTY OWNERS						
MAP ID	SECTION	BLOCK	LOT	PROPERTY ADDRESS	OWNER NAME	OWNER ADDRESS
10	82.12	2	2	35 TUCKER RD, MOUNT KISCO, NY 10549	MICHAEL & CARLA BIRD	35 TUCKER RD, BEDFORD CORNERS, NY 10549
11	82.12	2	1	25 TUCKER RD, MOUNT KISCO, NY 10549	MARCI STEARNS & STEVEN MCCORMICK	25 TUCKER RD, BEDFORD CORNERS, NY 10549
12	83.05	1	6	OPEN SPACE	TOWN OF BEDFORD	321 BEDFORD RD, BEDFORD HILLS, NY 10507
13	83.90	1	1	201 SOUTH BEDFORD RD, MOUNT KISCO, NY 10549	REALIS DEVELOPMENT LLC	356 MANVILLE RD, PLEASANTVILLE, NY 10570
14	83.90	1	19	220 SOUTH BEDFORD RD, MOUNT KISCO, NY 10549	CHABAD OF BEDFORD INC	133 RAILROAD AVE, BEDFORD HILLS, NY 10507
15	83.90	1	18	22 SARLES ST, MOUNT KISCO, NY 10549	ABDELOUAHAB EL BOUHALI & NANCY EL BOUHALI	P.O. BOX 667, BEDFORD HILLS, NY 10507
16	83.90	1	16	43 LINDEN LN, MOUNT KISCO, NY 10549	LAWRENCE LEE & DAISY LEE	43 LINDEN LN, BEDFORD, CORNERS, NY 10549
17	83.90	1	15	69 LINDEN LN, MOUNT KISCO, NY 10549	ROSEMARIE A MAIORANO & VALERI HEDGES	69 LINDEN LN, BEDFORD CORNERS, NY 10549
18	83.13	1	1	72 LINDEN LN, MOUNT KISCO, NY 10549	IHOR ANDREW CZERNYK & NATALIA M CZERNYK	108 SECOND AVE, NEW YORK, NY 10003
25	83.05	1	4	N/A	N/A	N/A
26	83.13	1	17	21 DEER KNL, BEDFORD CORNERS, NY 10549	EDWARD FEINBERG & HARRIET FEINBERG	701 D. BEDFORD RD, BEDFORD HILLS, NY 10549

HOMELAND TOWERS, LLC
9 HARMONY STREET
2nd FLOOR
DANBURY, CT 06810
(203) 297-6345

4 CENTEROCK ROAD
WEST NYACK, NY 10994

340 MOUNT KEMBLE AVENUE
MORRISTOWN, NEW JERSEY 07960

567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385
PH: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

PERMITTING DOCUMENTS

NO	DATE	REVISION
0	08/13/20	FOR REVIEW: RCB
1	08/14/20	CLIENT REVS: RCB
2	11/03/20	TOWN COMMENTS: RCB
3	12/22/20	TOWN COMMENTS: RCB
4	01/25/21	TOWN COMMENTS: RCB
5	03/19/21	TOWN COMMENTS: RCB
6	07/12/21	TOWN COMMENTS: RCB
7	07/13/21	TOWN COMMENTS: RCB
8	07/14/21	TOWN COMMENTS: RCB

DESIGN PROFESSIONALS OF RECORD

PROF: SCOTT M. CHASSE P.E.
COMP: APT ENGINEERING
ADD: 567 VAUXHALL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

DEVELOPER: HOMELAND TOWERS, LLC
ADDRESS: 9 HARMONY STREET
2ND FLOOR
DANBURY, CT 06810

NOTE:
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EDUCATION LAW ARTICLE 145, SECTION
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HOMELAND TOWERS
MOUNT KISCO

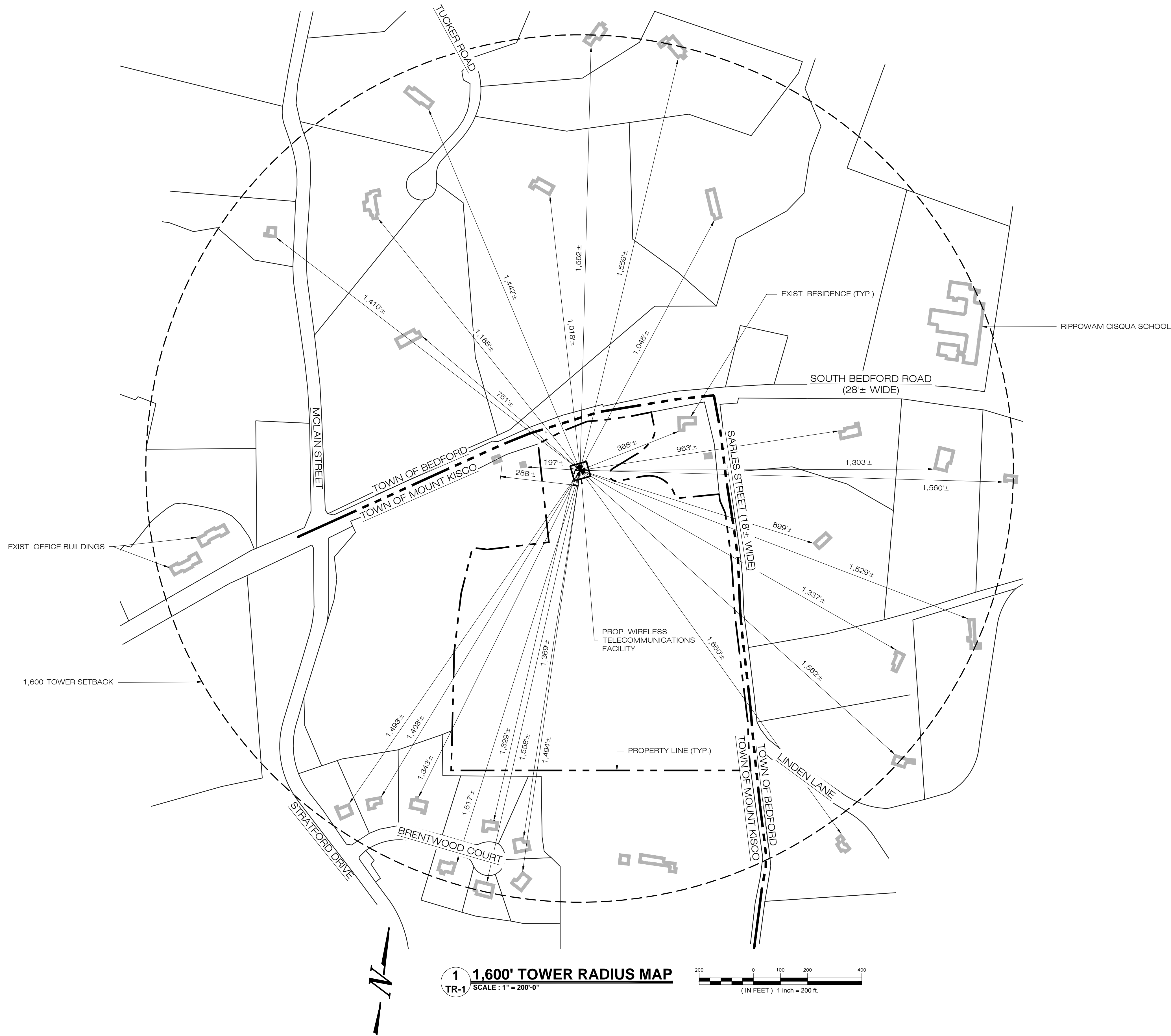
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ADDRESS: MT. KISCO, NY 10594

APT FILING NUMBER: NY283830

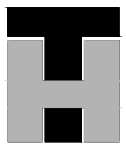
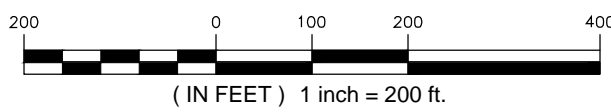
DATE: 08/13/20 DRAWN BY: CSH
CHECKED BY: RCB

SHEET TITLE:
**500' RADIUS MAP &
PROPERTY OWNERS**

SHEET NUMBER:
R-1



1 1,600' TOWER RADIUS MAP
TR-1 SCALE: 1" = 200'-0"



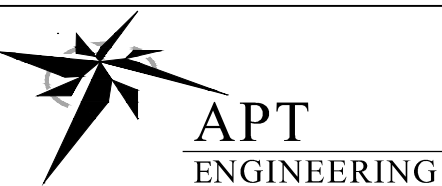
HOMELAND TOWERS, LLC
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8	07/14/21	TOWN COMMENTS: RCB

DESIGN PROFESSIONALS OF RECORD

PROF: SCOTT M. CHASSE P.E.
COMP: APT ENGINEERING
ADD: 567 VAUXHALL STREET
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WATERFORD, CT 06385

DEVELOPER: HOMELAND TOWERS, LLC
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HOMELAND TOWERS
MOUNT KISCO

SITE 180 S. BEDFORD RD.
ADDRESS: MT. KISCO, NY 10594

APT FILING NUMBER: NY283830

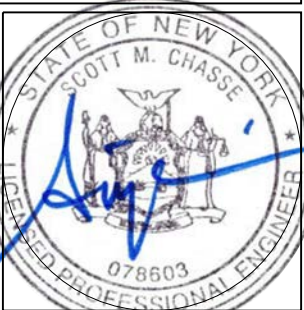
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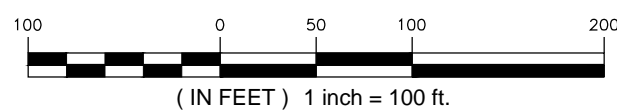
SHEET TITLE:

1,600' TOWER
RADIUS MAP

SHEET NUMBER:

TR-1

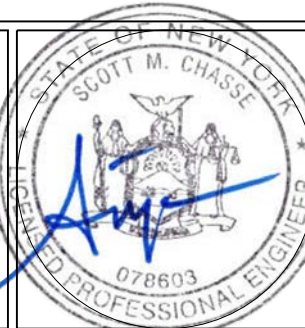


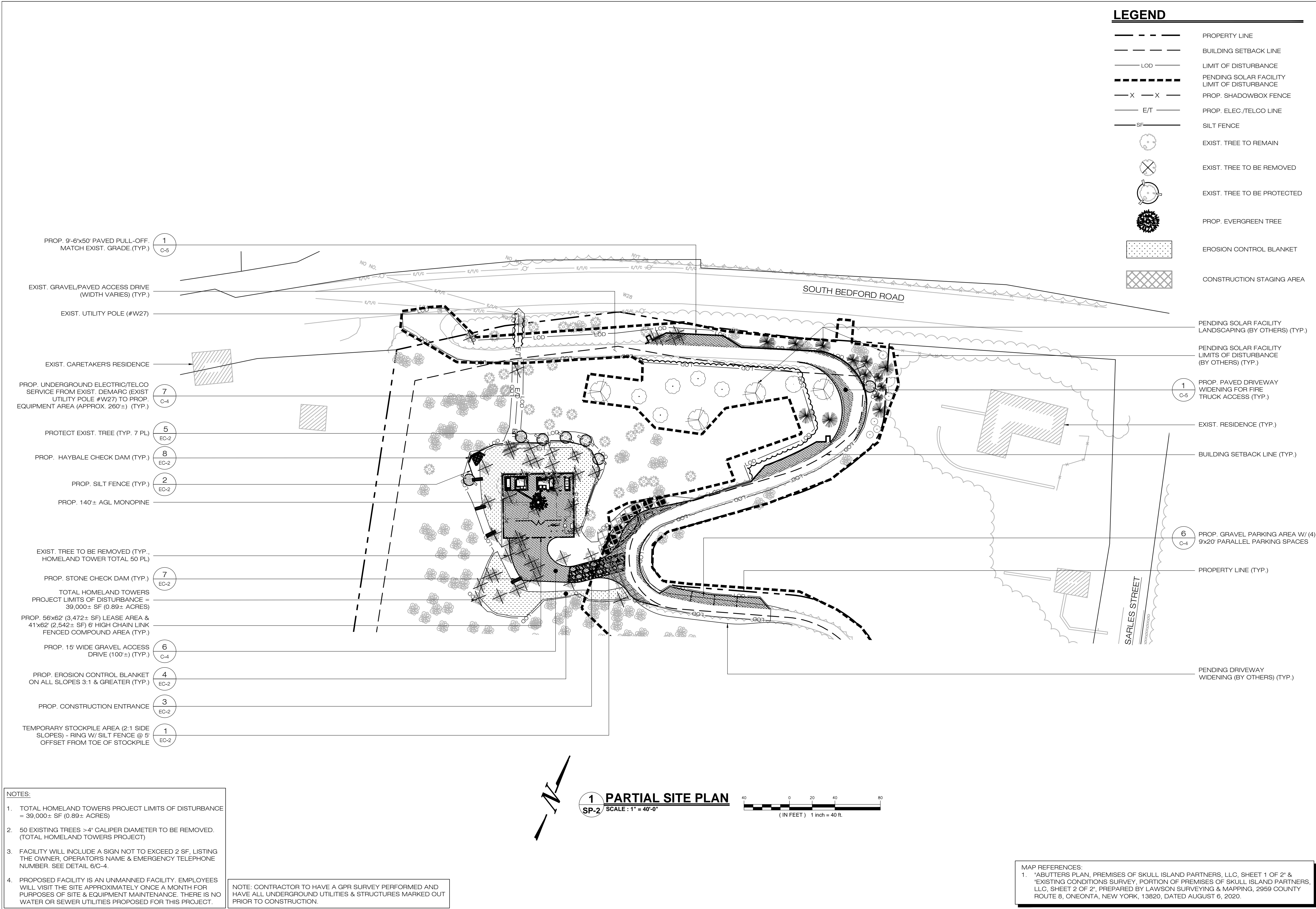



MAP REFERENCES:
1. "ABUTTERS PLAN, PREMISES OF SKULL ISLAND PARTNERS, LLC, SHEET 1 OF 2" & "EXISTING CONDITIONS SURVEY, PORTION OF PREMISES OF SKULL ISLAND PARTNERS, LLC, SHEET 2 OF 2". PREPARED BY LAWSON SURVEYING & MAPPING, 2959 COUNTY ROUTE 8, ONEONTA, NEW YORK, 13820, DATED AUGUST 6, 2020.

LIMITS OF DISTURBANCE:	
COMMUNITY SOLAR FARM	331,459± SF (7.61 ACRES)
HOMELAND TOWERS FACILITY	20,731± SF (0.47 ACRES)
ACCESS DRIVE IMPROVEMENTS	14,269± SF (0.33 ACRES)


SP-1








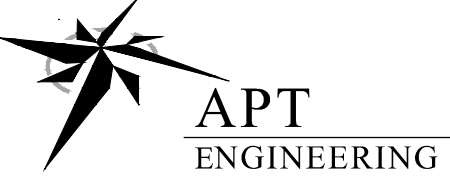
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HOMELAND TOWERS MOUNT KISCO

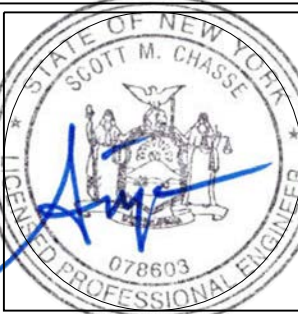
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ADDRESS: MT. KISCO, NY 10594

APT FILING NUMBER: NY283830

DATE: 08/13/20 DRAWN BY: CSH
CHECKED BY: RCB

SHEET TITLE:
PARTIAL SITE PLAN

SHEET NUMBER:
SP-2



LEGEND

- PROPERTY LINE
--- BUILDING SETBACK LINE
--- LOD LIMIT OF DISTURBANCE
--- PENDING SOLAR FACILITY LIMIT OF DISTURBANCE
--- X --- PROP. SHADOWBOX FENCE
--- E/T --- PROP. ELEC./TELOO LINE
--- SF --- SILT FENCE
--- EXIST. TREE TO REMAIN
--- EXIST. TREE TO BE REMOVED
--- EXIST. TREE TO BE PROTECTED
--- PROP. EVERGREEN TREE
--- EROSION CONTROL BLANKET
--- CONSTRUCTION STAGING AREA

PROP. UNDERGROUND ELECTRIC/TELOO SERVICE FROM EXIST. DEMARC (EXIST UTILITY POLE #W27) TO PROP. EQUIPMENT AREA (APPROX. 260'±) (TYP.)

PROTECT EXIST. TREE (TYP. 7 PL)

PROP. SILT FENCE (TYP.)

PROP. SEDIMENTATION CONTROL TEMPORARY HAYBALE CHECK DAM (TYP.)

PROP. RIPRAP APRON

PROP. 56'x62' (3,472± SF) LEASE AREA & 41'x62' (2,542± SF) 6' HIGH WOODEN SHADOWBOX FENCED COMPOUND AREA (TYP.)

PROP. 140'± AGL MONOPINE

TOTAL HOMELAND TOWERS PROJECT LIMITS OF DISTURBANCE = 39,000± SF (0.89± ACRES)

PROP. 15' WIDE GRAVEL ACCESS DRIVE (100'±) (TYP.)

PROP. GRASS LINED SWALE (TYP.)

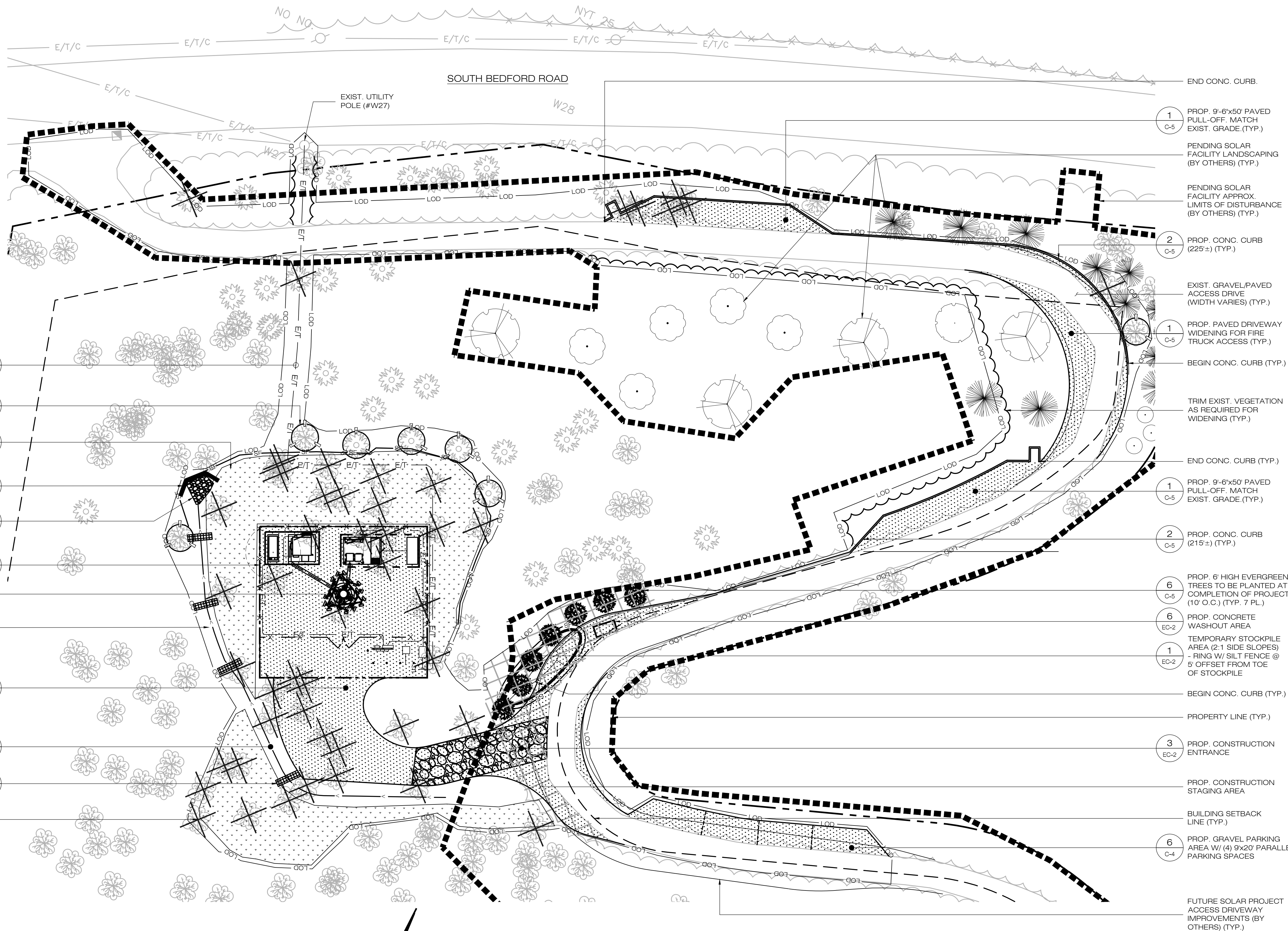
PROP. STONE CHECK DAM (TYP.)

EXIST. TREE TO BE REMOVED (TYP., HOMELAND TOWER TOTAL 50 PL)

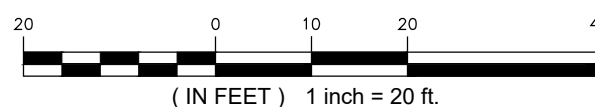
NOTES:

- TOTAL HOMELAND TOWERS PROJECT LIMITS OF DISTURBANCE = 39,000± SF (0.89± ACRES)
- 50 EXISTING TREES >4" CALIPER DIAMETER TO BE REMOVED. (TOTAL HOMELAND TOWERS PROJECT)
- FACILITY WILL INCLUDE A SIGN NOT TO EXCEED 2 SF, LISTING THE OWNER, OPERATOR'S NAME & EMERGENCY TELEPHONE NUMBER. SEE DETAIL 6/C-4.
- PROPOSED FACILITY IS AN UNMANNED FACILITY. EMPLOYEES WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR PURPOSES OF SITE & EQUIPMENT MAINTENANCE. THERE IS NO WATER OR SEWER UTILITIES PROPOSED FOR THIS PROJECT.

NOTE: CONTRACTOR TO HAVE A GPR SURVEY PERFORMED AND HAVE ALL UNDERGROUND UTILITIES & STRUCTURES MARKED OUT PRIOR TO CONSTRUCTION.

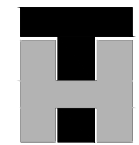


1 PARTIAL SITE PLAN
SP-3 SCALE: 1" = 20'-0"



MAP REFERENCES:

- "ABUTTERS PLAN, PREMISES OF SKULL ISLAND PARTNERS, LLC, SHEET 1 OF 2" & "EXISTING CONDITIONS SURVEY, PORTION OF PREMISES OF SKULL ISLAND PARTNERS, LLC, SHEET 2 OF 2", PREPARED BY LAWSON SURVEYING & MAPPING, 2959 COUNTY ROUTE 8, ONEONTA, NEW YORK, 13820, DATED AUGUST 6, 2020.



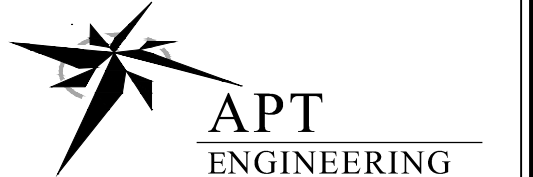
HOMELAND TOWERS, LLC
9 HARMONY STREET
2nd FLOOR
DANBURY, CT 06810
(203) 297-6345



4 CENTEROCK ROAD
WEST NYACK, NY 10994



340 MOUNT KEMBLE AVENUE
MORRISTOWN, NEW JERSEY 07960



567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PH: (860)-663-1697
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DESIGN PROFESSIONALS OF RECORD

PROF. SCOTT M. CHASSE P.E.
COMP: APT ENGINEERING
ADD: 567 VAUXHALL STREET
EXTENSION - SUITE 311
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DEVELOPER: HOMELAND TOWERS, LLC
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HOMELAND TOWERS
MOUNT KISCO

SITE 180 S. BEDFORD RD.
ADDRESS: MT. KISCO, NY 10594

APT FILING NUMBER: NY283830

DATE: 08/13/20 DRAWN BY: CSH

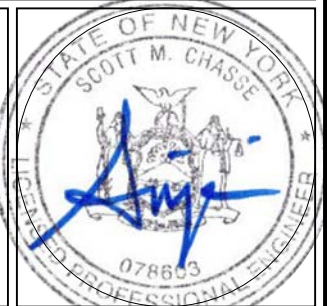
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SHEET TITLE:

PARTIAL SITE PLAN

SHEET NUMBER:

SP-3





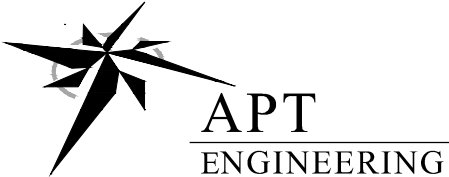
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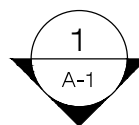
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SHEET TITLE:

COMPOUND PLAN

SHEET NUMBER:

CP-1



62'± LEASE & COMPOUND AREA

PROP. AT&T 30kW DIESEL FIRED
GENERATOR ON 4'x10' CONCRETE PAD

PROP. AT&T WALK-IN-CABINET (WIC) W/ (1)
GPS UNIT ON 10'x10' CONCRETE PAD

10' GENERATOR EXHAUST CLEARANCE

PROP. AT&T CABLE ICE BRIDGE FROM
WIC TO TOWER ENTRY PORT.

PROP. AT&T UNDERGROUND
ELECTRIC/ TELCO SERVICE FROM
PROP. MULTIMETER CENTER TO PROP.
AT&T WIC EQUIPMENT CABINET.

(12) PROP. AT&T PANEL ANTENNAS (30°, 150°, 270°) ON
PROP. 3-SIDED T-ARM MOUNTED TO PROP. 100'± AGL
MONOPINE W/ ANTENNA CL @ 86'-0"± AGL & W/ (3) SURGE
SUPPRESSORS, (9) RRHS MOUNTED TO PROP. EQUIPMENT
MOUNT W/ MOUNT CL @ 84'-0" AGL. ANTENNAS TO BE
FITTED W/ MONOPINE SOCKS & ALL HARDWARE &
APPURTENANCES PAINTED TO MATCH MONOPINE.

PROP. GRAVEL EQUIPMENT COMPOUND

PROP. 12' WIDE, 6' HIGH WOODEN SHADOWBOX GATE

PROP. GRAVEL PARKING/TURNAROUND AREA (TYP.)

(2) PROP. 15'x15' FIRE DEPARTMENT POOL AREAS

PROP. 56'x62' (3,472± SF) LEASE AREA

PROP. 15' WIDE GRAVEL ACCESS DRIVE (100'±) (TYP.)

10' NO SPARK ZONE

PROP. VERIZON 12'x29' (348± SF) LEASE AREA

PROP. VERIZON UNDERGROUND
PROPANE SERVICE

PROP. VERIZON 500 GAL. PROPANE
TANKS ON 4'x10' CONCRETE PAD

PROP. VERIZON EQUIPMENT CABINETS,
PROPANE FIRED GENERATOR, STEEL CANOPY
& (4) GPS UNITS ON 10'x14' CONCRETE PAD

PROP. VERIZON CABLE ICE BRIDGE FROM
EQUIPMENT PAD TO TOWER ENTRY PORT
W/ (3) 6'x12' HYBRID CABLES.

PROP. 140'± AGL GALVANIZED GRAY MONOPINE

PROP. 6' HIGH WOODEN SHADOWBOX FENCE (TYP.)

(8) PROP. VERIZON PANEL ANTENNAS (90°, 180°,
270°, 20°) W/ (3) MDBs & (12) RRHS ON PROP.
4-SIDED DOUBLE T-ARM MOUNTED TO PROP.
140'± AGL MONOPINE W/ ANTENNA CL @ 137'-0"±
AGL. ANTENNAS TO BE FITTED W/ MONOPINE
SOCKS & ALL HARDWARE & APPURTENANCES
PAINTED TO MATCH MONOPINE.

PROP. 41'x62' (2,542± SF) 6' HIGH CHAIN LINK
FENCED COMPOUND AREA (TYP.)

PROP. VERIZON UNDERGROUND ELECTRIC/
TELCO SERVICE FROM PROP. MULTIMETER
CENTER TO PROP. VERIZON EQUIPMENT PAD.

PROP. UNDERGROUND ELECTRIC/TELCO SERVICE
FROM EXIST. DEMARC (EXIST UTILITY POLE #W27) TO
PROP. EQUIPMENT AREA (APPROX. 260'±) (TYP.)

PROP. MESA SPAN VAULT

PROP. BOLLARD (5' O.C.) (TYP. 6 PL)

PROP. STEPDOWN TRANSFORMER

PROP. MULTIMETER CENTER

1 COMPOUND PLAN

SCALE: 1" = 5'-0"

0 2.5 5 10
(IN FEET) 1 inch = 5 ft.



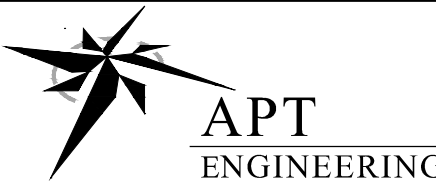
HOMELAND TOWERS, LLC
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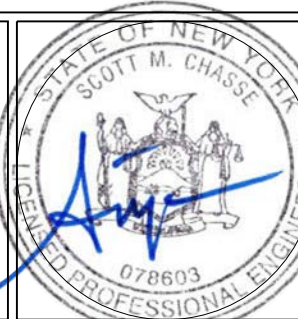
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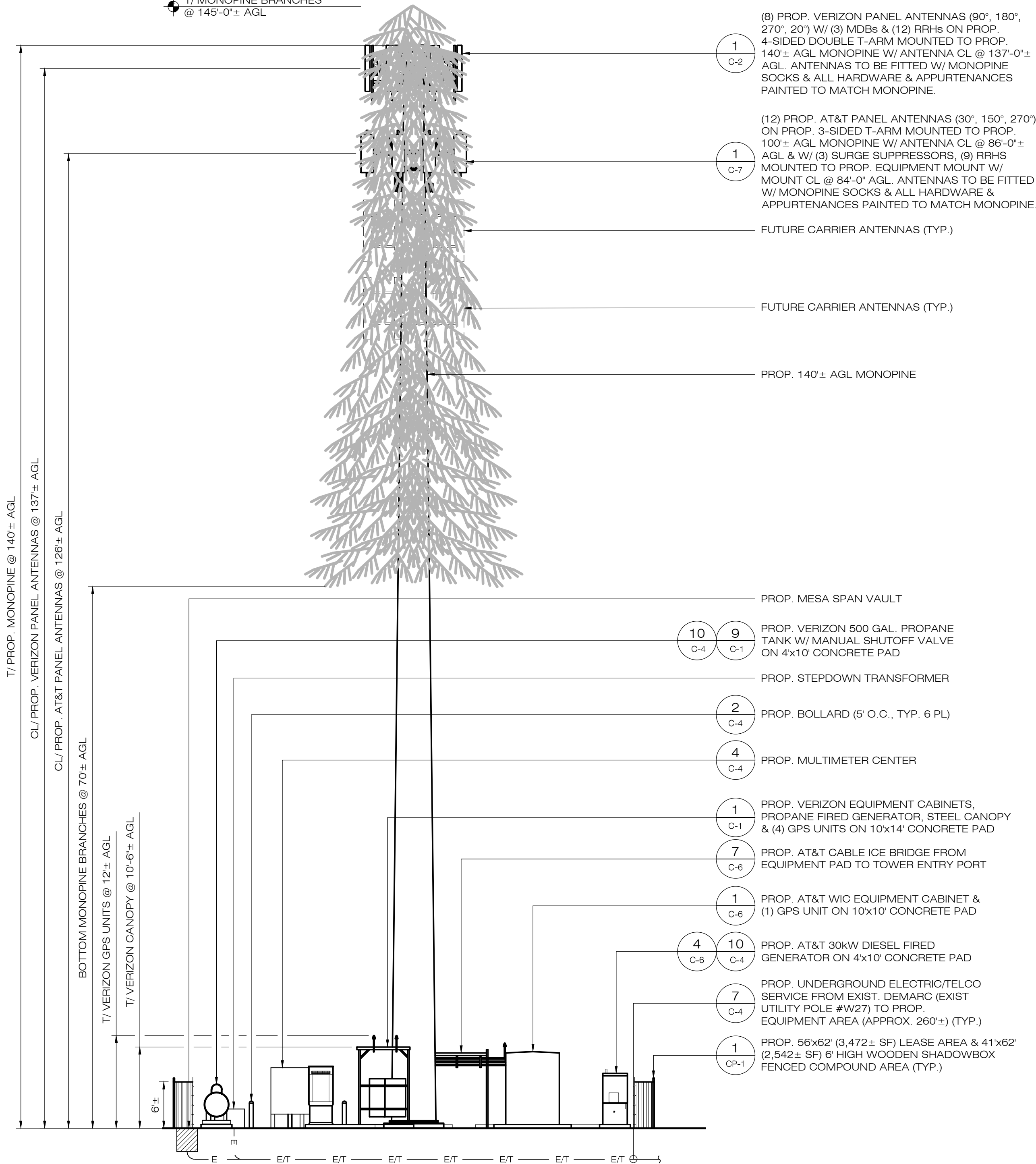
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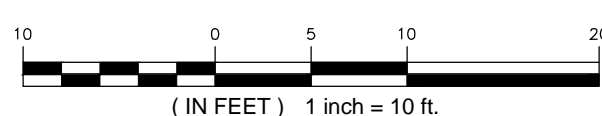
A-1



T/ MONOPINE BRANCHES
@ 145'-0"± AGL



1 NORTH ELEVATION
SCALE: 1" = 10'-0"



TOWER TO BE DESIGNED TO SUPPORT
FUTURE MUNICIPAL ANTENNAS.

(8) PROP. VERIZON PANEL ANTENNAS (90°, 180°, 270°, 20°) W/ (3) MDBs & (12) RRHS ON PROP. 4-SIDED DOUBLE T-ARM MOUNTED TO PROP. 140'± AGL MONOPINE W/ ANTENNA CL @ 137'-0"± AGL. ANTENNAS TO BE FITTED W/ MONOPINE SOCKS & ALL HARDWARE & APPURTENANCES PAINTED TO MATCH MONOPINE.

(12) PROP. AT&T PANEL ANTENNAS (30°, 150°, 270°) ON PROP. 3-SIDED T-ARM MOUNTED TO PROP. 100'± AGL MONOPINE W/ ANTENNA CL @ 86'-0"± AGL & W/ (3) SURGE SUPPRESSORS, (9) RRHS MOUNTED TO PROP. EQUIPMENT MOUNT W/ MOUNT CL @ 84'-0" AGL. ANTENNAS TO BE FITTED W/ MONOPINE SOCKS & ALL HARDWARE & APPURTENANCES PAINTED TO MATCH MONOPINE.

FUTURE CARRIER ANTENNAS (TYP.)

FUTURE CARRIER ANTENNAS (TYP.)

PROP. 140'± AGL MONOPINE

PROP. AT&T WIC EQUIPMENT CABINET & (1) GPS UNIT ON 10'x10' CONCRETE PAD (BEYOND)

PROP. VERIZON EQUIPMENT CABINETS, PROPANE FIRED GENERATOR, STEEL CANOPY & (4) GPS UNITS ON 10'x14' CONCRETE PAD

PROP. VERIZON 500 GAL. PROPANE TANK W/ MANUAL SHUTOFF VALVE ON 4'x10' CONCRETE PAD

PROP. AT&T CABLE ICE BRIDGE FROM EQUIPMENT PAD TO TOWER ENTRY PORT (BEYOND)

PROP. VERIZON CABLE ICE BRIDGE FROM EQUIPMENT PAD TO TOWER ENTRY PORT W/ (3) 6x12 HYBRID CABLES.

PROP. UNDERGROUND ELECTRIC/TELCO SERVICE FROM EXIST. DEMARC (EXIST UTILITY POLE #W27) TO PROP. EQUIPMENT AREA (APPROX. 260'±) (TYP.)

FUTURE EQUIPMENT AREA (12'x20')

PROP. 56'x62' (3,472± SF) LEASE AREA & 41'x62' (2,542± SF) 6' HIGH WOODEN SHADOWBOX FENCED COMPOUND AREA (TYP.)

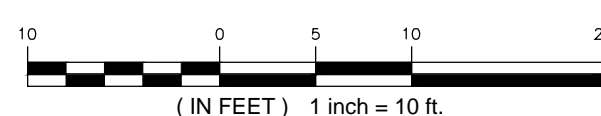
PROP. MULTIMETER CENTER

PROP. STEPDOWN TRANSFORMER

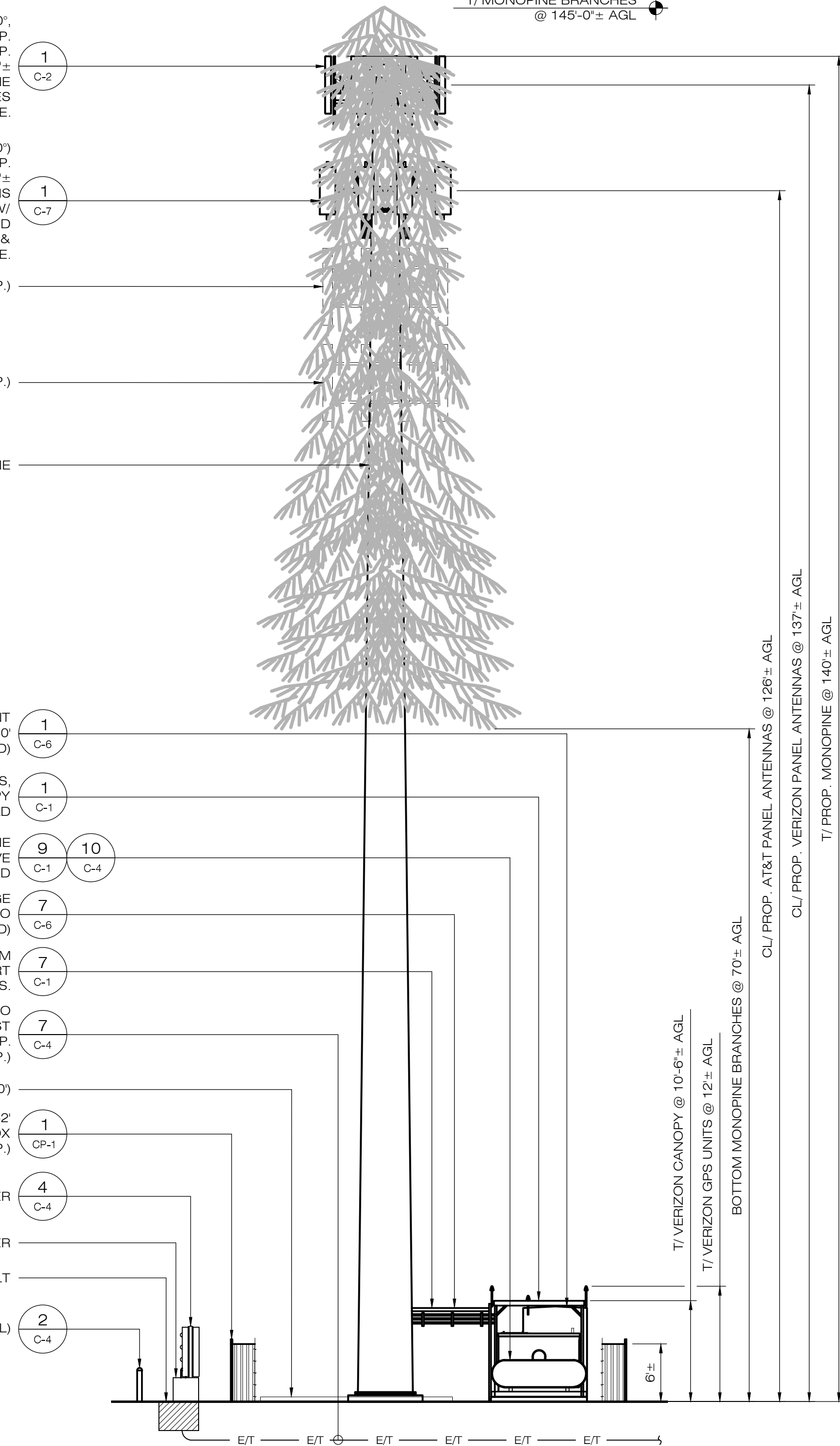
PROP. MESA SPAN VAULT

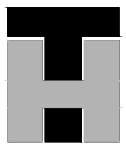
PROP. BOLLARD (5' O.C., TYP. 6 PL)

2 EAST ELEVATION
SCALE: 1" = 10'-0"



T/ MONOPINE BRANCHES
@ 145'-0"± AGL





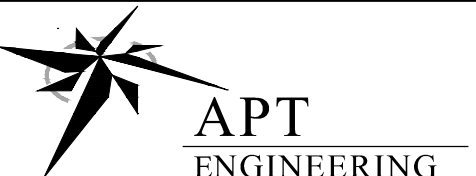
HOMELAND TOWERS, LLC
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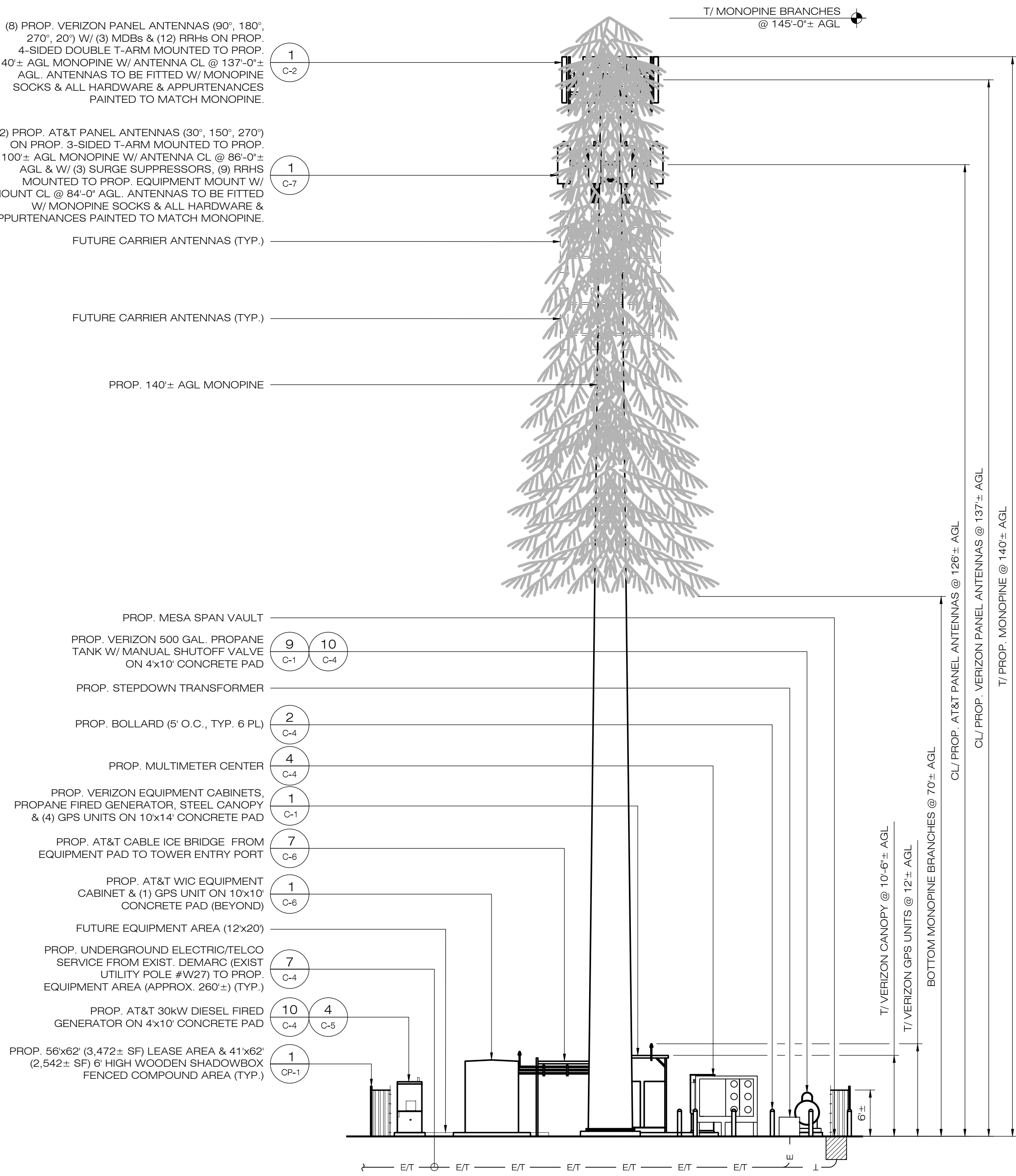
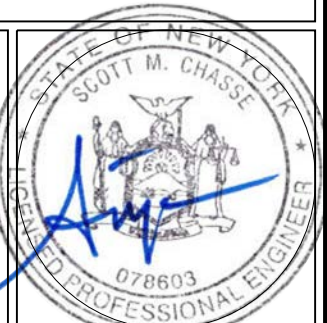
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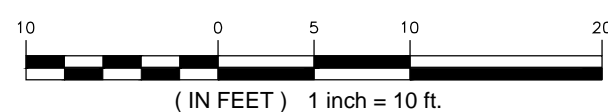
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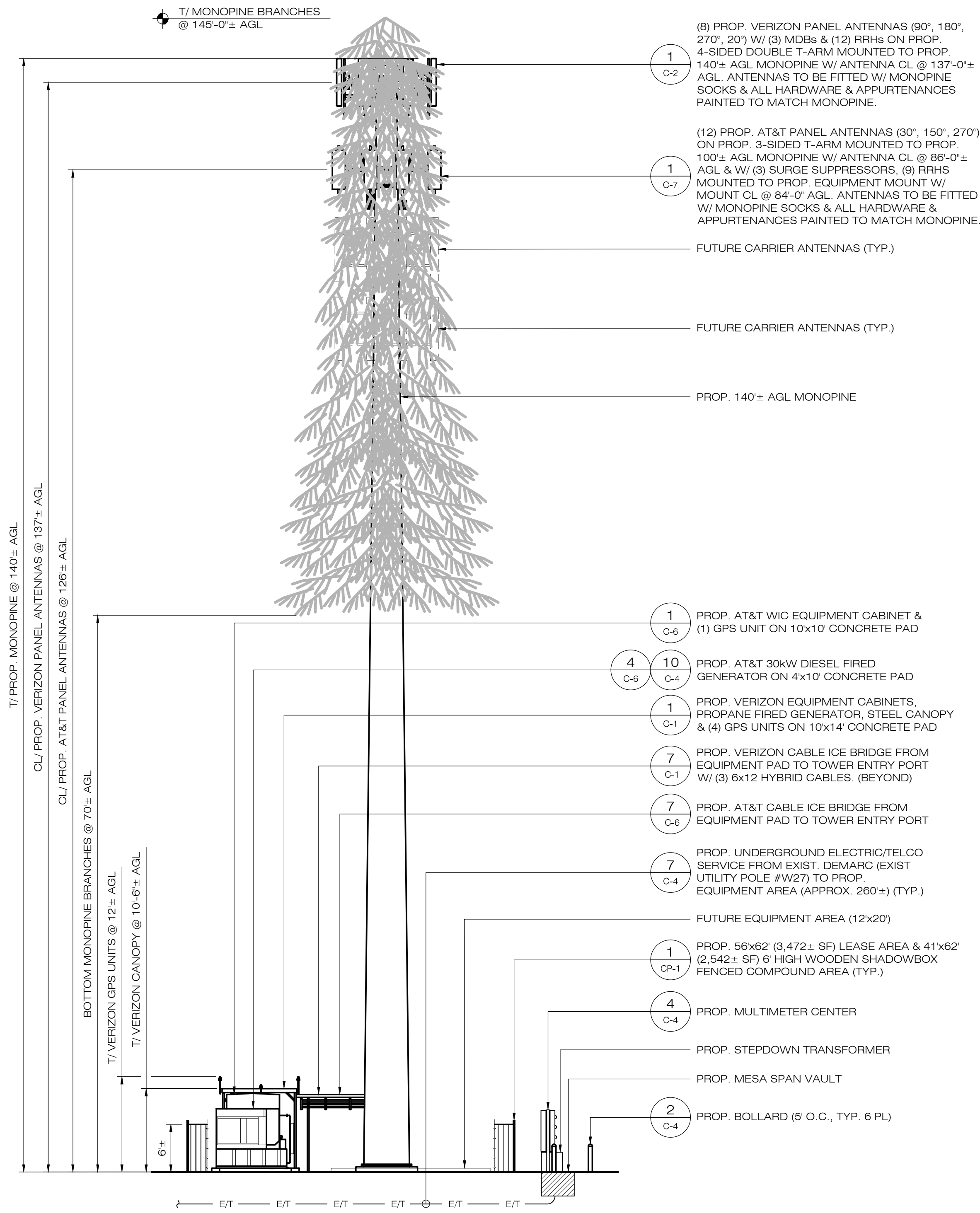
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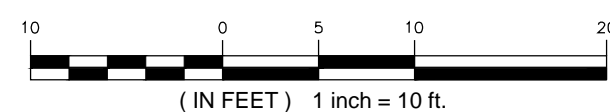
1 SOUTH ELEVATION
A-2 SCALE: 1" = 10'-0"

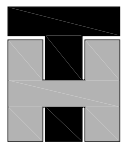


TOWER TO BE DESIGNED TO SUPPORT
FUTURE MUNICIPAL ANTENNAS.



2 WEST ELEVATION
A-2 SCALE: 1" = 10'-0"





HOMELAND TOWERS, LLC
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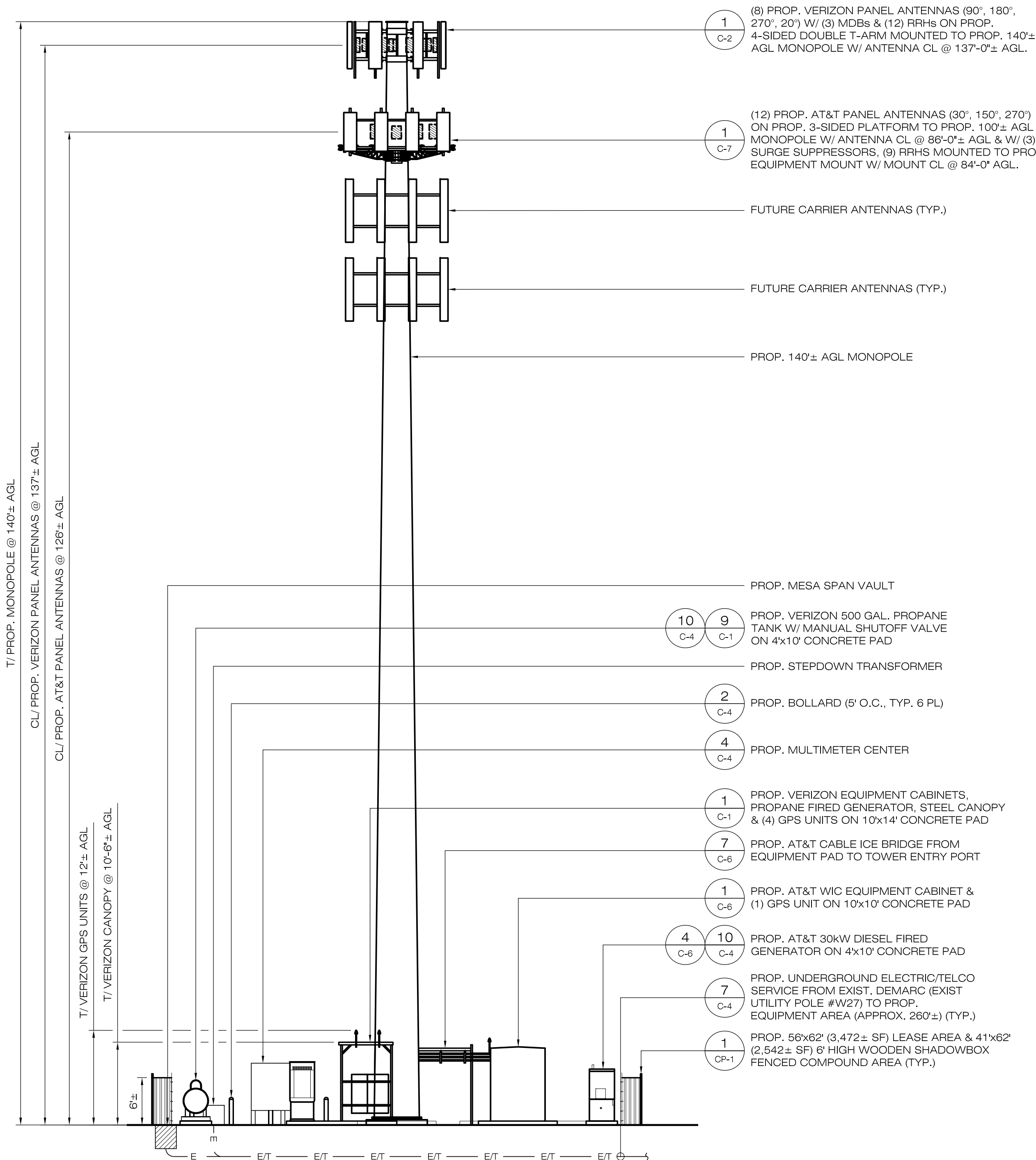
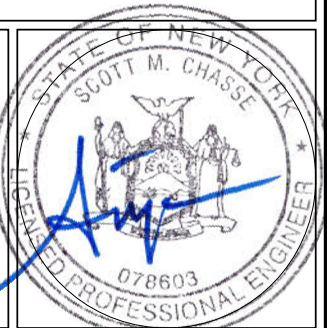
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CHECKED BY: RCB

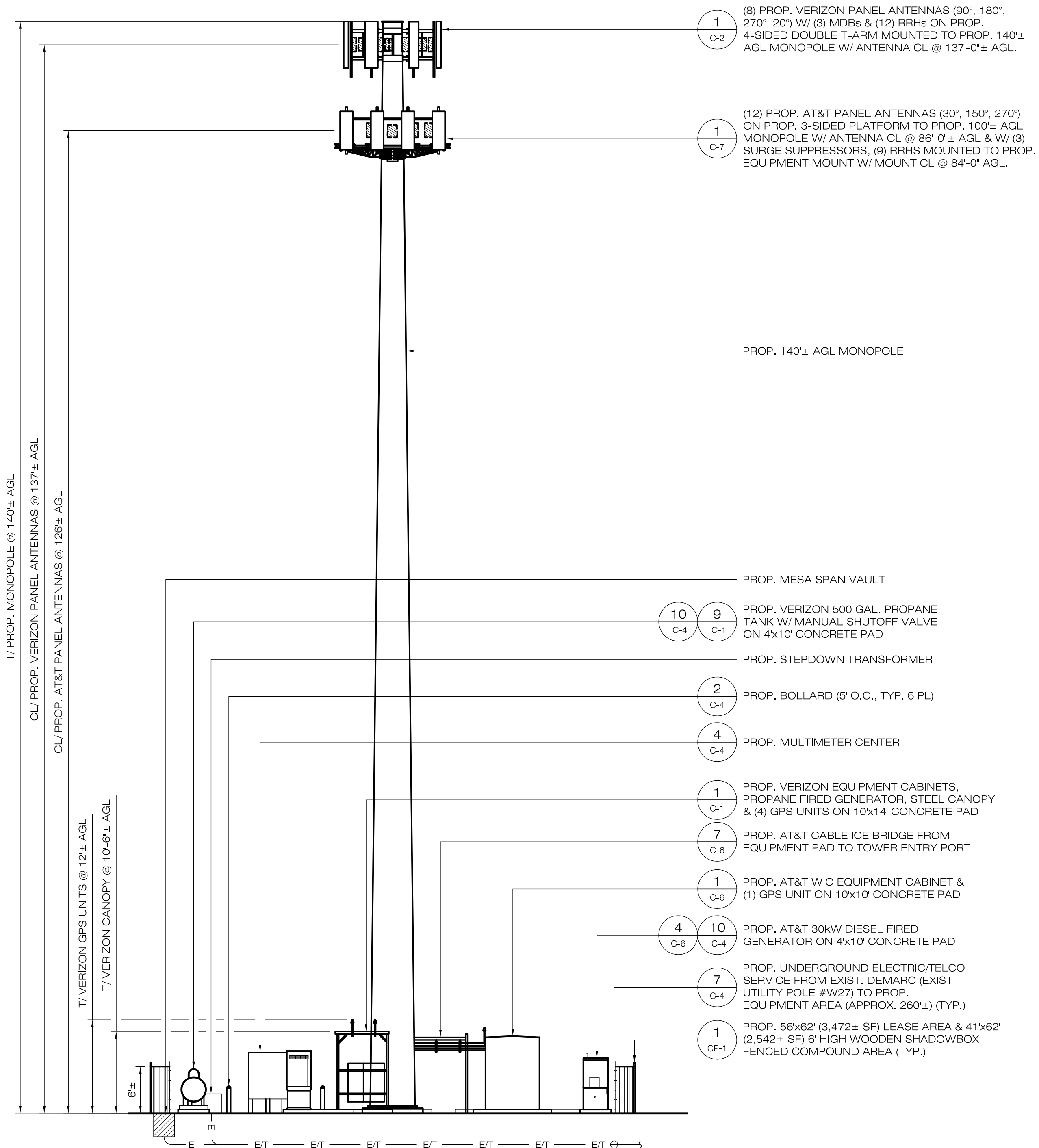
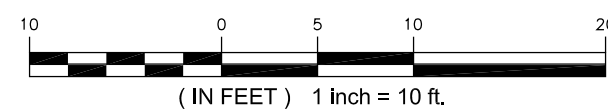
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**ALTERNATE
MONOPOLE
ELEVATIONS**

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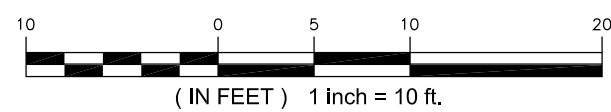
A-3



1 NORTH ELEVATION
SCALE : 1" = 10'-0"



1 NORTH ELEVATION
SCALE : 1" = 10'-0"



STORMWATER POLLUTION PREVENTION PLAN

STORMWATER POLLUTION PREVENTION PLAN

1. THE CONTRACTOR SHALL CONSTRUCT ALL SEDIMENT AND EROSION CONTROLS IN ACCORDANCE WITH THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL (BLUE BOOK), LATEST EDITION, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL KEEP A COPY OF THE CURRENT GUIDELINES ON-SITE FOR REFERENCE DURING CONSTRUCTION. ALL SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CLEARING AND GRUBBING AND DEMOLITION OPERATIONS.
2. THE CONTRACTOR WILL COMPLY WITH THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITY PERMIT NO. GP-0-20-001.
3. THESE DRAWINGS ARE ONLY INTENDED TO DESCRIBE THE SEDIMENT AND EROSION CONTROL MEASURES FOR THIS SITE. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN ARE SHOWN IN A GENERAL SIZE AND LOCATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL EROSION CONTROL MEASURES ARE CONFIGURED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO STORM DRAINAGE SYSTEMS AND/OR WATERCOURSES. ACTUAL SITE CONDITIONS OR SEASONAL AND CLIMATIC CONDITIONS MAY WARRANT ADDITIONAL CONTROLS OR CONFIGURATIONS WHEN DIRECTED BY THE ENGINEER. SEE SEDIMENT AND EROSION CONTROL DETAILS AND SUGGESTED CONSTRUCTION SEQUENCE FOR MORE INFORMATION. REFER TO SITE PLAN FOR GENERAL INFORMATION AND OTHER CONTRACT PLANS FOR APPROPRIATE INFORMATION.
4. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING THE SEDIMENT AND EROSION CONTROL PLAN. THIS RESPONSIBILITY INCLUDES THE PROPER INSTALLATION AND MAINTENANCE OF CONTROL MEASURES, INFORMING ALL PARTIES ENGAGED WITH CONSTRUCTION ON THE SITE OF THE REQUIREMENTS AND OBJECTIVES OF THIS PLAN, INFORMING THE GOVERNING AUTHORITY OR INLAND WETLANDS AGENCY OF ANY TRANSFER OF THIS RESPONSIBILITY, AND FOR CONVEYING A COPY OF THE SEDIMENT & EROSION CONTROL PLAN IF THE TITLE TO THE LAND IS TRANSFERRED.
5. A BOND MAY BE REQUIRED TO BE POSTED WITH THE GOVERNING AUTHORITY FOR THE EROSION CONTROL INSTALLATION AND MAINTENANCE.
6. THE CONTRACTOR SHALL APPLY THE MINIMUM EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THE PLAN IN CONJUNCTION WITH CONSTRUCTION SEQUENCING, SUCH THAT ALL ACTIVE WORK ZONES ARE PROTECTED. ADDITIONAL AND/OR ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES MAY BE INSTALLED DURING THE CONSTRUCTION PERIOD IF FOUND NECESSARY BY THE CONTRACTOR, OWNER, SITE ENGINEER, MUNICIPAL OFFICIALS, OR ANY GOVERNING AGENCY. THE CONTRACTOR SHALL CONTACT THE OWNER AND APPROPRIATE GOVERNING AGENCIES FOR APPROVAL IF ALTERNATIVE CONTROLS OTHER THAN THOSE SHOWN ON THE PLANS ARE PROPOSED BY THE CONTRACTOR.
7. THE CONTRACTOR SHALL TAKE EXTREME CARE DURING CONSTRUCTION SO AS NOT TO DISTURB UNPROTECTED WETLAND AREAS OR SEDIMENTATION AND EROSION CONTROL MEASURES. THE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROLS WEEKLY AND WITHIN 24 HOURS OF A STORM WITH A RAINFALL AMOUNT OF 0.2 INCHES OR GREATER TO VERIFY THAT THE CONTROLS ARE OPERATING PROPERLY AND MAKE REPAIRS WHERE NECESSARY.
8. THE CONTRACTOR SHALL KEEP A SUPPLY OF EROSION CONTROL MATERIAL (HAY BALES, SILT FENCE, JUTE MESH, ETC.) ON-SITE FOR PERIODIC MAINTENANCE AND EMERGENCY REPAIRS.
9. ALL FILL MATERIAL PLACED ADJACENT TO ANY WETLAND AREA SHALL BE GOOD QUALITY, WITH LESS THAN 5% FINES PASSING THROUGH A #200 SIEVE (BANK RUN). SHALL BE PLACED IN MAXIMUM ONE FOOT LIFTS, AND SHALL BE COMPACTED TO 95% MAX. DRY DENSITY MODIFIED PROCTOR OR AS SPECIFIED IN THE CONTRACT SPECIFICATIONS.
10. PROTECT EXISTING TREES THAT ARE TO BE SAVED BY FENCING AT THE DRIP LINE, OR AS DETAILED, WITH SNOW FENCE, ORANGE SAFETY FENCE, OR EQUIVALENT FENCING. ANY LIMB TRIMMING SHOULD BE DONE AFTER CONSULTATION WITH AN ARBORIST AND BEFORE CONSTRUCTION BEGINS IN THAT AREA; FENCING SHALL BE MAINTAINED AND REPAIRED DURING CONSTRUCTION.
11. ANTI-TRACKING PADS SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR CONSTRUCTION ACTIVITY AND SHALL BE MAINTAINED THROUGHOUT THE DURATION OF ALL CONSTRUCTION. THE LOCATION OF THE TRACKING PADS MAY CHANGE AS VARIOUS PHASES OF CONSTRUCTION ARE COMPLETED.
12. ALL CONSTRUCTION SHALL BE CONTAINED WITHIN THE LIMIT OF DISTURBANCE, WHICH SHALL BE MARKED WITH SILT FENCE, SAFETY FENCE, HAY BALES, RIBBONS, OR OTHER MEANS PRIOR TO CLEARING. CONSTRUCTION ACTIVITY SHALL REMAIN ON THE UPHILL SIDE OF THE SEDIMENT BARRIER UNLESS WORK IS SPECIFICALLY CALLED FOR ON THE DOWNHILL SIDE OF THE BARRIER. STAKED HAY BALES OR SILT FENCES SHALL ALSO BE INSTALLED AT THE DOWNHILL SIDES OF BUILDING EXCAVATIONS, DEWATERING PUMP DISCHARGES, AND MATERIAL STOCKPILES.
13. WASHOUT OF APPLICATORS, CONTAINERS, VEHICLES AND EQUIPMENT FOR CONCRETE SHALL BE CONDUCTED IN A DESIGNATED WASHOUT AREA. NO SURFACE DISCHARGE OF WASHOUT WASTEWATERS FROM THE AREA WILL BE ALLOWED. ALL CONCRETE WASHWATER WILL BE DIRECTED INTO A CONTAINER OR PIT SUCH THAT NO OVERFLOWS CAN OCCUR. WASHOUT SHALL BE CONDUCTED IN AN ENTIRELY SELF-CONTAINED SYSTEM AND WILL BE CLEARLY DESIGNED AND FLAGGED OR SIGNED WHERE NECESSARY. THE WASHOUT AREA SHALL BE LOCATED OUTSIDE OF ANY BUFFERS AND AT LEAST 50 FEET FROM ANY STREAM, WETLAND OR OTHER SENSITIVE WATER OR NATURAL RESOURCES AS DETERMINED OR DESIGNATED BY THE ENGINEER.
14. INSTALL TEMPORARY DIVERSION DITCHES, PLUNGE POOLS, TEMPORARY SEDIMENT TRAPS/BASINS, AND DEWATERING PITS AS SHOWN AND AS NECESSARY DURING VARIOUS PHASES OF CONSTRUCTION TO CONTROL RUNOFF UNTIL UPHILL AREAS ARE STABILIZED. LOCATION OF TEMPORARY SEDIMENT TRAPS/BASINS WILL REQUIRE REVIEW AND APPROVAL BY THE ENGINEER AND GOVERNING OFFICIAL. DEWATERING SETTLING TRAPS SHALL BE USED IF GROUND WATER IS ENCOUNTERED. NO RUNOFF SHALL BE ALLOWED TO EXIT THE SITE PRIOR TO TREATMENT FOR SEDIMENT REMOVAL.
15. AS GENERAL GRADING OPERATIONS PROGRESS, THE TEMPORARY DIVERSION DITCHES SHALL BE RAISED OR LOWERED AND RELOCATED, AS CUT AND FILL SLOPES DICTATE, TO DIVERT SURFACE RUNOFF TO THE SEDIMENT TRAPS/BASINS.
16. TEMPORARY SEDIMENT TRAPS SHALL PROVIDE 134 CUBIC YARDS OF SEDIMENT STORAGE PER DISTURBED ACRE CONTRIBUTING TO THE TRAP/BASIN. PROVIDE TRAP/BASIN VOLUMES FOR ALL DISTURBANCE ON SITE.
17. PERIODICALLY CHECK ACCUMULATED SEDIMENT LEVELS IN SEDIMENT TRAPS/BASINS DURING CONSTRUCTION AND CLEAN ACCUMULATED SILT WHEN NECESSARY OR WHEN ONE FOOT OF SEDIMENT HAS ACCUMULATED. CLEAN ACCUMULATED SEDIMENT FROM CATCH BASIN SUMPS AS NECESSARY. REMOVE ACCUMULATED SEDIMENT FROM BEHIND HAY BALES AND SILT FENCE. EXCAVATED MATERIAL FROM TEMPORARY SEDIMENT TRAPS/BASINS MUST BE STOCKPILED ON UPHILL SIDE OF SILT FENCE.
18. TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR USE IN FINAL LANDSCAPING. ALL EARTH STOCKPILES SHALL HAVE HAY BALES OR SILT FENCE AROUND THE LIMIT OF PILE. PILES SHALL BE TEMPORARILY SEEDED IF PILE IS TO REMAIN IN PLACE AND UNDISTURBED FOR MORE THAN 30 DAYS.
19. NO CUT OR FILL SLOPES SHALL EXCEED 3:1 EXCEPT WHERE STABILIZED BY ROCK FACED EMBANKMENTS OR EROSION CONTROL BLANKETS, JUTE MESH AND VEGETATION. ALL SLOPES SHALL BE SEEDED, AND THE ROAD SHOULDER AND BANKS WILL BE STABILIZED IMMEDIATELY UPON COMPLETION OF FINAL GRADING UNTIL TURF IS ESTABLISHED.
20. DIRECT ALL DEWATERING PUMP DISCHARGE TO A SEDIMENT CONTROL DEVICE SUCH AS TEMPORARY SEDIMENT TRAPS OR GRASS FILTERS WITHIN THE APPROVED LIMIT OF DISTURBANCE. DISCHARGE TO STORM DRAINS OR SURFACE WATERS FROM SEDIMENT CONTROLS SHALL BE CLEAR AND APPROVED BY THE ENGINEER.
21. BLOCK THE OPEN UPSTREAM ENDS OF DETENTION BASIN/SEDIMENT TRAP OUTLET CONTROL ORIFICES UNTIL SITE IS STABILIZED AND BLOCK END OF STORM DRAINS IN EXPOSED TRENCHES WITH BOARDS AND SANDBAGS AT THE END OF EACH WORKING DAY WHEN RAIN IS EXPECTED.
22. THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION SITE AND SHALL NOT ALLOW THE ACCUMULATION OF RUBBISH OR CONSTRUCTION DEBRIS ON THE SITE. PROPER SANITARY DEVICES SHALL BE MAINTAINED ON-SITE AT ALL TIMES. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID THE SPILLAGE OF FUEL OR OTHER POLLUTANTS ON THE CONSTRUCTION SITE AND SHALL ADHERE TO ALL APPLICABLE POLICIES AND REGULATIONS RELATED TO SPILL PREVENTION AND RESPONSE/CONTAINMENT.
23. MINIMIZE LAND DISTURBANCES. SEED AND MULCH DISTURBED AREAS WITH TEMPORARY MIX AS SOON AS PRACTICABLE (2 WEEK MAXIMUM UNSTABILIZED PERIOD) USING PERENNIAL RYEGRASS AT 40 LBS PER ACRE. MULCH ALL CUT AND FILL SLOPES AND SWALES WITH LOOSE HAY AT A RATE OF 2 TONS PER ACRE. IF NECESSARY, REPLACE LOOSE HAY ON SLOPES WITH EROSION CONTROL BLANKETS OR JUTE CLOTH. MODERATELY GRADED AREAS, ISLANDS, AND TEMPORARY CONSTRUCTION STAGING AREAS MAY BE HYDROSEEDING WITH TACKIFIER.
24. SWEEP AFFECTED PORTIONS OF OFF SITE ROADS ONE OR MORE TIMES A DAY (OR LESS FREQUENTLY IF TRACKING IS NOT A PROBLEM) DURING CONSTRUCTION. FOR DUST CONTROL, PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER ON UNPAVED TRAVELWAYS TO KEEP THE TRAVELWAYS DAMP. CALCIUM CHLORIDE MAY ALSO BE APPLIED TO ACCESS ROADS. DUMP TRUCK LOADS EXITING THE SITE SHALL BE COVERED.
25. TURF ESTABLISHMENT SHALL BE PERFORMED OVER ALL DISTURBED SOIL, UNLESS THE AREA IS UNDER ACTIVE CONSTRUCTION, IT IS COVERED IN STONE OR SCHEDULED FOR PAVING WITHIN 30 DAYS. TEMPORARY SEEDING OR NON-LIVING SOIL PROTECTION OF ALL EXPOSED SOILS AND SLOPES SHALL BE INITIATED WITHIN THE FIRST 7 DAYS OF SUSPENDING WORK IN AREAS TO BE LEFT LONGER THAN 30 DAYS.
26. IF CONSTRUCTION ACTIVITIES ARE COMPLETE OR HAVE BEEN TEMPORARILY HALTED FOR 7 DAYS, STABILIZATION ACTIVITIES WILL BE IMPLEMENTED WITHIN 3 DAYS.
27. TWO WEEKS BEFORE THE FALL SEEDING SEASON BEGINS (AUGUST 15 TO OCTOBER 15), THE CONTRACTOR SHALL SCHEDULE A MEETING WITH TOWN STAFF TO DISCUSS STABILIZING THE SITE FOR WINTER MONTHS. MEASURES SUCH AS MULCHING AND/OR SEEDING MAY BE REQUIRED.
28. MAINTAIN ALL PERMANENT AND TEMPORARY SEDIMENT CONTROL DEVICES IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF WORK REMOVE ALL TEMPORARY SEDIMENT CONTROLS ONCE THE SITE IS FULLY STABILIZED AND APPROVAL HAS BEEN RECEIVED FROM THE TOWN AND/OR ENGINEER.
29. SEEDING MIXTURES:
 - A. NYSDEC PERMANENT CONSTRUCTION AREA PLANTING MIXTURE #1 FROM THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL (BLUE BOOK), LATEST EDITION.
30. POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES ARE NOT REQUIRED FOR THIS PROJECT SINCE THE PROJECT LIMITS OF DISTURBANCE IS UNDER 1 ACRE.
31. THE OWNER OR OPERATOR SHALL ENSURE THERE IS A TRAINED CONTRACTOR INSPECT ALL EROSION CONTROL MEASURES IN CONFORMANCE WITH PART IV SECTION B OF THE GENERAL PERMIT.
32. THE OWNER OR OPERATOR IS NOT REQUIRED TO HAVE A QUALIFIED INSPECTOR CONDUCT SITE INSPECTIONS BECAUSE THE PROJECT LIMITS OF DISTURBANCE IS UNDER 1 ACRE PER PART IV SECTION C SUBSECTION 1d OF THE GENERAL PERMIT.

SEDIMENT & EROSION CONTROL NARRATIVE

1. THE PROJECT INCLUDES THE INSTALLATION OF A 140± AGL MONOPINE WITH ASSOCIATED GROUND MOUNTED EQUIPMENT. ALL DISTURBED AREAS ARE TO BE SEEDED AND STABILIZED PRIOR TO THE INSTALLATION OF THE PROPOSED EQUIPMENT.

THE PROPOSED PROJECT INVOLVES THE FOLLOWING CONSTRUCTION:

 - A. CONSTRUCTION OF 140± AGL MONOPINE.
 - C. CONSTRUCTION OF 41'x62' (2,542± SF) FENCED EQUIPMENT COMPOUND W/ GRAVEL SURFACE TREATMENT AND ASSOCIATED UTILITIES.
 - D. CONSTRUCTION OF 100± 15' WIDE GRAVEL ACCESS DRIVE.
 - E. CONSTRUCTION OF 10'x12' (120± SF) CONCRETE EQUIPMENT PAD.
 - F. THE STABILIZATION OF PERVIOUS DISTURBED AREAS WITH PERMANENT GRASS TREATMENTS.
2. FOR THIS PROJECT, THERE ARE APPROXIMATELY 39,000± SF (0.89± AC.) OF THE SITE BEING DISTURBED.
3. A GEOTECHNICAL ENGINEERING REPORT IS TO BE COMPLETED FOR THIS PROJECT AND WILL BE AVAILABLE UNDER SEPARATE COVER.
4. IT IS ANTICIPATED THAT CONSTRUCTION WILL BE COMPLETED IN APPROXIMATELY 12 WEEKS.
5. REFER TO THE CONSTRUCTION SEQUENCING AND EROSION AND SEDIMENTATION NOTES FOR INFORMATION REGARDING SEQUENCING OF MAJOR OPERATIONS IN THE ON-SITE CONSTRUCTION PHASES.
6. EROSION AND SEDIMENTATION MEASURES ARE BASED UPON ENGINEERING PRACTICE, JUDGEMENT AND THE APPLICABLE SECTIONS OF THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL (BLUE BOOK), LATEST EDITION.
7. DETAILS FOR THE TYPICAL EROSION AND SEDIMENTATION MEASURES ARE SHOWN ON PLAN SHEET EC-2 OR PROVIDED AS SEPARATE SUPPORT DOCUMENTATION FOR REVIEW IN THIS PLAN.
8. CONSERVATION PRACTICES TO BE USED DURING CONSTRUCTION AREA:
 - A. STAGED CONSTRUCTION.
 - B. MINIMIZE THE DISTURBED AREAS DURING CONSTRUCTION.
 - C. STABILIZE DISTURBED AREAS AS SOON AS POSSIBLE WITH TEMPORARY OR PERMANENT MEASURES.
 - D. MINIMIZE IMPERVIOUS AREAS.
 - E. UTILIZE APPROPRIATE CONSTRUCTION EROSION AND SEDIMENTATION MEASURES.

SUGGESTED CONSTRUCTION SEQUENCE

THE FOLLOWING SUGGESTED SEQUENCE OF CONSTRUCTION ACTIVITIES IS PROJECTED BASED UPON ENGINEERING JUDGEMENT AND BEST MANAGEMENT PRACTICES. THE CONTRACTOR MAY ELECT TO ALTER THE SEQUENCING TO BEST MEET THE CONSTRUCTION SCHEDULE. THE EXISTING SITE ACTIVITIES AND WEATHER CONDITIONS. CONTRACTOR TO HIRE SURVEYOR FOR PROJECT STAKEOUT AS NEEDED THROUGHOUT CONSTRUCTION ACTIVITIES.

1. CONTACT THE OWNER TO SCHEDULE A PRE-CONSTRUCTION MEETING. PHYSICALLY FLAG THE TREES TO BE REMOVED IN THE FIELD AS NECESSARY TO FACILITATE THE PRE-CONSTRUCTION MEETING.
2. CONDUCT A PRE-CONSTRUCTION MEETING TO DISCUSS THE PROPOSED WORK AND EROSION AND SEDIMENTATION CONTROL MEASURES. THE MEETING SHOULD BE ATTENDED BY THE OWNER, THE OWNER REPRESENTATIVE(S), THE GENERAL CONTRACTOR, DESIGNATED SUB-CONTRACTORS AND THE PERSON, OR PERSONS, RESPONSIBLE FOR THE IMPLEMENTATION, OPERATION, MONITORING AND MAINTENANCE OF THE EROSION AND SEDIMENTATION MEASURES. THE CONSTRUCTION PROCEDURES FOR THE ENTIRE PROJECT SHALL BE REVIEWED AT THIS MEETING.
3. NOTIFY THE OWNER AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO COMMENCEMENT OF ANY DEMOLITION, CONSTRUCTION OR REGULATED ACTIVITY ON THIS PROJECT. NOTIFY DIG SAFELY NEW YORK AY (800) 962-7962.
4. CLEAR AND GRUB AS REQUIRED, TO INSTALL THE PERIMETER EROSION AND SEDIMENTATION CONTROL MEASURES AND, IF APPLICABLE, TREE PROTECTION.
5. INSTALL CONSTRUCTION ENTRANCE.
6. PERFORM THE REMAINING CLEARING AND GRUBBING AS NECESSARY. REMOVE CUT WOOD AND STUMPS. CHIP BRUSH AND STOCKPILE FOR FUTURE USE OR REMOVE OFF-SITE. REMOVE AND DISPOSE OF DEMOLITION DEBRIS OFF-SITE.
7. TEMPORARILY SEED DISTURBED AREAS NOT UNDER CONSTRUCTION FOR THIRTY (30) DAYS OR MORE.
8. EXCAVATE AND GRADE NEW ACCESS DRIVE. INSTALL ACCESS ROAD DRAINAGE.
9. EXCAVATE AND ROUGH GRADE EQUIPMENT COMPOUND.
10. EXCAVATE FOR TOWER FOUNDATION & EQUIPMENT PAD.
11. FINALIZE ACCESS ROAD GRADES.
12. PREPARE SUBGRADE AND INSTALL FORMS, STEEL REINFORCING, & CONCRETE FOR TOWER FOUNDATION & EQUIPMENT PAD.
13. INSTALL BURIED GROUND RINGS, GROUND RODS, GROUND LEADS, UTILITY CONDUITS & UTILITY EQUIPMENT.
14. BACKFILL TOWER FOUNDATION.
15. ERECT TOWER.
16. INSTALL TELECOMMUNICATIONS EQUIPMENT ON TOWER & COMPOUND.
17. INSTALL COMPOUND GRAVEL SURFACES.
18. FINALIZE GRADES. INSTALL GRAVEL SURFACES. PAVE ACCESS DRIVE AREAS.
19. INSTALL FENCING.
20. CONNECT GROUNDING LEADS & LIGHTNING PROTECTION.
21. FINAL GRADE AROUND COMPOUND.
22. LOAM & SEED DISTURBED AREAS OUTSIDE COMPOUND, AS REQUIRED.
23. TEST ALL NEW EQUIPMENT.
24. AFTER THE SITE IS STABILIZED AND WITH THE APPROVAL OF THE OWNER, REMOVE PERIMETER EROSION AND SEDIMENTATION CONTROLS.
25. PERFORM FINAL PROJECT CLEANUP.

THE ESTIMATED TIME FOR THE COMPLETION OF THE WORK IS APPROXIMATELY TWELVE (12) WEEKS. THE EXACT PROCESS MAY VARY DEPENDING ON THE CONTRACTORS & SUBCONTRACTORS AVAILABILITY TO COMPLETE WORK & WEATHER DELAYS.

CONSTRUCTION OPERATION AND MAINTENANCE PLAN - BY CONTRACTOR

E&S MEASURE

CONSTRUCTION ENTRANCE

HAY BALES

SILT FENCE

SILT SACKS

TOPSOIL/BORROW STOCKPILES

WATER BARS

TEMPORARY DIVERSION DITCHES

TEMPORARY SEDIMENT TRAPS/BASINS

TEMPORARY SOIL PROTECTION

INSPECTION SCHEDULE

DAILY

WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"

WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"

WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"

DAILY

DAILY

DAILY & WITHIN 24 HOURS OF RAINFALL > 0.2"

WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"

WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.2"

MAINTENANCE REQUIRED

PLACE ADDITIONAL STONE, EXTEND THE LENGTH OR REMOVE AND REPLACE THE STONE. CLEAN PAVED SURFACES OF TRACKED SEDIMENT.

REPAIR/REPLACE WHEN FAILURE, OR OBSERVED DETERIORATION, IS OBSERVED. REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE BALE.

REPAIR/REPLACE WHEN FAILURE, OR OBSERVED DETERIORATION, IS OBSERVED. REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE FENCE.

REPAIR/REPLACE WHEN FAILURE, OR OBSERVED DETERIORATION, IS OBSERVED. REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE SACK.

REPAIR/REPLACE SEDIMENT BARRIERS AS NECESSARY.

REPAIR/RESHAPE AS NECESSARY. REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE WATER BAR.

REPAIR/RESHAPE AS NECESSARY. REVIEW CONDITIONS IF REPETITIVE FAILURES OCCUR.

REMOVE SEDIMENT WHEN IT REACHES 1/2 OF THE MINIMUM REQUIRED WET STORAGE VOLUME.

REPAIR ERODED OR BARE AREAS IMMEDIATELY. RESEED AND MULCH.

PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITY, THE OWNER OR OPERATOR MUST IDENTIFY THE CONTRACTOR(S) AND SUBCONTRACTOR(S) THAT WILL BE RESPONSIBLE FOR INSTALLING, CONSTRUCTING, REPAIRING, REPLACING, INSPECTING AND MAINTAINING THE EROSION AND SEDIMENT CONTROL PRACTICES INCLUDED IN THE SWPPP, AND THE CONTRACTOR(S) AND SUBCONTRACTOR(S) THAT WILL BE RESPONSIBLE FOR CONSTRUCTING THE POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES INCLUDED IN THE SWPPP. THE OWNER OR OPERATOR SHALL HAVE EACH OF THE CONTRACTORS AND SUBCONTRACTORS IDENTIFY AT LEAST ONE PERSON FROM THEIR COMPANY THAT WILL BE RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP. THIS PERSON SHALL BE KNOWN AS THE TRAINED CONTRACTOR. THE OWNER OR OPERATOR SHALL ENSURE THAT AT LEAST ONE TRAINED CONTRACTOR IS ON SITE ON A DAILY BASIS WHEN SOIL DISTURBANCE ACTIVITIES ARE BEING PERFORMED.

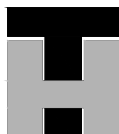
THE OWNER OR OPERATOR SHALL HAVE EACH OF THE CONTRACTORS AND SUBCONTRACTORS IDENTIFIED ABOVE SIGN A COPY OF THE FOLLOWING CERTIFICATION STATEMENT BELOW BEFORE THEY COMMENCE ANY CONSTRUCTION ACTIVITY:

"I HEREBY CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND AND AGREE TO COMPLY WITH THE TERMS AND CONDITIONS OF THE SWPPP AND AGREE TO IMPLEMENT ANY CORRECTIVE ACTIONS IDENTIFIED BY THE QUALIFIED INSPECTOR DURING A SITE INSPECTION. I ALSO UNDERSTAND THAT THE OWNER OR OPERATOR MUST COMPLY WITH THE TERMS AND CONDITIONS OF THE MOST CURRENT VERSION OF THE NEW YORK STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM (SPDES) GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES AND THAT IT IS UNLAWFUL FOR ANY PERSON TO CAUSE OR CONTRIBUTE TO A VIOLATION OF WATER QUALITY STANDARDS. FURTHERMORE, I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, THAT I DO NOT BELIEVE TO BE TRUE, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

PRINTED NAME _____ DATE _____

SIGNATURE _____ DATE _____

ALL CONTRACTORS AND SUB-CONTRACTORS SHALL SIGN THE ABOVE STATEMENT AND THEY WILL BE STORED ON-SITE.



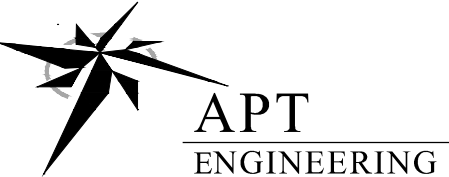
HOMELAND TOWERS, LLC
9 HARMONY STREET
2ND FLOOR
DANBURY, CT 06810
(203) 297-6345



4 CENTEROCK ROAD
WEST NYACK, NY 10994



340 MOUNT KEMBLE AVENUE
MORRISTOWN, NEW JERSEY 07960



567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PH: (860)-663-1697
WWW.ALLPOINTS2TECH.COM FAX: (860)-663-0935

PERMITTING DOCUMENTS

NO	DATE	REVISION
0	08/13/20	FOR REVIEW: RCB
1	08/14/20	CLIENT REVS: RCB
2	11/03/20	TOWN COMMENTS: RCB
3	12/22/20	TOWN COMMENTS: RCB
4	01/25/21	TOWN COMMENTS: RCB
5	03/19/21	TOWN COMMENTS: RCB
6	07/12/21	TOWN COMMENTS: RCB
7	07/13/21	TOWN COMMENTS: RCB
8	07/14/21	TOWN COMMENTS: RCB

DESIGN PROFESSIONALS OF RECORD

PROF: SCOTT M. CHASSE P.E.
COMP: APT ENGINEERING
ADD: 567 VAUXHALL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

DEVELOPER: HOMELAND TOWERS, LLC
ADDRESS: 9 HARMONY STREET
2ND FLOOR
DANBURY, CT 06810

NOTE:
IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW ARTICLE 145, SECTION 7209 (2) FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE SEAL OF AN ENGINEER OR LAND SURVEYOR IS ALTERED. THE ALTERING ENGINEER OR LAND SURVEYOR SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY THE SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

HOMELAND TOWERS
MOUNT KISCO

SITE 180 S. BEDFORD RD.
ADDRESS: MT. KISCO, NY 10594

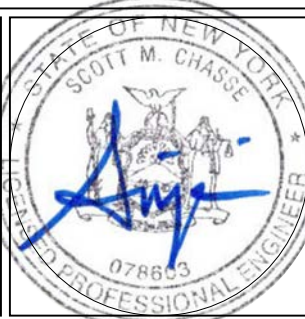
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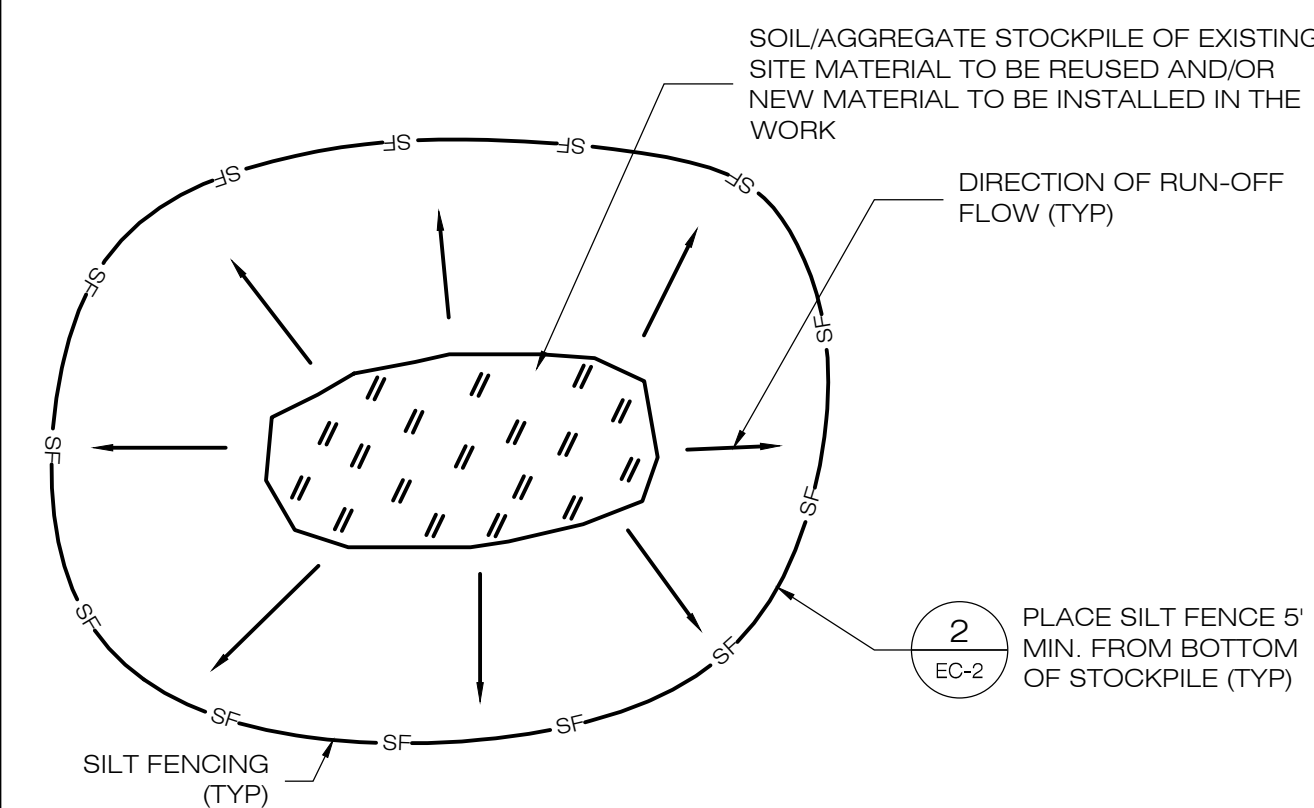
DATE: 08/13/20 DRAWN BY: CSH
CHECKED BY: RCB

SHEET TITLE:
EROSION CONTROL
NOTES

SHEET NUMBER:

EC-1





- NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
 2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS AND ARE NOT PERMITTED ON SLOPES GREATER THAN 10%.
 3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.
 4. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.
 5. ANY SOIL IN STOCKPILES IN EXCESS OF SEVEN (7) DAYS SHALL BE SEEDED AND MULCHED OR COVERED.

1 TEMPORARY STOCKPILE DETAIL

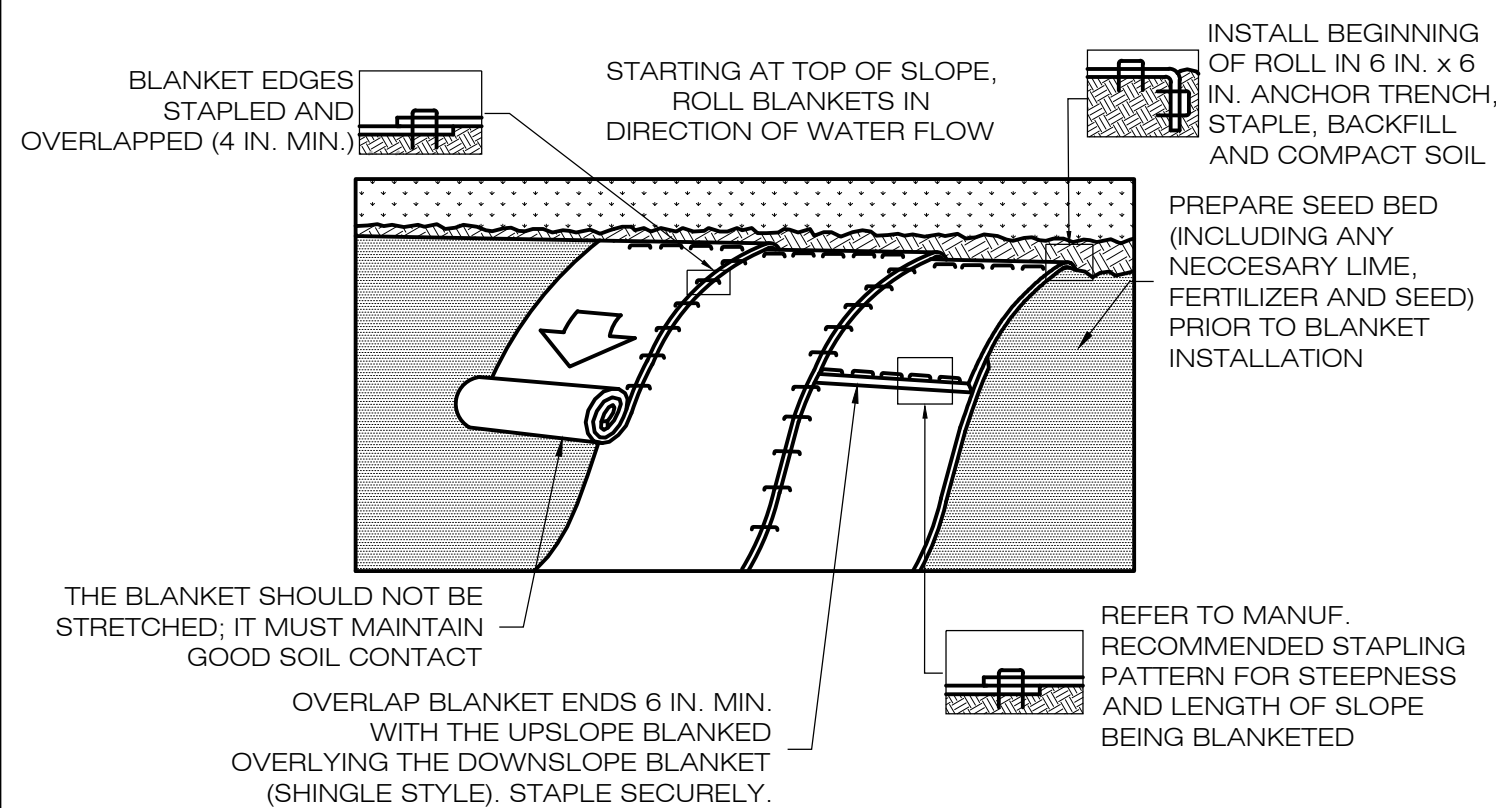
EC-2 SCALE : N.T.S.

SEQUENCE OF CONSTRUCTION

1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECPs), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECPs IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECPs EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECPs 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 THE COMPACTED SOIL AND FOLD THE REMAINING 12" PORTION OF RECPs BACK OVER THE SEED AND COMPACTED SOIL. SECURE RECPs OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECPs.
3. ROLL THE RECPs DOWN HORIZONTALLY ACROSS THE SLOPE. RECPs WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECPs MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL RECPs MUST BE STAPLED WITH APPROXIMATELY 2" - 5" OVERLAP DEPENDING ON THE RECPs TYPE.
5. CONSECUTIVE RECPs SPLICED DOWN THE SLOPE MUST BE END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECPs WIDTH.

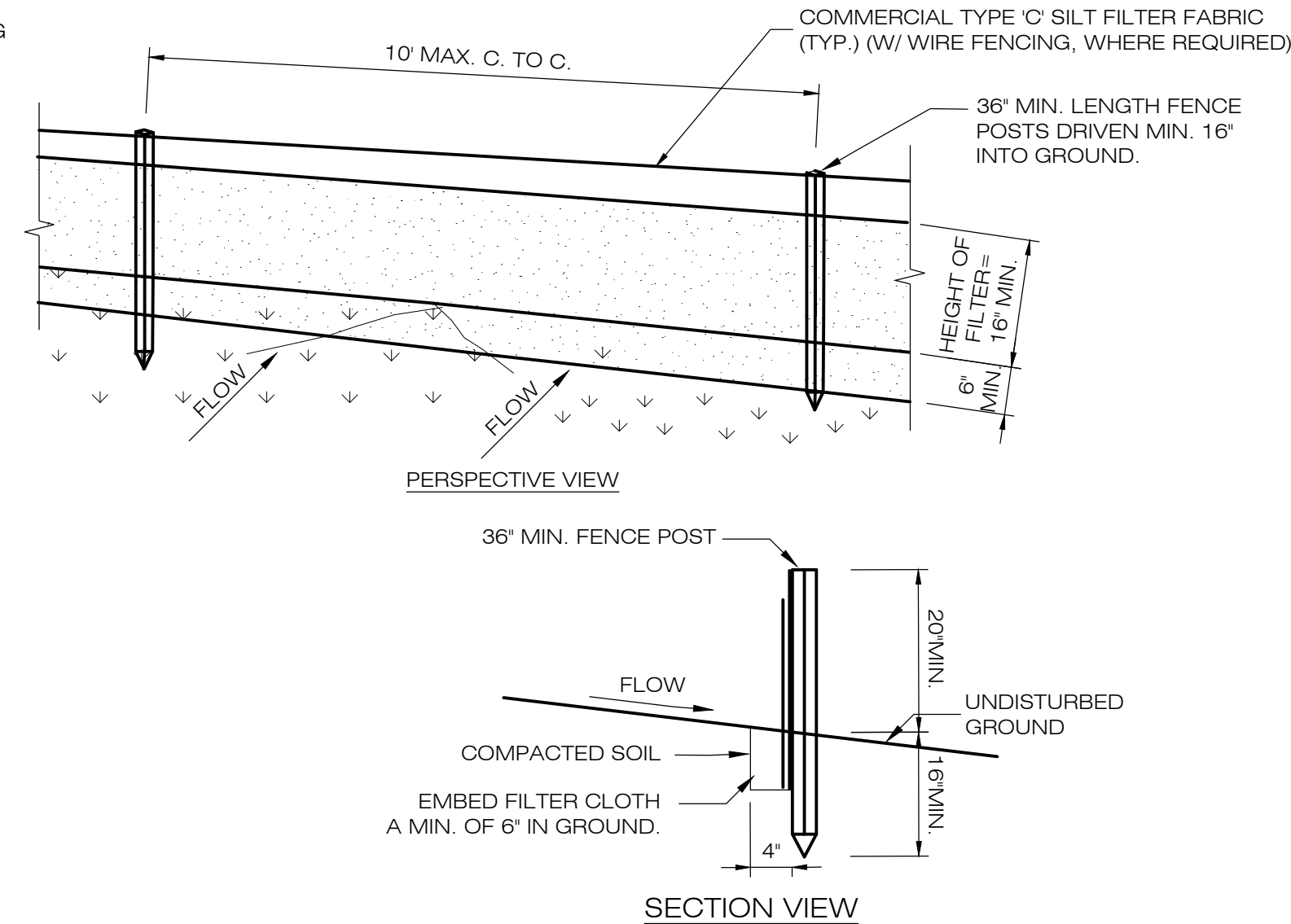
NOTES:

1. PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
2. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
3. BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
4. THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
5. BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.



4 EROSION CONTROL BLANKET STEEP SLOPES

EC-2 SCALE : N.T.S.

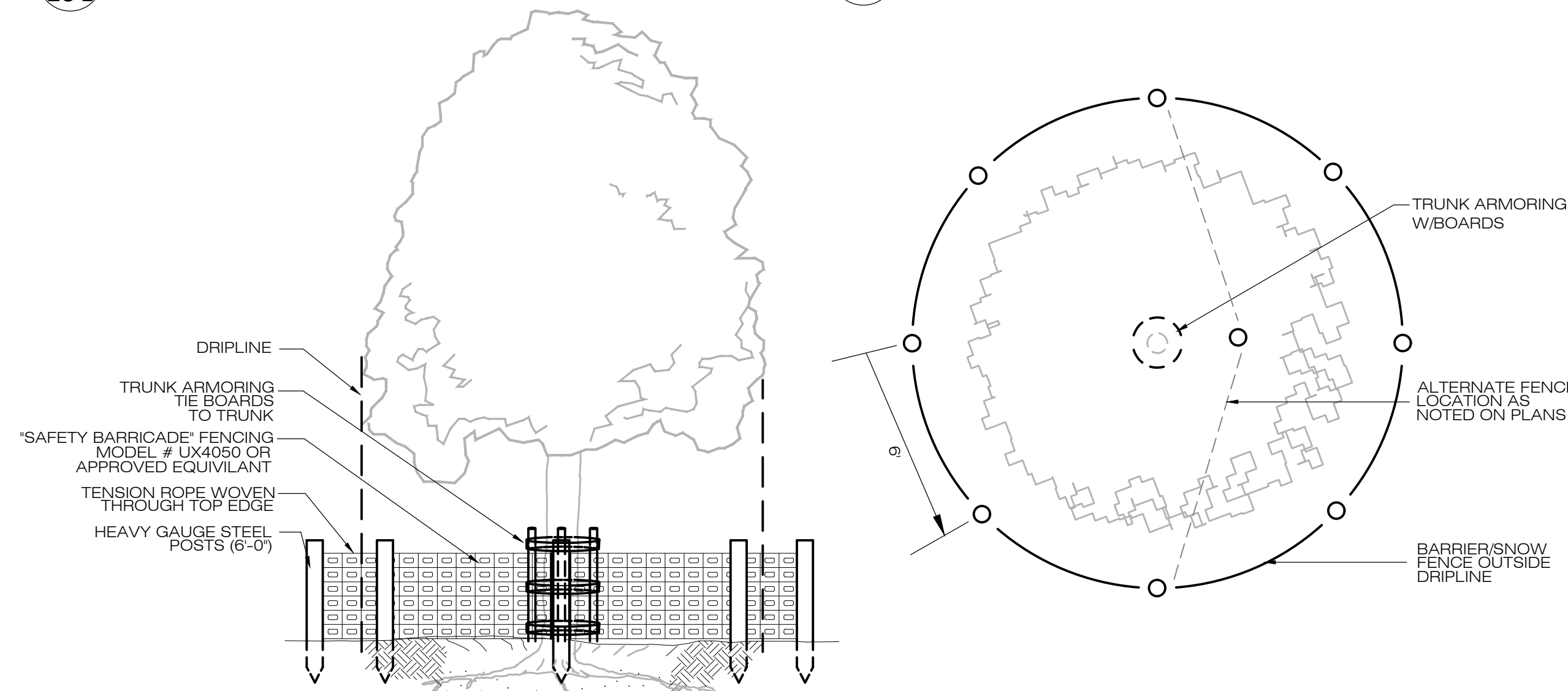


CONSTRUCTION SPECIFICATIONS

1. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
3. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

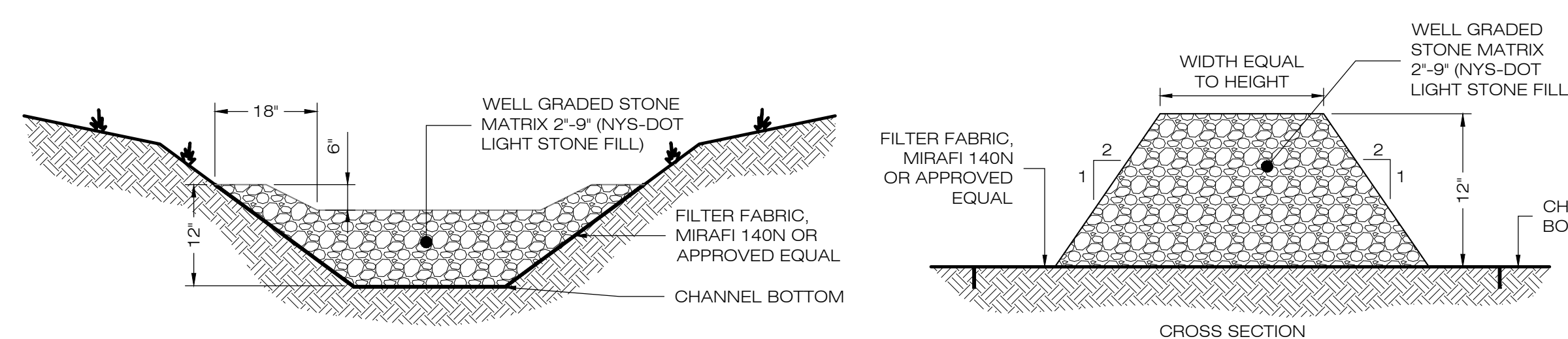
2 GEOTEXTILE SILT FENCE DETAIL

EC-2 SCALE : N.T.S.



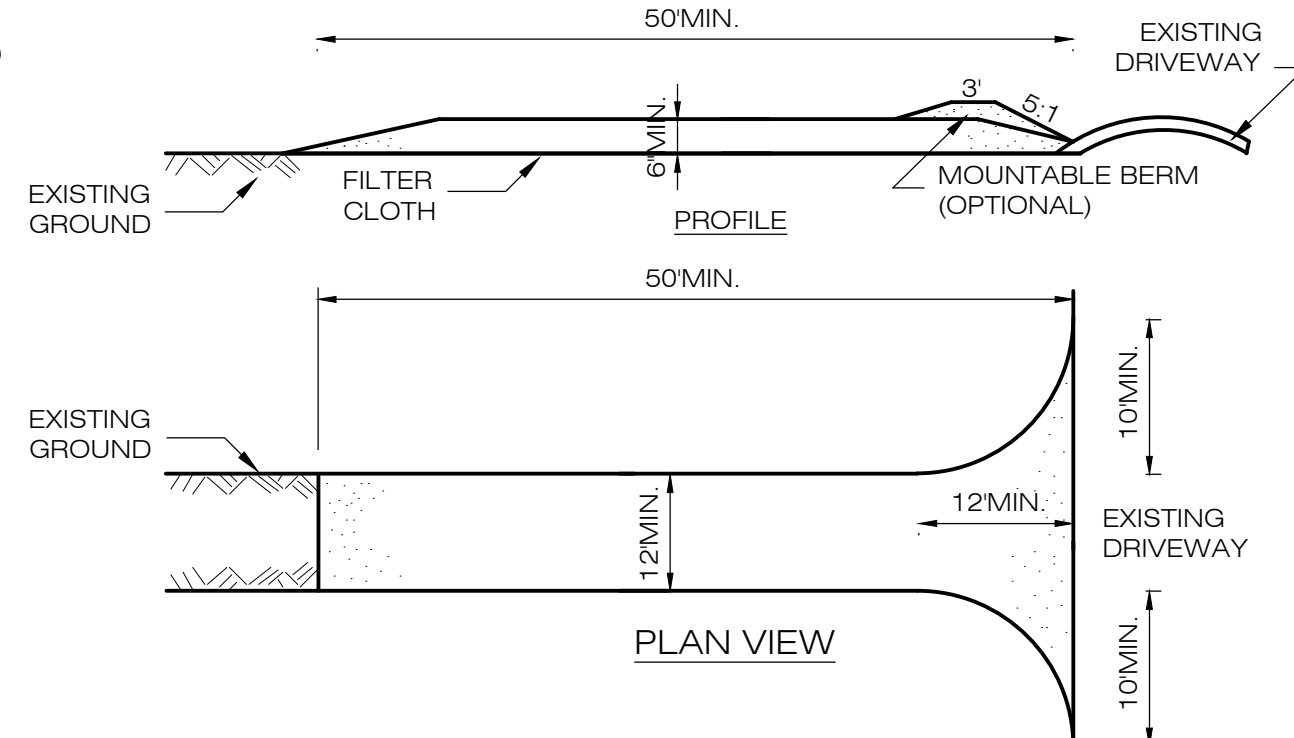
5 TREE PROTECTION

EC-2 SCALE : N.T.S.



7 STONE CHECK DAM

EC-2 SCALE : N.T.S.

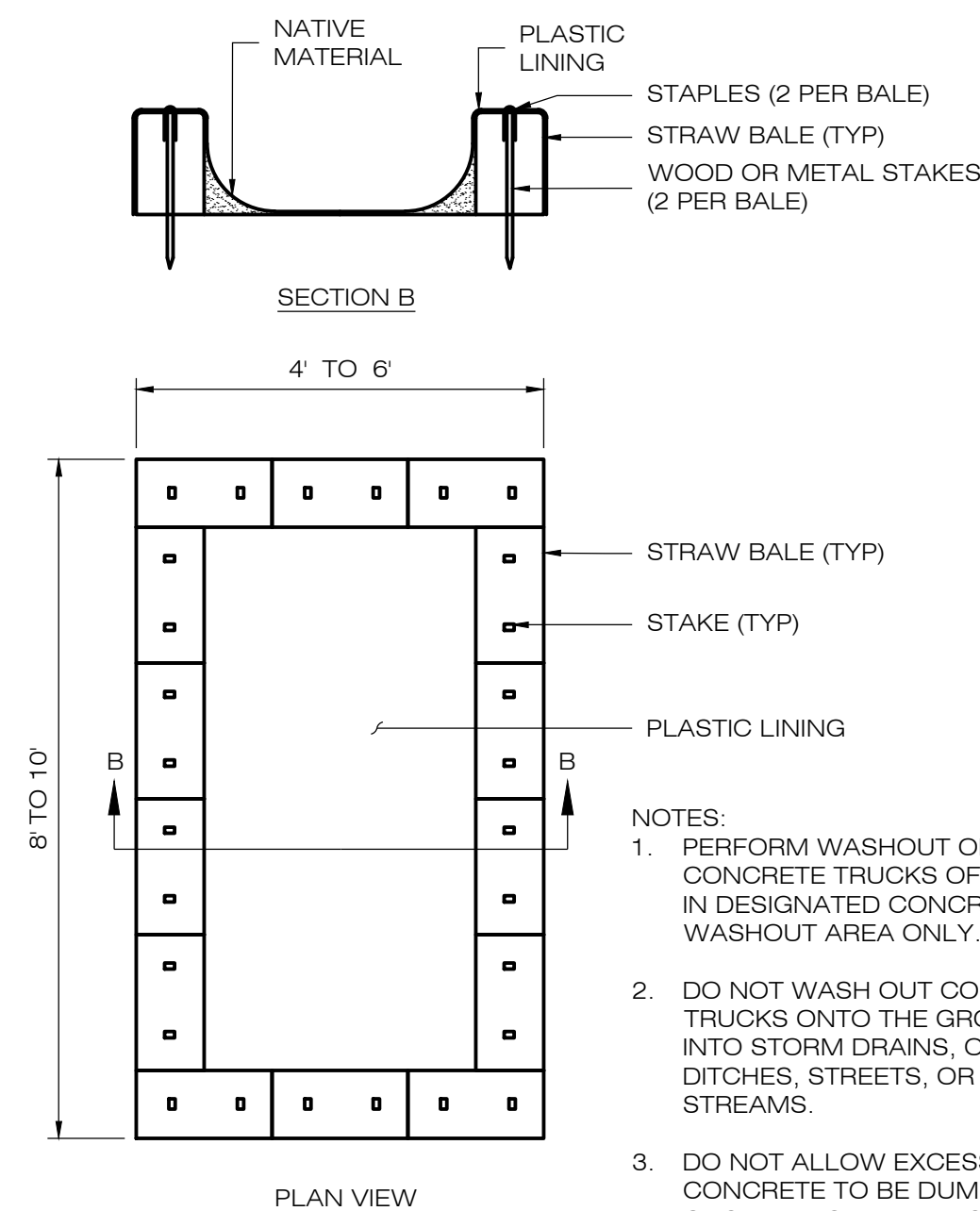


CONSTRUCTION SPECIFICATIONS:

1. STONE SIZE - USE 1-4 INCH STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ACCESS SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

3 CONSTRUCTION ENTRANCE DETAIL

EC-2 SCALE : N.T.S.

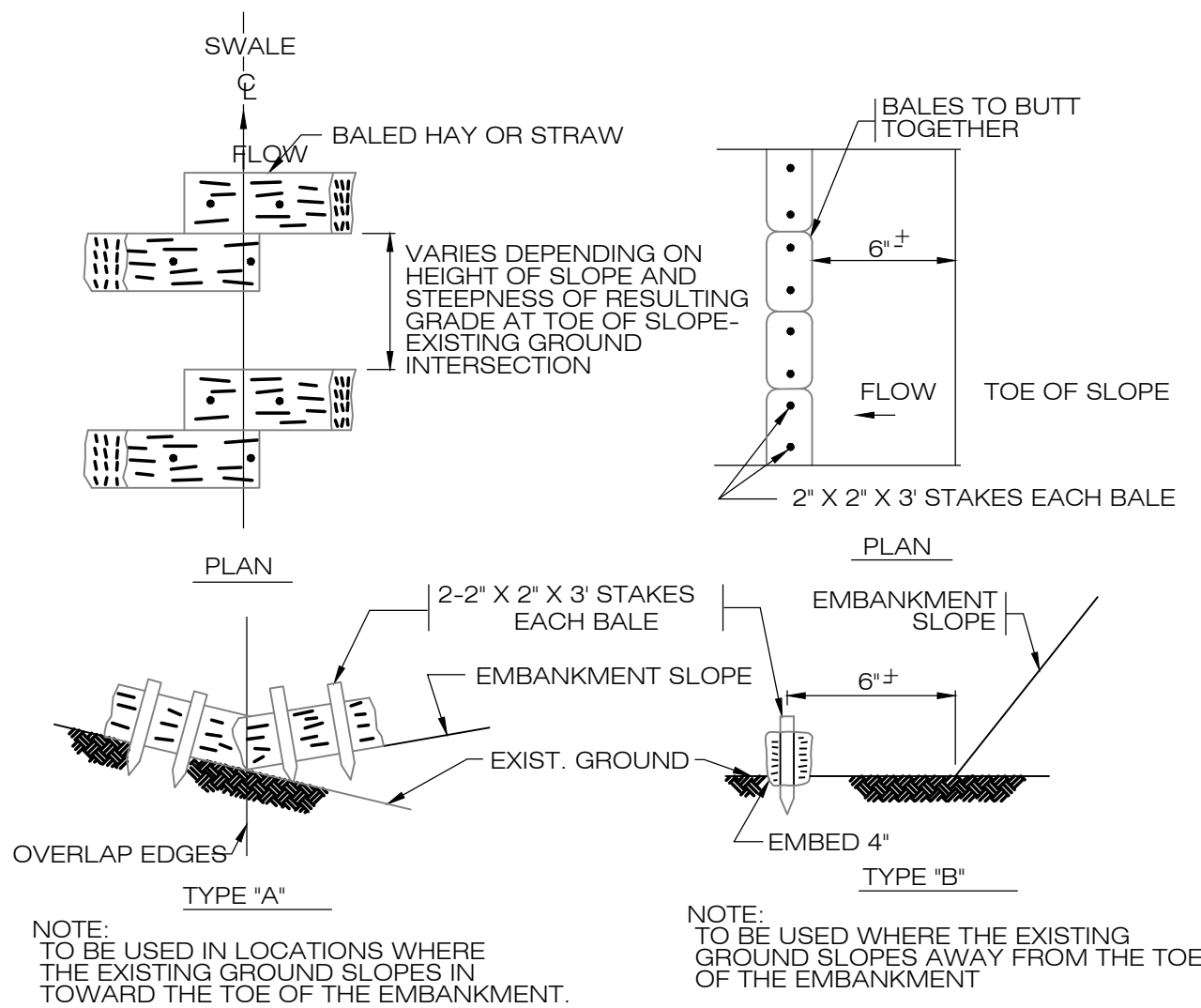


NOTES:

1. PERFORM WASHOUT OF CONCRETE TRUCKS OFFSITE OR IN DESIGNATED CONCRETE WASHOUT AREA ONLY.
2. DO NOT WASH OUT CONCRETE TRUCKS ONTO THE GROUND, OR INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS.
3. DO NOT ALLOW EXCESS CONCRETE TO BE DUMPED ONSITE, EXCEPT IN DESIGNATED CONCRETE WASHOUT AREA.

6 CONCRETE WASHOUT DETAIL

EC-2 SCALE : N.T.S.



NOTE: TO BE USED IN LOCATIONS WHERE THE EXISTING GROUND SLOPES IN TOWARD THE TOE OF THE EMBANKMENT.

NOTE: TO BE USED WHERE THE EXISTING GROUND SLOPES AWAY FROM THE TOE OF THE EMBANKMENT

8 HAYBALE CHECK DAM SEDIMENTATION CONTROL BARRIER

EC-2 SCALE : N.T.S.

HOMELAND TOWERS, LLC
9 HARMONY STREET
2nd FLOOR
DANBURY, CT 06810
(203) 297-6345

verizon
4 CENTEROCK ROAD
WEST NYACK, NY 10994

at&t
340 MOUNT KEMBLE AVENUE
MORRISTOWN, NEW JERSEY 07960

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567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PH: (860)-663-1697
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DESIGN PROFESSIONALS OF RECORD

PROF. SCOTT M. CHASSE P.E.
COMP: APT ENGINEERING
ADD: 567 VAUXHALL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

DEVELOPER: HOMELAND TOWERS, LLC
ADDRESS: 9 HARMONY STREET
2ND FLOOR
DANBURY, CT 06810

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HOMELAND TOWERS MOUNT KISCO

SITE 180 S. BEDFORD RD.
ADDRESS: MT. KISCO, NY 10594

APT FILING NUMBER: NY283830

DATE: 08/13/20 DRAWN BY: CSH

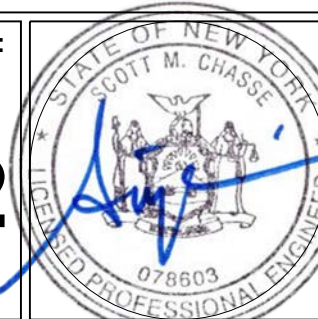
CHECKED BY: RCB

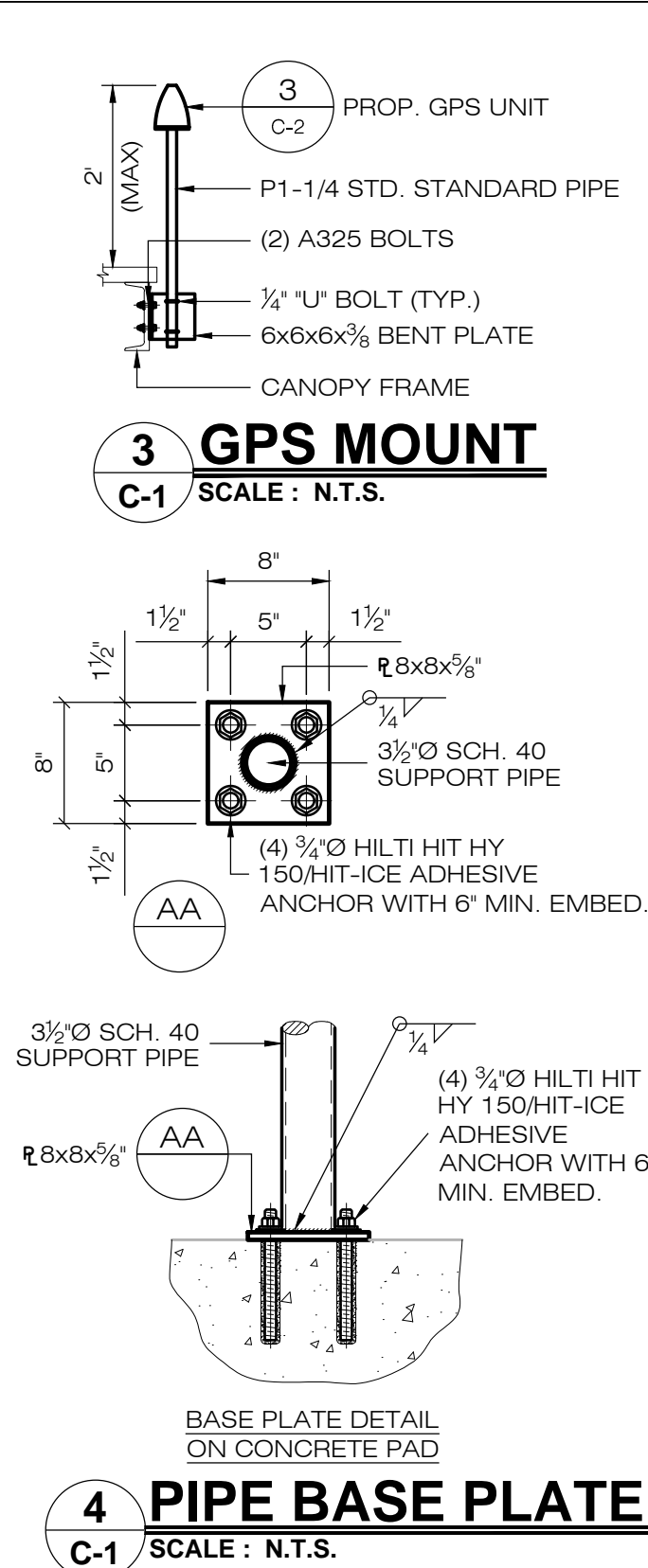
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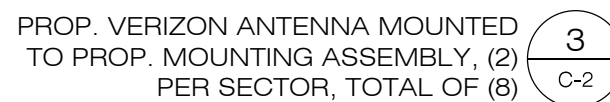
EROSION CONTROL DETAILS

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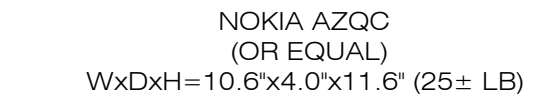
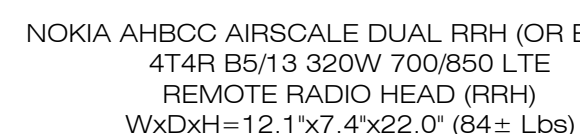
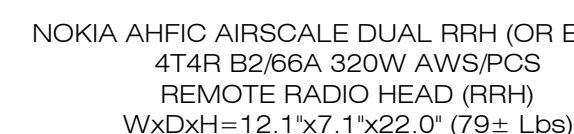
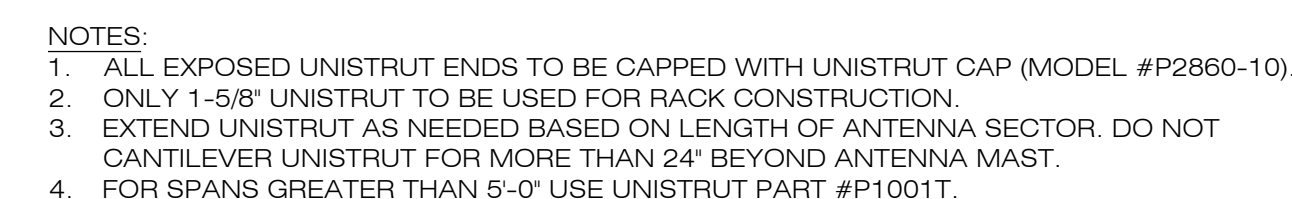
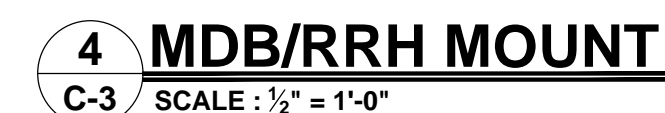
EC-2



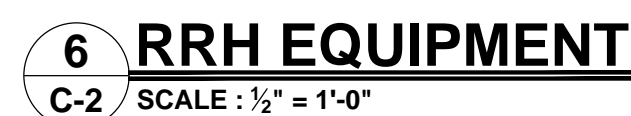




3 ANTENNA DETAIL
C-2 SCALE : 1/2" = 1'-0"



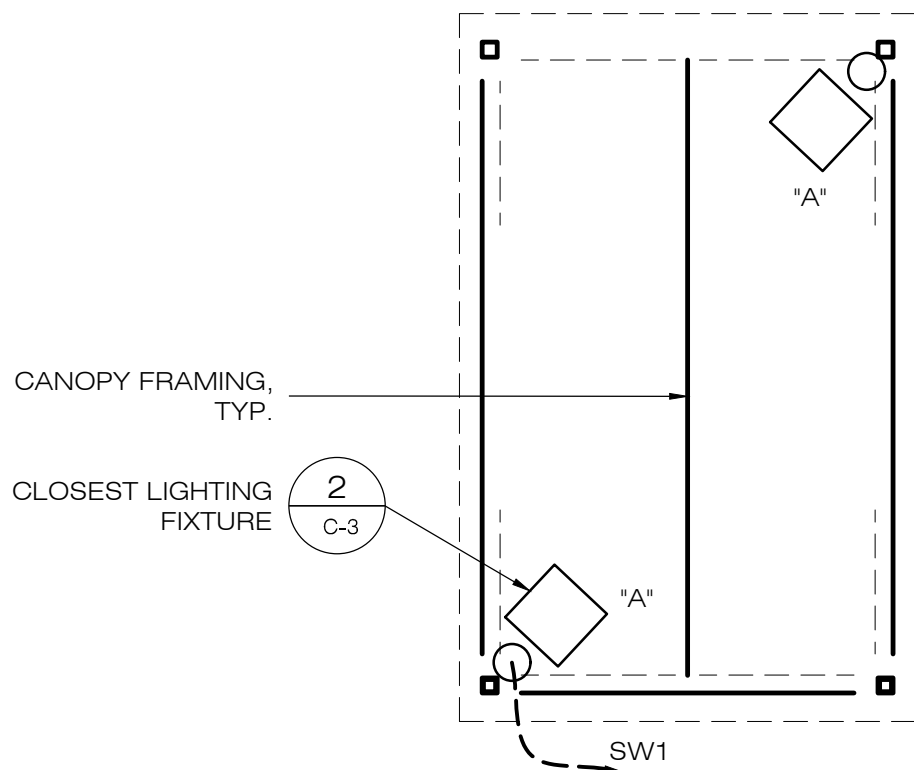
- NOTES:**
1. DIMENSIONS SUBJECT TO CHANGE BASED UPON AVAILABILITY AT TIME OF CONSTRUCTION.
 2. MANUFACTURER'S RECOMMENDED RRH CLEARANCES: FRONT: 36"; SIDES: 12"; BOTTOM: 24"
 3. SFPs ARE PROTOCOL SPECIFIC. THE CONNECTIONS BETWEEN RRHs AND BBU's ARE CPRI CONNECTIONS, AND REQUIRE CPRI SFP (ON BOTH ENDS). THE CONNECTIONS BETWEEN BBU's AND 7705 ARE ETHERNET AND REQUIRE ETHERNET SFP (ON BOTH ENDS.)



SHEET NUMBER:

C-2

STATE OF NEW YORK
SUOT M. CHASSE
078603
PROFESSIONAL ENGINEER



- SW1:
- 15A, 120V, 500W SINGLE POLE 4 HOUR MANUAL TIMER: LEVITON MANUFACTURING CO., INC. MODEL #LTB-1LZ
 - OUTLET BOX: RAB LIGHTING INC. MODEL #B3B
 - WEATHERPROOF COVER: RAB LIGHTING INC. MODEL #TCB
- *A*:
1. FIXTURES (2 TOTAL): FULL CUTOFF, RAB LIGHTING INC. MODEL #WPLEDFC52NW.

NOTE:

1. LIGHTING TO BE MOUNTED BELOW CANOPY. BOTTOM OF LIGHT FIXTURE AT APPROXIMATELY 9± AGL.

1 CANOPY LIGHTING

SCALE : N.T.S.

WPLEDFC52NW



LED 52W Wallpacks. 3 cutoff options. Patent Pending thermal management system. 100,000 hour L70 lifespan. 5-year, no-compromise warranty.

Color: White Weight: 17.6 lbs

Technical Specifications

Listings

UL Listing:

Suitable for wet locations

DLC Listed:

This product is listed by Design Lights Consortium (DLC) as an ultra-efficient premium product that qualifies for the highest tier of rebates from DLC Member Utilities.

DLC Product Code: PX2ZLS6K

IESNA LM-79 & IESNA LM-80 Testing:

RAB LED luminaires and LED components have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80.

Electrical

THD:

6.19% at 120V, 7.09% at 277V

Power Factor:

99.2% at 120V, 97.3% at 277V

Driver:

Constant Current, 720mA, Class 2, 100 - 277V, 50 - 60 Hz, 100 - 277VAC .8 Amps.

Surge Protection:

6kV

LED Characteristics

Lifespan:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations

LEDs:

Two (2) multi-chip, high-output, long-life LEDs

Color Consistency:

3-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color

Color Stability:

LED color temperature is warranted to shift no more than 200K in CCT over a 5 year period

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Construction

Ambient Temperature:

Suitable For use in 40°C (104°F)

Cold Weather Starting:

Minimum starting temperature is -40°C (-40°F)

Housing:

Precision die cast aluminum housing, lens frame

Mounting:

Die-cast aluminum wall bracket with (5) 1/2" conduit openings with plugs. Two-piece bracket with tether for ease of installation and wiring.

Arm:

Die-cast aluminum with wiring access plate

Cutoff:

Full cutoff (0°)

Reflector:

Specular vacuum-metallized polycarbonate

Gaskets:

High temperature silicone

Lens:

Tempered glass

Finish:

Formulated for high-durability and long lasting color

Green Technology:

Mercury and UV-free. RoHS compliant components.

Other

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish. RAB's warranty is subject to all terms and conditions found at

Patents:

The WPLED design is protected by patents in the U.S. Pat D653,377, Canada Pat. 142252, China Pat. ZL201130356930.8, and Mexico Pat. 36921 and pending patent in TW.

Replacement:

Replaces 250W HID

RAB Outdoor

Project:	Type:
Prepared By:	Date:

Driver Info		LED Info	
Type:	Constant Current	Watts:	52W
120V:	0.51A	Color Temp:	4000K (Neutral)
208V:	0.33A	Color Accuracy:	72 CRI
240V:	0.29A	L70 Lifespan:	100,000
277V:	0.24A	Lumens:	7,256
Input Watts:	56W	Efficacy:	130 LPW
Efficiency:	93%		

WPLEDFC52NW

RAB Outdoor

Technical Specifications (continued)

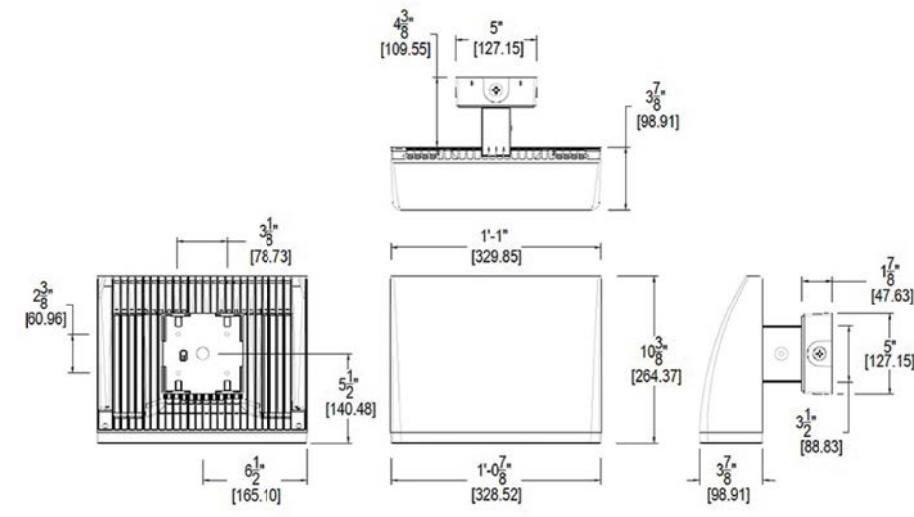
Other

Buy American Act Compliance:
RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

Optical

BUG Rating:
B1 U0 G1

Dimensions

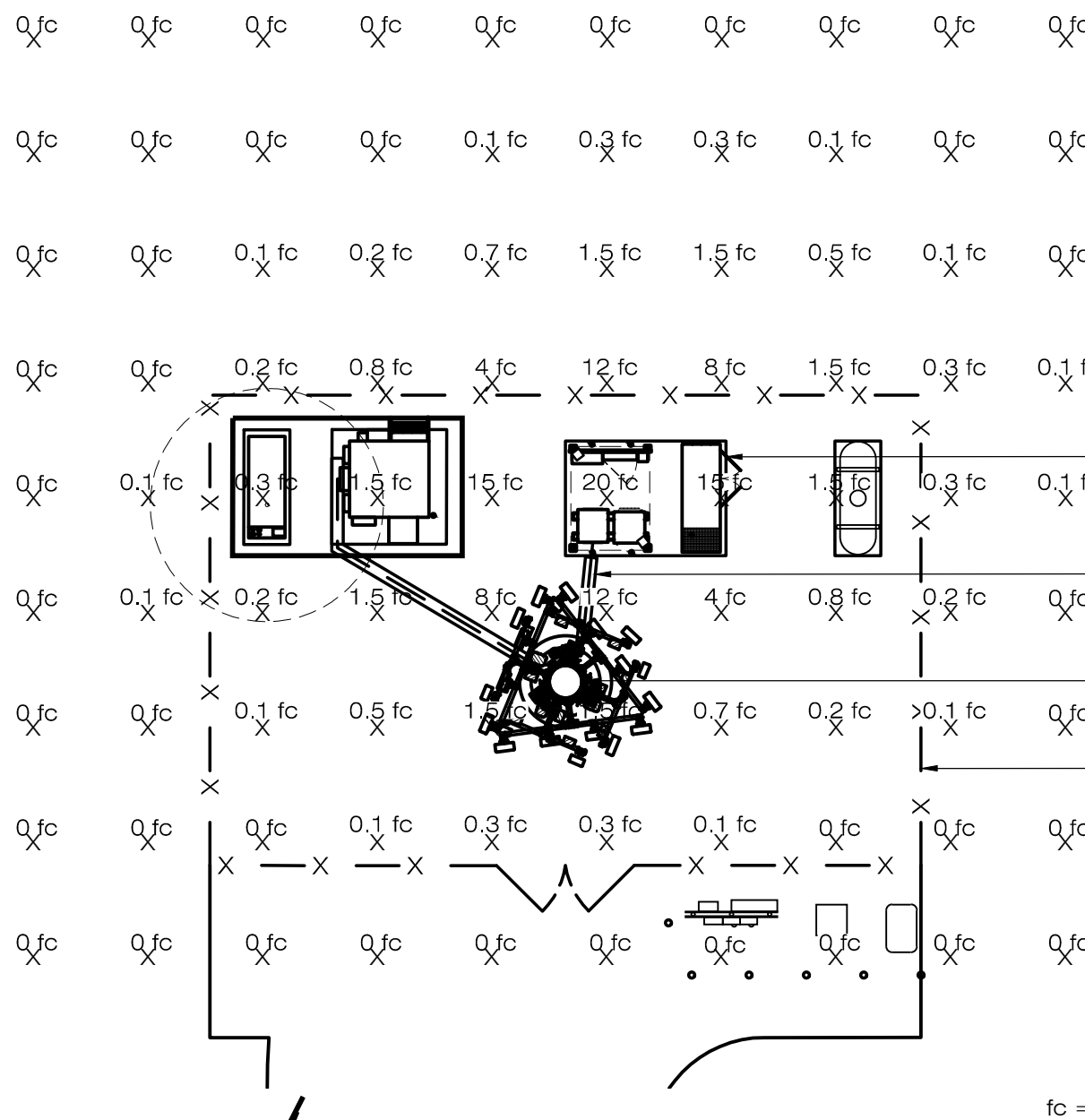


Features

- High performance LED light engine
- Maintains 70% of initial lumens at 100,000 hours
- Weatherproof high temperature silicone gaskets
- Superior heat sinking with die cast aluminum housing and external fins
- Replaces 250W MH
- Traditional wallpack look from the front
- 3 cutoff options
- 5-Year, No-Compromise Warranty

Ordering Matrix

Family	Cutoff	Wattage	Color Temp	Finish	Driver Options	Options	Other Options
WPLED	FC	52	N	W	A	A	A
Blank = Standard (15 degrees)		52 = 52W	Blank = 5000K (Cool)	Blank = Bronze	Blank = 120-277V /480 = 480V	Blank = No Option	Blank = Standard
C = Cutoff (7.5 degrees)		80 = 80W	N = 4000K (Neutral)	W = White	/BL = Bi-Level /D10 = 0-10V Dimming	/PCS = 120V Swivel Photocell /PCS2 = 277V Swivel Photocell /PCS4 = 480V Swivel Photocell /LC = Lightcloud	USA = BAA Compliant
FC = Full Cutoff (0 degrees)			Y = 3000K (Warm)				



3 LIGHTING SPILL PLAN

SCALE : 1" = 15'

Need help? Tech help line: (888) RAB-1000 Email: sales@rablighting.com Website: www.rablighting.com
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2 LIGHTING CUTSHEETS

SCALE : NONE

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HOMELAND TOWERS, LLC
9 HARMONY STREET
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4 CENTEROCK ROAD
WEST NYACK, NY 10994



340 MOUNT KEMBLE AVENUE
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567 VAUXHALL STREET EXTENSION - SUITE 311
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ADD: 567 VAUXHALL STREET
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HOMELAND TOWERS MOUNT KISCO

SITE 180 S. BEDFORD RD.
ADDRESS: MT. KISCO, NY 10594

APT FILING NUMBER: NY283830

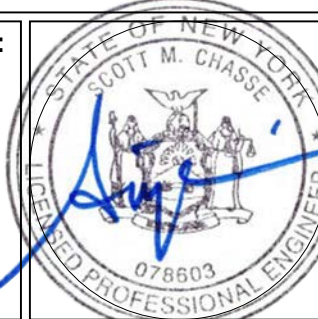
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	CHECKED BY: RCB

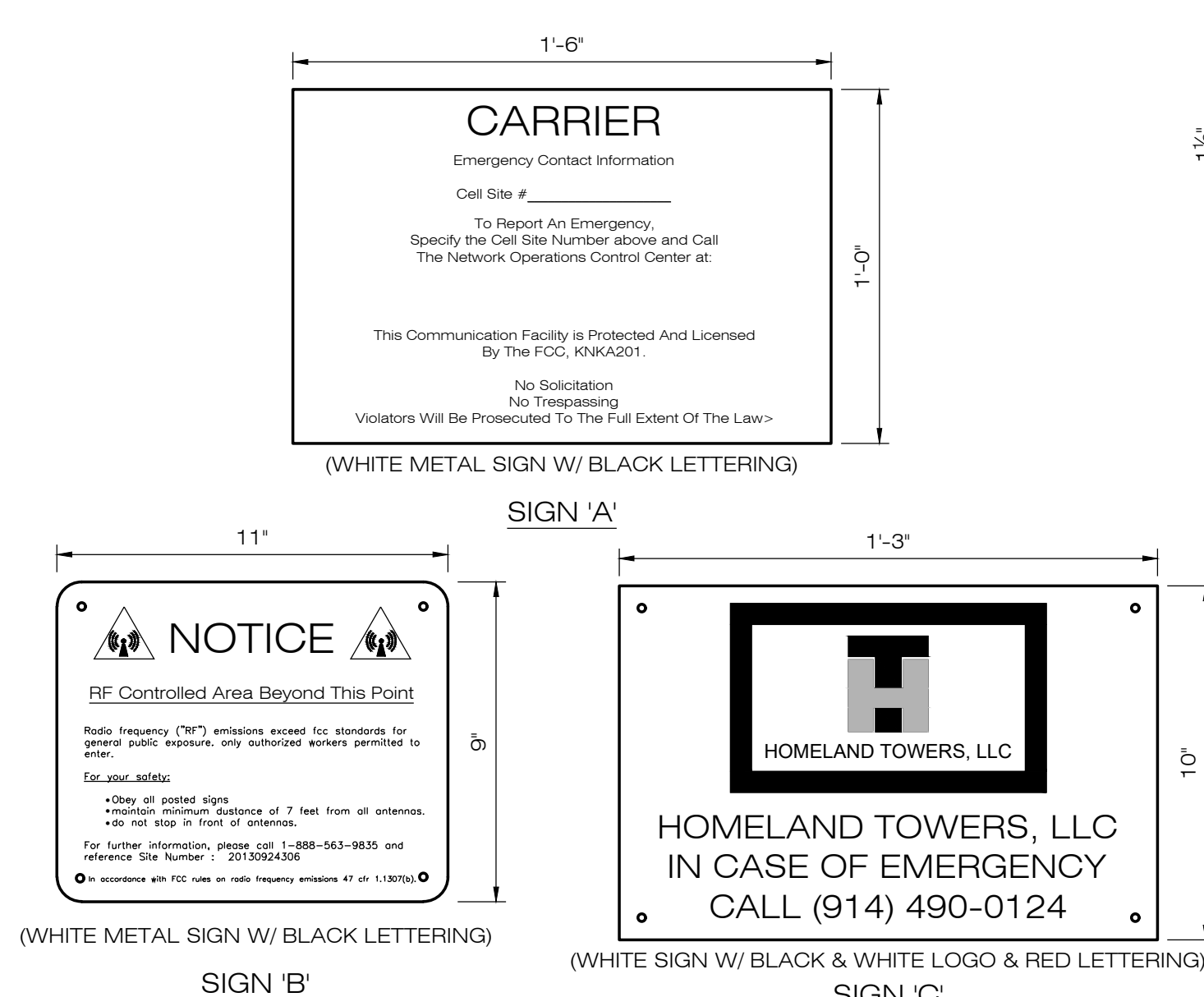
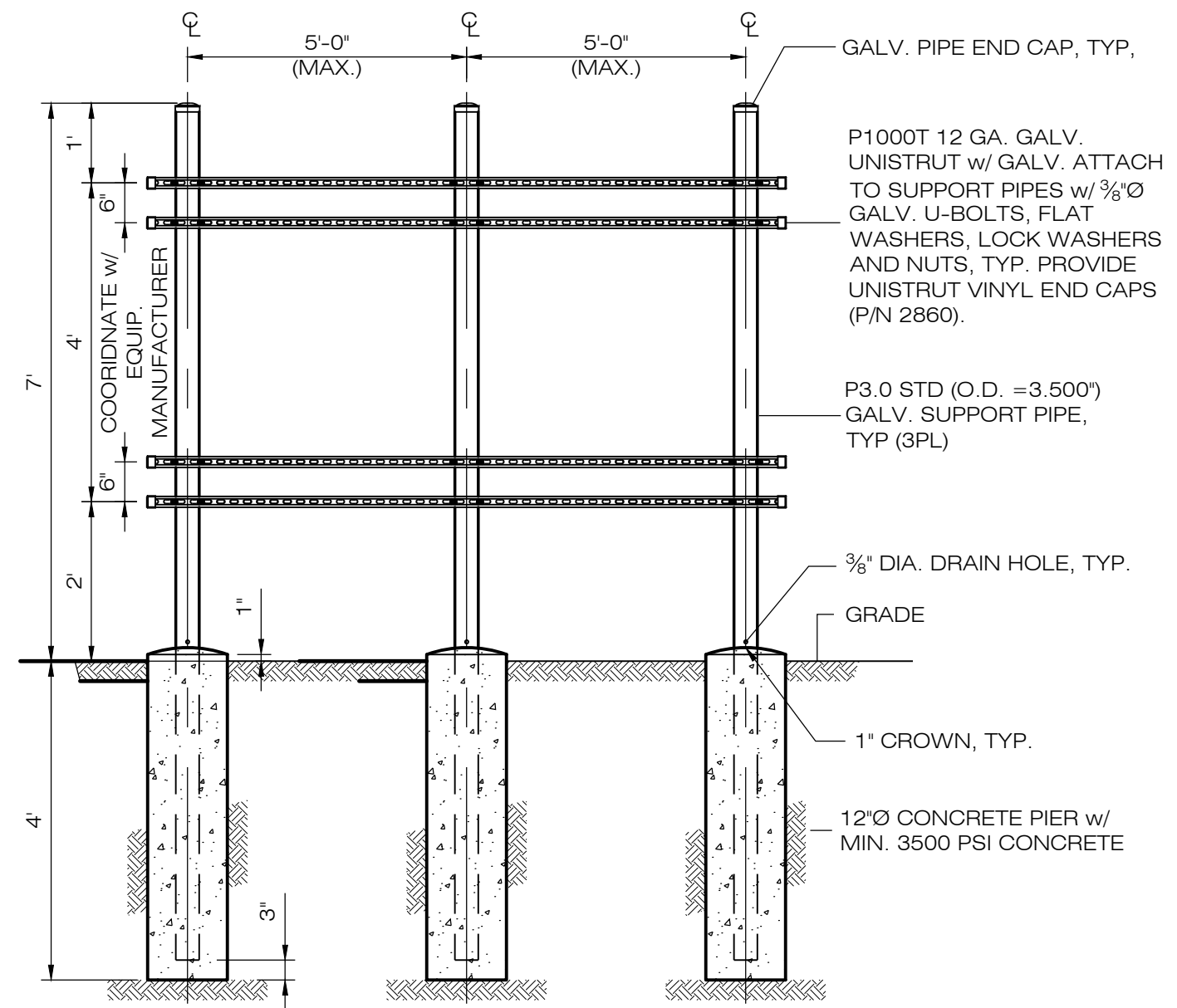
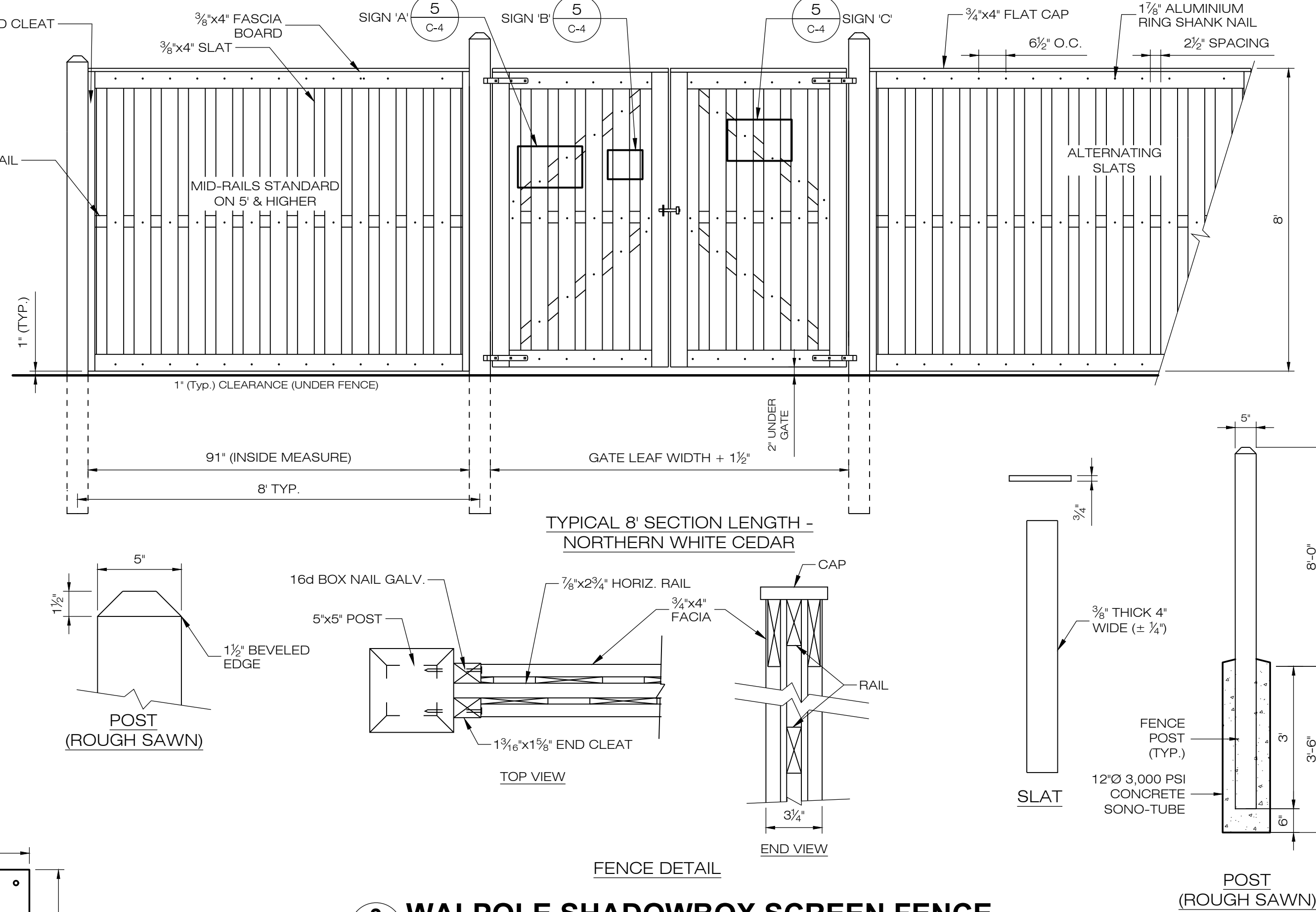
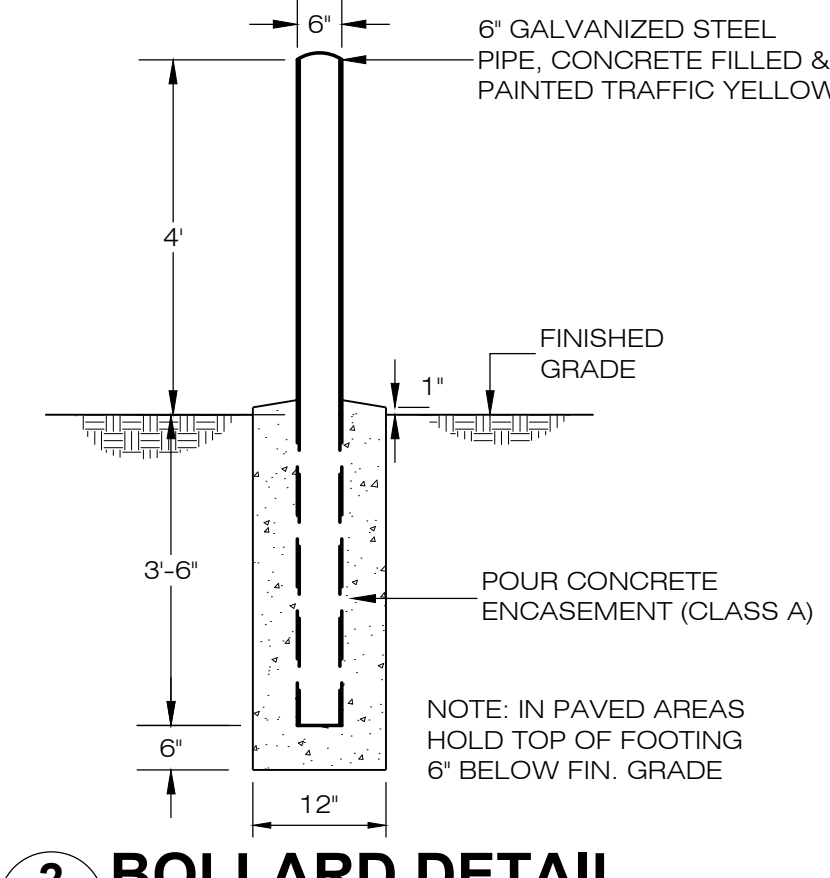
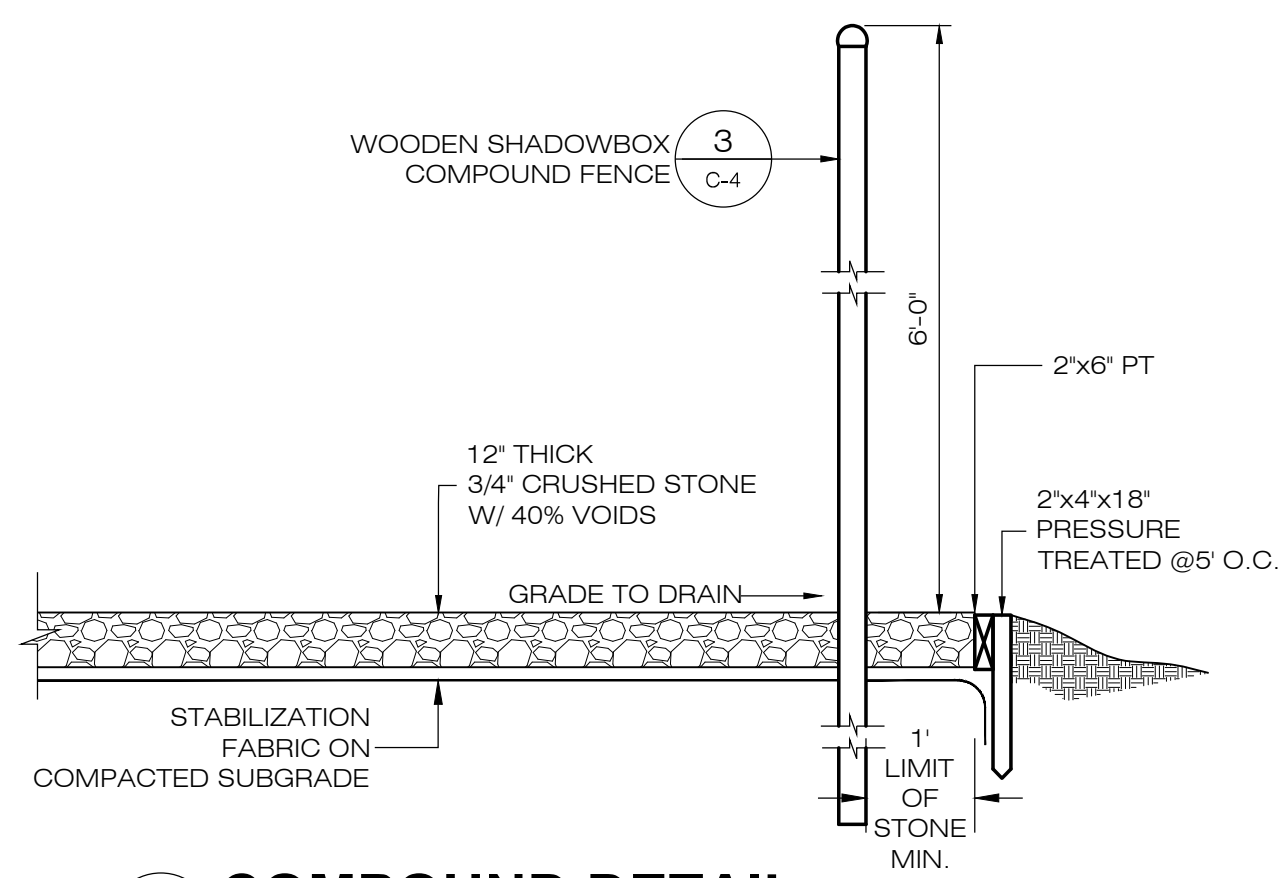
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VERIZON EQUIPMENT
LIGHTING PLAN &
DETAILS

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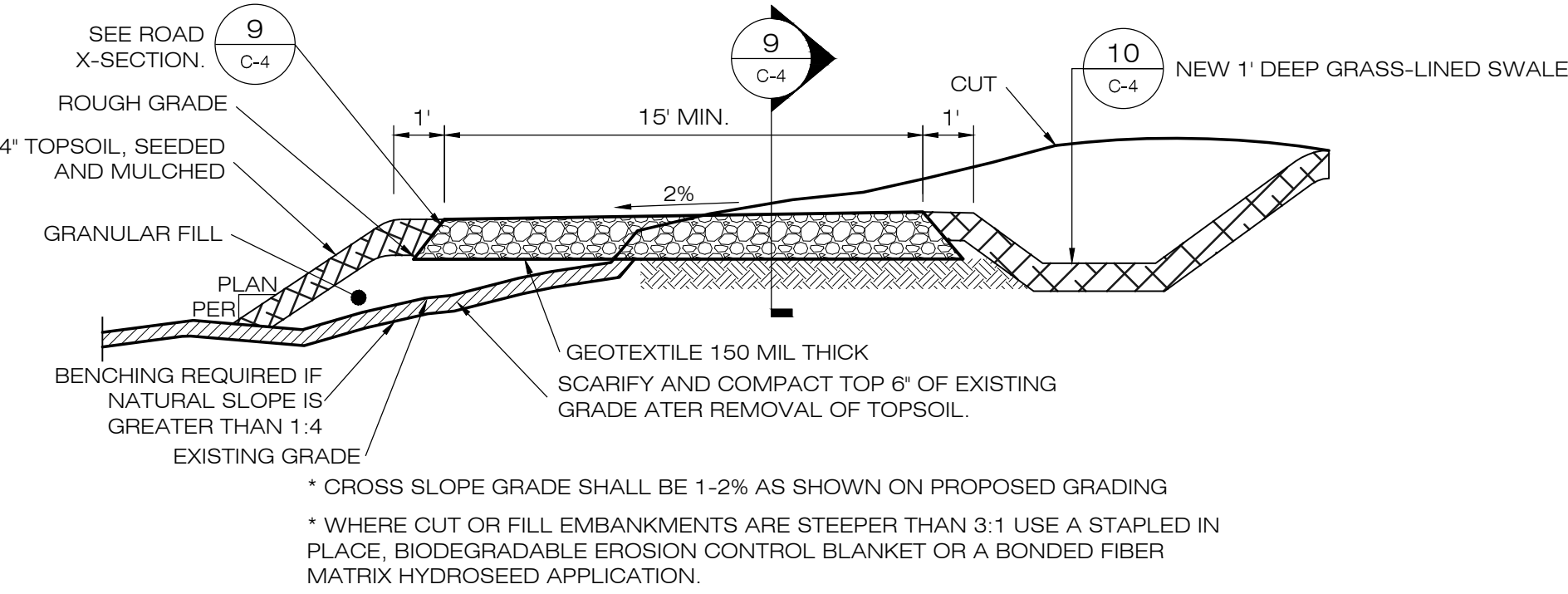
C-3





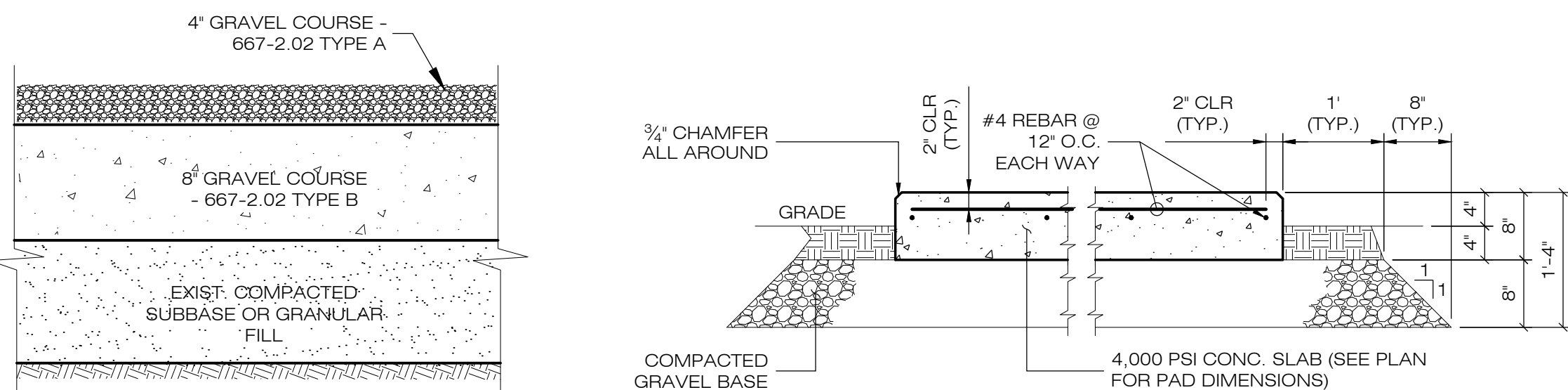
3 WALPOLE SHADOWBOX SCREEN FENCE

C-4 SCALE: N.T.S.



6 TYPICAL ROAD CROSS SECTION

C-4 SCALE: N.T.S.



7 PRIMARY UTILITY TRENCH

C-4 SCALE: N.T.S.



8 SECONDARY TRENCH DETAIL

C-4 SCALE: N.T.S.



9 GRAVEL ROAD/PARKING SECTION

C-4 SCALE: N.T.S.

HOMELAND TOWERS, LLC
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HOMELAND TOWERS MOUNT KISCO

SITE: 180 S. BEDFORD RD.
ADDRESS: MT. KISCO, NY 10594

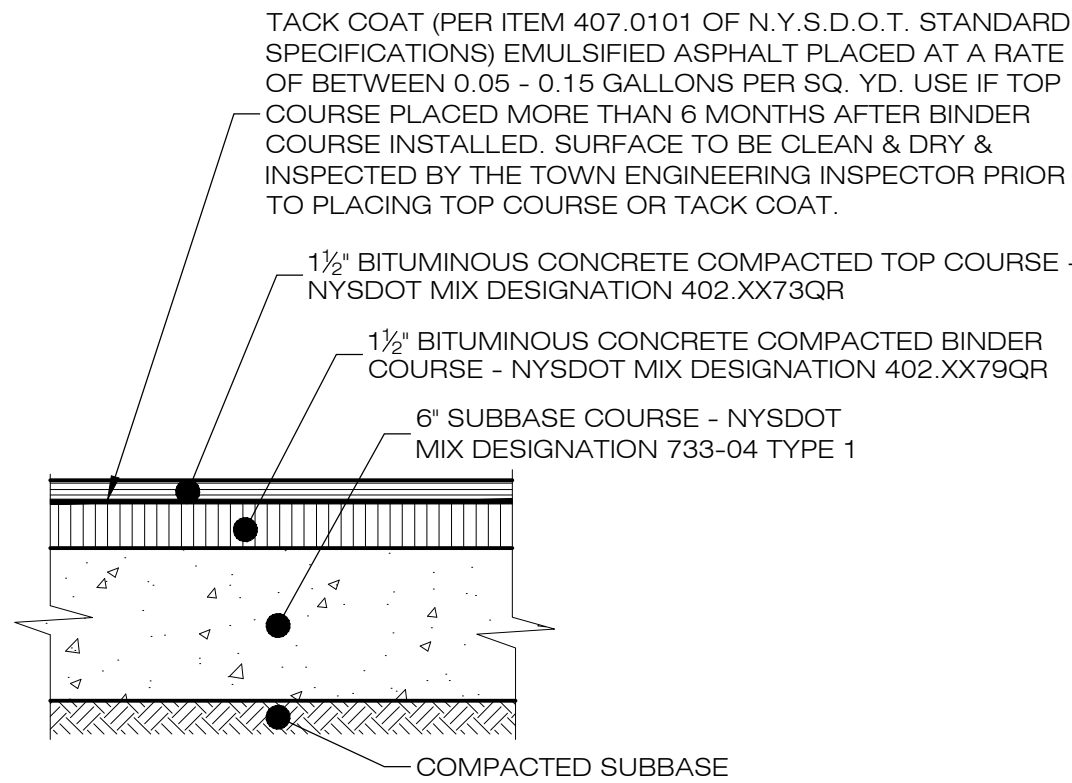
APT FILING NUMBER: NY283830

DATE: 08/13/20 DRAWN BY: CSH
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SHEET TITLE:

SITE DETAILS

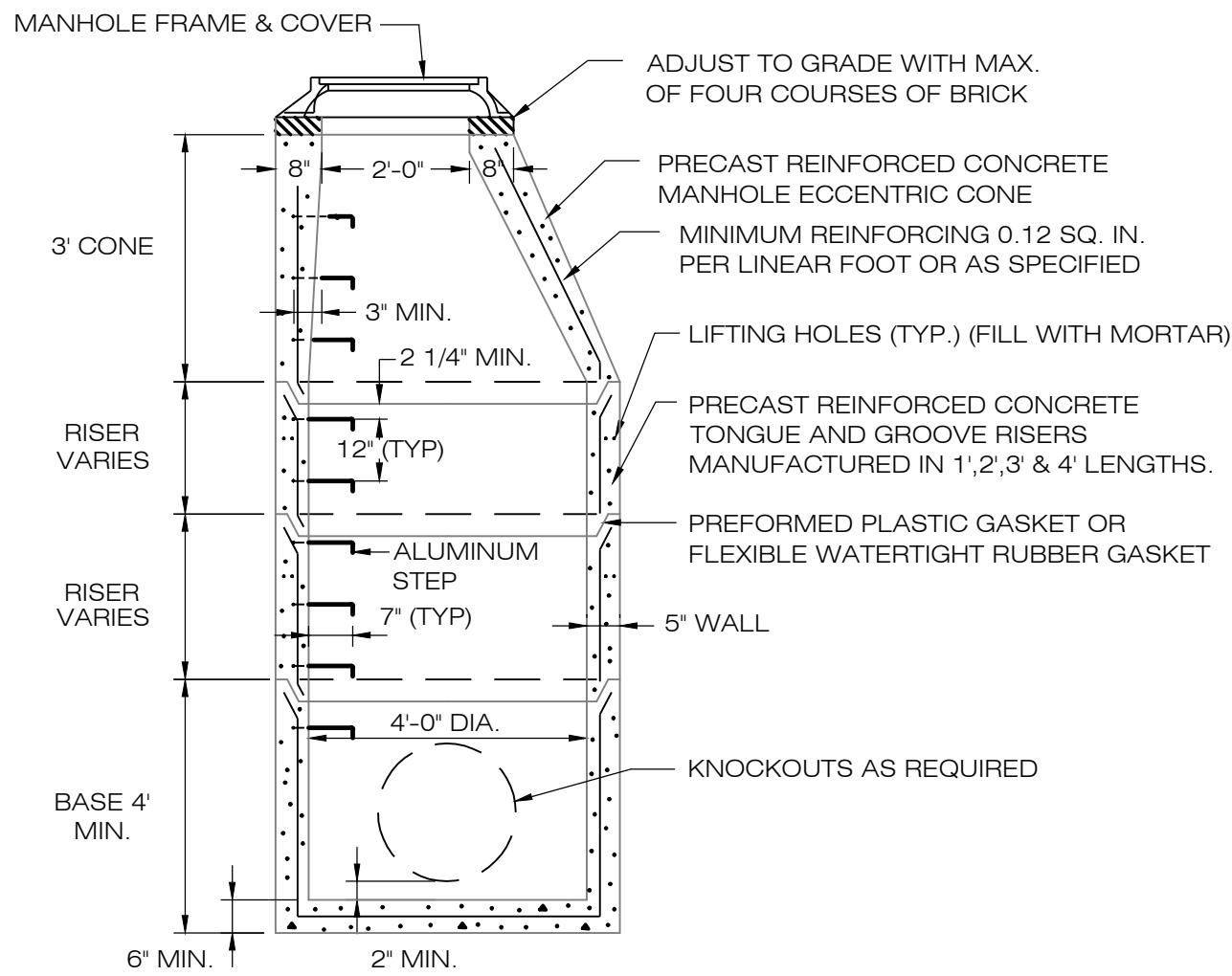
SHEET NUMBER: **C-4**



- NOTES:
- PAVEMENT SECTION PER GEOTECHNICAL ENGINEERING REPORT BY DOWN TO EARTH CONSULTING, DATED FEBRUARY 23, 2021, UNDER SEPARATE COVER.
 - SUBBASE MAY CONSIST OF NATIVE MATERIALS IF FOUND ACCEPTABLE BY THE ENGINEER. SUBBASE TO BE COMPACTED TO 95% MAX DRY DENSITY.
 - SUBBASE IS TO BE FREE FROM DEBRIS AND UNSUITABLE MATERIALS.

1 PAVED ROAD SECTION

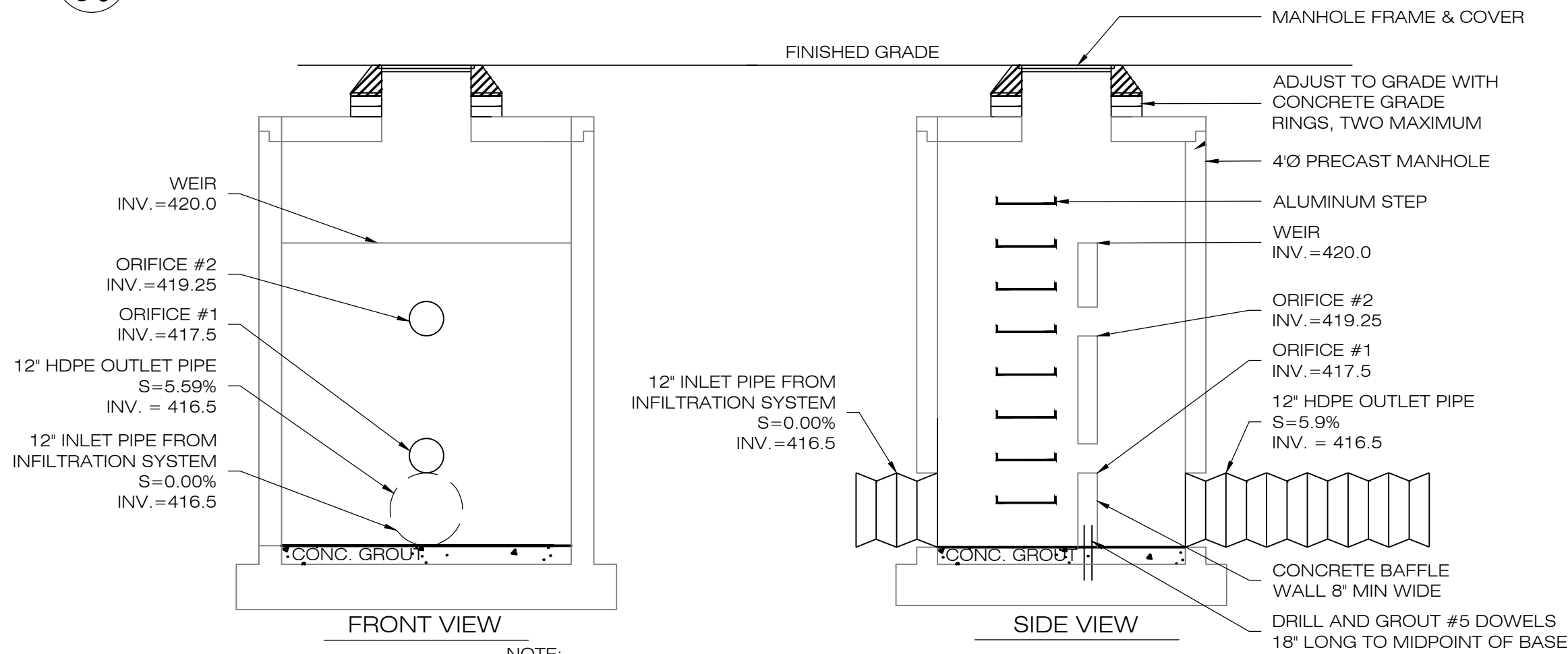
C-5 SCALE: N.T.S.



5' OR 6' DIA. PRECAST BASES MAY BE USED WHEN REQUIRED DUE TO SIZE OR NUMBER OF PIPES AT THE MANHOLE. PRECAST REDUCERS WILL BE PLACED ABOVE THE 5' & 6' BASES AS DIRECTED BY THE ENGINEER. WALL THICKNESS TO INCREASE 1" FOR EACH 1' OF INSIDE DIAMETER INCREASE.

5 PRECAST STORM MANHOLE

C-5 SCALE: N.T.S.

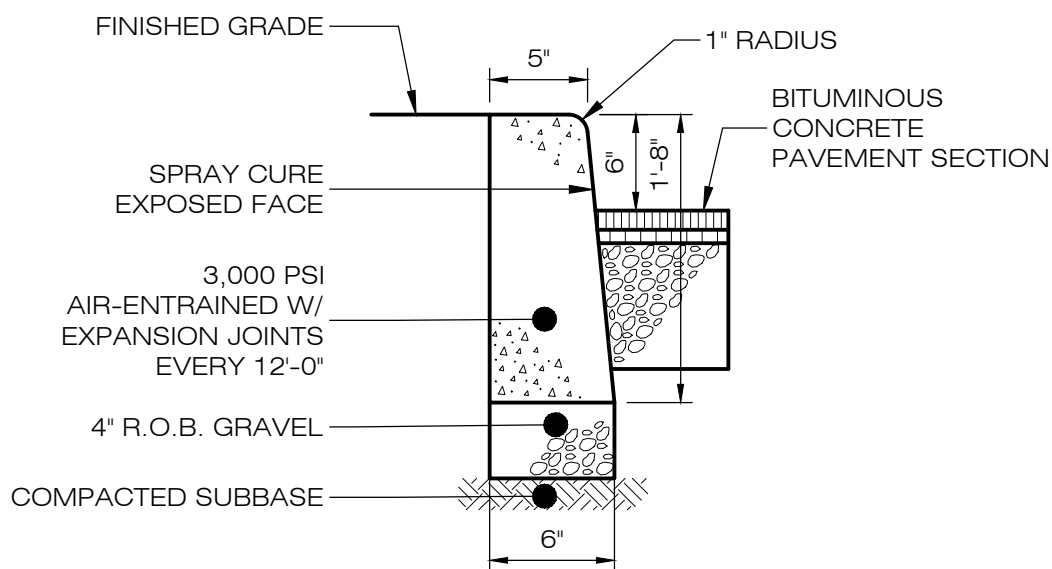


NOTE: ENTIRE MANHOLE STRUCTURE MUST ACCOMMODATE H2O LOADING.

OUTLET CONTROL STRUCTURE	T.F. ELEVATION	ORIFICE #1 SIZE	ORIFICE #1 ELEVATION	ORIFICE #2 SIZE	ORIFICE #2 ELEVATION	INLET/OUTLET PIPE INVERT
OCS-1	423.00	3"	417.50	3"	419.25	416.50

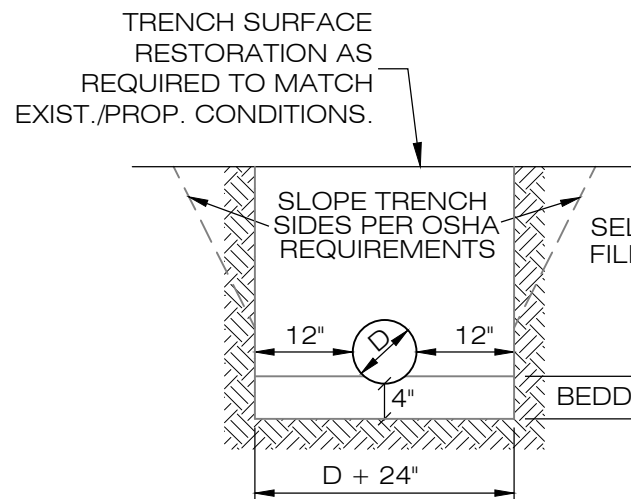
7 OUTLET CONTROL STRUCTURE DETAIL

C-5 SCALE: N.T.S.



2 CONCRETE CURB DETAIL

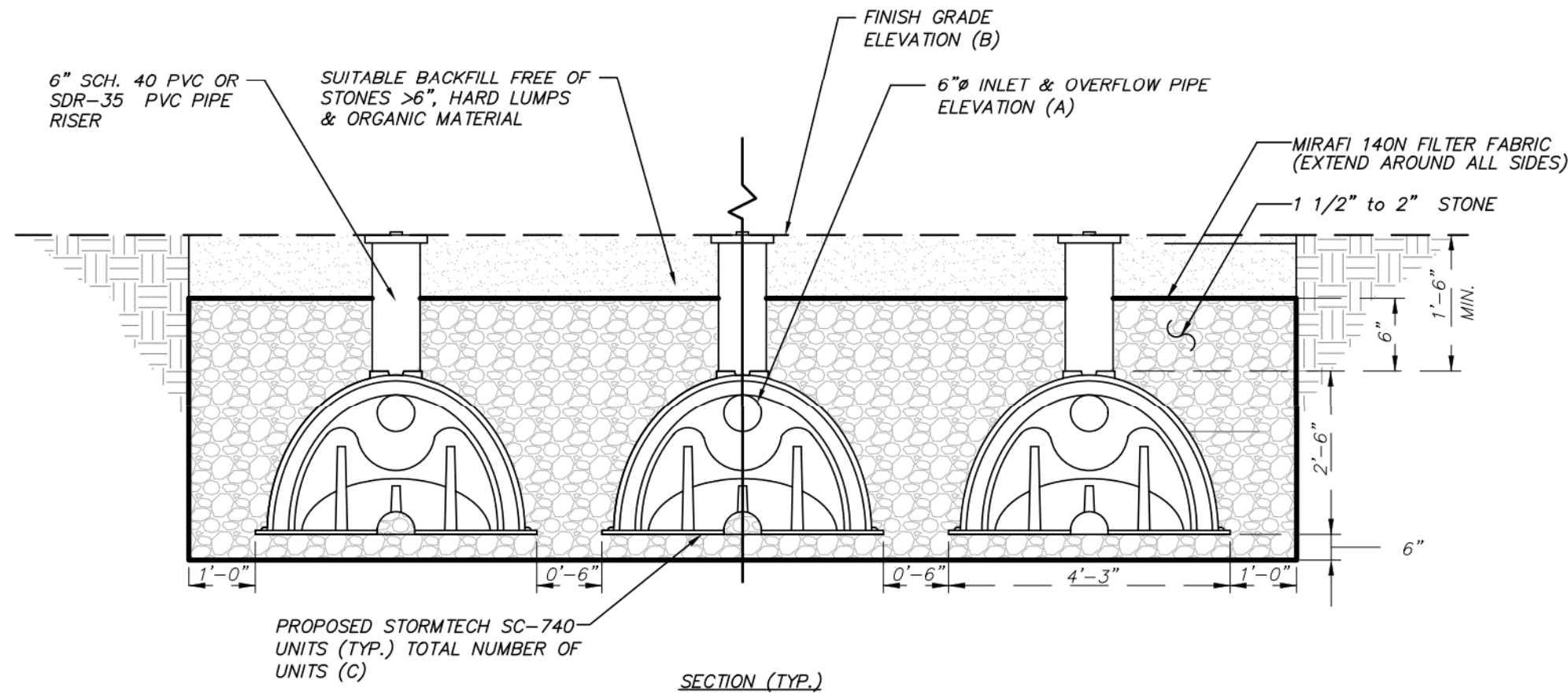
C-5 SCALE: N.T.S.



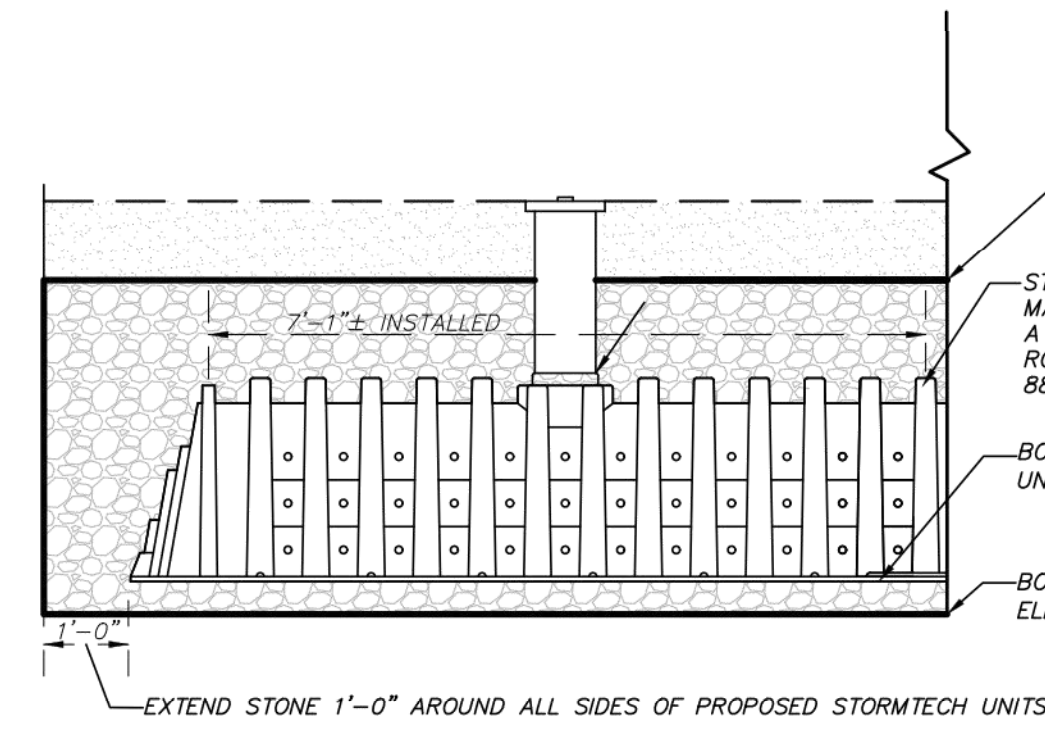
3 STORM TRENCH SECTION

C-5 SCALE: N.T.S.

- BEDDING SHALL BE COMPACTED CRUSHED STONE AND SHALL BE SHAPED TO THE BOTTOM OF THE PIPE.
- SELECT FILL SHALL BE SELECT MATERIAL FREE OF LARGE ROCKS (3"+) AND SHALL BE PLACED IN 8" MAX. LOOSE LIFTS AND COMPACTED TO 95% STANDARD PROCTOR.



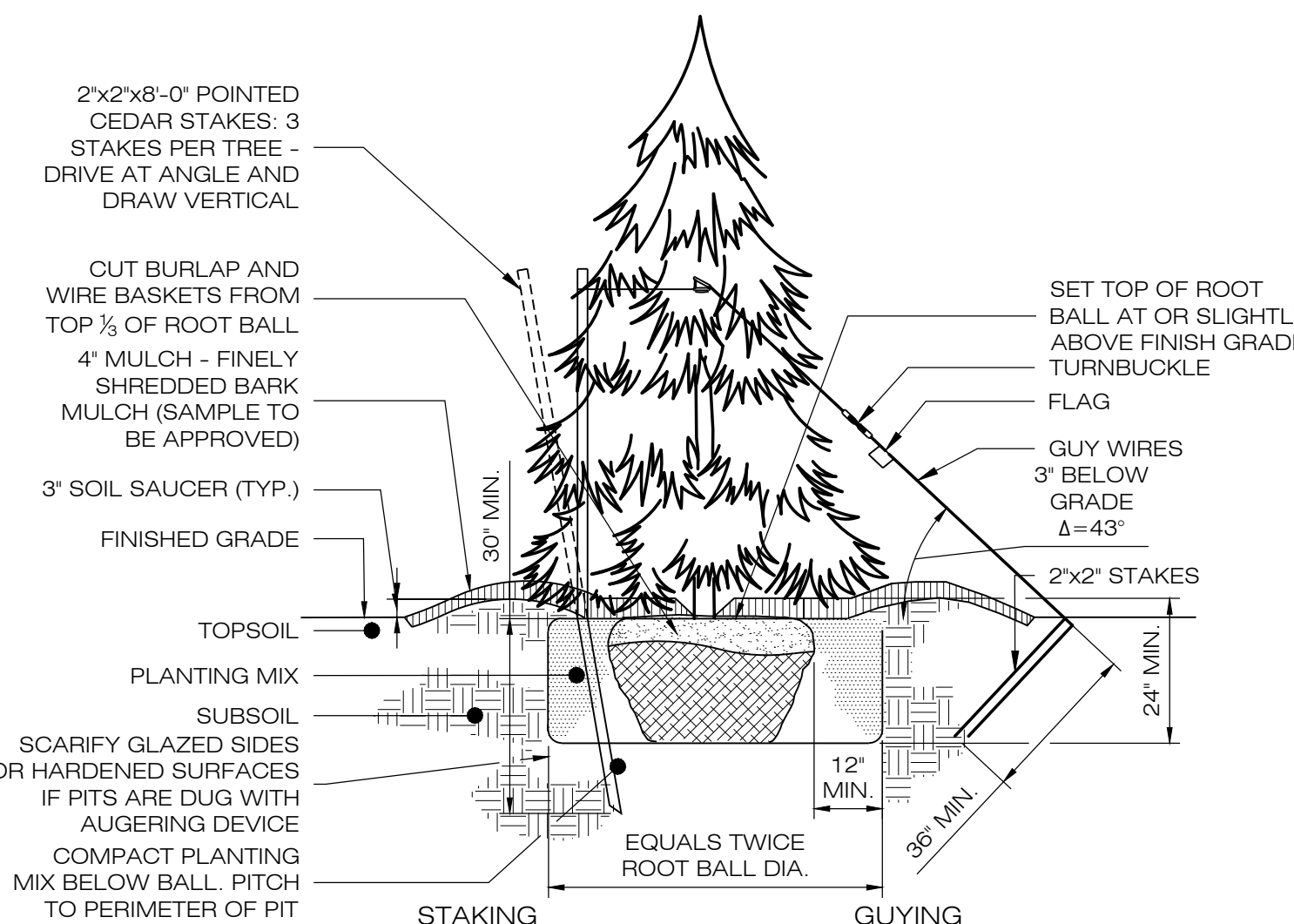
SECTION (TYP.)



INFILTRATION SYSTEM	INLET ELEVATION	FINISHED GRADE	NUMBER OF UNITS	BOTTOM OF STONE ELEV.	BOTTOM OF UNIT ELEV.	TOP OF GRAVEL ELEV.
1.8P	416.50	421.50-426.00	16	416.00'	416.50	419.50

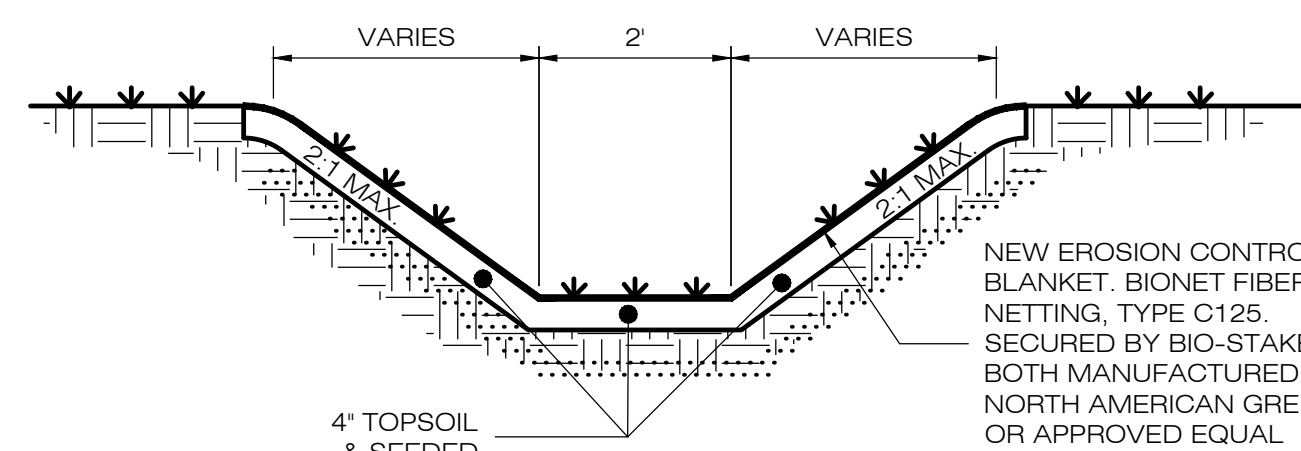
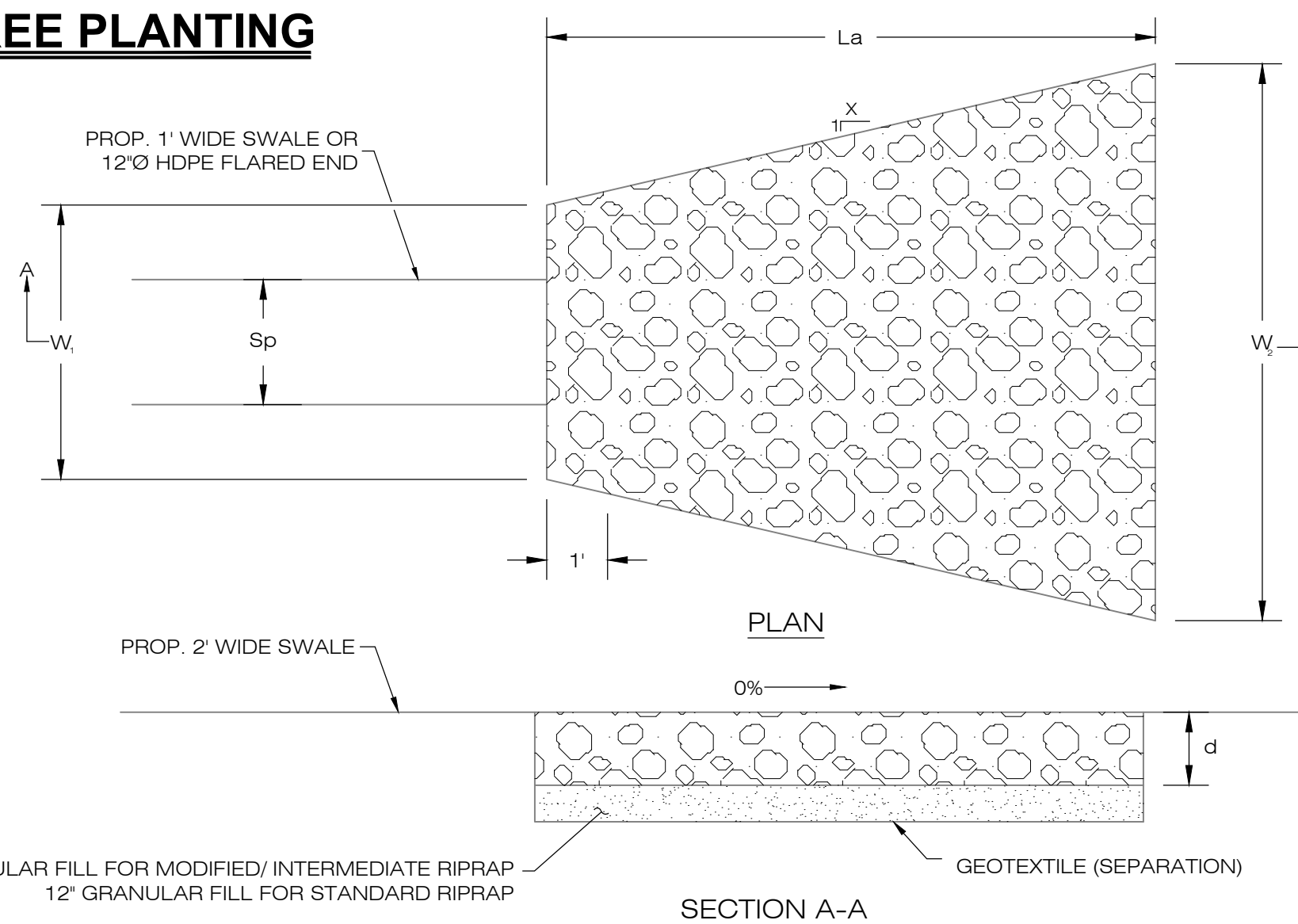
4 UNDERGROUND INFILTRATION SYSTEM

C-5 SCALE: N.T.S.



6 EVERGREEN TREE PLANTING

C-5 SCALE: N.T.S.



9 GRASS LINED SWALE

C-5 SCALE: N.T.S.

	X	W ₁	W ₂
TYPE A RIPRAP APRON	3	3Sp	3Sp + 0.7 La
TYPE B RIPRAP APRON	5	3Sp	3Sp + 0.4 La

OUTLET	SWALE WIDTH/ PIPE DIAMETER Sp (FT)	APRON LENGTH La (FT)	APRON INITIAL WIDTH W1 (FT)	APRON TERMINAL WIDTH W2 (FT)	RIPRAP SPECIFICATION
SWALE	1	5	3	6.5	MODIFIED
FE-1	1	5	3	6.5	MODIFIED

8 RIPRAP APRON

C-5 SCALE: N.T.S.



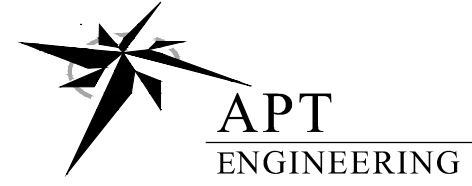
HOMELAND TOWERS, LLC
9 HARMONY STREET
2ND FLOOR
DANBURY, CT 06810
(203) 297-6345



4 CENTEROCK ROAD
WEST NYACK, NY 10994



340 MOUNT KEMBLE AVENUE
MORRISTOWN, NEW JERSEY 07960



567 VAUXHALL STREET EXTENSION - SUITE 311
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FAX: (860)-663-0935

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DESIGN PROFESSIONALS OF RECORD

PROF. SCOTT M. CHASSE P.E.
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WATERFORD, CT 06385

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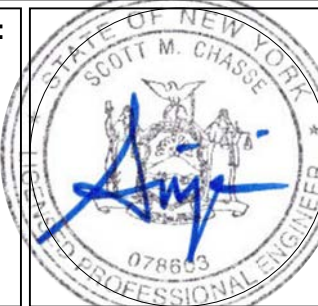
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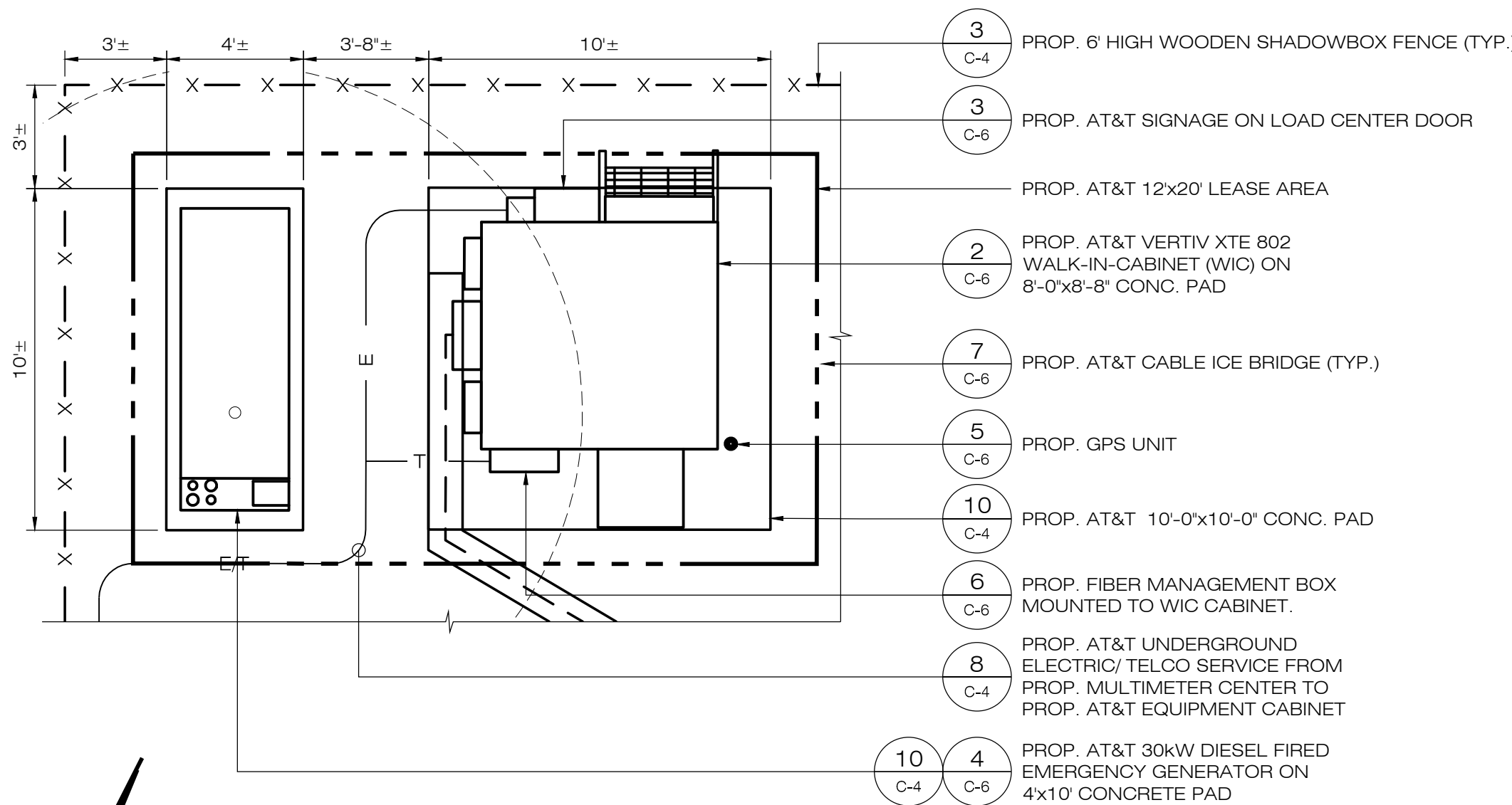
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SITE DETAILS

SHEET NUMBER:

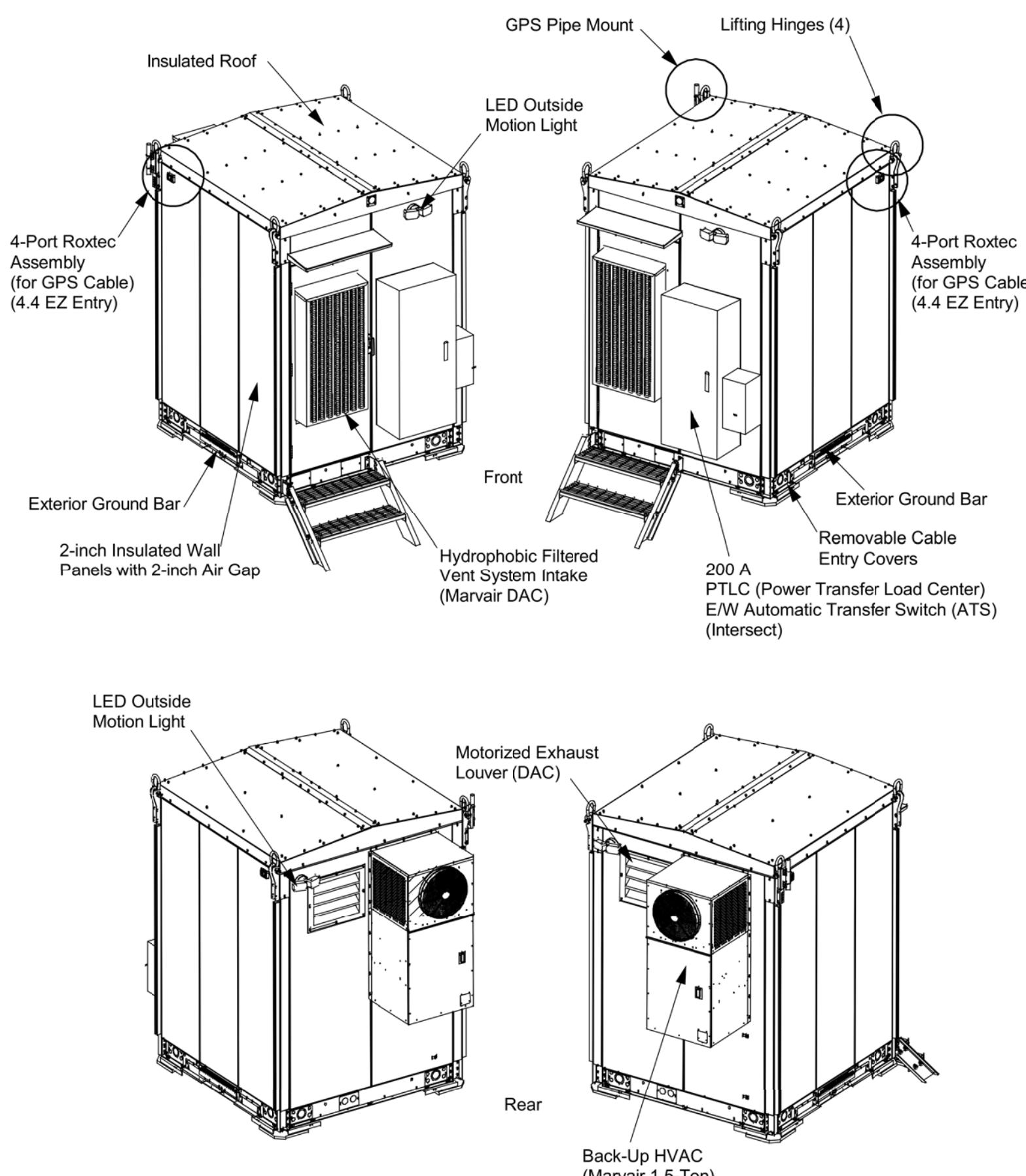
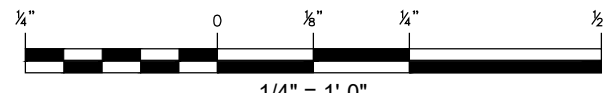
C-5





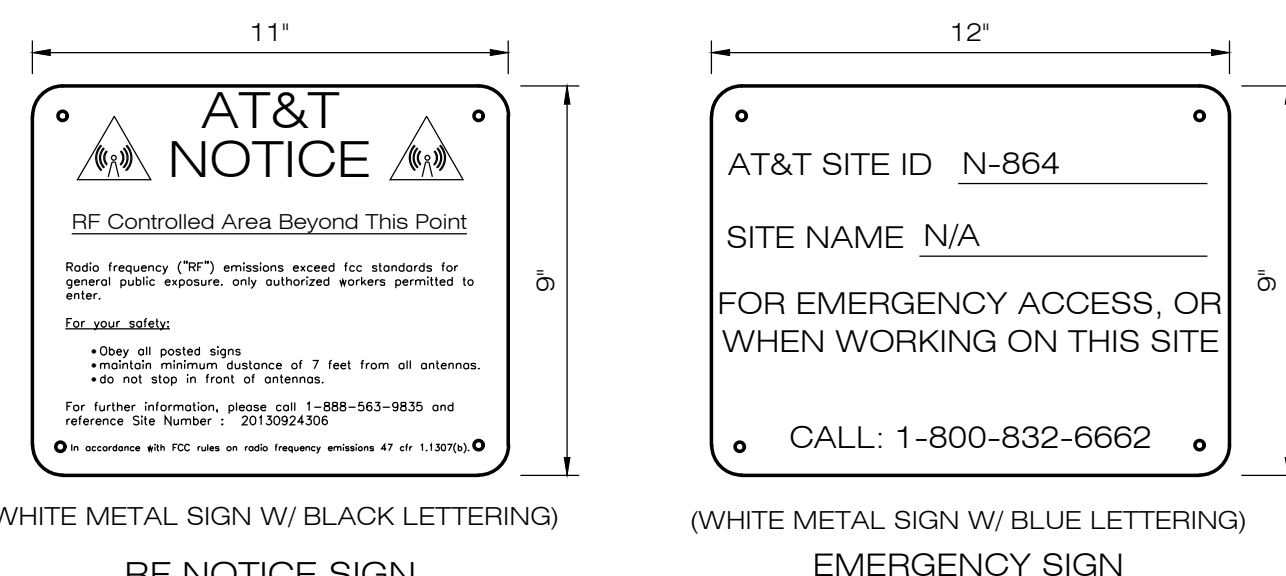
1 AT&T EQUIPMENT AREA

C-6 SCALE : 1/4" = 1'-0"



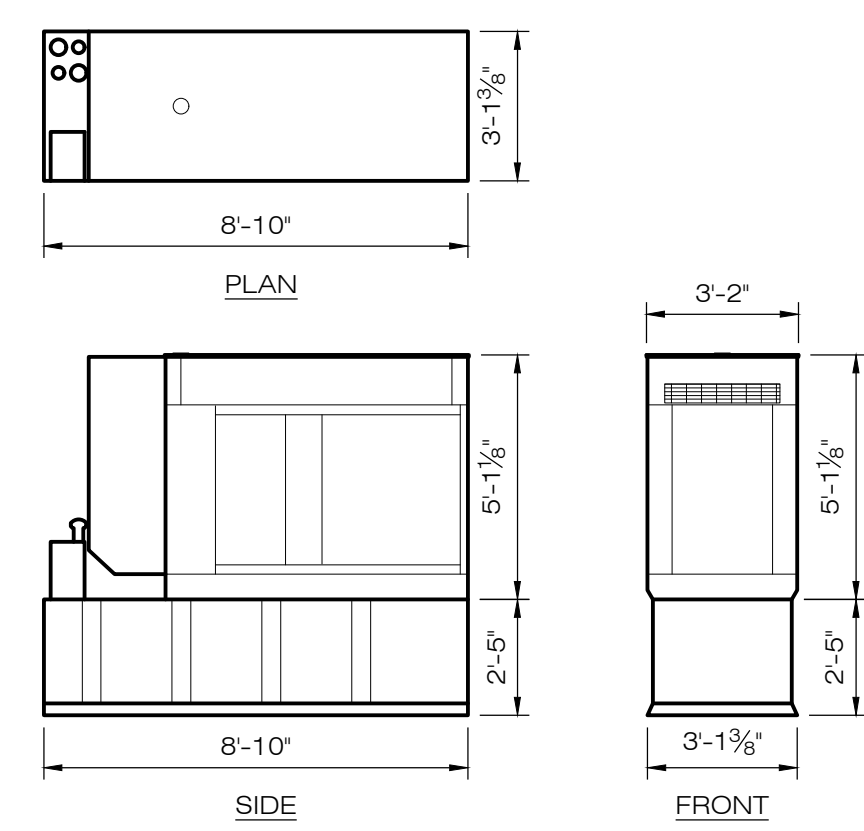
2 VERTIV XTE 802 WALK-IN-CABINET (WIC)

C-6 SCALE : N.T.S.



3 TYPICAL SIGNAGE

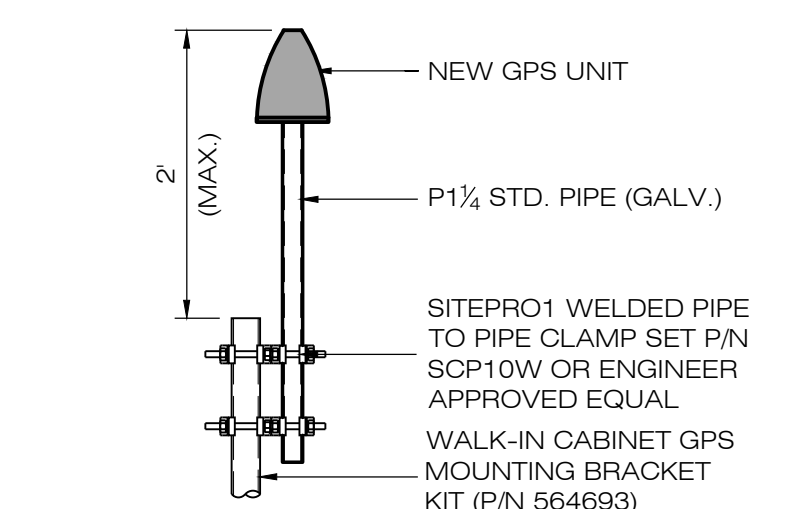
C-6 SCALE : N.T.S.



GENERAC POWER SYSTEMS
30kW DIESEL FIRED GENERATOR
MODEL #SD030
W/ 190 GALLON TANK & ENCLOSURE

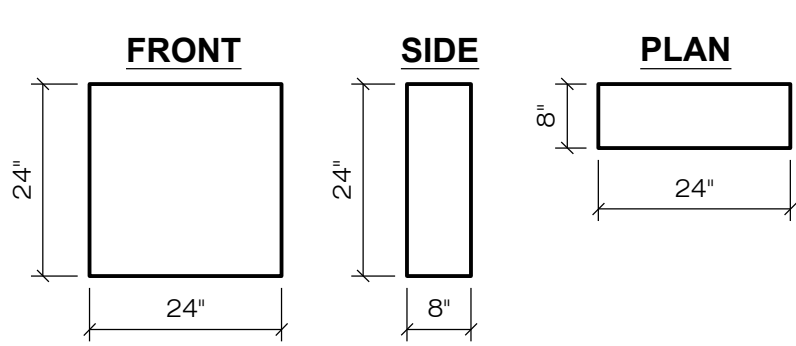
4 GENERATOR

C-6 SCALE : 1/4" = 1'-0"



5 GPS MOUNT

C-6 SCALE : N.T.S.

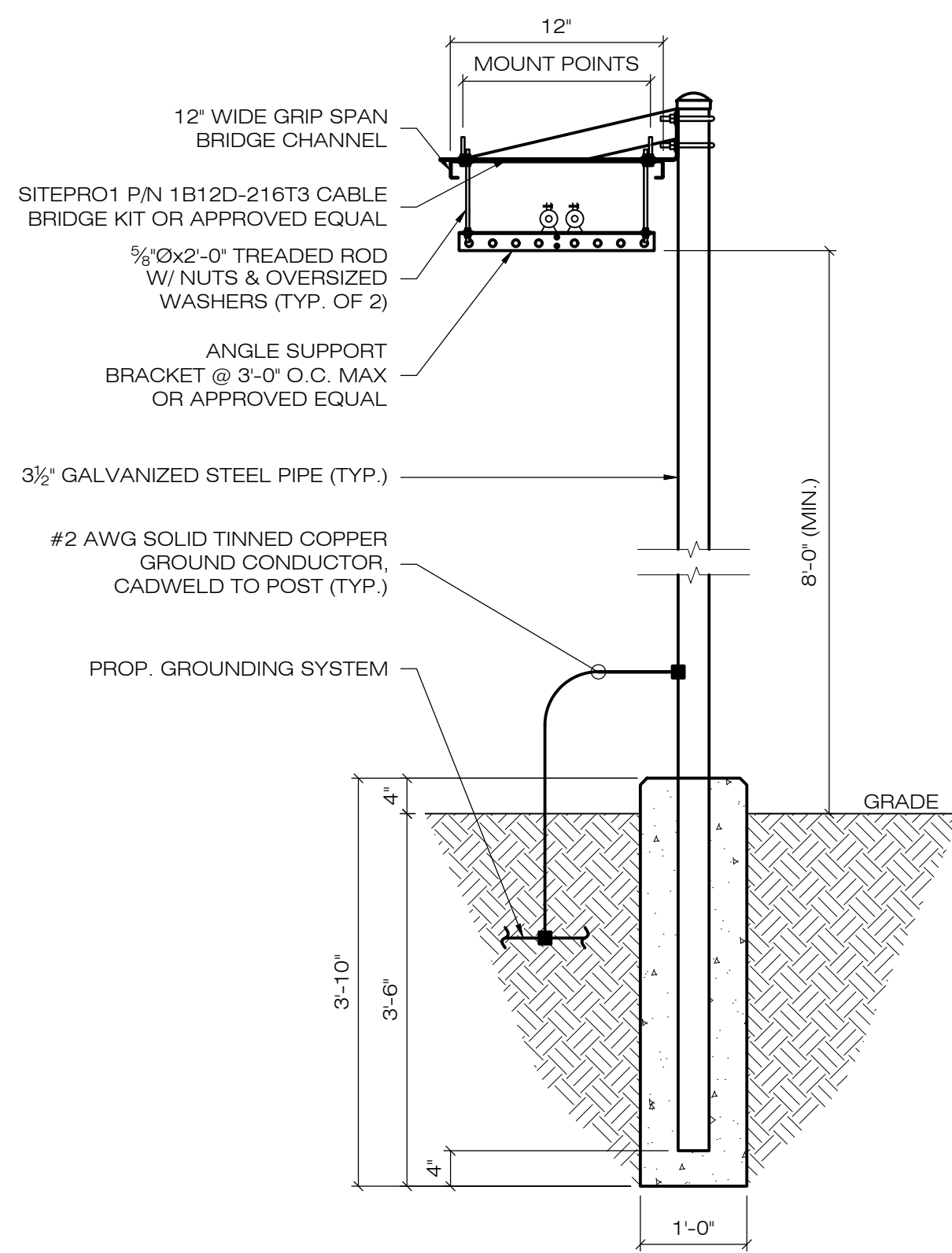


NEMA TYPE 3R (OR EQUAL)
WxDxH=24.0"x8.0"x24.0" (40.0Lbs)

NOTE:
MOUNT PER MANUFACTURERS SPECIFICATIONS.

6 FIBER MANAGEMENT BOX

C-6 SCALE : 1/2" = 1'-0"



7 CABLE BRIDGE DETAIL

C-6 SCALE : N.T.S.



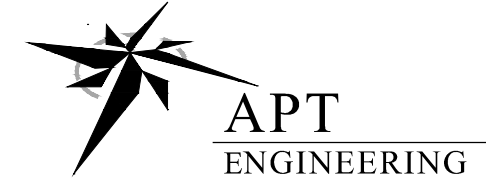
HOMELAND TOWERS, LLC
9 HARMONY STREET
2ND FLOOR
DANBURY, CT 06810
(203) 297-6345



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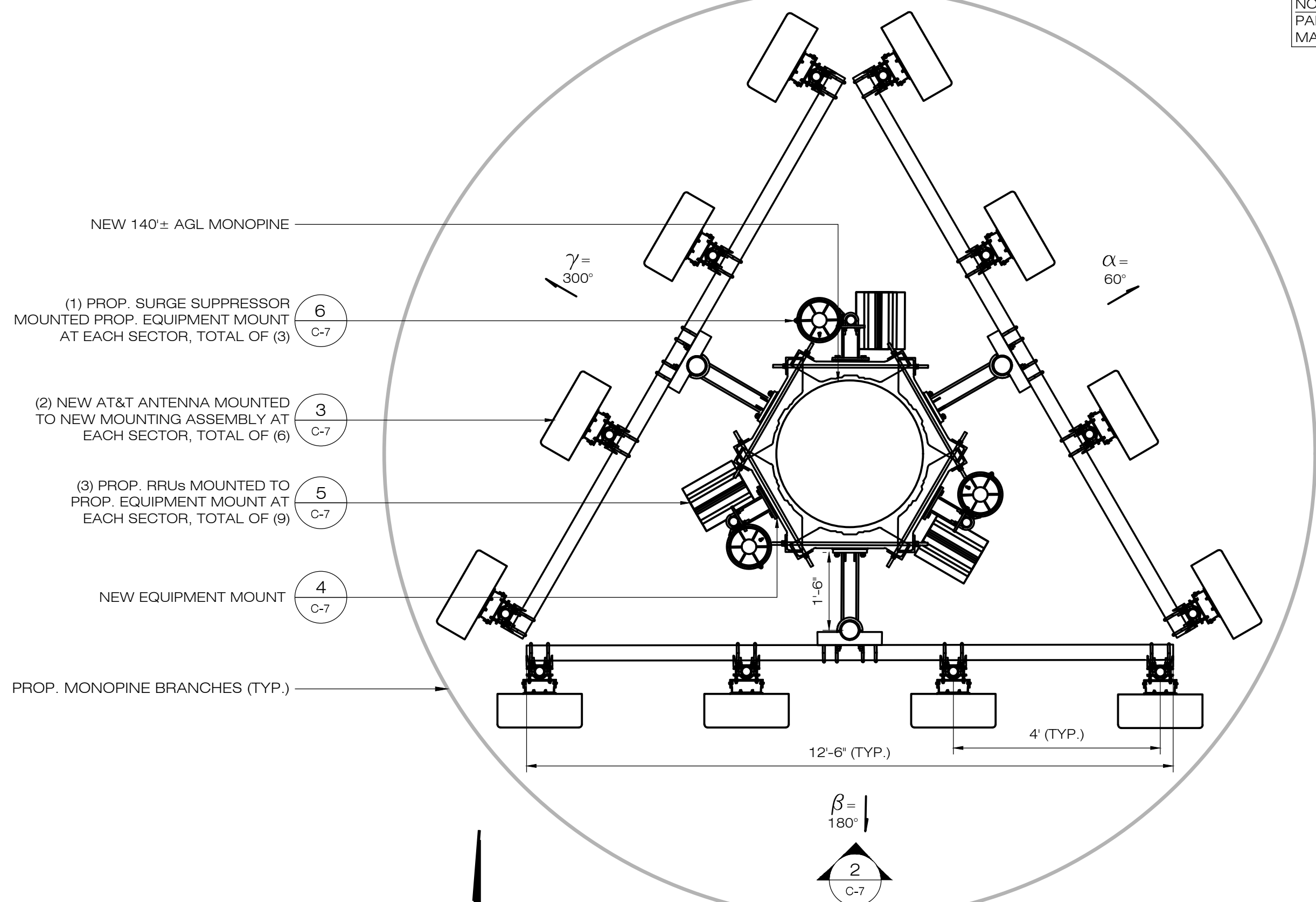
SHEET TITLE:

AT&T EQUIPMENT PLAN & DETAILS

SHEET NUMBER:

C-6





1 ANTENNA PLAN
C-7 SCALE : ½" = 1'-0"

NOTE:
PAINT MOUNTS, ANTENNAS, CABLING & APPURTENANCES TO
MATCH TREE & INSTALL ANTENNA SOCKS ON ALL ANTENNAS.

PROP. 3 SIDED SITEPRO1 T-ARM
MOUNT FOR (12) NEW AT&T PANEL
ANTENNAS CL @ 86'± AGL

(4) PROP. AT&T ANTENNA MOUNTED
TO PROP. MOUNTING ASSEMBLY AT
EACH SECTOR, TOTAL OF (12)

(1) PROP. SURGE SUPPRESSOR
MOUNTED PROP. EQUIPMENT MOUNT
AT EACH SECTOR, TOTAL OF (3)

ANTENNA MOUNT
@ 126'-0"± AGL

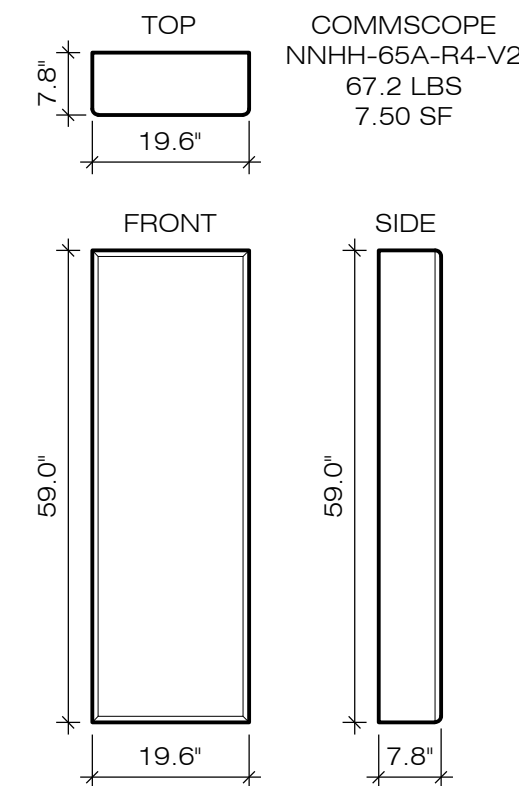
EQUIPMENT MOUNT
@ 124'-0"± AGL

NEW EQUIPMENT MOUNT

(3) PROP. RRU's MOUNTED TO
PROP. EQUIPMENT MOUNT AT
EACH SECTOR, TOTAL OF (9)

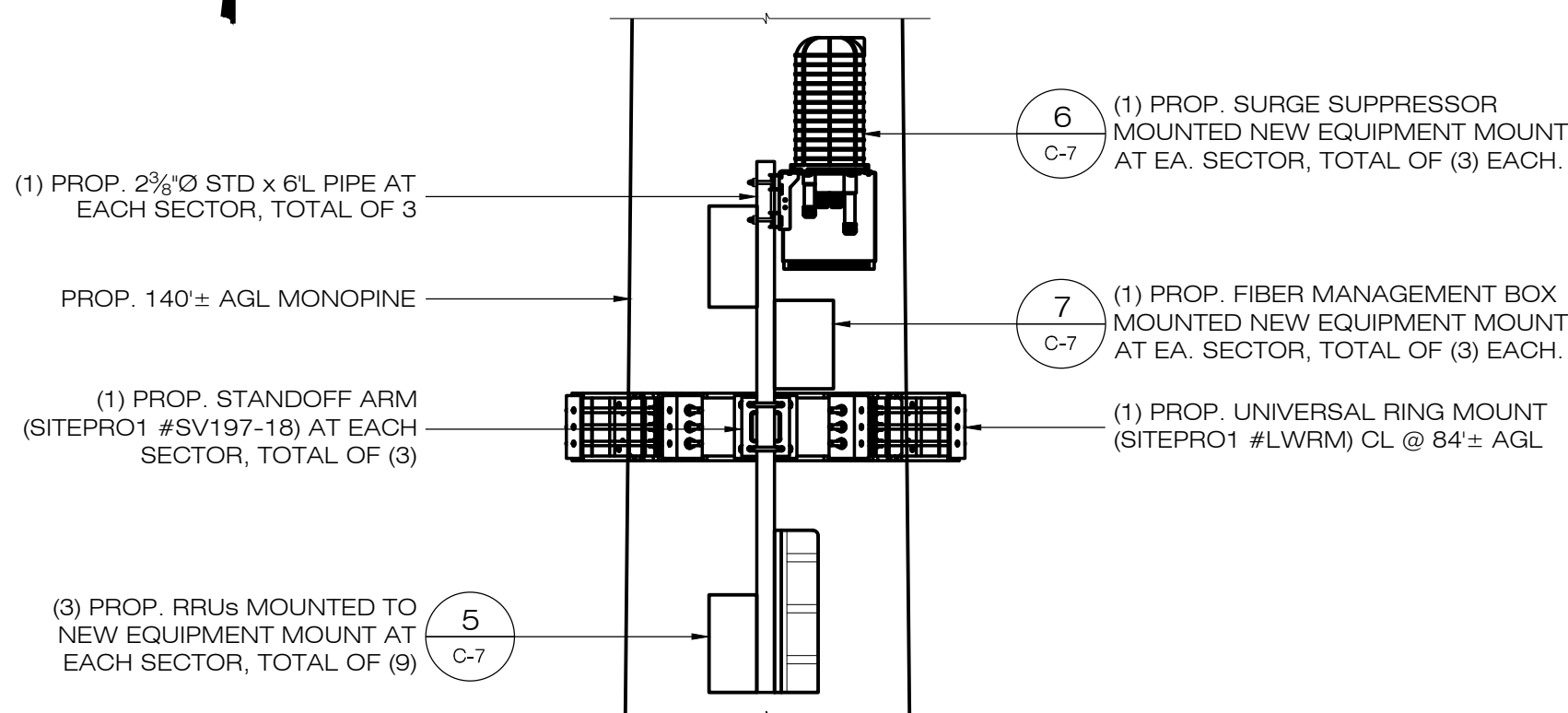
NEW 140'± AGL MONOPINE

2 ANTENNA MOUNTING DETAIL
C-7 SCALE : ½" = 1'-0"

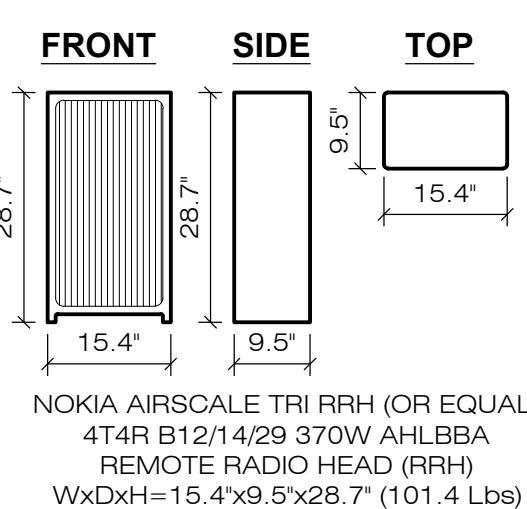
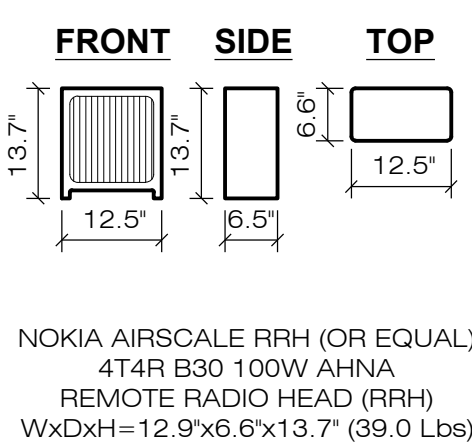
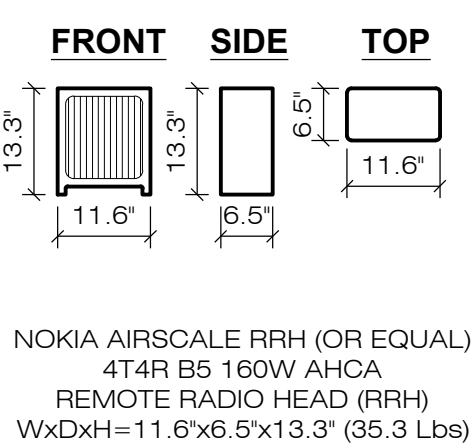
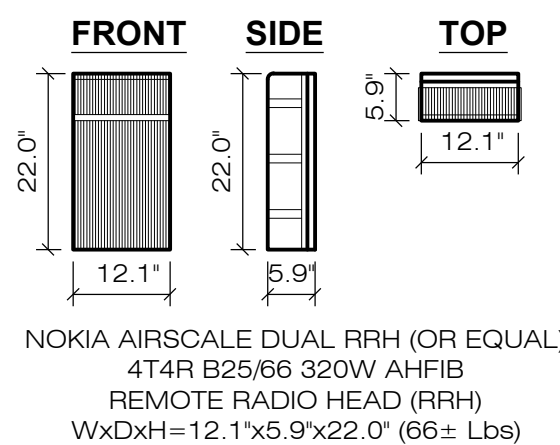


PANEL ANTENNAS

3 ANTENNA DETAIL
C-7 SCALE : ½" = 1'-0"

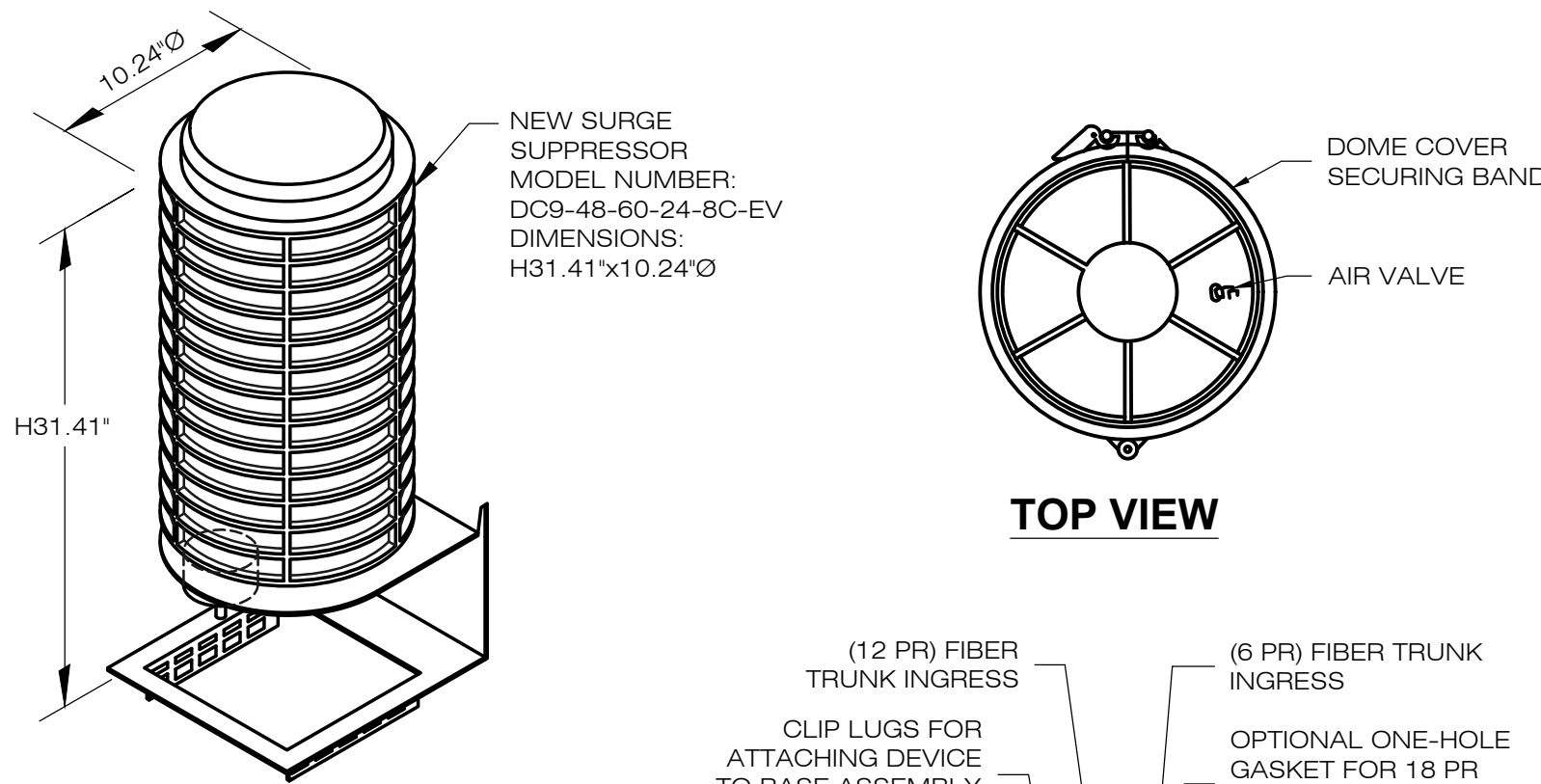


4 EQUIPMENT MOUNT
C-7 SCALE : ½" = 1'-0"



NOTES:
1. DIMENSIONS SUBJECT TO CHANGE BASED UPON AVAILABILITY AT TIME OF CONSTRUCTION.
2. MANUFACTURER'S RECOMMENDED RRH CLEARANCES: FRONT: 36"; SIDES: 12"; BOTTOM: 24"
3. SFPs ARE PROTOCOL SPECIFIC. THE CONNECTIONS BETWEEN RRHs AND BBUS ARE CPRI CONNECTIONS, AND REQUIRE CPRI SFP (ON BOTH ENDS). THE CONNECTIONS BETWEEN BBUS AND 7705 ARE ETHERNET AND REQUIRE ETHERNET SFP (ON BOTH ENDS.)

5 RRU EQUIPMENT
C-7 SCALE : ½" = 1'-0"

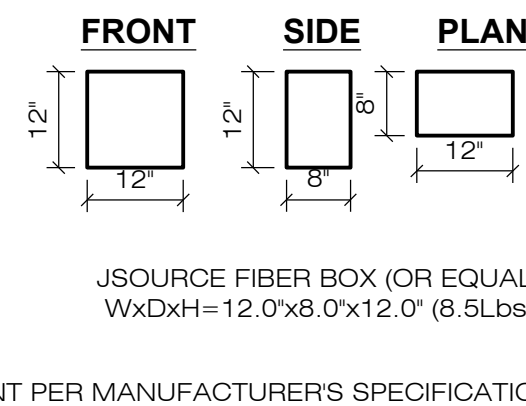


BOTTOM VIEW

BOTTOM VIEW

NOTES:
1. MOUNT PER MANUFACTURER'S SPECIFICATIONS.
2. REMOVE CABLE SEALING GLAND AND INSTALL M32x1.5 METRIC TO 1" NPT ADAPTER (COOPER CROUSE-HINES P/N CAP 740 994 OR EQUIVALENT MFR) WHEN CONNECTING CONDUIT TO OVP

6 TYPICAL SURGE SUPPRESSOR
C-7 SCALE : N.T.S.



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

7 FIBER MANAGEMENT BOX
C-7 SCALE : ½" = 1'-0"

HOMELAND TOWERS, LLC
9 HARMONY STREET
2ND FLOOR
DANBURY, CT 06810
(203) 297-6345

verizon
4 CENTEROCK ROAD
WEST NYACK, NY 10994

at&t
340 MOUNT KEMBLE AVENUE
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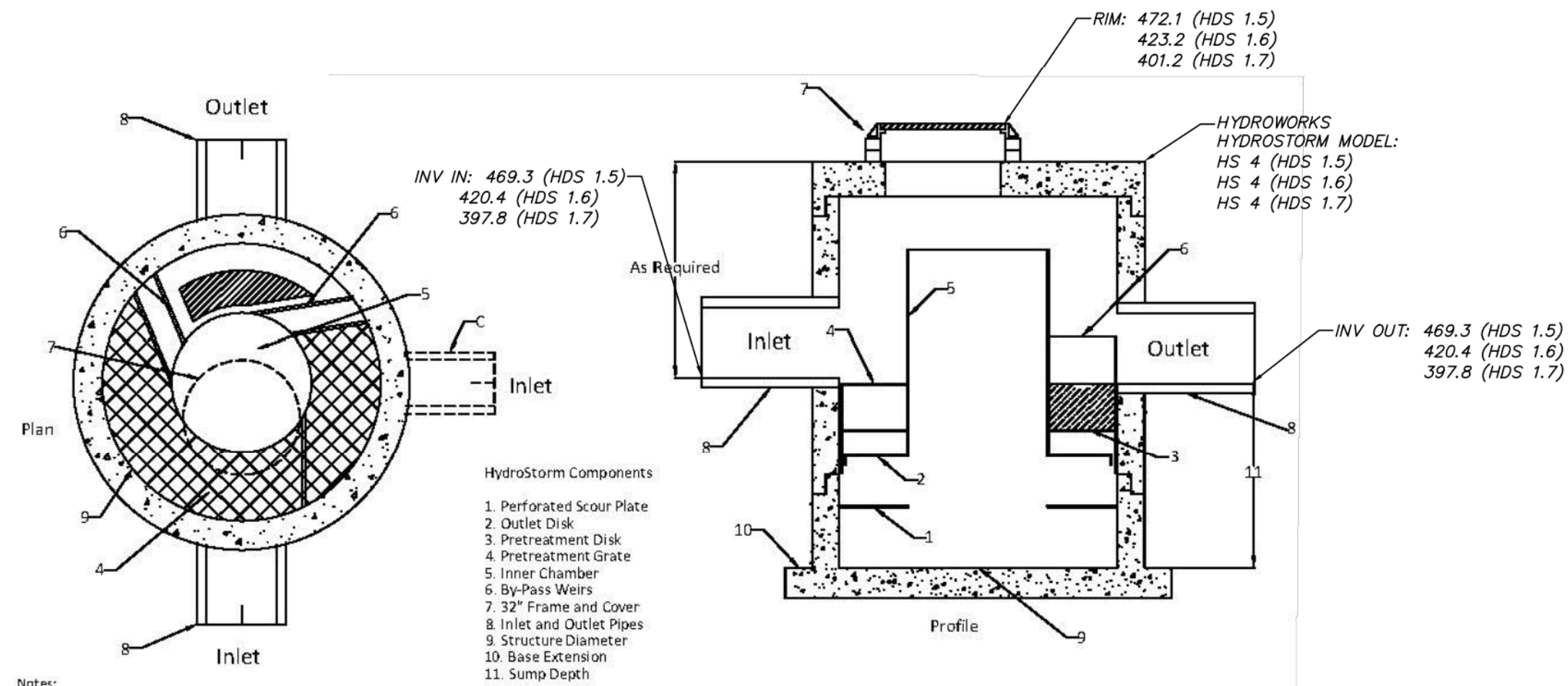
SHEET TITLE:

AT&T ANTENNA PLAN & DETAILS

SHEET NUMBER:

C-7





Notes:

A. Use a headloss K factor of 1.04 for hydraulic gradeline calculations.

B. Sump depths shown are minimums. Additional depth can be added for site specific capacities.

C. Multiple inlet pipes allowed.

D. Drops allowed.

E. Inlet Invert elevations should be the same or higher than the outlet invert elevation. Inlet can be up to 12" lower than outlet if pretreatment area is omitted but 12" must be added to sump depth to maintain overall treatment volume.

F. Solid Cover shown. HydroStorm can be designed with an inlet grate if required.

G. Oil capacities given are spill capacities. Oil should be removed from the unit once an oil depth of 2" or more is measured in the inner chamber.

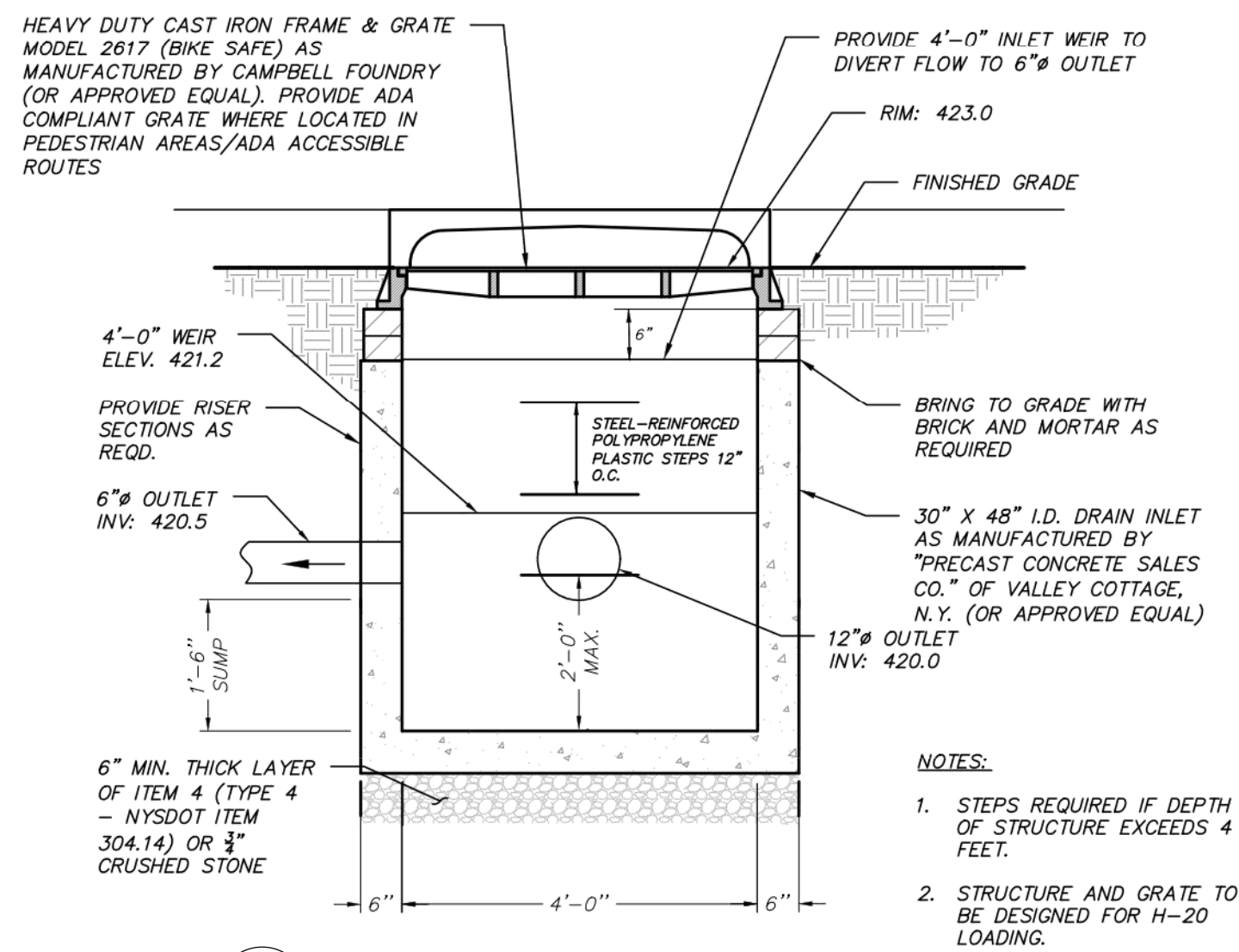
H. Sediment depths are maximum holding capacities and not recommended capacities for regular maintenance. Maintenance is recommended annually or once every 2 years.

I. Capacities are rounded down to nearest 5 gal or ft³.

HydroStorm by Hydroworks, LLC
Patent Pending
www.hydroworks.com
888-290-7900

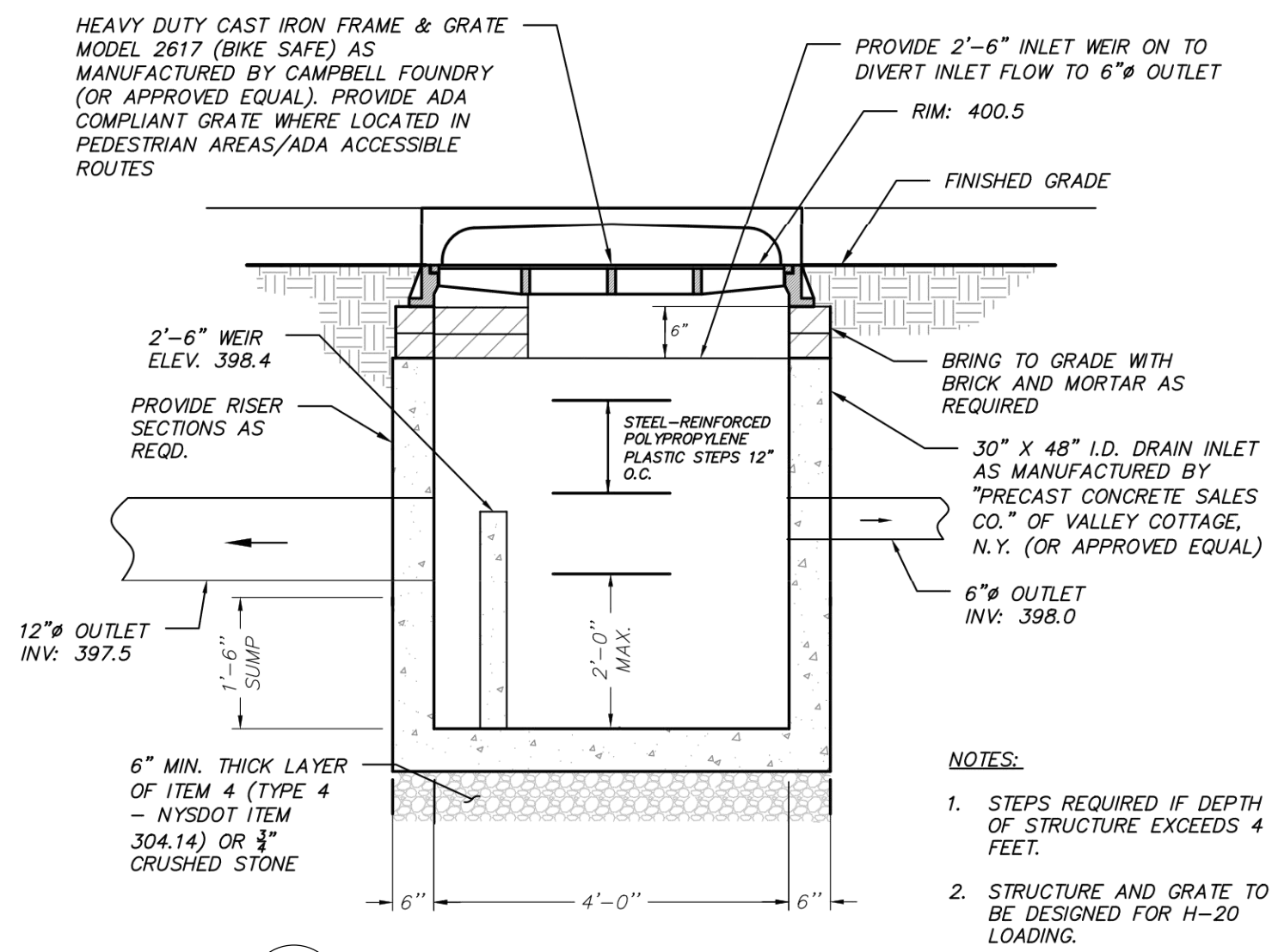
1 HYDROWORKS HYDROSTORM HYDRODYNAMIC SEPARATOR DETAIL

(N.T.S.)



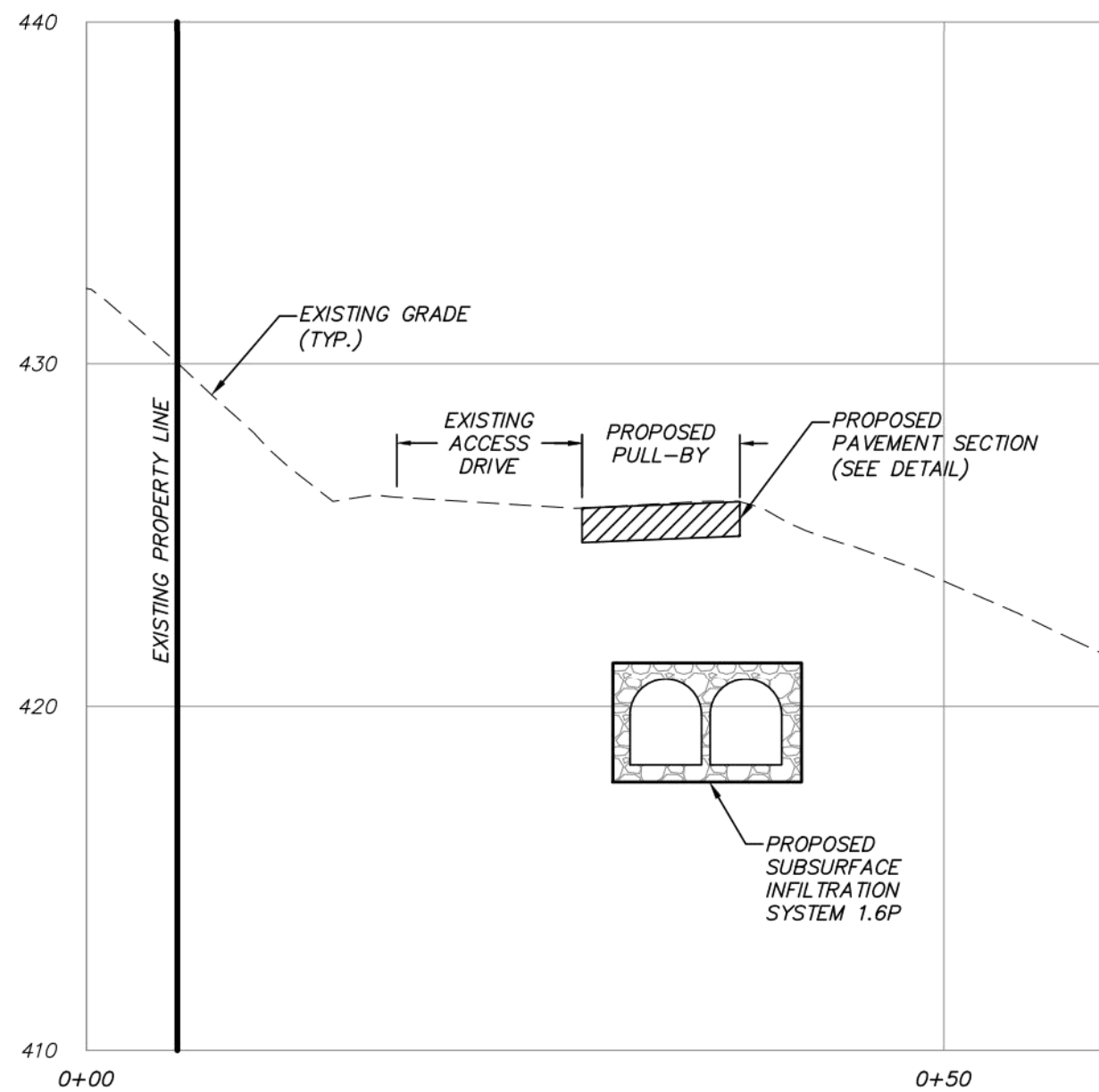
2 FLOW SPLITTER FS 1.6 DETAIL

(N.T.S.)



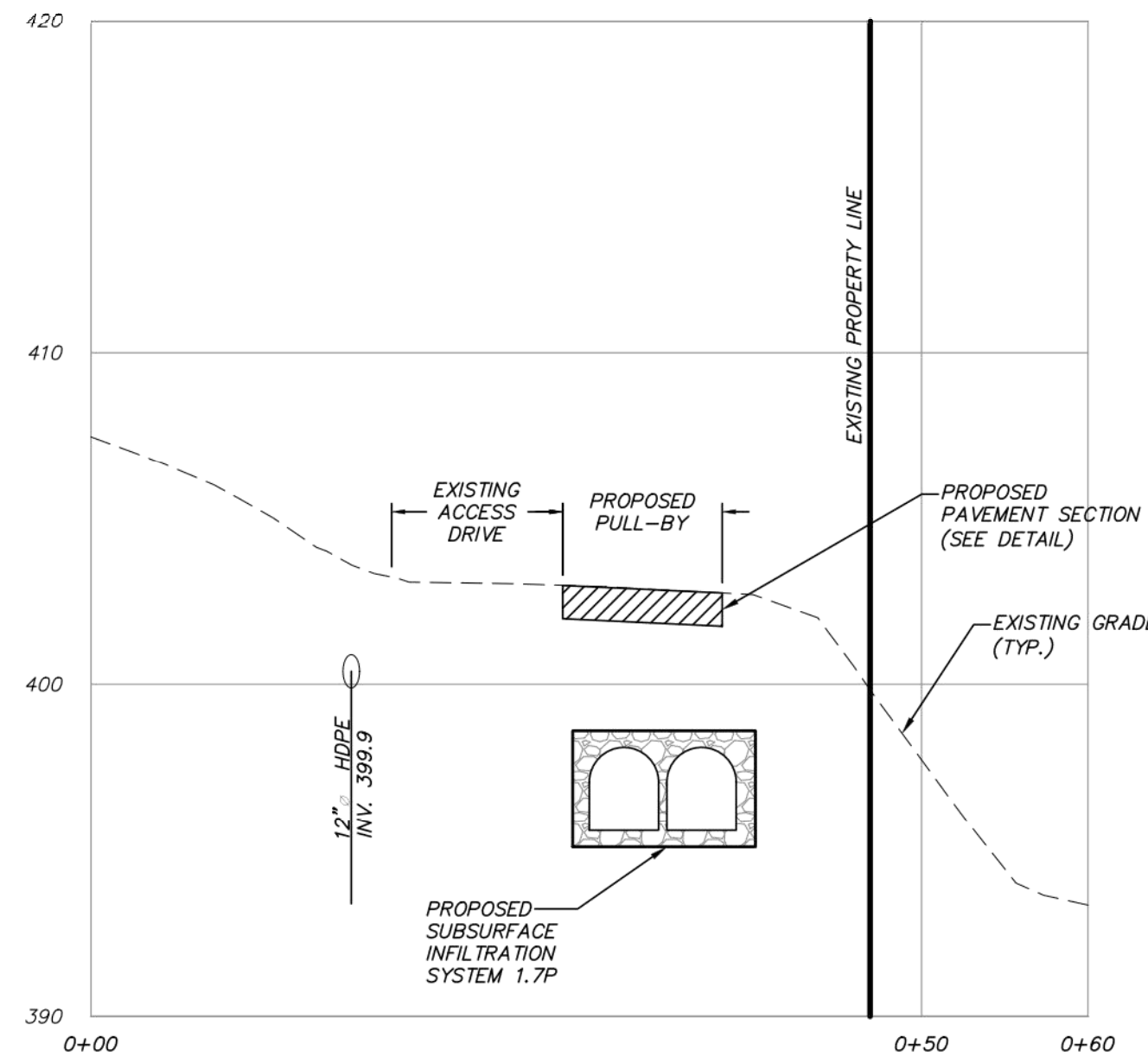
3 FLOW SPLITTER FS 1.7 DETAIL

(N.T.S.)



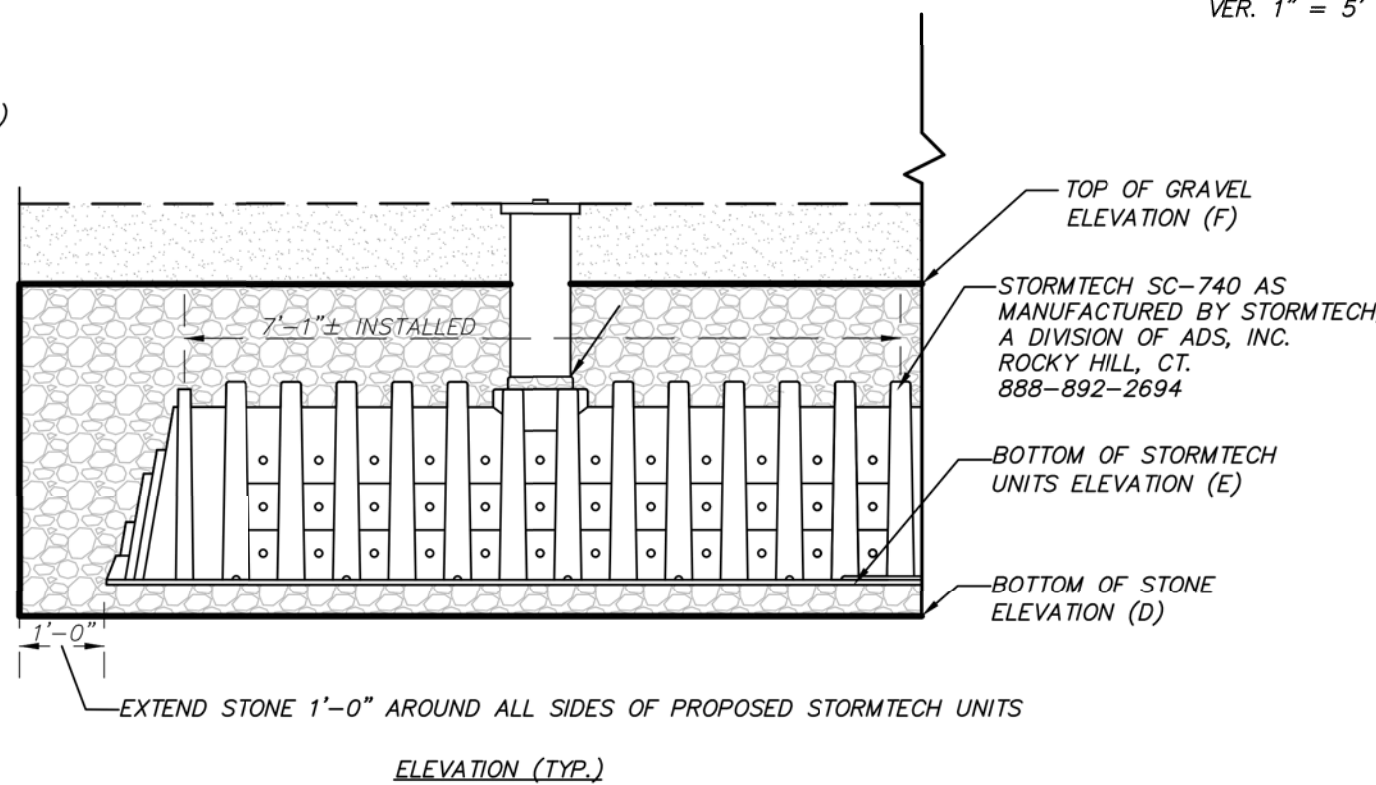
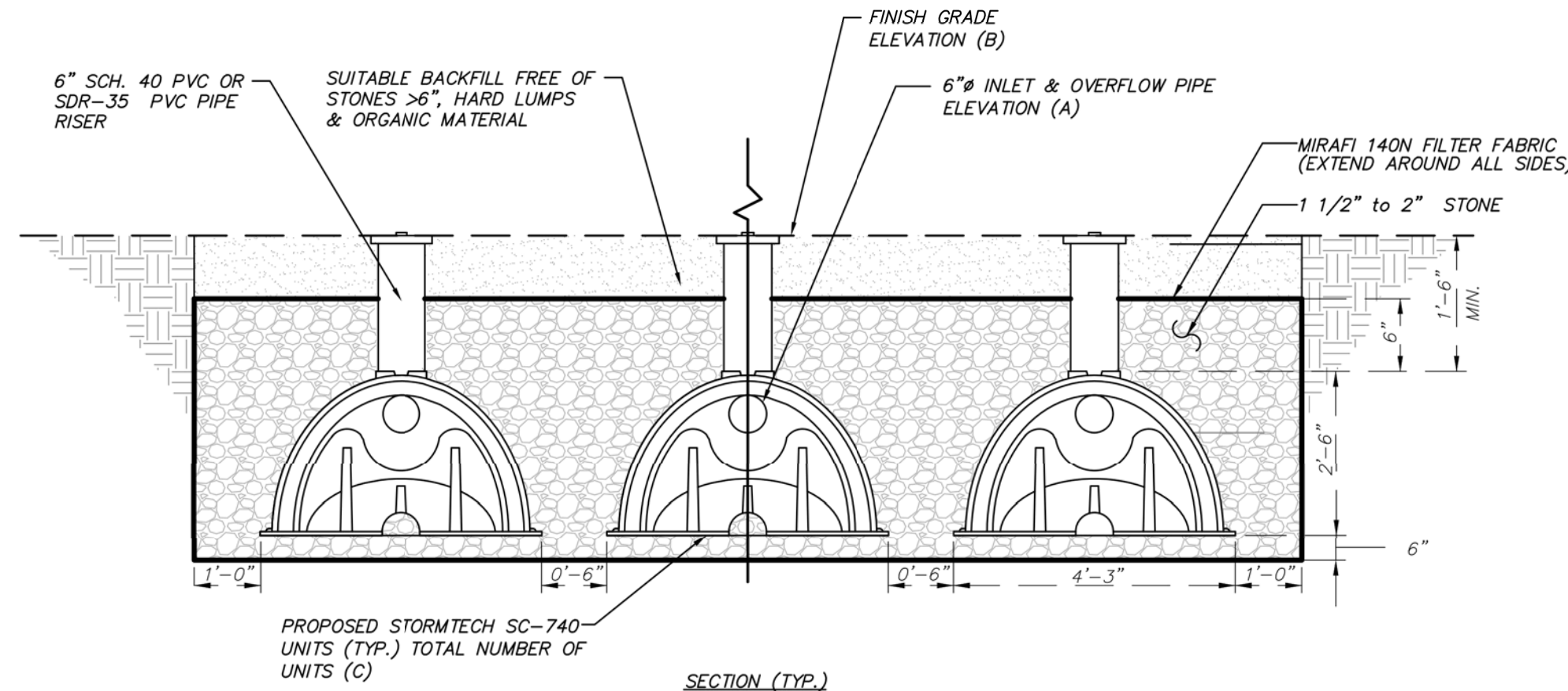
5 INFILTRATION SYSTEM 1.6P SCHEMATIC SECTION A-A

(N.T.S.)



6 INFILTRATION SYSTEM 1.7P SCHEMATIC SECTION B-B

(N.T.S.)



INFILTRATION SYSTEM	INLET/OVERFLOW PIPE ELEV. (A)	FINISHED GRADE ELEV. (B)	NUMBER OF UNITS (C)	BOTTOM OF STONE ELEV. (D)	BOTTOM OF UNIT ELEV. (E)	TOP OF GRAVEL ELEV. (F)
1.5P	469.2	471.5 - 474.0	30	466.7	467.2	470.2
1.6P	420.3	424.0 - 428.0	14	417.8	418.3	421.3
1.7P	397.6	402.0 - 404.5	10	395.1	395.6	398.6

4 STORMWATER INFILTRATION SYSTEM (NYSDEC DESIGN I-4) DETAIL

(N.T.S.)

HOMELAND TOWERS, LLC
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3	12/22/20	TOWN COMMENTS: RCB
4	01/25/21	TOWN COMMENTS: RCB
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6	07/12/21	TOWN COMMENTS: RCB
7	07/13/21	TOWN COMMENTS: RCB
8	07/14/21	TOWN COMMENTS: RCB

DESIGN PROFESSIONALS OF RECORD

PROF. SCOTT M. CHASSE P.E.
COMP: APT ENGINEERING
ADD: 567 VAUXHALL STREET
EXTENSION - SUITE 311
WATERFORD, CT 06385

DEVELOPER: HOMELAND TOWERS, LLC
ADDRESS: 9 HARMONY STREET
2ND FLOOR
DANBURY, CT 06810

NOTE:
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HOMELAND TOWERS MOUNT KISCO

SITE 180 S. BEDFORD RD.
ADDRESS: MT. KISCO, NY 10594

APT FILING NUMBER: NY283830

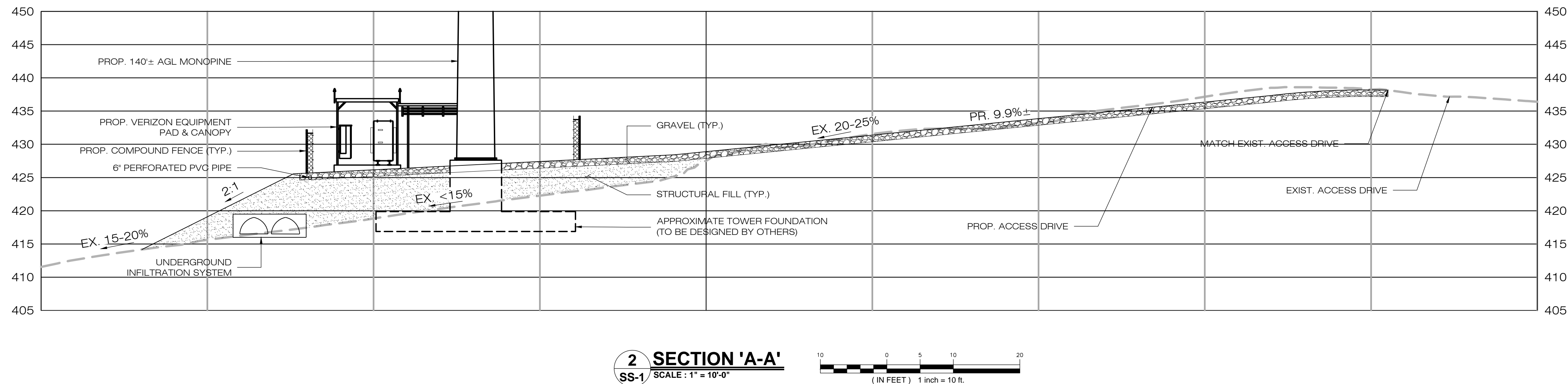
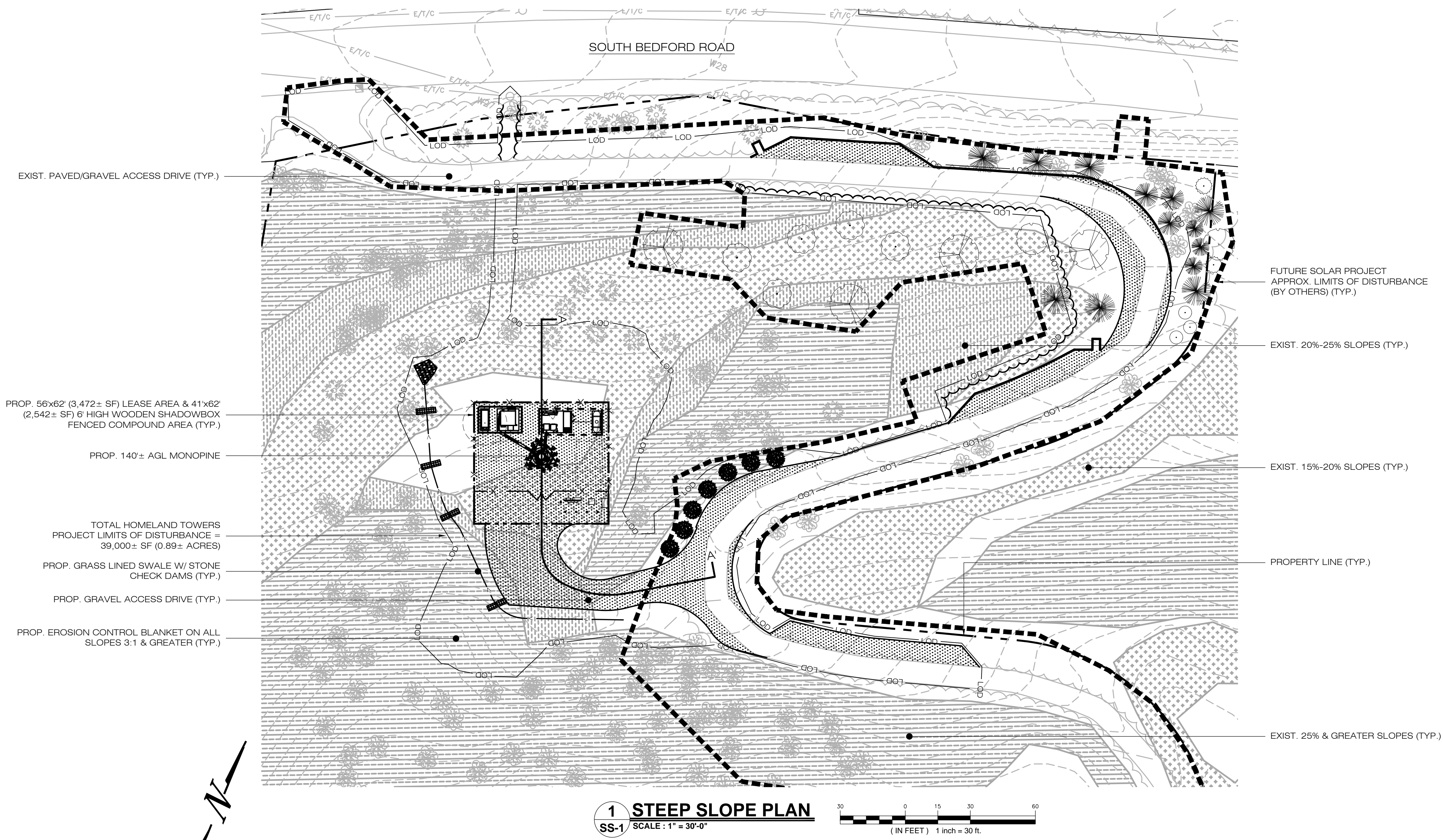
DATE: 08/13/20 DRAWN BY: CSH
CHECKED BY: RCB

SHEET TITLE:

DRAINAGE DETAILS (BY OTHERS)

SHEET NUMBER:

C-8



HOMELAND TOWERS, LLC
9 HARMONY STREET
2ND FLOOR
DANBURY, CT 06810
(203) 297-6345

verizon
4 CENTEROCK ROAD
WEST NYACK, NY 10994

at&t
340 MOUNT KEMBLE AVENUE
MORRISTOWN, NEW JERSEY 07960

APT
ENGINEERING
567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385
PH: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

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MOUNT KISCO

SITE 180 S. BEDFORD RD.
ADDRESS: MT. KISCO, NY 10594

APT FILING NUMBER: NY283830

DATE: 08/13/20 DRAWN BY: CSH

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SHEET TITLE:

STEEP SLOPE PLAN

SHEET NUMBER:

SS-1

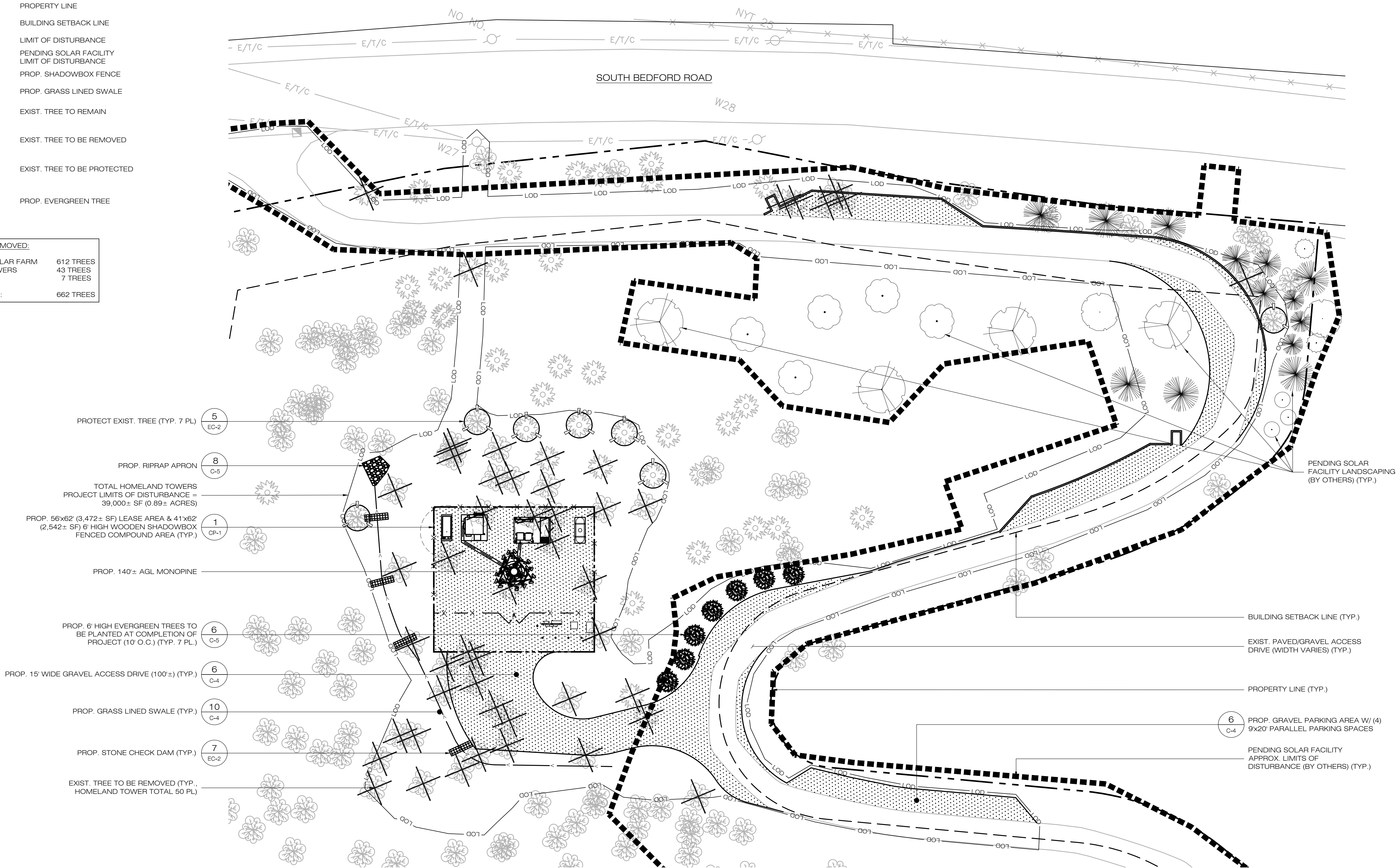
SCOTT M. CHASSE
P.E.
078603
PROFESSIONAL ENGINEER

LEGEND

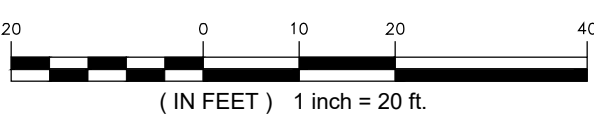
- PROPERTY LINE
--- BUILDING SETBACK LINE
--- LOD LIMIT OF DISTURBANCE
--- PENDING SOLAR FACILITY
--- LIMIT OF DISTURBANCE
--- X --- PROP. SHADOWBOX FENCE
--- PROP. GRASS LINED SWALE
○ EXIST. TREE TO REMAIN
⊗ EXIST. TREE TO BE REMOVED
⊙ EXIST. TREE TO BE PROTECTED
● PROP. EVERGREEN TREE

TREES TO BE REMOVED:

COMMUNITY SOLAR FARM	612 TREES
HOMELAND TOWERS	43 TREES
ACCESS DRIVE	7 TREES
OVERALL TOTAL:	662 TREES



1 LANDSCAPING PLAN
LS-1 SCALE : 1" = 20'-0"



MAP REFERENCES:
1. "ABUTTERS PLAN, PREMISES OF SKULL ISLAND PARTNERS, LLC, SHEET 1 OF 2" & "EXISTING CONDITIONS SURVEY, PORTION OF PREMISES OF SKULL ISLAND PARTNERS, LLC, SHEET 2 OF 2", PREPARED BY LAWSON SURVEYING & MAPPING, 2959 COUNTY ROUTE 8, ONEONTA, NEW YORK, 13820, DATED AUGUST 6, 2020.



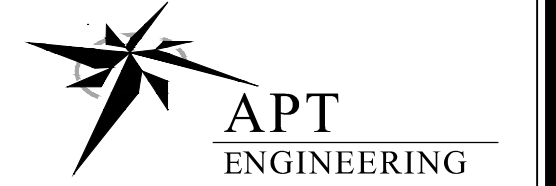
HOMELAND TOWERS, LLC
9 HARMONY STREET
2nd FLOOR
DANBURY, CT 06810
(203) 297-6345



4 CENTEROCK ROAD
WEST NYACK, NY 10994



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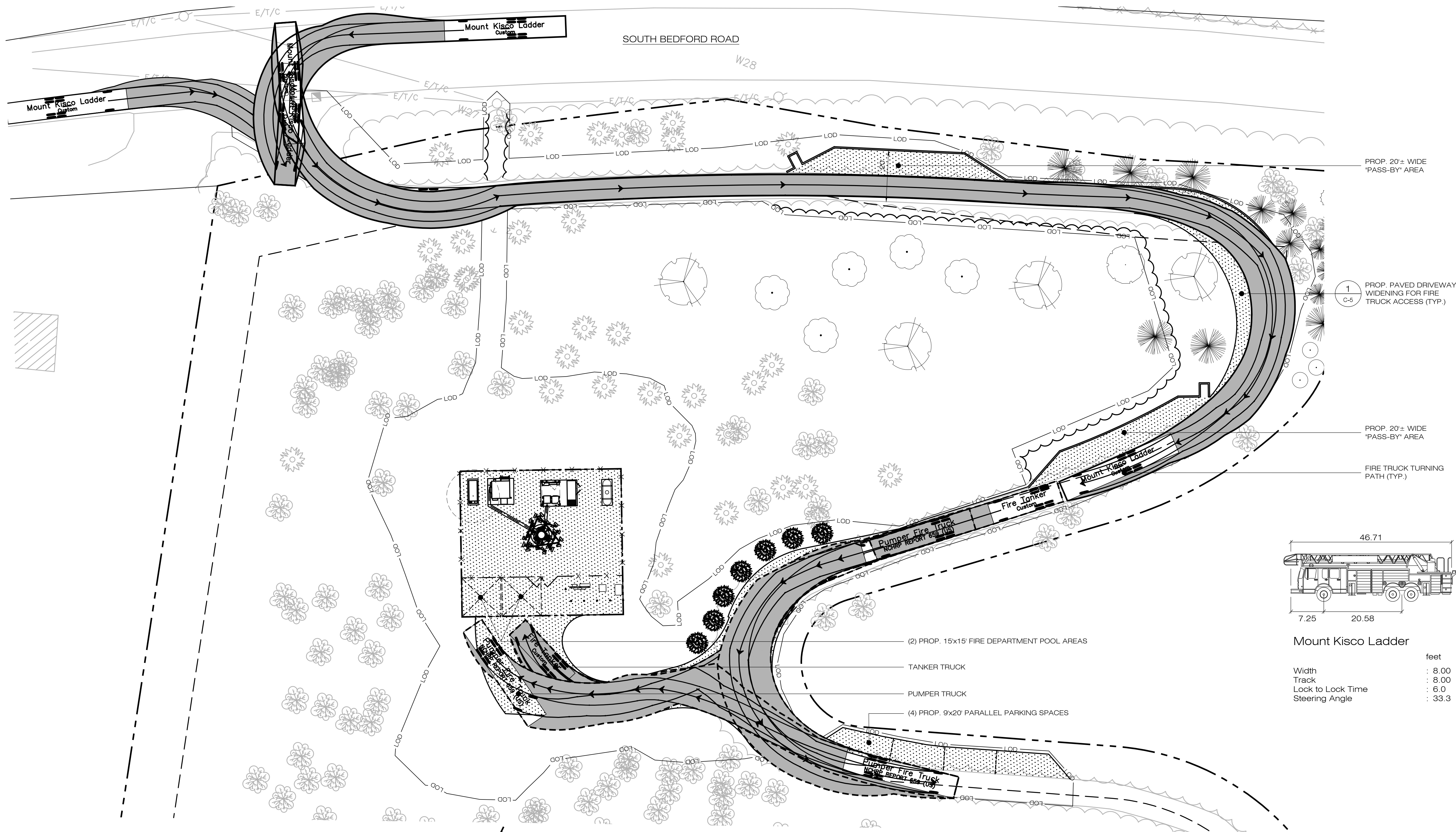
SHEET TITLE:

LANDSCAPING & TREE
PROTECTION PLAN

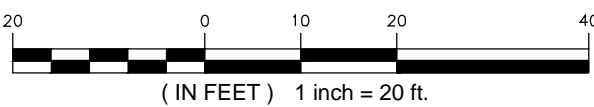
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LS-1

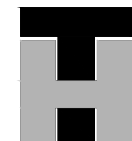




1 FIRE TRUCK TURNING PLAN
FD-1 SCALE: 1" = 20'-0"



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SHEET TITLE:

FIRE TRUCK
TURNING PLAN

SHEET NUMBER:

FD-1

