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TOWN OF CARMEL
PLANNING BOARD



60 McAlpin Avenue
Mahopac, New York 10541
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MICHAEL CARNAZZA
*Director of Code
Enforcement*

RICHARD FRANZETTI, P.E.
Town Engineer

PATRICK CLEARY,
AICP, CEP, PP, LEED AP
Town Planner

PLANNING BOARD AGENDA
DECEMBER 8, 2022 – 6:00 P.M.

TAX MAP # PUB. HEARING MAP DATE COMMENTS

TOWN BOARD REFERRAL - 6:00 PM – 7:00 PM

- | | | | | |
|---|--|--|--|---------------------------------|
| 1. Town of Carmel Comprehensive Master Plan and Zoning Code Draft | | | | Discussion (No Public Comments) |
|---|--|--|--|---------------------------------|

RESOLUTION

- | | | | | |
|--|------------|--------|-----------------------|--|
| 2. Vittorini, Brian & Gennyne – 6 Pheasant Place | 54.16-1-40 | 6/6/22 | Regrading Application | |
|--|------------|--------|-----------------------|--|

SITE PLAN

- | | | | | |
|--|------------|----------|-----------------------|--|
| 3. Platinum Propane – 1035 Route 6 | 65.10-2-11 | 11/23/22 | Site Plan | |
| 4. ML & RC Properties 2 LLC – (Lubic, Michael)
310 Buckshollow Road | 76.9-1-22 | 11/1/22 | Residential Site Plan | |

SUBDIVISION

- | | | | | |
|---------------------------------------|------------|----------|-------------------|--|
| 5. Jedlicka, Regina – 334 Austin Road | 64.13-1-16 | 11/21/22 | 2 Lot Subdivision | |
|---------------------------------------|------------|----------|-------------------|--|

MISCELLANEOUS

- | | | | | |
|--|-------------------------------|---------|------------------------------------|--|
| 6. Gateway Summit Multi-Family – Lot 6
2054 Route 6 | 55.-2-24.6-1,
55.-2-24.6-2 | 1/28/22 | Extension of Site Plan
Approval | |
| 7. The Fairways Multi-Family – Lot 7
2054 Route 6 | 55.-2-24.8-1,
55.-2-24.8-2 | 1/28/22 | Extension of Site Plan
Approval | |
| 8. Minutes – 10/13/22 | | | | |

TOWN BOARD REFERRAL – CONTINUATION OF DISCUSSION

- | | | | | |
|---|--|--|--|---------------------------------|
| 9. Town of Carmel Comprehensive Master Plan and Zoning Code Draft | | | | Discussion (No Public Comments) |
|---|--|--|--|---------------------------------|



November 28, 2022

Town of Carmel Planning Board
60 McAlpin Avenue
Mahopac, New York 10541

RE: 1035 Rt 6 – Platinum Propane
Town of Carmel
TM# 65.10-2-11

Dear Chairman Paeprer and Members of the Board:

Please find enclosed the following plans and documents in support of an application for site plan approval for the above referenced project:

- Site Plan set, last revised November 23, 2022. (5 copies).
- Architectural Plan and Elevations, by Michael Piccirillo Architecture, dated September 27, 2022.
- Existing House Plan, by Michael Piccirillo Architecture, dated September 27, 2022.
- System Layout, Elevation Detail, & Miscellaneous Details, by Chesmont Engineering, dated November 28, 2022.
- Fire Safety Analysis, dated November 18, 2022.

As discussed, this spring, the applicant seeks site plan approval for the conversion of an existing residential building to office space, the construction of a 1,500sf, three-sided lean to structure to house propane service trucks, a 480sf canopy over a proposed propane filling station, two buried 30,000 gallon propane tanks, and the associated stormwater management facilities, driveway and parking.

Since the project was last before the Board, the applicant has retained Chesmont Engineering to design the proposed propane system in more detail and to provide clarity for the Board as to the proposed propane-specific construction plan, operations, and safety measures.

In addition to the more detailed material that we have provided to this end, the only significant change in the site plan itself is that the proposed underground propane tanks have been moved to meet applicable setback standards.

In response to comments received from Director of Code Enforcement, Michael Carnazza, dated May 12, 2022, we offer the following responses:

1. This accurately summarizes the applicant's proposal.
2. This accurately describes the applicant's indication that this will be a "plant" and not a "terminal".
3. This is correct, see the enclosed System Layout drawing.
4. This comment is acknowledged.
5. See the enclosed architectural plans and elevations for the lean-to structure, as well as the existing dwelling. The filling station is only covered by a canopy. The proposed loading &

3 Garrett Place, Carmel, New York 10512 (845) 225-9690 Fax (845) 225-9717
www.insite-eng.com

unloading combo station and bollard layout below the canopy are indicated in the System Layout drawing.

6. The need for variances for the front yard setback and minimum floor area are acknowledged and the applicant would request that the Planning Board make the referral to the ZBA so the variances can be sought. Note that the existing house plans provided by Michael Piccirillo Architecture indicate a total square footage on 1,938 square feet for the existing building.

In response to comments received from Town Engineer Richard Franzetti, PE, dated May 6, 2022, we offer the following responses:

General Comments

1. The noted referrals are acknowledged.
2. The required permits are acknowledged.
3. Post-construction stormwater management practices are shown on the plans and the applicant awaits review of the previously provided SWPPP.
4. Traffic and vehicle movements are shown on drawing D-1.
 - a. This comment is acknowledged.
 - b. A driveway profile will be provided with our next submission as the entrance plan for the NYSDOT is advanced.
 - c. Driveway slopes at the entrance are indicated on drawing SP-2, and will be further clarified in the forthcoming profile.
 - d. The applicant would prefer not to perform a traffic study at this time as the project does not exceed the thresholds defining the proposed improvements as causing a "significant increase" in traffic under the guideline provided in the Environmental Assessment Form Workbooks, and because this project is to be reviewed by the NYSDOT as part of a required highway work permit for the new commercial entrance. The threshold for "significant increase" that we are citing is the Light Industrial/Warehousing use from the EAF Workbook question D.2.j., for which a significant increase would be surpassed with the construction of 180,000 square feet or more. Clearly, this project does not propose anything close to that level of new square footage. As the project use will cause a minimal increase in traffic, and as these impacts will be closely studied by the NYSDOT, a traffic study at this time would seem unnecessary.
5. The need for a stormwater maintenance agreement is acknowledged.
6. The requirement of a performance bond is acknowledged.

Detailed Comments

1. A stop sign and stop bar have been added at the exit to the site. Other signs are shown per the sign table on drawing SP-1.
2. A note has been added indicating that all planting shall be verified by the Town of Carmel Wetland Inspector.
3. A note has been added indicating that all planting shall be installed per Chapter 142 of the Town of Carmel Code.
4. The area of disturbance has been updated to include the areas around the sheds to be removed.

In response to open comments received from Town Planner, Cleary Consulting, dated May 12, 2022, we offer the following responses:

Site Plan Review Comments

2. As noted above, the need for variances for the front yard setback and minimum floor area are acknowledged and the applicant would request that the Planning Board make the referral to the ZBA so the variances can be sought.
9. The applicant's propane team has indicated that New York State does not have any specific oversight of propane facilities and is unaware of any Putnam County permits or regulations. It is the applicant's position that their ability to install the tanks and begin operations is pending site plan approval, the required area variances, and any requirements of the Building Department.
11. The locations of the proposed outdoor light fixtures are shown on drawing SP-1 and fixture details are shown on the Miscellaneous Details sheet from Chesmont Engineering.

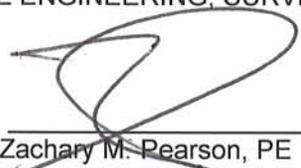
With regard to other questions posed by the Board at our last meeting regarding propane installation, operations and general safety requirements, see the enclosed plans, details and Fire Safety Analysis from Chesmont Engineering. We will be prepared to discuss these topics in more detail at the meeting.

Please place the project on the December 8, 2022 Planning Board agenda for a discussion of the project with the Board. Should you have any questions or comments regarding this information, please feel free to contact our office.

Very truly yours,

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

By:



Zachary M. Pearson, PE
Senior Associate Engineer

ZMP/adt

Enclosures

cc: (All via email only) Joseph Covais, Michael Velardo, Stacy Silvers, Mahopac Fire Department



FIRE SAFETY ANALYSIS

PLATINUM PROPANE



LOCATION ADDRESS:

1035 Route 6

Mahopac, NY 10541

LAST UPDATED:

11/18/2022

Fire Safety Analysis

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Analysis Summary on Exposure from and to the LP Gas Facility
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Appendix A Blank forms used in Analysis (not included)

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Technical References / Note:

The content of this document is based on the 2014 edition of the Fire Safety Analysis for LP-Gas Storage Facilities. As an updated Manual has not been published for the 2017 edition of NFPA 58, which is adopted in New York, the references to NFPA 58 paragraphs have been updated. All codes referenced in this document refer to the 2017 edition of NFPA 58.

CONFIDENTIAL

Introduction

This manual has been organized to address the requirements outlined in NFPA 58 2017 Ed. § 6.29 and Appendix A § A6

The manual is constructed following the guidelines provided by the Propane Education & Research Council, The National Propane Gas Association and the National Fire Protection Association.

Hiltz Propane Systems, Inc. has obtained and compiled this Information to assist clients in complying with NFPA 58 requirements.

The content of this document is based on the 2014 edition of the Fire Safety Analysis for LP-Gas Storage Facilities. As an updated Manual has not been published for the 2017 edition of NFPA 58, which is adopted in New York, the references to NFPA 58 paragraphs have been updated to reflect 2017 NFPA 58 Code.

This is not Intended to be an exhaustive effort covering all aspects.

Hiltz Propane Systems disclaims any and all liability for losses or damages arising from, or caused in whole or in part upon, use of this manual or the material or other Information contained in this manual.

Introduction

Fire Safety Analysis Manual for LP-Gas Storage Facilities

Based on the 2017 Edition of NFPA 58 Liquefied Petroleum Gas Code

The official position of the NFPA on all aspects regarding propane storage facility safety is in NFPA 58, the Liquefied Petroleum Gas Code. This manual is not intended to replace NFPA 58.

The Propane Education & Research Council (PERC) is a non-profit 501(c)6 trade organization authorized by the Propane Education and Research Act of 1996 (PERA), Public Law 104-284. PERC was created “to enhance consumer and employee safety and training, to provide for research and development of clean and efficient propane utilization equipment, and to inform and educate the public about safety and other issues associated with the use of propane.”

PERC is governed by a twenty-one member Board of Directors appointed by the National Propane Gas Association (NPGA) and the Gas Processors Association (GPA). PERC program beneficiaries include propane retail marketers, producers, transporters' and agricultural cooperatives, as well as representatives of allied service and supply industries (industry members).

The recommendations, standards, or recommended practices, as reflected in this document, were developed by independent consultants retained by PERC. While PERC administers the process of obtaining the information, it does not independently test or verify the accuracy of the information or methods used to collect the data that supports the conclusions or recommendations reflected in this document.

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The procedures and information in this document are intended to implement the standards set forth in the documents referenced with capabilities of the personnel and equipment available. It does not create new standards or criteria for compliance. The order of steps in any procedure may or may not be of importance. This material is not sold nor is it a product of any consulting or engineering activity.

Users of this document should consult the law of their individual jurisdictions for codes, standards and legal requirements applicable to them. This document is not intended nor should it be construed to (1) set forth policies or procedures which are the general custom or practice in the propane industry; (2) to establish the legal standards of care owed by propane distributors to their customers; or (3) to prevent the user from using different methods to implement applicable codes, standards or legal requirements.

By disseminating or publishing this document, PERC is not undertaking to render any professional or other service to or on behalf of any person or entity. PERC, NPGA, GPA and the industry members are not undertaking to perform any duty owed by any person or entity to any third party. Anyone reading or using this document should rely on his or her own judgment or, as appropriate, should seek the advice of a competent professional in determining the exercise of reasonable care in any and all circumstances.

Introduction Origin and Development of the Fire Safety Analysis Manual

The requirement for a Fire Safety Analysis (FSA) was introduced in the 1976 edition of NFPA 58, along with the requirement for emergency shutoff valves at locations where hoses and swivel type piping were used (for connection to cargo tank vehicles and rail cars). A Fire Safety Analysis was required for new propane storage plants with capacities of more than 4,000 gallons located in "heavily populated or congested areas".

This requirement was basically unchanged until the 2001 edition of NFPA 58, where the FSA was required for all propane storage plants with capacities of more than 4,000 gallons, with a three year period for existing facilities to be brought into compliance. As the majority of plants requiring a FSA did not have one in 2001, the need for guidance on how to conduct the FSA became apparent. Prior to 2001, the FSA was usually conducted by an independent consultant with knowledge of propane and fire safety. The concept of a consistent methodology was identified by a propane marketer in New England, Jim Hurley of Eastern Propane. The first two editions of the Manual were dedicated to Jim in recognition of his vision.

The recommendation resulted in NFPA working with NPGA to submit a proposal to PERC to develop a FSA manual to assist marketers in complying with the FSA requirement. When the project was approved, NPGA established an advisory committee and worked with NFPA to develop the manual.

Since the 2001 edition of the manual, it has been updated thrice to retain correct numbers of the paragraphs referenced in NFPA 58, as they are sometimes revised and renumbered. No technically substantive changes have been made to the manual since the first edition was published.

The models used in the Fire Safety Analysis (FSA) Manual to determine the distances to hazards (presented in Table B-1 of the FSA Manual) are based on published models in the literature. These models have been published in government reports, journal articles^{1,2}, EPA-suggested procedures³ and engineering monographs and books. The models used are considered conservative and have been simplified for the purposes of the FSA Manual.

¹ A general reference on hazard distance assessment models is: Lees, F.P. (Editor), *Loss Prevention in the Process Industries*, 2nd Edition, Vol 1, 2 & 3, Butterworth Heinemann Publishers, Oxford, England, 1996.

² Raj, P.K., "Exposure of a liquefied gas container to an external fire," *Journal of Hazardous Materials*, v 122, Issues 1-2, p 37-49, June 2005.

³ US EPA, *Technical Guidance for Hazard Analysis*, Emergency Planning for Extremely Hazardous Substances, EPA/FEMA/DOT, December 1987.

Introduction

Acknowledgments

This fifth edition of the Fire Safety Analysis (FSA) Manual, based on the 2014 edition of NFPA 58, is a continuation of the effort to fulfill a need for an easily used and simple aid for the members of propane industry to fulfill their obligations under NFPA 58 (2001, 2004, 2008, 2011 and 2014 editions) which require developing a written FSA. The project was funded by the Propane Education & Research Council through the National Propane Gas Association (NPGA). The National Fire Protection Association (NFPA) was the principal contractor for the first edition of the manual. Technology & Management Systems, Inc. (TMS) developed the technical analyses and several chapters of the first edition of the manual, as a subcontractor to NFPA.

Mr. Theodore C. Lemoff, Principal Gases Engineer, was the principal investigator at NFPA. Dr. Phani K. Raj was the principal investigator and analyst at TMS. Mr. Bruce Swiecicki, P.E., Senior Technical Advisor at NPGA, served as a staff technical reviewer.

In preparation for the first edition, NPGA assembled an Advisory Committee consisting of representatives from the propane industry, a Fire Department of a major city in the US and a Fire Protection Engineer. The Committee provided technical inputs and guidance to the project team on industry safety practices, types of information that an authority having jurisdiction and emergency responders would want to see in an FSA, an insight into the levels of understanding of various issues related to FSA in the industry, etc. The Advisory Committee set not only the direction of the project but made policy decisions related to the scope of the FSA manual. Except for the contractors, every member of the Advisory Committee had a vote and many decisions were made on the basis of a Committee vote. The Advisory Committee consisted of the following (voting) members.

1	Michael Merrill (Chairman)	Suburban Propane LP	Whippany, NJ
2	Mr. Greg Benton	Georgia Gas Distributors	Atlanta, GA
3	Mr. Billy Cox	O'Nealgas Inc.	Choudrant, LA
4	Mr. James Howe	Howe Engineers, Inc.	West Falmouth, MA
5	Mr. Jerry Lucas	Heritage Propane Partners, LP	Sallisaw, OK
6	Mr. Rob Scott	Scott & Associates	Kingsburg, CA
7	Mr. Cliff Slisz	Ferrellgas	Liberty, MO
8	Mr. Scott Stookey	City of Phoenix Fire Department	Phoenix, AZ
9	Mr. Ron Stover	Mutual Liquid Gas & Equipment	Gardena, CA
10	Mr. Robert Wallace	Dowdle Butane Gas Co Inc	Maryville, TN
11	Mr. Brent Wolcott	Ag Valley Coop	Edison, NE

Mr. Theodore Lemoff and Dr. Phani Raj participated in the deliberations of the meetings of the Advisory Committee as non-voting members.

Introduction

About the Authors

Phani K. Raj, Ph.D.

Dr. Raj is the President of Technology & Management Systems, Inc. (TMS). He holds S.M. and Ph.D. degrees in Mechanical Engineering as well as an MBA degree.

He has over 30 years professional experience in conducting safety research and assessing risks in the storage, transportation, handling and utilization of hazardous materials, including energy fluids. His research has included the development of mathematical models to describe the accidental release behavior of chemicals and flammable materials. In addition, he has developed easy to follow safety guideline documents and hazard assessment manuals for a number of clients including the Federal Agencies and industrial clients.

Dr. Raj developed a number of models for the "Chemical Hazard Response Information System" (CHRIS), which the U.S. Coast Guard and the National Response Center use for assisting in case of hazardous material emergencies. He is the author of CHRIS Manual III "Hazard Assessment Handbook."

Since 1996 he has been a member of the NFPA's Technical Committee on Liquefied Petroleum Gases which writes NFPA 58, *Liquefied Petroleum Gas Code*. He was a member of the Committee Transportation of Hazardous Materials (of the National Research Council), and emeritus member of the Editorial Board of the Journal of Hazardous Materials. He has held the post of visiting lecturer at MIT and taught, in the Chemical Engineering Department, a graduate level course. He is the principal author of over 100 technical reports and over 40 technical papers.

Theodore C. Lemoff, PE

Mr. Lemoff is retired from the National Fire Protection Association (NFPA). While at NFPA, he served as the Principal Gases Engineer. He holds a Bachelor of Engineering degree in Chemical Engineering and is a registered professional engineer in Massachusetts.

He has over 40 years experience in the fire safety and the chemical industry, including 25 years at NFPA working in the flammable gases area. He served as the staff liaison and secretary to the NFPA Technical Committee on Liquefied Petroleum Gases, responsible for NFPA 58, and for other NFPA codes and standards on flammable gases.

Mr. Lemoff is a member of the American Institute of Chemical Engineers, the Society of Fire Protection Engineers, the Society of Gas Engineers, and the American Society of Plumbing Engineers.

1.1 Background

The Fire Safety Analysis (FSA) is a self-conducted audit of the safety features of a propane installation and an assessment of the means to minimize the potential for inadvertent propane releases from storage containers and during transfer operations. The assessment also includes an evaluation of the capabilities of local emergency response agencies as well as an analysis of potentially hazardous exposures from the installation to the neighborhood and from the surroundings to the LP-Gas facility.

Since 1976, NFPA 58, Liquefied Petroleum Gas Code (hereinafter referred to as the “code” or “NFPA 58”) has required that a facility operator or owner conduct a FSA for propane facilities having ASME containers of aggregate storage greater than 4,000 gallons water capacity. The FSA requirement was changed in the 2001 edition to require a written FSA. The requirements for fire protection are indicated in the 2017 edition of NFPA 58 in §6.29, which addresses fire protection requirements for industrial plants, bulk plants and dispensing stations. Specifically §6.29.2 (“Planning”) and §6.27.3(“Protection of ASME Containers”) require, in part, the following:

6.29.2.1 The planning for the response to incidents including the inadvertent release of LP-Gas, fire, or security breach shall be coordinated with local emergency response agencies.

6.29.2.2 Planning shall include consideration of the safety of emergency personnel, workers, and the public.

6.29.3.1 Fire protection shall be provided for installations with an aggregate water capacity of more than 4000 gal (15.2 m³) and for ASME containers on roofs.

6.29.3.2 The modes of fire protection shall be specified in a written fire safety analysis for new installations, for existing installations that have an aggregate water capacity of more than 4000 gallons (15.2 m³) and for ASME containers on roofs. Existing installations shall comply with this requirement within 2 years of the effective date of this code.

6.29.3.3 The fire safety analysis shall be submitted by the owner, operator, or their designee to the authority having jurisdiction and local emergency responders.

6.29.3.4 The fire safety analysis shall be updated when the storage capacity or transfer system is modified.

The FSA and required assessment of the installation provides several important benefits:

- 1) A structured assessment by which each facility can be evaluated for conformity of installed equipment with code requirements.
- 2) A means to evaluate the capability of systems and equipment installed to control and contain potential LP-Gas releases during day-to-day operations.
- 3) An approach to evaluate the informational needs of the facility, based on factors such as the type and frequency of transfer operations, size of the storage containers, location of the facility with respect to other buildings and the existing procedures and systems in place.
- 4) A means to describe product control and fire protection features which exceed the comprehensive requirements of NFPA 58¹.
- 5) A tool for facilitating a cooperative and effective dialogue with local emergency response agencies and authorities having jurisdiction.

¹ All reference, henceforth, to the “code” in this document should be construed as referring to NFPA 58, 2017 edition.

1.2 Scope of the Manual

The manual addresses a number of subjects, including:

- (1) A review of the product control measures required in the NFPA 58, "Liquefied Petroleum Gas Code"
- (2) Local conditions of hazards within the facility site
- (3) Exposures to and from other properties
- (4) Effectiveness of local fire departments
- (5) Effective control of leakage, fire and exposure
- (6) Illustrative examples using four different sizes of typical LP-Gas facilities

This FSA manual is intended for use by propane plant owners or operators, consultants, authorities having jurisdiction (AHJs) and emergency response personnel. The manual addresses the process by which a FSA can be conducted for a LP-Gas facility containing one or more stationary ASME containers.

The FSA manual is designed to provide a guide for identifying the requirements in NFPA 58 and determining compliance with them. Section 6.29.3.5 of NFPA 58 provides that:

The fire safety analysis shall be an evaluation of the total product control system, such as the emergency shutoff and internal valves equipped for remote closure and automatic shutoff using thermal (fire) actuation, pull away protection where installed, and the optional requirements of Section 6.30.

The philosophy of NFPA 58 is to minimize fires by minimizing the accidental release of propane if an incident should occur. Or put in simple terms, "no fuel, and no fire."

The manual **does not** address the following:

1. Marine terminals, refrigerated LP-Gas storage and the transportation of LP-gas by either rail tank cars or by cargo tank trucks. Marine terminals are governed by the OSHA Process Safety Management regulations and the US EPA Risk Management Plan regulations; refrigerated storage of LP-gas is a high-volume operation requiring special considerations; and, the transportation of LP-gas is addressed by Title 49 of the Code of Federal Regulations, Transportation.¹
2. Storage of LP-Gas in salt domes and caverns.
3. Installations of ASME LP-gas containers on roofs of buildings. This type of installation, for which a fire safety analysis is required, is excluded from the scope of this manual primarily because of the rarity of such installations in the United States.
4. Cylinder filling operations at a dispensing facility, unless the storage threshold for LP- Gas has been exceeded, requiring an FSA to be prepared.
5. The use of facility employees performing as a "fire brigade."

The above facilities may be required to comply with other safety analysis requirements.

1.3 Need for a FSA Manual

Neither NFPA 58 nor the “Liquefied Petroleum Gas Code Handbook”ⁱⁱ provide detailed guidance on how to prepare or develop a written FSA. Since each industrial plant, bulk plant, or dispensing station presents unique physical and operational characteristics, the fire safety analysis is a tool used to assess the level of fire safety performance that a specific industrial plant, bulk plant or dispensing station can be expected to provide. This FSA will also provide essential information on the facility and its operation to the local authority having jurisdiction (AHJ) and local emergency response agency.

An informal survey was taken of AHJ’s on the fire safety analyses used for existing and new plants in their jurisdictions (conducted by the author) at the time the first edition of this manual was being prepared. It indicated that there was no uniformity either in content, the details of information, or final assessment of the facility in the FSAs submitted. They ranged from a single page submission for a medium size bulk plant to very detailed assessment including risk assessment and management plan for a 30,000 gallon bulk storage facility. Without a guidance manual, potential confusion would almost certainly occur as each AHJ would be required to establish an individual set of criteria that would meet the FSA in their area. Thus, the need in the LP-Gas industry for assistance with the following tasks was clearly established.

- 1) Providing a FSA template that allows for consideration of different size installations
- 2) Establishing a uniform approach and defining common elements
- 3) Developing simplified checklists and an example-based methodology for completing the analysis
- 4) Utilizing technically-based guidance and support

The intent of this FSA manual is to provide an easy-to-use procedure for LP-gas facility owners or operators who are most familiar with the equipment technology and system operations and therefore qualified to complete the document. Knowledge of fire science and engineering principles is not required for this document to be useable by an owner, operator or an AHJ, because those principles have already been factored into the assessment criteria contained within the FSA.

By utilizing the expertise of industry, engineering and fire service representatives in the development of the material to follow, this manual provides a comprehensive, uniform, objective approach that was designed to provide for the uniform and objective application of FSA requirements by the AHJs. Further, the joint input of the Propane Education & Research Council (PERC), National Propane Gas Association (NPGA), and the National Fire Protection Association (NFPA) provides additional assurance of the manual’s depth, credibility and broad-based consensus.

This FSA manual has been developed based on the requirements of NFPA 58, 2017 edition. Using this manual to perform a FSA at a facility constructed to meet the requirements of prior editions of NFPA 58 or other state-specific codes may produce conflicts between actual facility construction and the checklists in this manual. The code or standard in effect at the time of construction of the facility should be used as the source of requirements to perform the FSA. Checklist items contained within this manual can be revised to indicate the appropriate code items required at the time of facility construction.

1.4 LP-Gas Safety Record and Risks

The LP-Gas industry has a long history of safe operations. With the requirement in the 1976 edition of NFPA 58 to retrofit LP-Gas plants with emergency shutoff valves (ESVs) in transfer lines, the safety of LP-Gas facilities was further improved.

The FSA provided in this manual, in addition to other safety programs currently enacted at any workplace, is intended to reduce or eliminate the risk of fatality or injury to both the plant employees and the public. In an effort to identify the level of risk a propane installation poses to the general public, as well as employees and emergency responders, the U.S. Department of Energy (DOE) instituted a studyⁱⁱⁱ in 1981. Accident data from a variety of sources was analyzed, including: the US Department of Transportation hazardous material incident report database, reports of the National Transportation Safety Board, National Fire Protection Association, technical journals and other sources. Data analyzed for the period 1971 through 1979 addressed LP-Gas transportation and product releases from stationary storage facilities. The special focus of the study was the fatalities suffered by employees and the general public. The study concluded that a fatality to the general public as a direct result of an LPG transportation or storage incident involving the loss of product is very small and the risk (expressed in expected number of fatalities per year) is smaller than that from natural phenomena (lightning, tornadoes, objects falling from the sky, etc).

An analysis conducted by the National Fire Protection Association^{iv} of LP-Gas fire damage and casualty data during the period between 1980 and 1999 also indicates that the LP-Gas storage facility operations in the US are very safe. The number of reported fires at LP-Gas bulk storage facilities remains small and has fallen since 1980, but substantial variation exists from year to year. During the five-year period from 1994 through 1998, an estimated 49 fires, on average, were reported per year at LP-Gas bulk storage facilities. These fires caused an annual average of one civilian death, five civilian injuries and \$754,000 in direct property damage. In 1999, an estimated 58 reported fires on these properties caused four civilian injuries and \$722,000 in direct property damage. The 58 fires reported in 1999 accounted for .003% of all fires reported that year.

1.5 Organization of the FSA Manual

The manual has been organized to address the requirements outlined in the 2017 edition of NFPA 58, Sections 6.29 and 6.30.

Chapter 2 discusses the requirements of the 2017 edition of NFPA 58 in regard to product control requirements, and their evolution. The philosophy and the advantages of product control systems are discussed. Also included are the various appurtenances used in a typical LP-Gas facility. More detailed information on the types of valves, their functions and example photographs of various appurtenances are provided in Appendix B. Chapter 3 provides an overview of the FSA process including its principal elements.

The input of data into the FSA procedure begins with Chapter 4. In Chapter 4, basic information about the LP-Gas facility is input into appropriate tables and a decision is made (based on the data provided) as to the extent of the analysis that should be completed. The assessment of conformity with code requirements of the product control requirements for containers and in transfer piping is performed in Chapter 5. To aid this assessment a series of sketches of possible configurations of container appurtenances (satisfying 2017 code requirements) are provided. Note that several section references have been changed from the published edition of the 2014 edition due to the acceptance of Tentative Interim Amendment 14-3, which is reprinted with permission in Appendix C of the original document found at . When necessary, the year when specific equipment was required by the code is also indicated on the sketches to facilitate application of the Manual to facilities constructed to the requirements in previous editions of NFPA 58. The analysis of the local conditions of hazard is presented in Chapter 6, followed by the assessment in Chapter 7 of the hazard exposure to off-site properties and persons. Also, the potential exposure to LP-Gas installations from off-site activities is covered in Chapter 7.

The evaluation of the capabilities of the local emergency responder (usually the fire department) and the availability of water to fight in-plant fires and exposures are presented in Chapter 8. Summary of evaluations and actions that may need to be initiated for proposed LP-Gas facilities are presented in Chapter 9. The use of this manual in preparing a written FSA for a LP-Gas facility is demonstrated with examples of four different generic cases. Several different sizes of facilities are considered.

ⁱ U. S. Code of Federal Regulations, Title 49, Transportation

ⁱⁱ Liquefied Petroleum Gas Handbook, Beach, 2014, NFPA, Quincy MA and 2017 NFPA

ⁱⁱⁱ LPG Land Transportation and Storage Safety, Department of Energy report No. DOE/EV/06020-TS 9/18/81"

^{iv} Fires at LP-Gas Bulk Storage Plants Statistical Analysis, NFPA, 2003, Quincy, MA

LP-Gas Storage Container Safety Features

The fundamental premise on which the requirements for LP-Gas facility safety specified in several recent editions of NFPA 58 is based is the following:

If product release can be either controlled or eliminated, safety is effectively addressed.

A product release creates the potential for the occurrence of a fire. Therefore, the focus of both NFPA 58 and the Fire Safety Analysis Manual is on the need to design systems (incorporating product controls) to ensure, to the extent possible with current technology and procedures, the elimination of the accidental release of LP-gas from storage or during transfer operations.

2.1 A Historical Perspective

In the late 1960's and the early 1970's there were a number of fires and BLEVEs (Boiling Liquid Expanding Vapor Explosions) of propane and other liquefied petroleum gases resulting from derailments of railcars carrying propane and other flammable liquefied gases. These incidents involved fire fighter fatalities and highlighted the need for safety improvements. As a result, the U. S. Department of Transportation (DOT) implemented new regulations for the tank cars used to transport propane and other liquefied flammable gases, and made them mandatory and retroactive in 1980. These improvements included:

- Head shields to reinforce the pressure vessel on the railcar
- “Shelf” couplers to reduce the potential for railcars to be uncoupled during a derailment
- Thermal protection to reduce the potential for the tank to experience a rise in temperature due to flame impingement

Since these improvements in rail car safety were made in the 1980's, there have been no fire fighter fatalities from any railroad tank car BLEVEs and the number of these incidents has been greatly reduced, to the authors' knowledge.

In 1973, product control requirements to prevent the uncontrolled release of LP-gas from storage containers consisted primarily of manually operated valves, backflow check valves and excess-flow check valves.

On July 3, 1973 a propane incident occurred in Kingman, Arizona involving a propane fire at a propane tank car unloading area in a propane bulk storage plant. Though the plant's equipment conformed to the requirements of NFPA 58 and other safety standards for flammable materials at that time, the incident resulted in the death of several fire fighters and one plant employee.

A direct result of this incident (and others that occurred at approximately the same time) was the addition of a new fire protection requirement in the 1976 edition of NFPA 58. The requirement stated that planning “for the effective measures for control of inadvertent LP- Gas release or fire” shall be done and coordinated with local emergency responders. In addition, the primary consideration of a fire safety analysis at that time was the use of water as a suppressing agent to control fires. The requirements today are very similar to those original requirements except in two areas.

- As of the 2001 edition, fire safety analyses are required to be written;
- The primary consideration in performing such an analysis has changed from the emphasis of using water for fire control to the emphasis of avoiding product release altogether using technology and training.

This modern approach takes advantage of the inherent safety present in a controlled environment such as a bulk plant, as well as the safety features of the most current product control hardware.

In early editions of NFPA 58, the primary consideration of water as the means to control a fire was based on the fact that at that time, there were few reliable ways to stop the flow of LP-gas after failures in the system and the need to apply water quickly to storage containers being impinged by flames was important.

Another significant change in the 1976 edition of NFPA 58 was the requirement for including an emergency shutoff valve (ESV) in the transfer lines used between stationary storage containers of over 4,000 gallons capacity and cargo tank vehicles. This revision was intended to prevent product release from storage containers in the event of a vehicle pulling away with its hoses still connected. All existing plants were required to comply with this requirement by the end of 1980. Since this retrofit program was completed, there has not been, to the knowledge of the authors, a pull-away accident involving an ESV installation that resulted in serious consequences.

The 1980's enjoyed a reduced number of propane incidents in the U. S., and the next major product control enhancement was the revision to introduce an optional requirement for internal tank valves in containers over 2,000 gallons in the 1992 edition of NFPA 58. These tank valve requirements included:

Vapor and Liquid Withdrawal Openings in Tanks

1. Positive shutoff valve in line with excess flow valve installed in the tank, or
2. Internal valve with integral excess flow shutoff capability

Vapor and Liquid Inlet Openings in Tanks

1. Positive shutoff valve in combination with either an excess flow valve or backflow check valve installed in the tank, or
2. Internal valve with integral excess flow valve, or
3. Internal valve with remote means of closure

These revisions were made to enhance the operational features of product control hardware. Internal valves are capable of being closed from a remote location (using a cable, pneumatic, or hydraulic device) and by thermal activation, which is accomplished using an element that melts when it is subjected to fairly moderate temperatures (in the 200°F - 250° F range).

The 2001 edition of NFPA 58 was further revised to require internal valves for liquid connections to containers over 4,000 gallons, with remote and thermal shutoff activation. This change was the result of the Committee desiring improved safety performance with this advanced hardware, due to the following incidents:

-Sanford, NC. A hose separation resulted in the loss of the contents of a transport vehicle (9700 gallons water capacity). The contents within the storage containers were also lost because of a failed check valve.

-Albert City, Iowa. An exposed liquid pipe installed in violation of the code between an 18,000 gallon water capacity storage container and a vaporizer was broken when a recreational vehicle accidentally drove over it. The leaking gas found a source of ignition and impinged on the container, resulting in a BLEVE.

-Truth or Consequences, NM. A small, parked truck rolled into a propane bulk storage plant, breaking plant piping. The resulting fire caused the failure of several cylinders.

These improvements in product control are considered critically important, and in addition to requiring them for all new installations after 2001, the requirements were made retroactive to all existing installations, allowing 10 years for the conversion. All existing containers over 4,000 gallons water capacity will be retrofit with an internal valve or similar protection on all liquid connections. Alternatively, the use of an emergency shutoff valve (ESV) as close to the container as practical is also allowed, in recognition that some containers cannot accommodate an internal valve without extensive modification. The ESV has the same remote and thermal activation closing features as an internal valve.

2.2 Current LP-Gas Storage Container Safety Features

As of the 2001 edition, NFPA 58 requirements for product release control include the provision for a number of different types of valves or appurtenances in the product storage containers, transfer piping network and at liquid transfer facility locations. Generally, code requirements for product control appurtenances on containers used in industrial plants and bulk plants, as well as dispensing stations, are more stringent than for residential and commercial use containers.

In the 2014 edition of NFPA 58, changes to the definitions of "Bulk Plant" and "Industrial Plant" clarified the intent of the NFPA Technical Committee on Liquefied Petroleum Gases by stating that each of those types of facilities utilize only containers greater than 4,000 gallons water capacity. Therefore, modifications were made to Chapter 5 of this manual to remove references to containers between 2,000 and 4,000 gallons water capacity. The manual does retain information on containers less than 4,000 gallons water capacity due to the fact that some dispensing stations may be utilizing more than one container less than 4,000 gallons, but with an aggregate capacity greater than 4,000 gallons.

Unless product is being transferred, product control valves are normally in the closed position. However, some of the installations require an automatic shutoff feature when either a fire (or heat) is sensed or when other abnormal conditions occur. The product control valves include the following:

Positive shutoff valve: A shutoff valve that, in the closed position, does not allow the flow of product in either direction. [NFPA 58, 3.3.85.7]

Backflow check valve: This valve allows flow in one direction only and is used to allow a container to be filled while preventing product from flowing out of the container.

Excess-flow valve: A valve designed to close when the liquid or vapor passing through it exceeds a prescribed flow rate. [NFPA 58, 3.3.85.3]

Internal valve: A container primary shutoff valve that can be closed remotely, which incorporates an internal excess flow valve with the seat and seat disc located within the container so that they remain in place should external damage occur to the valve. [NFPA 58, 3.3.85.6]

Emergency shutoff valve: A shutoff valve incorporating thermal and manual means of closing that also provides for a remote means of closing. [NFPA 58, 3.3.85.2]

Hydrostatic pressure relief valve: A type of relief valve that is set to open and relieve pressure in a liquid hose or pipe segment between two shutoff valves when the pressure exceeds the setting of the valve.

Container pressure relief valve: A type of pressure relief device designed to open and then close to prevent excess internal fluid pressure in a container without releasing the entire contents of the container. The valve is located in the vapor space of the container.

Bulk storage installations incorporate several product release control appurtenances. This fire safety analysis manual outlines alternative schematics for the various facilities covered (4,000 gallons or less and greater than 4,000 gallons water capacity).

CONFIDENTIAL

PART 1

FACILITY INFORMATION

FORM 4.1

FACILITY OWNER DATA

LP Gas Facility Owner: Platinum Propane

Contact Name: Joe Covais

Contact Telephone #: 914-666-2323

Contact Email Address: Joe@goplatinumpropane.com

Mailing Address: 13 Schuman Rd.
Millwood, NY 10546

FACILITY LOCATION DATA

Facility Location: 1035 Route 6
Mahopac, NY 10541

PART 2 FACILITY INFORMATION

Platinum Propane - Mahopac NY - (2) 30K FORM 4.2

Facility Storage Capacity ^{1,2,3}

Individual Container Water Capacity (w.c.) (gallons)	Number of containers	Total Water Capacity of each container size (gallons)
500		
1,000		
2,000		
4,000		
10,000		
18,000		
30,000	2	30,000
45,000		
60,000		
Other:		
Other:		
Other:		
Aggregate Water Capacity ⁴	2	60,000

2 UNDERGROUND 30,000 GWC ASME PROPANE VESSELS

Notes:

- (1) Column D = Column B x Column C.
- (2) Parked bobtails, transports and tank cars should not be considered for aggregate capacity calculations.
- (3) Do not consider containers that are not connected for use.
- (4) For the purpose of this manual, "Aggregate Water Capacity" means any group of single ASME storage containers separated from each other by distances less than those stated in the aboveground containers column of Table 6.3.1.1.

TYPE & FREQUENCY OF TRANSFER OPERATIONS

Current estimated average receipt of 4 transports into tanks and 12 bobtails out weekly.

PART 2 FACILITY INFORMATION

Platinum Propane - Mahopac NY - (2) 30K FORM 4.3

Additional Information on the LP-Gas Facility

Type of LP-Gas Facility: Commercial Industrial **Bulk Storage**

Facility is located in: Rural Area Suburban Area **Commercial**
 Town Industrial Zone

Facility neighbors* Agra Fields **Commercial Bldgs.** Manufacturing
 Industrial Activity (metal fabrication, cutting and welding, etc)
 Flammable Liquids Storage **Other (explain)**
Wooded & Residential Areas

Geographic Location of Plant: **1035 Route 6**
Address: **Mahopac, NY 10541**

Landmarks, if any:

LP-Gas Liquid supply by: Bobtail **Truck Transport** Rail Car

LP-Gas Distribution by: **Bobtail** Truck Transport Vapor Piping
 Liquid Piping Dispensing or Vehicle Liquid Fueling

of Vehicle Entrances: **One** Two More than two
(in/out)

Type of Access Roads to the Facility: Rural Town **State Route 6**

Entrance 1: Dirt Road Gravel entrance **Paved (main)**

Entrance 2: Dirt Road Gravel entrance Paved

Staff Presence: Not Staffed 24 hours a day, 6 days a week
 Staffed Always during business hours

Location and distances to Institutional Occupancies surrounding the facility, if any, within 250 ft from the boundary in the direction of the assets.
NONE

Overview plot plan of the facility attached: **yes** no

* All properties either abutting the LP-Gas facility or within 250 feet of the container or transfer point nearest to facility boundary.

PART 3 ANALYSIS OF PRODUCT CONTROL MEASURES IN CONTAINERS AND TRANSFER PIPING

Platinum Propane - Mahopac NY - (2) 30K

Form 5.3

Compliance with Code Requirements for Appurtenances on Containers Having a Water Capacity Greater Than 4,000 Gallons Used in Bulk Plants and Industrial Plants

A	B	C	D		E	F	G
Container #	LP-Gas inlet to and outlet from the container**		Figure #		Total Number of Product Release Control Appurtenances		NFPA 58 Section Reference (2017 edition)
					Required by NFPA 58 (2017 edition)	Installed on the container	
1	Vapor	Inlet	5-2	3	2	2	See Table 5.9.4.2
		Outlet	5-3	2	2	2	
	Liquid	Inlet	5-6 A	2	4	4	
		Outlet	5-7 A	1	4	4	
2	Vapor	Inlet	5-2	3	2	2	Same reference as indicated above
		Outlet	5-3	2	2	2	
	Liquid	Inlet	5-6 A	2	4	4	
		Outlet	5-7 A	1	4	4	
3	Vapor	Inlet	5-2	3	2	2	
		Outlet	5-3	2	2	2	
	Liquid	Inlet	5-6 A	2	4	4	
		Outlet	5-7 A	1	4	4	
4	Vapor	Inlet	5-2	3	2	2	
		Outlet	5-3	2	2	2	
	Liquid	Inlet	5-6 A	2	4	4	
		Outlet	5-7 A	1	4	4	
5	Vapor	Inlet	5-2	3	2	2	
		Outlet	5-3	2	2	2	
	Liquid	Inlet	5-6 A	2	4	4	
		Outlet	5-7 A	1	4	4	

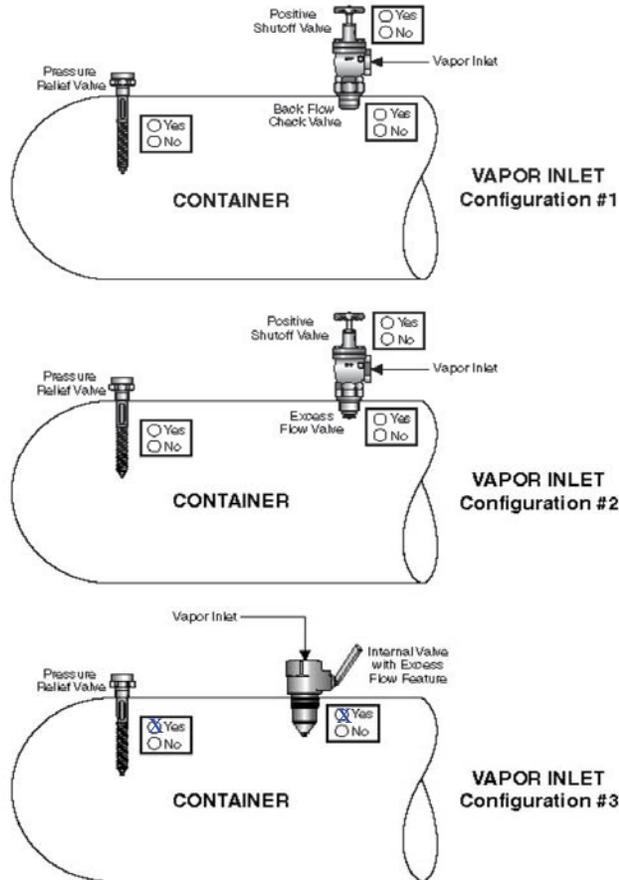
**If the container does not provide an opening for the specific function listed, enter 0 (zero) in columns E and F corresponding to that row.

If in Form 5.3 any one of the numbers in column F is less than the number in Column E of the corresponding row, these items must be addressed and brought into compliance with the specific edition of NFPA 58 that the facility was constructed to.

PART 3 ANALYSIS OF PRODUCT CONTROL MEASURES IN CONTAINERS AND TRANSFER PIPING

Platinum Propane - Mahopac NY - (2) 30K

Figure 5-2: Vapor Inlet Appurtenances on Containers of Water Capacity Greater Than 2,000 Gallons in bulk and industrial plants

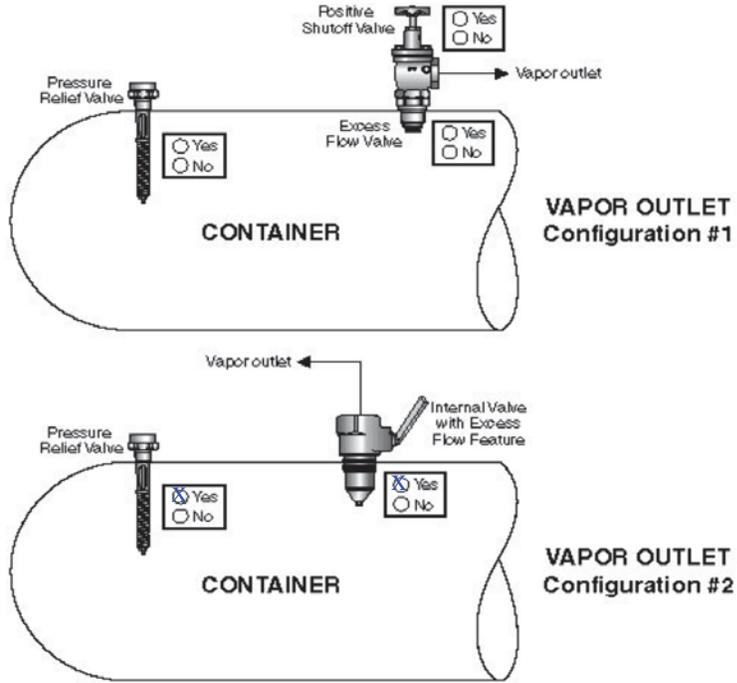


Note: Container appurtenances shown are illustrative of product control equipment only. See NFPA 58 for all container appurtenances required. Illustrations are not intended to be used for system design purposes.

PART 3 ANALYSIS OF PRODUCT CONTROL MEASURES IN CONTAINERS AND TRANSFER PIPING

Platinum Propane - Mahopac NY - (2) 30K

Figure 5-3: Vapor Outlet Appurtenances on Containers of Water Capacity Greater Than 2,000 Gallons in bulk and industrial plants

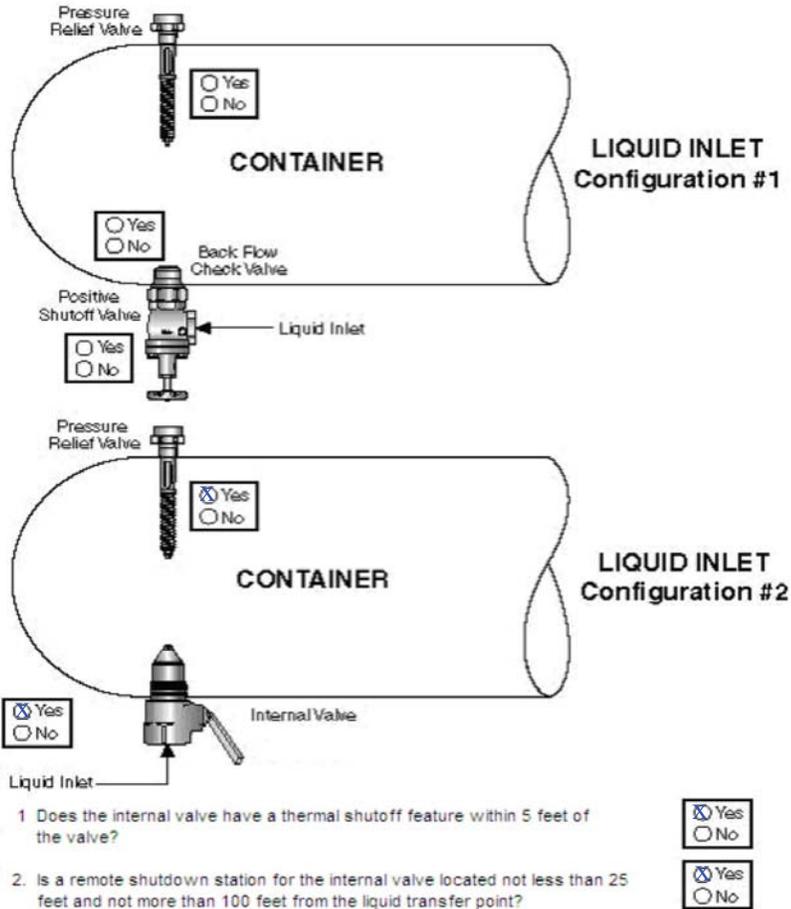


Note: Container appurtenances shown are illustrative of product control equipment only. See NFPA 58 for all container appurtenances required. Illustrations are not intended to be used for system design purposes.

PART 3 ANALYSIS OF PRODUCT CONTROL MEASURES IN CONTAINERS AND TRANSFER PIPING

Platinum Propane - Mahopac NY - (2) 30K

Figure 5-6A Liquid Inlet Valves on Containers With Water Capacity Greater Than 4,000 Gallons in New installations

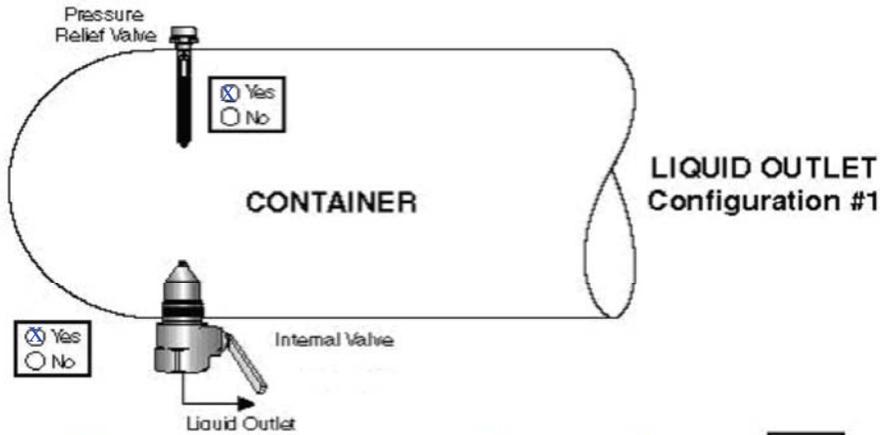


Note: Container appurtenances shown are illustrative of product control equipment only. See NFPA 58 for all container appurtenances required. Illustrations are not intended to be used for system design purposes.

PART 3 ANALYSIS OF PRODUCT CONTROL MEASURES IN CONTAINERS AND TRANSFER PIPING

Platinum Propane - Mahopac NY - (2) 30K

Figure 5-7A: Liquid Outlet Valves on Containers with Water Capacity Greater Than 4,000 Gallons in New installations



1. Does the internal valve have a thermal shutoff feature within 5 feet of the valve? Yes No
2. Is a remote shutdown station for the internal valve located not less than 25 feet or more than 100 feet from the liquid transfer point? Yes No

Note: Container appurtenances shown are illustrative of product control equipment only. See NFPA 58 for all container appurtenances required. Illustrations are not intended to be used for system design purposes.

PART 4 ANALYSIS OF PRODUCT CONTROL MEASURES IN CONTAINERS AND TRANSFER PIPING

Platinum Propane - Mahopac NY - (2) 30K Form 5.4

**Requirements for Transfer Lines of 1 1/2 inch Diameter or Larger,
Liquid-into-Containers**

Item #	Appurtenance (Either No. 1 or No. 2)**	Appurtenance Provided with the Feature	Installed in the Facility?		NFPA 58 Section Reference (2017 edition)
			Yes	No	
1	Emergency Shutoff Valve (ESV) (Ref § 6.12)	Installed within 20 ft. of lineal pipe from the nearest end of the hose or swivel-type connections.	✓		6.14.2 6.14.3
		Automatic shutoff through thermal (fire) actuation with melting point of thermal element <250°F	✓		6.14.6
		Temperature sensitive element (fusible link) installed within 5 ft from the nearest end of the hose or swivel type piping connected to liquid transfer line.	✓		6.14.6
		Manual shutoff feature provided at ESV installed location.	✓		6.14.12.1
		Manual shutoff device provided at a remote location, not less than 25 ft., and not more than 100 ft. from the ESV.	✓		6.14.12.2
		An ESV is installed on each leg of a multi leg piping each of which is connected to a hose or a swivel type connection on one side and to a header of size 1 1/2 inch in diameter or larger on the other side.	✓		6.14.5 6.14.9
		Breakaway stanchion is provided such that in any pull-away break will occur on the hose or swivel-type connection side while retaining intact the valves and piping on the plant side.	✓		6.14.8
2	Back flow Check Valve (BCK)**	Installed downstream of the hose or swivel-type connection	N/A	N/A	6.14.8
		BCK is designed for this specific application.	N/A	N/A	6.14.3 and 6.12.4
		A BCK is installed on each leg of a multi-leg piping each of which is connected to a hose or a swivel type connection on one side and to a header of 1 1/2 inch in diameter or larger on the other side.	N/A	N/A	6.14.5
		Breakaway stanchion is provided such that in any pull-away break will occur on the hose or swivel-type connection side while retaining intact the valves and piping on the plant side.	N/A	N/A	6.14.8
3	Debris Protection++	Liquid inlet piping is designed or equipped to prevent debris and foreign material from entering the system.	✓		6.21.2.5
4	Emergency discharge control	Flow through facility hose used to transfer LP-Gas from non-metered cargo tank vehicle into containers will stop within 20 seconds of a complete hose separation without human intervention.	✓		6.21.2.6 (3)

** In lieu of an emergency shutoff valve, the backflow check valve (BCK) is only permitted when flow is only into the container and shall have a metal-to-metal seat or a primary resilient seat with metal backup, not hinged with a combustible material (6.14.3, 6.14.4).

++ Retrofit required for existing facilities by July 1, 2011.

PART 4 ANALYSIS OF PRODUCT CONTROL MEASURES IN CONTAINERS AND TRANSFER PIPING

Platinum Propane - Mahopac NY - (2) 30K Form 5.5

**Requirements for Transfer Lines of 1 1/2 inch Diameter or Larger,
Liquid-withdrawal from Containers (TO TRANSPORT UNLOAD/FILL STATION)**

Item #	Appurtenance	Appurtenance Provided with the Feature	Installed in the Facility?		NFPA 58 Section Reference (2017 edition)
			Yes	No	
1	Emergency Shutoff Valve (ESV) (Ref § 6.12)	Installed within 20 ft. of lineal pipe from the nearest end of the hose or swivel-type connections.	✓		6.14.2 6.14.3
		Automatic shutoff through thermal (fire) actuation with melting point of thermal element <250°F	✓		6.14.6
		Temperature sensitive element (fusible link) installed within 5 ft from the nearest end of the hose or swivel type piping connected to liquid transfer line.	✓		6.14.6
		Manual shutoff feature provided at ESV installed location.	✓		6.14.12.1
		Manual shutoff device provided at a remote location, not less than 25 ft., and not more than 100 ft. from the ESV.	✓		6.14.12.2
		An ESV is installed on each leg of a multi leg piping each of which is connected to a hose or a swivel type connection on one side and to a header of size 1 1/2 inch in diameter or larger on the other side.	✓		6.14.5 6.14.9
		Breakaway stanchion is provided such that in any pull-away break will occur on the hose or swivel-type connection side while retaining intact the valves and piping on the plant side.	✓		6.14.8
		Number of ESV's in liquid withdrawal service	1		

Note: If more than one ESV is installed in the facility, use one Form 5.5 for each ESV.

PART 4 ANALYSIS OF PRODUCT CONTROL MEASURES IN CONTAINERS AND TRANSFER PIPING

Platinum Propane - Mahopac NY - (2) 30K Form 5.6

Requirements for Vapor Transfer Lines 1 1/4-inch Diameter or Larger

Item #	Appurtenance	Appurtenance Provided with the Feature	Installed in the Facility?		NFPA 58 Section Reference (2017 edition)
			Yes	No	
1	Emergency Shutoff Valve (ESV) (Ref § 6.12)	Installed within 20 ft. of lineal pipe from the nearest end of the hose or swivel-type connections.	✓		6.14.2 6.14.3
		Automatic shutoff through thermal (fire) actuation with melting point of thermal element <250°F	✓		6.14.6
		Temperature sensitive element (fusible link) installed within 5 ft from the nearest end of the hose or swivel type piping connected to liquid transfer line.	✓		6.14.6
		Manual shutoff feature provided at ESV installed location.	✓		6.14.12.1
		Manual shutoff device provided at a remote location, not less than 25 ft., and not more than 100 ft. from the ESV.	✓		6.14.12.2
		An ESV is installed on each leg of a multi leg piping each of which is connected to a hose or a swivel type connection on one side and to a header of size 1 1/2 inch in diameter or larger on the other side.	✓		6.14.5 6.14.9
		Breakaway stanchion is provided such that in any pull-away break will occur on the hose or swivel-type connection side while retaining intact the valves and piping on the plant side.	✓		6.14.8
2	Backflow check valve (BCK)**	Installed downstream of the hose or swivel-type connection	N/A	N/A	6.14.3
		BCK is designed for this specific application.	N/A	N/A	6.14.4
		A BCK is installed on each leg of a multi leg piping each of which is connected to a hose or a swivel type connection on one side and to a header of 1-1/4 inch in diameter or larger on the other side.	N/A	N/A	6.14.5
		Breakaway protection is provided such that in any pullaway break will occur on the hose or swivel-type connection side while retaining intact the valves and piping on the plant side.	N/A	N/A	6.14.8

** In lieu of an emergency shutoff valve, the backflow check valve (BCK) is only permitted when flow is only into the container and it shall have a metal-to-metal seat or a primary resilient seat with metal backup, not hinged with a combustible material (6.14.3, 6.14.4).

If a checkmark is made in the “No” column of any one of Form 5.4, Form 5.5 or Form 5.6, then these items must be addressed and brought into compliance with the specific edition of NFPA 58 that the facility was constructed to.

If the LP-Gas facility is designed using ALTERNATE PROVISIONS for the installation of ASME CONTAINERS, then continue the analysis below. Otherwise skip section 5.3 and go to Chapter 6.

PART 4 ANALYSIS OF PRODUCT CONTROL MEASURES IN CONTAINERS AND TRANSFER PIPING

Platinum Propane - Mahopac NY - (2) 30K FORM 5.7

Evaluation of Redundant and Fail-Safe Design

A	B	C	D	E	F
Item#	Description	Features	Installed in the facility?		NFPA 58 Section Reference (2017 edition)
			Yes	No	
1	Container Sizes for which the appurtenances are provided	Redundant Fail-Safe equipment and Low Emission transfer lines are provided for <u>each</u> container of water capacity greater than 2,000 gal through 30,000 gal	N/A	N/A	6.30.3 and 6.30.4
2	LIQUID OR VAPOR WITHDRAWAL (1-1/4 in. or larger)	Internal Valve with integral excess flow valve or excess flow protection	✓		6.30.3.1
		Positive Shutoff Valve installed as close as possible to the Internal Valve	✓		6.30.3.4
3	LIQUID OR VAPOR INLET	Internal Valve with integral excess flow valve or excess flow protection or Back Flow Check valve	✓		6.30.3.5
		Positive Shutoff Valve installed as close as possible to the Internal Valve or the back flow check valve	✓		6.30.3.5
4	Railcar Transfer	Flow Into or Out of Railroad tank car Internal Valve installed in the transfer hose or the swivel-type piping at the tank car end	N/A	N/A	6.21.2.6(1) and 6.30.4.1
		Flow Only into railroad tank car Internal valve or backflow check valve installed in the transfer hose or the swivel-type piping at the tank car end	N/A	N/A	6.21.2.6 (2) and 6.30.4.1
5	Cargo Tank Transfer	Protection provided in accordance with 6.26.4.1	✓		6.30.4.1
6	Automatic closure of all primary valves (IV & ESV) in an Emergency	Actuated by Fire Detection	✓		6.30.4.2
		Actuated by a hose pull-away due to vehicle motion	✓		6.30.4.2
7	Manually operated remote shutdown of IV and ESV	Remote shutdown station within 15 ft of the point of transfer?	✓		6.30.4.3(A)
		Another remote shutdown station between 25 ft and 100 ft of the transfer point?	✓		6.30.4.3(B)
		Shutdown stations will shut down electrical power supply, if any, to the transfer equipment and primary valves?	✓		6.30.4.3
		Signs complying with the requirements of 6.24.4.3 (C) provided?	✓		6.30.4.3(C)

Note: If the facility does not have a rail terminal, enter "NA" in both the "Yes" Column and the "No" Column in item 4 of this Form in the railroad tank car row. Similar option is also available if there is no cargo tank vehicle transfer station.

PART 5 ANALYSIS OF LOCAL CONDITIONS OF HAZARD

Platinum Propane - Mahopac NY - (2) 30K FORM 6.1

Evaluation of Physical Protection and Other Measures

#	Item	Features	Installed in the Facility?		NFPA 58 Section Reference (2017 edition)
			Yes	No	
1	Lighting	Provide lighting for nighttime operations to illuminate storage containers, container being loaded, control valves, and other equipment.	✓		6.21.5
2	Vehicle impact protection	Protection against vehicular (traffic) impacts on containers, transfer piping and other appurtenances is designed and provided commensurate with the size of vehicles and type of traffic in the facility.	✓		6.27.3.13
3	Protection against corrosion	Provide protection against corrosion where piping is in contact with supports or corrosion causing sub-stances.	✓		6.19
4A	Perimeter Fence	Is an industrial type or chain link fence of at least 6 ft high or equivalent protection provided to enclose (all around) container appurtenances, pumping equipment, loading and unloading and container filling facilities?	✓		6.21.4.2
		Are at least two means of emergency accesses (gates) from the enclosure provided?	✓		6.21.4.2(A)
		Is a clearance of, at least, 3 feet all around to allow emergency access to the required means of egress been provided?	✓		6.21.4.2(B)
	Guard Service	If a guard service is provided, does this service cover the LP-Gas plant and are the guard personnel provided with appropriate LP-Gas related training, per section 4.4 of NFPA 58?	N/A Guard service not used	N/A	6.21.4.3
4B	Lock-in-Place Devices	Are Lock-in-Place devices provided to prevent unauthorized use or operation of any container appurtenance, system valves, equipment in lieu of the fence requirements above?	N/A	N/A	6.21.4.2(D)

Note: Fill only items 1, 2, 3, and 4A or 4B. Indicate with "NA" when not filling the "Yes" or "No" column.

Evaluation of LP-Gas facility's Physical Protection Measures. Tank control valves and piping will be protected from vehicular traffic with guardrail, and tampering with any equipment by a chain link fence of at least 6 ft in height that encompasses entire property. Fencing will include access and egress gates.

PART 5 ANALYSIS OF LOCAL CONDITIONS OF HAZARD

Platinum Propane - Mahopac NY - (2) 30K

FORM 6.2

Ignition Source Control Assessment

#	Sources of Ignition and Requirements Pertaining to Adjacent Combustible Materials	Installed in the Facility?		NFPA 58 Section Reference (2017 edition)
		Yes	No	
1	Are combustible materials, weeds and tall grass not closer than 10 ft from each container?	✓		6.5.3.3
2	Is distance at least 20 ft between containers and tanks containing flammable liquids with flash point less than 200°F (ex., gasoline, diesel)?	✓		6.5.3.6
3	Are electrical equipment located and wiring installed per Code requirements?	✓		6.25.2
4	Are open flame equipment located and used according to code?	✓		6.25.3
5	Are ignition control procedures and requirements during liquid transfer operations complied with?	✓		7.2.3.2
6	Is an approved, portable, dry chemical fire extinguisher of minimum capacity 18 lbs and have a B:C rating provided in the facility?	✓		6.29.4.2
7	Is an approved, portable, dry chemical fire extinguisher of minimum capacity 18 lbs and have a B:C rating provided on each truck or trailer used to transport portable containers?	✓		9.3.5 and 9.4.7
8	Is the prohibition on smoking within the facility premises strictly enforced?	✓		7.2.3.2(B) & 9.4.10

Note: Insert "NA" in both "Yes" and "No" columns of any items that are not applicable.

Note: See NFPA 58 for complete requirements.

PART 5 ANALYSIS OF LOCAL CONDITIONS OF HAZARD

Platinum Propane - Mahopac NY - (2) 30K FORM 6.3

Separation Distances from Containers to Buildings, Property Line that can be Built Upon, Inter-container Distances, and Aboveground flammable or Combustible Storage Tanks

Item #	Container Size Range in Gallon (W.C.) of largest container in group	Separation between a <u>neighboring buildable property line</u> , important bldg or other property and the nearest container which is	Minimum Distance (ft)	Is the Facility Compliant		NFPA 58 Section Reference (2017 edition)	
				Yes	No		
1	501 through 2,000	Above Ground	25	N/A	N/A	6.4.1, 6.4.2 and Table 6.4.1.1	
		Underground or Mounded	10	N/A	N/A		
		Between Containers	3	N/A	N/A		
2	2,001 through 30,000	Aboveground	50	N/A	N/A		
		Underground or Mounded	50	✓			
		Between containers	5	✓			
3	30,001 through 70,000	Above Ground	75	N/A	N/A		
		Underground or Mounded	50	N/A	N/A		
		Between Containers	1/4 sum of diameters of adjacent containers	N/A	N/A		
4	70,001 through 90,000	Above Ground	100	N/A	N/A		
		Underground or Mounded	50	N/A	N/A		
		Between Containers	1/4 sum of diameters of adjacent containers	N/A	N/A		
5	All sizes greater than 125 gal	Separation distance between a LP-Gas container and an above ground storage tank containing flammable or combustible liquids of flash points below 200°F.	20	N/A	N/A		6.5.3.6 and 6.5.3.7

Note: If any of the container sizes indicated in the above form are not present in the facility, enter "NA" in both Yes and No columns.

Assessment of separation distances between containers and important buildings, other properties, build-able property lines, and transfer points, shows the LP-Gas facility will meet all requirements for separation distances as required in NFPA 58.

PART 5 ANALYSIS OF LOCAL CONDITIONS OF HAZARD

Platinum Propane - Mahopac NY - (2) 30K FORM 6.4

Separation Distances between Points of Transfer and other Exposures

Item #	Type of Exposure within or outside the facility boundary		Check if exposure is present	Minimum Distance (ft)	Is the Facility Compliant		NFPA 58 Section Reference (2017 edition)
					Yes	No	
1	Buildings, mobile homes, recreational vehicles, and modular homes with fire-resistive walls.		N/A	10	N/A		Section 6.7.2 Table 6.7.2.1
2	Buildings with other than fire resistive walls.		✓	25	✓		
3	Building wall openings or pits at or below the level of the point of transfer.		✓	25	✓		
4	Line of <u>adjoining property</u> that can be <u>built upon</u> .		✓	25	✓		
5	Outdoor places of public assembly, including school yards, athletic fields, and playgrounds.		✓	50	✓		
6	Public ways, including public streets, highways, thoroughfares, and sidewalks.	From points of transfer in LP-Gas dispensing stations and at vehicle fuel dispensers.	N/A	10	N/A		
		From other points of transfer	✓	25	✓		
7	Driveways		✓	5	✓		
8	Mainline railroad track centerlines		N/A	25	N/A		
9	Containers other than those being filled		✓	10	✓		
10	Flammable and Class II combustible liquid dispensers and aboveground & underground containers.		N/A	20	N/A		
11	Flammable and Class II combustible liquid dispensers and the fill connections of LPG containers.		N/A	10	N/A		
12	LP-Gas dispensing device located close to a Class I liquid dispensing device.		N/A	10	N/A	6.27.4.3	

NOTE: Place a checkmark in column C against an exposure that is present in or around the facility. Fill columns E or F for only those rows for which there is a checkmark in column C.

Assessment of separation distances between transfer points and other exposures shows facility will be compliant

If the facility contains low emission transfer equipment (i.e, all equipment identified in Form 5.7 are installed and are in working order), then the minimum separation distances in column D of Form 6.4 can be reduced to one half of the indicated values.

PART 5 ANALYSIS OF LOCAL CONDITIONS OF HAZARD

Platinum Propane - Mahopac NY - (2) 30K FORM 6.7

PROTECTION AGAINST VEHICULAR IMPACT

#	SYSTEM PROTECTED	IS PHYSICAL PROTECTION		TYPE OF PHYSICAL PROTECTION	NFPA 58 Section Reference (2017 Edition)
		YES	NO		
1	STORAGE CONTAINER	N/A	N/A	TANKS ARE UNDERGROUND AND DO NOT HAVE ANY VEHICULAR TRAFFIC NEAR THEM	6.8.1.2, 6.8.6.1(B), 6.8.6.1(C), 6.11.3.10, and 6.27.3.13
2	TRANSFER STATIONS	✓		BOLLARDS AT ALL PIPING LOCATIONS AND TRUCK STATIONS	
3	ENTRY WAY INTO PLANT	✓		FENCING AROUND ENTIRE TANK AND LOADING FACILITY	

PART 6 EXPOSURE TO AND FROM OTHER PROPERTIES, POPULATION DENSITY

CHAPTER 7

Exposure To and From Other Properties, Population Density

7.1 Exposure to Off-Site Properties and Persons From In-Plant Propane Releases

Types of Propane Fires: A propane release inside the LP-Gas facility may affect adjacent properties and off-site populations if the release is of a sufficiently large size. An immediately ignited release will result in a local fire. Depending upon the characteristics of the release and ignition two types of local fires can occur, namely, a pool fire on any liquid pool of propane on the ground or a burning rising fireball.

If the released propane is not immediately ignited, then a dispersing cloud (or plume) of vapor will form. The cloud or plume will move in the direction of the wind. Because of the mixing of air with the dispersing propane, propane concentration decreases continuously both with downwind distance as well as in the crosswind direction. This cloud or plume can be ignited at any distance downwind by an ignition source when the concentration at the point of ignition is within the Lower Flammability Limit (LFL) to Upper Flammability Limit (UFL) range. For propane the range of flammable concentrations in air is between 2.15% and 9.6% by volume.

Ignition of a dispersing vapor cloud or plume may result in a flashback type of vapor fire. In extremely rare cases, and only when the physical conditions are conducive, with partial or full confinement of the propane-air mixture of proper concentration and its ignition, a vapor explosion can occur, resulting in a blast wave. If the dispersing cloud is not ignited it poses no hazard to the surrounding area.

Propane vapor at ambient pressure and temperature is heavier than air. Hence, any vapor released will tend to flow towards and accumulate in low-lying areas adjacent to the release location. If a building or other semi-confined area exists adjacent to the release location wherein the vapor can accumulate in the lower parts of the building, a potential explosion hazard will result.

Hazardous Effects of a Fire: The effect of a propane fire on an off-site property will depend on the type and material of construction of the structure and its distance from the fire and fire size. Similarly, the number of off-site persons adversely impacted by a fire inside a LP-Gas facility will also depend on, (in addition to the characteristics of the fire and the distance between the fire and the population) the type of population, the timeliness of notification, the effectiveness of the evacuation planning and implementation, etc.

Release Cases: In this manual, a number of mathematical models were developed for credible accident scenarios, to describe the effects of the release of propane inside LP-Gas facilities and its subsequent behavior. These models were used to calculate potential hazard areas for each scenario of release. Each potential release discussed has very low probability of occurrence. However, because of the flammability of propane, such releases may pose hazards. The hazard distance (to a property outside the facility boundary or to off-site persons) from a propane release within the facility will depend on the size and duration of release, and the type of fire that occurs.

The calculated distance to which a hazard extends under each scenario of release and for each hazard behavior is indicated in Table 7.1.

To assess the hazards posed to offsite population from in-plant releases of propane it is necessary to:

1. Note the type of occupancies surrounding the facility, and
2. Describe in detail the characteristics and density of the population surrounding the facility.

To evaluate the impact on the surrounding population from an in-plant propane release, complete Form 7.2 using the results indicated in Table 7.1.

PART 6 EXPOSURE TO AND FROM OTHER PROPERTIES, POPULATION DENSITY

Platinum Propane - Mahopac NY - (2) 30K TABLE 7.1

Distances to Various Types of Propane Hazards Under Different Release Models

Model #	Details of the Propane Release Model Releases from or due to	Vapor Dispersion Distance to LFL	Explosion Hazard Distance (ft)	Fire Ball Radiation Distance
1a	Bobtail hose failure. Release of the entire inventory in the hose, quickly.	1" ID x 150 ft hose length 250	110	50
1b		1" ID x 120 ft hose length 230	103	45
1c		1" ID x 75 ft hose length 190	90	40
2a	Release of the inventory in a transfer piping 1" x 30 ft @ 20 gpm for 10 min., due to failed excess flow valve.	135	120	25
2b	Release of the inventory in a transfer piping 2" x 30 ft @80 gpm for 10 mins.	230	252	48
2c	Release of the inventory in a transfer piping 2" x 80 ft. @ 70 gpm for 10 mins.	328	235	74
2d	Release of the inventory in a transfer piping 2.5" x 30 ft @80 gpm for 10 mins.	269	252	59
2e	Release of the inventory in a transfer piping 3" x 30 ft @100 gpm for 10 mins.	312	287	69
2f	Release of the inventory in a transfer piping 3" x 18 ft @100 gpm for 10 mins.	256	284	55
2g	Release of the inventory in a transfer piping 3" x 80 ft @100 gpm for 10 mins	455	284	106
2h	Release of inventory from transfer piping 4" x 30 ft. + 200 gpm for 10 minutes	407	410	89
3	Release from the container pressure relief valve	No ignitable vapor concentration at ground level		
4	Release from a 1" ID x 150 ft transfer piping to a vaporizer and reduced flow from a partially open excess flow valve @ 20 gpm for 10 min.	250	120	50
5	Leak from a corrosion hole in a transfer pipe at a back pressure of 130 psig (corresponding to 80 °F) for 60 min. Hole size is 1/4" ID.	110	120	5

PART 6 EXPOSURE TO AND FROM OTHER PROPERTIES, POPULATION DENSITY				
Platinum Propane - Mahopac NY - (2) 30K			TABLE 7.1 (continued)	
Distances to Various Types of Propane Hazards Under Different Release Models **				
Model #	Details of the Propane Release Model Releases from or due to	Vapor Dispersion Distance to LFL	Explosion Hazard Distance (ft)	Fire Ball Radiation Distance
6a	Release of the entire inventory in a 2.5"ID x 20 ft., transfer hose.	195	90	40
6b	Release of the entire inventory in a 2.5 inch dia. transfer hose x 16 ft. length	215	98	45
6c	Release of the entire inventory in a 3-inch dia. transfer hose x 12 ft. length	230	100	46
6d	Release of the entire inventory in a 1.25-inch diameter transfer hose x 20 ft. in length	138	66	27
7a	Transport hose blow down: Hose size 2" ID, 20 ft length release for 3min., from a Transport after the tank is filled.	25	30	<5
7b	Transport hose blow down: Hose size 2.5" ID, 16 ft length release for 3min., from a Transport after the tank is filled.	25	29	<5
7c	Transport hose blow down: Hose size 3" ID, 16 ft length release for 3min., from a Transport after the tank is filled.	31	36	<5

** Results from models described in Appendix B.

PART 6 EXPOSURE TO AND FROM OTHER PROPERTIES, POPULATION DENSITY

Platinum Propane - Mahopac NY - (2) 30K

Form 7.1

Types of Occupancies ⁽¹⁾ Near or Surrounding the LP-Gas Facility

Types of Occupancies	Model # from Table 7.1	Hazard Distance ⁽²⁾ (feet)	Is an Occupancy located within the hazard distance from the facility?
			Yes/No
Assembly Occupancies (Places of worship, Libraries, Theaters and Auditoriums, Food or Drink Bars, Sports Stadiums, Amusement Parks, Transportation centers, etc. with 50 or more people.	1A	110	No
Institutional Occupancies (Elderly Persons Home or Nursing Home, Hospitals, Alcohol & Drug Rehabilitation Centers, Prisons)	1A	110	No
Educational Occupancies (Elementary Schools, Day Care facilities, etc).	1A	110	No - neighboring facility is outside of the hazard area

Notes: (1) Different types of occupancies are defined in NFPA 5000

(2) Table 7.1 provides a number of scenarios that can result in propane release, and the resulting area exposed for different ignition mechanisms. Determine the scenarios that are applicable to the facility, for the quantities that can be released, and enter the greatest value from Table 7.1. Use the hose diameters and length that will be used at the facility if they differ from the ones in Table 7.1 and recalculate the hazard distances using a spreadsheet method that is available at npga.org. Some scenarios may not be applicable to an installation because of other mitigation measures implemented, such as a hose management procedure to minimize the possibility of hose failure.

PART 6 EXPOSURE TO AND FROM OTHER PROPERTIES, POPULATION DENSITY

Platinum Propane - Mahopac NY - (2) 30K FORM 7.2

Exposure to LP-Gas Facility from External Hazards

A	B	C	D
Item #	Type of <u>Neighboring</u> Operation	Hazard exists to the LP-Gas Facility	
		<u>YES</u>	<u>NO</u>
1	Petroleum and other hazardous material storage, wholesale dispensing, etc.	NA	NA
2	Metal cutting, welding, and metal fabrication	NA	NA
3	Industrial Manufacturing that can pose external hazards	NA	NA
4	Ports, rail yards and trans-shipment terminals handling flammable and explosive materials.	NA	NA
5	Other operations that may pose hazards (Gasoline and other hazardous material dispensing stations, fertilizer storage, etc.)	NA	NA

Note: If a particular activity in column B does not exist, fill both "YES" and "NO" columns with "NA".

All code and local setbacks are met, and all points of transfer and storage for each neighboring operation meet and exceed set back requirements from one another.

PART 7 EVALUATION OF FIRE SERVICES AND WATER SUPPLY REQUIREMENTS

CHAPTER 8

Evaluation of Fire Services and Water Supply Requirements

In this chapter the procedure for evaluating the capability and resources of the local fire department (FD) that would respond to an emergency at the LP-Gas facility is discussed. This evaluation includes the training of FD personnel, availability of suitable fire apparatus and equipment, and determination of water requirements if such a system were to be installed at the facility.

8.1 Details of the Fire Service

Use Form 8.1 to record the relevant data on personnel and resources from the local FD or fire company that is responsible for the area where the LP-Gas facility is located. This is a good opportunity to establish a working relationship with the fire department as you will need their support as you go forward with this planning and evaluation process and they will need to understand the facility to provide maximum assistance should an incident occur at the facility.

Analyzing the data from Form 8.1: The designation of the fire fighters as career personnel or volunteers has no bearing on the expertise of the department. The purpose of items 4 and 5 in Form 8.1 is to help determine how fast the initial help might be available. Career fire fighters are in the station and available to respond. Volunteer fire fighters may have to come from home or their place of business. Career fire fighters can normally have a piece of fire apparatus responding within one minute of receiving the call, volunteers may take 4-5 minutes to reach the station before they can respond.

Item # 6 helps determine the level of skill of the fire fighters in the fire department. NFPA 1001, Standard for Fire Fighter Professional Qualifications, defines the expertise required of a fire fighter to be qualified to Levels I and II. A Level I fire fighter can do general fire fighting tasks under close supervision and a Level II fire fighter can do those and more tasks under general supervision.

Item # 7A is critical to determining if an effective operation can be conducted. For fighting a fire, at least two fire fighters are required for each 125 gpm hose line used. In addition, an incident commander, a safety officer, additional supervisory officers (depending on the size of the incident), and an operator for each piece of fire apparatus that is being used (pumping or performing some other function) is required. Also required is a rapid intervention crew (RIC) of 2 fire fighters when the first firefighting crew is deployed into a hazardous area, with that team growing to 4 fire fighters when the second and subsequent crews enter the hazardous area. The role of the RIC is to perform a rescue of one or more fire fighters that may be injured during the operation.

Item # 7B and Item # 7C help determine the training and knowledge of the fire fighters in hazardous materials and the specific hazards of LP-Gas. NFPA 472 is Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents.

PART 7 EVALUATION OF FIRE SERVICES AND WATER SUPPLY REQUIREMENTS

Item # 8A and Item # 8B help determine the capability of fire apparatus that will or could respond to an incident. A 125 gpm hose line is a typical hose line used for firefighting where the fire fighters are expected to advance and maneuver the line while it is flowing.

Response time: Another important consideration of the effectiveness of the Fire Department to respond to an incident is the time it takes the FD to reach the LP-Gas facility. Many fire departments have multiple fire stations or use mutual aid fire companies from other communities to assist them so resources are coming from different locations. It is therefore important to determine the total time for not only the first arriving apparatus but for subsequently arriving apparatus dispatched on the first alarm as well. You will need to work with the fire department and gather this information as well.

Using Form 8.2, determine the time for all resources that would be dispatched on the first alarm to an emergency at the facility. Start by identifying and listing in column A the fire companies that would respond on a first alarm to an emergency. Then, for each company record the time it would take to receive and handle an alarm, for the company to turnout, and the time to respond. If the fire department does not have data that can help, some good averages to use are:

- Alarm Receipt & Handling Time - 1 minute for the fire department first receiving the alarm and 3 minutes for mutual aid fire departments,
- Turnout Time - 1 minute if the apparatus is staffed by career fire fighters and 4 minutes if the apparatus is staffed by volunteer fire fighters,
- Travel Time - 2 minutes for each mile the fire apparatus must travel in an urban/suburban setting and 1.5 minutes for each mile the fire apparatus must travel in a rural setting.

Total the times in columns B, C, and D for each company and enter the sum in Column E. This response time will give you an idea of how long it will take resources to reach the facility gate. Fire fighters must then determine the nature and severity of the emergency, determine how they are going to deal with the emergency, maybe establish a water supply from a hydrant or other source, and implement their attack. This can take anywhere from a couple of minutes to upwards of 30 minutes.

8.2 Water Needs and Availability

The requirements for water to cool a container exposed to a fire are indicated in NFPA 15. A flow rate of 0.25 gpm/ft² (10 liter/min/m²) is specified as being adequate to cool a LP-Gas container exposed to a fire. Since a majority of the containers in the LP-Gas facilities have container penetration for liquid inflow or liquid outflow at only one end of the container and since any product leak occurring at one end and a subsequent fire will affect only the end zone of a container, it has been assumed that the container surface within only one half length of the container needs to be cooled for an effective prevention of damage to the container. Also, calculate the total volume of water required on the basis of a stream flow time of 10 minutes.

Based on these parameters and the surface area of various size ASME containers, the cooling water rate requirements for each container size are determined using Form 8.3. Complete Form 8.3 with information relevant to the facility. Start by identifying the largest container at the facility. Assume that a fire occurs at the end of that container where the appurtenances for

PART 7 EVALUATION OF FIRE SERVICES AND WATER SUPPLY REQUIREMENTS

product inflow and outflow are located, and determine whether other containers are within 50 feet of this largest container.

Identify the largest container at the facility and all stationary containers within 50 feet of the largest container. Record in column F of Form 8.3 the largest container. Next, record in Column F the two containers that are within 50 feet of the largest, and which have the most surface area exposed to the end of the largest container at which the appurtenances are installed. These are the containers, which are most likely to be affected by a fire occurring at the appurtenances of the largest container. Multiply the number of containers recorded in Column F by the required water flow rate per container in Column E and enters the result in Column G. Sum the values in Column G and enter the sum in Cell 2a, Column G. Round this number up to the next multiple of 125 (i.e. 725 gpm would round up to 750 gpm). This is done because the application of water by the fire department is generally going to be in increments of 125 gpm. Enter that figure in Cell 2b, Column G.

You have now determined the application rate for cooling water that is necessary if the largest container is subjected to fire. Add 250 gpm (Cell 3, Column G) for use by fire fighters to protect personnel when approaching the container or its valves to control the flow of product. Sum the numbers in Cells 2b and 3 of Column G. Enter that number in Cell 4, Column G. To determine the total volume of water required for a 10-minute application time, multiply the total water flow rate in Cell 4, Column G by 10 and enter that figure into Cell 4, Column H.

PART 7 EVALUATION OF FIRE SERVICES AND WATER SUPPLY REQUIREMENTS

Platinum Propane - Mahopac NY - 30K

FORM 8.1

Data on the Responding Fire Department

Item #	Data Item		Data Entry
1	Name of the Fire Department (FD).		Mahopac Volunteer Fire Department
2A	Name of the person in the FD assisting with the data acquisition		Andrew Roberto
2B	Position of the person in the FD assisting with the data acquisition		Chief
3A	Date on which FD data was provided.		11/14/2022
3B	Name of the person providing the data.		Andrew Roberto/Erica Emig
4	Number of firefighters on duty at any time.		Volunteer- 45 on Roster
5	Average number of firefighters available for response		16
6A	Number of firefighters qualified to	Firefighter I Level	45
6B		Firefighter II Level	17
7A	Number of firefighters who would:	Respond on the first alarm to the facility	16- varies
7B		Respond on the first alarm and who are qualified to the operations level requirements of NFPA 472 or local requirements.	2-4
7C		Respond on the first alarm with specific knowledge and training on the properties of LP-Gas and LP-Gas fires.	10
8A	Number of fire apparatus that have the capability to deploy a 125 gpm hose line supplied by onboard water for at least 4 minutes, and which:	Are in service in the department.	4
8B		Would respond on a first alarm.	4

PART 7 EVALUATION OF FIRE SERVICES AND WATER SUPPLY REQUIREMENTS

Platinum Propane - Mahopac NY - 30K FORM 8.2

Response Time data for the Fire Departments

A	B	C	D	E
Company or Department	Alarm receipt & Handling	Turnout	Travel	Total Time (Minutes)
Mahopac Volunteer Fire Department	1 min	6 min	3 min	10 min

Note: Number in Column E=Sum of numbers from Columns B through D

PART 7 EVALUATION OF FIRE SERVICES AND WATER SUPPLY REQUIREMENTS

Platinum Propane - Mahopac NY - 30K FORM 8.3

Water Flow Rate and Total Water Volume Required to Cool Containers Exposed to a fire

A	B	C	D	E	F	G	H
Item #	ASME Container size (gallons)	Total Surface area of each Container ¹ (sq. ft.)	Surface area of each container to be cooled (sq. ft.)	Water flow rate required per container (gpm)	Number of containers of the size indicated ±	Total Water flow rate required. (B) (gpm)	Total volume of water required for 10 min (gallons)
1	500	86	43	10.8			
	1000	172	86	21.5			
	2000	290	145	36.3			
	4000	374	187	46.8			
	6500	570	285	71.3			
	9200	790	395	98.8			
	12000	990	495	123.8			
	18000	1160	580	145			
	30000	1610	805	201.3	2 UG *	0	0
	45000	2366	1183	295.8			
	60000	3090	1545	386.3			
	90000	4600	2300	575			
other size:							
2a	Calculated water flow rate for container protection					0	0
2b	Water flow rate rounded up to nearest multiple of 125					0	0
3	Water for firefighter protection **if required					250	2500
4	Total water rate and volume					250	2500

NOTE: Column D=(1/2) x Column C Column E = 0.25 (gpm/ft sqed) x Column D

Column G = Column F x Column E Column H = 10 x Column G

Line 2, column G and column H are the sum of numbers in each row above line 2 of each column

Line 4, Column G and Column H are the sum of number in rows 2 and 3

± Consider only 3 containers for water supply evaluations even if the number of containers in a group is more than 3. See Section 8.2.

¹ ASME container approximate dimensions

*** Underground tanks do not require water for surfaces**

The total water requirement for the facility is indicated in item 4, column G (water flow rate) and column H (total water volume or quantity) of Form 8.3. If multiple groups of containers are present in the facility, repeat the calculations in Form 8.3 for each group of containers. The total water requirement for the facility is the largest value for any single group of containers.

PART 7 EVALUATION OF FIRE SERVICES AND WATER SUPPLY REQUIREMENTS

Water Availability Evaluation

If a water system is installed, Form 8.3 calculates the total water requirement for a 10-minute duration. This time period allows for manual shutdown, rescue of any injured, and the possibility of dispersing unignited gas.

If there is a public or private water supply with hydrants available within 1000 feet of the container or containers on which water will be applied, determine the available flow rate from that system with 20 psi residual pressure. The water company may have flow test data or it may be necessary to conduct flow tests. If that flow rate is equal to or greater than the needed flow rate determined using Form 8.3, you can assume your water supply is adequate. If the hydrant flow rate is less than the needed flow rate, determine what other sources of water are available. Sources fall into two categories: water on fire apparatus responding to the incident, and water in rivers, ponds or lakes near the facility. Start by talking with the fire department about whether they have a tanker shuttle capability. Some departments have well-organized operations that can deliver 250 gpm or more on a continuous basis using tanker shuttles. This may be the only capability available or it may be a supplement to a weak hydrant system. Be sure to determine how long it would take to get the water shuttle established.

If there is a river, pond or lake in the area, the fire department may be capable of drafting from that water source and pumping water through hose lines to the facility. There are a number of things that need to be considered before relying on this type of water supply.

1. Can a fire apparatus get close enough to the water source to reach the water with the suction hose it carries (normally 20 feet) and not have the lift (distance from the surface of the water to the center of the pump) greater than 10 feet?
2. Is the water source available year round? Does it dry up in the summer or freeze in the winter? The strainer on the suction hose needs to be at least 2 feet below the surface of the water.
3. Is the water source of adequate size or flow to supply the water needed?
4. Does the fire department have the hose and pumping apparatus to relay the water from the source to the fire?
5. How long will it take to set up this relay?

These factors should be evaluated and discussed with the fire department before any decision is made to use such a supply. It might also be useful to have the fire department conduct an actual timed drill to deliver the needed water supply to the facility site using the normally responding complement of personnel and equipment.

Complete Form 8.4 to document the water supply that will be available to the facility site.

PART 7 EVALUATION OF FIRE SERVICES AND WATER SUPPLY REQUIREMENTS

Platinum Propane - Mahopac NY - 30K Form 8.4

Evaluation of Water Availability in or Near the LP-Gas Facility

A	B	C	D		
Item #	Water from	Available?	Quantitative information		
1	Public supply or from another piped-in supply through one or more fire hydrants in or near the facility		Hydrant data	Distance from Container(s) on which water will be applied (feet)	Available water flow rate from all hydrants ⁽¹⁾ (gpm)
			Hydrant 1		
			Hydrant 2		
2	A nearby static water source stream, pond, lake, etc.	✓	Source: Reservoir Distance to Source: 4000 ft Time to set up: 20 min Available Gallons per min (GPM): 1500 or rating of pumper at draft		
3	Only through a mobile water tanker shuttle.	✓	Time to set up shuttle: 15-20 min		
			Sustainable flow rate: 250 GPM		
Comments:					
Note:					

Having the water available does not guarantee that the fire department has the resources to apply the water in a timely manner. Completed Form 8.2 will indicate how much time it will take for the fire department to have initial resources at the facility and how long before additional resources will be on-site. If the capability to apply cooling water within the first 10 minutes of initial fire exposure to the container is not present, extremely dangerous conditions could begin to develop. Note that it will take several minutes after the apparatus arrives at the facility gate before cooling water is actually applied to the containers and that hand held hose lines will be used with water supplied from the water tank on the apparatus. Even if hydrants are available, the staffing on the first arriving fire apparatus will probably not be sufficient to establish a water supply from the hydrant. Depending on the hydrant system and the fire department's standard operating guidelines, it may be necessary to connect a pumper to the hydrant. If the distance is over 1000 ft. it may also be necessary to use hose from more than one fire apparatus to reach the hydrant and in some cases, to use intermediate pumpers in the hose line to boost the pressure.

Form 8.1 contains information on responding apparatus capable of applying 125 gpm for 4 minutes. This is adequate to begin operations for a single container of 30,000 gallons or less water capacity if no other adjacent containers are exposed to the fire. However, a continuous water supply then has to be established within that 4 minutes or other apparatus must be available with onboard water to continue the cooling until a continuous water supply is set up. A larger facility or multiple containers exposing each other is a different situation. In those cases, cooling water may need to be applied using larger hand held hose lines or ground monitors to achieve the reach necessary with the water stream. Both of these require considerably more water than may be supplied by 125 gpm hose lines. Unless a hydrant system with an adequate flow rate is readily available, the time needed to establish an adequate water supply from remote hydrants, a relay operation from a static water source, or a sustainable tanker shuttle operation will greatly exceed the initial 10 minutes of fire exposure to the container and dangerous conditions could begin to develop. For these facilities, a fixed water spray system is the only practical means by which adequate protection can be provided to installations consisting of multiple 30,000 gallon or larger containers.

Using the data you have gathered, it is recommended that you discuss with the fire department the resources available to protect the facility. This would include evaluating the knowledge and training of the fire fighters who would be arriving at the facility.

PART 8 EVALUATION SUMMARY FOR A PROPOSED NEW LP-GAS FACILITY

Platinum Propane - Mahopac NY - 30K FORM 9.1

Analysis Summary on Product Control and Local Conditions Hazard

Item #	Chapter Title	Section & Title	Reference FORM #	Number of "NO" checked §
1	Product Control Measures in Containers & Transfer Piping	2: Product Control in Containers	N/A	0
			N/A	0
			5.4	0
		4: Product Control in Transfer Piping	5.5	0
			5.6	0
			5.7	0
			5.8	0
2	Analysis of Local Conditions of Hazard (Part 5)	6.1 Physical Protection Measures	6.1	0
		6.2 Ignition Source Control	6.2	0
		6.3.1 Separation distances; Container & outside exposures	6.3	0
		6.3.2 Separation distances; Transfer points & outside exposures	6.4	0
		6.4 Special Protection Measures	N/A	0
			N/A	0

§ The number of "NO" for Forms from Section 5 is the difference between the required number of appurtenances according to NFPA 58-2017, and the (lesser) number found to be actually installed on the container or the transfer piping.

PART 8 EVALUATION SUMMARY FOR A PROPOSED NEW LP-GAS FACILITY

Platinum Propane - Mahopac NY - 30K FORM 9.2

Analysis Summary on Exposure from and to the LP-Gas Facility

A	B	C	D	E
Item #	Chapter Title	Section & Title	Reference FORM #	Number of "Yes" checked
1	Exposure to and from Other Properties	7.1 Exposure to off-site properties & persons from in-plant propane release	7.1	0
		7.2 Exposure to propane facility from external events	7.2	0

Additional Safety Initiatives in Product Release Control: Platinum Propane will have a written safety policy to inspect facility hoses and piping on transfer as required.

Site inspection will be completed on a regular basis during normal days of business operation or at times of transfer.

PART 8 EVALUATION SUMMARY FOR A PROPOSED NEW LP-GAS FACILITY

Platinum Propane - Mahopac NY - 30K FORM 9.3

Analysis Summary on Fire Department Evaluations

A	B	C	D	E	F
Item #	Chapter Title	Section & Title	Reference FORM #	Number "zeros" entered in Column C, Lines 6 through 8 of form 8.1	Number of "Yes" Checked in Column C of Form 8.4
1	Fire Department capability, adequacy of water supply and Emergency Planning (Part 7)	8.1 Data on the Fire Department	8.1	0	
2		8.2 Fire response water needs and availability	8.4		2

FINAL DETERMINATION

Evaluation of Emergency Fire Services show adequate response times and sources of water supply to meet the FSA criteria

Technical References

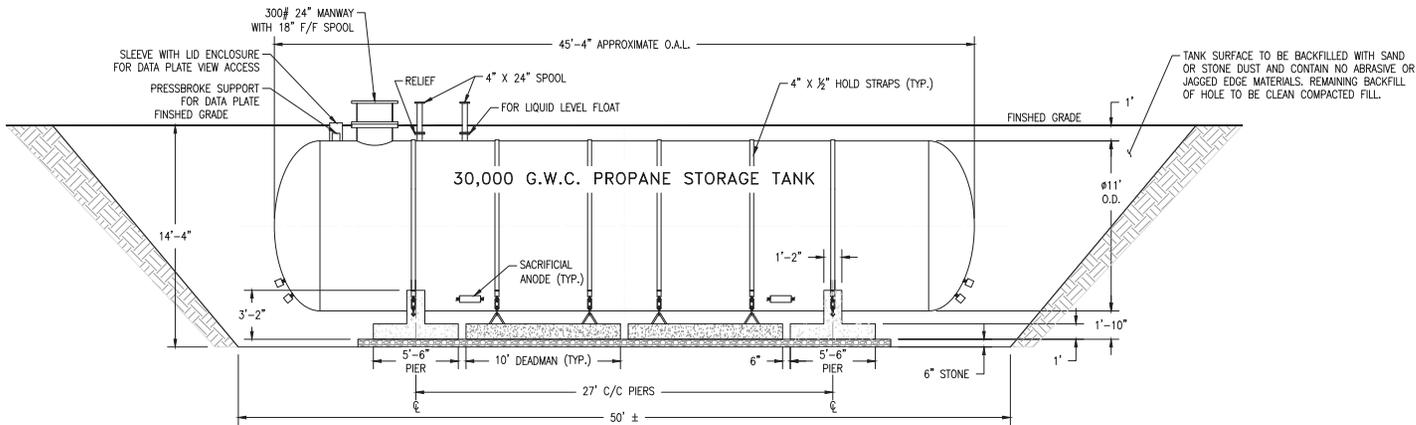
NFPA 58 Liquefied Petroleum Gas Handbook, Lemoff, NFPA, Quincy MA

NFPA 58 Liquefied Petroleum Gas Code, 2017 Edition

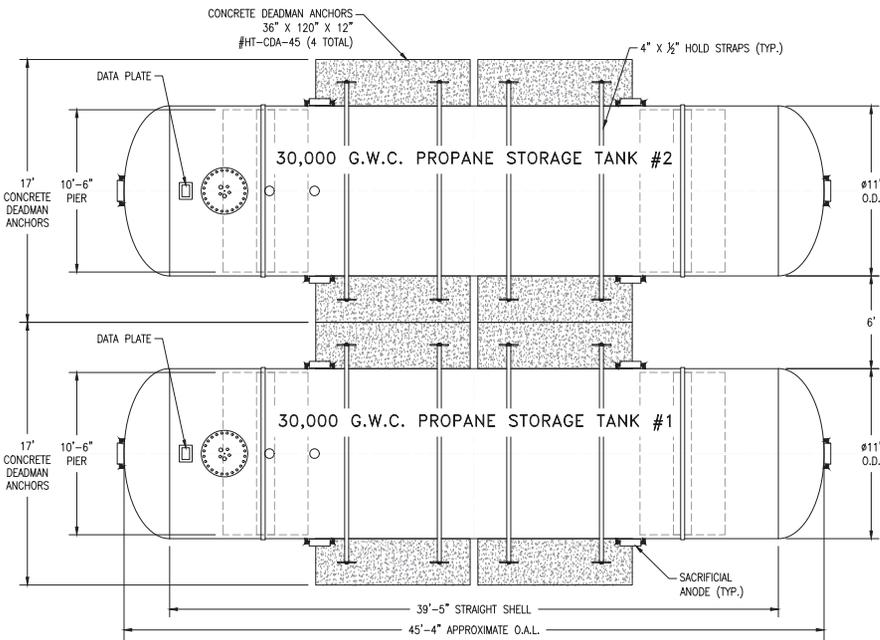
Fire Safety Analysis Manual for LP-Gas Storage Facilities, 2005 Propane Education and Research Council

PRC005025

Hildebrand, M., & Noll, G. (2001) Propane Emergencies. Maryland: Red Hat Publishing



SIDE ELEVATION VIEW
SCALE: 1/4"=1'



TOP ELEVATION VIEW
SCALE: 1/4"=1'

TANK BUOYANCY CALCULATIONS:

TANK BUOYANCY WITH 100% SUBMERSION:

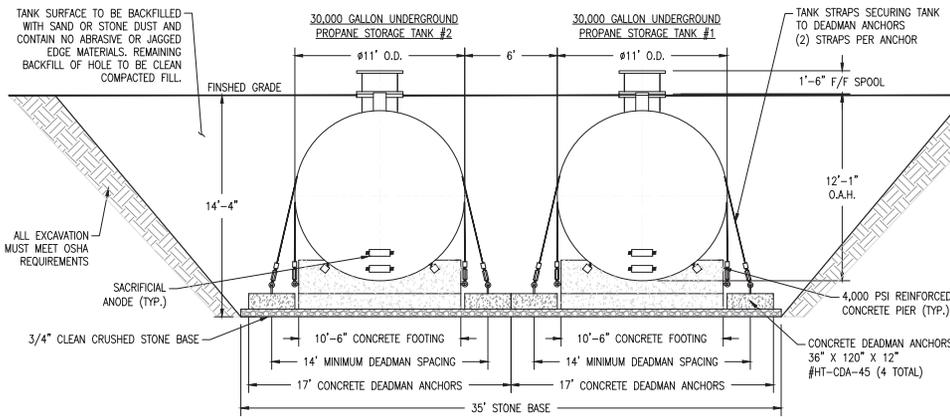
$$F_b = 0.134 \text{ CU.FT./GAL} \times 30,000 \text{ GAL.} \times 62.4 \text{ LB./CU.FT.} = 250,848 \text{ LB.}$$

BALLAST FORCE = TANK WEIGHT + CONCRETE WEIGHT + SOIL OVERBURDEN WEIGHT

$$= 65,000 \text{ LB} + 28,053 \text{ LB} + 210,258 \text{ LB} = 303,311 \text{ LB}$$

$$\text{NET BUOYANCY: } 250,848 \text{ LB} - 303,311 \text{ LB} = -52,463 \text{ LB}$$

SAFETY FACTOR APPROXIMATELY 1.21



END ELEVATION VIEW
SCALE: 1/4"=1'

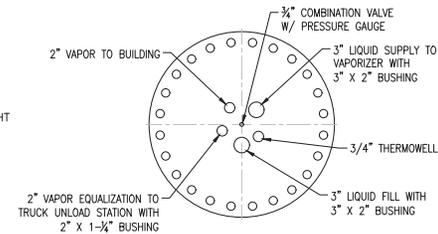
Highland Tank
www.highlandtank.com

CERTIFIED BY: HIGHLAND TANK OF CENTRAL MICHIGAN LLC
4701 WHITE LAKE ROAD, CLARKSTON, MI 48347

MINIMUM DESIGN METAL TEMPERATURE: °F AT PSI
MAX. ALLOWABLE WORKING PRESSURE: PSI AT °F
MANUFACTURER SERIAL NO.

YEAR BUILT:
SERVICE:
WATER CAPACITY: US GALLONS
MAX FILL: %
SHELL THICKNESS: MIN
HEAD THICKNESS: MIN
OVERALL LENGTH: APPROX.
OUTSIDE DIA:
HEAD DESIGN: ELLIPTICAL
OUTSIDE SURFACE AREA: SQ/FT
THIS CONTAINER SHALL NOT CONTAIN A PRODUCT THAT HAS A VAPOR PRESSURE IN EXCESS OF 215 PSIG AT 100 °F

DATA PLATE



MANWAY LID DETAIL
SCALE: 1"=1'

PRELIMINARY

REVISION	BY	DATE

CHESMONT ENGINEERING COMPANY
A HILTZ COMPANY

693 WEST MARKET STREET
MARIETTA, PENNSYLVANIA 17547
PHONE: (717) 799-4832
FAX: (717) 799-4832

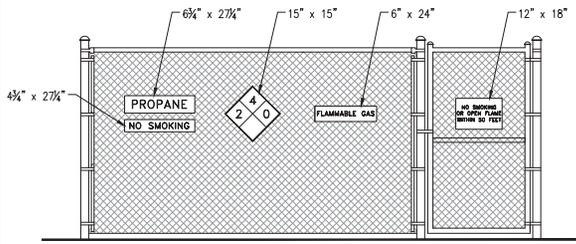
ELEVATION DETAIL

PROJ. NO.
OWNER:
DATE: 10/28/2022
SCALE: 1/4"=1'
CHECKED:

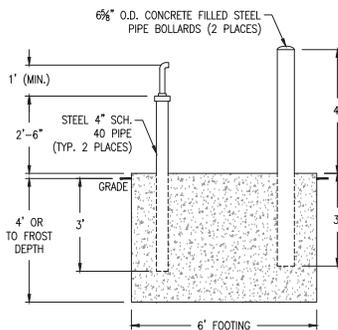
THIS DRAWING IS THE PROPERTY OF HILTZ ENGINEERING COMPANY. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON. ANY REUSE OR REPRODUCTION OF THIS DRAWING WITHOUT THE WRITTEN PERMISSION OF HILTZ ENGINEERING COMPANY IS STRICTLY PROHIBITED.

PLASTIM PROPANE
1035 ROUTE 66
MAHOPAC, NY 10541

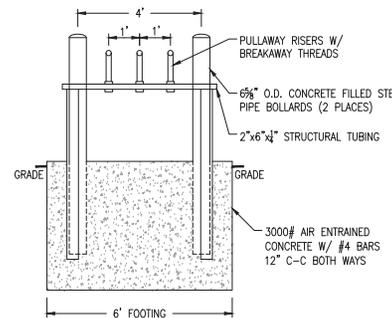
DWG. NO. E-031-22-E1



TYPICAL SWING GATE w/ TYPICAL METAL SIGNAGE ON FENCING
SCALE: NONE



SIDE VIEW

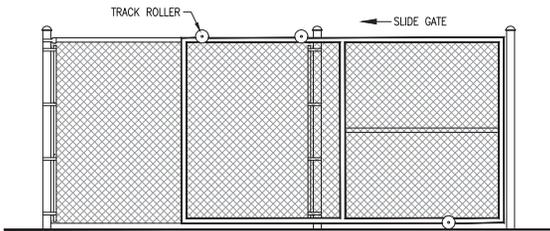


FRONT VIEW

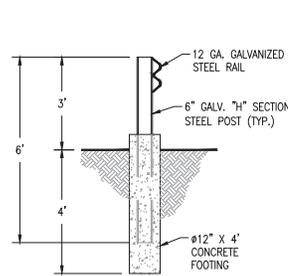
BREAKAWAY STANCHION
SCALE: 1/2\"/>



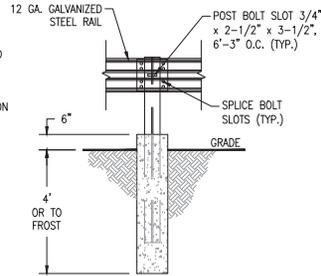
TYPICAL ESV SHUTDOWN SIGN
SCALE: 3\"/>



TYPICAL SLIDE GATE
SCALE: NONE

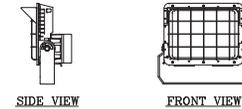


CROSS SECTION



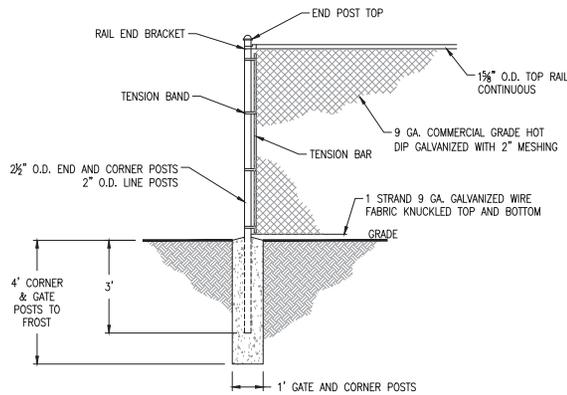
FRONT ELEVATION

GUARD/GUIDE RAIL DETAIL
SCALE: 1/2\"/>

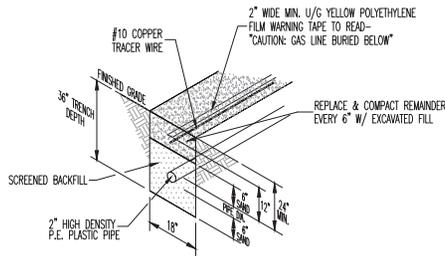


EASTON #FMVA9L 250 WATT LED FLOOD LIGHT OR EQUAL
ELECTRICAL: CLASS 1, DIVISION 2, GROUP D EXPLOSION PROOF

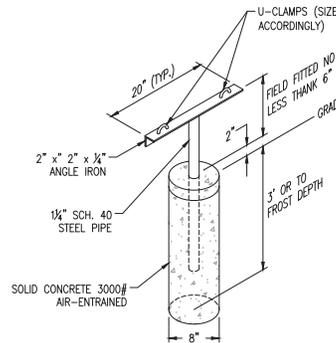
EXPLOSION PROOF LIGHT DETAIL
SCALE: 1\"/>



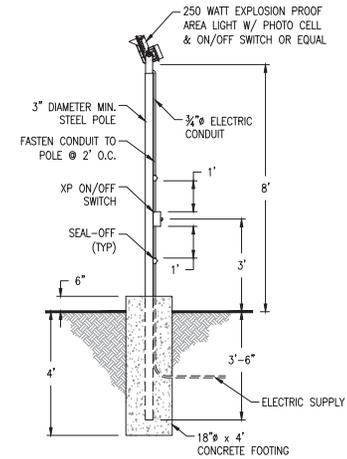
TYPICAL CHAIN-LINK FENCE DETAIL
SCALE: 1/2\"/>



TYP. U/G P.E. PLASTIC PIPE
INSTALLATION DETAIL
SCALE: NONE



TYPICAL PIPE
SUPPORT DETAIL
SCALE: 1\"/>



AREA LIGHT DETAIL
SCALE: 1/2\"/>

FENCING NOTES:

1. ALL FENCING TO BE SIX FEET (6') HIGH.
2. ALL FENCING TO BE 9 GAUGE COMMERCIAL GRADE WITH 2\"/>

REVISION	
BY	
DATE	
SCALE	

PROJECT NO.	
DATE	
SCALE	

CHESMONT
ENGINEERING
A HILTZ COMPANY

683 WEST MARKET STREET
MARIETTA, PENNSYLVANIA 17547
PHONE: (717) 799-4332
PHONE: (610) 594-9200

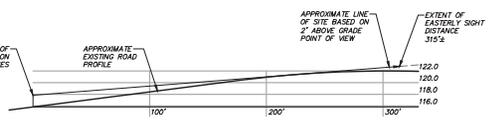
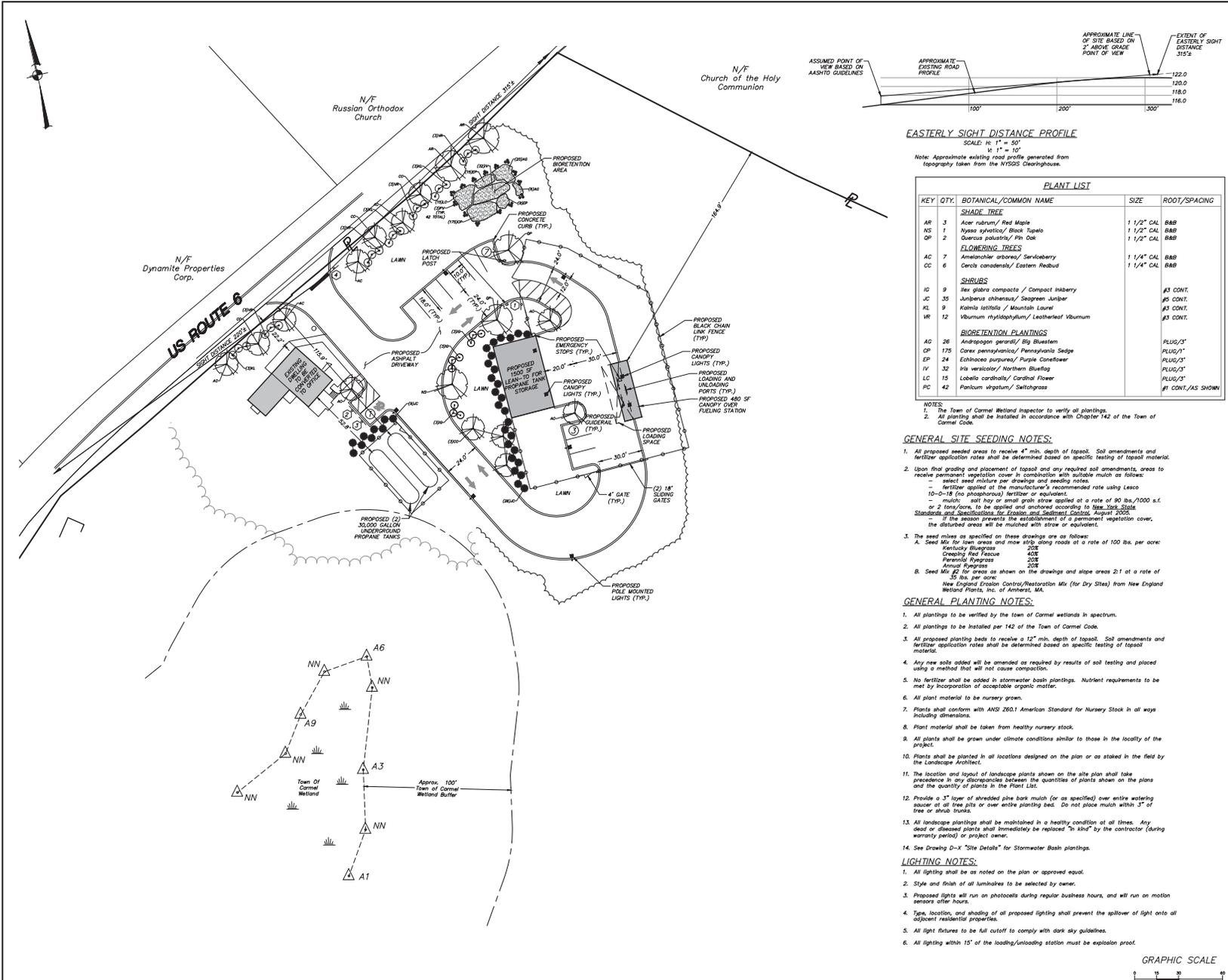
PROJECT	
DATE	
SCALE	

MISCELLANEOUS DETAILS

PLASTIC PROPANE
LOSS ROUTE #6
MAROPAC, NY 10541

DWG. NO. E-031-22-D1

PRELIMINARY



EASTERLY SIGHT DISTANCE PROFILE
SCALE: H: 1" = 50'
V: 1" = 10'

Note: Approximate existing road profile generated from topography taken from the NYSOS Clearinghouse.

KEY	QTY.	BOTANICAL/COMMON NAME	SIZE	ROOT/SPACING
SHADE TREE				
AR	3	Acer rubrum / Red Maple	1 1/2" CAL	B&B
NS	1	Nyssa sylvatica / Black Tupelo	1 1/2" CAL	B&B
QP	2	Quercus palustris / Pin Oak	1 1/2" CAL	B&B
FLOWERING TREES				
AC	7	Amelanchier arborea / Spicebush	1 1/4" CAL	B&B
CC	6	Cercis canadensis / Eastern Redbud	1 1/4" CAL	B&B
SHRUBS				
IG	9	Ilex glabra compacta / Compact Highberry		#3 CONT.
JC	35	Juniperus chinensis / Seagreen Juniper		#5 CONT.
KL	9	Kalmia latifolia / Mountain Laurel		#3 CONT.
VR	12	Viburnum myriodaphylum / Leatherleaf Viburnum		#3 CONT.
BIORETENTION PLANTINGS				
AD	20	Andropogon gerardii / Big Bluestem		PLUG/3"
OP	175	Carex pennsylvanica / Pennsylvania Sedge		PLUG/1"
EP	24	Echinoacea purpurea / Purple Coneflower		PLUG/3"
IV	32	Iris versicolor / Northern Blueflag		PLUG/3"
LC	15	LOBELIA cardinalis / Cardinal Flower		PLUG/3"
PC	42	Panicum virgatum / Switchgrass		#1 CONT./AS SHOWN

- NOTES:
1. The Town of Carmel Wetland Inspector to verify all plantings.
2. All planting shall be installed in accordance with Chapter 142 of the Town of Carmel Code.

GENERAL SITE SEEDING NOTES:

- All proposed seeded areas to receive 4" min. depth of topsoil. Soil amendments and fertilizer application rates shall be determined based on specific testing of topsoil material.
- Upon final grading and placement of topsoil and any required soil amendments, areas to receive permanent vegetation cover in combination with suitable mulch as follows:
 - select seed mixture per drawings and seeding notes.
 - fertilizer applied at the manufacturer's recommended rate using Lesco 10-0-18 (no phosphorus) fertilizer or equivalent.
 - mulch: salt hay or small grain straw applied at a rate of 80 lbs./1000 s.f. or 2 tons/acre, to be applied and anchored according to Mass. Inq. State Standards and Specifications for Erosion and Sediment Control, August 2005.
 - If the season prevents the establishment of a permanent vegetation cover, the disturbed areas will be mulched with straw or equivalent.
- The seed mixes as specified on these drawings are as follows:
 - A. Seed Mix for lawn areas and most steep slopes at a rate of 100 lbs. per acre:
 - Kentucky Bluegrass 20%
 - Creechleaf Fescue 40%
 - Perennial Ryegrass 20%
 - Annual Ryegrass 20%
 - B. Seed Mix #2 for areas as shown on the drawings and slope areas 2:1 at a rate of 35 lbs. per acre:
 - New England Erosion Control/Restoration Mix (for Dry Sites) from New England Wetland Plants, Inc. of Amherst, MA.

GENERAL PLANTING NOTES:

- All plantings to be verified by the town of Carmel wetlands in spectrum.
- All plantings to be installed per 142 of the Town of Carmel Code.
- All proposed planting beds to receive a 12" min. depth of topsoil. Soil amendments and fertilizer application rates shall be determined based on specific testing of topsoil material.
- Any new soils added will be amended as required by results of soil testing and placed using a method that will not cause compaction.
- No fertilizer shall be added to stormwater basin plantings. Nutrient requirements to be met by incorporation of acceptable organic matter.
- All plant material to be nursery grown.
- Plants shall conform with ANSI Z60.1 American Standard for Nursery Stock in all ways including dimensions.
- Plant material shall be taken from healthy nursery stock.
- All plants shall be grown under climate conditions similar to those in the locality of the project.
- Plants shall be planted in all locations designed on the plan or as staked in the field by the Landscape Architect.
- The location and signal of landscape plants shown on the site plan shall take precedence in any discrepancies between the quantities of plants shown on the plans and the quantity of plants in the Plant List.
- Provide a 2" layer of shredded pine bark mulch (or as specified) over entire watering saucer at all tree pits or over entire planting bed. Do not place mulch within 3" of tree or shrub trunks.
- All landscape plantings shall be maintained in a healthy condition at all times. Any dead or diseased plants shall immediately be replaced "in kind" by the contractor (during warranty period) or project owner.
- See Drawing D-X "Site Details" for Stormwater Basin plantings.

LIGHTING NOTES:

- All lighting shall be as noted on the plan or approved equal.
- Style and finish of all luminaires to be selected by owner.
- Proposed lights will run on photocells during regular business hours, and will run on motion sensors after hours.
- Type, location, and shading of all proposed lighting shall prevent the spillover of light onto adjacent residential properties.
- All light fixtures to be full cutoff to comply with dark sky guidelines.
- All lighting within 15' of the loading/unloading station must be explosion proof.

LEGEND	
	EXISTING PROPERTY LINE
	EXISTING BUILDING
	EXISTING WETLAND FLAGS
	EXISTING WETLAND BUFFER
	EXISTING UTILITY POLE
	EXISTING HEDGE ROW
	EXISTING TREE LINE
	PROPOSED BUILDING
	PROPOSED CONCRETE CURB
	PROPOSED PAINTED DIRECTIONAL ARROW
	PROPOSED STRIPED ISLAND
	PROPOSED STOP BAR
	PROPOSED SINGLE POLE SIGN
	PROPOSED POLE MOUNTED LIGHT
	PROPOSED CANOPY LIGHT
	PROPOSED BUILDING MOUNTED LIGHT
	PROPOSED GATE
	PROPOSED LOADING SPACE
	PROPOSED LANDSCAPING

C-ZONE REQUIREMENTS

	REQUIRED / EXISTING	PROPOSED
Minimum Lot Area:	40,000 s.f.	522,500 s.f.
Minimum Width:	200'	722'
Minimum Depth:	200'	722'
Minimum Yard Setbacks:		
Front:	40'	22.2'
Side:	25'	105'
Rear:	30'	432'
Maximum Building Height:	60'	<60'
Minimum Required Floor Area:	5,000 s.f.	1938 s.f.*
Maximum Lot Coverage:	40%	0.7%

* Pre-existing nonconforming condition. Variance Required.

PARKING SUMMARY

OFFICE USE	1 SPACE PER 200 S.F. @ 1,650 S.F.	= 9 SPACES
WHOLESALE/RETAIL/STORAGE/HAZARDOUS COMMERCIAL USE	1 SPACE PER 1,000 S.F. @ 1,500 S.F.	= 2 SPACES
TOTAL PROVIDED SPACES		= 11 SPACES

SIGN DATA TABLE

LOCATION NO.	TEXT	M.U.T.C.D. NUMBER	SIZE OF SIGN (s.f.)	DESCRIPTION
1		RS-1C	30" x 30"	White on Red
2		R7-1	12" x 18"	Red on White
3		NY R7-8*	12" x 18"	Green on White (Blue Symbol)
3		R7-8P	12" x 6"	Green on White
2		R1-1C	30" x 30"	White on Red

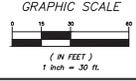
NO.	DATE	REVISION	BY
2	11-23-22	REVISED PER PLANNING BOARD COMMENTS	J.P.
1	5-2-22	REVISED PER PLANNING BOARD COMMENTS	J.T.

INSITE
ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.
3 Corbett Place
Carmel, NY 12012
(845) 225-9690
(845) 225-9717 fax
www.insite-ny.com

PROJECT:
PLATINUM PROPANE - MAHOPAC
1035 ROUTE 6, TOWN OF CARMEL, PUTNAM COUNTY, NEW YORK

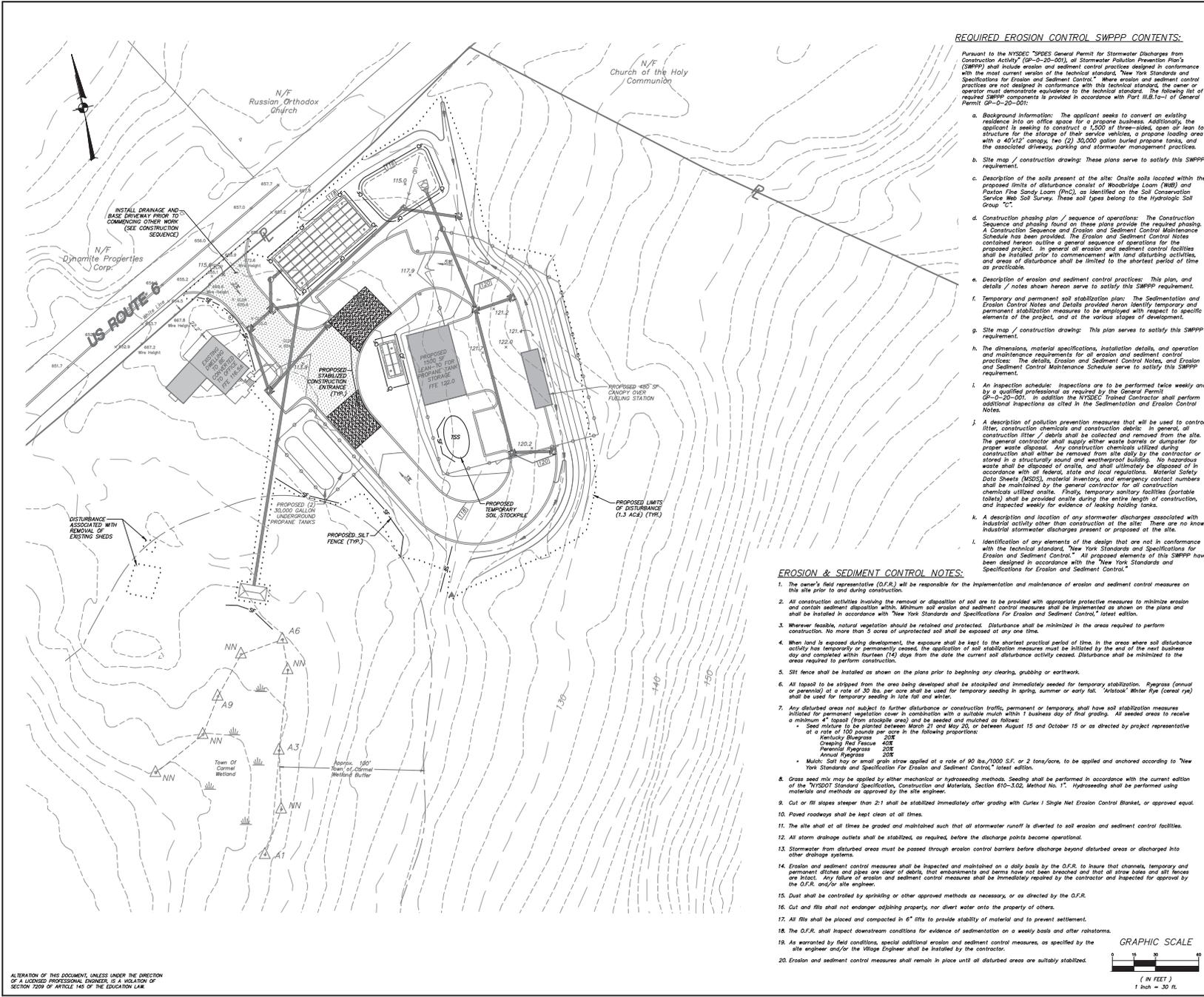
DRAWING:
LANDSCAPE & LAYOUT PLAN

PROJECT NUMBER	22101.100	PROJECT MANAGER	Z.M.P.	DRAWING NO.	SHEET
DATE	3-30-22	DRAWN BY	J.L.T.		2
SCALE	1" = 30'	CHECKED BY	A.D.T.		7



ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.

22101.100.100.Landscape-Plan.dwg, 11/23/22 10:03:03 AM, 0/0/0, 31

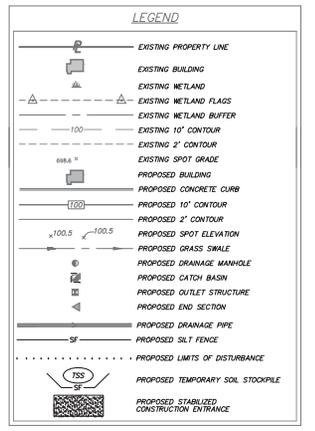


REQUIRED EROSION CONTROL SWPPP CONTENTS:

- Pursuant to the NYSDEC "SPDES General Permit for Stormwater Discharges from Construction Activity" (GP-0-20-001), all Stormwater Pollution Prevention Plans (SWPPP) shall include erosion and sediment control practices designed in conformance with the most current version of the technical standards "New York Standards and Specifications for Erosion and Sediment Control". Where erosion and sediment control practices are not designed in conformance with this technical standard, the owner or operator must demonstrate equivalence to the technical standard. The following list of required SWPPP components is provided in accordance with Part III.B.1.a-i of General Permit GP-0-20-001:
- Background information:** The applicant seeks to convert an existing residence into an office space for a propane business. Additionally, the applicant is seeking to construct a 1,500 of three-sided, open air lean to structure for the storage of their service vehicles, a propane loading area with a 40'x12' canopy, two (2) 30,000 gallon buried propane tanks, and the associated driveway, parking and stormwater management practices.
 - Site map / construction drawings:** These plans serve to satisfy this SWPPP requirement.
 - Description of the soils present at the site:** Onsite soils located within the proposed limits of disturbance consist of Woodbridge Loam (WBL) and Patton Fine Sandy Loam (PFL), as identified on the Soil Conservation Service Web Soil Survey. These soil types belong to the Hydrologic Soil Group "C".
 - Construction phasing plan / sequence of operations:** The Construction Sequence and phasing found on these plans provide the required phasing. A Construction Sequence and Erosion and Sediment Control Maintenance Schedule has been provided. The Erosion and Sediment Control Notes contained herein outline a general sequence of operations for the proposed project. In general all erosion and sediment control facilities shall be installed prior to commencement with land disturbing activities, and areas of disturbance shall be limited to the shortest period of time as practicable.
 - Description of erosion and sediment control practices:** This plan, and details / notes shown herein serve to satisfy this SWPPP requirement.
 - Temporary and permanent soil stabilization plan:** The Sedimentation and Erosion Control Notes and Details provided herein identify temporary and permanent stabilization measures to be employed with respect to specific elements of the project, and at the various stages of development.
 - Site map / construction drawing:** This plan serves to satisfy this SWPPP requirement.
 - The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices:** The details, Erosion and Sediment Control Notes, and Erosion and Sediment Control Maintenance Schedule serve to satisfy this SWPPP requirement.
 - An inspection schedule:** Inspections are to be performed twice weekly and GP-0-20-001, in addition the NYSDEC Trained Contractor shall perform additional inspections as cited in the Sedimentation and Erosion Control Notes.
 - A description of pollution prevention measures that will be used to control litter, construction chemicals and construction debris:** In general, all construction litter / debris shall be collected and removed from the site. The general contractor shall supply either waste barrels or dumpster for proper waste disposal. Any construction chemicals utilized during construction shall either be removed from site daily by the contractor or stored in a structurally sound and weatherproof building. No hazardous waste shall be disposed of onsite, and shall ultimately be disposed of in accordance with all federal, state and local regulations. Material Safety Data Sheets (MSDS), material inventory, and emergency contact numbers shall be maintained by the general contractor for all construction chemicals utilized onsite. Finally, temporary sanitary facilities (portable toilets) shall be provided onsite during the entire length of construction, and inspected weekly for evidence of leaking holding tanks.
 - A description and location of any stormwater discharges associated with industrial activity other than construction at the site:** There are no known industrial stormwater discharges present or proposed at the site.
 - Identification of any elements of the design that are not in conformance with the technical standard, "New York Standards and Specifications for Erosion and Sediment Control":** All proposed elements of this SWPPP have been designed in accordance with the "New York Standards and Specifications for Erosion and Sediment Control".

EROSION & SEDIMENT CONTROL NOTES:

- The owner's field representative (O.F.R.) will be responsible for the implementation and maintenance of erosion and sediment control measures on this site prior to and during construction.
- All construction activities involving the removal or disposal of soil are to be provided with appropriate protective measures to minimize erosion and control sediment disposal with. Minimum soil erosion and sediment control measures shall be implemented as shown on the plans and shall be installed in accordance with "New York Standards and Specifications For Erosion and Sediment Control", latest edition.
- Wherever feasible, natural vegetation should be retained and protected. Disturbance shall be minimized in the areas required to perform construction. No more than 5 acres of unprotected soil shall be exposed at any one time.
- When land is exposed during development, the exposure shall be kept to the shortest practical period of time. In the areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. Disturbance shall be minimized to the areas required to perform construction.
- Silt fence shall be installed as shown on the plans prior to beginning any clearing, grading or earthwork.
- All topsoil to be stripped from the area being developed shall be stockpiled and immediately seeded for temporary stabilization. Ryegrass (annual or perennial) at a rate of 30 lbs. per acre shall be used for temporary seeding in spring, summer or early fall. 'Aristocrat' Winter Rye (annual rye) shall be used for temporary seeding in late fall and winter.
- Any disturbed area not subject to further disturbance or construction traffic, permanent or temporary, shall have soil stabilization measures initiated for permanent vegetation cover in combination with a suitable mulch within 1 business day of final grading. All seeded areas to receive a minimum 4" topsoil (from stockpile area) and be seeded and mulched as follows:
 - Seed mixture to be planted between March 21 and May 20, or between August 15 and October 15 or as directed by project representative at a rate of 100 pounds per acre in the following proportions:
 - Kentucky Bluegrass 20%
 - Crested Dog Fescue 40%
 - Perennial Ryegrass 20%
 - Annual Ryegrass 20%
 - Mulch: Silt hay or small grain straw applied at a rate of 90 lbs./1000 SF, or 2 tons/acre, to be applied and anchored according to "New York Standards and Specifications For Erosion and Sediment Control", latest edition.
- Grass seed mix may be applied by either mechanical or hydroseeding methods. Seeding shall be performed in accordance with the current edition of the NYSDEC Standard Specification, Construction and Materials, Section 610-3.02, Method No. 1". Hydroseeding shall be performed using methods and methods as approved by the site engineer.
- Cut or fill slopes steeper than 2:1 shall be stabilized immediately after grading with Curlex I Single Net Erosion Control Blanket, or approved equal.
- Paved roadways shall be kept clean at all times.
- The site shall at all times be graded and maintained such that all stormwater runoff is diverted to soil erosion and sediment control facilities.
- All storm drainage outlets shall be stabilized, as required, before the discharge points become operational.
- Stormwater from disturbed areas must be passed through erosion control barriers before discharge beyond disturbed areas or discharged into other drainage systems.
- Erosion and sediment control measures shall be inspected and maintained on a daily basis by the O.F.R. to insure that channels, temporary and permanent ditches and dikes are clear of debris, that embankments have not been breached and that all stress bars and all fences are intact. Any failure of erosion and sediment control measures shall be immediately repaired by the contractor and inspected for approval by the O.F.R. and/or site engineer.
- Dust shall be controlled by sprinkling or other approved methods as necessary, or as directed by the O.F.R.
- Cut and fills shall not endanger adjoining property, nor divert water onto the property of others.
- All fills shall be placed and compacted in 6" lifts to provide stability of material and to prevent settlement.
- The O.F.R. shall inspect downstream conditions for evidence of sedimentation on a weekly basis and after rainstorms.
- As warranted by field conditions, special additional erosion and sediment control measures, as specified by the contractor.
- Erosion and sediment control measures shall remain in place until all disturbed areas are suitably stabilized.



REQUIRED POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICE COMPONENTS:

- Pursuant to the NYSDEC "SPDES General Permit for Stormwater Discharges from Construction Activity" (GP-0-20-001), all construction projects needing post-construction stormwater management practices shall prepare a Stormwater Management Plan (SWMP) that includes practices designed in conformance with the most current version of the technical standards "New York Stormwater Management Design Manual ("Design Manual)". Where post-construction stormwater management practices are not designed in conformance with this technical standard, the owner or operator must demonstrate equivalence to the technical standard. The following list of SWPPP components is provided in accordance with Part III.B.2.a-i and III.B.3:
- Identification of all post-construction stormwater management practices to be constructed as part of the project. This plan, and details/notes shown herein serve to satisfy this SWPPP requirement.
- A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice. This plan, and details/notes shown herein serve to satisfy this SWPPP requirement.
- A Stormwater Modeling and Analysis Report including pre-development conditions, post-development conditions, the results of the stormwater modeling, a summary table demonstrating that each practice has been designed in conformance with the stormwater management design manual, and justification for any deviations from the Design Manual, and identification of any design criteria that are not required. The required analysis is shown in the project Stormwater Pollution Prevention Plan.
- Soil testing results and locations. This SWPPP requirement is shown herein.
- Infiltration testing results. This SWPPP requirement is shown herein.
- An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the person that will be responsible for the long term operation and maintenance of each practice. The project Stormwater Pollution Prevention Plan serves to satisfy this requirement.

CONSTRUCTION SEQUENCE:

- Per New York State Law, the contractor shall digitally file New York at 1-800-962-7962, form (2) full days prior to performing any excavation work.
- Install stabilized construction entrance/anti-tracking pad in the locations shown in the plans.
- Install all fence in general locations indicated on the plan.
- Remove the portion of the driveway between the road and stabilized inlet protection, as shown on the plan.
- Install catch structures and piping in that location, and provide inlet protection.
- Base that portion of the proposed driveway.
- Begin clearing and grubbing operations associated with buildings, and remainder of the driveway.
- Stirs and stockpile topsoil on site for later use in lawn and landscape areas.
- Begin excavation for foundations and construction of stormwater management practices, parking and driveways.
- Begin construction of on-site stormwater detention or storage.
- Install infiltration Area, remaining Drains inlets and connect Roof Leader Drains to drainage.
- All embankments are to be graded and seeded immediately upon being laid back.
- Upon completion of construction, install filtered drainage surfaces.
- Topsoil, seed, and mulch all disturbed areas as soon as practical in accordance with the Erosion and Sediment Control Notes contained on this page.

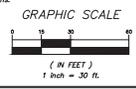
NO.	DATE	REVISION	BY
2	11-23-22	REVISED PER PLANNING BOARD COMMENTS	JLP
1	5-2-22	REVISED PER PLANNING BOARD COMMENTS	JLT

INSITE
ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.
1 Garrett Place
Coram, NY 10017
(845) 225-9690
(845) 225-9717 fax
www.insite-ny.com

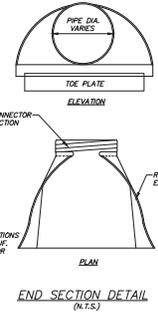
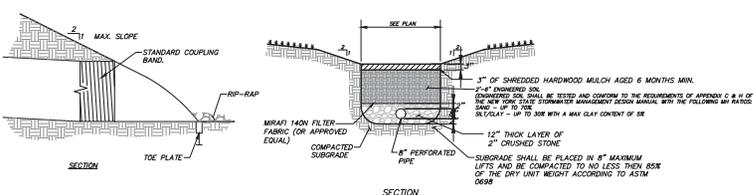
PROJECT: PLATINUM PROPANE - MAHOPAC
1035 ROUTE 6, TOWN OF CAMEL, PUTNAM COUNTY, NEW YORK

DRAWING: EROSION CONTROL PLAN

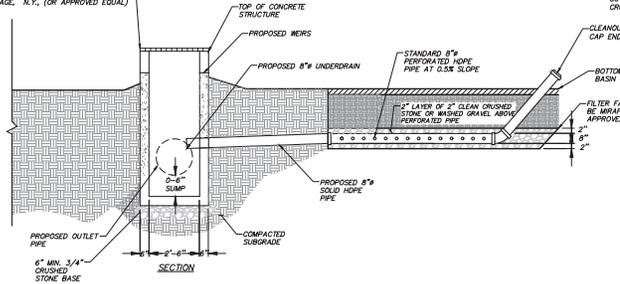
PROJECT NUMBER	PROJECT MANAGER	Z.M.P.	DRAWING NO.	SHEET
22101.100	J.M.P.	J.M.P.	SP-3	7
DATE	DESIGNED BY	CHECKED BY	DATE	
3-30-22	J.L.T.	A.D.T.		
SCALE	1" = 30'			



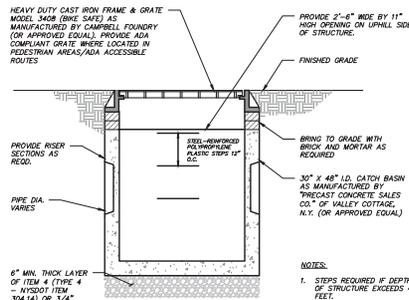
ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.



2-6" x 4-0" DRAIN INLET AS MANUFACTURED BY PRECAST CONCRETE SALES CO. OF VALLEY COTTAGE, N.Y., (OR APPROVED EQUAL)



SIDE DRAIN INLET DETAIL (N.T.S.)



NOTES:

1. STEPS REQUIRED IF DEPTH OF STRUCTURE EXCEEDS 4 FEET.
2. STRUCTURE AND GRATE TO BE DESIGNED FOR H-20 LOADING.

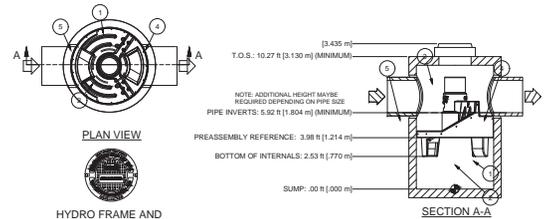
PRODUCT SPECIFICATION:

1. PEAK HYDRAULIC FLOW: 32.0 cfs (909 l/s)
2. MIN. SEDIMENT STORAGE CAPACITY: 1.0 cu yd (1.2 cu m)
3. OIL STORAGE CAPACITY: 406 gal (1678 liters)
4. MAXIMUM INLET/OUTLET PIPE DIAMETER: 30" (762 mm)
5. THE FLOW INLET SYSTEM SHALL INCLUDE REGULATORY ACCEPTANCE VORTEX TO SEPARATE POLLUTANTS FROM STORMWATER RUNOFF.
6. MORE PRODUCT INFORMATION INCLUDING REGULATORY ACCEPTANCES, PLEASE VISIT <http://www.conspipe.com/products/dsd/>

GENERAL NOTES:

1. General management drawings only. Contact Hydro International for site specific drawings.
2. The diameter of the inlet and outlet pipes may be no more than 30".
3. Multiple inlets possible (refer to project plan).
4. Instructed pipe angle can vary to align with drainage network (refer to project plan).
5. Peak flow rate and minimum height limited by available cover and pipe diameter.
6. Larger sediment storage capacity may be provided with a deeper sump depth.

FIRST DEFENSE HYDRODYNAMIC SEPARATOR FD-3 (HDS 1.1 & HDS 1.3)



T.O.S.: 10.27 m (33.71 ft) (MINIMUM)

NOTE: ADDITIONAL HEIGHT MAY BE REQUIRED DEPENDING ON PIPE SIZE

PIPE INVERTS: 5.92 m (19.44 ft) (MINIMUM)

PRESSASSEMBLY REFERENCE: 3.98 m (12.14 ft)

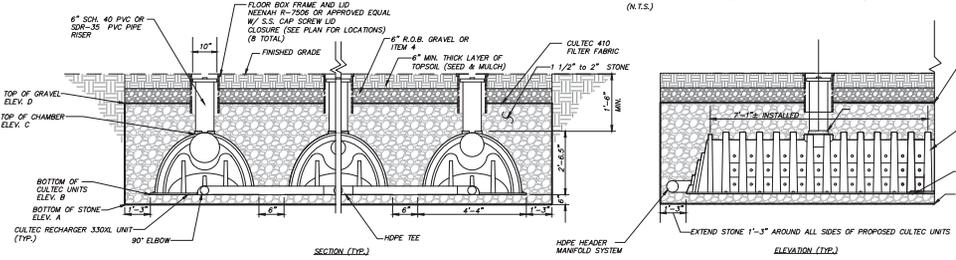
BOTTOM OF INTERNALS: 2.53 m (7.70 ft)

SUMP: .00 m (0.00 ft)

1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE
3. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE
4. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE

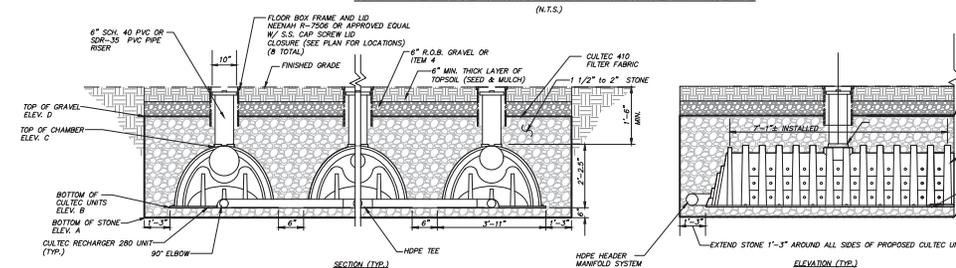
ITEM	QTY	SIZE (in)	SIZE (mm)	DESCRIPTION
1	1	36	900	I.D. PRECAST MANHOLE (PRE-INSTALLED)
2	1	30	760	FRAME AND COVER (ROUND)
3	1	18	450	CUTLET PIPE (BY OTHERS)
4	1	18	450	INLET PIPE (BY OTHERS)

BIORETENTION FILTER OUTLET STRUCTURE DETAIL (NYSDEC DESIGN F-5) (N.T.S.)



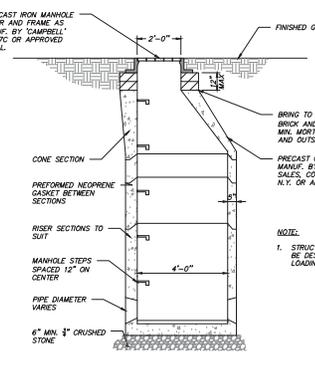
UNDERGROUND SYSTEM DESIGNATION	SYSTEM FOOTPRINT (SQ. FT.)	CULTEC UNIT NODE #	QUANTITY OF CHAMBERS	OVERALL SYSTEM DIMENSIONS (LENGTHXWIDTH)	ELEV A (BOTTOM OF STONE)	ELEV B (BOTTOM OF CHAMBER)	ELEV C (TOP OF CHAMBER)	ELEV D (TOP OF STONE)
1.1P	2,028	R-330XLD	54	66.5' x 30.5'	110.0	110.5	113.0	113.5

STORMWATER UNDERGROUND INFILTRATION SYSTEM 1.1P DETAIL (N.T.S.)

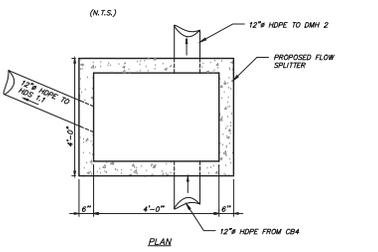


UNDERGROUND SYSTEM DESIGNATION	SYSTEM FOOTPRINT (SQ. FT.)	CULTEC UNIT NODE #	QUANTITY OF CHAMBERS	OVERALL SYSTEM DIMENSIONS (LENGTHXWIDTH)	ELEV A (BOTTOM OF STONE)	ELEV B (BOTTOM OF CHAMBER)	ELEV C (TOP OF CHAMBER)	ELEV D (TOP OF STONE)
1.2P	252	R-280HD	6	10.5' x 24'	111.5	112.0	114.2	114.7

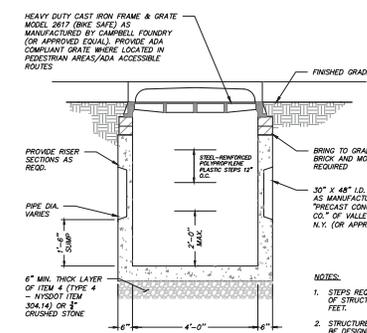
STORMWATER UNDERGROUND INFILTRATION SYSTEM 1.2P DETAIL (N.T.S.)



DRAINAGE MANHOLE DETAIL (N.T.S.)



FLOW SPLITTER FS 3 DETAIL (N.T.S.)



30" X 48" CATCH BASIN DETAIL (N.T.S.)

REVISION

NO.	DATE	REVISION	BY
2	11-23-22	REVISED FOR PLANNING BOARD COMMENTS	JLP
1	5-2-22	REVISED PER PLANNING BOARD COMMENTS	JLT

INSITE
ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

PROJECT:
PLATINUM PROPANE - MAHOPAC
1035 ROUTE 4 & TOWN OF CAMEL, PUTNAM COUNTY, NEW YORK

DRAWING: **DETAILS**

PROJECT NUMBER: 22101.100
DATE: 3-30-22
SCALE: AS SHOWN

PROJECT MANAGER: Z.M.P.
DRAWN BY: J.L.T.
CHECKED BY: A.D.T.

DRAWING NO. 6
SHEET 7

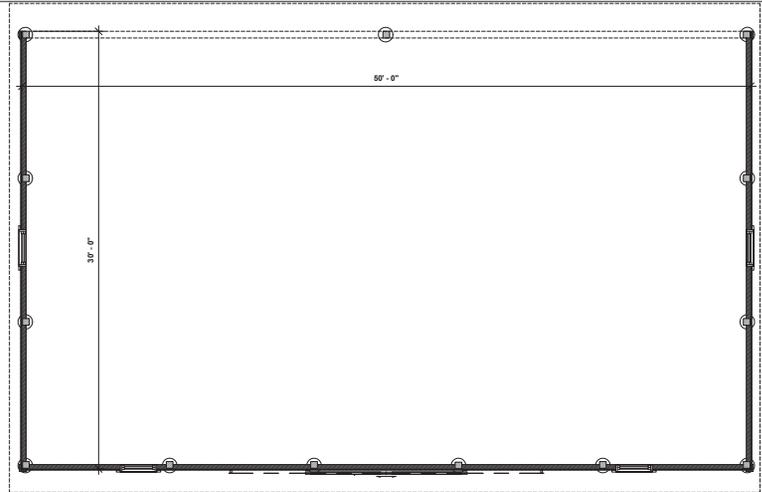
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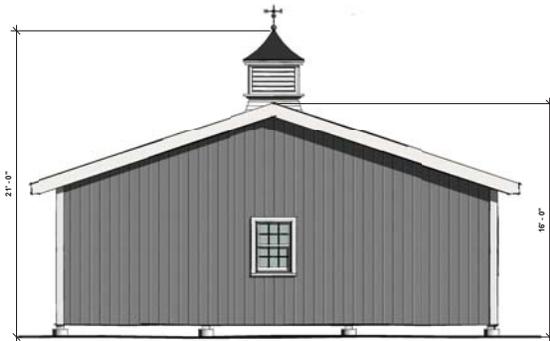
6 3D View 1



7 3D View 2



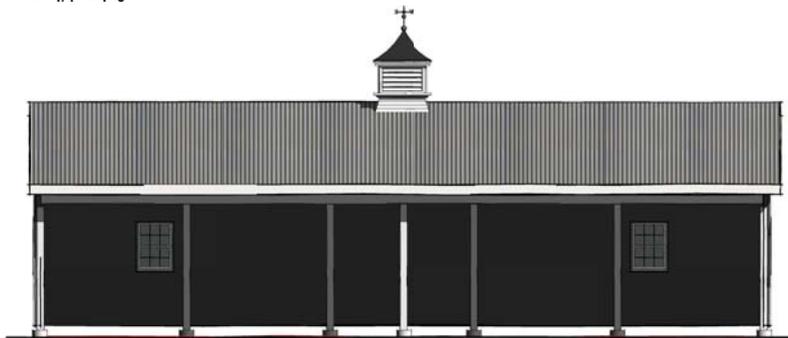
1 FIRST FLOOR
1/4" = 1'-0"



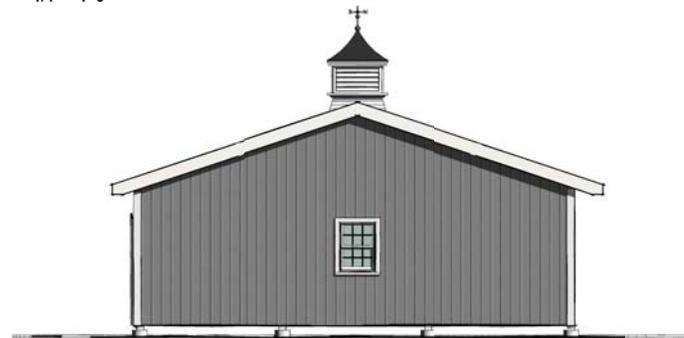
3 LEFT ELEVATION
1/4" = 1'-0"



2 FRONT ELEVATION
1/4" = 1'-0"



4 BACK ELEVATION
1/4" = 1'-0"



5 RIGHT ELEVATION
1/4" = 1'-0"



NOTE:
DO NOT SCALE DRAWINGS. REFER TO WRITTEN MEASUREMENTS FOR ACCURACY. IF CONTACT ARCHITECT, CONTACT ARCHITECT IF THERE ARE ANY DISCREPANCIES. ALL REVISIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF NEW YORK STATE EDUCATION LAW. Copyright 2020 MICHAEL PICCIRILLO ARCHITECTURE

No.	DATE	ISSUE
1	3/15/22	ISSUED
2	3/27/22	ISSUED

PROJECT NAME:

PLATINUM PROPANE

PROJECT ADDRESS:

ROUTE 6
MAHOPAC, NY



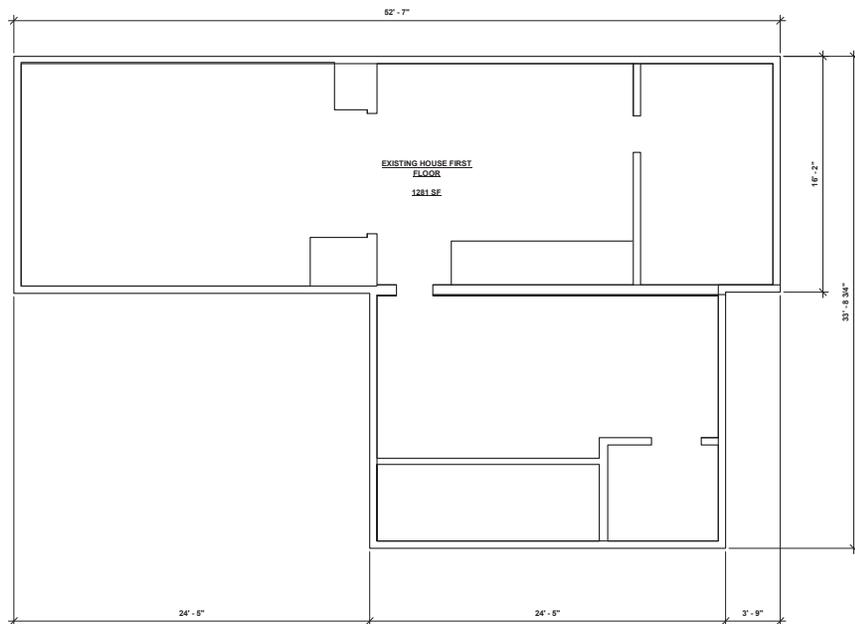
MICHAEL A PICCIRILLO, AIA
345 KEAR STREET, SUITE 203
YORKTOWN HEIGHTS, NY 10598

TELEPHONE: 914-368-9838
FACSIMILE: 914-368-9839
michael@piccirilloarchitect.com
www.mpiccirilloarchitect.com

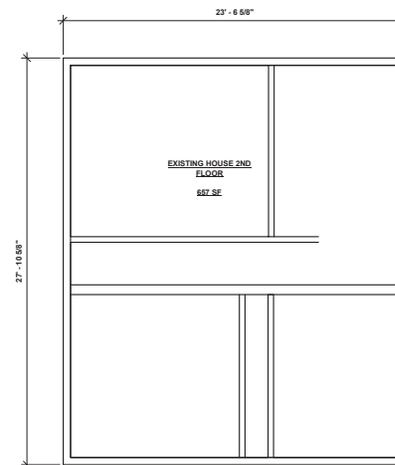
PLANS/
ELEVATIONS

A101

FIRST FLOOR



2ND FLOOR



① EXISTING HOUSE PLANS
1/4" = 1'-0"

No.	DATE	ISSUE
1	3/15/22	ISSUED
2	9/27/22	ISSUED

PROJECT NAME:

PLATINUM PROPANE

PROJECT ADDRESS:

ROUTE 6
MAHOPAC, NY



MICHAEL A. PICCIRILLO, AIA
345 KEAR STREET, SUITE 203
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FACSIMILE: 914-368-9839
michael@mpiccirilloarchitect.com
www.mpiccirilloarchitect.com

**EXISTING
HOUSE
PLANS**

A102



TOWN OF CARMEL SUBDIVISION APPLICATION INSTRUCTIONS



The Town of Carmel Planning Board meetings are held twice a month, on the second and fourth Wednesday's, at 7:00 PM at Carmel Town Hall, 60 McAlpin Avenue, Carmel

The submission deadline is 10 days prior to the Planning Board meeting. New subdivision applications that have been deemed complete will be placed on the agenda in the order they are received.

Pre-Submission:

Prior to the formal submission of the subdivision, a pre-submission conference may be requested by the applicant to be conducted with representatives from the Town, which may include the Town Planner, Town Engineer, Director of Code Enforcement, Planning Board Attorney. This conference will serve to educate the applicant on the process he/she must follow, clarify the information required to submit a complete subdivision application, and to highlight any specific areas of concern. You may arrange a pre-submission conference through the Planning Board Secretary at (845) 628-1500.

Submission Requirements:

At least 10 days prior to the Planning Board meeting, the subdivision application shall be submitted to the Planning Board Secretary as follows:

All subdivisions shall be signed, sealed and folded with the title box legible. The application package shall include:

- 11 copies of the Subdivision Application Form signed and notarized.
- 11 copies of the SEQR Environmental Assessment Form (use of short form or long form shall be determined at pre-submission conference).
- 5 full size sets of the Subdivision Plan
- 1 CD (in pdf. format) containing an electronic version of the Subdivision Plan
- 2 copies of the Disclosure Statement
- 11 copies of the Subdivision Completeness Certification Form
- All supplemental studies, reports, plans and renderings.
- 2 copies of the current deed.
- 2 copies of all easements, covenants and restrictions.
- The appropriate fee, determined from the attached fee schedule. Make checks payable to the *Town of Carmel*.

Rose Lombetta 11/28/22
Planning Board Secretary; Date

RF 11/23/22
Town Engineer; Date



TOWN OF CARMEL SITE PLAN APPLICATION



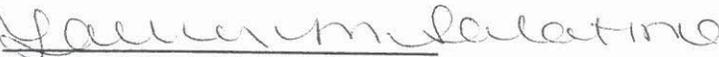
Per Town of Carmel Code – Section 156 - Zoning

SITE IDENTIFICATION INFORMATION		
Application Name: ML & RC Properties 2 LLC	Application # 22-0014	Date Submitted: 11/22/22
Site Address: No. 310 Street: Buckshollow Road Hamlet: Mahopac		
Property Location: (Identify landmarks, distance from intersections, etc.) 310 Buckshollow Road, Mahopac, NY 10541		
Town of Carmel Tax Map Designation: Section 76.9 Block 1 Lot(s) 22	Zoning Designation of Site: R-120	
Property Deed Recorded in County Clerk's Office Date Liber Page	Liens, Mortgages or other Encumbrances <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Existing Easements Relating to the Site <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes Describe and attach copies:	Are Easements Proposed? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes Describe and attach copies:	
Have Property Owners within a 500' Radius of the Site Been Identified? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Attached List to this Application Form		
APPLICANT/OWNER INFORMATION		
Property Owner: Michael Lubic - ML & RC Properties 2 LLC	Phone #: Fax#: 914-574-3222	Email: mikeylubic@gmail.com
Owners Address: No. 3087 Street: Farmwalk Road Town: Yorktown Heights State: NY Zip: 10598		
Applicant (If different than owner):	Phone #: Fax#:	Email:
Applicant Address (If different than owner): No. Street: Town: State: Zip:		
Individual/ Firm Responsible for Preparing Site Plan: Architectural Visions/Joel Greenberg	Phone #: 845-628-6613 Fax#: 845-628-2807	Email: joel.greenberg@arch-visions.com
Address: No. 2 Street: Muscoot Road North Town: Mahopac State: NY Zip: 10541		
Other Representatives: N/A	Phone #: Fax#:	Email:
Owners Address: No. 310 Street: Buckshollow Road Town: Mahopac State: NY Zip: 10541		
PROJECT DESCRIPTION		
Describe the project, proposed use and operation thereof: Legalize the 2 4th Floor Studio Apartments		

TOWN OF CARMEL SITE PLAN APPLICATION

Is the site listed on the State or Federal Register of Historic Place (or substantially contiguous) Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>			
Is the site located in a designated floodplain? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>			
Will the project require coverage under the Current NYSDEC Stormwater Regulations <div style="text-align: right;">Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/></div>			
Will the project require coverage under the Current NYCDEP Stormwater Regulations <div style="text-align: right;">Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/></div>			
Does the site disturb more than 5,000 sq ft		Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>	
Does the site disturb more than 1 acre		Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>	
Does the site contain freshwater wetlands? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>			
Jurisdiction: N/A NYSDEC: <input type="checkbox"/> Town of Carmel: <input type="checkbox"/>			
<i>If present, the wetlands must be delineated in the field by a Wetland Professional, and survey located on the Site Plan.</i>			
Are encroachments in regulated wetlands or wetland buffers proposed? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>			
Does this application require a referral to the Environmental Conservation Board?		Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>	
Does the site contain waterbodies, streams or watercourses? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>			
Are any encroachments, crossings or alterations proposed? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>			
Is the site located adjacent to New York City watershed lands? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>			
Is the project funded, partially or in total, by grants or loans from a public source? Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>			
Will municipal or private solid waste disposal be utilized? Public: <input type="checkbox"/> Private: <input checked="" type="checkbox"/>			
Has this application been referred to the Fire Department? Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>			
What is the estimated time of construction for the project? <div style="text-align: center;">N/A</div>			
ZONING COMPLIANCE INFORMATION			
Zoning Provision	Required	Existing	Proposed
Lot Area	120.00 SF	80,270 SF	80,270 SF
Lot Coverage	65%	3%	3%
Lot Width	200 FT	295 FT	295 FT
Lot Depth	200 FT	275 FT	275 FT
Front Yard	40 FT	54.5 FT	54.5 FT
Side Yard	None		
Rear Yard	40 FT	105.5 FT	105.5 FT
Minimum Required Floor Area	N/A		
Floor Area Ratio	N/A		
Height	35 FT	35 FT	35 FT
Off-Street Parking	20 PS	26 PS	26 PS
Off-Street Loading	N/A		

TOWN OF CARMEL SITE PLAN APPLICATION

Will variances be required? Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>	If yes, identify variances: Use variance for 2 Apartments
PROPOSED BUILDING MATERIALS	
Foundation	N/A
Structural System	N/A
Roof	N/A
Exterior Walls	N/A
APPLICANTS ACKNOWLEDGEMENT	
I hereby depose and certify that all the above statements and information, and all statements and information contained in the supporting documents and drawings attached hereto are true and correct.	
Michael Lubic Applicants Name	 Applicants Signature
Sworn before me this <u>30th</u> day of <u>September</u> 20 <u>22</u>	
 Notary Public	LAUREN M SALATINO Notary Public, State of New York Registration no. 01SA6361481 Qualified in Dutchess County Commission Expires July 10, 20 <u>25</u>



TOWN OF CARMEL SITE PLAN COMPLETENESS CERTIFICATION FORM



All Site Plans submitted to the Planning Board for review shall include the following information and details, as set forth in Section 156-61 B of the Town of Carmel Zoning Ordinance.

This form shall be included with the site plan submission

	<i>Requirement Data</i>	<i>To Be Completed by the Applicant</i>		<i>Waived by the Town</i>
1	Name and title of person preparing the site plan	<input checked="" type="checkbox"/>	✓	<input type="checkbox"/>
2	Name of the applicant and owner (if different from applicant)	<input checked="" type="checkbox"/>	✓	<input type="checkbox"/>
3	Original drawing date, revision dates, scale and north arrow	<input checked="" type="checkbox"/>	✓	<input type="checkbox"/>
4	Tax map, block and lot number(s), zoning district	<input checked="" type="checkbox"/>	✓	<input type="checkbox"/>
5	All existing property lines, name of owner of each property within a 500' radius of the site	<input checked="" type="checkbox"/>	✓	<input type="checkbox"/>
6	Contour lines at two-foot intervals, grades of all roads, driveways, sanitary and storm sewers	N/A	<input type="checkbox"/>	✓
7	The location of all water bodies, streams, watercourses, wetland areas, wooded areas, rights-of-way, streets, roads, highways, railroads, buildings, structures	<input checked="" type="checkbox"/>	✓	<input type="checkbox"/>
8	The location of all existing and proposed easements	None	<input type="checkbox"/>	✓
9	The location of all existing and proposed structures, their use, setback dimensions, floor plans, front, side and rear elevations, buildable area.	<input checked="" type="checkbox"/>	✓	<input type="checkbox"/>
10	On site circulation systems, access, egress ways and service roads, emergency service access and traffic mitigation measures	<input checked="" type="checkbox"/>	✓	<input type="checkbox"/>
11	Sidewalks, paths and other means of pedestrian circulation	N/A	<input type="checkbox"/>	✓
12	On-site parking and loading spaces and travel aisles with dimensions	<input checked="" type="checkbox"/>	✓	<input type="checkbox"/>
13	The location, height and type of exterior lighting fixtures	<input checked="" type="checkbox"/>	✓	<input type="checkbox"/>
14	Proposed signage	N/A	<input type="checkbox"/>	✓
15	For non-residential uses, an estimate of the number of employees who will be using the site, description of the operation, types of products sold, types of machinery and equipment used	<input type="checkbox"/>	✓	<input type="checkbox"/>

*ok for
but needs
work*

*ok
but needs
add
detail
for*

read this



TOWN OF CARMEL SITE PLAN COMPLETENESS CERTIFICATION FORM



	<i>Requirement Data</i>	<i>To Be Completed by the Applicant</i>	<i>Waived by the Town</i>
16	The location of clubhouses, swimming pools, open spaces, parks or other recreational areas, and identification of who is responsible for maintenance	N/A <input type="checkbox"/>	<input type="checkbox"/>
17	The location and design of buffer areas, screening or other landscaping, including grading and water management. A comprehensive landscaping plan in accordance with the Tree Conservation Law	N/A <input type="checkbox"/>	<input type="checkbox"/>
18	The location of public and private utilities, maintenance responsibilities, trash and garbage areas	<input checked="" type="checkbox"/>	<input type="checkbox"/>
19	A list, certified by the Town Assessor, of all property owners within 500 feet of the site boundary	<input checked="" type="checkbox"/>	<input type="checkbox"/>
20	Any other information required by the Planning Board which is reasonably necessary to ascertain compliance with this chapter	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Applicants Certification (to be completed by the licensed professional preparing the site plan:

I Joel Greenberg hereby certify that the site plan to which I have attached my seal and signature, meets all of the requirements of §156-61B of the Town of Carmel Zoning Ordinance:



Signature - Applicant

Date

Professionals Seal

Signature - Owner

10/31/2022
Date



TOWN OF CARMEL
SITE PLAN COMPLETENESS
CERTIFICATION FORM



Town Certification (to be completed by the Town)

I _____ hereby confirm that the site plan meets all of the requirements of §156-61B of the Town of Carmel Zoning Ordinance:

Rose Trombetta
Signature - Planning Board Secretary

11/28/22
Date

Richard [Signature]
Signature - Town Engineer

11/28/22
Date

Short Environmental Assessment Form

Part 1 - Project Information

Instructions for Completing

Part 1 – Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 – Project and Sponsor Information			
Name of Action or Project: 442 Realty Group LLC			
Project Location (describe, and attach a location map): <div style="text-align: right;">310 Buckshollow Road, Mahopac, NY 10541</div>			
Brief Description of Proposed Action: Legalize 2 Apartments			
Name of Applicant or Sponsor: Michael Lubic		Telephone: 914-574-3222	
		E-Mail:	
Address: 3087 Farmwalk Road			
City/PO: Yorktown Heights		State: NY	Zip Code: 10598
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.			NO <input checked="" type="checkbox"/>
			YES <input type="checkbox"/>
2. Does the proposed action require a permit, approval or funding from any other government Agency? If Yes, list agency(s) name and permit or approval: Carmel Building Department			NO <input type="checkbox"/>
			YES <input checked="" type="checkbox"/>
3. a. Total acreage of the site of the proposed action?		<u>1.8427</u> acres	
b. Total acreage to be physically disturbed?		<u>0</u> acres	
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor?		<u>1.8427</u> acres	
4. Check all land uses that occur on, are adjoining or near the proposed action:			
5. <input type="checkbox"/> Urban <input type="checkbox"/> Rural (non-agriculture) <input type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Residential (suburban)			
<input type="checkbox"/> Forest <input type="checkbox"/> Agriculture <input type="checkbox"/> Aquatic <input type="checkbox"/> Other(Specify):			
<input type="checkbox"/> Parkland			

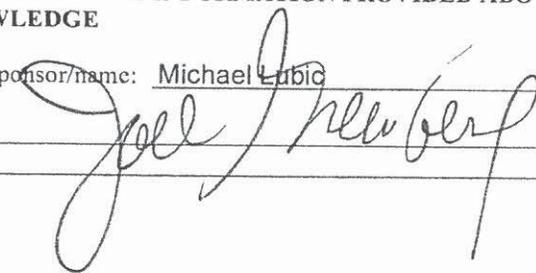
5. Is the proposed action, a. A permitted use under the zoning regulations? b. Consistent with the adopted comprehensive plan?	NO <input type="checkbox"/> <input type="checkbox"/>	YES <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	N/A <input type="checkbox"/> <input type="checkbox"/>
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/>	
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area? If Yes, identify: _____	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>	
8. a. Will the proposed action result in a substantial increase in traffic above present levels? b. Are public transportation services available at or near the site of the proposed action? c. Are any pedestrian accommodations or bicycle routes available on or near the site of the proposed action?	NO <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	YES <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
9. Does the proposed action meet or exceed the state energy code requirements? If the proposed action will exceed requirements, describe design features and technologies: _____ _____	NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/>	
10. Will the proposed action connect to an existing public/private water supply? If No, describe method for providing potable water: _____ _____	NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/>	
11. Will the proposed action connect to existing wastewater utilities? If No, describe method for providing wastewater treatment: <u>Septic System</u> _____	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>	
12. a. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? b. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?	NO <input checked="" type="checkbox"/> <input type="checkbox"/>	YES <input type="checkbox"/> <input checked="" type="checkbox"/>	
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency? b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody? If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: _____ _____ _____	NO <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	YES <input type="checkbox"/> <input type="checkbox"/>	

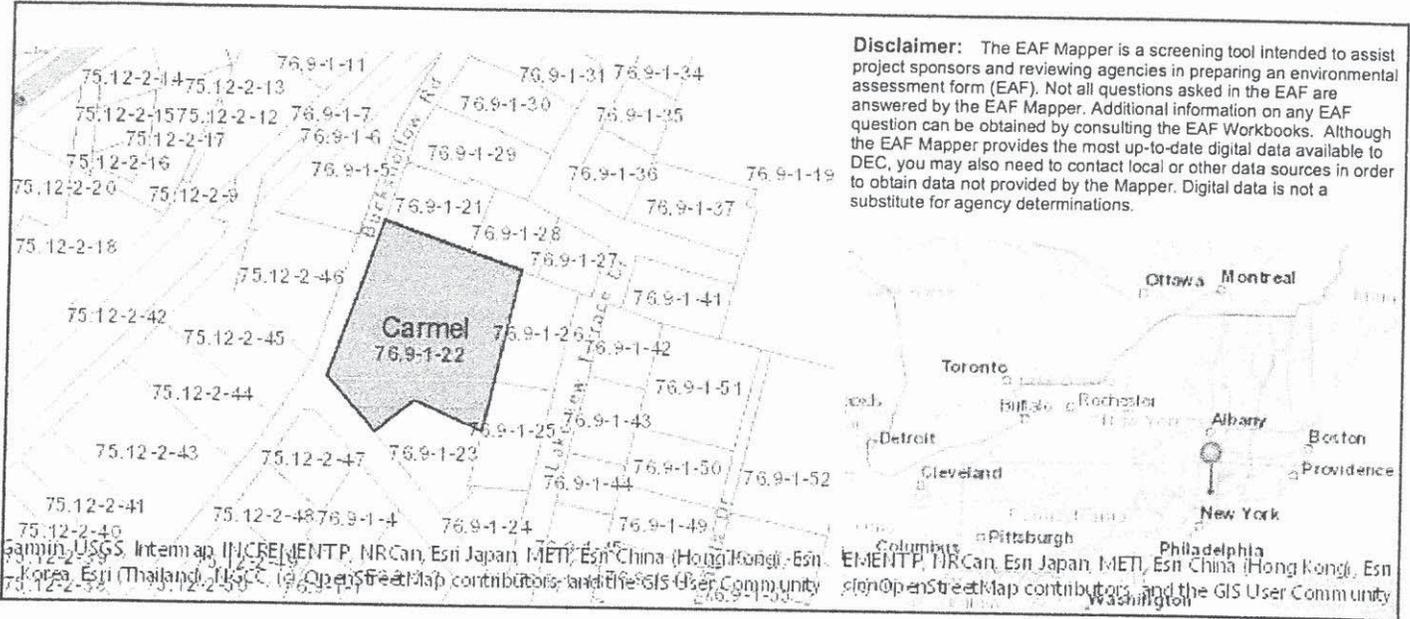
14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:		
<input type="checkbox"/> Shoreline <input type="checkbox"/> Forest <input type="checkbox"/> Agricultural/grasslands <input type="checkbox"/> Early mid-successional <input type="checkbox"/> Wetland <input type="checkbox"/> Urban <input checked="" type="checkbox"/> Suburban		
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	NO	YES
Northern Long-eared Bat	<input type="checkbox"/>	<input checked="" type="checkbox"/>
16. Is the project site located in the 100-year flood plan?	NO	YES
	<input checked="" type="checkbox"/>	<input type="checkbox"/>
17. Will the proposed action create storm water discharge, either from point or non-point sources?	NO	YES
If Yes,	<input checked="" type="checkbox"/>	<input type="checkbox"/>
a. Will storm water discharges flow to adjacent properties?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If Yes, briefly describe:		

18. Does the proposed action include construction or other activities that would result in the impoundment of water or other liquids (e.g., retention pond, waste lagoon, dam)?	NO	YES
If Yes, explain the purpose and size of the impoundment: _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>

19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility?	NO	YES
If Yes, describe: _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>

20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste?	NO	YES
If Yes, describe: _____	<input type="checkbox"/>	<input checked="" type="checkbox"/>

I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE		
Applicant/sponsor/name: <u>Michael Lubic</u> Date: <u>9/29/22</u>		
Signature: <u></u> Title: <u>Project Architect</u>		



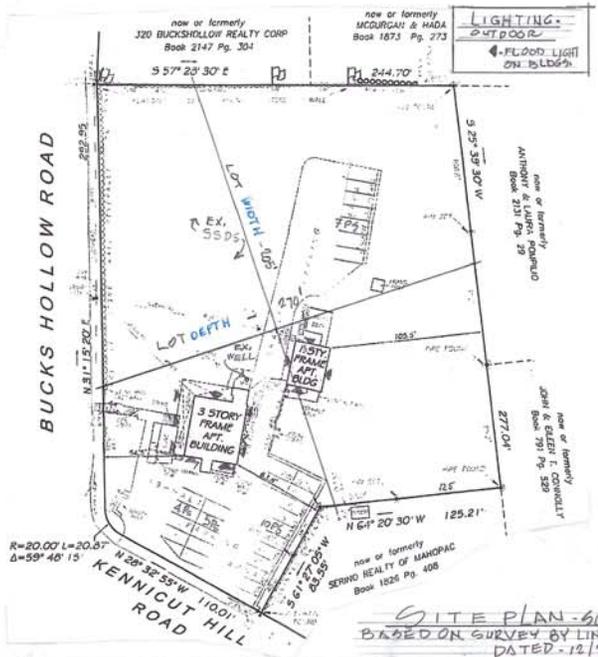
Part 1 / Question 7 [Critical Environmental Area]	No
Part 1 / Question 12a [National or State Register of Historic Places or State Eligible Sites]	No
Part 1 / Question 12b [Archeological Sites]	Yes
Part 1 / Question 13a [Wetlands or Other Regulated Waterbodies]	No
Part 1 / Question 15 [Threatened or Endangered Animal]	Yes
Part 1 / Question 15 [Threatened or Endangered Animal - Name]	Northern Long-eared Bat
Part 1 / Question 16 [100 Year Flood Plain]	No
Part 1 / Question 20 [Remediation Site]	Yes

Zoning Schedule

ZONE - R120 TMR 76.09-1-22 R - RESIDENTIAL	REQUIRED	EXISTING	VARIANCE
MIN LOT AREA (SF)	120,000SF	80.27SF	PRE-EXISTING
MIN LOT WIDTH (FT)	200FT	270FT	NONE
MIN LOT DEPTH (FT)	200FT	205FT	NONE
MIN YARD DIMENSIONS (FT)			
FRONT	40FT	54FT	NONE
SIDE - NONE			
REAR	40FT	63.8FT	NONE
MAX BUILDING HEIGHT (FT)	35FT	<35FT	NONE
MAX LOT COVERAGE (%)	65%	3.5%	NONE
PARKING	2PS/1APT - 2X10 = 20PS	26PS	NONE

PROPERTIES WITHIN 500'

76.9-1-44 Renee Paloutkas Family Trust 11 Sycamore Rd Mahopac, NY 10541	76.9-1-55 Paul Casti 10 Olympus Dr Mahopac, NY 10541	76.9-1-25 John Connolly 11 Lakeview Ter Mahopac, NY 10541
76.9-1-49 Mariel Wines 13 Olympus Dr Mahopac, NY 10541	76.9-1-43 Haider Ali 14 Lakeview Ter Mahopac, NY 10541	76.9-1-53 Joseph Camillo 14 Olympus Dr Mahopac, NY 10541
76.9-1-50 Paul Sherman 17 Olympus Dr Mahopac, NY 10541	76.9-1-42 Richard DeFrancesco 18 Lakeview Ter Mahopac, NY 10541	76.9-1-26 Anthony Pompilio 19 Lakeview Ter Mahopac, NY 10541
76.9-1-46 Peter Tully 2 Lakeview Ter Mahopac, NY 10541	76.9-1-51 Joan Newmann 49 West Lake Blvd Mahopac, NY 10541	76.9-1-41 Christopher Przymyski 22 Lakeview Ter Mahopac, NY 10541
76.9-1-52 Robert Donohue 22 Olympus Dr Mahopac, NY 10541	75.12-2-60 Leonard Briler 245 Dahlia Dr Mahopac, NY 10541	75.12-2-61 John Galvin 249 Dahlia Dr Mahopac, NY 10541
76.9-1-64 Robert Steinberg 250 Dahlia Dr Mahopac, NY 10541	76.9-1-1 John Scala 253 Dahlia Dr Mahopac, NY 10541	76.9-1-63 Jennifer Corso 254 Dahlia Dr Mahopac, NY 10541
76.9-1-27 John Sheedy 27 Lakeview Ter Mahopac, NY 10541	75.12-2-15 Crystal Property Mgmt LLC 128 Lakeview Dr Mahopac, NY 10541	75.12-2-52 Giorgio Monaco 276 Buckshollow Rd Mahopac, NY 10541
75.12-2-51 Monaco Bros Realty Mgmt LLC 276 Buckshollow Rd Mahopac, NY 10541	75.12-2-40 Dippolito Realty LLC PO BOX 124 Amawalk, NY 10501	75.12-2-41 Elaine Carey 287 Buckshollow Rd Mahopac, NY 10541
75.12-2-50 Brandan Raum 288 Buckshollow Rd Mahopac, NY 10541	75.12-2-49 Christine Schreff PO BOX 804 Mahopac, NY 10541	75.12-3-43 Genaro Gonzalez, Jr. 293 Buckshollow Rd Mahopac, NY 10541
76.9-1-48 Cofaloni Family Irrev. Trust 9 Olympus Dr Mahopac, NY 10541	76.9-1-34 Fernandes Living Trust 48 Lakeview Ter Mahopac, NY 10541	75.12-2-12 Crystal Property Mgmt LLC 128 Lakeview Ter Mahopac, NY 10541
75.12-2-9 Rowley Development Corp Inc PO BOX 460069 PO BOX 460069 Houston, TX 77056	75.12-2-18 Rowley Development Corp Inc PO BOX 460069 PO BOX 460069 Houston, TX 77056	



75.12-2-20 Rowley Development Corp Inc PO BOX 460069 PO BOX 460069 Houston, TX 77056	75.12-2-14 593 Route 6 LLC 21 Croton Lake Rd #15 Katonah, NY 10536	75.12-2-13 597 Rt. 6 Realty Group, LLC 466 Rt 6 Mahopac, NY 10541
75.12-2-48 Rebecca Barrett 296 Buckshollow Rd Mahopac, NY 10541	75.12-2-44 Luis Colon 299 Buckshollow Rd Mahopac, NY 10541	76.9-1-47 Prinz Family Trust 3 Olympus Dr 3 Olympus Dr Mahopac, NY 10541

76.9-1-37 Dawn Reala 30 Lakeview Ter Mahopac, NY 10541	75.12-2-45 303 Buckshollow, LLC PO BOX 636 Mahopac, NY 10541	76.9-1-28 Brian McGurigan 31 Lakeview Terrace Mahopac, NY 10541
76.9-1-28 Kyoko Hada 31 Lakeview Ter Mahopac, NY 10541	76.9-1-22 442 Realy Group, LLC 466 Route 6 Mahopac, NY 10541	75.12-2-46 Alfred Butroni 311 Buckshollow Rd Mahopac, NY 10541
75.12-2-16 Crystal Property Mgmt LLC 128 Lakeview Dr Mahopac, NY 10541	76.9-1-21 Hector Roman 320 Buckshollow Rd Mahopac, NY 10541	76.9-1-5 Robert Sokerka 321 Buckshollow Rd Mahopac, NY 10541
76.9-1-30 Angel Carroel Carchipalla 175 Valley St Tarrytown, NY 10591	76.9-1-29 Mannuel Arevalo 330 Buckshollow Rd Mahopac, NY 10541	76.9-1-6 Legion Post 1080 American 333 Buckshollow Rd Mahopac, NY 10541
76.9-1-20 Steven Mittelmann PO BOX 25 Baldwin Place, NY 10505	76.9-1-7 American Legion Post 1080 333 Buckshollow Rd Mahopac, NY 10541	75.12-2-17 Crystal Property Mgmt LLC 128 Lakeview Ter Mahopac, NY 10541
76.9-1-36 Richard Brancaccio 34 Lakeview Ter Mahopac, NY 10541	76.9-1-35 Anthony Cassone 25 Hillcrest Ave Ryebrook, NY 10573	76.9-1-31 Jason Rahani 43 Lakeview Ter Mahopac, NY 10541
76.9-1-33 Fernandes Living Trust 48 Lakeview Ter Mahopac, NY 10541	76.9-1-32 Siprena Delovic 50 Lakeview Ter Mahopac, NY 10541	76.9-1-61 Robert Tittermore 531 Kennicut Hill Rd Mahopac, NY 10541
76.9-1-42 Albert Thompson 535 Kennicut Hill Rd Mahopac, NY 10541	76.9-1-24 Brian Robbins 540 Kennicut Hill Rd Mahopac, NY 10541	76.9-1-2 Conlan Living Trust 541 Kennicut Hill Rd Mahopac, NY 10541
76.9-1-23 Serrino Realty of Mahopac Inc 205 East Lake Blvd Apt A Mahopac, NY 10541	76.9-1-4 John Conlan 547 Kennicut Hill Rd Mahopac, NY 10541	75.12-2-47 Leke Nijaj 3115 Sedgwick Ave Apt 1-4 Bronx, NY 10463
76.9-1-45 Stanley Przymyski 6 Lakeview Ter Mahopac, NY 10541	75.12-2-4 Giovanna Barba 291A Heritage Hills Somers, NY 10589	76.9-1-11 Lake Mahopac Properties Inc 609 Rt 6 PO BOX 770 PO BOX 770 Mahopac, NY 10541
76.9-1-9 621 Route 6 LLC 621 Rt 6 Mahopac, NY 10541	76.9-1-19 Woodcrest Gardens Inc PO BOX 265 PO BOX 265 Somers, NY 10589	75.12-2-42 Rowley Development Corp Inc PO BOX 460069 PO BOX 460069 Houston, TX 77056

ARCHITECTURAL VISIONS INC
A GREENBERG DESIGN GROUP

2 MUSCODY ROAD NORTH P. 845-628-8013
MAHOPAC, NY 10541 F. 845-628-2807
JES.001@ARCHITECTURALVISIONS.COM

**PROJECT: SITE PLAN FOR:
MICHAEL LUBICK**

PROJECT ADDRESS: 510 BUCKS HOLLOW ROAD, MAHOPAC, NY 10541
MAILING ADDRESS: MAHOPAC, NY 10541

TAX MAP NO: 76.09-1-18

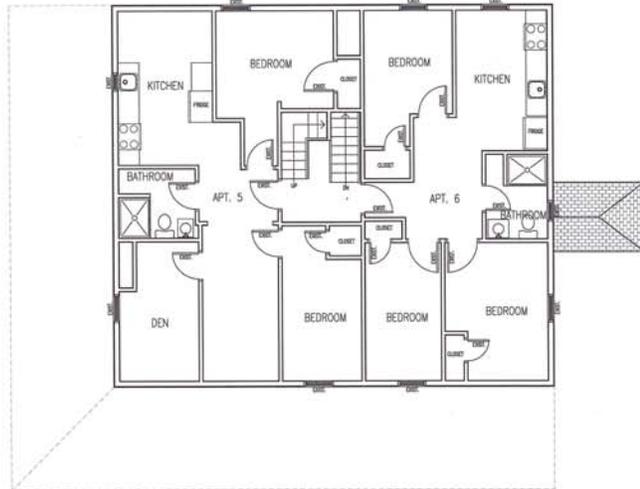
SITE PLAN

ISSUANCE	7/11/2025
REVISED	11/10/2025

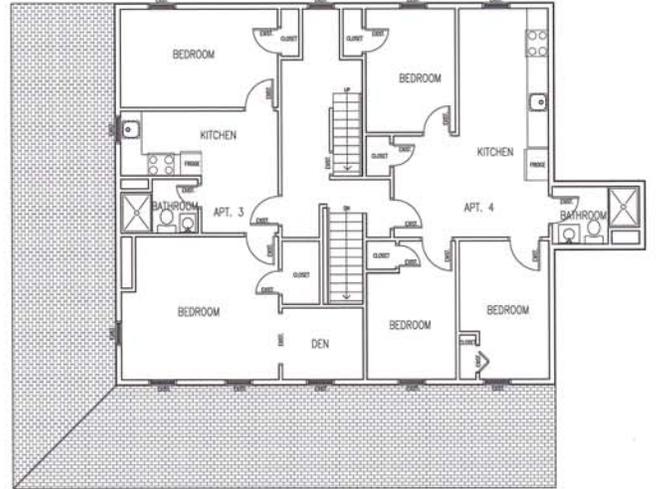
SCALE: A & B
DRAWN BY: [Signature]
PROJECT NO: 17-27-11-1

B-1

PROJECT AND DOCUMENTS ARE THE PROPERTY OF ARCHITECTURAL VISIONS INC. NO PART OF THIS DOCUMENT SHALL BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF ARCHITECTURAL VISIONS INC. THE ALTERING ARCHITECT SHALL AFFIX TO HIS/HER ITEM THE ALTERATION. THIS ARCHITECT DENIES ANY AND ALL RESPONSIBILITY FOR ALTERATIONS OF THESE PLANS AND DOCUMENTS BY OTHERS AND EXPRESSLY DENIES PERMISSION TO ALTER THESE PLANS AND DOCUMENTS.



1 EXISTING SECOND FLOOR PLAN



2 EXISTING THIRD FLOOR PLAN

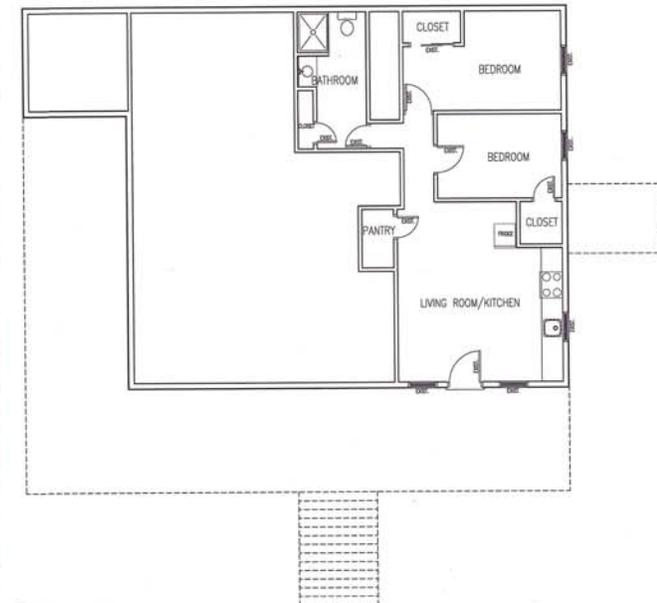
ARCHITECTURAL VISIONS
 2 WILSON ROAD NORTH
 MANHATTAN, NY 10017
 TEL: 212-692-2807
 FAX: 212-692-2807

PROJECT:
 MICHAEL LUBICK
 PROJECT ADDRESS: 100 W. 110th St.
 MANHATTAN, NY 10027
 PROJECT NO. 100-110

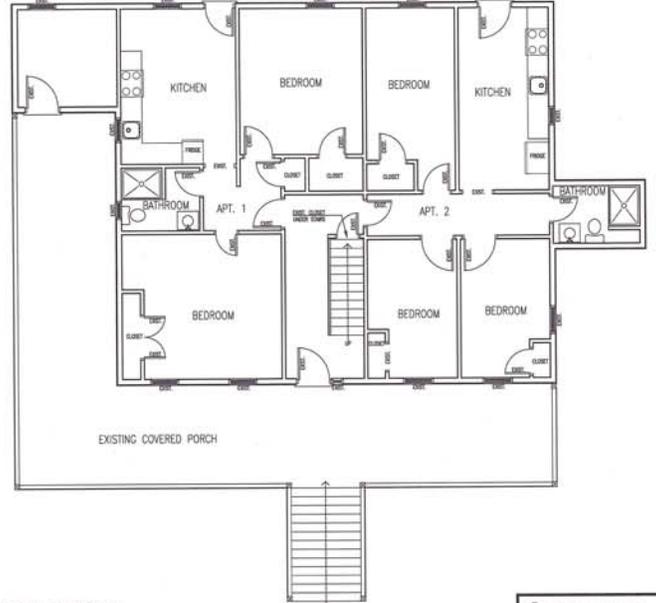
HOUSE PLANS

SCALE	AS SHOWN
DATE	11/10/99
DESIGN	BY MICHAEL LUBICK
PROJECT NO.	100-110
DATE	11/10/99

A-101



3 EXISTING BASEMENT PLAN



4 EXISTING FIRST FLOOR PLAN

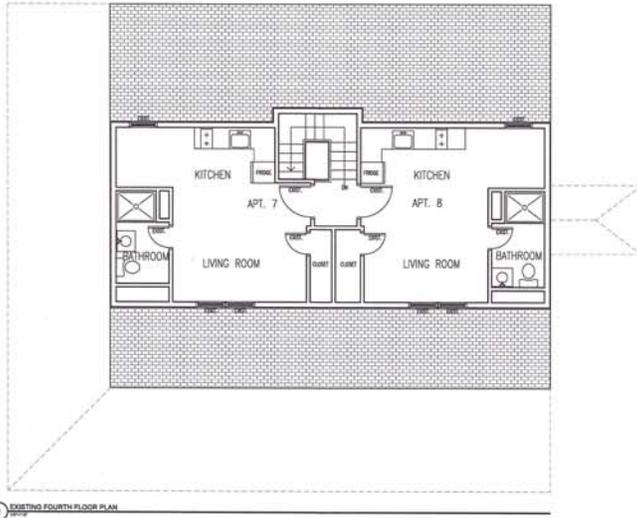
ARCHITECTURAL VISIONS
 2 WILSON ROAD NORTH
 MANHATTAN, NY 10017
 TEL: 212-692-2807
 FAX: 212-692-2807

PROJECT:
 MICHAEL LUBICK
 PROJECT ADDRESS: 100 W. 110th St.
 MANHATTAN, NY 10027
 PROJECT NO. 100-110

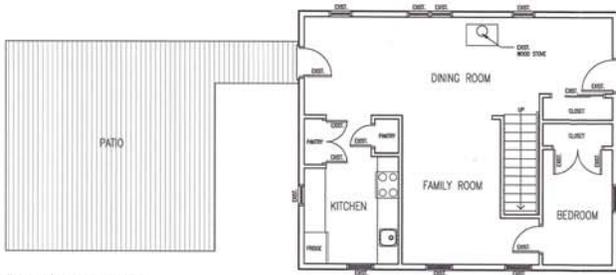
HOUSE PLANS

SCALE	AS SHOWN
DATE	11/10/99
DESIGN	BY MICHAEL LUBICK
PROJECT NO.	100-110
DATE	11/10/99

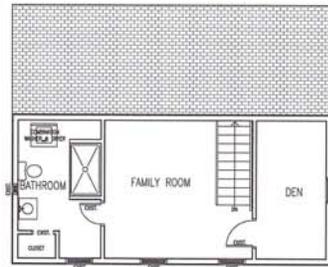
A-100



1 EXISTING FOURTH FLOOR PLAN



2 EXISTING COTTAGE FIRST FLOOR PLAN



3 EXISTING COTTAGE SECOND FLOOR PLAN

ARCHITECTURAL VISIONS
 2 BRADDOCK ROAD NORTH
 MANHATTAN, NY 10041
 TEL: 212-692-2000 FAX: 212-692-2007

PROJECT: MICHAEL LUBICK
 PROJECT ARCHITECT: MICHAEL LUBICK
 ARCHITECT OF RECORD: MICHAEL LUBICK
 100 BRADDOCK ROAD NORTH
 MANHATTAN, NY 10041
 TEL: 212-692-2000 FAX: 212-692-2007

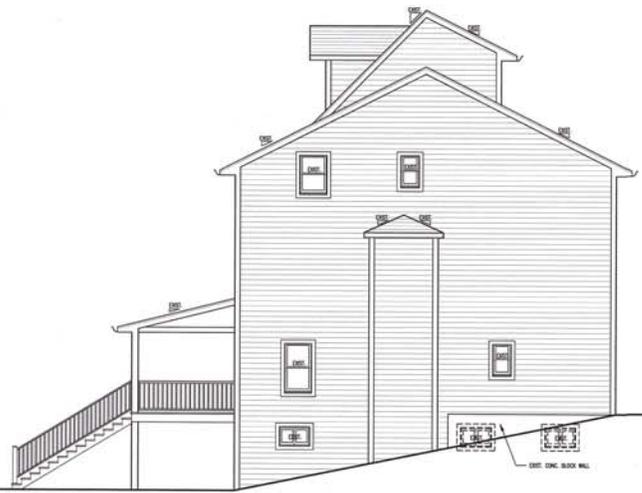
HOUSE PLANS

DATE:	10/15/10
SCALE:	AS SHOWN
DESIGN PROVIDED BY:	ARCHITECTURAL VISIONS
DATE:	10/15/10
DESIGN BY:	ARCHITECTURAL VISIONS
DATE:	10/15/10

A-102



1 FRONT ELEVATION



2 RIGHT SIDE ELEVATION

ARCHITECTURAL VISIONS
 2 BRADDOCK ROAD NORTH
 MANHATTAN, NY 10041
 TEL: 212-692-2000 FAX: 212-692-2007

PROJECT: MICHAEL LUBICK
 PROJECT ARCHITECT: MICHAEL LUBICK
 ARCHITECT OF RECORD: MICHAEL LUBICK
 100 BRADDOCK ROAD NORTH
 MANHATTAN, NY 10041
 TEL: 212-692-2000 FAX: 212-692-2007

ELEVATIONS

DATE:	10/15/10
SCALE:	AS SHOWN
DESIGN PROVIDED BY:	ARCHITECTURAL VISIONS
DATE:	10/15/10
DESIGN BY:	ARCHITECTURAL VISIONS
DATE:	10/15/10

A-200



November 30, 2022

Craig Paeprer, Chairman and Members of the Carmel Planning Board
60 McAlpin Ave
Mahopac, NY 10541

RE: Jedlicka 2 Lot Subdivision
334 Austin Road
TM#: 64.13-1-16

Dear Chairman Paeprer and the Members of the Carmel Planning Board,

Please note my response to the Town Engineer's memo dated 11/29/22:

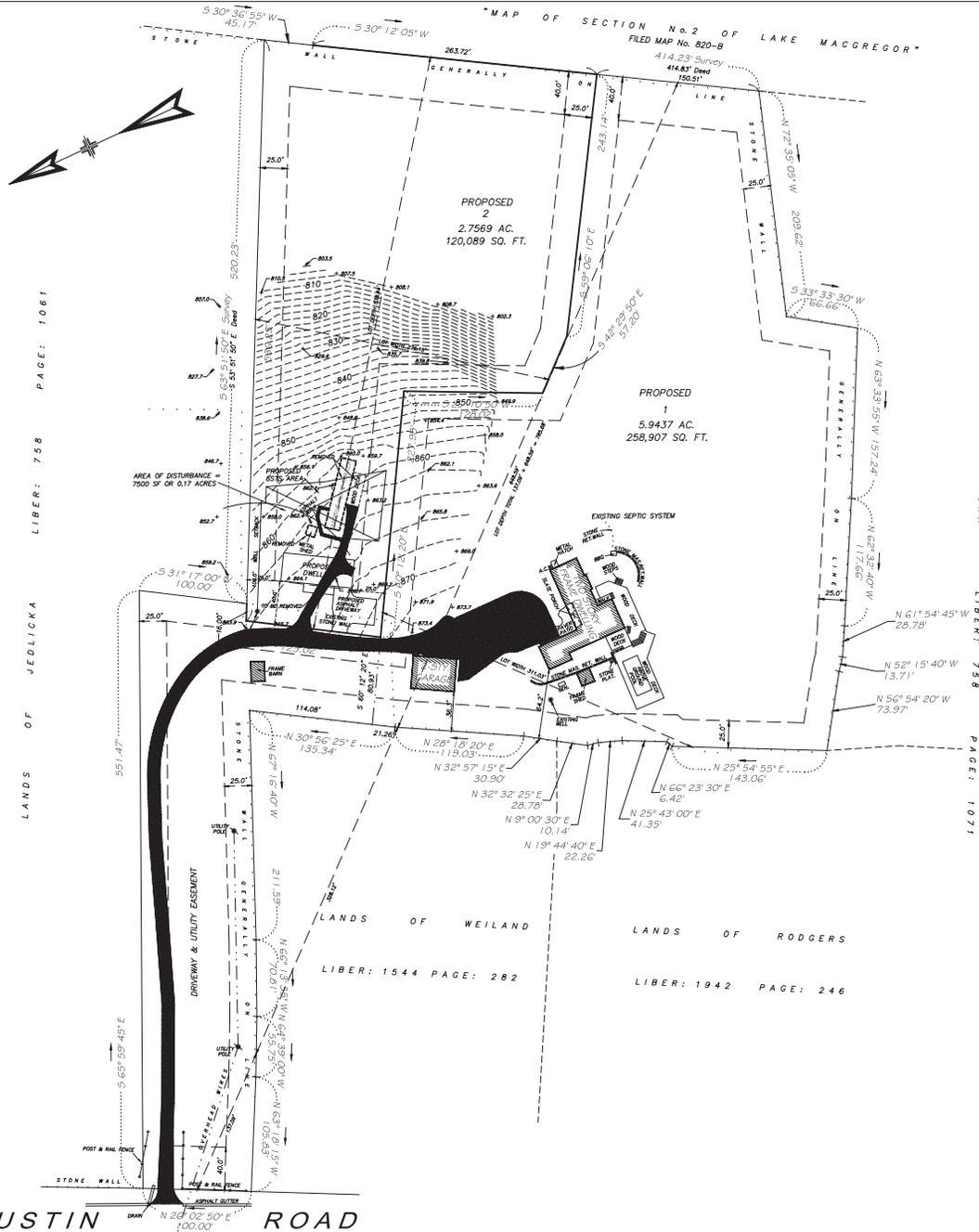
1. Anti-tracking pad shown.
2. Section through driveway pavement shown.
3. Connection to the infiltrators is shown.
4. The owner has no idea how she is going to landscape the property. However, I have noted on the drawings a series of azalea bushes in the back and front of the house.
5. Note regarding fill has been added.
6. The infiltrators have been placed further away from the proposed well.

Very truly yours,

A handwritten signature in black ink that reads "Joel Greenberg". The signature is fluid and cursive, with the first and last letters of the first and last names being capitalized and prominent.

Joel Greenberg, AIA, NACRB





PLANNING BOARD TOWN OF CARMEL

TOWN OF CARMEL, PUTNAM COUNTY, NEW YORK, ON THE DAY OF _____ SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION, ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL, SIGNED THIS _____ DAY OF _____ BY _____ (CHAIRMAN, CARMEL PLANNING BOARD) _____ (SECRETARY, CARMEL PLANNING BOARD)

THIS PLAT VALID FOR FILING UNTIL _____ (DATE)
THIS MAP MUST BE FILED IN THE PUTNAM COUNTY CLERK'S OFFICE WITHIN 30 DAYS OF THIS APPROVAL.

PUTNAM COUNTY HEALTH DEPARTMENT APPROVAL

APPROVAL SUBJECT TO THE PROVISION OF A PRIVATE WATER SUPPLY AND PRIVATE SEWAGE DISPOSAL FOR EACH HABITABLE LOT IN ACCORDANCE WITH THE PUTNAM COUNTY SANITARY CODE AND AS SHOWN ON THE REALTY SUBDIVISION PLAN FILED WITH THE PUTNAM COUNTY DEPARTMENT OF HEALTH. CONSENT IS HEREBY GIVEN FOR THE FILING OF THIS MAP IN THE OFFICE OF THE COUNTY CLERK IN ACCORDANCE WITH THE PROVISIONS OF SECTION 1116 AND 1117 OF THE PUBLIC HEALTH LAW.

BY: ENVIRONMENTAL HEALTH SERVICES

EXPIRATION DATE: _____

CERTIFIED BY:
REAL PROPERTY TAX DEPARTMENT

TO THE REAL PROPERTY TAX DEPARTMENT
PLEASE CERTIFY THAT THE FOLLOWING TAX MAP NUMBER MAP 64.13 - BLOCK 1 - LOT 18 IN THE TOWN OF CARMEL IS THE CORRECT TAX MAP NUMBER FOR THE ATTACHED SUBDIVISION MAP.

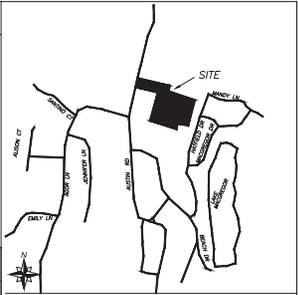
SIGNED _____ DATE _____
DIRECTOR OF REAL PROPERTY TAXES

PUTNAM COUNTY COMMISSIONER OF FINANCE

CERTIFICATION BY:
PUTNAM COUNTY COMMISSIONER OF FINANCE

THE COMMISSIONER OF FINANCE HEREBY CERTIFIES THAT ALL TOWN, COUNTY AND VILLAGE TAXES FORWARD TO THIS OFFICE FOR COLLECTION AS OF _____ HAVE BEEN PAID FOR THE PARCEL AS DESCRIBED AS:
TAX MAP NUMBER MAP 64.13 - BLOCK 1 - LOT 18 IN THE TOWN OF CARMEL

SIGNED _____ DATE _____
COMMISSIONER OF FINANCE



CONSENT TO FILE

THE UNDERSIGN OWNER OF THE PROPERTY HEREON STATES THAT HE IS FAMILIAR WITH THIS MAP, ITS CONTENTS AND ITS LEGENDS, AND HEREBY CONSENTS TO ALL ITS TERMS AND CONDITIONS AS STATED HEREON, AND TO THE FILING OF THIS MAP IN THE OFFICE OF THE CLERK OF PUTNAM COUNTY.

SIGNED THIS _____ DAY OF _____
BY: REGINA JEDLICKA

PUTNAM COUNTY CLERK'S OFFICE
CARMEL, NEW YORK

MAP NO. _____
FILED _____
AFFIDAVIT FILED _____
AS PER LOCAL LAW NO. 3 OF 1957

FINAL PLAT
PREPARED FOR
REGINA JEDLICKA
SITUATE IN THE
TOWN OF CARMEL
PUTNAM COUNTY
NEW YORK

SCALE: 1" = 50'

SURVEYED: APRIL 1, 2022

ZONING SCHEDULE

OPEN DEVELOPMENT - TOWN BOARD APPROVAL REQUIRED UNDER SECTION 1280A OF TOWN LAW

ZONE - R120 TAM 64.13-1-16 R - RESIDENTIAL	REQUIRED	PROPOSED LOT 1	PROPOSED LOT 2
MIN LOT AREA (SQ. AC)	120,000	258,907	120,089
MIN LOT WIDTH (FT)	200	311.03	276.15
MIN LOT DEPTH (FT)	200	785.68*	538.41
MIN YARD DIMENSIONS (FT)			
FRONT	40	146.5	40.5
SIDE	25	64.2	30.7
REAR	40	203.7	488.6
MAX BUILDING HEIGHT (FT)	25	135	135
MIN FRONTAGE (FT)	100	100	0
MAX LOT COVERAGE (%)	65	1.9	1.5

* VARIANCE REQUIRED FROM ZBA SINCE THE LOT DEPTH PASSES THROUGH THE ADJACENT LOT FOR 318.22 FT. THE TOTAL ON JEDLICKA'S LOT #1 IS 785.68 FT.
* VARIANCE GRANTED BY ZBA ON OCTOBER 25, 2022

PROFESSIONAL ARCHITECT

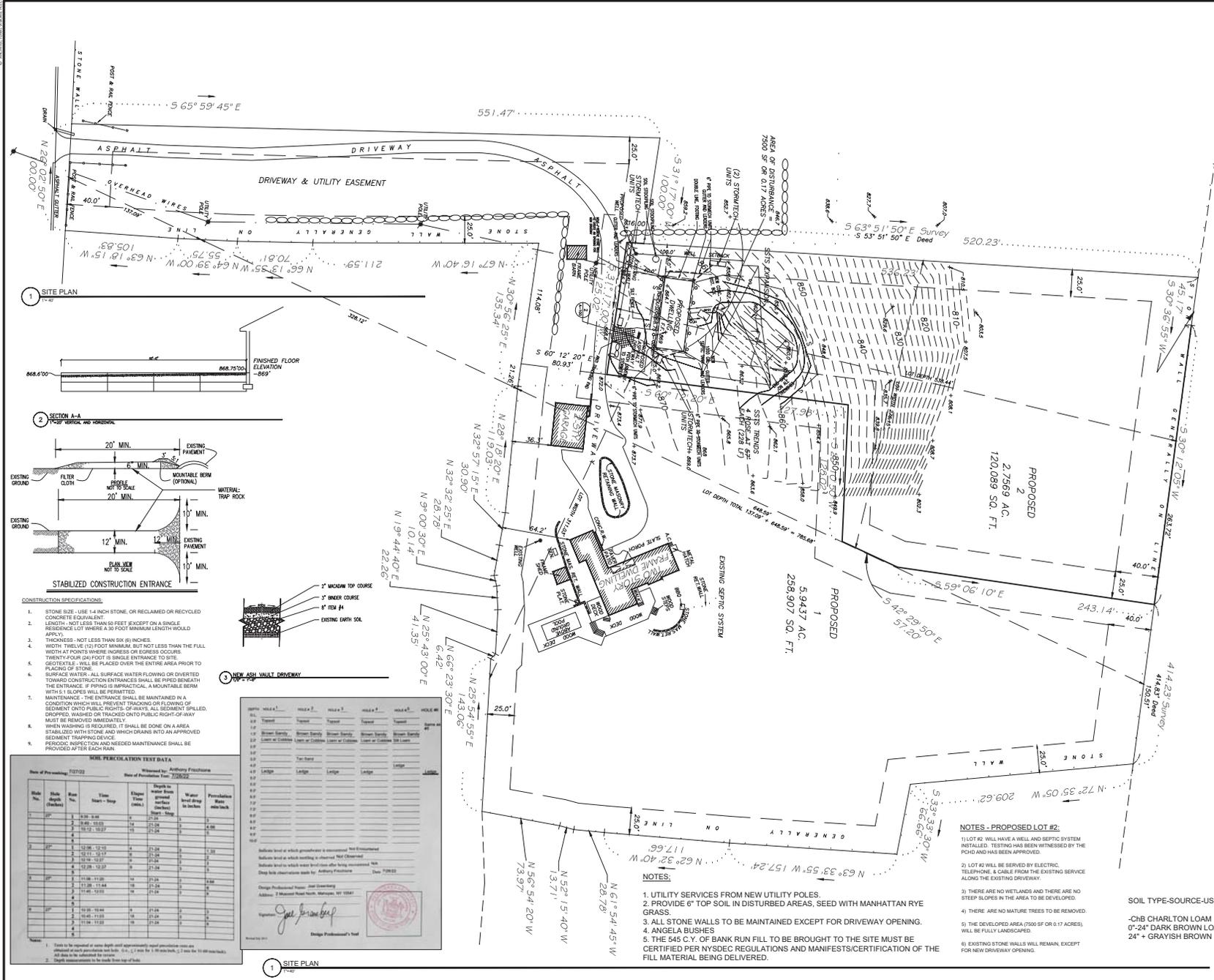
LAND SURVEYOR'S CERTIFICATION

I, ERIK J. LINK, HEREBY CERTIFY THAT THE SURVEY UPON WHICH THIS MAP IS BASED WAS COMPLETED APRIL 1, 2022 & MAP COMPLETED ON AUGUST 30, 2022.

ERIK J. LINK
NEW YORK STATE LICENSED
LAND SURVEYOR NO. 55562

PROFESSIONAL LAND SURVEYOR

NEW YORK STATE LICENSED
LAND SURVEYOR NO. 55562



LEGEND

	EXISTING STONE WALL
	STORMTECH
	UTILITY POLE
	SOIL STOCKPLING
	1000 GAL. SEPTIC TANK
	CONCRETE DISTRIBUTION BOX
	SSTS TRENCH
	TOPOGRAPHIC RE-LOCATION
	SILT FENCE
	EXISTING BUILDINGS
	FOOTING
	UTILITY SERVICE TO HOUSE
	AZALEA BUSHES

- The following notes shall be provided on all plans for individual SSTS and well water supply.
- Notes Proposed #1**
- All areas within 10 feet of the proposed subsurface wastewater treatment systems (SSTS) shall be removed.
 - SSTS to be installed by the Licensed Design Professional and the Putnam County Health Department after construction and prior to backfill.
 - The SSTS area shall be marked and kept off-limits to all trucks, machinery, building materials, and excavated earth shall be allowed on the SSTS area.
 - All erosion control measures shall be installed prior to the start of any construction and must be maintained and reconstructed to completion and satisfaction by owner.
 - Construction of SSTS will be in accordance with these plans, any necessary permits, and the rules and regulations of the general nursing environmental agency.
 - The well is to be a drilled well, constructed in accordance with New York State Health Department (16 NYCRR 401.00). Standard 10' Water Well, except that the maximum depth of the well shall not exceed 100 feet. A well with a depth greater than 100 feet will be considered a deep well and require a permit from the Putnam County Health Department.
 - The SSTS design shall have been done and provided for installation of a garbage grinder. Such installation requires additional design and the approval of the Putnam County Department of Health.
 - Putnam County Health Department approval is required for the location of the SSTS, well, existing setbacks, and driveway in accordance with the approved drawings. Modifications are to have prior Putnam County Health Department approval. Unapproved modifications made to this drawing after the date of Putnam County Health Department approval will not be approved.
 - All materials and within 10 feet of the SSTS area shall be removed to three inches depth and the resulting void replaced with gravel or site soil.
 - Use of fill is not permitted on the SSTS area, except if specified on this plan.
 - After backfilling the system, the SSTS area shall be covered with minimum 2" inches of top soil, seeded, and mulched.
 - Ownership of this structure will not be permitted until the Construction Compliance Application has been received and approved by the Putnam County Health Department and forwarded to the Building Inspector of the respective municipality as part of the Certificate of Occupancy application.
 - This plan is approved for average treatment and water supply only, and all other required permits and/or approvals are the responsibility of the permittee.
 - The Putnam County Health Department approval system two (2) years from the date on the approved design and is required to be renewed on or before the expiration date. The approval is renewable for cause or may be amended or modified when considered necessary by the Department.
 - A copy of this license plan submitted to the building inspector of the local municipality, when filing for a building permit, shall be submitted to the Putnam County Health Department to verify the building permit.
 - The house, well and SSTS shall be survey located and marked by NYSD Erosion Control Design Professional in a north NAD 83 NAVD83 datum 1/4" scale 24 hours prior to the commencement of the SSTS construction.

ARCHITECTURAL VISIONS

2 MUSCOOT ROAD NORTH MAHPAC NY, 10541
 P: 845-628-0613
 F: 845-628-2807
 JAC@ARCHITECTURALVISIONS.COM

PROJECT: REGINA JEDLICKA

PROJECT ADDRESS: 534 AUSTIN RD
 MAHPAC NY 10541
 TAX MAP NO. 64-13-18

DATE: 06/13/18
 NAME: REGINA JEDLICKA
 BARE AS PROJECT ADDRESS

SITE PLAN

FINISHANCE	
CONCRETE	100000
ASPHALT	100000
PAVING	100000
SEWER	100000
WATER	100000

SCALE AS NOTED

DESIGNED BY: VTP/JAG

PROJECT NO: S-100

DATE: 02/22/2017

- NOTES - PROPOSED LOT #2:**
- LOT #2 WILL HAVE A WELL AND SEPTIC SYSTEM INSTALLED. TESTING HAS BEEN WITNESSED BY THE PCHD AND HAS BEEN APPROVED.
 - LOT #2 WILL BE SERVED BY ELECTRIC, TELEPHONE, & CABLE FROM THE EXISTING SERVICE ALONG THE EXISTING DRIVEWAY.
 - THERE ARE NO WETLANDS AND THERE ARE NO STEEP SLOPES IN THE AREA TO BE DEVELOPED.
 - THERE ARE NO MATURE TREES TO BE REMOVED.
 - THE DEVELOPED AREA (750 SF OR 0.17 ACRES), WILL BE FULLY LANSCAPED.
 - EXISTING STONE WALLS WILL REMAIN EXCEPT FOR NEW DRIVEWAY OPENING.

- NOTES:**
- UTILITY SERVICES FROM NEW UTILITY POLES.
 - PROVIDE 6" TOP SOIL IN DISTURBED AREAS, SEED WITH MANHATTAN RYE GRASS.
 - ALL STONE WALLS TO BE MAINTAINED EXCEPT FOR DRIVEWAY OPENING.
 - ANGELA BUSHES
 - THE 545 C.Y. OF BANK RUN FILL TO BE BROUGHT TO THE SITE MUST BE CERTIFIED PER NYSDOC REGULATIONS AND MANIFESTS/CERTIFICATION OF THE FILL MATERIAL BEING DELIVERED.

SOIL TYPE-SOURCE-USDA:
 -CHB CHARLTON LOAM
 0"-24" DARK BROWN LOAM
 24" + GRAYISH BROWN SANDY LOAM

IT IS A VIOLATION OF STATE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT, TO ALTER AN ITEM ON THESE PLANS AND DOCUMENTS IN ANY WAY. PER STATE LAW, IF AN ITEM BEARING THE SEAL OF AN ARCHITECT IS ALTERED, THE ALTERING ARCHITECT SHALL AFFIX TO THE SAME THE SEAL AND THE NOTATION "AS NOTED BY FOLLOWING REVISION NUMBER AND DATE OF SUCH ALTERATION, AND A BRIEF DESCRIPTION OF THE ALTERATION. THIS ARCHITECT TAKES NO AND NO RESPONSIBILITY FOR ALTERATIONS OF THESE PLANS AND DOCUMENTS BY OTHERS UNLESS EXPRESSLY PERMITTED BY THIS ARCHITECT TO DO SO. TO ALTER THESE PLANS AND DOCUMENTS.



November 23, 2022

Town of Carmel Planning Board
60 McAlpin Avenue
Mahopac, New York 10541

RE: Gateway Summit Multi-Family Lot 6
Gateway Drive
Tax Map No. 55.-2-24.6-1 & 55.-2-24.6-2

Dear Chairman Paepre and Members of the Board:

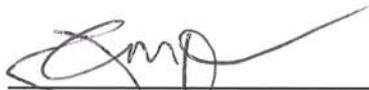
As the Board is aware, amended site plan approval for the subject project was granted on February 23, 2022, which will expire on February 23, 2023. Road work for the G&F Subdivision Road is underway. Otherwise, there has been no substantial change in the condition of the Gateway Multi-family Housing site and/or its environs. The applicant requests a 1 year extension of the Site Plan approval. Please place this item on the Board's upcoming meeting agenda for consideration of an extension of approval.

A check is enclosed for the \$2,000.00 fee.

Should you have any questions or comments regarding this information, please feel free to contact our office.

Very truly yours,

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

By: 
Jeffrey J. Contelmo, PE
Senior Principal Engineer

JJC/dlm

cc: Paul Camarda, CRI

Insite File No. 04232.106



**Gateway Summit Multi-Family Housing (Lot 6)
APPROVAL LIST**

November 23, 2022

AGENCY	APPROVAL	EXPIRATION DATE
Carmel Planning Board	Site Plan	February 8, 2023
Carmel Environmental Conservation Board	Wetland Permit	October 10, 2023
Putnam County Department of Health	Sewer	October 3, 2027
New York City Department of Environmental Protection	Sewer	October 30, 2024
New York City Department of Environmental Protection	Stormwater Pollution Prevention Plan	August 28, 2027
New York State Department of Environmental Conservation	Freshwater Wetland Permit	September 9, 2025
New York State Department of Environmental Conservation	Stormwater Pollution Prevention Plan Coverage	General Permit Coverage obtained September 13, 2007. (No Expiration Date)
New York State Department of Health	Water	Water Approval obtained December 10, 2007. (No Expiration Date)



November 23, 2022

Town of Carmel Planning Board
60 McAlpin Avenue
Mahopac, New York 10541

RE: The Fairways Multi-Family Lot 7
Gateway Drive
Tax Map No. 55.-2-24.8-1 & 55.-2-24.8-2

Dear Chairman Paepre and Members of the Board:

As the Board is aware, amended site plan approval for the subject project was granted on February 23, 2022, which will expire on February 23, 2023. Road work for the G&F Subdivision Road is underway. Otherwise, there has been no substantial change in the condition of the Fairways Multi-Family Housing site and/or its environs. The applicant requests a 1 year extension of the Site Plan approval. Please place this item on the Board's upcoming meeting agenda for consideration of an extension of approval.

A check is enclosed for the \$2,000.00 fee.

Should you have any questions or comments regarding this information, please feel free to contact our office.

Very truly yours,

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

By: 
Jeffrey J. Contelmo, PE
Senior Principal Engineer

JJC/dlm

cc: Paul Camarda, CRI

Insite File No. 05140.100



**Fairways Multi-Family Housing (Lot 7)
APPROVAL LIST**

November 23, 2022

AGENCY	APPROVAL	EXPIRATION DATE
Carmel Planning Board	Site Plan	February 23, 2023
Carmel Environmental Conservation Board	Wetland Permit	October 10, 2023
Putnam County Department of Health	Sewer	September 26, 2027
New York City Department of Environmental Protection	Sewer	November 7, 2024
New York City Department of Environmental Protection	Stormwater Pollution Prevention Plan	August 21, 2027
New York State Department of Environmental Conservation	Freshwater Wetland Permit	September 9, 2025
New York State Department of Environmental Conservation	Stormwater Pollution Prevention Plan Coverage	General Permit Coverage obtained September 13, 2007. (No Expiration Date)
New York State Department of Health	Water	Water Approval obtained December 10, 2007. (No Expirations Date)