

Brooklyn Inland Wetlands Commission
Special Meeting Agenda
Tuesday, August 8, 2023
Zoom and In-Person Meeting
Community Center
31 Tiffany Street Upper Level
6:00 p.m.

In-Person: Community Center 31 Tiffany Street Upper Level, Brooklyn, CT	
Online: Click link below: https://us06web.zoom.us/j/83921116459	OR Go to Zoom.us , click Sign In On the top right, click Join a Meeting Enter meeting ID: 839 2111 6459
Phone: Dial 1 646 558 8656 US Toll Enter meeting number: 839 2111 6459 You can bypass attendee number by pressing #	

Call to Order:

Roll Call:

Staff Present:

Seating of Alternates:

Public Commentary:

Additions to Agenda: None.

Approval of Minutes: Site Walk Minutes June 19, 2023
Regular Meeting Minutes July 11, 2023

Public Hearings:

1. IWWC 23-009 A. Kausch & Sons, Church Street, Map 37, Lot 21, RA Zone; Single-family house with driveway crossing; 2,100 sq ft of proposed wetlands alteration.

Old Business:

1. IWWC 23-009 A. Kausch & Sons, Church Street, Map 37, Lot 21, RA Zone; Single-family house with driveway crossing; 2,100 sq ft of proposed wetlands alteration.

2. IWWC 23-005 Townsend Development Associates LLC, 538 Providence Road, Map 41, Lot 16, PC Zone; Modification to existing approved Special Permit to construct approximately 16,100 sf of Self Storage in two buildings, and 19,360 sf of commercial space.

3. IWWC 23-006 Ryan Kelleher. 404 Wolf Den Road, Map 18, Lot 22, RA Zone; Improvement of an existing gravel driveway through a wetland to construct a single-family home on 41 acres of land.

4. IWWC 23-007 Tripp Hollow Investments LLC, Tripp Hollow Road, Map 14, Lot 10-1 RA Zone; Proposed single-family house, well, septic system and site grading in the upland review area on a subdivision lot created in 2004.

5. IWWC 23-008 Wal-Mart Real Estate Business Trust, 450 Providence Road, Map 41, Lot 10, PC Zone; Online grocery pickup addition with parking modifications.

New Business:

253 Wolf Den Road – Janessa Choquette. Show Cause Hearing for Wetlands Violation.

Other Business:

Discussion on special meeting dates: There is no need to vote. It is anticipated that the next regular meeting will be held at the Green Building. Until we meet at the Green Building, meetings at Tiffany Street will be special meetings.

183 Barrett Hill Road – Erica and Ryan Murphy. New horse barn, no wetlands permit needed.

Jake Kausch - 409 & 411 Church Street driveway. Millings have been added to the driveway.

FCR Realty LLC - FCR Gravel Pit, Map 41, Lot 6 and Map 35, Lot 7. The 3/3/22 Enforcement Order has been closed.

Communications:

1. Wetlands Agent Monthly Report.
2. Budget Update.

Public Commentary:

Adjourn:

Richard Oliverson, Chairman

Brooklyn IWWC

June 19, 2023 Sitewalk Minutes

5:30 PM

Site walk location: Day Street, Map 43, Lot 6; Jeffrey Weaver, #SUBD 22-001

Members present: Adam Brindamour, Demian Sorrentino, James Paquin, Janet Booth

Others present: Jeffrey Weaver

Meeting started: 5:30 PM

Mr. Weaver escorted the members onto the property to show the location of the proposed activity. The members viewed the area of proposed activity: Installation of common driveway to access two rear lots and site work for the construction of two new homes.

Meeting ended: 5:47 PM

Respectfully submitted,

James Paquin, Member Brooklyn IWWC

Brooklyn Inland Wetlands and Watercourses Commission

Special Meeting Minutes

Tuesday, July 11, 2023

Zoom and In-Person Meeting

Community Center

31 Tiffany Street Upper Level

Call to Order: 6:00 pm

Roll Call: Richard Oliverson, Adam Brindamour, Janet Booth, Demian Sorrentino, Jason Burgess and James Paquin. Adam Tucker was absent with notice.

Staff Present: Margaret Washburn, Lisa Lindia Recording Secretary, Terry Mahanna

Attendance: Jeffrey Weaver, Paul Archer, Archer Surveying and Jeff Bord, Bohler Engineering

Seating of Alternates: None

Public Commentary: None

Approval of Minutes: Regular Meeting Minutes June 13, 2023, meeting with the following changes.

Page 2/5, the statement “Jim Paquin made a motion Demian Sorrentino seconded the motion” and the following paragraph might be combined to match the others, such as “Jim Paquin made a motion that the 68SF, Demian Sorrentino seconded....” The statement should read: “James Paquin made a motion to lift Cease & Desist Order. Demian Sorrentino seconded the motion. APPROVED 6/0.”

Page 3/5 “Adam Brindamour and Demian Sorrentino continue to the next...” should be revised. The statement should read: “Adam Brindamour moved to continue to the next scheduled meeting, July 11, 2023, which will be held at the Community Center. Demian Sorrentino seconded the motion. APPROVED 6/0.”

Public Hearings: Not available at this time.

Old Business:

1. SUBD23-001 Jeffrey Weaver, Day Street, Map 43, Lot 6, R-30 and RA Zones; 2-lot subdivision.

Richard Oliverson – recuses himself as an abutter.

Jeff Weaver – Is present to answer questions regarding the application.

A site walk was done on 6/19/23. Joe Theroux delineated the wetlands. The only regulated area is on one lot. The pipe is outside the regulated area. The only work to be approved is in the Upland Review Area. The house on the westerly side is out of the 125 feet regulated area.

Adam Brindamour – Is the foundation of the new house under construction the source of water flowing down the hill?

Jeff Weaver – I have zero water coming out of the foundation. The curtain drain has been in for about month and half. The water is not coming from the house, it is residual water that is funneling down across the lot. The silt fence did treat a substantial amount of water.

Janet Booth – Asked if the pipe will handle the flow.

Jeff Weaver – We don't want to create a dam.

Demian Sorrentino - There is protection on both sides of the pipe, the water will reach the wetland.

Margaret Washburn – The water originates from the sky, shallow subsurface flow and surface runoff.

Janet Booth – Is the pipe our jurisdiction?

Demian Sorrentino – No, there is a swale, not a wetland.

Paul Archer – No, that would go to PZC.

James Paquin – There is not much cover over the pipe, according to Syl Pauley.

James Paquin made a motion to approve with Standard Conditions. Jason Burgess seconded the motion.
APPROVED 5/0.

Richard Oliverson – returns to the table.

2. IWWC 23-005 Townsend Development Associates LLC, 538 Providence Road, Map 41, Lot 16, PC Zone; Modification to existing approved Special Permit to construct approximately 16,100 sf of Self Storage in two buildings, and 19,360 sf of commercial space.

Demian Sorrentino made a motion to table to the next meeting Janet Booth seconded the motion. No discussion. The motion passed 6-0

New Business:

1. IWWC 23-006 Ryan Kelleher. 404 Wolf Den Road, Map 18, Lot 22, RA Zone; Improvement of an existing gravel driveway through a wetland to construct single-family home on 41 acres of land.

Application was received 7/11/23. No one was present to represent the project.

2. IWWC 23-007 Tripp Hollow Investments LLC, Tripp Hollow Road, Map 14, Lot 10-1 RA Zone; Proposed single-family house, well, septic system and site grading in the upland review area on a subdivision lot created in 2004.

Application was received 7/11/23. No one was present to represent the project.

3. IWWC 23-008 Wal-Mart Real Estate Business Trust, 450 Providence Road, Map 41, Lot 10, PC Zone; Online grocery pickup addition with parking modifications.

Jeff Bord Engineer, Bohler Engineering – The purpose of the project is an expansion of a 59,050 square-foot addition for an online pick-up area in the northeast corner. The reconfiguration will eliminate 12 parking spaces and reduce 680 square feet of impervious area by adding new landscaped areas where the work is proposed to be done. The work in the upland review is the landscape. They are +/- 100 feet away from the storm water pond.

Margaret Washburn – Is there any work being done outside the existing pavement footprint?

Jeff Bord - There is no work being done outside of the existing pavement.

Margaret Washburn – Is there any bump out on the back of existing building?

Jeff Bord – Not to my knowledge. The aerial is a current display, and nothing is shown with bump outs on the building.

Demian Sorrentino – Is there any chance that sediment will reach the pond?

Jeff Bord – No, I do not see it being an issue; we are not working in that area. Some utility easements that are being maintained. We will have to go to PZC next and to the DOT for an updated approval.

Margaret Washburn – Asked about the plans in the file.

Jeff Bord – Stated there is an existing condition plan; no proposed work is shown on it.

4. IWWC 23-009 A. Kausch & Sons, Church Street, Map 37, Lot 21, RA Zone; Driveway with wetland crossing with 1,340 sq ft of wetlands fill proposed for a single-family house with attached garage, porch, deck, septic system, well and associated grading all in the upland review area.

Paul Archer, Archer Surveying – Questioned where the 1,340 square feet and 760 square feet came from of proposed wetlands being filled.

Margaret Washburn – Explained that it is written on the application that was submitted.

Demian Sorrentino – Does Mr. Kausch still own the driveway from 411 Church Street? Using this would have been a feasible and prudent alternative.

Paul Archer – No, he does not. His son owns the driveway now.

Demian Sorrentino – Did Mr. Kausch contemplate developing this lot before selling the shared driveway?

Paul Archer – No.

James Paquin – Is it possible that Mr. Kausch will consider asking his son for an easement?

Margaret Washburn - Mr. Kausch also owns more land, at the rear of the property, for a third house. Shared driveways are limited to three houses.

Monday 7/31/23 at 8:30 am, Paul Archer will be at the site to meet Adam Brindamour, Janet Booth and Margaret Washburn for a site inspection.

Demian Sorrentino made a motion to schedule a public hearing on 8/8/23 due to significant activity. Adam Brindamour seconded the motion. APPROVED 6/0.

IWWC 23-006 Ryan Kelleher. 404 Wolf Den Road, Map 18, Lot 22, RA Zone

No Hearing was scheduled for 404 Wolf Den Rd. James Paquin asked to have the plans passed around.

Demian Sorrentino – Questioned where is the 20-scale plan from the road to the stone wall?
Drainage calculations?
Watershed analysis?
Will Margaret forward a list of my comments to the design engineer?

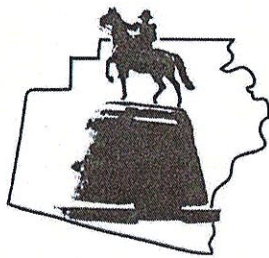
Margaret Washburn – Yes.

Communications:

1. **Wetlands Agent Monthly Report.**
2. **Budget Update.**
3. **Public Commentary:** None

Adjourn: 6:57 p.m. James Paquin made a motion to adjourn. Adam Brindamour seconded the motion. APPROVED 6/0.

Submitted By:
Lisa M Lindia
Recording Secretary



Brooklyn Land Use Department

69 South Main Street
Brooklyn CT 06234
(860) 779-3411 x 31

Inland Wetlands ☒

Zoning Enforcement ☐

Blight Enforcement ☐

SITE INSPECTION NUMBER

1 2 3 4 5

Map 37
Lot 21 Church St

7/31/23

Address

Date

I met Adam Brindamour and Janet Booth, inspected and took photos of the new proposed house site off the existing driveway to # 409 + # 411 Church St. Jake Kausch met us. Paul Archer failed to appear although the site walk was scheduled on 7/11. Jake called Paul Archer. P. Archer failed to replace the wetlands flags or stake anything, according to Jake Kausch. Jake did not know that there is a public hearing on 8/8. I cautioned Jake that Paul Archer's failure to do the staking / flag replacing may cause delays.

Commission Representative

M. Washburn

Owner or Authorized Signature



INLAND WETLANDS & WATERCOURSES COMMISSION
TOWN OF BROOKLYN, CONECTICUT

Date _____

Application # _____

APPLICATION -- INLAND WETLANDS & WATERCOURSES

APPLICANT A. Kausch & Sons MAILING ADDRESS 15 Beach View Fx+ Voluntown
APPLICANT'S INTEREST IN PROPERTY owner PHONE 800-230-7928 EMAIL _____ CT

PROPERTY OWNER IF DIFFERENT _____ PHONE _____
MAILING ADDRESS _____ EMAIL _____

ENGINEER/SURVEYOR (IF ANY) Archer Surveying LLC (Paul Archer)
ATTORNEY (IF ANY) _____

PROPERTY LOCATION/ADDRESS Church Street
MAP # 37 LOT # 21 ZONE RA TOTAL ACRES 4.18 ACRES OF WETLANDS ON PROPERTY 2.97

PURPOSE AND DESCRIPTION OF THE ACTIVITY Residential development
(house, septic system, well, driveway)

WETLANDS EXCAVATION AND FILL:

FILL PROPOSED _____ CUBIC YDS _____ SQ FT 1340
EXCAVATION PROPOSED _____ CUBIC YDS _____ SQ FT 7100
LOCATION WHERE MATERIAL WILL BE PLACED: ON SITE ☒ OFF SITE _____
TOTAL REGULATED AREA ALTERED: SQ FT 2100 ACRES 0.05

EXPLAIN ALTERNATIVES CONSIDERED (REQUIRED): only option with less amount
of disturbance

MITIGATION MEASURES (IF REQUIRED): WETLANDS/WATERCOURSES CREATED: CY 0 SQFT 0 ACRES 0

IS PARCEL LOCATED WITHIN 500FT OF AN ADJOINING TOWN? No IF YES, WHICH TOWN(S) Pomfret
IS THE ACTIVITY LOCATED WITHIN THE WATERSHED OF A WATER COMPANY AS DEFINED IN CT GENERAL STATUTES 25-32A? No

THE OWNER AND APPLICANT HEREBY GRANT THE BROOKLYN IWWC, THE BOARD OF SELECTMAN AND THEIR AUTHORIZED AGENTS PERMISSION TO ENTER THE SUBJECT PROPERTY FOR THE PURPOSE OF INSPECTION AND ENFORCEMENT OF THE IWWC REGULATIONS OF THE TOWN OF BROOKLYN. IF THE COMMISSION DETERMINES THAT OUTSIDE REVIEW IS REQUIRED, APPLICANT WILL PAY CONSULTING FEE.

NOTE: DETERMINATION THAT THE INFORMATION PROVIDED IS INACCURATE MAY INVALIDATE THE IWWC DECISION AND RESULT IN ENFORCEMENT ACTION.

APPLICANT: [Signature] DATE 7/5/23

OWNER: [Signature] DATE 7/5/23

JUL - 6 2023

REQUIREMENTS

_____ APPLICATION FEE \$ _____ STATE FEE (\$60.00) _____

_____ COMPLETION OF CT DEEP REPORTING FORM

_____ ORIGINAL PLUS COPIES OF ALL MATERIALS REQUIRED - **NUMBER TO BE DETERMINED BY STAFF**

_____ PRE-APPLICATION MEETING WITH THE WETLANDS AGENT IS RECOMMENDED TO EXAMINE THE SCOPE OF THE ACTIVITY

_____ SITE PLAN SHOWING LOCATION OF THE WETLANDS WITH EXISTING AND PROPOSED CONDITIONS. APPLICANT MAY BE REQUIRED TO HAVE A CERTIFIED **SOIL SCIENTIST IDENTIFY THE WETLANDS.**

_____ COMPLIANCE WITH THE CONNECTICUT EROSION & SEDIMENTATION CONTROL MANUAL

_____ IF THE PROPOSED ACTIVITY IS DEEMED TO BE A "SIGNIFICANT IMPACT ACTIVITY" A PUBLIC HEARING IS REQUIRED ALONG WITH THE FOLLOWING INFORMATION:

- NAMES AND ADDRESSES OF ABUTTING PROPERTY OWNERS
- ADDITIONAL INFORMATION AS CONTAINED IN IWWC REGULATIONS ARTICLE 7.6

ADDITIONAL INFORMATION/ACTION NEEDED:

OTHER APPLICATIONS MAY BE REQUIRED. CONTACT THESE AGENCIES FOR FURTHER INFORMATION:

APPLICATION TO STATE OF CONNECTICUT DEEP
INLAND WATER RESOURCES DIVISION
79 ELM ST.
HARTFORD, CT. 06106
1-860-424-3019

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MA. 01742
1-860-343-4789

STAFF USE ONLY:

_____ DECLARATORY RULING: AS OF RIGHT & NON-REGULATED USES (SEE IWWC REGULATIONS SECTION 4)

_____ PERMIT REQUIRED:

_____ AUTHORIZED BY STAFF/CHAIR (NO ACTIVITY IN WETLANDS/WATERCOURSE AND MINIMAL IMPACT)

_____ CHAIR, BROOKLYN IWWC

_____ WETLANDS OFFICER

_____ AUTHORIZED BY IWWC

_____ SIGNIFICANT ACTIVITY/PUBLIC HEARING

_____ NO PERMIT REQUIRED

_____ OUTSIDE OF UPLAND REVIEW AREA

_____ NO IMPACT

_____ CHAIR, BROOKLYN IWWC

_____ WETLANDS OFFICER

_____ TIMBER HARVEST



Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete and mail this form in accordance with the instructions on pages 2 and 3 to:

DEEP Land & Water Resources Division, Inland Wetlands Management Program, 79 Elm Street, 3rd Floor, Hartford, CT 06106

Incomplete or incomprehensible forms will be mailed back to the inland wetlands agency.

PART I: Must Be Completed By The Inland Wetlands Agency

1. DATE ACTION WAS TAKEN: year: _____ month: _____

2. ACTION TAKEN (see instructions, only use one code): _____

3. WAS A PUBLIC HEARING HELD (check one)? yes ☐ no ☐

4. NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:

(print name) _____ (signature) _____

PART II: To Be Completed By The Inland Wetlands Agency Or The Applicant

5. TOWN IN WHICH THE ACTION IS OCCURRING (print name): Brooklyn

does this project cross municipal boundaries (check one)? yes ☐ no ☒

if yes, list the other town(s) in which the action is occurring (print name(s)): _____

6. LOCATION (see instructions for information): USGS quad name: Danielson or number: 43

subregional drainage basin number: _____

7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (print name): A. Kausch & Sons

8. NAME & ADDRESS / LOCATION OF PROJECT SITE (print information): Church St (37-21)

briefly describe the action/project/activity (check and print information): temporary ☐ permanent ☒ description: _____

House, septic, well

9. ACTIVITY PURPOSE CODE (see instructions, only use one code): B

10. ACTIVITY TYPE CODE(S) (see instructions for codes): 1, 2, 9, 12

11. WETLAND / WATERCOURSE AREA ALTERED (must provide acres or linear feet):

wetlands: 0.05 acres

open water body: 0 acres

stream: 0 linear feet

12. UPLAND AREA ALTERED (must provide acres): 0.40 acres

13. AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (must provide acres): 0 acres

DATE RECEIVED:

PART III: To Be Completed By The DEEP

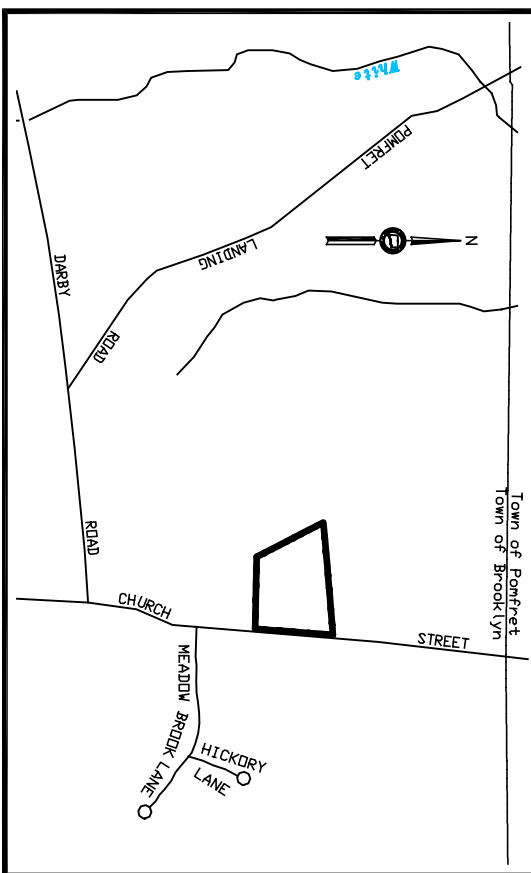
DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO

FORM CORRECTED / COMPLETED: YES NO

I have reviewed the inland-wetlands shown on this plan and they appear to be substantially the same as those which I delineated in the field.

Certified Soil Scientist



Location Map



Notes

- This survey has been prepared pursuant to the Regulations of the Connecticut State Agencies Section 20-300b-20 and the "Standards for Surveys and Maps in State of Connecticut" as adopted by the Connecticut Associations of Land Surveyors, Inc. on September 26, 1986
- This survey conforms to a Class "A-2" Horizontal Accuracy
- Survey Type: Site Development Plan
- Boundary Data: Estimated
- Intent: Wetlands Crossing and work within the upland review area
- Parcels shown as lot 21 on Assessors Tax Map 37 of the Brookline Assessors Office

- Wetlands were flagged in the field by Robert Russo and field located by Archer Surveying LLC. Total Area of Wetlands Flagged and located: 127,947 +/- Sq.Ft. 2.41 +/- Acres.
- Property is located in the RA Zone:
Area: 871,220 Sq.Ft. 17.20 Acres
Frontage: 150'
Front/Neat Setback: 50'
Side Setback: 40'
- There is no proposed regulated activities within 500' of the boundary of an adjoining municipality.
- The applicant is familiar with all the information provided in the application and is aware of the penalties for obtaining a permit through deception or through inaccurate or misleading information.
- Vertical Datum Depicted: Herson is Approximate North American Vertical Datum 1985 (NAVDB85) Based on Global Positioning System
- North Orientation Depicted Hereon is approximate North American Datum 1985 (NAD85). Based on Global Positioning System Observation.
- Topographic features depicted were taken from NOAA Lidar Data and are in the Topographic Keweenaw "T-D", contour interval = 2', Vertical Datum = Approx. NAVD 88.

Driveway Construction Sequence

- Notify Brooklyn Wetlands Agent to schedule a Pre-construction Meeting
- Install Silt Fence and Anti Tracking Pad
- Clear & Grub within Silt Fence and Wetlands Disturbance Limits
- Remove & Temporarily stockpile Topsoil
- Install Drainage Pipe
- Install Driveway Gravel
- Provide Topsoil Fertilizer & Seed on all remaining disturbed area
- Prepared As Built plan
- Remove EES control once vegetation is established

LEGEND

—————	PROPERTY LINE
—————	EASEMENT
—————	STONEMALL
—————	STONEMALL REMAINS
—————	EXISTING INDEX CONTOURS
—————	EXISTING CONTOURS
—————	WETLANDS FLAG
—————	BUILDING SETBACK
—————	SILT FENCE
○	IRON PIN
○	DRILL HOLE
□	MONUMENT
●	PROPERTY POINT
—x—	UTILITY POLE

James C. Gifford
Map 36 // Lot 55-2

DAVID A. SMITH, P.E. 10/1/23
DATE
NOT VALID UNLESS SEAL IS AFFIXED HEREIN

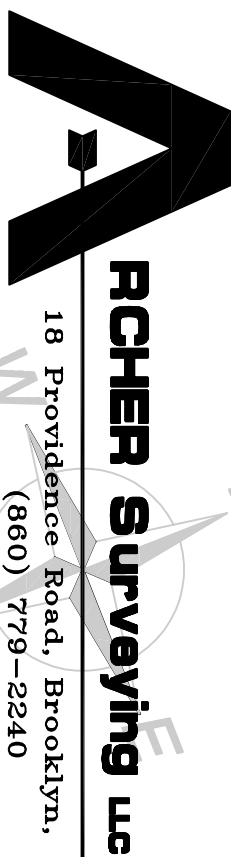
REVISIONS

No.	Description	Date
1	Initial Survey	10/1/23
2	Final Survey	10/1/23
3	Final Survey	10/1/23
4	Final Survey	10/1/23
5	Final Survey	10/1/23
6	Final Survey	10/1/23
7	Final Survey	10/1/23
8	Final Survey	10/1/23
9	Final Survey	10/1/23
10	Final Survey	10/1/23

Site Development Plan

Prepared For:
A. Kausch & Sons LLC
Church Street & Pomfret Landing
Brooklyn, Connecticut

DRAWING SCALE: 1"=30'



Sheet No. 1 of 2 Project No. AS 2162 Date: Jun 5, 2023

CLA Engineers, Inc.

Civil • Structural • Survey

RECEIVED

MAY 03 2021

317 MAIN STREET

NORWICH, CT 06360

(860) 886-1966

(860) 886-9165 FAX

May 3, 2021

Inland Wetlands Commission
Town of Brooklyn
69 South Main Street
Suite 22
Brooklyn, CT 06234

RE: CLA 6639
Subdivision
Church Street Brooklyn CT

To the Commission:

CLA Engineers was retained by A. Kausch & Sons LLC to conduct a wetlands investigation and functional assessment on the parcel of land, located on Church Street in Brooklyn CT that is proposed to be developed for a residences. The approximate site location is shown on the cover sheet of the site plans. The purposes of the investigation were to: establish the wetland delineation, provide background data in the form of determining wetland functions, and assess the potential for wetland impacts due to the proposed development.

Wetlands were delineated by Robert Russo of CLA Engineers according to the State of Connecticut statutory definition as described in Section 22a of the State Statutes. CLA conducted field work in October of 2020 and March of 2021.

After wetland delineation was complete, the wetland resources of the site were surveyed by conducting a deliberate walk through of the site, traversing each wetland in order to collect data characteristic of that wetland. During the walk through, vegetation identifiable was noted, and described.

Site Setting

Much of the site had been used for agriculture up until the 20th century as demonstrated by abundant stone walls. The presence of numerous Japanese barberry (*Berberis thunbergii*) indicates that the site was likely used for cattle grazing in the past as this plant is ignored by cattle and soon takes over. The site currently has two vegetative cover types that were established after farming ceased. Both cover types, wooded upland and wooded swamp, are dominated by mixed hardwoods.

The areas of upland have mixed hardwoods such as red maple, red oak, white oak, black cherry and black birch. The wetlands are dominated by red maple trees with other species such as yellow birch and pin oak in lesser numbers.

The land uses surrounding the site include residential, agricultural and woodland. The residential development is primarily located to the north and south along Church St and to the west along Pomfret Landing Rd. Undeveloped farmland and woodland also occurs surrounds the site to the north, west and south.

Throughout the site slopes vary from moderate to nearly flat. The surface water drains both south westward and south eastward off of the site.. The slopes on the east and west side of the site are gentle at the edge of the wetland and are not prone to erosion.

Surficial Geology and Soils

Southern New England was overlain by glacial ice as recently as 12,000-15,000 years ago. The materials that the glaciers deposited over top the local bedrock determine the surficial geology of the region and of the site. Connecticut's glacial deposits are generally divided into three categories: glacial till (un-stratified sand, silt and rock), glaciofluvial (water sorted, stratified sand and gravel), and glaciolacustrine (stratified sand, silt and clay that settled out in lakebeds). Only glacial till is present on the site of the proposed residences. soils formed in till deposits typically have sandy loam to silt loam textures and in this case they are the coarser, sandy loams. The slopes are moderate to flat throughout the site and this leads to differences in soil mapping classification as listed by the NRCS.

Table 1 is a summary table of the soils found on the site.

Table 1 - Soil Types and Properties at the Church Street Site

<u>Soil Series</u>	<u>Parent Material</u>	<u>Drainage Class</u>	<u>Texture/Characteristics</u>
*2 Ridgebury	Glacial Till	Somewhat poorly to very poorly drained	Stony sandy loam
61 Canton and Charlton	Glacial till	Well drained	Sandy loam
46 Woodbridge	Glacial Till	Moderately Well Drained	Sandy loam

* Wetland soil types

Wetland Descriptions and Functions

In the area of the proposed development there is a wetland system that occupies a broad lowland that stretches from Church Street north westward. The wetland itself varies from approximately 100 to 400 feet wide. It is nearly level but has hummocky micro-topography. Under the USFWS system is a palustrine deciduous swamp (PF01) that is seasonally flooded/saturated. This designation reflects its vegetation which is dominated by mature trees, and its hydrology which has shallow standing water in the winter and after storm events. The wetland lacks standing water in the summer and was not found to contain a perennial stream or vernal pool.

The typical vegetation of the wetlands includes: trees such as red maple trees and saplings, yellow birch trees and saplings; shrubs such as Japanese barberry, spice bush, highbush blueberry, winterberry holly, sweet pepperbush, clammy azalea, alder and plants such as skunk cabbage, cinnamon fern, sphagnum, royal fern, and sensitive fern.

The principle functions of this wetland system are typical to local red maple swamps and the wetland is generally undisturbed with an undisturbed wooded upland buffer. The CTDEEP NDDB (December 2020) shows no known habitat of threatened, endangered or special concern species.

The functions were found to include:

- Wildlife habitat
- Floodwater retention/detention
- Groundwater recharge/discharge
- Biomass production export
- Aesthetics

These values associated with the wetland and are supported by several important features of that wetland:

- Areas of undeveloped buffer
- Limited development within the watershed
- Evidence of use by a diversity of wildlife species.

Potential for Impacts

As shown on the project plans there are proposed activities in the inland wetlands. Three wetland crossings are proposed for the driveway that will provide access to the two houses. These activities are limited to impacts necessary to provide the driveway and are purposed

located in the narrowest reaches of wetland in order to minimize impacts. This lot has significant developable area that cannot be accessed without wetland impacts. The width of the driveway has been kept to the minimum required and the use smaller diameter culverts assists in keeping the elevation of the driveway low, minimizing the side slopes needed for the crossing. CLA believes that the proposed driveway crossing is the most feasible and prudent alternative.

As shown on the plans, work in the wetland will include:

- Clearing and grading
- Construction of driveways and placement of culverts
- Installation of erosion and sedimentation controls
- Construction of utilities

The activities in the wetland have been minimized in order to limit wetland disturbance.

As shown on the plans, work in the upland review zone will include:

- Clearing and grading
- Construction of driveways
- Installation of erosion and sedimentation controls
- Construction of utilities

These activities in the upland review zone present limited potential for wetland impacts. The site has only moderate slopes and short length of slope. CLA believes that the Best Management Practices (BMPs) measures shown on the plans for erosion and sediment control and storm water management will be adequate in preventing wetland impacts if properly installed and maintained.

CLA notes that in order to minimize the potential for impacts to wetlands, the E&S has been designed in compliance with the CTDEEP 2002 E&S Manual.

Alternatives

CLA examined alternative to the proposed wetland crossings. Note that the property has frontage on Pomfret Landing Rd, which could be used to gain access via a driveway, but wetland impacts would also be required. CLA conducted a field to determine the feasibility of a driveway crossing walk of this location. CLA determined that a driveway crossing in this location is not the most feasible and prudent alternative based on the following observations.

1. The wetland that would have to be crossed has a perennial stream, indicating that is a more valuable wetland than those to be impacted by coming off of Church Street.

2. The wetland to be crossed is 12 to 14 feet lower in elevation than the access strip off of Pomfret Landing Rd. This would necessitate a wide wetland fill to accomplish the crossing.
3. The wetland to be crossed is over 100 feet wide and continues, north and south, as a wildlife travel corridor. This characteristic is lacking in the wetlands that would be disturbed by gaining access from Church Street.
4. Due to the width of the wetland and elevation change, present, a wetland crossing at the Pomfret Land access would create a substantial fragmentation of the wetland and reduce its habitat values significantly. This would not be the case with the Church Street access.

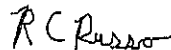
Based on these field observations, CLA believes that the proposed wetland crossings represent the most feasible and prudent alternative.

Summary

The proposed development activities will directly impact wetlands. The work in the upland review zone can be managed with BMPS so as to not impact wetlands during construction. In summary, if the proposed erosion and sedimentation control measures are adhered to, CLA believes that the wetland impacts will be limited to what is necessary to provide a driveway for the building lost.

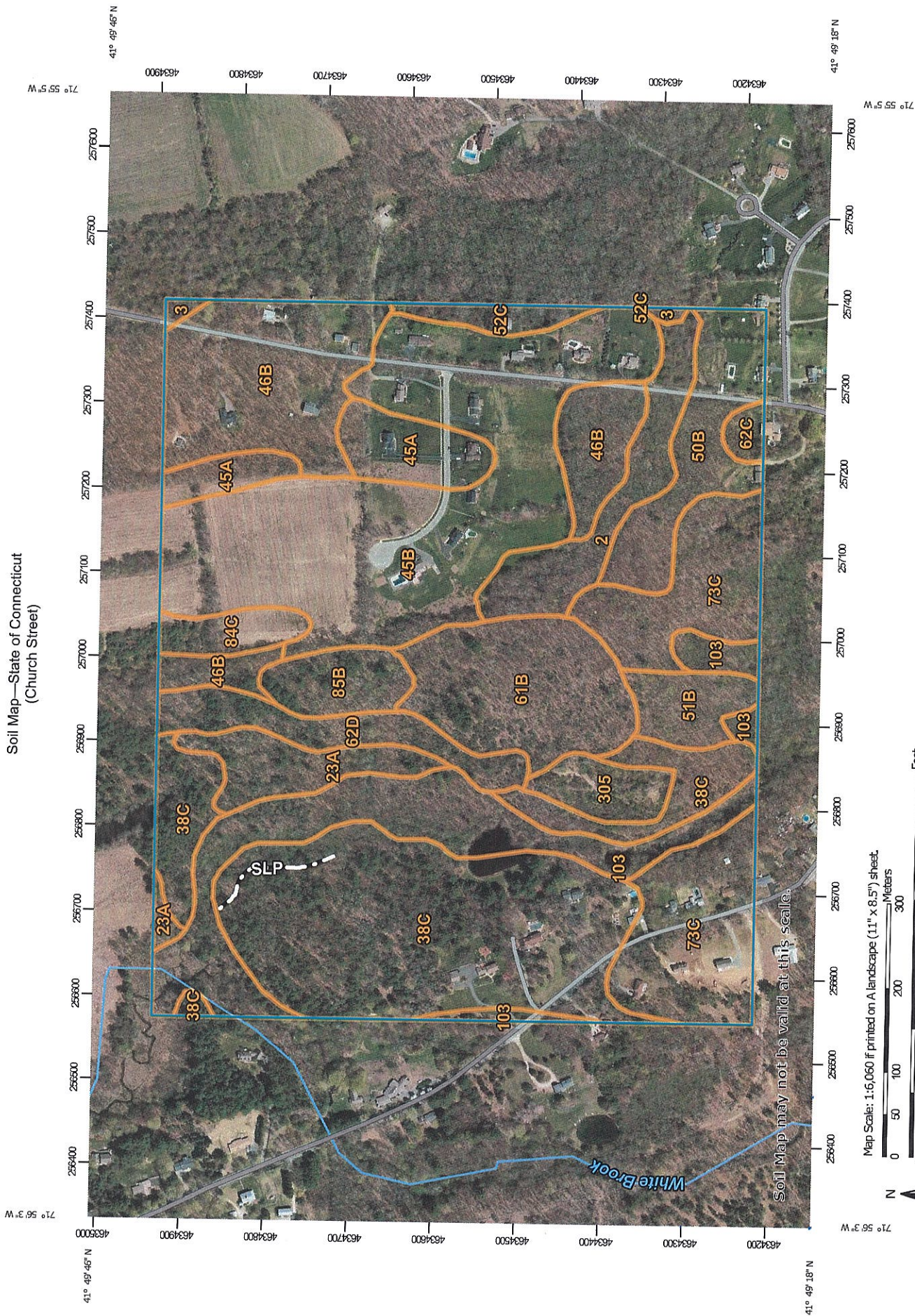
Please contact me if you have any questions.

Very truly yours,



Robert C. Russo
Soil Scientist

Soil Map—State of Connecticut (Church Street)



Map Scale: 1:6,060 if printed on A landscape (11" x 8.5") sheet.

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

MAP LEGEND

	Area of Interest (AOI)		Soil Map Unit Polygons		Spoil Area
	Area of Interest (AOI)		Soil Map Unit Lines		Stony Spot
	Soils		Soil Map Unit Points		Very Stony Spot
	Special Point Features		Blowout		Wet Spot
	Special Point Features		Borrow Pit		Other
	Special Point Features		Clay Spot		Special Line Features
	Special Point Features		Closed Depression		Water Features
	Special Point Features		Gravel Pit		Streams and Canals
	Special Point Features		Gravelly Spot		Transportation
	Special Point Features		Landfill		Rails
	Special Point Features		Lava Flow		Interstate Highways
	Special Point Features		Marsh or swamp		US Routes
	Special Point Features		Mine or Quarry		Major Roads
	Special Point Features		Miscellaneous Water		Local Roads
	Special Point Features		Perennial Water		Background
	Special Point Features		Rock Outcrop		Aerial Photography
	Special Point Features		Saline Spot		
	Special Point Features		Sandy Spot		
	Special Point Features		Severely Eroded Spot		
	Special Point Features		Sinkhole		
	Special Point Features		Slide or Slip		
	Special Point Features		Sodic Spot		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: State of Connecticut
Survey Area Data: Version 20, Jun 9, 2020

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

Date(s) aerial images were photographed: Mar 30, 2011—May 1, 2011

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2	Ridgebury fine sandy loam, 0 to 3 percent slopes	5.6	3.8%
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	0.4	0.3%
23A	Sudbury sandy loam, 0 to 5 percent slopes	4.1	2.8%
38C	Hinckley loamy sand, 3 to 15 percent slopes	29.8	19.8%
45A	Woodbridge fine sandy loam, 0 to 3 percent slopes	4.9	3.3%
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	28.7	19.1%
46B	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	15.4	10.2%
50B	Sutton fine sandy loam, 3 to 8 percent slopes	6.5	4.3%
51B	Sutton fine sandy loam, 0 to 8 percent slopes, very stony	2.8	1.9%
52C	Sutton fine sandy loam, 2 to 15 percent slopes, extremely stony	1.4	0.9%
61B	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	9.5	6.3%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	0.7	0.5%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	4.6	3.0%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	14.7	9.8%
84C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes	2.0	1.3%
85B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony	3.0	2.0%
103	Rippowam fine sandy loam	13.6	9.1%
305	Udorthents-Pits complex, gravelly	2.5	1.6%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Totals for Area of Interest		150.2	100.0%



July 28, 2023

Jana Butts Roberson, AICP
Director of Community Development / Town Planner
Town of Brooklyn
69 South Main Street, Suite 22
Brooklyn, CT 06234

RE: **Special Permit Modification
Townsend Development Associates, LLC
SP 15-006**

Jana,

Below is an itemized response to the July 5, 2023 and July 10, 2023 Review Comments received from Northeastern Connecticut Council of Governments. For clarity original comments are in normal text and CHA responses are in **Bold**.

July 5, 2023 - Engineering Site Plan & Drainage Report Review

Drawing No. 2 (Sheet 1 of 1) – Improvement Location Plan

1. Are all of the abutting property owners shown on the 2017 plan present today? If not, a new large scale plan or drawing needs to be included in the plan set with current owners, similar to the "inset site installation drawing" included in Drawing No. 13.
Drawing 2 has been updated to revise the current Owners.

Drawing No. 3 – Layout Plan

1. Not all sidewalks shown are dimensioned. All sidewalk widths need to be specified on the plan.
Additional dimensions have been added to the plan set.
2. If the sidewalk at the south end of the proposed crosswalk is not flush with the pavement, a sidewalk ramp will need to be constructed there and a construction detail provided — see Type 17 on CT DOT "Sheet 6 – Sidewalk Ramps."
A new sidewalk ramp and detail are now provided.
3. The layout plan is missing some dimensions for curb radii, tangents, aisle widths, loading zone width, etc. All dimensions need to be shown to be able to call this a true layout plan. Scaling dimensions off the plan where no dimensions are shown is unacceptable as this is prone to reading error and distortion in a paper printing process.
Additional dimensions have been added to the plan set.

4. The “Commercial Space” building footprint is missing dimensions; however, the “Self Storage” units do have dimensions shown. Add all dimensions to the commercial space.

Additional dimensions have been added to the plan set.

5. The wood guard rail end treatments on the west side of the development need to be described on this plan or on the Construction Details plan.

An end treatment detail has been added to Sheet 11 of the plan set.

6. If the wood guard rail is struck by a vehicle, has the impact to the segmental retaining wall adjacent to the posts been evaluated? The distance a post will be located from the back side of the wall needs to be shown in a construction detail. Furthermore, has the condition of the wall been inspected with respect to the development of this project and in consideration of the traffic (vibration) of heavy construction vehicles travelling close by?

On similar previous projects, a minimum separation of 3'-3" from the face of retaining wall to the back of the guardrail posts (±4' from face of wall to traffic face of guardrail) has been required by the wall designer/manufacturer to handle the potential impact loads. The location of the proposed guardrail has been moved to be 18-inches from face of curb to face of guardrail, providing at least 4' from face of existing retaining wall to face of proposed guardrail. Notes have been added to the wood guardrail detail to clarify this.

The condition of the existing wall has been visually inspected, and no apparent defects were noted. This wall is the result of modern construction (c. 2007) associated with the original development approval granted to Townsend Development Associates, and was originally intended to have the paved roadway immediately adjacent to the back of the wall. The completion of the site development is not anticipated to negatively impact the existing wall.

7. If a tractor-trailer truck will be delivering merchandise/supplies to the restaurant and commercial space, a diagram needs to be submitted showing that it can maneuver throughout the site, especially for the 60± foot long loading zone to the rear of the restaurant portion of the proposed building.

A Turning Demonstration Plan has been added to the Plan Set.

8. Will this development be phased construction?

At this time, it is anticipated that the Self-Storage facility would begin construction as soon as feasible following anticipated approvals. The Commercial Space is still seeking defined tenants and would likely follow a construction season, or more, behind.

Drawing No. 4 – Grading Plan

1. Elevations need to be shown for the top of wall on each side of the Loading Zone.

Provided.

2. What does the bold line around the scour hole at the rear of the property represent? This needs to be clarified on the plan.

This line has been removed.

3. Elevations on the entire top of the existing wall at the west boundary of the property need to be included on the plan.

Existing top of wall elevations are now provided.

4. There is inadequate information identifying existing contour lines to evaluate the proposed grading. The plan must be updated to include existing elevations on all existing contour lines and resubmitted for review.

Additional contour labels have been added.

Drawing No. 5 – Drainage Plan

1. Direction of flow arrows need to be included on the plan.

Flow arrows have been added to the plan set.

Drawing No. 6 – Utility Plan

1. For the restaurant operation, it is not evident from the plan where a bulk fat/oil/grease (FOG) recovery tank will be located on the site close to the restaurant. This location needs to be added to the plan in an enclosed area.

The Dumpster Area has been expanded to accommodate this tank.

2. Who is going to be responsible for the maintenance of certain utilities (water, gas, electric, telephone, cable, etc.) on site? If utility companies will be responsible for maintenance and ownership, are easements necessary for their infrastructure on private property? If so, they need to be shown on the plan similar to the sewer maintenance easement.

Utility Providers already have mains extended onto the property. Based on initial conversations with Connecticut Water and Eversource, easements are not expected to be required for the service connections.

3. In addition to the Brooklyn Water Pollution Control Authority, has the Killingly Water Pollution Control Authority provided written approval on accepting the additional anticipated sewage flow for from the proposed development?

The proposed Project has not yet been reviewed by the Brooklyn or Killingly WPCA; however, the proposed development represents a decrease in anticipated flows based on the previously approved developments, as the Self-Storage facility will not generate any discharge.

Drawing No. 9 – Construction Details

1. In the “1,000 Gallon Grease Trap” detail, add a note that it is H20 load rated. Also, show risers at each access opening noting material spec and dimensions. It is not anticipated that buoyancy needs to be taken into account.

Provided.



Drawing No. 11 – Construction Details

1. The “Depressed Curb Ramp” detail is lacking information in order to construct it. The ramp needs a “landing” and shall be modeled after a Connecticut Department of Transportation (CT DOT) 48” wide ramp with landing detail drawing that can be found on their “Sheet 1 - Sidewalk Ramps.”
CT DOT details are now provided.
2. In the “Typical Cross Section for Matching Existing and Proposed Pavement,” the thickness of the new pavement is shown to be 3¼”. Is this correct, as I have never ever seen pavement thickness called out to the quarter (1/4) inch? Incidentally, in the “Bituminous Concrete Pavement” detail, the total pavement thickness is only three (3) inches. Which detail is correct?
The Matching Existing and Proposed Pavement detail has been modified to 3-inches.
3. Any reference to State of Connecticut Department of Transportation Form 816 shall be changed to the most recent publication, Form 818.
References to 816 have been revised to 818 throughout.
4. In the “Concrete Encasement” detail, the length of concrete encasement on each side of the centerline of the crossing needs to be specified.
A note has been added to the detail.
5. In the “Wood Guard Rail” detail, the depth of bury of the wood post needs to be specified as well as typical spacing between posts. Also, metal fasteners need to be specified as stainless steel.
Depth of Bury and spacing for the posts are now specified.
6. Termination ends of the guard rail need to be shown in a construction detail.
A detail is now provided on Sheet 11 of the plan set.
7. There is a “Finish Course Standard Mold 6” Concrete Lip Curbing Detail” on this plan sheet, however, where this is located is not shown on any of the site plans. Where is this used? If it is not used it should be removed.
This detail is for the Extruded Concrete Curb proposed for the site. The title of the detail has been revised for clarity.

Drawing No. 13 – E&S Control and Stormwater Maintenance Plan

1. Any reference to State of CT DOT Form 816 shall be changed to the most recent publication, Form 818.
References to 816 have been revised to 818 throughout.

2. Straw wattles need to be installed in a shallow trench due to their light weight, which minimizes movement from heavy rain. Furthermore, the contractor responsible for digging the trench may neglect to dig the trench and will result in an improper installation. To avoid this and for better sediment control, replace straw wattles with silt socks, which are heavier and do not require a shallow trench to install but do need to be staked when installed on a bed of earth, and revise the detail and inset site installation drawing to reflect this.

The straw wattle has been replaced with a silt sock as suggested.

3. The “construction entrance pad” location in the site inset drawing is unacceptable. It is in conflict with traffic movements generated by the existing pharmacy (Lot 16-2) and existing commercial space. Movement of heavy equipment to and from the construction site presents a safety hazard, accumulation of site debris (mud, rocks, etc.) that have the potential to damage customer vehicles, has a tight if not undoable turning egress movement, and poses an impediment to active businesses. The construction entrance needs to be relocated to the paved driveway with a center island along the west boundary line of the site to be developed to minimize these impacts as much as possible.

Construction Entrance has been relocated as indicated.

Drainage Report

1. No comments.
Acknowledged.

July 10, 2023 - Drainage Report Review for Compliance with Zoning Regulation 7.H. – Stormwater Management

7.H.3.1a. Pollutant Reduction in accordance with 2004 Connecticut Stormwater Quality Manual (CSQM) Section 7.4

1. The CHA Drainage Report addresses pollutant reduction with Water Quality Volume calculations using the CSQM formula.
Acknowledged.

7.H.3.1b. Groundwater Recharge and Runoff Volume Reduction in accordance with 2004 Connecticut Stormwater Quality Manual Section 7.5

1. A “groundwater recharge calculation” could not be found in the Drainage Report. CHA needs to address this and submit this as an addendum to their Report.

It should be noted that the expanded drainage system serving this development is a “closed system,” having one outlet in an existing swale along the north edge of the property, which flows in a northwesterly direction to a wetland. However, the swale and wetland will provide an unknown quantity of groundwater recharge.

The “runoff volume reduction” is in the Report but not identified as such and utilizes an identical calculation as the “water quality volume” formula in the CSQM and also found in the CHA Report. In essence, they are one in the same.

Pursuant to the design calculations prepared by J&D (attached and included in the Drainage Report) the design of the water quality swales included “Full Build Out of Klotz Property”. Based



on these calculations, the Retention Basin (serpentine swale) provides water quality treatment (and recharge) of $\pm 42,000$ CF, based on 0.5-inches of runoff from ± 21 acres of collected impervious area, that was previously untreated. Pursuant to the CSQM Section 7.5.1, the required Groundwater Recharge Volume for sites on Hydrologic Soil Group 'B' (portion of the developed lot is mapped as 'D') would be 0.25-inches from the impervious areas. Therefore, the existing water quality swale is believed to satisfy the groundwater recharge volume requirements for the proposed development.

7.H.3.1c. Peak Flow Control in accordance with 2004 Connecticut Stormwater Quality Manual Section 7.6 for the 10-year, 25-year and 100-year storm events

1. The Drainage Report provides calculations for the 2, 10, 25 and 100-year storm events for the post-development condition. The Report does not evaluate the pre-development condition that would be used to see if the "peak flow control" is met. However, in the Summary of the consultant's Report it is stated that "As part of an agreement between a previous property Owner and the Town of Brooklyn (see Section G), the proposed stormwater treatment system is not required to attenuate peak flows versus existing conditions, but must only treat the runoff for water quality (80% Total Suspended Solids removal). Because peak stormwater flow reduction is not a requirement, pre-development stormwater analysis has not been provided."

I believe this agreement pertains to the serpentine water quality basin to the rear of the Berkshire Bank and is not applicable to this project, which does not empty into the serpentine basin—the basin only treats drainage captured along Providence Road (Route 6) collected in the State of Connecticut drainage system. I base this on what I have gleaned from the plans and evaluation of the serpentine basin included in the CHA Report, especially the J&D Civil Engineers' report "Evaluation and Selection of BMP's," dated April 2003 with revision date of May 2003, which was to be used as a part of a Town of Brooklyn Stormwater Management Plan.

Because the drainage from the expansion of development on the Townsend property does not empty into the serpentine basin, it is my opinion that the consultant needs to calculate the pre-development condition to evaluate existing condition vs. the developed condition to meet the requirement of 7.H.3.1c. and submit it for review.

The Drainage and Conservation Easement Documents, included as an attachment to the Drainage Report, include:

1. **Drainage and Conservation Easement (on file in the Town's Land Records, Book 365 Pages 0285 through 0288)**
2. **Sheets 4 and 5 of the Plan Set entitled "Klotz Property Regional BMP's, Town of Brooklyn, CT, Stormwater Management Plan, Prepared by J&D Civil Engineers, Dated June 2003.**
3. **Evaluation and Selection of BMP's, Town of Brooklyn Stormwater Management Plan, Prepared by J&D Civil Engineers, Dated April 2003, Revised June 2003.**

Based on these documents, and the previous approvals granted for development of the Townsend Development Property, the Applicant, and their Consulting Engineer, believe that both the serpentine swale and the linear swale along the northern boundary are included in this agreement and that the only stormwater treatment required of the development is pretreatment prior to

discharge to the Town's Regional Water Quality Swales. The following excerpts from the Drainage and Conservation Easement are provided to support this, with commentary in italics below:

- **Article I Grantor's Rights and Responsibilities, Item a. states: "The Grantor shall allow the Grantee to construct the water quality swales as shown on the plan entitled, "Klotz Property Regional BMP's, Town of Brooklyn, CT Stormwater Management Plan Sheets 4 & 5, by J&D Civil Engineers, Scale 1" = 40', dated June 30, 2003.**

Sheet 4 of the J&D Plan Set clearly shows both swales being constructed on the Townsend Development Property, and Sheet 5 includes cross sections of both swales.

Also noted:

- 1. The Limits of the Easement described in Schedule 'A' (Book 365, Page 289, attached) and depicted on the existing conditions plan, clearly include the limits of both swales.*
 - 2. This Item of the Easement indicates swales (plural) where other items (Article 1.c. for example) are singular and specific to one swale.*
 - 3. Both Swales were constructed at the same time by the same Contractor and would require the Town to have an easement for construction on private property.*
- **Article I Grantor's Rights and Responsibilities, Item f. states: "Grantor shall have the right to discharge its stormwater runoff into the water quality swales and the drainage and conservation easement in one or more locations subject to the approval of appropriate Town Commissions.**
 - **Article I Grantor's Rights and Responsibilities, Item g. states: "Grantor shall provide pre-treatment of stormwater from the developed portion of the Grantor's property prior to discharging to the water quality swales. The following performance standards for stormwater discharge shall apply.**
- 1. Stormwater management conveyance systems must be designed to remove 80% on the annual average load of Total Suspended Solids (TSS). It shall be presumed that this standard is met when stormwater management best practices (BMPs) are sized to treat 0.5 inches of runoff times the impervious area of the post-development project site. TSS removal rates of BMPs must be documented from current EPA or Connecticut DEP design guidelines.**
 - 2. Rooftop runoff except from flat industrial roofs made of galvanized metal or copper, may be considered uncontaminated and not require pre-treatment prior to discharge to the drainage and conservation easement.**
- **Article II Grantee's Rights and Responsibilities, Item c. states: "To allow the Grantor to discharge stormwater from the developed portion of the property into the Town's regional stormwater quality swales in one or more locations subject to the approval of appropriate Town Commissions. The Grantor shall not be required to construct stormwater detention facilities to reduce peak discharges.**

7.H.3.2.

1. The CHA drainage design incorporates an additional Hydrodynamic Separator to one that already functions in the existing drainage system and some hooded catch basins will be constructed. These enhancements to the drainage system serve to reduce Total Suspended Solids, hydrocarbons and other deleterious floatables from discharging into the environment at the system outfall.

Acknowledged.

7.H.4. Modifications

1. To the best of my knowledge, CHA has not requested any modifications or waivers involving the stormwater system.

Acknowledged, no modifications or waivers are requested.

Please contact me (pparent@chacompanies.com, 860-885-1052) if you have any questions or additional comments.

Thank You,

Pete Parent, P.E.



STATE OF CONNECTICUT)
) ss: 11th July " 2005
 COUNTY OF NEW LONDON)

Personally appeared NANCY S KLOTZ, President of THE DOWNES-PATTERSON CORPORATION, signer and sealer of the foregoing instrument and acknowledged the same to be her free act and deed, and the free act and deed of THE DOWNES-PATTERSON CORPORATION, before me.

[Signature]
 Commissioner of the Superior Court
 Notary Public

STATE OF CONNECTICUT)
) ss: August 2 2005
 COUNTY OF WINDHAM)

Personally appeared Thomas J. Gower of the TOWN OF BROOKLYN, signer and sealer of the foregoing instrument and acknowledged the same to be his/her free act and deed, and the free act and deed of the TOWN OF BROOKLYN, before me

[Signature]
 Commissioner of the Superior Court
 Notary Public Wing County 10/31/05

Attachment A

Description of Drainage and Conservation Easement: A tract of land shown as "Drainage and Conservation Easement in favor of the Town of Brooklyn" on a plan prepared by I & D Civil Engineers, No. Grosvenordale, CT, entitled "Compilation Plan showing Drainage and Conservation Easement to be granted to the Town of Brooklyn by Downes Patterson Corporation, Route 6 - East Main Street, Brooklyn, CT", date August 7, 2003, scale 1" = 50' bounded and described as follows:

Beginning at the north westerly corner of herein described drainage and conservation easement, bounded northerly by n/Town of Brooklyn and westerly by n/T Kenneth and Cindy Cardini;

Thence N 70° 13' 16" E 707.58' to an iron pipe;

Thence N 70° 13' 16" E 81.17' to a point which is the north east corner of said easement;

Thence S 19° 54' 12" E 35.00' to a point;

Thence S 70° 13' 16" W 509.11' to a point;

Thence S 30° 24' 11" W 196.48' to a point;

Thence S 19° 49' 27" E 240.00' to a point;

Thence S 70° 10' 33" W 185.51' to a point;

Thence N 15° 25' 28" W 367.33' to an iron pipe;

Thence N 15° 25' 28" W 59.16' to the corner at the point of beginning.

Received for record this 31st day
 of August 2005. A.D. at 2:46 P.M.

JOB NO. 01146
DATE 4/10/03
BY JJB
D BY _____

J & D CIVIL
ENGINEERS
401 RAVENELLE ROAD
North Grosvenordale, CT 06255
(860) 923-2920 FAX (860) 923-3487

SHEET NO. 1 OF 2

JOB _____
SUBJECT DRAINAGE
CLIENT BROOKLYN

STORMWATER QUALITY CALCULATIONS

SEE WATERSHED MAP

INSTALL STRUCTURAL BMP'S BETWEEN COMMERCIAL DEVELOPMENT & LARGE WETLAND IN DRAINAGE BASINS F-2 & E.

TOTAL DRAINAGE AREA UP TO WETLAND IS

$$22 \text{ AC} + 17 \text{ AC} = 39 \text{ AC}$$

(F-1) (PORTION F-2 UP TO WETLAND)

FOR RUNOFF VOLUME TO BE TREATED TO WATER QUALITY SWALE (WQV)

IMPERVIOUS AREA* = 21 ACRES

* ASSUMES FULL BUILD OUT OF LOT PROPERTY

- IF TREAT 0.5 IN RUNOFF VOLUME TO BE TREATED:

$$\frac{(0.5 \text{ IN})(21 \text{ AC})(43560 \text{ FT}^2/\text{AC})}{12 \text{ IN}} = 38,115 \text{ FT}^3$$
$$= 0.88 \text{ AC-FT}$$

- IF TREAT 1" RUNOFF VOLUME =

$$\frac{76,230 \text{ FT}^3}{1.75 \text{ AC-FT}}$$

FOR WQV TO BE TREATED FOR SEDIMENT TRAP (FOREBAY) FROM 'JOB LOT' PROPERTY

IMPERVIOUS D.A = 6.8 AC

MA DEP GUIDELINES RECOMMEND TREATING 0.1"

$$\frac{0.1 \text{ IN}(6.8 \text{ AC})(43560 \text{ FT}^2/\text{AC})}{12 \text{ IN}} = 2470 \text{ FT}^3$$

JOB NO. 01146
DATE _____
BY _____
CH'D BY _____

J & D CIVIL
ENGINEERS
401 RAVENELLE ROAD
North Grosvenordale, CT 06255
(860) 923-2920 FAX (860) 923-3487

SHEET NO. 2 OF 2

JOB _____
SUBJECT _____
CLIENT _____

DESIGN SEDIMENT FOREBAY FOR RUNOFF FROM
JOB LOT PLAZA

COMMENTS: CONC BOTTOM PREFERABLE FOR MAINTAINENCE
OPEN UNIT EASIER TO MAINTAIN BUT
NOT AS SAFE

IF DEPTH = 4' THE BOTTOM AREA = $\frac{2470}{4} = 617 \text{ FT}^2$
OR ABOUT 15' x 40'

WITH THIS LARGE SIZE CONC BOTTOM OR CLOSED
UNITS PROBABLY NOT FINANCIALLY FEASIBLE
∴ DESIGN OPEN, RIPRAP UNIT SIMILAR TO
DOT'S

SEE DESIGN PLAN: SET BOTTOM ELEV @ 221 w/
OVERFLOW EL INTO STORMWATER
QUALITY SWALE @ 225.0

CHECK SIZE OF WATER QUALITY SWALE

EFFECTIVE SIZE FROM EL 218-222

<u>ELEV.</u>	<u>AREA (FT²)</u>	<u>AVE AREA</u>	<u>VOL (FT³)</u>	<u>CUM VOL (FT³)</u>
218	3100		0	
220	9820	6460	12,920	12,920
222	19,440	14,630	29,260	42,180

∴ STORAGE / SIZE = 42,180 FT³

> 38,115 ∴ OK → GOOD

NORTHEASTERN CONNECTICUT COUNCIL OF GOVERNMENTS

DRAINAGE REPORT REVIEW FOR COMPLIANCE WITH ZONING REGULATION 7.H. – STORMWATER MANAGEMENT

PERTAINING TO A

SPECIAL PERMIT SITE DEVELOPMENT PLAN

(ASSESSOR'S MAP 41, LOT 16)

PROVIDENCE ROAD (ROUTE 6)

BROOKLYN, CT

(July 10, 2023)

The comments contained herein pertain to my review of a Drainage Report, consisting of four hundred fifty-five (455) pages Prepared for Townsend Development Associates, LLC, Providence Road (Route 6), Brooklyn, Connecticut, Dated: May 24, 2023,” prepared by engineering consultant CHA. The purpose of this review is to determine whether or not portions of Brooklyn Zoning Ordinance 7.H., Stormwater Management, have been met for this commercial project.

7.H.3.1a. Pollutant Reduction in accordance with 2004 Connecticut Stormwater Quality Manual (CSQM) Section 7.4

The CHA Drainage Report addresses pollutant reduction with Water Quality Volume calculations using the CSQM formula.

7.H.3.1b. Groundwater Recharge and Runoff Volume Reduction in accordance with 2004 Connecticut Stormwater Quality Manual Section 7.5

A “groundwater recharge calculation” could not be found in the Drainage Report. CHA needs to address this and submit this as an addendum to their Report.

It should be noted that the expanded drainage system serving this development is a “closed system,” having one outlet in an existing swale along the north edge of the property, which flows in a northwesterly direction to a wetland. However, the swale and wetland will provide an unknown quantity of groundwater recharge.

The “runoff volume reduction” is in the Report but not identified as such and utilizes an identical calculation as the “water quality volume” formula in the CSQM and also found in the CHA Report. In essence, they are one in the same.

7.H.3.1c. Peak Flow Control in accordance with 2004 Connecticut Stormwater Quality Manual Section 7.6 for the 10-year, 25-year and 100-year storm events

The Drainage Report provides calculations for the 2, 10, 25 and 100-year storm events for the post-development condition. The Report does not evaluate the pre-development condition that would be used to see if the “peak flow control” is met. However, in the Summary of the consultant’s Report it is stated that *“As part of an agreement between a previous property Owner and the Town of Brooklyn (see Section G), the proposed stormwater treatment system is not require to attenuate peak flows versus existing conditions, but must only treat the runoff for water quality (80% Total Suspended Solids removal). Because peak stormwater flow reduction is not a requirement, pre-development stormwater analysis has not been provided.”*

I believe this agreement pertains to the serpentine water quality basin to the rear of the Berkshire Bank and is not be applicable to this project, which does not empty into the serpentine basin—the basin only treats drainage captured along Providence Road (Route 6) collected in the State of Connecticut drainage system. I base this on what I have gleaned from the plans and evaluation of the serpentine basin included in the CHA Report, especially the J&D Civil Engineers’ report “Evaluation and Selection of BMP’s,” dated April 2003 with revision date of May 2003, which was to be used as a part of a Town of Brooklyn Stormwater Management Plan.

Because the drainage from the expansion of development on the Townsend property does not empty into the serpentine basin, it is my opinion that the consultant needs to calculate the pre-development condition to evaluate existing condition vs. the developed condition to meet the requirement of 7.H.3.1c. and submit it for review.

7.H.3.2.

The CHA drainage design incorporates an additional Hydrodynamic Separator to one that already functions in the existing drainage system and some hooded catch basins will be constructed. These enhancements to the drainage system serve to reduce Total Suspended Solids, hydrocarbons and other deleterious floatables from discharging into the environment at the system outfall.

7.H.4. Modifications

To the best of my knowledge, CHA has not requested any modifications or waivers involving the stormwater system.

By: Syl Pauley, Jr., P.E.
Syl Pauley, Jr., P.E., NECCOG Regional Engineer

A detailed location map of East Brooklyn, showing streets, landmarks, and a scale bar. The map includes a north arrow, a scale bar indicating 1 inch equals 1000 feet, and various street names such as BRICK YARD ROAD, ALLEN HILL, LOCUS, and BROOKLYN. A shaded area labeled 'LOCUS' is shown near the center of the map.

PROPOSED USES: 19,640 S.F. COMMERCIAL SPACE
16,100 S.F. SELF STORAGE SPACE

"LOCUS"
 MAP #41 LOT #16
 N/F
 TOWNSEND DEVELOPMENT
 ASSOCIATES, LLC
 VOLUME 396/PAGE 321
 AREA = 326,125 ± S.F.
 = 7.49 ± ACRES

PROPOSED SELF-STORAGE
 PROPOSED SELF-STORAGE
 PROPOSED COMMERCIAL SPACE
 EXISTING COMMERCIAL SPACE
 EXISTING COMMERCIAL SPACE
 EXISTING PHARMACY
 EXISTING BANK

* IF PARKING OR DRIVEWAY IS BETWEEN BUILDINGS AND STREET
** 30' FOR 1 & 2 STORY BUILDINGS, 40' FOR 3 STORY BUILDINGS

PARKING CALCULATIONS			
BUILDING	PARKING REQUIREMENT	SPACES REQUIRED	SPACES PROVIDED
RETAIL USES (7.B.2.2)	3 SPACES PER 1,000 SF	38 SPACES	134 SPACES (41 EXISTING)
PERSONAL SERVICES USES (7.B.2.2)		8 SPACES (EXISTING USE)	
LICENSED HEALTH SERVICES (7.B.2.4)		8 SPACES (EXISTING USE)	
RESTAURANT USES (7.B.2.5)		80 SPACES (ASSUMING 240 SEATS)	
TOTAL		134 SPACES	

PER ADA STANDARDS, PARKING AREAS WITH 101 TO 150 PARKING SPACES MUST PROVIDE A MINIMUM OF 5 ACCESSIBLE PARKING SPACES. THERE ARE 3 EXISTING AND TWO PROPOSED ACCESSIBLE SPACES TO MEET THIS REQUIREMENT.

ADJACENT POTENTIAL OVERFLOW PARKING			
BUILDING	GROSS SQUARE FOOTAGE	SPACES REQUIRED	SPACES PROVIDED
PHARMACY PRIOR APPROVAL	13,225 SF	67 SPACES	73 SPACES
BANK PRIOR APPROVAL	3,000 SF	15 SPACES	21 SPACES
TOTAL		83 SPACES	94 SPACES

SCALE: 1' = 100'

PER SECTION 8-26c OF THE CONNECTICUT GENERAL STATUTES, AS AMENDED
APPROVAL AUTOMATICALLY EXPIRES _____, IF ALL PHYSICAL IMPROVEMENTS
REQUIRED BY THIS PLAN ARE NOT COMPLETE BY THIS DATE.

REVIEWED BY THE TOWN ENGINEER <div style="display: flex; justify-content: space-between; margin-top: 20px;"> _____ FIRST SELECTMAN _____ DATE </div>	ENDORSED BY THE BROOKLYN INLAND WETLANDS COMMISSION <div style="display: flex; justify-content: space-between; margin-top: 20px;"> _____ CHAIRMAN OR SECRETARY _____ DATE </div>	APPROVED BY THE BROOKLYN PLANNING & ZONING COMMISSION <div style="display: flex; justify-content: space-between; margin-top: 20px;"> _____ CHAIRMAN OR SECRETARY _____ DATE </div>
---	--	--



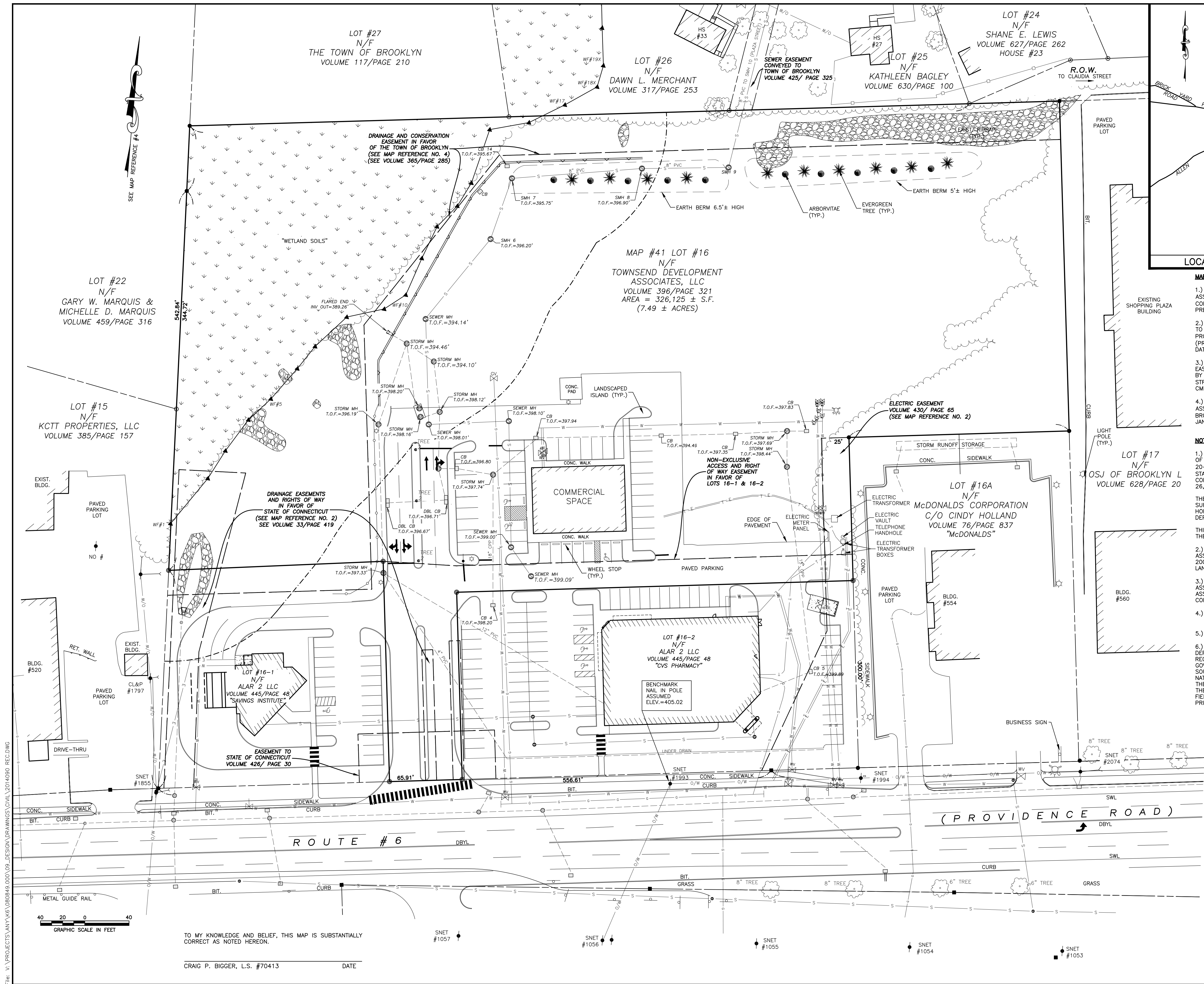
- ## NOTES

- LEGEND

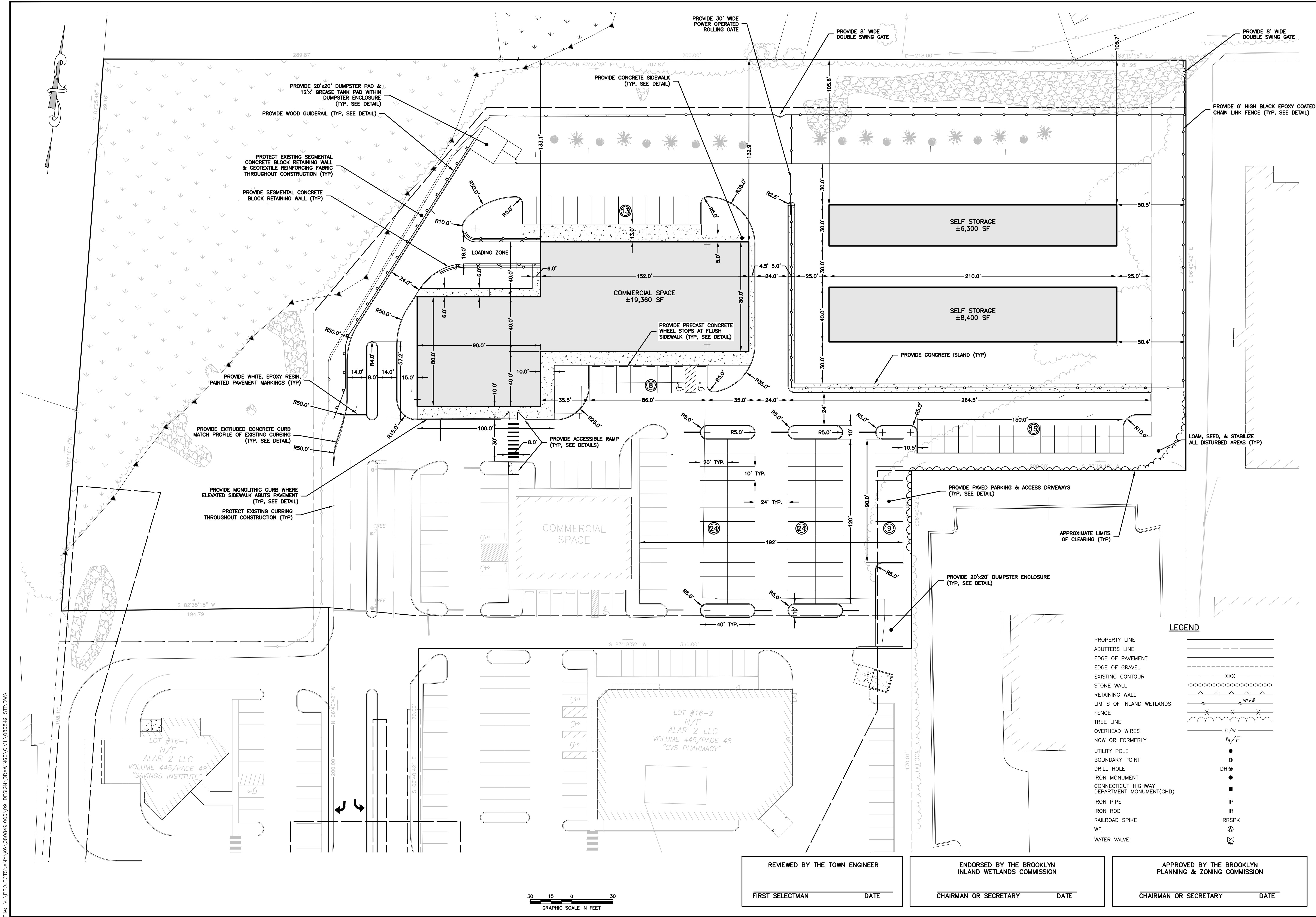
No.	Submittal / Revision	App'd.	By	Date
1	REVIEW COMMENTS		PMP	07/21/2023

Designed By: PMP	Drawn By: PMP	Checked By:
Issue Date: 05/05/2023	Project No: 080849	Scale: 1" = 40'

2



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CHA

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Rocky Hill, CT 06067
860-257-4557 | www.chacompanies.com

SITE DEVELOPMENT PLAN
PREPARED FOR:

TOWNSEND
DEVELOPMENT
ASSOCIATES
PROVIDENCE ROAD (RT 6)
BROOKLYN, CT

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED. THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

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1	REVIEW COMMENTS	PMP	07/21/2023

LAYOUT PLAN

Designed By:	Drawn By:	Checked By:
PMP	PMP	PMP

Issue Date:	Project No:	Scale:
05/05/2023	080849	1" = 30'

Drawing No.:
3

SITE DEVELOPMENT PLAN
PREPARED FOR:

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DEVELOPMENT
ASSOCIATES
PROVIDENCE ROAD (RT 6)
BROOKLYN, CT

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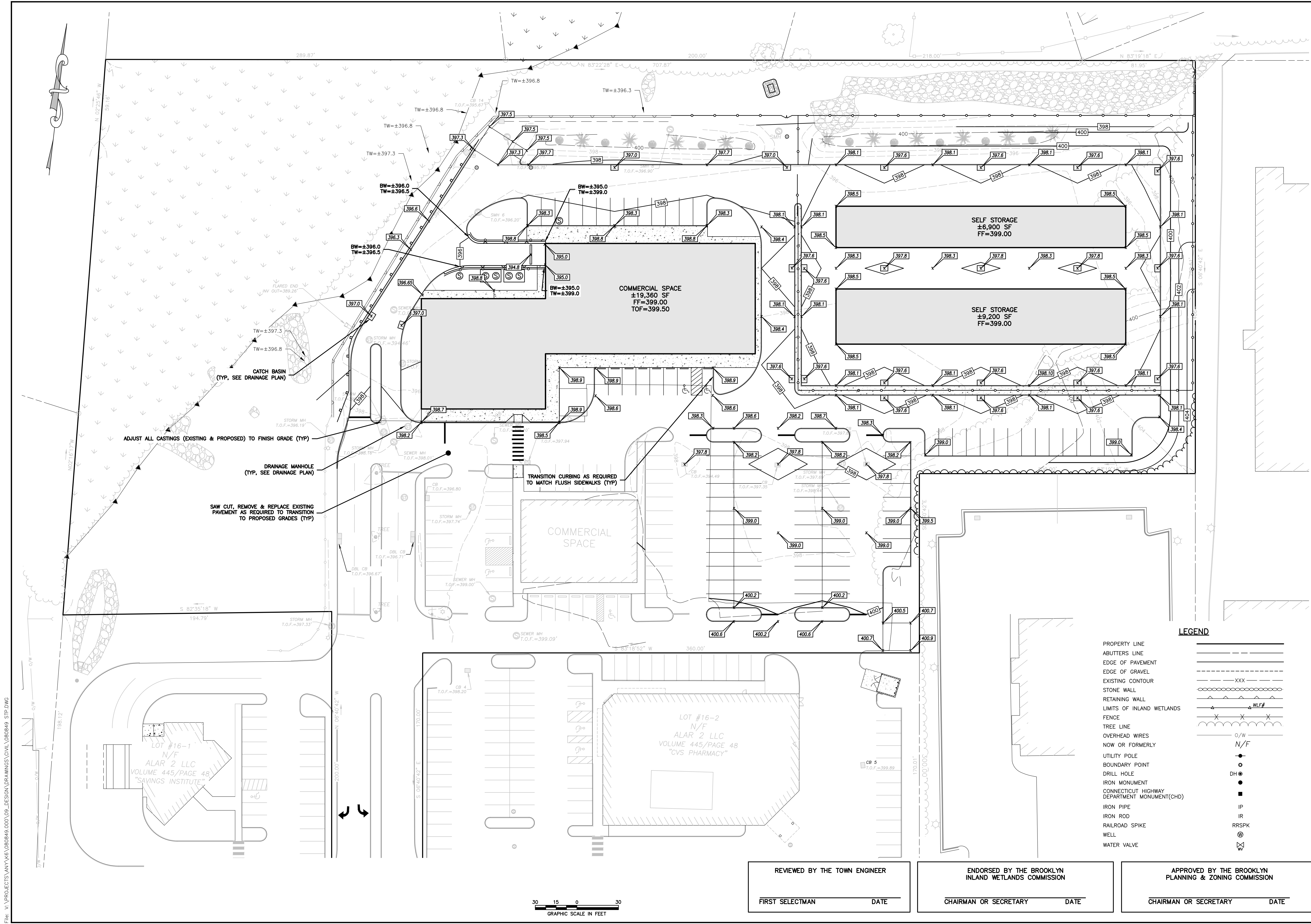
No.	Submittal / Revision	App'd.	By	Date
1	REVIEW COMMENTS	PMP		07/21/2023

GRADING PLAN

Designed By: PMP	Drawn By: PMP	Checked By: PMP
Issue Date: 05/05/2023	Project No: 080849	Scale: 1" = 30'

Drawing No.:

4



REVIEWED BY THE TOWN ENGINEER

FIRST SELECTMAN _____ DATE _____

ENDORSED BY THE BROOKLYN
INLAND WETLANDS COMMISSION

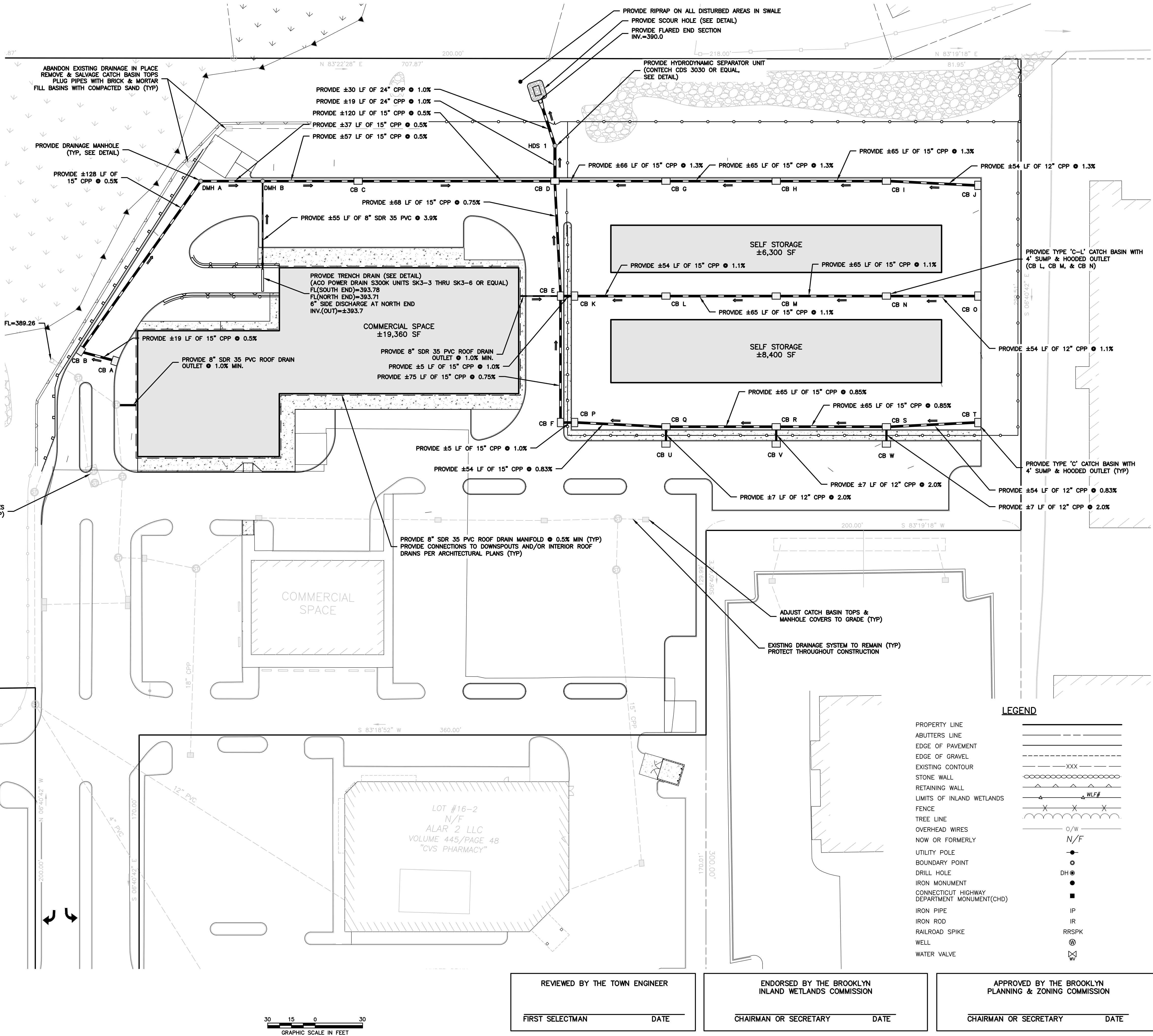
CHAIRMAN OR SECRETARY _____ DATE _____

APPROVED BY THE BROOKLYN
PLANNING & ZONING COMMISSION

CHAIRMAN OR SECRETARY _____ DATE _____

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DRAINAGE INVERT TABLE			
STRUCTURE	TOP OF FRAME	INVERT IN	INVERT OUT
CB A	±397.0	-	392.60 (CB B)
CB B	±397.0	392.50 (CB A)	392.45 (DMH A)
CB C	±397.0	391.20 (DMH B)	391.15 (CB D)
CB D	±397.0	390.55 (CB C)	390.50 (HDS 1)
		390.55 (CB E)	
		390.55 (CB G)	
		391.10 (CB F)	
CB E	±397.6	391.10 (CB K)	391.05 (CB D)
		±393.4 (RD)	
		391.70 (CB P)	
CB F	±397.6	391.50 (CB H)	391.40 (CB D)
CB G	±397.6	±393.2 (RD)	391.40 (CB D)
		392.45 (CB I)	
CB H	±397.6	392.45 (CB I)	392.35 (CB G)
CB I	±397.6	393.40 (CB J)	393.30 (CB H)
CB J	±397.6	-	394.10 (CB I)
CB K	±397.6	391.25 (CB L)	391.20 (CB E)
CB L	±397.8	391.95 (CB M)	391.85 (CB K)
CB M	±397.8	392.75 (CB N)	392.65 (CB L)
CB N	±397.8	393.55 (CB O)	393.45 (CB M)
CB O	±397.6	-	394.15 (CB N)
CB P	±397.6	391.85 (CB Q)	391.80 (CB F)
CB Q	±397.6	392.35 (CB R)	392.30 (CB P)
		394.45 (CB U)	
CB R	±397.6	392.95 (CB S)	392.90 (CB Q)
CB S	±397.6	394.45 (CB V)	392.90 (CB Q)
		393.55 (CB T)	
CB T	±397.6	394.45 (CB W)	393.50 (CB R)
CB U	±397.6	-	394.00 (CB S)
CB V	±397.6	-	394.60 (CB Q)
CB W	±397.6	-	394.60 (CB R)
DMH A	±397.0	391.80 (CB B)	391.75 (DMH B)
DMH B	±397.7	391.55 (DMH A)	391.50 (CB C)
		391.55 (TD)	
HDS 1	±397.0	390.3 (CB D)	390.3 (OUTLET)



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SITE DEVELOPMENT PLAN
PREPARED FOR:

TOWNSEND
DEVELOPMENT
ASSOCIATES
PROVIDENCE ROAD (RT 6)
BROOKLYN, CT

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DRAINAGE PLAN

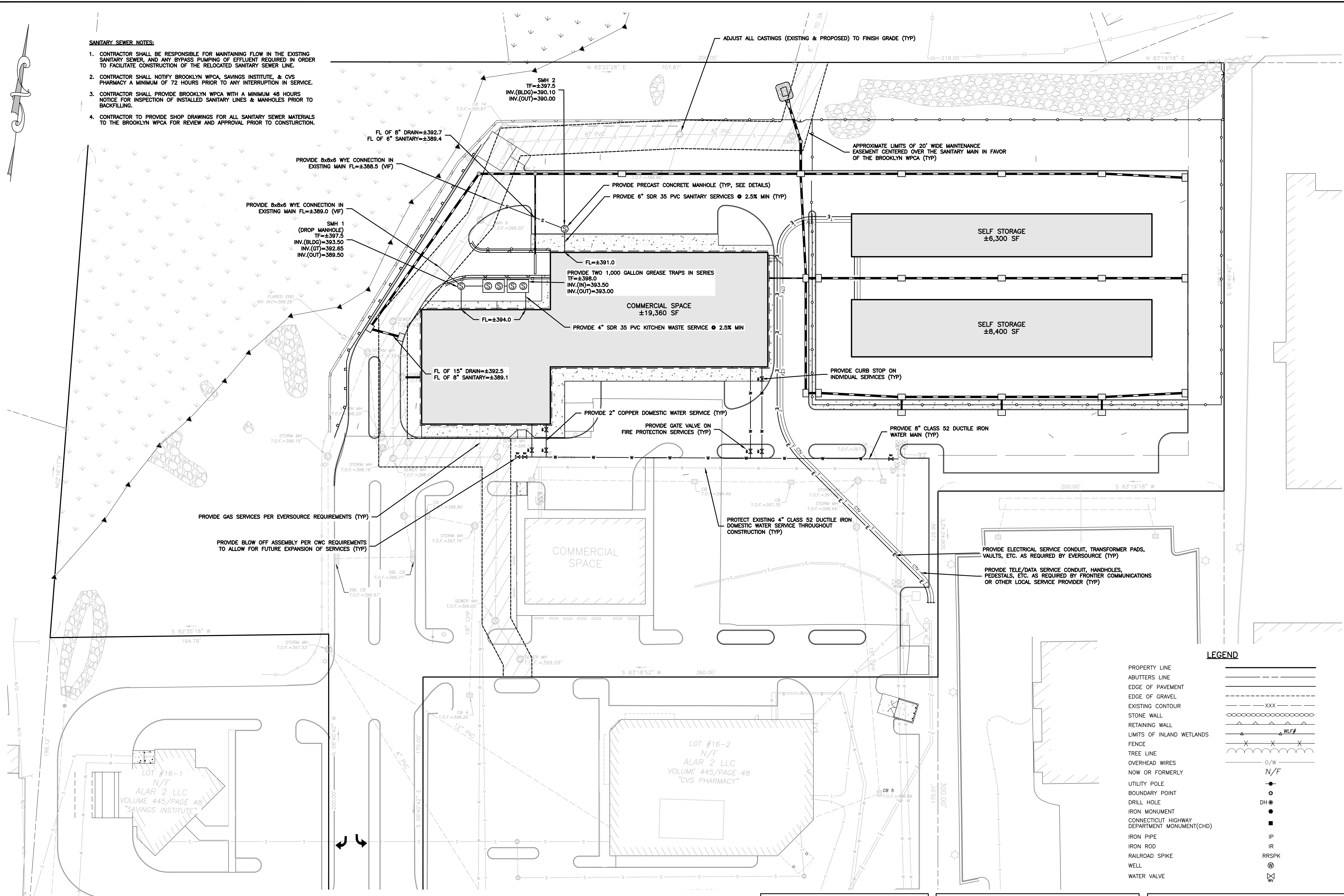
Designed By:	Drawn By:	Checked By:
PMP	PMP	PMP
Issue Date:	Project No:	Scale:
05/05/2023	080849	1" = 30'

Drawing No.: 5

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SANITARY SEWER NOTES:

- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING FLOW IN THE EXISTING SANITARY SEWER, AND ANY BYPASS PUMPING OF EFFLUENT REQUIRED IN ORDER TO FACILITATE CONSTRUCTION OF THE RELOCATED SANITARY SEWER LINE.
- CONTRACTOR SHALL NOTIFY BROOKLYN WPCA, SAVINGS INSTITUTE, & CVS PHARMACY A MINIMUM OF 72 HOURS PRIOR TO ANY INTERRUPTION IN SERVICE.
- CONTRACTOR SHALL PROVIDE BROOKLYN WPCA WITH A MINIMUM 48 HOURS NOTICE FOR INSPECTION OF INSTALLED SANITARY LINES & MANHOLES PRIOR TO BACKFILLING.
- CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR ALL SANITARY SEWER MATERIALS TO THE BROOKLYN WPCA FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.



SITE DEVELOPMENT PLAN
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DEVELOPMENT
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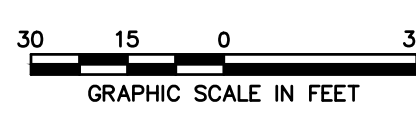
No.	Submittal / Revision	App'd.	By	Date
1	REVIEW COMMENTS	PMP		07/21/2023

UTILITY PLAN

Designed By: PMP	Drawn By: PMP	Checked By:
Issue Date: 05/05/2023	Project No: 080849	Scale: 1" = 30'

Drawing No.:
6

REVIEWED BY THE TOWN ENGINEER	ENDORSED BY THE BROOKLYN INLAND WETLANDS COMMISSION	APPROVED BY THE BROOKLYN PLANNING & ZONING COMMISSION
FIRST SELECTMAN	CHAIRMAN OR SECRETARY	CHAIRMAN OR SECRETARY
DATE	DATE	DATE



LEGEND

- PROPERTY LINE
- ABUTTERS LINE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- EXISTING CONTOUR
- STONE WALL
- RETAINING WALL
- LIMITS OF INLAND WETLANDS
- FENCE
- TREE LINE
- OVERHEAD WIRES
- NOW OR FORMERLY
- UTILITY POLE
- BOUNDARY POINT
- DRILL HOLE
- IRON MONUMENT
- CONNECTICUT HIGHWAY DEPARTMENT MONUMENT(CHD)
- IRON PIPE
- IRON ROD
- RAILROAD SPIKE
- WELL
- WATER VALVE

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PLANTING SCHEDULE				
PLAN LABEL	COMMON NAME Botanical Name	QUANTITY	SIZE	NOTES
SHRUBS				
AC	JUNIPER BUSH Juniperus Andorra Compacta	27	2 GAL.	CONT.
BK	DWARF KOREAN BOXWOOD Buxus Koreana	26	18"-24" HT.	CONT.
FI	FORSYTHIA Forsythia 'spring glory' x intermedia	3	2 GAL.	CONT.
KL	OLYMPIC FIRE MOUNTAIN LAUREL Kalmia latifolia 'Olympic Fire'	4	24"-30" HT.	B&B
MP	BAYBERRY Myrica pensylvanica	7	2'-3' HT.	CONT.
RP	PJM Rhododendron	4	2 GAL.	CONT.
RY	RHODODENDRON Rhododendron 'Commonwealth'	4	24"-30" HT.	B&B
VD	ARROWHEAD VIBURNUM Viburnum dentatum	15	24"-30" HT.	CONT.
TREES				
PCC	CALLERY PEAR Pyus calleryana 'chanticleer'	3	2.5"-3" CAL.	B&B
CA	WHITE HYBRID DOGWOOD Cornus nuden 'Celestial'	11	2.5"-3" CAL.	B&B
GT	UPRIGHT PYRAMIDAL THORNLESS HONEY LOCUST Gleditsia triacanthos inermis 'Skyline'	4	2.5"-3" CAL.	B&B
PP	COLORADO BLUE SPRUCE Picea Pungens	2	3" CAL.	B&B
TP	GREEN GIANT ARBORVITAE Thuja Standishii x plicata	5	3" CAL.	B&B
	MULCHED BED	-	-	-
	GRASS SEEDED AREA	-	-	-

B&B = BALLED AND BURLAPPED
CAL = CALIPER
CONT. = CONTAINER
GAL. = GALLON
HT. = HEIGHT

SEEDING: SEEDING SHALL TAKE PLACE BETWEEN MARCH 15 AND MAY 31 OR AUGUST 15 AND OCTOBER 15 ONLY. SEED SHALL BE PURE, LIVE, FRESH SEED FROM COMMERCIAL SOURCES MEETING AND LABELED IN ACCORDANCE WITH STATE AND FEDERAL RULES AND REGULATIONS. THE SEED MIXTURE SHALL BE:

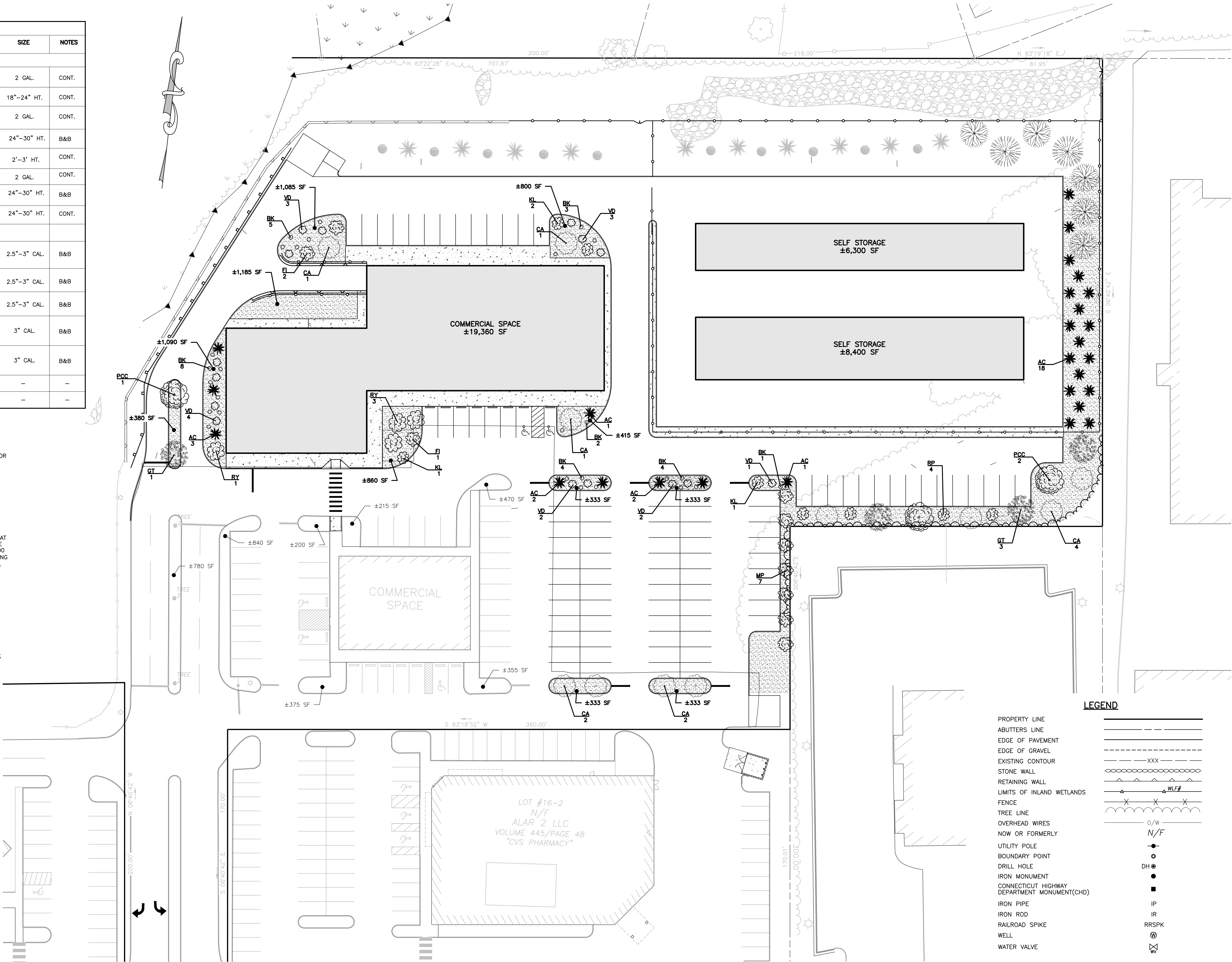
PROPORTION BY TYPE	WEIGHT	PUR.	GERM.
PALMER PERENNIAL RYEGRASS	20%	99%	90%
RANGER PERENNIAL RYEGRASS	20%	99%	90%
BARON KENTUCKY BLUEGRASS	30%	95%	85%
MERION KENTUCKY BLUEGRASS	30%	95%	85%
INERT MATERIALS 2.5% (MAXIMUM)			

SEEDING AREAS SHALL, AT A MINIMUM, INCLUDE ALL AREAS OF THE SITE THAT HAVE BEEN DISTURBED OR ARE BARREN UNLESS OTHERWISE NOTED ON THE PLANS. SEED SHALL BE APPLIED AT A MINIMUM RATE OF 4 LBS. PER 1000 SQUARE FEET. PROVIDE 6" GOOD QUALITY FERTILE LOAM OR REUSE EXISTING SOIL AND PROVIDE ADDITIONAL LOAM AS REQUIRED FOR MINIMUM 6" DEPTH.

LANDSCAPE CALCULATIONS:

TOTAL REQUIRED PARKING = 134 SPACES
10 SQ FT OF LANDSCAPING PER PARKING SPACE
THEREFORE, 1,340 SQ FT OF LANDSCAPING REQUIRED
GREATER THAN 4,000 SQ FT PROVIDED

1 DECIDUOUS TREE PER 100 SQ FT OF LANDSCAPING
THEREFORE, 14 TREES REQUIRED
20 DECIDUOUS TREES PROVIDED PLUS 4 CONIFEROUS TREES



REVIEWED BY THE TOWN ENGINEER
FIRST SELECTMAN _____ DATE _____

ENDORSED BY THE BROOKLYN
INLAND WETLANDS COMMISSION
CHAIRMAN OR SECRETARY _____ DATE _____

APPROVED BY THE BROOKLYN
PLANNING & ZONING COMMISSION
CHAIRMAN OR SECRETARY _____ DATE _____

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SITE DEVELOPMENT PLAN
PREPARED FOR:

TOWNSEND
DEVELOPMENT
ASSOCIATES
PROVIDENCE ROAD (RT 6)
BROOKLYN, CT

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LANDSCAPE PLAN

Designed By: PMP	Drawn By: PMP	Checked By:
Issue Date: 05/05/2023	Project No: 080849	Scale: 1" = 30'

Drawing No.:
7

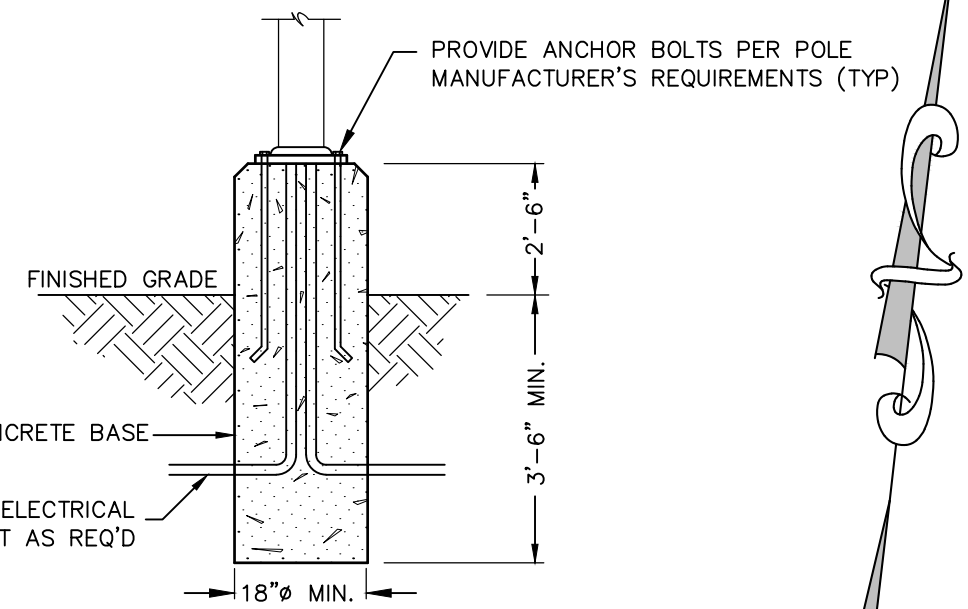
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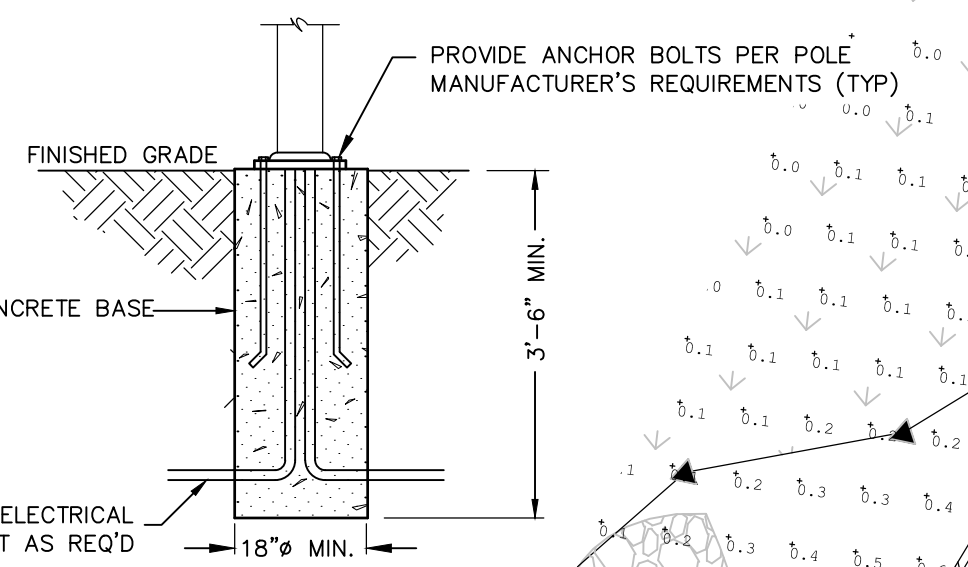
AREA POLE FIXTURE
"VIPER SIZE 2" by BEACON
115 WATTS
COLOR: DBT DARK BRONZE
20' MOUNTING HEIGHT



WALL MOUNT FIXTURE
ECO LNC LITEPAK
17 WATTS
COLOR: 1 BRONZE
14' MOUNTING HEIGHT



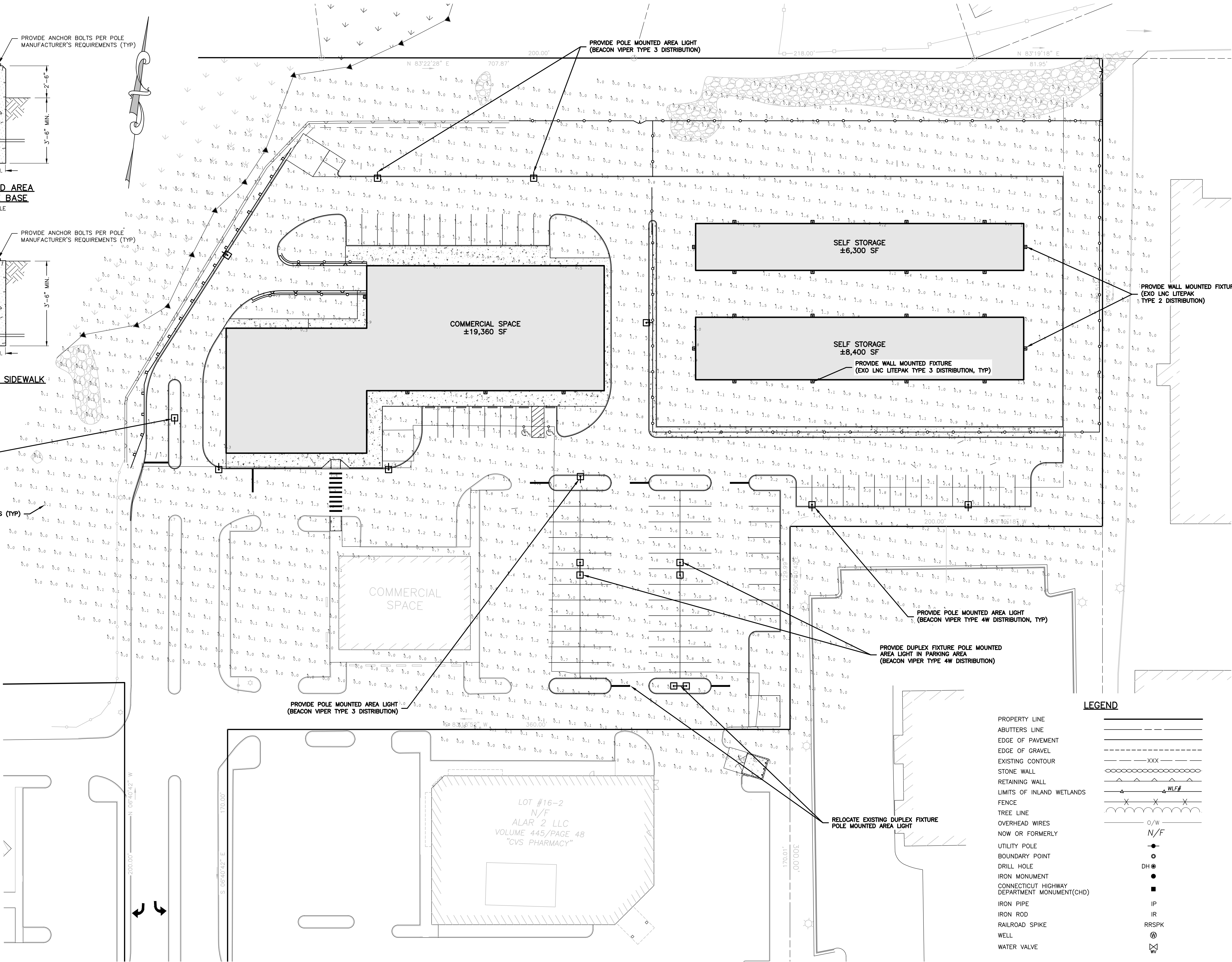
**POLE IN PAVED AREA
W/CONCRETE BASE**
NOT TO SCALE



POLE IN ISLAND OR SIDEWALK
NOT TO SCALE

PROVIDE POLE MOUNTED AREA LIGHT
(BEACON VIPER TYPE 5 DISTRIBUTION)

APPROXIMATE LIGHT INTENSITY IN FOOT CANDLES (TYP)



LEGEND

- PROPERTY LINE
- ABUTTERS LINE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- EXISTING CONTOUR
- STONE WALL
- RETAINING WALL
- LIMITS OF INLAND WETLANDS
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- IRON PIPE
- IRON ROD
- RAILROAD SPIKE
- WELL
- WATER VALVE

REVIEWED BY THE TOWN ENGINEER

FIRST SELECTMAN DATE

ENDORSED BY THE BROOKLYN
INLAND WETLANDS COMMISSION

CHAIRMAN OR SECRETARY DATE

APPROVED BY THE BROOKLYN
PLANNING & ZONING COMMISSION

CHAIRMAN OR SECRETARY DATE

SITE DEVELOPMENT PLAN
PREPARED FOR:

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ASSOCIATES
PROVIDENCE ROAD (RT 6)
BROOKLYN, CT

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LIGHTING PLAN

Designed By:	Drawn By:	Checked By:
PMP	PMP	
Issue Date:	Project No:	Scale:
05/05/2023	080849	1" = 30'

Drawing No.:

8

TOWNSEND
DEVELOPMENT
ASSOCIATES
PROVIDENCE ROAD (RT 6)
BROOKLYN, CT

CONSTRUCTION DETAILS

Designed By: PMP	Drawn By: PMP	Checked By:
Issue Date: 05/05/2023	Project No: 080849	Scale: AS NOTED

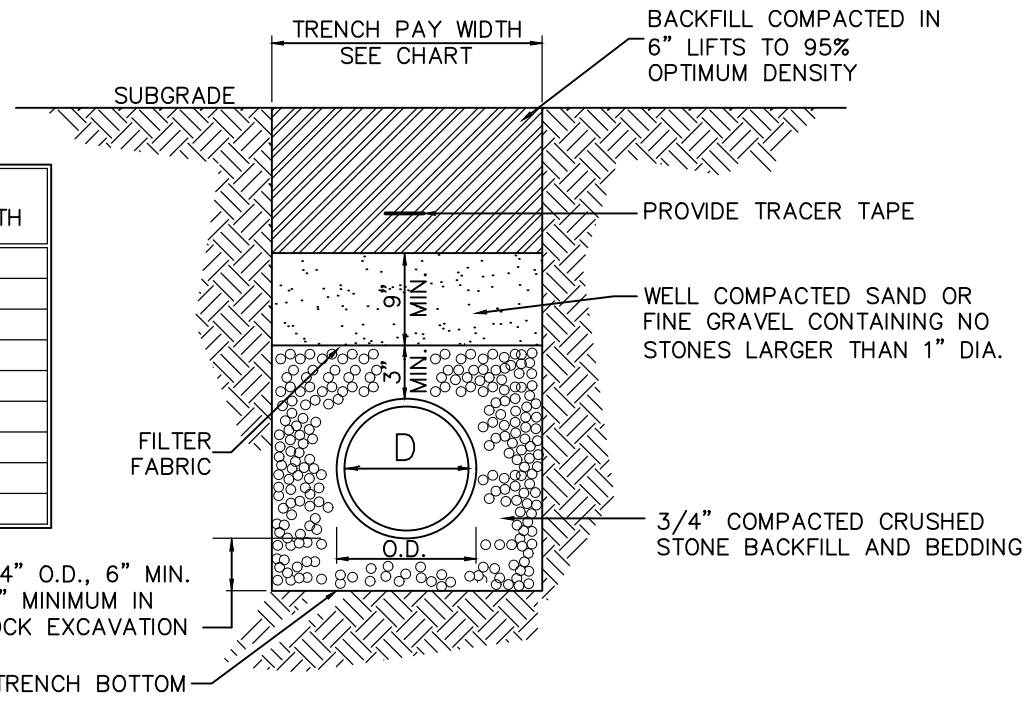
9



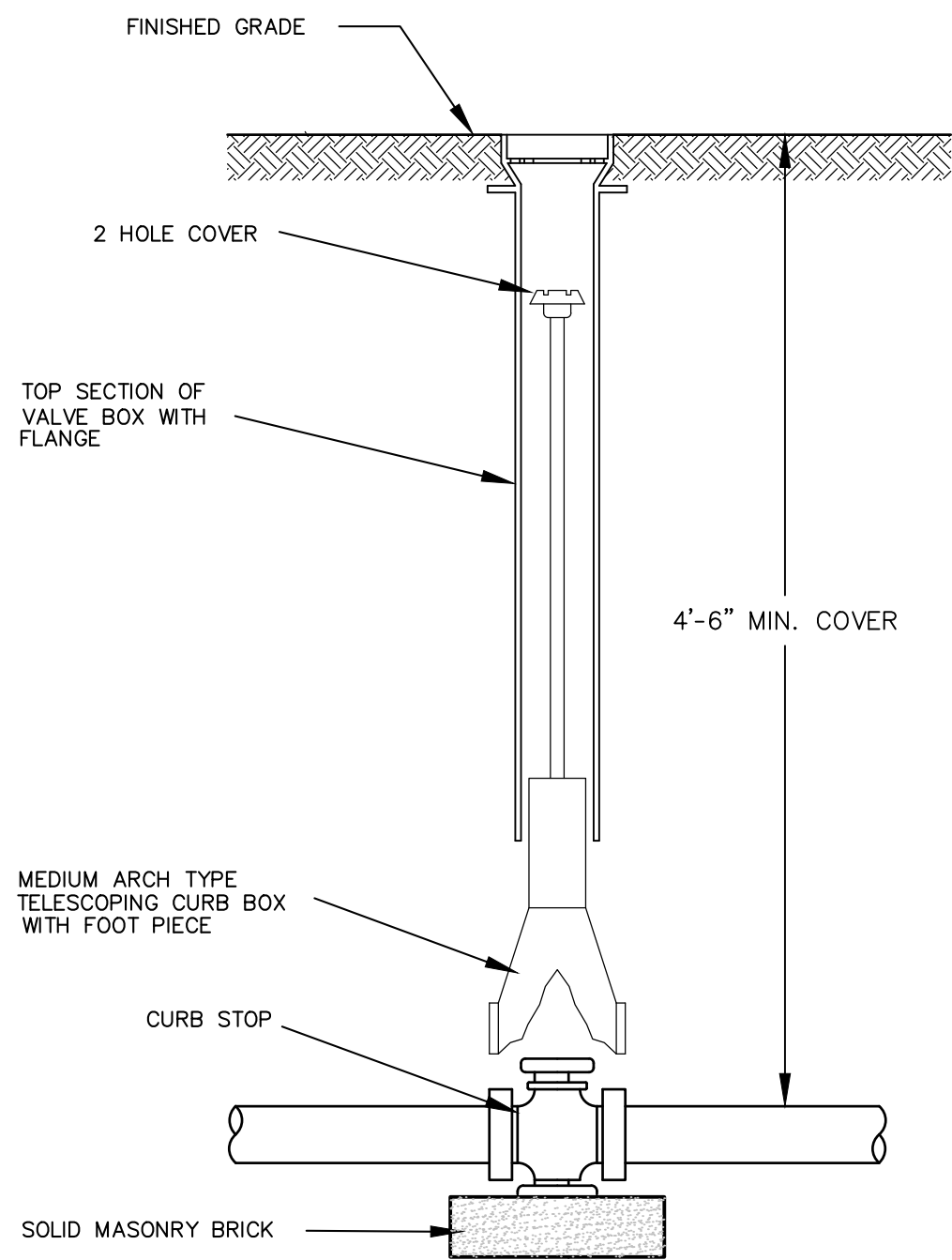
NOTE: STRUCTURE TO MEET H-20 LOADING REQUIREMENTS

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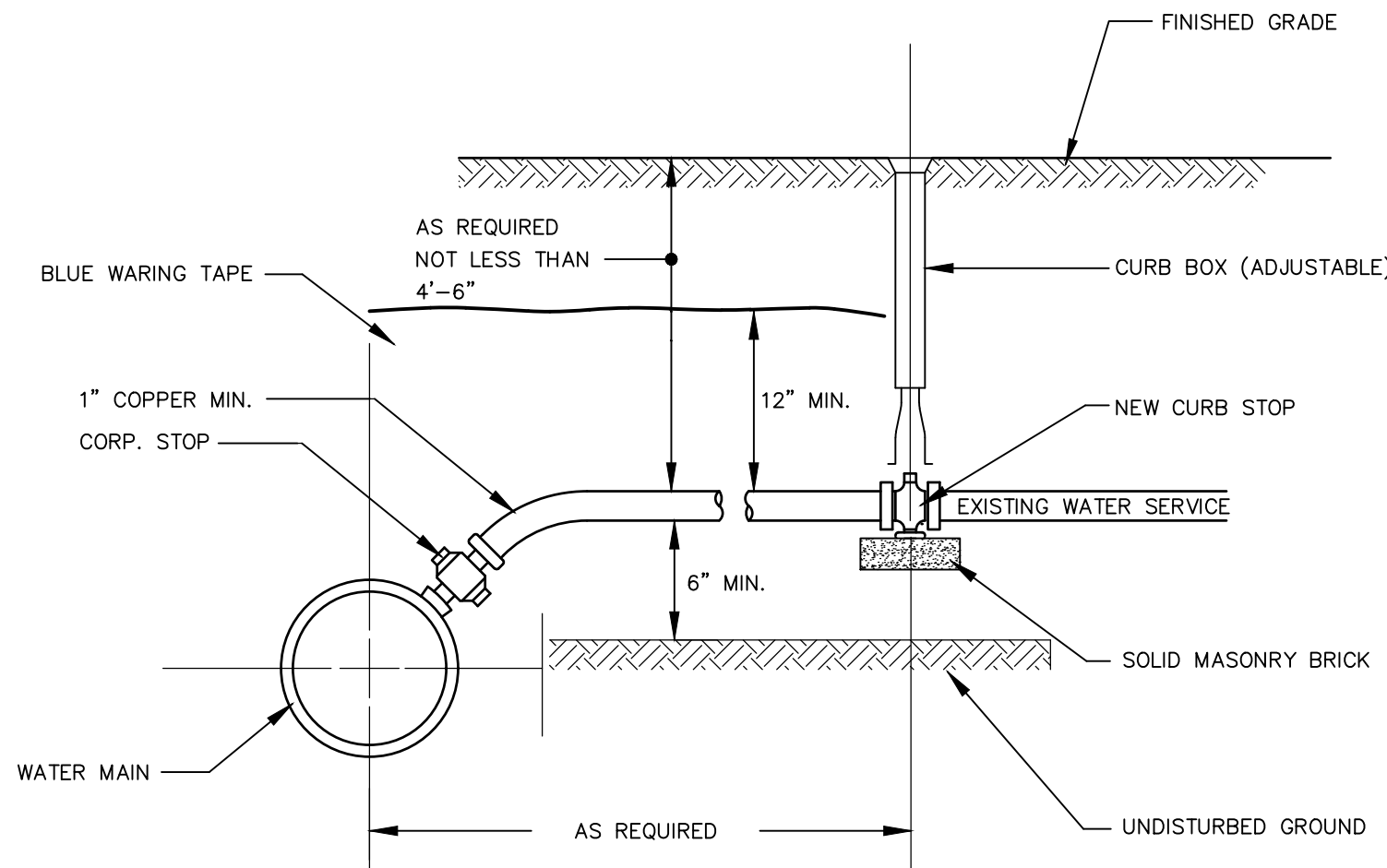
PIPE DIAMETER	MAXIMUM TRENCH WIDTH
6"	2'-6"
8"	3'-0"
10"	3'-0"
12"	3'-0"
15"	3'-3"
18"	3'-6"
21"	4'-0"
24"	4'-6"
30"	5'-0"



TRENCH SECTION FOR TYPICAL WATER MAIN TRENCH
NOT TO SCALE

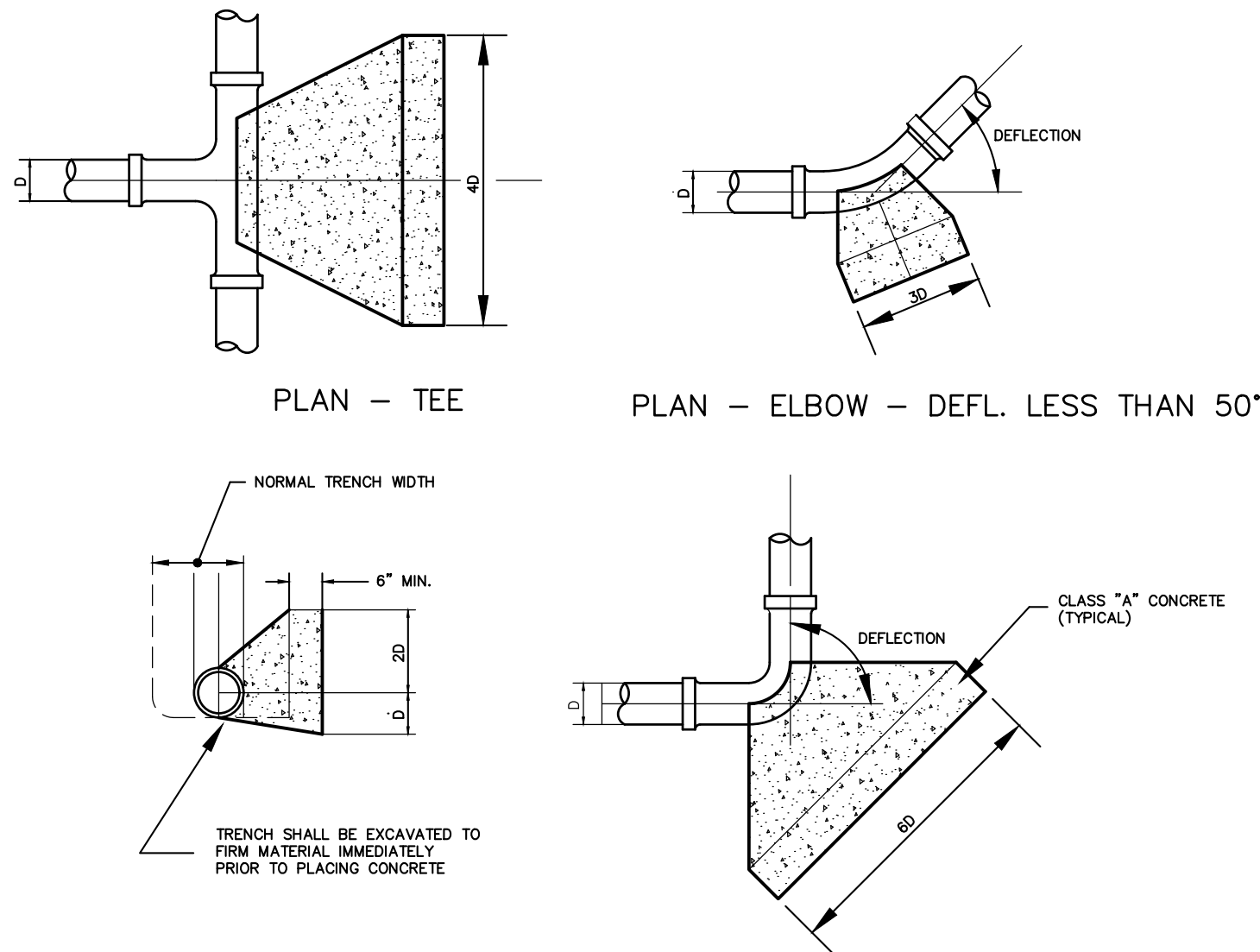


CURB STOP
NTS



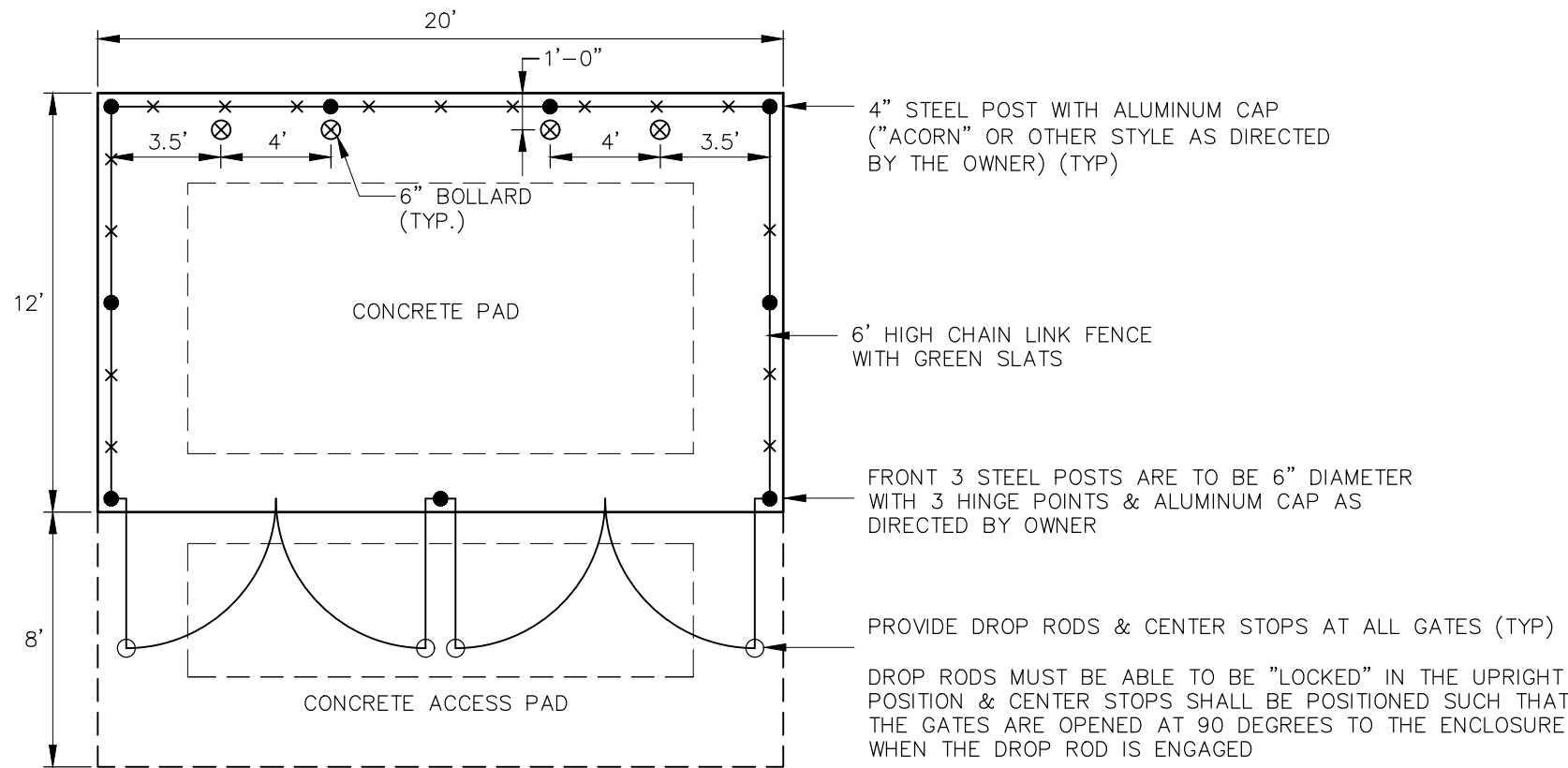
NOTE:
WATER SERVICE PIPE TO BE INSTALLED IN A BED OF FINE AGGREGATE SAND
6" MINIMUM BED AND 12" MINIMUM COVER AND BLUE WARNING TAPE ON TOP
OF THE 12" FINE AGGREGATE BED.

CORPORATION CURB STOP
NTS

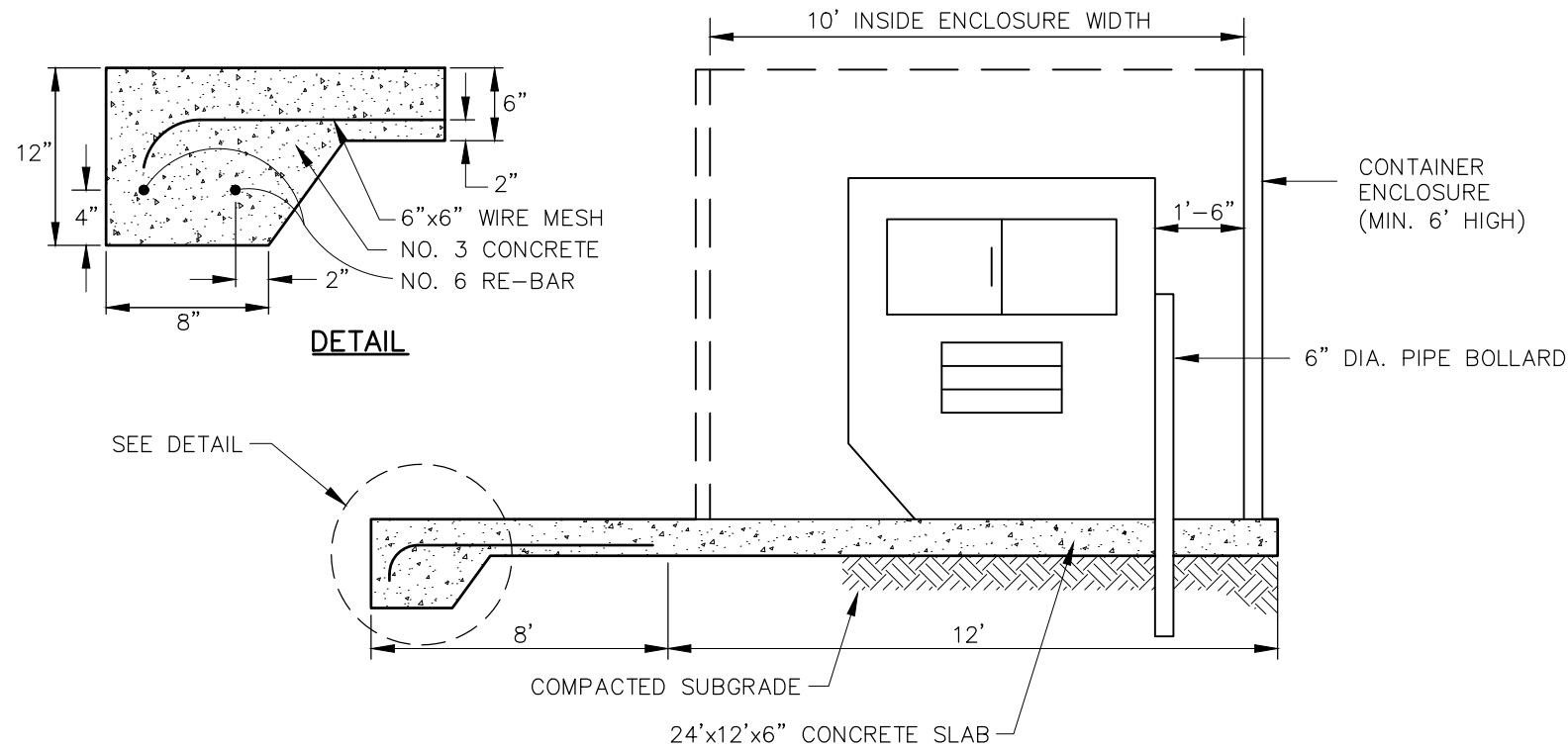


CONCRETE THRUST BLOCKS
NOT TO SCALE

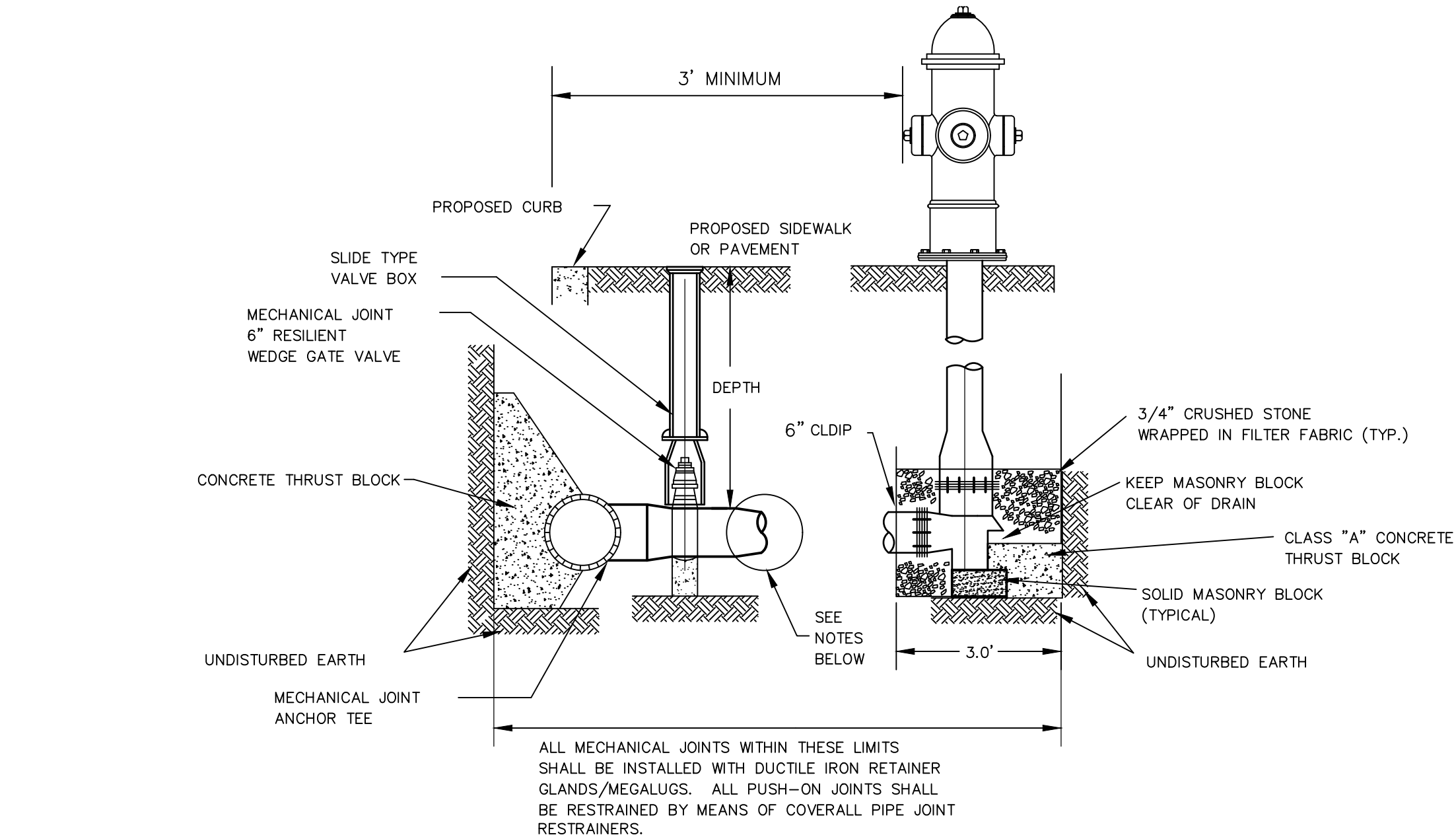
NOTE: THRUST BLOCK DIMENSIONS ASSUME:
ALLOWABLE SOIL BEARING PRESSURE = 1,650 PSI
WATER MAIN WORKING PRESSURE = 150 PSI



DUMPSTER ENCLOSURE DETAIL
NOT TO SCALE

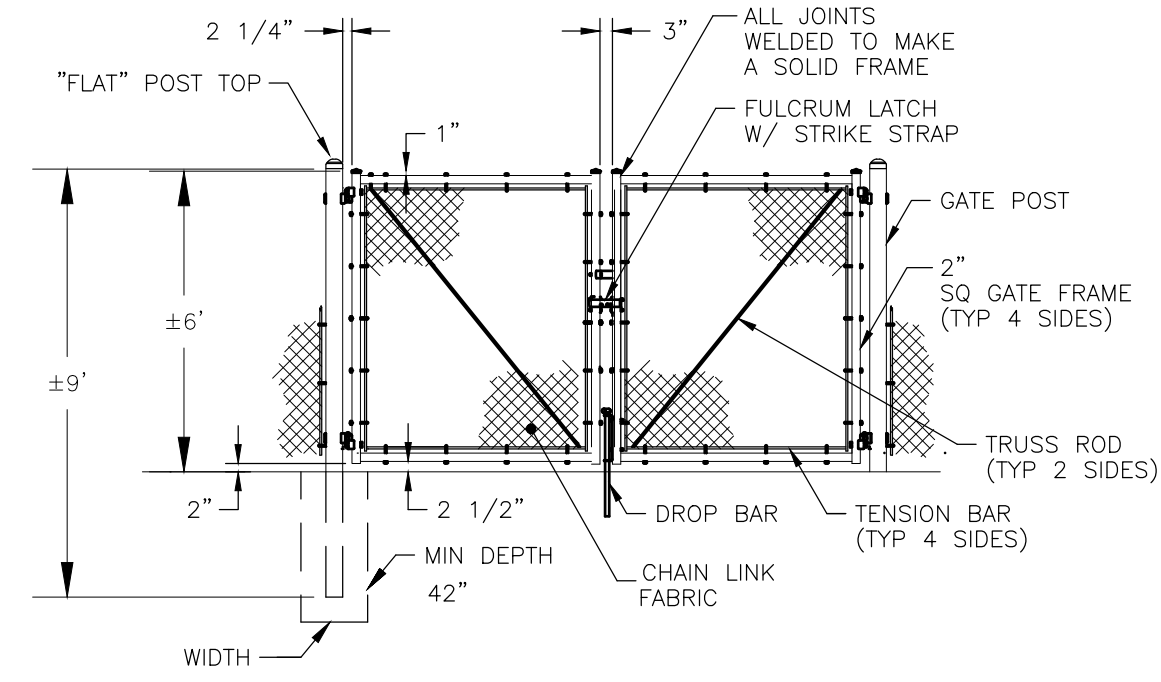


DUMPSTER PAD SECTION
NOT TO SCALE



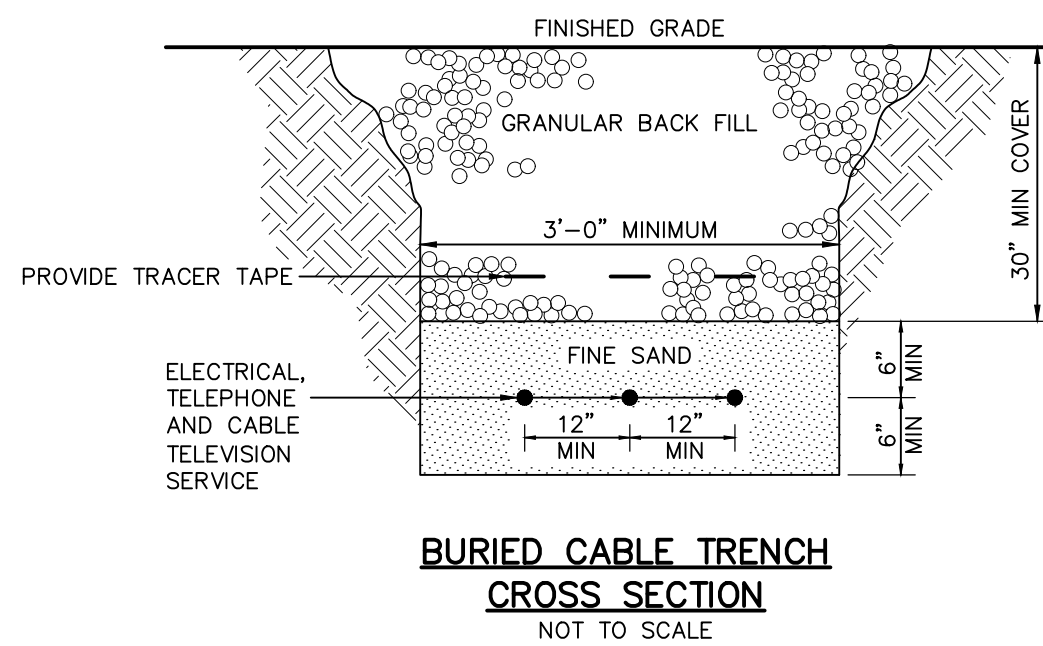
NOTE: HYDRANTS SHALL BE SET AT BACK OF SIDEWALKS
ALLOWING 3.0' MINIMUM TO FACE OF CURB.

HYDRANT DETAIL
NOT TO SCALE

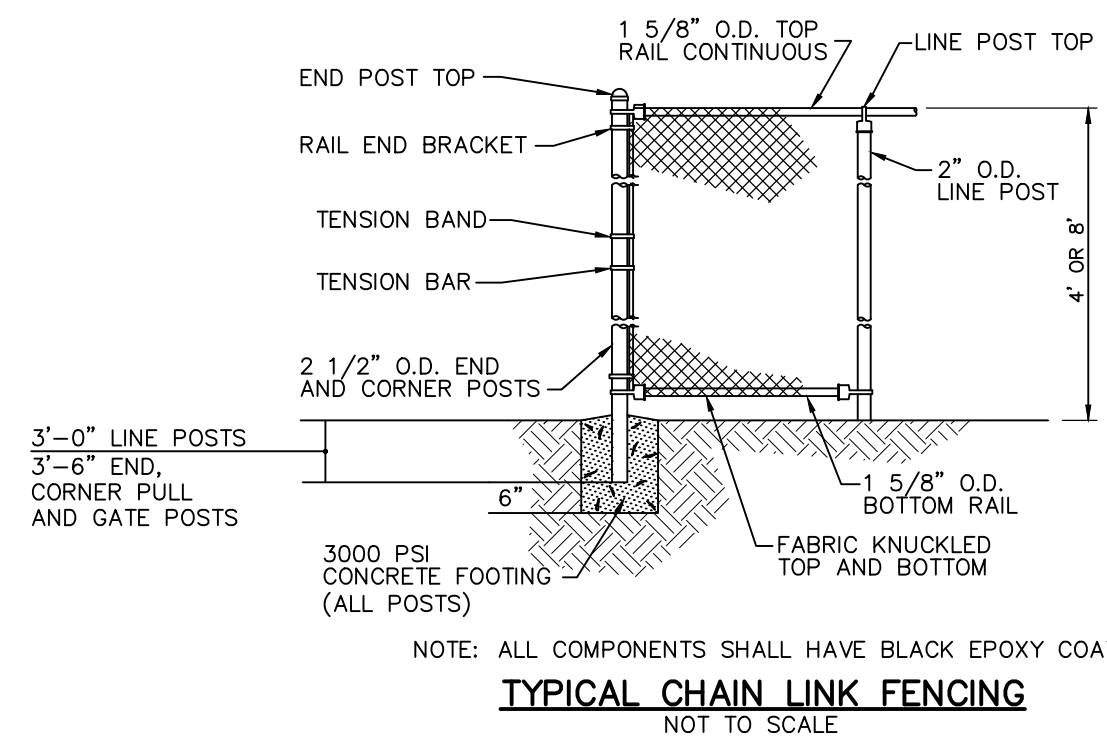


NOTE:
1. ALL FENCE COMPONENTS SHALL BE BLACK PVC COATED
2. PROVIDE DROP BAR FOR EACH GATE & GROUND INSERT TO STABILIZE GATES IN BOTH CLOSED & OPEN CONDITIONS. PROVIDE LATCH POSTS TO STABILIZE GATES IN OPEN POSITION IF GROUND ELEVATIONS VARY.

TYPICAL DOUBLE SWING GATE
NOT TO SCALE



BURIED CABLE TRENCH
CROSS SECTION
NOT TO SCALE



TYPICAL CHAIN LINK FENCING
NOT TO SCALE

SITE DEVELOPMENT PLAN
PREPARED FOR:

TOWNSEND
DEVELOPMENT
ASSOCIATES
PROVIDENCE ROAD (RT 6)
BROOKLYN, CT

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	Submittal / Revision	App'd. By	Date
1	REVIEW COMMENTS	PMP	07/21/2023

CONSTRUCTION DETAILS

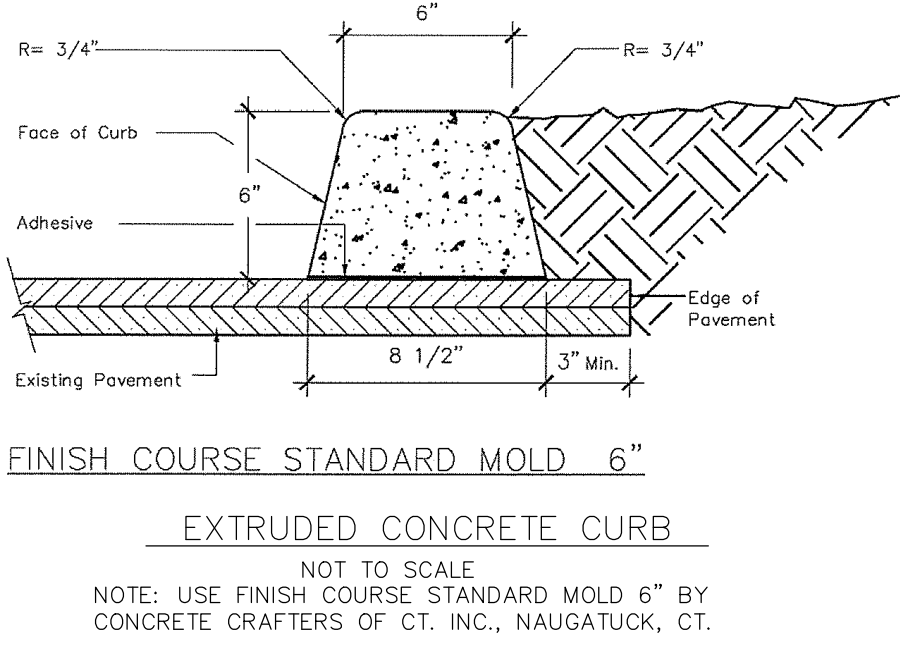
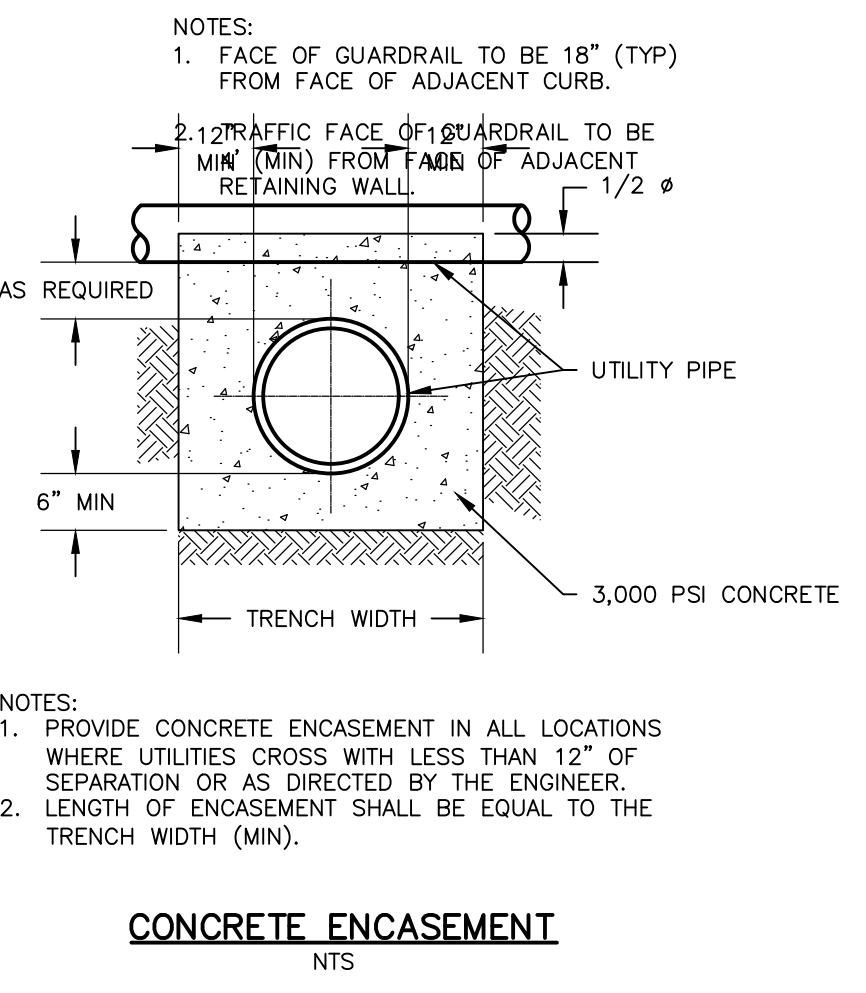
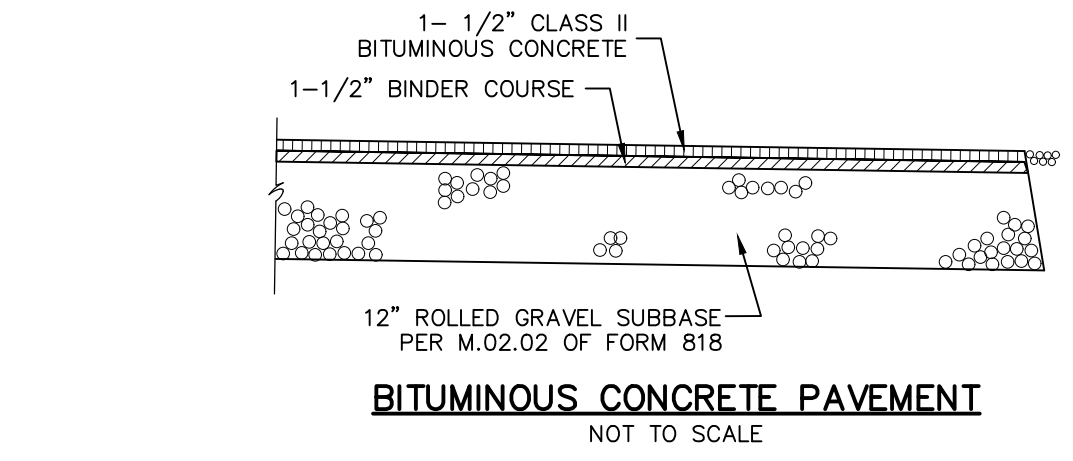
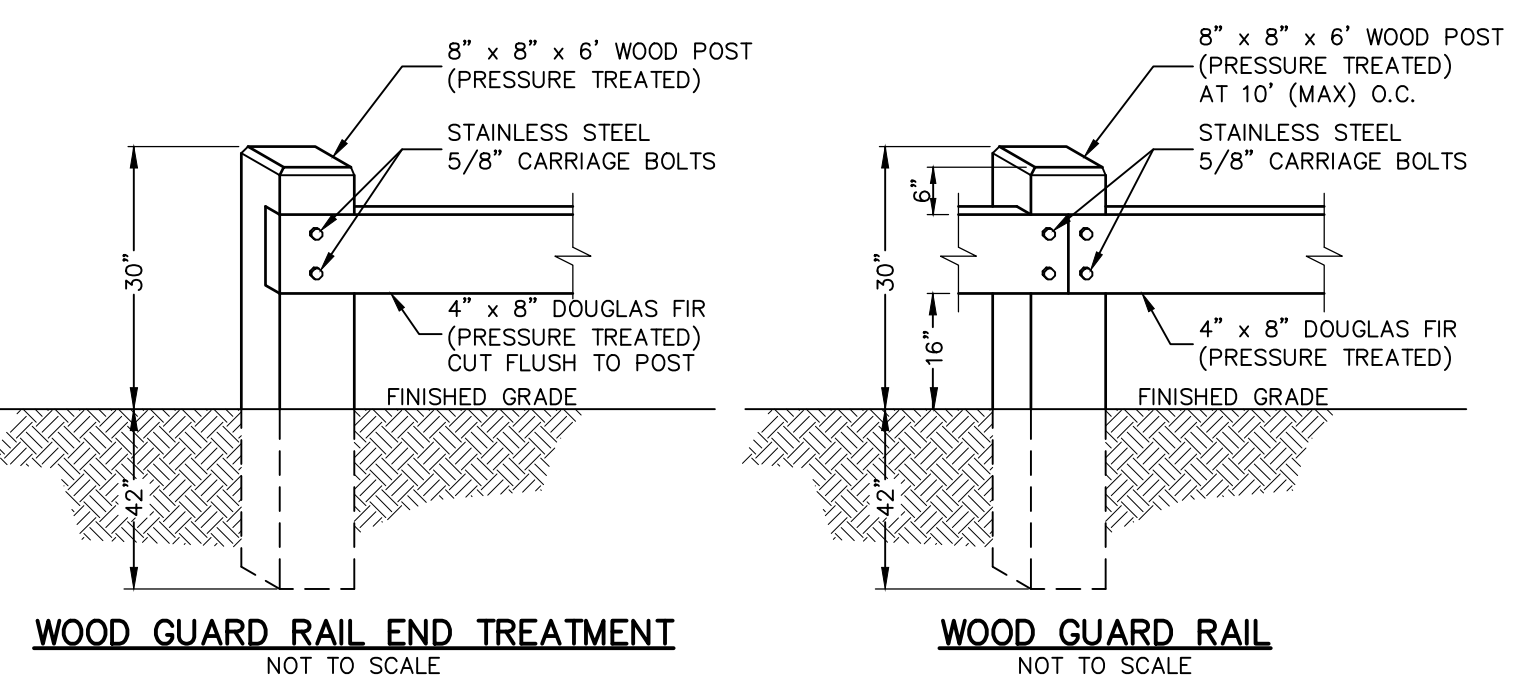
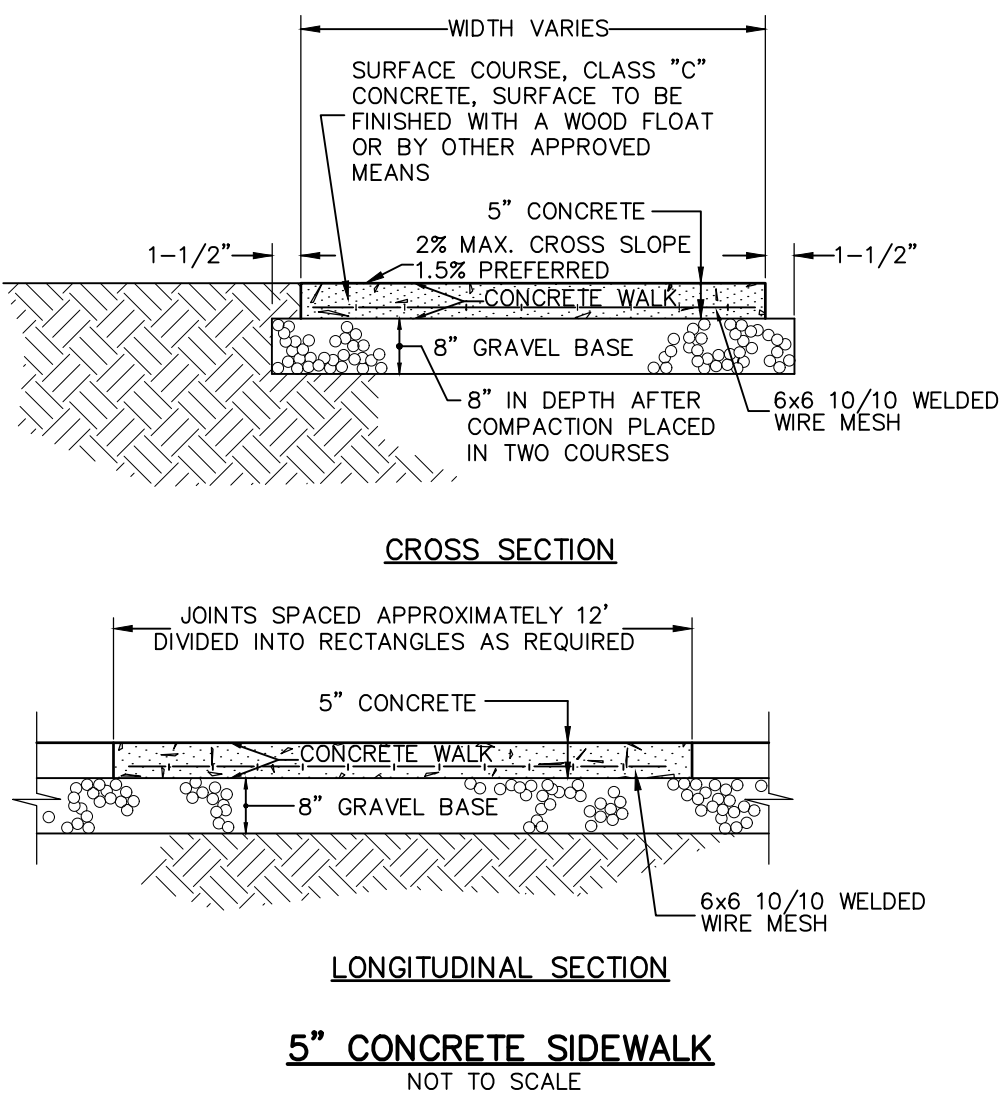
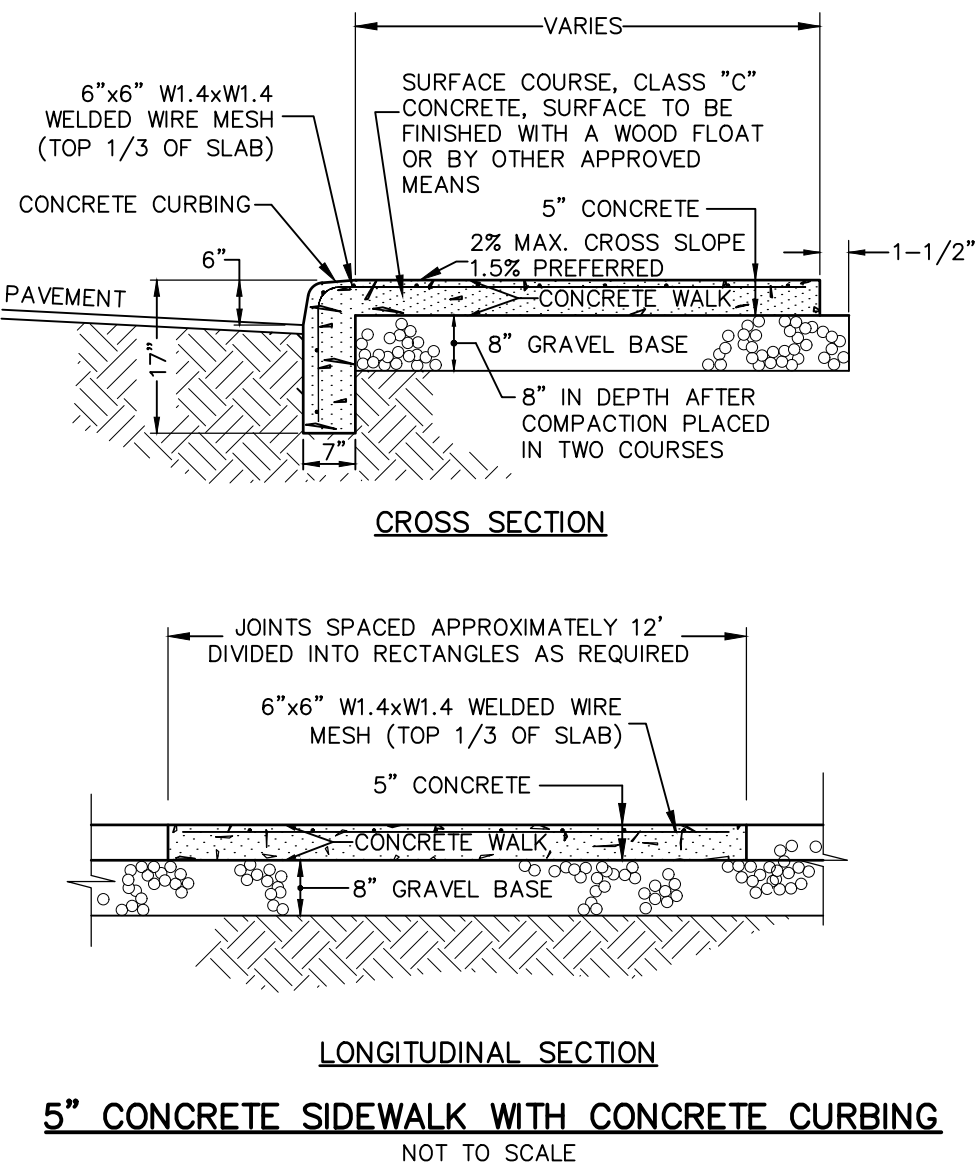
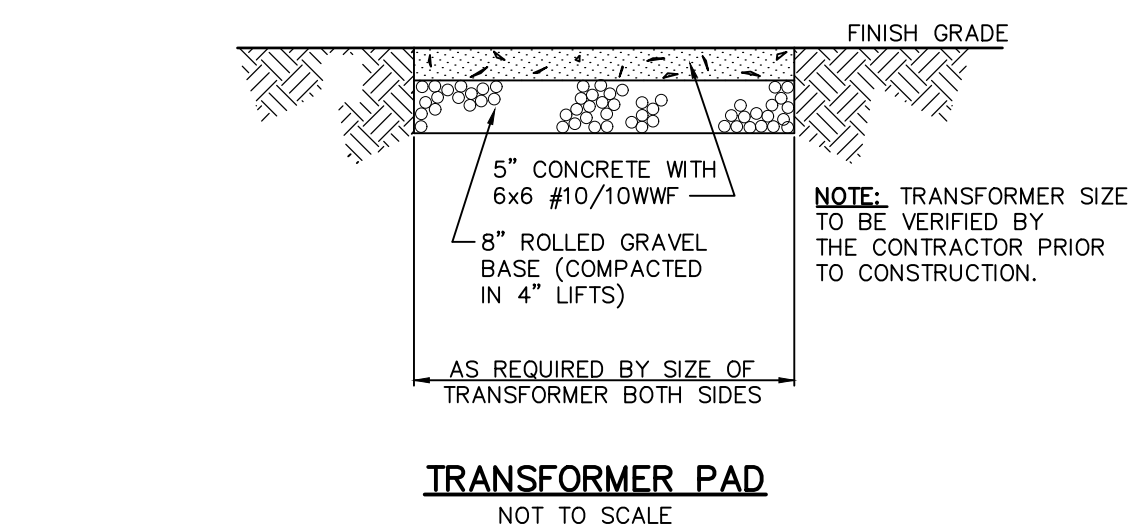
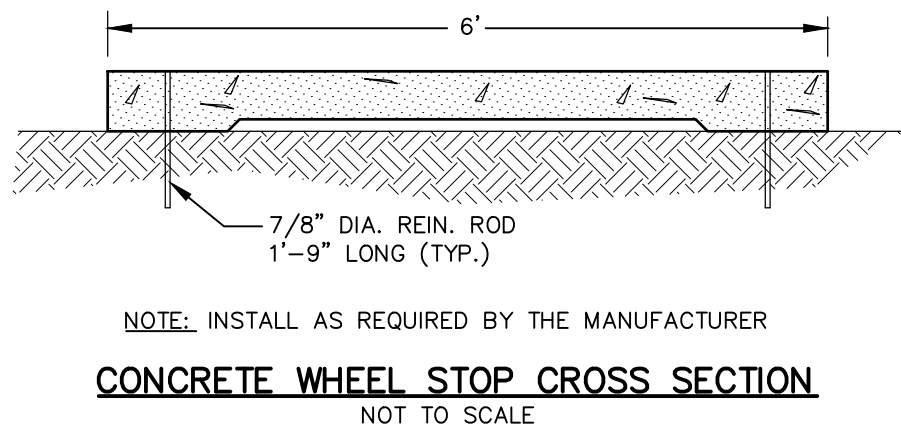
Designed By: PMP	Drawn By: PMP	Checked By: PMP
Issue Date: 05/05/2023	Project No: 080849	Scale: AS NOTED

REVIEWED BY THE TOWN ENGINEER FIRST SELECTMAN DATE	ENDORSED BY THE BROOKLYN INLAND WETLANDS COMMISSION CHAIRMAN OR SECRETARY DATE	APPROVED BY THE BROOKLYN PLANNING & ZONING COMMISSION CHAIRMAN OR SECRETARY DATE
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No.	Submittal / Revision	App'd.	By	Date
1	REVIEW COMMENTS	PMP		07/21/2023

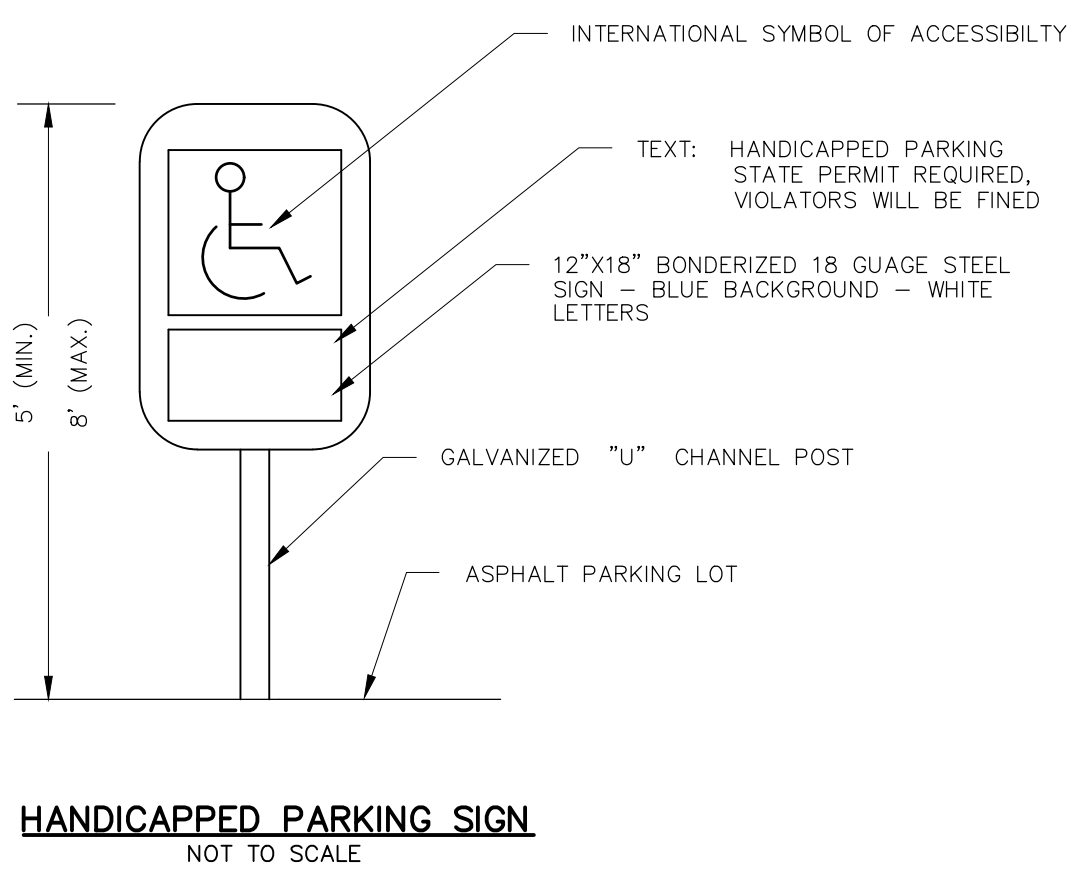
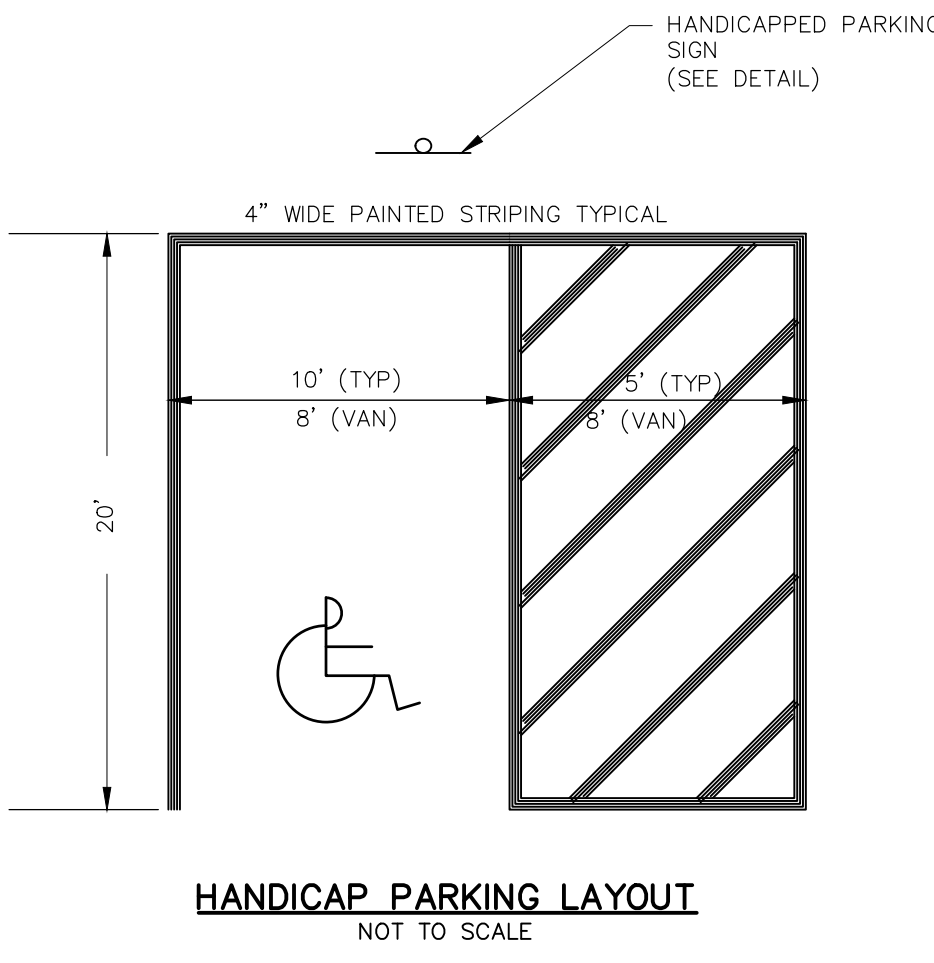
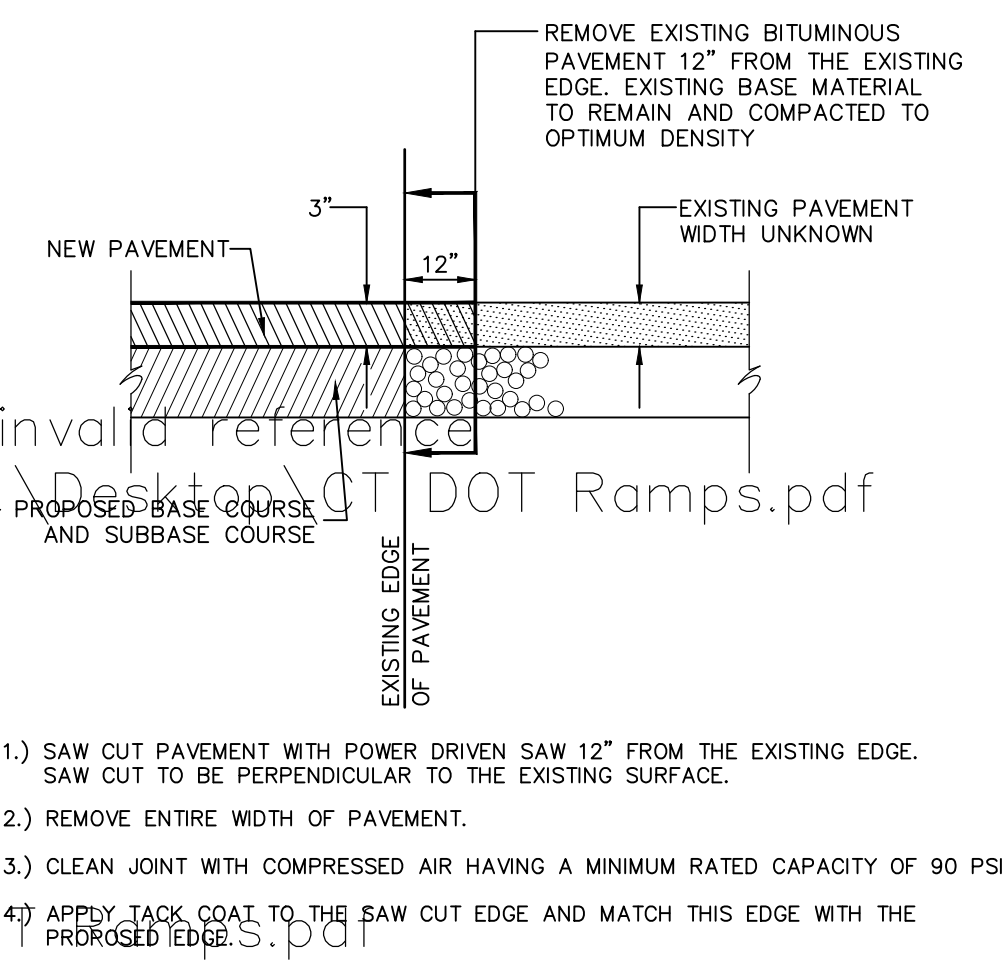
CONSTRUCTION DETAILS

Designed By: PMP	Drawn By: PMP	Checked By: PMP
Issue Date: 05/05/2023	Project No: 080849	Scale: AS NOTED



**ACCESSIBLE RAMP
(CT DOT TYPE 8)**
NOT TO SCALE

**ACCESSIBLE RAMP
(CT DOT TYPE 16)**
NOT TO SCALE



TOWNSEND
DEVELOPMENT
ASSOCIATES
PROVIDENCE ROAD (RT 6)
BROOKLYN, CT

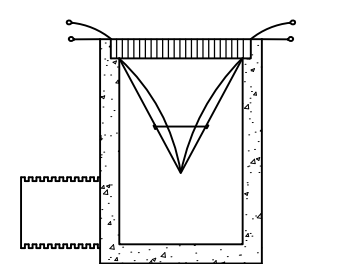
Designed By: PMP	Drawn By: PMP	Checked By:
Issue Date: 05/05/2023	Project No: 080849	Scale: AS NOTED

12

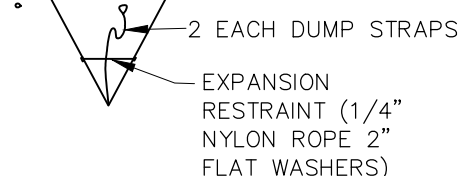


REVIEWED BY THE TOWN ENGINEER <hr style="width: 80%; margin: 10px auto;"/> <div style="display: flex; justify-content: space-between; width: 80%;"> FIRST SELECTMAN DATE </div>	ENDORSED BY THE BROOKLYN INLAND WETLANDS COMMISSION <hr style="width: 80%; margin: 10px auto;"/> <div style="display: flex; justify-content: space-between; width: 80%;"> CHAIRMAN OR SECRETARY DATE </div>	APPROVED BY THE BROOKLYN PLANNING & ZONING COMMISSION <hr style="width: 80%; margin: 10px auto;"/> <div style="display: flex; justify-content: space-between; width: 80%;"> CHAIRMAN OR SECRETARY DATE </div>
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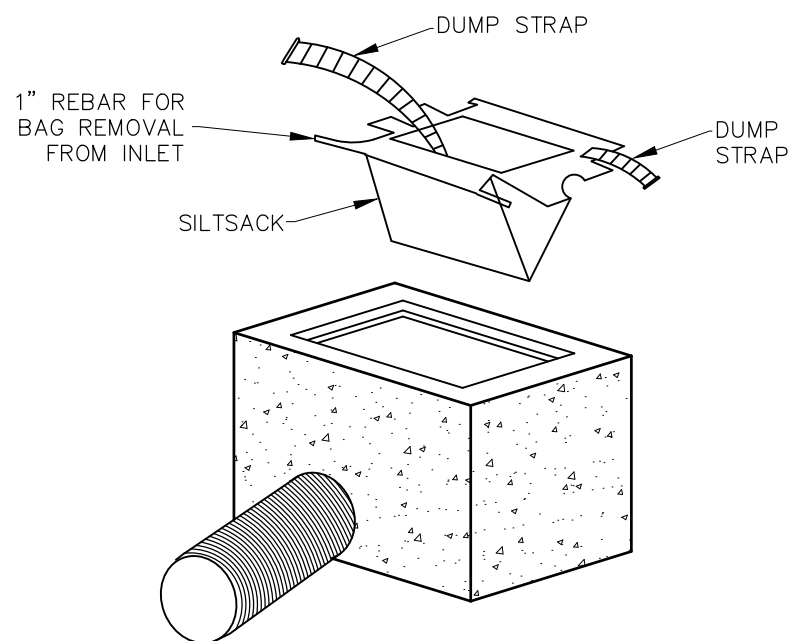
EROSION AND SEDIMENTATION CONTROL DETAILS



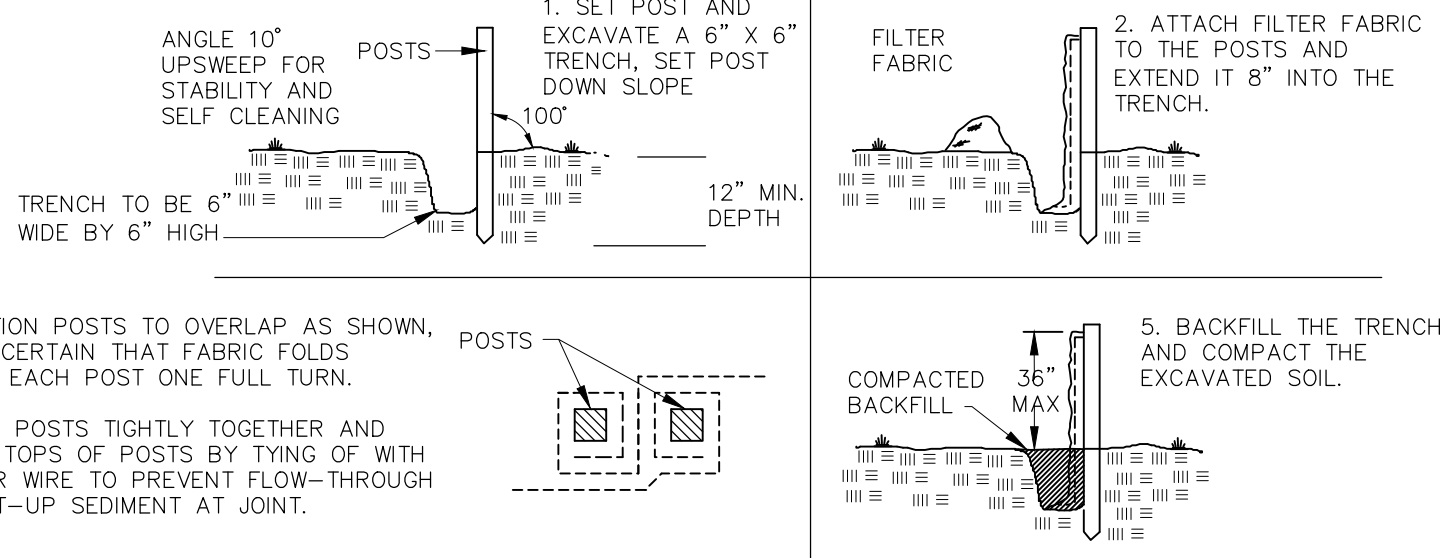
INSTALLATION DETAIL



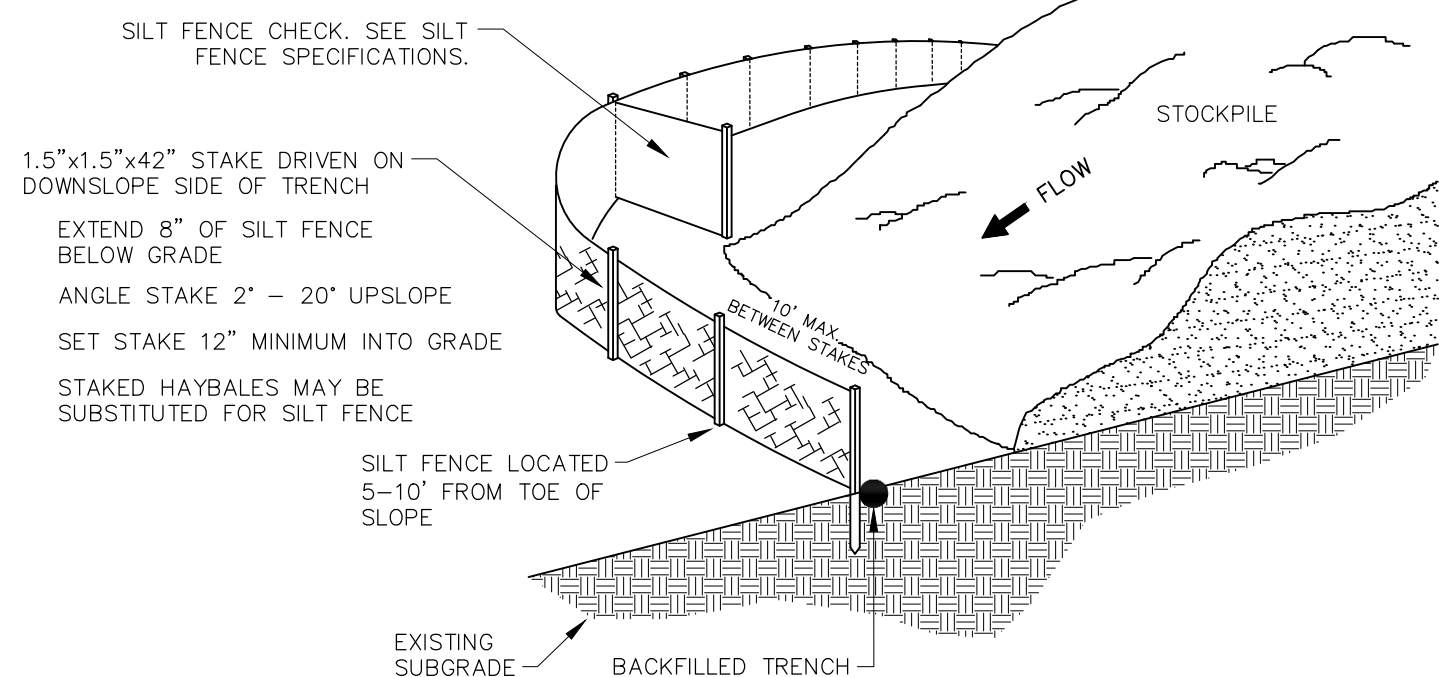
BAG DETAIL



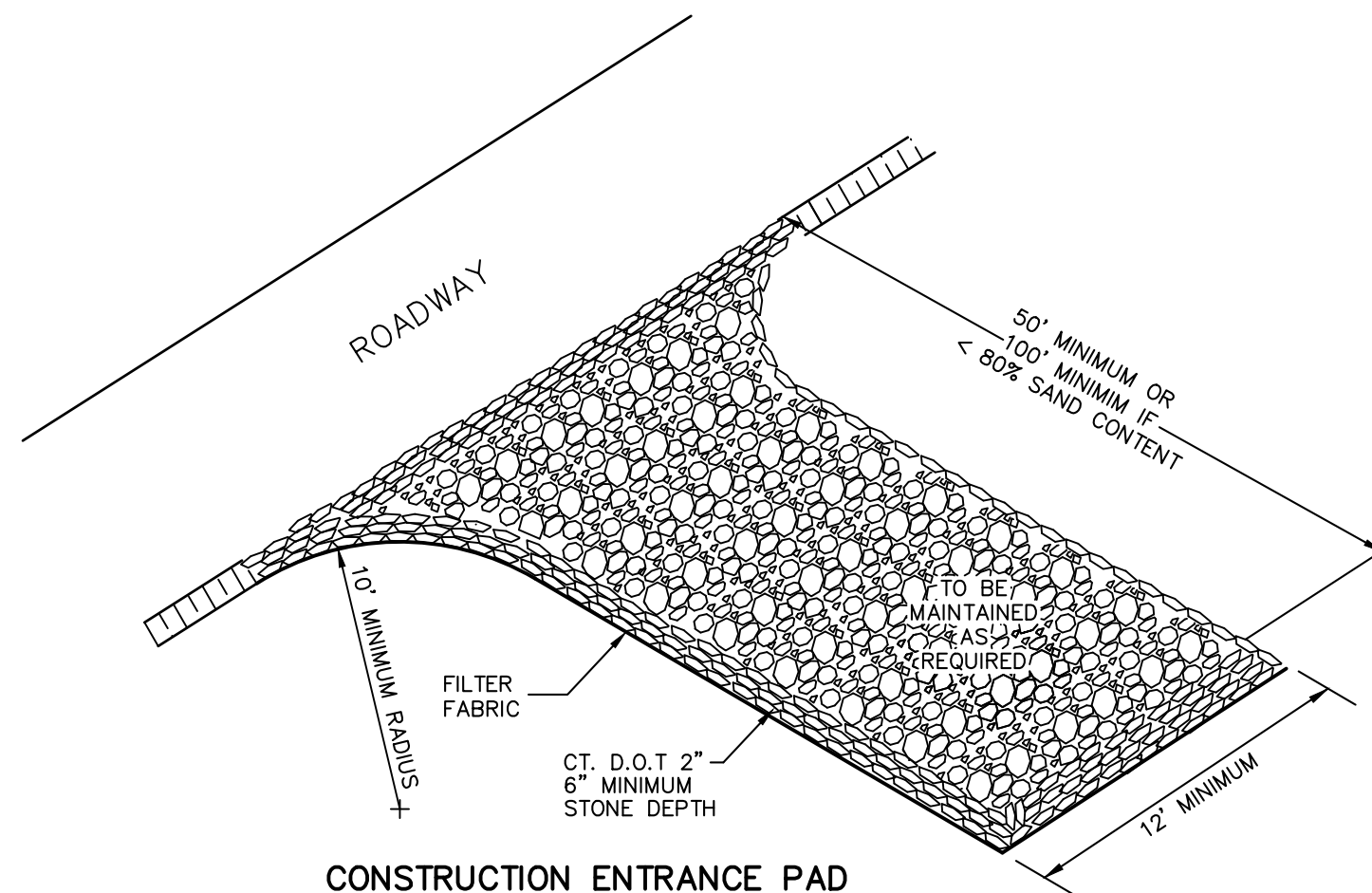
INLET SEDIMENT CONTROL DEVICE
NOT TO SCALE



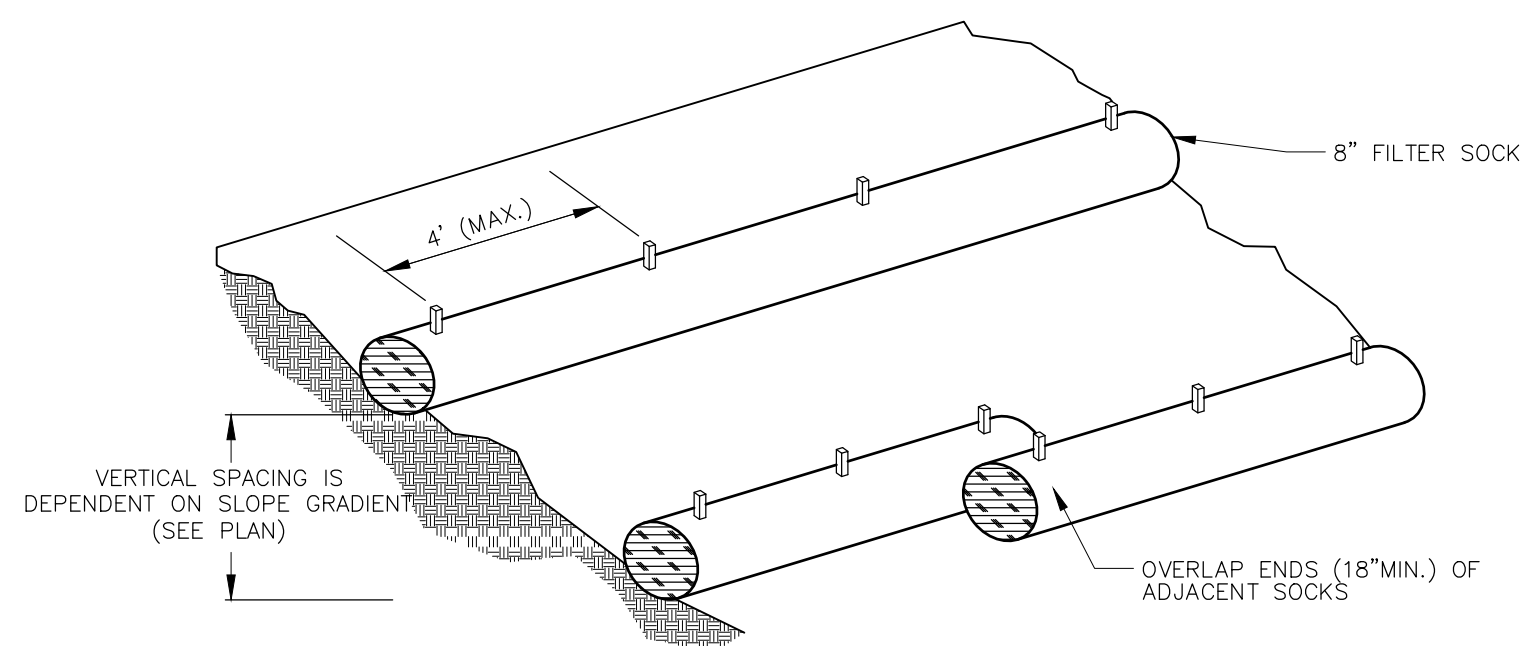
PLACEMENT AND CONSTRUCTION OF A SILT FENCE
NOT TO SCALE



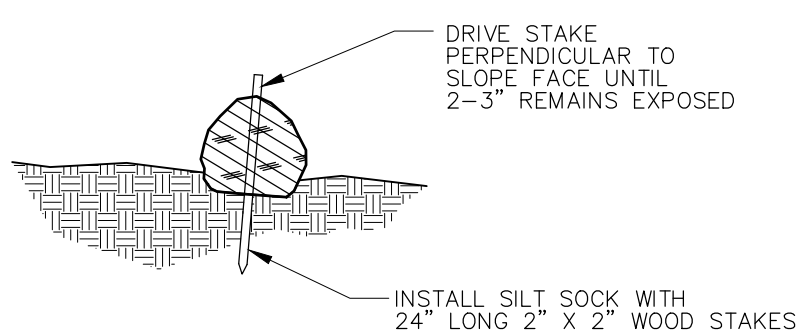
SILT FENCE AT TOE OF SLOPE APPLICATION
NOT TO SCALE



CONSTRUCTION ENTRANCE PAD
NTS

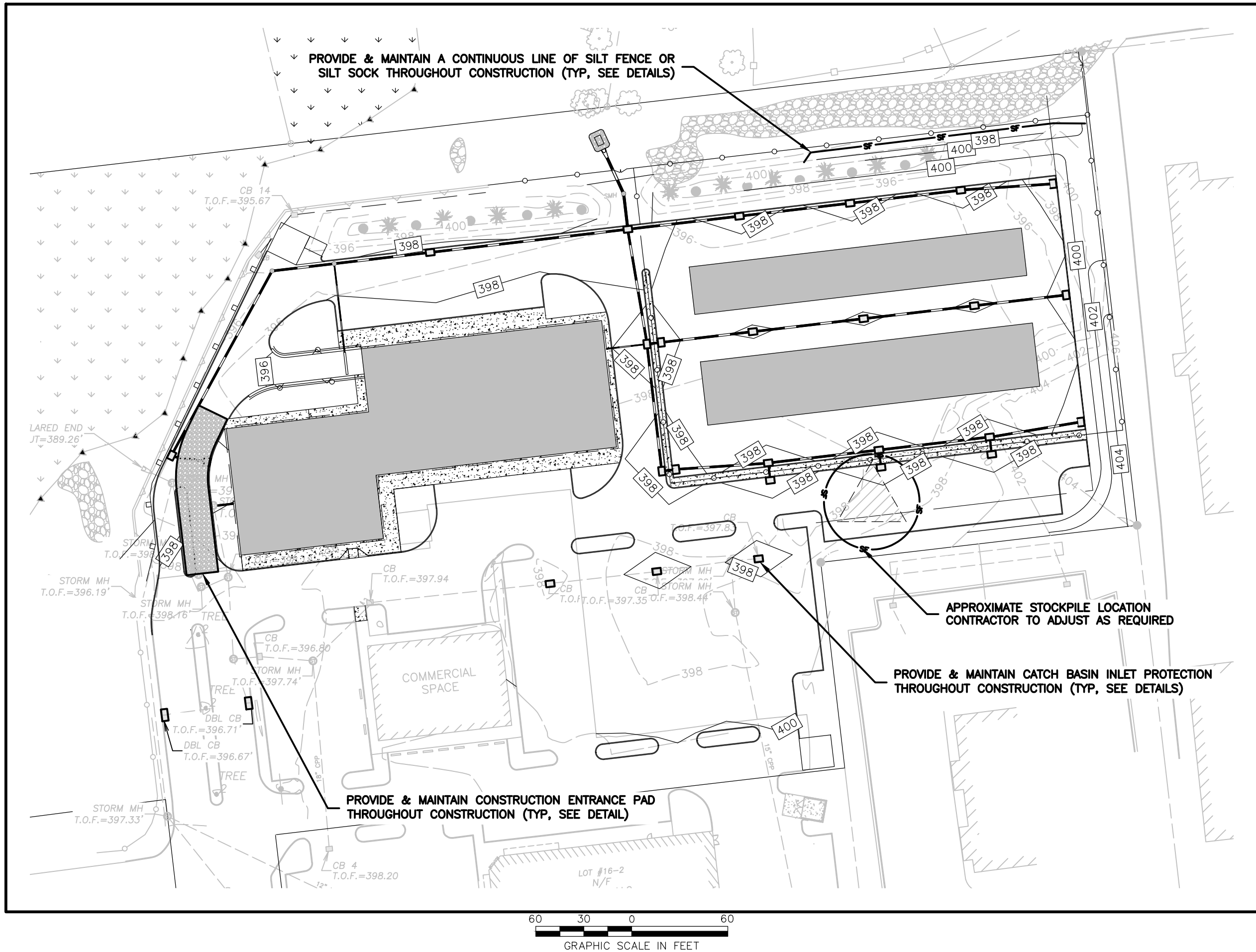


TYPICAL SILT SOCK INSTALLATION



SECTION

SILT SOCK INSTALLATION
NOT TO SCALE



SITE DEVELOPMENT PLAN
PREPARED FOR:

TOWNSEND
DEVELOPMENT
ASSOCIATES
PROVIDENCE ROAD (RT 6)
BROOKLYN, CT

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No.	Submittal / Revision	App'd. By	Date
1	REVIEW COMMENTS	PMP	07/21/2023

E&S CONTROL AND
STORMWATER
MAINTENANCE PLAN

Designed By: PMP	Drawn By: PMP	Checked By: PMP
Issue Date: 05/05/2023	Project No: 080849	Scale: AS NOTED

Drawing No.:

13

REVIEWED BY THE TOWN ENGINEER

FIRST SELECTMAN DATE

ENDORSED BY THE BROOKLYN
INLAND WETLANDS COMMISSION

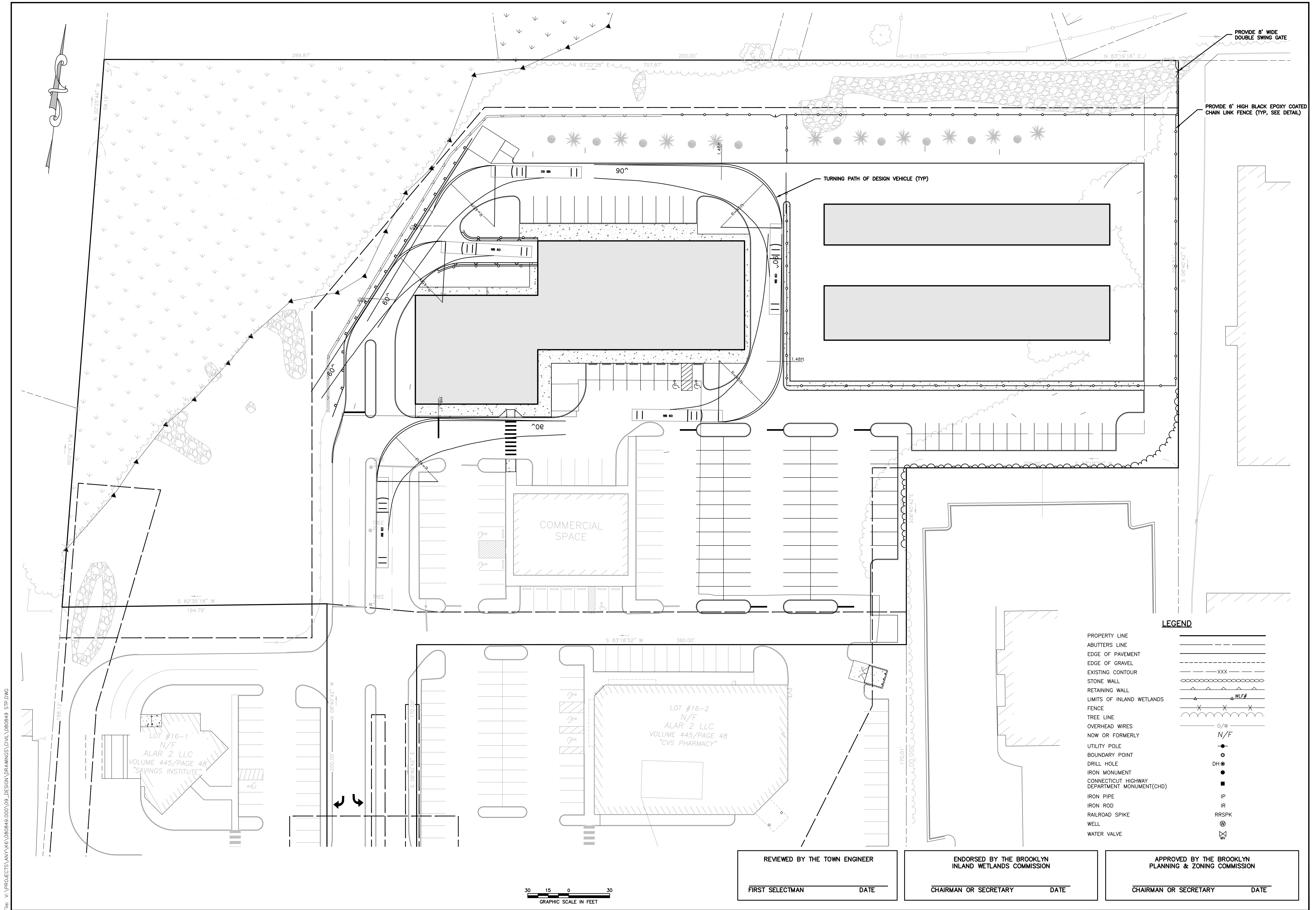
CHAIRMAN OR SECRETARY DATE

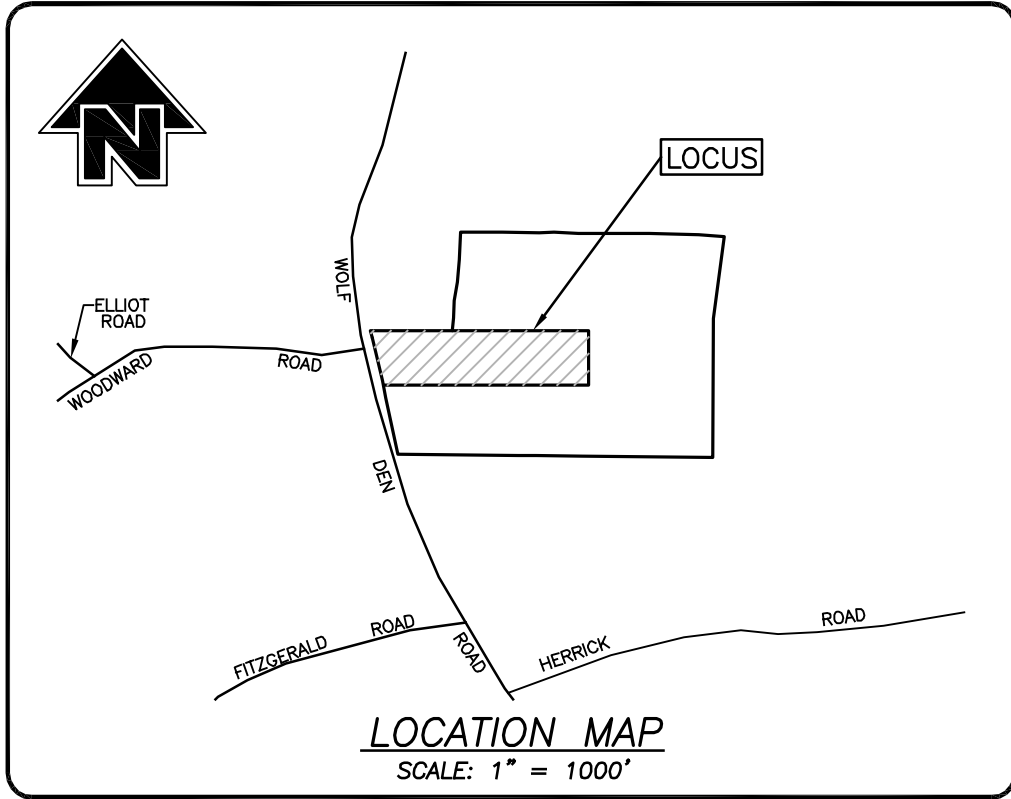
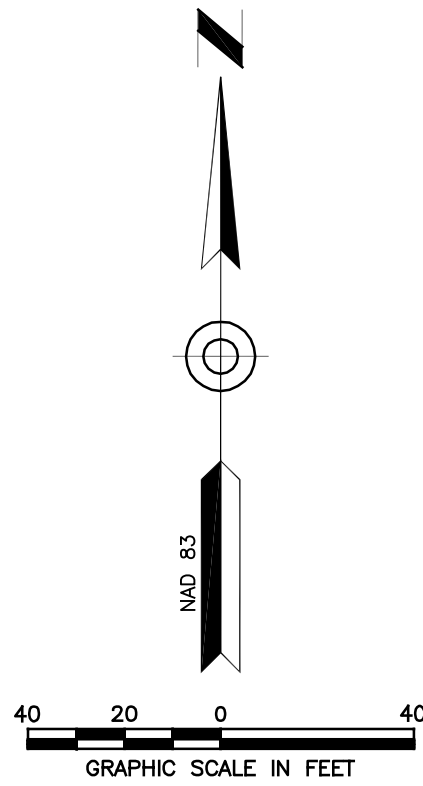
APPROVED BY THE BROOKLYN
PLANNING & ZONING COMMISSION

CHAIRMAN OR SECRETARY DATE

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MP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING
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SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE
OTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE
DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION
OF THE ALTERATION.

TURNING DEMONSTRATION PLAN

Drawing No.:



NOTES:

- This survey has been prepared pursuant to the Regulations of Connecticut State Agencies Sections 20-300b-1 through 20-300b-20 and the "Standards for Surveys and Maps in the State of Connecticut" as adopted by the Connecticut Association of Land Surveyors, Inc. on September 26, 1996, Amended October 26, 2018;
 - This survey conforms to a Class "C" horizontal accuracy.
 - Field surveyed topographic features conform to a Class "T-2", "V-2" vertical accuracy.
 - LIDAR topographic features conform to a Class "T-D" vertical accuracy.
 - Survey Type: General Location Survey.
- This map was prepared from record research, other maps, limited field measurements and other sources, it is not to be construed as a Property/Boundary or Limited Property/ Boundary Survey and is subject to such facts as said surveys may disclose.
- Zone = RA.
- Parcel is shown as Lot #22 on Assessors Map #18.
- Owner of record: Ryan & Leah Kelleher & Judith & William Raitt
155 Lafantasie Road
Danielson, CT 06239
See Volume 704, Page 126
- Elevations shown are based on North American Vertical Datum of 1988 (NAVD 88). Contours shown are taken from Connecticut statewide LIDAR and supplemented with actual field survey. Contour interval = 2'.
- Wetlands shown were delineated in the field by Joseph Theroux, Certified Soil Scientist, in 5/2/2023.
- North orientation, bearings and coordinate values shown are based on North American Datum of 1983 (NAD 83) and are taken from GPS observations using the "Superior" statewide GPS network and RTK correction system.
- 100 year flood zone shown was taken from the preliminary FIRM Windham County flood maps dated 7/17/2020, panel 090164 0236F.

MAP REFERENCES:

- "Survey Plan - Prepared for - State of Connecticut Dept. of Agriculture Farmland Preservation Program - Map of Property of - Hillendale Family Limited Partnership & Estate of Georgy L. Booth - Wolfden & Bush Hill Road - Brooklyn, Connecticut Scale: 1" = 100' - Date: October, 1992 - Sheet 1 of 2 - Prepared by: Scott L. Neff". On file in the Brooklyn Land Records as Map #35.
- Subdivision Map prepared for Meehan Builders, LLC - Wolf Den Road - Brooklyn, Connecticut - Date: 11/01/2004 - Revised to: 3/01/2005 - Scale: 1" = 80' - Sheet 2 of 17 - Prepared by Provost & Rovero, Inc." Not on file.

DATE	DESCRIPTION
07/31/2023	ADDED BOX CULVERTS
DATE	DESCRIPTION
REVISIONS	

GENERAL LOCATION SURVEY
DRIVEWAY CROSSING DESIGN PLAN
PREPARED FOR

RYAN KELLEHER

404 WOLF DEN ROAD
BROOKLYN, CONNECTICUT



Killingly Engineering Associates
Civil Engineering & Surveying

114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

DATE: 5/24/2023	DRAWN: NET
SCALE: 1" = 40'	DESIGN: NET
SHEET: 1 OF 3	CHK BY: GG
DWG. No: CLIENT FILE	JOB No: 23057

**BEFORE YOU DIG
CALL BEFORE YOU DIG**
AT LEAST TWO FULL BUSINESS DAYS
BEFORE DIGGING OR DISTURBING EARTH
DIAL 811 OR 1-800-922-4455

LEGEND

- DH DRILL HOLE FOUND
- UTILITY POLE
- PERCOLATION TEST HOLE
- TEST HOLE
- 100--- EXISTING CONTOURS
- 100--- PROPOSED CONTOURS
- #--- INLAND WETLANDS FLAG
- R--- BUILDING SETBACK LINE
- STONE WALL
- SILT FENCE

ANY CHANGES TO THESE PLANS WITHIN 200' OF
WETLANDS OR WATERCOURSES MUST BE RESUBMITTED
TO THE BROOKLYN INLAND WETLANDS COMMISSION.

THE APPLICANT WILL CONTACT THE BROOKLYN INLAND
WETLANDS COMMISSION OR ITS AGENT AFTER ALL
EROSION AND SEDIMENT CONTROL MEASURES ARE
INSTALLED, PRIOR TO ANY CONSTRUCTION OR EXCAVATION
ON THE PROPERTY.

ENDORSED BY THE BROOKLYN INLAND
WETLANDS COMMISSION

CHAIRMAN

DATE

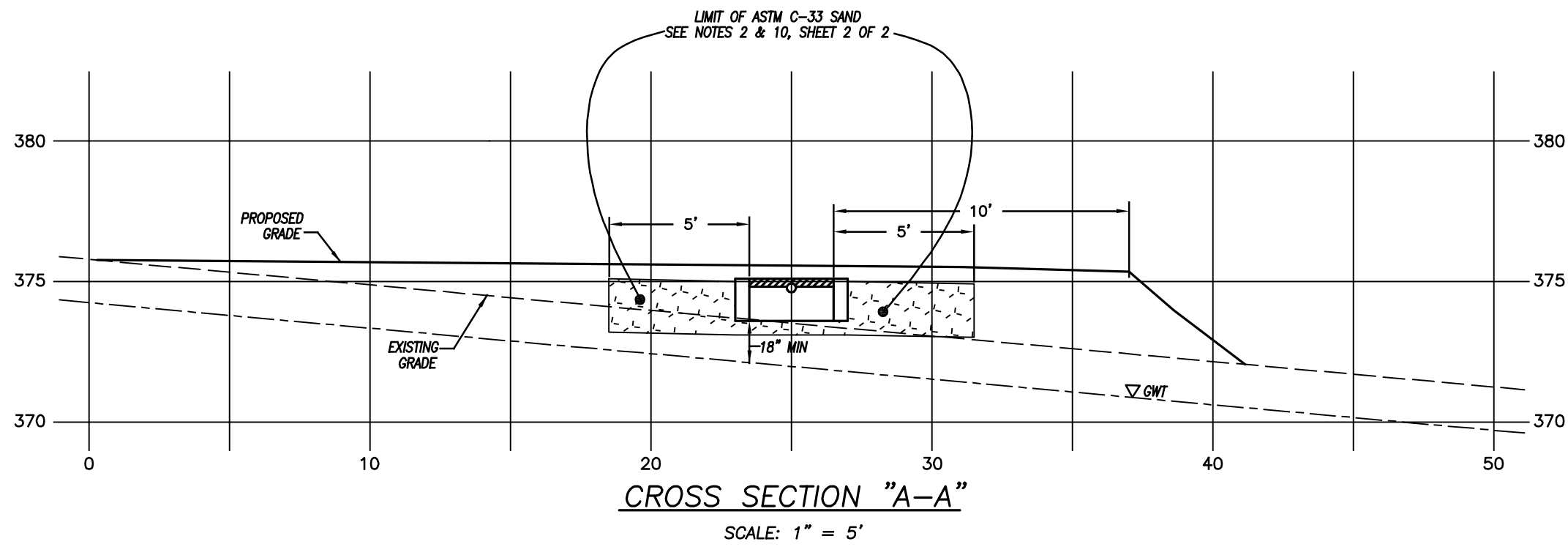
NORMAND E. THIBAULT, JR., P.E.
LIC #PEN 0022834

DATE

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT
AS NOTED HEREON,

GREG A. GLAUDE, L.S. LIC. NO. 70191 DATE

NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS
THE ORIGINAL SEAL AND SIGNATURE OF THE LAND SURVEYOR.



PERCOLATION TEST RESULT - September 28, 2022
NORTHEAST DISTRICT DEPARTMENT OF HEALTH

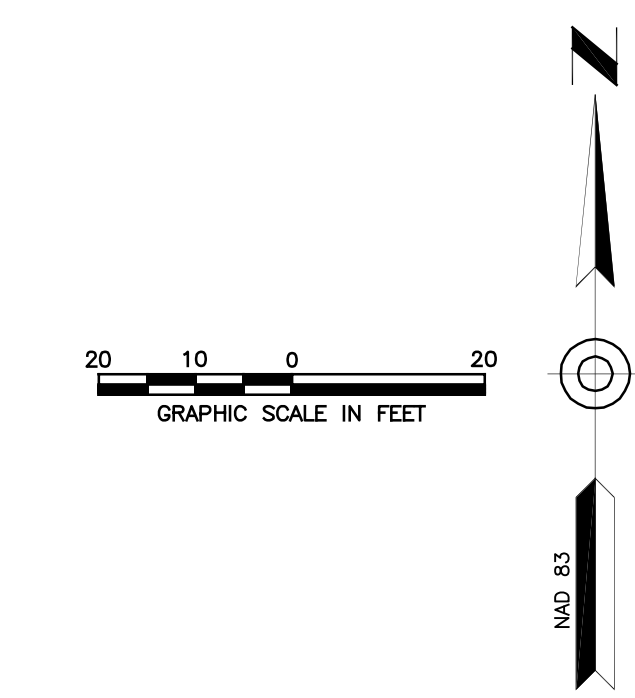
HOLE A	Rate = 10.1-20 min./in.
Depth = 24"	
Time	Reading
9:38	9.5"
9:43	11"
9:53	13"
10:03	14.5"
10:13	16"
10:23	16.5"
10:33	17.5"

TEST HOLE DATA - September 28, 2022
Northeast District Department of Health

TEST PIT	DEPTH	PROFILE
1	0"-16" 16"-20" 20"-90"	Topsoil Tan, Brown Fine Sandy Loam Grey Tan Compact Mottled Fine Sandy Loam N/A N/A
	Ledge GWT Roots Mottling Restrictive	90" 10" 20" 20" 20"
2	0"-28" 28"-60"	Topsoil Compact Mottled Gray Fine Sandy Loam N/A N/A
	Ledge GWT Mottling Roots Restrictive	26" 26" 28" 28" 28"

SEPTIC SYSTEM DESIGN DATA

Percolation Rate	= 10.1-20 min. / in.
5 bedroom house requires	= 900 s.f. effective leaching area
Effective Leaching area	= 11 s.f. / l.f. of trench
Length Required	= 900/11 = 81.8 l.f.
Length Provided	= 85 l.f.
Min. Leaching System Spread (MLSS)	= 26 x 2.0 x 1.25 = 65.00'
MLSS Provided	= 85'
LEACHING FIELD	
85 L.F. (17 sections) of Eljen Mantis 536.8 Septic Leaching system	
Maximum depth into existing grade	= 2"



NOTES:

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 - Field surveyed topographic features conform to a Class "T-2", "V-2" vertical accuracy.
 - LIDAR topographic features conform to a Class "T-D" vertical accuracy.
 - Survey Type: General Location Survey.

This map was prepared from record research, other maps, limited field measurements and other sources, it is not to be construed as a Property/Boundary or Limited Property/Boundary Survey and is subject to such facts as said surveys may disclose.

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- Elevations shown are based on North American Vertical Datum of 1988 (NAVD 88). Contours shown are taken from Connecticut statewide LIDAR and supplemented with actual field survey. Contour interval = 2'.
- Wetlands shown were delineated in the field by Joseph Theroux, Certified Soil Scientist, in 5/2/2023.
- North orientation, bearings and coordinate values shown are based on North American Datum of 1983 (NAD 83) and are taken from GPS observations using the "Superior" statewide GPS network and RTK correction system.
- Before any construction is to commence contact "CALL BEFORE YOU DIG" at 1-800-922-4455 or 811.

MAP REFERENCES:

- "Survey Plan - Prepared for - State of Connecticut Dept. of Agriculture Farmland Preservation Program - Map of Property of - Hillandale Family Limited Partnership & Estate of Georgy L. Booth - Wolfden & Bush Hill Road - Brooklyn, Connecticut Scale: 1" = 100' - Date: October, 1992 - Sheet 1 of 2 - Prepared by: Scott L. Neff". On file in the Brooklyn Land Records as Map #35.
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7/31/2023	ADDED BOX CULVERTS
DATE	DESCRIPTION
REVISIONS	

GENERAL LOCATION SURVEY
SEPTIC SYSTEM DESIGN PLAN
PREPARED FOR

RYAN KELLEHER

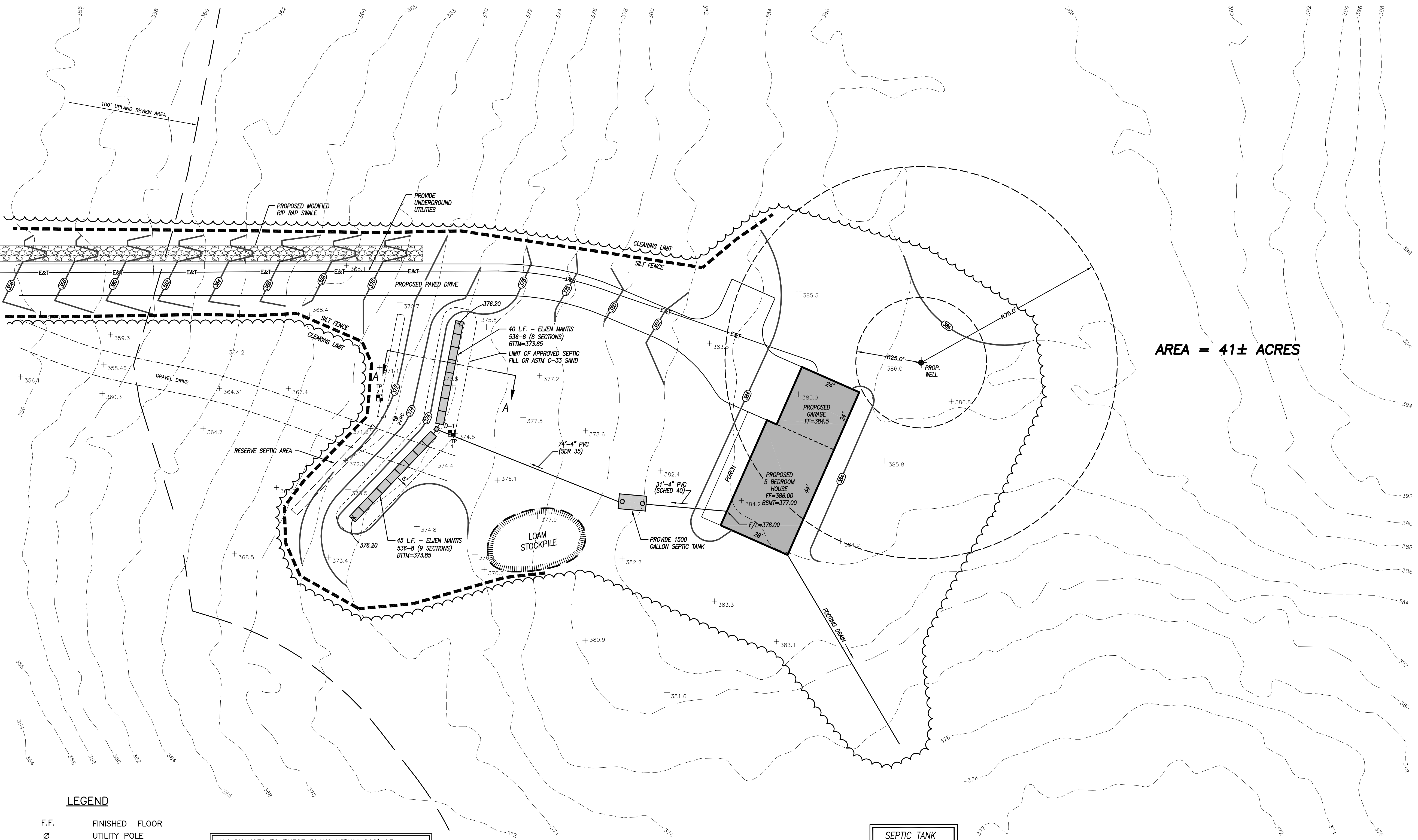
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DATE: 5/24/2023	DRAWN: RGS
SCALE: 1" = 20'	DESIGN: NET
SHEET: 2 OF 3	CHK BY: GG
DWG. No: CLINT FILE	JOB No: 23057



LEGEND

F.F.	FINISHED FLOOR
Ø	UTILITY POLE
---	EXISTING CONTOURS
---	PROPOSED CONTOURS
---	INLAND WETLANDS FLAG
---	BUILDING SETBACK LINE
○	PERCOLATION TEST HOLE
---	TEST HOLE
---	SILT FENCE

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ENDORSED BY THE BROOKLYN INLAND WETLANDS COMMISSION

CHAIRMAN DATE

SURVEYOR SHALL SET A BENCH MARK IN THE AREA OF THE SEPTIC SYSTEM AT THE TIME OF CONSTRUCTION STAKE-OUT.

SEPTIC TANK
1500 GALLON
TWO COMPARTMENT
F/L IN = 377.25
F/L OUT = 377.00
DISTRIBUTION BOXES
D-1 (STANDARD)
F/L IN = 375.02
F/L OUT = 374.85

NORMAND THIBEAULT, JR., P.E. No. 22834 DATE

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON,

GREG A. GLAUDE, L.S. LIC. NO. 70191 DATE

NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS THE ORIGINAL SEAL AND SIGNATURE OF THE LAND SURVEYOR.

EROSION AND SEDIMENT CONTROL NARRATIVE:

PRINCIPLES OF EROSION AND SEDIMENT CONTROL

The primary function of erosion and sediment controls is to absorb erosional energies and reduce runoff velocities that force the detachment and transport of soil and/or encourage the deposition of eroded soil particles before they reach any sensitive area.

KEEP LAND DISTURBANCE TO A MINIMUM

The more land that is in vegetative cover, the more surface water will infiltrate into the soil, thus minimizing stormwater runoff and potential erosion. Keeping land disturbance to a minimum not only involves minimizing the extent of exposure at any one time, but also the duration of exposure. Phasing, sequencing and construction scheduling are interrelated. Phasing divides a large project into distinct sections where construction work over a specific area occurs over distinct periods of time and each phase is not dependent upon a subsequent phase in order to be functional. A sequence is the order in which construction activities are to occur during any particular phase. A sequence should be developed on the premise of "first things first" and "last things last" with proper attention given to the inclusion of adequate erosion and sediment control measures. A construction schedule is a sequence with time lines applied to it and should address the potential overlap of actions in a sequence which may be in conflict with each other.

- Limit areas of clearing and grading. Protect natural vegetation from construction equipment with fencing, tree armoring, and retaining walls or tree wells.
- Route traffic patterns within the site to avoid existing or newly planted vegetation.
- Phase construction so that areas which are actively being developed at any one time are minimized and only that area under construction is exposed. Clear only those areas essential for construction.
- Sequence the construction of storm drainage systems so that they are operational as soon as possible during construction. Ensure all outlets are stable before outletting storm drainage flow into them.
- Schedule construction so that final grading and stabilization is completed as soon as possible.

SLOW THE FLOW

Detachment and transport of eroded soil must be kept to a minimum by absorbing and reducing the erosive energy of water. The erosive energy of water increases as the volume and velocity of runoff increases. The volume and velocity of runoff increases during development as a result of reduced infiltration rates caused by the removal of existing vegetation, removal of topsoil, compaction of soil and the construction of impervious surfaces.

- Use diversions, stone dikes, silt fences and similar measures to break flow lines and dissipate storm water energy.
- Avoid diverting one drainage system into another without calculating the potential for downstream flooding or erosion.

KEEP CLEAN RUNOFF SEPARATED

Clean runoff should be kept separated from sediment laden water and should not be directed over disturbed areas without additional controls. Additionally, prevent the mixing of clean off-site generated runoff with sediment laden runoff generated on-site until after adequate filtration of on-site waters has occurred.

- Segregate construction waters from clean water.
- Divert site runoff to keep it isolated from wetlands, watercourses and drainage ways that flow through or near the development until the sediment in that runoff is trapped or detained.

REDUCE ON SITE POTENTIAL INTERNALLY AND INSTALL PERIMETER CONTROLS

While it may seem less complicated to collect all waters to one point of discharge for treatment and just install a perimeter control, it can be more effective to apply internal controls to many small sub-drainage basins within the site. By reducing sediment loading from within the site, the chance of perimeter control failure and the potential off-site damage that it can cause is reduced. It is generally more expensive to correct off-site damage than it is to install proper internal controls.

- Control erosion and sedimentation in the smallest drainage area possible. It is easier to control erosion than to contend with sediment after it has been carried downstream and deposited in unwanted areas.
- Direct runoff from small disturbed areas to adjoining undisturbed vegetated areas to reduce the potential for concentrated flows and increase settlement and filtering of sediments.
- Concentrated runoff from development should be safely conveyed to stable outlets using rip rapped channels, waterways, diversions, storm drains or similar measures.
- Determine the need for sediment basins. Sediment basins are required on larger developments where major grading is planned and where it is impossible or impractical to control erosion at the source. Sediment basins are needed on large and small sites when sensitive areas such as wetlands, watercourses, and streets would be impacted by off-site sediment deposition. Do not locate sediment basins in wetlands or permanent or intermittent watercourses. Sediment basins should be located to intercept runoff prior to its entry into the wetland or watercourse.

SEPTIC SYSTEM CONSTRUCTION NOTES

- The building, septic system and well shall be accurately staked in the field by a licensed Land Surveyor in the State of Connecticut, prior to construction.
- Topsail shall be removed and in the area of the primary leaching field scarified, prior to placement of septic fill. Septic fill specifications are as follows:
 - Max. percent of gravel (material between No. 4 & 3 inch sieves) = 45%

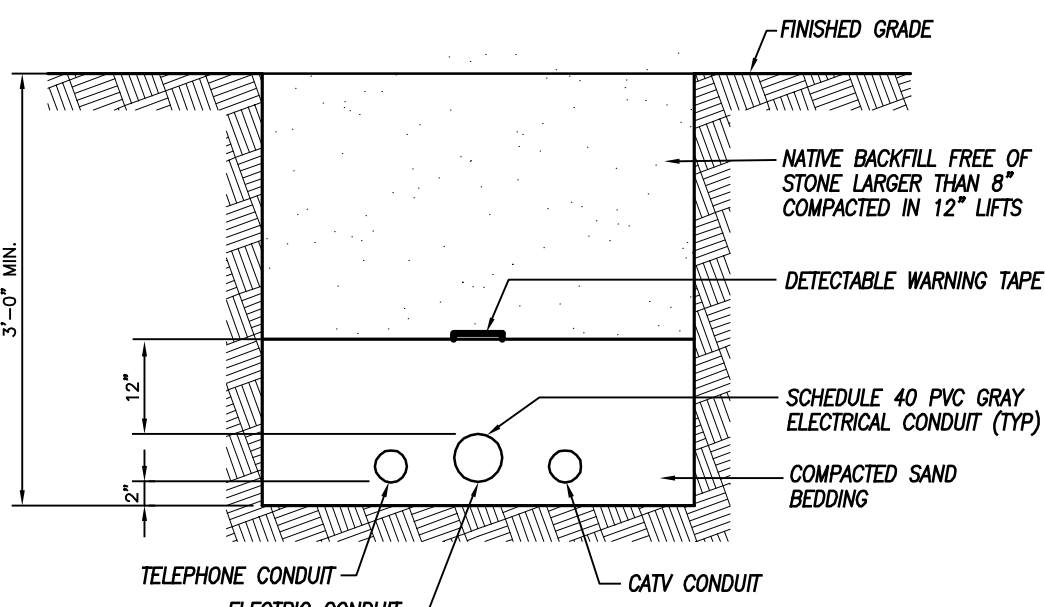
GRADATION OF FILL (MINUS GRAVEL)

SIEVE SIZE	PERCENT PASSING (WET SIEVE)	PERCENT PASSING (DRY SIEVE)
No. 10	100%	100%
No. 40	70% - 100%	70% - 100%
No. 100	10% - 50%	0% - 75%
No. 200	0% - 20%	0% - 5%
	0% - 5%	0% - 2.5%

Fill material shall be approved by the sanitarian prior to placement. It shall be compacted in 6" lifts and shall extend a minimum of five feet (5') around the perimeter of the system. Common fill shall extend an additional five feet (5') down gradient of the system (10' total) before tapering off at a maximum slope of 2H:1V.

- Septic tank shall be two compartment precast 1500 gallon tank with gas deflector and outlet filter as manufactured by Jolley Precast, Inc. or equal.
- Distribution boxes shall be 4 hole precast concrete as manufactured by Jolley Precast, Inc. or equal.
- All precast structures such as septic tanks, distribution boxes, etc. shall be set level on six inches (6") of compacted gravel base at the elevations specified on the plans.
- Solid distribution pipe shall be 4" diameter PVC meeting ASTM D-3034 SDR 35 with compression gasket joints. It shall be laid true to the lines and grades shown on the plans and in no case have a slope less than 0.125 inches per foot.
- Perforated distribution pipe shall be 4" diameter PVC meeting ASTM D-3034 or ASTM F1760 for SDR 35, or ASTM F810 for SDR 38.
- Sewer pipe from the foundation wall to the septic tank shall be schedule 40 PVC meeting ASTM D 1785. It shall be laid true to the grades shown on the plans and in no case shall have a slope less than 0.25 inches per foot.
- Solid footing drain outlet pipe shall be 4" Diameter PVC meeting ASTM D 3034, SDR 35 with compression gasketed joints. Footing drain outlet pipe shall not be backfilled with free draining material, such as gravel, broken stone, rock fragments, etc.
- Septic sand shall meet the requirements of ASTM C-33 with less than 10% passing a 100 sieve and less than 5% passing a 200 sieve

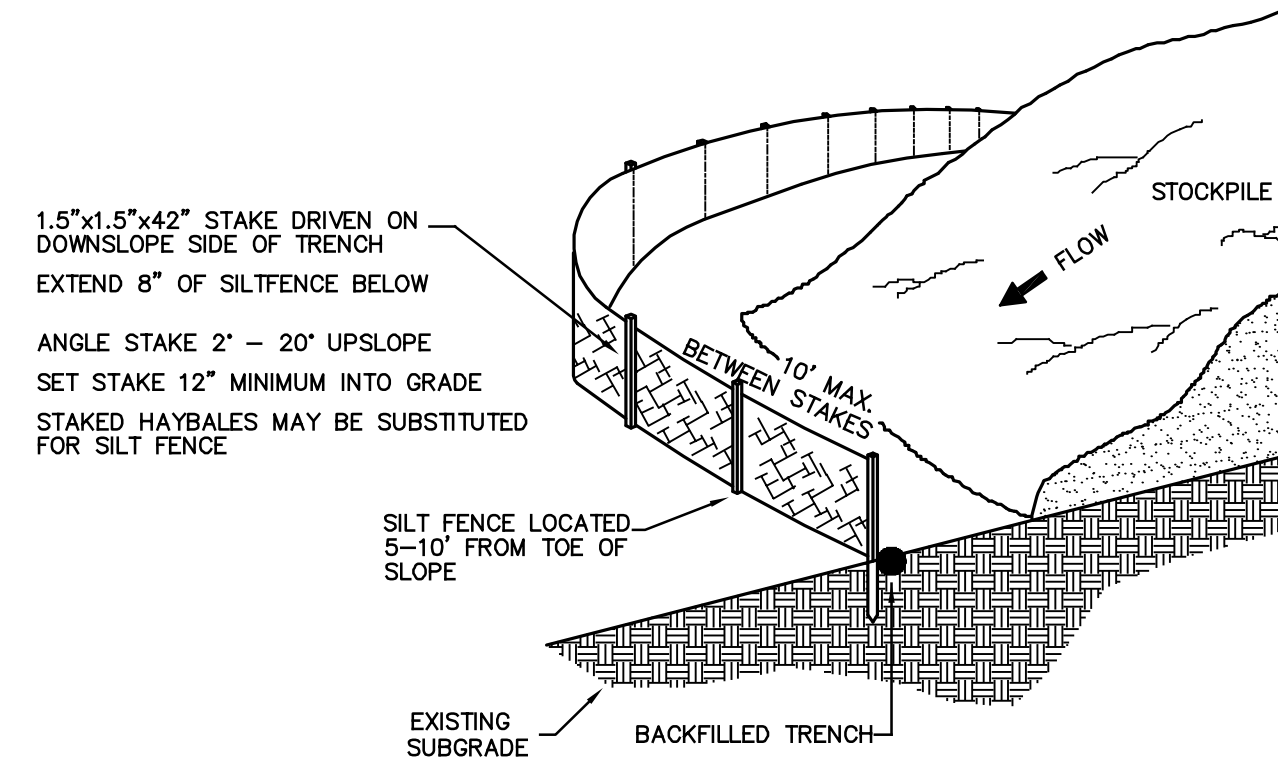
SIEVE SIZE	% PASSING
0.375	100
#4	95-100
#8	80-100
#16	60-85
#30	25-60
#50	10-30
#100	<10
#200	<5



NOTE: CONTRACTOR SHALL PROVIDE SILT/CLAY DAMS AT 100' INTERVALS ALONG PROPOSED UTILITY TRENCH TO AVOID TRANSPORTING INTERCEPTED WATER.

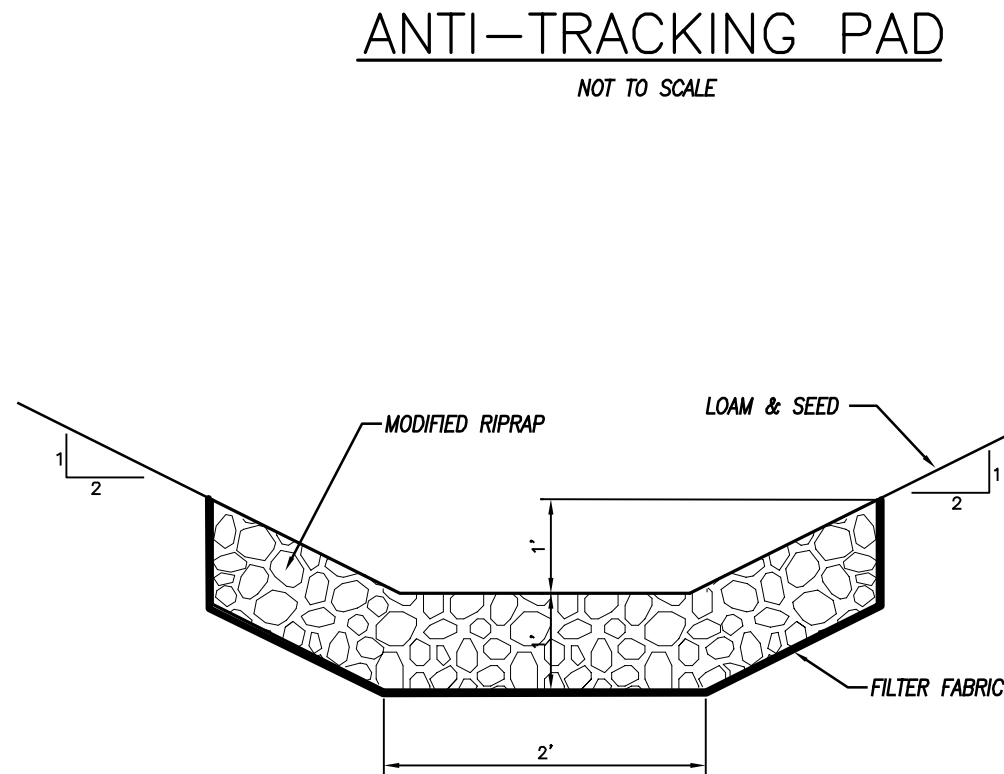
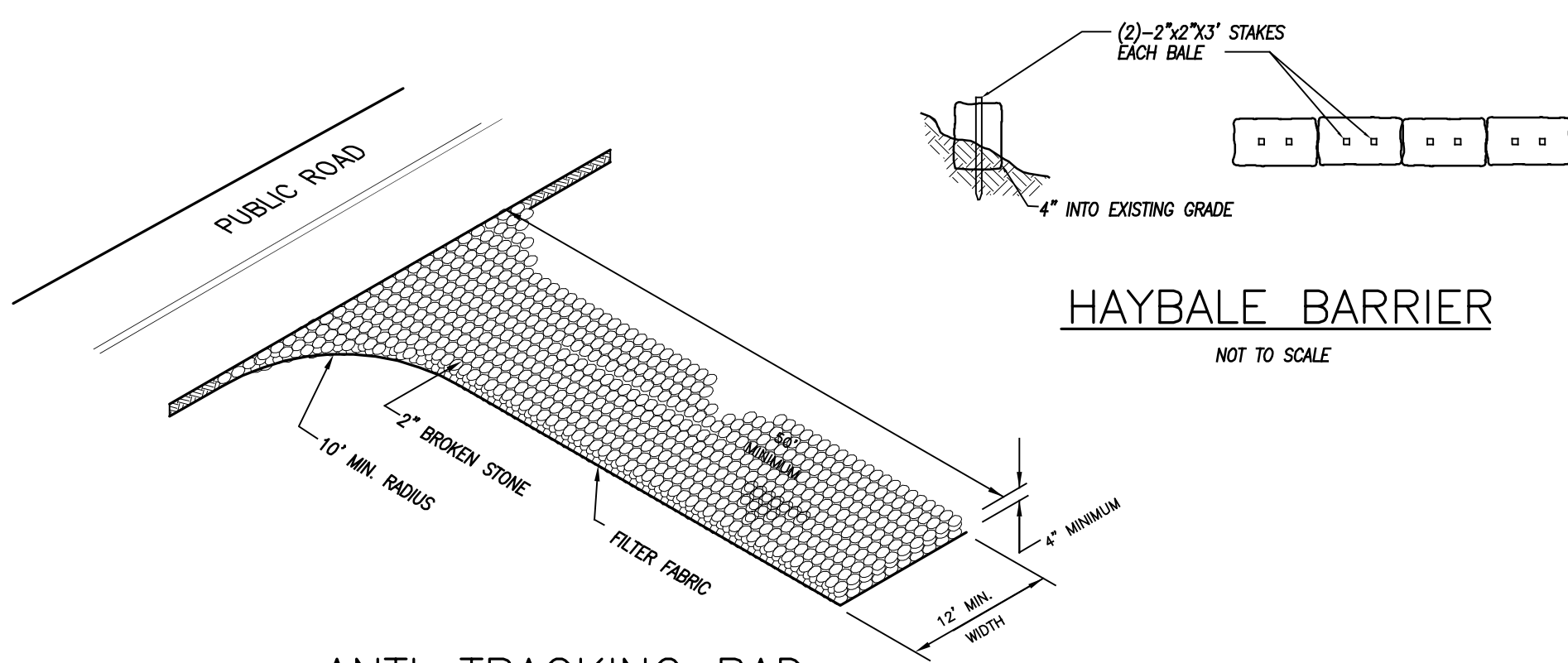
UNDERGROUND UTILITY TRENCH

NOT TO SCALE



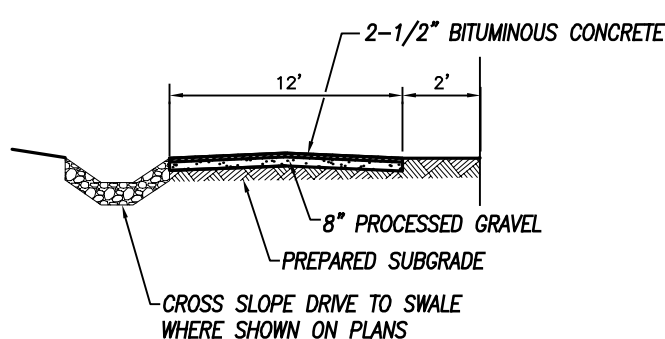
SILT FENCE @ TOE OF SLOPE APPLICATION

NOT TO SCALE



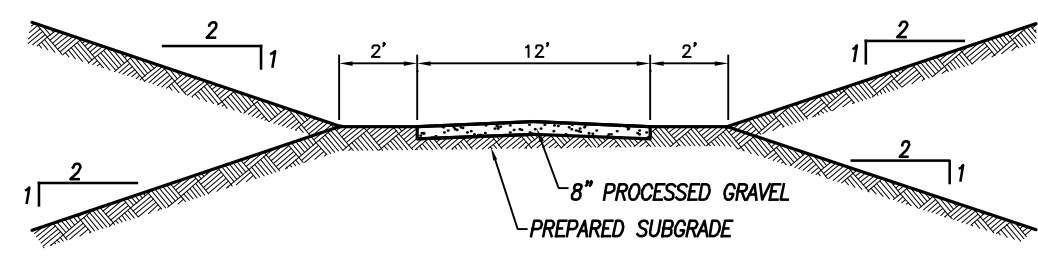
MODIFIED RIPRAP SWALE

NOT TO SCALE



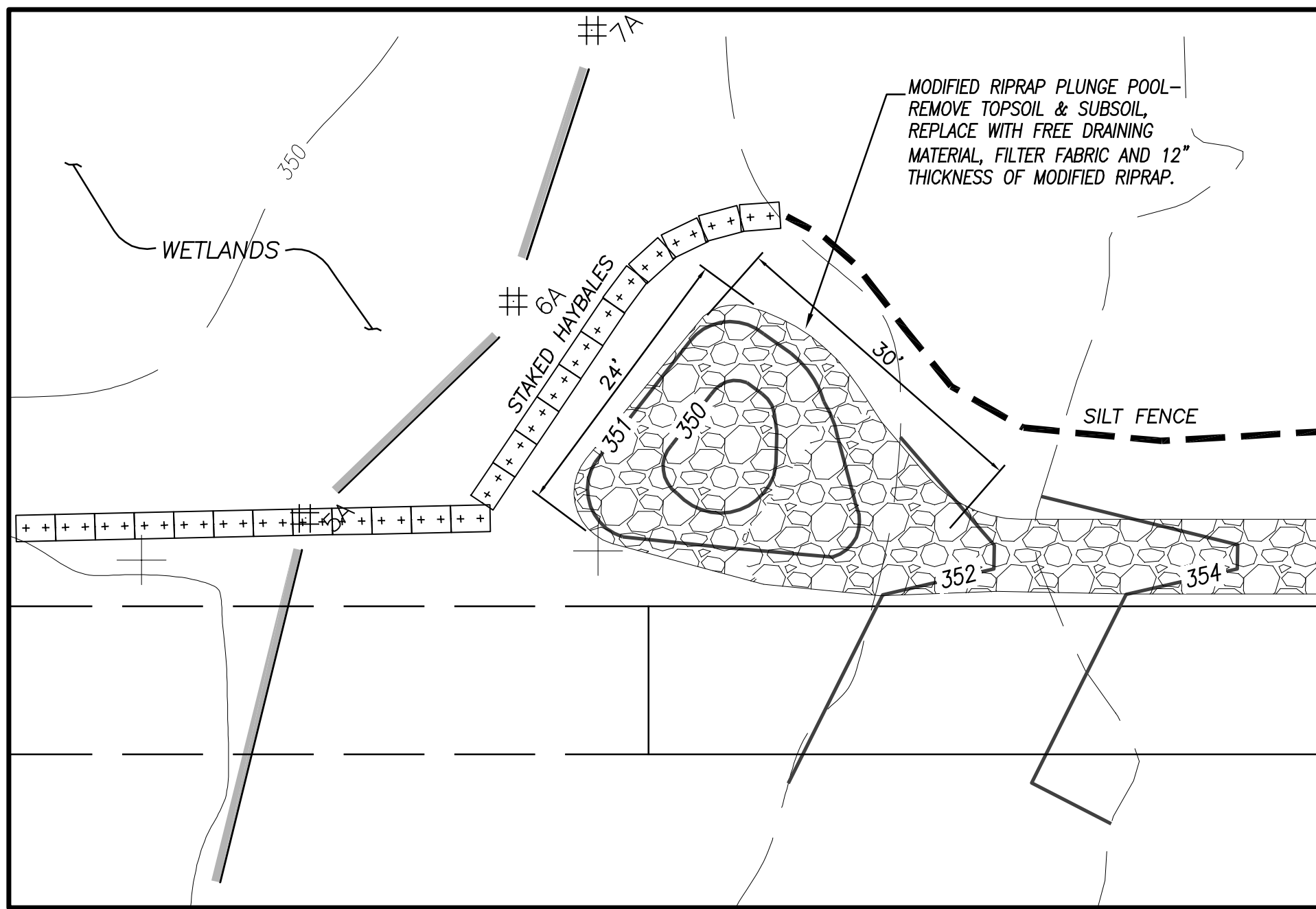
PAVED DRIVE DETAIL

NOT TO SCALE



GRAVEL DRIVE DETAIL

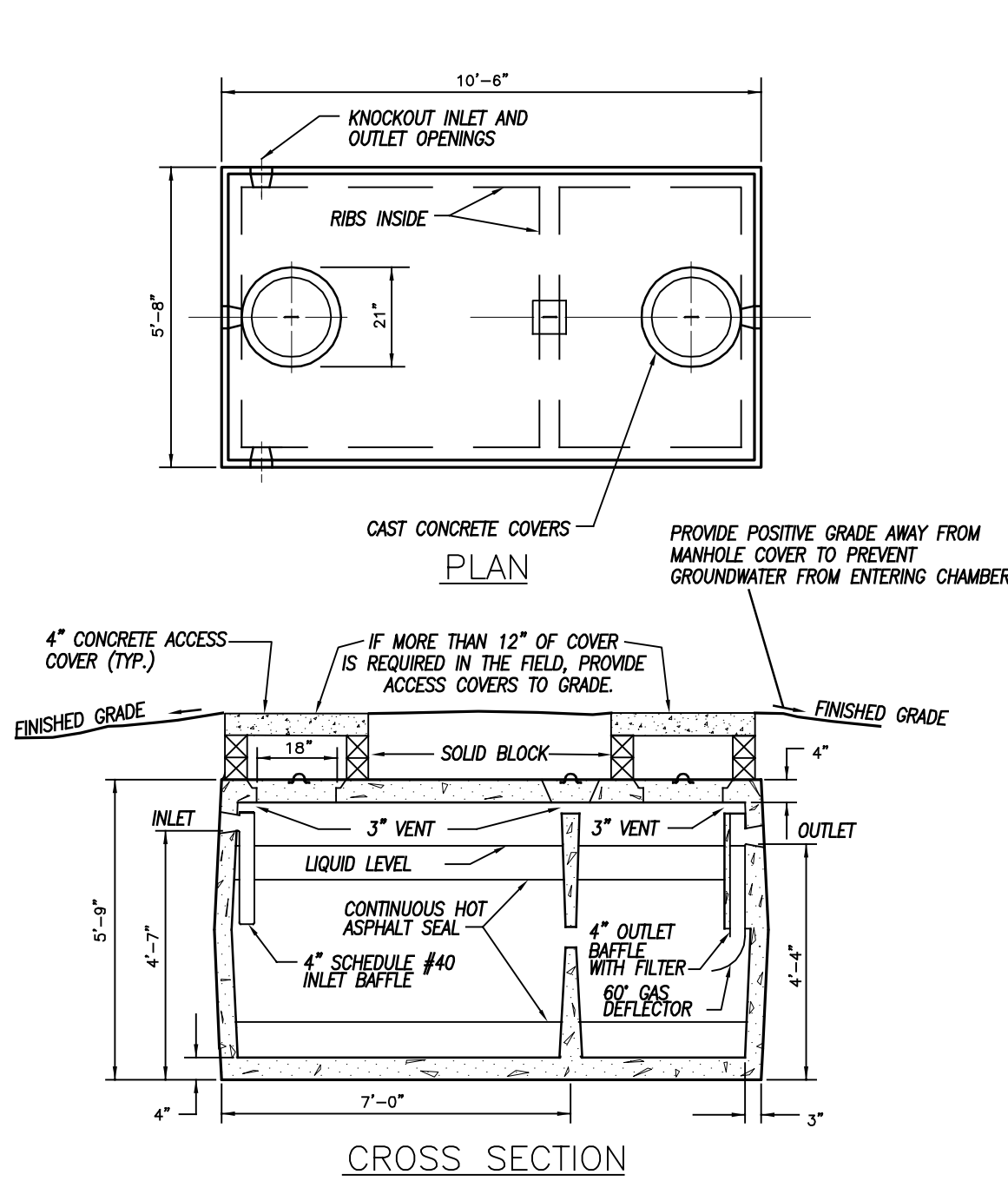
NOT TO SCALE



MODIFIED RIPRAP PLUNGE POOL DETAIL

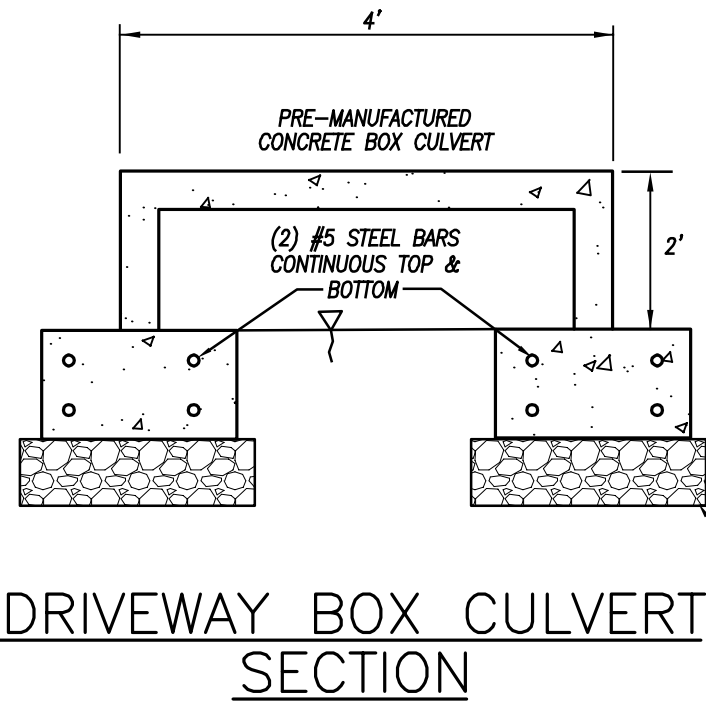
NOT TO SCALE

FREE DRAINING MATERIAL SHALL CONFORM TO ARTICLE M.02.07 OF CTDOT FORM 818

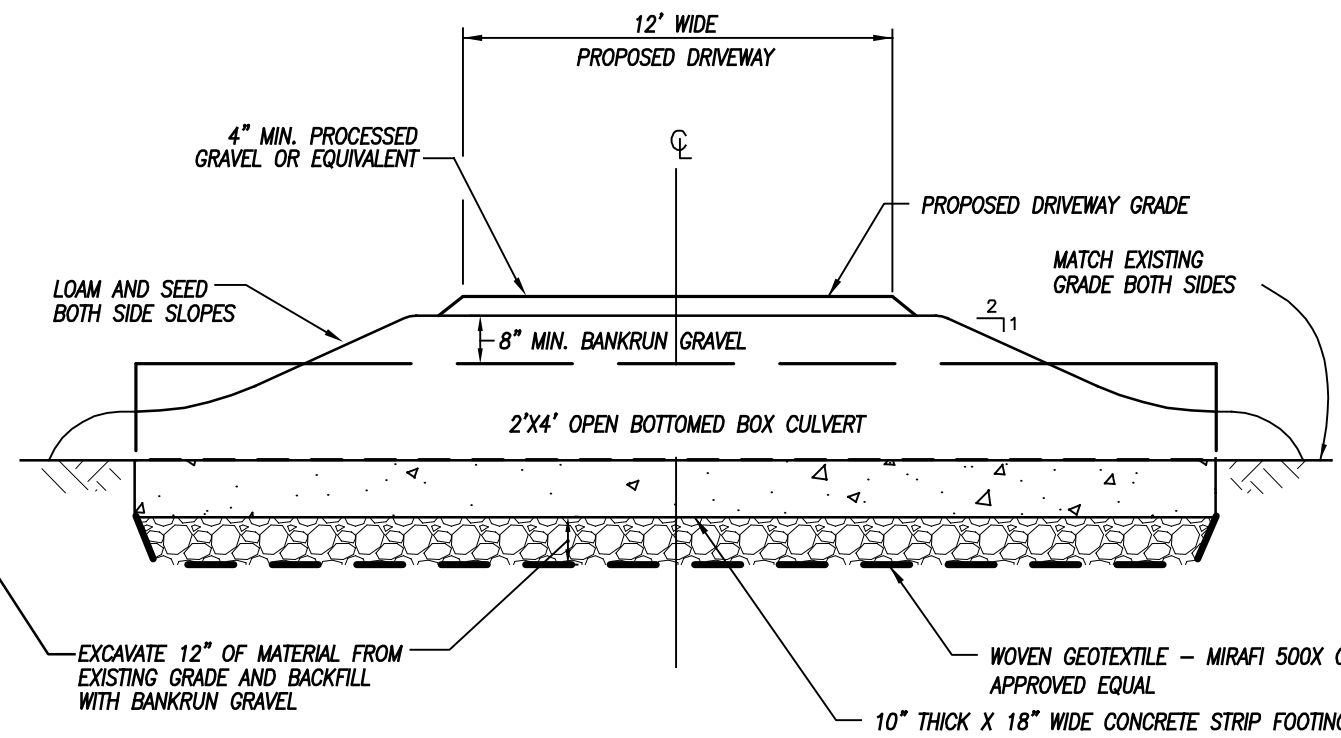


1500 GALLON 2 COMPARTMENT SEPTIC TANK

NOT TO SCALE

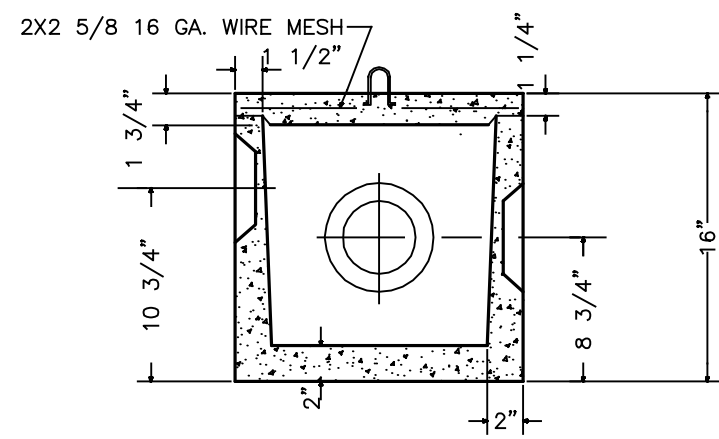


DRIVEWAY BOX CULVERT SECTION



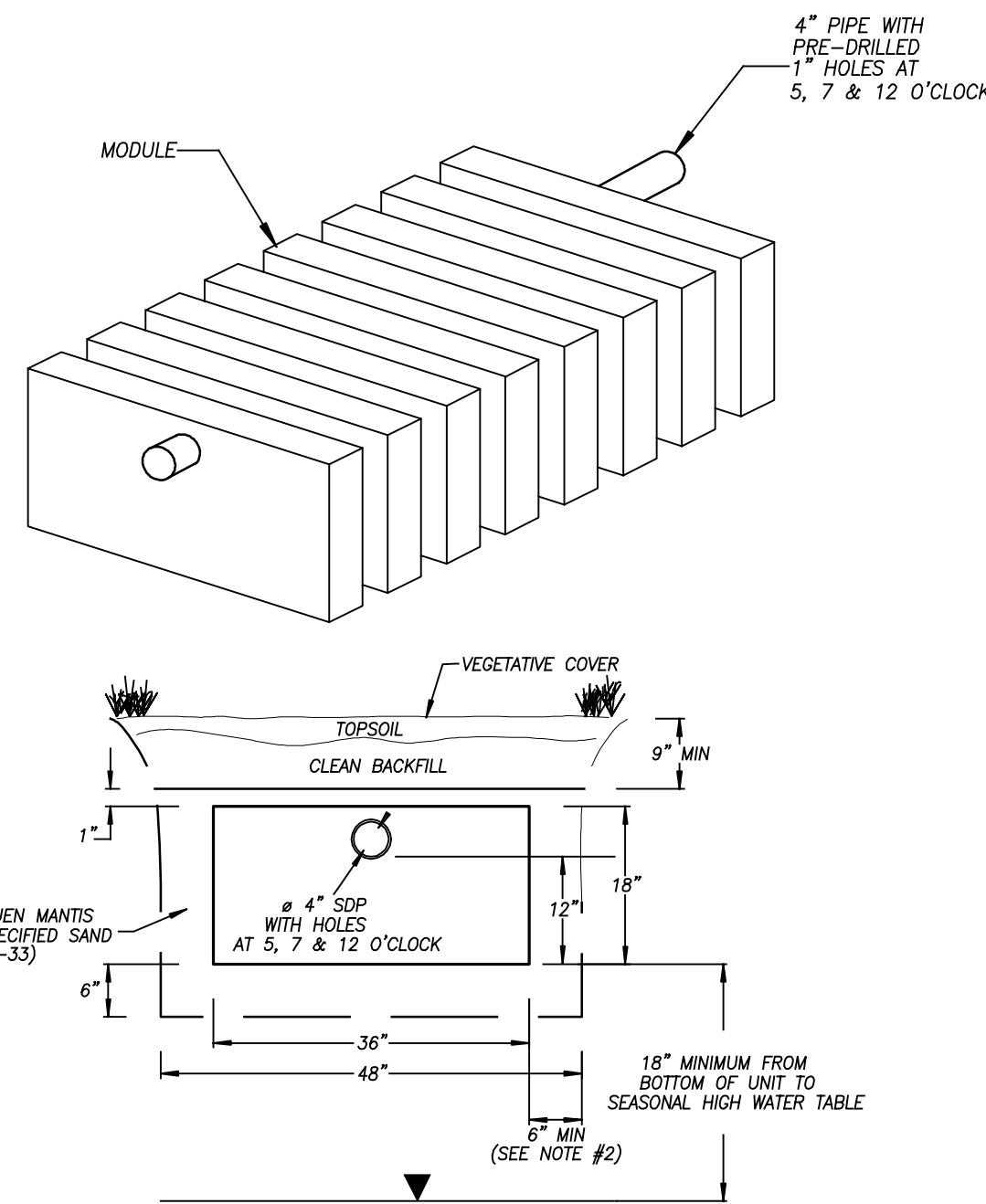
DRIVEWAY BOX CULVERT DETAIL

NOT TO SCALE



STANDARD D-BOX

NOT TO SCALE



ELJEN 536-8 WASTEWATER LEACHING SYSTEM

NOT TO SCALE

- NOTES:
- VENTING REQUIRED WHEN MORE THAN 18" OF COVER AS MEASURED FROM THE TOP OF THE UNIT TO FINISHED GRADE.
 - FOR SYSTEMS INSTALLED IN FILL, CONTRACTOR SHALL PROVIDE 5" OF SELECT FILL OR ASTM C-33 SAND 5' AROUND PERIMETER OF SYSTEM.

07/31/2023	ADDED BOX CULVERTS
DATE	DESCRIPTION
	REVISIONS

DETAIL SHEET

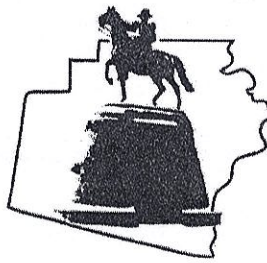
PREPARED FOR

RYAN KELLEHER

WOLF DEN ROAD
BROOKLYN, CONNECTICUT



DATE: 5/24/2023	DRAWN: RGS
SCALE: NOT TO SCALE	DESIGN: NET
SHEET: 3 OF 3	CHK BY: GG
DWG. No: CLIENT FILE	JOB No: 23057



Brooklyn Land Use Department

69 South Main Street
Brooklyn CT 06234
(860) 779-3411 x 31

Inland Wetlands ☒ Zoning Enforcement _____ Blight Enforcement _____

SITE INSPECTION NUMBER

1 2 3 4 5

404 Wolf Den Rd.

7/25/23

Address

Date

I met Janet Booth, Norm Thibeault and
Raiff Santerre, inspected and took photos.

Norm did a watershed analysis. He expects to
install a box culvert, with an open bottom, or
~~or~~ maybe two box culverts.

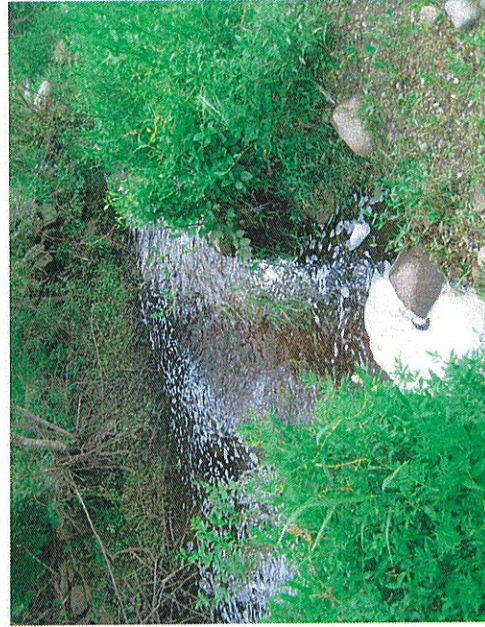
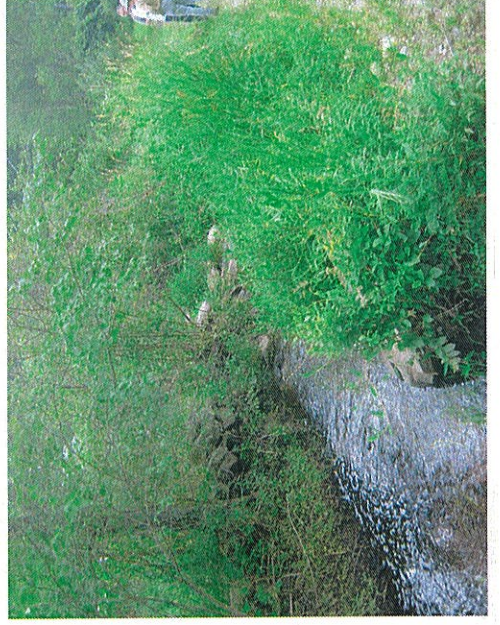
We have not received Syl Pauley's comments
yet.

Norm received Demian's comments.

Commission Representative

M. Washburn

Owner or Authorized Signature





DRAINAGE REPORT

Prepared for

**RYAN KELLEHER
BROOKLYN, CT**

June 2023

Prepared for

Proposed single-family Site Development
404 Wolf Den Road
Brooklyn, CT

Prepared by

Killingly Engineering Associates
Civil Engineering & Surveying



Normand Thibeault Jr., P.E.
CT License #22

Drainage Design Executive Summary

This proposal involves a single-family home on approximately 41 acres of land. The project site is located on the east side of Wolf Den Road, across from the intersection of Wolf Den Road and Woodward Road. Included with this proposal is the improvement of an existing gravel driveway and construction of a paved driveway to access the proposed residence. The residence will be served by private well and an on-site subsurface sewage disposal system.

Existing Conditions Hydrology

An existing conditions hydrologic model was created for areas of the site to be affected by this proposal. Hydrologic conditions were modeled with TR-55 methodology as utilized by HydroCAD software from Applied Microcomputer Systems. Runoff curve numbers for use in the model are based on accepted values published by the U.S. Department of Agriculture (USDA).

Since Bush Hill Brook flows through the property and constitutes the most important hydrologic resource on the site, the hydrologic model represents the entire upstream watershed of Bush Hill Brook, substantially areas off the project site; approximately 76 acres. The analysis point is the existing gravel driveway where there are currently two 15ø reinforced concrete pipes that convey flows from Bush Hill Brook which currently flows through the eastern end of a stone wall, runs parallel to the existing driveway and flows through the concrete pipes. Based on a visual inspection of the site, the existing gravel drive routinely overtops. The wetlands to the north are dammed to some extent by the stonewall which forms the northern boundary of the project property in that area and provide some limited storage capacity. The computations demonstrate that the driveway is overtopped for all storms except for the 2-year for existing conditions.

Proposed Conditions Hydrology

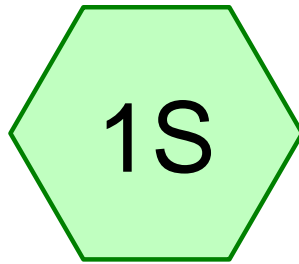
The proposed conditions are identical to the existing conditions with regard to the watershed area and composition. The existing driveway will be widened to a width of 12ø raised to elevation 350, and the existing 15ø concrete pipes will be replaced with 4ø2ø open bottom box culverts. With the replacement of the 15ø concrete pipes with box culverts and slightly raising the driveway, up to a 100-year storm is conveyed without overtopping the driveway.

Table 1. Watershed Peak Flow Analysis

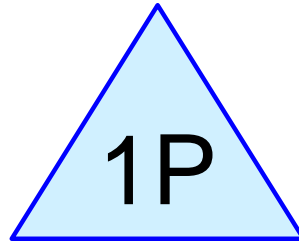
Design Storm	Depth (in)	Runoff peak	Existing Flow over Driveway	Proposed Flow over Driveway
2-Year	3.33	24.61 CFS	0.00 CFS	0.00 CFS
5-Year	4.27	47.30 CFS	3.75 CFS	+0.14 CFS
10-Year	5.02	68.97 CFS	12.10 CFS	+0.19 CFS
25-Year	6.05	101.44 CFS	61.41 CFS	+0.25 CFS
50-Year	6.81	157.66 CFS	134.54 CFS	+0.24 CFS
100-Year	7.64	222.75 CFS	197.68 CFS	+0.16 CFS

HYDROCAD CALCULATIONS

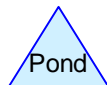
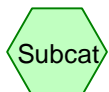
EXISTING CONDITIONS



Drainage Area



Wetlands



Routing Diagram for Existing

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Existing

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
12.000	55	Woods, Good, HSG B (1S)
61.000	70	Woods, Good, HSG C (1S)
3.000	32	Woods/grass comb., Good, HSG A (1S)
76.000	66	TOTAL AREA

Existing*Type II 24-hr 2-year Rainfall=3.36"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage Area

Runoff Area=76.000 ac 0.00% Impervious Runoff Depth>0.62"
Flow Length=3,325' Slope=0.0480 '/' Tc=56.3 min CN=66 Runoff=24.61 cfs 3.939 af

Pond 1P: Wetlands

Peak Elev=349.17' Storage=0.584 af Inflow=24.61 cfs 3.939 af
Primary=13.51 cfs 3.934 af Secondary=0.00 cfs 0.000 af Outflow=13.51 cfs 3.934 af

Total Runoff Area = 76.000 ac Runoff Volume = 3.939 af Average Runoff Depth = 0.62"
100.00% Pervious = 76.000 ac 0.00% Impervious = 0.000 ac

Existing

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Summary for Subcatchment 1S: Drainage Area

Runoff = 24.61 cfs @ 12.68 hrs, Volume= 3.939 af, Depth> 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-year Rainfall=3.36"

Area (ac)	CN	Description
12.000	55	Woods, Good, HSG B
3.000	32	Woods/grass comb., Good, HSG A
61.000	70	Woods, Good, HSG C
76.000	66	Weighted Average
76.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.3	3,325	0.0480	0.98		Lag/CN Method, Tc-Watershed

Summary for Pond 1P: Wetlands

Inflow Area = 76.000 ac, 0.00% Impervious, Inflow Depth > 0.62" for 2-year event
 Inflow = 24.61 cfs @ 12.68 hrs, Volume= 3.939 af
 Outflow = 13.51 cfs @ 13.27 hrs, Volume= 3.934 af, Atten= 45%, Lag= 35.4 min
 Primary = 13.51 cfs @ 13.27 hrs, Volume= 3.934 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 349.17' @ 13.27 hrs Surf.Area= 3.684 ac Storage= 0.584 af

Plug-Flow detention time= 13.3 min calculated for 3.934 af (100% of inflow)
 Center-of-Mass det. time= 12.8 min (874.9 - 862.1)

Volume	Invert	Avail.Storage	Storage Description
#1	349.00'	4.300 af	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
349.00	3.380	0.000	0.000
350.00	5.220	4.300	4.300

Device	Routing	Invert	Outlet Devices
#1	Primary	347.08'	15.0" Round Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.08' / 347.03' S= 0.0025 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Primary	347.15'	15.0" Round Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.15' / 346.95' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#3	Secondary	349.30'	15.0' long x 90.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Existing

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Primary OutFlow Max=13.51 cfs @ 13.27 hrs HW=349.17' (Free Discharge)└─**1=Culvert** (Barrel Controls 6.61 cfs @ 5.38 fps)└─**2=Culvert** (Barrel Controls 6.90 cfs @ 5.62 fps)**Secondary OutFlow** Max=0.00 cfs @ 5.00 hrs HW=349.00' (Free Discharge)└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Existing*Type II 24-hr 5-year Rainfall=4.27"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage Area

Runoff Area=76.000 ac 0.00% Impervious Runoff Depth>1.09"
Flow Length=3,325' Slope=0.0480 '/' Tc=56.3 min CN=66 Runoff=47.30 cfs 6.929 af

Pond 1P: Wetlands

Peak Elev=349.51' Storage=1.945 af Inflow=47.30 cfs 6.929 af
Primary=15.55 cfs 6.523 af Secondary=3.75 cfs 0.397 af Outflow=19.30 cfs 6.920 af

Total Runoff Area = 76.000 ac Runoff Volume = 6.929 af Average Runoff Depth = 1.09"
100.00% Pervious = 76.000 ac 0.00% Impervious = 0.000 ac

Existing

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Summary for Subcatchment 1S: Drainage Area

Runoff = 47.30 cfs @ 12.63 hrs, Volume= 6.929 af, Depth> 1.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-year Rainfall=4.27"

Area (ac)	CN	Description
12.000	55	Woods, Good, HSG B
3.000	32	Woods/grass comb., Good, HSG A
61.000	70	Woods, Good, HSG C
76.000	66	Weighted Average
76.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.3	3,325	0.0480	0.98		Lag/CN Method, Tc-Watershed

Summary for Pond 1P: Wetlands

Inflow Area = 76.000 ac, 0.00% Impervious, Inflow Depth > 1.09" for 5-year event
 Inflow = 47.30 cfs @ 12.63 hrs, Volume= 6.929 af
 Outflow = 19.30 cfs @ 13.44 hrs, Volume= 6.920 af, Atten= 59%, Lag= 48.5 min
 Primary = 15.55 cfs @ 13.44 hrs, Volume= 6.523 af
 Secondary = 3.75 cfs @ 13.44 hrs, Volume= 0.397 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 349.51' @ 13.44 hrs Surf.Area= 4.310 ac Storage= 1.945 af

Plug-Flow detention time= 43.8 min calculated for 6.897 af (100% of inflow)
 Center-of-Mass det. time= 43.2 min (893.1 - 849.9)

Volume	Invert	Avail.Storage	Storage Description
#1	349.00'	4.300 af	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
349.00	3.380	0.000	0.000
350.00	5.220	4.300	4.300

Device	Routing	Invert	Outlet Devices
#1	Primary	347.08'	15.0" Round Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.08' / 347.03' S= 0.0025 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Primary	347.15'	15.0" Round Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.15' / 346.95' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#3	Secondary	349.30'	15.0' long x 90.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Existing

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Primary OutFlow Max=15.55 cfs @ 13.44 hrs HW=349.51' (Free Discharge)↑ **1=Culvert** (Barrel Controls 7.77 cfs @ 6.34 fps)└ **2=Culvert** (Inlet Controls 7.77 cfs @ 6.33 fps)**Secondary OutFlow** Max=3.75 cfs @ 13.44 hrs HW=349.51' (Free Discharge)↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 3.75 cfs @ 1.22 fps)

Existing*Type II 24-hr 10-year Rainfall=5.02"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage Area

Runoff Area=76.000 ac 0.00% Impervious Runoff Depth>1.54"
Flow Length=3,325' Slope=0.0480 '/' Tc=56.3 min CN=66 Runoff=68.97 cfs 9.745 af

Pond 1P: Wetlands

Peak Elev=349.75' Storage=3.037 af Inflow=68.97 cfs 9.745 af
Primary=16.74 cfs 8.027 af Secondary=12.10 cfs 1.707 af Outflow=28.84 cfs 9.735 af

Total Runoff Area = 76.000 ac Runoff Volume = 9.745 af Average Runoff Depth = 1.54"
100.00% Pervious = 76.000 ac 0.00% Impervious = 0.000 ac

Existing

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Summary for Subcatchment 1S: Drainage Area

Runoff = 68.97 cfs @ 12.61 hrs, Volume= 9.745 af, Depth> 1.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-year Rainfall=5.02"

Area (ac)	CN	Description
12.000	55	Woods, Good, HSG B
3.000	32	Woods/grass comb., Good, HSG A
61.000	70	Woods, Good, HSG C
76.000	66	Weighted Average
76.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.3	3,325	0.0480	0.98		Lag/CN Method, Tc-Watershed

Summary for Pond 1P: Wetlands

Inflow Area = 76.000 ac, 0.00% Impervious, Inflow Depth > 1.54" for 10-year event
 Inflow = 68.97 cfs @ 12.61 hrs, Volume= 9.745 af
 Outflow = 28.84 cfs @ 13.37 hrs, Volume= 9.735 af, Atten= 58%, Lag= 45.4 min
 Primary = 16.74 cfs @ 13.37 hrs, Volume= 8.027 af
 Secondary = 12.10 cfs @ 13.37 hrs, Volume= 1.707 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 349.75' @ 13.37 hrs Surf.Area= 4.754 ac Storage= 3.037 af

Plug-Flow detention time= 54.8 min calculated for 9.735 af (100% of inflow)
 Center-of-Mass det. time= 54.4 min (897.6 - 843.2)

Volume	Invert	Avail.Storage	Storage Description
#1	349.00'	4.300 af	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
349.00	3.380	0.000	0.000
350.00	5.220	4.300	4.300

Device	Routing	Invert	Outlet Devices
#1	Primary	347.08'	15.0" Round Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.08' / 347.03' S= 0.0025 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Primary	347.15'	15.0" Round Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.15' / 346.95' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#3	Secondary	349.30'	15.0' long x 90.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Existing

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Primary OutFlow Max=16.74 cfs @ 13.37 hrs HW=349.75' (Free Discharge)└─**1=Culvert** (Inlet Controls 8.44 cfs @ 6.88 fps)└─**2=Culvert** (Inlet Controls 8.30 cfs @ 6.76 fps)**Secondary OutFlow** Max=12.09 cfs @ 13.37 hrs HW=349.75' (Free Discharge)└─**3=Broad-Crested Rectangular Weir** (Weir Controls 12.09 cfs @ 1.80 fps)

Existing*Type II 24-hr 25-year Rainfall=6.05"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage Area

Runoff Area=76.000 ac 0.00% Impervious Runoff Depth>2.21"
Flow Length=3,325' Slope=0.0480 '/ Tc=56.3 min CN=66 Runoff=101.44 cfs 14.000 af

Pond 1P: Wetlands

Peak Elev=350.64' Storage=4.300 af Inflow=101.44 cfs 14.000 af
Primary=20.12 cfs 9.649 af Secondary=61.41 cfs 4.336 af Outflow=81.54 cfs 13.986 af

Total Runoff Area = 76.000 ac Runoff Volume = 14.000 af Average Runoff Depth = 2.21"
100.00% Pervious = 76.000 ac 0.00% Impervious = 0.000 ac

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Summary for Subcatchment 1S: Drainage Area

Runoff = 101.44 cfs @ 12.60 hrs, Volume= 14.000 af, Depth> 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-year Rainfall=6.05"

Area (ac)	CN	Description
12.000	55	Woods, Good, HSG B
3.000	32	Woods/grass comb., Good, HSG A
61.000	70	Woods, Good, HSG C
76.000	66	Weighted Average
76.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.3	3,325	0.0480	0.98		Lag/CN Method, Tc-Watershed

Summary for Pond 1P: Wetlands

Inflow Area = 76.000 ac, 0.00% Impervious, Inflow Depth > 2.21" for 25-year event
 Inflow = 101.44 cfs @ 12.60 hrs, Volume= 14.000 af
 Outflow = 81.54 cfs @ 13.05 hrs, Volume= 13.986 af, Atten= 20%, Lag= 27.1 min
 Primary = 20.12 cfs @ 13.05 hrs, Volume= 9.649 af
 Secondary = 61.41 cfs @ 13.05 hrs, Volume= 4.336 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 350.64' @ 13.05 hrs Surf.Area= 5.220 ac Storage= 4.300 af

Plug-Flow detention time= 59.7 min calculated for 13.986 af (100% of inflow)
 Center-of-Mass det. time= 59.4 min (895.5 - 836.2)

Volume	Invert	Avail.Storage	Storage Description
#1	349.00'	4.300 af	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
349.00	3.380	0.000	0.000
350.00	5.220	4.300	4.300

Device	Routing	Invert	Outlet Devices
#1	Primary	347.08'	15.0" Round Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.08' / 347.03' S= 0.0025 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Primary	347.15'	15.0" Round Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.15' / 346.95' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#3	Secondary	349.30'	15.0' long x 90.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

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Primary OutFlow Max=20.12 cfs @ 13.05 hrs HW=350.64' (Free Discharge)└─**1=Culvert** (Inlet Controls 10.12 cfs @ 8.25 fps)└─**2=Culvert** (Inlet Controls 10.00 cfs @ 8.15 fps)**Secondary OutFlow** Max=61.38 cfs @ 13.05 hrs HW=350.64' (Free Discharge)└─**3=Broad-Crested Rectangular Weir** (Weir Controls 61.38 cfs @ 3.06 fps)

Existing*Type II 24-hr 50-year Rainfall=6.81"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

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

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

Subcatchment 1S: Drainage Area

Runoff Area=76.000 ac 0.00% Impervious Runoff Depth=2.74"

Flow Length=3,325' Slope=0.0480 '/ Tc=56.3 min CN=66 Runoff=126.90 cfs 17.360 af

Pond 1P: Wetlands

Peak Elev=351.57' Storage=4.300 af Inflow=126.90 cfs 17.360 af

Primary=23.12 cfs 10.569 af Secondary=134.54 cfs 6.758 af Outflow=157.66 cfs 17.327 af

Total Runoff Area = 76.000 ac Runoff Volume = 17.360 af Average Runoff Depth = 2.74"**100.00% Pervious = 76.000 ac 0.00% Impervious = 0.000 ac**

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Summary for Subcatchment 1S: Drainage Area

Runoff = 126.90 cfs @ 12.59 hrs, Volume= 17.360 af, Depth> 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-year Rainfall=6.81"

Area (ac)	CN	Description
12.000	55	Woods, Good, HSG B
3.000	32	Woods/grass comb., Good, HSG A
61.000	70	Woods, Good, HSG C
76.000	66	Weighted Average
76.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.3	3,325	0.0480	0.98		Lag/CN Method, Tc-Watershed

Summary for Pond 1P: Wetlands

Inflow Area = 76.000 ac, 0.00% Impervious, Inflow Depth > 2.74" for 50-year event
 Inflow = 126.90 cfs @ 12.59 hrs, Volume= 17.360 af
 Outflow = 157.66 cfs @ 12.80 hrs, Volume= 17.327 af, Atten= 0%, Lag= 12.4 min
 Primary = 23.12 cfs @ 12.80 hrs, Volume= 10.569 af
 Secondary = 134.54 cfs @ 12.80 hrs, Volume= 6.758 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 351.57' @ 12.80 hrs Surf.Area= 5.220 ac Storage= 4.300 af

Plug-Flow detention time= 55.6 min calculated for 17.270 af (99% of inflow)
 Center-of-Mass det. time= 54.7 min (886.7 - 832.0)

Volume	Invert	Avail.Storage	Storage Description
#1	349.00'	4.300 af	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
349.00	3.380	0.000	0.000
350.00	5.220	4.300	4.300

Device	Routing	Invert	Outlet Devices
#1	Primary	347.08'	15.0" Round Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.08' / 347.03' S= 0.0025 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Primary	347.15'	15.0" Round Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.15' / 346.95' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#3	Secondary	349.30'	15.0' long x 90.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

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Primary OutFlow Max=22.97 cfs @ 12.80 hrs HW=351.52' (Free Discharge)└─**1=Culvert** (Inlet Controls 11.54 cfs @ 9.40 fps)└─**2=Culvert** (Inlet Controls 11.43 cfs @ 9.32 fps)**Secondary OutFlow** Max=131.33 cfs @ 12.80 hrs HW=351.53' (Free Discharge)└─**3=Broad-Crested Rectangular Weir** (Weir Controls 131.33 cfs @ 3.93 fps)

Existing*Type II 24-hr 100-year Rainfall=7.64"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

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

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

Subcatchment 1S: Drainage Area

Runoff Area=76.000 ac 0.00% Impervious Runoff Depth>3.35"

Flow Length=3,325' Slope=0.0480 '/ Tc=56.3 min CN=66 Runoff=155.78 cfs 21.199 af

Pond 1P: Wetlands

Peak Elev=352.22' Storage=4.300 af Inflow=155.78 cfs 21.199 af

Primary=25.02 cfs 11.372 af Secondary=197.68 cfs 9.609 af Outflow=222.75 cfs 20.980 af

Total Runoff Area = 76.000 ac Runoff Volume = 21.199 af Average Runoff Depth = 3.35"**100.00% Pervious = 76.000 ac 0.00% Impervious = 0.000 ac**

Existing

Type II 24-hr 100-year Rainfall=7.64"

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Summary for Subcatchment 1S: Drainage Area

Runoff = 155.78 cfs @ 12.59 hrs, Volume= 21.199 af, Depth> 3.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-year Rainfall=7.64"

Area (ac)	CN	Description
12.000	55	Woods, Good, HSG B
3.000	32	Woods/grass comb., Good, HSG A
61.000	70	Woods, Good, HSG C
76.000	66	Weighted Average
76.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.3	3,325	0.0480	0.98		Lag/CN Method, Tc-Watershed

Summary for Pond 1P: Wetlands

Inflow Area = 76.000 ac, 0.00% Impervious, Inflow Depth > 3.35" for 100-year event
 Inflow = 155.78 cfs @ 12.59 hrs, Volume= 21.199 af
 Outflow = 222.75 cfs @ 12.65 hrs, Volume= 20.980 af, Atten= 0%, Lag= 4.0 min
 Primary = 25.02 cfs @ 12.65 hrs, Volume= 11.372 af
 Secondary = 197.68 cfs @ 12.65 hrs, Volume= 9.609 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 352.22' @ 12.65 hrs Surf.Area= 5.220 ac Storage= 4.300 af

Plug-Flow detention time= 51.5 min calculated for 20.980 af (99% of inflow)
 Center-of-Mass det. time= 47.7 min (875.8 - 828.1)

Volume	Invert	Avail.Storage	Storage Description
#1	349.00'	4.300 af	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
349.00	3.380	0.000	0.000
350.00	5.220	4.300	4.300

Device	Routing	Invert	Outlet Devices
#1	Primary	347.08'	15.0" Round Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.08' / 347.03' S= 0.0025 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Primary	347.15'	15.0" Round Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.15' / 346.95' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#3	Secondary	349.30'	15.0' long x 90.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Existing*Type II 24-hr 100-year Rainfall=7.64"*

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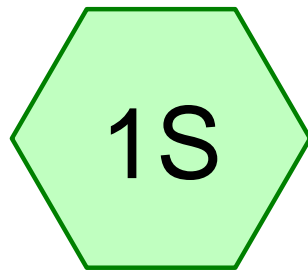
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Primary OutFlow Max=25.02 cfs @ 12.65 hrs HW=352.22' (Free Discharge)↑ **1=Culvert** (Inlet Controls 12.56 cfs @ 10.23 fps)└ **2=Culvert** (Inlet Controls 12.46 cfs @ 10.15 fps)**Secondary OutFlow** Max=187.12 cfs @ 12.65 hrs HW=352.12' (Free Discharge)↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 187.12 cfs @ 4.42 fps)

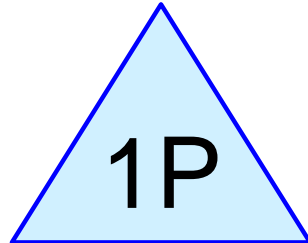
PROPOSED CONDITIONS

SUPPORTING DOCUMENTATION

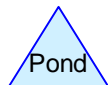
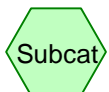
NOAA Point Precipitation Estimates



Drainage Area



Wetlands



Routing Diagram for Proposed

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Proposed

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
12.000	55	Woods, Good, HSG B (1S)
61.000	70	Woods, Good, HSG C (1S)
3.000	32	Woods/grass comb., Good, HSG A (1S)
76.000	66	TOTAL AREA

Proposed*Type II 24-hr 2-year Rainfall=3.36"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage Area

Runoff Area=76.000 ac 0.00% Impervious Runoff Depth>0.62"
Flow Length=3,325' Slope=0.0480 '/' Tc=56.3 min CN=66 Runoff=24.61 cfs 3.939 af

Pond 1P: Wetlands

Peak Elev=348.11' Storage=0.362 af Inflow=24.61 cfs 3.939 af
Primary=17.61 cfs 3.931 af Secondary=0.00 cfs 0.000 af Outflow=17.61 cfs 3.931 af

Total Runoff Area = 76.000 ac Runoff Volume = 3.939 af Average Runoff Depth = 0.62"
100.00% Pervious = 76.000 ac 0.00% Impervious = 0.000 ac

Proposed

Type II 24-hr 2-year Rainfall=3.36"

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Summary for Subcatchment 1S: Drainage Area

Runoff = 24.61 cfs @ 12.68 hrs, Volume= 3.939 af, Depth> 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-year Rainfall=3.36"

Area (ac)	CN	Description
12.000	55	Woods, Good, HSG B
3.000	32	Woods/grass comb., Good, HSG A
61.000	70	Woods, Good, HSG C
76.000	66	Weighted Average
76.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.3	3,325	0.0480	0.98		Lag/CN Method, Tc-Watershed

Summary for Pond 1P: Wetlands

Inflow Area = 76.000 ac, 0.00% Impervious, Inflow Depth > 0.62" for 2-year event
 Inflow = 24.61 cfs @ 12.68 hrs, Volume= 3.939 af
 Outflow = 17.61 cfs @ 13.05 hrs, Volume= 3.931 af, Atten= 28%, Lag= 22.2 min
 Primary = 17.61 cfs @ 13.05 hrs, Volume= 3.931 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 348.11' @ 13.05 hrs Surf.Area= 3.477 ac Storage= 0.362 af

Plug-Flow detention time= 6.8 min calculated for 3.931 af (100% of inflow)
 Center-of-Mass det. time= 6.1 min (868.1 - 862.1)

Volume	Invert	Avail.Storage	Storage Description
#1	348.00'	8.600 af	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
348.00	3.380	0.000	0.000
350.00	5.220	8.600	8.600

Device	Routing	Invert	Outlet Devices
#1	Primary	347.08'	48.0" W x 24.0" H Box Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.08' / 347.03' S= 0.0025 '/' Cc= 0.900 n= 0.030 Earth, grassed & winding, Flow Area= 8.00 sf
#2	Primary	347.15'	48.0" W x 24.0" H Box Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.15' / 346.95' S= 0.0100 '/' Cc= 0.900 n= 0.030 Earth, grassed & winding, Flow Area= 8.00 sf
#3	Secondary	350.00'	15.0' long x 90.0' breadth Broad-Crested Rectangular Weir

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Head (feet)	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60
Coef. (English)	2.68	2.70	2.70	2.64	2.63	2.64	2.64	2.63

Primary OutFlow Max=17.61 cfs @ 13.05 hrs HW=348.11' (Free Discharge)↑ **1=Culvert** (Barrel Controls 8.39 cfs @ 2.73 fps)└ **2=Culvert** (Barrel Controls 9.22 cfs @ 3.21 fps)**Secondary OutFlow** Max=0.00 cfs @ 5.00 hrs HW=348.00' (Free Discharge)↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Proposed*Type II 24-hr 5-year Rainfall=4.27"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage Area

Runoff Area=76.000 ac 0.00% Impervious Runoff Depth>1.09"
Flow Length=3,325' Slope=0.0480 '/' Tc=56.3 min CN=66 Runoff=47.30 cfs 6.929 af

Pond 1P: Wetlands

Peak Elev=348.39' Storage=1.381 af Inflow=47.30 cfs 6.929 af
Primary=25.97 cfs 6.915 af Secondary=0.00 cfs 0.000 af Outflow=25.97 cfs 6.915 af

Total Runoff Area = 76.000 ac Runoff Volume = 6.929 af Average Runoff Depth = 1.09"
100.00% Pervious = 76.000 ac 0.00% Impervious = 0.000 ac

Proposed

Type II 24-hr 5-year Rainfall=4.27"

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Summary for Subcatchment 1S: Drainage Area

Runoff = 47.30 cfs @ 12.63 hrs, Volume= 6.929 af, Depth> 1.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-year Rainfall=4.27"

Area (ac)	CN	Description
12.000	55	Woods, Good, HSG B
3.000	32	Woods/grass comb., Good, HSG A
61.000	70	Woods, Good, HSG C
76.000	66	Weighted Average
76.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.3	3,325	0.0480	0.98		Lag/CN Method, Tc-Watershed

Summary for Pond 1P: Wetlands

Inflow Area = 76.000 ac, 0.00% Impervious, Inflow Depth > 1.09" for 5-year event
 Inflow = 47.30 cfs @ 12.63 hrs, Volume= 6.929 af
 Outflow = 25.97 cfs @ 13.19 hrs, Volume= 6.915 af, Atten= 45%, Lag= 33.7 min
 Primary = 25.97 cfs @ 13.19 hrs, Volume= 6.915 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 348.39' @ 13.19 hrs Surf.Area= 3.737 ac Storage= 1.381 af

Plug-Flow detention time= 20.4 min calculated for 6.892 af (99% of inflow)
 Center-of-Mass det. time= 19.7 min (869.6 - 849.9)

Volume	Invert	Avail.Storage	Storage Description
#1	348.00'	8.600 af	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
348.00	3.380	0.000	0.000
350.00	5.220	8.600	8.600

Device	Routing	Invert	Outlet Devices
#1	Primary	347.08'	48.0" W x 24.0" H Box Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.08' / 347.03' S= 0.0025 '/' Cc= 0.900 n= 0.030 Earth, grassed & winding, Flow Area= 8.00 sf
#2	Primary	347.15'	48.0" W x 24.0" H Box Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.15' / 346.95' S= 0.0100 '/' Cc= 0.900 n= 0.030 Earth, grassed & winding, Flow Area= 8.00 sf
#3	Secondary	350.00'	15.0' long x 90.0' breadth Broad-Crested Rectangular Weir

Proposed

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Head (feet)	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60
Coef. (English)	2.68	2.70	2.70	2.64	2.63	2.64	2.64	2.63

Primary OutFlow Max=25.97 cfs @ 13.19 hrs HW=348.39' (Free Discharge)↑ **1=Culvert** (Barrel Controls 12.43 cfs @ 3.17 fps)└ **2=Culvert** (Barrel Controls 13.54 cfs @ 3.65 fps)**Secondary OutFlow** Max=0.00 cfs @ 5.00 hrs HW=348.00' (Free Discharge)↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Proposed*Type II 24-hr 10-year Rainfall=5.02"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage Area

Runoff Area=76.000 ac 0.00% Impervious Runoff Depth>1.54"
Flow Length=3,325' Slope=0.0480 '/' Tc=56.3 min CN=66 Runoff=68.97 cfs 9.745 af

Pond 1P: Wetlands

Peak Elev=348.65' Storage=2.399 af Inflow=68.97 cfs 9.745 af
Primary=34.69 cfs 9.728 af Secondary=0.00 cfs 0.000 af Outflow=34.69 cfs 9.728 af

Total Runoff Area = 76.000 ac Runoff Volume = 9.745 af Average Runoff Depth = 1.54"
100.00% Pervious = 76.000 ac 0.00% Impervious = 0.000 ac

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Type II 24-hr 10-year Rainfall=5.02"

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Summary for Subcatchment 1S: Drainage Area

Runoff = 68.97 cfs @ 12.61 hrs, Volume= 9.745 af, Depth> 1.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-year Rainfall=5.02"

Area (ac)	CN	Description
12.000	55	Woods, Good, HSG B
3.000	32	Woods/grass comb., Good, HSG A
61.000	70	Woods, Good, HSG C
76.000	66	Weighted Average
76.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.3	3,325	0.0480	0.98		Lag/CN Method, Tc-Watershed

Summary for Pond 1P: Wetlands

Inflow Area = 76.000 ac, 0.00% Impervious, Inflow Depth > 1.54" for 10-year event
 Inflow = 68.97 cfs @ 12.61 hrs, Volume= 9.745 af
 Outflow = 34.69 cfs @ 13.22 hrs, Volume= 9.728 af, Atten= 50%, Lag= 36.7 min
 Primary = 34.69 cfs @ 13.22 hrs, Volume= 9.728 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 348.65' @ 13.22 hrs Surf.Area= 3.980 ac Storage= 2.399 af

Plug-Flow detention time= 29.8 min calculated for 9.696 af (99% of inflow)
 Center-of-Mass det. time= 29.0 min (872.2 - 843.2)

Volume	Invert	Avail.Storage	Storage Description
#1	348.00'	8.600 af	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
348.00	3.380	0.000	0.000
350.00	5.220	8.600	8.600

Device	Routing	Invert	Outlet Devices
#1	Primary	347.08'	48.0" W x 24.0" H Box Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.08' / 347.03' S= 0.0025 '/' Cc= 0.900 n= 0.030 Earth, grassed & winding, Flow Area= 8.00 sf
#2	Primary	347.15'	48.0" W x 24.0" H Box Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.15' / 346.95' S= 0.0100 '/' Cc= 0.900 n= 0.030 Earth, grassed & winding, Flow Area= 8.00 sf
#3	Secondary	350.00'	15.0' long x 90.0' breadth Broad-Crested Rectangular Weir

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Head (feet)	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60
Coef. (English)	2.68	2.70	2.70	2.64	2.63	2.64	2.64	2.63

Primary OutFlow Max=34.68 cfs @ 13.22 hrs HW=348.65' (Free Discharge)↑ **1=Culvert** (Barrel Controls 16.66 cfs @ 3.53 fps)└ **2=Culvert** (Barrel Controls 18.02 cfs @ 4.00 fps)**Secondary OutFlow** Max=0.00 cfs @ 5.00 hrs HW=348.00' (Free Discharge)↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Proposed*Type II 24-hr 25-year Rainfall=6.05"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage Area

Runoff Area=76.000 ac 0.00% Impervious Runoff Depth>2.21"
Flow Length=3,325' Slope=0.0480 '/ Tc=56.3 min CN=66 Runoff=101.44 cfs 14.000 af

Pond 1P: Wetlands

Peak Elev=349.02' Storage=3.943 af Inflow=101.44 cfs 14.000 af
Primary=48.28 cfs 13.977 af Secondary=0.00 cfs 0.000 af Outflow=48.28 cfs 13.977 af

Total Runoff Area = 76.000 ac Runoff Volume = 14.000 af Average Runoff Depth = 2.21"
100.00% Pervious = 76.000 ac 0.00% Impervious = 0.000 ac

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Summary for Subcatchment 1S: Drainage Area

Runoff = 101.44 cfs @ 12.60 hrs, Volume= 14.000 af, Depth> 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-year Rainfall=6.05"

Area (ac)	CN	Description
12.000	55	Woods, Good, HSG B
3.000	32	Woods/grass comb., Good, HSG A
61.000	70	Woods, Good, HSG C
76.000	66	Weighted Average
76.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.3	3,325	0.0480	0.98		Lag/CN Method, Tc-Watershed

Summary for Pond 1P: Wetlands

Inflow Area = 76.000 ac, 0.00% Impervious, Inflow Depth > 2.21" for 25-year event
 Inflow = 101.44 cfs @ 12.60 hrs, Volume= 14.000 af
 Outflow = 48.28 cfs @ 13.24 hrs, Volume= 13.977 af, Atten= 52%, Lag= 38.2 min
 Primary = 48.28 cfs @ 13.24 hrs, Volume= 13.977 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 349.02' @ 13.24 hrs Surf.Area= 4.322 ac Storage= 3.943 af

Plug-Flow detention time= 38.7 min calculated for 13.977 af (100% of inflow)
 Center-of-Mass det. time= 38.2 min (874.3 - 836.2)

Volume	Invert	Avail.Storage	Storage Description
#1	348.00'	8.600 af	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
348.00	3.380	0.000	0.000
350.00	5.220	8.600	8.600

Device	Routing	Invert	Outlet Devices
#1	Primary	347.08'	48.0" W x 24.0" H Box Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.08' / 347.03' S= 0.0025 '/' Cc= 0.900 n= 0.030 Earth, grassed & winding, Flow Area= 8.00 sf
#2	Primary	347.15'	48.0" W x 24.0" H Box Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.15' / 346.95' S= 0.0100 '/' Cc= 0.900 n= 0.030 Earth, grassed & winding, Flow Area= 8.00 sf
#3	Secondary	350.00'	15.0' long x 90.0' breadth Broad-Crested Rectangular Weir

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Head (feet)	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60
Coef. (English)	2.68	2.70	2.70	2.64	2.63	2.64	2.64	2.63

Primary OutFlow Max=48.27 cfs @ 13.24 hrs HW=349.02' (Free Discharge)↑ **1=Culvert** (Barrel Controls 23.30 cfs @ 4.00 fps)└ **2=Culvert** (Barrel Controls 24.97 cfs @ 4.44 fps)**Secondary OutFlow** Max=0.00 cfs @ 5.00 hrs HW=348.00' (Free Discharge)↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Proposed*Type II 24-hr 50-year Rainfall=6.81"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage Area

Runoff Area=76.000 ac 0.00% Impervious Runoff Depth>2.74"
Flow Length=3,325' Slope=0.0480 '/ Tc=56.3 min CN=66 Runoff=126.90 cfs 17.360 af

Pond 1P: Wetlands

Peak Elev=349.30' Storage=5.157 af Inflow=126.90 cfs 17.360 af
Primary=59.15 cfs 17.334 af Secondary=0.00 cfs 0.000 af Outflow=59.15 cfs 17.334 af

Total Runoff Area = 76.000 ac Runoff Volume = 17.360 af Average Runoff Depth = 2.74"
100.00% Pervious = 76.000 ac 0.00% Impervious = 0.000 ac

Proposed

Type II 24-hr 50-year Rainfall=6.81"

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Summary for Subcatchment 1S: Drainage Area

Runoff = 126.90 cfs @ 12.59 hrs, Volume= 17.360 af, Depth> 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50-year Rainfall=6.81"

Area (ac)	CN	Description
12.000	55	Woods, Good, HSG B
3.000	32	Woods/grass comb., Good, HSG A
61.000	70	Woods, Good, HSG C
76.000	66	Weighted Average
76.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.3	3,325	0.0480	0.98		Lag/CN Method, Tc-Watershed

Summary for Pond 1P: Wetlands

Inflow Area = 76.000 ac, 0.00% Impervious, Inflow Depth > 2.74" for 50-year event
 Inflow = 126.90 cfs @ 12.59 hrs, Volume= 17.360 af
 Outflow = 59.15 cfs @ 13.24 hrs, Volume= 17.334 af, Atten= 53%, Lag= 38.6 min
 Primary = 59.15 cfs @ 13.24 hrs, Volume= 17.334 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 349.30' @ 13.24 hrs Surf.Area= 4.573 ac Storage= 5.157 af

Plug-Flow detention time= 43.5 min calculated for 17.334 af (100% of inflow)
 Center-of-Mass det. time= 42.9 min (874.9 - 832.0)

Volume	Invert	Avail.Storage	Storage Description
#1	348.00'	8.600 af	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
348.00	3.380	0.000	0.000
350.00	5.220	8.600	8.600

Device	Routing	Invert	Outlet Devices
#1	Primary	347.08'	48.0" W x 24.0" H Box Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.08' / 347.03' S= 0.0025 '/' Cc= 0.900 n= 0.030 Earth, grassed & winding, Flow Area= 8.00 sf
#2	Primary	347.15'	48.0" W x 24.0" H Box Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.15' / 346.95' S= 0.0100 '/' Cc= 0.900 n= 0.030 Earth, grassed & winding, Flow Area= 8.00 sf
#3	Secondary	350.00'	15.0' long x 90.0' breadth Broad-Crested Rectangular Weir

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Head (feet)	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60
Coef. (English)	2.68	2.70	2.70	2.64	2.63	2.64	2.64	2.63

Primary OutFlow Max=59.13 cfs @ 13.24 hrs HW=349.30' (Free Discharge)↑ **1=Culvert** (Barrel Controls 28.63 cfs @ 4.30 fps)└ **2=Culvert** (Barrel Controls 30.51 cfs @ 4.74 fps)**Secondary OutFlow** Max=0.00 cfs @ 5.00 hrs HW=348.00' (Free Discharge)↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Proposed*Type II 24-hr 100-year Rainfall=7.64"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage Area

Runoff Area=76.000 ac 0.00% Impervious Runoff Depth>3.35"
Flow Length=3,325' Slope=0.0480 '/ Tc=56.3 min CN=66 Runoff=155.78 cfs 21.199 af

Pond 1P: Wetlands

Peak Elev=349.59' Storage=6.539 af Inflow=155.78 cfs 21.199 af
Primary=71.60 cfs 21.167 af Secondary=0.00 cfs 0.000 af Outflow=71.60 cfs 21.167 af

Total Runoff Area = 76.000 ac Runoff Volume = 21.199 af Average Runoff Depth = 3.35"
100.00% Pervious = 76.000 ac 0.00% Impervious = 0.000 ac

Proposed

Type II 24-hr 100-year Rainfall=7.64"

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Summary for Subcatchment 1S: Drainage Area

Runoff = 155.78 cfs @ 12.59 hrs, Volume= 21.199 af, Depth> 3.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-year Rainfall=7.64"

Area (ac)	CN	Description
12.000	55	Woods, Good, HSG B
3.000	32	Woods/grass comb., Good, HSG A
61.000	70	Woods, Good, HSG C
76.000	66	Weighted Average
76.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.3	3,325	0.0480	0.98		Lag/CN Method, Tc-Watershed

Summary for Pond 1P: Wetlands

Inflow Area = 76.000 ac, 0.00% Impervious, Inflow Depth > 3.35" for 100-year event
 Inflow = 155.78 cfs @ 12.59 hrs, Volume= 21.199 af
 Outflow = 71.60 cfs @ 13.23 hrs, Volume= 21.167 af, Atten= 54%, Lag= 38.7 min
 Primary = 71.60 cfs @ 13.23 hrs, Volume= 21.167 af
 Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 349.59' @ 13.23 hrs Surf.Area= 4.843 ac Storage= 6.539 af

Plug-Flow detention time= 47.6 min calculated for 21.097 af (100% of inflow)
 Center-of-Mass det. time= 46.9 min (875.0 - 828.1)

Volume	Invert	Avail.Storage	Storage Description
#1	348.00'	8.600 af	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
348.00	3.380	0.000	0.000
350.00	5.220	8.600	8.600

Device	Routing	Invert	Outlet Devices
#1	Primary	347.08'	48.0" W x 24.0" H Box Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.08' / 347.03' S= 0.0025 '/' Cc= 0.900 n= 0.030 Earth, grassed & winding, Flow Area= 8.00 sf
#2	Primary	347.15'	48.0" W x 24.0" H Box Culvert L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 347.15' / 346.95' S= 0.0100 '/' Cc= 0.900 n= 0.030 Earth, grassed & winding, Flow Area= 8.00 sf
#3	Secondary	350.00'	15.0' long x 90.0' breadth Broad-Crested Rectangular Weir

Proposed*Type II 24-hr 100-year Rainfall=7.64"*

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Head (feet)	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60
Coef. (English)	2.68	2.70	2.70	2.64	2.63	2.64	2.64	2.63

Primary OutFlow Max=71.58 cfs @ 13.23 hrs HW=349.59' (Free Discharge)↑ **1=Culvert** (Barrel Controls 34.74 cfs @ 4.61 fps)└ **2=Culvert** (Barrel Controls 36.83 cfs @ 5.03 fps)**Secondary OutFlow** Max=0.00 cfs @ 5.00 hrs HW=348.00' (Free Discharge)↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

SUPPORTING DOCUMENTATION

NOAA Point Precipitation Estimates



NOAA Atlas 14, Volume 10, Version 3
Location name: Brooklyn, Connecticut, USA*
Latitude: 41.8039°, Longitude: -71.9768°
Elevation: 354 ft**
 * source: ESRI Maps
 ** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps_&_aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.338 (0.257-0.445)	0.401 (0.304-0.528)	0.503 (0.380-0.664)	0.587 (0.442-0.779)	0.703 (0.515-0.967)	0.792 (0.568-1.11)	0.883 (0.616-1.27)	0.980 (0.657-1.45)	1.11 (0.720-1.70)	1.22 (0.772-1.89)
10-min	0.479 (0.364-0.631)	0.568 (0.431-0.747)	0.712 (0.539-0.941)	0.832 (0.626-1.10)	0.996 (0.729-1.37)	1.12 (0.805-1.57)	1.25 (0.873-1.80)	1.39 (0.929-2.05)	1.58 (1.02-2.40)	1.73 (1.09-2.68)
15-min	0.564 (0.429-0.742)	0.668 (0.507-0.879)	0.838 (0.634-1.11)	0.978 (0.737-1.30)	1.17 (0.858-1.61)	1.32 (0.947-1.85)	1.47 (1.03-2.12)	1.63 (1.09-2.41)	1.86 (1.20-2.83)	2.03 (1.29-3.16)
30-min	0.776 (0.590-1.02)	0.919 (0.697-1.21)	1.15 (0.872-1.52)	1.35 (1.01-1.78)	1.61 (1.18-2.22)	1.82 (1.30-2.54)	2.02 (1.41-2.92)	2.25 (1.50-3.32)	2.55 (1.65-3.89)	2.80 (1.77-4.34)
60-min	0.988 (0.751-1.30)	1.17 (0.888-1.54)	1.47 (1.11-1.94)	1.71 (1.29-2.27)	2.05 (1.50-2.82)	2.31 (1.66-3.23)	2.58 (1.80-3.71)	2.86 (1.91-4.22)	3.25 (2.10-4.95)	3.56 (2.25-5.52)
2-hr	1.26 (0.965-1.66)	1.50 (1.14-1.96)	1.88 (1.42-2.46)	2.19 (1.66-2.89)	2.63 (1.93-3.60)	2.95 (2.14-4.13)	3.30 (2.33-4.77)	3.69 (2.48-5.42)	4.27 (2.77-6.46)	4.74 (3.01-7.31)
3-hr	1.46 (1.12-1.90)	1.73 (1.32-2.26)	2.17 (1.65-2.84)	2.53 (1.92-3.33)	3.03 (2.24-4.16)	3.41 (2.47-4.76)	3.81 (2.70-5.51)	4.28 (2.87-6.26)	4.98 (3.24-7.52)	5.58 (3.55-8.56)
6-hr	1.86 (1.43-2.42)	2.21 (1.70-2.88)	2.78 (2.12-3.62)	3.24 (2.47-4.25)	3.89 (2.88-5.31)	4.37 (3.19-6.08)	4.88 (3.49-7.04)	5.50 (3.71-8.01)	6.43 (4.19-9.65)	7.23 (4.61-11.0)
12-hr	2.36 (1.82-3.05)	2.80 (2.16-3.62)	3.52 (2.70-4.57)	4.12 (3.15-5.37)	4.95 (3.68-6.71)	5.56 (4.07-7.70)	6.22 (4.45-8.91)	7.00 (4.74-10.1)	8.17 (5.34-12.2)	9.16 (5.86-13.9)
24-hr	2.81 (2.18-3.62)	3.36 (2.60-4.33)	4.27 (3.29-5.51)	5.02 (3.85-6.51)	6.05 (4.52-8.16)	6.81 (5.00-9.37)	7.64 (5.48-10.9)	8.60 (5.84-12.4)	10.0 (6.58-14.8)	11.2 (7.21-16.9)
2-day	3.17 (2.46-4.06)	3.83 (2.98-4.92)	4.92 (3.81-6.32)	5.82 (4.48-7.52)	7.06 (5.30-9.49)	7.98 (5.89-10.9)	8.97 (6.47-12.7)	10.1 (6.90-14.5)	11.9 (7.82-17.5)	13.4 (8.61-20.0)
3-day	3.43 (2.68-4.39)	4.16 (3.24-5.32)	5.34 (4.15-6.86)	6.33 (4.89-8.15)	7.68 (5.78-10.3)	8.69 (6.43-11.9)	9.78 (7.07-13.8)	11.1 (7.55-15.8)	13.0 (8.58-19.1)	14.7 (9.47-21.9)
4-day	3.67 (2.86-4.68)	4.44 (3.46-5.67)	5.70 (4.44-7.30)	6.75 (5.22-8.69)	8.20 (6.18-11.0)	9.26 (6.87-12.6)	10.4 (7.56-14.7)	11.8 (8.07-16.8)	13.9 (9.18-20.3)	15.7 (10.2-23.3)
7-day	4.33 (3.39-5.51)	5.20 (4.07-6.62)	6.63 (5.18-8.46)	7.82 (6.07-10.0)	9.44 (7.15-12.6)	10.7 (7.92-14.5)	12.0 (8.71-16.8)	13.5 (9.27-19.1)	16.0 (10.5-23.2)	18.0 (11.7-26.6)
10-day	5.00 (3.93-6.34)	5.93 (4.66-7.53)	7.45 (5.83-9.48)	8.71 (6.78-11.1)	10.4 (7.92-13.9)	11.7 (8.74-15.9)	13.1 (9.55-18.4)	14.8 (10.1-20.8)	17.3 (11.4-25.0)	19.4 (12.6-28.5)
20-day	7.15 (5.64-9.02)	8.14 (6.41-10.3)	9.77 (7.67-12.4)	11.1 (8.68-14.1)	13.0 (9.84-17.0)	14.4 (10.7-19.2)	15.8 (11.4-21.7)	17.4 (12.0-24.4)	19.7 (13.1-28.2)	21.4 (13.9-31.3)
30-day	8.96 (7.08-11.3)	9.98 (7.88-12.6)	11.6 (9.17-14.7)	13.0 (10.2-16.5)	14.9 (11.3-19.4)	16.4 (12.2-21.7)	17.9 (12.8-24.2)	19.3 (13.4-26.9)	21.2 (14.2-30.4)	22.7 (14.8-33.0)
45-day	11.2 (8.89-14.1)	12.3 (9.70-15.4)	14.0 (11.0-17.6)	15.4 (12.1-19.4)	17.3 (13.2-22.4)	18.9 (14.0-24.7)	20.3 (14.6-27.2)	21.7 (15.0-30.0)	23.3 (15.6-33.1)	24.4 (15.9-35.3)
60-day	13.1 (10.4-16.4)	14.2 (11.2-17.7)	15.9 (12.6-20.0)	17.3 (13.6-21.9)	19.3 (14.7-24.9)	20.9 (15.6-27.3)	22.4 (16.0-29.8)	23.7 (16.5-32.6)	25.1 (16.8-35.6)	26.0 (17.0-37.5)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

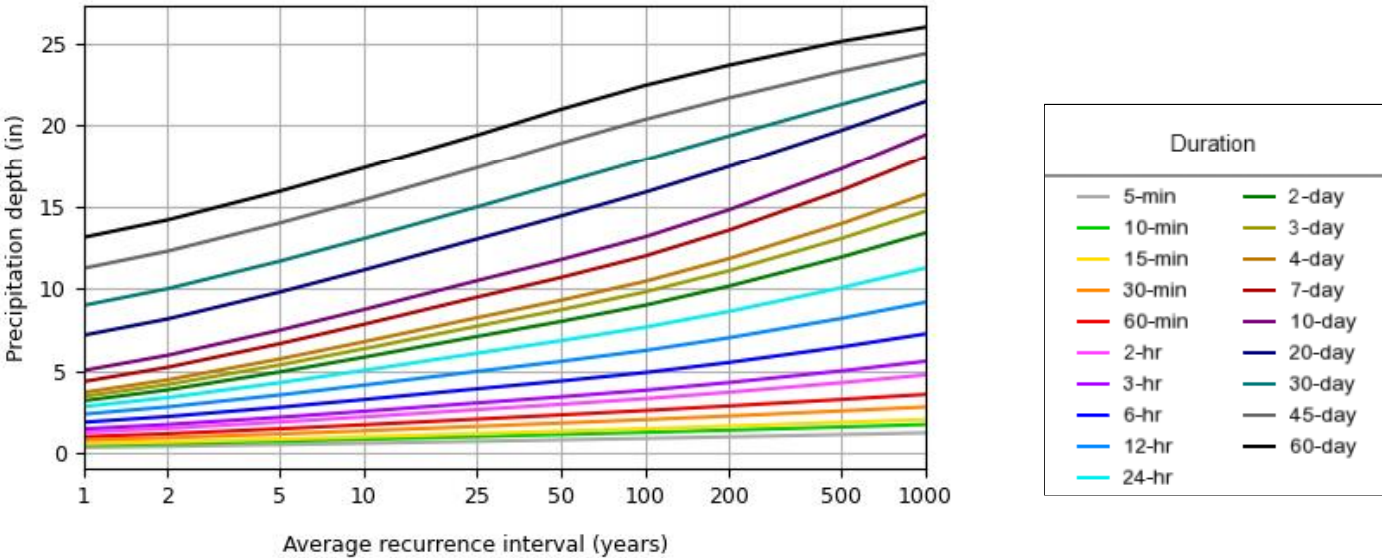
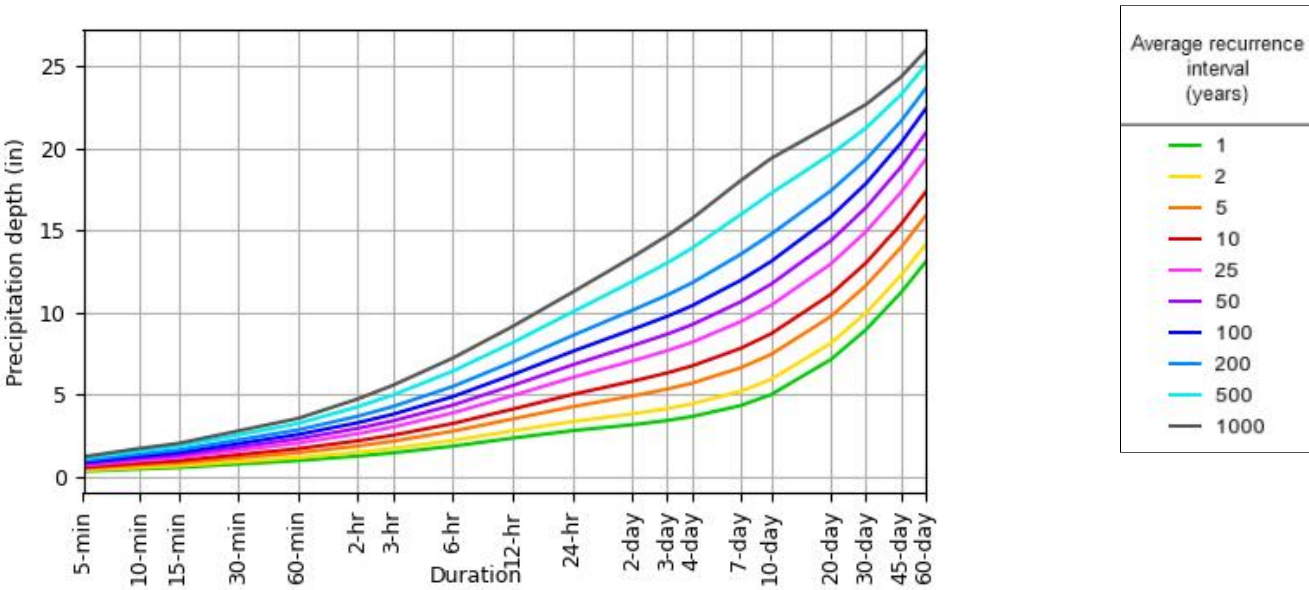
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

[Back to Top](#)

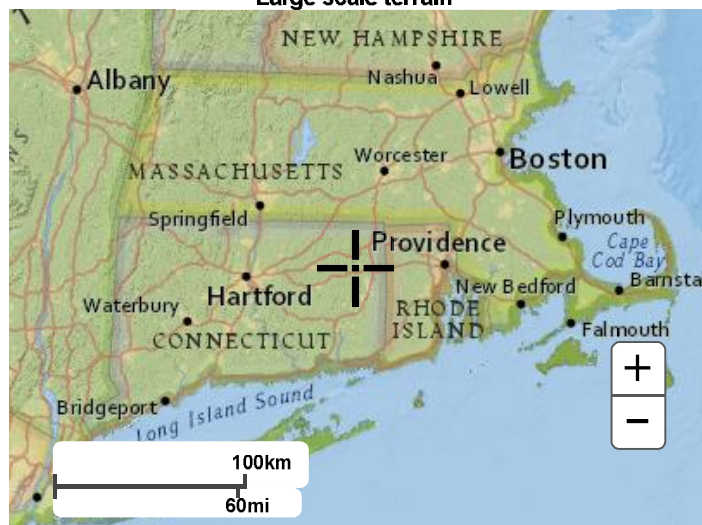
PF graphical

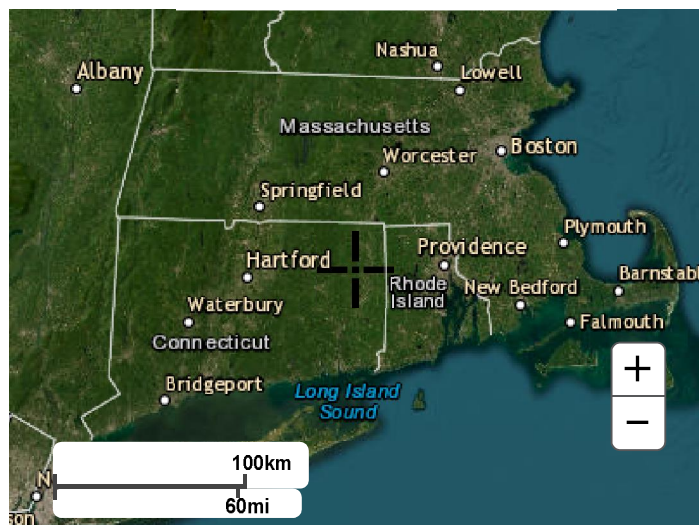
PDS-based depth-duration-frequency (DDF) curves
Latitude: 41.8039°, Longitude: -71.9768°



Maps & aerals

Small scale terrain

**Large scale terrain****Large scale map****Large scale aerial**

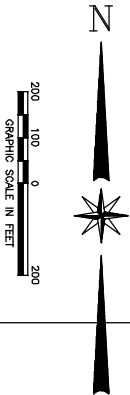


[Back to Top](#)

US Department of Commerce
[National Oceanic and Atmospheric Administration](#)
[National Weather Service](#)
[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)

DRAINAGE AREA PLAN

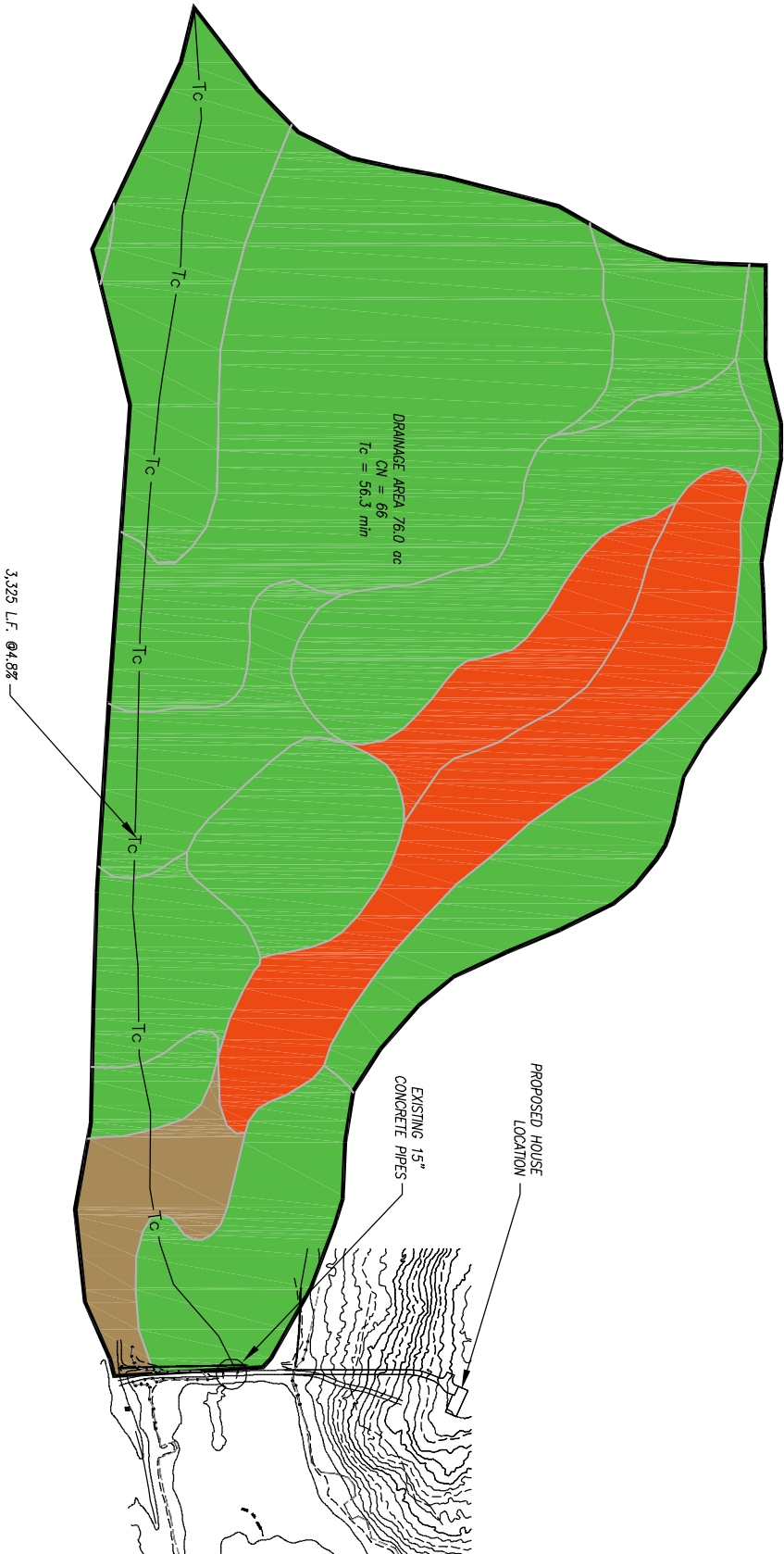


LEGEND

- HYDROLOGIC GROUP "A" SOILS
- HYDROLOGIC GROUP "B" SOILS
- HYDROLOGIC GROUP "C" SOILS
- HYDROLOGIC GROUP "D" SOILS
- TIME OF CONCENTRATION ROUTE

HYDROLOGIC SOILS MAPPING/WATERSHED AREA


SCALE: 1" = 200'



DATE	DESCRIPTION
REVISIONS	

DRainage AREA PLAN
PREPARED FOR
RYAN KELLEHER

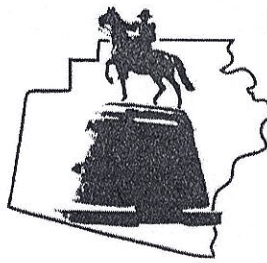
WOLFEDEN ROAD
BROOKLYN, CONNECTICUT



Killingly Engineering & Surveying
Civil Engineering & Surveying

114 Western Road
P.O. Box 421
Killingly, Connecticut 06241
www.killingly-engineering.com

DATE: 7/21/2023	DRAWN: NEJ
SCALE: 1"=200'	DESIGN: NEJ
SHEET: 1 OF 1	CHECK BY: --
DWG. NO: CLIENT FILE	JOB NO: 23057



Brooklyn Land Use Department

69 South Main Street
Brooklyn CT 06234
(860) 779-3411 x 31

Inland Wetlands ✓ Zoning Enforcement _____ Blight Enforcement _____

SITE INSPECTION NUMBER

1 2 3 4 5

Tripp Hollow Rd. M14 L10-1

7/25/23

Address

Date

I inspected with Janet Booth,
Norm Thi beault and Raiff Santerre.
Photos were taken.

The wetlands flags are all missing.

The wetlands were flagged in NOV. 2003.

We looked at the wetlands near
the closest point of work, near the
proposed footing drain outlet.

We looked at the location of the
proposed house and driveway.

There are no wetlands issues.

Recommend approval.

Commission Representative

M. Washburn

Owner or Authorized Signature _____





Killingly Engineering Associates

Civil Engineering & Surveying

P.O. Box 421 Killingly, CT 06241
Phone: 860-779-7299
www.killinglengineering.com



June 26, 2023

Proposed Single Family Home

Tripp Hollow Investments, LLC
Tripp Hollow Road
Brooklyn, CT

APPLICATION PACKAGE CONTENTS – Inland Wetlands

1. Application fee: \$210.00
2. 5- full sized sets of plans dated: 6/15/2023
3. Inland Wetlands Application
4. List of adjacent landowners including across the street
5. CT DEEP Reporting Form
6. Web Soil Survey Map
7. Town GIS map
8. Applicant's Certification

COPY

INLAND WETLANDS & WATERCOURSES COMMISSION
TOWN OF BROOKLYN, CONECTICUT

Date _____

Application # _____

APPLICATION -- INLAND WETLANDS & WATERCOURSES

APPLICANT TRIPP HOLLOW INVESTMENTS LLC MAILING ADDRESS 89 WAUREGAN RD, BROOKLYN, CT, 06234

APPLICANT'S INTEREST IN PROPERTY OWNER PHONE: CELL 401-374-0543 HOME: _____

E-MAIL bmeenan4@yahoo.com

PROPERTY OWNER IF DIFFERENT _____ PHONE: CELL: _____ HOME: _____

MAILING ADDRESS _____ EMAIL _____

ENGINEER/SURVEYOR (IF ANY)

KILLINGLY ENGINEERING ASSOCIATES

ATTORNEY (IF ANY) _____

PROPERTY LOCATION/ADDRESS) TRIPP HOLLOW RD.

MAP # 14 LOT # 10-1 ZONE RA TOTAL ACRES 4.26 ACRES OF WETLANDS ON PROPERTY 1.4

PURPOSE AND DESCRIPTION OF THE ACTIVITY

EXISTING SUBDIVISION LOT FROM 2004. PROPOSED HOUSE, WELL, SEPTIC SYSTEM
AND SITE GRADING IN THE UPLAND REVIEW AREA.

WETLANDS EXCAVATION AND FILL:

FILL PROPOSED 0 CUBIC YDS _____ SQ FT _____

EXCAVATION PROPOSED 0 CUBIC YDS _____ SQ FT _____

LOCATION WHERE MATERIAL WILL BE PLACED: ON SITE Y/A OFF SITE _____

TOTAL REGULATED AREA ALTERED: SQ FT _____ ACRES _____

EXPLAIN ALTERNATIVES CONSIDERED (REQUIRED):

MITIGATION MEASURES (IF REQUIRED): WETLANDS/WATERCOURSES CREATED: CY _____ SQ FT _____ ACRES _____

IS PARCEL LOCATED WITHIN 500FT OF AN ADJOINING TOWN? _____ IF YES, WHICH TOWN(S) _____

IS THE ACTIVITY LOCATED WITHIN THE WATERSHED OF A WATER COMPANY AS DEFINED IN CT GENERAL STATUTES 25-32A? NO

THE OWNER AND APPLICANT HEREBY GRANT THE BROOKLYN IWWC, THE BOARD OF SELECTMAN AND THEIR AUTHORIZED AGENTS PERMISSION TO ENTER THE SUBJECT PROPERTY FOR THE PURPOSE OF INSPECTION AND ENFORCEMENT OF THE IWWC REGULATIONS OF THE TOWN OF BROOKLYN. IF THE COMMISSION DETERMINES THAT OUTSIDE REVIEW IS REQUIRED, APPLICANT WILL PAY CONSULTING FEE.

NOTE: DETERMINATION THAT THE INFORMATION PROVIDED IS INACCURATE MAY INVALIDATE THE IWWC DECISION AND RESULT IN ENFORCEMENT ACTION.

APPLICANT: [Signature] DATE 6-28-23

OWNER: [Signature] DATE 6-28-23

REQUIREMENTS

X STANDARD APPLICATION FEE \$ (\$150) ✓ STATE FEE (\$60) ✓ CHECK #

 NOTICE OF ACTION PUBLICATION FEE \$ CHECK #

 PUBLIC HEARING PUBLICATION FEE (\$100) \$ (SUBJECT TO CHANGE DEPENDING ON PAPER) CHECK#

 SIGNIFICANT ACTIVITY FEE (PUBLIC HEARING) (\$250) \$ CHECK #

 COMPLETION OF CT DEEP REPORTING FORM

 ORIGINAL PLUS COPIES OF ALL MATERIALS REQUIRED - **NUMBER TO BE DETERMINED BY STAFF**

 PRE-APPLICATION MEETING WITH THE WETLANDS AGENT IS RECOMMENDED TO EXAMINE THE SCOPE OF THE ACTIVITY

 SITE PLAN SHOWING LOCATION OF THE WETLANDS WITH EXISTING AND PROPOSED CONDITIONS.
APPLICANT MAY BE REQUIRED TO HAVE A CERTIFIED **SOIL SCIENTIST IDENTIFY THE WETLANDS.**

 COMPLIANCE WITH THE CONNECTICUT EROSION & SEDIMENTATION CONTROL MANUAL

 IF THE PROPOSED ACTIVITY IS DEEMED TO BE A “SIGNIFICANT IMPACT ACTIVITY” A PUBLIC HEARING IS REQUIRED ALONG WITH THE FOLLOWING INFORMATION:

- NAMES AND ADDRESSES OF ABUTTING PROPERTY OWNERS
- ADDITIONAL INFORMATION AS CONTAINED IN IWWC REGULATIONS ARTICLE 7.6

ADDITIONAL INFORMATION/ACTION NEEDED:

OTHER APPLICATIONS MAY BE REQUIRED. CONTACT THESE AGENCIES FOR FURTHER INFORMATION:
APPLICATION TO STATE OF CONNECTICUT DEEP

INLAND WATER RESOURCES DIVISION
79 ELM ST.
HARTFORD, CT. 06106
1-860-424-3019

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MA. 01742
1-860-343-4789

STAFF USE ONLY:

_____ DECLARATORY RULING: AS OF RIGHT & NON-REGULATED USES (SEE IWWC REGULATIONS SECTION 4)

_____ PERMIT REQUIRED:

_____ AUTHORIZED BY STAFF/CHAIR (NO ACTIVITY IN WETLANDS/WATERCOURSE AND MINIMAL IMPACT)

_____ CHAIR, BROOKLYN IWWC

_____ WETLANDS OFFICER

_____ AUTHORIZED BY IWWC

_____ SIGNIFICANT ACTIVITY/PUBLIC HEARING

_____ NO PERMIT REQUIRED

_____ OUTSIDE OF UPLAND REVIEW AREA

_____ NO IMPACT

_____ CHAIR, BROOKLYN IWWC

_____ WETLANDS OFFICER

_____ TIMBER HARVEST

LIST OF AJACENT LAND OWNERS as of 6/26/2023 GIS

**Meehan Builders, LLC
Tripp Hollow Road
Brooklyn, CT**

Job No. 16069

MAP/BLOCK/LOT BROOKLYN	NAME
Map 14, Lot 10-2	ADAM TUCKER & BETHANY S. TUCKER 184 TRIPP HOLLOW RD BROOKLYN, CT 06234
Map 14, Lot 10-3	MICHAEL J. CAPUANO 192 TRIPP HOLLOW RD BROOKLYN, CT 06234
Map 14, Lot 10-4	DEANE RETTIG & ELIZABETH A. RETTIG 208 TRIPP HOLLOW RD BROOKLYN, CT 06234
Map 14, Lot 10	MEEHAN BUILDERS, LLC 89 WAUREGAN RD BROOKLYN, CT 06234
Map 14, Lot 10-59	TATNIC HILL INVESTMENTS, LLC 89 WAUREGAN RD BROOKLYN, CT 06234
Map 15, Lot 19-18	KEVIN FERRA 176 TRIPP HOLLOW RD BROOKLYN, CT 06234

**Statewide Inland Wetlands & Watercourses Activity Reporting Form**

Please complete this form in accordance with the instructions on pages 2 and 3 and mail to:

DEEP Land & Water Resources Division, Inland Wetlands Management Program, 79 Elm Street, 3rd Floor, Hartford, CT 06106

Incomplete or incomprehensible forms will be mailed back to the inland wetlands agency.

PART I: Must Be Completed By The Inland Wetlands Agency

1. DATE ACTION WAS TAKEN: year: _____ month: _____

2. ACTION TAKEN (see instructions - one code only): _____

3. WAS A PUBLIC HEARING HELD (check one)? yes ☐ no ☐

4. NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:

(print name) _____ (signature) _____

PART II: To Be Completed By The Inland Wetlands Agency Or The Applicant

5. TOWN IN WHICH THE ACTIVITY IS OCCURRING (print name): Brooklyn

does this project cross municipal boundaries (check one)? yes ☐ no ☐

if yes, list the other town(s) in which the activity is occurring (print name(s)): _____

6. LOCATION (see instructions for information): USGS quad name: Danvers or number: 43

subregional drainage basin number: _____

7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (print name): Meekins Builders, LLC

8. NAME & ADDRESS OF ACTIVITY / PROJECT SITE (print information): Trip Hollow Road

briefly describe the action/project/activity (check and print information): temporary ☐ permanent ☒ description: Proposed

Construction of a single family home

9. ACTIVITY PURPOSE CODE (see instructions - one code only): B

10. ACTIVITY TYPE CODE(S) (see instructions for codes): 1, 2, 12, 14

11. WETLAND / WATERCOURSE AREA ALTERED (see instructions for explanation, must provide acres or linear feet):

wetlands: 0 acres open water body: 0 acres stream: 0 linear feet

12. UPLAND AREA ALTERED (must provide acres): 0.45 acres

13. AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (must provide acres): 0 acres

DATE RECEIVED:

PART III: To Be Completed By The DEEP

DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO

FORM CORRECTED / COMPLETED: YES NO

Soil Map—State of Connecticut



Natural Resources
Conservation Service

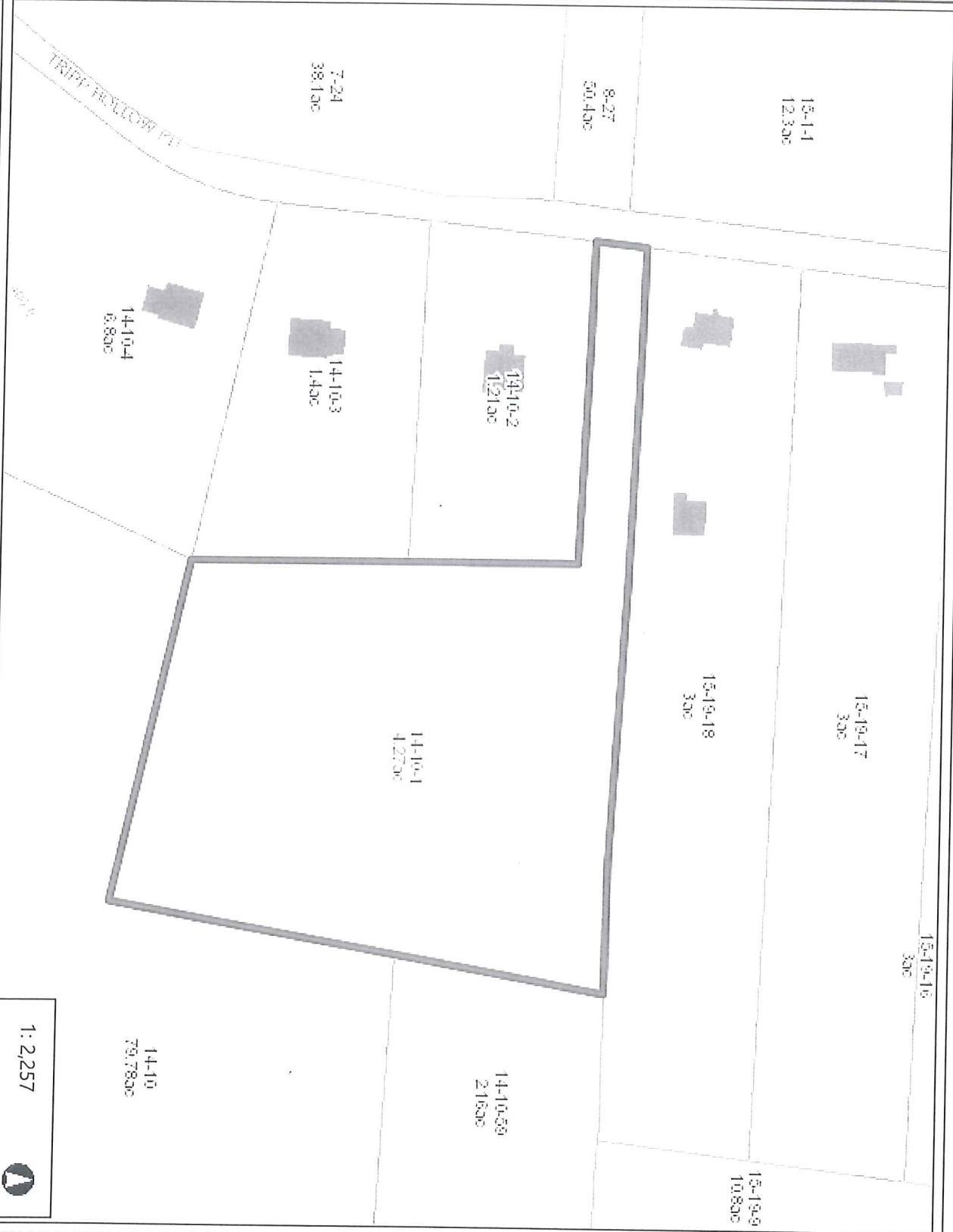
Web Soil Survey
National Cooperative Soil Survey

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	0.2	1.0%
17	Timakwa and Natchaug soils, 0 to 2 percent slopes	2.4	14.3%
51B	Sutton fine sandy loam, 0 to 8 percent slopes, very stony	0.5	3.1%
52C	Sutton fine sandy loam, 2 to 15 percent slopes, extremely stony	7.6	44.8%
59D	Gloucester gravelly sandy loam, 15 to 35 percent slopes, extremely stony	3.8	22.1%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	2.5	14.8%
Totals for Area of Interest		17.0	100.0%



neccog



- Legend**
- ☐ Town
 - ☒ Buildings 2012
 - ☐ Parcels

Notes

Enter Map Description



Killingly Engineering Associates

P.O. Box 421 Killingly, CT 06241
Phone: 860-779-7299
www.killinglyengineering.com

June 26, 2023

***Meehan Builders, LLC
Tripp Hollow Road
Brooklyn, CT***

Per Section 7.7 of the Inland Wetland and Watercourses regulations

The applicant certifies that:

- a. The property on which the regulated activity is proposed is not located within 500 feet of the boundary of an adjoining municipality);
- b. Traffic attributable to the completed project on the site will not use streets within the adjoining municipality to enter or exit the site;
- c. Sewer or water drainage from the project site will not flow through and impact the sewage or drainage system within the adjoining municipality;
- d. Water run-off from the improved site will not impact streets of other municipal or private property within the adjoining municipality.

Applicant

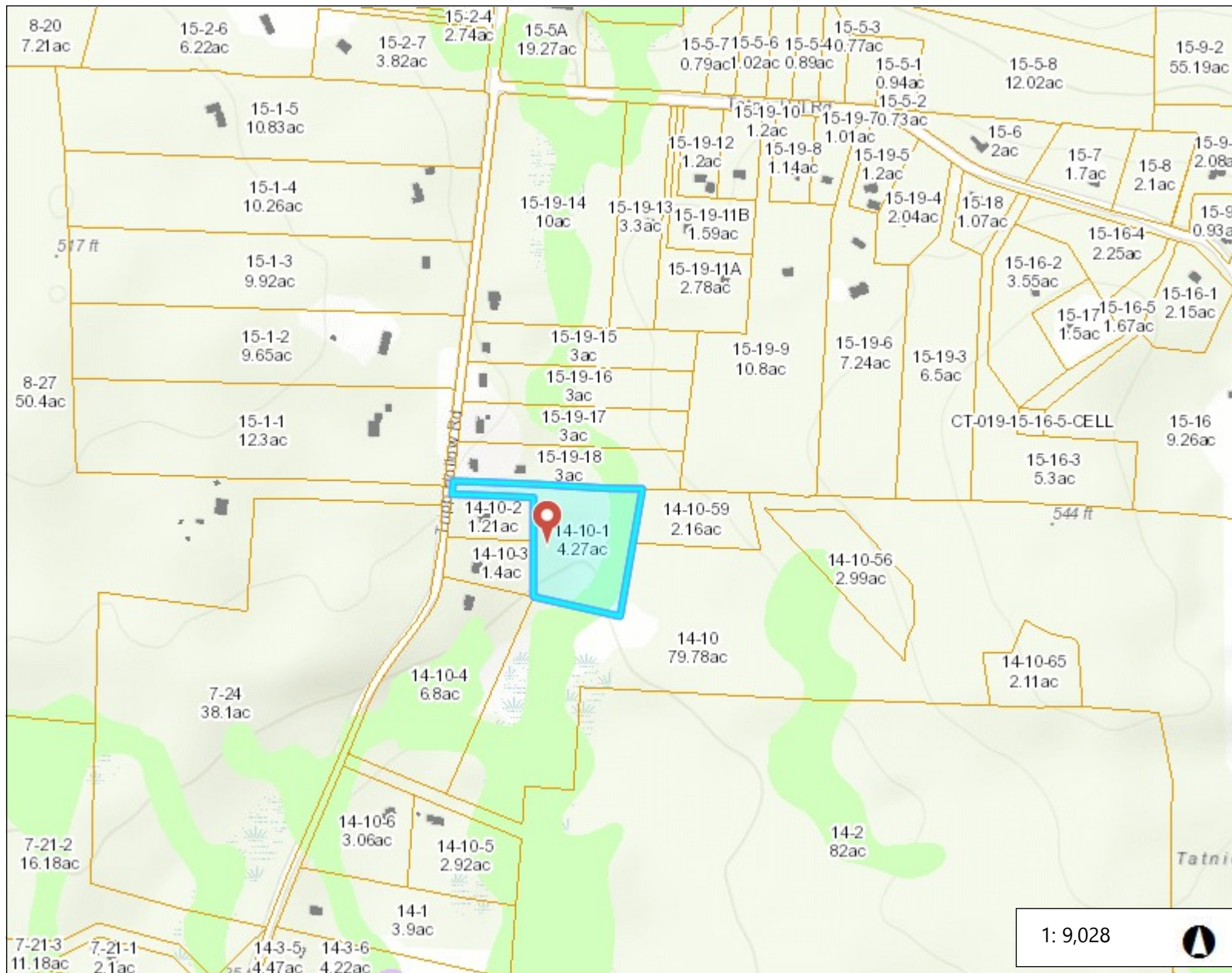
Date

6-28-23



necog

Necog GIS Site



Legend

- Town
- Buildings 2012
- Parcels
- Wetlands
 - Alluvial and Floodplain Soils
 - Poorly Drained and Very Poorly Dr

1: 9,028



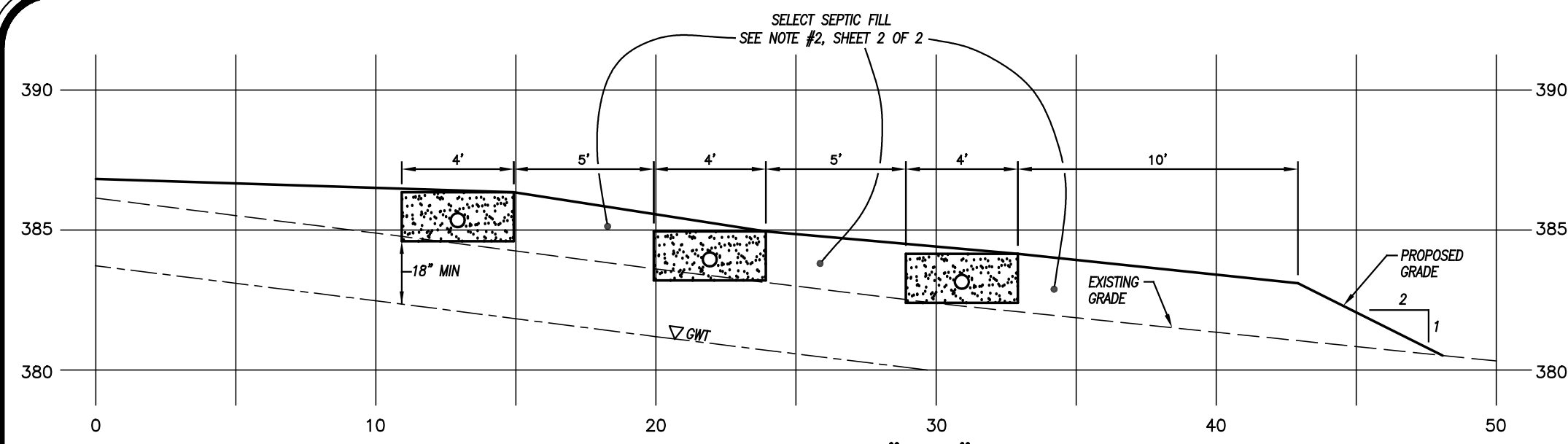
Notes

Map 14 Lot 10-1 Kausch

0.3 0 0.14 0.3 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
© Latitude Geographics Group Ltd.

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

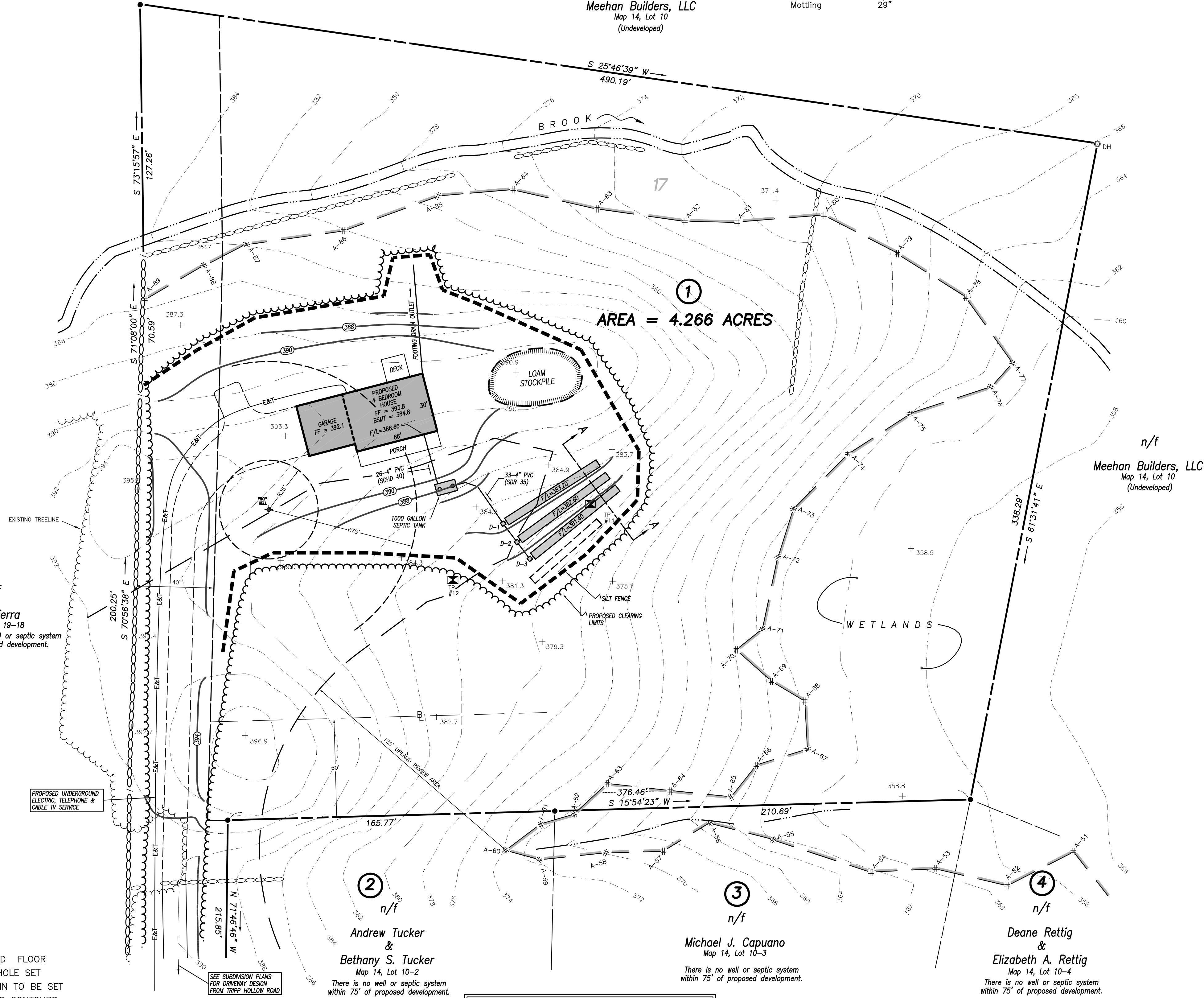
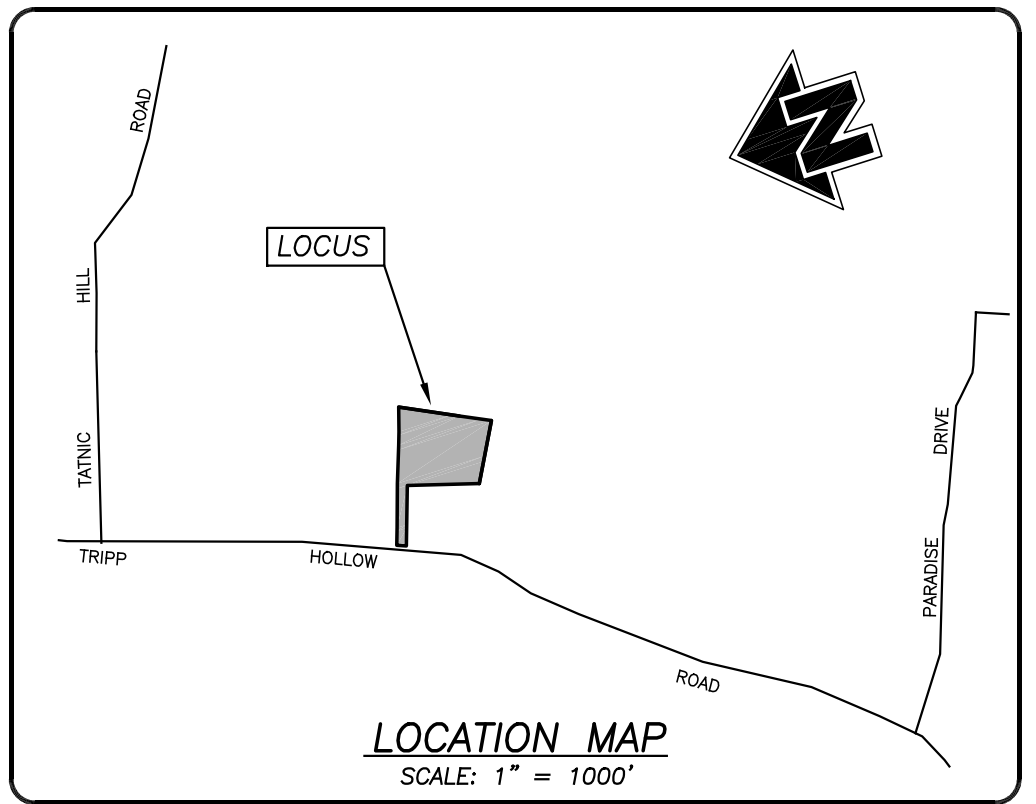


DEEP TEST HOLE EVALUATION - January 7, 2004
Northeast District Department of Health

TEST PIT	DEPTH	PROFILE
11	0"-10" 10"-22" 22"-39" 39"-48" 48"-93" Ledge GWT Mottling	Topsoil Organics Roots V.F. Sandy Loam Roots F. Sandy Loam, Fine Roots Loamy Fine Sand / Gravel Compact Mottled Loamy V.F. Sand / Gravel Very Compact Mottles N/A N/A 30"
12	0"-10" 10"-24" 24"-32" 32"-39" 39"-52" 52"-85" Ledge GWT Mottling	Topsoil Roots Organics V.F. Sandy Loam Moist Roots F. Sandy Loam, Fine Roots, Mottles Loamy Sand / Gravel Mottled Loamy Sand / Gravel Stones Mottled Sand / Gravel Rocky Mottled Very Compact N/A N/A 29"

SEPTIC SYSTEM DESIGN DATA

Percolation Rate	= 8.0 min. / in.
3 bedroom house requires	= 495 s.f. effective leaching area
Effective Leaching area	= 3 s.f. / l.f. of trench
Length Required	= 495/3 = 165 l.f.
Length Provided	= 3 (55') = 165 l.f.
Min. Leaching System Spread (MLSS)	= 26 x 1.5 x 1.0 = 39.0'
MLSS Provided	= 55'
LEACHING FIELD	
3 Trenches @ 55 l.f. each	
Maximum depth into existing grade	= 11"



NOTES:

- This survey has been prepared pursuant to the Regulations of Connecticut State Agencies Sections 20-300b-1 through 20-300b-20 and the "Standards for Surveys and Maps in the State of Connecticut" as adopted by the Connecticut Association of Land Surveyors, Inc. on September 26, 1996;
- This map was prepared from record research, other maps, limited field measurements and other sources. It is not to be construed as a Property/Boundary or Limited Property/Boundary Survey and is subject to such facts as said surveys may disclose.
- This survey conforms to a Class "C" horizontal accuracy.
- Topographic features conform to a Class "T-2", "V-2" vertical accuracy.
- Survey Type: General Location Survey.
- Zone = RA.
- Owner of record: Tripp Hollow Investments, LLC
89 Wauregan Road, Brooklyn, CT 06234
- Parcel shown is as Lot #10-1 on Assessors Map #14.
- Parcel lies within Flood Hazard Zone "C" (areas of minimal flooding as shown on FIRM Map # 090164 Panel 0008A Effective date: Jan. 3, 1985.
- Northeast District Department of Health file number: 04003693.
- Elevations based on National Geodetic Vertical Datum of 1929. Contours taken from aerial photogrammetry and supplemented with actual field survey. Contour interval = 2'.
- Wetlands shown were flagged in the field by Pinecrest Environmental Services, LLC in November 2003.
- Before any construction is to commence contact "CALL BEFORE YOU DIG" at 1-800-922-4455.

MAP REFERENCES:

- "Subdivision Map - prepared for - Meehan Builders, LLC - Tripp Hollow Road - Brooklyn, Connecticut - Scale: 1" = 80' - Dated: 3/11/2004 Revised to: 12/14/2004 - Provost & Rovero, Inc." On file in the Brooklyn Land Records.
- "Property Survey - Showing Boundary Line Adjustment - Between - Lots 1 & 4 Prepared for - Meehan Builders, LLC - Tripp Hollow Road - Brooklyn, Connecticut - Scale: 1" = 80' - Dated: 6/21/2005 - Prepared by: Provost & Rovero, Inc." On file in the Brooklyn Land Records.

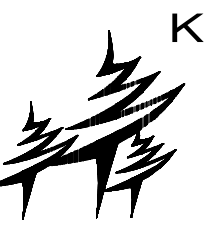
DATE	DESCRIPTION
	REVISIONS

GENERAL LOCATION SURVEY SEPTIC SYSTEM DESIGN PLAN - LOT 1

PREPARED FOR

TRIPP HOLLOW
INVESTMENTS, LLC

TRIPP HOLLOW ROAD
BROOKLYN, CONNECTICUT



Killingly Engineering & Surveying
Civil Engineering & Surveying

114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

DATE: 6/15/2023	DRAWN: AMR
SCALE: 1" = 30'	DESIGN: NET
SHEET: 1 OF 2	CHK BY: ---
DWG. No: CLIENT FILE	JOB No: 16069

EROSION AND SEDIMENT CONTROL PLAN:

REFERENCE IS MADE TO:

- Connecticut Guidelines for Soil Erosion and Sediment Control 2002 (2002 Guidelines).
- Soil Survey of Windham County Connecticut, U.S.D.A. Soil Conservation Service 1983.

SOILS:

The proposed development area is comprised mainly of three soil types; Timakwa and Natachaug (17), Sutton (52C) and Gloucester (59D)

- Timakwa and Natachaug soils, 0-2% slopes

Included with these soils in mapping are areas of very poorly drained Cadden soils where the muck is more than 51 inches thick over mineral substratum. Also included are areas of very poorly drained Whitman, Menlo, Scarborough, Maybld, and Saco soils. Whitman and Menlo soils formed in loamy glacial till. Scarborough soils are sandy and Maybld soils are silty and clayey. Saco soils are on flood plains and are silty. Minor components make up about 15 percent of the map unit
Slope: nearly level
Landscape: depressions
Size of map unit: Areas commonly range from 3 to 150 acres.

- 52C Sutton fine sandy loam, 2 to 15 percent slopes, extremely stony

Included with this soil in mapping are areas of well drained Canton, Charlton, and Paxton soils that are higher on the landscape. Canton soils are loamy over sandy, Charlton soils are sandy loam throughout, and Paxton soils have a dense substratum. Also included are small areas of poorly drained Leicester soils in depressions and drainageways. Small areas of moderately well drained Woodbridge soils are included in areas with a dense substratum. Some areas have a silt loam surface layer and subsoil. A few areas in New London County include well drained Narragansett soils and moderately well drained Rainbow soils. Minor components make up about 20 percent of this map unit.
Slope: nearly level to strongly sloping
Landscape: drainageways on uplands, depressions on uplands
Surface cover: 3 to 15 percent stones
Size of map unit: Areas commonly range from 3 to 50 acres.

- 59D-Gloucester gravelly sandy loam, 15 to 35 percent slopes, extremely stony

Included with these soils in mapping are areas of moderately well drained Sutton soils in slight depressions on the landscape, and poorly drained Leicester soils in depressions and drainageways. Also included are areas of moderately deep, somewhat excessively drained and well drained Chaffield soils where bedrock is 20 to 40 inches below the surface. Shallow, somewhat excessively drained and well drained Hollis soils are in small areas where bedrock is 10 to 20 inches below the surface. Minor components make up about 20 percent of the map unit.

DEVELOPMENT SCHEDULE:

- Construction will begin with clearing, grubbing and rough grading of the proposed site. The work will be confined to areas adjacent to the proposed buildings, septic systems and driveways. Topsoil will be stockpiled on site and utilized during final grading.
- The site will be graded so that all possible trees on site will be saved to provide buffers to adjoining lots.

DEVELOPMENT CONTROL PLAN:

- Development of the site will be performed by the individual lot owner, who will be responsible for the installation and maintenance of erosion and sediment control measures required throughout construction.
- The sedimentation control mechanisms shall remain in place from start of construction until permanent vegetation has been established. The representative for the Town of Brooklyn will be notified when sediment and erosion control structures are initially in place. Any additional soil & erosion control measures requested by the Town or its agent, shall be installed immediately. Once the proposed development, seeding and planting have been completed, the representative shall again be notified to inspect the site. The control measures will not be removed until this inspection is complete.
- All stripping is to be confined to the immediate construction area. Topsoil shall be stockpiled so that slopes do not exceed 2 to 1. A hay bale sediment barrier is to surround each stockpile and a temporary vegetative cover shall be provided.
- Dust control will be accomplished by spraying with water and if necessary, the application of calcium chloride.
- The proposed planting schedule is to be adhered to during the planting of disturbed areas throughout the proposed construction site.
- Final stabilization of the site is to follow the procedures outlined in "Permanent Vegetative Cover", if necessary a temporary vegetative cover is to be provided until a permanent cover can be applied.

FILTER BARRIER INSTALLATION AND MAINTENANCE:

- Dig a 6" deep trench on the uphill side of the barrier location.
- Position the posts on the downhill side of the barrier and drive the posts 1.5 feet into the ground.
- Lay the bottom 6" of the fabric in the trench to prevent undermining and backfill.
- Inspect and repair barrier after heavy rainfall.
- Inspections will be made at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater to determine maintenance needs.
- Sediment deposits are to be removed when they reach a height of 1 foot behind the barrier or half the height of the barrier and are to be deposited in an area which is not regulated by the inland wetlands commission.
- Replace or repair the fence within 24 hours of observed failure. Failure of the fence has occurred when sediment fails to be retained by the fence because:
 - the fence has been overtopped, undercut or bypassed by runoff water,
 - the fence has been moved out of position (knocked over), or
 - the geotextile has decomposed or been damaged.

HAY BALE INSTALLATION AND MAINTENANCE:

- Bales shall be placed as shown on the plans with the ends of the bales tightly abutting each other.
- Each bale shall be securely anchored with at least 2 stakes and gaps between bales shall be wedged with straw to prevent water from passing between the bales.
- Inspect bales at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inches or greater to determine maintenance needs.
- Remove sediment behind the bales when it reaches half the height of the bale and deposit in an area which is not regulated by the Inland Wetlands Commission.
- Replace or repair the barrier within 24 hours of observed failure. Failure of the barrier has occurred when sediment fails to be retained by the barrier because:
 - the barrier has been overtopped, undercut or bypassed by runoff water,
 - the barrier has been moved out of position, or
 - the hay bales have deteriorated or been damaged.

TEMPORARY VEGETATIVE COVER:

SEED SELECTION

Grass species shall be appropriate for the season and site conditions. Appropriate species are outlined in Figure TS-2 in the 2002 Guidelines.

TIMING CONSIDERATIONS

Seed with a temporary seed mixture within 7 days after the suspension of grading work in disturbed areas where the suspension of work is expected to be more than 30 days but less than 1 year.

SITE PREPARATION

Install needed erosion control measures such as diversions, grade stabilization structures, sediment basins and grassed waterways.

Grade according to plans and allow for the use of appropriate equipment for seedbed preparation, seeding, mulch application, and mulch anchoring.

ENDORSED BY THE BROOKLYN INLAND
WETLANDS COMMISSION

CHAIRMAN DATE

ANY CHANGES TO THESE PLANS WITHIN 200' OF
WETLANDS OR WATERCOURSES MUST BE RESUBMITTED
TO THE BROOKLYN INLAND WETLANDS COMMISSION.

THE APPLICANT WILL CONTACT THE BROOKLYN INLAND
WETLANDS COMMISSION OR ITS AGENT AFTER ALL
EROSION AND SEDIMENT CONTROL MEASURES ARE
INSTALLED, PRIOR TO ANY CONSTRUCTION OR EXCAVATION
ON THE PROPERTY.

SEEDBED PREPARATION

Loosen the soil to a depth of 3-4 inches with a slightly roughened surface. If the area has been recently loosened or disturbed, no further roughening is required. Soil preparation can be accomplished by tracking with a bulldozer, disking, harrowing, raking or dragging with a section of chain link fence. Avoid excessive compaction of the surface by equipment traveling back and forth over the surface. If the slope is tracked, the cleat marks shall be perpendicular to the anticipated direction of the flow of surface water.

If soil testing is not practical or feasible on small or variable sites, or where timing is critical, fertilizer may be applied at the rate of 300 pounds per acre or 7.5 pounds per 1,000 square feet of 10-10-10 or equivalent. Additionally, lime may be applied using rates given in Figure TS-1 in the 2002 Guidelines.

SEEDING

Apply seed uniformly by hand cyclone seeder, drill, cultipacker type seeder or hydroseeder at a minimum rate for the selected species. Increase seeding rates by 10% when hydroseeding.

MULCHING

Temporary seedings made during optimum seeding dates shall be mulched according to the recommendations in the 2002 Guidelines. When seeding outside of the recommended dates, increase the application of mulch to provide 95%-100% coverage.

MAINTENANCE

Inspect seeded area at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for seed and mulch movement and fill erosion.

Where seed has moved or where soil erosion has occurred, determine the cause of the failure. Repair eroded areas and install additional controls if required to prevent recurrence of erosion.

Continue inspections until the grasses are firmly established. Grasses shall not be considered established until a ground cover is achieved which is mature enough to control soil erosion and to survive severe weather conditions (approximately 80% vegetative cover).

PERMANENT VEGETATIVE COVER:

Refer to Permanent Seeding Measure in the 2002 Guidelines for specific applications and details related to the installation and maintenance of a permanent vegetative cover. In general, the following sequence of operations shall apply:

- Topsoil will be replaced once the excavation and grading has been completed. Topsoil will be spread at a minimum compacted depth of 4".
- Once the topsoil has been spread, all stones 2" or larger in any dimension will be removed as well as debris.
- Apply agricultural ground limestone at a rate of 2 tons per acre or 100 lbs. per 1000 s.f. Apply 10-10-10 fertilizer or equivalent at a rate of 300 lbs. per acre or 7.5 lbs. per 1000 s.f. Work lime and fertilizer into the soil to a depth of 4".
- Inspect seedbed before seeding. If traffic has compacted the soil, retil compacted areas.
- Apply the chosen grass seed mix. The recommended seeding dates are: April 1 to June 15 & August 15 - October 1.
- Following seeding, firm seedbed with a roller. Mulch immediately following seeding. If a permanent vegetative stand cannot be established by September 30, apply a temporary cover on the topsoil such as netting, mat or organic mulch.

EROSION AND SEDIMENT CONTROL NARRATIVE:

PRINCIPLES OF EROSION AND SEDIMENT CONTROL

The primary function of erosion and sediment controls is to absorb erosional energies and reduce runoff velocities that force the detachment and transport of soil and/or encourage the deposition of eroded soil particles before they reach any sensitive area.

KEEP LAND DISTURBANCE TO A MINIMUM

The more land that is in vegetative cover, the more surface water will infiltrate into the soil, thus minimizing stormwater runoff and potential erosion. Keeping land disturbance to a minimum not only involves minimizing the extent of exposure at any one time, but also the duration of exposure. Phasing, sequencing and construction scheduling are interrelated. Phasing divides a large project into distinct sections where construction work over a specific area occurs over distinct periods of time and each phase is not dependent upon a subsequent phase in order to be functional. A sequence is the order in which construction activities are to occur during any particular phase. A sequence should be developed on the premise of "first things first" and "last things last" with proper attention given to the inclusion of adequate erosion and sediment control measures. A construction schedule is a sequence with time lines applied to it and should address the potential overlap of actions in a sequence which may be in conflict with each other.

- Limit areas of clearing and grading. Protect natural vegetation from construction equipment with fencing, tree armoring, and retaining walls or tree wells.
- Route traffic patterns within the site to avoid existing or newly planted vegetation.
- Phase construction so that areas which are actively being developed at any one time are minimized and only that area under construction is exposed. Clear only those areas essential for construction.
- Sequence the construction of storm drainage systems so that they are operational as soon as possible during construction. Ensure all outlets are stable before outletting storm drainage flow into them.
- Schedule construction so that final grading and stabilization is completed as soon as possible.

SLOW THE FLOW

Detachment and transport of eroded soil must be kept to a minimum by absorbing and reducing the erosive energy of water. The erosive energy of water increases as the volume and velocity of runoff increases. The volume and velocity of runoff increases during development as a result of reduced infiltration rates caused by the removal of existing vegetation, removal of topsoil, compaction of soil and the construction of impervious surfaces.

- Use diversions, stone dikes, silt fences and similar measures to break flow lines and dissipate storm water energy.
- Avoid diverting one drainage system into another without calculating the potential for downstream flooding or erosion.

KEEP CLEAN RUNOFF SEPARATED

Clean runoff should be kept separated from sediment laden water and should not be directed over disturbed areas without additional controls. Additionally, prevent the mixing of clean off-site generated runoff with sediment laden runoff generated on-site until after adequate filtration of on-site waters has occurred.

- Segregate construction waters from clean water.
- Divert site runoff to keep it isolated from wetlands, watercourses and drainage ways that flow through or near the development until the sediment in that runoff is trapped or detained.

REDUCE ON SITE POTENTIAL INTERNALLY AND INSTALL PERIMETER CONTROLS

While it may seem less complicated to collect all waters to one point of discharge for treatment and just install a perimeter control, it can be more effective to apply internal controls to many small sub-drainage basins within the site. By reducing sediment loading from within the site, the chance of perimeter control failure and the potential off-site damage that it can cause is reduced. It is generally more expensive to correct off-site damage than it is to install proper internal controls.

- Control erosion and sedimentation in the smallest drainage area possible. It is easier to control erosion than to contend with sediment after it has been carried downstream and deposited in unwanted areas.
- Direct runoff from small disturbed areas to adjoining undisturbed vegetated areas to reduce the potential for concentrated flows and increase settlement and filtering of sediments.
- Concentrated runoff from development should be safely conveyed to stable outlets using rip rapped channels, waterways, diversions, storm drains or similar measures.
- Determine the need for sediment basins. Sediment basins are required on larger developments where major grading is planned and where it is impossible or impractical to control erosion at the source. Sediment basins are needed on large and small sites when sensitive areas such as wetlands, watercourses, and streets would be impacted by off-site sediment deposition. Do not locate sediment basins in wetlands or permanent or intermittent watercourses. Sediment basins should be located to intercept runoff prior to its entry into the wetland or watercourse.
- Grade and landscape around buildings and septic systems to divert water away from them.

SEPTIC SYSTEM CONSTRUCTION NOTES

- The building, septic system and well shall be accurately staked in the field by a licensed Land Surveyor in the State of Connecticut, prior to construction.
- Topsoil shall be removed and in the area of the primary leaching field scarified, prior to placement of septic fill. Septic fill specifications are as follows:
 - Max. percent of gravel (material between No. 4 & 3 inch sieves) = 45%

GRADATION OF FILL (MINUS GRAVEL)

SIEVE SIZE	PERCENT PASSING (WET SIEVE)	PERCENT PASSING (DRY SIEVE)
No. 4	100%	100%
No. 10	70% - 100%	70% - 100%
No. 40	10% - 50%	10% - 75%
No. 100	0% - 20%	0% - 5%
No. 200	0% - 5%	0% - 2.5%

Fill material shall be approved by the sanitarian prior to placement. It shall be compacted in 6" lifts and shall extend a minimum of ten feet (10') beyond the last leaching trench before tapering off.

- Septic tank shall be two compartment precast 1000 gallon tank with gas deflector and outlet filter as manufactured by Jolley Precast, Inc. or equal.

- Distribution boxes shall be 4 hole precast concrete as manufactured by Jolley Precast, Inc. or equal.

- All precast structures such as septic tanks, distribution boxes, etc. shall be set level on six inches (6") of compacted gravel base at the elevations specified on the plans.

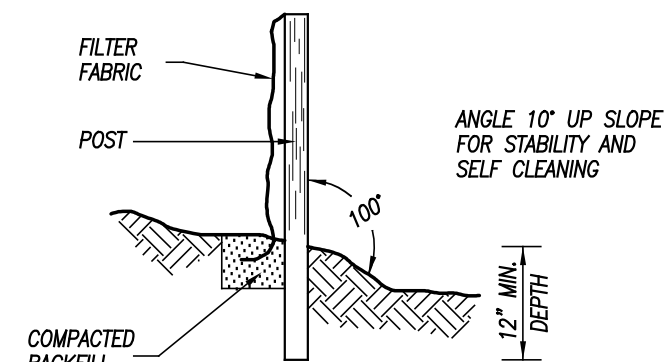
- Solid distribution pipe shall be 4" diameter PVC meeting ASTM D-3034 SDR 35 with compression gasket joints. It shall be laid true to the lines and grades shown on the plans and in no case have a slope less than 0.125 inches per foot.

- Perforated distribution pipe shall be 4" diameter PVC meeting ASTM D-2729 or ASTM D-3350, 1500 lb. minimum crush.

- Sewer pipe from the foundation wall to the septic tank shall be schedule 40 PVC meeting ASTM D 1785. It shall be laid true to the grades shown on the plans and in no case shall have a slope less than 0.25 inches per foot.

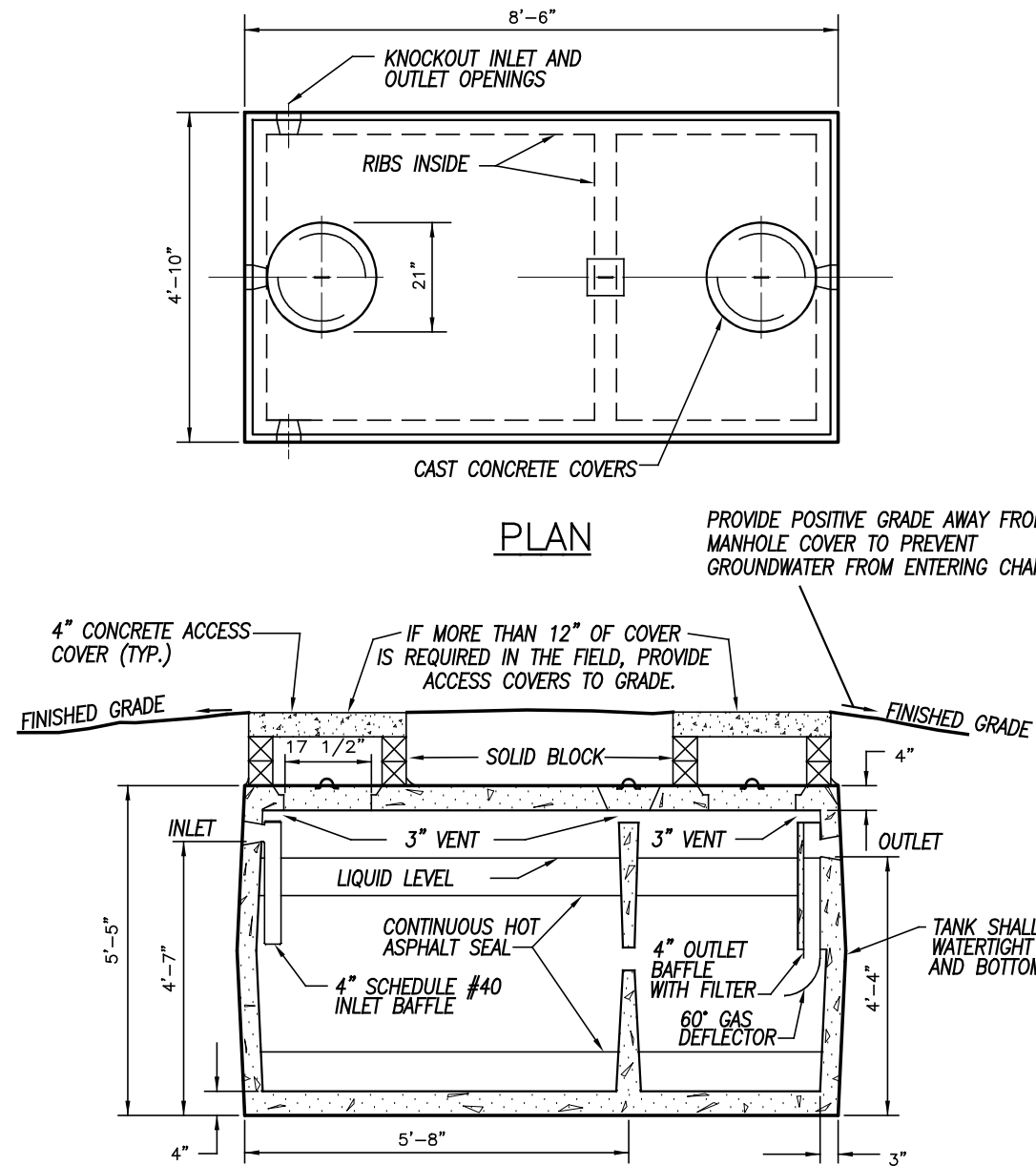
- Force main pressure pipe from pump chamber to the leaching field shall be 2" diameter pvc meeting ASTM D 2241 SDR 21.

- Solid footing drain outlet pipe shall be 4" Diameter PVC meeting ASTM D 3034, SDR 35 with compression gasketed joints. Footing drain outlet pipe shall not be backfilled with free draining material, such as gravel, broken stone, rock fragments, etc.



SILT FENCE

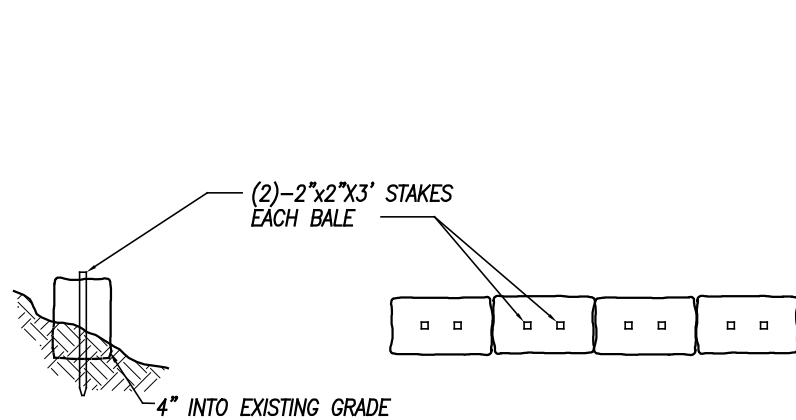
NOT TO SCALE



CROSS SECTION

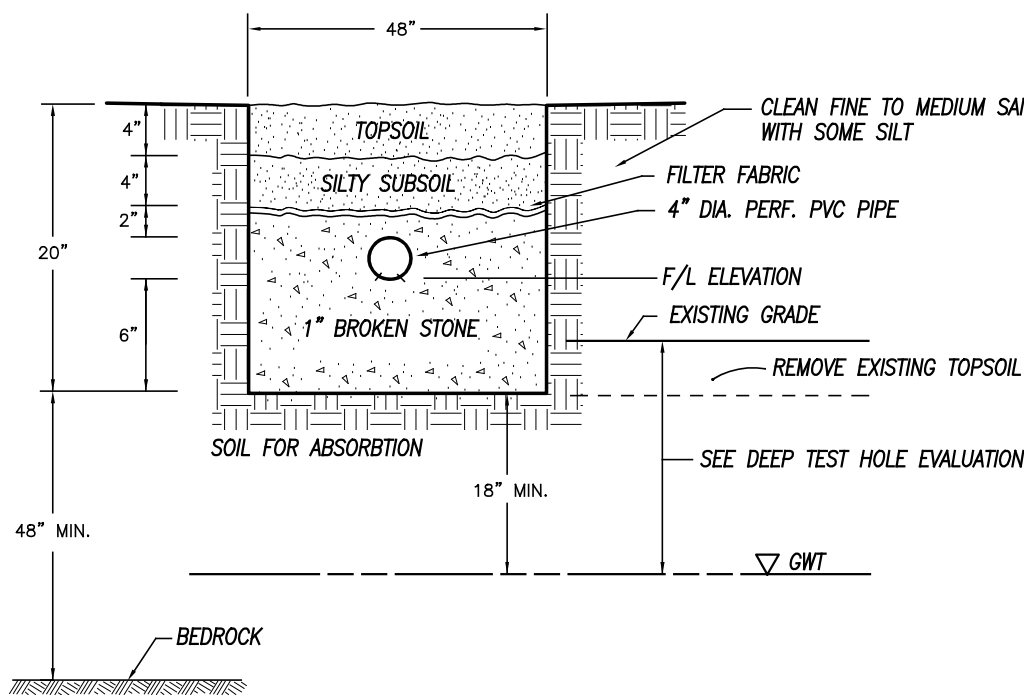
1000 GALLON
2 COMPARTMENT
SEPTIC TANK

NOT TO SCALE



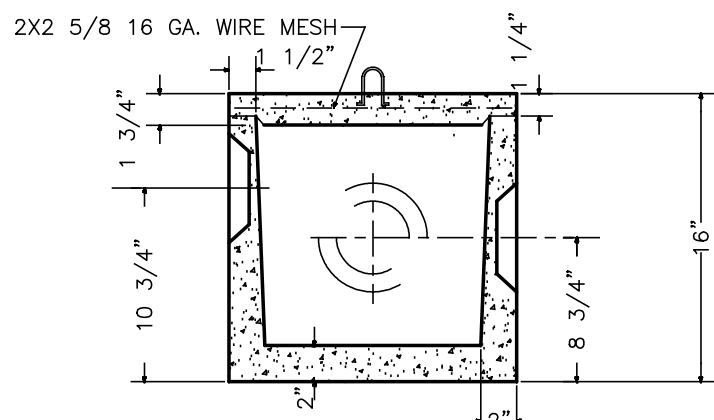
HAYBALE BARRIER

NOT TO SCALE



TYPICAL LEACHING
TRENCH SECTION

NOT TO SCALE



STANDARD D-BOX

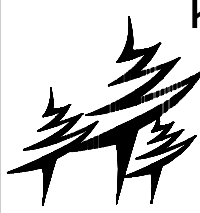
NOT TO SCALE

DETAIL SHEET - LOT 1
PREPARED FOR

TRIPP HOLLOW
INVESTMENTS, LLC

TRIPP HOLLOW ROAD
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying



114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

DATE: 6/15/2023	DRAWN: AMR
SCALE: NOT TO SCALE	DESIGN: NET
SHEET: 2 OF 2	CHK BY: ---
DWG. No: CLIENT FILE	JOB No: 16069

NORMAND THIBEAULT, JR., P.E. No. 22834 DATE

**INLAND WETLANDS & WATERCOURSES COMMISSION
TOWN OF BROOKLYN, CONECTICUT**

Date 06/21/2023

Application # _____

APPLICATION -- INLAND WETLANDS & WATERCOURSES

APPLICANT Wal-Mart Real Estate Business Trust MAILING ADDRESS 2001 SE 10th Street, Bentonville, AR 72716
APPLICANT'S INTEREST IN PROPERTY Expansion PHONE (479)270-7024 EMAIL mike.rutherford@walmart

PROPERTY OWNER IF DIFFERENT Wal-Mart Real Estate Business Trust PHONE _____
MAILING ADDRESS PO Box 8050 Bentonville, AR, 72712 EMAIL _____

ENGINEER/SURVEYOR (IF ANY) Bohler Engineering (c/o Jeff Bord - 65 LaSalle Road, West Hartford, CT
ATTORNEY (IF ANY) N/A

PROPERTY LOCATION/ADDRESS 450 Providence Road, Brooklyn, CT
MAP # 41 LOT # 10 ZONE PC TOTAL ACRES 25.48 ACRES OF WETLANDS ON PROPERTY 1.37 +/-

PURPOSE AND DESCRIPTION OF THE ACTIVITY _____
Online grocery pick up addition with parking modifications

WETLANDS EXCAVATION AND FILL:
FILL PROPOSED 0 CUBIC YDS 0 SQ FT 0
EXCAVATION PROPOSED 0 CUBIC YDS 0 SQ FT 0
LOCATION WHERE MATERIAL WILL BE PLACED: ON SITE _____ OFF SITE _____
TOTAL REGULATED AREA ALTERED: SQ FT 4,637 ACRES 0.11

EXPLAIN ALTERNATIVES CONSIDERED (REQUIRED): _____
No build alternative. No additional benefit from online grocery pick up

MITIGATION MEASURES (IF REQUIRED): WETLANDS/WATERCOURSES CREATED: CY N/A SQFT N/A ACRES N/A

IS PARCEL LOCATED WITHIN 500FT OF AN ADJOINING TOWN? No IF YES, WHICH TOWN(S) _____
IS THE ACTIVITY LOCATED WITHIN THE WATERSHED OF A WATER COMPANY AS DEFINED IN CT GENERAL STATUTES 25-32A? No

THE OWNER AND APPLICANT HEREBY GRANT THE BROOKLYN IWWC, THE BOARD OF SELECTMAN AND THEIR AUTHORIZED AGENTS PERMISSION TO ENTER THE SUBJECT PROPERTY FOR THE PURPOSE OF INSPECTION AND ENFORCEMENT OF THE IWWC REGULATIONS OF THE TOWN OF BROOKLYN. IF THE COMMISSION DETERMINES THAT OUTSIDE REVIEW IS REQUIRED, APPLICANT WILL PAY CONSULTING FEE.

NOTE: DETERMINATION THAT THE INFORMATION PROVIDED IS INACCURATE MAY INVALIDATE THE IWWC DECISION AND RESULT IN ENFORCEMENT ACTION.

APPLICANT: Mike Rutherford DATE June 21, 2023 | 13:02 CDT

OWNER: Mike Rutherford DATE June 21, 2023 | 13:02 CDT

REQUIREMENTS

_____ APPLICATION FEE \$ 200.00 STATE FEE (\$60.00) 60.00

_____ COMPLETION OF CT DEEP REPORTING FORM

_____ ORIGINAL PLUS COPIES OF ALL MATERIALS REQUIRED - **NUMBER TO BE DETERMINED BY STAFF**

_____ PRE-APPLICATION MEETING WITH THE WETLANDS AGENT IS RECOMMENDED TO EXAMINE THE SCOPE OF THE ACTIVITY

_____ SITE PLAN SHOWING LOCATION OF THE WETLANDS WITH EXISTING AND PROPOSED CONDITIONS. APPLICANT MAY BE REQUIRED TO HAVE A CERTIFIED SOIL SCIENTIST IDENTIFY THE WETLANDS.

_____ COMPLIANCE WITH THE CONNECTICUT EROSION & SEDIMENTATION CONTROL MANUAL

_____ IF THE PROPOSED ACTIVITY IS DEEMED TO BE A "SIGNIFICANT IMPACT ACTIVITY" A PUBLIC HEARING IS REQUIRED ALONG WITH THE FOLLOWING INFORMATION:

- NAMES AND ADDRESSES OF ABUTTING PROPERTY OWNERS
- ADDITIONAL INFORMATION AS CONTAINED IN IWWC REGULATIONS ARTICLE 7.6

ADDITIONAL INFORMATION/ACTION NEEDED:

OTHER APPLICATIONS MAY BE REQUIRED. CONTACT THESE AGENCIES FOR FURTHER INFORMATION:

APPLICATION TO STATE OF CONNECTICUT DEEP
INLAND WATER RESOURCES DIVISION
79 ELM ST.
HARTFORD, CT. 06106
1-860-424-3019

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MA. 01742
1-860-343-4789

STAFF USE ONLY:

_____ DECLARATORY RULING: AS OF RIGHT & NON-REGULATED USES (SEE IWWC REGULATIONS SECTION 4)

_____ PERMIT REQUIRED:

_____ AUTHORIZED BY STAFF/CHAIR (NO ACTIVITY IN WETLANDS/WATERCOURSE AND MINIMAL IMPACT)

_____ CHAIR, BROOKLYN IWWC

_____ WETLANDS OFFICER

_____ AUTHORIZED BY IWWC

_____ SIGNIFICANT ACTIVITY/PUBLIC HEARING

_____ NO PERMIT REQUIRED

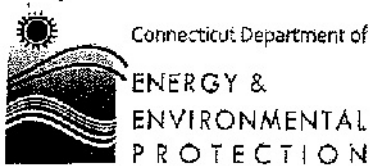
_____ OUTSIDE OF UPLAND REVIEW AREA

_____ NO IMPACT

_____ CHAIR, BROOKLYN IWWC

_____ WETLANDS OFFICER

_____ TIMBER HARVEST



STATEWIDE INLAND WETLANDS & WATERCOURSES ACTIVITY REPORTING FORM

Pursuant to section 22a-39(m) of the General Statutes of Connecticut and section 22a-39-14 of the Regulations of Connecticut State Agencies, inland wetlands agencies must complete the Statewide Inland Wetlands & Watercourses Activity Reporting Form for each action taken by such agency.

This form may be made part of a municipality's inland wetlands application package. If the municipality chooses to do this, it is recommended that a copy of the Town and Quadrangle Index of Connecticut and a copy of the municipality's subregional drainage basin map be included in the package as well.

Please remember, the inland wetlands agency is responsible for ensuring that the information provided is accurate and that it reflects the final action of the agency. Incomplete or incomprehensible forms will be mailed back to the agency. Instructions for completing the form are located on the following page.

The inland wetlands agency shall mail completed forms for actions taken during a calendar month no later than the 15th day of the following month to the Department of Energy and Environmental Protection (DEEP). Do not mail this cover page or the instruction page. **Please mail only the completed yellow reporting form to:**

Wetlands Management Section
Inland Water Resources Division
Department of Energy & Environmental Protection
79 Elm Street, 3rd Floor
Hartford, CT 06106

Questions may be directed to the DEEP's Wetlands Management Section at (860) 424-3019.

INSTRUCTIONS FOR COMPLETING THE STATEWIDE INLAND WETLANDS & WATERCOURSES ACTIVITY REPORTING FORM

Use a separate form to report each action taken by the Agency. Complete the form as described below.

PLEASE PRINT CLEARLY

PART I: To Be Completed By the Inland Wetlands Agency Only

1. Enter the year and month the Inland Wetlands Agency took the action being reported. If multiple actions were taken regarding the same project or activity then multiple forms need to be completed. Enter ONE year and month per form.
2. Enter ONE code letter to describe the final action or decision taken by the Inland Wetlands Agency. *Do not submit a reporting form for withdrawn applications.* Do not enter multiple code letters (for example: if an enforcement notice was given and subsequent permit issued - two forms for the two separate actions are to be completed).
 - A = A Permit Granted by the Inland Wetlands Agency (*not including map amendments, see code D below*)
 - B = Any Permit Denied by the Inland Wetlands Agency
 - C = A Permit Renewed or Amended by the Inland Wetlands Agency
 - D = A Map Amendment to the Official Town Wetlands Map - or -
An Approved/Permitted Wetland or Watercourse Boundary Amendment to a Project Site Map
 - E = An Enforcement Notice of Violation, Order, Court Injunction, or Court Fines
 - F = A Jurisdictional Ruling by the Inland Wetlands Agency (i.e.: activities "permitted as of right" or activities considered non-regulated)
 - G = An Agent Approval pursuant to CGS 22a-42a(c)(2)
 - H = An Appeal of Agent Approval Pursuant to 22a-42a(c)(2)
3. Check "Yes" if a public hearing was held in regards to the action taken; otherwise check "No".
4. Enter the name of the Inland Wetlands Agency official verifying that the information provided on this form is accurate and that it reflects the FINAL action of the agency.

PART II: To Be Completed by the Inland Wetlands Agency or the Applicant - If Part II is completed by the applicant, the applicant must return the form to the Inland Wetlands Agency. The Inland Wetlands Agency must ensure that the information provided is accurate and that it reflects the FINAL action of the Agency.

5. Enter the name of the municipality for which the Inland Wetlands Agency has jurisdiction and in which the action/project/activity is occurring.

Check "Yes" if the action/project/activity crosses municipal boundaries and enter the name(s) of the other municipality(ies) where indicated. Check "No" if it does not cross municipal boundaries.
6. Enter the USGS Quad Map name or number (1 through 115) as found on the Connecticut Town and Quadrangle Index Map (the directory to all USGS Quad Maps) that contains the location of the action/project/activity. See the following website for USGS Quad Map names and numbers:
http://ct.gov/deep/lib/deep/gis/resources/Index_NamedQuadTown.pdf

ALSO enter the four-digit identification number of the corresponding Subregional Drainage Basin in which the action/project/activity is located. If the action/project/activity is located in more than one subregional drainage basin, enter the number of the basin in which the majority of the action/project/activity is located. Town subregional drainage basin maps can be found at UConn – CLEAR's website: http://clear.uconn.edu/data/map_set/index.htm
7. Enter the name of the individual applying for, petitioning, or receiving the action.
8. Enter the name and address or location of the action/project/activity. Check if the the action/project/activity is TEMPORARY or PERMANENT in nature. Also provide a brief description of the action/project/activity.

9. **CAREFULLY REVIEW** the list below and enter **ONE** code letter which best characterizes the action/project/activity. All state agency projects must code "N".

A = Residential Improvement by Homeowner	I = Storm Water / Flood Control
B = New Residential Development for Single Family Units	J = Erosion / Sedimentation Control
C = New Residential Development for Multi-Family / Condos	K = Recreation / Boating / Navigation
D = Commercial / Industrial Uses	L = Routine Maintenance
E = Municipal Project	M = Map Amendment
F = Utility Company Project	N = State Agency Project
G = Agriculture, Forestry or Conservation	P = Other (this code includes the approval of
H = Wetland Restoration, Enhancement, Creation	concept plans with no-on-the-ground work)

10. Enter between one and four code numbers to best characterize the project or activity being reported. Enter "NA" if this form is being completed for the action of map amendment. You must provide code 12 if the activity is located in an established upland review area (buffer, setback). You must provide code 14 if the activity is located **BEYOND** the established upland review area (buffer, setback) or **NO** established upland review area (buffer, setback) exists.

1 = Filling	8 = Underground Utilities (no other activities)
2 = Excavation	9 = Roadway / Driveway Construction
3 = Land Clearing / Grubbing (no other activity)	10 = Drainage Improvements
4 = Stream Channelization	11 = Pond, Lake Dredging / Dam Construction
5 = Stream Stabilization (includes lakeshore stabilization)	12 = Activity in an Established Upland Review Area
6 = Stream Clearance (removal of debris only)	14 = Activity in Upland
7 = Culverting (not for roadways)	

Examples: Jurisdictional ruling allowing construction of a parking lot in an upland where the municipality *does not* have an established upland review area must use code 14; other possible codes are 2 and 10. Permitted construction of a free standing garage (residential improvement by homeowner) partially in an established upland review area with the remainder in the upland must use code 12 and 14; other possible codes are 1 and 2. Permitted dredging of a pond must use code 11; other possible codes are 12 and 5.

11. Leave blank for **TEMPORARY** alterations but please indicate action/project/activity is temporary under question #8 on the form. For **PERMANENT** alterations, enter in acres the area of wetland soils or watercourses altered. Include areas that are permanently altered, or are proposed to be, for all agency permits, denials, amendments, and enforcement actions. For those activities that involve filling or dredging of lakes, ponds or similar open water bodies enter the acres filled or dredged under "open water body". For those activities that involve directly altering a linear reach of a brook, river, lakeshore or similar linear watercourse, enter the total linear feet altered under "stream". Remember that these figures represent only the acreage altered not the total acreage of wetlands or watercourses on the site. You **MUST** provide all information in **ACRES** (or linear feet as indicated) including those areas less than one acre. To convert from square feet to acres, divide square feet by the number 43,560. Enter zero if there is no alteration.
12. Enter in acres the area of upland altered as a result of an **ACTIVITY REGULATED BY** the inland wetlands agency, or as a result of an **AGENT APPROVAL** pursuant to 22a-42a(c)(2). Leave blank for **TEMPORARY** alterations but please indicate action/project/activity is temporary under question #8 on the form. Include areas that are permanently altered, or proposed to be permanently altered, for all agency permits, denials, amendments, and enforcement actions. Inland wetlands agencies may have established an upland review area (also known as a buffer or setback) in which activities are regulated. Agencies may also regulate activities beyond these established areas. You **MUST** provide all information in **ACRES** including those areas less than one acre. To convert from square feet to acres, divide square feet by the number 43,560. Enter zero if there is no alteration. Remember that these figures represent only the upland acreage altered as a result of an activity regulated by the inland wetlands agency, or as a result of an agent approval.
13. Enter the acres that are, or are proposed to be, restored, enhanced or created for all agency permits, denials, amendments, and enforcement actions. **NOTE** restored or enhanced applies to previously existing wetlands or watercourses. Created applies to a non-wetland or non-watercourse area which is converted into wetlands or watercourses (question #10 must provide 12 and/or 14 as an answer, and question #12 must also be answered). You **MUST** provide all information in **ACRES** including those areas less than one acre. To convert from square feet to acres, divide square feet by the number 43,560. Enter zero if there is no restoration, enhancement or creation.

PART III: To Be Completed By The DEEP - Please leave this area blank. Incomplete or incomprehensible forms will be mailed back to the inland wetlands agency.



Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete - print clearly - and mail this form in accordance with the instructions on pages 2 and 3 to:
Wetlands Management Section, Inland Water Resources Division, CT DEEP, 79 Elm Street - 3rd Floor, Hartford, CT 06106

PART I: To Be Completed By the Municipal Inland Wetlands Agency Only

1. DATE ACTION WAS TAKEN (enter one year and month): Year _____ Month _____
2. ACTION TAKEN (enter one code letter): _____
3. WAS A PUBLIC HEARING HELD (check one)? Yes _____ No _____
4. NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:
(type name) _____ (signature) _____

PART II: To Be Completed By the Municipal Inland Wetlands Agency or the Applicant

5. TOWN IN WHICH THE ACTION IS OCCURRING (type name): Brooklyn, CT
Does this project cross municipal boundaries (check one)? Yes _____ No X _____
If Yes, list the other town(s) in which the action is occurring (type name(s)): _____
6. LOCATION (see directions for website information): USGS Quad Map Name: Danielson, CT or Quad Number: _____
Subregional Drainage Basin Number: 3700
7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (type name): Bohler Engineering
8. NAME & ADDRESS/LOCATION OF PROJECT SITE (type information): 450 Providence Road, Brooklyn, CT
Briefly describe the action/project/activity (check and type information): Temporary _____ Permanent X _____
Description: Online grocery pick up addition with parking modification
9. ACTIVITY PURPOSE CODE (enter one code letter): D
10. ACTIVITY TYPE CODE(S) (enter up to four code numbers): 8, 14, _____, _____
11. WETLAND / WATERCOURSE AREA ALTERED (type in acres or linear feet as indicated):
Wetlands: 1.37 acres Open Water Body: _____ acres Stream: _____ linear feet
12. UPLAND AREA ALTERED (type in acres as indicated): 0.11 acres
13. AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (type in acres as indicated): 0 acres

DATE RECEIVED:

PART III: To Be Completed By the DEEP

DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO

FORM CORRECTED / COMPLETED: YES NO

PROPOSED SITE PLAN
DOCUMENTS

FOR



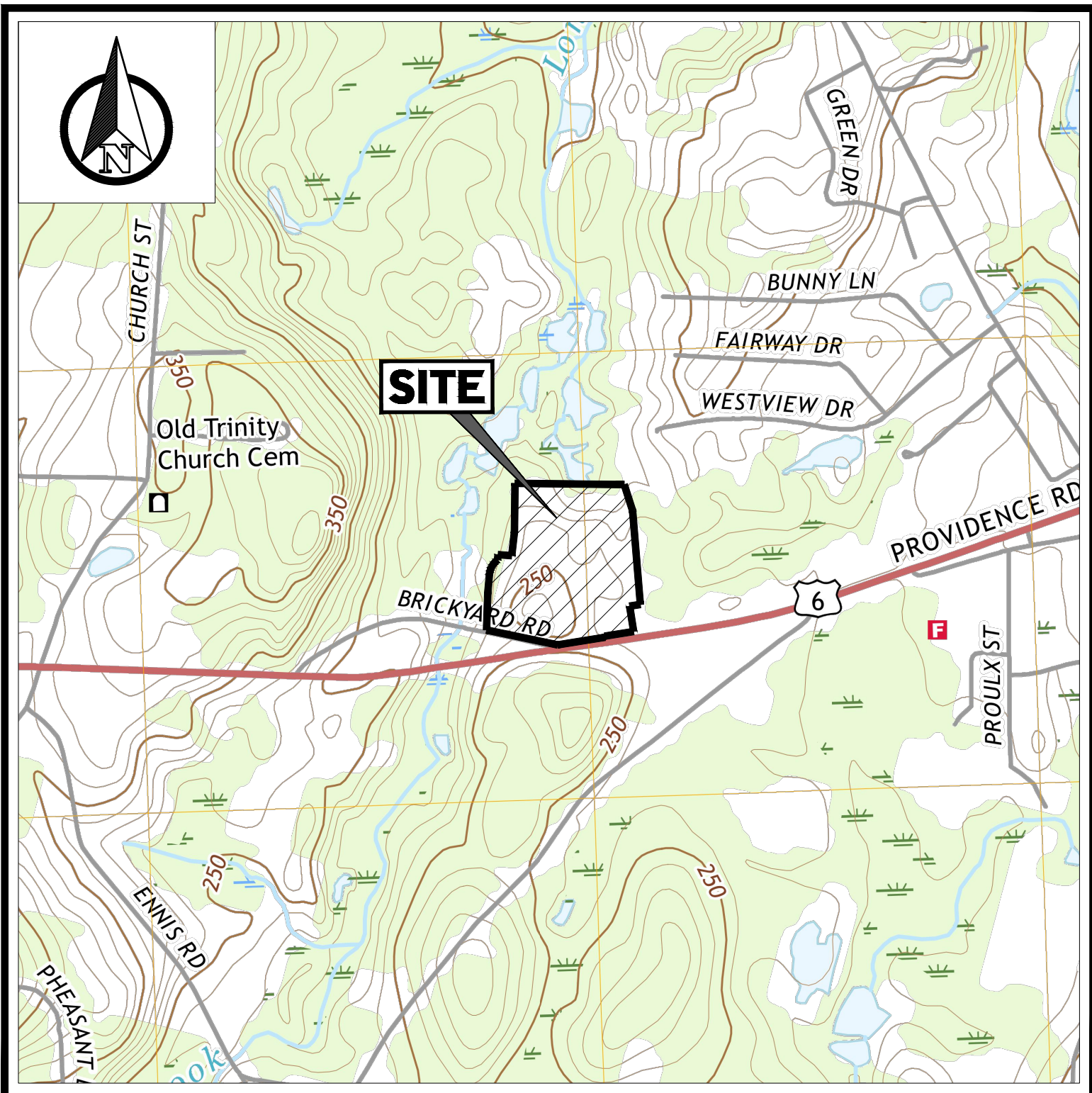
STORE #5777-228

PROPOSED

PICKUP AND SIGNAGE / STRIPING
IMPROVEMENTS AND BUILDING EXPANSION

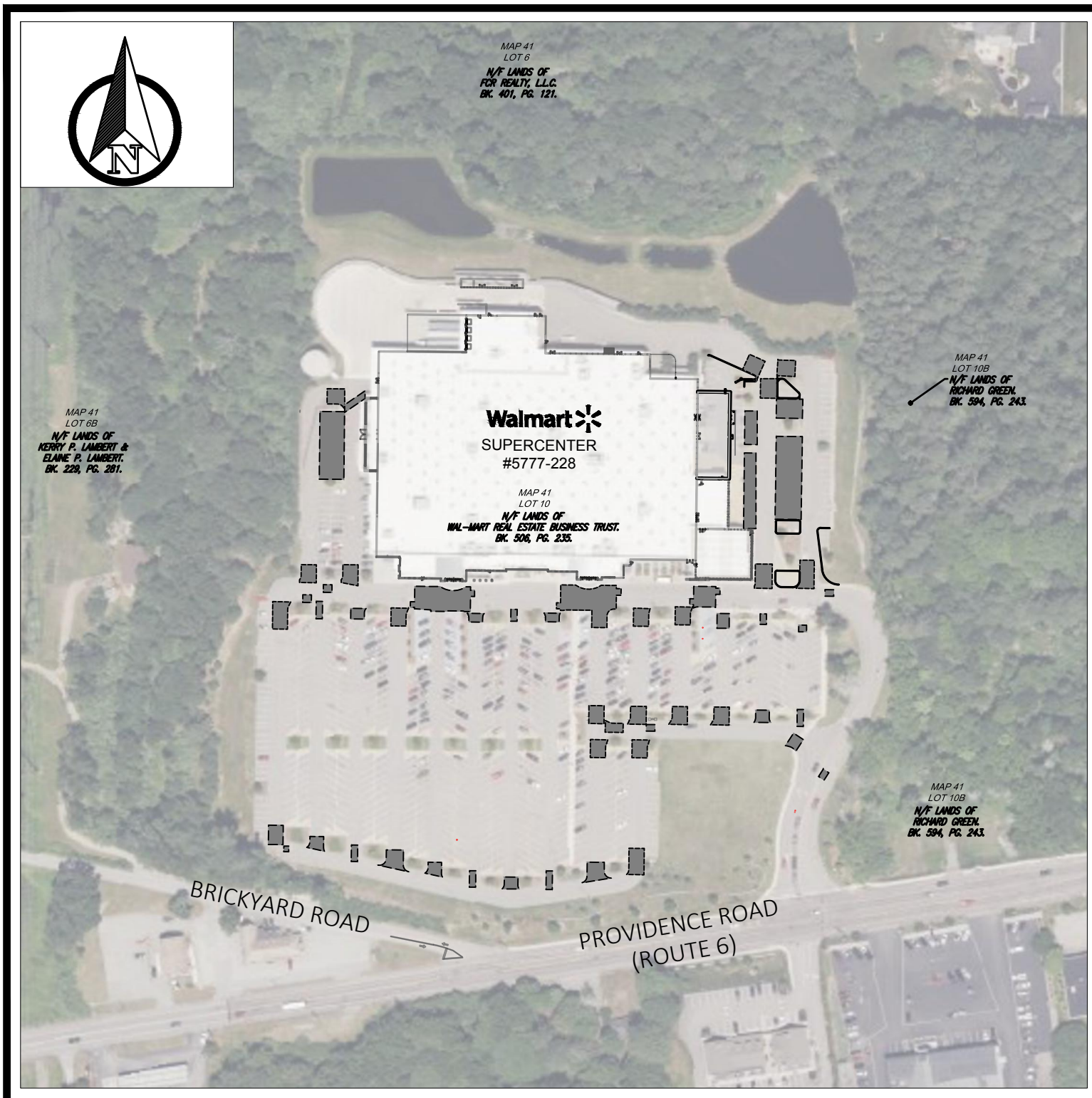
LOCATION OF SITE:

450 PROVIDENCE ROAD, TOWN OF BROOKLYN
WINDHAM COUNTY, CONNECTICUT



USGS MAP

SCALE: 1" = 1,000'
SOURCE: DANIELSON CONNECTICUT USGS
QUADRANGLE



SITE MAP

SCALE: 1" = 200'
SOURCE: 2023 MICROSOFT
CORPORATION

DRAWING SHEET INDEX

SHEET TITLE	SHEET NUMBER
COVER SHEET	COV-1
GENERAL NOTES SHEET	NS-1
EXISTING CONDITIONS PLAN	EC-1
OVERALL SITE PLAN - STOP SIGNS AND MARKINGS PLAN	SSM-1
DEMOLITION AND SITE CONSTRUCTION PLAN	SECP-1
DEMOLITION AND EROSION CONTROL PLAN	DM-1
SITE PLAN	SP-1
GRADING, DRAINAGE, & UTILITY PLAN	GD-1
SECP AND STOP SIGNS AND MARKINGS DETAIL SHEET	SECP/SSM DETAILS
DETAIL SHEET	DTL-1
DETAIL SHEET	DTL-2
DETAIL SHEET	DTL-3
SPECIFICATIONS SHEET	CSS-1
SPECIFICATIONS SHEET 2	CSS-2
ALTA/NSPS LAND TITLE SURVEY (BY OTHERS)	2 SHEETS

PREPARED BY

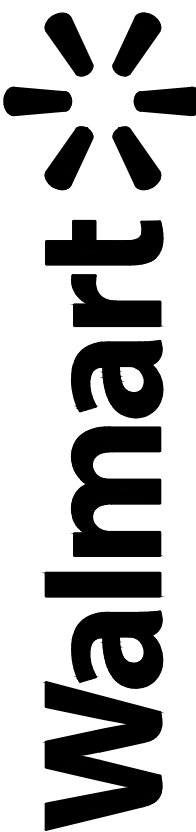
BOHLER

COVER SHEET

REVISIONS	BY

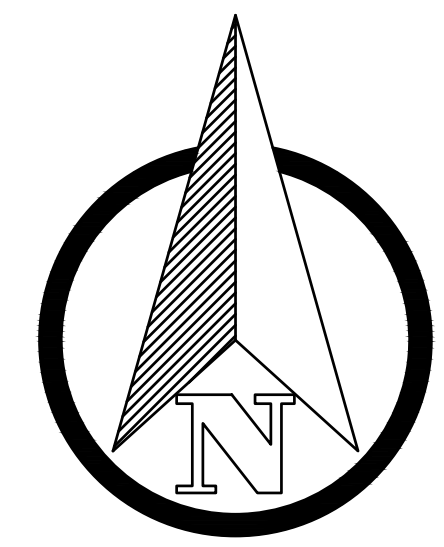
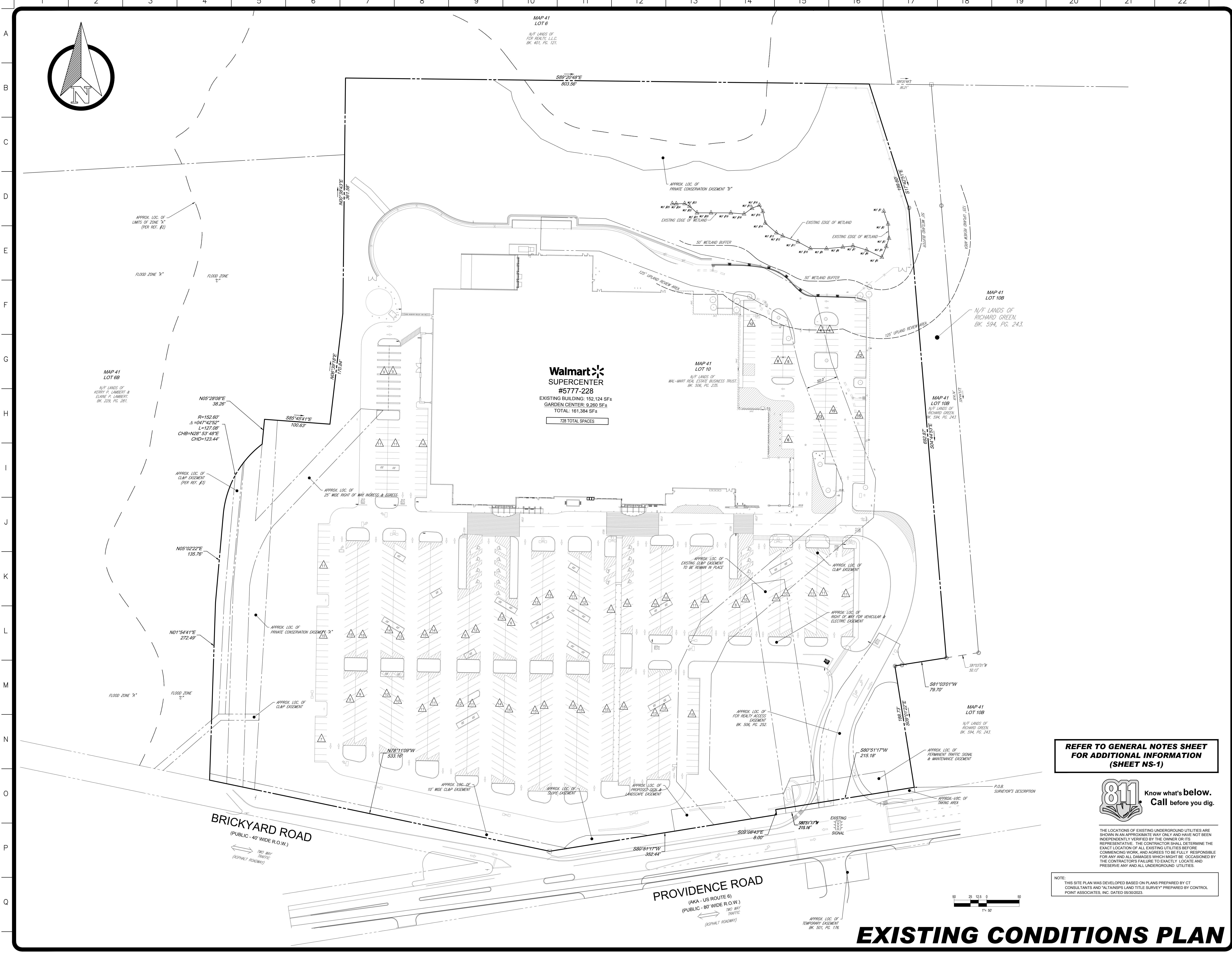


SUPERCENTER #5777-228
450 PROVIDENCE ROAD, TOWN OF BROOKLYN, CT
WAL-MART STORES, INC.
2001 SE 10TH STREET
BENTONVILLE, AR 72716



DRAWN BTJ/TJN
CHECKED JJC/GB
DATE 06/29/2023
SCALE AS NOTED
JOB No. MAA230031.00
SHEET

COV-1



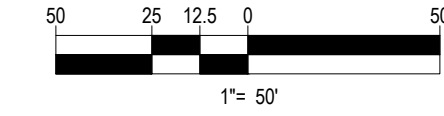
Walmart
SUPERCENTER
#5777-228
EXISTING BUILDING: 152,124 SF±
GARDEN CENTER: 9,260 SF±
TOTAL: 161,384 SF±
728 TOTAL SPACES

**REFER TO GENERAL NOTES SHEET
FOR ADDITIONAL INFORMATION
(SHEET NS-1)**



THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTE: THIS SITE PLAN WAS DEVELOPED BASED ON PLANS PREPARED BY CT CONSULTANTS AND "ALTANSIPS LAND TITLE SURVEY" PREPARED BY CONTROL POINT ASSOCIATES, INC. DATED 05/20/2023.

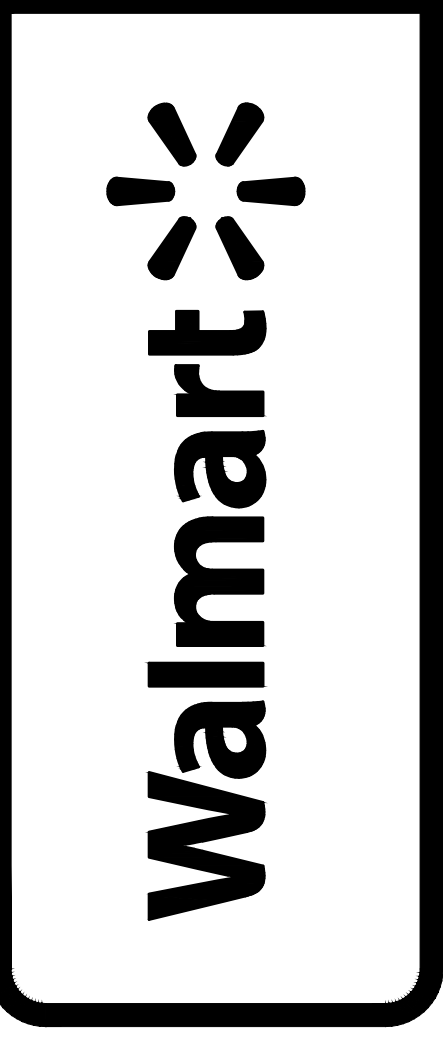


EXISTING CONDITIONS PLAN

REVISIONS	BY

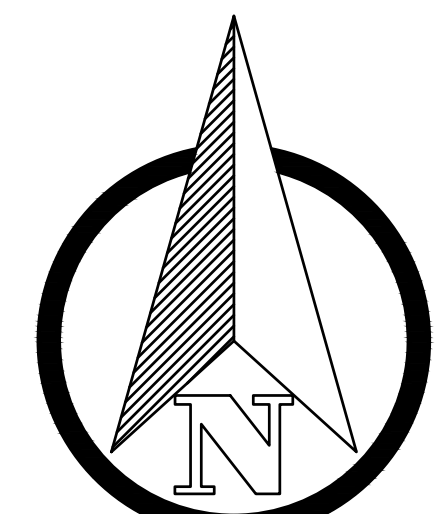
BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
PERMITTING SERVICES
SUSTAINABLE DESIGN

SUPERCENTER #5777-228
450 PROVIDENCE ROAD, TOWN OF BROOKLYN, CT
WAL-MART STORES, INC.
2001 SE 10TH STREET
BENTONVILLE, AR 72716



DRAWN	BTJ/TJN
CHECKED	JUC/GB
DATE	06/29/2023
SCALE	AS NOTED
JOB No.	MAA230031.00
SHEET	

EC-1



N/F LANDS OF
FOR REALTY, L.L.C.
BK. 401, PG. 121.

ZONING INFORMATION			
ZONING DISTRICT:		PLANNED COMMERCIAL	
ZONE CRITERIA	REQUIRED	EXISTING (1)	PROPOSED
MINIMUM LOT AREA	30,000 SF	1,109,787 SF (25.5± Ac.)	NO CHANGE
MIN. LOT FRONTAGE	100 FT	533.16 FT (BRICKYARD RD.)	NO CHANGE
MIN. FRONT SETBACK	45 FT	490.6 FT (BRICKYARD RD.)	NO CHANGE
MIN. SIDE SETBACK	20 FT	140.1 FT	NO CHANGE
MIN. REAR SETBACK	20 FT	213.0 FT	NO CHANGE
MAX. BUILDING HEIGHT	40 FT	< 40'	NO CHANGE
MAX. IMPERVIOUS AREA	65%	56.7%	55.5%
PARKING SPACES	502	728	716
PARKING CRITERIA	RETAIL STORES: 3 SPACES PER 1,000 SF GFA 167,344 SF / 1,000' ± = 502 SPACES REQUIRED UNDER CURRENT ZONING		
ACCESSIBLE PARKING SPACES	15	18	NO CHANGE
ACCESSIBLE PARKING CRITERIA	TOTAL PARKING 901 TO 1000 = 2 PERCENT OF TOTAL ACCESSIBLE SPACES VAN ACCESSIBLE SPACES = 1 / 8 SPACES		

STOP SIGNS AND MARKING PLAN LEGEND

REFERENCE DETAIL SHEET

- (A) EXISTING PEDESTRIAN CROSSING SIGN TO BE REMOVED.
- (B1) EXISTING STOP SIGN TO BE REMOVED.
- (B2) EXISTING PICKUP DIRECTIONAL SIGN TO BE REMOVED.
- (B3) EXISTING "NO TRUCK" SIGN TO BE REMOVED.
- (C) EXISTING SIGN POST TO BE REMOVED.
- (D) EXISTING SIGN POST AND BASE TO REMAIN. EXISTING BOLLARD SHALL BE REPAINTED TRAFFIC YELLOW (SEE DETAIL).
- (E) EXISTING CROSSWALK STRIPING TO BE REMOVED.
- (F) EXISTING CROSSWALK STRIPING TO REMAIN AND SHALL BE REFRESHED/RESTRIPED.
- (F) EXISTING YIELD PAVEMENT MARKING TO BE REMOVED.
- (G) EXISTING DIRECTIONAL ARROW PAVEMENT MARKING TO BE REMOVED.
- (H) NEW "STOP HERE FOR PEDESTRIANS" SIGN.
- (I-1) NEW W4-4A "TRAFFIC FROM LEFT DOES NOT STOP" PLACARD. SEE DETAIL.
- (I-2) NEW W4-4B "ONCOMING TRAFFIC DOES NOT STOP" PLACARD. SEE DETAIL.
- (I-3) NEW W4-4A "TRAFFIC FROM RIGHT DOES NOT STOP" PLACARD. SEE DETAIL.
- (I-4) NEW R31-3P "ALL WAY" PLACARD. SEE DETAIL.
- (J1) NEW 30"x30" STOP SIGN.
- (J2) NEW 36"x36" STOP SIGN.
- (K) NEW SIGN MOUNTING AND BASE WITH BOLLARD.
- (L) NEW STOP TEXT AND STOP BAR.
- (M) 4" WIDE PAINTED YELLOW STRIPES AT 45° @ 2'-0" O.C.
- (N) NEW CROSSWALK MARKINGS - 6" WIDE PAINTED WHITE STRIPING PARALLEL TO DIRECTION OF TRAFFIC AT 2'-0" O.C. AND (1) 4" WHITE STRIPES PERPENDICULAR ON BOTH ENDS UNLESS NOTED OTHERWISE. SEE SITE PLAN FOR DIMENSIONS. ENTIRE CROSSWALK SHALL BE RE-STRIPED.
- (O) NEW "CROSS TRAFFIC DOES NOT STOP" (W4-4P) SIGN MOUNTED BELOW STOP SIGN.
- (P) LIMITS OF SEAL COAT. APPLY SEAL COAT OVER WHERE STRIPING AND PAVEMENT MARKINGS WERE REMOVED AND WHERE NEW STRIPING AND PAVEMENT MARKINGS WILL BE APPLIED. APPLY NEW STRIPING AND PAVEMENT MARKINGS OVER SEAL COAT.
- (Q) 4" WIDE PAINTED YELLOW STRIPES - 6" LONG WITH 18" GAPS.
- (R) EXISTING STOP BAR AND STRIPING TO BE REMOVED.
- (S) NEW OPEN ARROW PAVEMENT MARKINGS.
- (T1) NEW 6" WIDE FIRE LANE STRIPING PAINTED TRAFFIC RED WITH "NO PARKING FIRE LANE" PAINTED WITH 4" HIGH WHITE LETTERING AT 25' SPACING. SEE DETAIL.
- (T2) NEW FIRE LANE STRIPING TO MATCH EXISTING.
- (U) NEW STOP BAR.
- (V) 4" WIDE DOUBLE SOLID YELLOW STRIPE.
- (W1) EXISTING STOP SIGN TO REMAIN.
- (W2) EXISTING "NO PARKING FIRE LANE" SIGN TO BE REMOVED.
- (W3) NEW "NO PARKING FIRE LANE" SIGN.
- (W4) PEDESTRIAN CROSSING SIGN TO REMAIN.
- (W5) NEW PICKUP DIRECTIONAL SIGN.
- (W6) EXISTING MISC TRUCK/PARKING/ASLE SIGN TO REMAIN.
- (X) EXISTING SIGN MOUNTING BASE WITH BOLLARD TO BE REMOVED.
- (Y1) NEW SIGN MOUNTING BASE WITH BREAK AWAY POST.
- (Z1) NEW SOLID ARROW PAVEMENT MARKINGS.
- (Z2) EXISTING DOUBLE YELLOW PAVEMENT STRIPE TO BE RESTRIPE.
- (Z3) EXISTING STOP TEXT PAVEMENT MARKING TO BE REMOVED.
- (Z4) EXISTING FORWARD/LEFT OR RIGHT TURN ONLY PAVEMENT MARKING TO BE RESTRIPE.
- (Z5) EXISTING PICKUP PAVEMENT GRAPHIC TO BE REMOVED.
- (Z6) EXISTING SINGLE WHITE LINE TO BE RESTRIPE.

NOTES TO CONTRACTOR:

- BFR (BUILDING FRONTAGE ROAD)
OCR (OUTER CIRCULATION ROAD)
- CONTRACTOR SHALL INSTALL 'NEW' STOP BARS, SIGNS, AND TEXT TO MATCH CURRENT DETAILS AT THE LOCATIONS SHOWN ON THESE PLANS.
- ALL SIGNS LOCATED ON THE BUILDING SIDE OF THE BFR SHALL BE INSTALLED ON A SINGLE POST WITH BOLLARD.
- CONTRACTOR TO REPAINT PARKING LOT LIGHT POLE BASES AND REMOVE PREVIOUS OVERSPRAY ON PAVING. REPLACE COVER FOR ANCHOR BOLTS IF DAMAGED/MISSING.
- CONTRACTOR TO REFRESH ALL PARKING LOT STRIPING TO MATCH EXISTING, EXCEPT WHERE SPECIFIED IN SSM OR SECP SHEETS.

REFER TO GENERAL NOTES SHEET
FOR ADDITIONAL INFORMATION
(SHEET NS-1)



THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

1" = 50'

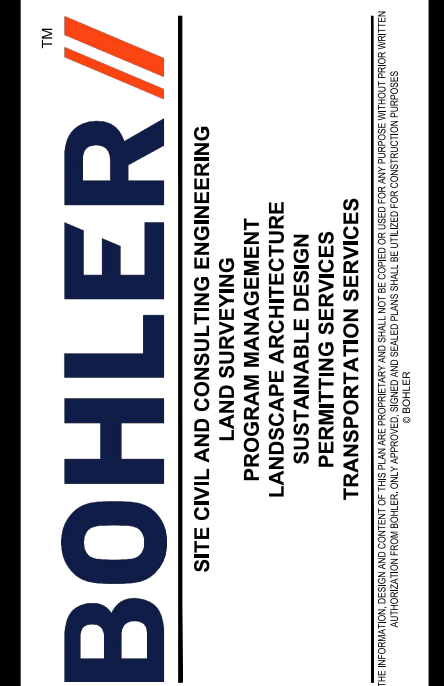
ALL PICKUP WAY FINDING AND STALL SIGNS ARE WALMART SUPPLIED AND CONTRACTOR INSTALLED. CONTRACTOR TO PLACE SIGN ORDERS AT LEAST 3 WEEKS IN ADVANCE. ORDER SHALL BE SENT VIA EMAIL TO GETTY THOMAS

SEALCOAT NOTE:
CONTRACTOR SHALL INSTALL SEAL COAT ON EXISTING ASPHALT PAVING AT ANY STRIPED AREA THAT IS PART OF THE PICKUP SCOPE OF WORK FOR EXISTING CONCRETE SURFACES. DO NOT PREPARE THE SURFACE FOR PAINT ONLY

NOTE:
THIS SITE PLAN WAS DEVELOPED BASED ON PLANS PREPARED BY CT CONSULTANTS AND "ALTANSPS LAND TITLE SURVEY" PREPARED BY CONTROL POINT ASSOCIATES, INC. DATED 05/30/2023.

OVERALL SITE PLAN - STOP SIGNS AND MARKINGS PLAN

REVISIONS	BY

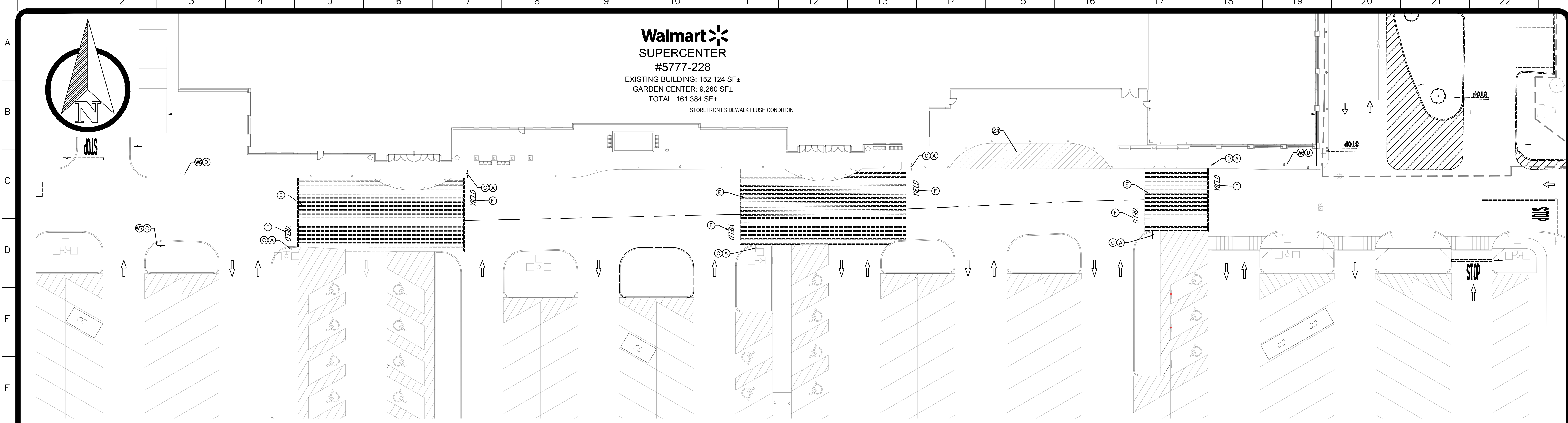


SUPERCENTER #5777-228
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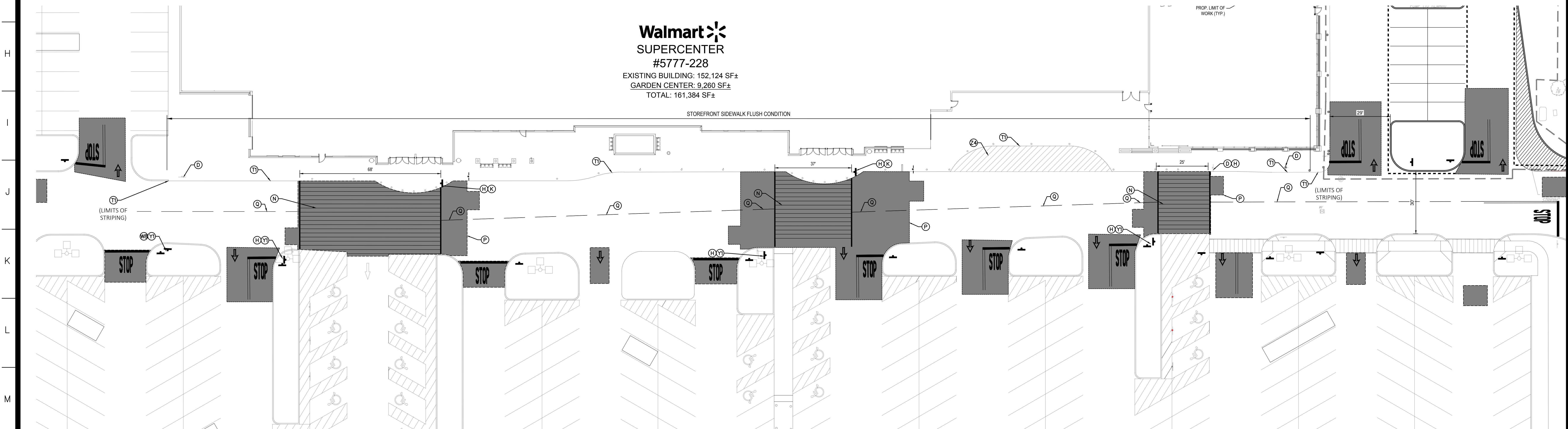


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CHECKED JJC/GB
DATE 06/29/2023
SCALE AS NOTED
JOB No. MAA230031.00
SHEET

SSM-1



DEMOLITION PLAN



STOP SIGNS AND MARKING
PLAN LEGEND

- REFERENCE DETAIL SHEET
- (A) EXISTING PEDESTRIAN CROSSING SIGN TO BE REMOVED.
 - (B1) EXISTING STOP SIGN TO BE REMOVED.
 - (B2) EXISTING PICKUP DIRECTIONAL SIGN TO BE REMOVED.
 - (C) EXISTING SIGN POST TO BE REMOVED.
 - (D) EXISTING SIGN POST AND BASE TO REMAIN. EXISTING BOLLARD SHALL BE REPAINTED TRAFFIC YELLOW (SEE DETAIL).
 - (E) EXISTING CROSSWALK STRIPING TO BE REMOVED.
 - (F) EXISTING YIELD PAVEMENT MARKING TO BE REMOVED.
 - (G) EXISTING DIRECTIONAL ARROW PAVEMENT MARKING TO BE REMOVED.
 - (H) NEW "STOP HERE FOR PEDESTRIANS" SIGN.
 - (I-1) NEW W4-4A "TRAFFIC FROM LEFT DOES NOT STOP" PLACARD. SEE DETAIL.
 - (I-2) NEW W4-4B "ONCOMING TRAFFIC DOES NOT STOP" PLACARD. SEE DETAIL.
 - (I-3) NEW W4-4A "TRAFFIC FROM RIGHT DOES NOT STOP" PLACARD. SEE DETAIL.
 - (I-4) NEW R31-3P "ALL WAY" PLACARD. SEE DETAIL. NEW R31-3P "ALL WAY" PLACARD. SEE DETAIL.
 - (J1) NEW 30"x30" STOP SIGN.
 - (J2) NEW 36"x36" STOP SIGN.

STOP SIGNS AND MARKING
PLAN LEGEND - CONT.

- (K) NEW SIGN MOUNTING AND BASE WITH BOLLARD.
- (L) NEW STOP TEXT AND STOP BAR.
- (M) EXISTING BOLLARD (TO BE REMOVED).
- (M) EXISTING BOLLARD TO REMAIN AND BE PAINTED TRAFFIC YELLOW.
- (N) NEW CROSSWALK MARKINGS - 6" WIDE PAINTED WHITE STRIPING PARALLEL TO DIRECTION OF TRAFFIC AT 2'-0" O.C. AND (13'-8" WHITE STRIPE PERPENDICULAR ON BOTH ENDS UNLESS NOTED OTHERWISE. SEE SITE PLAN FOR DIMENSIONS. ENTIRE CROSSWALK SHALL BE RE-STRIPED.
- (O) NEW "CROSS TRAFFIC DOES NOT STOP" (W4-4P) SIGN MOUNTED BELOW STOP SIGN
- (P) LIMITS OF SEAL COAT. APPLY SEAL COAT OVER WHERE STRIPING AND PAVEMENT MARKINGS WERE REMOVED AND WHERE NEW STRIPING AND PAVEMENT MARKINGS WILL BE APPLIED. APPLY NEW STRIPING AND PAVEMENT MARKINGS OVER SEAL COAT.
- (Q) 4" WIDE PAINTED YELLOW STRIPES - 6' LONG WITH 18" GAPS.
- (R) EXISTING STOP BAR AND STRIPING TO BE REMOVED.
- (S) NEW OPEN ARROW PAVEMENT MARKINGS.
- (T1) NEW 6" WIDE FIRE LANE STRIPING (PAINTED TRAFFIC RED WITH "NO PARKING FIRE LANE" PAINTED WITH 4" HIGH WHITE LETTERING AT 25' SPACING. SEE DETAIL.
- (T2) NEW FIRE LANE STRIPING TO MATCH EXISTING.
- (U) NEW STOP BAR
- (V) 4" WIDE DOUBLE SOLID YELLOW STRIPE.
- (W1) EXISTING STOP SIGN TO REMAIN.

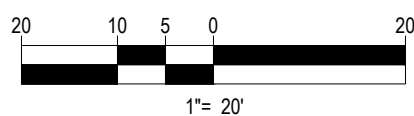
STOP SIGNS AND MARKING
PLAN LEGEND - CONT.

- (W2) EXISTING "DO NOT ENTER" SIGN TO REMAIN.
- (W3) EXISTING AISLE / ROW INDICATOR SIGN TO REMAIN.
- (W4) PEDESTRIAN CROSSING SIGN TO REMAIN.
- (W5) EXISTING PICKUP DIRECTIONAL SIGN TO REMAIN.
- (W6) EXISTING "NO PARKING FIRE LANE SIGN" TO REMAIN.
- (W7) EXISTING "NO PARKING FIRE LANE SIGN" TO BE REMOVED.
- (W8) NEW "NO PARKING FIRE LANE SIGN" TO REMAIN
- (X) EXISTING CROSSWALK STRIPING TO REMAIN
- (Y1) NEW SIGN MOUNTING BASE WITH BREAK AWAY POST.
- (Z1) NEW SOLID ARROW PAVEMENT MARKINGS.
- (Z2) EXISTING "NO PARKING FIRE LANE" SIGN TO BE REMOVED
- (Z3) NEW SOLID YELLOW PAVEMENT MARKING. SEE DETAIL
- (Z4) EXISTING PAVEMENT STRIPING TO BE REFRESHED.

SITE CONSTRUCTION PLAN

NOTES TO CONTRACTOR:

- REFERENCE SITE CONSTRUCTION PLAN FOR SITE SPECIFIC DIMENSIONS OF CROSSWALK STRIPING AND LOCATION OF SIGNAGE.
- PROVIDE A COMPREHENSIVE CONSTRUCTION PHASING PLAN FOR THIS WORK TO THE STORE MANAGER 7 DAYS PRIOR TO STARTING ANY WORK. IT IS TO PROVIDE FOR DATES, TIMES AND DURATION OF LANE CLOSURES, TEMPORARY VEHICLE AND PEDESTRIAN TRAFFIC CONTROL.
- ALL EXISTING STRIPING AND PAVEMENT MARKINGS OR TEXT ALONG THE BFR (BUILDING FRONTAGE ROAD) SHALL BE REMOVED. GRIND OUT ANY DIRECTIONAL ARROWS OR STOP BARS/TEXT THAT ARE NOT CORRECTLY LOCATED OR INCONSISTENT WITH THE DETAILS PROVIDED. CONTRACTOR SHALL REMOVE THE PAVEMENT MARKINGS IN THEIR ENTIRETY PRIOR TO SEAL COAT. APPLY SEAL COAT TO THE COMPLETE EXTENT THAT THE STRIPING OR TEXT HAS BEEN REMOVED IN A SINGLE COMPLETE RECTANGLE TO COVER ALL REMOVED STRIPING (DO NOT APPLY SEAL COAT OVER EXISTING STRIPING OR CONCRETE). INSTALL NEW STRIPING AND SIGNAGE AS SHOWN ON THE SITE CONSTRUCTION PLAN.
- ALL SIGNS LOCATED ON THE BUILDING SIDE OF THE BFR SHALL BE INSTALLED ON A SINGLE POST WITH BOLLARD.
- CONTRACTOR TO PROVIDE AND INSTALL YELLOW PLASTIC LIGHT POLE BASE COVERS AND YELLOW PLASTIC BOLLARD COVERS. ONLY LIGHT POLE BASES OVER 80" IN CIRCUMFERENCE TO BE PAINTED. REMOVE PREVIOUS OVERSPRAY ON PAVING. REPLACE COVER FOR ANCHOR BOLTS IF DAMAGED/MISSING.
- CONTRACTOR TO REFRESH ALL PARKING LOT STRIPING TO MATCH EXISTING, EXCEPT WHERE SPECIFIED IN SSM OR SECP SHEETS.
- CONTRACTOR TO POWER WASH EXISTING SIDEWALK ALONG THE BFR, AUTO CARE CENTER, AND ONLINE PICKUP AREA.



REVISIONS	BY

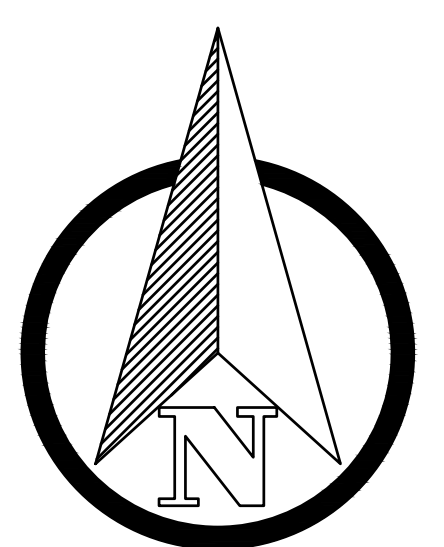
BOHLER

SITE CIVIL AND CONSULTING ENGINEERING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
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SUSTAINABLE DESIGN
TRANSPORTATION

SUPERCENTER #5777-228
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SECP-1



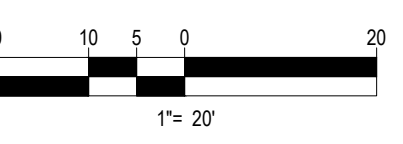
- SITE LEGEND**
ALL DETAIL REFERENCES ON SHEET DTL-1
- (A) 4" WIDE YELLOW PAVEMENT MARKING @ 2' O.C. @ 45°.
 - (B) PICKUP BREAKAWAY SIGN MOUNTING AND BASE (WITHIN CURBED ISLAND). SEE DETAIL.
 - (C) ASSOCIATE PATH CROSSWALK STRIPING. SEE DETAIL.
 - (D) PICKUP PARKING SIGNAGE. SEE DETAIL.
 - (E) PICKUP PARKING SIGN MOUNTING AND BASE IN PROTECTIVE BOLLARD. SEE DETAIL.
 - (F) PICKUP PARKING STALL WITH YELLOW PAVEMENT MARKINGS. SEE DETAIL.
 - (G) PICKUP SIGN PANEL AND SIGN POST TO BE REMOVED.
 - (H) PICKUP SIGN PANEL TO BE REMOVED.
 - (I) PROP. "STOP HERE FOR PEDESTRIANS" SIGN MOUNTED IN PROP. BOLLARD. REFER TO SIGN MOUNTING DETAIL.
 - (J) NEW PICKUP BANNER SIGN MOUNTED TO EXISTING LIGHT POLE. TOP OF SIGN SHALL BE SET 18 FT. ABOVE FINISHED GRADE. SEE DETAIL.
 - (X) PROP. STANDARD PARKING STALL WITH YELLOW PAVEMENT MARKINGS.
 - (L) PROP. 30"x30" STOP SIGN MOUNTED IN PROP. BOLLARD. SEE DETAIL.
 - (M) PROP. TRANSITION CURB. SEE DETAIL.

- LEGEND**
- HEAVY DUTY ASPHALT PAVEMENT
 - STANDARD DUTY ASPHALT PAVEMENT
 - PAVEMENT SEAL COAT

REFER TO GENERAL NOTES SHEET FOR ADDITIONAL INFORMATION (SHEET NS-1)

SEALCOAT NOTE:
CONTRACTOR SHALL INSTALL SEAL COAT ON EXISTING ASPHALT PAVING AT ANY STOPPED AREA THAT IS PART OF THE PICKUP SCOPE OF WORK AND ADDITIONAL ASSOCIATED PARKING SPACES REQUIRED TO BE STRIPED AS SHOWN ON THESE PLANS. FOR EXISTING CONCRETE SURFACES, SC IS TO PREPARE THE SURFACE FOR PAINT ONLY.

ALL PICKUP WAY FINDING AND STALL SIGNS ARE WALMART SUPPLIED AND CONTRACTOR INSTALLED. CONTRACTOR TO PLACE SIGN ORDER AT LEAST 3 WEEKS IN ADVANCE. ORDER SHALL BE SENT VIA EMAIL TO GETTY THOMAS



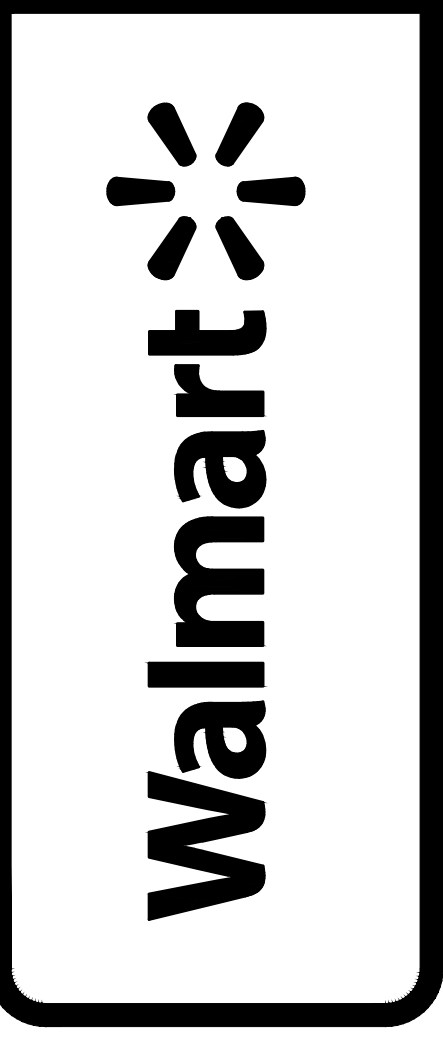
THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

SITE PLAN

REVISIONS	BY

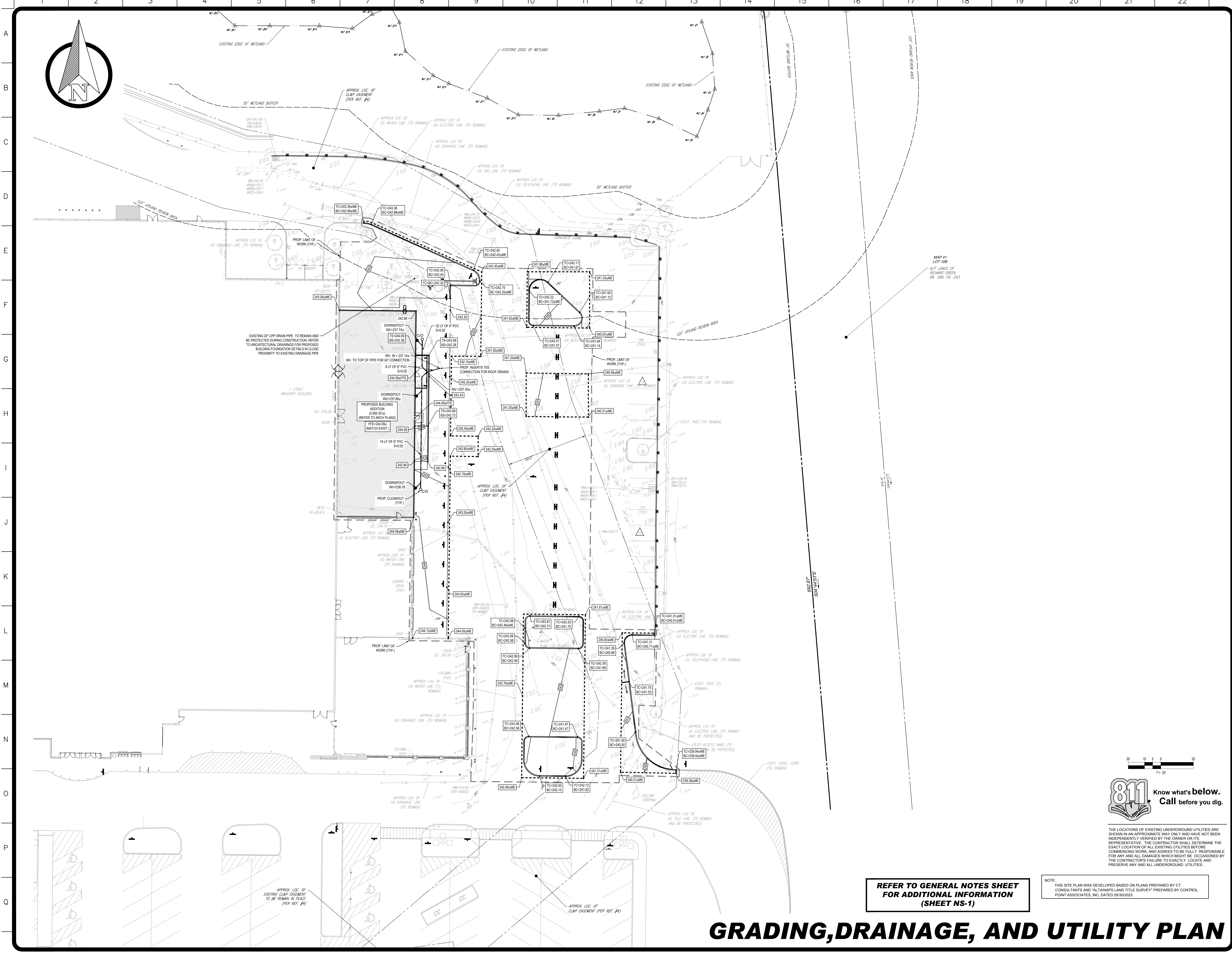
BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
LANDSCAPE ARCHITECTURE
PERMITTING SERVICES
SUSTAINABLE DESIGN

SUPERCENTER #5777-228
450 PROVIDENCE ROAD, TOWN OF BROOKLYN, CT
WAL-MART STORES, INC.
2001 SE 10TH STREET
BENTONVILLE, AR 72716



DRAWN BTJ/TJN
CHECKED JUC/GB
DATE 06/29/2023
SCALE AS NOTED
JOB No. MAA230031.00
SHEET

SP-1



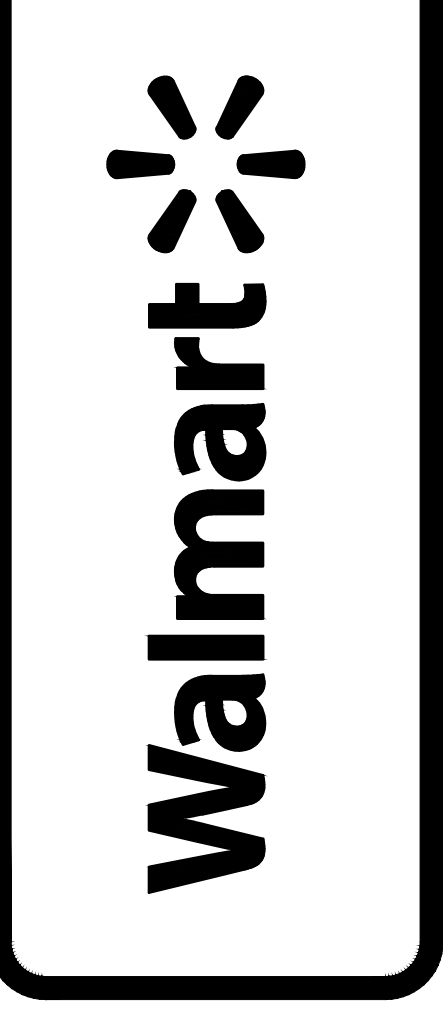
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PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
PERMITTING SERVICES
DESIGN SERVICES



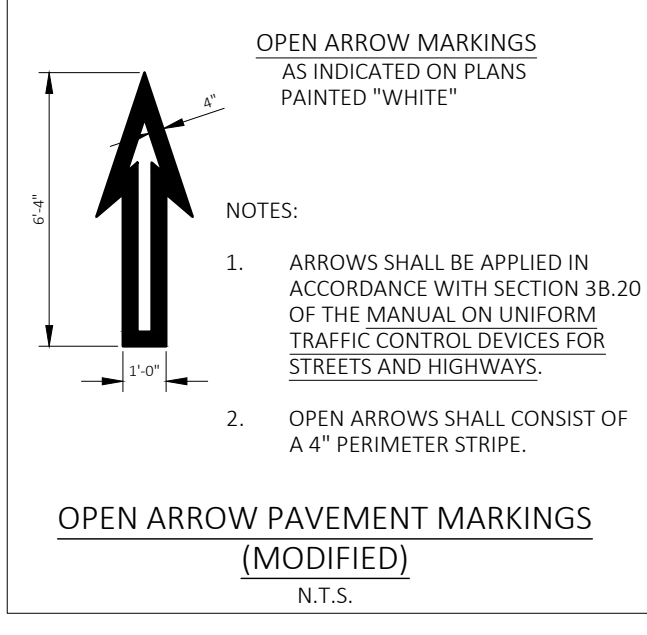
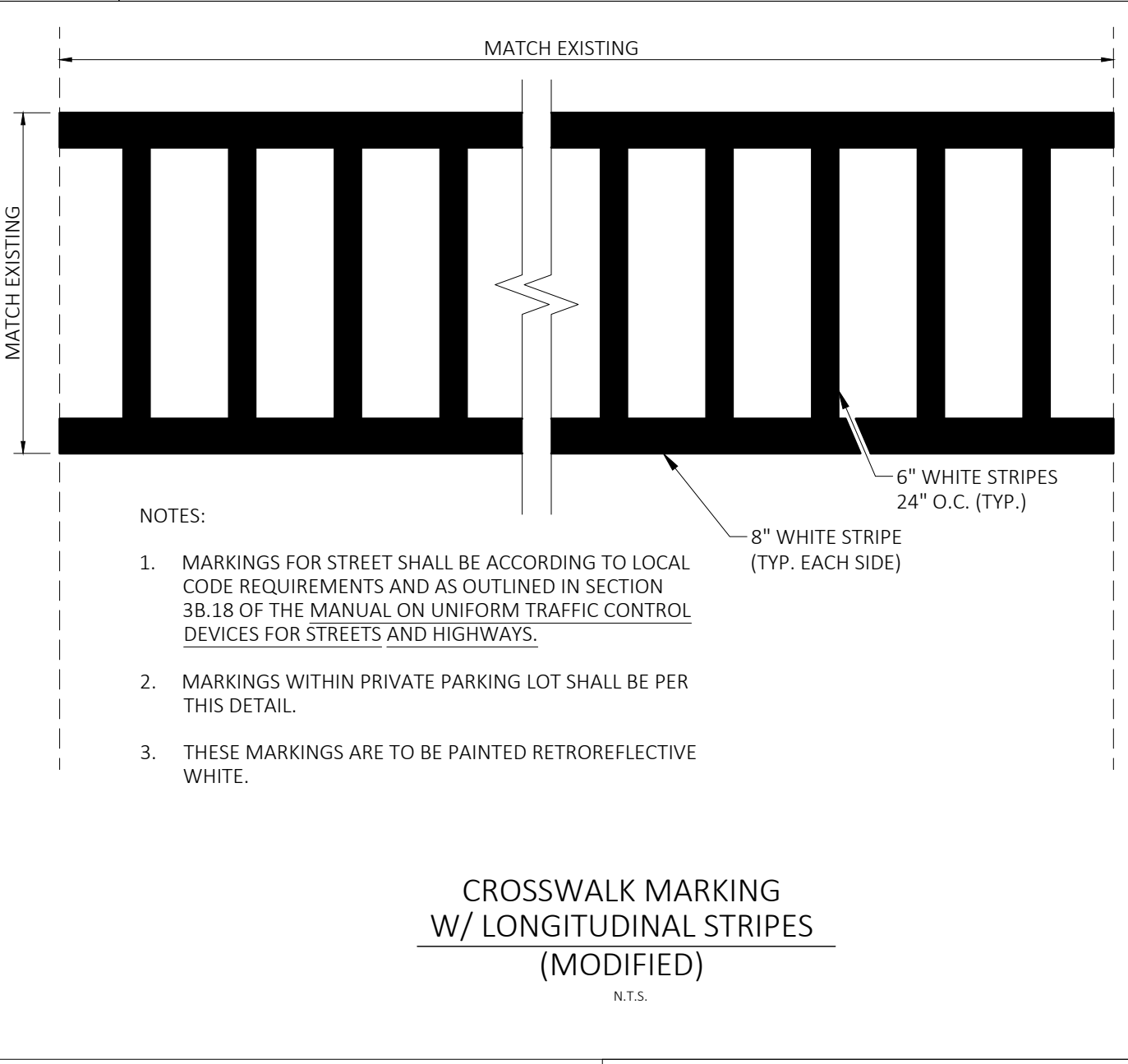
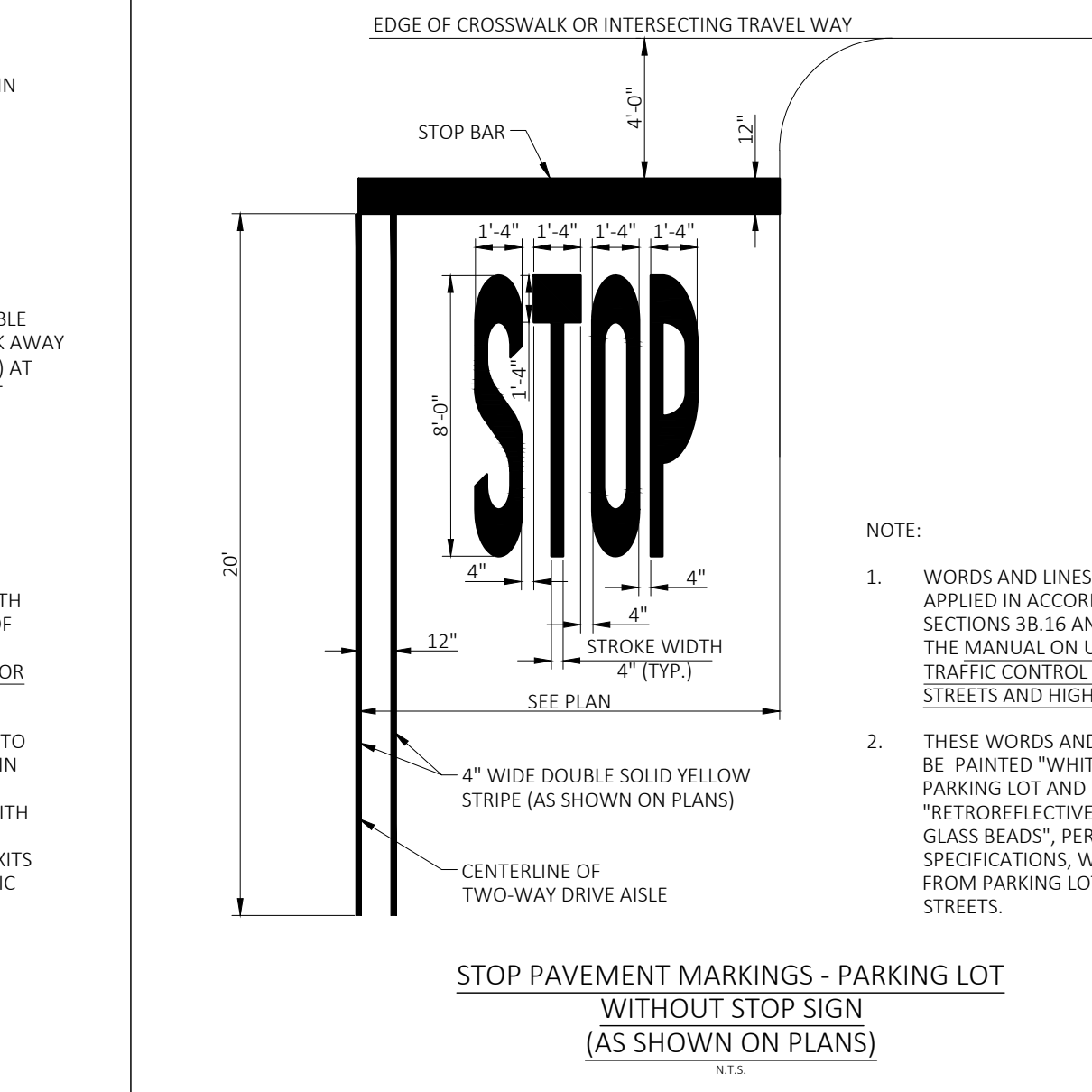
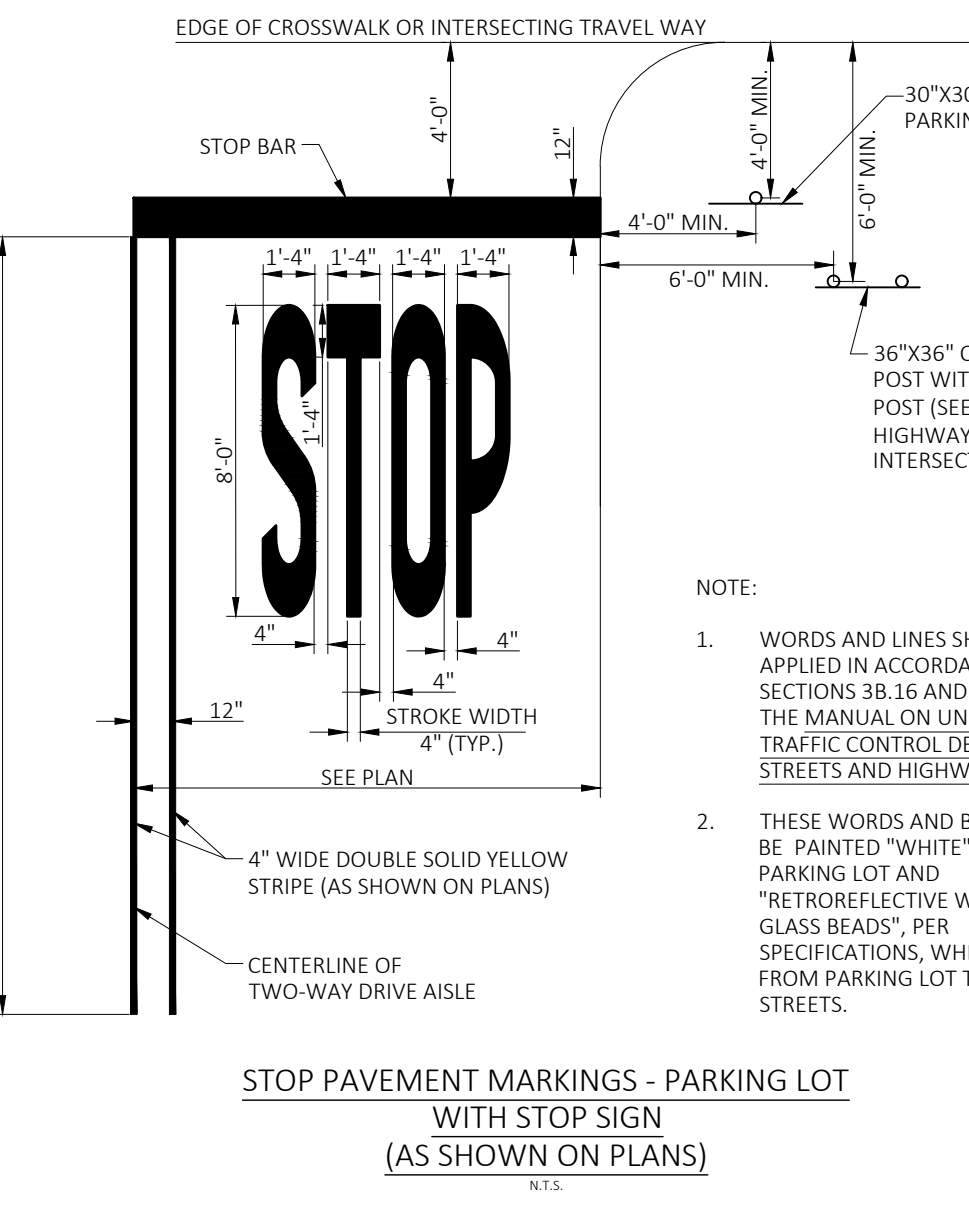
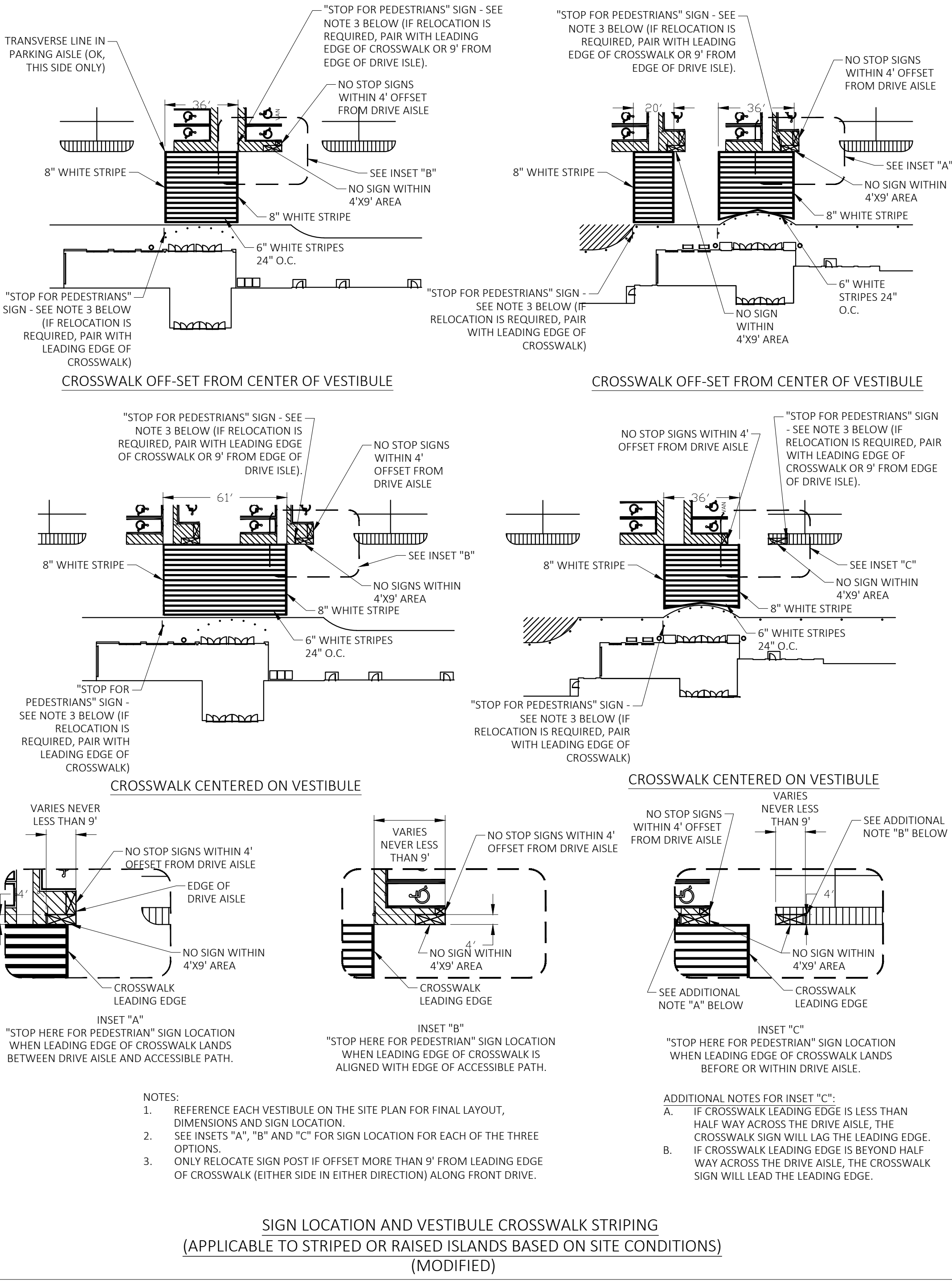
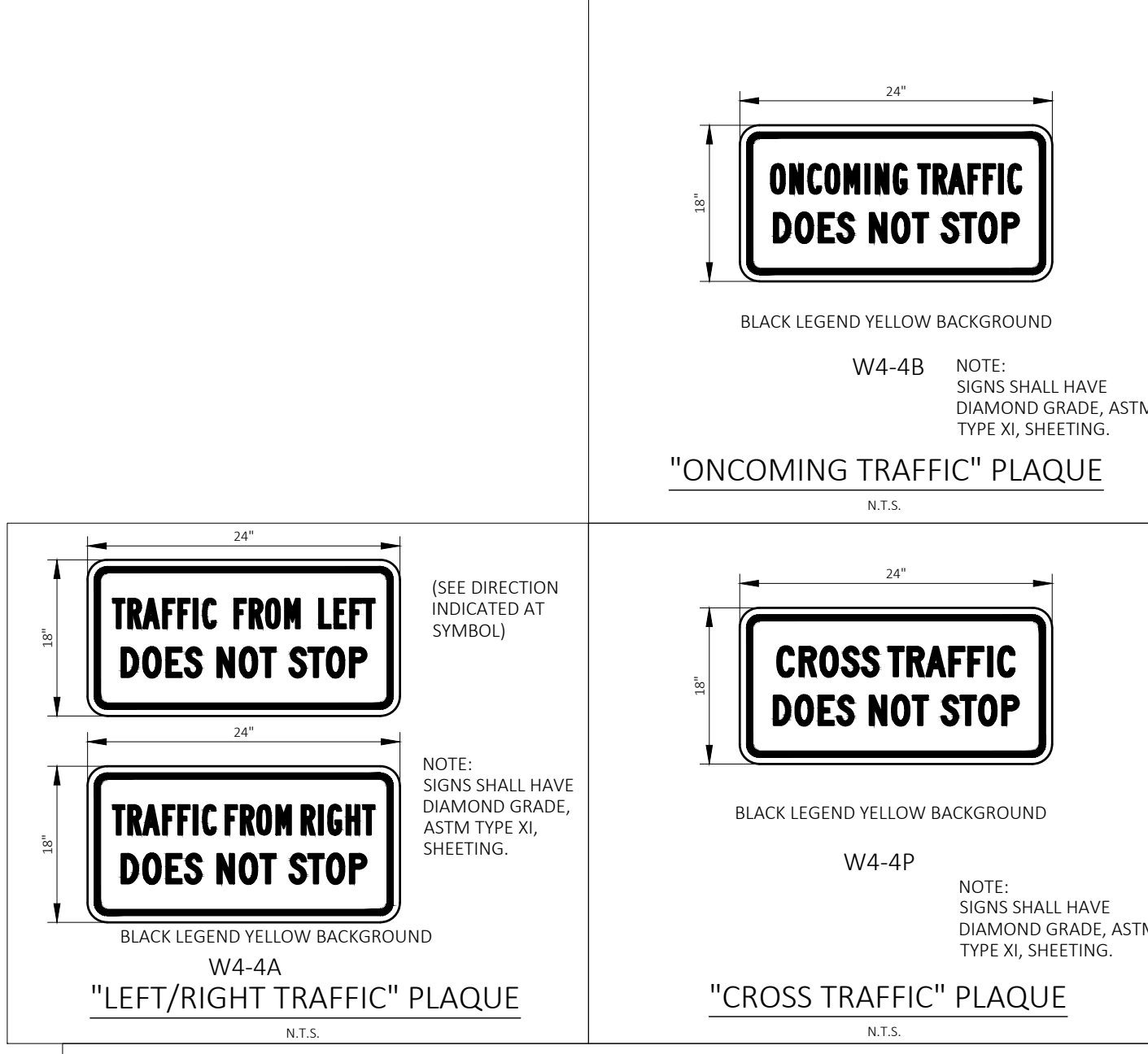
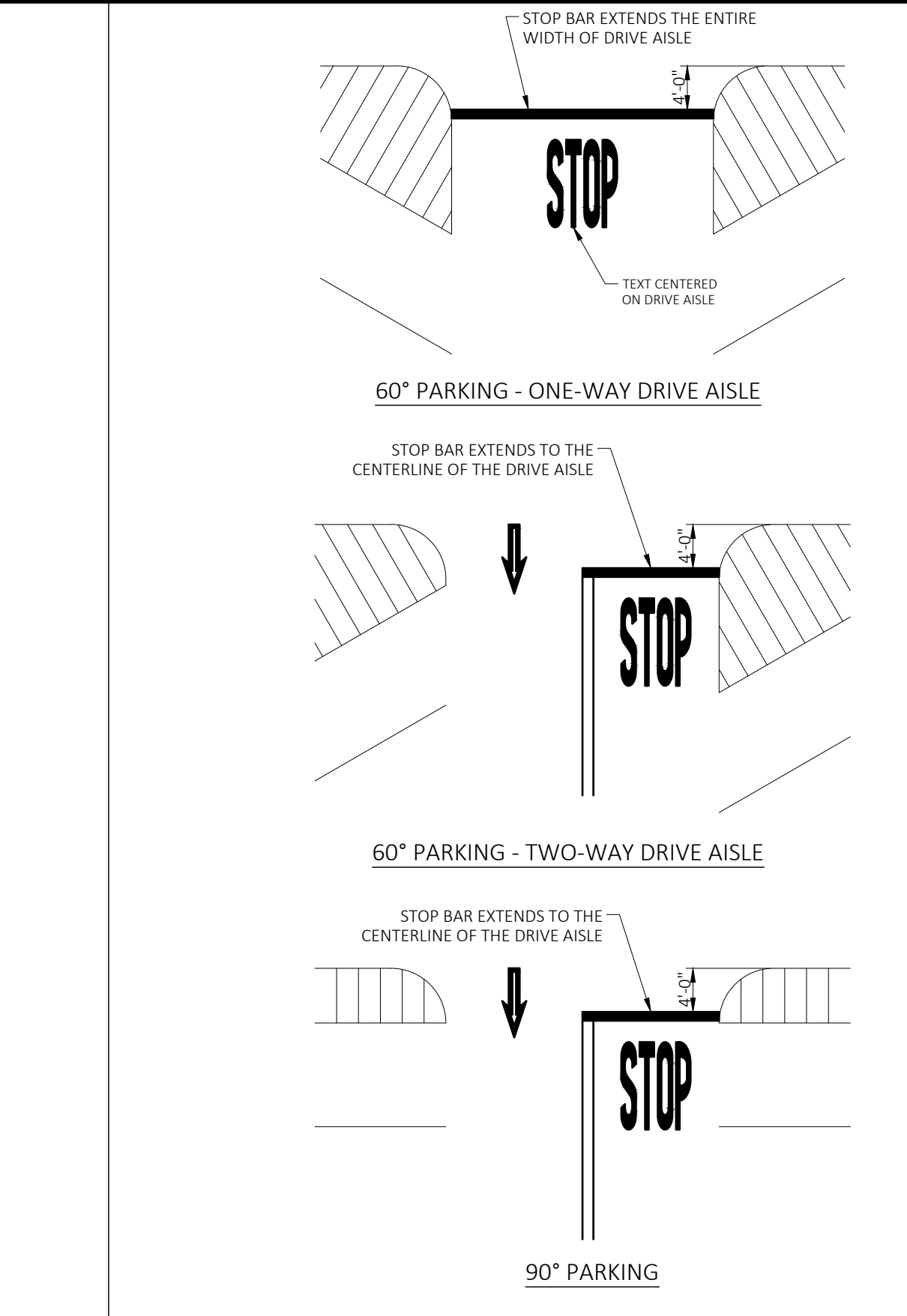
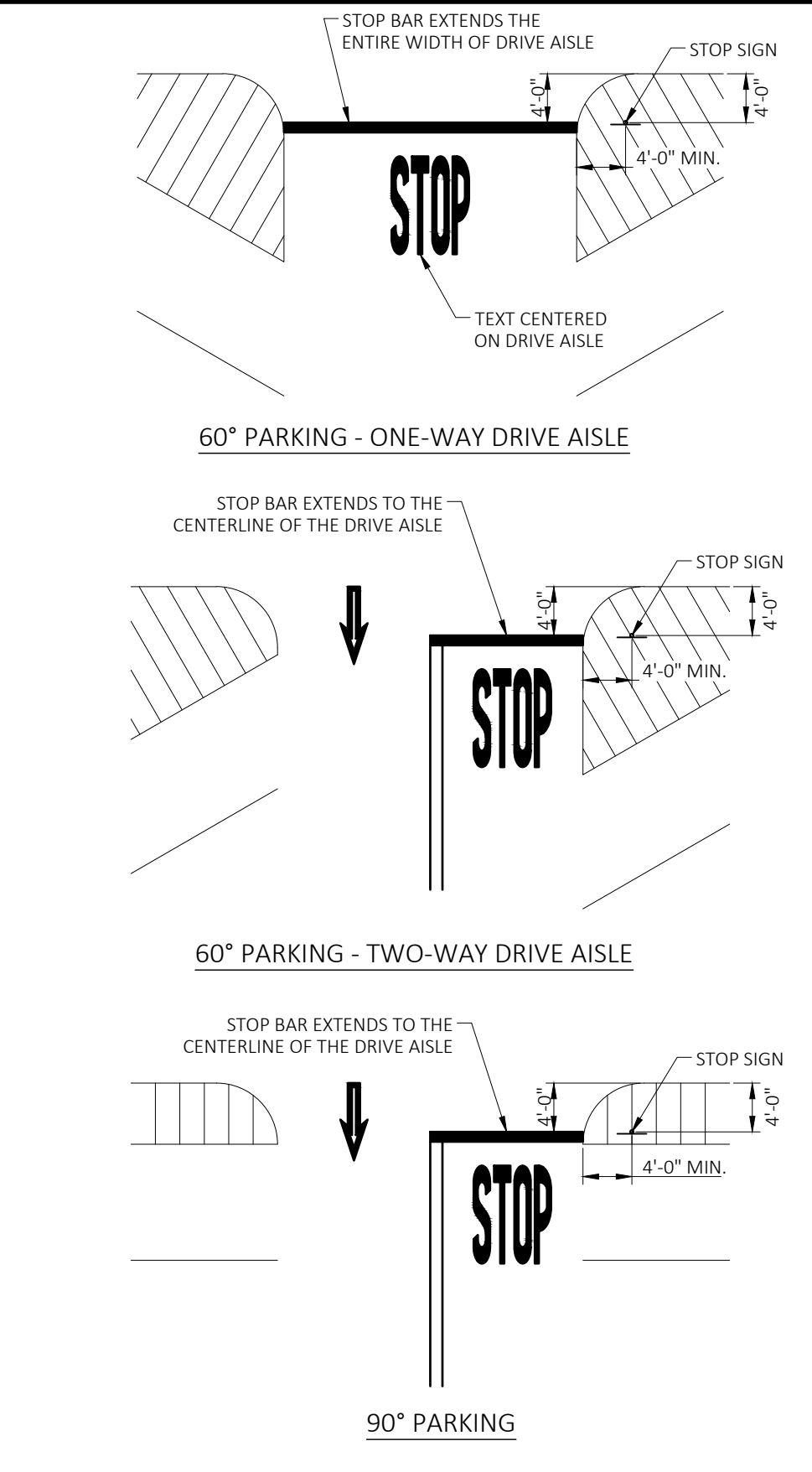
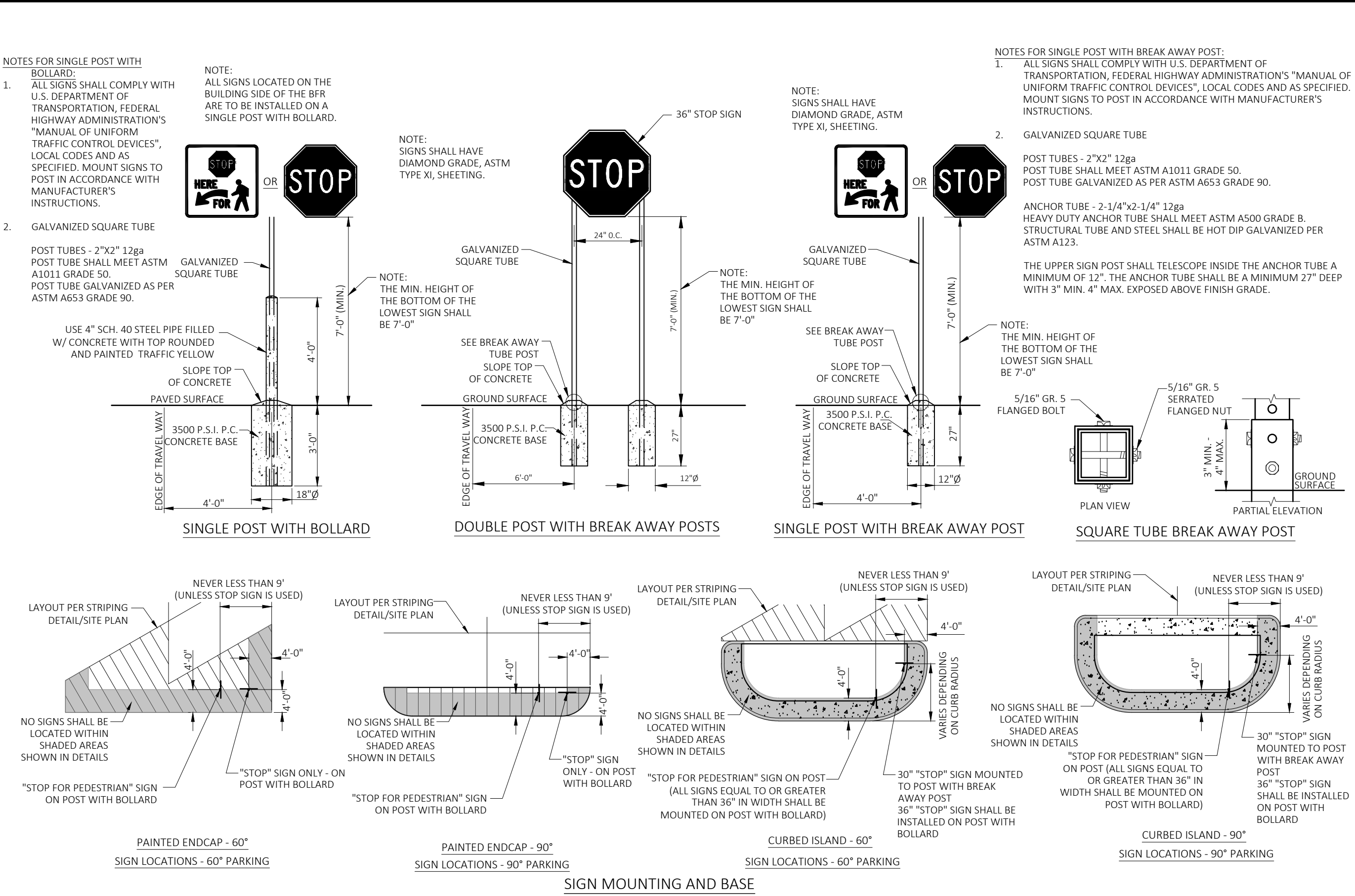
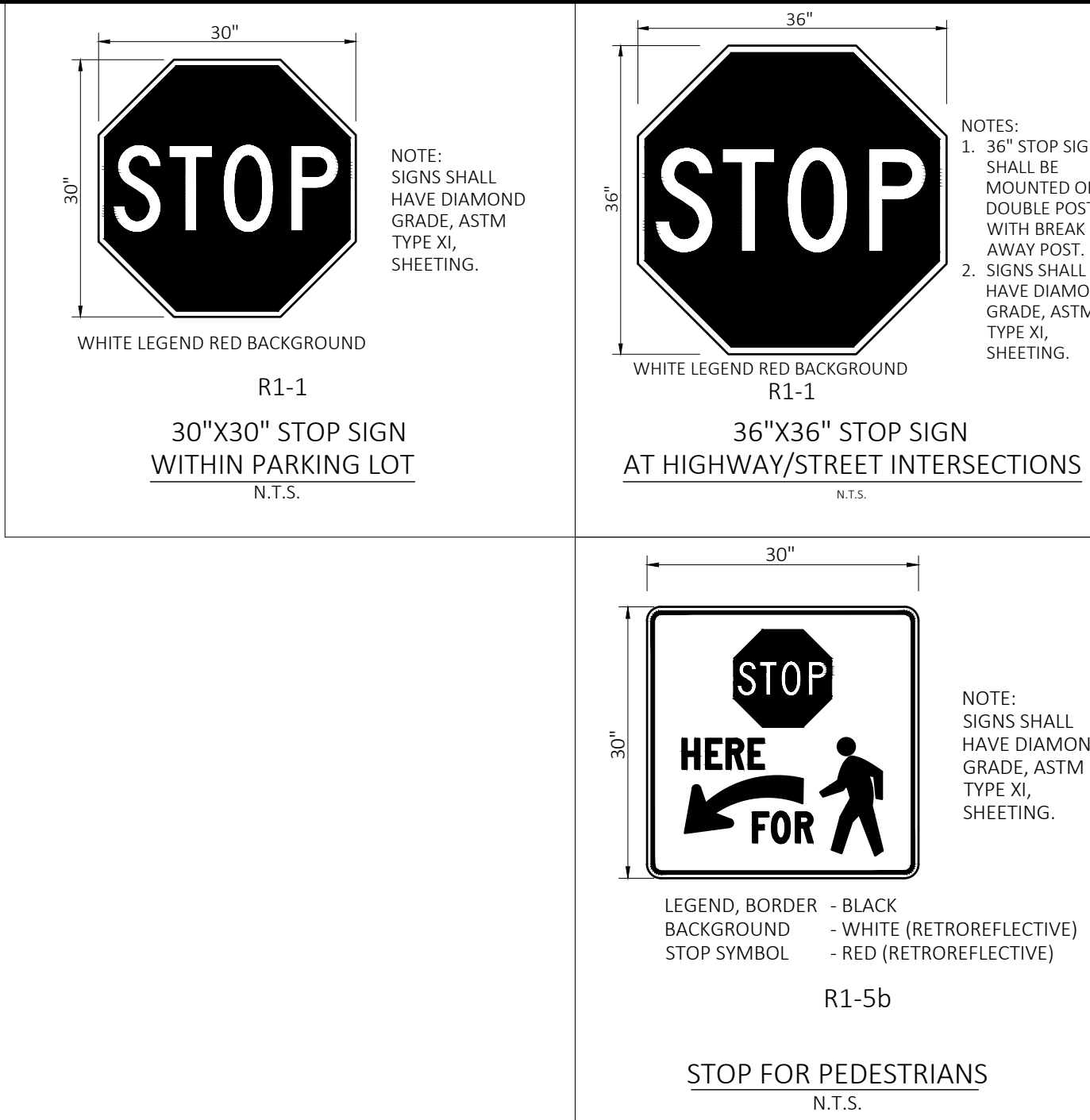
SUPERCENTER #5777-228
450 PROVIDENCE ROAD, TOWN OF BROOKLYN, CT
WAL-MART STORES, INC.
2001 SE 10TH STREET
BENTONVILLE, AR 72716



DRAWN BTJ/TJN
CHECKED JUC/GB
DATE 06/29/2023
SCALE AS NOTED
JOB No. MAA230031.00
SHEET

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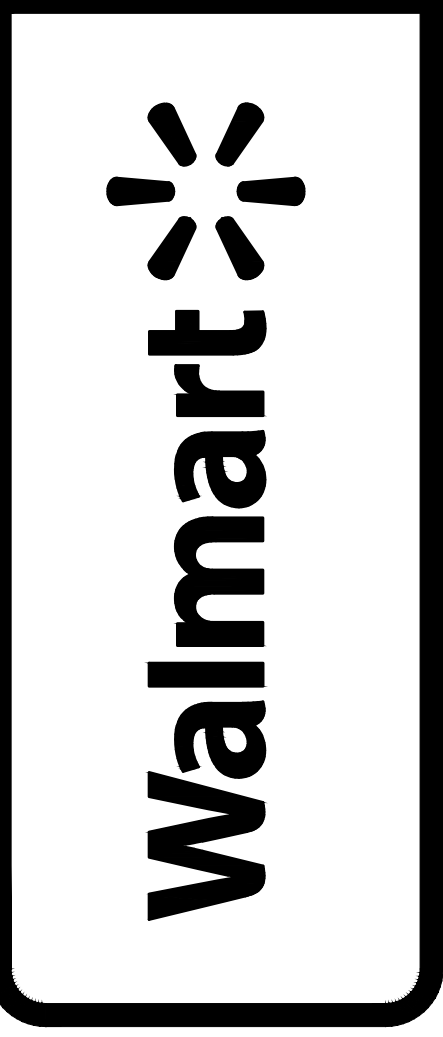
REVISIONS	BY

BOHLER

SITE CIVIL AND CONSULTING ENGINEERING
TRAFFIC CONTROL DEVICES PROGRAM
PROGRAM MANAGER
LAURENCE BOHLER
PERMITTING SERVICES
TOWN OF BROOKLYN, CT

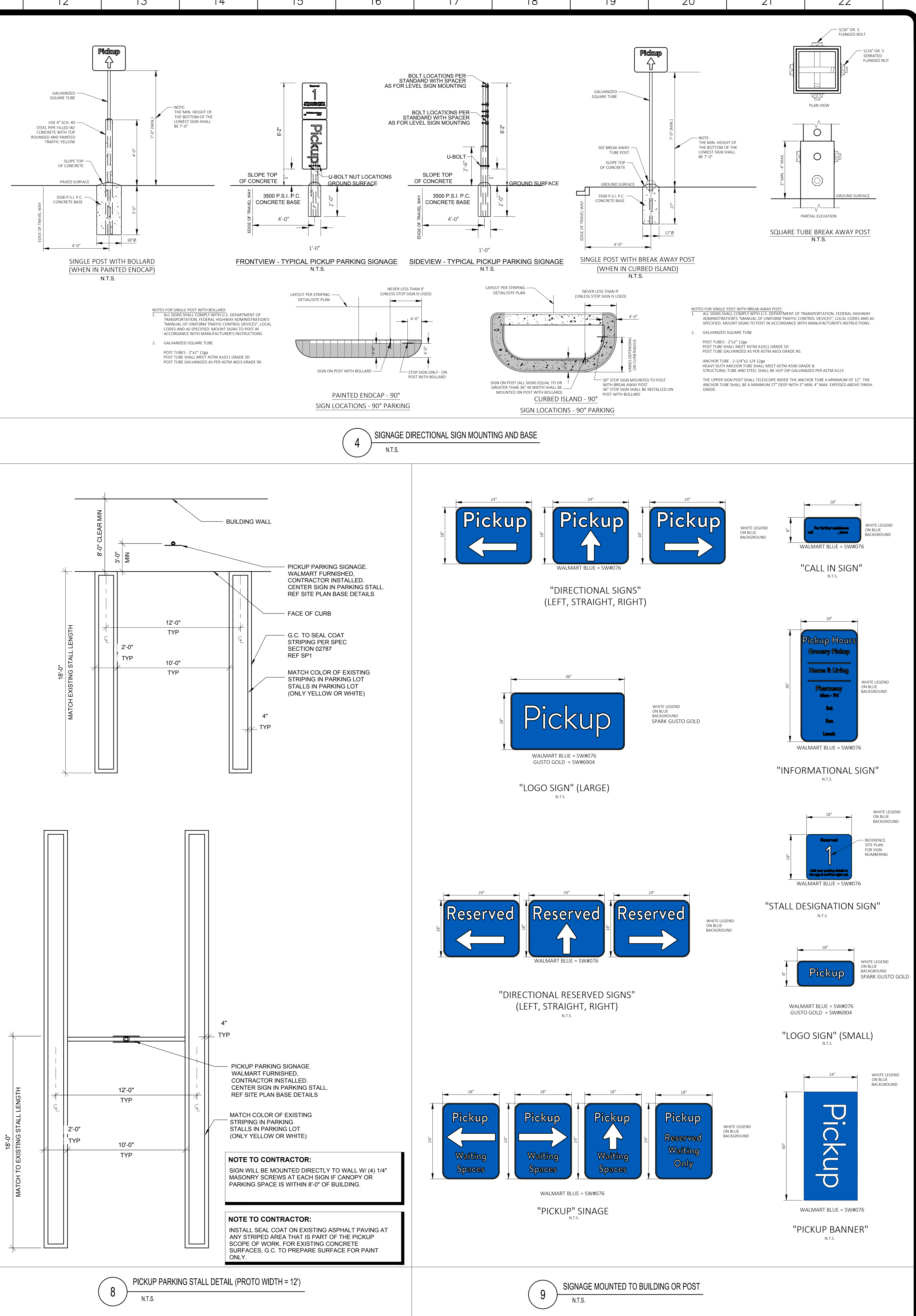
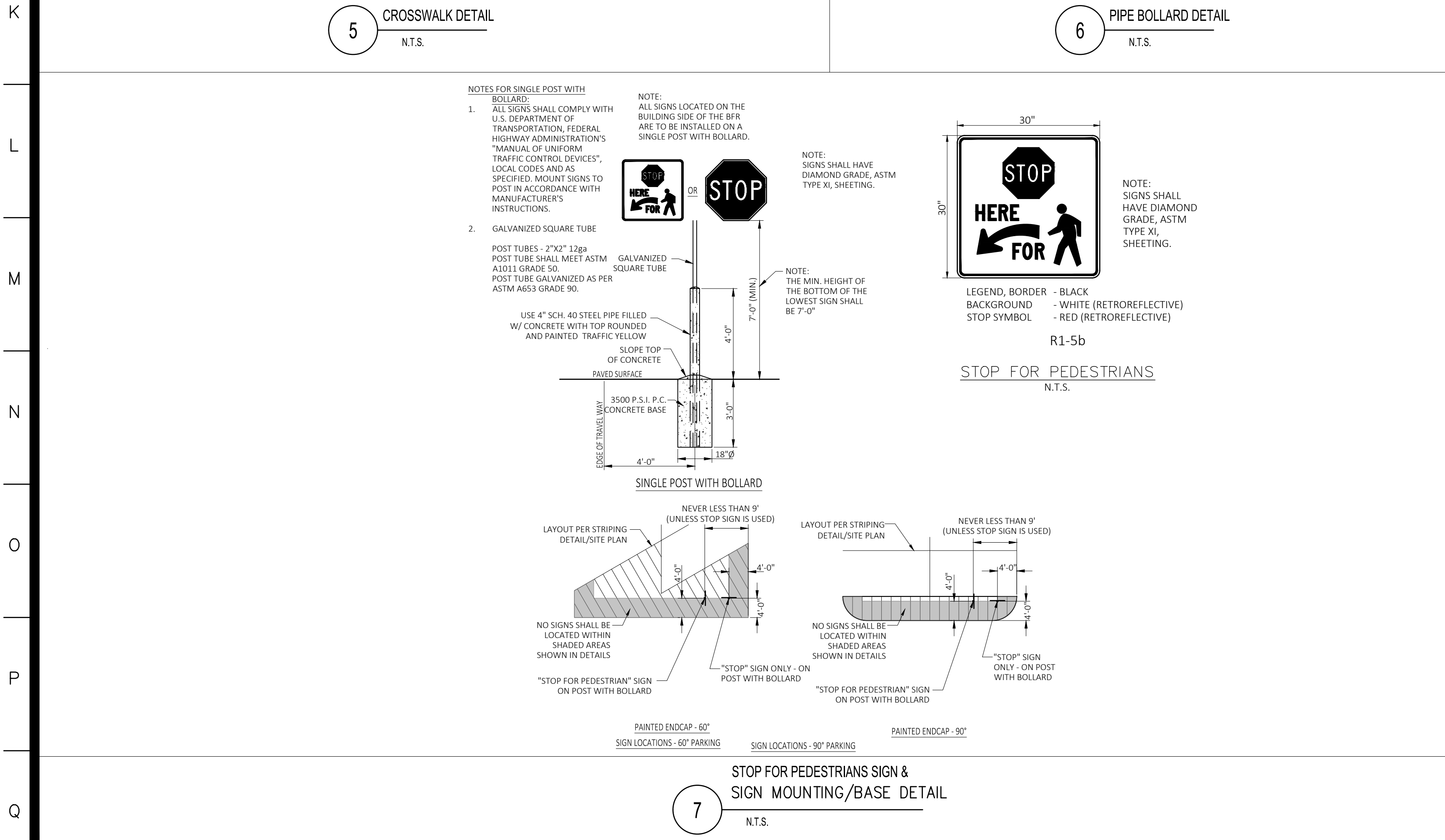
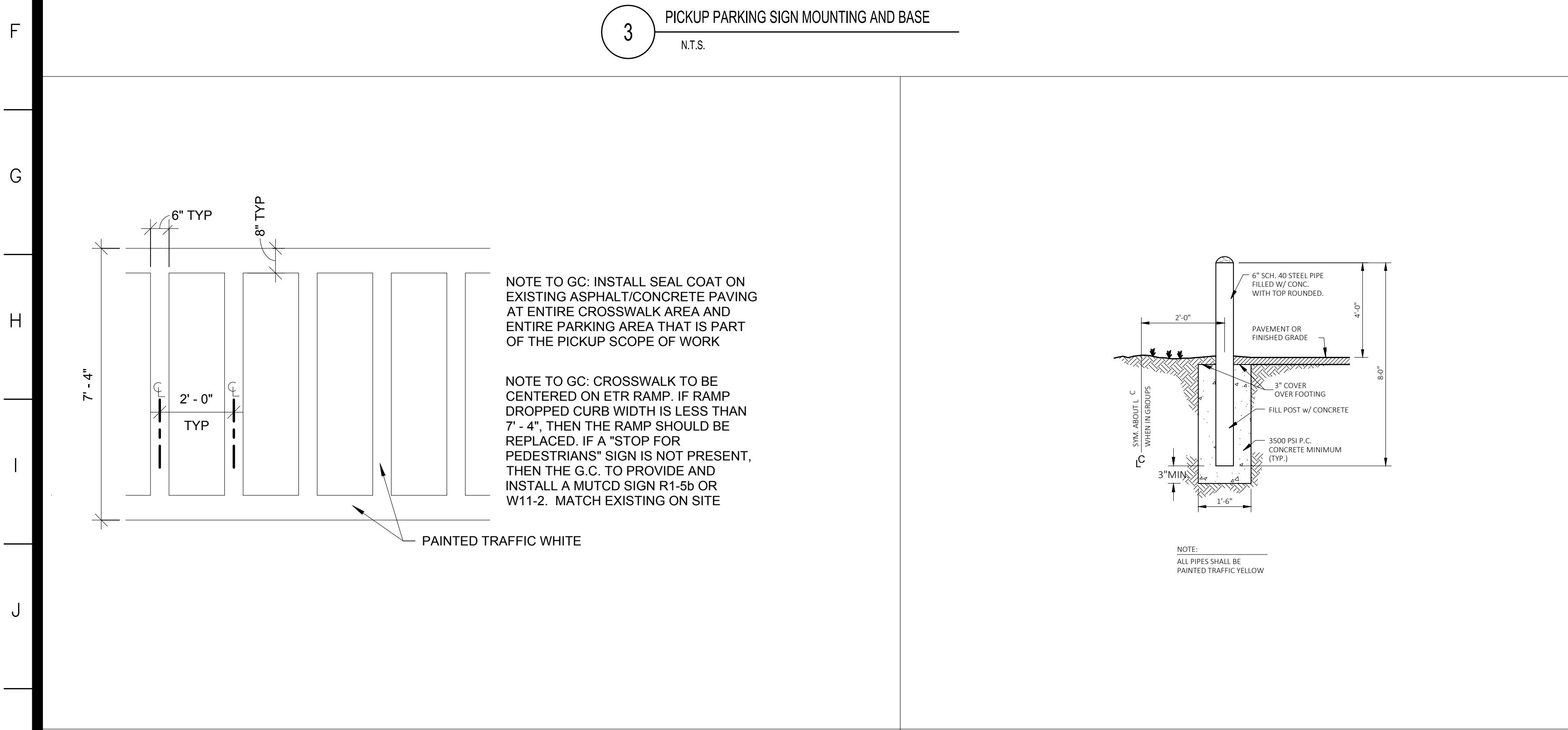
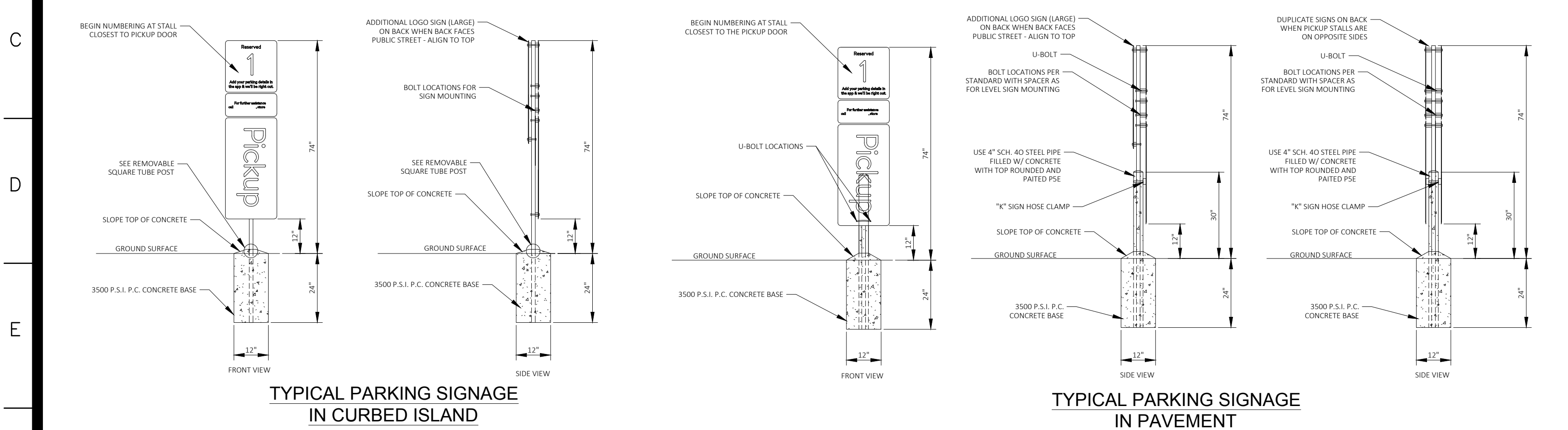
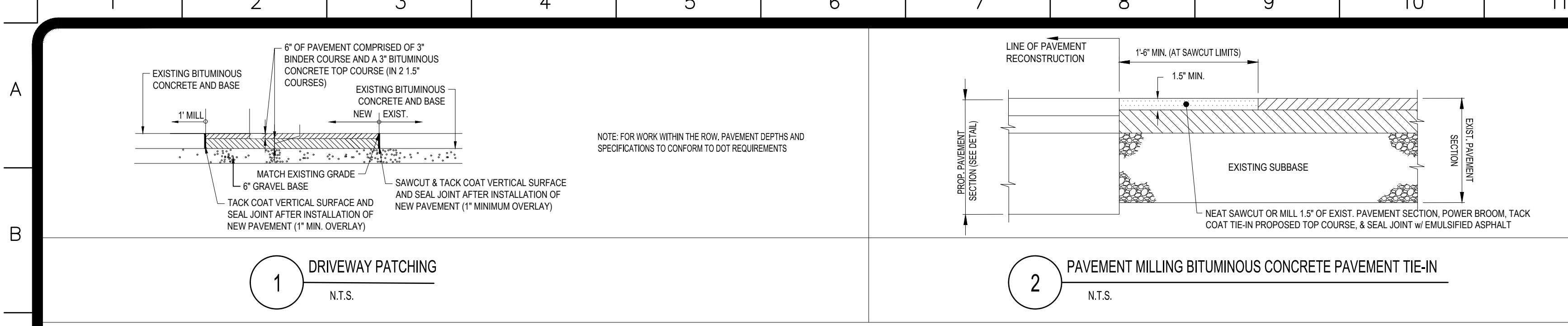


SUPERCENTER #5777-228
450 PROVIDENCE ROAD, TOWN OF BROOKLYN, CT
WAL-MART STORES, INC.
2001 SE 10TH STREET
BENTONVILLE, AR 72716



DRAWN BTJ/TJN
CHECKED JJC/GB
DATE 06/29/2023
SCALE AS NOTED
JOB No. MAA230031.00
SHEET SECP/SSM DETAILS

SECP AND STOP SIGNS AND MARKINGS DETAIL SHEET



REVISIONS

BY

BOHLER

SITE CIVIL AND CONSULTING ENGINEERING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
PERMITTING SERVICES
DESIGN

SEAL

REGISTERED PROFESSIONAL ENGINEER
No. 0416
STATE OF CONNECTICUT

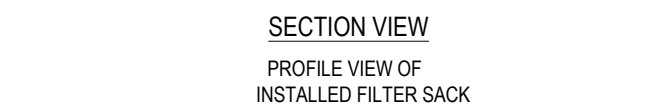
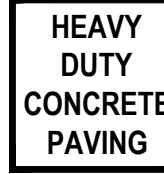
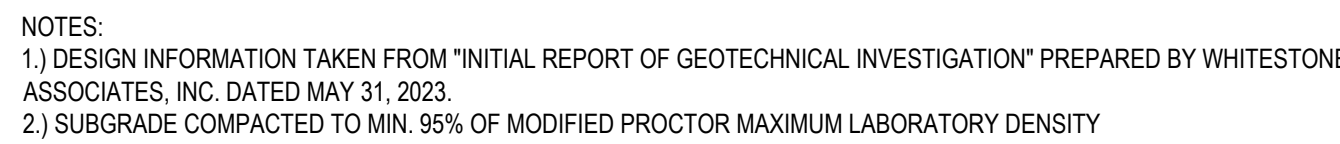
SUPERCENTER #5777-228
450 PROVIDENCE ROAD, TOWN OF BROOKLYN, CT
WAL-MART STORES, INC.
2001 SE 10TH STREET
BENTONVILLE, AR 72716

Walmart

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06/29/2023
SCALE
AS NOTED
JOB No.
MAA230031.00
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DTL-1

DETAIL SHEET



NOTE:
DO NOT USE IN PAVED AREAS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

1. REMOVE TRAPPED SEDIMENT WHEN BRIGHTLY COLORED EXPANSION RESTRAINT CAN NO LONGER BE SEEN.
2. GEOTEXTILE SHALL BE A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS REQUIREMENTS IN THE SPECIFICATIONS TABLE.
3. PLACE AN OIL ADSORBENT PAD OR PILLOW OVER INLET GRATE WHEN OIL SPILLS ARE A CONCERN.
4. INSPECT PER REGULATORY REQUIREMENTS.
5. THE WIDTH, "W", OF THE FILTER SACK SHALL MATCH THE INSIDE WIDTH OF THE GRATED INLET BOX.
6. THE DEPTH, "D", OF THE FILTER SACK SHALL BE BETWEEN 18 INCHES AND 36 INCHES.
7. THE LENGTH, "L", OF THE FILTER SACK SHALL MATCH THE INSIDE LENGTH OF THE GRATED INLET BOX.

BOHLER

SITE CIVIL AND CONSULTING ENGINEERING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

BOHLER & ASSOCIATES, INC., A PROFESSIONAL CORPORATION
A SUBSIDIARY OF CH2M HILL, INC.
CH2M HILL IS AN EQUAL OPPORTUNITY EMPLOYER. WOMEN AND MINORITIES ARE ENCOURAGED TO APPLY.

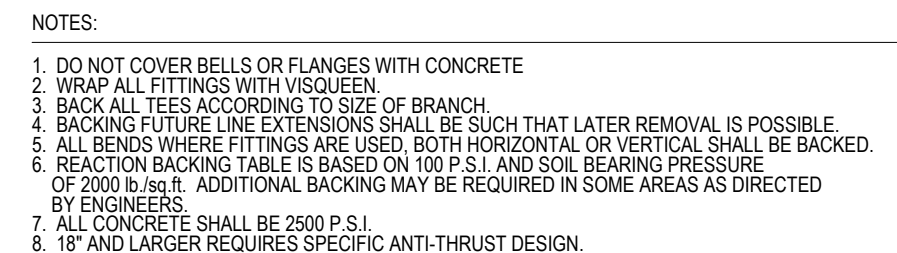
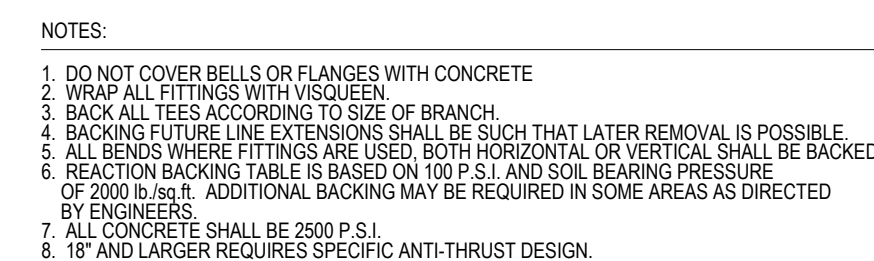
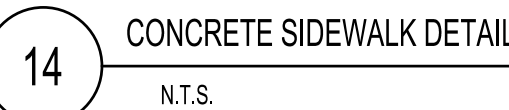


SUPERCENTER #5777-228
450 PROVIDENCE ROAD, T
WAL-MART STORES, INC.
2001 SE 10TH STREET
BENTONVILLE, AR 72716



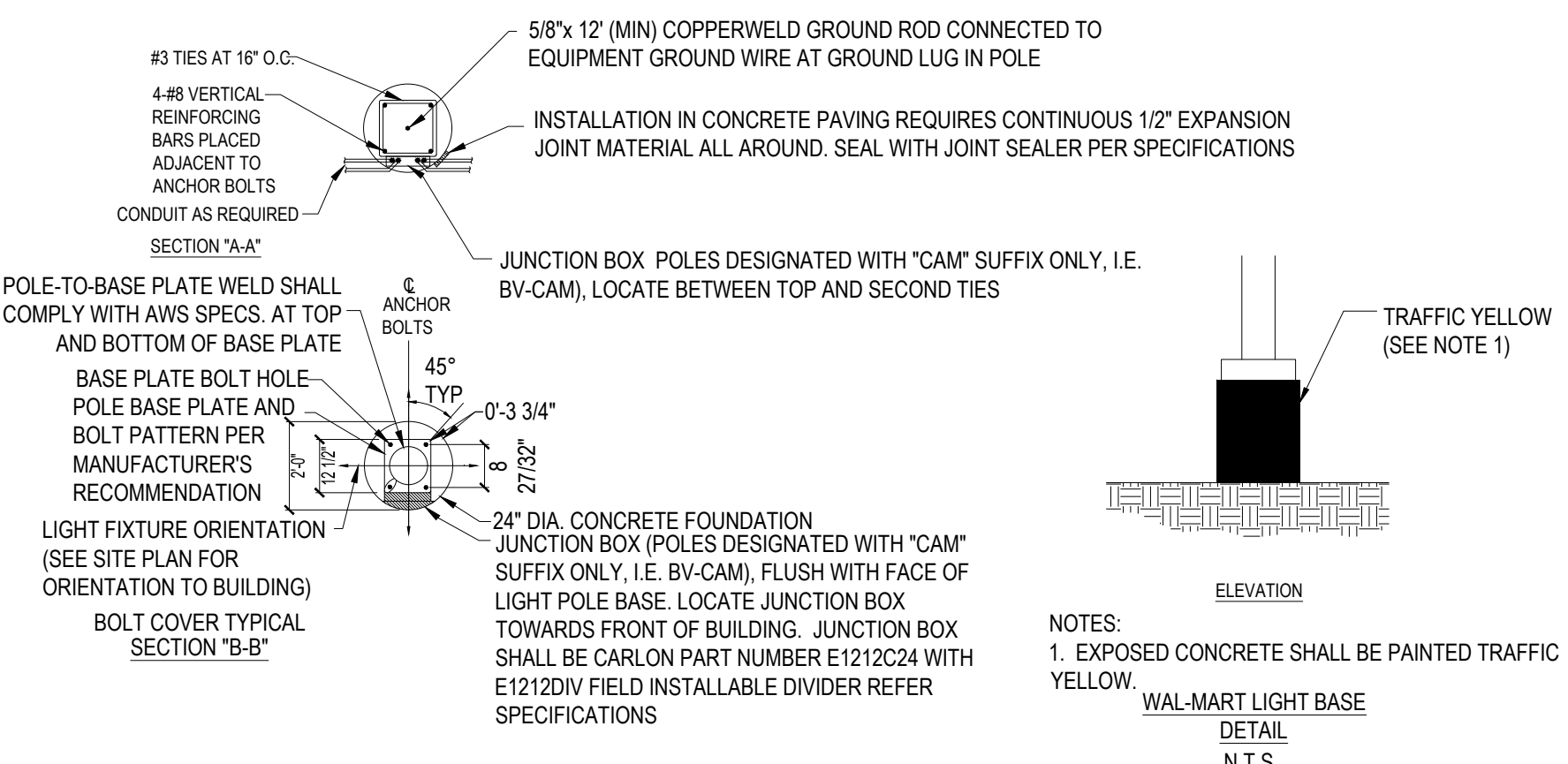
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DATE 06/29/2023
SCALE AS NOTED
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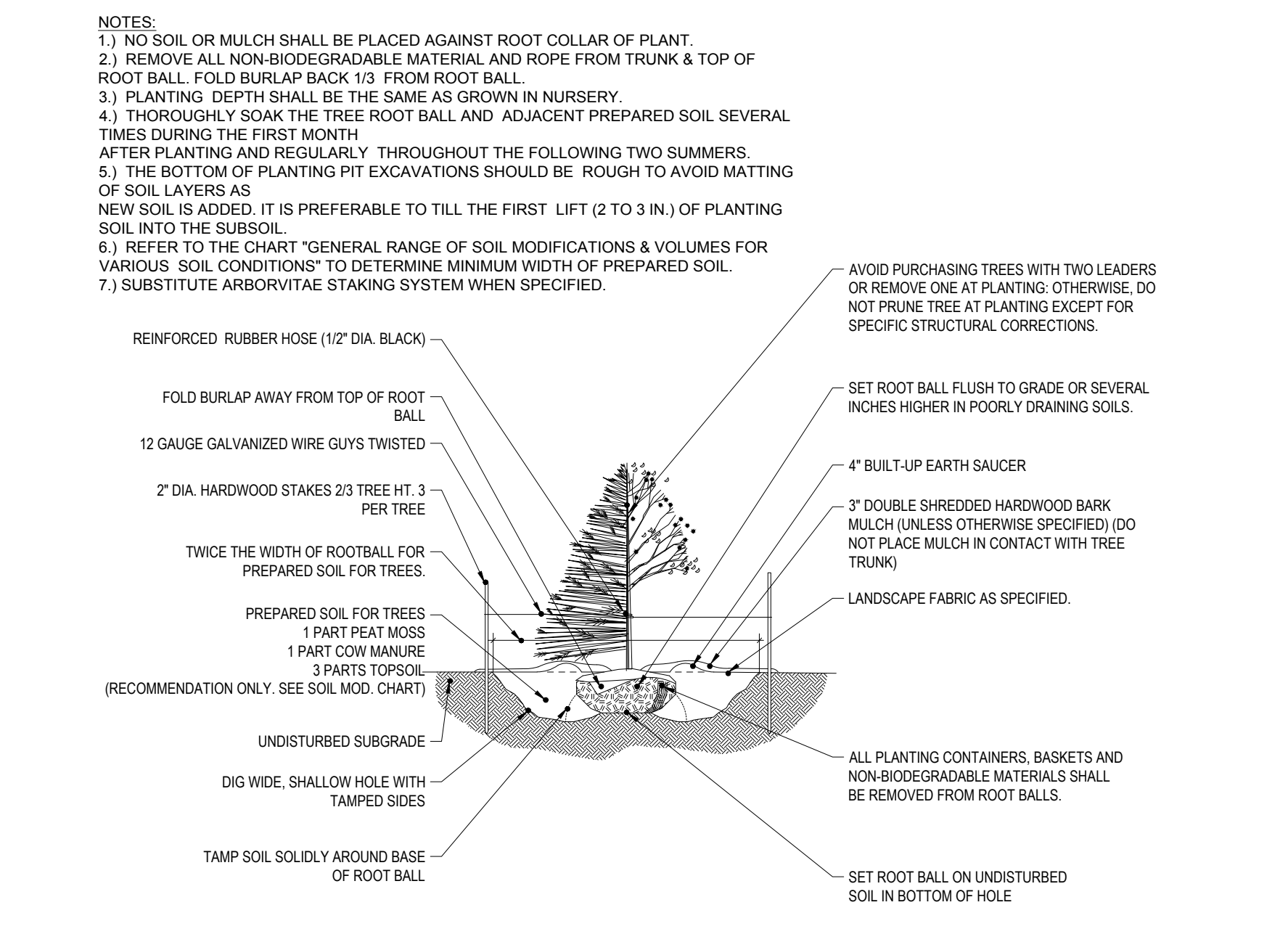
DETAIL SHEET

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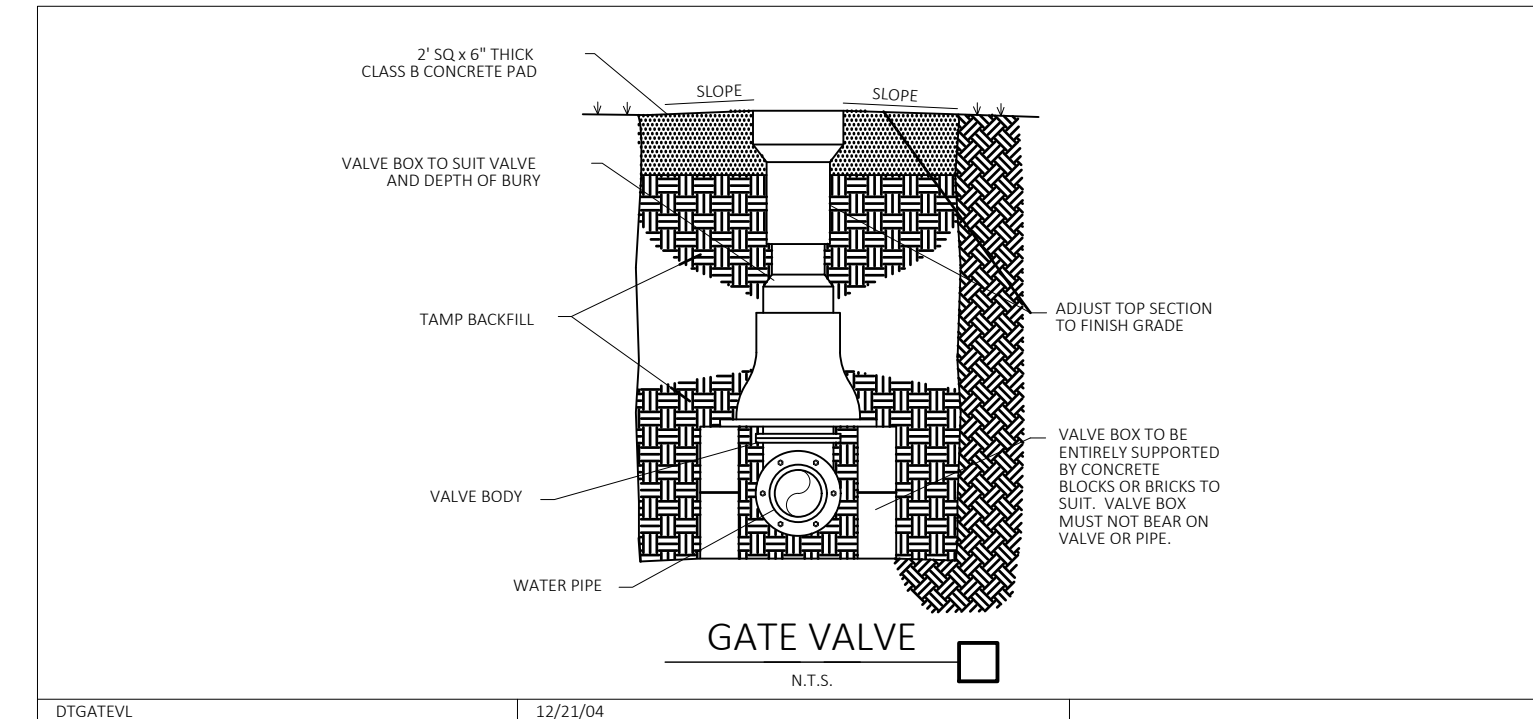


- NOTES:
- 3500 PSI MIN. 28 DAY COMPRESSIVE STRENGTH CONCRETE WITH GRADE 60 REINFORCING STEEL.
 - IF WATER IS PRESENT IN HOLE, REMOVE BEFORE POURING CONCRETE.
 - FOUNDATION EXCAVATION SHALL BE BY 24" AUGER IN UNDISTURBED OR PROPERLY COMPACTED FILL PER SPECIFICATIONS.
 - FOUNDATION SHALL HAVE A MINIMUM ALLOWABLE END BEARING OF 2000 PSF.
 - FOUNDATION HAS BEEN DESIGNED FOR A COHESIVE SOIL BASED ON A MINIMUM COHESIVE VALUE OF 1000 PSF.
 - FOUNDATION HAS BEEN DESIGNED FOR A GRANULAR SOIL BASED ON A MINIMUM LATERAL SOIL PRESSURE OF 1000 PSF, UTILIZING AASHTO FIGURE 1.8.2C(4) OF "EMBEDMENT OF POSTS WITH OVERTURNING LOADS".
 - DETAIL FOR 39" POLE WITH MAX. FIXTURE EPA 4.6 SQ. FT.
 - ALL LIGHT POLE BASE FOUNDATIONS SHALL BE CAST-IN-PLACE, PRE-CAST LIGHT POLE BASE FOUNDATIONS ARE NOT ACCEPTABLE.

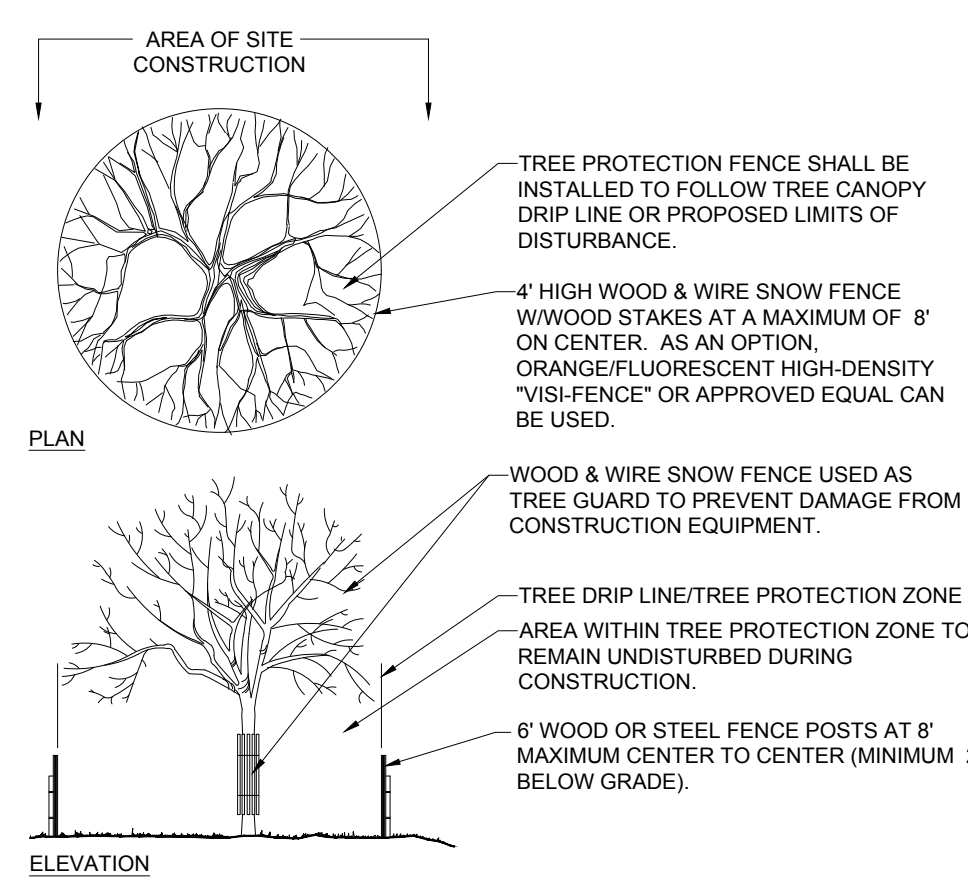
19 TYPICAL LIGHTING POLE BASE DETAIL
N.T.S.



22 TREE PLANTING DETAIL
N.T.S.



20 GATE VALVE
N.T.S.



23 TREE PROTECTION DURING SITE CONSTRUCTION
N.T.S.

Diagram 21: Inserta Tee Detail. This drawing shows a cross-section of an inserta tee connection. It includes labels for the tee, pipe, and surrounding backfill. Notes specify the use of 4" x 4" x 2 3/4" junction boxes and the requirement for a 2" degree liquid-tight connector. The drawing is labeled 'N.T.S.' (Not To Scale).

NOTES:

- ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION.
- MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
- THE INSERTA TEE® CONNECTION SHOULD NOT BE PLACED AT AN ANGLE EXCEEDING 45° FROM THE SPRINGLINE. GREATER ANGLES ARE SUBJECT TO DESIGN ENGINEER APPROVAL AND MAY REQUIRE PREMIUM BACKFILL.
- FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
- BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III, THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER, UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm), 6" (150mm) FOR 30"-60" (750mm-1500mm).
- INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
- MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

PIPE DIA.	MIN. TRENCH WIDTH
4" (100mm)	28" (711mm)
6" (150mm)	30" (762mm)
8" (200mm)	32" (813mm)
10" (250mm)	34" (864mm)
12" (300mm)	36" (914mm)
14" (350mm)	38" (965mm)
16" (400mm)	40" (1016mm)
18" (450mm)	42" (1067mm)
20" (500mm)	44" (1118mm)
22" (550mm)	46" (1168mm)
24" (600mm)	48" (1219mm)
26" (650mm)	50" (1270mm)
28" (700mm)	52" (1321mm)
30" (750mm)	54" (1372mm)
32" (800mm)	56" (1423mm)
34" (850mm)	58" (1473mm)
36" (900mm)	60" (1524mm)
38" (950mm)	62" (1575mm)
40" (1000mm)	64" (1626mm)
42" (1050mm)	66" (1677mm)
44" (1100mm)	68" (1728mm)
46" (1150mm)	70" (1778mm)
48" (1200mm)	72" (1829mm)
50" (1250mm)	74" (1880mm)
52" (1300mm)	76" (1930mm)
54" (1350mm)	78" (1981mm)
56" (1400mm)	80" (2032mm)
58" (1450mm)	82" (2083mm)
60" (1500mm)	84" (2134mm)

RECOMMENDED MINIMUM TRENCH WIDTHS

REV.	DESCRIPTION	BY	DATE	CHK'D
1	REV. DRAWING NAME OR NUMBER	TJR	01/28/16	

ADVANCED DRAINAGE SYSTEMS, INC. (ADS) HAS PREPARED THIS DETAIL BASED ON INFORMATION PROVIDED TO ADS. THE DRAWING IS INTENDED TO DEPICT THE COMPONENTS AS REQUESTED. ADS HAS NOT RESPONDED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT. ADS HAS NOT RESPONDED TO ANY REQUESTS FOR INFORMATION SUPPLIED. THE INSTALLATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO INSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THE PROJECT.

INSERTA TEE DETAIL (HDPE)

DRAWING NUMBER: STD-1011

4DS 4640 TRULEMAN BLVD. HELLMS, OHIO 43026

SCALE: N.T.S.

DATE: 01/28/16

BY: TJR

CHK'D: [Signature]

21 INSERTA TEE DETAIL
N.T.S.

REVISIONS	BY

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
PERMITTING SERVICES
DESIGN-BUILD
CONSTRUCTION MANAGEMENT

Walmart

SUPERCENTER #5777-228
450 PROVIDENCE ROAD, TOWN OF BROOKLYN, CT
WAL-MART STORES, INC.
2001 SE 10TH STREET
BENTONVILLE, AR 72716

Walmart

DRAWN	BTJ/TJN
CHECKED	JUC/GB
DATE	06/29/2023
SCALE	AS NOTED
JOB No.	MAA230031.00
SHEET	

SCHEDULE B,

GENERAL EXCEPTIONS 1 AND 2, ARE NOT SURVEY RELATED AND HAVE NOT BEEN COMMENTED ON AS A PART OF THIS SURVEY.

3. EASEMENT IN FAVOR OF THE CONNECTICUT LIGHT AND POWER COMPANY DATED AUGUST 5, 1954 AND RECORDED IN VOLUME 32 AT PAGE 168 OF THE BROOKLYN LAND RECORDS, **CONNECTICUT LIGHT AND POWER COMPANY EASEMENT SHOWN HEREON.**

4. EASEMENT IN FAVOR OF THE CONNECTICUT LIGHT AND POWER COMPANY DATED FEBRUARY 8, 1972 AND RECORDED IN VOLUME 52 AT PAGE 436 OF THE BROOKLYN LAND RECORDS, **CONNECTICUT LIGHT AND POWER COMPANY EASEMENT SHOWN HEREON.**

5. EASEMENT GRANTED BY WALTER E. SANDHOLM AND VIOLET J. SANDHOLM TO THE CONNECTICUT LIGHT AND POWER COMPANY BY INSTRUMENT DATED JUNE 28, 1977 AND RECORDED JULY 12, 1977 IN VOLUME 54 AT PAGE 561; AS MODIFIED BY MODIFICATION OF ELECTRIC DISTRIBUTION EASEMENT DATED OCTOBER 25, 2012 AND RECORDED NOVEMBER 5, 2012 IN VOLUME 515 AT PAGE 221 OF THE BROOKLYN LAND RECORDS, **CONNECTICUT LIGHT AND POWER COMPANY EASEMENT SHOWN HEREON.**

6. SLOPE EASEMENT IN FAVOR OF THE STATE OF CONNECTICUT AS SET FORTH IN A NOTICE OF CONDEMNATION DATED AUGUST 16, 2001 AND RECORDED IN VOLUME 246 AT PAGE 371 OF THE BROOKLYN LAND RECORDS, **SLOPE EASEMENT SHOWN HEREON.**

7. ENCROACHMENT PERMIT ISSUED BY THE DEPARTMENT OF TRANSPORTATION BUREAU OF ENGINEERING & HIGHWAY OPERATIONS, STATE OF CONNECTICUT DATED OCTOBER , 2007 AND RECORDED OCTOBER 15, 2007 IN VOLUME 426 AT PAGE 170 OF THE BROOKLYN LAND RECORDS, **PERMIT FOR RECONSTRUCTION OF SITE ENTRANCE & TRAFFIC IMPROVEMENTS; NOT PLOTTABLE.**

8. TRAFFIC INVESTIGATION REPORT BY THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION DATED FEBRUARY 15, 2011 AND RECORDED IN VOLUME 494 AT PAGE 182 OF THE BROOKLYN LAND RECORDS. SEE ALSO CERTIFICATE (NO. 1864) ISSUED BY THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION DATED MARCH 13, 2012 AND RECORDED IN VOLUME 503 AT PAGE 167 OF THE SAID LAND RECORDS. REFER TO CERTIFICATE DATED JANUARY 15, 2013 AND RECORDED JANUARY 29, 2013 IN VOLUME 520 AT PAGE 210 OF THE BROOKLYN LAND RECORDS, **PERMANENT TRAFFIC SIGNAL & MAINTENANCE EASEMENT SHOWN HEREON.**

9. TERMS AND PROVISIONS SET FORTH IN AN EASEMENT AGREEMENT BY AND BETWEEN WAL-MART REAL ESTATE BUSINESS TRUST AND FCR REALTY, LLC DATED JUNE 12, 2012 AND RECORDED IN VOLUME 506 AT PAGE 252 OF THE BROOKLYN LAND RECORDS, **ACCESS EASEMENT SHOWN HEREON.**

10. EASEMENT TO THE STATE OF CONNECTICUT DATED SEPTEMBER 18, 2012 AND RECORDED SEPTEMBER 25, 2012 IN VOLUME 513 AT PAGE 149 OF THE BROOKLYN LAND RECORDS, **RIGHT OF WAY EASEMENT SHOWN HEREON.**

11. ENCROACHMENT PERMIT ISSUED BY THE DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY OPERATIONS, STATE OF CONNECTICUT DATED APRIL 8, 2013 AND RECORDED MAY 9, 2013 IN VOLUME 526 AT PAGE 176 OF THE BROOKLYN LAND RECORDS, **PERMIT FOR RIGHT OF WAY TRAFFIC IMPROVEMENTS; NOT PLOTTABLE.**

12. PRIVATE CONSERVATION EASEMENT AGREEMENT TO THE TOWN OF BROOKLYN DATED JULY 31, 2013 AND RECORDED SEPTEMBER 9, 2013 IN VOLUME 532 AT PAGE 288 OF THE BROOKLYN LAND RECORDS, **PRIVATE CONSERVATION EASEMENT SHOWN HEREON.**

13. NOTES, NOTATIONS, EASEMENTS AND CONDITIONS SHOWN ON MAP VOLUME 20, PAGES 17, 18, 19, 20, 21, 22, 23, 24V, 81, 82, 88, 89, 90, 91 AND 92, AND MAP VOLUME 21, PAGES 27, 28, 37, 38, 64, 73, 74, 75, 76, 77 AND 79 ON FILE IN THE BROOKLYN TOWN CLERK'S OFFICE, **MATTERS SHOWN HEREON.**

14. RIGHTS OF OTHERS IN AND TO THE APPURTENANT RIGHT OF WAY AND EASEMENTS REFERENCED IN SCHEDULE A, **MATTERS SHOWN HEREON.**

EXHIBIT "A" LEGAL DESCRIPTION COMMITMENT No. 23000030404 WITH AN EFFECTIVE DATE OF MAY 05, 2022

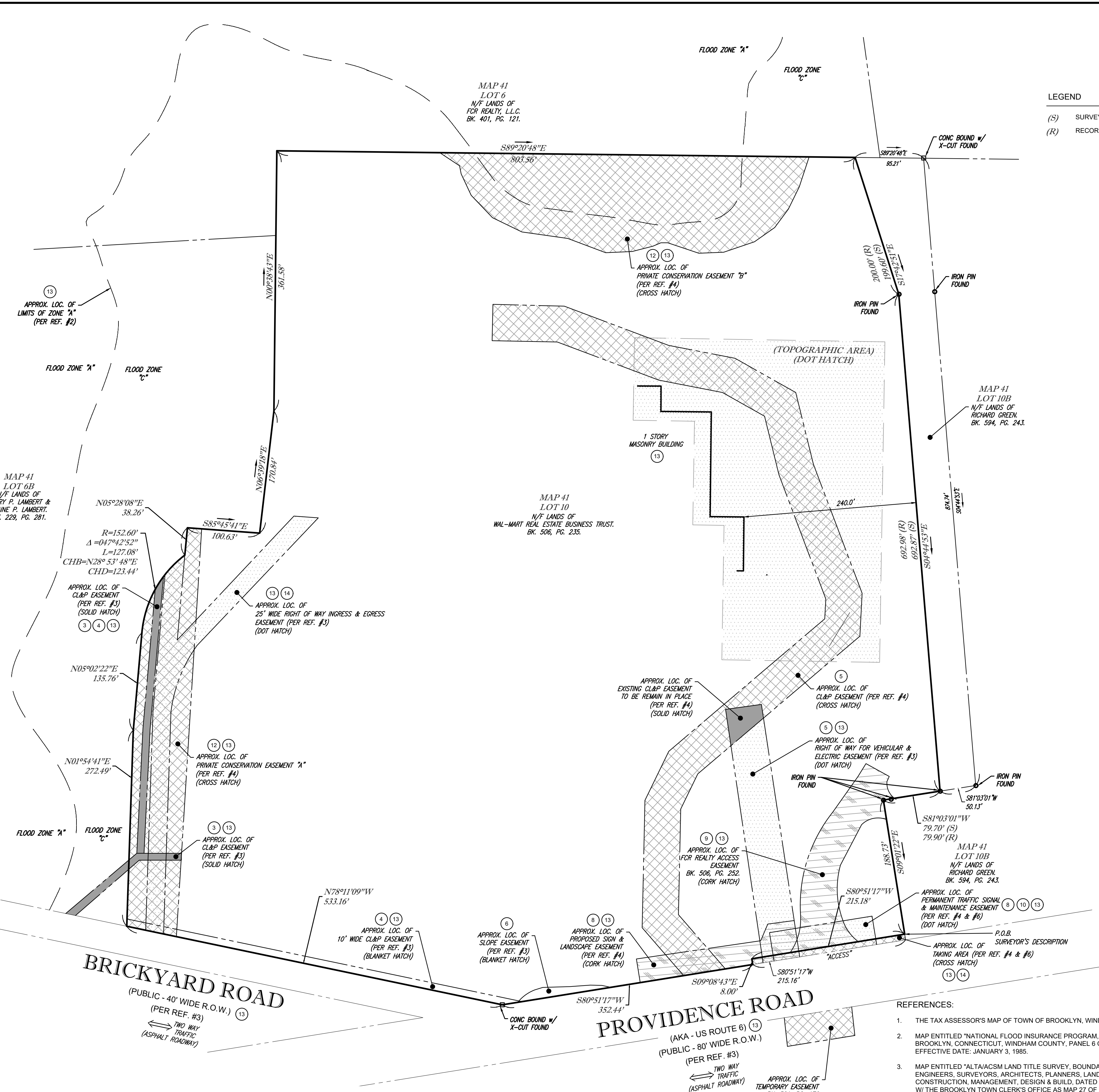
ALL THAT CERTAIN PIECE OR PARCEL OF LAND, WITH THE BUILDINGS AND IMPROVEMENTS THEREON, SITUATED IN THE TOWN OF BROOKLYN, COUNTY OF WINDHAM AND STATE OF CONNECTICUT, BEING SHOWN ON A CERTAIN SURVEY ENTITLED "ALTA/ACSM LAND TITLE SURVEY COVER PAGE WAL-MART STORE NO. 5777-00, ROUTE 6 & BRICKYARD ROAD, TOWN OF BROOKLYN, COUNTY OF WINDHAM, CONNECTICUT DATE OF FIELD SURVEY: 11/28/07 JOB NO.: W13488", LAST REVISED MAY 18, 2012, MADE BY CPH, VERNON, CT, AND ON FILE IN THE BROOKLYN LAND RECORDS. SAID PREMISES ARE MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT 50.66 FEET FROM THE SOUTHWEST CORNER OF LAND NOW OR FORMERLY OF PHILLIP STEDMAN AT THE NORTH STREET LINE OF BRICKYARD ROAD, SAID POINT BEING THE SOUTHWEST CORNER OF THE HEREIN DESCRIBED PARCEL, THENCE N 02° 57' 48" E, 272.49 FEET TO A POINT, THENCE N 06° 05' 29" E, 135.76 FEET TO A POINT, THENCE ON AN ARC TO THE RIGHT CONTAINING A RADIUS OF 152.60 FEET, A CENTRAL ANGLE OF 47° 42' 52", AND A LENGTH OF 127.08 FEET TO A POINT, THENCE N 06° 51' 15" E, 38.26 FEET TO AN IRON PIN, THENCE S 84° 42' 34" E, 100.63 FEET TO A POINT, THENCE N 07° 42' 25" E, 170.84 FEET TO A POINT, THENCE N 01° 42' 50" E, 361.58 FEET TO A POINT, THENCE S 88° 27' 41" E, ALONG LAND NOW OR FORMERLY OF BROOKLYN DEVELOPMENT ASSOCIATES FOR A DISTANCE OF 803.56 FEET TO A POINT, THENCE S 16° 38' 44" E, ALONG LAND NOW OR FORMERLY OF BROOKLYN DEVELOPMENT ASSOCIATES, FOR A DISTANCE OF 199.60 FEET TO A POINT, THENCE S 03° 41' 46" E, ALONG LAND NOW OR FORMERLY OF BROOKLYN DEVELOPMENT ASSOCIATES, FOR A DISTANCE OF 692.87 FEET TO A POINT, THENCE S 82° 06' 08" W, ALONG LAND NOW OR FORMERLY OF ALBERT SANDHOLM 79.70 FEET TO A POINT, THENCE S 07° 58' 15" E, ALONG LAND NOW OR FORMERLY OF ALBERT SANDHOLM 196.73 FEET TO A POINT ON THE NORTH STREET LINE OF U.S. ROUTE 6 (PROVIDENCE ROAD), THENCE ALONG THE NORTH STREET LINE OF U.S. ROUTE 6 (PROVIDENCE ROAD), S 81° 54' 24" W, 567.60 FEET TO A POINT ON THE NORTH STREET LINE OF BRICKYARD ROAD, THENCE ALONG THE NORTH STREET LINE OF BRICKYARD ROAD, N 77° 08' 02" W, 533.16 FEET TO THE POINT AND PLACE OF BEGINNING.

TOGETHER WITH A 25' RIGHT OF WAY AS RESERVED IN A WARRANTY DEED FROM BROOKLYN DEVELOPMENT ASSOCIATES TO STANLEY B. CRAWFORD AND SUSAN J. CRAWFORD DATED APRIL 10, 1980 AND RECORDED IN VOLUME 99 AT PAGE 688 OF THE BROOKLYN LAND RECORDS.

TOGETHER WITH THE EASEMENTS SET FORTH IN A TEMPORARY GRANT OF EASEMENT AGREEMENT BY AND BETWEEN ST. JOHN LUTHERAN CHURCH INC. AND WAL-MART REAL ESTATE BUSINESS TRUST DATED JANUARY 17, 2012 AND RECORDED IN VOLUME 501 AT PAGE 176 OF THE BROOKLYN LAND RECORDS.

LESS AND EXCEPTING THEREFROM THE PREMISES CONVEYED TO THE STATE OF CONNECTICUT SET FORTH IN A WARRANTY DEED DATED SEPTEMBER 18, 2012 AND RECORDED SEPTEMBER 25, 2012 IN VOLUME 513 AT PAGE 146 OF THE BROOKLYN LAND RECORDS.



LEGEND

(S) SURVEY DIMENSION
(R) RECORD DIMENSION

NOTES:

- THIS IS AN IMPROVEMENT LOCATION SURVEY PREPARED IN ACCORDANCE WITH THE STANDARDS OF A CLASS A-2 AND T-2 SURVEY AS DEFINED IN THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTION 20-300B, EFFECTIVE DATE JUNE 21, 1996, PARTIALLY AMENDED OCTOBER 26, 2018. THIS SURVEY IS ALSO PREPARED IN ACCORDANCE WITH THE MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT, ADOPTED ON AUGUST 29, 2019, BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS INC., THE BOUNDARY LINES SHOWN HEREON ARE BASED UPON A RESURVEY OF THE SUBJECT PROPERTY.
- PROPERTY KNOWN AS LOT 10 AS SHOWN ON THE TOWN OF BROOKLYN, WINDHAM COUNTY, STATE OF CONNECTICUT, MAP No. 41.
- AREA = 1,109,787 SQUARE FEET OR 25.477 ACRES.
- THE LOCATION OF ALL UNDERGROUND UTILITIES SHOWN ARE BASED UPON MARKOUT PROVIDED BY CONTROL POINT ASSOCIATES, INC. USING GROUND PENETRATING RADAR AND ELECTROMAGNETIC DETECTION EQUIPMENT. ALL LOCATIONS AND SIZES ARE BASED ON UTILITY MARK-OUTS, ABOVE GROUND STRUCTURES THAT WERE VISIBLE & ACCESSIBLE IN THE FIELD, AND THE MAPS AS LISTED IN THE REFERENCES AVAILABLE AT THE TIME OF THE SURVEY. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED AS TO THEIR LOCATION, SIZE, AND TYPE BY THE PROPER UTILITY COMPANIES.

THE SOURCE OF UNDERGROUND UTILITIES ARE SHOWN UTILIZING A QUALITY LEVEL SYSTEM:

QUALITY LEVEL D - UTILITIES SHOWN BASED UPON REFERENCE MAPPING OR ORAL HISTORY, NOT FIELD VERIFIED.

QUALITY LEVEL C - LOCATION OF UTILITY SURFACE FEATURES SUPPLEMENTS REFERENCE MAPPING, INCLUDES MARKOUT BY OTHERS.

QUALITY LEVEL B - UTILITY LOCATION DATA IS COLLECTED THROUGH GEOPHYSICAL, SENSING TECHNOLOGY TO SUPPLEMENT SURFACE FEATURES AND/OR REFERENCE MAPPING, INCLUDES MARKOUT BY CONTROL POINT ASSOCIATES, INC.

QUALITY LEVEL A - HORIZONTAL AND VERTICAL LOCATION OF UTILITIES ARE OBTAINED USING VACUUM EQUIPMENT EXCAVATION OR OTHER METHODS TO EXPOSE THE UTILITY. LOCATION SHOWN AT SINGLE POINT WHERE EXCAVATION OCCURRED UNLESS UTILITY WAS LOCATED PRIOR TO FILLING.

ALL FOUR TYPES MAY NOT BE PRESENT ON THIS SURVEY.

- THIS PLAN IS BASED ON INFORMATION PROVIDED BY CLIENT, A SURVEY PREPARED IN THE FIELD BY CONTROL POINT ASSOCIATES, INC., AND OTHER REFERENCE MATERIAL AS LISTED HEREON.
- THIS SURVEY WAS PREPARED WITH THE BENEFIT OF TITLE COMMITMENT OF TITLE INSURANCE PREPARED BY STEWART TITLE GUARANTY COMPANY, POLICY NUMBER: 23000030404, WITH AN EFFECTIVE DATE OF MAY 2, 2023 AND IS SUBJECT TO THE RESTRICTIONS, COVENANTS AND/OR EASEMENTS THAT MAY BE CONTAINED THEREIN, WHERE THE FOLLOWING DOCUMENTS APPEAR IN SCHEDULE B, SECTION 2.
- BY GRAPHIC PLOTTING ONLY PROPERTY IS PARTIALLY LOCATED IN FLOOD HAZARD ZONE C (AREAS AREAS OF MINIMAL FLOODING (NO SHADING)) AND PARTIALLY LOCATED IN FLOOD HAZARD ZONE A (AREAS OF 100 YEAR FLOOD, BASE FLOOD ELEVATIONS AND FLOOD HAZARD FACTOR NOT DETERMINED), PER REF. #2.
- THE EXISTENCE OF UNDERGROUND STORAGE TANKS, IF ANY, WAS NOT KNOWN AT THE TIME OF THE FIELD SURVEY.
- ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), BASED ON GPS OBSERVATIONS UTILIZING THE KEYSTONE VRS NETWORK (KEYNETGPS).
- TEMPORARY BENCH MARKS SET:
- TBM-A: X-CUT SET ON BOLT MAIN OUTLET OF FIRE HYDRANT, ELEVATION= 245.07'
- TBM-B: X-MAG NAIL SET IN ASPHALT PAVEMENT, ELEVATION= 242.45'
- PRIOR TO CONSTRUCTION IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT THE BENCHMARKS ILLUSTRATED ON THIS SKETCH HAVE NOT BEEN DISTURBED AND THEIR ELEVATIONS HAVE BEEN CONFIRMED. ANY CONFLICTS MUST BE REPORTED PRIOR TO CONSTRUCTION.
- THE OFFSETS SHOWN ARE NOT TO BE USED FOR THE CONSTRUCTION OF ANY STRUCTURE, FENCE, PERMANENT ADDITION, ETC.
- PROPERTY HAS DIRECT ACCESS TO PROVIDENCE ROAD.
- PARKING COUNT: REGULAR = 94 SPACES
RESERVED SPACE = 94 SPACES (WITHIN SURVEY AREA)
- THERE IS NO EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS OBSERVED IN THE PROCESS OF CONDUCTING THE FIELD WORK.
- NO PROPOSED CHANGES IN STREET RIGHT OF WAY LINES HAVE BEEN MADE AVAILABLE TO THE SURVEYOR BY THE CONTROLLING JURISDICTION.
- PARTIAL TOPOGRAPHY SHOWN HEREON PER CONTRACTUAL AGREEMENT WITH CLIENT.
- SURVEYOR'S DESCRIPTION PREPARED BECAUSE RECORD DESCRIPTION DOES NOT DEPICT ENTIRETY OF CURRENT PROPERTY CONFIGURATION.

THIS SURVEY IS CERTIFIED TO
WAL-MART REAL ESTATE BUSINESS TRUST.
STEWART TITLE GUARANTY COMPANY.

THIS IS TO CERTIFY THAT THIS SURVEY HAS BEEN PERFORMED IN THE FIELD UNDER MY SUPERVISION, AND IS SUBSTANTIALLY CORRECT TO THE DEGREE OF ACCURACY SHOWN HEREON.

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT WAS BASED WERE MADE IN ACCORDANCE WITH THE "2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS", JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 5, 7(b)(1), 7(c), 8, 9, 11a, 13, 14, 16, 17 & 18 OF TABLE A THEREOF. THE FIELDWORK WAS COMPLETED ON APRIL 05, 2023.

NOT A VALID ORIGINAL DOCUMENT UNLESS EMBOSSED WITH RAISED IMPRESSION OR BLUE INK SEAL



05-30-2023
DATE

CHRISTOPHER R. MICHAUD, PLS
CONNECTICUT PROFESSIONAL LAND SURVEYOR #70283

FIELD DATE
04-05-2023
FIELD BOOK NO
23-03-MA
FIELD BOOK PG
26
FIELD CREW
J.S.A.
DRAWN:
R.A.B.
REVIEWED:
R.J.K.K.

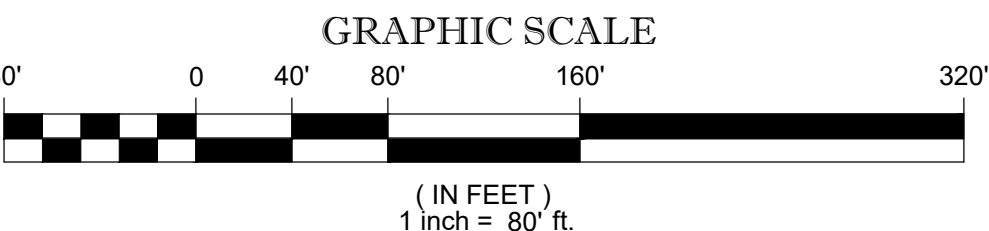
Walmart
450 PROVIDENCE ROAD, STORE No. 5777-00
MAP 41, LOT 10
TOWN OF BROOKLYN, WINDHAM COUNTY
STATE OF CONNECTICUT

CONTROL POINT ASSOCIATES, INC.
ALBANY, NY 518-217-5010
HAUPPAUGE, NY 631-880-2645
MANHATTAN, NY 646-780-0411
SOUTH BOKROUCH, MA 01772
508.948.3000 - 508.948.3003 FAX
WARREN, NJ 908-668-0999

APPROVED:
C.R.M.
DATE
05-30-2023
SCALE
1"=80'
FILE NO.
03-230072-00
DWS. NO.
1 OF 2

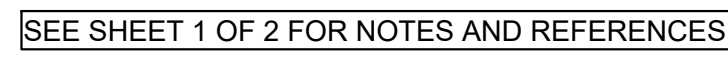
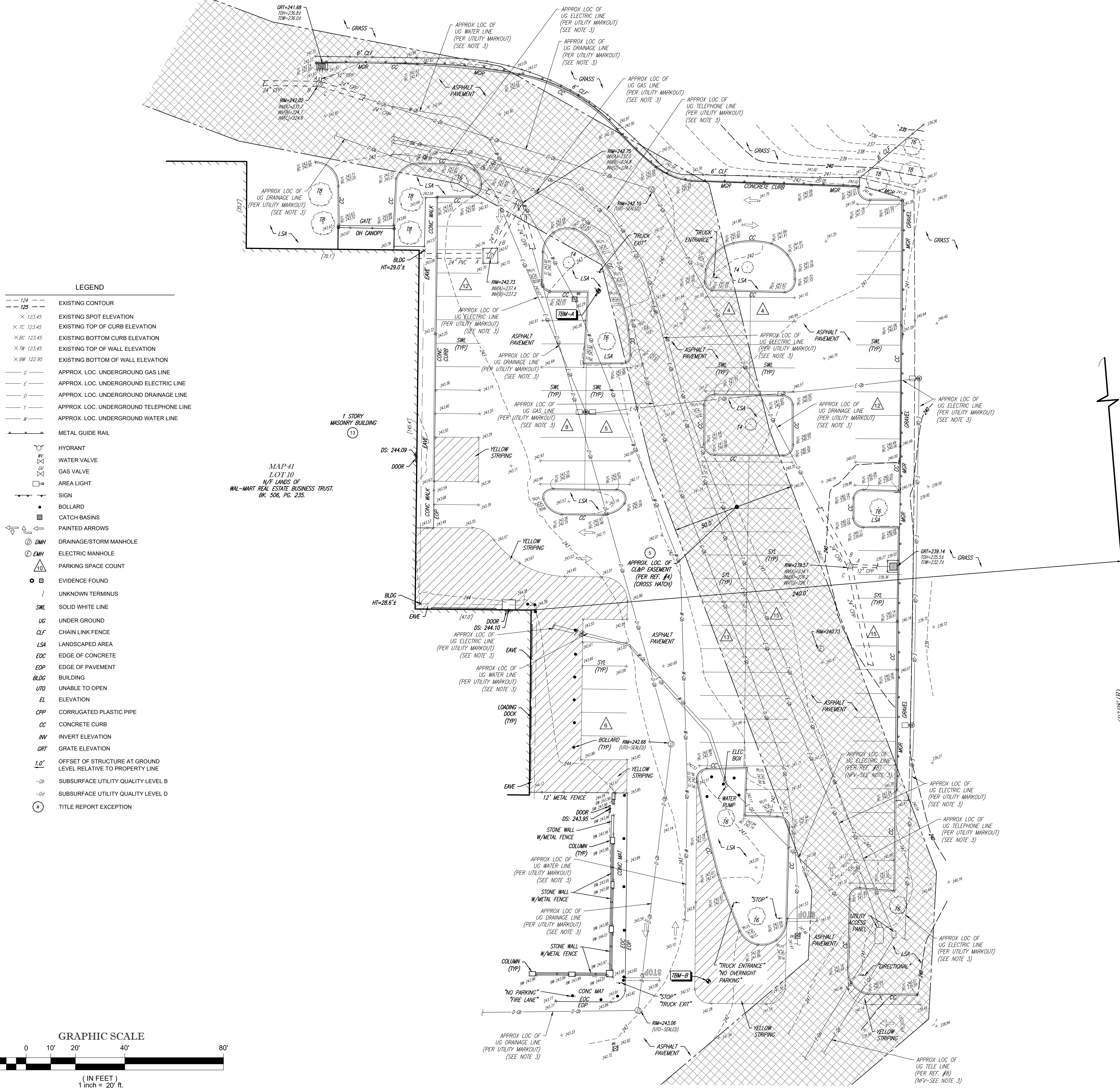


THE STATE OF CONNECTICUT REQUIRES NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE.



SEE SHEET 2 OF 2 FOR TOPOGRAPHIC AND UTILITIES

CONTROL POINT ASSOCIATES, INC. ALL RIGHTS RESERVED. THIS SURVEY IS THE PROPERTY OF CONTROL POINT ASSOCIATES, INC. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF CONTROL POINT ASSOCIATES, INC.



CONTROL POINT ASSOCIATES, INC. - ALL RIGHTS RESERVED.
THE COPYING OR REUSE OF THIS DOCUMENT, OR PORTIONS THEREOF, FOR OTHER THAN THE ORIGINAL PROJECT OR THE PURPOSE ORIGINALLY INTENDED, WITHOUT THE WRITTEN PERMISSION OF CONTROL POINT ASSOCIATES, INC., IS PROHIBITED.



Wetland Delineation • Wetland Assessment & Permitting • Wildlife & Botanical Surveys • Fisheries & Aquatics • GIS Mapping

June 23, 2023

Jeff Bord
Bohler
65 LaSalle Rd, Suite 401
West Hartford, CT 06107

RE: *Wetland and Watercourse Delineation Report*
Walmart Property
450 Providence Road, Brooklyn

Mr. Bord,

At your request, I conducted an inspection on the above-referenced property on June 20, 2023 as depicted on the attached *Wetland Delineation Sketch Map*. The purpose of the inspection was to delineate the Connecticut jurisdictional wetlands and watercourses. The inspection was conducted by a soil scientist according to the requirements of the Connecticut Inland Wetlands and Watercourses Act (P.A. 155).

Inland wetlands include soil types designated as poorly drained, very poorly drained, alluvial, and floodplain by the National Cooperative Soils Survey as may be amended from time to time, of the National Resources Conservation Service (NRCS). Watercourses means rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent. Intermittent watercourses shall be delineated by a defined permanent channel and bank and the occurrence of two or more of the following characteristics: *(A) Evidence of scour or deposits of recent alluvium or detritus, (B) the presence of standing or flowing water for a duration longer than a particular storm incident, and (C) the presence of hydrophytic vegetation.*

Wetlands were delineated by examining the upper 20" of the soil profile with an auger. Those areas meeting the requirements noted above were marked with pink flagging tape labeled "Wetland Delineation" and numbered 1-25. The field placed wetland flags are accurately depicted on the Project plans prepared by Bohler.

Wetland Description

The delineated wetlands consist of a series of constructed stormwater ponds. The ponds are entirely anthropogenic in origin, created to manage stormwater runoff from the developed areas of the site. There are four ponds in total, all of which are connected during larger storm events via stone-lined swales. The ponds have naturalized, with shoreline vegetation including areas of emergent vegetation in the shallow water portions. No areas of bank erosion were observed, and there was no visible turbidity in the water column, sediment plumes or excessive algal blooms.

Vegetation present includes cattails, willows, soft rush, various sedges, sensitive fern, and goldenrods, with some small areas of the invasive reed canary grass. Both bullfrog and green frog are abundant, as is typical in urban pond systems. A fisherman was present who indicating that the large eastern pond supports “panfish”, presumably bluegill or other warmwater fish species. Overall, considering the design purpose of these ponds, they have naturalized nicely and likely provide habitat for a number of common wetland-dependent species.

The surrounding uplands are maintained via mowing to prevent woody growth, but mowing appears infrequent, and thus the habitat presents as a meadow that offers habitat for a variety of insect species.

Soil Types

Soils present in the delineation area reflect the intended construction of both upland and wetland resources. Both wetland and upland soil types are anthropogenic soil. Wetland soils are classified as Aquents. Aquents is a miscellaneous land type used to denote areas of anthropogenic origin or disturbance that are poorly drained or very poorly drained, and hydric. These soils have an aquic soil moisture regime and can be expected to support hydrophytic vegetation. Typically, these soils occur in places where less than two feet of earthen material have been placed over poorly or very poorly drained soils; areas where the natural soils have been mixed so that the natural soil layers are not identifiable; or where the soil materials have been excavated to the watertable.

The non-wetland soils consist of the Udorthents. Udorthents is a miscellaneous land type used to denote moderately well to excessively drained earthen material which has been so disturbed by cutting, filling, or grading that the original soil profile can no longer be discerned.

Project Review and Impact Evaluation

Davison Environmental reviewed the project plans prepared by Bohler. Specifically, we considered the potential for the project to impact the function of the stormwater ponds. The project consists of a building expansion along with reconfiguration of the eastern parking area. Based on our review, we see no impact to wetland functions resulting from the proposed project, based on the following facts:

1. The project is sited within an existing area of development. No naturalized areas will be disturbed.
2. There are no direct wetland impacts proposed. All activities are located outside of the 50-foot Upland Review Area.
3. The primary means by which these stormwater ponds could be impacted is by increasing runoff that exceeds the design flows. This would occur if the project resulted in additional impervious cover. In this case, the proposed project will decrease total impervious cover slightly (<660s.f.). Therefore, there will be no increase in total volume or peak flow of runoff entering the system.

If you have any questions regarding these findings, please feel free to contact me.

Respectfully submitted,



Eric Davison
Professional Wetland Scientist
Registered Soil Scientist
eric@davisonenvironmental.com
www.davisonenvironmental.com

Attachments: (1) Wetland Photographs

WETLAND PHOTOGRAPHS



Photo 1: View of easternmost stormwater pond looking north.



Photo 2: View across all three field delineated ponds, looking east.

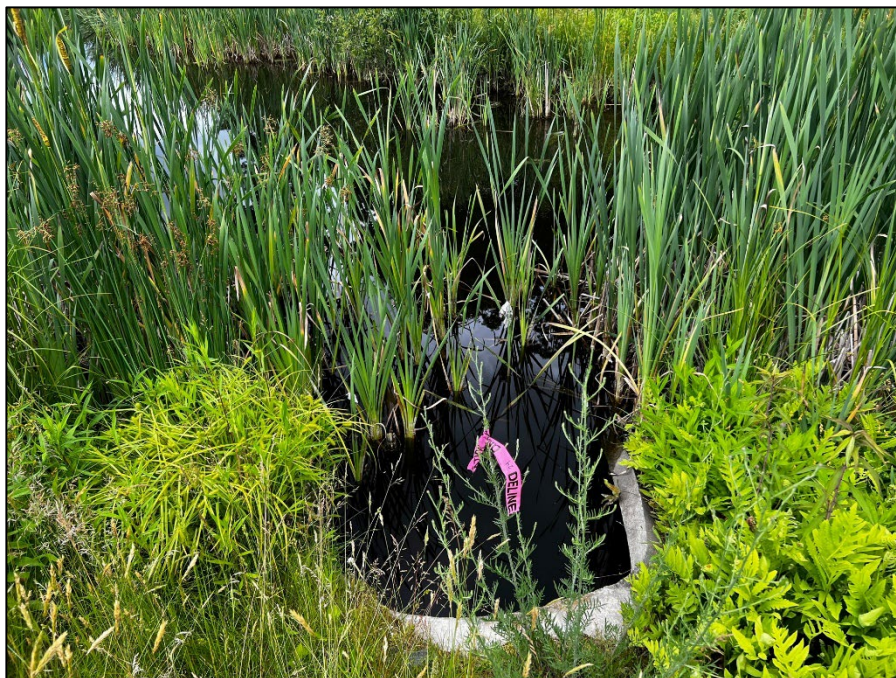


Photo 3: Culvert outlet to second pond. Note dense emergent vegetation (cattails).



Photo 4: View of second pond, looking east. Note naturalized shoreline and bordering meadow vegetation.

PROP. LIMIT OF
WORK (TYP.)

50' WETLAND BUFFER

PROP. LIMIT OF
WORK (TYP.)

IMPERVIOUS COVERAGE EXHIBIT

450 PROVIDENCE ROAD
TOWN OF BROOKLYN, CT

PREPARED BY
BOHLER

SCALE: 1"=40' DATE: 06/20/2023



**EXISTING
IMPERVIOUS:
39,002 SF**

PROP. LIMIT OF
WORK (TYP.)

PROP. LIMIT OF
WORK (TYP.)

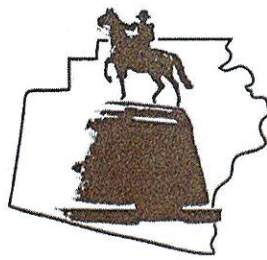
PROP. LIMIT OF
WORK (TYP.)

PROP. LIMIT OF
WORK (TYP.)

**PROPOSED
IMPERVIOUS:
38,311 SF**

692.87'
22°01'15.3"N

P:\2023\MAA230031.00\CAD\Drawings\Plan Sets\Impervious Cover Exhibit\MAA230031.00-IMCE-0a.dwg



Brooklyn Land Use Department

69 South Main Street
Brooklyn CT 06234
(860) 779-3411 x 31

Inland Wetlands ☒

Zoning Enforcement ☐

Blight Enforcement ☐

SITE INSPECTION NUMBER

1 2 3 4 5

450 Providence Rd.

7-19-23

Address

Date

I met Ben Jednak and Janet Booth, inspected and took photos.

We reviewed the plans. It is a building expansion and parking modification, with no increase in impervious surfaces.

There will be more pervious surfaces.

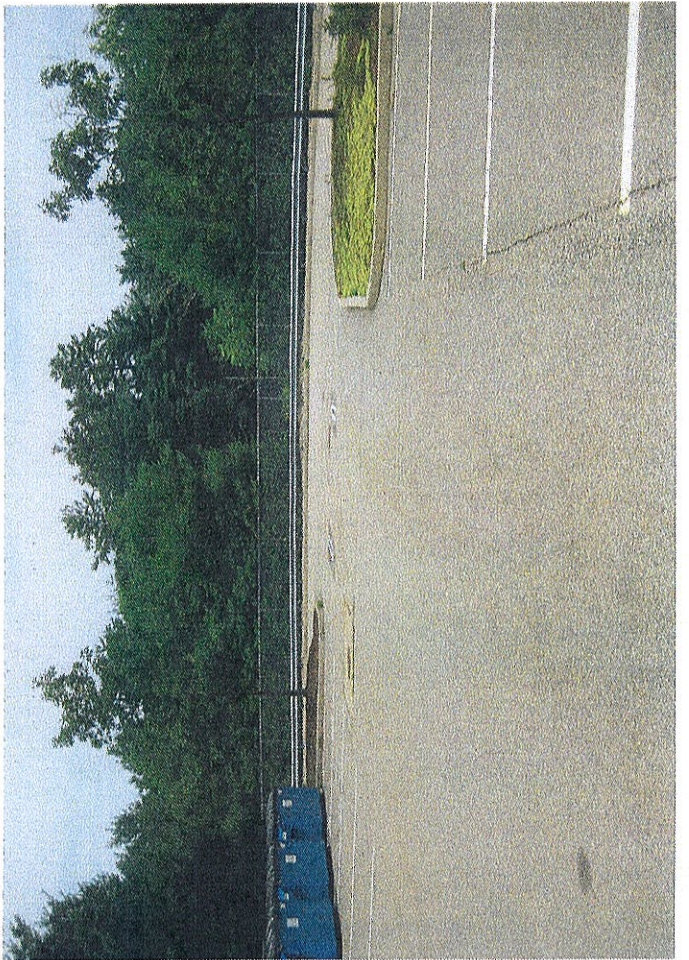
Approval is recommended.

Commission Representative

M. Washburn

Owner or Authorized Signature

Dr. Jalow





8/2/23

Hi Margaret,

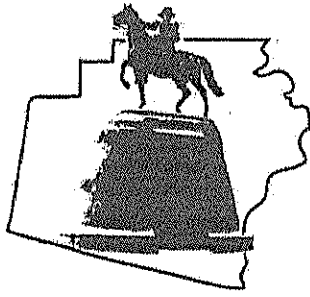
I apologize for getting my comments to you on the Walmart expansion plan.

I have reviewed the very detailed plans and have no issues, especially seeing that the planned expansion with parking lot modifications will decrease the amount of impermeable surface. There are no drainage issues with the proposed work.

The wetland report contains a lot of good information - a good example for some of our local soil scientists to emulate with their analysis and reports.

If you have any questions, please do not hesitate to contact me.

Syl



TOWN OF BROOKLYN
Land Use Department
69 South Main Street • Suite 22
BROOKLYN, CONNECTICUT 06234
860-779-3411 Ext. 12

ORDER TO CORRECT WETLANDS VIOLATIONS

CERTIFIED # 9489 0090 0027 6215 8965 51

Janessa Choquette
648 Cooper Road
Glocester, RI 02814

August 1, 2023

Re: Collapse of side slope and fill in wetlands at 253 Wolf Den Road

Dear Ms. Choquette,

Heavy rains in July caused a portion of the recent site work done at your property at 253 Wolf Den Road CT (Assessors Map 17 Lot 32-3) in Brooklyn, to collapse, following the installation of the permitted wetlands crossing. Several cubic yards of material flowed down the slope into wetlands and an intermittent watercourse, which is now partially buried. Please refer to the attached inspection report and photographs.

The wetland filling is in violation of IWWC permit, # **IWWC 22-004**, issued to Keith Pasay on November 8, 2022.

YOU ARE HEREBY REQUIRED TO:

1. Attend the Inland Wetlands and Watercourses Commission meeting on August 8, 2023 at 6 pm at 31 Tiffany Street (upper level) in Brooklyn, CT. At that meeting, a hearing will take place to provide you the opportunity to be heard and show cause why the Order to Correct should not remain in effect.
2. Submit an engineer's plan and construction sequence designed to
 - (a) remove the sediment from the wetland;
 - (b) repair the slope; and
 - (c) provide a design solution so that it doesn't occur again.

Please refer to the attached copy of Section 6 of the Town of Brooklyn IWWC Regulations, which states that any person violating provisions of these regulations shall be subject to enforcement proceedings and penalties.

Refer to the attached copy of the CT Wetlands Statutes, Section 22a – 44(b) which enables municipalities to assess civil penalties for violations.

Your cooperation would be greatly appreciated.

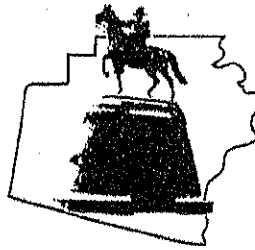
Please feel free to contact me if you have any questions.

Issued by:



Margaret Washburn
ZEO/WEO/Blight Enforcement Officer
69 South Main Street, Suite 23
Brooklyn, CT 06234
(860) 779-3411 ext. 31
Mon. – Thurs. 8:00 am – 3:30 pm
m.washburn@brooklynct.org

CC: Austin Tanner, First Selectman; Jana Roberson, Town Planner; Keith Pasay



Brooklyn Land Use Department

69 South Main Street
Brooklyn CT 06234
(860) 779-3411 x 31

Inland Wetlands ☒

Zoning Enforcement _____

Blight Enforcement _____

SITE INSPECTION NUMBER

1 2 3 4 5

253 Wolf Den Rd

7/26/23

Address

Date

I inspected and took photos in response
to a complaint from Charles Browning.

There has been a washout on the
steep slope between the driveway and
the wetlands to the west of the
location where the pipes were recently
extended. The extended pipes appear
to be stable, for now.

The silt fence/hay bales are holding back
the sediment from washing downstream.

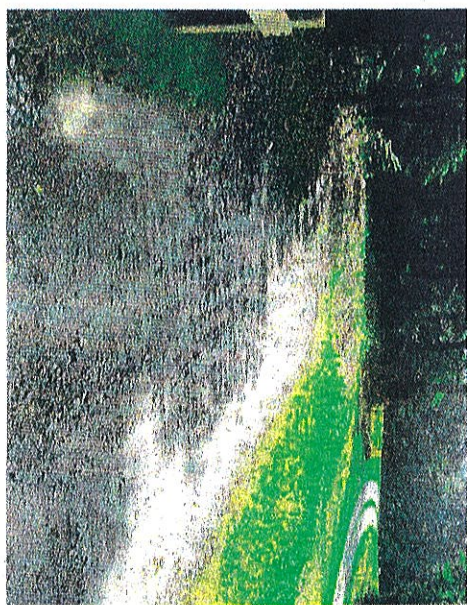
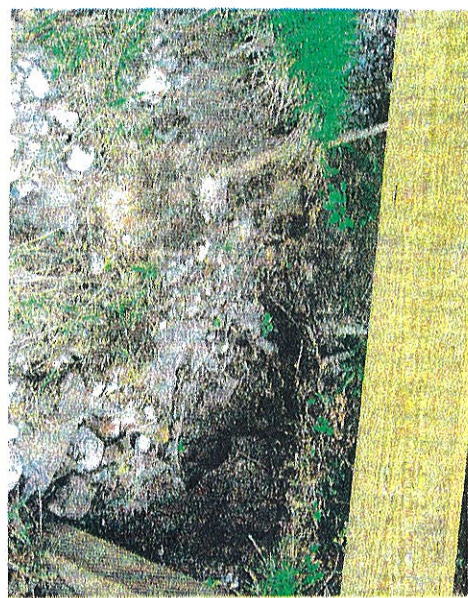
☒ contact Chairman Oliverson and IWWC members

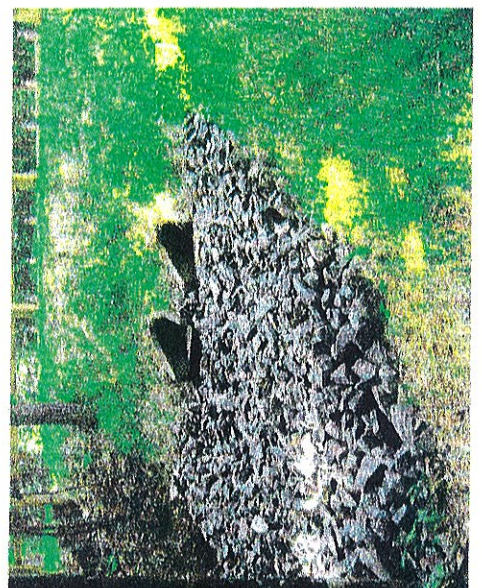
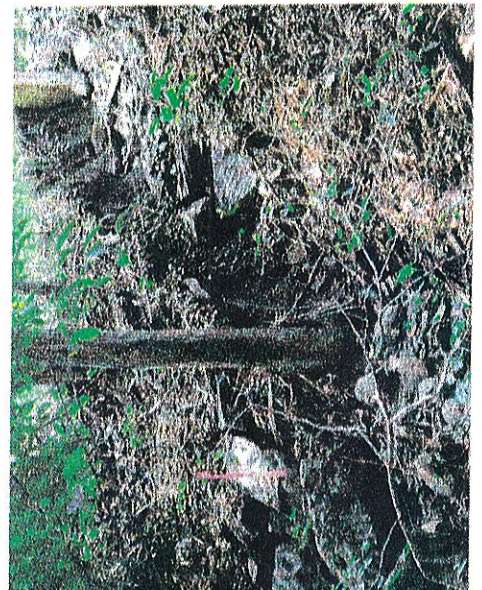
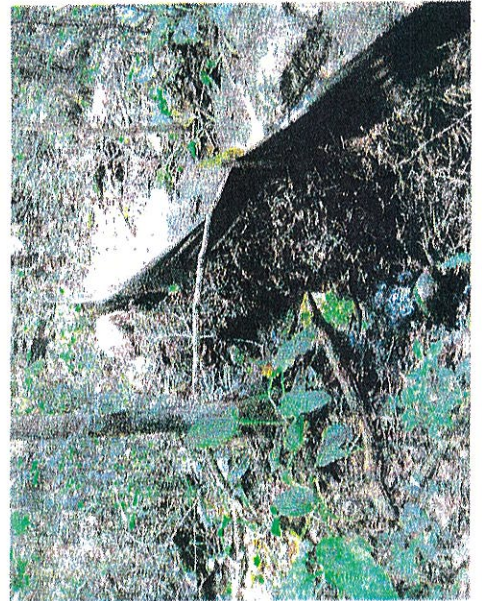
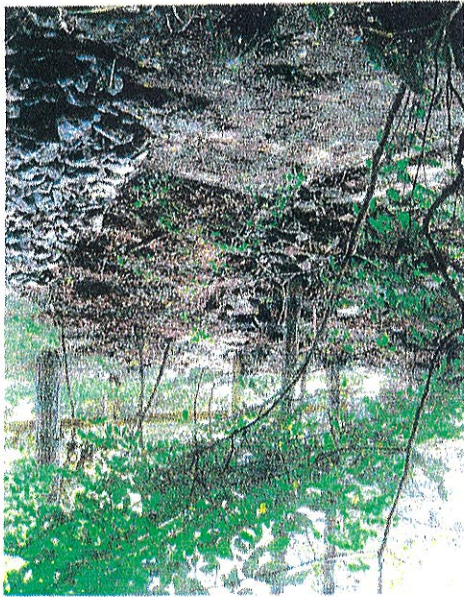
☒ schedule a show cause hearing/issue NOV

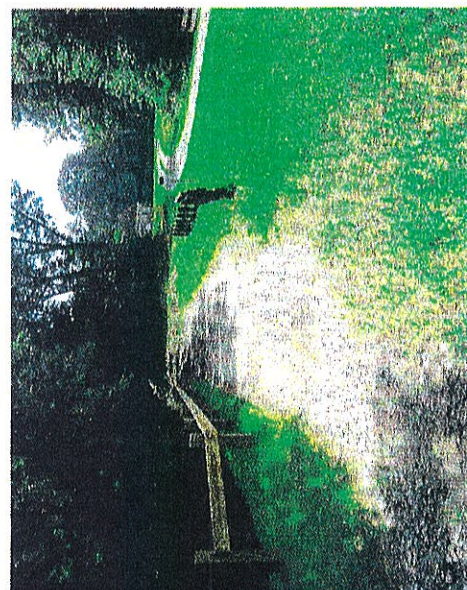
Commission Representative

M. Washburn

Owner or Authorized Signature _____







Section 6 Regulated Activities to be Licensed

No person shall conduct or maintain a regulated activity without first obtaining a permit for such activity from the Brooklyn Inland Wetlands and Watercourses Commission of the Town of Brooklyn.

Any person found to be conducting or maintaining a regulated activity without the prior authorization of the Commission, or violating any other provision of these regulations, shall be subject to the enforcement proceedings and penalties prescribed in section 14 of these regulations and any other remedies as provided by law.

its inland wetlands regulations, or (2) for which an approval is required under sections 22a-36 to 22a-45, inclusive, and for which such approval has not been obtained.

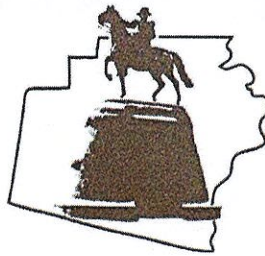
(b) Any person who commits, takes part in, or assists in any violation of any provision of sections 22a-36 to 22a-45, inclusive, including regulations adopted by the commissioner and ordinances and regulations promulgated by municipalities or districts pursuant to the grant of authority herein contained, shall be assessed a civil penalty of not more than one thousand dollars for each offense. Each violation of said sections shall be a separate and distinct offense, and, in the case of a continuing violation, each day's continuance thereof shall be deemed to be a separate and distinct offense. The Superior Court, in an action brought by the commissioner, municipality, district or any person, shall have jurisdiction to restrain a continuing violation of said sections, to issue orders directing that the violation be corrected or removed and to assess civil penalties pursuant to this section. All costs, fees and expenses in connection with such action shall be assessed as damages against the violator together with reasonable attorney's fees which may be allowed, all of which shall be awarded to the commissioner, municipality, district or person which brought such action. All penalties collected pursuant to this section shall be used solely by the Commissioner of Energy and Environmental Protection (1) to restore the affected wetlands or watercourses to their condition prior to the violation, wherever possible, (2) to restore other degraded wetlands or watercourses, (3) to inventory or index wetlands and watercourses of the state, or (4) to implement a comprehensive training program for inland wetlands agency members.

(c) Any person who wilfully or knowingly violates any provision of sections 22a-36 to 22a-45, inclusive, shall be fined not more than one thousand dollars for each day during which such violation continues or be imprisoned not more than six months or both. For a subsequent violation, such person shall be fined not more than two thousand dollars for each day during which such violation continues or be imprisoned not more than one year or both. For the purposes of this subsection, "person" shall be construed to include any responsible corporate officer.

(1972, P.A. 155, S. 9; P.A. 75-387, S. 2; P.A. 76-330; P.A. 77-599, S. 4, 7; P.A. 81-125, S. 1; P.A. 87-338, S. 9, 11; P.A. 95-151, S. 2; 95-218, S. 13, 24; P.A. 96-269, S. 2; P.A. 11-80, S. 1.)

History: P.A. 75-387 made previous provisions Subsec. (b) and inserted new Subsec. (a) re orders issued upon discovery of violation of Secs. 22a-36 to 22a-45 or regulations of inland wetlands agency; P.A. 76-330 allowed assessment of attorneys fees against violator and required that all costs, etc. be awarded to the initiator of the action; P.A. 77-599 amended Subsec. (a) to allow issuance of orders to cease an activity as well as orders to correct facilities or conditions; P.A. 81-125 amended Subsec. (a) to authorize

☒ report to
IWWC



Brooklyn Land Use Department

69 South Main Street
Brooklyn CT 06234
(860) 779-3411 x 31

☒ send
to Eric
w/ both
sketches
pix.

Inland Wetlands ☒

Zoning Enforcement ☒

Blight Enforcement ☐

SITE INSPECTION NUMBER

1 2 3 4 5

183 Barrett Hill Rd

Address

7/20/23

Date

I met Ryan Murphy, owner, Doug Leonard, site contractor, and Lance Shannon of Dept of Ag. I inspected + took photos. A horse barn is proposed in the building envelope provided by the Purchase of Development Rights agreement.

There are no zoning issues; there are no wetlands issues. The Town has to wait to issue the zoning permit until Dept. of Ag approval has been issued.

The Murphys agree not to spread the excavated topsoil in any wetlands.

Commission Representative M. Washburn

Owner or Authorized Signature

[Signature]
Mr. Murphy

☒ notify Tommy of new barn re driveway.

183 Barrett Hill Rd
horse barn sketch
for zoning permit

7-20-23

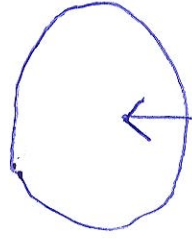
N
↑

Barrett Hill Rd

barway



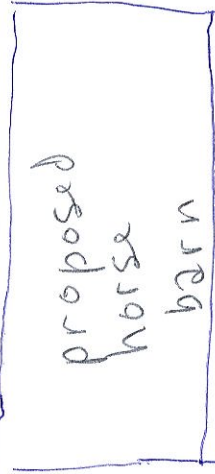
57' +/-



proposed
topsoil
stockpile

72' +/-

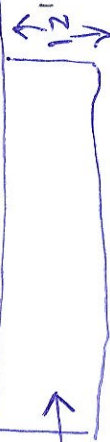
50'



proposed
horse
barn

24'

proposed
lean-to



12'

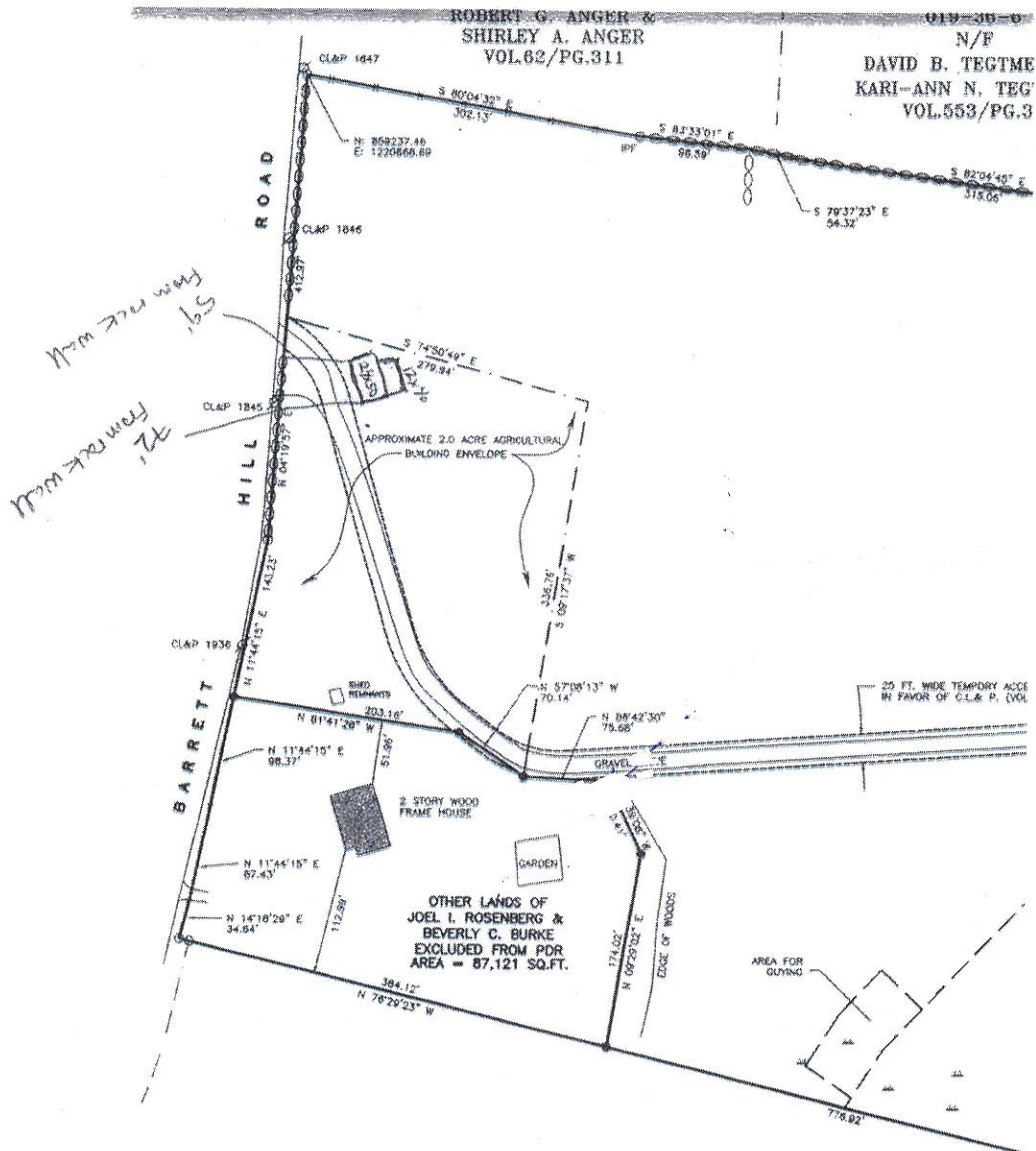
40' →

10:38

5G



20161671 - PDR Survey....



019-36-4-2
N/F
STEVEN D. SPANGLER
VOL.518/PG.11

CGS 1983

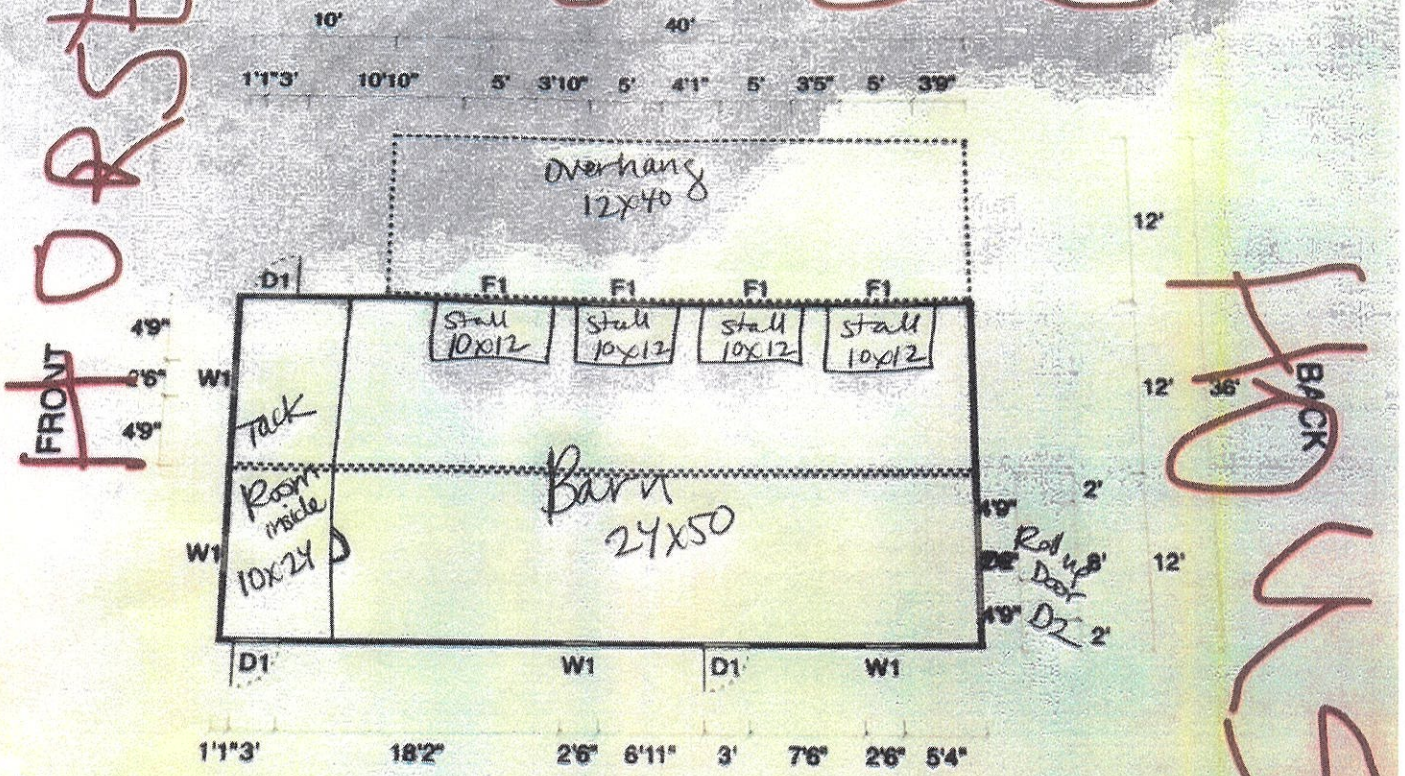
LEGEND

- WIRE FENCE
- STONEMALL
- N/F NOW OR FORMERLY
- ⊗ UTILITY POLE
- REBAR FOUND
- PP IRON PIPE FOUND
- REBAR SET
- ALL SWAMP / INUNDATED

New location near red gate in building envelope

HORSES

LEFT SIDE



ENTRY

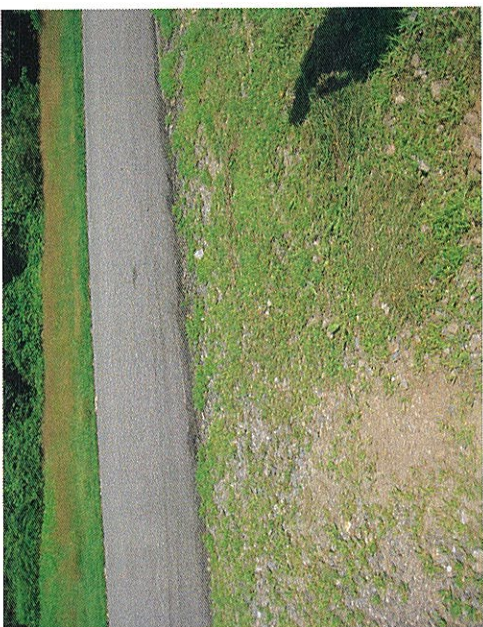
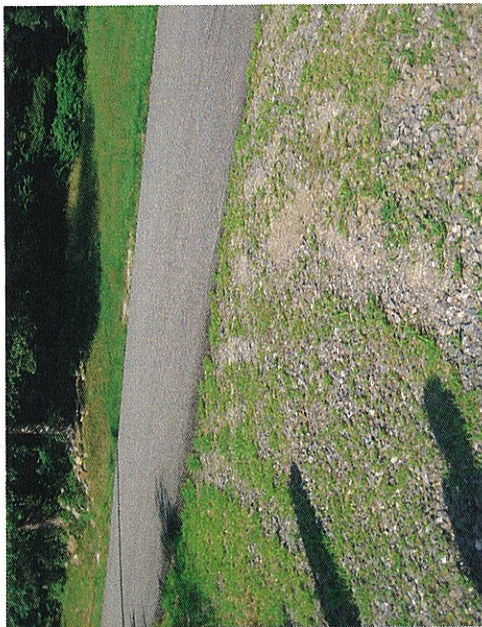
RIGHT SIDE

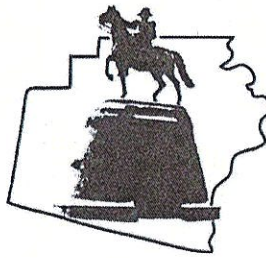
SYMBOL LEGEND

W1	30W x 30H Single Pane	D1	Walk-in Door (36 x 80)
F1	Side Frameout - Custom Size	D2	8' x 7' Roll-Up Door
—	Closed Wall	----	Open Wall

DRIVEWAY







Brooklyn Land Use Department

69 South Main Street
Brooklyn CT 06234
(860) 779-3411 x 31

Inland Wetlands ☒

Zoning Enforcement ☐

Blight Enforcement ☐

SITE INSPECTION NUMBER

1 2 3 4 5

409+411 Church St driveway

Address

7/31/23

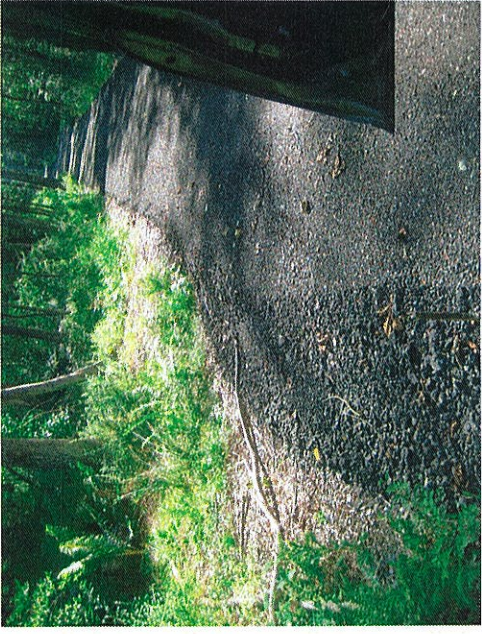
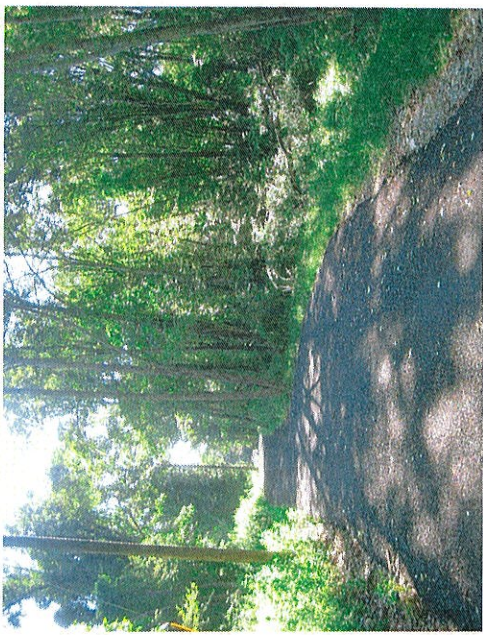
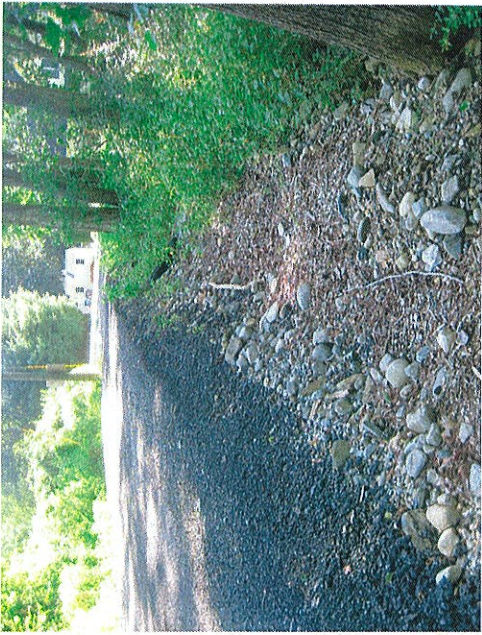
Date

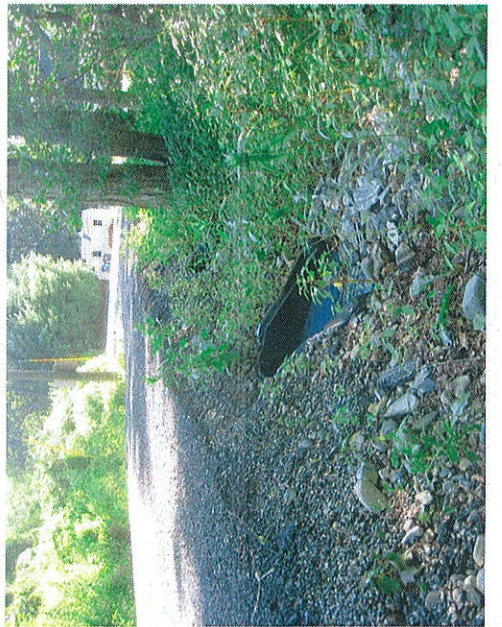
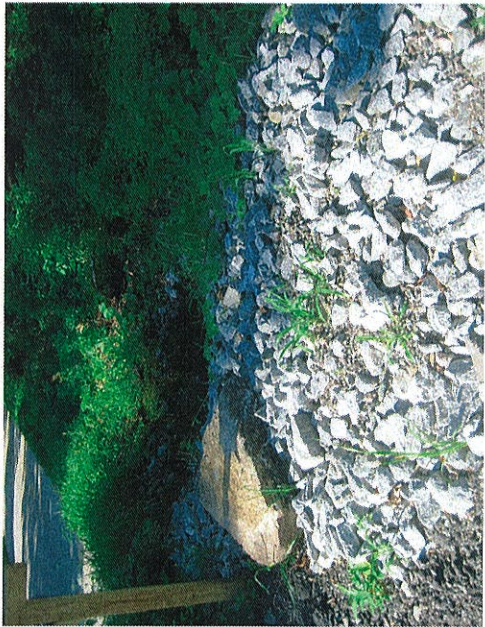
The driveway has been covered with millings. Adam Brindamour, Janet Booth and I inspected. The millings have made their way into the wetlands on both sides of the pipe at the westernmost wetlands crossing. There is no water flowing through this pipe. Water is flowing through the other 2 pipes. Jake Kausch was present. He agreed to remove the millings at the ends of the pipe at the westernmost crossing.

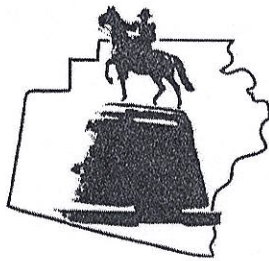
☐ Email Jake + ask him to let me know when the millings have been removed from the wetlands.

Commission Representative M. Washburn

Owner or Authorized Signature _____







Brooklyn Land Use Department

69 South Main Street
Brooklyn CT 06234
(860) 779-3411 x 31

Inland Wetlands ☒

Zoning Enforcement ☒

Blight Enforcement ☐

SITE INSPECTION NUMBER

1 2 3 4 5

FCR Gravel Pit

6/29/23

Address

Date

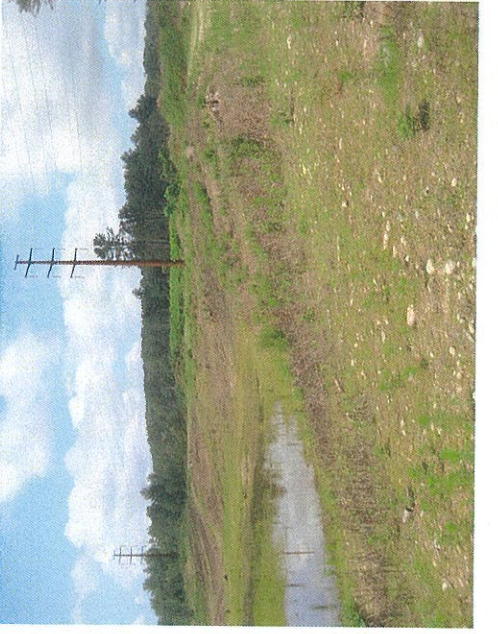
I met David Held, inspected and took
photographs. Work required in the
3/3/22 IWWC Order to Remediate
and in the 3/3/22 Order to Remediate
for Zoning Violations has been completed
to my satisfaction.

The Orders described above are hereby closed.

Commission Representative

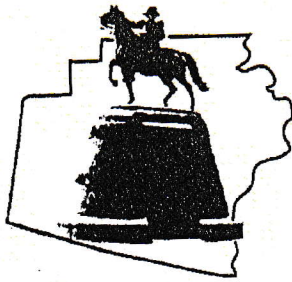
Margaret Washburn

Owner or Authorized Signature





CLOSED 7/26/23



TOWN OF BROOKLYN
Land Use Department
69 South Main Street • Suite 22
BROOKLYN, CONNECTICUT 06234
860-779-3411 Ext. 12

ORDER TO REMEDIATE
Inland Wetlands and Watercourses Violations

CERTIFIED 7021 2720 0001 3206 2160

To: FCR Realty, LLC
10 Day Street
Brooklyn, CT 06234

March 3, 2022

Location of Violation: Westerly of Day Street
Brooklyn, CT 06234
Assessor's Map 41 Lot 6 and Map 35 Lot 7

Facts

On 11/30/21, Provost & Rovero, Inc. submitted to the Brooklyn Land Use Office a Topographic Survey as of 11/25/2021 prepared for FCR Realty LLC.

Refer to the attached copy of this plan, which shows approximately one acre of earth removal has been conducted beyond the project limits approved by the Inland Wetlands Commission in their Notice of Decision dated June 20, 2018.

On 12/1/21, Margaret Washburn, Wetlands Enforcement Officer, inspected the site to conduct a compliance inspection with Keith Green.

That inspection resulted in the issuance of a Cease and Desist Order on 1/3/22.

The following activities have been observed to have occurred on your property in violation of your Inland Wetlands and Watercourses Permit # 041018A: Vegetation has been removed and material has been excavated in the Upland Review Area, beyond the approved limit of work shown on the approved plan titled Proposed Gravel Removal Plan Prepared for FCR Realty LLC Westerly of Day Street, Brooklyn, Connecticut, ("the approved plan") prepared by KWP Associates, revised October 2, 2018.

Your activities, conducted in violation of your Inland Wetlands and Watercourses Permit, are in violation of the Brooklyn Inland Wetlands and Watercourses Regulations.

On 2/2/22, at a meeting at the Clifford B. Green Memorial Center, attended by Austin Tanner, Jana Roberson, Margaret Washburn, David Held and Keith Green, Keith Green informed Town staff that FCR did not intend to renew its Gravel Special Permit with the Planning and Zoning Commission (PZC).

On 2/15/22, the PZC accepted the withdrawal of the Gravel Bank Renewal Application (GBR 21-005) by FCR Realty, LLC.

On 2/22/22, at a site inspection attended by Margaret Washburn, David Held and Keith Green, all parties agreed that when gravel bank restoration begins, the first area to be regraded will be near the undercut, overhanging vegetated banks between the gravel pit and the closest wetlands.

Applicable Laws and Regulations

The Brooklyn Inland Wetlands and Watercourses Regulations define, in part, a “regulated activity” as “any operation within or use of a wetland or watercourse involving removal or deposition of material, or any obstruction, construction, alteration or pollution, of such wetlands or watercourses....”. “Material” is defined to include “means any substance, solid or liquid, organic or inorganic, including but not limited to soil, sediment, aggregate, land, gravel, clay, bog, mud, debris, sand, refuse or waste”. The term “pollution” is defined to include “harmful thermal effect or the contamination or rendering unclean or impure of any waters of the state by reason of any waste or other materials discharged or deposited therein by any public or private sewer or otherwise so as directly or indirectly to come in contact with any waters. This includes, but is not limited to, erosion and sedimentation resulting from any filling, land clearing or excavation activity”.

The phrase “rendering unclean or impure” is further defined as “any alteration of the physical, chemical or biological properties of any waters of the state, including, but not limited to, change in odor, color, turbidity or taste”.

Furthermore, a “significant impact” is defined as “any activity, including, but not limited to, the following activities which may have a major effect:

1. Any activity involving deposition or removal of material which will or may have a substantial effect on the wetland or watercourse or on wetlands or watercourses outside the area for which the activity is proposed.
2. Any activity which substantially changes the natural channel or may inhibit the natural dynamics of a watercourse system.
3. Any activity which substantially diminishes the natural capacity of an inland wetland or watercourse to: support aquatic, plant or animal life and habitats; prevent flooding; supply water; assimilate waste; facilitate drainage; provide recreation or open space; or perform other functions.
4. Any activity which is likely to cause or has the potential to cause substantial turbidity, siltation or sedimentation in a wetland or watercourse.
5. Any activity which causes substantial diminution of flow of a natural watercourse or groundwater levels of the wetland or watercourse.
6. Any activity which is likely to cause or has the potential to cause pollution of a wetland or watercourse.
7. Any activity which damages or destroys unique wetland or watercourse areas or such areas having demonstrable scientific or educational value.”

“Upland Review Area” means “non-wetland or non-watercourse areas where activities are likely to impact or affect wetlands or continuous watercourses”.

Section 4 of the Regulations addresses exemptions, and Section 6.1 provides that any regulated activity requires a permit.

Section 6.2 states "Any person found to be conducting or maintaining a regulated activity without the prior authorization of the Commission, or violating any other provision of these regulations, shall be subject to the enforcement proceedings and penalties prescribed in section 14 of these regulations and any other remedies as provided by law".

The deposition of material within the upland review area and wetlands without a permit constitutes both a "regulated activity" and a "significant impact" under the Regulations and fall within no allowable exception. Therefore, said activities constitute a violation of the Brooklyn Inland Wetlands and Watercourses Regulations because of, at a minimum, the following condition:

- a. The "deposition or removal of material which will or may have a substantial effect on the wetland or watercourse".

Order

You are hereby ordered to do the following: Submit to the Brooklyn Inland Wetlands and Watercourses Commission a Site Restoration Plan showing the restoration of the disturbed areas within one hundred and seventy-five (175) feet of regulated areas on or before 3/8/2022.

The Site Restoration Plan must be approved by the Commission prior to starting any work.

No grades steeper than 3:1 shall remain after restoration is complete.

Leave the undercut, overhanging vegetated banks on the edge of the gravel pit intact. This refers to the undercut, overhanging vegetated banks between the gravel pit and the closest wetlands. Do not pull the undercut, overhanging vegetated banks down.

Phase 1: Push fill in the existing gravel pit, toward the overhanging vegetated banks between the gravel pit and the closest wetlands. Do not pull the undercut, overhanging vegetated banks down. Smooth out the material so no slopes are steeper than 3:1.
TARGET DATE FOR COMPLETION: Thursday 4/7/22

Phase 2: Pull down the steep slopes near the existing road into the gravel pit. Smooth out the slopes so that no slopes are steeper than 3:1.
TARGET DATE FOR COMPLETION: Thursday, 6/9/22

Phase 3: Push the material from the slopes near the existing road, and the material from the unprocessed material stockpile, into the gravel pit and smooth out the fill.
TARGET DATE FOR COMPLETION: Thursday, 7/28/22

Phase 4: Spread dark brown topsoil over the material.
TARGET DATE FOR COMPLETION: Thursday, 8/18/22

Phase 5: Seed all disturbed areas in accordance with the Site Restoration Plan.
TARGET DATE FOR COMPLETION: Thursday, 9/1/22

Inspections are scheduled for 9:00 am on-site meetings with Keith Green and David Held in attendance on the target dates listed above. The Commission or its duly authorized agent may make regular inspections of the required remediation work during any other reasonable hours.

All restoration work must be done under the timeline established by the Commission.

Failure to meet any of the deadlines in this Order may result in the issuance of citations.

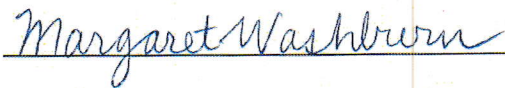
The Brooklyn Inland Wetlands and Watercourses Duly Authorized Agent is to be notified if any phase is completed prior to its target date at 860-779-3411 ext. 31.

For each day during which to violation continues beyond the deadline in this Order, the Town may commence an enforcement action and the seek a civil penalty of up to \$1,000.00 per day for such violation, plus its attorney's fees and costs. The civil penalties are assessed by the Superior Court when an action is brought before the court by the municipality. Refer to the attached Chapter 20-2: Citation Procedures and Fines for Zoning and Wetlands Violations.

Show Cause Hearing

In accordance with Section 15.7 of the Regulations, a Show Cause Hearing will be held on this Order on Tuesday, March 8, 2022 at 6:00 p.m. via Zoom as well as in person. At this hearing, you will be given an opportunity to be heard and to show cause why this Order to Remediate should not remain in effect. Depending on the decision of the Agency, a copy of this Order, or a modified version of it, may be filed on the Brooklyn Land Records. To attend this hearing follow the instructions on the attached draft meeting agenda.

Dated at Brooklyn, this 3rd day of March 2022.

A handwritten signature in blue ink that reads "Margaret Washburn". The signature is written in a cursive style and is positioned above a horizontal line.

Margaret Washburn, Enforcement Officer of the Brooklyn
Inland Wetlands and Watercourses Commission

CC: Austin Tanner, Jana Roberson, Peter Alter

Town of Brooklyn

Inland Wetlands Budget FY23

Fiscal Year: 2023-2024

From Date: 7/1/2023

To Date: 7/31/2023

☐ Include pre encumbrance

☒ Print accounts with zero balance

☒ Filter Encumbrance Detail by Date Range

☐ Exclude inactive accounts with zero balance

Account Number	Description	Budget	Adjustments	GL Budget	Current	YTD	Balance	Encumbrance	Budget Bal	% Rem
1005.41.4163.51900	Inland Wetlands-Wages-Recording Secretary	\$1,000.00	\$0.00	\$1,000.00	\$87.50	\$87.50	\$912.50	\$0.00	\$912.50	91.25%
1005.41.4163.53020	Inland Wetlands-Legal Fees	\$3,500.00	\$0.00	\$3,500.00	\$0.00	\$0.00	\$3,500.00	\$0.00	\$3,500.00	100.00%
1005.41.4163.53200	Inland Wetlands-Professional Affiliations	\$65.00	\$0.00	\$65.00	\$0.00	\$0.00	\$65.00	\$0.00	\$65.00	100.00%
1005.41.4163.53400	Inland Wetlands-Professional Services	\$500.00	\$0.00	\$500.00	\$0.00	\$0.00	\$500.00	\$0.00	\$500.00	100.00%
1005.41.4163.55400	Inland Wetlands-Advertising & Legal Notices	\$500.00	\$0.00	\$500.00	\$0.00	\$0.00	\$500.00	\$0.00	\$500.00	100.00%
1005.41.4163.55500	Inland Wetlands-Printing & Publications	\$120.00	\$0.00	\$120.00	\$0.00	\$0.00	\$120.00	\$0.00	\$120.00	100.00%
1005.41.4163.56900	Inland Wetlands-Other Supplies	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.00	(\$45.00)	0.00%
Grand Total:		\$5,685.00	\$0.00	\$5,685.00	\$87.50	\$87.50	\$5,597.50	\$45.00	\$5,552.50	97.67%

End of Report