

Estates of Berlin, LLC

Beckley Road

Project Narrative

The Estates of Berlin, LLC has previously received town approvals for the phased construction of single family detached and townhouse style units, roads, storm drainage and utilities but will expire over the next few months.

The following describes each phase of the project:

Phases 1, 1A & 2

Construction of the houses are complete except for custom units 14 & 51. The installation of the bituminous concrete pavement wearing surface on phase 1 and 1A has been installed. In Phase 1 the gazebo area is yet to be completed and Phase 2 has the bituminous concrete pavement binder surface installed. All sidewalks and landscaping have been installed. All utilities have been installed.

Phase 3

The construction of houses are complete except for custom units 79 & 80 and the clubhouse. Bituminous concrete binder course of pavement has been installed. Most of the concrete sidewalks have been installed. Landscaping needs to be installed. All utilities have been installed.

Phase 4

The development of the age restricted community continues in phase 4 of the project. Drainage improvements, utilities and the binder course of pavement have been installed. Houses are being constructed, as of the beginning of December, 2019, eleven (11) units are either constructed or under construction.

Phase 5

The development of this phase shall consist of the construction of townhouse buildings, installation of storm drainage, utilities and bituminous concrete access drives. Approximately 4.4 acres of tree clearing will be required prior to construction. An areas of approximately 2.8 acres, where the proposed townhouses, access drives, utilities and storm drainage will be constructed requires blasting.

Percent of Units with C/O's per Phase

Phase 1A- 11 of 11 units (100%)

Phase 1- 25 of 27 units (93%)

Phase 2- 17 of 17 units (100%)

Phase 3- 24 of 26 units (92%)

Phase 4- Under construction with a total of 25 units.

Phase 5- Proposed construction of 57 townhouse type units.

The project has been designed to be consistent with the town's plan of land use which is permitted in the current zoning district.

Existing utilities with suitable capacity provide service to the project.

The project has been designed to minimize impact on the inland wetlands and other site features. The unit site layout, road network, site grading & amenities are accessible from area roads, provide needed age restricted housing and have no significant impact on the surrounding area.



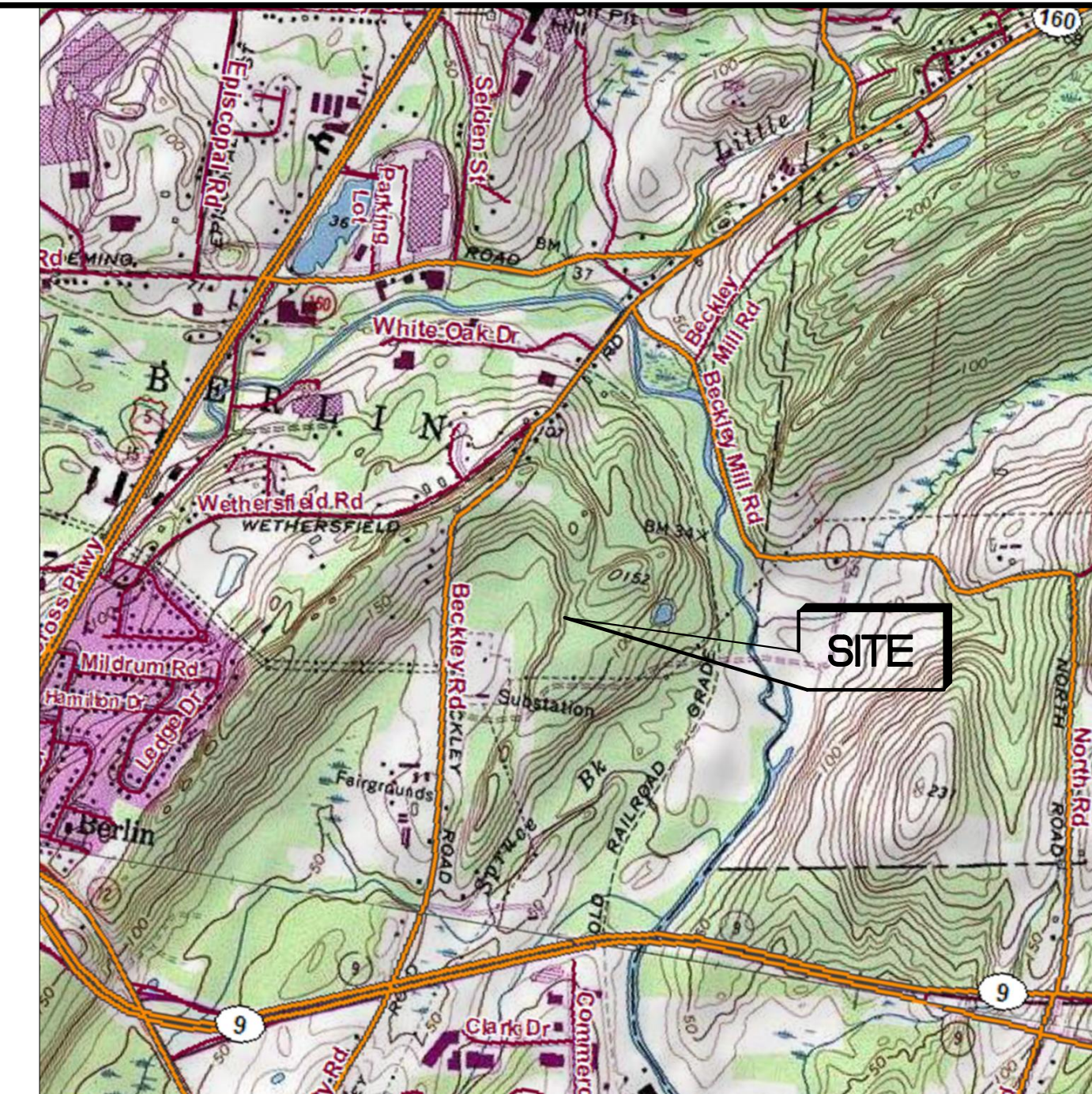
LOCATION MAP
SCALE: 1"=1000'

BECKLEY FARMS DEVELOPMENT

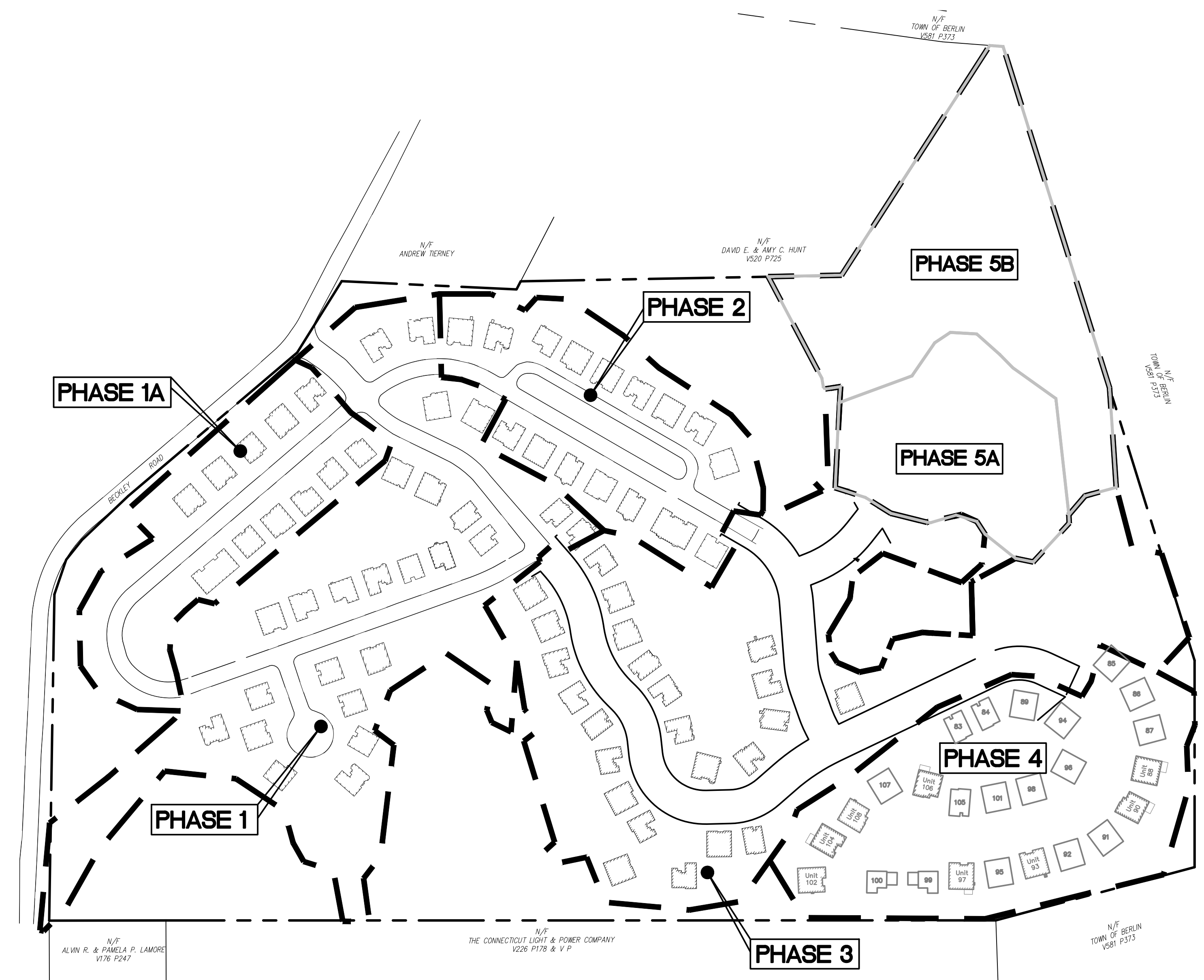
AN AGED RESTRICTED COMMUNITY

BECKLEY ROAD BERLIN, CONNECTICUT

SITE PLAN AMENDMENT APPLICATION



VICINITY MAP
SCALE: 1"=1000'



OVERALL SITE PLAN

SCALE: 1"=200'
DATE: FEBRUARY 22, 2018
REVISION DATE: JULY 2, 2020

OWNER/APPLICANT
ESTATES OF BERLIN, LLC
833 GLEN DRIVE
WOODMERE, NY 11598



Land Planning ~ Civil Engineering
Land Surveying ~ Environmental Services
Landscape Architecture

LRC Engineering & Surveying, D.P.C.
LRC Engineering and Surveying, LLC
LRC Environmental Services, Inc.
Land Resource Consultants, Inc.

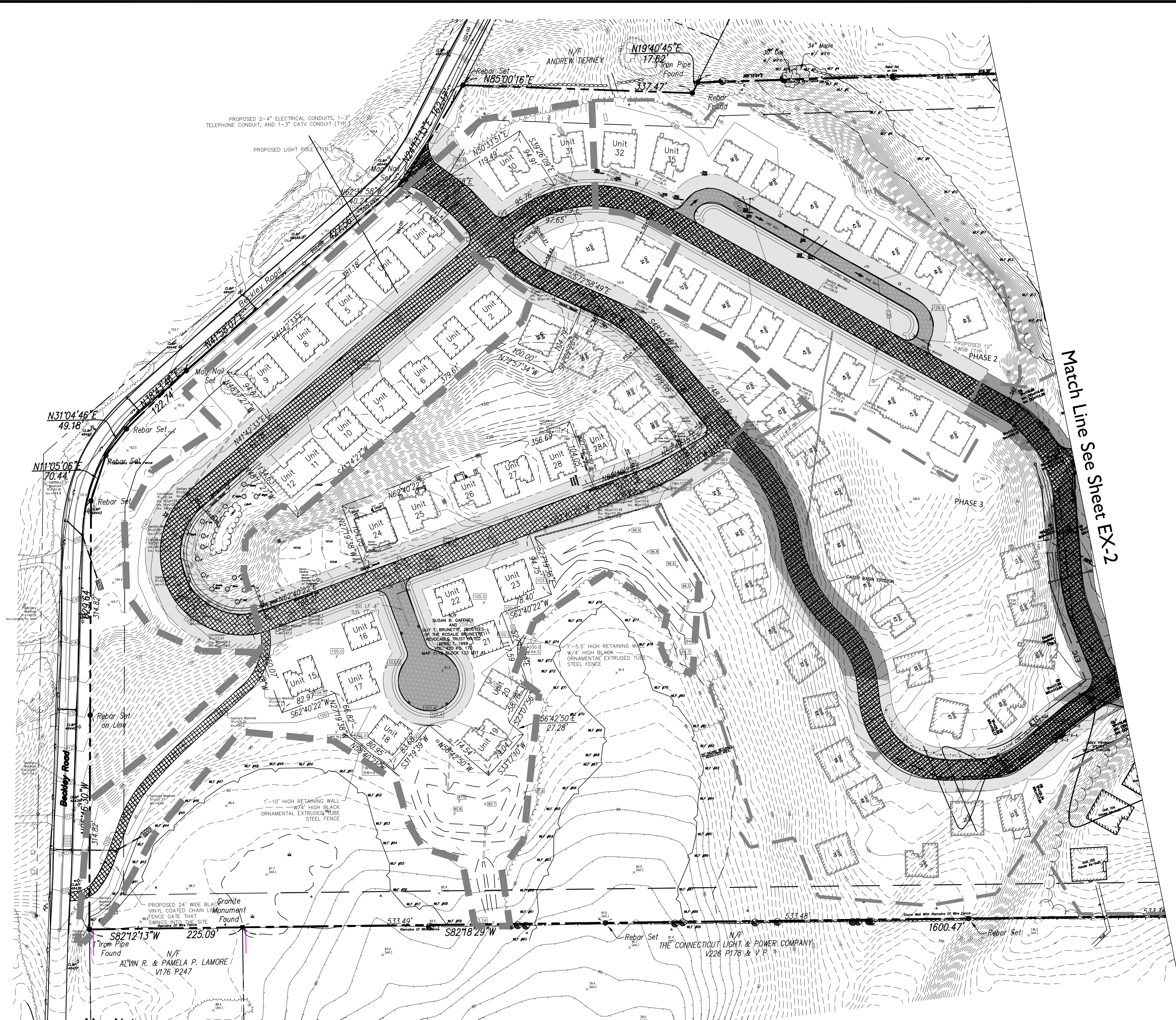
160 West Street, Suite "E"
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Tel 860-635-2877
Fax 860-635-4266

85 Civic Center Plaza, Suite
103 Poughkeepsie, NY
12601
Tel 845-243-2880
Fax 845-265-8175



INDEX OF DRAWINGS

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OSP-1	OVERALL SITE PLAN



Vicinity Map
Scale: 1"=1,500'

Legend

Property Line	Concrete Surface
Easement Line	Existing Spot Grade
Concrete Monument Found	23x40
Iron Pipe / Rebar Found	Guy Wire
Angle Point	Deciduous Tree
Drill Hole	Coniferous Tree
Sanitary Sewer	Shrub
Water Main	Fence Post
Gas Main	Lamp Post
Electric Line	Span Pole
Telephone Line	Light Pole
Overhead Wire	Sign
Utility Pole	Ballard
Water Gate	Hydrant
Gas Gate	Mailbox
Gas Valve	Yard Drain
Drainage Manhole	Curbless Catch Basin
Sanitary Manhole	Catch Basin
Electric Manhole	Benchmark
Telephone Manhole	Wire Fence
Well	Chain Link Fence
Wetland Flag	Guide Rail
Index Contour	Stream/Edge of Water
Intermediate Contour	Limit of Wetlands
Treeline	
Hedge/Shrub Line	
Stone Wall	
Retaining Wall	
Phase Line	

GRAPHIC SCALE
1 inch = 80 ft.

Deed References
Volume 615 Page 787
Total Parcel Area
2,556,549 S.F.
58.692 Acres

- Map Notes**
- This survey and map have been prepared pursuant to the regulations of Connecticut State Agencies, section 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.
The type of Survey performed and the mapped features depicted hereon are in accordance with the requirements of a Property & Topographic Survey.
Boundary determination opinion is based upon a resurvey of the map referenced in note 3-A.
This survey conforms to class A-2.
This survey conforms to class 1-2.
 - Bearings are referenced to map referenced in note 3-A.
 - Reference is made to the following maps:
A. "Property Survey, Open Space Land Plan of Beckley Farms, LLC to be Conveyed to Town of Berlin, Beckley Rd., Wethersfield Rd., and Beckley Mill Rd., Berlin, Connecticut," scale 1"=100', dated December 14, 2005, sheets 1 & 2 of 2, prepared by BL Companies, map on file in the Berlin Town Clerks Office as maps 3613 and 3614.
B. "New Haven Trap Rock Co., Berlin, Connecticut," scale 100', dated May, 1967, prepared by Cohn Engineers, New Haven, Connecticut, map on file in the Berlin Town Clerks Office as map 1925.
C. "Map of Properties of Gustav & Annie Bodach, West St. & Wethersfield Rd., Berlin, Conn., Showing Conveyance June 1950 to May 1959" scale 1"=100', dated October 1, 1963, revised October 30, 1963, prepared by Joseph D. Williams, map on file in the Berlin Town Clerks Office as map 712.
D. "Land to be Purchased from Harry N. Jackaway, Berlin, Conn., The Hartford Electric Light Co.," scale 1"=200', dated July 14, 1971, prepared by The Hartford Electric Light Co., map on file in the Berlin Town Clerks Office as map 1064.
E. "Property to be Transferred to Robert Horton, West Street and Wethersfield Road, Berlin, Conn.," scale 1"=40', dated October 1, 1963, prepared by J.D. Williams, map on file in the Berlin Town Clerks Office as map #3724.
F. "Compilation Plan CL&P File No. W60860, Map Showing Easement Area to be Granted to The Connecticut Light & Power Company Across the Property of Beckley Farms, LLC, Beckley Road, Berlin, Connecticut," scale 1"=100', dated November 8, 2006, prepared by BL Companies, map on file in the Berlin Town Clerks Office as map #3559.
G. "Improvement Location Survey, Declaration of Condominium, Beckley Farms Condominium, Beckley Road, Town of Berlin, Connecticut," scale 1"=100', dated December 21, 2006, prepared by BL Companies, map on file in the Berlin Town Clerks Office as map #3741.
H. "Improvement Location Survey, Declaration of Condominium, Beckley Farms Condominium, Beckley Road, Town of Berlin, Connecticut," scale 1"=100', dated December 21, 2006 revised January 19, 2007, prepared by BL Companies, map on file in the Berlin Town Clerks Office as map #3741.
I. "Improvement Location Survey, Declaration of Condominium, Beckley Farms Condominium, Beckley Road, Town of Berlin, Connecticut," scale 1"=100', dated December 21, 2006 revised through March 23, 2007, prepared by BL Companies, map on file in the Berlin Town Clerks Office as map #3688.
J. "Improvement Location Survey, Declaration of Condominium, Beckley Farms Condominium, Beckley Road, Town of Berlin, Connecticut," scale 1"=100', dated December 21, 2006 revised through April 4, 2007, prepared by BL Companies, map on file in the Berlin Town Clerks Office as map #3694.
K. "Improvement Location Survey, Declaration of Condominium, Beckley Farms Condominium, Beckley Road, Town of Berlin, Connecticut," scale 1"=100', dated December 21, 2006 revised through May 10, 2007, prepared by BL Companies, map on file in the Berlin Town Clerks Office as map #3702.
L. "Improvement Location Survey, Declaration of Condominium, Beckley Farms Condominium, Beckley Road, Town of Berlin, Connecticut," scale 1"=100', dated December 21, 2006 revised through June 15, 2007, prepared by BL Companies, map on file in the Berlin Town Clerks Office as map #3724.
M. "Improvement Location Survey, Declaration of Condominium, Beckley Farms Condominium, Beckley Road, Town of Berlin, Connecticut," scale 1"=100', dated December 21, 2006 revised through June 21, 2007, prepared by BL Companies, map on file in the Berlin Town Clerks Office as map #3732.
N. "Improvement Location Survey, Declaration of Condominium, Beckley Farms Condominium, Beckley Road, Town of Berlin, Connecticut," scale 1"=100', dated December 21, 2006 revised through July 20, 2007, prepared by BL Companies, map on file in the Berlin Town Clerks Office as map #3741.
O. "Access Easement Plan, Berlin Water Control Commission, Beckley Farms Phases 1, 2, 3, 4 and 5, Beckley Road, Town of Berlin, Connecticut," scale 1"=80', dated December 8, 2014, prepared by the LRC Group.
P. "Access Easement Plan, Mattabassett Sewer District, Beckley Farms Phases 1, 2, 3, 4 and 5, Beckley Road, Town of Berlin, Connecticut," scale 1"=80', dated December 8, 2014, prepared by the LRC Group, map on file in the Berlin Town Clerks Office as map #4241.
S. "Compilation Plan Map Showing Existing Easement to be Modified and Easement Area to be Granted to The Connecticut Light & Power Company Across the Property of Estates of Berlin, LLC, Phase 3, Beckley Road, Berlin, Connecticut," scale 1"=40' dated November 3, 2014, CL&P drawing #W4131, prepared by the LRC Group, map on file in the Berlin Town Clerks Office as map #4173.
T. "Easement Plan Map Showing Existing Easement to be Modified and Easement Area to be Granted to The Connecticut Light & Power Company d/b/a Eversource Energy Across the Property of Estates of Berlin, LLC, Phase 4, Beckley Road, Berlin, Connecticut," scale 1"=40' dated March 29, 2017, CL&P drawing #W17048-W4131, prepared by the LRC Group, map on file in the Berlin Town Clerks Office as map #4281.

Certification
To my knowledge and belief this map is substantially correct as noted hereon.
JOHN F. WAGENBLATT
L.S. No. 17,791

EXISTING CONDITIONS

PROPERTY & TOPOGRAPHIC SURVEY

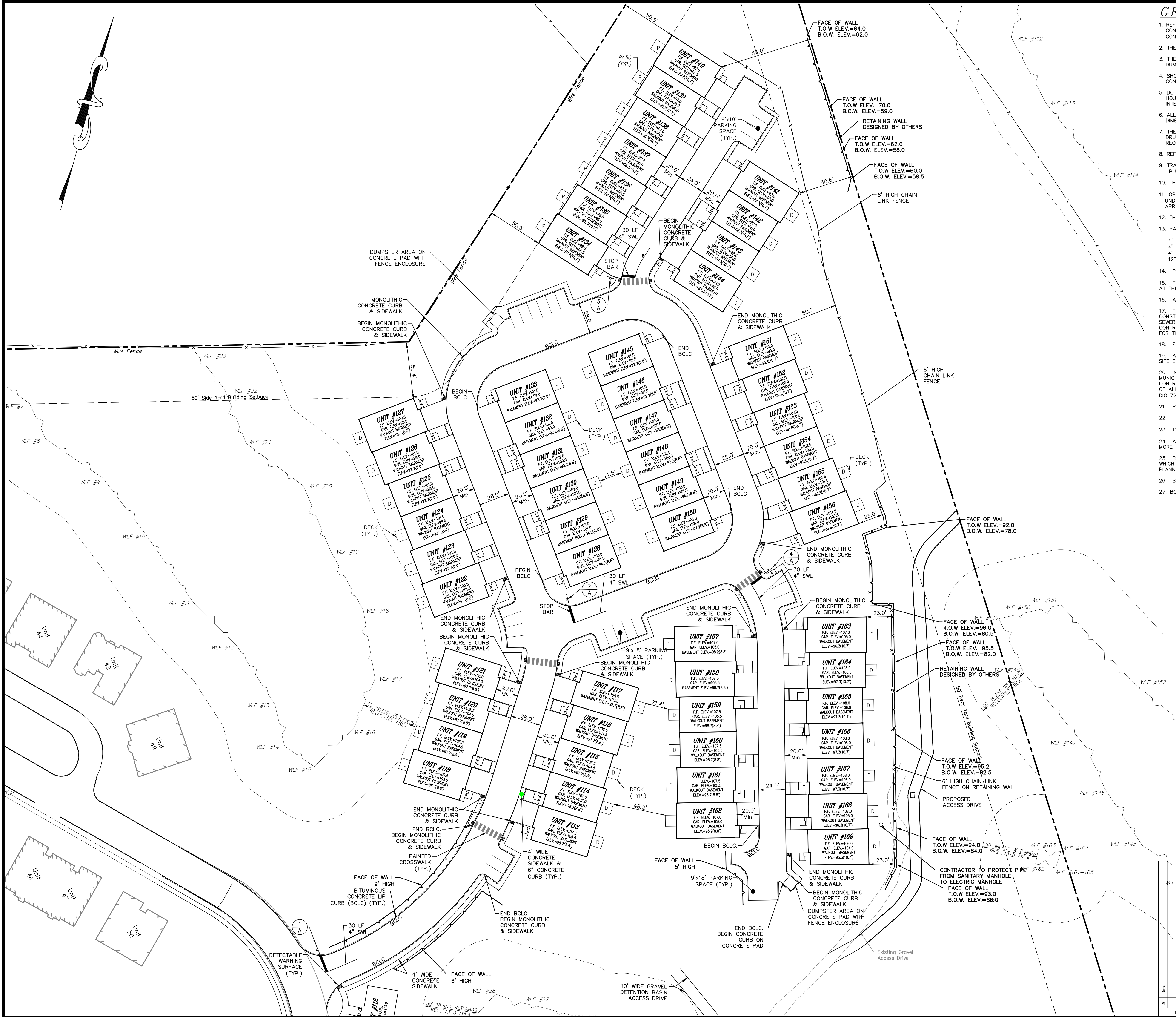
BECKLEY FARMS DEVELOPMENT
AN AGE RESTRICTED COMMUNITY

BECKLEY ROAD
TOWN OF BERLIN
STATE OF CONNECTICUT

Designed EX111173.dwg
Drawn Project No. 11-1173
Checked JFW Date 8/16/19
Approved JFW Scale 1"=80'

Sheet No.
EX-1

Z:\survey\new\new\berlin\3070 job\VC-1006-Beckley Farms Phase 3-4-5.dwg (Sheet) Phase 3\Wetland Wetlands Submission Plan Set 6-16-19 EX111173.dwg



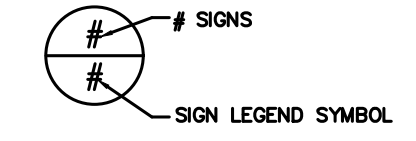
GENERAL NOTES:

- REFER TO OTHER PLANS, DETAILS AND PROJECT MANUAL FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND CONTACT THE SITE ENGINEER IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT APPROPRIATE REVISIONS CAN BE MADE.
- THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF CONSTRUCTION NOTES PROVIDED ON THE DETAIL SHEETS.
- THE CONTRACTOR SHALL REFERENCE ARCHITECTURAL PLANS FOR EXACT DIMENSIONS AND CONSTRUCTION DETAILS OF BUILDING AND DUMPSTER ENCLOSURE.
- SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED EXISTING PIPING OR OTHER UTILITY BE UNCOVERED DURING EXCAVATION, CONSULT THE ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH WORK IN THIS AREA.
- DO NOT INTERRUPT EXISTING UTILITIES SERVICING FACILITIES OCCUPIED AND USED BY THE OWNER OR OTHERS DURING OCCUPIED HOURS EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE OWNER AND THE LOCAL MUNICIPALITIES. INTERRUPTIONS SHALL ONLY OCCUR AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.
- ALL SITE DIMENSIONS ARE REFERENCED TO THE FACE OF CURBS OR EDGE OF PAVING UNLESS OTHERWISE NOTED. ALL BUILDING DIMENSIONS ARE REFERENCED TO THE OUTSIDE FACE OF THE STRUCTURE.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC DEVICES FOR PROTECTION OF VEHICLES AND PEDESTRIANS CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES AND UNIFORMED TRAFFIC OFFICERS AS REQUIRED, ORDERED BY THE ENGINEER OR REQUIRED BY THE LOCAL GOVERNING AUTHORITIES.
- REFER TO DETAIL SHEETS FOR PAVEMENT, CURBING AND SIDEWALK INFORMATION.
- TRAFFIC CONTROL SIGNAGE SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. SIGNS SHALL BE INSTALLED PLUMB WITH THE EDGE OF THE SIGN 2' OFF THE FACE OF THE CURB.
- THE CONTRACT LIMIT IS THE PROPERTY LINE UNLESS OTHERWISE SPECIFIED.
- OSHA REGULATIONS MAKE IT UNLAWFUL TO OPERATE CRANES, BOOMS, HOSTS, ETC. WITHIN TEN (10) FEET OF ANY ELECTRIC LINE UNDER 50KV. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINE(S), CONTACT POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS.
- THE CONTRACTOR SHALL SUBMIT A SHOP DRAWING OF THE PAINT MIXTURE PRIOR TO STRIPING.
- PAVEMENT MARKING KEY:
 - 4" SYDL - 4" SOLID YELLOW DOUBLE LINE
 - 4" SYL - 4" SOLID YELLOW LINE
 - 4" SWL - 4" SOLID WHITE LINE
 - 12" SWSB - 12" SOLID WHITE STOP BAR
- PARKING SPACES SHALL BE STRIPED WITH 4" SWL.
- THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE OWNER AT THE END OF CONSTRUCTION.
- ALL CONSTRUCTION SHALL COMPLY WITH TOWN STANDARDS AND SPECIFICATIONS.
- THE DEVELOPER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS REQUIRED BY GOVERNMENT AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL STATE AND TOWN PERMITS FOR WORK WITHIN ROAD RIGHT OF WAYS, INCLUDING SEWER AND WATER CONNECTION PERMITS. AN EROSION CONTROL BOND IS REQUIRED BEFORE THE START OF ANY ACTIVITY. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE, AND PROVIDE TRAFFIC PROTECTION NECESSARY FOR THIS WORK.
- EXISTING PROPERTY AND TOPOGRAPHY BASED ON MAPPING PREPARED BY LRC ENGINEERING & SURVEYING, LLC.
- ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE OWNER, SITE ENGINEER AND TOWN ENGINEER PRIOR TO INSTALLATION.
- INFORMATION ON EXISTING UTILITIES HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY AND MUNICIPAL RECORD MAPS AND FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE OF DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT CALL BEFORE YOU DIG 72 HOURS BEFORE COMMENCEMENT OF WORK AT (800)922-4455 AND VERIFY ALL LOCATIONS.
- PAVEMENT MARKINGS SHALL BE 15 MINUTE FAST DRYING TYPE.
- THE SITE IS CURRENTLY SERVICED BY PUBLIC WATER, SANITARY SEWER AND GAS.
- 12" SWSB (STOP BAR) AND 4" SYDL AND SWL PAVEMENT MARKINGS LOCATED IN DRIVEWAYS TO BE EPOXY RESIN TYPE.
- ALL CURB/HANDICAP RAMP DESIGNS SHALL CONFORM TO ANSI STANDARDS OR THE TOWN SITE PLAN STANDARDS, WHICHEVER IS MORE RESTRICTIVE.
- BEFORE THE START OF ANY WORK ON SITE THE CONTRACTOR SHALL SETUP A PRE-CONSTRUCTION MEETING WITH TOWN STAFF, WHICH SHALL INCLUDE BUT NOT LIMITED TO, BUILDING INSPECTORS OFFICE, HEALTH DEPARTMENT, PUBLIC WORKS DEPARTMENT AND PLANNING DEPARTMENT.
- SIGNS SHALL CONFORM TO THE MUTCD FOR SHAPE, COLOR, SIZE, LEGEND AND RETROREFLECTIVITY.
- BCLC - BITUMINOUS CONCRETE LIP CURB.

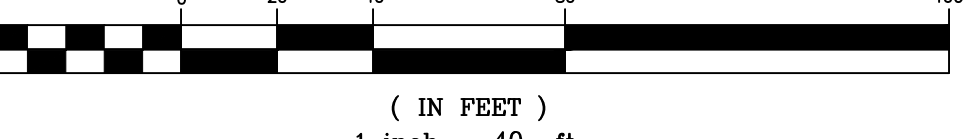
NOTE: The minimum spacing between adjacent structures shall be 20 feet.

SIGN LEGEND

SYM.	LEGEND	QTY.
A	STOP 30"	4



GRAPHIC SCALE



(IN FEET)
1 inch = 40 ft.

Date	Revisions
7/2/20	1
7/2/20	2

LRC GROUP

- Land Planning
- Civil Engineering
- Environmental Services
- Land Surveying
- Landscape Architecture

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LRC Engineering and Surveying, D.P.C.
LRC Environmental Services, Inc.
LRC Engineering and Surveying, LLC

SITE PLAN

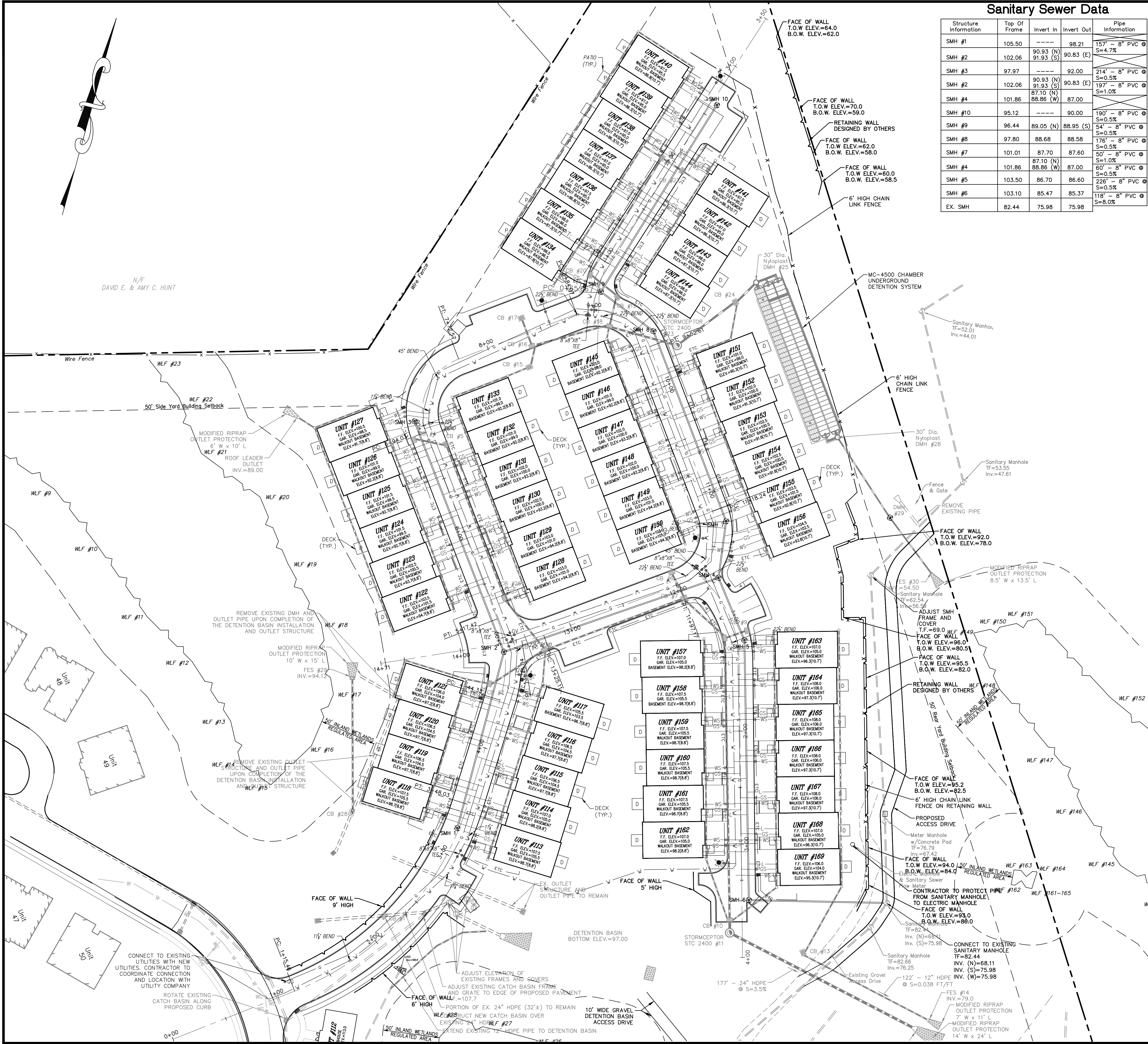
**BECKLEY FARMS
PHASE 5 REDESIGN**

**BECKLEY ROAD
TOWN OF BERLIN
STATE OF CONNECTICUT**

Designed	RHR	CAD File	SP10108601.dwg	Sheet No.
Drawn	RHR	Project No.	11-1173	
Checked	JW/REM	Date	2/22/18	
Approved	JW/REM	Scale	1"=40'	

SP-1

Revisions	2 7/12/2010 REVISED RETAINING WALLS & ADDED UNDERGROUND DETENTION DATA 1 2/24/2010 PHASED SITE GRADING & UPGRADE DRAINAGE DATA	 - Land Planning - Civil Engineering - Environmental Services - Land Surveying - Landscape Architecture 160 West Street, Suite E Cromwell, CT 06416 Tel:860.635.2877 85 Civic Center Plaza, Suite 103 Poughkeepsie NY 12601 Tel:845.243.2880 90 Beaver Ave, Suite 5 Clinton, NJ 08809 Tel:908.603.5730 www.lrcconsult.com Land Resource Consultants, Inc. LRC Engineering and Surveying, D.P.C. LRC Environmental Services, LLC LRC Engineering and Surveying, LLC	GRADING AND DRAINAGE PLAN BECKLEY FARMS PHASE 5 REDESIGN BECKLEY ROAD TOWN OF BERLIN STATE OF CONNECTICUT				Sheet No. GD-1														
			<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">Designed</th> <th style="width: 10%;">RHR</th> <th style="width: 20%;">CAD File</th> <th style="width: 30%;">GD10108601.dwg</th> <th style="width: 20%;"></th> </tr> </thead> <tbody> <tr> <td>Drawn</td> <td></td> <td>Project No.</td> <td>11-1173</td> <td></td> </tr> <tr> <td>Checked</td> <td>JW/REM</td> <td>Date</td> <td>2/22/18</td> <td></td> </tr> <tr> <td>Approved</td> <td>JW/REM</td> <td>Scale</td> <td>1"=40'</td> <td></td> </tr> </tbody> </table>	Designed	RHR	CAD File		GD10108601.dwg		Drawn		Project No.	11-1173		Checked	JW/REM	Date	2/22/18		Approved	JW/REM
Designed	RHR	CAD File	GD10108601.dwg																		
Drawn		Project No.	11-1173																		
Checked	JW/REM	Date	2/22/18																		
Approved	JW/REM	Scale	1"=40'																		



Sanitary Sewer Data

Structure Information	Top Of Frame	Invert In	Invert Out	Pipe Information
SMH #1	105.50	-----	98.21	157' - 8" PVC @ S=4.7%
SMH #2	102.06	90.93 (N) 91.93 (S)	90.83 (E)	
SMH #3	97.97	-----	92.00	214' - 8" PVC @ S=0.5%
SMH #2	102.06	90.93 (N) 91.93 (S)	90.83 (E)	197' - 8" PVC @ S=1.0%
SMH #4	101.86	88.86 (W)	87.00	
SMH #10	95.12	-----	90.00	190' - 8" PVC @ S=0.5%
SMH #9	96.44	89.05 (N) 88.95 (S)		54' - 8" PVC @ S=0.5%
SMH #8	97.80	88.68	88.58	176' - 8" PVC @ S=0.5%
SMH #7	101.01	87.70	87.60	50' - 8" PVC @ S=1.0%
SMH #4	101.86	87.10 (N) 88.86 (W)	87.00	60' - 8" PVC @ S=0.5%
SMH #5	103.50	86.70	86.60	226' - 8" PVC @ S=0.5%
SMH #6	103.10	85.47	85.37	118' - 8" PVC @ S=8.0%
EX. SMH	82.44	75.98	75.98	

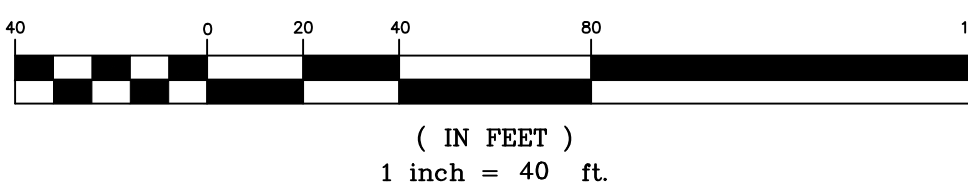
UTILITY NOTES:

- SEE SITE PLAN FOR ADDITIONAL GENERAL NOTES.
- THIS DRAWING IS INTENDED TO DEPICT THE PROPOSED UTILITIES TO BE INSTALLED. REFER TO SITE PLAN FOR GENERAL INFORMATION AND DETAIL SHEETS FOR DETAILS. SEE MEP DRAWINGS FOR BUILDING CONNECTION LOCATIONS AND DETAILS.
- THE CONTRACTOR SHALL PRESERVE EXISTING VEGETATION WHERE POSSIBLE AND/OR AS NOTED ON DRAWINGS.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS REQUIRED BY GOVERNMENT AND LOCAL AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM THE LOCAL MUNICIPALITIES REQUIRED TO PERFORM ALL REQUIRED WORK. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
- CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE LOCAL MUNICIPALITIES TO SECURE PERMITS AND FEES FOR STREET CUTS AND CONNECTIONS TO EXISTING UTILITIES.
- THIS PLAN DETAILS PIPES UP TO 5' FROM THE BUILDING FACE. REFER TO DRAWINGS BY OTHERS FOR BUILDING CONNECTIONS. CONTRACTOR SHALL SUPPLY AND INSTALL PIPE ADAPTERS AS NECESSARY.
- THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION. TEST PITS SHALL BE DUG AT ALL LOCATIONS WHERE PROPOSED UTILITIES, CROSS-EXISTING UTILITIES AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES SHALL BE DETERMINED. THE CONTRACTOR SHALL CONTACT THE SITE ENGINEER IN THE EVENT OF ANY UNFORESEEN CONFLICTS BETWEEN EXISTING AND PROPOSED UTILITIES SO THAT AN APPROPRIATE MODIFICATION MAY BE MADE.
- UTILITY CONNECTION DESIGN AS REFLECTED ON THE PLAN MAY CHANGE SUBJECT TO UTILITY CO. AND TOWN STAFF REVIEW.
- THE CONTRACTOR SHALL ENSURE THAT ALL UTILITY COMPANIES AND TOWN STANDARDS FOR MATERIALS AND CONSTRUCTION METHODS ARE MET. THE CONTRACTOR SHALL PERFORM PROPER COORDINATION WITH THE RESPECTIVE UTILITY COMPANY.
- THE CONTRACTOR SHALL ARRANGE FOR AND COORDINATE WITH THE RESPECTIVE UTILITY COMPANIES FOR SERVICE INSTALLATIONS AND CONNECTIONS. THE CONTRACTOR SHALL COORDINATE WORK TO BE PERFORMED BY THE VARIOUS UTILITY COMPANIES AND SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTION, RELOCATIONS, INSPECTIONS, AND DEMOLITION.
- SHOP DRAWINGS: THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF MATERIALS AND STRUCTURES FOR REVIEW AND APPROVAL PRIOR TO DELIVERY TO THE SITE. ALLOW 14 WORKING DAYS FOR REVIEW.
- SAW CUT ALL EXISTING PAVEMENT WHERE UTILITY PIPING IS TO BE INSTALLED.
- ALL PIPES SHALL BE LAID ON STRAIGHT ALIGNMENTS AND EVEN GRADES USING A PIPE LASER OR OTHER ACCURATE METHOD.
- THE CONTRACTOR SHALL COMPACT THE PIPE BACKFILL IN 8" LIFTS ACCORDING TO THE PIPE BEDDING DETAILS. TRENCH BOTTOM SHALL BE STABLE IN HIGH GROUNDWATER AREAS. A PIPE FOUNDATION SHALL BE USED IN AREAS OF ROCK EXCAVATION.
- CONTRACTOR TO PROVIDE SLEEVES UNDER FOOTINGS FOR UTILITY CONNECTIONS AS REQUIRED.
- UTILITY PENETRATIONS AND LOCATIONS ARE SHOWN FOR THE CONTRACTOR'S INFORMATION AND SHALL BE VERIFIED WITH THE MEP DRAWINGS.
- ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION PRIOR TO APPROVAL FOR BACKFILL IN ACCORDANCE WITH THE APPROPRIATE UTILITY COMPANY AND/OR THE LOCAL MUNICIPALITIES' REQUIREMENTS.
- A ONE-FOOT MINIMUM CLEARANCE BETWEEN WATER, GAS, ELECTRICAL & TELEPHONE LINES AND STORM SEWERS SHALL BE PROVIDED.
- CONTRACTOR SHALL PROVIDE ALL BENDS, FITTINGS, ADAPTERS, ETC., AS REQUIRED FOR PIPE CONNECTIONS TO BUILDING STUB OUTS INCLUDING ROOF/FOOTING DRAIN CONNECTIONS TO ROOF LEADERS AND TO STORM DRAINAGE SYSTEM.
- ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION PRIOR TO APPROVAL FOR BACKFILL IN ACCORDANCE WITH THE APPROPRIATE UTILITY COMPANY AND/OR TOWN AND COUNTY REQUIREMENTS.
- SITE CONTRACTOR SHALL COORDINATE THE METER LOCATION ON BUILDINGS WITH THE APPROPRIATE UTILITY COMPANY AND THE ARCHITECTURAL PLANS.
- THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, PIPE, UTILITY, PAVEMENT, CURBS, SIDEWALKS, OR LANDSCAPED AREAS DISTURBED DURING CONSTRUCTION, TO ITS ORIGINAL CONDITION OR BETTER.
- ALL SITE WORK, MATERIALS OR CONSTRUCTION, AND CONSTRUCTION METHODS SHALL CONFORM TO THE SPECIFICATIONS AND DETAILS AND APPLICABLE SECTIONS OF THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION. ALL FILL MATERIAL UNDER STRUCTURES AND PAVED AREAS SHALL BE "LOAD BEARING FILL" (COURSE AGGREGATE #2A), AND SHALL BE PLACED IN ACCORDANCE WITH THE REQUIREMENT OF THE CTDOT, UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER. COMPACTION SHALL BE 95% MAXIMUM MODIFIED PROCTOR DENSITY PER ASTM D1557 AT 3 PERCENT OF OPTIMUM MOISTURE CONTENT.
- INFORMATION ON EXISTING UTILITIES HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY AND MUNICIPAL RECORD MAPS AND FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES INCLUDING SERVICES. PRIOR TO CONSTRUCTION, CONTACT CALL BEFORE YOU DIG AT (800) 922-4455 AND VERIFY ALL UNDERGROUND AND OVERHEAD UTILITY LOCATIONS.
- THE CONTRACTOR SHALL ARRANGE AND COORDINATE WITH UTILITY COMPANIES FOR WORK TO BE PERFORMED BY UTILITY COMPANIES. THE CONTRACTOR SHALL PAY ALL UTILITY FEES, REPAIR PAVEMENTS AND PROVIDE BACKFILL MATERIALS AS NECESSARY.
- ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION PRIOR TO APPROVAL FOR BACKFILL IN ACCORDANCE WITH THE APPROPRIATE UTILITY COMPANY AND/OR TOWN'S REQUIREMENTS.
- ELECTRIC AND TELEPHONE SERVICES SHALL BE INSTALLED UNDERGROUND FROM THE PREVIOUSLY INSTALLED SERVICES IN PHASE 3. THE CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE UTILITY COMPANY FOR REQUIREMENTS AND SPECIFICATION OF WORK TO BE CONDUCTED. GALVANIZED STEEL ELECTRICAL CONDUIT SHALL BE USED AT POLE AND TRANSFORMER LOCATIONS. INSTALL HANDHOLES AS REQUIRED.
- PIPE SEPARATIONS - 10' MIN BETWEEN WATER AND SEWER, 10' MIN. BETWEEN WATER AND BUILDINGS AND 5' MIN. BETWEEN WATER AND CATCH BASINS AND DRAIN PIPES.
- ALL NEW UTILITIES, INCLUDING CATV, SHALL BE LOCATED UNDERGROUND.
- PERPETUAL CARE AND MAINTENANCE SHALL BE PROVIDED BY THE OWNER FOR ALL PLANTINGS, SEEDING AND OTHER SITE IMPROVEMENTS.
- SHEETING, SHORING OR OTHER MEANS OF PROTECTION FOR WORKERS, ADJACENT PROPERTY AND THE GENERAL PUBLIC SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. HE SHALL FOLLOW ALL REGULATIONS OF THE TOWN AND ALL REQUIREMENTS OF STATE AND FEDERAL REGULATIONS AS THEY APPLY TO UNDERGROUND TRENCHING AND IN SITUATIONS.
- ALL FIELD CHANGES TO BE APPROVED BY ZONING OFFICER PRIOR TO COMPLETION IN THE FIELD. THE CONTRACTOR SHALL MAINTAIN A SET OF "AS BUILT" PLANS ON THE SITE ON WHICH ALL CHANGES TO THE APPROVED PLANS SHALL BE RECORDED. AT THE COMPLETION OF CONSTRUCTION THIS SET OF PLANS WILL BE TURNED OVER TO THE DESIGN ENGINEER WHO WILL REVERSE THE ORIGINAL PLANS ACCORDINGLY AND WILL FILE THE REVISED PLANS WITH THE TOWN'S ENGINEERING DIVISION AND WITH EACH UTILITY OWNER.
- SANITARY SEWER LATERALS SHALL BE 6" PVC (POLYVINYL CHLORIDE) SDR35 WITH A MINIMUM SLOPE OF 2% SANITARY SEWER MAIN SHALL BE 8" PVC (POLYVINYL CHLORIDE) SDR35 WITH A MINIMUM SLOPE 0.5%.
- WATER SERVICES SHALL BE 1" COPPER TUBING. INSTALL A CURB STOP AND VALVE BOX 2 FEET BEHIND THE PROPOSED CURB UNLESS OTHERWISE DIRECTED. WATER MAINS SHALL BE DUCTILE IRON PIPE OR APPROVED EQUAL WITH A MINIMUM COVER OF 4.5 FEET.
- INSTALL GAS SHUT OFF VALVE AND CURB BOX AT EACH HOUSE SERVICE LOCATION. COORDINATE INSTALLATION WITH CONNECTICUT NATURAL GAS.
- ALL DRAINAGE STRUCTURES SHALL BE CLEANED PRIOR TO FINAL ACCEPTANCE OF THE PROJECT BY THE OWNER.
- ALL CONSTRUCTION MATERIALS AND METHODS SHALL CONFORM WITH THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGES, AND INCIDENTAL CONSTRUCTION FORM 816, AS REVISED.
- ANY DAMAGE TO THE EXISTING CURB, SIDEWALK OR ANY OTHER APPURTENANCES DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE AS DIRECTED BY THE TOWN. PERMANENT PAVEMENT REPAIR UPON COMPLETION OF UTILITY INSTALLATION SHALL INCLUDE THE RESTORATION OF CURBING AND PAVEMENT MARKINGS. THE LIMITS OF PERMANENT PAVEMENT REPAIR SHOWN ON THE PLANS MAY BE REVISED BY THE TOWN DUE TO EXISTING SITE CONDITIONS OR OTHER UNFORESEEN FACTORS.
- IF BLASTING IS NECESSARY, THE FOLLOWING IS REQUIRED:
PRE-BLAST SURVEY SHALL COVER ALL HOMES (BUILDINGS) WITHIN 250' OF THE PROJECT BOUNDARY. APPLICANT SHALL OBTAIN ALL PERMITS, ADHERE TO ALL TOWN REQUIREMENTS AND PROVIDE REQUIRED INSURANCE PRIOR TO BLASTING.

Legend

EXISTING	PROPOSED
Property Line	---
Sanitary Sewer	---
Water Main	---
Gas Main	---
Sanitary Sewer Lateral	---
Water Service	---
Water Gate	---
Gas Gate	---
Drainage Manhole	---
Sanitary Manhole	---
Index Contour	---
Intermediate Contour	---
Storm Drainage Pipe	---
Curbside Catch Basin	---
Curb Inlet Catch Basin	---

GRAPHIC SCALE



Date	Revisions
1/22/20	1. PREPARED RETAINING WALLS & ADDED UNDERGROUND DETENTION
2/22/20	2. REVISED SITE DRAWING & UPDATE SANITARY DATA



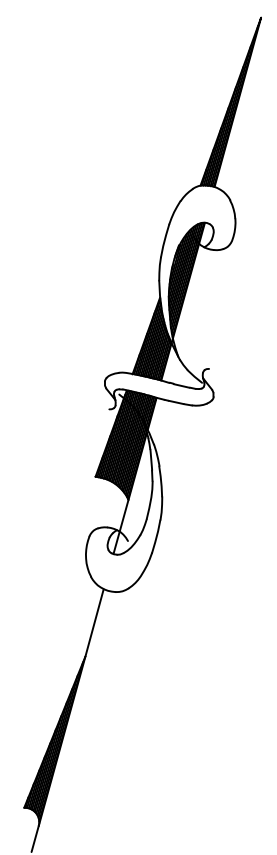
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UTILITY PLAN

BECKLEY FARMS
PHASE 5 REDESIGN
BECKLEY ROAD
TOWN OF BERLIN
STATE OF CONNECTICUT

Designed	RHR	CAD/JFM0108601 rrasied site.dwg	Sheet No.
Drawn	RHR	Project No.	11-1173
Checked	JW/REM	Date	2/22/18
Approved	JW/REM	Scale	1"=40'

UT-1





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EROSION AND SEDIMENT CONTROL PLAN - PHASE 4

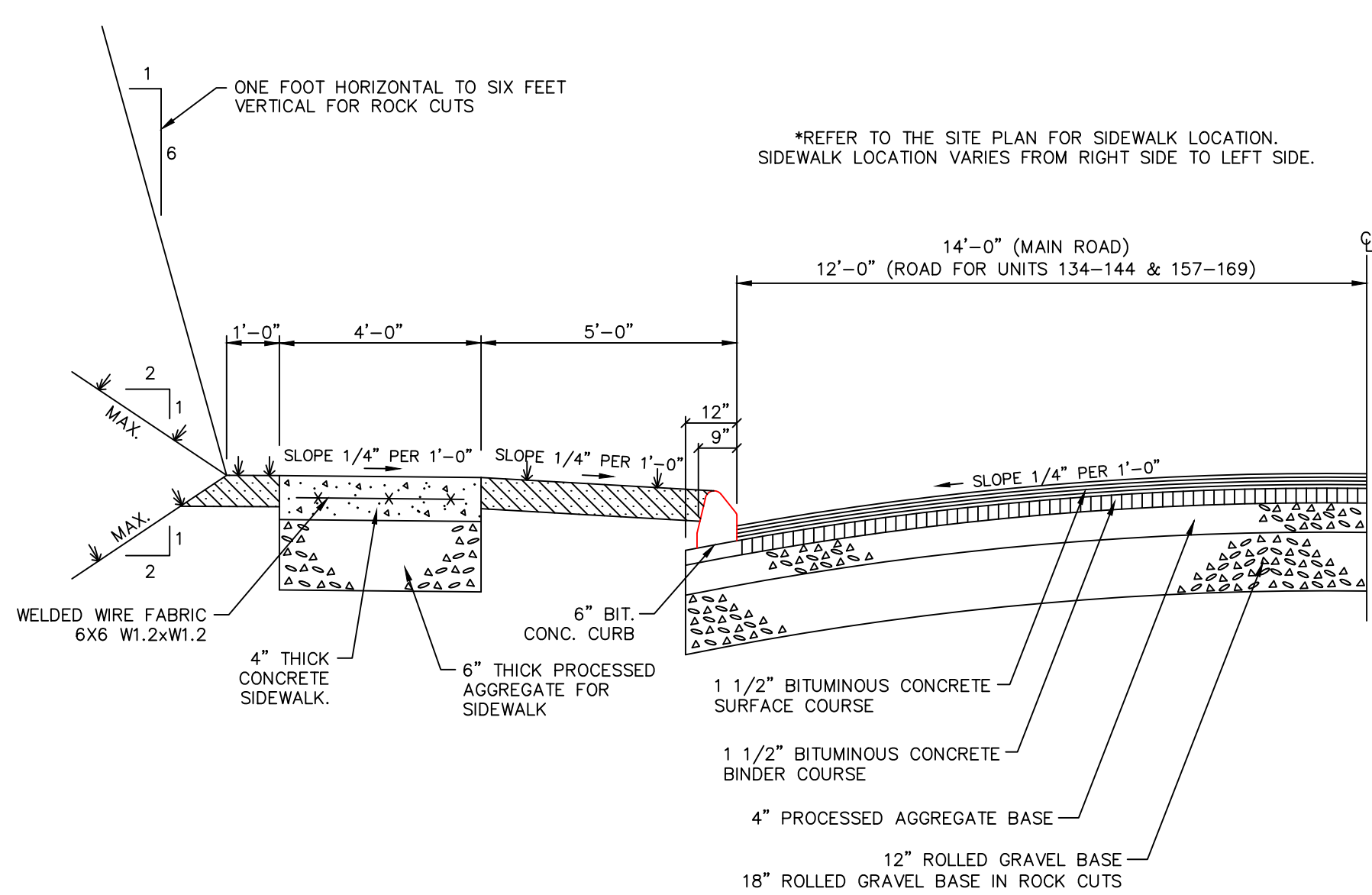
BECKLEY FARMS DEVELOPMENT AN AGE RESTRICTED COMMUNITY

BECKLEY ROAD
TOWN OF BERLIN
STATE OF CONNECTICUT

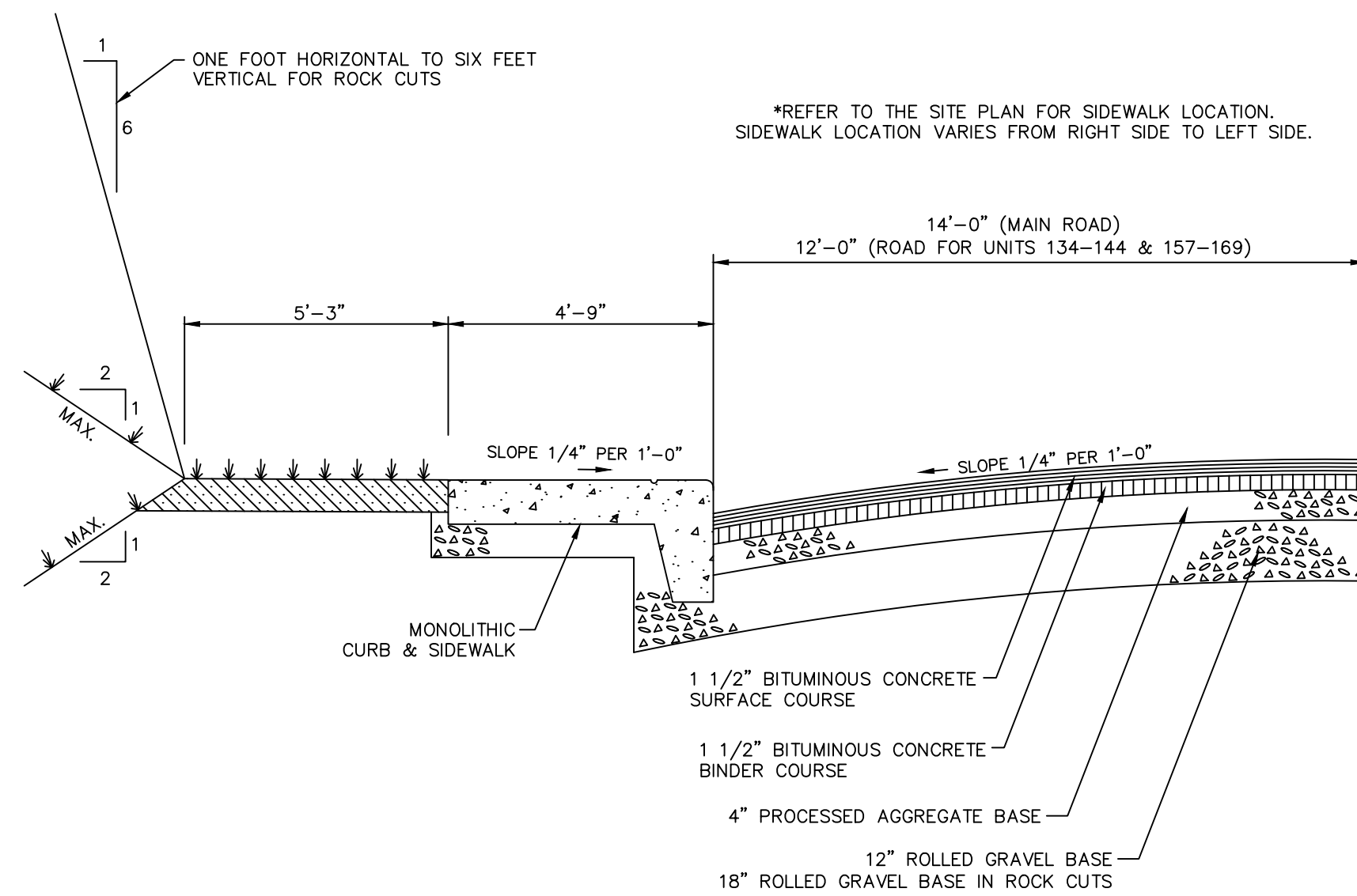
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Drawn	Project No.	11-1173
Checked	Date	8/16/19
Approved	Scale	1" = 40'

Sheet No.

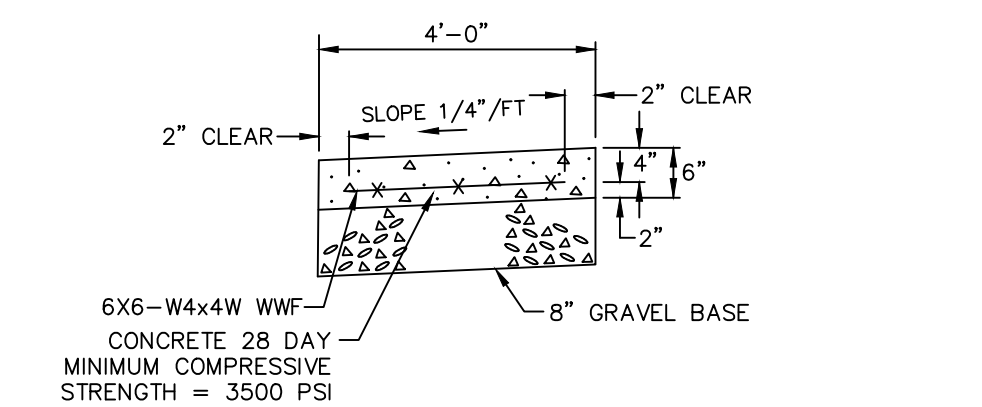
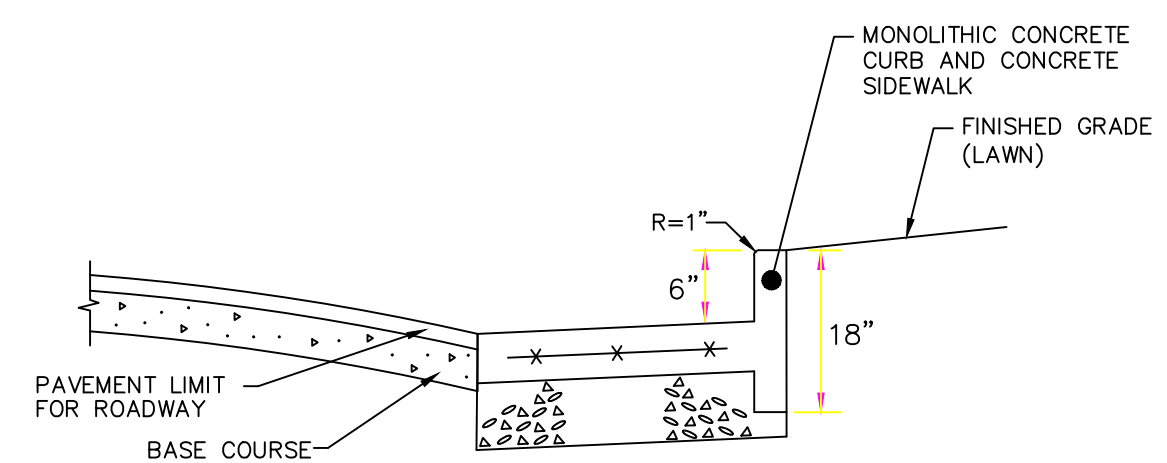
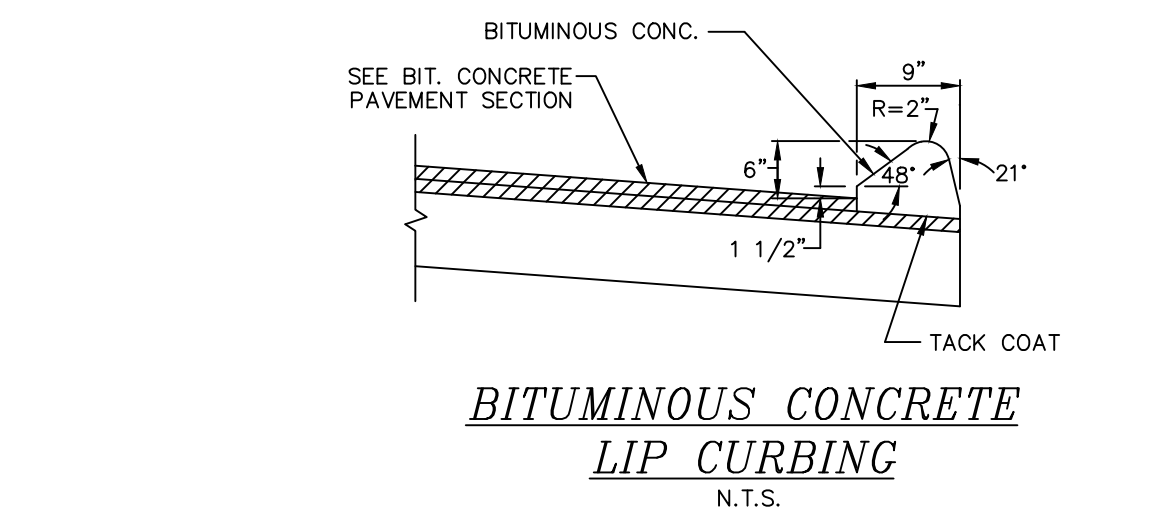
EC-2



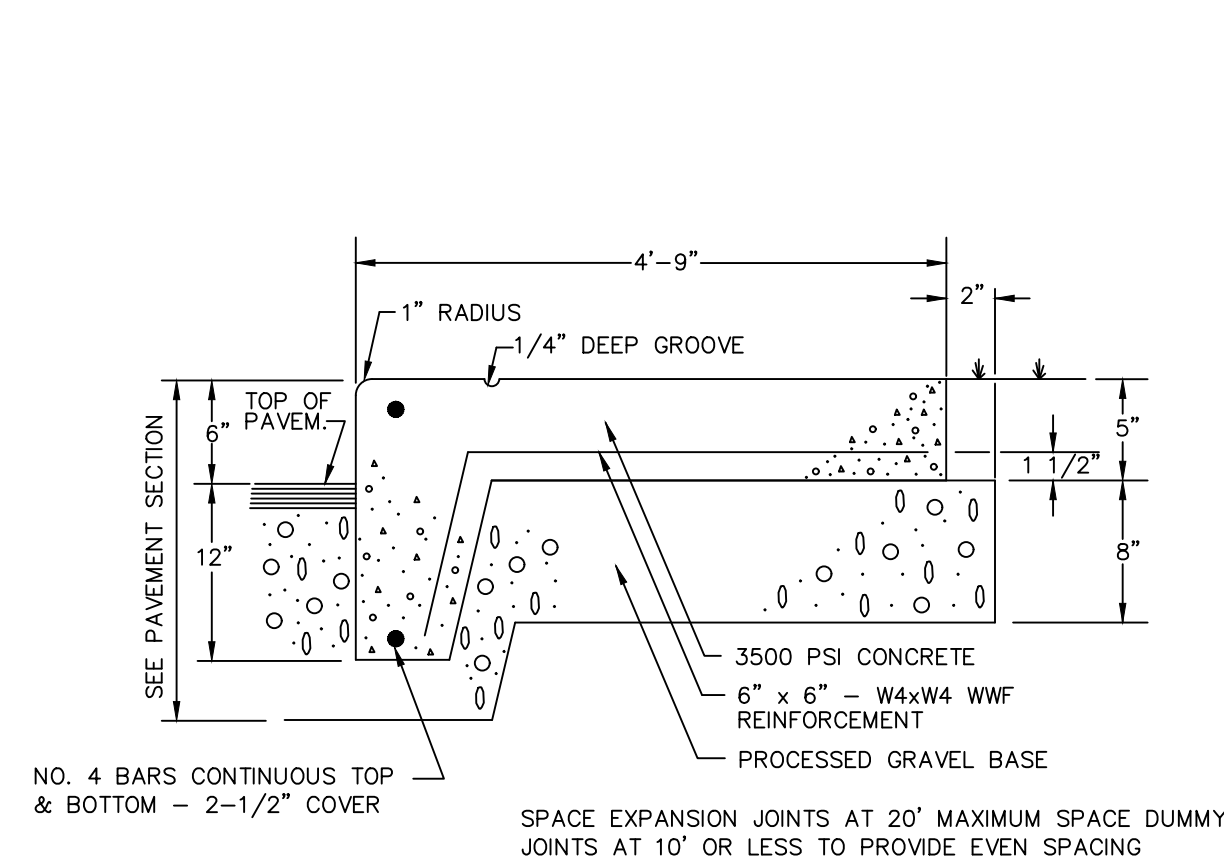
**BITUMINOUS CONCRETE
PAVEMENT & SIDEWALK SECTION**
N.T.S.



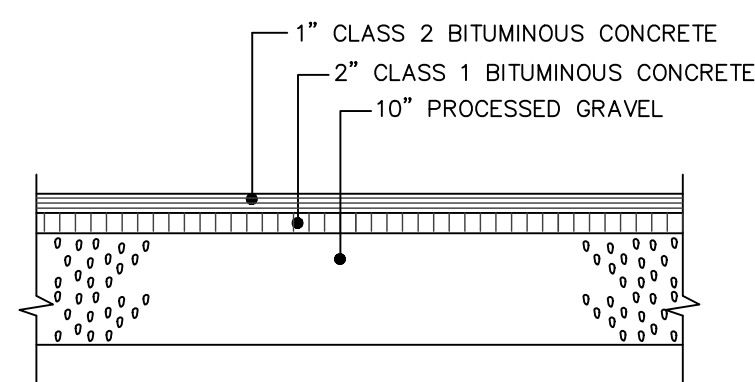
**BITUMINOUS CONCRETE PAVEMENT &
MONOLITHIC SIDEWALK SECTION**
N.T.S.



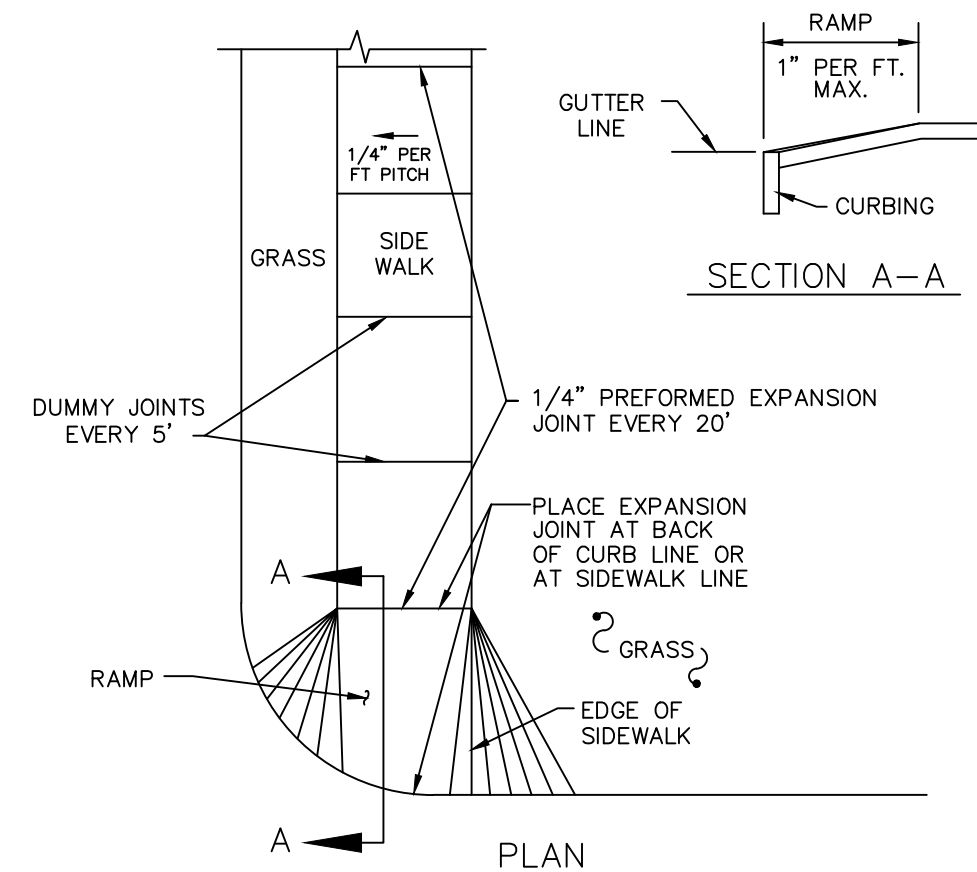
**MONOLITHIC CONCRETE CURB AND
CONCRETE SIDEWALK DETAIL
BETWEEN DRIVEWAYS**
N.T.S.



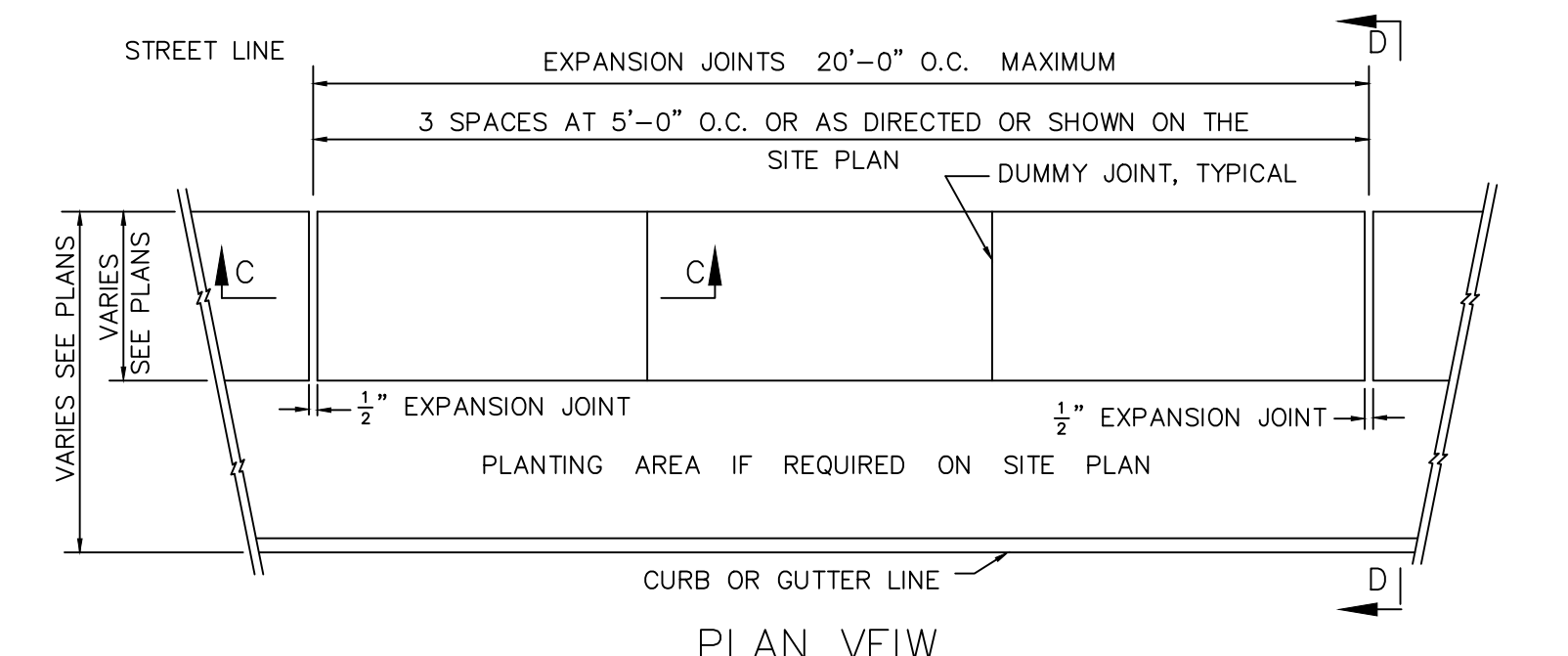
MONOLITHIC CONCRETE WALK
N.T.S.



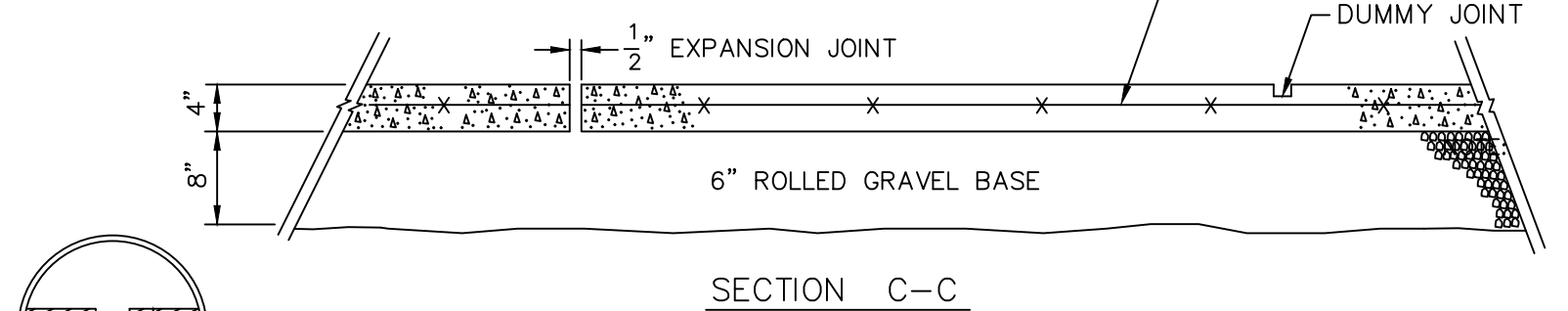
BITUMINOUS CONCRETE DRIVEWAYS
N.T.S.



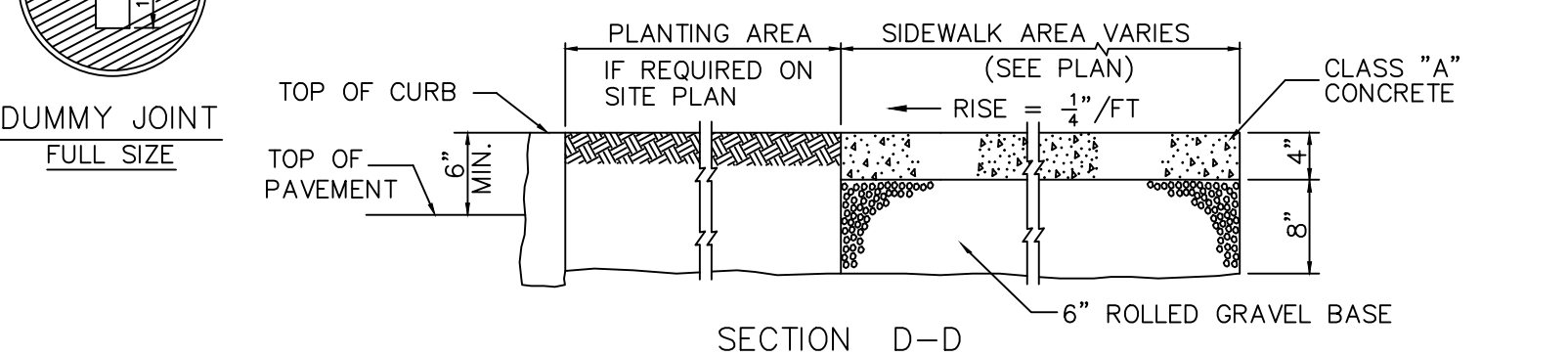
SIDEWALK RAMP DETAIL
N.T.S.



PLAN VIEW

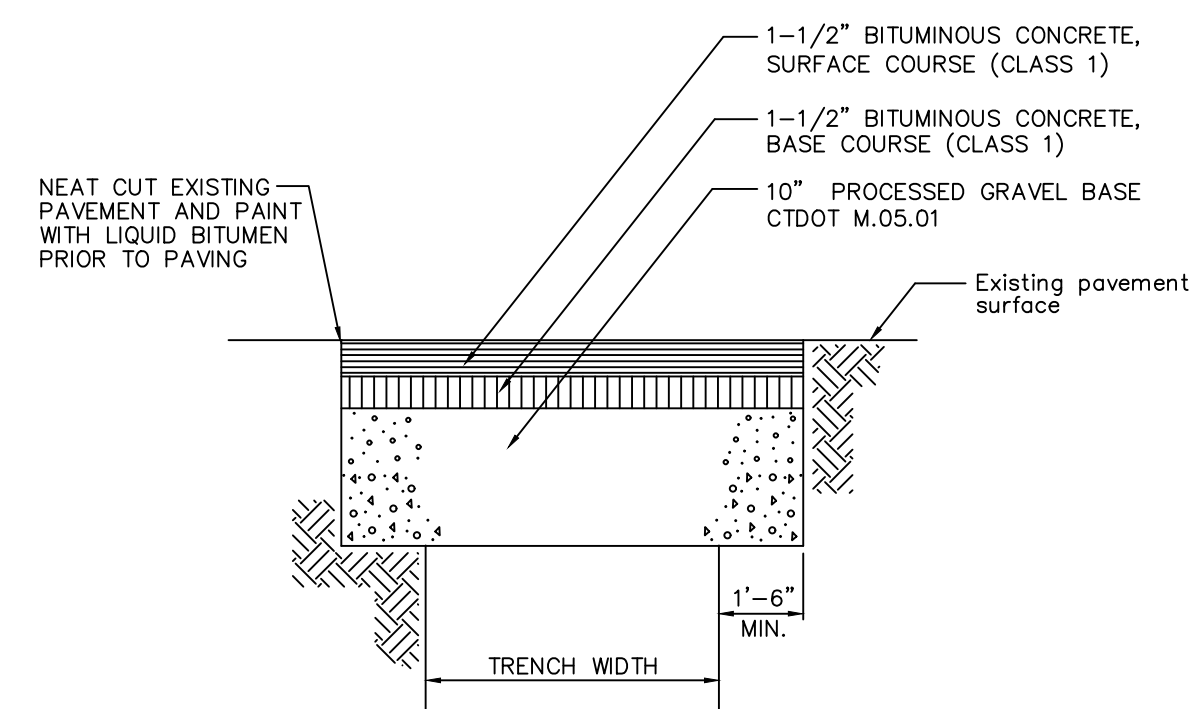


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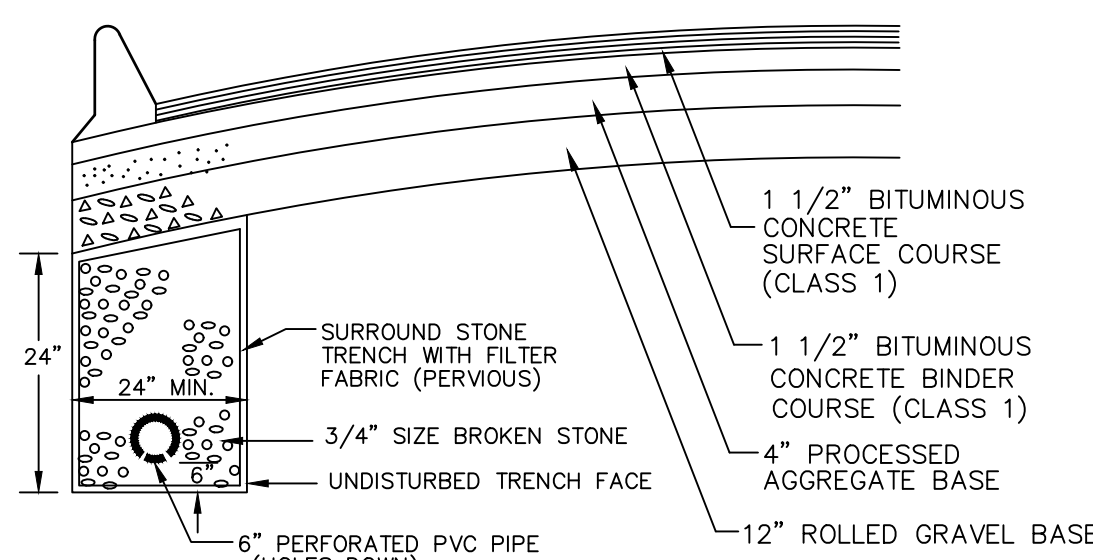


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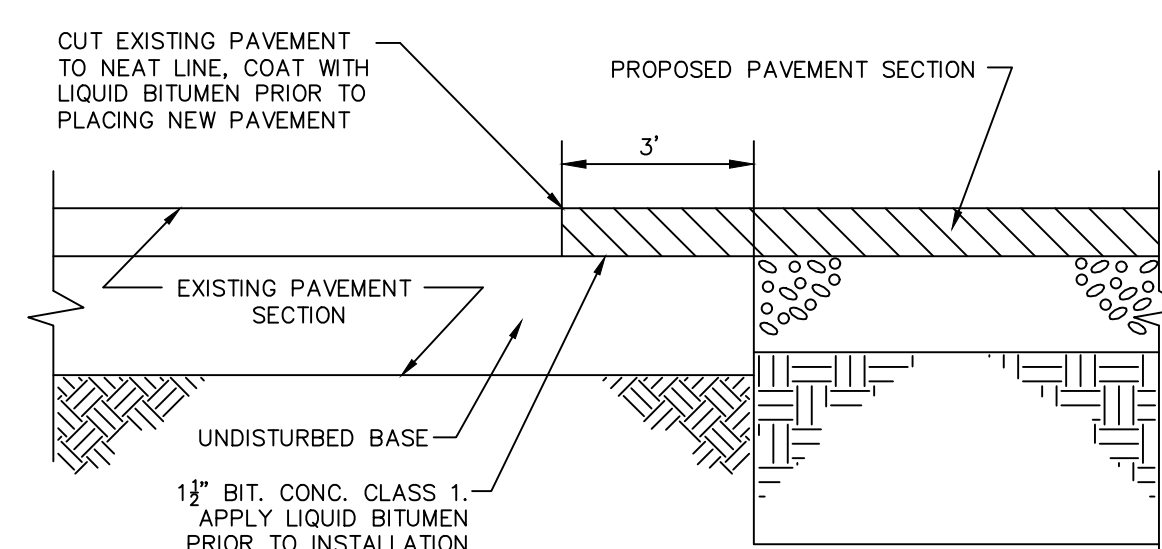
TYPICAL CONCRETE SIDEWALK DETAIL
N.T.S.



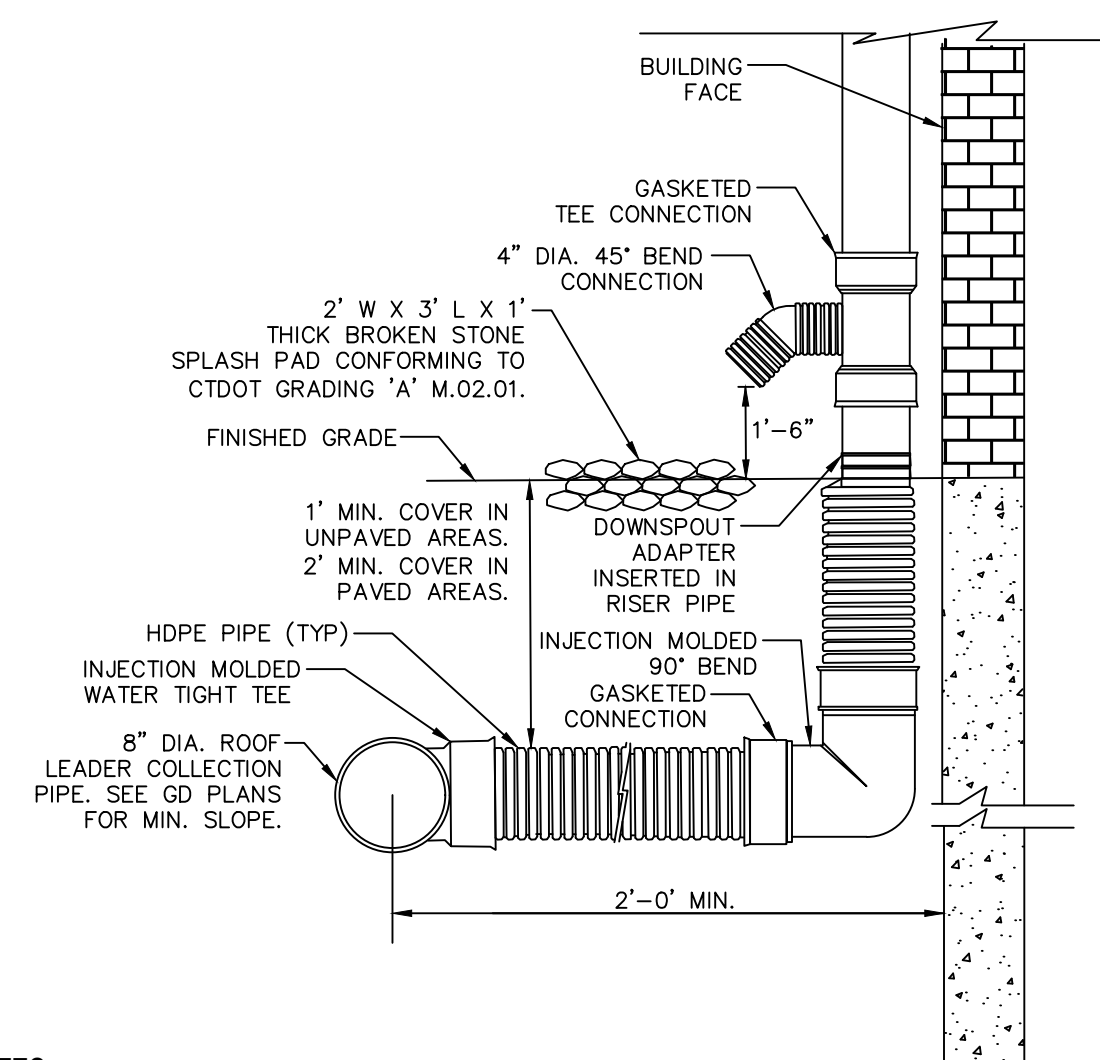
PAVEMENT REPAIR OVER TRENCH
N.T.S.



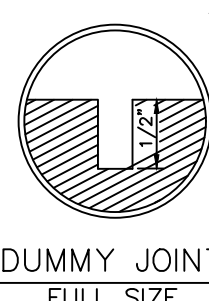
UNDERDRAIN TRENCH SECTION
N.T.S.



PAVEMENT MATCHING DETAIL
N.T.S.



ROOF DRAIN COLLECTION PIPE WITH OVERFLOW DETAIL
N.T.S.



**DUMMY JOINT
FULL SIZE**



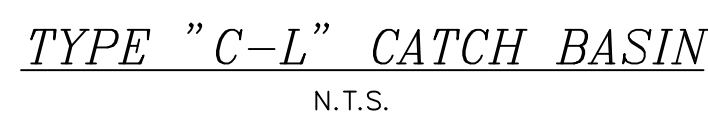
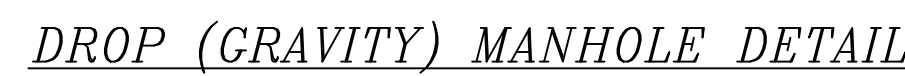
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DETAIL SHEET

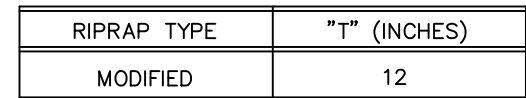
**BECKLEY FARMS
PHASE 5 REDESIGN
BECKLEY ROAD
TOWN OF BERLIN
STATE OF CONNECTICUT**

Designed	RHR	CAD File	DN10108601.dwg	Sheet No.
Drawn	RHR	Project No.	11-1173	
Checked	JW/REM	Date	2/22/18	
Approved	JW/REM	Scale	AS NOTED	

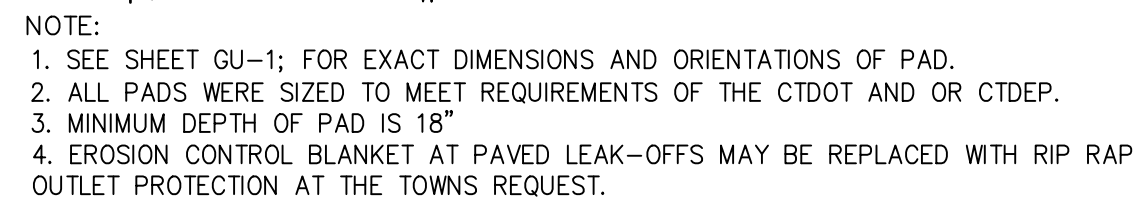
DN-1



DN-2



RIPRAP AT FLARED SECTION
N.T.S.

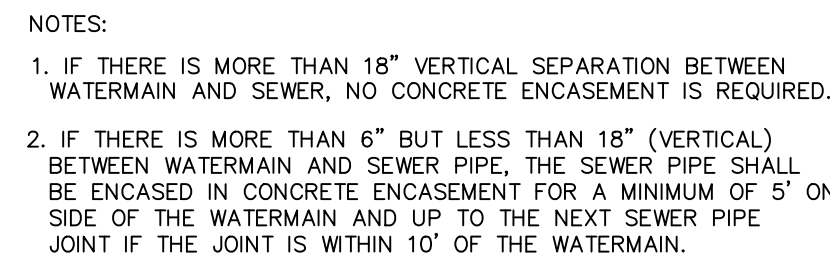


RIP RAP OUTLET PROTECTION
N.T.S.



TRANSFORMER PAD DETAIL
N.T.S.

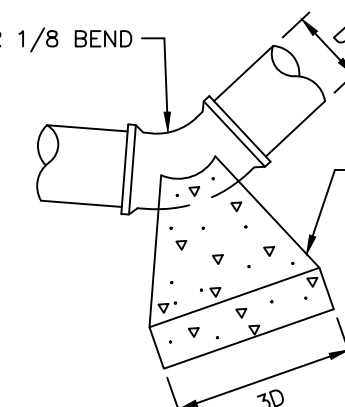
1. FOUR COPPERWELD GROUND RODS AND A #4/0 AWG BARE COPPER GROUNDING GRID SHALL BE INSTALLED AND CONNECTED WITH (5) APPROVED GROUND GRID CONNECTORS AS SHOWN.
2. THE GROUND GRID "TALS" SHALL BE BROUGHT, BELOW GRADE, INTO THE FOUNDATION WINDOW AS SHOWN.
3. THE GROUND RODS, GROUND GRID, PRIMARY NEUTRALS, SECONDARY NEUTRALS, TRANSFORMER TANK AND METAL CONDUITS SHALL ALL BE EFFECTIVELY BONDED TOGETHER.
4. ALL GROUNDING AND BONDING SHALL BE DONE WITH COPPER WIRE. THE MINIMUM CONDUCTOR SIZE FOR BONDING METAL CONDUITS IS #4 AWG BARE COPPER; ALUMINUM WIRE IS NOT ACCEPTABLE.
5. GROUNDING BUSHINGS SHALL BE USED FOR BONDING ALL METAL CONDUITS.
6. THE GROUND GRID AND ASSOCIATED CONNECTIONS REQUIRE UI INSPECTION PRIOR TO BACKFILLING THE AREA.
7. A COMPACTED BASE OF 12" CRUSHED STONE SHALL BE INSTALLED ON A LEVEL COMPACTED SUB-GRADE WITH A MINIMUM SOIL BEARING CAPACITY OF 1,000 POUNDS PER SQUARE FOOT.
8. CONCRETE SHALL CONFORM WITH ACI BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE; AND SHALL HAVE A MINIMUM ULTIMATE STRENGTH OF 3,000 PSI AT 28 DAYS. A MAXIMUM OF 1 1/2" COARSE AGGREGATE, AND AIR ENTRAINMENT FOR A TOTAL AIR CONTENT OF 3%-6% BY VOLUME.
9. REINFORCED STEEL SHALL BE NEW, DEFORMED BARS MEETING ASTM A615 SPECIFICATIONS FOR GRADE NO. 60 STEEL. THE REINFORCING STEEL IS TYPICAL FOR FIELD FABRICATION.
10. A PRE-CAST FOUNDATION WILL REQUIRE LIFTING EYES AND MAY REQUIRE ADDITIONAL REINFORCING TO HANDLE THE STRESSES OF TRANSPORTATION AND SETTING IN PLACE.
11. THE TOP SURFACE SHALL BE SMOOTH AND LEVEL WITH A 1" CHAMFER ALONG THE UPPER EDGES.
12. THE LOCATION AND ORIENTATION OF THE FOUNDATION MUST BE APPROVED BY UI PRIOR TO THE START OF CONSTRUCTION. SEE UI STANDARDS 3002, 3003 FOR LOCATION AND INSTALLATION REQUIREMENTS.



WATER MAIN/SEWER CROSSING
CONCRETE ENCASEMENT
N.T.S.



OR 1/8 BEND



PLAN



SECTION

THRUST BLOCKS FOR BENDS AND TIES
N.T.S.

[illegible]

Post-construction, regularly scheduled inspections and maintenance will be necessary to ensure the permanent structural features such as the stormwater management basins, underground detention, water quality units and the conveyance system components remain optimally functional and continue to reduce the risk of sediment loading of surface water bodies.

At the time of final stabilization, the Owner's Engineer shall perform a final inspection of the site and certify that the site has successfully undergone final stabilization using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls such as silt fence, not needed for long term use, have been removed. At this point, the Owner is responsible for the following:

- The Land Owner shall undertake responsibility of inspecting and maintaining drainage and erosion control features over the lifetime of the structures. Maintenance personnel, employed by the Land Owner, must be aware of the SWPPP and should be trained to recognize signs that stabilization measures may not be performing optimally. The responsibility of inspection and maintenance of the structures will become part of routine preventative maintenance practiced by the Land Owner. Inspections should be performed after rain events of 0.5 inches or greater in a 24-hour period and at a minimum of twice per year (April 1st and Nov 1st). Inspections and maintenance should be performed as described below within this section.

The overall site, embankments, vegetation and stormwater conveyance system components including water quality units, outlet structures, structure sumps, culverts, swales, and pond spillways should be inspected regularly after every major rain event of 0.5 inch or greater in a 24-hour period and twice per year (April 1st and Nov 1st). A rain gauge should be installed and permanently maintained at the site. The inspections should include but are not limited to:

- Stormwater management basins and other water quality practices and all associated features such as spillways, inlets, outlets, forebays and rip rap filter berms should be inspected regularly after every major rain event of 0.5 inch or greater in a 24-hour period and twice per year (April 1st and Nov 1st). A rain gauge should be installed and permanently maintained at the site. The inspections should include but are not limited to:

- Maintaining vegetative and structural measures for soil protection is necessary to keep the storm water system functioning properly. Maintenance should occur on a regular basis and should include but is not limited to:

1. Vegetated areas should be maintained to promote vigorous and dense growth. Lawn areas should be mowed at least three times a year but may require more frequent mowings depending on the growth rate.
2. Accumulation of litter and debris should be removed during each mowing or sweep operation.
3. Structural components of the storm sewer system such as culverts, water quality units and outlet structures (including sumps) which require repair or replacement should be addressed immediately following identification.
4. Swale and drainageway maintenance will include periodic mowing, occasional spot reseeding and weed control. Weeds and woody plants should be eradicated or cut back since they reduce the efficiency of the drainageway.
5. Rip rap lined outlets that show signs of scour should be repaired. Weed and brush growth at the inlets and outlets should be controlled as needed.
6. Catch basin sumps shall be inspected a least 3 times per year starting in April. Cleaning of silt and debris using a vacuum type truck shall be performed if the accumulated sediment depth is greater than 12 inches. Removed material shall be disposed of at an off site location. The location of disposal shall be provided to the owner as necessary.

1. Remove snow and ice from catch basin grates, basin inlet and outlet structures and away from culvert end sections.
2. Snow removed from paved areas should not be piled at inlets/outlets of the storm water management basin or on the catch basin grates.
3. Use of deicing materials should be limited to sand and environmentally friendly chemical products. Use of salt mixtures should be kept to a minimum.
4. Sand used for deicing should be clean, coarse material free of fines, silt, and clay.
5. Materials used for deicing should be removed during the early spring by sweeping and/or vacuuming.

1. Side slope, embankments, inlets and overflow spillways should be mowed at least three times a year but may require more frequent mowings depending on the growth rate.
2. Trees and shrubs should be removed at the inlets and outlets.
3. Accumulation of litter and debris should be removed during each mowing or sweep operation.
4. Structural components of the basin which require repair or replacement should be addressed immediately following identification.
5. Sedimentation of stormwater management basins is dependent on storage capacity, inflow and sediment load. Basins and forebays should be monitored periodically for sediment accumulation. Sediments should be removed when capacity has been reduced by 10%, inlets/outlets become clogged or restricted, or when 6 inches has accumulated. When sediment removal is required, original grades should be restored as shown on the Construction Plans.
6. The water quality units should be maintained by manufacturer's specifications after construction is complete, when the site has reached a full uniform, perennial vegetative cover. The water quality units should also be maintained twice a year (April 1st and Nov 1st) per manufacturer's specifications; which typically involves measurements of sludge depth with a "sludge judge" followed by removal with a "vac-truck". These maintenance measures are to be performed at the Land Owners expense.
7. Spillways should be cleared of obstructions.
8. Inlet / outlet riprap damage due to scour and sedimentation should be repaired.



Fox Sedge (<i>Carex vulpinoidea</i>)	30%
Fringed Sedge (<i>Carex crinita</i>)	22%
Canada Manna Grass (<i>Glyceria Canadensis</i>)	10%
Chufa (<i>Cyperus esculentus</i>)	10%
Soft Rush (<i>Juncus effusus</i>)	5%
Bearded Sedge (<i>Carex comosa</i>)	4%
Lurid Sedge (<i>Carex lurida</i>)	4%
Woolgrass (<i>Scirpus cyperinus</i>)	3%
Boneset (<i>Eupatorium perfoliatum</i>)	3%
Hop Sedge (<i>Carex lupulina</i>)	3%
Blue Vervain (<i>Verbena hastata</i>)	2%
Green Bulrush (<i>Scirpus atrovirens</i>)	2%
Joe-Pye Weed (<i>Eupatorium fistulosum</i>)	2%

Erosion Control Blanket shall be North American Green SC 150 or shall be a green, wood fiber mat constructed from 100% Aspen curled fibers with a green photo-degradable netting applied to one side. Erosion Control Blanket to be as manufactured by American Excelsior Company, Arlington, TX, "Quick Grass" or approved equal.



DN-4

No.	Seed Mixture (Variety) ¹	Lbs/Acre	Lbs/1,000 Sq. Ft.
1 ⁵	Kentucky Bluegrass Creeping Red Fescue (Pennlawn, Wintergreen) Perennial Ryegrass (Norlae, Manhattan)	20 20 5	.45 .45 .10
	Total	45	1.00
2 ⁵	Creeping Red Fescue (Pennlawn, Wintergreen) Redtop (streaking, Common) Tall Fescue (Kentucky 31) Smooth Bromegrass (Saratoga, Lincoln)	20 2 2 2	.45 .05 .05 .05
	Total	42	.95
3 ⁵	Creeping Red Fescue (Pennlawn, Wintergreen) Bird's-foot Trefoil (Empire, Viking) Tall Fescue (Kentucky 31) Smooth Bromegrass (Saratoga, Lincoln)	20 8 20 2	.45 .10 .45 .10
	Total	48	1.10
4 ⁵	Creeping Red Fescue (Pennlawn, Wintergreen) or Tall Fescue (Kentucky 31) Redtop (Streaker, Common) Bird's-foot Trefoil (Empire, Viking) with inoculant ¹	20 2 8	.45 .02 .20
	Total	30	.70
5 ⁵	White Clover Perennial Rye Grass	10 2	.25 .05
	Total	12	.30
6 ⁵	Creeping Red Fescue Redtop (streaker, Common) Perennial Rye Grass	10 2 20	.50 .05 .50
	Total	42	1.05
7 ⁵	Smooth Bromegrass (Saratoga, Lincoln) Perennial Ryegrass (Norlae, Manhattan) Bird's-foot Trefoil (Empire, Viking) with inoculant ¹	15 5 10	.35 .10 .25
	Total	30	.70
8 ⁵	Switchgrass (Blackwell, Shelter, Cave-in-rock) Weeping Lovegrass Little Bluestem (Blaze, Aldous, Camper)	10 ¹ 3 10 ¹	.25 .07 .25
	Total	23	.57
9 ⁵	Creeping Red Fescue (Pennlawn, Wintergreen) Crown Vetch (Chemung, Penngift) with inoculant ¹ (or Floatpea (Lathco) with inoculant ¹) Tall Fescue (Kentucky 31) or Smooth Bromegrass (Saratoga, Lincoln) Redtop (streaker, Common)	10 15 (30) 15 2	.25 .35 (.75) .35 .05
	Total	42 (or 57)	1.00 (or 1.40)
10 ⁵	Creeping Red Fescue (Pennlawn, Wintergreen) Redtop (streaker, Common) Crown Vetch (Chemung, Penngift) with inoculant (or Floatpea (Lathco) with inoculant)	20 2 15 (30)	.45 .05 .35 (.75)
	Total	37 (or 52)	.85 (or 1.25)
11 ⁵	Bird's-foot Trefoil (Empire, Viking) with inoculant ¹ Crown Vetch (Chemung, Penngift) with inoculant ¹ Creeping Red Fescue (Pennlawn, Wintergreen) or Tall Fescue (Kentucky 31)	8 15 2	.20 .35 .05
12 ⁵	Switchgrass (Blackwell, Shelter, Cave-in-rock) Perennial Ryegrass (Norlae, Manhattan) Crown Vetch (Chemung, Penngift) with inoculant ¹	101 5 15	.25 .10 .35
	Total	45	1.05
13-15	Not used		
16 ⁵	Tall Fescue (Kentucky 31) Floatpea (Lathco) with inoculant ¹	20 30	.45 .75
	Total	50	1.20
17 & 18	Not used		
19 ⁵	Chewing Fescue Hard Fescue Colonial Betsgrass Bird's-foot Trefoil (Empire, Viking) Perennial Ryegrass	35 30 5 10 20	.80 .70 .10 .20 .50
	Total	100	2.3
21 ⁵	Creeping Red Fescue (Pennlawn, Wintergreen)	Total 60	1.35
22 ⁵	Creeping Red Fescue (Pennlawn, Wintergreen) Tall Fescue (Kentucky 31)	40 20	.90 .45
	Total	60	1.35
23 ⁵	Creeping Red Fescue (Pennlawn, Wintergreen) Floatpea (Lathco) with inoculant ¹	15 30 30	.35 .75 .75
	Total	45	3.60
24-28	Not Used		
29	Turf Type Tall Fescue (Bonanza, Mustang, Rebel II, Spartan, Jaguar) or Perennial Rye ("Future 2000" mix, Fiesta II, Blazer II, and Dasher II)	175 to 250	6 to 8

Figure PS-2 Selecting Seed Mix to Match Need

1 The numbers following in these columns refer to seed mixtures in **Figure PB-3**. Mixes for shady areas are in **bold-face** print (including mixes 20 through 24)

2 See county soil survey for drainage class. Soil surveys are available from the County Soil and Water Conservation District Office.

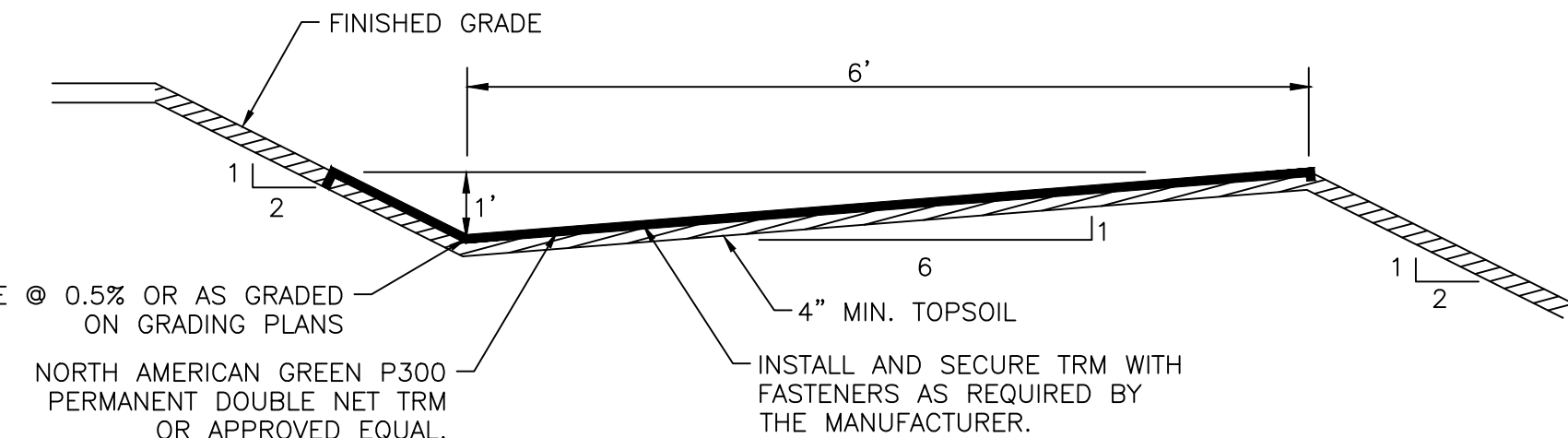
3 Use mix 26 when soil passing a 200 mesh sieve is less than 15% of total weight. Use mix 26 & 27 when passing a 200 mesh sieve is between 15 and 20% of total weight. Use mix 26, 27 & 28 when soil passing a 200 mesh is above 20% of total weight.

Species ⁴	Seeding Rates (pounds)	Optimum Seed Depth ² (inches)	Optimum Seeding Dates ³										Plant Characteristics	
			3/5	4/5	5/5	6/5	7/5	8/5	9/5	10/5				
			/acre	/1000 sq ft										
Annual ryegrass	40	1.0	0.5										May be added in mixes. Will mow out of most stands	
Lolium multiflorum														
Perennial ryegrass	40	1.0	0.5										Use for winter cover. Tolerates cold and low moisture.	
Lolium perenne														
Winter rye	120	3.0	1.0										Quick germinating and heavy spring growth. Dies back in June with little regrowth.	
Sesale cereale														
Oats	86	2.0	1.0										In northern CT, will winter kill with the first killing frost and may throughout the state in severe winters.	
Avena sativa														
Winter Wheat	120	3.0	1.0										Quick germination with moderate growth. Dies back in June with no regrowth.	
Triticum aestivum														
Millet	20	0.5	1.0										Warm season small grain. Dies with frost in September.	
Echinochloa crusgali														
Sudangrass	30	0.7	1.0										Tolerates warm temperatures and droughty conditions.	
Sorghum sudanense														
Sudangrass	15	0.4	1.0										Hardy plant that will reseed itself and is good as a green manure crop.	
Sorghum sudanense														
Weeping Lovegrass	5	0.2	0.25										Warm-season perennial. May bunch. Tolerates hot, dry slopes, cold infertile soils. Excellent nurse crop. Usually winter kills.	
Eragrostis curvula														
DOT All Purpose Mix ⁵	150	3.4	0.5										Suitable for all conditions.	

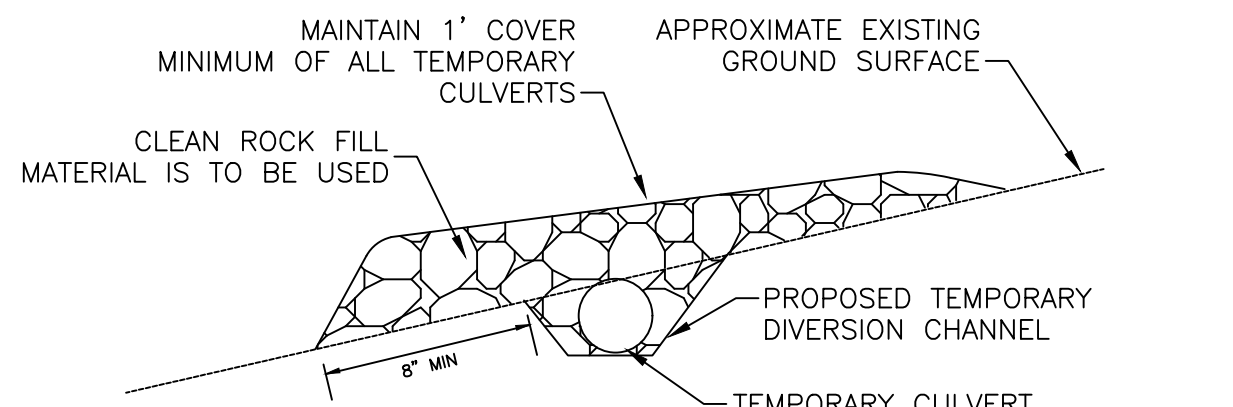
CONSTRUCTION SEQUENCE

PHASE 5

- TRENCH DEWATERING - SETTLING BASIN
N.T.S.



TYPICAL CUT SLOPE BENCH
N.T.S.

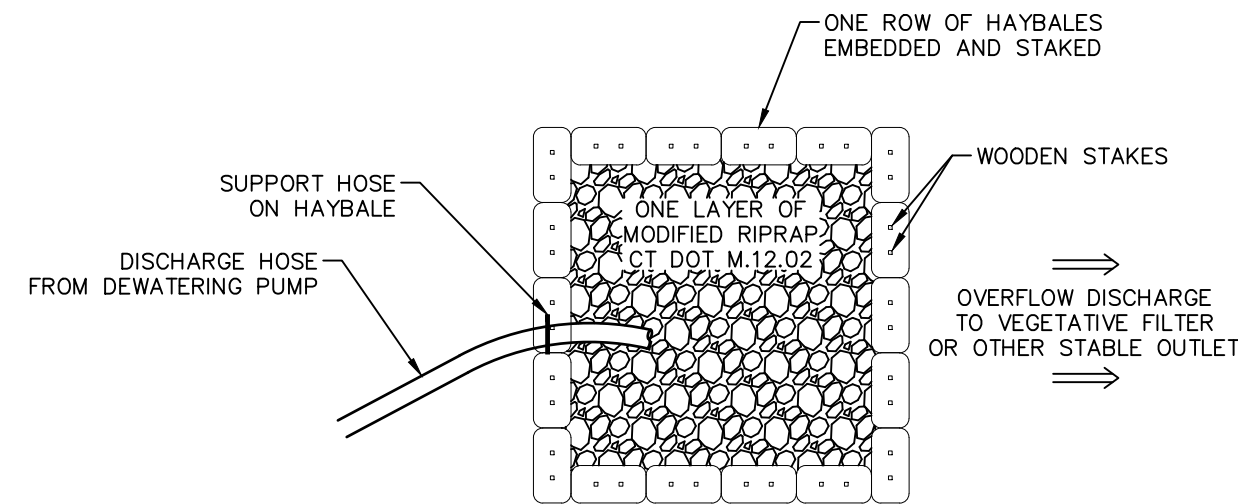


NOTES:

1. PIPE SHOULD EXTEND BEYOND THE ROADWAY.
2. ROADWAY SHOULD BE DEPRESSED OVER THE CULVERT TO ALLOW FOR OVERFLOW.
3. CLEAN ROCK FILL SHALL BE USED GUARD AGAINST EROSION AND SEDIMENTATION.
4. MINIMUM CULVERT SIZE IS 12 INCHES.
5. APPROACHES TO CROSSINGS ARE NOT TO EXCEED 6 INCHES ABOVE ORIGINAL GRADE.

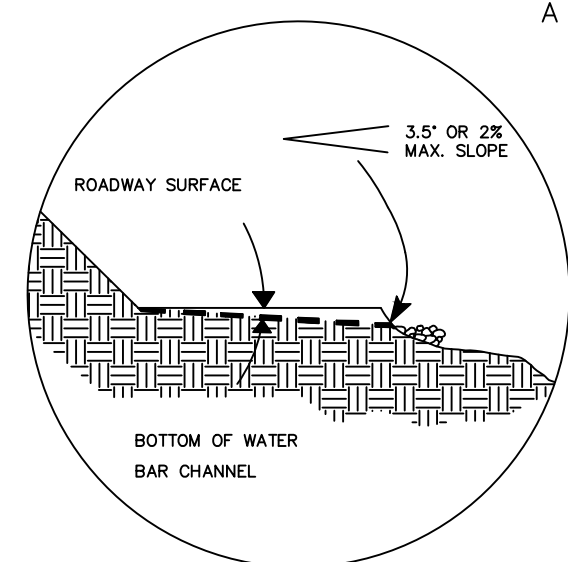
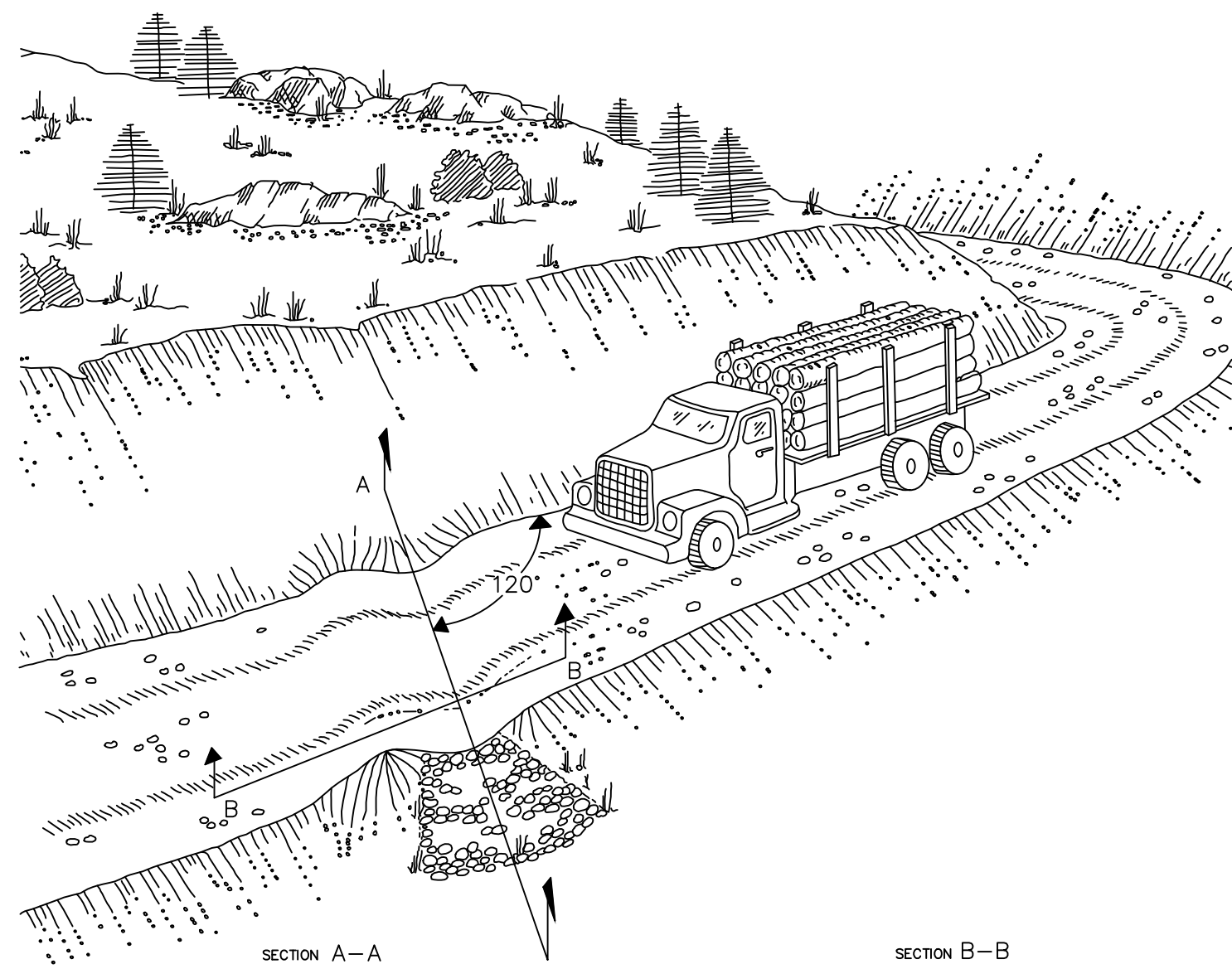
TEMPORARY CHANNEL CROSSING

N.T.S.



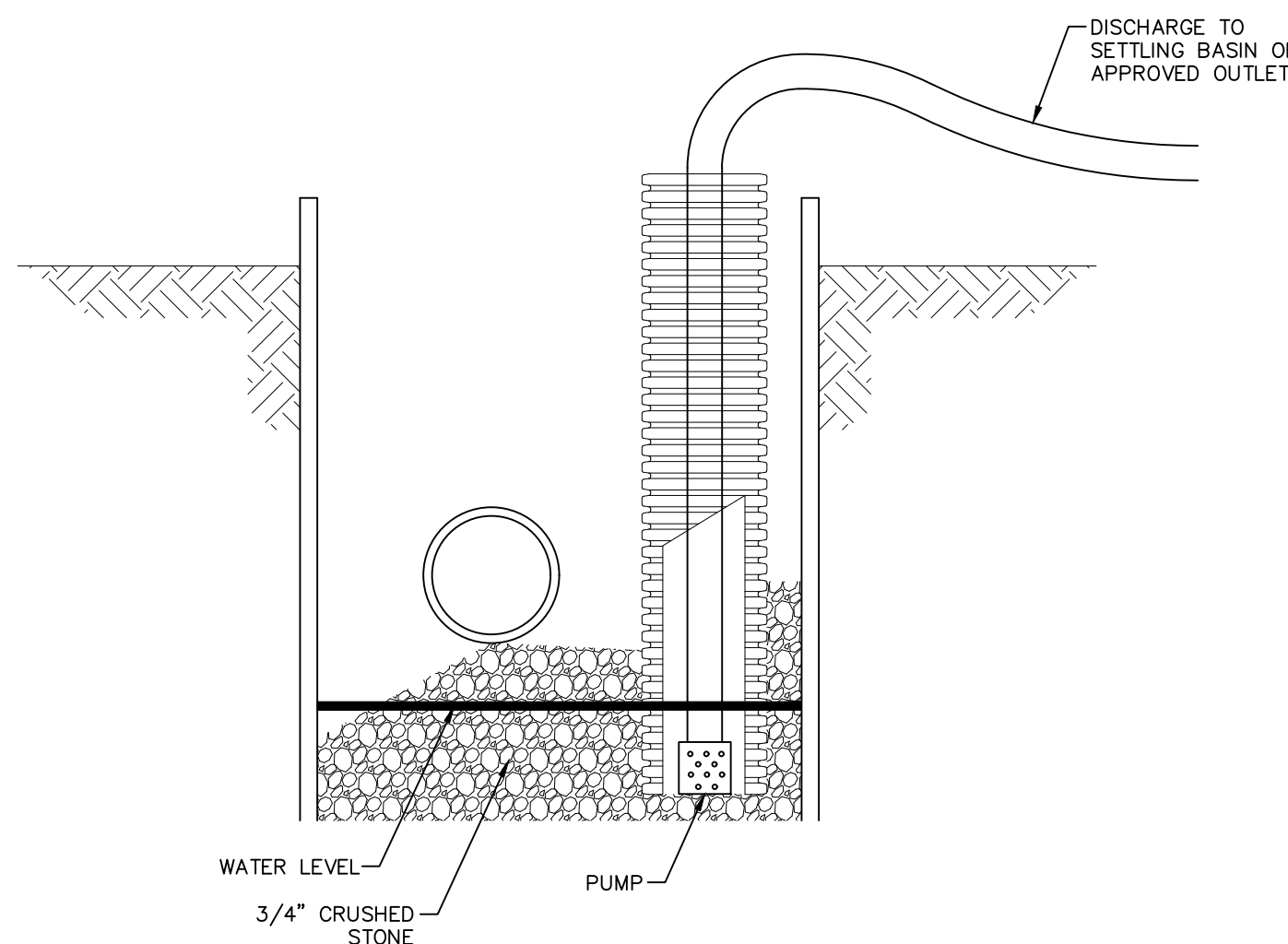
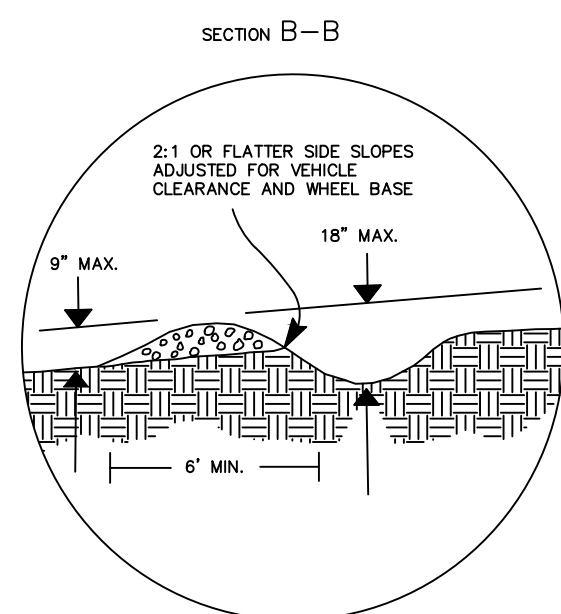
TRENCH DEWATERING – SETTLING BASIN

N.T.S.



WATER BAR DETAILS

N.T.S

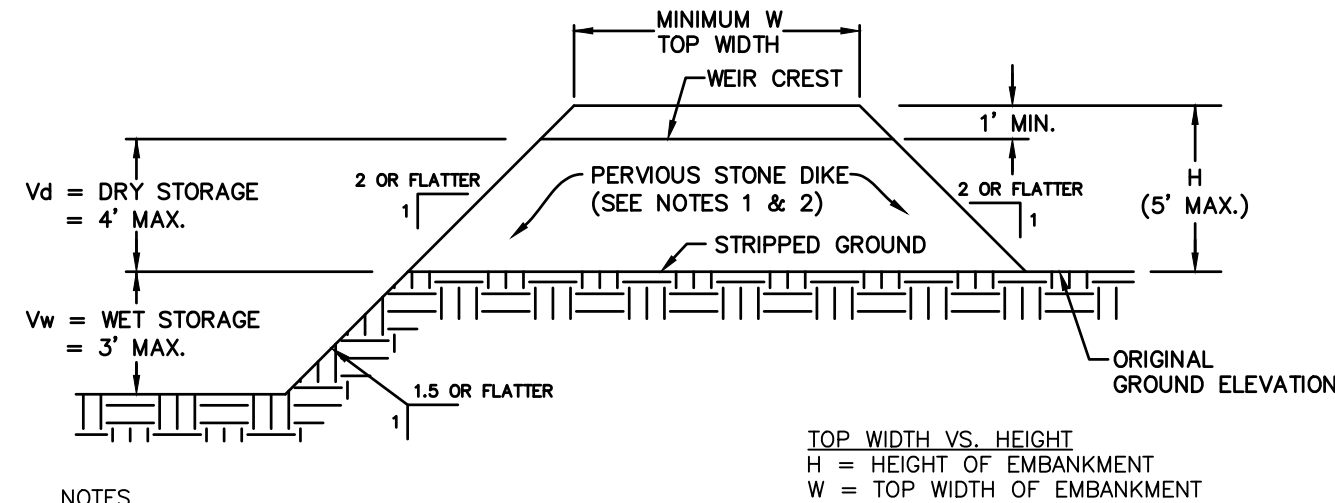


NOTES

1. PLACE 15 INCH DIAMETER PERFORATED HDPE PIPE AND CRUSHED STONE BELOW TRENCH BOTTOM AROUND OF WORK AREA. SET INTAKE OF PUMP INSIDE PIPE AND Dewater TRENCH.
2. DISCHARGE MUDDY WATER TO OUTLET PROTECTION OF A DIRT BAG, TANK TRUCK, PUMP OUTLET BARREL, SETTLING BASIN OR OTHER APPROVED OUTLET. DO NOT DISCHARGE MUDDY WATER TO THE ROAD GUTTER, STORM DRAINAGE SYSTEM, WETLANDS OR STREAMS.
3. MAINTAIN INLET PER SECTION 5-13 DEWATERING OF THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL.

TRENCH DEWATERING – PUMP INTAKE PROTECTION

N.T.S



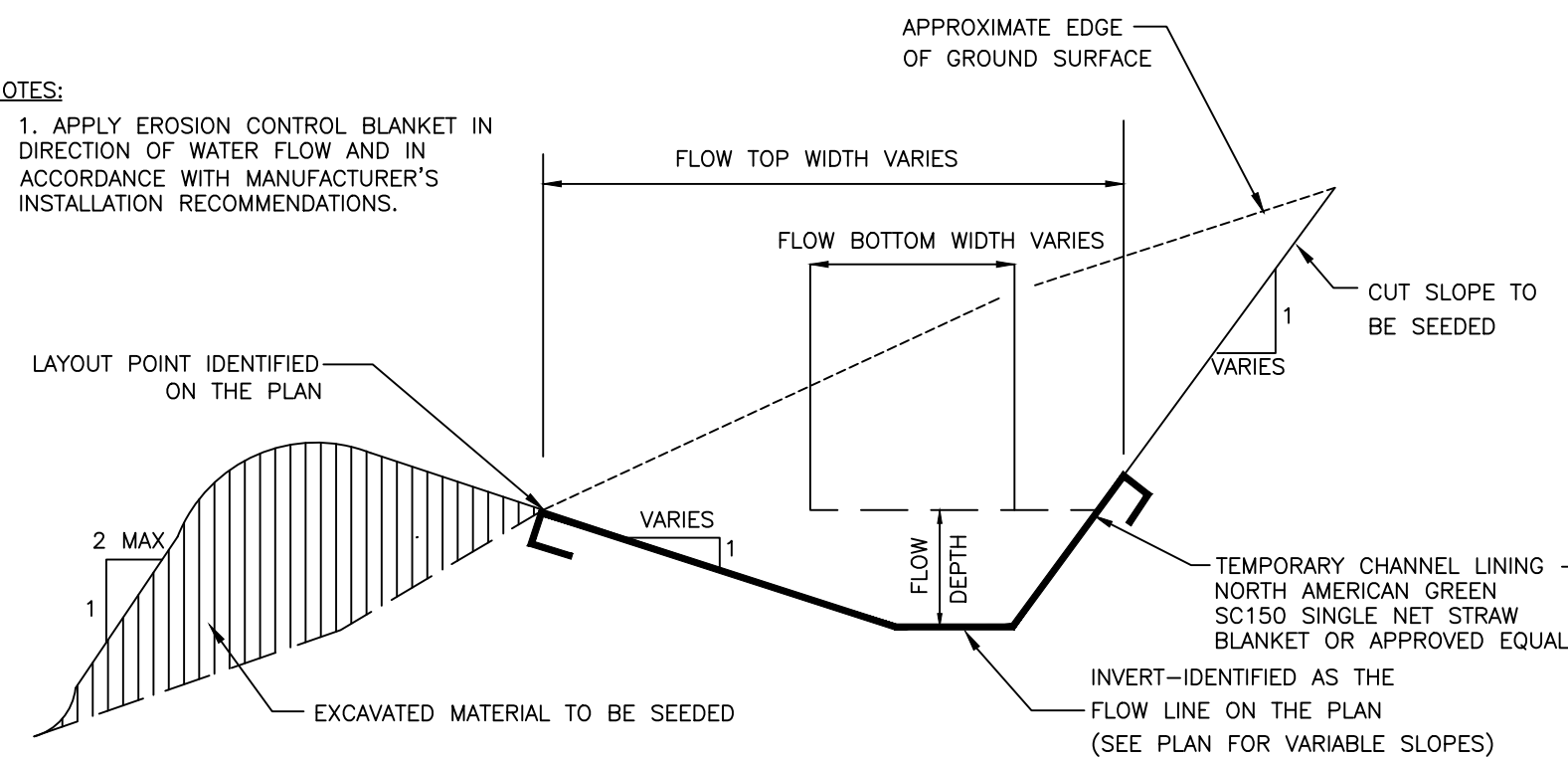
TEMPORARY SEDIMENT TRAP CROSS SECTION

N.T.S

- NOTES
1. PERVIOUS STONE DIKE SHALL BE CONSTRUCTED OF CT DOT MODIFIED RIPRAP WITH #3 STONE ON FACE.
 2. NON-OVERFLOW PORTIONS AND ABUTMENTS OF TEMPORARY SEDIMENT TRAPS MAY BE CONSTRUCTED OR COMPACTED EARTHFILL.
 3. SEDIMENT TRAP SHALL HAVE A STORAGE VOLUME OF 1.34 CUBIC YARDS PER CONTRIBUTING DRAINAGE AREA, HALF OF WHICH SHALL BE IN THE FORM OF WET STORAGE VOLUME.

NOTES

1. APPLY EROSION CONTROL BLANKET IN DIRECTION OF WATER FLOW AND IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION RECOMMENDATIONS.



TEMPORARY LINED DIVERSION CHANNEL

N.T.S.

CHANNEL IDENTIFICATION	SHAPE	SIDE SLOPES	DESIGN SLOPE (%)	BOTTOM WIDTH (ft.)	DESIGN DISCHARGE (cfs)	DESIGN VELOCITY (fps)	CALCULATED FLOW DEPTH (ft.)	DESIGN DEPTH (ft.) (D)	PROPOSED LINING TYPE
TEMPORARY DIVERSION	TRAP.	2:1	5.0 (MAX.)	2.0	7.90 (MAX.)	3.90 (MAX.)	0.62	1.12	NORTH AMERICAN GREEN SC150

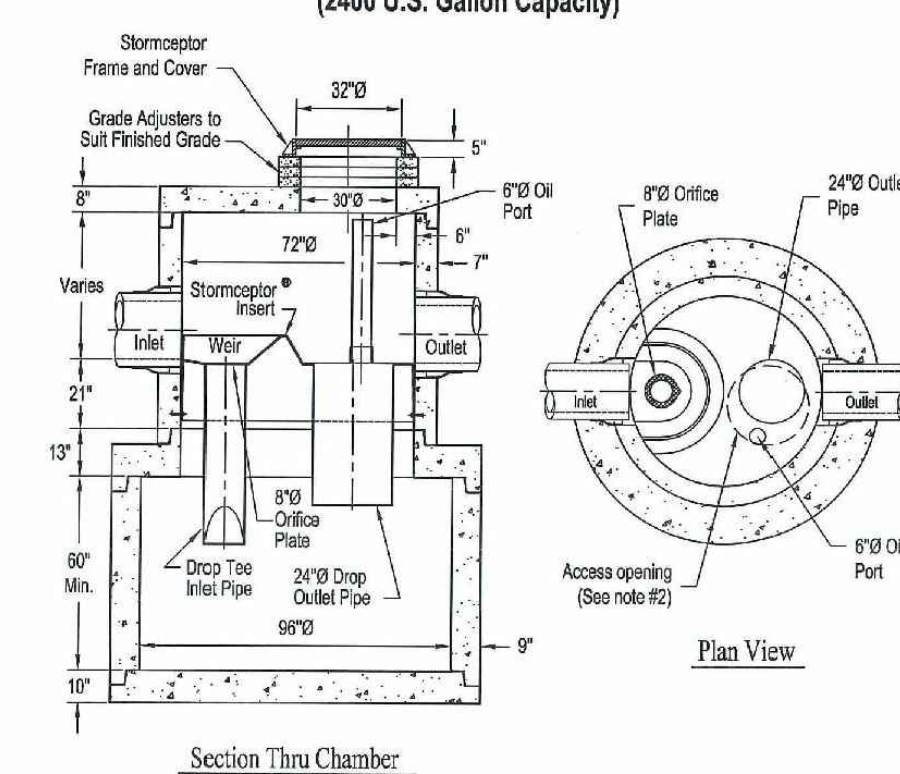
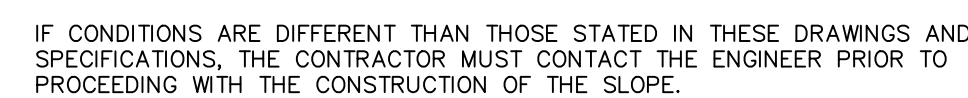
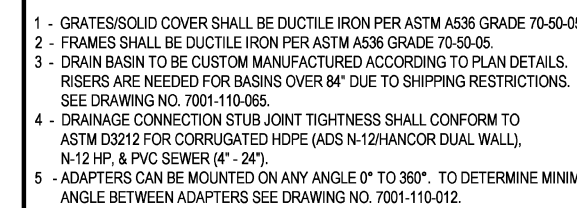
TEMPORARY LINED DIVERSION CHANNEL SPECIFICATIONS

N.T.S.

[illegible]



- If conditions are different than those stated in these drawings and specifications, the contractor must contact the engineer prior to proceeding with the construction of the slope.



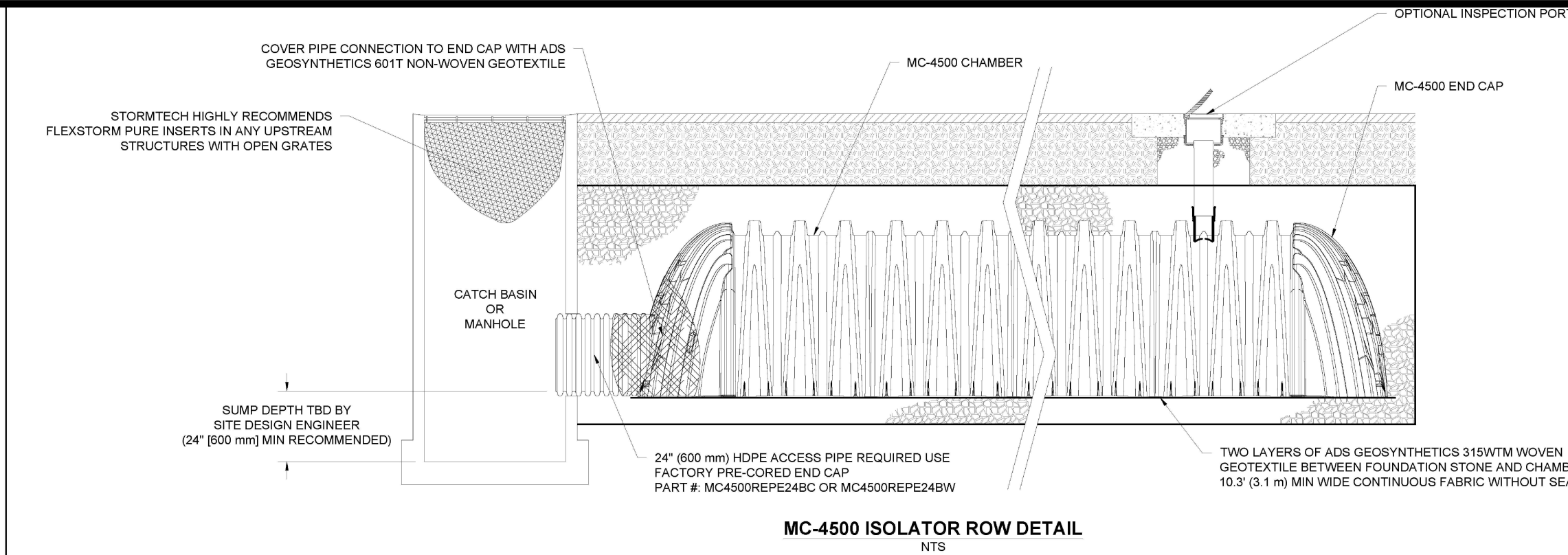
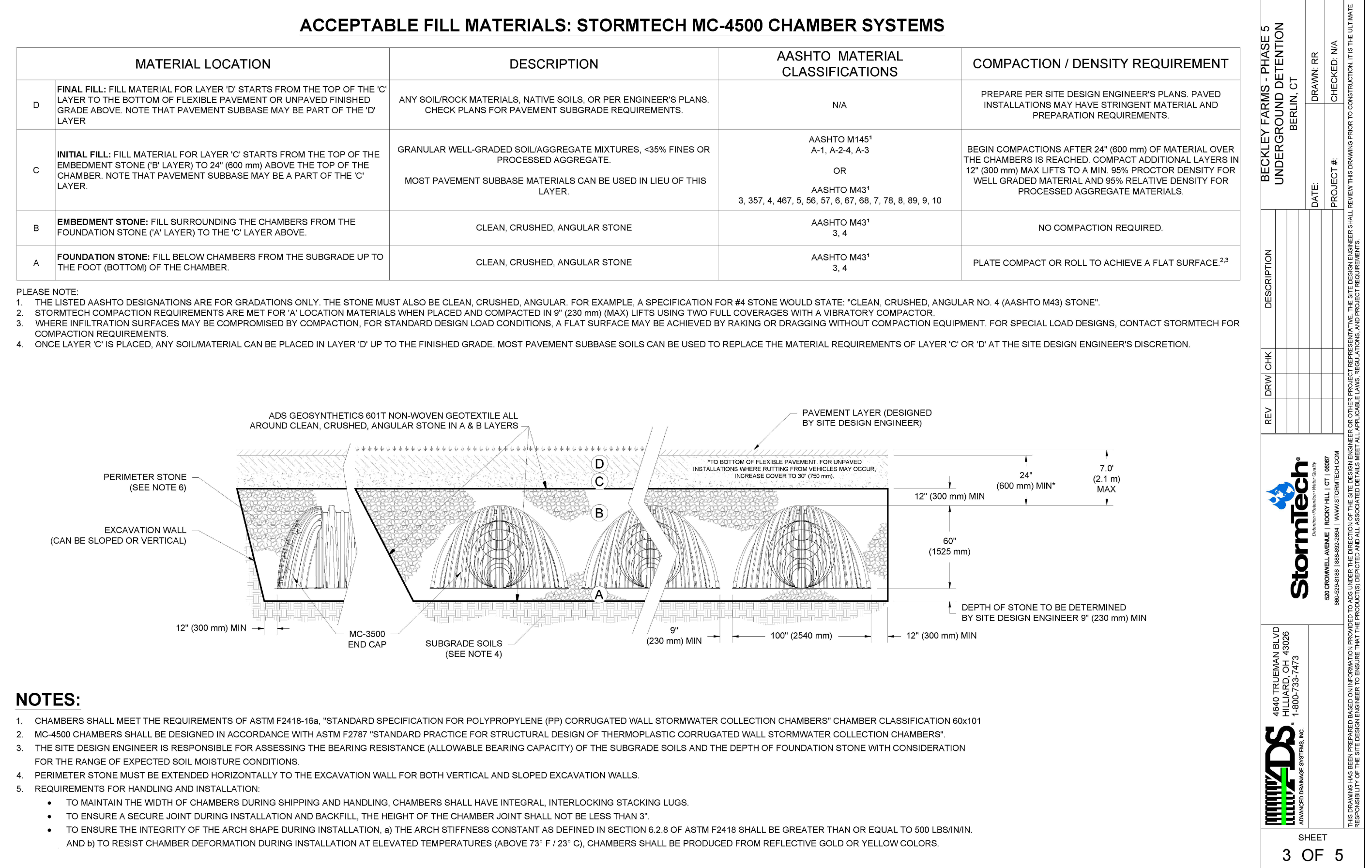
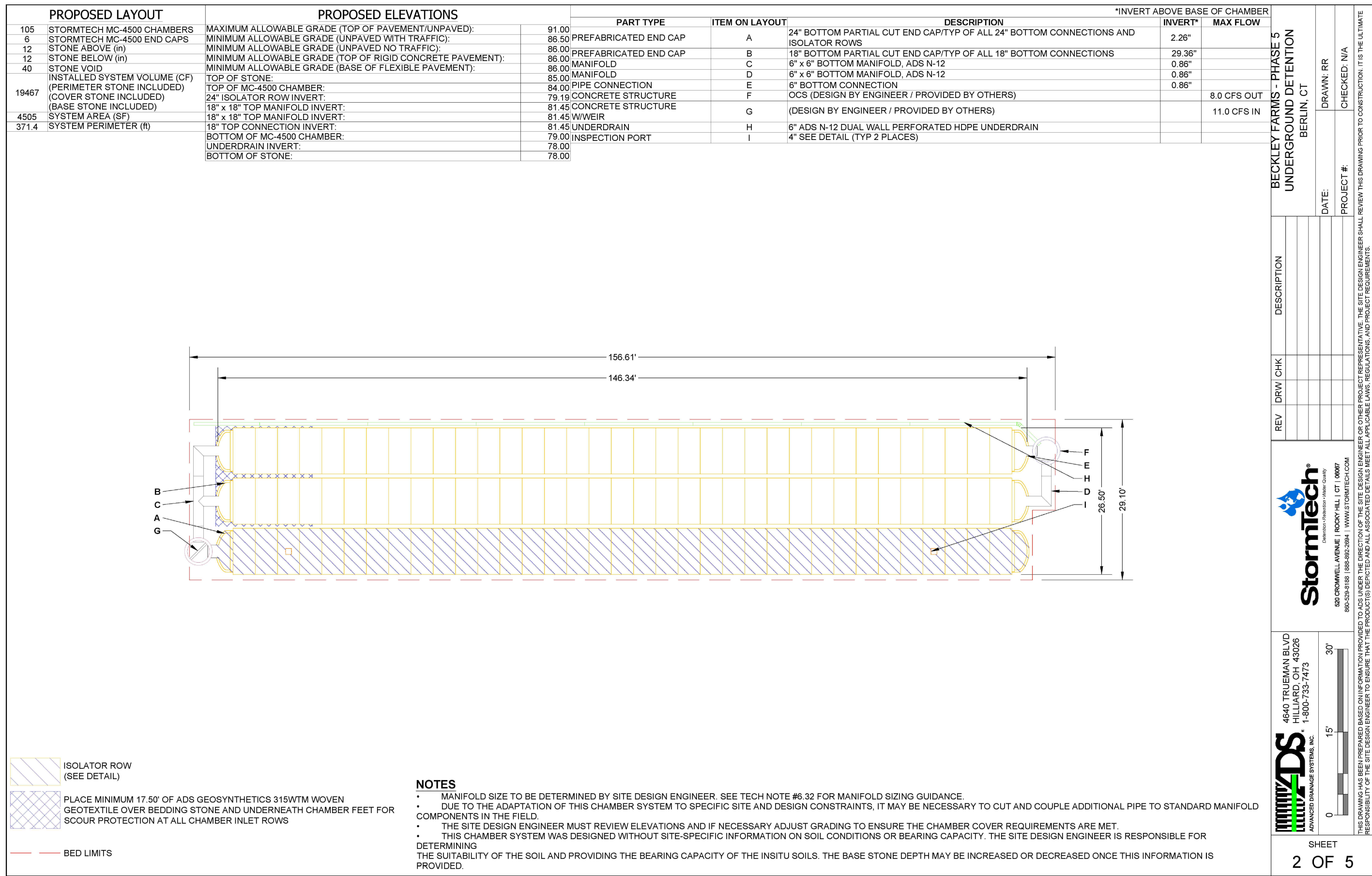
- Notes:
1. The Use Of Flexible Connection is Recommended at The Inlet and Outlet Where Applicable
 2. The Cover Should be Positioned Over The Outlet Drop Pipe and The Oil Port.
 3. The Stormceptor System is protected by one or more of the following U.S. Patents: #498514, #5498331, #5725760, #5753115, #5849181, #6068765, #6371690.
 4. Contact a Concrete Pipe Division representative for further details not listed on this drawing



BECKLEY FARMS
PHASE 5 REDESIGN
BECKLEY ROAD
TOWN OF BERLIN
STATE OF CONNECTICUT

Designed	RHR	CAD File	DN1010860.dwg	Sheet No. DN
Drawn	RHR	Project No.	11-1173	
Checked	JW/REM	Date	2/22/18	
Approved	JW/REM	Scale	AS NOTED	

DN-6

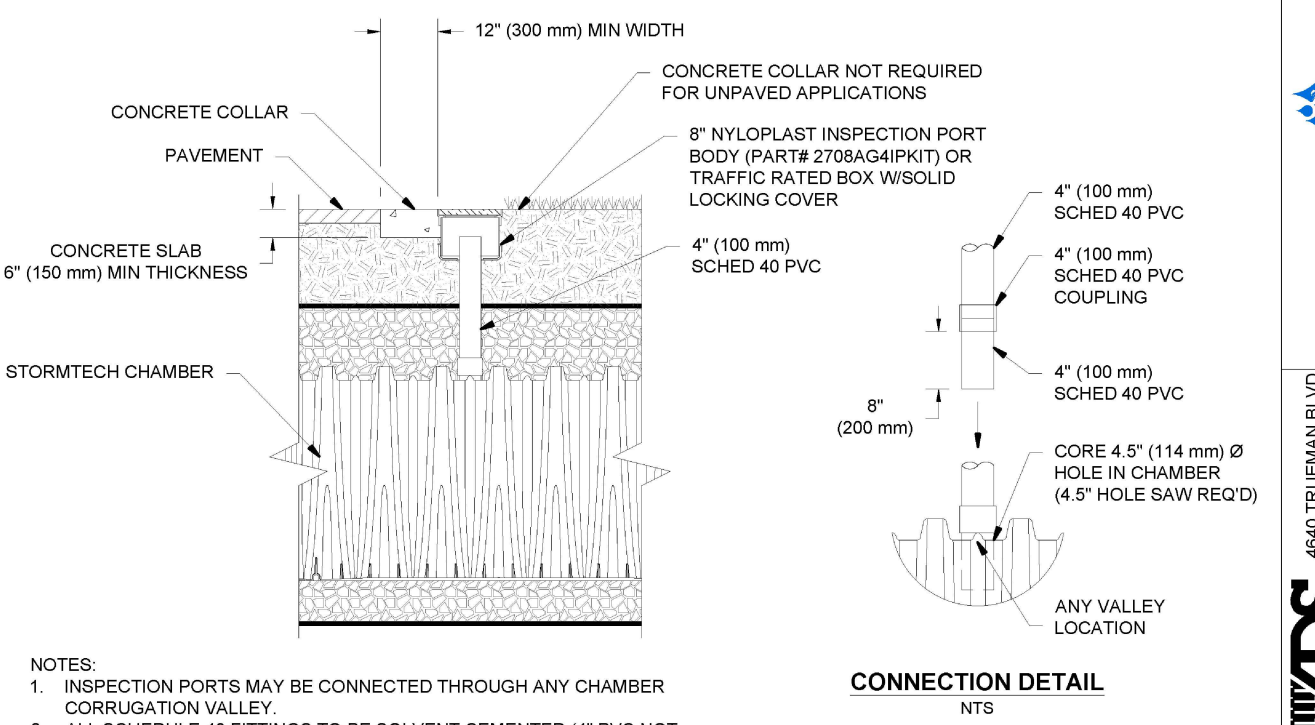


INSPECTION & MAINTENANCE

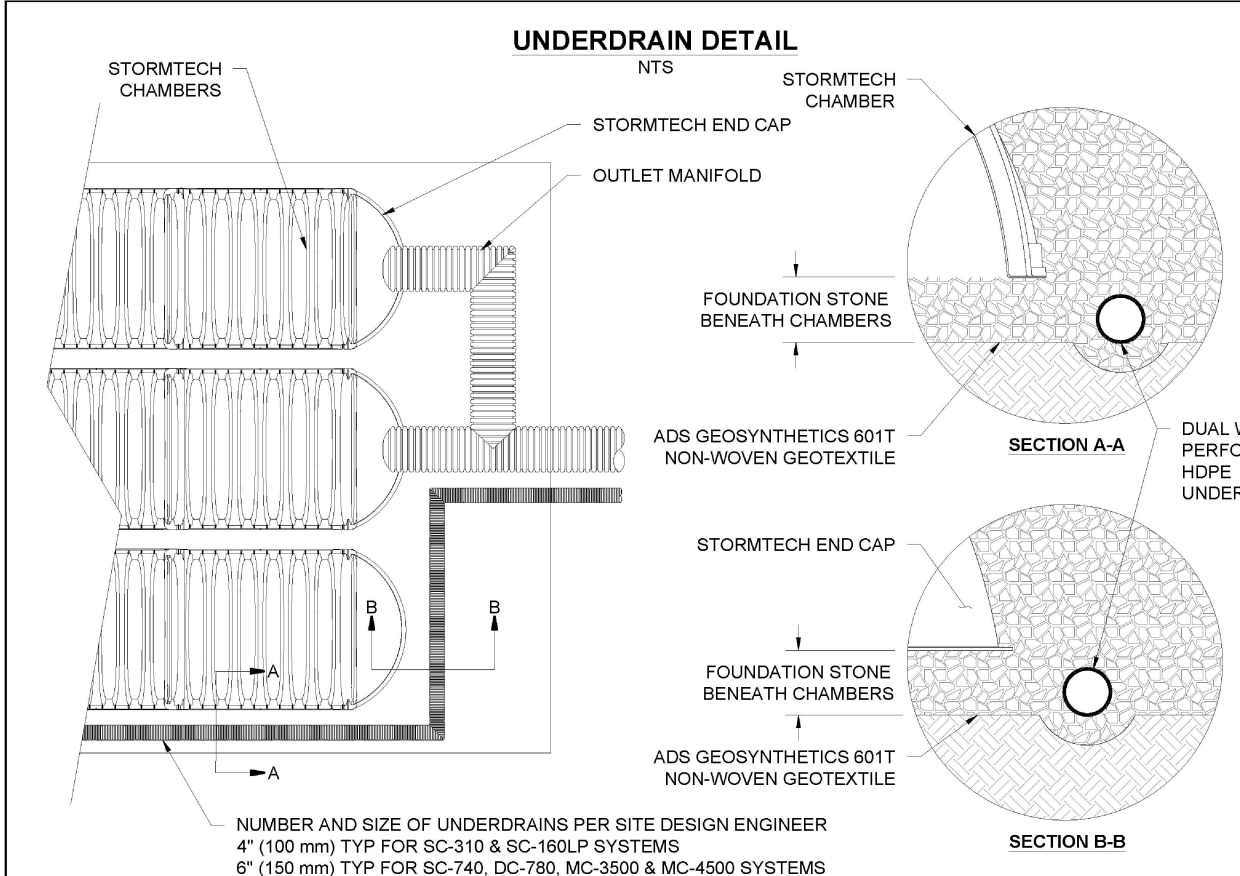
- STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- INSPECTION PORTS (IF PRESENT)
 - REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
 - REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROWS
- REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
 - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
 - MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
 - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
 - VACUUM STRUCTURE PUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS. RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

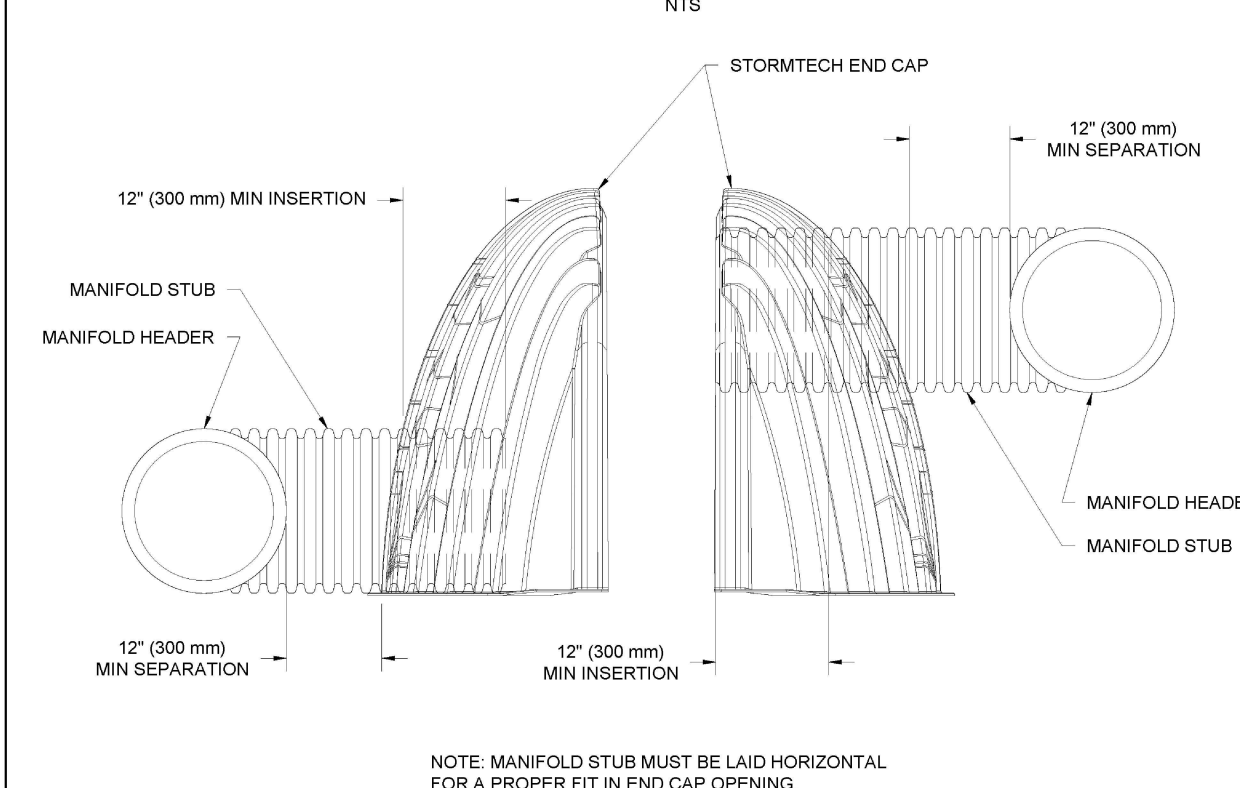
- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



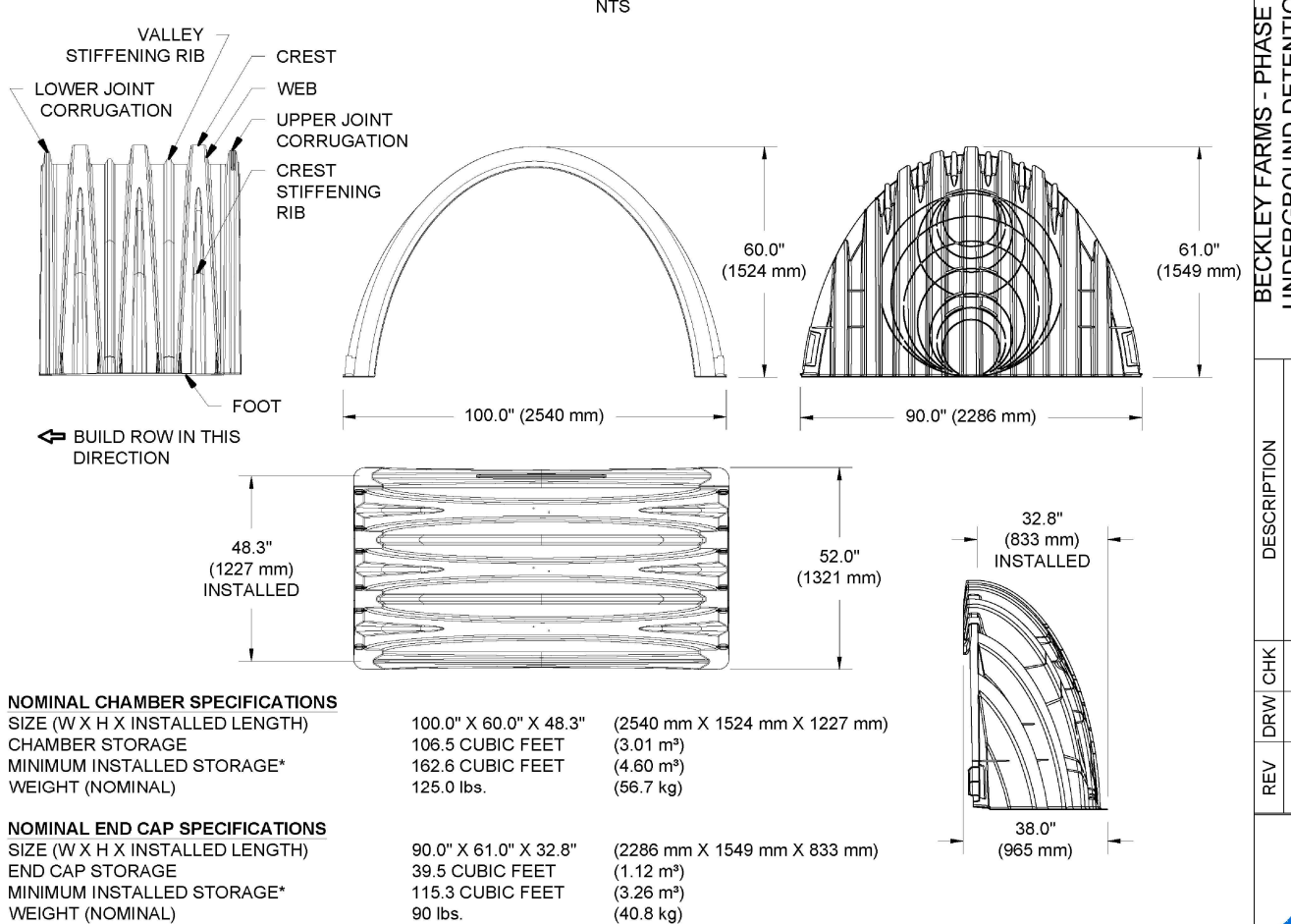
4" PVC INSPECTION PORT DETAIL NTS



MC-SERIES END CAP INSERTION DETAIL NTS



MC-4500 TECHNICAL SPECIFICATION NTS



NOTE: ALL DIMENSIONS ARE NOMINAL



DETAIL SHEET

BECKLEY FARMS PHASE 5 REDESIGN BECKLEY ROAD TOWN OF BERLIN STATE OF CONNECTICUT

Designed	RHR	CAD File	DN10108607.dwg	Sheet No.
Drawn	RHR	Project No.	11-1173	
Checked	JW/REM	Date	2/2/18	
Approved	JW/REM	Scale	AS NOTED	

DN-7

Engineering Summary Report

For The
Beckley Farms Redesign
located on
Beckley Road
Berlin, CT

Submittal to the:
Town of Berlin, CT

Submitted:
May 20, 2011

Revised July 2, 2020

Prepared By:



THE LRC GROUP

LAND PLANNING ~ CIVIL ENGINEERING ~ ENVIRONMENTAL SERVICES

**160 WEST STREET, SUITE E
CROMWELL, CONNECTICUT 06416**

PHONE 860-635-2877
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Beckley Farms Redesign – Engineering Summary Report

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Introduction

Beckley Farms is an Age-restricted housing development that was approved in 2006 for the development of a 90.688 parcel of land now or formerly of Quarry Associates, Susan B. Gaffney and Guy T. Gaffney, Trustees, Cary Dobkin and Lee Dobkin, Trustees and the Town of Berlin located on Beckley Road, Wethersfield Road and Beckley Mills Road entitled "Active Adult Residential Community Beckley Road Town of Berlin, Connecticut" Dated 8/6/04 and revised through 5/10/07. The project was to be developed in 5 phases. House construction, roads and utility installation is complete for a majority of phases 1 and 2 with many of the houses occupied. Also, a piece of land on the eastern portion of the property containing 31.99 acres has been deeded to the Town of Berlin for open space.

Construction was started in 2006, but due to the economy the project stalled, the developer halted construction and eventually lost the property to bankruptcy. A new group of developers has purchased the property and are actively working on finalizing existing construction in phases 1 and 2 and are preparing to begin construction on additional phases.

This summary report has been prepared to review the site engineering and storm water drainage design for the redesign of phases 3, 4 & 5 of the above referenced parcel. The plans entitled "Beckley Farms Redesign" reflect our new design of the project.

Existing Site Conditions

The site subject to this design is phases 3, 4 & 5 of the aforementioned property and contains 34.55 acres of land. Some minor clearing and stockpiling of surplus material has been conducted on the land. The balance of the property is undisturbed and consists of existing woodland and areas on inland wetlands.

The following is a list of the existing soil types that were referenced from the United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey National Cooperative Soil Survey. The Map Unit Symbol followed by the Map Unit Name and description is provided. 6 – Wilbraham and Menlo soils, extremely stony is Soil Group D. 9 – Scitico, Shaker and Maybid soils is Soil Group D. 78E – Holyoke-Rock outcrop complex, 3 to 15 percent slopes, very rocky is Soil Group D. 87B – Wethersfield loam, 3 to 8 percent slopes is Soil Group C. 87C – Wethersfield loam, 8 to 15 percent slopes is Soil Group C. 87D – Wethersfield loam, 15 to 25 percent slopes is Soil Group C. 88B – Wethersfield Loam, 3 to 8 percent slopes, very stony is Soil Group C. 89D – Wethersfield loam, 15 to 35 percent slopes, extremely stony is Soil Group C. The Wethersfield soil type covers a majority of the existing site.

The existing runoff leaving the site has been analyzed at five locations called Outlet Points, which are the points where Pre and Post Developed runoff values are compared. There are several

ridge lines that define the flow direction. The surface water flows from the ridge lines to area of existing wetlands in the southern, northern and eastern portions of the property. See the Pre Developed Drainage Area Maps located in Appendix B for more detail.

Proposed Improvements

The proposed project consists of the construction of single family and multifamily buildings, bituminous concrete access roads and parking areas, utility installation, storm drainage systems, a sanitary sewer system with pump station, landscaping and signage. Since the project disturbs greater than 10 acres, it will require a General Permit Application and Report to be filed with the Department of Environmental Protection (CTDEP).

As part of the construction of phase 2 some storm drainage structures and piping have been installed and are incorporated where possible in our redesign of phase 3. These structures include catch basins, manholes and a Vortechs model 9000 stormwater treatment unit. Calculations are enclosed to show that the previously approved Vortechs unit can treat peak design flows of 14 cfs. Bypass manholes were also installed to accommodate flows above the 10 year storm. The proposed peak flow for a 10 year storm is 12.2 cfs. Detention basin #4 east and #4 west are design to include the previously approved development of phase 2 and the future development of phase 3.

Site Drainage Design

The proposed development will change the existing groundcover from woods to grass and impervious surfaces which affects the runoff from the project area. The increase in runoff will be detained on-site using stormwater detention basins and outlet structures to attenuate the flows and mimic pre-developed conditions. Stormceptor Water quality units will be installed at discharge locations of the drainage system prior to entering the detention basins to provide at least 80% removal of the Total Suspended Solids (TSS). The stormwater runoff system is designed to accommodate runoff from a twenty-five (25) year storm without overtopping any of the structures.

An underground chamber system is proposed to replace the previously approved detention basin in Phase 5. The chamber system includes an isolator row which collects debris and allows sediment to settle out prior to discharge. The remainder of the stormwater management system (catch basins, detention basins and piping remain unchanged). The underground chamber system provides the a slight increase in stormwater detention compared to the excavated detention basin. The stormwater detention basins are designed as extended basins, which mean that the "Water Quality Volume" will be held and released slowly over a 24-hour period. The stormwater basins have been designed with oversized forbays and extra long travel paths much greater than the 2:1 length to width ratio required by the CTDEP. During construction the extended detention basins will act as Temporary Sediment Traps or sediment traps will be constructed in areas where a detention basin is not proposed. Calculations adhere to the 2002 Connecticut Erosion and Sediment Control Guidelines for capacity.

Method of Analysis

The HydroCAD Stormwater Modeling System computer program by Applied Microcomputer Systems was used to analyze and design the storm sewer system. HydroCAD uses the TR-55 curve number method to estimate the quantity and peak rates of runoff produced by each subcatchment; the resulting flows are routed through the different storm system elements to the system's Outlet Points, typically where the stormwater flows leave the subject property. Storm events were analyzed with Type III, 24-hour rainfall values and curve number/cover types as selected from the SCS TR-55 Manual. Also, the minimum of Time of Concentration used was 0.10 hours (6 Minutes) as selected from the SCS TR-55 Manual, Urban Hydrology for Small Watersheds. Runoff rates chosen from the 2004 Connecticut Stormwater Quality Manual for Middlesex County are listed below:

Design Rainfall Amounts:

25 year 5.50 in

Detailed Runoff Summary

Flow Rate Attenuation - 25 Year Storm

Design Point #1

Pre Developed = 7.94 cfs

Post Developed = 6.94 cfs

Design Point #2

Pre Developed = 9.32 cfs

Post Developed = 7.44 cfs

Design Point #3

Pre Developed = 10.74 cfs

Post Developed = 8.83 cfs

Design Point #4

Pre Developed = 2.85 cfs
Post Developed = 0.43 cfs

Design Point #5

Pre Developed = 19.89 cfs
Post Developed = 19.05 cfs

Total Pre Developed = 50.74 cfs
Total Post Developed = 42.69 cfs

Values listed above are in cubic feet per second.

Temporary Sediment Trap Calculations

Temporary sediment trap shall have a storage volume of 134 cubic yards per acre of contributing drainage area. The proposed detention areas shall serve this function.

Temporary Sediment Traps – Phase 5
Required Volume – 914 cubic yards
Provided Volume – 1,164 cubic yards

Runoff Quality & BMP Performance

Practice Used:	Effective Use	Performance Effectiveness
Water Quality Unit; Oversized Forbays;	Preliminary Water Quality Treatment of runoff from the parking area and access drive	Pretreatment - 20% TSS removal; Extended Travel Time; Vegetated with species appropriate for nutrient uptake in wet or dry conditions. Units remove oil and grit from parking area runoff.
Extended Stormwater Detention with 2:1 or Greater Travel Time	Peak Flow control; First Flush Infiltration; Sediment Filtering;	Primary- 80% TSS removal, Extended Detention Time =>100% WQV

Calculated TSS removal for impacted site lands using practices above:
The area of the proposed roads and parking were analyzed for TSS removal.

Impervious road and parking areas contributing To Detention Basin #1:
Stormceptor 2400 – 82 %

Impervious road and parking areas contributing To Detention Basin #2:
Stormceptor 4800 – 83 %

Impervious road and parking areas contributing To Detention Basin #3:
Stormceptor 2400 – 81 %

Impervious road and parking areas contributing To Detention Basin #5:
Stormceptor 2400 – 80 %

Total Site TSS Removal → 82%

Conclusions

This summary report demonstrates that all design criteria set forth by the State of Connecticut and Town of Berlin have been met or exceeded, and all design and mitigation measures have been derived from standard practices and procedures as directed by the Connecticut DEP and DOT design manuals. In conclusion, the proposed project will satisfy all design requirements as have been stipulated by the Town, State and Federal regulations that may apply.

Appendix A - Storm System Design Details

- 1) Outlet Protection Design Data**
- 2) Pipe Sizing Calculations**

Appendix B - Post Construction Inspection & Maintenance

Appendix C - Pre & Post Developed Hydrologic Data

- 1) 25-Year Storm Runoff Data
- 2) Pre and Post Developed Drainage Area Maps

Appendix D - Temporary Diversion Design - Sediment Trap Lining Calculations