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2020-10-28

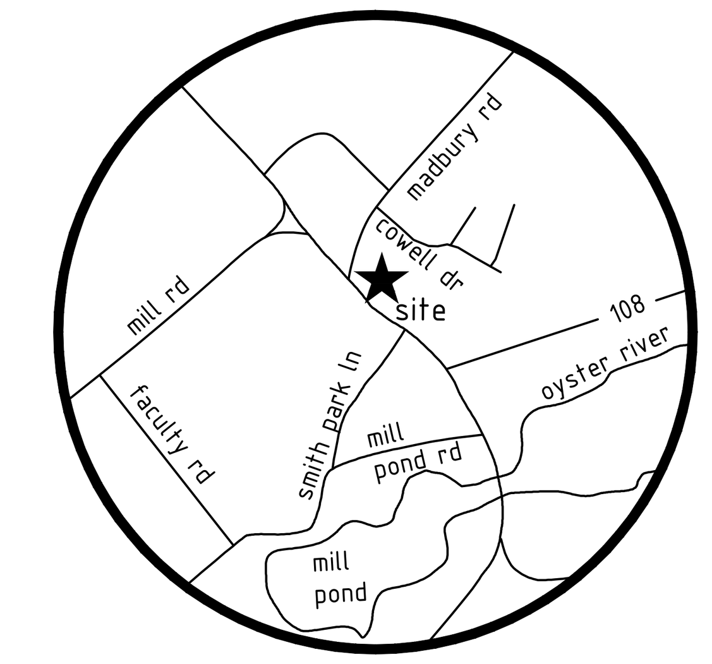
SITE PLAN

for

TOOMERFS, LLC

19 MAIN STREET & 21 MAIN STREET
DURHAM, NH

REVISED OCTOBER 28, 2020



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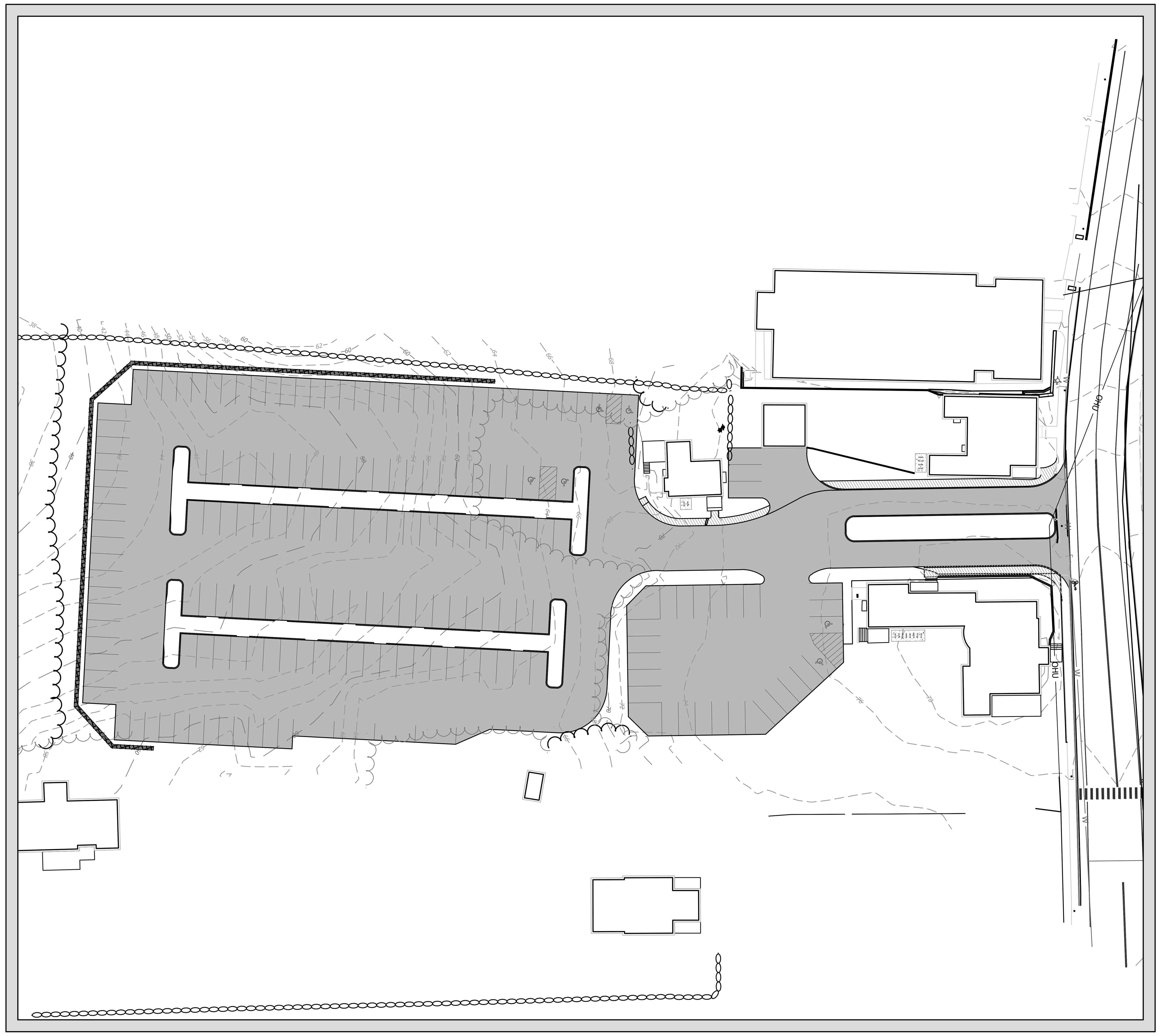


TABLE OF CONTENTS

OWNER

TOOMERFS, LLC
37 MAIN STREET
UNIT O
DURHAM, NH 03824

CIVIL ENGINEER

MJS ENGINEERING, P.C.
CIVIL • STRUCTURAL • ENVIRONMENTAL
5 RAILROAD ST., P.O. BOX 359
NEWMARKET, NH 03857
PHONE: (603) 659-4979, FAX: (603) 659-4627
E-MAIL: MJS@MJS-ENGINEERING.COM

LANDSCAPE ARCHITECT

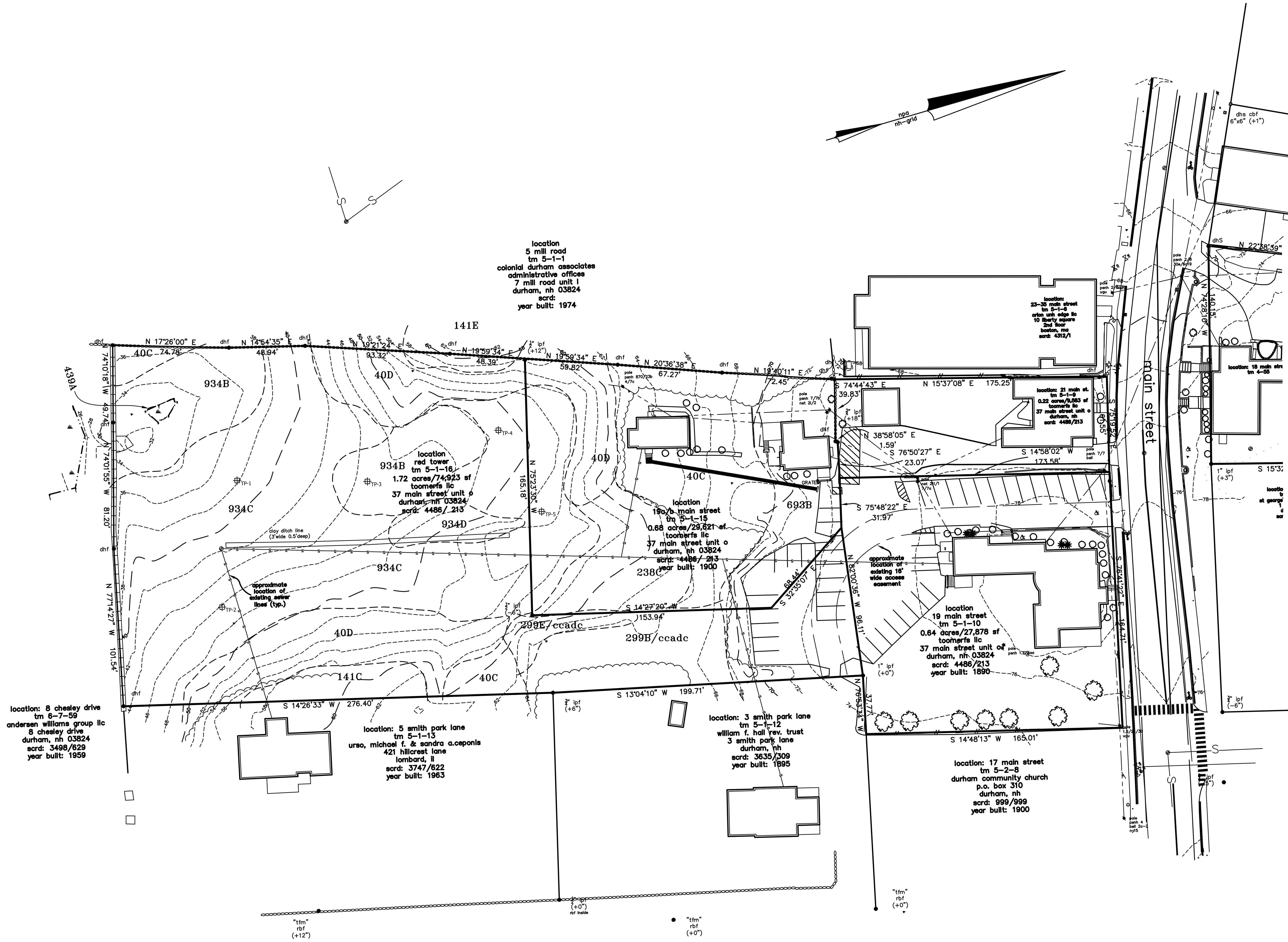
WOODBURN & COMPANY
103 KENT PLACE
NEWMARKET, NEW HAMPSHIRE
(603) 659-5949

SURVEYOR

NORWAY PLAINS ASSOCIATES, INC.
2 CONTINENTAL BOULEVARD
ROCHESTER, NEW HAMPSHIRE
03867 (603) 335-3948

NO.	REVISIONS	DATE	INT.
0.	INITIAL SUBMISSION FOR SITE PLAN REVIEW	10/28/20	AWS

reserved registry of deeds



NOTES:

1. Total parcel area: Map 5, Lots 1–9,1–10,1–15,1–16 3.2 acres
2. The parcel is zoned Church Hill Dirstirct. Tax map 5 Lots 1–9 & 1–10 are within the historic overlay district.
3. Minimum lot requirements: lot size = 5000 SF,
4. Building setbacks:
   Front = 15' (all Streets)
   Side = 5'
   Rear = 15'
   Maximum building height: 30'
   Maximum Impervious Surface Ratio 80%
6. The lots are serviced by the municipal water and sewer system.
7. The proposed lot is not located within the 100 year flood zone as shown on the flood insurance rate map dated 09/30/15 community panel 33017c0318e.

Tax Map & Lot Number
5–1–9,1–10,1–15,1–16
OWNER OF RECORD:
TOOMERFS, LLC
37 MAIN STREET, UNIT 0
DURHAM, NH.

existing features plan
19–21 main street
durham,strafford county, nh
for: Toomerfs, LLC

1"=40' August, 2019

graphic scale

40 0 20 40 120 160

revisions:

FILE NO.#
PLAN NO.#
DWG. NO.#
F.B. NO. #

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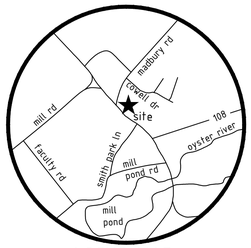

LOCUS MAP
NTS

N

LOCATION: 5 MILL ROAD
TM 5-1-1
COLONIAL DURHAM ASSOCIATES
7 MILL ROAD, UNIT 1
DURHAM, NH
SCRD:
YEAR BUILT: 1974

LOCATION:8 CHESLEY DRIVE
TM 6-7-59
ANDERSON WILLIAMS GROUP, LLC
8 CHESLEY DRIVE
DURHAM, NH
SCRD: 3498/629
YEAR BUILT: 1959

LOCATION: 5 SMITH PARK LANE
TM 5-1-13
MICHAEL F. URSO & SANDRA A. CEPONIS
421 HILLCREST LANE
LOMBARD, IL
SCRD: 3747/622
YEAR BUILT: 1963

LOCATION: 3 SMITH PARK LANE
TM 5-1-12
WILLIAM F. HALL REV. TRUST
3 SMITH PARK LANE
DURHAM, NH
SCRD: 3635/309
YEAR BUILT: 1895

LOCATION: 18 MAIN STREET
TM 4-55
TOOMERFS, LLC
37 MAIN STREET, UNIT O
DURHAM, NH
SCRD: 4486/213
YEAR BUILT: 1753

LOCATION: 1 PARK COURT
TM 4-54-2
ST GEORGE'S EPISCOPAL CHURCH
1 PARK COURT
DURHAM, NH
SCRD: 595/474
YEAR BUILT: 1952
YEAR BUILT: 1850

LOCATION: 17 MAIN STREET
TM 5-2-8
DURHAM COMMUNITY CHURCH
17 MAIN STREET
DURHAM, NH
SCRD: 999/999
YEAR BUILT: 1900

GENERAL NOTES:

1. OWNER OF RECORD:
TOOMERFS, LLC
21 MAIN STREET
DURHAM, NEW HAMPSHIRE 03824
S.C.R.D. BOOK 4486, PAGE 213

OWNER OF RECORD:
TOOMERFS, LLC
19 MAIN STREET
DURHAM, NEW HAMPSHIRE 03824
S.C.R.D. BOOK 4486, PAGE 213

OWNER OF RECORD:
TOOMERFS, LLC
19A/B MAIN STREET
DURHAM, NEW HAMPSHIRE 03824
S.C.R.D BOOK 4486, PAGE 213

OWNER OF RECORD:
TOOMERFS, LLC
RED TOWER
DURHAM, NEW HAMPSHIRE 03824
S.C.R.D. BOOK 4486, PAGE 213

2. LOT AREA: 3.26 ACRES (142,005 S.F.)

3. REFERENCE PLANS:

A. EXISTING FEATURES PLAN MAIN STREET AKA NH ROUTE 108 AND COWELL DRIVE, DURHAM STRAFFORD COUNTY, NH PREPARED FOR TOOMERFS, LLC, PREPARED BY NORWAY PLAINS ASSOCIATES, INC. DATED AUGUST, 2018.

4. VERTICAL DATUM IS ASSUMED.

5. IMPERVIOUS SURFACE RATIO:
EXISTING = 19.3% (27,398 S.F.)
PROPOSED = 52.4% (47,443 S.F.)

6. ALL OUTSIDE CONSTRUCTION RELATED ACTIVITY RELATED TO THE DEVELOPMENT OF THIS SITE IS RESTRICTED TO THE HOURS OF 7:00 A.M. TO 6:00 P.M. MONDAY THROUGH FRIDAY AND 8:00 A.M. TO 3:00 P.M. SATURDAY.

7. FOR MORE INFORMATION ABOUT THIS SITE PLAN, OR TO SEE THE COMPLETE PLAN SET, CONTACT THE TOWN OF DURHAM PLANNING DEPARTMENT, 8 NEWMARKET ROAD, DURHAM, NH 03824. (603) 868-8064.

8. ALL EXTERIOR LIGHTING MUST BE FULLY SHIELDED AND NOT PROJECT GLARE TOWARD ANY ABUTTING PROPERTIES.

9. ACCESS INTO THE SITE FOR FIRE APPARATUS SHALL BE MAINTAINED AT ALL TIMES DURING THE CONSTRUCTION PROCESS. PLEASE CONTACT THE FIRE DEPARTMENT AT 868-5531 WITH ANY QUESTIONS ABOUT ACCESS REQUIREMENTS.

10. SNOW SHALL NOT BE PUSHED AGAINST TREES OR SHRUBS IN ANY MANNER THAT COULD DAMAGE THEM. SNOW REMOVAL SHALL BE ACCOMPLISHED BY UTILIZING A MELTING MACHINE. BROUGHT TO THE SITE AS NEEDED.

11. THE GENERAL CONTRACTOR IS RESPONSIBLE TO VERIFY ALL DIMENSIONS, ELEVATIONS AND CONDITIONS AT THE SITE. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK. THIS INCLUDES DISCREPANCIES BETWEEN THESE PLANS AND ANY OTHER PLANS OR CONTRACT DOCUMENTS.

SITE DATA BLOCK

PLAN INTENT: THE PROPOSAL IS TO CONSTRUCT A NEW PAVED PARKING LOT ON THE SUBJECT PARCEL

ZONE: CH - CHURCH HILL

OVERLAY DISTRICTS: HISTORIC DISTRICT

USE: COMMERCIAL

DIMENSIONAL REQUIREMENTS	REQUIRED IN CH DISTRICT
MINIMUM LOT SIZE (SQUARE FEET)	5,000 SF
MINIMUM FRONTAGE (FEET)	50
MINIMUM LOT SETBACKS	
FRONT (FEET)	15'
SIDE (FEET)	5'
REAR (FEET)	15'
MAXIMUM ROAD SETBACK (FEET)	NA
MAXIMUM HEIGHT (FEET)	30'
MAXIMUM HEIGHT W/ P.B. APPROVAL (FEET)	35'
IMPERVIOUS SURFACES RATIO	80%

PARKING CALCULATION

USE	STANDARD	REQUIRED	PROVIDED
DWELLING UNITS AND BOARDING HOUSES	1 SPACE/RESIDENT	38 RESIDENTS	38 SPACES	183 SPACES

NOTE: ADDITIONAL PARKING SPACES FOR RENT BY OTHER PROPERTIES.

SCALE: 1" = 30'

FINAL APPROVAL BY DURHAM PLANNING BOARD.
CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
CERTIFIED _____
DATE _____

NO.	REVISIONS	DATE	INT.
0.	INITIAL SUBMISSION FOR SITE PLAN REVIEW	10/28/20	AWS

SEAL

DATE ISSUED: 10/28/20
SCALE: 1"=30'
DESIGNED BY: AWS
DRAWN BY: AWS
APPROVED BY: MJS
DWG FILE: 18041 CivilP.dwg

PROPOSED SITE PLAN

prepared for
TOOMERFS, LLC
TAX MAP 5, LOTS 1-9 AND 1-10
19 MAIN ST AND 21 MAIN ST, DURHAM, NH 03824

MJS ENGINEERING, P.C.
CIVIL • STRUCTURAL • ENVIRONMENTAL
5 INDUSTRIAL WAY, UNIT 3, SUITE 359
SALEM, NH 03079
PHONE: (603) 659-4979, FAX: (603) 659-4627
E-MAIL: TK@MJS-ENGINEERING.COM

JOB: 18-041

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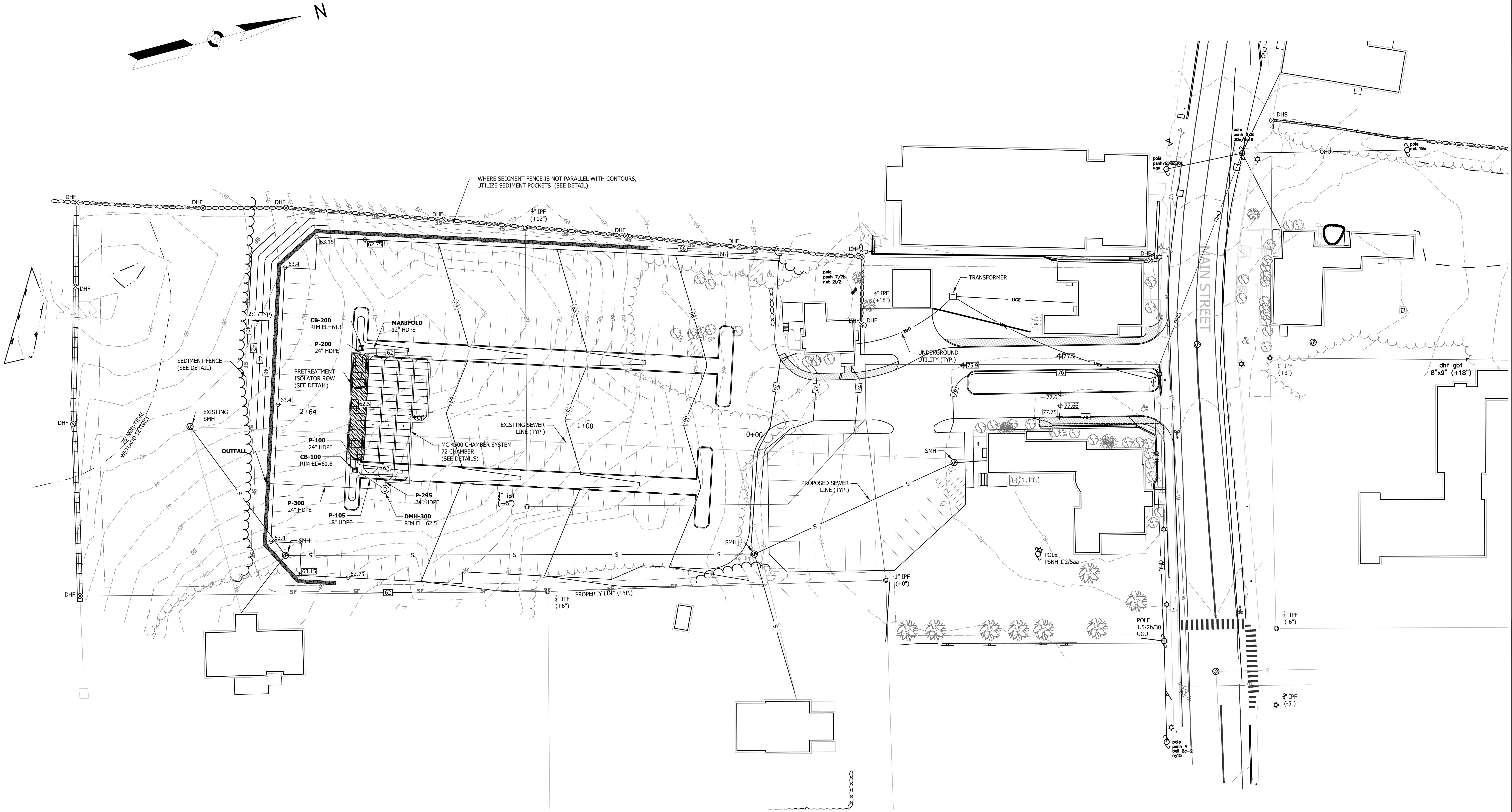

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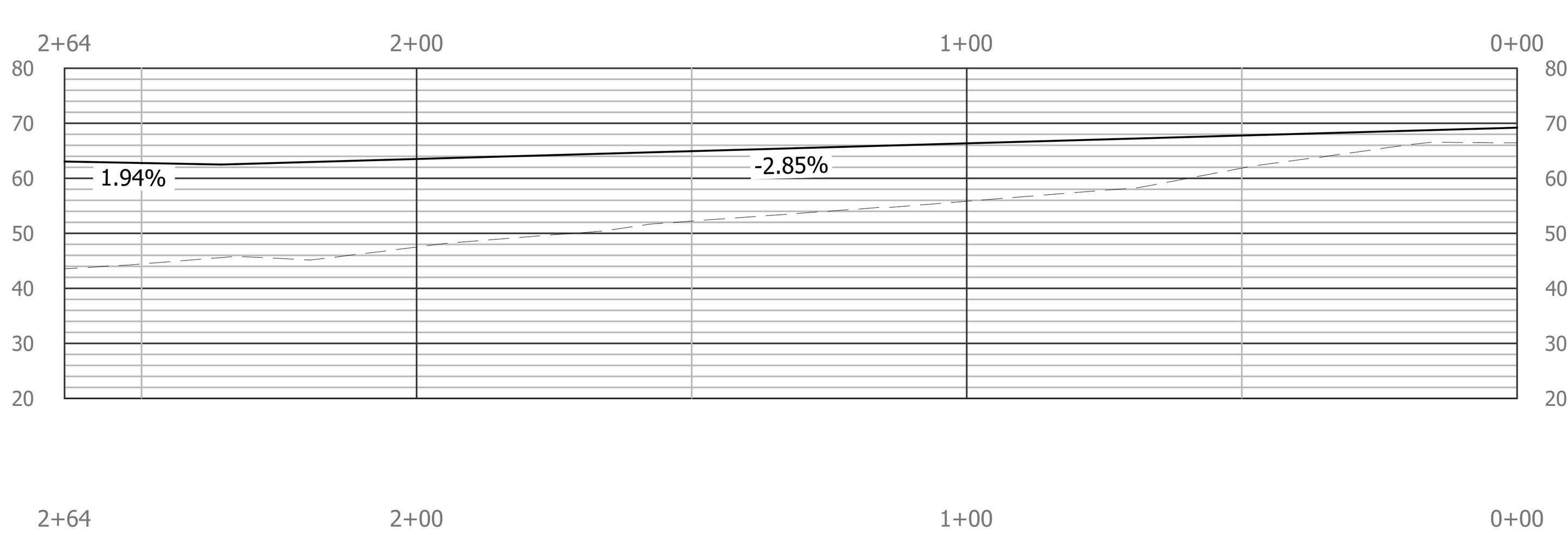

P- PARKING LOT - CL
STA: 0+00 to STA: 2+64

FINAL APPROVAL BY DURHAM PLANNING BOARD.
CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
CERTIFIED ______________________
DATE ______________________

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SCALE:	1"=30'
DESIGNED BY:	AWS
DRAWN BY:	AWS
APPROVED BY:	MJS
DWG FILE:	18041 CivilP.dwg

GRADING, DRAINAGE, UTILITY & EROSION CONTROL PLAN

prepared for
TOOMERFS, LLC
TAX MAP 5, LOTS 1-9 AND 1-10
19 MAIN ST AND 21 MAIN ST, DURHAM, NH 03824

MJS ENGINEERING, P.C.
CIVIL • STRUCTURAL • ENVIRONMENTAL
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NEWMARKET, NH 03857
PHONE: (603) 659-4979, FAX: (603) 659-4627
E-MAIL: MJS@MJS-ENGINEERING.COM

JOB: 18-041

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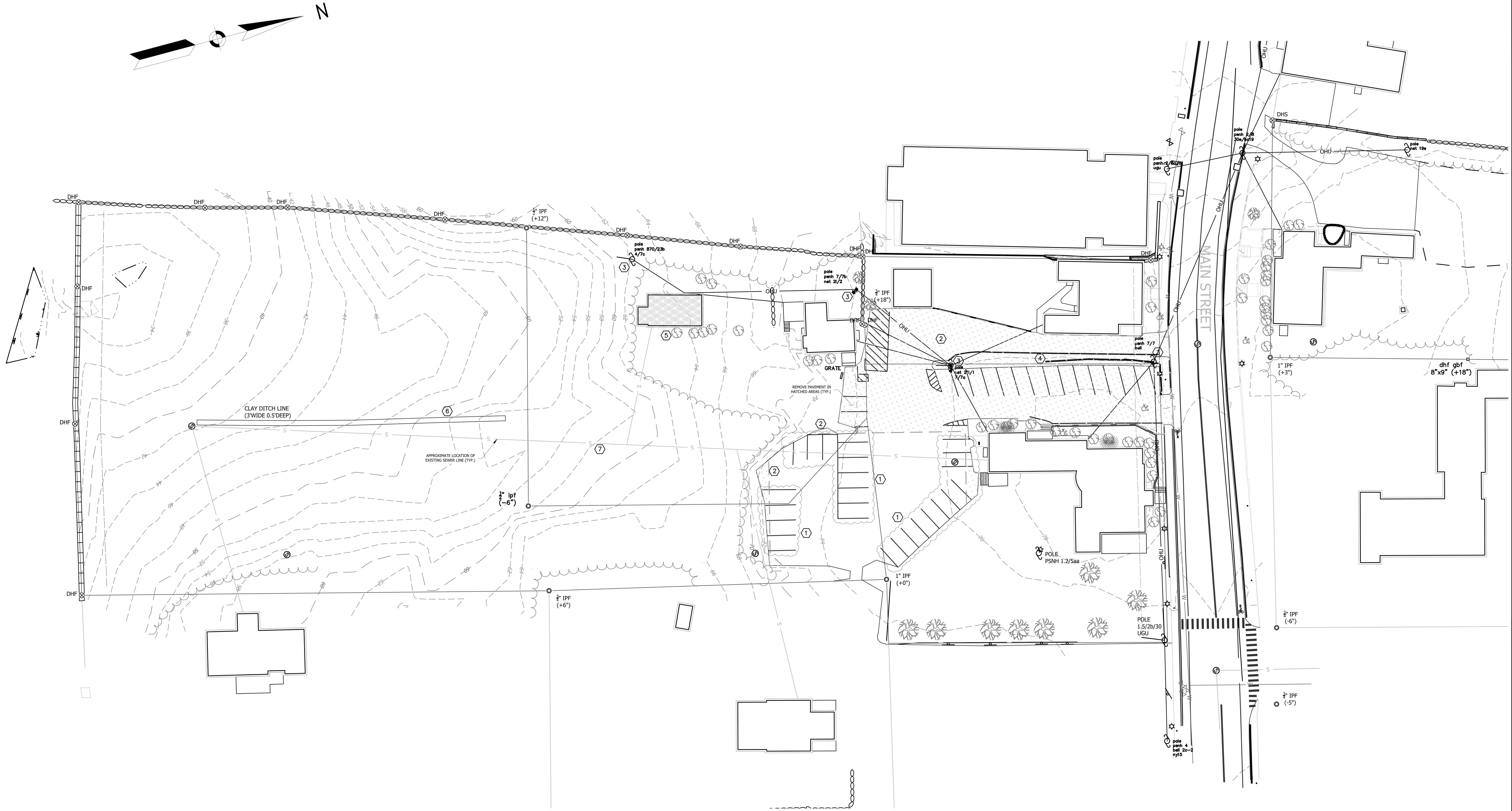

0 30 60 100

SCALE: 1" = 30'

DEMOLITION ITEMS
(REFER TO DEMOLITION NOTE 5)

1. SAWCUT AND REMOVE PAVEMENT AND ALL MARKINGS OR REMOVE OR GRIND PAVEMENT AS REQUIRED TO RECONSTRUCT AS SHOWN ON SITE PLAN.
2. SAWCUT AND REMOVE EXISTING PAVEMENT TO THE LIMITS SHOWN.
3. REMOVE UTILITY POLE AND CONNECTED CABLES. COORDINATION WITH EVERSOURCE AND INTERNET/TV/PHONE PROVIDER MAY BE REQUIRED.
4. REMOVE EXISTING CURBING.
5. DEMOLISH EXISTING BUILDING, FOUNDATION, AND ALL ASSOCIATED UTILITIES AND STRUCTURES.
6. EXCAVATE EXISTING CLAY DITCH LINE TO PROJECT EXTENTS.
7. REMOVE EXISTING SEWER LINE WHERE NECESSARY TO AVOID INTERFERENCE WITH CONSTRUCTION.

DEMOLITION NOTES

1. LOCATIONS OF UTILITIES ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE SITE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES. CONTRACTOR SHALL CALL DIGSAFE AT 1–888–DIG–SAFE (1–888–344–7253) PRIOR TO COMMENCING WITH ANY DEMOLITION WORK. ALL UTILITY WORK AND MATERIALS SHALL BE IN CONFORMANCE WITH THE SPECIFIC UTILITY COMPANY. CONSULT WITH THE SPECIFIC UTILITY COMPANY.

2. CONSTRUCTION SEQUENCING SHALL MEET THE REQUIREMENTS OF THE CONSTRUCTION SEQUENCING AND EROSION CONTROL NOTES FOUND ON SHEET D1. TEMPORARY EROSION CONTROL STRUCTURES AND TEMPORARY CHAINLINK FENCE SHALL BE INSTALLED PRIOR TO CONDUCTING EARTHWORK ACTIVITIES.

3. ALL SALVAGED MATERIALS FROM WITHIN THE CITY RIGHT OF WAY SHALL BE TAKEN TO THE DPW FACILITY. ALL DEMOLITION MATERIALS FROM WITHIN THE LOTS SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS SPECIFICALLY INDICATED OTHERWISE ON THIS PLAN. MATERIALS SHALL BE REMOVED FROM THE SITE AS SOON AS POSSIBLE TO PREVENT UNDUE BURDEN ON THE BUILDING CONTRACTOR OF WORKING AROUND STOCKPILED MATERIALS.

4. ALL DEMOLITION MATERIALS SHALL BE PROPERLY DISPOSED OF OFF SITE PER CURRENT LOCAL, STATE, AND FEDERAL REGULATIONS.

5. THE INTENT OF THIS PLAN IS TO SHOW THE DEMOLITION REQUIREMENTS. THE DEMOLITION OR REMOVAL OF ADDITIONAL ITEMS MAY BE REQUIRED AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO PERFORM A SITE VISIT TO VERIFY ALL DEMOLITION REQUIREMENTS FOR THE PROJECT.

6. EXISTING MONUMENTATION THAT IS DISTURBED DURING CONSTRUCTION SHALL BE RESET BY A NH LICENSED LAND SURVEYOR OR PERSONS UNDER THE DIRECT SUPERVISION OF A NH LLS. NORWAY PLAINS & ASSOCAITES INC. (335–3948) IS THE SURVEYOR OF RECORD FOR THIS PROPERTY. COSTS FOR THIS WORK SHALL BE PAID FOR BY THE SITE CONTRACTOR.

7. THE SITE CONTRACTOR SHALL PROVIDE DAILY MAINTENANCE AS NECESSARY, INCLUDING SWEEPING AS NECESSARY, TO REMOVE DEPOSITED MATERIALS, SPILLS, ETC. ASSOCIATED WITH THE SITE CONSTRUCTION ACTIVITIES.

8. ALL WORK SHALL BE CONDUCTED IN A MANNER TO PROTECT EXISTING FEATURES TO REMAIN AS SHOWN. THIS INCLUDES ONSITE FEATURES AND THOSE FEATURES WITHIN THE PUBLIC R.O.W. DAMAGE TO THESE FEATURES SHALL BE REPAIRED/REPLACED IN KIND BY THE SITE CONTRACTOR.

9. IN ANY LOCATION WHERE AN EXISTING PEDESTRIAN TRAVEL WAY LEADS TO THE CONSTRUCTION SITE (CROSSWALK, SIDEWALK, ETC.), ACCESS TO THE CONSTRUCTION SITE SHALL BE BLOCKED AND SIGNAGE SHALL BE PROVIDED AS SHOWN BELOW:

NO ACCESS
CONSTRUCTION SITE

10. UTILITIES: THE SITE CONTRACTOR SHALL COORDINATE WITH EVERSOURCE TO REMOVE AND RELOCATE THE EXISTING TRANSFORMER.

FINAL APPROVAL BY DURHAM PLANNING BOARD.
CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
CERTIFIED ______________________
DATE ______________________

NO.	REVISIONS	DATE	INT.
0.	INITIAL SUBMISSION FOR SITE PLAN REVIEW	10/28/20	AWS

SEAL

DATE ISSUED: 10/28/20
SCALE: 1"=30'
DESIGNED BY: AWS
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DEMOLITION PLAN
prepared for
TOOMERFS, LLC
TAX MAP 5, LOTS 1-9 AND 1-10
19 MAIN ST AND 21 MAIN ST, DURHAM, NH 03824

MJS ENGINEERING, P.C.
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5 RAILROAD ST., P.O. BOX 359
NEWMARKET, NH 03857
PHONE: (603) 659-4979, FAX: (603) 659-4627
E-MAIL: MJS@MJS-ENGINEERING.COM

JOB: 18-041

C-103

LANDSCAPE NOTES:

1. Design is based on drawings by MJS Engineering, P.C. dated October 20, 2020, and may require adjustment due to actual field conditions.
2. The contractor shall follow best management practices during construction and shall take all means necessary to stabilize and protect the site from erosion.
3. Erosion Control shall be in place prior to construction.
4. Erosion Control to consist of Hay Bales and Erosion Control Fabric shall be staked in place between the work and Water bodies, Wetlands and/or drainage ways prior to any construction.
5. The Contractor shall verify layout and grades and inform the Landscape Architect or Client's Representative of any discrepancies or changes in layout and/or grade relationships prior to construction.
6. It is the contractor's responsibility to verify drawings provided are to the correct scale prior to any bid, estimate or installation. A graphic scale bar has been provided on each sheet for this purpose. If it is determined that the scale of the drawing is incorrect, the landscape architect will provide a set of drawings at the correct scale, at the request of the contractor.
7. Trees to Remain within the construction zone shall be protected from damage for the duration of the project by snow fence or other suitable means of protection to be approved by Landscape Architect or Client's Representative. Snow fence shall be located at the drip line at a minimum and shall include any and all surface roots. Do not fill or mulch on the trunk flare. Do not disturb roots. In order to protect the integrity of the roots, branches, trunk and bark of the tree(s) no vehicles or construction equipment shall drive or park in or on the area within the drip line(s) of the tree(s). Do not store any refuse or construction materials or portalets within the tree protection area.
8. This plan is for review purposes only, NOT for Construction. Construction Documents will be provided upon request.
9. Location, support, protection, and restoration of all existing utilities and appurtenances shall be the responsibility of the Contractor.
10. The Contractor shall verify exact location and elevation of all utilities with the respective utility owners prior to construction. Call DIGSAFE at 1-888-344-7233.
11. The Contractor shall procure any required permits prior to construction.
12. Prior to any landscape construction activities Contractor shall test all existing loam and loam from off-site intended to be used for lawns and plant beds using a thorough sampling throughout the supply. Soil testing shall indicate levels of pH, nitrates, macro and micro nutrients, texture, soluble salts, and organic matter. Contractor shall provide Landscape Architect with test results and recommendations from the testing facility along with soil amendment plans as necessary for the proposed plantings to thrive. All loam to be used on site shall be amended as approved by the Landscape Architect prior to placement.
13. Contractor shall notify landscape architect or owner's representative immediately if at any point during demolition or construction a site condition is discovered which may negatively impact the completed project. This includes, but is not limited to, unforeseen drainage problems, unknown subsurface conditions, and discrepancies between the plan and the site. If a contractor is aware of a potential issue and does not bring it to the attention of the landscape architect or owner's representative immediately, they may be responsible for the labor and materials associated with correcting the problem.
14. The Contractor shall furnish and plant all plants shown on the drawings and listed thereon. All plants shall be nursery-grown under climatic conditions similar to those in the locality of the project. Plants shall conform to the botanical names and standards of size, culture, and quality for the highest grades and standards as adopted by the American Association of Nurserymen, Inc. in ANSI Z60.1 of the American Standard of Nursery Stock, American Standards Institute, Inc. 230 Southern Building, Washington, D.C. 20005.
15. A complete list of plants, including a schedule of sizes, quantities, and other requirements is shown on the drawings. In the event that quantity discrepancies or material omissions occur in the plant materials list, the planting plans shall govern.
16. All plants shall be legibly tagged with proper botanical name.
17. The Contractor shall guarantee all plants for not less than one year from time of acceptance.
18. Owner or Owner's Representative will inspect plants upon delivery for conformity to Specification requirements. Such approval shall not affect the right of inspection and rejection during or after the progress of the work. The Owner reserves the right to inspect and/or select all trees at the place of growth and reserves the right to approve a representative sample of each type of shrub, herbaceous perennial, annual, and ground cover at the place of growth. Such sample will serve as a minimum standard for all plants of the same species used in this work.
19. No substitutions of plants may be made without prior approval of the Owner or the Owner's Representative for any reason.
20. All landscaping shall be provided with either of the following
    a. An underground sprinkling system
    b. An outside hose attachment within 150 feet
21. If an automatic irrigation system is installed, all irrigation valve boxes shall be located within planting bed areas.
22. The contractor is responsible for all plant material from the time their work commences until final acceptance. This includes but is not limited to maintaining all plants in good condition, the security of the plant material once delivered to the site, and watering of plants. Plants shall be appropriately watered prior to, during and after planting. It is the contractor's responsibility to provide water from off site, should it not be available on site.
23. All disturbed areas will be dressed with 6" of topsoil and planted as noted on the plans or seeded except plant beds. Plant beds shall be prepared to a depth of 12" with 75% loam and 25% compost.
24. Trees, ground cover, and shrub beds shall be mulched to a depth of 2" with one-year-old, well-composted, shredded native bark not longer than 4" in length and ½" in width, free of woodchips and sawdust. Mulch for ferns and herbaceous perennials shall be no longer than 1" in length. Trees in lawn areas shall be mulched in a 5' diameter min. saucer. Color of mulch shall be black.
25. In no case shall mulch touch the stem of a plant nor shall mulch ever be more than 3" thick total (including previously applied mulch) over the root ball of any plant.
26. Secondary lateral branches of deciduous trees overhanging vehicular and pedestrian travel ways shall be pruned up to a height of 6' to allow clear and safe passage of vehicles and pedestrians under tree canopy.
27. Snow shall be stored a minimum of 5' from shrubs and trunks of trees.
28. Landscape Architect is not responsible for the means and methods of the contractor.

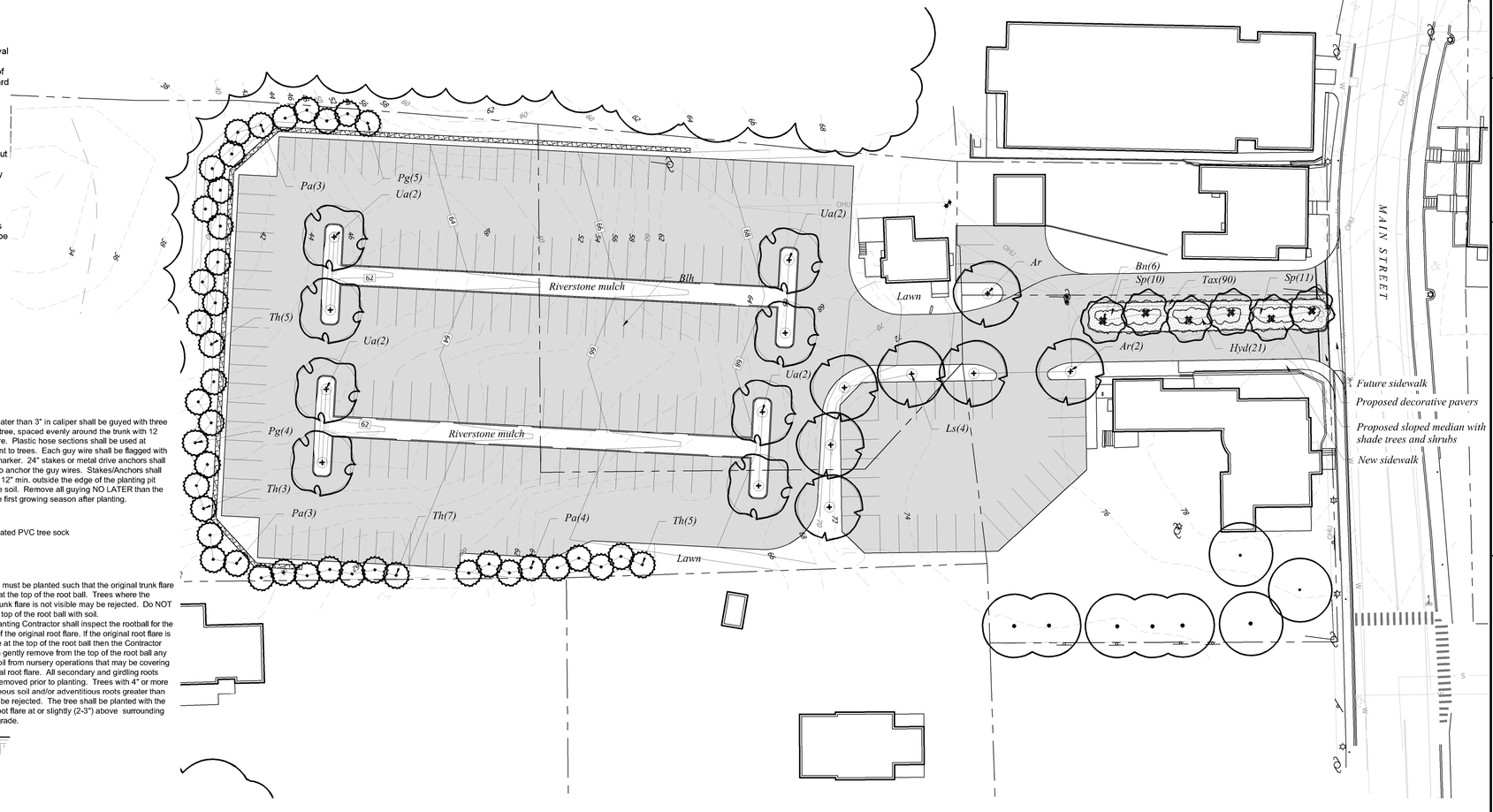
Plant List

TREES

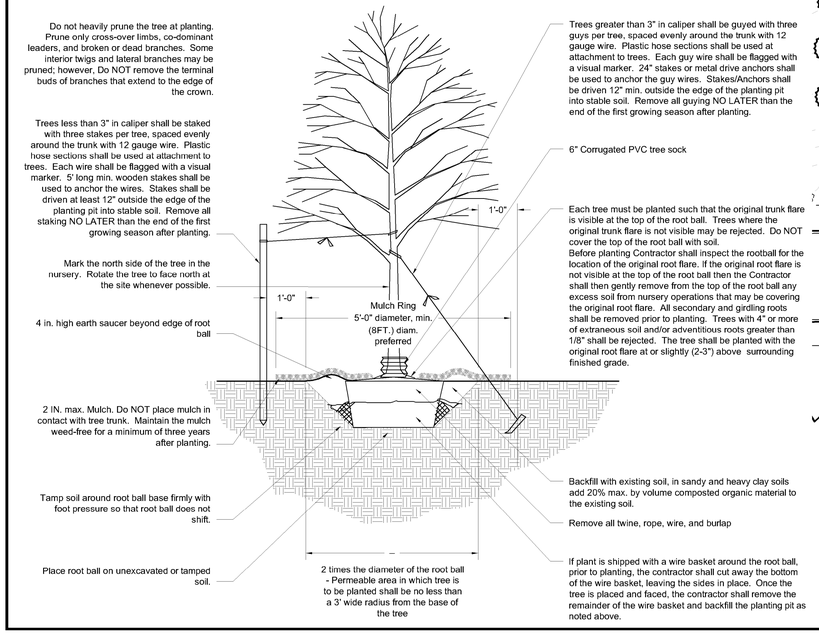
Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Ar	*Acer rubrum 'October Glory'*	October Glory Red Maple	3	2.5-3" cal	B&B
Bn	*Betula nigra 'Heritage'*	Heritage River Birch	6	12-14' ht.	B&B, multi-stemmed
Ls	*Liquidambar styraciflua*	American Sweetgum	4	2.5-3" cal	B&B
Pa	*Picea abies*	Norway Spruce	10	7-8' ht.	B&B
Pg	*Picea glauca*	White Spruce	9	7-8' ht.	B&B
Th	*Thuja plicata 'Green Giant'*	Green Giant Arborvitae	20	10' ht.	B&B
Ua	*Ulmus americana 'Princeton'*	Princeton American Elm	8	2.5-3" cal	B&B

SHRUBS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Hyd	*Hydrangea serrata 'Tuff Stuff'*	Tuff Stuff Hydrangea	21	3 gal	
Sp	*Spiraea x bumalda 'Anthony Waterer'*	Anthony Waterer Spirea	21	3 gal	
Tax	*Taxus media 'Tauntonii'*	Taunton Yew	90	2-2.5'	B&B



TREE PLANTING DETAIL



NO.	DATE	INT.
0.	10/21/20	LF

REVISIONS

INITIAL SUBMISSION

SEAL

DATE: 10/19/20
SCALE: 1"=30'
DESIGNED BY: RW
DRAWN BY: LF
APPROVED BY: RW
DWG FILE:

LANDSCAPE SITE PLAN

prepared for
TOOMERFS, LLC
TAX MAP 5, LOTS 1-9 AND 1-10
19 MAIN ST AND 21 MAIN ST DURHAM, NH

MJS ENGINEERING, P.C.
CIVIL • STRUCTURAL • ENVIRONMENTAL
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Newmarket, NH 03857
Phone: (603) 659-4979 FAX: (603) 659-4627
E-MAIL: MJS@MJS-ENGINEERING.COM

JOB: 18-041

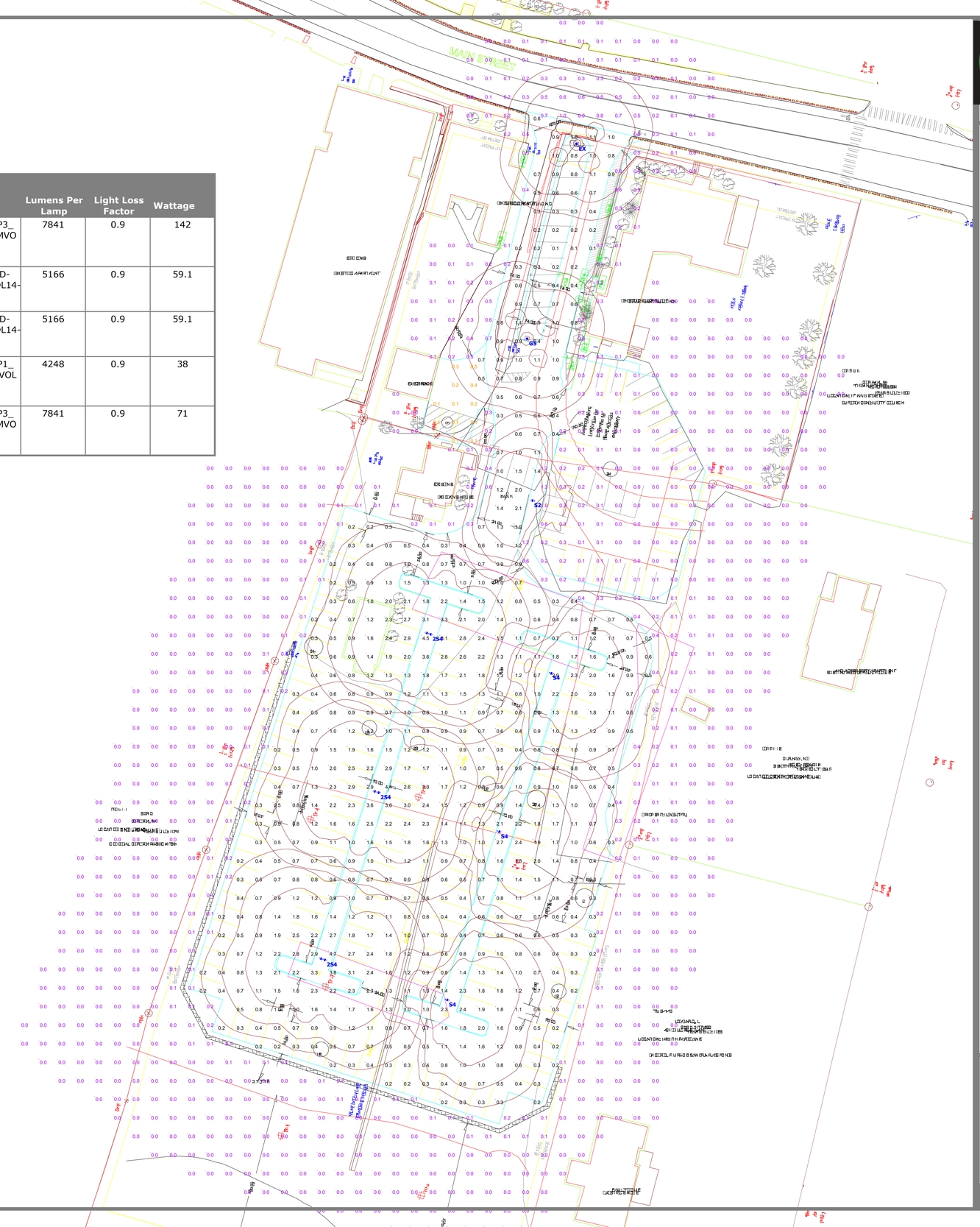
L1

Schedule

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	2S4	3	Lithonia Lighting	DSX0 LED P3 30K TFTM MVOLT SPA DDBXD with SSS 18 4C DM28AS DDBXD	DSX0 LED Area Fixture; mounted at 18ft	LED	1	DSX0_LED_P3_30K_TFTM_MVOLT.ies	7841	0.9	142
	EX	1	XXXXX	XXXXXXX	Existing Lantern-Style Fixture; mounted at 14ft	LED	1	962TC-XRLED-12L45T5-MDL14--SV1.IES	5166	0.9	59.1
	G5	1	Sternberg Lighting	962TC-XRLED-12L45T5-MDL14-SV1	Glenn Ellen Series; mounted at 14ft	LED	1	962TC-XRLED-12L45T5-MDL14--SV1.IES	5166	0.9	59.1
	S2	1	Lithonia Lighting	DSX0 LED P1 30K T3M MVOLT SPA DDBXD with SSS 12 4C DM19AS DDBXD	DSX0 LED Area Fixture; mounted at 12ft	LED	1	DSX0_LED_P1_30K_T3M_MVOLT.ies	4248	0.9	38
	S4	3	Lithonia Lighting	DSX0 LED P3 30K TFTM MVOLT SPA DDBXD with SSS 18 4C DM19AS DDBXD	DSX0 LED Area Fixture; mounted at 18ft	LED	1	DSX0_LED_P3_30K_TFTM_MVOLT.ies	7841	0.9	71

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Outside of Parking Lot	+	0.1 fc	1.3 fc	0.0 fc	N/A	N/A
Parking at Rooming House	+	0.2 fc	0.5 fc	0.1 fc	5.0:1	2.0:1
Parking Lot	+	1.1 fc	4.7 fc	0.1 fc	47.0:1	11.0:1



VISUAL

19 MAIN ST - DURHAM, NH
Site Lighting Layout

Designer
Heidi G. Connors
Visible Light, Inc.
24 Stickney Terrace
Suite 6
Hampton, NH 03842

Date
10/27/2020

Scale
1" = 30'

Drawing No.

Summary

CONSTRUCTION SEQUENCING AND EROSION CONTROL NOTES:

AREA OF DISTURBANCE/STABILIZATION

A. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL THE AREA OF UNSTABILIZED SOIL EXCEED 5 ACRES AT ANY ONE TIME BEFORE THE AREA IS STABILIZED.
B. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
   1. IN AREAS TO BE PAVED, BASE COURSE GRAVELS MEETING THE GRADATION REQUIREMENTS OF NHDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, 2016, ITEM NO. 304.1 OR 304.2 HAVE BEEN INSTALLED;
   2. IN AREAS NOT TO BE PAVED
      2.A. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
      2.B. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED;
      2.C. EROSION CONTROL BLANKETS HAVE BEEN INSTALLED IN ACCORDANCE WITH ENV-WQ 1506.03.
C. DISTURBED AREAS SHALL BE TEMPORARILY STABILIZED WITHIN 45 DAYS AND PERMANENTLY STABILIZED NO LATER THAN 3 DAYS AFTER FINAL GRADING.

EROSION CONTROL PRACTICES:

A. INSTALLATION:
   1. INSTALL ALL EROSION CONTROLS AS SHOWN ON THE GRADING PLAN, TYPICAL DETAILS, AND IN CONFORMANCE WITH THE EROSION AND SEDIMENT CONTROL NOTES ON THIS PAGE. MANUFACTURER'S SPECIFICATIONS SHALL BE FOLLOWED.
B. INSPECTION:
   1. INSPECT ALL EROSION CONTROLS WEEKLY AND AFTER EVERY RAIN EVENT OF 0.5 INCHES OR GREATER UNLESS OTHERWISE NOTED.
   2. TEMPORARY STABILIZATION PRACTICES SHALL BE INSPECTED ONCE PER WEEK DURING CONSTRUCTION UNTIL EXPOSED SURFACES ARE STABILIZED.
   3. ANY SIGNS OF RILL OR GULLY EROSION SHALL BE IMMEDIATELY REPAIRED.
C. MAINTENANCE:
   1. MAINTAIN EROSION CONTROLS PER THE TYPICAL DETAILS AND IN CONFORMANCE WITH THE EROSION AND SEDIMENT CONTROL NOTES ON THIS PAGE.
D. REMOVAL
   1. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE 85% VEGETATIVE COVER HAS BEEN ESTABLISHED.
   2. AFTER REMOVAL, ALL DISTURBED AREAS SHALL BE REGRADED, FERTILIZED, AND RESEEDED. MONITOR TO ENSURE VEGETATIVE GROWTH IS ESTABLISHED AND REPAIR AS NEEDED UNTIL MINIMUM OF 85% VEGETATIVE COVER IS ESTABLISHED.

COLD WEATHER SITE STABILIZATION

A. TO ADEQUATELY PROTECT WATER QUALITY DURING COLD WEATHER AND DURING SPRING RUNOFF, THE ADDITIONAL STABILIZATION TECHNIQUES SPECIFIED IN THIS SECTION SHALL BE EMPLOYED DURING THE PERIOD FROM OCTOBER 15 THROUGH MAY 1.
B. SUBJECT TO (C), BELOW, THE AREA OF EXPOSED, UNSTABILIZED SOIL SHALL BE:
   1. LIMITED TO ONE ACRE; AND
   2. PROTECTED AGAINST EROSION BY THE METHODS DESCRIBED IN THIS SECTION PRIOR TO ANY THAW OR SPRING MELT EVENT.
C. THE ALLOWABLE AREA OF EXPOSED SOIL MAY BE INCREASED IF A WINTER CONSTRUCTION PLAN IS DEVELOPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST AND SUBMITTED TO THE DEPARTMENT FOR APPROVAL AS A REQUEST TO WAIVE THE ONE-ACRE LIMIT.
D. SUBJECT TO (F) AND (G), BELOW, ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF LESS THAN 15% THAT DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR THAT ARE DISTURBED AFTER OCTOBER 15, SHALL BE SEEDED AND COVERED WITH 3 TO 4 TONS OF HAY OR STRAW MULCH PER ACRE SECURED WITH ANCHORED NETTING OR TACKIFIER OR WITH AT LEAST 2 INCHES OF EROSION CONTROL MIX MEETING THE CRITERIA OF ENV-WQ 1506.05(B).
E. SUBJECT TO (F) AND (G), BELOW, ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF 15% OR GREATER THAT DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR THAT ARE DISTURBED AFTER OCTOBER 15, SHALL BE SEEDED AND COVERED WITH A PROPERLY INSTALLED AND ANCHORED EROSION CONTROL BLANKET OR WITH AT LEAST 4 INCHES OF EROSION CONTROL MIX MEETING THE CRITERIA OF ENV-WQ 1506.05(B).
F. ANCHORED HAY MULCH OR EROSION CONTROL MIX THAT MEETS THE CRITERIA OF ENV-WQ 1506.05(B) SHALL NOT BE INSTALLED OVER SNOW GREATER THAN ONE INCH IN DEPTH.
G. EROSION CONTROL BLANKETS SHALL NOT BE INSTALLED OVER SNOW GREATER THAN ONE INCH IN DEPTH OR ON FROZEN GROUND.
H. ALL PROPOSED STABILIZATION IN ACCORDANCE WITH (D) OR (E), ABOVE, SHALL BE COMPLETED WITHIN A DAY OF ESTABLISHING THE GRADE THAT IS FINAL OR THAT OTHERWISE WILL EXIST FOR MORE THAN 5 DAYS.
I. ALL DITCHES OR SWALES THAT DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR THAT ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS, AS DETERMINED BY THE OWNER'S ENGINEERING CONSULTANT.
J. AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING AREAS WHERE ACTIVE CONSTRUCTION OF THE ROAD OR PARKING AREA HAS STOPPED FOR THE WINTER SEASON SHALL BE PROTECTED WITH A MINIMUM 3-INCH LAYER OF BASE COURSE GRAVELS MEETING THE GRADATION REQUIREMENTS OF NHDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, 2016, TABLE 304-1, ITEM NO. 304.1, 304.2, OR 304.3, AVAILABLE AS NOTED IN APPENDIX B.

TEMPORARY VEGETATION

A. SITE PREPARATION
   1. INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SPECIFIED ABOVE.
   2. ENSURE RUNOFF IS DIVERTED FROM SEEDED AREA.
   3. ON SLOPES OF 4:1 OR STEEPER, CREATE HORIZONTAL GROOVES PERPENDICULAR TO THE DIRECTION OF THE SLOPE TO CATCH SEED AND REDUCE RUNOFF.
B. SEED BED PREPARATION
   1. REMOVE STONES AND TRASH FROM AREA TO BE SEEDED.
   2. COMPACTED SOIL SHALL BE LOOSENED TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME, AND SEED.
   3. APPLY FERTILIZER AT A RATE OF 600 LBS PER ACRE OF 10-10-10. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE.
C. SEEDING
   1. SEED PER THE FOLLOWING RECOMMENDATIONS

SEASON	APPLICATION DATE	MIXTURE TYPE	QUANTITY (lb./Ac.)
EARLY SPRING	NO LATER THAN 5/15	OATS	80
LATE SPRING/ FALL	4/1 TO 6/1 & 8/15 TO 9/15	PERENNIAL RYE	30
EARLY SPRING/ FALL	4/1 TO 5/15 & 8/15 TO 9/15	ANNUAL RYE	40
FALL	8/15 TO 9/15	WINTER RYE	112

   2. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). NORMAL SEEDING DEPTH IS FROM ¼ TO ½ INCH. HYDROSEEDING THAT INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED 10% WHEN HYDROSEEDING.
   3. TEMPORARY SEEDING SHALL OCCUR PRIOR TO SEPTEMBER 15TH IN THE YEAR IN WHICH THE AREA BEING SEEDED WAS DISTURBED.
   4. AREAS SEEDED BETWEEN MAY 15TH AND AUGUST 15TH SHALL BE COVERED WITH HAY OR STRAW MULCH MEETING THE FOLLOWING CRITERIA:
      4.A. HAY AND STRAW MULCHES SHALL BE ANCHORED WITH MULCH NETTING OR TACKIFIER SO THAT THEY ARE NOT BLOWN AWAY BY WIND OR WASHED AWAY BY FLOWING WATER;
      4.B. MULCH MATERIALS SHALL BE SELECTED BASED UPON SOILS, SLOPE, FLOW CONDITIONS, AND TIME OF YEAR;
      4.C. HAY OR STRAW MULCH SHALL BE APPLIED AT A RATE OF 1.5 TO 2 TONS PER ACRE, EQUIVALENT TO 70 TO 90 POUNDS PER 1,000 SQUARE FEET;
   5. IF VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED AREA IS NOT ACHIEVED PRIOR TO OCTOBER 15TH, ONE OR MORE ADDITIONAL EROSION CONTROL METHODS SHALL BE IMPLEMENTED.
D. MAINTENANCE
   1. TEMPORARY SEEDING SHOULD BE INSPECTED WEEKLY AND AFTER ANY RAINFALL EXCEEDING ½ INCH IN 24 HOURS ON ACTIVE CONSTRUCTION SITES. TEMPORARY SEEDING SHOULD ALSO BE INSPECTED JUST PRIOR TO SEPTEMBER 15, TO ASCERTAIN WHETHER ADDITIONAL SEEDING IS REQUIRED TO PROVIDE STABILIZATION OVER THE WINTER PERIOD.
   2. BASED ON INSPECTION, AREAS SHOULD BE RESEEDED TO ACHIEVE FULL STABILIZATION OF EXPOSED SOILS. IF IT IS TOO LATE IN THE PLANTING SEASON TO APPLY ADDITIONAL SEED, THEN OTHER TEMPORARY STABILIZATION MEASURES SHOULD BE IMPLEMENTED.
   3. AT A MINIMUM, 85% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION.
   4. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHOULD BE MADE AND AREAS SHOULD BE RESEEDED, WITH OTHER TEMPORARY MEASURES (E.G., MULCH) USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.

PERMANENT VEGETATION

A. SITE PREPARATION
   1. REFER TO SITE PREPARATION FOR TEMPORARY SEEDING.
B. SEED BED PREPARATION
   1. REFER TO SEED BED PREPARATION FOR TEMPORARY SEEDING IN CONJUNCTION WITH THESE NOTES.
   2. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING TOOTH HARROW OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED. ALL BUT CLAY OR SILTY SOILS AND COARSE SANDS SHOULD BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE.
   3. REMOVE FROM THE SURFACE ALL STONES 2 INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, CONCRETE, CLODS, LUMPS, TRASH OR OTHER UNSUITABLE MATERIAL.
   4. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED; THE AREA MUST BE TILLED AND FIRMED AS ABOVE.
   5. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
   6. APPLY FERTILIZER AT A RATE OF 600 LBS PER ACRE OF 10-10-10. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE.
C. SEEDING
   1. UNLESS OTHERWISE NOTED, GRASS SEED MIXTURE 'C' SHALL BE APPLIED AT THE SPECIFIED RATE AS NOTED IN THE 'SEED MIXTURES FOR PERMANENT VEGETATION' TABLE.
   2. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). NORMAL SEEDING DEPTH IS FROM ¼ TO ½ INCH. HYDROSEEDING THAT INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE. SEEDING OPERATIONS SHOULD BE ON THE CONTOUR.
   3. WHERE FEASIBLE, EXCEPT WHERE EITHER A CULTIPACKER TYPE SEEDER OR HYDROSEEDER IS USED, THE SEEDBED SHOULD BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A ROLLER, OR LIGHT DRAG.
   4. WHEN HYDROSEEDING (HYDRAULIC APPLICATION), PREPARE THE SEEDBED AS SPECIFIED ABOVE OR BY HAND RAKING TO LOOSEN AND SMOOTH THE SOIL AND TO REMOVE SURFACE STONES LARGER THAN 2 INCHES IN DIAMETER.
   5. SLOPES MUST BE NO STEEPER THAN 2 TO 1.
   6. LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. THE USE OF FIBER MULCH ON CRITICAL AREAS IS NOT RECOMMENDED (UNLESS IT IS USED TO HOLD STRAW OR HAY). BETTER PROTECTION IS GAINED BY USING STRAW MULCH AND HOLDING IT WITH ADHESIVE MATERIALS OR 500 POUNDS PER ACRE OF WOOD FIBER MULCH.
   7. SEEDING RATES MUST BE INCREASED 10% WHEN HYDROSEEDING.
   8. TEMPORARY SEEDING SHALL OCCUR PRIOR TO SEPTEMBER 15TH IN THE YEAR IN WHICH THE AREA BEING SEEDED WAS DISTURBED.
   9. AREAS SEEDED BETWEEN MAY 15TH AND AUGUST 15TH SHALL BE COVERED WITH HAY OR STRAW MULCH MEETING THE FOLLOWING CRITERIA:
      9.A. HAY AND STRAW MULCHES SHALL BE ANCHORED WITH MULCH NETTING OR TACKIFIER SO THAT THEY ARE NOT BLOWN AWAY BY WIND OR WASHED AWAY BY FLOWING WATER;
      9.A. MULCH MATERIALS SHALL BE SELECTED BASED UPON SOILS, SLOPE, FLOW CONDITIONS, AND TIME OF YEAR;
      9.B. HAY OR STRAW MULCH SHALL BE APPLIED AT A RATE OF 1.5 TO 2 TONS PER ACRE, EQUIVALENT TO 70 TO 90 POUNDS PER 1,000 SQUARE FEET;
   10. IF VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED AREA IS NOT ACHIEVED PRIOR TO OCTOBER 15TH, ONE OR MORE ADDITIONAL EROSION CONTROL METHODS SHALL BE IMPLEMENTED.
D. MAINTENANCE
   1. PERMANENTLY SEEDED AREAS SHOULD BE INSPECTED MONTHLY.
   2. MOW SEEDED AREAS AS NECESSARY.
   3. BASED ON INSPECTION, AREAS SHOULD BE REPAIRED AND/OR RESEEDED TO ENSURE 85% OF THE SOIL SURFACE IS COVERED BY VEGETATION.

MULCHING & EROSION CONTROL MATTING

A. GENERAL
   1. APPLY PRIOR TO A STORM EVENT. CLOSELY MONITOR THE WEATHER TO HAVE ADEQUATE WARNING OF SIGNIFICANT STORMS.
   2. MULCHING WITHIN A SPECIFIED TIME PERIOD FROM ORIGINAL SOIL EXPOSURE
      2.A. WITHIN 100 FEET OF WETLANDS THE TIME PERIOD SHOULD BE NO GREATER THAN 7 DAYS.
      2.B. IN OTHER AREAS IT SHALL BE NO GREATER THAN 14 DAYS.
   3. MULCH MATERIALS SHALL BE SELECTED BASED UPON SOILS, FLOW CONDITIONS, AND TIME OF YEAR.
B. TEMPORARY MULCHING
   1. HAY OR STRAW MULCHES
      1.A. ORGANIC MULCHES INCLUDING HAY AND STRAW SHALL BE AIR-DRIED, FREE OF UNDESIRABLE SEEDS AND COARSE MATERIALS.
      1.B. APPLICATION RATE SHALL BE 2 BALES/1,000 SF (70-90 POUNDS) OR 1.5-2.0 TONS/ACRE TO COVER 75-90% OF THE GROUND.
      1.C. ANCHORING SHALL BE ONE OF THE FOLLOWING
         1.C.1. NETTING SHALL BE JUTE, WOOD FIBER, OR BIODEGRADABLE PLASTIC NETTING INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
         1.C.2. TACKIFIER: APPLY POLYMER OR ORGANIC TACKIFIER TO ANCHOR HAY OR STRAW MULCH. APPLY PER MANUFACTURER'S SPECIFICATIONS. TYPICAL APPLICATION RATES ARE 40-60 LBS/ACRE FOR POLYMER MATERIAL AND 80-120 LBS/ACRE FOR ORGANIC LIQUID.
      1.D. WINTER APPLICATION: APPLY TO A DEPTH OF 4 INCHES OR DOUBLE THE ABOVE LISTED APPLICATION RATE. NOTE THAT IF SEEDING IS NECESSARY, MULCH WILL NEED TO BE REMOVED AND THE AREA SEEDED AND MULCHED IN THE SPRING.
      1.E. MAINTENANCE
         1.E.1. INSPECT PERIODICALLY AND AFTER RAIN STORMS FOR RILLS OR DISPLACEMENT OF MULCH. REPAIR AS NECESSARY. CONTINUE INSPECTIONS UNTIL 85% VEGETATIVE COVER IS ESTABLISHED.
   2. EROSION CONTROL BLANKET OR MATTING
      2.A. REFER TO PLANS FOR TYPICAL EROSION CONTROL MATTING DETAIL. INSTALL PER MANUFACTURERS SPECIFICATIONS.
      2.B. APPLICATION AND TIMING
         2.B.1. DURING THE GROWING SEASON (APRIL 15 – SEPTEMBER 15) USE ON THE BASE OF GRASSED WATERWAYS, STEEP SLOPES (15% OR GREATER), ANY DISTURBED SOIL WITHIN 100 FEET OF LAKES, STREAMS, AND WETLANDS.
         2.B.2. DURING THE LATE FALL AND WINTER (SEPTEMBER 15 – APRIL 15) IN ADDITION TO THOSE LISTED ABOVE USE ON SIDE SLOPES OF GRASSED WATERWAYS AND MODERATE SLOPES (GREATER THAN 8%).
   3. MAINTENANCE
      3.A. INSPECT PERIODICALLY AND BEFORE AND AFTER STORM EVENTS TO ENSURE CONTACT WITH THE SOIL UNTIL 85% VEGETATIVE COVER IS ESTABLISHED. REPAIR AND RESTAPLE AS NECESSARY.
C. PERMANENT MULCHING
   1. WOOD CHIPS OR GROUND BARK
      1.A. APPLY TO A THICKNESS OF 2 TO 6 INCHES. APPLICATION RATES ARE 10-20 TONS/ACRE OR 460-920 POUNDS/1,000 SF.
      1.B. MAINTENANCE: INSPECT ANNUALLY AND AFTER RAIN EVENTS OF 2.5 INCHES OR MORE IN A 24 HOUR PERIOD. REPAIR/REPLACE AS NECESSARY.
   2. EROSION CONTROL MIX
      2.A. SHALL BE PLACED AT A THICKNESS OF 2 INCHES OR MORE FOR MULCHING.
      2.B. COMPOSITION OF THE MIX SHALL BE AS FOLLOWS:
         2.B.1. ORGANIC MATTER CONTENT SHALL BE BETWEEN 25-65% DRY WEIGHT BASIS.
         2.B.2. PARTICLE SIZE BY WEIGHT SHOULD BE 100% PASSING THE 3" SCREEN, 90-100% PASSING THE 1" SCREEN, 70-100% PASSING THE 0.75 INCH SCREEN, AND 30-75% PASSING THE 0.25 INCH SCREEN.
         2.B.3. THE ORGANIC PORTION SHALL BE ELONGATED AND FIBROUS SUCH AS FROM SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR EQUIVALENT MANUFACTURED PRODUCTS. IT SHALL NOT CONTAIN WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS, OR REPROCESSED WOOD PRODUCTS.
         2.B.4. THE MIX SHALL NOT CONTAIN SILTS, CLAYS, OR FINE SANDS.
         2.B.5. SOLUBLE SALTS CONTENT SHALL BE < 4.0MMHOS/CM AND A pH OF 5.0-8.0,
      2.C. PLACEMENT OF BERM
         2.C.1. PLACE BERM ALONG A LEVEL CONTOUR. BERM MUST BE A MINIMUM OF 12" HIGH ON THE UPHILL SIDE AND 2 FEET WIDE. UPSLOPE AREA MUST HAVE A SLOPE OF LESS THAN 5%.
      2.D. MAINTENANCE: INSPECT PERIODICALLY AND AUGMENT AS NEEDED TO MAINTAIN INITIAL THICKNESS. REPLACE IF NO LONGER FUNCTIONING AS INTENDED.

FINAL APPROVAL BY DURHAM PLANNING BOARD.

CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER

CERTIFIED ______________________

DATE ______________________

SOIL STOCKPILES

A. GENERAL
1. STOCKPILES MUST BE LOCATED 50 FEET FROM DITCHES AND CULVERT INLETS.
B. PROTECTION OF STOCKPILES
1. PROTECT SOIL AND AGGREGATE STOCKPILES WITH TEMPORARY PERIMETER SEDIMENT BARRIER SUCH AS SILT FENCE OR SILT SOCK.
2. COVER ACTIVE STOCKPILES WITH ANCHORED PROTECTIVE COVERING PRIOR TO EXPECTED STORM EVENTS.
3. INACTIVE STOCKPILES SHALL BE COVERED WITH ANCHORED TARPS OR TEMPORARILY SEEDED AND MULCHED PER THE TEMPORARY VEGETATION AND MULCHING NOTES ON THIS PAGE.
4. STOCKPILES THAT ARE A SOURCE OF DUST SHALL BE COVERED.

DUST CONTROL

A. DUST SHALL BE CONTROLLED ON SITE DURING CONSTRUCTION BY IMPLEMENTING THE FOLLOWING DUST CONTROL MEASURES
1. MULCHING AND VEGETATIVE COVER TO REDUCE DUST.
2. MECHANICAL SWEEPERS AND FINE WATER SPRAYS.
3. COVER SURFACES WITH CRUSHED STONE OR COARSE GRAVEL.

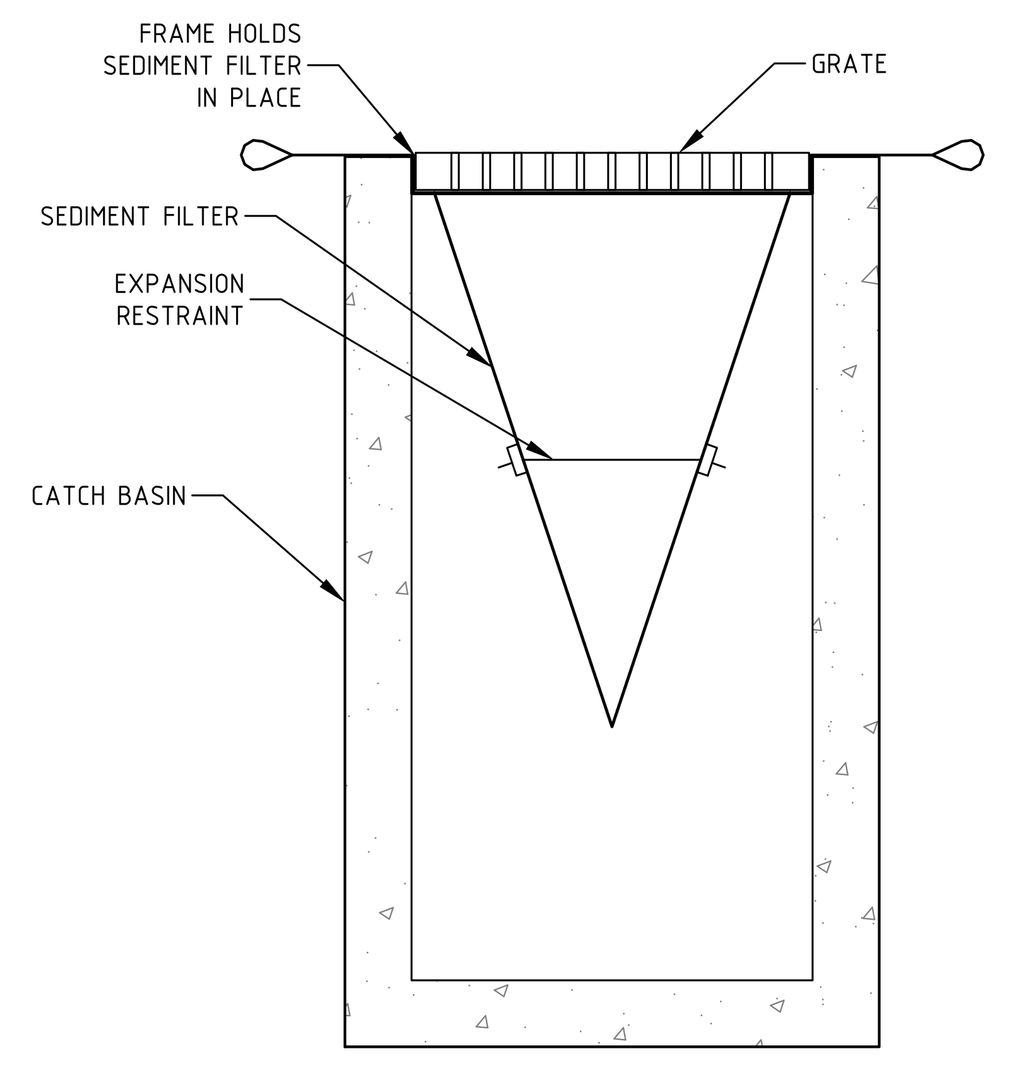
SEED MIXTURE SELECTION BASED ON SOIL TYPE

USE	SOIL DRAINAGE			
	SEEDING MIXTURE	DROUGHTY	WELL DRAINED	MODERATELY WELL DRAINED
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A B C D	FAIR POOR POOR FAIR	GOOD GOOD GOOD EXCELLENT	GOOD FAIR EXCELLENT EXCELLENT
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER.	A C	GOOD GOOD	GOOD EXCELLENT	GOOD EXCELLENT
LIGHTLY USED PARKING LOTS, ODD AREAS, UNUSED LANDS, AND LOW INTENSITY USE RECREATION SITES.	A B C	GOOD GOOD GOOD	GOOD GOOD EXCELLENT	GOOD FAIR EXCELLENT
PLAY AREAS AND ATHLETIC FIELDS. (TOPSOIL IS ESSENTIAL FOR GOOD TURF.)	E F	FAIR FAIR	EXCELLENT EXCELLENT	EXCELLENT EXCELLENT

NOTE: POORLY DRAINED SOILS ARE NOT DESIRABLE FOR USE AS PLAYING AREAS AND ATHLETIC FIELDS.

SEED MIXTURES FOR PERMANENT VEGETATION

MIXTURE	SPECIES	POUNDS PER ACRE	POUNDS PER 1,000 SF
A	TALL FESCUE CREEPING RED FESCUE REDTOP *TOTAL*	20 20 2 *42*	0.45 0.45 0.05 *0.95*
B	TALL FESCUE CREEPING RED FESCUE CROWN VETCH OR FLATPEA *TOTAL*	15 10 15 – 30 *40 OR 55*	0.35 0.25 0.35 – 0.75 *0.95 OR 1.35*
C	TALL FESCUE CREEPING RED FESCUE BIRDSFOOT TREFOIL *TOTAL*	20 20 8 *48*	0.45 0.45 0.20 *1.10*
D	TALL FESCUE FLATPEA *TOTAL*	20 30 *50*	0.45 0.75 *1.20*
E	CREPPING RED FESCUE KENTUCKY BLUEGRASS *TOTAL*	50 50 *100*	1.15 1.15 *2.30*
F	TALL FESCUE	*150*	*3.60*



NOTES:
1. SEDIMENT FILTER TRAP SHALL BE ACF REGULAR FLOW SILTSACK OR APPROVED EQUAL.
2. FILTERS SHALL BE INSPECTED AFTER EVERY RAIN EVENT OF 0.25" OR GREATER AND SEDIMENTS SHALL BE REMOVED FROM TRAP WHEN SEDIMENT HAS REACHED TWO THIRDS OF THE DEPTH OF THE TRAP, OR IF PONDING OF WATER AT SURFACE BEGINS TO OCCUR. DO NOT PUNCTURE FILTER TRAP TO MITIGATE PONDING.

CATCH BASIN SEDIMENT FILTER DETAIL

NTS

CONSTRUCTION SEQUENCING:

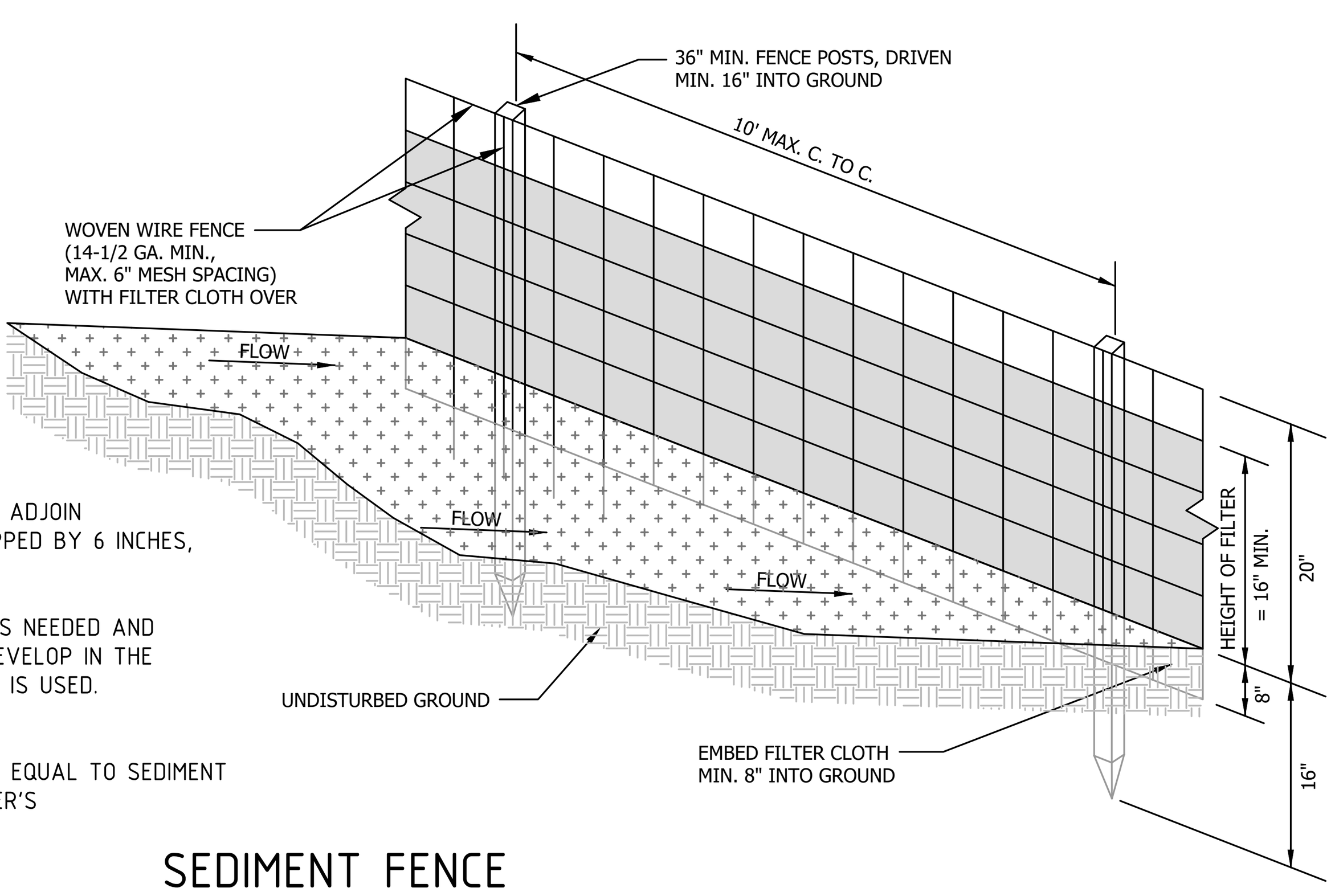
1. SCHEDULE A PRE-CONSTRUCTION MEETING WITH CITY OFFICIALS, OWNER, AND CONTRACTORS IF REQUIRED BY THE CONDITIONS OF APPROVAL PRIOR TO BEGINNING CONSTRUCTION.
2. CONTACT DIG-SAFE, INDIVIDUAL UTILITIES, AND CITY DEPARTMENTS TO GET ALL UTILITIES MARKED PRIOR TO START OF CONSTRUCTION.
3. INSTALL PERIMETER CONTROLS PRIOR TO ALL EARTHMOVING WORK.
4. CLEAR/GRUB ONLY WITHIN THE LIMITS OF GRADING AS SHOWN ON THE PLANS. REMOVE ORGANICS ONLY FROM THOSE AREAS THAT CAN BE WORKED AND STABILIZED WITHIN 45 DAYS OF REMOVAL.
5. THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES..
6. CLEAR/GRUB
   A. STUMPS MAY BE DISPOSED ON-SITE IN ACCORDANCE WITH LOCAL AND STATE REGULATIONS.
7. STOCKPILES
   A. STOCKPILE LOAM FOR RE-USE AS NEEDED.
   B. TEMPORARILY STABILIZE LOAM STOCKPILES WITH:
      1. WINTER RYE GRASS- PRIOR TO SEPTEMBER 15TH
      2. MULCH- FROM SEPTEMBER 15TH TO MAY 1ST
8. CONSTRUCT AND STABILIZE ALL TEMPORARY AND PERMANENT SEDIMENT, EROSION, AND STORMWATER CONTROL FACILITIES AS LISTED ABOVE.
   A. THESE SHALL BE INSTALLED BEFORE ANY MAJOR EARTH MOVING OPERATIONS.
   B. RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMPS ARE STABILIZED. REFER TO SEDIMENT TRAP DETAIL.
   C. STORMWATER PONDS, INFILTRATION BASINS, AND SWALES MUST BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
   D. REFER TO INDIVIDUAL DETAILS FOR CONSTRUCTION REQUIREMENTS.
10. PARKING LOT CONSTRUCTION
   A. CUTS AND FILLS:
      1. CONSTRUCT IN LOCATIONS AND TO GRADES AS SHOWN ON THE PLANS.
      2. FILLS:
         A. PLACE MAXIMUM 12" LIFTS AND COMPACT TO 95% MAXIMUM DRY DENSITY.
         B. ALL MATERIAL BASED ON PROCTOR TEST SHALL BE FREE OF DELETERIOUS MATERIALS SUCH AS LOAM, STUMPS, BRUSH, AND ROCKS LARGER THAN 3/4 THE DEPTH OF THE LIFT BEING PLACED.
      3. LOAM AND SEED SLOPES WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
   B. DRAINAGE AND UTILITY STRUCTURES
      1. INSTALL AS SHOWN IN ACCORDANCE WITH DETAILS AND DRY STABILIZE.
   C. BASE MATERIALS: BANK RUN AND CRUSHED GRAVEL SHALL BE PLACED IN 6" LIFTS AND COMPACTED TO 95% MAXIMUM DRY DENSITY TO THE DEPTHS SPECIFIED IN THE PARKING LOTS CROSS-SECTION DETAILS.
   D. STABILIZE ALL PARKING AREAS WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
11. INSPECT, MAINTAIN, AND IF NECESSARY, REPAIR ALL EROSION AND SEDIMENT CONTROL MEASURES AS STATED IN EROSION CONTROL NOTES ON THIS SHEET.
12. REMOVE ALL TEMPORARY EROSION CONTROL MEASURES ONCE INITIAL GROWTH IS ESTABLISHED.

ADDITIONAL NOTES:

1. NO FUEL SHALL BE STORED ON SITE DURING CONSTRUCTION.
2. DURING CONSTRUCTION DUST SHALL BE PREVENTED FROM BECOMING A SAFETY OR HEALTH HAZARD BY THE IMPLEMENTATION OF ACCEPTED CONTROL METHODS SUCH AS WATERING.
3. ALL CONSTRUCTION MATERIALS THAT ARE SPILLED OR DEPOSITED ON THE PUBLIC ROADWAYS SHALL BE REMOVED BY THE CONTRACTOR.
4. DO NOT BEGIN CONSTRUCTION UNTIL ALL LOCAL, STATE, AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.
5. THE GENERAL CONTRACTOR IS RESPONSIBLE TO VERIFY ALL DIMENSIONS, ELEVATIONS AND CONDITIONS AT THE SITE. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.

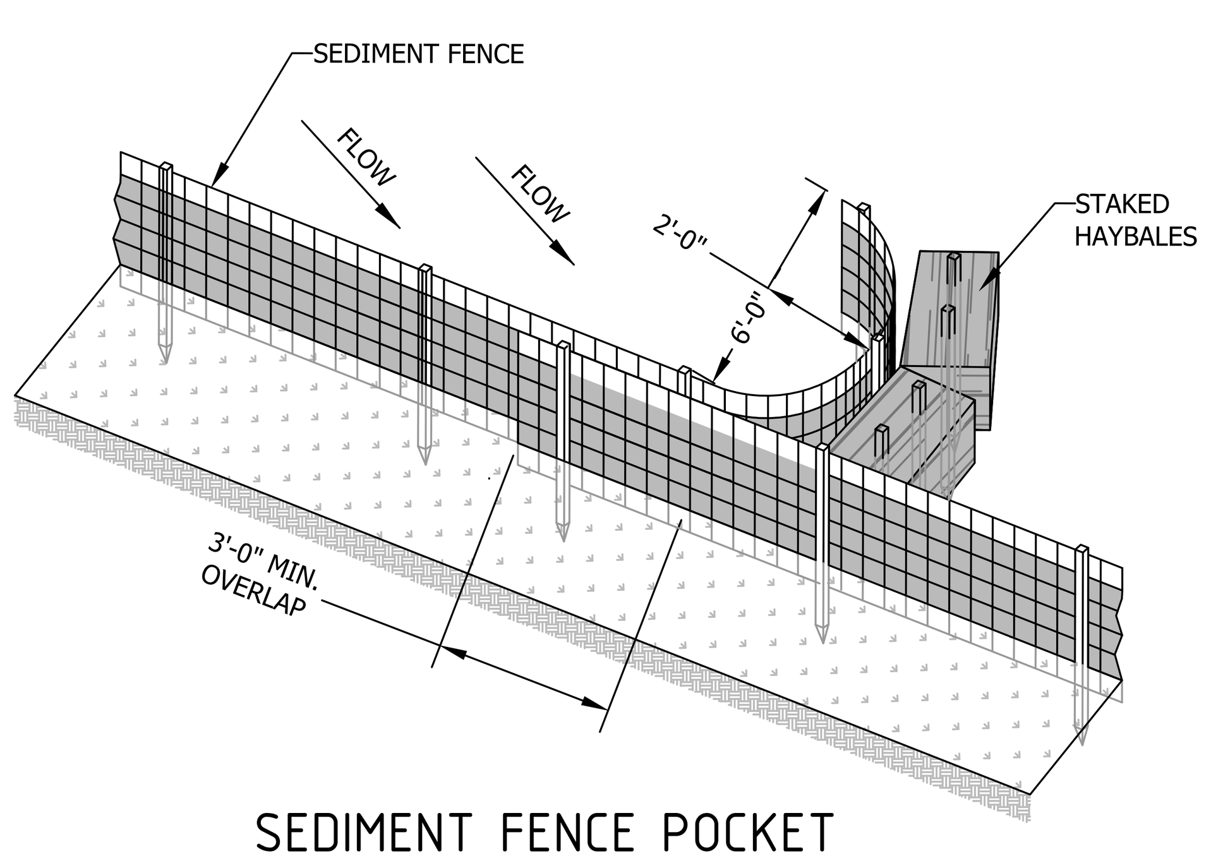
CONSTRUCTION NOTES FOR SEDIMENT FENCE

1. WOVEN WIRE FENCE, IF REQUIRED, TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP, MID SECTION, AND BOTTOM.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SEDIMENT FENCE, OR 50% OF CAPACITY IS USED.
5. 12" DIAMETER FILTREXX SILTSOXX SHALL BE CONSIDERED AN ACCEPTABLE EQUAL TO SEDIMENT FENCE IF INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.



SEDIMENT FENCE

NTS



SEDIMENT FENCE POCKET

NTS

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SEAL

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DRAWN BY: AWS
APPROVED BY: MJS
DWG FILE: 18041 DetA.dwg

CONSTRUCTION DETAILS

prepared for
TOOMERFS, LLC
TAX MAP 5, LOTS 1-9 AND 1-10
19 MAIN ST AND 21 MAIN ST, DURHAM, NH 03824

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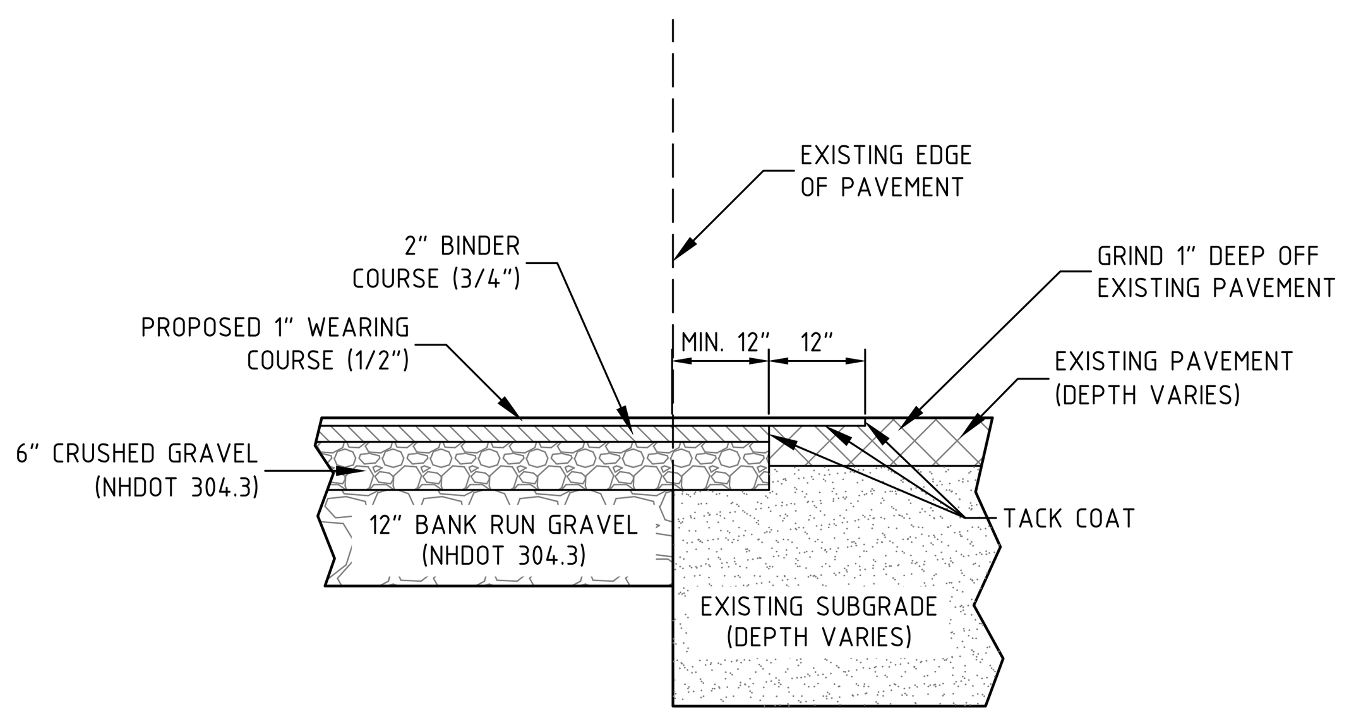
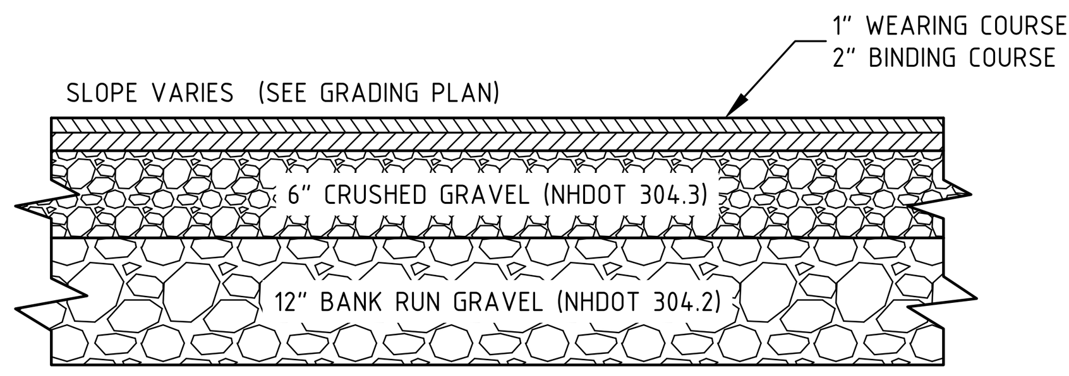


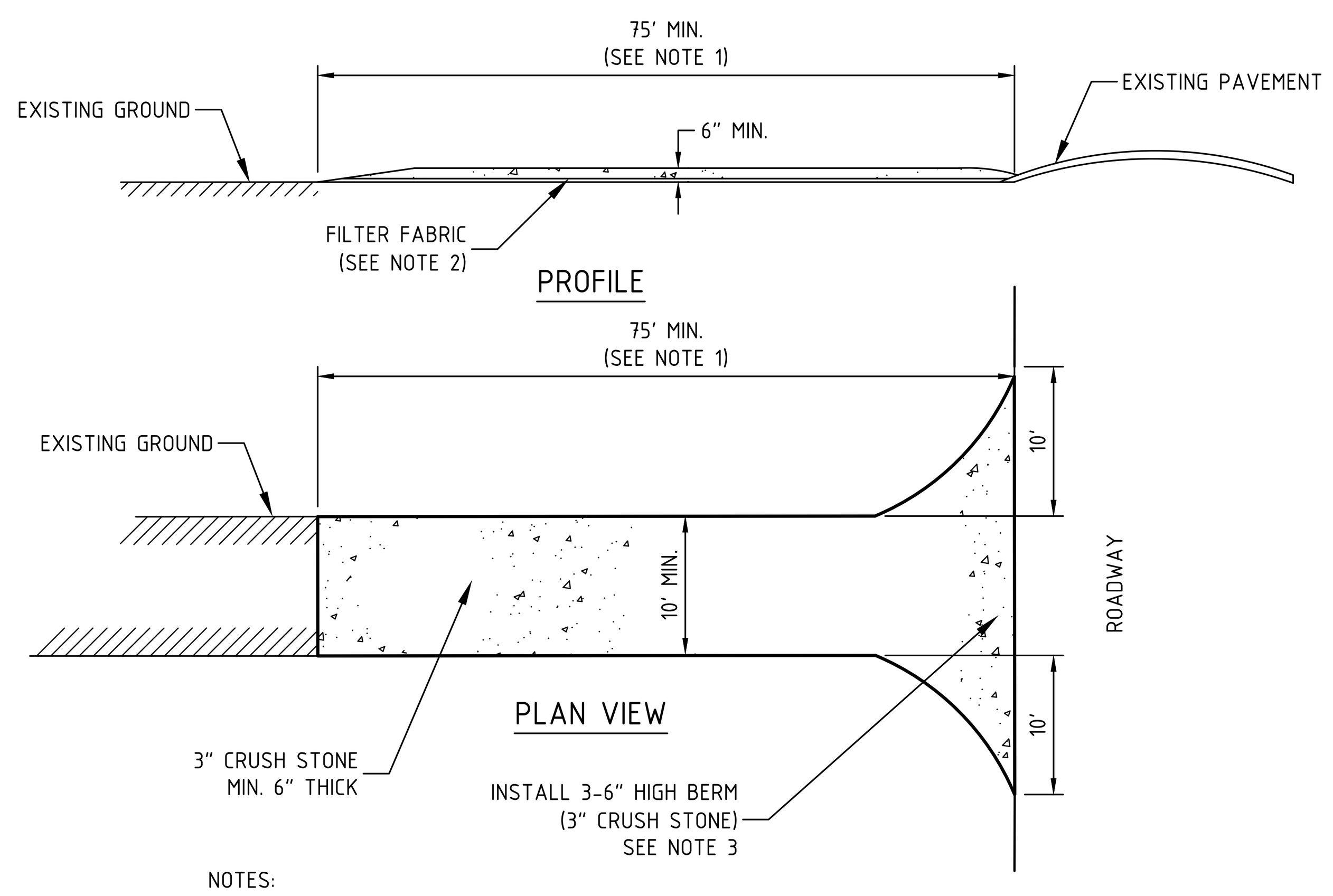
NOTES:
1. SAWCUT THROUGH DEPTH OF PAVEMENT AT LEAST 1 FT. FROM EDGE OR GREATER IF REQUIRED BY NHDOT.
2. INSTALL AND COMPACT CRUSHED GRAVEL TO GRADE.
3. PLACE BINDER COURSE.
4. GRIND EXISTING PAVEMENT 1 FT. WIDE TO A DEPTH NECESSARY TO PROPERLY MATCH NEW WEARING COURSE PAVEMENT.
5. TACK COAT ALL EXISTING PAVEMENT SURFACES WITH EMULSIFIED ASPHALT (MS-1) PRIOR TO PLACING NEW PAVEMENT.

TYPICAL PAVEMENT SAWCUT DETAIL
NTS



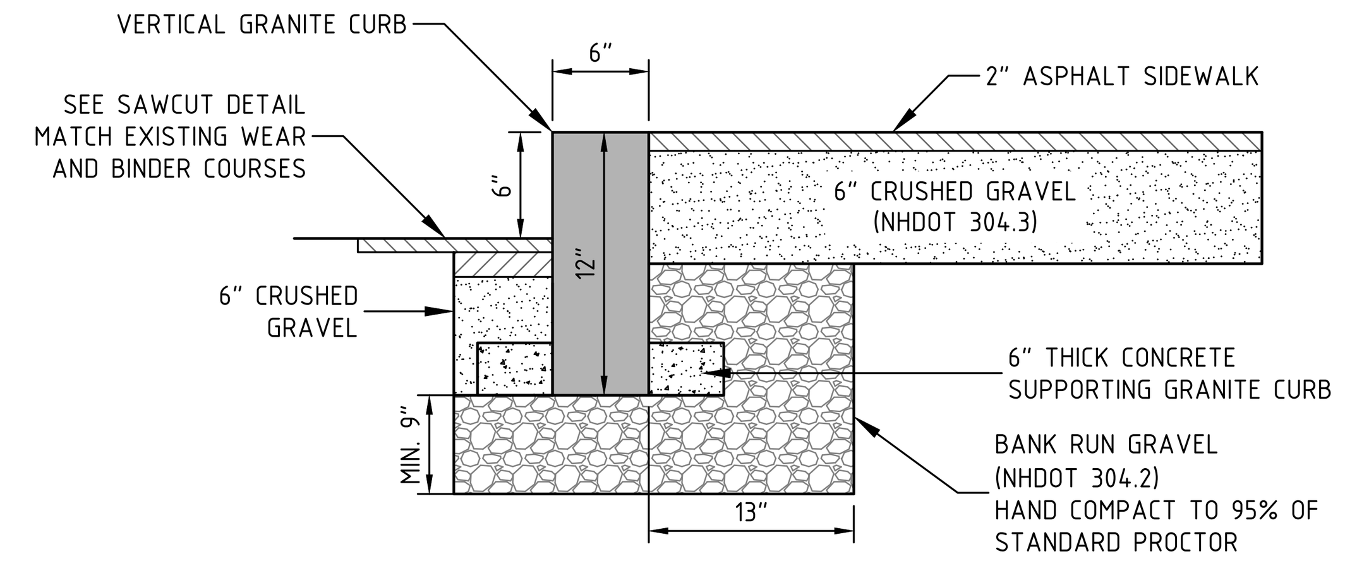
NOTES:
1. DELETERIOUS MATERIALS ENCOUNTERED BELOW PARKING AREA SHALL BE COMPLETELY REMOVED.
2. COMPACT SUBGRADE TO 95% OF STANDARD PROCTOR.

PAVED PARKING LOT CROSS-SECTION
NTS



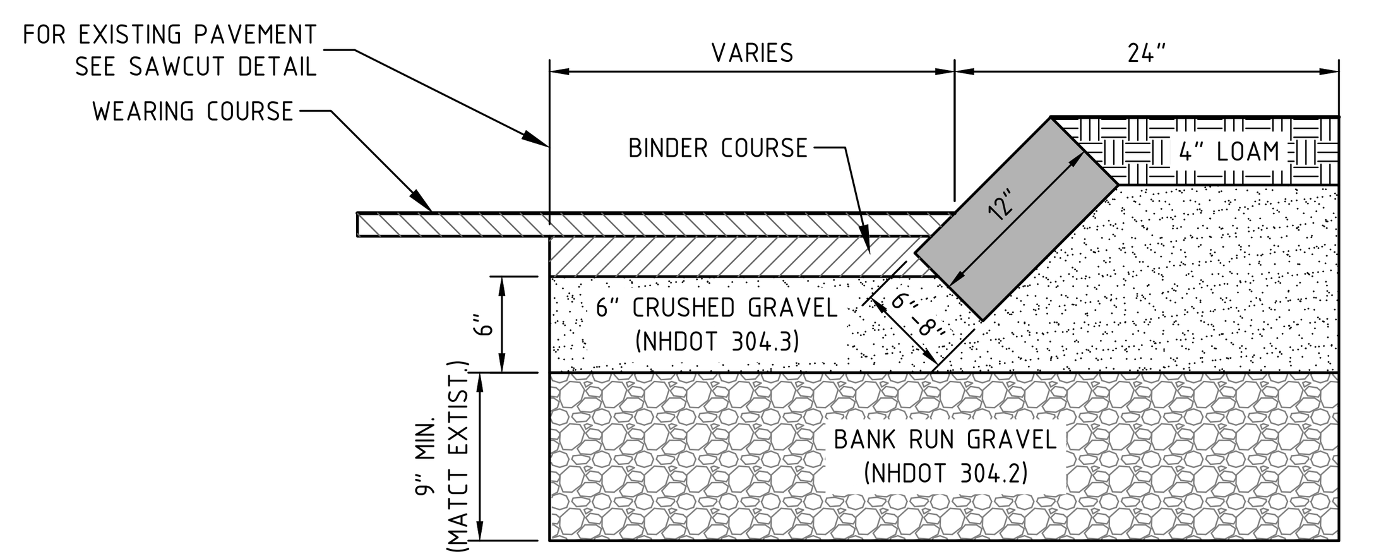
NOTES:
1. LENGTH OF ENTRANCE MAY BE 50' WHERE DIVERSION RIDGE IS PROVIDED.
2. GRADE AND COMPACT ACCESS ROAD ENTRANCE AS NECESSARY. PLACE FILTER FABRIC AND 6" OF 3" CRUSHED STONE TO MATCH SLOPE OF EXISTING ROAD.
3. PROVIDE NECESSARY SWALES OR DIVERSIONS TO MINIMIZE DIRECT FLOW OF WATER ONTO STONE AREA.
4. CONSTRUCTION ENTRANCE SHALL BE MAINTAINED AS NECESSARY TO REMOVE SILT FROM TIRES PRIOR TO ENTERING PUBLIC ROADS. A SMALL SWALE SHALL BE CONSTRUCTED ON THE DOWN GRADIENT SIDE TO TRAP ANY SILT WASHED FROM THE STONE ENTRANCE.

STABILIZED CONSTRUCTION ENTRANCE DETAIL
NTS



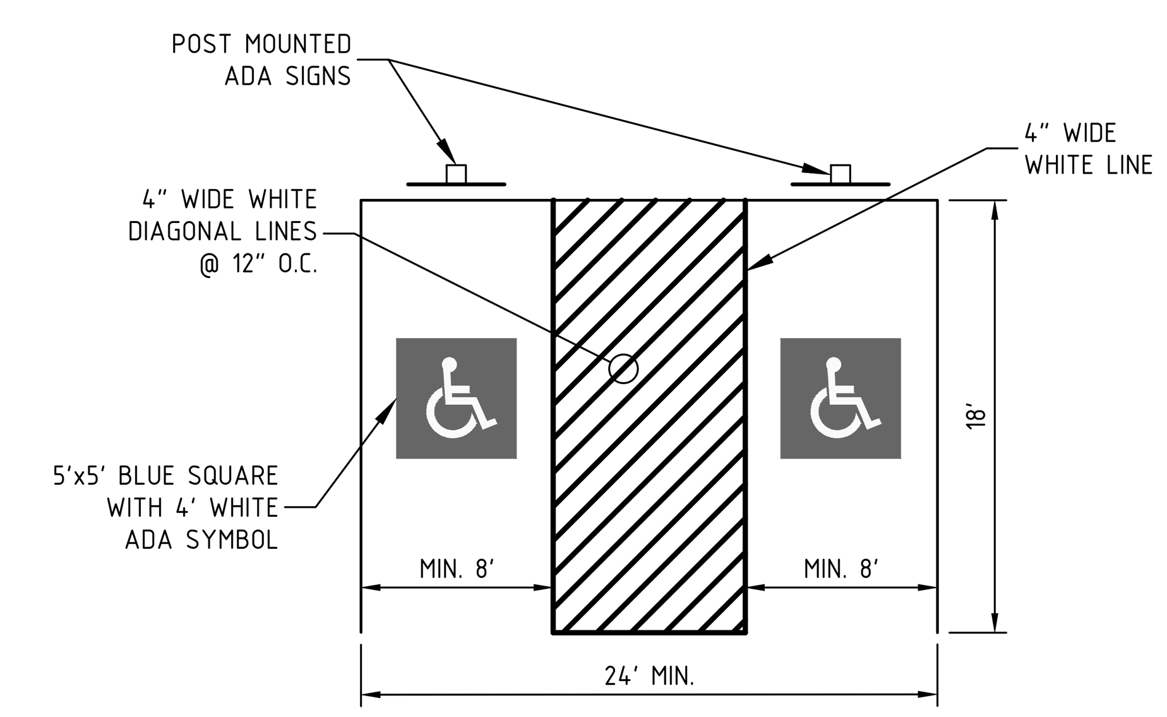
NOTES:
1. MINIMUM LENGTH OF CURB STONES = 3'
2. MAXIMUM LENGTH OF CURB STONES = 10'
3. ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.
4. SEE PLAN FOR LOCATION

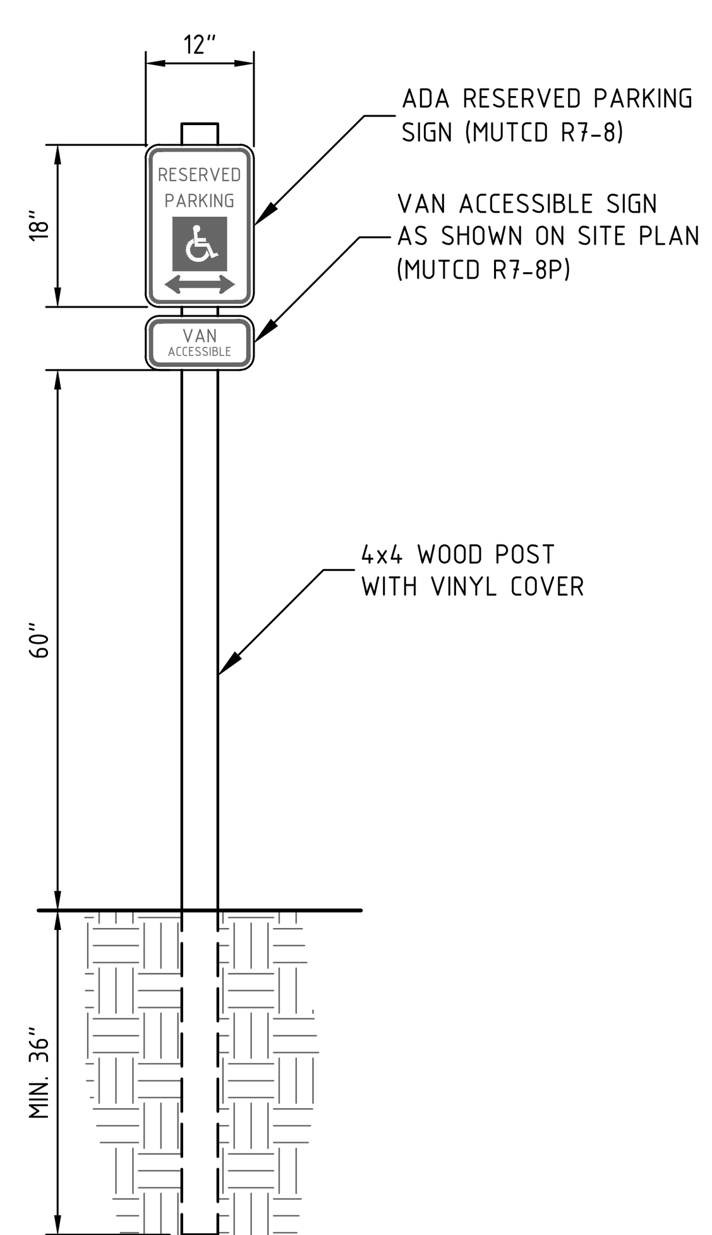
TYPICAL VERTICAL GRANITE CURB
NTS



NOTES:
1. REMOVE LOAM TO A MINIMUM DEPTH OF 8" BELOW SELECT MATERIALS.
2. COMPACT BASE, SUBBASE, AND SUBGRADE TO 95% OF STANDARD PROCTOR.
3. SEE PLAN FOR LOCATION

TYPICAL SLOPED GRANITE CURB
NTS



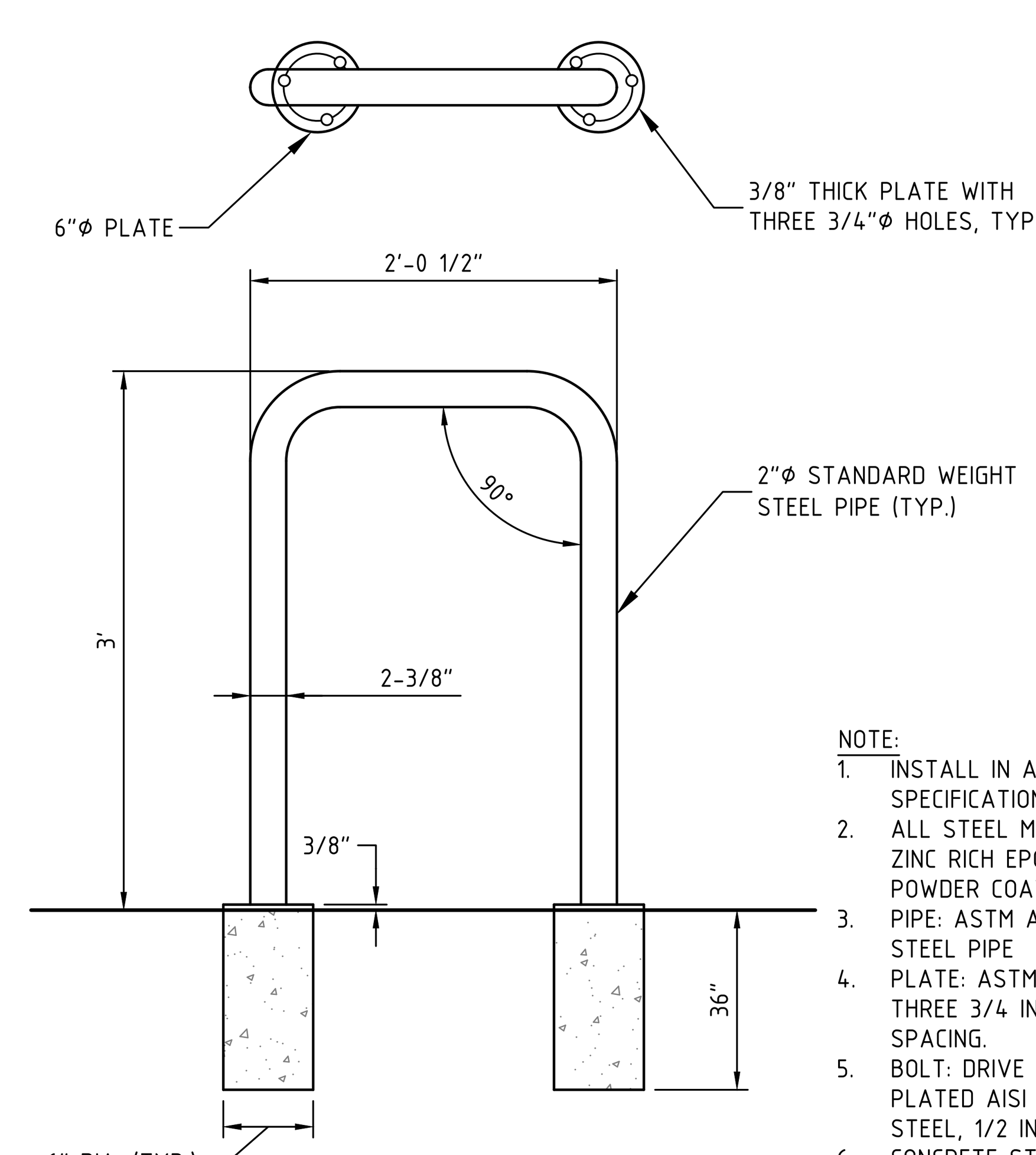


NOTES:
1. SEE SITE PLAN FOR STRIPING LAYOUT

PAVEMENT MARKINGS:

1. STRIPE PARKING AREAS AND DRIVES AS SHOWN, INCLUDING PARKING SPACES, HANDICAP SYMBOLS, AND PAINTED ISLANDS. ALL TRAFFIC PAINT SHALL MEET THE REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) AND AASHTO M248 TYPE "F". MEDIAN ISLANDS AND CENTERLINES TO BE CONSTRUCTED USING YELLOW TRAFFIC PAINT.
2. ALL PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", THE "STANDARD ALPHABETS FOR HIGHWAY SIGN AND PAVEMENT MARKINGS", AND THE AMERICANS WITH DISABILITIES ACT REQUIREMENTS.
3. PAINTED ISLANDS SHALL BE 4 INCH WIDE DIAGONAL LINES SPACED AT 3 FT. O.C. BORDERED BY 4 INCH WIDE LINES.
4. MAXIMUM SLOPE OF ADA PARKING IS 2%

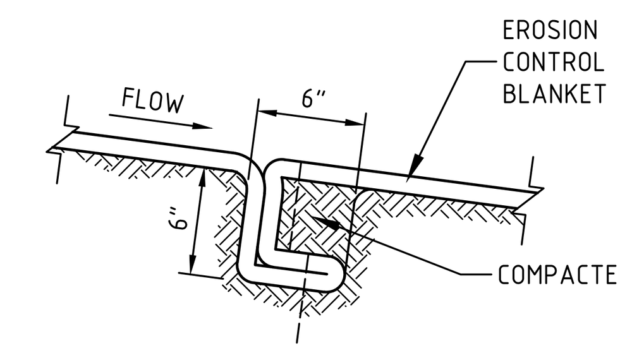
ADA STRIPING AND SIGN DETAIL
NTS



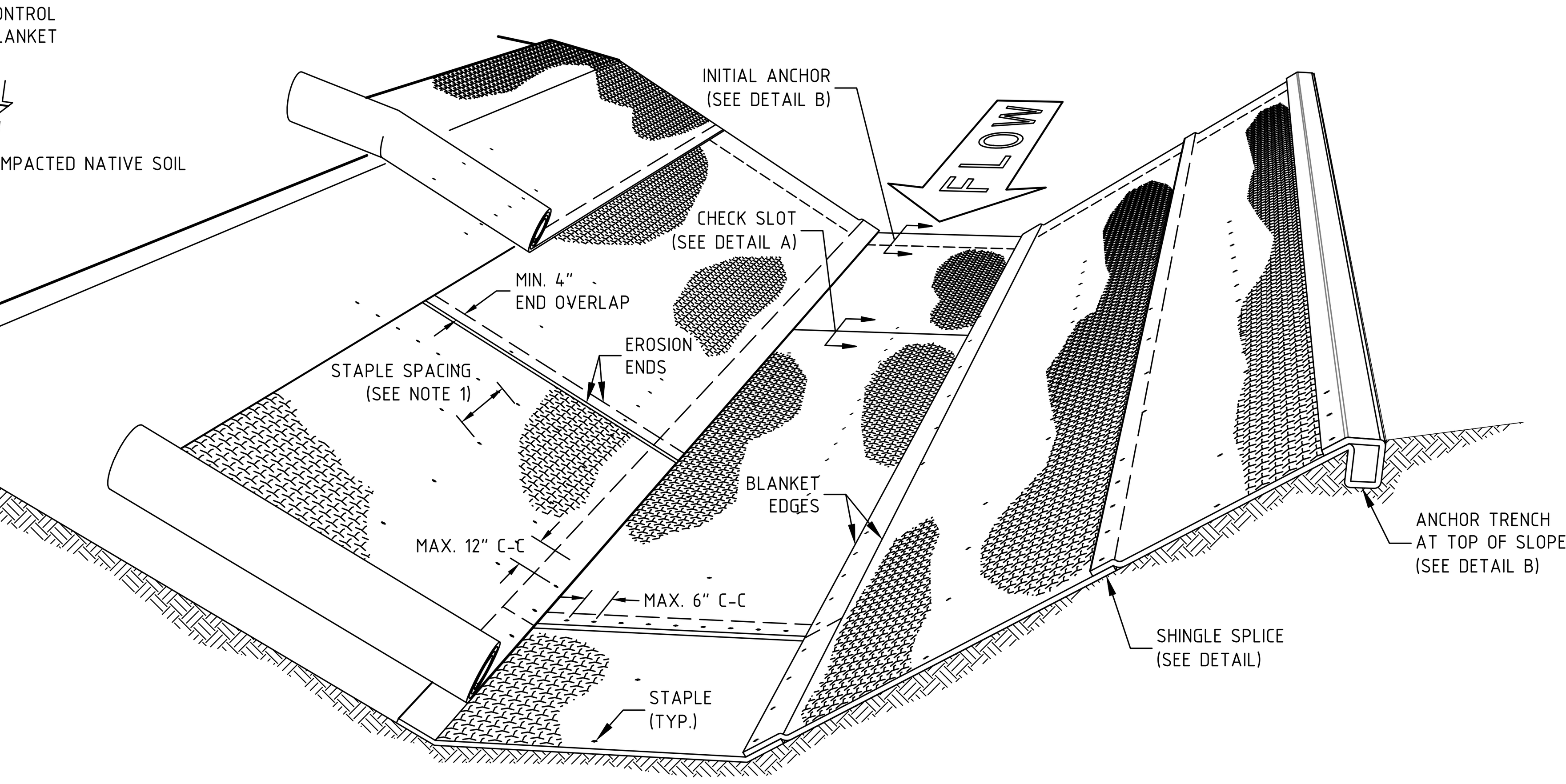
FINAL APPROVAL BY DURHAM PLANNING BOARD.
CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
CERTIFIED ______________________
DATE ______________________

NOTE:
1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS
2. ALL STEEL MEMBERS SHALL BE COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING.
3. PIPE: ASTM A53 GRADE B STANDARD WEIGHT STEEL PIPE
4. PLATE: ASTM 136 3/8 INCH THICK PLATE WITH THREE 3/4 INCH DIA. HOLES AT 120 DEGREE SPACING.
5. BOLT: DRIVE TYPE ANCHOR BOLT MADE OF ZINC PLATED AISI 1038 HEAT TREATED CARBON STEEL, 1/2 INCH DIA. BY 3 INCHES LONG.
6. CONCRETE STRENGTH TO BE 3,000 PSI AT 28 DAYS.

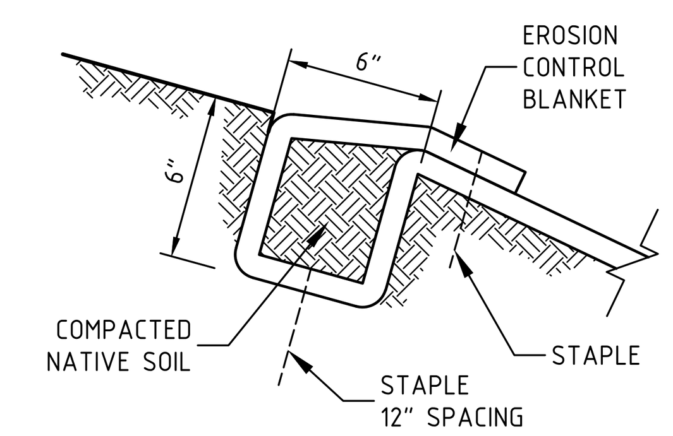
TYPICAL BIKE RACK DETAIL
NTS



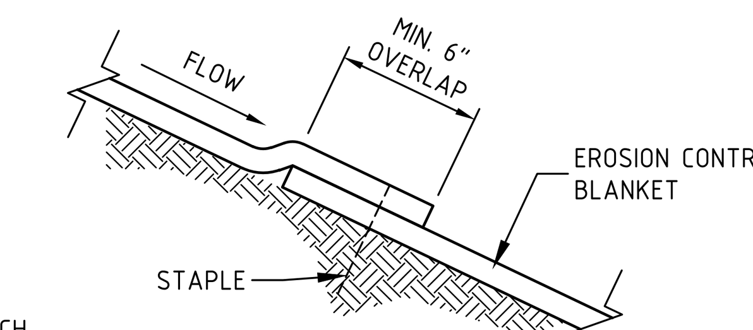
CHECK SLOT DETAIL
DETAIL A



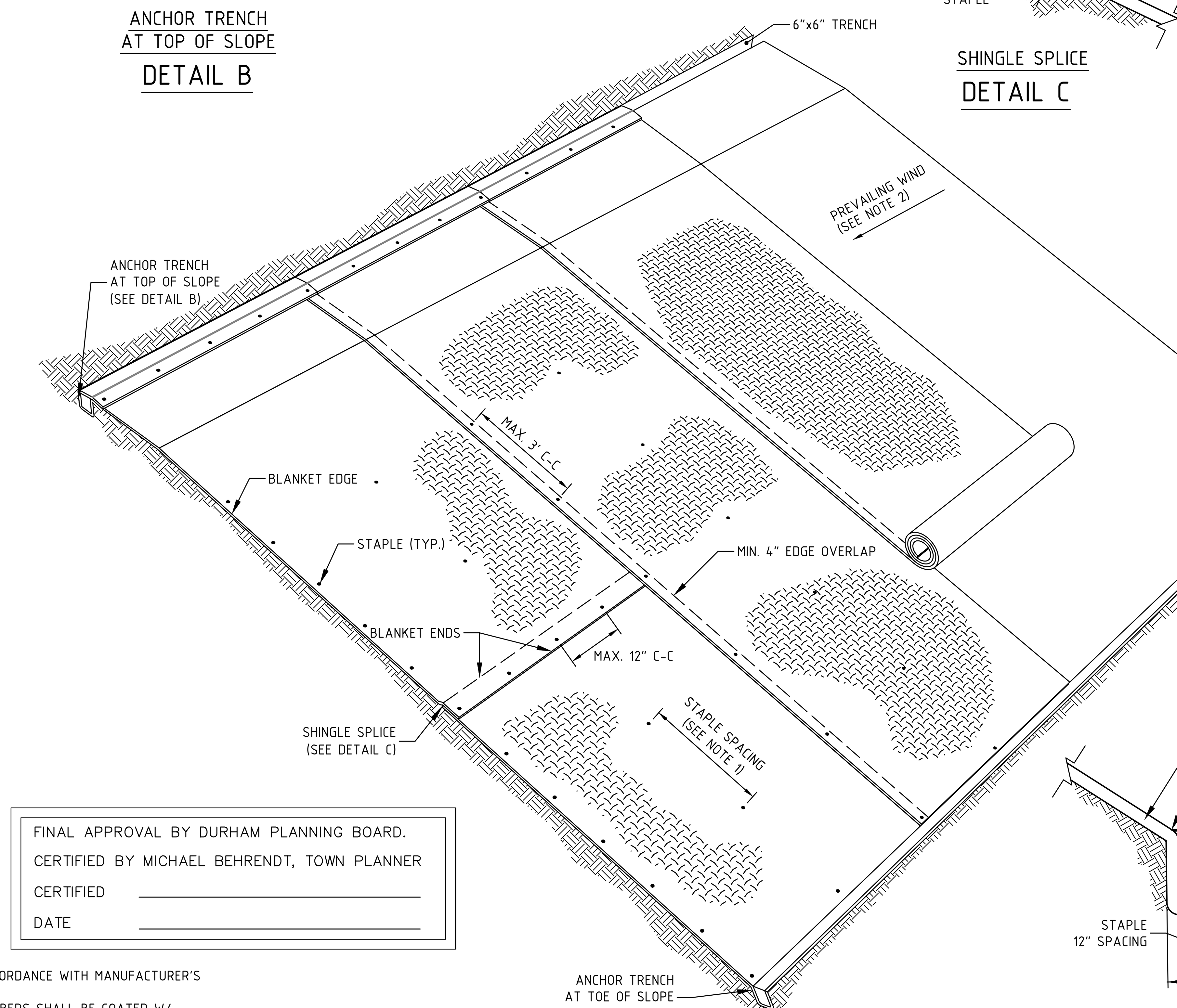
CHANNEL INSTALLATION



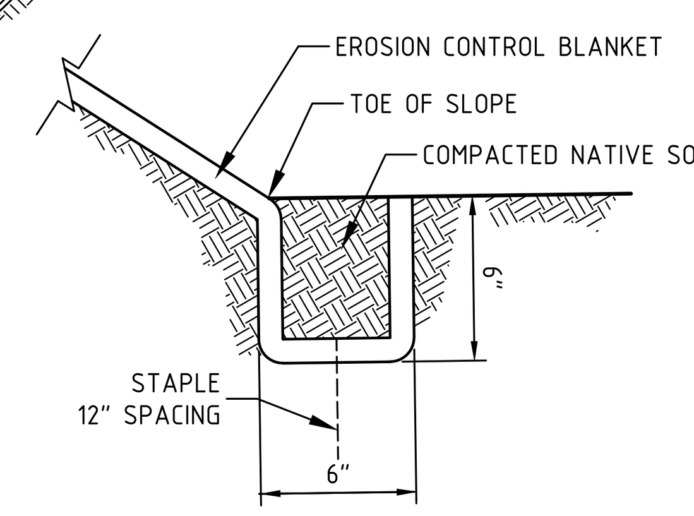
ANCHOR TRENCH AT TOP OF SLOPE
DETAIL B



SHINGLE SPLICE
DETAIL C



SLOPE INSTALLATION



ANCHOR TRENCH AT TOE OF SLOPE
DETAIL D

ROLLED EROSION CONTROL DETAIL
NTS

NOTES:
1. INSTALL STAPLES ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
2. OVERLAP IN THE DIRECTION OF THE PREVAILING WIND.
3. INSTALL STAPLES ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
4. PROVIDE CHECK SLOTS ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
5. ROLL ENDS MAY BE SPLICED IN A CHECK SLOT.
6. TRAPEZOIDAL DITCH SHOWN. SIMILAR DETAILS FOR A V-DITCH.

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SEAL

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APPROVED BY: MJS
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CONSTRUCTION DETAILS
prepared for
TOOMERFS, LLC
TAX MAP 5, LOTS 1-9 AND 1-10
19 MAIN ST AND 21 MAIN ST, DURHAM, NH 03824

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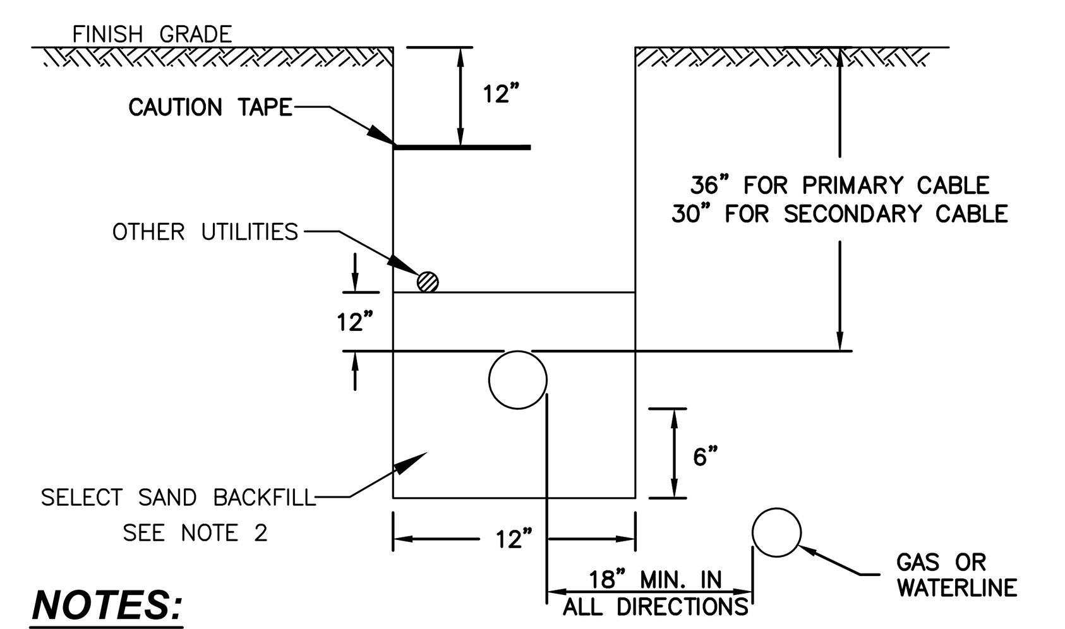
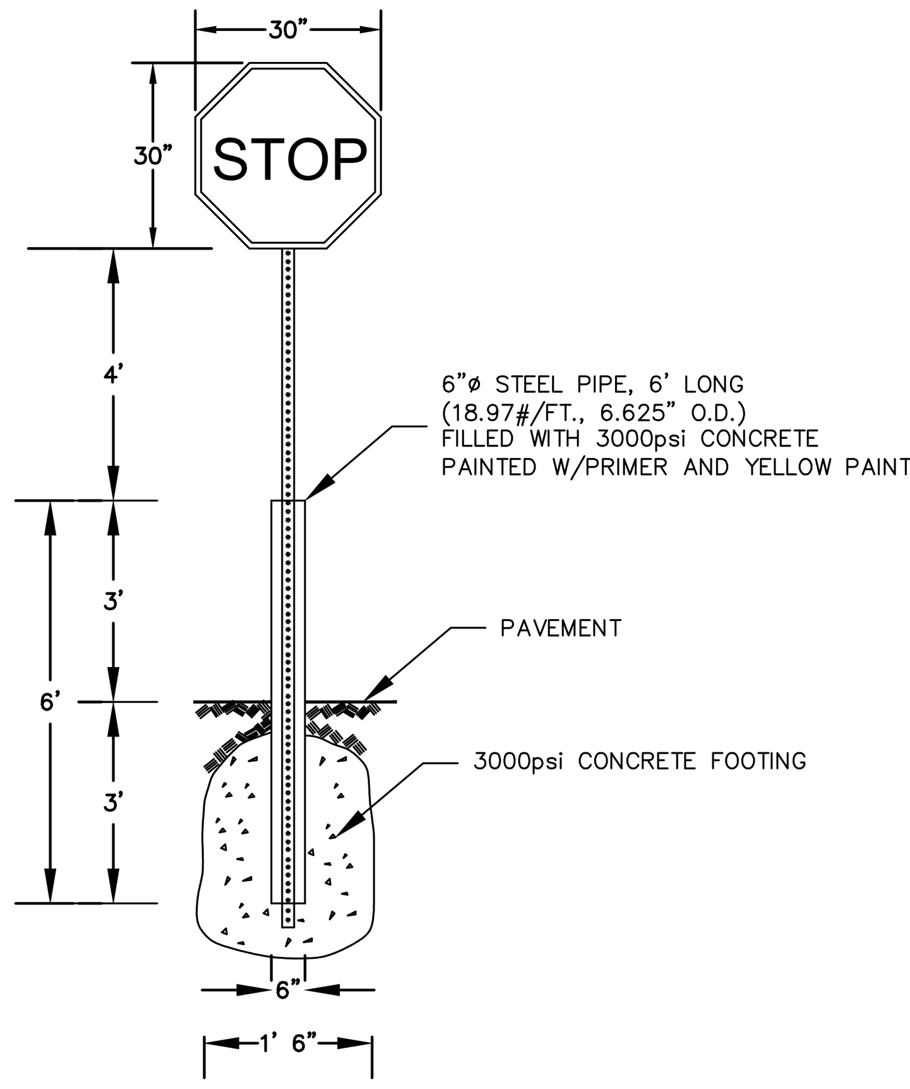


NOTES:

1. CONSTRUCTION TO BE IN ACCORDANCE WITH PSNH CONSTRUCTION STANDARDS FOR NEW ELECTRICAL SERVICE WORK BY CONTRACTORS, MOST RECENT EDITION.
2. SELECT SAND BACKFILL SHALL CONSIST OF A FINE GRANULAR MATERIAL OF WHICH 100% SHALL PASS THROUGH A 1/4" SIEVE. EXCEPT NATURALLY OCCURING SMOOTH ROUND PEBBLES NO GREATER THAN 3/8" IN DIAMETER ARE PERMITTED AS LONG AS THEIR TOTAL VOLUME PER CUBIC FOOT OF SAND DOES NOT EXCEED 1%. THE SAND SHALL BE COMPLETELY FREE OF FROZEN LUMPS, ROCKS, STONES, DEBRIS AND RUBBISH. BACKFILL SHALL BE THOROUGHLY COMPACTED IN 6" LIFTS.
3. CONDUIT SIZES TO BE 5" 3-PHASE PRIMARY AND 4" 3-PHASE SECONDARY. ALL CONDUIT SIZES TO BE VERIFIED BY PSNH.
4. ALL CONDUIT INSTALLATIONS MUST CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRIC SAFETY CODE, STATE AND LOCAL CODES AND ORDINANCES, AND WHERE APPLICABLE THE NATIONAL ELECTRIC CODE.

TELEPHONE & ELECTRIC TRENCH

N.T.S



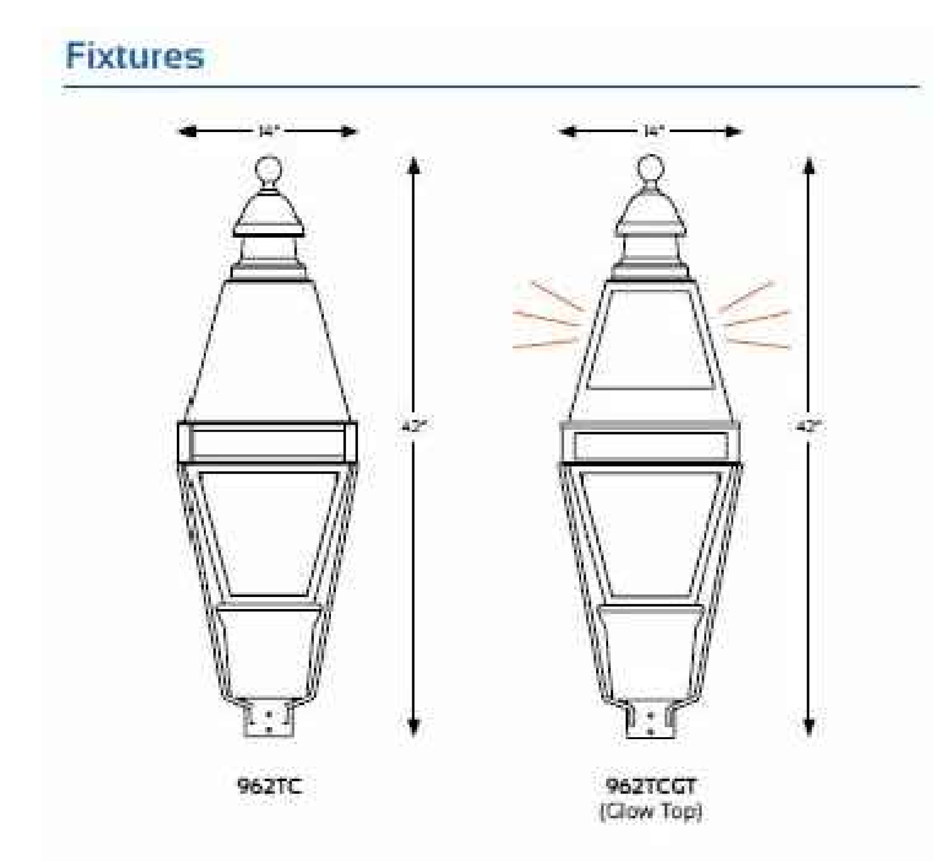
TYPICAL SIGN DETAIL

N.T.S.

NOTES:
1. SEE PLANS FOR SIGN PLACEMENT.

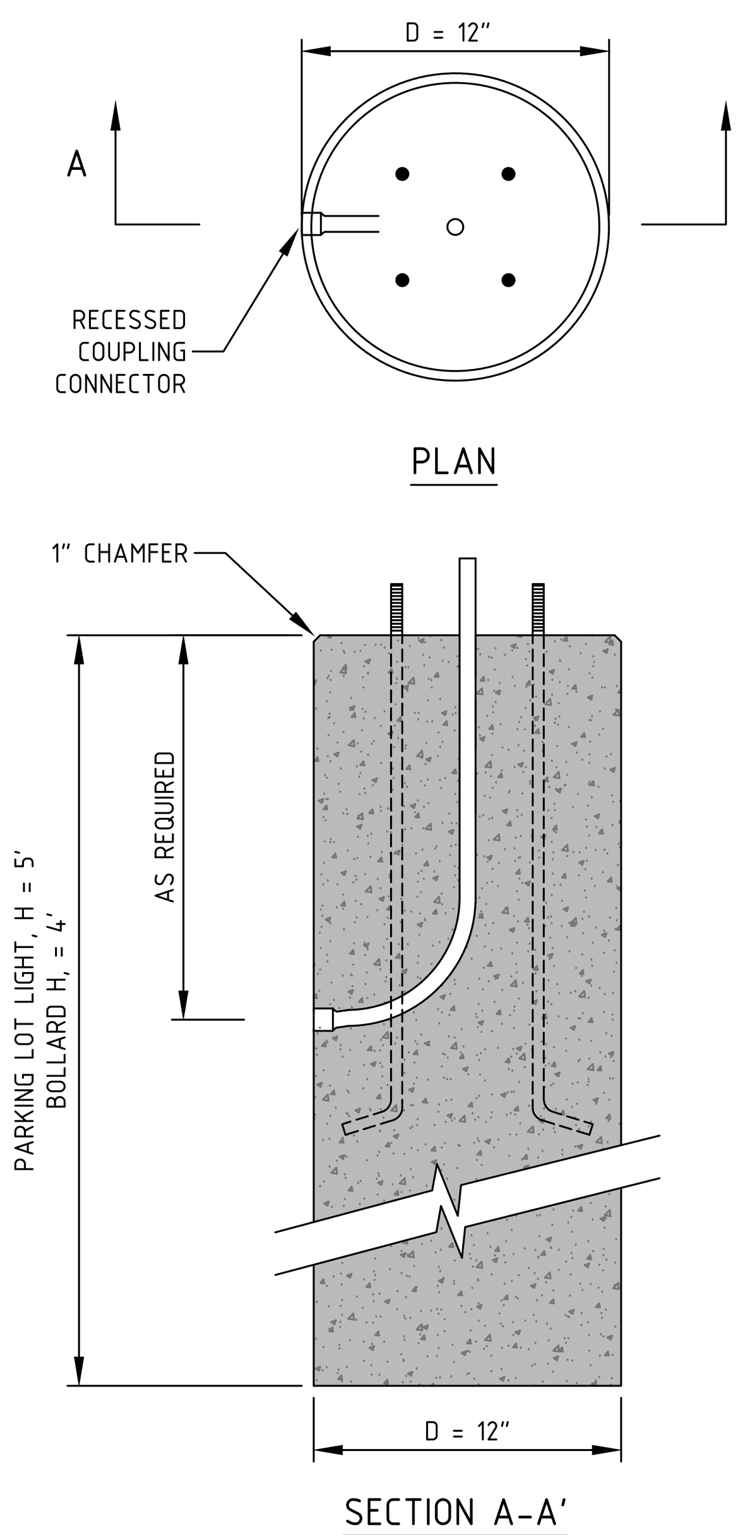
LITHONIA DSX0-LED POLE MOUNTED LIGHT FIXTURE

N.T.S



STERNBERG LIGHTING 962TC-XRLED GLEN ELLYN SERIES POLE MOUNTED LIGHT FIXTURE

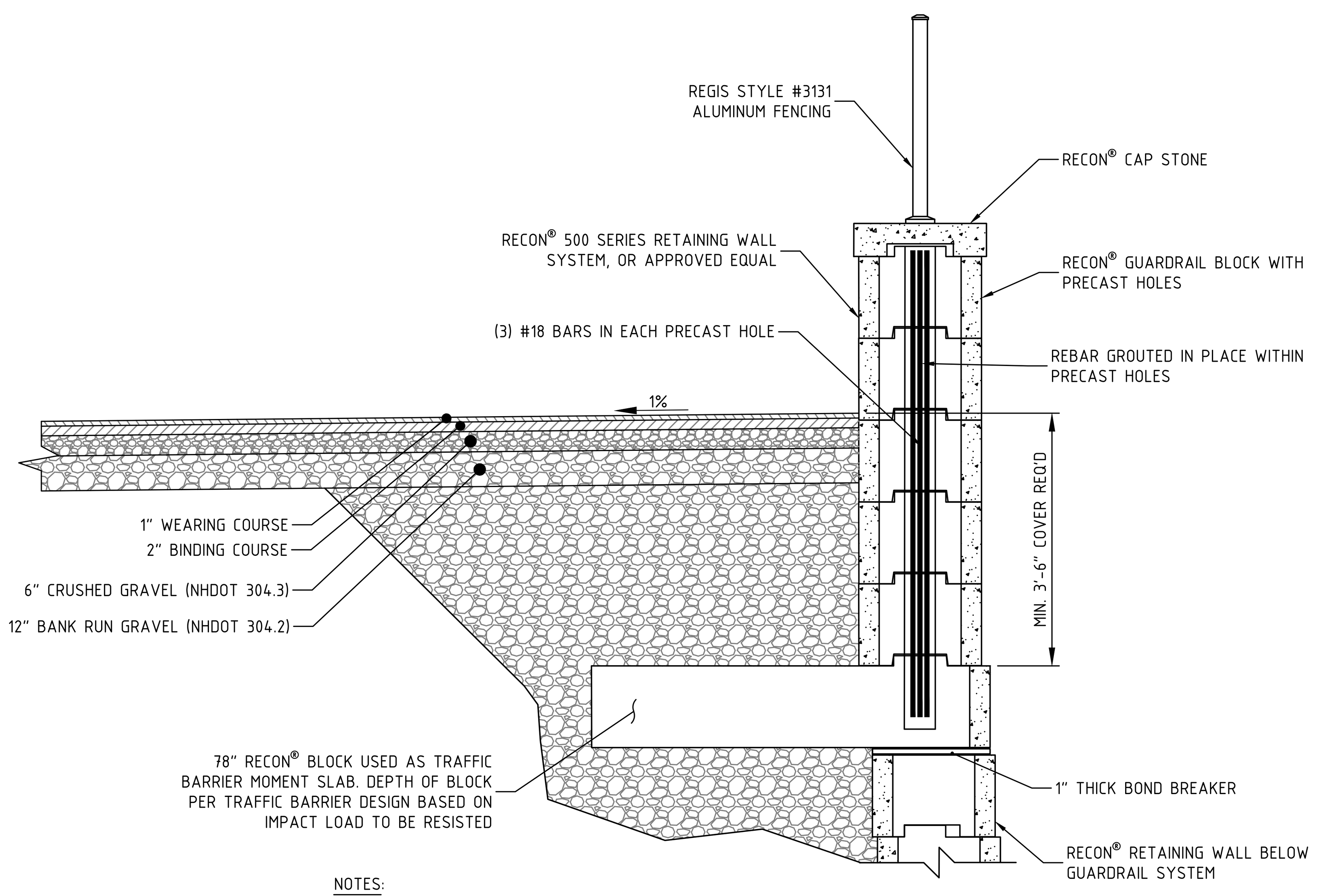
N.T.S



NOTES:
1. CONCRETE MINIMUM 5,000 PSI AFTER 28 DAYS.
2. CONDUIT, ANCHOR BOLTS AND TEMPLATE SUPPLIED BY OTHERS.
3. LIGHT POLE BASE SIZE IS TO BE SPECIFIED BY A QUALIFIED ENGINEER.
4. TYPICAL BASE DIAMETERS 'D' INCLUDE: 12", 18", 24", AND 30".
5. TYPICAL BASE HEIGHTS 'H' RANGE FROM 4' TO 7'.
6. OTHER BASE SIZES AVAILABLE UPON REQUEST.

LIGHT POLE BASE DETAIL

NTS

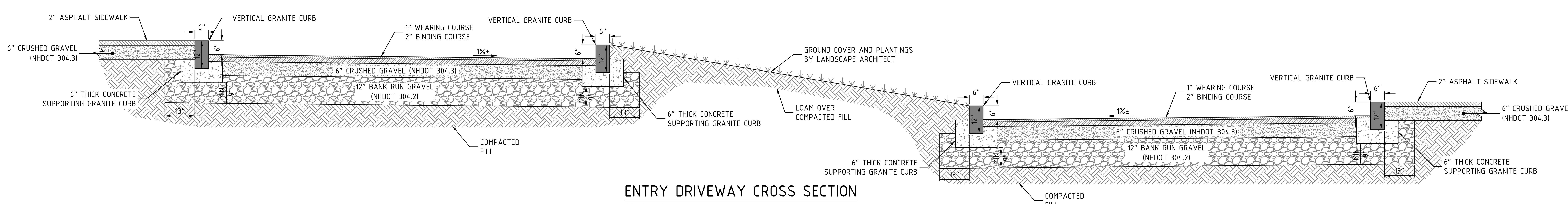


NOTES:
1. DELETERIOUS MATERIALS ENCOUNTERED BELOW PARKING AREA SHALL BE COMPLETELY REMOVED.
2. COMPACT SUBGRADE TO 95% OF STANDARD PROCTOR.

RETAINING WALL DETAIL

NTS

FINAL APPROVAL BY DURHAM PLANNING BOARD.
CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
CERTIFIED ______________________
DATE ______________________



ENTRY DRIVEWAY CROSS SECTION

SCALE: 1"=2'

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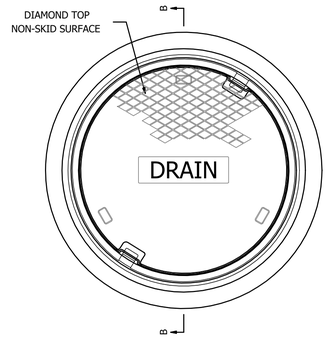
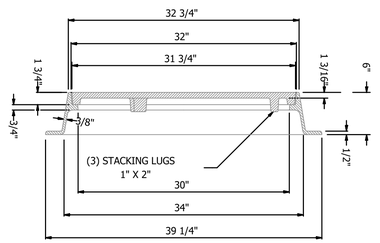


PLAN



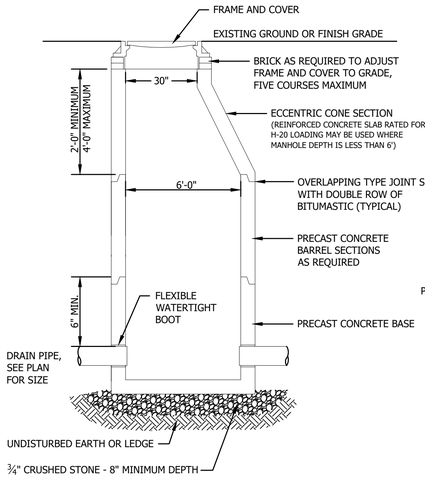
SECTION B-B

NOTES

1. ALL DIMENSIONS ARE NOMINAL
2. LABEL TYPE OF MANHOLE WITH 3" HIGH LETTERS IN THE CENTER OF THE COVER

DRAIN MANHOLE FRAME AND GRATE

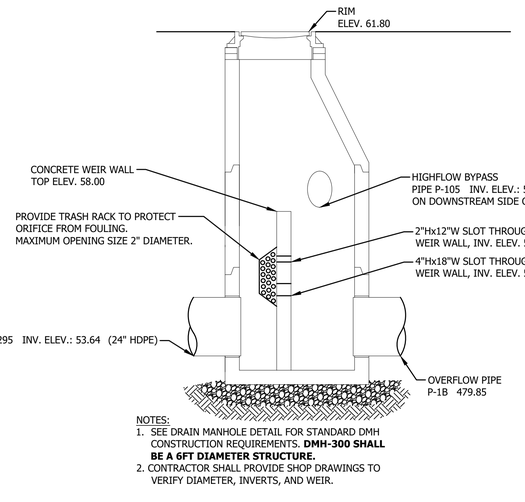
NOT TO SCALE



NOTE:
CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO CONFIRM ADEQUATE DIAMETER AND INVERTS.

DRAIN MANHOLE DETAIL

NOT TO SCALE



NOTES:
1. SEE DRAIN MANHOLE DETAIL FOR STANDARD DMH CONSTRUCTION REQUIREMENTS. **DMH-300 SHALL BE A 6FT DIAMETER STRUCTURE.**
2. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO VERIFY DIAMETER, INVERTS, AND WEIR.

DRAIN MANHOLE DMH-300 DETAIL

NOT TO SCALE

STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-4500.
2. CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
4. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
5. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
6. CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
7. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
   a. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY AASHTO FOR THERMOPLASTIC PIPE.
   b. A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET. THE 50 YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418 MUST BE USED AS PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
   c. STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
8. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

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

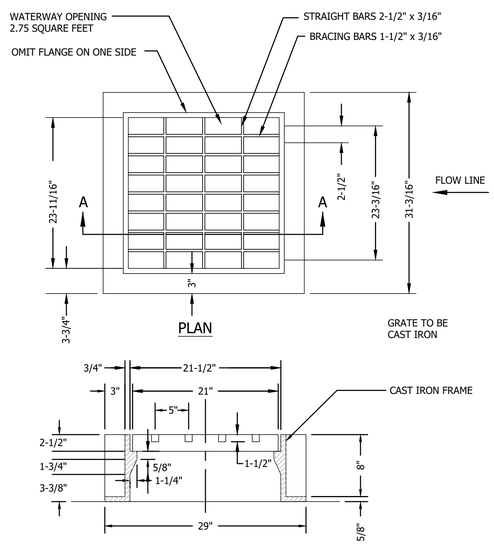
1. STORMTECH MC-4500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-4500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE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

NOTES FOR CONSTRUCTION EQUIPMENT

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

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

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

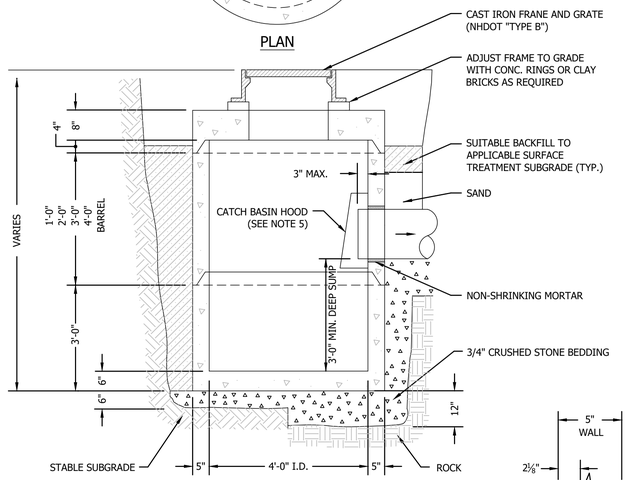


SECTION A - A

REFERENCE:
NH DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
PLATE 2 OF STANDARD NO. 3

NHDOT TYPE "B" GRATE DETAIL

NOT TO SCALE



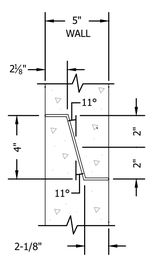
PLAN

SECTION A - A

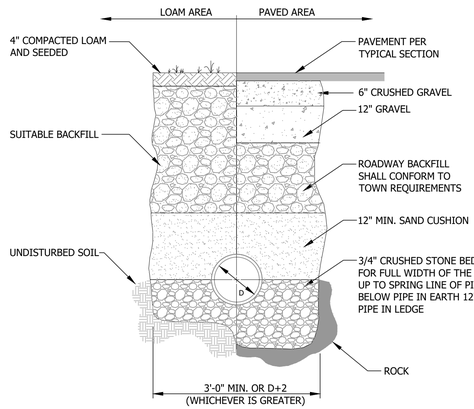
NOTES:
1. CONCRETE SHALL BE 4,000 P.S.I. AFTER 28 DAYS.
2. REINFORCING H-20 LOADING 4 x 4/4 x 4 W.W.M.
3. SHIP LAP JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT. AND SHALL BE SEALED WITH 1 STRIP OF 1" DIA. BUTYL RUBBER SEALANT.
4. EACH CASTING TO HAVE LIFTING HOLES CAST IN.
5. THE CATCH BASIN HOOD SHALL BE CONSTRUCTED FROM SOLID WALL HDPE PIPE GRADE PLATE. THE HOOD SHALL BE CONSTRUCTED SO THAT IT FORMS A BAFFLE AGAINST FLOATABLE LITTER AND OIL. THE HOOD SHALL PROTRUDE AT LEAST SIX INCHES OR 1/3 OF THE PIPE'S INSIDE DIAMETER, WHICHEVER IS GREATER, BELOW THE INVERT. THE CATCH BASIN HOOD SHALL BE SEALED TO THE CATCH BASIN STRUCTURE WITH AN OIL RESISTANT FOAM GASKET. VENT HOLES SHALL BE INSTALLED ON THE TOP OF THE HOOD TO ALLOW AIR FLOW INTO PIPE. THE CATCH BASIN HOOD SHALL BE ATTACHED TO THE STRUCTURE WITH STAINLESS STEEL ANCHOR STUDS AND NUTS, ALLOWING THE HOOD TO BE REMOVED AND INSTALLED WITH MINIMUM EFFORT. THE CATCH BASIN HOOD IS TO BE AS MANUFACTURED BY PLASTIC PIPE FABRICATION OR ENGINEER APPROVED EQUAL.

HOODED CATCH BASIN DETAIL

NOT TO SCALE

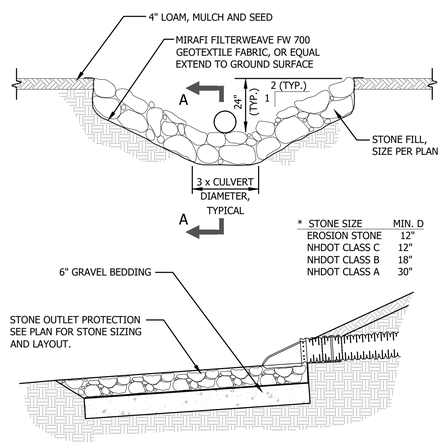


DETAIL OF SHIP LAP JOINT



TYPICAL DRAINAGE TRENCH DETAIL

NOT TO SCALE



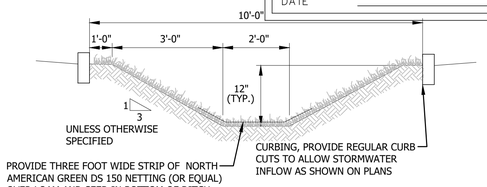
* STONE SIZE	MIN. D
EROSION STONE	12"
NHDOT CLASS C	12"
NHDOT CLASS B	18"
NHDOT CLASS A	30"

SECTION A-A

STONE LINED OUTLET DETAIL

NOT TO SCALE

FINAL APPROVAL BY DURHAM PLANNING BOARD.
CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
CERTIFIED _____
DATE _____



GRASS LINED DITCH DETAIL

NOT TO SCALE

NO.	DATE	INT.
0	10/28/20	AWS

REVISIONS

INITIAL SUBMISSION FOR SITE PLAN REVIEW

SEAL

DATE ISSUED: 10/28/20
SCALE: N/A
DESIGNED BY: AWS
DRAWN BY: AWS
APPROVED BY: MJS
DWG FILE: 20601 COVER DETAILS 01.dwg

CONSTRUCTION DETAILS

prepared for
TOOMERFS, LLC
TAX MAP 5, LOTS 1-9 AND 1-10
19 MAIN ST AND 21 MAIN ST, DURHAM, NH 03824

MJS ENGINEERING, P.C.
CIVIL • STRUCTURAL • ENVIRONMENTAL
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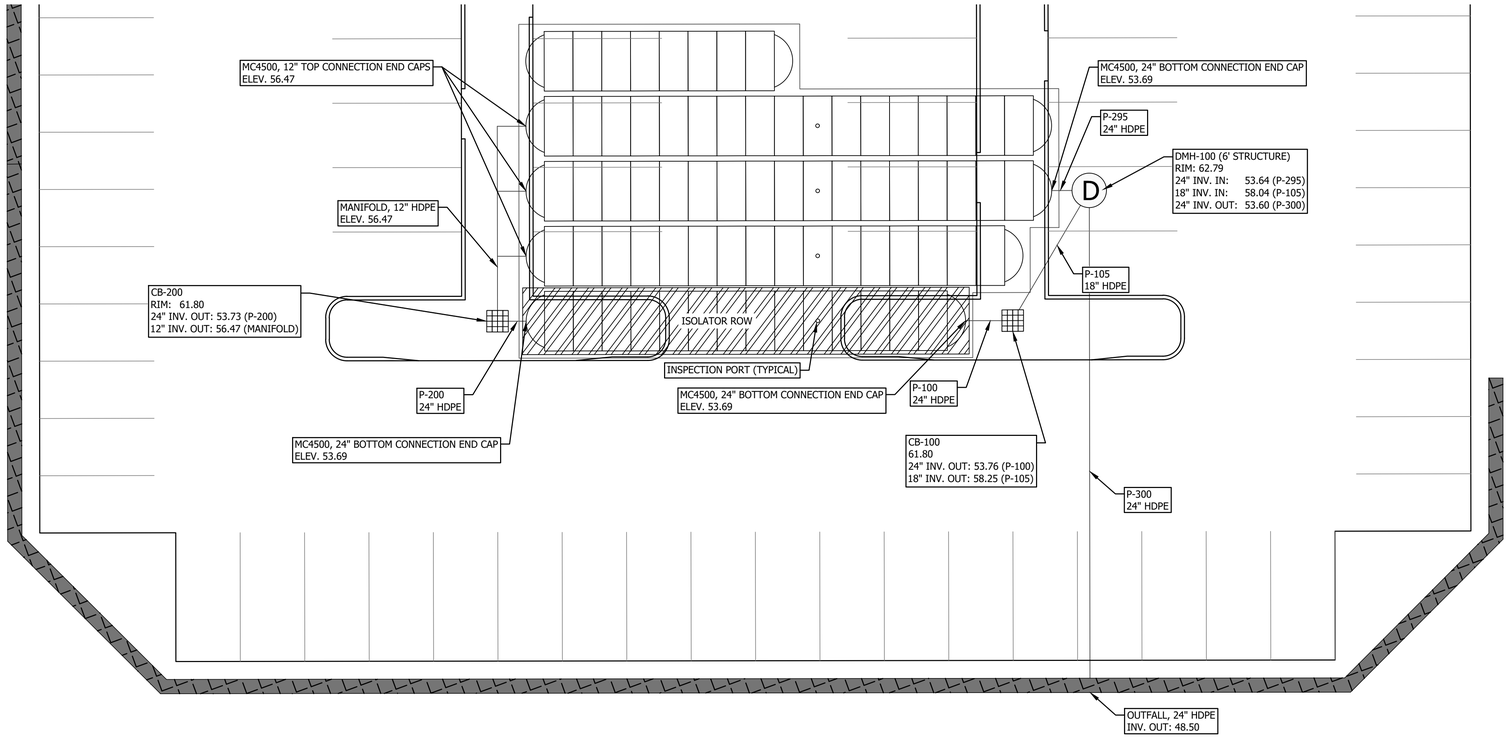
NEWMARKET, NH 03857
PHONE: (603) 659-6979, FAX: (603) 659-6627
E-MAIL: MJS@MJSENGINEERING.COM

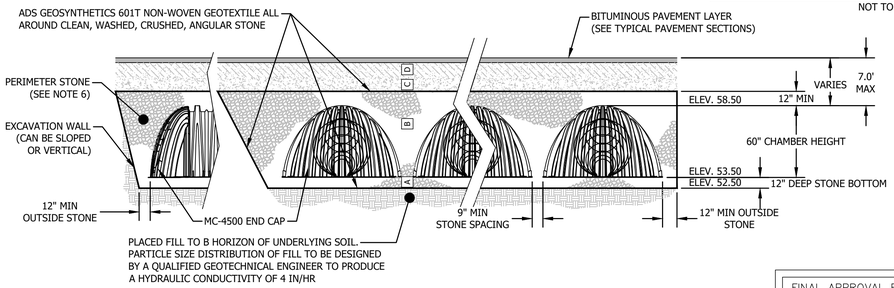
JOB: 18-041

C-504



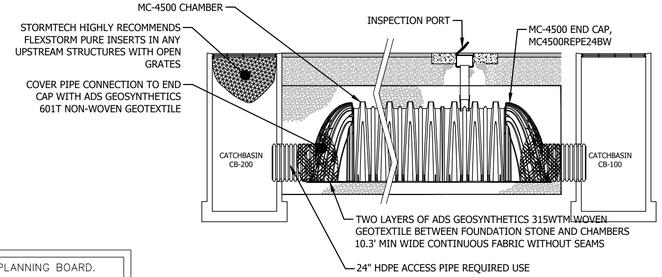
STORMTECH MC-4500 CHAMBER LAYOUT

NOT TO SCALE



TYPICAL STORMTECH MC-4500 CHAMBER SECTION

NOT TO SCALE



STORMTECH MC-4500 ISOLATOR ROW DETAIL

NOT TO SCALE

FINAL APPROVAL BY DURHAM PLANNING BOARD.

CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER

CERTIFIED _____

DATE _____

ACCEPTABLE FILL MATERIALS: STORMTECH MC-4500 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

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

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

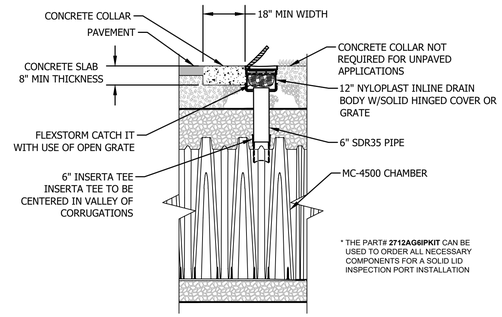
STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

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

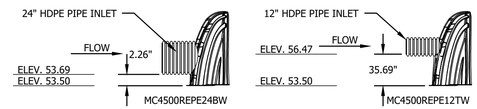
1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



NOTE: PROVIDE ONE INSPECTION PORT PER ROW OF CHAMBERS AT APPROXIMATELY 1/2 OF THE ROW LENGTH

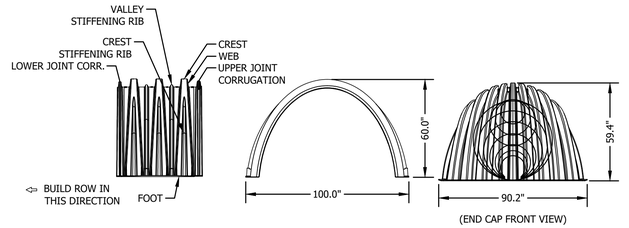
STORMTECH MC-4500 6" INSPECTION PORT

NOT TO SCALE



STORMTECH MC-4500 CHAMBER INLET SECTION

NOT TO SCALE



STORMTECH MC-4500 CHAMBER DIMENSION

NOT TO SCALE

IMPORTANT NOTE

FOUNDATION AND EMBEDMENT STONE SHALL BE **CLEAN, WASHED, ANGULAR CRUSHED STONE**. ENGINEER SHALL INSPECT AND VERIFY MATERIAL PRIOR TO SYSTEM INSTALLATION.

STORMTECH MC-4500 CHAMBER SPECIFICATIONS

100.0" WIDE + 9.0" SPACING = 109.0" C-C ROW SPACING

ROW LENGTH VARIES
[17 CHAMBERS/ROW x 4.025' LONG] + [2.55' CAP LENGTH x 2] = 73.53' ROW LENGTH
+ [12.0" END STONE x 2] = 75.53' BASE LENGTH
[16 CHAMBERS/ROW x 4.025' LONG] + [2.55' CAP LENGTH x 2] = 69.50' ROW LENGTH
+ [12.0" END STONE x 2] = 71.50' BASE LENGTH
[14 CHAMBERS/ROW x 4.025' LONG] + [2.55' CAP LENGTH x 2] = 61.45' ROW LENGTH
+ [12.0" END STONE x 2] = 63.45' BASE LENGTH
[08 CHAMBERS/ROW x 4.025' LONG] + [2.55' CAP LENGTH x 2] = 37.30' ROW LENGTH
+ [12.0" END STONE x 2] = 39.30' BASE LENGTH

[5 ROWS x 100.0" WIDE] + [9.0" SPACING X 4] + [12.0" SIDE STONE X 2] = 46.67' BASE WIDTH

[12.0" BASE + 60.0" CHAMBER HEIGHT + 12.0" COVER] = 7.00' FIELD HEIGHT

[72 CHAMBERS X 106.5 CF] + [35.7 CF CAP VOLUME X 2 X 5 ROWS] = 8,025 CF CHAMBER STORAGE

21,327 CF FIELD - 8,025 CF CHAMBERS = 13,302 CF STONE X 40.0% VOIDS = 5,321 CF STONE STORAGE

CHAMBER STORAGE + STONE STORAGE = 13,346 CF = 0.306 AF
OVERALL STORAGE EFFICIENCY = 62.6%

72 CHAMBERS, 10 END CAPS
21,327 CY FIELD, 13,302 CY STONE

*CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL QUANTITIES

NO.	DATE	INT.
0	10/28/20	AWS

REVISIONS: INITIAL SUBMISSION FOR SITE PLAN REVIEW

SEAL

DATE ISSUED: 10/28/20
SCALE: N/A
DESIGNED BY: AWS
DRAWN BY: AWS
APPROVED BY: MJS
DWG FILE: 20601 COVER DETAILS 01.dwg

CONSTRUCTION DETAILS

prepared for
TOOMERFS, LLC
TAX MAP 5, LOTS 1-9 AND 1-10
19 MAIN ST AND 21 MAIN ST, DURHAM, NH 03824

MJS ENGINEERING P.C.
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C-505