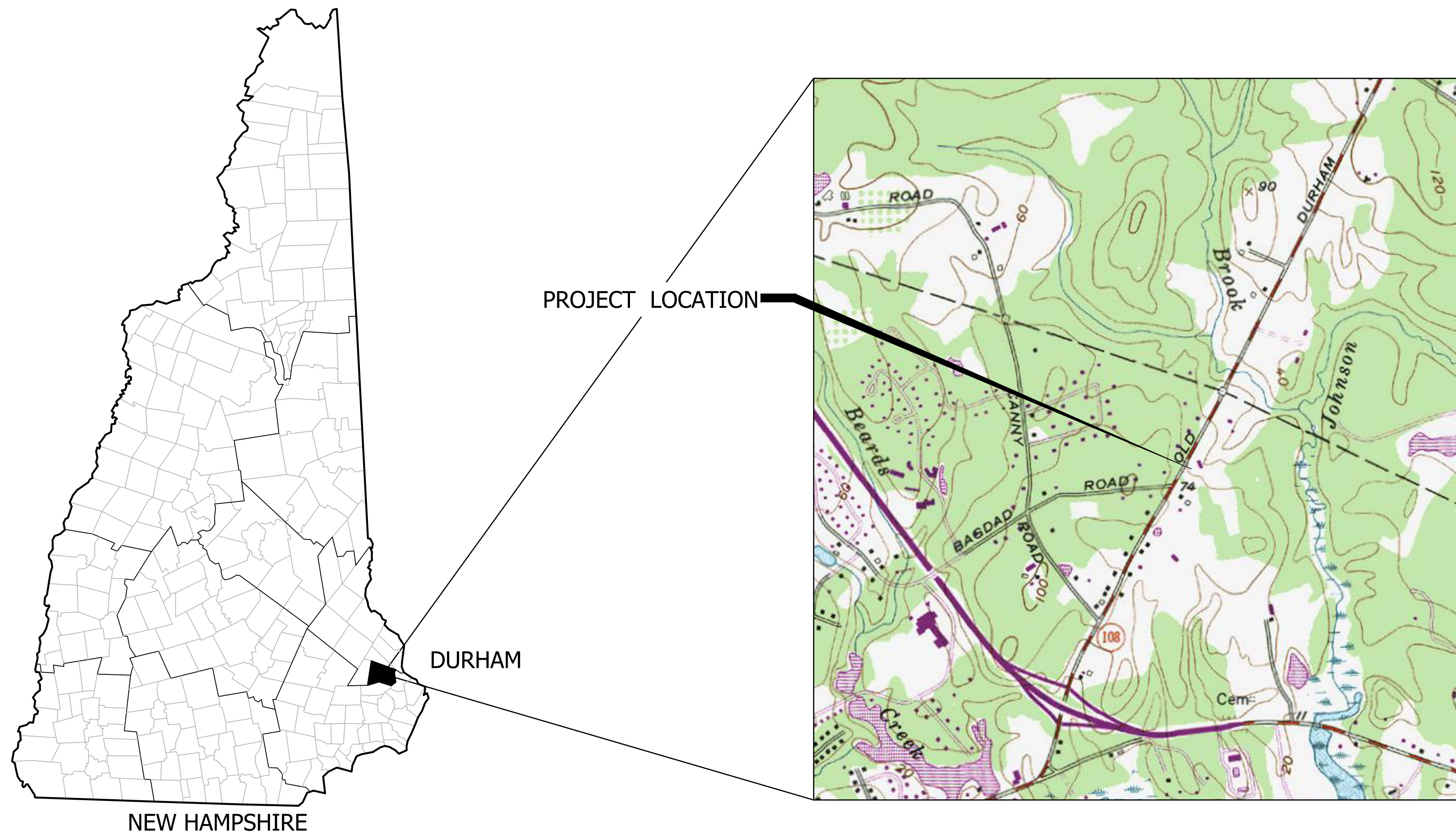


# DURHAM EVANGELICAL CHURCH PARKING LOT DESIGN

114 DOVER ROAD, DURHAM, NH

NOVEMBER 2024



**LOCATION PLAN**

SCALE: 1" = 1000'

OWNER

DURHAM EVANGELICAL CHURCH  
114 DOVER ROAD,  
DURHAM, NH, 03824

ENGINEER - SURVEYOR

**horizons**  
*Engineering*

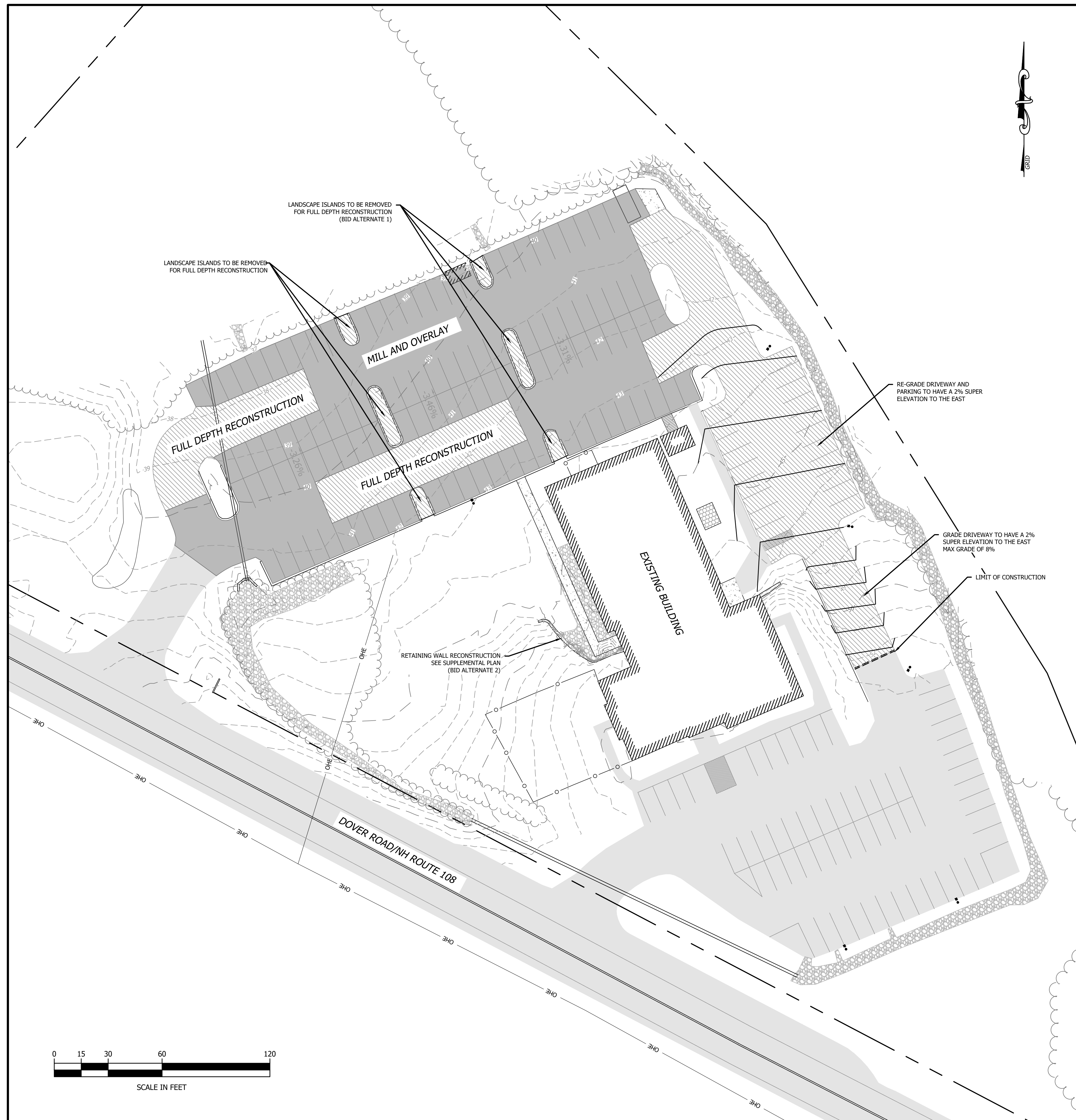
34 SCHOOL STREET  
LITTLETON, NH 03561  
(603) 444-4111

**Sheet List Table**

Sheet Number	Sheet Title
C1	COVER
C1.1	EXISTING CONDITIONS PLAN
C2.1	SITE & GRADING PLAN
C3.1	NOTES & DETAILS







**LEGEND**

- |           |                           |     |                                |
|-----------|---------------------------|-----|--------------------------------|
| ---       | APPROXIMATE PROPERTY LINE | --- | CONTOUR - MAJOR INTERVAL       |
| - - - - - | EDGE OF FIELD TOPOGRAPHY  | --- | CONTOUR - MINOR INTERVAL       |
| ○ ○ ○ ○ ○ | VINYL FENCE               | --- | BRUSH LINE                     |
| ---       | EDGE OF DOCK OR DECK      | --- | TREE LINE                      |
| ---       | BUILDING                  | --- | EXTENTS OF UPDATED PARKING LOT |
| ---       | WHITE STRIPING            | --- | OVERHEAD UTILITY LINE          |
| ---       | PAINTED CENTERLINE        | --- |                                |
| ---       | CONIFEROUS TREE           | ○   | REBAR OR IRON PIPE FOUND       |
| ---       | DECIDUOUS TREE            | ○   | UTILITY POLE                   |
| ---       | SHRUB                     | ○   | GUY WIRE                       |
| ○         | SEPTIC CLEANOUT           | ●   | SPOT GRADE                     |
| ○         | SEPTIC COVER              | ●   | LIGHT POST                     |
| ○         | WELL                      | □   | UTILITY CABINET                |
| □         | CONCRETE                  | □   | AC UNIT                        |
| □         | RIPRAP                    | □   | GATEVALVE                      |
| □         | FULL DEPTH RECONSTRUCTION | □   | DECK                           |
| □         | MILL AND OVERLAY          | □   | PAVEMENT                       |

**CONSTRUCTION SEQUENCING:**

- COMPLETE A PRE-CONSTRUCTION MEETING WITH ALL PARTIES. CONTACT DIG-SAFE, INDIVIDUAL UTILITIES, AND TOWN DEPARTMENTS TO GET ALL UTILITIES DISCONNECTED PRIOR TO START OF CONSTRUCTION. PROPERLY DISCONTINUE SERVICES OR TEMPORARILY CAP SERVICES IN ACCORDANCE WITH TOWN REQUIREMENTS.
- SEDIMENT AND EROSION CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
- INSTALL TEMPORARY CONSTRUCTION ENTRANCE/EXIT PRIOR TO EXCAVATION ACTIVITY ON THE SITE.
- CONSTRUCT AND STABILIZE ALL TEMPORARY EROSION CONTROLS INCLUDING CONSTRUCTION ENTRANCES, SWALES AND SEDIMENTATION BASINS IF REQUIRED.
- REMOVE ALL PAVEMENT IN THE UPPER PARKING AREA TO THE LIMITS SHOWN. THE PAVEMENT AND EXISTING UNDERLINING MATERIAL SHALL BE EXCAVATED AND REMOVED TO A DEPTH OF 21".
- ONCE ALL THE EXISTING MATERIAL IS REMOVED, INSTALL CATCH BASINS AND DRAINAGE PIPES IN ACCORDANCE WITH THE PLANS. ADJUST GRADES AS NECESSARY TO MEET EXISTING CONDITIONS.
- EXCAVATE TRENCHES AND INSTALL UNDERDRAINS AS SHOWN ON THE DETAILS. TIE INTO CATCH BASINS.
- GRADE SUBGRADE TO MATCH SURFACE SLOPE AND INSTALL GEOTEXTILE FABRIC OVER ENTIRE PARKING LOT SURFACE.
- INSTALL SELECT MATERIALS IN ACCORDANCE WITH THE CROSS SECTION DETAILS.
- INSTALL LIGHT POLE BASES AND ELECTRICAL CONDUIT AS SHOWN ON THE PLANS. (ALTERNATE BID)
- COMPACT ALL SELECT MATERIALS IN MAXIMUM 12" LIFTS. ALL SELECT MATERIALS SHOULD BE COMPACTED TO 95% OF THE MAX DRY DENSITY.
- COMPLETE GRADING AND INSTALL PERMANENT SEEDING AND PLANTINGS.
- REMOVE TOPSOIL ON SLOPES AS REQUIRED AND REGRADE SLOPES AND SWALES TO MEET THE DESIGN.
- RIP RAP FROM EXISTING SWALES SHALL BE STOCKPILED AND REUSED AT TOE OF SLOPE AT THE BACK SIDE OF THE SWALE.
- FINE GRADE THE GRADES TO GRADES AND SLOPE SHOWN AND PRE ROOL PRIOR TO PAVING.
- REPAVE PARKING LOT TO MEET PLAN SPECIFICATIONS.
- LOAM AND SEED ALL DISTURBED AREAS AS DEFINED IN THE PERMANENT VEGETATION NOTES
- INSPECT, MAINTAIN, AND IF NECESSARY, REPAIR ALL EROSION AND SEDIMENT CONTROL MEASURES.
- REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AFTER SITE IS STABILIZED AND RESEED ANY AREAS DISTURBED BY REMOVAL. THE APPROXIMATE DATE FOR REMOVAL OF EROSION CONTROLS IS SEPTEMBER 1, 2020.

**ADDITIONAL NOTES:**

- NO FUEL SHALL BE STORED ON SITE DURING CONSTRUCTION.
- DURING CONSTRUCTION DUST SHALL BE PREVENTED FROM BECOMING A SAFETY OR HEALTH HAZARD BY THE IMPLEMENTATION OF ACCEPTED CONTROL METHODS SUCH AS WATERING.
- ALL CONSTRUCTION MATERIALS THAT ARE SPILLED OR DEPOSITED ON THE PUBLIC ROADWAYS SHALL BE REMOVED BY THE CONTRACTOR.
- DO NOT BEGIN CONSTRUCTION UNTIL ALL LOCAL, STATE, AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.
- ALL INSPECTIONS/OBSERVATION SERVICES FOR THE INSTALLATION OF WATER, WASTEWATER, STORMWATER MANAGEMENT, AND OTHER INFRASTRUCTURE SHALL BE PERFORMED BY AUTHORIZED REPRESENTATIVES OF THE TOWN OF DURHAM AS STIPULATED BY THE DURHAM DEPARTMENT OF PUBLIC WORKS. THE DEVELOPER SHALL REIMBURSE THE TOWN FOR ALL ASSOCIATED INSPECTION/OBSERVATION COSTS.

PROJECT #:	DATE:	NO.	DATE	REVISION DESCRIPTION	DWG
240376	11/2024				
MAP-LOT (OR ARCHIVE)	MAP 11 LOT 3-1				
SURVEYED BY:	HEI				
ENGINEERED BY:	JFH				
DRAWN BY:	JFH-SM				
CHECKED BY:	RH				

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DURHAM EVANGELICAL CHURCH  
PARKING LOT DESIGN  
114 DOVER ROAD  
DURHAM, NH  
SITE AND GRADING PLAN



## EROSION CONTROL GENERAL NOTES

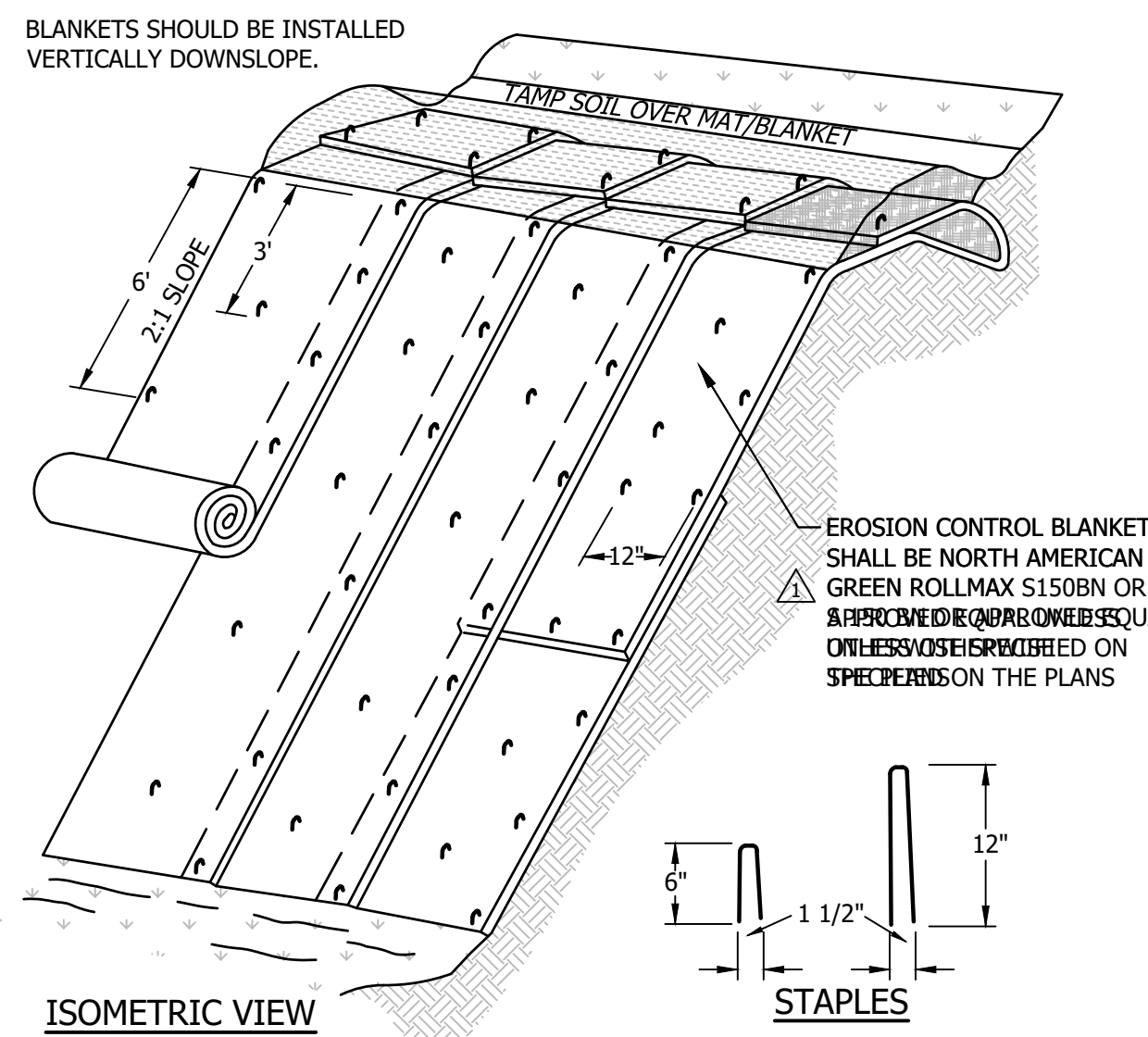
- A. KEEP SITE MODIFICATION TO A MINIMUM**
- CONSIDER FITTING THE BUILDINGS AND STREETS TO THE NATURAL TOPOGRAPHY. THIS REDUCES THE NEED FOR CUTS AND FILLS. AVOID EXTENSIVE GRADING THAT WOULD ALTER DRAINAGE PATTERNS OR CREATE VERY STEEP SLOPES.
  - EXPOSE AREAS OF BARE SOIL TO EROSION ELEMENTS FOR THE SHORTEST TIME POSSIBLE.
  - SAVE AND PROTECT DESIRABLE EXISTING VEGETATION WHERE POSSIBLE. ERECT BARRIERS TO PREVENT DAMAGE FROM CONSTRUCTION EQUIPMENT.
  - LIMIT THE GRADES OF SLOPES SO VEGETATION CAN BE EASILY ESTABLISHED AND MAINTAINED.
  - AVOID SUBSTANTIAL INCREASE IN RUNOFF LEAVING THE SITE.
- B. MINIMIZE POLLUTION OF WATER DURING CONSTRUCTION ACTIVITIES**
- STOCKPILE TOPSOIL REMOVED FROM CONSTRUCTION AREA AND SPREAD OVER ANY DISTURBED AREAS PRIOR TO REVEGETATION. TOPSOIL STOCKPILES MUST BE PROTECTED FROM EROSION.
  - PROTECT BARE SOIL AREAS EXPOSED BY GRADING ACTIVITIES WITH TEMPORARY VEGETATION OR MULCHES.
  - USE SEDIMENT BASINS TO TRAP DEBRIS AND SEDIMENT WHICH WILL PREVENT THESE MATERIALS FROM MOVING OFF SITE.
  - USE DIVERSIONS TO DIRECT WATER AROUND THE CONSTRUCTION AREA AND AWAY FROM EROSION PRONE AREAS TO POINTS OF SAFE DISPOSAL.
  - USE TEMPORARY CULVERTS OR BRIDGES WHEN CROSSING STREAMS WITH EQUIPMENT.
  - PLACE CONSTRUCTION FACILITIES, MATERIALS, AND EQUIPMENT STORAGE AND MAINTENANCE AREAS AWAY FROM DRAINAGE WAYS.
- C. PROTECT AREA AFTER CONSTRUCTION**
- ESTABLISH GRASS OR OTHER SUITABLE VEGETATION ON ALL DISTURBED AREAS. SELECT SPECIES ADAPTED TO THE SITE CONDITIONS AND THE FUTURE USE OF THE AREA. FINAL GRADES SHALL BE SEEDED WITHIN 72 HOURS. STABILIZATION SHALL BE DEFINED AS 85% VEGETATIVE COVER.
  - MAINTAIN VEGETATED AREAS USING PROPER VEGETATIVE 'BEST MANAGEMENT PRACTICES' DURING THE CONSTRUCTION PERIOD.
  - MAINTAIN NEEDED STRUCTURAL 'BEST MANAGEMENT PRACTICES' AND REMOVE SEDIMENT FROM DETENTION PONDS AND SEDIMENT BASINS AS NEEDED.
  - DETERMINE RESPONSIBILITY FOR LONG TERM MAINTENANCE OF PERMANENT 'BEST MANAGEMENT PRACTICES'.
  - IF CONSTRUCTION IS ANTICIPATED DURING WINTER MONTHS, REFER TO 'COLD WEATHER SITE STABILIZATION REQUIREMENTS'.
- D. INVASIVE SPECIES AND FUGITIVE DUST**
- THE PROJECT SHALL NOT CONTRIBUTE TO THE SPREAD OF INVASIVE SPECIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EVALUATE WORK AREAS FOR THE PRESENCE OF INVASIVE SPECIES, AND IF FOUND SHALL TAKE NECESSARY MEASURES TO PREVENT THEIR SPREAD IN ACCORDANCE WITH RSA 430:51-57 AND AGR 3800. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PREVENT THE INTRODUCTION OF INVASIVE SPECIES BY INSPECTING AND CLEANING ALL EQUIPMENT ARRIVING ON SITE.
  - FUGITIVE DUST SHALL BE CONTROLLED IN ACCORDANCE WITH ENV-A 1000.

## COLD WEATHER SITE STABILIZATION REQUIREMENTS

- TO ADEQUATELY PROTECT WATER QUALITY DURING COLD WEATHER AND DURING SPRING RUNOFF, THE FOLLOWING ADDITIONAL STABILIZATION TECHNIQUES SHALL BE EMPLOYED DURING THE PERIOD FROM OCTOBER 15 THROUGH MAY 1:
- THE AREA OF EXPOSED, UNSTABILIZED SOIL SHALL BE LIMITED TO 1 ACRE AND SHALL BE PROTECTED AGAINST EROSION BY THE METHODS DESCRIBED IN THIS SECTION PRIOR TO ANY THAW OR SPRING MELT EVENT. THE ALLOWABLE AREA OF EXPOSED SOIL MAY BE INCREASED IF A WINTER CONSTRUCTION PLAN, DEVELOPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, IS REVIEWED AND APPROVED BY NHDES.
  - ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF GREATER THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH 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 2 INCHES OF EROSION CONTROL MIX MEETING THE CRITERIA OF ENV-WQ 1506.05(D) THROUGH (H).
  - ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF GREATER THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE SEEDED AND COVERED WITH PROPERLY INSTALLED AND ANCHORED EROSION CONTROL MATTING OR WITH A MINIMUM 4 INCH THICKNESS OF EROSION CONTROL MIX MEETING THE CRITERIA OF ENV-WQ 1506.05(D) THROUGH (H).
  - INSTALLATION OF ANCHORED HAY MULCH OR EROSION CONTROL MIX, MEETING THE CRITERIA OF ENV-WQ 1506.05(D) THROUGH (H), SHALL NOT OCCUR OVER SNOW OF GREATER THAN 1 INCH IN DEPTH.
  - INSTALLATION OF EROSION CONTROL MATTING SHALL NOT OCCUR OVER SNOW OF GREATER THAN ONE INCH IN DEPTH OR ON FROZEN GROUND.
  - ALL PROPOSED STABILIZATION IN ACCORDANCE WITH NOTES 2 OR 3 ABOVE, SHALL BE COMPLETED WITHIN 1 DAY OF ESTABLISHING THE GRADE THAT IS FINAL OR THAT OTHERWISE WILL EXIST FOR MORE THAN 5 DAYS.
  - ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH 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.
  - 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, ITEM NO. 304.1 OR 304.2.

## SEEDING RECOMMENDATIONS

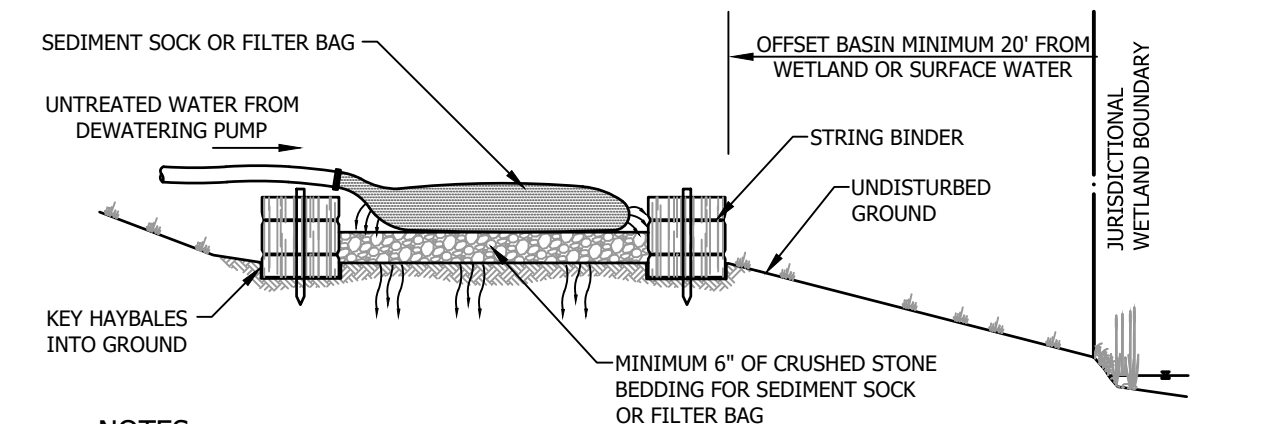
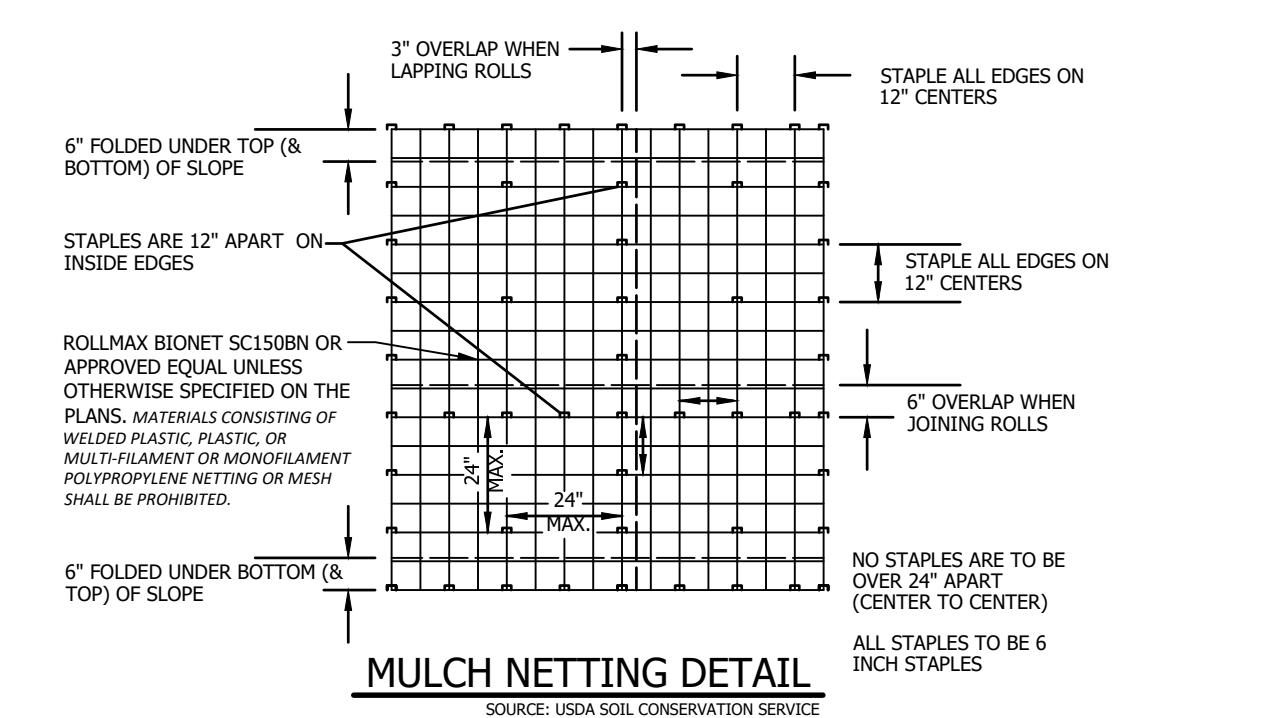
- 1. GRADING AND SHAPING**
- A. SLOPES SHALL NOT BE STEEPER THAN 2:1; 3:1 SLOPES OR FLATTER ARE PREFERRED. WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.
- 2. SEEDBED PREPARATION**
- A. SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
- B. STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE AMENDED WITH ORGANIC MATTER AND TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDED AND MIX FERTILIZER AND LIME THOROUGHLY INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.
- 3. ESTABLISHING VEGETATION**
- A. LIME AND FERTILIZER SHOULD BE APPLIED PRIOR TO OR AT THE TIME OF SEEDING AND INCORPORATED INTO THE SOIL. KINDS AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:
- AGRICULTURAL LIMESTONE, 2 TONS PER ACRE OR 100 LBS. PER 1,000 SQ. FT.
  - NITROGEN (N), 50 LBS., PER ACRE OR 1.1 LBS. PER 1,000 SQ. FT.
  - PHOSPHATE (P<sub>2</sub>O<sub>5</sub>), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ. FT.
  - POTASH (K<sub>2</sub>O), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ. FT.
- (NOTE: THIS IS THE EQUIVALENT OF 500 LBS. PER ACRE OF 10-20-20 FERTILIZER OR 1,000 LBS. PER ACRE OF 5-10-10).
- B. SEED SHOULD BE SPREAD UNIFORMLY BY THE METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDE BROADCASTING, DRILLING, AND HYDROSEEDING. WHERE BROADCASTING IS USED, COVER SEED WITH .25 INCH OF SOIL OR LESS, BY CULTIPACKING OR RAKING.



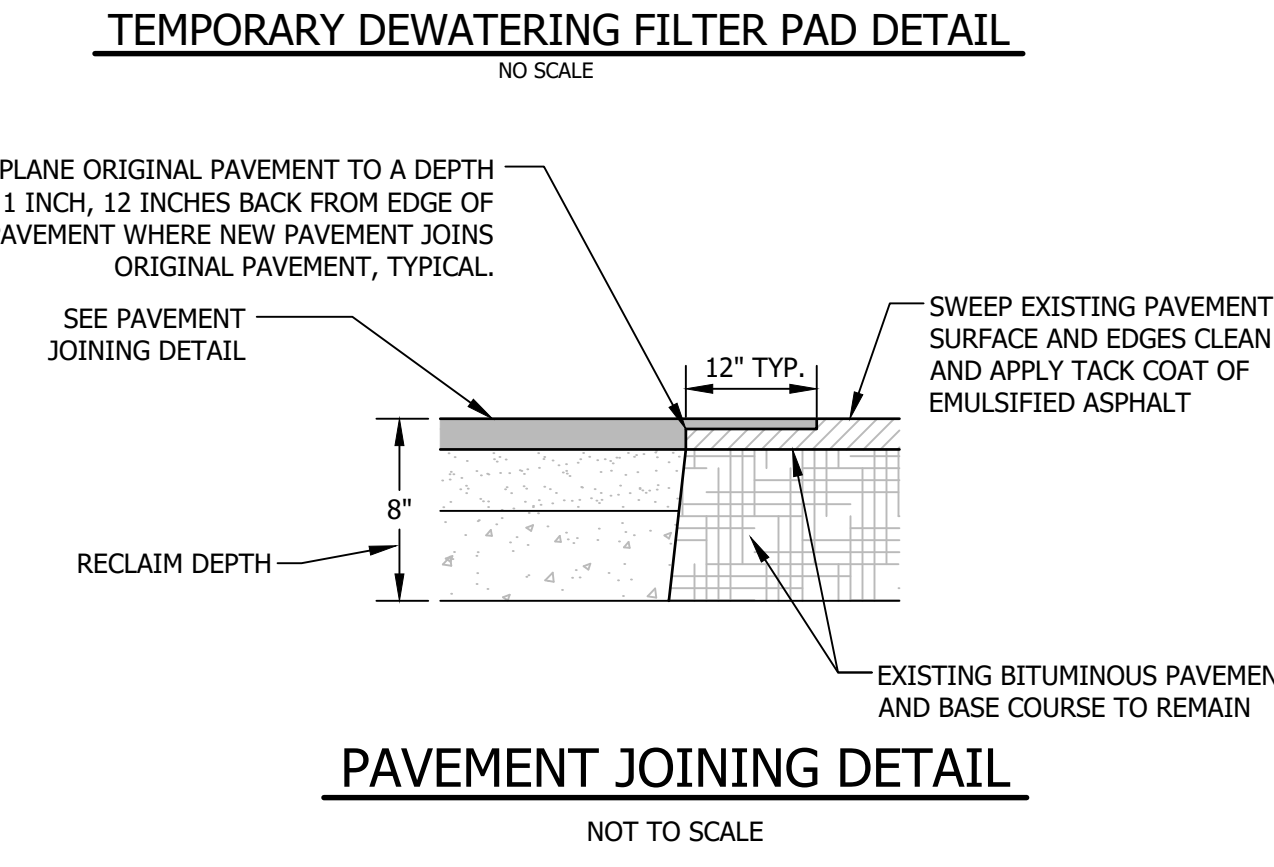
- NOTES:**
- DIMENSION GIVEN IN THE DRAWINGS ARE EXAMPLES; DEVICE SHOULD BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
  - SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
  - APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
  - LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.

### EROSION CONTROL BLANKET INSTALLATION DETAIL

NOT TO SCALE

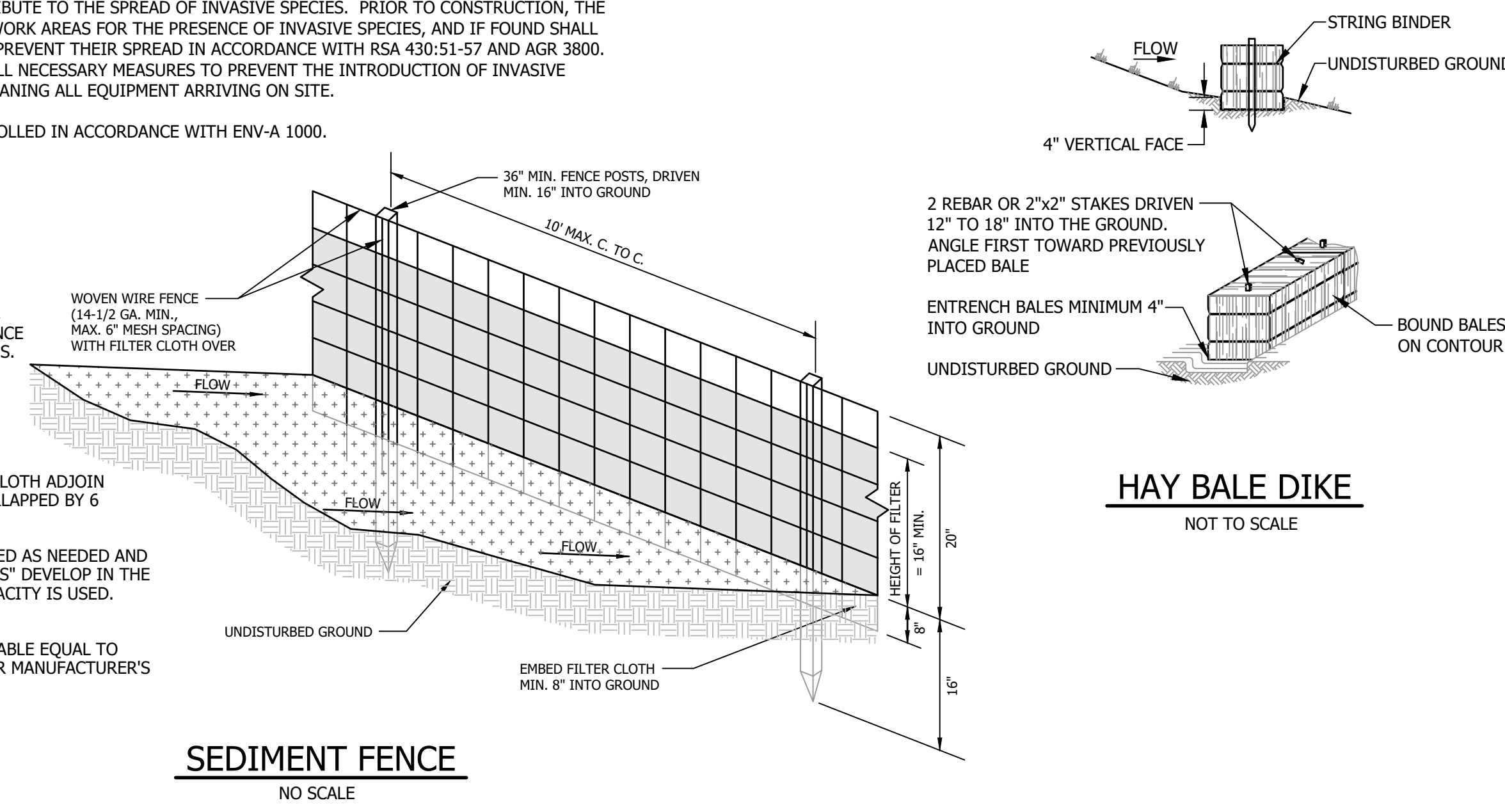


- NOTES:**
- DESIGN INTENT FOR TEMPORARY DEWATERING FILTER PAD IS TO ENHANCE PUMP WATER QUALITY PRIOR TO INFILTRATION INTO UNDISTURBED GROUND.
  - CONTRACTOR TO OPERATE PUMPS AND SIZE TEMPORARY DEWATERING FILTER PAD TO ENCOURAGE INFILTRATION AND PREVENT DISCHARGE TO SURFACE WATERS OR WETLANDS. USE ADDITIONAL SEDIMENT CONTROLS AS NEEDED.



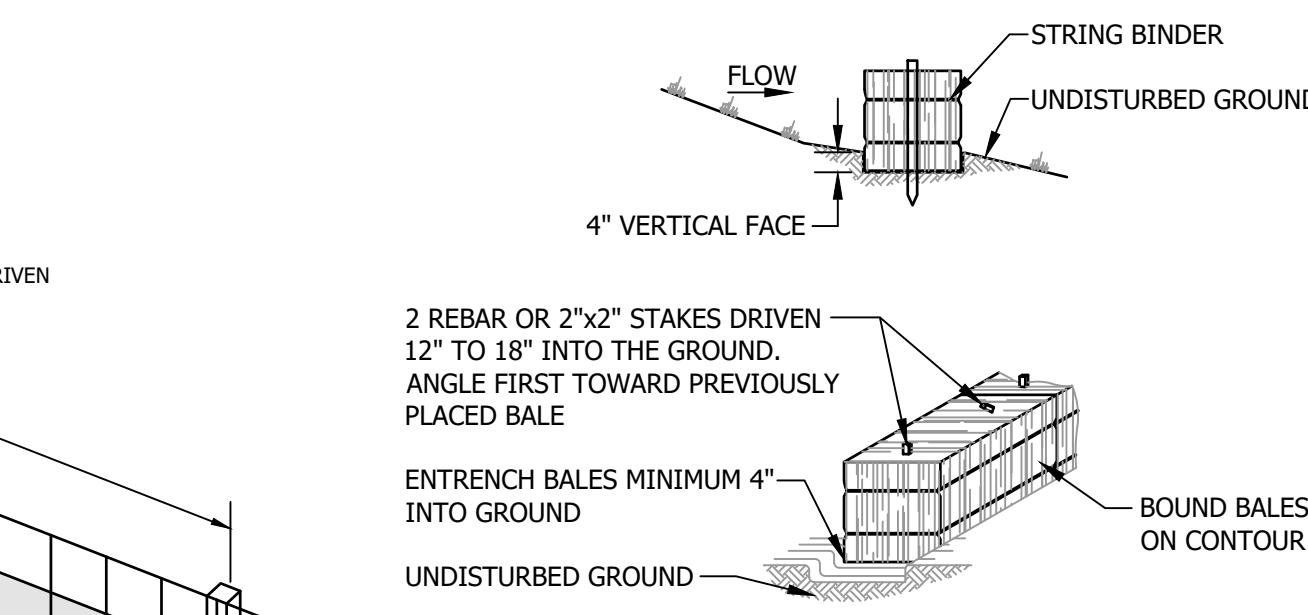
### CONSTRUCTION NOTES FOR SEDIMENT FENCE

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



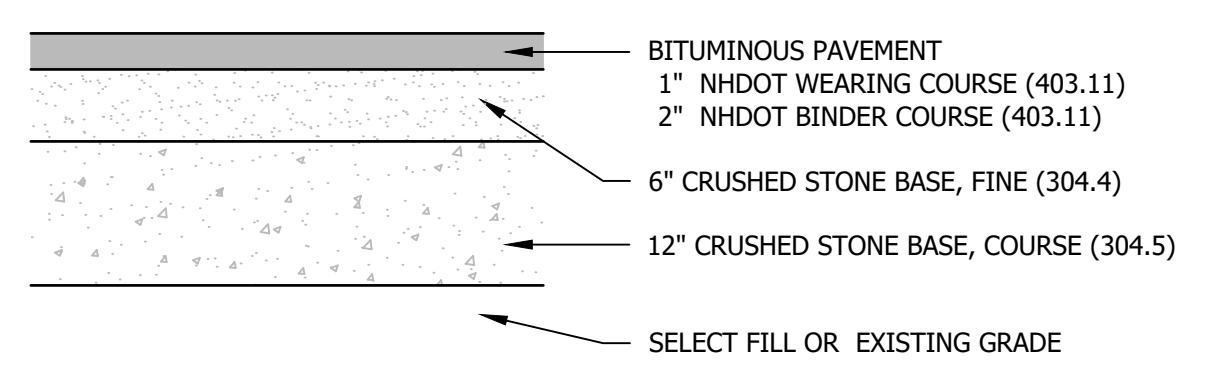
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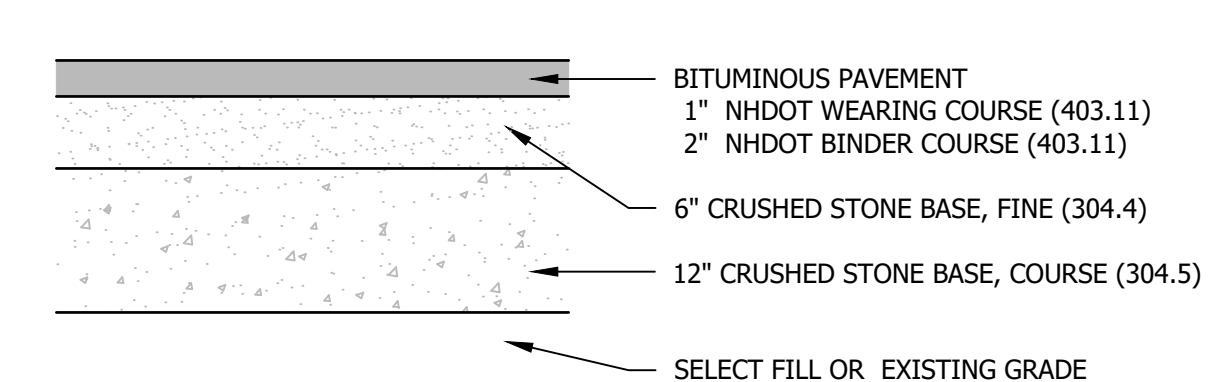
### HAY BALE DIKE

NOT TO SCALE



### FULL DEPTH RECONSTRUCTION

NOT TO SCALE



### MILL AND OVERLAY

NOT TO SCALE

NO.	DATE	REVISION DESCRIPTION
240376	11/2024	

PROJECT #:	240376
DATE:	11/2024
MAP-LOT (OR ARCHIVE):	MAP 206 LOT 56
SURVEYED BY:	HEI
ENGINEERED BY:	JFH
DRAWN BY:	JFH-SM
CHECKED BY:	NL

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