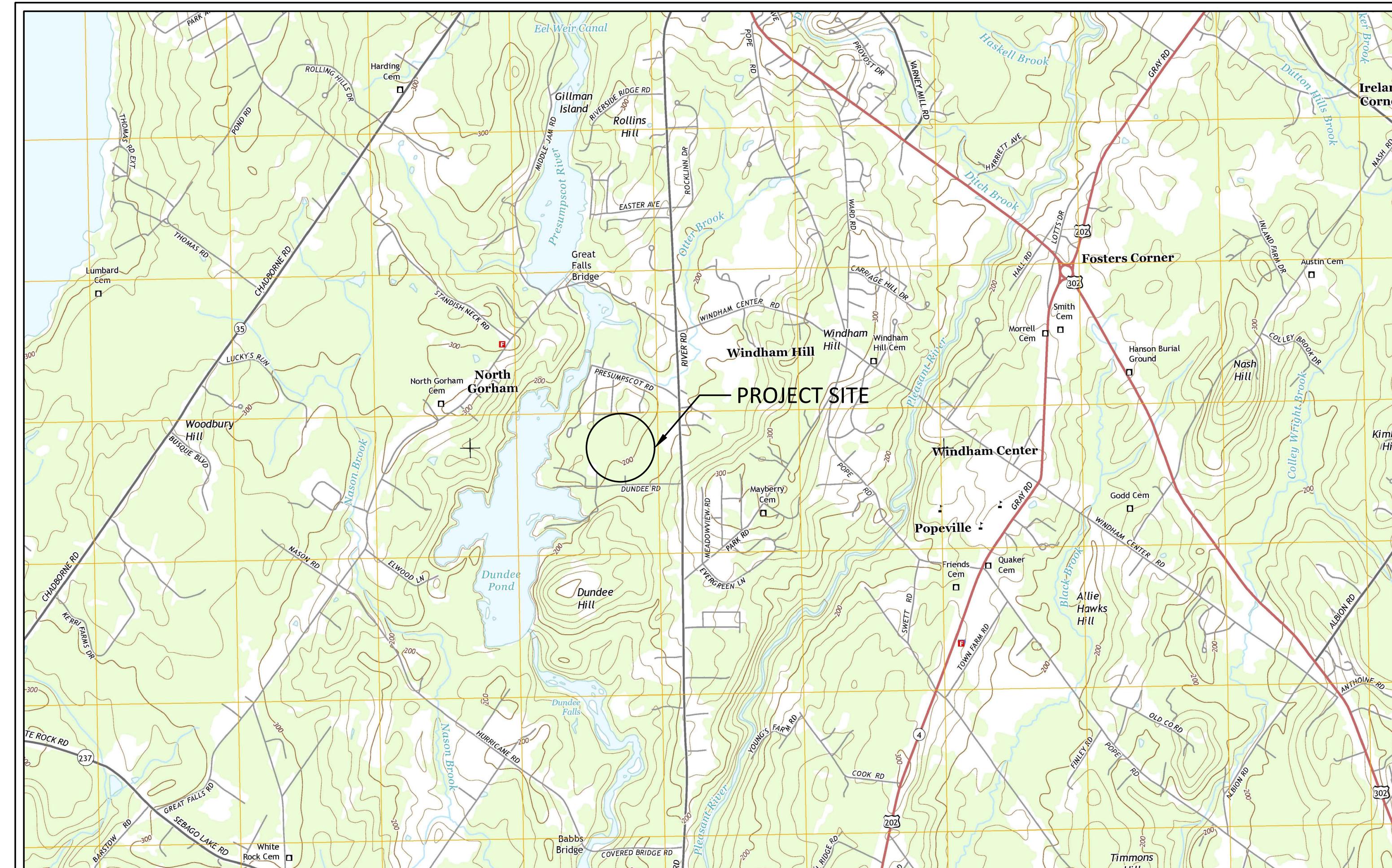


# SABBATUS LANE SUBDIVISION

SABBATUS LANE  
WINDHAM, MAINE

**CONSULTANTS**  
CIVIL ENGINEER DM ROMA CONSULTING ENGINEERS  
LAND SURVEYOR SURVEY, INC.  
SITE EVALUATOR MARK HAMPTON ASSOCIATES, INC.  
WETLAND SCIENTIST MARK HAMPTON ASSOCIATES, INC.



ISSUED FOR PRELIMINARY SUBDIVISION REVIEW - NOT FOR CONSTRUCTION

JANUARY 25, 2018

PREPARED BY:

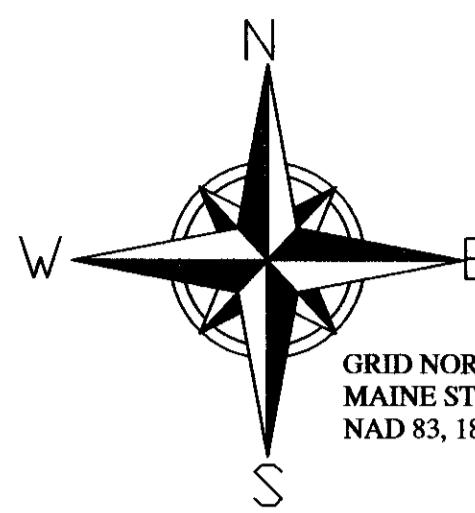
**DM ROMA**

CONSULTING ENGINEERS  
59 HARVEST HILL RD  
WINDHAM, ME 04062  
(207) 310 - 0506

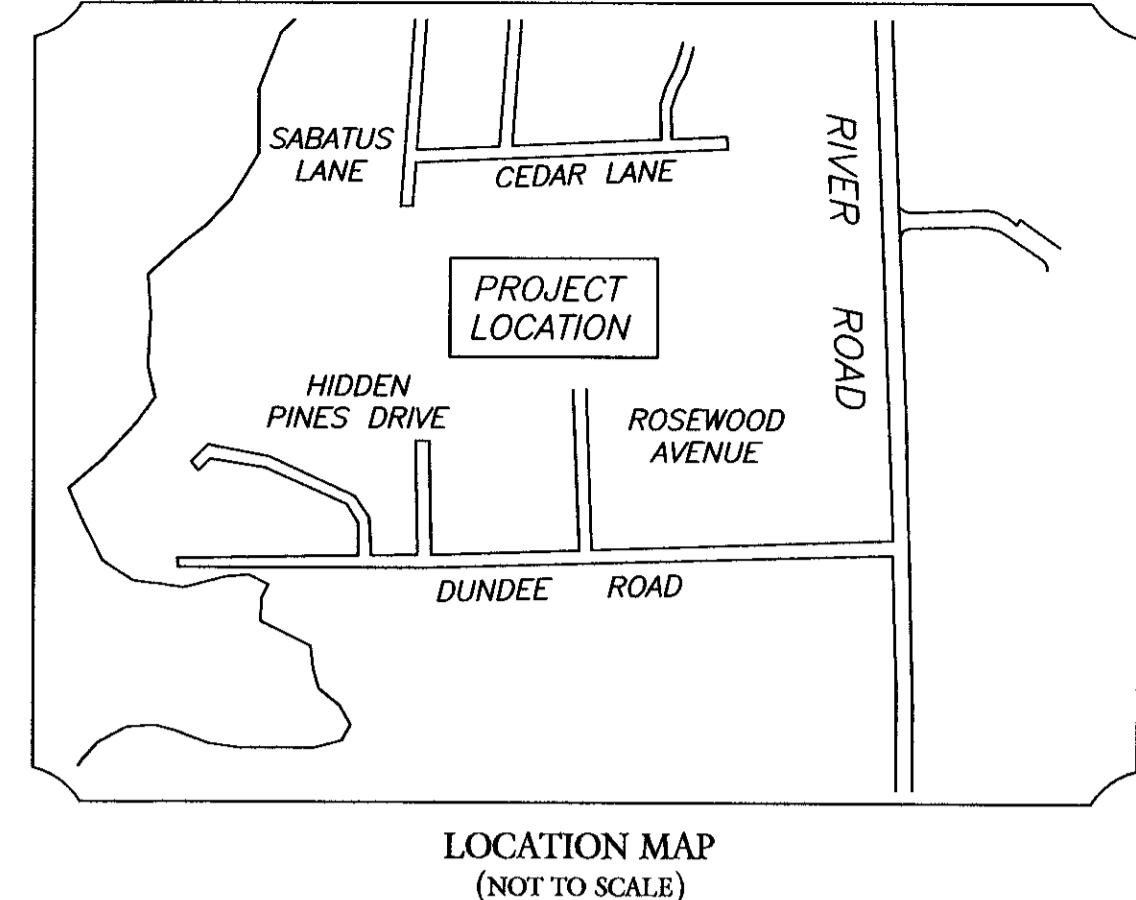
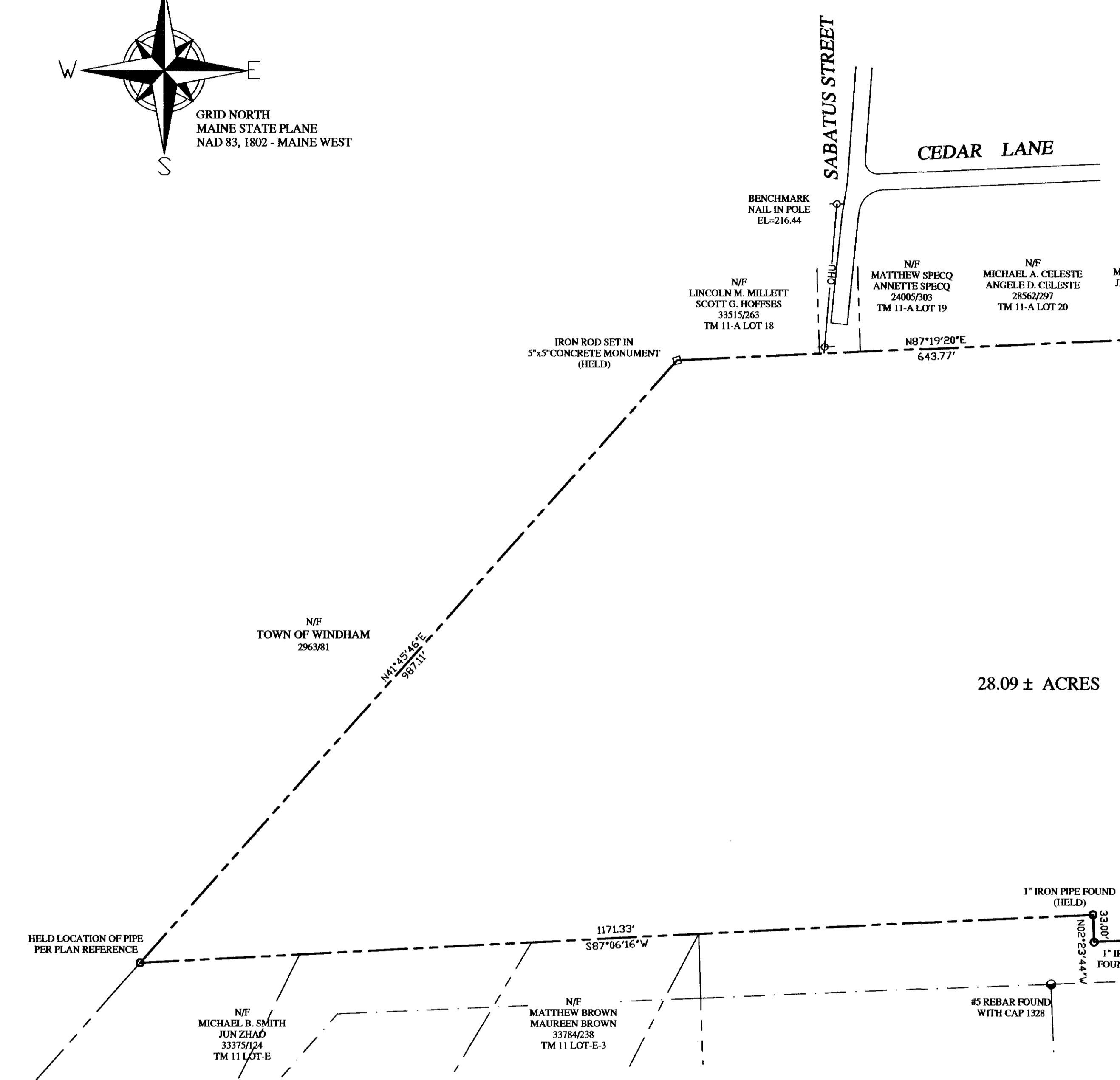
**APPLICANT:**  
GRONDIN CORPORATION  
89 BELANGER AVENUE  
WINDHAM, MAINE 04062

**SABBATUS LANE SUBDIVISION**  
**DRAWING SHEET INDEX**

PAGE NO.	DESCRIPTION
1	TITLE SHEET
2	BOUNDARY SURVEY
3	SUBDIVISION PLAN
4	PLAN & PROFILE: PROPOSED ROAD STA. -0+35 THRU STA. 4+50
5	PLAN & PROFILE: PROPOSED ROAD STA. 4+50 THRU STA. 9+15
6	DETAILS
7	DETAILS



GRID NORTH  
MAINE STATE PLANE  
NAD 83, 1802 - MAINE WEST



#### PLAN REFERENCES:

1. PROPOSED DIVISION OF THE EDWARD L. TOTLE ESTATE ON RIVER ROAD WINDHAM, MAINE DATED JULY 2015 BY WAYNE T. WOOD & CO. RECORDED IN PLAN BOOK 217 PAGE 383 IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS.
2. BOUNDARY SURVEY 784 RIVER ROAD WINDHAM, ME FOR HEIRS OF EDWARD L. TOTLE DATED JANUARY 16, 2014 BY SURVEY INC.
3. AMENDED LOT 103 OF DUNDEE ACRES ON RIVER ROAD WINDHAM, MAINE FOR CYNTHIA J. CROY DATED JANUARY 2005 BY WAYNE T. WOOD & CO.
4. STANDARD BOUNDARY SURVEY ON RIVER ROAD WINDHAM, MAINE FOR ROBERT CLOUTIER DATED JULY 2001 BY WAYNE T. WOOD & CO.
5. STANDARD BOUNDARY SURVEY ON RIVER ROAD AND DUNDEE ROAD WINDHAM, MAINE FOR FRANCES E. ESTY DATED JULY 1998 BY WAYNE T. WOOD & CO.
6. BOUNDARY SURVEY RIVER ROAD WINDHAM, MAINE FOR RIVER ROAD HOUSING, LLC RICKY G. JONES BRIAN D. AASKOV DATED NOVEMBER 17, 2017 BY SURVEY INC.

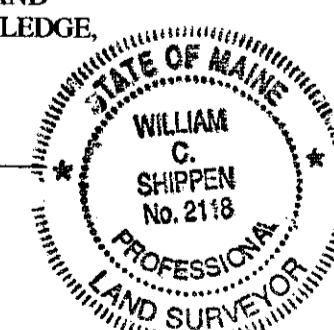
#### SURVEY NOTES:

1. THE RECORD OWNER IS GRONDIN CORPORATION AS DESCRIBED IN A DEED RECORDED IN BOOK 34549 PAGE 91 IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS.
2. THE PARCEL IS SHOWN AS A PORTION OF LOT 11 ON THE TOWN OF WINDHAM ASSESSORS MAP 12.
3. BEARINGS ARE GRID NORTH BASED ON STATIC GPS OBSERVATIONS.
4. ELEVATIONS ARE NAVD88 BASED ON STATIC GPS OBSERVATIONS.
5. THIS PLAN REPRESENTS A RESURVEY OF LOT 11 AS DEPICTED ON PLAN REFERENCE 1 PLACED ON MAINE STATE PLANE COORDINATES.
6. THE PARCEL IS LOCATED IN, BY SCALING METHODS, ZONE C (AREAS OF MINIMAL FLOODING) AS SHOWN ON THE FLOOD INSURANCE RATE MAP FOR THE TOWN OF WINDHAM, MAINE COMMUNITY PANEL NUMBER 230189-0010B WITH AN EFFECTIVE DATE OF SEPTEMBER 2, 1981.

#### CERTIFICATION:

I CERTIFY THAT THIS SURVEY CONFORMS TO THE STANDARDS OF THE MAINE BOARD OF LICENSURE FOR PROFESSIONAL LAND SURVEYORS AND IS CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF.

1-25-18  
WILLIAM C. SHIPEN P.L.S. 2118



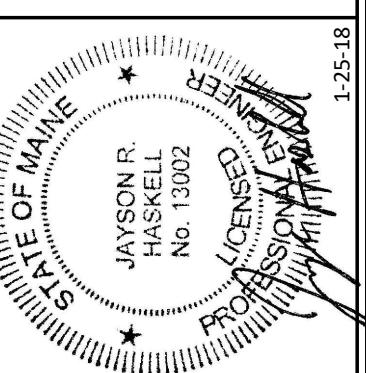
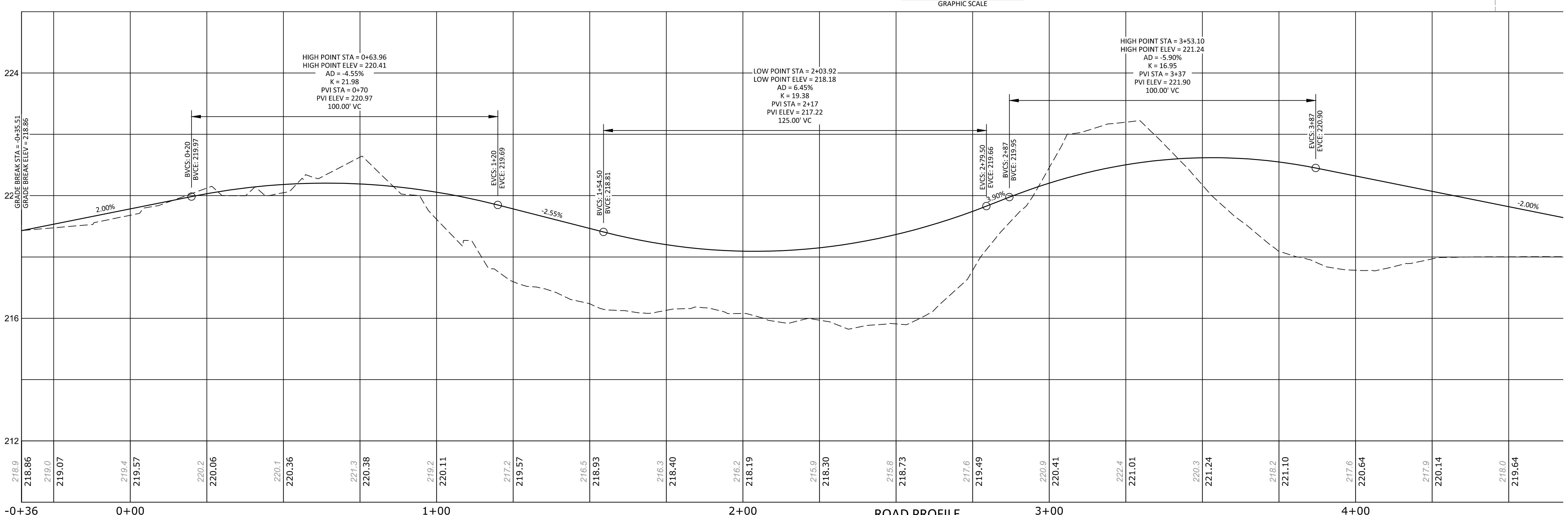
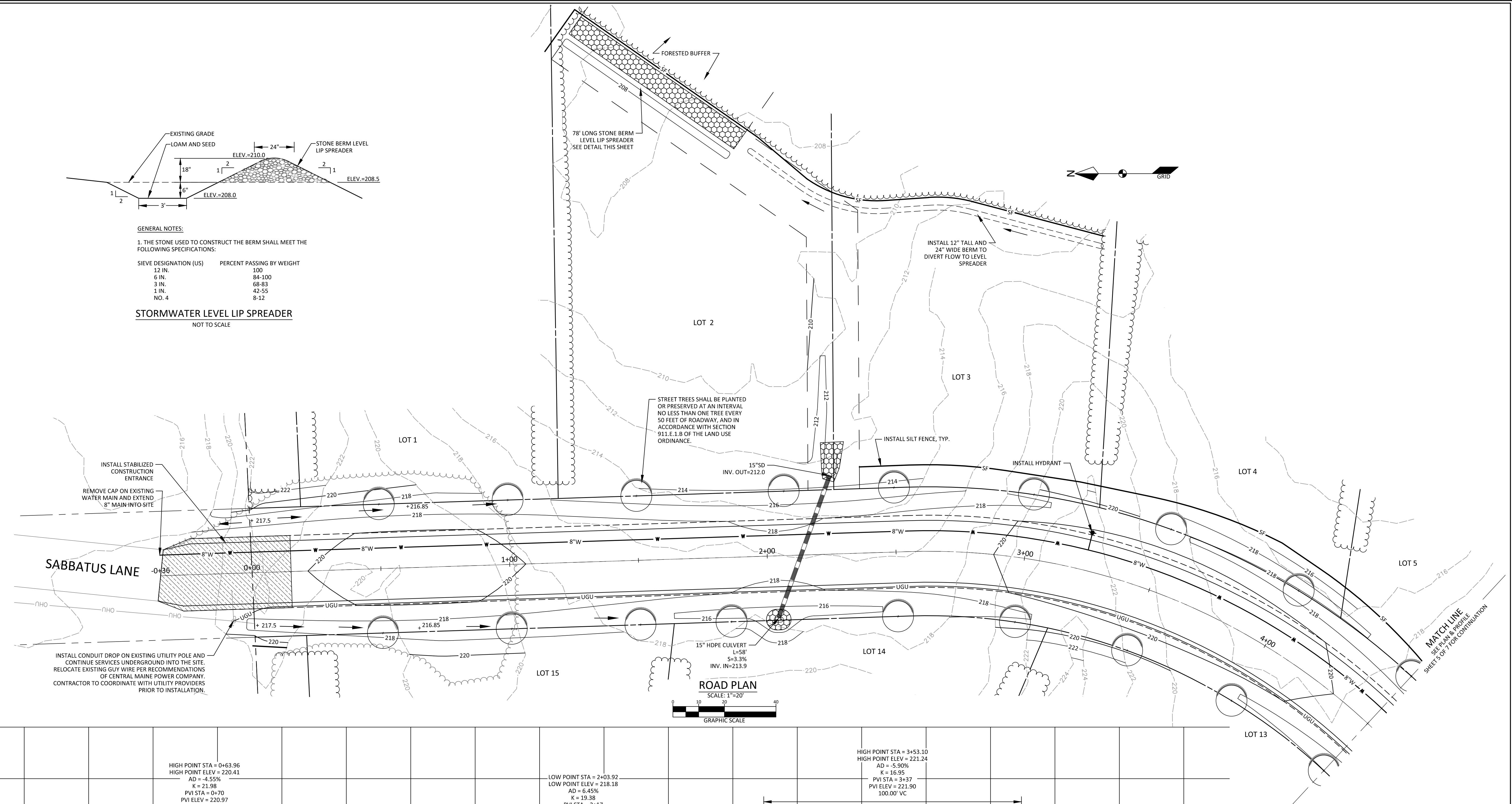
**BOUNDARY SURVEY**  
RIVER ROAD AND SABATTUS LANE  
WINDHAM, MAINE

FOR: **GRONDIN CORPORATION**  
89 BELANGER AVENUE  
WINDHAM, MAINE 04062  
(OWNER OF RECORD)

SURVEY BY: **SURVEY, INC.**  
P.O. BOX 210  
WINDHAM, ME 04062  
(207) 892-2556  
INFO@SURVEYINCORPORATED.COM

DW: WCS  
CHK: BMD  
DATE: JANUARY 25, 2018  
JOB NO. 17210





The logo for DM ROMA Consulting Engineers. The company name 'DM ROMA' is written vertically in large, bold, black, sans-serif capital letters. A small gray downward-pointing triangle is positioned between the 'M' and the 'A'. To the right of the company name, the words 'CONSULTING ENGINEERS' are written vertically in a smaller, black, sans-serif font. Below this, the address '59 HARVEST HILL RD' and 'WINDHAM, ME 04062' are listed, followed by the phone number '(207) 310 - 0506'.

**PLAN & PROFILE: FROGSD ROAD**  
**STA. -0+35 THRU STA. 4+50**

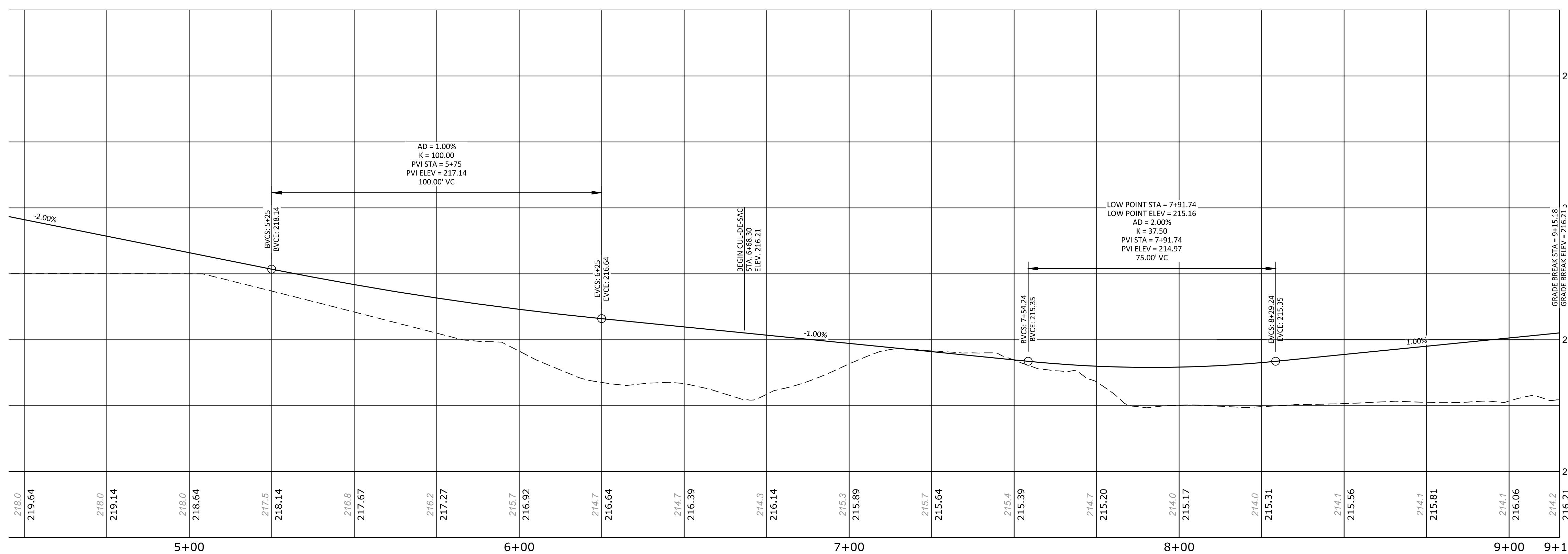
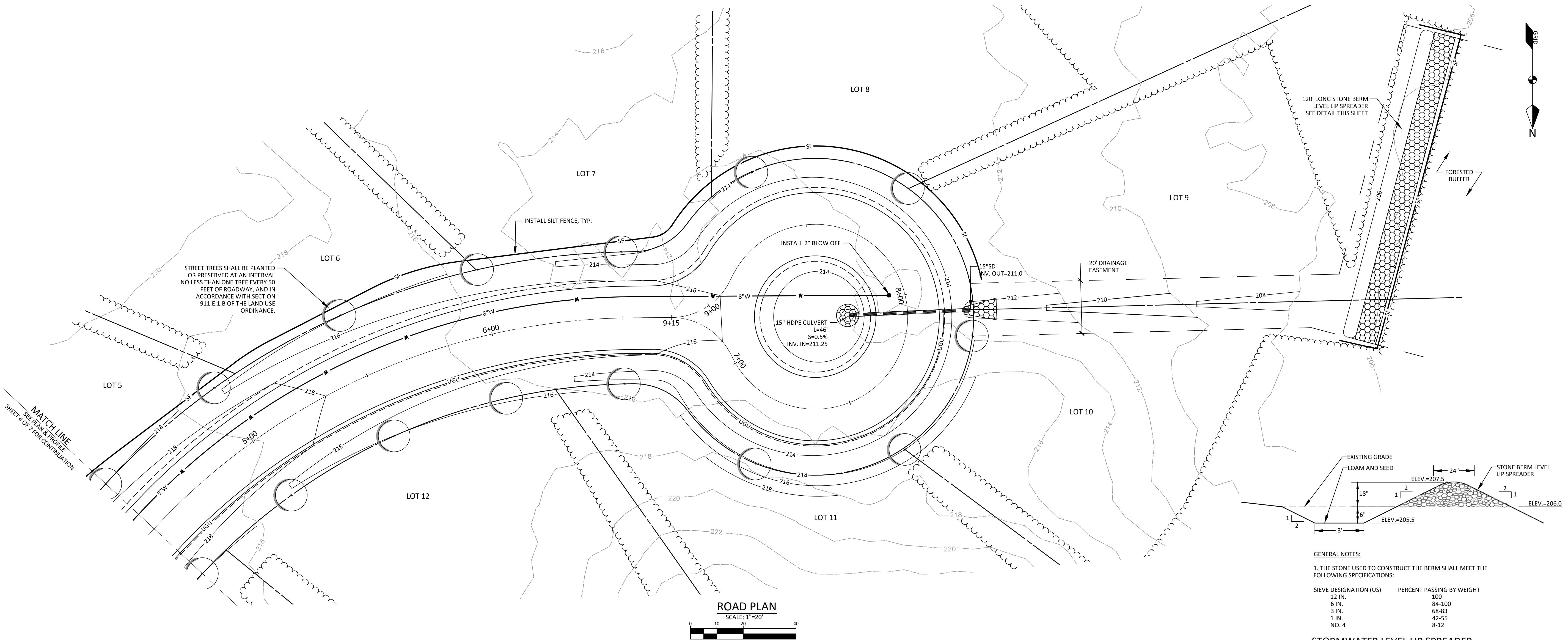
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**SABBATUS LANE SUBDIVISION**  
**WINDHAM, MAINE**

**FOR:**  
**GRONDIN CORPORATION**

89 BELANGER AVE  
WINDHAM, ME 04062

17067  
JOB NUMBER:  
  
AS NOTED  
SCALE:  
  
1-25-2018  
DATE:  
  
SHEET 4 OF 7  
  
PP-1

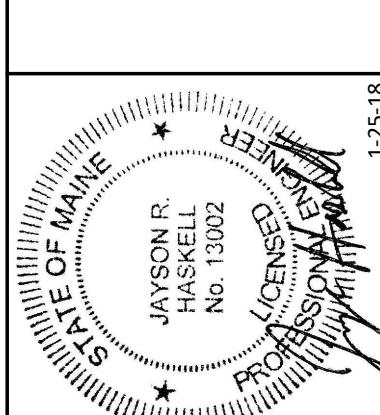


EXISTING	PROPOSED
PROPERTY LINE/R.O.W.	PROPERTY LINE/R.O.W.
ABUTTER PROPERTY LINE	ABUTTER PROPERTY LINE
SETBACK	SETBACK
EASEMENT LINE	EASEMENT LINE
CENTERLINE	CENTERLINE
EDGE OF PAVEMENT/CURB	EDGE OF PAVEMENT/CURB
EDGE OF GRAVEL	EDGE OF GRAVEL
CONTOUR LINE	CONTOUR LINE
TREELINE	TREELINE
CULVERT/STORMDRAIN	CULVERT/STORMDRAIN
WATER MAIN	WATER MAIN
WATER VALVE	WATER VALVE
HYDRANT	HYDRANT
UTILITY POLE	UTILITY POLE
OVERHEAD UTILITIES	OVERHEAD UTILITIES
UNDERGROUND UTILITIES	UNDERGROUND UTILITIES
RIPRAP	RIPRAP
SILT FENCE	SILT FENCE

**PLAN & PROFILE: PROPOSED ROAD**  
SABBATUS LANE SUBDIVISION  
WINDHAM, MAINE  
FOR: GRONDIN CORPORATION  
89 REANGER AVE  
WINDHAM, ME 04062

17067  
JOB NUMBER:  
AS NOTED  
SCALE:  
1-25-2018  
DATE:  
SHEET 5 OF 7  
PP-2

**DM ROMA**  
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(207) 310-0506



## EROSION AND SEDIMENTATION CONTROL NOTES:

IN ORDER TO EFFECTIVELY PREVENT AND CONTROL EROSION RELATED TO SOIL DISTURBANCE, THE FOLLOWING BEST MANAGEMENT PRACTICES (BMPS) SHALL BE EMPLOYED:

### 1. POLLUTION PREVENTION

MINIMIZE DISTURBED AREAS AND PROTECT NATURAL DOWNGRADIENT BUFFER AREAS TO THE EXTENT PRACTICABLE. CONTROL STORMWATER VOLUME AND VELOCITY WITHIN THE SITE TO MINIMIZE SOIL EROSION. MINIMIZE THE DISTURBANCE OF STEEP SLOPES. CONTROL STORMWATER DISCHARGES, INCLUDING BOTH PEAK FLOW RATES AND VOLUME, TO MINIMIZE EROSION AT OUTLETS. THE DISCHARGE MAY NOT RESULT IN EROSION OF ANY OPEN DRAINAGE CHANNELS, SWALES, STREAM CHANNELS OR STREAM BANKS, UPLAND, OR COASTAL OR FRESHWATER WETLANDS OFF THE PROJECT SITE.

WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY PROTECTED NATURAL RESOURCE. IF DISTURBANCE ACTIVITIES TAKE PLACE BETWEEN 30 FEET AND 50 FEET, THE DISTURBANCE ACTIVITIES SHOULD BE LOCATED AS CLOSE AS POSSIBLE TO THE PROTECTED NATURAL RESOURCE. PERIMETER EROSION CONTROLS MUST BE DOUBLED. IF DISTURBANCE ACTIVITIES TAKE PLACE LESS THAN 30 FEET FROM ANY PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED AND DISTURBED AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 7 DAYS.

### 2. TEMPORARY SOIL STABILIZATION BMPS

TEMPORARY MULCHING SHALL BE APPLIED IMMEDIATELY TO ANY AREAS THAT HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED. ANY DISTURBED SOIL WITHIN 75' OF A STREAM, WATER BODY OR WETLAND MUST RECEIVE TEMPORARY MULCH WITHIN 48 HOURS FOLLOWING DISTURBANCE AND BEFORE ANY STORM EVENT. ALL OTHER AREAS SHALL RECEIVE TEMPORARY MULCH WITHIN 7 DAYS OF DISTURBANCE. AREAS WHICH CANNOT BE SEEDED DURING THE GROWING SEASON SHALL BE MULCHED FOR OVER-WINTER PROTECTION. THE FOLLOWING ARE ACCEPTABLE TEMPORARY MULCHING METHODS:

HAY OR STRAW MULCHES NEED TO BE AIR-DRIED, FREE OF UNDESIRABLE SEEDS AND COARSE MATERIALS. APPLICATION RATE MUST BE 2 BALES (70-POUNDS) PER 1000 SQ FT OR 1.5 TO 2 TONS (90-100 BALES) PER ACRE TO COVER 75-90% OF THE GROUND SURFACE. HAY OR STRAW CAN BE DRIVEN INTO THE GROUND WITH TRACKED EQUIPMENT IF SLOPES ARE LESS THAN 3%, OR CAN BE ANCHORED WITH JUTE, WOOD FIBER OR PLASTIC NETTING ON STEEPER SLOPES.

EROSION CONTROL MIX MUST CONSIST PRIMARILY OF ORGANIC MATERIAL AND WILL INCLUDE ANY OF THE FOLLOWING: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK OR OTHER ACCEPTABLE PRODUCTS BASED ON A SIMILAR RAW SOURCE. WOOD OR BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS ARE NOT ACCEPTABLE. EROSION CONTROL MIX CAN BE USED AS A STAND-ALONE REINFORCEMENT ON SLOPES 2 HORIZONTAL TO 1 VERTICAL OR LESS AND DRAINING IN SHEET FLOW. IT CAN BE PLACED WITH A HYDRAULIC BUCKET, WITH A PNEUMATIC BLOWER OR BY HAND, AND MUST PROVIDE 100% SOIL COVERAGE.

EROSION CONTROL MIX SHALL MEET THE FOLLOWING SPECIFICATIONS:  
 -ORGANIC MATTER CONTENT SHALL BE BETWEEN 80-100% DRY WEIGHT BASIS.  
 -PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6 IN. SCREEN AND BETWEEN 70-85% PASSING 0.75 IN. SCREEN.  
 -ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED.  
 -LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX

WHEN USED AS MULCH, THE THICKNESS OF THE EROSION CONTROL MIX IS BASED UPON THE FOLLOWING:

LENGTH OF SLOPE	3:1 SLOPE OR LESS	BETWEEN 2:1 AND 3:1 SLOPE
LESS THAN 20 FT	2.0 IN.	4.0 IN.
BETWEEN 20 - 60 FT	3.0 IN.	5.0 IN.
BETWEEN 60 - 100 FT	4.0 IN.	6.0 IN.

CHEMICAL MULCHES AND SOIL BINDERS MAY BE USED AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL CONSULT WITH THE MANUFACTURER TO DETERMINE ADEQUATE APPLICATION RATES AND METHODS.

EROSION CONTROL BLANKETS AND MATS SHALL BE USED ON STEEP SLOPES AND IN THE BOTTOM OF GRADED WATERWAYS, OR AS OTHERWISE DIRECTED BY THE ENGINEER. THE MAT SHALL BE INSTALLED WITH FIRM CONTINUOUS CONTACT WITH THE SOIL AND STAPLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

TEMPORARY MULCH SHALL BE INSPECTED FOLLOWING ANY SIGNIFICANT RAINFALL EVENT. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED. EROSION CONTROL MATS AND MULCH ANCHORING MUST BE INSPECTED AFTER RAINFALL EVENTS FOR DISLOCATION OR FAILURE, AND REPAVED IMMEDIATELY. INSPECTIONS SHALL TAKE PLACE UNTIL 95% OF THE SOIL SURFACE IS COVERED WITH PERMANENT VEGETATION. WHERE MULCH IS USED AS ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE, AND REPAIR AS NEEDED.

TEMPORARY VEGETATION SHALL BE ESTABLISHED ON SOILS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF MORE THAN 30 DAYS. IF TEMPORARY VEGETATION CANNOT BE ESTABLISHED PRIOR TO OCTOBER 15, TEMPORARY MULCH SHALL BE APPLIED THROUGH THE WINTER AND TEMPORARY VEGETATION SHALL BE PLANTED AT THE BEGINNING OF THE GROWING SEASON THE FOLLOWING YEAR. TO PREPARE THE SITE, THE CONTRACTOR SHALL APPLY FERTILIZER AT A RATE OF 600 POUNDS PER ACRE OF 10-10-10 (N-P205-K20) OR EQUIVALENT AND LIMESTONE AT A RATE OF 3 TONS PER ACRE, IF NECESSARY. LOOSEN SOIL TO A DEPTH OF 2 INCHES IN AREAS THAT HAVE BEEN COMPACTED BY CONSTRUCTION ACTIVITIES. GRASS SEED SHALL BE SELECTED BASED UPON THE TIME OF YEAR THE PLANTING WILL TAKE PLACE AS SUMMARIZED IN THE FOLLOWING TABLE:

SEED	LB. PER ACRE	RECOMMENDED SEEDING DATES
WINTER RYE	112	8/15 - 10/1
OATS	80	4/1 - 7/1; 8/15 - 9/15
ANNUAL RYEGRASS	40	4/1 - 7/1

TEMPORARY SEEDING SHALL BE PERIODICALLY INSPECTED TO MAINTAIN AT LEAST 95% VEGETATIVE COVER OF SOIL SURFACE. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES SHALL BE USED IN THE INTERIM SUCH AS TEMPORARY MULCH, FILTER BARRIERS, ETC.

### 3. SEDIMENT BARRIER BMPS

PRIOR TO CONSTRUCTION TEMPORARY SEDIMENT BARRIERS SHALL BE INSTALLED AT THE DOWNGRADIENT EDGE OF ANY AREA TO BE DISTURBED AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA. SEDIMENT BARRIERS INCLUDE ANY OF THE FOLLOWING:

FILTER BARRIER FENCE, ALSO CALLED SILT FENCE, SHALL BE INSTALLED WHERE SHOWN ON THE PLANS AND IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS. THE FILTER FABRIC SHALL BE A PERVIOUS SHEET OF POLYPROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN AND SHALL PROVIDE A MINIMUM OF 6 MONTHS USABLE CONSTRUCTION LIFE INCLUDING PROTECTION AGAINST ULTRA-VIOLET LIGHT. THE FILTER FABRIC SHALL BE SECURED TO THE EXISTING GROUND CONDITIONS. THE FILTER FABRIC SHALL NOT OVERLAP. THE FILTER FABRIC SHALL BE AVOIDED TO THE EXTENT POSSIBLE, AND IF NECESSARY SHALL BE SPLICED TOGETHER AT A SUPPORT POST WITH A MINIMUM 6 INCH OVERLAP. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES WIDE AND 4 INCHES DEEP, AND THE BOTTOM 6-8 INCHES OF FABRIC SHALL BE "TOED-IN" TO THE TRENCH AND COMPACTED. THE TRENCH SHOULD BE UPHILL OF THE FABRIC PRIOR TO BURIAL.

STRAW/HAY BALES SHALL BE INSTALLED WHERE SPECIFIED ON THE PLANS IN A SINGLE ROW WITH THE ENDS OF ADJACENT BALES TIGHTLY ADHERING ONE ANOTHER. ALL BALES SHALL BE EITHER WIRE-BOUND OR STRING-TEED. THE BARRIERS SHALL BE ENTRENCHED AND BACKFILLED TO A DEPTH OF AT LEAST 4 INCHES, AND THE BALES SHALL BE SECURED WITH AT LEAST TWO WOODEN STAKES OR STEEL REBAR PER BALE. STAKES SHALL BE DRIVEN IN A DIRECTION TO PUSH THE BALES TOGETHER. GAPS BETWEEN BALES SHALL BE CHINKED WITH HAY.

EROSION CONTROL MIX BERM IS LINEAR BARRIERS COMPOSED OF EROSION CONTROL MIX AS SPECIFIED ABOVE. THE BERM MUST BE MINIMUM OF 12 INCHES TALL AND 24 INCHES WIDE AND 10% STEEP SLOPES ARE LESS THAN 5%. STEEPER SLOPES OR SLOPES GREATER THAN 20% MAY REQUIRE A CANGER WIDTH BERM. EROSION CONTROL MIX BERM AT THE BASE OF A LONG OR STEEP SLOPE MAY ALSO REQUIRE A FILTER FENCE TO BE INSTALLED ON THE DOWNSHILL SIDE OF THE BERM TO PROVIDE ADDITIONAL STABILIZATION AGAINST HIGH RUNOFF FLOWS.

CONTINUOUS CONTAINED BERM, WHICH ARE ALSO REFERRED TO AS A FILTER SOCK, PROVIDES ADDITIONAL STABILITY TO AN EROSION CONTROL MIX BERM AND SHOULD BE USED IN FROZEN GROUND CONDITIONS OR IN AREAS THAT RECEIVE CONCENTRATED FLOW.

SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADIENT OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER PREVENTED RUNNING ONTO THE STOCKPILE. SEDIMENT BARRIERS SHALL BE INSPECTED AFTER ANY SIGNIFICANT RAINFALL EVENT AND REPAVED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE BARRIERS. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR EDGES OF THE BERM, OR IF LARGE VOLUMES OF WATER ARE PUMPED THROUGH THE BERM, IT MAY BE NECESSARY TO REPLACE THE BARRIER WITH A TEMPORARY STONE CHECK DAM. SEDIMENT SHALL BE REMOVED ONCE IT REACHES HALF THE BARRIER HEIGHT. AFTER THE BARRIER IS REMOVED, ANY REMAINING SILT SHALL EITHER BE REMOVED OR GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.

### 4. TEMPORARY CHECK DAMS

STONE CHECK DAMS SHALL BE INSTALLED IN SWALES OR DRAINAGE DITCHES TO REDUCE STORMWATER VELOCITIES AS SHOWN ON THE PLANS. STONE CHECK DAMS ARE NOT EFFECTIVE IN REMOVING SEDIMENT AND SHOULD BE USED IN CONJUNCTION WITH SEDIMENT BARRIERS IDENTIFIED ABOVE. TEMPORARY CHECK DAMS MAY BE LEFT IN PLACE PERMANENTLY IN MOST CASES. CHECK DAMS SHOULD BE NO HIGHER THAN 24 INCHES, AND THE CENTER OF THE CHECK DAM MUST BE AT LEAST 6 INCHES LOWER THAN THE OUTSIDE EDGES. CHECK DAMS SHOULD BE SPACED SUCH THAT THE CREST OF THE DOWNSHILL CHECK DAM IS AT THE SAME ELEVATION AS THE TOE OF THE UPSTREAM CHECK DAM. CHECK DAMS IN A DRAINAGE DITCH OR WATERWAY SHOULD BE INSTALLED PRIOR TO DIRECTING RUNOFF TO THEM.

### 5. STORM DRAIN INLET PROTECTION

STORM DRAIN INLETS THAT ARE MADE OPERATIONAL BEFORE THEIR DRAINAGE AREA IS STABILIZED SHALL BE PROTECTED WITH A FILTER UNTIL THE DRAINAGE AREA IS EITHER PAVED OR STABILIZED WITH 95% VEGETATIVE GROWTH. THE FOLLOWING ARE ACCEPTABLE BMPS ASSOCIATED WITH STORM DRAIN INLET PROTECTION:

HAY BALE OR SILT FENCE INLET STRUCTURE CONSISTS OF HAY BALES OR SILT FENCE CONFIGURED AROUND A CATCH BASIN INLET FRAME AND INSTALLED ACCORDING TO THE METHODS OUTLINED ABOVE. THIS METHOD IS SUITABLE FOR OPEN PIPE (CULVERT) INLETS, FIELD INLETS OR ROAD INLETS THAT HAVE NOT YET BEEN PAVED.

MANUFACTURED SEDIMENT FILTERS ARE THE PREFERRED METHOD FOR PROTECTING CATCH BASIN INLETS IN PAVED OR GRAVEL ROADWAYS. THE FILTERS TYPICALLY CONSIST OF A FABRIC OR OTHER PERVIOUS MATERIAL THAT IS PLACED ABOVE OR BELOW THE GRATE THAT TRAPS SEDIMENT ON THE SURFACE AND ALLOWS WATER TO FLOW THROUGH THE GRATE. CONSIDERATIONS SUCH AS WEATHER CONDITIONS, SLOPES, TRIBUTARY WATERSHED AREA AND EXPECTED SEDIMENT ACCUMULATION SHOULD BE FACTORED INTO MAKING A DECISION ON ANY PARTICULAR PRODUCT, AND THE MANUFACTURER'S RECOMMENDATIONS ON INSTALLATION AND MAINTENANCE SHALL BE STRICTLY ADHERED TO.

### 6. STABILIZED CONSTRUCTION ENTRANCE/EXIT

TO REDUCE THE TRACING OF SEDIMENT ONTO ROADWAYS, A STABILIZED CONSTRUCTION EXIT SHALL BE INSTALLED AT ALL POINTS OF EGRESS WHERE VEHICLES MAY TRAVEL FROM THE PROJECT SITE TO A PUBLIC ROAD OR OTHER PAVED AREA. THE STONE PAD SHALL CONSIST OF A MINIMUM 6-INCH DEPTH OF 2-3 INCH CRUSHED STONE, AND SHALL BE PLACED ON A GEOTEXTILE FABRIC. THE PAD SHALL EXTEND AT LEAST 50 FEET INTO THE PROJECT SITE AND BE A MINIMUM OF 10 FEET WIDE. THE EXIT SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, AND THE CONTRACTOR SHALL SWEEP OR WASH PAVEMENT AT EXITS THAT HAVE EXPERIENCED ANY MUD-TRACKING. MAINTAIN THE PAD UNTIL ALL DISTURBED AREAS ARE STABILIZED.

### 7. DUST CONTROL

THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST ON THE PROJECT SITE AND ON ADJACENT ROADWAYS. EXPOSED SOIL SURFACES SHALL BE MOISTENED PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST. GRAVEL SURFACES SHALL EITHER BE TREATED WITH AN APPLICATION OF CALCIUM CHLORIDE OR COVERED WITH CRUSHED STONE IF DUST CONTROL BECOMES DIFFICULT WITH NORMAL WATER APPLICATIONS.

### 8. LAND GRADING AND SLOPE PREPARATION

GRADING SHALL BE PLANNED SO AS TO MINIMIZE THE LENGTH OF TIME BETWEEN INITIAL SOIL EXPOSURE AND FINAL GRADING. ON LARGE PROJECTS THIS SHOULD BE ACCOMPLISHED BY PHASING THE OPERATION AND COMPLETING THE FIRST PHASE UP TO FINAL GRADING AND SEEDING BEFORE STARTING THE NEXT PHASE. ANY EXPOSED AREA THAT WILL NOT BE FINISH GRADED WITHIN 14 DAYS SHALL BE TREATED WITH MULCH OR PLANTED WITH TEMPORARY VEGETATION. PROVISIONS SHALL BE MADE TO SAFELY CONVEY SURFACE RUNOFF TO STORM DRAINS, PROTECTED OUTLETS OR TO STABLE WATER CURSES TO ENSURE THAT SURFACE RUNOFF DOES NOT DAMAGE SLEEVES OR OTHER GRADED AREAS. CUT AND FILL SLOPES THAT ARE TO BE GRADED SHOULD BE EARTHWORKED AND PREPARED TO THE GRADE AND SLOPES AS PLANNED. EXPOSED VEGETATION, ROOTS OR OTHER OBSTRUCTION MATERIALS AREAS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 INCHES PRIOR TO PLACEMENT OF TOPSOIL. ALL AREAS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES. ALL FILLS SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 8 INCHES IN THICKNESS. FILL MATERIAL SHALL BE FREE OF STUMPS, BUILDING DEBRIS AND OTHER OBSTRUCTION MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY LIFTS. FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILL LIFTS OR STRUCTURAL FILLS. FILL SHALL NOT BE PLACED ON A FROZEN FOUNDATION. SEEP OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED APPROPRIATELY. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.

### 9. TOPSOIL

IF POSSIBLE, TOPSOIL SHALL BE SCAVENGED ON THE PROJECT SITE AND REUSED. HIGH QUALITY TOPSOIL SHALL BE FRIABLE AND LOAMY (LOAM, SANDY LOAM, SILT LOAM, SANDY CLAY LOAM, CLAY LOAM), AND SHALL BE FREE OF DEBRIS, TRASH, STUMPS, ROCKS, ROOTS AND NOXIOUS WEEDS. AFTER THE AREAS TO BE TOPSOLED HAVE BEEN BROUGHT TO GRADE, AND IMMEDIATELY PRIOR TO SPREADING THE TOPSOIL, THE SUBGRADE SHALL BE LOOSENED BY SCARIFYING TO A DEPTH OF AT LEAST 2 INCHES TO ENSURE BONDING WITH SUBSOIL. THE TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED TO A MINIMUM COMPACTED DEPTH OF 4 INCHES. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS. IT IS NECESSARY TO COMPACT THE TOPSOIL ENOUGH TO ENSURE GOOD CONTACT WITH THE UNDERLYING SOIL, BUT UNDUE COMPACTATION IS TO BE AVOIDED.

### 10. PERMANENT SOIL STABILIZATION

IF THE AREA WILL NOT BE WORKED FOR MORE THAN ONE YEAR OR HAS BEEN BROUGHT TO FINAL GRADE, THEN PERMANENTLY STABILIZE THE AREA WITHIN 7 DAYS BY PLANTING VEGETATION, SEEDING, SOD, OR THROUGH THE USE OF PERMANENT MULCH, OR RIPRAP, OR ROAD SUB-BASE. IF USING VEGETATION FOR STABILIZATION, SELECT THE PROPER VARIETIES, SEEDING, SOD, OR PLANTING METHODS. PLANTING IS NOT RECOMMENDED IN AREAS WITH HIGH RAINFALL OR IN AREAS WITH MULCH OR, IF NECESSARY, EROSION CONTROL BLANKETS, AND SCHEDULE SODDED PLANTING, AND SEEDING SO AS TO AVOID DROFF-FROM-SUMMER DROUGHT AND FALL DROSTS. NEWLY SEDED OR SODDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC, EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL-ESTABLISHED WITH 90% COVERAGE BY HEALTHY VEGETATION. IF NECESSARY, AREAS MUST BE REWORKED AND RESTABILIZED IF GERMINATION IS SPOTTY, OR TOPSOIL EROSION IS EVIDENT, OR ONE OR MORE OF THE FOLLOWING MAY APPLY TO A PARTICULAR SITE:

SEEDED AREAS: TO PREPARE THE SEEDBED, APPLY 10-20-20 FERTILIZER AT A RATE OF 800 POUNDS PER ACRE AND GROUND LIMESTONE AT A RATE OF 3 TONS PER ACRE. WORK THE FERTILIZER AND LIMESTONE INTO THE TOPSOIL TO A DEPTH OF 4 INCHES AND REMOVE ANY STONES, ROOTS OR OTHER VISIBLE DEBRIS. SELECT A SEED MIXTURE THAT IS APPROPRIATE FOR THE SOIL TYPE AND MOISTURE CONTENT AS FOUND AT THE SITE, AND FOR THE AMOUNT OF SUN EXPOSURE AND FOR LEVEL OF USE. REFER TO THE USDA SOIL CONSERVATION SERVICE OR THE LOCAL SOIL AND WATER CONSERVATION DISTRICT FOR APPROPRIATE SEED MIXTURES. APPLY SEED UNIFORMLY IN ACCORDANCE WITH SUPPLIER RECOMMENDATIONS AND IMMEDIATELY COVER WITH MULCH AS DESCRIBED IN THE TEMPORARY MULCHING SECTION OF THIS PLAN.

HYDROSEEDING SHALL BE DONE IN ACCORDANCE WITH SUPPLIER'S RECOMMENDATIONS. FOR SEDED AREAS TO BE PERMANENTLY STABILIZED, 90% OF THE DISTURBED SOIL SHALL BE COVERED WITH MATURE HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.

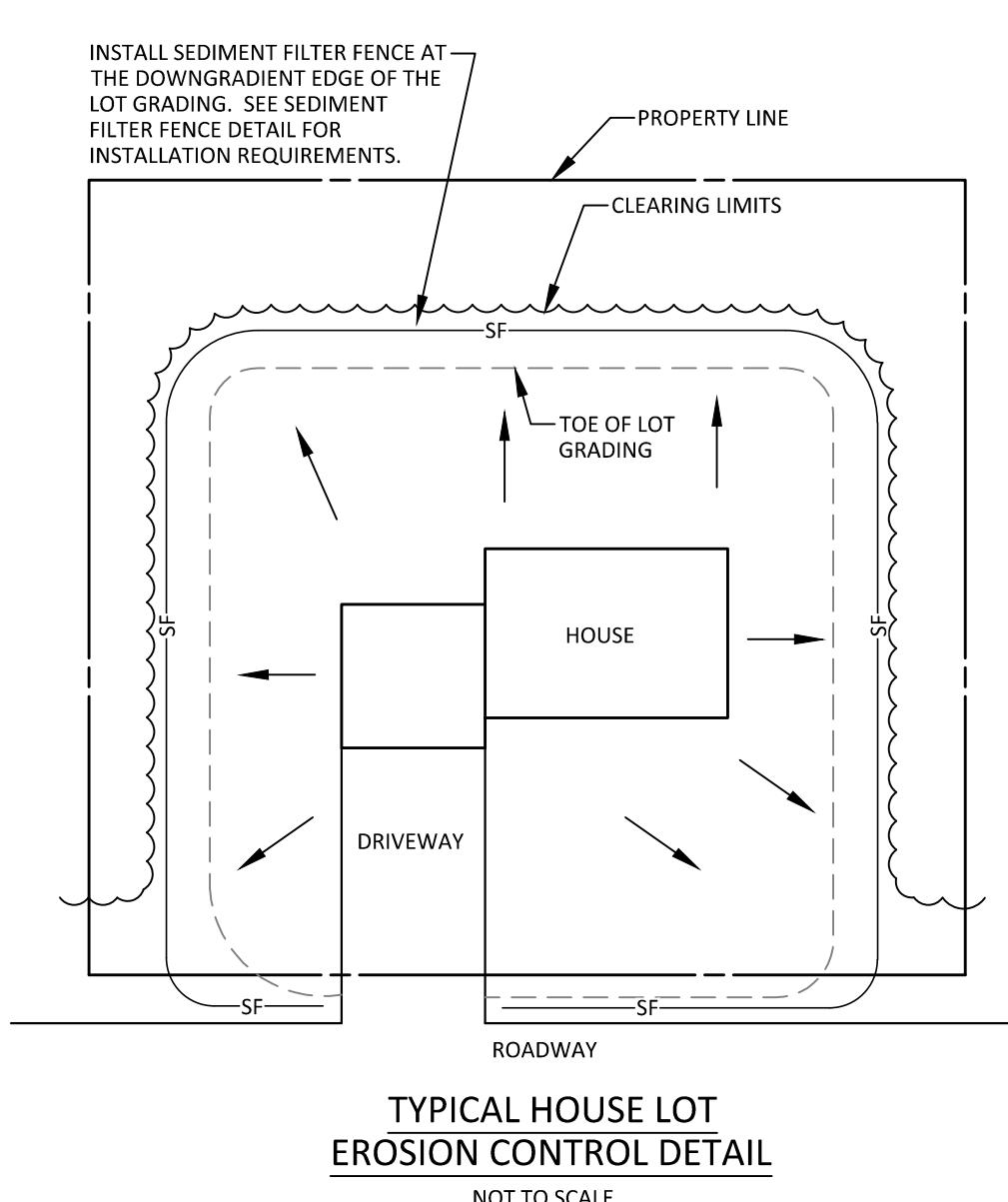
SOD STRIPS SHALL BE LAID AT RIGHT ANGLES TO DIRECTION OF SLOPE OR FLOW OF WATER STARTING AT LOWEST ELEVATION. JOINTS SHALL BE STAGGERED, AND ALL STRIPS SHALL BE ROLLED OR TAMPED INTO PLACE. ON SLOPES, SOD SHALL BE ANCHORED WITH STAPLES, WIRE OR PINS. IRRIGATE SODDED AREA IMMEDIATELY AFTER INSTALLATION. FOR SODDED AREAS TO BE PERMANENTLY STABILIZED, THE ROOTS OF THE SOD MUST BE COMPLETELY BOUND TO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF.

PERMANENT MULCH IS A LONG TERM COVER THAT PROVIDES A GOOD BUFFER AROUND DISTURBED AREAS. THE EROSION CONTROL MIX SHALL CONSIST PRIMARILY OF ORGANIC MATERIAL AND MAY INCLUDE SHREDDED BARK, STUMP GRINDINGS OR COMPOSTED BARK. WOOD CHIPS, GROUND CONSTRUCTION DEBRIS, REPROCESSED WOOD PRODUCTS OR BARK CHIPS ARE NOT ACCEPTABLE. EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4 INCHES IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS AND MATERIAL TOXIC TO PLANT GROWTH.

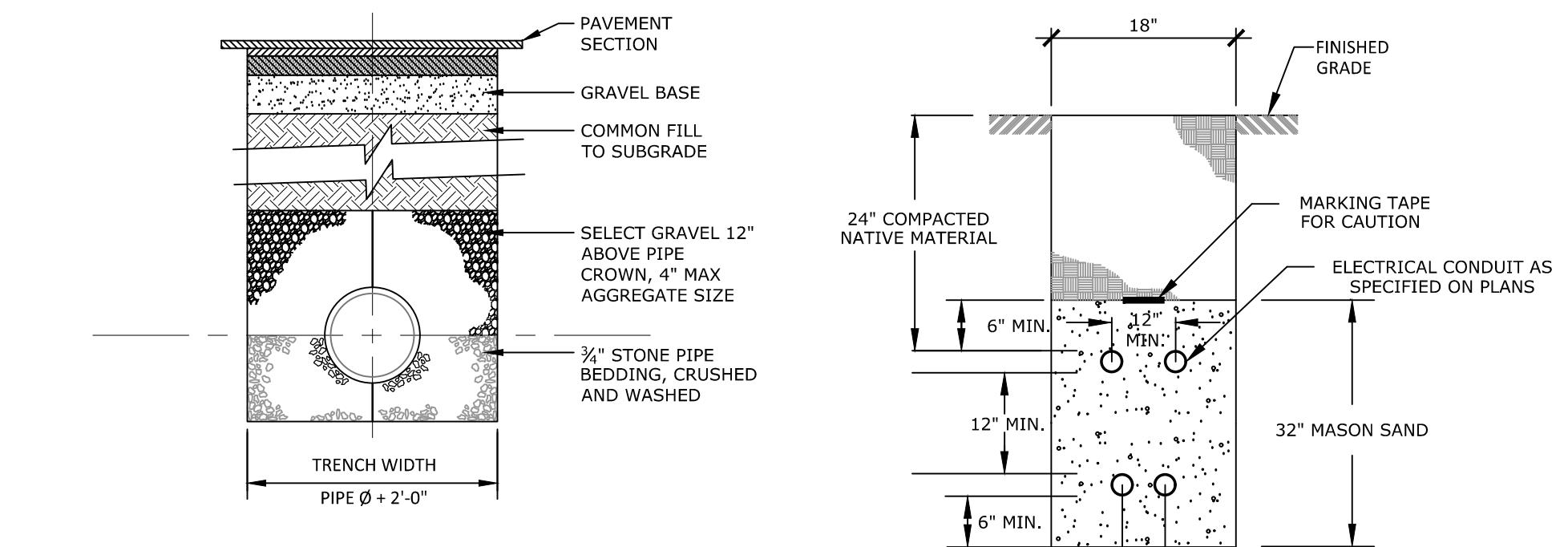
RIRAP STONE SHALL CONSIST OF SUB-ANGULAR FIELD STONE OR ROUGH UNLEVEL QUARRY STONE OF APPROXIMATELY RECTANGULAR SHAPE. THE DEPTH OF STONE SHALL BE A MINIMUM OF 2.2 TIMES THE MAXIMUM STONE DIAMETER. A GRAVEL OR GEOTEXTILE FILTER BLANKET SHALL BE PLACED BETWEEN THE RIRAP AND UNDERLYING SOIL SURFACE. GRAVEL FILTER BLANKETS SHALL MEET MDOT TYPE-C UNDERDRAIN MATERIAL SPECIFICATIONS AND BE AT LEAST 6 INCHES THICK. GEOTEXTILE FILTER BLANKETS SHALL BE SPECIFIED BASED ON SITE CONDITIONS. RIRAP SLOPES SHALL BE TOED INTO THE BASE OF THE EMBANKMENT BY EXCAVATING A TRENCH AT THE BOTTOM OF THE SLOPE AND INSTALLING A STABILIZED BASE OF RIRAP TO GRADE.

DITCHES, CHANNELS AND SWALES ARE CONSIDERED PERMANENTLY STABILIZED WHEN THE CHANNEL HAS 90% COVER OF HEALTHY VEGETATION WITH A WELL GRADED RIRAP LINING, EROSION CONTROL BLANKET, OR WITH ANOTHER NON-ERODIVE LINING SUCH AS CONCRETE OR ASPHALT PAVEMENT. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE CHANNEL LINING, UNDERCUTTING OF THE BANKS, OR DOWNCUTTING OF THE CHANNEL.

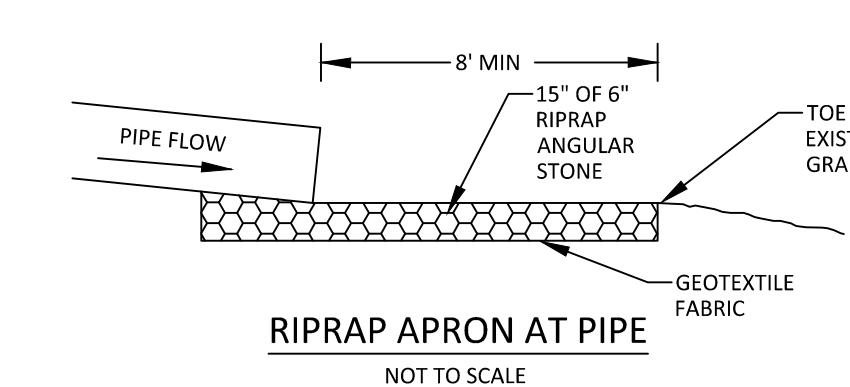
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**TYPICAL HOUSE LOT  
EROSION CONTROL DETAIL**



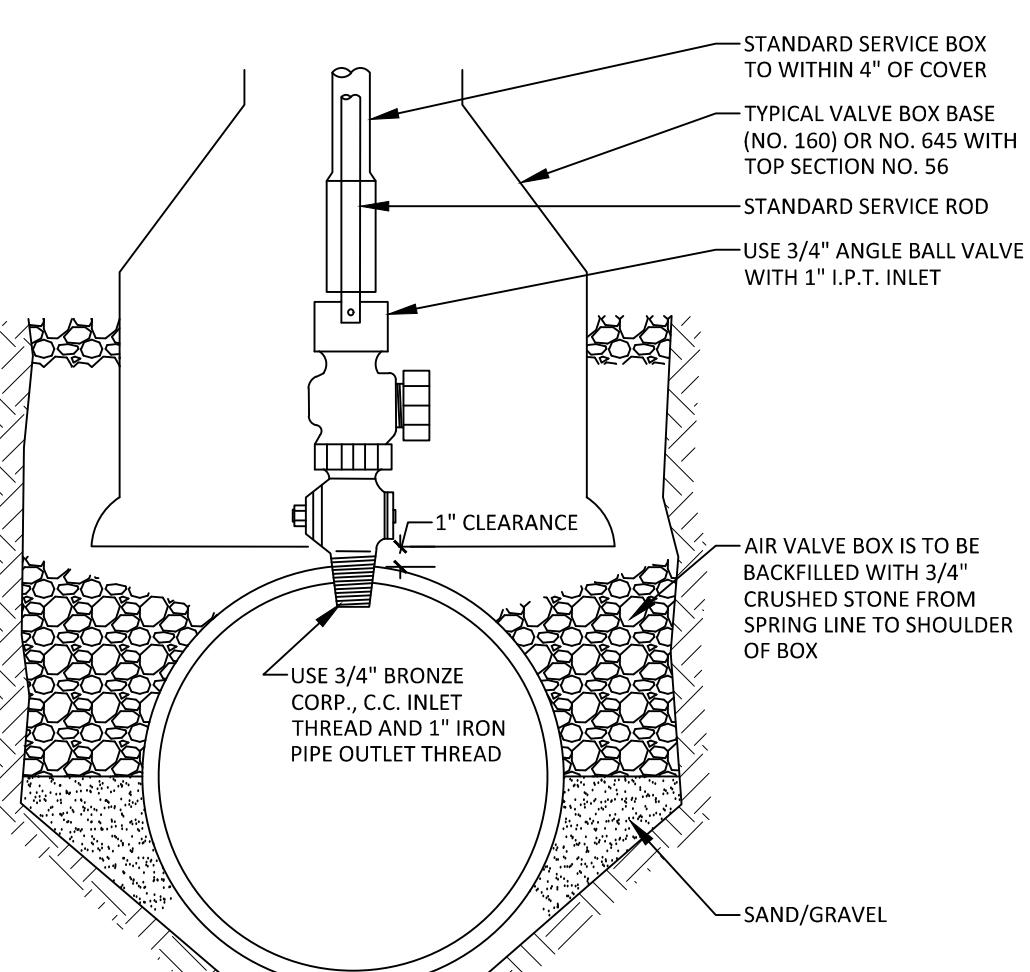
**TYPICAL TRENCH SECTION**



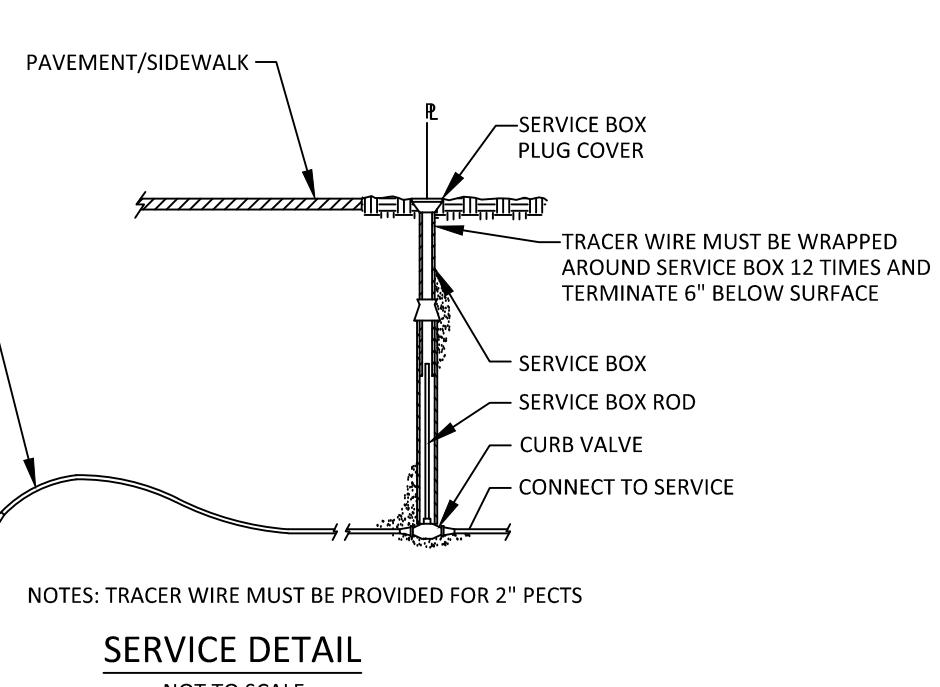
**RIPRAP APRON AT PIPE**

**TRENCH DETAIL - ELECTRICAL CONDUIT**

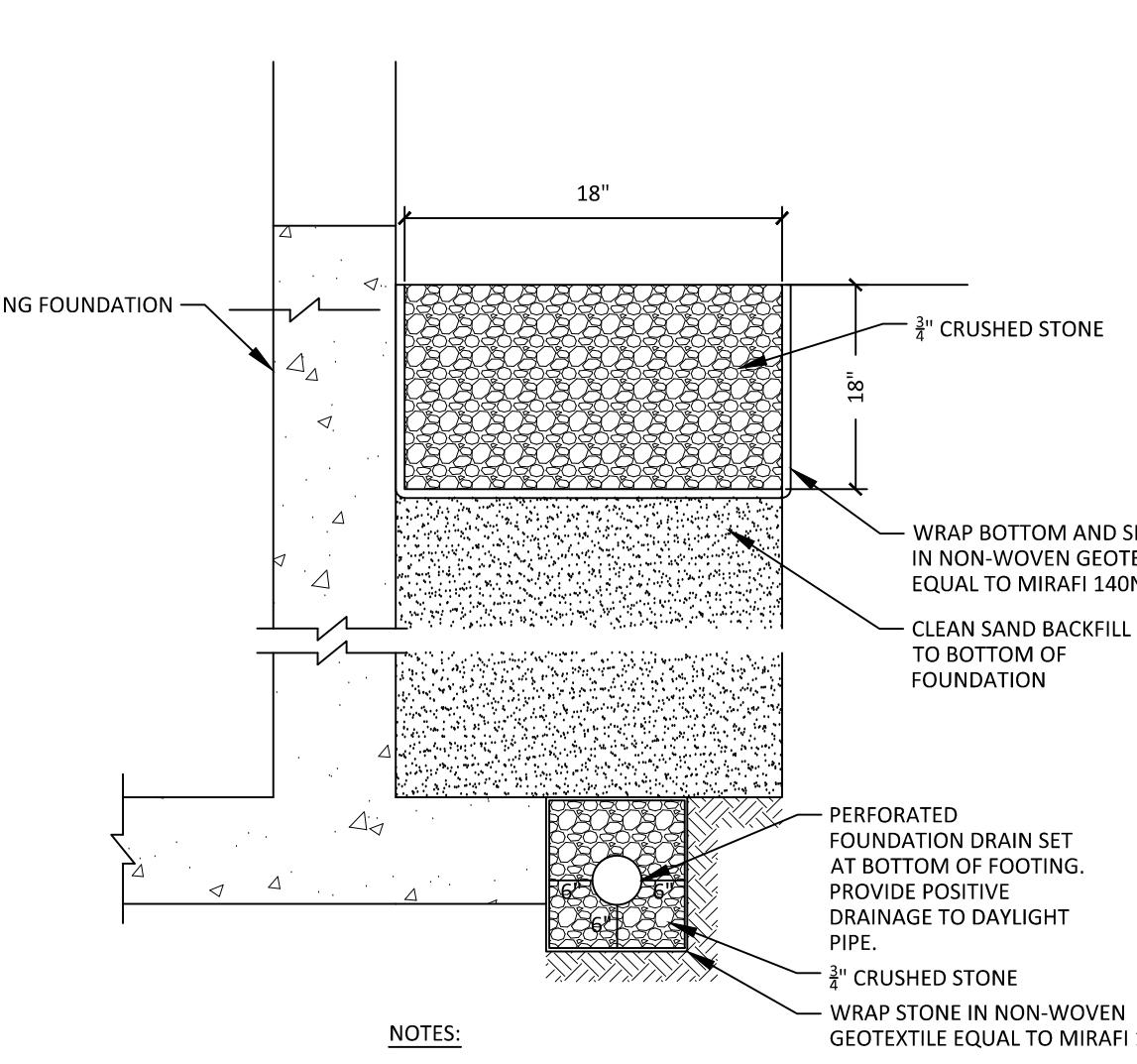
NOTES:  
1. ALL CONDUITS SHALL BE 4" DIA. PVC SCH 40 EXCEPT FOR ROAD CROSSINGS SHALL BE PVC SCH 80  
2. INSTALLATION SHOULD NOT ALLOW THE INTER-TWINING OF CABLES.  
3. BEDDING AND BACKFILL SHALL BE FREE OF ROOTS, STUMPS AND OTHER DEBRIS.  
4. COMMUNICATION CABLE AND POWER CABLE SHALL HAVE NO LESS THAN 12 INCHES OF RADIAL SEPARATION.



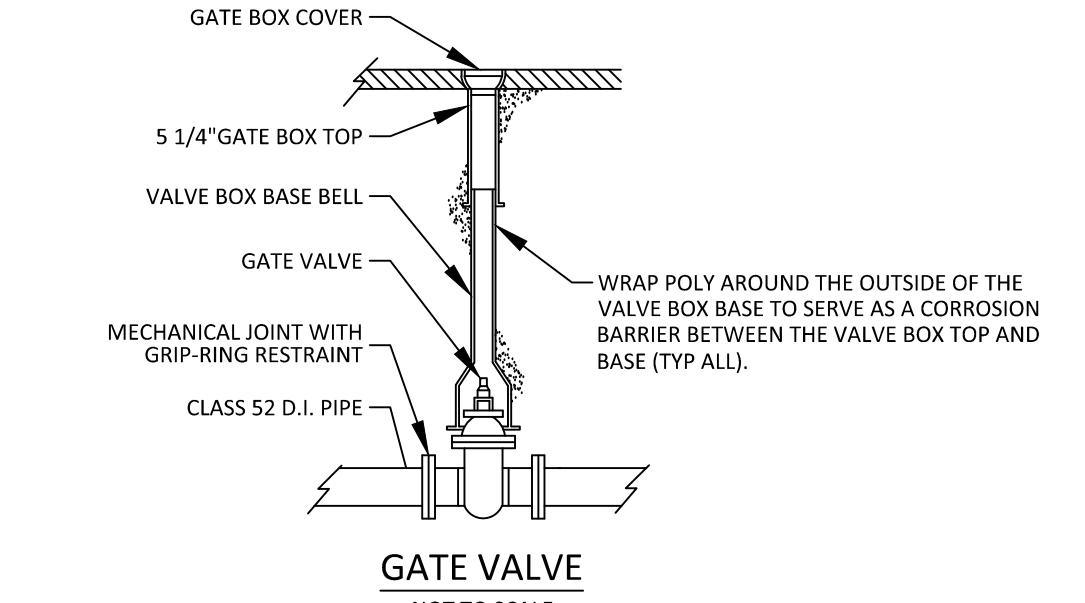
**TYPICAL AIR VALVE (1")**



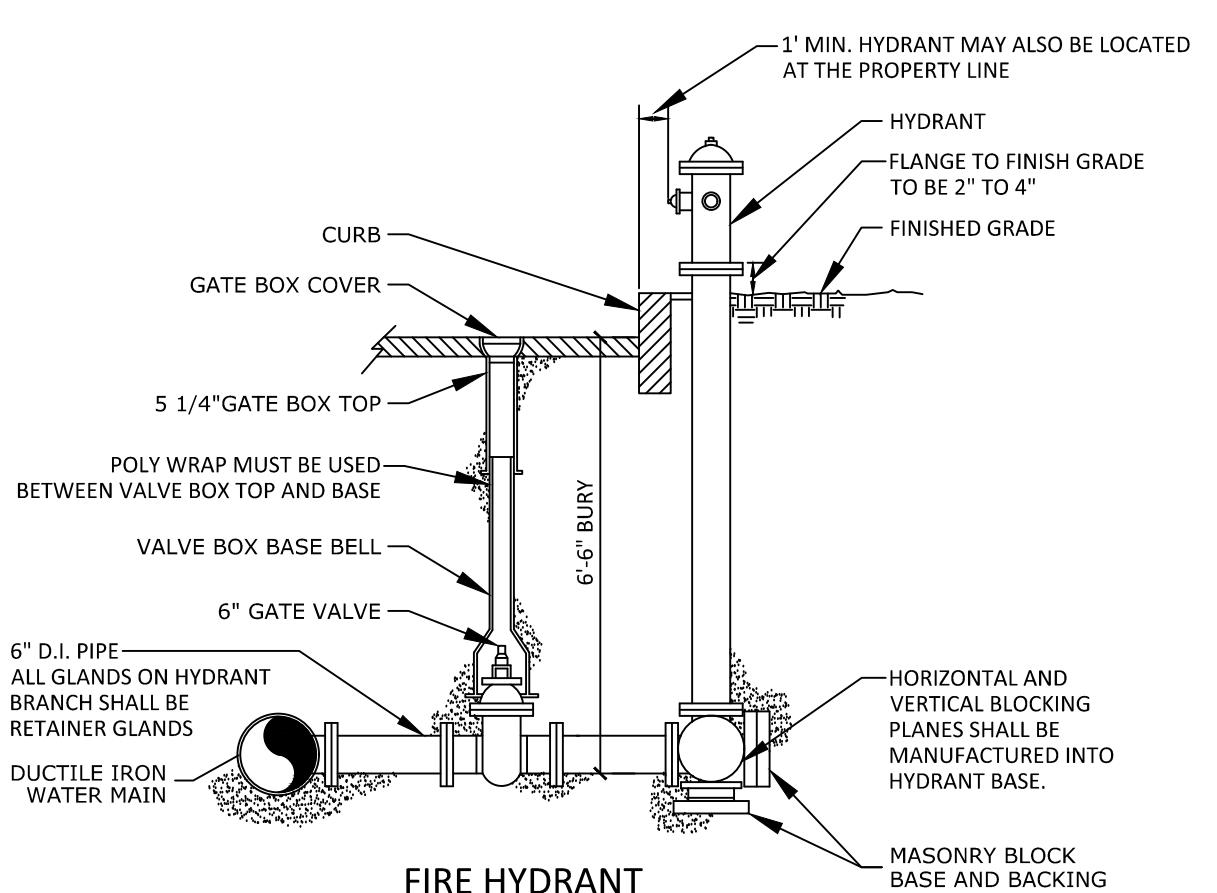
**SERVICE DETAIL**



**WATERMAIN TYPICAL TRENCH CROSS-SECTION**



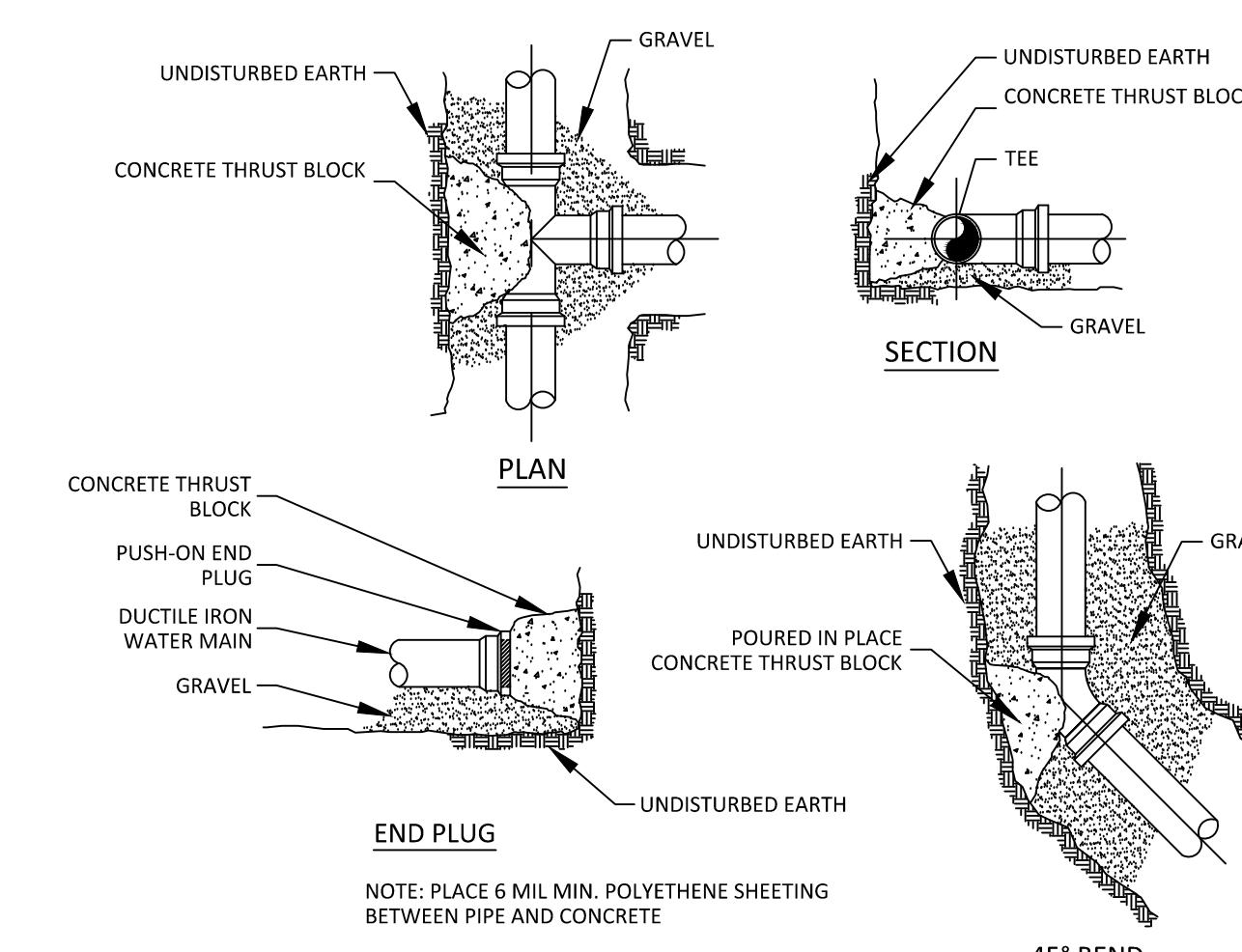
**GATE VALVE**



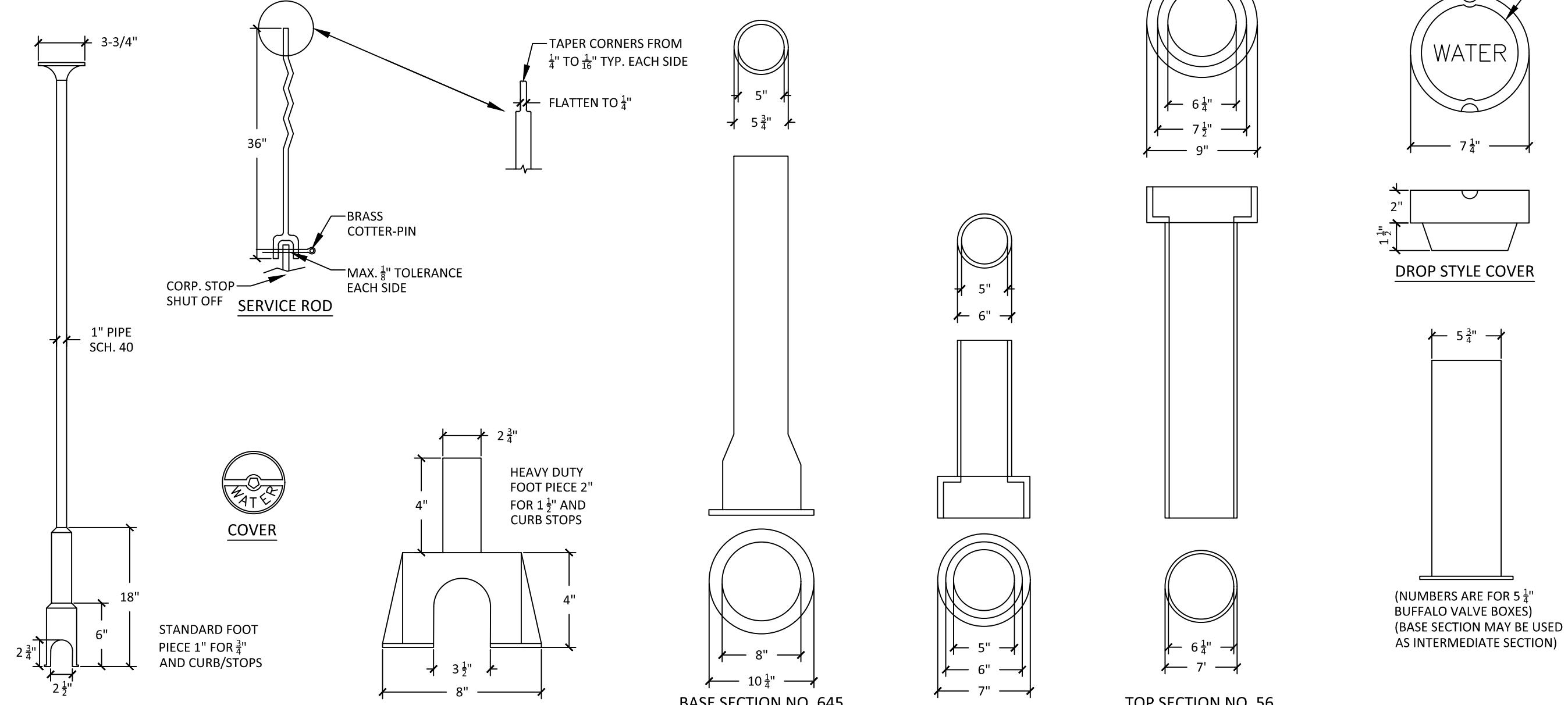
**FIRE HYDRANT**

CONCRETE THRUST BLOCK SIZE REQUIREMENTS	
FITTINGS	SQ. FT. OF BEARING ON UNDISTURBED SOIL
	90° BENDS 45° BENDS TEES AND PLUGS
6"	4.0
8"	8.0
12"	15
16"	26
20"	40
	2.0 6.0 9 14 19 22 28

BASED ON SOIL BEARING PRESSURE OF 2000PSF AND 100PSI LINE PRESSURE. COMPACT COURSE TO FINE SANDS AND CLAYS REQUIRE ENGINEERED BLOCKS. ENGINEERED BLOCKS WILL TYPICALLY REQUIRE REINFORCING STEEL OF #5 AT 12".



**THRUST BLOCK DETAIL**

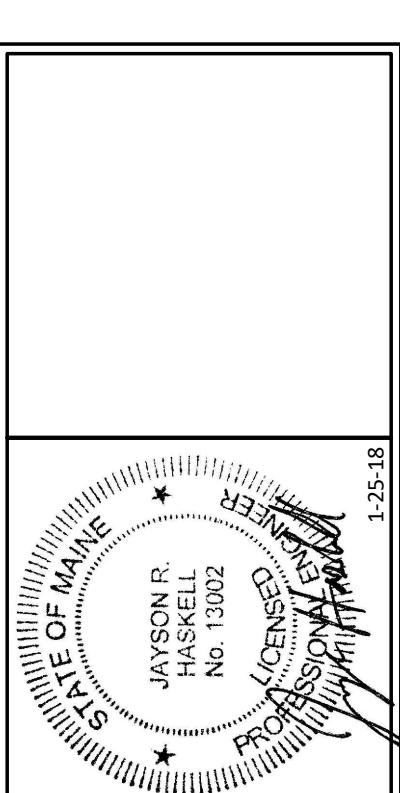


**VALVE BOX & COVER**

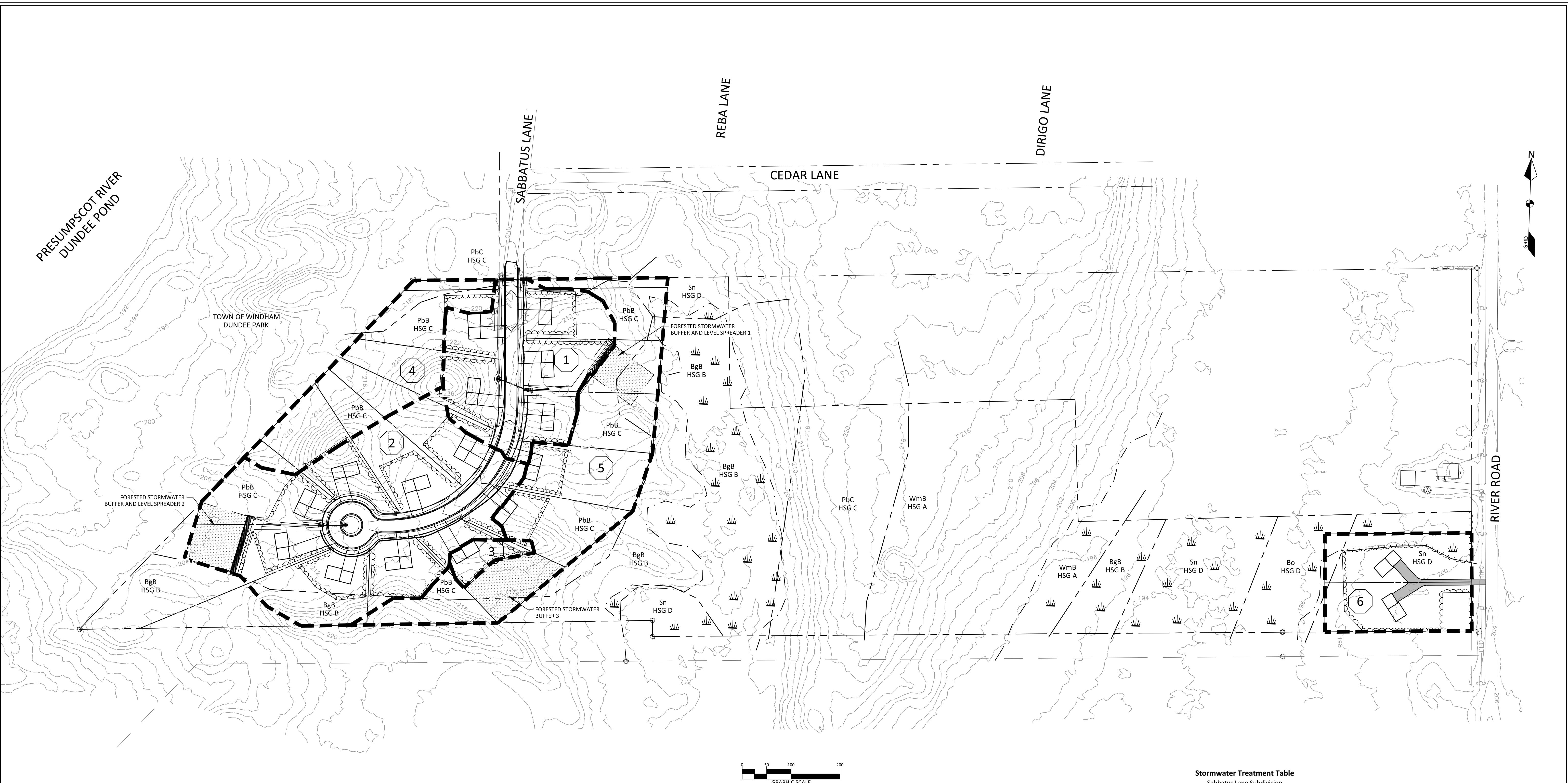
**DETAILS**  
SABBATUS LANE SUBDIVISION  
WINDHAM, MAINE  
FOR: GRONDIN CORPORATION  
89 BEAUGRANGE AVE  
WINDHAM, ME 04062

17067  
JOB NUMBER:  
AS NOTED  
SCALE:  
1-25-2018  
DATE:  
SHEET 7 OF 7  
D-2

REV	DATE	BY	DESCRIPTION
A	1-25-18	DMR	ISSUED FOR PRELIMINARY SUBDIVISION REVIEW



**DM ROMA**  
CONSULTING ENGINEERS  
59 HARVEST HILL RD  
WINDHAM, ME 04062  
(207) 310-0506



0 50 100 200  
GRAPHIC SCALE

Stormwater Treatment Table  
Sabbath Lane Subdivision

	Total Watershed Area (SF)	New Driveway and Road Impervious Area (SF)	New Building Area (SF)*	New Landscaped Area (SF)	Existing Undeveloped Area (SF)	Treatment Provided	New Impervious Area Treated in Treatment Device (SF)	New Landscaped Area Treated in Treatment Device (SF)	Treatment Device
WS-1	93,660	17,025	7,100	57,025	12,510	Yes	17,025	57,025	Buffer 1
WS-2	197,470	27,025	9,940	82,745	77,760	Yes	27,025	82,745	Buffer 2
WS-3	8,615	0	1,420	5,900	1,295	Yes	0	5,900	Buffer 3
WS-4	75,785	0	0	4,390	71,395	No	0	0	None
WS-5	132,800	0	2,840	11,780	118,180	No	0	0	None
WS-6	60,000	3,470	2,840	31,650	22,040	No	0	0	None
Total	47,520	24,140	193,800				44,050	145,670	

\* All new buildings shall install a roofline drip edge to provide treatment for the rooftop impervious surface. The building's impervious area is included in the watershed and overall treatment calculations below, but not included in the BMP sizing calculations for each treatment device.

New Impervious Area =  
Impervious Area Requiring Treatment (95%) =  
Impervious Area Treatment Provided =

71,660 sf  
68,077 sf  
68,190 sf  
95% New Impervious Area Treated

New Developed Area =  
Developed Area Requiring Treatment (80%) =  
Developed Area Treatment Provided =

265,150 sf  
212,120 sf  
213,860 sf  
81% New Developed Area Treated

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REV	DATE	BY	DESCRIPTION
A	1-25-18	DMR	ISSUED FOR PRELIMINARY SUBDIVISION REVIEW

**STORMWATER TREATMENT PLAN**  
SABBATUS LANE SUBDIVISION  
WINDHAM, MAINE  
FOR:  
GRONDIN CORPORATION  
89 BEAUGER AVENUE  
WINDHAM, ME 04062

17067  
JOB NUMBER:  
1" = 100'  
SCALE:  
1-25-2018  
DATE:  
SHEET 1 OF 1  
STP-1

