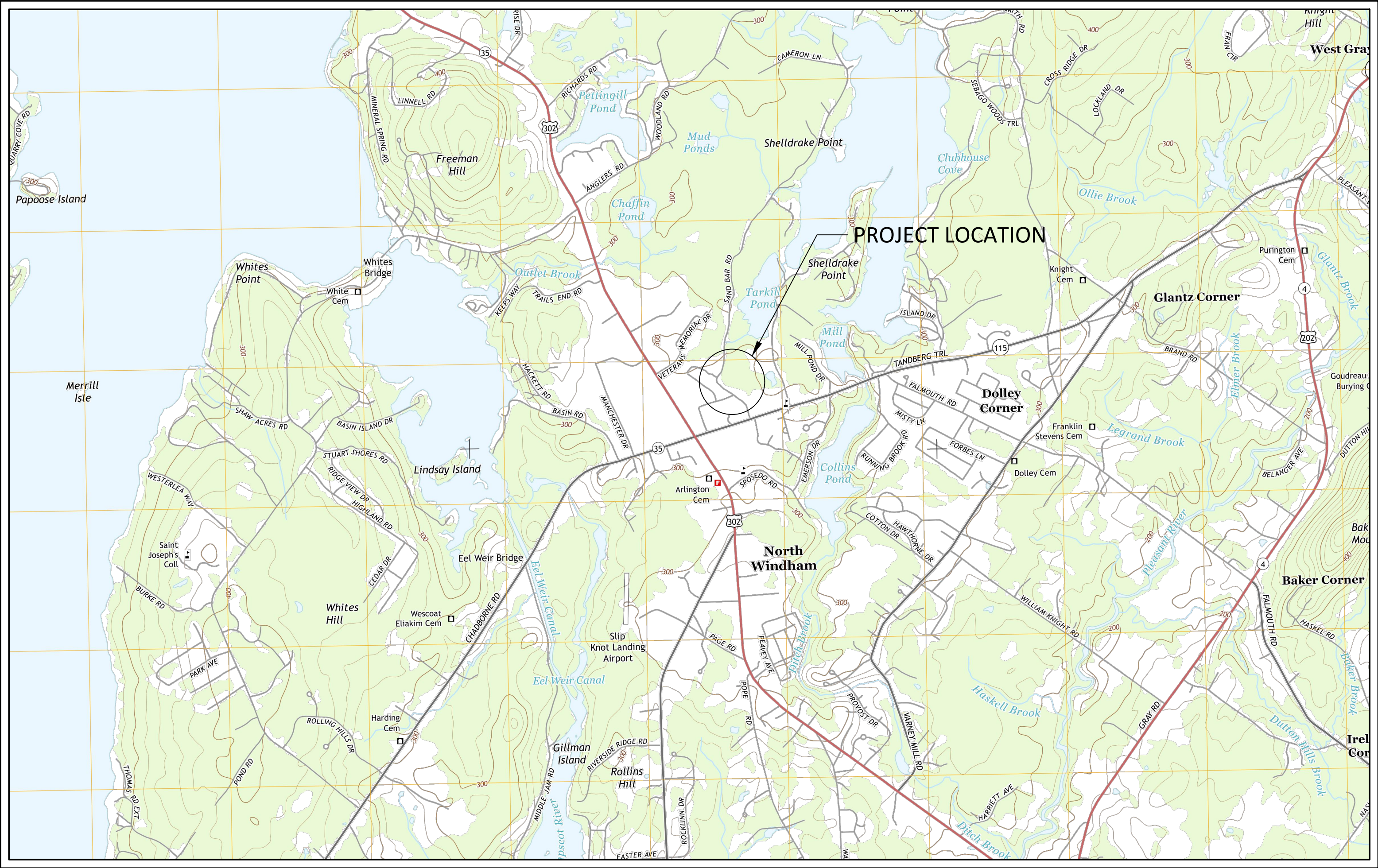


# ABBY COMMONS CONDOMINIUM

SANDBAR ROAD  
WINDHAM, MAINE

CONSULTANTS	
CIVIL ENGINEER	DM ROMA CONSULTING ENGINEERS
LAND SURVEYOR	SURVEY, INC. & SEBAGO TECHNICS, INC.
SITE EVALUATOR	ALBERT FRICK ASSOCIATES
WETLAND SCIENTIST	ALBERT FRICK ASSOCIATES
GEOLOGIST	SEVEE & MAHER ENGINEERS, INC.



PROJECT VICINITY MAP

**PREPARED FOR:** RALPH VANCE LAND DEVELOPMENT, INC.  
590 ROOSEVELT TRAIL  
WINDHAM, ME 04062

ISSUED FOR PERMITTING - NOT FOR CONSTRUCTION  
AUGUST 22, 2016

PREPARED BY:

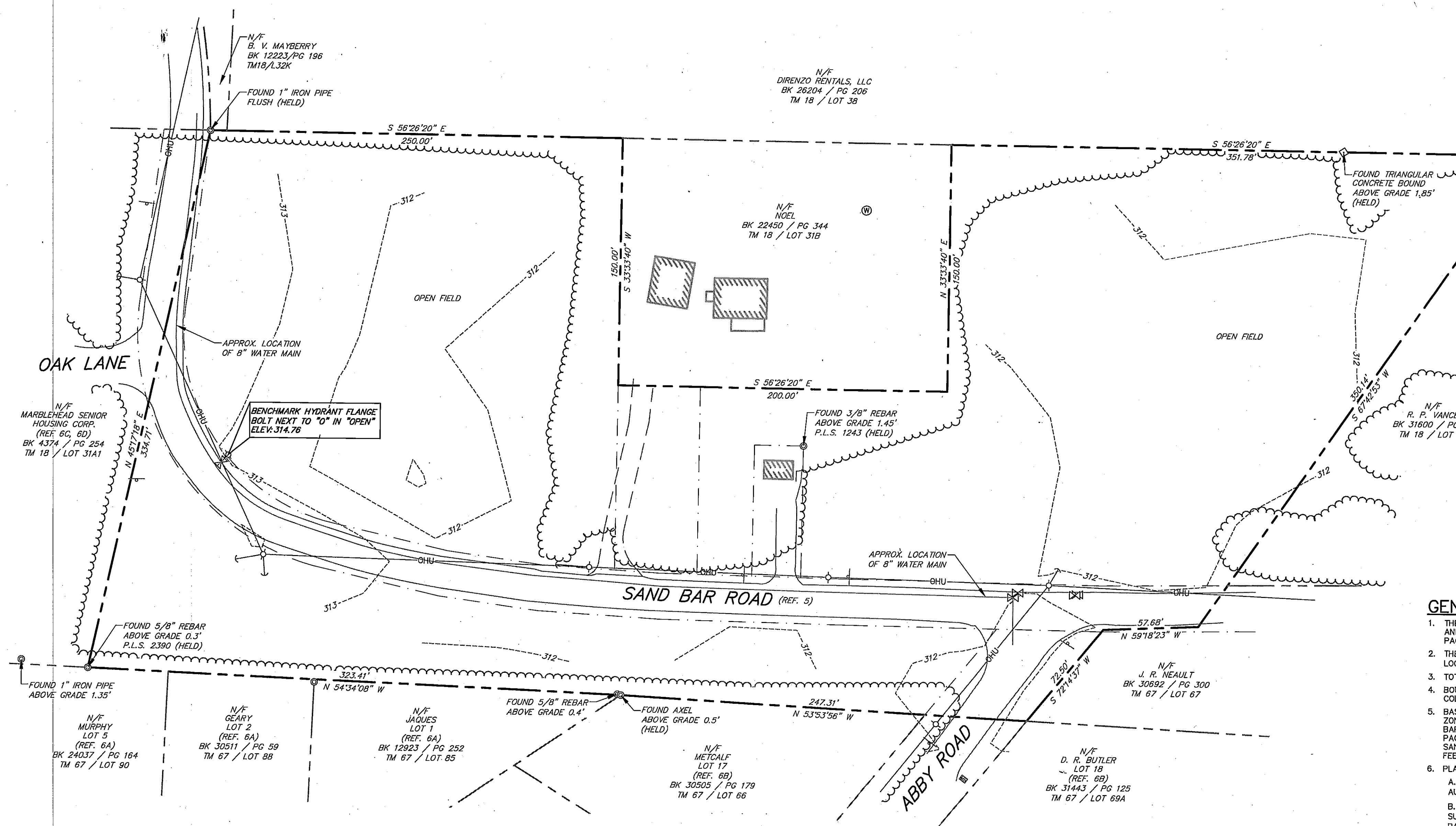
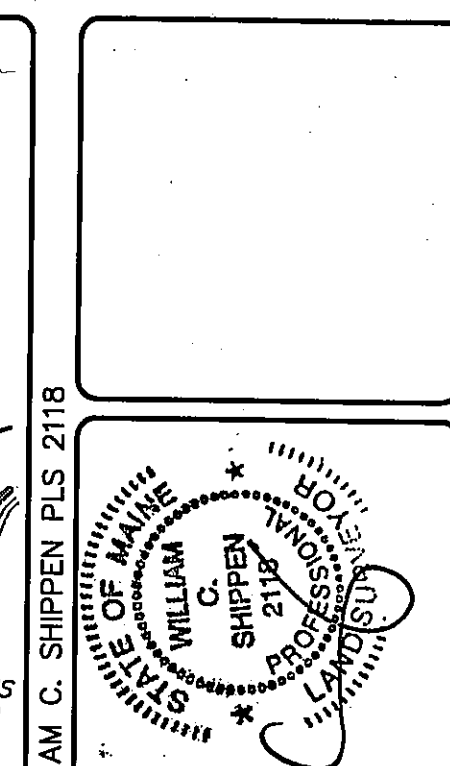
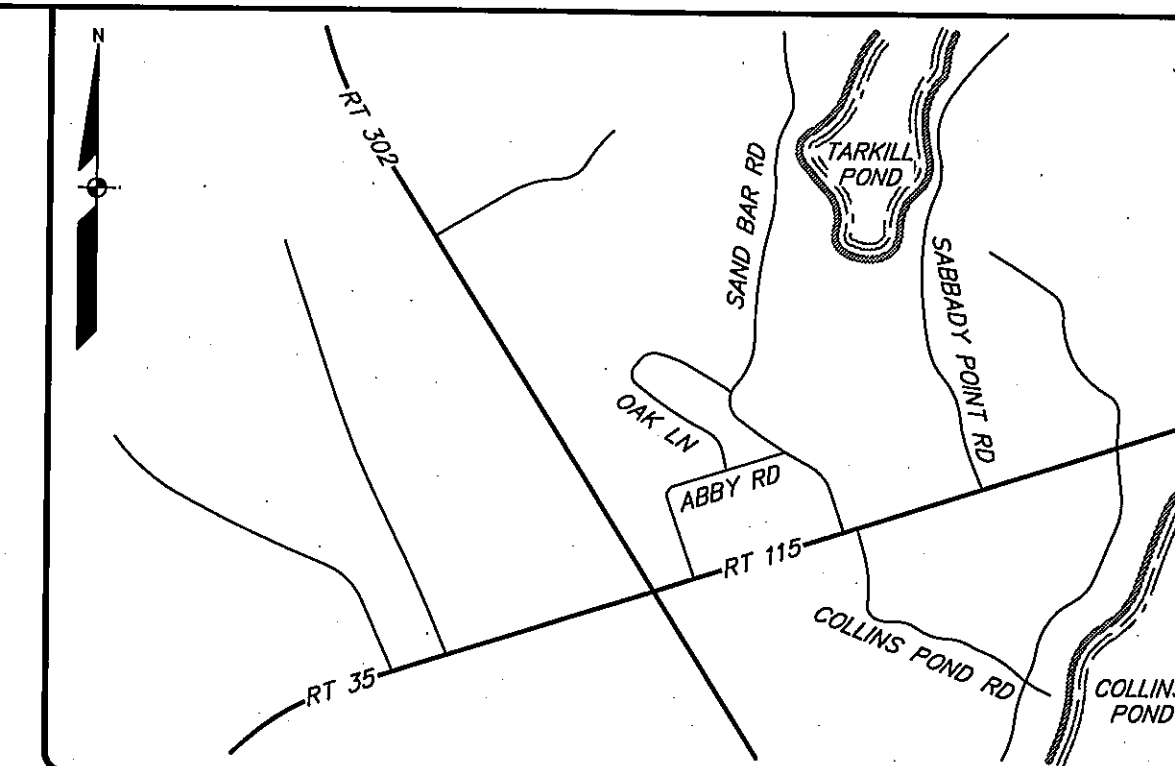
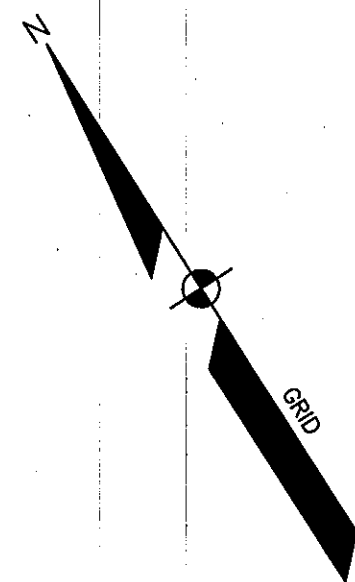
**DM ROMA**

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

**ABBY COMMONS CONDOMINIUM**

DRAWING SHEET INDEX	
PAGE NO.	DESCRIPTION
1	TITLE SHEET
2	BOUNDARY SURVEY
3	SITE AND SUBDIVISION PLAN
4	GRADING PLAN
5	UTILITY PLAN
6	LANDSCAPING PLAN
7	CONSTRUCTION DETAILS
8	CONSTRUCTION DETAILS
9	CONSTRUCTION DETAILS

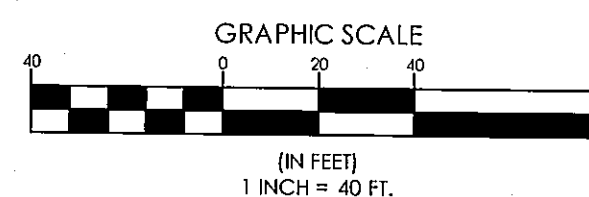




#### GENERAL NOTES:

1. THE RECORD OWNER OF THE PARCEL IS RALPH E. VANCE BY DEED DATED MAY 23, 2014 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 31600, PAGE 50.
2. THE PROPERTY IS SHOWN AS LOT 31 ON THE TOWN OF WINDHAM TAX MAP 18 AND IS LOCATED IN THE COMMERCIAL 1 (C-1) DISTRICT.
3. TOTAL AREA OF PARCEL IS APPROXIMATELY 4.85 ACRES.
4. BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON FIELD DATA COLLECTED BY SEBAGO TECHNICS DURING MARCH 2015.
5. BASED ON AN EMAIL FROM HEATHER MCNALLY, DIRECTOR OF CODE ENFORCEMENT AND ZONING ADMINISTRATION FOR THE TOWN OF WINDHAM, MAINE, THE TOWN CONSIDERS SAND BAR ROAD AS PRIVATE WITH AN EASEMENT WITH A WIDTH OF 25 FEET. IN BOOK 1337 PAGE 413 AN EASEMENT WITH A WIDTH OF 28 FEET WAS PROVIDED TO OTHERS USING SAND BAR ROAD. THIS SURVEYOR HAS CENTERED AN EASEMENT WITH A WIDTH OF 28 FEET ON THE EXISTING PAVEMENT.
6. PLAN REFERENCES:
  - A. PLAN OF OAK GROVE, WINDHAM, ME, SURVEYED FOR GENERAL DEVELOPMENT CO., AUGUST 10, 1965, PLAN BOOK 70, PAGE 17
  - B. FAIRVIEW PARK, EXTENSION ONE, DEVELOPED BY GREGG WOODMAN CO., INC., SURVEYED BY L.B. VARNEY ENG., NORTH WINDHAM, ME, NOVEMBER 1961, PLAN BOOK 61 PAGE 18.
  - C. PLAN OF LAND NEW MARBLEHEAD SENIORS HOUSING CORP., PROPOSED HOUSING SITE, NORTH WINDHAM, ME, JUNE 4, 1971, PLAN BOOK 116, PAGE 56
  - D. REVISION NO.1, NEW MARBLEHEAD SENIORS HOUSING CORP., OAK LANE, NORTH WINDHAM, ME, MAY 31, 1978, PLAN BOOK 119, PAGE 73
  - E. STANDARD BOUNDARY SURVEY OF A PORTION OF LANDS LOCATED ON SAND BAR ROAD, WINDHAM, ME, FOR MARVIN MAYBERRY, RECORD OWNER MAURICE V. MAYBERRY, MARCH 13, 2001, PLAN BOOK 201, PAGE 428
  - F. BOUNDARY SURVEY FOR R&T ENTERPRISES MADE FOR GEORGE A. AND JEAN A. KEEF DATED JUNE 2005 BY SURVEY INC, FILE NO. 05-049
7. PLAN ORIENTATION IS GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83, ELEVATIONS DEPICTED HEREON ARE NAVD83, BASED ON DUAL FREQUENCY GPS OBSERVATIONS.
8. THE PARCEL IS LOCATED, BY SCALING METHODS, WITHIN ZONE C (AREAS OF MINIMAL FLOODING) AS SHOWN ON THE FLOOD INSURANCE RATE MAP FOR THE TOWN OF WINDHAM, MAINE COMMUNITY PANEL NO. 230189-0015 WITH AN EFFECTIVE DATE OF SEPTEMBER 2, 1981.
9. THE LOCATION OF THE 8" WATER MAIN IN SANDBAR ROAD IS TO BE CONSIDERED APPROXIMATE AND IS BASED ON THE HYDRANT AND WATER GATES AS SHOWN AND AN OVERVIEW OF THE WATERMANS IN THE AREA PROVIDED BY THE PORTLAND WATER DISTRICT.
10. THE PORTION OF ABBY ROAD LOCATED WITHIN THE LIMITS OF THE SURVEYED PROPERTY IS ASSUMED TO HAVE THE SAME WIDTH OF FIFTY FEET AS SHOWN ON THE PLAN OF FAIRVIEW PARK.

LEGEND	
EXISTING	
	PROPERTY LINE/R.O.W.
	ABUTTER LINE/R.O.W.
	TIE LINE
	EASEMENT
	IRON PIPE/ROD
	DRILL HOLE
	BENCHMARK
	BENCHMARK DESCRIPTION WITH ELEVATION
	BUILDING
	DECK/STEPS/ OVERHANG
	EDGE PAVEMENT
	EDGE CONCRETE
	EDGE GRAVEL
	TREELINE
	CONTOURS
	SIGN
	WATER GATE VALVE
	HYDRANT
	POTABLE WELL
	OVERHEAD UTILITY
	UTILITY POLE
	GUY WIRE



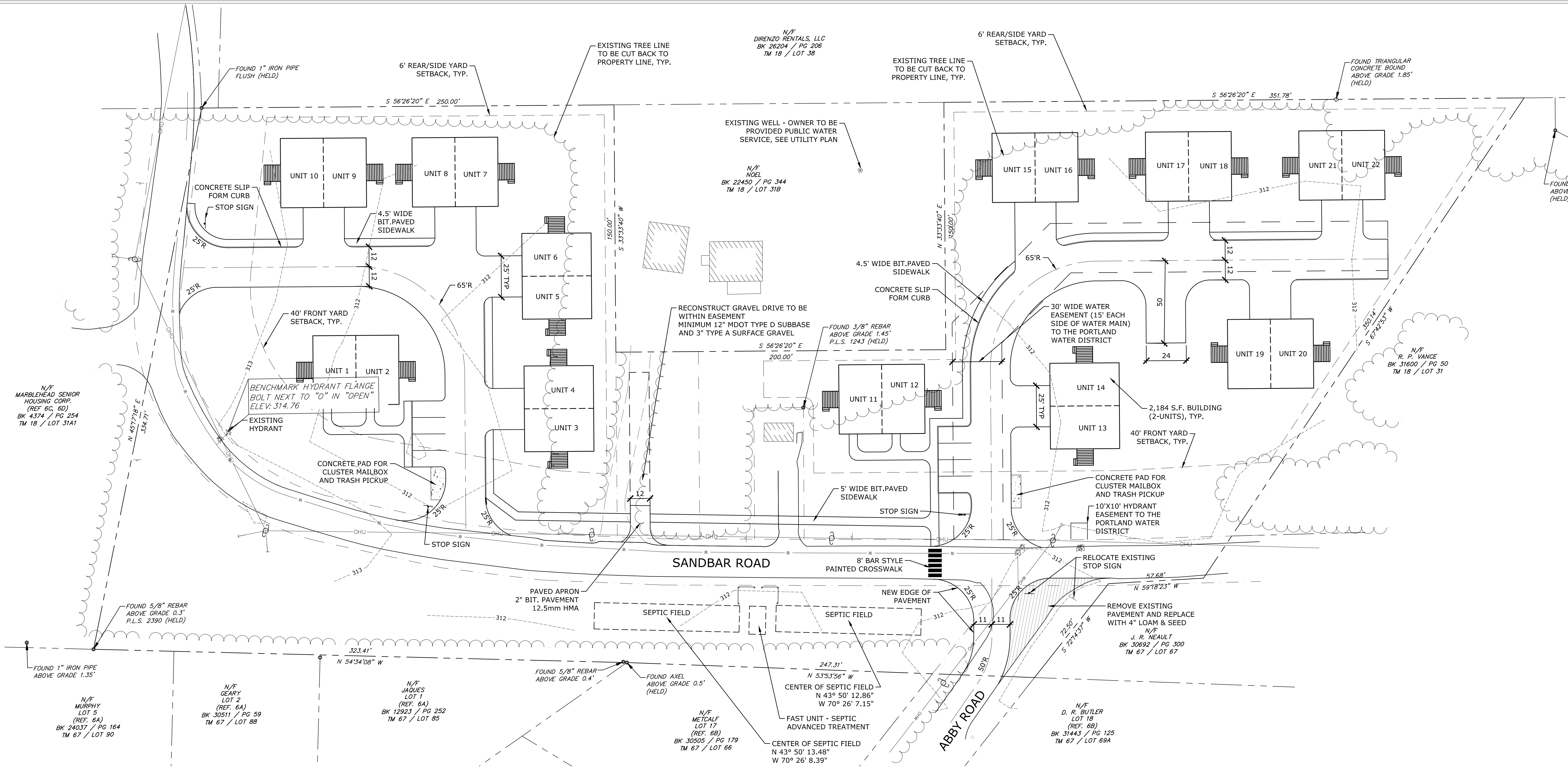
EXISTING CONDITIONS PLAN  
OF  
SAND BAR ROAD LOT  
SAND BAR ROAD  
WINDHAM, ME  
FOR RECORD OWNER:  
**RALPH E. VANCE**  
590 ROOSEVELT TRAIL  
WINDHAM, MAINE 04062

PROJECT NO.	SCALE
07647	1" = 40'

SHEET 1 OF 1

07647EC.dwg TAB:EC





LEGEND	
EXISTING	PROPOSED
	EASEMENT LINE
	EDGE OF GRAVEL
	EDGE OF PAVEMENT/CURB
	PROPERTY LINE
	CONTOUR LINE
	OVERHEAD ELECTRIC
	UNDERGROUND TELCO
	SEWER LINE
	STORM DRAIN LINE
	WATER LINE
	GAS/PROPANE LINE
	UTILITY POLE & GUY WIRE
	ELEC. TRANSFORMER PAD
	ELEC. MANHOLE
	SEWER MANHOLE
	FIRE HYDRANT
	GAS VALVE
	WATER VALVE
	WELL

GENERAL NOTES:

- THE RECORD OWNER OF THE PROPERTY IS RALPH VANCE LAND DEVELOPMENT, INC. BY DEED DATED MARCH 15, 2016 AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS BOOK 33034 PAGE 42.
- PARCEL TAX MAP REFERENCE: TOWN OF WINDHAM ASSESSORS MAP 18, LOT 31-C.
- HORIZONTAL DATUM: MAINE STATE PLANE, WEST ZONE, NAD83, U.S. FEET.
- VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
- ELEVATION CONTOURS WERE GENERATED BY GROUND SURVEY BY SEBAGO TECHNICS, INC. IN MARCH 2015.
- PLAN REFERENCES:
  - EXISTING CONDITIONS PLAN OF SANDBAR ROAD LOT, SANDBAR ROAD, WINDHAM MAINE, FOR R&T ENTERPRISES, LLC, 500 ROOSEVELT TRAIL, WINDHAM MAINE 04062, SHEET 1 OF 1 COMPLETED BY SEBAGO TECHNICS, REVISED DATE APRIL 8, 2015.
- THE TOTAL PARCEL AREA IS APPROXIMATELY 4.85 ACRES ±.
- THE PROPERTY IS LOCATED IN THE COMMERCIAL C-1 ZONE AND RETIREMENT COMMUNITY AND CARE FACILITY OVERLAY DISTRICT.
- NET RESIDENTIAL ACREAGE:  
TOTAL AREA: 211,136 SF  
EXISTING ROW/EASEMENTS: 28,632 SF  
NET RESIDENTIAL ACREAGE: 182,504 SF  
ALLOWABLE DENSITY: 5,000 SF PER UNIT (RCCFO DISTRICT)  
ALLOWABLE UNITS: 36  
PROPOSED UNITS: 22
- THE PROJECT IS SUBJECT TO A STORMWATER PERMIT FROM THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION ORDER #L-26961-NJ-A-N.
- VEHICLE SIGHT DISTANCE WAS MEASURED FOR THE THREE PROPOSED DRIVEWAY ENTRANCES TO BE IN EXCESS OF 350 FEET. THE CONSTRUCTION OF UNITS 1 AND 2 WILL RESTRICT SIGHT DISTANCE TO APPROXIMATELY 250 FEET AT THE SANDBAR ROAD CORNER. THE CURRENT POSTED SPEED ON SANDBAR ROAD IS 25 MPH WHICH REQUIRES A MINIMUM OF 250' OF SIGHT DISTANCE PER THE WINDHAM LAND USE ORDINANCE, SECTION 900.
- THE ON-SITE SUBSURFACE WASTEWATER DISPOSAL SYSTEM IS CLASSIFIED AS AN ENGINEERED SYSTEM BY THE MAINE DEPARTMENT OF HEALTH AND HUMAN SERVICES, AND RECEIVED APPROVAL FROM THE DEPARTMENT ON JULY 8, 2016.

CONDITIONS OF SITE PLAN APPROVAL:

- APPROVAL IS DEPENDANT UPON, AND LIMITED TO, THE PROPOSALS AND PLANS CONTAINED IN THE APPLICATION DATE JUNE 1, 2015 AND SUPPORTING DOCUMENTS AND ORAL REPRESENTATIONS SUBMITTED AND AFFIRMED BY THE APPLICANT, AND CONDITIONS, IF ANY, IMPOSED BY THE PLANNING BOARD, AND ANY VARIATION FROM SUCH PLANS, PROPOSALS AND SUPPORTING DOCUMENTS AND REPRESENTATIONS ARE SUBJECT TO REVIEW AND APPROVAL BY THE PLANNING BOARD OR THE TOWN PLANNER IN ACCORDANCE WITH SECTION 814.G. OF THE LAND USE ORDINANCE.

APPROVED: TOWN OF WINDHAM PLANNING BOARD

_____	DATE
_____	
_____	
_____	
_____	
_____	
_____	
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_____	

SITE AND SUBDIVISION PLAN

ABBY COMMONS CONDOMINIUM  
WINDHAM, MAINE

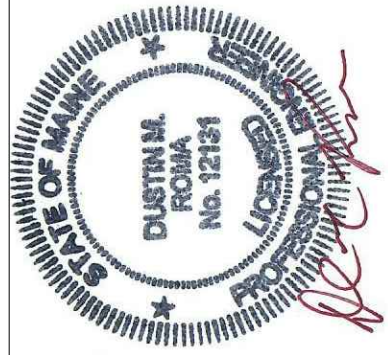
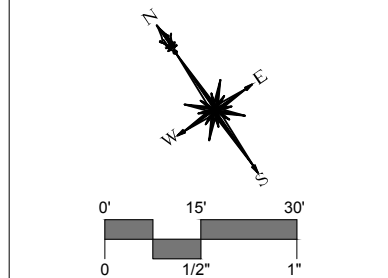
FOR RECORD OWNER:  
RALPH VANCE LAND DEVELOPMENT, INC.  
500 ROOSEVELT TRAIL  
WINDHAM, ME 04062

1" = 30'  
SCALE:

8-22-2016  
DATE:

SHEET 3 OF 9

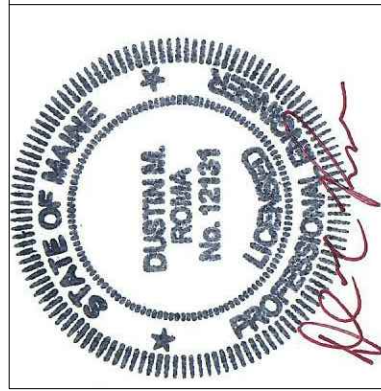
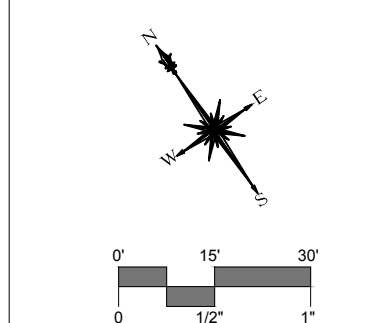
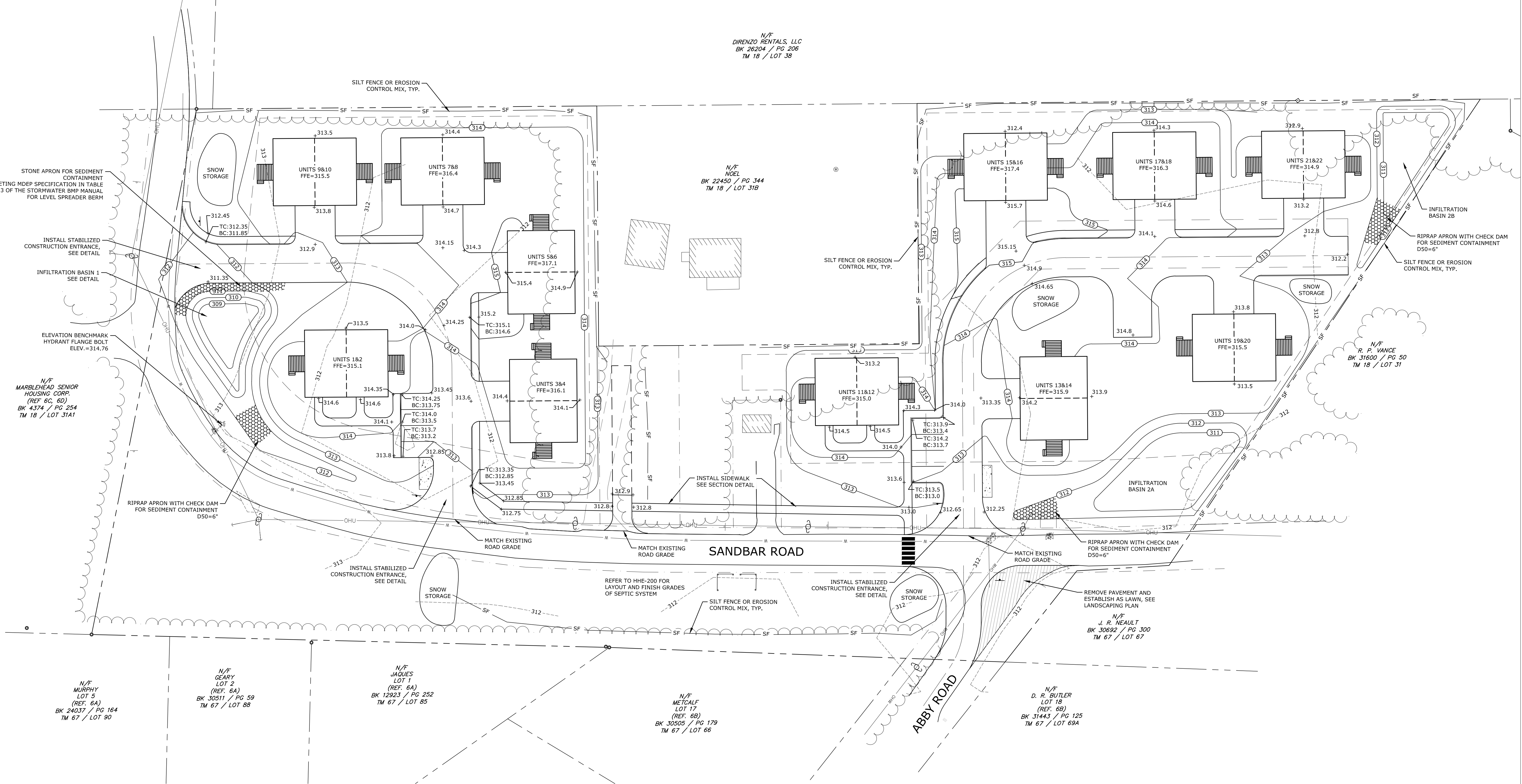
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**DM ROMA**  
CONSULTING ENGINEERS  
59 HARVEST HILL RD  
WINDHAM, ME 04062  
(207) 310-0506

REV	DATE	BY	DESCRIPTION
A	1-19-16	DMR	SUBMITTED TO TOWN AND MDP
B	2-16-16	DMR	REVISED PER TOWN REVIEW COMMENTS
C	2-29-16	DMR	REVISED PER MDP REVIEW COMMENTS
D	4-21-16	DMR	REVISED PER REVIEW COMMENTS
E	8-22-16	DMR	SUBMITTED TO TOWN FOR FINAL APPROVAL





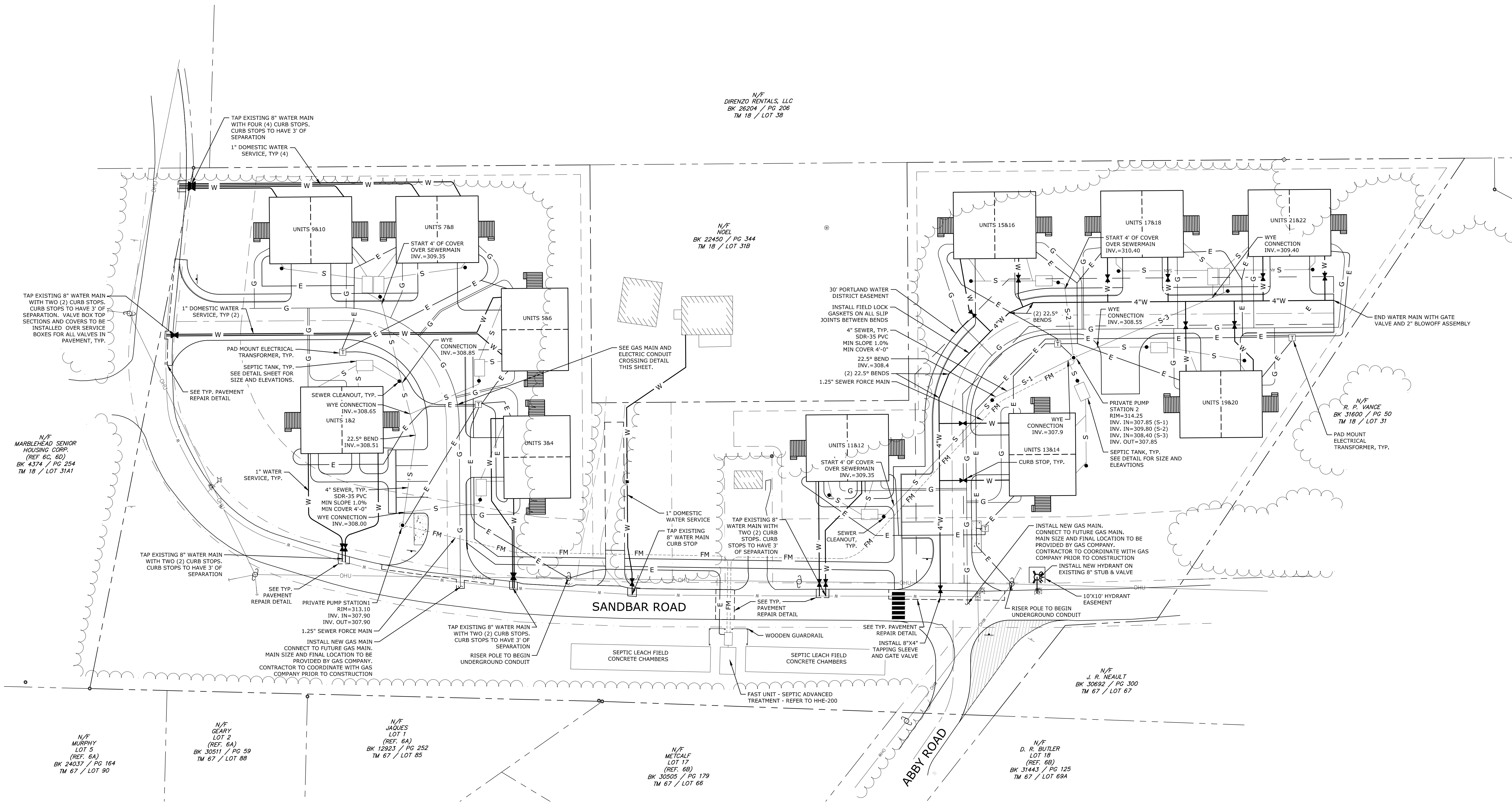
**DM ROMA**  
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C	4-5-16	DMR	REVISED PER MDP REVIEW COMMENTS
D	4-21-16	DMR	REVISED PER REVIEW COMMENTS
E	8-22-16	DMR	SUBMITTED TO TOWN FOR FINAL APPROVAL

**GRADING PLAN**  
ABBY COMMONS CONDOMINIUM  
WINDHAM, MAINE  
FOR RECORD OWNER:  
RALPH VANCE LAND DEVELOPMENT, INC.  
59 ROOSEVELT TRAIL  
WINDHAM, ME 04062

1" = 30'  
SCALE:  
8-22-2016  
DATE:  
SHEET 4 OF 9  
GR-1



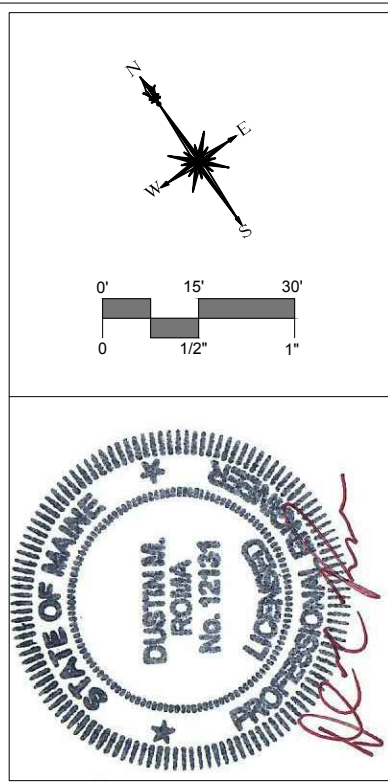
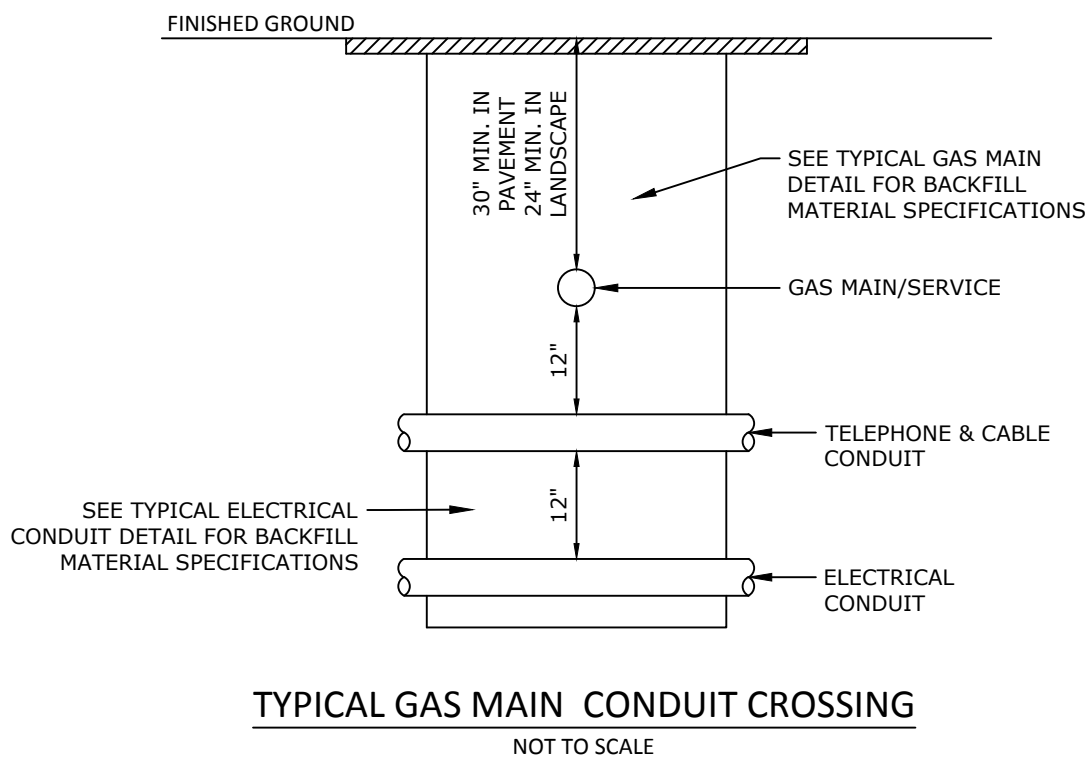


**WASTEWATER SYSTEM CONSTRUCTION NOTES:**  
 SUBSURFACE WASTEWATER DISPOSAL SYSTEM TO BE INSTALLED PER STATE OF MAINE SUBSURFACE WASTEWATER DISPOSAL RULES. TANKS, PUMP STATION, CHAMBERS AND ALL OTHER MATERIALS TO MEET MINIMUM SPECIFICATIONS LOCATED THEREIN PER SECTION 4 OF THE RULES. SIZE PUMP STATION PER MANUFACTURER'S RECOMMENDATIONS FOR FRICTION/HEAD LOSS. INSTALLER SHOULD COORDINATE WITH DESIGNER/ENGINEER TO COORDINATE PERIODIC INSPECTIONS DURING INSTALLATION.

THE SYSTEM INSTALLER SHOULD CONTACT ALBERT FRICK ASSOCIATES, INC. (207-839-5563) IF THERE ARE ANY QUESTIONS CONCERNING MATERIALS, PROCEDURES OR DESIGN SPECIFICATIONS ABOUT WHICH THEY ARE UNCERTAIN. THE SYSTEM INSTALLER SHALL BE SOLELY RESPONSIBLE FOR COMPLIANCE WITH THE RULES AND WITH ALL OTHER STATE AND MUNICIPAL LAWS AND ORDINANCES PERTAINING TO PERMITTING, MUNICIPAL INSPECTION, AND CONSTRUCTION OF SUBSURFACE WASTEWATER DISPOSAL SYSTEMS.

THE INSTALLER SHOULD REVIEW ALL AVAILABLE INFORMATION RELATING TO PROPERTY LINES, WATER LINES, UTILITY LINES, ETC. PRIOR TO STARTING CONSTRUCTION AND CONFIRM THE LOCATIONS OF THE ABOVE-LISTED IN THE FIELD TO ASSURE PROPER SETBACKS.

NOTIFY DIG-SAFE.



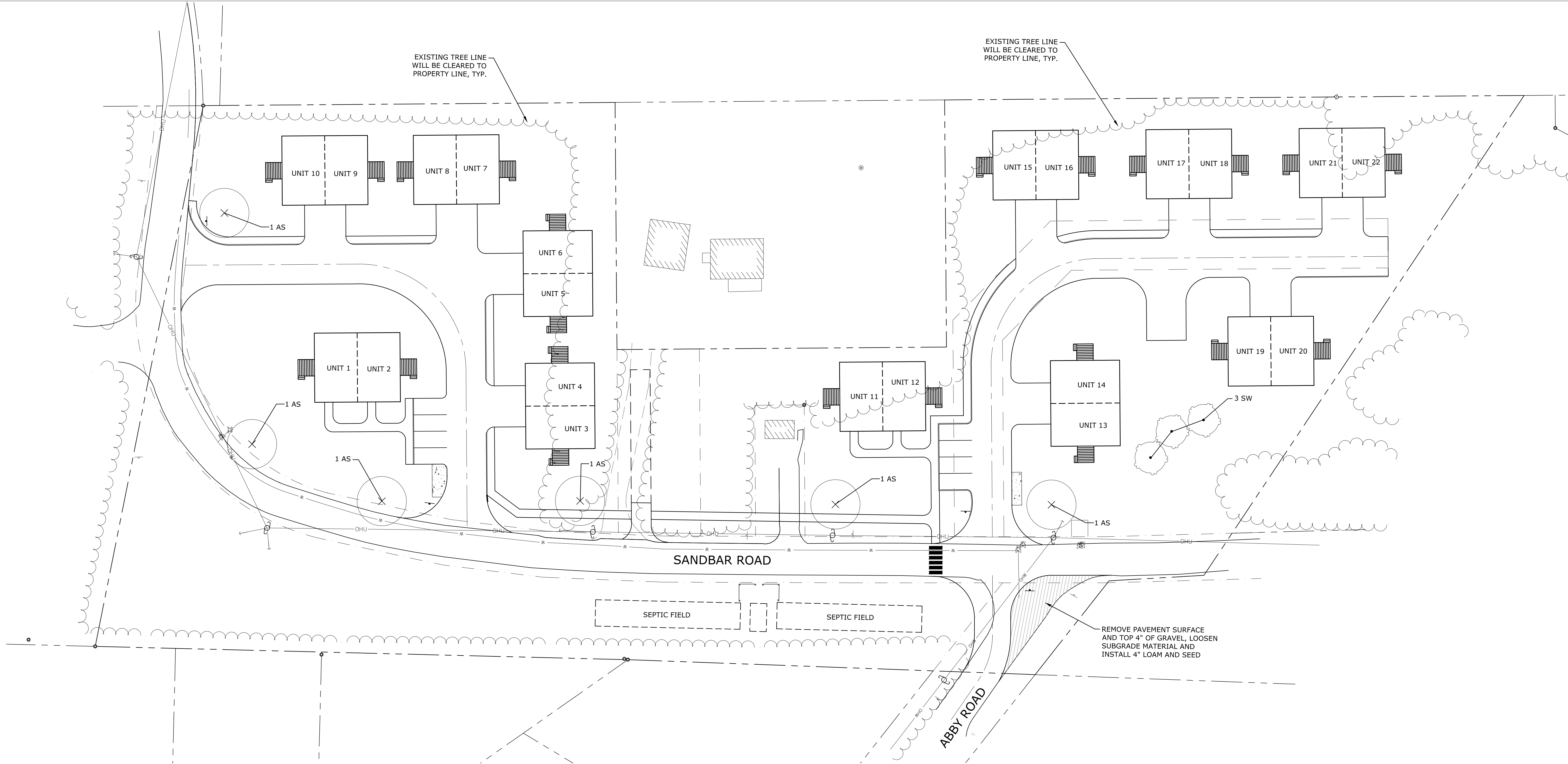
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 WINDHAM, ME 04062  
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**UTILITY PLAN**  
 ABBY COMMONS CONDOMINIUM  
 WINDHAM, MAINE  
 FOR RECORD OWNER:  
 RALPH VANCE LAND DEVELOPMENT, INC.

1" = 30'
SCALE:
8-22-2016
DATE:
SHEET 5 OF 9
UT-1





PLANTING NOTES

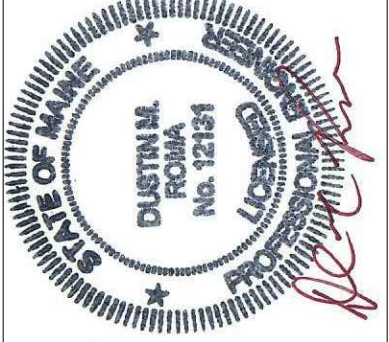
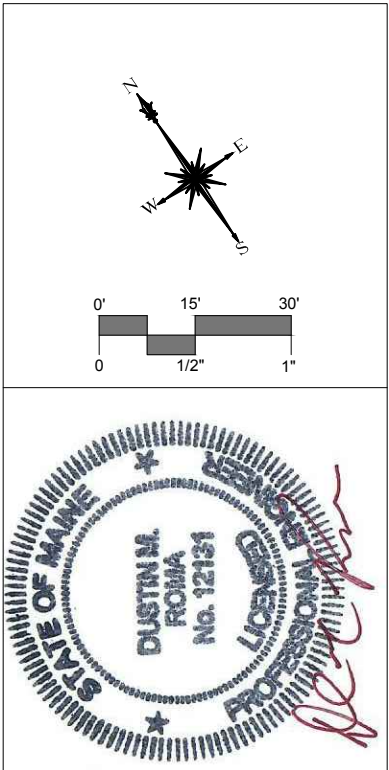
1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATING PLANT PITS. HORIZONTAL FIELD ADJUSTMENTS MAY BE REQUIRED TO AVOID UTILITY CONFLICTS.
2. CONTRACTOR SHALL STAKE OUT PROPOSED TREE LOCATIONS AND CONTACT OWNER FOR APPROVAL PRIOR TO EXCAVATION AND INSTALLATION.
3. ALL PLANTING BEDS SHALL HAVE 12" MINIMUM DEPTH OF TOPSOIL.
4. THE LANDSCAPE CONTRACTOR SHALL PROVIDE A 4" MIN. DEPTH OF SHREDDED BARK MULCH (AFTER COMPACTION) OVER ALL PLANTING BEDS AND TREE PLANTINGS. PAID UNDER ITEM "MULCHING"
5. ALL PLANT MATERIAL IS SUBJECT TO INSPECTION AND APPROVAL BY THE OWNER PRIOR TO AND AFTER PLANTING.
6. PLANT SPECIES MAY BE ADJUSTED BASED ON AVAILABILITY AT TIME OF PLANTING. ALL PLANT MATERIAL SUBSTITUTIONS ARE SUBJECT TO REVIEW AND APPROVAL BY THE OWNER.
7. ALL PLANT MATERIALS SHALL CARRY A FULL GUARANTEE FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE, TO INCLUDE PROMPT TREATMENT OR REMOVAL AND REPLACEMENT OF ANY PLANTS FOUND TO BE IN AN UNHEALTHY CONDITION BY THE LANDSCAPE ARCHITECT. ALL REPLACEMENTS SHALL BE OF THE SAME KIND AND SIZE OF PLANTS SPECIFIED IN THE PLANT LIST, UNLESS OTHERWISE APPROVED.
8. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER PLANTING AND SHALL CONTINUE UNTIL ACCEPTANCE BY THE OWNER. MAINTENANCE SHALL INCLUDE WATERING, MULCHING, TIGHTENING & REPLACING OF GUYS, REPLACEMENT OF UNHEALTHY OR DEAD PLANTS, RESETTING PLANTS TO PROPER GRADE OR UPRIGHT (PLUMB) POSITION, RESTORATION OF SAUCERS, AND ALL OTHER CARE NEEDED FOR PROPER GROWTH OF THE PLANTS.
9. CONTRACTOR TO REMOVE TREE STAKES AFTER ONE GROWING SEASON.
10. ALL AREAS DISTURBED BY CONSTRUCTION THAT ARE NOT CALLED OUT TO BE RESTORED ARE TO BE TOPSOILED AND SEEDED TO LAWN AT NO ADDITIONAL COST TO THE OWNER.
11. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING VEGETATION TO REMAIN. NO MECHANICAL OPERATIONS OR MATERIAL STORAGE IS TO TAKE PLACE WITHIN THE DRIP LINE OF PROTECTED TREES. VEGETATION DAMAGED BY CONTRACTOR IS TO BE ASSESSED BY A LICENSED ARBORIST WITH WRITTEN RECOMMENDATIONS SUBMITTED TO THE OWNER. CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS OF ASSESSMENT AND REQUIRED REMEDIATION OR REPLACEMENT OF VEGETATION.

PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONT.	COMMENTS
AS	6	Acer rubrum 'Red Sunset'	Red Sunset Maple	2"-3" Cal.	B & B	5' MIN. BRANCHING HT.
EVERGREEN TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONT.	COMMENTS
SW	3	Picea glauca	White Spruce	6' /7' HT.	B & B	

INDIVIDUAL UNIT LANDSCAPING

1. LANDSCAPING WILL BE INSTALLED AROUND EACH OF THE INDIVIDUAL UNITS TYPICAL OF A RESIDENTIAL SETTING. TYPICAL PLANTINGS TO INCLUDE VARIOUS SHRUBS AND PERENNIALS AND WILL BE MAINTAINED BY THE INDIVIDUAL UNIT OWNER OR THE HOMEOWNERS ASSOCIATION.
2. ADDITIONAL SCREENING LANDSCAPING MAY BE ADDED BETWEEN UNITS AT THE DISCRETION OF THE OWNER OR THE HOMEOWNERS ASSOCIATION.



**DM ROMA**  
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**LANDSCAPING PLAN**  
ABBY COMMONS CONDOMINIUM  
WINDHAM, MAINE  
FOR RECORD OWNER:  
RALPH VANCE LAND DEVELOPMENT, INC.  
5819 ROOSEVELT TRAIL  
WINDHAM, ME 04095



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, VEGETATION 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 OF ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED. IF DISTURBANCE ACTIVITIES TAKE PLACE LESS THAN 30 FEET FROM ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE 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 (70-90 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 OF 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 GRASSED 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 REPAIRED IMMEDIATELY. INSPECTIONS SHALL TAKE PLACE UNTIL 95% OF THE SOIL SURFACE IS COVERED WITH PERMANENT VEGETATION. WHERE MULCH IS USED WITH PERMANENTAL 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 THROUGHOUT THE WINTER AND TEMPORARY VEGETATION SHALL BE PLANTED AT THE BEGINNING OF THE GROWING SEASON THE FOLLOWING YEAR. TO PREPARE THE SEEDBED, 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 2 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 PROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN AND SHALL PROVIDE A MINIMUM OF 6 MONTHS USABLE CONSTRUCTION LIFE INCLUDING PROTECTION AGAINST ULTRA-VIOLET LIGHT. THE HEIGHT OF THE FENCE SHALL NOT EXCEED 36 INCHES INSTALLED AND POST SPACING SHALL NOT EXCEED 6 FEET. JOINTS IN THE FENCE 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 BURAL.

STRAY/HAY BALES SHALL BE INSTALLED WHERE SPECIFIED ON THE PLANS IN A SINGLE ROW WITH THE ENDS OF ADJACENT BALES TIGHTLY BUTTING ONE ANOTHER. ALL BALES SHALL BE EITHER WIRE-BOUND OR STRING-TIED. THE BARRIER 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 BERMS ARE LINEAR BARRIERS COMPOSED OF EROSION CONTROL MIX AS SPECIFIED ABOVE. THE BERM MUST BE A MINIMUM OF 12 INCHES TALL AND 24 INCHES WIDE AT THE BASE IF UPHILL SLOPES ARE LESS THAN 5%. STEEPER SLOPES OR SLOPES GREATER THAN 20 FEET LONG MAY REQUIRE A LARGER WIDTH BERM. EROSION CONTROL MIX BERMS AT THE BASE OF A LONG OR STEEP SLOPE MAY ALSO REQUIRE A FILTER FENCE TO BE INSTALLED ON THE DOWNHILL SIDE OF THE BERM TO PROVIDE ADDITIONAL STABILIZATION AGAINST HIGH RUNOFF FLOWS.

CONTINUOUS CONTAINED BERMS, 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 REPAIRED 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 BARRIER, OR IF LARGE VOLUMES OF WATER ARE IMPOUNDED BEHIND THE BARRIER, 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 DOWNSTREAM 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 TRACKING 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 FINISHING 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 COURSES TO ENSURE THAT SURFACE RUNOFF WILL NOT DAMAGE SLOPES OR OTHER GRADED AREAS. CUT AND FILL SLOPES THAT ARE TO BE STABILIZED WITH GRASS SHALL NOT BE STEEPER THAN 2:1. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIALS. AREAS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 INCHES PRIOR TO PLACEMENT OF TOPSOIL. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLURPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN LAYERS 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 OBJECTIONABLE 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 SLOPES OR STRUCTURAL FILLS. FILL SHALL NOT BE PLACED ON A FROZEN FOUNDATION. SEEPS 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 STOCKPILED 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 WEEKS. AFTER THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GRADE, AND IMMEDIATELY PRIOR TO SPREADING THE TOPSOIL, THE SUBGRADE SHALL BE LOOSENEED 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 UNDO COMPACTION 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 VEGETATION FOR THE LIGHT, MOISTURE, AND SOIL CONDITIONS; AMEND AREAS OF DISTURBED SUBSOILS WITH TOPSOIL, COMPOST, OR FERTILIZERS; PROTECT SEEDED AREAS WITH MULCH OR, IF NECESSARY, EROSION CONTROL BLANKETS; AND SCHEDULE SODDING, PLANTING, AND SEEDING SO TO AVOID DIE-OFF FROM SUMMER DROUGHT AND FALL FROSTS. NEWLY SEEDED OR SODDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC, EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL-ESTABLISHED WITH 90% COVER BY HEALTHY VEGETATION. IF NECESSARY, AREAS MUST BE REWORKED AND RESTABILIZED IF GERMINATION IS SPOTTY, OR TOPSOIL EROSION IS EVIDENT. 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 MIXTURE. 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 SUPPLIERS RECOMMENDATIONS. FOR SEEDED 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 DOWN INTO 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. THE 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.

RIRAPR STONE SHALL CONSIST OF SUB-ANGULAR FIELD STONE OR ROUGH UNEVEN 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 RIPRAP AND UNDERLYING SOIL SURFACE. GRAVEL FILTER BLANKETS SHALL MEET MOOT TYPE OF UNDERDRAIN MATERIAL SPECIFICATIONS AND BE AT LEAST 6 INCHES THICK. GEOTEXTILE FILTER BLANKETS SHALL BE SPECIFIED AND SHOWN ON SITE CONSTRUCTION. RIPRAP STONES SHALL BE "TOED INTO" THE BASE OF THE EMBANKMENT BY EXCAVATING A TRENCH AT THE BOTTOM OF THE SLOPE AND INSTALLING A STABLE BASE OF RIPRAP TO GRADE.

DITCHES, CHANNELS AND SWALES ARE CONSIDERED PERMANENTLY STABILIZED WHEN THE CHANNEL HAS 90% COVER OF HEALTHY VEGETATION WITH A WELL GRADED RIPRAP LINING, EROSION CONTROL BLANKET, OR WITH ANOTHER NON-EROSIVE 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.

11. STORMWATER CHANNELS

EACH CHANNEL SHOULD BE CONSTRUCTED IN SECTIONS SO THAT THE SECTION'S GRADING, SHAPING, AND INSTALLATION OF THE PERMANENT LINING CAN BE COMPLETED THE SAME DAY. IF A CHANNELARY FRAME GRADING OR LINING IS REQUIRED, THE CHANNEL SHOULD BE CONSTRUCTED IN SECTIONS. A DOUBLE ROW OF SEDIMENT BARRIERS PROPERLY-SPACED CHECK DAMS MUST BE INSTALLED IN THE CHANNEL TO SLOW THE WATER VELOCITY, AND A TEMPORARY LINING INSTALLED ALONG THE CHANNEL TO PREVENT SCOURING.

WINTER EROSION AND SEDIMENTATION CONTROL NOTES:

THE WINTER CONSTRUCTION PERIOD TYPICALLY BEGINS IN EARLY NOVEMBER AND ENDS IN MID APRIL. IF A CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, A ROAD GRAVEL BASE, 75% MATURE VEGETATION COVER OR RIPRAP BY NOVEMBER 15 THEN THE SITE NEEDS TO BE PROTECTED WITH OVER-WINTER STABILIZATION. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME. LIMIT THE EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS TO OCCUR DURING THE FOLLOWING 15 DAYS AND THAT CAN BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT. AN AREA SHALL BE CONSIDERED DENIED UNTIL THE SUBBASE GRAVEL IS INSTALLED IN THE ROADWAY AREAS OR THE AREAS OF FUTURE LOAM AND SEED HAVE BEEN LOADED, SEEDED AND MULCHED. A COVER OF EROSION CONTROL MIX IS THE PREFERRED TEMPORARY MULCH DURING WINTER CONDITIONS.

1. NATURAL RESOURCE PROTECTION

ANY AREAS WITHIN 75 FEET FROM ANY REGULATED NATURAL RESOURCES; IF NOT STABILIZED WITH A MINIMUM OF 75% MATURE VEGETATION CATCH, SHALL BE MULCHED BY DECEMBER 1 AND ANCHORED WITH PLASTIC NETTING OR PROTECTED WITH AN EROSION CONTROL COVER. DURING WINTER CONSTRUCTION, A DOUBLE ROW OF SEDIMENT BARRIERS (FOR EXAMPLE, SILT FENCE BACKED WITH HAY BALES OR EROSION CONTROL MIX) WILL BE PLACED BETWEEN ANY REGULATED NATURAL RESOURCE AND THE DISTURBED AREA. PROJECTS CROSSING THE REGULATED NATURAL RESOURCE SHALL BE PROTECTED A MINIMUM DISTANCE OF 100 FEET ON EITHER SIDE FROM THE RESOURCE. EXISTING PROJECTS NOT STABILIZED BY DECEMBER 1 SHALL BE PROTECTED WITH THE SECOND LINE OF SEDIMENT BARRIER TO ENSURE FUNCTIONALITY DURING THE SPRING THAW AND RAINS.

2. SEDIMENT BARRIERS

DURING FROZEN CONDITIONS, SEDIMENT BARRIERS MAY CONSIST OF EROSION CONTROL MIX BERMS OR ANY OTHER RECOGNIZED SEDIMENT BARRIERS AS FROZEN SOIL PREVENTS THE PROPER INSTALLATION OF HAY BALES OR SILT FENCES.

3. MULCHING

ALL AREAS SHALL BE CONSIDERED TO BE DENUEED UNTIL SEEDED AND MULCHED. HAY AND STRAW MULCH SHALL BE APPLIED AT A RATE OF 3 TONS PER ACRE (TWICE THE NORMAL ACCEPTED RATE) AND SHALL BE PROPERLY ANCHORED. EROSION CONTROL MIX MUST BE APPLIED WITH A MINIMUM 4 INCHES THICKNESS. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW. SNOW MUST BE REMOVED DOWN TO A ONE-INCH DEPTH PRIOR TO APPLICATION. AFTER EACH DAY OF FINAL GRADING, THE AREA WILL BE PROPERLY STABILIZED WITH ANCHORED HAY OR STRAW OR EROSION CONTROL MATTING. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED OR ADEQUATELY ANCHORED SO THAT GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY EITHER MULCH NETTING, ASPHALT EMULSION CHEMICAL, TRACKING OR WOOD CELLULOSE FIBER. THE COVER WILL BE CONSIDERED SUFFICIENT WITH THE GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. AFTER NOVEMBER 1ST, MULCH AND ANCHORING OF ALL EXPOSED SOIL SHALL OCCUR AT THE END OF EACH FINAL GRADING WORKDAY.

4. SOIL STOCKPILING

STOCKPILES OF SOIL OR SUBSOIL WILL BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE FOR WITH A FOUR-INCH LAYER OF EROSION CONTROL MIX. THIS WILL BE DONE WITHIN 24 HOURS OF STACKING AND RE-ESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL. ANY SOIL STOCKPILE WILL NOT BE PLACED WITHIN 100 FEET FROM ANY REGULATED NATURAL RESOURCE.

5. SEEDING

BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES FINISHED AREAS SHALL BE FINE GRADED AND EITHER PROTECTED MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1 AND IF THE EXPOSED AREA HAS BEEN LOOEMD, FINAL GRADED WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED. IF DORMANT SEEDING IS USED, ALL DISTURBED AREAS SHALL RECEIVE 4 LBS OF LOAM AND SEED AT AN APPLICATION RATE OF 5 LBS PER 1,000 S.F. ALL AREAS INSUFFICIENTLY VEGETATED (LESS THAN 75%) IN THE SPRING SHALL BE REVEGETATED.

6. OVER-WINTER STABILIZATION OF DITCHES AND CHANNELS

ALL STONE-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED BY NOVEMBER 1. ALL GRASS-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY SEPTEMBER 1. IF A GRASS-LINED DITCH OR CHANNEL IS STABILIZED BY SEPTEMBER 1, THEN EITHER A SOD LINING SHALL BE INSTALLED PRIOR TO OCTOBER 1 OR THE DITCH MUST BE LINED WITH STONE RIPRAP BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE PRIOR TO NOVEMBER 1.

7. OVER-WINTER STABILIZATION OF DISTURBED SLOPES

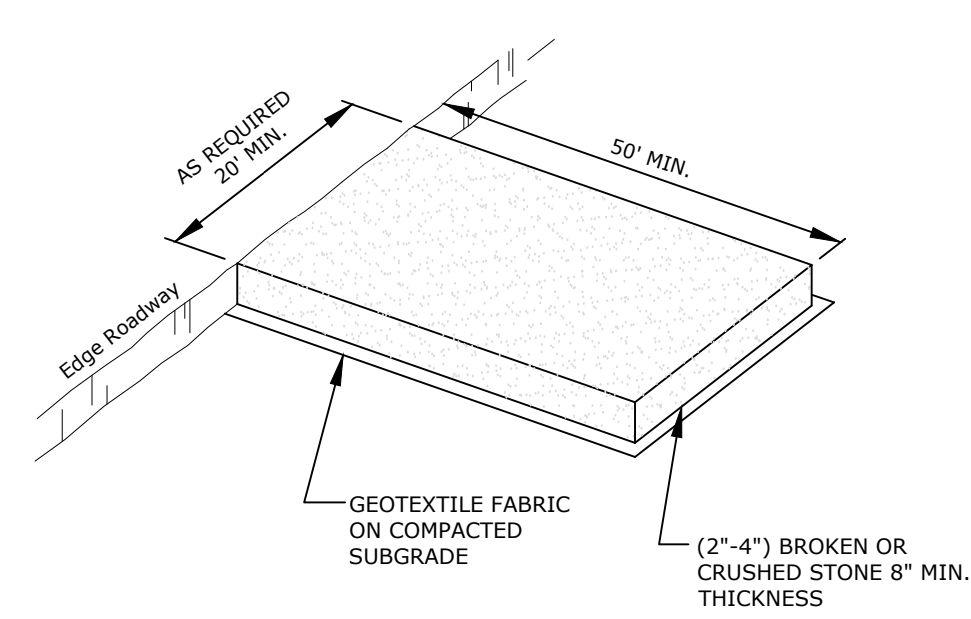
ALL STONE-COVERED SLOPES MUST BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15. ALL SLOPES TO BE VEGETATED MUST BE SEEDED AND MULCHED BY SEPTEMBER 1. ALL AREAS HAVING A GRADE STEEPER THAN 8% SHALL BE CONSIDERED A SLOPE. IF A SLOPE TO BE VEGETATED IS NOT STABILIZED BY SEPTEMBER 1, THEN THE SLOPE SHALL EITHER BE STABILIZED WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS BY OCTOBER 1, SOD BY OCTOBER 1, EROSION CONTROL MIX BY NOVEMBER 1 OR STONE RIPRAP BY NOVEMBER 15. SEE APPLICABLE SECTIONS UNDER EROSION AND SEDIMENTATION CONTROL NOTES FOR PROPER INSTALLATION METHODS.

8. OVER-WINTER STABILIZATION OF DISTURBED SOILS

BY SEPTEMBER 15, ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15% MUST BE SEEDED AND MULCHED. IF THE DISTURBED AREAS ARE NOT STABILIZED BY THIS DATE, THEN THE AREA SHALL EITHER BE STABILIZED WITH TEMPORARY VEGETATION BY OCTOBER 1, SOD BY OCTOBER 1, OR MULCH BY NOVEMBER 15. SEE APPLICABLE SECTIONS UNDER EROSION AND SEDIMENTATION CONTROL NOTES FOR PROPER INSTALLATION METHODS.

9. MAINTENANCE

MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION SEASON. AFTER EACH RAINFALL, SNOW STORM OR PERIOD OF THAWING AND RUNOFF, THE SITE CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUOUS FUNCTION. FOLLOWING THE TEMPORARY AND/OR FINAL SEEDING AND MULCHING, THE CONTRACTOR SHALL, IN THE SPRING, INSPECT AND REPAIR ANY DAMAGES AND/OR BARE SPOTS. AN ESTABLISHED VEGETATIVE COVER MEANS A MINIMUM OF 85% OF AREAS VEGETATED WITH VIGOROUS GROWTH.

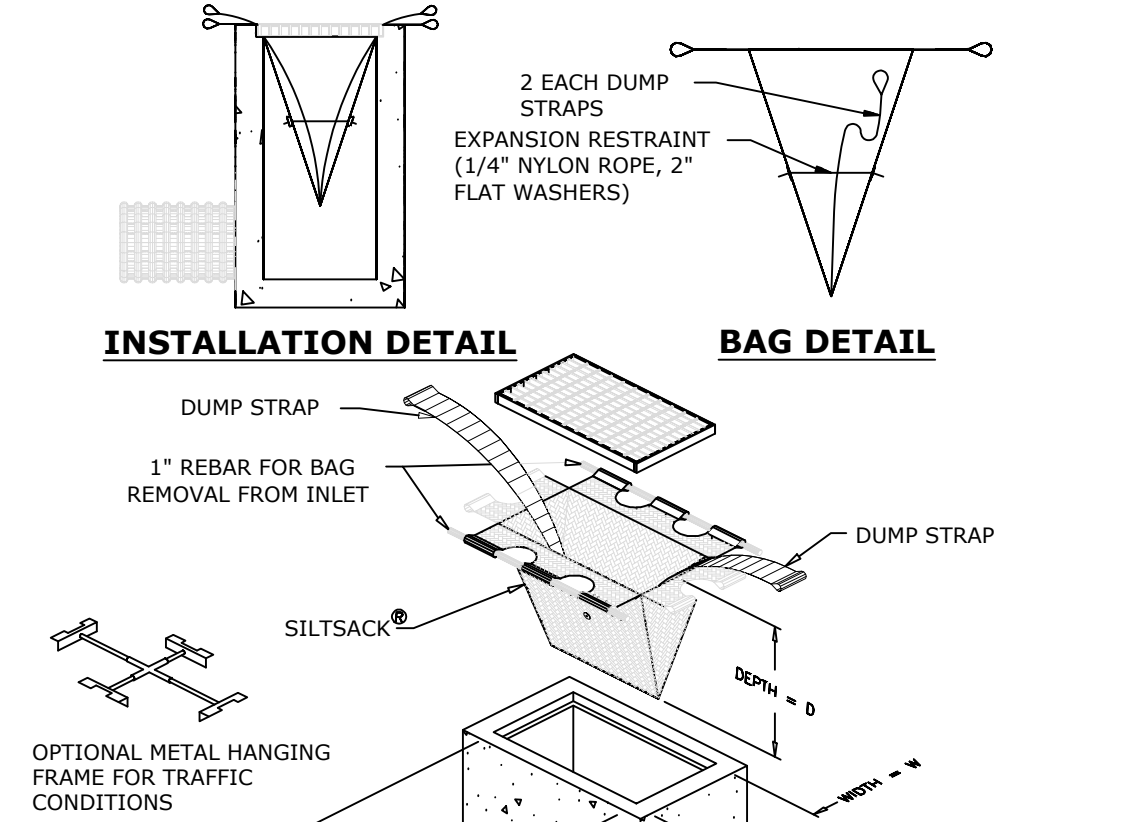


NOTE: CONSTRUCTION ENTRANCE PAD SHALL BE INSTALLED AND MAINTAINED DURING OPERATIONS WHICH PROMOTE VEHICULAR TRACKING OF MUD

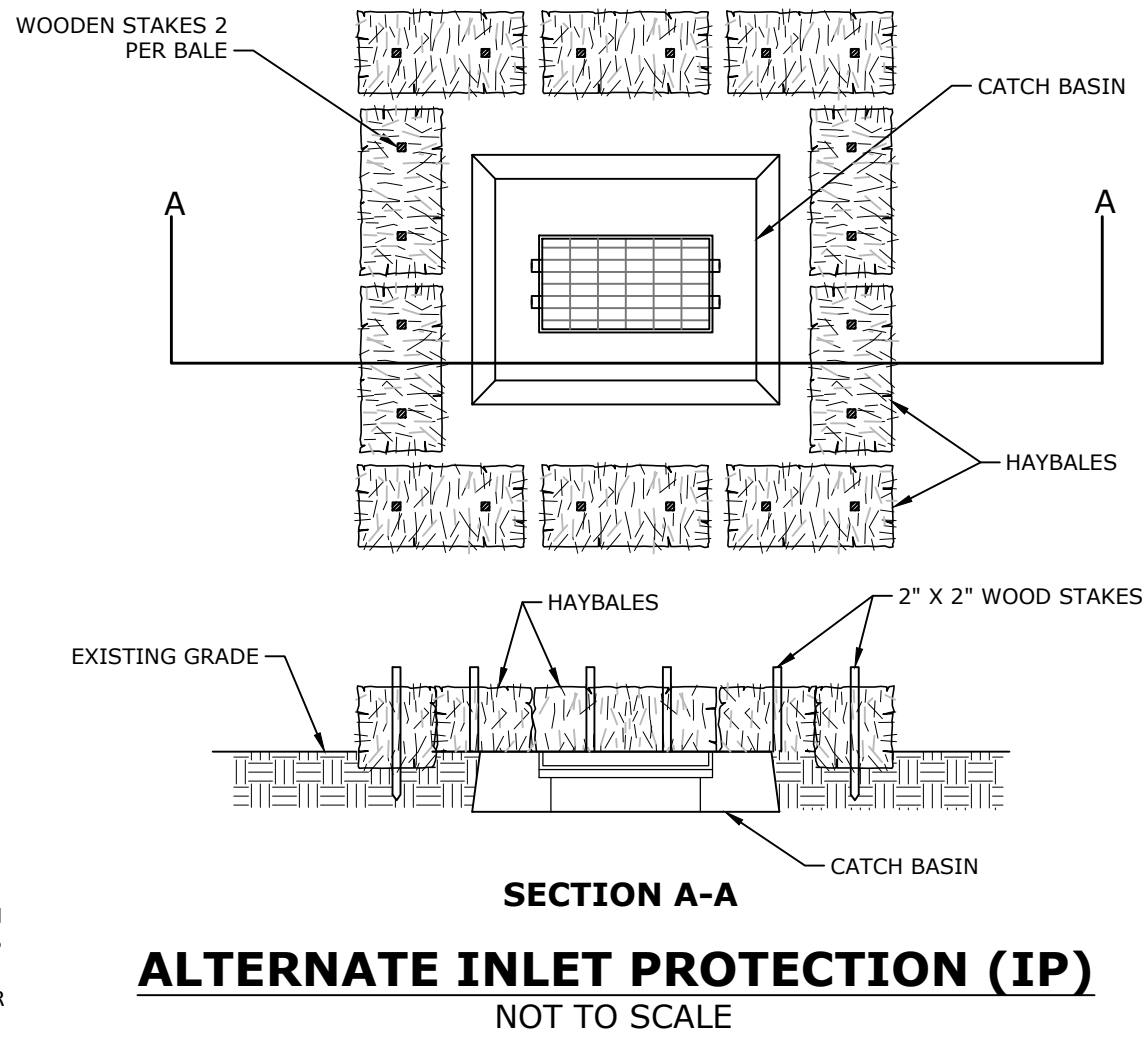
CONSTRUCTION ENTRANCE PAD (CE)  
NOT TO SCALE

HOUSKEEPING NOTES

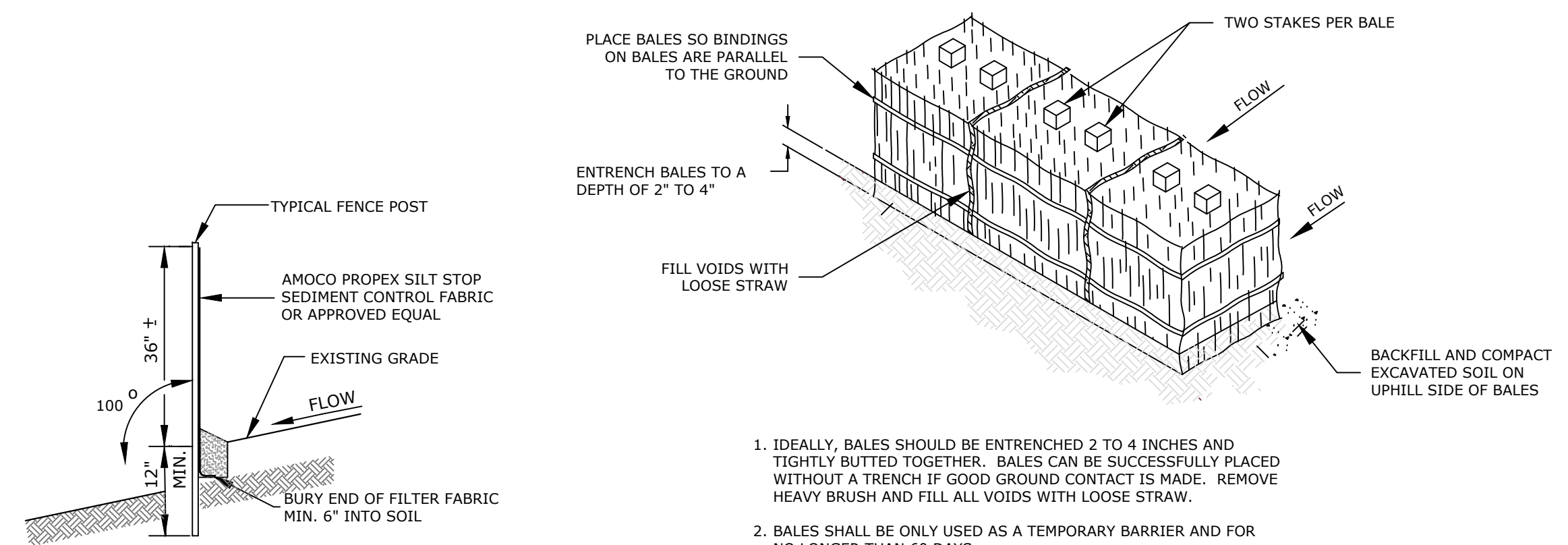
- SPILL PREVENTION: CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS ON SITE TO ENTER STORMWATER, WHICH INCLUDES STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER. THE SITE CONTRACTOR OR OPERATOR MUST DEVELOP, AND IMPLEMENT AS NECESSARY, APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING MEASURES.
- GROUNDWATER PROTECTION: DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN "INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY AND OTHER RELEVANT FACTORS ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL. DIKES, BERMS, SUMPS, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS. ANY PROJECT PROPOSING INFILTRATION OF STORMWATER MUST PROVIDE ADEQUATE PRE-TREATMENT OF STORMWATER PRIOR TO DISCHARGE OF STORMWATER TO THE INFILTRATION AREA, OR PROVIDE FOR TREATMENT WITHIN THE INFILTRATION AREA, IN ORDER TO PREVENT THE ACCUMULATION OF FINES, REDUCTION IN INFILTRATION RATE, AND CONSEQUENT FLOODING AND DESTABILIZATION.
- FUGITIVE SEDIMENT AND DUST: ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OIL MAY NOT BE USED FOR DUST CONTROL, BUT OTHER WATER ADDITIVES MAY BE CONSIDERED AS NEEDED. A STABILIZED CONSTRUCTION ENTRANCE (SCE) SHOULD BE INCLUDED TO MINIMIZE TRACKING OF MUD AND SEDIMENT. IF OFF-SITE TRACKING OCCURS, PUBLIC ROADS SHOULD BE SWEEP IMMEDIATELY AND NO LESS THAN ONE WEEK AND PRIOR TO SIGNIFICANT STORM EVENTS. OPERATIONS DURING DRY MONTHS, THAT EXPERIENCE FUGITIVE DUST PROBLEMS, SHOULD WET DOWN UNPAVED ACCESS ROADS ONCE A WEEK OR MORE FREQUENTLY AS NEEDED WITH A WATER ADDITIVE TO SUPPRESS FUGITIVE SEDIMENT AND DUST.
- DEBRIS AND OTHER MATERIALS: MINIMIZE THE EXPOSURE OF CONSTRUCTION DEBRIS, BUILDING AND LANDSCAPING MATERIALS, TRASH, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE AND OTHER MATERIALS TO PRECIPITATION AND STORMWATER RUNOFF. THESE MATERIALS MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.
- EXCAVATION DE-WATERING: EXCAVATION DE-WATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS, COFFER DAMS, PONDS, AND OTHER AREAS WITHIN THE CONSTRUCTION AREA THAT RETAIN WATER AFTER EXCAVATION. IN MOST CASES THE COLLECTED WATER IS HEAVILY SILTED AND HINDERS CORRECT AND SAFE CONSTRUCTION PRACTICES. THE COLLECTED WATER REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, MUST BE SPREAD THROUGH NATURAL WOODDED BUFFERS OR REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFERDAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE. EQUIVALENT MEASURES MAY BE TAKEN IF APPROVED BY THE DEPARTMENT.
- AUTHORIZED NON-STORMWATER DISCHARGES: IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES. WHERE ALLOWED NON-STORMWATER DISCHARGES EXIST, THEY MUST BE IDENTIFIED AND STEPS SHOULD BE TAKEN TO ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORMWATER COMPONENT(S) OF THE DISCHARGE. AUTHORIZED NON-STORMWATER DISCHARGES ARE:
  - (a) DISCHARGES FROM FIREFIGHTING ACTIVITY;
  - (b) FIRE HYDRANT FLUSHINGS;
  - (c) VEHICLE WASHWATER IF DETERGENTS ARE NOT USED AND WASHING IS LIMITED TO THE EXTERIOR OF VEHICLES (ENGINE, UNDERCARRIAGE AND TRANSMISSION WASHING IS PROHIBITED);
  - (d) DUST CONTROL RUNOFF IN ACCORDANCE WITH PERMIT CONDITIONS AND APPENDIX (C)(3);
  - (e) ROUTINE EXTERNAL BUILDING WASHDOWN, NOT INCLUDING SURFACE PAINT REMOVAL, THAT DOES NOT INVOLVE DETERGENTS;
  - (f) PAVEMENT WASHWATER (WHERE SPILLS/LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED, UNLESS ALL SPILLED MATERIAL HAD BEEN REMOVED) IF DETERGENTS ARE NOT USED;
  - (g) UNCONTAMINATED AIR CONDITIONING OR COMPRESSOR CONDENSATE;
  - (h) UNCONTAMINATED GROUNDWATER OR SPRING WATER;
  - (i) FOUNDATION OR FOOTER DRAIN-WATER WHERE FLOWS ARE NOT CONTAMINATED;
  - (j) UNCONTAMINATED EXCAVATION DEWATERING (SEE REQUIREMENTS IN APPENDIX (C)(5));
  - (k) POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHINGS; AND
  - (l) LANDSCAPE IRRIGATION.
- UNAUTHORIZED NON-STORMWATER DISCHARGES: APPROVAL FROM THE MDEP DOES NOT AUTHORIZE A DISCHARGE THAT IS MIXED WITH A SOURCE OF NON-STORMWATER, OTHER THAN THOSE DISCHARGES IN COMPLIANCE WITH SECTION 6 ABOVE. SPECIFICALLY, THE MDEP'S APPROVAL DOES NOT AUTHORIZE DISCHARGES OF THE FOLLOWING:
  - (a) WASTEWATER FROM THE WASHOUT OR CLEANOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS OR OTHER CONSTRUCTION MATERIALS;
  - (b) FUELS, OILS OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE;
  - (c) SOAPS, SOLVENTS, OR DETERGENTS USED IN VEHICLE AND EQUIPMENT WASHING; AND
  - (d) TOXIC OR HAZARDOUS SUBSTANCES FROM A SPILL OR OTHER RELEASE.



INLET PROTECTION (IP)  
NOT TO SCALE



SECTION A-A  
ALTERNATE INLET PROTECTION (IP)  
NOT TO SCALE



- IDEALLY, BALES SHOULD BE ENTRENCHED 2 TO 4 INCHES AND TIGHTLY BUTTED TOGETHER. BALES CAN BE SUCCESSFULLY PLACED WITHOUT A TRENCH IF GOOD GROUND CONTACT IS MADE. REMOVE HEAVY BRUSH AND FILL ALL VOIDS WITH LOOSE STRAW.
- BALES SHALL BE ONLY USED AS A TEMPORARY BARRIER AND FOR NO LONGER THAN 60 DAYS.
- WHEN SEDIMENTATION DEPOSITS REACH WITHIN 3





STANDARD 2" BLOW OFF



**THRUST BLOCK DETAIL**  
NOT TO SCALE



A. TESTING AND SUBMITTALS: THE CONTRACTOR SHALL IDENTIFY THE LOCATION OF THE SOURCE OF EACH COMPONENT OF THE FILTER MEDIA. ALL RESULTS OF FIELD AND LABORATORY TESTING SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR CONFIRMATION. THE CONTRACTOR SHALL:

A) SELECT SAMPLES FOR SAMPLING OF EACH TYPE OF MATERIAL TO BE BLENDED FOR THE MIXED FILTER MEDIA AND SAMPLES OF THE UNDERDRIN BEDDING MATERIAL. SAMPLES MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE OR PIT FACE. SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY.

B) PERFORM A SIEVE ANALYSIS CONFORMING TO ASTM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES 1996a) ON EACH TYPE OF THE SAMPLE MATERIAL. THE RESULTING SOIL FILTER MEDIA MIXTURE MUST HAVE 8% TO 12% BY WEIGHT PASSING THE #200 SIEVE, A CLAY CONTENT OF LESS THAN 2% (DETERMINED BY HYDROMETER GRAIN SIZE ANALYSIS) AND HAVE 10% DRY WEIGHT OF ORGANIC MATTER.

C) PERFORM A PERMEABILITY TEST ON THE SOIL FILTER MEDIA MIXTURE CORRESPONDING TO ASTM D2434 WITH THE MIXTURE COMPACTED TO 90-92% OF MAXIMUM DRY DENSITY BASED ON ASTM D698

SIEVE SIZE	% PASSING BY WEIGHT
#4	75-95
#10	60-90
#40	35-85
#200	20-70
200 CLAY	<2.0

## CONSTRUCTION DETAILS

ABBY COMMONS CONDOMINIUM  
WINDHAM, MAINE

FOR RECORD OWNER:  
**RALPH VANCE LAND DEVELOPMENT, INC.**  
5590 ROOSEVELT TRAIL  
WINDHAM, ME 04062

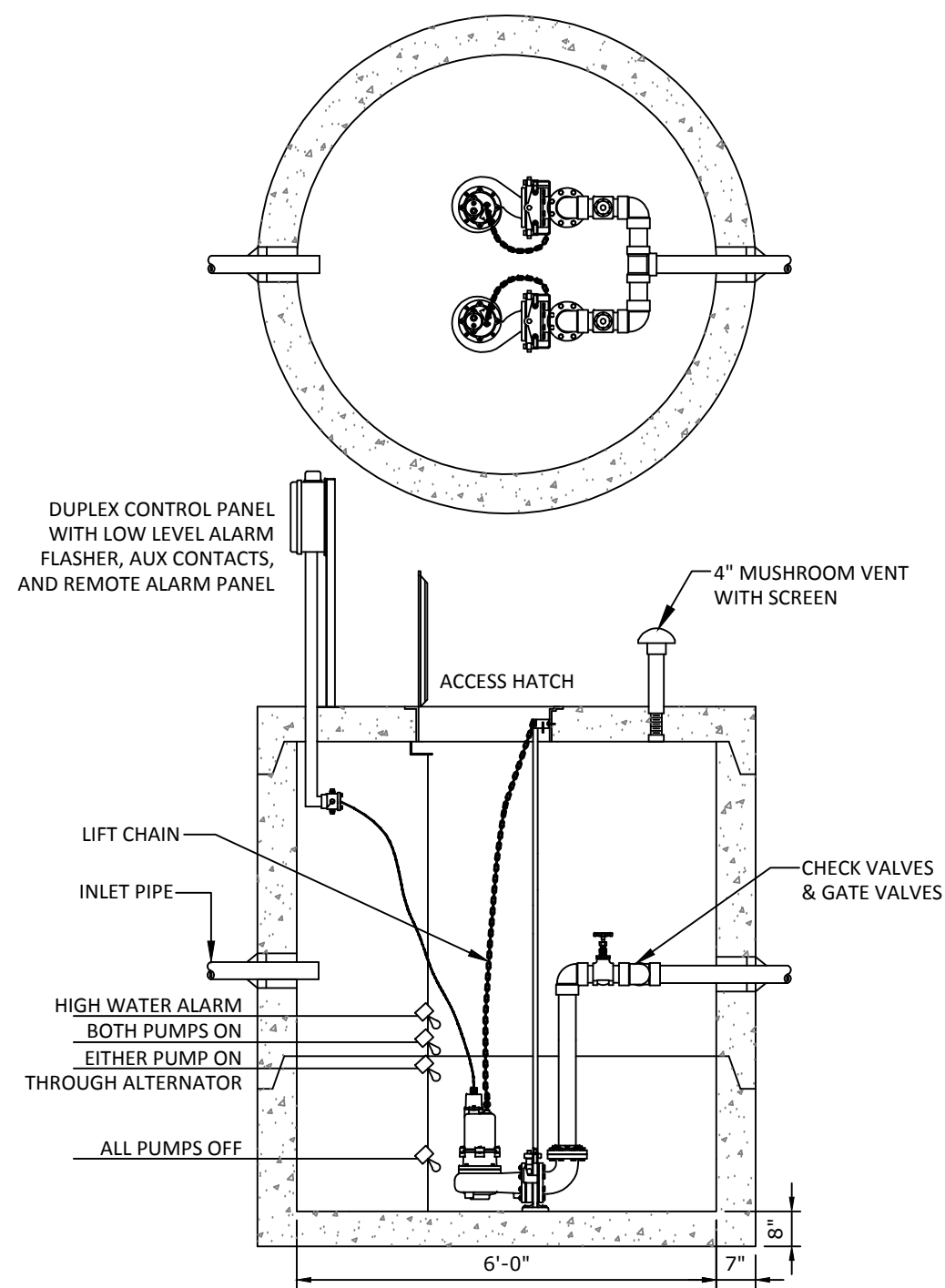
AS SHOWN  
SCALE:

8-22-2016  
DATE:

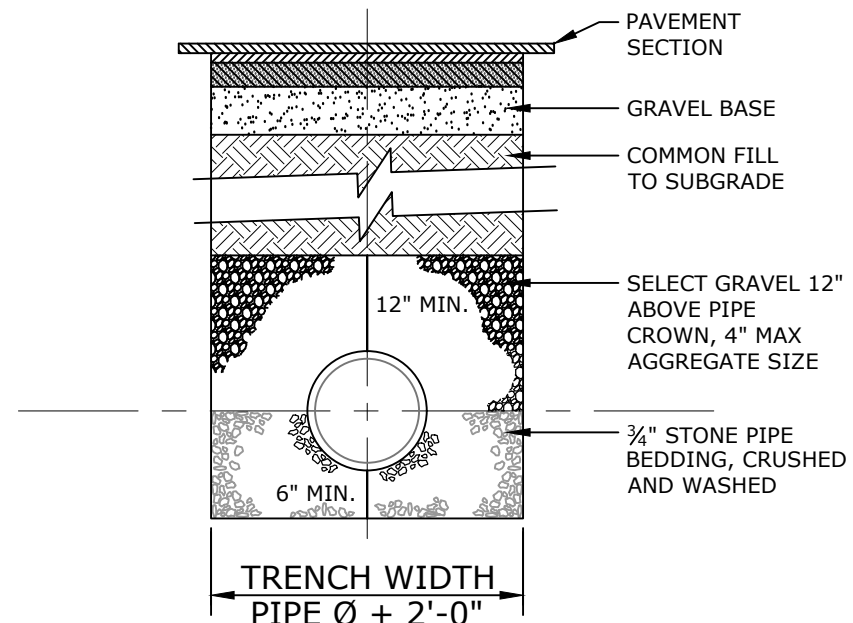
SHEET 8 OF 9

D-2





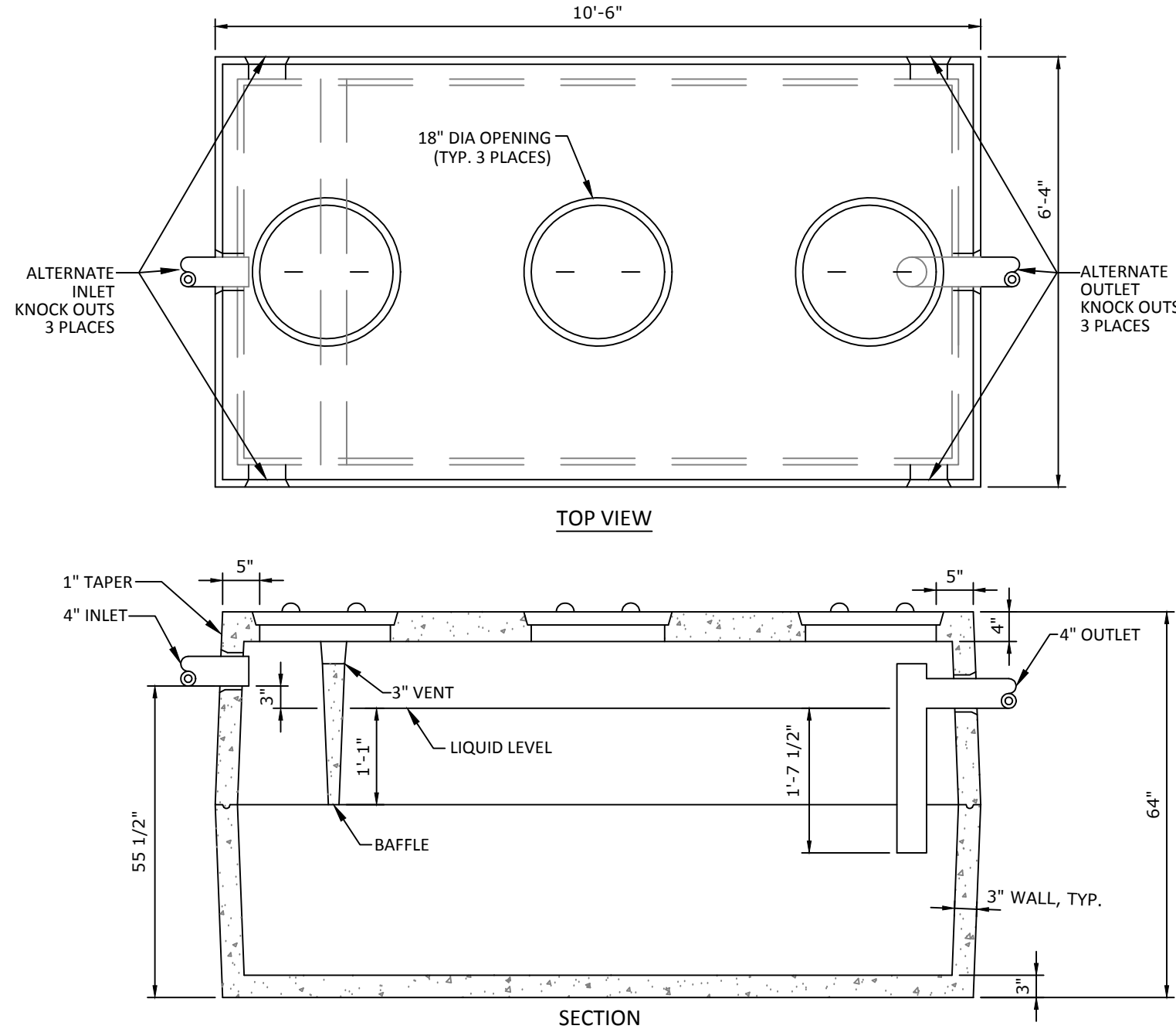
**PUMP STATION DETAIL**  
NOT TO SCALE



NOTES:

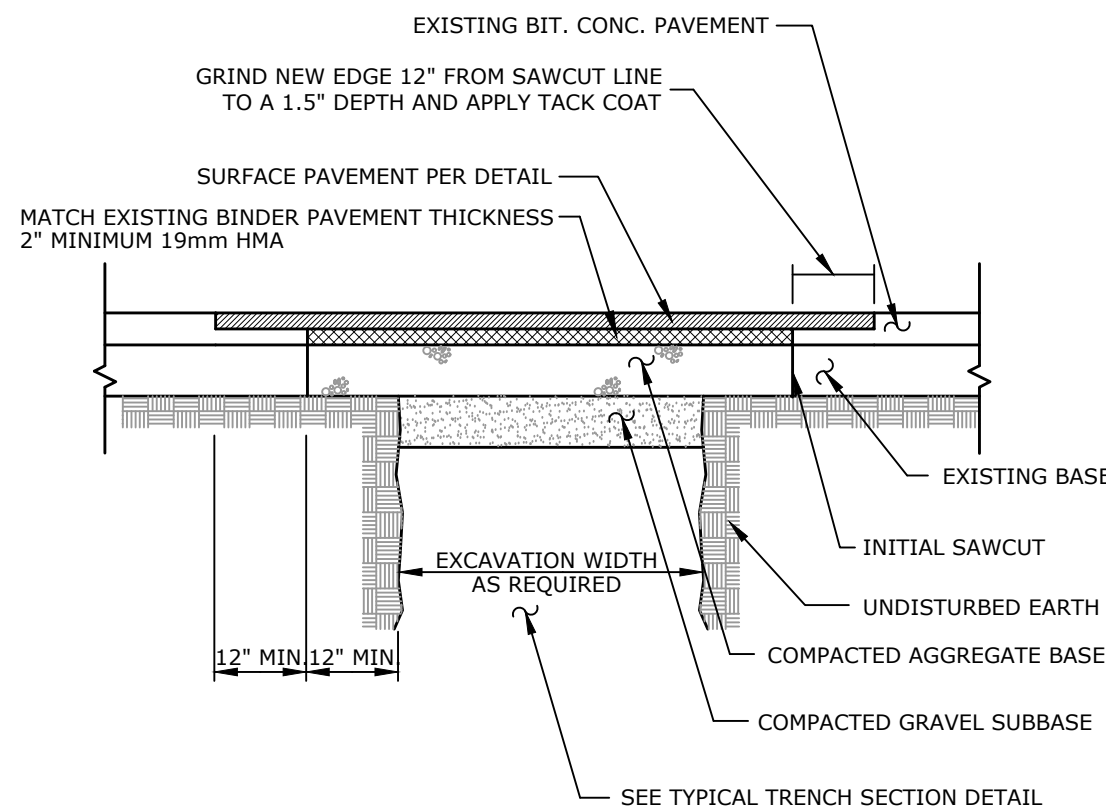
1. INSTALL 3 FOOT LONG IMPERVIOUS MATERIAL DAMS IN BEDDING/INITIAL BACKFILL MATERIAL EVERY 100 FEET TO PREVENT TRENCH GROUNDWATER FROM BEING CHANNELLED ALONG BEDDING/INITIAL BACKFILL
2. SEE TYPICAL ROAD SECTION FOR PAVEMENT AND GRAVEL DEPTHS.

**TYPICAL TRENCH SECTION**  
NOT TO SCALE



- TANK NOTES:**
1. CONCRETE TO BE 4,000 PSI AT 28 DAYS.
  2. THE INLET BAFFLE IS PRECAST AS ONE UNIT WITH THE TOP SECTION OF THE SEPTIC TANK
  3. TANKS REINFORCED WITH 6X6X10 G.A. WIRE.
  4. KEYED JOINTS SEALED WITH ASPHALT SEALANT.
  5. TANKS IN PAVED AREAS TO BE REINFORCED WITH WITH 1/2" REBAR SPACED 6" O.C. EACH WAY.
  6. TANK TO BE A 1,500 GAL. RESIDENTIAL SEPTIC TANK MODEL A-1004 AS MANUFACTURED BY PRECAST CONCRETE PRODUCTS OF MAINE, INC. OR APPROVED EQUAL

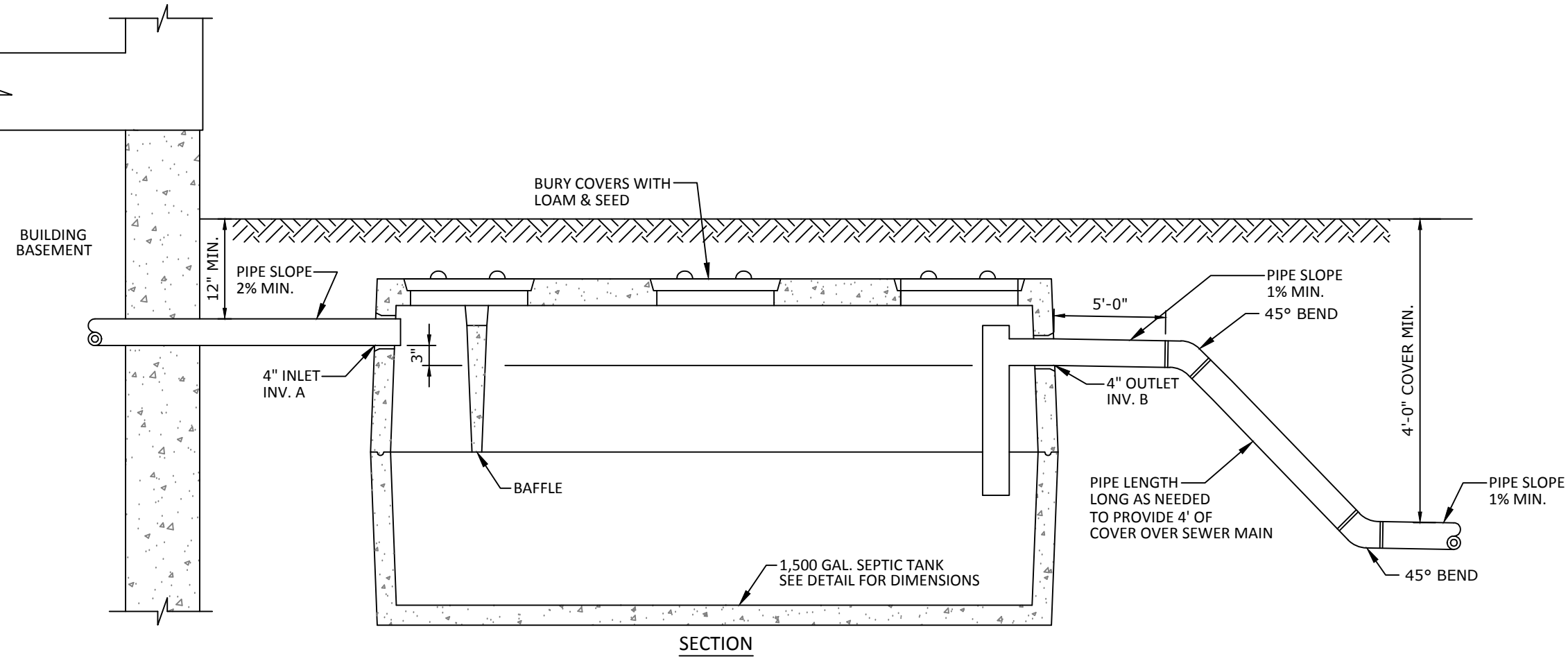
**1,500 GALLON SEPTIC TANK**  
NOT TO SCALE



NOTES:

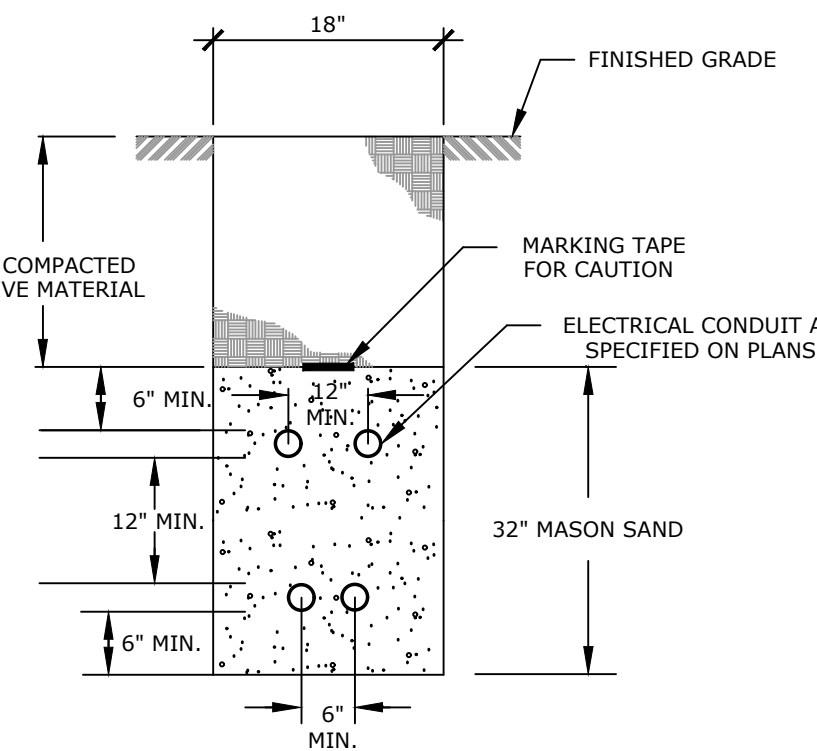
1. SEE TYPICAL ROAD SECTION FOR REQUIRED DEPTHS OF AGGREGATE AND PAVEMENT COURSES

**PAVEMENT REPAIR DETAIL**  
NOT TO SCALE



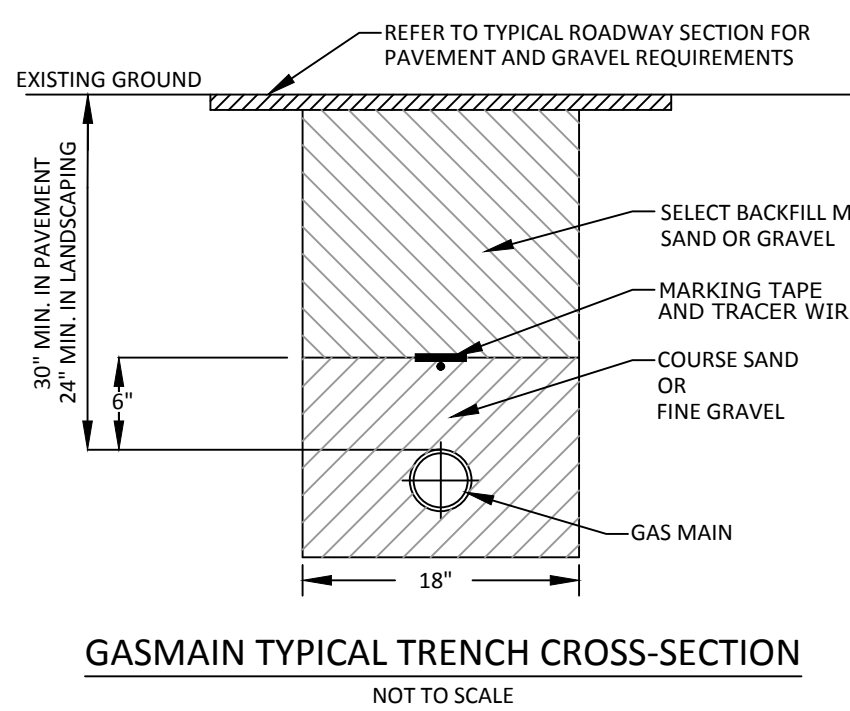
SEPTIC TANK ELEVATIONS		
UNITS SERVED	A	B
1 & 2	311.60	311.35
3 & 4	312.20	311.95
5 & 6	313.25	313.00
7 & 8	312.15	311.90
9 & 10	311.25	311.00
11 & 12	312.30	312.05
13 & 14	311.55	311.30
15 & 16	313.35	313.10
17 & 18	311.90	311.65
19 & 20	311.25	311.00
21 & 22	310.55	310.30

**SEWER SERVICE AND SEPTIC TANK DETAIL**  
NOT TO SCALE

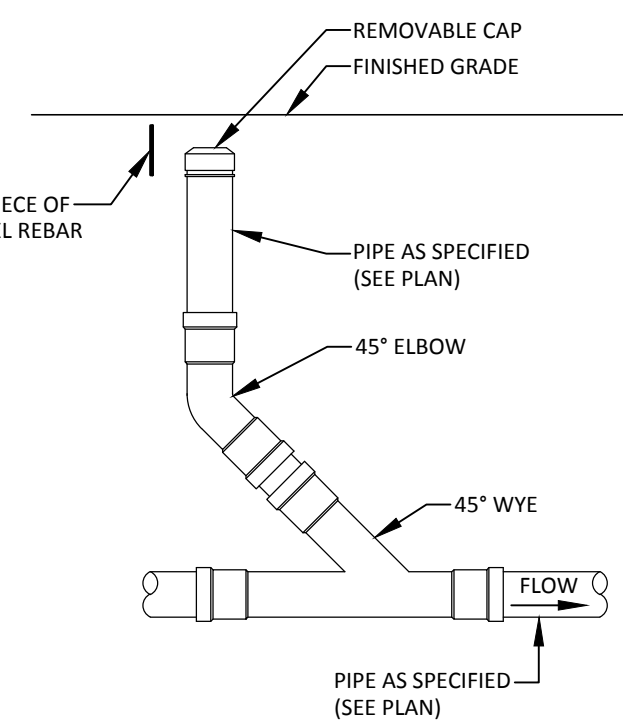


**TRENCH DETAIL - ELECTRICAL CONDUIT**  
NOT TO SCALE

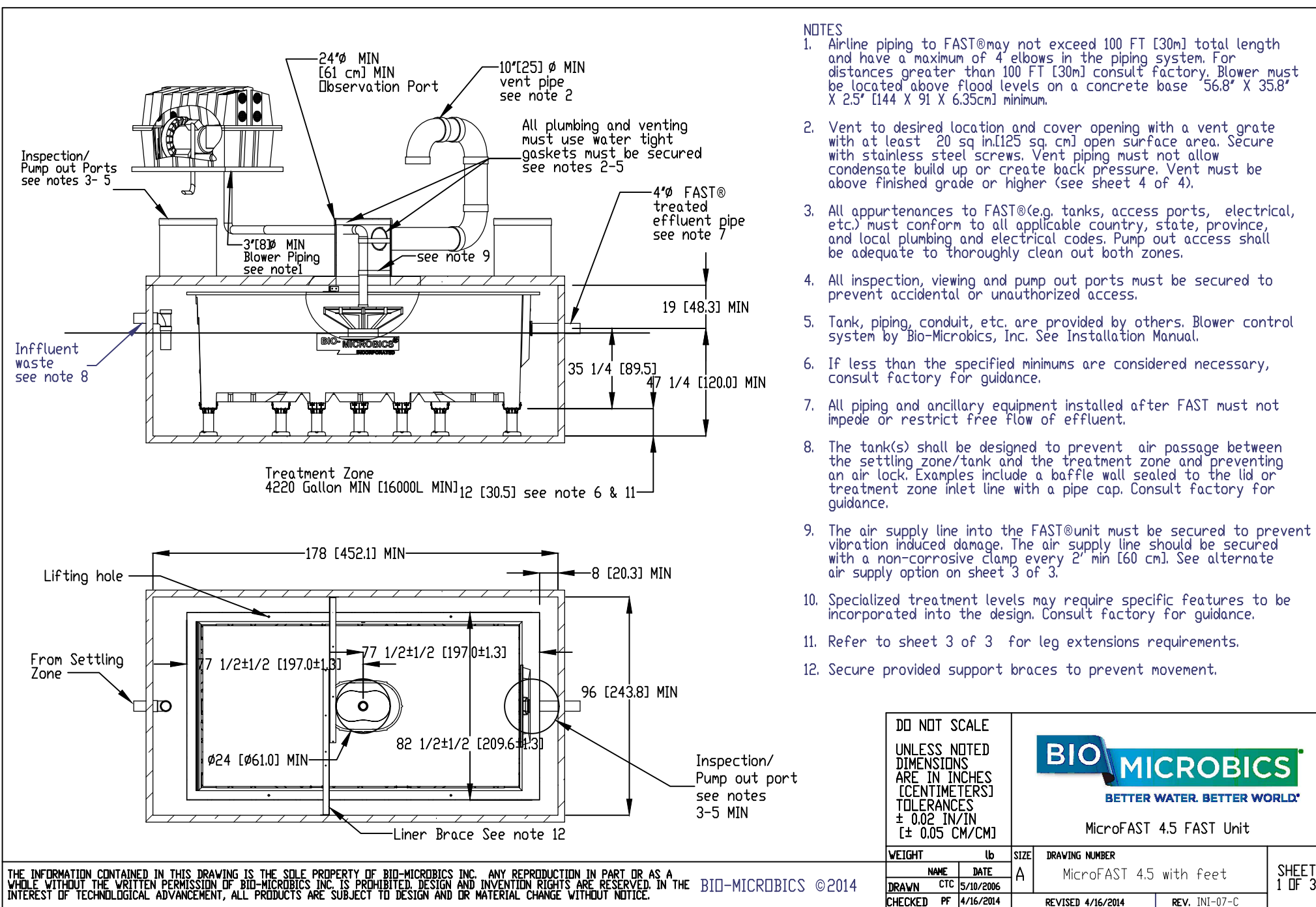
- NOTES:
1. ALL CONDUITS SHALL BE 4" DIA. PVC SCH 40 EXCEPT FOR ROAD CROSSINGS SHALL BE PVC SCH 80
  2. INSTALLATION SHOULD NOT ALLOW THE INTER-TWING OF CABLES.
  3. BEDDING AND BACKFILL SHALL BE FREE OF ROOTS, STUMPS AND OTHER DEBRIS.
  4. COMMUNICATION CABLE AND POWER CABLE SHALL HAVE NO LESS THAN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



**GASMAIN TYPICAL TRENCH CROSS-SECTION**  
NOT TO SCALE



**SANITARY CLEANOUT DETAIL**  
NOT TO SCALE



- NOTES:
1. Airline piping to FAST@ may not exceed 100 FT (30m) total length and have a maximum of 4 elbows in the piping system. For distances greater than 100 FT (30m) consult factory. Blower must be located above flood levels on a concrete base - 36" X 36" X 2.5" (144 X 91 X 6.35cm) minimum.
  2. Vent to desired location and cover opening with a vent grate with at least 20 sq in (1293 sq cm) open surface area. Secure with stainless steel screws. Vent piping must not allow condensate build up or create back pressure. Vent must be above finished grade or higher (see sheet 4 of 4).
  3. All appliances to FAST@ (e.g. tanks, access ports, electrical, etc.) must conform to all applicable country, state, province, and local plumbing and electrical codes. Pump out access shall be adequate to thoroughly clean out both zones.
  4. All inspection, viewing and pump out ports must be secured to prevent accidental or unauthorized access.
  5. Tank, piping, conduit, etc. are provided by others. Blower control system by Bio-Microbics, Inc. See Installation Manual.
  6. If less than the specified minimums are considered necessary, consult factory for guidance.
  7. All piping and ancillary equipment installed after FAST must not impede or restrict free flow of effluent.
  8. The tank(s) shall be designed to prevent air passage between the settling zone/tank and the treatment zone and preventing an air lock. Examples include a baffle wall sealed to the lid or treatment zone inlet line with a pipe cap. Consult factory for guidance.
  9. The air supply line into the FAST@ unit must be secured to prevent vibration induced damage. The air supply line should be secured with a non-corrosive clamp every 2' min (60 cm). See alternate air supply option on sheet 3 of 3.
  10. Specialized treatment levels may require specific features to be incorporated into the design. Consult factory for guidance.
  11. Refer to sheet 3 of 3 for leg extensions requirements.
  12. Secure provided support braces to prevent movement.

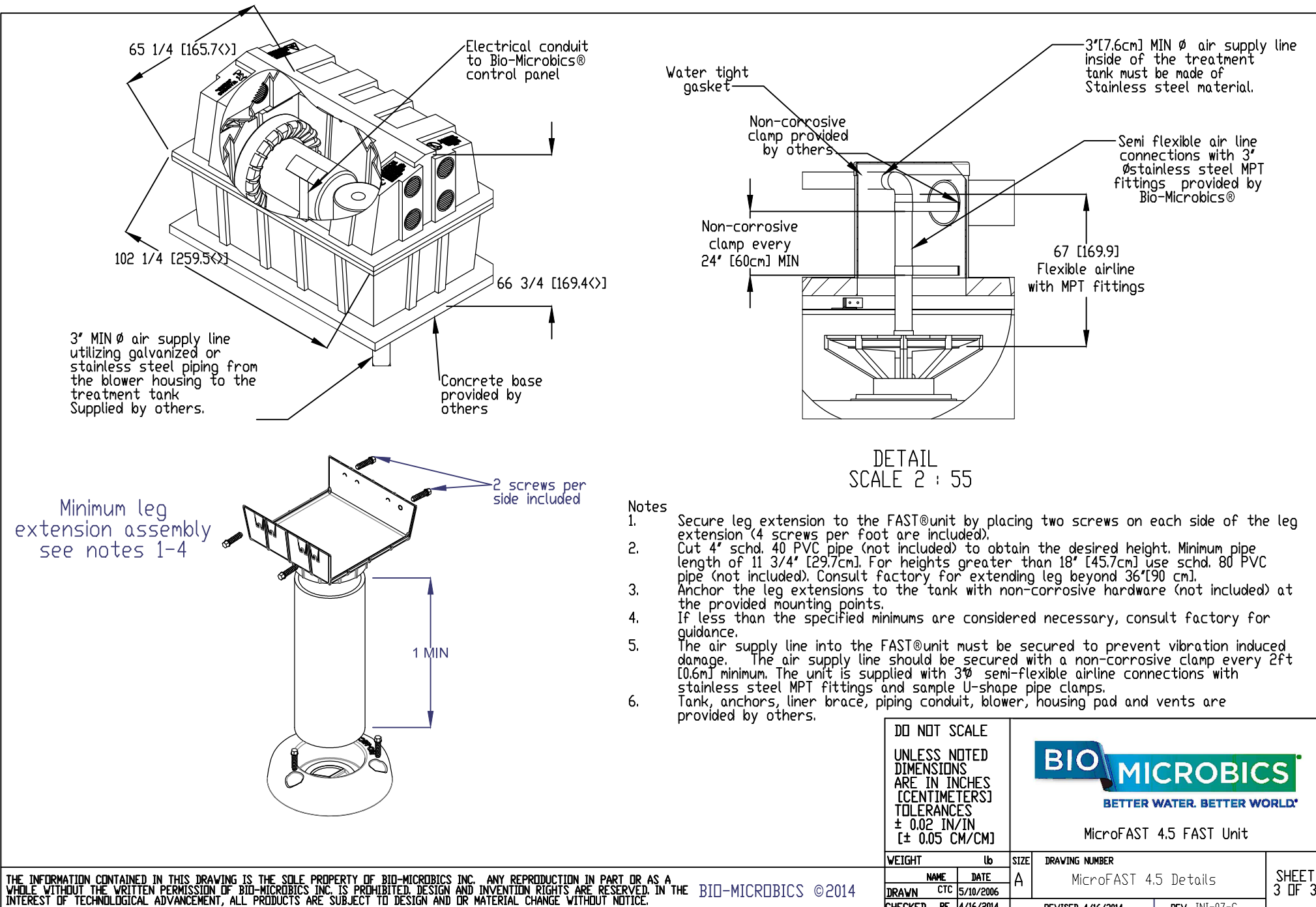
**BIO MICROBICS**  
BETTER WATER. BETTER WORLD.<sup>®</sup>  
MicroFAST 4.5 FAST Unit

DO NOT SCALE  
UNLESS NOTED  
DIMENSIONS  
ARE IN INCHES  
(CENTIMETERS)  
TOLERANCES  
± .005 IN/IN  
(± .005 CM/CM)

WEIGHT lb kg  
DRAWN BY DATE  
CHECKED BY DATE  
REV. 01-07-C

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- NOTES:
1. Secure leg extension to the FAST@ unit by placing two screws on each side of the leg extension (4 screws per foot are included).
  2. Cut 4" schd. 40 PVC pipe (not included) to obtain the desired height. Minimum pipe length of 11 3/4" (297cm). For heights greater than 18" (457cm) use schd. 80 PVC pipe (not included). Consult factory for extending leg beyond 36" (90 cm).
  3. Anchor the leg extensions to the tank with non-corrosive hardware (not included) at the provided mounting points.
  4. If less than the specified minimums are considered necessary, consult factory for guidance.
  5. The air supply line into the FAST@ unit must be secured to prevent vibration induced damage. The air supply line should be secured with a non-corrosive clamp every 2ft (60cm) minimum. The unit is supplied with 3" semi-flexible airline connections with stainless steel MPT fittings and sample U-shape pipe clamps.
  6. Tank, anchors, liner brace, piping conduit, blower, housing pad and vents are provided by others.

DETAIL  
SCALE 2 : 55

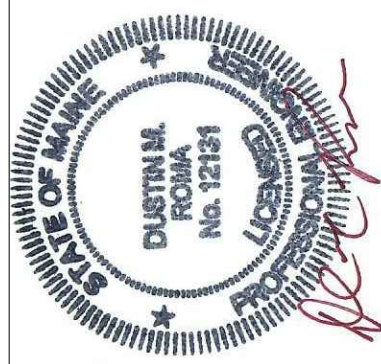
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MicroFAST 4.5 FAST Unit

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

REV	DATE	BY	DESCRIPTION
A	1-5-16	DMR	SUBMITTED TO TOWN AND MDP
B	2-16-16	DMR	REVISED PER TOWN REVIEW COMMENTS
C	4-21-16	DMR	REVISED PER REVIEW COMMENTS
D	8-22-16	DMR	SUBMITTED TO TOWN FOR FINAL APPROVAL

**CONSTRUCTION DETAILS**  
ABBY COMMONS CONDOMINIUM  
WINDHAM, MAINE  
FOR RECORD OWNER:  
RALPH VANCE LAND DEVELOPMENT, INC.

AS SHOWN  
SCALE:

8-22-2016  
DATE:

SHEET 9 OF 9

D-3