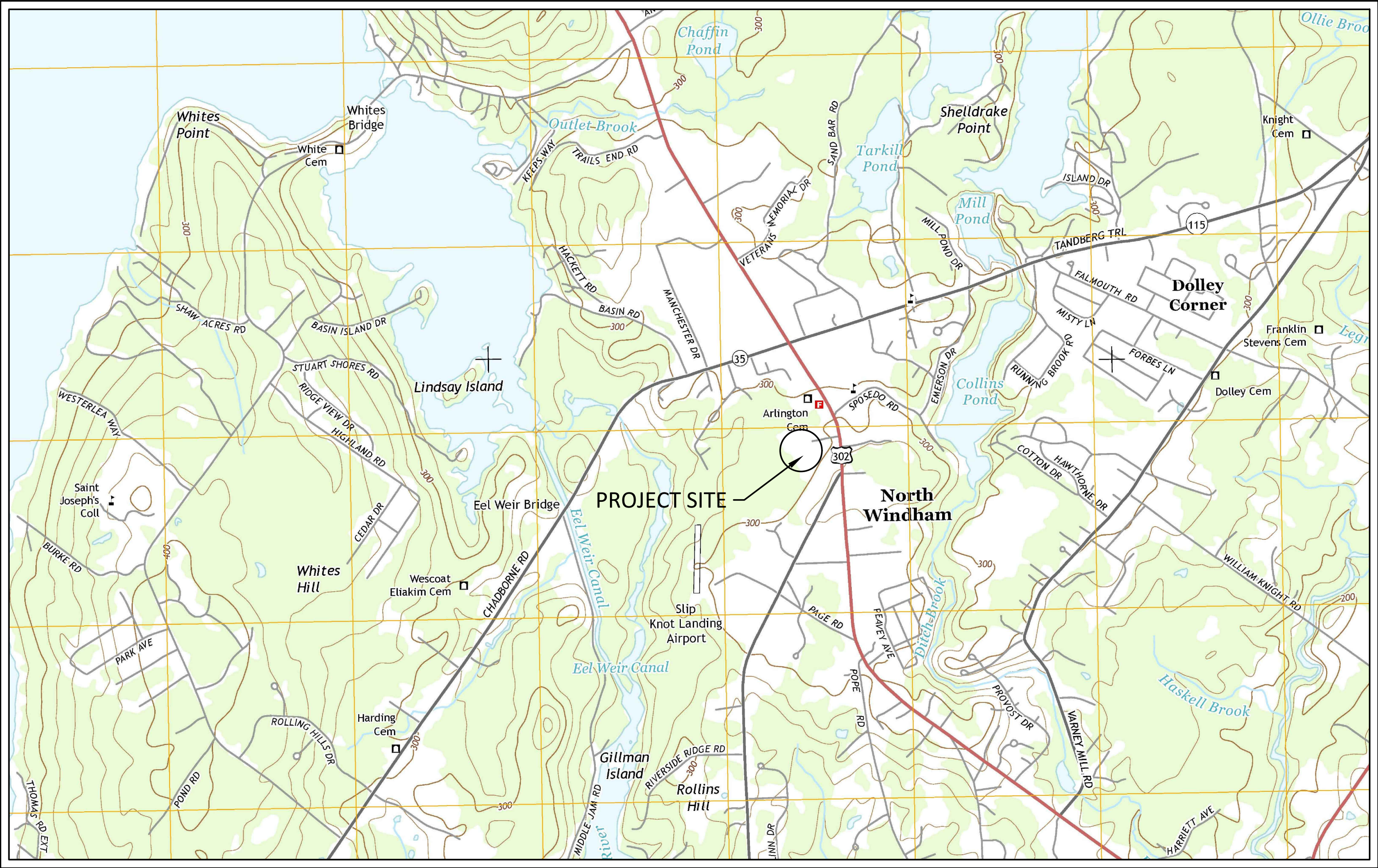


LOT 3 - PROPOSED SITE PLAN

ARCHITECTURAL DRIVE
WINDHAM, MAINE

CONSULTANTS
CIVIL ENGINEER DM ROMA CONSULTING ENGINEERS



PROJECT VICINITY MAP

ISSUED FOR MINOR SITE PLAN REVIEW - NOT FOR CONSTRUCTION
MAY 13, 2019

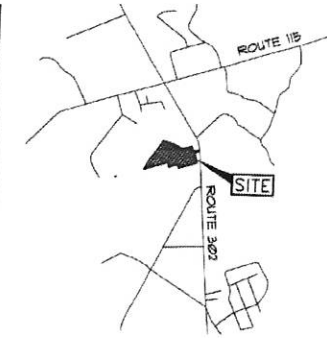
PREPARED BY:

DM ROMA

CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 310 - 0506

APPLICANT:
BRUCE N. CROCKETT
500 115TH AVE
TREASURE ISLAND, FL, 33706

LOT 3 - ARCHITECTURAL DRIVE	
DRAWING SHEET INDEX	
PAGE NO.	DESCRIPTION
1	TITLE SHEET
2	APPROVED SUBDIVISION PLAN (PINKHAM & GREER)
3	SITE LAYOUT & GRADING PLAN
4	DETAILS



ZONE INFORMATION

C-1 COMMERCIAL DISTRICT
PERMITTED USE: COMMERCIAL SUBDIVISION

SPACE STANDARDS

MINIMUM LOT SIZE 20,000 SQ. FT.

MINIMUM STREET FRONTAGE 100 FEET

MINIMUM FRONT YARD 60 FEET

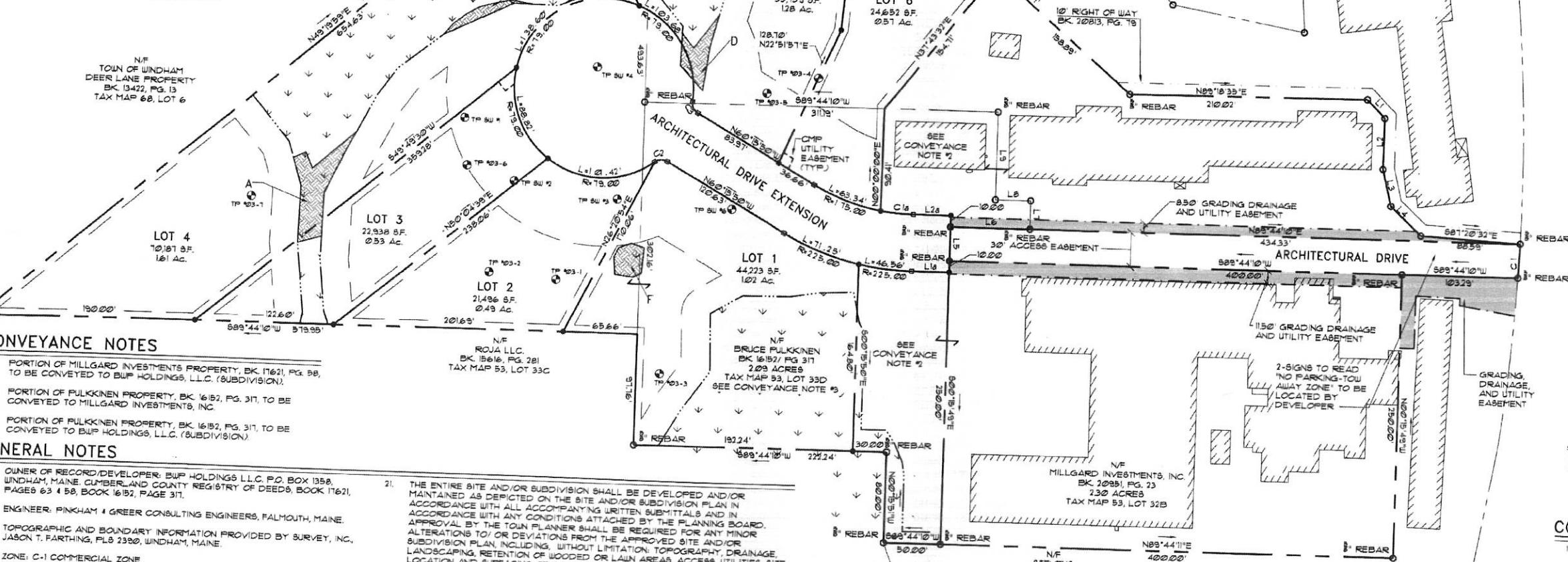
MINIMUM REAR & SIDE YARDS 6 FEET

MAXIMUM BUILDING HEIGHT NONE

* THE FIRST 15 FEET FROM THE PROPERTY LINE SHALL BE DEVELOPED AS A LANDSCAPED BUFFER STRIP.

LOCATION MAP

SCALE: 1" = 200'



- CONVEYANCE NOTES**
1. PORTION OF MILLGARD INVESTMENTS PROPERTY, BK. 17621, PG. 98, TO BE CONVEYED TO BUP HOLDINGS, LLC. (SUBDIVISION).
 2. PORTION OF FULKINEN PROPERTY, BK. 16152, PG. 317, TO BE CONVEYED TO MILLGARD INVESTMENTS, INC.
 3. PORTION OF FULKINEN PROPERTY, BK. 16152, PG. 317, TO BE CONVEYED TO BUP HOLDINGS, LLC. (SUBDIVISION).

- GENERAL NOTES**
1. OWNER OF RECORD/DEVELOPER: BUP HOLDINGS LLC, P.O. BOX 1358, WINDHAM, MAINE. GUMBERLAND COUNTY REGISTRY OF DEEDS, BOOK 17621, PAGES 63 & 58, BOOK 16152, PAGE 317.
 2. ENGINEER: PINKHAM & GREER CONSULTING ENGINEERS, FALMOUTH, MAINE.
 3. TOPOGRAPHIC AND BOUNDARY INFORMATION PROVIDED BY SURVEY, INC. JASON T. FARTHING, PLS 2390, WINDHAM, MAINE.
 4. ZONE: C-1 COMMERCIAL ZONE
PROPOSED USE: COMMERCIAL SUBDIVISION
 5. TAX MAP REFERENCE: MAP 53/LOT 33-1, MAP 53/LOT 33, & MAP 53/LOT 33D.
 6. TOTAL PARCEL = 6.25 acres
 7. WAIVERS: NONE REQUESTED.
 8. CALL DIG-SAFE PRIOR TO COMMENCING WORK, 1-800-DIG-SAFE.
 9. LOT AREAS & COVERAGE RATIOS, FRONTAGE AND SETBACKS ARE AS SHOWN ON PLAN AND IN ZONING INFORMATION NOTES.
 10. BUFFERS AND DISTANCES BETWEEN STRUCTURES ARE GOVERNED BY SETBACKS.
 11. BUILDING LOCATIONS TO BE WITHIN THE SETBACK LINES SHOWN ON THIS PLAN.
 12. CONSTRUCTION WILL COMMENCE WITH FINAL APPROVAL.
 13. BUILDINGS TO BE SERVICED BY INDIVIDUAL SEPTIC SYSTEMS AND PUBLIC WATER PROVIDED BY PORTLAND WATER DISTRICT. SEPTIC SYSTEMS MUST BE LOCATED AS SHOWN ON THIS PLAN OR AN ALTERNATE LOCATION APPROVED BY THE TOWN STAFF.
 14. POWER, TELEPHONE AND CABLE ARE TO BE UNDERGROUND.
 15. THE ASSOCIATION WILL BE RESPONSIBLE FOR MAINTAINING THE ROAD, INCLUDING FLOWING.
 16. ALL CONSTRUCTION AND SITE ALTERATIONS SHALL BE DONE IN ACCORDANCE WITH THE MAINE EROSION AND SEDIMENT CONTROL BMP'S DEPARTMENT OF ENVIRONMENTAL PROTECTION, LATEST EDITION.
 17. IRON RODS TO BE SET AT ALL CORNERS OF LOTS, GRANITE OR CONCRETE MONUMENTS TO BE SET AS SHOWN ON THIS PLAN BY THE DEVELOPER.
 18. STREET NAME: ARCHITECTURAL DRIVE
 19. NO CONSTRUCTION OR FILLING OF WETLANDS OTHER THAN THAT SHOWN ON THE PLAN ARE ALLOWED. THIS PRODUCT HAS AN NRPA PERMIT FROM DEP FOR THE IMPACTS SHOWN. ANY ADDITIONAL IMPACTS WILL REQUIRE A PERMIT FROM DEP.
 20. FAILURE TO COMMENCE SUBSTANTIAL CONSTRUCTION OF A SUBDIVISION WITHIN TWO (2) YEARS OF THE DATE OF FINAL PLANNING BOARD APPROVAL OF THE PLAN SHALL RENDER THE PLAN NULL AND VOID.

21. THE ENTIRE SITE AND/OR SUBDIVISION SHALL BE DEVELOPED AND/OR MAINTAINED AS DEPICTED ON THE SITE AND/OR SUBDIVISION PLAN IN ACCORDANCE WITH ALL ACCOMPANYING WRITTEN SUBMITTALS AND IN ACCORDANCE WITH ANY CONDITIONS ATTACHED BY THE PLANNING BOARD. APPROVAL BY THE TOWN PLANNER SHALL BE REQUIRED FOR ANY MINOR ALTERATIONS TO OR DEVIATIONS FROM THE APPROVED SITE AND/OR SUBDIVISION PLAN INCLUDING, WITHOUT LIMITATION: TOPOGRAPHY, DRAINAGE, LANDSCAPING, RETENTION OF WOODED OR LAWN AREAS, ACCESS, UTILITIES, SIZE, LOCATION AND SURFACING OF PARKING AREAS, AND LOCATION AND SIZE OF BUILDINGS. MAJOR ALTERATIONS OR DEVIATIONS MUST BE APPROVED BY THE PLANNING BOARD AS REVISIONS OR AMENDMENTS. THE INITIAL DETERMINATION OF WHETHER A CHANGE IS MINOR OR MAJOR WILL BE MADE BY THE TOWN PLANNER AND THE PLANNING BOARD CHAIRMAN.
22. PRIOR TO THE CONSTRUCTION OF A DRIVEWAY SERVING ANY USE, THE OWNER(S) OF THE PROPERTY MUST SECURE, IN WRITING, ALL REQUIRED PERMITS FOR A DRIVEWAY OPENING (i.e. "CURB CUT") FROM EITHER THE TOWN OF WINDHAM'S DEPARTMENT OF PUBLIC WORKS AND/OR THE STATE OF MAINE DEPARTMENT OF TRANSPORTATION, AS NECESSARY, AND SUBMIT A COPY OF SAID PERMITS AS PART OF AN APPLICATION FOR ANY FUTURE BUILDING PERMIT.
23. BUILDINGS WITHIN THE SITE PLAN/SUBDIVISION PLAN SHALL BE CONSTRUCTED WITH PROVISIONS FOR EITHER OF THE FOLLOWING:
 - A. A POSITIVE FREE OUTLET FOUNDATION DRAIN, WHEREBY THE FOOTING ELEVATIONS SHOULD BE SET AS ESTABLISHED BY THE BUILDER OR ENGINEER.
 - B. ANY OTHER FOUNDATION DRAINAGE SYSTEM, SUCH AS, BUT NOT LIMITED TO, A SUMP HOLE, WHEREBY THE BOTTOM OF THE FOOTING ELEVATION SHALL BE AT LEAST TWELVE (12) INCHES ABOVE THE LIMITING GROUNDWATER LEVEL AS DETERMINED BY A LICENSED SITE EVALUATOR AND APPROVED BY THE TOWN OF WINDHAM CODE ENFORCEMENT OFFICER.
24. SNOW STORAGE IS NOT ALLOWED IN THE SOIL FILTERS OR THE WETLAND AREAS.
25. ALL DRIVEWAY ACCESS WILL BE FROM THE SUBDIVISION ROAD.
26. ALL LOTS WILL HAVE A BLANKET DRAINAGE EASEMENT FOR MAINTENANCE ACCESS, EXCEPT FROM THESE EASEMENTS ARE THE FINALIZED BUILDINGS AND PARKING LOT AREAS.
27. THE STORMWATER MANAGEMENT DESIGN WAS PERFORMED FOR PLANNING PURPOSES AND SHOULD NOT BE CONSIDERED A FINALIZED LAYOUT OR DESIGN. IF THE SITE PLANS FOR THE LOTS CHANGE, THE DEVELOPER SHALL PROVIDE UPDATED STORMWATER MANAGEMENT DESIGN CALCULATIONS AND PLANS.
28. DRAWINGS INCLUDED IN THE FINAL SUBMITTAL:
 - C1.0 SUBDIVISION PLAN
 - C2.0 EXISTING CONDITIONS PLAN
 - C3.0 SITE PLAN
 - C3.1 UTILITIES PLAN
 - C4.0 ROAD PLAN AND PROFILE
 - C5.0 EROSION CONTROL PLAN
 - C5.1 EROSION CONTROL DETAILS
 - C6.0 DETAILS
 - C6.1 DETAILS
 - D1.0 DRAINAGE ANALYSIS EXISTING DEVELOPMENT
 - D2.0 DRAINAGE ANALYSIS PROPOSED DEVELOPMENT

LOT COVERAGE TABLE

LOT #	TOTAL IMPERVIOUS AREA	BUILDING AREA
LOT 1	6,393 sq. ft.	2,100 sq. ft.
LOT 2	6,480 sq. ft.	2,100 sq. ft.
LOT 3	6,618 sq. ft.	2,000 sq. ft.
LOT 4	13,864 sq. ft.	2,000 sq. ft.
LOT 5	6,513 sq. ft.	2,000 sq. ft.
LOT 6	10,403 sq. ft.	2,000 sq. ft.

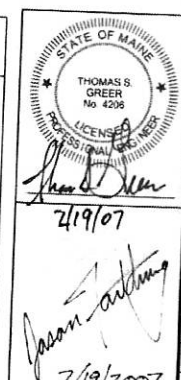
* ANY INDIVIDUAL LOT PLAN THAT EXCEEDS THE TOTAL IMPERVIOUS AREA ALLOCATION AS SHOWN IN THE TABLE MUST BE APPROVED BY THE TOWN CODE ENFORCEMENT OFFICER.

* ALL APPLICANTS PROPOSING STRUCTURES LARGER THAN SHOWN IN THE TABLE, OR LARGER THAN THE CURRENT MAXIMUM THAT WOULD TRIGGER FULL PLANNING BOARD APPROVAL, WILL BE REQUIRED TO SECURE INDIVIDUAL LOT APPROVALS ACCORDING TO SITE PLAN REVIEW PROCEDURES AND MUST MEET APPLICABLE STANDARDS.

SUBDIVISION PLAN, APPROVED BY THE TOWN OF WINDHAM PLANNING BOARD

James C. Greer
Keith K. Williams
James M. Hamilton
James R. Bignou

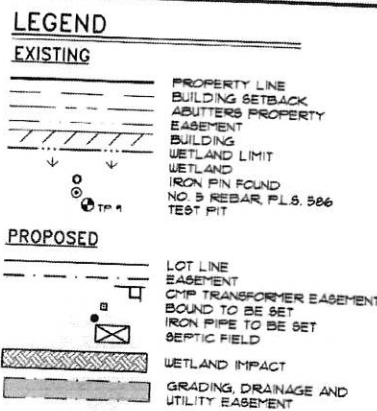
2/26/07
DATE



WETLAND IMPACT

A= 1,955 sq. ft.
B= 471 sq. ft.
C= 137 sq. ft.
D= 886 sq. ft.
E= 1,000 sq. ft.
F= 643 sq. ft.

TOTAL IMPACT= 5,092 sq. ft.

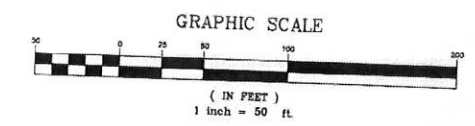


LINE TABLE

LINE	LENGTH	BEARING
L1a	33.77	S89°44'10"W
L2a	33.77	S89°44'10"W
L1	22.5	S45°20'43"E
L2	44.94	S00°00'00"E
L3	33.27	S14°06'15"E
L4	31.56	S41°48'53"E
L5	30.00	N00°15'50"W
L6	70.00	N89°44'10"E
L7	75.00	N00°15'33"W
L8	31.05	S89°44'10"W
L9	77.16	N00°15'50"W

CURVE TABLE

CURVE	LENGTH	RADIUS
C1	30.02	179.95
C2	28.29	179.20
C3	18.7	10.00
C3	18.7	10.00



CONDITIONS OF APPROVAL

1. THE CUL DE SAC WAS DESIGNED TO ACCOMMODATE A 10550 TRUCK.
2. A TRAFFIC ENGINEER MUST REVIEW ALL APPLICATIONS FOR A BUILDING PERMIT AND ANY CHANGE OF USE FOR COMPLIANCE WITH THE PLANNING BOARD APPROVAL PRIOR TO ANY BUILDING PERMITS BEING ISSUED, AND IF THERE IS A CHANGE OF USE OR MORE THAN 30 TRIPS PER HOUR MAXIMUM, FOR ARCHITECTURAL DRIVE SUBDIVISION IT MUST BE RETURNED TO THE PLANNING BOARD FOR APPROVAL BEFORE ANY BUILDING PERMITS CAN BE ISSUED.
3. THE 30 FOOT WIDE TRAVELWAY MUST BE MAINTAINED AND AT ALL TIMES CLEAR FOR TWO WAY TRAFFIC.

TRIP GENERATION TABLE

LOT USE	PEAK HOUR INCREASE
2,000 SQ. FT. OFFICE SPACE	1 TRIPS
2,000 SQ. FT. OFFICE SPACE	1 TRIPS
2,000 SQ. FT. OFFICE SPACE	1 TRIPS
7,000 SQ. FT. LIGHT INDUSTRIAL	3 TRIPS
2,000 SQ. FT. LIGHT INDUSTRIAL	3 TRIPS
2,000 SQ. FT. LIGHT INDUSTRIAL	3 TRIPS

AVERAGE INCREASE IN PEAK = 5.0 TRIPS

* LOT PLANS SHOULD MAINTAIN THIS AVERAGE UNLESS APPROVED BY THE CODE ENFORCEMENT OFFICER.

* TRIP GENERATION DATA WAS OBTAINED FROM TRIP GENERATION 6TH EDITION ISSUED BY THE INSTITUTE OF TRANSPORTATION ENGINEERS.

REV.	DATE	DESCRIPTION
8	2/19/07	REVISED PER PLANNING BOARD COMMENTS
7	2/12/07	REVISED PER NEW BOUNDARY SURVEY
6	1/5/07	REVISED PER CONDITIONS OF APPROVAL AND DEP PRE-APP MEETING
5	12/8/06	REVISED PER COMMENTS FROM MAINE TRAFFIC RESOURCES
4	11/27/06	REVISIONS PER PLANNING BOARD COMMENTS
3	10/8/06	NOTE #22 CHANGED
2	9/22/06	REVISIONS PER PEER REVIEW
1	8/10/06	REVISIONS PER CLIENTS REQUEST

OWNER OF RECORD: BUP HOLDINGS LLC
P.O. BOX 1358 WINDHAM, MAINE

COMMERCIAL LOTS ON ARCHITECTURAL DRIVE
WINDHAM, MAINE

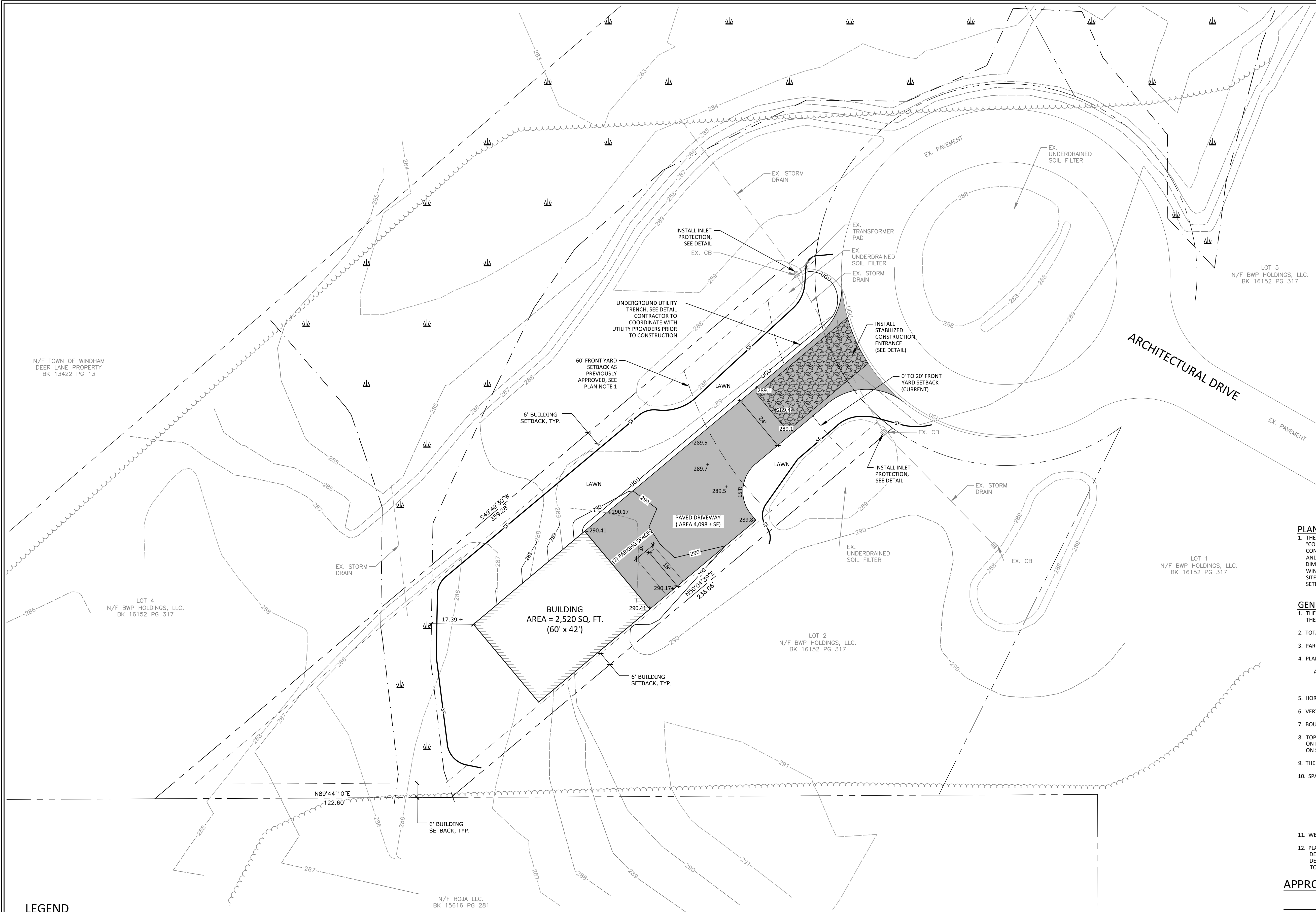
FINAL MAJOR SUBDIVISION PLAN

CONSULTING ENGINEERS, INC.
FALMOUTH, MAINE

SCALE: AS NOTED
DATE: JUNE 9, 2006
PROJECT: 06110

DRN BY: RJB/OPD
DESG BY: TSG
CHK BY: TSG

C1.0

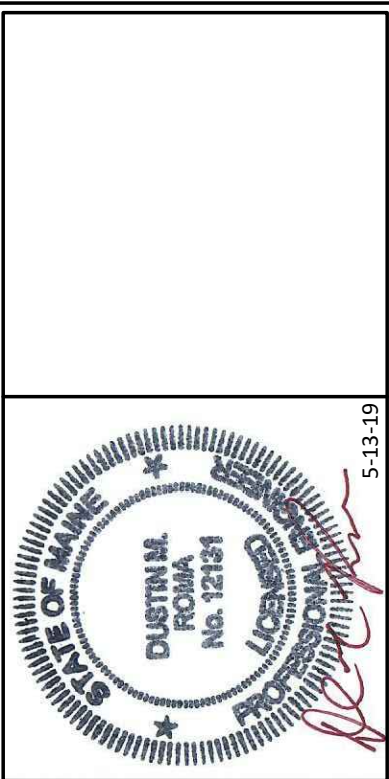


LEGEND	
EXISTING	PROPOSED
	PROPERTY LINE/R.O.W.
	ABUTTER PROPERTY LINE
	SETBACK
	EASEMENT LINE
	BUILDING
	EDGE OF PAVEMENT/CURB
	EDGE OF GRAVEL
	EDGE OF WETLANDS
	CONTOUR LINE
	TREELINE
	CATCHBASIN
	CULVERT/STORMDRAIN
	UNDERDRAIN
	OVERHEAD UTILITIES
	UNDERGROUND UTILITIES
	TRANSFORMER PAD
	RIPRAP
	SILT FENCE

- PLAN NOTE:**
- THE APPROVED FINAL MAJOR SUBDIVISION PLAN INCLUDED IN THE PLAN SET FOR "COMMERCIAL LOTS ON ARCHITECTURAL DRIVE", PREPARED BY PINKHAM & GREER CONSULTING ENGINEERS, INC. PREPARED FOR BWP HOLDINGS, LLC., DATED JUNE 9 2006 AND REVISED THROUGH 2/19/2007, WAS APPROVED WITH DIFFERENT ZONING DIMENSIONAL REQUIREMENTS THAN THOSE ADOPTED BY THE CURRENT TOWN OF WINDHAM LAND USE ORDINANCE (ADOPTED SEPTEMBER 2009). AS SUCH THIS PROPOSED SITE PLAN SUBSTANTIAL CONFORMS TO THE SITE DESIGN AND ZONING FRONT YARD SETBACK OF 60-FEET SHOWN ON THE APPROVED SUBDIVISION PLAN.
- GENERAL NOTES:**
- THE OWNER OF RECORD OF THE PROPERTY IS BWP HOLDINGS, LLC., BY DEED RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS BOOK 16152 PAGE 317.
 - TOTAL AREA OF THE PARCEL IS APPROXIMATELY 0.53± ACRES.
 - PARCEL TAX MAP REFERENCE: TOWN OF WINDHAM ASSESSORS MAP 53, LOT 33-3.
 - PLAN REFERENCES:
 - A) "COMMERCIAL LOTS ON ARCHITECTURAL DRIVE", PREPARED BY PINKHAM & GREER CONSULTING ENGINEERS, INC. PREPARED FOR BWP HOLDINGS, LLC., DATED JUNE 9 2006 AND REVISED THROUGH 2/19/2007.
 - HORIZONTAL DATUM: MAGNETIC NORTH OF 2006
 - VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
 - BOUNDARY SHOWN HEREON IS BASED ON PLAN REFERENCE 4A.
 - TOPOGRAPHIC CONTOURS AND EXISTING UTILITIES SHOWN HEREON ARE BASED SOLELY ON PLAN REFERENCE 4A AND ITS SUBSEQUENT DESIGN PLANS LISTED IN GENERAL NOTE 28 ON SAID PLAN.
 - THE PROPERTY IS LOCATED IN THE C-1 DISTRICT.
 - SPACE AND BULK REQUIREMENTS: C-1 DISTRICT
- | | |
|----------------------|--------------|
| MIN LOT SIZE: | C-1 DISTRICT |
| MIN STREET FRONTAGE: | NONE |
| MIN FRONT YARD: | 100 FT |
| MIN SIDE/REAR YARD: | 0-20 FT |
| MAX BUILDING HEIGHT: | 6 FT |
| | NONE |
- WETLANDS SHOWN HEREON PER PLAN REFERENCE 4A.
 - PLAN REFERENCE 4A INCLUDES A LOT COVERAGE TABLE THAT INDICATES THAT LOT 3 WAS DESIGNED WITH A TOTAL IMPERVIOUS AREA COMPONENT OF 6,619 SQUARE FEET. AS DESIGNED THE PROPOSED SITE PLAN PROPOSES A TOTAL OF 6,617 SQUARE FEET OF TOTAL IMPERVIOUS AREA.

APPROVED - WINDHAM PLANNING BOARD:

CHAIRPERSON	DATE



DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 310-0506

REV	DATE	BY	DESCRIPTION
A	5-13-19	DMK	ISSUED FOR REVIEW

SITE LAYOUT & GRADING PLAN
LOT 3 - ARCHITECTURAL DRIVE
WINDHAM, MAINE
FOR APPLICANT:
BRUCE N. CROCKETT
380 JI 15TH AVE
INDUSRIAL PARK
INDUSRIAL PARK, FL 32706

19021
JOB NUMBER:
1" = 20'
SCALE:
5-13-2019
DATE:
SHEET 1 OF 1
S-1

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 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 SLITS, 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 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 SEEDBED, THE CONTRACTOR SHAT APPLY FERTILIZER AT A RATE OF 600 POUNDS PER ACRE OF 10-10-10 (N-P205-K20) OR EQUIVALENT AND LIME/STONE 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 PROPPYLENE, 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 BURLAP.

STRAY/HAY BALES SHALL BE INSTALLED WHERE SPECIFIED ON THE PLANS IN A SINGLE ROW WITH THE ENDS OF ADJACENT BALES TIGHTLY ADJUTING 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 SOD, 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 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 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, 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 OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY LIFTS. FROZEN MATERIAL OR SOFT, MOIST, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILL SLOPES OR STRUCTURAL MATERIALS. CUTS 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 WEEDS. AFTER THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GRADE, AND IMMEDIATELY PRIOR TO SPREADING THE TOPSOIL, THE SUBGRADE SHALL BE LOOSENEED BY SCARPING 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 UNDUCE 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 SPARSE, PLANT COVERAGE IS SPOTTY, OR TOPSOIL EROSION IS EVIDENT. ONE OR MORE OF THE FOLLOWING MAY APPLY TO A PARTICULAR SITE.

SEEDED AREAS: TO PREPARE THE SEEDED, 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 USE 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 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 BOUND 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 FINE 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 MEET TYPE C UNDERMAN MATERIAL SPECIFICATIONS AND BE AT LEAST 6 INCHES THICK. GEOTEXTILE FILTER BLANKETS SHALL BE SPECIFIED BASED ON SITE CONDITIONS. RIPRAP SLOPES 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 CHANNEL'S FINAL GRADING OR LINING INSTALLATION MUST BE DELAYED, THEN DIVERSION BERMS MUST BE USED TO DIVERT STORMWATER AWAY FROM THE CHANNEL, 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 PRIOR TO THE DATE 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 DENUED 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 DENUEDED 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 ONE-ONE-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 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 CHALK, TRACING 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 LOOSED, 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 INCHES 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.

HOUSEKEEPING NOTES

1. SPILL PREVENTION: CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS ON SITE TO ENTER STORMWATER, WHICH WOULD BE USED 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.

2. 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, DINKS, BERMS, STUMPS, AND OTHER FORMS OF SECONDARY CONTAMINANT 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.

3. 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 INSTALLED TO MINIMIZE TRACKING OF MUD AND SEDIMENT. IF OFF-SITE TRACKING OCCURS, PUBLIC ROADS SHOULD BE SWEEP IMMEDIATELY AND NO LESS THAN ONCE A 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.

4. 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.

5. 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 CRACK 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.

6. AUTHORIZED NON-STORMWATER DISCHARGES: IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES. WHERE ALLOWED NON-STORMWATER DISCHARGES EXIST, THEY MUST BE IDENTIFIED AND STOPS 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.

7. UNAUTHORIZED NON-STORMWATER DISCHARGES: APPROVAL FROM THE MDP 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 MDP'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.

