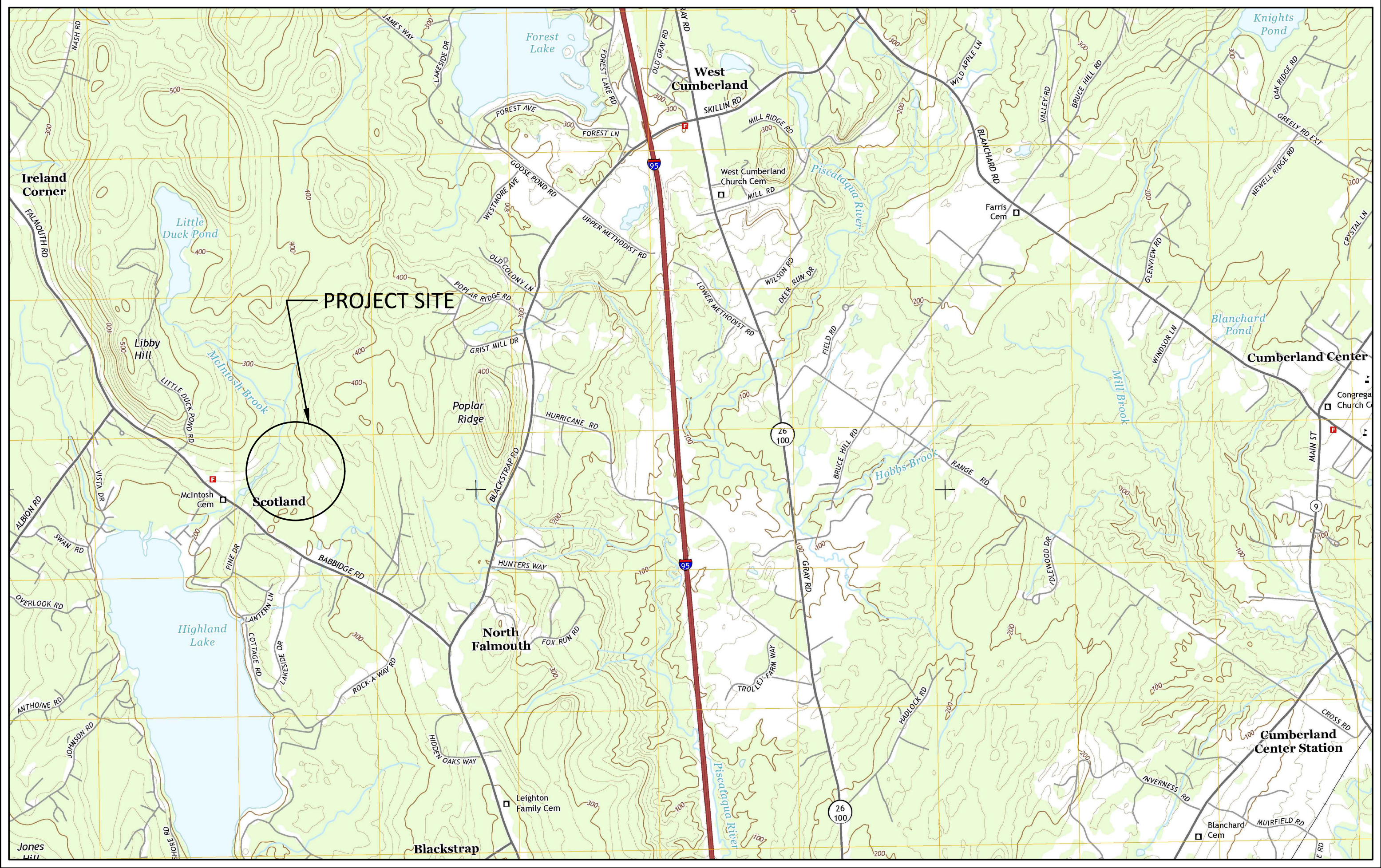


BABBIDGE FARMS SUBDIVISION

FALMOUTH ROAD
WINDHAM, MAINE

CONSULTANTS	
CIVIL ENGINEER	DM ROMA CONSULTING ENGINEERS
LAND SURVEYOR	SURVEY, INC.
SITE EVALUATOR/WETLANDS	LONGVIEW PARTNERS, LLC



PROJECT VICINITY MAP

ISSUED FOR TOWN SUBDIVISION REVIEW - NOT FOR CONSTRUCTION
JULY 3, 2017

PREPARED BY:

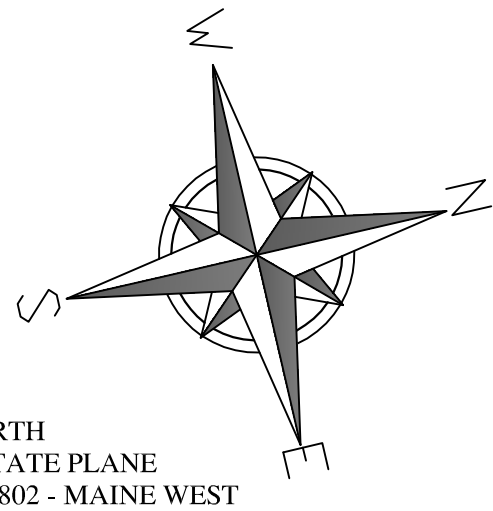
DM ROMA

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

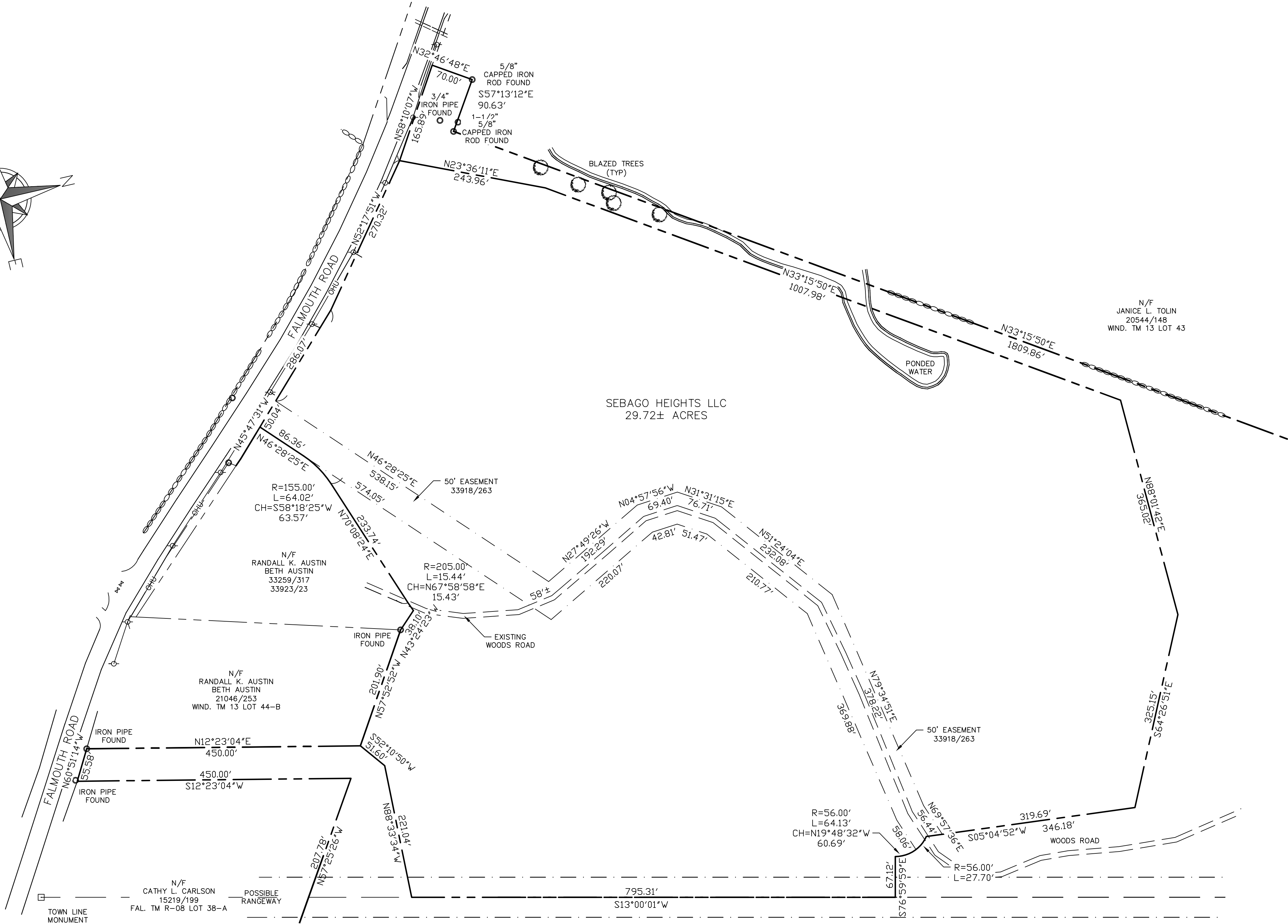
APPLICANT:
SEBAGO HEIGHTS, LLC
97A EXCHANGE STREET
PORTLAND, MAINE 04101

BABBIDGE FARMS SUBDIVISION
DRAWING SHEET INDEX

PAGE NO.	DESCRIPTION
1	TITLE SHEET
2	BOUNDARY PLAN
3	SUBDIVISION PLAN
4	PLAN & PROFILE - PROPOSED ROAD STA. -0+34 THRU STA. 5+50
5	PLAN & PROFILE - PROPOSED ROAD STA. 5+50 THRU STA. 11+50
6	PLAN & PROFILE - PROPOSED ROAD STA. 11+50 THRU 17+37
7	STORMWATER PONDS PLAN
8	DETAILS
9	DETAILS
10	DETAILS



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



BOUNDARY SURVEY
FALMOUTH ROAD
WINDHAM, MAINE
OF
BABBIDGE FARMS
FOR
SEBAGO HEIGHTS LLC
(OWNER OF RECORD)

SURVEY, INC.

P.O. BOX 210
WINDHAM, ME 04062
(207) 892-2556
INFO@SURVEYINCORPORATED.COM

DWN: WCS
DATE: JUNE 2017
CHK: DJP
JOB NO. 16009



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

WILLIAM C. SHIPPIN

6-15-17
P.L.S. 2118

PLAN REFERENCES

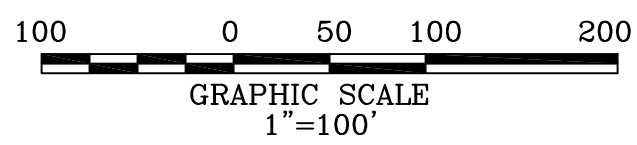
- BOUNDARY SURVEY 39 FALMOUTH ROAD WINDHAM, CUMBERLAND COUNTY, STATE OF MAINE PREPARED FOR RECORD OWNER: JANICE TOLIN DATED 12-2-07 REVISED THROUGH 1-30-08 BY LEWIS AND WASINA, INC.
- ATLAS OF CUMBERLAND COUNTY MAINE DATED 1871.
- PLAN OF PROPERTY OF HOWARD W. BUCK REVOCABLE TRUST OFF BLACKSTRAP ROAD FALMOUTH, MAINE MADE FOR TOWN OF FALMOUTH DATED 1-28-08 BY TITCOMB ASSOCIATES AND RECORDED IN PLAN BOOK 208 PAGE 77 IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS.
- SKETCH PLAN SHOWING LAND IN TOWN OF FALMOUTH, MAINE FOR FRANCIS X. PICHER ESQ DATED 5-8-84 REVISED THROUGH 6-6-84 BY MORTON AND ROSE ASSOC. AND RECORDED IN PLAN BOOK 142 PAGE 67 IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS.
- PLAN OF DIVISION OF LAND AND PRIVATE RIGHT OF WAY BABBIDGE ROAD FALMOUTH, MAINE DATED MARCH 1977 BY ROBERT P. TITCOMB, INC AND RECORDED IN PLAN BOOK 116 PAGE 14 IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS.
- BOUNDARY SURVEY FALMOUTH, MAINE FOR: TOWN OF FALMOUTH 271 FALMOUTH ROAD FALMOUTH, MAINE FRED W. CHASE (OWNER OF RECORD) DATED MARCH 3, 2009 BY SURVEY INC. AND RECORDED IN PLAN BOOK 209 PAGE 112 IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

PLAN REFERENCES CONT.

- STANDARD BOUNDARY SURVEY PLAN OF PROPERTY FALMOUTH, MAINE MADE FOR FRED CHASE DATED MAY 24, 1990 BY TITCOMB ASSOCIATES.
- PLAN OF THE BABBIDGE ROAD IN THE TOWN OF FALMOUTH AS REDEFINED BY THE COMMISSIONERS OF CUMBERLAND COUNTY FOLLOWING THE HEARING ON SAME JUNE 16, 1965 BY HI AND EC JORDAN.
- PLAN OF PROPOSED LOT ON FALMOUTH ROAD WINDHAM, MAINE FOR LISA LOMBARDO DATED AUGUST 2015 BY WAYNE T. WOOD & CO.
- STANDARD BOUNDARY SURVEY RIGHT OF WAY LOCATION FALMOUTH ROAD WINDHAM, MAINE MADE FOR JANE G. SUDDS DATED JULY 18, 1989 BY TITCOMB ASSOCIATES.
- STANDARD BOUNDARY SURVEY AND SITE PLAN FALMOUTH ROAD, WINDHAM, MAINE FOR: EAST WINDHAM FIRE DEPARTMENT DATED AUGUST 1992 BY SURVEY INC.
- COPY OF OLD PLAN WINDHAM, MAINE HALEY AND CUMMINGS PORTLAND MAINE REPRODUCED BY GEORGE SWASEY HALEY 12-9-35 AND RECORDED IN PLAN BOOK 24 PAGE 13 IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS.

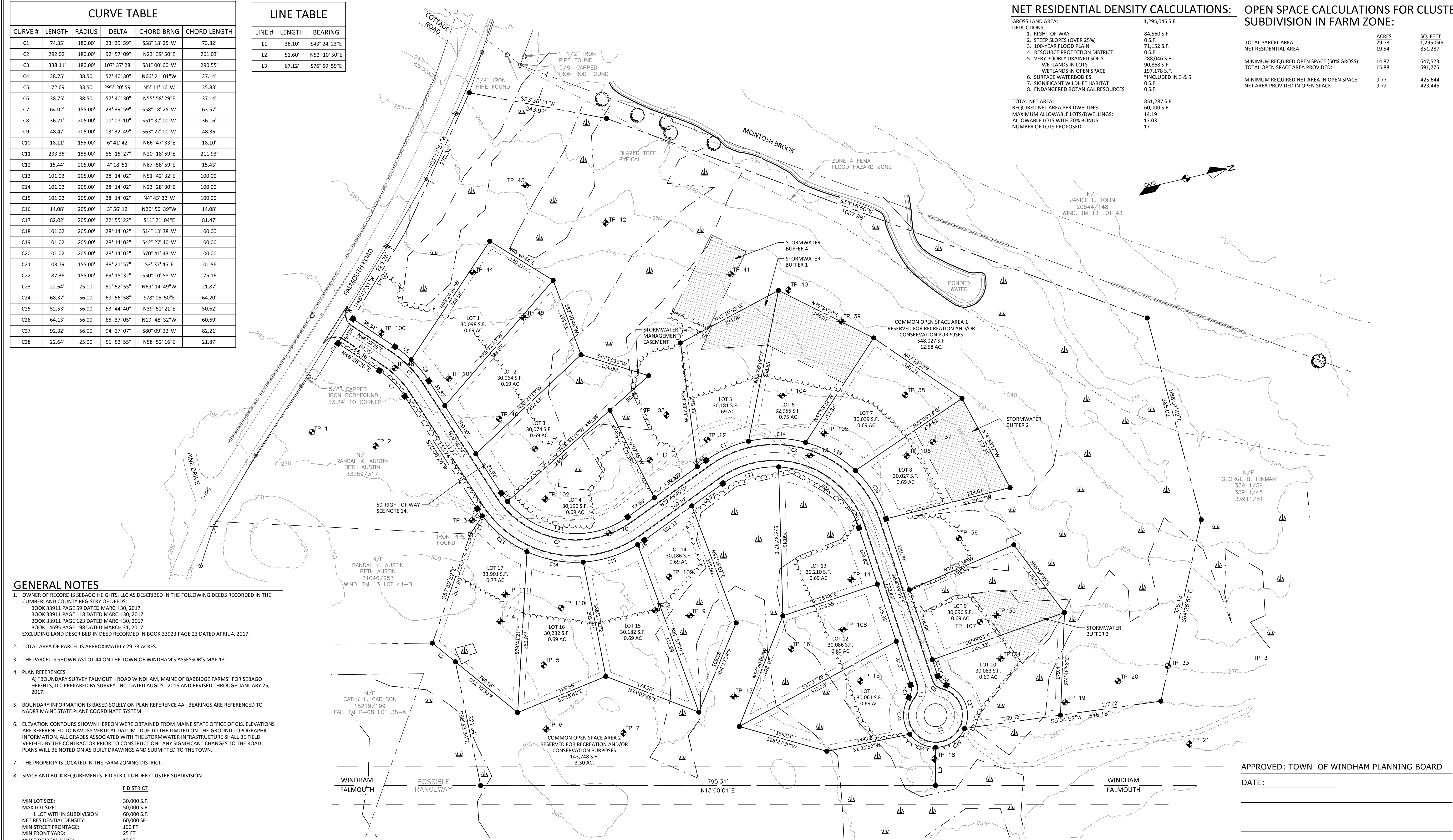
NOTES

- OWNER OF RECORD IS SEBAGO HEIGHTS, LLC AS DESCRIBED IN A DEED RECORDED IN BOOK 33911 PAGE 123 AND BOOK 33913 PAGE 198 IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS.
- THE PARCEL IS SHOWN AS LOT 44 ON THE TOWN OF WINDHAM'S ASSESSOR'S MAP 13.
- BEARINGS ARE GRID NORTH PER GPS OBSERVATIONS.
- THE PERIMETER BOUNDARY IS TAKEN FROM A PLAN ENTITLED "BOUNDARY SURVEY FALMOUTH ROAD WINDHAM, MAINE OF BABBIDGE FARMS FOR SEBAGO HEIGHTS, LLC" DATED AUGUST 2016 AND REVISED THROUGH JANUARY 25, 2017 BY SURVEY INC.
- REFERENCE IS MADE TO A MEMORANDUM OF OPTION RECORDED IN BOOK 33916 PAGE 260 IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS.



CURVE TABLE				
CURVE #	LENGTH	RADIUS	DELTA	CHORD BRNG
C1	74.35'	180.00'	23° 39' 59"	S58° 18' 25" W
C2	292.02'	180.00'	92° 57' 09"	N23° 39' 50" E
C3	338.11'	180.00'	107° 37' 28"	S31° 00' 00" W
C4	38.75'	38.50'	57° 40' 30"	N66° 21' 01" W
C5	172.69'	33.50'	295° 20' 59"	N5° 11' 16" W
C6	38.75'	38.50'	57° 40' 30"	N55° 58' 29" E
C7	64.02'	155.00'	23° 39' 59"	S58° 18' 25" W
C8	36.21'	205.00'	10° 07' 10"	S51° 32' 00" W
C9	48.47'	205.00'	13° 32' 49"	S63° 22' 00" W
C10	18.11'	155.00'	6° 41' 42"	N66° 47' 33" E
C11	233.35'	155.00'	86° 15' 27"	N20° 18' 59" E
C12	15.44'	205.00'	4° 18' 51"	N67° 58' 59" E
C13	101.02'	205.00'	28° 14' 02"	N51° 42' 32" E
C14	101.02'	205.00'	28° 14' 02"	N23° 28' 30" E
C15	101.02'	205.00'	28° 14' 02"	N4° 45' 32" W
C16	14.08'	205.00'	3° 56' 12"	N20° 50' 39" W
C17	82.02'	205.00'	22° 55' 22"	S11° 21' 04" E
C18	101.02'	205.00'	28° 14' 02"	S14° 13' 38" W
C19	101.02'	205.00'	28° 14' 02"	S42° 27' 40" W
C20	101.02'	205.00'	28° 14' 02"	S70° 41' 43" W
C21	103.79'	155.00'	38° 21' 57"	S3° 37' 46" E
C22	187.36'	155.00'	69° 15' 32"	S50° 10' 58" W
C23	22.64'	25.00'	51° 52' 55"	N69° 14' 49" W
C24	68.37'	56.00'	69° 56' 58"	S78° 16' 50" E
C25	52.53'	56.00'	53° 44' 40"	N39° 52' 21" E
C26	64.13'	56.00'	65° 37' 05"	N19° 48' 32" W
C27	92.32'	56.00'	94° 27' 07"	S80° 09' 22" W
C28	22.64'	25.00'	51° 52' 55"	N58° 52' 16" E

LINE TABLE		
LINE #	LENGTH	BEARING
L1	38.10'	S43° 24' 23" E
L2	51.60'	N52° 10' 50" E
L3	67.12'	S76° 59' 59" E



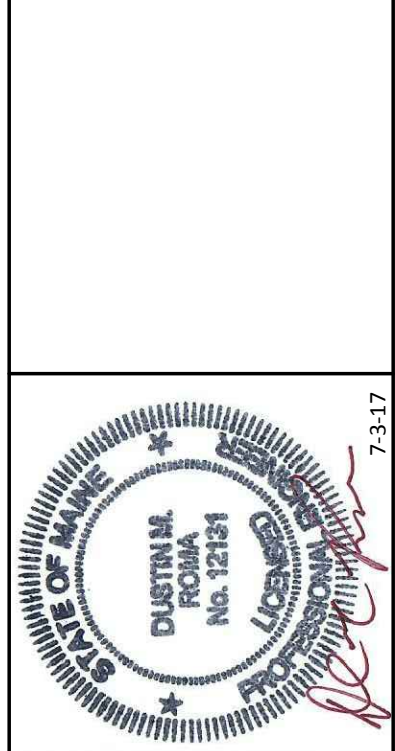
NET RESIDENTIAL DENSITY CALCULATIONS:		OPEN SPACE CALCULATIONS FOR CLUSTER SUBDIVISION IN FARM ZONE:	
GROSS LAND AREA:	1,295,045 S.F.	ACRES	SQ. FEET
DEDUCTIONS:		29.73	1,295,045
1. RIGHT-OF-WAY	84,560 S.F.	19.54	851,287
2. STEEP SLOPES (OVER 25%)	0 S.F.		
3. 100-YEAR FLOOD PLAIN	71,152 S.F.		
4. RESOURCE PROTECTION DISTRICT	0 S.F.		
5. VERY POORLY DRAINED SOILS	288,046 S.F.		
6. WETLANDS IN LOTS	90,868 S.F.		
7. WETLANDS IN OPEN SPACE	197,178 S.F.		
8. SURFACE WATERBODIES	0 S.F.		
9. SIGNIFICANT WILDLIFE HABITAT	0 S.F.		
10. ENDANGERED BOTANICAL RESOURCES	0 S.F.		
TOTAL NET AREA:	851,287 S.F.		
REQUIRED NET AREA PER DWELLING:	60,000 S.F.		
MAXIMUM ALLOWABLE LOTS/DWELLINGS:	14.19		
ALLOWABLE LOTS WITH 20% BONUS	17.03		
NUMBER OF LOTS PROPOSED:	17		

- GENERAL NOTES**
- OWNER OF RECORD IS SEBAGO HEIGHTS, LLC AS DESCRIBED IN THE FOLLOWING DEEDS RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS:
BOOK 33911 PAGE 59 DATED MARCH 30, 2017
BOOK 33911 PAGE 118 DATED MARCH 30, 2017
BOOK 33911 PAGE 123 DATED MARCH 30, 2017
BOOK 14695 PAGE 198 DATED MARCH 31, 2017
EXCLUDING LAND DESCRIBED IN DEED RECORDED IN BOOK 33923 PAGE 23 DATED APRIL 4, 2017.
 - TOTAL AREA OF PARCEL IS APPROXIMATELY 29.73 ACRES.
 - THE PARCEL IS SHOWN AS LOT 44 ON THE TOWN OF WINDHAM'S ASSESSOR'S MAP 13.
 - PLAN REFERENCES
A) "BOUNDARY SURVEY FALMOUTH ROAD WINDHAM, MAINE OF BABBIGE FARMS" FOR SEBAGO HEIGHTS, LLC PREPARED BY SURVEY, INC. DATED AUGUST 2016 AND REVISED THROUGH JANUARY 25, 2017.
 - BOUNDARY INFORMATION IS BASED SOLELY ON PLAN REFERENCE 4A. BEARINGS ARE REFERENCED TO NAD83 MAINE STATE PLANE COORDINATE SYSTEM.
 - ELEVATION CONTOURS SHOWN HEREON WERE OBTAINED FROM MAINE STATE OFFICE OF GIS. ELEVATIONS ARE REFERENCED TO NAVD83 VERTICAL DATUM. DUE TO THE LIMITED ON-THE-GROUND TOPOGRAPHIC INFORMATION, ALL GRADES ASSOCIATED WITH THE STORMWATER INFRASTRUCTURE SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY SIGNIFICANT CHANGES TO THE ROAD PLANS WILL BE NOTED ON AS-BUILT DRAWINGS AND SUBMITTED TO THE TOWN.
 - THE PROPERTY IS LOCATED IN THE FARM ZONING DISTRICT.
 - SPACE AND BULK REQUIREMENTS: F DISTRICT UNDER CLUSTER SUBDIVISION
- F DISTRICT**
- | | |
|--------------------------|-------------|
| MIN LOT SIZE: | 30,000 S.F. |
| MAX LOT SIZE: | 50,000 S.F. |
| 1 LOT WITHIN SUBDIVISION | 60,000 S.F. |
| NET RESIDENTIAL DENSITY: | 100/100 SF |
| MIN STREET FRONTAGE: | 25 FT |
| MIN FRONT YARD: | 10 FT |
| MIN SIDE/REAR YARD: | 35 FT |
| MAX BUILDING HEIGHT: | 25% |
| MAX BUILDING COVERAGE: | |
- STORMWATER BUFFERS SHALL REMAIN IN THEIR NATURAL STATE, WITH NO REMOVAL OF VEGETATION OR NATURAL DUFF LAYER EXCEPT FOR THE REMOVAL OF DEAD TREES. THE BUFFERS SHALL BE TEMPORARILY MARKED IN THE FIELD PRIOR TO SITE DISTURBANCE, AND PERMANENTLY MARKED AFTER THE LOT IS DEVELOPED.
 - ALL BUILDINGS WILL REQUIRE THE INSTALLATION OF A ROOF DROP EDGE FILTER FOR STORMWATER TREATMENT.
 - STREET TREES SHALL BE PLANTED OR PRESERVED AT AN INTERVAL NO LESS THAN ONE TREE EVERY 50 FEET OF ROADWAY, AND IN ACCORDANCE WITH SECTION 911.1.B OF THE LAND USE ORDINANCE.
 - THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE MAINTAINED FOR A PERIOD OF FIVE (5) YEARS FROM THE DATE OF PLANNING BOARD APPROVAL, AND IN ACCORDANCE WITH SECTION 911.1.A OF THE LAND USE ORDINANCE.
 - BIORETENTION CELLS (RAIN GARDENS) MUST BE INSTALLED ON LOTS 1, 2, 3, 4 AND 7 TO PROVIDE REQUIRED STORMWATER QUALITY TREATMENT.
 - THE PROPERTY IS TO BE SUBJECT TO A 50' WIDE UTILITY EASEMENT BENEFITING THE PORTLAND WATER DISTRICT THAT FOLLOWS THE PROPOSED RIGHT OF WAY. ONCE THE TOWN OF WINDHAM ACCEPTS, IF EVER, THE ROADWAY AS A PUBLIC STREET, THE EASEMENT WILL BE DISSOLVED.
 - A WETLAND DELINEATION WAS PERFORMED BY LONGVIEW PARTNERS, LLC IN JULY 2016. A VERNAL POOL SURVEY WAS CONDUCTED BY MARK HAMPTON ASSOCIATES, INC. IN 2016 WITH THE DETERMINATION THAT NO SIGNIFICANT VERNAL POOLS WERE PRESENT AS DEFINED BY THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

LEGEND	
EXISTING	PROPOSED
---	PROPERTY LINE/R.O.W.
---	ABUTTER PROPERTY LINE
---	TIE LINE
---	SETBACK
---	EASEMENT LINE
□	GRANITE MONUMENT
○	IRON PIN/DRILL HOLE
---	CENTERLINE
---	EDGE OF PAVEMENT/CURB
---	EDGE OF GRAVEL
---	EDGE OF WETLANDS
---	CENTERLINE OF STREAM
---	CONTOUR LINE
---	TREELINE
---	CULVERT/STORMDRAIN
---	UTILITY POLE
---	OVERHEAD UTILITIES

APPROVED: TOWN OF WINDHAM PLANNING BOARD

DATE: _____

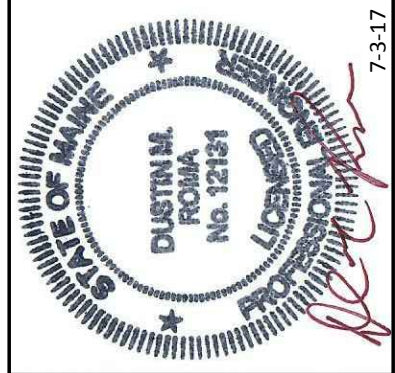
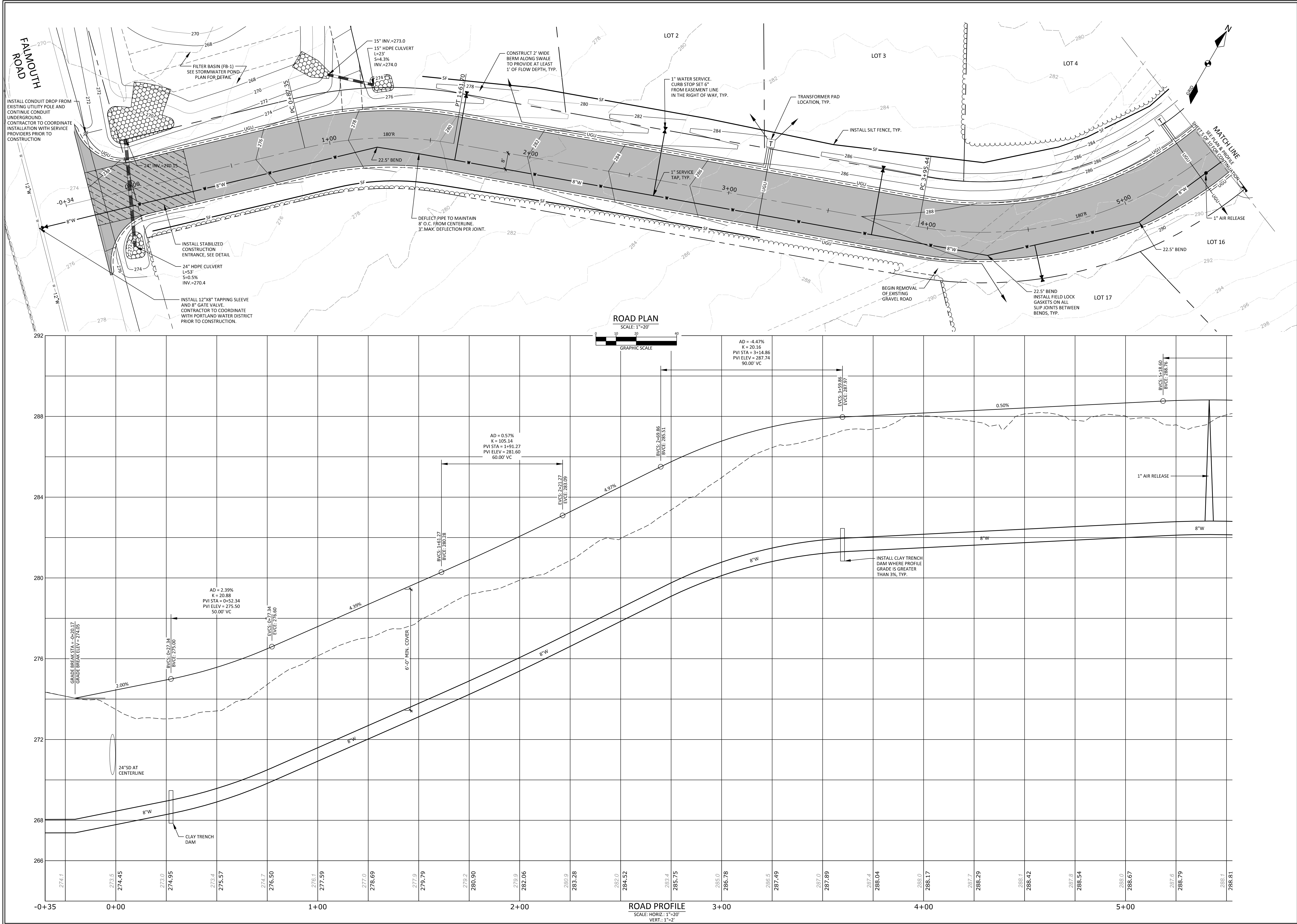


DM ROMA
CONSULTING ENGINEERS
59 HARVEST HILL RD
WINDHAM, ME 04062
(207) 310-0506

REV	DATE	BY	DESCRIPTION
A	6-2-17	DMR	REVISED PER PWD REVIEW COMMENTS
B	6-28-17	DMR	ISSUED FOR STORMWATER PERMIT REVIEW
C	7-3-17	DMR	ISSUED FOR TOWN SUBDIVISION REVIEW

SUBDIVISION PLAN
BABBIGE FARMS SUBDIVISION
WINDHAM, MAINE
FOR RECORD OWNER:
SEBAGO HEIGHTS, LLC
39A EXCHANGE STREET
PORTLAND, MAINE

15024
JOB NUMBER:
1" = 80'
SCALE:
7-3-2017
DATE:
SHEET 3 OF 10
SB-1

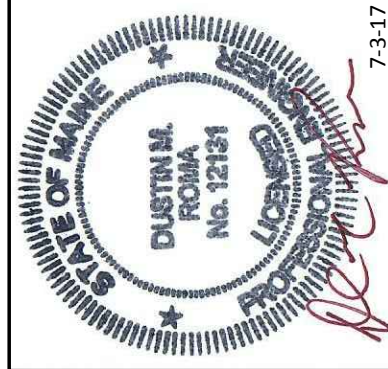
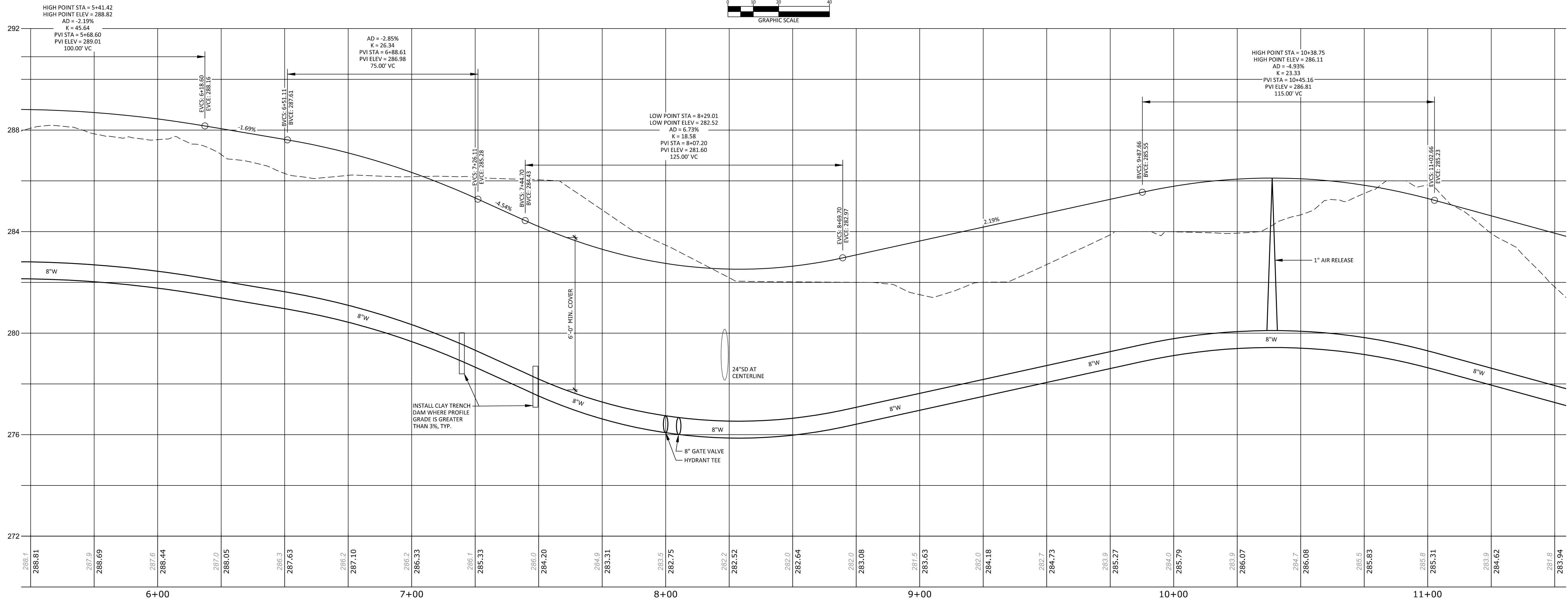
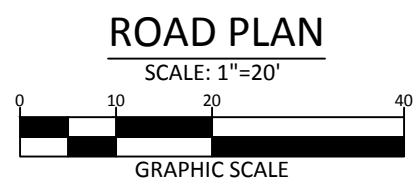
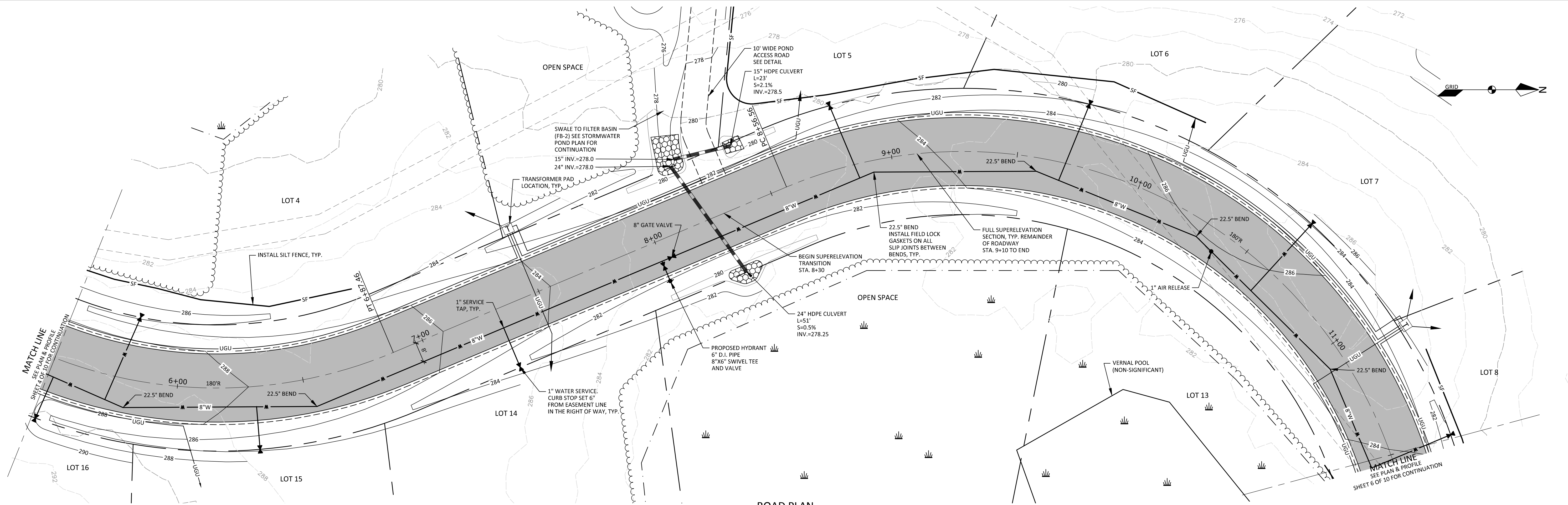


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PLAN & PROFILE: PROPOSED ROAD
STA. -0+34 THRU STA. 5+50
BABBIDGE FARMS SUBDIVISION
WINDHAM, MAINE
FOR RECORD OWNER:
SEBAGO HEIGHTS, LLC
97A EXCHANGE STREET
PORTLAND, MAINE

15024
JOB NUMBER:
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SCALE:
7-3-2017
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SHEET 4 OF 10
PP-1

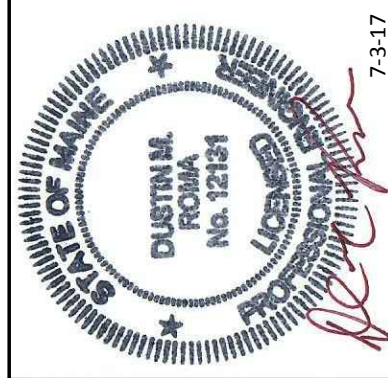
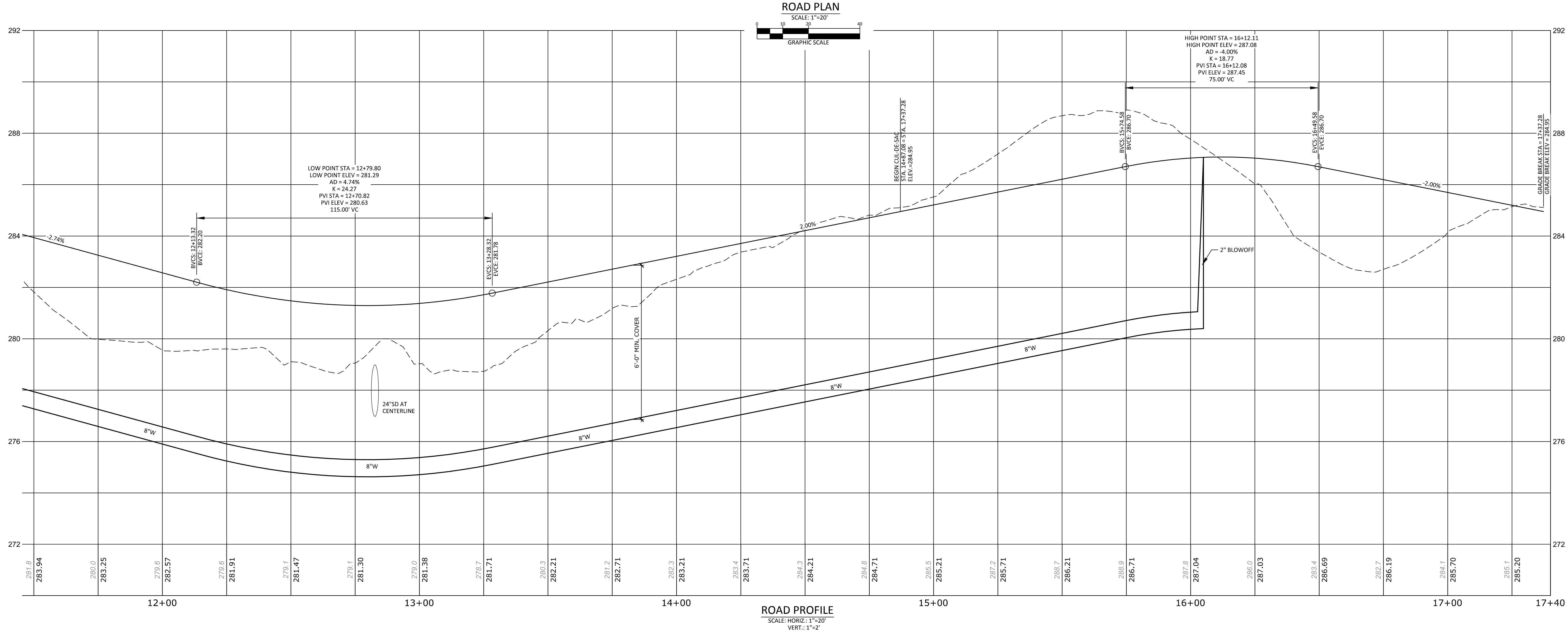
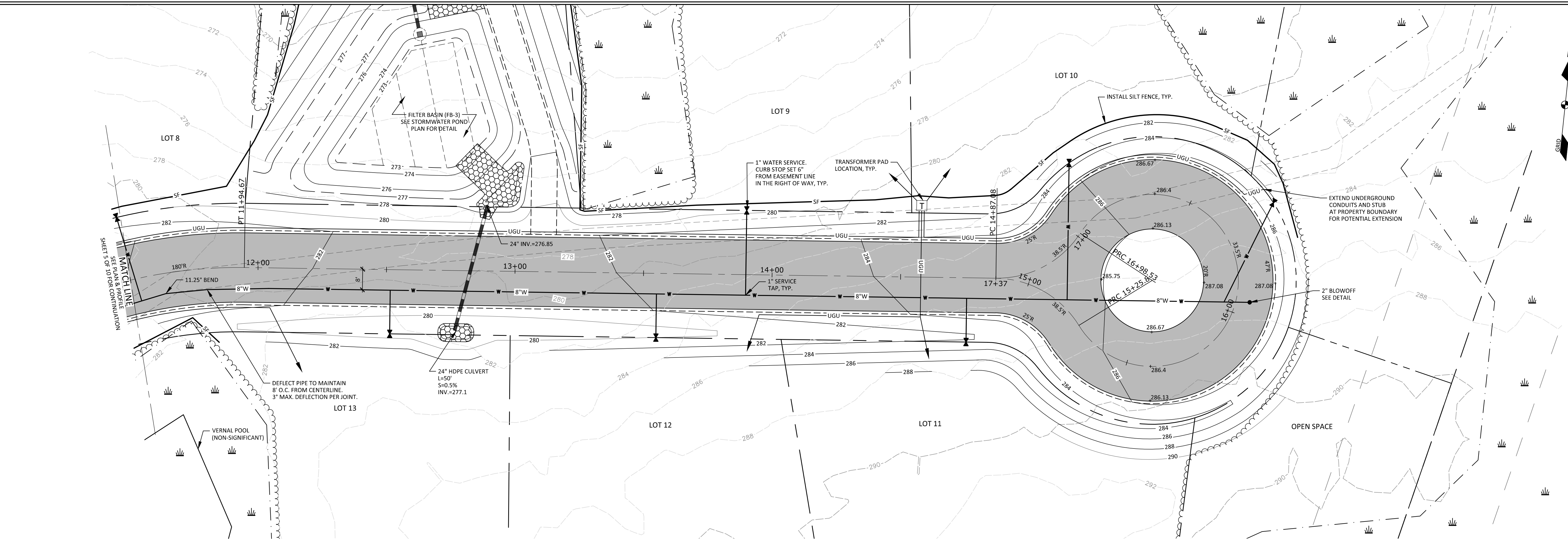


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BABBIDGE FARMS SUBDIVISION
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FOR RECORD OWNER:
SEBAGO HEIGHTS, LLC
97A EXCHANGE STREET
PORTLAND, MAINE

15024 JOB NUMBER:
1" = 20' SCALE:
7-3-2017 DATE:
SHEET 5 OF 10
PP-2

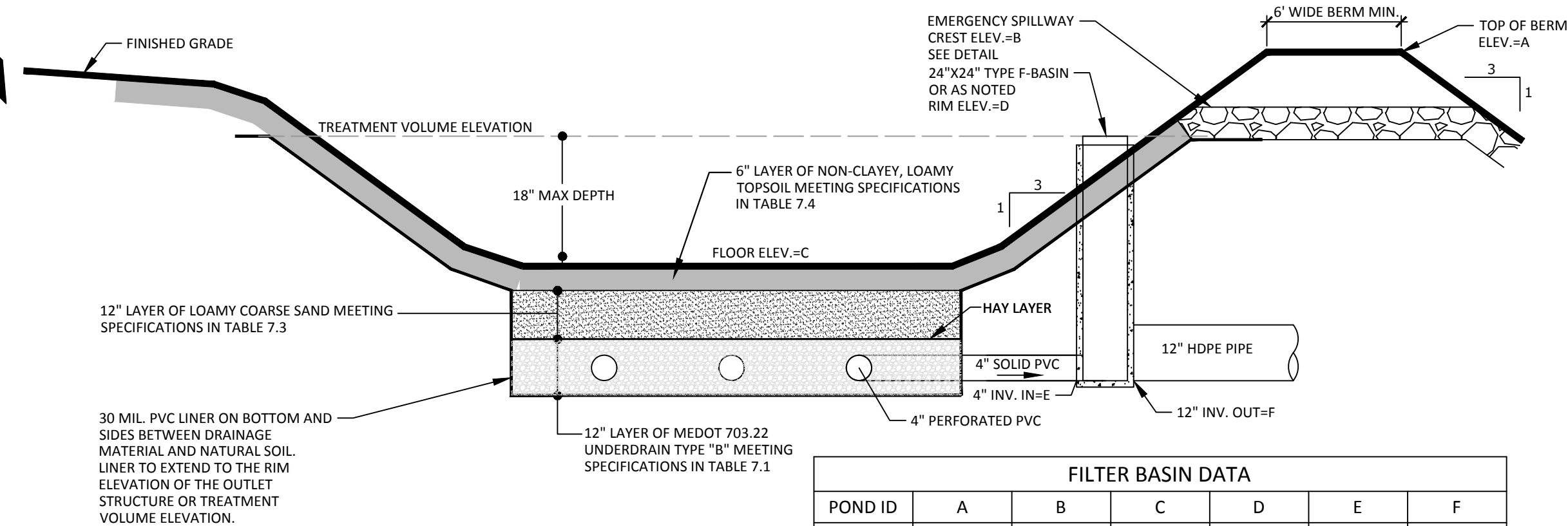
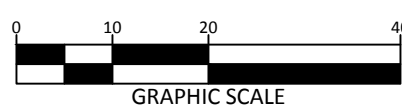
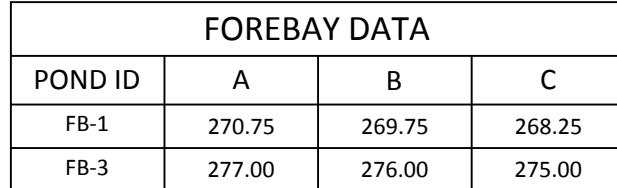


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WINDHAM, MAINE
FOR RECORD OWNER:
SEBAGO HEIGHTS, LLC
39A EXCHANGE STREET
PORTLAND, MAINE

15024
JOB NUMBER:
1" = 20'
SCALE:
7-3-2017
DATE:
SHEET 6 OF 10
PP-3



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

FILTER BASIN DATA						
POND ID	A	B	C	D	E	F
FB-1	272.00	270.55	268.00	269.50	265.80	265.70
FB-2	277.30	275.90	272.50	274.00	270.35	270.25
FB-3	277.40	276.00	273.00	274.50	270.80	270.70

NOT TO SCALE

[illegible]

STORMWATER POND PLAN

BABBIDGE FARMS SUBDIVISION
WINDHAM, MAINE

FOR RECORD OWNER:
SEBAGO HEIGHTS, LLC

15024
JOB NUMBER:

AS NOTED
SCALE:

7-3-2017
DATE:

SHEET 7 OF 10

P-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 #16 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 SHALL APPLY FERTILIZER AT A RATE OF 10-10-10 (N-P2O5-K2O) OR EQUIVALENT AND LIME 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
CRACKS	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 OBSERVED, REPAIRMENT 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 MANUFACTURER'S RECOMMENDATIONS. THE FILTER FABRIC SHALL BE A PERVIOUS SHEET OF PROPLENE, 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 SPICED TOGETHER AT A SUPPORT POST WITH A MINIMUM 6 INCH OVERLAP. A TRENCH SHALL BE EXCAVATED 4 INCHES WIDE AND 4 INCHES DEEP, AND THE BOTTOM 6-8 INCHES OF FABRIC SHALL BE "TOE-IN" TO THE TRENCH AND COMPACTED. THE TRENCH SHOULD BE UPHILL OF THE FABRIC PRIOR TO BURLAP.

STRAW/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 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 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 PASS 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 ON SOFT, MUD OR OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILL SLOPES OR STRUCTURAL FILL. 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 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 DUE-TO-ROCK 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 REESTABLISHED 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 CONSERVATION SERVICE OR THE LOCAL SOIL AND WATER CONSERVATION DISTRICT FOR APPROPRIATE SEED MIXTURES. APPLY SEED UNIFORMLY IN ACCORDANCE WITH SUPPLIER RECOMMENDATIONS AND IMMEDIATELY COVER WITH MULCH AS DESCRIBED IN THE TEMPORARY MULCHING SECTION OF THIS PLAN.

HYDROSEEDING SHALL BE DONE IN ACCORDANCE WITH SUPPLIER'S RECOMMENDATIONS. FOR 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.

RIRAPAR STONE SHALL CONSIST OF SUB-ANGULAR FINE STONE OR ROUGH UNEXCITED 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 MDOT TYPE C UNDERLAIN 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 DRAINING, 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 NOVEMBER 15. 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 DENIED 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 CHALK, 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 LOOSED, FINAL GRADED WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND MULCH. 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

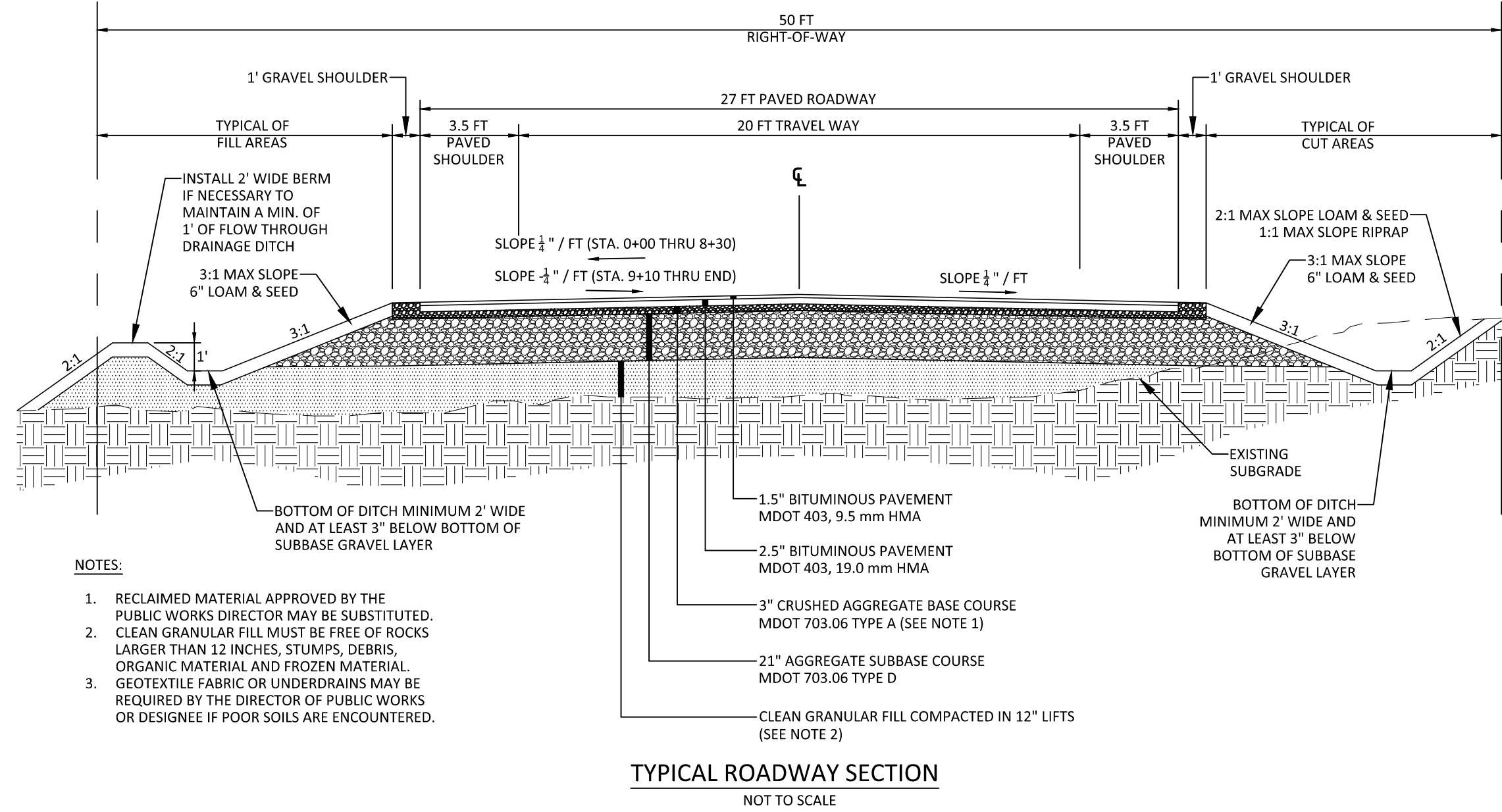
ALL STONE-COVERED SLOPES MUST BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15. ALL SLOPES TO BE VEGETATED MUST BE SEEDED AND MULCHED BY SEPTEMBER 1. ALL AREAS HAVING A GRADE STEEPER THAN 8% SHALL BE CONSIDERED A SLOPE. IF A SLOPE TO BE VEGETATED IS NOT STABILIZED BY SEPTEMBER 1, THEN THE SLOPE SHALL EITHER 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 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.



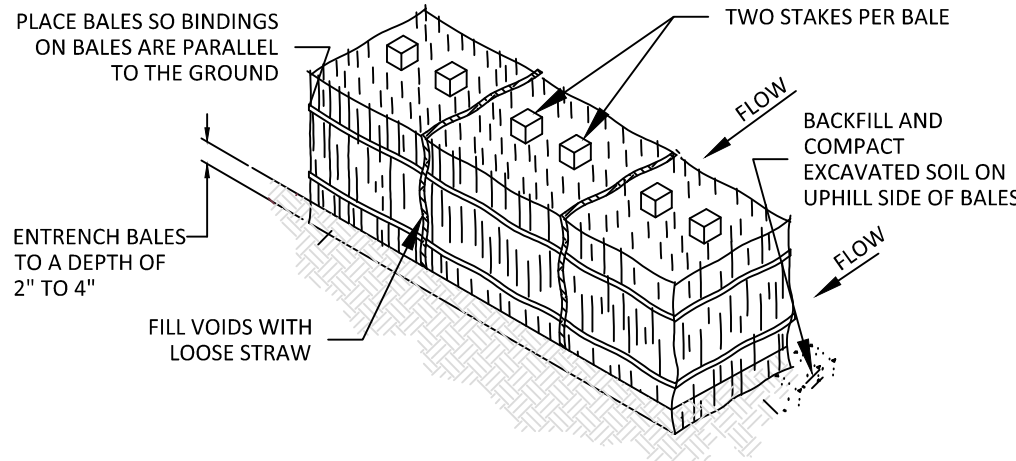
NOTES:

1. RECLAIMED MATERIAL APPROVED BY THE PUBLIC WORKS DIRECTOR MAY BE SUBSTITUTED.
2. CLEAN GRANULAR FILL MUST BE FREE OF ROCKS LARGER THAN 12 INCHES, STUMPS, DEBRIS, ORGANIC MATERIAL AND FROZEN MATERIAL.
3. GEOTEXTILE FABRIC OR UNDERDRAINS MAY BE REQUIRED BY THE DIRECTOR OF PUBLIC WORKS OR DESIGNED IF POOR SOILS ARE ENCOUNTERED.

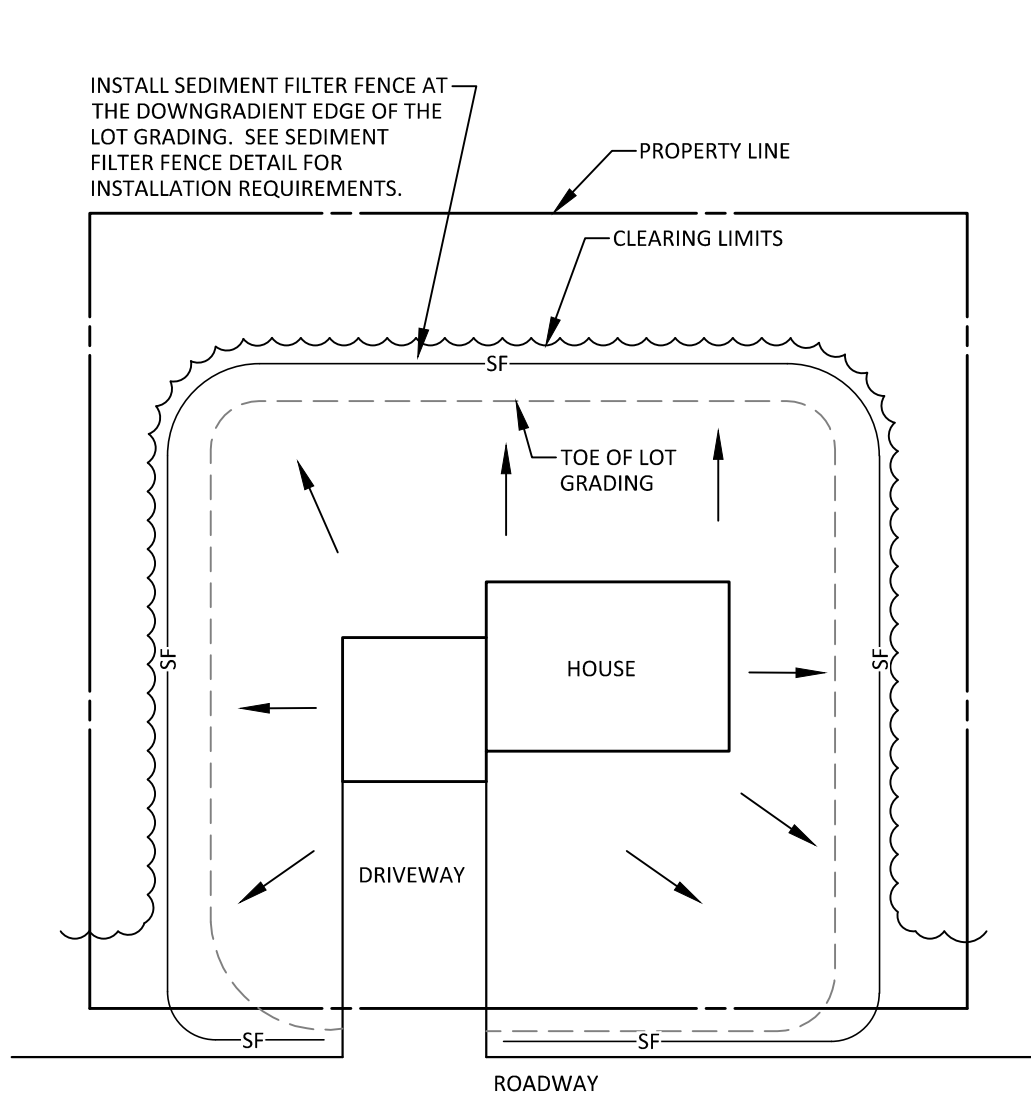
TYPICAL ROADWAY SECTION
NOT TO SCALE

HOUSKEEPING NOTES

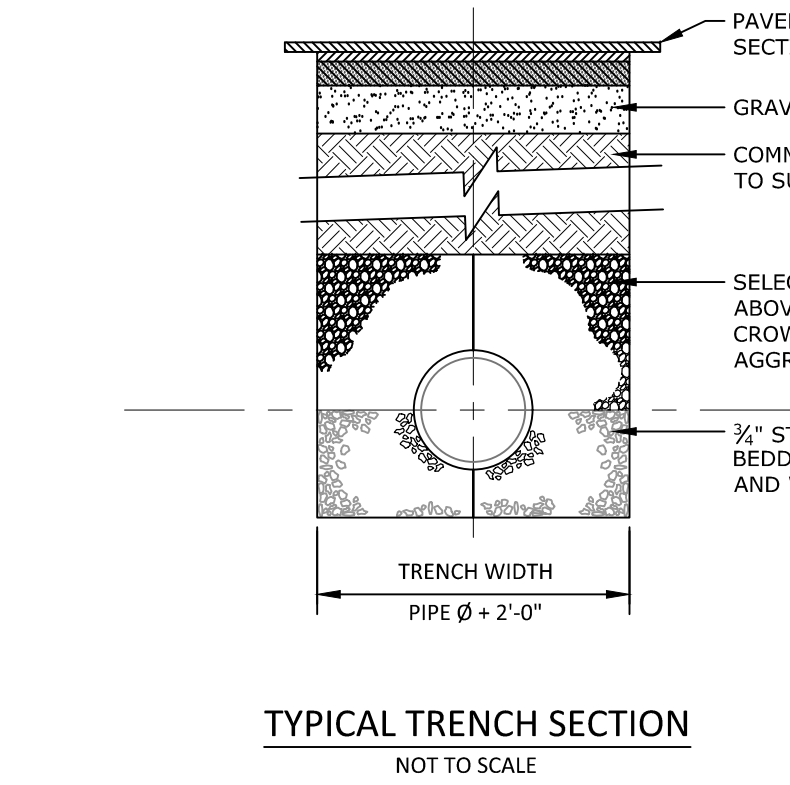
1. SPILL PREVENTION: CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS ON SITE TO ENTER STORMWATER, WHICH INCLUDES STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER. THE SITE CONTRACTOR OR OPERATOR MUST DEVELOP, AND IMPLEMENT AS NECESSARY, APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING MEASURES.
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, DIKES, BERMS, SLUMPS, 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 DISTURBANCE.
3. FUGITIVE SEDIMENT AND DUST: ACTIVATIONS 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 (SEE) 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 SILDIC 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.
6. 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(13);
 - (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 MDEP DOES NOT AUTHORIZE A DISCHARGE THAT IS MIXED WITH A PORTION 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.



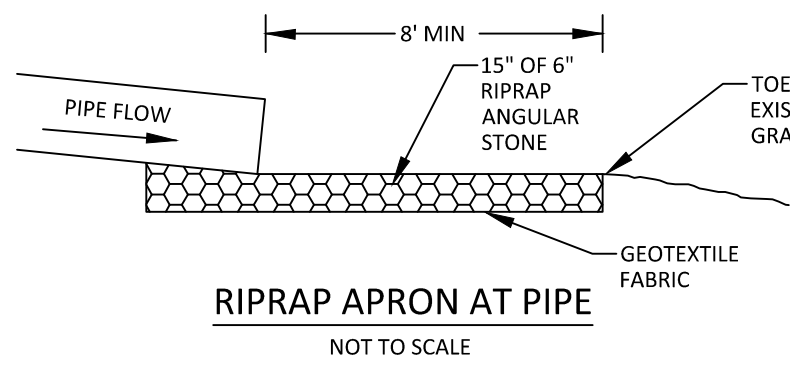
1. IDEALLY, BALES SHOULD BE ENTRENCHED 2 TO 4 INCHES AND TIGHTLY BUTTED TOGETHER. BALES CAN BE SUCCESSFULLY PLACED WITHOUT A TRENCH IF GOOD GROUND CONTACT IS MADE. REMOVE HEAVY BRUSH AND FILL ALL VOIDS WITH LOOSE STRAW.
2. BALES SHALL BE ONLY USED AS A TEMPORARY BARRIER AND FOR NO LONGER THAN 60 DAYS.
3. WHEN SEDIMENTATION DEPOSITS REACH WITHIN 3" OF THE TOP OF BALES, REMOVE SEDIMENTATION OR ADD ADDITIONAL BALES ON SEDIMENTATION DIRECTLY BEHIND FIRST ROW OF BALES AS DIRECTED BY THE ENGINEER.
4. UPON ESTABLISHMENT OF GROUND COVER ON DISTURBED AREAS AND WHEN DIRECTED BY THE ENGINEER, HAY BALES WILL BE RELOCATED AND USED AS MULCH. ANY SEDIMENTATION WILL BE THINLY SPREAD UPON



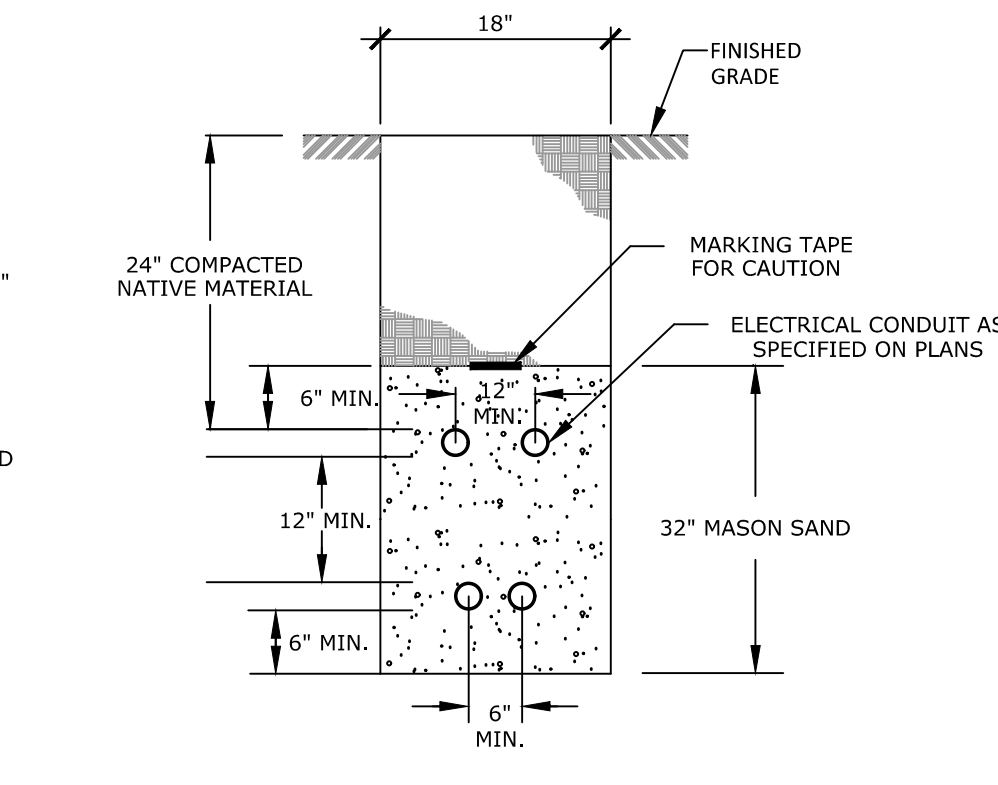
Typical House Lot
Erosion Control Detail
NOT TO SCALE



Typical Trench Section
NOT TO SCALE

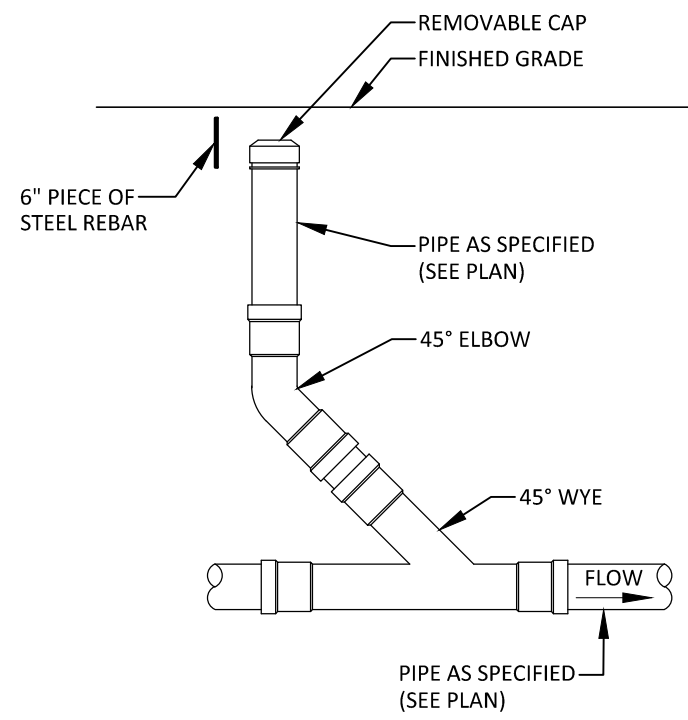


Riprap Apron at Pipe
NOT TO SCALE

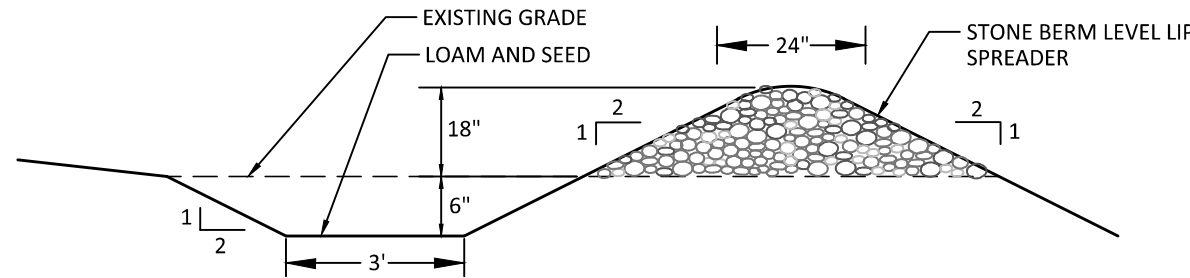


Trench Detail - Electrical Conduit
NOT TO SCALE

- 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.



Sanitary/Underdrain Cleanout Detail
NOT TO SCALE



Stormwater Level Lip Spreader
NOT TO SCALE

GENERAL NOTES:

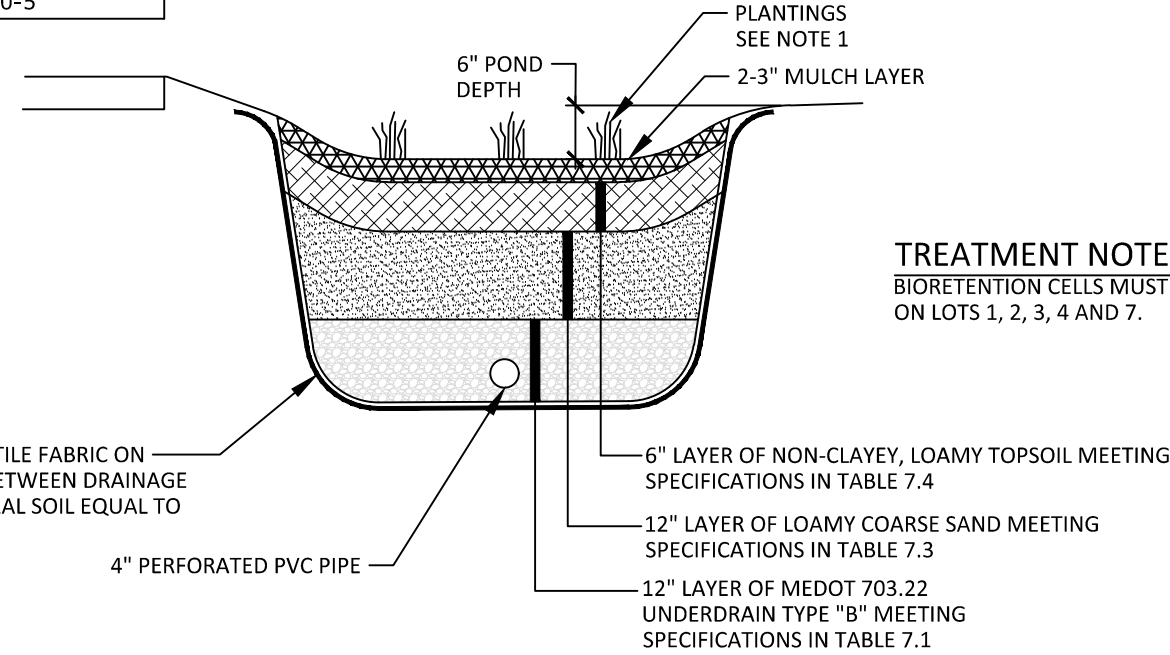
1. THE STONE USED TO CONSTRUCT THE BERM SHALL MEET THE FOLLOWING SPECIFICATIONS:

SIEVE DESIGNATION (US)	PERCENT PASSING BY WEIGHT
12 IN.	100
6 IN.	84-100
3 IN.	68-83
1 IN.	42-55
NO. 4	8-12

SIEVE SIZE	% PASSING BY WEIGHT
1"	90-100
1/2"	75-100
#4	50-100
#20	15-80
#50	0-15
#200	0-5

SIEVE SIZE	% PASSING BY WEIGHT
#10	85-100
#20	70-100
#60	15-40
#200	8-15
200 CLAY	<2.0

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

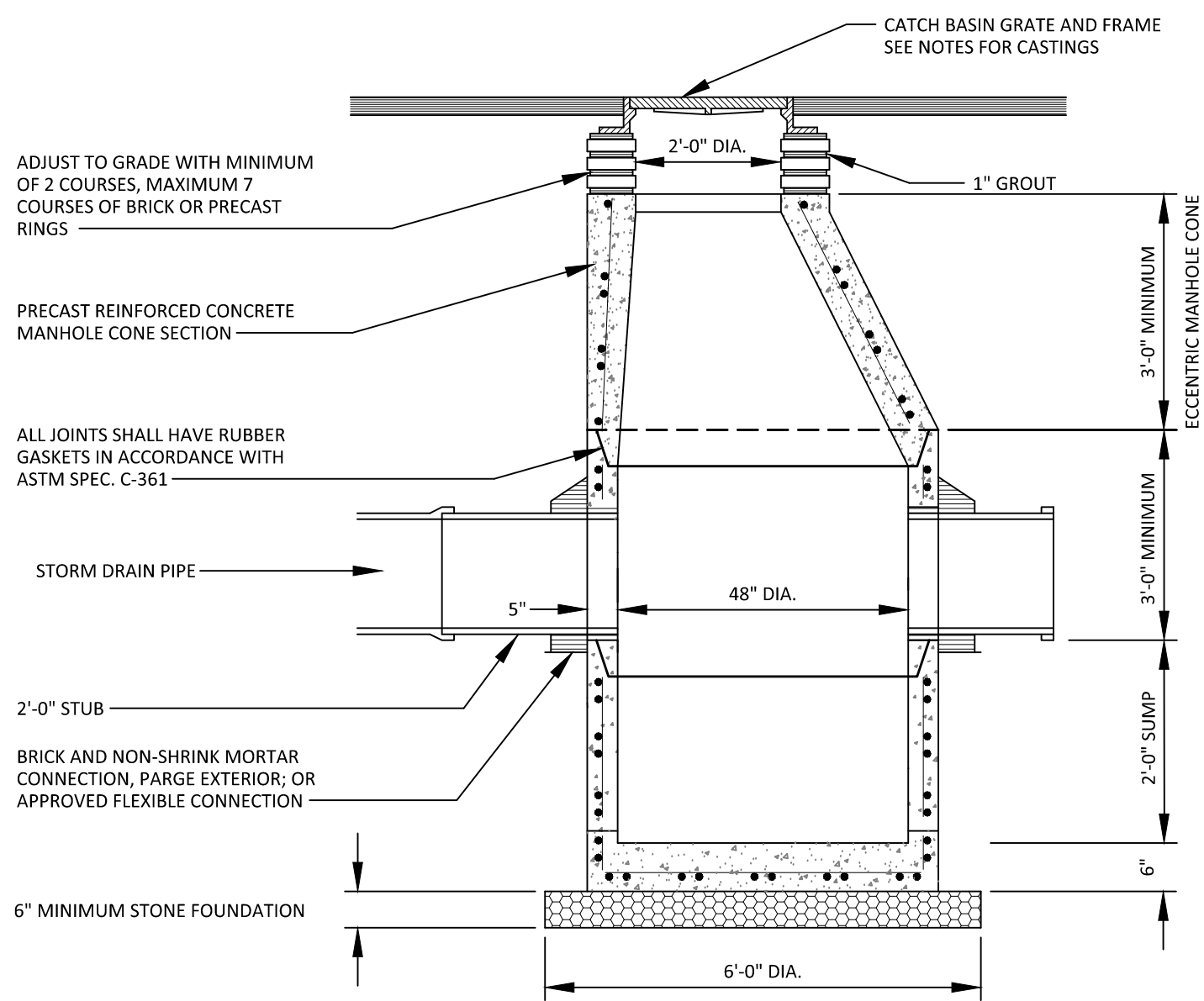


TREATMENT NOTE:
BIORETENTION CELLS MUST BE INSTALLED
ON LOTS 1, 2, 3, 4 AND 7.

GENERAL NOTES:

1. PLANTINGS WITHIN BIORETENTION CELLS SHALL BE TOLERANT OF WELL DRAINED SOILS AND FREQUENT INUNDATION. SEE MAINE STORMWATER MANAGEMENT DESIGN MANUAL VOLUME 1 - APPENDIX A LANDSCAPE DESIGNS TO ENHANCE STORMWATER TREATMENT FOR PLANTING RECOMMENDATIONS.
2. SIZING CRITERIA: THE SOIL FILTER MUST DETAIN AND FILTER A RUNOFF VOLUME EQUAL TO 1 INCH TIMES THE SUBCATCHMENT'S IMPERVIOUS AREA PLUS 0.4 INCH TIME THE SUBCATCHMENT'S LANDSCAPED AREA. THE FILTER MAY ONLY POND 6 INCHES PRIOR TO DISCHARGE. THE FILTER BOTTOM SURFACE AREA MUST BE NO LESS THAN 7% FROM THE IMPERVIOUS AREA AND 3% FROM THE LANDSCAPED AREA DRAINING TO THE FILTER.
3. CONSTRUCTION SEQUENCE: THE SOIL FILTER MEDIA AND VEGETATION MUST NOT BE INSTALLED UNTIL THE AREA THAT DRAINS TO THE FILTER HAS BEEN PERMANENTLY STABILIZED WITH PAVEMENT OR OTHER STRUCTURE, 90% VEGETATION COVER, OR OTHER PERMANENT STABILIZATION UNLESS THE RUNOFF FROM THE CONTRIBUTING DRAINAGE AREA IS DIVERTED AROUND THE FILTER UNTIL STABILIZATION IS COMPLETED.
4. COMPACTION OF SOIL FILTER: FILTER SOIL MEDIA AND UNDERDRAIN BEDDING MATERIAL MUST BE COMPACTED BETWEEN 90% AND 92% STANDARD PROCTOR. THE BED SHOULD BE INSTALLED IN AT LEAST TWO LIFTS TO PREVENT POCKETS OF LOOSE MEDIA.
5. CONSTRUCTION OVERSIGHT: INSPECTION BY THE DESIGN ENGINEER OR SUITABLE THIRD PARTY WILL OCCUR AT A MINIMUM:
A) AFTER THE PRELIMINARY CONSTRUCTION OF THE FILTER GRADES AND ONCE THE UNDERDRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED.
B) AFTER THE DRAINAGE LAYER IS CONSTRUCTED AND PRIOR TO THE INSTALLATION OF THE FILTER MEDIA.
C) AFTER THE FILTER MEDIA HAS BEEN INSTALLED, MULCHED AND PLANTED.
D) AFTER ONE YEAR TO INSPECT HEALTH OF THE VEGETATION AND MAKE CORRECTIONS.
E) ALL THE MATERIAL USED FOR THE CONSTRUCTION OF THE FILTER BASIN MUST BE CONFIRMED AS SUITABLE BY THE DESIGN ENGINEER. TESTING MUST BE DONE BY A CERTIFIED LABORATORY TO SHOW THAT THEY ARE PASSING MDEP SPECIFICATIONS.
6. 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 UNDERDRAIN BEDDING MATERIAL. SAMPLES MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRASS) FROM THE STOCKPILE OR PIT FACE. SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY.
B) PERFORM A SIEVE ANALYSIS CONFORMING TO STM 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 PERMIABILITY TEST ON THE SOIL FILTER MEDIA MIXTURE CONFORMING TO ASTM D2434 WITH THE MIXTURE COMPACTED TO 90-92% OF MAXIMUM DRY DENSITY BASED ON ASTM D698

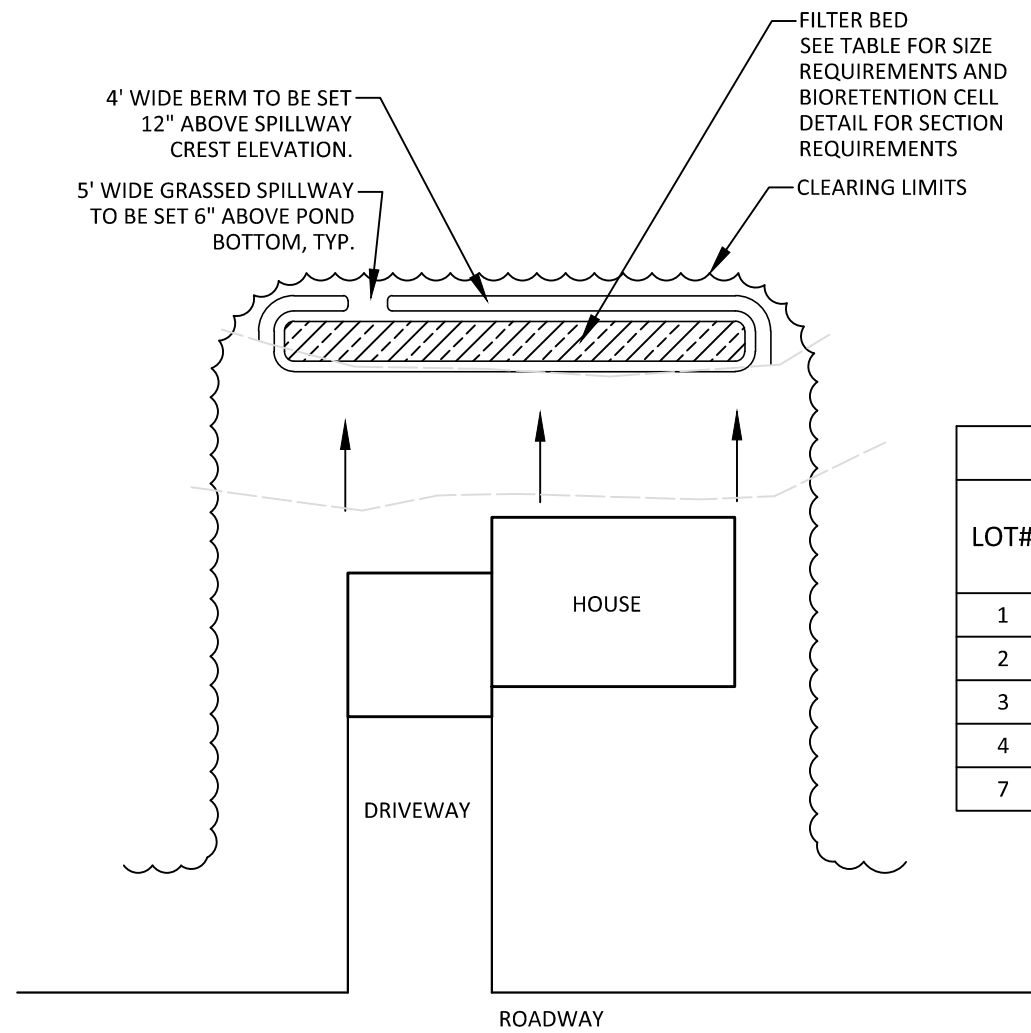
BIORETENTION CELL
NOT TO SCALE



NOTES:

1. LARGER DIAMETER STRUCTURES MAY BE REQUIRED DUE TO SIZE OR GEOMETRY OF PIPE CONNECTIONS AT MANHOLE. WALL THICKNESS TO INCREASE BY 1" FOR EACH 1'-0" DIA. INCREASE. PROVIDE SHOP DRAWINGS.
2. DRAINAGE STRUCTURES TO BE DESIGNED FOR H-20 LOADING.
3. CAST IRON GRATES SHALL BE EQUAL TO EAST JORDAN IRON WORKS, PRODUCT NO. 00552052807, HEAVY DUTY CASCADE GRATE. SUBMIT CATALOG SHEETS TO ENGINEER FOR APPROVAL.
4. ALTERNATE CURB-INLET GRATE SHALL BE INSTALLED WHERE INDICATED ON PLANS. FOR CURB INLET GRATES, CASTING SHALL BE EQUAL TO NEENAH R-3303.

Precast Concrete Catch Basin Structure
NOT TO SCALE



Typical House Lot
with Bioretention Cell
NOT TO SCALE

BIORETENTION CELL DATA			
LOT#	TRIBUTARY IMPERVIOUS AREA (S.F.)	TRIBUTARY LANDSCAPED AREA (S.F.)	MINIMUM FILTER AREA (S.F.)
1	0	7,585	270
2	1,270	7,865	395
3	1,305	8,575	405
4	775	6,585	310
7	0	3,290	240

DETAILS

BABBIDGE FARMS SUBDIVISION
WINDHAM, MAINE

FOR RECORD OWNER:
SEBAGO HEIGHTS, LLC
39A LEACHES STREET
PORTLAND, MAINE

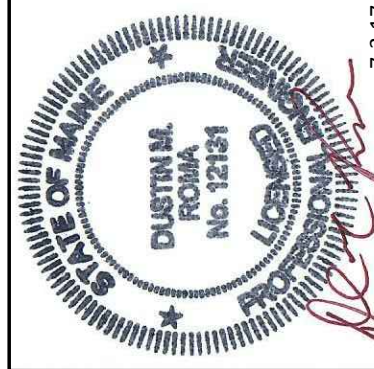
15024
JOB NUMBER:

AS NOTED
SCALE:

7-3-2017
DATE:

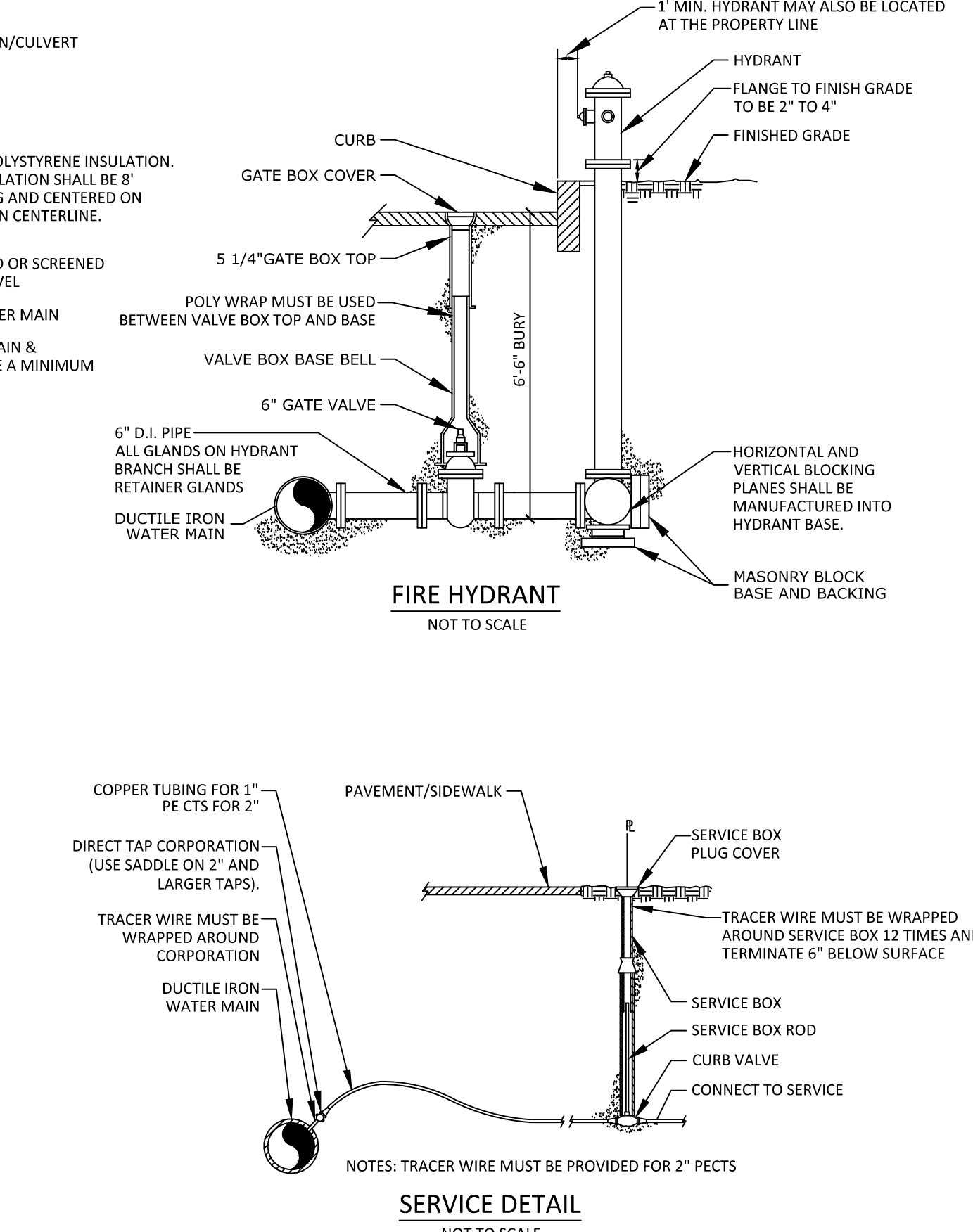
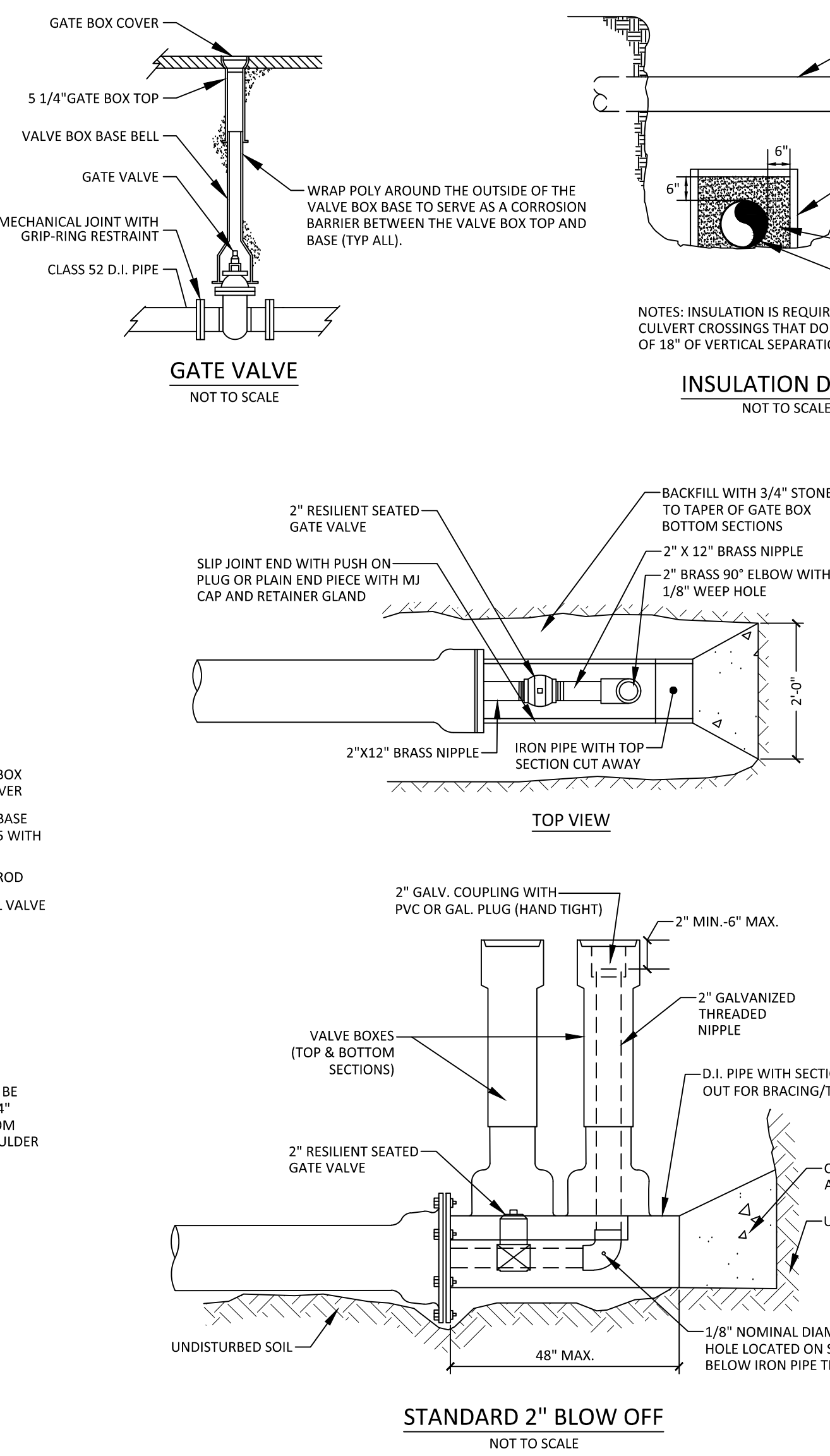
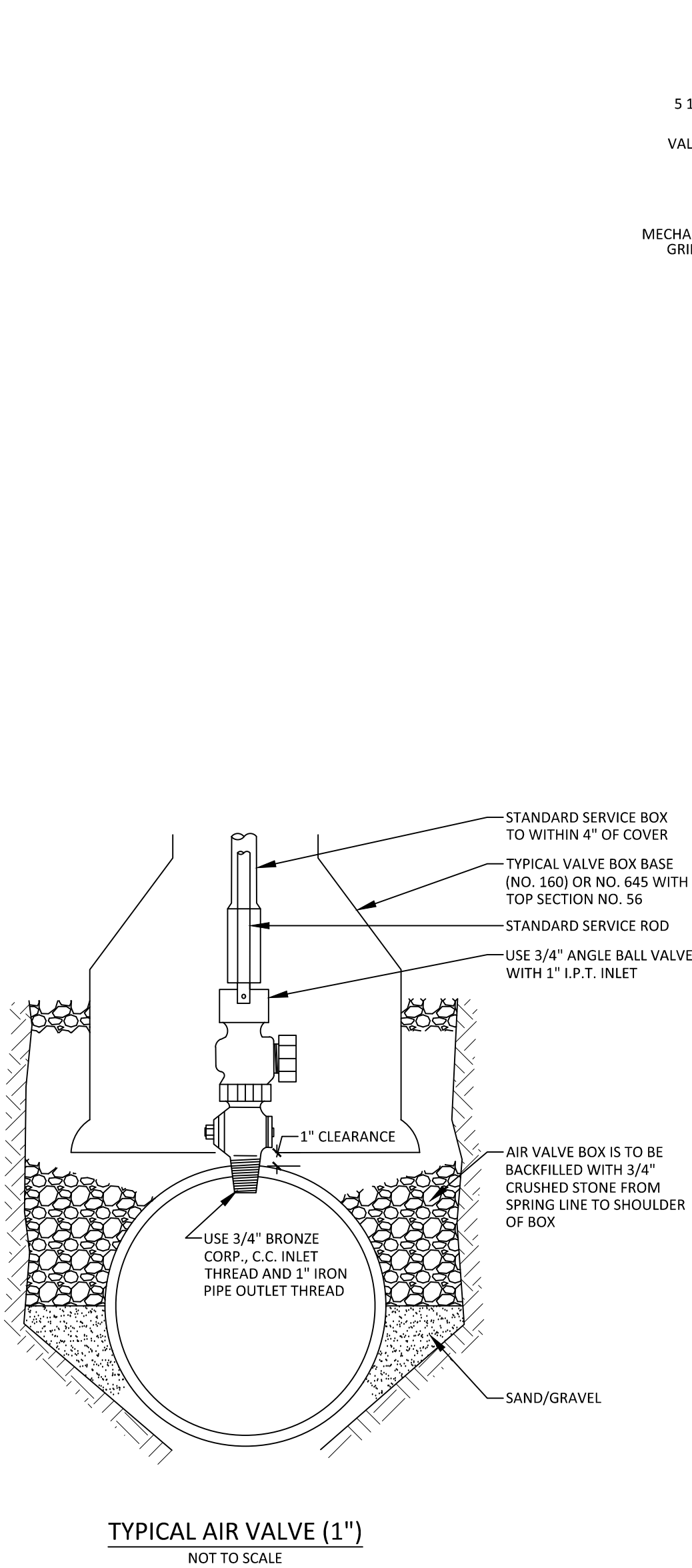
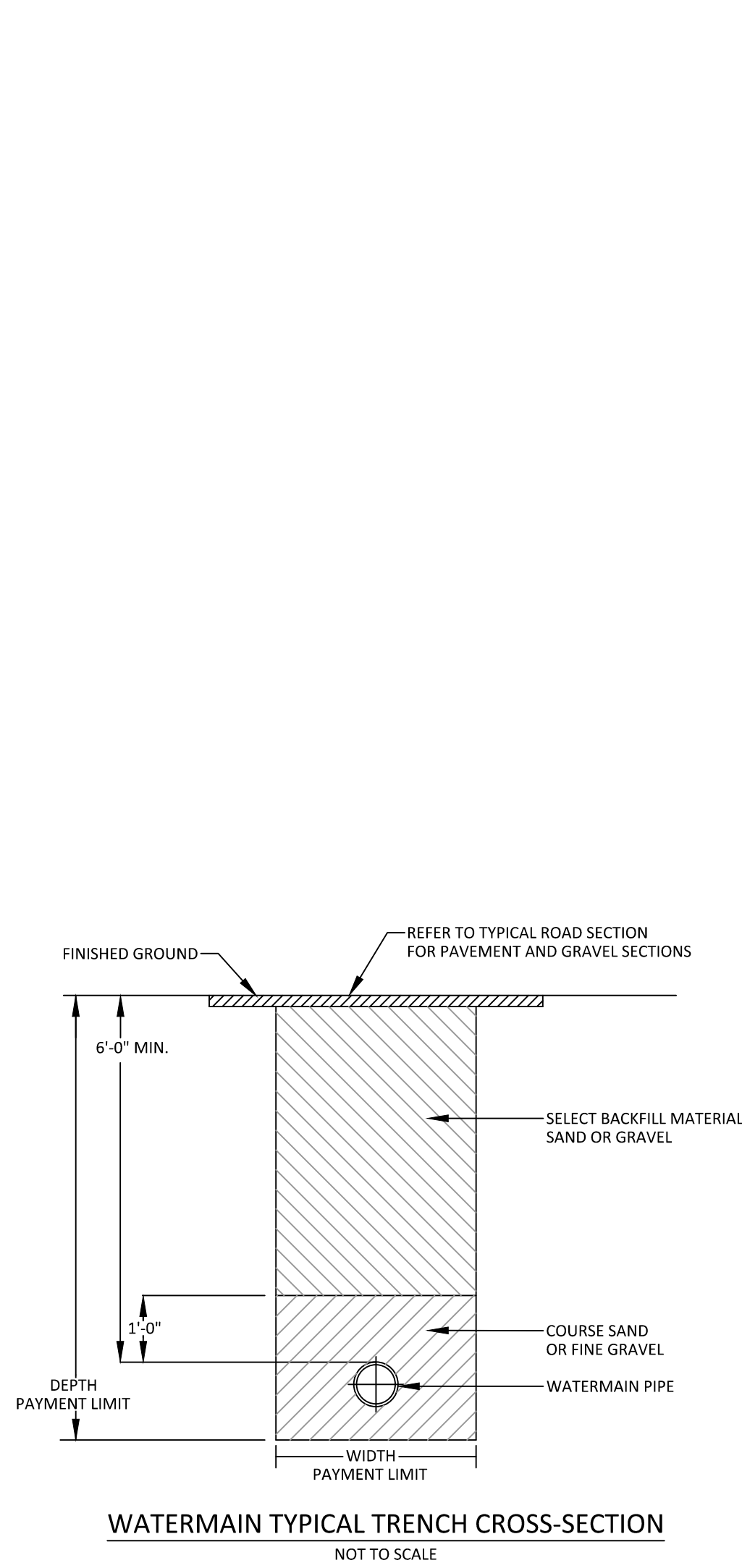
SHEET 9 OF 10

D-2



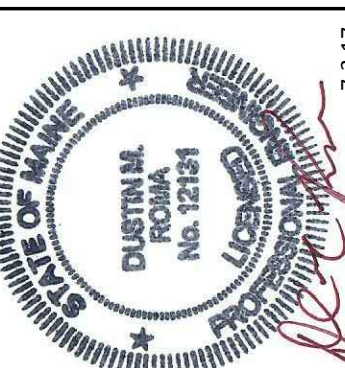
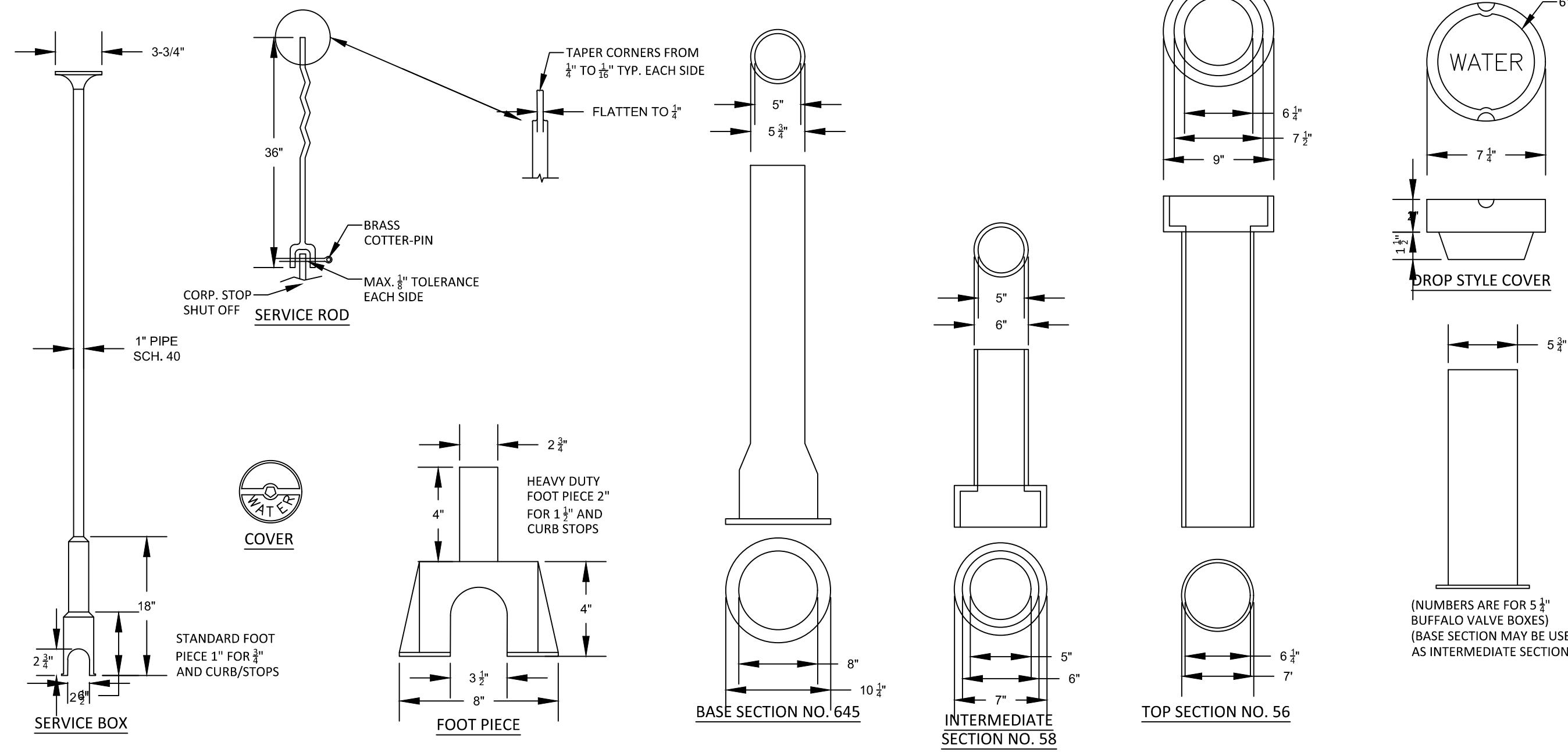
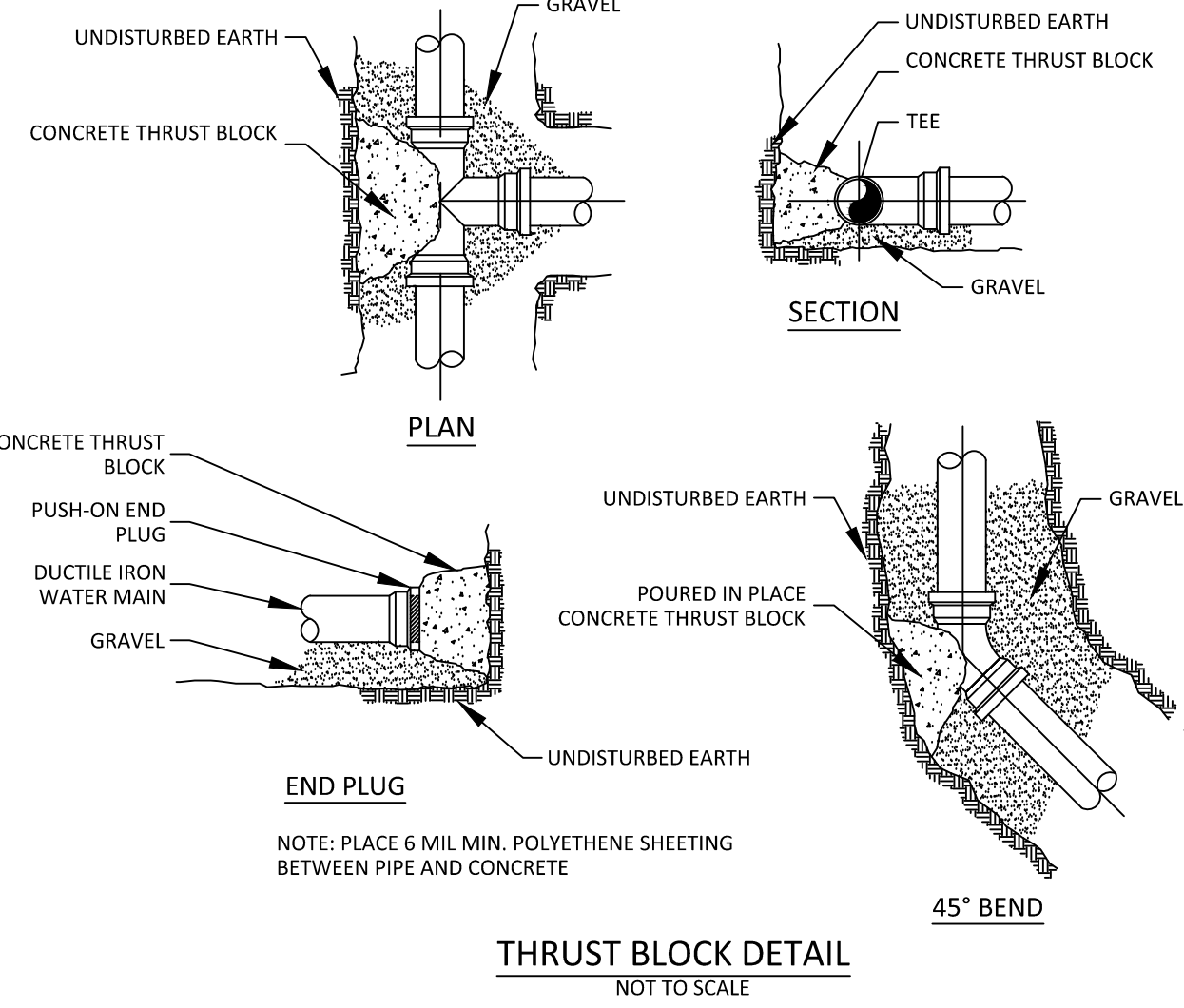
DM ROMA
CONSULTING ENGINEERS
59 HARVEST HILL RD
WINDHAM, ME 04062
(207) 310-0506

REV	DATE	BY	DESCRIPTION
A	6-28-17	DMR	ISSUED FOR STORMWATER PERMIT REVIEW
B	7-3-17	DMR	ISSUED FOR TOWN SUBDIVISION REVIEW



CONCRETE THRUST BLOCK SIZE REQUIREMENTS				
		SQ. FT. OF BEARING ON UNDISTURBED SOIL		
FITTINGS		90°BENDS	45°BENDS	TEES AND PLUGS
PIPE SIZE	6"	4.0	2.0	3.0
	8"	8.0	4.0	6.0
	12"	15	9	12
	16"	26	14	19
	20"	40	22	28

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



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59 HARVEST HILL RD
WINDHAM, ME 04062
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REV	DATE	BY	DESCRIPTION
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DETAILS
BABBIGE FARMS SUBDIVISION
WINDHAM, MAINE
FOR RECORD OWNER:
SEBAGO HEIGHTS, LLC
39A EXCHANGE STREET
PORTLAND, MAINE

15024 JOB NUMBER:
AS NOTED SCALE:
7-3-2017 DATE:
SHEET 10 OF 10
D-3