



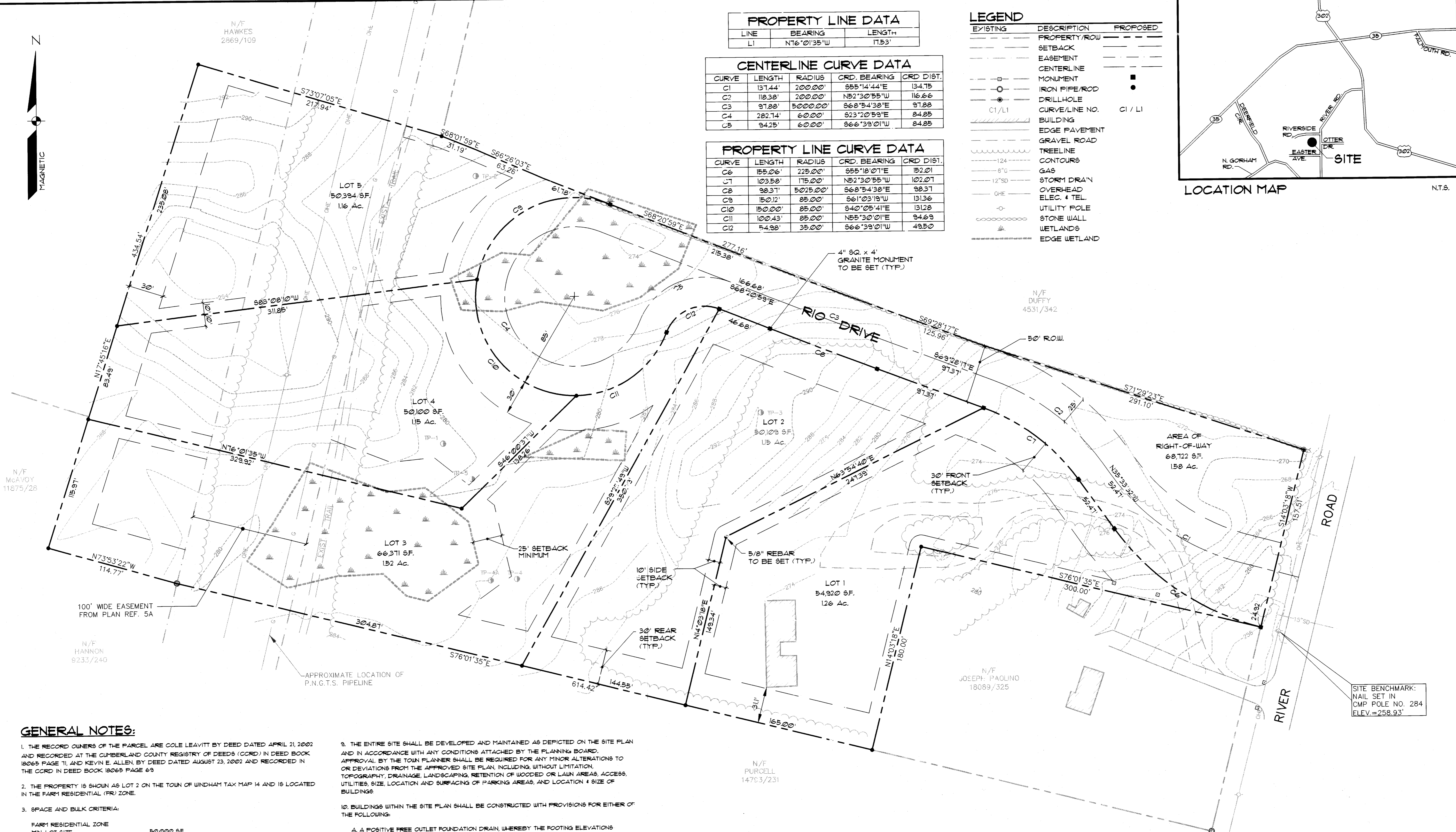
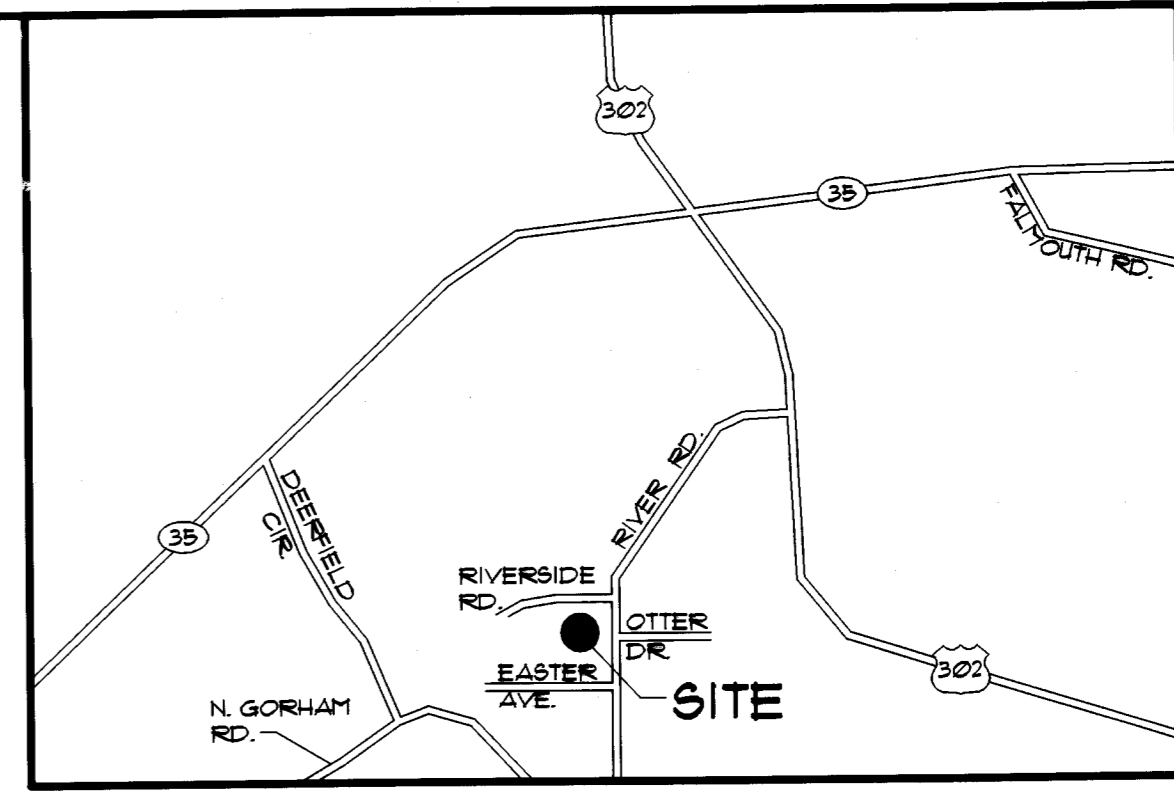
N/F HAWKES 2869/109

PROPERTY LINE DATA		
LINE	BEARING	LENGTH
L1	N76°01'35"W	175.3'

CENTERLINE CURVE DATA				
CURVE	LENGTH	RADIUS	CRD. BEARING	CRD. DIST.
C1	131.44'	200.00'	S55°14'44"E	134.75
C2	118.38'	200.00'	N52°30'55"W	116.66
C3	97.88'	500.00'	S68°54'38"E	97.88
C4	282.14'	60.00'	S23°20'59"E	84.85
C5	94.25'	60.00'	S66°39'01"W	84.85

PROPERTY LINE CURVE DATA				
CURVE	LENGTH	RADIUS	CRD. BEARING	CRD. DIST.
C6	155.06'	225.00'	S55°18'01"E	152.01
C7	103.58'	175.00'	N52°30'55"W	102.01
C8	98.31'	500.00'	S68°54'38"E	98.31
C9	150.12'	85.00'	S61°03'19"W	131.36
C10	150.00'	85.00'	S40°05'41"E	131.28
C11	100.43'	85.00'	N55°30'01"E	94.69
C12	54.98'	35.00'	S66°39'01"W	49.50

LEGEND		
EXISTING	DESCRIPTION	PROPOSED
---	PROPERTY ROW	---
---	SETBACK	---
---	EASEMENT	---
---	CENTERLINE	---
---	MONUMENT	---
---	IRON PIPE/ROD	---
---	DRILLHOLE	---
---	CURVE/LINE NO.	---
---	BUILDING	---
---	EDGE PAVEMENT	---
---	GRAVEL ROAD	---
---	TREELINE	---
---	CONTOURS	---
---	GAS	---
---	STORM DRAIN	---
---	OVERHEAD ELEC. & TEL.	---
---	UTILITY POLE	---
---	STONE WALL	---
---	WETLANDS	---
---	EDGE WETLAND	---



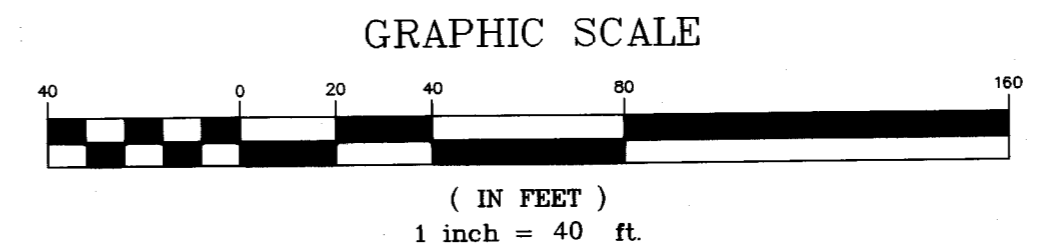
GENERAL NOTES:

- THE RECORD OWNERS OF THE PARCEL ARE COLE LEAVITT BY DEED DATED APRIL 21, 2002 AND RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS (CORD) IN DEED BOOK 18065 PAGE 11, AND KEVIN E. ALLEN, BY DEED DATED AUGUST 23, 2002 AND RECORDED IN THE CORD IN DEED BOOK 18065 PAGE 63.
- THE PROPERTY IS SHOWN AS LOT 2 ON THE TOWN OF WINDHAM TAX MAP 14, AND IS LOCATED IN THE FARM RESIDENTIAL (FR) ZONE.
- SPACE AND BULK CRITERIA:
FARM RESIDENTIAL ZONE
MIN. LOT SIZE: 50,000 SF.
MIN. STREET FRONTAGE: 150 FT.
MIN. FRONT YARD: 30 FT.
MIN. SIDE YARD: 10 FT.
MIN. REAR YARD: 30 FT.
MAX. BUILDING HEIGHT: 35 FT.
MAX. BUILDING COVERAGE: 20%
- TOTAL AREA OF PARCEL: 340,611 SF. (7.82 Ac.)
- PLAN REFERENCES:
A. BOUNDARY SURVEY FOR JOSEPH PAOLINO, BY SURVEY INC., JOB NO 02-162, DATED JUNE 2002.
- EXTERIOR BOUNDARY INFORMATION WAS TAKEN SOLELY FROM PLAN REFERENCED IN NOTE 5A. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON AN ON THE GROUND SURVEY BY SEBAGO TECHNICS, INC. THE TOTAL AREA OF WETLANDS IS 27,856 SF, AND 12,161 SF. IS PROPOSED TO BE ALTERED DUE TO ROADWAY AND DRIVEWAY CONSTRUCTION.
- WETLAND LIMITS SHOWN HEREON WERE IDENTIFIED BY SEBAGO TECHNICS, INC. BASED UPON THE 1981 ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL FOR IDENTIFYING WETLANDS. THE TOTAL AMOUNT OF WETLANDS IS NEARLY 27,856 SF, WITH APPROX. 12,161 SF. TO BE IMPACTED BY DEVELOPMENT. THIS PROPOSED WETLAND IMPACT REQUIRES A TIER 1 PERMIT FROM THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.
- FAILURE TO COMMENCE SUBSTANTIAL CONSTRUCTION OF A SUBDIVISION OR SITE PLAN WITHIN TWO (2) YEARS OF THE DATE OF FINAL PLANNING BOARD APPROVAL OF THE PLAN, SHALL RENDER THE PLAN NULL AND VOID.

- THE ENTIRE SITE SHALL BE DEVELOPED AND MAINTAINED AS DEPICTED ON THE SITE PLAN 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 PLAN, INCLUDING, WITHOUT LIMITATION, TOPOGRAPHY, DRAINAGE, LANDSCAPING, RETENTION OF WOODED OR LAWN AREAS, ACCESS, UTILITIES, SIZE, LOCATION AND SURFACING OF PARKING AREAS, AND LOCATION & SIZE OF BUILDINGS.
- BUILDINGS WITHIN THE SITE 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
B. ANY OTHER FOUNDATION DRAINAGE SYSTEM, SUCH AS A SUMP HOLE, WHEREBY THE BOTTOM OF THE FOOTING ELEVATION SHALL BE SET AT LEAST 12" ABOVE THE LIMITING GROUNDWATER LEVEL AS DETERMINED BY A LICENSED SITE EVALUATOR AND APPROVED BY THE TOWN OF WINDHAM CODE ENFORCEMENT OFFICER.
- 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.
- NET RESIDENTIAL DENSITY CRITERIA:
FARM RESIDENTIAL ZONE
TOTAL ACREAGE: 340,611 SF.
AREA USED FOR ROW, ROADS/SIDEWALKS: 68,122 SF.
AREA WITH SLOPE OVER 25%: n/a.
AREA WITHIN 100YR FLOOD PLAIN: n/a.
AREA INSIDE RESOURCE PROTECTION: n/a.
AREA UNSUITABLE FOR BUILDING: 16,078 SF.
AREA COVERED BY WATER: n/a.
NET RESIDENTIAL AREA: 255,806 SF.
NUMBER OF 50,000 SF. LOTS ALLIQUED: 5.11

CONDITION OF APPROVAL NOTES:

- THE PROJECT IS TO BE SERVICED BY PUBLIC WATER AND SUBSURFACE DISPOSAL SYSTEMS MEETING THE REQUIREMENTS OF THE MAINE STATE PLUMBING CODE.
- THE ENTIRE RIGHT-OF-WAY AREA DEPICTED ON THIS PLAN SHALL BE INCLUDED AS PART OF ANY REQUEST TO THE TOWN OF WINDHAM FOR ACCEPTANCE OF A PUBLIC ROAD BY THE DEVELOPER.
- ANY AREA OF EXISTING DRIVEWAY ENCROACHMENT ONTO LAND OF JOSEPH PAOLINO AS DEPICTED ON THIS PLAN SHALL BE RECLAIMED/RESURFACED AND ALL DISTURBED AREAS SHALL BE ADEQUATELY LOAMED AND SEEDED. THIS WORK SHALL BE INCLUDED IN THE REQUIRED PERFORMANCE BOND FOR THIS PROJECT.
- THIS PROJECT SHALL CONFORM TO ALL REQUESTS OF THE CUMBERLAND COUNTY SOIL AND WATER CONSERVATION DISTRICT (CCSWCD) MADE DURING THEIR REVIEW FOR EROSION & SEDIMENT CONTROL APPROVAL.



STATE OF MAINE
Cumberland COUNTY SS REGISTRY OF DEEDS
RECEIVED Oct 26, 2004
AT 3:24 P.M. AND RECORDED IN
PLAN BOOK 204 PAGE 192
ATTEST John B. O'Brien REGISTER

APPROVAL - TOWN OF WINDHAM PLANNING BOARD

SEPTEMBER 27, 2004
DATE
[Signature] CHAIRPERSON
[Signature]
[Signature]

REV.	BY:	DATE:	STATUS:
G	JHW	04-05-04	ISSUED FOR FINAL APPROVAL COMPLIANCE
F	JHW	02-03-04	REVISED FOR FINAL APPROVAL
E	JHW	01-12-04	REVISED PER TOWN STAFF/MDOT COMMENTS
D	JHW	12-29-03	REVISED PER PLANNING BOARD COMMENTS
C	JHW	12-12-03	REVISED FOR FINAL SUBDIVISION SUBMITTAL
B	JHW	10-27-03	SUBMIT TO TOWN FOR PRELIMINARY SUBDIVISION REVIEW
A	MVE	5-30-03	SUBMIT TO TOWN FOR SKETCH PLAN REVIEW

Sebago Technics
Engineering Expertise You Can Build On
One Orchard Street
Windham, Maine 04092
Tel: (207) 456-0277

PROJECT NO. | FIELD BOOK | DESIGN | CHKD | DRAWN | JHW/SAB
02359 | 798 | JHW | WPS

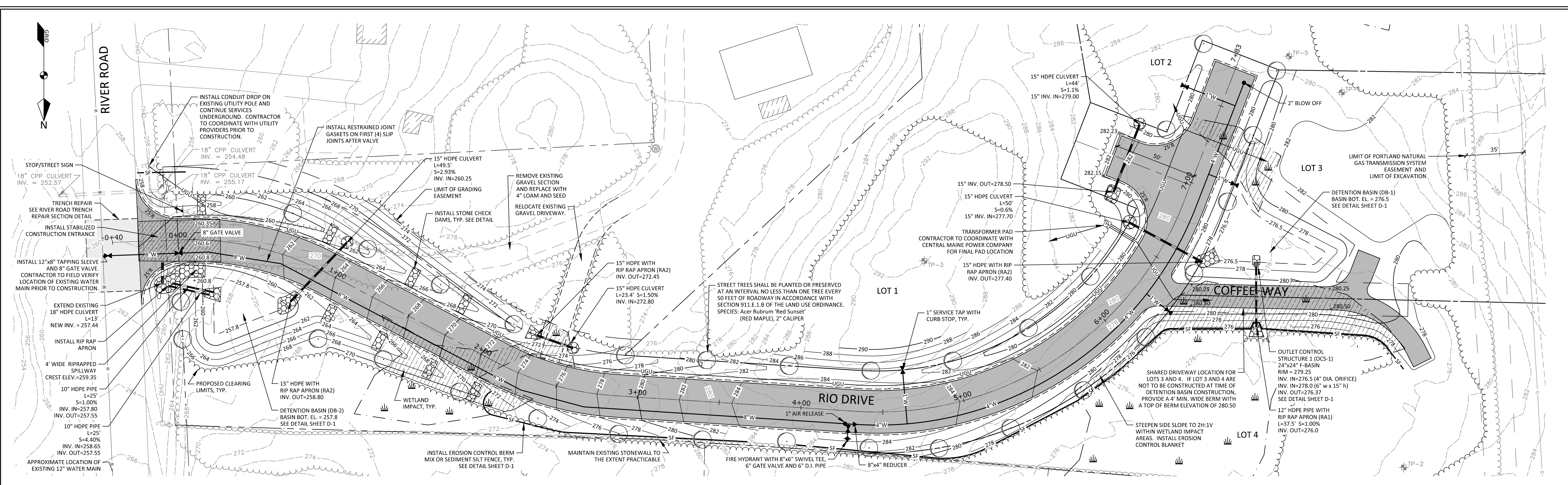
FINAL SUBDIVISION PLAN
OF:
RIO DRIVE SUBDIVISION
RIVER ROAD
WINDHAM, MAINE

FOR:
COLE LEAVITT
9 BROOKLET LAKE
WINDHAM, MAINE 04062

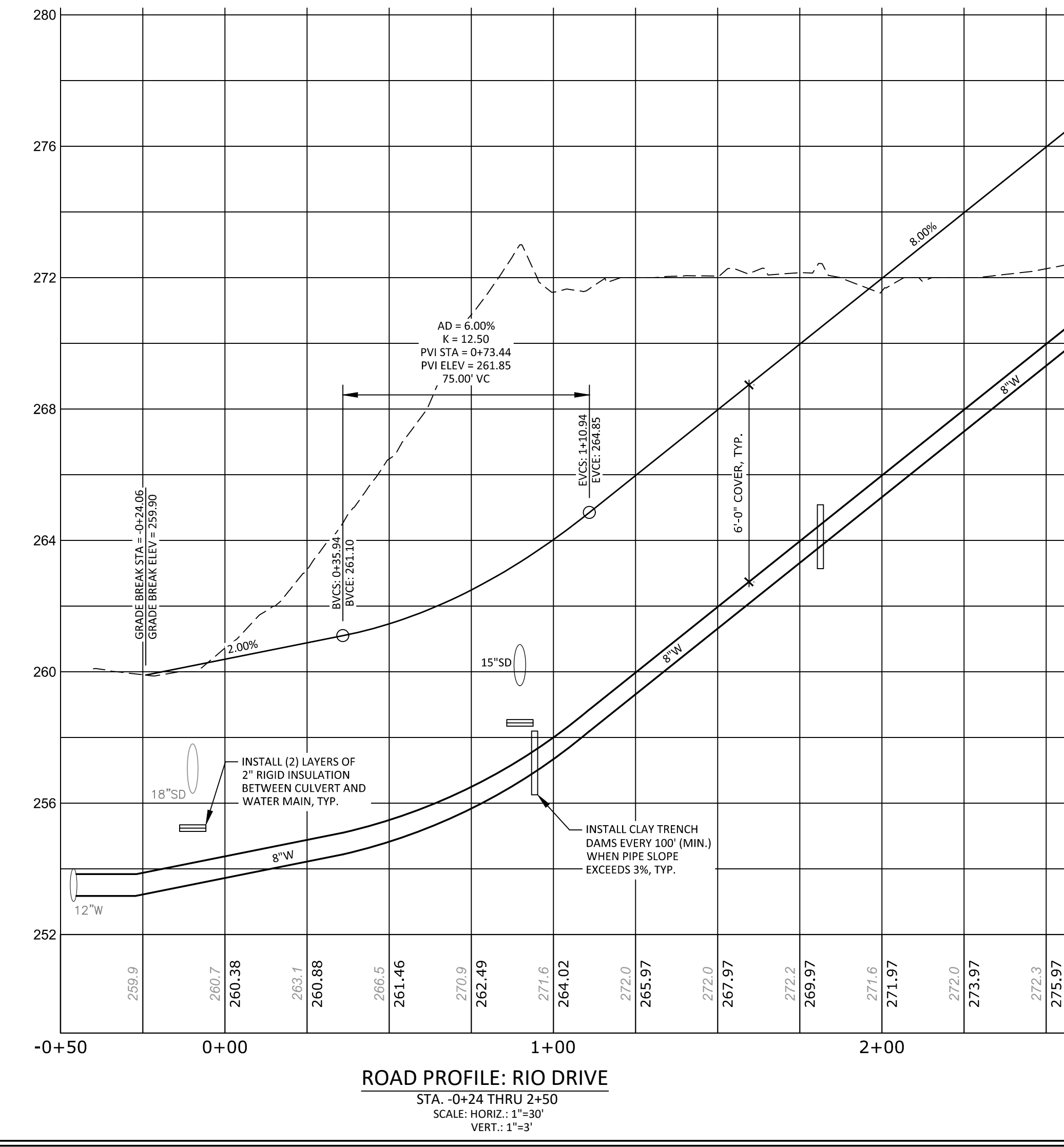
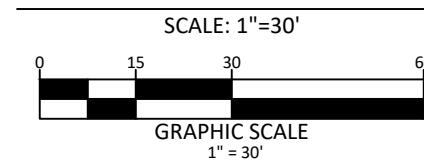
RECORD OWNER:
SEE NOTE 1

DATE	SCALE
5-30-03	1"=40'

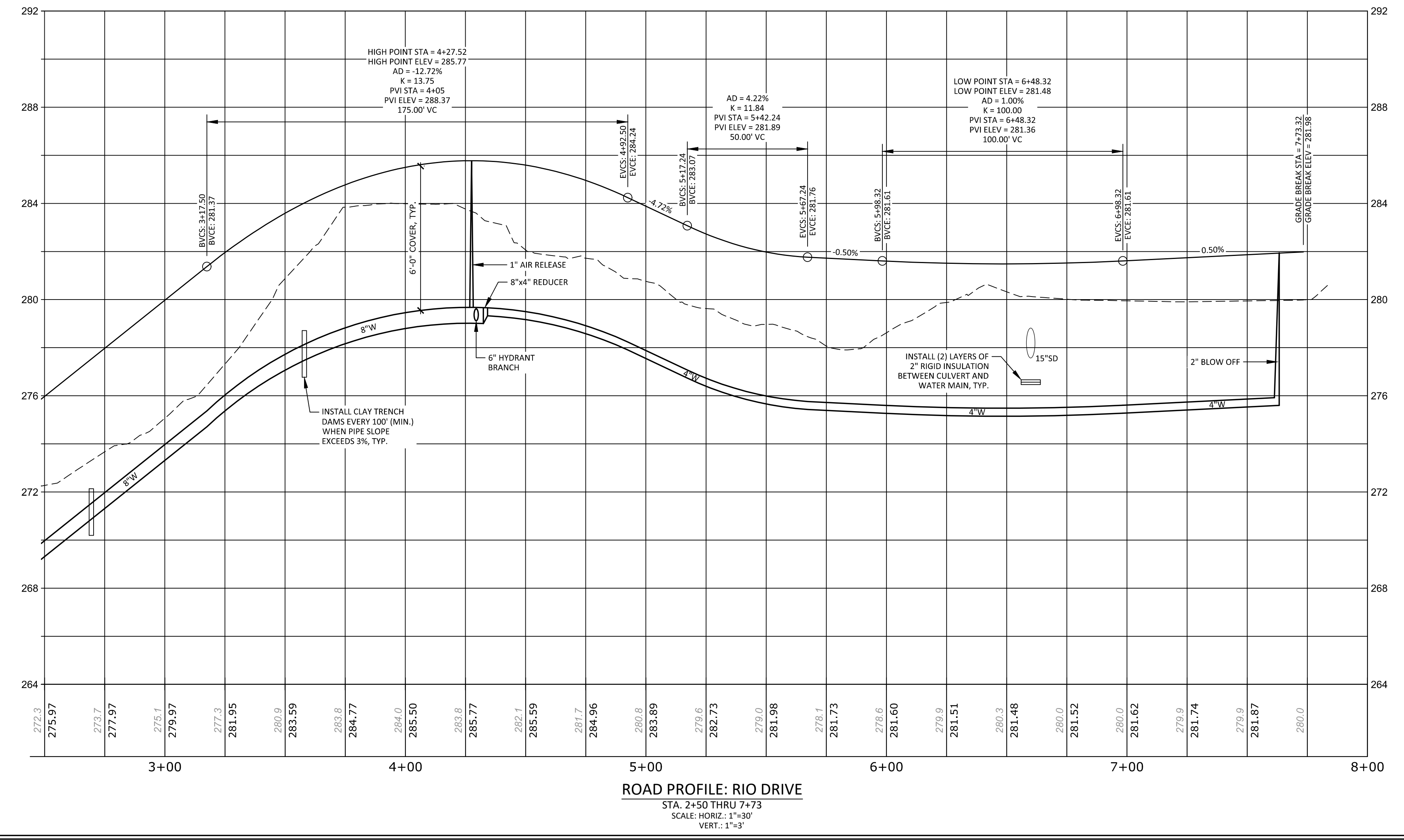
SHEET 1 OF 5



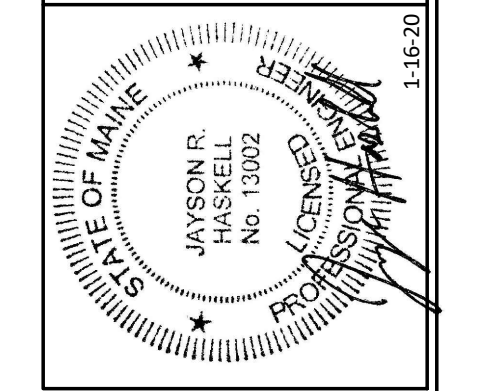
ROAD PLAN: RIO DRIVE



ROAD PROFILE: RIO DRIVE
STA. -0+24 THRU 2+50
SCALE: HORIZ. 1\"/>



ROAD PROFILE: RIO DRIVE
STA. 2+50 THRU 7+73
SCALE: HORIZ. 1\"/>



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

REV	DATE	BY	DESCRIPTION
A	11-12-19	JRH	ISSUED FOR RFP REVIEW
B	11-20-19	JRH	REVISED PER ACDE REVIEW
C	12-10-19	JRH	REVISED PER PWD REVIEW
D	1-6-20	JRH	ISSUED FOR MINOR SUBDIVISION REVIEW
E	1-16-20	JRH	REVISED PER TOWN REVIEW

PLAN AND PROFILE: RIO DRIVE
RIO DRIVE SUBDIVISION
WINDHAM, MAINE
FOR RECORD OWNER:
KNMC, LLC
91 TANDERBERG TRAIL, UNIT 2
WINDHAM, MAINE 04062

19035
JOB NUMBER:
AS NOTED
SCALE:
1-16-2020
DATE:
SHEET 4 OF 6
PP-1

EROSION AND SEDIMENTATION CONTROL NOTES:

EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME. LIMIT THE EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS TO OCCUR DURING THE FOLLOWING 15 DAYS AND THAT CAN BE MULCHED IN ONE DAY.

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 DOWNGRADE 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 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.

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 50-100%, DRY WEIGHT BASIS.
- MINERAL PORTION OF THE MIX SHOULD BE NATURALLY INCLUDED IN THE MIX WITH NO LARGER ROCKS (>4")
- ORGANIC PORTION NEEDS TO BE FIBROUS AND LONGATED.
- LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX
- IN STUMP GRINDING, THE MINERAL SOIL ORIGINATES FROM THE ROOT BALL AND SHOULD NOT BE REMOVED BEFORE GRINDING
- THE MIX SHOULD BE FREE OF REFUSE, MATERIAL, TOXIC TO PLANT GROWTH OR UNSUITABLE MATERIAL (BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS)

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.

TEMPORARY MULCH SHALL BE INSPECTED FOLLOWING ANY SIGNIFICANT RAINFALL EVENT (GREATER THAN 0.5 INCH RAINFALL, TYP.). 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 THROUGHOUT THE WINTER AND TEMPORARY VEGETATION SHALL BE PLANTED AT THE BEGINNING OF THE GROWING SEASON THE FOLLOWING YEAR. TO PREPARE THE SEEDED, THE CONTRACTOR SHALL APPLY FERTILIZER AT A RATE OF 600 POUNDS PER ACRE OF 10-10-10 (N-P205-K20) OR EQUIVALENT AND LIMING MATERIAL TO 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 DOWNGRADE 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 BARRIER SHALL BE A PERVIOUS SHEET OF PROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN AND SHALL PROVIDE A MINIMUM OF 6 MONTHS USABLE CONSTRUCTION LIFE INCLUDING PROTECTION AGAINST ULTRA-VIOLET LIGHT. THE HEIGHT OF THE FENCE SHALL NOT EXCEED 36 INCHES INSTALLED AND POST SPACING SHALL NOT EXCEED 6 FEET. JOINTS IN THE FENCE SHALL BE AVOIDED TO THE EXTENT POSSIBLE, AND IF NECESSARY SHALL BE SPLICED TOGETHER AT A SUPPORT POST WITH A MINIMUM OF INCH OVERLAP. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 6 INCHES WIDE AND 6 INCHES DEEP, AND THE BOTTOM 6-8 INCHES OF INCH SHALL BE "TOED-IN" TO THE TRENCH AND COMPACTED. THE TRENCH SHOULD BE UPHILL OF THE FABRIC PRIOR TO BURIAL.

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 SHALL BE PROHIBITED AT THE BASE OF A LONG OR STEEP SLOPE (8% OR GREATER) WITHOUT THE ADDITIONAL SUPPORT OF A FILTER FENCE INSTALLED ON THE DOWNHILL SIDE OF THE BERM.

SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADE OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER SHOULD BE PREVENTED FROM RUNNING ONTO THE STOCKPILE. SEDIMENT BARRIERS SHALL BE INSPECTED AFTER ANY SIGNIFICANT RAINFALL EVENT (GREATER THAN 0.5 INCH RAINFALL) AND REPAIRED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE BARRIERS. IF THERE ARE SIGNS OF UNDERMINING 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. 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:

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.

5. 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 ENTER OR EXIT A PUBLIC ROAD OR OTHER PAVED AREA. THE STONE PAD SHALL CONSIST OF A MINIMUM 6-INCH DEPTH OF 2-3 INCH CRUSHED STONE, AND SHALL BE PLACED ON A GEOTEXTILE FABRIC. THE PAD SHALL EXTEND AT LEAST 50 FEET INTO THE PROJECT SITE AND BE A MINIMUM OF 10 FEET WIDE. THE EXIT SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, AND THE CONTRACTOR SHALL SWEEP PAVEMENT AT EXITS THAT HAVE EXPERIENCED ANY MID-TRACKING PRIOR TO THE NEXT STORM EVENT. MAINTAIN THE PAD UNTIL ALL DISTURBED AREAS ARE STABILIZED.

6. 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.

7. 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 7 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 ROOTS OR OTHER OBJECTIVE 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, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILL SLOPES OR STRUCTURAL FILLS. FILL SHALL NOT BE PLACED ON FOUNDATION. SEEDS OR SPRINGS INCORPORATED DURING CONSTRUCTION SHALL BE HANDLED APPROPRIATELY. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.

8. 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 LOOSENED BY SCARIFYING TO A DEPTH OF AT LEAST 2 INCHES TO ENSURE BONDING WITH SUBSOIL. THE TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED TO A MINIMUM COMPACTED DEPTH OF 4 INCHES. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS. IT IS NECESSARY TO COMPACT THE TOPSOIL ENOUGH TO ENSURE GOOD CONTACT WITH THE UNDERLYING SOIL, BUT UNDUE COMPACTION IS TO BE AVOIDED.

9. 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, SOO, 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 DUFF FROM SUMMER DROUGHT AND EARLY FROSTS. NEWLY SEEDED OR SODDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC, EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL THE PROTECTED NATURAL RESOURCE, PERIMETER VEGETATION IS WELL ESTABLISHED WITH 90% COVER BY HEALTHY VEGETATION. PERMANENT MULCH 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 UNIFORMITY CONTENT AS FOUND AT THE SITE, AND ADVISE THE FINAL SEEDING AND LEVEL OF USE. REFLECT THE FINAL SOIL CONSERVATION STRIPES ON THE LOCAL SOIL AND WATER CONSERVATION DISTRICT FOR APPROPRIATE SEED MIXTURES. APPLY SEED IMMEDIATELY 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 BILLING 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, WIRES OR PINS. IRRIGATE SODDED AREAS IMMEDIATELY AFTER INSTALLATION. FOR SODDED AREAS TO BE PERMANENTLY STABILIZED, THE ROPE 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.

RIPRAP STONE SHALL CONSIST OF SUB-ANGULAR FIELD STONE OR MATERIAL 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 MDOT TYPE-C UNDERDRAIN MATERIAL SPECIFICATIONS AND BE AT LEAST 6 INCHES THICK. GEOTEXTILE FILTER BLANKETS SHALL BE SPECIFIED BASED ON SITE CONDITIONS. RIPRAP STONES SHALL BE TOED INTO THE BASE OF THE EMBANKMENT BY EXCAVATING A TRENCH AT THE BOTTOM OF THE SLOPE AND INSTALLING A STABLE BASE OF RIPRAP TO GRADE.

DITCHES, CHANNELS AND SWALES ARE CONSIDERED PERMANENTLY STABILIZED WHEN THE CHANNEL HAS 90% COVER OF HEALTHY VEGETATION WITH A WELL-GRADED GRAVEL BASE OR A ROAD GRAVEL BASE 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.

10. 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 OR WITH ANOTHER NON-EROSIVE LINING SUCH AS CONCRETE, ASPHALT OR OVER-WINTER STABILIZATION, WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME. LIMIT THE EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS TO OCCUR DURING THE FOLLOWING 15 DAYS AND THAT CAN BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT. AN AREA SHALL BE CONSIDERED DENUDED UNTIL THE SUBGRADE GRAVEL IS INSTALLED IN THE ROADWAY AREAS OR THE AREAS OF FUTURE LOAM AND SEED HAVE BEEN LOAMED, 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 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 PROJECTIONS 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 DENUDED 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, TRACKING OR WOOD CELLULOSE FIBER. THE COVER WILL BE CONSIDERED SUFFICIENT WITH THE GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. AFTER NOVEMBER 15, 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 OR 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 (0.5 INCH RAINFALL OR GREATER) OR SNOWFALL. SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADE OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER SHOULD BE PREVENTED FROM RUNNING ONTO THE STOCKPILE. 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 90%) 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

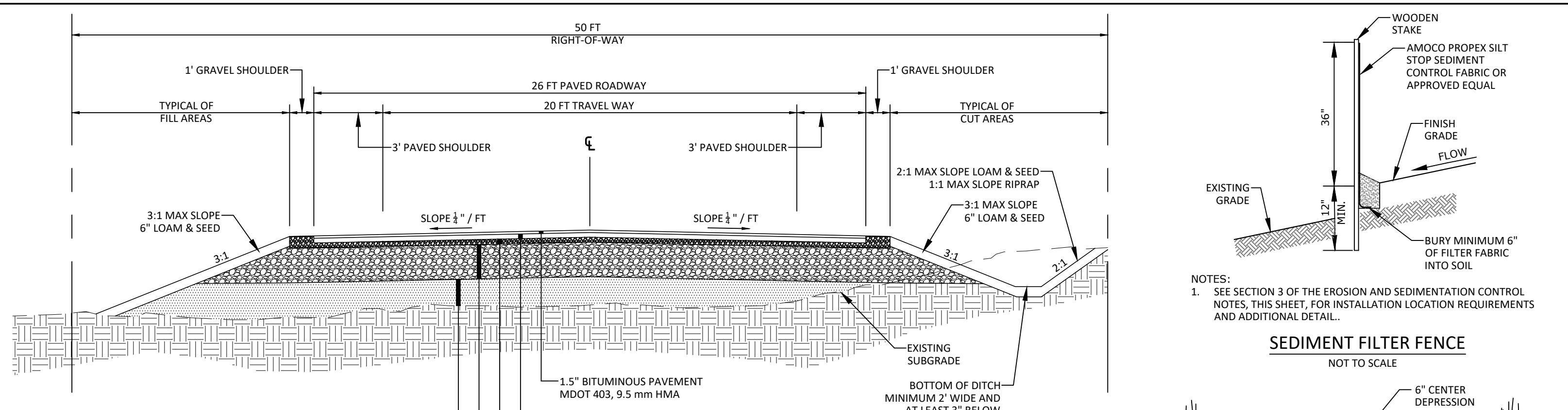
ALL STONE-COVERED SLOPES MUST BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15. ALL SLOPES TO BE VEGETATED MUST BE SEEDED AND MULCHED BY SEPTEMBER 1. ALL AREAS HAVING A GRADE STEEPER THAN 8% SHALL BE CONSIDERED A SLOPE. IF A SLOPE TO BE VEGETATED IS NOT STABILIZED BY SEPTEMBER 1, THEN THE SLOPE SHALL EITHER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

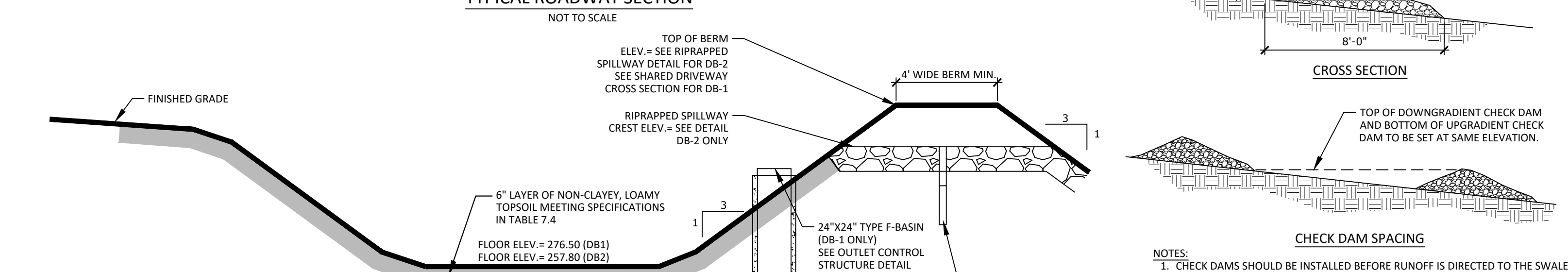
MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION SEASON. AFTER EACH RAINFALL, SNOW STORM, PERIOD OF THAWING AND RUNOFF AND AT LAST ONCE A WEEK, THE SITE CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUOUS FUNCTION. FOLLOWING 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 ROOTS OR OTHER OBJECTIVE 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, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILL SLOPES OR STRUCTURAL FILLS. FILL SHALL NOT BE PLACED ON FOUNDATION. SEEDS OR SPRINGS INCORPORATED DURING CONSTRUCTION SHALL BE HANDLED APPROPRIATELY. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.



NOTES:

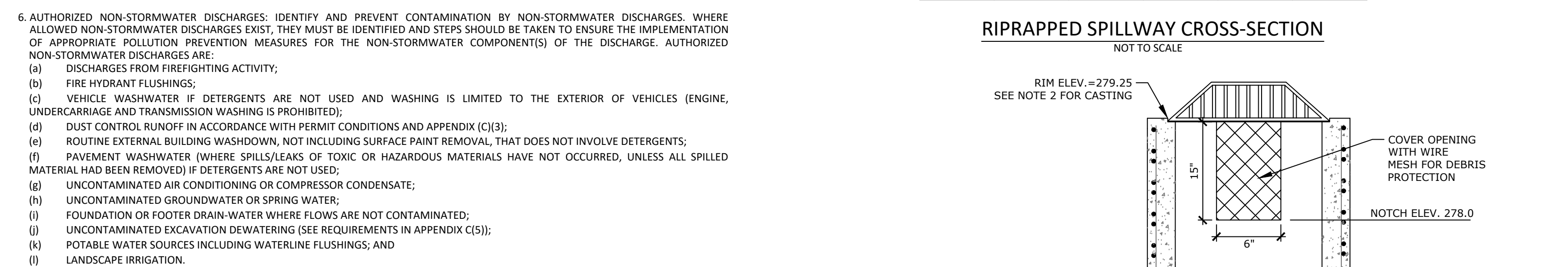
1. RECLAIMED MATERIAL APPROVED BY THE PUBLIC WORKS DIRECTOR MAY BE SUBSTITUTED.
2. CLEAN GRANULAR FILL MUST BE FREE OF ROCKS LARGER THAN 12 INCHES, STUMPS, DEBRIS, ORGANIC MATERIAL AND FROZEN MATERIAL.
3. GEOTEXTILE FABRIC OR UNDERDRAINS MAY BE REQUIRED BY THE DIRECTOR OF PUBLIC WORKS OR DESIGNED IF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

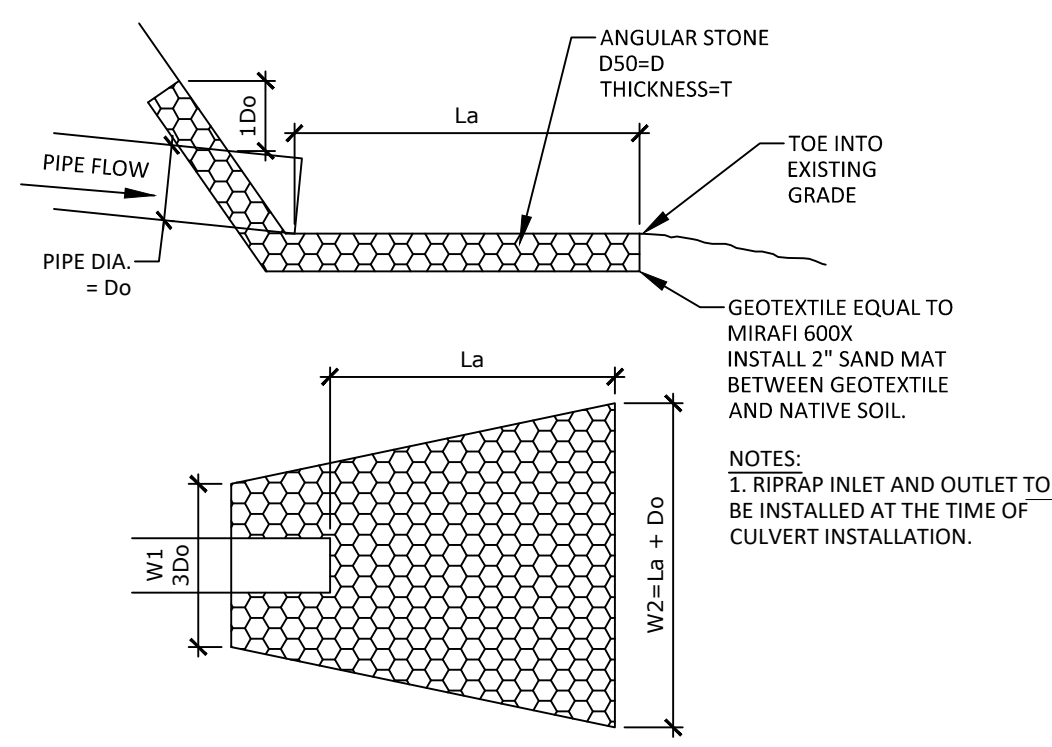
TYPICAL ROADWAY SECTION



HOUSEKEEPING NOTES

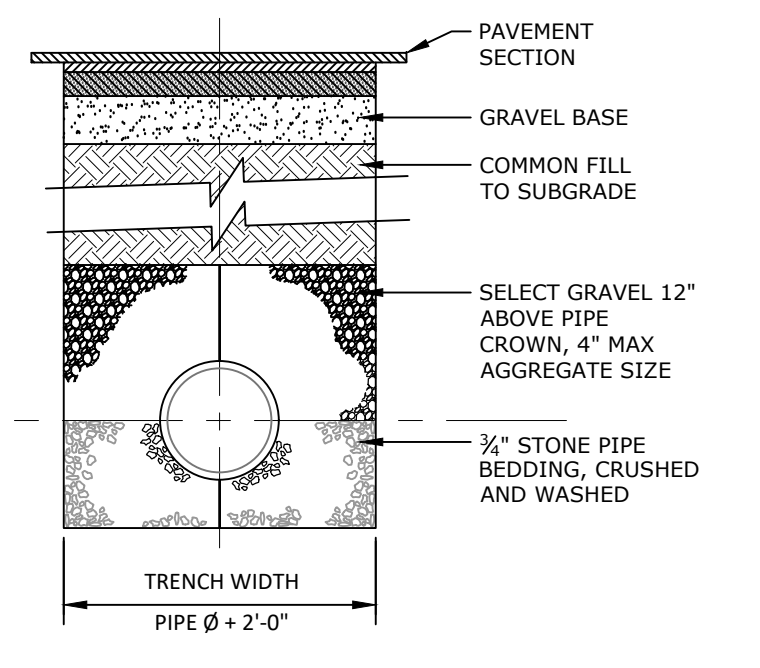
1. SPILL PREVENTION: CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS ON SITE TO ENTER STORMWATER, WHICH INCLUDES STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER. THE SITE CONTRACTOR OR OPERATOR MUST DEVELOP, AND IMPLEMENT AS NECESSARY, APPROPRIATE 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, SUMPS, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS. ANY PROJECT PROPOSING INFILTRATION OF STORMWATER MUST PROVIDE ADEQUATE PRE-TREATMENT OF STORMWATER PRIOR TO DISCHARGE 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 INCLUDED 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 SILENT 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 WOODED BUFFERS OR REVEGETATED 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)(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 HAS 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 SOURCE OF NON-STORMWATER, OTHER THAN THOSE DISCHARGES IN COMPLIANCE WITH SECTION 6 ABOVE. SPECIFICALLY, THE MDEP'S APPROVAL DOES NOT AUTHORIZE DISCHARGES OF THE FOLLOWING:
 - (a) WASTEWATER FROM THE WASHOUT OR CLEANOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS OR OTHER CONSTRUCTION MATERIALS;
 - (b) FUELS, OILS OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE;
 - (c) SOLIDS, SOLVENTS, OR DETERGENTS USED IN VEHICLE AND EQUIPMENT WASHING; AND
 - (d) TOXIC OR HAZARDOUS SUBSTANCES FROM A SPILL OR OTHER RELEASE.



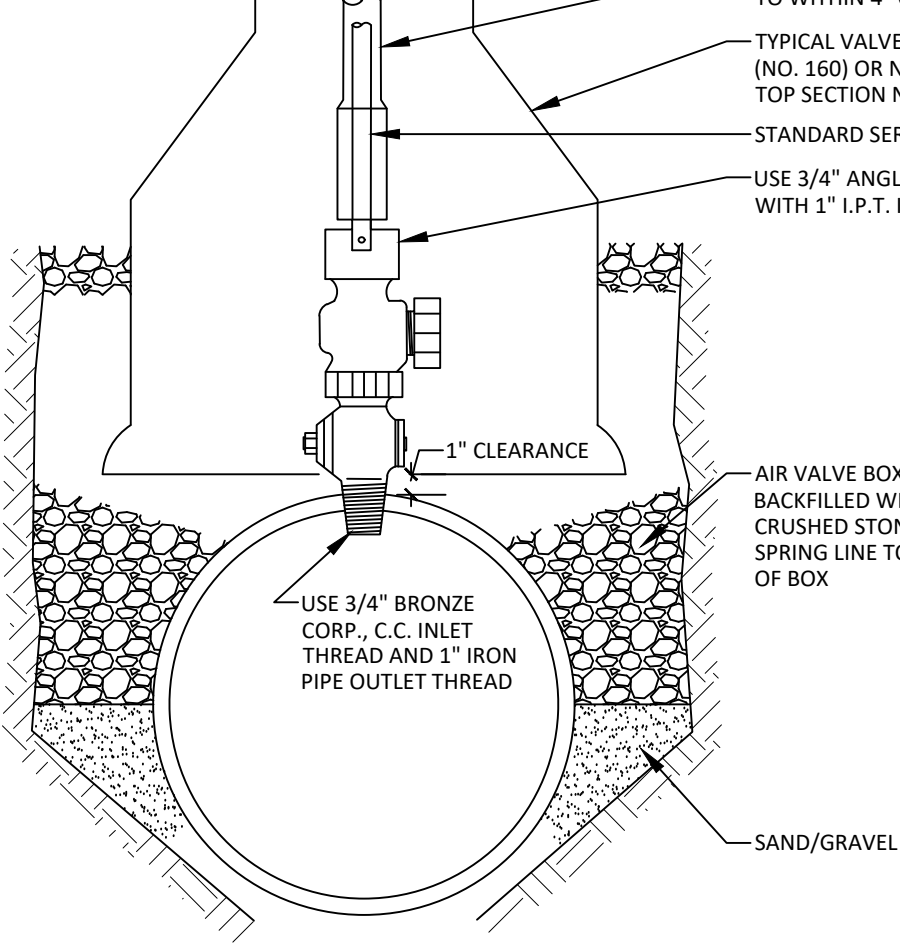


RIPRAP APRON DATA					
RA ID	W1	W2	La	D	T
RA-1	3'	7'	6'	6"	14"
RA-2	3.75'	9.25'	8'	6"	14"

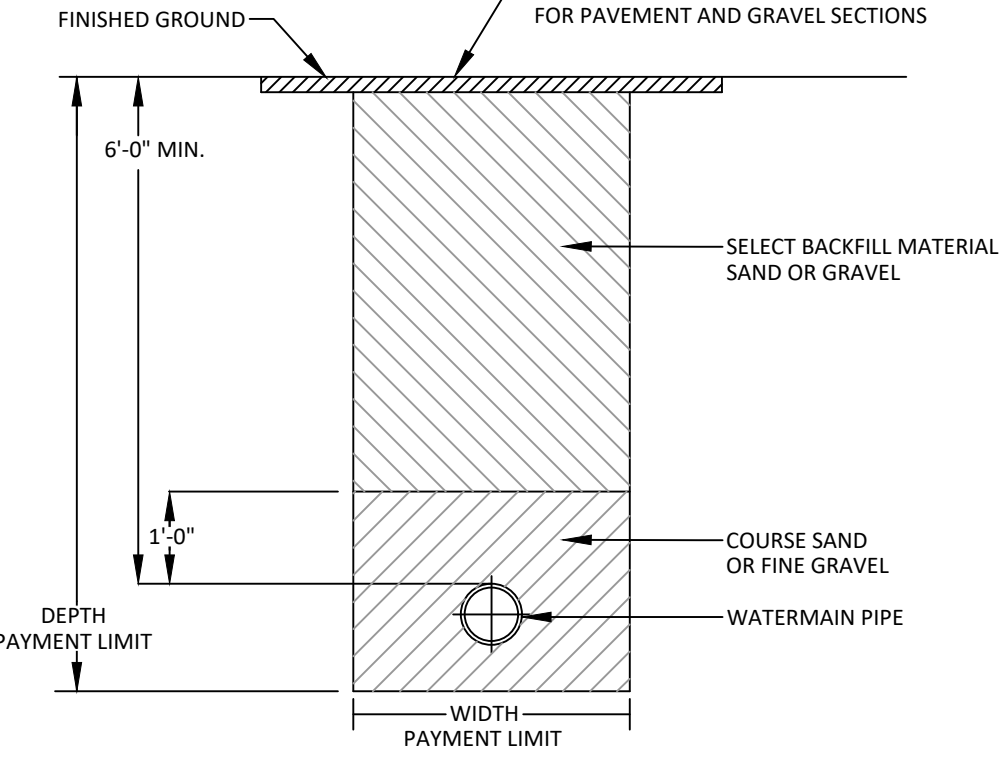
RIPRAP APRON AT PIPE
NOT TO SCALE



TYPICAL TRENCH SECTION
NOT TO SCALE



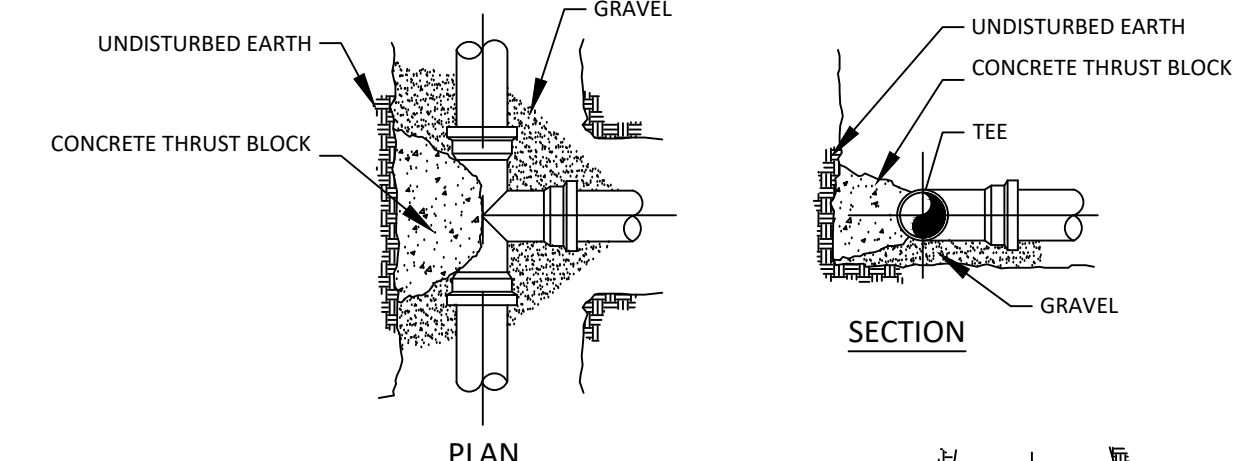
TYPICAL AIR VALVE (1\"/>



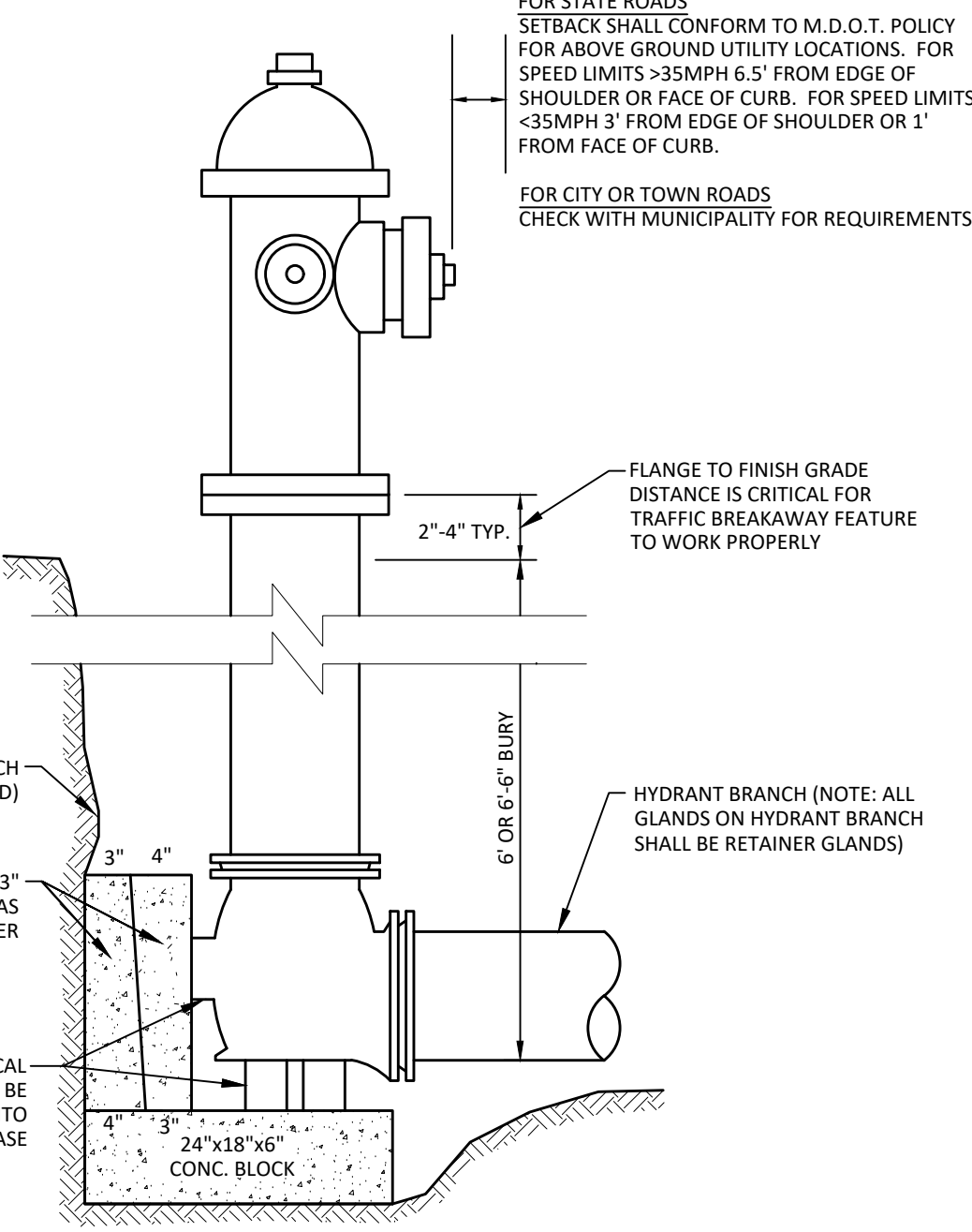
WATERMAIN TYPICAL TRENCH CROSS-SECTION
NOT TO SCALE

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	

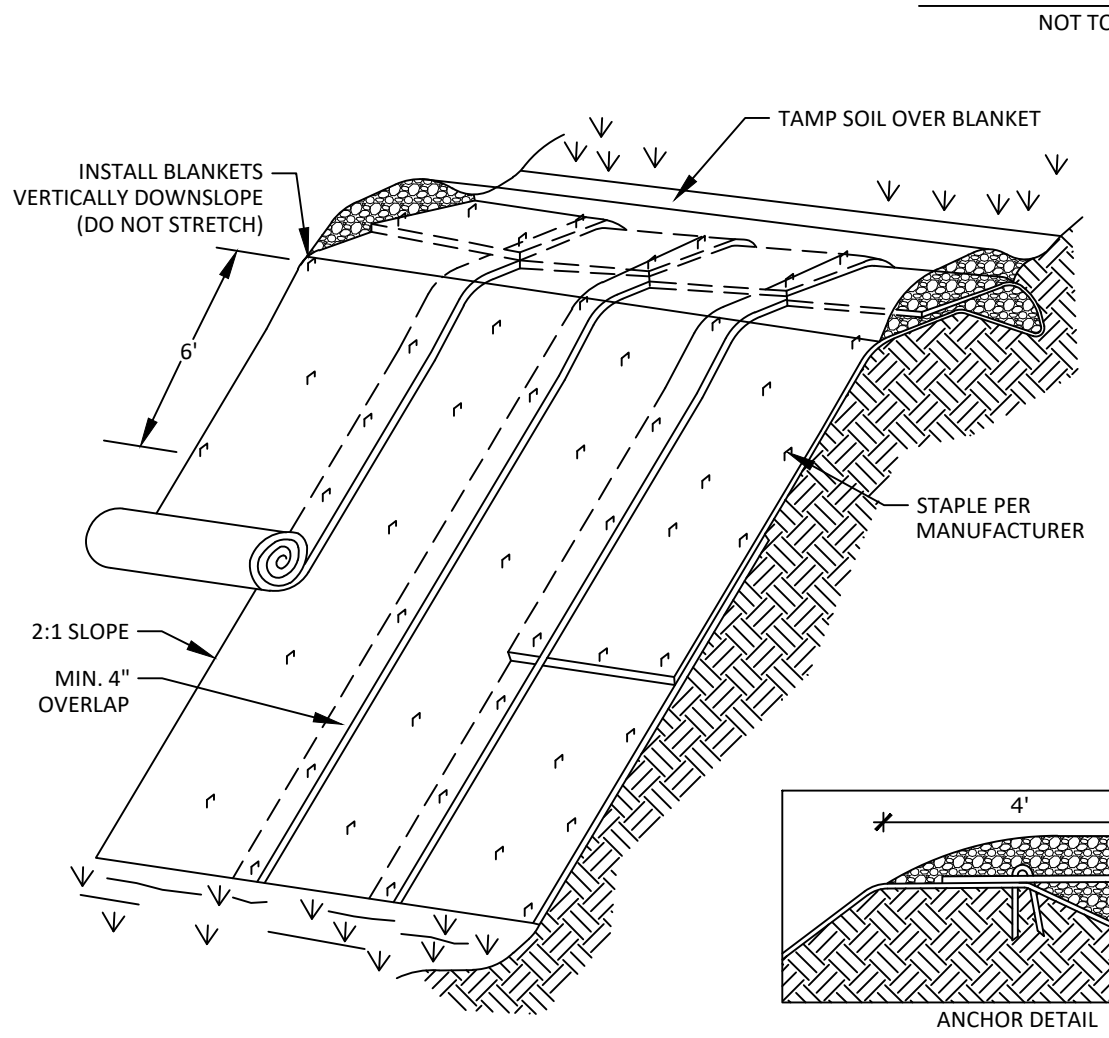
BASED ON SOIL BEARING PRESSURE OF 2000PSF AND 100PSI LINE PRESSURE. COMPACT COURSE TO FINE SANDS AND CLAYS REQUIRE ENGINEERED BLOCKS. ENGINEERED BLOCKS WILL TYPICALLY REQUIRE REINFORCING STEEL OF #5 AT 12\"/>



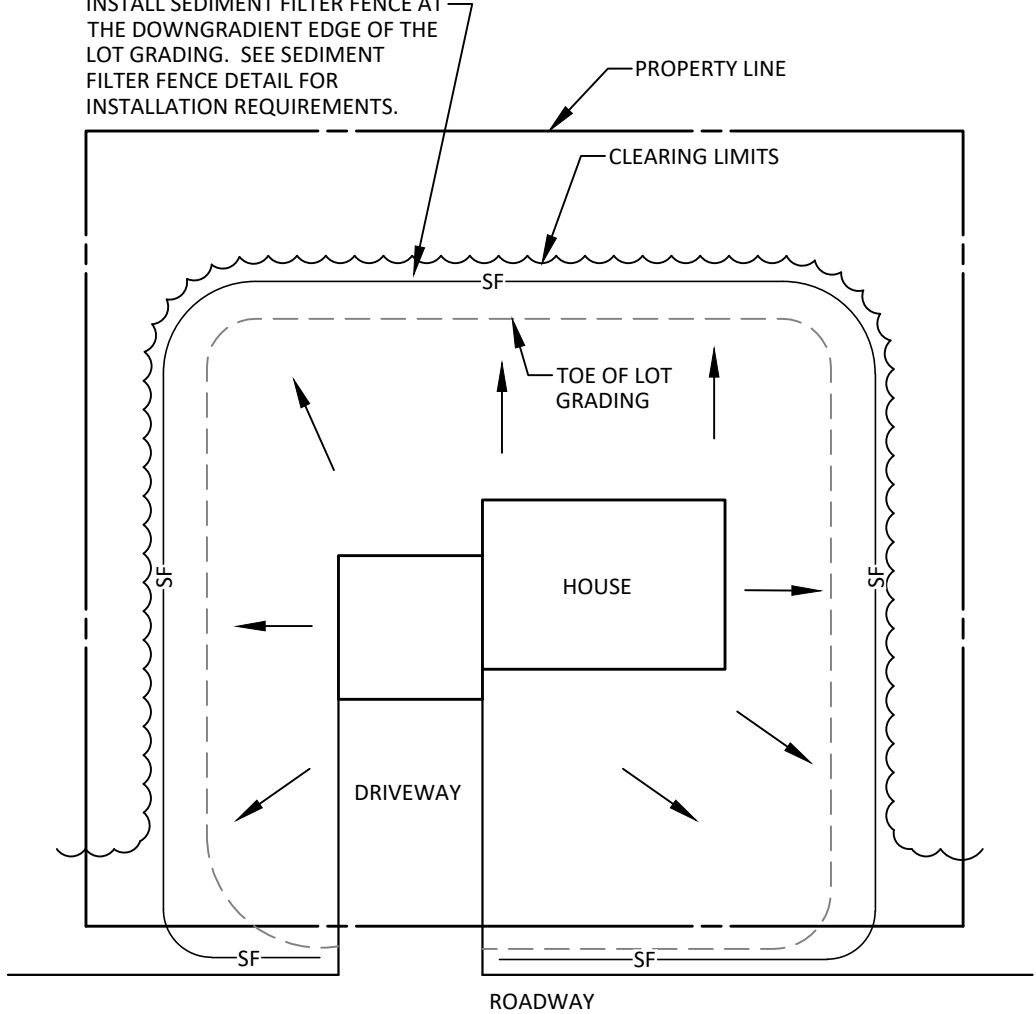
THRUST BLOCK DETAIL
NOT TO SCALE



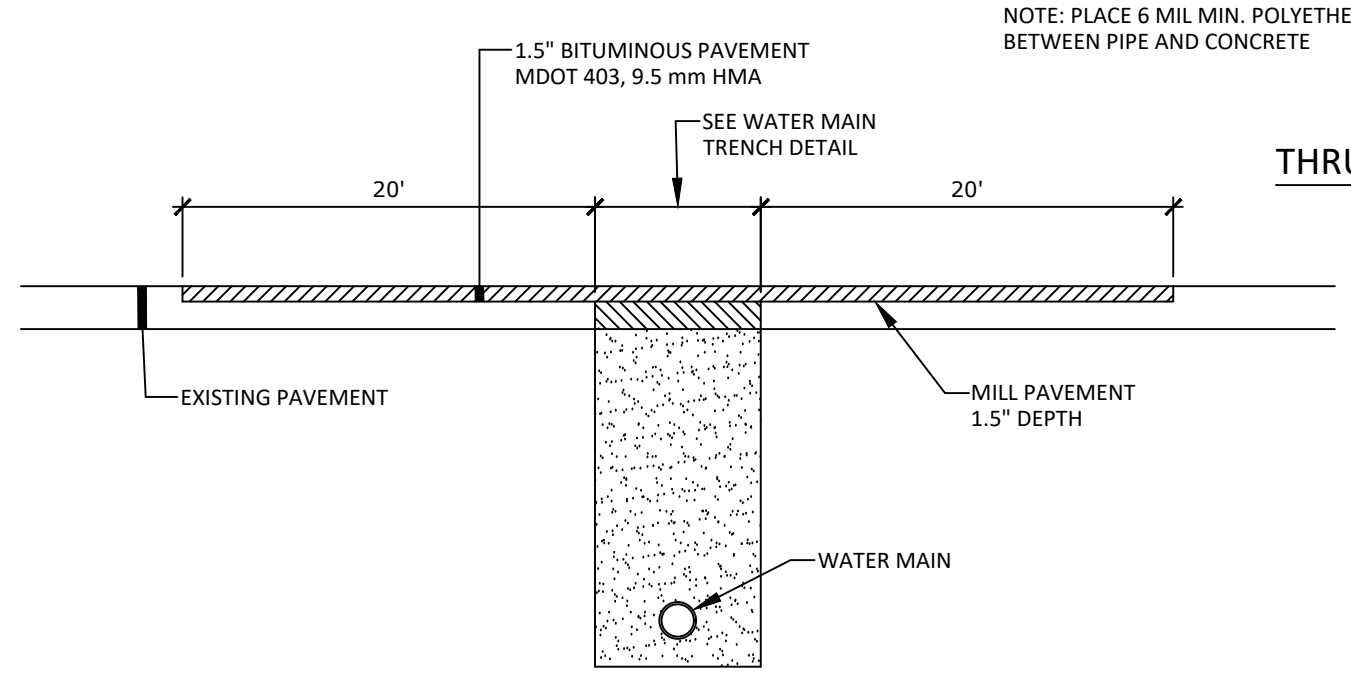
TYPICAL HYDRANT INSTALLATION DETAIL
NOT TO SCALE



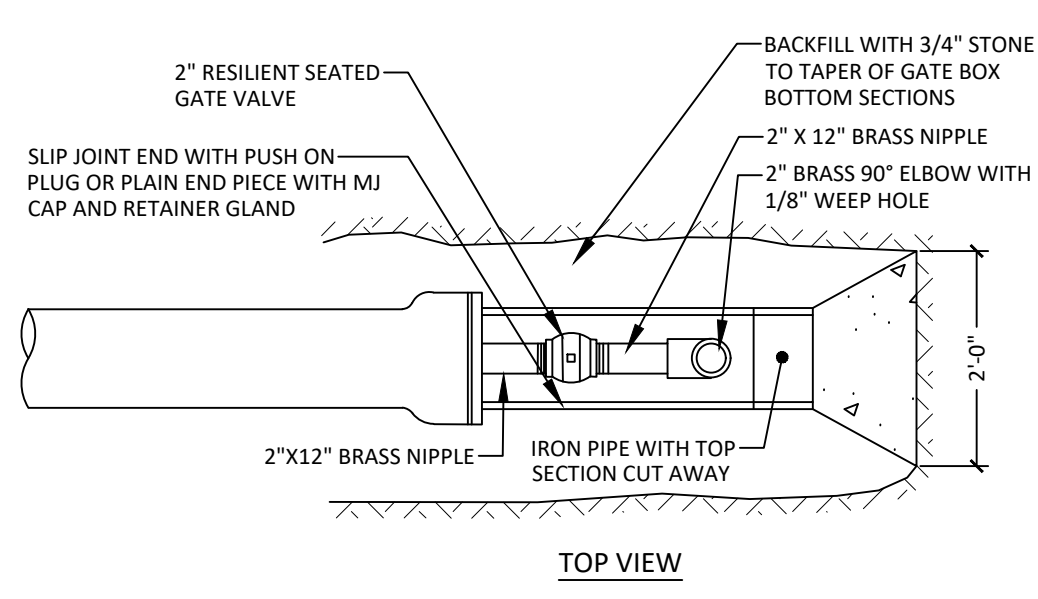
EROSION CONTROL BLANKET
NOT TO SCALE



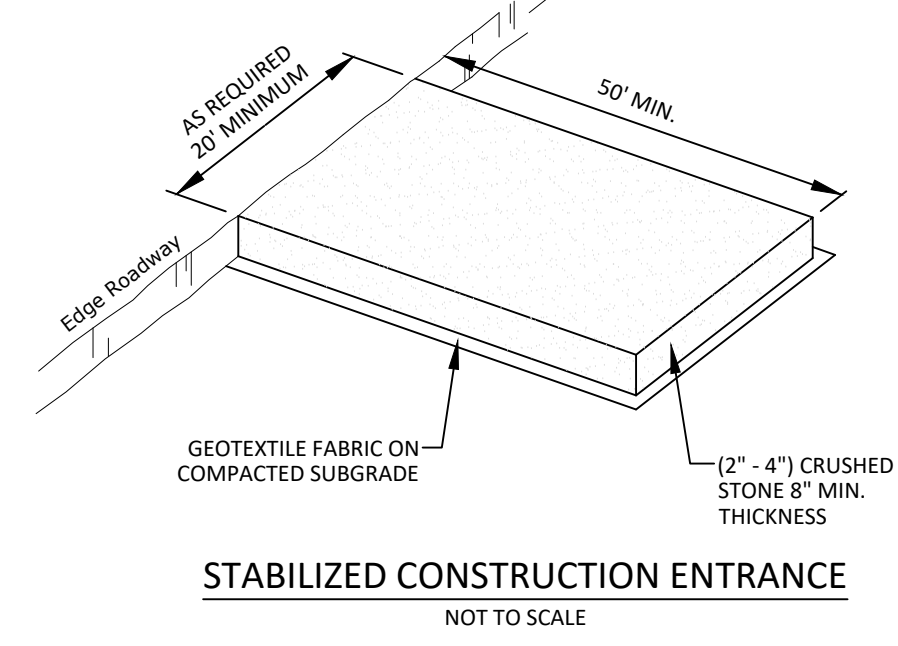
TYPICAL HOUSE LOT EROSION CONTROL DETAIL
NOT TO SCALE



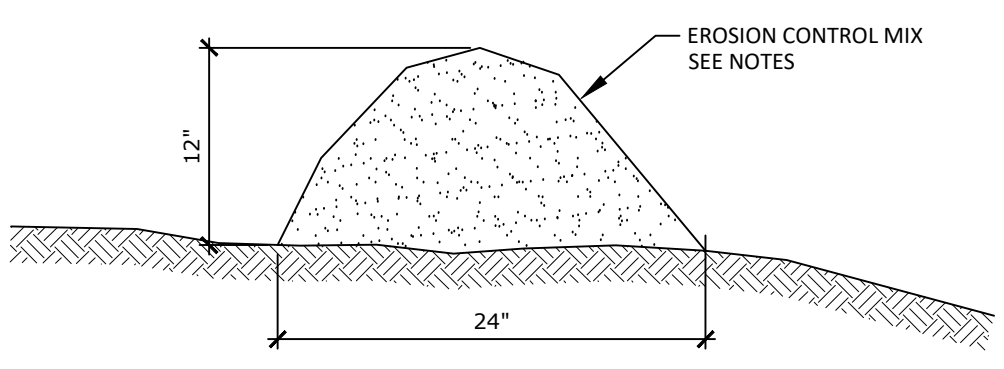
RIVER ROAD TRENCH REPAIR DETAIL
NOT TO SCALE



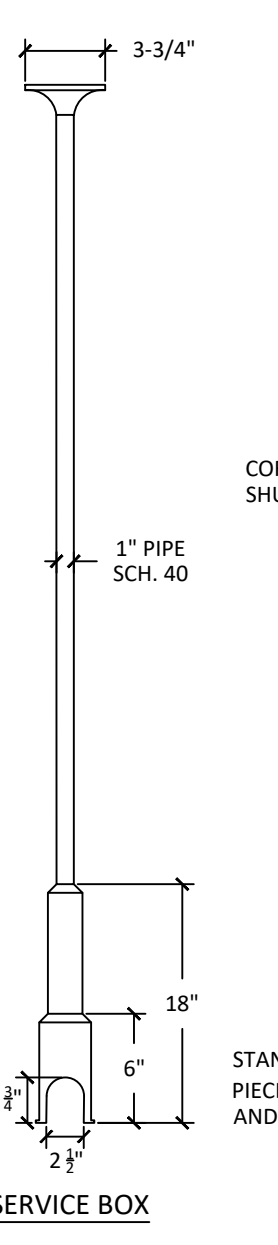
STANDARD 2\"/>



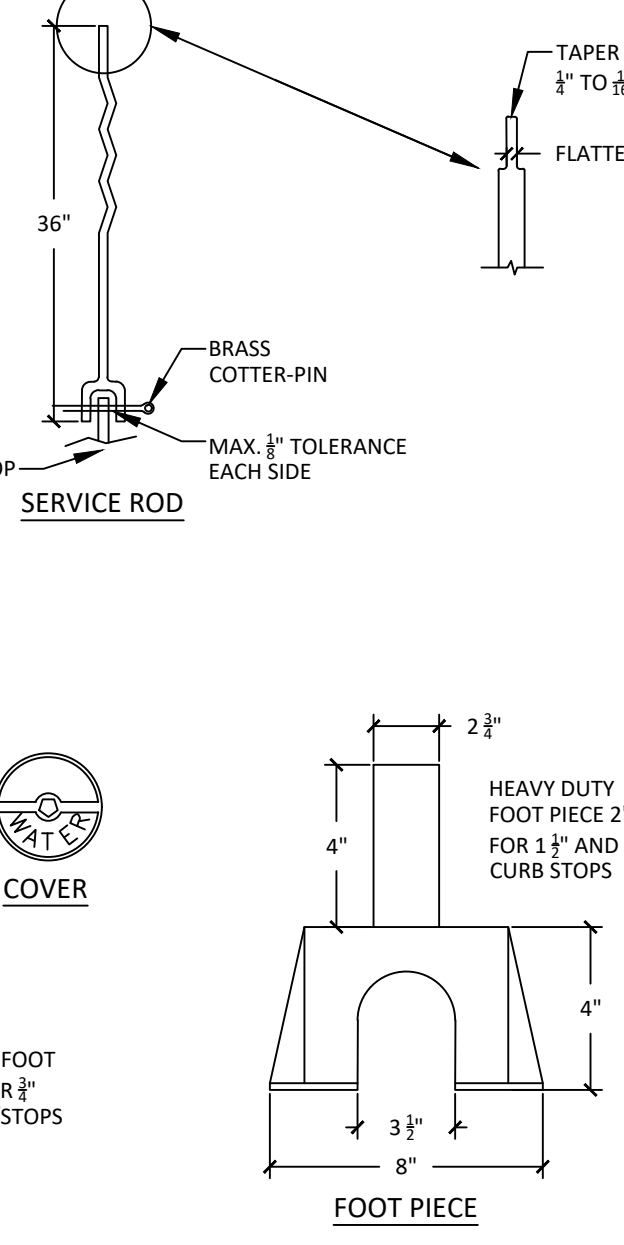
STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



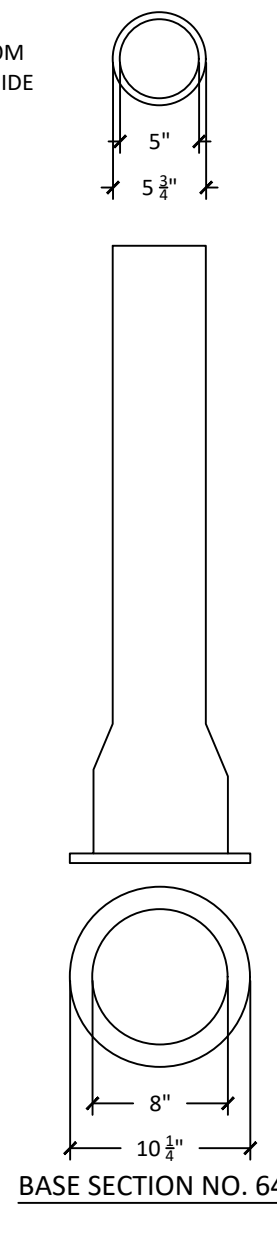
EROSION CONTROL MIX BERM
NOT TO SCALE



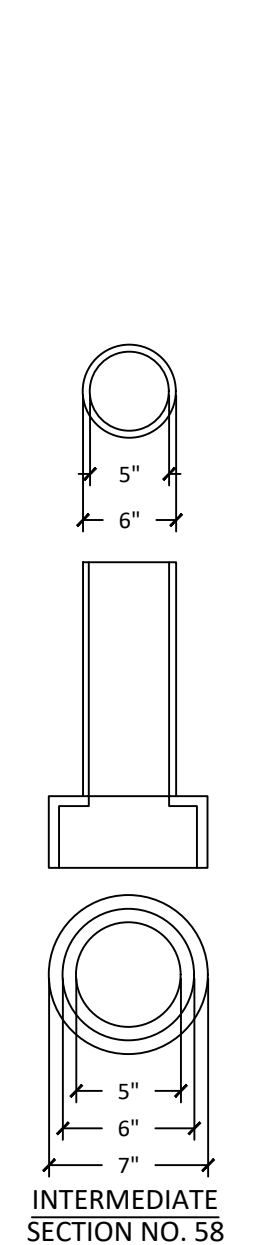
SERVICE BOX



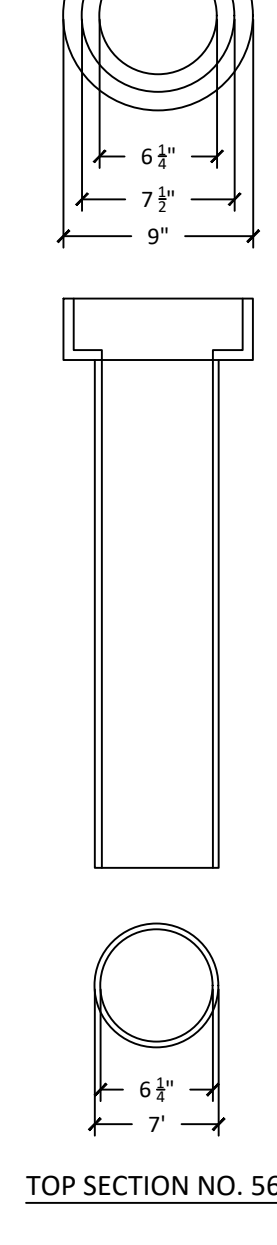
FOOT PIECE



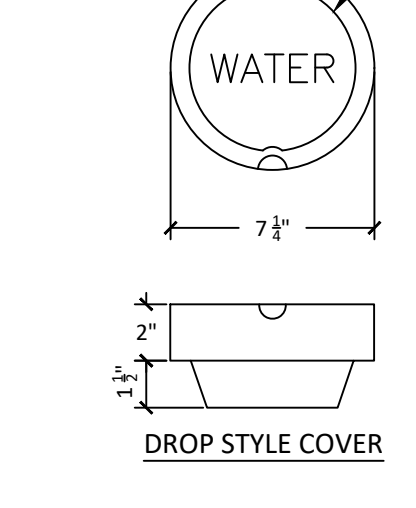
BASE SECTION NO. 645



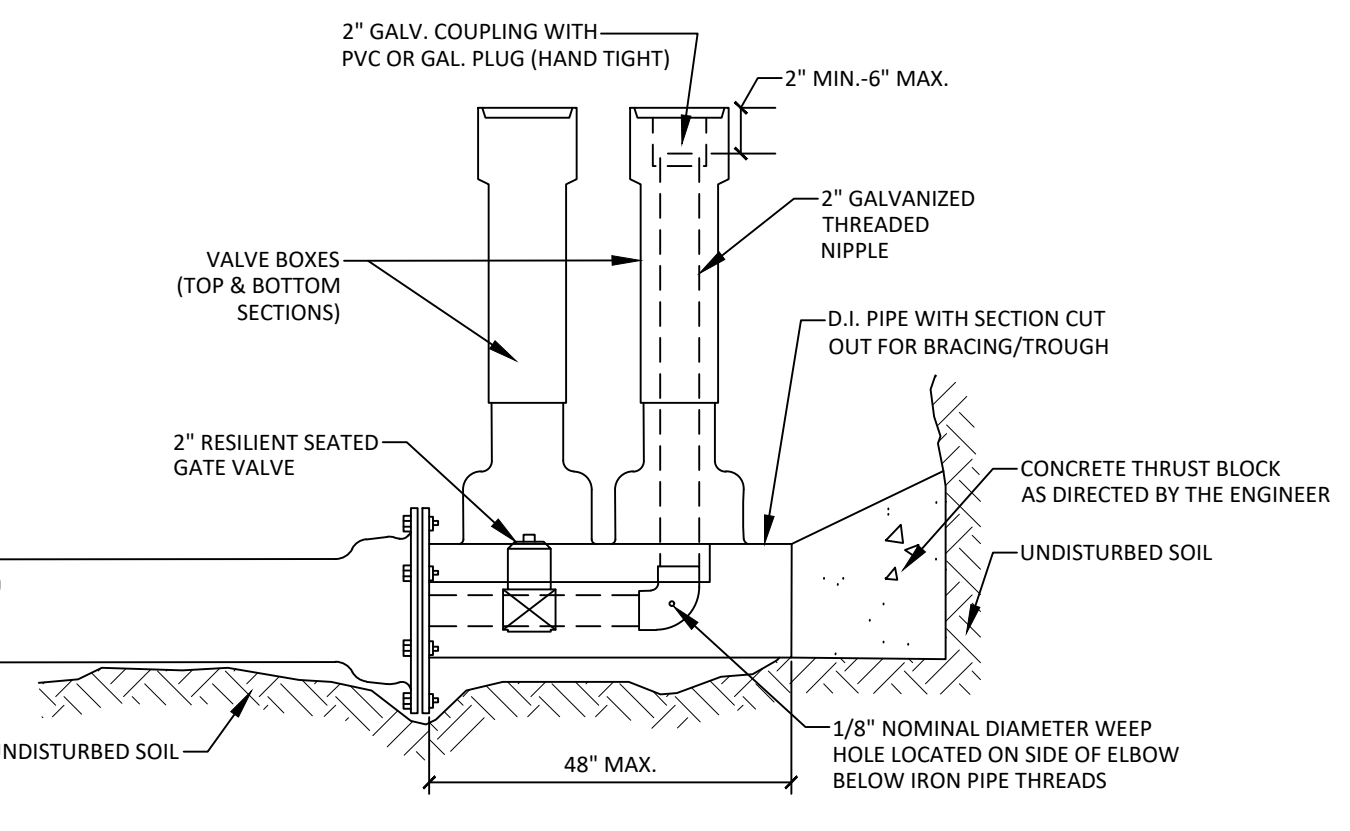
INTERMEDIATE SECTION NO. 58



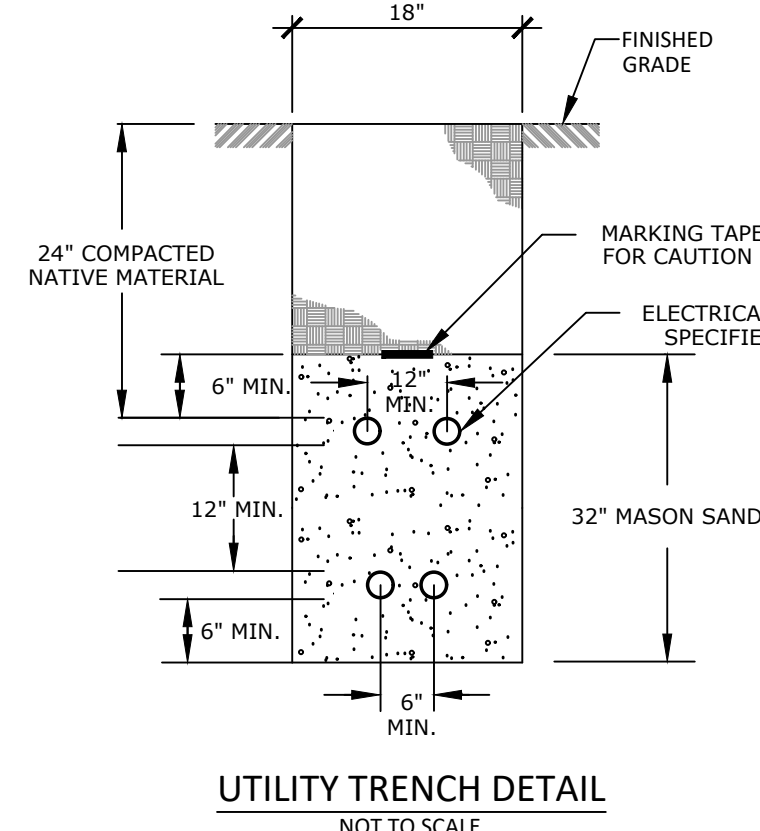
TOP SECTION NO. 56



DROP STYLE COVER

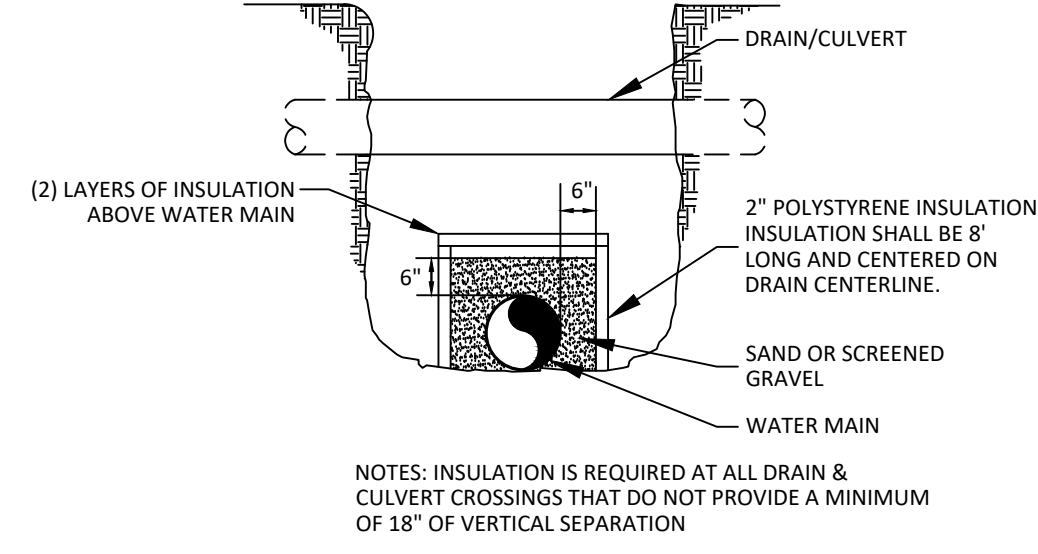


STANDARD 2\"/>

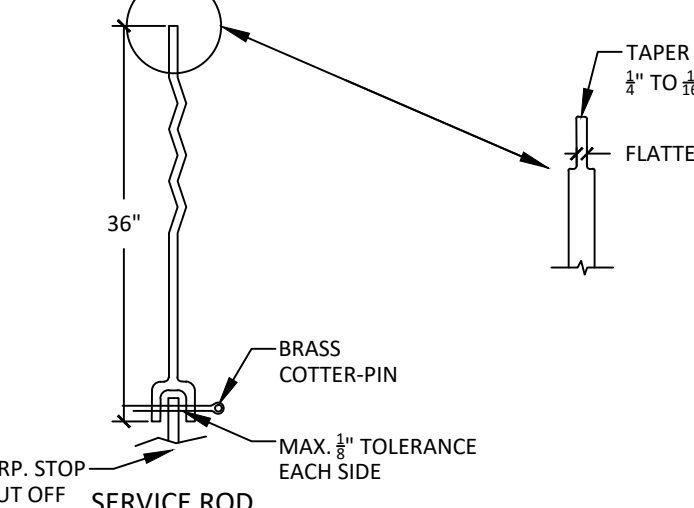


UTILITY TRENCH DETAIL
NOT TO SCALE

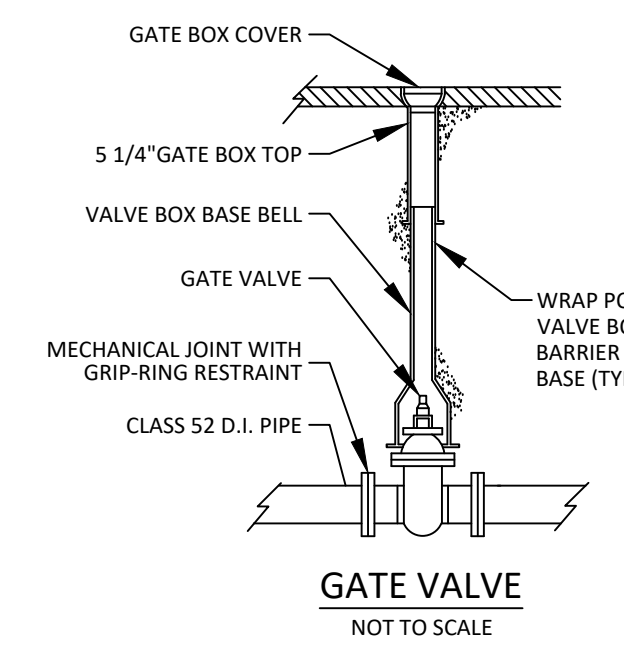
- NOTES:
1. ALL CONDUITS SHALL BE 4" DIA. PVC SCH 40 EXCEPT FOR ROAD CROSSINGS SHALL BE PVC SCH 80
 2. INSTALLATION SHOULD NOT ALLOW THE INTER-TWING OF CABLES.
 3. BEDDING AND BACKFILL SHALL BE FREE OF ROOTS, STUMPS AND OTHER DEBRIS.
 4. COMMUNICATION CABLE AND POWER CABLE SHALL HAVE NO LESS THAN 12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



INSULATION DETAIL
NOT TO SCALE

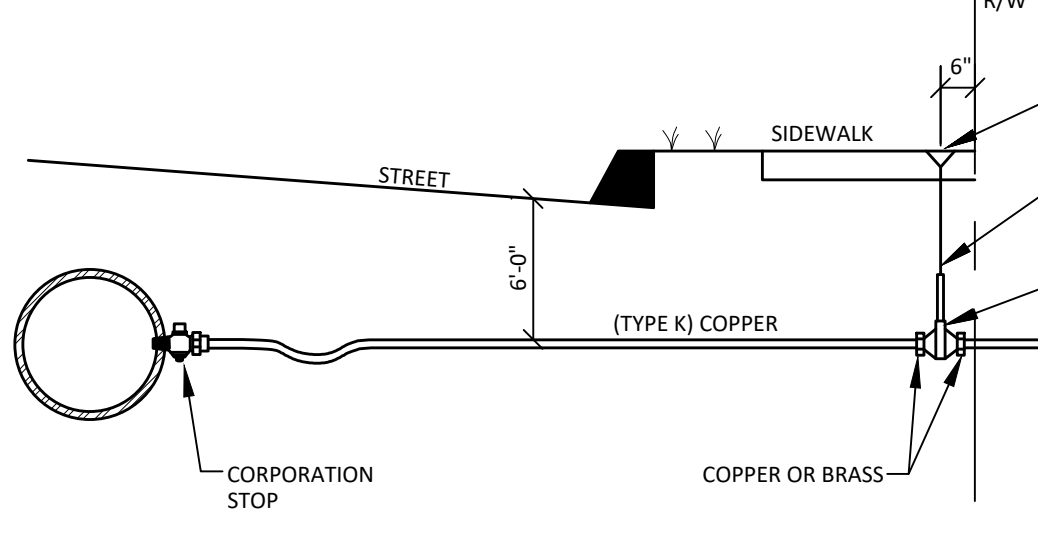


COVER

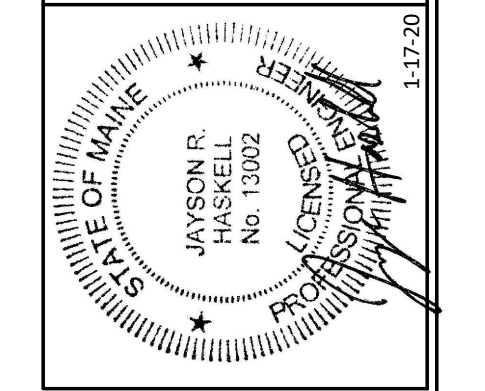


GATE VALVE
NOT TO SCALE

VALVE BOX & COVER
NOT TO SCALE



TYPICAL SERVICE CONNECTION
NOT TO SCALE

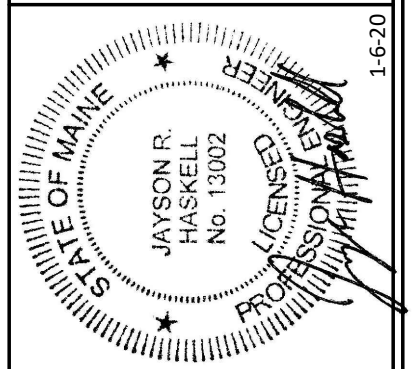


DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 310-0506

REV	DATE	BY	DESCRIPTION
A	11-12-19	JRH	ISSUED FOR MDP REVIEW
B	1-6-20	JRH	ISSUED FOR MINOR SUBDIVISION REVIEW
C	1-16-20	JRH	REVISED PER TOWN REVIEW
D	1-17-20	JRH	REVISED PER TOWN ENGINEER REVIEW

DETAILS
RIO DRIVE SUBDIVISION
RIO DRIVE
WINDHAM, MAINE
FOR RECORD OWNER:
KNMC, LLC
91 TANDERBERG TRAIL, UNIT 2
WINDHAM, MAINE 04062

19035
JOB NUMBER:
AS NOTED
SCALE:
1-17-2020
DATE:
SHEET 6 OF 6
D-2



DM ROMA
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 (207) 310-0506

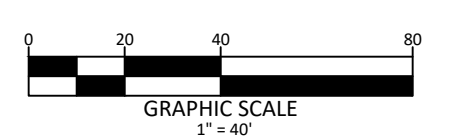
REV	DATE	BY	DESCRIPTION
A	1-6-20	JRH	ISSUED FOR MINOR SUBDIVISION REVIEW

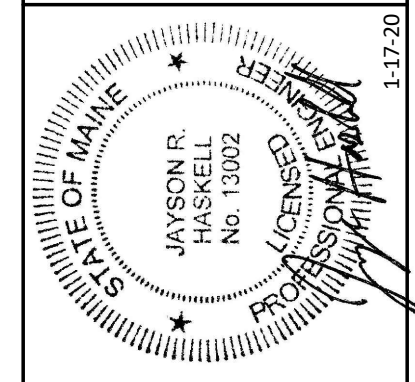
WATERSHED MAP - EXISTING CONDITION
 RIO DRIVE SUBDIVISION
 WINDHAM, MAINE
 FOR RECORD OWNER:
 KRWMC, LLC
 100 WINDHAM TRAIL, UNIT 2
 WINDHAM, MAINE 04095

19035
 JOB NUMBER:
 1" = 40'
 SCALE:
 1-6-2020
 DATE:
 SHEET 1 OF 2
 SW-1

LEGEND

- 1 WATERSHED NO.
- SP1 REACH/STUDY POINT
- P1 POND
- WATERSHED BOUNDARY
- TIME OF CONCENTRATION
- REACH PATH
- SOIL BOUNDARY





DM ROMA
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 WINDHAM, ME 04062
 (207) 310-0506

REV	DATE	BY	DESCRIPTION
A	1-15-20	JRH	ISSUED FOR MINOR SUBDIVISION REVIEW
B	1-17-20	JRH	REVISED PER TOWN REVIEW

WATERSHED MAP - DEVELOPED CONDITION
 RIO DRIVE SUBDIVISION
 RIO DRIVE
 WINDHAM, MAINE
 FOR RECORD OWNER:
KNMC, LLC
 91 TANDERBERG TRAIL, UNIT 2
 WINDHAM, MAINE 04062

19035
 JOB NUMBER:
1" = 40'
 SCALE:
1-17-2020
 DATE:
SHEET 2 OF 2
SW-2

LEGEND

	WATERSHED NO.
	REACH/STUDY POINT
	POND
	WATERSHED BOUNDARY
	TIME OF CONCENTRATION
	REACH PATH
	SOIL BOUNDARY