## NEW MANUFACTURING FACILITY FOR





AIRPORT DRIVE, ROCHESTER, NH

CIVIL ENGINEERS NORWAY PLAINS ASSOCIATES, INC. 2 CONTINENTAL BOULEVARD P.O. BOX 249 ROCHESTER, NH 03866-0249 (603) 335-3948

CITY OF ROCHESTER 31 WAKEFIELD STREET ROCHESTER, NH 03867 (603) 335-1338

DEVELOPER SNECMA, SAFRAN GROUP 216 AIRPORT DRIVE ROCHESTER, NH 03867 (603) 330-7215

LOCAL SURVEYING AND ENGINEERING SERVICES PROVIDED BY: NORWAY PLAINS ASSOCIATES, INC. SURVEYORS - ENGINEERS - TRANSPORTATION PLANNERS

DATE ISSUE/REVISION

DRAWN BY: CHECKED E

AE JOB NUMBER

LAND OWNER

⊡	EXISTING GRANITE OR CONCRETE BOUND	_	PROPOSED MONUMENT
<b>⊚</b>	EXISTING IRON PIN, PIPE OR STAKE	<del>-</del>	PROPOSED SIGN
		GV	PROPOSED GAS VALVE
<u>~~</u>	WETLAND EXISTING SIGN	wv.	
GV	EXISTING GAS VALVE	<b>⋈</b>	PROPOSED WATER GATE VALVE
WV		<b>∜</b>	PROPOSED WATER SHUTOFF
×	EXISTING WATER GATE VALVE	×	PROPOSED FIRE HYDRANT
*\$°	EXISTING WATER SHUTOFF	<b>A</b>	PROPOSED THRUST BLOCK
	EXISTING FIRE HYDRANT		PROPOSED SEWER MANHOLE
<u>©</u>	EXISTING SEWER MANHOLE	<b>©</b>	PROPOSED DRAIN MANHOLE
<b>(1)</b>	EXISTING DRAIN MANHOLE		PROPOSED CATCH BASIN
	EXISTING CATCH BASIN		PROPOSED CATCH BASIN (D-FRAME, SEE DETAIL)
<b>(1)</b>	EXISTING TELEPHONE MANHOLE	<u></u>	PROPOSED CATCH BASIN
sv	PROPOSED SEWER GATE VALVE	<b>●</b>	(ROUND-FRAME) PROPOSED FLARED END SECTION (FES)
		<b>▲</b>	PROPOSED HEADWALL
©	EXISTING ELECTRIC MANHOLE	<b>(1)</b>	PROPOSED TELEPHONE MANHOLE
□-○-□ NGLE DOUBLE	EXISTING LIGHT POLES		
茶	EXISTING LAMP POST	SINGLE DOUBLE	PROPOSED LIGHT POLES
-	EXISTING UTILITY POLE	茶	PROPOSED LAMP POST
BEARING	EXISTING PROPERTY LINE	<b>+</b>	PROPOSED UTILITY POLE
DISTANCE		BEARING DISTANCE	PROPOSED PROPERTY LINE
	EXISTING EASEMENT LINE		PROPOSED EASEMENT LINE
	SETBACK LINE		PROPOSED TREE LINE
	EDGE OF WETLAND	PGC	PROPOSED GRANITE CURB
EGC	EXISTING TREE LINE	PGSC	
	EXISTING GRANITE CURB	PBC	PROPOSED GRANITE SLOPED CURB
EGSC	EXISTING GRANITE SLOPED CURB		PROPOSED BITUMINOUS CURB
EBC	EXISTING BITUMINOUS CURB	PCC	PROPOSED CONCRETE CURB
ECC	EXISTING CONCRETE CURB	P SSL (W)	PROPOSED SINGLE SOLID WHITE LINE
E SSL (W)	EXISTING SINGLE SOLID WHITE LINE	P_SBL_(W)	PROPOSED SINGLE BROKEN WHITE LINE
E SBL (W)	EXISTING SINGLE BROKEN WHITE LINE	P SSL (Y)	PROPOSED SINGLE SOLID YELLOW LINE
E SSL (Y)	EXISTING SINGLE SOLID YELLOW LINE	PSBL(Y)	PROPOSED SINGLE BROKEN YELLOW LINE
E SBL (Y)	EXISTING SINGLE BROKEN YELLOW LINE	P DSL (Y)	PROPOSED DOUBLE SOLID YELLOW LINE
E DSL (Y)	EXISTING DOUBLE SOLID YELLOW LINE	PG	PROPOSED GAS LINE
	EXISTING GAS LINE	———P(DIA.)W———	PROPOSED WATER LINE
w	EXISTING WATER LINE	———P(DIA.)S———	PROPOSED SEWER LINE
s	EXISTING SEWER LINE	————PFM———	PROPOSED SEWER FORCE MAIN
	EXISTING DRAIN LINE	•••••	PROPOSED DRAIN LINE
UT	EXISTING UNDERGROUND TELEPHONE	———UT———	PROPOSED UNDERGROUND TELEPHONE
——OHW———	EXISTING UNDERGROUND ELECTRIC	———UE ———	PROPOSED UNDERGROUND ELECTRIC
OHW	EXISTING UNDERGROUND UTILITIES	———UU———	PROPOSED UNDERGROUND UTILITIES
——OHW———	EXISTING OVERHEAD WIRES	———OHW——	PROPOSED OVERHEAD WIRES
Ĕ.	EXISTING ACCESSIBLE PARKING SPACE	<u></u> <u></u>	PROPOSED ACCESSIBLE PARKING SPACE
	EXISTING PAINTED ISLAND		PROPOSED PAINTED ISLAND
10	EXISTING PARKING SPACE COUNT	10	PROPOSED PARKING SPACE COUNT SIZE=9-FT X 18-FT
100	EXISTING CONTOURS		PROPOSED CONTOURS
100.50 X	EXISTING SPOT GRADE	 100.50 X	PROPOSED SPOT GRADE
	FIRM MAP FLOODPLAIN BOUNDARY		PROPOSED HAY BALES
	SOIL TYPE BOUNDARY		PROPOSED STONE CHECK DAM
<b>GsC</b>	SOIL TYPE		PROPOSED INLET PROTECTION
#1	TEST PIT LOCATION		TROPOSED INLET FROTECTION
PT	PERCOLATION TEST LOCATION		PROPOSED INLET PROTECTION
MON.	MONITORING WELL LOCATION		PROPOSED SILT FENCE
**		<del>-</del> /.	PROPOSED ORANGE

CAREFULLY REVIEW ALL SHEETS OF THIS PACKAGE TO INSURE PROPER CONSTRUCTION. SPECIFIC SITE CONDITIONS SHOULD BE EXPLORED PRIOR TO CONSTRUCTION. CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT OWNER FOR ANY AVAILABLE
GEOTECHNICAL OR HYDROGEOLOGICAL INFORMATION AVAILABLE BUT NOT CONTAINED
WITH IN THE PLAN SET. IF THERE ARE ANY QUESTIONS WITH THE DESIGN PRESENTED
IN THIS PLAN SET PLEASE CONTACT THE ENGINEERING STAFF AT NORWAY PLAINS
ASSOCIATES, INC. (603)—335—3948.

STATE OF NEW HAMPSHIRE PERMIT NUMBERS:

NHDES ALTERATION OF TERRAIN:

NHDES WETLANDS PERMIT:

P NHDES DAM PERMIT: NHDES SUBDIVISION PERMIT: NHDES SUBSURFACE SYSTEMS PERMIT: NHDES SEWER CONNECTION PERMIT: NHDOT DRIVEWAY/ENTRANCE PERMIT:

NPDES PERMIT:

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES):

NPDES PERMITS ARE ONLY REQUIRED FOR PROJECTS MEETING THE DISTURBED AREA CRITERIA
BELOW AND HAVING A POINT SOURCE STORMWATER DISCHARGE FROM THE SITE TO AN ADJACENT
WETLAND OR WATER BODY (I.E. CULVERT, SWALE, ETC. OUTLETING TO A WETLAND, CREEK, STREAM OR RIVER).

NPDES PERMITS CONSIST OF A NOTICE OF INTENT (NOI) FILED WITH THE ENVIRONMENTAL PROTECTION AGENCY AT LEAST 48 HOURS PRIOR TO CONSTRUCTION COMMENCING AND A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) BEING PREPARED, KEPT ON SITE AND FOLLOWED BY THE CONTRACTOR.

FOR STATUS OF THIS PERMIT CONTACT THE PROJECT GENERAL CONTRACTOR.

#### CIVIL SHEET INDEX

C-100	OVERALL SITE PLAN	1" = 60'
C-101	EXISTING FEATURES PLAN	1" = 60'
C-102 TO C-107	SITE PLAN	1" = 20'
C-108	OVERALL GRADING & DRAINAGE PLAN	1" = 60'
C-109 TO C-114	GRADING & DRAINAGE PLAN	1" = 20'
C-115	UTILITY PLAN	1" = 60'
C-500 TO C-501	EROSION CONTROL DETAILS	AS SHOWN
C-502	GRAVEL WETLAND DETAILS	AS SHOWN
C-503	DRAINAGE STRUCTURE DETAILS	AS SHOWN
C-504	UTILITY DETAILS	AS SHOWN
C-505	SEWER DETAILS	AS SHOWN

CONSTRUCTION DETAILS

C9-C11

AS SHOWN



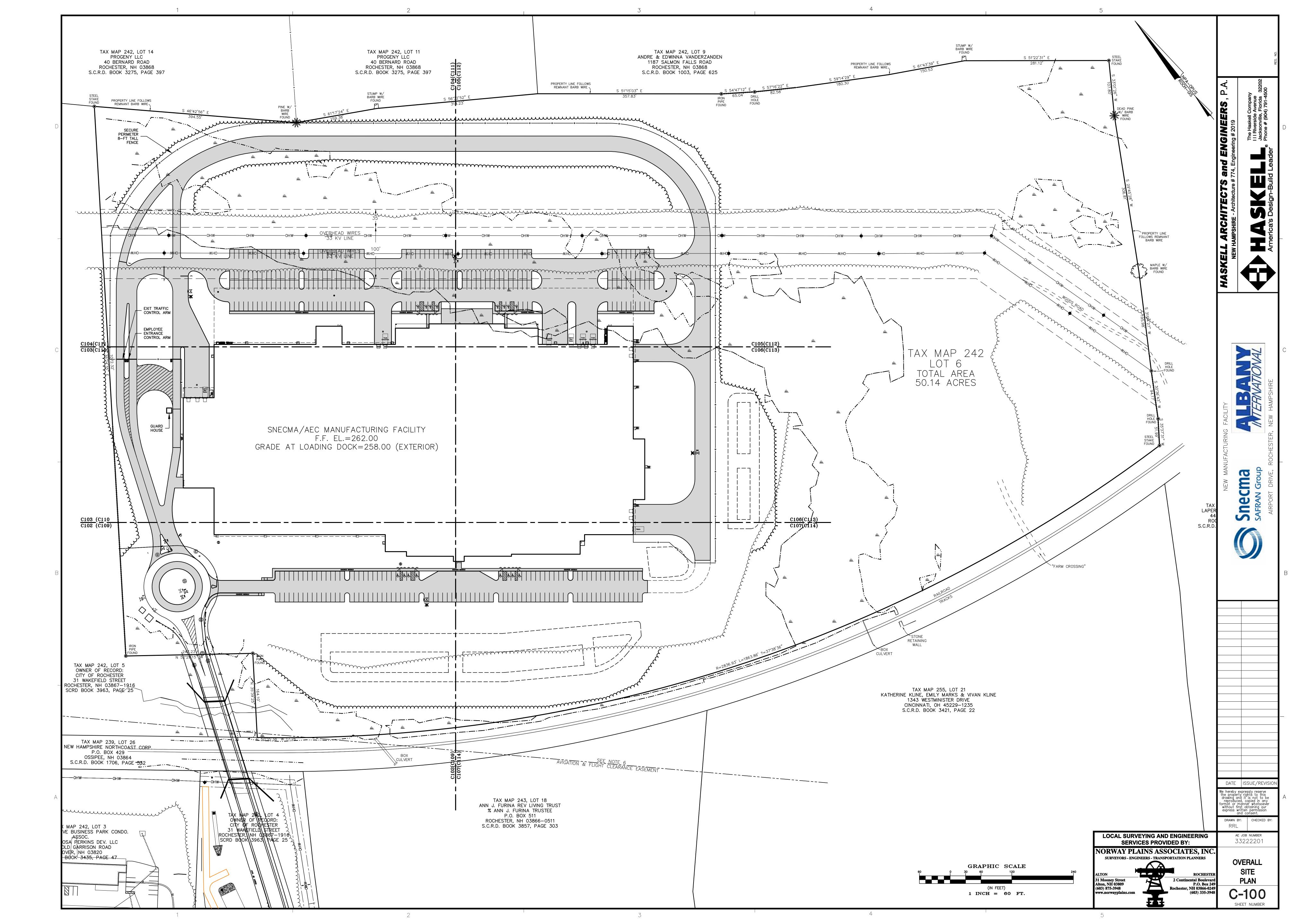
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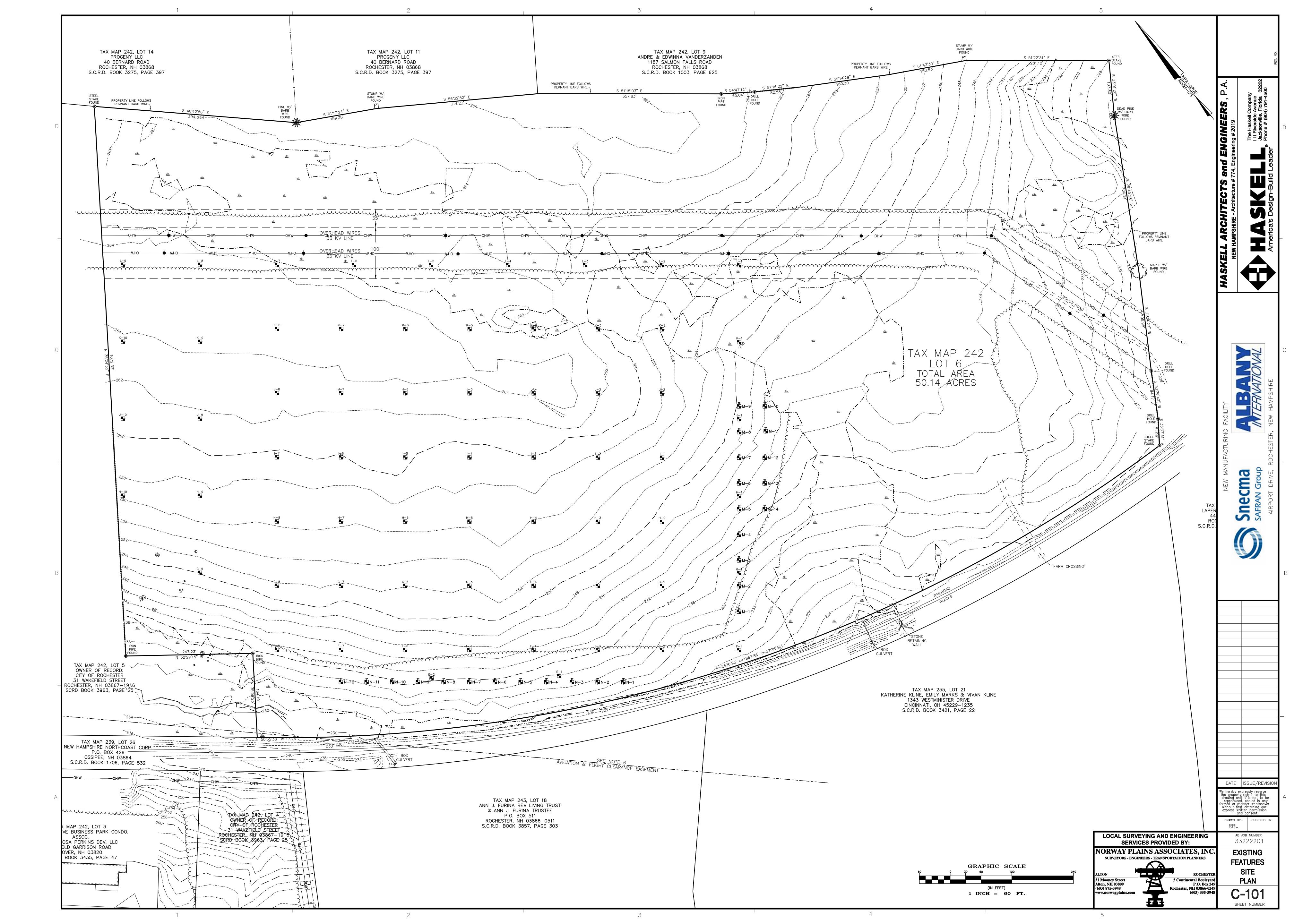
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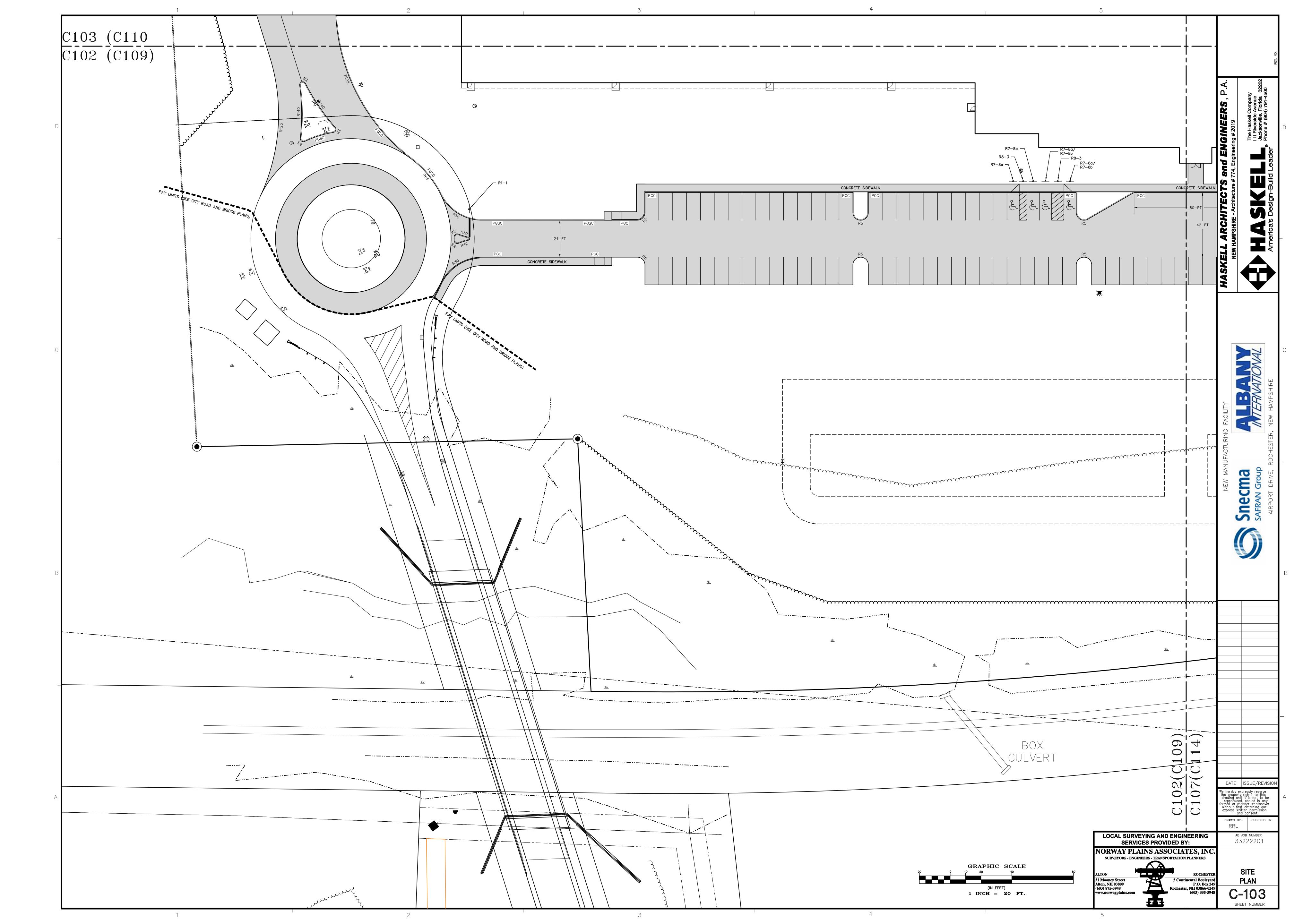
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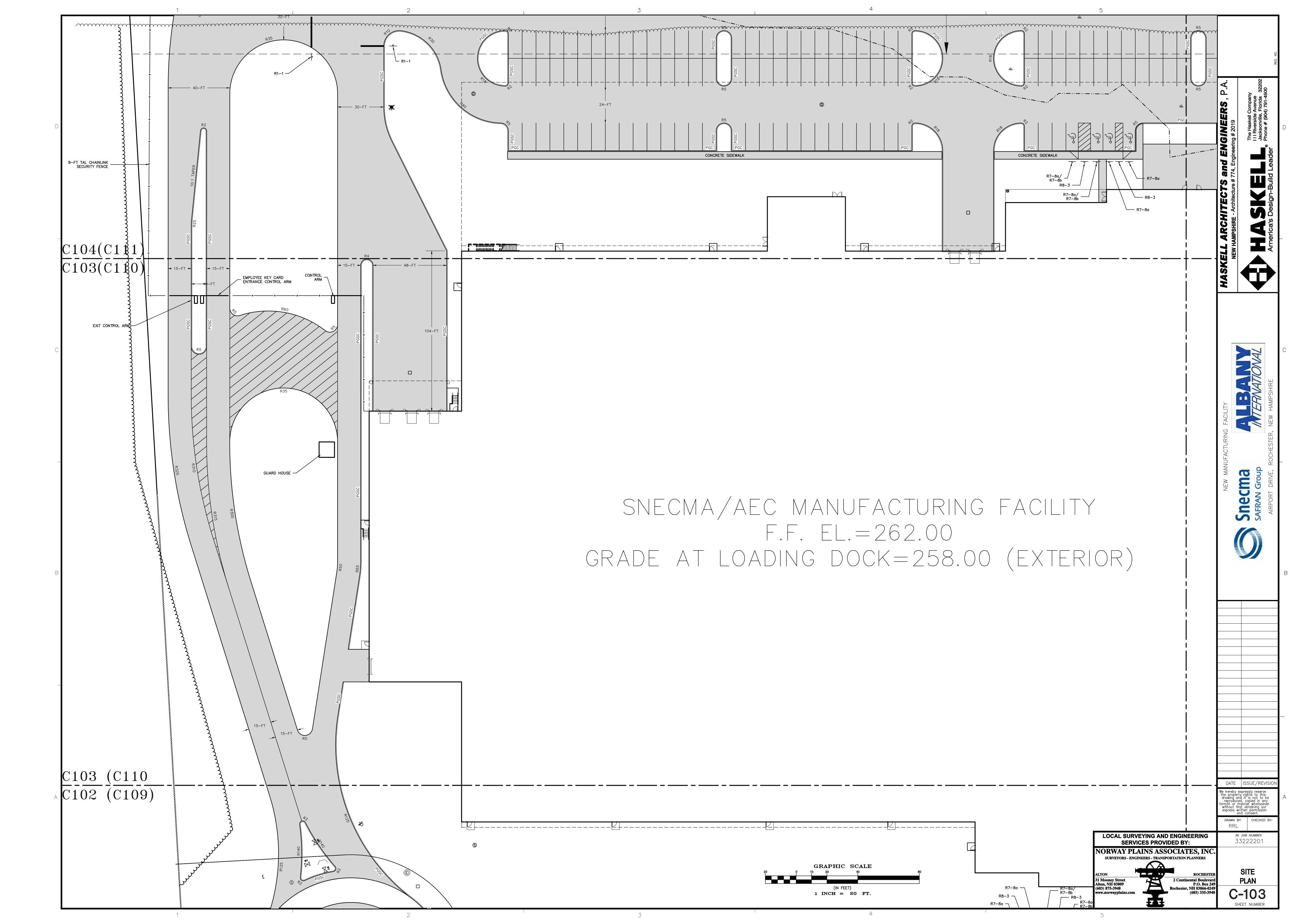
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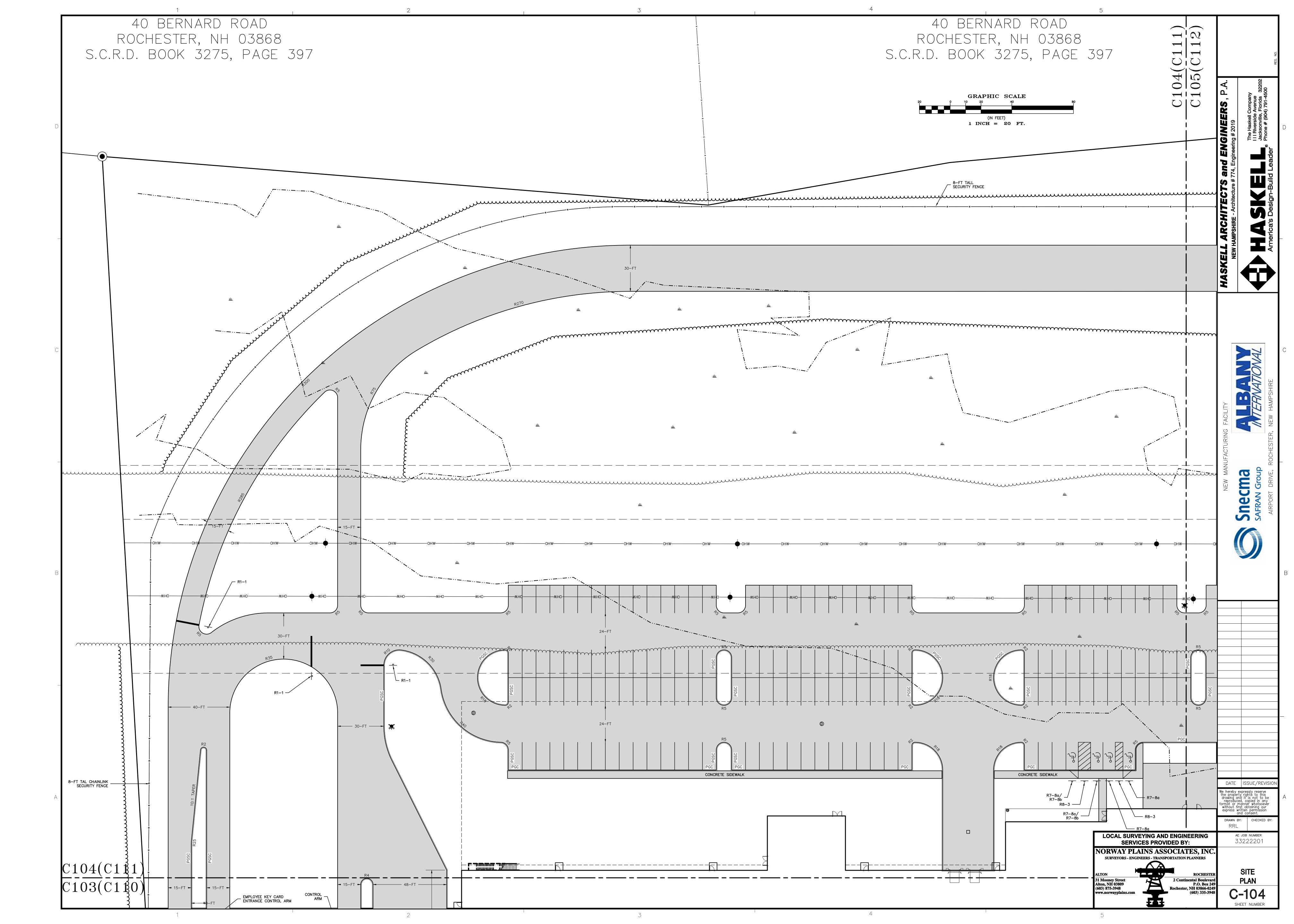
33222201 **LEGEND** ABBREVIATIONS

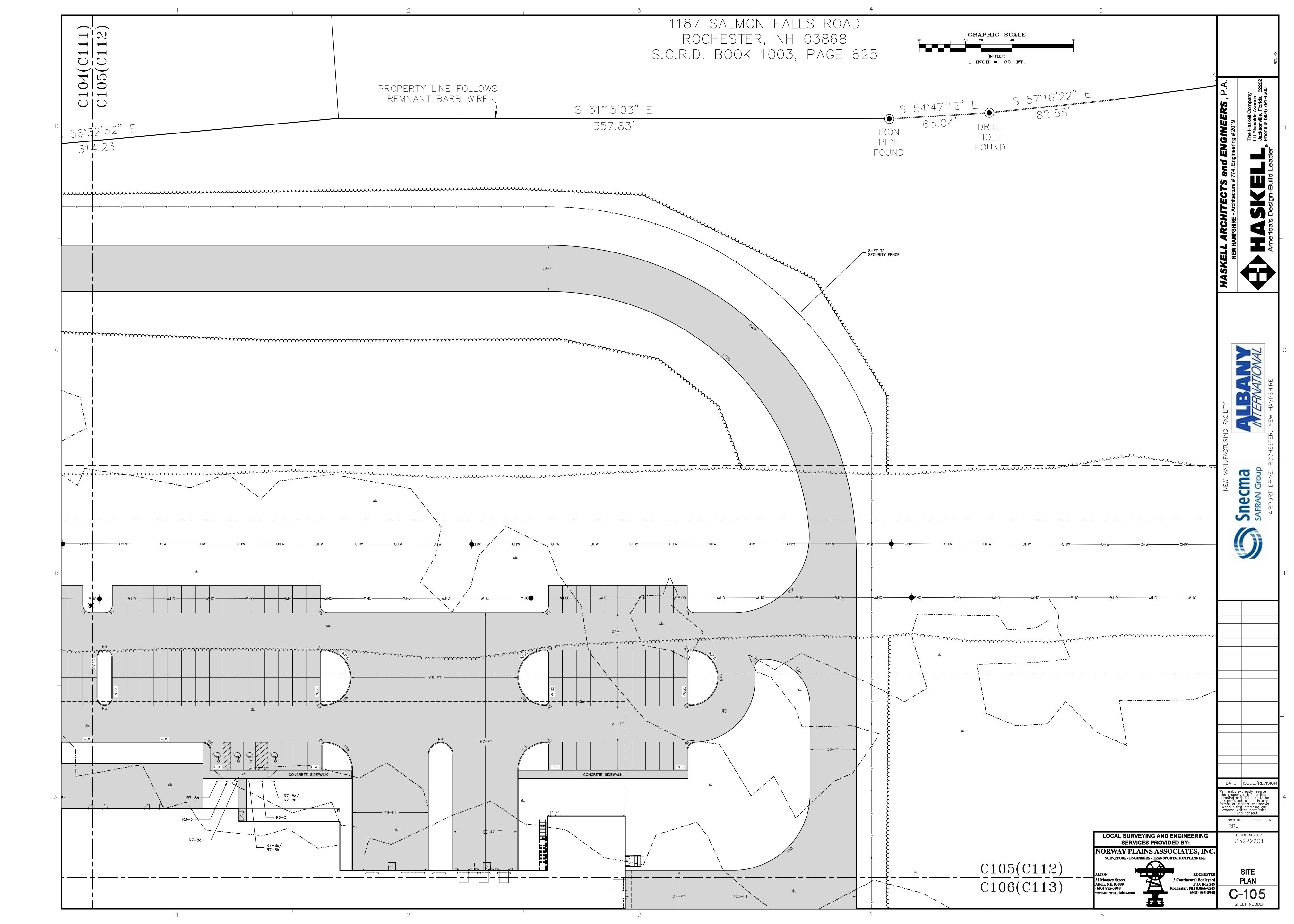


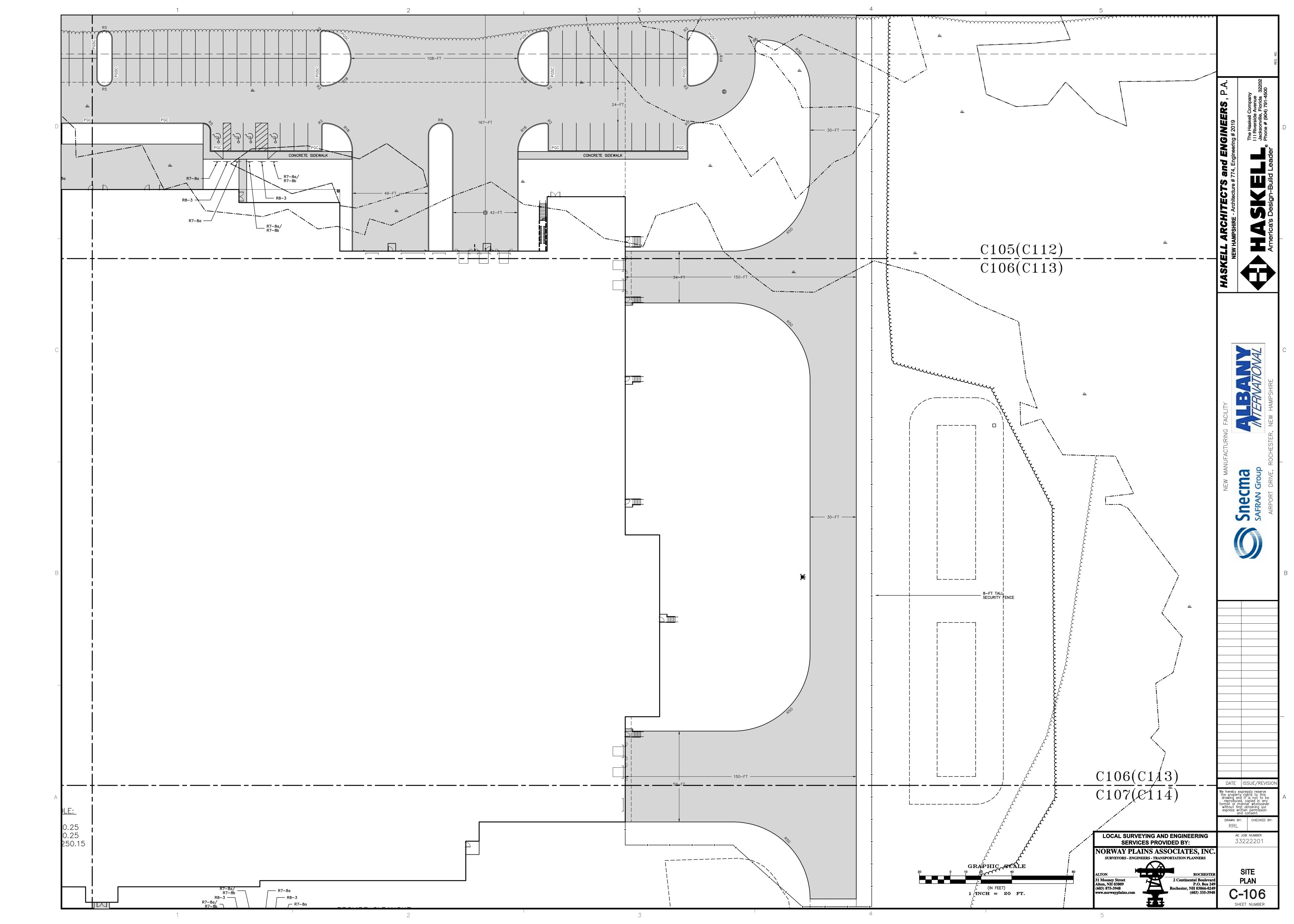


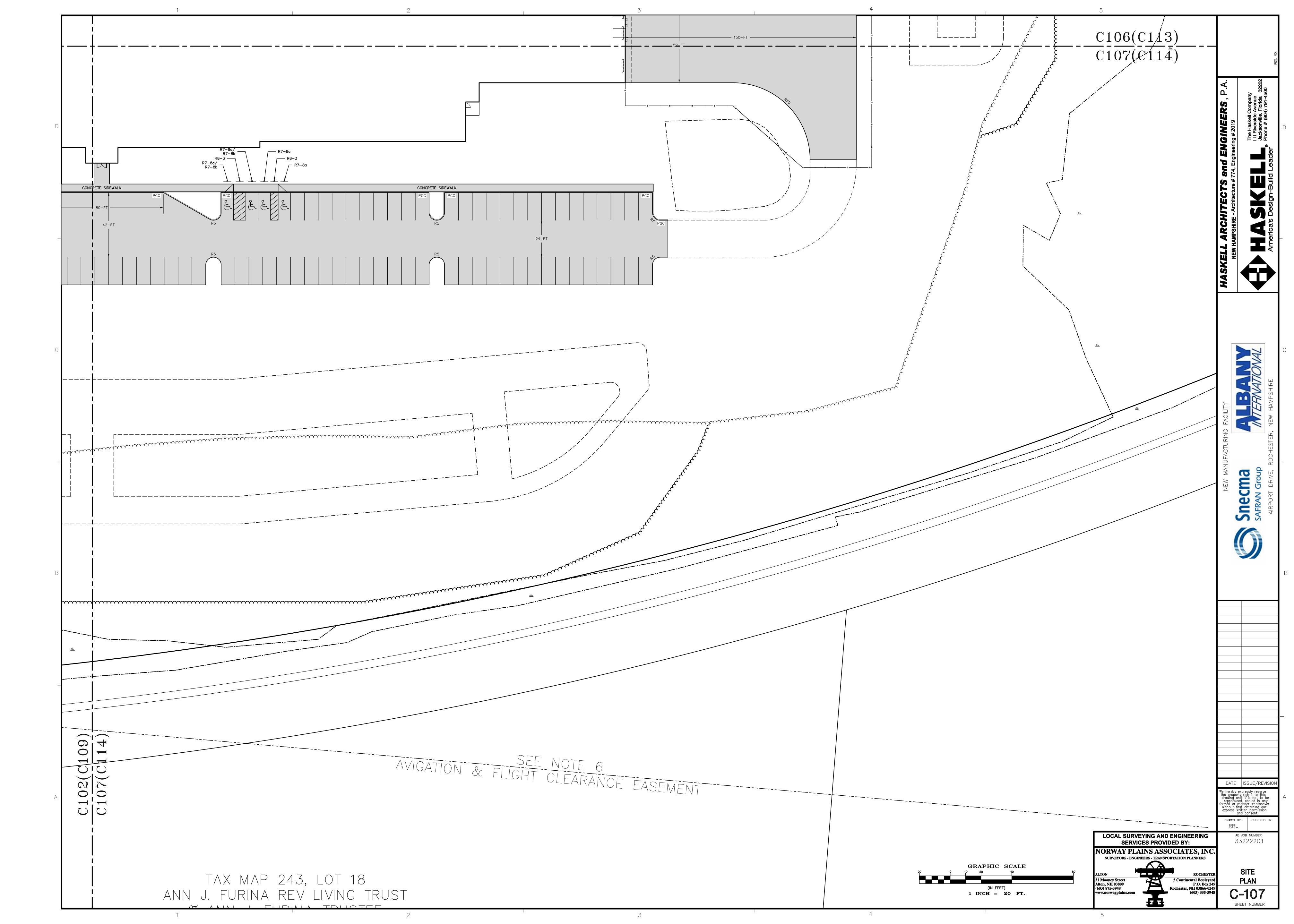


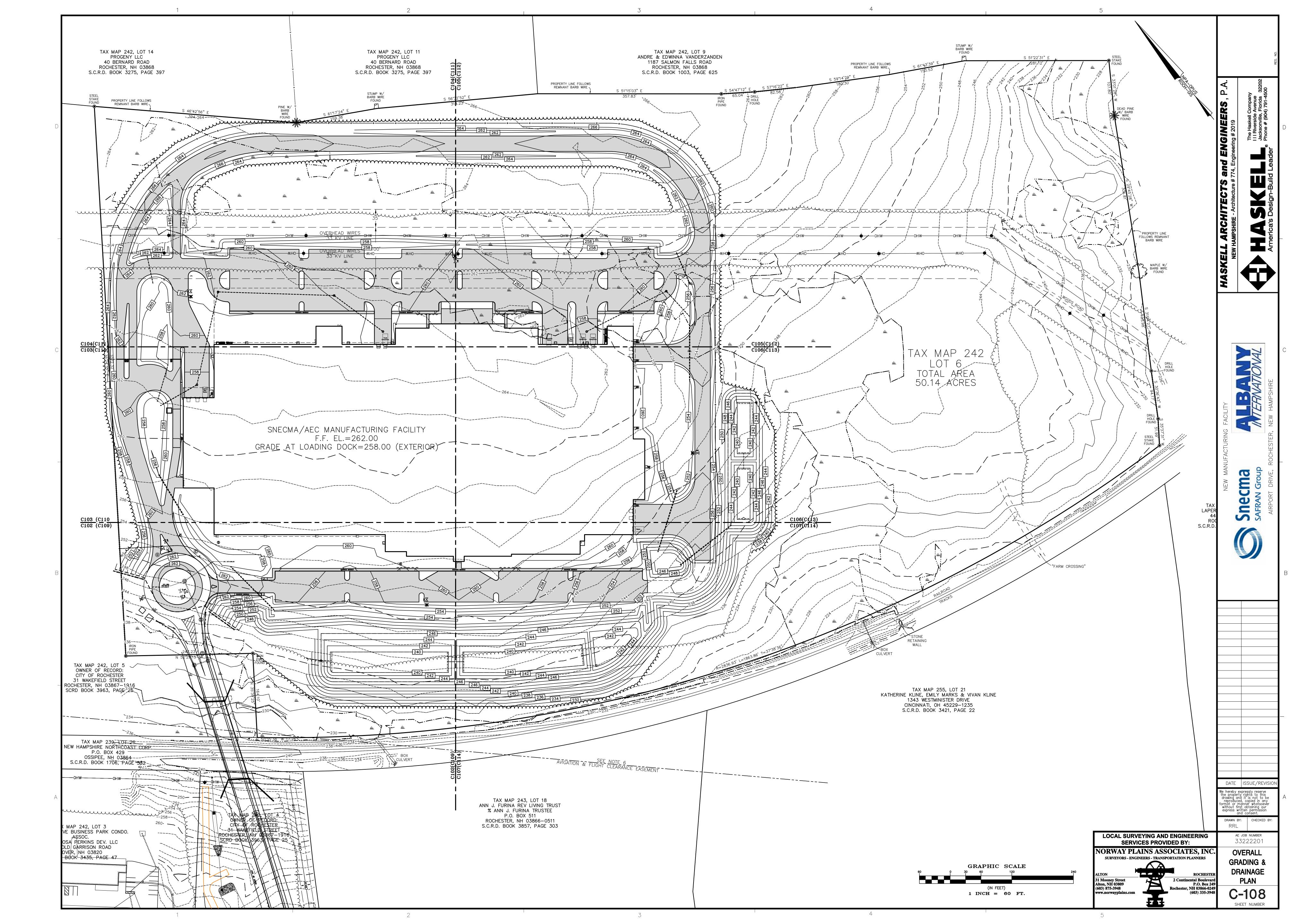


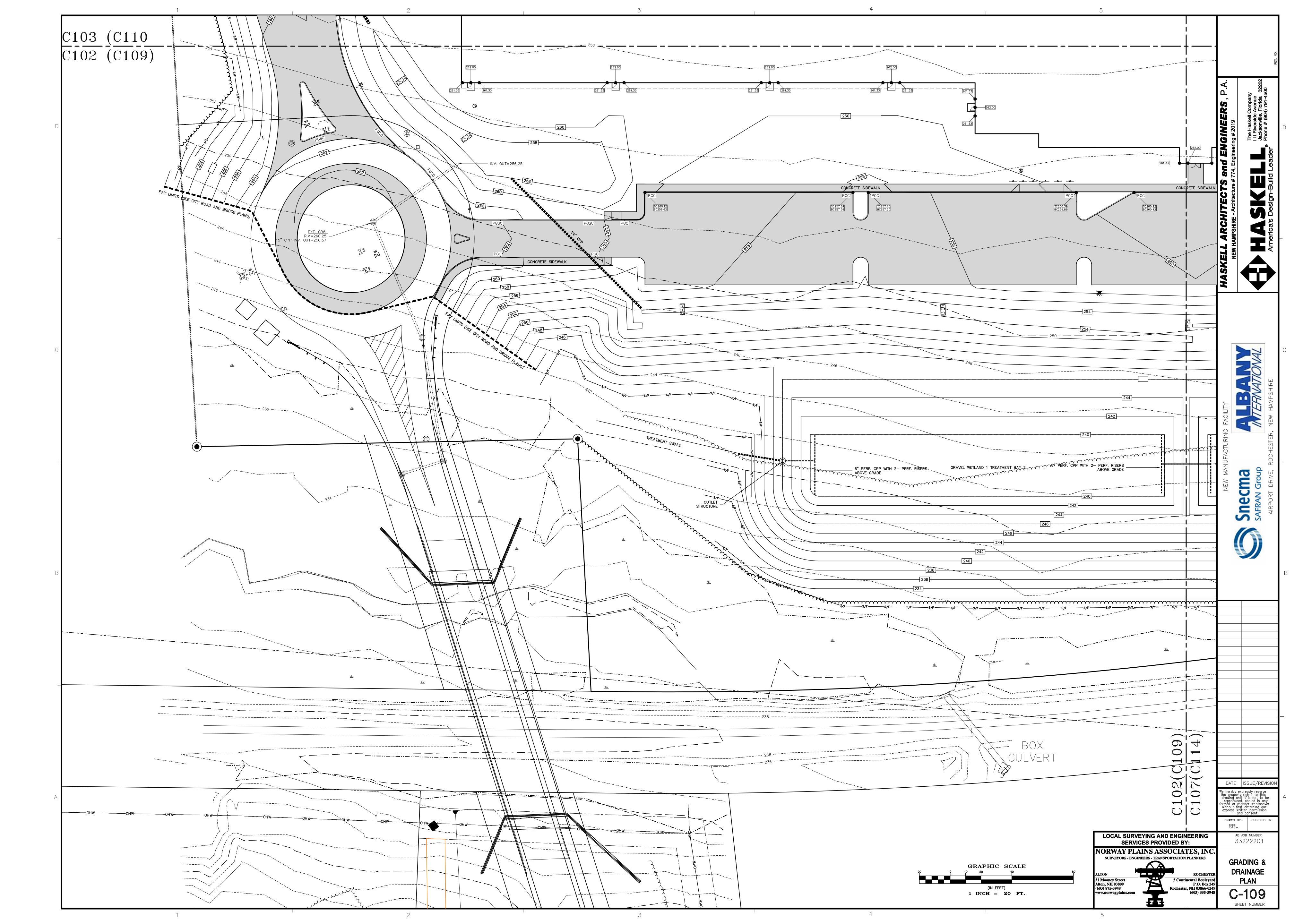


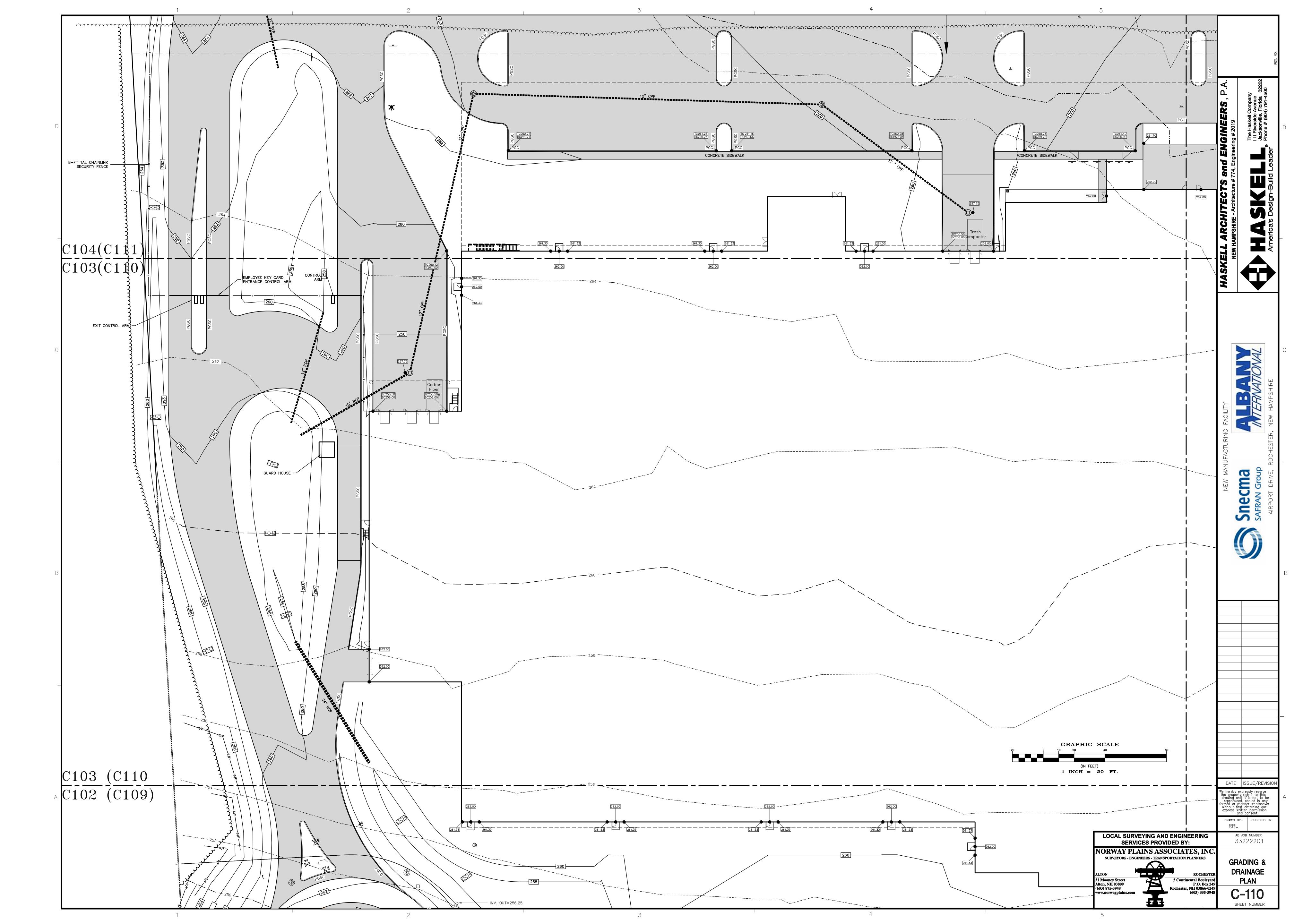


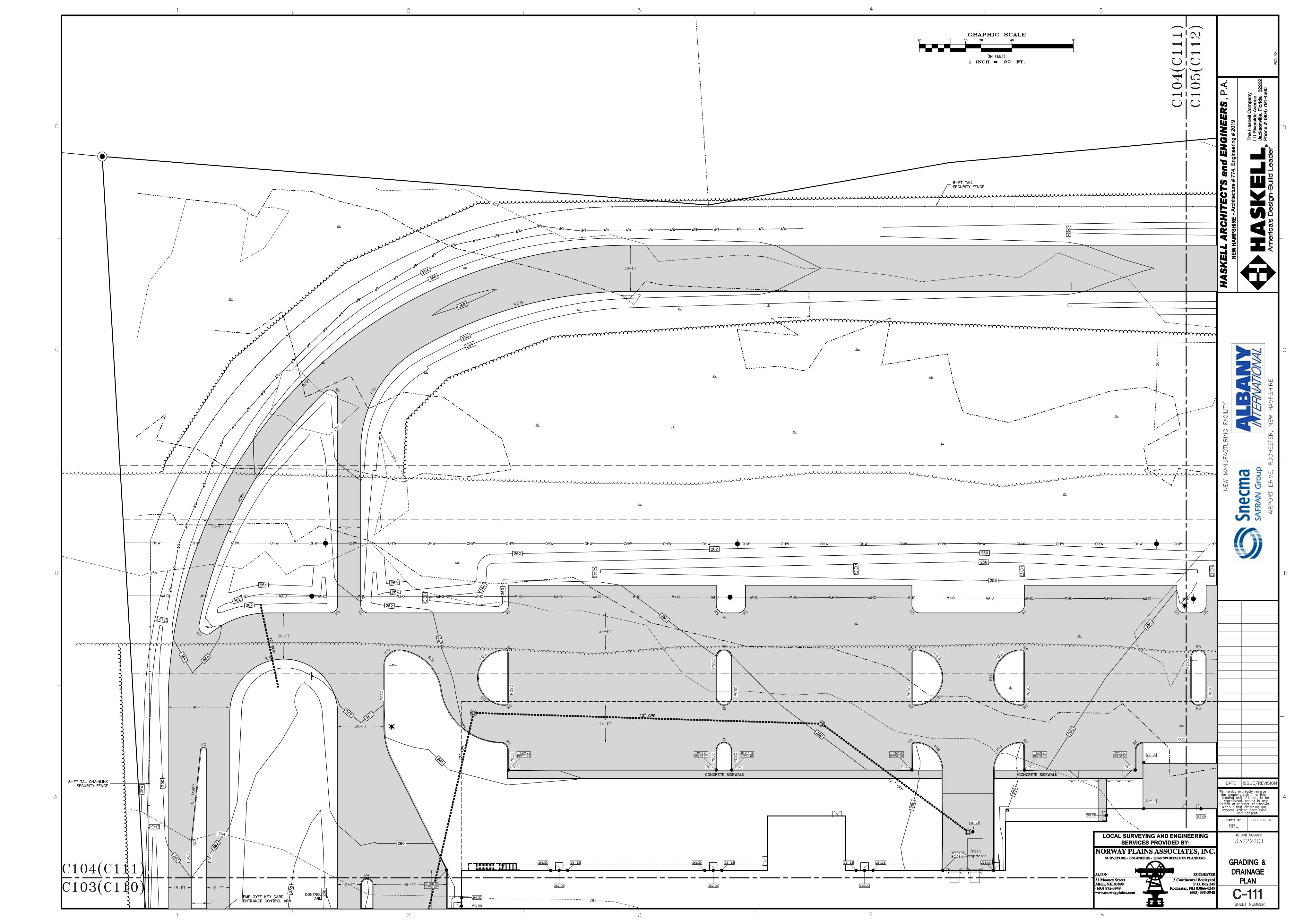


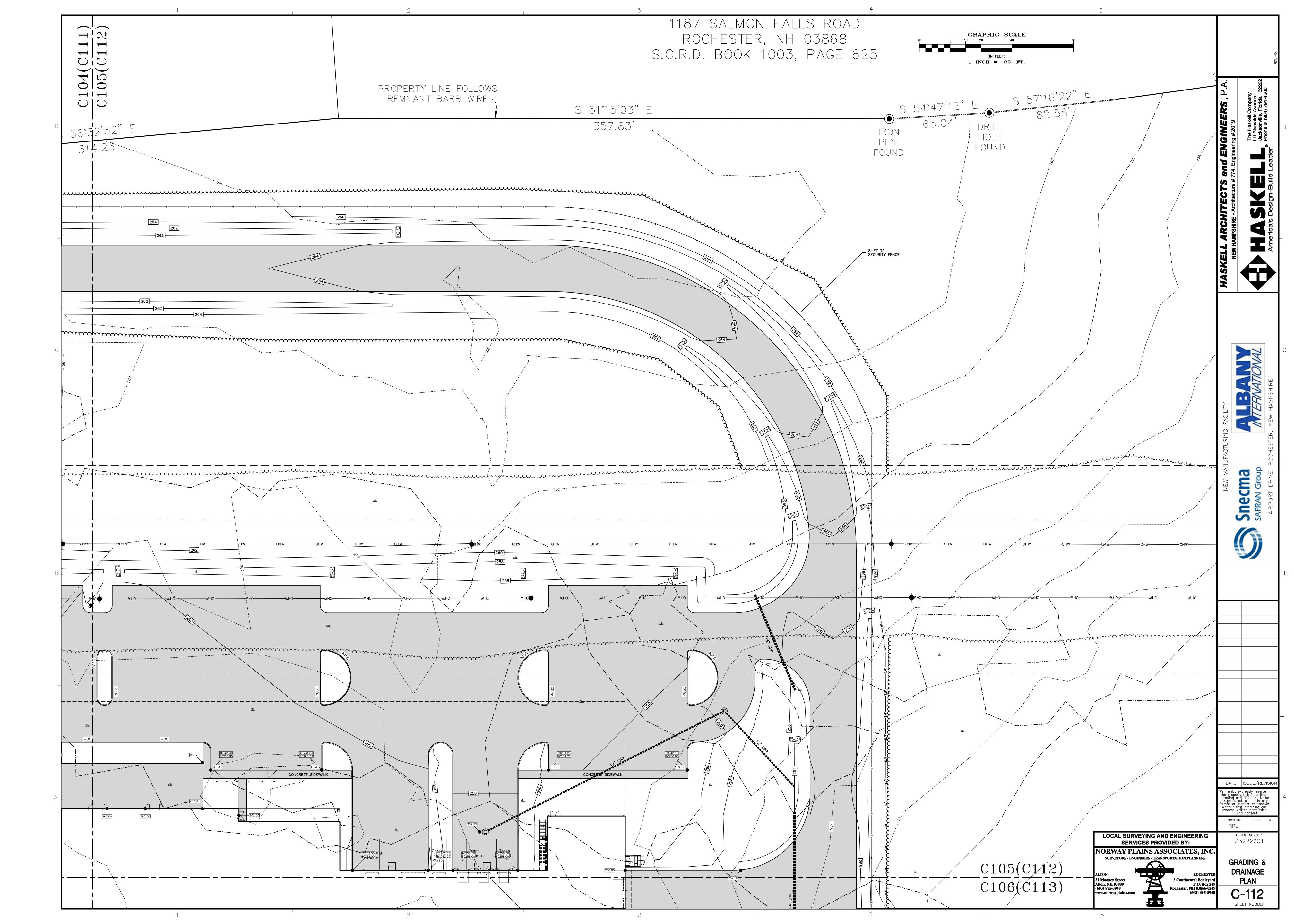


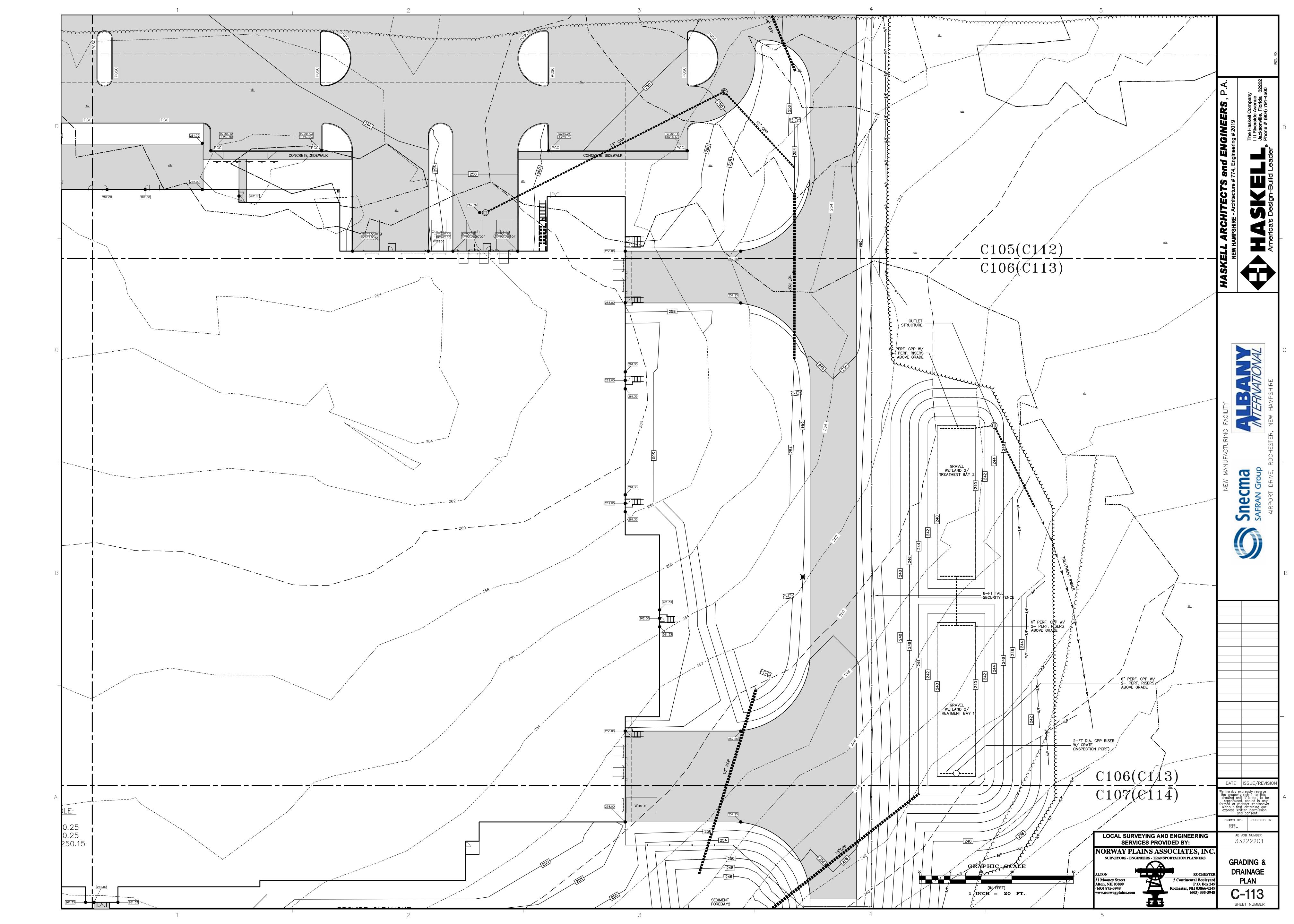


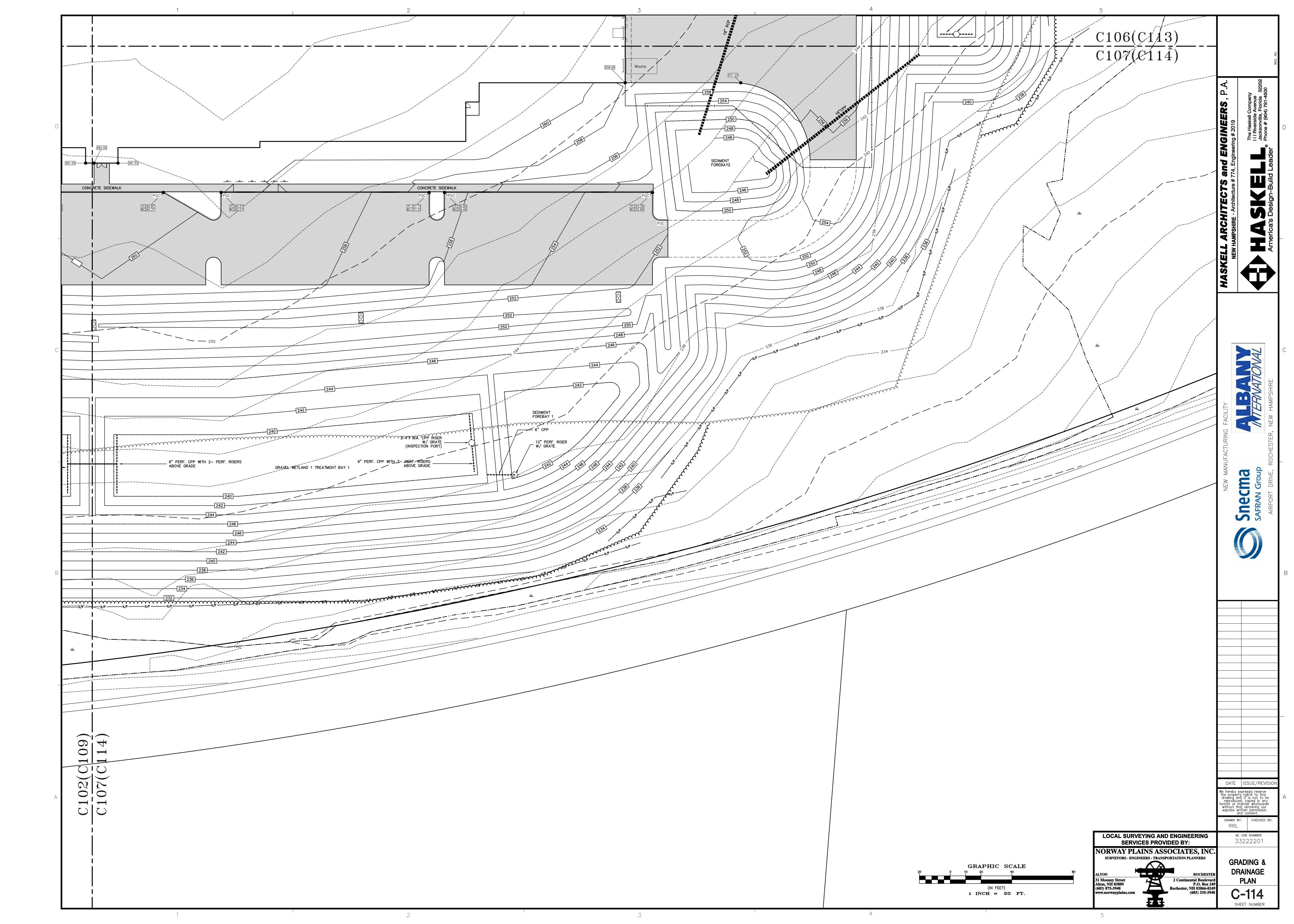


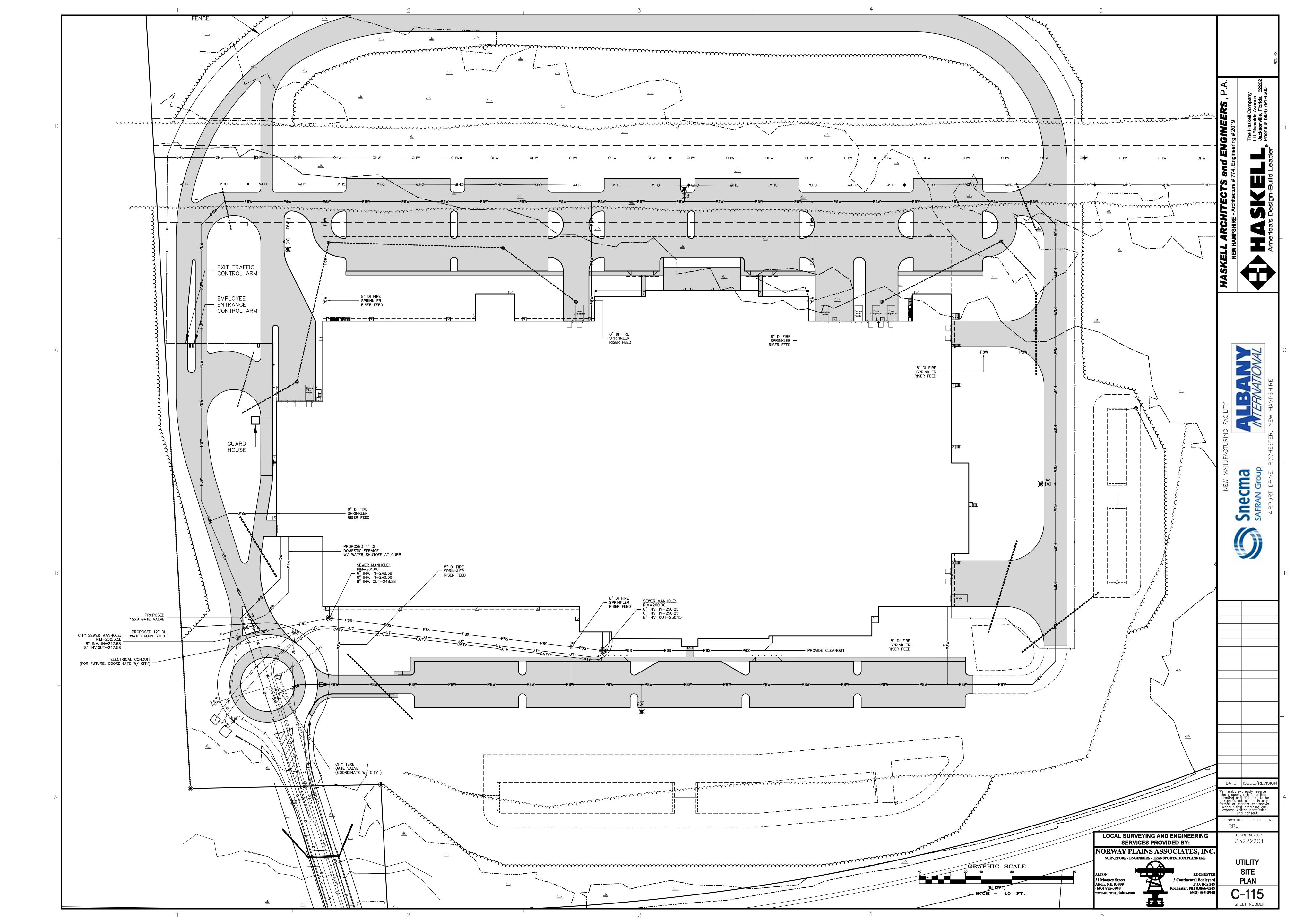












. FENCES SHOULD BE INSPECTED AND MAINTAINED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED 2. SEDIMENT DEPOSITION SHOULD BE REMOVED, AT A MINIMUM, WHEN DEPOSITION ACCUMULATES TO ONE-HALF THE HEIGHT OF THE FENCE, AND MOVED TO AN APPROPRIATE LOCATION SO THE SEDIMENT IS NOT READILY TRANSPORTED BACK TOWARD THE SILT 3. SILT FENCES SHOULD BE REPAIRED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES OF THE BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS SHOULD BE REPLACED WITH A TEMPORARY CHECK DAM. 4. SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY: THE FABRIC SHOULD BE REPLACED PROMPTLY. 5. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHOULD BE DRESSED TO CONFORM TO THE EXISTING GRADE PREPARED AND SEEDED. IF THERE IS EVIDENCE OF END FLOW ON PROPERLY INSTALLED BARRIERS, EXTEND BARRIERS UPHILL OR CONSIDER REPLACING THEM WITH OTHER MEASURES. SUCH AS TEMPORARY DIVERSIONS AND SEDIMENT TRAPS. 7. SILT FENCES HAVE A USEFUL LIFE OF ONE SEASON. ON LONGER CONSTRUCTION PROJECTS, SILT FENCE SHOULD BE REPAIRED PERIODICALLY AS REQUIRED TO MAINTAIN EFFECTIVENESS.

1. FENCES SHOULD BE USED IN AREAS WHERE EROSION WILL OCCUR ONLY IN THE FORM OF SHEET EROSION AND THERE IS NO CONCENTRATION OF WATER IN A CHANNEL OR DRAINAGE WAY ABOVE THE FENCE. SEDIMENT BARRIERS SHOULD BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM. THE MAXIMUM CONTRIBUTING DRAINAGE AREA ABOVE THE FENCE SHOULD BE LESS THAN 1A ACRE PER 100 LINEAR FEET OF FENCE; THE MAXIMUM LENGTH OF SLOPE ABOVE THE FENCE SHOULD BE 100 FEET; . THE MAXIMUM SLOPE ABOVE THE FENCE SHOULD BE 2:1; 5. FENCES SHOULD BE INSTALLED FOLLOWING THE CONTOUR OF THE LAND AS CLOSELY AS POSSIBLE, AND

A. THE ENDS OF THE FENCE SHOULD BE FLARED UPSLOPE:

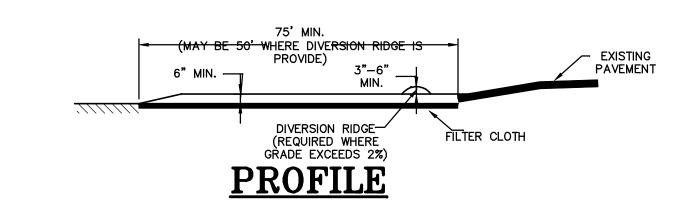
B. THE FABRIC SHOULD BE EMBEDDED A MINIMUM OF 4 INCHES IN DEPTH AND INCHES IN WIDTH IN A TRENCH EXCAVATED INTO THE GROUND, OR IF SITE CONDITIONS INCLUDE FROZEN GROUND, LEDGE, OR THE PRESENCE OF HEAVY ROOTS, THE BASE OF THE FABRIC SHOULD BE EMBEDDED WITH A MINIMUM THICKNESS OF 8 INCHES OF 3/4-INCH STONE; THE SOIL SHOULD BE COMPACTED OVER THE EMBEDDED FABRIC; SUPPORT POSTS SHOULD BE SIZED AND ANCHORED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS WITH MAXIMUM POST SPACING OF 6 FEET: E. ADJOINING SECTIONS OF THE FENCE SHOULD BE OVERLAPPED BY A MINIMUM OF 6 INCHES (24 INCHES IS PREFERRED), FOLDED AND STAPLED TO A SUPPORT POST. IF METAL POSTS ARE USED, FABRIC SHOULD BE WIRE—TIED DIRECTLY TO THE POSTS WITH

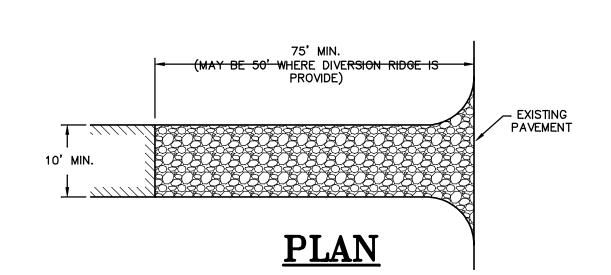
. SILT FENCING SHOULD NOT BE STAPLED OR NAILED TO TREES. 7. THE FILTER FABRIC SHOULD BE A PERVIOUS SHEET OF PROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN AND SHOULD BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER. 8. THE FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 DEGREES FAHRENHEIT TO 120 DEGREES FAHRENHEIT. 9. POSTS FOR SILT FENCES SHOULD BE EITHER 4-INCH DIAMETER WOOD OR 1.33 POUNDS PER LINEAR FOOT STEEL WITH A MINIMUM LENGTH OF 5 FEET. STEEL POSTS SHOULD HAVE, PROJECTIONS FOR FASTENING WIRE TO THEM. POSTS SHOULD BE PLACED ON THE DOWN SLOPE SIDE OF THE FABRIC. 10. THE HEIGHT OF A SILT FENCE SHOULD NOT EXCEED 36 INCHES AS HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE 11. THE FILTER FABRIC SHOULD BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY; FILTER CLOTH SHOULD BE SPLICED TOGETHER ONLY AT SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP, AND SECURELY SEALED. 12. A MANUFACTURED SILT FENCE SYSTEM WITH INTEGRAL POSTS MAY BE USED.

13. POST SPACING SHOULD NOT EXCEED 6 FEET. 14. A TRENCH SHOULD BE EXCAVATED APPROXIMATELY 4 INCHES WIDE AND 4 INCHES DEEP ALONG THE LINE OF POSTS AND UP 15. THE STANDARD STRENGTH OF FILTER FABRIC SHOULD BE STAPLED OR WIRED TO THE POST, AND 8 INCHES OF THE FABRIC SHOULD BE EXTENDED INTO THE TRENCH. THE FABRIC SHOULD NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE. 16. THE TRENCH SHOULD BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC. 17. SILT FENCE MAY BE INSTALLED BY "SLICING" USING MECHANICAL EQUIPMENT SPECIFICALLY DESIGNED FOR THIS PROCEDURE. THE SLICING METHOD USES AN IMPLEMENT TOWED BEHIND A TRACTOR TO "PLOW" OR SLICE THE SILT FENCE MATERIAL INTO THE SOIL THE SLICING METHOD MINIMALLY DISRUPTS THE SOIL UPWARD AND SLIGHTLY DISPLACES THE SOIL, MAINTAINING THE SOIL'S PROFILE AND CREATING AN OPTIMAL CONDITION FOR SUBSEQUENT MECHANICAL COMPACTION. 18. SILT FENCES SHOULD BE INSTALLED WITH "SMILES" OR "J-HOOKS" TO REDUCE THE DRAINAGE AREA THAT ANY SEGMENT WILL 19. THE ENDS OF THE FENCE SHOULD BE TURNED UPHILL.

20. SILT FENCES PLACED AT THE TOE OF A SLOPE SHOULD BE SET AT LEAST 6 FEET FROM THE TOE M ALLOW SPACE FOR SHALLOW PONDING AND TO ALLOW FOR MAINTENANCE ACCESS WITHOUT DISTURBING THE SLOPE. 21. SILT FENCES SHOULD BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREAS HAVE

#### SILTATION CONTROL FENCE DETAIL NOT TO SCALE





WHEN THE CONTROL PAD BECOMES INEFFECTIVE, THE STONE SHOULD BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL, REGRADED ON SITE, AND STABILIZED. THE ENTRANCE SHOULD TEN BE RECONSTRUCTED. THE CONTRACTOR SHOULD SWEEP THE PAVEMENT AT EXITS WHENEVER SOIL MATERIALS ARE TRACKED ONTO THE ADJACENT PAVEMENT OR TRAVELED WAY. WHEN WHEEL WASHING IS REQUIRED, IT SHOULD BE CONDUCTED ON AN AREA STABILIZED WITH AGGREGATE, WHICH DRAINS INTO AN APPROVED SEDIMENT—TRAPPING DEVICE. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.

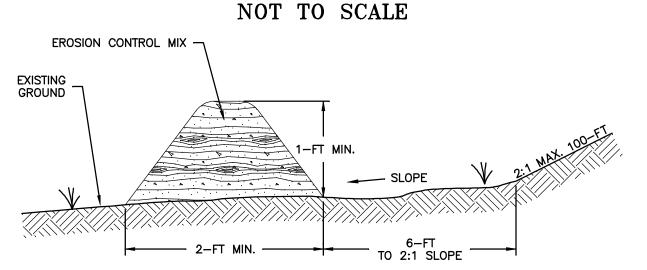
CONSTRUCTION SPECIFICATIONS:

1. THE MINIMUM STONE USED SHOULD BE 3—INCH CRUSHED STONE.

PAD, AS NECESSARY, WITH SUITABLE OUTLET PROTECTION.

THE MINIMUM LENGTH OF THE PAD SHOULD BE 75 FEET, EXCEPT THAT THE MINIMUM LENGTH MAY BE REDUCED TO 50 FEET IF A 3-INCH TO 6-INCH BERM IS INSTALLED AT THE ENTRANCE OF THE PROJECT SITE. THE PAD SHOULD BE THE FULL WIDTH OF CONSTRUCTION ACCESS ROAD OR 10 FEET, WHICHEVER IS GREATER. THE PAD SHOULD SLOPE AWAY FROM THE EXISTING ROADWAY. THE PAD SHOULD BE AT LEAST 6 INCHES THICK. THE GEOTEXTILE FILTER FABRIC SHOULD BE PLACED BETWEEN THE STONE PAD AND THE EARTH SURFACE BELOW THE PAD. THE PAD SHOULD BE MAINTAINED OR REPLACED WHEN MUD AND SOIL PARTICLES CLOG THE VOIDS IN THE STONE SUCH THAT MUD AND SOIL PARTICLES ARE TRACKED OFF-SITE. 8. NATURAL DRAINAGE THAT CROSSES THE LOCATION OF THE STONE PAD SHOULD BE INTERCEPTED AND PIPED BENEATH THE

#### TEMPORARY CONSTRUCTION EXIT



#### EROSION CONTROL MIX BERM CROSS-SECTION

EROSION CONTROL MIX BERMS SHOULD BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED 2. EROSION CONTROL MIX BERMS SHOULD BE REPAIRED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW 3. IF THERE ARE SIGNS OF BREACHING OF THE BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, THE EROSION CONTROL MIX BERMS SHOULD BE REPLACED WITH OTHER MEASURES TO INTERCEPT AND TRAP SEDIMENT (SUCH AS A DIVERSION BERM DIRECTING RUNOFF TO A SEDIMENT TRAP OR BASIN) . SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. SEDIMENT DEPOSITS MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE THIRD (1/3) OF THE HEIGHT OF THE BARRIER. EROSION CONTROL MIX BERMS SHOULD BE RESHAPED OR REAPPLIED AS NEEDED. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE BARRIER IS NO LONGER REQUIRED SHOULD BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

ROSION CONTROL MIX CAN BE MANUFACTURED ON OR OFF OF THE PROJECT SITE. EROSION CONTROL MIX MUST CONSIST PRIMARILY OF ORGANIC MATERIAL, SEPARATED AT THE POINT OF GENERATION, AND MAY NCLUDE SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR ACCEPTABLE MANUFACTURED PRODUCTS. 3. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS WILL NOT BE ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.

4. <u>COMPOSITION OF THE EROSION CONTROL MIX SHOULD BE AS FOLLOWS:</u>
A. EROSION CONTROL MIX SHALL BE A WELL GRADED MIXTURE OF PARTICLE SIZES FREE OF REFUSE, PHYSICAL CONTAMINANTS, MATERIAL TOXIC TO PLANT GROWTH AND MAY NOT CONTAIN ROCKS LESS THAN 4-INCHES IN DIAMETER; ORGANIC MATTER= 25-65% DRY WEIGHT BASIS

PARTICLES PASSING BY WEIGHT: PASSING BY WEIGHT: 1-INCH 90-100%

3/4-INCH

THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED THE MIX SHOULD CONTAIN NO SILTS, CLAYS OR FINE SANDS.

SOLUBLE SALTS CONTENT < 4.0 mmhos/cm G. ph OF THE MIX SHOULD BE BETWEEN 5.0 AND 8.0

5. THE BARRIER MUST BE PLACED ALONG A RELATIVELY LEVEL CONTOUR. 3. IT MAY BE NECESSARY TO CUT TALL GRASSES AND WOODY VEGETATION TO AVOID CREATING VOIDS AND BRIDGES IN THE BARRIER THAT WOULD ENABLE FINES TO WASH UNDER THE BARRIER THROUGH THE GRASS BLADES OR PLANT STEMS 7. THE BARRIER MUST BE A MINIMUM OF 12-INCHES TALL AS MEASURED ON THE UPHILL SIDE OF THE BARRIER. 8. THE BARRIER MUST BE A MINIMUM OF 2-FT WIDE.

CONTINUOUS CONTAINED BERM (ALTERNATIVE):

1. AN ALTERNATIVE PRODUCT, THE CONTINUOUS CONTAINED BERM (OR "FILTER SOCK") CAN BE AN EFFECTIVE SEDIMENT BARRIER AS IT 2. IN THE EVENT THAT USE OF CONTINUOUS CONTAINED BERM IS DESIRED, THE PRODUCT SELECTED SHOULD BE REVIEWED AND 3. INSTALLATION OF CONTINUOUS CONTAINED BERMS SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE

#### EROSION CONTROL MIX BERM DETAIL

NOT TO SCALE

#### SOIL STOCKPILE PRACTICES:

1. LOCATE STOCKPILES A MINIMUM OF 50-FT. AWAY FROM CONCENTRATED FLOWS OF STORMWATER, DRAINAGE COURSES OR INLETS. 2. PROTECT ALL STOCKPILES FROM STORMWATER RUN-ON USING TEMPORARY PERIMETER MEASURES SUCH AS DIVERSIONS, BERMS, SANDBAGS OR OTHER

3. STOCKPILES SHOULD BE SURROUNDED BY SEDIMENT BARRIERS AS DESCRIBED ON THE PLANS AND IN NHSMM VOL. 3. TO PREVENT MIGRATION OF MATERIAL BEYOND THE IMMEDIATE CONFINES OF THE

4. IMPLEMENT WIND EROSION CONTROL PRACTICES AS APPROPRIATE ON ALL STOCKPILED MATERIAL.

5. PLACE BAGGED MATERIALS ON PALLETS OR UNDERCOVER. PROTECTION OF INACTIVE STOCKPILES:
6. INACTIVE SOIL STOCKPILES SHOULD BE COVERED WITH ANCHORED TARPS

TEMPORARY PERIMETER SEDIMENT BARRIERS (I.E. SILT FENCÉ, ETC.) AT ALL 7. INACTIVE STOCKPILES OF CONCRETE RUBBLE, ASPHALT CONCRETE RUBBLE, AGGREGATE MATERIALS, AND SIMILAR MATERIALS SHOULD BE PROTECTED WITH TEMPORARY SEDIMENT PERIMETER BARRIERS (I.E. SILT FENCE, ETC.) AT ALL TIMES. IF THE MATERIALS ARE A SOURCE OF DUST, THEY SHOULD

OR PROTECTED WITH SOIL STABILIZATION MEASURES (TEMPORARY SEED

AND MULCH OR OTHER TEMPORARY STABILIZATION PRACTICE) AND

PROTECTION OF ACTIVE STOCKPILES:

8. ALL STOCKPILES SHOULD BE SURROUNDED WITH TEMPORARY LINEAR SEDIMENT BARRIERS (I.E. SILT FENCE, ETC.) PRIOR TO THE ONSET OF PRECIPITATION. PERIMETER BARRIERS SHOULD BE MAINTAINED AT ALL TIMES, AND ADJUSTED AS NEEDED TO ACCOMMODATE THE DELIVERY AND REMOVAL OF MATERIAL FROM THE STOCKPILE. THE INTEGRITY OF THE

ALSO BE COVERED.

BARRIER SHOULD BE INSPECTED AT THE END OF EACH WORKING DAY. 9. WHEN A STORM IS PREDICTED, STOCKPILES SHOULD BE PROTECTED WITH AN ANCHORED PROTECTIVE COVERING.

#### WINTER STABILIZATION & **CONSTRUCTION PRACTICES:**

MAINTENANCE MEASURES SHOULD BE PERFORMED THROUGHOU CONSTRUCTION, INCLUDING OVER THE WINTER PERIOD. AFTER EACH RAINFALL, SNOWSTORM, OR PERIOD OF THAWING AND RUNOFF, THE SITE CONTRACTOR SHOULD CONDUCT INSPECTION OF ALL INSTALLED EROSION CONTROL PRACTICES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR 2. FOR ANY AREA STABILIZED BY TEMPORARY OR PERMANENT SEEDING PRIOR TO THE ONSET OF THE WINTER SEASON, THE CONTRACTOR SHOULD CONDUCT AN INSPECTION IN THE SPRING TO ASCERTAIN THE CONDITION OF HE VEGETATION AND REPAIR ANY DAMAGED AREAS OR BARE SPOTS AND

HE FOLLOWING STABILIZATION TECHNIQUES SHOULD BE EMPLOYED DURING THE PERIOD FROM OCTOBER 15 THROUGH MAY 15. THE AREA OF EXPOSED, UNSTABILIZED SOIL SHOULD BE LIMITED TO 1-ACRE

RESEED AS REQUIRED TO ACHIEVE AN ESTABLISHED VEGETATIVE COVER (AT

LEAST 85% OF AREA VEGETATED WITH HEALTHY, VIGOROUS GROWTH.)

AND SHOULD BE PROTECTED AGAINST EROSION BY THE METHODS DISCUSSED IN NHSMM, VOL. 3 AND ELSEWHERE IN THIS PLAN SET, PRIOR TO ANY THAW OR SPRING MELT EVENT. STABILIZATION AS FOLLOWS SHOULD BE COMPLETED WITHIN A DAY OF

ESTABLISHING THE GRADE THAT IS FINAL OR THAT OTHERWISE WILL EXIST FOR

MORE THAN 5 DAYS: 2. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF LESS THAN 15% WHICH DO NOT EXHIBIT A MINIMUM 85% VEGETATIVE GROWTH BY OR ARE DISTURBED AFTER OCTOBER 15, SHOULD BE SEEDED AND COVERED WITH 3 TO 4 TONS OF HAY OR STRAW MULCH PER ACRE SECURED WITH ANCHORED NETTING, OR 2 INCHES OF EROSION CONTROL MIX (REFER TO

NHSMM, VOL. 3 FOR SPECIFICATION). 3. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF GREATER THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OR ARE DISTURBED AFTER OCTOBER 15 SHOULD BE SEEDED AND COVERED WITH A PROPERLY INSTALLED EROSION CONTROL BLANKET OR WITH A MINIMUM OF 4 INCHES OF EROSION CONTROL MIX, UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER. NOTE THAT COMPOST BLANKETS

4. ALL STONE COVERED SLOPES MUST BE CONSTRUCTED AND STABILIZED BY

SHOULD NOT EXCEED 2 INCHES IN THICKNESS OR THEY MAY OVERHEAT.

5. INSTALLATION OF ANCHORED HAY MULCH OR EROSION CONTROL MIX SHOULD NOT OCCUR OVER SNOW OF GREATER THAN 1 INCH IN DEPTH.

6. ALL MULCH APPLIED DURING WINTER SHOULD BE ANCHORED (I.E. BY NETTING, TRACKING, WOOD CELLULOSE FIBER). 7. WITHIN 24 HOURS OF STOCKPILING SOIL MATERIALS SHOULD BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR WITH A 4 INCH LAYER OF EROSION CONTROL MIX MULCH SHOULD BE RE-ESTABLISHED PRIOR TO ANY RAIN OR SNOWFALL. NO SOIL STOCKPILE SHOULD BE PLACED (EVEN COVERED WITH MULCH) WITHIN 100-FT OF ANY WETLAND OR OTHER WATER RESOURCE AREA.

8. FROZEN MATERIAL (I.E. FROST LAYER REMOVED DURING WINTER CONSTRUCTION) SHOULD BE STOCKPILED SEPARATELY AND IN A LOCATION AWAY FROM ANY AREA NEEDING PROTECTION. FROZEN MATERIAL STOCKPILES CAN MELT IN SPRING AND BECOME UNWORKABLE AND DIFFICULT TO TRANSPORT DUE TO HIGH SOIL MOISTURE CONTENT.

9. INSTALLATION OF EROSION CONTROL BLANKETS SHOULD NOT OCCUR OVER

SNOW OF GREATER THAN 1 INCH IN DEPTH OR ON FROZEN GROUND. 10. ALL GRASS-LINED DITCHES AND CHANNELS SHOULD BE CONSTRUCTED BY SEPTEMBER 1. ALL DITCHES AND SWALES WHICH DO NOT EXHIBIT 85% VEGETATIVE GROWTH BY OR ARE DISTURBED AFTER OCTOBER 15, SHOULD BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS AS DETERMINED BY A PROFESSIONAL ENGINEER. IF STONE LINING IS NECESSARY, THE CONTRACTOR MAY NEED TO RE-GRADE THE DITCH AS REQUIRED TO PROVIDE ADEQUATE CROSS-SECTION AFTER ALLOWING FOR PLACEMENT OF

11. ALL STONE LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY OCTOBER 15.

12. AFTER NOVEMBER 15. INCOMPLETE ROAD OR PARKING AREAS WHERE ACTIVE CONSTRUCTION HAS STOPPED FOR THE WINTER SHOULD BE PROTECTED WITH A MINIMUM 3 INCH LAYER OF SAND AND GRAVEL WITH A GRADATION THAT IS LESS THAN 12% OF THE SAND PORTION, OR MATERIAL PASSING THE NUMBER 4 SIEVE, BY WEIGHT, PASSES THE NUMBER 200

13. SEDIMENT BARRIERS THAT ARE INSTALLED DURING FROZEN CONDITIONS SHOULD CONSIST OF EROSION CONTROL MIX BERMS, OR CONTINUOUS CONTAINED BERMS. SILT FENCES AND HAY BALES SHOULD NOT BE INSTALLED WHEN FROZEN CONDITIONS PREVENT PROPER EMBEDMENT OF THESE BARRIERS.

#### **DUST CONTROL PRACTICES:**

1. APPLY DUST CONTROL MEASURES AS NECESSARY TO MAINTAIN CONTROL

OF DUST ON SITE. 2. <u>WATER APPLICATION:</u>
A) MOISTEN EXPOSED SOIL SURFACES PERIODICALLY WITH ADEQUATE

WATER TO CONTROL DUST. B) AVOID EXCESSIVE APPLICATION OF WATER THAT WOULD RESULT IN MOBILIZING SEDIMENT AND SUBSEQUENT DEPOSITION IN NATURAL WATERBODIES.

STONE APPLICATION:

A) COVER SURFACE WITH CRUSHED OR COARSE GRAVEL

B) IN AREAS NEAR WATERWAYS USE ONLY CHEMICALLY STABILIZED OR WASHED AGGREGATE. 4. REFER TO "NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3 CONSTRUCTION PHASE EROSION AND SEDIMENT CONTROLS, DECEMBER

2008" FOR OTHER ALLOWABLE DUST CONTROL PRACTICES (I.E. COMMERCIAL TACKIFIERS OR CHEMICAL TREATMENTS SUCH AS CALCIUM CHLORIDE, ETC.)

#### **GENERAL** CONSTRUCTION PHASING:

A SITE IS DEEMED STABILIZED WHEN IT IS IN A CONDITION IN WHICH THE SOIL ON SITE WILL NOT EXPERIENCE ACCELERATED OR UNNATURAL EROSION UNDER THE CONDITIONS OF A 10-YEAR STORM EVENT, SUCH AS BUT NOT

A) IN AREAS THAT WILL NOT BE PAVED: A MINIMUM OF 85% VEGETATIVE COVER HAS BEEN ESTABLISHED; ii) A MINIMUM OF 3-INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR A CERTIFIED COMPOST BLANKET HAS BEEN INSTALLED,

iii) EROSION CONTROL BLANKETS HAVE BEEN INSTALLED.

3) I<u>n Areas to be paved:</u> ) base course gravels have been installed.

2. TEMPORARY STABILIZATION: ALL AREAS OF EXPOSED OR DISTURBED SOIL SHOULD BE TEMPORARILY STABILIZED AS SOON AS PRACTICABLE BUT **NO LATER THAN 45 DAYS** FROM THE TIME OF INITIAL DISTURBANCE, UNLESS A SHORTER TIME SPECIFIED BY LOCAL AUTHORITIES, THE CONSTRUCTION SEQUENCE APPROVED AS PART OF THE ISSUED PERMIT OR AN INDEPENDENT MONITOR

3. <u>PERMANENT STABILIZATION:</u>
ALL AREAS OF EXPOSED OR DISTURBED SOIL SHOULD BE PERMANENTLY STABILIZED AS SOON AS PRACTICABLE BUT **NO LATER THAN 3 DAYS** FOLLOWING FINAL GRADING.

4. MAXIMUM AREA OF DISTURBANCE: THE AREA OF UNSTABILIZED SOIL SHOULD NOT EXCEED **5 ACRES** AT ANY

5. ONLY DISTURB, CLEAR, OR GRADE AREAS NECESSARY FOR CONSTRUCTION. A) FLAG OR OTHERWISE DELINEATE AREAS **NOT** TO BE DISTURBED.

B) EXCLUDE VEHICLES AND CONSTRUCTION EQUIPMENT FROM THESE AREAS TO PRESERVE NATURAL VEGETATION. 6. ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHOULD BE PROTECTED

DURING CLEARING AND CONSTRUCTION IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN DEPICTED ON SHEET C2. 7. ALL EROSION AND SEDIMENT CONTROL PRACTICES AND MEASURES SHOULD BE CONSTRUCTED, APPLIED AND MAINTAINED IN ACCORDANCE WITH THE

APPROVED EROSION AND SEDIMENT CONTROL PLAN DEPICTED ON SHEET C2, 8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHOULD BE STOCKPILED IN THE AMOUNT NECESSARY TO COMPLETE FINISHED GRADING AND BE PROTECTED FROM FROSION

9. STOCKPILES, BORROW AREAS AND SPOILS SHALL BE STABILIZED AS DESCRIBED UNDER "SOIL STOCKPILE PRACTICES", 10. SLOPES SHOULD NOT BE CREATED SO CLOSE TO PROPERTY LINES AS TO

ENDANGER ADJOINING PROPERTIES WITHOUT ADEQUATE PROTECTION AGAINST SEDIMENTATION, EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED DAMAGE.

11. AREAS TO BE FILLED SHOULD BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND/OR OTHER OBJECTIONABLE MATERIALS.

12. AREAS SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF 3-INCHES PRIOR TO PLACEMENT OF TOPSOIL. TOPSOIL SHOULD BE PLACED WITHOUT SIGNIFICANT COMPACTION TO PROVIDE A LOOSE BEDDING FOR PLACEMENT OF SEED.

13. ALL FILLS SHOULD BE COMPACTED IN ACCORDANCE WITH PROJECT SPECIFICATIONS TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES, SITE UTILITIES, CONDUITS AND OTHER FACILITIES, SHOULD BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.

14. IN GENERAL, FILLS SHOULD BE COMPACTED IN LAYERS RANGING FROM 6 TO 24 INCHES IN THICKNESS. THE CONTRACTOR SHOULD REVIEW THE PROJECT GEOTECHNICAL REPORT AND/OR THE "PROJECT SPECIFIC PHASING NOTES" FOR SPECIFIC GUIDANCE.

15. ANY AND ALL FILL MATERIAL SHOULD BE FREE OF BRUSH, RUBBISH, ROCKS (LARGER THAN 3/4 THE DEPTH OF THE LIFT BEING INSTALLED), LOGS, STUMPS, BUILDING DEBRIS, FROZEN MATERIAL AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY LIFTS.

16. FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE (I.E. CLAY, SILT) MATERIALS ARE SUSCEPTIBLE TO ACCELERATED SETTLEMENT AND POTÉNTIAL ACCELERATED EROSION. WORK IN AREAS OF THESE MATERIALS SHOULD BE PERFORMED UNDER THE DIRECTION OF A PROFESSIONAL ENGINEER.

17. THE OUTER FACE OF THE FILL SLOPE SHOULD BE ALLOWED TO STAY LOOSE, NOT ROLLED OR COMPACTED, OR BLADE SMOOTHED. A BULLDOZER MAY RUN UP AND DOWN THE FILL SLOPE SO THE DOZER TREADS (CLEAT TRACKS) CREATE GROOVES PERPENDICULAR TO THE SLOPE. IF THE SOIL IS NOT TOO MOIST, EXCESSIVE COMPACTION WILL NOT OCCUR. SEE "SURFACE **ROUGHENING"** IN THE NHSMM, VOL.3.

18. ROUGHEN THE SURFACE OF ALL SLOPES DURING THE CONSTRUCTION OPERATION TO RETAIN WATER, INCREASE INFILTRATION AND FACILITATE VEGETATION ESTABLISHMENT.

19. USE SLOPE BREAKS, SUCH AS DIVERSIONS, BENCHES, OR CONTOUR FURROWS AS APPROPRIATE TO REDUCE THE LENGTH OF CUT-FILL SLOPES TO LIMIT SHEET AND RILL EROSION AND PREVENT GULLY EROSION. ALL BENCHES SHOULD BE KEPT FREE OF SEDIMENT DURING ALL PHASES OF CONSTRUCTION. 20. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHOULD BE

EVALUATED BY A **PROFESSIONAL ENGINEER** (PREFERABLY THE DESIGN ENGINEER) TO DETERMINE IF THE PROPOSED DESIGN SHOULD BE REVISED TO PROPERLY MANAGE THE CONDITION. 21. STABILIZE ALL GRADED AREAS (AS ABOVE) WITH VEGETATION, CRUSHED

STONE, COMPOST BLANKET, OR OTHER GROUND COVER AS SOON AS GRADING IS COMPLETE OR IF WORK IS INTERRUPTED FOR 21 WORKING DAYS OR MORE. USE MULCH OR OTHER APPROVED METHODS TO STABILIZE AREAS TEMPORARILY WHERE FINAL GRADING MUST BE DELAYED. 22. ALL GRADED AREAS SHOULD BE PERMANENTLY STABILIZED IMMEDIATELY

FOLLOWING FINISHED GRADING. ABOVE NOTES EXCERPTED, ADAPTED AND REFERENCED FROM "NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3 CONSTRUCTION PHASE EROSION AND SEDIMENT CONTROLS, DECEMBER 2008" (NHSMM, VOL. 3)

LOCAL SURVEYING AND ENGINEERING **SERVICES PROVIDED BY:** NORWAY PLAINS ASSOCIATES, INC.

SURVEYORS - ENGINEERS - TRANSPORTATION PLANNERS

**EROSION** CONTROL **DETAILS** SHEET NUMBER

DATE ISSUE/REVIS

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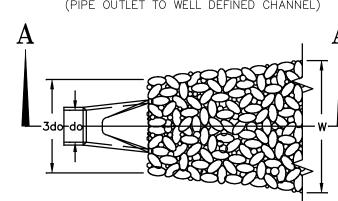




# D10=3" D10=10" RIP-RAP GRADATION RIP-RAP GRADATI

END SECTION RIP-RAP	[
CULVERT	-
EXISTING SUB-GRADE GEOTEXTILE FABRIC	
SECTION A—A	<u>N</u>

	APRON D	ME	NSI	ON	TA	$\mathbf{B}$
	PIPE OUTLET	Wo	W	La	Т	d5
	24" CPP OUTLET FROM DMH #1	6'	28'	23'	30"	10
<del>.</del>	INF. BASIN OUTLET	3.0'	11'	8'	12"	3'
-	8" ROOF DRAIN	2.0'	11'	8'	12"	3'
FABRIC						



HEADWALLS. END SECTION MATERIAL AND MANUFACTURER SHALL MATCH THAT OF THE PIPE CULVERT.

2. THE LARGEST RIP—RAP SIZE DETERMINED DURING HYDROLOGIC ANALYSIS HAS BEEN USED FOR ALL OUTLETS FOR ECONOMY AND SIMPLICITY.

3. APRON LENGTHS, WIDTHS AND THICKNESSES HAVE BEEN ROUNDED UP TO WHOLE NUMBERS FOR EASE OF

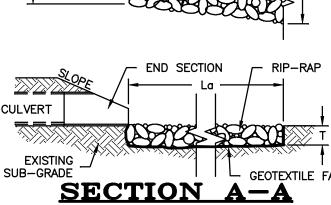
CONSTRUCTION SPECIFICATIONS:

PREPARE THE SUB-GRADE FOR THE FILTER MATERIAL,

GEOTEXTILE FABRIC, AND RIP-RAP TO THE GRADES

SHOWN ON THE PLANS.

1. ALL PIPE CULVERTS SHALL HAVE END SECTIONS OR



(PIPE OUTLET TO FLAT AREA NO

WELL DEFINED CHANNEL)

AND IN SUCH A MANNER THAT IT WILL NOT ERODE.

IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO THE OUTLET PROTECTION APRON.

MINIMUM 6" SAND/GRAVEL BEDDING OR GEOTEXTILE FABRIC REQUIRED UNDER ALL ROCK RIP-RAP. 3. THE ROCK OR GRAVEL USED FOR FILTER OR RIP-RAP SHALL CONFORM TO THE SPECIFIED GRADATION. 4. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF ROCK RIP-RAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO (2) PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES. STONE FOR THE RIP-RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES. 6. RIP-RAP SIZE CHOSEN FOR THE WORST CASE OF ALL OUTLETS. ALL RIP-RAP USED FOR PIPE OUTLET

PROTECTION WILL HAVE THE SAME GRADATION AND THICKNESS.

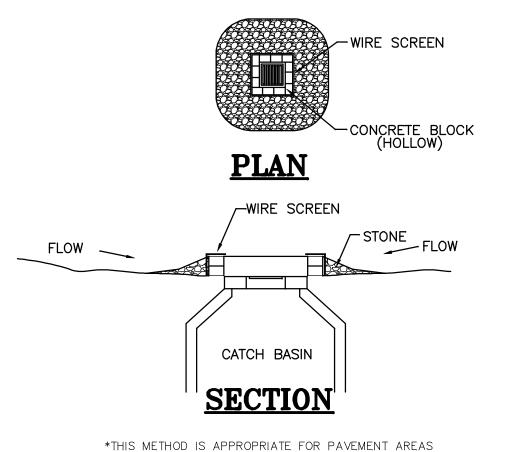
MAINTENANCE NOTES:

1. OUTLETS SHALL BE INSPECTED AND CLEANED ANNUALLY AND AFTER ANY MAJOR STORM EVENT. ANY EROSION OR DAMAGE TO THE RIP—RAP SHALL BE REPAIRED IMMEDIATELY.

2. THE CHANNEL IMMEDIATELY DOWNSTREAM FROM THE OUTLET SHOULD BE CHECKED TO SEE THAT NO EROSION IS OCCURRING.

3. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT

### PIPE OUTLET PROTECTION DETAIL NOT TO SCALE



## AND GRASS AREAS WITH STEEP (IN EXCESS OF 5%) SLOPES LEADING TO THE INLET. BLOCK AND GRAVEL DROP INLET SEDIMENT FILTER

PLACE CONCRETE BLOCKS LENGTHWISE ON THEIR SIDE IN A SINGLE ROW AROUND THE PERIMETER OF THE INLET, WITH THE

NOT TO SCALE

ENDS OF ADJACENT BLOCKS ABUTTING. THE HEIGHT OF THE BARRIER CAN BE VARIED, DEPENDING ON DESIGN NEEDS, BY STACKING COMBINATIONS OF 4-INCH, 8-INCH AND 12-INCH WIDE BLOCKS. THE BARRIER OF BLOCKS SHALL BE AT LEAST 12 INCHES HIGH AND NO GREATER THAN 24 INCHES HIGH.

2. WIRE MESH SHALL BE PLACED OVER THE OUTSIDE VERTICAL FACE (WEBBING) OF THE CONCRETE BLOCKS TO PREVENT STONE FROM BEING WASHED THROUGH THE HOLES IN THE BLOCKS. HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2-INCH OPENINGS SHALL BE USED.

3. STONE SHALL BE PILED AGAINST THE WIRE TO THE TOP OF THE BLOCK BARRIER, AS SHOWN ABOVE. STONE GRADATION SHALL BE WELL GRADED WITH THE MAXIMUM STONE SIZE OF 6 INCHES AND MINIMUM STONE SIZE OF 1 INCH.

4. IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE STONE MUST BE PULLED AWAY FROM THE BLOCKS, CLEANED AND REPLACED.

MAINTENANCE NOTES:

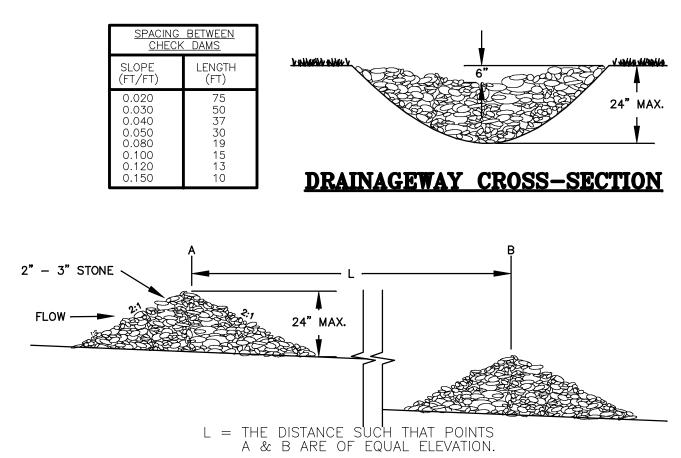
1. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.

2. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA

#### SEDIMENTATION CONTROL AT CATCH BASINS

3. STRUCTURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY

NOT TO SCALE



#### SPACING BETWEEN STONE CHECK DAMS

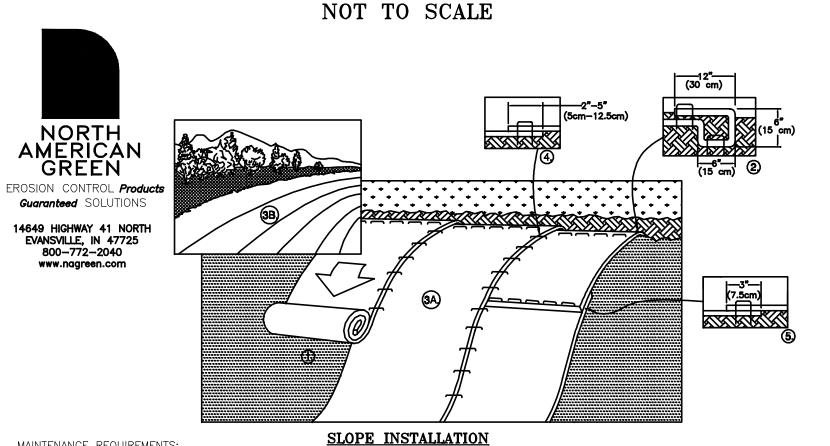
STRUCTURES SHALL BE INSTALLED ACCORDING TO THE DIMENSIONS SHOWN ON THE PLANS AT THE APPROPRIATE SPACING.
 CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER SO THAT EROSION, AIR AND WATER POLLUTION WILL BE MINIMIZED.
 STRUCTURES SHALL BE REMOVED FROM THE CHANNEL WHEN THEIR USEFUL LIFE HAS BEEN COMPLETED.
 MAINTENANCE NOTES:
 TEMPORARY GRADE STABILIZATION STRUCTURES SHOULD BE INSPECTED AFTER EACH STORM AND DAILY DURING PROLONGED STORM EVENTS. ANY DAMAGE TO THE STRUCTURES SHALL BE REPAIRED IMMEDIATELY.
 PARTICULAR ATTENTION SHOULD BE GIVEN TO END RUN AND EROSION AT THE DOWNSTREAM TOE OF THE STRUCTURE.

#### STONE CHECK DAM INSTALLATION DETAIL

WHEN REMOVING THE STRUCTURES, THE DISTURBED AREAS SHALL BE BROUGHT UP TO EXISTING CHANNEL GRADE AND THE

4. SEDIMENT SHALL BE REMOVED FROM BEHIND THE STRUCTURES WHEN IT REACHES 1/2 THE ORIGINAL HEIGHT OF THE

AREAS PREPARED, SEEDED AND MULCHED.



MAINTENANCE REQUIREMENTS:

1. ALL BLANKET AND MATS SHOULD BE INSPECTED WEEKLY DURING THE CONSTRUCTION PERIOD, AND AFTER ANY RAINFALL EVENT EXCEEDING 1/2 INCH IN A 24—HOUR PERIOD.

2. ANY FAILURE SHOULD BE REPAIRED IMMEDIATELY. IF WASHOUT OF THE SLOPE, DISPLACEMENT OF THE MAT, OR DAMAGE TO THE MAT OCCURS, THE AFFECTED SLOPE SHALL BE REPAIRED AND RESEEDED, AND THE AFFECTED AREA OF MAT SHALL BE

RE-INSTALLED. CONSTRUCTION SPECIFICATIONS:

1. MANUFACTURE'S INSTALLATION INSTRUCTIONS: PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER B. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP'S IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF RECP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12 (30 CM) PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP'S. C. ROLL THE RECP'S (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM , STAPLE SATERS SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE D. THE EDGES OF PARALLEL RECP'S MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) OVERLAP DEPENDING ON RECP'S TYPE. CONSECUTIVE RECP'S SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECP'S WIDTH.NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECP's. PROPER SITE PREPARATION IS ESSENTIAL TO ENSURE COMPLETE CONTACT OF THE PROTECTION MATTING WITH THE SOIL. GRADE AND SHAPE AREA IF INSTALLATION. REMOVE ALL ROCKS, CLODS, TRASH, VEGETATIVE OR OTHER OBSTRUCTIONS SO THAT THE INSTALLED BLANKETS WILL HAVE DIRECT CONTACT WITH THE SOIL. PREPARE SEEDBED BY LOOSENING 2-3 INCHES OF TOPSOIL ABOVE FINAL GRADE.
INCORPORATE AMENDMENTS, SUCH AS LIME AND FERTILIZER, INTO SOIL ACCORDING TO SOIL TEST AND THE SEEDING PLAN. SEED AREA BEFORE BLANKET INSTALLATION FOR EROSION CONTROL AND REVEGETATION. SEEDING AFTER MAT INSTALLATION IS OFTEN SPECIFIED FOR TURF REINFORCEMENT APPLICATIONS. WHEN SEEDING PRIOR TO BLANKET INSTALLATION, ALL CHECK SLOTS

## TEMPORARY EROSION CONTROL BLANKET DETAIL

WHEN SOIL FILLING IS SPECIFIED, SEED THE MATTING AND THE ENTIRE DISTURBED AREA AFTER INSTALLATION AND PRIOR TO

AND OTHER AREAS DISTURBED DURING INSTALLATION MUST BE RESEEDED.

NOT TO SCALE

#### **TEMPORARY VEGETATION:**

SPECIFICATIONS:

1. INSTALL NEEDED EROSION AND SEDIMENT CONTROL MEASURES SUCH AS SILTATION BARRIERS, DIVERSIONS, AND SEDIMENT TRAPS.

- 2. GRADE AS NEEDED FOR THE ACCESS OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING
- PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING.

SLOPE TO CATCH SEED AND REDUCE RUNOFF.

- 3. RUNOFF SHOULD BE DIVERTED FROM THE SEEDBED AREA.4. ON SLOPES 4:1 OR STEEPER, THE FINAL PREPARATION SHOULD INCLUDE CREATING HORIZONTAL GROOVES PERPENDICULAR O THE DIRECTION OF THE
- SEEDBED PREPARATION:

  1. STONES AND TRASH SHOULD BE REMOVED SO AS NOT TO INTERFERE WITH THE SEEDING AREA.
- WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
- 3. IF APPLICABLE, FERTILIZER AND ORGANIC SOIL AMENDMENTS SHOULD BE APPLIED DURING THE GROWING SEASON.
- RECOMMENDATIONS. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL FERTILIZER AND LIMESTONE MAY BE APPLIED AT THE FOLLOWING RATES:

  LIMESTONE APPLICATION RATE = 3 TONS/ACRE (138 LB./1,000-SF)\*

  \*EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE

  FERTILIZER APPLICATION RATE = 600 LB./ACRE (13.8 LB./1,000-SF)\*

  \*LOW PHOSPHATE FERTILIZER (N-P205-K20) OR EQUIVALENT

4. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST

- 5. FERTILIZER SHOULD BE RESTRICTED TO LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER WHEN APPLIED TO AREAS BETWEEN 25 AND 250-FT FROM A SURFACE WATER BODY. NO FERTILIZER EXCEPT LIMESTONE SHOULD BE APPLIED WITHIN 25-FT OF A SURFACE WATER BODY. THESE ARE THE REQUIREMENTS FOR ANY WATER BODY PROTECTED BY THE COMPREHENSIVE SHORELAND PROTECTION ACT.
- 1. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL CULTIPACKER TYPE SEEDER OR HYDRO SEEDER (SLURRY INCLUDING SEED AND FERTILIZER). NORMAL SEEDING DEPTH IS FROM 1/4 TO 1/2 INCH. HYDROSEEDING THAT INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
- 3. AREAS SEEDED BETWEEN MAY 15 AND AUGUST 15 SHOULD BE COVERED WITH HAY OR STRAW MULCH, ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE DESCRIBED IN THE NHSSM, VOL 3.

2. TEMPORARY SEED SHOULD TYPICALLY OCCUR PRIOR TO SEPTEMBER 15.

- 4. VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED AREA SHOULD BE ACHIEVED PRIOR TO OCTOBER 15. IF THIS CONDITION IS NOT ACHIEVED, IMPLEMENT OTHER TEMPORARY STABILIZATION MEASURES FOR OVERWINTER PROTECTION.
- 1. TEMPORARY SEEDING SHOULD BE INSPECTED WEEKLY AFTER ANY RAINFALL EXCEEDING 1/2 INCH IN 24 HOURS ON ACTIVE CONSTRUCTION SITES.

  TEMPORARY SEEDING SHOULD BE INSPECTED JUST PRIOR TO SEPTEMBER 15, TO ASCERTAIN WHETHER ADDITIONAL SEEDING IS REQUIRED TO PROVIDE STABILIZATION OVER THE WINTER PERIOD.
- 2. BASED ON INSPECTION, AREAS SHOULD BE RESEEDED TO ACHIEVE FULL STABILIZATION OF EXPOSED SOILS. IF IT IS TOO LATE IN THE PLANTING SEASON TO APPLY ADDITIONAL SEED, THEN OTHER TEMPORARY STABILIZATION MEASURES SHOULD BE IMPLEMENTED.
- 3. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHOULD BE MADE AND AREAS SHOULD BE RESEEDED, WITH OTHER TEMPORARY MEASURES (I.E. MULCH, ETC.) USED TO PROVIDE EROSION

PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.

### TEMPORARY VEGETATION SEEDING RECOMMENDATIONS

SPECIES	PER ACRE BUSHELS (BU) OR POUNDS (LBS.)	PER 1,000-SF	REMARKS	
WINTER RYE	2.5 BU OR 112 LBS.	2.5 LBS.	BEST FOR FALL SEEDING. SEED FROM AUGUST 15 TO SEPTEMBER 15 FOR BEST COVER. SEED TO A DEPTH OF 1 INCH.	
OATS	2.5 BU OR 80 LBS.	2.0 LBS.	BEST FOR SPRING SEEDING. SEED NO LATER THAN MAY 15 FOR SUMMER PROTECTION. SEED TO A DEPTH OF 1 INCH.	
ANNUAL RYEGRASS	40 LBS.	1.0 LB.	GROWS QUICKLY, BUT IS OF SHORT DURATION. USE WHERE APPEARANCES ARE IMPORTANT. SEED EARLY SPRING AND/OR BETWEEN AUGUST 15 AND SEPTEMBER 15. COVER THE SEED WITH NO MORE THAN 0.25 INCH OF SOIL.	
PERENNIAL RYEGRASS	30 LBS.	0.7 LBS.	BEST FOR FALL SEEDING. SEED FROM AUGUST 15 TO SEPTEMBER 15 FOR BEST COVER. SEED TO A DEPTH OF 1 INCH.	
SOURCES:  1. NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3, TABLE 4-1				

2. MINNICK, E.L. AND H.T. MARSHALL, (AUGUST 1992)

#### PERMANENT VEGETATION:

SPECIFICATIONS:

TE PREPARATION:
INSTALL NEEDED EROSION AND SEDIMENT CONTROL MEASURES SUCH AS
SILTATION BARRIERS, DIVERSIONS, AND SEDIMENT TRAPS.

- 2. GRADE AS NEEDED FOR THE ACCESS OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING.
- 3. RUNOFF SHOULD BE DIVERTED FROM THE SEEDBED AREA.
- 4. ON SLOPES 4:1 OR STEEPER, THE FINAL PREPARATION SHOULD INCLUDE CREATING HORIZONTAL GROOVES PERPENDICULAR O THE DIRECTION OF THE SLOPE TO CATCH SEED AND REDUCE RUNOFF.
- 1. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING TOOTH HARROW OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED. ALL BUT CLAY AND SILT SOILS SHOULD BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE.
- REMOVE FROM THE SURFACE ALL STONES 2INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, CONCRETE CLODS, LUMPS, TRASH OR OTHER UNSUITABLE MATERIAL.
   INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL
- COMPACTED; THE AREA MUST BE TILLED AND FIRMED AS ABOVE.

  4. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
- 5. IF APPLICABLE, FERTILIZER AND ORGANIC SOIL AMENDMENTS SHOULD BE APPLIED DURING THE GROWING SEASON.
- 6. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL FERTILIZER AND LIMESTONE MAY BE APPLIED AT THE FOLLOWING RATES:

  LIMESTONE APPLICATION RATE = 3 TONS/ACRE (138 LB./1,000-SF)\*

  \*EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE

  FERTILIZER APPLICATION RATE = 600 LB./ACRE (13.8 LB./1,000-SF)\*
- \*LOW PHOSPHATE FERTILIZER (N-P205-K20) OR EQUIVALENT

  7. FERTILIZER SHOULD BE RESTRICTED TO LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER WHEN APPLIED TO AREAS BETWEEN 25 AND 250-FT FROM A SURFACE WATER BODY. NO FERTILIZER EXCEPT LIMESTONE SHOULD BE APPLIED WITHIN 25-FT OF A SURFACE WATER BODY. THESE ARE THE REQUIREMENTS FOR ANY WATER BODY PROTECTED BY THE COMPREHENSIVE SHORELAND PROTECTION ACT.

INOCULATE ALL LEGUME SEED WITH THE CORRECT TYPE OF INOCULANT.
 APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL CULTIPACKER
TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER).
NORMAL SEEDING DEPTH IS FROM 1/4 TO 1/2 INCH. HYDROSEEDING THAT
INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE.

- WHERE FEASIBLE EXCEPT WHERE EITHER CULTIPACKER TYPE SEEDER OR HYDROSEEDER IS USED, THE SEEDBED SHOULD BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A ROLLER, OR LIGHT DRAG.
- 4. SPRING SEEDING USUALLY GIVES THE BEST RESULTS FOR ALL SEED MIXES OR WITH LEGUMES. PERMANENT SEEDING SHOULD BE COMPLETED 45 DAYS PRIOR TO FIRST KILLING FROST. WHEN CROWN VETCH IS SEEDED IN LATE SUMMER AT LEAST 35% OF THE SEED SHOULD BE HARD SEED (UNSCARIFIED). IF SEEDING CANNOT BE DONE WITHIN THE SPECIFIED SEEDING DATES, MULCH ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE DESCRIBED IN THE NHSSM, VOL 3. AND DELAY
- SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.

  5. AREAS SEEDED BETWEEN MAY 15 AND AUGUST 15 SHOULD BE COVERED WITH HAY OR STRAW MULCH, ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE DESCRIBED IN THE NHSSM, VOL 3.
- 6. VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED AREA SHOULD BE ACHIEVED PRIOR TO OCTOBER 15. IF THIS CONDITION IS NOT ACHIEVED, IMPLEMENT OTHER TEMPORARY STABILIZATION MEASURES FOR OVERWINTER PROTECTION.

1. WHEN HYDROSEEDING (HYDRAULIC APPLICATION), PREPARE THE SEEDBED AS SPECIFIED ABOVE OR BY HAND RAKING TO LOOSEN AND SMOOTH THE SOIL AND REMOVE SURFACE STONES LARGER THAN 2 INCHES IN DIAMETER.

- SLOPES BUST BE NO STEEPER THAN 2:1 (2 FEET HORIZONTALLY BY 1 FOOT VERTICALLY.
   LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED.
- THE USE OF FIBER MULCH ON CRITICAL AREAS IS NOT RECOMMENDED (UNLESS IT IS USED TO HOLD STRAW OR HAY). BETTER PROTECTION IS GAINED BY USING STRAW MULCH AND HOLDING IT WITH ADHESIVE MATERIALS OR 500 POUNDS PER ACRE OF WOOD FIBER MULCH.

  4. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
- MAINTENANCE REQUIREMENTS:

  1. PERMANENT SEEDED AREAS SHOULD BE INSPECTED AT LEAST MONTHLY
  DURING THE COURSE OF CONSTRUCTION. INSPECTION, MAINTENANCE AND
  CORRECTIVE ACTIONS SHOULD CONTINUE UNTIL THE OWNER ASSUMES
  PERMANENT OPERATION OF THE SITE.
- SEEDED AREAS SHOULD BE MOWED AS REQUIRED TO MAINTAIN A HEALTHY STAND OF VEGETATION. MOWING HEIGHT AND FREQUENCY DEPEND OF TYPE OF GRASS COVER.
- 3. BASED ON INSPECTION, AREAS SHOULD BE RESEEDED TO ACHIEVE FULL STABILIZATION OF EXPOSED SOILS.
- 4. AT A MINIMUM 85% OF THE SOIL SURFACE SHOULD BE COVERED BY
- 5. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHOULD BE MADE AND AREAS SHOULD BE RESEEDED, WITH OTHER TEMPORARY MEASURES (I.E. MULCH, ETC.) USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.

### PERMANENT VEGETATION SEEDING RECOMMENDATIONS

USE	MIXTURE	SPECIES	LBS./ACRE	LBS./ 1,000-SF
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	А	TALL FESCUE CREEPING RED FESCUE REDTOP TOTAL	20 20 2 42	0.45 0.45 0.05 0.95
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER	А	TALL FESCUE CREEPING RED FESCUE REDTOP TOTAL	20 20 2 42	0.45 0.45 0.05 0.95
IGHTLY USED PARKING LOTS, DDD AREAS, UNUSED LANDS, AND LOW NTENSITY RECREATION	А	TALL FESCUE CREEPING RED FESCUE REDTOP TOTAL	20 20 2 42	0.45 0.45 0.05 0.95
PLAY AREAS AND ATHLETIC FIELDS (TOPSOIL ESSENTIAL FOR GOOD TURF)	F	CREEPING RED FESCUE KENTUCKY BLUEGRASS TOTAL	50 50 100	1.15 1.15 2.30

SOURCES:

1. NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3,
TABLES 4-2 AND 4-3
2. MINNICK, E.L. AND H.T. MARSHALL, (AUGUST 1992)

LOCAL SURVEYING AND ENGINEERING
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NORWAY PLAINS ASSOCIATES, INC

SURVEYORS - ENGINEERS - TRANSPORTATION PLANNERS

ON

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2 Continental Bouleva
P.O. Box 2
Rochester, NH 03866-02
(603) 335-39

EROSION
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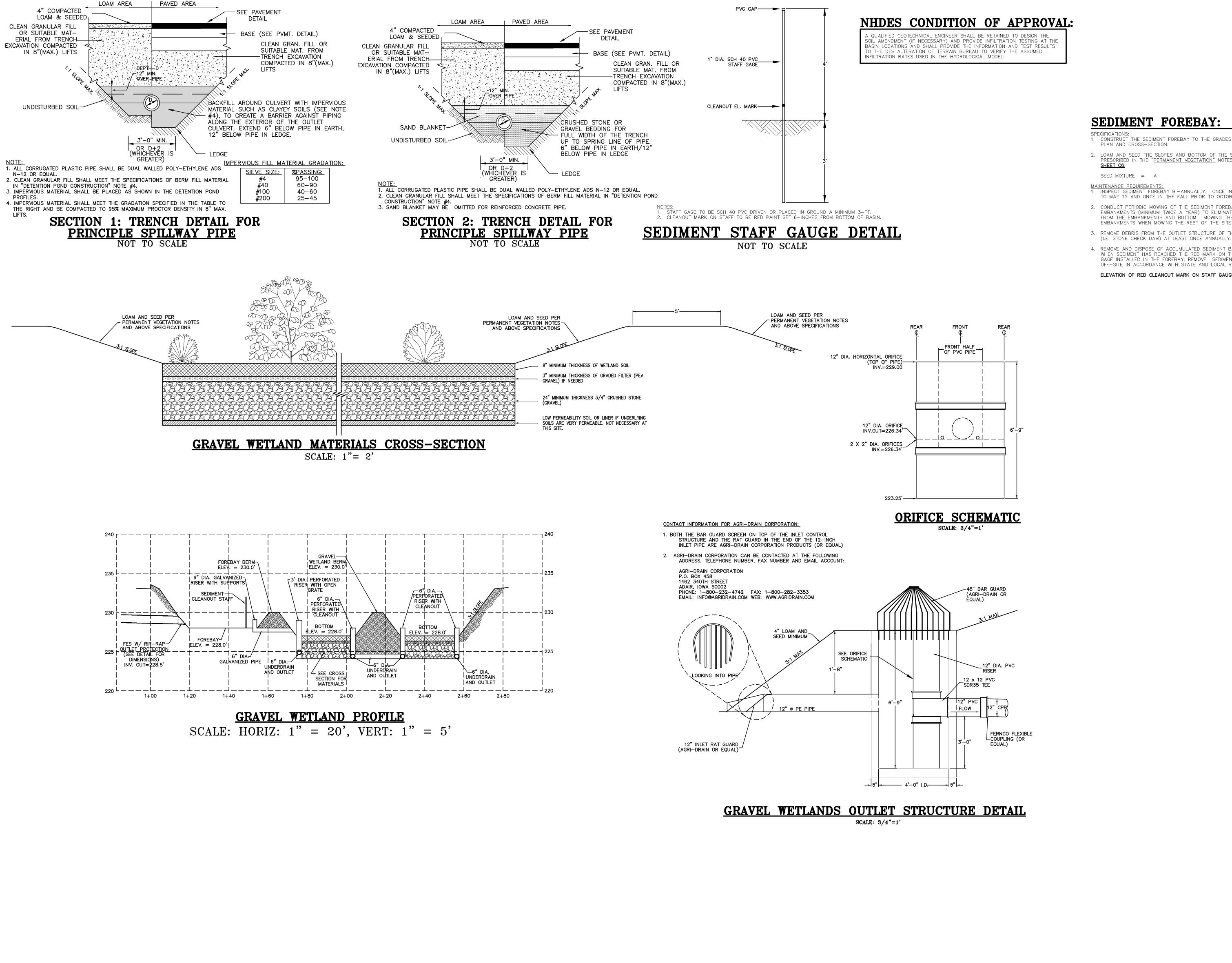
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SEDIMENT FOREBAY:

SPECIFICATIONS:

1. CONSTRUCT THE SEDIMENT FOREBAY TO THE GRADES DEPICTED ON THE PLAN AND CROSS-SECTION.

2. LOAM AND SEED THE SLOPES AND BOTTOM OF THE SEDIMENT FOREBAY AS PRESCRIBED IN THE "PERMANENT VEGETATION" NOTES FOUND ON SEED MIXTURE = A

MAINTENANCE REQUIREMENTS:

1. INSPECT SEDIMENT FOREBAY BI—ANNUALLY. ONCE IN THE SPRING PRIOR
TO MAY 15 AND ONCE IN THE FALL PRIOR TO OCTOBER 15.

2. CONDUCT PERIODIC MOWING OF THE SEDIMENT FOREBAY SLOPES AND EMBANKMENTS (MINIMUM TWICE A YEAR) TO ELIMINATE WOODY GROWTH FROM THE EMBANKMENTS AND BOTTOM. MOWING THE SEDIMENT FOREBAY EMBANKMENTS WHEN MOWING THE REST OF THE SITE IS RECOMMENDED.

3. REMOVE DEBRIS FROM THE OUTLET STRUCTURE OF THE SEDIMENT FOREBAY

4. REMOVE AND DISPOSE OF ACCUMULATED SEDIMENT BASED ON INSPECTION. WHEN SEDIMENT HAS REACHED THE RED MARK ON THE SEDIMENT STAFF GAGE INSTALLED IN THE FOREBAY, REMOVE SEDIMENT AND DISPOSE OF IT OFF-SITE IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS.

ELEVATION OF RED CLEANOUT MARK ON STAFF GAUGE = 228.50

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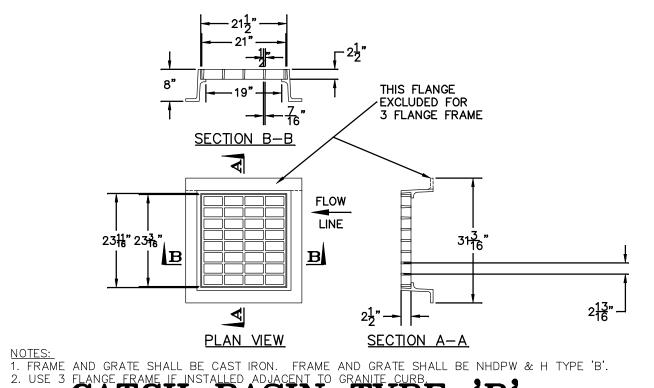
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33222201 **GRAVEL WETLAND** 

SHEET NUMBER

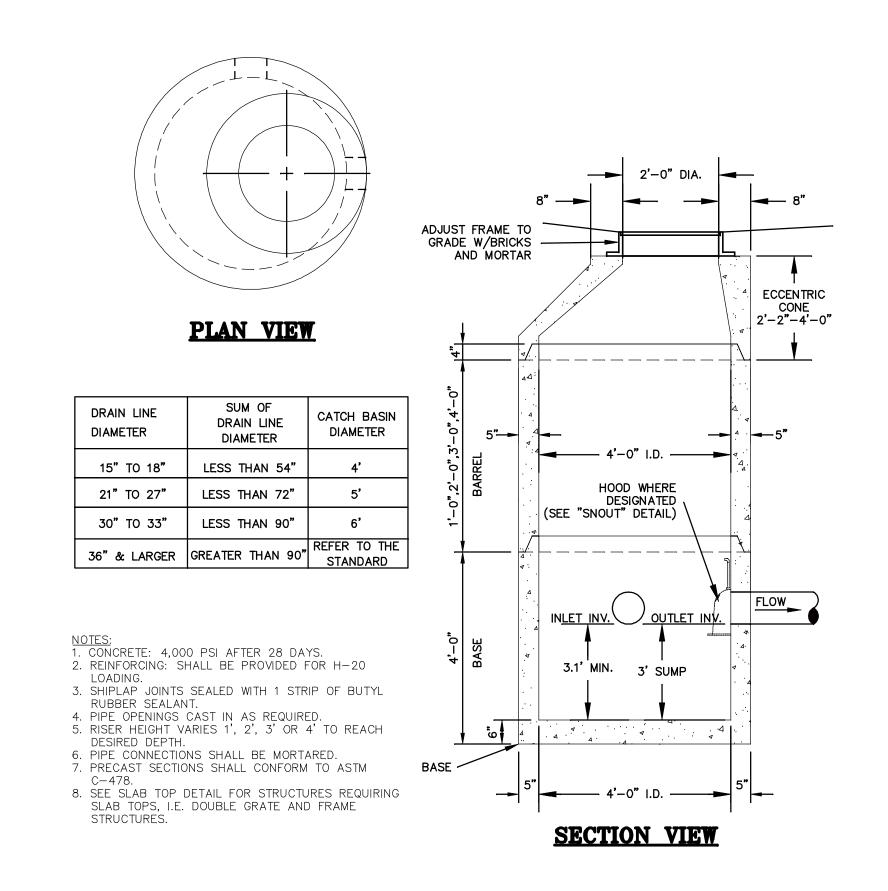
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USE 3 FLANGE FRAME IF INSTALLED ADJACENT TO GRANITE CURB.

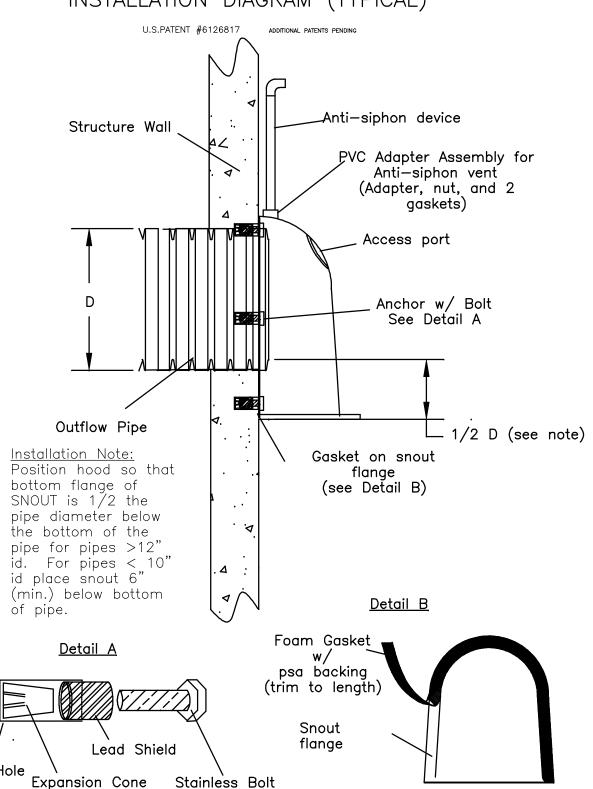
CATCH BASIN TYPE 'B'

FRAME AND GRATE DETAIL NOT TO SCALE



PRE-CAST REINFORCED CATCH BASIN NOT TO SCALE

BEST MANAGEMENT PRODUCTS, INC. SNOUT OIL & DEBRIS STOP DRAWING NUMBER: IN-SN INSTALLATION DIAGRAM (TYPICAL) U.S.PATENT #6126817 ADDITIONAL PATENTS PENDING



(narrow end out) NOTES:

1. ALL HOODS AND TRAPS FOR PVC CATCH BASINS AND WATER QUALITY STRUCTURES SHALL BE

BEST MANAGEMENT PRODUCTS, INC. 53 MT. ARCHER RD. LYME, CT 06371

(860) 434-0277, (860) 434-3195 FAX TOLL FREE: (800) 504-8008

WEB SITE: www.bmpinc.com OR PRE-APPROVED EQUAL

INSTALLATION KIT SHALL INCLUDE:

STAINLESS STEEL SCREWS

. SCREW GASKETS

ALL PVC CATCH BASINS SHALL BE MANUFACTURED BY NYLOPLAST, A DIVISION OF ADVANCED DRAINAGE SYSTEMS, INC. 800-821-6710 OR PRE-APPROVED EQUAL. 2. ALL HOODS SHALL BE CONSTRUCTED OF A GLASS REINFORCED RESIN COMPOSITE WITH ISO GEL COAT EXTERIOR FINISH WITH

A MINIMUM 0.125" LAMINATE THICKNESS. 3. ALL HOODS SHALL BE EQUIPPED WITH A WATERTIGHT ACCESS PORT, A MOUNTING FLANGE, AND AN ANTI-SIPHON VENT AS

DRAWN. (SEE CONFIGURATION DETAIL) 4. THE SIZE AND POSITION OF THE HOOD SHALL BE DETERMINED BY OUTLET PIPE SIZE AS PER MANUFACTURER'S

5. THE BOTTOM OF THE HOOD SHALL EXTEND DOWNWARD A DISTANCE EQUAL TO 1/2 THE OUTLET PIPE DIAMETER WITH A MINIMUM DISTANCE OF 6" FOR PIPES <12" I.D.

6. THE ANTI-SIPHON VENT SHALL EXTEND ABOVE HOOD BY MINIMUM OF 3" AND A MAXIMUM OF 12" ACCORDING TO STRUCTURE

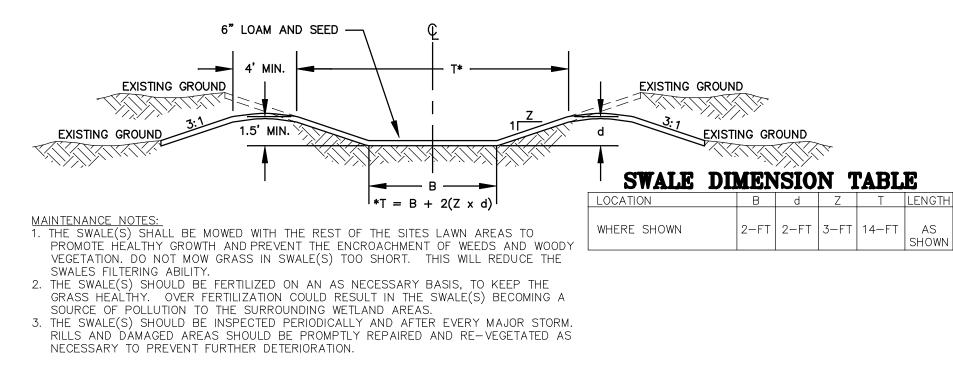
7. THE HOOD SHALL BE INSTALLED IN PVC CATCH BASIN WITH SUMP AS MANUFACTURED BY NYLOPLAST OR PRE-APPROVED

8. THE HOOD SHALL BE SECURELY ATTACHED TO STRUCTURE WALL WITH STAINLESS STEEL SCREWS, STAINLESS RUBBER

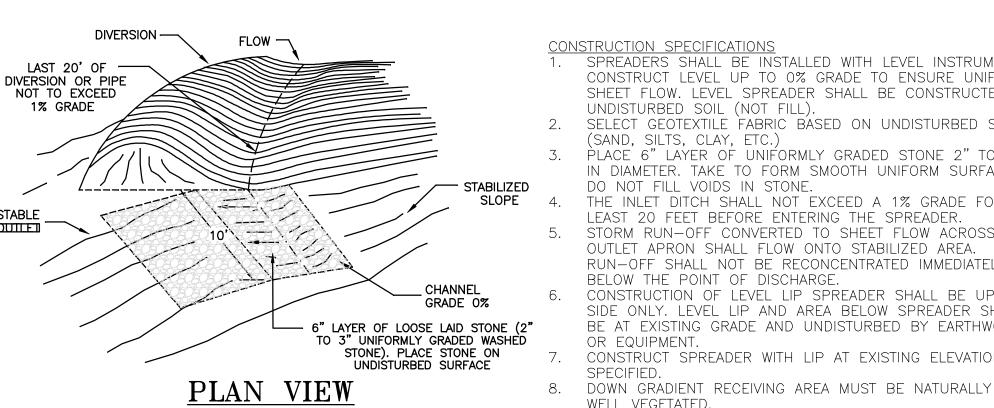
BACKED WASHERS, AND OIL-RESISTANT GASKET AS SUPPLIED BY MANUFACTURER. (SEE INSTALLATION DETAIL) 9. INSTALLATION INSTRUCTIONS SHALL BE FURNISHED WITH MANUFACTURER SUPPLIED INSTALLATION KIT.

A. INSTALLATION INSTRUCTIONS B. PVC ANTI-SIPHON VENT PIPE AND ADAPTER OIL-RESISTANT CRUSHED CELL FOAM GASKET WITH PSA BACKING

HOOD "SNOUT" INSTALLATION DETAIL NOT TO SCALE



#### **DIVERSION SWALE DETAIL** NOT TO SCALE



MAINTENANCE NOTES:

CHANGED.

AREA.

1. THE LEVEL SPREADER SHOULD BE

2. ANY DETRIMENTAL ACCUMULATION OF

4. THE VEGETATION SHOULD BE MOWED

THE ENCROACHMENT OF WOODY

AND RE-VEGETATED.

SEDIMENTS SHOULD BE REMOVED.

3. IF RILLING HAS TAKEN PLACE ON THE LIP,

VEGETATION. CLIPPINGS SHOULD BE

CHECKED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE IF THE LIP

HAS BEEN DAMAGED AND TO DETERMINE

THAT THE DESIGN CONDITIONS HAVE NOT

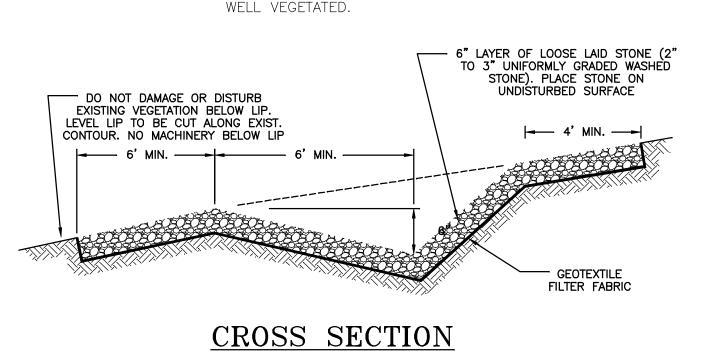
THEN THE DAMAGE SHOULD BE REPAIRED

OCCASIONALLY TO CONTROL WEEDS AND

REMOVED AND DISPOSED OF OUTSIDE THE

SPREADER AND AWAY FROM THE OUTLET

CONSTRUCTION SPECIFICATIONS SPREADERS SHALL BE INSTALLED WITH LEVEL INSTRUMENT, CONSTRUCT LEVEL UP TO 0% GRADE TO ENSURE UNIFORM SHEET FLOW. LEVEL SPREADER SHALL BE CONSTRUCTED ON UNDISTURBED SOIL (NOT FILL). SELECT GEOTEXTILE FABRIC BASED ON UNDISTURBED SOILS (SAND, SILTS, CLAY, ETC.) PLACE 6" LAYER OF UNIFORMLY GRADED STONE 2" TO 3" IN DIAMETER. TAKE TO FORM SMOOTH UNIFORM SURFACE. DO NOT FILL VOIDS IN STONE. THE INLET DITCH SHALL NOT EXCEED A 1% GRADE FOR AT LEAST 20 FEET BEFORE ENTERING THE SPREADER. STORM RUN-OFF CONVERTED TO SHEET FLOW ACROSS OUTLET APRON SHALL FLOW ONTO STABILIZED AREA. RUN-OFF SHALL NOT BE RECONCENTRATED IMMEDIATELY BELOW THE POINT OF DISCHARGE. CONSTRUCTION OF LEVEL LIP SPREADER SHALL BE UPHILL SIDE ONLY. LEVEL LIP AND AREA BELOW SPREADER SHALL BE AT EXISTING GRADE AND UNDISTURBED BY EARTHWORK OR EQUIPMENT. CONSTRUCT SPREADER WITH LIP AT EXISTING ELEVATION AS SPECIFIED.



STONE LINED LEVEL SPREADER NOT TO SCALE

UTILITIES NOTES:

1. CONTRACTOR SHALL NOTIFY DIG-SAFE (1-888 344-7233) 72 HOURS PRIOR TO THE START OF CONSTRUCTION.

- 2. ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE AS SHOWN. THE CONTRACTOR SHALL VERIFY THEIR LOCATIONS AND ELEVATIONS. 3. THIS PLAN SHOWS ONLY THOSE FEATURES THAT WERE VISUALLY APPARENT ON THE DATE OF THE SURVEY. THE ABSENCE OF SUBSURFACE STRUCTURES, UTILITIES, ETC. FROM THIS PLAN, BUT IN EXISTENCE IS NOT INTENDED OR IMPLIED.
- 4. ANY UTILITY POLES THAT NEED TO BE RELOCATED SHALL BE COORDINATED WITH PSNH OR FAIRPOINT TELECOMMUNICATIONS.
- 5. PROPOSED UTILITIES ARE TO BE UNDERGROUND. COORDINATE LOCATION OF UNDERGROUND UTILITIES AND TRANSFORMER PADS WITH PSNH AND OTHER PERTINENT UTILITY COMPANIES.
- 6. WATER AND SEWER LINES SHALL BE INSTALLED A MINIMUM OF 10-FT APART HORIZONTALLY.
- 7. WHERE SEWER AND WATER LINES MUST CROSS, SEWER PIPE JOINTS SHALL BE LOCATED A MINIMUM 9-FT HORIZONTALLY FROM THE WATER LINE AND
- A VERTICAL SEPARATION OF 18-INCHES SHALL BE MAINTAINED. 8. SEWER PIPE JOINTS SHALL BE TESTED WITH ZERO LEAKAGE AT 25 POUNDS PER SQUARE INCH FOR GRAVITY SEWER AND AT 1-1/2 TIMES WORKING PRESSURE FOR ALL FORCE MAINS.
- 9. <u>Waterline construction:</u> a. all proposed water line material used shall meet SOMERSWORTH WATER DEPARTMENT AND SOMERSWORTH ENGINEERING DEPARTMENT SPECIFICATIONS. WATER LINES SHALL
- BE A.W.W.A C 151, CLASS 52, CEMENT LINED, DUCTILE IRON PIPE, POLYWRAPPED. B. PROPOSED WATER GATE VALVES SHALL BE MANUFACTURED BY KENNEDY OF AMERICAN FLOW CONTROL, RESILIENT SEAT TYPE.
- C. ALL WATER LINES SHALL BE BURIED A MINIMUM OF 5'.
- D. IF 5' OF COVER IS NOT AVAILABLE WATER LINE SHALL BE INSULATED AS SHOWN IN THE "SHALLOW COVER TRENCH DETAIL FOR INSULATED WATER PIPE".
- E. ALL WATER FITTINGS SHALL BE CLASS 350. F. PROPOSED WATER GATE VALVE SHALL OPEN CLOCKWISE (LEFT).
- O. WORK TO CONNECT INTO THE WATER OR SEWER MAINS REQUIRES A PERMIT FROM THE SOMERSWORTH PUBLIC WORKS DEPARTMENT. CONTRACTORS ARE TO BE PRE-QUALIFIED.
- 11. CONTRACTOR SHALL LOCATE EXISTING SERVICES AND COORDINATE WITH THE CITY OF SOMERSWORTH FOR DISCONTINUATION OF THE SERVICES.

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33222201 DRAINAGE STRUCTURE **DETAILS** 

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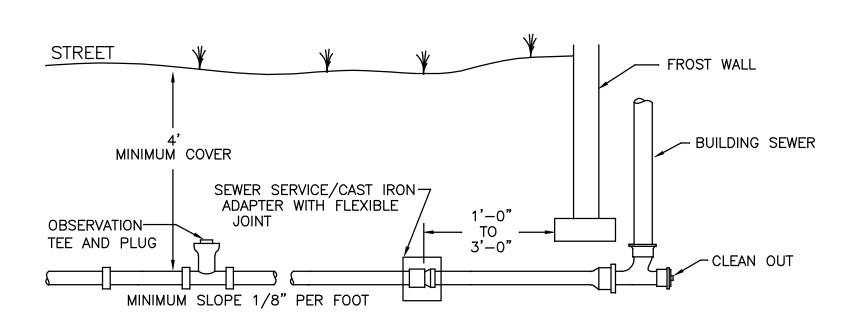
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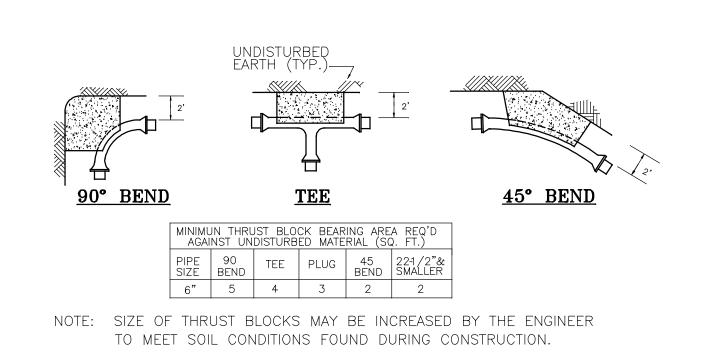
# SEWER PIPE TRENCH INSTALLATION DETAIL

3. SAND BLANKET MAY BE OMITTED FOR REINFORCED CONCRETE PIPE.

NOT TO SCALE

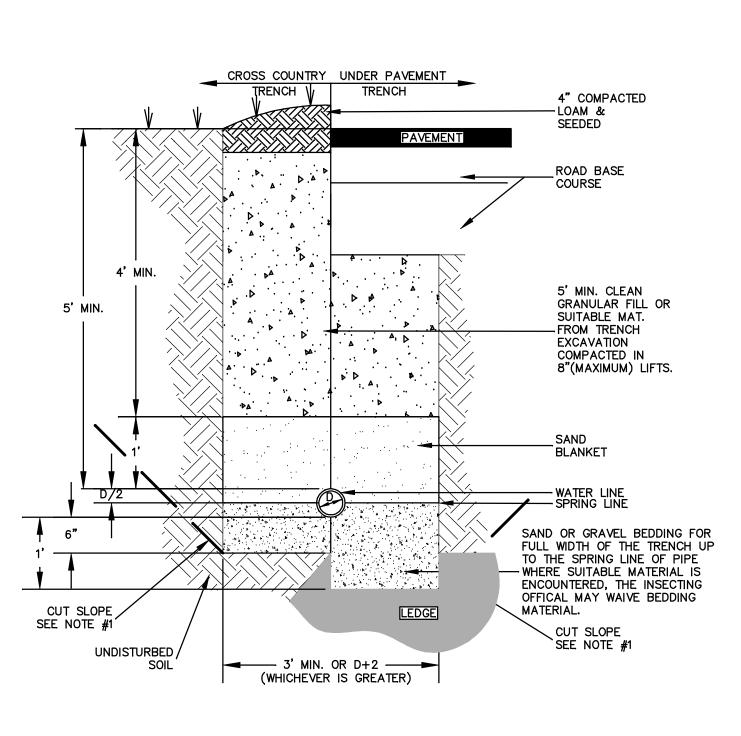


## BUILDING SEWER SERVICE DETAIL NOT TO SCALE



WATER MAIN THRUST BLOCK DETAILS

NOT TO SCALE



NOTES:

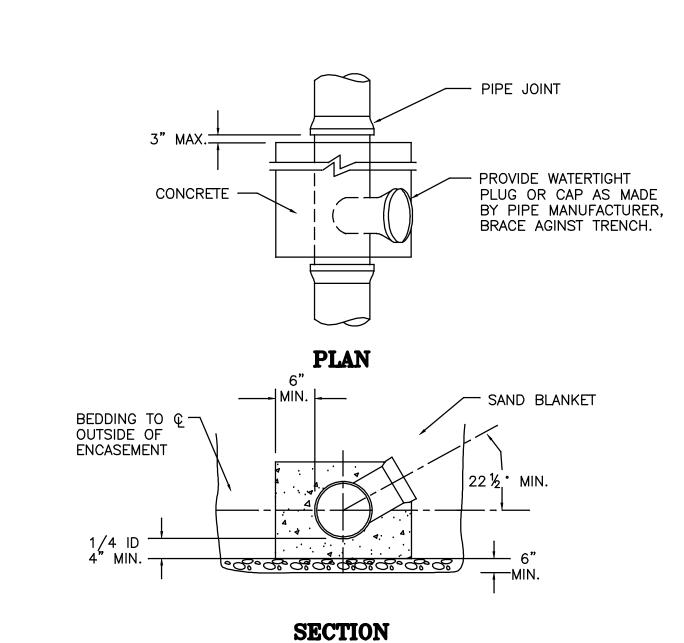
1. PIPES MAY BE INSTALLED BY EXCAVATING AN OPEN TRENCH WITH SIDE SLOPES OF 1:1

MAXIMUM TO A DEPTH OF 4-FT. INTALLATIONS DEEPER THAN 4-FT REQUIRE THE USE OF A TRENCH BOX.

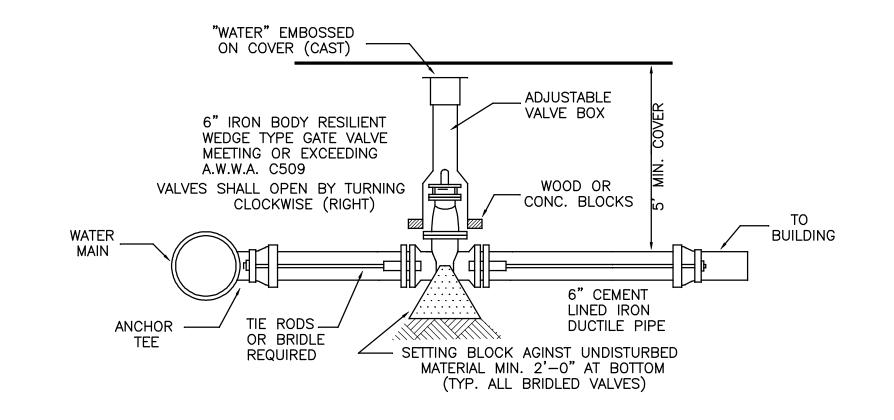
2. PIPE MATERIALS SHALL BE AS SPECIFIED ON THE DESIGN PLAN.

3. SAND BLANKET MAY BE OMITTED FOR REINFORCED CONCRETE PIPE.

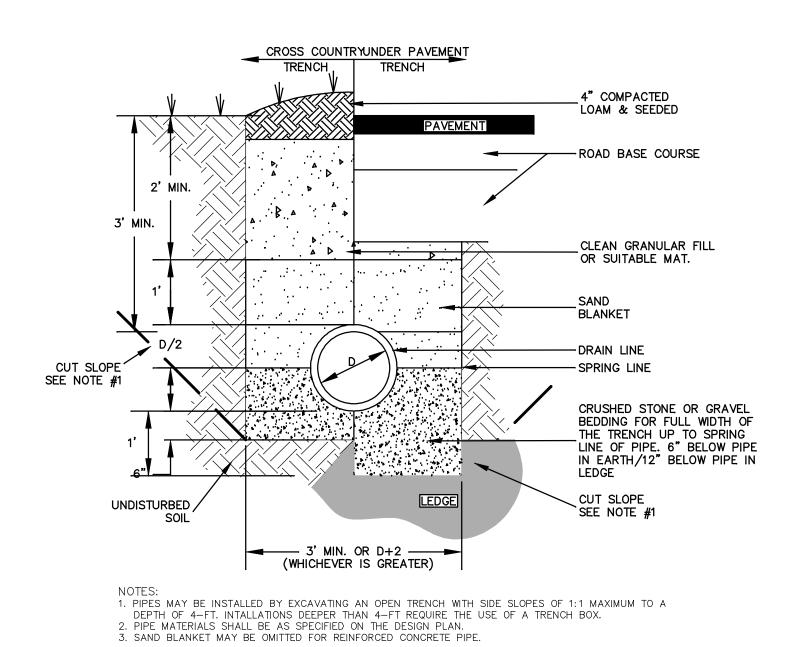
# WATER PIPE TRENCH INSTALLATION DETAIL NOT TO SCALE



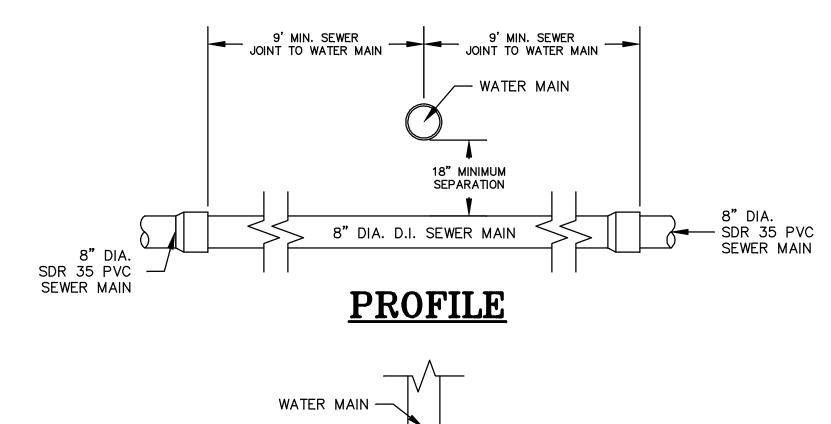
### CONCRETE FULL ENCASEMENT NOT TO SCALE

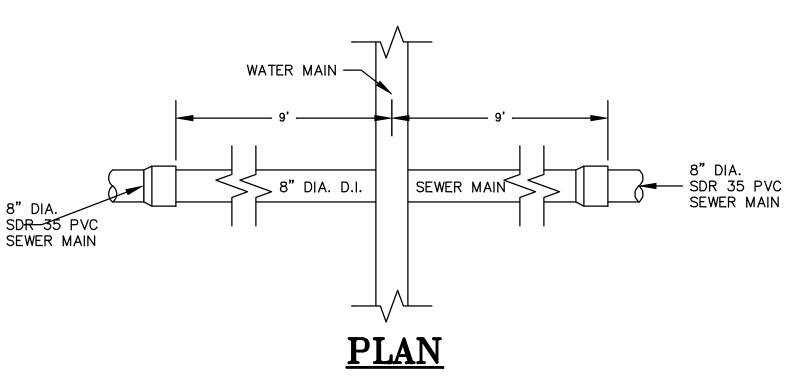


TYPICAL WATER MAIN SERVICE CONNECTION
NOT TO SCALE



DRAINAGE PIPE
TRENCH INSTALLATION DETAIL
NOT TO SCALE





SEWER MAIN CROSSING WATER MAIN NOTES:

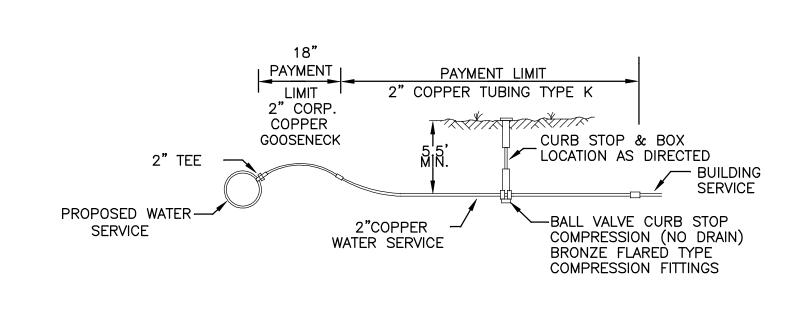
1. SEWER PIPE SHALL BE CLASS 52 DUCTILE IRON.

2. SEWER PIPE JOINTS SHALL BE LOCATED AT LEAST 9-FT HORIZONTALLY FROM THE WATER MAIN.

3. SEWER PIPE JOINTS SHALL BE PRESSURE TESTED TO 25 POUNDS PER SQUARE INCH FOR GRAVITY SEWERS, AND AT 1-1/2 TIMES WORKING PRESSURE FOR FORCE MAINS.

4. VERTICAL SEPARATION OF THE SEWER AND WATER MAIN SHALL NOT BE LESS THAN 18 INCHES.

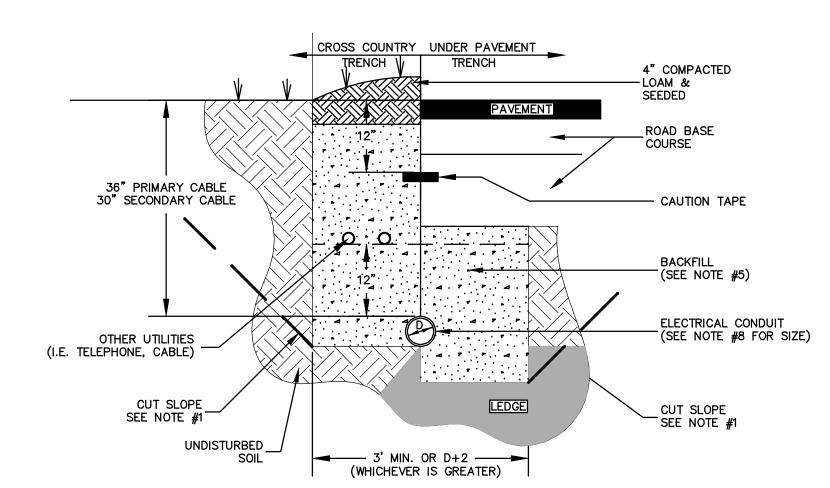
## WATER MAIN/SEWER MAIN CROSSING DETAIL NOT TO SCALE



NOTE: SERVICE LINE SHALL BE TYPE K COPPER CONFORMING TO ASTM-D88

TYPICAL SERVICE CONNECTION

NOT TO SCALE



NOTES:

1. ALL NON-METALLIC CONDUIT AND FITTINGS SHALL BE ELECTRICAL GRADE, SCHEDULE 40 PVC, AND SHALL CONFORM TO THE APPLICABLE SECTIONS OF NEMA TC2—1990 AND BE UL LISTED. ONLY GRAY—COLORED CONDUIT WILL BE ACCEPTED. ANY PVC CONDUIT NOT HAVING THE PROPER NEMA AND UL MARKINGS WILL NOT BE ACCEPTED. ALL STEEL CONDUITS SHALL CONFORM TO ASTM A120 AND BE RIGID GALVANIZED STEEL. ALL PVC JOINTS MUST BE CEMENTED. STEEL FITTINGS SHALL BE SEALED WITH COMPOUND.

2. ALL 90 DEGREE SWEEPS WILL BE MADE USING RIGID GALVANIZED STEEL WITH A MINIMUM RADIUS OF 36 INCHES FOR PRIMARY CABLES AND 24 INCHES FOR SECONDARY CABLES. ALL STEEL SWEEPS WITHIN 18" OF THE SURFACE SHALL BE PROPERLY GROUNDED.

3. A 10-FOOT HORIZONTAL SECTION OF RIGID GALVANIZED STEEL CONDUIT WILL BE REQUIRED AT EACH SWEEP, UNLESS IN THE OPINION OF THE PSNH DESIGNER, THE SWEEP—PVC JOINT IS NOT SUBJECT TO FAILURE DURING CABLE PULLING.

4. THE CONDUIT SHALL CROSS PAVED AREAS AT APPROXIMATELY 90 DEGREES.

5. BACKFILL MAY BE MADE WITH EXCAVATED MATERIAL OR COMPARABLE, UNLESS MATERIAL IS DEEMED UNSUITABLE BY PSNH. BACKFILL SHALL BE FREE OF FROZEN LUMPS, ROCKS, DEBRIS, AND RUBBISH. ORGANIC MATERIAL SHALL NOT BE USED AS BACKFILL. BACKFILL SHALL BE THOROUGHLY COMPACTED IN 6—INCH LAYERS.

6. A SUITABLE PULL STRING, CAPABLE OF 200 POUNDS OF PULL, MUST BE INSTALLED IN THE CONDUIT BEFORE PSNH IS NOTIFIED TO INSTALL CABLE. THE STRING SHOULD BE BLOWN INTO THE CONDUIT AFTER THE RUN IS ASSEMBLED TO AVOID BONDING

TO INSTALL CABLE. THE STRING SHOULD BE BLOWN INTO THE CONDUIT AFTER THE RUN IS ASSEMBLED TO AVOID BONDING THE STRING TO THE CONDUIT.

7. ROUTING OF THE CONDUIT AND INSPECTION PRIOR TO BACKFILL WILL BE PROVIDED BY PSNH. INSTALLATION OF THE CONDUIT WILL BE DONE BY THE CONTRACTOR. THE PSNH SUPERVISOR MUST BE NOTIFIED 2 BUSINESS DAYS PRIOR TO BACKFILLING THE TRENCH. IN THE EVENT THAT A CABLE CANNOT BE SUCCESSFULLY PULLED THROUGH THE COMPLETED CONDUIT SYSTEM DUE TO A CONSTRUCTION ERROR, IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND REPAIR THE INVOLVED CONDUIT. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL RESULTING EXPENSES.

8. NORMAL CONDUIT SIZES FOR PSNH ARE 3—INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4—INCH FOR THREE PHASE SECONDARY, AND 5—INCH FOR THREE PHASE PRIMARY.

9. ALL CONDUIT INSTALLATIONS MUST CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRIC SAFETY CODE, STATE AND LOCAL CODES AND ORDINANCES, AND WHERE APPLICABLE THE NATIONAL ELECTRIC CODE.

10. CONDUIT MAY BE INSTALLED BY EXCAVATING AN OPEN TRENCH WITH SIDE SLOPES OF 1:1 MAXIMUM TO A DEPTH OF 4—FT.

ELECTRICAL &
UNDERGROUND UTILITY
TRENCH INSTALLATION
DETAIL
NOT TO SCALE

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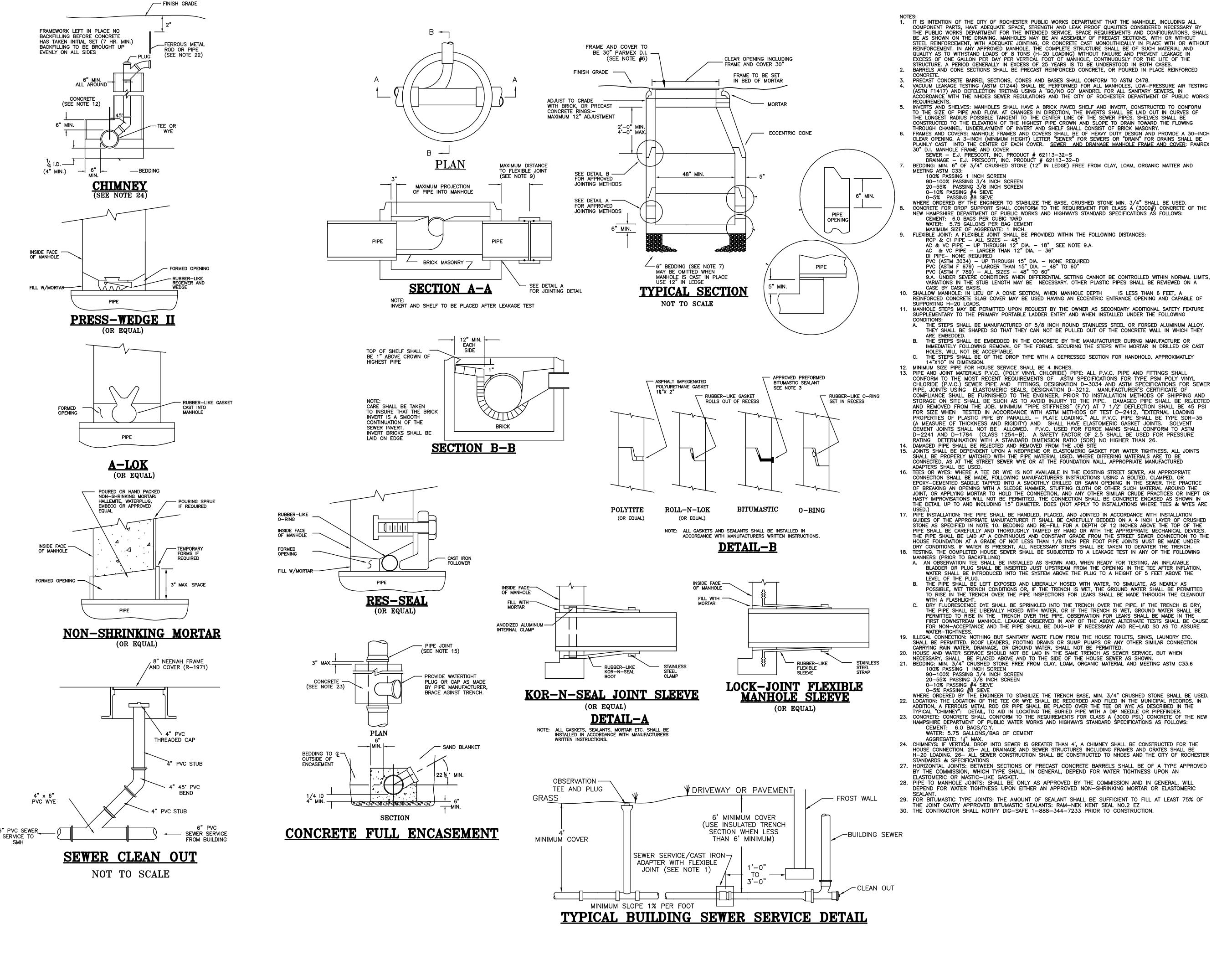
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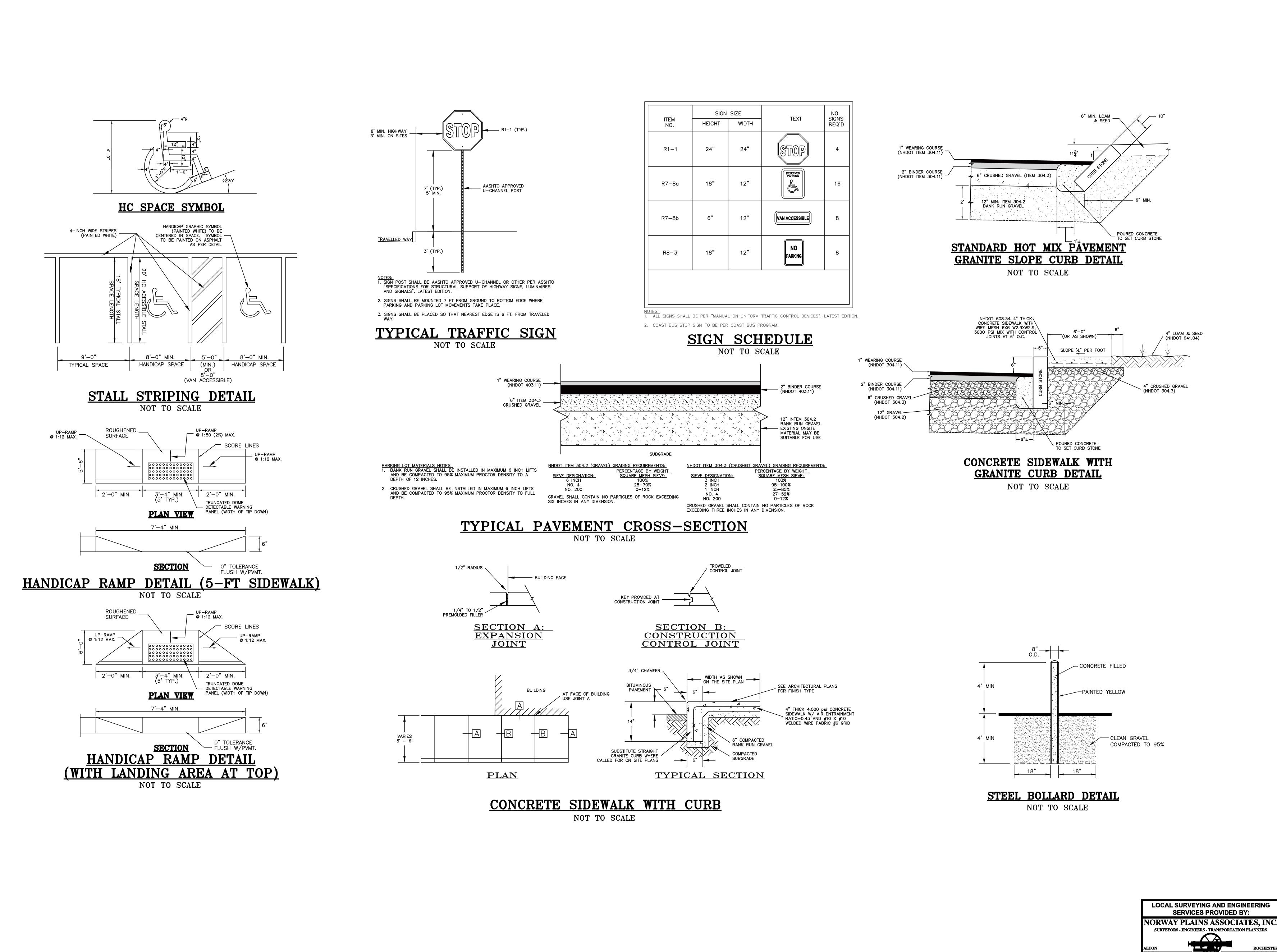
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