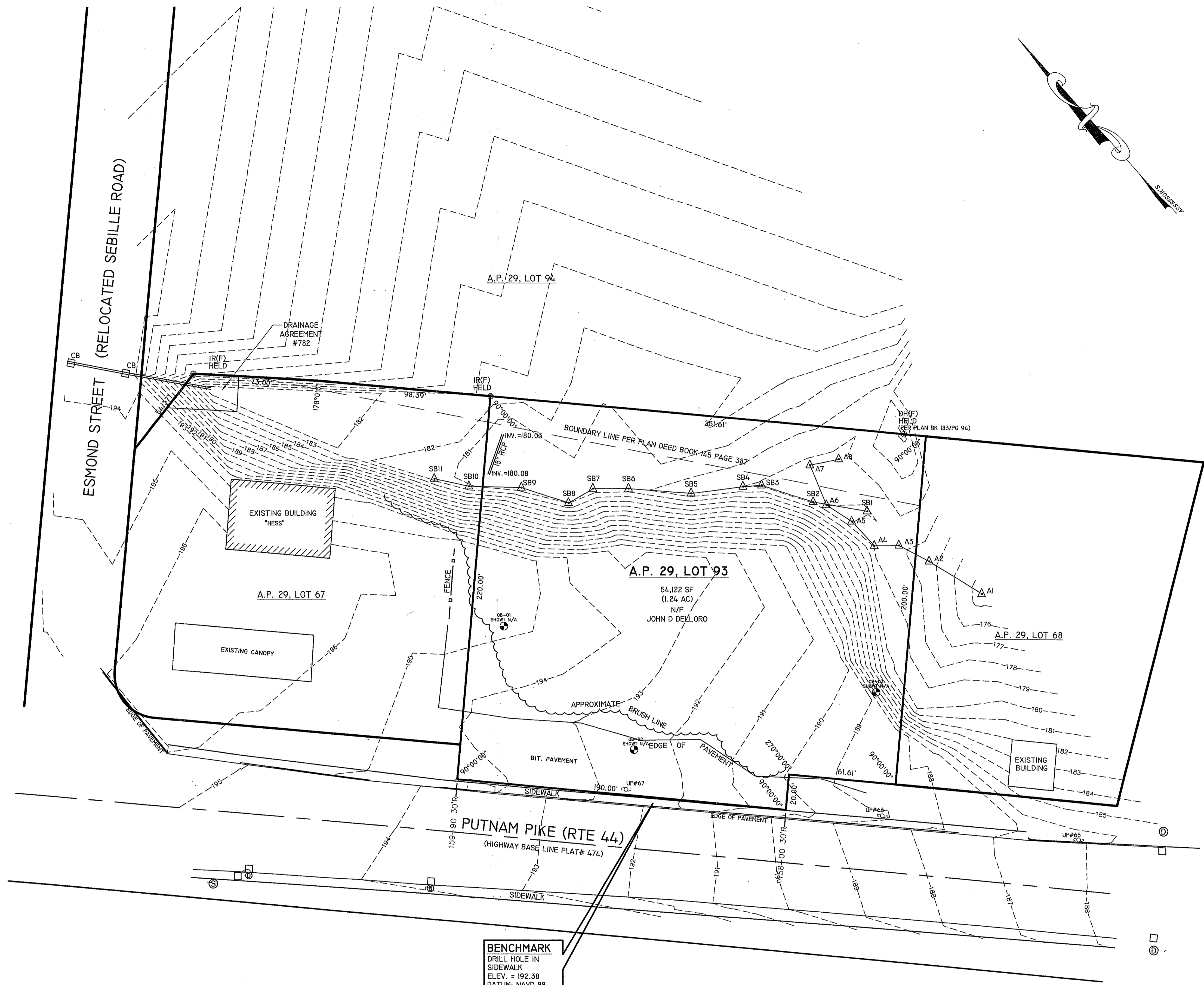


Locus Map  
N.T.S.



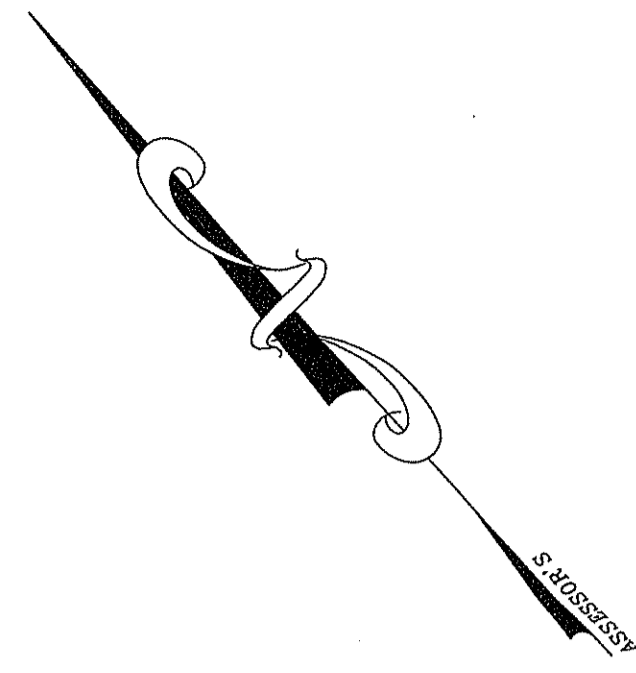
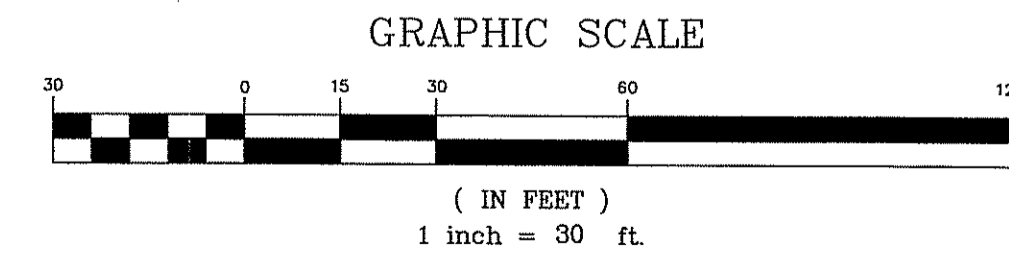
LEGEND	
FOUND GRANITE BOUND	□
EXISTING FENCE	—○—
SQUARE FEET	S.F.
STONE WALL	—○—○—○—
FOUND DRILL HOLE	●
FOUND IRON ROD	○
PROP. LINE TO BE ELIMIN.	- - - - -
EXISTING PROPERTY LINE	— — — — —
WETLAND EDGE	— — — — —
UTILITY POLE	⊕
PROPOSED GRANITE BOUND	■
WETLAND FLAG	△
TEST PIT	⊙
SEWER MANHOLE	⊕
DRAIN MANHOLE	⊕

NOTE:  
PROPERTY LINE, SITE FEATURES AND TOPOGRAPHICAL INFORMATION TAKEN FROM CLASS ONE SURVEY PLAN TITLED "PLAN OF LAND A.P. 29 LOT 93, 259 PUTNAM PIKE, SMITHFIELD, RI. DATED JANUARY, 2008, SCALE: 1"=30 FT" PREPARED BY " SUGRUE & ASSOC., INC. CIVIL ENGINEERS & LAND SURVEYORS, 72 HARTFORD PIKE, NORTH SCITUATE, RI 02857

BENCHMARK  
DRILL HOLE IN  
SIDEWALK  
ELEV. = 192.38  
DATUM: NAVD 88

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED APR 26 2010 FILE # 09-0117  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE.

*Matthew D. Wenzel*



NO.	REVISION DESCRIPTION	DRN BY:	CHK BY:	DATE
1	S&E COMMENTS DATED 5-27-09	DFJ	BPT	6-22-09

PREPARED FOR:  
**Minot Ledge Development, LLC**  
40 BYRON RANDALL ROAD  
NORTH SCITUATE, RI 02857

PROJECT INFORMATION:  
**MINOT LEDGE**  
COMMERCIAL DEVELOPMENT  
259 PUTNAM PIKE  
SMITHFIELD, RI Lot 93

PROFESSIONAL APPROVAL:  
**BRIAN P. THALMANN**  
REGISTERED PROFESSIONAL ENGINEER  
(CIVIL)

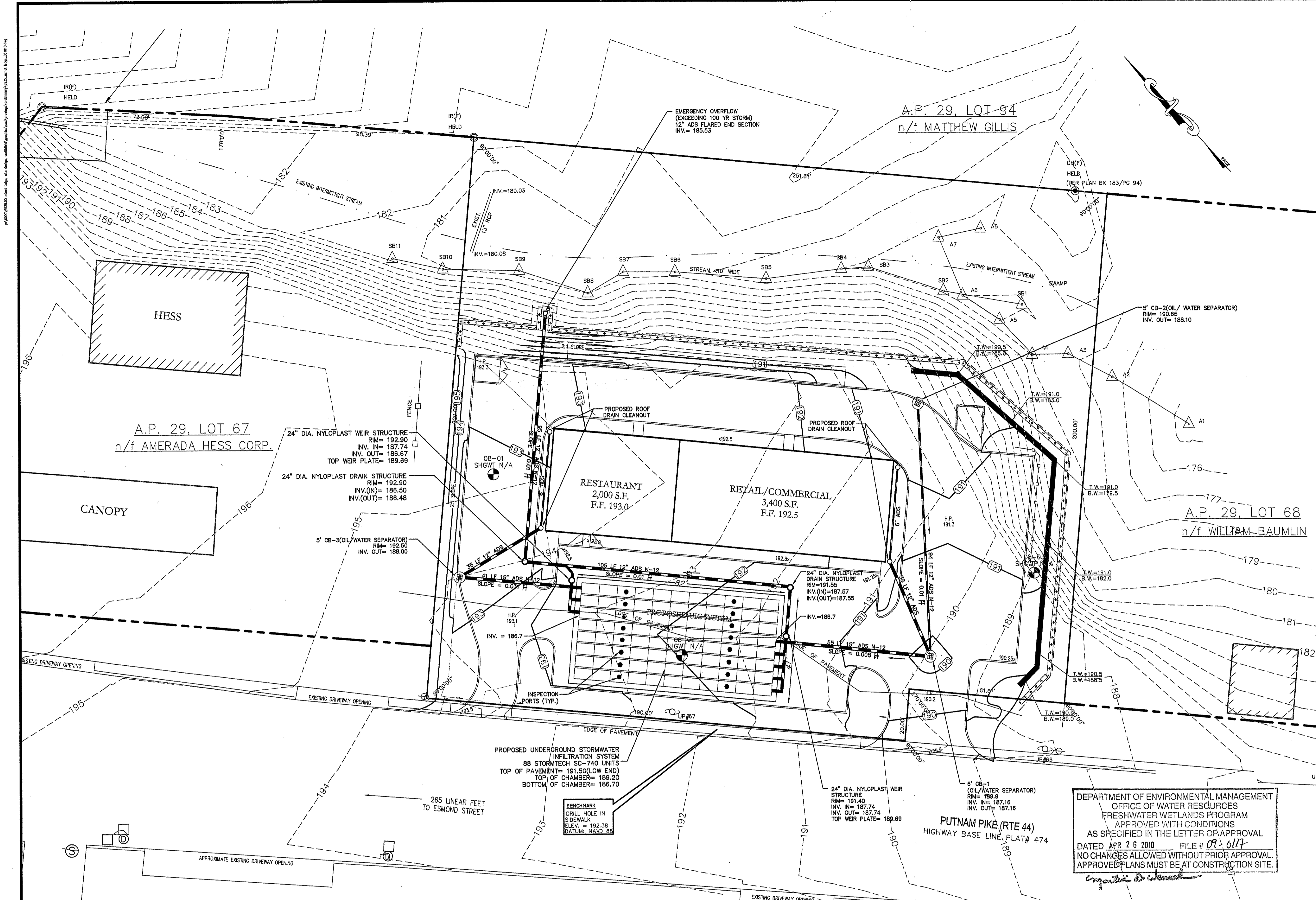
DRAWN BY: DFJ  
DESIGNED BY: BPT  
CHECKED BY: BPT  
APPROVED BY: BPT  
PROJECT MANAGER: BPT  
SCALE: AS SHOWN

PREPARED BY: **Resource Controls**  
Freshwater Environmental & Engineering Solutions  
474 Broadway, Pawtucket, RI 02860 • (401) 728-6600  
318 North Main Road • Suite 200 • Woonsocket, R.I. 02891 • (401) 986-5574  
www.resourcecontrols.com

DATE: January 2009  
PROJECT NUMBER: A6935  
SHEET NUMBER: SHEET 2 OF 8  
DRAWING NUMBER: FIGURE 2

DRAWING TITLE: **EXISTING CONDITIONS PLAN**





**SITE GRADING AND DRAINAGE NOTES**

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE CONTRACTOR SHALL NOTIFY "DIG-SAFE" PRIOR TO EXCAVATION AND SHALL NOTIFY LOCAL UTILITY COMPANIES AT LEAST 72 HOURS BEFORE COMMENCEMENT OF WORK TO REQUEST EXACT LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES AND RELOCATE UTILITIES AS REQUIRED SHOULD THERE BE A CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. THE CONTRACTOR SHALL BE REQUIRED TO OBTAIN A SOIL EROSION PERMIT PRIOR TO THE INITIATION OF CONSTRUCTION WORK AND SHALL INSTALL ALL SOIL EROSION PROTECTION DEVICES PER PLAN PRIOR TO ANY EARTH MOVING ACTIVITIES AND/OR REMOVAL OF VEGETATION.
3. PRECAST STRUCTURES MAY BE USED AT CONTRACTOR'S OPTION. SHOP DRAWINGS OF PRECAST STRUCTURES SHALL BE REVIEWED BY THE ENGINEER AND APPROVED BEFORE USE.
4. ALL CATCH BASINS ARE TO BE 4 FT. DIAMETER WITH 4 FT. SUMP, UNLESS OTHERWISE SPECIFIED AS OIL/WATER SEPARATORS (SEE DETAIL).
5. DRAINAGE PIPE SHALL ADS N-12.
6. ALL ROOF DRAINS TO BE ROUTED AS SHOWN ON PLAN. DOWN SPOUT LOCATIONS SHALL BE COORDINATED WITH THE ARCHITECTURALS.
7. EXISTING AND PROPOSED CONTOURS ARE SHOWN AT 1 FOOT INTERVALS.
8. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
9. ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT.
10. ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT AND SHALL HAVE TRAFFIC BEARING RING & COVERS. MANHOLES IN UNPAVED AREAS SHALL BE 6" ABOVE FINISH GRADE. LIDS SHALL BE LABELED "STORM SEWER".
11. CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
12. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
13. ALL UNSURFACED AREAS DISTURBED BY GRADING OPERATION SHALL RECEIVE 4 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. THE CONTRACTOR SHALL GRASS DISTURBED AREAS IN ACCORDANCE WITH TOWN SPECIFICATIONS UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
14. CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.
15. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR IS REQUIRED TO DEVELOP AND IMPLEMENT A PLAN FOR THE TEMPORARY CONTROL OF VEHICULAR AND PEDESTRIAN TRAFFIC FOR WORK WITHIN PUBLIC STREET RIGHT-OF-WAY AT THE SITE EGRESS. THE CONTRACTOR SHALL OBTAIN APPROVAL OF SAID PLAN FROM APPROPRIATE STATE AND COMMUNITY PUBLIC SAFETY OFFICIALS.
16. WHEN IT IS NECESSARY TO CLOSE OFF A STREET, THE FIRE DEPARTMENT AND POLICE DEPARTMENT SHALL BE NOTIFIED BY THE CONTRACTOR.
17. DRIVEWAY ACCESS SHALL BE MAINTAINED AT ALL TIMES.

**GENERAL CONSTRUCTION NOTES**

1. AN APPROVED SET OF PLANS AND ALL APPLICABLE PERMITS MUST BE AVAILABLE AT THE CONSTRUCTION SITE. DEVIATIONS OR CHANGES WILL NOT BE ALLOWED UNLESS APPROVED BY THE ENGINEER.
2. THE CONTRACTOR SHALL VERIFY THE PROPOSED LAYOUT WITH ITS RELATIONSHIP TO THE EXISTING SITE SURVEY. THE CONTRACTOR SHALL ALSO VERIFY ALL DIMENSIONS, SITE CONDITIONS, AND MATERIAL SPECIFICATIONS AND SHALL NOTIFY THE OWNER AND ENGINEER OF ANY ERRORS, OMISSIONS OR DISCREPANCIES BEFORE COMMENCING OR PROCEEDING WITH WORK.
3. BUILDING DIMENSIONS INDICATED ARE PRELIMINARY AND BASED ON GENERAL TENANT INFORMATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE TO INCLUDE ADDITIONAL CANOPIES, OVERHANGS, VESTIBULES, DRIVE-THRU, DUMPSTERS, ETC. AS ALLOWED WITHIN THE BYLAWS OF THE TOWN OF SMITHFIELD AND AS MAY BE WARRANTED TO MEET TENANT REQUIREMENTS. ANY REVISIONS TO THE PLANS ARE REQUIRED TO BE SUBMITTED TO THE RESPECTIVE TOWN DEPARTMENTS PRIOR TO CONTINUATION OF WORK.
4. METHODS AND MATERIALS USED IN THE CONSTRUCTION OF IMPROVEMENTS FOR THIS PROJECT SHALL CONFORM TO THE CURRENT CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE TOWN OF SMITHFIELD AND THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION.
5. THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS AND LOCATE ALL EXISTING UTILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO VERIFY ALL DIMENSIONS, SITE CONDITIONS, AND MATERIAL SPECIFICATIONS AND SHALL NOTIFY THE OWNER AND ENGINEER OF ANY ERRORS, OMISSIONS OR DISCREPANCIES BEFORE COMMENCING OR PROCEEDING WITH WORK.
6. CONTRACTORS SHALL NOTIFY OPERATORS WHO MAINTAIN UNDERGROUND UTILITY LINES IN THE AREA OF PROPOSED EXCAVATION OR BLASTING AT LEAST TWO WORKING DAYS, BUT NOT MORE THAN TEN WORKING DAYS, PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION. WATER, GAS, SEWER, AND OTHER UTILITIES SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING, WITH MATCHING MATERIALS, ANY PAVEMENT, DRIVEWAYS, WALKS, WALLS, CURBS, ETC. THAT MUST BE CUT OR THAT ARE DAMAGED DURING CONSTRUCTION.
8. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL AND ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM "THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER."
9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES AND TO TAKE WHATEVER STEPS NECESSARY TO PROVIDE FOR THEIR PROTECTION. THE ENGINEER HAS DILIGENTLY ATTEMPTED TO LOCATE AND INDICATE ALL EXISTING FACILITIES ON THESE PLANS; HOWEVER, THIS INFORMATION SHOWN FOR THE CONTRACTOR'S CONVENIENCE ONLY. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS OF UTILITIES SHOWN OR NOT SHOWN. THE CONTRACTOR SHALL CONTACT THE UTILITY COMPANIES FOR EXACT LOCATION OF THEIR UTILITIES PRIOR TO STARTING CONSTRUCTION. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AND REPLACE ANY AND ALL DAMAGE MADE TO THE UTILITIES BY THE CONTRACTOR.

**SEDIMENT CONTROL NOTES**

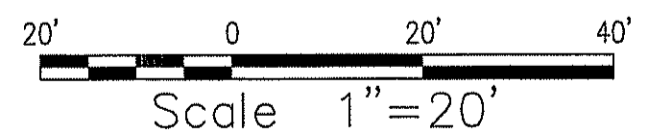
1. DISTURBED AREAS WHICH ARE PARTICULARLY SENSITIVE TO EROSION SHALL RECEIVE A CRUSHED STONE OR SHARP ANGULAR RIP-RAP TREATMENT IF OTHER METHODS OF STABILIZATION ARE UNSUCCESSFUL.
2. BANKS OR SLOPES NOT RECEIVING RIP RAP SHALL BE SEEDED AND PROTECTED WITH FIBER MULCH.
3. DURING CONSTRUCTION, THE CONTRACTOR AND OR THE DEVELOPER SHALL BE RESPONSIBLE FOR UTILIZING BEST MANAGEMENT PRACTICES TO CONTROL ENVIRONMENTAL DAMAGE THAT COULD RESULT FROM UNCHECKED STORMWATER RUNOFF.
4. SEDIMENTATION CONTROL DEVICES SHALL BE INSPECTED PERIODICALLY AND MAINTAINED REGULARLY. SPECIAL ATTENTION SHOULD BE GIVEN AFTER A HEAVY OR PROLONGED RAINFALL.
5. CARE SHALL BE SO AS NOT TO PLACE "REMOVED SEDIMENTS" WITHIN THE PATH OF EXISTING, NEWLY CREATED (BOTH TEMPORARY AND PERMANENT) OR PROPOSED WATERCOURSES OR THOSE AREAS SUBJECT TO STORM WATER FLOWAGE.
6. ADDITIONAL HAY BALS, SILT FENCE OR SANDBAGS SHALL BE LOCATED AS CONDITIONS WARRANT OR AS DIRECTED BY THE ENGINEER.
7. SEDIMENTATION TRAPS SHALL BE PROVIDED AND MAINTAINED AT ALL DRAINAGE STRUCTURES DURING CONSTRUCTION. SPECIAL CARE SHALL BE TAKEN TO INCLUDE EROSION PROTECTION ON UIC CATCH BASINS.
8. REFERENCE THE "RHODE ISLAND EROSION AND SEDIMENT CONTROL HANDBOOK" (1989) PREPARED BY THE RI DEPT. OF ENVIRONMENTAL MANAGEMENT, (RI STATE CONSERVATION COMMISSION AND THE U.S. DEPT. OF AGRICULTURE, SOIL CONSERVATION SERVICE AS A PRACTICAL GUIDE.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED APR 26 2010 FILE # 02-617  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE.

PLAN LEGEND			
DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
CONTOUR	--- 200 ---	EXISTING DRAINAGE	— D —
CATCH BASIN	⊙	EXISTING ELECTRIC	— E —
DRAIN MANHOLE	⊙	EXISTING GATE VALVE	— G —
DRAIN PIPE	—	EXISTING HYDRANT	— H —
SILT FENCE/LIMIT OF CLEARING	— S —	EXISTING WATER SHUTOFF	— W —
PROPERTY LINE	— P —	EXISTING DRAINAGE MANHOLE	⊙
ABUTTER PROPERTY LINE	— A —	EXISTING SEWER MANHOLE	⊙
BUILDING SETBACK	— B —	EXISTING UTILITY POLE	— U —
EXISTING BOUND	—	EXISTING CONTOUR	--- 330 ---
IRON PIN	⊙	TEST PIT	⊙
DRILL HOLE	⊙	EXISTING WELL	⊙
EXISTING WATER	— W —	10' FLOOD ELEVATION	— F —
EXISTING SEWER	— S —	HAY BALE	— H —
EXISTING GAS	— G —	PROPOSED GUARDRAIL	— G —
SPOT GRADE	190x0		
PROPOSED CLEAN OUT	⊙		

**APPROXIMATE EARTHWORK QUANTITIES**

SITE EXCAVATION (CUT)	= 880 CY
UIC SYSTEM EXCAVATION	= 440 CY
SITE FILLING (FILL)	= 850 CY
NET MATERIAL REMOVED	= 450 CY



DATE:	6-22-09
CHK BY:	BPT
DRN BY:	DPJ
NO.:	1
REVISION DESCRIPTION:	S&E COMMENTS DATED 9-27-09
NO.:	2
REVISION DESCRIPTION:	RIDEM COMMENTS DATED 9-03-09

PREPARED FOR: **Minot Ledge Development, LLC**  
40 BYRON RANDALL ROAD  
NORTH SCITUATE, RI 02857

PROJECT INFORMATION: **MINOT LEDGE COMMERCIAL DEVELOPMENT**  
259 PUTNAM PIKE  
SMITHFIELD, RI

PREPARED BY: **BRIAN P. THALMANN**  
REGISTERED PROFESSIONAL ENGINEER (GEN'L)

DATE: **January 2009**

PROJECT NUMBER: **A6935**

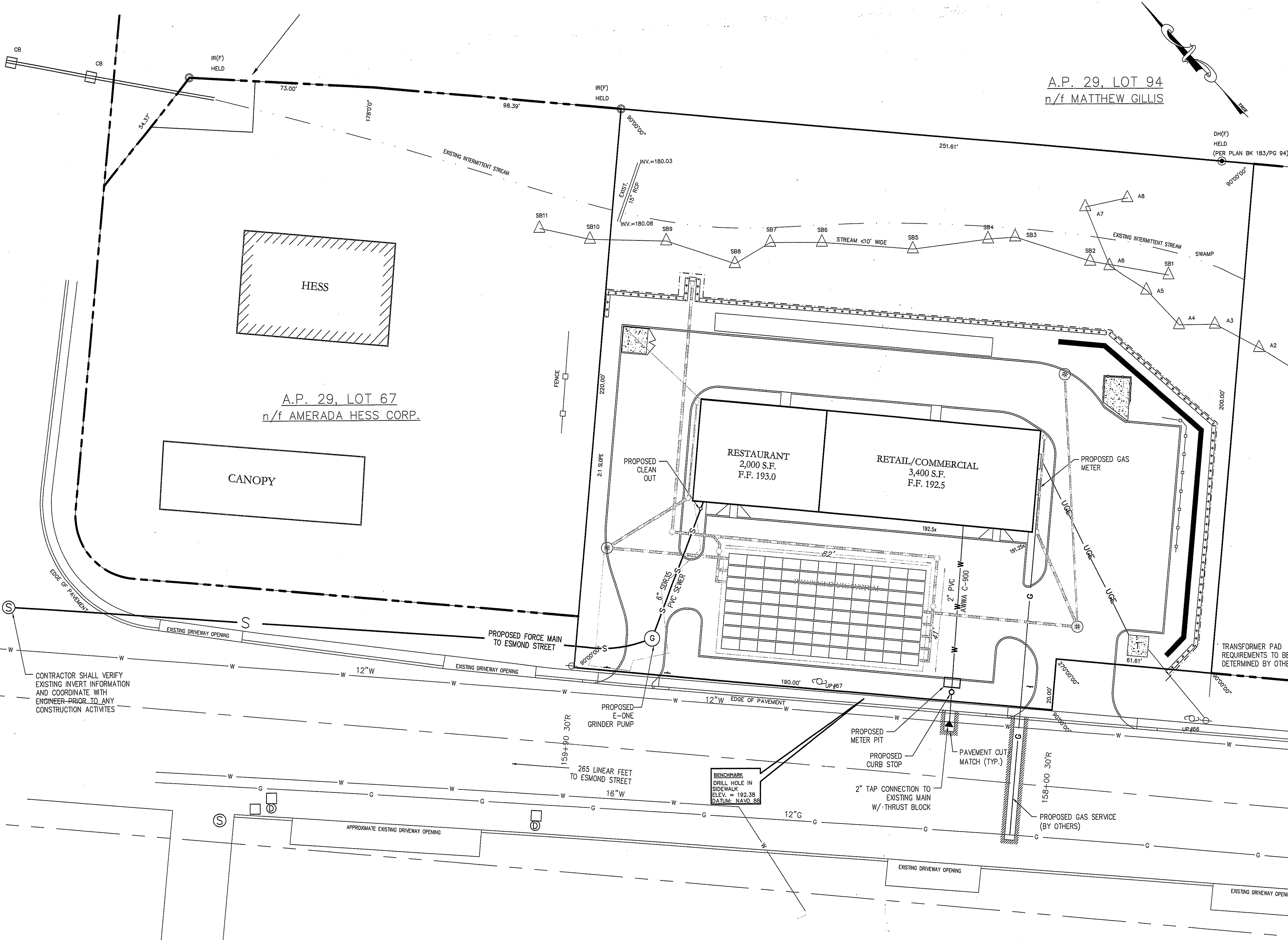
SHEET NUMBER: **SHEET 4 OF 8**

DRAWING TITLE: **GRADING & DRAINAGE**

SCALE: **AS SHOWN**

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10/10/2010 10:00 AM



A.P. 29, LOT 94  
n/f MATTHEW GILLIS

A.P. 29, LOT 67  
n/f AMERADA HESS CORP.

### Sheet Legend

EXISTING	DESCRIPTION	PROPOSED
—S—	SEWER	—S—
—W—	WATER	—W—
—G—	GAS	—G—
—E—	FENCE LINE	—E—
—E—	ELECTRIC	—E—
⊕	FIRE HYDRANT	⊕
⊙	SEWER MANHOLE (SMH)	⊙
⊕	CATCH BASIN	⊕
⊕	WATER SHUT-OFF VALVE	⊕
⊕	UTILITY POLE	⊕
⊕	THRUST BLOCK	⊕

### GREENVILLE WATER NOTES

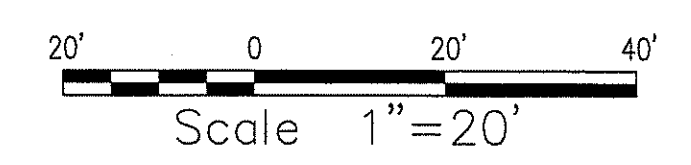
- 1) ALL INSTALLATION, JOINTS, CONSTRUCTION METHODS AND MATERIALS SHALL BE ACCORDING TO GREENVILLE WATER DISTRICT INSTALLATION OF WATER MAINS, AWWA STANDARDS AND GOVERNMENTAL REQUIREMENTS.
- 2) WATER PIPE SHALL BE AWWA C-900 PVC.
- 3) CONSTRUCTION SHALL INCLUDE ALL PIPE, JOINTS, BENDS, TEES, FITTINGS, THRUST BLOCKS, SERVICE CONNECTIONS AND ALL MISCELLANEOUS ITEMS REQUIRED TO CONSTRUCT THE PROPOSED SYSTEM.
- 4) CONCRETE THRUST, ANCHOR, OR BEARING BLOCKS SHALL BE INSTALLED IN LOCATIONS INDICATED AND AT ALL BENDS, FITTINGS, PLUGS, ETC. WHEN A THRUST BLOCK CANNOT BE PLACED AGAINST UNDISTURBED EARTH, A REACTION BLOCK SUBSTITUTE SHALL BE DESIGNED AND SUBMITTED TO THE ENGINEER FOR APPROVAL.
- 5) PRESSURE AND LEAKAGE TESTS AND DISINFECTING PIPES SHALL BE PERFORMED BY THE CONTRACTOR IN CONFORMANCE TO AMERICAN WATER WORKS ASSOCIATION (AWWA) RECOMMENDATIONS, GREENVILLE WATER DISTRICT REQUIREMENTS, AND GOVERNMENTAL AGENCIES HAVING JURISDICTION.
- 6) ALL FITTINGS, PIPE JOINTS, ETC. SHALL BE DESIGNED FOR 1.5 TIMES WORKING PRESSURE BUT NOT LESS THAN 150 PSI. PIPE SIZES SHOWN ON THE PLANS ARE SUBJECT TO CHANGE UPON REVIEW BY THE GREENVILLE WATER DISTRICT.
- 7) WATER PIPE SHALL TYPICALLY BE LOCATED AT LEAST TEN (10) FEET HORIZONTALLY FROM SEWER PIPE, AND AT A MINIMUM DEPTH OF COVER EQUAL TO 5' WHERE A NEW WATER MAIN IS LESS THAN 18 INCHES CLEAR DISTANCE ABOVE A SEWER OR WHERE A WATER MAIN PASSES BENEATH A SEWER OR STORM DRAIN, ENCASE THE SEWER OR DRAIN IN 6" OF CONCRETE FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE CROSSING.
- 8) ALL SYSTEM COMPONENTS AND CONSTRUCTION METHODS, SUCH AS PIPE, THRUST BLOCKS, FITTINGS, CASTINGS, ETC. SHALL BE SUBMITTED TO THE GREENVILLE WATER DISTRICT AND ENGINEER FOR APPROVAL PRIOR TO PURCHASE AND INSTALLATION. THIS SUBMISSION SHALL INCLUDE MANUFACTURER'S LITERATURE, SHOP DRAWINGS, PROPOSED CONSTRUCTION.
- 9) WATER LINE TRENCH TO BE AWWA TYPE 5, A METALIZED DETECTABLE IDENTIFICATION TAPE 2" IN WIDTH, BLUE IN COLOR AND PRINTED WITH "CAUTION WATERLINE BURIED BELOW" SHALL BE UTILIZED OVER ALL MAINS. TAPE SHALL BE SET AT APPROXIMATELY 1" BELOW FINISHED GRADE.
- 10) THE DEVELOPER SHALL MAKE APPLICATION FOR AND PAY ALL FEES FOR PERMITS REQUIRED TO CONSTRUCT THIS PROJECT. THE DEVELOPER SHALL NOTIFY THE DISTRICT IN WRITING A MINIMUM OF 72 HOURS PRIOR TO WATER INFRASTRUCTURE INSTALLATION.
- 11) PRIOR TO RECEIVING AUTHORIZATION TO CONSTRUCT, ALL MATERIALS SHALL BE BY THE DISTRICT SUPERINTENDANT.
- 12) ALL WATER MAIN AND LATERALS SHALL MEET TESTING AND DISINFECTING REQUIREMENTS.
- 13) CONSTRUCTION DRAWINGS MUST BE PROVIDED TO THE DISTRICT AT THE COMPLETION OF CONSTRUCTION.
- 14) A RESIDENTIAL METER PIT SHALL BE REQUIRED. CONSULT WITH DISTRICT SUPERINTENDANT FOR SPECIFIC DETAILS.

### SANITARY SEWER NOTES

- 1) ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE RULES AND REGULATIONS GOVERNING THE PUBLIC SANITARY SEWER SYSTEM IN THE TOWN OF SMITHFIELD, RHODE ISLAND, AS AMENDED.
- 2) EXISTING SANITARY SEWER FLOWS SHALL BE MAINTAINED WITHOUT INTERRUPTION DURING CONSTRUCTION. DRAIN LAYERS SHALL ONLY INSTALL BUILDING SEWERS DURING THE NORMAL WORKING HOURS OF THE TOWN OF SMITHFIELD.
- 3) ALL SEWER LATERALS ARE TO HAVE TEN (10) FEET OF HORIZONTAL CLEARANCE FROM WATER LINES, WHERE SEWER AND WATER CROSS, A MINIMUM OF EIGHTEEN (18) INCHES OF VERTICAL CLEARANCE SHALL BE MAINTAINED. IF THIS CANNOT BE MAINTAINED THEN THE WATERMAIN SHALL BE ENCASED IN CONCRETE FOR 10 FEET.
- 4) ALL NON-PRESSURE SANITARY SEWER PIPES SHALL BE POLY VINYL CHLORIDE (PVC) PIPE AND SHALL CONFORM TO ASTM D-3034, SDR 35.
- 5) ALL EXCAVATIONS FOR THE INSTALLATION OF A BUILDING SEWER SHALL BE OPEN TRENCH WORK. PIPE LAYING AND BACKFILL SHALL BE PERFORMED IN ACCORDANCE WITH ASTM SPECIFICATIONS (C12-72) EXCEPT THAT NO BACKFILL SHALL BE PLACED EACH SIDE OF CROSSING.
- 6) ALL BUILDING SEWER LINES SHALL BE OF 6-INCH DIAMETER AND BUILT WITH A MINIMUM DEPTH OF COVER OF 42 INCHES AND WIDTH OF TRENCH SHALL BE AT LEAST 24 INCHES.
- 7) ALL SEWER PIPE SHALL BE CONSTRUCTED ON A BED OF CRUSHED STONE AT LEAST 6 INCHES IN DEPTH. STONE SHALL BE INSTALLED BEFORE THE PIPE IS PLACED IN THE TRENCH AND THE PIPE SHALL BE COVERED WITH AT LEAST 6 INCHES OF CRUSHED STONE. NO BLOCKS OR STONES SHALL BE USED TO SUPPORT THE PIPE.
- 8) BUILDING SEWER JOINTS SHALL BE TIGHT AND WATERPROOF. NO CEMENT-MORTAR JOINTS WILL BE PERMITTED.
- 9) ALL JOINTS POLYVINYL CHLORIDE (PVC) PIPE OR BETWEEN SUCH PIPE SHALL BE MADE WITH APPROVED PREMOULDED GASKET JOINTS.
- 10) ALL EXCAVATIONS FOR BUILDING SEWER INSTALLATIONS SHALL BE ADEQUATELY GUARDED WITH BARRICADES AND LIGHTS SO AS TO PROTECT THE PUBLIC FROM HAZARD. STREETS, SIDEWALKS, PARKWAYS AND OTHER PUBLIC PROPERTY DISTURBED IN THE COURSE OF THE WORK SHALL BE RESTORED AT THE OWNER'S EXPENSE, IN A MANNER SATISFACTORY TO THE TOWN. BACK FILLING THE EXCAVATION OVERNIGHT MAY BE REQUIRED. WHEN IT IS NECESSARY TO CLOSE OF A STREET, THE FIRE DEPARTMENT AND POLICE DEPARTMENT SHALL BE NOTIFIED BY THE CONTRACTOR. A STREET OPENING PERMIT FROM THE TOWN OF SMITHFIELD HIGHWAY DEPARTMENT AND PERFORMANCE BOND SHALL BE POSTED WITH THE SEWER DEPARTMENT AT LEAST TWELVE (12) HOURS BEFORE OPENING THE STREET.
- 11) BEFORE ANY CONSTRUCTION COMMENCES ON THIS PROJECT, THE CONTRACTOR MUST NOTIFY THE BOARD OR DULY AUTHORIZED AGENT WITH A TIMELINE IN ADEQUATE ADVANCE TO THE BEGINNING OF ANY WORK ON SEWER OR HOUSE CONNECTIONS.
- 12) AFTER THE COMPLETION OF INSTALLING THE SEWER SYSTEM THE APPLICANT SHALL HAVE ALL COMPONENTS OF THE SYSTEM TESTED AS REQUIRED BY THE COMMISSION AND TO MEET THE COMMISSION'S SPECIFICATIONS.
- 13) CONSTRUCTION DRAWINGS MUST BE PROVIDED TO THE SEWER DEPT. AT THE COMPLETION OF CONSTRUCTION.

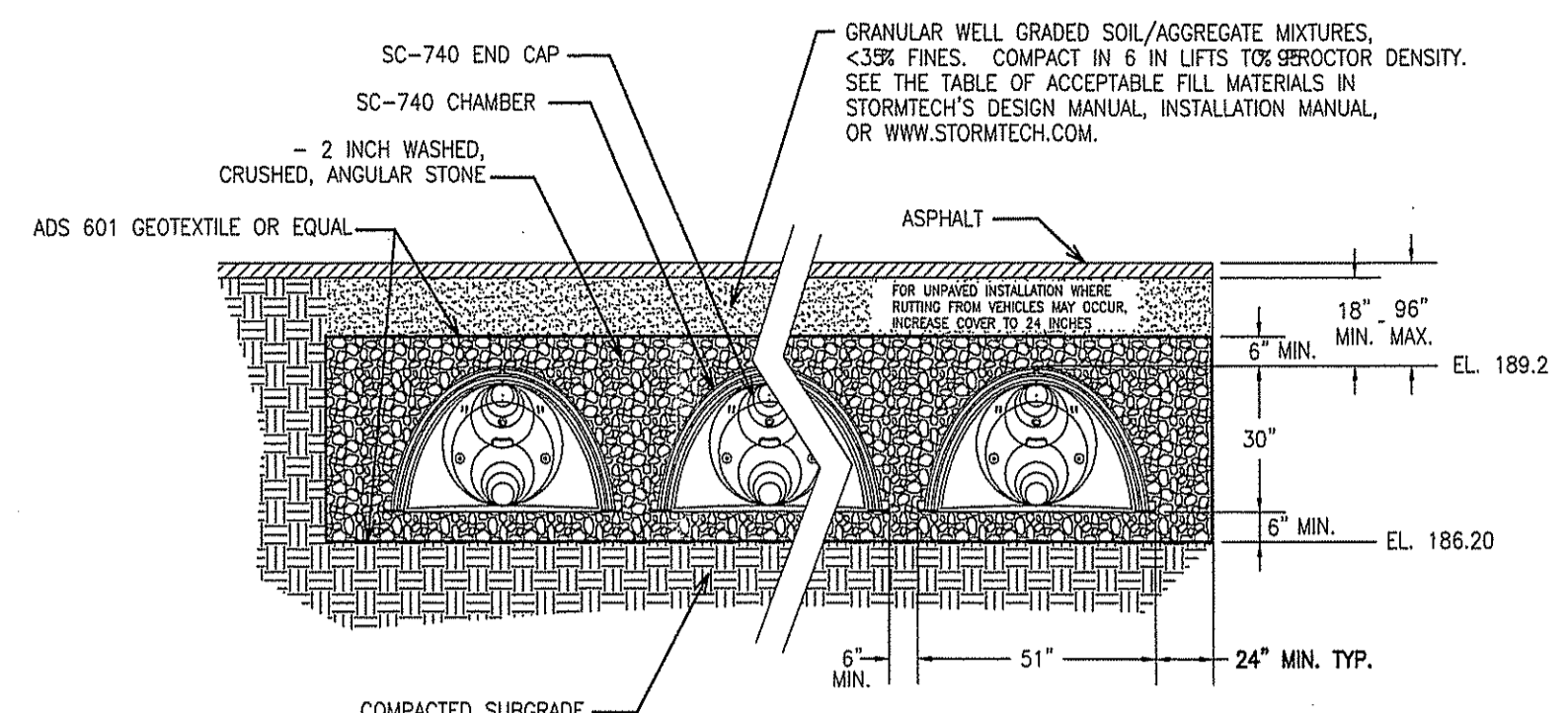
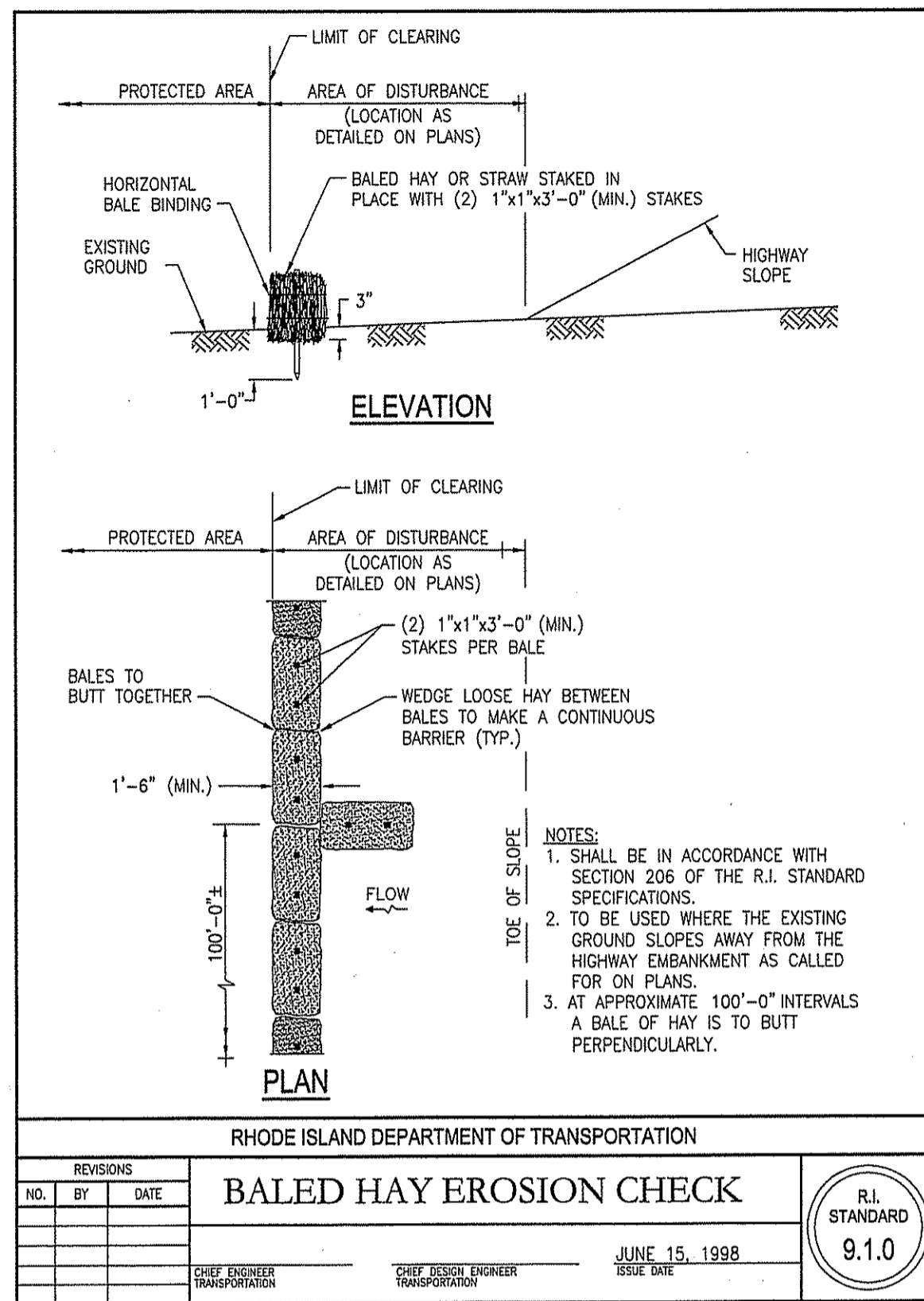
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED APR 26 2010 FILE # 09-017  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Martin D. Wenzel*



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DATE:	6-22-09
DRN BY:	BPT
CHK BY:	BPT
DPJ	BPT
RGM	BPT
NO.	REVISION DESCRIPTION
1	S&E COMMENTS DATED 5-27-09
2	RIDEM COMMENTS DATED 9-03-09
PREPARED FOR: <b>Minot Ledge Development, LLC</b> 40 BYRON RANDALL ROAD NORTH SCITUATE, RI 02857	
PROJECT INFORMATION: <b>MINOT LEDGE COMMERCIAL DEVELOPMENT</b> 259 PUTNAM PIKE SMITHFIELD, RI	
PROFESSIONAL APPROVAL: BRIAN P. TRUJILLO REGISTERED PROFESSIONAL ENGINEER (CIVIL)	
DESIGNED BY:	BPT
CHECKED BY:	BPT
APPROVED BY:	BPT
PROJECT MANAGER:	BPT
SCALE:	AS SHOWN
PREPARED BY: <b>Resource Controls</b> Prevent Environmental & Engineering Solutions 472 Broadway, Pawtucket, RI 02860 • 401-726-6900 318 Beech Hill Road • Pawtucket, RI 02861 • 401-781-9834 www.resourcecontrols.com	
DRAWING TITLE: <b>UTILITIES PLAN</b>	
DATE:	January 2009
PROJECT NUMBER:	A6935
SHEET NUMBER:	SHEET 5 OF 8
DRAWING NUMBER:	FIGURE 5

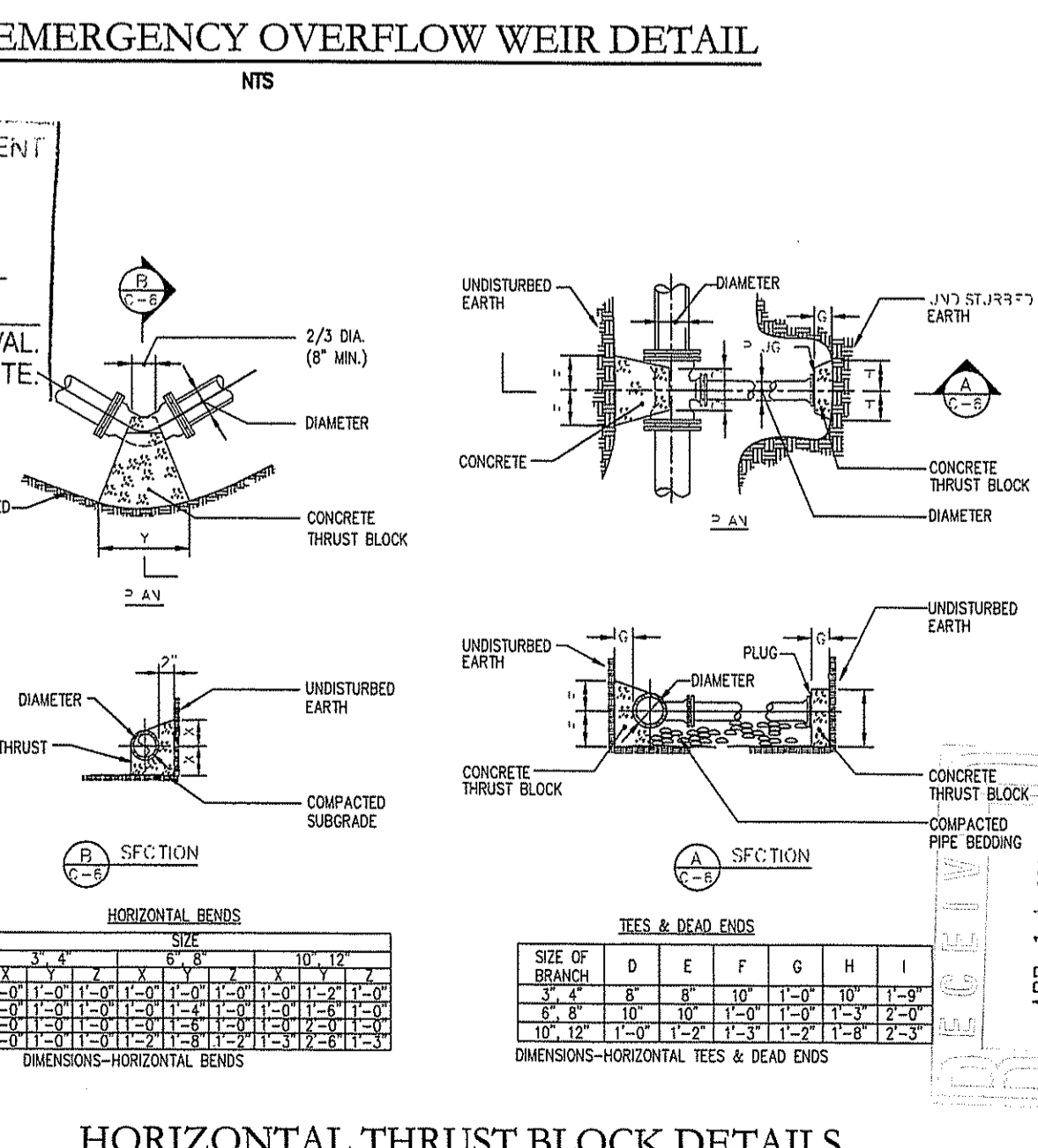
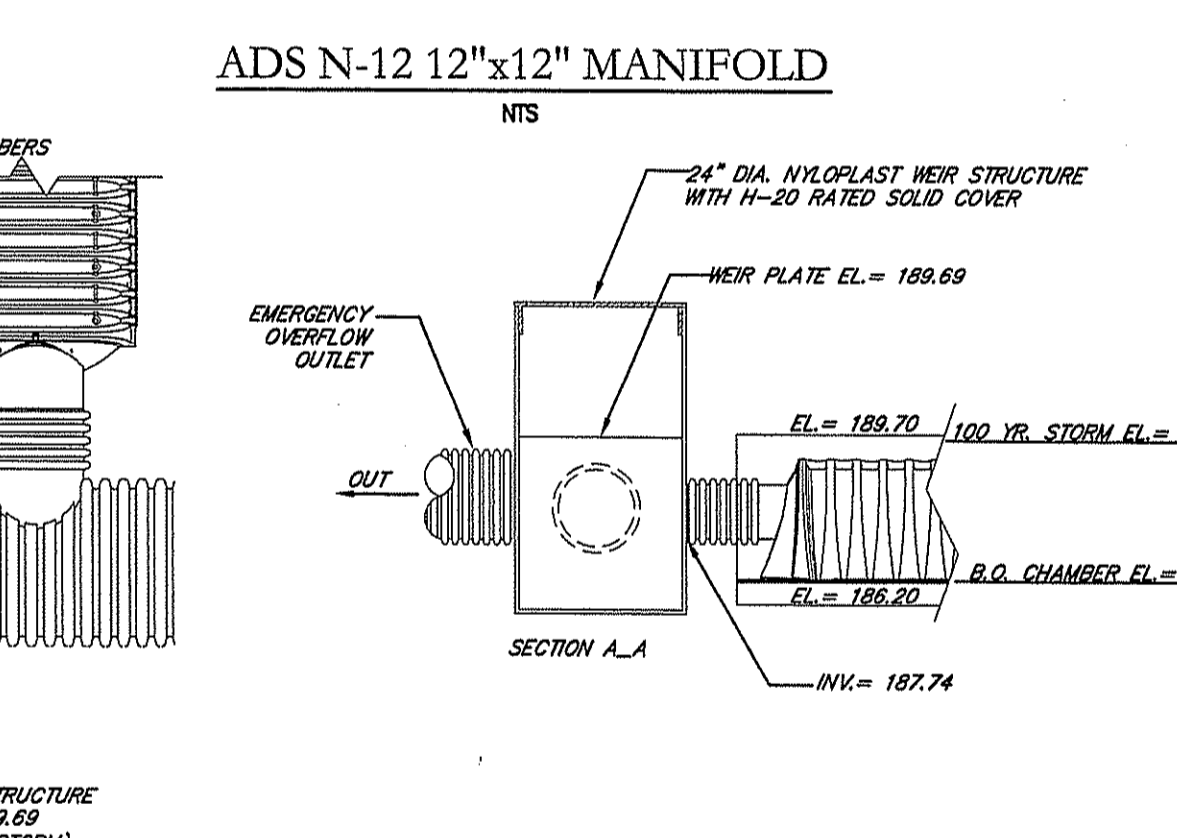
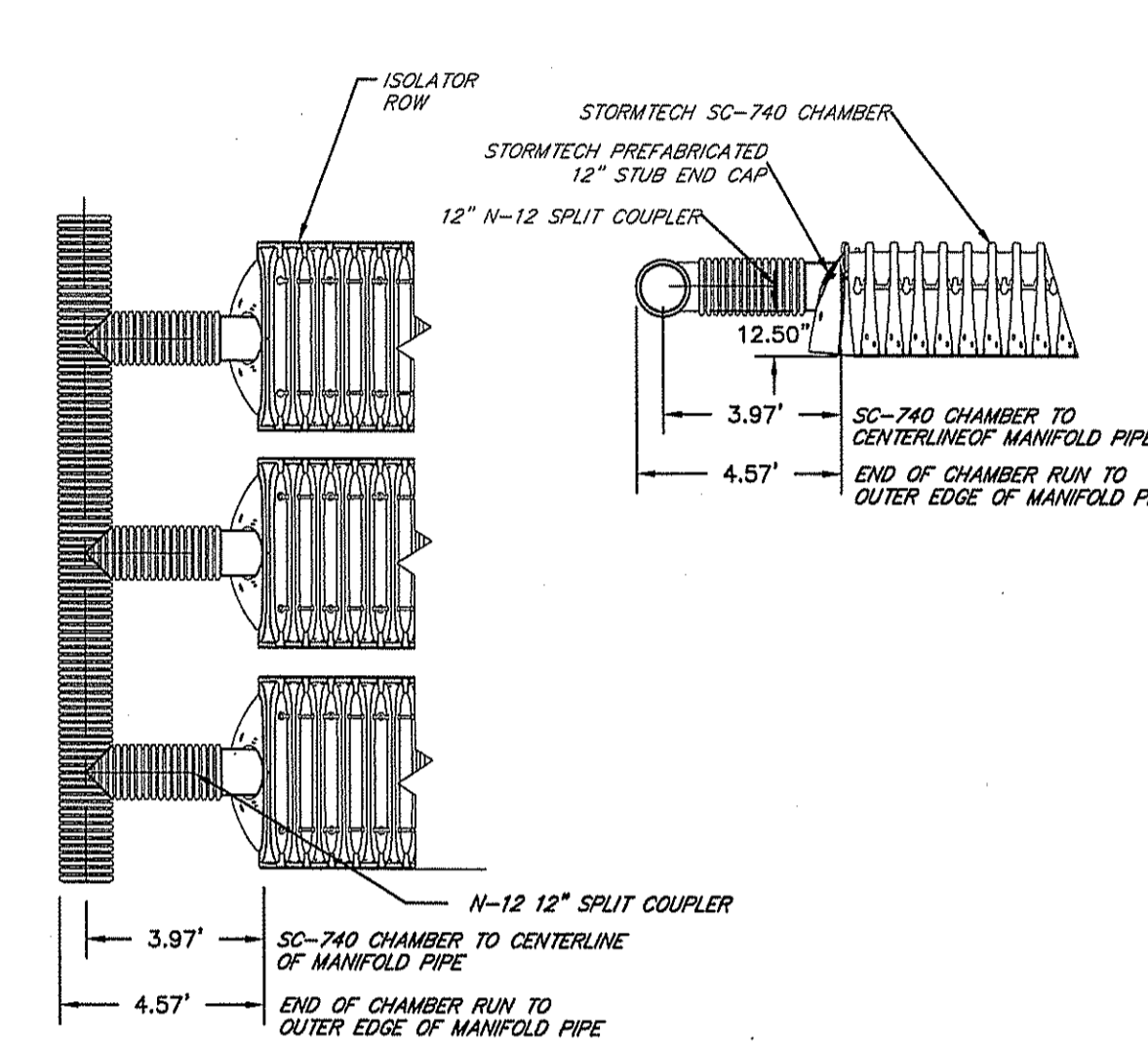
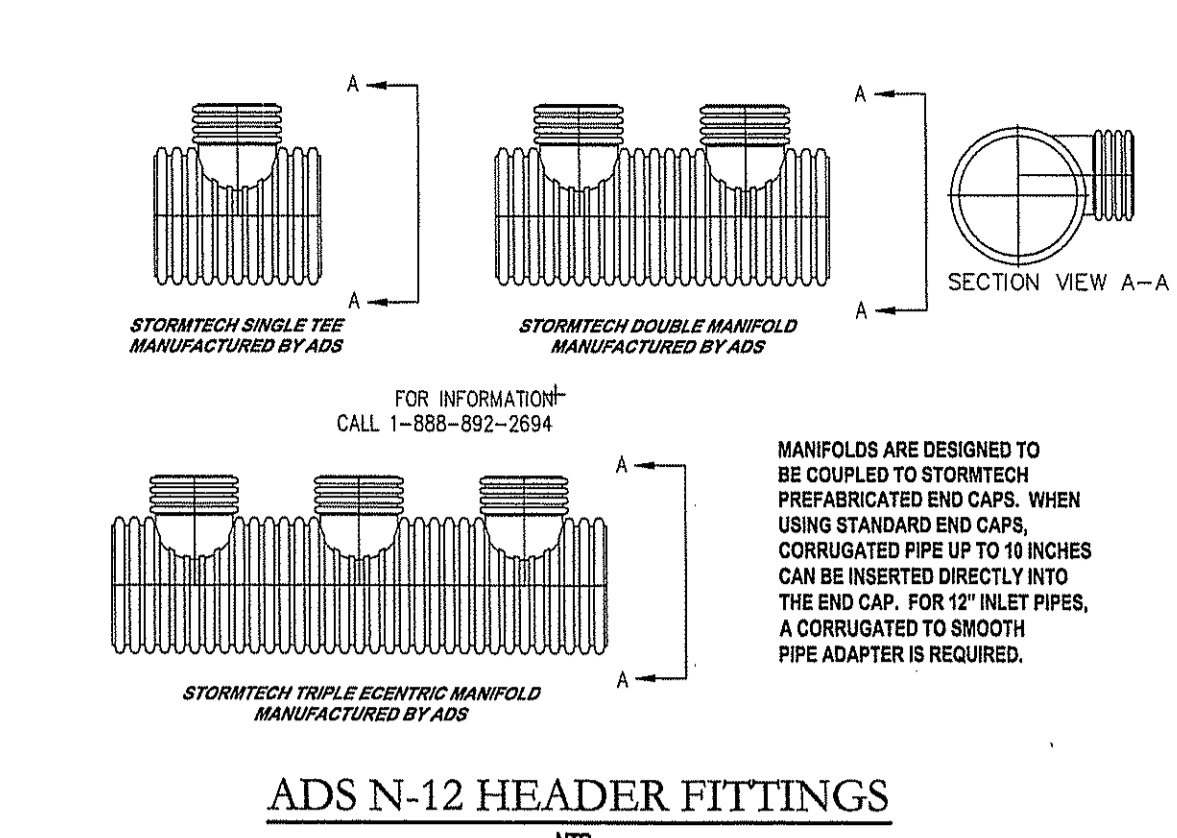
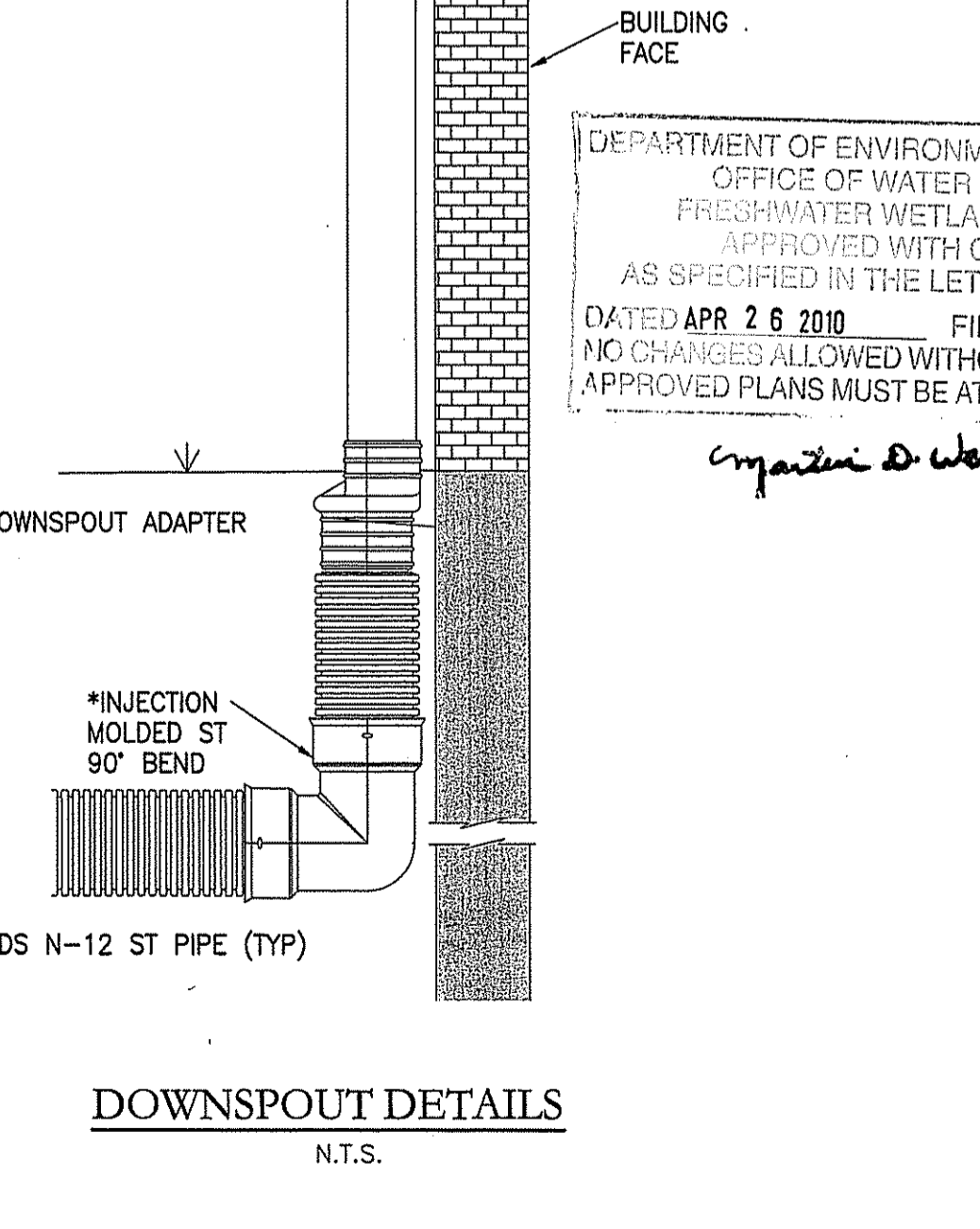
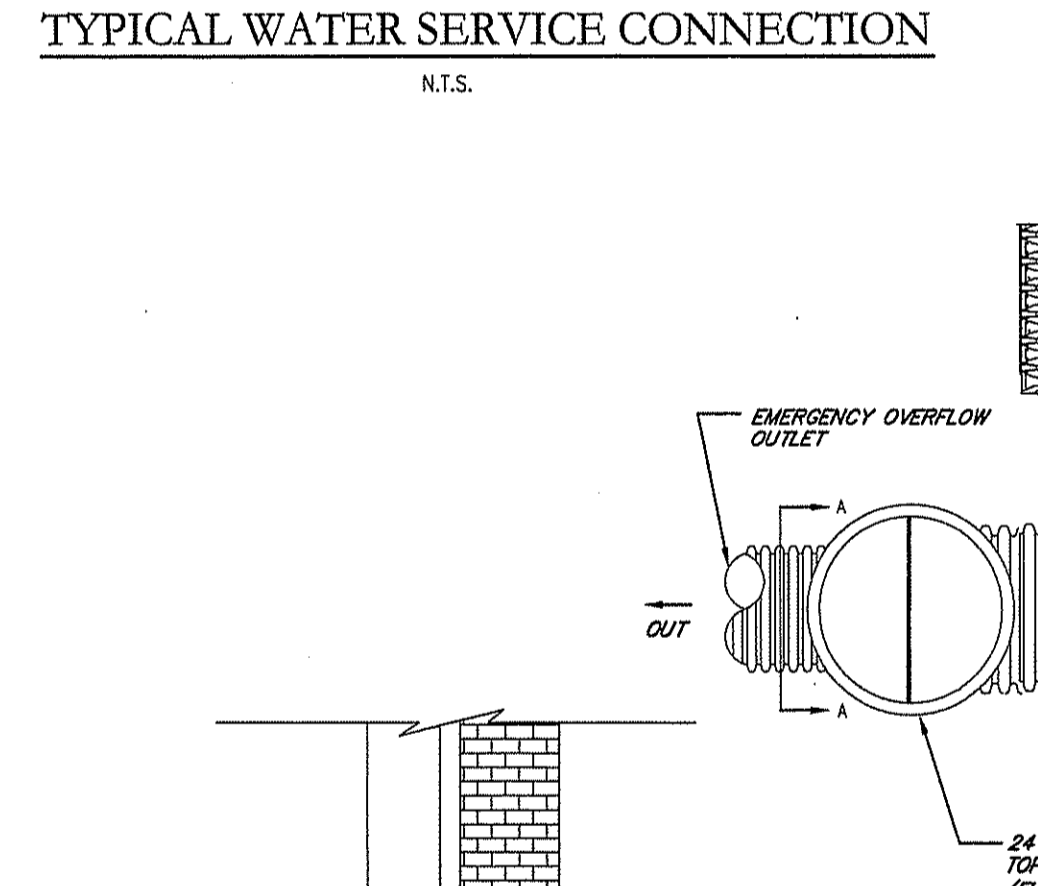
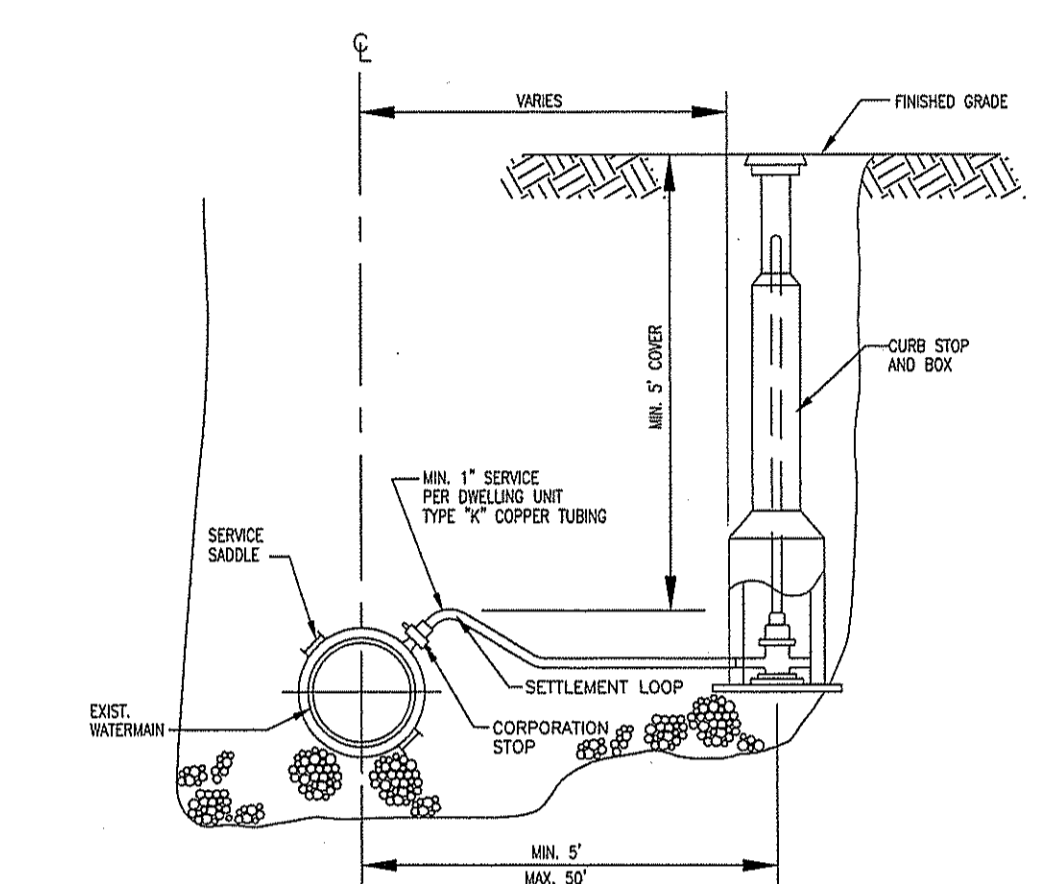
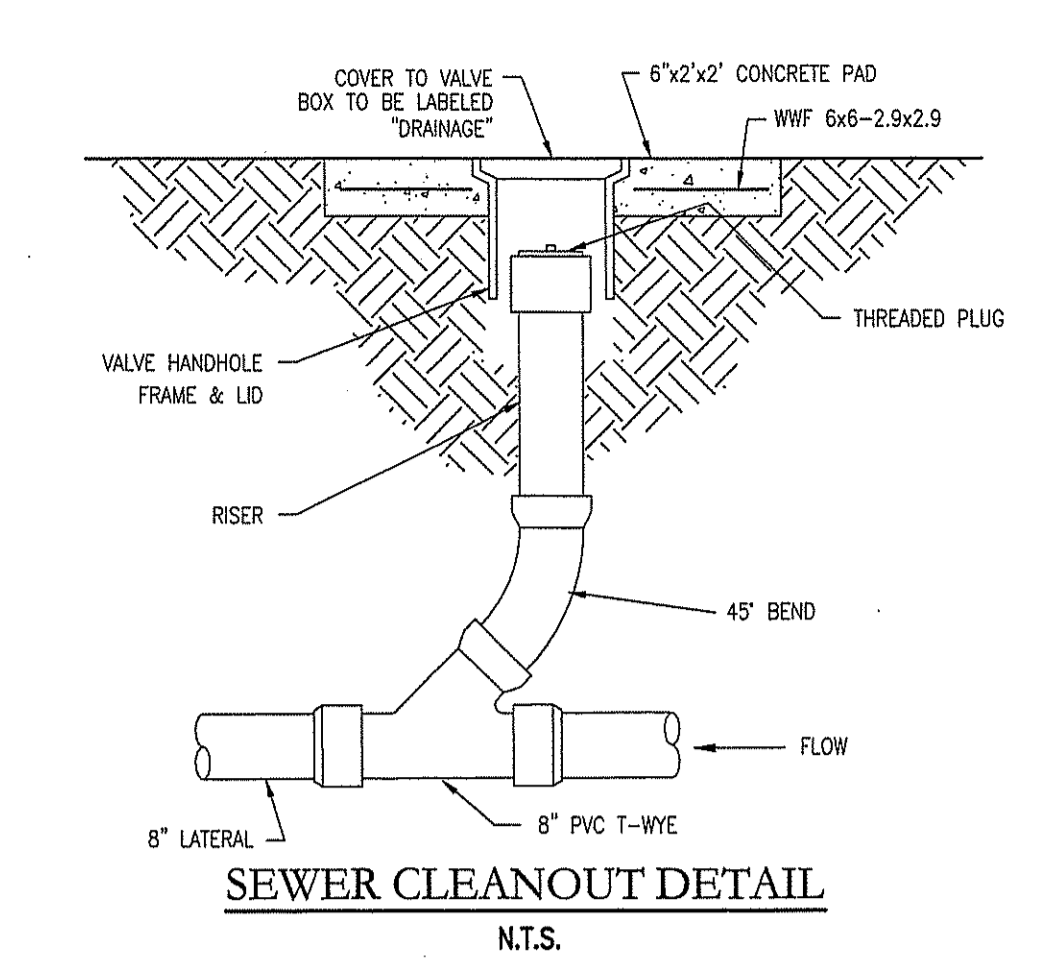
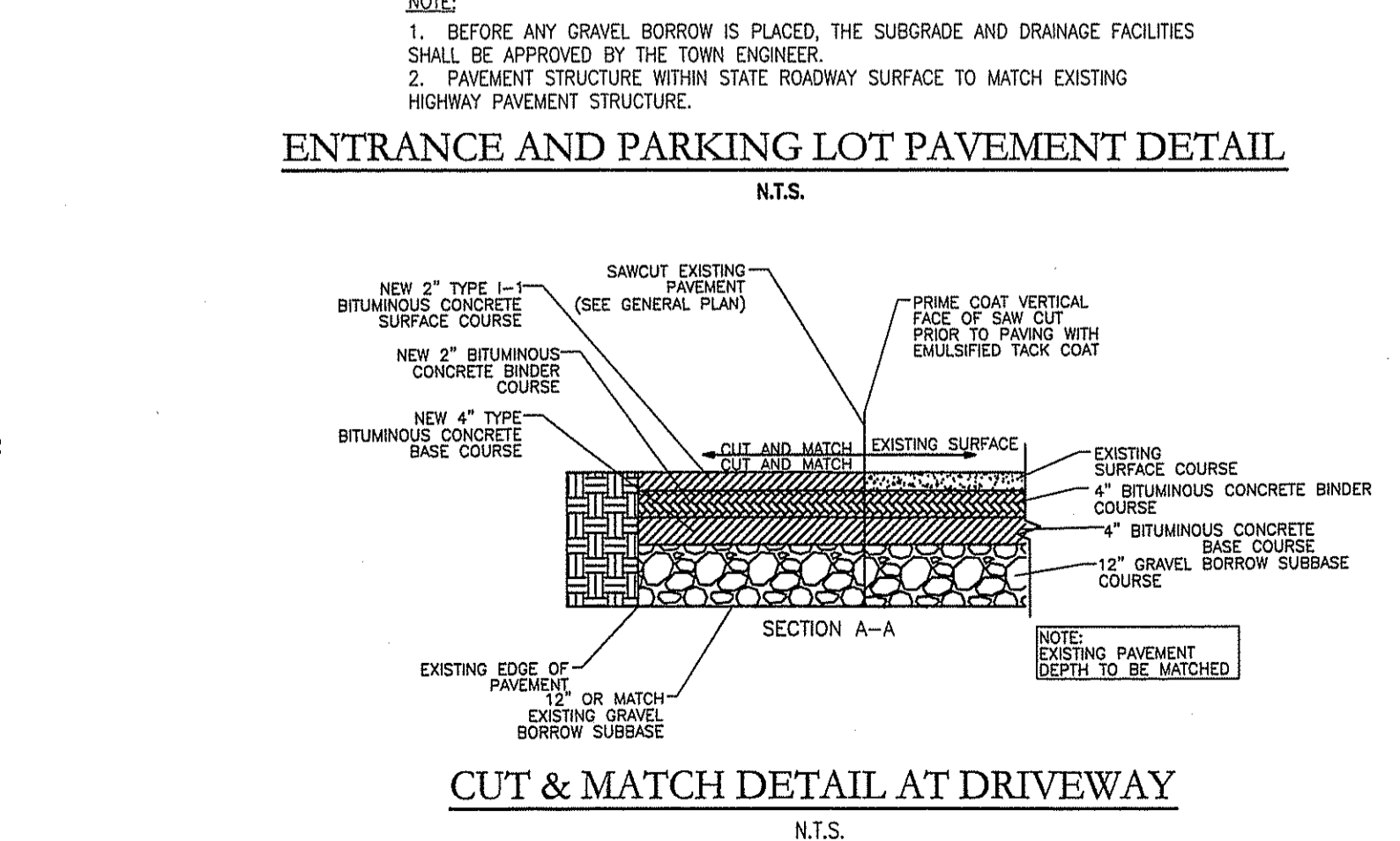
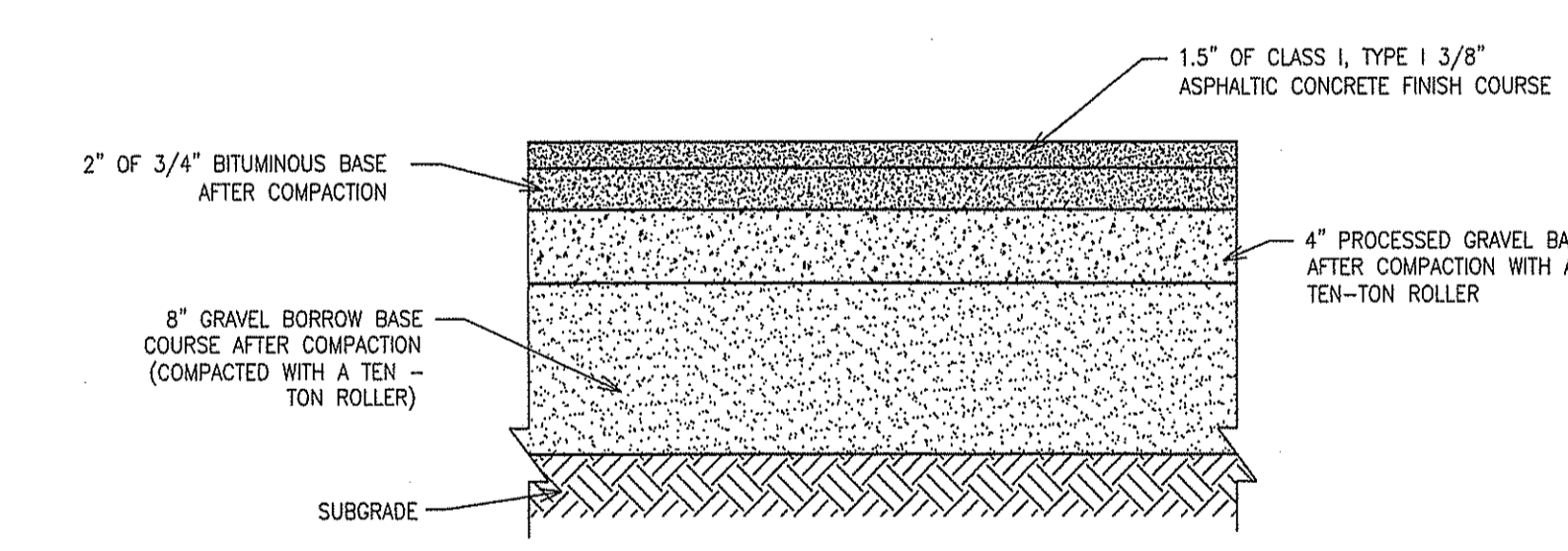


**ACCEPTABLE FILL MATERIALS**

**STORMTECH SC-310 AND SC-740 CHAMBER SYSTEMS**

N.T.S.

MATERIAL LOCATION	DESCRIPTION	AASHTO M43 DESIGNATION	AASHTO M145 DESIGNATION	COMPACTION/DENSITY REQUIREMENT
① FILL MATERIAL FROM 18" TO GRADE ABOVE CHAMBERS	ANY SOIL/ROCK MATERIALS, NATIVE SOILS OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	N/A	PREPARE PER ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
② FILL MATERIAL FOR 6" TO 18" ELEVATION ABOVE CHAMBERS (24" FOR UNPAVED INSTALLATIONS)	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES.	3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	A-1, A-2, A-3	COMPACT IN 6" LIFTS TO A MINIMUM 95% STANDARD PROCTOR DENSITY. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 LBS. DYNAMIC FORCE NOT TO EXCEED 20,000 LBS.
③ EMBEDMENT STONE SURROUNDING AND TO A 6" ELEVATION ABOVE CHAMBERS	WASHED ANGULAR STONE WITH THE MAJORITY OF PARTICLES BETWEEN 3/4-2 INCH	3, 357, 4, 467, 5, 56, 57	N/A	NO COMPACTION REQUIRED
④ FOUNDATION STONE BELOW CHAMBERS	WASHED ANGULAR STONE WITH THE MAJORITY OF PARTICLES BETWEEN 3/4-2 INCH	3, 357, 4, 467, 5, 56, 57	N/A	PLATE COMPACT OR ROLL TO ACHIEVE A 95% STANDARD PROCTOR DENSITY



DATE: January 2009

PROJECT NUMBER: A6935

SHEET NUMBER: SHEET 6 OF 8

DRAWING NUMBER: FIGURE 6

PREPARED BY: DPJ

DESIGNED BY: BPT

CHECKED BY: BPT

APPROVED BY: BPT

PROJECT MANAGER: BPT

SCALE: AS SHOWN

PROFESSIONAL APPROVAL: BRIAN P. THALMANN, REGISTERED PROFESSIONAL ENGINEER (CIVIL)

PREPARED FOR: Minot Ledge Development, LLC, 40 BYRON RANDALL ROAD, NORTH SCITUATE, RI 02857

PROJECT INFORMATION: MINOT LEDGE COMMERCIAL DEVELOPMENT, 289 PUTNAM PIKE, SMITHFIELD, RI

NO. REVISION DESCRIPTION

1. PAPA COMMENTS

2. RIDEM COMMENTS DATED 11-24-08

3. UIC COMMENTS DATED 11-9-08

4. S&E COMMENTS DATED 5-27-09

5. RIDEM COMMENTS DATED 9-03-09

CHK BY: DATE

DPJ 12-10-08

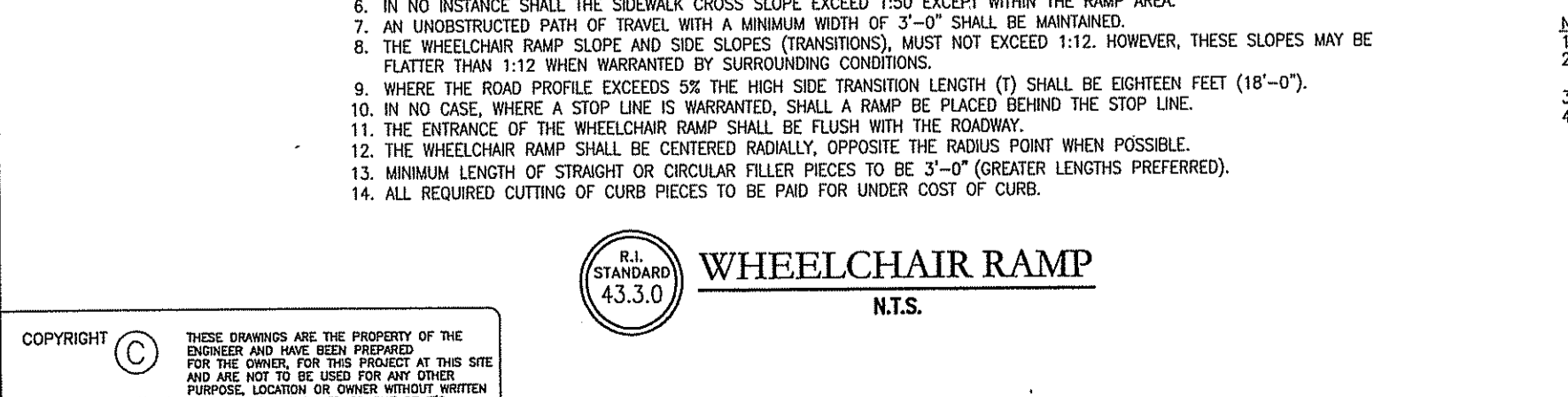
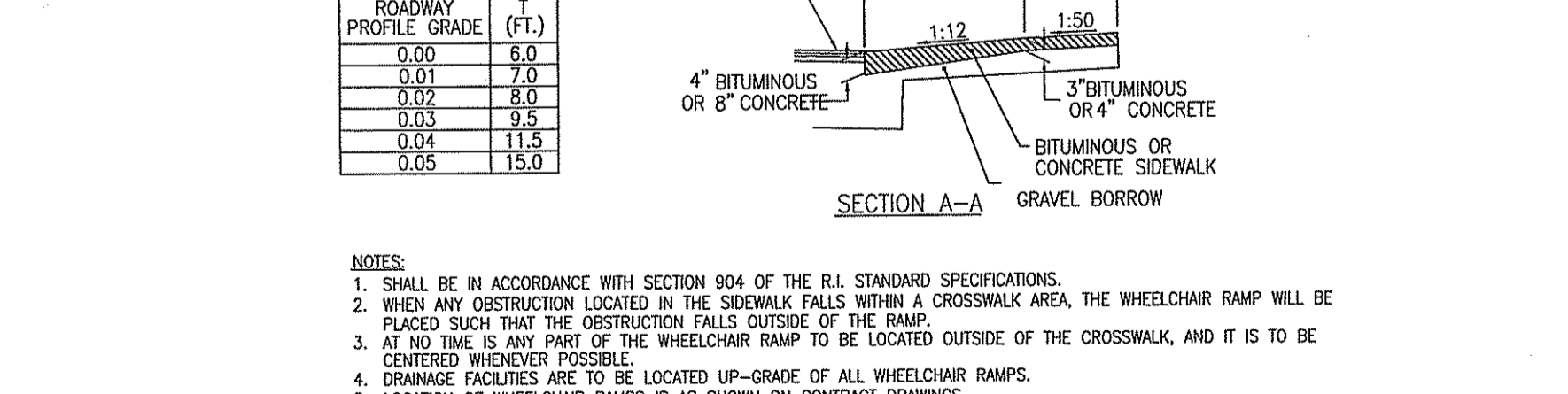
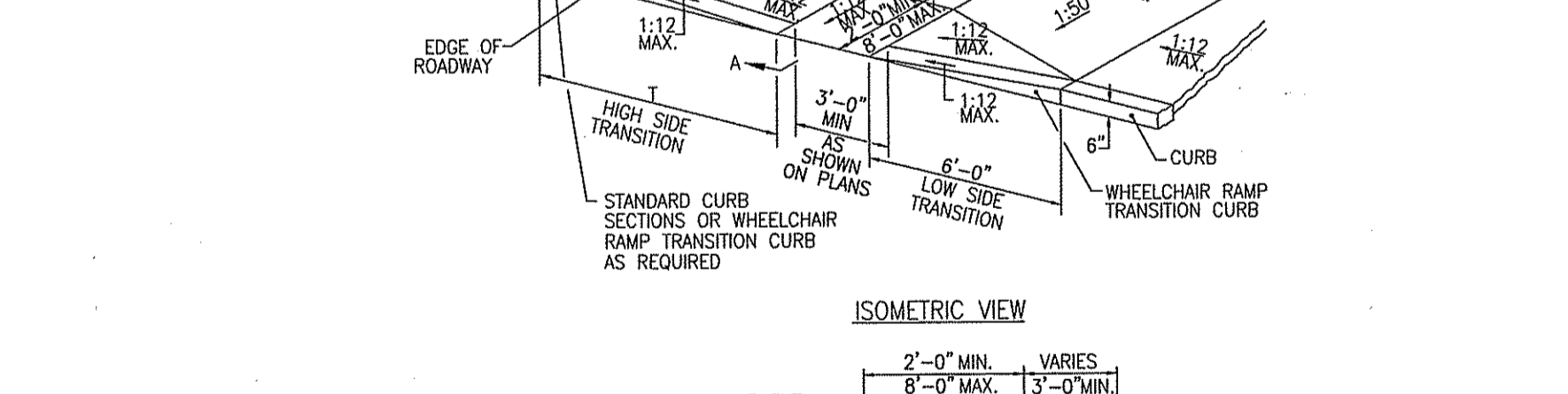
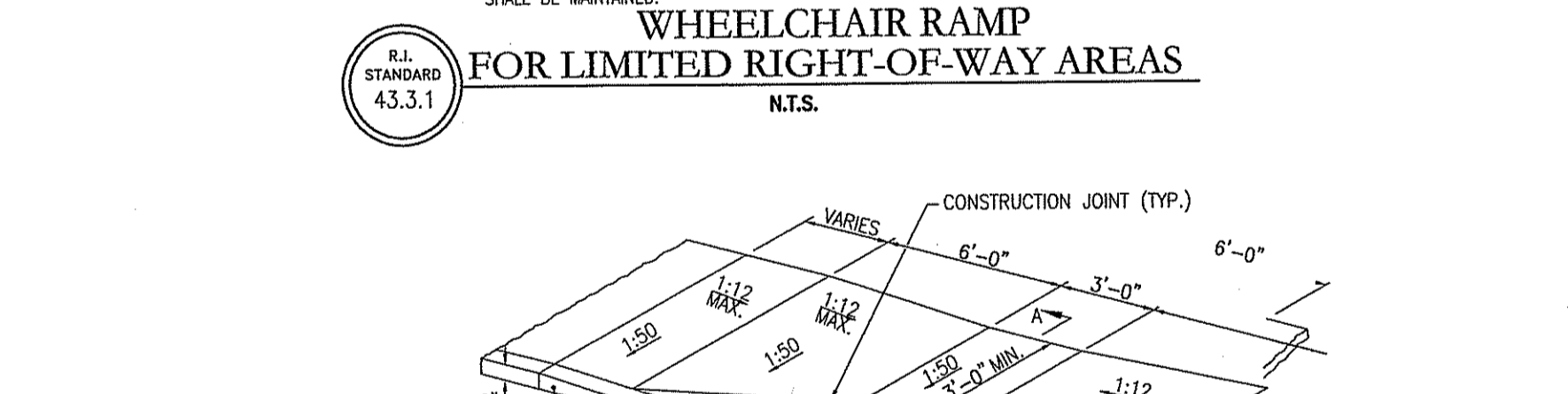
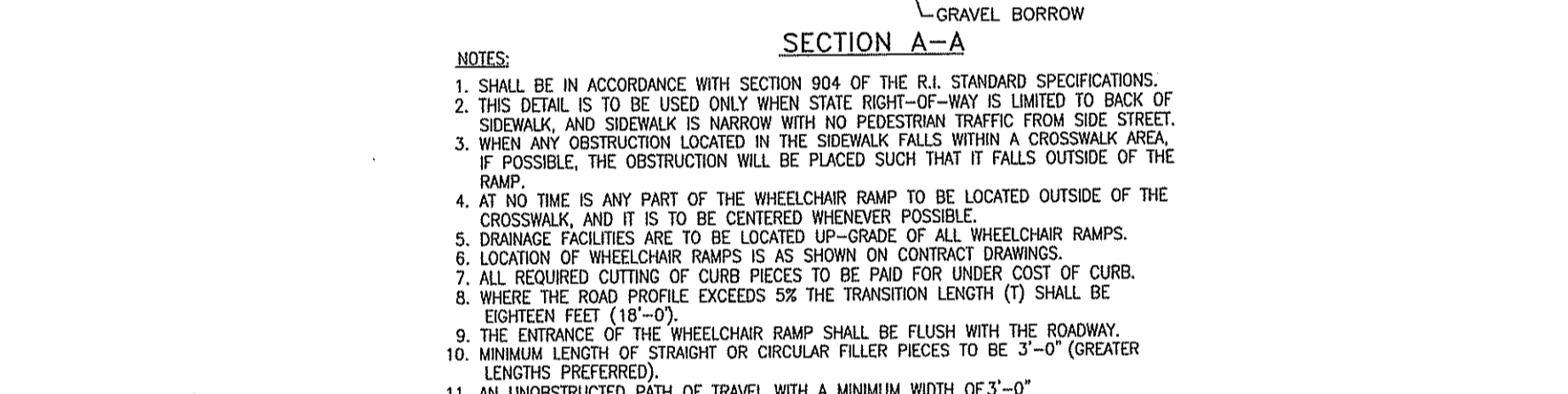
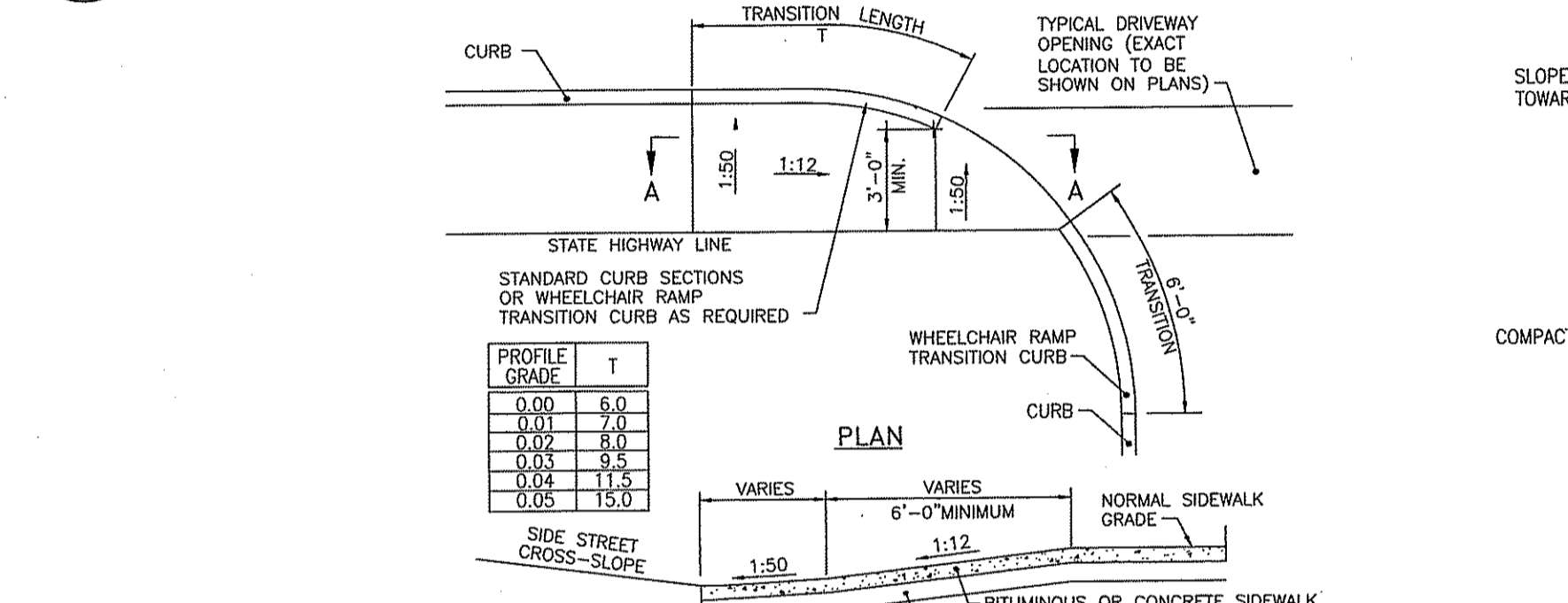
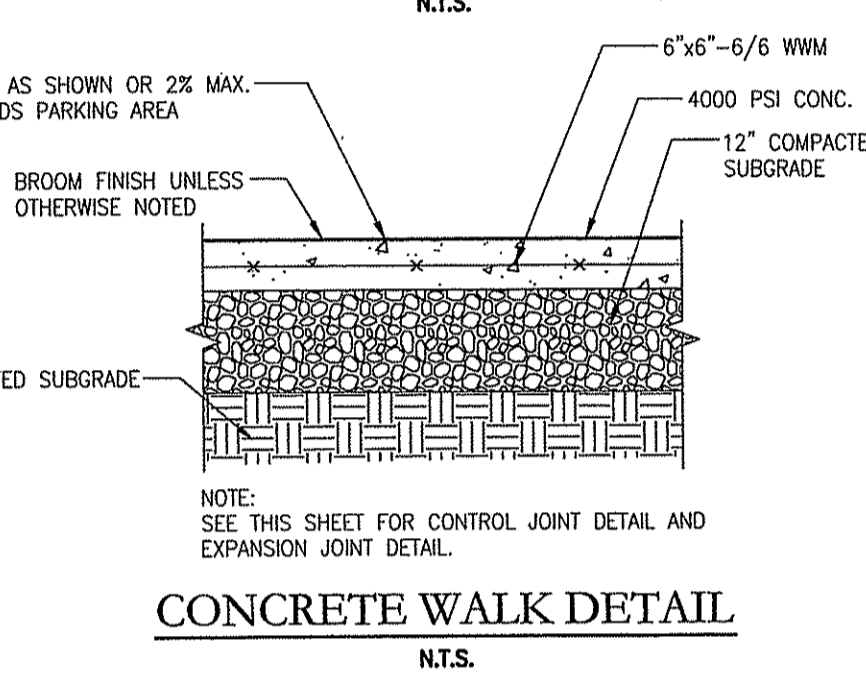
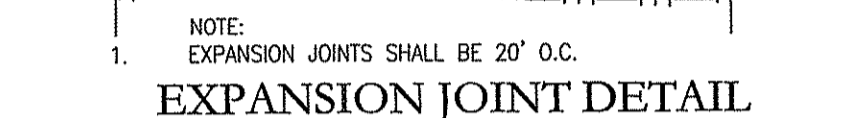
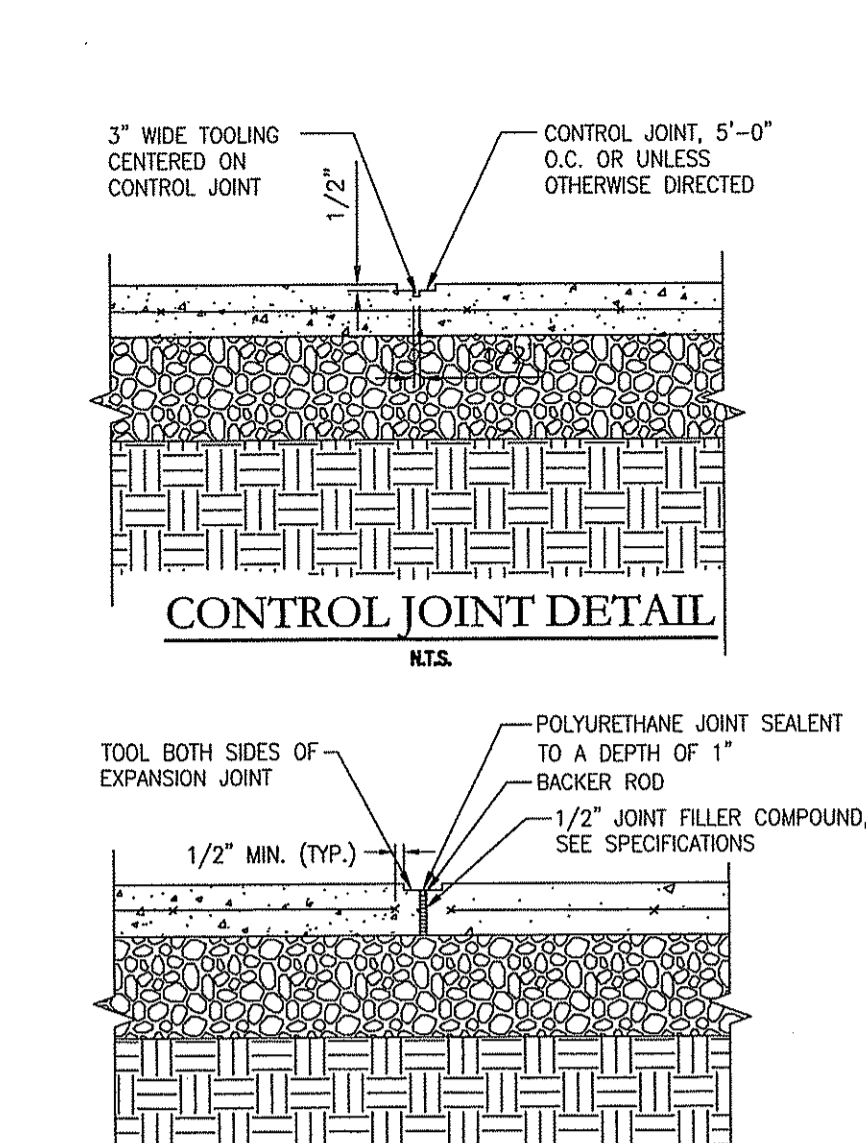
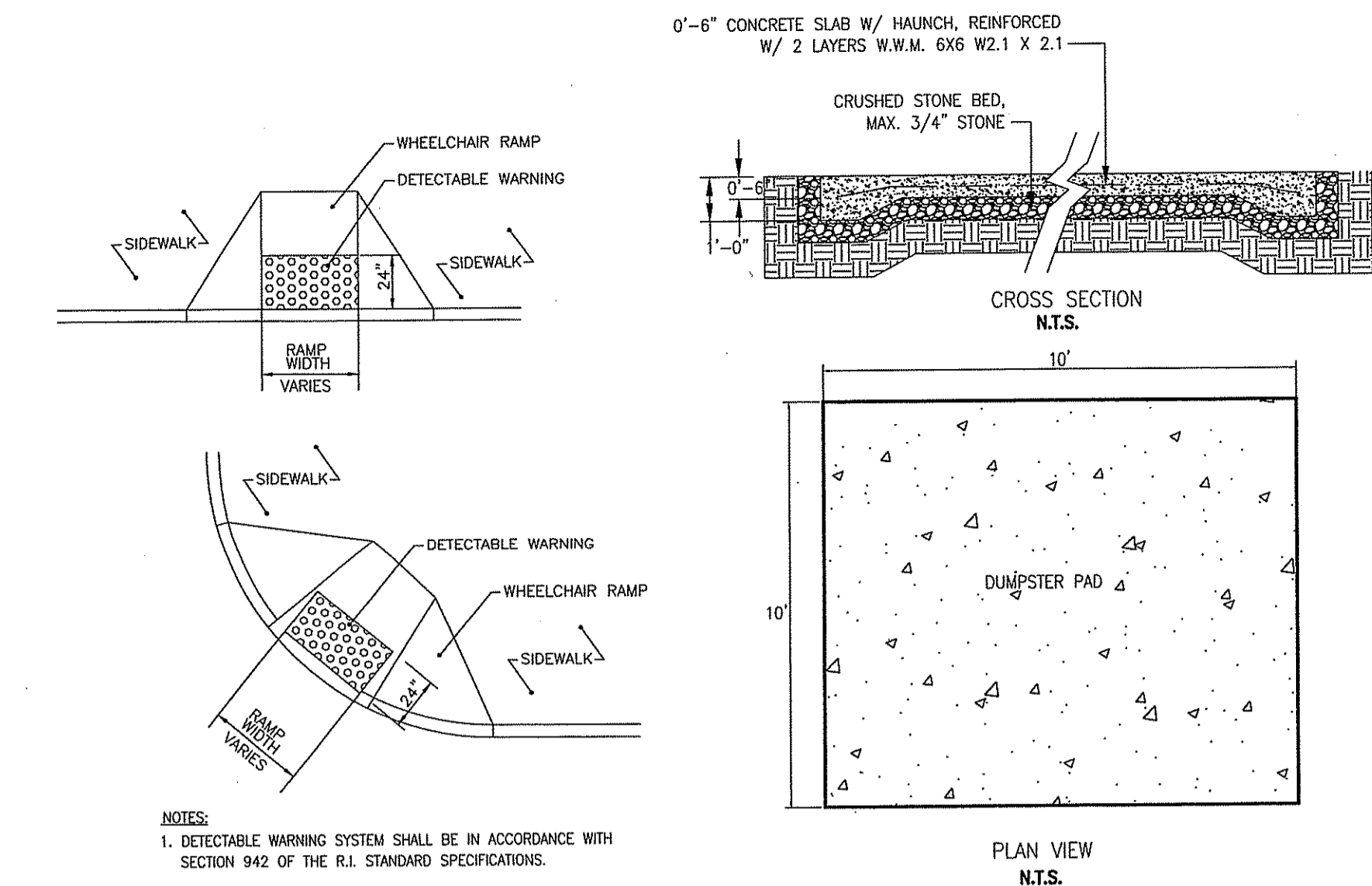
BPT 12-22-08

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DPJ 6-22-09

RGM 3-15-10

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43.3.0 WHEELCHAIR RAMP N.T.S.

43.3.1 FOR LIMITED RIGHT-OF-WAY AREAS N.T.S.

48.1.0 DETECTABLE WARNING SYSTEM N.T.S.

43.3.2 WHEELCHAIR RAMP FOR LIMITED RIGHT-OF-WAY AREAS N.T.S.

43.3.3 WHEELCHAIR RAMP N.T.S.

43.3.4 WHEELCHAIR RAMP N.T.S.

43.3.5 WHEELCHAIR RAMP N.T.S.

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43.3.100 WHEELCHAIR RAMP N.T.S.

**SEQUENCE AND STAGING OF LAND DISTURBING ACTIVITIES:**

1. SURVEY AND STAKE THE DRAINAGE STRUCTURES, BUILDING CORNERS, AND THE LIMIT OF WORK AND SEDIMENTATION BARRIERS.
2. PLACE SEDIMENTATION BARRIERS (HAY BALES OR SILT FENCE) AS SHOWN ON THE PLANS AND STAKED OUT IN THE FIELD. IN NO CASE IS THE LIMIT OF WORK TO EXTEND BEYOND THE SEDIMENTATION BARRIERS.
3. CLEAR EXISTING VEGETATION AND REMOVE SUBSOIL AND STOCKPILE. BEGIN BUILDING RETAINING WALL AND DO CUTS TO FILLS. ROUGH GRADE BUILDING SLAB AND DIG FOUNDATIONS.
4. START DRAINAGE WORK AND UNDERGROUND INJECTION CONTROL SYSTEM.
5. START INSTALLATION OF UNDERGROUND UTILITIES. COORDINATE UNDERGROUND UTILITIES AROUND DRAINAGE WORK.
6. FINISH DRAINAGE AND UTILITIES. GRADE AND LOAM SLOPES.
7. BEGIN BUILDING CONSTRUCTION. UTILIZE DRAINAGE SYSTEM ONCE THE PARKING AREA BINDER COURSE IS INSTALLED.
8. BEGIN LANDSCAPING WHILE BUILDING IS UNDER CONSTRUCTION.
9. FINISH BUILDING AND PARKING LOT CONSTRUCTION.
10. FINISH LANDSCAPING, AND PERMANENT STABILIZATION. SWEEP THE PARKING AREAS TO REMOVE ALL SEDIMENTS.
11. FLUSH AND/OR REPAIR DRAINAGE AREAS AS NEEDED.
12. REMOVE ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES FOLLOWING VEGETATIVE ESTABLISHMENT OF ALL DISTURBED AREAS.

**STRUCTURAL**

1. AN INFILTRATION SYSTEM IS USED TO CONTROL RUNOFF. DISCHARGE OUTLETS ARE PROTECTED WITH RIP-RAP APRONS.
2. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON THE SITE IMMEDIATELY AFTER TOPSOILING. THE SEEDING EXTENT SHALL BE TO THE LIMIT OF DISTURBANCE BY CONSTRUCTION ACTIVITIES. ACTIVITIES SHALL BE CONFINED WITHIN THE LIMIT OF WORK AS SHOWN ON THE PLANS.
3. WOODRUS VEGETATION SHALL BE MAINTAINED BY APPLYING LIME AND FERTILIZER. BARE OR ERODED AREAS SHALL BE IMMEDIATELY REPAIRED AND RESEDED BY THE CONTRACTOR.
4. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND INSPECTION OF THE INFILTRATION SYSTEM DURING AND UP TO A YEAR AFTER COMPLETION OF CONSTRUCTION. THE OWNER SHALL BE RESPONSIBLE THEREAFTER. ANY STANDING WATER AFTER A PERIOD OF 72 HOURS WITHIN A YEAR OF THE PROJECT COMPLETION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL RESEED ANY UNSTABILIZED AREAS AFTER A FULL GROWING SEASON AT NO ADDITIONAL EXPENSE TO THE OWNER.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE DRAINAGE SYSTEM DURING CONSTRUCTION. THE PROPERTY OWNER IS RESPONSIBLE THEREAFTER. THE SYSTEM SHALL BE INSPECTED SEMIANNUALLY AND AFTER MAJOR STORMS EVENTS.
6. RIP-RAP APRONS SHALL BE INSTALLED AT THE INLETS & OUTLETS OF ALL CULVERTS.
7. RIP-RAP APRONS SHALL BE INSPECTED SEMIANNUALLY AND AFTER MAJOR STORMS. IF REPAIRS ARE NEEDED, THEY SHALL BE ACCOMPLISHED IMMEDIATELY.
8. THE CONSTRUCTION SUPERINTENDENT SHALL HAVE THE OVERALL RESPONSIBILITY FOR STRUCTURAL MEASURES IMPLEMENTATION AND FOR SEEING THAT APPROPRIATE WORKERS ARE AWARE OF THE PROVISIONS OF THE PLAN.
9. REFERENCE THE "RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK" PREPARED BY USDA SOIL CONSERVATION SERVICE 1989, AS A GUIDE.

**UNDERGROUND INJECTION CONTROL SYSTEM NOTES:**

CATCH BASINS OF THE SUBSURFACE DISCHARGE SYSTEM SHALL BE NON-LEACHING WITH A MINIMUM SUMP DEPTH OF THREE FEET BELOW THE OUTLET INVERT, AND INCLUDE AN OIL-WATER SEPARATOR OF ADEQUATE CAPACITY THAT EXTENDS AT LEAST TWO FEET BELOW THE OUTLET INVERT. THE OTHER DRAINS SHALL BE NON-LEACHING AND PASS THROUGH AN OIL-WATER SEPARATOR OF ADEQUATE CAPACITY PRIOR TO DISCHARGE.

THE SEASONAL HIGH GROUND WATER TABLE ELEVATION IN THE AREA OF THE IUC SYSTEM WAS DETERMINED BY A RIDEM LICENSED CLASS IV SOIL EVALUATOR OR R.I. REGISTERED PROFESSIONAL ENGINEER, AND THE BOTTOM OF BED OF THE INFILTRATION AREA HAS AT LEAST THREE FEET OF VERTICAL SEPARATION FROM THE SEASONAL HIGH GROUND WATER TABLE.

THE FILTRATION AREA SHALL BE LOCATED AT LEAST 400 FEET FROM PUBLIC DRINKING WATER WELLS.

THE FILTRATION AREA SHALL BE LOCATED AT LEAST 100 FEET FROM PRIVATE DRINKING WATER WELLS.

THE FILTRATION AREA SHALL BE LOCATED AT LEAST 200 FEET FROM SURFACE WATER SUPPLIES AND TRIBUTARIES.

THE FILTRATION AREA SHALL BE LOCATED AT LEAST 150 FEET FROM COASTAL PONDS.

THE FILTRATION AREA SHALL BE LOCATED AT LEAST 50 FEET FROM ALL NON-CRITICAL SURFACE WATER BODIES (ANY SURFACE WATER BODIES NOT INCLUDED IN ITEM #5).

THE FILTRATION AREA SHALL BE LOCATED AT LEAST 25 FEET FROM ALL OTHER DISCHARGE SYSTEMS, WHETHER EXISTING OR APPROVED FOR INSTALLATION, INCLUDING SEPTIC SYSTEMS AND CESSPOOLS.

THE FILTRATION AREA SHALL BE LOCATED AT LEAST 10 FEET FROM ALL BUILDING SLABS AND FOUNDATIONS.

**ESTABLISHMENT OF VEGETATIVE COVER**

1. SLOPES SHALL NOT BE LEFT UNATTENDED OR EXPOSED FOR EXCESSIVE PERIODS OF TIME SUCH AS THE INACTIVE WINTER SEASON.
2. ALL DISTURBED SLOPES EITHER NEWLY CREATED OR CURRENTLY EXPOSED SHALL BE SEEDING OR PROTECTED.
3. THE TOPSOIL SHALL HAVE A SANDY LOAM TEXTURE RELATIVELY FREE OF SUBSOIL MATERIAL, STONES, ROOTS, LUMPS OF SOIL, TREE LIMBS, TRASH OR CONSTRUCTION DEBRIS AND SHALL CONFORM WITH RHODE ISLAND'S STANDARD SPECIFICATION, M.20.
4. THE GENERAL DESIGN MIX FOR REGRADING AREAS SHALL BE COMPRISED OF THE FOLLOWING:

TYPE	SEEDING	SEEDING	SEEDING
	SEEDING	SEEDING	SEEDING
CREeping RED FESCUE	15	15	15
KENTUCKY BLUE GRASS	15	15	15
COLONIAL BENT GRASS	15	15	15
PERENNIAL RYE GRASS	15	15	15

5. EARLY SPRING OR LATE SUMMER SEEDING IS RECOMMENDED. LIME AND FERTILIZE AS REQUIRED BY SOIL TESTING TO COMPLEMENT OR UPGRADE EXISTING CONDITIONS. THE SEED MIX SHALL BE INOCULATED WITHIN 24 HOURS BEFORE MIXING AND PLANTING, WITH APPROPRIATE INOCULUM FOR EACH VARIETY.
6. TEMPORARY TREATMENTS SHALL CONSIST OF NORTH AMERICAN GREEN EROSION CONTROL BLANKETS OR HAY, STRAW OR FIBER MULCH. THEY SHALL BE INCORPORATED INTO THE WORK AS WARRANTED OR AS ORDERED BY THE ENGINEER. HAY OR STRAW APPLICATIONS SHALL BE IN THE AMOUNT OF 2 TONS/ACRE.
7. ALL HAY BALES OR TEMPORARY PROTECTION SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED.
8. ALL FILL SHALL BE THOROUGHLY COMPACTED UPON PLACEMENT IN STRICT CONFORMANCE WITH THE RHODE ISLAND STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, SECTION 202.
9. STOCKPILES OF TOPSOIL SHALL NOT BE LOCATED NEAR WATERWAY. THEY SHALL HAVE SIDE SLOPES NO GREATER THAN 2:1 AND SHALL BE TEMPORARILY SEEDING AND/OR STABILIZED. STOCKPILE TO BE SURROUNDED BY HAY BALES.
10. THE CONSTRUCTION SUPERINTENDENT SHALL HAVE OVERALL RESPONSIBILITY FOR PLAN IMPLEMENTATION AND FOR SEEING THAT THE APPROPRIATE WORKERS ARE AWARE OF THE PROVISIONS OF THE PLAN. THE CONTRACTOR MUST REPAIR AND/OR RESEED ANY AREAS THAT DO NOT DEVELOP WITHIN THE PERIOD OF ONE YEAR AND SHALL DO SO AT NO ADDITIONAL EXPENSE.
11. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING. PERMANENTLY SEEDING AREAS SHALL BE PROTECTED DURING ESTABLISHMENT WITH MULCH. ALL SEEDING AREAS WILL BE CHECKED REGULARLY TO SEE THAT THE SEEDING STAND IS MAINTAINED. AREAS SHALL BE FERTILIZED AND RESEDED AS NECESSARY.
12. REFERENCE THE "RHODE ISLAND SOIL EROSION AND SEDIMENTATION CONTROL HANDBOOK" PREPARED BY THE USDA SOIL CONSERVATION SERVICE 1989, AS A GUIDE.

**MAINTENANCE SCHEDULE FOR DRAINAGE STRUCTURES**

**GENERAL**

- LONG-TERM MAINTENANCE OF THE DRAINAGE STRUCTURES WILL BE COMPLETED BY THE PROPERTY OWNER. THE CONTRACTOR SHALL MAINTAIN ALL DRAINAGE COMPONENTS DURING AND DIRECTLY AFTER CONSTRUCTION. THE OIL/WATER SEPARATORS SHALL BE RECORDED ON THE PROPERTY DEED. ALL OPERATIONAL MAINTENANCE REQUIREMENTS WILL ALSO BE RECORDED ON THE DEED.
- THE OWNER/OPERATOR SHALL SUBMIT AN ANNUAL INSPECTION AND MAINTENANCE REPORT TO THE TOWN ENGINEER NO LATER THAN FEBRUARY 1ST PER THE REQUIREMENTS OF THE RIPPER PHASE 1 STORMWATER REGULATIONS.

**CATCH BASINS & PAVED WATERWAY**

1. MAINTENANCE OF ALL CATCH BASINS AND OIL/WATER SEPARATOR CATCH BASINS ON-SITE WILL OCCUR AS SEDIMENT AND DEBRIS REACHES A DEPTH OF TWO (2) FT. WITHIN THE SUMP. CHECK FOR STRUCTURAL INTEGRITY & REPAIR IMMEDIATELY AS REQUIRED.
2. ALL DEBRIS, SEDIMENT, AND/OR GREASE SHALL BE REMOVED FROM THE OIL/WATER SEPARATOR CATCH BASINS AND DISPOSED OF IN ACCORDANCE WITH STATE AND FEDERAL GUIDELINES.

**UNDERGROUND DETENTION SYSTEMS**

1. MAINTENANCE OF STORMTECH INFILTRATION SYSTEM SHALL OCCUR ON A YEARLY BASIS AND IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS (STORMTECH 1-888-892-2694).
2. SEDIMENTS SHALL BE REMOVED WITH USE OF VACUUM TRUCK BY WAY OF INSPECTION PORTS. SEDIMENTS SHALL BE REMOVED FROM SITE.
3. MAINTENANCE OF INFILTRATION SYSTEM IS RESPONSIBILITY OF PROPERTY OWNER.

**NOTES 1 THROUGH 3 SHALL BE INCLUDED ON THE PROPERTY DEED.**

**ADS PIPE INSTALLATION NOTES:**

**1. FOUNDATION:** WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A STABLE DEPTH AND REPLACE WITH A FOUNDATION OF CLASS I OR II MATERIAL AS DEFINED IN ASTM D2321, "STANDARD PRACTICE FOR INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS," LATEST EDITION; AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A WOVEN GEOTEXTILE FABRIC.

**2. BEDDING:** SUITABLE MATERIAL SHALL BE CLASS I, II, OR III AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION. UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" FOR 4" TO 24" DIA. & 6" FOR 30" TO 60" DIA.

**3. HAUNCHING AND INITIAL BACKFILL:** SUITABLE MATERIAL SHALL BE CLASS I, II, OR III AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

**4. UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MINIMUM TRENCH WIDTHS SHALL BE AS FOLLOWS:**

NOMINAL DIA. (IN)	MIN. TRENCH WIDTH (IN)
6"	23"
8"	25"
10"	28"
12"	31"
15"	34"
18"	39"

**5. MINIMUM COVER:** RECOMMENDED DEPTHS OF COVER FOR VARIOUS LIVE LOADING CONDITIONS ARE SUMMARIZED IN THE FOLLOWING TABLE. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE TAKEN FROM THE TOP OF PIPE TO THE GROUND SURFACE.

SURFACE LIVE LOADING CONDITION	MINIMUM RECOMMENDED COVER (IN)
H2S (FLEXIBLE PAVEMENT)	12"
H2S (RIGID PAVEMENT)	12"
HEAVY CONSTRUCTION	48"

**UNDERGROUND INJECTION CONTROL SYSTEM NOTES:**

CATCH BASINS OF THE SUBSURFACE DISCHARGE SYSTEM SHALL BE NON-LEACHING WITH A MINIMUM SUMP DEPTH OF THREE FEET BELOW THE OUTLET INVERT, AND INCLUDE AN OIL-WATER SEPARATOR OF ADEQUATE CAPACITY THAT EXTENDS AT LEAST TWO FEET BELOW THE OUTLET INVERT. THE OTHER DRAINS SHALL BE NON-LEACHING AND PASS THROUGH AN OIL-WATER SEPARATOR OF ADEQUATE CAPACITY PRIOR TO DISCHARGE.

THE SEASONAL HIGH GROUND WATER TABLE ELEVATION IN THE AREA OF THE IUC SYSTEM WAS DETERMINED BY A RIDEM LICENSED CLASS IV SOIL EVALUATOR OR R.I. REGISTERED PROFESSIONAL ENGINEER, AND THE BOTTOM OF BED OF THE INFILTRATION AREA HAS AT LEAST THREE FEET OF VERTICAL SEPARATION FROM THE SEASONAL HIGH GROUND WATER TABLE.

THE FILTRATION AREA SHALL BE LOCATED AT LEAST 400 FEET FROM PUBLIC DRINKING WATER WELLS.

THE FILTRATION AREA SHALL BE LOCATED AT LEAST 100 FEET FROM PRIVATE DRINKING WATER WELLS.

THE FILTRATION AREA SHALL BE LOCATED AT LEAST 200 FEET FROM SURFACE WATER SUPPLIES AND TRIBUTARIES.

THE FILTRATION AREA SHALL BE LOCATED AT LEAST 150 FEET FROM COASTAL PONDS.

THE FILTRATION AREA SHALL BE LOCATED AT LEAST 50 FEET FROM ALL NON-CRITICAL SURFACE WATER BODIES (ANY SURFACE WATER BODIES NOT INCLUDED IN ITEM #5).

THE FILTRATION AREA SHALL BE LOCATED AT LEAST 25 FEET FROM ALL OTHER DISCHARGE SYSTEMS, WHETHER EXISTING OR APPROVED FOR INSTALLATION, INCLUDING SEPTIC SYSTEMS AND CESSPOOLS.

THE FILTRATION AREA SHALL BE LOCATED AT LEAST 10 FEET FROM ALL BUILDING SLABS AND FOUNDATIONS.

43.3.0 WHEELCHAIR RAMP N.T.S.

43.3.1 FOR LIMITED RIGHT-OF-WAY AREAS N.T.S.

48.1.0 DETECTABLE WARNING SYSTEM N.T.S.

43.3.2 WHEELCHAIR RAMP FOR LIMITED RIGHT-OF-WAY AREAS N.T.S.

43.3.3 WHEELCHAIR RAMP N.T.S.

43.3.4 WHEELCHAIR RAMP FOR LIMITED RIGHT-OF-WAY AREAS N.T.S.

43.3.5 WHEELCHAIR RAMP N.T.S.

43.3.6 WHEELCHAIR RAMP N.T.S.

43.3.7 WHEELCHAIR RAMP N.T.S.

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43.3.61 WHEELCHAIR RAMP N.T.S.

43.3.62 WHEEL

