

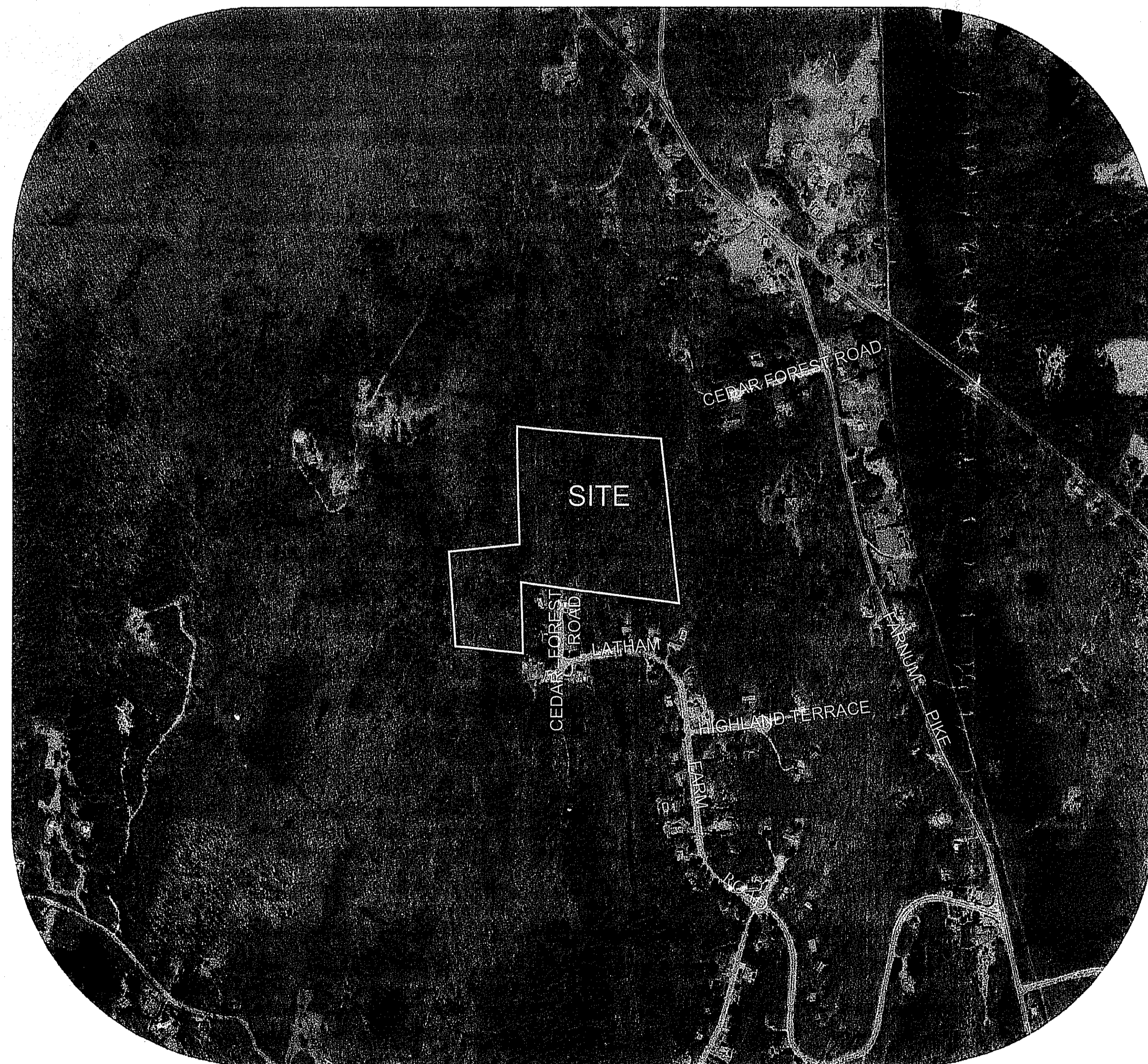
# Preliminary Plan Submission

# Cedar Forest Estates

## 7-Lot Residential Conservation Subdivision

Assessor's Plat 49 Lot 24

Cedar Forest Road, Smithfield, RI



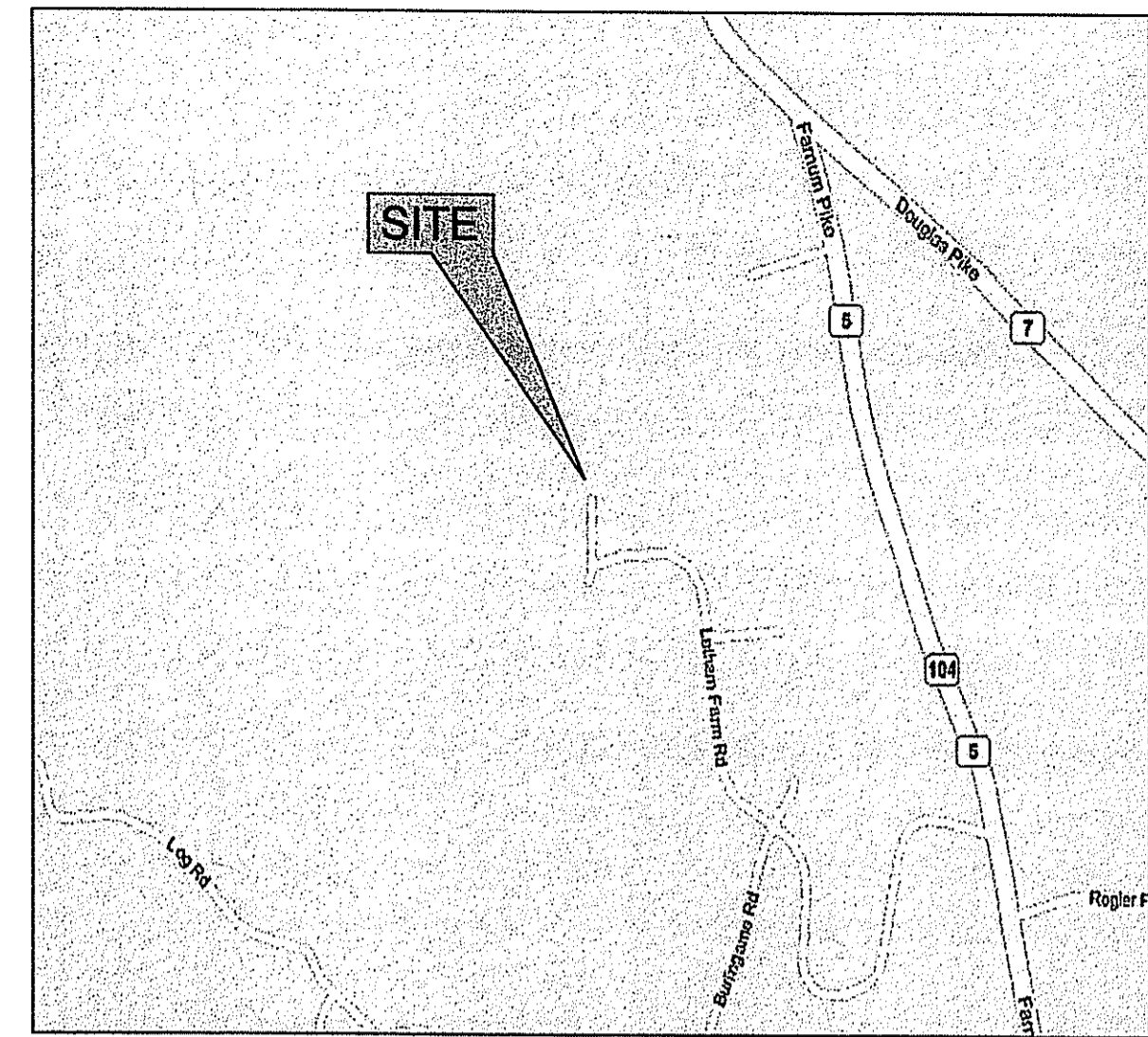
RIGIS 2004 Orthophotography

0 500' 1000' 1500'

1" = 500'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED FEB 09 2010 FILE # 06-0058  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL.  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE.

*Erin D. Wenzel*



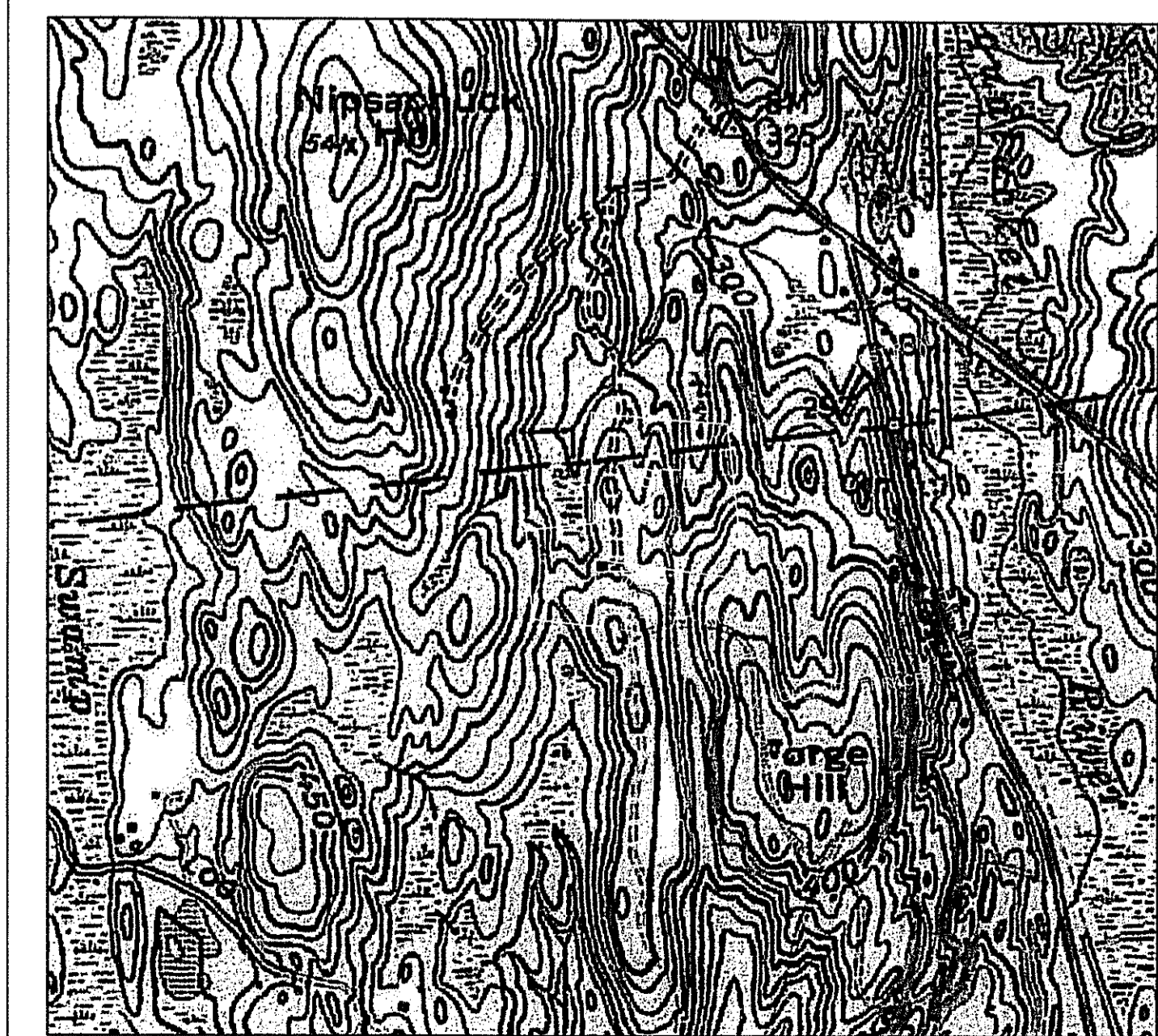
Locus Map  
N.T.S.

### Owner/Applicant:

Cedar Forest Associates, LLC  
 700 Main Street  
 East Greenwich, Rhode Island 02818

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USGS Quad Map 1"=1000'

NO.	DATE	REVISION
1	3/11/08	CONSERVATION LAYOUT/ARCHEOLOGICAL FEATURES
2	7/9/08	DEM COMMENTS
3	11/05/08	RIDEM COMMENTS 10/29/08
4	2/4/09	RIDEM COMMENTS 1/20/09
5	7/24/09	RIDEM COMMENTS 7/15/09



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**Thalman**  
 ENGINEERING CO., INC.

Lot 24  
 Rhode Island  
 Smithfield

**Cedar Forest Estates**  
 Cedar Forest Road  
 Prepared for:  
 Cedar Forest Associates, LLC  
 700 Main Street, East Greenwich, Rhode Island

date: June 2007 scale: As Noted

Drawn By: JEA  
 Checked By: BPT

Sheet  
**1**  
 of 8

FILE NO.: 06.008

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**Sequence & Staging of Land Disturbing Activities**

1. SURVEY AND STAKE THE PROPOSED ROAD CENTERLINE, DETENTION POND, STRUCTURES, AND LIMIT OF DISTURBANCE.
2. PLACE SEDIMENTATION BARRIERS (HAY BALES OR SILT FENCE) AS SHOWN ON THE PLANS AND AS STAKED OUT IN THE FIELD. IN NO CASE IS THE LIMIT OF WORK TO EXTEND BEYOND THE SEDIMENTATION BARRIERS.
3. EXCAVATE, LOAM, AND SEED DETENTION PONDS AS SHOWN ON PLAN.
4. BEGIN ROAD WORK (CLEARING AND GRUBBING, EXCAVATING AND GRADING, ETC.). TOPSOIL IS TO BE STRIPPED AND STOCKPILED WITH DISTURBANCE LIMITS. THE STOCKPILES ARE TO BE PROTECTED BY A ROW OF SEDIMENTATION BARRIERS. STOCKPILES TO BE COVERED OR TEMPORARILY SEEDED. DIVERT ALL THE RUNOFF FROM DISTURBED AREAS TO THE PROPOSED POND.
5. INSTALL UTILITIES AND DRAINAGE INCLUDING DRAINAGE PIPE. IMMEDIATELY PLACE THE RIP-RAP AT THE DISCHARGE POINTS. SEED ALL DISTURBED AREAS.
6. BEGIN ROAD CONSTRUCTION.
7. BEGIN LAYOUT OF HOUSES AND PROPOSED GRADING. LANDSCAPE WHILE HOUSES ARE UNDER CONSTRUCTION.
8. FINISH HOMES AND ROAD CONSTRUCTION.
9. FINISH LANDSCAPING AND PERMANENT STABILIZATION.
10. INSPECT AND REPAIR ALL DRAINAGE STRUCTURES INCLUDING PONDS AND DISCHARGE POINTS. REMOVE ANY DEBRIS (LEAVES, TREE LIMBS, BOULDERS, ETC.) FROM THE PONDS. FLUSH ALL SEDIMENTS FROM DRAINAGE PIPES AND APPLY TOPSOIL TO PONDS.
11. REMOVE ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES ONCE VEGETATION HAS BEEN ESTABLISHED TO ALL DISTURBED AREAS.

**ADS Pipe Installation Notes:**

1. **EXCAVATION:** 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. **BEDDINGS:** SUITABLE MATERIAL SHALL BE CLASS II, III, OR IV 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)
H25 (FLEXIBLE PAVEMENT)	12"
H25 (RIGID PAVEMENT)	12"
HEAVY CONSTRUCTION	48"

**Water Notes**

1. ALL INSTALLATION, JOINTS, CONSTRUCTION METHODS AND MATERIALS SHALL BE ACCORDING TO TOWN OF EAST SMITHFIELD WATER DISTRICT REQUIREMENTS, AWWA STANDARDS AND GOVERNMENTAL REQUIREMENTS.
2. ALL FITTINGS SHALL BE DUCTILE IRON MECHANICAL JOINT CLASS 350 CEMENT MORTAR LINED COMPACT STYLE (BY AMERICAN MANUFACTURER ONLY). FITTINGS SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C153/A21.53. MECHANICAL JOINTS SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C111/A21.11.
3. WATER PIPE SHALL BE DOUBLE CEMENT MORTAR LINED DUCTILE IRON PIPE CL52 AND SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C151/A21.51.
4. CONSTRUCTION SHALL INCLUDE ALL PIPE, JOINTS, BENDS, TEES, FITTINGS, THRUST BLOCKS, SERVICE CONNECTIONS AND ALL MISCELLANEOUS ITEMS REQUIRED TO CONSTRUCT THE PROPOSED SYSTEM.
5. 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.
6. PRESSURE AND LEAKAGE TESTS AND DISINFECTING PIPES SHALL BE PERFORMED BY THE CONTRACTOR IN CONFORMANCE TO AMERICAN WATER WORKS ASSOCIATION (AWWA) RECOMMENDATIONS, EAST SMITHFIELD WATER DISTRICT REQUIREMENTS, AND GOVERNMENTAL AGENCIES HAVING JURISDICTION.
7. 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 EAST SMITHFIELD WATER DISTRICT.
8. 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 WATER MAIN.
9. ALL SYSTEM COMPONENTS AND CONSTRUCTION METHODS, SUCH AS PIPE, THRUST BLOCKS, FITTINGS, CASTINGS, ETC. SHALL BE SUBMITTED TO THE EAST SMITHFIELD WATER DISTRICT AND ENGINEER FOR APPROVAL PRIOR TO PURCHASE AND INSTALLATION. THIS SUBMISSION SHALL INCLUDE MANUFACTURER'S LITERATURE, SHOP DRAWINGS, PROPOSED CONSTRUCTION METHODS, ETC.
10. WATER LINE TRENCH IS 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'-0" BELOW FINISHED GRADE.

**Sanitary Sewer Notes:**

1. ALL SEWER CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN SMITHFIELD SEWER AUTHORITY STANDARD SPECIFICATIONS AND DETAILS FOR THE INSTALLATION OF SEWER AND APPURTENANCES BY PRIVATE DEVELOPERS.
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 SMITHFIELD SEWER AUTHORITY.
3. PRECAST CONCRETE SECTIONS AND APPURTENANCES SHALL CONFORM TO ASTM C478-79.
4. GASKETS FOR PIPE TO MANHOLE CONNECTIONS SHALL CONFORM TO ASTM C923.
5. EXTERIOR SURFACES OF MANHOLE STRUCTURES AND APPURTENANCES SHALL BE GIVEN TWO (2) COATS OF BITUMINOUS WATERPROOFING.
6. MANHOLE BRICK TO CONFORM TO ASTM M32, AND ASHTO M91, RED BRICK.
7. STANDARD MANHOLE FRAMES AND COVERS TO BE LEBARON FOUNDRY MODEL LC326-200, WITH THE WORD "SEWER" CAST IN THE COVER.
8. 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.
9. ALL SEWER LATERALS ARE TO BE INSTALLED TO PROVIDE BASEMENT SEWER SERVICE.
10. ALL NON-PRESSURE SANITARY SEWER PIPES SHALL BE POLY VINYL CHLORIDE (PVC) PIPE AND SHALL CONFORM TO ASTM D-3034, SDR 35 & SCH 40 STANDARDS.
11. 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 UNTIL WORK HAS BEEN INSPECTED.
12. 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.
13. 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 12 INCHES OF CRUSHED STONE. NO BLOCKS OR STONES SHALL BE USED TO SUPPORT THE PIPE.
14. BUILDING SEWER JOINTS SHALL BE GASKETED AND WATERPROOF. NO CEMENT-MORTAR JOINTS WILL BE PERMITTED.
15. ALL JOINTS POLYVINYL CHLORIDE (PVC) PIPE OR BETWEEN SUCH PIPE SHALL BE MADE WITH APPROVED PREMOLDED GASKET JOINTS.
16. SEWER LATERALS SHALL BE INSTALLED TO THE PROPERTY LINES OF EACH LOT THE PROPOSED SEWER MAIN PASSES BY. THE ENDS OF ALL NEW SEWER SERVICES SHALL BE MARKED AT THE PROPERTY LINE WITH A 1 FT. SQUARE STEEL PLATE BURIED 1 FT. BELOW GRADE IF NOT CONNECTED IMMEDIATELY.
17. THE SEWER AUTHORITY SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO THE BEGINNING OF ANY WORK ON SEWER OR HOUSE CONNECTIONS.
18. INSPECTION OF ALL SEWER SERVICES ON PRIVATE PROPERTY MUST BE COORDINATED WITH WOLLA WATER PERSONNEL, 401-231-1510.
19. APPLICANT SHALL PROVIDE FINAL AS-BUILT PLANS TO THE SEWER AUTHORITY AND ENGINEERING DEPARTMENT UPON COMPLETION OF CONSTRUCTION. AS-BUILT PLANS SHALL INCLUDE: FIELD MEASUREMENTS OF ALL INSTALLED PIPE AND APPURTENANCES, INCLUDING LENGTH, SLOPE, MANHOLE INVERTS, AS WELL AS SINKING TIES/MEASUREMENTS, TO ALL MANHOLES, SEWER STUBS, AND LATERAL SERVICE CONNECTIONS.

**Structural Measures**

1. DETENTION POND SYSTEMS ARE USED TO CONTROL RUNOFF. DISCHARGE OUTLETS ARE PROTECTED WITH RIP-RAP APRONS AND/OR LEVEL SPREADERS.
2. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED IN THE BASIN IMMEDIATELY AFTER GRADING. THE SEEDING EXTENT TO AT LEAST THE DESIGN TOP WIDTH AND INCLUDE ANY OTHER AREAS DISTURBED BY CONSTRUCTION ACTIVITIES. ACTIVITIES SHALL BE CONFINED TO WITHIN THE LIMIT OF WORK AS SHOWN ON THE PLANS.
3. MESSY VEGETATION SHALL BE MAINTAINED BY APPLYING LIME AND FERTILIZER. BARE OR ERODED AREAS SHALL BE IMMEDIATELY REPAIRED AND RESEEDED BY THE CONTRACTOR.
4. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND INSPECTION OF THE PONDS DURING AND UP TO A YEAR AFTER COMPLETION OF CONSTRUCTION. THE TOWN OF SMITHFIELD IS RESPONSIBLE THEREAFTER. ANY UNDEVELOPED VEGETATION COVER IN THE PONDS 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 GRASS WITHIN THE PONDS SHALL BE ALLOWED TO GROW BETWEEN 2' - 10'.
6. THE DETENTION PONDS SHALL BE BUILT TO CONTROL RUNOFF FOR THE 2-YEAR THROUGH 100-YEAR STORM FREQUENCIES.
7. SIDE SLOPES OF THE PONDS SHALL BE SEEDED. THE SIDE SLOPES SHALL BE 3:1 MAXIMUM.
8. ALL EMBANKMENTS OF THE PONDS SHALL BE THOROUGHLY COMPACTED UPON PLACEMENT IN STRICT CONFORMANCE WITH RL STANDARD SPECIFICATION SECTION 202.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL SEDIMENTATION BASINS DURING CONSTRUCTION AND THE DETENTION PONDS UP TO THE ACCEPTANCE BY THE OWNER. THE TOWN OF SMITHFIELD IS RESPONSIBLE THEREAFTER. THE TOWN OF SMITHFIELD SHALL INSPECT THE PONDS SEMIANNUALLY AND AFTER MAJOR STORMS.
10. A GRADUATED GAGE IS TO BE SET WITHIN EACH POND TO MONITOR ACCUMULATED SEDIMENTS.
11. RIP-RAP APRONS SHALL BE INSTALLED AT THE OUTLETS OF ALL CULVERTS. THE EMERGENCY SPILLWAY SHALL BE PROTECTED BY RIP-RAP DOWNSTREAM AND UPSTREAM.
12. RIP-RAP APRONS SHALL BE INSPECTED SEMIANNUALLY AND AFTER MAJOR STORMS. IF REPAIRS ARE NEEDED, THEY SHALL BE ACCOMPLISHED IMMEDIATELY.
13. 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.
14. REFERENCE THE "RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK" PREPARED BY USDA SOIL CONSERVATION SERVICE 1989, AS A GUIDE.

**Sediment Control Program**

1. DISTURBED AREAS WHICH ARE PARTICULARLY SENSITIVE TO EROSION SHALL RECEIVE A CRUSHED STONE OR SHARP ANGULAR RIPRAP 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 SUBJECTED TO STORM WATER FLOWAGE.
6. ADDITIONAL HAYBALES, 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.
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.

**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 SEEDED 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	LB/AC
CREEPER RED FESCUE	75
KENTUCKY BLUE GRASS	15
COLONIAL BERT GRASS	15
PERENNIAL RYE GRASS	5
5. EARLY SPRING OR LATE SUMMER SEEDING IS RECOMMENDED. LIME AND FERTILIZER AS REQUIRED BY SOIL TESTING TO COMPENSATE OR UPGRADE EXISTING CONDITIONS. THE SEED MIX SHALL BE INCORPORATED WITHIN 24 HOURS BEFORE MIXING AND PLANTING, WITH APPLIED 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 3:1 AND SHALL BE TEMPORARILY SEEDED AND/OR STABILIZED. STOCKPILE TO BE SURROUNDED BY HAYBALES.
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 BY POND(S) CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING. PERMANENTLY SEEDED AREAS SHALL BE PROTECTED DURING ESTABLISHMENT WITH MULCH. ALL SEEDED AREAS WILL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHALL BE FERTILIZED AND RESEED AS NECESSARY.
12. REFERENCE THE "RHODE ISLAND SOIL EROSION AND SEDIMENTATION CONTROL HANDBOOK" PREPARED BY THE USDA SOIL CONSERVATION SERVICE 1989, AS A GUIDE.
13. MAXIMUM GRADED SLOPE WITHIN SUBMISSION TO BE 3:1 UNLESS SPECIFIED OTHERWISE BY AN ADDITIONAL STABILIZATION METHODS BE EMPLOYED.
14. IF AND WHEN REQUIRED, TEMPORARY HAY MULCH TO BE TACKED IN PLACE WITH NYLON MESH NETTING.

**Nonstructural Measures**

1. CONSTRUCTION TRAFFIC SHALL BE LIMITED TO ACCESS ROADS, DRAINAGE EASEMENTS AND AREAS TO BE GRADED.
2. A STONE STABILIZATION PAD IS LOCATED AT THE SITE ENTRANCE TO REDUCE THE TRACKING OR FLOWING OF SEDIMENTS ONTO PUBLIC RIGHT-OF-WAY.
3. THE ENTRANCE SHALL BE MAINTAINED BY THE CONTRACTOR. THE MAINTENANCE SHALL INCLUDE TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND OR AS DIRECTED BY THE ENGINEER. ALL SEDIMENTS SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAY, MUST BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
4. TOPSOIL SHALL BE STRIPPED FROM AREAS TO BE GRADED AND STOCKPILED FOR LATER USE. STOCK PILE LOCATION SHALL BE SUBJECT TO APPROVAL BY THE PROJECT ENGINEER. A SEDIMENT BARRIER SHALL SURROUND ALL TOPSOIL STOCKPILES.
5. HAY BALES OR SILT FENCE SHALL BE INSTALLED DOWNSTREAM OUTSIDE THE LIMITS OF ANY PROPOSED CONSTRUCTION AS SHOWN ON THE SITE PLANS AND PRIOR TO THE COMMENCEMENT OF THE PROPOSED ALTERATIONS.
6. SILT FENCE AND HAY BALES SHALL BE MAINTAINED BY THE CONTRACTOR. INSPECTIONS SHALL BE MADE AFTER EACH STORM EVENT AND REPAIRS OR REPLACEMENTS WHEN NECESSARY. THE CONTRACTOR SHALL CLEAN THE ACCUMULATED SEDIMENT IF HALF OF THE ORIGINAL HEIGHT OF THE BALES BECOMES FILLED.
7. THE HAY BALES OR SILT FENCE SHALL BE CHECKED WEEKLY BY THE CONTRACTOR FOR UNDERMINING OR DETERIORATION.
8. THE CONSTRUCTION SUPERINTENDENT SHALL HAVE OVERALL RESPONSIBILITY FOR PLAN IMPLEMENTATION OF NON-STRUCTURAL MEASURES 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.

**Maintenance: Short Term / Long Term**

1. ALL DISTURBED SLOPES EITHER NEWLY CREATED OR CURRENTLY EXPOSED SHALL BE SEEDED, PROTECTED AND MAINTAINED BY THE CONTRACTOR. THE CONTRACTOR SHALL CHECK REGULARLY AND RESEED AREAS TO SEE THAT A GOOD STAND IS MAINTAINED.
2. THE CONTRACTOR MUST REPAIR OR RESEED ANY AREAS THAT DO NOT DEVELOP WITHIN THE PERIOD OF ONE YEAR AND SHALL DO SO AT NO ADDITIONAL EXPENSE.
3. ALL HAY BALES, TEMPORARY TREATMENTS (HAY, STRAW, ETC.) AND TEMPORARY PROTECTION SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED.
4. THE CONTRACTOR SHALL MAINTAIN ALL TOP SOIL STOCKPILES AND UTILITIES BARRIERS THROUGHOUT CONSTRUCTION. EXTREME CARE SHALL BE TAKEN TO ENSURE THAT SEDIMENTS DO NOT SPILL OVER THE SEDIMENT BARRIER.
5. THE HAY BALES OR SILT FENCE SHALL BE CHECKED BY THE CONTRACTOR ON A WEEKLY BASIS AND AFTER EACH STORM FOR UNDERMINING OR DETERIORATION. CONTRACTOR SHALL REPAIR OR REPLACE THE HAYBALES AS NECESSARY. CONTRACTOR SHALL CLEAN THE ACCUMULATED SEDIMENT IF HALF OF THE ORIGINAL HEIGHT OF THE BALES BECOMES FILLED IN WITH SEDIMENTS.
6. THE STONE STABILIZATION PADS AT THE SITE ENTRANCES SHALL BE MAINTAINED BY THE CONTRACTOR. THE CONTRACTOR SHALL INCLUDE TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND OR AS DIRECTED BY THE ENGINEER. ALL SEDIMENTS SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHT OF WAY MUST BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
7. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND INSPECTION OF THE PONDS DURING AND UP TO A YEAR AFTER COMPLETION OF CONSTRUCTION. MAINTENANCE SHALL INCLUDE RESEEDING ANY UNDEVELOPED AREAS AFTER A FULL GROWING SEASON AT NO ADDITIONAL EXPENSE. REMOVING ACCUMULATED SILT OVER 3" IN THE PONDS, AND MAINTAINING THE GRASS TO A GROWING HEIGHT BETWEEN 2' - 10'. EXCAVATION OF SILT SHALL BE MANUAL WITH A SHOVEL AND WHEELBARROW ONLY. REMOVE ALL WOODY VEGETATION FROM POND EMBANKMENTS.

8. THE CONTRACTOR SHALL INSPECT RIP-RAP APRONS AFTER EACH STORM AND REPAIR AS NECESSARY.
9. THE CONTRACTOR SHALL MAINTAIN THE DRAINAGE SYSTEM THROUGHOUT CONSTRUCTION. THE ACCUMULATED SEDIMENTS IN THE CATCH BASINS SHALL BE REMOVED AND DRAINAGE PIPES FLUSHED BY THE CONTRACTOR AT THE END OF CONSTRUCTION.
10. THE TOWN OF SMITHFIELD IS RESPONSIBLE FOR THE LONG TERM MAINTENANCE OF ALL DETENTION PONDS. ALL DRAINAGE SYSTEM COMPONENTS WITHIN THE RIGHT-OF-WAY SHALL REMAIN THE RESPONSIBILITY OF THE CONTRACTOR UNTIL THE TOWN ACCEPTS THE ROAD. THE DRAINAGE SYSTEMS SHALL BE CHECKED SEMI-ANNUALLY AND ACCUMULATED SEDIMENTS SHALL BE REMOVED WHEN THEY EXCEED 3" DEPTH OR EVERY 10 YEARS, WHICHEVER COMES FIRST. CATCH BASIN SLUMPS SHALL BE CHECKED ANNUALLY AND SEDIMENTS SHALL BE REMOVED IF THEY EXCEED 0.5' OR 10 YEARS, WHICHEVER COMES FIRST.
11. THE TOWN OF SMITHFIELD SHALL CHECK THE RIP-RAP APRONS AND EMERGENCY OUTLETS AFTER MAJOR STORMS AND AN ANNUAL BASIS. REPAIRS SHALL BE PERFORMED IMMEDIATELY AS CONDITIONS WARRANT.
12. THE PONDS SHALL BE MAINTAINED BY THE TOWN OF SMITHFIELD AFTER THE FIRST YEAR. THE TOWN SHALL MAINTAIN A GOOD VEGETATIVE COVER (GRASS BETWEEN 2'-10" OR VEGETATION AS SPECIFIED), BOTTOM OF PONDS SHALL BE INSPECTED ON A BIENNIAL BASIS AND ACCUMULATED SEDIMENTS SHALL BE REMOVED WHEN THEY REACH A 3' DEPTH OR EVERY 10 YEARS, WHICHEVER COMES FIRST.
13. ALL DETENTION POND BOTTOMS AND SIDE SLOPES SHOULD BE INSPECTED IN THE FALL AND SPRING TO INSURE PROPER COVER. AREAS SUBJECT TO EROSION SHOULD BE REPAIRED AND RESEEDED.
14. DETENTION POND BOTTOMS AND SIDE SLOPES SHOULD BE MOWED A MINIMUM OF THREE PER YEAR AND INSPECTED FOR WOODY GROWTH. WOODY PLANTS SHOULD BE REMOVED FROM THE DETENTION BASIN BERM DURING MOWING OPERATION.
15. ALL CONTRIBUTING CATCH BASINS AND MANHOLE SLUMPS SHOULD BE INSPECTED AND CLEANED ONCE PER YEAR. ALL REMOVED SOILS MUST BE DISCARDED AT AN APPROVED SITE.
16. DURING INSPECTION, IF STANDING WATER IS FOUND IN ANY OF THE BASINS ON THE SITE MORE THAN THREE (3) DAYS AFTER A RAINFALL EVENT, THAT BASIN OR BASINS(S) SHALL BE DETERMINED TO BE FAILED, AND THE OWNER SHALL BE RESPONSIBLE TO HAVE THE SYSTEM(S) INSPECTED BY A R.I. REGISTERED PROFESSIONAL ENGINEER AND REPAIRED/REPLACED IMMEDIATELY.
17. THE CONSTRUCTION SUPERINTENDENT SHALL HAVE OVERALL RESPONSIBILITY FOR THE MAINTENANCE PROGRAM DURING THE CONSTRUCTION PHASE. THE SUPERINTENDENT SHALL SEE THAT THE APPROPRIATE WORKERS ARE AWARE OF THE PROVISIONS OF THE PLAN.
18. AFTER THE FIRST YEAR AND ACCEPTANCE BY THE TOWN, THE TOWN OF SMITHFIELD SHALL HAVE OVERALL RESPONSIBILITY FOR IMPLEMENTING THE MAINTENANCE PROGRAM.
19. CONSTRUCTION OF ALL DRAINAGE PONDS SHALL BE SUPERVISED BY A PROFESSIONAL ENGINEER. A REPORT AND PLAN OF THE BUILDING CONSTRUCTION SHALL BE MADE AVAILABLE TO THE TOWN ENGINEER.

**General Contractor Notes & Requirements**

1. THE CONTRACTOR IS TO NOTIFY DIG SAFE PRIOR TO CONSTRUCTION.
2. A PRE-CONSTRUCTION MEETING IS REQUIRED. THE TOWN ENGINEER SHALL BE NOTIFIED PRIOR TO CONSTRUCTION.
3. CONTRACTOR TO OBTAIN ALL FEDERAL, STATE, AND MUNICIPAL APPROVALS (IF APPLICABLE) PRIOR TO THE START OF CONSTRUCTION.
4. ALL WORK PERFORMED HEREIN SHALL BE GOVERNED BY THE RHODE ISLAND STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION AND THE TOWN OF SMITHFIELD STANDARD SPECIFICATIONS AND DETAILS.
5. ALL DRAINAGE PIPING TO BE R.C.P. CLASS III UNDER ROADWAY AND ADS H-12 IN ALL OTHER AREAS, UNLESS SPECIFIED ON PLANS.
6. ALL CATCH BASINS AND MANHOLES TO BE 4 FT DIAMETER UNLESS SPECIFIED OTHERWISE.
7. COMPACT, LOAM & SEED ALL DISTURBED AREAS. ADDITIONAL EROSION CONTROLS MAY BE REQUIRED BY THE SITE OR TOWN ENGINEER.
8. 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.
9. THE CONTRACTOR SHALL VERIFY THE PROPOSED LAYOUT WITH ITS RELATIONSHIP TO THE EXISTING 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.
10. 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.
11. THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS AND LOCATE AND EXISTING UTILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION VERIFY ALL DIMENSIONS, SITE CONDITIONS, AND MATERIALS SPECIFICATIONS AND SHALL NOTIFY THE OWNER AND ENGINEER OF ANY ERRORS, OMISSIONS OR DISCREPANCIES BEFORE COMMENCING OR PROCEEDING WITH WORK.
12. 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. ALL WATER, GAS, SEWER AND OTHER UTILITIES SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
13. 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.
14. THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; 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 ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL AND ALLEGED IN CONNECTION WITH THE PERFORMANCE OF WORK ON THE PROJECT, EXCEPTING FOR LIABILITY ARISING FROM "THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER."
15. 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 IS SHOWN FOR THE CONTRACTORS 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 DAMAGED MADE TO UTILITIES BY THE CONTRACTOR.

**Legend:**

- EXISTING PROPERTY LINE
- ABUTTER PROPERTY LINE
- BUILDING SETBACK
- 100 FT BUILDING SETBACK
- EXISTING STONE WALL
- EXISTING TRELLINE
- SURVEYED RIVERBANK
- EXISTING WETLAND FLAG
- EXISTING UTILITY POLE
- EXISTING BOUND
- IRON PIN
- DRILL HOLE
- EXISTING WATER
- EXISTING SEWER
- EXISTING DRAINAGE
- EXISTING WATER GATE VALVE
- EXISTING HYDRANT
- EXISTING SEWER MANHOLE
- EXISTING CATCH BASIN
- EXISTING DRAINAGE MANHOLE
- PROPOSED WATER GATE VALVE
- PROPOSED HYDRANT
- PROPOSED WATER SHUTOFF
- PROPOSED CATCH BASIN
- PROPOSED DRAINAGE MANHOLE
- PROPOSED SEWER MANHOLE
- PROPOSED SEWOUR
- PROPOSED SPOT GRADE
- PROPOSED TOP OF WALL ELEVATION
- PROPOSED BOTTOM OF WALL ELEVATION
- PROPOSED PROPERTY LINE
- PROPOSED PAVEMENT
- PROPOSED BITUMINOUS CURB
- PROPOSED WATER
- PROPOSED SEWER
- PROPOSED DRAINAGE
- PROPOSED EASEMENT
- SAW CUT
- PROPOSED EROSION CONTROLS
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED BOLDER WALL
- PROPOSED RIP RAP APRON
- TEST PIT ID AND LOCATION
- AREA(S) OF ARCHEOLOGICAL FINDINGS
- PROPOSED GAURD RAIL

NO.	DATE	REVISION
1	3/7/08	CONSERVATION LAYOUT/ARCHEOLOGICAL FEATURES

BRIAN P. THALMANN  
6066  
REGISTERED PROFESSIONAL ENGINEER  
(CON.)

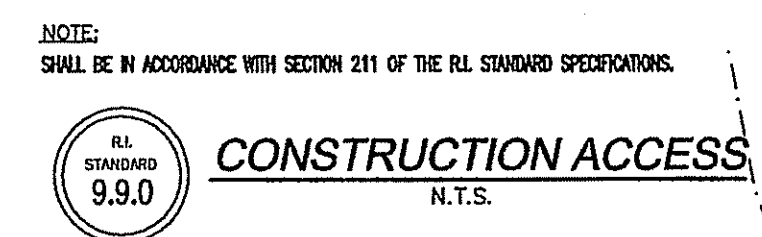
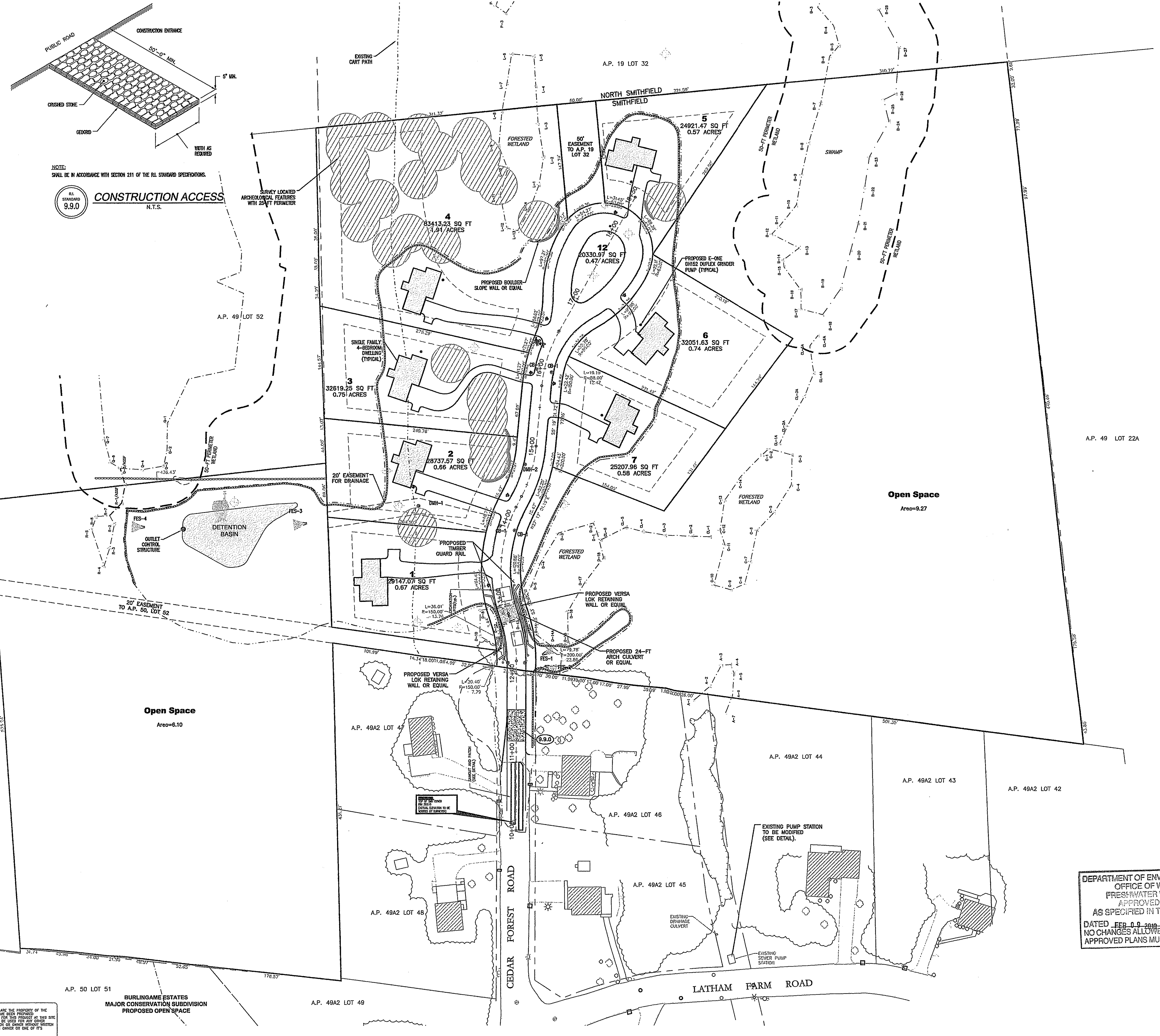
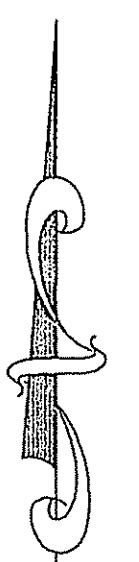
**Thalman Engineering Co., Inc.**  
Site/Civil Engineers • Land Planners  
600 Putnam Pike, Suite #7  
Greenville, Rhode Island 02828  
(401) 349-3040 • (401) 349-3041 (fax)

Notes & Legend  
**Cedar Forest Estates**  
Cedar Forest Road  
Prepared for:  
**Cedar Forest Associates, LLC**  
700 Main Street, East Greenwich, RI  
Scale: As Noted  
date: NOV-07

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED FEB 09 2008 FILE # 06-0058  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL.  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE.

*Brian P. Thalmann*

Design By: JEA  
Checked By: BPT  
Sheet  
**3**  
of  
**8**  
FILE NO.: 06.008



NOTE: SHALL BE IN ACCORDANCE WITH SECTION 211 OF THE R.I. STANDARD SPECIFICATIONS.

RA STANDARD 9.9.0 CONSTRUCTION ACCESS N.T.S.

Preliminary Plan Submission

General Notes:

- 1. THE OWNER/APPLICANT OF THIS PROJECT IS CEDAR FOREST ASSOCIATES, LLC, 700 MAIN STREET, EAST GREENWICH, RI.
2. THE PROPOSED LOTS ARE TO BE SERVICED BY PUBLIC SEWER AND WATER.
3. EXISTING UTILITIES HAVE BEEN PLOTTED FROM BEST AVAILABLE INFORMATION. LOCATION OF ALL UNDERGROUND STRUCTURES ARE APPROXIMATE ONLY.
4. STORMWATER RUNOFF WILL BE MITIGATED WITH THE USE OF CATCH BASINS, SWALES, AND DETENTION/RETENTION BASINS INCORPORATING THE BEST MANAGEMENT PRACTICES OF RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT.
5. THE 100 FT. STRUCTURE SETBACK TO A WETLAND IS INCLUDED WITHIN THE BUILDING ENVELOPES AS SHOWN.
6. MASTER PLAN APPROVAL NOVEMBER 13, 2007.

Conservation Development Calculation:

TOTAL SITE AREA 22.34 ACRES
WETLAND AREA 1.20 ACRES
WETLAND BUFFERS 0.87 ACRES
SLOPES 15% > 5.07 ACRES

EXISTING SUITABLE OPEN SPACE = 15.35 AC.
SUITABLE OPEN SPACE TO BE PROVIDED = 60% X 15.35 ACRES = 9.21 AC.

Flood Note:

A REVIEW OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS (FIRM) COMMUNITY PANEL NUMBER 440025 0001B, REVISED MARCH 4, 1991 INDICATES THE SUBJECT PARCEL LIES IN ZONE X: AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD PLAIN.

Inconclusive Wetland Flags:

THE FOLLOWING WETLAND EDGE AND CENTERLINE FLAGS ARE INCONCLUSIVE TO THE PROPOSED WORK AND HAVE NOT BEEN VERIFIED AS PART OF THIS APPLICATION FOR PROPOSED WORK.
B-4 THROUGH B-28
C-1 THROUGH C-8, C-14
CL-1A THROUGH CL-7A
E-1 THROUGH E-6
R-1 THROUGH R-7
O-1, O-2, O-6, O-7

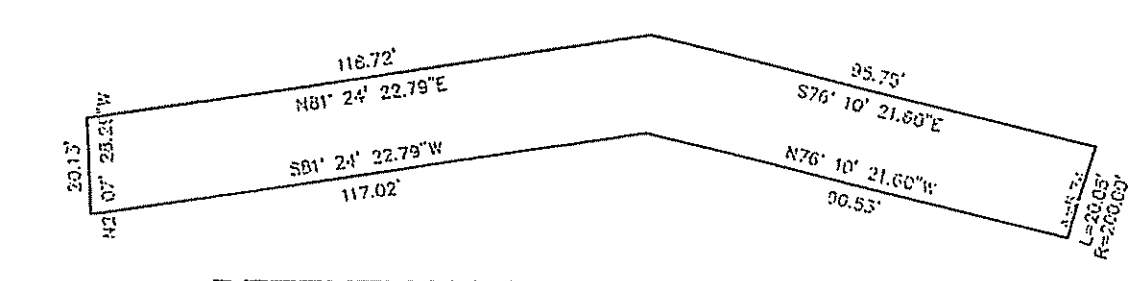
\*50FT PERIMETER WETLAND ASSOCIATED WITH THESE FLAGS HAS NOT BEEN VERIFIED.

Conservation Zoning (PUBLIC SEWER & WATER)

AREA 20,000 S.F.
FRONTAGE 80 FT.
SETBACKS:
FRONT 25 FT.
SIDE 16 FT.
REAR 30 FT.

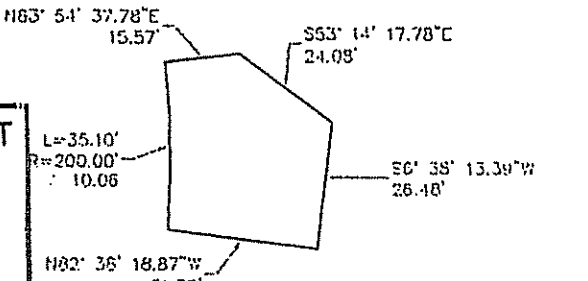
Development Data

Table with 2 columns: Category and Value. Includes: AREA OF PARCEL (22.34 ACRES), AREA OF R-O-W (0.97 ACRES), OPEN SPACE AREA (15.35 ACRES), SUITABLE OPEN SPACE (11.48 ACRES), AREA OF PROP. LOTS (6.03 ACRES), # PROPOSED LOTS (7), AVG. LOT AREA (0.86 ACRES), LENGTH OF PROPOSED ROADWAY W/IN PROPERTY (860± LF), LENGTH OF TOTAL ROAD TO BE CONSTRUCTED (980± LF).



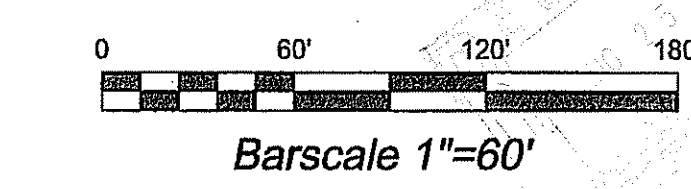
DETENTION BASIN EASEMENT: SCALE: 1"=40'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF WATER RESOURCES FRESHWATER WETLANDS PROGRAM APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL DATED FEB 09 2008 FILE # 06-0058 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL APPROVED PLANS MUST BE AT CONSTRUCTION SITE.



FES-1 & 2 EASEMENT: SCALE: 1"=40'

Signature: Cynthia D. Wencel



Barscale 1"=60'

Revision table with columns: NO., DATE, REVISION. Includes entries for CONSERVATION LAYOUT/ARCHEOLOGICAL FEATURES, DEM. COMMENTS, RIDEA COMMENTS, and RIDEA COMMENTS.



Thalman Engineers Co., Inc. Site/Civil Engineers • Land Planners 600 Putnam Pike, Suite #7 Greenville, Rhode Island 02828 (401) 349-3040 • (401) 349-3041 (fax)

Site Layout Plan Lot 24 Cedar Forest Estates Cedar Forest Road Prepared for: Cedar Forest Associates, LLC 700 Main Street, East Greenwich, RI Smithfield Rhode Island 08080 Date: June-07

Drawn By: JEA Checked By: BPT Sheet 4 of 8 FILE NO.: 06.008

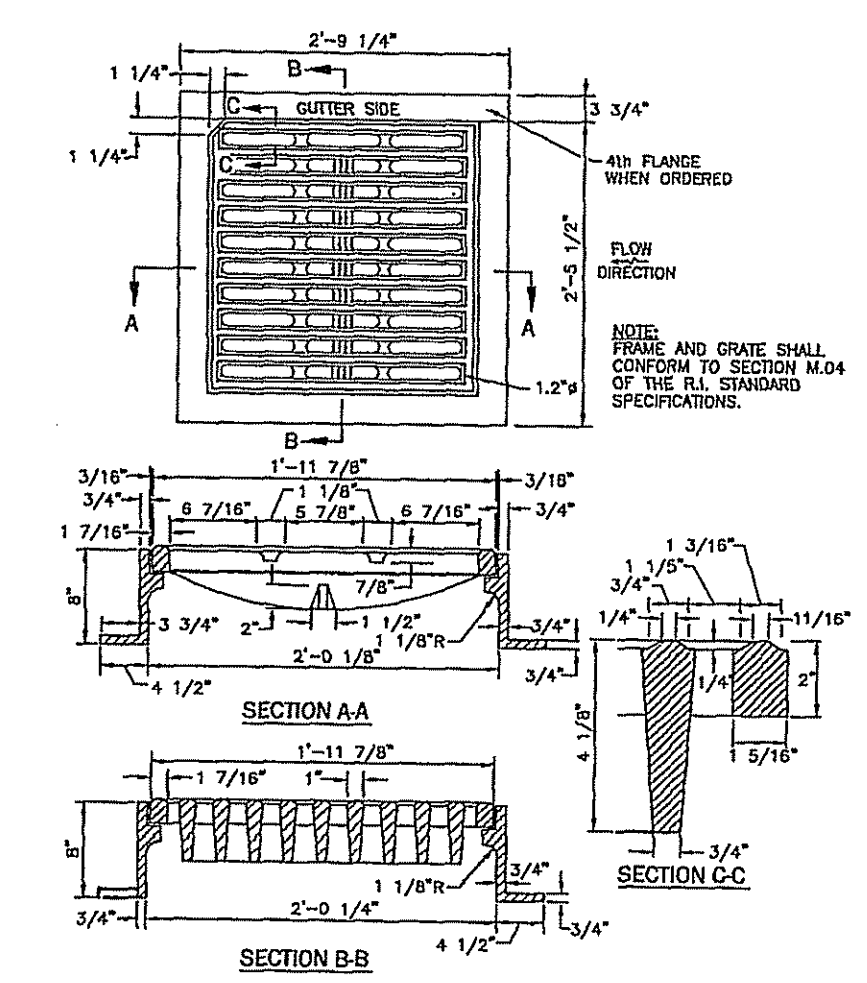
COPYRIGHT THESE DRAWINGS ARE THE PROPERTY OF THE ENGINEER AND ARE NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER.



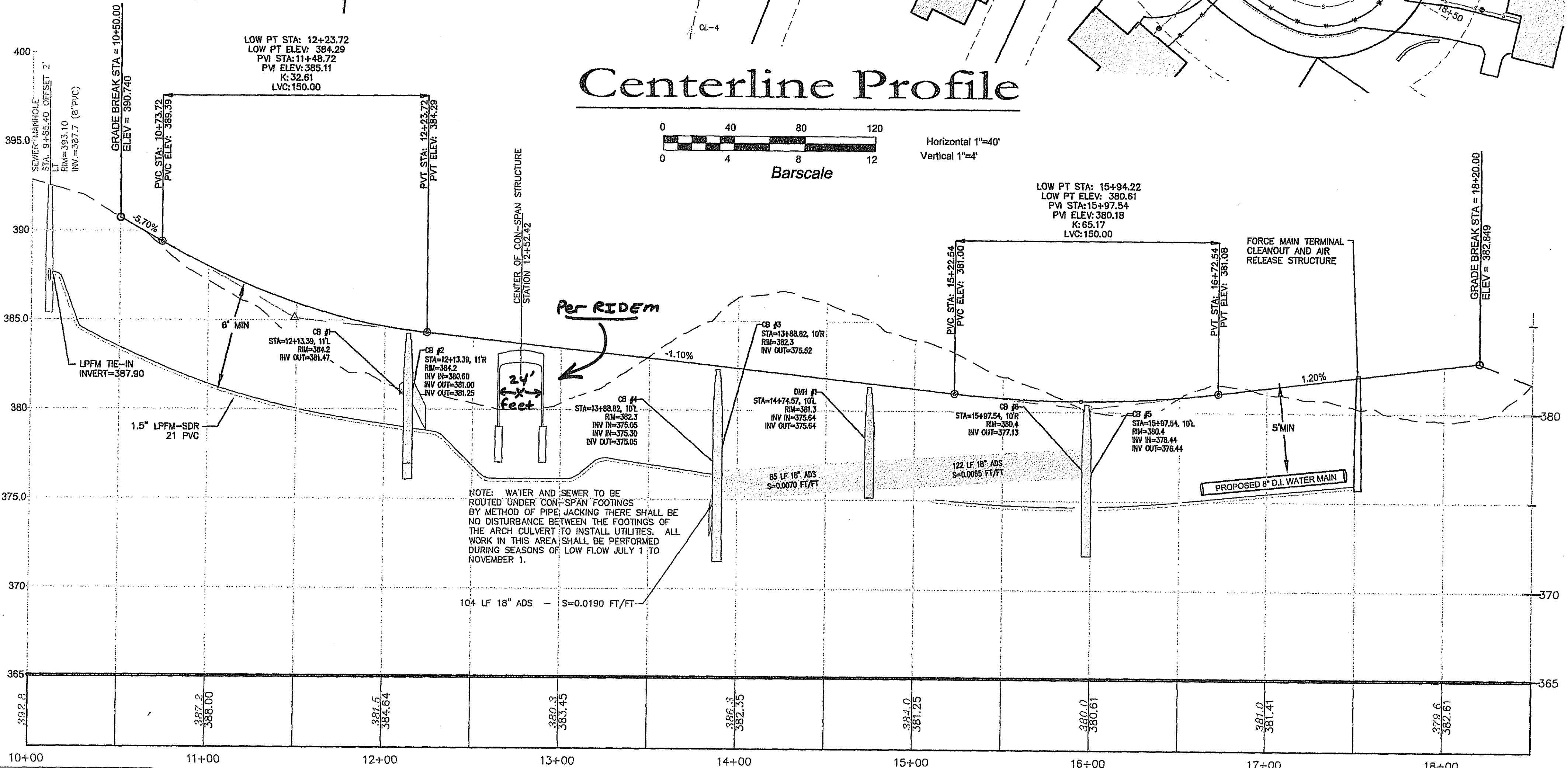
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RM=375.8

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED FEB 09 2010 FILE # 06-0058  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
*Signature: D. Wenzel*

**TYPICAL SEWER AND WATER LINE CROSSINGS**  
N.T.S.

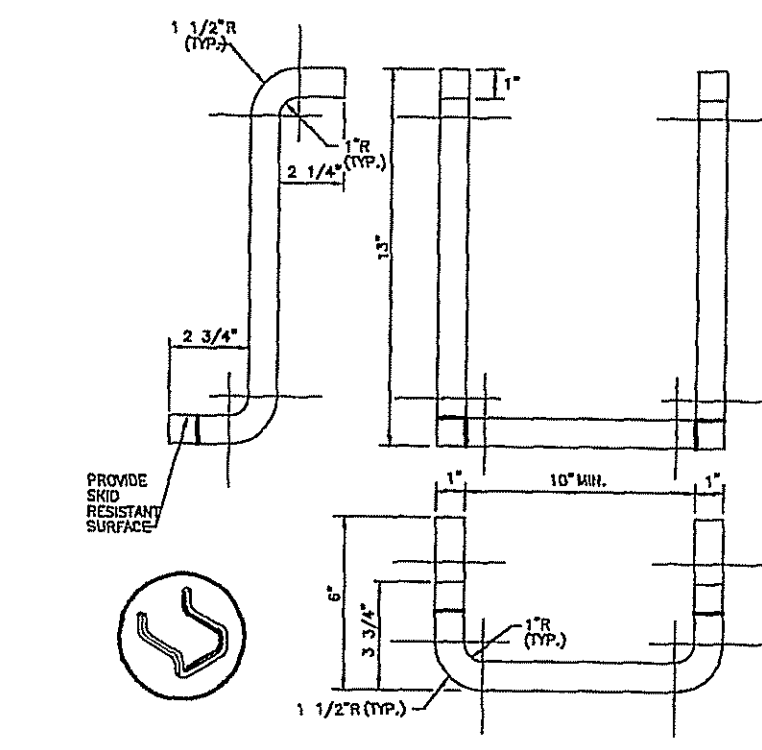


**Centerline Profile**

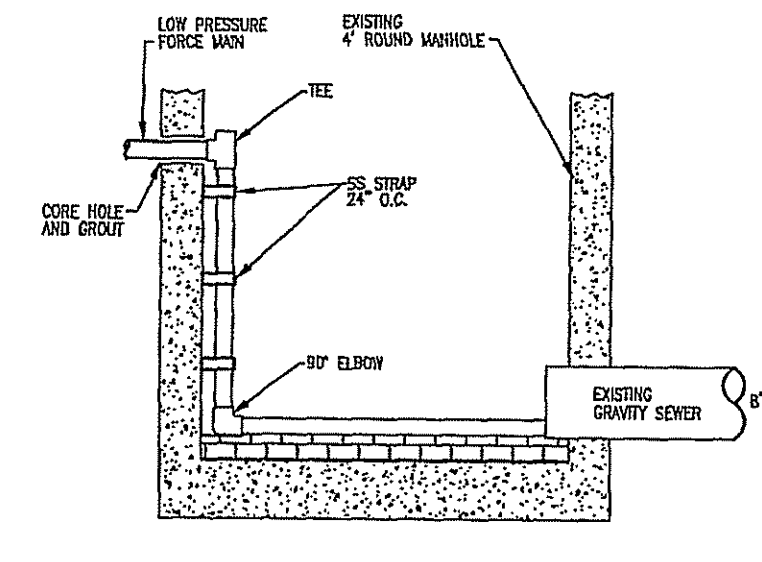


NOTE: WATER AND SEWER TO BE ROUTED UNDER CON-SPAN STRUCTURE BY METHOD OF PIPE JACKING THERE SHALL BE NO DISTURBANCE BETWEEN THE FOOTINGS OF THE ARCH CULVERT TO INSTALL UTILITIES. ALL WORK IN THIS AREA SHALL BE PERFORMED DURING SEASONS OF LOW FLOW JULY 1 TO NOVEMBER 1.

**SQUARE FRAME AND GRATE**  
(BICYCLE SAFE)  
N.T.S.



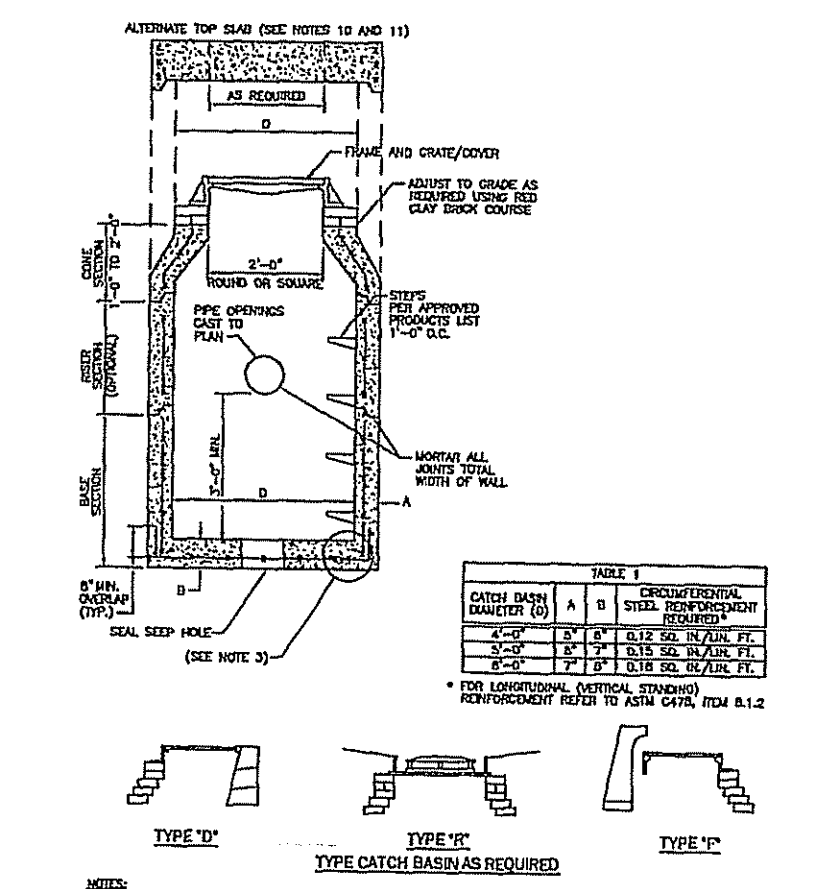
**CATCH BASIN AND MANHOLE STEP**  
N.T.S.



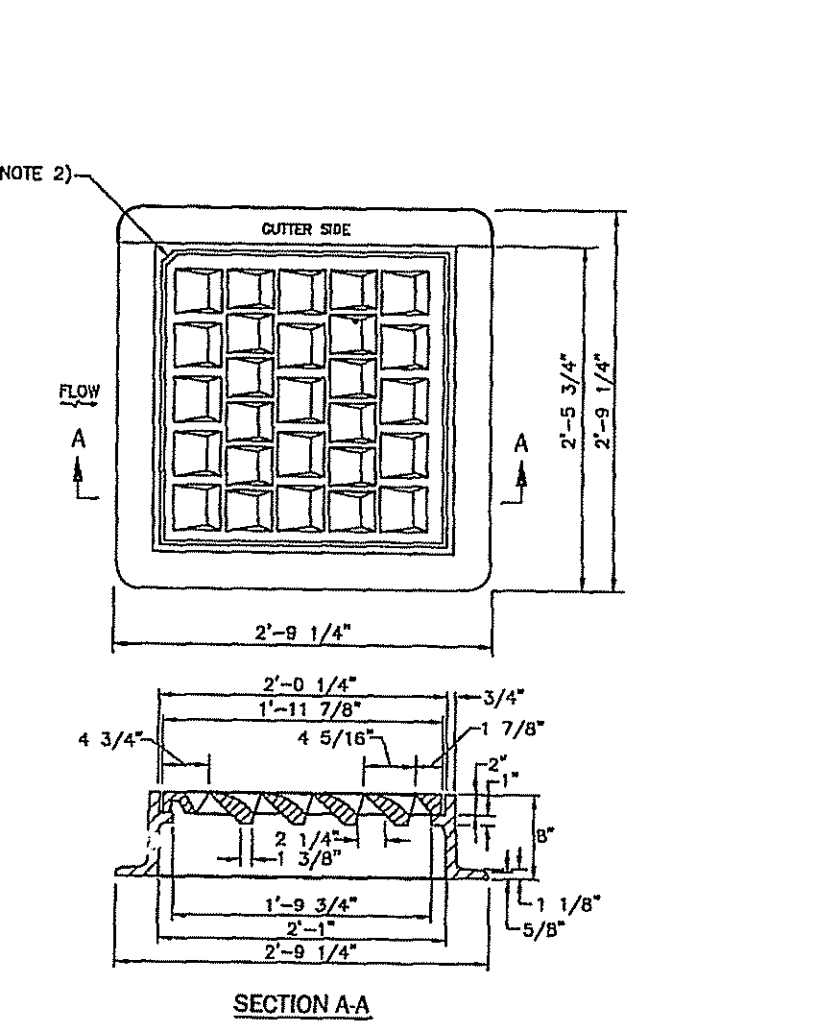
**DROP CONNECTION FOR LPSS TO GRAVITY SEWER**  
N.T.S.



**PRECAST 4'-0" ROUND MANHOLE**  
N.T.S.



**PRECAST 4'-0", 5'-0", 5'-0" ROUND CATCH BASIN**  
N.T.S.



**HIGH CAPACITY FRAME AND GRATE**  
(BICYCLE SAFE)  
N.T.S.



NO.	DATE	REVISION
1	3/11/08	CONSERVATION LAYOUT/ARCHEOLOGICAL FEATURES
2	6/11/08	RIDEM COMMENTS

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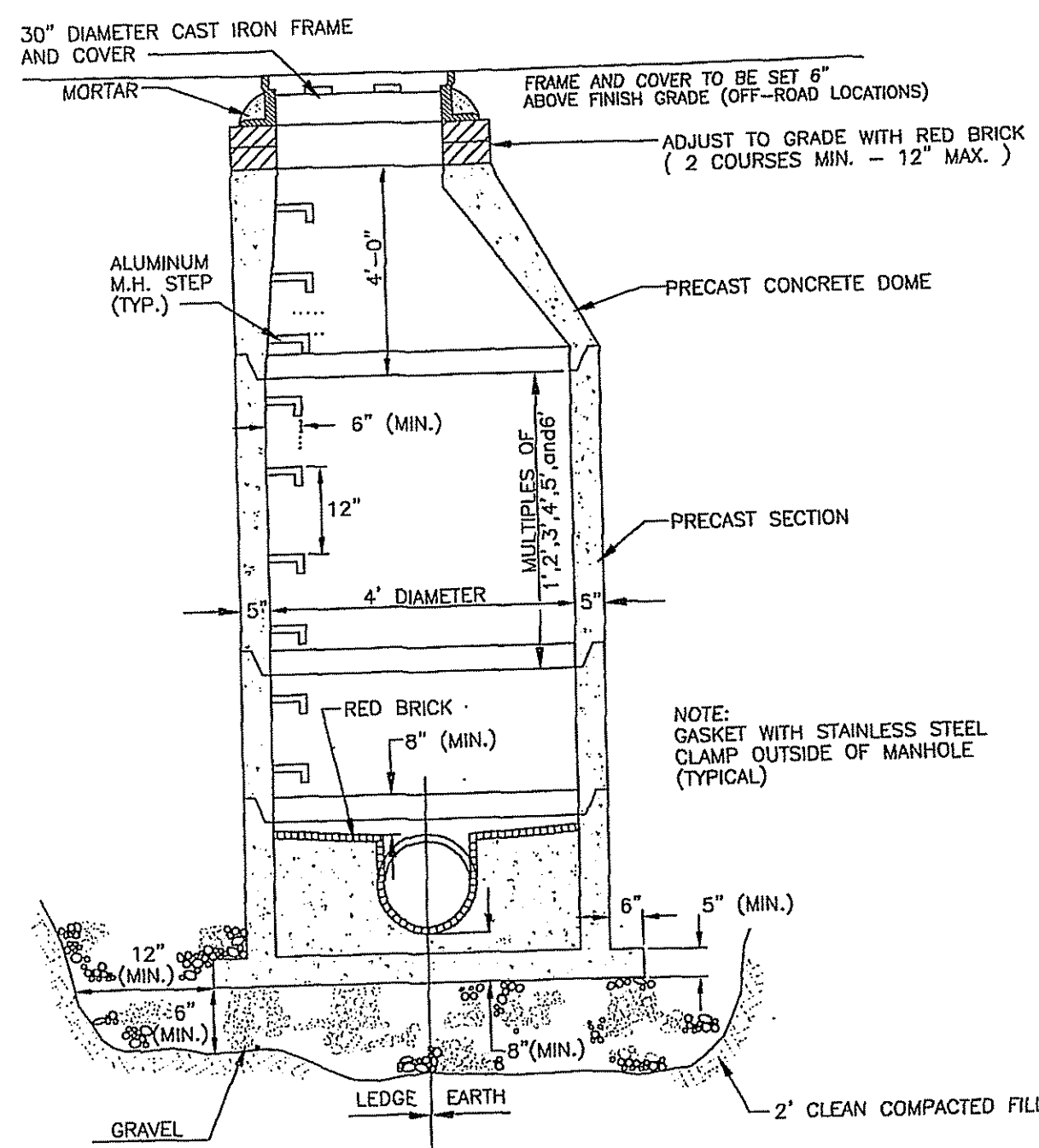
**Thalman Engineering Co., Inc.**  
Site/Civil Engineers • Land Planners  
600 Putnam Pike, Suite #7  
Greenville, Rhode Island 02828  
(401) 349-3040 • (401) 349-3041 (fax)

Plan & Profile / Drainage Plan  
**Cedar Forest Estates**  
Cedar Forest Road  
Prepared for:  
**Cedar Forest Associates, LLC**  
700 Main Street, East Greenwich, RI  
date: Nov-07  
Scale: AS SHOWN

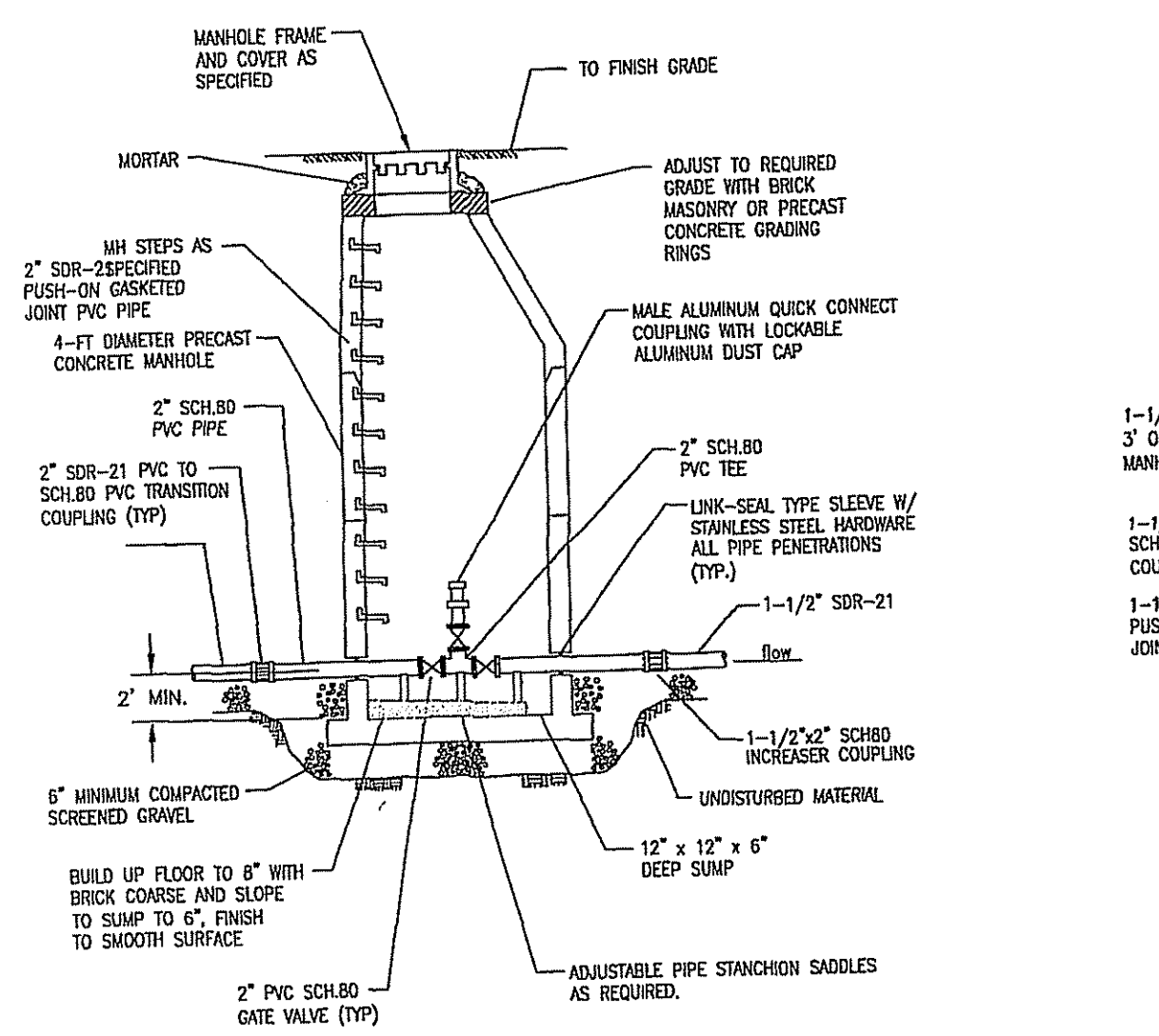
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Checked By: BPT  
Sheet  
**6**  
of 8  
FILE NO.: 06.008

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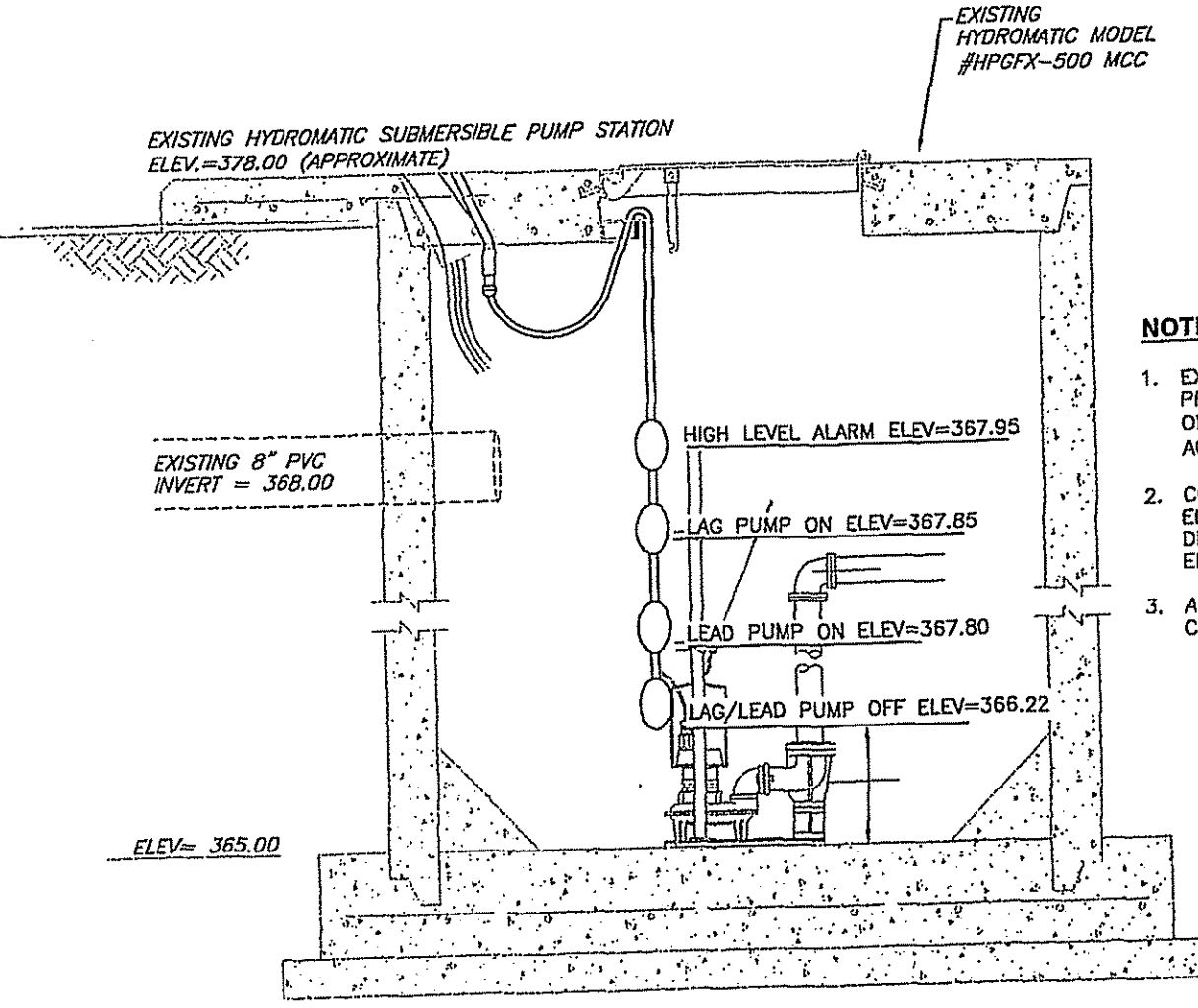




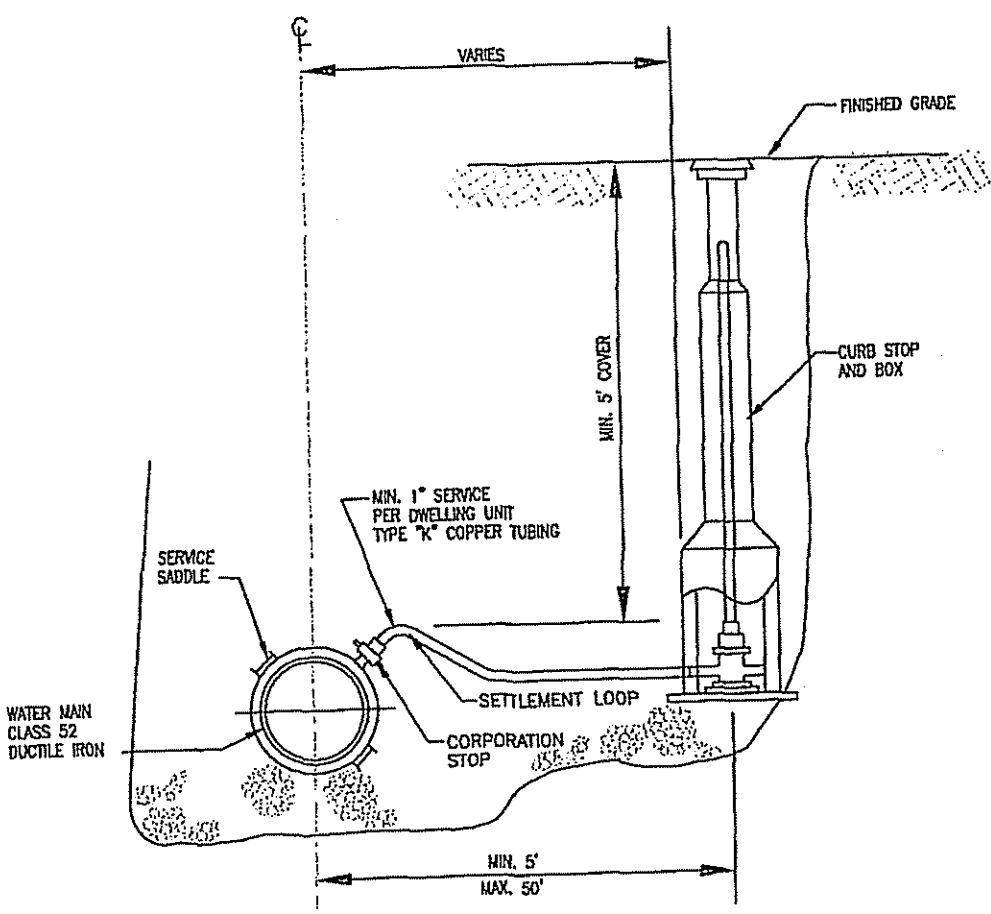
**SANITARY SEWER MANHOLE**  
N.T.S.



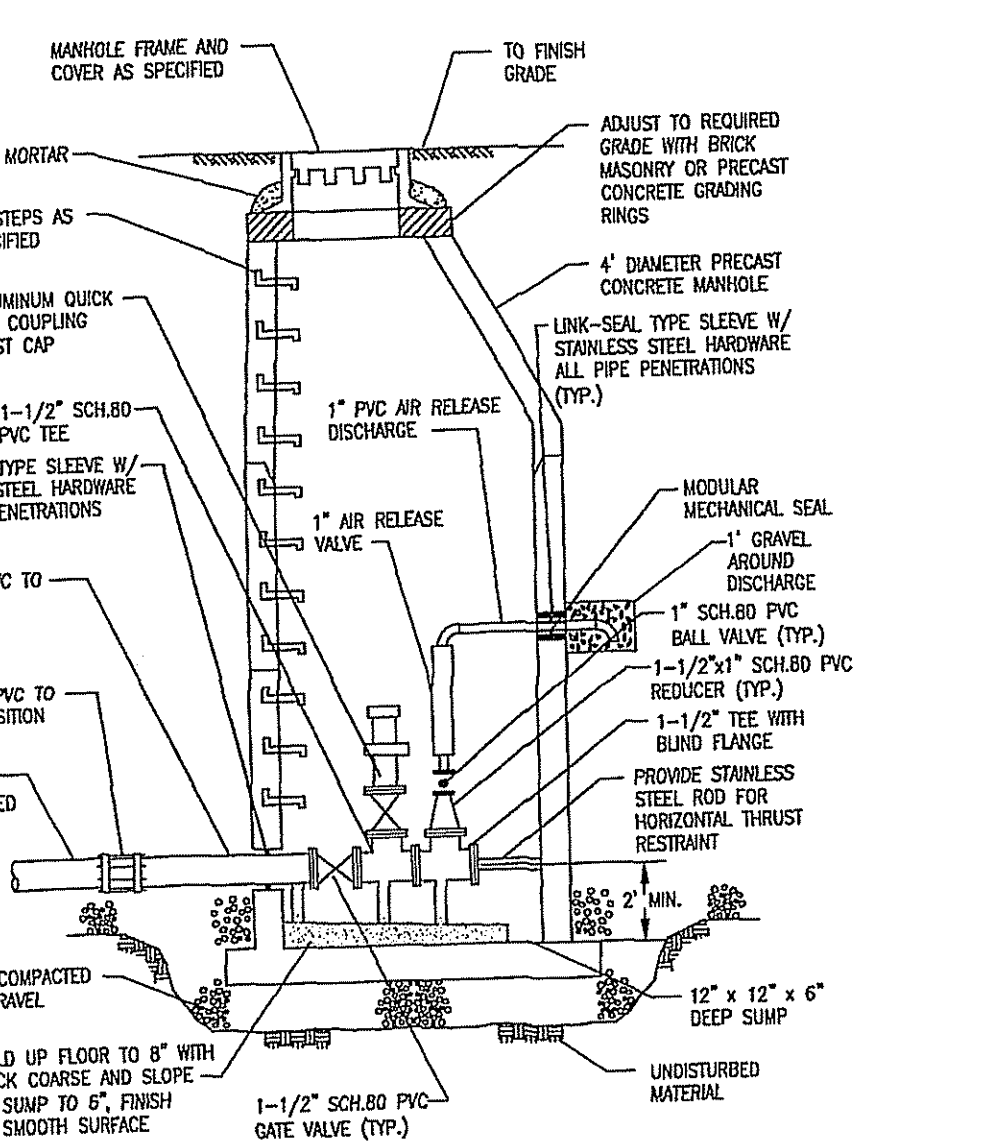
**FORCE MAIN IN-LINE CLEANOUT STRUCTURE**  
N.T.S.



**FLOAT ELEVATION SEQUENCE:**  
NOT TO SCALE

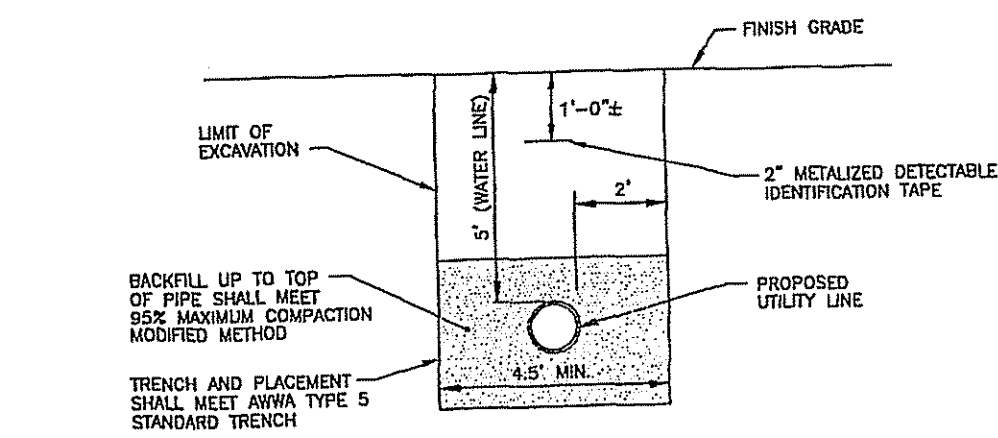


**TYPICAL WATER SERVICE CONNECTION**  
N.T.S.

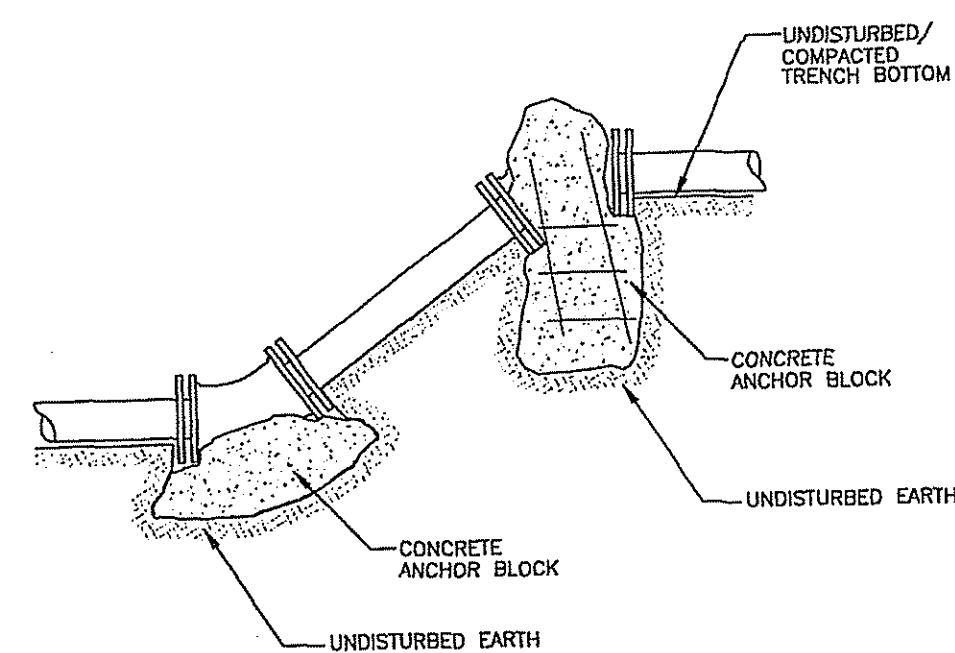


**FORCE MAIN TERMINAL CLEANOUT AND AIR RELEASE STRUCTURE**  
N.T.S.

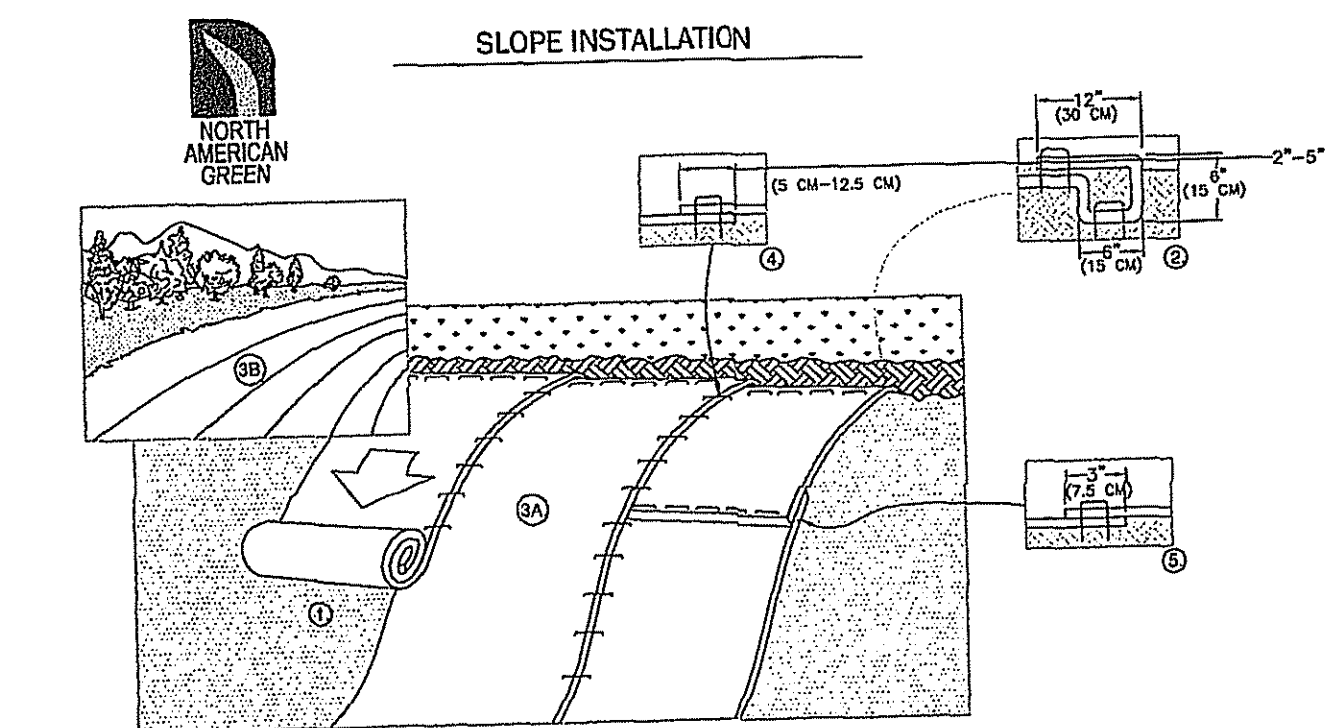
- NOTES:**
1. EXISTING ELEVATION(S) OBTAINED FROM INFORMATION PROVIDED BY VENDOR AND VERIFIED BY FIELD OBSERVATIONS. FLOAT ELEVATION(S) SHALL BE SET IN ACCORDANCE TO DISTANCE FROM 8" INVERT ELEVATION.
  2. CONTRACTOR SHALL VERIFY FLOAT(S) AND INVERT ELEVATIONS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE PROVIDED TO THE TOWN ENGINEER.
  3. ALL COMPONENTS SHALL BE POWER WASHED AND CLEANED PRIOR TO START UP.



**TYPICAL WATER LINE TRENCH**  
N.T.S.

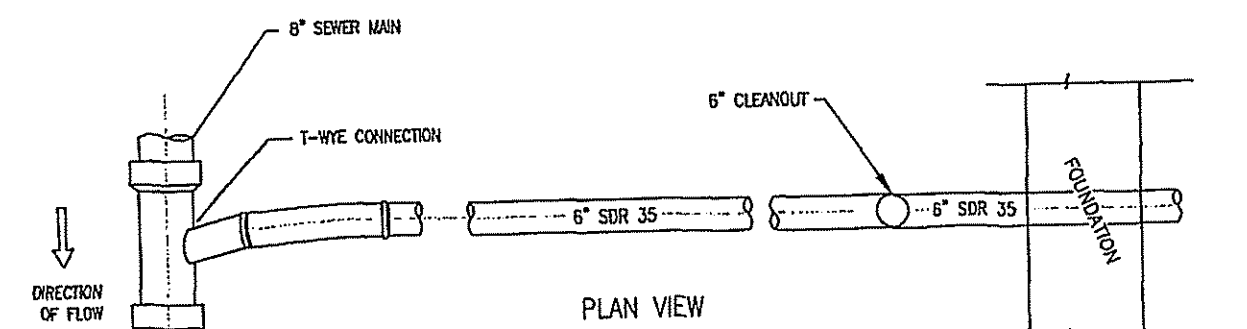


**WATERMAIN ANCHORAGE DETAIL**  
N.T.S.

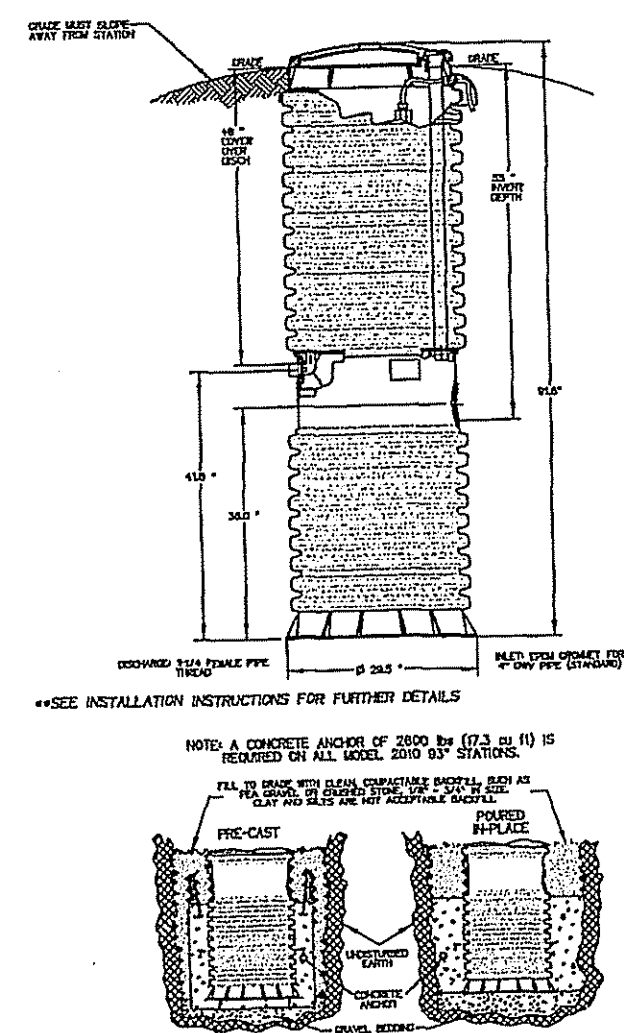


**NORTH AMERICAN GREEN DETAIL**  
N.T.S.

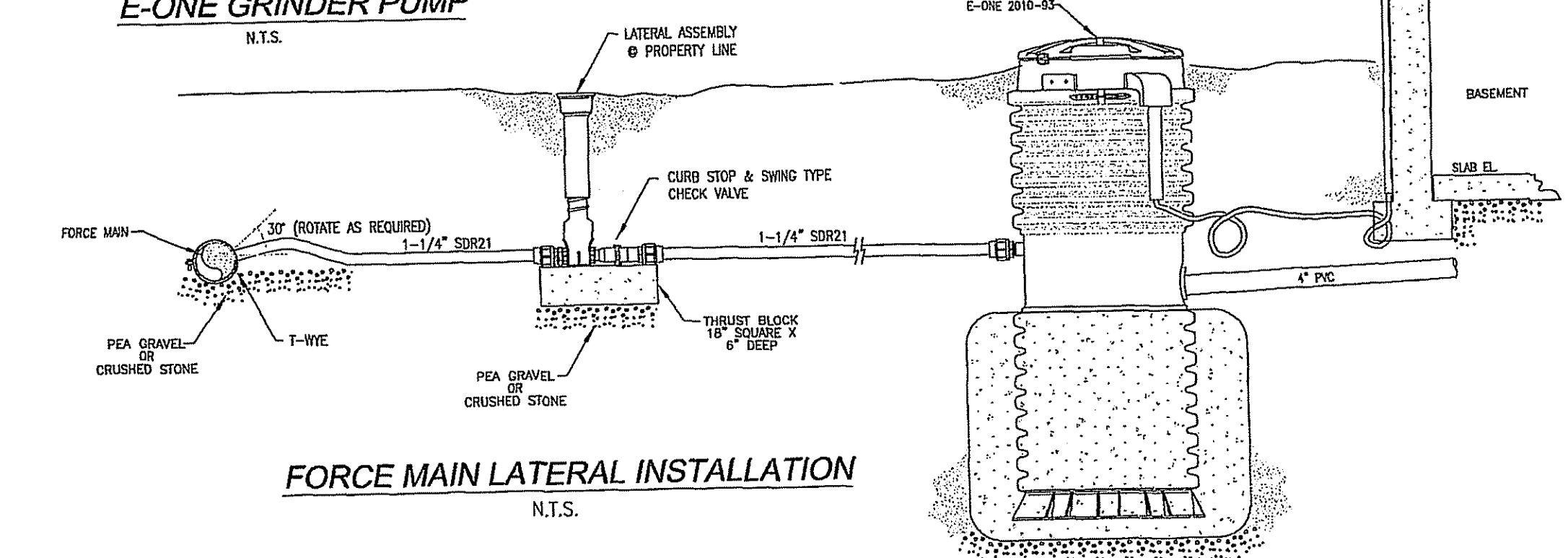
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
  2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF BLANKET EXTENDING BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET 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) OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE BLANKET.
  3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS 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, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
  4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) OVERLAP DEPENDING ON BLANKET TYPE.
  5. CONSECUTIVE BLANKETS 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 BLANKET 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 BLANKETS.
- \*INSTALL AS SHOWN ON PLAN



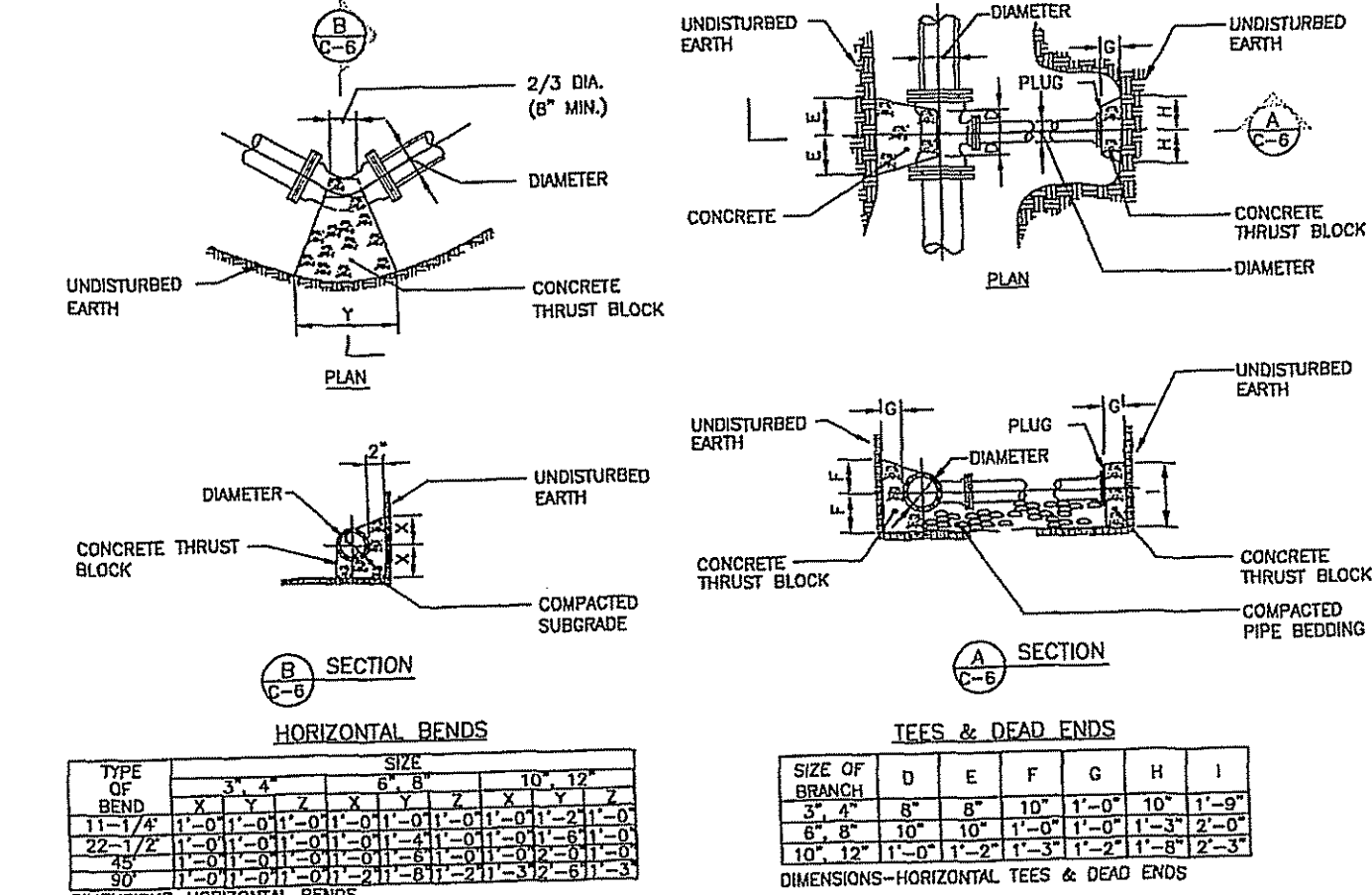
**GRAVITY SEWER BUILDING CONNECTION DETAIL**  
N.T.S.



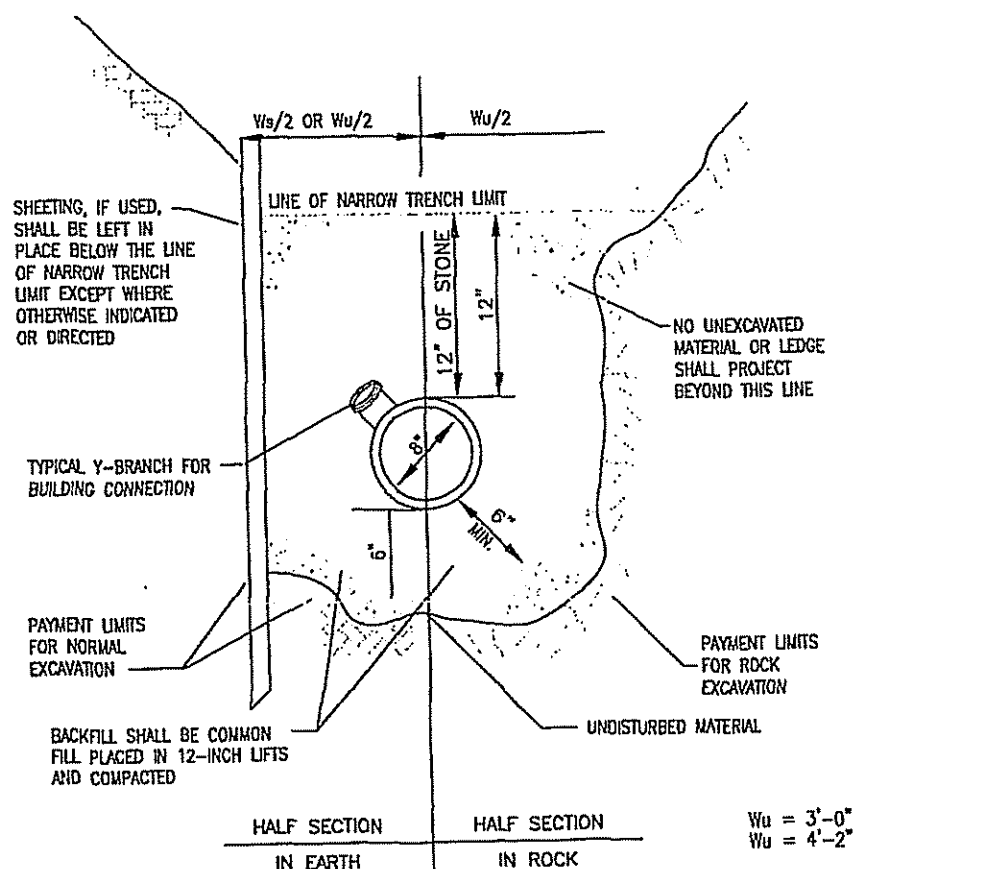
**E-ONE GRINDER PUMP**  
N.T.S.



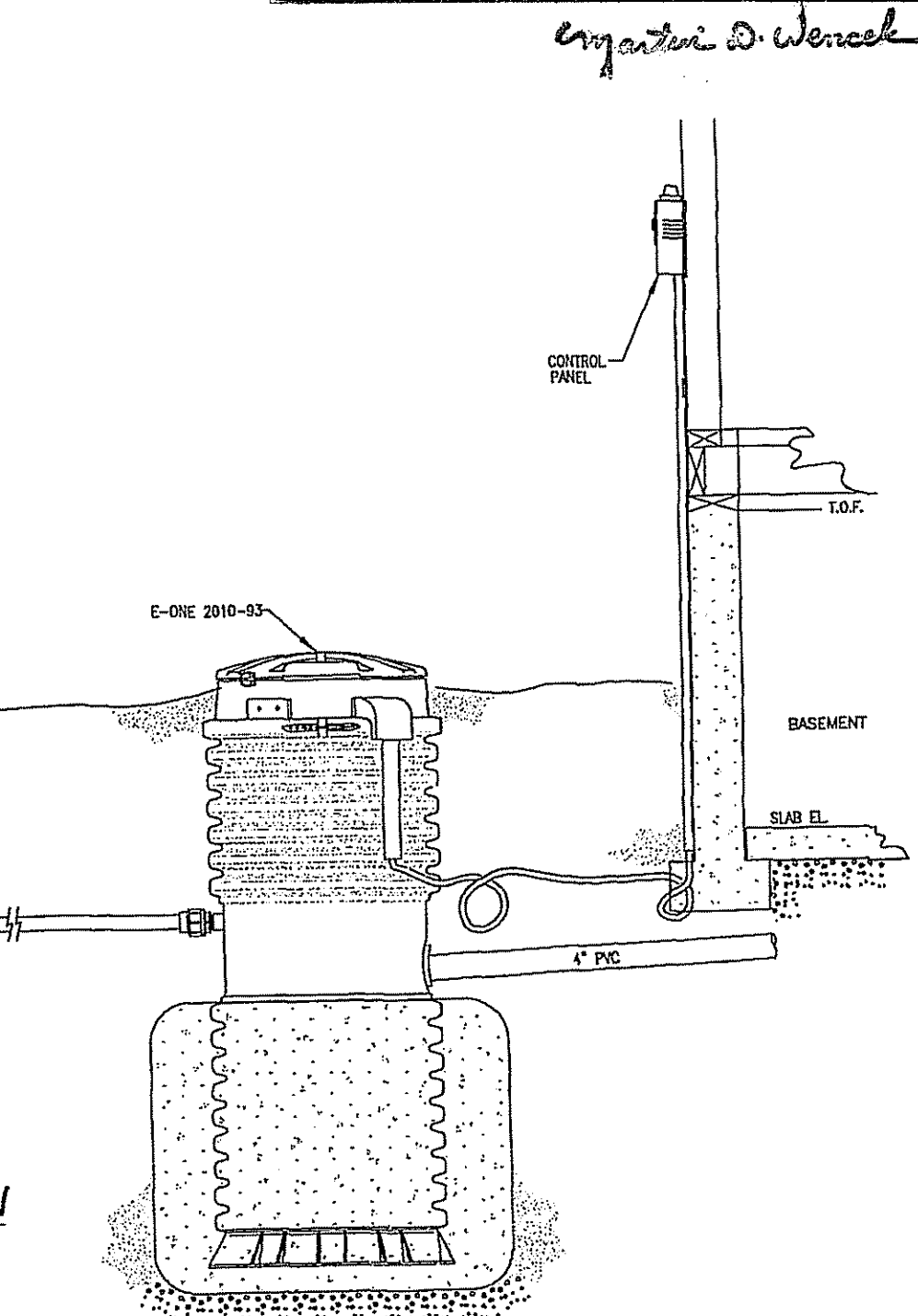
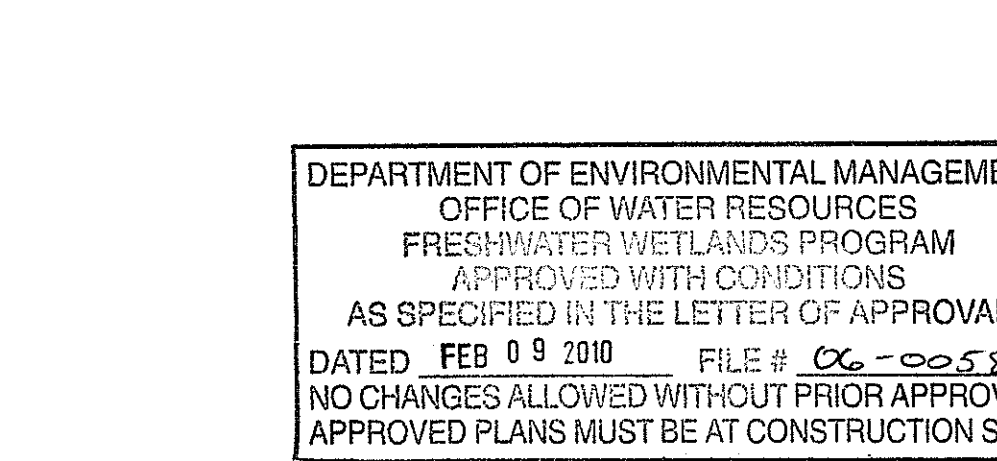
**FORCE MAIN LATERAL INSTALLATION**  
N.T.S.



**HORIZONTAL THRUST BLOCK DETAILS**  
N.T.S.



**GRAVITY SEWER TRENCH DETAIL**  
N.T.S.



**OIL/WATER SEPARATOR CATCH BASIN**  
N.T.S.

BY: JEA  
REVISION: CONSERVATION LAYOUT/ARCHITECTURAL FEATURES  
DATE: 3/7/08  
NO. 1

BRIAN P. THALMANN  
REGISTERED PROFESSIONAL ENGINEER (CIVIL)

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED FEB 09 2010 FILE # 06-0058  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Thalman Engineering Co., Inc.  
Site/Civil Engineers • Land Planners  
600 Putnam Pike - Suite 7  
Greenville, Rhode Island  
(401) 349-3040

Lot 24  
Rhode Island  
Smithfield  
date: NOV-07 scale: As Noted

Cedar Forest Estates  
Cedar Forest Road  
Prepared for:  
Cedar Forest Associates, LLC  
700 Main Street, East Greenwich, RI

Drawn By: J.E.A.  
Checked By: B.P.T.

Sheet 8 of 8  
FILE NO.: 06.008