

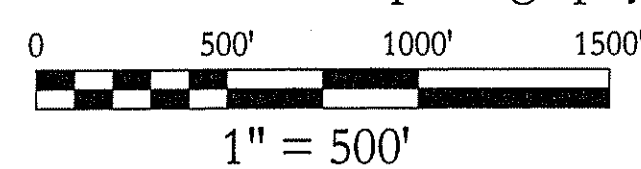
# Preliminary Plan Set

# Wolf Hill Estates

12-Lot Residential Conservation Subdivision  
 Assessor's Plat 43 Lots 61 & 62  
 Mountindale Road Smithfield, RI

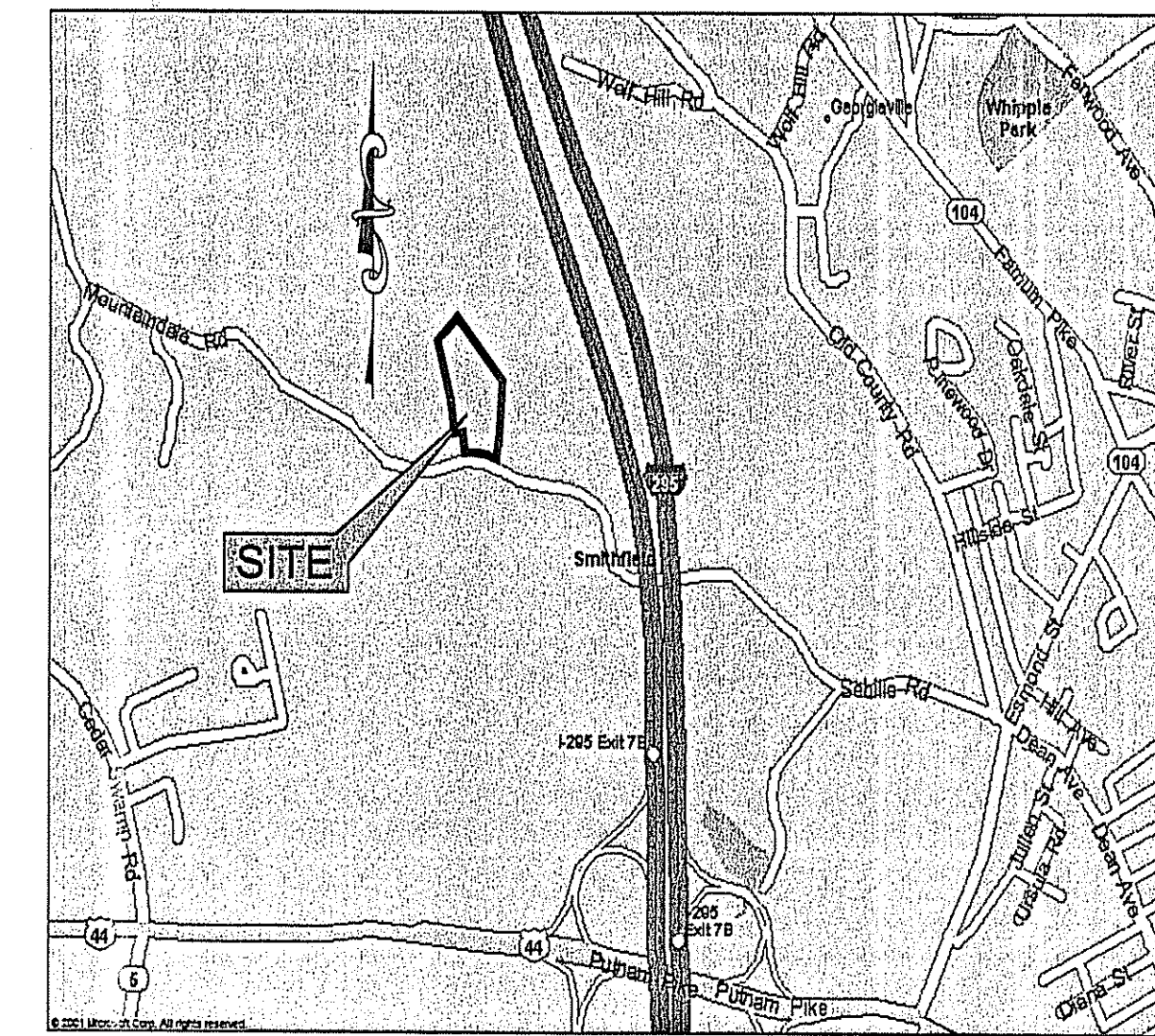


RIGIS 2004 Orthophotography



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Smithfield Planning Board Submission	
Stage	Date
Pre-Application	March 1, 2007
Master Plan	June 7, 2007



Locus Map  
N.T.S.

### Owner/Applicant:

Robert M. Eaton, Jr.  
 75 Mountindale Road  
 Smithfield, RI 02917

### Sheet Index

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED JUL 3 - 2008 FILE # 07-0408  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

JUN 26 2008



USGS Quad Map 1"=1000'

NO.	DATE	REVISION
1	10/3/07	RIDEM WETLANDS SUBMISSION
2	12/17/07	ADDRESS RIDEM WETLANDS COMMENTS
3	3-17-08	ADDRESS RIDEM WETLANDS COMMENTS
4	6-23-08	ADDRESS RIDEM WETLANDS COMMENTS

BRIAN P. THALMANN  
 No. 06608  
 2500 PUTNAM PIKE  
 GREENVILLE, RHODE ISLAND 02828  
 REGISTERED PROFESSIONAL ENGINEER  
 (R.I.)

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)

A.P. 43  
 Cover Sheet  
**Wolf Hill Estates**  
 95 Mountindale Road  
 Smithfield  
 Prepared for:  
 Robert M. Eaton, Jr.  
 75 Mountindale Road, Smithfield, RI 02917

Drawn By: CSR  
 Checked By: BPT  
 Sheet  
**C-1**  
 1 of 8  
 FILE NO.: 06.075

Lot #	Area (s.f.)	Area (ac.)
1	88360.4 s.f.	2.03 ac.
2	42166.4 s.f.	0.97 ac.
3	42835.3 s.f.	0.98 ac.
4	35432.6 s.f.	0.81 ac.
5	34193.2 s.f.	0.78 ac.
6	44628.5 s.f.	1.02 ac.
7	42761.8 s.f.	0.98 ac.
8	32225.6 s.f.	0.74 ac.
9	31929.4 s.f.	0.73 ac.
10	38229.2 s.f.	0.88 ac.
11	44304.3 s.f.	1.02 ac.
12	236673.0 s.f.	5.43 ac.

Lot #	Area (s.f.)
Lot 1	39,000 s.f.
Lot 2	30,400 s.f.
Lot 3	38,600 s.f.
Lot 4	31,200 s.f.
Lot 5	30,030 s.f.
Lot 6	34,000 s.f.
Lot 7	38,800 s.f.
Lot 8	31,000 s.f.
Lot 9	31,900 s.f.
Lot 10	37,800 s.f.
Lot 11	33,700 s.f.
Lot 12	193,000 s.f.

**LEGEND**

	EXISTING CONTOUR		PROPOSED CONTOUR
	VERIFIED WETLAND EDGE		BUILDING ENVELOPE
	STONEWALL		SOIL/LEDGE TEST VERIFIED BY RIDEM
	TREELINE		PROPOSED WELL
	TRAIL		PROPOSED BOTTOMLESS SAND FILTER LEACHFIELD
	LEDGE OUTCROP		PROPOSED CONVENTIONAL LEACHFIELD
	PROPOSED RIP-RAP		PROPOSED WOODEN FENCE / GUARDRAIL
	EXISTING WOODEN FENCE		PROPOSED SILT FENCE
	100 FT. RIVERBANK WETLAND		PROPOSED BALED HAY

**Zoning R-20**

AREA	20,000 S.F.
FRONTAGE	125 FT.
SETBACKS:	
FRONT	30 FT.
SIDE	15 FT.
REAR	30 FT.

**Conservation Zoning (ISDS & WELL ON PROPERTY)**

AREA	30,000 S.F.
FRONTAGE	125 FT.
SETBACKS:	
FRONT	30 FT.
SIDE	16 FT.
REAR	40 FT.

**Development Data**

AREA OF PARCEL	30.63 ACRES
AREA OF R-O-W	1.41 ACRES
OPEN SPACE AREA	12.84 ACRES
SUITABLE OPEN SPACE	8.92 ACRES
AREA OF PROP. LOTS	16.38 ACRES
# PROPOSED LOTS	12
AVG. LOT AREA	1.36 ACRES
LENGTH OF ROADWAY	1,200± LF

**GENERAL NOTES**

- THE OWNER/APPLICANT OF THIS PROJECT IS ROBERT M. EATON, JR. OF 75 MOUNTAINDALE ROAD, SMITHFIELD, RI 02917.
  - THE PROPOSED LOTS ARE TO BE SERVICED BY PRIVATE WELLS AND INDIVIDUAL SEWAGE DISPOSAL SYSTEMS (ISDS).
  - EXISTING UTILITIES HAVE BEEN PLOTTED FROM BEST AVAILABLE INFORMATION. LOCATION OF ALL UNDERGROUND STRUCTURES ARE APPROXIMATE ONLY.
  - 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.
  - THE 100 FT. STRUCTURE SETBACK TO A WETLAND IS INCLUDED WITHIN THE BUILDING ENVELOPES AS SHOWN.
  - PROPOSED DWELLINGS ARE THREE (3) TO FOUR (4) BEDROOMS.
  - ALL PROPOSED PRIVATE WELLS ARE LOCATED 100 FT. FROM EXISTING AND PROPOSED LEACHFIELDS.
  - ALL LEACHFIELDS ARE LOCATED AT LEAST 25 FEET FROM ALL LEDGE OUTCROPS.
  - NUMEROUS BRAIDED CHANNELS ARE CONTAINED BETWEEN FLAGS RB23/RB24 AND RB23/RB23A.
- Conservation Development Calculation:**
- |                 |             |
|-----------------|-------------|
| TOTAL SITE AREA | 30.63 ACRES |
| WETLAND AREA    | 2.18 ACRES  |
| WETLAND BUFFERS | 4.87 ACRES  |
| SLOPES 15% >    | 10.0 ACRES  |
- EXISTING SUITABLE OPEN SPACE = 13.58 AC.  
 SUITABLE OPEN SPACE TO BE PROVIDED = 60% X 13.58 ACRES = 8.15 AC.

**Waivers Granted**

- FRONTAGE ON LOTS 5, 6, 7, 8, & 11
- SANITARY SEWER INSTALLATION

**ON-SITE WASTEWATER SUBDIVISION SUITABILITY NOTES**

- ALL SEWAGE DISPOSAL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE RULES AND REGULATIONS ESTABLISHING MINIMUM STANDARDS RELATING TO LOCATION, DESIGN, CONSTRUCTION AND MAINTENANCE OF INDIVIDUAL SEWAGE DISPOSAL SYSTEM, PREPARED BY THE RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, AS AMENDED.
- NO SUBSURFACE OR SURFACE DRAINS, INCLUDING FOUNDATION DRAINS, EXISTING OR PROPOSED, WITHIN 25 FEET OF THE DISPOSAL TRENCHES OR SEPTIC TANK.
- NO WETLANDS OR WATER COURSES, EXISTING OR PROPOSED, ARE WITHIN 200 FEET OF THE PROPOSED DISPOSAL SYSTEM, EXCEPT AS SHOWN.
- THE SITE IS TO BE SERVICED BY TOWN WATER. NO LEACHFIELDS SHALL BE PROPOSED WITHIN 25 FT. OF A PRESSURE WATER LINE NOR 40 FT. OF A SUCTION WATER LINE.
- NO PRIVATE WELLS, EXISTING OR PROPOSED, ARE WITHIN 100 FEET OF ANY PROPOSED INDIVIDUAL SEWAGE DISPOSAL SYSTEM.
- NO PUBLIC WELLS, EXISTING OR PROPOSED, ARE WITHIN 500 FEET OF ANY PROPOSED INDIVIDUAL SEWAGE DISPOSAL SYSTEM.
- ALL DISTRIBUTION PIPES SHALL BE 4-INCH SOLID WALL PVC, SDR-35 AND 4-INCH PERFORATED PVC, SDR-35.
- DESIGNER SUPERVISION IS REQUIRED FOR SYSTEM INSTALLATION. CONTACT LICENSED DESIGNER AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION.
- UTILITIES WERE PLOTTED FROM BEST AVAILABLE INFORMATION. CONTRACTOR TO VERIFY LOCATIONS, SIZES AND MATERIALS PRIOR TO COMMENCING ANY CONSTRUCTION.
- CONTRACTOR REQUIRED TO NOTIFY DIG-SAFE BEFORE COMMENCING ANY SITE CONSTRUCTION.
- PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES AS DEPICTED ON THE PLAN. EROSION CONTROL MEASURES SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL ALL DISTURBED AREAS ARE STABILIZED.

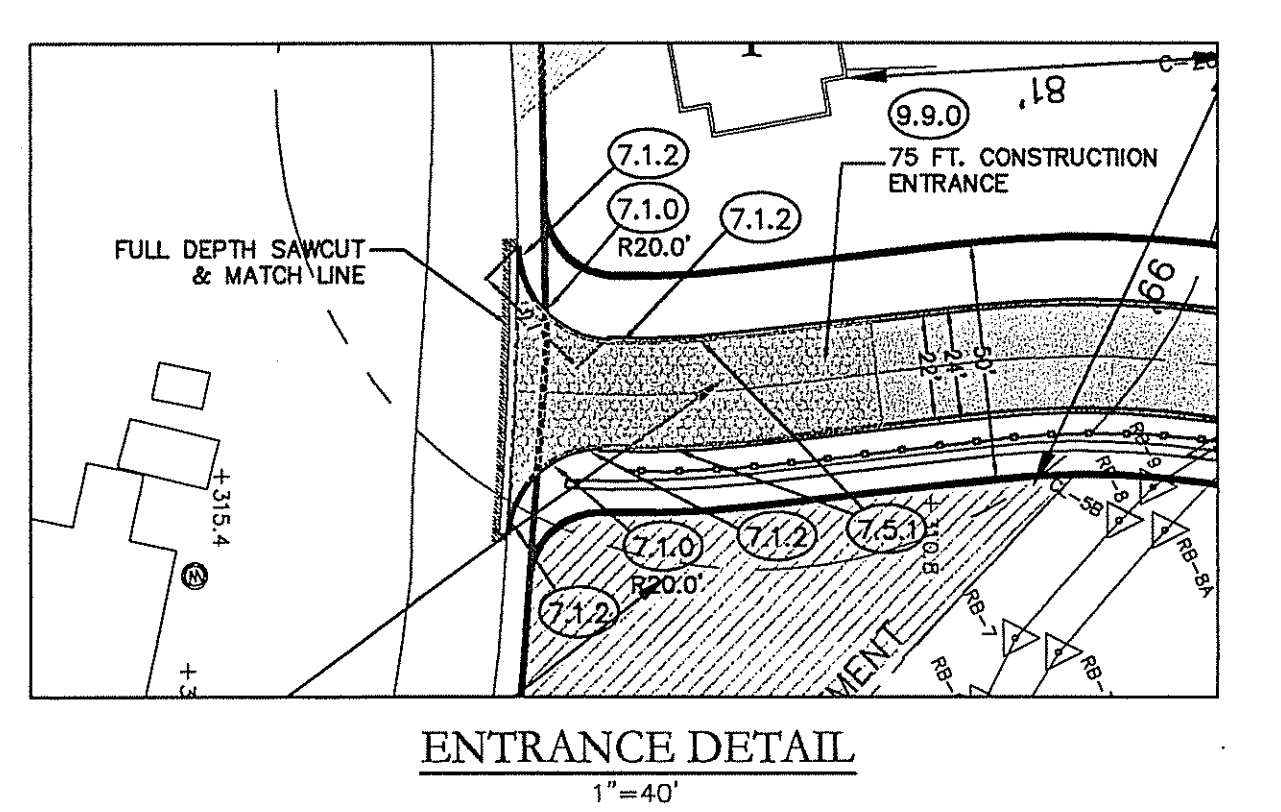
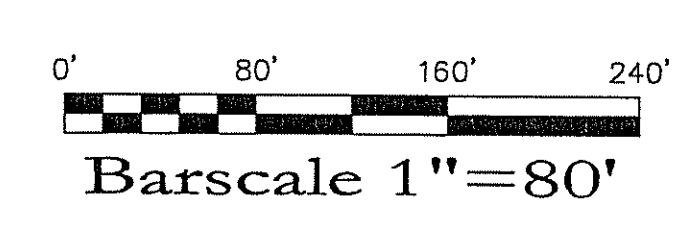
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
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*Charles A. [Signature]*  
 JUN 26 2008

**SURVEY CERTIFICATION:**  
 THIS SURVEY AND PLAN CONFORMS TO A CLASS III STANDARD AS ADOPTED BY THE RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS.

REGISTERED PROFESSIONAL LAND SURVEYOR DATE

**INTERNATIONAL MAPPING & SURVEYING CORP.**  
 LAND SURVEYING CIVIL ENGINEERING PHOTOGRAMMETRIC MAPPING  
 19 INDUSTRIAL DRIVE, SMITHFIELD, R.I. 02917 (401) 232-2620



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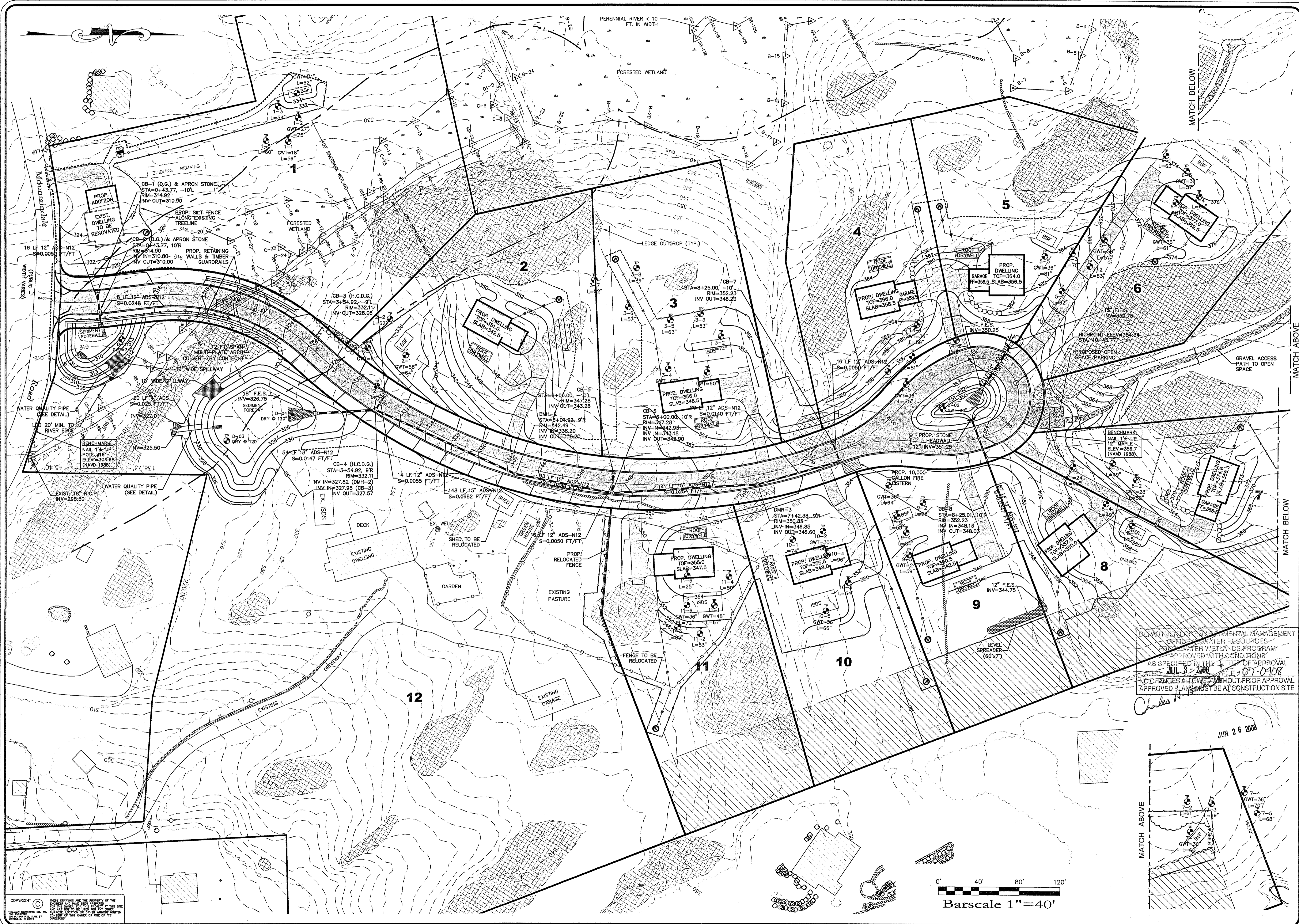
NO.	DATE	REVISION
1	12-17-07	ADDRESS RIDEM COMMENTS
2	3-17-08	ADDRESS RIDEM WETLANDS COMMENTS
3	5-28-08	RIDEM WETLANDS COMMENTS

BRIAN P. THALMANN  
 No. 6596  
 2008  
 PROFESSIONAL ENGINEER (CIVIL)

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

Subdivision Layout Plan  
**Wolf Hill Estates**  
 95 Mountandale Road  
 Smithfield  
 Prepared for:  
 Robert M. Eaton, Jr.  
 75 Mountandale Road, Smithfield, RI 02917  
 date: 2-8-07  
 scale: 1"=80'

Design By: CSR  
 Checked By: BPT  
 Sheet  
**C-2**  
 2 of 8  
 FILE NO.: 06.075



NO.	DATE	REVISION
1	9-5-07	ADD WETLAND FLAGS CL-1B TO CL-11B
2	12-17-07	ADDRESS RIDEM WETLANDS COMMENTS
3	3-17-08	ADDRESS RIDEM WETLANDS COMMENTS
4	5-28-08	RIDEM WETLANDS COMMENTS
5	6-24-08	RIDEM WETLANDS COMMENTS

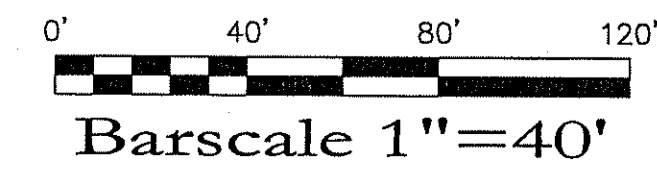
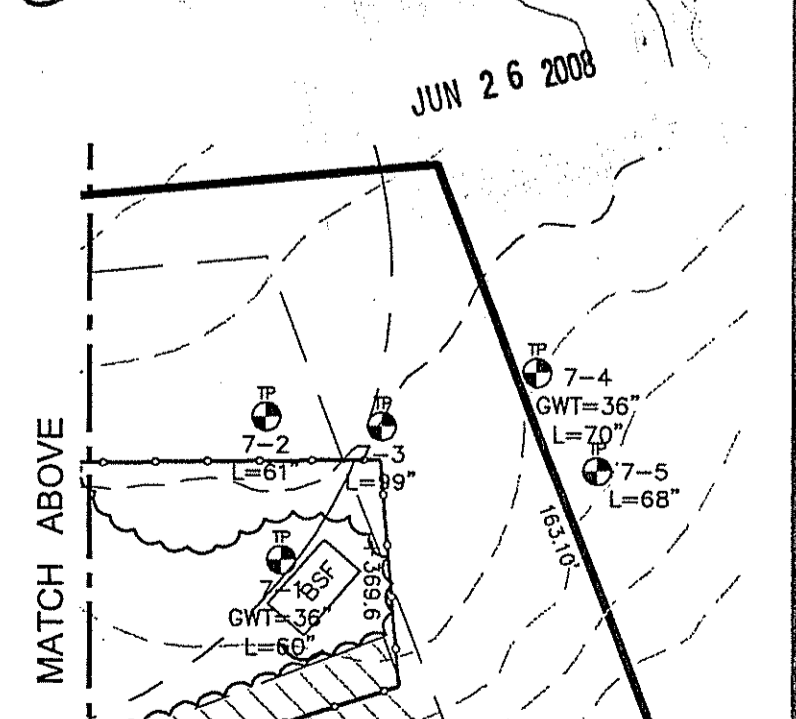
BRIAN P. THALMANN  
 No. 6596  
 PROFESSIONAL ENGINEER  
 (C.T.I.L.)

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 600 Putnam Pike, Suite #7  
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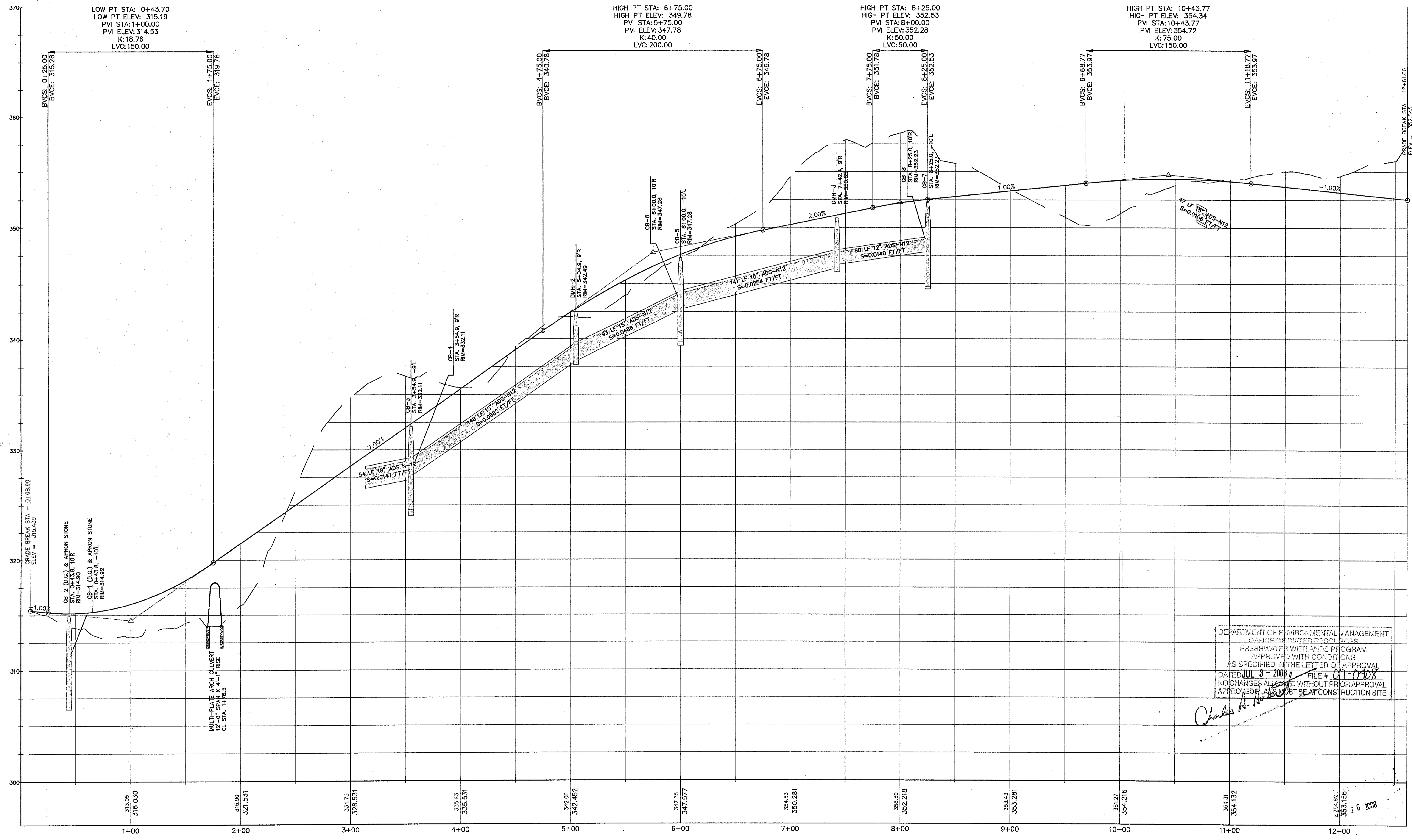
A.P. 43  
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 Rhode Island  
 scale: 1"=40'

Design By: CSR  
 Checked By: BPT  
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**C-3**  
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 FILE NO.: 06.075

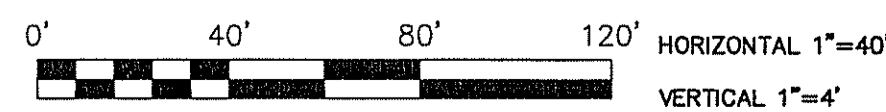
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 RIVER AND WATER RESOURCES  
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CENTERLINE PROFILE



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
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 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED JUL 3 - 2008 FILE # 07-0908  
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*Charles H. [Signature]*

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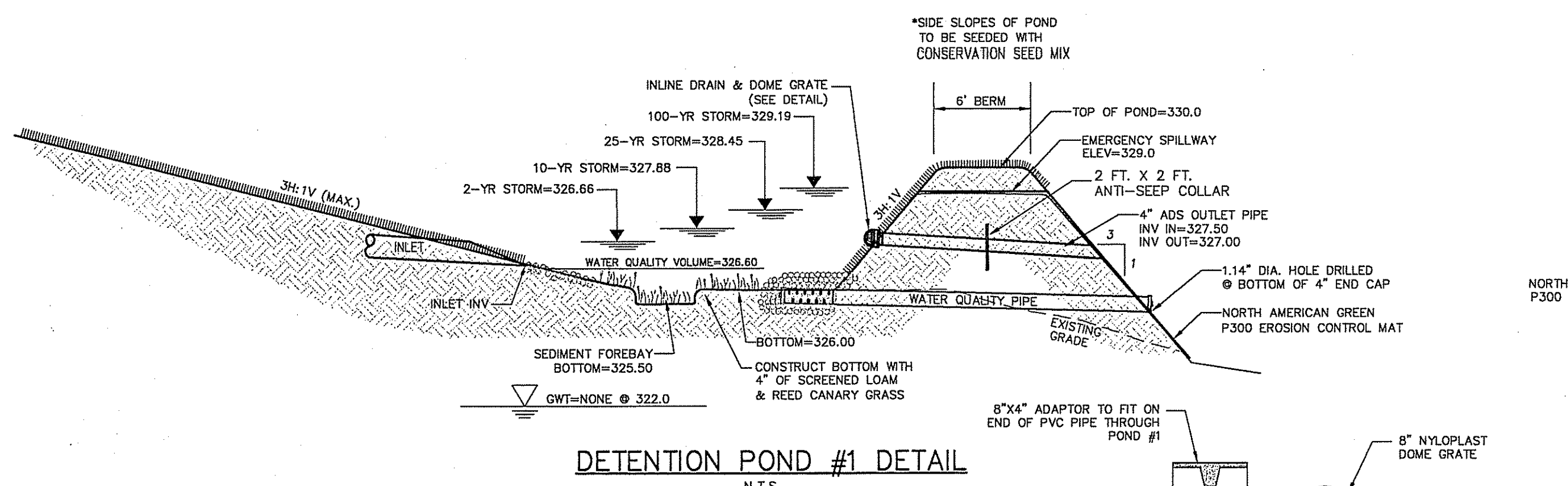
NO.	DATE	REVISION	BY

BRIAN P. THALMANN  
 No. 6596  
 PROFESSIONAL ENGINEER  
 (CITY)

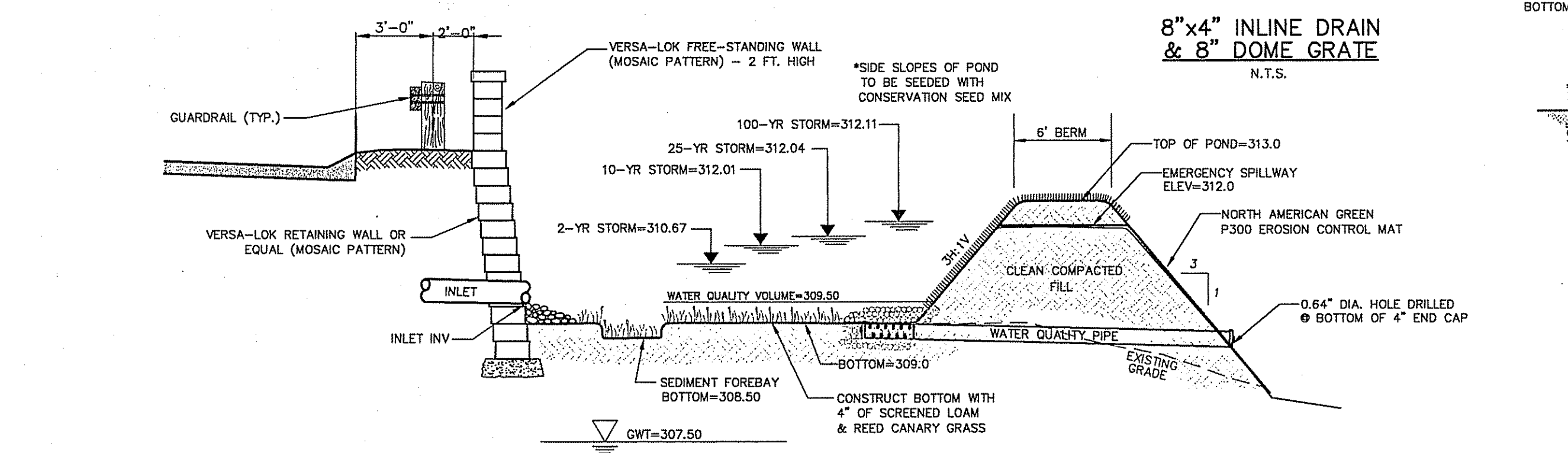
**Thalman Engineering Co., Inc.**  
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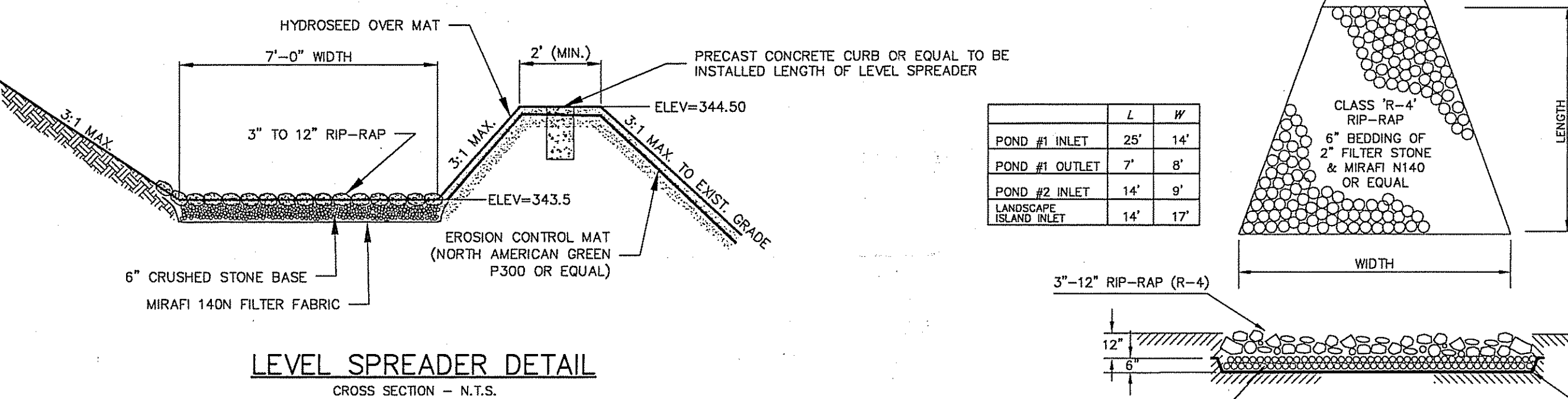
Design By: CSR  
 Checked By: BPT  
 Sheet  
**C-4**  
 4 of 8  
 FILE NO.: 06.075



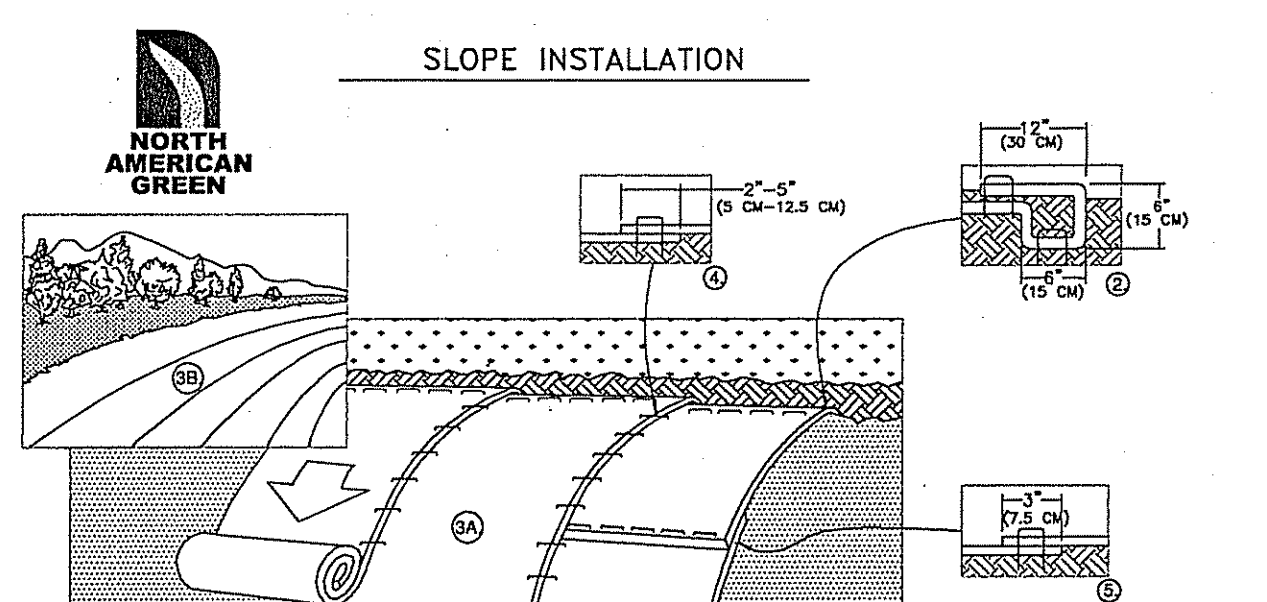
DETENTION POND #1 DETAIL  
N.T.S.



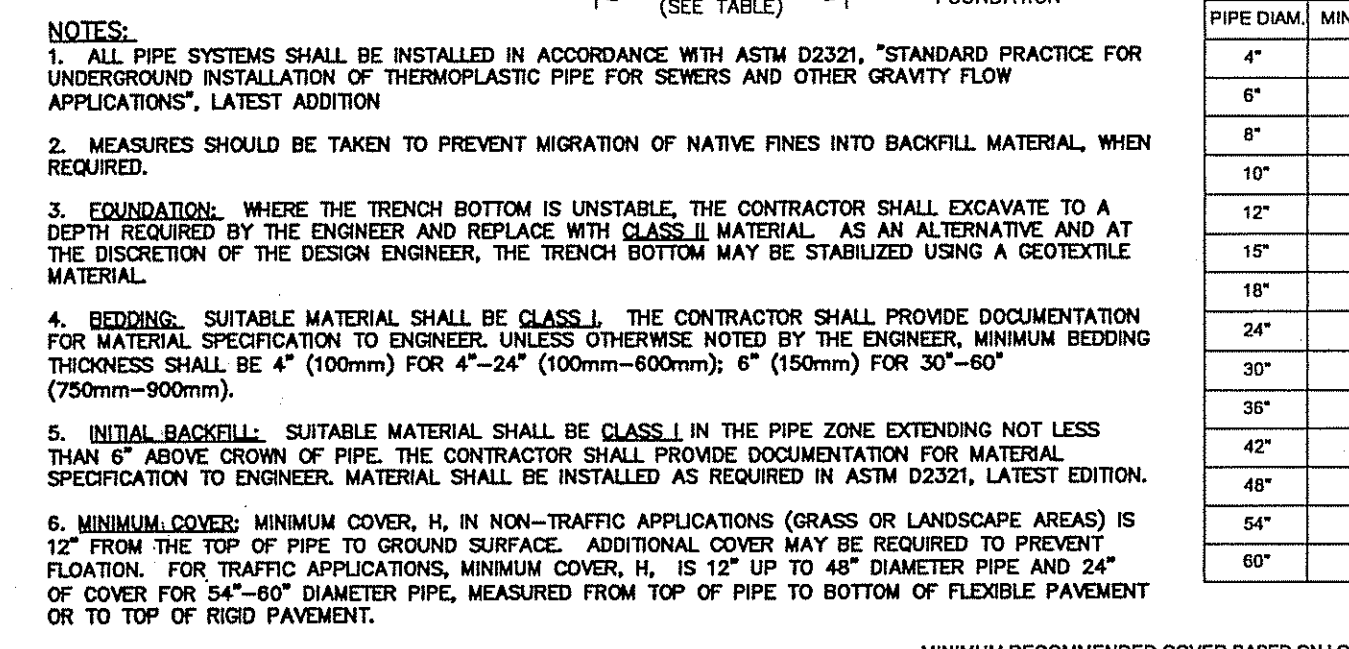
DETENTION POND #2 DETAIL  
N.T.S.



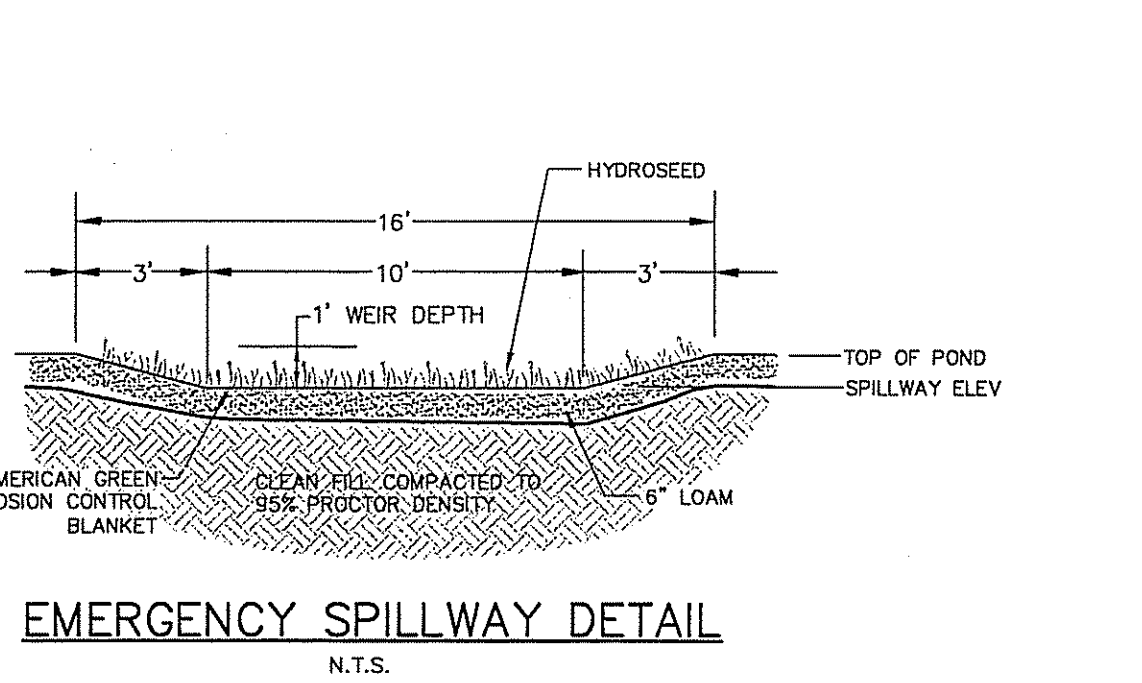
LEVEL SPREADER DETAIL  
CROSS SECTION - N.T.S.



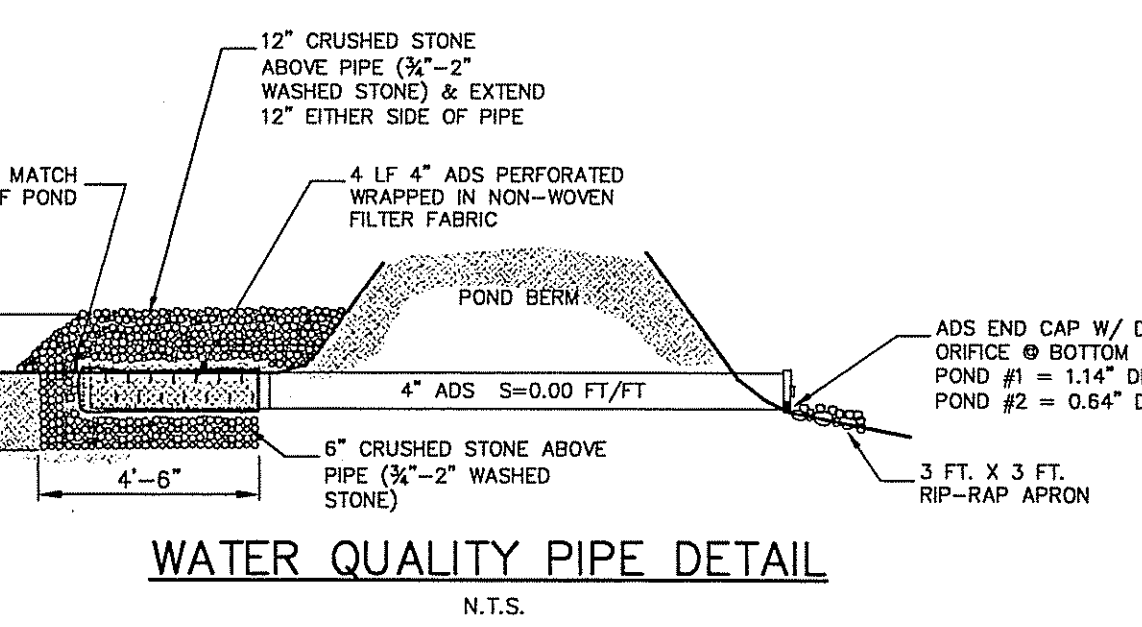
SLOPE INSTALLATION



ADS DRAIN PIPE TRENCH INSTALLATION  
N.T.S.



EMERGENCY SPILLWAY DETAIL  
N.T.S.



WATER QUALITY PIPE DETAIL  
N.T.S.

**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 ALL SEEDED 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 SEDIMENT BARRIERS THROUGHOUT CONSTRUCTION. EXCESSIVE GRASS 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 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.
- 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 Sumps 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 RESEDED.
- 14) DETENTION POND BOTTOMS AND SIDE SLOPES SHOULD BE MOVED A MINIMUM OF TWICE PER YEAR AND SPECIFIED FOR WOODY GROWTH. WOODY PLANTS SHOULD BE REMOVED FROM THE DETENTION BASIN BERM DURING MOWING OPERATION.
- 15) ALL CONTRIBUTING CATCH BASINS AND MANHOLE Sumps SHOULD BE INSPECTED AND CLEANED ONE PER YEAR. ALL REMOVED SOILS MUST BE DISCARDED AT AN APPROVED SITE.
- 16) 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.
- 17) AFTER THE FIRST YEAR AND ACCEPTANCE BY THE TOWN, THE TOWN OF SMITHFIELD SHALL HAVE OVERALL RESPONSIBILITY FOR IMPLEMENTING THE MAINTENANCE PROGRAM.
- 18) CONSTRUCTION OF ALL DRAINAGE PONDS SHALL BE SUPERVISED BY A PROFESSIONAL ENGINEER. A REPORT AND PLAN OF AS-BUILT CONSTRUCTION SHALL BE MADE AVAILABLE TO THE TOWN ENGINEER.

**Sequence & Staging of Land Disturbing Activities**

- 1) SURVEY AND STAKE THE PROPOSED ROAD CENTERLINE, DETENTION PONDS, STRUCTURES, AND LIMIT OF CLEARING.
- 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) CLEAR AND GRUB ENTIRE RIGHT-OF-WAY AREA. HEALTHY TREES WITHIN THE RIGHT-OF-WAY WIDTH AND OUTSIDE THE PAVEMENT WIDTH MAY BE LEFT STANDING, PROVIDED TREES ARE NOT MORE THAN 5 FEET FROM THE RIGHT-OF-WAY LINE.
- 4) STRIP LOAM FROM ROADWAY AND DETENTION POND AREAS. STOCKPILE WITHIN APPROVED DISTURBANCE LIMITS. STOCKPILES SHALL BE SEEDED FOR STABILIZATION.
- 5) EXCAVATE, GRADE, LOAM, AND SEED DETENTION PONDS AS SHOWN ON PLAN. INSTALL ALL STRUCTURES AND EROSION CONTROL WITHIN POND AS SHOWN ON PLAN.
- 6) DIVERT ALL RUNOFF FROM DISTURBED AREAS TO DETENTION POND AREAS. (NO STORMWATER IS ALLOWED TO LEAVE THE SITE UNTIL ALL AREAS ARE STABILIZED, AND BINDER COURSE HAS BEEN PAVED.)
- 7) INSTALL UTILITIES AND DRAINAGE PIPE. (UNDERGROUND ELECTRIC AND GAS MUST BE COORDINATED WITH NATIONAL GRID FOR PLANS AND SPECIFICATIONS.)
- 8) ONCE ROAD BASE HAS BEEN APPROVED BY TOWN ENGINEER, FINE GRADING AND PAVING MAY BE ACCOMPLISHED.
- 9) INSPECT ALL DRAINAGE COMPONENTS. FLUSH PIPES AND REMOVE BUILT-UP SEDIMENT IN CATCH BASINS AND PONDS AS REQUIRED. RESEED DETENTION AREAS AS NECESSARY.
- 10) REMOVE ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES ONCE VEGETATION HAS BEEN ESTABLISHED.

**General Contractor Notes & Requirements**

1. THE CONTRACTOR IS TO NOTIFY DIG SAFE PRIOR TO CONSTRUCTION.
2. A PRE-CONSTRUCTION MEETING WITH THE TOWN SHALL BE COORDINATED THROUGH THE PLANNING DEPARTMENT PRIOR TO START OF ANY WORK.
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. DRAINAGE PIPE TO BE HDPE (ADS N-12).
6. BOULDER WALLS TO BE 4 FEET HIGH MAX. WALLS > 4 FT. SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER AND DRAWINGS PROVIDED TO TOWN ENGINEER.
7. ALL CATCH BASINS AND MANHOLES TO BE 4 FT DIAMETER UNLESS SPECIFIED OTHERWISE.
8. LOAM & SEED ALL DISTURBED AREAS. ADDITIONAL EROSION CONTROLS MAY BE REQUIRED BY THE PROJECT AND/OR TOWN ENGINEER.
9. 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 PROJECT AND MUNICIPAL ENGINEER.
10. 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.
11. METHODS AND MATERIALS USED IN THE CONSTRUCTION OF IMPROVEMENTS FOR THIS PROJECT SHALL CONFORM TO THE REGULATIONS OR CHANGES WILL NOT BE ALLOWED UNLESS APPROVED BY THE PROJECT AND MUNICIPAL ENGINEER.
12. THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS AND LOCATE 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.
13. 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.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING, WITH MATCHING MATERIALS, ANY PAVEMENT, DRIVEWAYS, WALLS, CURBS, ETC., THAT MUST BE CUT OR THAT ARE DAMAGED DURING CONSTRUCTION.
15. 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 RESPONSIBILITY 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, EXCEPT FOR LIABILITY ARISING FROM "THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER."
16. 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 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 DAMAGED MADE TO UTILITIES BY THE CONTRACTOR.
17. A SOIL EROSION PERMIT IS REQUIRED FOR EACH INDIVIDUAL LOT CONSTRUCTION THROUGH THE SMITHFIELD ENGINEER'S OFFICE.
18. THIS SUBDIVISION HAS BEEN DESIGNED WITH ASSUMPTIONS OF HOUSE SIZES AND PROPOSED GRADES. IF A HOUSE SIZE VARIES FROM THIS PLAN, THE INDIVIDUAL DRAINAGE SYSTEMS SHOWN ON THE LOTS MAY INCREASE IN SIZE AND SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER AT THE TIME OF SOIL EROSION APPLICATION. PROPOSED GRADES MAY CHANGE ON THE INDIVIDUAL LOTS AS WELL AT THE TIME OF SOIL EROSION APPLICATION.
19. FOUNDATION DRAINS MAY BE REQUIRED AND MUST BE SHOWN AT TIME OF SOIL EROSION FOR EACH INDIVIDUAL LOT.

**WETLAND NOTES**

1. THE LIMITS OF DISTURBANCE SHOWN ON THIS PLAN ARE VERY STRICT. IN NO CASE SHALL THE CONTRACTOR WORK BEYOND WITHOUT APPROVAL FROM RIDEM.
2. WETLAND PLANTINGS MUST BE INSTALLED AS SHOWN ON THESE PLANS.
3. THE WETLAND CROSSING MUST BE INSTALLED BETWEEN JULY 15TH AND OCTOBER 31ST DURING THE LOW FLOW PERIOD OF THE YEAR. THIS SPECIFIC RIVER HAS NO BASE FLOW DURING THESE MONTHS.
4. THE OWNER, IN WRITING, MUST NOTIFY THE DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OF THE START OF CONSTRUCTION.
- 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 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.

**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) VORACIOUS VEGETATION SHALL BE MAINTAINED BY APPLYING LIME AND FERTILIZER. BARE OR ERODED AREAS SHALL BE IMMEDIATELY REPAIRED AND RESEED BY THE CONTRACTOR AND AT THE DIRECTION OF THE TOWN ENGINEER.
- 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 VEGETATIVE 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, OR 2:1 WITH A FENCE ENCLOSURE.
- 8) ALL EMBANKMENTS OF THE PONDS SHALL BE THOROUGHLY COMPACTED UPON PLACEMENT IN STRICT CONFORMANCE WITH R.I. STANDARD SPECIFICATION SECTION 202.
- 9) THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL SEDIMENTATION BASINS DURING CONSTRUCTION AND THE DETENTION PONDS UNTIL ACCEPTANCE BY THE TOWN. THE TOWN OF SMITHFIELD IS RESPONSIBLE THEREAFTER. THE TOWN OF SMITHFIELD SHALL INSPECT THE PONDS SEMIANNUALLY AND AFTER MAJOR STORMS.
- 10) RIP-RAP APRONS SHALL BE INSTALLED AT THE OUTLETS OF ALL CULVERTS. THE EMERGENCY SPILLWAY SHALL BE PROTECTED BY RIP-RAP.
- 11) RIP-RAP APRONS SHALL BE INSPECTED SEMIANNUALLY AND AFTER MAJOR STORMS. IF REPAIRS ARE NEEDED, THEY SHALL BE ACCOMPLISHED IMMEDIATELY.
- 12) 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.
- 13) REFERENCE THE "RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK" PREPARED BY USDA SOIL CONSERVATION SERVICE 1989, AS A GUIDE.

**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	LBS./ACRE
CREeping RED FESCUE	75
KENTUCKY BLUE GRASS	15
COLONIAL BENT GRASS	5
PERENNIAL RYE GRASS	5
- 5) EARLY SPRING OR LATE SUMMER SEEDING IS RECOMMENDED. LIME AND FERTILIZE AS REQUIRED BY SOIL TESTING TO COMPLIMENT 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 WALKED AND 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 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 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 SUBDIVISION TO BE 3:1 UNLESS SPECIFIED OTHERWISE BY WHICH ADDITIONAL STABILIZATION METHODS SHALL BE EMPLOYED.
- 14) IF AND WHEN REQUIRED, TEMPORARY PROTECTION SHALL BE PLACED IN PLACE WITH NYLON MESH NETTING. AS SPECIFIED IN THE LETTER OF APPROVAL DATED JUL 3 - 2008 FILE # 07-0108. ANY CHANGES ALLOWED WITHOUT PRIOR APPROVAL OF THE TOWN ENGINEER. PERMITS MUST BE AT CONSTRUCTION SITE.

**Sediment Control Program**

- 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 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.

NO.	DATE	ADDRESS	REVISION	BY	CSR
1	12-17-07				

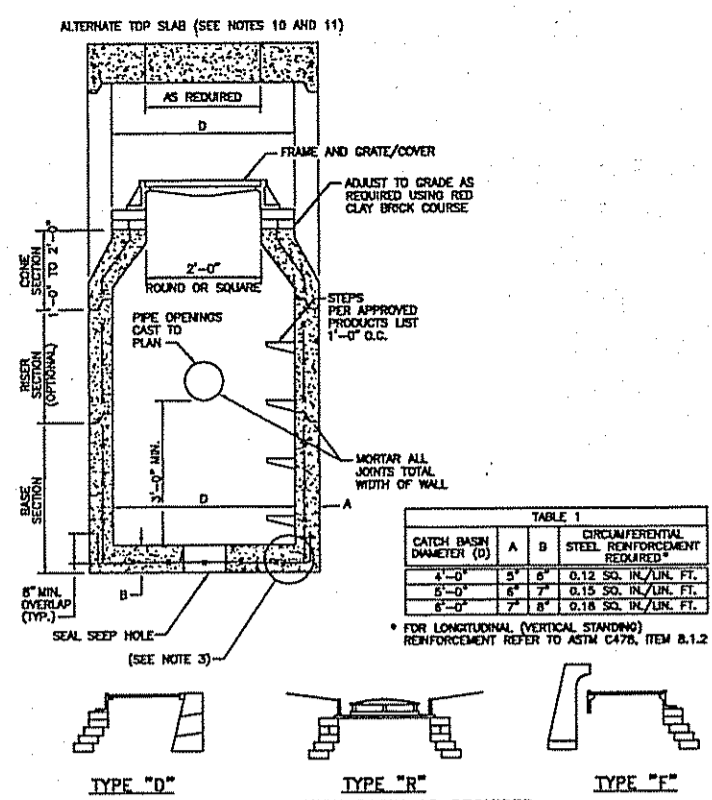
BRIAN P. THALMAN  
No. 6598  
REGISTERED PROFESSIONAL ENGINEER  
(GTD)

**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)

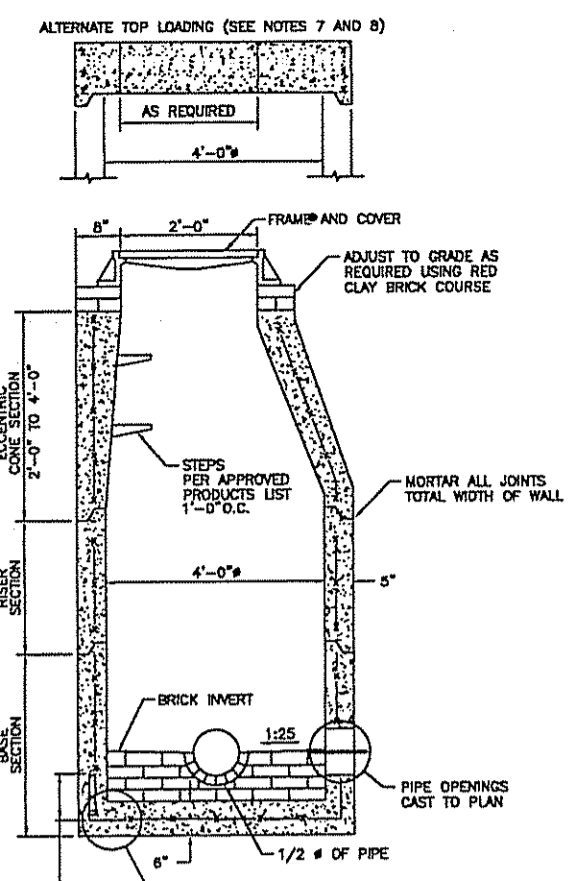
**Wolf Hill Estates**  
95 Mountaineer Road  
Smithfield  
Rhode Island  
Prepared for:  
Robert M. Eaton, Jr.  
75 Mountaineer Road, Smithfield, RI 02917  
date: 2-8-07  
scale: AS NOTED

Design By: CSR  
Checked By: BPT  
Sheet  
**C-5**  
5 of 8  
FILE NO: 06.075

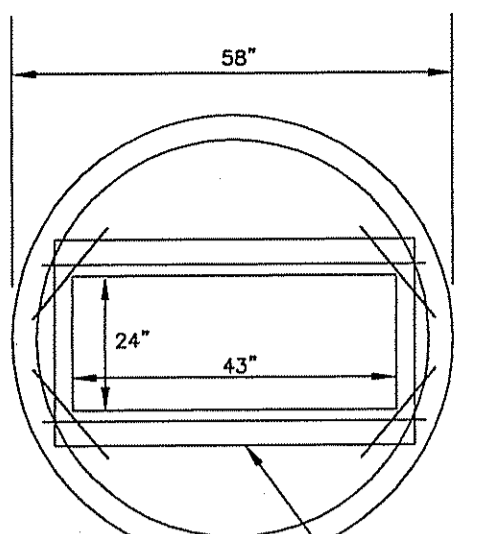
THESE DRAWINGS ARE THE PROPERTY OF THE ENGINEER AND SHALL BE KEPT IN HIS OFFICE. NO PART OF THESE DRAWINGS SHALL BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER.



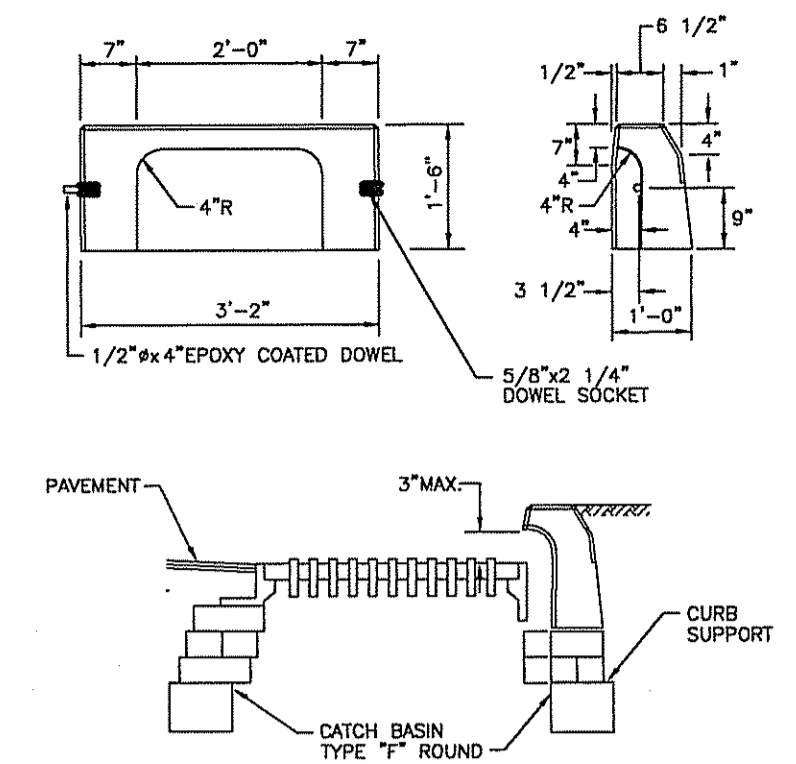
**PRECAST 4'-0", 5'-0", OR 6'-0" ROUND CATCH BASIN**  
N.T.S.



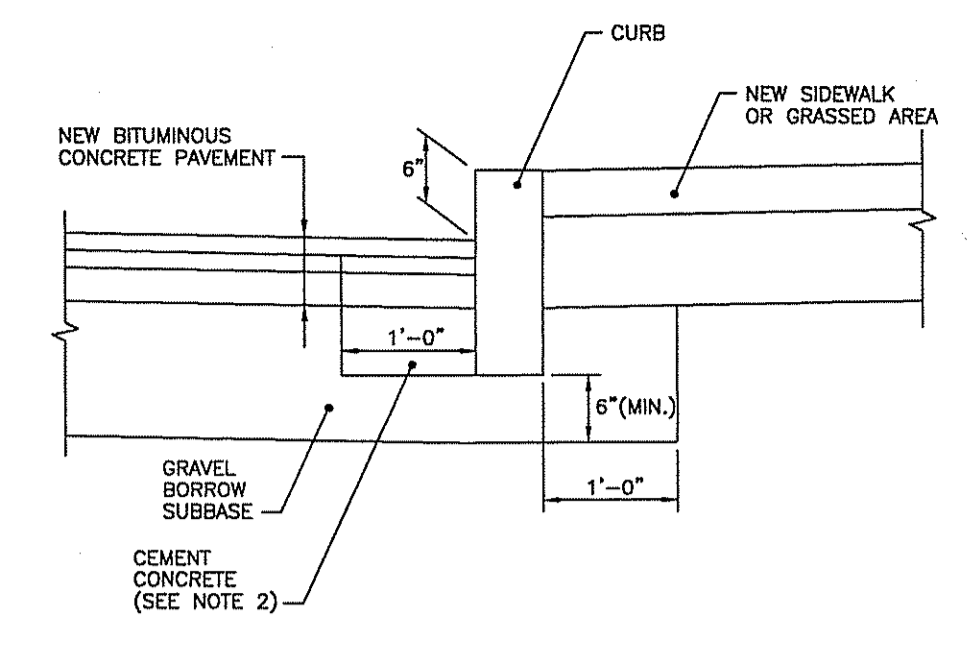
**PRECAST 4'-0" ROUND MANHOLE**  
N.T.S.



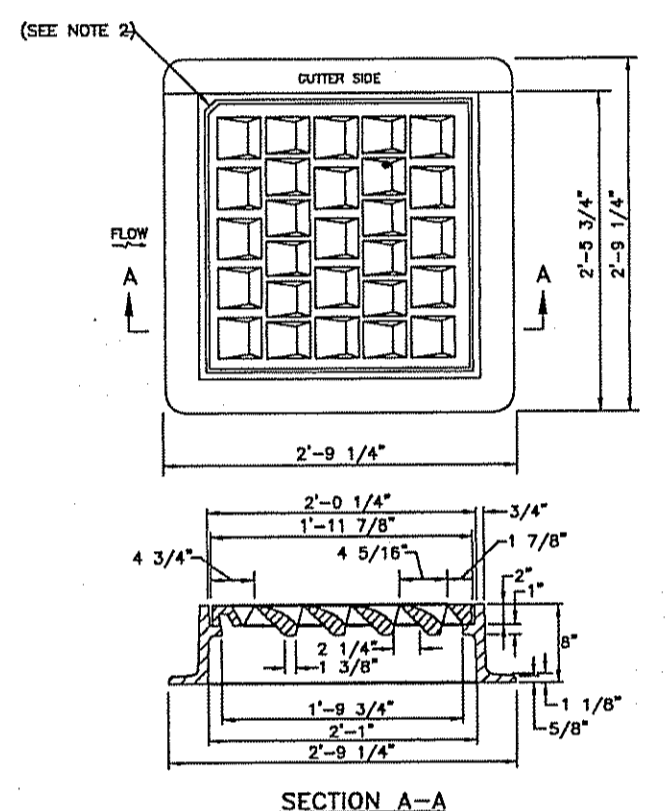
**4' DIA. DOUBLE OPENING CONCRETE COVER FIORE CONCRETE PRODUCTS (OR EQUAL)**  
N.T.S.



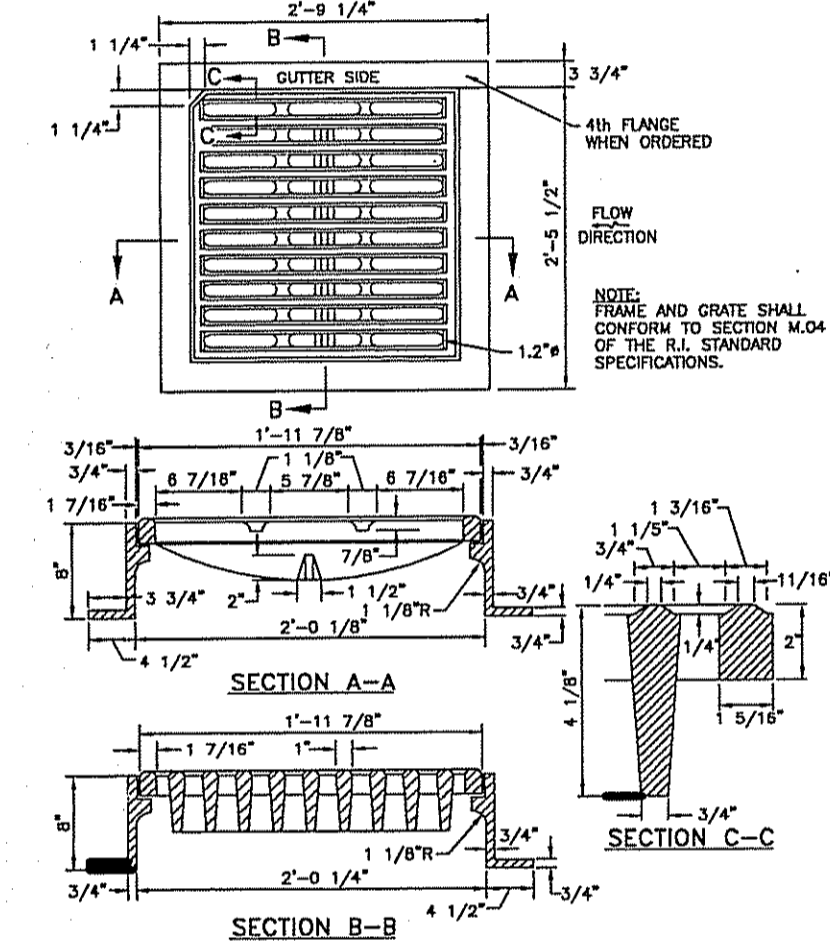
**PRECAST CONCRETE APRON STONE (FOR ROUND CATCH BASIN)**  
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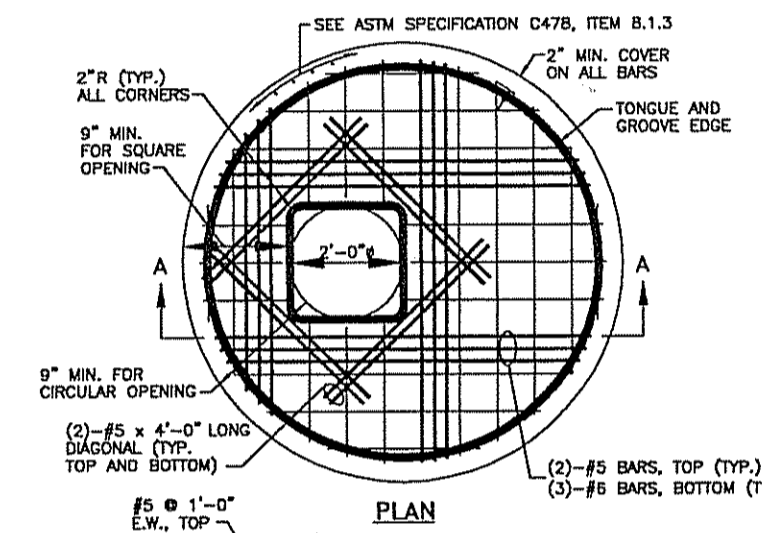
**CURB SETTING DETAIL**  
N.T.S.



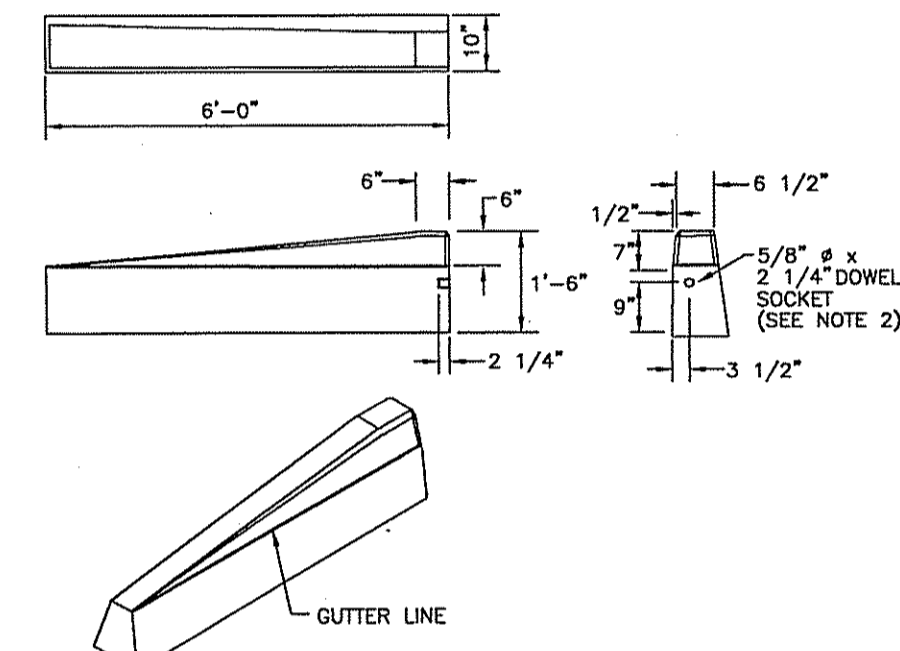
**HIGH CAPACITY FRAME AND GRATE (BICYCLE SAFE)**  
N.T.S.



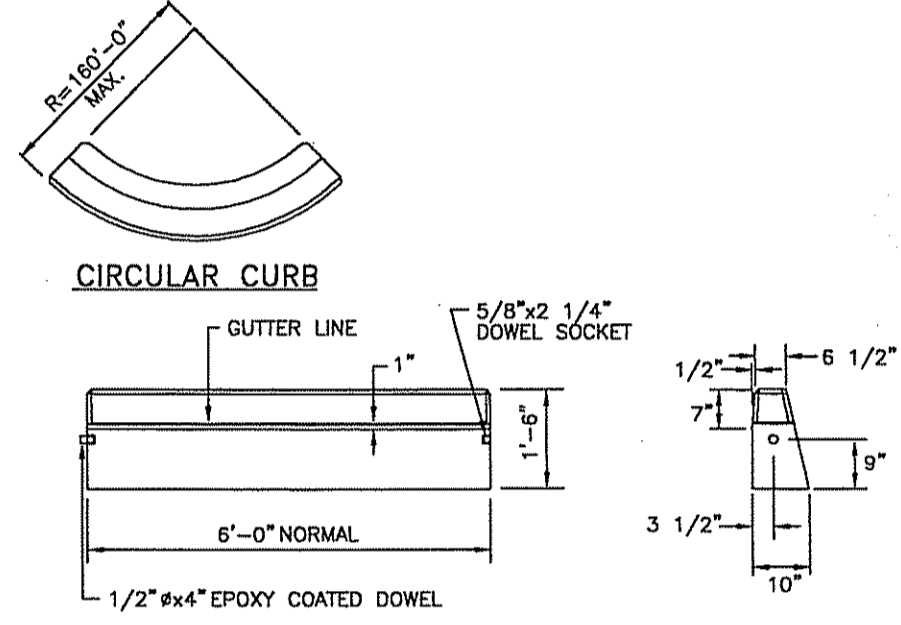
**SQUARE FRAME AND GRATE (BICYCLE SAFE)**  
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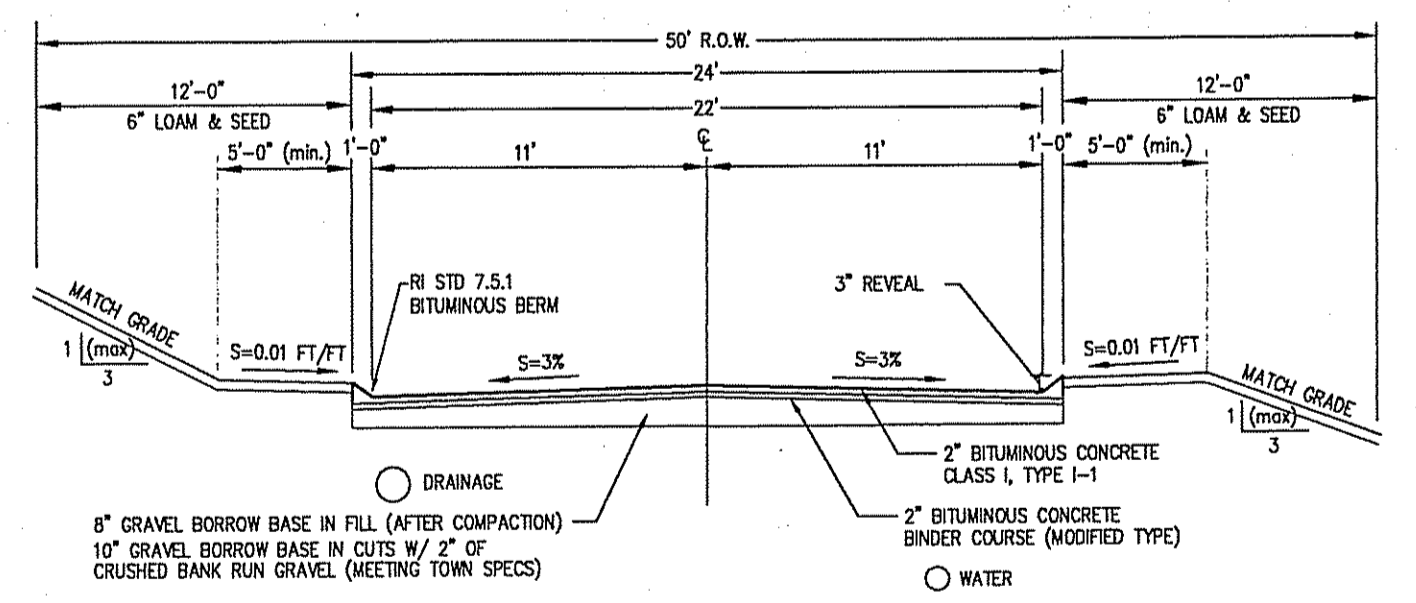
**ALTERNATE TOP COVER FOR ROUND PRECAST MANHOLES AND CATCH BASINS**  
N.T.S.



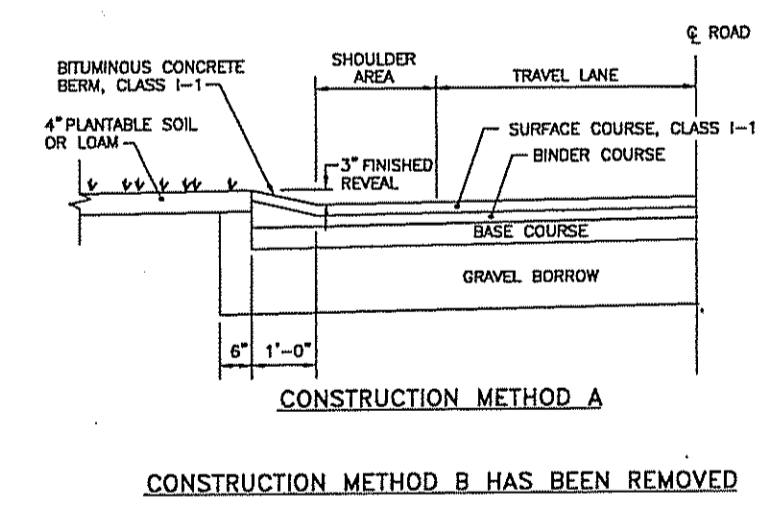
**6'-0" PRECAST CONCRETE TRANSITION CURB**  
N.T.S.



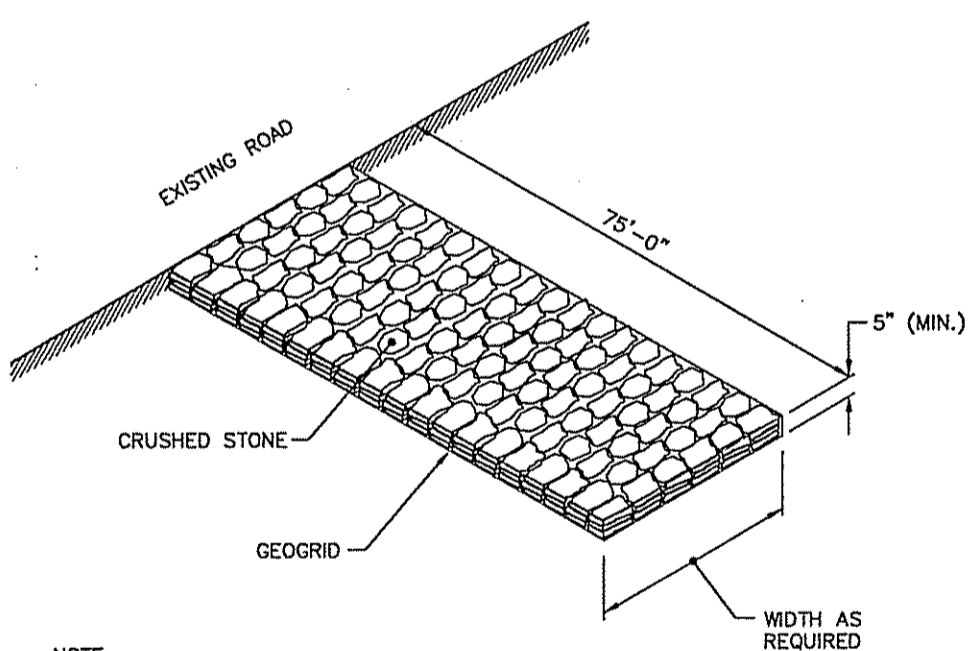
**PRECAST CONCRETE CURB**  
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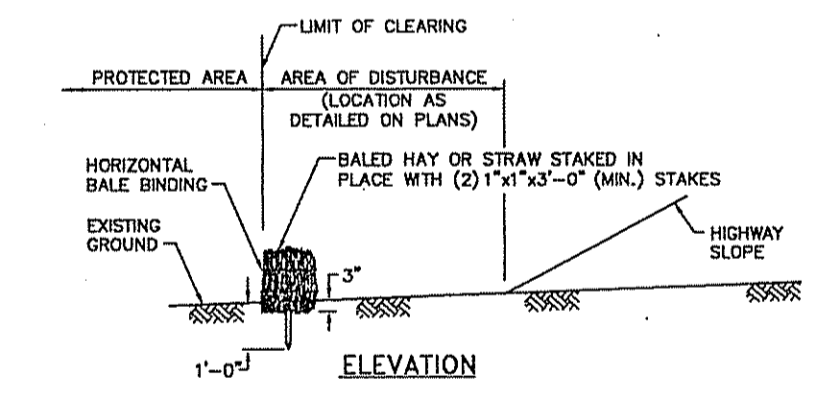
**TYPICAL ROADWAY SECTION**  
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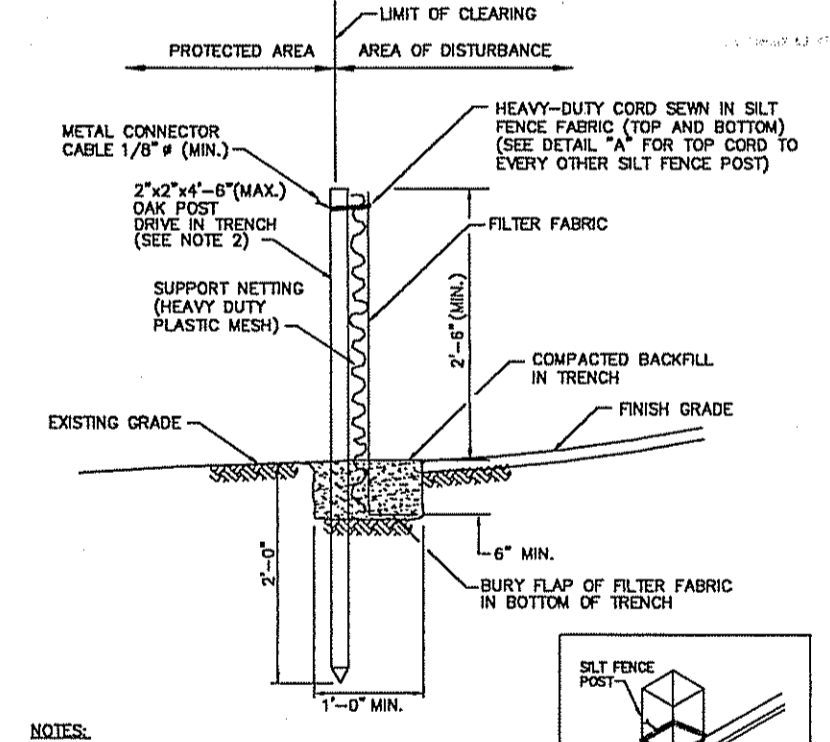
**BITUMINOUS BERM**  
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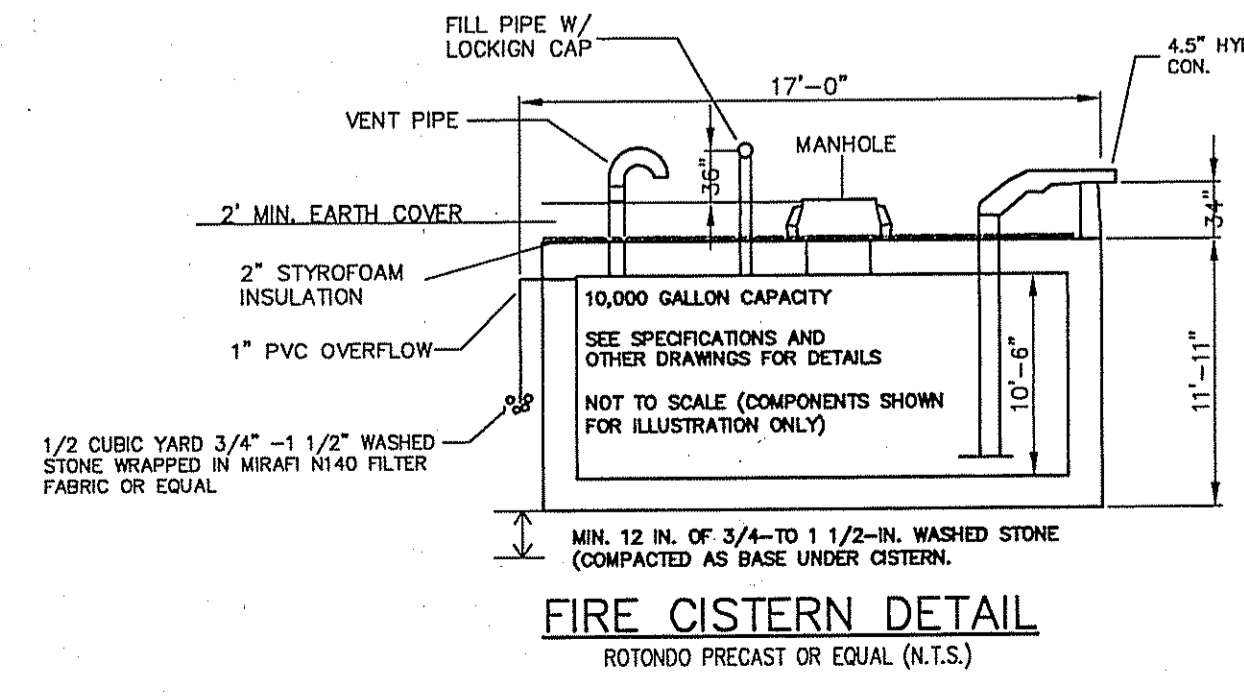
**CONSTRUCTION ACCESS**  
N.T.S.



**BALED HAY EROSION CHECK**  
N.T.S.

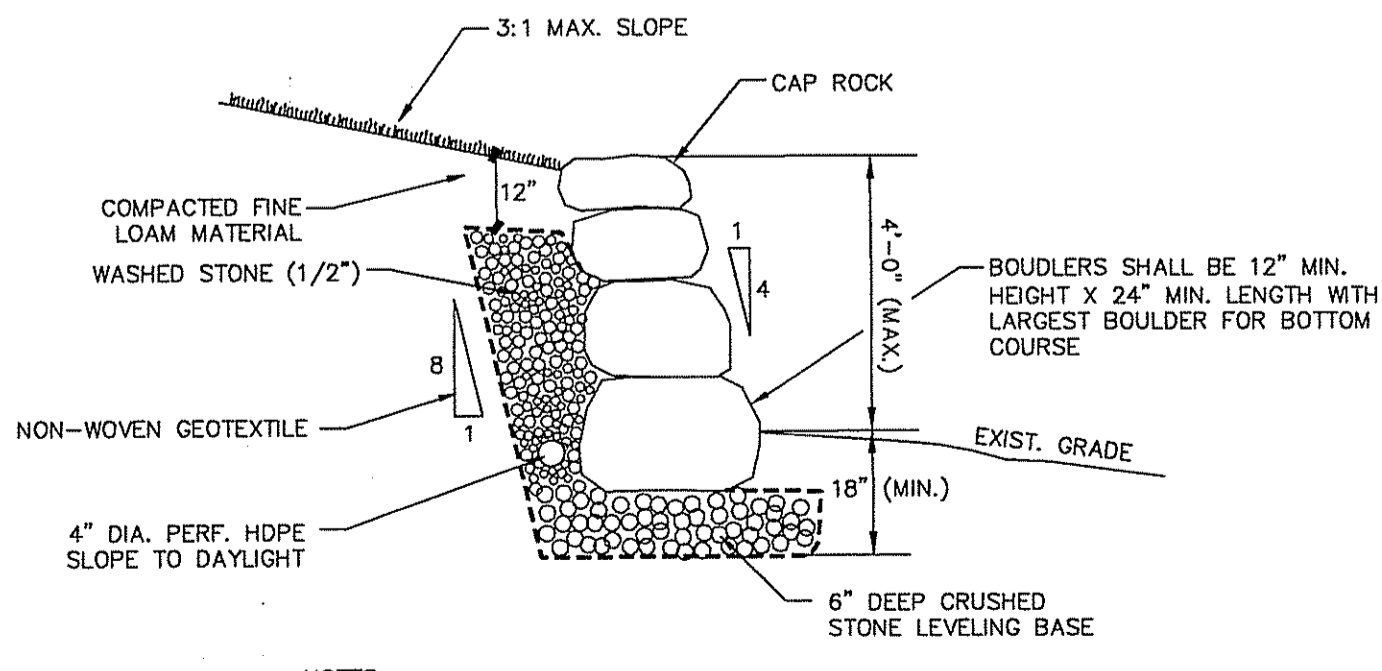


**SILT FENCE DETAIL**  
N.T.S.



**FIRE CISTERN DETAIL**  
ROTONDO PRECAST OR EQUAL (N.T.S.)

- CISTERN NOTES**
- SPECIFICATION AND INSTALLATION OF EACH CISTERN AND DRY HYDRANT SHALL BE IN COMPLIANCE WITH NFPA 1142 STANDARD ON WATER SUPPLIES FOR SUBURBAN AND RURAL FIRE FIGHTING (LAST EDITION).
  - MAINTENANCE OF THE CISTERNS AND DRY HYDRANTS SHALL BE THE RESPONSIBILITY OF THE TOWN OF SMITHFIELD.
  - THE CISTERN CAPACITY SHOULD BE 10,000 GALLONS MINIMUM, AVAILABLE THROUGH THE SUCTION PIPING SYSTEM.
  - THE SUCTION PIPING SYSTEM SHOULD BE CAPABLE OF DELIVERING 750 GPM FOR THREE QUARTERS OF THE CISTERN CAPACITY.
  - THE ENTIRE CISTERN SHOULD BE HS-20 RATED UNLESS SPECIFICALLY EXEMPTED BY THE AUTHORITY HAVING JURISDICTION.
  - AS A CONDITION OF FINAL APPROVAL NO CERTIFICATE OF OCCUPANCY WILL BE ISSUED UNTIL THE FIRE SUPPRESSION CISTERN IS CONSTRUCTED AND FUNCTIONAL.



**BOULDER RETAINING WALL**  
N.T.S.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED JUL 3 - 2008 FILE # 07-008  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Charles H. [Signature]

NO.	DATE	REVISION	BY

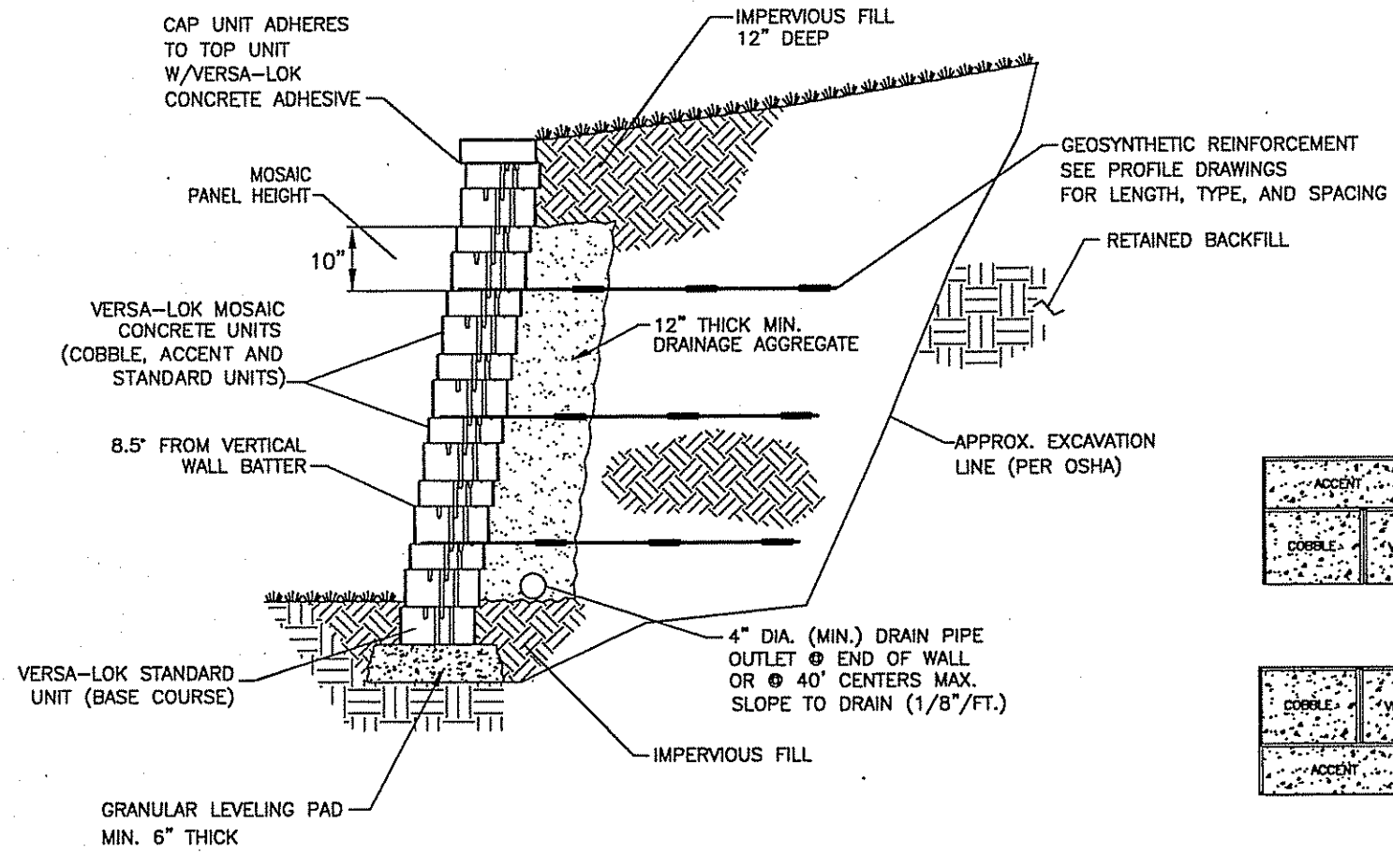
BRIAN P. THALMANN  
P.E.  
PROFESSIONAL ENGINEER  
(CIVIL)

**Thalman Engineering Co., Inc.**  
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600 Putnam Pike, Suite #7  
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**Wolf Hill Estates**  
95 Mountmainde Road  
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Prepared for:  
Robert M. Eaton, Jr.  
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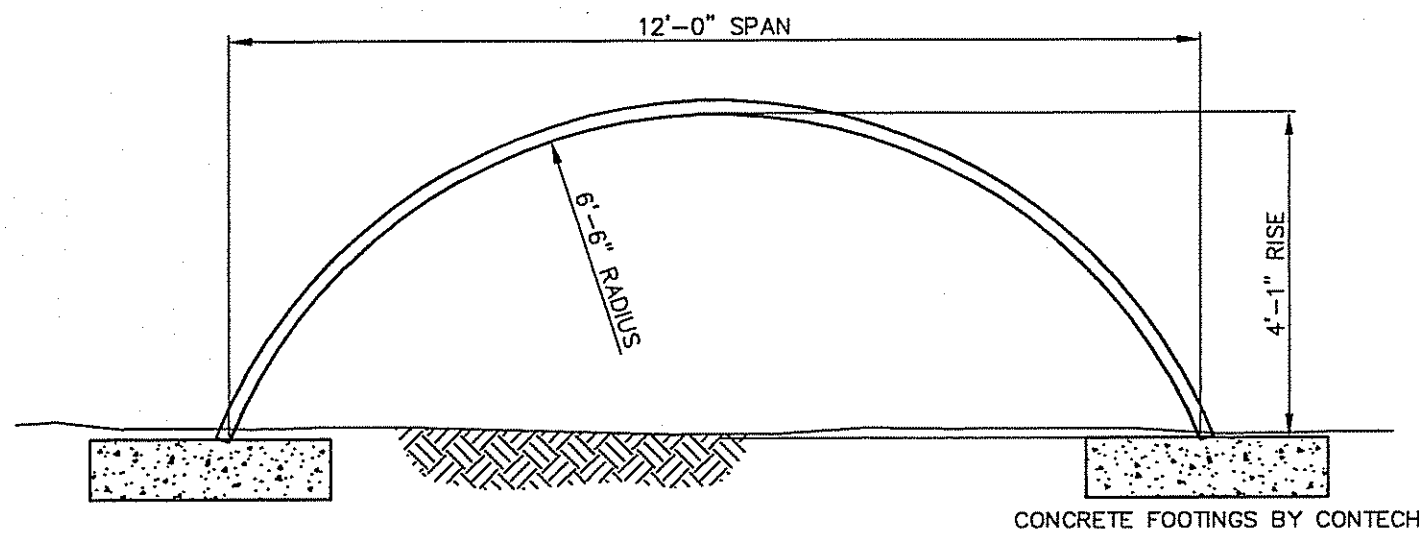
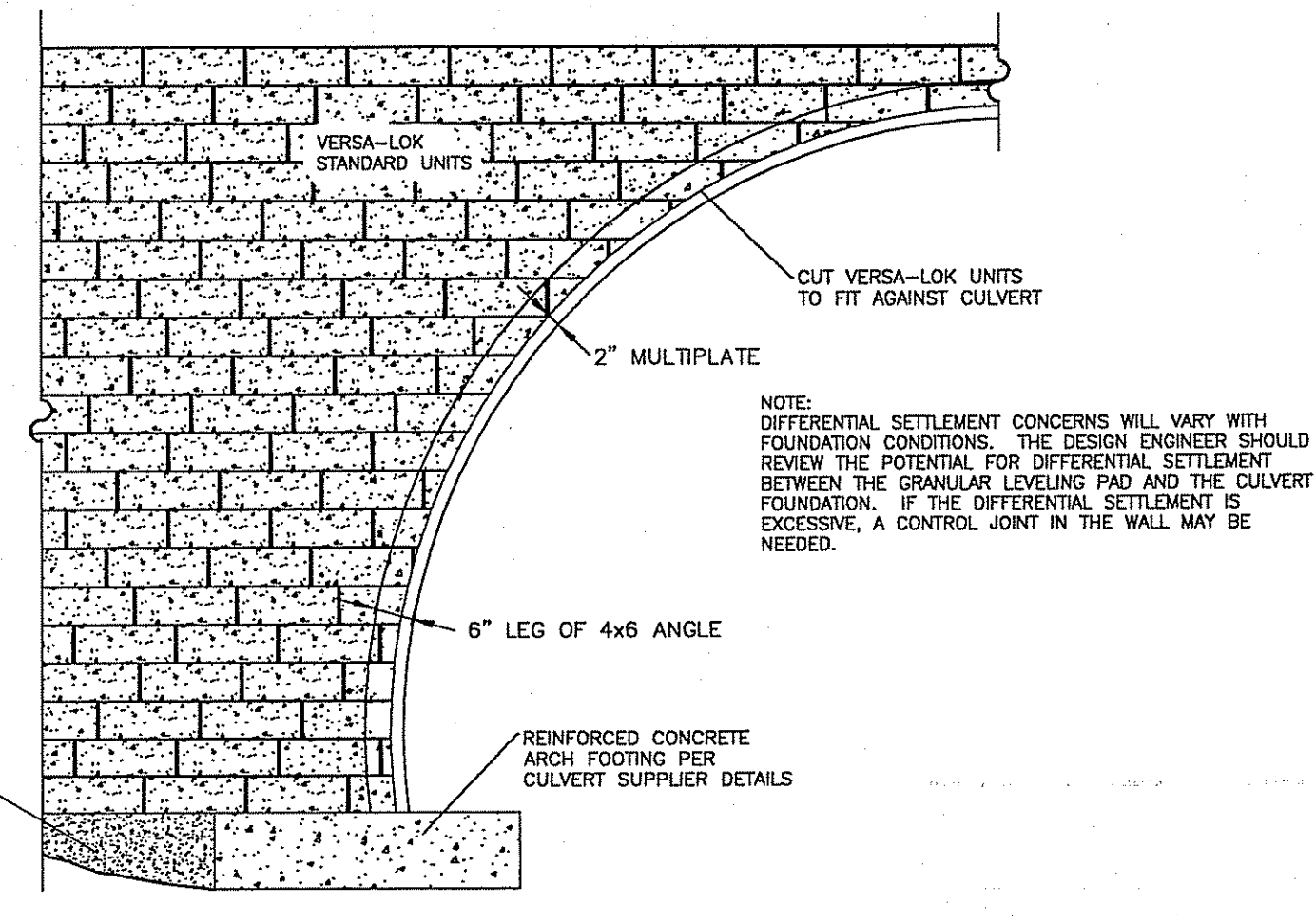
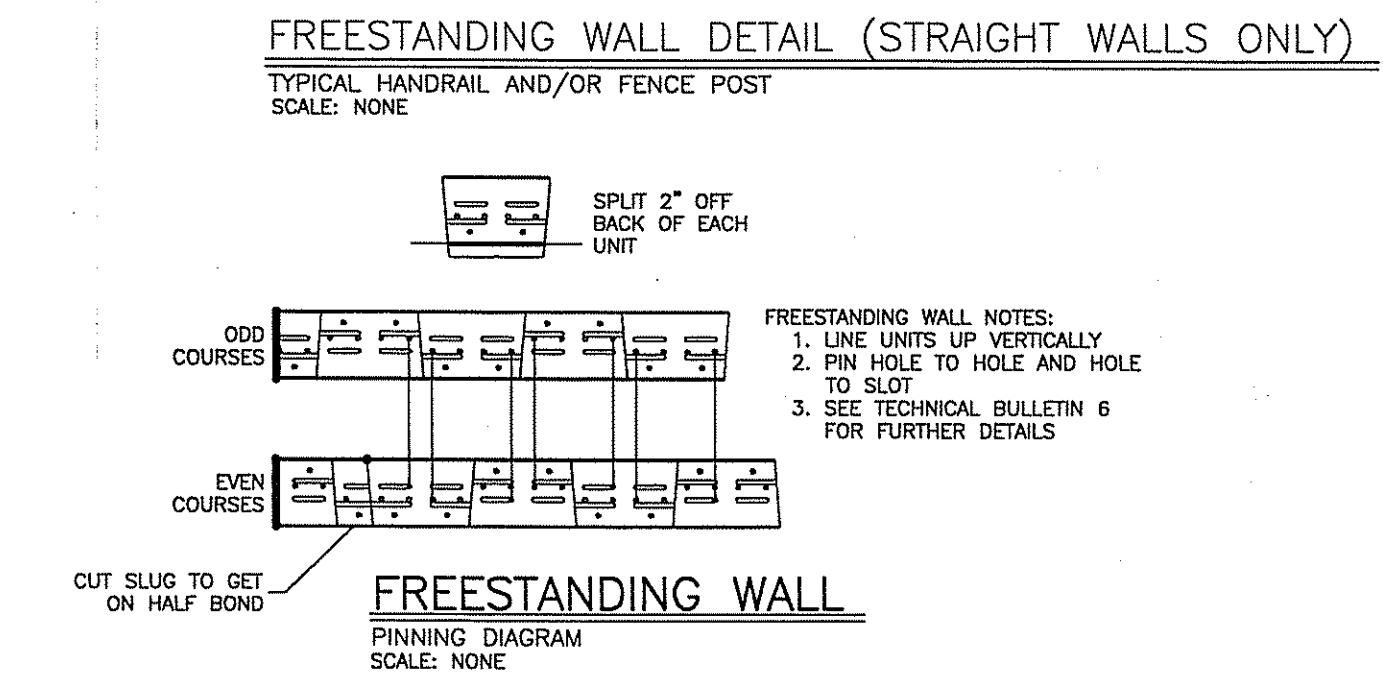
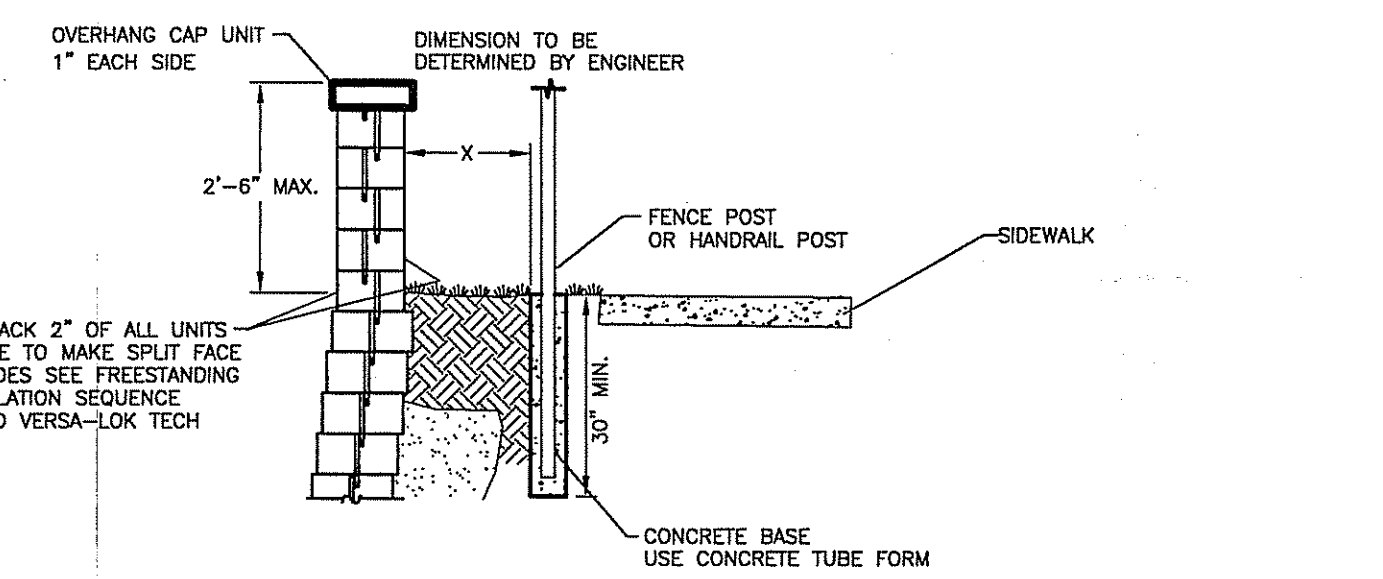
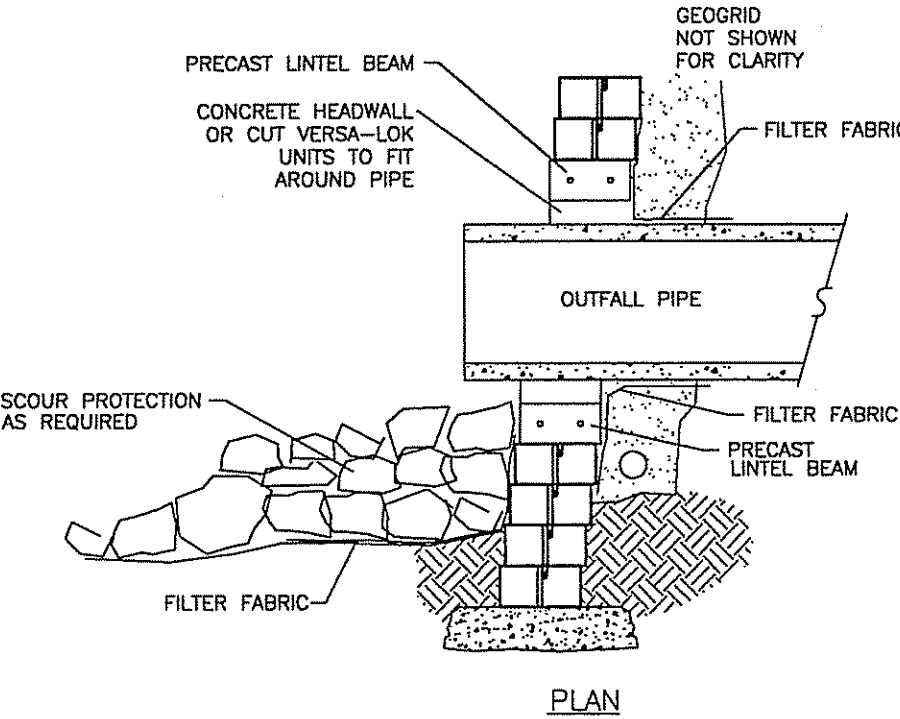
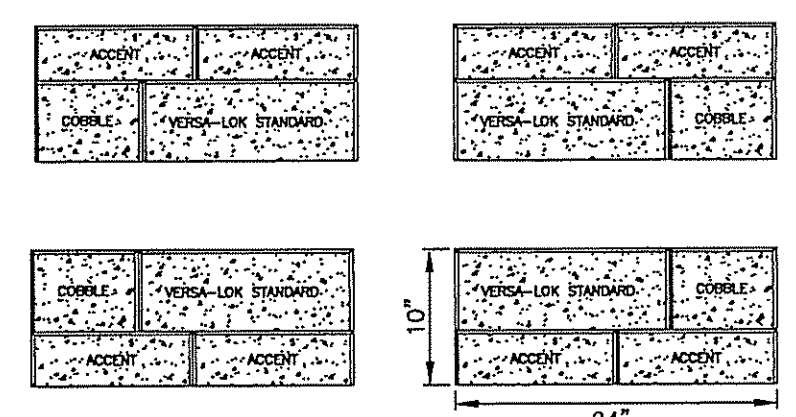
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Sheet  
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6 of 8  
FILE NO: 06.075

JUN 26 2008

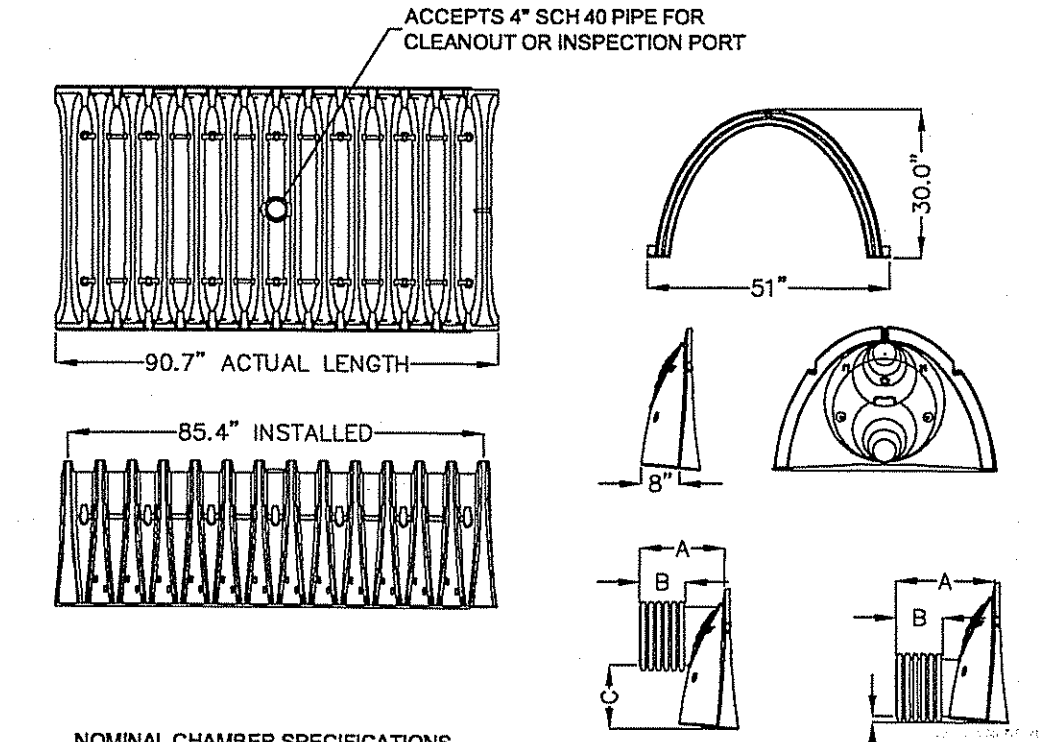
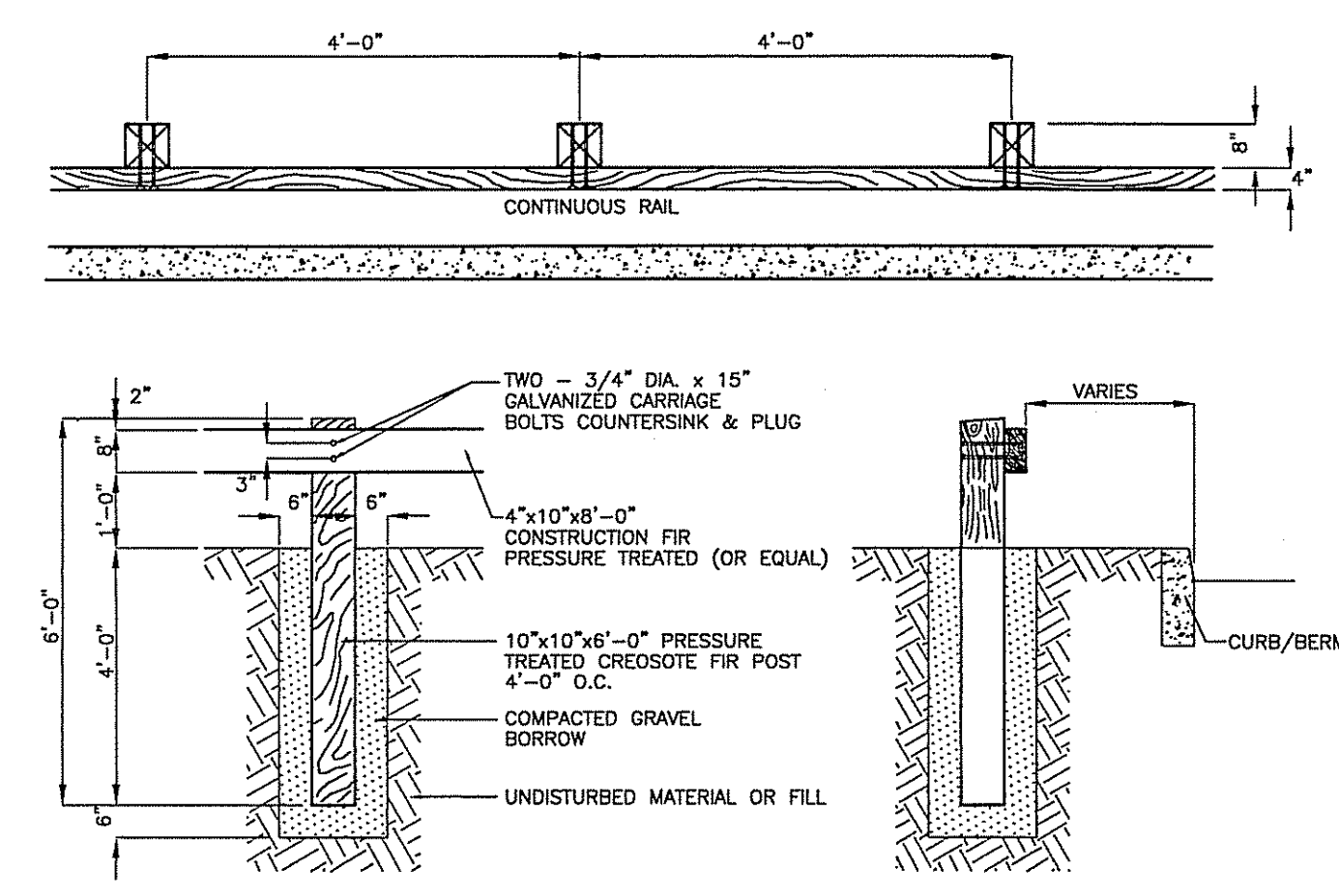


IF CONDITIONS ARE DIFFERENT THAN THOSE STATED IN THESE DRAWINGS AND SPECIFICATIONS, THE CONTRACTOR MUST CONTACT ENGINEER PRIOR TO PROCEEDING WITH THE CONSTRUCTION OF THE WALL.

SEGMENTAL BLOCK RETAINING WALLS ARE TO BE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER. SHOP DRAWINGS TO BE PROVIDED TO THE SITE AND TOWN ENGINEER PRIOR TO CONSTRUCTION FOR APPROVAL.



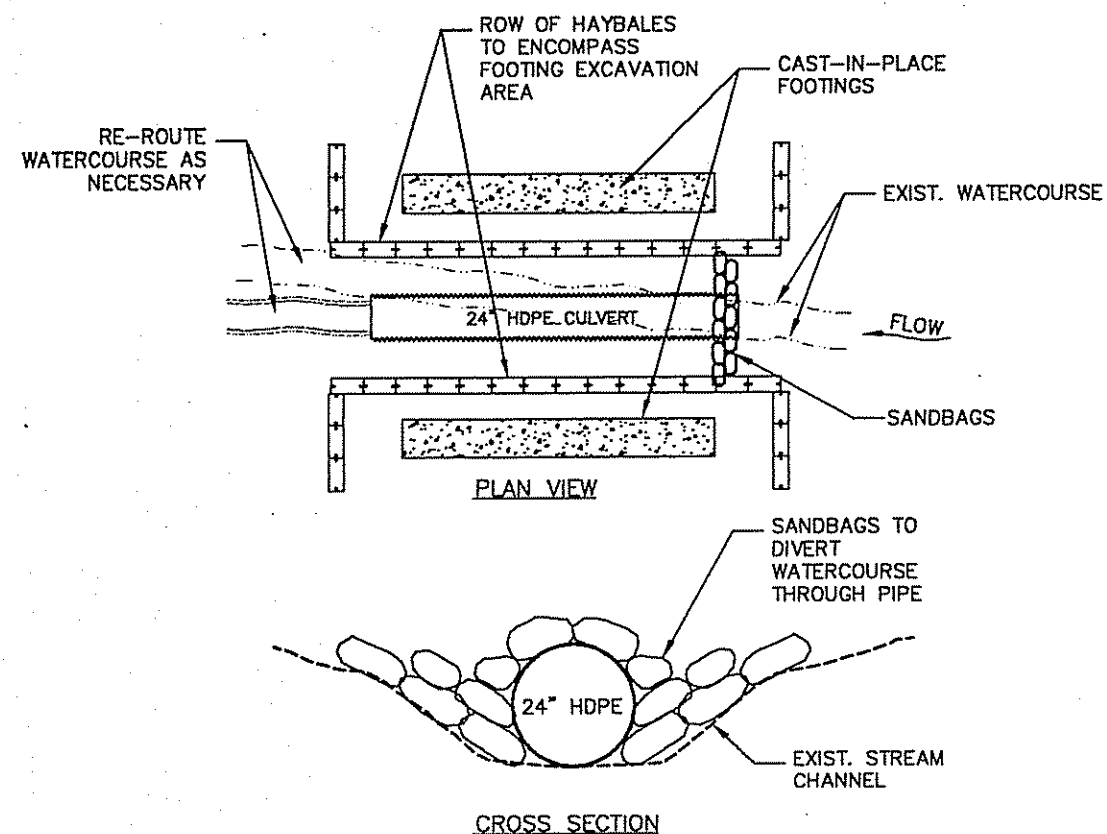
CONTACT CONTECH @ 1-800-338-1122 FOR SITE SPECIFIC DESIGN OF THIS PARTICULAR CULVERT



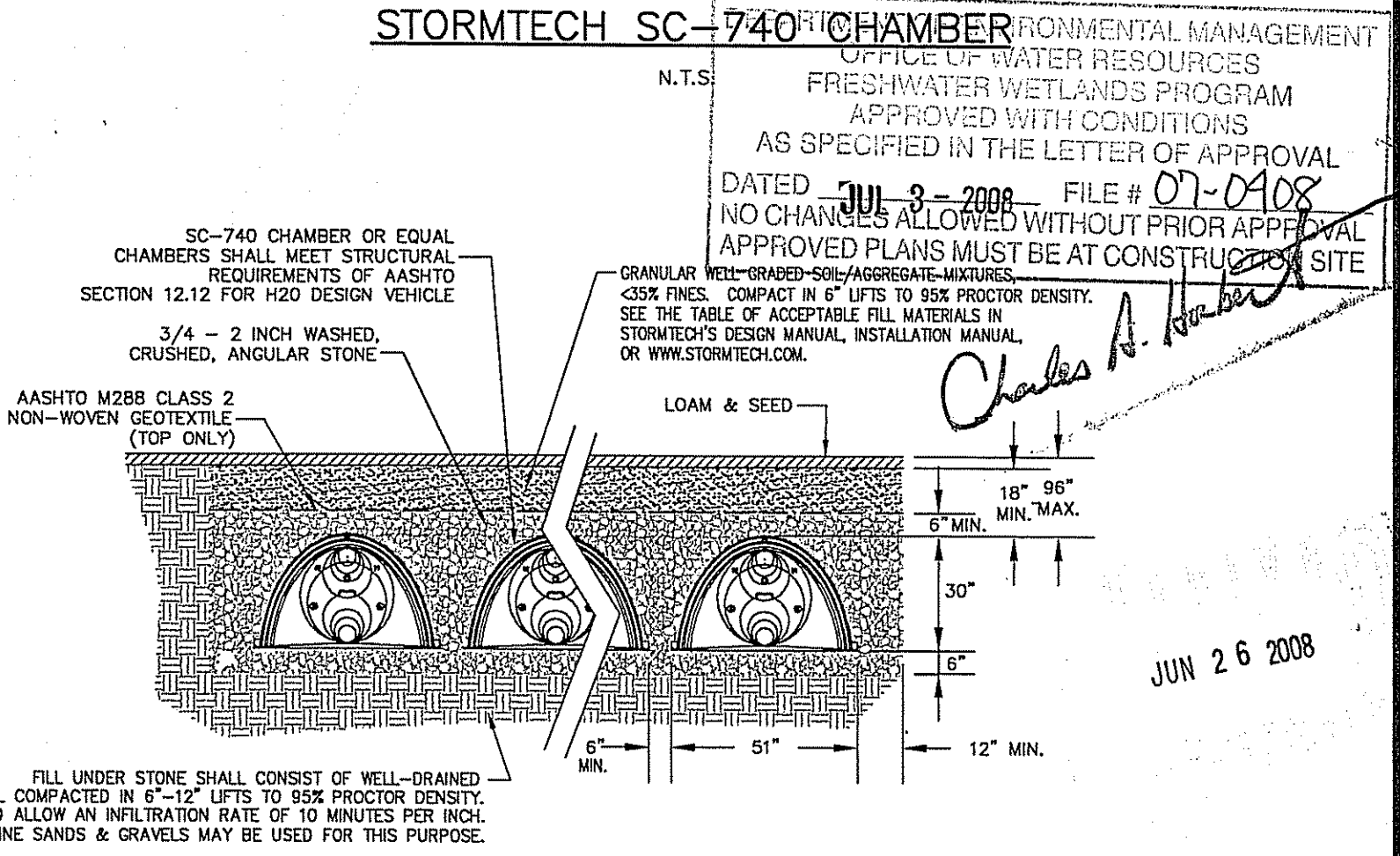
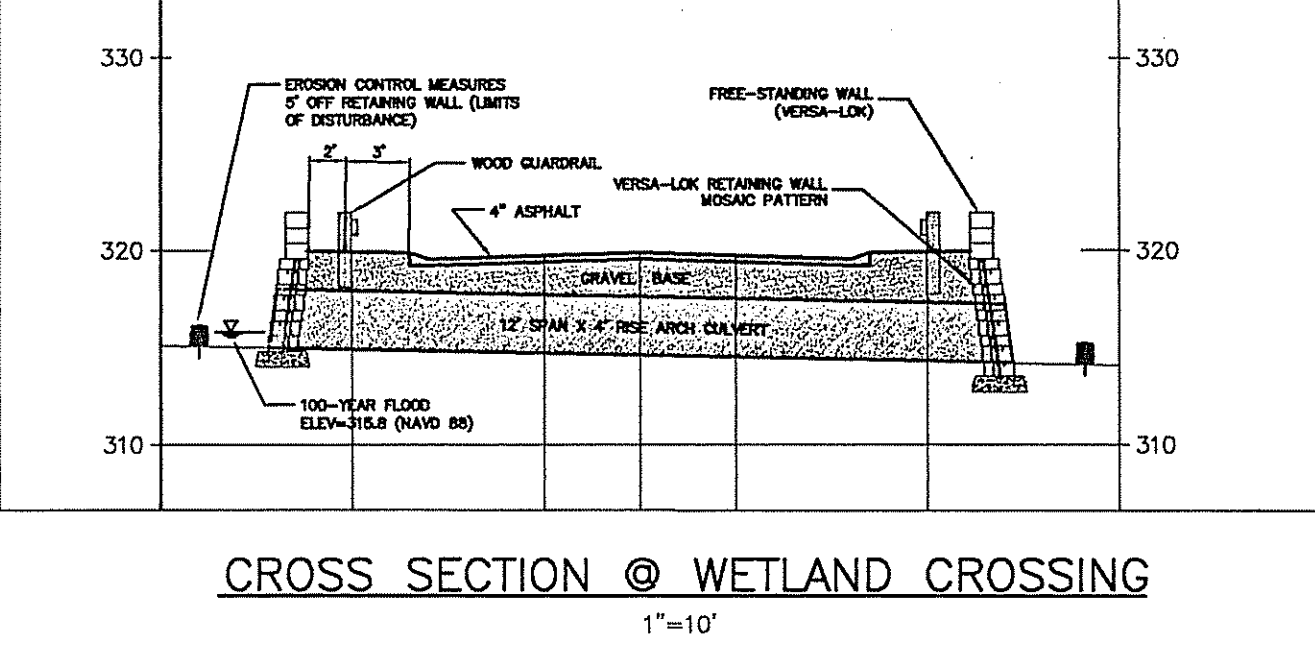
PART #	CHAMBER	PIPE SIZE	A	B	C	D
SC740EP06T	SC 740	6 in (150 mm)	10.90 in (277 mm)	3.85 in (98 mm)	18.50 in (470 mm)	N/A
SC740EP06B	SC 740	6 in (150 mm)	10.90 in (277 mm)	3.85 in (98 mm)	N/A	0.50 in (13 mm)
SC740EP12T	SC 740	12 in (300 mm)	14.70 in (373 mm)	7.70 in (196 mm)	12.50 in (318 mm)	N/A
SC740EP12B	SC 740	12 in (300 mm)	14.70 in (373 mm)	7.70 in (196 mm)	N/A	1.20 in (30 mm)
SC740EP15T	SC 740	15 in (375 mm)	18.40 in (467 mm)	10.36 in (263 mm)	9.00 in (229 mm)	N/A
SC740EP15B	SC 740	15 in (375 mm)	18.40 in (467 mm)	10.36 in (263 mm)	N/A	1.30 in (33 mm)
SC740EP18T	SC 740	18 in (460 mm)	19.70 in (500 mm)	10.72 in (272 mm)	5.00 in (127 mm)	N/A
SC740EP18B	SC 740	18 in (460 mm)	19.70 in (500 mm)	10.72 in (272 mm)	N/A	1.50 in (41 mm)
SC740EP24B	SC 740	24 in (600 mm)	18.50 in (470 mm)	8.45 in (214 mm)	N/A	0.10 in (3 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

- CONSTRUCTION SEQUENCE OF WETLAND CROSSING**
- INSTALLATION OF CULVERT SHALL BE DURING LOW FLOW PERIOD - JULY 1 THROUGH OCTOBER 31.
  - INSTALL HAYBALES AT LIMIT OF EXCAVATION FOR CAST-IN-PLACE CONCRETE FOOTINGS.
  - INSTALL SAND BAGS ON AND WITHIN CHANNEL BANKS OF STREAM ALONG WITH 24" HDPE BY-PASS PIPE (IF NO STREAM FLOW EXISTS, BY-PASS PIPE AND SANDBAGS ARE UNNECESSARY).
  - STREAM MUST BE RE-ALIGNED AS SHOWN ON PLAN FOR CULVERT INSTALLATION.
  - EXCAVATE FOOTING LOCATIONS AND DEWATER AS NECESSARY BY PUMPING GROUNDWATER TO PROPOSED DETENTION POND #2.
  - CONSTRUCT FOOTINGS, BACKFILL WITH ORIGINAL MATERIAL AND COMPACT.
  - REMOVE ALL SEDIMENT BUILD-UP IN DETENTION POND FROM DEWATERING PROCESS AND RESEED POND AS NECESSARY.
  - REMOVE PIPE, SANDBAGS, AND HAYBALES.
  - CONSTRUCT NEW STREAM CHANNEL BETWEEN FOOTINGS AND ROUTE TO EXISTING CHANNEL USING SAME DIMENSIONS AS CHANNEL. BOTTOM AND SIDE SLOPES SHALL BE COMPACTED WITH 3"-12" STONE/RIP-RAP.
  - LOAM AND SEED ALL DISTURBED AREAS USING CONSERVATION SEED MIX.
  - CON-SPAN ARCH CULVERTS OF 12'-0" SPAN ARE INSTALLED USING A CRANE WHICH PLACES CULVERT ON INSTALLED FOOTINGS.



NOTE: CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING PUMP DURING FOOTING INSTALLATION (SEE CONSTRUCTION SEQUENCE FOR MORE DETAIL).



**STORMTECH SC-740 CHAMBER**

OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED JUL 3 2008 FILE # 07-0108  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Charles A. [Signature]

JUN 26 2008

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NO.	DATE	REVISION	BY
1	12-17-07	ADDRESS RIEM WETLANDS COMMENTS	CSR

**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)

**Thalman**  
ENGINEERING CO., INC.

**Wolf Hill Estates**  
95 Mountaineer Road  
Smithfield  
Rhode Island

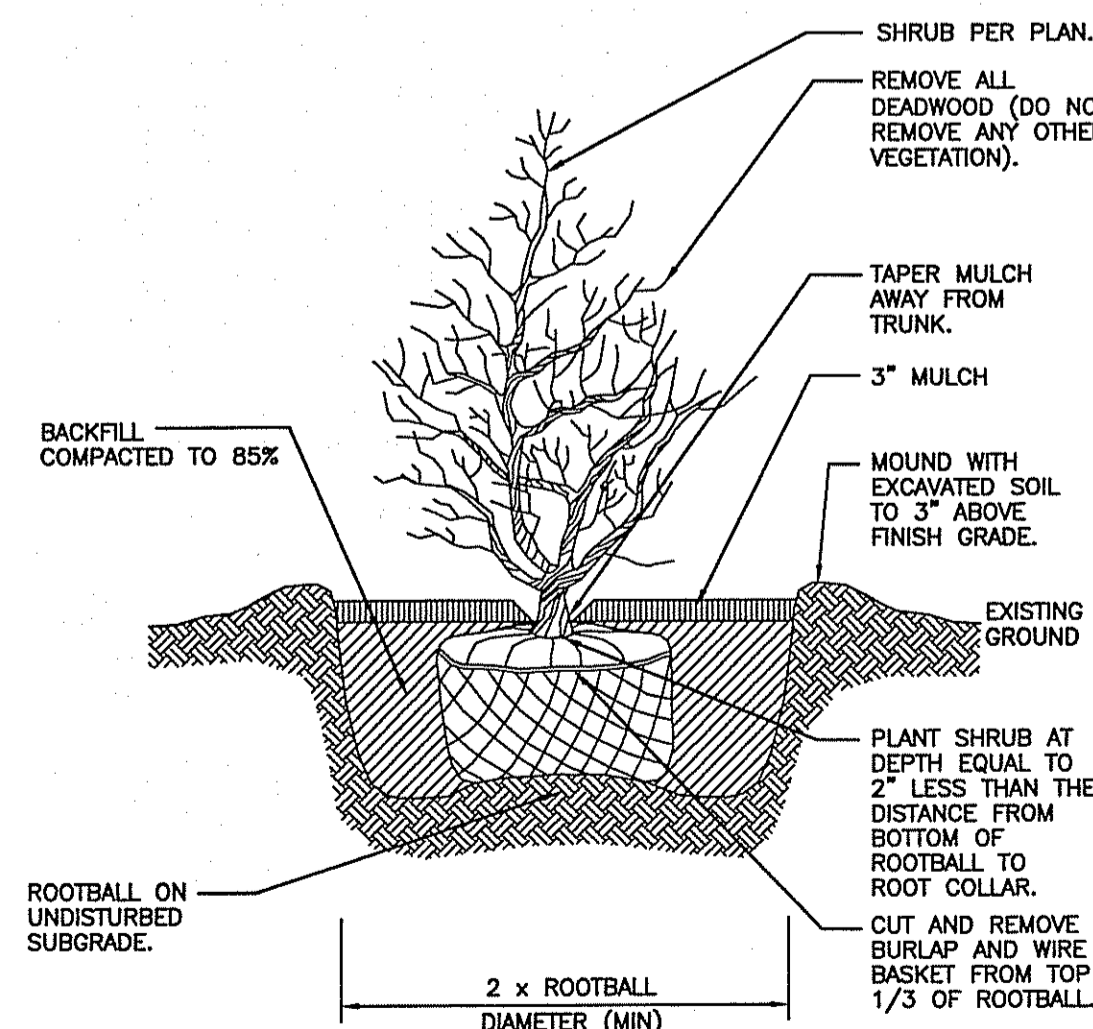
Prepared for:  
**Robert M. Eaton, Jr.**  
75 Mountaineer Road, Smithfield, RI 02917

scale: As Noted

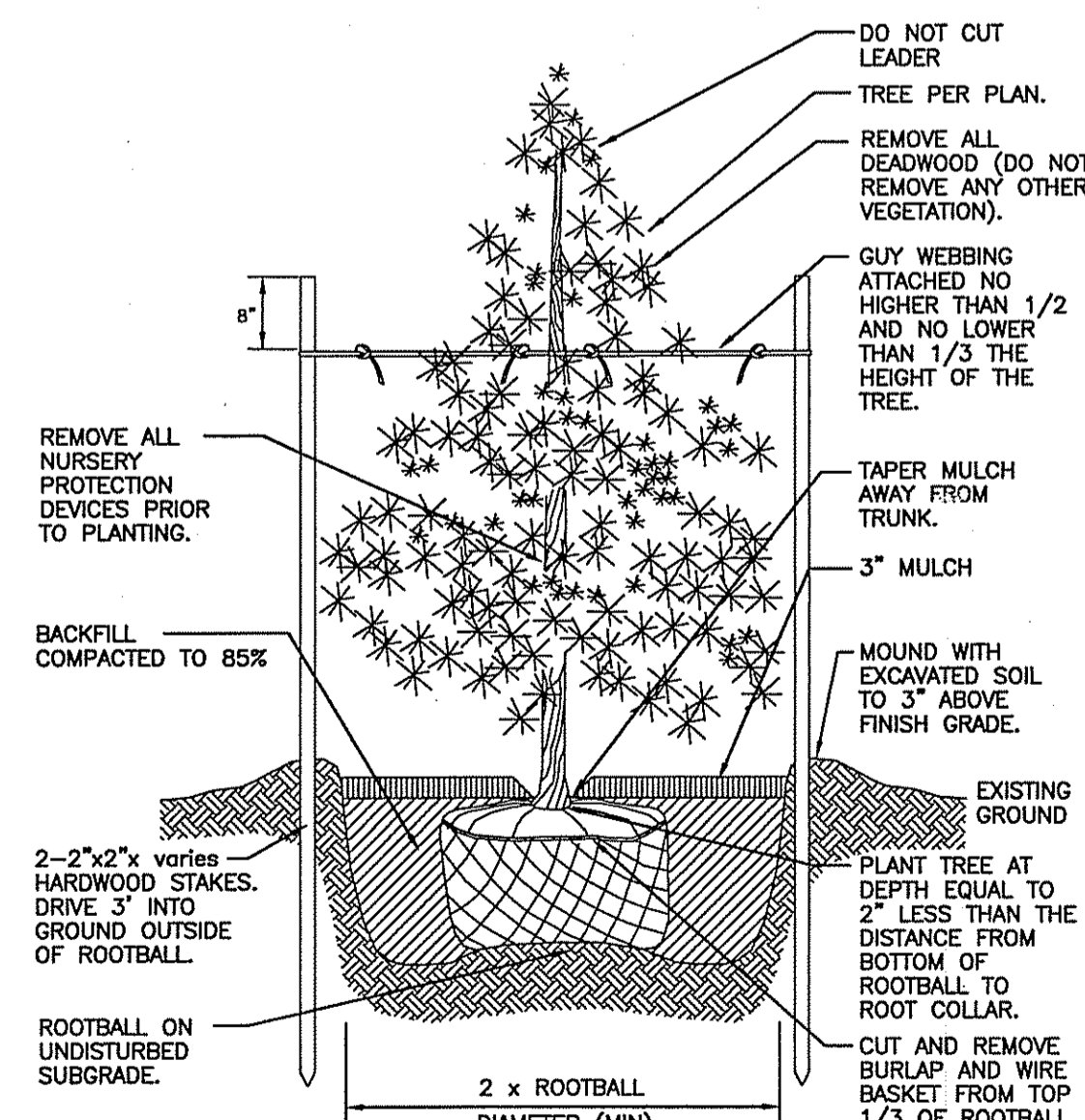
Design By: CSR  
Checked By: BPT  
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**C-7**  
7 of 8  
FILE NO.: 06.075

**GENERAL LANDSCAPE NOTES:**

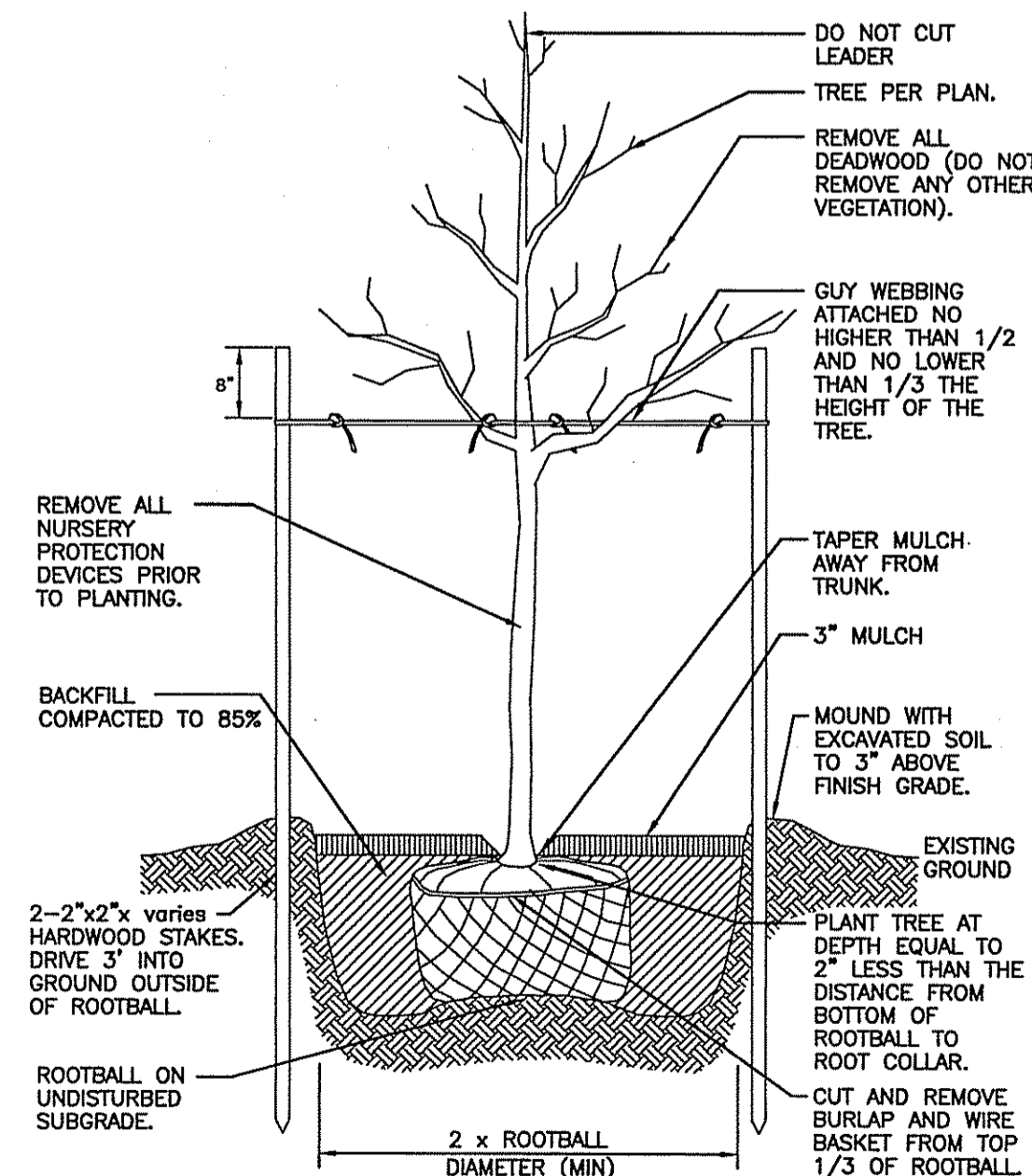
- THE CONTRACTOR SHALL INSTALL ALL PLANT MATERIAL IN CONFORMANCE WITH THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
- ALL PLANT MATERIAL SHALL MEET THE AMERICAN OF NURSERYMEN STANDARDS FOR NURSERY STOCK, LATEST EDITION, AND ITS AMENDMENTS. PLANT ONLY DURING SEASONS NORMAL TO THE PARTICULAR VARIETY. NO SUBSTITUTIONS SHALL BE ACCEPTED WITHOUT PRIOR APPROVAL BY THE LANDSCAPE ARCHITECT.
- ALL PLANT MATERIAL FURNISHED BY THE CONTRACTOR SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR. IF THE FIRST YEAR ENDS DURING THE DORMANT PERIOD, THE GUARANTEE SHALL EXTEND TO THE START OF THE NEXT LEAFING. DURING THE ONE-YEAR GUARANTEE PERIOD THE CONTRACTOR SHALL EMPLOY ACCEPTED HORTICULTURAL PRACTICES TO KEEP THE PLANTS INSTALLED IN LIVING, HEALTHY CONDITION. FOLLOWING THE ONE-YEAR GUARANTEE PERIOD THE OWNER/OWNERS SHALL INSPECT ALL PLANT MATERIAL FOR HEALTHY ORNAMENTAL QUALITY. AT THAT TIME SHOULD ANY PLANT MATERIAL BE FOUND IN INADEQUATE HEALTH THE CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE THE PLANT IN KIND AND PROVIDE A ONE-YEAR GUARANTEE FOR THE REPLACEMENT PLANT.
- INSTALL ALL PLANT MATERIAL AS SHOWN IN DETAILS.
- STAKE ALL TREES OVER 5' AS SHOWN ON DETAILS. REMOVE STAKES AT THE END OF THE GUARANTEE PERIOD.
- THE CONTRACTOR IS RESPONSIBLE FOR KEEPING THE SITE CLEAN OF MISCELLANEOUS DEBRIS THROUGHOUT THE CONSTRUCTION PERIOD. ALL WASTE MATERIAL IS TO BE DISPOSED OF IMMEDIATELY TO AN OFF-SITE LOCATION, UNLESS OTHERWISE INDICATED ON THE PLANS.
- THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS, AND SHALL OBTAIN ALL NECESSARY PERMITS FOR THE PROJECT.
- LAYOUT: ALL NOTES AND DIMENSIONS ARE TYPICAL UNLESS OTHERWISE NOTED. ALL DIMENSIONS ARE SQUARE (PARALLEL OR PERPENDICULAR) UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL NOTIFY THE OWNER/OWNER'S REPRESENTATIVE IMMEDIATELY IN THE EVENT OF ANY DISCREPANCIES FOUND IN THE CONTRACT DOCUMENTS AND/OR IN THE FIELD, OR ON CONDITIONS UNCOVERED IN THE WORK WHICH ARE NOT REFLECTED IN THE PLANS.
- LOAM: LOAM MOVED DURING THE COURSE OF CONSTRUCTION SHALL BE RETAINED AND DISTRIBUTED WITHIN THE SITE IN ACCORDANCE WITH THE LANDSCAPE PLAN. STOCKPILED LOAM SHALL NOT BE MIXED WITH ANY SUBSOIL OR UNSUITABLE MATERIAL. ALL EXISTING LOAM REMAINS THE PROPERTY OF THE OWNER.
- PROTECTION OF EXISTING PLANTINGS: MAXIMUM EFFORT SHOULD BE MADE TO SAVE TREES OF OTHER PLANT SPECIMENS WHICH ARE LARGE FOR THEIR SPECIES, RARE TO THE AREA, OR OF SPECIAL HORTICULTURAL OR LANDSCAPE VALUE. CONTACT OWNER/LANDSCAPE ARCHITECT BEFORE REMOVING ANY SPECIMEN OF THIS TYPE UNLESS OTHERWISE NOTED ON THE PLANS. NO MATERIAL OR TEMPORARY SOIL DEPOSITS SHALL BE PLACED WITHIN THE DRIP LINE OF SHRUBS OR TREES DESIGNATED ON THE LANDSCAPE PLAN TO BE RETAINED. PROTECTIVE BARRIERS ARE TO BE INSTALLED AROUND EACH PLANT AND/OR GROUP OF PLANTS THAT ARE TO REMAIN ON THE SITE. BARRIERS SHALL NOT BE SUPPORTED BY THE PLANTS THEY ARE PROTECTING, BUT SHALL BE SELF-SUPPORTING. THEY SHALL BE OF MINIMUM OF FOUR FEET (4') HIGH AND CONSTRUCTED OF A DURABLE MATERIAL, SUCH AS SNOW OR SILT FENCE, THAT WILL LAST UNTIL CONSTRUCTION IS COMPLETED.
- PRUNING: THE CONTRACTOR SHALL CAREFULLY PRUNE BRANCHES IN THE WAY OF CONSTRUCTION BY USING ONLY APPROVED METHODS AND TOOLS. THE USE OF AXES FOR TRIMMING OR SPURS FOR CLIMBING WILL NOT BE PERMITTED.
- UTILITIES: IN ACCORDANCE WITH DIG-SAFE LAW THE CONTRACTOR SHALL CONTACT ALL APPLICABLE UTILITY COMPANIES AND VERIFY LINE LOCATIONS (1-800-225-4877). RECORD LOCATIONS OF DIG-SAFE UTILITY LINE MARKINGS ON PROJECT RECORDS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY AND ALL UTILITY DAMAGE INCLUDING DAMAGE THAT MAY OCCUR TO NEW UTILITIES.
- DISTURBED AREAS: AREAS DISTURBED DURING THE COURSE OF CONSTRUCTION ARE TO BE RESTORED TO ORIGINAL (OR BETTER) CONDITION BY THE CONTRACTOR BEFORE COMPLETION OF THE PROJECT, AND ARE SUBJECT TO APPROVAL BY THE LANDSCAPE ARCHITECT AND OWNER. ALL GRASS AREAS DISTURBED DURING CONSTRUCTION SHALL BE FINE RAKED TO REMOVE STONES AND LOAMED AND SEEDED AS PER SPECIFICATIONS.
- DRAINAGE SYSTEMS: CONTRACTOR IS RESPONSIBLE FOR GENERAL CLEAN-OUT OF ALL CATCH BASINS, MANHOLES, AND/OR OTHER DRAINAGE FEATURES ON THE SITE WHICH HAVE ACCUMULATED SEDIMENT AS A RESULT OF CONSTRUCTION ACTIVITIES.
- CLEANING: CONTRACTOR IS RESPONSIBLE FOR KEEPING SITE CLEAN OF MISCELLANEOUS DEBRIS THROUGHOUT THE CONSTRUCTION PERIOD. ALL WASTE MATERIAL IS TO BE DISPOSED OF IMMEDIATELY TO AN OFF-SITE LOCATION, UNLESS OTHERWISE INDICATED ON THE PLAN.



**SHRUB PLANTING DETAIL**  
NOT TO SCALE



**EVERGREEN TREE PLANTING DETAIL**  
NOT TO SCALE



**CANOPY TREE PLANTING DETAIL**  
NOT TO SCALE

**PLANT LIST**

Key	Botanical Name Common Name	Quantity	Size	Note
AR	ACER RUBRUM 'ARMSTRONG' ARMSTRONG MAPLE	10	2.5'-3' B&B	
AR	ACER RUBRUM 'RED SUNSET' RED SUNSET MAPLE	10	2.5'-3' B&B	
FP	FRAXINUS PENNSYLVANICA GREEN ASH	11	2.5'-3' B&B	
JV	JUNIPERUS VIRGINIANA EASTERN RED CEDAR	10	5'-6' B&B	
LT	LIRIODENDRON TULIPIFERA TULIP TREE	9	2.5'-3' B&B	
TO	THUJA OCCIDENTALIS NORTHERN WHITE CEDAR	42	5'-6' B&B	

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
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DATED JUL 8 2008 FILE # 07-0408  
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NO.	DATE	REVISION	BY
1	12-17-07	RIDEM WETLANDS COMMENTS	CSR
2	3-17-08	RIDEM WETLANDS COMMENTS	NJP
3	5-28-08	RIDEM WETLANDS COMMENTS	NJP
4	6-24-08	RIDEM WETLANDS COMMENTS	NJP

BRIAN P. THALMANN  
No. 6696  
PROFESSIONAL ENGINEER  
(CMTD)

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LANDSCAPE PLAN  
**Wolf Hill Estates**  
95 Mountandale Road  
Smithfield  
Rhode Island  
Robert M. Eaton, Jr.  
75 Mountandale Road Smithfield, RI 02917  
date: 2-8-07 scale: 1"=40'

Design By: CSR  
Checked By: BPT  
Sheet  
**L-1**  
8 of 8  
FILE NO.: 06.075

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