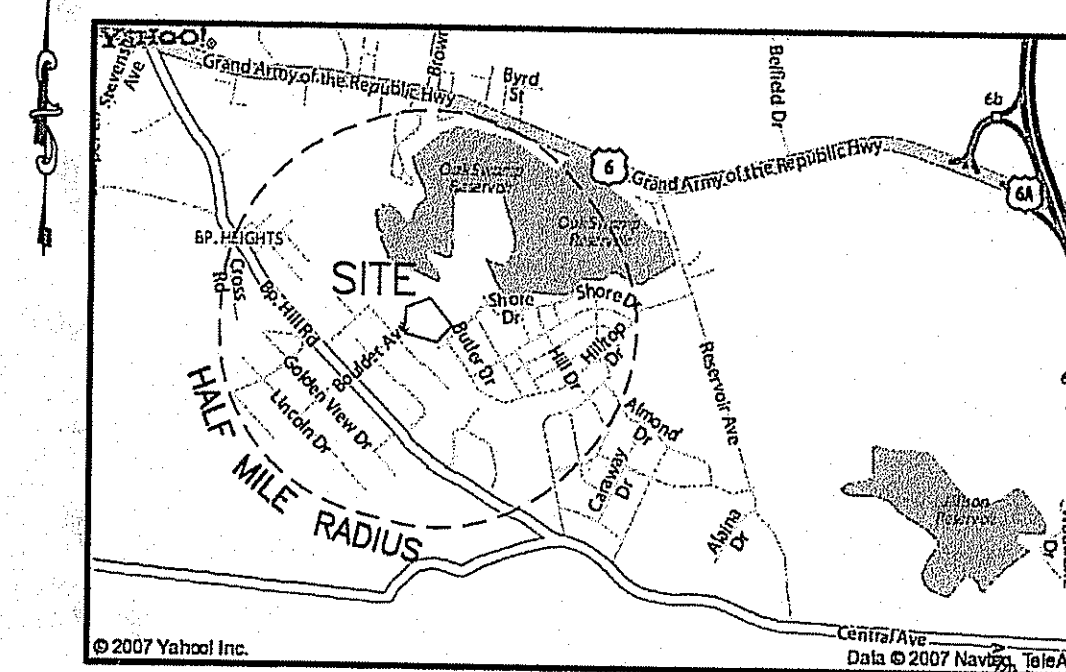


PRELIMINARY PLAN SUBMISSION  
MAJOR SUBDIVISION

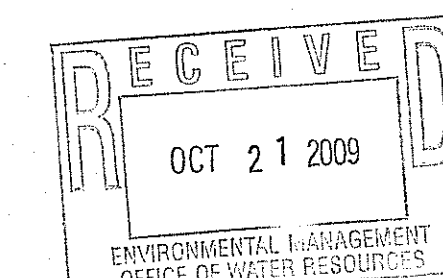
# BOULDER DRIVE ESTATES

A.P. 46-2 LOT 104  
Zone - R20

JOHNSTON, RHODE ISLAND



LOCUS MAP  
SCALE: 1"=2,700'



**NOTES:**

- PROPOSED WATER SUPPLY BY PUBLIC WATER SYSTEM.
- PROPOSED WASTEWATER DISPOSAL BY ONSITE WASTEWATER TREATMENT SYSTEMS.
- FLOOD ZONE: THE ENTIRE PROPERTY IS NOT SITUATED IN A 100-YR FLOOD ZONE AS DEPICTED IN FEMA'S FLOOD INSURANCE RATE MAPS #FM 44007C02836, PANEL 283 OF 541, DATED MAR. 2, 2009.
- THE PROPERTY IS ZONED RESIDENTIAL R-20, REFER TO ORDINANCE 2008-18 ADOPTED JANUARY 20, 2009.
- PROPERTY LINE SURVEY BY K. ANDREWS ASSOC. 2006, A CLASS I SURVEY.
- THE PROPERTY IS NOT LOCATED IN A DRINKING WATER WELL HEAD PROTECTION AREA AS INDICATED ON THE RIDEM'S GIS MAPPING SYSTEM.
- THE PROPERTY IS NOT LOCATED IN A GROUNDWATER RECHARGE AREA AS INDICATED ON THE RIDEM'S GIS MAPPING SYSTEM.
- THE PROPERTY IS NOT LOCATED IN A NATURAL HERITAGE AREA AS INDICATED ON THE RIDEM'S GIS MAPPING SYSTEM.
- THERE ARE NO FRESHWATER WETLANDS, WATER BODIES OR WATER COURSES ON SUBJECT PROPERTY AS DETERMINED BY ECOTONES, INC.
- THERE ARE NO OPEN SPACE OR RECREATIONAL AREAS PROPOSED.
- THERE ARE NO EXISTING PUBLICALLY OR PRIVATELY HELD EASEMENTS ON SUBJECT PROPERTY.
- THE SOILS ON THE SUBJECT PROPERTY ARE CLASSIFIED AS HAVING GROUNDWATER TABLES GREATER THAN 6 FEET FROM SURFACE AND BEDROCK GREATER THAN 5 FEET FROM THE SURFACE (TAKEN FROM SOIL SURVEY OF RHODE ISLAND BY USDA).
- NO HISTORIC AREAS, CEMETARIES, STRUCTURES, BUILDINGS AND FOUNDATIONS OR EXTRAORDINARY/UNUSUAL NATURAL FEATURES ARE KNOWN TO EXIST ON THE SUBJECT PROPERTY.
- EXISTING RIGHT OF WAY INTO SUBJECT PROPERTY IS 20 FEET WIDE. PROPOSAL WILL INCREASE RIGHT OF WAY WIDTH TO 50 FEET BY LAND ACQUISITION WITH ABUTTORS ON A.P. 45/1 LOTS 447 & 483.
- PROPOSED DRAINAGE EASEMENTS (SITUATED ON PROPOSED LOTS 1, 2 & 3) WILL BE DEDICATED TO THE BOULDER DRIVE ESTATES HOMEOWNERS' ASSOCIATION. HOMEOWNERS' ASSOCIATION IS RESPONSIBLE FOR MAINTENANCE OF DRAINAGE FACILITIES LOCATED ON DRAINAGE EASEMENTS, REFER TO DRAFT COPY OF HOMEOWNERS' ASSOCIATION LEGAL DOCUMENTS.
- CONSTRUCTION OF THE PROJECT WILL NOT BE PHASED.
- PROPOSED ROADWAY RIGHT-OF-WAY WILL BE DEDICATED TO THE TOWN OF JOHNSTON.
- STREET TREES WILL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE LAND DEVELOPMENT REGULATIONS.
- ALL PROPOSED UTILITIES SHALL BE INSTALLED UNDERGROUND.
- NO POTENTIAL ADVERSE IMPACTS HAVE BEEN IDENTIFIED BY THE PROPOSAL.
- TOPOGRAPHY IS BASED ON NGVD 29 DATUM. TOPOGRAPHY AND LOCATION OF PHYSICAL FEATURES ON SUBJECT PROPERTY WERE PERFORMED BY AEROTECH CORPORATION USING DIGITAL PHOTOGRAMMETRIC METHODS. ERROR IN ELEVATION IS 1/2 CONTOUR INTERVAL.

**WAIVERS:**

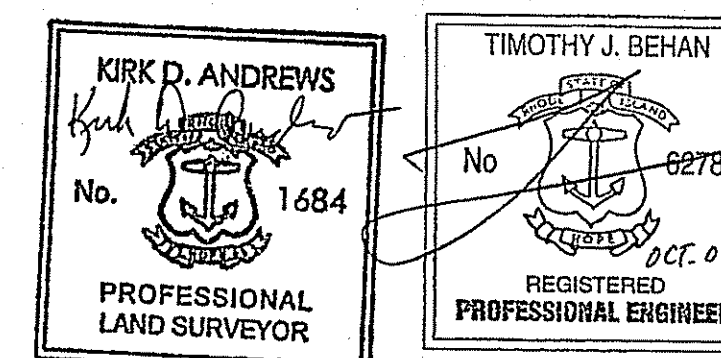
- CURVE RADII AT STREET INTERSECTION NOT PROPOSED. THE EXISTING STREET RIGHT OF WAY INTO SUBJECT PROPERTY AND AT INTERSECTING STREETS (PRIMROSE ROAD & BOULDER DRIVE) IS 20 FEET. PROPOSAL IS TO INCREASE WIDTH TO 50 FEET BY OBTAINING LAND FROM ABUTTORS ON LOTS 447 AND 483.
- REDUCE PAVED ROAD WIDTH FROM 30' TO 24' AND ELIMINATE SIDEWALKS.

**SHEET# PLAN TITLE**

1	COVER SHEET
2	GENERAL NOTES
3	EXISTING CONDITIONS PLAN
4	PROPOSED LOT LAYOUT PLAN
5	PROPOSED SITE PLAN
6	PROPOSED ROAD & DRAIN PROFILES
7	PROPOSED EROSION CONTROL PLAN
8	DETAILS-1
9	DETAILS-2
10	DETAILS-3
11	DETAILS-4
12	OFFSITE DRAINAGE PLAN

**CERTIFICATION**  
"ALL PLANS AND IMPROVEMENTS CONFORM TO ALL EXISTING AND AMENDED STANDARDS OF THE STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS, BOARD OF REGISTRATION OF PROFESSIONAL ENGINEERS AND BOARD OF REGISTRATION OF LAND SURVEYORS."

BY: TIMOTHY J. BEHAN, PE NO. 6278 DATED: 10/19/09  
BY: KIRK D. ANDREWS, PLS NO. 1684 DATED: 10/19/09



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED DEC 8 2009 FILE # 09-02641  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

PARCEL AREA  
AP 46/2 LOT 104  
AREA = 6.35 ACRES

**STREE INDEX**  
THIS PLAN IS TO BE INDEXED UNDER THE FOLLOWING STREETS:  
BOULDER DRIVE  
PRIMROSE LANE

**PRELIMINARY PLAN  
NOT FOR CONSTRUCTION**

**TJB ENGINEERING, LLC**  
CIVIL ENGINEERING, R.I.P.E. LIC.#6278  
PERMITTING \* LAND PLANNING  
SUBDIVISIONS \* WASTEWATER

1050 MAIN STREET SUITE 30  
EAST GREENWICH, RI 02818  
PHONE: 401-996-1677 FAX: 401-885-0779  
EMAIL: TIMBEHAN@COMCAST.NET

**K ANDREWS ASSOCIATES**  
LAND SURVEYING AND SITE PLANNING

1050 MAIN STREET SUITE 30  
EAST GREENWICH, RHODE ISLAND 02818  
PHONE (401) 885-0770  
FAX (401) 885-0779

Sheet **1**  
of **12** sheets

Checked By: T.J.B. Drawn By: T.J.B. Date: JULY 2008

NO.	REVISIONS	DATE
1	LOW CHANGES & ROAD WIDTH WATER	7/27/08
2	LOCAL CONDITIONS SUBMISSION	7/30/08
3	TWOEL REVISION SUBMISSION	7/31/08

Being: ASSESSORS PLAT 46/2 LOT 104  
MAJOR SUBDIVISION - PRELIMINARY PLAN  
COVER SHEET  
BOULDER DRIVE ESTATES

LOCATION  
BOULDER DRIVE  
JOHNSTON, RHODE ISLAND  
PROFESSIONAL ENGINEER  
Kirk D. Andrews, P.E.  
Boulder Realty, LLC

52 River Avenue, Providence, RI 02908 401-266-7005

**GENERAL NOTES:**

- EMBANKMENT SLOPES AND ALL DISTURBED AREAS ARE TO RECEIVE 4" OF TOPSOIL AND SEED UNLESS OTHERWISE NOTED.
- ALL EXCAVATION AND PLACEMENT OF FILL SHALL BE IN ACCORDANCE WITH R.I.D.O.T. STANDARD SPECIFICATIONS SECTION 202.
- THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING DRAINAGE AND UTILITIES, BOTH UNDERGROUND AND OVERHEAD BEFORE EXCAVATION BEGINS IN ACCORDANCE WITH "DIG SAFE". NO DRAINAGE STRUCTURE OR FACILITY SHALL BE DISTURBED WITHOUT PROPER PERMITS UNLESS SPECIFICALLY INDICATED ON THESE DRAWINGS. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- SPECIFICATIONS & DETAILS TO GOVERN THIS PROJECT ARE THE RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION 2004 EDITION & TOWN STANDARDS. THE TOWN'S STANDARDS SHALL OVERRIDE RIDOT STANDARDS OUTSIDE OF THE STATE R.O.W. THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED ROADWAYS AND DRAINAGE SYSTEMS IN ACCORDANCE WITH THE TOWN'S SPECIFICATIONS FOR CONSTRUCTION OF REQUIRED IMPROVEMENTS AS SPECIFIED IN THE TOWN'S SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MAINTENANCE AND PROTECTION OF PEDESTRIAN AND VEHICULAR TRAFFIC INCLUDING POLICE PROTECTION. ALL TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES 2003 INCLUDING ALL REVISIONS.
- ALL REQUIRED AUTHORIZATION/PERMITS TO PERFORM WORK MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
- ALL EXISTING UTILITIES HAVE BEEN PLOTTED BASED UPON BEST AVAILABLE INFORMATION AND REPRESENT APPROXIMATE LOCATIONS. UTILITY LOCATIONS SHOWN ON THE PLANS SHALL NOT BE RELIED UPON BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY CONSTRUCTION OPERATIONS INCLUDING ALL ACTIONS OR OMISSIONS OF ANY SUBCONTRACTORS, AGENTS OR EMPLOYEES. THE CONTRACTOR MUST ENSURE THAT THE CONDITIONS OF ALL PERMITS, SPECIFICATIONS AND FEDERAL, STATE AND LOCAL REGULATIONS ARE STRICTLY ENFORCED. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ALL ASPECTS OF ON-SITE SAFETY INCLUDING ANY DAMAGE TO EXISTING STRUCTURES.
- ALL DISTURBED AREAS/STRUCTURES SHALL BE REPLACED IN KIND UNLESS OTHERWISE SHOWN, INCLUDING CURBS, PAVEMENTS, ETC.
- WORK SHOWN ON THE PLANS FOR WHICH THERE ARE NO PARTICULAR DETAILS OR SPECIFICATIONS DOES NOT RELIEVE THE CONTRACTOR FROM FURNISHING AND INSTALLING THE WORK. THE CONTRACTOR SHALL THOROUGHLY EXAMINE THE CONTRACT DOCUMENTS AND PLANS AND INSPECT THE SITE, AND THE BID PRICE SHALL INCLUDE ALL SERVICES AND MATERIALS NECESSARY TO COMPLETE THE PROJECT. ANY CHANGES TO THE PROJECT OR THE INSTALLATION OF AN ITEM FOR WHICH NO PARTICULAR DETAIL OR SPECIFICATION WAS PROVIDED MUST BE REVIEWED BY AND MUST BE ACCEPTABLE TO THE ENGINEER.
- ALL ELEVATIONS ON SUBJECT PROPERTY ARE BASED ON NGVD29 DATUM AND HAS A VERTICAL ERROR OF 1± FEET. OFFSITE TOPOGRAPHY, IF SHOWN, IS BASED ON USGS DATA AND LIKELY HAS A VERTICAL ERROR OF 5± FEET.
- THE CONTRACTOR SHALL INSTALL ALL HAY BALES & SEDIMENT CONTROL DEVICES IN ACCORDANCE WITH RIDEM & TOWN STANDARDS PRIOR TO ANY CONSTRUCTION.
- ALL CONSTRUCTION IS SUBJECT TO THE INSPECTION AND APPROVAL BY THE TOWN. PROPER NOTIFICATION SHALL BE GIVEN PRIOR TO THE COMMENCEMENT OF ANY WORK.
- ALL UNSUITABLE MATERIAL (LOAM, SUBSOIL, ROOTS, TREE TRUNKS, CLAY, SILT, ORGANIC MATTER, LARGE STONES, ETC.) SHALL BE REMOVED FROM THE ROADWAY SUBGRADE AND DETENTION POND AREAS PRIOR TO THE PLACEMENT OF THE GRAVEL SUBBASE/BERM MATERIAL AS DIRECTED AND APPROVED.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SOIL EROSION AND SEDIMENTATION CONTROLS WHERE NECESSARY AND AS DIRECTED. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND PROCEDURES SET FORTH IN THE TOWNS SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, LATEST EDITION. THE REGULATIONS ARE AVAILABLE FOR REVIEW FROM THE PLANNING DEPARTMENT.
- PROPOSED GRADING ON THE HOUSE LOTS IS TO BE USED AS A GUIDE SUCH THAT THE DEVELOPED AREA IS GRADED TO DRAIN ALL SURFACE RUNOFF.
- COMMUNICATION LINES (ELECTRIC, TELEPHONE, AND CABLE TV) SHALL BE INSTALLED UNDERGROUND UNLESS APPROVED BY THE TOWN.
- ALL BASEMENTS SHALL BE LOCATED WELL ABOVE THE GROUNDWATER TABLE.
- NO MINING OF SITE MATERIALS (SAND, GRAVEL, LOAM, ETC.) SHALL BE PERMITTED EXCEPT AS INDICATED ON THE PLANS.
- THE LOCATION, SIZE AND SHAPE OF HOUSES/DRIVES ARE SHOWN TO DEMONSTRATE CONFORMANCE WITH VARIOUS STATE AND LOCAL SITE REQUIREMENTS FOR PERMITTING PURPOSES. THESE MAY ALL VARY ACCORDINGLY TO BUYER PREFERENCES AND PERMITTING APPROVALS EXCEPT THAT UNDER NO CIRCUMSTANCES SHALL ANY BUILDINGS BE ALLOWED BEYOND THE LIMITS OF DISTURBANCE OR THE BUILDING SETBACK LINE SHOWN ON THESE PLANS.
- THE ENTIRE PROPERTY IS NOT SITUATED IN A 100-YR FLOOD ZONE AS DEPICTED IN FEMA'S FLOOD INSURANCE RATE MAPS #FM 44007C02836, PANEL 283 OF 541, DATED MAR. 2, 2009.
- ALL CONSTRUCTION SHALL BE PERFORMED IN THE DRY. THE CONTRACTOR SHALL PROVIDE, OPERATE AND MAINTAIN ALL PUMPS, DRAINS, WELL POINTS AND OTHER FACILITIES NECESSARY TO CONTROL, COLLECT AND DISPOSE SURFACE AND SUBSURFACE WATER ENCOUNTERED DURING CONSTRUCTION.
- PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL ENGAGE A RI PROFESSIONAL LAND SURVEYOR TO SET AND VERIFY ALL LINES AND GRADES. ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS ARE TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY ITEM FOUND WHICH DOES NOT MATCH THE PLANS MUST BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO CONSTRUCTION FOR REVIEW. NO WORK SHALL PROCEED UNTIL AUTHORIZED BY THE TOWN.
- THE LIMIT OF DISTURBANCE SHALL BE LOCATED BY A RI PLS PRIOR TO CONSTRUCTION. NO CLEARING OR DISTURBANCE SHALL TAKE PLACE OUTSIDE THE LIMIT OF DISTURBANCE. THE AREA OUTSIDE THE LIMIT OF DISTURBANCE SHALL BE KEPT TOTALLY UNDISTURBED.
- ALL ROOT SYSTEMS, TREES, STUMPS, BUSHES, BOULDERS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND TRANSPORTED AWAY FROM THE PROJECT SITE, UNLESS OTHERWISE APPROVED BY THE TOWN.
- MANHOLE AND CATCH BASIN FRAME & COVERS SHALL BE ADJUSTED TO FINISH GRADE WITH RED BRICK AND MORTAR. OTHER TYPES OF BRICK AND/OR PRECAST CONCRETE RINGS ARE NOT ACCEPTABLE.
- ALL MANHOLE AND CATCH BASIN FRAME & COVERS SHALL BE ADJUSTED TO THE FIRST COURSE OF PAVEMENT. THE FRAME AND COVERS SHALL BE RE-ADJUSTED IMMEDIATELY PRIOR TO PLACEMENT OF THE SECOND COURSE OF PAVEMENT.
- THE CONTRACTOR SHALL READ THE TOWN SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PRIOR TO CONSTRUCTION (AS THEY PERTAIN TO CONSTRUCTION). ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE REGULATIONS.
- THE CONTRACTOR SHALL ADHERE TO ALL PERMITS WHICH INCLUDE AT LEAST RIDEM WETLANDS AND RIDEM OWTS SITE SUITABILITY.
- ALL ROAD DRAINAGE SHALL REMAIN ON THE ROAD AND NOT BE DIRECTED DOWN ANY DRIVEWAYS. A BITUMINOUS BERM SHALL BE CONSTRUCTED ALONG EACH DRIVEWAY CURB CUT TO KEEP DRAINAGE IN THE ROADWAY.
- ALL PAVEMENT CUTS IN TOWN STREETS SHALL HAVE SAW CUT EDGES. A 2" THICK HOT MIX TEMPORARY PATCH SHALL BE INSTALLED BY THE CONTRACTOR. AFTER A MINIMUM OF 90 DAYS, THE TEMPORARY PATCH SHALL BE REMOVED AND A PERMANENT HOT MIX PATCH SHALL BE PLACED. ALL WORK SHALL BE PERFORMED TO THE TOWN'S SATISFACTION.
- ONLY PLANS ENTITLED 'ISSUED FOR CONSTRUCTION' SHALL BE USED AT THE JOB SITE BY THE CONTRACTOR.

**MAINTENANCE AND PROTECTION OF TRAFFIC NOTES:**

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MAINTENANCE AND PROTECTION OF PEDESTRIAN AND VEHICLE TRAFFIC INCLUDING POLICE PROTECTION. ALL TEMPORARY AND VEHICULAR SIGNS, BARRICADES AND LANE CLOSURES SHALL BE IN CONFORMANCE WITH THE LATEST REVISIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES 2003 (M.U.T.C.D.) INCLUDING ALL REVISIONS.
- TEMPORARY CONSTRUCTION SIGNS AND ALL APPLICABLE TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF WORK IN ANY AREA OPEN TO TRAFFIC.
- THE PRIVATE VEHICLES OF CONSTRUCTION WORKERS WILL NOT BE PARKED IN THE STREET RIGHT-OF-WAYS.
- SIGN MOUNTINGS SHALL BE IN ACCORDANCE WITH THE R.I.D.O.T. SPECIFICATIONS FOR TEMPORARY CONSTRUCTION SIGNS.

**PERMANENT MONUMENTS:**

- SET AT EVERY CORNER AND ANGLE POINT ON THE BOUNDARY LINE OF THE SUBDIVISION AND AT EVERY ANGLE POINT OF CURVATURE ON THE PROPOSED STREET RIGHTS OF WAY, EXCEPT AS WAIVED BY THE PLANNING BOARD.
- MONUMENTS SHALL BE QUARRY SPLIT (PEEN HAMMERED TOP) GRANITE CONFORMING IN SIZE AND SHAPE TO THE SPECIFICATIONS BELOW:
  - AT LEAST 30" IN LENGTH AND 6" SQUARE IN CROSS-SECTION.
  - PLACE AND CENTER ON THE TOP SURFACE OF THE MONUMENT A DRILL HOLE ONE-HALF INCH IN DIAMETER AND THREE-QUARTERS OF AN INCH DEEP.
  - INSTALL AT POINTS INDICATED ON THE FINAL PLAN.
- MONUMENTS SHALL BE SET FOUR INCHES ABOVE FINISHED GRADE OF THE CENTER OF THE STREET.

**RIDEM OWTS SITE SUITABILITY NOTES:**

- THERE ARE NO KNOWN EXISTING OR PROPOSED PRIVATE WELLS (DRINKING WATER AND NON-POTABLE USES) WITHIN 200 FEET OF THE PROPOSED DEVELOPMENT EXCEPT WHERE SHOWN.
- THERE ARE NO KNOWN EXISTING OR PROPOSED OWTS'S WITHIN 200 FEET OF THE DEVELOPMENT EXCEPT WHERE SHOWN.
- THERE ARE NO KNOWN EXISTING OR PROPOSED PUBLIC WELLS WITHIN 500 FEET OF THE PROPOSED DEVELOPMENT.
- THERE ARE NO KNOWN EXISTING OR PROPOSED WELLS WITHIN 200 FEET OF A PROPOSED OWTS EXCEPT WHERE SHOWN.
- THERE ARE NO KNOWN EXISTING OR PROPOSED DRAINS WITHIN 100 FEET OF THE PROPOSED DEVELOPMENT EXCEPT WHERE SHOWN.
- THE SUBJECT PROPERTY IS NOT SITUATED IN A CRITICAL RESOURCE AREA.
- THERE ARE NO KNOWN NATURAL WATERS OR WATERCOURSES WITHIN 200' OF THE PROPOSED SUBDIVISION EXCEPT WHERE SHOWN.
- THE PROPOSED DEVELOPMENT IS NOT SITUATED IN A WATERSHED OF AN EXISTING OR PROPOSED PUBLIC WATER SUPPLY SOURCE OR CRITICAL AREA.

**OWTS LEACHFIELD ELEVATIONS & MISC. OWTS NOTES:**

LOT #	EXISTING GROUND ELEV. AT LEACHFIELD CENTER AS SHOWN ON PLAN	BOTTOM OF ELGEN AS SHOWN ON PLAN	DISTRIBUTION PIPE INVERT AS SHOWN ON PLAN	SEPARATION FROM E.S.H.W.T. AS SHOWN ON PLAN	REQUIRES FILL EASEMENT
1	411.5	404.42	405.00	4.92'	NO
2	395.0	394.42	395.00	5.92'	NO
3	397.5	397.50	398.08	5' TO LEDGE	NO
4	411.0	409.00	409.58	3.00'	NO
5	410.0	406.00	406.58	5.00'	NO
6	409.0	407.92	408.50	4.92'	NO
7	416.5	410.00	410.58	3.00'	NO
8	416.5	410.00	410.58	3.00'	NO

**DRAINAGE SYSTEM - INSPECTION, MAINTENANCE AND REPAIR:**

- THE BOULDER DRIVE ESTATES HOMEOWNERS ASSOCIATION SHALL MAINTAIN THE PROPOSED DRAINAGE SYSTEM COMPONENTS WHICH INCLUDE THE CATCH BASINS, DRAIN MANHOLES, PIPING, CULVERTS, SWALES, SEDIMENT FOREBAY, EXTENDED DETENTION SYSTEM AND OUTLET. ALL DRAINAGE PIPES AND STRUCTURES LOCATED ON PRIMROSE LANE SHALL BE MAINTAINED BY THE TOWN OF JOHNSON.
- THE DRAINAGE SYSTEM SHOULD BE INSPECTED TWICE PER YEAR BY A QUALIFIED INDIVIDUAL, GENERALLY IN THE SPRING AND FALL.

**CATCH BASINS:**

- REMOVE TRASH AND LITTER.
- REMOVE SEDIMENT WHEN SLUMP DEPTH IS WITHIN 1 FOOT OF THE OUTLET PIPE.
- REPAIR ALL STRUCTURAL DEFECTS IMMEDIATELY.

**DRAIN MANHOLES:**

- REMOVE TRASH AND LITTER.
- REPAIR ALL STRUCTURAL DEFECTS IMMEDIATELY.

**PIPES, SWALES & OUTLETS:**

- ALL CLOGGED OR SEDIMENT FILLED PIPES WHICH ARE MORE THAN 10% SEDIMENT FILLED SHALL BE CLEANED OUT IMMEDIATELY. WHEN CLEANING OUT PIPES, ENSURE DOWNSTREAM AREAS ARE PROTECTED FROM SEDIMENT DISCHARGES.
- REMOVE TRASH AND LITTER.
- INSPECT OUTLET RIP RAP AREAS. REPAIR ALL ERODED AREAS BY SUPPLEMENTING WITH MORE RIP RAP AND ESTABLISHING NEW VEGETATIVE GROWTH.

**CULVERTS:**

- ALL CLOGGED OR SEDIMENT FILLED PIPES WHICH ARE MORE THAN 10% SEDIMENT FILLED SHALL BE CLEANED OUT IMMEDIATELY. WHEN CLEANING OUT PIPES, ENSURE DOWNSTREAM AREAS ARE PROTECTED FROM SEDIMENT DISCHARGES.
- REMOVE TRASH AND LITTER.
- INSPECT OUTLET RIP RAP AREAS. REPAIR ALL ERODED AREAS BY SUPPLEMENTING WITH MORE RIP RAP AND ESTABLISHING NEW VEGETATIVE GROWTH.

**SEDIMENT FOREBAY:**

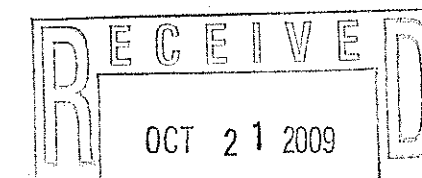
- INSPECT SLOPES OF BERM. STABILIZE ERODED AREAS BY REGRADING AND ESTABLISHING NEW VEGETATIVE GROWTH.
- MOW SIDE SLOPES OF BERM, EMBANKMENTS ONCE PER YEAR (GENERALLY AFTER AUGUST 15).
- REMOVE ALL TRASH AND LITTER.
- SEDIMENT ACCUMULATION SHOULD BE REMOVED ANNUALLY.

**EXTENDED DETENTION POND:**

- INSPECT THE OUTLET CONTROL STRUCTURES TO ENSURE ALL OPENINGS ARE FREE OF DEBRIS AND ARE FUNCTIONING PROPERLY. MAKE ALL NECESSARY REPAIRS.
- INSPECT SLOPES OF BERM. STABILIZE ERODED AREAS BY REGRADING AND ESTABLISHING NEW VEGETATIVE GROWTH.
- MOW SIDE SLOPES OF BERM, EMBANKMENTS ONCE PER YEAR (GENERALLY AFTER AUGUST 15).
- REMOVE ALL TRASH AND LITTER.
- RIP RAP AREAS SHALL BE INSPECTED FOR EROSION. RESTORE AREAS BY REGRADING AND REPAIRING THE RIP RAP AREAS.
- THE GRASSED AREAS OF THE POND SHOULD BE INSPECTED TWO TIMES PER YEAR TO CHECK FOR EROSION PROBLEMS. PROBLEM AREAS SHOULD BE RESEED IMMEDIATELY TO STABILIZE EXPOSED SOILS, THEREBY PREVENTING EROSION AND POTENTIAL CLOGGING OF OUTLET DEVICES.
- IF STANDING WATER IS FOUND IN THE POND MORE THAN 3 DAYS AFTER A RAINFALL EVENT, THE POND SHALL BE DETERMINED TO BE FAILED, AND THE POND SHALL BE INSPECTED BY A R.I. REGISTERED PROFESSIONAL ENGINEER FOR RECOMMENDATION FOR REPAIR.

**OUTLET DISCHARGE FROM EXTENDED DETENTION POND:**

- REMOVE TRASH AND LITTER.
- REPAIR ERODED AREAS BY REGRADING AND PLACING ADDITIONAL RIP RAP AND/OR ESTABLISHING NEW VEGETATIVE GROWTH.
- RIP RAP AREAS SHALL BE INSPECTED FOR EROSION. RESTORE AREAS BY REGRADING AND REPAIRING THE RIP RAP AREAS.



ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES

MAJOR SUBDIVISION - PRELIMINARY PLAN  
 GENERAL NOTES  
 BOULDER DRIVE ESTATES  
 LOCATION  
 BOULDER DRIVE  
 JOHNSON, RHODE ISLAND  
 PROPERTY OWNER AND APPLICANT:  
 Boulder Realty, LLC  
 52 River Avenue, Providence, RI 02908 401-286-7005

NO.	REVISION	BY	DATE
1	WETLAND PLAN SUBMISSION	TJB	7/27/09
2	WETLAND PLAN SUBMISSION	TJB	8/10/09
3	WETLAND PLAN SUBMISSION	TJB	9/16/09
4	WETLAND PLAN SUBMISSION	TJB	9/16/09

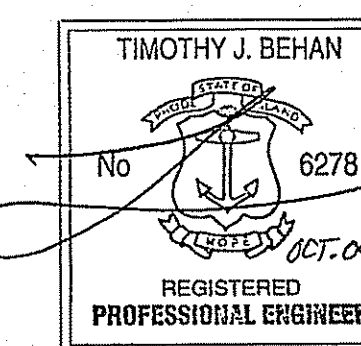
Checked By: T.J.B. Drawn By: T.J.B.  
 Scale: AS SHOWN Date: JULY 2008

**TJB ENGINEERING, LLC**

CIVIL ENGINEERING, R.I.P.E. LIC.#6278  
 PERMITTING \* LAND PLANNING  
 SUBDIVISIONS \* WASTEWATER  
 1050 MAIN STREET SUITE 30  
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**K ANDREWS ASSOCIATES**

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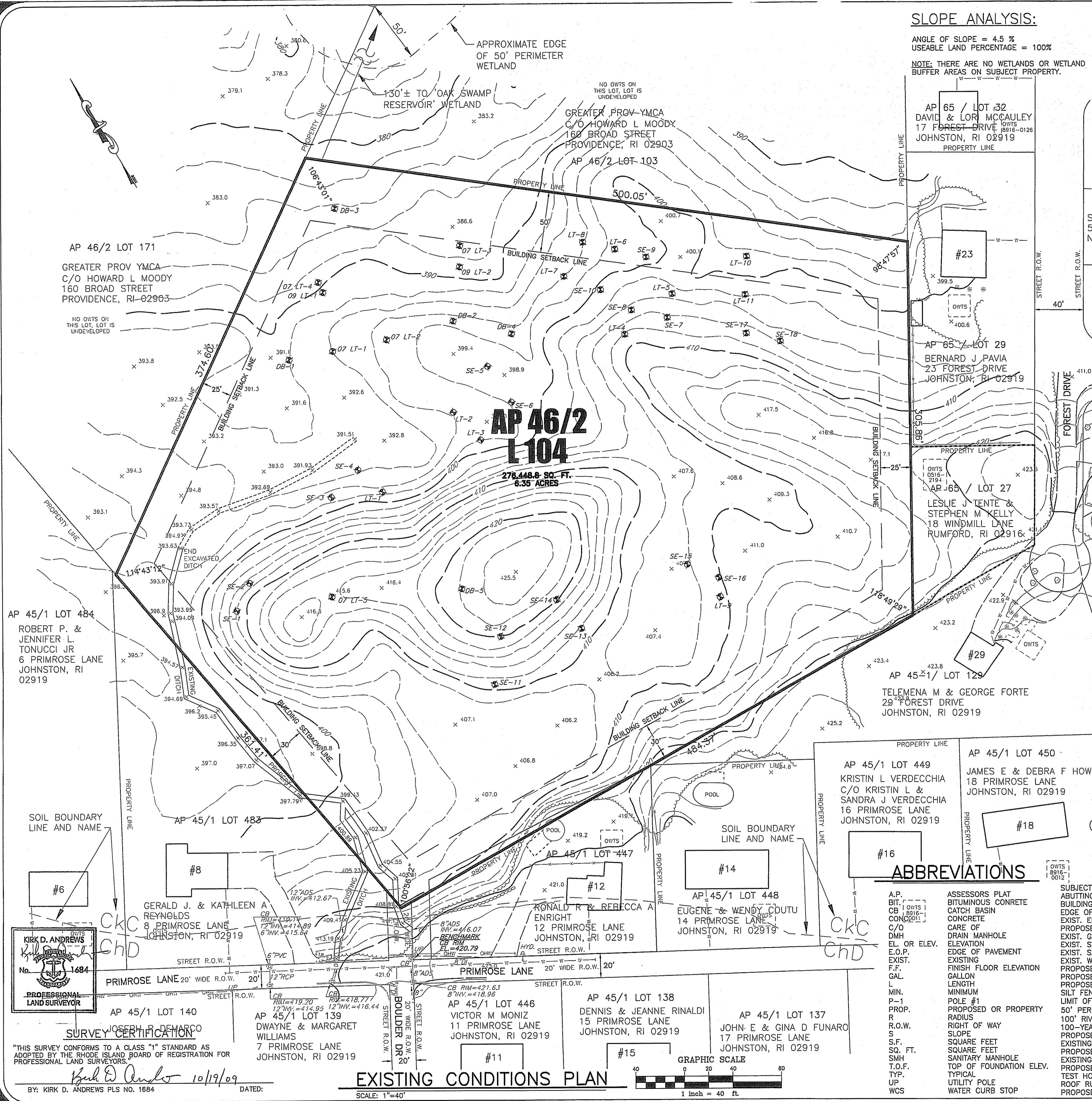
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
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 DATED DEC 8 2009 FILE # 09-0264  
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 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Charles J. [Signature]  
 PARCEL AREA  
 AP 46/2 LOT 104  
 AREA = 6.35 ACRES

STREE INDEX  
 THIS PLAN IS TO BE INDEXED  
 UNDER THE FOLLOWING STREETS:  
 BOULDER DRIVE  
 PRIMROSE LANE

**PRELIMINARY PLAN  
 NOT FOR CONSTRUCTION**

Sheet **2**  
 of 12 sheets



**SLOPE ANALYSIS:**

ANGLE OF SLOPE = 4.5 %  
 USEABLE LAND PERCENTAGE = 100%  
 NOTE: THERE ARE NO WETLANDS OR WETLAND BUFFER AREAS ON SUBJECT PROPERTY.

**SOIL DESCRIPTION:**

ALL THE SOILS ON SUBJECT PROPERTY ARE CLASSIFIED AS 'CkC' BY THE USDA 'SOIL SURVEY OF RHODE ISLAND', 1981. THE NEIGHBORING SOIL TYPE NEAR THE PROPOSED ROAD ENTRANCE IS 'ChD'. SOIL BOUNDARY LINES ARE PROVIDED ON THIS SHEET. A SUMMARY OF THE SOIL PROPERTIES ARE PROVIDED BELOW:

**NAMES:**  
 CkC = Canton and Charlton extremely stony fine sandy loams  
 ChD = Canton and Charlton very stony fine sandy loams

**CHARACTERISTICS:**

NAME	HYDRO GROUP	FLOOD FREQ.	F.S.H.W.T.	BEDROCK	PERMEABILITY
CkC	B	NONE	>6.0 FEET	>5 FEET	MODERATE TO RAPID
ChD	B	NONE	>6.0 FEET	>5 FEET	MODERATE TO RAPID

**DESCRIPTIONS: (TAKEN FROM USDA 'SOIL SURVEY OF RHODE ISLAND')**

CkC - "THESE GENTLY SLOPING TO SLOPING, WELL DRAINED SOILS ARE ON THE SIDE SLOPES OF GLACIAL UPLAND HILLS AND RIDGES. STONES AND BOULDERS COVER 10 TO 35% OF THE SURFACE. THESE SOILS ARE SUITABLE FOR COMMUNITY DEVELOPMENT, BUT STONES AND BOULDERS HINDER THE USE OF EXCAVATING EQUIPMENT AND NEED TO BE REMOVED FOR LANDSCAPING. ON SITE SEWAGE DISPOSAL SYSTEMS NEED CAREFUL DESIGN AND INSTALLATION TO PREVENT EFFLUENT FROM SEEPING TO THE SURFACE. QUICKLY ESTABLISHING PLANT COVER AND THE USE OF MULCH, TEMPORARY DIVERSIONS, STRAW BALE SEDIMENT BARRIERS, AND SILTATION BASINS HELP TO CONTROL EROSION DURING CONSTRUCTION."

ChD - "THESE MODERATELY STEEP, WELL DRAINED SOILS ARE ON THE SIDE SLOPES OF GLACIAL UPLAND HILLS AND RIDGES. STONES AND BOULDERS COVER 2 TO 10% OF THE SURFACE. THE STEEP SLOPES MAKE THESE SOILS POORLY SUITED TO COMMUNITY DEVELOPMENT. ON SITE SEPTIC SYSTEMS NEED SPECIAL DESIGN AND INSTALLATION TO PREVENT EFFLUENT FROM SEEPING TO THE SURFACE. STONES AND BOULDERS NEED TO BE REMOVED FOR LANDSCAPING. QUICKLY ESTABLISHING PLANT COVER AND THE USE OF TEMPORARY DIVERSIONS AND SILTATION BASINS HELP TO CONTROL EROSION DURING CONSTRUCTION."

**SOIL EVALUATION SUMMARY:**

ID #	DATE EXCAVATED	TOTAL DEPTH	F.S.H.W.T.	DEPTH TO IMPERVIOUS
SE-1	6/9/2009	168"	144"	NONE
SE-2	6/9/2009	168"	144"	NONE
SE-3	6/9/2009	144"	120"	NONE
SE-4	6/9/2009	104"	80"	NONE
SE-5	6/9/2009	96"	72"	96"
SE-6	6/9/2009	96"	72"	96"
SE-7	6/9/2009	84"	60"	84"
SE-8	6/9/2009	84"	60"	84"
SE-9	6/9/2009	48"	24"	48"
SE-10	6/9/2009	60"	36"	60"
SE-11	6/10/2009	120"	96"	NONE
SE-12	6/10/2009	180"	156"	NONE
SE-13	6/10/2009	120"	96"	NONE
SE-14	6/10/2009	180"	156"	NONE
SE-15	6/10/2009	96"	72"	96"
SE-16	6/10/2009	108"	84"	108"
SE-17	6/10/2009	132"	108"	NONE
SE-18	6/10/2009	132"	108"	NONE
LT-1	6/9/2009	N/A	N/A	120"
LT-2	6/9/2009	N/A	N/A	84"
LT-3	6/9/2009	N/A	N/A	84"
LT-4	6/9/2009	N/A	N/A	108"
LT-5	6/9/2009	N/A	N/A	60"
LT-6	6/9/2009	N/A	N/A	84"
LT-7	6/9/2009	N/A	N/A	36"
LT-8	6/9/2009	N/A	N/A	38"
LT-9	6/10/2009	N/A	N/A	132"
LT-10	6/10/2009	N/A	N/A	36"
LT-11	6/10/2009	N/A	N/A	38"
DB-1	11/15/2007	144"	144"	NONE
DB-2	11/15/2007	132"	132"	NONE
DB-3	11/15/2007	96"	96"	96"
DB-4	11/15/2007	108"	108"	108"
DB-5	11/15/2007	180"	180"	NONE
07 LT-1	11/15/2007	N/A	N/A	72"
07 LT-2	11/15/2007	N/A	N/A	84"
07 LT-3	11/15/2007	N/A	N/A	60"
07 LT-4	11/15/2007	N/A	N/A	36"
07 LT-5	11/15/2007	N/A	N/A	36"
09 LT-1	6/10/2009	84"	72"	84"
09 LT-2	6/10/2009	96"	84"	96"

**PRELIMINARY PLAN  
 NOT FOR CONSTRUCTION**

**ABBREVIATIONS**

- A.P. ASSESSORS PLAT
- BIT. BITUMINOUS CONCRETE
- CB CATCH BASIN
- CONG. CONCRETE
- C/O CARE OF
- DMH DRAIN MANHOLE
- EL. OR ELEV. ELEVATION
- E.O.P. EDGE OF PAVEMENT
- EXIST. EXISTING
- F.F. FINISH FLOOR ELEVATION
- GAL. GALLON
- MIN. MINIMUM
- P-1 POLE #1
- PROP. PROPOSED OR PROPERTY
- R. RADIUS
- R.O.W. RIGHT OF WAY
- S. SLOPE
- S.F. SQUARE FEET
- SQ. FT. SQUARE FEET
- SMH SANITARY MANHOLE
- T.O.F. TOP OF FOUNDATION ELEV.
- TYP. TYPICAL
- UP UTILITY POLE
- WCS WATER CURB STOP

**LINETYPE LEGEND**

- SUBJECT PROPERTY LINE
- ABUTTING PROPERTY LINE
- BUILDING SETBACK LINE
- EDGE OF EXISTING PAVEMENT
- EXIST. ELEVATION CONTOUR LINE
- PROPOSED ELEVATION CONTOUR
- EXIST. GAS LINE
- EXIST. STORM DRAIN LINE
- EXIST. SANITARY SEWER LINE
- EXIST. WATER LINE
- PROPOSED GAS LINE
- PROPOSED STORM DRAIN LINE
- PROPOSED WATER LINE
- LIMIT OF DISTURBANCE
- 50' PERIMETER WETLAND
- 100' RIVERBANK WETLAND
- 100-YEAR FLOOD PLAIN
- PROPOSED EASEMENT
- EXISTING GUARDRAIL
- PROPOSED GUARDRAIL
- EXISTING SPOT GRADE
- PROPOSED SPOT GRADE
- TEST HOLE
- ROOF RUNOFF INFILTRATION SYSTEM
- PROPOSED BOUNDARY MARKER

PARCEL AREA  
 AP 46/2 LOT 104  
 AREA = 6.35 ACRES

STREET INDEX  
 THIS PLAN IS TO BE INDEXED UNDER THE FOLLOWING STREETS:  
 BOULDER DRIVE  
 PRIMROSE LANE

Being: ASSESSORS PLAT 46/2 LOT 104

**MAJOR SUBDIVISION - PRELIMINARY PLAN  
 EXISTING CONDITIONS PLAN  
 BOULDER DRIVE ESTATES**

LOCATION  
 BOULDER DRIVE  
 JOHNSTON, RHODE ISLAND  
 PROPERTY OWNER AND APPLICANT  
**Boulder Realty, LLC**

52 River Avenue, Providence, RI 02908 401-286-7005

Checked By: T.J.B. Drawn By: T.J.B.  
 Scale: AS SHOWN Date: JULY 2008

NO. REVISION BY DATE

NO.	REVISION	BY	DATE
1	MASTER PLAN SUBMISSION	TJB	7/2/08
2	CONTRACT SUBMISSION	TJB	7/16/08
3	FORM WETLAND SUBMISSION	TJB	7/16/08

**TJB ENGINEERING, LLC**  
 CIVIL ENGINEERING, R.I.P.E. LIC #6278  
 PERMITTING \* LAND PLANNING  
 SUBDIVISIONS \* WASTEWATER

1050 MAIN STREET SUITE 30  
 EAST GREENWICH, RI 02818  
 PHONE: 401-996-1677 FAX: 401-885-0779  
 EMAIL: TIMBEHAN@COMCAST.NET

**K ANDREWS ASSOCIATES**  
 LAND SURVEYING AND SITE PLANNING

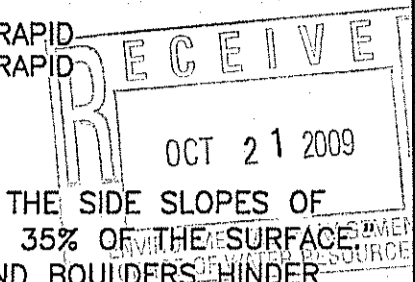
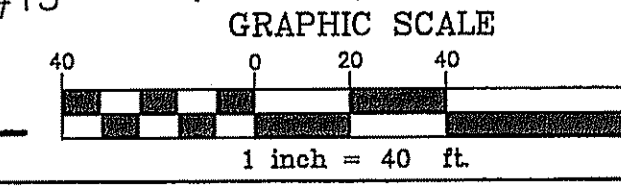
1050 MAIN STREET SUITE 30  
 EAST GREENWICH, RHODE ISLAND 02818  
 PHONE (401) 885-0770  
 FAX (401) 885-0779

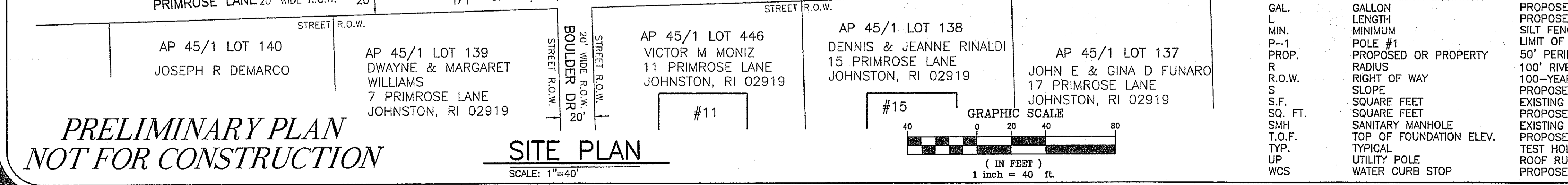
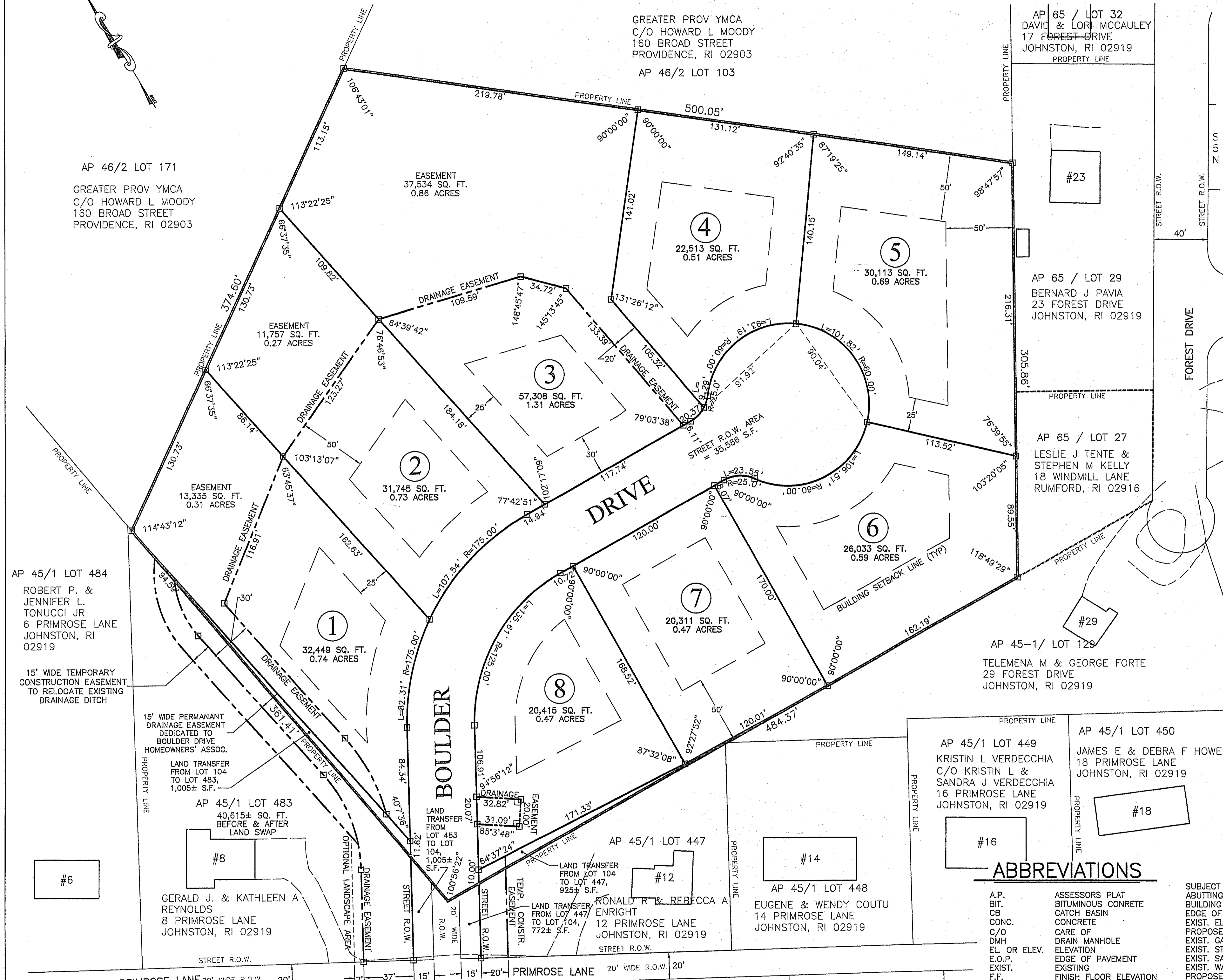
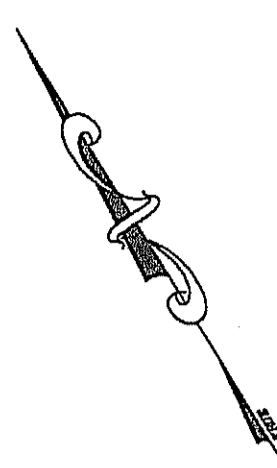
Sheet **3**  
 of 12 sheets

**KIRK D. ANDREWS**  
 No. 1684  
 PROFESSIONAL LAND SURVEYOR

**SURVEY CERTIFICATION**  
 "THIS SURVEY CONFORMS TO A CLASS 'M' STANDARD AS ADOPTED BY THE RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS."  
 DATED: 10/19/09  
 BY: KIRK D. ANDREWS PLS NO. 1684

**EXISTING CONDITIONS PLAN**





**ZONING TABLE**

ZONE: R-20	LOT1	LOT2	LOT3	LOT4	LOT5	LOT6	LOT7	LOT8	
MIN. AREA	20,000 S.F.	32,449	31,745	57,308	22,513	30,113	26,033	20,311	20,415
WIDTH	120'	120'	120'	137.51'	123.56'	152.70'	137'	120'	>120'
FRONTAGE	120'	166.65'	122.48'	138.11'	N/A	N/A	138.13'	120.00'	253.24'
FRONTAGE ON CUL-DE-SACS	90' CHORD	N/A	N/A	N/A	91.92'	90.04'	N/A	N/A	N/A
FRONT	30'	30'	30'	30'	30'	30'	30'	30'	30'
SIDE	25'	25'	25'	25'	25'	25'	25'	25'	25'
REAR	50'	50'	50'	50'	50'	50'	50'	50'	50'
BLDG. HEIGHT	30'	<30'	<30'	<30'	<30'	<30'	<30'	<30'	<30'
BLDG. COVER.	20%	<20%	<20%	<20%	<20%	<20%	<20%	<20%	<20%
FLOOD ZONE	0 S.F.	0 S.F.	0 S.F.	0 S.F.	0 S.F.	0 S.F.	0 S.F.	0 S.F.	0 S.F.
WETLANDS	0 S.F.	0 S.F.	0 S.F.	0 S.F.	0 S.F.	0 S.F.	0 S.F.	0 S.F.	0 S.F.
AVG. SLOPE	X.X%								

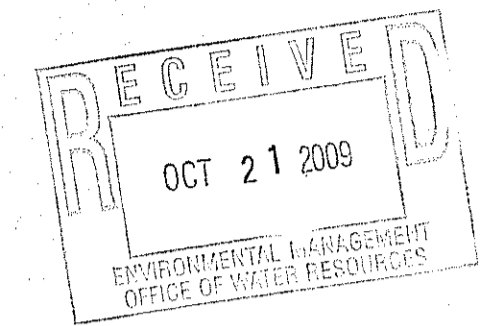
S.F. = SQUARE FEET BLDG. = BUILDING AVG. = AVERAGE

**ABBREVIATIONS**

- A.P. ASSESSORS PLAT
- BIT. BITUMINOUS CONCRETE
- CB CATCH BASIN
- CONC. CONCRETE
- C/O CARE OF
- DMH DRAIN MANHOLE
- EL. OR ELEV. ELEVATION
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- EXIST. EXISTING
- F.F. FINISH FLOOR ELEVATION
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- LENGTH
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- SMH SANITARY MANHOLE
- T.O.F. TOP OF FOUNDATION ELEV.
- TYP. TYPICAL
- UP. UTILITY POLE
- WCS WATER CURB STOP

**LINETYPE LEGEND**

- SUBJECT PROPERTY LINE
- ABUTTING PROPERTY LINE
- BUILDING SETBACK LINE
- EDGE OF EXISTING PAVEMENT
- EXIST. ELEVATION CONTOUR LINE
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- EXIST. SANITARY SEWER LINE
- EXIST. WATER LINE
- PROPOSED GAS LINE
- PROPOSED STORM DRAIN LINE
- PROPOSED WATER LINE
- SILT FENCE & LIMIT OF DISTURB.
- LIMIT OF DISTURBANCE
- 50' PERIMETER WETLAND
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- 100-YEAR FLOOD PLAIN
- PROPOSED EASEMENT
- EXISTING GUARDRAIL
- PROPOSED GUARDRAIL
- EXISTING SPOT GRADE
- PROPOSED SPOT GRADE
- TEST HOLE
- ROOF RUNOFF INFILTRATION SYSTEM
- PROPOSED BOUNDARY MARKER



MAJOR SUBDIVISION - PRELIMINARY PLAN  
PROPOSED LOT LAYOUT PLAN  
BOULDER DRIVE ESTATES

BOULDER DRIVE  
JOHNSTON, RHODE ISLAND  
PROPERTY OWNER AND APPLICANT:  
BOULDER REALTY, LLC

62 River Avenue, Providence, RI 02908 401-288-7005

Checked By: T.J.B. Drawn By: T.J.B.  
Scale: AS SHOWN Date: JULY 2008

NO.	REVISION	DATE
1	MASTER PLAN SUBMISSION	7/20/08
2	TOWN COMMITTEE & ROAD WIDTH WADDER	7/27/08
3	REVISION	8/12/08
4	REVISION	8/12/08

**TJB ENGINEERING, LLC**  
CIVIL ENGINEERING, R.I.P.E. LIC.#6278  
PERMITTING \* LAND PLANNING  
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1050 MAIN STREET SUITE 30  
EAST GREENWICH, RI 02818  
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**K ANDREWS ASSOCIATES**  
LAND SURVEYING AND SITE PLANNING

1050 MAIN STREET, SUITE 30  
EAST GREENWICH, RHODE ISLAND 02818  
PHONE: (401) 885-0770  
FAX (401) 885-0779

TIMOTHY J. BEHAN  
REGISTERED PROFESSIONAL ENGINEER  
09-0261  
AS SPECIFIED IN THE CITY OF PROVIDENCE  
DATED DEC 15 2009

PARCEL AREA  
AP 46/2 LOT 104  
AREA = 6.35 ACRES

STREE INDEX  
THIS PLAN IS TO BE INDEXED  
UNDER THE FOLLOWING STREETS:  
BOULDER DRIVE  
PRIMROSE LANE

Sheet 4  
of 12 sheets

PRELIMINARY PLAN  
NOT FOR CONSTRUCTION

SITE PLAN  
SCALE: 1"=40'

**SHGW DETERMINATIONS IN PROPOSED BASINS:**

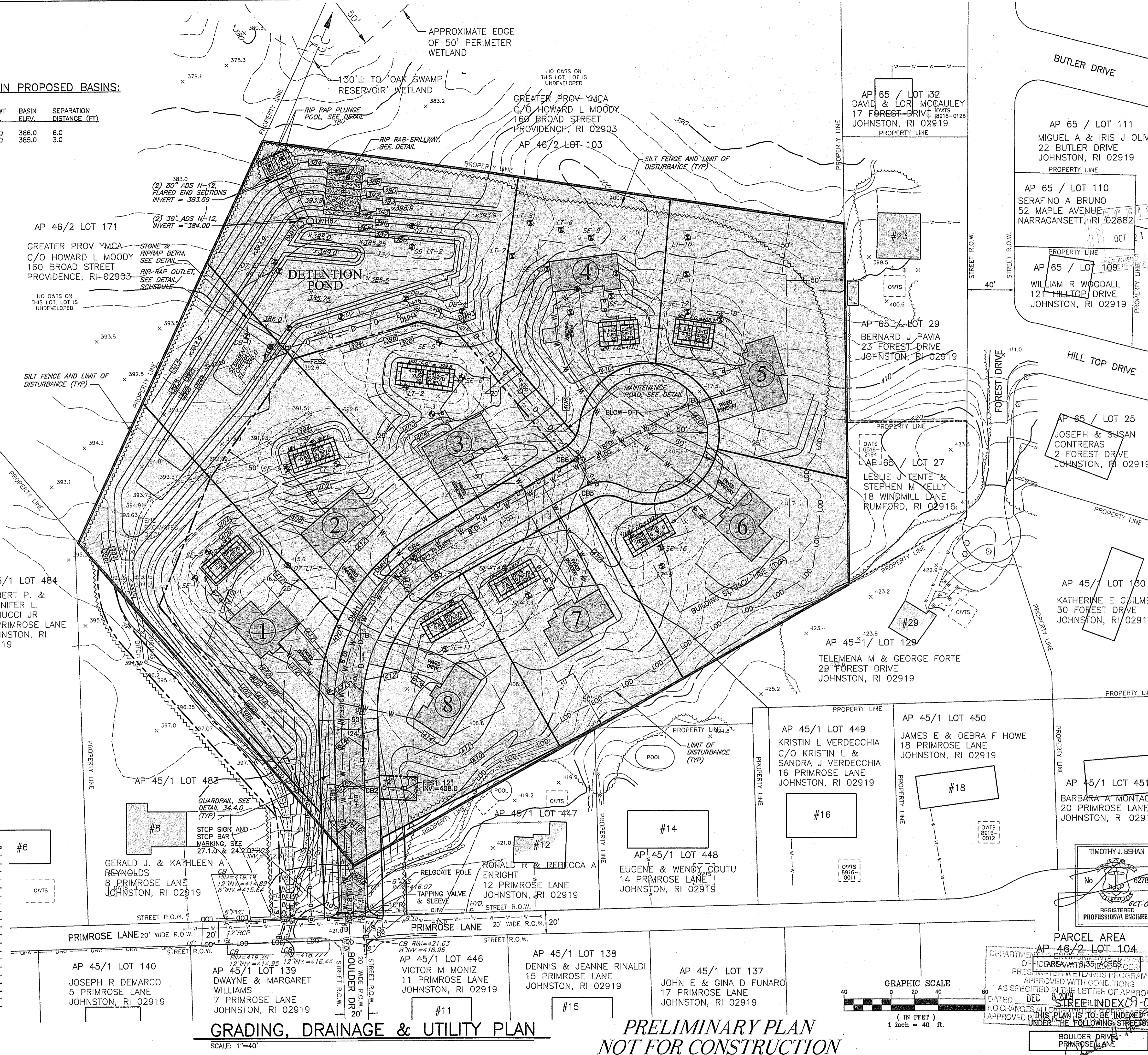
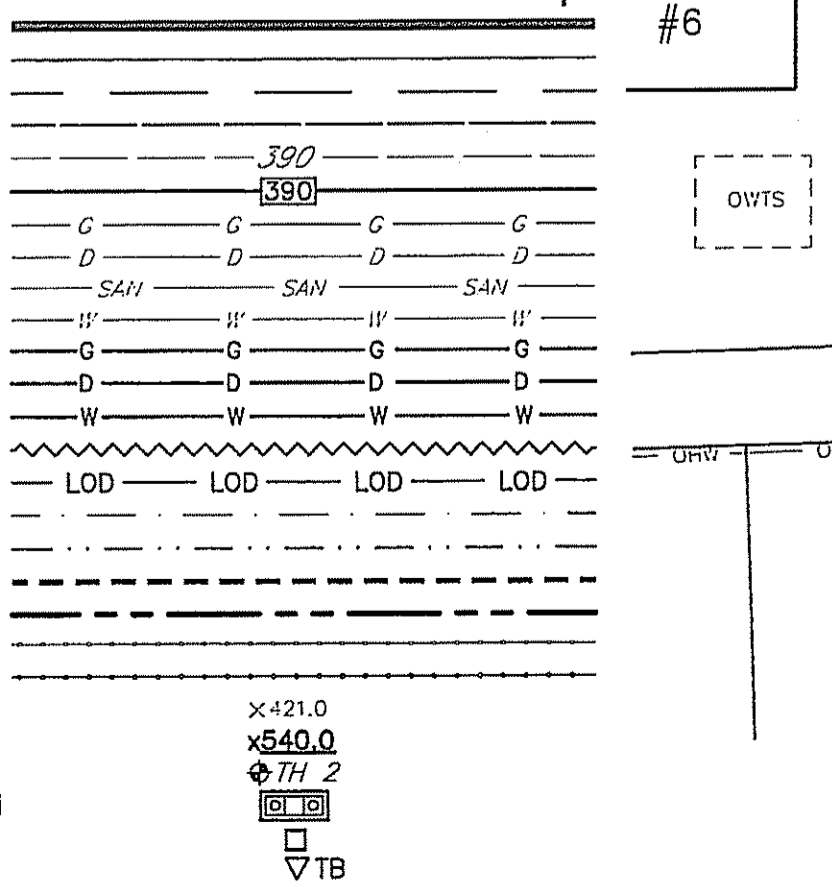
EXTENDED DETENTION POND NO.	TEST HOLE NO'S	SHOWT ELEV.	BASEIN ELEV.	SEPARATION DISTANCE (FT)
1	DB1 09 LT-2	380.0 382.0	386.0 385.0	6.0 3.0

**ABBREVIATIONS**

A.P.	ASSESSORS PLAT
BIT.	BITUMINOUS CONCRETE
CB	CATCH BASIN
CONC.	CONCRETE
C/O	CARE OF
DMH	DRAIN MANHOLE
EL. OR ELEV.	ELEVATION
E.O.P.	EDGE OF PAVEMENT
EXIST.	EXISTING
F.F.	FINISH FLOOR ELEVATION
GAL.	GALLON
L	LENGTH
MIN.	MINIMUM
P-1	POLE #1
PROP.	PROPOSED OR PROPERTY
R	RADIUS
R.O.W.	RIGHT OF WAY
S.O.W.	SLOPE
S.F.	SQUARE FEET
SQ. FT.	SQUARE FEET
SMH	SANITARY MANHOLE
T.O.F.	TOP OF FOUNDATION ELEV.
TYP.	TYPICAL
WCS	WATER CURB STOP

**LINETYPE LEGEND**

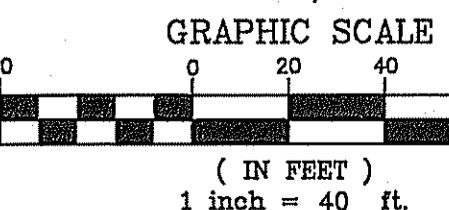
SUBJECT PROPERTY LINE	---
ABUTTING PROPERTY LINE	---
BUILDING SETBACK LINE	---
EDGE OF EXISTING PAVEMENT	---
EXIST. ELEVATION CONTOUR LINE	---
PROPOSED ELEVATION CONTOUR	---
EXIST. GAS LINE	---
EXIST. STORM DRAIN LINE	---
EXIST. SANITARY SEWER LINE	---
EXIST. WATER LINE	---
PROPOSED GAS LINE	---
PROPOSED STORM DRAIN LINE	---
PROPOSED WATER LINE	---
SILT FENCE & LIMIT OF DISTURB.	---
LIMIT OF DISTURBANCE	---
50' PERIMETER WETLAND	---
100' RIVERBANK WETLAND	---
100-YEAR FLOOD PLAIN	---
PROPOSED EASEMENT	---
EXISTING GUARDRAIL	---
PROPOSED GUARDRAIL	---
EXISTING SPOT GRADE	---
PROPOSED SPOT GRADE	---
TEST HOLE	---
ROOF RUNOFF INFILTRATION SYSTEM	---
PROPOSED BOUNDARY MARKER	---
THRUST BLOCK	---



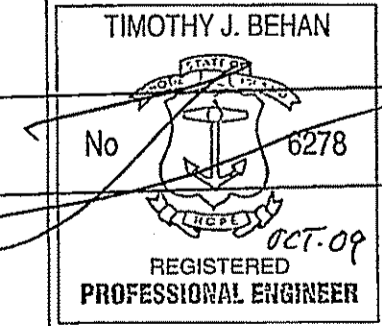
**GRADING, DRAINAGE & UTILITY PLAN**

SCALE: 1"=40'

**PRELIMINARY PLAN  
NOT FOR CONSTRUCTION**



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF PERMITTING SERVICES  
FRESH WATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED DEC 8 2009  
NO CHANGES TO THIS PLAN ARE TO BE INDEXED OR APPROVED UNDER THE FOLLOWING SITE PLAN INDEX: 09-024



MAJOR SUBDIVISION - PRELIMINARY PLAN  
PROPOSED SITE PLAN  
**BOULDER DRIVE ESTATES**

Checked By: T.J.B. Drawn By: T.J.B. Date: JULY 2008

NO.	REVISIONS	DATE
1	MASTER PLAN SUBMISSION	7/27/08
2	LOCAL OWS SUBMISSION	7/27/08
3	LOCAL OWS SUBMISSION	7/27/08
4	LOCAL OWS SUBMISSION	7/27/08
5	LOCAL OWS SUBMISSION	7/27/08
6	LOCAL OWS SUBMISSION	7/27/08

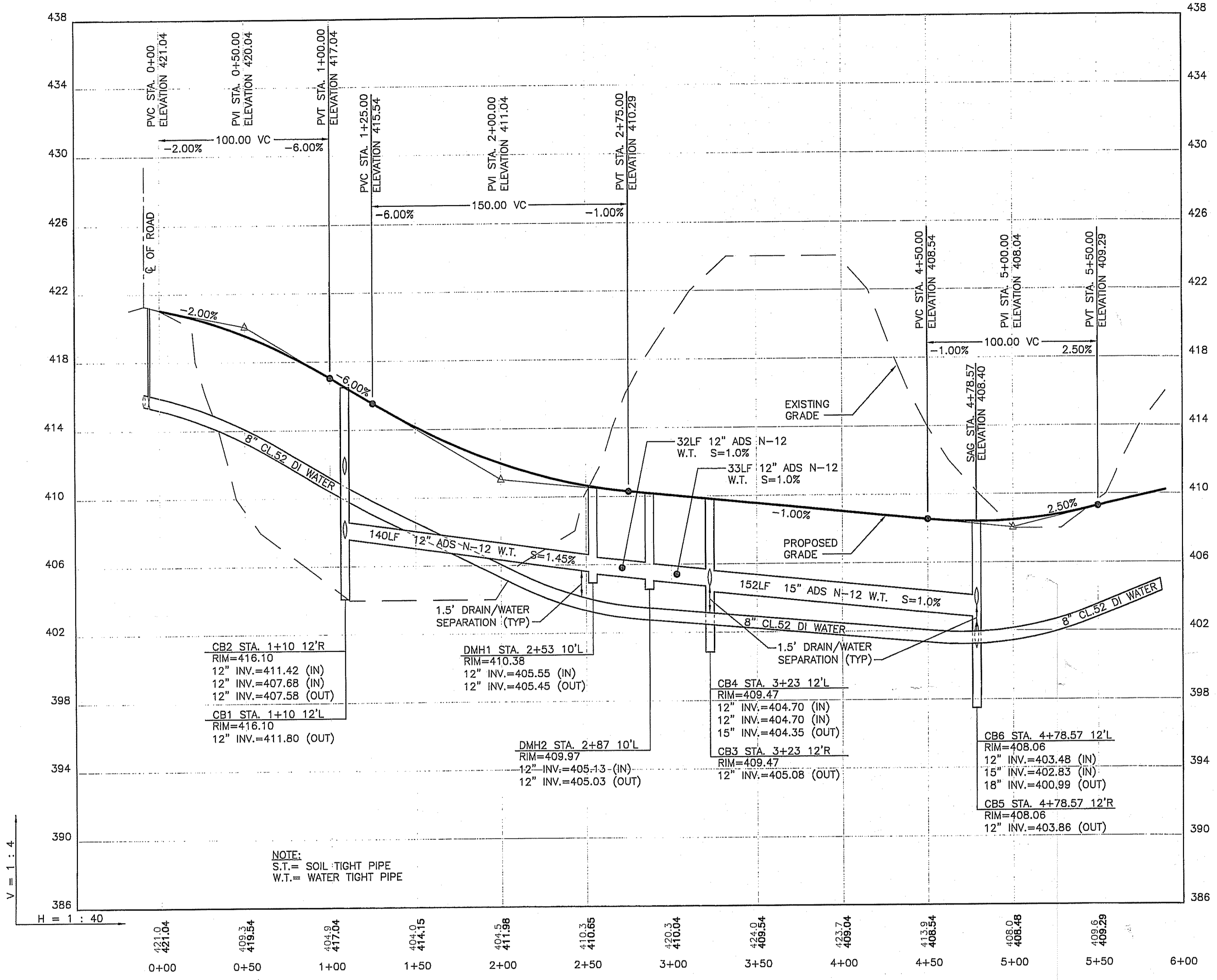
**TJB ENGINEERING, LLC**  
CIVIL ENGINEERING, R.I.P.E. LIC.#6278  
PERMITTING \* LAND PLANNING  
SUBDIVISIONS \* WASTEWATER

**K ANDREWS ASSOCIATES**  
LAND SURVEYING AND SITE PLANNING

Sheet **5** of 12 sheets

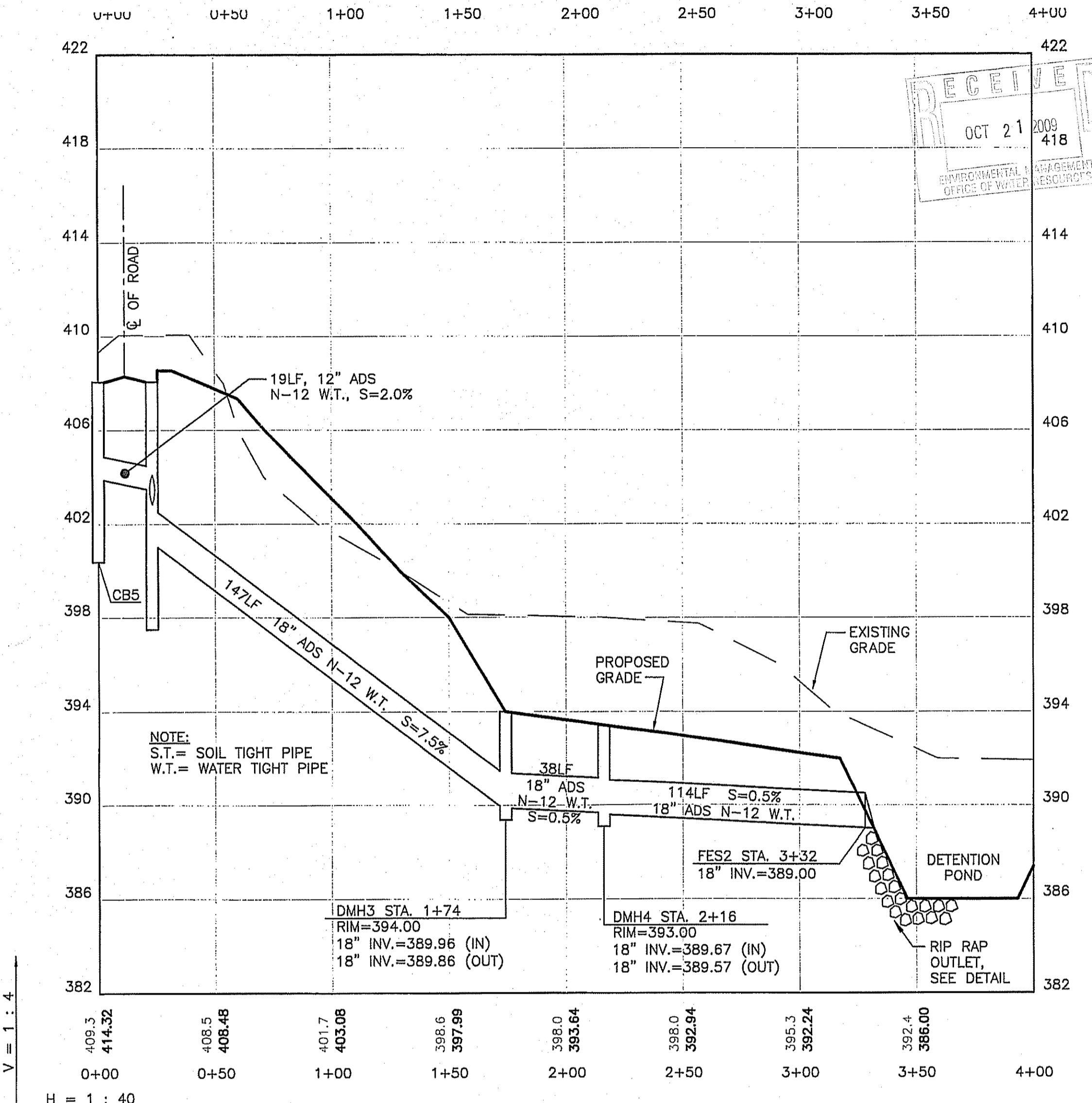
LOCATION  
BOULDER DRIVE  
JOHNSTON, RHODE ISLAND  
PROPERTY OWNER AND APPLICANT:  
Boulder Realty, LLC  
52 River Avenue, Providence, RI 02908 401-286-7005

1050 MAIN STREET SUITE 30  
EAST GREENWICH, RI 02818  
PHONE: 401-996-1677 FAX: 401-885-0779  
EMAIL: TIMBEHAN@COMCAST.NET



**ROAD PROFILE**

SCALE: 1"=40' HOR.  
SCALE: 1"=4' VERT.



**DRAIN PROFILE TO DETENTION POND**

SCALE: 1"=40' HOR.  
SCALE: 1"=4' VERT.

**ABBREVIATIONS**

A.P.	ASSESSORS PLAT
BIT.	BITUMINOUS CONCRETE
CB	CATCH BASIN
CONC.	CONCRETE
C/O	CARE OF
DMH	DRAIN MANHOLE
EL. OR ELEV.	ELEVATION
E.O.P.	EDGE OF PAVEMENT
EXIST.	EXISTING
F.F.	FINISH FLOOR ELEVATION
GAL.	GALLON
L	LENGTH
MIN.	MINIMUM
P-1	POLE #1
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R	RADIUS
R.O.W.	RIGHT OF WAY
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S.F.	SQUARE FEET
SQ. FT.	SQUARE FEET
SMH	SANITARY MANHOLE
T.O.F.	TOP OF FOUNDATION ELEV.
TYP.	TYPICAL
UP	UTILITY POLE
WCS	WATER CURB STOP

**LINETYPE LEGEND**

---	SUBJECT PROPERTY LINE
---	ABUTTING PROPERTY LINE
---	BUILDING SETBACK LINE
---	EDGE OF EXISTING PAVEMENT
---	EXIST. ELEVATION CONTOUR LINE
---	PROPOSED ELEVATION CONTOUR
---	EXIST. GAS LINE
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---	EXIST. SANITARY SEWER LINE
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---	PROPOSED GAS LINE
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---	SILT FENCE & LIMIT OF DISTURB.
---	50' PERIMETER WETLAND
---	100' RIVERBANK WETLAND
---	100-YEAR FLOOD PLAIN
---	PROPOSED EASEMENT
---	EXISTING GUARDRAIL
---	PROPOSED GUARDRAIL
---	EXISTING SPOT GRADE
---	PROPOSED SPOT GRADE
---	TEST HOLE
---	ROOF RUNOFF INFILTRATION SYSTEM
---	PROPOSED BOUNDARY MARKER

**DRAINAGE STRUCTURE SCHEDULE:**

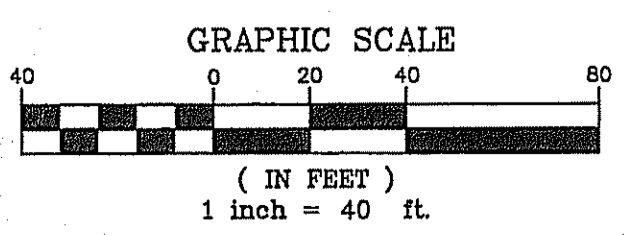
NAME	DIA.	RIM	NO. 1 INV. IN	NO. 2 INV. IN	INV. OUT	SUMP	FRAME/COVER	DOUBLE GRATE	RIDOT 7.1.8 APRON STONE	INLET SLOT DEVICES
CB1	4'	416.10	N/A	N/A	12" @ 411.80	3'	6.3.4	NO	NONE	NONE
CB2	4'	416.10	12" @ 411.42	12" @ 407.68	12" @ 407.58	3'	6.3.4	NO	NONE	NONE
DMH1	4'	410.38	12" @ 405.55	N/A	12" @ 405.45	NONE	6.2.1	NO	NONE	NONE
DMH2	4'	409.97	12" @ 405.13	N/A	12" @ 405.03	NONE	6.2.1	NO	NONE	NONE
CB3	4'	409.47	N/A	N/A	12" @ 405.08	3'	6.3.4	NO	NONE	NONE
CB4	4'	409.47	12" @ 404.70	12" @ 404.70	15" @ 404.35	3'	6.3.4	NO	NONE	NONE
CB5	4'	408.06	N/A	N/A	12" @ 403.86	3'	6.3.0	YES	YES	NONE
CB6	4'	408.06	12" @ 403.48	15" @ 402.83	18" @ 400.99	3'	6.3.0	YES	YES	NONE
CB7	4'	408.06	12" @ 403.48	15" @ 402.83	18" @ 400.99	3'	6.3.0	YES	YES	NONE
CB8	5'	418.67	18" @ 412.19	18" @ 410.83	30" @ 409.79	3'	6.3.0	YES	NONE	NONE
CB9	5'	418.67	12" @ 412.14	30" @ 409.49	36" @ 408.99	3'	6.3.0	YES	NONE	NONE
CB10	5'	420.30	18" @ 411.00	36" @ 408.44	36" @ 406.92	NONE	6.3.0	NO	NONE	NONE
CB11	5'	421.70	18" @ 412.16	N/A	18" @ 412.06	3'	6.3.0	YES	NONE	NONE
CB12	4'	421.60	8" @ 418.86	N/A	18" @ 412.64	3'	6.3.0	YES	NONE	NONE
DMH3	4'	394.00	18" @ 389.96	N/A	18" @ 389.86	NONE	6.2.1	NO	NONE	NONE
DMH4	4'	393.00	18" @ 389.67	N/A	18" @ 389.57	NONE	6.2.1	NO	NONE	NONE
DMH5	5'	408.00	36" @ 399.95	N/A	36" @ 399.45	NONE	6.2.1	NO	NONE	NONE
DMH6	6'	391.25	3" @ 385.00	N/A	36" @ 384.00	6"	6.3.0	NO	NONE	NONE
DMH7	6'	391.25	3" @ 385.00	N/A	30" @ 384.00	6"	6.3.0	NO	NONE	NONE

NOTE: FOR STRUCTURE(S) IN THE DETENTION POND, SEE APPROPRIATE DETAILS.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED DEC 8 2009 FILE # 09-0264  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

TIMOTHY J. BEHAN  
REGISTERED PROFESSIONAL ENGINEER

**PRELIMINARY PLAN  
NOT FOR CONSTRUCTION**



Being: ASSESSORS PLAT 46/2 LOT 104  
**MAJOR SUBDIVISION - PRELIMINARY PLAN  
PROPOSED ROAD & DRAIN PROFILES  
BOULDER DRIVE ESTATES**  
LOCATION  
BOULDER DRIVE  
JOHNSTON RHODE ISLAND  
PROPERTY OWNER AND APPLICANT  
Boulder Realty, LLC  
52 River Avenue, Providence, RI 02908 401-288-7005

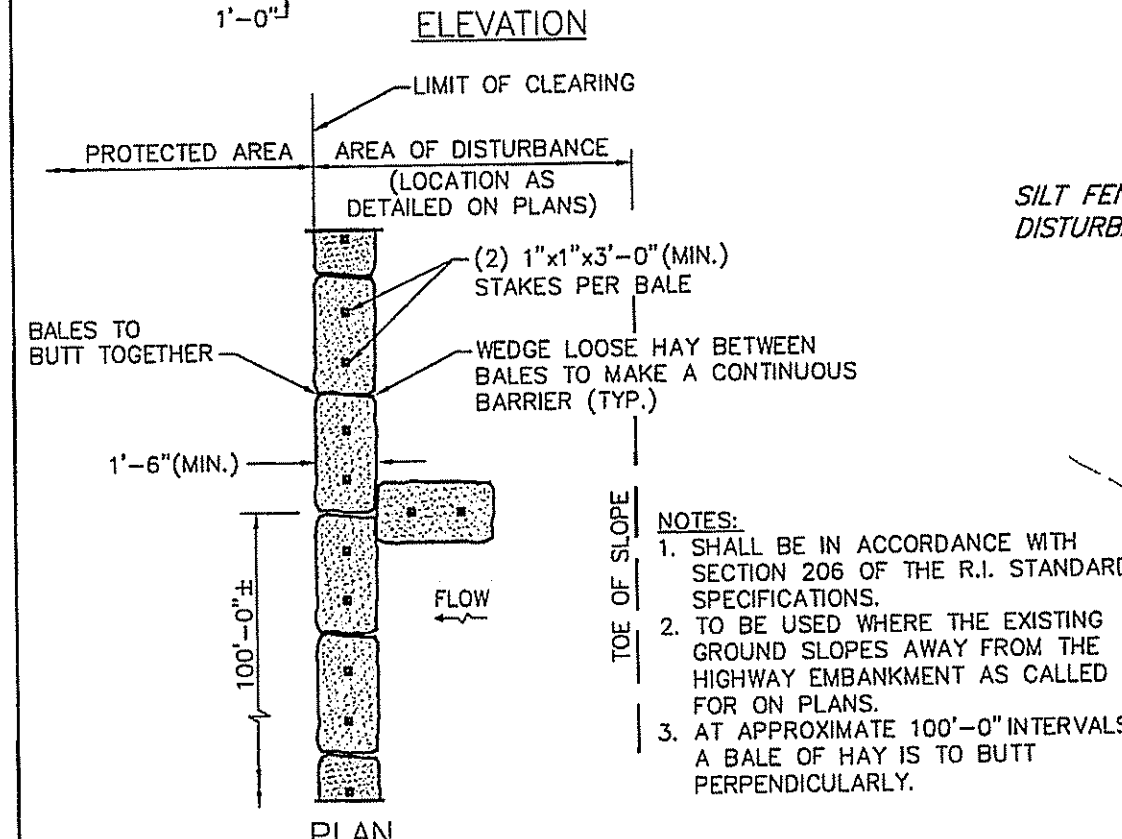
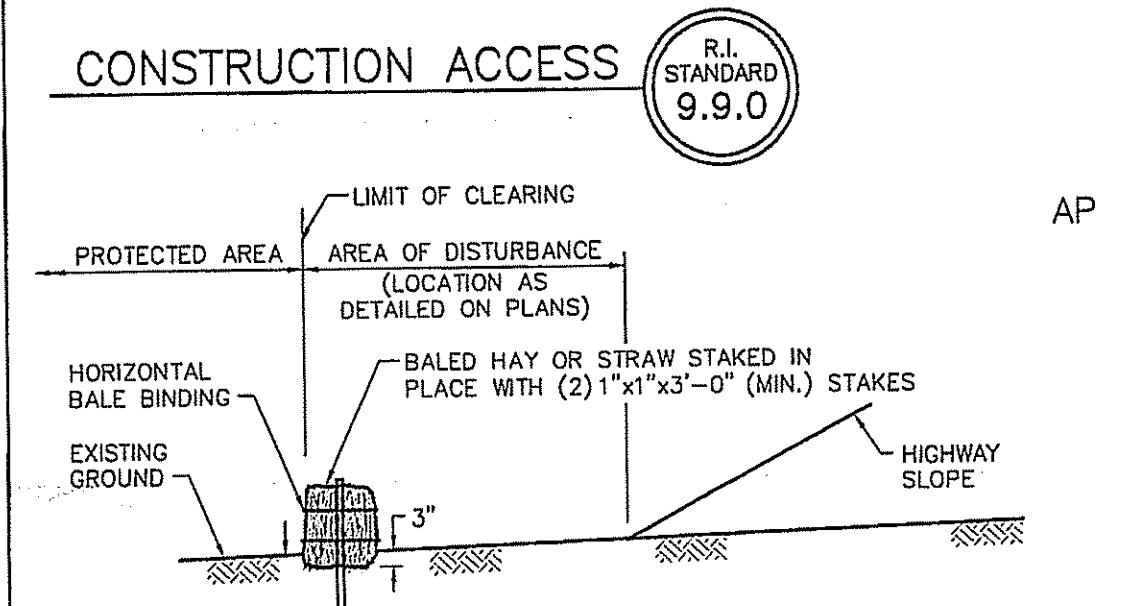
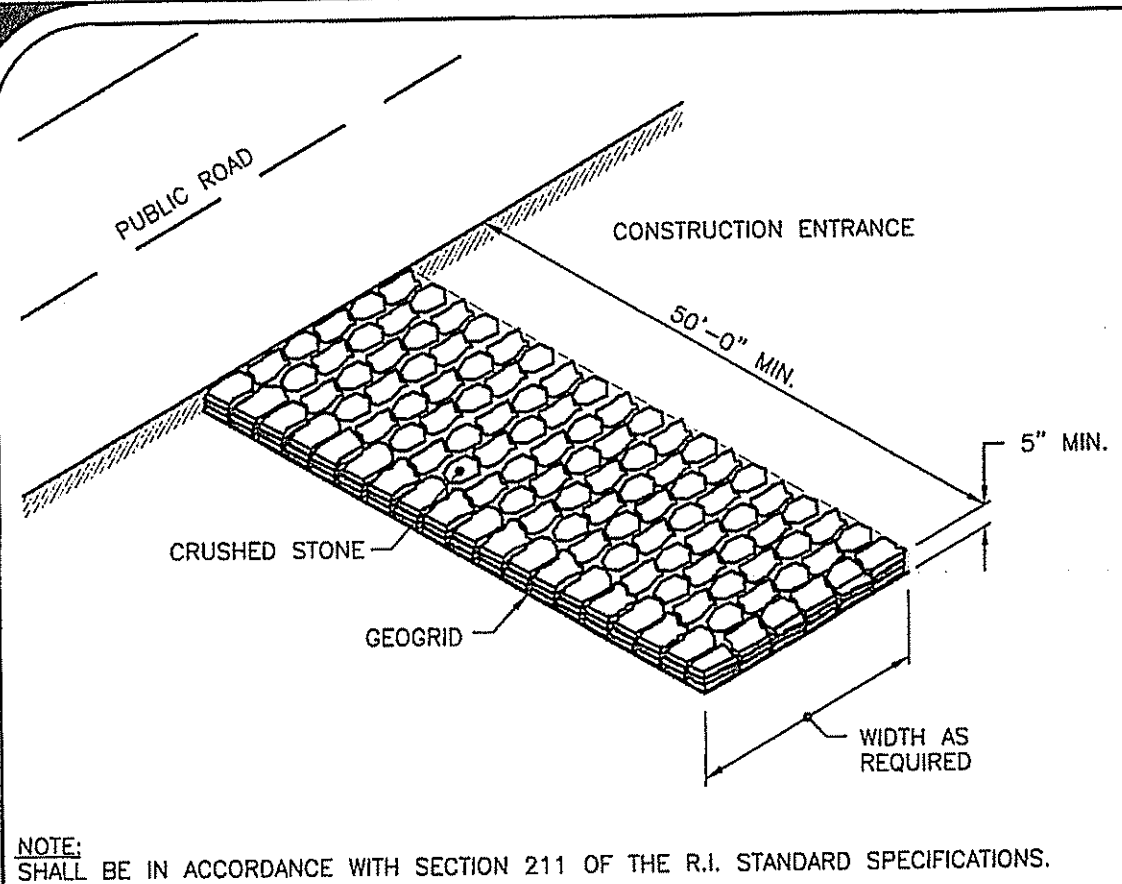
Checked By: T.J.B. Drawn By: T.J.B.  
Scale: AS SHOWN Date: JULY 2008

NO.	REVISION	BY	DATE
1	MASTER PLAN SUBMISSION	TJB	7/28/08
2	FORMAL PLAN SUBMISSION	TJB	7/28/08
3	FORMAL PLAN SUBMISSION	TJB	7/28/08
4	FORMAL PLAN SUBMISSION	TJB	7/28/08

**TJB ENGINEERING, LLC**  
CIVIL ENGINEERING, R.P.E. LIC #6278  
PERMITTING \* LAND PLANNING  
SUBDIVISIONS \* WASTEWATER  
1050 MAIN STREET SUITE 30  
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EMAIL: TIMBEHAN@COMCAST.NET

**K ANDREWS ASSOCIATES**  
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1050 MAIN STREET SUITE 30  
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PHONE (401) 885-0770  
FAX (401) 885-0779

Sheet **6**  
of 12 sheets



**BALED HAY EROSION CHECK**  
R.I. STANDARD 9.1.0

**ABBREVIATIONS**

A.P.	ASSESSORS PLAT
BIT.	BITUMINOUS CONCRETE
CB	CATCH BASIN
CONC.	CONCRETE
C/O	CARE OF
DMH	DRAIN MANHOLE
EL. OR ELEV.	ELEVATION
E.O.P.	EDGE OF PAVEMENT
EXIST.	EXISTING
F.F.	FINISH FLOOR ELEVATION
GAL.	GALLON
L	LENGTH
MIN.	MINIMUM
P-1	POLE #1
PROP.	PROPOSED OR PROPERTY
R	RADIUS
R.O.W.	RIGHT OF WAY
S.F.	SLOPE
SQ. FT.	SQUARE FEET
SMH	SANITARY MANHOLE
T.O.F.	TOP OF FOUNDATION ELEV.
TYP.	TYPICAL
WCS	WATER CURB STOP

**LINETYPE LEGEND**

SUBJECT PROPERTY LINE	---
ABUTTING PROPERTY LINE	---
BUILDING SETBACK LINE	---
EDGE OF EXISTING PAVEMENT	---
EXIST. ELEVATION CONTOUR LINE	---
PROPOSED ELEVATION CONTOUR	---
EXIST. GAS LINE	---
EXIST. STORM DRAIN LINE	---
EXIST. SANITARY SEWER LINE	---
EXIST. WATER LINE	---
PROPOSED GAS LINE	---
PROPOSED STORM DRAIN LINE	---
PROPOSED WATER LINE	---
SILT FENCE & LIMIT OF DISTURB.	---
LIMIT OF DISTURBANCE	---
50' PERIMETER WETLAND	---
100' RIVERBANK WETLAND	---
100-YEAR FLOOD PLAIN	---
PROPOSED EASEMENT	---
EXISTING GUARDRAIL	---
PROPOSED GUARDRAIL	---
EXISTING SPOT GRADE	---
PROPOSED SPOT GRADE	---
TEST HOLE	---
ROOF RUNOFF INFILTRATION SYSTEM	---
PROPOSED BOUNDARY MARKER	---

**NARRATIVE:**

**PROJECT DESCRIPTION:** THE DEVELOPMENT PROPOSES TO CONSTRUCT EIGHT (8) SINGLE FAMILY HOME SITES, A NEW 600' ROADWAY, SUBSURFACE UTILITIES, AND A STORM WATER MANAGEMENT SYSTEM.

**BASE FLOOD ELEVATION:** THE PROJECT SITE DOES NOT LIE IN A 100-YEAR FLOOD ZONE AS IDENTIFIED BY FEMA'S FLOOD INSURANCE RATE MAPS #FM 4400702636, PANEL 283 OF 541, DATED MAR. 2, 2009.

**PROPOSED DRAINAGE SYSTEM:** STORMWATER RUNOFF FROM THE PROPOSED DEVELOPMENT WILL BE DIRECTED TO AN EXTENDED DETENTION POND. ROAD RUNOFF IS DIRECTED TO INLETS AND PIPED TO THE EXTENDED DETENTION POND FOR TREATMENT OF THE WATER QUALITY VOLUME. IT IS IMPORTANT TO KEEP SEDIMENTS OUT OF THE DRAINAGE SYSTEMS DURING CONSTRUCTION.

**EMERGENCY PHONE NUMBERS:** CONTACT MR. JOE BAGINSKI AT 286-7005 FOR IMMEDIATE ATTENTION.

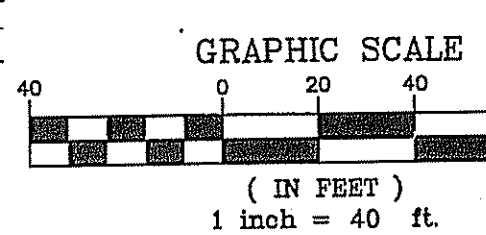
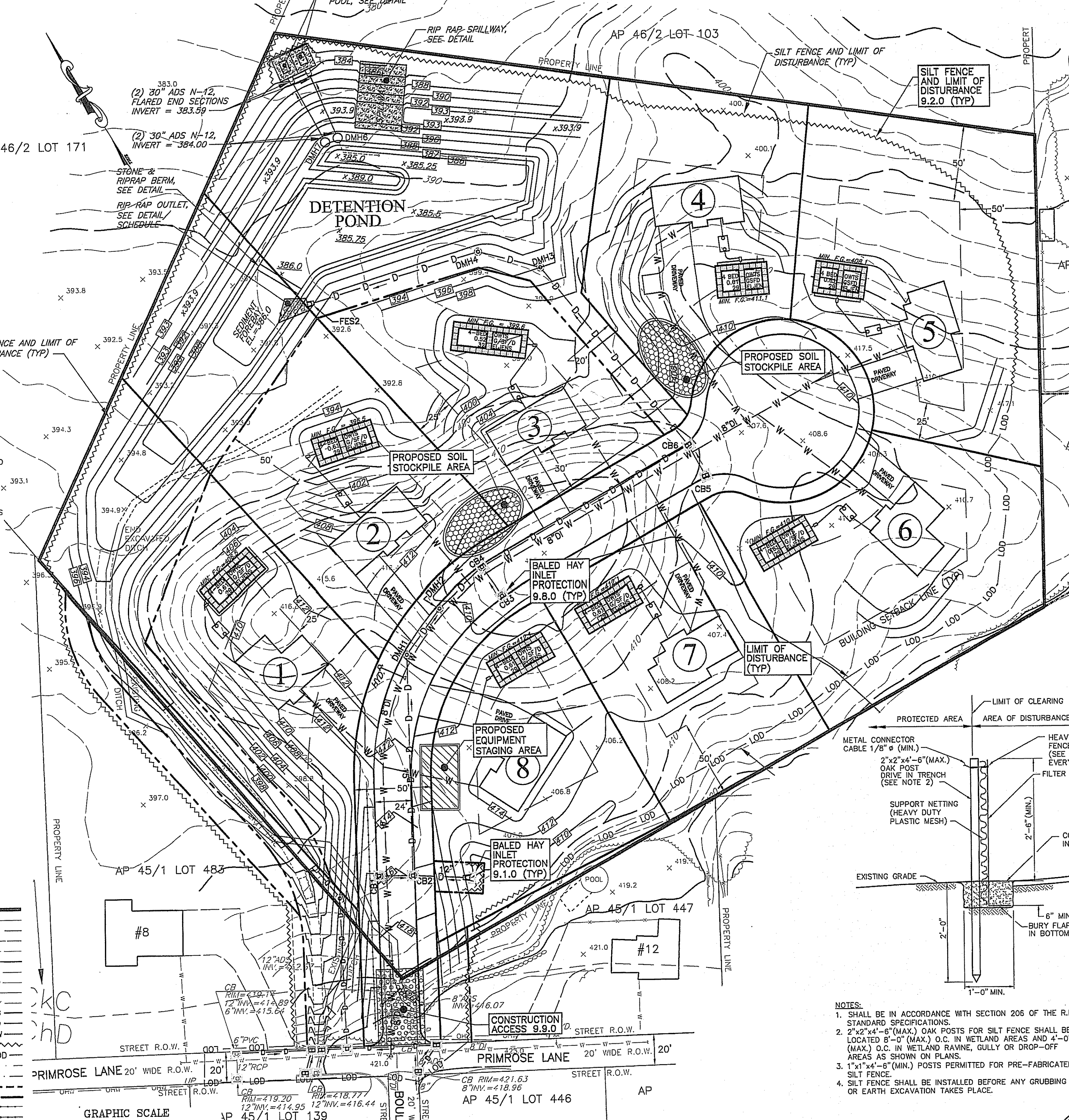
**SOIL EROSION AND SEDIMENT CONTROL MEASURES:** DOWN GRADIENT AREAS OF ALL DISTURBED AREAS SHALL BE PROTECTED WITH SILT FENCE AND/OR HAYBALES AS SHOWN ON THE DETAILS. THE DETENTION POND SHALL BE CONSTRUCTED PRIOR TO SITE DISTURBANCE SO RUNOFF DURING CONSTRUCTION WILL FLOW INTO THE POND. ALL SOIL STOCK PILE AREAS SHALL BE PROTECTED FROM SOIL EROSION AS SHOWN ON THE DETAIL. STABILIZE ALL DISTURBED AREAS AS SOON AS POSSIBLE WITH GRASS SEED.

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

1. SURVEY AND STAKE LIMIT OF DISTURBANCE FOR PLACEMENT OF SEDIMENTATION CONTROL DEVICES.
2. PLACE PERIMETER SEDIMENTATION CONTROL DEVICES (HAYBALE OR SILT FENCE) AS SHOWN ON THE PLANS AND STAKED OUT IN THE FIELD. IN NO CASE IS THE LIMIT OF WORK TO EXTEND BEYOND THE SEDIMENTATION CONTROL DEVICES.
3. CONSTRUCT CONSTRUCTION ENTRANCE DEVICE 9.9.0.
4. ROUGH GRADE DETENTION POND SO ALL RUNOFF FROM DISTURBED SITE FLOWS INTO DETENTION POND. CLEAR AND GRUB SITE.
5. CONSTRUCT ROADWAY (ROUGH GRADE).
6. CONSTRUCT DRAINAGE SYSTEMS.
7. CONSTRUCT UTILITIES (WATER, ELECTRIC, ETC.).
8. BEGIN CONSTRUCTION OF HOME SITES (EXCAVATING AND GRADING, ETC.). TOPSOIL TO BE STRIPPED AND STOCKPILED IN APPROVED AREAS. THE STOCKPILES ARE TO BE PROTECTED BY A ROW OF SEDIMENTATION DEVICES.
9. PREPARE ROADWAY FOR PAVEMENT. PAVE FIRST COURSE.
10. FINISH CONSTRUCTION OF HOME SITES.
11. PLACE SECOND COURSE OF PAVEMENT.
12. ALL DISTURBED AREAS SHALL BE LOAMED AND SEEDED WITH GRASS.
13. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER A PERMANENT GROWTH OF VEGETATION IS ESTABLISHED.

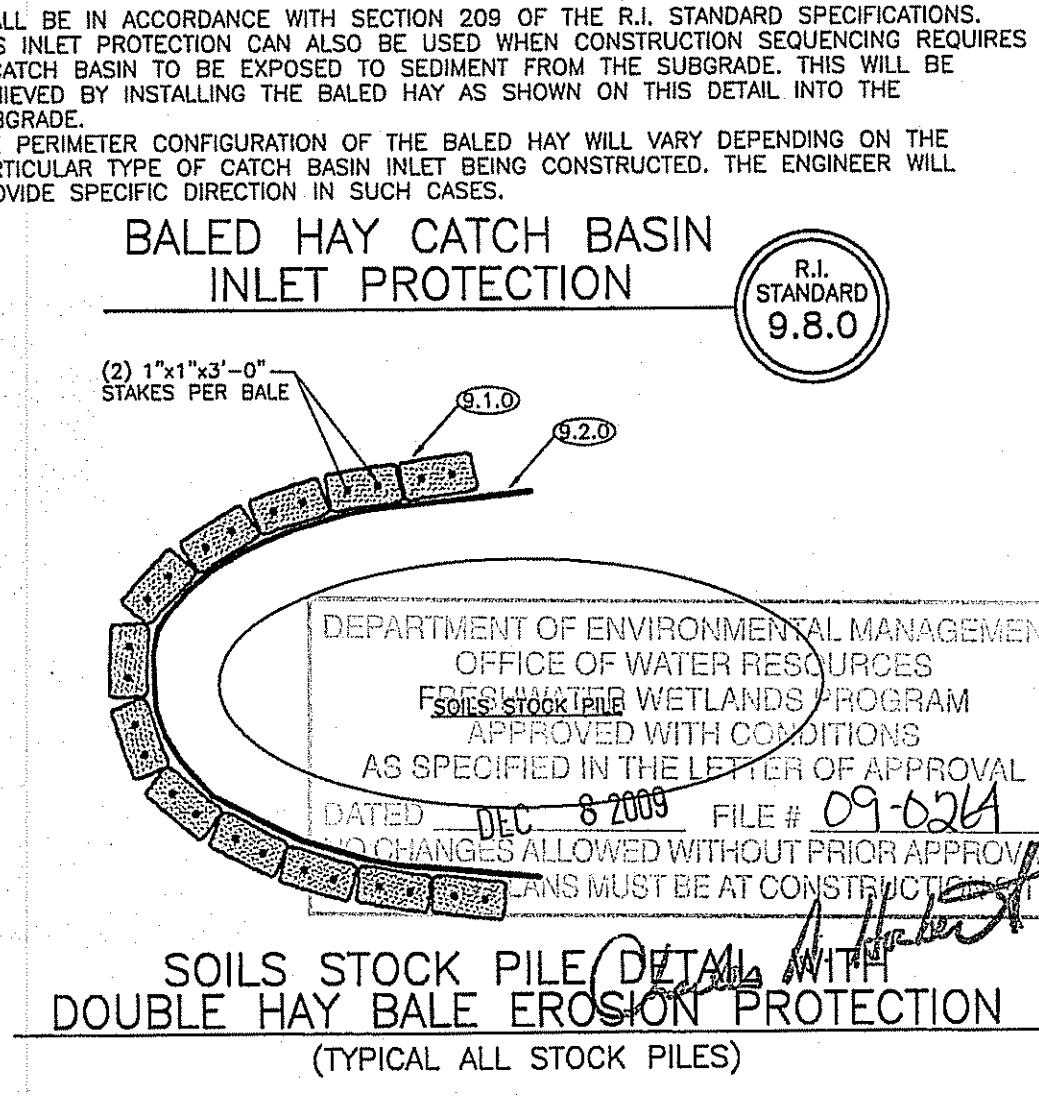
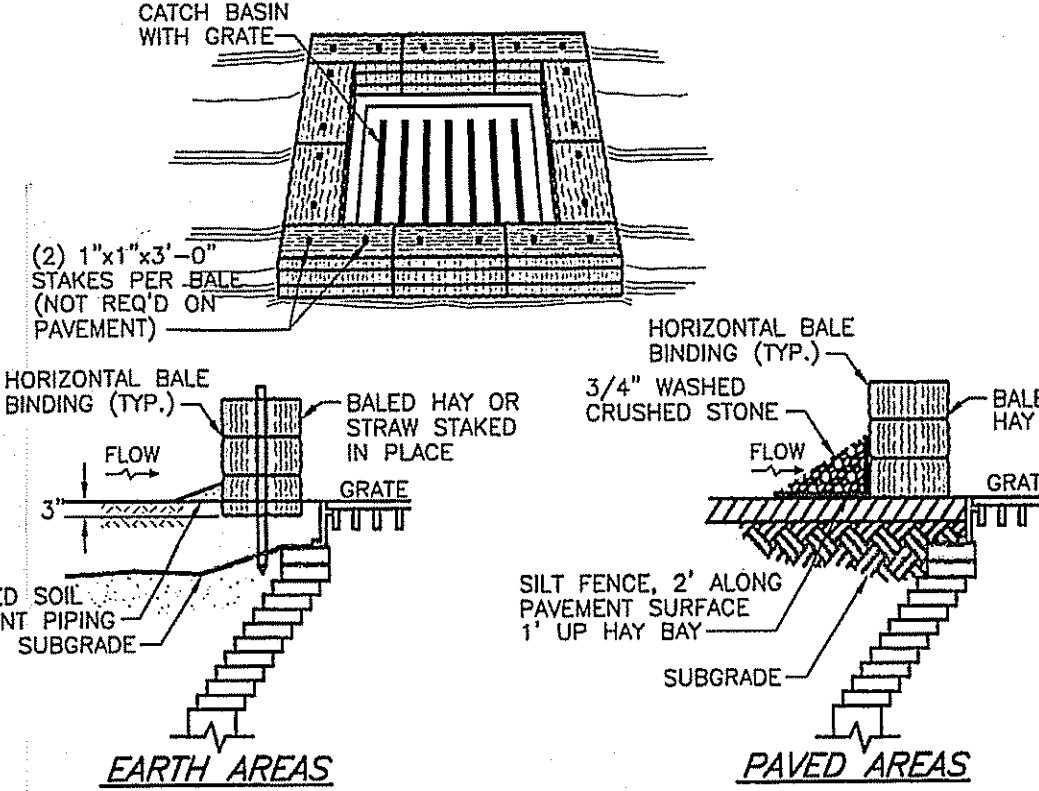
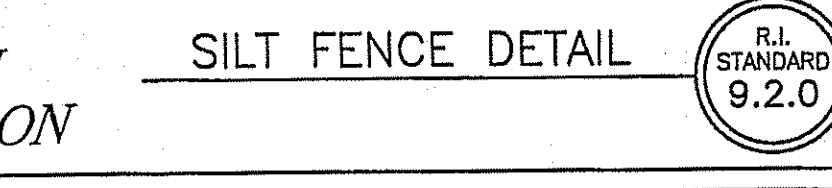
**EROSION CONTROL & SOIL STABILIZATION PROGRAM:**

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND PROCEDURES SET FORTH IN THE JOHNSON LAND DEVELOPMENT AND SUBDIVISION REVIEW REGULATIONS AND ALL STATE PERMITS.
  2. EXTREME CARE SHALL BE EXERCISED AS TO PREVENT ANY MATERIALS FROM ENTERING WETLANDS, THE ROADWAYS, ROADWAY DRAINAGE SYSTEMS, AND ADJACENT PROPERTY.
  3. STAKED HAY BALES OR SILT FENCE SHALL BE INSTALLED WHERE SHOWN ON THE PLAN AND AS REQUIRED TO PREVENT SEDIMENTATION ONTO ADJACENT PROPERTIES, WETLANDS AND THE ROADWAY DRAINAGE SYSTEM.
  4. DENuded SLOPES SHALL NOT BE UNATTENDED OR EXPOSED FOR EXCESSIVE PERIODS OF TIME SUCH AS THE INACTIVE WINTER SEASON.
  5. ALL DISTURBED SLOPES, EITHER NEWLY CREATED OR EXPOSED PRIOR TO OCTOBER 15 SHALL BE SEEDED OR PROTECTED BY THAT DATE.
- SEED MIX: (RIDOT STANDARD)**
- |                     |             |
|---------------------|-------------|
| CREEPING RED FESCUE | 75 LBS/ACRE |
| KENTUCKY BLUE GRASS | 15 LBS/ACRE |
| CERENAL BENT GRASS  | 5 LBS/ACRE  |
| PERENNIAL RYE GRASS | 5 LBS/ACRE  |
6. TEMPORARY TREATMENTS SHALL CONSIST OF HAY, STRAW OR FIBER MULCH OR PROTECTIVE COVERS, SUCH AS A MAT OR FIBER LINING (BURLAP, JUTE, FIBERGLASS NETTING, EXCELSIOR 2000 BLANKETS) THEY SHALL BE INCORPORATED INTO THE WORK AS WARRANTED OR AS ORDERED BY THE TOWN, ENGINEER OR OWNER AT NO ADDITIONAL COST.
  7. HAY OR STRAW APPLICATIONS SHALL BE IN THE AMOUNT OF 3,000-4,000 LBS/ACRE.
  8. ALL NEW HAY BALES OR TEMPORARY PROTECTION SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED AND POTENTIAL SEDIMENTATION SOURCES ARE REMOVED.
  9. STOCKPILES SHALL HAVE NO SLOPE GREATER THAN 2:1 AND SHALL BE SURROUNDED BY STAKED HAY BALES OR SILT FENCE. STOCKPILES EXPOSED FOR EXCESSIVE PERIODS OF TIME SHALL RECEIVE TEMPORARY TREATMENT CONSISTING OF HAY, STRAW OR FIBER MATTING.
  10. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EROSION CONTROL MAINTENANCE AND SHALL INSPECT/REPLACE AS NEEDED.
  11. ADDITIONAL HAY BALES/SILT FENCE OR OTHER TREATMENTS SHALL BE PROVIDED AS DIRECTED BY ENGINEER, RIDOT OR LOCAL REPRESENTATIVES AT NO ADDITIONAL COST.
  12. THE CONTRACTOR SHALL REFERENCE THE "EROSION AND SEDIMENT CONTROL HANDBOOK" AS PREPARED BY THE US DEPT. OF AGRICULTURE, SOIL CONSERVATION SERVICE, 1989, (AS REVISED) AS A GUIDE.
  13. THE CONTRACTOR SHALL INSPECT THE SOIL EROSION CONTROL DEVICES AFTER EVERY RAIN STORM EVENT. ANY SOIL MIGRATION PAST THE DEVICES SHALL BE REMOVED AND THE SOIL EROSION CONTROL DEVICES SHALL BE RE-ESTABLISHED TO PREVENT SOIL EROSION. ALL ACCUMULATED SEDIMENT IN FRONT OF THE DEVICES SHALL BE REMOVED AFTER EVERY RAIN STORM EVENT.
  14. ALL DISTURBED SOIL AREAS SHALL BE PROTECTED AGAINST SOIL EROSION BY PLACEMENT OF HAY BALES AND/OR SILT FENCE ON THE DOWN GRADIENT SIDE OF THE DISTURBED AREAS. SHOULD THE VOLUME AND/OR RATE OF STORMWATER RUNOFF BE TOO GREAT FOR A SINGLE DEVICE, THEN MULTIPLE DEVICES ARE REQUIRED SUCH AS SILT FENCE BACKED-UP WITH HAYBALES.
  15. CATCH BASIN GRATES SHALL BE PROTECTED AGAINST SOIL MIGRATION INTO THE GRATES BY USE OF DETAIL 9.8.0.
  16. AT THE END OF THE PROJECT ALL SEDIMENT IN THE CATCH BASIN SUMPS SHALL BE REMOVED.
  17. DISTURBED SOILS SHALL BE STABILIZED AS SOON AS PRACTICABLE.
  18. TEMPORARY VEGETATION AND/OR MULCHING SHALL BE USED TO PROTECT EXPOSED LAND AREAS DURING DEVELOPMENT.
  19. PERMANENT (FINAL) VEGETATION SHALL BE PLANTED AND SUPPLEMENTAL EROSION CONTROL MEASURES SHALL BE INSTALLED AS SOON AS PRACTICABLE.
  20. UNTIL A DISTURBED AREA IS STABILIZED, SEDIMENT IN THE RUNOFF WATER SHALL BE TRAPPED BY THE USE OF DEBRIS BASINS, SEDIMENT BASINS, SILT TRAPS OR SIMILAR MEASURES. DURING GRADING OPERATIONS, APPROPRIATE MEASURES FOR DUST CONTROL SHALL BE EXERCISED BY USE OF SPRAY WATER APPLIED OR APPROVED EQUAL.
  21. A CONTRACTOR SHALL INSPECT AND MAINTAIN THE EROSION AND SEDIMENT CONTROL SYSTEM AS SPECIFIED. CONSTRUCTION INSPECTION AND MAINTENANCE SHALL BE PERFORMED AFTER EACH RAINSTORM EVENT AND ON A WEEKLY BASIS.



**EROSION CONTROL PLAN**  
SCALE: 1"=40'

PRELIMINARY PLAN  
NOT FOR CONSTRUCTION



**PARCEL AREA**  
AP 46/2 LOT 104  
AREA = 6.35 ACRES

**STREE INDEX**  
THIS PLAN IS TO BE INDEXED UNDER THE FOLLOWING STREETS:  
BOULDER DRIVE  
PRIMROSE LANE

MAJOR SUBDIVISION - PRELIMINARY PLAN  
EROSION CONTROL PLAN  
BOULDER DRIVE ESTATES

BOULDER DRIVE  
JOHNSTON, RHODE ISLAND  
PROPERTY OWNER AND APPLICANT:  
Boulder Realty, LLC  
52 River Avenue, Providence, RI 02908 401-266-7005

Checked By: T.J.B. Drawn By: T.J.B. Date: JULY 2008

Scale: AS SHOWN

REVISIONS

NO.	REVISION	DATE
1	DATE	
2	DATE	
3	DATE	
4	DATE	

**TJB ENGINEERING, LLC**  
CIVIL ENGINEERING, R.I.P.E. LIC #6278  
PERMITTING \* LAND PLANNING  
SUBDIVISIONS \* WASTEWATER

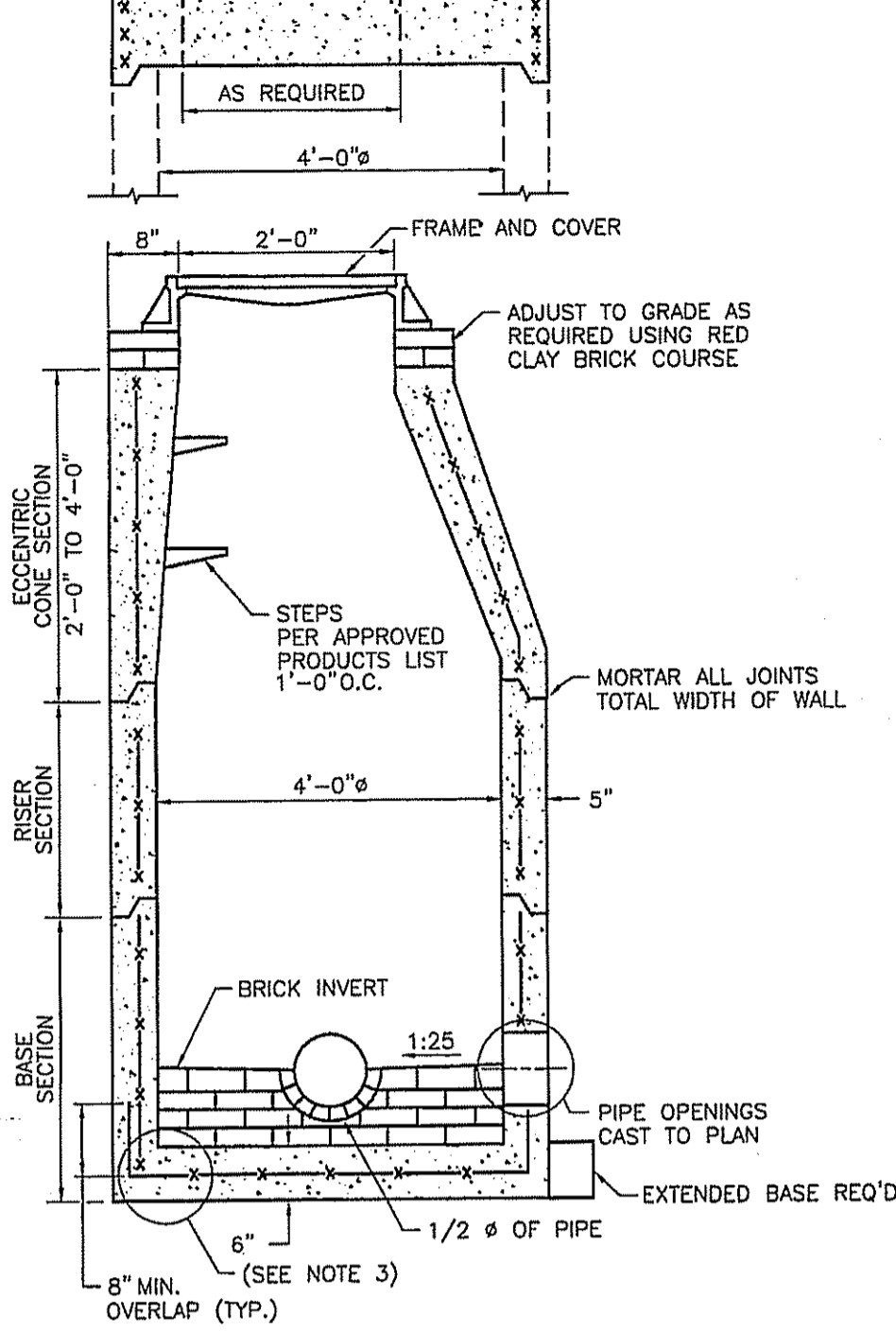
1050 MAIN STREET SUITE 30  
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EMAIL: TIMBEHAN@COMCAST.NET

**K ANDREWS ASSOCIATES**  
LAND SURVEYING AND SITE PLANNING

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PHONE: (401) 885-0770 FAX: (401) 885-0779

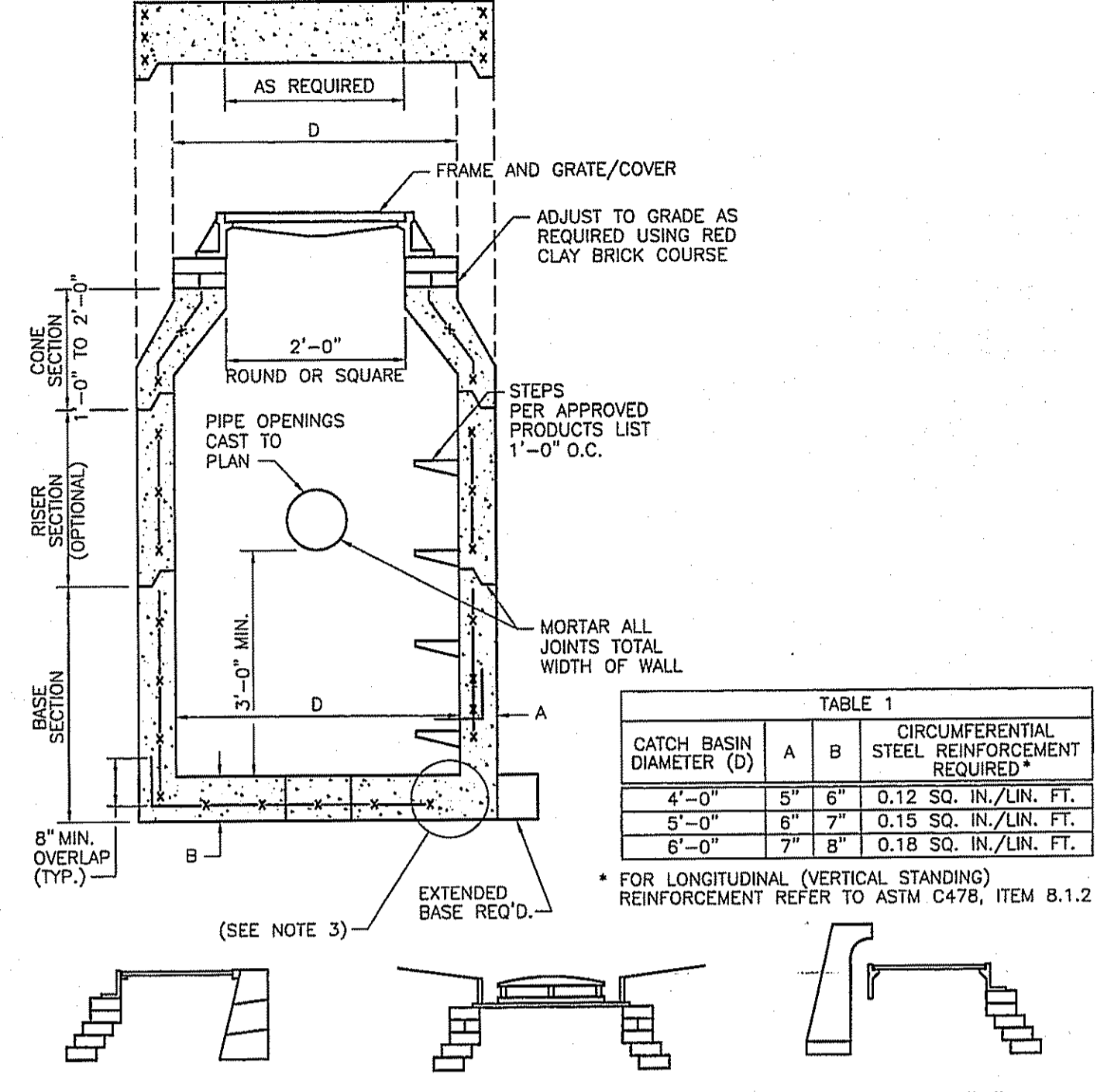
Sheet 7 of 12 sheets

ALTERNATE TOP LOADING (SEE NOTES 7 AND 8)



PRECAST 4'-0" ROUND MANHOLE  
R.I. STANDARD 4.2.0

ALTERNATE TOP SLAB (SEE NOTES 10 AND 11)

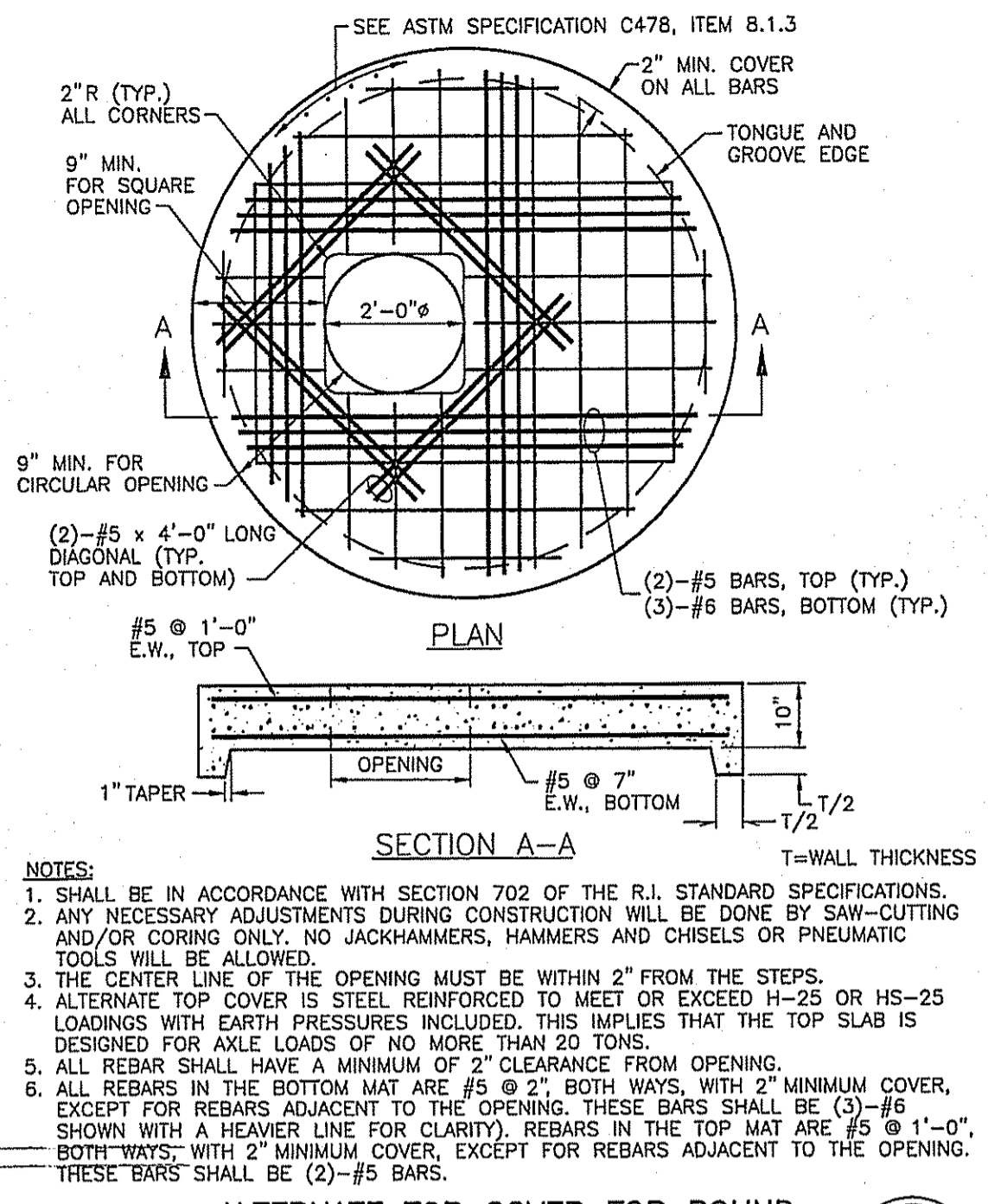


PRECAST 4'-0", 5'-0", OR 6'-0" ROUND CATCH BASIN  
R.I. STANDARD 4.4.0

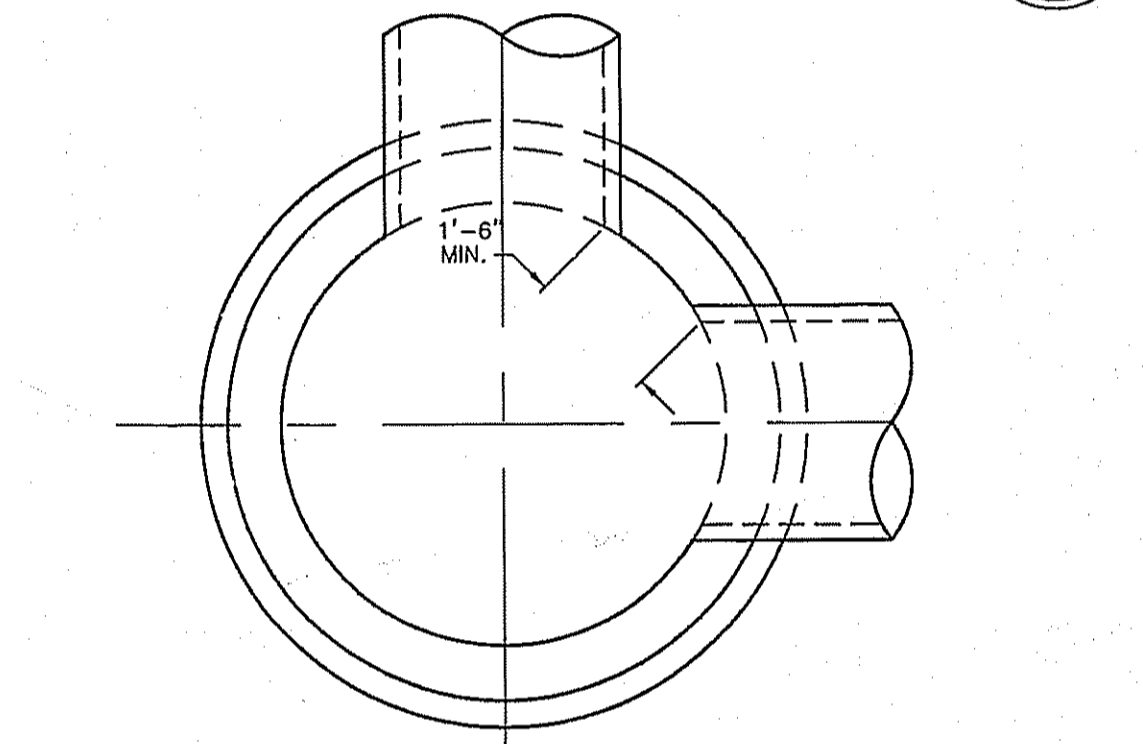
TABLE 1  
CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED

CATCH BASIN DIAMETER (D)	A	B	CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED
4'-0"	5"	6"	0.12 SQ. IN./LIN. FT.
5'-0"	6"	7"	0.15 SQ. IN./LIN. FT.
6'-0"	7"	8"	0.18 SQ. IN./LIN. FT.

\* FOR LONGITUDINAL (VERTICAL) REINFORCEMENT REFER TO ASTM C478, ITEM 8.1.2



ALTERNATE TOP COVER FOR ROUND PRECAST MANHOLES AND CATCH BASINS  
R.I. STANDARD 4.7.2

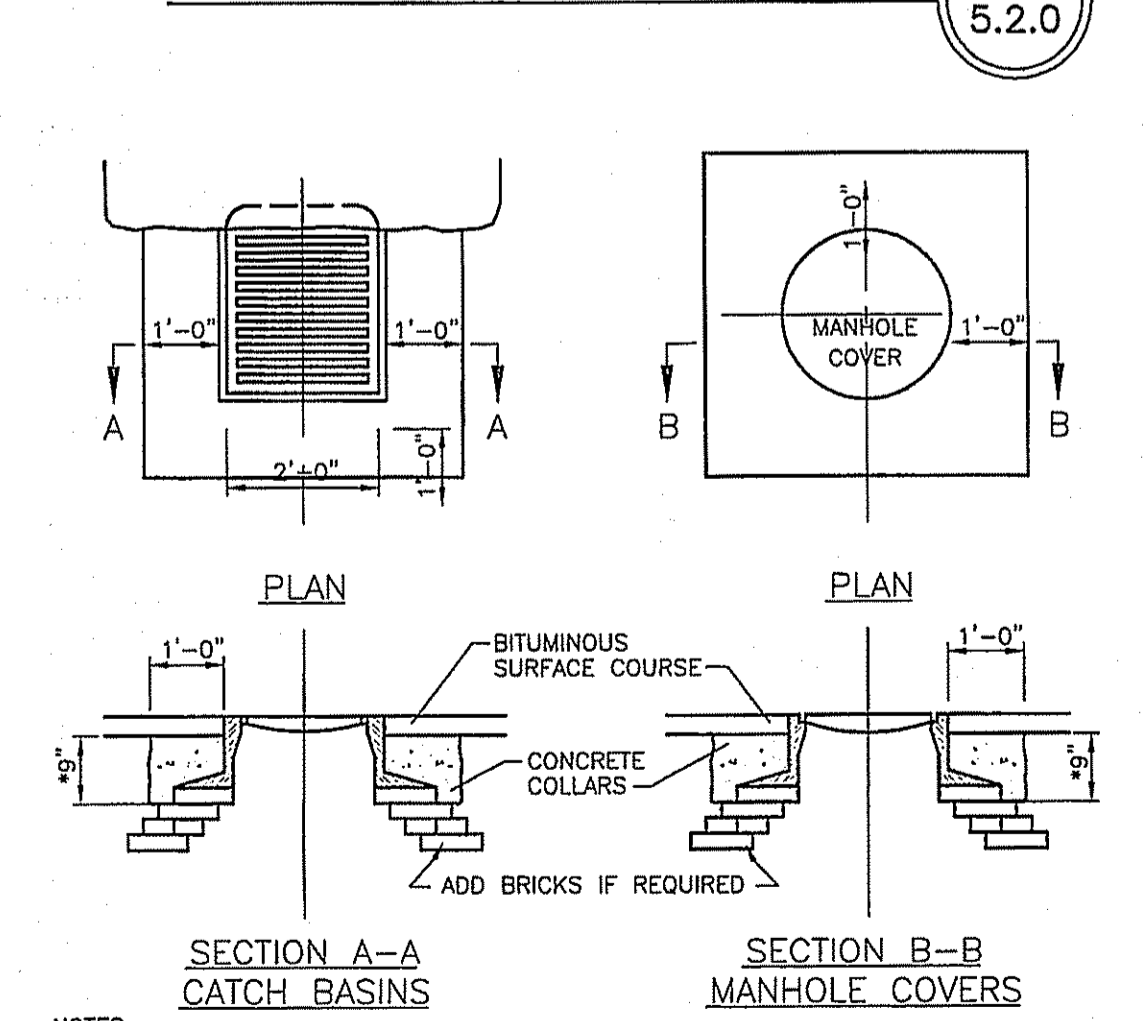


CROSS SECTION OF MANHOLE OR CATCH BASIN

	4 FT. MANHOLE OR CATCH BASIN	5 FT. MANHOLE OR CATCH BASIN	6 FT. MANHOLE OR CATCH BASIN
MAX. PIPE O.D. STRAIGHT THRU TO 45° DEFLECTION	33 1/2" O.D. 27" R.C. PIPE	44" O.D. 36" R.C. PIPE	51" O.D. 42" R.C. PIPE
MAX. PIPE O.D. 90° DEFLECTION	23" O.D. 18" R.C. PIPE	33 1/2" O.D. 27" R.C. PIPE	37" O.D. 30" R.C. PIPE

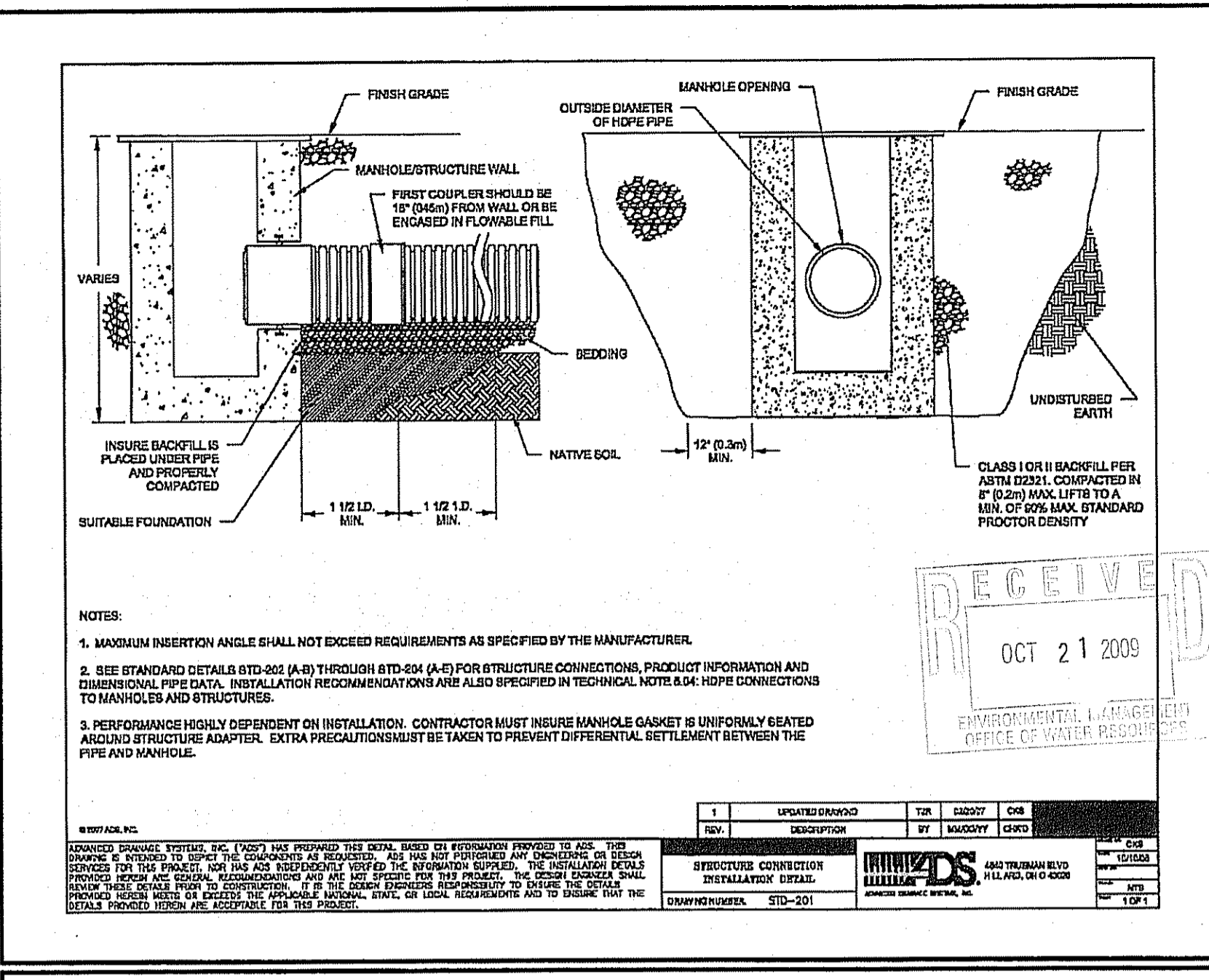
NOTES:  
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.  
2. THE MINIMUM DISTANCE BETWEEN PIPES ENTERING MANHOLES AND CATCH BASINS MUST BE 1'-6". THE SIZE OF THE CATCH BASIN WILL BE DETERMINED BY THE PIPE SIZE AND ENTRY ANGLE. (SEE TABLE ABOVE.)

ROUND MANHOLES AND CATCH BASINS MAXIMUM PIPE SIZE STANDARD  
R.I. STANDARD 5.2.0

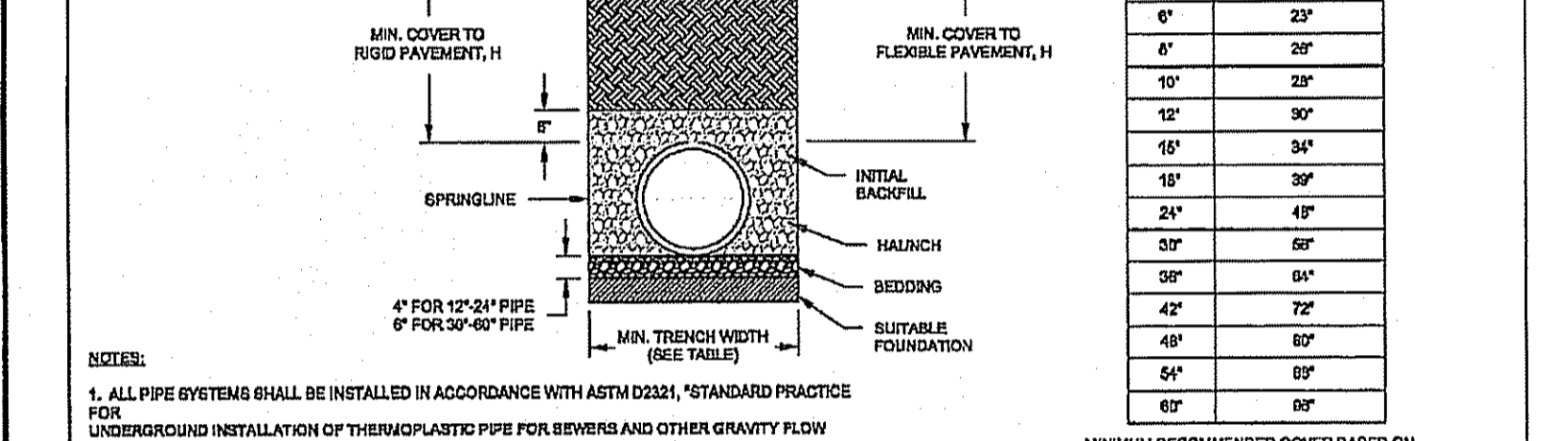


CATCH BASIN AND MANHOLE STEP  
R.I. STANDARD 5.3.0

CONCRETE COLLARS  
R.I. STANDARD 5.4.0



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RECOMMENDED MINIMUM TRENCH WIDTH

PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	22"
8"	23"
10"	24"
12"	25"
14"	26"
16"	27"
18"	28"
20"	29"
22"	30"
24"	31"
26"	32"
28"	33"
30"	34"
32"	35"
34"	36"
36"	37"
38"	38"
40"	39"
42"	40"
44"	41"
46"	42"
48"	43"
50"	44"

MINIMUM RECOMMENDED COVER BASED ON SURFACE LIVE LOADS CONDITION

PIPE DIAM.	COVER
UP TO 24"	24"
24"-30"	30"
30"-36"	36"
36"-42"	42"
42"-48"	48"
48"-54"	54"
54"-60"	60"

MINIMUM RECOMMENDED COVER BASED ON ONE-WAY LIVE LOADS CONDITION

PIPE DIAM.	COVER
UP TO 24"	24"
24"-30"	30"
30"-36"	36"
36"-42"	42"
42"-48"	48"
48"-54"	54"
54"-60"	60"

MINIMUM RECOMMENDED COVER BASED ON TWO-WAY LIVE LOADS CONDITION

PIPE DIAM.	COVER
UP TO 24"	24"
24"-30"	30"
30"-36"	36"
36"-42"	42"
42"-48"	48"
48"-54"	54"
54"-60"	60"

MINIMUM RECOMMENDED COVER BASED ON TRAFFIC APPLICATIONS (SEE NOTE 4)

PIPE DIAM.	COVER
UP TO 24"	24"
24"-30"	30"
30"-36"	36"
36"-42"	42"
42"-48"	48"
48"-54"	54"
54"-60"	60"

MINIMUM RECOMMENDED COVER BASED ON TRAFFIC APPLICATIONS (SEE NOTE 4)

PIPE DIAM.	COVER
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42"-48"	48"
48"-54"	54"
54"-60"	60"

**SRP**  
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If You Can Draw It - We Can Build It  
1-800-440-0009 • 781-437-1747 • fax 781-557-4240  
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**Manholes / Catch Basins**  
4 FT. Dia. Double Open Catch Basin

- Manufactured to meet or exceed ASTM C 478 & AASHTO M 199 specs.
- Reinforced steel conforms to latest ASTM A 185 specs. and is placed as per ASTM C-178 (8.1, 8.3)
- Concrete = 4000psi minimum. Cement per ASTM C-478 (6.1)
- Manhole steps - polypropylene coated grade 60 reinforcing bar per ASTM C 478 & O.S.H.A. (STD 1 19)
- Butyl rubber joint sealant per ASTM C-990 & AASHTO M-198 and be placed as per ASTM C-178 (8.1, 8.3)
- Water proofing per contact specs. as required.

DOUBLE GRATE CATCH BASIN DETAIL  
NOT TO SCALE

American Concrete Pipe Asso. The Scituate Companies NPCA

PRELIMINARY PLAN  
NOT FOR CONSTRUCTION

TIMOTHY J. BEHAN  
REGISTERED PROFESSIONAL ENGINEER  
No. 6278

STREE INDEX  
THIS PLAN IS TO BE INDEXED UNDER THE FOLLOWING STREETS:  
BOULDER DRIVE  
PRIMROSE LANE

Being ASSESSORS PLAT 46/2 LOT 104  
MAJOR SUBDIVISION - PRELIMINARY PLAN  
DETAILS - 1  
BOULDER DRIVE ESTATES

LOCATION  
BOULDER DRIVE  
RHODE ISLAND  
PROPERTY OWNER AND APPLICANT:  
Boulder Realty, LLC  
52 River Avenue, Providence, RI 02908 401-286-7005

Checked By: T.J.B. Drawn By: T.J.B. Date: JULY 2008  
Scale: AS SHOWN

REVISIONS

NO.	REVISION	DATE
1	MASTER PLAN SUBMISSION	7/2/08
2	REVISIONS	7/2/08
3	REVISIONS	7/2/08
4	REVISIONS	7/2/08

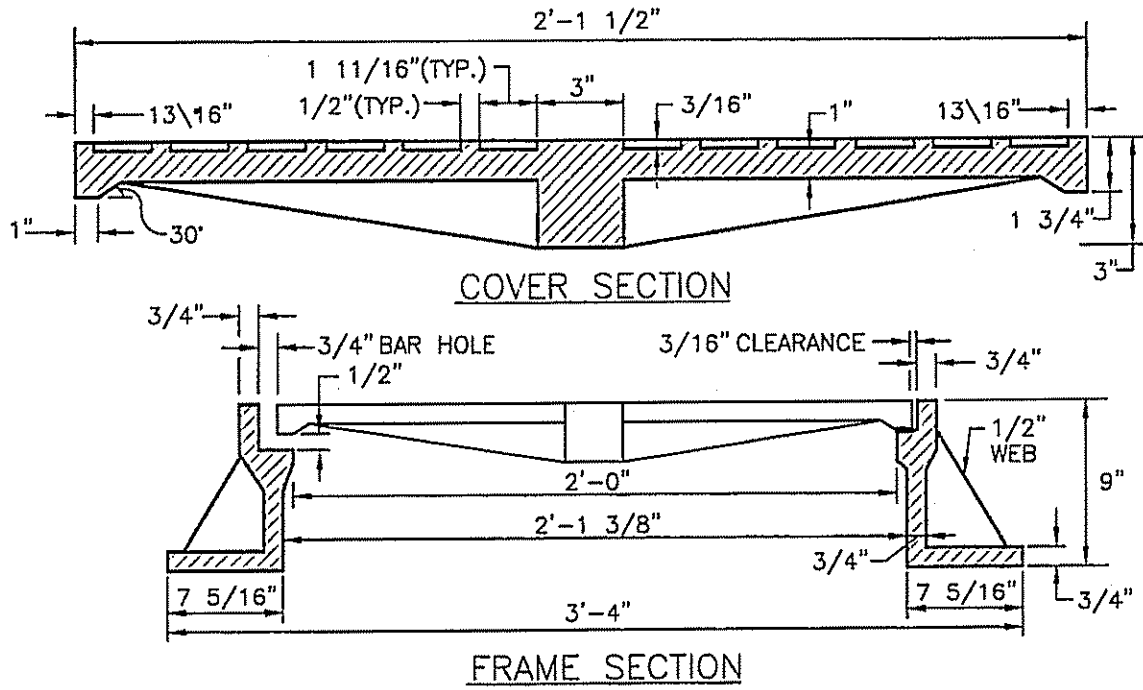
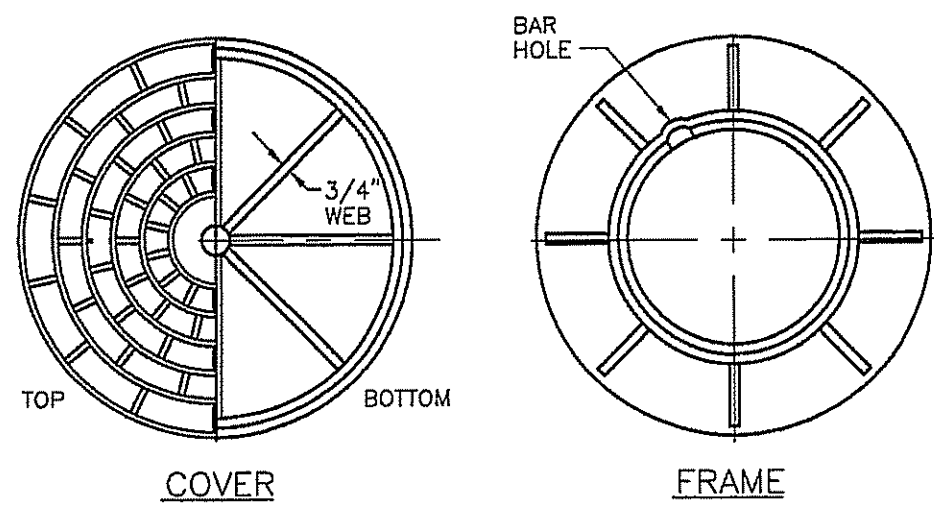
**TJB ENGINEERING, LLC**  
CIVIL ENGINEERING R.P.E. LIC #6278  
PERMITTING \* LAND PLANNING  
SUBDIVISIONS \* WASTEWATER

1050 MAIN STREET SUITE 30  
EAST GREENWICH, RI 02818  
PHONE: 401-596-1677 FAX: 401-885-0779  
EMAIL: TJB@TJBENGINEERING.COM

**K ANDREWS ASSOCIATES**  
LAND SURVEYING AND SITE PLANNING

1050 MAIN STREET SUITE 30  
EAST GREENWICH, RI 02818  
PHONE: (401) 885-0770  
FAX (401) 885-0779

Sheet 8  
of 12 sheets

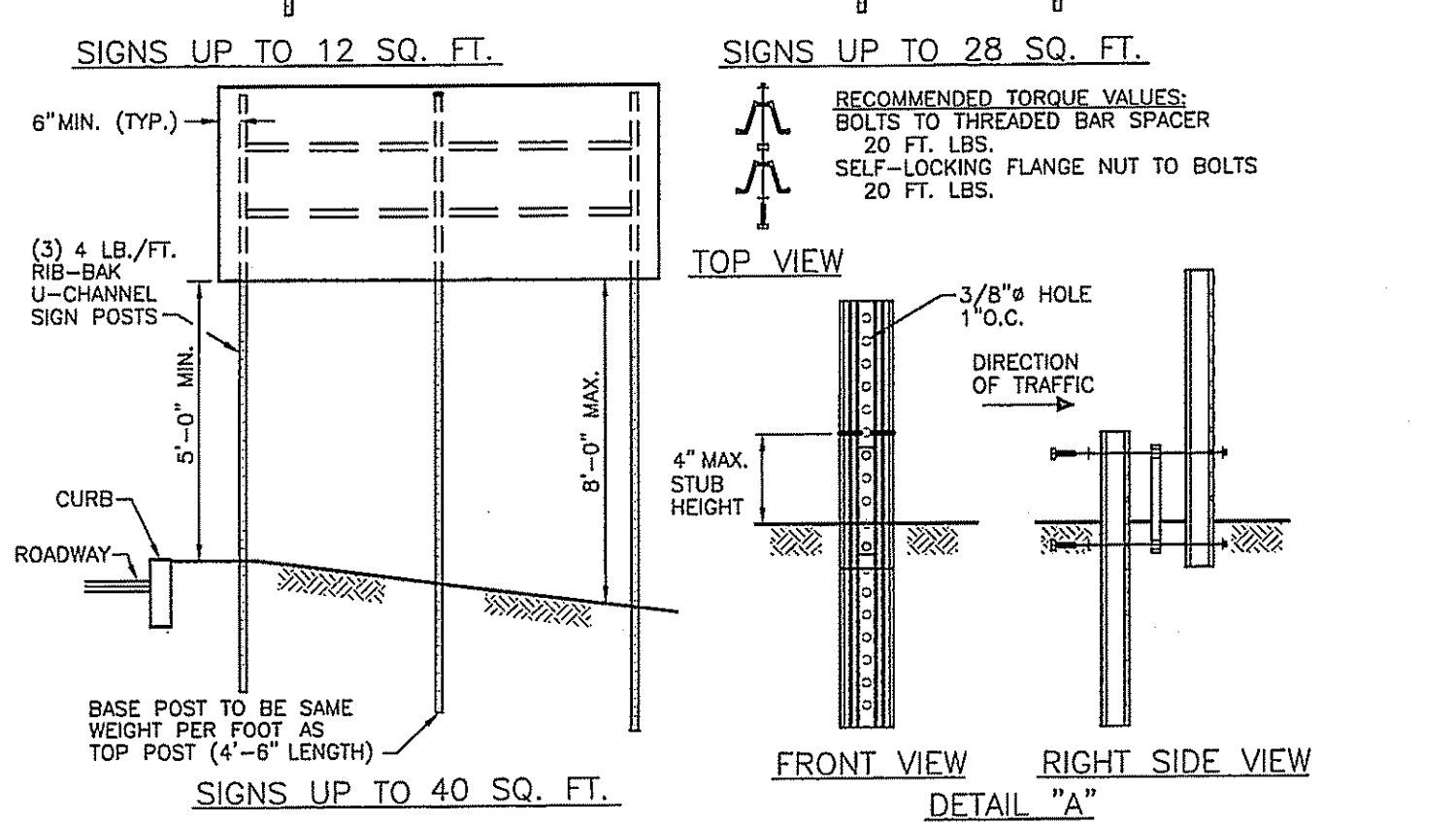
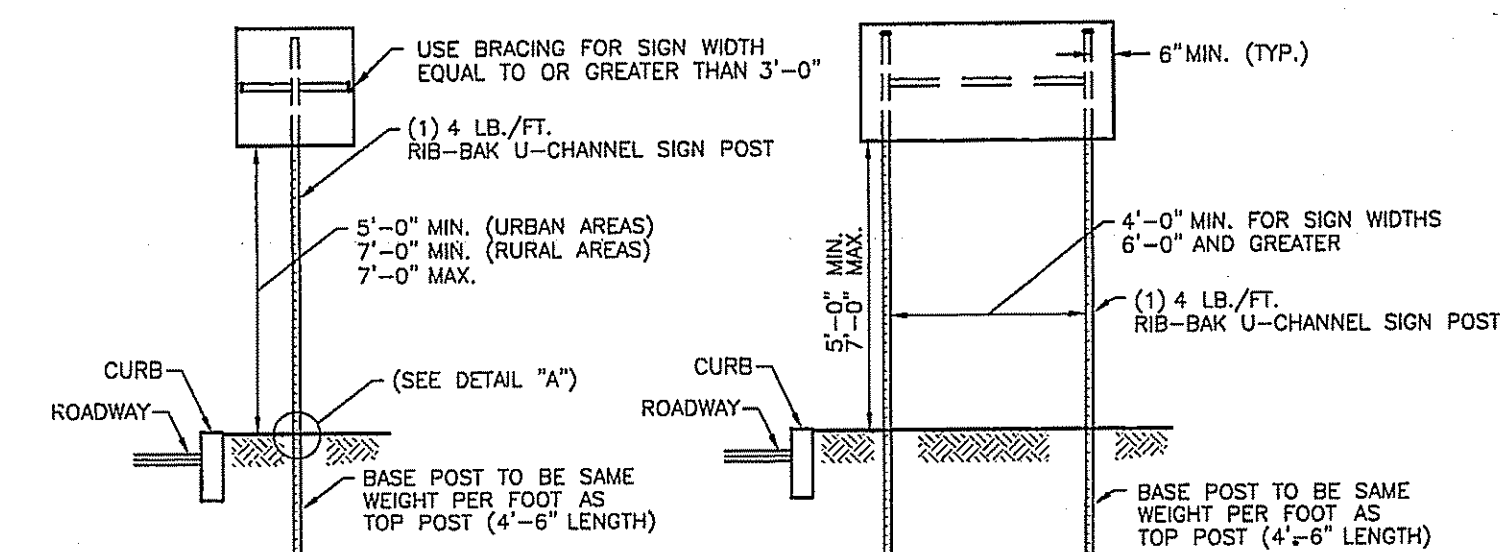


NOTES:  
1. FRAME AND GRATE SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.  
2. FRAME AND COVER SEATS MUST HAVE MACHINE FINISH.  
**HEAVY-DUTY ROUND FRAME AND COVER**  
R.I. STANDARD 6.2.1

SIGN NUMBER		R1-1	
<b>LEGEND</b>			
COLOR		BACKGROUND	RED
		COPY	WHITE
SIGN DIMENSION	WIDTH	24"	30"
	HEIGHT	24"	30"

**STOP SIGN DETAIL**  
R.I. STANDARD 27.1.0

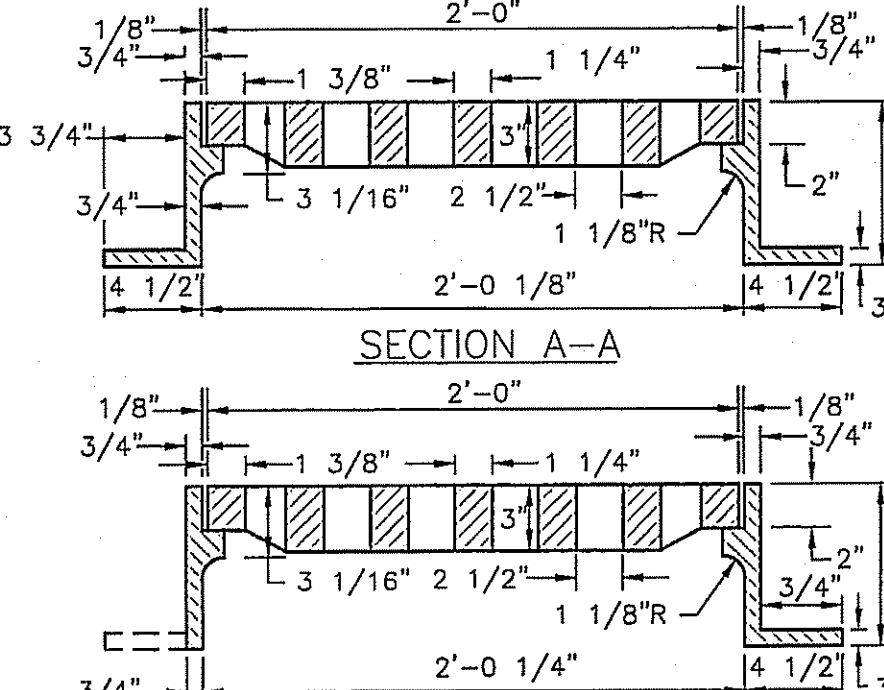
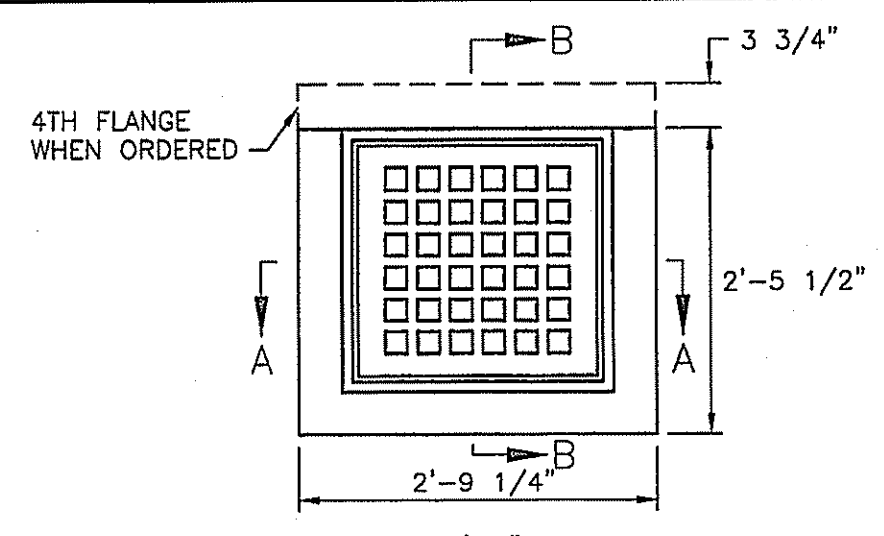
NOTE:  
1. A 30" STOP SIGN AND POST SHALL BE PROVIDED AT EACH ENTERANCE ROAD.  
2. REFER TO SHEET 5 FOR THE SIGNAGE PLAN.



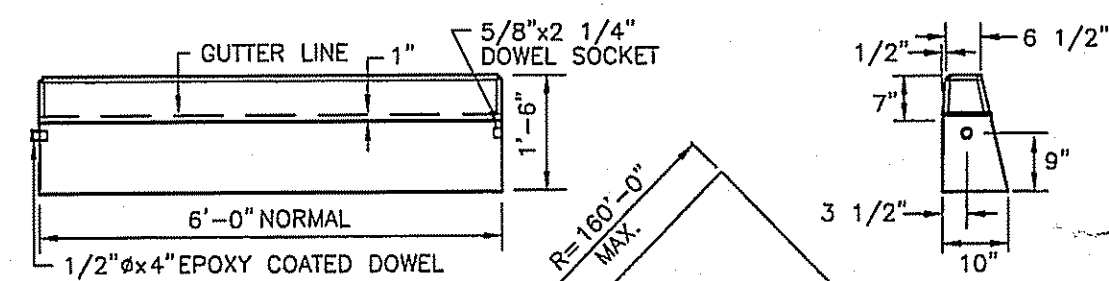
**INSTALLATION PROCEDURE:**  
1. REMOVE A SHOVE FULL OF SOIL (APPROXIMATELY 2" DEEP) FROM WHERE THE BASE POST WILL BE LOCATED.  
2. DRIVE THE BASE POST IN THE CENTER OF THE HOLE JUST CREATED, TO WITHIN 4" OF GRADE LEVEL.  
3. PLACE ONE BOLT AND FLAT WASHER IN THE TOP HOLE OF THE BASE POST. (IF THE TOP HOLE ON THE BASE POST, OR THE BOTTOM HOLE ON THE TOP POST IS LESS THAN 3/4" FROM END OF THE POST USE THE SECOND AND SIXTH HOLES.) WITH THE THREADED BAR SPACER ALIGNED WITH TOP HOLE ON THE BACK SIDE OF THE BASE POST, SECURELY TIGHTEN THE BOLT TO 20 FT. LBS. OF TORQUE. REPEAT THIS PROCESS FOR THE LOWER BOLT.  
4. NEST THE TOP POST OVER THE PROTRUDING BOLTS ON THE BASE POST. PLACE A SELF-LOCKING FLANGE NUT ON EACH BOLT AND TIGHTEN SECURELY TO 20 FT. LBS. OF TORQUE.  
5. REPLACE SOIL REMOVED IN STEP 1.  
6. IN TRIPLE POST INSTALLATIONS USING 4 LB./FT. POSTS IN WEAK SOIL, A 1'-0" W x 6" H SOIL PLATE IS REQUIRED.

NOTES:  
1. SHALL BE IN ACCORDANCE WITH SECTION T.15 OF THE R.I. STANDARD SPECIFICATIONS.  
2. THE SILVER ANODIZED BAR SPACER IS FOR USE WITH 2, 2.5 AND 2.75 LB./FT. RIB-BAK POST GRADE SP-80 ONLY.  
3. THE GOLD ANODIZED BAR SPACER IS FOR USE WITH 3 AND 4 LB./FT. RIB-BAK POST GRADE SP-80 ONLY.  
4. INSTALLATION PROCEDURES SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.  
5. FOR SIGNS GREATER THAN 40 SQ. FT., REFER TO STD. 30.1.0, 30.1.1, 30.2.0, 30.2.1, 30.3.0, 30.3.1, 30.4.0, 30.4.1, 30.4.2 AND 30.4.3.

**SIGN POST SELECTION AND INSTALLATION DETAILS U-CHANNEL POST (SIGNS UP TO 8'-0" W x 4'-0" H)**  
R.I. STANDARD 24.2.0

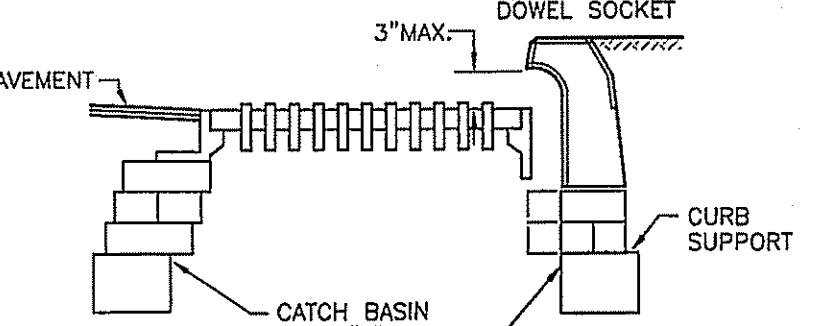
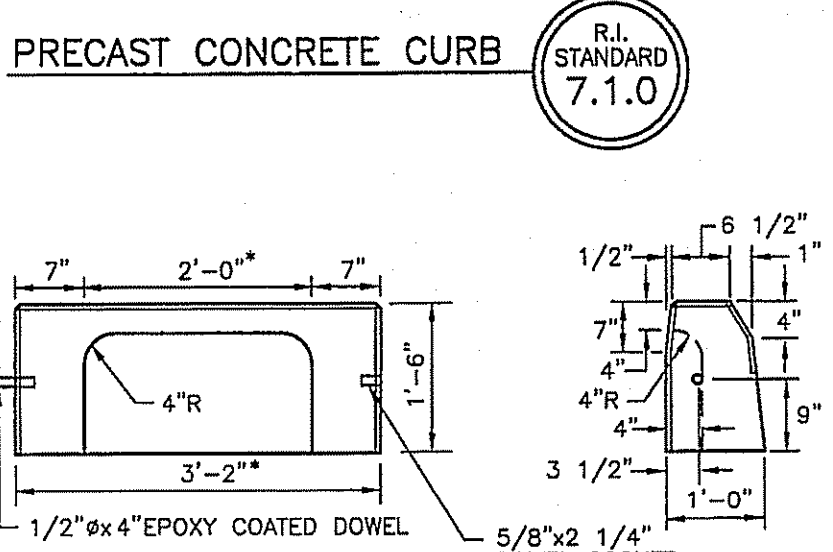


NOTE:  
FRAME AND GRATE SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.  
**SQUARE FRAME AND GRATE**  
R.I. STANDARD 6.3.0



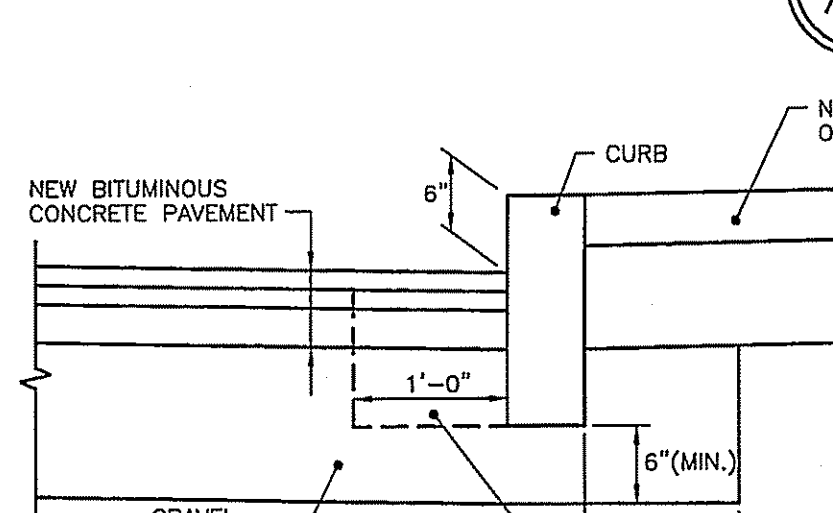
**CIRCULAR CURB**  
R.I. STANDARD 7.1.0

NOTES:  
1. SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.  
2. MINIMUM LENGTH OF STRAIGHT OR CIRCULAR FILLER PIECES TO BE 3'-0".  
3. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.  
4. CIRCULAR CURB IS REQUIRED ON CURVES WITH RADI OF 180'-0" OR LESS. STRAIGHT CURB TO BE USED ON CURVES OF MORE THAN 180'-0" RADIUS.  
5. EXPOSED EDGES TO HAVE A 3/4" CHAMFER.



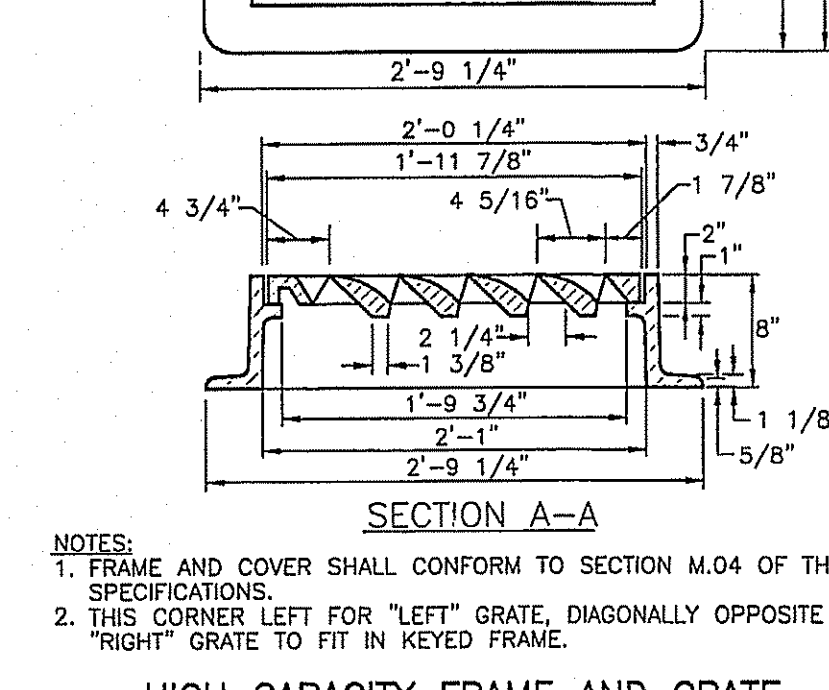
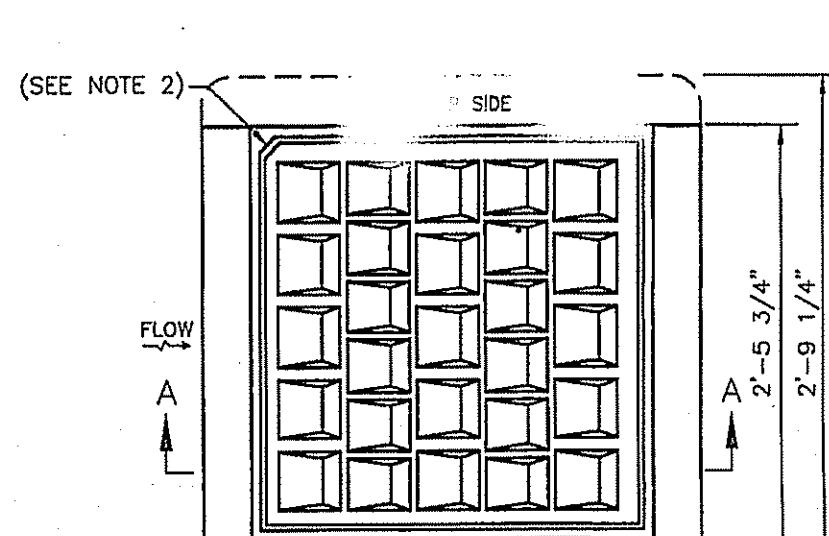
**PRECAST CONCRETE APRON STONE (FOR ROUND CATCH BASIN)**  
R.I. STANDARD 7.1.8

NOTES:  
1. SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.  
2. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.  
3. EXPOSED EDGES TO HAVE A 3/4" CHAMFER.  
4. 2'-0" SHALL BE 4'-0" FOR DOUBLE GRADE CATCH BASINS.  
5. 3'-2" SHALL BE 5'-2" FOR DOUBLE GRADE CATCH BASINS.

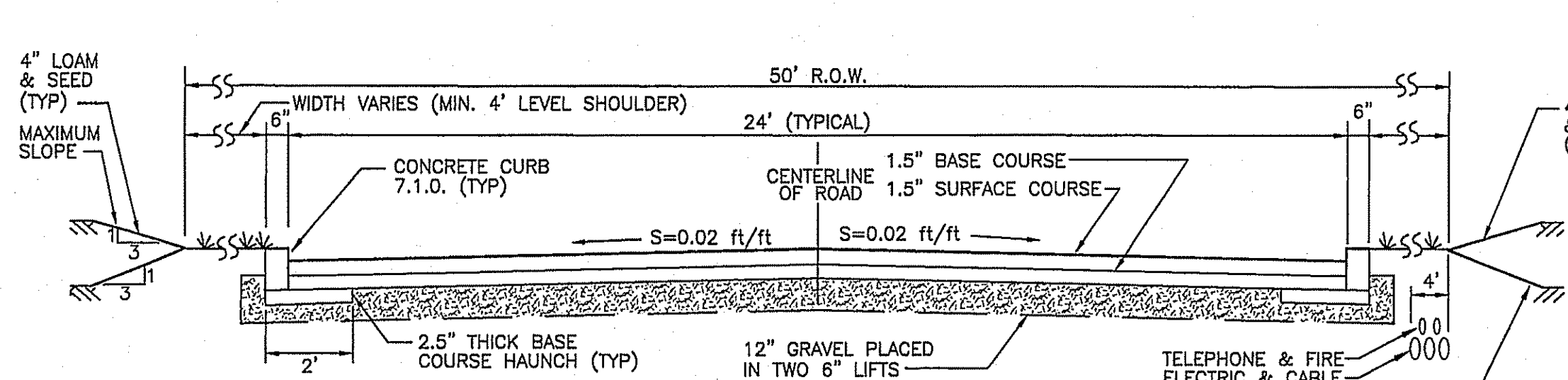


**CURB SETTING DETAIL**  
R.I. STANDARD 7.6.0

NOTES:  
1. SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.  
2. CEMENT CONCRETE SHALL BE USED ONLY WHEN THE CURB IS SET AFTER THE BASE AND/OR BINDER COURSES ARE IN PLACE, OTHERWISE THE CEMENT CONCRETE WILL BE ELIMINATED AND THE GRAVEL BROUGHT UP TO BOTTOM OF THE BASE COURSE.

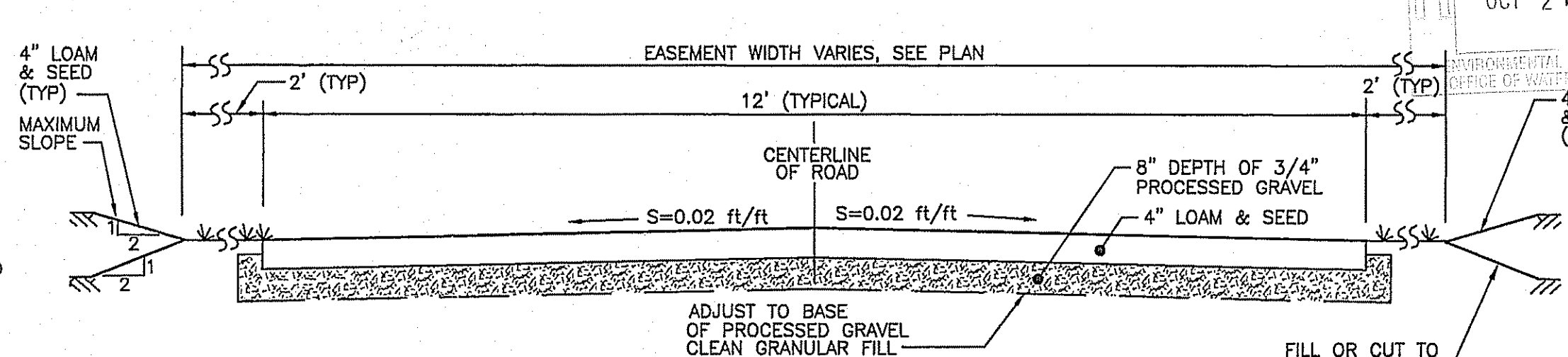


NOTES:  
1. FRAME AND COVER SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.  
2. THIS CORNER LEFT FOR "LEFT" GRATE, DIAGONALLY OPPOSITE CORNER FOR "RIGHT" GRATE TO FIT IN KEYS FRAME.  
**HIGH CAPACITY FRAME AND GRATE (BICYCLE SAFE)**  
R.I. STANDARD 6.3.4



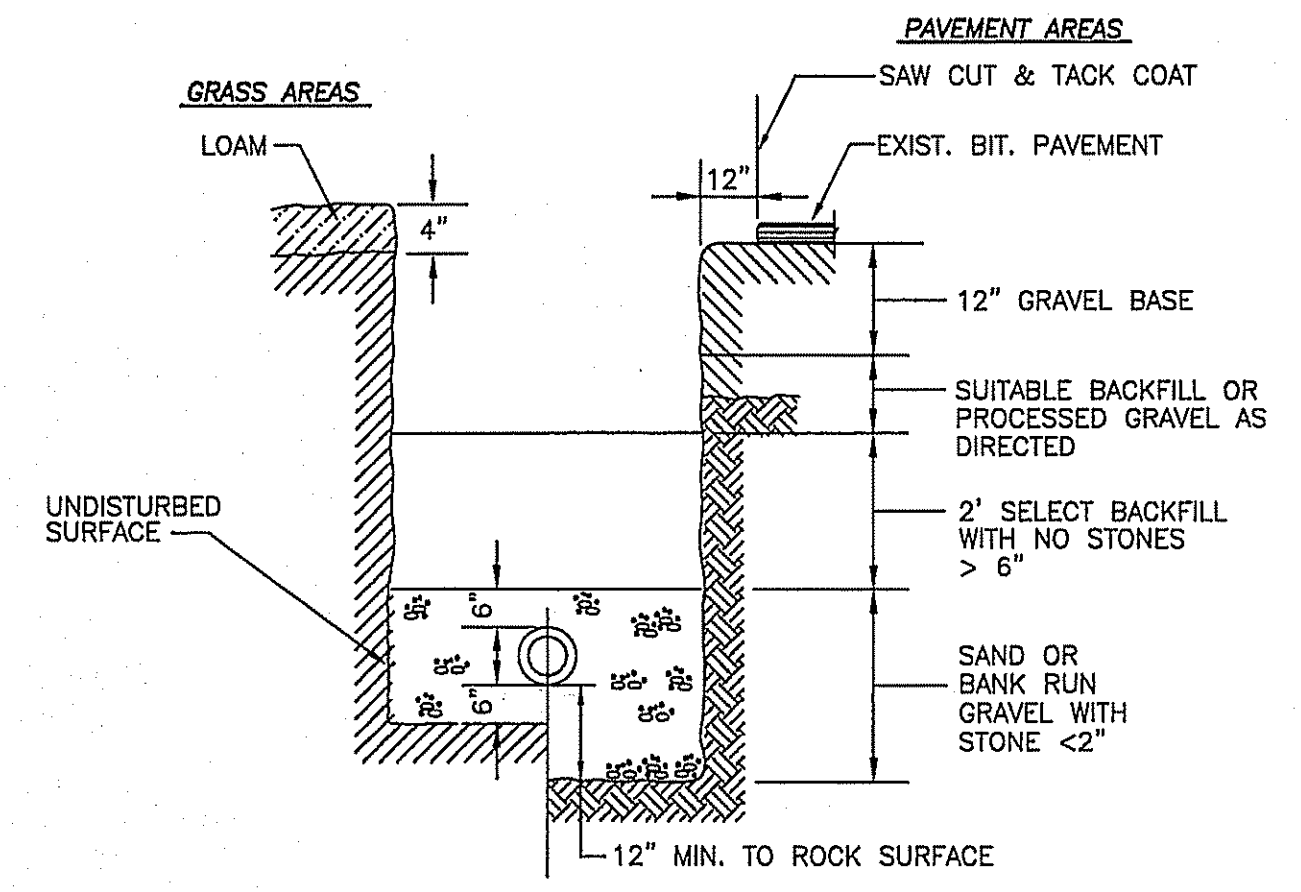
**TYPICAL ROADWAY CROSS SECTION**  
NOT TO SCALE

NOTES: 1. ALL MATERIALS TO MEET RIDOT & TOWN OF JOHNSTON STANDARDS.  
2. THIS DETAIL APPLIES TO THE MAINTENANCE ROAD TO THE DETENTION POND.  
3. LOAM OVER ROADWAY SHALL BE A SANDY LOAM NOT A SILTY LOAM.

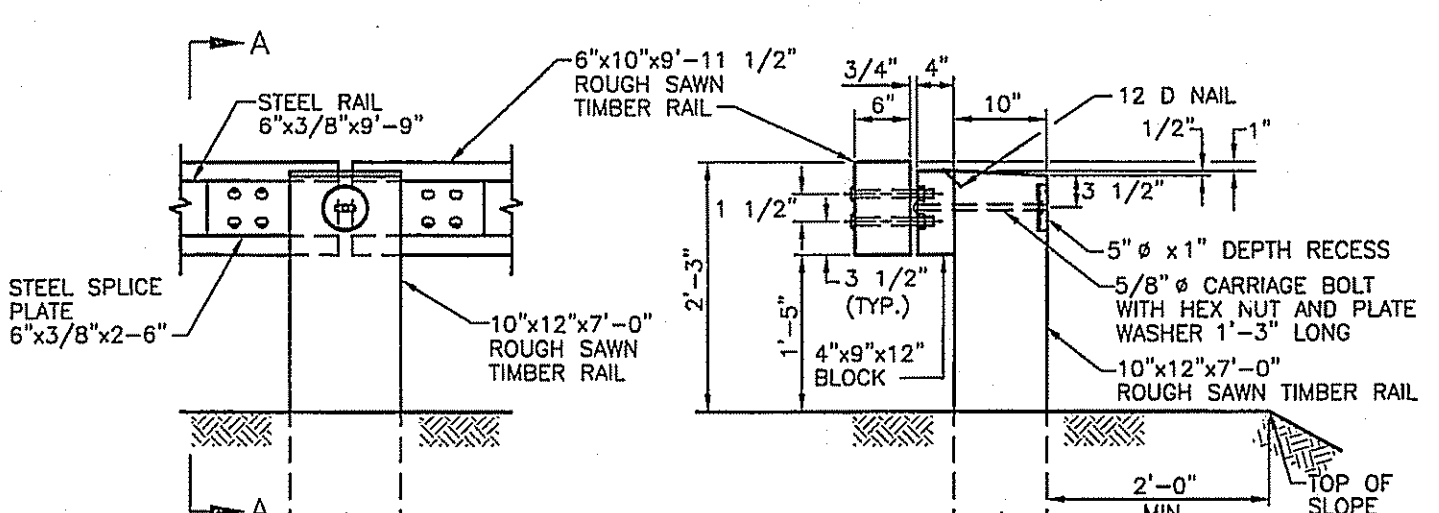
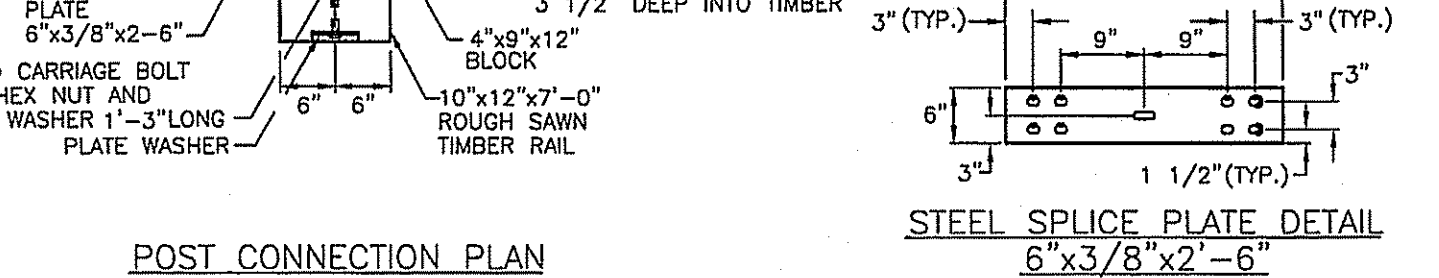
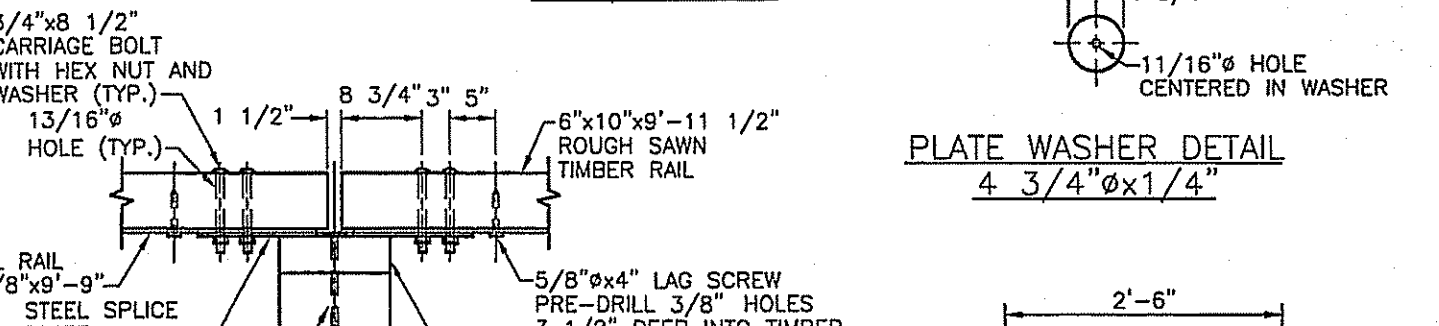
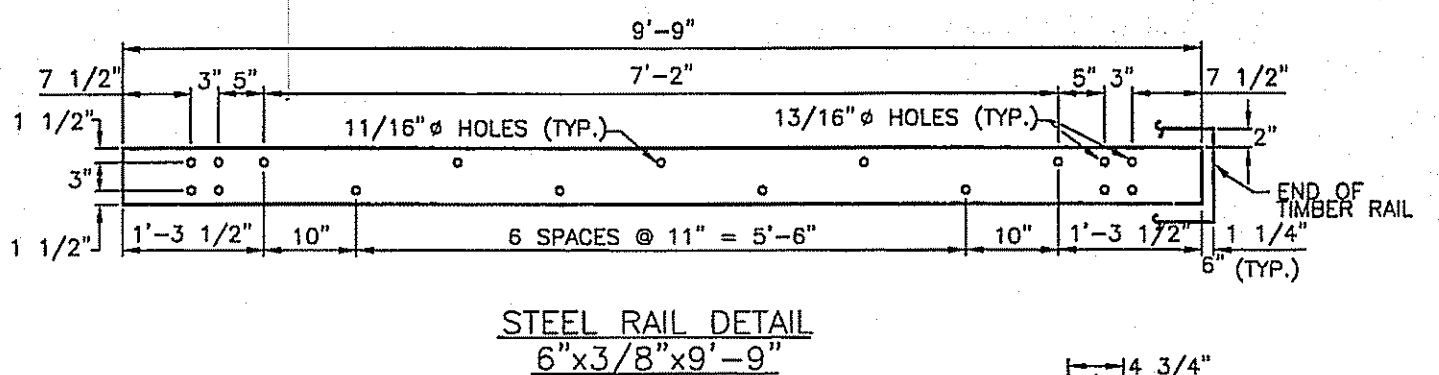


**TYPICAL MAINTENANCE ROAD CROSS SECTION**  
NOT TO SCALE

NOTES: 1. ALL MATERIALS TO MEET RIDOT & TOWN OF JOHNSTON STANDARDS.  
2. THIS DETAIL APPLIES TO THE MAINTENANCE ROAD TO THE DETENTION POND.  
3. LOAM OVER ROADWAY SHALL BE A SANDY LOAM NOT A SILTY LOAM.



**STORM DRAIN TRENCH DETAIL**  
NOT TO SCALE



**STEEL BACKED TIMBER GUARDRAIL**  
R.I. STANDARD 34.4.0

NOTES:  
1. SHALL BE IN ACCORDANCE WITH SECTION 900 OF THE R.I. STANDARD SPECIFICATIONS.  
2. ALL STRUCTURAL STEEL AND FASTENER HARDWARE SHALL BE WEATHERING STEEL AS SPECIFIED.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER QUALITY PROGRAM  
AS SPECIFIED BY THE CITY OF JOHNSTON  
DATED DEC 8 2009 PAGE 09-0264  
NO CHANGE ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION

Charles A. Hanlon  
TIMOTHY J. BEHAN  
REGISTERED PROFESSIONAL ENGINEER  
No. 6278

PARCEL AREA  
AP 46/2 LOT 104  
AREA = 6.35 ACRES

STREE INDEX  
THIS PLAN IS TO BE INDEXED UNDER THE FOLLOWING STREETS:  
BOULDER DRIVE  
PRIMROSE LANE

BOULDER DRIVE  
JOHNSTON, RHODE ISLAND  
PROPERTY OWNER AND APPLICANT:  
Boulder Realty, LLC  
52 River Avenue, Providence, RI 02908 401-286-7005

Checked By: T.J.B. Drawn By: T.J.B. Date: JULY 2008

NO.	REVISION	DATE
1	ISSUED FOR PERMIT	7/26/08
2	FOR COMMENTS & ROAD WIDTH WAIVER	8/1/08
3	FOR COMMENTS & ROAD WIDTH WAIVER	8/1/08
4	FOR COMMENTS & ROAD WIDTH WAIVER	8/1/08
5	FOR COMMENTS & ROAD WIDTH WAIVER	8/1/08

**TJB ENGINEERING, LLC**  
CIVIL ENGINEERING, R.I.P.E. LIC.#6278  
PERMITTING & LAND PLANNING  
SUBDIVISIONS \* WASTEWATER  
1050 MAIN STREET SUITE 30  
EAST GREENWICH, RI 02818  
PHONE: 401-996-1677 FAX: 401-885-0779  
EMAIL: TIMBEHAN@COMCAST.NET

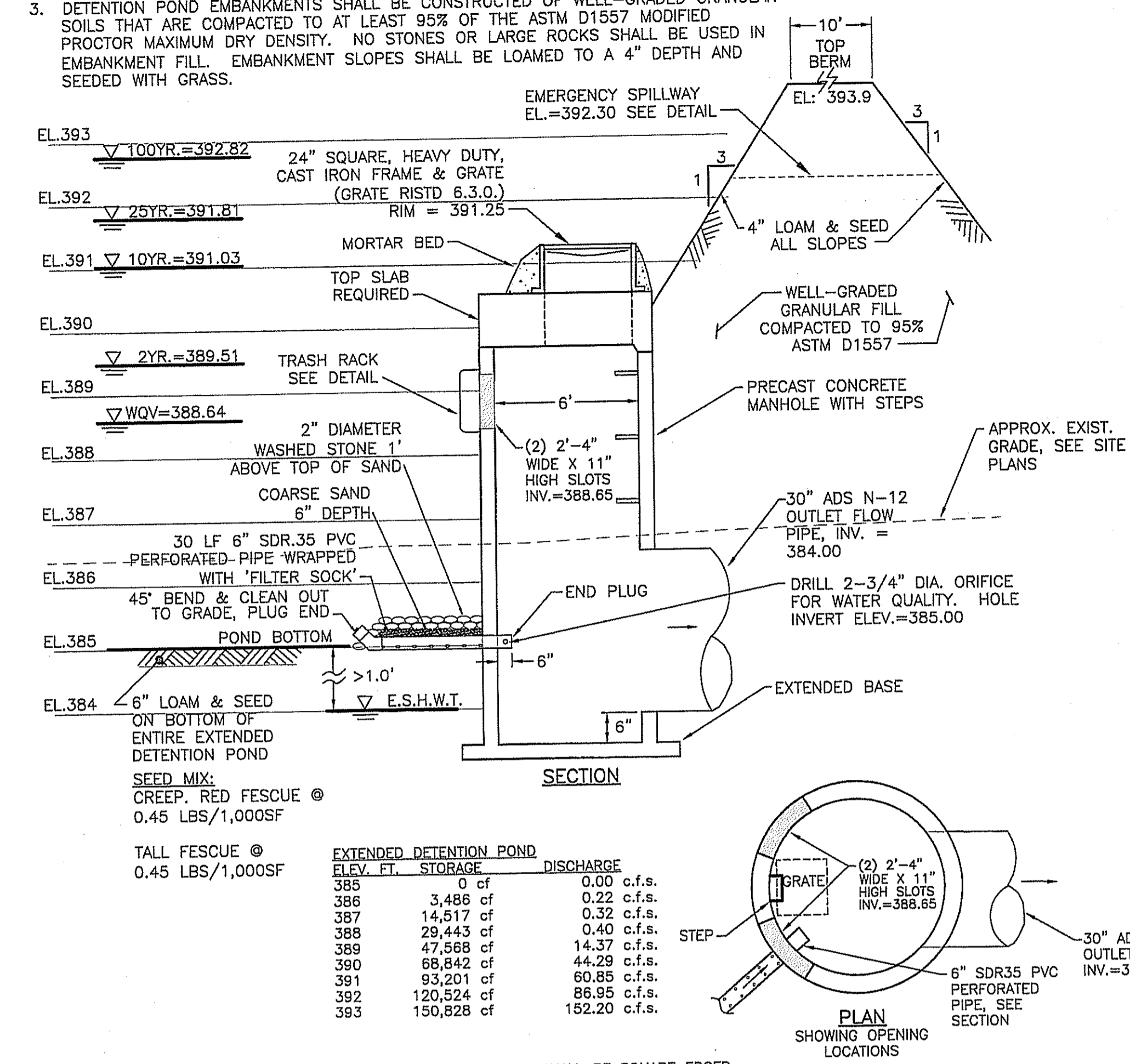
**K ANDREWS ASSOCIATES**  
LAND SURVEYING AND SITE PLANNING  
1050 MAIN STREET, SUITE 30  
EAST GREENWICH, RHODE ISLAND 02818  
PHONE (401) 885-0770  
FAX (401) 885-0779

Sheet 9 of 12 sheets

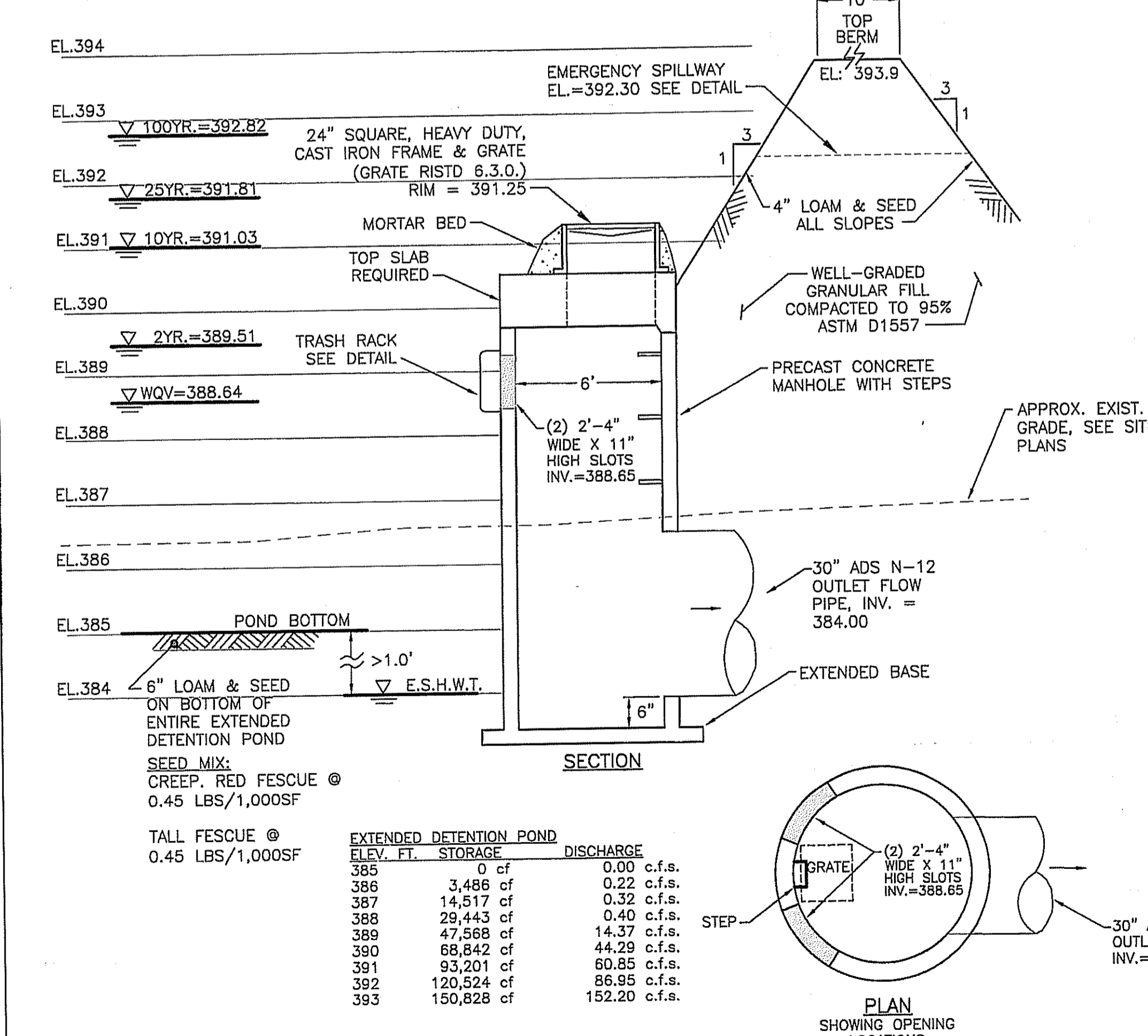
**PRELIMINARY PLAN NOT FOR CONSTRUCTION**

**EXTENDED DETENTION POND NOTES:**

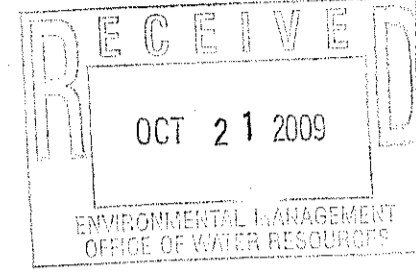
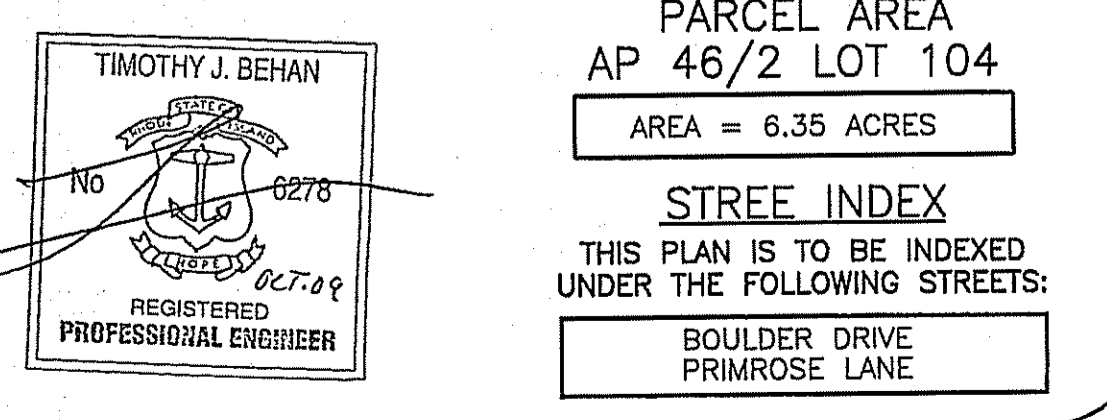
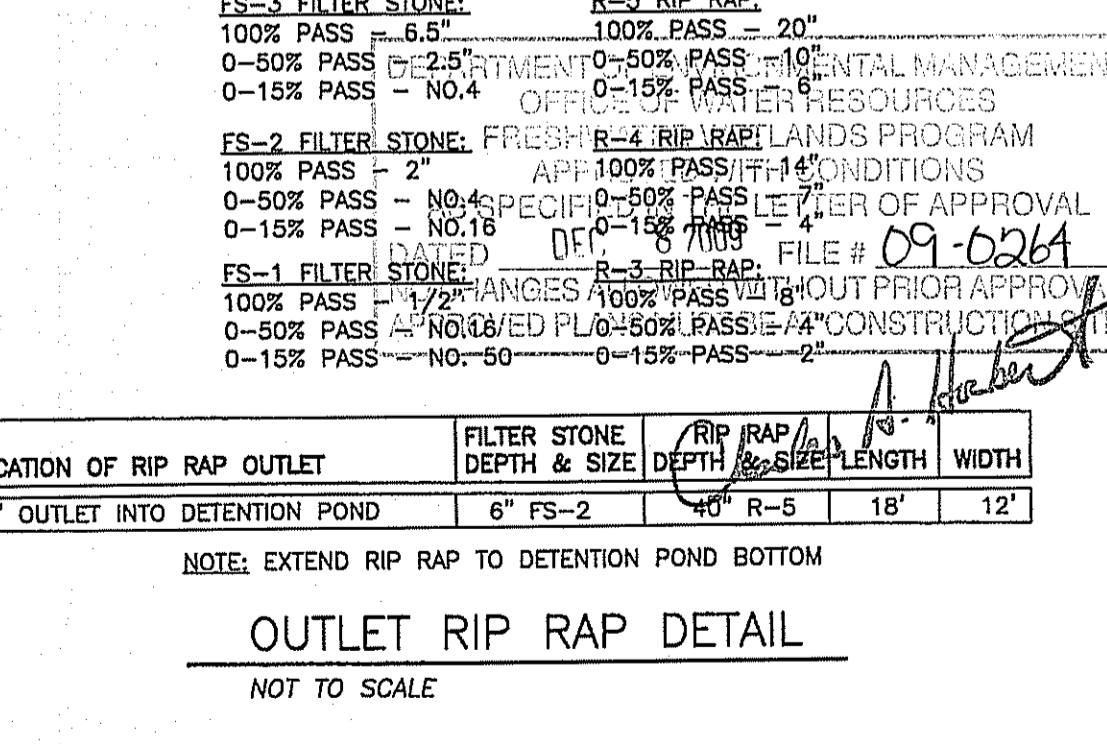
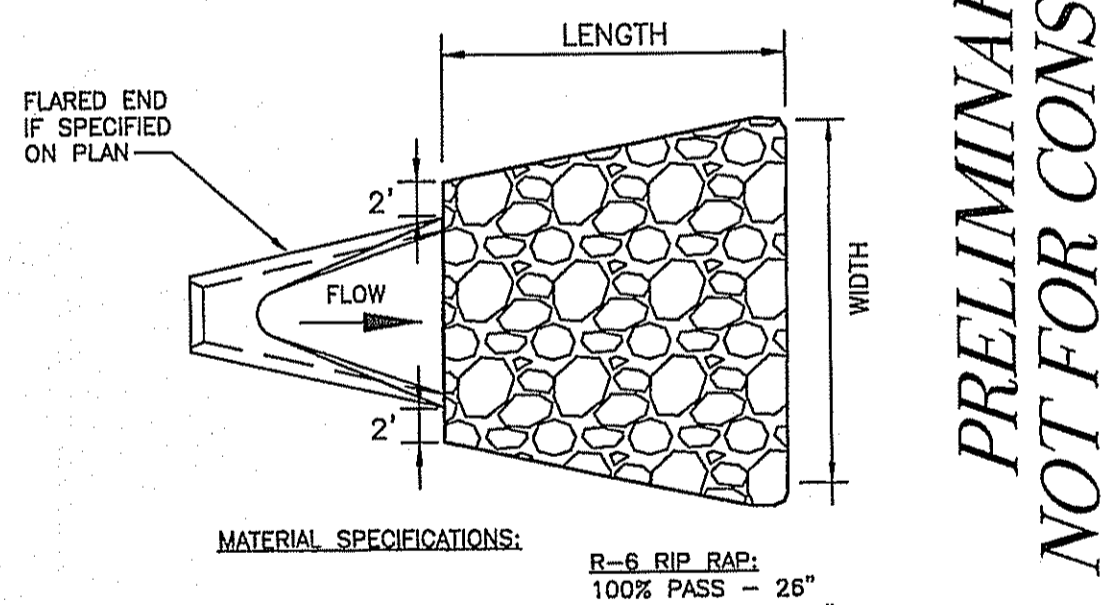
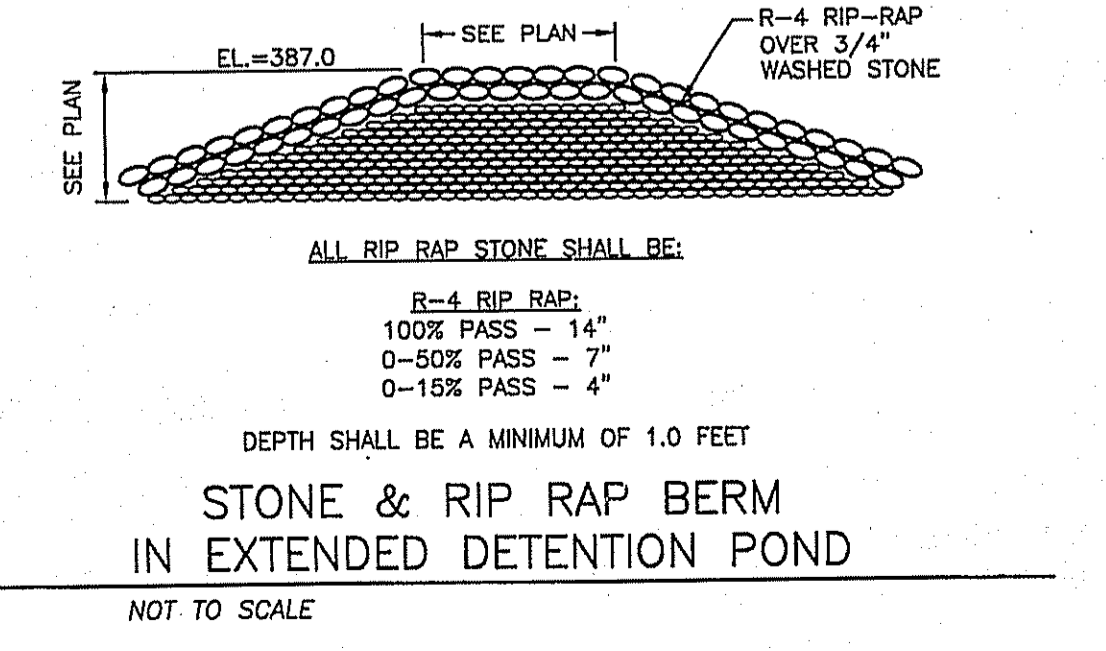
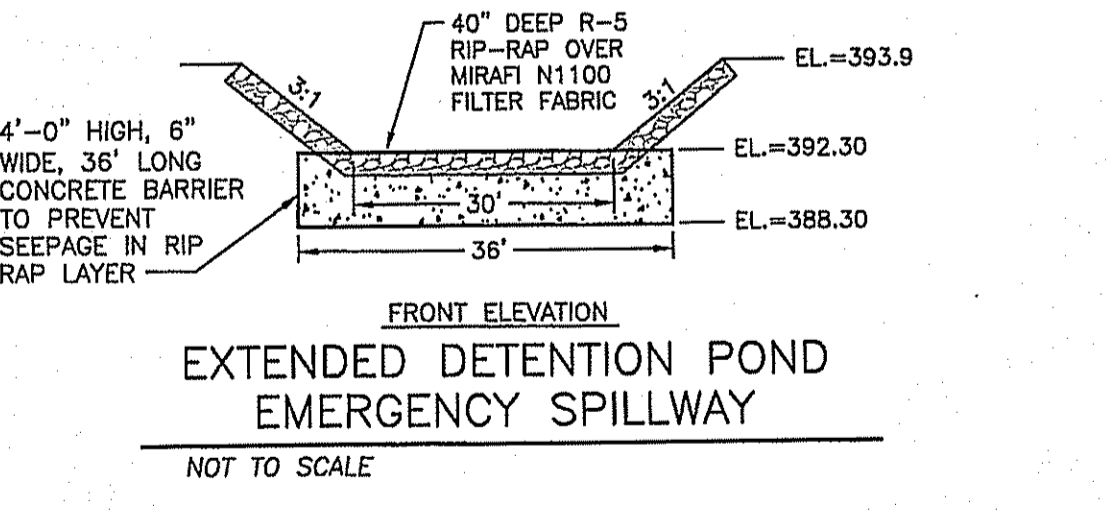
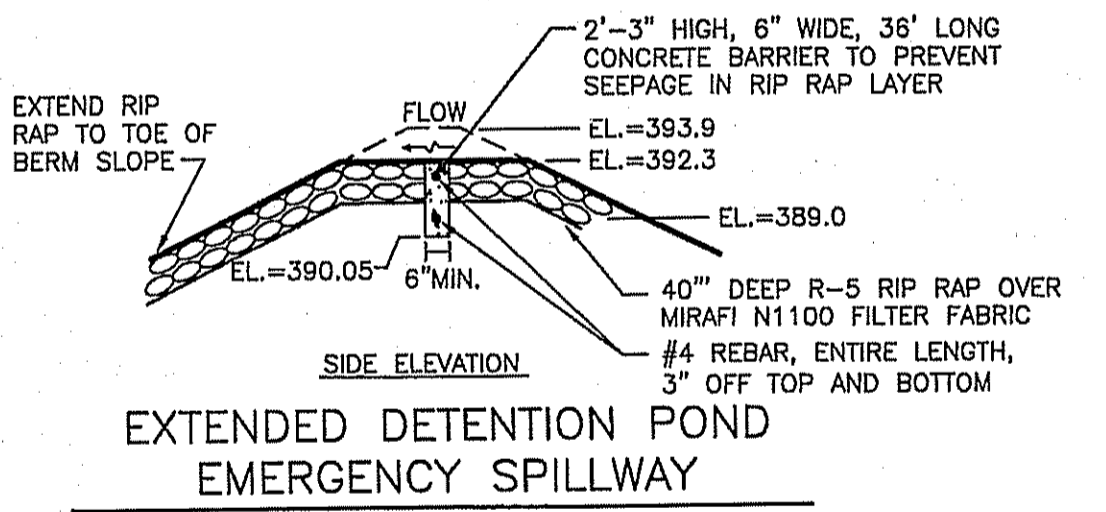
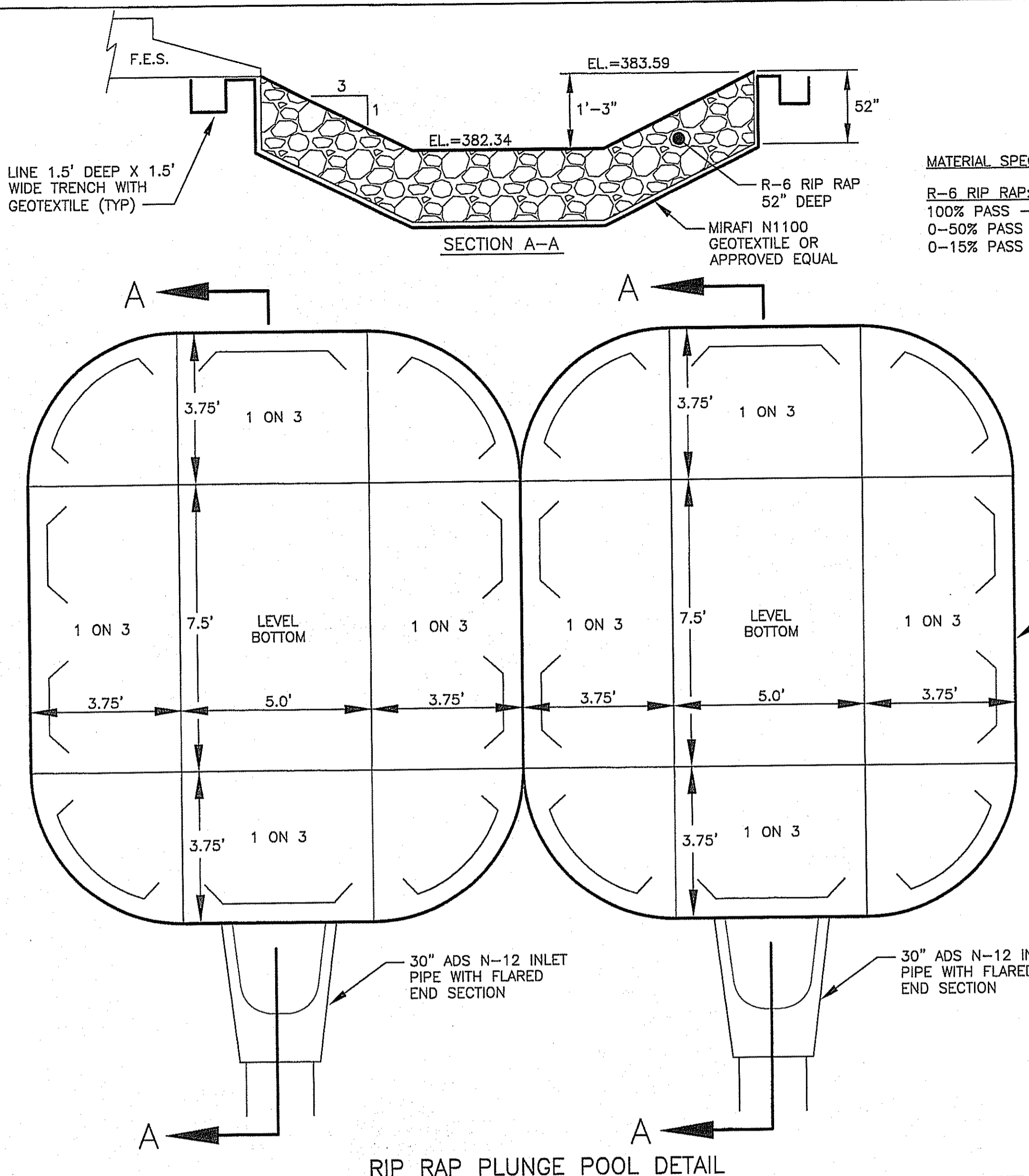
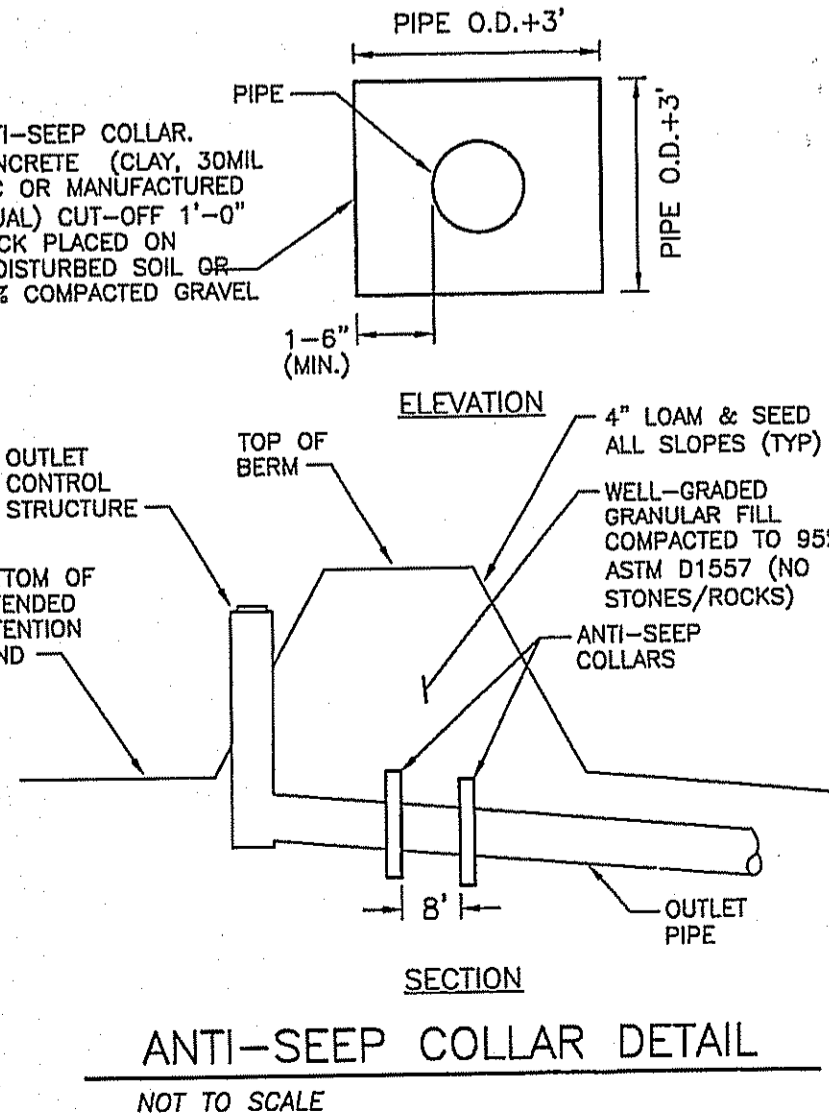
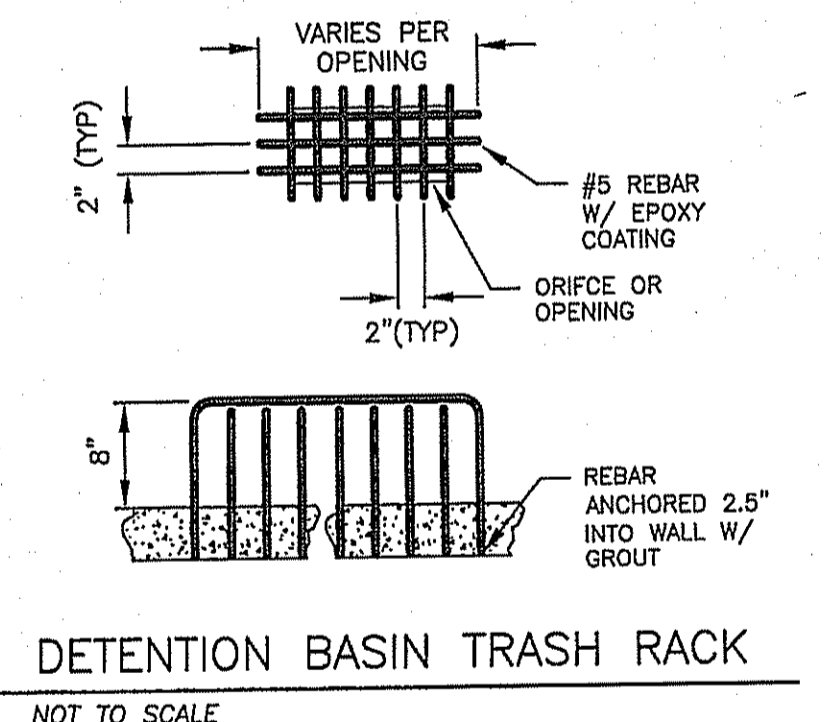
1. ALL SIDE SLOPES SHALL BE 3:1 OR FLATTER.
2. 6" OF LOAM SHALL BE PLACED AT THE BOTTOM OF THE EXTENDED DETENTION POND & SEEDED WITH DETENTION POND MIX.
3. DETENTION POND EMBANKMENTS SHALL BE CONSTRUCTED OF WELL-GRADED GRANULAR SOILS THAT ARE COMPACTED TO AT LEAST 95% OF THE ASTM D1557 MODIFIED PROCTOR MAXIMUM DRY DENSITY. NO STONES OR LARGE ROCKS SHALL BE USED IN EMBANKMENT FILL. EMBANKMENT SLOPES SHALL BE LOAMED TO A 4" DEPTH AND SEEDED WITH GRASS.



NOTE: OUTLET CONTROL OPENINGS AND ORIFICES SHALL BE SQUARE EDGED.  
**OUTLET CONTROL STRUCTURE #1 (DMH6) - EXTENDED DETENTION POND**  
SCALE: 1" = 0.6' VERT.



NOTE: OUTLET CONTROL OPENINGS AND ORIFICES SHALL BE SQUARE EDGED.  
**OUTLET CONTROL STRUCTURE #2 (DMH7) - EXTENDED DETENTION POND**  
SCALE: 1" = 0.6' VERT.



Being: ASSESSORS PLAN 46/2 LOT 104  
**MAJOR SUBDIVISION - PRELIMINARY PLAN DETAILS - 3**  
**BOULDER DRIVE ESTATES**  
LOCATION  
BOULDER DRIVE  
BOULDER RHODE ISLAND  
THE BEHAVIOR GROUP AND ASSOCIATES  
Boulder Realty, LLC  
52 River Avenue, Providence, RI 02908 401-288-7005

Checked By: T.J.B. Drawn By: T.J.B. Date: JULY 2008

Scale: AS SHOWN

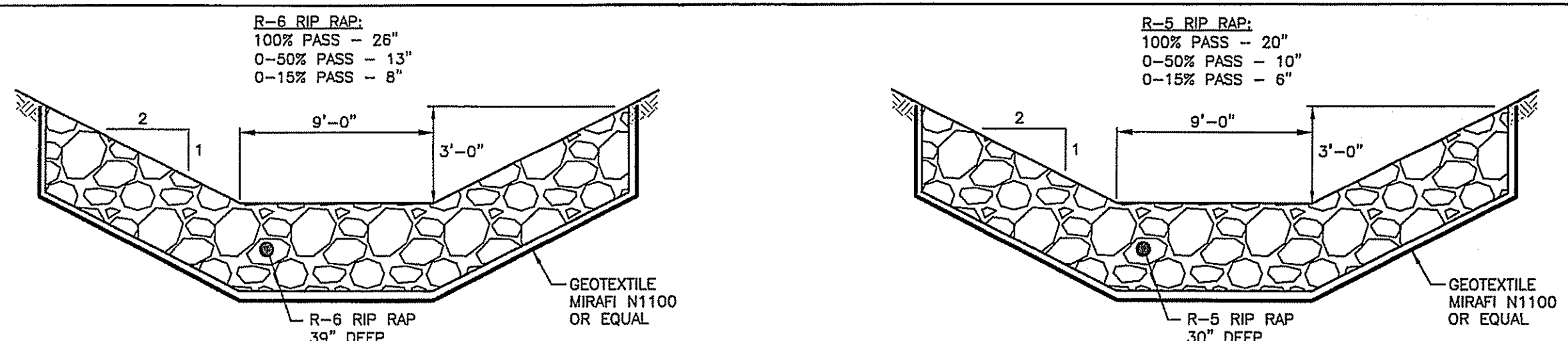
NO.	REVISIONS	DATE	BY
1	MASTER PLAN SUBMISSION	07/29/08	TJB
2	LOCAL COMMUNITY & ROAD WIDTH WADDER	07/29/08	TJB
3	LOCAL COMMUNITY & ROAD WIDTH WADDER	07/29/08	TJB
4	LOCAL COMMUNITY & ROAD WIDTH WADDER	07/29/08	TJB

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1050 MAIN STREET SUITE 30  
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**K ANDREWS ASSOCIATES**  
LAND SURVEYING AND SITE PLANNING  
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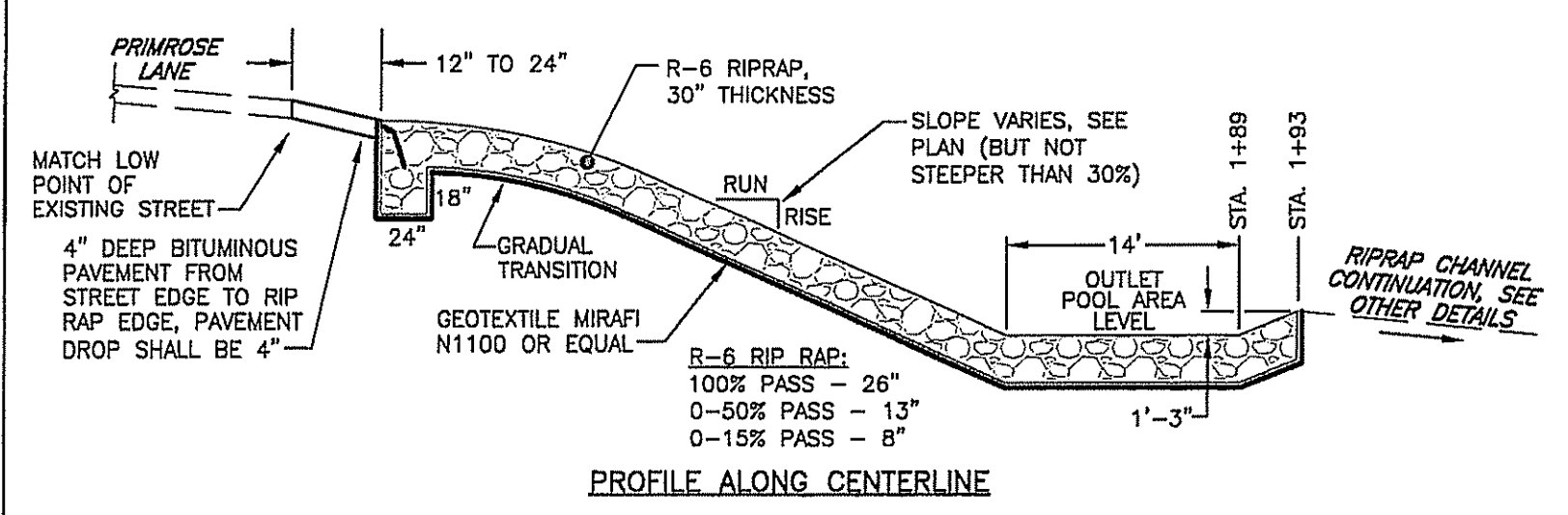
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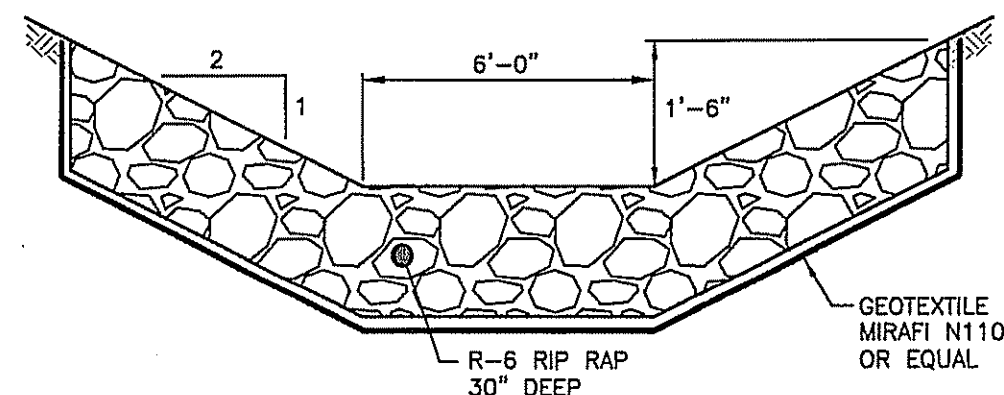


**NOTE:**  
 1. ALL MATERIALS AND INSTALLATION METHODS SHALL CONFORM TO RIDOT STANDARDS AND SPECIFICATIONS.  
 2. INSTALL GEOTEXTILES IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.  
 3. RIPRAP SHALL BE ANGULAR, GEOMETRIC STANDARD DEVIATION BETWEEN 1.15 AND 1.47, HAVE A SPECIFIC GRAVITY BETWEEN 2.54 AND 2.82, BE IGNEOUS, AND PLACED, NOT DUMPED.

FROM STA.1+93 TO STA.2+45  
 NEW DRAINAGE SWALE (TYP)



PROFILE ALONG CENTERLINE

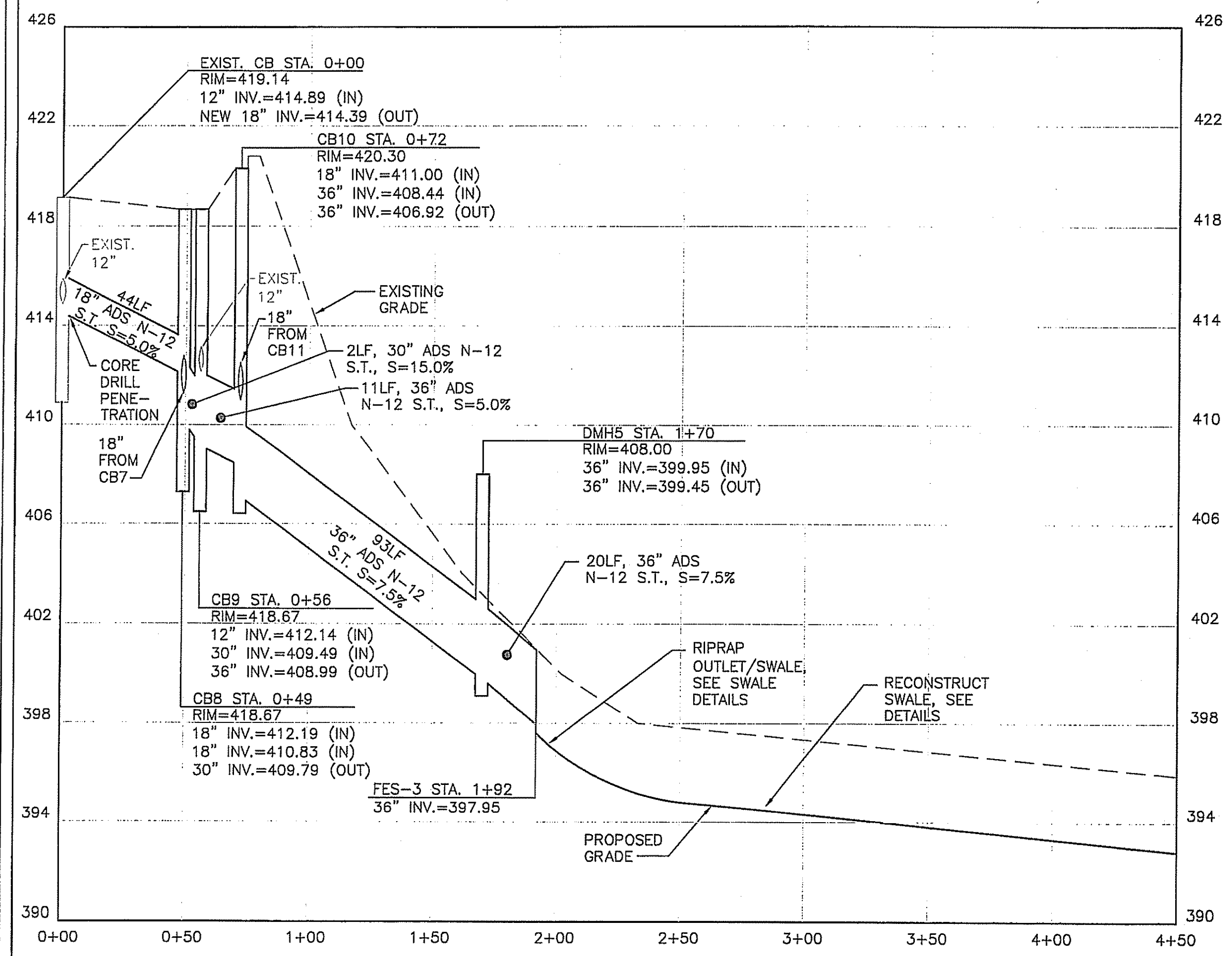


SECTION

**NOTE:**  
 1. ALL MATERIALS AND INSTALLATION METHODS SHALL CONFORM TO RIDOT STANDARDS AND SPECIFICATIONS.  
 2. INSTALL GEOTEXTILES IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.  
 3. RIPRAP SHALL BE ANGULAR, GEOMETRIC STANDARD DEVIATION BETWEEN 1.15 AND 1.47, HAVE A SPECIFIC GRAVITY BETWEEN 2.54 AND 2.82, BE IGNEOUS, AND PLACED, NOT DUMPED.

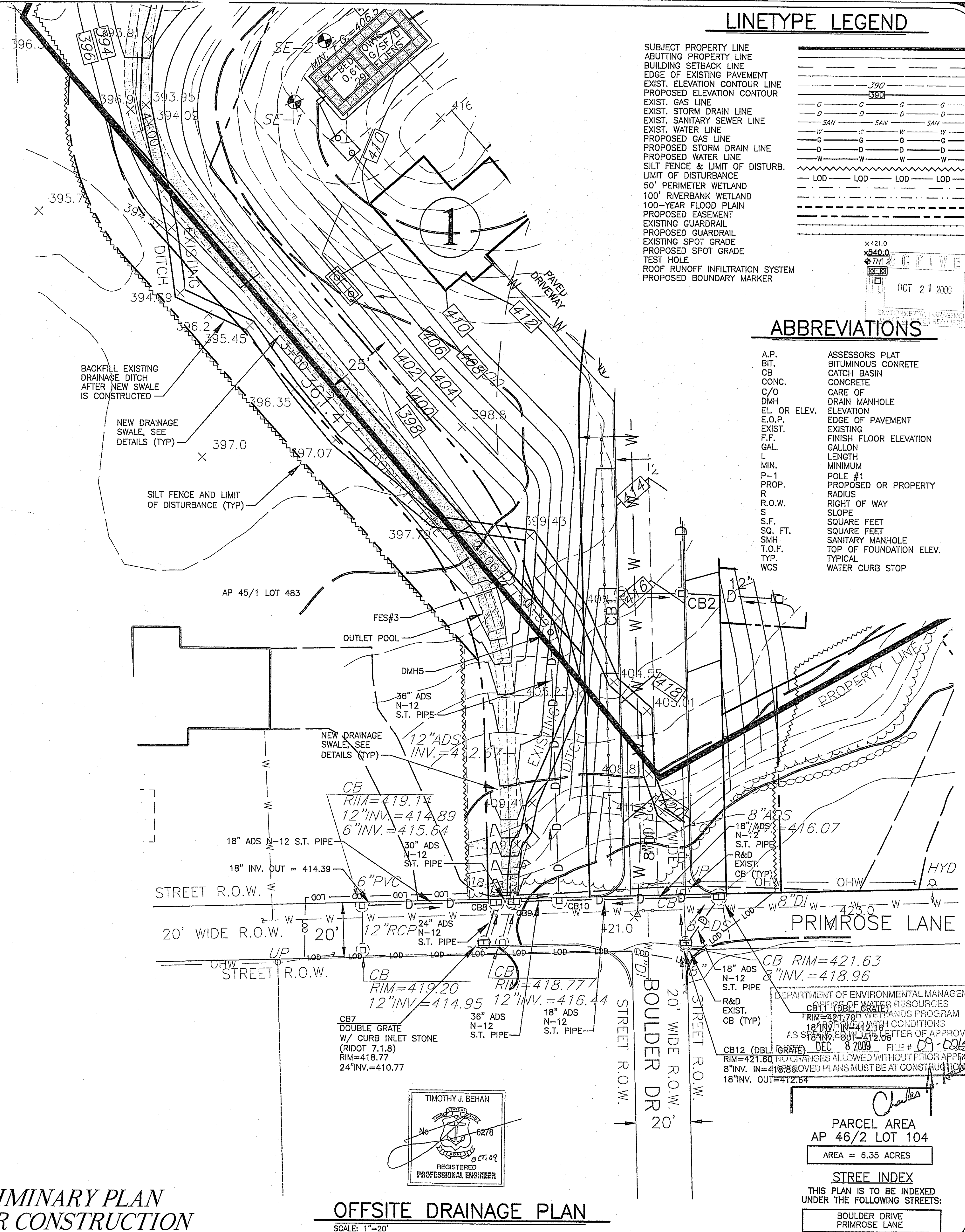
FROM PRIMROSE LANE TO STATION 1+93  
 NEW DRAINAGE SWALE (TYP)

NOT TO SCALE



**DRAIN PROFILE FROM EXIST. CB TO F.E.S.**  
 SCALE: 1"=40' HOR.  
 SCALE: 1"=4' VERT.

**PRELIMINARY PLAN  
 NOT FOR CONSTRUCTION**



**OFFSITE DRAINAGE PLAN**  
 SCALE: 1"=20'

**LINETYPE LEGEND**

SUBJECT PROPERTY LINE	---
ABUTTING PROPERTY LINE	---
BUILDING SETBACK LINE	---
EDGE OF EXISTING PAVEMENT	---
EXIST. ELEVATION CONTOUR LINE	---
PROPOSED ELEVATION CONTOUR	---
EXIST. GAS LINE	---
EXIST. STORM DRAIN LINE	---
EXIST. SANITARY SEWER LINE	---
EXIST. WATER LINE	---
PROPOSED GAS LINE	---
PROPOSED STORM DRAIN LINE	---
PROPOSED WATER LINE	---
SILT FENCE & LIMIT OF DISTURB.	---
LIMIT OF DISTURBANCE	---
50' PERIMETER WETLAND	---
100-YEAR FLOOD PLAIN	---
PROPOSED EASEMENT	---
EXISTING GUARDRAIL	---
PROPOSED GUARDRAIL	---
EXISTING SPOT GRADE	---
PROPOSED SPOT GRADE	---
TEST HOLE	---
ROOF RUNOFF INFILTRATION SYSTEM	---
PROPOSED BOUNDARY MARKER	---

**ABBREVIATIONS**

A.P.	ASSESSORS PLAT
BIT.	BITUMINOUS CONCRETE
CB	CATCH BASIN
CONC.	CONCRETE
C/O	CARE OF
DMH	DRAIN MANHOLE
EL. OR ELEV.	ELEVATION
E.O.P.	EDGE OF PAVEMENT
EXIST.	EXISTING
F.F.	FINISH FLOOR ELEVATION
GAL.	GALLON
L	LENGTH
MIN.	MINIMUM
P-1	POLE #1
PROP.	PROPOSED OR PROPERTY
R	RADIUS
R.O.W.	RIGHT OF WAY
S	SLOPE
S.F.	SQUARE FEET
SQ. FT.	SQUARE FEET
SMH	SANITARY MANHOLE
T.O.F.	TOP OF FOUNDATION ELEV.
TYP.	TYPICAL
WCS	WATER CURB STOP

Being: ASSESSORS PLAT 46/2 LOT 104

**MAJOR SUBDIVISION - PRELIMINARY PLAN**  
**OFFSITE DRAINAGE PLAN**  
**BOULDER DRIVE ESTATES**

LOCATION  
 BOULDER DRIVE  
 JOHNSTON, RHODE ISLAND  
 PROJECT APPLICANT:  
 Boulder Realty, LLC

52 River Avenue, Providence, RI 02908 401-288-7005

Checked By: T.J.B. Drawn By: T.J.B. Date: JULY 2008

Scale: AS SHOWN

NO.	REVISION	BY	DATE
1	ISSUE PLAN SUBMISSION	TJB	7/27/08
2	REVISION	TJB	7/28/08
3	REVISION	TJB	7/28/08
4	REVISION	TJB	7/28/08

**TJB ENGINEERING, LLC**

CIVIL ENGINEERING, R.I.P.E. LIC #6278  
 PERMITTING \* LAND PLANNING  
 SUBDIVISIONS \* WASTEWATER

1050 MAIN STREET SUITE 30  
 EAST GREENWICH, RI 02818  
 PHONE: 401-996-1677 FAX: 401-885-0779  
 EMAIL: TIMBEHAN@COMCAST.NET

**K ANDREWS ASSOCIATES**

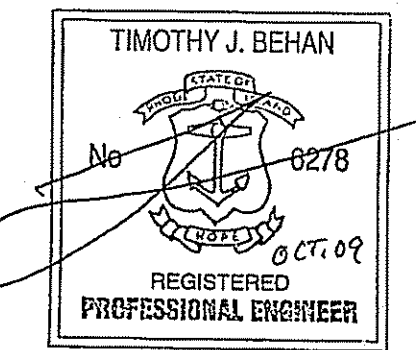
LAND SURVEYING AND SITE PLANNING

1050 MAIN STREET, SUITE 30  
 EAST GREENWICH, RHODE ISLAND 02818  
 PHONE (401) 885-0770  
 FAX (401) 885-0779

Sheet **12** of **12** sheets

PARCEL AREA  
 AP 46/2 LOT 104  
 AREA = 6.35 ACRES

STREE INDEX  
 THIS PLAN IS TO BE INDEXED  
 UNDER THE FOLLOWING STREETS:  
 BOULDER DRIVE  
 PRIMROSE LANE



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 DIVISION OF WATER RESOURCES  
 R.I. PERMITTING AND WETLANDS PROGRAM  
 18" INVERT WITH CONDITIONS  
 AS SHOWN ON THIS PLAN  
 DEC 8 2009 FILE # 09-0041