

CARDINAL PLACE

DEFINITIVE PLAN FOR A RESIDENTIAL SUBDIVISION

AVA'S WAY, NEW BEDFORD, MASSACHUSETTS

OWNERS:
 THOMAS GRENIER
 560 ROCKDALE AVE.
 NEW BEDFORD, MASSACHUSETTS

APPLICANT:
 RICHARD HOPPS
 302 ELM STREET
 DARTMOUTH, MASSACHUSETTS



LOCUS PLAN
SCALE: 1"=300'±



APRIL 22, 2013
 REVISED NOVEMBER 13, 2013

REQUESTED WAIVERS:
 NO WAIVERS FROM THE CITY OF NEW BEDFORD SUBDIVISION
 RULES AND REGULATIONS ARE BEING REQUESTED.
 NO WAIVERS FROM THE CITY OF NEW BEDFORD ZONING
 BYLAWS ARE BEING REQUESTED.

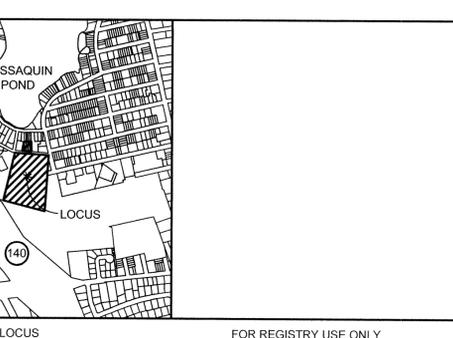
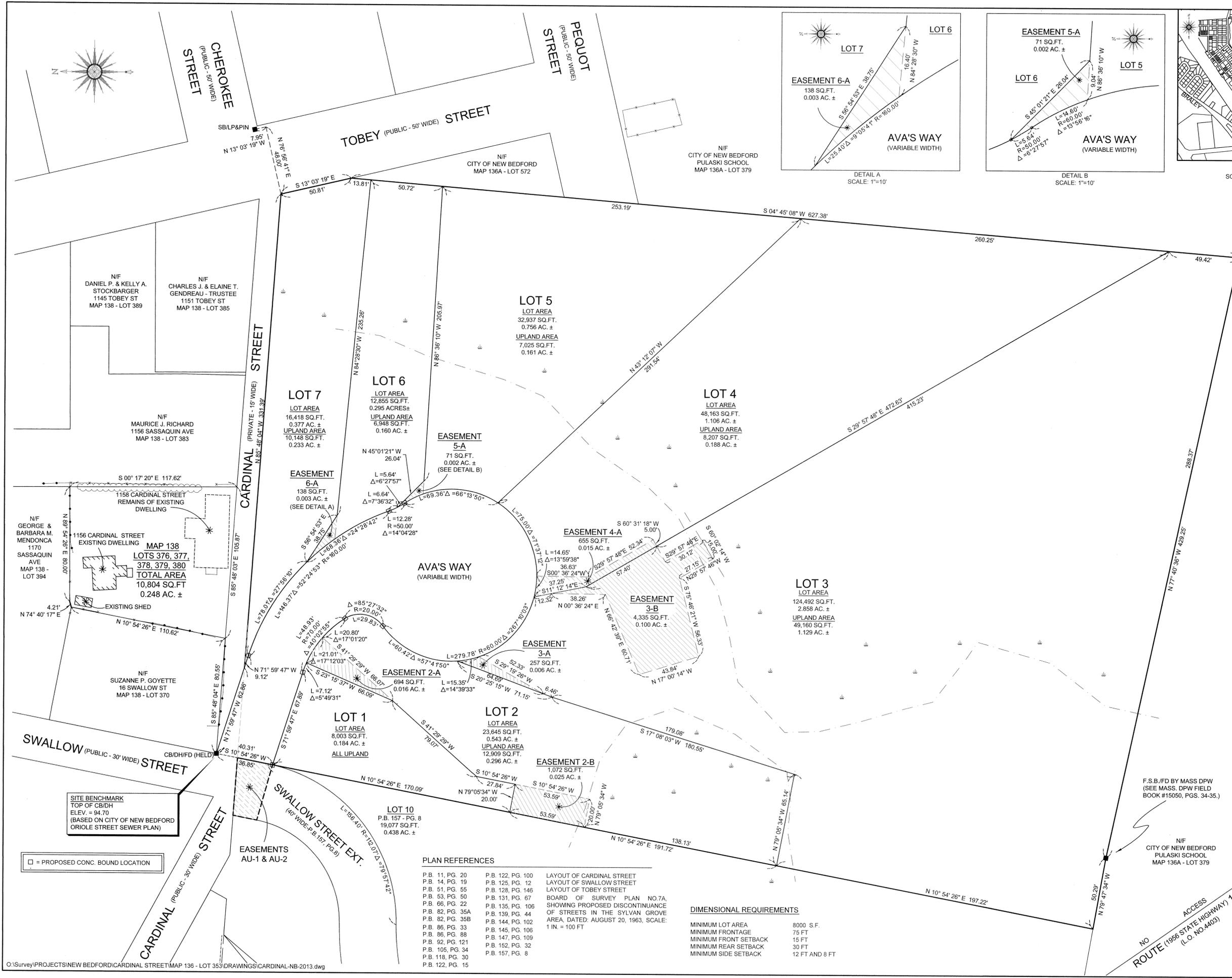
SCHEDULE OF DRAWINGS

SHEET NUMBER	PLAN TITLE
CS1	COVER SHEET
DF1	DEFINITIVE LOTTING SHEET
EX1	EXISTING CONDITIONS PLAN
GD1	GRADING AND DRAINAGE PLAN
UT1	UTILITY PLAN
RP1	ROAD PLAN AND PROFILE
DE1-2	DETAIL SHEET
LP1	LANDSCAPE AND LIGHTING PLAN
ER1-2	EROSION CONTROL PLANS

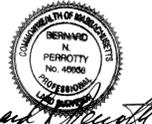
PREPARED BY:



CIVIL ENGINEERING—LAND SURVEYING—ENVIRONMENTAL ASSESSMENT
 P.O. BOX 1088, 350 BEDFORD STREET, LAKEVILLE, MA 02347
 TEL: 508.947.0050 FAX: 508.947.2004



I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN CONFORMANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS



11/13/2013
 DATE: Bernard N. Perrotty
 BERNARD N. PERROTTY, P.E.

- NOTES:
1. THE SUBJECT PROPERTY IS SHOWN ON THE CITY OF NEW BEDFORD ASSESSORS' MAP 136 AS LOT 353.
 2. FOR TITLE REFERENCE TO THE SUBJECT PROPERTY REFER TO DEED BOOK 5380, PAGE 116 ON FILE AT THE BRISTOL COUNTY REGISTRY OF DEEDS.
 3. THE SUBJECT PROPERTY IS ZONED "RESIDENTIAL A" AS SHOWN ON THE ZONING MAP FOR THE CITY OF NEW BEDFORD.
 4. THE SUBJECT PROPERTY IS LOCATED IN ZONE X (UNHATCHED), AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS SHOWN ON THE FLOOD INSURANCE MAP FOR BRISTOL COUNTY, MASSACHUSETTS, PANEL 377 OF 550, MAP NUMBER 25005-C-0377F, EFFECTIVE DATE: JULY 7, 2009.

APPLICANT
 RICHARD HOPPS
 302 ELM STREET
 DARTMOUTH, MA 02748

OWNER
 THOMAS GRENIER
 560 ROCKDALE AVENUE
 NEW BEDFORD, MA 02740

NEW BEDFORD PLANNING BOARD
 APPROVED UNDER THE SUBDIVISION CONTROL LAW

**DEFINITIVE PLAN OF
 CARDINAL PLACE**
 IN
 NEW BEDFORD, MASSACHUSETTS

PREPARED FOR
RICHARD HOPPS
 DATE: NOVEMBER 13, 2013 SCALE: 1"=30'

PREPARED BY:

PRIME ENGINEERING
 CIVIL ENGINEERING-LAND SURVEYING-ENVIRONMENTAL ASSESSMENT
 P.O. BOX 1088, 350 BEDFORD STREET, LAKEVILLE, MA 02347
 TEL: 508.947.0050 FAX: 508.947.2004

SITE BENCHMARK
 TOP OF CB/DH
 ELEV. = 94.70
 (BASED ON CITY OF NEW BEDFORD
 ORIOLE STREET SEWER PLAN)

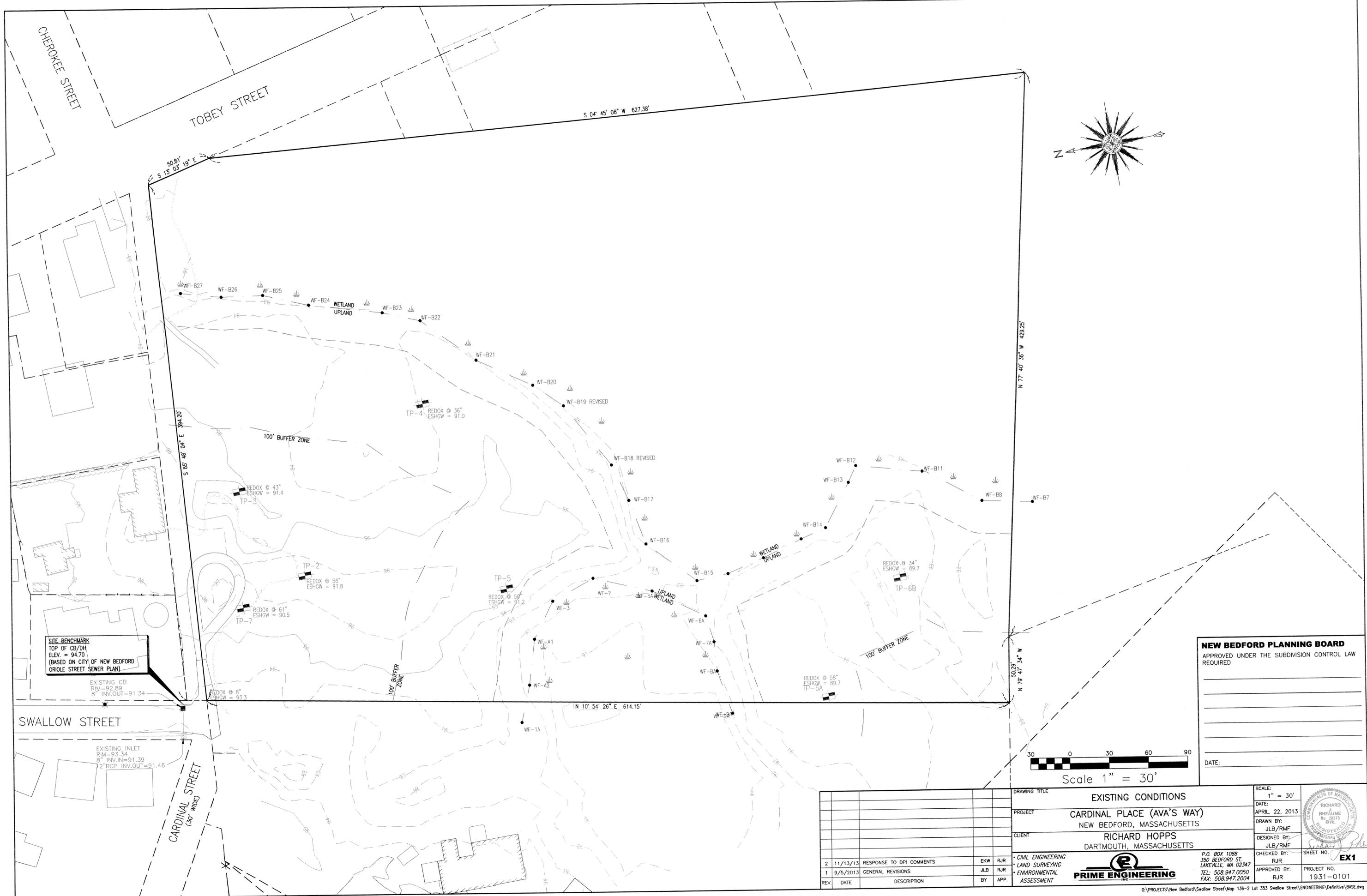
□ = PROPOSED CONC. BOUND LOCATION

PLAN REFERENCES

P.B. 11, PG. 20	P.B. 122, PG. 100	LAYOUT OF CARDINAL STREET
P.B. 14, PG. 19	P.B. 125, PG. 12	LAYOUT OF SWALLOW STREET
P.B. 51, PG. 55	P.B. 128, PG. 146	LAYOUT OF TOBEY STREET
P.B. 53, PG. 50	P.B. 131, PG. 67	BOARD OF SURVEY PLAN NO.7A, SHOWING PROPOSED DISCONTINUANCE OF STREETS IN THE SYLVAN GROVE AREA, DATED: AUGUST 20, 1963, SCALE: 1 IN. = 100 FT
P.B. 66, PG. 22	P.B. 135, PG. 106	
P.B. 82, PG. 35A	P.B. 139, PG. 44	
P.B. 82, PG. 35B	P.B. 144, PG. 102	
P.B. 86, PG. 33	P.B. 145, PG. 106	
P.B. 86, PG. 38	P.B. 147, PG. 109	
P.B. 92, PG. 121	P.B. 152, PG. 32	
P.B. 105, PG. 34	P.B. 157, PG. 8	
P.B. 118, PG. 30		
P.B. 122, PG. 15		

DIMENSIONAL REQUIREMENTS

MINIMUM LOT AREA	8000 S.F.
MINIMUM FRONTAGE	75 FT
MINIMUM FRONT SETBACK	15 FT
MINIMUM REAR SETBACK	30 FT
MINIMUM SIDE SETBACK	12 FT AND 8 FT



SITE BENCHMARK
 TOP OF CB/DH
 ELEV. = 94.70
 (BASED ON CITY OF NEW BEDFORD
 ORIOLE STREET SEWER PLAN)

EXISTING CB
 RIM=92.89
 8" INV.OUT=91.34

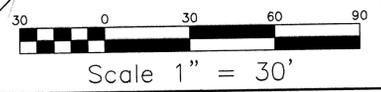
SWALLOW STREET

EXISTING INLET
 RIM=93.34
 8" INV.IN=91.39
 12" RCP INV.OUT=91.46

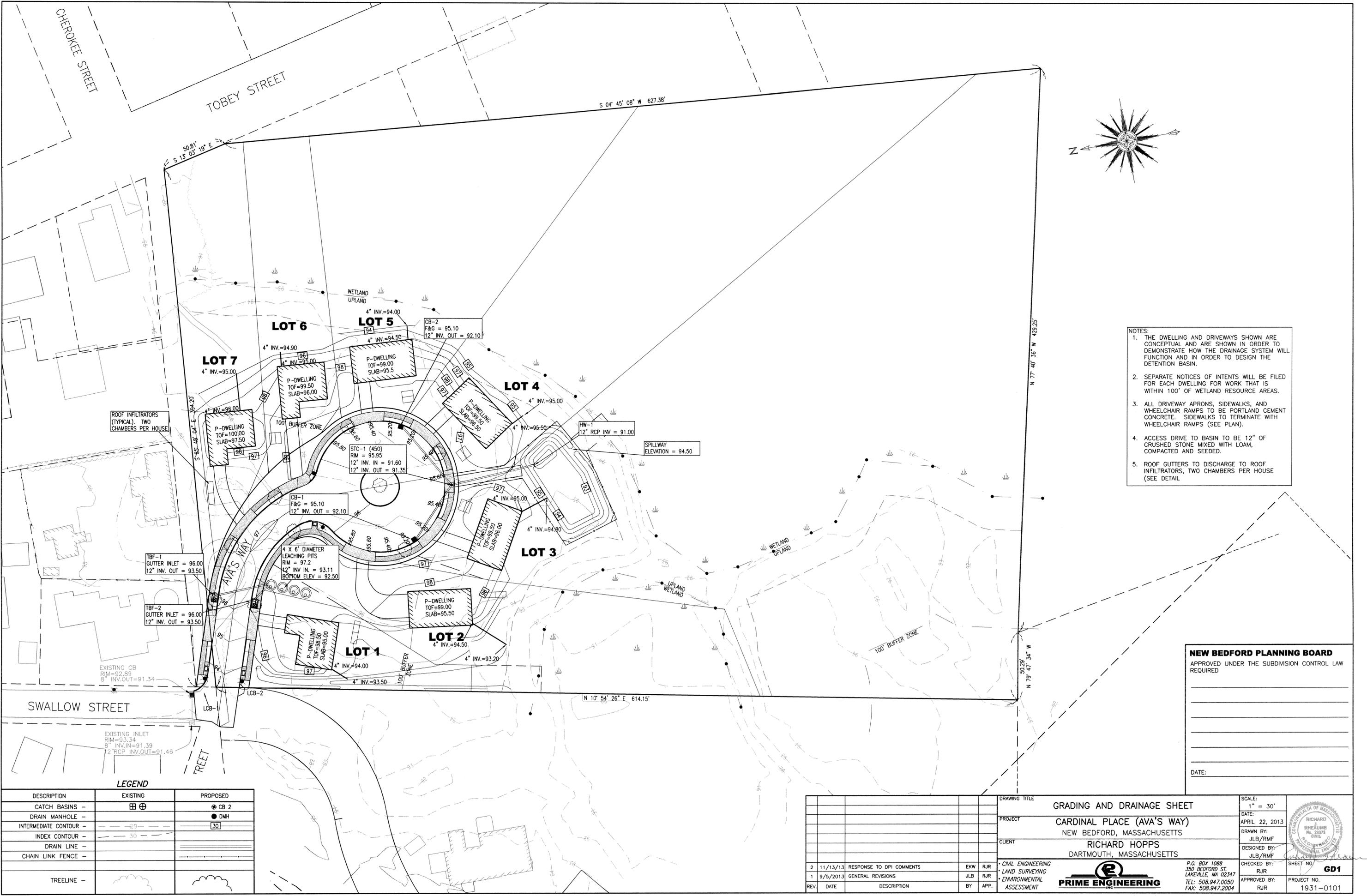
CARDINAL STREET
 (30' WIDE)

NEW BEDFORD PLANNING BOARD
 APPROVED UNDER THE SUBDIVISION CONTROL LAW
 REQUIRED

DATE: _____



DRAWING TITLE		EXISTING CONDITIONS		SCALE:	1" = 30'
PROJECT		CARDINAL PLACE (AVA'S WAY) NEW BEDFORD, MASSACHUSETTS		DATE:	APRIL 22, 2013
CLIENT		RICHARD HOPPS DARTMOUTH, MASSACHUSETTS		DRAWN BY:	JLB/RMF
DESIGNED BY:		JLB/RMF		CHECKED BY:	RJR
APPROVED BY:		RJR		APPROVED BY:	RJR
SHEET NO.		EX1		PROJECT NO. 1931-0101	
2 11/13/13 RESPONSE TO DPI COMMENTS EKW RJR 1 9/5/2013 GENERAL REVISIONS JLB RJR		P.O. BOX 1088 350 BEDFORD ST. LAKEVILLE, MA 02347 TEL: 508.947.0050 FAX: 508.947.2004		PRIME ENGINEERING 	



- NOTES:
1. THE DWELLING AND DRIVEWAYS SHOWN ARE CONCEPTUAL AND ARE SHOWN IN ORDER TO DEMONSTRATE HOW THE DRAINAGE SYSTEM WILL FUNCTION AND IN ORDER TO DESIGN THE DETENTION BASIN.
 2. SEPARATE NOTICES OF INTENTS WILL BE FILED FOR EACH DWELLING FOR WORK THAT IS WITHIN 100' OF WETLAND RESOURCE AREAS.
 3. ALL DRIVEWAY APRONS, SIDEWALKS, AND WHEELCHAIR RAMPS TO BE PORTLAND CEMENT CONCRETE. SIDEWALKS TO TERMINATE WITH WHEELCHAIR RAMPS (SEE PLAN).
 4. ACCESS DRIVE TO BASIN TO BE 12" OF CRUSHED STONE MIXED WITH LOAM, COMPACTED AND SEEDDED.
 5. ROOF GUTTERS TO DISCHARGE TO ROOF INFILTRATORS, TWO CHAMBERS PER HOUSE (SEE DETAIL).

NEW BEDFORD PLANNING BOARD
 APPROVED UNDER THE SUBDIVISION CONTROL LAW
 REQUIRED

DATE: _____

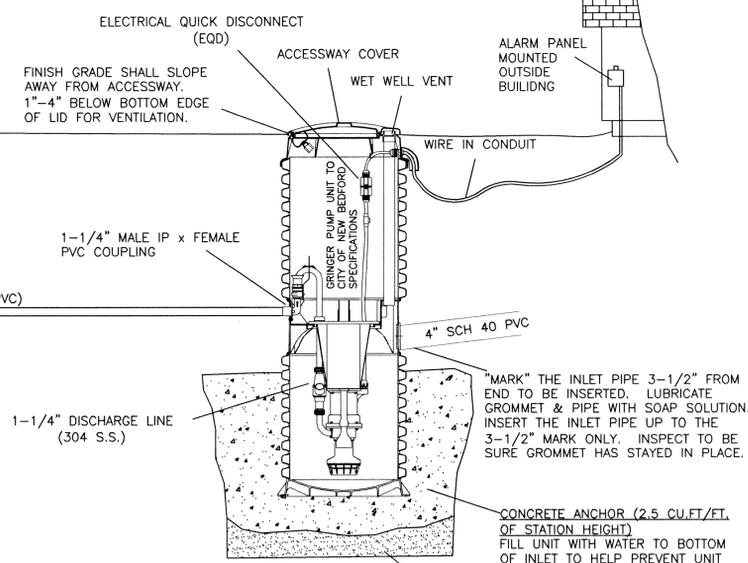
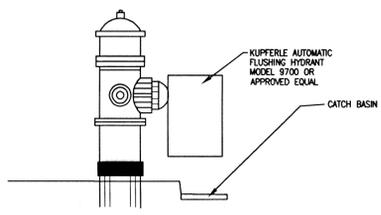
LEGEND

DESCRIPTION	EXISTING	PROPOSED
CATCH BASINS	⊕	⊙ CB 2
DRAIN MANHOLE	—	⊙ DMH
INTERMEDIATE CONTOUR	--- 2' ---	[30]
INDEX CONTOUR	---	---
DRAIN LINE	---	---
CHAIN LINK FENCE	---	---
TREELINE	---	---

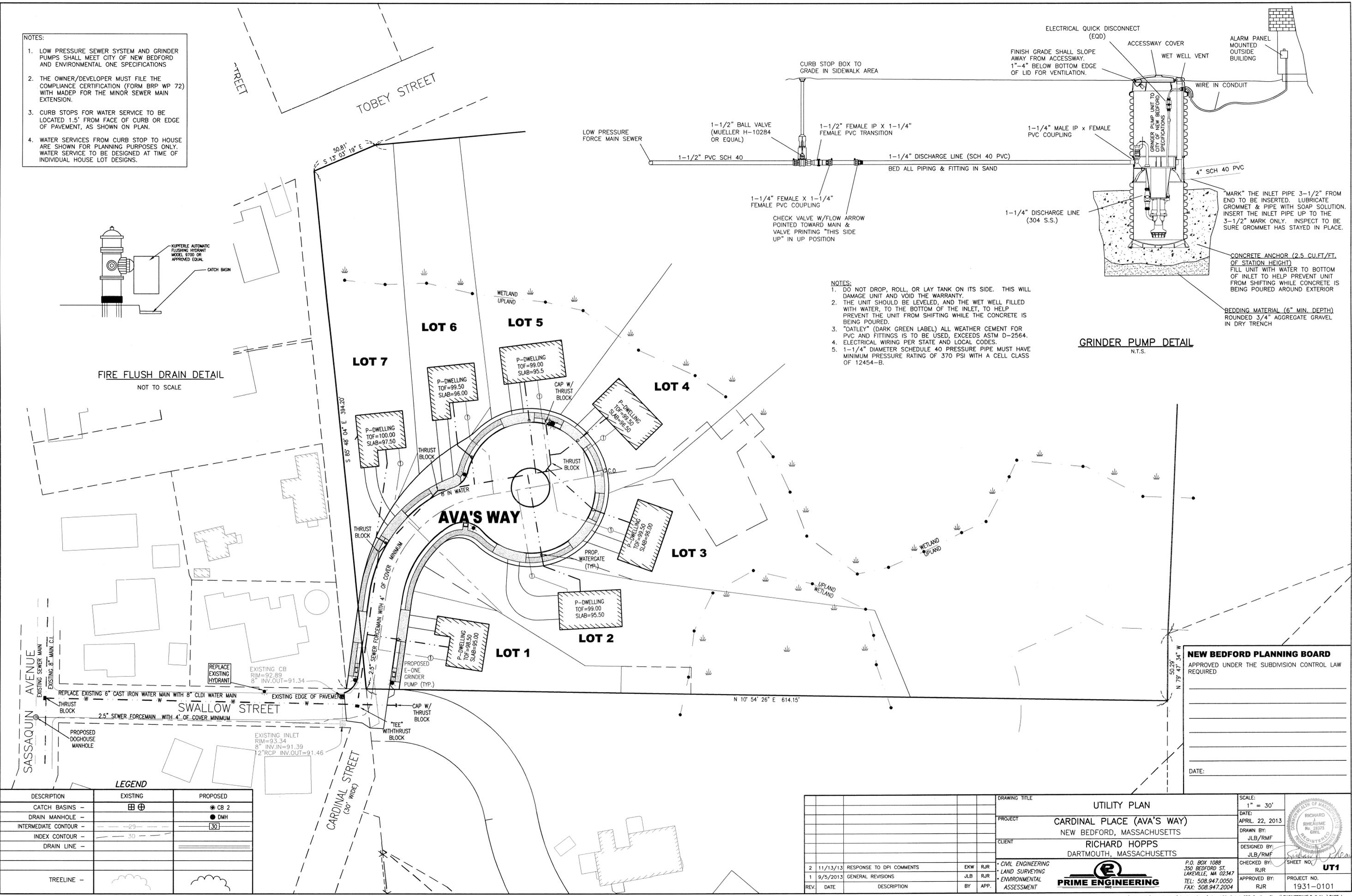
REV.	DATE	DESCRIPTION	BY	APP.
2	11/13/13	RESPONSE TO DPI COMMENTS	EKW	RJR
1	9/5/2013	GENERAL REVISIONS	JLB	RJR

DRAWING TITLE GRADING AND DRAINAGE SHEET		SCALE: 1" = 30'
PROJECT CARDINAL PLACE (AVA'S WAY) NEW BEDFORD, MASSACHUSETTS		DATE: APRIL 22, 2013
CLIENT RICHARD HOPPS DARTMOUTH, MASSACHUSETTS		DRAWN BY: JLB/RMF
DESIGNED BY: JLB/RMF		CHECKED BY: RJR
 P.O. BOX 1088 350 BEDFORD ST. LAKEVILLE, MA 02347 TEL: 508.947.0050 FAX: 508.947.2004		APPROVED BY: RJR
		SHEET NO. GD1
		PROJECT NO. 1931-0101

- NOTES:
1. LOW PRESSURE SEWER SYSTEM AND GRINDER PUMPS SHALL MEET CITY OF NEW BEDFORD AND ENVIRONMENTAL ONE SPECIFICATIONS
 2. THE OWNER/DEVELOPER MUST FILE THE COMPLIANCE CERTIFICATION (FORM BRP WP 72) WITH MADEP FOR THE MINOR SEWER MAIN EXTENSION.
 3. CURB STOPS FOR WATER SERVICE TO BE LOCATED 1.5' FROM FACE OF CURB OR EDGE OF PAVEMENT, AS SHOWN ON PLAN.
 4. WATER SERVICES FROM CURB STOP TO HOUSE ARE SHOWN FOR PLANNING PURPOSES ONLY. WATER SERVICE TO BE DESIGNED AT TIME OF INDIVIDUAL HOUSE LOT DESIGNS.



- NOTES:
1. DO NOT DROP, ROLL, OR LAY TANK ON ITS SIDE. THIS WILL DAMAGE UNIT AND VOID THE WARRANTY.
 2. THE UNIT SHOULD BE LEVELLED, AND THE WET WELL FILLED WITH WATER, TO THE BOTTOM OF THE INLET, TO HELP PREVENT THE UNIT FROM SHIFTING WHILE THE CONCRETE IS BEING POURED.
 3. "OATLEY" (DARK GREEN LABEL) ALL WEATHER CEMENT FOR PVC AND FITTINGS IS TO BE USED, EXCEEDS ASTM D-2564.
 4. ELECTRICAL WIRING PER STATE AND LOCAL CODES.
 5. 1-1/4" DIAMETER SCHEDULE 40 PRESSURE PIPE MUST HAVE MINIMUM PRESSURE RATING OF 370 PSI WITH A CELL CLASS OF 12454-B.



LEGEND

DESCRIPTION	EXISTING	PROPOSED
CATCH BASINS -	⊕ ⊕	⊙ CB 2
DRAIN MANHOLE -	—	● DMH
INTERMEDIATE CONTOUR -	---	--- 30
INDEX CONTOUR -	---	---
DRAIN LINE -	---	---
TREELINE -	---	---

NEW BEDFORD PLANNING BOARD
APPROVED UNDER THE SUBDIVISION CONTROL LAW REQUIRED

DATE: _____

DRAWING TITLE UTILITY PLAN		SCALE: 1" = 30'
PROJECT CARDINAL PLACE (AVA'S WAY) NEW BEDFORD, MASSACHUSETTS		DATE: APRIL 22, 2013
CLIENT RICHARD HOPPS DARTMOUTH, MASSACHUSETTS		DRAWN BY: JLB/RMF
DESIGNED BY: JLB/RMF		CHECKED BY: RJR
APPROVED BY: RJR		PROJECT NO. 1931-0101

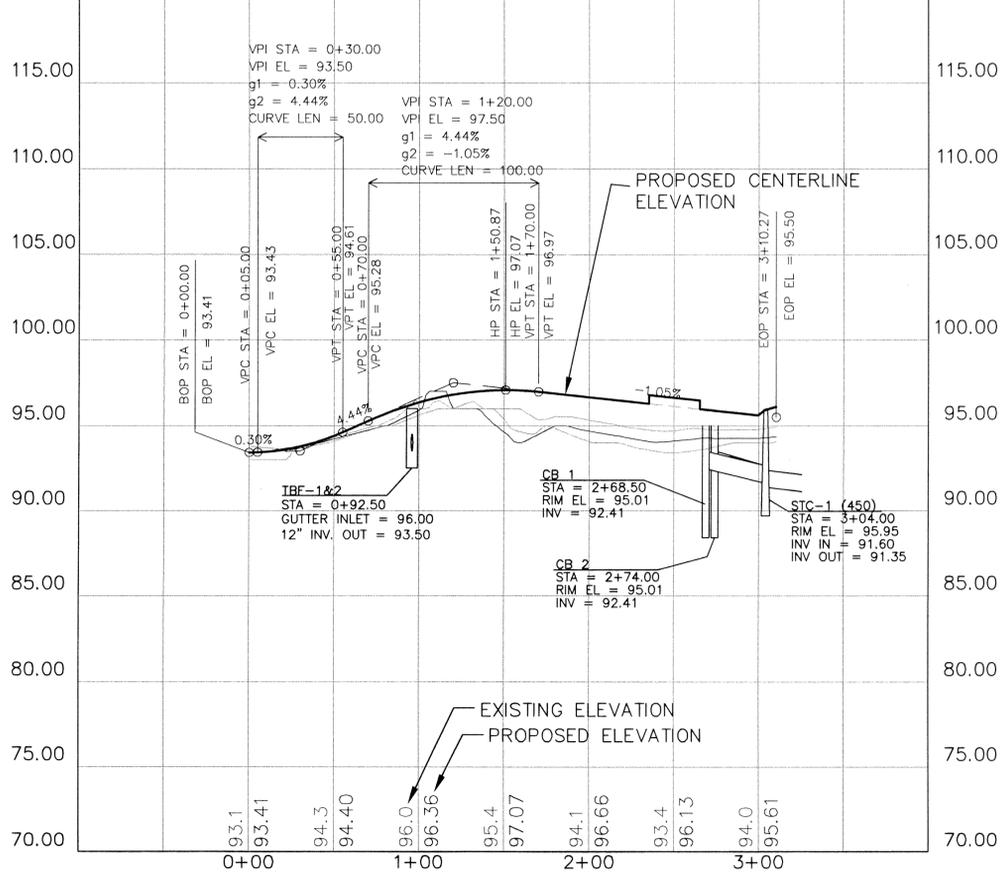
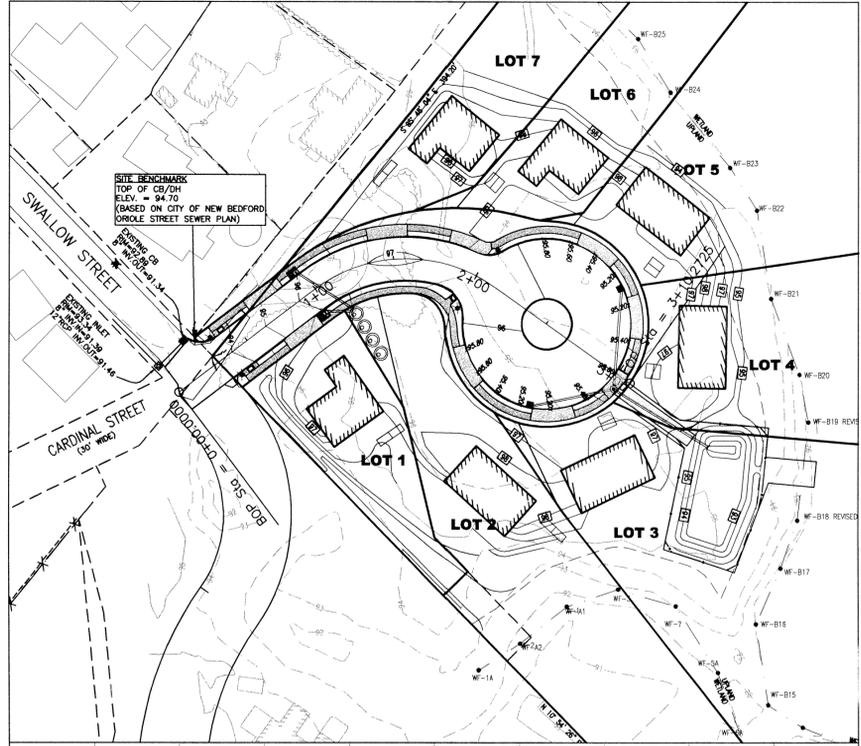
CIVIL ENGINEERING
 LAND SURVEYING
 ENVIRONMENTAL ASSESSMENT

PRIME ENGINEERING
 P.O. BOX 1088
 350 BEDFORD ST.
 LAKEVILLE, MA 02347
 TEL: 508.947.0050
 FAX: 508.947.2004

RICHARD HOPPS
 No. 28373
 CIVIL
 REGISTERED PROFESSIONAL ENGINEER

SHEET NO. **UT1**

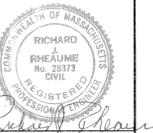
SCALES:
 1" = 50' HOR
 1" = 5' VER



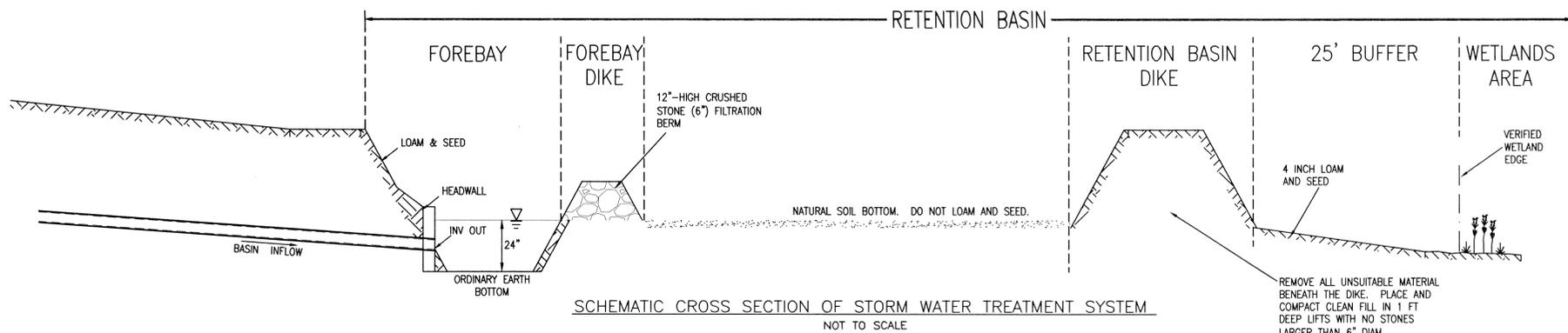
DRAWING TITLE		ROADWAY PLAN AND PROFILE		SCALE:	AS NOTED
PROJECT		CARDINAL PLACE (AVA'S WAY) NEW BEDFORD, MASSACHUSETTS		DATE:	6/28/10
CLIENT		RICHARD HOPPS DARTMOUTH, MASSACHUSETTS		DRAWN BY:	RMF
REV.		DATE	DESCRIPTION	DESIGNED BY:	RMF
2	10/29/13	RESPONSE TO DPI COMMENTS	EKW RJR	CHECKED BY:	RJR
1	9/5/2013	GENERAL REVISIONS	JLB RJR	APPROVED BY:	RJR



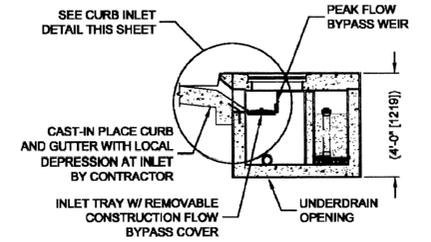
P.O. BOX 1088
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 LAKEVILLE, MA 02347
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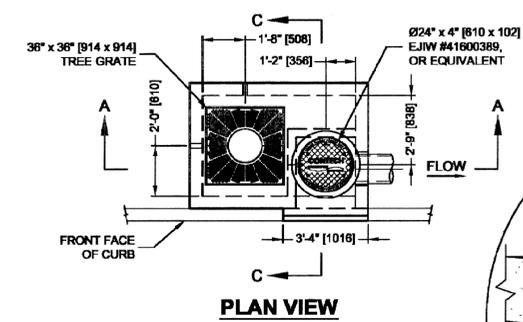
CHECKED BY: RJR
 APPROVED BY: RJR
 SHEET NO. **RP1**
 PROJECT NO. 1931-0101



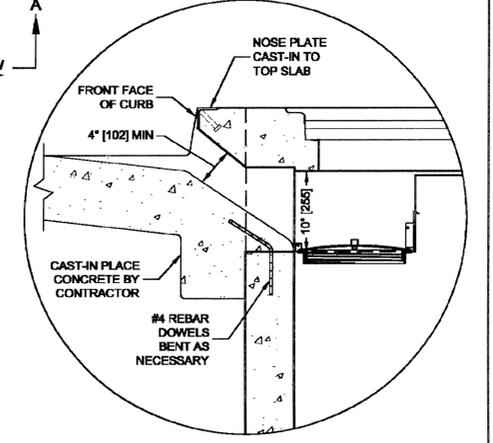
SCHEMATIC CROSS SECTION OF STORM WATER TREATMENT SYSTEM
NOT TO SCALE



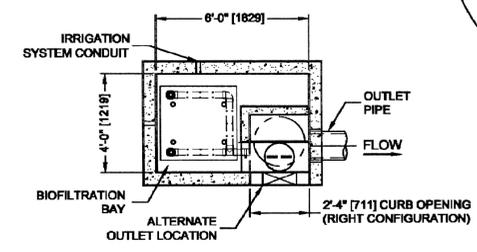
SECTION C-C



PLAN VIEW

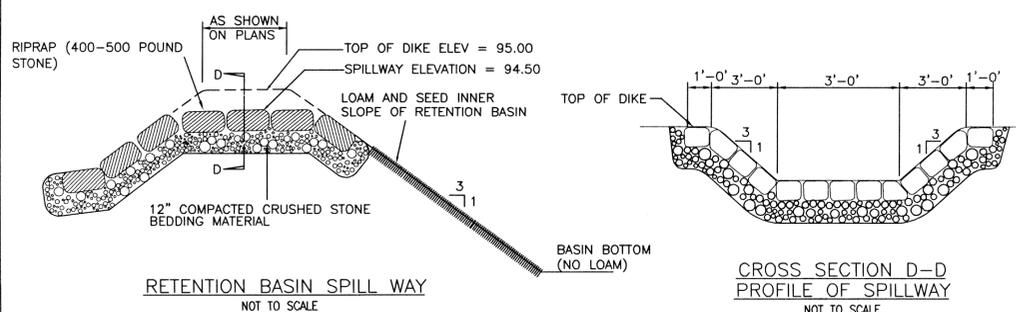


CURB INLET DETAIL

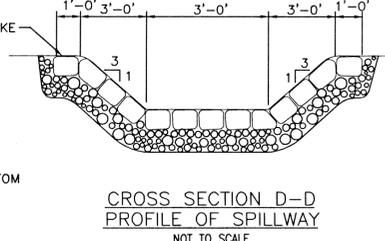


SECTION B-B

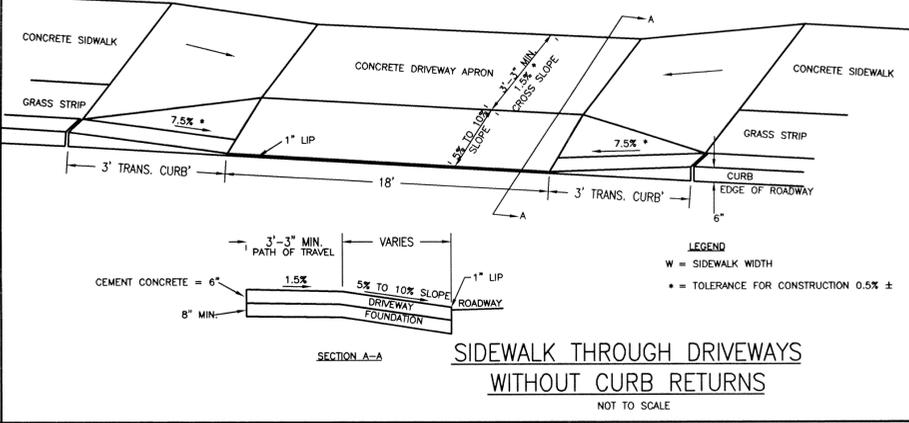
NOTES:
1. REFER TO CONTECH URBANGREEN BIOFILTER INSTALLATION MANUAL.
2. TO MEET ALL SPECIFICATIONS PROVIDED BY CONTECH.



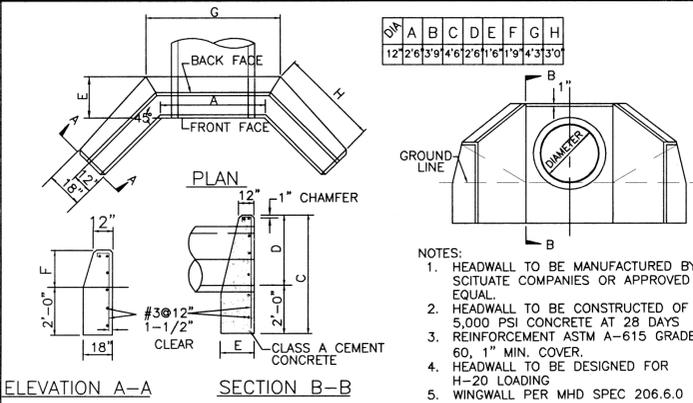
RETENTION BASIN SPILL WAY
NOT TO SCALE



CROSS SECTION D-D
PROFILE OF SPILLWAY
NOT TO SCALE



SIDEWALK THROUGH DRIVEWAYS
WITHOUT CURB RETURNS
NOT TO SCALE

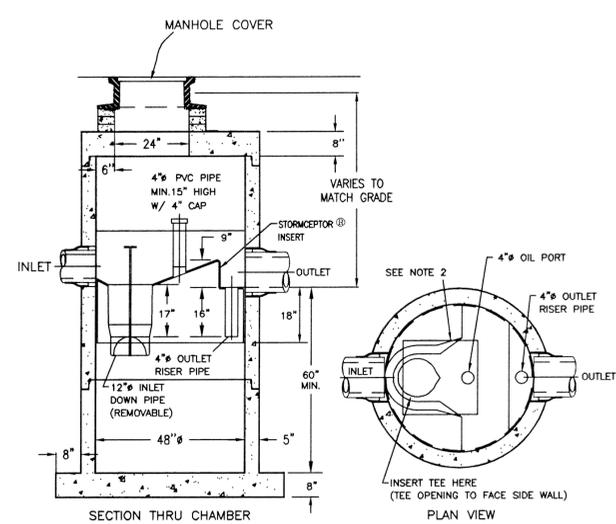


CONCRETE HEADWALL
NOT TO SCALE

RECOMMENDED MAINTENANCE PROCEDURE:
OIL IS REMOVED THROUGH THE 6" INSPECTION/OIL PORT AND SEDIMENT IS REMOVED THROUGH THE 24" DIAMETER OUTLET RISER PIPE. ALTERNATIVELY, OIL COULD BE REMOVED FROM THE 24" OPENING IF WATER IS REMOVED FROM TREATMENT CHAMBER, LOWERING THE OIL LEVEL BELOW THE DROP PIPES.
THE DEPTH OF SEDIMENT CAN BE MEASURED FROM THE SURFACE OF THE STORMCEPTOR WITH A DIPSTICK TUBE EQUIPPED WITH A BALL VALVE (SLUDGE JUDGE). RINKER MATERIALS RECOMMENDS MAINTENANCE BE PERFORMED ONCE THE SEDIMENT DEPTH EXCEEDS THE GUIDELINE VALUE PROVIDED IN TABLE BELOW.

MODEL	SEDIMENT DETH
450i	8" (200MM)
900	8" (200MM)
1200	10" (250MM)
1800	15" (375MM)
2400	12" (300MM)
3600	17" (425MM)
4800	15" (375MM)
6000	18" (450MM)
7200	15" (375MM)
11000s	17" (425MM)**
13000s	20" (500MM)**
16000s	17" (425MM)**

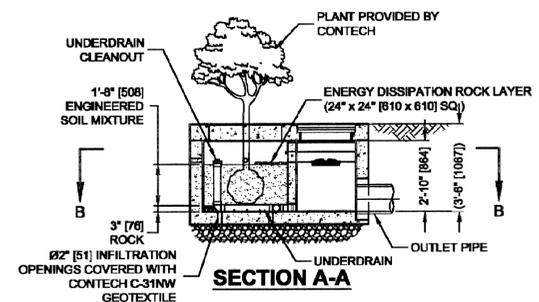
* DEPTHS ARE APPROXIMATE
** DEPTHS IN EACH STRUCTURE



STC 450 PRECAST CONCRETE STORMCEPTOR
NOT TO SCALE

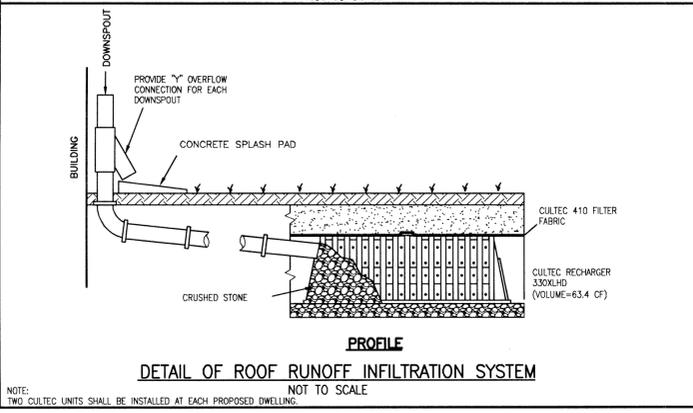
NOTES:
1. THE USE OF FLEXIBLE CONNECTION IS RECOMMENDED AT THE INLET AND OUTLET WHERE APPLICABLE.
2. THE COVER SHOULD BE POSITIONED OVER THE INLET DROP PIPE AND THE OIL PORT.
3. THE STORMCEPTOR SYSTEM IS PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: #4985148, #5498331, #5725760, #5753115, #5849181, #6068765, #6371690.
4. CONTACT A CONCRETE PIPE DIVISION REPRESENTATIVE FOR FURTHER DETAILS NOT LISTED ON THIS DRAWING.

NO ENTRY INTO THE UNIT IS REQUIRED FOR ROUTINE MAINTENANCE OF THE INLET STORMCEPTOR. THE SMALLER DISC INSERT MODELS OF THE IN-LINE STORMCEPTOR ENTRY TO THE LEVEL OF THE BY-PASS MAY BE REQUIRED FOR SERVICING THE LARGER IN-LINE MODELS. ANY POTENTIAL OBSTRUCTIONS AT THE INLET CAN BE OBSERVED FROM THE SURFACE. THE BY-PASS CHAMBER HAS BEEN DESIGNATED AS A PLATFORM FOR AUTHORIZED MAINTENANCE PERSONNEL, IN THE EVENT THAT AN OBSTRUCTION NEEDS TO BE REMOVED, DRAIN FLUSHING NEEDS TO BE PERFORMED, OR CAMERA SURVEYS ARE REQUIRED.
TYPICALLY, MAINTENANCE IS PERFORMED BY THE VACUUM SERVICE INDUSTRY, A WELL ESTABLISHED SECTOR OF THE SERVICE INDUSTRY THAT CLEANS UNDERGROUND TANKS, SEWERS, AND CATCH-BASINS. COSTS TO CLEAN THE STORMCEPTOR WILL VARY BASED ON THE SIZE OF THE UNIT AND TRANSPORTATION DISTANCES. IF YOU NEED ASSISTANCE FOR CLEANING A STORMCEPTOR UNIT, CONTACT YOUR LOCAL RINKER MATERIALS REPRESENTATIVE, OR THE RINKER MATERIALS STORMCEPTOR INFORMATION LINE AT (800) 909-7763.



SECTION A-A

URBANGREEN TREE-BOX FILTER INLET
NOT TO SCALE



DETAIL OF ROOF RUNOFF INFILTRATION SYSTEM
NOT TO SCALE

NEW BEDFORD PLANNING BOARD
APPROVED UNDER THE SUBDIVISION CONTROL LAW REQUIRED

DATE: _____



DETAIL SHEET

PROJECT: CARDINAL PLACE (AVA'S WAY)
NEW BEDFORD, MASSACHUSETTS

CLIENT: RICHARD HOPPS
DARTMOUTH, MASSACHUSETTS

SCALE: AS NOTED
DATE: APRIL 22, 2013
DRAWN BY: JLB/RMF
DESIGNED BY: JLB/RMF
CHECKED BY: RJR
APPROVED BY: RJR

PROJECT NO. 1931-0101

DATE: _____

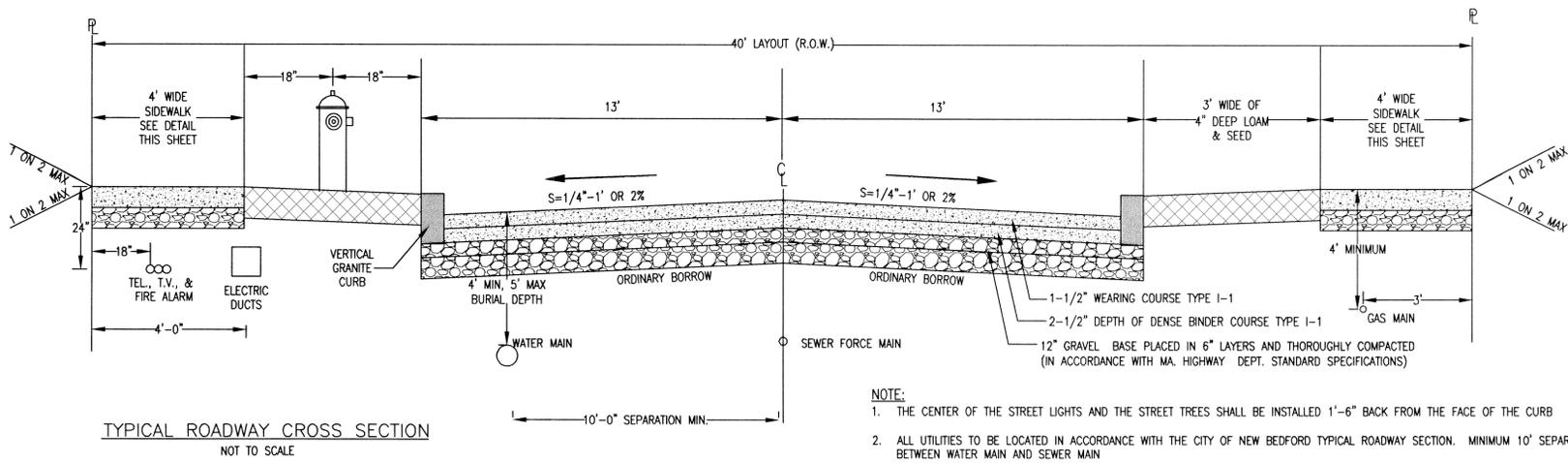
REVISIONS:

REV.	DATE	DESCRIPTION	BY	APP.
2	11/13/13	RESPONSE TO DPI COMMENTS	EKW	RJR
1	9/5/2013	GENERAL REVISIONS	JLB	RJR

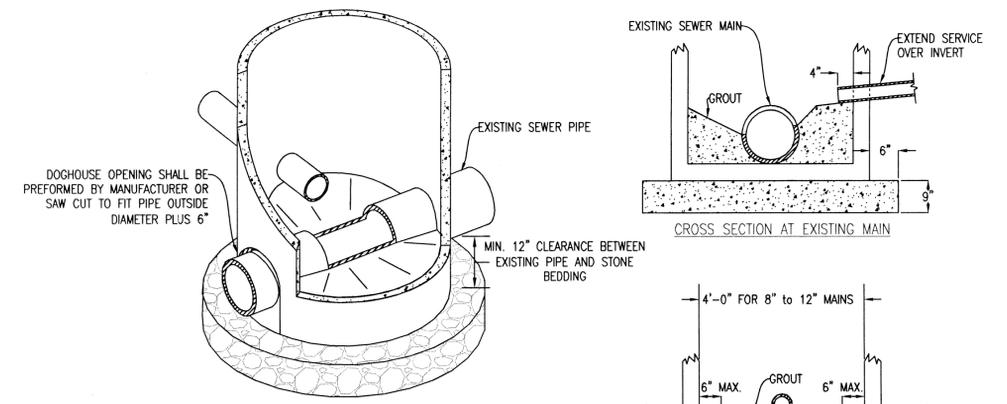
PRIME ENGINEERING

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350 BEDFORD ST.
LAKEVILLE, MA 02347
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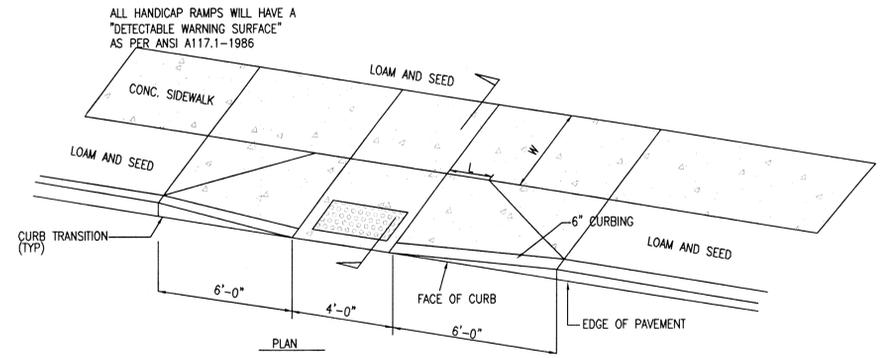
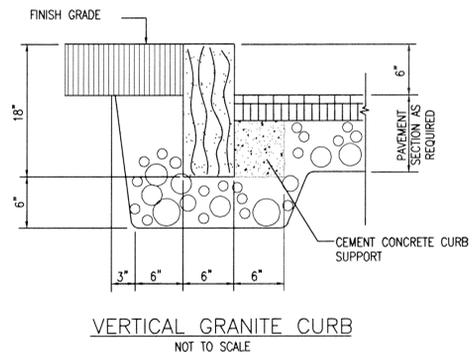
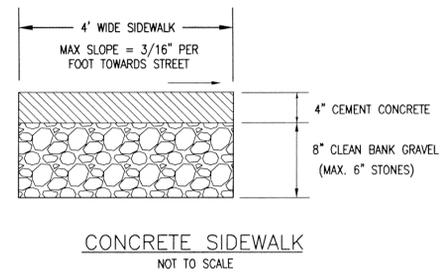
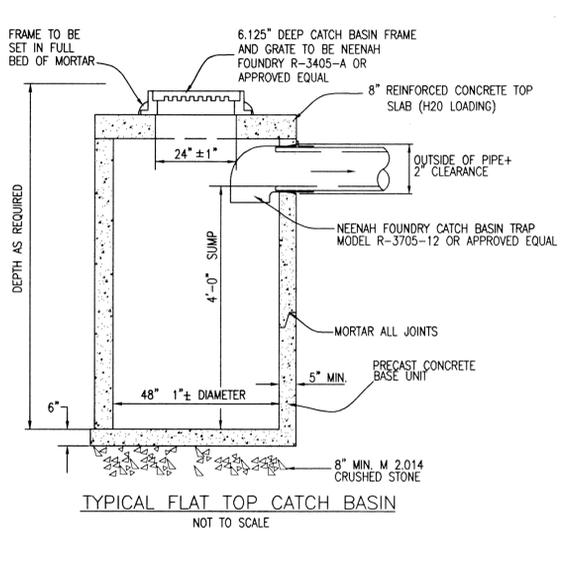
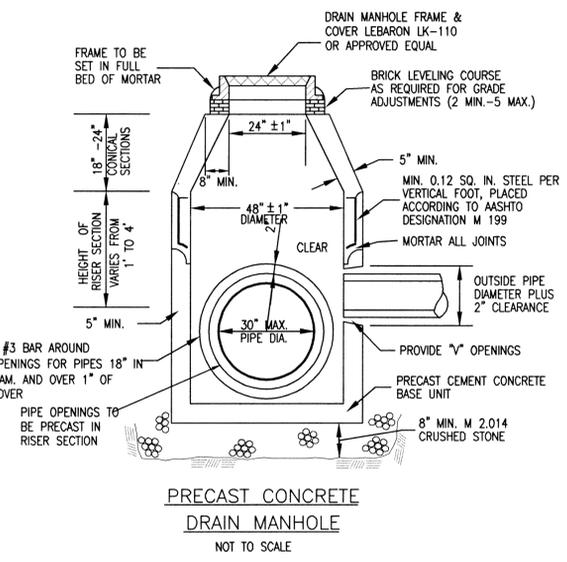
0:\PROJECTS\New Bedford\Swallow Street\Map 136-2 Lot 353 Swallow Street\ENGINEERING\Definitive\BASE.dwg



NOTE:
 1. THE CENTER OF THE STREET LIGHTS AND THE STREET TREES SHALL BE INSTALLED 1'-6" BACK FROM THE FACE OF THE CURB
 2. ALL UTILITIES TO BE LOCATED IN ACCORDANCE WITH THE CITY OF NEW BEDFORD TYPICAL ROADWAY SECTION. MINIMUM 10' SEPARATION BETWEEN WATER MAIN AND SEWER MAIN

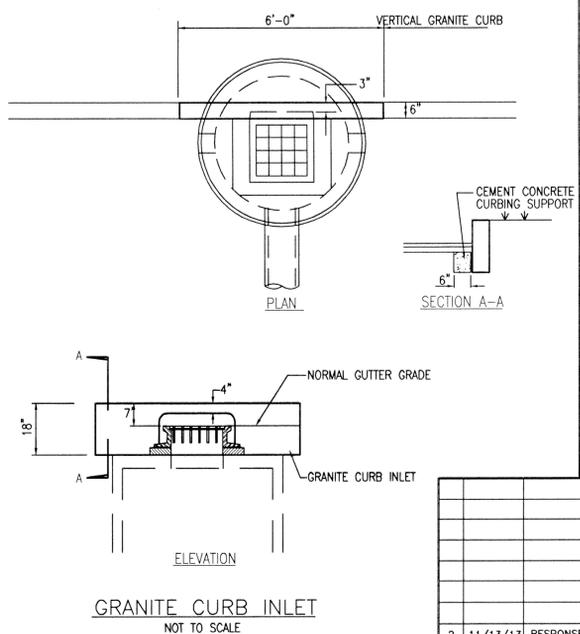
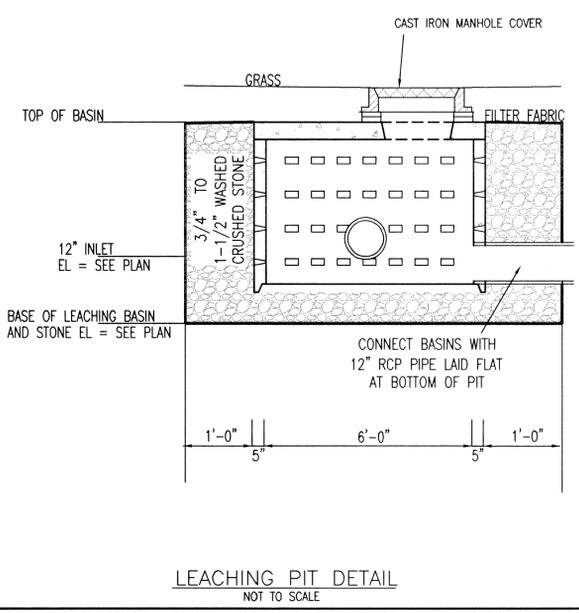
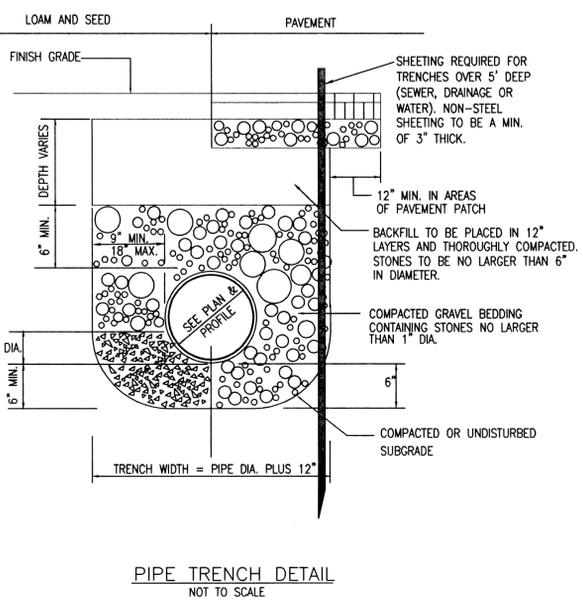


NOTES:
 1. FLOW SHALL BE MAINTAINED DURING CONSTRUCTION.
 2. MANHOLE PAD TO REST UPON A MINIMUM 6" COMPACTED #67 STONE BASE.
 3. A WATER TIGHT SEAL MUST BE CONSTRUCTED BETWEEN THE MANHOLE, THE BASE AND THE MANHOLE SECTIONS AROUND THE PIPES.



1. THE DIMENSIONS SHOWN AT ROADWAY EDGE ARE FIXED DISTANCES.
2. RAMP CROSS SECTION TO BE THE SAME AS ADJACENT SIDEWALK.
3. CEMENT CONCRETE RAMPS ARE TO BE TEXTURED BY BROOMING IN A DIRECTION PARALLEL TO THE LENGTH OF THE RAMP.
4. IN NO CASE ARE THE RAMPS TO BE PLACED BEHIND THE STOP SIGN.
5. SIDEWALKS THAT CROSS DRIVEWAYS SHALL BE RAMPED TO MEET THE GRADE OF THE DRIVEWAY.
6. THESE DIMENSIONS ARE SUBJECT TO CHANGE IN THE FIELD IF EXISTING CONDITIONS WILL MAKE THE RAMP LOCATIONS IMPRACTICAL OR UNSAFE.

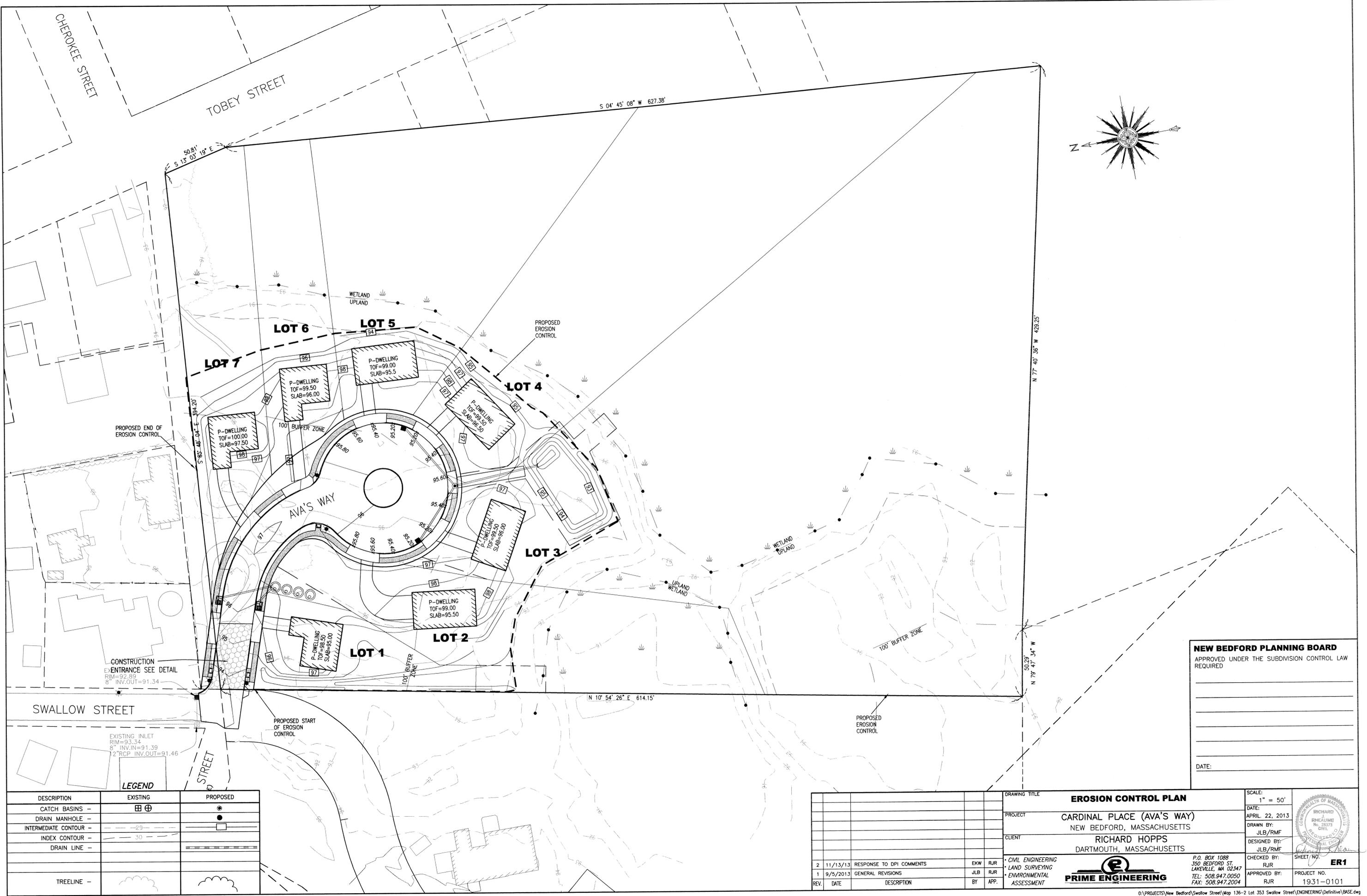
W	L
4'-0"	3'-6"±
5'-0"	2'-9"±
6'-0"	2'-0"±
7'-0"	1'-3"±
8'-0"	0'-0"



NEW BEDFORD PLANNING BOARD
 APPROVED UNDER THE SUBDIVISION CONTROL LAW
 REQUIRED

DATE: _____

DRAWING TITLE				SCALE:	
DETAIL SHEET				AS NOTED	
PROJECT				DATE:	
CARDINAL PLACE (AVA'S WAY)				APRIL 22, 2013	
NEW BEDFORD, MASSACHUSETTS				DRAWN BY:	
RICHARD HOPPS				JLB/RMF	
DARTMOUTH, MASSACHUSETTS				DESIGNED BY:	
				JLB/RMF	
REV. DATE DESCRIPTION				CHECKED BY:	
2	11/13/13	RESPONSE TO DPI COMMENTS	EKW	RJR	SHEET NO. DE2
1	9/5/2013	GENERAL REVISIONS	JLB	RJR	PROJECT NO. 1931-0101



NEW BEDFORD PLANNING BOARD
 APPROVED UNDER THE SUBDIVISION CONTROL LAW
 REQUIRED

DATE: _____

LEGEND

DESCRIPTION	EXISTING	PROPOSED
CATCH BASINS -	⊕ ⊕	●
DRAIN MANHOLE -	⊕	●
INTERMEDIATE CONTOUR -	---29---	
INDEX CONTOUR -	---30---	
DRAIN LINE -	====	====
TREELINE -	☁	☁

REV.	DATE	DESCRIPTION	BY	APP.
2	11/13/13	RESPONSE TO DPI COMMENTS	EKW	RJR
1	9/5/2013	GENERAL REVISIONS	JLB	RJR

EROSION CONTROL PLAN

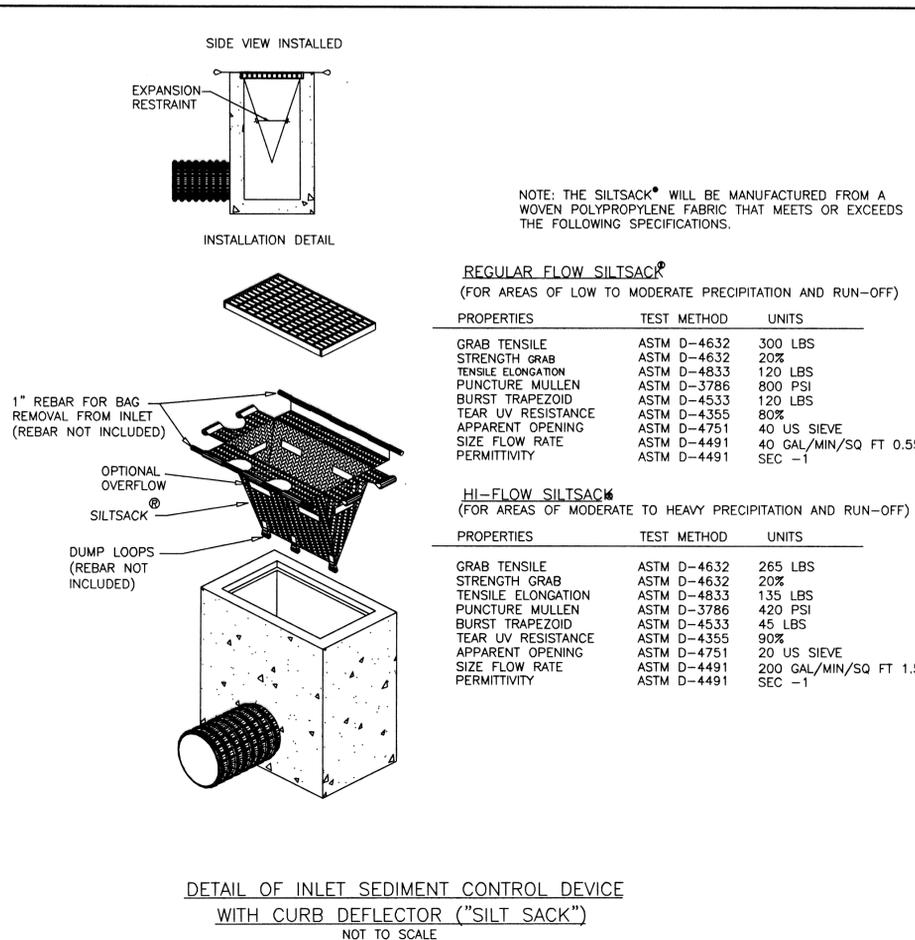
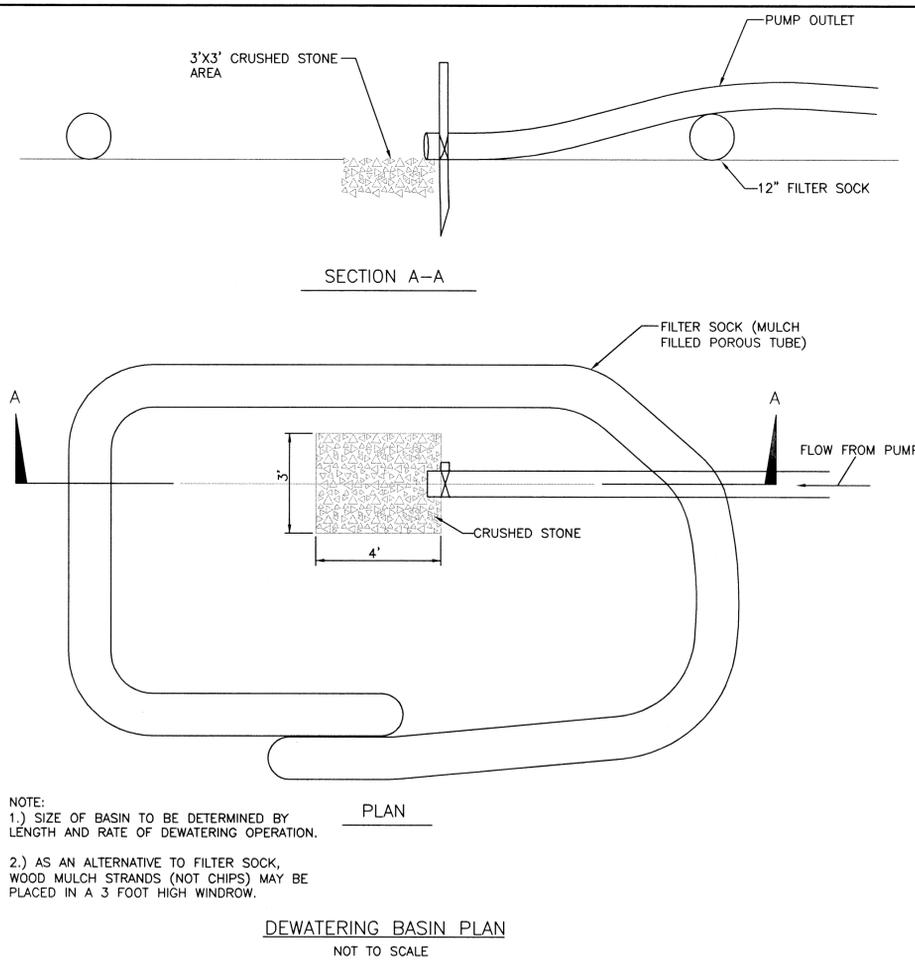
PROJECT: **CARDINAL PLACE (AVA'S WAY)**
 NEW BEDFORD, MASSACHUSETTS

CLIENT: **RICHARD HOPPS**
 DARTMOUTH, MASSACHUSETTS

DESIGNED BY: JLB/RMF
 CHECKED BY: RJR
 APPROVED BY: RJR

SCALE: 1" = 50'
 DATE: APRIL 22, 2013
 DRAWN BY: JLB/RMF
 SHEET NO. **ER1**
 PROJECT NO. 1931-0101

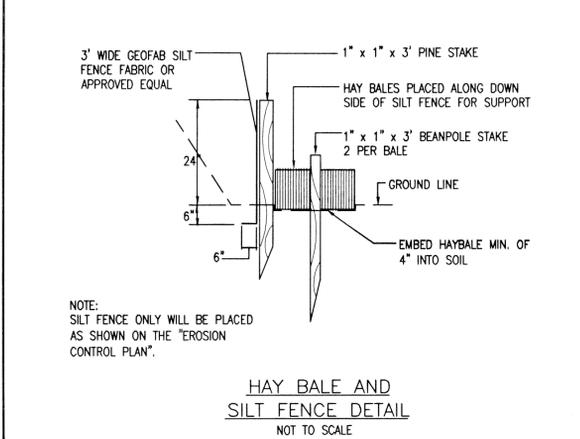
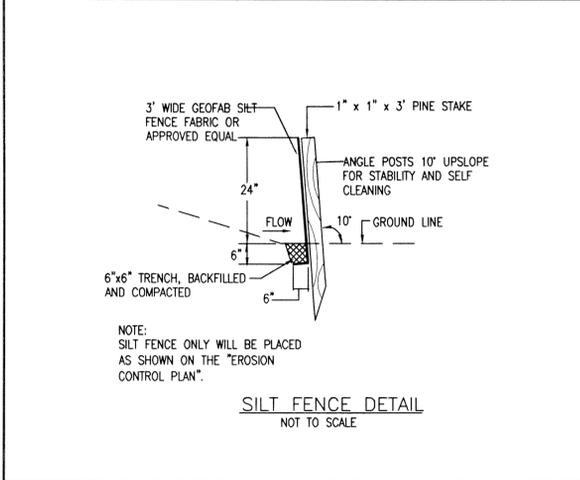
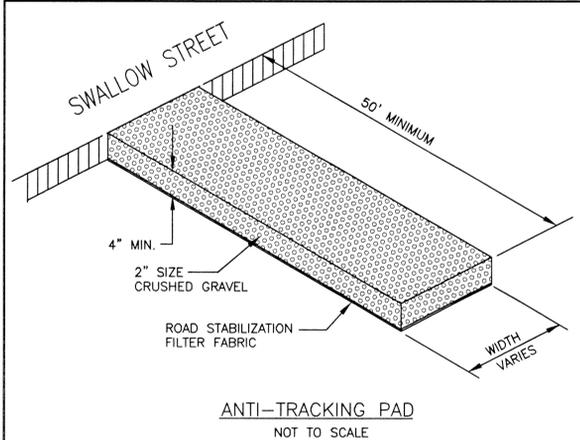
PRIME ENGINEERING
 P.O. BOX 1088
 350 BEDFORD ST.
 LAKEVILLE, MA 02347
 TEL: 508.947.0050
 FAX: 508.947.2004



CONSTRUCTION OPERATION AND MAINTENANCE SCHEDULE

THE OPERATION AND MAINTENANCE (O&M) SCHEDULE DURING THE CONSTRUCTION PHASE IS THE RESPONSIBILITY OF THE DEVELOPER AND/OR SITE CONTRACTOR. THE OUTLINE BELOW SHALL BE ADHERED TO AS CLOSELY AS POSSIBLE TO ENSURE THE PROPER CONSTRUCTION AND FUNCTION OF THE DRAINAGE SYSTEM.

- PRIOR TO CONSTRUCTION, HAYBALES AND SILT FENCE SHALL BE INSTALLED PER THE APPROVED PLANS. THE HAY BALES AND SILT FENCE SHALL BE INSPECTED PRIOR TO A LARGE STORM EVENT TO ENSURE THAT THE EROSION CONTROL WILL FUNCTION AS REQUIRED AND FOLLOWING A STORM TO INSPECT FOR DAMAGE TO THE EROSION CONTROL ELEMENTS. ANY DAMAGE OR IMPROPER INSTALLATION THAT IS NOTICED PRIOR TO OR FOLLOWING A STORM EVENT SHALL BE PROMPTLY REPLACED OR REPAIRED IN A SATISFACTORY MANNER SO AS TO PREVENT SEDIMENT FROM BYPASSING THE EROSION CONTROL BARRIER.
- THE LIMIT OF CLEARING SHOWN ON THE APPROVED PLAN SHALL BE STRICTLY ADHERED TO. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE LEVEL OF SAFETY OF STANDING TREES.
- IN CONJUNCTION WITH THE ROADWAY CONSTRUCTION, ALL DRAINAGE STRUCTURES, INCLUDING THE DETENTION BASIN, SHALL BE CONSTRUCTED AND STABILIZED AS SOON AS POSSIBLE. METHODS OF STABILIZATION INCLUDE, BUT ARE NOT LIMITED TO, HYDROSEED, LOAM AND SEED, STRAW MULCH, EROSION CONTROL BLANKETS, ETC.
- THE CATCH BASINS AND SEDIMENT FOREBAYS SHALL BE INSPECTED WEEKLY DURING CONSTRUCTION. ANY SEDIMENT BUILDUP OF EIGHT (8) INCH DEPTH IN EITHER OF THE STRUCTURES SHALL BE PROMPTLY REMOVED BY HAND OR MECHANICAL METHODS AND ALL DEBRIS REMOVED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
- THE DETENTION BASIN AND FOREBAYS SHALL BE INSPECTED WEEKLY OR AFTER ALL RAINFALL EVENTS GREATER THAN 1/2 INCH, WHICHEVER OCCURS SOONER. ANY EROSION WITHIN THE BASIN OR FOREBAYS SHALL BE FILLED AND RESTABILIZED IN A MANNER TO PREVENT FUTURE EROSION. IN ADDITION, THE OUTER PORTIONS OF THE DETENTION BASINS SHALL BE INSPECTED IN A SIMILAR MANNER.
- THIS SCHEDULE MUST BE ADHERED TO BY THE OWNER AND/OR CONTRACTOR UNTIL THE ROADWAY IS ACCEPTED BY THE TOWN.



EROSION & SEDIMENT CONTROL NOTES:

IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTROL EROSION AND PREVENT SEDIMENTATION WITHIN THE 25' NO DISTURB ZONE OR OFFSITE PROPERTIES. IT IS INTENDED THAT THE IMPLEMENTATION OF THE FOLLOWING MEASURES WILL MEET THIS GOAL. WHEN IT IS CLEAR TO THE DESIGNER THAT EROSION AND SEDIMENTATION HAVE BEEN ADEQUATELY CONTROLLED WITHOUT THE IMPLEMENTATION OF EVERY MEASURE, ADDITIONAL MEASURES NEED NOT BE IMPLEMENTED. ALTERNATIVELY, IF ALL OF THE FOLLOWING MEASURES HAVE BEEN IMPLEMENTED AND THE CONTROL OF EROSION AND SEDIMENTATION IS INADEQUATE, THE CONTRACTOR MUST EMPLOY SUFFICIENT SUPPLEMENTAL MEASURES BEYOND THE SCOPE OF THIS PLAN.

- EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED PRIOR TO STUMP REMOVAL AND CONSTRUCTION. STABILIZATION OF ALL REGRADED AND SOIL STOCKPILE AREAS WILL BE INITIATED AND MAINTAINED DURING ALL PHASES OF CONSTRUCTION.
- ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CONSTRUCTED IN ACCORDANCE WITH LOCAL MUNICIPAL REGULATIONS. ALL EROSION CONTROL MEASURES ARE TO BE MAINTAINED AND UPGRADED AS REQUIRED TO ACHIEVE PROPER SEDIMENT CONTROL DURING CONSTRUCTION. A STAKED HAYBALE DAM SHALL BE INSTALLED DOWN GRADIENT OF ALL DRAINAGE OUTFALLS.
- ADDITIONAL CONTROL MEASURES WILL BE INSTALLED DURING THE CONSTRUCTION PERIOD, IF DEEMED NECESSARY BY THE OWNER OR AGENTS OF THE OWNER.
- CATCH BASINS WILL BE PROTECTED WITH HAYBALE FILTERS THROUGHOUT THE CONSTRUCTION PERIOD UNTIL ALL DISTURBED AREAS ARE THOROUGHLY STABILIZED. SILT SOCKS SHOULD BE INSTALLED UNDER GRATE OPENING UNTIL PAVEMENT IS IN PLACE AND GROUND SURFACE IS STABILIZED.
- SEEDING MIXTURE FOR FINISHED GRASSSED AREAS WILL BE AS FOLLOWS:

KENTUCKY BLUE GRASS	45%
CREeping RED FESCUE	45%
PERENNIAL RYEGRASS	10%

SEED TO BE APPLIED AT A RATE OF 4 LBS./1000 SQ. FT. PLANTING SEASONS SHALL BE APRIL 1 TO JUNE 1 AND AUGUST 1 TO OCTOBER 15. AFTER OCTOBER 15, AREAS WILL BE STABILIZED WITH HAYBALE CHECK, FILTER FABRIC, OR WOODCHIP MULCH, AS REQUIRED, TO CONTROL EROSION.

- AREAS THAT ARE NOT THE LOCATION OF ACTIVE CONSTRUCTION WHICH ARE TO BE LEFT BARE FOR OVER ONE MONTH BEFORE FINISHED GRADING AND SEEDING IS ACHIEVED, SHALL BE MULCHED OR RECEIVE TEMPORARY STABILIZATION SUCH AS JUTE NETTING OR SHALL RECEIVE A TEMPORARY SEEDING OF PERENNIAL RYEGRASS APPLIED TO A RATE OF 2 LBS./1,000 SQ. FT. LIMESTONE (EQUIVALENT TO BE 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) SHALL BE APPLIED AS SEEDBED PREPARATION AT A RATE OF 90 LBS./1,000 SQ. FT. PLANTING SEASONS SHALL BE APRIL 1 TO JUNE 1 AND AUGUST 1 TO OCTOBER 15. AREAS TO BE LEFT BARE BEFORE FINISH GRADING AND SEEDING OUTSIDE OF PLANTING SEASONS SHALL RECEIVE AN AIR-DRIED WOOD CHIP MULCH, FREE OF COARSE MATTER.
- AT ALL PROPOSED FILL AREAS WHICH ARE NOT CURRENTLY SHOWN ON THESE PLANS, THE CONTRACTOR SHALL ESTABLISH AN EROSION CONTROL LINE (HAYBALE CHECK OR FILTER FABRIC) ABOUT TEN (10') FEET FROM TOE TO SLOPE OF PROPOSED FILL AREAS PRIOR TO BEGINNING FILL INSTALLATION. STABILIZATION OF SLOPES IN FILL AREAS (USING MULCH OR GRASS) SHALL BE INITIATED WITHIN THIRTY (30) DAYS OF COMMENCEMENT OF FILL INSTALLATION.
- STABILIZATION OF SLOPES IN CUT AREAS (USING MULCH OR GRASS) AND THE INSTALLATION OF CONTROL LINE (HAYBALE CHECK OR FILTER FABRIC) AT THE TOE OF SLOPE SHALL BE INITIATED WITHIN THIRTY (30) DAYS OF COMPLETION.
- SEDIMENT REMOVED FROM CONTROL STRUCTURES WILL BE DISPOSED IN A MANNER WHICH IS CONSISTENT WITH THE INTENT OF THE PLAN. ALL HAYBALES OR SILT FENCE RETAINING SEDIMENT OVER 1/2 THEIR HEIGHT SHALL HAVE THE SEDIMENT REMOVED AND ALL DAMAGED EROSION CONTROLS SHALL BE REPAIRED OR REPLACED.
- CONTRACTOR WILL BE ASSIGNED THE RESPONSIBILITY FOR IMPLEMENTING THIS EROSION AND SEDIMENT CONTROL PLAN. THIS RESPONSIBILITY INCLUDES THE INSTALLATION AND MAINTENANCE OF CONTROL MEASURES, INFORMING ALL PARTIES ENGAGED ON THE CONSTRUCTION SITE OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, AND NOTIFYING THE ROCHESTER PLANNING BOARD OF ANY TRANSFER OF THIS RESPONSIBILITY. THE OWNER SHALL BE RESPONSIBLE FOR CONVEYING A COPY OF THE EROSION AND SEDIMENT CONTROL PLAN IF THE TITLE TO THE LAND IS TRANSFERRED.

- THE CONTRACTOR SHALL SECURE THE SERVICES OF A PROFESSIONAL ENGINEER, WHO SHALL VERIFY IN THE FIELD THAT THE CONTROLS REQUIRED BY THIS PLAN ARE PROPERLY INSTALLED, SHALL MAKE INSPECTION OF SUCH FACILITIES NOT LESS FREQUENTLY THAN EVERY 14 DAYS OR AFTER A RAINFALL IN EXCESS OF 1/2 INCH, WHICHEVER OCCURS FIRST. THE INSPECTION REPORTS SHALL BE SUBMITTED TO THE PLANNING DEPARTMENT AND CONSERVATION COMMISSION OFFICE ON A MONTHLY BASIS.
- STOCKPILES OF SOIL SHALL BE SURROUNDED BY A SEDIMENT BARRIER. SOIL STOCKPILES TO BE LEFT BARE FOR MORE THAN THIRTY (30) DAYS SHALL BE STABILIZED WITH TEMPORARY VEGETATION OR MULCH. IF SOIL STOCKPILES ARE TO REMAIN FOR MORE THAN SIXTY (60) DAYS, FILTER FABRIC SHALL BE USED IN PLACE OF HAYBALES. SIDE SLOPES SHALL NOT EXCEED 2:1.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST AND WIND EROSION THROUGHOUT THE LIFE OF HIS CONTRACT. DUST CONTROL SHALL INCLUDE, BUT IS NOT LIMITED TO SPRINKLING OF WATER ON EXPOSED SOILS AND HAUL ROADS. CONTRACTOR SHALL CONTROL DUST TO PREVENT A HAZARD TO TRAFFIC.
- IF FINAL GRADING IS TO BE DELAYED FOR MORE THAN THIRTY (30) DAYS AFTER LAND DISTURBANCES CEASE, TEMPORARY VEGETATION OR MULCH SHALL BE USED TO STABILIZE SOILS.
- HAYBALES SHALL BE USED ONLY AS A TEMPORARY MEASURE. WHERE CONTROL MEASURES WILL BE REQUIRED FOR LONGER THAN SIXTY (60) DAYS, FILTER FABRIC SHALL BE USED.
- WHERE DEWATERING IS NECESSARY, THERE SHALL NOT BE A DISCHARGE DIRECTLY INTO WETLANDS OR WATERCOURSES. PROPER METHODS AND DEVICES SHALL BE UTILIZED TO THE EXTENT PERMITTED BY LAW, SUCH AS PUMPING WATER INTO A TEMPORARY SEDIMENTATION BOWL, PROVIDING SURGE PROTECTION AT THE INLET AND THE OUTLET OF PUMPS, OR FLOATING THE INTAKE OF THE PUMP, OR OTHER METHODS TO MINIMIZE AND RETAIN THE SUSPENDED SOLIDS. IF A PUMPING OPERATION IS CAUSING TURBIDITY PROBLEMS, SAID OPERATION SHALL CEASE UNTIL SUCH TIME AS FEASIBLE MEANS OF CONTROLLING TURBIDITY ARE DETERMINED AND IMPLEMENTED. SAID DISCHARGE POINTS SHALL BE LOCATED OVER 100 FEET FROM THE DELINEATED WETLANDS AS INDICATED ON THIS PLAN.

STORMWATER MANAGEMENT SYSTEMS LONG-TERM OPERATION AND MAINTENANCE PLAN:

1.0 INTRODUCTION
THE CARDINAL PLACE SUBDIVISION HAS BEEN DESIGNED TO ENSURE STORMWATER QUALITY. IN ORDER FOR THIS TO CONTINUE IN THE LONG TERM, IT IS NECESSARY TO IMPLEMENT THE FOLLOWING LONG TERM OPERATION AND MAINTENANCE PROGRAM.

2.0 RESPONSIBLE PARTY

APPLICANT:
RICHARD HOPPS
302 ELM STREET
DARTMOUTH, MA

RESPONSIBLE FOR OPERATION AND MAINTENANCE:
SAME

NOTIFICATION OF FUTURE PROPERTY OWNERS:
UPON COMPLETION OF THE DEVELOPMENT, MR. HOPPS INTENDS ON PETITIONING THE CITY OF NEW BEDFORD TO ACCEPT THE ROADWAY AS PUBLIC. PRIOR TO ACCEPTANCE OF THE ROADWAY, THE CITY OF NEW BEDFORD WILL BE MADE AWARE OF THE PRESENCE OF STORMWATER MANAGEMENT SYSTEMS AND THE REQUIREMENT FOR PROPER OPERATION AND MAINTENANCE.

3.0 MAINTENANCE OF STORMWATER MANAGEMENT FACILITIES
THE STORMWATER MANAGEMENT FACILITIES WERE DESIGNED TO REQUIRE LITTLE OR NO INTERVENTION IN THE OPERATION AND TO REQUIRE LITTLE OR NO MAINTENANCE ONCE THE PROJECT IS BUILT AND STABLE VEGETATIVE COVER IS ESTABLISHED. HOWEVER, THE DRAINAGE IMPROVEMENTS SHALL BE SUBJECT TO THE FOLLOWING MAINTENANCE SCHEDULE.

3.1 ROUTINE MAINTENANCE

- MOWING: THE GRASS SWALES, TOP OF THE DIKE AT THE WATER QUALITY BASINS AND EMBANKMENTS ARE TO BE MOWED AT LEAST ONCE A YEAR DURING THE GROWING SEASON. GRASS IS TO BE CUT TO A HEIGHT NO LESS THAN 4 INCHES.
- DEBRIS: ALL DEBRIS AND LITTER ARE TO BE REMOVED FROM ALL OF THE FOREBAYS, VEGETATED SWALES, WATER QUALITY BASINS, IN AND AROUND THE CONTROL STRUCTURES DURING REGULAR MOWING OPERATIONS.
- RE-SEEDING: EMBANKMENTS THAT HAVE EXCESSIVE EROSION OR SLUMPING ARE TO BE RE-GRADED AND SEEDING (WITH CANARY GRASS OR TALL FESCUE GRASS) DURING THE SPRING OR FALL GROWING SEASONS AS NEEDED.
- THE WATER LEVEL IN THE INFILTRATION BED SHALL BE MEASURED AT LEAST ONCE PER YEAR. THE WATER LEVEL MEASUREMENTS SHALL BE TAKEN IN THE SPRING FROM A PERMANENTLY INSTALLED INSPECTION PORT/ WELL IN THE INFILTRATION BED.

3.2 PERIODIC MAINTENANCE

- ALL CATCH BASIN SUMPS, AND THE SUMPS AT THE STORM WATER DISCHARGE OUTFALL SHALL BE INSPECTED MONTHLY AND CLEANED A MINIMUM OF ONCE PER YEAR. IN THIS CLEANING, THE ENTIRE CONTENTS OF THE SUMPS WILL BE EXCAVATED.
- ACCUMULATED WATER QUALITY BASIN SEDIMENT IS TO BE REMOVED EVERY TWO (2) YEARS. THIS OPERATION MAY, IN RARE CASES, NECESSITATE THE USE OF A SMALL LOADER SUCH AS A BOBCAT AND A SMALL DUMP TRUCK TO REMOVE THE SEDIMENT BUILD UP IN THE FOREBAY OF THE BASIN, HOWEVER, THE BASIS OF THE DESIGN IS SUCH THAT SEDIMENT BE REMOVED BY HAND SHOVEL, BE LOADED INTO 5 GALLON BUCKETS AND CARRIED ON FOOT. SEDIMENT BUILD UP AROUND RIP-RAPED OUTFALLS, DEBRIS CATCHERS AND IN THEIR SUMPS, SHALL BE REMOVED MANUALLY OR BY VACUUM TRUCK. ALL DISTURBED AREAS ARE TO BE RE-SEEDING AS APPROPRIATE WITH CANARY GRASS OR TALL FESCUE GRASS. SEDIMENT REMOVAL SHOULD PREFERABLY BE DONE DURING A DRY PERIOD.
- REGULAR MAINTENANCE OF THE SEDIMENT FOREBAY IS REQUIRED. FREQUENT REMOVAL OF SEDIMENT WILL MAKE IT LESS LIKELY THAT SEDIMENTS WILL BE RE-SUSPENDED. AT A MINIMUM, THE FOREBAY SHALL BE INSPECTED MONTHLY AND CLEANED TWO (2) TIMES PER YEAR.

3.3 NON-ROUTINE MAINTENANCE
STRUCTURAL: ALL HEADWALLS, CATCH BASINS, GRATES AND PIPES SHOULD BE INSPECTED ONCE EVERY FOUR (4) YEARS FOR PROPER FUNCTION, CLOGGING, SIGNS OF DETERIORATION AND STRUCTURAL INADEQUACY. ANY ADVERSE SITUATIONS ARE TO BE REPAIRED AS NEEDED.

3.4 NON-PERIODIC INSPECTION
THE STORM WATER MANAGEMENT SYSTEM SHALL BE INSPECTED AFTER TWO YEARS OF FULL OPERATION BY A REGISTERED PROFESSIONAL CIVIL ENGINEER TO CONFIRM ITS ADEQUACY. THE INSPECTION SHALL INCLUDE AN EXAMINATION OF ALL COMPONENTS OF THE SYSTEM INCLUDING FOREBAYS, VEGETATED SWALES, WATER QUALITY BASINS, CATCH BASINS, AND STORM WATER OUTFALLS.

3.5 RECORD KEEPING
A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION. A COPY OF THE O&M LOG FORM TO BE COMPLETED BY THE INSPECTOR IS INCLUDED AS APPENDIX A-2. MAINTENANCE INSPECTION REPORTS SHALL BE MAINTAINED BY THE OWNER FOR A PERIOD OF NO LESS THAN 5-YEARS.

4.0 PUBLIC SAFETY FEATURES
THE STORMWATER MANAGEMENT FACILITIES WERE DESIGNED TO BE INHERENTLY SAFE. ALL OF THE ACCESSIBLE STORMWATER CONTROLS (I.E., BASINS, FOREBAYS, SWALES, ETC.) WERE DESIGNED WITH 3:1 SIDE SLOPES TO ALLOW FOR PEDESTRIAN ACCESS IN AND OUT OF THE STORMWATER CONTROLS.

5.0 ESTIMATED O&M BUDGET
THE ESTIMATED ANNUAL BUDGET TO CONDUCT THE SPECIFIED OPERATION AND MAINTENANCE IS APPROXIMATELY SIX-HUNDRED DOLLARS PER YEAR (\$600/YEAR).

REV.	DATE	DESCRIPTION	BY	APP.
2	11/13/13	RESPONSE TO DPI COMMENTS	EKW	RJR
1	9/5/13	GENERAL REVISIONS	JLB	RJR

NEW BEDFORD PLANNING BOARD
APPROVED UNDER THE SUBDIVISION CONTROL LAW REQUIRED

DATE: _____

EROSION CONTROL DETAIL SHEET

PROJECT: CARDINAL PLACE (AVA'S WAY)
NEW BEDFORD, MASSACHUSETTS

CLIENT: RICHARD HOPPS
DARTMOUTH, MASSACHUSETTS

DESIGNED BY: JLB/RMF
DRAWN BY: JLB/RMF

CHECKED BY: RJR
APPROVED BY: RJR

SCALE: AS-NOTED
DATE: APRIL 22, 2013

P.O. BOX 1088
350 BEDFORD ST.
LAKEVILLE, MA 02347
TEL: 508.947.0050
FAX: 508.947.2004

PRIME ENGINEERING

SHEET NO. **ER2**
PROJECT NO. 1931-0101