

# STORMWATER ENGINEERING AT ROGER WILLIAMS PARK

## -BID PACKAGE 1-

1000 ELMWOOD AVENUE  
PLAT 090 LOT 001  
PROVIDENCE, RHODE ISLAND

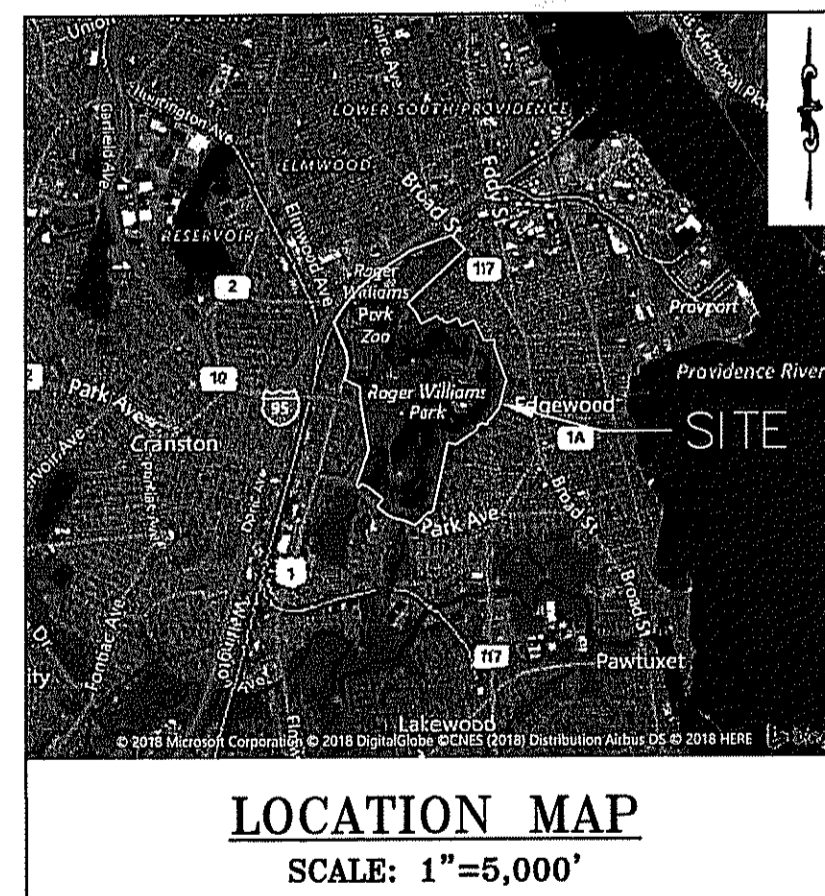
ISSUED FOR REVIEW

CLIENT:  
CITY OF PROVIDENCE PARKS & RECREATION DEPARTMENT  
CITY HALL, 25 DORRANCE STREET  
PROVIDENCE, RI 02903

LATEST ISSUED: AUGUST 22, 2018

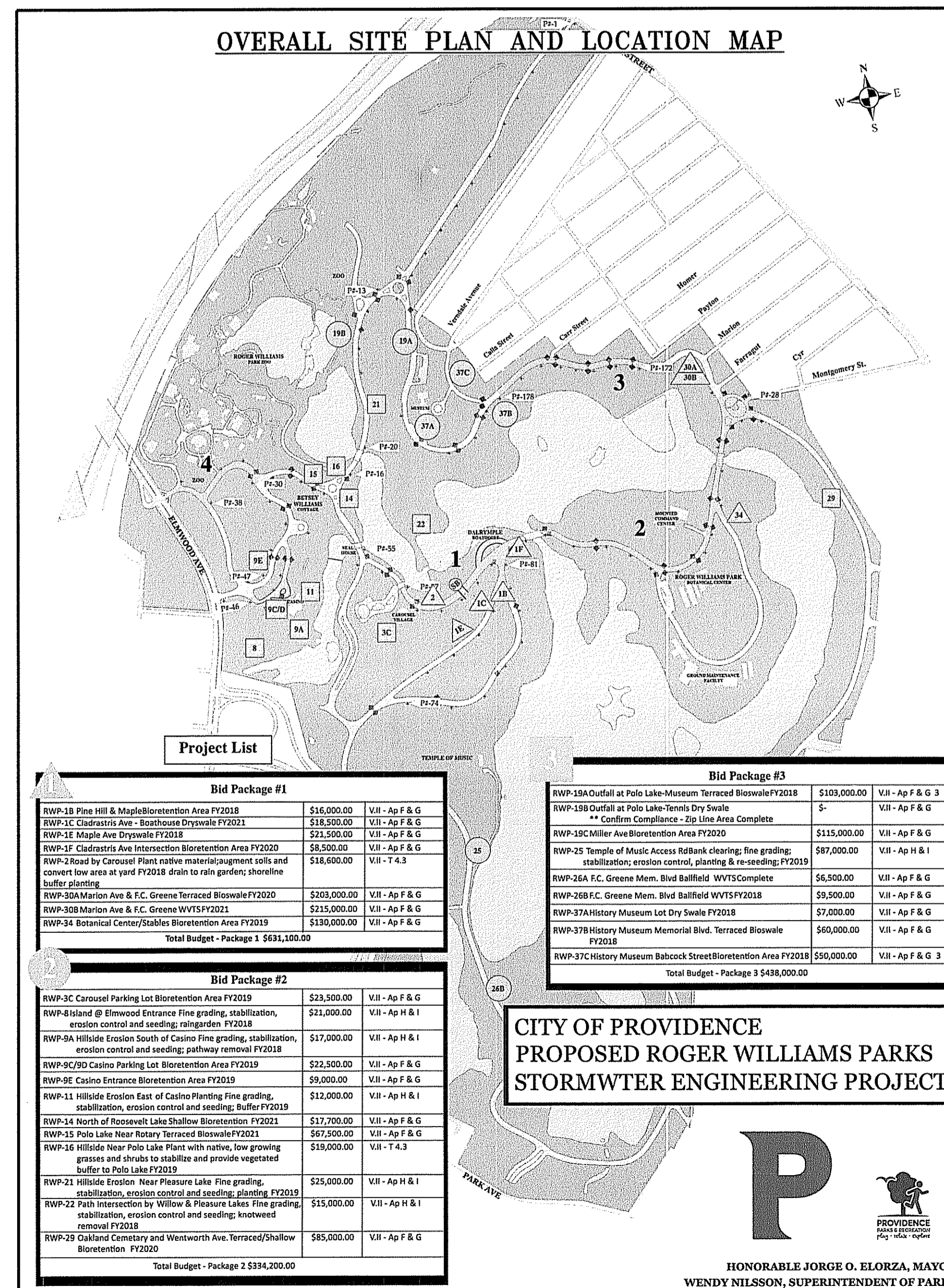
AUG 24 2018

**wood.**  
WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.  
275 PROMENADE STREET, SUITE 100  
PROVIDENCE RHODE ISLAND, 02908  
WEB: WWW.WOODPLC.COM  
(401) 649-9240



**PROPERTY OWNERS**

PLAT - LOT	PROPERTY ADDRESS	PROPERTY OWNER NAME	MAILING ADDRESS
090-001	1000 ELMWOOD AVE	CITY OF PROVIDENCE	CITY HALL, 25 DORRANCE ST. PROVIDENCE, RI 02903



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**LATEST ISSUE**

- 8/22/2018
- 8/22/2018
- 8/22/2018
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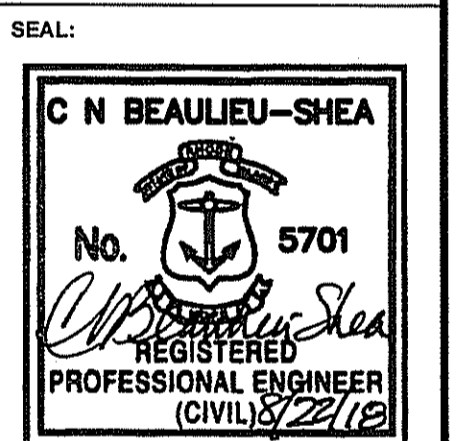
**LANDSCAPE PLANS (BY HALL BECKMAN, LTD.)**

- L-1 LANDSCAPE PLAN 1 7/31/2018
- L-2 LANDSCAPE PLAN 2 7/31/2018
- L-3 LANDSCAPE PLAN 3 7/31/2018
- L-4 LANDSCAPE PLAN 4 7/31/2018
- L-5 LANDSCAPE PLAN 5 7/31/2018

**SURVEY PLANS (BY WATERMAN ENGINEERING)**

- SU1-1 SITE 1 3/2/2018
- SU1-2 SITE 1 3/2/2018
- SU2 SITE 2 3/2/2018
- SU3-1 SITE 3 3/2/2018
- SU3-2 SITE 3 3/2/2018
- SU3-3 SITE 3 3/2/2018

NOT FOR CONSTRUCTION



REVISION	DATE	DESCRIPTION

CLIENT:  
**CITY OF PROVIDENCE PARKS & RECREATION DEPARTMENT**  
CITY HALL, 25 DORRANCE STREET,  
PROVIDENCE, RI 02903

PROJECT:

**STORMWATER ENGINEERING AT ROGER WILLIAMS PARK**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:

**COVER**

ISSUED FOR: PERMITTING

DATE: AUGUST 22, 2018

SCALE: N/A

DRAWN BY: MJW

CHECKED BY: CNB

PROJECT NO: 3653170024

NO CHANGES ALLOWED WITHOUT APPROVED PLANS MUST BE AT YOUR RISK

DATE: 08/22/2018 FILE: 18-0229

Charles A. Beaulieu-Shea

HONORABLE JORGE O. ELORZA, MAYOR  
WENDY NILSSON, SUPERINTENDENT OF PARKS

CITY OF PROVIDENCE  
PROPOSED ROGER WILLIAMS PARKS  
STORMWATER ENGINEERING PROJECT

CITY OF PROVIDENCE  
OFFICE OF WATER RESOURCES  
FRESHWATER WATER RESOURCES  
APPROVED WITH COMMENTS  
AS SPECIFIED IN THE COMMENTS  
AUGUST 22, 2018

C-0

SHEET 1 OF 9

**LEGEND**

	EXIST	PROP		EXIST	PROP
TOP/BOTTOM CURB ELEVATION	21.25 BC	21.25 BC	SURVEYED PROPERTY LINE (PL)	---	---
SPOT GRADE w/LEADER	21.25 X	21.25 X	ASSESSOR'S MAP PROP. LINE	---	---
SPOT GRADE	21.25 X	21.25 X	RIGHT-OF-WAY/PL EASEMENT	---	---
BORING LOCATION	BP-1	BP-1	BUILDING SETBACK	---	---
TEST PIT LOCATION	TP-1	TP-1	50' PERIMETER WETLAND	---	---
MONITORING WELL	MW-1	MW-1	100' RIVERBANK WETLAND	---	---
BENCH MARK	BM	BM	200' RIVERBANK WETLAND	---	---
DRAIN MANHOLE	DMH	DMH	ZONING LINE	10,000	10,000
CATCH BASIN	CB	CB	TOWN LINE	---	---
DOUBLE CATCH BASIN	DCB	DCB	STATE LINE	---	---
GUTTER INLET	GI	GI	GRAVEL ROAD	---	---
TRENCH DRAIN	TD	TD	EDGE OF PAVEMENT	---	---
HEADWALL	HW	HW	BITUMINOUS CURB	---	---
FLARED END SECTION	FES	FES	CAPE COD BERM	---	---
DRAINAGE LINE	D	D	PRECAST CONC. CURB	---	---
OVERFLOW DRAIN	OD	OD	VERT. GRAN. CURB	---	---
ROOF DRAIN	RD	RD	SLOPED GRAN. EDGING	---	---
OVERHEAD WIRE	OW	OW	LIMIT OF CURB TYPE	---	---
WATER LINE	W	W	TREE LINE	---	---
FIRE PROTECTION LINE	FW	FW	CRUSHED STONE	---	---
GAS LINE	G	G	EROSION CONTROL BLANKET	---	---
UNDERGROUND ELECTRIC	UE	UE	SAWCUT	---	---
UNDERGROUND TELEPHONE	UT	UT	MATCHLINE	---	---
FIRE ALARM	FA	FA	SOLID WHITE LINE	---	---
FIRE & POLICE CABLE	F&P	F&P	SOLID YELLOW LINE	---	---
CABLE TV	CATV	CATV	BROKEN WHITE LINE	---	---
PLUG/STUB	P	P	BROKEN YELLOW LINE	---	---
GREASE TRAP	GT	GT	SOLID WHITE CHANNELIZING LINE	---	---
CONTROL STRUCTURE	CS	CS	SOLID YELLOW CHANNELIZING LINE	---	---
SEWER MANHOLE	SMH	SMH	DOUBLE YELLOW LINE	---	---
SEWER LINE	S	S	STOP LINE	---	---
WATER GATE	W	W	STEEL GUARD RAIL	---	---
TAPPING SLEEVE, VALVE, & BOX	TSV	TSV	WOOD GUARD RAIL	---	---
RISER	R	R	PATH	---	---
PRESSURE REDUCER	PR	PR	CHAIN LINK FENCE	---	---
SIAMSE CONNECTION	SC	SC	STONE WALL	---	---
FIRE HYDRANT	FH	FH	RETAINING WALL	---	---
WATER METER	WM	WM	HAY BALES	---	---
POST INDICATOR VALVE	PV	PV	SILT FENCE	---	---
WELL	W	W	STRAW WATTLE	---	---
GAS GATE	GG	GG	LIMIT OF DISTURBANCE	---	---
GAS METER	GM	GM	MINOR CONTOUR	---	---
ELECTRIC MANHOLE	EM	EM	MAJOR CONTOUR	---	---
ELECTRIC BOX	EB	EB	TOP OF SLOPE	---	---
ELECTRIC METER	EM	EM	TOE OF SLOPE	---	---
LIGHT POLE	LP	LP	BUILDING	---	---
FLOOD LIGHT	FL	FL	BUILDING ENTRANCE	---	---
SINGLE LUMINAIRE	SL	SL	LOADING DOCK	---	---
DOUBLE LUMINAIRE	DL	DL	BOLLARD	---	---
TRIPLE LUMINAIRE	TL	TL	DUMPSTER PAD	---	---
QUAD LUMINAIRE	QL	QL	SIGN	---	---
WALL PACK	WP	WP	DOUBLE SIGN	---	---
TELEPHONE MANHOLE	TMH	TMH	PARKING METER	---	---
TRAFFIC SIGNAL	TS	TS	PARKING COUNT	---	---
SIGNAL BOX	SB	SB	COMPACT PARKING STALLS	---	---
FIRE ALARM CONTROL PANEL	FACP	FACP	CROSSWALK	---	---
FIRE ALARM BOX	FAB	FAB	CEMENT CONC. PAVEMENT	---	---
TRANSFORMER PAD	TP	TP	RIPRAP STONE	---	---
MANHOLE	M	M	TRAIL REINFORCEMENT	---	---
UTILITY POLE	U	U	ADA RAMP	---	---
GUY POLE	G	G	ADA PARKING	---	---
HAND HOLE	H	H	VAN-ACCESSIBLE ADA PARKING	---	---
PULL BOX	PB	PB			

**ABBREVIATIONS**

ABANDON	ABAN	MAXIMUM	MAX
ADJUST	ADJ	MINIMUM	MIN
AMERICAN SOCIETY FOR TESTING & MATERIALS	ASTM	NOT IN CONTRACT	NIC
AMERICANS WITH DISABILITIES ACT	ADA	NOT TO SCALE	NTS
APPROXIMATE	APPROX	ON CENTER	OC
ASPHALT COATED CORRUGATED METAL PIPE	ACOMP	ONSITE WASTEWATER TREATMENT SYSTEM	OWTS
BITUMINOUS CURB	BC	PAVED WATER WAY	PWW
BOTTOM OF SLOPE	BOS	POLYVINYLCHLORIDE PIPE	PVC
CAPE COD BERM	CCV	PRECAST CONCRETE CURB	PCC
CAST IRON PIPE	CIP	PROPOSED	PROP
CHANGE IN TYPE	CIT	RADIUS	R
COLUMN	COL	REINFORCED CONCRETE PIPE	RCP
CONDUIT	COND	REMODEL	REM
CORRUGATED ALUMINUM PIPE	CAP	REMOVE	REM
CORRUGATED POLYETHYLENE PIPE	CPP	REMOVE AND DISPOSE	R&D
DUCTILE IRON PIPE	DIP	REMOVE AND RESET	R&R
ELEVATION	ELEV	REMOVE AND STORE	R&S
EXISTING	EXIST	RETAIN	RET
FOUNDATION	FDN	SLOPED GRANITE EDGING	SGE
FRAME AND COVER	F&C	TAPPING SLEEVE, VALVE AND BOX	TSV&B
FRAME AND GRATE	F&G	TOP OF SLOPE	TOS
GALVANIZED	GALV	TRANSITION	TRANS
GRANITE CURB	GC	TYPICAL	TYP
HIGH DENSITY POLYETHYLENE	HDPE	UTILITY POLE	UP
HYDRANT	HYD	VERTICAL GRANITE CURB	VGC
INVERT ELEVATION	INV	VITRIFIED CLAY PIPE	VCP
LANDSCAPE AREA	LA	WATER GATE	WG

**GENERAL NOTES**

- THESE PLANS AND THEIR CORRESPONDING ELECTRONIC DOCUMENTS, INCLUDING CAD FILES FOR THE PROJECT ARE INSTRUMENTS OF PROFESSIONAL SERVICE AND SHALL NOT BE USED IN WHOLE OR IN PART FOR ANY OTHER PURPOSE THAN THE DEVELOPMENT OF THIS PROJECT WITHOUT THE EXPRESSED, WRITTEN CONSENT OF AMEC FOSTER WHEELER. ANY UNAUTHORIZED USE, RE-USE, ALTERATION, OR MODIFICATION OF THIS DATA SHALL BE AT THE USER'S RISK WITH NO LIABILITY ON THE PART OF AMEC FOSTER WHEELER.
- UPON AWARD OF THE CONTRACT AND PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND BONDS AND PAYING ALL STATE AND LOCAL FEES RELATING TO THE WORK SHOWN ON THESE DRAWINGS, THE CONSTRUCTION SPECIFICATIONS, AND CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL NOTIFY DIG-SAFE AT LEAST 72 BUSINESS HOURS PRIOR TO INITIATING ANY EXCAVATION WORK.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS. WHERE SITE SPECIFICATIONS ARE NOT PROVIDED, THE CONTRACTOR SHALL ADHERE TO LOCAL MUNICIPAL STANDARDS OR THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, AS APPLICABLE. WORK WITHIN LOCAL RIGHTS-OF-WAY SHALL ADHERE TO LOCAL MUNICIPAL STANDARDS; WORK WITHIN STATE RIGHTS-OF-WAY SHALL ADHERE TO STATE HIGHWAY STANDARDS. WHERE A DISCREPANCY EXISTS, THE MORE RESTRICTIVE STANDARD SHALL APPLY.
- REFERENCE MADE TO "STATE HIGHWAY STANDARDS," "STATE STANDARD SPECIFICATIONS," "STANDARD SPECIFICATIONS," OR "RIDOT STANDARDS" SHALL MEAN AND BE DEFINED AS THE "RHODE ISLAND DEPARTMENT OF TRANSPORTATION - STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION."
- ANY WORK NOT MEETING THE APPROVED STANDARDS SHALL BE REMOVED IMMEDIATELY AND REPLACED BY THE CONTRACTOR AT NO COST TO THE OWNER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SITE SECURITY AND JOB SAFETY AND SHALL CONFORM TO THE RULES AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND PROTECTION OF PEDESTRIAN AND VEHICULAR TRAFFIC INCLUDING ANY REQUIRED POLICE PROTECTION. ANY REQUIRED TEMPORARY CONSTRUCTION SIGNS, BARRICADES AND LANE CLOSURES SHALL BE IN CONFORMANCE WITH THE LATEST "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD).
- THE CONTRACTOR SHALL NOT OBSTRUCT PUBLIC ROADWAYS, SIDEWALKS, OR FIRE HYDRANTS WITHOUT FIRST OBTAINING THE NECESSARY PERMITS TO DO SO.
- ACCESSIBLE ROUTES, PARKING SPACES, SIDEWALKS, AND RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FEDERAL "AMERICANS WITH DISABILITIES ACT (ADA)" AND LOCAL AND STATE STANDARDS. WHERE A DISCREPANCY EXISTS, THE MORE RESTRICTIVE STANDARD SHALL APPLY.
- THE LIMITS-OF-WORK (A.K.A. "LIMIT OF DISTURBANCE") SHALL BE AS SHOWN ON THESE PLANS. AREAS DISTURBED BEYOND THESE DEFINED LIMITS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE. LANDSCAPE AREAS SHALL BE RESTORED WITH 6 INCHES OF LOAM AND SEED.
- UNLESS OTHERWISE NOTED ON THE PLANS, ALL UNPAVED/ LANDSCAPE AREAS SHALL RECEIVE FOUR (4) INCHES OF LOAM AND SEED WITHIN THE LIMITS OF WORK SHOWN ON THESE PLANS. LOAM SHALL BE EVENLY SPREAD, SMOOTHED, AND COMPACTED PRIOR TO SEEDING.
- PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL VERIFY EXISTING PAVEMENT ELEVATIONS AT THEIR PROPOSED INTERFACE WITH PROPOSED PAVEMENTS TO ENSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.
- HORIZONTAL AND VERTICAL DATUMS ARE PROVIDED ON THE EXISTING CONDITIONS PLANS.
- ALL TREES TO REMAIN WITHIN LIMIT OF DISTURBANCE (LOD) UNLESS OTHERWISE NOTED. TREES WITHIN LOD SHALL BE PROTECTED WITH SNOW FENCE UNTIL COMPLETION OF WORK OR WHEN HEAVY EQUIPMENT IS NO LONGER REQUIRED.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LOCAL AND STATE APPROVALS REQUIRED FOR THE PROJECT. REQUIRED PERMITS/APPROVALS FOR THE CONSTRUCTION INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:
  - RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
  - o FRESHWATER WETLANDS INSIGNIFICANT ALTERATION PERMIT
  - o RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

**GENERAL UTILITY NOTES:**

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES AND WORK TRADES ASSOCIATED WITH THE WORK SHOWN ON THESE PLANS.
- THE CONTRACTOR SHALL KEEP ALL LOCAL AGENCIES INFORMED OF SCHEDULE AS NECESSARY.
- EXISTING UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATION BASED ON BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE LOCATION, SIZE, MATERIAL(S), AND ELEVATION OF ALL EXISTING UTILITIES WITHIN THE LIMIT OF WORK PRIOR TO ORDERING OR INSTALLING THESE MATERIALS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES OR UTILITY CONFLICTS PRIOR TO CONSTRUCTION.
- WHERE AN EXISTING UTILITY IS FOUND TO BE IN CONFLICT WITH THE PROPOSED WORK, OR WHERE EXISTING CONDITIONS DIFFER FROM THE INFORMATION SHOWN ON THESE PLANS, SUCH THAT THE WORK CAN NOT BE COMPLETED AS INTENDED, THE CONTRACTOR SHALL IMMEDIATELY IDENTIFY AND PROVIDE THE ENGINEER WITH THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY IN CONFLICT. THE CONTRACTOR SHALL NOT CONTINUE WORK IN THIS AREA UNTIL THE APPROPRIATE REMEDIAL ACTION IS AGREED UPON BY THE OWNER AND ENGINEER.
- THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY DAMAGE TO OVERHEAD AND/OR UNDERGROUND UTILITIES, WHETHER OR NOT SHOWN ON THESE PLANS THROUGHOUT WORK ON THIS PROJECT.
- STORM DRAIN PIPING SHALL BE CONSTRUCTED OF HIGH-DENSITY POLYETHYLENE (HDPE) UNLESS OTHERWISE NOTED ON THE PLANS.
- ALL DRAINAGE MANHOLE DIAMETERS SHALL BE A MINIMUM OF FOUR (4) FEET AND AS DETERMINED BY THE MANHOLE MANUFACTURER(S), BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS AND LOCAL MUNICIPAL STANDARDS.
- ALL STRUCTURES UNDER PAVED AREAS SHALL BE DESIGNED TO MEET HS-20 TRUCK LOAD.

**LAYOUT AND MATERIALS NOTES**

- THE CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, AND DATA FILES THAT ARE OBTAINED FROM THE DESIGNERS, BUT SHALL VERIFY LOCATION OF PROJECT FEATURES IN ACCORDANCE WITH PAPER COPIES OF THE PLANS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.
- SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SCALED TO THE ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.
- DIMENSIONS ARE TO/FROM FACE OF CURB, FACE OF BUILDING, FACE OF WALL, AND CENTER LINE OF PAVEMENT MARKINGS, UNLESS OTHERWISE NOTED ON THESE PLANS.
- PROPOSED BOUNDS AND ANY OTHER EXISTING PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.
- THE CONTRACTOR SHALL PROVIDE TEMPORARY BITUMINOUS PATCH FOR ANY TRENCH WORK WITHIN PAVEMENT OR SIDEWALK AREAS IN PUBLIC RIGHTS-OF-WAY UNTIL PERMANENT PATCHING IS INSTALLED.

**DEMOLITION**

- WITHIN THE LIMIT OF WORK/DISTURBANCE, THE CONTRACTOR SHALL CLEAR AND GRUB ALL EXISTING VEGETATION AND STOCKPILE AND SCREEN TOPSOIL FOR RE-USE IN LANDSCAPE AREAS. THE CONTRACTOR SHALL ALSO REMOVE AND DISPOSE OF ALL EXISTING MANMADE FEATURES, INCLUDING BUT NOT LIMITED TO BUILDINGS, STRUCTURES, PAVEMENTS, SLABS, CURBING, WALLS, FENCES, UTILITIES (BOTH OVERHEAD AND UNDERGROUND), SIGNS, ETC., EXCEPT AS OTHERWISE NOTED ON THESE PLANS. THE EXISTING SOIL CAP SHALL NOT BE DISTURBED UNLESS OTHERWISE INDICATED ON THESE PLANS.
- ALL WETLAND DISTURBANCES ASSOCIATED WITH CONSTRUCTION ACTIVITIES SHALL BE RESTORED.
- THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.
- THE EXTENT OF DEMOLITION DEPICTED ON THESE PLANS IS INTENDED TO AID THE CONTRACTOR IN BIDDING THE PROJECT AND IS NOT NECESSARILY INTENDED TO DEPICT EACH AND EVERY ELEMENT OF DEMOLITION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE FULL EXTENTS OF THE DEMOLITION WORK PRIOR TO CONTRACT AWARD AND SHALL NOT BE COMPENSATED FOR UNFORESEEN CONDITIONS ONCE THE WORK HAS COMMENCED.
- UNLESS OTHERWISE SPECIFICALLY PROVIDED ON THESE PLANS, THE ENGINEER HAS NOT PREPARED PLANS FOR THE DISCOVERY, REMOVAL, ABATEMENT, OR DISPOSAL OF ANY HAZARDOUS OR TOXIC MATERIALS FOUND DURING CONSTRUCTION.

**100-YEAR FLOOD PLAIN IMPACT AVOIDANCE**

- FEMA FLOOD ZONE BOUNDARIES HAVE BEEN SUPERIMPOSED ONTO THIS DRAWING, GIVEN THAT IN MOST AREAS THE FEMA BOUNDARIES CROSS SIGNIFICANT ELEVATIONS (SOMETIMES >20 FEET). THEREFORE, 100-YEAR FLOOD LIMITS WERE DEEMED INACCURATE.
- ANECDOTAL EVIDENCE SUGGESTS THAT DURING THE FLOODS IN MARCH/APRIL 2010 (A 100+ YEAR STORM EVENT) THE FLOOD LEVELS DID NOT BREACH THE DALRYMPLE BOATHOUSE. BASED ON THE EXISTING CONDITIONS SURVEY, GRADES AT THE BOATHOUSE APPEAR LESS THAN 30 FEET. THEREFORE, THE FLOOD PLAIN IS ASSUMED TO BE BELOW ELEVATION 30.
- BASED ON THE INFORMATION ABOVE, THERE IS NO ANTICIPATED INCREASE IN THE 100-YEAR FLOOD ELEVATIONS RESULTANT FROM THE PROPOSED PROJECT, AS DESIGNED.

**EXISTING CONDITIONS**

- EXISTING CONDITIONS ARE COMPILED FROM THE FOLLOWING SOURCES:
- FIELD SURVEY AND BY WATERMAN ENGINEERING COMPANY, SUPPLEMENTED BY RIGIS LIDAR ELEVATION DATA.
  - FEMA FLOOD MAPS 44007C0316G (EFFECTIVE 3/2/2009), 44007C0317J (EFFECTIVE 9/8/2013), 44007C0318H (EFFECTIVE 10/2/2015), 44007C0319I (EFFECTIVE 10/2/2015).
  - SUPPLEMENTAL INFORMATION PROVIDED THROUGH FIELD VISITS BY WOOD.

**SITE SPECIFIC DATA**

- TOTAL SITE AREA = 435.0± ACRES
- TOTAL AREA OF DISTURBANCE = 2.0± ACRES
- NATURAL HERITAGE AREA (NHA) IMPACT - N/A
- THREATENED SPECIES OR HABITAT IMPACT - N/A
- WATERSHED = ROGER WILLIAMS PARK PONDS: I.D. R0006017L-05

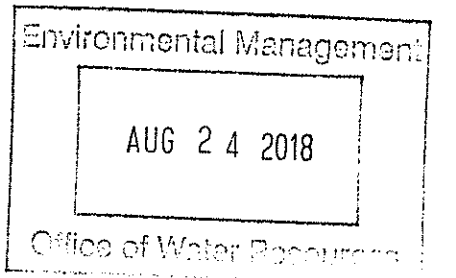
**EROSION CONTROLS/CONSTRUCTION SEQUENCING**

- PRIOR TO THE START OF CONSTRUCTION OF ANY EARTHWORK ACTIVITIES, THE CONTRACTOR SHALL NOTIFY ALL APPLICABLE AGENCIES AND INSTALL THE EROSION CONTROL MEASURES SHOWN ON THESE PLANS IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL PERMITS PERTAINING TO THIS PROJECT.
- THE CONTRACTOR SHALL KEEP A COPY OF THE "SOIL EROSION AND SEDIMENTATION CONTROL PLAN" (SESC) AND THE APPROVED PLAN SET AT THE CONSTRUCTION SITE AT ALL TIMES.
- THE CONTRACTOR SHALL INSTALL ALL EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES SHOWN ON THE PLAN SET IN ACCORDANCE WITH THE SESC AND THE MOST RECENT EDITION OF THE "RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK."
- THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN AND/OR UPGRADE THESE MEASURES, AS NECESSARY, THROUGHOUT CONSTRUCTION, TO MEET THE REQUIREMENTS OF ALL RELATED PERMITS FOR THE PROJECT.
- THE CONTRACTOR SHALL PREPARE AND MAINTAIN A RED-LINED COPY OF THE SESC PLAN SHOWING INTENDED AREAS FOR STAGING, STOCKPILING, WASHOUT, SOLID WASTE CONTAINMENT, AND TEMPORARY SEDIMENTATION CONTROL AREAS. ALL SUCH AREAS SHALL BE LOCATED OUTSIDE OF REGULATED WETLAND AREAS OR AREAS INTENDED FOR INFILTRATION PRACTICES.
- EROSION CONTROL DEVICES:
  - AT LEAST ONE STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED FOR ALL CONSTRUCTION VEHICLES. THE CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED BEFORE CONSTRUCTION VEHICLES ARE ALLOWED TO ENTER THE CONSTRUCTION SITE. ADDITIONAL ENTRANCES/EXITS SHALL BE INSTALLED, IF MORE THAN ONE ACCESS POINT IS ANTICIPATED BY THE CONTRACTOR. A WASH OUT PAD MAY ALSO BE INSTALLED TO WASH CONSTRUCTION VEHICLES EXITING THE SITE.
  - ROADS ADJACENT TO THE CONSTRUCTION SITE SHALL BE CLEAN AT THE END OF EACH WORK DAY.
  - TEMPORARY SEDIMENT BASINS MAY BE EXCAVATED OR BERMED/HAYBALED AND SHALL BE SIZED IN ACCORDANCE WITH THE "RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL" AND THE "RHODE ISLAND SOIL EROSION AND SEDIMENTATION CONTROL HANDBOOK." THE DISCHARGE LOCATION FROM THESE BASINS SHALL BE STABILIZED TO PREVENT EROSION.
  - STRAW WATTLE AND SILT SACKS SHALL BE INSTALLED AT ALL DOWN-GRADIENT CATCH BASINS WITHIN THE LIMIT OF WORK TO CONTROL EROSION AND SEDIMENTATION AND TO PROTECT OFF-SITE AREAS. THESE DEVICES SHALL BE INSTALLED AS SHOWN ON THE E&S CONTROL PLAN PRIOR TO INITIATION OF MAJOR SITE WORK ACTIVITIES AND SHALL BE MAINTAINED/REPAIRED UNTIL FINAL STABILIZATION OF ALL DISTURBED AREAS.
  - SILT FENCE SHALL BE INSTALLED AROUND ALL EARTH STOCKPILES. STOCKPILES SHALL BE STABILIZED WITH TEMPORARY SEED ACCORDING TO NOTE 11 BELOW. IF TEMPORARY SEED IS NOT FEASIBLE OR NOT PRACTICAL, STOCKPILES SHALL BE COVERED WITH POLYETHYLENE SHEETING OR SIMILAR PRODUCT AT THE END OF EACH DAY TO MINIMIZE DUST.
  - ALL OTHER EROSION CONTROL DEVICES SHOWN ON THESE PLANS SHALL BE IN ACCORDANCE WITH "RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL" AND THE "RHODE ISLAND SOIL EROSION AND SEDIMENTATION CONTROL HANDBOOK."
- THE EROSION CONTROL MEASURES SHOWN ON THESE PLANS ARE INTENDED TO BE THE MINIMUM NECESSARY AT THE START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN AND SUPPLEMENT THESE EROSION CONTROLS, AS NECESSARY THROUGHOUT CONSTRUCTION, TO PREVENT DAMAGE TO WETLANDS AND/OR SURROUNDING PROPERTIES.
- THE CONTRACTOR SHALL PREVENT DUST, DEBRIS, AND SEDIMENTS FROM LEAVING THE SITE DURING CONSTRUCTION AND SHALL BE RESPONSIBLE TO REPAIR, CLEAN UP, AND TAKE OTHER CORRECTIVE ACTION IMMEDIATELY OR NO LATER THAN 24 HOURS AFTER ANY ISSUE ARISES.
- THE CONTRACTOR SHALL CONTROL CONSTRUCTION STORMWATER RUNOFF IN SUCH A MANNER AS TO PREVENT DAMAGE TO DOWN-GRADIENT PROPERTIES; ANY PROPERTIES SO DAMAGED SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL DEVICES ON A WEEKLY BASIS AND WITHIN 12 HOURS AFTER A RAINFALL EVENT. THE CONTRACTOR SHALL IMMEDIATELY REPAIR DAMAGED DEVICES AND SHALL REMOVE ACCUMULATED SEDIMENTS IN ACCORDANCE WITH LOCAL REQUIREMENTS AND THE RIPDES PERMIT, WHEN APPLICABLE. ACCUMULATED SEDIMENTS SHALL BE REMOVED FROM THE SITE OR PLACED AWAY FROM WETLANDS AND CLOSED DRAINAGE SYSTEMS.
- THE CONTRACTOR SHALL MAKE EVERY EFFORT TO PERFORM EARTHWORK IN PHASES THAT ALLOW FOR STABILIZATION OF THESE AREAS IN A RELATIVELY SHORT TIME PERIOD AND TO DISCOURAGE EROSION AND SEDIMENTATION. ANY EXPOSED SOILS INTENDED TO REMAIN FOR MORE THAN 14 DAYS SHALL BE STABILIZED WITH MULCH, OR TEMPORARY SEED AND WATERED TO ENCOURAGE VEGETATION.
- THE CONTRACTOR SHALL INSTALL PERMANENT SEEDING BETWEEN APRIL 15TH AND JUNE 15TH AND/OR AUGUST 15TH TO OCTOBER 15TH.
- THE CONTRACTOR SHALL APPLY PERMANENT SOIL STABILIZATION MEASURES TO ALL GRADED AREAS WITHIN SEVEN (7) DAYS OF ESTABLISHING FINAL GRADE.
- THE CONTRACTOR SHALL PERFORM A FINAL INSPECTION OF ALL EXISTING CATCH BASINS, DRAINAGE PIPING, AND ASSOCIATED DRAINAGE STRUCTURES WITHIN THE PROJECT LIMITS TO ENSURE THAT ALL SEDIMENTS HAVE BEEN REMOVED BEFORE WORK IS DEEMED COMPLETE.
- THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL E&S MEASURES ONLY AFTER FINAL PAVEMENT IS PLACED AND VEGETATION IN LANDSCAPE AREAS IS WELL ESTABLISHED.

**INFILTRATION AREAS**

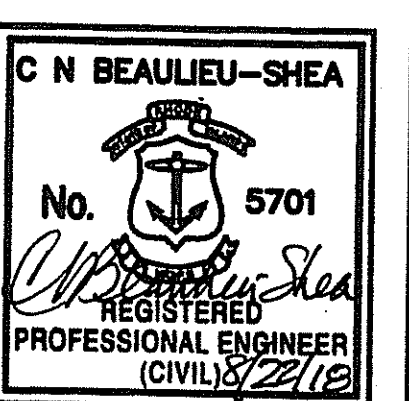
TO ENSURE THE LONG-TERM FUNCTION AND VALUE OF ANY AREA PROPOSED FOR INFILTRATION INCLUDING BUT NOT LIMITED TO BIORETENTION BASINS, SAND FILTERS, SURFACE INFILTRATION BASINS, AND SUBSURFACE INFILTRATION CHAMBERS, THE CONTRACTOR SHALL EXERCISE THE FOLLOWING BEST MANAGEMENT PRACTICES THROUGHOUT CONSTRUCTION:

- THESE AREAS SHALL NOT BE USED FOR TEMPORARY CONSTRUCTION SEDIMENTATION CONTROL, SEDIMENTATION BASINS, OR DEWATERING AREAS.
- THESE AREAS SHALL REMAIN OFF-LINE UNTIL THE ENTIRE CONSTRUCTION AREA CONTRIBUTING TO THESE AREAS HAS BEEN STABILIZED WITH BUILDINGS, BUILDING FOUNDATIONS, PAVEMENT, OR VEGETATION, AS APPLICABLE.
- STORMWATER RUNOFF DURING CONSTRUCTION SHALL BE DIRECTED AWAY FROM THESE AREAS TO THE GREATEST EXTENT PRACTICABLE. WHERE NOT FEASIBLE, THE CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROLS UP-GRADIENT OF THESE AREAS TO PREVENT SEDIMENTATION OF THESE AREAS DURING CONSTRUCTION.
- THE SUBGRADE BELOW THESE AREAS SHALL NOT BE COMPACTED; THEREFORE, THE CONTRACTOR SHALL RESTRICT ACCESS TO THESE AREAS BY HEAVY EQUIPMENT AND SHALL NOT USE THESE AREAS FOR MATERIALS STOCKPILES.
- EXCAVATION AND CONSTRUCTION OF THESE AREAS SHALL BE PERFORMED USING HAND OR HYDRAULIC EQUIPMENT TO ENSURE THAT THE NATURAL FILTRATION EARTH MATERIAL IS NOT DISTURBED OR OTHERWISE COMPACTED.
- UPON COMPLETION OF CONSTRUCTION OF ANY OF THESE AREAS, THE CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES TO PREVENT SILTATION OF THE FILTER MATERIALS.



NOT FOR CONSTRUCTION

SEAL:



REVISION DATE DESCRIPTION

CITY OF PROVIDENCE  
PARKS & RECREATION  
DEPARTMENT  
CITY HALL, 25 DORRANCE STREET,  
PROVIDENCE, RI 02903

PROJECT:

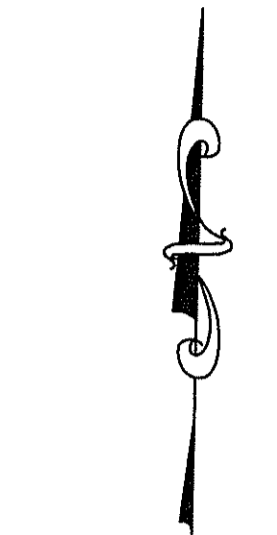
STORMWATER  
ENGINEERING AT  
ROGER  
WILLIAMS PARK  
1000 ELMWOOD AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:

**LEGEND & NOTES**

ISSUED FOR: PERMITTING  
DATE: AUGUST 22, 2018  
SCALE: N/A  
DRAWN BY: M&W  
CHECKED BY: CNB  
PROJECT NO: 3653170024

DEPARTMENT OF ENVIRONMENTAL  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS  
APPROVED WITH PERMIT NO. 18-0229  
AS SPECIFIED IN THE PERMIT  
DATED JULY 22 2018  
NO CHANGES ALLOWED WITHOUT  
APPROVED PLAN AMENDMENTS  
Charles A. White



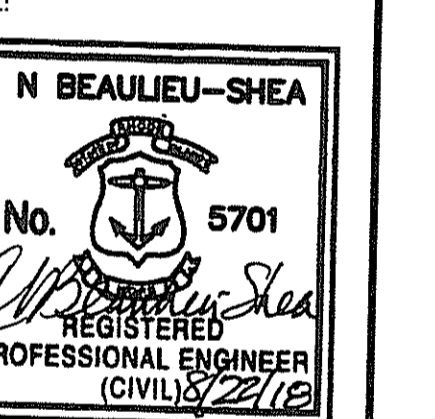
Environmental Management

AUG 24 2018

DEPARTMENT OF  
OFFICE OF  
FRESHWATER  
APPROVED  
AS SPECIFIED  
DATED OCT 22 2018  
NO CHANGES  
APPROVED PLACE

18-0229

NOT FOR CONSTRUCTION



REVISION	DATE	DESCRIPTION

CLIENT:  
**CITY OF PROVIDENCE  
PARKS & RECREATION  
DEPARTMENT**  
CITY HALL, 25 DORRANCE STREET,  
PROVIDENCE, RI 02903

PROJECT:  
**STORMWATER  
ENGINEERING AT  
ROGER  
WILLIAMS PARK**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:  
**OVERALL PLAN**

ISSUED FOR: PERMITTING  
DATE: AUGUST 22, 2018  
SCALE: 1" = 150'  
DRAWN BY: MJW  
CHECKED BY: CNB  
PROJECT NO: 3653170024

**C-2**

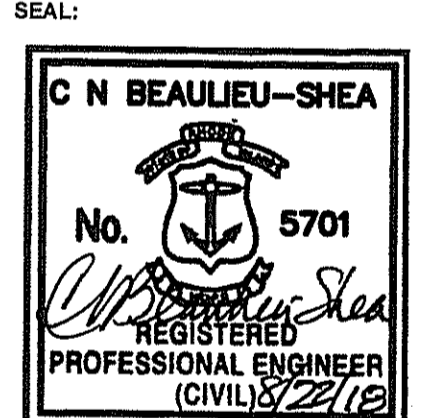
SHEET 3 OF 9



ALL TREES TO REMAIN WITHIN LIMIT OF DISTURBANCE (LOD) UNLESS OTHERWISE NOTED. TREES WITHIN LOD SHALL BE PROTECTED WITH SNOW FENCE UNTIL COMPLETION OF WORK OR WHEN HEAVY EQUIPMENT IS NO LONGER REQUIRED.

Environmental Management  
AUG 24 2018  
Office of Environmental Management

NOT FOR CONSTRUCTION



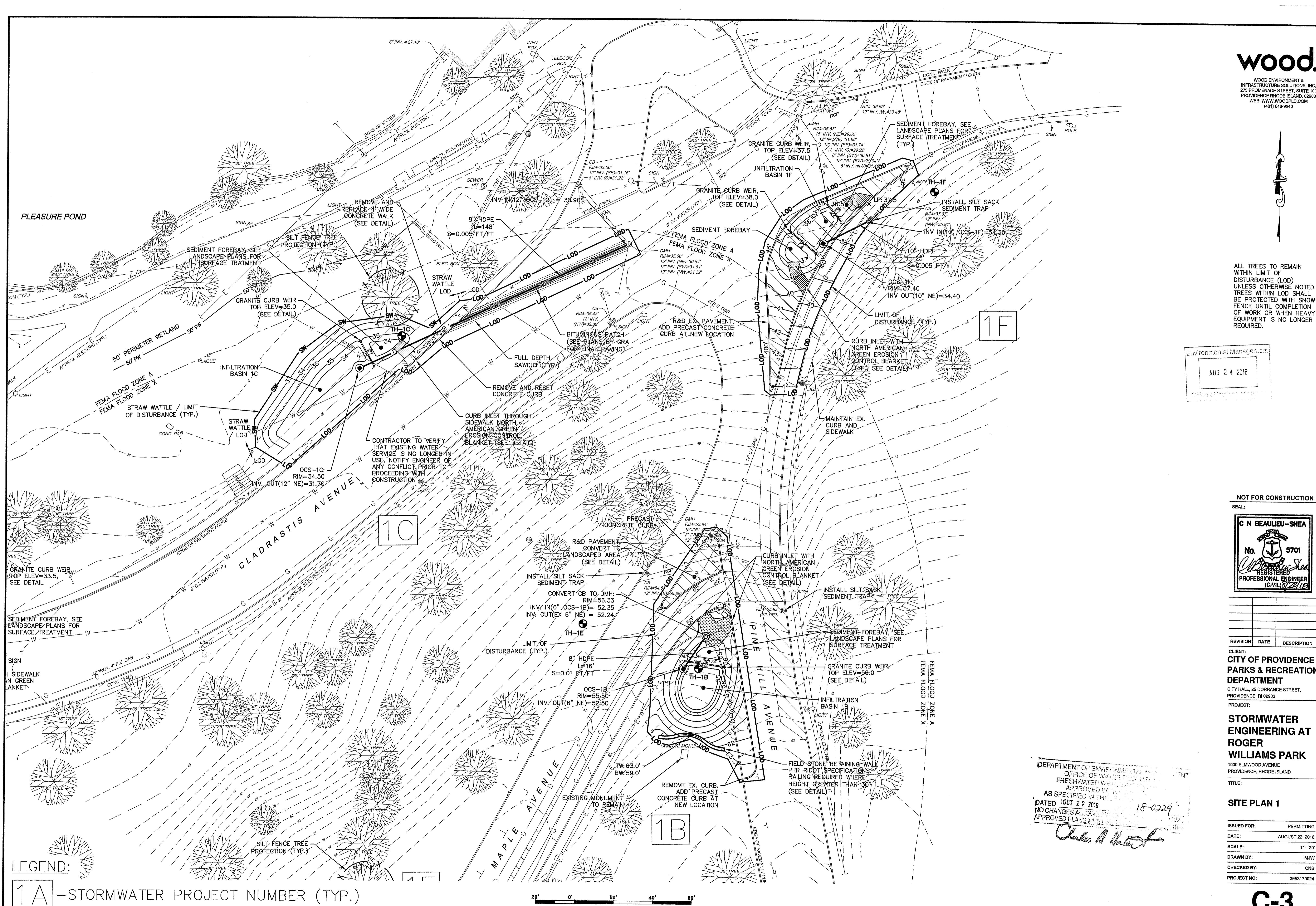
REVISION DATE DESCRIPTION

CLIENT:  
**CITY OF PROVIDENCE PARKS & RECREATION DEPARTMENT**  
CITY HALL, 25 DORRANCE STREET, PROVIDENCE, RI 02903

PROJECT:  
**STORMWATER ENGINEERING AT ROGER WILLIAMS PARK**  
1000 ELMWOOD AVENUE, PROVIDENCE, RHODE ISLAND

TITLE:  
**SITE PLAN 1**

ISSUED FOR: PERMITTING  
DATE: AUGUST 22, 2018  
SCALE: 1" = 20'  
DRAWN BY: MJW  
CHECKED BY: CNB  
PROJECT NO.: 365370024



**LEGEND:**  
1A - STORMWATER PROJECT NUMBER (TYP.)

SCALE: 1" = 20'

ALL TREES TO REMAIN WITHIN LIMIT OF DISTURBANCE (LOD) UNLESS OTHERWISE NOTED. TREES WITHIN LOD SHALL BE PROTECTED WITH SNOW FENCE UNTIL COMPLETION OF WORK OR WHEN HEAVY EQUIPMENT IS NO LONGER REQUIRED.

Environmental Management  
AUG 24 2018

NOT FOR CONSTRUCTION

SEAL:  
**C N BEAULIEU-SHEA**  
No. 5701  
REGISTERED PROFESSIONAL ENGINEER (CIVIL) 12/15

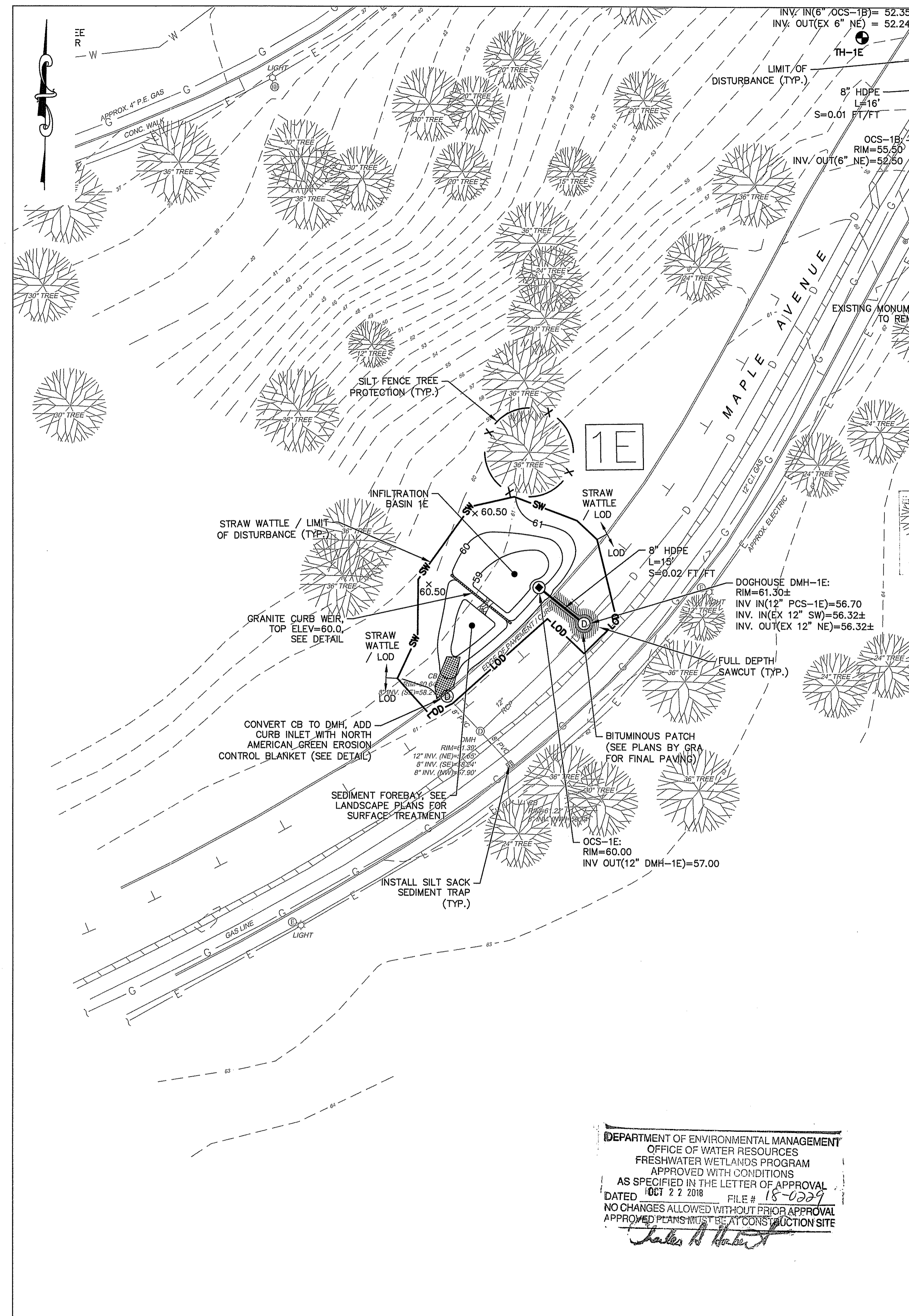
REVISION	DATE	DESCRIPTION

CLIENT:  
**CITY OF PROVIDENCE PARKS & RECREATION DEPARTMENT**  
CITY HALL, 25 DORRANCE STREET, PROVIDENCE, RI 02903

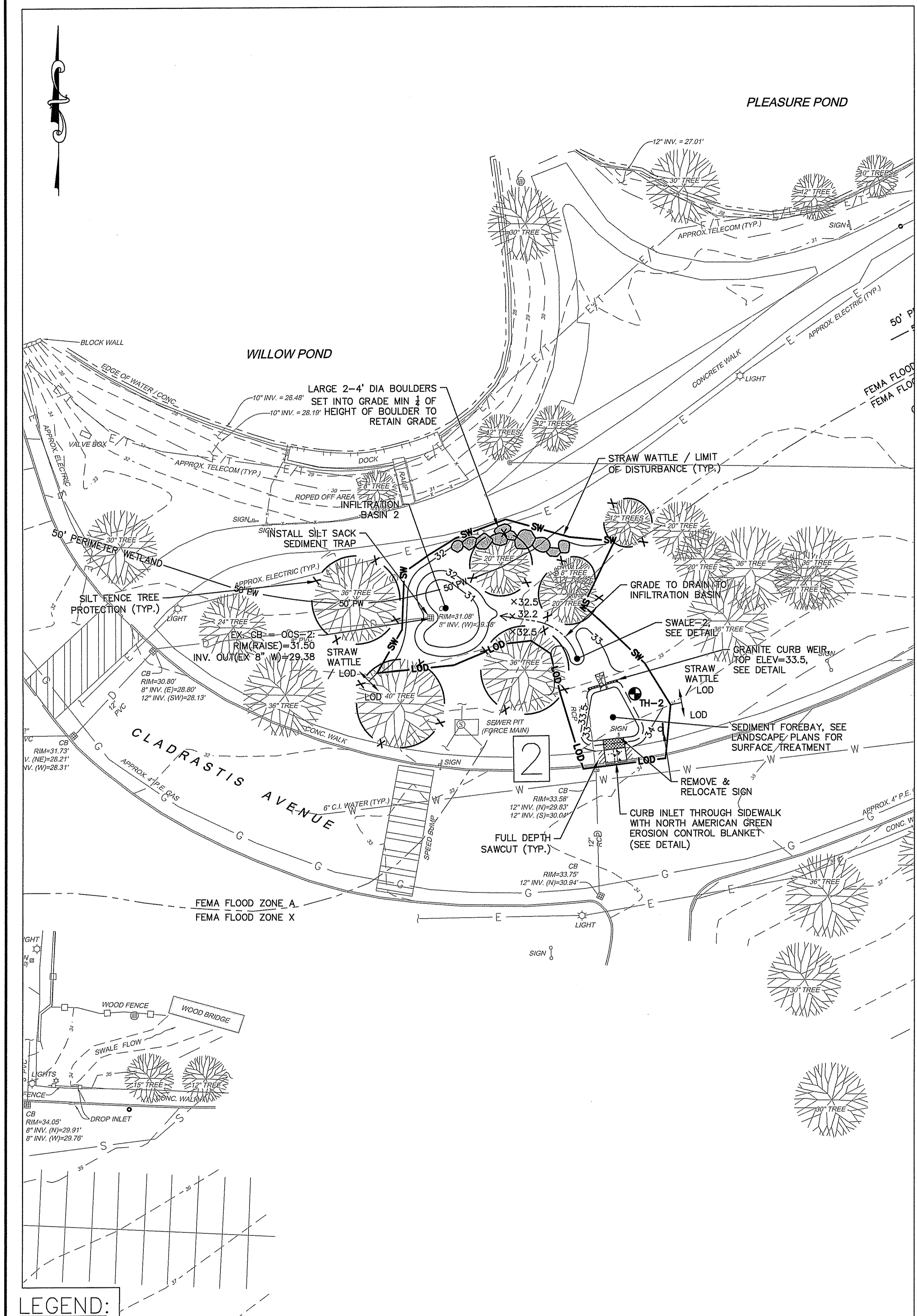
PROJECT:  
**STORMWATER ENGINEERING AT ROGER WILLIAMS PARK**  
1000 ELMWOOD AVENUE PROVIDENCE, RHODE ISLAND

TITLE:  
**SITE PLAN 2**

ISSUED FOR: PERMITTING  
DATE: AUGUST 22, 2018  
SCALE: 1" = 20'  
DRAWN BY: MJW  
CHECKED BY: CNB  
PROJECT NO: 3653170024



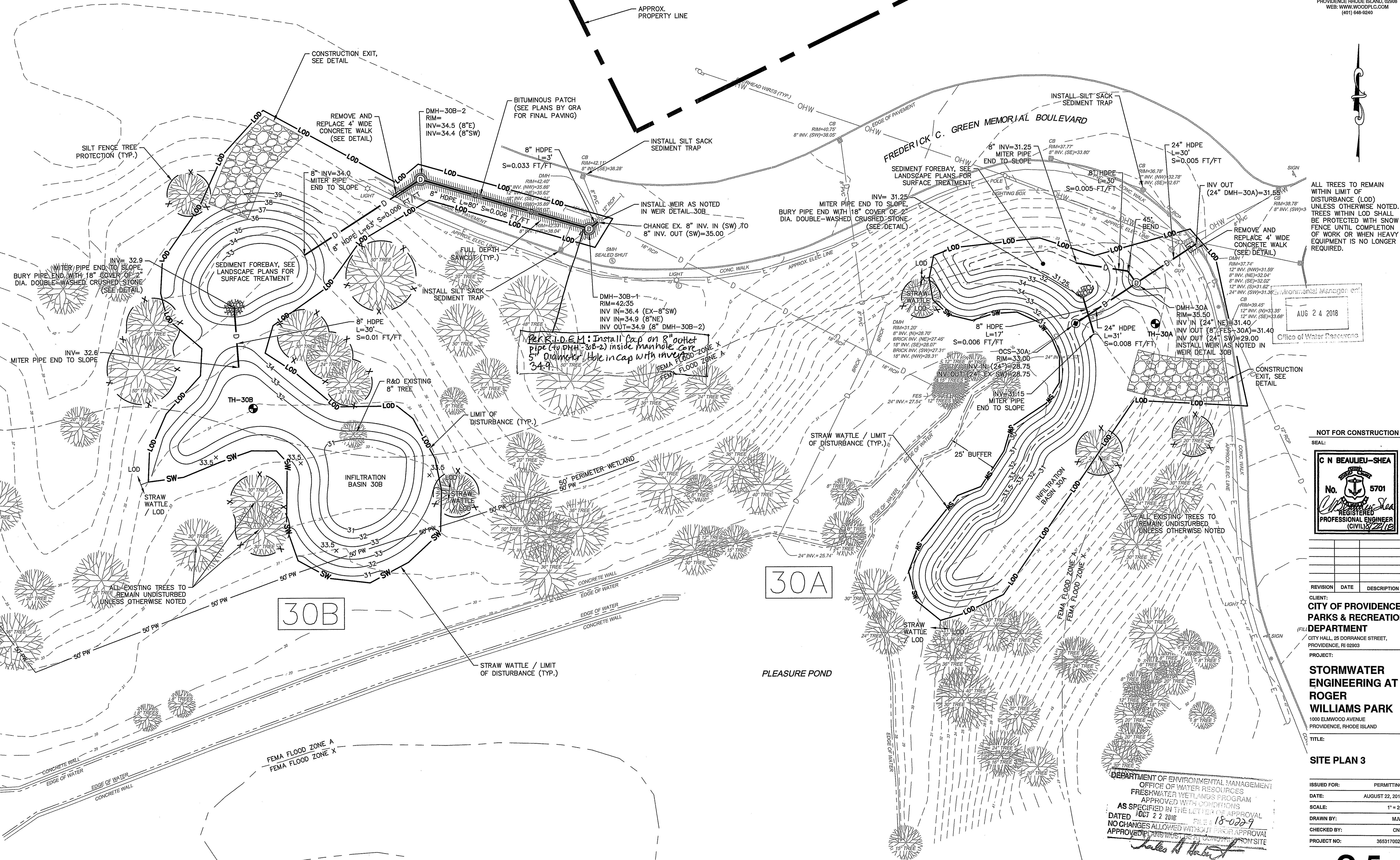
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED OCT 22 2018 FILE # 18-0229  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
*Charles A. Hender*



LEGEND:  
**1A** - STORMWATER PROJECT NUMBER (TYP.)

LEGEND:

1A - STORMWATER PROJECT NUMBER (TYP.)



ALL TREES TO REMAIN WITHIN LIMIT OF DISTURBANCE (LOD) UNLESS OTHERWISE NOTED. TREES WITHIN LOD SHALL BE PROTECTED WITH SNOW FENCE UNTIL COMPLETION OF WORK OR WHEN HEAVY EQUIPMENT IS NO LONGER REQUIRED.

Office of Environmental Management  
Office of Water Resources  
AUG 24 2018

NOT FOR CONSTRUCTION  
SEAL:  
**C N BEAULIEU-SHEA**  
No. 5701  
REGISTERED PROFESSIONAL ENGINEER (CIVIL) 2/12

REVISION DATE DESCRIPTION  
CLIENT:  
**CITY OF PROVIDENCE PARKS & RECREATION DEPARTMENT**  
CITY HALL, 25 DORRANCE STREET, PROVIDENCE, RI 02903  
PROJECT:

**STORMWATER ENGINEERING AT ROGER WILLIAMS PARK**  
1005 ELMWOOD AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:  
**SITE PLAN 3**

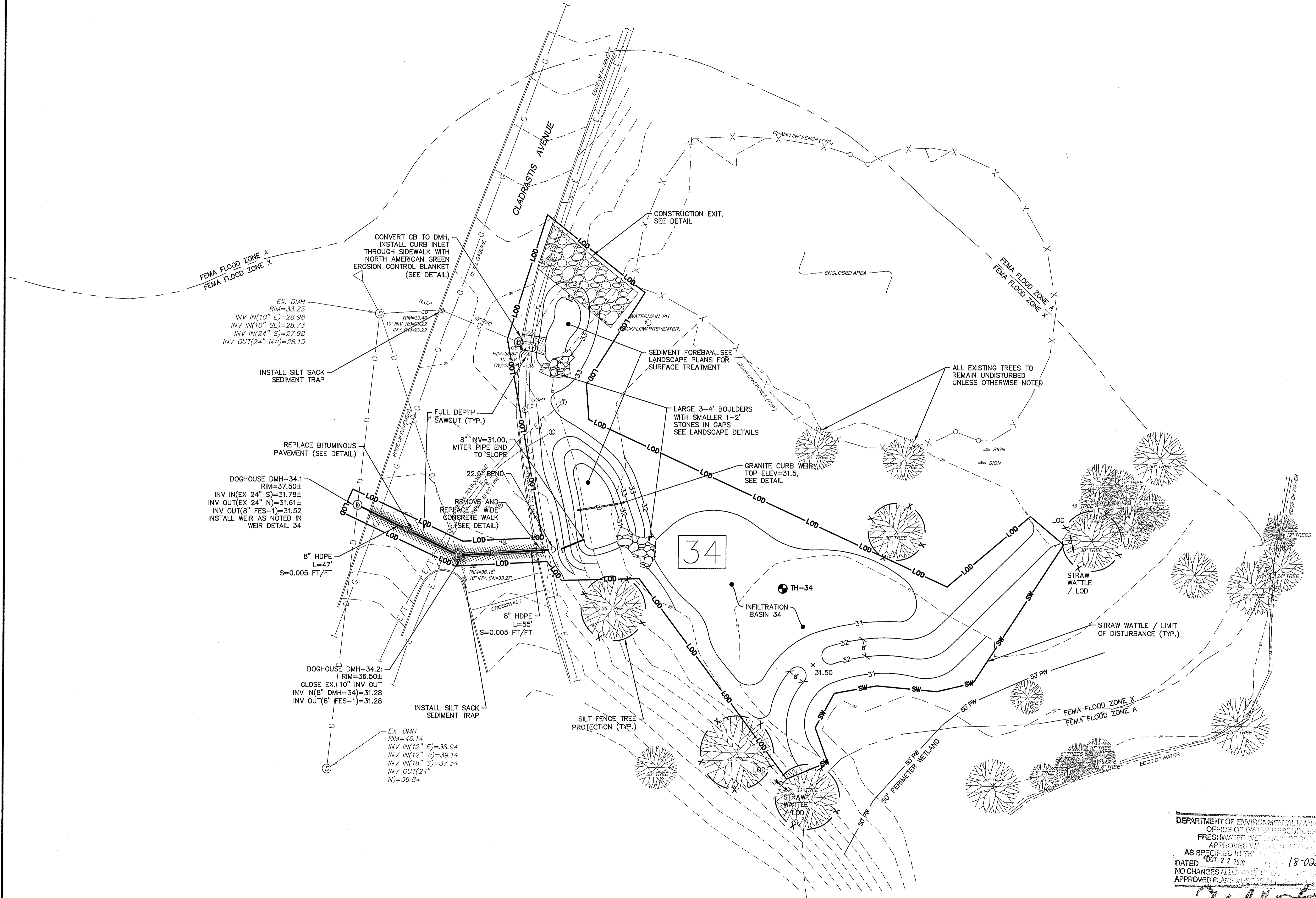
ISSUED FOR: PERMITTING  
DATE: AUGUST 22, 2018  
SCALE: 1" = 20'  
DRAWN BY: MJW  
CHECKED BY: CNB  
PROJECT NO: 3653170024

**C-5**  
SHEET 6 OF 9



ALL TREES TO REMAIN WITHIN LIMIT OF DISTURBANCE (LOD) UNLESS OTHERWISE NOTED. TREES WITHIN LOD SHALL BE PROTECTED WITH SNOW FENCE UNTIL COMPLETION OF WORK OR WHEN HEAVY EQUIPMENT IS NO LONGER REQUIRED.

ENVIRONMENTAL MANAGEMENT  
AUG 24 2018



EX. DMH  
RIM=33.23  
INV IN(10" E)=28.98  
INV IN(10" SE)=28.73  
INV IN(24" S)=27.98  
INV OUT(24" NW)=28.15

DOGHOUSE DMH-34.1  
RIM=37.50±  
INV IN(EX 24" S)=31.78±  
INV OUT(EX 24" N)=31.61±  
INV OUT(8" FES-1)=31.52  
INSTALL WEIR AS NOTED IN WEIR DETAIL 34

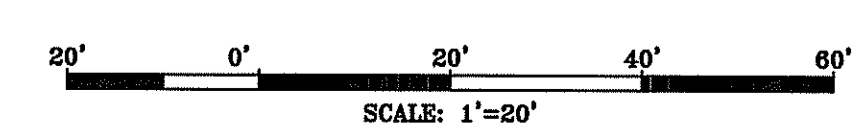
8" HDPE  
L=47'  
S=0.005 FT/FT

DOGHOUSE DMH-34.2:  
RIM=36.50±  
CLOSE EX. 10" INV OUT  
INV IN(8" DMH-34)=31.28  
INV OUT(8" FES-1)=31.28

EX. DMH  
RIM=46.14  
INV IN(12" E)=38.94  
INV IN(12" W)=39.14  
INV IN(18" S)=37.54  
INV OUT(24" N)=36.84

34

LEGEND:  
1A - STORMWATER PROJECT NUMBER (TYP.)



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLAND PROGRAM  
APPROVED WITH PERMIT NO. 18-0229  
AS SPECIFIED IN THIS LETTER OF APPROVAL  
DATED OCT 22 2018  
NO CHANGES ALLOWED WITHOUT THE APPROVAL  
APPROVED PLANS MUST BE ON THIS SITE

*Charles A. Hart*

NOT FOR CONSTRUCTION

SEAL:

**C N BEAULIEU-SHEA**  
No. 5701  
*Charles N. Beaulieu-Shea*  
REGISTERED PROFESSIONAL ENGINEER (CIVIL) 8/22/18

REVISION	DATE	DESCRIPTION

CLIENT:  
**CITY OF PROVIDENCE  
PARKS & RECREATION  
DEPARTMENT**  
CITY HALL, 25 DORRANCE STREET,  
PROVIDENCE, RI 02903

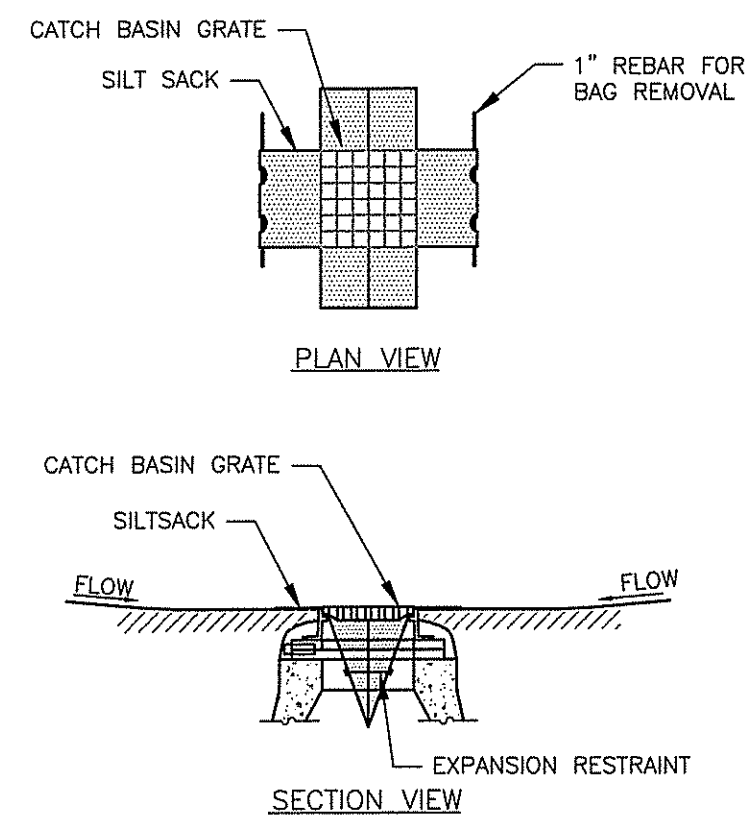
PROJECT:  
**STORMWATER  
ENGINEERING AT  
ROGER  
WILLIAMS PARK**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:  
**SITE PLAN 4**

ISSUED FOR: PERMITTING  
DATE: AUGUST 22, 2018  
SCALE: 1" = 20'  
DRAWN BY: MJW  
CHECKED BY: CNB  
PROJECT NO: 365317024

UNLESS OTHERWISE AGREED IN A WRITTEN CONTRACT BETWEEN WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC. AND ITS CLIENT: (I) THIS DOCUMENT CONTAINS INFORMATION, DATA AND DESIGN THAT IS CONFIDENTIAL AND MAY NOT BE COPIED OR DISCLOSED; AND (II) THIS DOCUMENT MAY ONLY BE USED BY THE CLIENT IN THE CONTEXT AND FOR THE EXPRESS PURPOSE FOR WHICH IT HAS BEEN DELIVERED. ANY OTHER USE OR RELIANCE ON THIS DOCUMENT BY ANY THIRD PARTY IS AT THAT PARTY'S SOLE RISK AND RESPONSIBILITY.





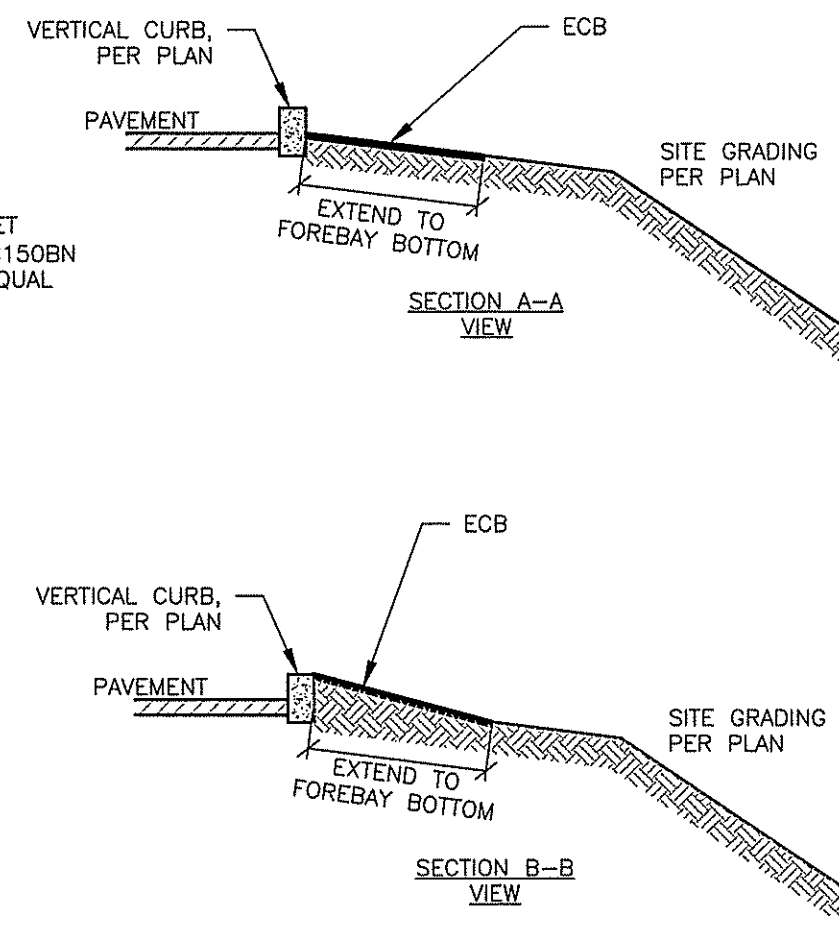
- NOTES:**
1. INSTALL SILT SACK IN ALL CATCH BASINS WHERE INDICATED ON THE PLAN BEFORE COMMENCING WORK.
  2. GRATE TO BE PLACED OVER SILT SACK.
  3. SILT SACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.
  4. MAINTAIN UNTIL UP-GRADE AREAS HAVE BEEN PERMANENTLY STABILIZED.

**SILT SACK SEDIMENT TRAP**

NTS wood\_9.10

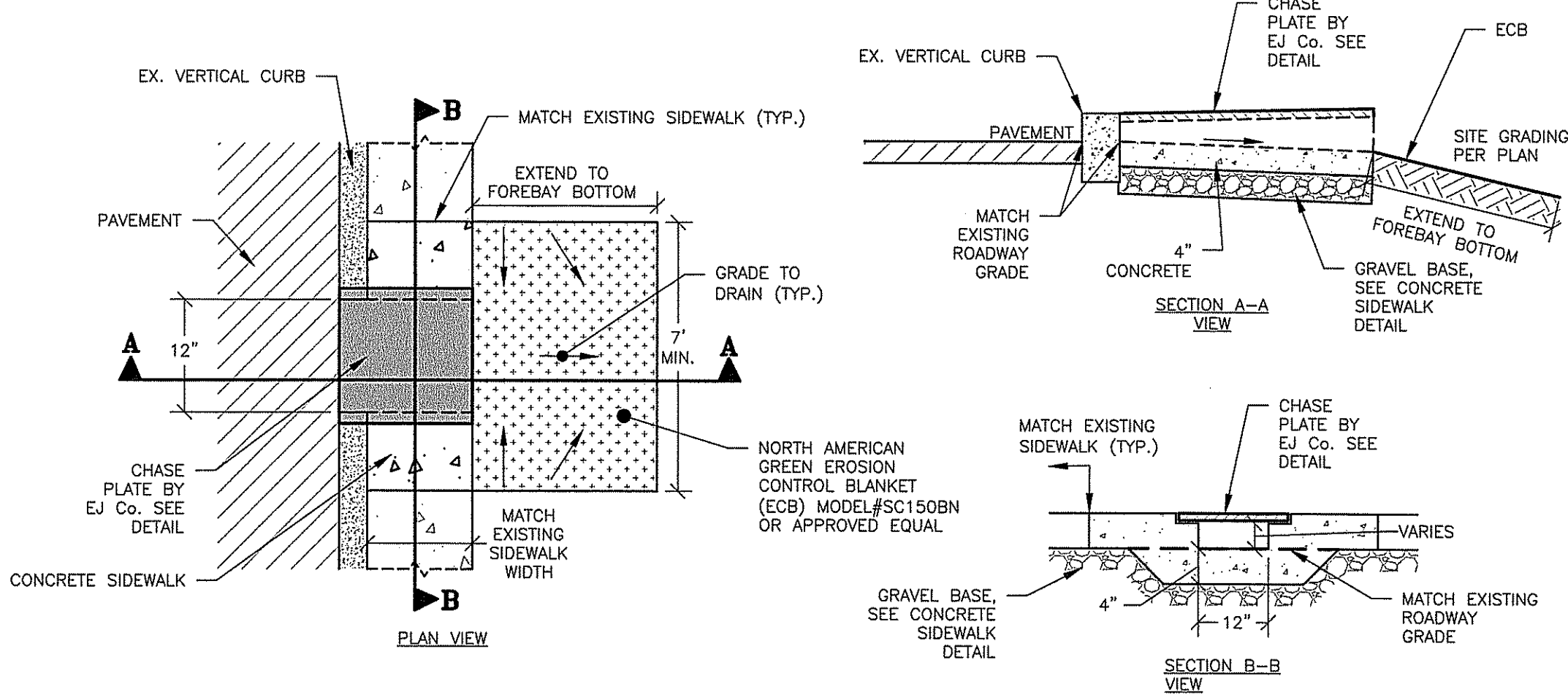
**CURB BREAK**

NTS wood\_2.6



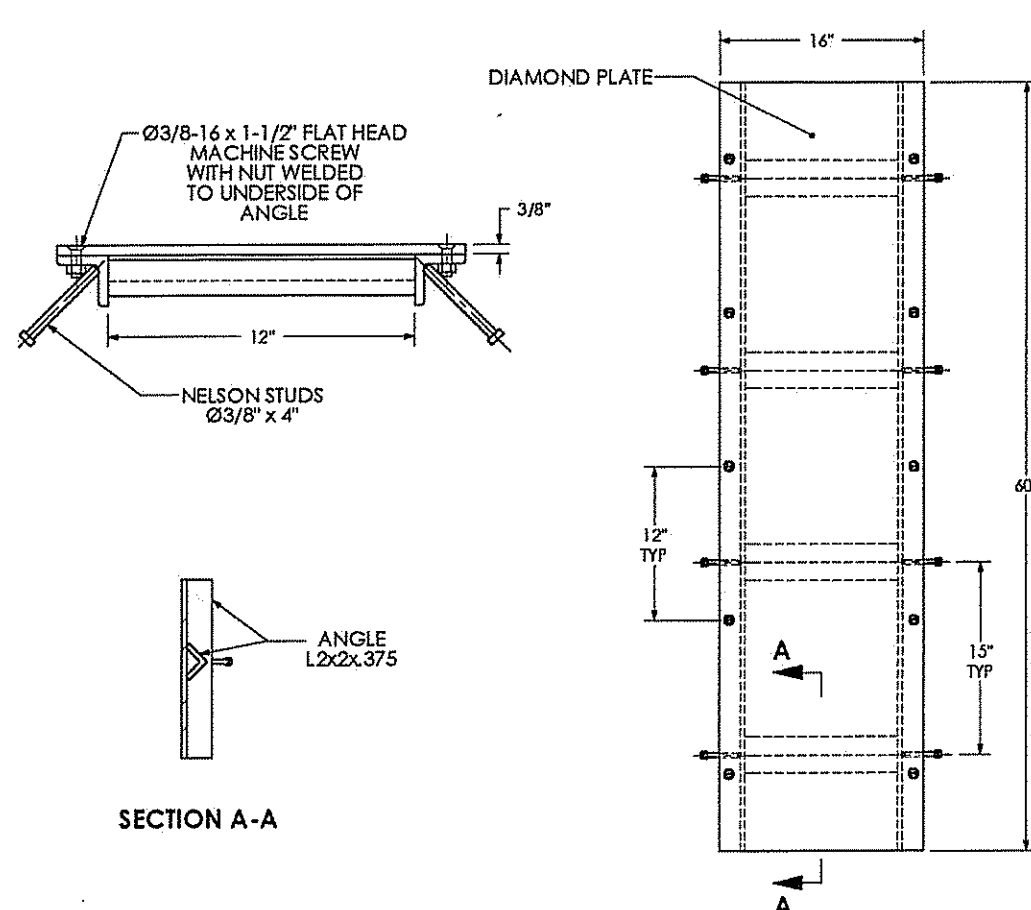
**CURB BREAK WITH SIDEWALK**

NTS wood\_2.6.1



Environmental Management  
AUG 24 2018

**CHASE PLATE**



**Product Number**  
78810290

**Design Features**  
Materials:  
- Steel-A36  
- Design Load:  
- Non-Traffic  
- Open Area  
- Coating:  
- Galvanized  
- √ Designates Machined Surface

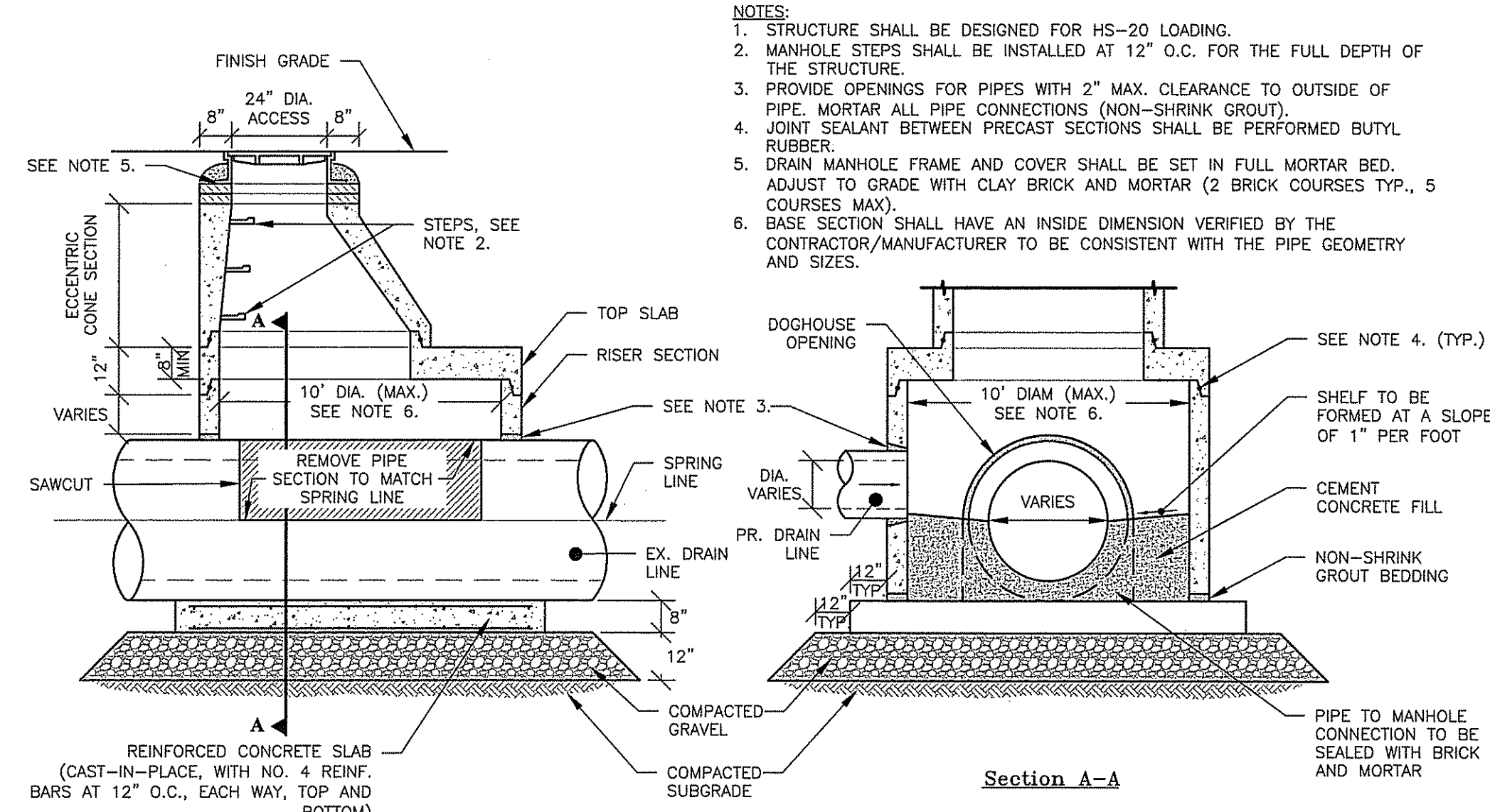
**Reference Material**  
- A913-3167A  
- Estimated Weight: 180 LBS  
- Country of Origin: USA

**Drawing Revision**  
08/10/2017 Designer: DE  
Reviewed By:

**Disclaimer**  
Wood's (and its subsidiaries') products and services are provided for your general use. We assume no liability for any specific applications without our approval.

**Confidential** No drawing is the property of EJ Group, Inc. and its subsidiaries. All drawings, specifications, and information are the property of EJ Group, Inc. and its subsidiaries. No part of this drawing may be reproduced without the written consent of EJ Group, Inc.

**Contact**  
800 628 4653  
ej.com



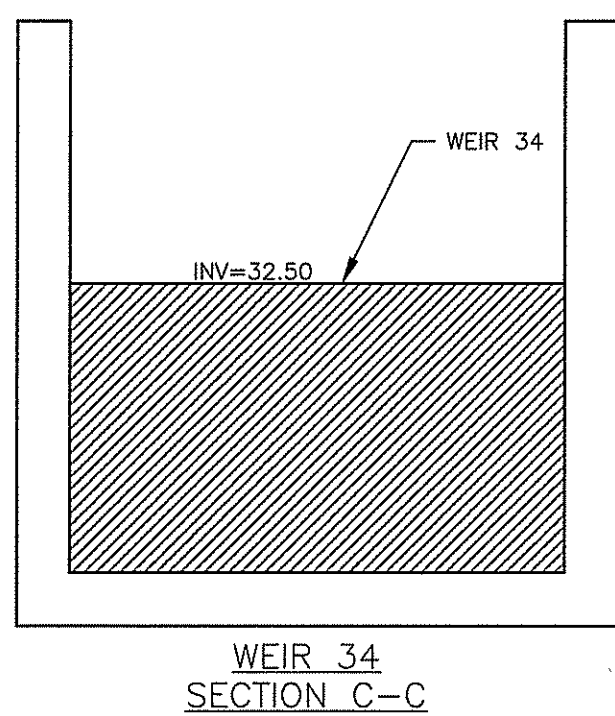
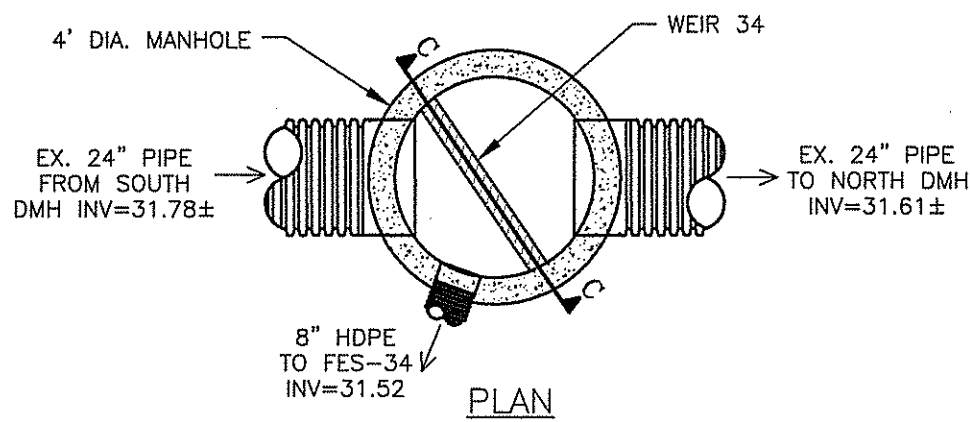
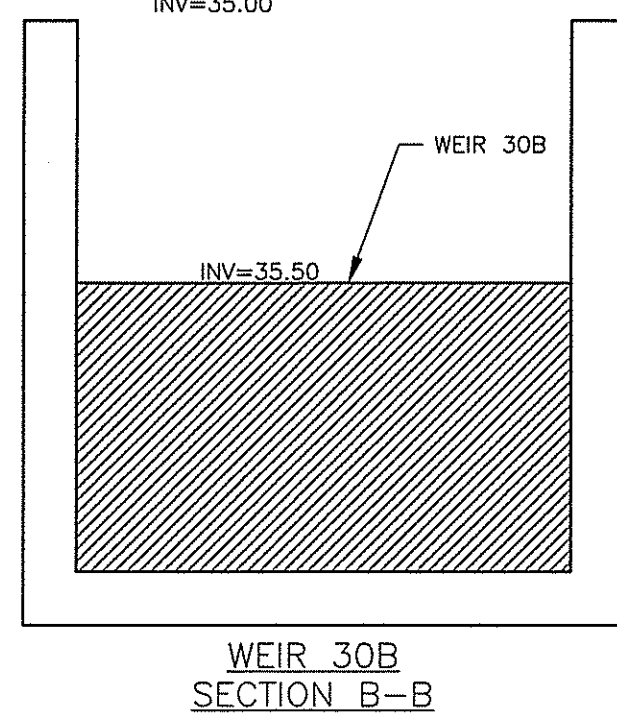
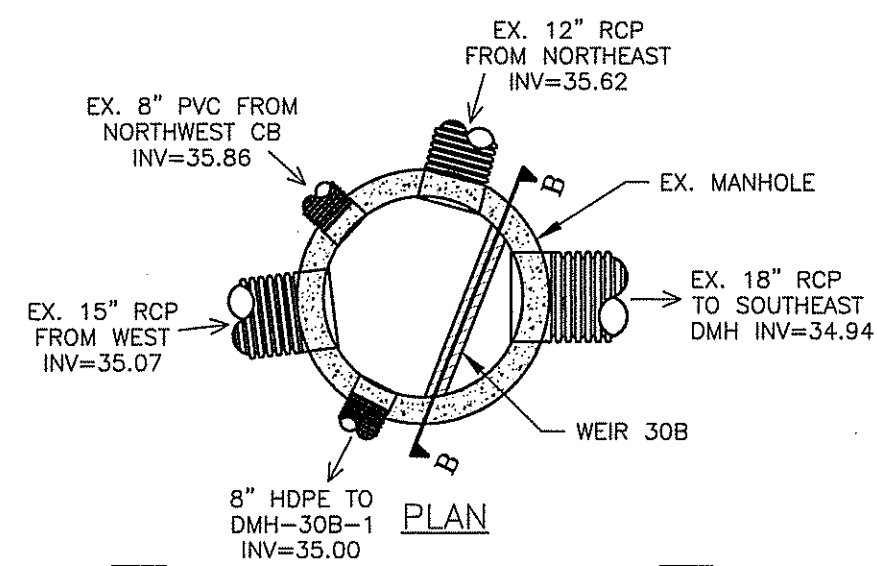
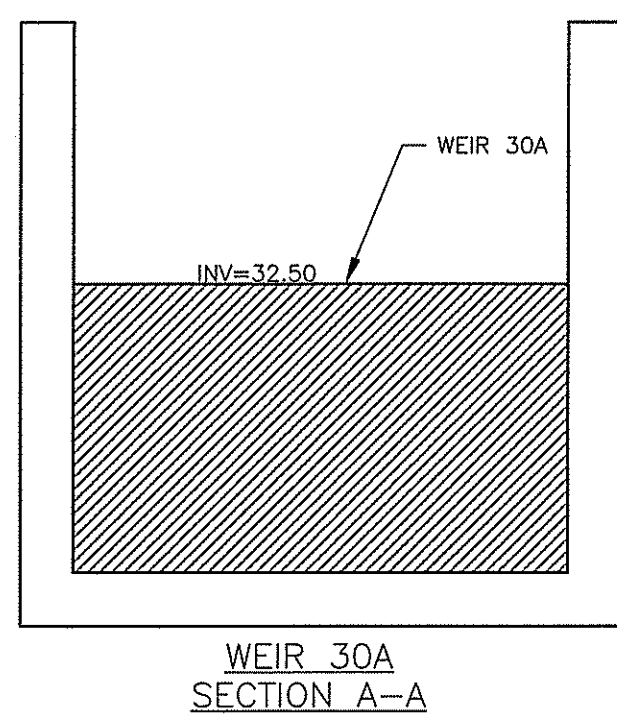
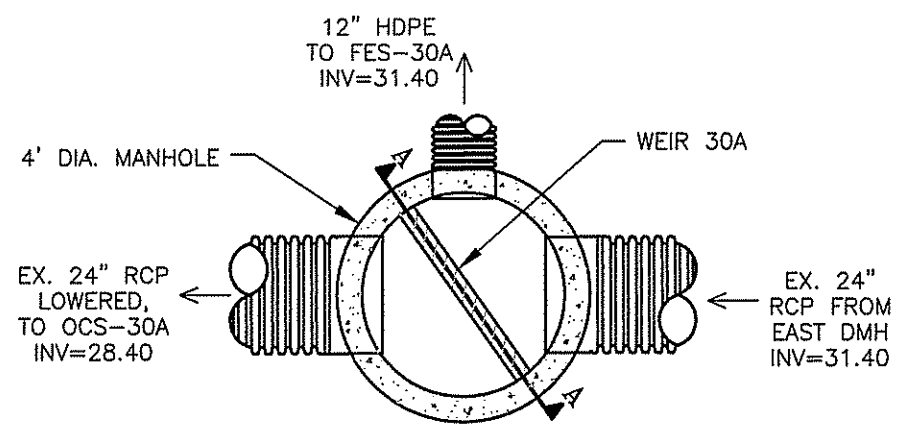
- NOTES:**
1. STRUCTURE SHALL BE DESIGNED FOR HS-20 LOADING.
  2. MANHOLE STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
  3. PROVIDE OPENINGS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS (NON-SHRINK GROUT).
  4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PERFORMED BUTYL RUBBER.
  5. DRAIN MANHOLE FRAME AND COVER SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYP., 5 COURSES MAX).
  6. BASE SECTION SHALL HAVE AN INSIDE DIMENSION VERIFIED BY THE CONTRACTOR/MANUFACTURER TO BE CONSISTENT WITH THE PIPE GEOMETRY AND SIZES.

**CHASE PLATE - EJ**

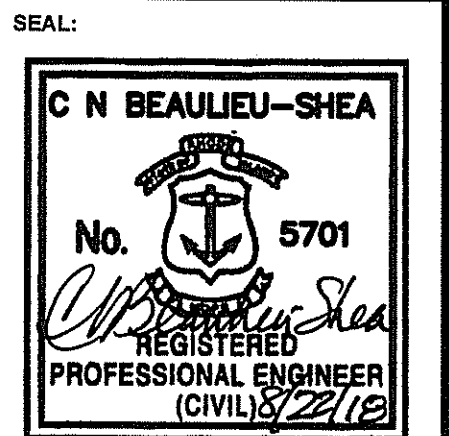
NTS wood\_X.X

**DOGHOUSE DRAIN MANHOLE**

NTS wood\_3.12



NOT FOR CONSTRUCTION



REVISION	DATE	DESCRIPTION

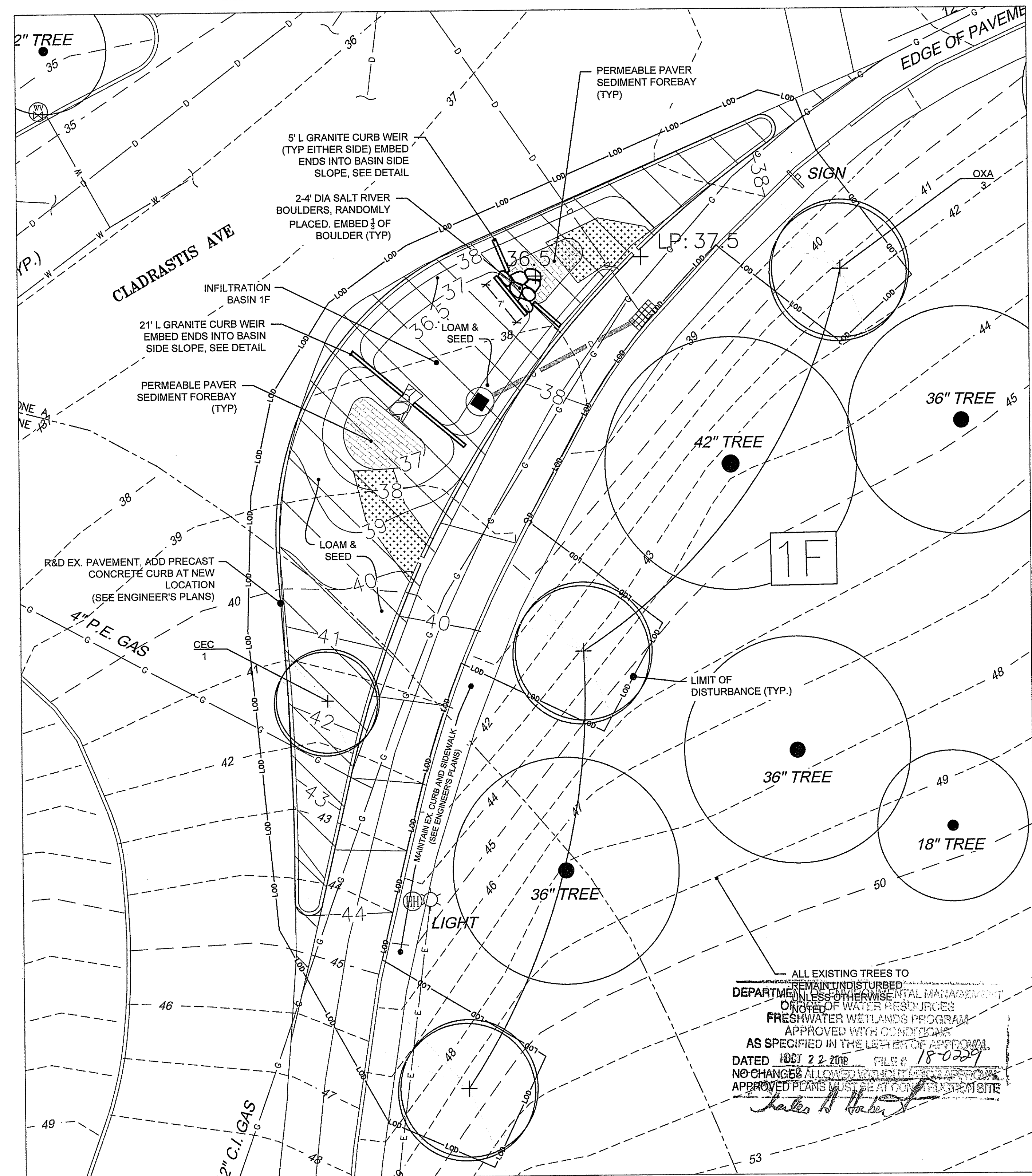
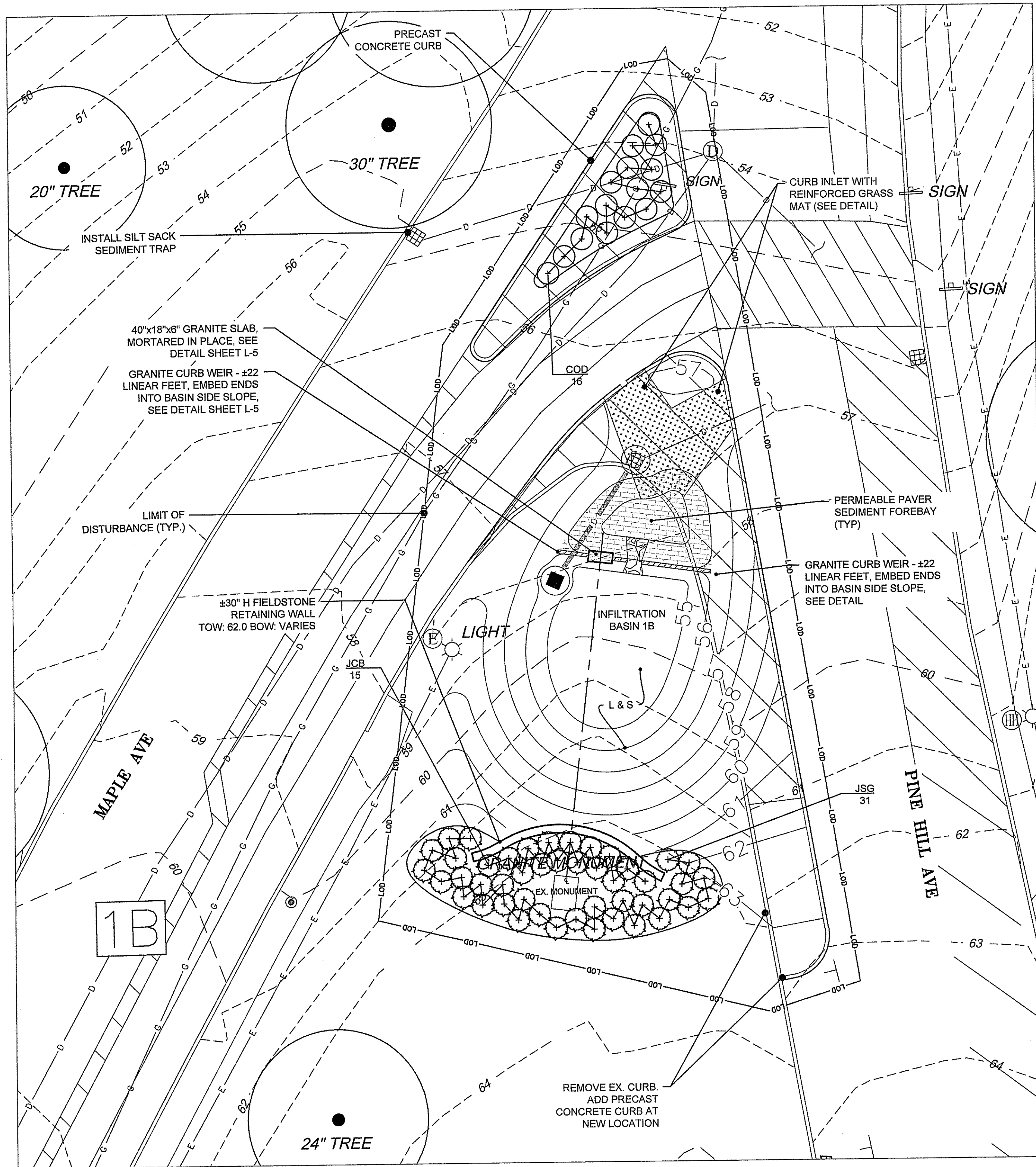
CLIENT:  
**CITY OF PROVIDENCE  
PARKS & RECREATION  
DEPARTMENT**  
CITY HALL, 25 DORRANCE STREET,  
PROVIDENCE, RI 02903

PROJECT:  
**STORMWATER  
ENGINEERING AT  
ROGER  
WILLIAMS PARK**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:  
**DETAILS-2**

ISSUED FOR:	PERMITTING
DATE:	AUGUST 22, 2018
SCALE:	N/A
DRAWN BY:	MJV
CHECKED BY:	CNB
PROJECT NO:	3653170024

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WATER QUALITY DIVISION  
APPROVED WITH  
AS SPECIFIED IN THE PERMIT  
DATED OCT 22 2018  
NO CHANGES ALLOWED  
APPROVED PERMITTING ENGINEER  
Charles B. Harbeck



ROGER WILLIAMS PARK - PLANT SCHEDULE 2018					
AREA 1B					
SHRUBS					
Key	Qty	Botanical Name	Common Name	Size	Notes
COD	16	COTONEASTER DAMMERI	CORALBERRY COTONEASTER	#3	3'O.C.
JCB	15	JUNIPERUS CONFERTA 'BLUE PACIFIC'	PACIFIC SHORE JUNIPER	#3	3'O.C.
JSG	31	JUNIPERUS SARGENTII 'GLAUCA'	BLUE SARGENT'S JUNIPER	#3	3'O.C.

AREA 1F					
TREES					
Key	Qty	Botanical Name	Common Name	Size	Notes
OXA	3	OXYDENDRUM ARBOREUM	SOURWOOD	1.5-2" CAL	
CEC	1	CERCIS CANADENSIS	EASTERN REDBUD	2-2.5" CAL	

1A - STORMWATER PROJECT NUMBER (TYP.)

SCALE: 1"=10'

- GENERAL NOTES:**
1. THE INFORMATION ON THIS PLAN WAS COMPILED FROM DRAWINGS BY WATERMAN ENGINEERING, WOOD ENVIRONMENT AND INFRASTRUCTURE SOLUTIONS, INC AND FIELD OBSERVATION. THIS IS NOT A REGISTERED SURVEY. TO THE BEST OF OUR KNOWLEDGE, THIS DRAWING IS A TRUE REPRESENTATION OF THE ACTUAL FIELD CONDITIONS.
  2. SEE DRAWINGS BY WOOD ENVIRONMENT AND INFRASTRUCTURE SOLUTIONS, INC FOR PROPOSED GRADING & DRAINAGE PLANS AND DETAILS.
  3. CALL 1-800-DIGSAFE & LOCATE ANY AND ALL UTILITIES BEFORE CONSTRUCTION.
  4. TEST EXISTING SOIL IN LAWN & LANDSCAPE AREAS & REMEDIATE AS NEEDED BEFORE PLANTING OR SEEDING. PROVIDE MOCK-UP OR SAMPLE OF ANY ALL PAVING, WALLS, STAIRS, & FENCING TO LANDSCAPE ARCHITECT AND/OR CLIENT PRIOR TO CONSTRUCTION.
  5. CLEAN SITE. REMOVE ALL DEBRIS AND REPAIR/LOAM AND SEED ALL DISTURBED AREAS WITH MOWED AREAS SEED MIX UNLESS OTHERWISE SPECIFIED.

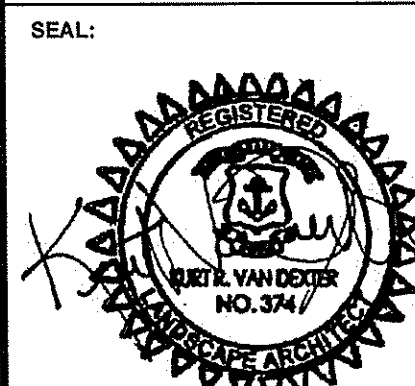
**wood.**

WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.  
275 PROMENADE STREET, SUITE 100  
PROVIDENCE RHODE ISLAND, 02908  
WEB: WWW.WOODPLG.COM  
(401) 648-9240

**HALL BECKMAN, LTD.**  
23 Brown Street, Suite 206, Wickford, RI 02852  
Tel. 401.294.1684 - www.hallbeckman.com  
Estate Planning - Landscape Architecture

Environmental Management  
AUG 24 2018  
Division of Water Resources

NOT FOR CONSTRUCTION



1 8/7/2018 AREA 2 & 3A

REVISION DATE DESCRIPTION

CLIENT:  
**CITY OF PROVIDENCE  
PARKS & RECREATION  
DEPARTMENT**  
CITY HALL, 25 DORRANCE STREET,  
PROVIDENCE, RI 02903

PROJECT:  
**STORMWATER  
ENGINEERING AT  
ROGER  
WILLIAMS PARK**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RHODE ISLAND

TITLE:  
**LANDSCAPE PLAN 1  
AREA 1B & 1F**

ISSUED FOR: PERMITTING

DATE: JULY 31, 2018

SCALE: 1" = 10'

DRAWN BY: MJW

CHECKED BY: GAA

PROJECT NO: HBL 448

**L-1**

SHEET 1 OF 5



1A - STORMWATER PROJECT NUMBER (TYP.)

ROGER WILLIAMS PARK - PLANT SCHEDULE 2018					
AREA 30A					
TREES					
Key	Qty	Botanical Name	Common Name	Size	Notes
LIS	7	LIQUIDAMBAR STYRACIFLUA	SOUR GUM	2-2.5" Cal	LIMB TO 7'
LIT	3	LIRIODENDRON TULIPIFERA	TULIP TREE	2-2.5" Cal	LIMB TO 7'
SHRUBS					
Key	Qty	Botanical Name	Common Name	Size	Notes
AZH	6	AZALEA 'HERBERT'	HERBERT AZALEA	#3	
AZS	12	AZALEA SCHUPPENBACHII	ROYAL AZALEA	#3	
CAF	10	CALYCANTHUS FLORIDUS	CAROLINA ALLSPICE	#7	
COR	10	CORNUS RACEMOSA	SILKY DOGWOOD	#3	
IVF	9	ILEX VERTICILLATA - FEMALE	FEMALE WINTERBERRY	3-4' B&B	
IVM	1	ILEX VERTICILLATA - MALE	MALE WINTERBERRY	#7	
KAL	14	KALMIA LATIFOLIA	MOUNTAIN LAUREL	3-4' B&B	
RAK	3	RHODODENDRON 'ANAH KRUSCHKA'	ANAH KRUSCHKA RHODODENDRON	2.5-3' B&B	
RBN	5	RHODODENDRON 'BOULE DE NEIGE'	BALLS OF SNOW RHODODENDRON	2.5-3' B&B	
RCR	9	RHODODENDRON CATAWBIENSE 'ROSEUM PINK'	PINK CATAWBA RHODODENDRON	2.5-3' B&B	
PERENNIALS, GRASSES, GROUNDCOVERS & VINES					
Key	Qty	Botanical Name	Common Name	Size	Notes
DEP	90	DENNSTAEDTIA PUNCTILOBULA	HAYSCENTED FERN	#1	24" O.C.
POA	45	POLYSTICHUM ARCTOSTICHOIDES	CHRISTMAS FERN	#1	24" O.C.
ONS	47	ONOCLEA SENSIBILIS	SENSITIVE FERN	#1	24" O.C.

AREA 30B					
TREES					
Key	Qty	Botanical Name	Common Name	Size	Notes
LIS	3	LIQUIDAMBAR STYRACIFLUA	SOUR GUM	2-2.5" Cal	LIMB TO 7'
LIT	1	LIRIODENDRON TULIPIFERA	TULIP TREE	2-2.5" Cal	LIMB TO 7'
SHRUBS					
Key	Qty	Botanical Name	Common Name	Size	Notes
MYP	17	MYRICA PENNSYLVANICA	NORTHERN BAYBERRY	2.5-3' B&B	

- GENERAL NOTES:**
1. THE INFORMATION ON THIS PLAN WAS COMPILED FROM DRAWINGS BY WATERMAN ENGINEERING, WOOD ENVIRONMENT AND INFRASTRUCTURE SOLUTIONS, INC AND FIELD OBSERVATION. THIS IS NOT A REGISTERED SURVEY. TO THE BEST OF OUR KNOWLEDGE, THIS DRAWING IS A TRUE REPRESENTATION OF THE ACTUAL FIELD CONDITIONS.
  2. SEE DRAWINGS BY WOOD ENVIRONMENT AND INFRASTRUCTURE SOLUTIONS, INC FOR PROPOSED GRADING & DRAINAGE PLANS AND DETAILS.
  3. CALL 1-800-DIGSAFE & LOCATE ANY AND ALL UTILITIES BEFORE CONSTRUCTION.
  4. TEST EXISTING SOIL IN LAWN & LANDSCAPE AREAS & REMEDIATE AS NEEDED BEFORE PLANTING OR SEEDING.
  5. PROVIDE MOCK-UP OR SAMPLE OF ANY ALL PAVING, WALLS, STAIRS, & FENCING TO LANDSCAPE ARCHITECT AND/OR CLIENT PRIOR TO CONSTRUCTION.
  6. CLEAN SITE, REMOVE ALL DEBRIS AND REPAIR/LOAM AND SEED ALL DISTURBED AREAS WITH MOWED AREAS SEED MIX UNLESS OTHERWISE SPECIFIED.



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Environmental Management  
 AUG 24 2018  
 Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 APPROVED FOR THE CITY OF PROVIDENCE  
 AS SPECIFIED IN THE PERMITTING PROCESS  
 DATED JULY 22 2018  
 NO CHANGES ALLOWED WITHOUT APPROVED PLANS  
 APPROVED PLANS  
 [Signature]

NOT FOR CONSTRUCTION  
 SEAL:



REVISION	DATE	DESCRIPTION
1	8/7/2018	AREA 2 & 3A

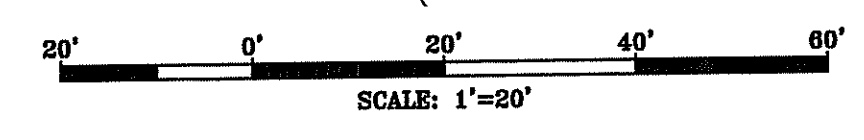
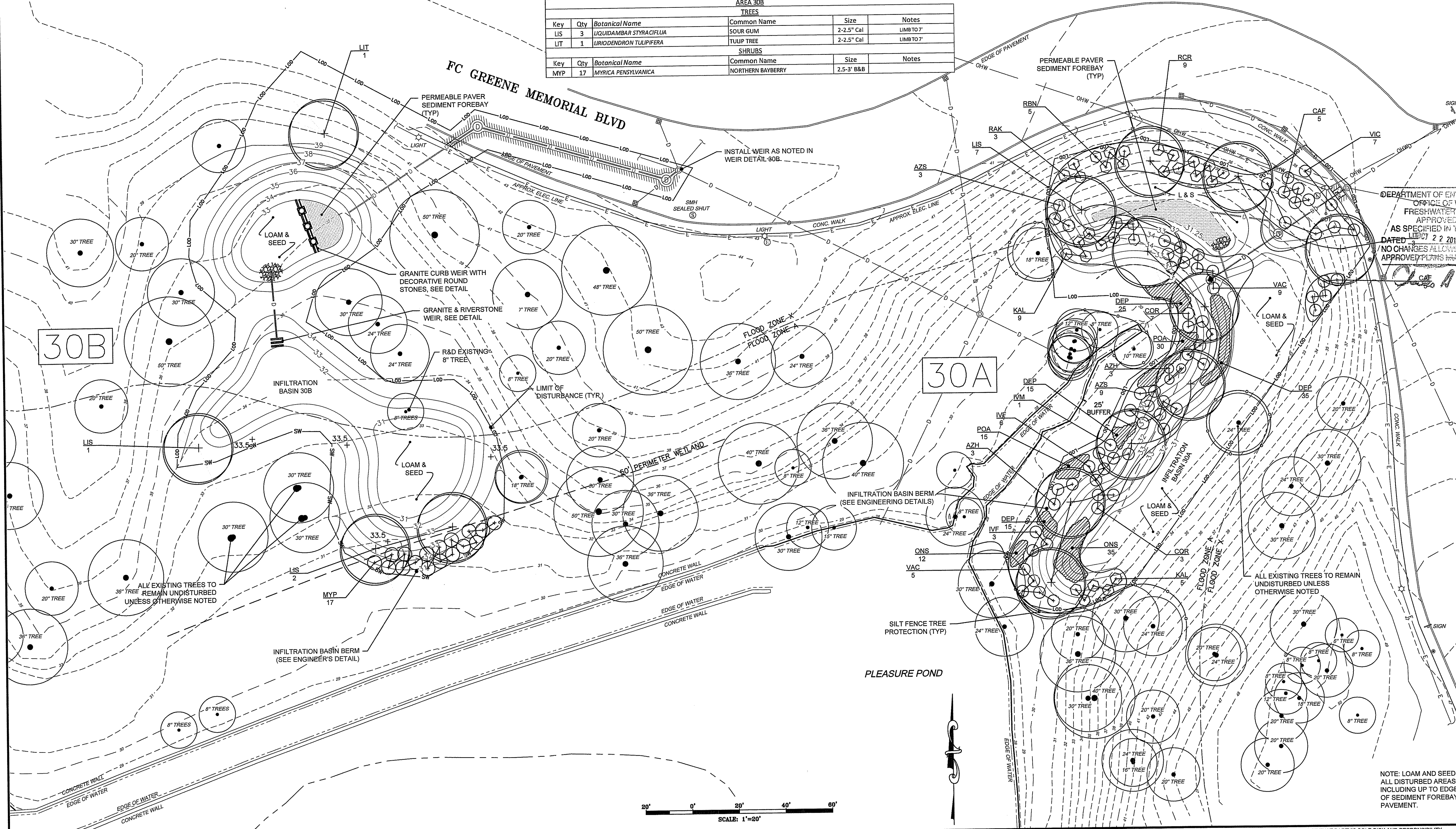
CLIENT:  
**CITY OF PROVIDENCE  
 PARKS & RECREATION  
 DEPARTMENT**  
 CITY HALL, 25 DORRANCE STREET,  
 PROVIDENCE, RI 02903

PROJECT:  
**STORMWATER  
 ENGINEERING AT  
 ROGER  
 WILLIAMS PARK**  
 1000 ELMWOOD AVENUE  
 PROVIDENCE, RHODE ISLAND

TITLE:  
**LANDSCAPE PLAN 3  
 AREA 30 A & B**

ISSUED FOR: PERMITTING  
 DATE: JULY 31, 2018  
 SCALE: 1" = 20'  
 DRAWN BY: MJW  
 CHECKED BY: GAA  
 PROJECT NO: HBL 448

**L-3**  
 SHEET 3 OF 5



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ROGER WILLIAMS PARK - PLANT SCHEDULE 2018					
AREA 34					
TREES					
Key	Qty	Botanical Name	Common Name	Size	Notes
NYS	3	NYSSA SYLVATICA	TUPELO TREE	2-2.5" Cal	
SHRUBS					
Key	Qty	Botanical Name	Common Name	Size	Notes
CA	44	CLETHRA ALNIFOLIA	SUMMERSWEET CLETHRA	2-3'	FROM NEW ENGLAND WETLAND PLANTS
VD	16	VIBURNUM DENTATUM	ARROWWOOD VIBURNUM	2-3'	FROM NEW ENGLAND WETLAND PLANTS

**wood.**  
WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.  
275 PROMENADE STREET, SUITE 100  
PROVIDENCE RHODE ISLAND, 02908  
WEB: WWW.WOODPLG.COM  
(401) 649-9240

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Environmental Management  
AUG 24 2018  
Office of Water Resources

NOT FOR CONSTRUCTION  
SEAL:



REVISION	DATE	DESCRIPTION
1	8/7/2018	AREA 2 & 34

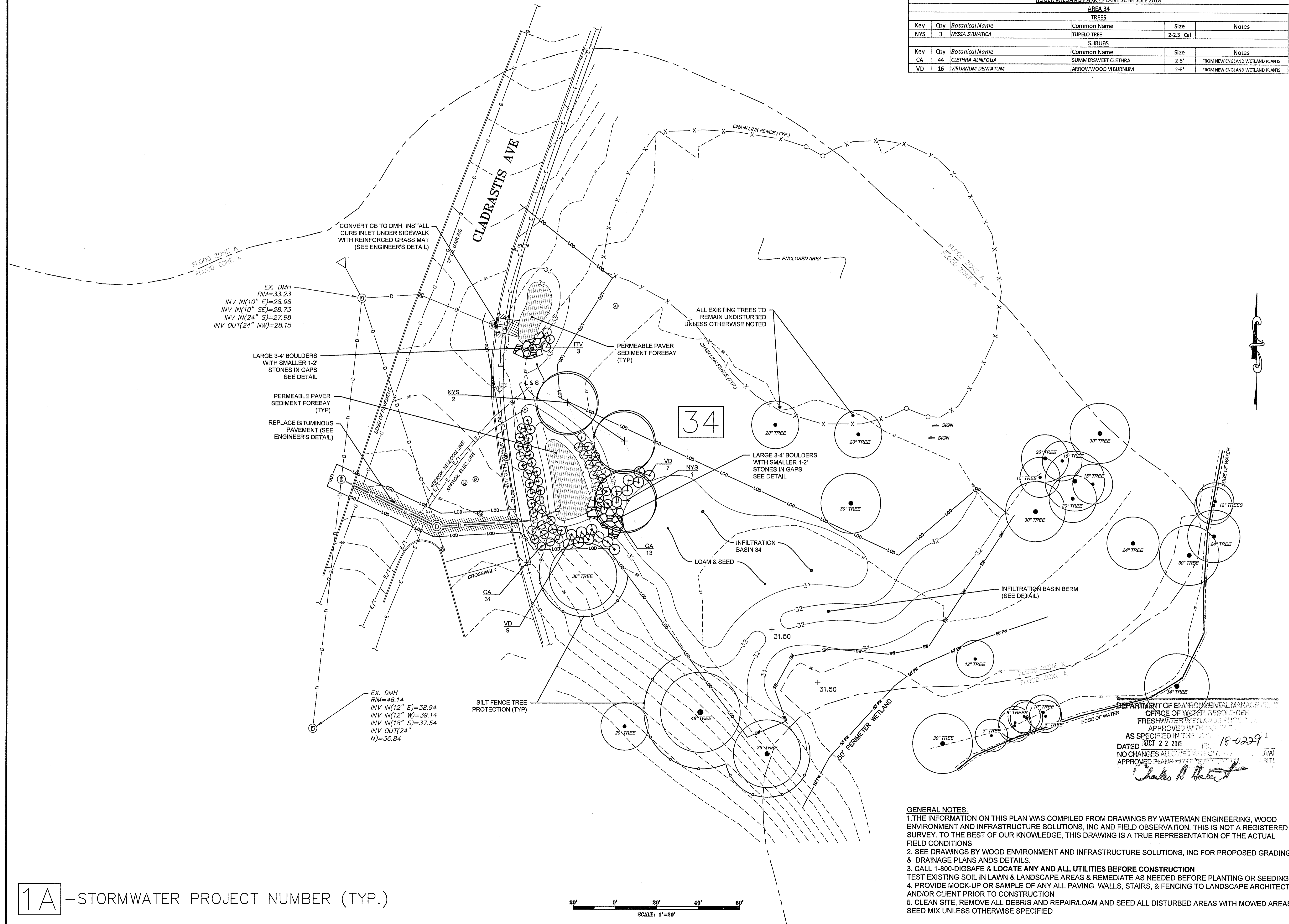
CLIENT:  
**CITY OF PROVIDENCE  
PARKS & RECREATION  
DEPARTMENT**  
CITY HALL, 25 DORRANCE STREET,  
PROVIDENCE, RI 02903

PROJECT:  
**STORMWATER  
ENGINEERING AT  
ROGER  
WILLIAMS PARK**  
1000 ELMWOOD AVENUE  
PROVIDENCE, RHODE ISLAND

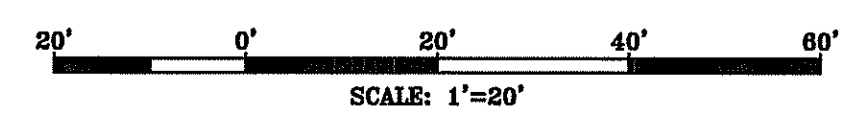
TITLE:  
**LANDSCAPE PLAN 4  
AREA 34**

ISSUED FOR:	PERMITTING
DATE:	JULY 31, 2018
SCALE:	1" = 20'
DRAWN BY:	MJW
CHECKED BY:	GAA
PROJECT NO:	HLI-448

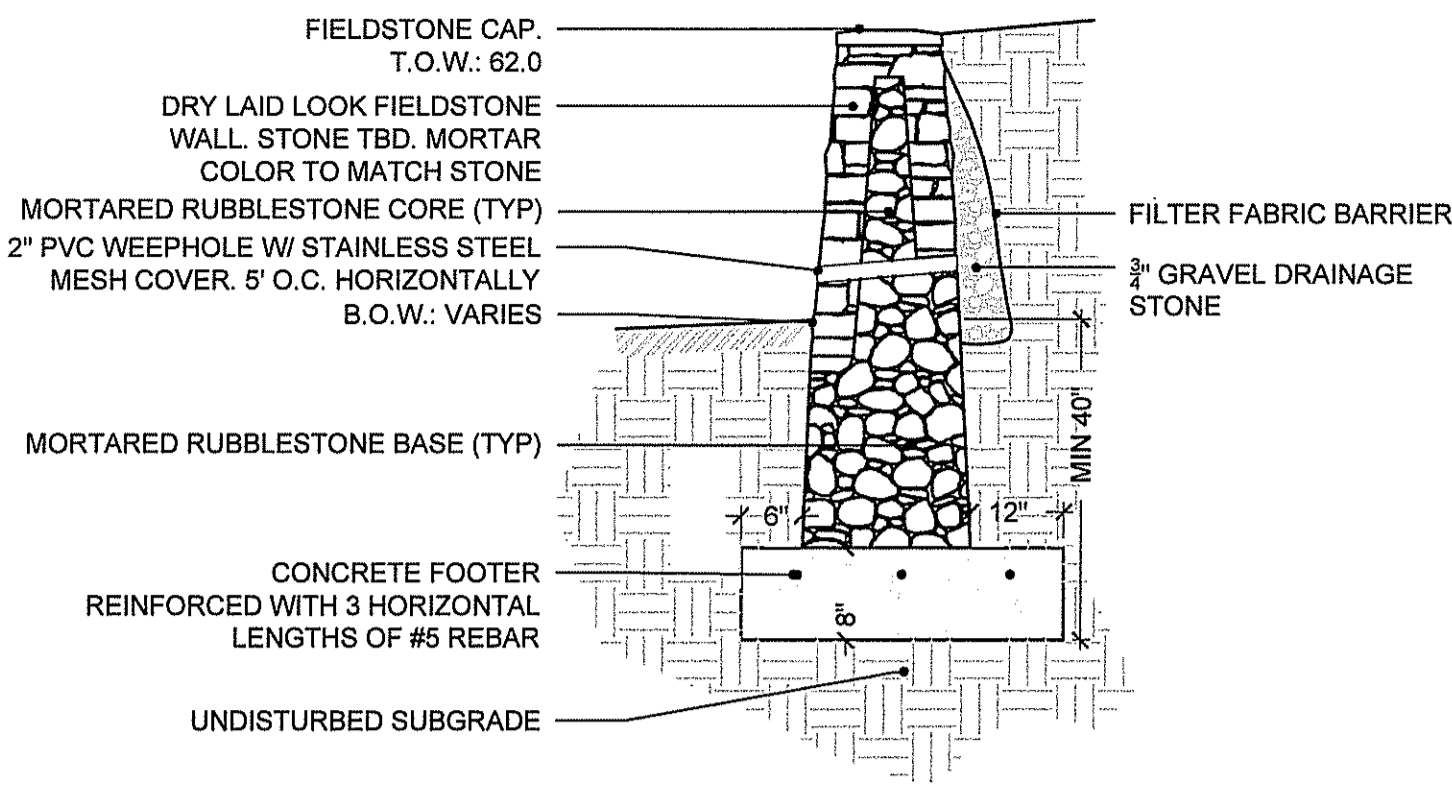
**L-4**  
SHEET 4 OF 5



1A - STORMWATER PROJECT NUMBER (TYP.)

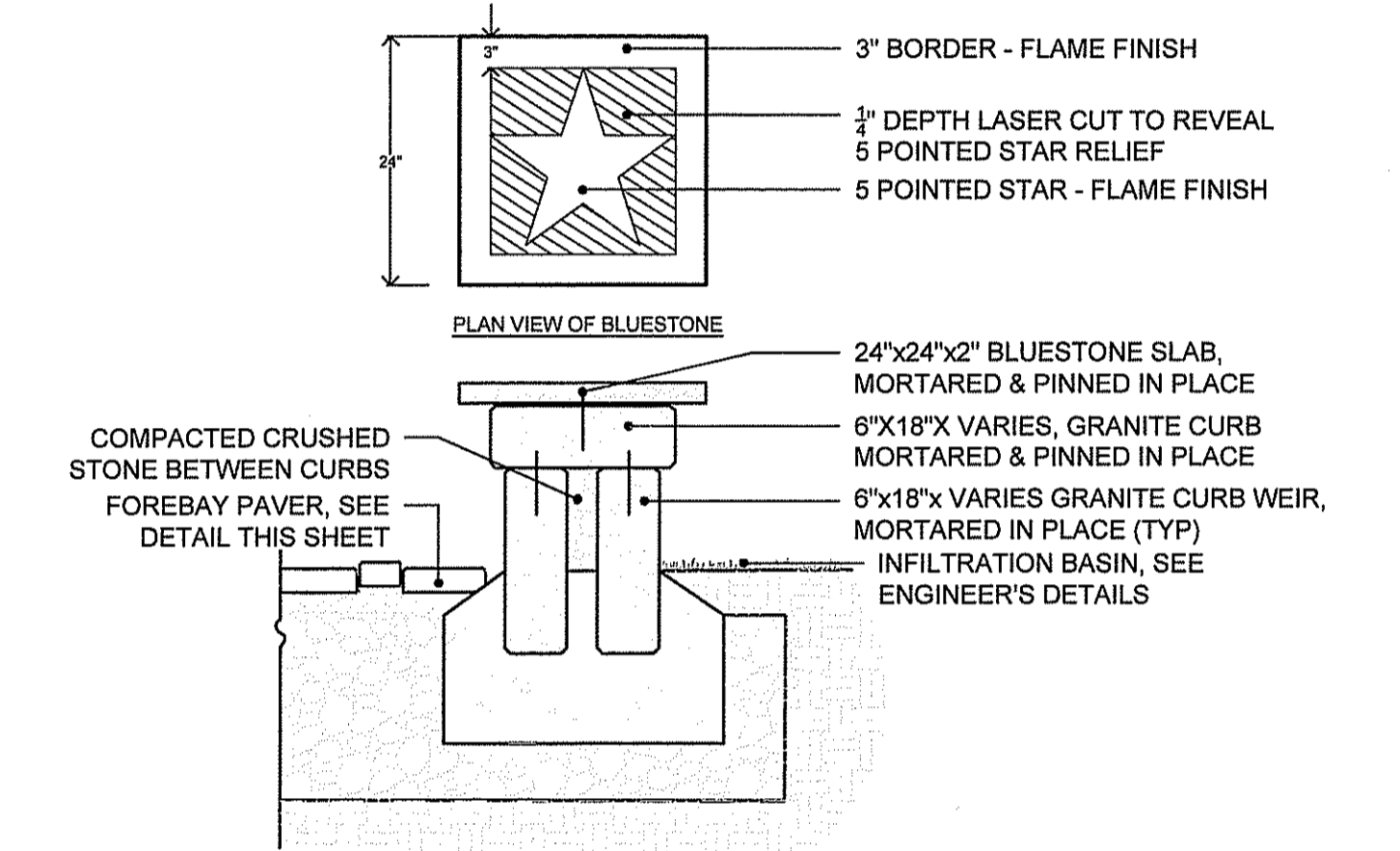


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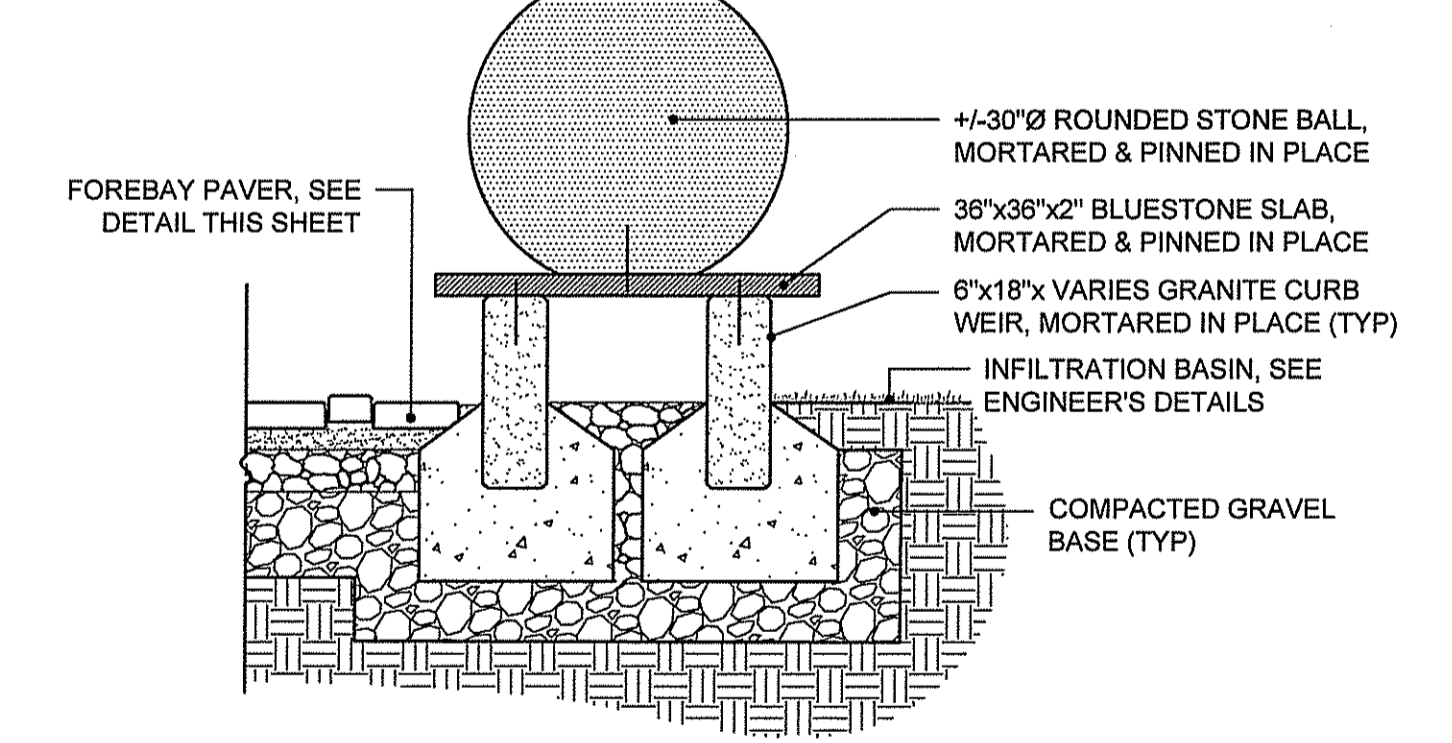


**NOTES:**  
 1. ALL WALLS TO BE BATTERED EVENLY @ 1/4" VERT FT.  
 2. STONES TO BE DETERMINED. SAMPLE OF STONE TO BE PROVIDED TO LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION.  
 3. SEE GRADING PLAN FOR SPOT GRADES

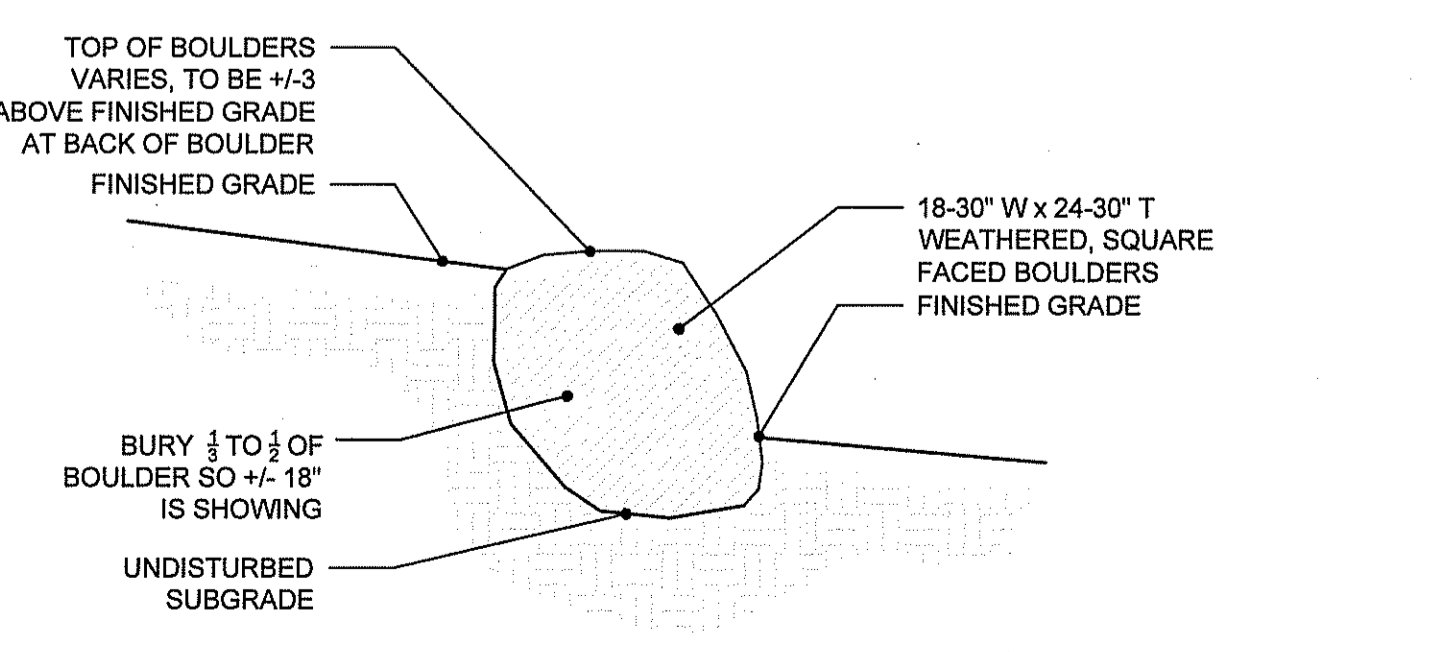
**FIELDSTONE RETAINING WALL DETAIL - AREA 1B**  
 SCALE: NTS



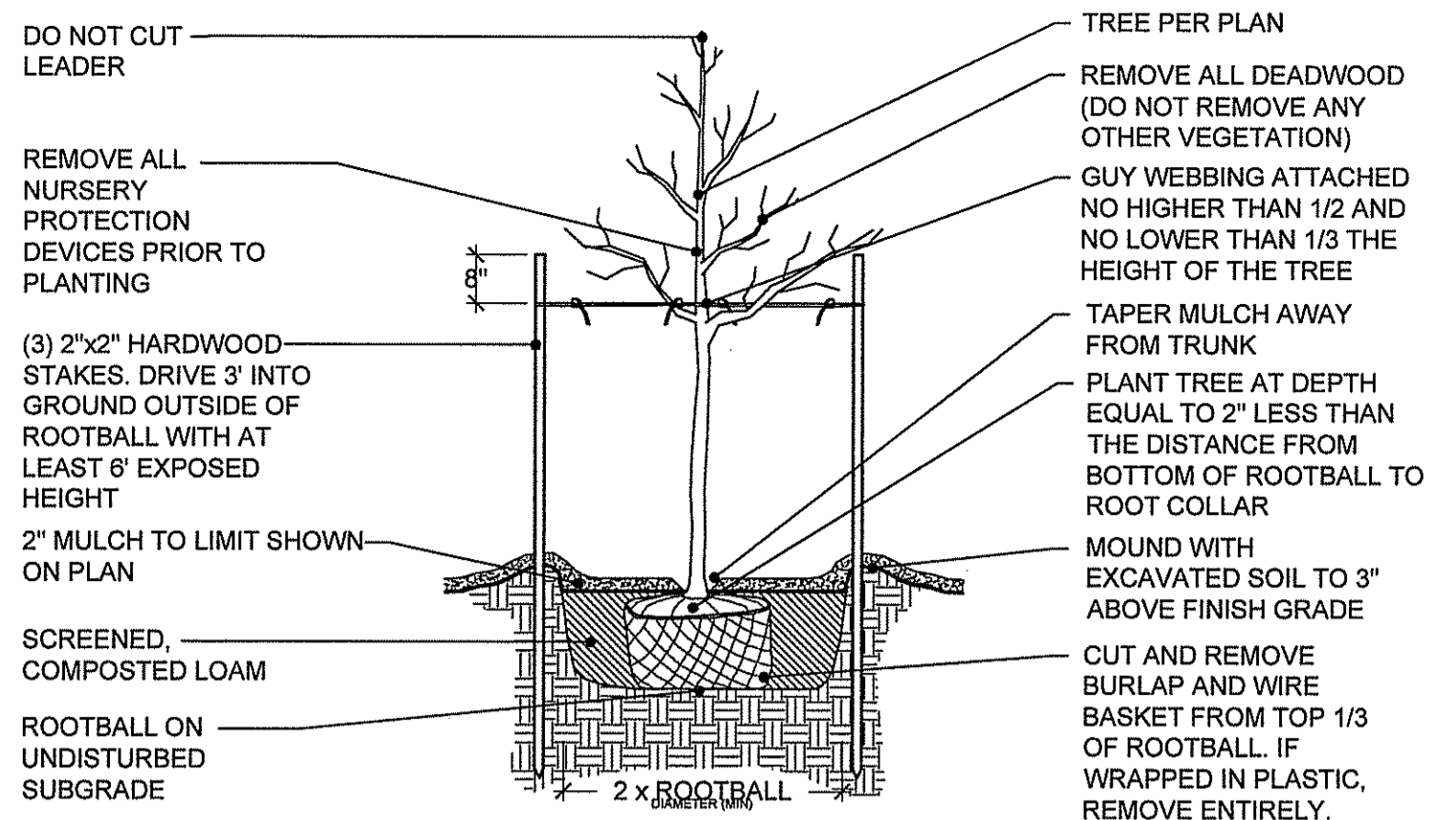
**HOLLYWOOD STAR WEIR DETAIL - AREA 1C**  
 SCALE: NTS



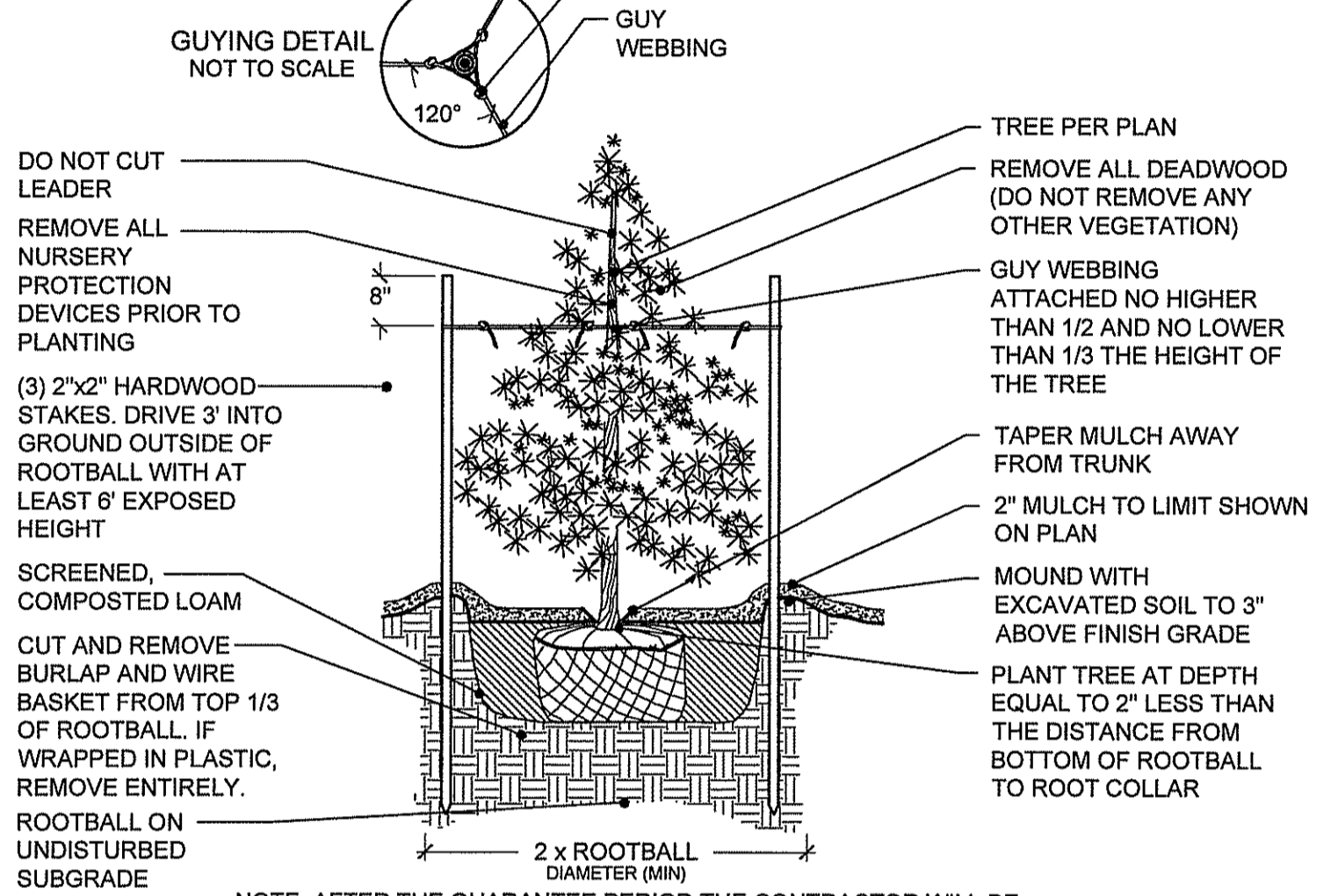
**ROUNDED DECORATIVE STONE WEIR DETAIL - AREA 30B**  
 SCALE: NTS



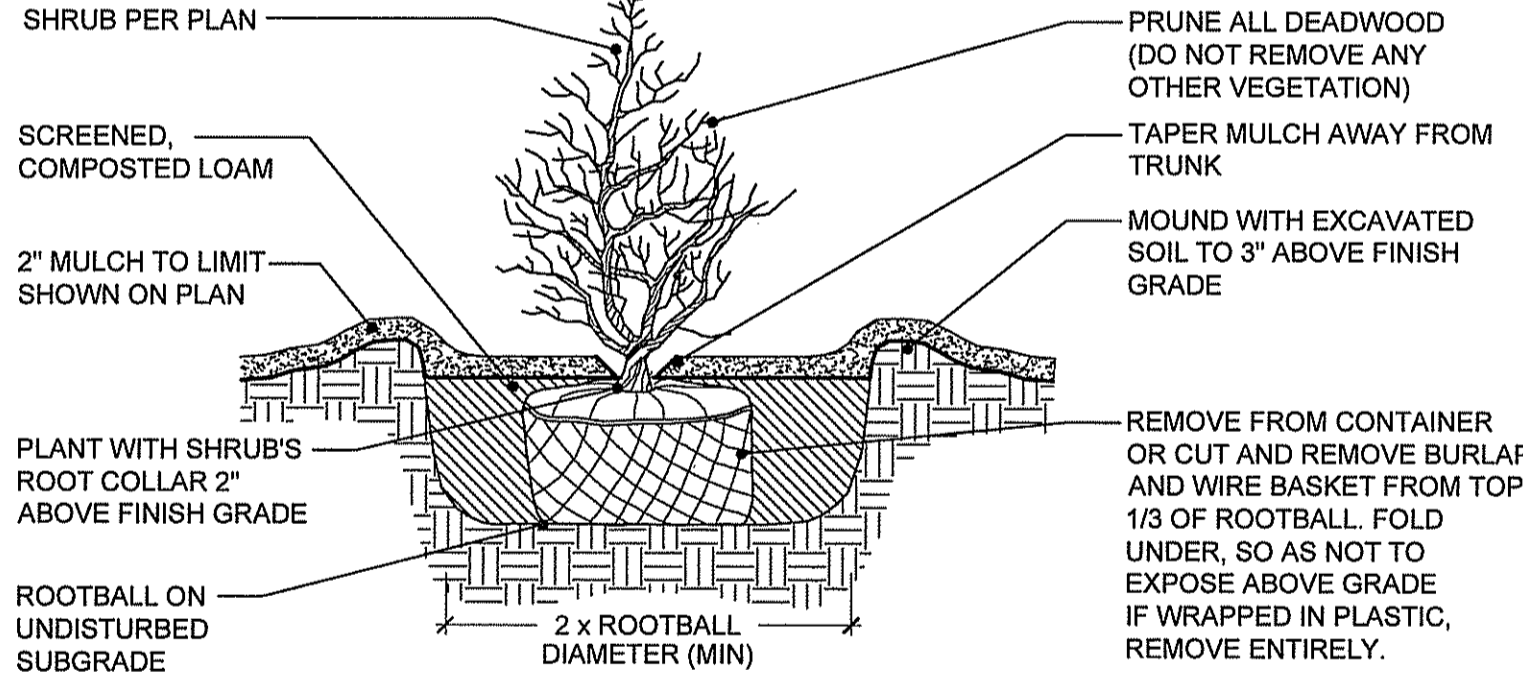
**BOULDER PLACEMENT DETAIL**  
 SCALE: NTS



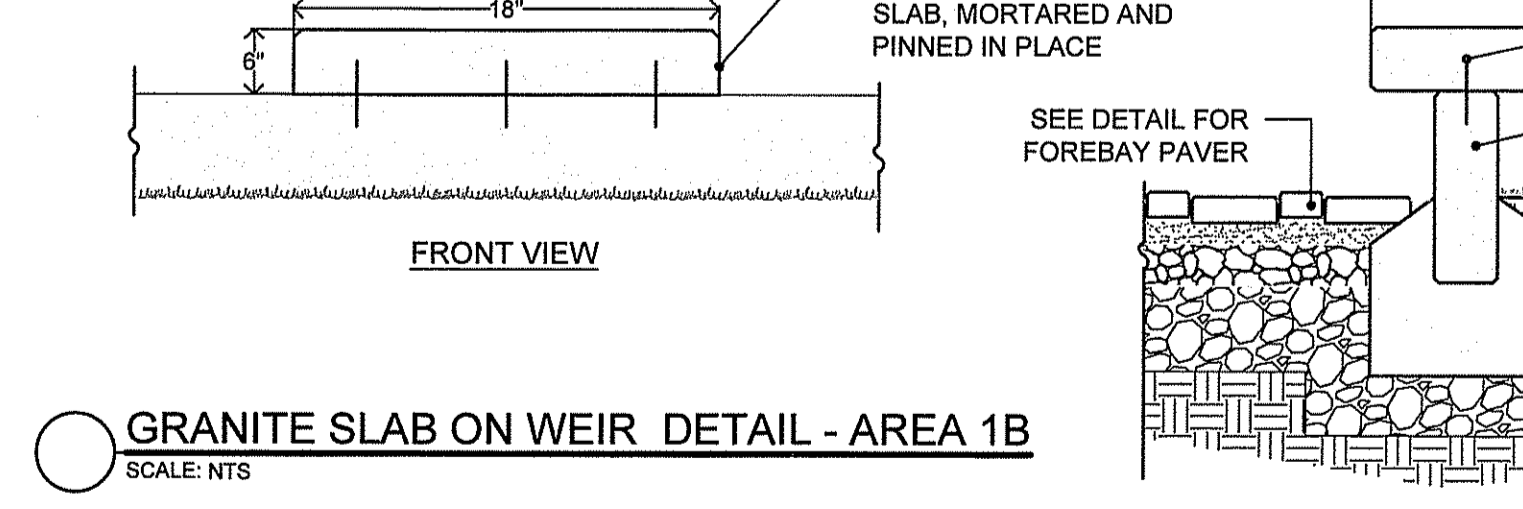
**DECIDUOUS TREE PLANTING DETAIL**  
 SCALE: NTS



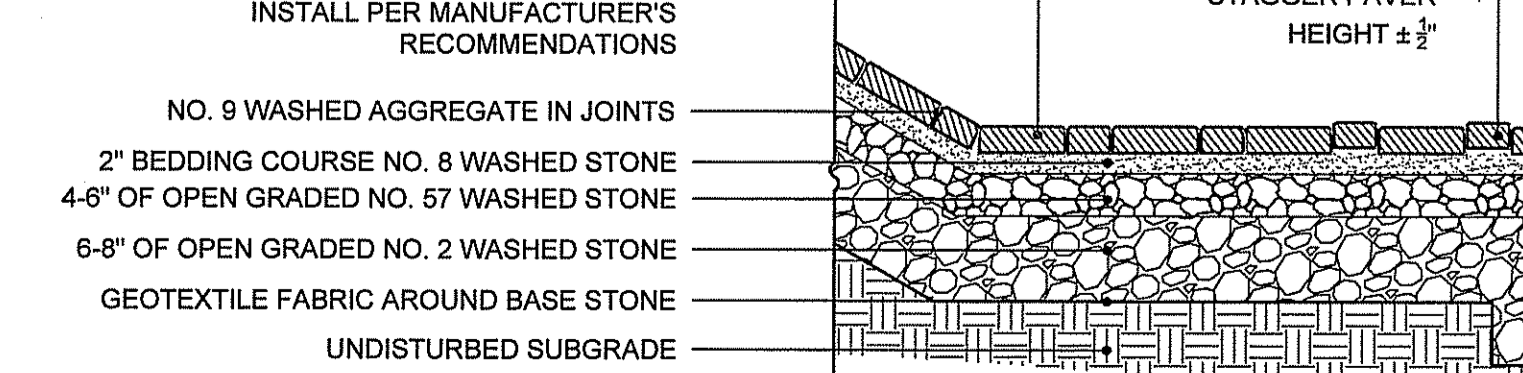
**EVERGREEN TREE PLANTING DETAIL**  
 SCALE: NTS



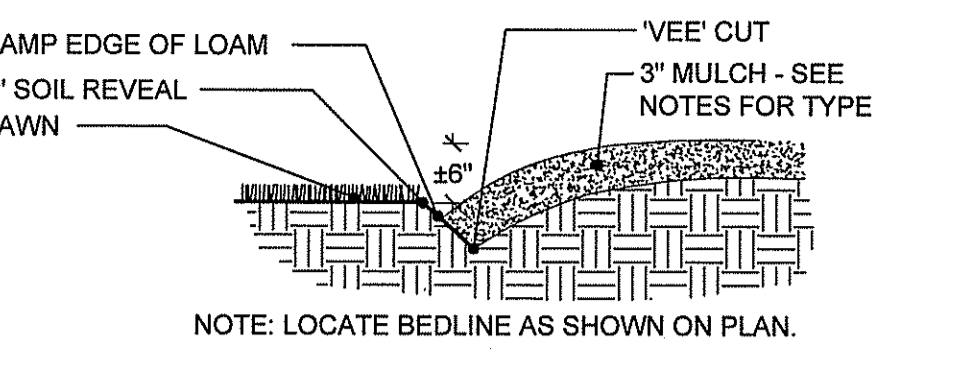
**SHRUB & PERENNIAL PLANTING DETAIL**  
 SCALE: NTS



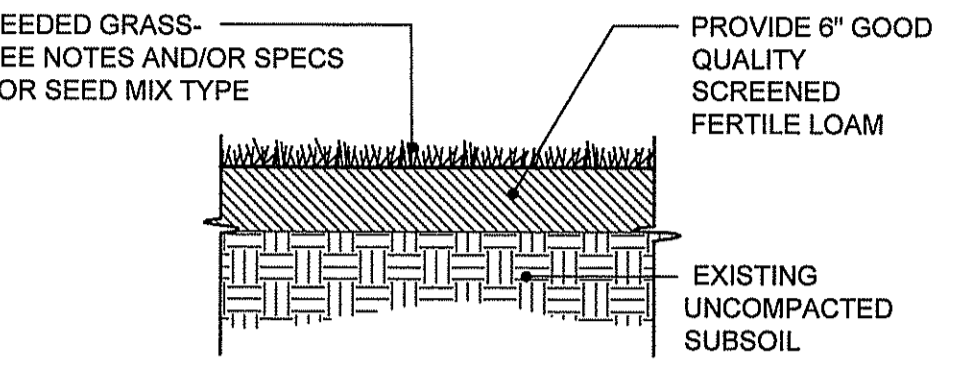
**GRANITE SLAB ON WEIR DETAIL - AREA 1B**  
 SCALE: NTS



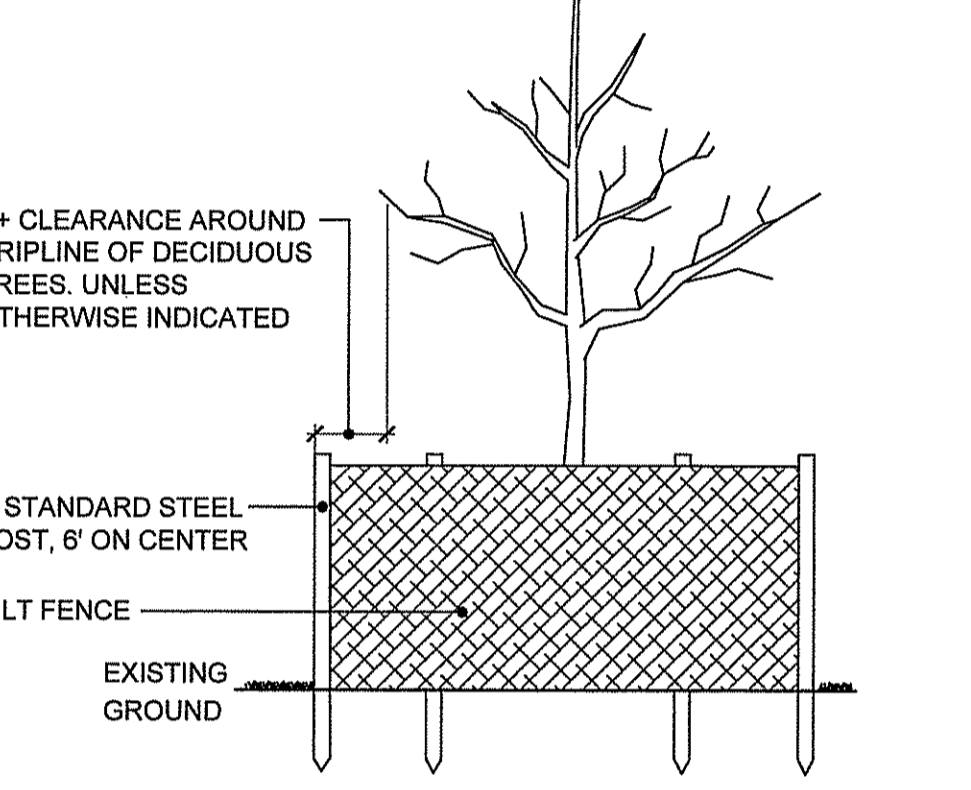
**FOREBAY PAVER & GRANITE CURB WEIR DETAIL**  
 SCALE: NTS



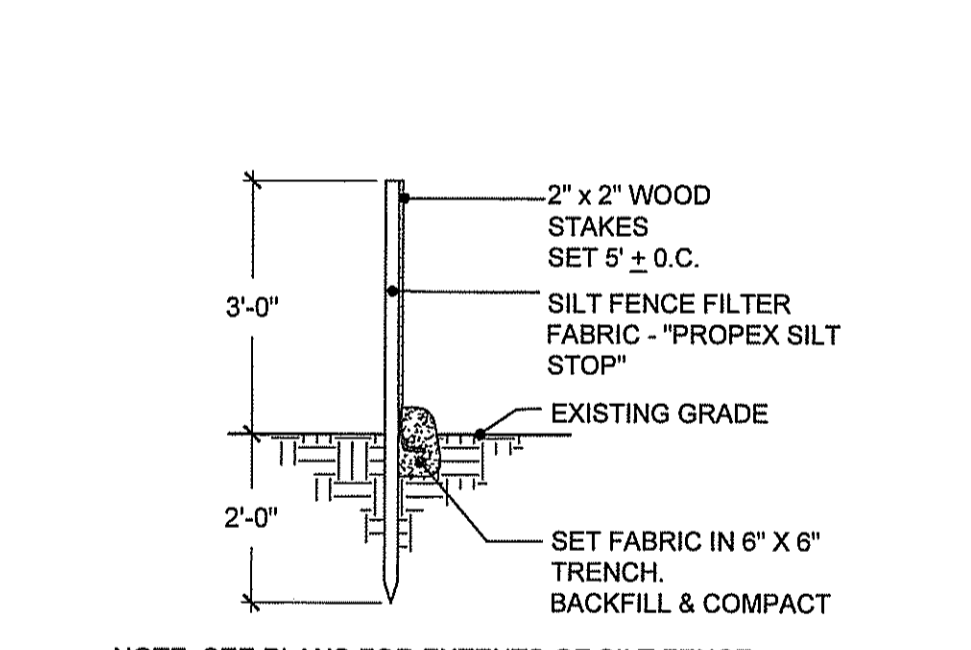
**BEDLINE EDGE DETAIL**  
 SCALE: NTS



**LOAM & SEED DETAIL**  
 SCALE: NTS



**DRIPLINE TREE PROTECTION DETAIL**  
 SCALE: NTS



**SILT FENCE DETAIL**  
 SCALE: NTS

**CONSTRUCTION NOTES:**  
 1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES ON SITE AND SHALL IMMEDIATELY REPORT ANY DISCREPANCIES OR DEVIATIONS FROM THE CONSTRUCTION PLANS TO THE LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL ALSO REPORT ANY CONDITIONS UNCOVERED IN THE WORK THAT ARE NOT REFLECTED WITHIN THE PLANS.  
 2. THE CONTRACTOR SHALL, UNDER THE DIRECTION OF THE OWNER, ESTABLISH CONSTRUCTION LIMITS ON THE SITE BY ACCEPTABLE VISIBLE MARKERS PLACED AT EYE LEVEL. ALL WORK AND EQUIPMENT SHALL BE CONFINED TO WITHIN THESE LIMITS. THE CONTRACTOR SHALL REMOVE ALL MARKERS WHEN DIRECTED BY OWNER.  
 3. THE SITE SHALL BE "ROUGH GRADED" TO THE ELEVATIONS AND CONTOURS SET FORTH ON THE PLANS, ALLOWING FOR GRAVEL, LOAMING AND FINAL GRADING.  
 4. THE CONTRACTOR SHALL STRIP AND STOCKPILE EXISTING LOAM FROM THOSE AREAS THAT ARE TO BE EXCAVATED OR FILLED AND TO WITHIN THE PROJECT LIMITS. STOCKPILED LOAM SHALL NOT BE MIXED WITH ANY SUBSOIL OR OTHER UNSUITABLE MATERIAL UNLESS DIRECTED BY OWNER. ALL EXCESS SOIL REMAINS THE PROPERTY OF THE OWNER. EARTH EXCAVATION SHALL BE LIMITED TO THE DIMENSIONS AND REQUIREMENTS SHOWN ON THE DRAWINGS.  
 5. THE INTENTION OF THE OWNER IS TO MAINTAIN THE BOUNDARIES OF THE SITE IN ITS EXISTING CONDITION AND THEREFORE THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFINING THE WORK TO WITHIN THE CONSTRUCTION LIMITS.  
 6. ALL EXISTING VEGETATION (TREES, SHRUBS, GRASSES, ETC.) TO REMAIN SHALL BE PROTECTED BY INJURY. INDIVIDUAL TREES AND SHRUBS TO BE SAVED WITHIN THE DESIGNATED WORK AREA SHALL BE ADEQUATELY PROTECTED BY THE CONTRACTOR. THE CONTRACTOR SHALL REMOVE ALL PROTECTIVE BARRIERS AS DIRECTED BY THE OWNER.  
 7. ALL EXISTING GRASSED AREAS NOT ADEQUATELY PROTECTED AND THEREFORE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.  
 8. CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL WETLANDS, COASTAL, CITY/TOWN, AND STATE REGULATIONS.  
 9. ALL PLANTINGS SHALL BE MAINTAINED IN A MANNER SO AS TO PROMOTE OPTIMUM GROWTH OF PLANT MATERIALS.  
 10. ALL TREES, SHRUBS, GROUND COVERS, AND OTHER PLANT MATERIALS MUST BE REPLACED IF THEY DIE OR BECOME UNHEALTHY BECAUSE OF ACCIDENTS, DRAINAGE PROBLEMS, DISEASE, OR OTHER CAUSES. ALL SUCH REPLACEMENTS SHALL CONFORM TO ALL STANDARDS THAT GOVERNED THE ORIGINAL INSTALLATION. WHERE NO SUCH STANDARDS EXIST, NEW PLANTINGS SHALL MATCH THE REPLACED MATERIALS IN TYPE, SPECIES, AND QUANTITY.  
 11. SOIL OR LOAM THAT IS STORED OR STOCKPILED DURING CONSTRUCTION SHOULD ALSO BE MULCHED OR COVERED WITH A MAT OF LOOSE HAY AND CAN BE SEED WITH A TEMPORARY SEED MIX. STOCKPILES SHOULD ALSO BE ENCLOSED WITH SILT OR HAY BALES.  
 12. ENTRANCE TO CONSTRUCTION SITE SHOULD BE COVERED WITH GRAVEL TO TRAP SEDIMENT FROM THE TIRES OF VEHICLES EXISTING ON THE SITE.

**DIG SAFE**  
 1. RHODE ISLAND LAW REQUIRES THAT DIG SAFE AND ALL UTILITY COMPANIES BE NOTIFIED BY THE CONTRACTOR A MINIMUM OF 48 HOURS - 2 BUSINESS DAYS - PRIOR TO ANTICIPATED EXCAVATION. THIS DOES NOT INCLUDE WEEKENDS OR LEGAL HOLIDAYS. DIG SAFE MAY BE CONTACTED BY CALLING 1-888-344-7233 MONDAY THRU FRIDAY FROM 8 A.M. TO 6 P.M.  
 2. STATE LAW REQUIRES ALL EXCAVATORS TO PRE-MARK THE AREA OF EXCAVATION BEFORE NOTIFYING DIG SAFE. PRE-MARKING IS DEFINED AS MARKING OUT THE SCOPE OF THE PROPOSED EXCAVATION AREA, USING STAKES, PAINT OR FLAGS.  
 3. LOCATE AND RECORD ALL BURIED UTILITIES AND CONFORM TO REQUIREMENTS GOVERNING EXCAVATION AND CHANGES IN THIS AREA.  
 4. THE DEPTH OF UNDERGROUND FACILITIES IS VARIABLE, THEREFORE STATE LAW REQUIRES EXCAVATORS TO USE NON-MECHANICAL MEANS WHEN DIGGING WITHIN 18" OF A MARKED UNDERGROUND FACILITY. THE CURRENT DEPTH OF A FACILITY MIGHT NOT BE THE SAME AS WHEN IT WAS ORIGINALLY INSTALLED, DUE TO SOIL EROSION, GRADING AND MANY OTHER FACTORS. TO ENSURE THE SAFETY OF EXCAVATORS AND TO AVOID DISRUPTION, IT MAKES SENSE TO HAND DIG WHEN NEAR AND UNDERGROUND FACILITY.  
 5. IF DAMAGE OCCURS TO A UTILITY LINE, AND THERE IS A POSSIBILITY THAT THE DAMAGE MAY POSE A THREAT TO THE HEALTH AND SAFETY OF THE PUBLIC, CALL 911 IN ORDER TO DISPATCH LOCAL OFFICIALS WHO WILL DETERMINE WHETHER THE COMMUNITY IS IN IMMEDIATE DANGER. NEXT, ACCORDING TO STATE LAW, IT IS THE RESPONSIBILITY OF THE EXCAVATOR TO NOTIFY THE AFFECTED UTILITY COMPANY DIRECTLY AFTER DAMAGE OCCURS. STATE LAW PROHIBITS THE CONTRACTOR FROM ATTEMPTING TO REPAIR THE LINE, OR BACKFILLING BEFORE THE LINE HAS BEEN REPAIRED BY THE UTILITY COMPANY. FAMILIARIZE YOURSELF WITH YOUR LOCAL UTILITY COMPANIES' SAFETY PROCEDURES AND PROTOCOL IN THE EVENT OF UTILITY LINE DISRUPTION.  
 6. A DIG SAFE PERMIT SHOULD BE PROCESSED ONLY IF YOU INTEND TO EXCAVATE WITHIN 30 DAYS.

**PLANTING NOTES:**  
 1. FURNISH AND INSTALL ALL PLANTS SHOWN ON THE DRAWINGS SPECIFIED HEREIN, AND IN THE QUANTITIES LISTED ON THE PLANT LIST. NO SUBSTITUTIONS WILL BE PERMITTED, UNLESS APPROVED BY THE LANDSCAPE ARCHITECT AND PROJECT ADMINISTRATOR.  
 2. LOAM TO BE GOOD QUALITY, FERTILE, FREE OF WEEDS, STICKS STONES OVER 1/2", AND ROOTS. SPREAD TO A MINIMUM OF 6" OVER ALL PLANTED AREAS AND 12" IN ALL AREAS DESIGNATED.  
 3. NURSERY STOCK SHALL MEET THE STANDARDS OF THE AMERICAN ASSOCIATION OF NURSERYMEN AS TO GRADING AND QUALITY.  
 4. ONLY NURSERY-GROWN PLANTS, GROWN IN ACCORDANCE WITH ACCEPTED HORTICULTURAL PRACTICES AND GROWN UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT FOR AT LEAST (2) YEARS, WILL BE ACCEPTED.  
 5. SET PLANTS PLUMS AND AT A LEVEL THAT AFTER SETTLEMENT THEY BEAR THE SAME RELATION TO THE SURROUNDING GROUND AS THEY BORE TO THE GROUND FROM WHICH THEY WERE DUG. SETTLE BACKFILL MATERIAL FOR PLANTS, THOROUGHLY AND PROPERLY BY FIRING OR TAMPING FORM SAUCERS CAPABLE OF HOLDING WATER ABOVE INDIVIDUAL PLANTS, BY PLACING RIDGES OF PLANTING SOIL AROUND EACH.  
 6. STREET TREES SHALL BE SECURELY TRIPLE-STAKED WITH STAKES OF A MINIMUM SIZE OF TWO INCHES BY TWO INCHES BY SIX FEET.  
 7. TREES IN OPEN AREAS TO HAVE A NATURALIZED BRANCHING HABIT.  
 8. ALL STREET TREES ADJACENT TO SIDEWALKS AND ROADS MUST HAVE A MINIMUM CLEARANCE HEIGHT OF 7' (FEET) TO THE FIRST BRANCH.  
 9. WATERING: WATER ALL PLANTS WITHIN 48 HOURS AFTER PLANTING IF CONDITIONS WARRANT, AND AS MANY TIMES THEREAFTER TO SUSTAIN HEALTHY CONDITIONS. SATURATE THE SOIL AROUND EACH PLANT THOROUGHLY AT EACH WATERING, WHICH EVER IS REQUIRED BY SITE CONDITIONS.  
 10. PRUNING: PRUNE PLANTS, AS DIRECTED BY OWNER, AT THE PROJECT SITE BEFORE OR IMMEDIATELY AFTER PLANTING IN ACCORDANCE WITH THE BEST HORTICULTURAL PRACTICES. DEAD OR INJURED BRANCHES (WITHIN THE TRUNK OR THE LIMB) PRUNE ALL BROKEN ROOTS ON THE PLANT SIDE OF THE BREAK. PRUNING SHALL NOT DEFORM OR OTHERWISE DESTROY THE TYPICAL SHAPE OR SYMMETRY OF THE PLANT AND SHALL NOT REDUCE THE HEIGHT BY MORE THAN ONE-THIRD. DO NOT CUT BACK THE LEADER OF THE PLANT UNLESS DIRECTED BY THE LANDSCAPE ARCHITECT.  
 11. FERTILIZING: FERTILIZE SHRUB BEDS WITH 10-6-4 FERTILIZER AT A RATE OF THREE POUNDS PER 100 SQUARE FEET OF SURFACE AREA. BROADCAST APPLY THE FERTILIZER UNIFORMLY TO THE SURFACE BEDS AND WORK INTO THE UPPER TWO INCHES OF SOIL. FERTILIZE INDIVIDUAL TREES AT THE RATE OF ONE AGRIFORM PELLET PER INCH OF TRUNK DIAMETER (FOLLOW MANUFACTURER'S WRITTEN INSTRUCTIONS). APPLY A SECOND APPLICATION OF FERTILIZER TO ALL PLANT ITEMS AT THE SAME SPECIFIED RATES OVER THE MULCH AT THE END OF AN EIGHT WEEK PERIOD.  
 12. MULCHING: COVER ALL PLANTED AREAS WITH 3" DARK BROWN PINE BARK MULCH WITHIN A SEVENTY - TWO HOUR PERIOD AFTER PLANTING. NO RED MULCH ACCEPTED.  
 13. GUARANTEE: ALL PLANTS FURNISHED BY THE CONTRACTOR SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEARS AFTER PRELIMINARY INSPECTION AND SHALL BE ALIVE AND IN SATISFACTORY GROWTH AT THE END OF THE GUARANTEE PERIOD. ALL DEAD OR DYING PLANT MATERIAL SHALL BE REPLACED AT ONCE BY THE CONTRACTOR, FREE OF CHARGE.  
 14. ALL TREES ARE TO HAVE ONE MAIN LEADER.  
 15. CONTRACTOR IS RESPONSIBLE FOR CHECKING THE IRRIGATION AND WATER AMOUNTS FOR THE FIRST YEAR.  
 16. POCKET PLANTING: REFERS TO PLANTING MATERIAL AMONG INDIVIDUAL PLANTINGS IN INDIVIDUAL HOLES AND NOT A PREPARED BED. THE STANDARD PLANTING DETAILS STILL APPLY.

**SEEDING NOTES:**  
 1. LOAM SHALL BE SPREAD TO A MINIMUM DEPTH OF 6" OVER ALL AREA DESIGNATED ON PLANS.  
 2. ON-SITE LOAM TO BE TESTED BY A CERTIFIED PROFESSIONAL SOIL SCIENTIST FOR ORGANIC MATTER, PH AND NUTRIENTS. AMEND AS NEEDED TO MEET RECOMMENDED STANDARDS FOR SEEDING.  
 3. SHAPE AND SMOOTH THE SURFACE TO THE LINES AND GRADES AS SHOWN ON PLANS.  
 4. FERTILIZE WITH 10-10-10 OR EQUIVALENT ANALYSIS AT LEAST 40% OF THE FERTILIZER NITROGEN SHALL BE IN A SLOW RELEASE FORM. INCORPORATE THE FERTILIZER INTO THE TOP 3 TO 4 INCHES OF THE PLANTING SOIL. APPLY AT THE RATE OF 8 POUNDS PER 1,000 SQ. FT. AT SEEDING.  
 5. LIME: SPREAD EVENLY AND WORK INTO THE SOIL DURING PREPARATION OF SEED BED AT THE RATE OF ONE TON PER ACRE. INCORPORATE INTO THE SOIL BY DIGGING OR OTHER APPROVED METHOD. DISTRIBUTE LIME UNIFORMLY AND WORK INTO TOP 4 INCHES OF TOP SOIL (MINIMUM) AND UNIFORMLY BLEND BY DIGGING OR ROTOTILLING.  
 6. ANY LOAM EXPOSED FOR ONE WEEK SHALL BE PLANTED WITH ANNUAL RYE GRASS SEED & SEED MIX #1. ALL LOAM STOCKPILES TO BE SEED IMMEDIATELY.  
 7. APPLICATION OF SEED:  
 A. RATE OF APPLICATION OF SEED SHALL BE 8 POUNDS PER 1,000 SQ. FT. OR AS INDICATED ON PLANS.  
 B. SEEDING SHALL BE DONE IN ACCORDANCE WITH SECTION L.02.03 OF THE RI STANDARD SPECIFICATIONS AND ONLY DURING THE FOLLOWING DATES:  
 FALL SEEDING: AUGUST 15 TO OCTOBER 15  
 SPRING SEEDING: APRIL 1 TO MAY 31  
 C. THE CONTRACTOR SHALL KEEP ALL SEEDED AREAS WATERED AND IN GOOD CONDITION, RESEEDING IF AND WHEN NECESSARY FOR AN 8-WEEK PERIOD OR UNTIL A GOOD, HEALTHY, UNIFORM GROWTH IS ESTABLISHED OVER THE ENTIRE AREA. THE CONTRACTOR SHALL LEAVE THESE AREAS IN GOOD CONDITION, ALSO MAINTAIN THESE AREAS IN GOOD CONDITION UNTIL PROVISIONAL ACCEPTANCE.  
 D. DURING THIS PERIOD, WATER TURF AS NECESSARY TO MAINTAIN AN ADEQUATE SUPPLY OF MOISTURE. THE EQUIVALENT OF ONE INCH OF ABSORBED WATER PER WEEK THAT IS DELIVERED AT WEEKLY INTERVALS IN THE FORM OF NATURAL RAIN OR IS AUGMENTED AS REQUIRED BY PERIODIC WATERINGS IS REQUIRED.  
 E. OVERSEED WHEN NECESSARY TO PROMOTE GRASS GROWTH.  
 F. REPLANT AREAS VOID OF TURF ONE SQUARE FOOT OR LARGER.  
 G. SEED ALL AREAS DESIGNATED ON PLAN AS WELL AS ALL DISTURBED EXISTING AREAS WITH THE FOLLOWING SEED MIX:

SEED MIX FOR LAWN/OPEN SPACE MOWED AREAS SEED MIX		SEED MIX FOR INFILTRATION BASINS CONSERVATION MIX	
TYPE	% BY WEIGHT	TYPE	% BY WEIGHT
NASSAU KENT BLUE	60	CREeping RED FESCUE	25
JAMESTOWN CHEWINGS FESCUE	20	PERENNIAL RYE GRASS	25
PALMER PERENNIAL RYE GRASS	20	ANNUAL RYE GRASS	25
		TALL FESCUE	17
		KENTUCKY BLUEGRASS	5
		COLONIAL BENTGRASS	1
		REDTOP	1
		WHITE CLOVER	1

**SEED MIX FOR SHORELINE NEW ENGLAND EROSION CONTROL RESTORATION MIX FOR MOIST SITES**  
 APPLICATION RATE = 25 LBS/ACRE | 1750 SQ FT/LB AVAILABLE FROM NEW ENGLAND WETLAND PLANTS 820 WEST STREET AMHERST, MA 01002 - 413-548-8000

**NO CHANGES ALLOWED WITHOUT APPROVAL**  
 DATED: 10/22/2018  
 18-0229

SPECIES: Virginia Wild Rye (Elymus virginicus), Little Bluestem (Schizachyria capillaris), Red Fescue (Festuca rubra), Switch Grass (Panicum virgatum), Parrot Grass (Chamaecrista fasciculata), Panicledleaf Tick Trefoil (Desmodium paniculatum), Indian Grass (Sorghastrum nutans), Blue Vervain (Verbena hastata), Butterfly Milkweed (Asclepias tuberosa), Black Eyed Susan (Rudbeckia hirta), Common Sneezeweed (Helenium autumnale), Heath Aster (Aster sp.), Symphyotrichum pilosum), Early Goldenrod (Solidago juncea), Upland Bentgrass (Agrostis perennans)

**wood.**  
 WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.  
 275 PROMENADE STREET, SUITE 100  
 PROVIDENCE RHODE ISLAND, 02903  
 WEB: WWW.WOODPILC.COM  
 (401) 648-9240

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 23 Brown Street, Suite 206, Wickford, RI 02882  
 Tel. 401.294.1684 - www.halibeckman.com  
 Estate Planning - Landscape Architecture

Environmental Management  
 AUG 24 2018

**NOT FOR CONSTRUCTION**  
 SEAL:  
 REGISTERED PROFESSIONAL ENGINEER  
 WALTER VAN DUSEN  
 NO. 3747

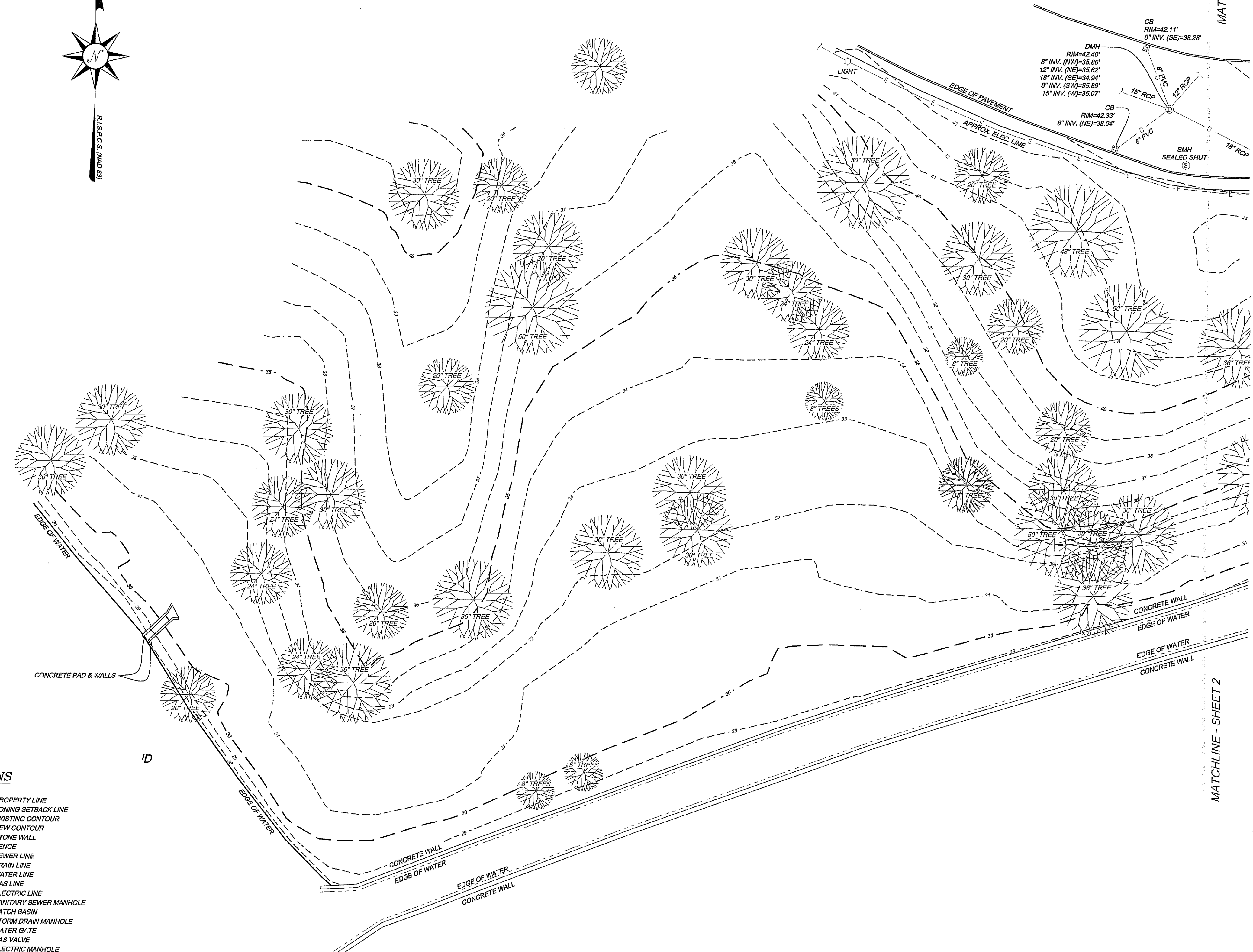
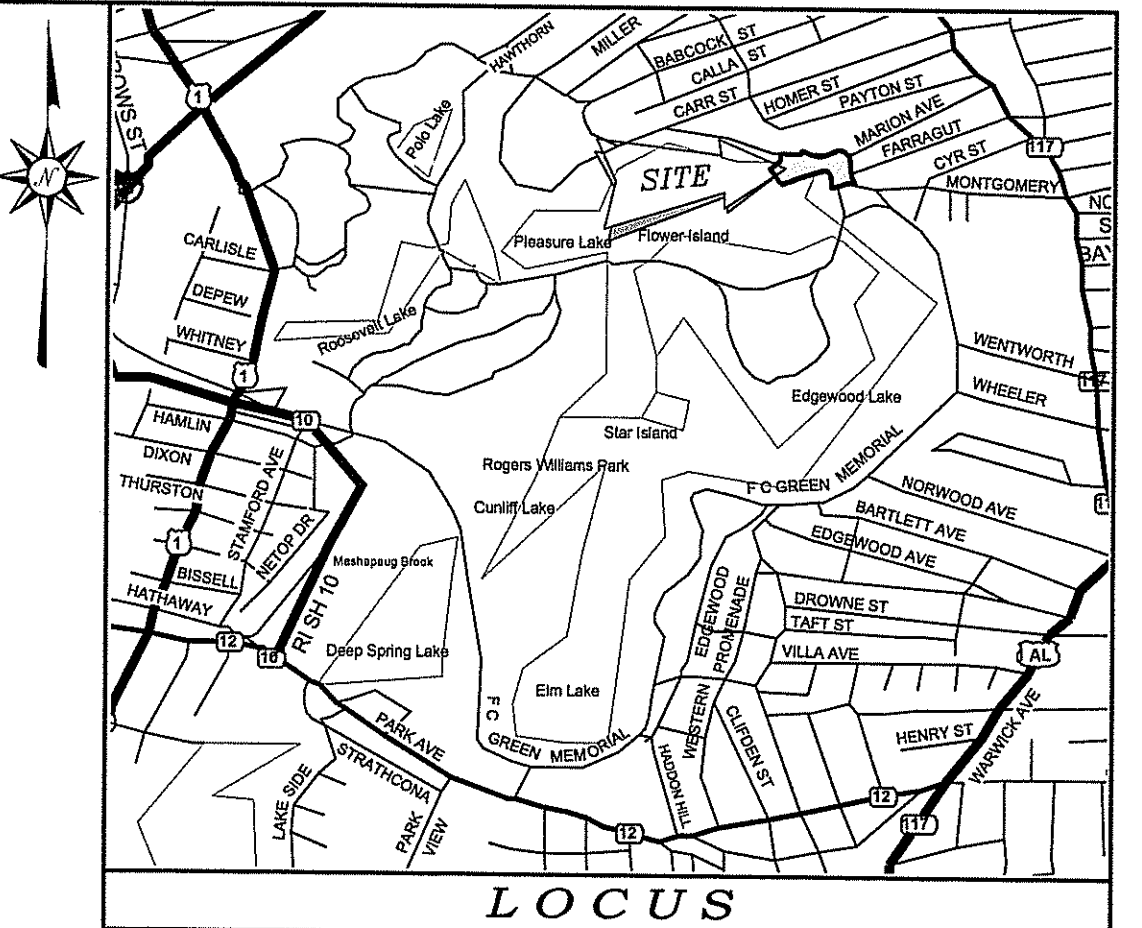
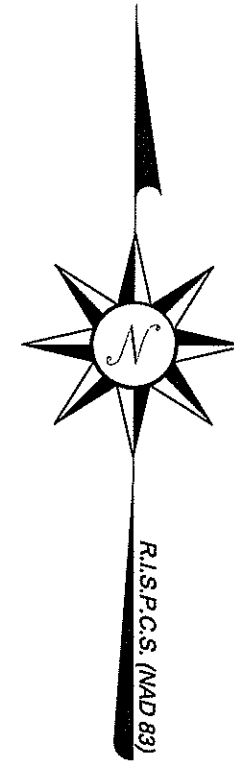
CLIENT:  
**CITY OF PROVIDENCE PARKS & RECREATION DEPARTMENT**  
 CITY HALL, 25 DORRANCE STREET, PROVIDENCE, RI 02903

PROJECT:  
**STORMWATER ENGINEERING AT ROGER WILLIAMS PARK**  
 1000 ELMWOOD AVENUE, PROVIDENCE, RHODE ISLAND

TITLE:  
**LANDSCAPE DETAILS**

ISSUED FOR: PERMITTING  
 DATE: JULY 31, 2018  
 SCALE: NTS  
 DRAWN BY: M.J.W.  
 CHECKED BY: G.A.A.  
 PROJECT NO: HBL-448

**L-5**  
 SHEET 5 OF 5



MATCHLINE - SHEET 2

MATCHLINE - SHEET 2

**NOTES / REFERENCES**

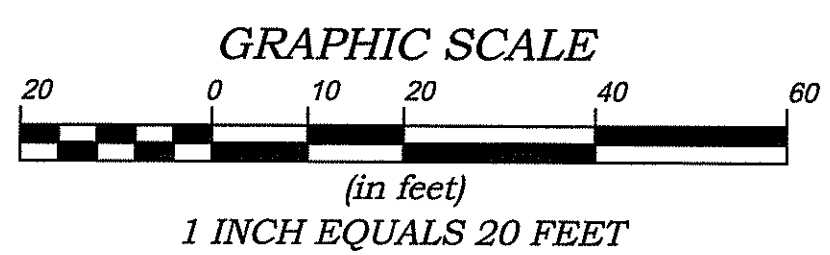
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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 AUG 24 2018  
 Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED OCT 22 2018 FILE # 18-0229  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
*Charles M. Forster*

**LEGEND & ABBREVIATIONS**

- |          |                            |          |                          |
|----------|----------------------------|----------|--------------------------|
| N/F      | - NOW OR FORMERLY          | —        | - PROPERTY LINE          |
| A.P.     | - ASSESSORS PLAT           | —        | - ZONING SETBACK LINE    |
| S.F.     | - SQUARE FEET              | - - - 15 | - EXISTING CONTOUR       |
| AC.      | - ACRES                    | - - - 10 | - NEW CONTOUR            |
| ±        | - PLUS OR MINUS            | - - -    | - STONE WALL             |
| STY      | - STORY                    | - - - X  | - FENCE                  |
| W/F      | - WOOD FRAMED              | - - - S  | - SEWER LINE             |
| SHP      | - STATE HIGHWAY PLAT       | - - - D  | - DRAIN LINE             |
| RET.     | - RETAINING WALL           | - - - W  | - WATER LINE             |
| PED.     | - PEDESTRIAN               | - - - G  | - GAS LINE               |
| (FND.)   | - FOUND                    | - - - E  | - ELECTRIC LINE          |
| R/HB     | - RI HIGHWAY BOUND         | ⊙        | - SANITARY SEWER MANHOLE |
| PK WALL  | - MASONRY WALL             | ⊞        | - CATCH BASIN            |
| FE       | - FLARED END               | ⊕        | - STORM DRAIN MANHOLE    |
| RCP      | - REINFORCED CONCRETE PIPE | ⊗        | - WATER GATE             |
| CLF      | - CHAIN LINK FENCE         | ⊙        | - GAS VALVE              |
| INV.     | - INVERT                   | ⊕        | - ELECTRIC MANHOLE       |
| x 10.80  | - EXISTING SPOT GRADE      | ⊞        | - GRANITE BOUND          |
| x 100.00 | - NEW SPOT GRADE           | ⊙        | - DRILL HOLE             |
|          |                            | ⊙        | - IRON PIPE              |

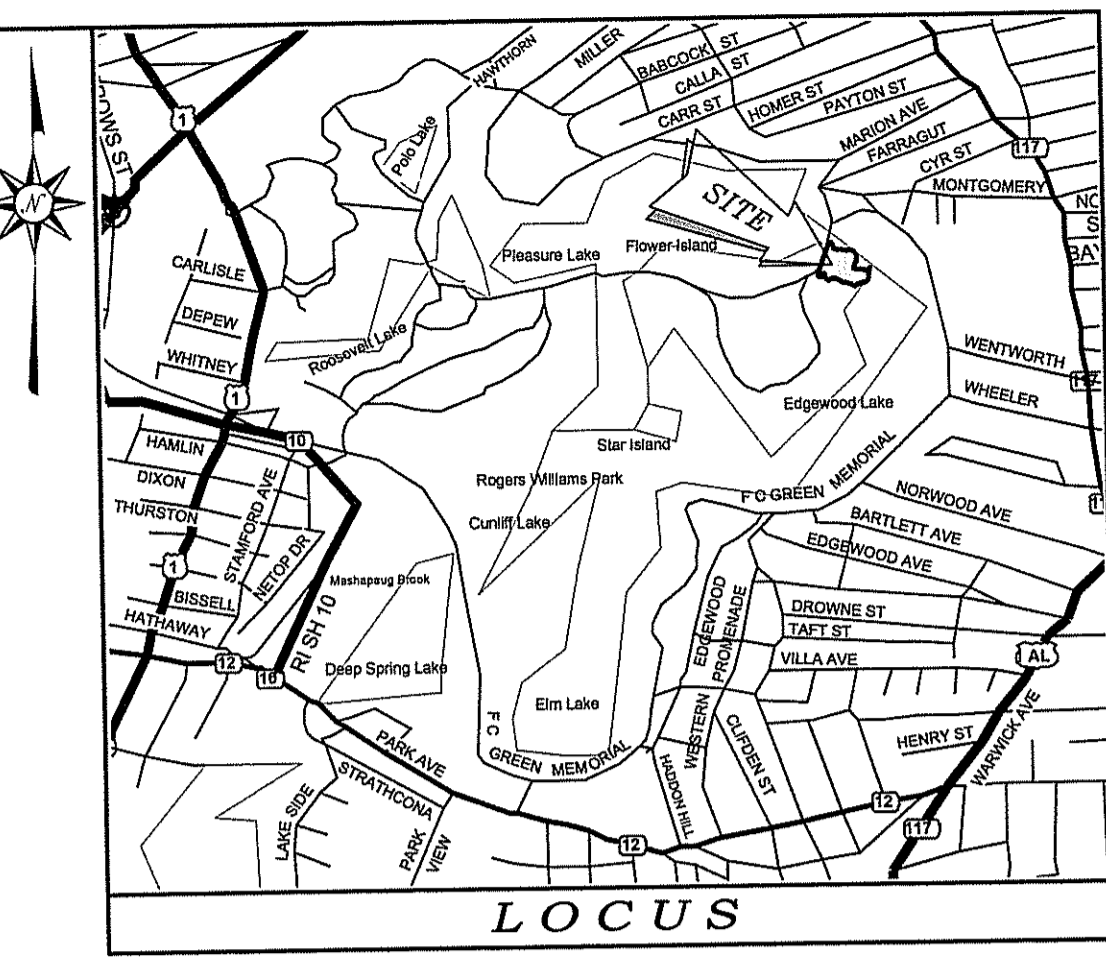


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NO.	DATE	REVISION	CHECKED BY
PARTIAL TOPOGRAPHIC SURVEY PLAN ROGER WILLIAMS PARK ASSESSORS PLAT 90, LOT 1 PROVIDENCE, RHODE ISLAND			PROJECT NO: 17-107 SCALE: 1" = 20' DATE: 03/02/2018 DRAWN BY: EBP/BJT CHECKED BY: RSL
AMEC FOSTER WHEELER 275 PROMENADE STREET, SUITE 100 PROVIDENCE, RHODE ISLAND			FILENAME: 17-107_SU1 1 of 2 SHTS DRAWING #: SU1

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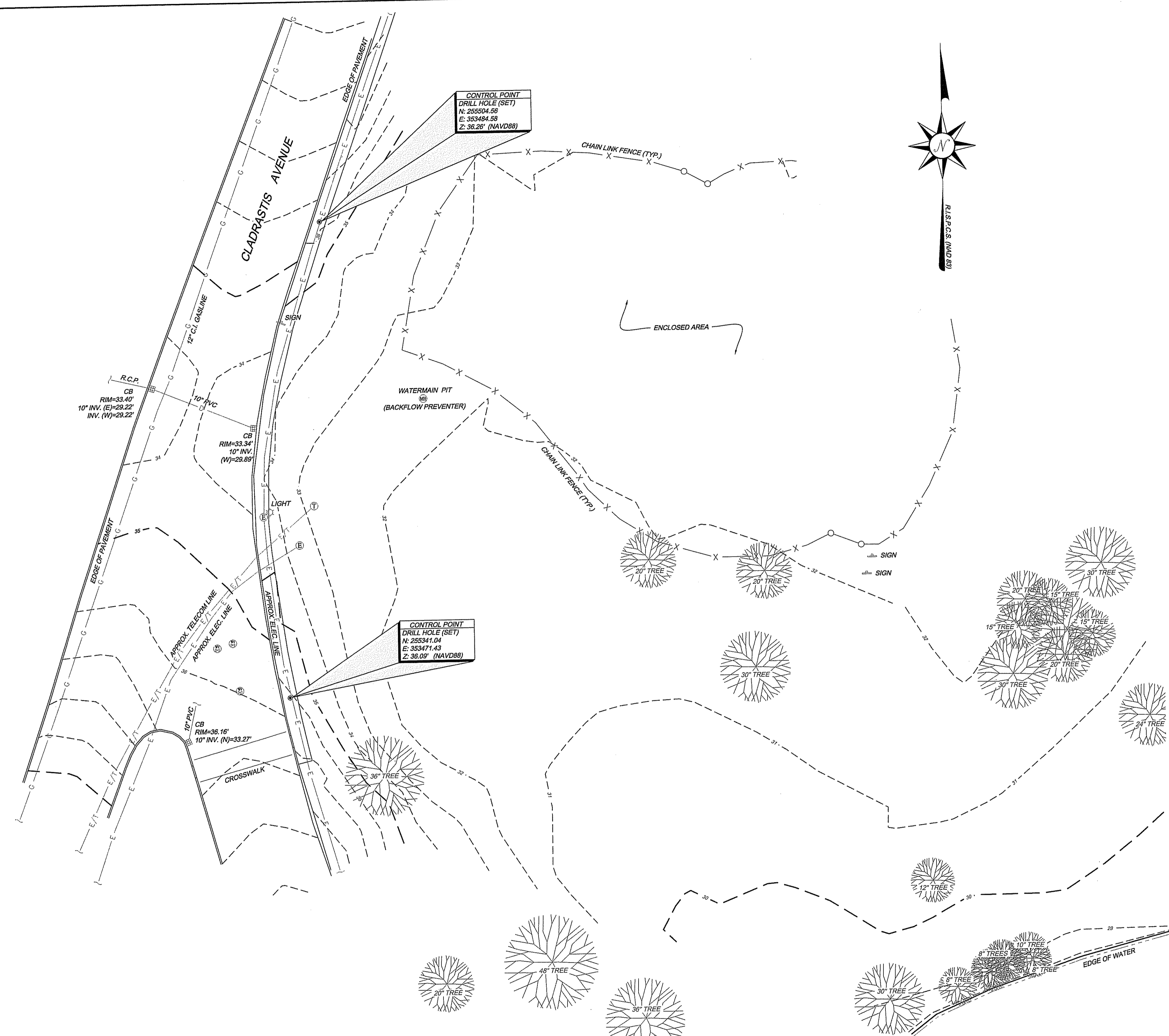


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APPROVED  
AUG 24 2018  
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS DIVISION  
APPROVED WITH COMMENTS  
AS SPECIFIED IN THE COMMENTS  
DATED OCT 22 2018  
NO CHANGES ALLOWED WITHOUT APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
18-0229  
James H. Wheeler

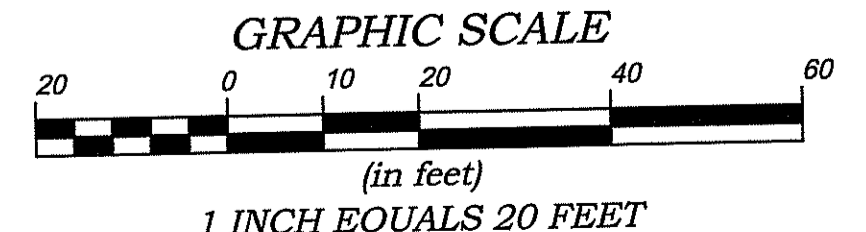


CONTROL POINT  
DRILL HOLE (SET)  
N: 255504.56  
E: 353484.58  
Z: 36.26' (NAVD88)

CONTROL POINT  
DRILL HOLE (SET)  
N: 253341.04  
E: 353471.43  
Z: 36.08' (NAVD88)

**LEGEND & ABBREVIATIONS**

- |         |                            |     |                          |
|---------|----------------------------|-----|--------------------------|
| NF      | - NOW OR FORMERLY          | --- | - PROPERTY LINE          |
| A.P.    | - ASSESSOR'S PLAT          | --- | - ZONING SETBACK LINE    |
| S.F.    | - SQUARE FEET              | --- | - EXISTING CONTOUR       |
| AC.     | - ACRES                    | --- | - NEW CONTOUR            |
| ±       | - PLUS OR MINUS            | --- | - STONE WALL             |
| STY     | - STORY                    | X   | - FENCE                  |
| WF      | - WOOD FRAMED              | S   | - SEWER LINE             |
| SHF     | - STATE HIGHWAY PLAT       | D   | - DRAIN LINE             |
| RET.    | - RETAINING WALL           | W   | - WATER LINE             |
| PED.    | - PEDESTRIAN               | G   | - GAS LINE               |
| (FND.)  | - FOUND                    | E   | - ELECTRIC LINE          |
| RHB     | - RI HIGHWAY BOUND         | Ⓢ   | - SANITARY SEWER MANHOLE |
| PK NAIL | - MASONRY NAIL             | Ⓢ   | - CATCH BASIN            |
| FE      | - FLARED END               | Ⓢ   | - STORM DRAIN MANHOLE    |
| RCP     | - REINFORCED CONCRETE PIPE | Ⓢ   | - WATER GATE             |
| CLF     | - CHAIN LINK FENCE         | Ⓢ   | - GAS VALVE              |
| INV.    | - INVERT                   | Ⓢ   | - ELECTRIC MANHOLE       |
| x 10.80 | - EXISTING SPOT GRADE      | Ⓢ   | - GRANITE BOUND          |
| x 10.80 | - NEW SPOT GRADE           | Ⓢ   | - DRILL HOLE             |
|         |                            | Ⓢ   | - IRON PIPE              |



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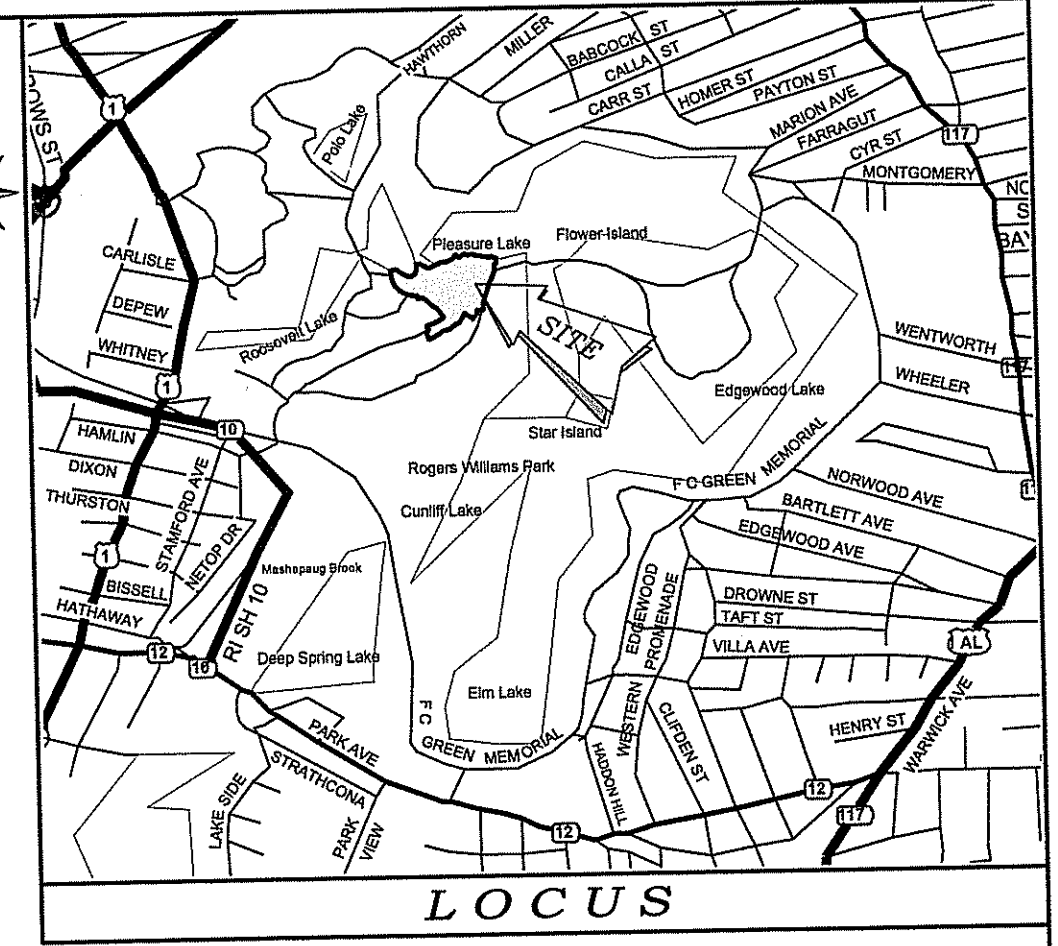
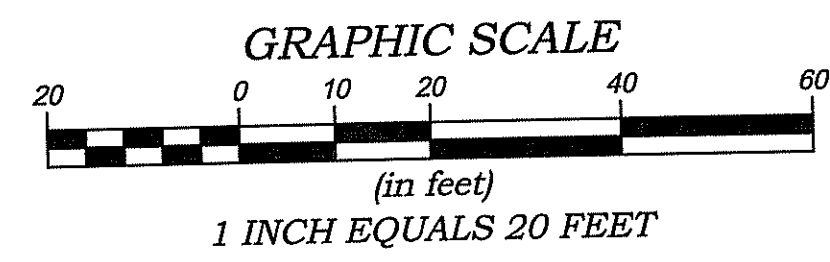
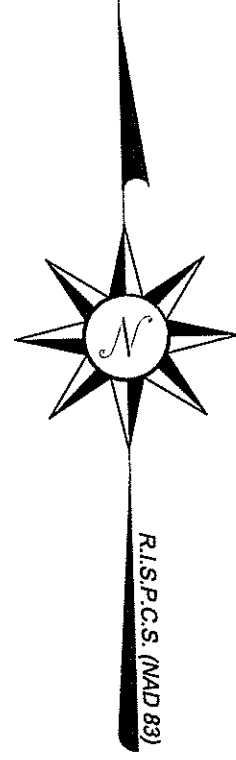
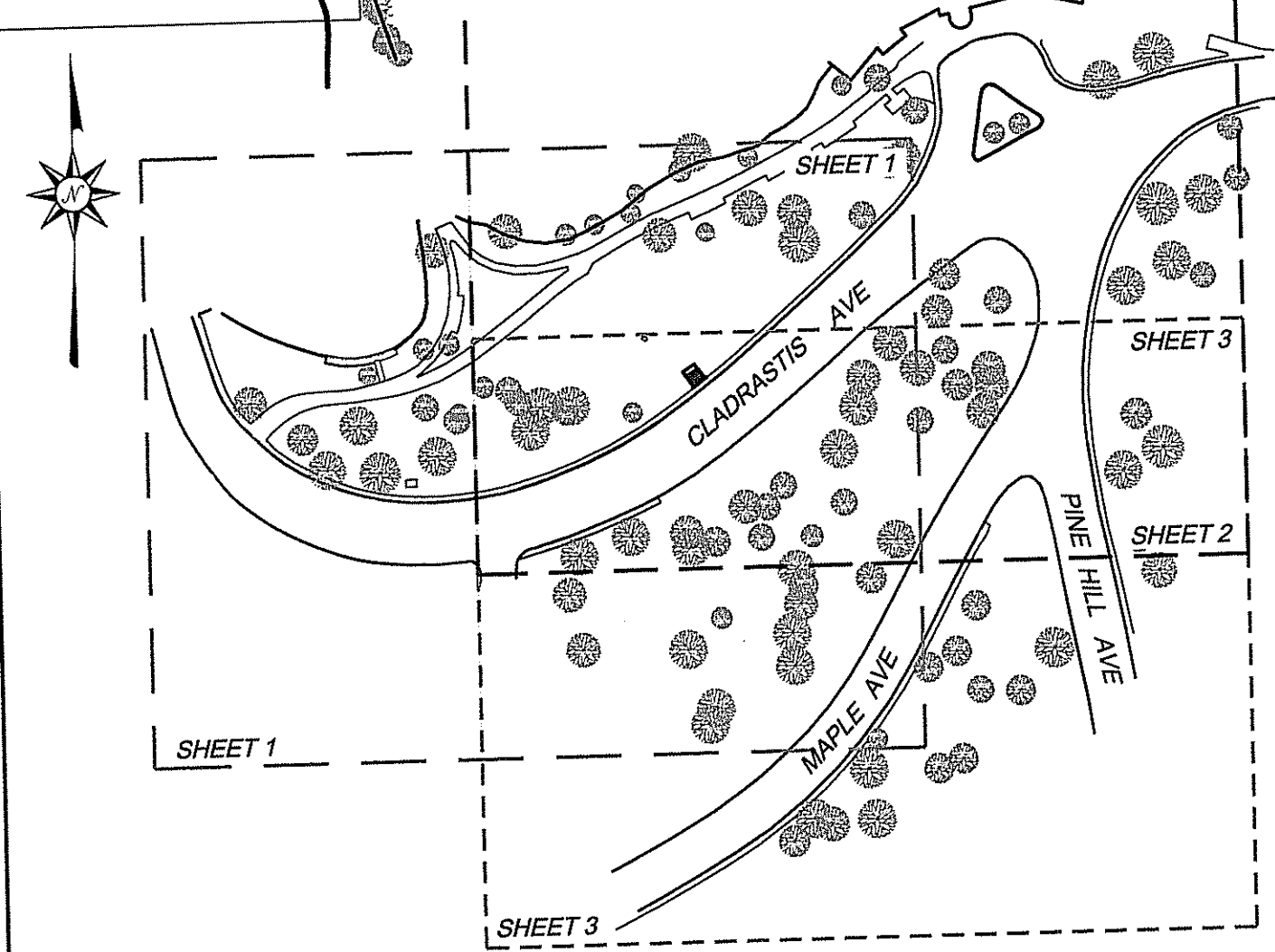
NO.	DATE	REVISION	CHECKED BY
PARTIAL TOPOGRAPHIC SURVEY PLAN ROGER WILLIAMS PARK ASSESSORS PLAT 90, LOT 1 PROVIDENCE, RHODE ISLAND			PROJECT NO: 17-107 SCALE: 1" = 20' DATE: 03/02/2018 DRAWN BY: EBP/BJT CHECKED BY: RSL FILENAME: 17-107_SU1 1 of 1 SHTS DRAWING #: SU2
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**SHEET KEY**  
NOT TO SCALE



**LEGEND & ABBREVIATIONS**

N/F	- NOW OR FORMERLY	---	- PROPERTY LINE
A.P.	- ASSESSORS PLAT	- - -	- ZONING SETBACK LINE
S.F.	- SQUARE FEET	- - -	- EXISTING CONTOUR
AC.	- ACRES	- - -	- NEW CONTOUR
±	- PLUS OR MINUS	- - -	- STONE WALL
STY	- STORY	- - -	- FENCE
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RCP	- REINFORCED CONCRETE PIPE	- - -	- WATER GATE
CLF	- CHAIN LINK FENCE	- - -	- GAS VALVE
INV.	- INVERT	- - -	- ELECTRIC MANHOLE
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x 12.80	- NEW SPOT GRADE	- - -	- DRILL HOLE
		- - -	- IRON PIPE

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*Chris A. Hart*

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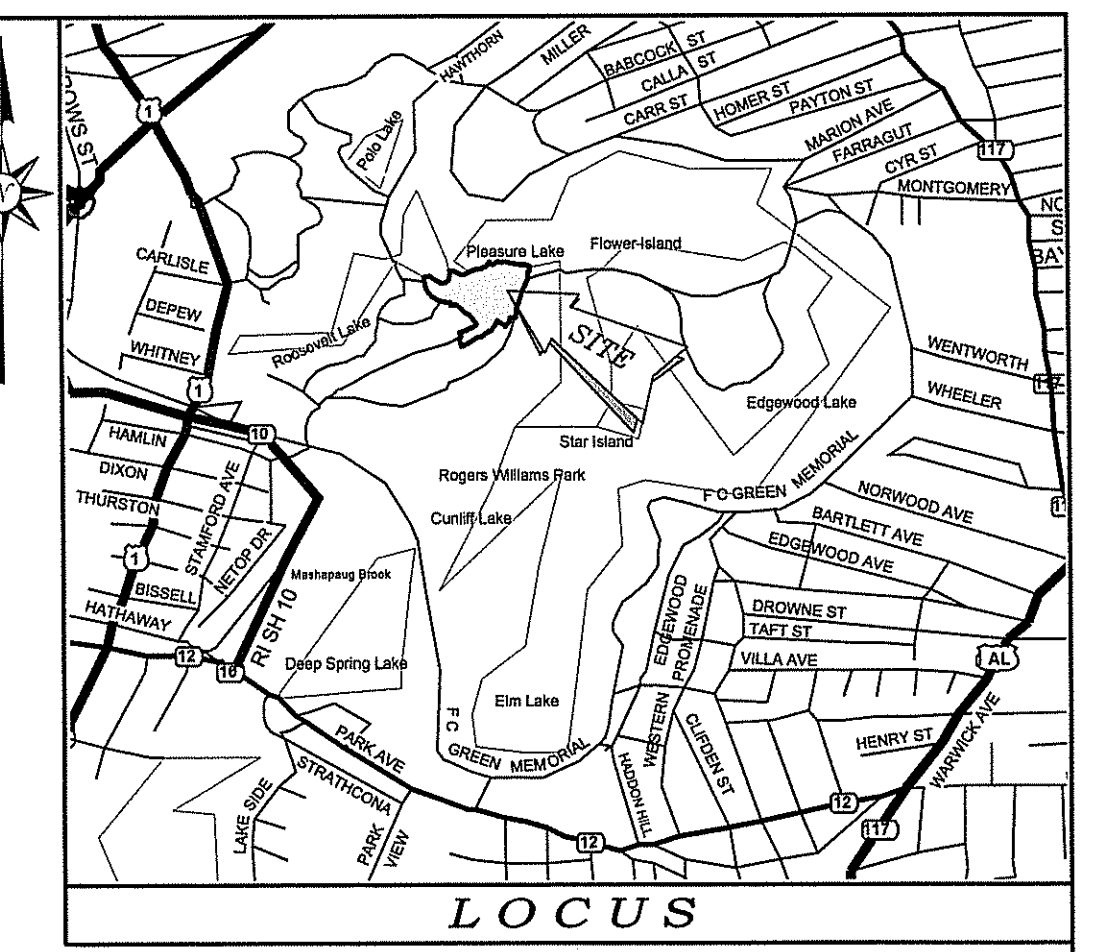
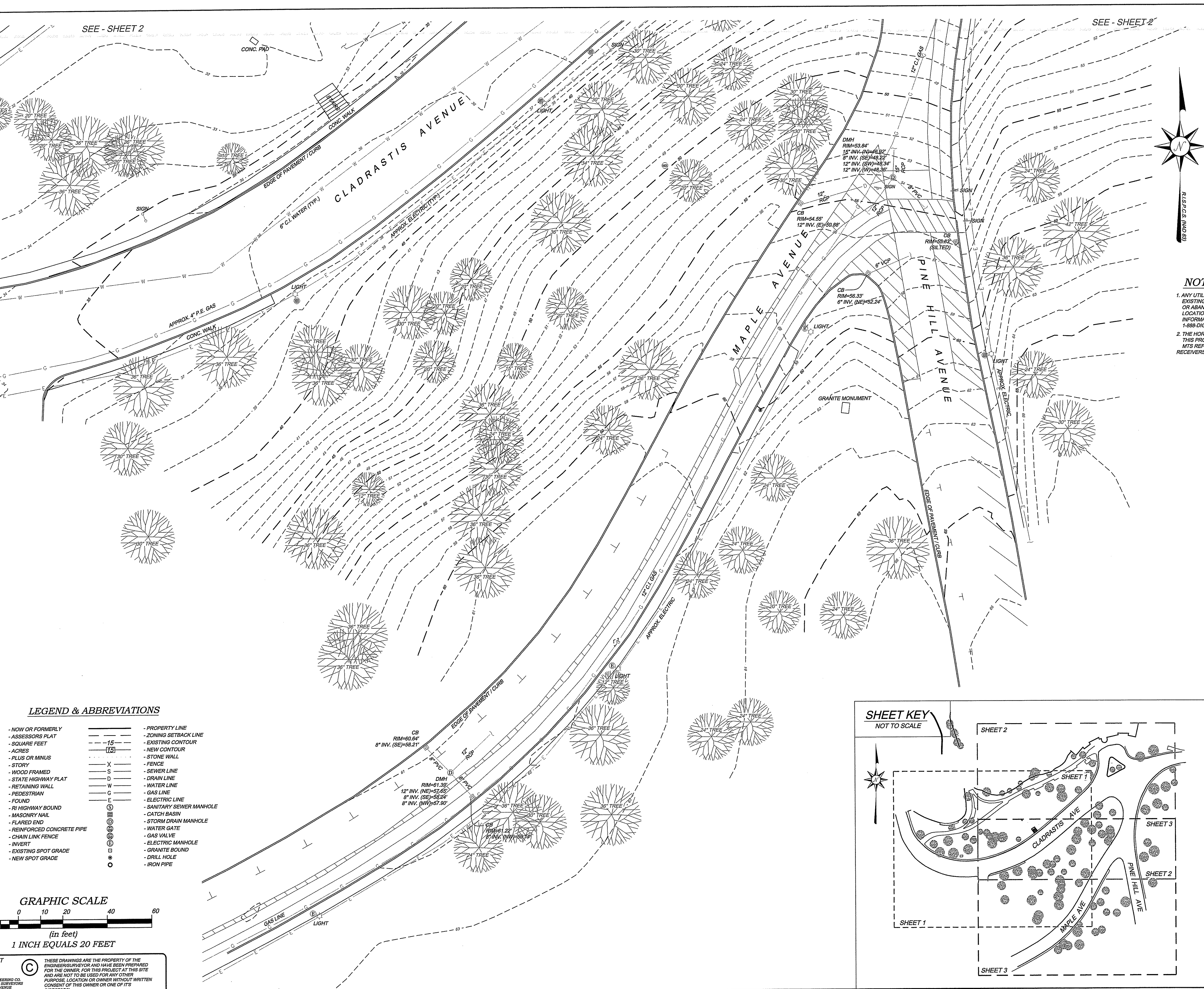
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SEE - SHEET 3

SEE - SHEET 2

SEE - SHEET 2



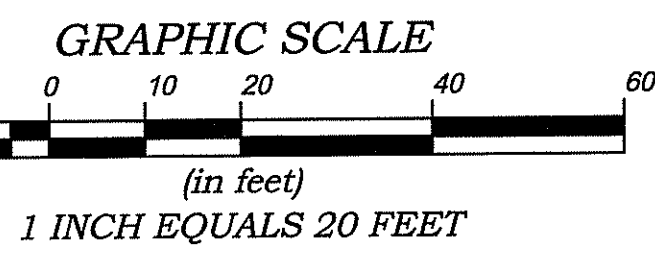
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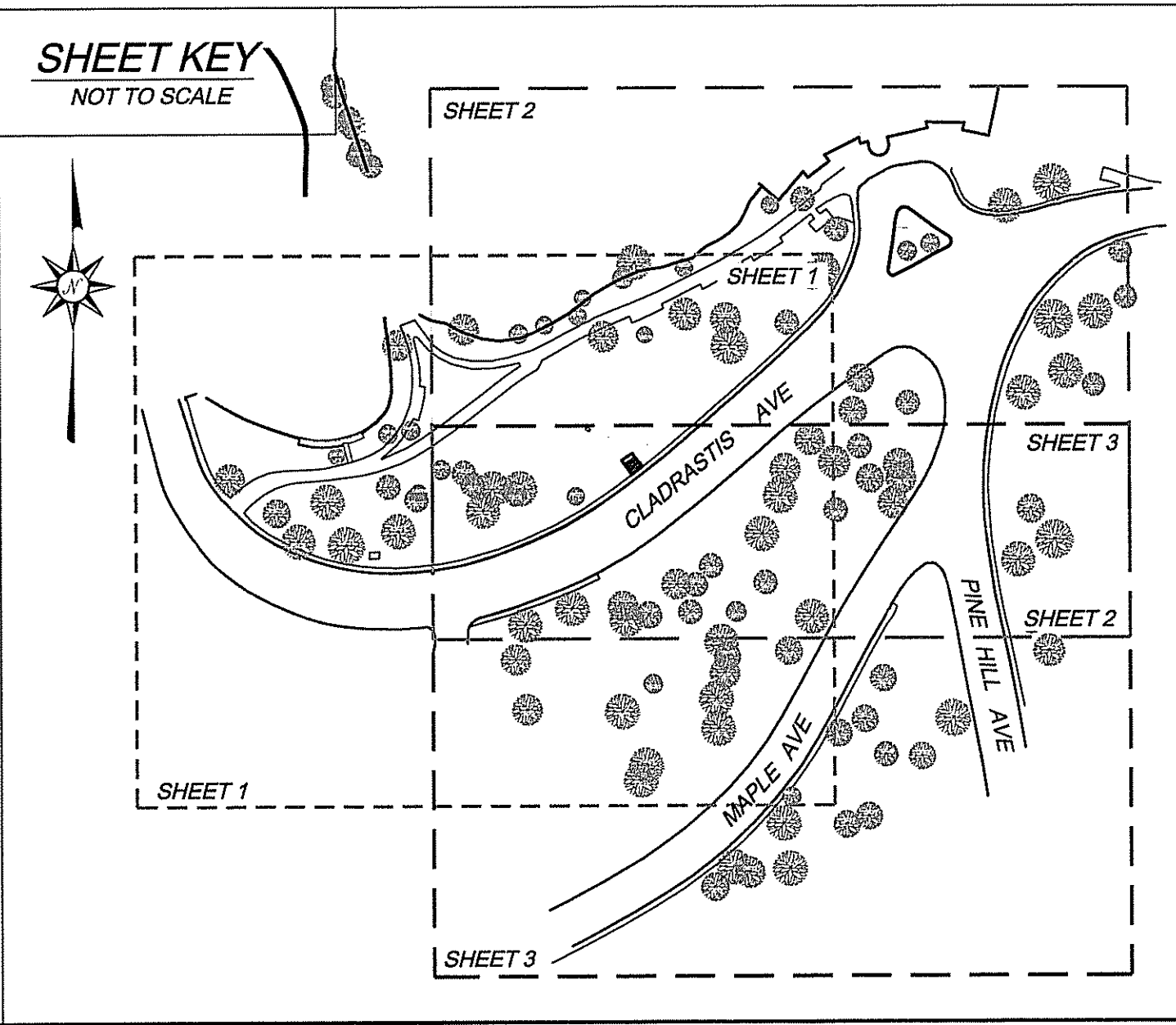
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**LEGEND & ABBREVIATIONS**

- NOW OR FORMERLY
- ASSESSORS PLAT
- SQUARE FEET
- ACRES
- PLUS OR MINUS
- STORY
- WOOD FRAMED
- STATE HIGHWAY PLAT
- RETAINING WALL
- PEDESTRIAN
- FOUND
- RI HIGHWAY BOUND
- MASONRY NAIL
- FLARED END
- REINFORCED CONCRETE PIPE
- CHAIN LINK FENCE
- INVERT
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- NEW SPOT GRADE
- PROPERTY LINE
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- EXISTING CONTOUR
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- FENCE
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- GAS VALVE
- ELECTRIC MANHOLE
- GRANITE BOUND
- DRILL HOLE
- IRON PIPE



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DATED OCT 22 2018 FILE # 18-0229  
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NO.	DATE	REVISION	CHECKED BY
PARTIAL TOPOGRAPHIC SURVEY PLAN ROGER WILLIAMS PARK ASSESSORS PLAT 90, LOT 1 PROVIDENCE, RHODE ISLAND			PROJECT NO. 17-107 SCALE 1" = 20' DATE 03/02/2018 DRAWN BY: EBP/BJT CHECKED BY: RSL
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