

Roger Williams Park Zoo Soar and Explore Adventure Park

1000 Elmwood Avenue
Providence, Rhode Island

OWNER/APPLICANT:
City of Providence
Roger Williams Park Zoo
1000 Elmwood Avenue
Providence, RI 02907

CIVIL ENGINEER:



PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
8 BLACKSTONE VALLEY PLACE
LINCOLN, RI 02865
401-334-4100



Scale : N.T.S.

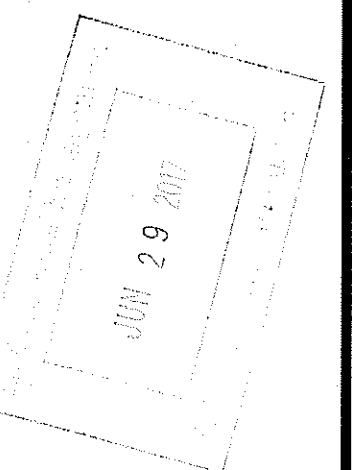
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RIDEM PRELIMINARY DETERMINATION SUBMISSION
MAY 9, 2017
REVISED JUNE 29, 2017

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUL 18 2017 FILE # 17-0102
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Martin D. Wenczek



REFERENCE

- PROJECT LOCATION: ROGER WILLIAMS PARK ZOO, 1000 ELMWOOD AVENUE, PROVIDENCE RI 02907.
- EXISTING CONDITIONS MAPPING TAKEN FROM PLAN ENTITLED "PROVIDENCE, RI EXISTING CONDITIONS PLAN ZIPLINE AT POLO LAKE" PREPARED FOR ROGER WILLIAMS PARK ZOO, PREPARED BY MARSH & LONG SURVEYING, INC. DATED APRIL 19, 2017.

GENERAL NOTES

- THE STATE OF RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2004 EDITION OR LATEST REVISION, AND THE RHODE ISLAND STANDARD DETAILS ARE MADE A PART HEREOF AS FULLY AND COMPLETELY AS IF ATTACHED HERETO. ALL WORK SHALL CONFORM TO THE RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2004 EDITION OR LATEST REVISION. THE 2004 EDITION OF THE STANDARD SPECIFICATIONS MAY BE OBTAINED AT THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION.
- THE CONTRACTOR SHALL MAKE ALL NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN ALL NECESSARY CONSTRUCTION PERMITS, PAY ALL FEES AND POST ALL BONDS ASSOCIATED WITH THE SAME, AND COORDINATE WITH THE ENGINEER AND OWNER'S REPRESENTATIVE AS REQUIRED.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR JOB SITE SAFETY. THE CONTRACTOR SHALL PROVIDE TEMPORARY FENCING AND/OR BARRIERS AROUND ALL OPEN EXCAVATED AREAS IN ACCORDANCE WITH OSHA STANDARDS.
- IF ANY DEVIATION OR ALTERATION OF THE WORK PROPOSED ON THESE DRAWINGS IS REQUIRED, THE CONTRACTOR IS TO IMMEDIATELY CONTACT AND COORDINATE WITH THE ENGINEER AND OWNER.
- ANY AREA OUTSIDE OF THE LIMIT OF WORK THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO COST TO THE OWNER.
- ALL SITE WORK SHALL MEET OR EXCEED THE SITE WORK SPECIFICATIONS PREPARED FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOWN EXISTING OR OTHER PROPOSED IMPROVEMENTS. IF ANY CONFLICTS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER PRIOR TO INSTALLATION OF ANY PORTION OF THE SITE WORK WHICH WOULD BE AFFECTED.
- UNDERGROUND UTILITIES WERE COMPILED FROM AVAILABLE RECORD PLANS AND ABOVE GROUND LOCATIONS. CONTACT OWNER AND "DIG SAFE" AT LEAST 72 HOURS BEFORE COMMENCING ANY SITE WORK ACTIVITIES AT 1-888-DIG-SAFE. CONTRACTOR IS RESPONSIBLE TO VERIFY LOCATIONS OF UTILITIES THAT ARE NOT LOCATED BY "DIG SAFE." CONTRACTOR SHALL PROVIDE AN UNDERGROUND UTILITY LOCATOR TO MARK THE LOCATION OF ALL EXISTING UTILITIES WITHIN THE LIMIT OF DISTURBANCE PRIOR TO COMMENCING WORK.
- NO EXCAVATION SHALL BE DONE UNTIL COMPANIES ARE PROPERLY NOTIFIED IN ADVANCE. NOTE THAT NOT ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO CONTACT ALL RESPECTIVE UTILITY COMPANIES TO VERIFY AND LOCATE EXISTING UTILITIES.

LAYOUT NOTES

- ALL LINES ARE PERPENDICULAR OR PARALLEL TO THE LINES FROM WHICH THEY ARE MEASURED UNLESS OTHERWISE INDICATED.
- ACCESSIBLE RAMPS SHALL BE PER THE AMERICANS WITH DISABILITIES ACT (ADA) ACCESSIBILITY GUIDELINES.
- CONTRACTOR TO PERFORM BENCHMARK FIELD LEVEL VERIFICATION AND COORDINATE LAYOUT CHECK PRIOR TO CONSTRUCTION. CONTRACTOR SHALL CONTACT PARE CORPORATION IF ANY DISCREPANCIES ARE FOUND.

DEMOLITION NOTES

- THE CONTRACTOR SHALL COORDINATE ALL DEMOLITION OF STRUCTURES, PAVEMENT AND CONCRETE MATERIALS, AND UTILITIES WITH APPROPRIATE PROPOSED SITE GENERAL, GRADING, UTILITY, LANDSCAPING, AND ARCHITECTURAL DRAWINGS.
- ALL NOTED UTILITIES TO BE REMOVED AND DISPOSED OF, RELOCATED OR CAPPED REPRESENT ALL KNOWN SITE CONDITIONS TO BE DEMOLISHED. CONTRACTOR TO COORDINATE ALL UNFORESEEN CONDITIONS WITH THE PROJECT ENGINEER, OWNER AND/OR RESPECTIVE UTILITY COMPANIES PRIOR TO PROCEEDING WITH WORK.
- WATER, SEWER, DRAINAGE, GAS, AND OTHER SITE UTILITIES SERVICING THE EXISTING FACILITIES ARE TO REMAIN ACTIVE UNTIL PROPOSED UTILITY IMPROVEMENTS ARE CONSTRUCTED AND ONLINE. WHEN CONNECTING ACTIVE OR RELOCATED UTILITIES, SHUTDOWNS SHALL BE MINIMIZED AND COMPLETED OFF HOURS AND COORDINATED WITH OWNER.

GRADING AND UTILITY NOTES

- UNDERGROUND UTILITIES WERE COMPILED FROM AVAILABLE RECORD PLANS AND ARE APPROXIMATE. BEFORE COMMENCING SITE WORK IN ANY AREA, CONTACT "DIG SAFE" AT 1-888-DIG-SAFE TO ACCURATELY LOCATE UNDERGROUND UTILITIES. ANY DAMAGE TO EXISTING UTILITIES OR STRUCTURES AS SHOWN ON THE PLANS SHALL BE THE CONTRACTOR'S RESPONSIBILITY. COSTS OF SUCH DAMAGE SHALL BE THE CONTRACTOR'S RESPONSIBILITY. NO EXCAVATION SHALL BE DONE UNTIL UTILITY COMPANIES ARE PROPERLY NOTIFIED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOWN EXISTING OR OTHER PROPOSED IMPROVEMENTS. IF CONFLICTS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER PRIOR TO INSTALLATION OF ANY PORTION OF THE SITE WORK WHICH WOULD BE AFFECTED. NO FIELD ADJUSTMENTS IN THE LOCATION OF SITE ELEMENTS SHALL BE MADE WITHOUT THE ENGINEER'S APPROVAL.
- ALL WORK PERFORMED AND ALL MATERIALS FURNISHED SHALL CONFORM WITH THE LINES AND GRADES ON THE PLANS AND SITE WORK SPECIFICATIONS.
- AT ALL LOCATIONS WHERE EXISTING CURBING OR PAVEMENT ADJUTS NEW CONSTRUCTION, THE EDGE OF THE EXISTING CURB OR PAVEMENT SHALL BE SAW CUT TO A CLEAN, SMOOTH EDGE. BLEND NEW PAVEMENT AND CURBS SMOOTHLY INTO EXISTING BY MATCHING LINES, GRADES, AND JOINTS.
- ALL UTILITY COVERS, GRATES, ETC. SHALL BE ADJUSTED TO BE FLUSH WITH THE SURROUNDING SURFACE OR PAVEMENT FINISH GRADE. RIM ELEVATIONS OF STRUCTURES AND MANHOLES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH AND CONSISTENT WITH THE GRADING PLANS.
- THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION OF PRIVATE UTILITIES BY THE UTILITY COMPANIES, AS REQUIRED.
- WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR REVIEW.
- THE CONTRACTOR SHALL PROTECT ALL UNDERGROUND DRAINAGE, SEWER AND UTILITY FACILITIES FROM EXCESSIVE VEHICULAR LOADS DURING CONSTRUCTION. ANY DAMAGE TO THESE FACILITIES RESULTING FROM CONSTRUCTION LOADS WILL BE RESTORED TO ORIGINAL CONDITION AT NO COST TO THE OWNER.
- GAS, ELECTRIC, AND COMMUNICATIONS ROUTING ARE SUBJECT TO REVIEW AND APPROVAL BY APPROPRIATE UTILITY COMPANIES.
- DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES BY PROVIDING TEMPORARY SUPPORTS OR SHEETING AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.
- ALL GRAVITY SANITARY PIPING SHALL BE SDR-35 PVC. ALL SEWER CONSTRUCTION SHALL CONFORM TO THE CITY OF PROVIDENCE AND NARRAGANSETT BAY COMMISSION (NBC) STANDARDS.
- ALL WATER LINE BENDS AND TEES SHALL BE REINFORCED WITH THRUST BLOCKS. ALL WATER DISTRIBUTION PIPING AND FITTINGS MUST ADHERE TO PROVIDENCE WATER SPECIFICATIONS AND SHALL BE INSPECTED BEFORE, DURING, AND AFTER CONSTRUCTION PRIOR TO TAPPING THE SERVICE MAIN.
- EXCAVATION REQUIRED WITHIN THE PROXIMITY OF EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO THE OWNER.
- PITCH EVENLY BETWEEN SPOT GRADES. ALL PAVED AREAS MUST PITCH TO DRAIN AT A MIN. OF 1/8" PER FOOT UNLESS SPECIFIED.
- THE PROPOSED WALKWAYS SHALL HAVE A MAXIMUM CROSS SLOPE OF 2% AND A MAXIMUM RUNNING SLOPE OF 5% AS SHOWN ON CONSTRUCTION DETAILS AND GRADING PLAN.

EROSION AND SEDIMENTATION CONTROL NOTES

- THE CONTRACTOR AND RELEVANT SUBCONTRACTORS SHALL READ AND UNDERSTAND THE RIDEM GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY (GENERAL PERMIT) AND THE SITE SPECIFIC SOIL EROSION AND SEDIMENT CONTROL PLAN (SESC) PREPARED FOR THE PROJECT. ALL EROSION CONTROL SHALL BE IN ACCORDANCE WITH THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST REVISION.
- THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE CONDITIONS ISSUED FOR THE PROJECT BY RIDEM AND BE RESPONSIBLE FOR CONFORMANCE WITH ALL PERMIT REQUIREMENTS AND CONSTRUCTION DOCUMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING OR INSTALLING ALL TEMPORARY SEDIMENT AND EROSION CONTROLS AS SHOWN ON THESE PLANS AND SHALL MAINTAIN ALL EROSION CONTROL MEASURES AS NECESSARY DURING THE ENTIRE CONSTRUCTION PERIOD.
- ANTI-TRACKING PADS (R.I. STD. DETAIL 9.9.0) SHALL BE PROVIDED AT ALL POINTS OF EGRESS OR INGRESS AND SHALL BE MAINTAINED TO LIMIT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADS.
- EROSION CONTROL BARRIERS SHALL BE INSTALLED AS SHOWN ON THE EROSION CONTROL PLAN PRIOR TO COMMENCEMENT OF CONSTRUCTION OPERATIONS.
- SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED ON A WEEKLY BASIS AND AFTER EACH STORM EVENT OF 0.25 INCH OR GREATER DURING CONSTRUCTION TO ENSURE THAT CHANNELS, DITCHES, AND PIPES ARE CLEAR OF DEBRIS AND THAT THE EROSION CONTROL BARRIERS ARE INTACT. IDENTIFIED DEFICIENCIES SHALL BE CORRECTED IMMEDIATELY.
- DUST SHALL BE CONTROLLED BY WATERING OR OTHER APPROVED METHODS AS NECESSARY, OR AS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
- THE CONTRACTOR SHALL CLEAN AND MAINTAIN EROSION CONTROL BARRIERS WHEN SEDIMENT ACCUMULATES TO ONE HALF THE HEIGHT OF THE BARRIER OR PER THE MANUFACTURER'S RECOMMENDATION. NATURAL MATERIAL COLLECTED FROM THE SEDIMENTATION BARRIERS SHALL BE REMOVED AS NECESSARY AND DISPOSED IN AN UPLAND AREA. ANY TRASH OR DEBRIS COLLECTED SHALL BE PROPERLY DISPOSED OF ACCORDING TO LOCAL AND STATE REGULATIONS.
- THE CONTRACTOR SHALL SCHEDULE HIS WORK TO ALLOW THE FINISHED SUB GRADE ELEVATIONS TO DRAIN PROPERLY WITHOUT PONDING. SPECIFICALLY, ALLOW WATER TO ESCAPE WHERE PROPOSED CURB MAY RETAIN RUNOFF PRIOR TO APPLICATION OF SURFACE PAVING. PROVIDE TEMPORARY POSITIVE DRAINAGE, AS REQUIRED, TO STABILIZED DISCHARGE POINTS.
- INSTALLATION OF THE EROSION CONTROL BARRIERS AS ILLUSTRATED IS INTENDED TO REPRESENT THE MINIMUM SEDIMENTATION CONTROL FACILITIES NECESSARY TO MEET ANTICIPATED SITE CONDITIONS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED AS CONDITIONS WARRANT OR AS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
- REQUIRED SEDIMENTATION CONTROL FACILITIES MUST BE PROPERLY ESTABLISHED, CLEARLY VISIBLE AND IN OPERATION PRIOR TO INITIATING ANY LAND CLEARING ACTIVITY AND/OR OTHER CONSTRUCTION RELATED WORK. SUCH FACILITIES SHALL REPRESENT THE LIMIT OF WORK. WORKERS SHALL BE INFORMED THAT NO CONSTRUCTION ACTIVITY IS TO OCCUR BEYOND THE LIMIT OF WORK AT ANY TIME THROUGHOUT THE CONSTRUCTION PERIOD.
- THE CONTRACTOR SHALL MAINTAIN A SUFFICIENT RESERVE OF VARIOUS EROSION CONTROL MATERIALS ONSITE AT ALL TIMES FOR EMERGENCY PURPOSES OR ROUTINE MAINTENANCE.
- CATCH BASINS AND STORM DRAIN INLETS SHALL BE PROTECTED WITH CATCH BASIN INSERTS, COMPOST FILTER SOCKS, FIBER ROLLS, OR GRAVEL BAG BERMS IN PAVED AREAS.
- DEWATERING WASTE WATERS PUMPED FROM EXCAVATIONS WILL BE CONVEYED BY HOSE TO AN UPLAND AREA AND DISCHARGED INTO DEWATERING BASIN (R.I. STD. 9.7.0) OR SEDIMENTATION BAGS.
- THE CONTRACTOR SHALL NOT REMOVE ANY TEMPORARY EROSION OR SEDIMENT CONTROLS UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED.
- CONSTRUCTION SITE WASTE MATERIALS WILL BE PROPERLY CONTAINED ONSITE AND DISPOSED OFF SITE AT A LOCATION IN ACCORDANCE WITH THE LOCAL AND STATE REGULATIONS.
- RIP-RAP OR OTHER ENERGY DISSIPATORS WILL BE USED WHERE NECESSARY TO PREVENT SCOUR.
- ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 14 DAYS UPON COMPLETION OF WORK IN THAT AREA.
- ALL DRAINAGE STRUCTURES SHALL BE CLEARED OF ACCUMULATED SEDIMENT PRIOR TO ACCEPTANCE OF FINAL PROJECT.
- NEWLY VEGETATED AREAS SHALL BE MAINTAINED REGULARLY TO ENSURE STABLE VEGETATED SURFACES.
- EROSION AND SEDIMENTATION CONTROLS WILL BE UTILIZED AS SHOWN ON THE PLANS. POTENTIAL EROSION AND SEDIMENTATION PROBLEMS ASSOCIATED WITH THE CONSTRUCTION OF THE PROJECT WILL BE AVOIDED THROUGH THE PROJECT SCHEDULING AND THE USE OF APPROPRIATE STANDARD CONTROLS (RHODE ISLAND SOIL EROSION AND SEDIMENTATION CONTROL HANDBOOK) AS ILLUSTRATED ON THE PROJECT PLANS.

STORM WATER MANAGEMENT SYSTEM INSPECTION AND MAINTENANCE NOTES

DURING CONSTRUCTION

- THE CONTRACTOR SHALL REMOVE SEDIMENT AND DEBRIS FROM ALL CATCH BASINS, MANHOLES, AND THE DRAINAGE SYSTEM ON A ROUTINE BASIS, IMMEDIATELY FOLLOWING SITE STABILIZATION, AND PRIOR TO PROJECT COMPLETION AND ACCEPTANCE.
- THE CLOSED DRAINAGE SYSTEM AND ASSOCIATED STRUCTURES SHALL BE CLEANED AND FLUSHED BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTION AND MAINTENANCE OF THE DRAINAGE SYSTEM UNTIL ACCEPTANCE OF THE SYSTEM BY THE ENGINEER AND THE CITY OF PROVIDENCE. FOLLOWING ACCEPTANCE OF THE DRAINAGE SYSTEM PROPOSED FOR THIS SITE, THE OWNER OF THE SITE SHALL BE RESPONSIBLE FOR THE LONG-TERM INSPECTION AND MAINTENANCE OF THE DRAINAGE SYSTEM.
- ANY ACCUMULATION OF PONDING WATER IN AREAS WITHIN THE LIMITS OF DISTURBANCE, OTHER THAN DESIGNATED AREAS, SHALL BE REMOVED ACCORDINGLY AND PREVENTED IN THE FUTURE.

POST CONSTRUCTION

- TRASH, LITTER, SEDIMENT AND OTHER DEBRIS SHALL BE REMOVED FROM ANY STORM WATER FACILITY (INCLUDING CATCH BASINS, MANHOLES, DETENTION SYSTEM, INLET AND OUTLET STRUCTURES, AND THE STORMWATER TREATMENT SYSTEM) AT LEAST TWICE A YEAR, PREFERABLY SPRING AND FALL, AT THE COST OF THE OWNER.
- ALL CLEANING AND MAINTENANCE OF DRAINAGE SYSTEM BMP'S SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER.

BIORETENTION AREA INSPECTION, MAINTENANCE, AND REPAIR NOTES

FOLLOWING CONSTRUCTION, THE COMPLETION OF THE INSPECTION AND MAINTENANCE REQUIREMENTS BELOW SHALL BE THE RESPONSIBILITY OF THE OWNER.

- THE BIORETENTION AREA SHALL BE INSPECTED AFTER THE FIRST TWO STORM EVENTS OF 1" OR GREATER IN THE FIRST 6 MONTHS AFTER CONSTRUCTION.
- THE BIORETENTION AREA SHALL BE INSPECTED ANNUALLY AND AFTER EVERY STORM OF 2.7" OR GREATER FOR TRASH, DEBRIS, SEDIMENT, EROSION, STANDING WATER, AND OVERALL PERFORMANCE. DEFECTS SHALL BE REPAIRED BY THE OWNER.
- PRUNE OR REPLACE WOODY VEGETATION WHEN DEAD OR DYING VEGETATION IS OBSERVED. SEPARATION OF HERBACEOUS VEGETATION ROOTSTOCK SHOULD OCCUR WHEN OVERCROWDING IS OBSERVED OR ONCE EVERY 3 YEARS.
- REPLENISH THE MULCH LAYER TO THE ORIGINAL DESIGN DEPTH EVERY OTHER YEAR. PREVIOUS MULCH LAYER SHALL BE REMOVED, AND PROPERLY DISPOSED OF, OR ROTO-TILLED INTO THE SOIL SURFACE.
- IF AT LEAST 50 PERCENT VEGETATION COVERAGE IS NOT ESTABLISHED AFTER TWO YEARS, A REINFORCEMENT PLANTING SHOULD BE PERFORMED BY THE OWNER.
- REMOVE ACCUMULATED SEDIMENT FROM THE BIORETENTION CELLS TWICE ANNUALLY, ONCE IN THE LATE SPRING AND ONCE IN THE EARLY FALL, OR AT ANY TIME THAT SEDIMENT EXCEEDS 1" IN THE BIORETENTION AREA CELLS.
- REMOVE ACCUMULATED SEDIMENT FROM FOREBAY WHEN DEPTH EXCEEDS 1/2 THE DESIGN DEPTH.
- IF PONDING EXCEEDS 48 HOURS, REMOVE ALL DISCOLORED MATERIAL AND RE-MULCH FILTER SURFACE.

EXISTING	LEGEND	PROPOSED
---	CONTOUR	---
X 55.65	SPOT ELEVATION	X 261.5
D	DRAINAGE LINE	D
W	WATER LINE	W
S	SANITARY SEWER LINE	S
G	GAS LINE (BY OTHERS)	G
E	HIGH PRESSURE GAS	HPG
T	ELECTRIC (BY OTHERS)	E
	TELEPHONE/INSTRUMENTATION	T
	FILTER WATER RETURN	FWR
	LIMIT OF DISTURBANCE	LOD
	CATCH BASIN/AREA DRAIN	
	HYDRANT	
	DRAINAGE MANHOLE	DMH
	SEWER MANHOLE	SMH
	ELECTRIC MANHOLE	EMH
	YARD HYDRANT	
	UTILITY POLE	
	WATER VALVE	
	GAS GATE	
	LIGHT POLE	
	TEST PIT	
	STONE WALL	
	WOOD FENCE	
	CHAIN LINK FENCE	
	CURBING	
	EDGE OF PAVEMENT	
	SAWCUT LINE	
	SIGN	
	COMPOST FILTER SOCK	

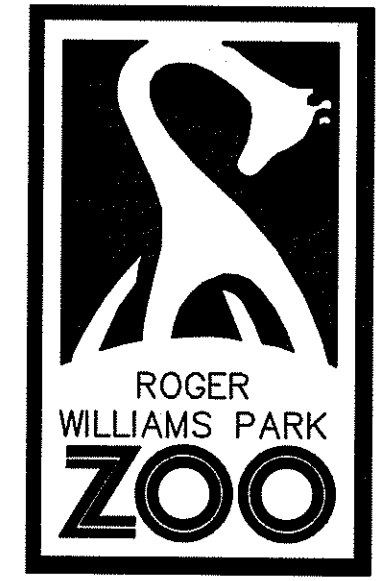
- (ATG) = ADJUST TO GRADE
- (BC) = BITUMINOUS CONCRETE (SEE DETAIL)
- (CFS) = COMPOST FILTER SOCK (SEE DETAIL)
- (CLF) = CHAIN LINK FENCE
- (CM) = SAWCUT AND MATCH
- (CDE) = CONNECT TO EXISTING
- (DTE) = REMOVE & DISPOSE DRAIN
- (DDS) = REMOVE & DISPOSE DRAINAGE STRUCTURE
- (DE) = REMOVE & DISPOSE ELECTRIC
- (DF) = REMOVE & DISPOSE FENCE
- (DFP) = REMOVE & DISPOSE FLEXIBLE PAVEMENT
- (ETR) = EXISTING TO REMAIN
- (GV) = GATE VALVE
- (LS) = LOAM AND SEED
- (RRA) = RIPRAP APRON
- (R&D) = REMOVE AND DISPOSE
- (R&R) = REMOVE AND STOCKPILE
- (SM) = SEDIMENT MARKER
- (TGP) = TREE GROUP PROTECTION
- (TIP) = TEMPORARY INLET PROTECTION

- (2.3.0) = PRECAST CONCRETE FLARED END SECTION - R.I. STD. 2.3.0
- (4.2.0) = PRECAST 4'-0" ROUND MANHOLE - R.I. STD. 4.2.0
- (7.1.0) = PRECAST CONCRETE CURB - R.I. STD. 7.1.0
- (7.5.1) = BITUMINOUS BERM - R.I. STD. 7.5.1
- (9.9.0) = CONSTRUCTION ACCESS - R.I. STD. 9.9.0
- (43.1.0M) = CEMENT CONCRETE SIDEWALK (MODIFIED) - R.I. STD. 43.1.0M

- ASSF = AREA SUBJECT TO STORM FLOWAGE
- BC = BOTTOM OF CURB (FINISH GRADE AT BASE OF CURB)
- BIT. = BITUMINOUS
- BM = BENCHMARK
- BMP = BEST MANAGEMENT PRACTICE
- BS = BOTTOM OF STAIR
- BW = BOTTOM OF WALL (FINISH GRADE AT BASE OF WALL)
- CB = 4' DIA. CATCH BASIN UNLESS OTHERWISE NOTED
- CC = VERTICAL CONCRETE CURB
- CI = CAST IRON
- CL = CLASS
- CLL = CEMENT-LINED DUCTILE IRON
- CO = CLEANOUT
- CONC. = CONCRETE
- DEMO = DEMOLITION
- DIA = DIAMETER
- DMH = DRAIN MANHOLE
- ELEV. = ELEVATION
- EOP = EDGE OF PAVEMENT
- EXIST. = EXISTING
- EXCB = EXISTING CATCH BASIN
- EXDMH = EXISTING DRAIN MANHOLE
- FFE = FINISH FLOOR ELEVATION
- FND. = FOUND
- FT = FOOT
- GRAN. = GRANITE
- GTD = GRADE TO DRAIN
- HDPE = HIGH DENSITY POLYETHYLENE PIPE
- HYD = HYDRANT
- I.D. = INNER DIAMETER
- INV. = INVERT
- LOD = LIMIT OF DISTURBANCE
- LP = LOW POINT
- MAX. = MAXIMUM
- MIN. = MINIMUM
- MON. = MONITORING
- MUTC = MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION
- OCS = OUTLET CONTROL STRUCTURE
- OWS = OIL WATER SEPARATOR
- PE = POLYETHYLENE
- PERF. = PERFORATED
- PVC = POLYVINYL CHLORIDE
- RCP = REINFORCED CONCRETE PIPE
- RIDEM = RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
- R.I.D.O.T. = RHODE ISLAND DEPARTMENT OF TRANSPORTATION
- R.I. STD. = RHODE ISLAND STANDARD
- R=x' = RADIUS
- SDR = STANDARD DIMENSIONAL RATIO
- SESC = SOIL EROSION AND SEDIMENT CONTROL
- SMH = SEWER MANHOLE
- TC = TOP OF CURB
- TP = TEST PIT
- TS = TOP OF STAIR
- TW = TOP OF WALL
- (TYP.) = TYPICAL
- UP = UTILITY POLE
- VOC = VERTICAL GRANITE CURB
- w/ = WITH
- YH = YARD HYDRANT

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
 APPROVED WITH CONDITIONS
 AS SPECIFIED IN THE LETTER OF APPROVAL
 DATED JUL 18 2017 FILE # 17-0108
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Matthew D. Wenczek



**1000 ELMWOOD AVE
 PROVIDENCE, RI
 02907**

THESE PLANS ARE FOR THE CONSTRUCTION OF ONE PROJECT ONLY AND ARE NOT TO BE COPIED IN ANY FORM WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER. ALTHOUGH A LOT OF CARE HAS BEEN TAKEN INTO THE PREPARATION OF THE DRAWINGS TO ENSURE THAT THEY ARE ERROR FREE, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE DRAWINGS FOR ERROR OR OMISSIONS AND TO ADAPT THE DRAWINGS TO ANY SITE CONDITION AS REQUIRED TO COMPLETE CONSTRUCTION. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS.
 THE GENERAL CONTRACTOR SHALL NOT SCALE DRAWINGS FOR MEASUREMENTS BUT SHALL VERIFY AT THE SITE ALL LEVELS AND MEASUREMENTS NECESSARY FOR COMPLETE FABRICATION ASSEMBLY AND INSTALLATION OF HIS OR HER WORK. MINOR DETAILS OF THE WORK NOT SPECIFICALLY SHOWN ON THE DRAWINGS SHALL BE ASCERTAINED BY THE CONTRACTOR AT THE SITE OF WORK AND SHALL BE ACCOMPLISHED WITH THE INTENT OF THIS PROJECT.

PROJECT NAME:
**SOAR AND EXPLORE
 ADVENTURE PARK
 AT THE ZOO**

JOSEPH WEED
 No. 11763
 REGISTERED PROFESSIONAL ENGINEER (CIVIL)

REVISIONS

#	DATE:	REVISION COMMENTS
1	6/29/17	RIDEM COMMENTS

CONSULTANT:

PARE CORPORATION
 ENGINEERS - SCIENTISTS - PLANNERS
 8 BLACKSTONE VALLEY PLACE
 LINCOLN, RI 02865
 401-334-4100

SHEET TITLE:
NOTES & LEGEND

DRAWN BY: AKL
 CHECKED BY: JLV
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 SCALE: AS NOTED

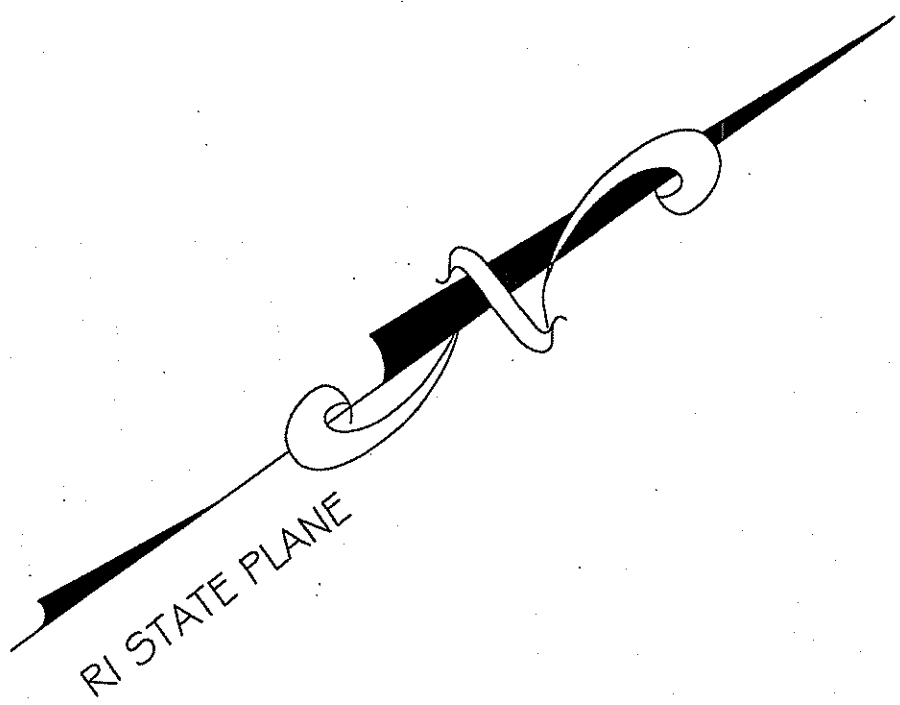
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SHEET: 2 OF 13

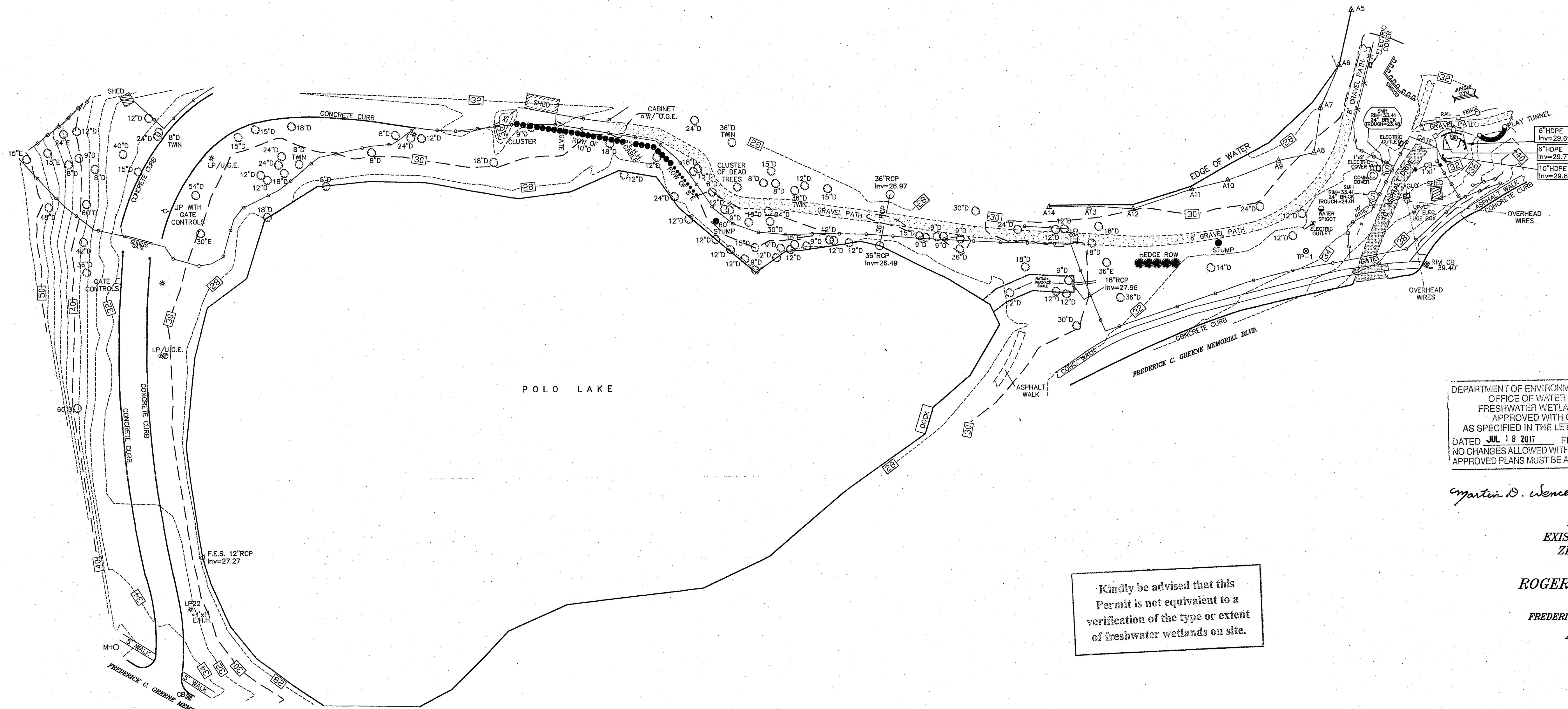
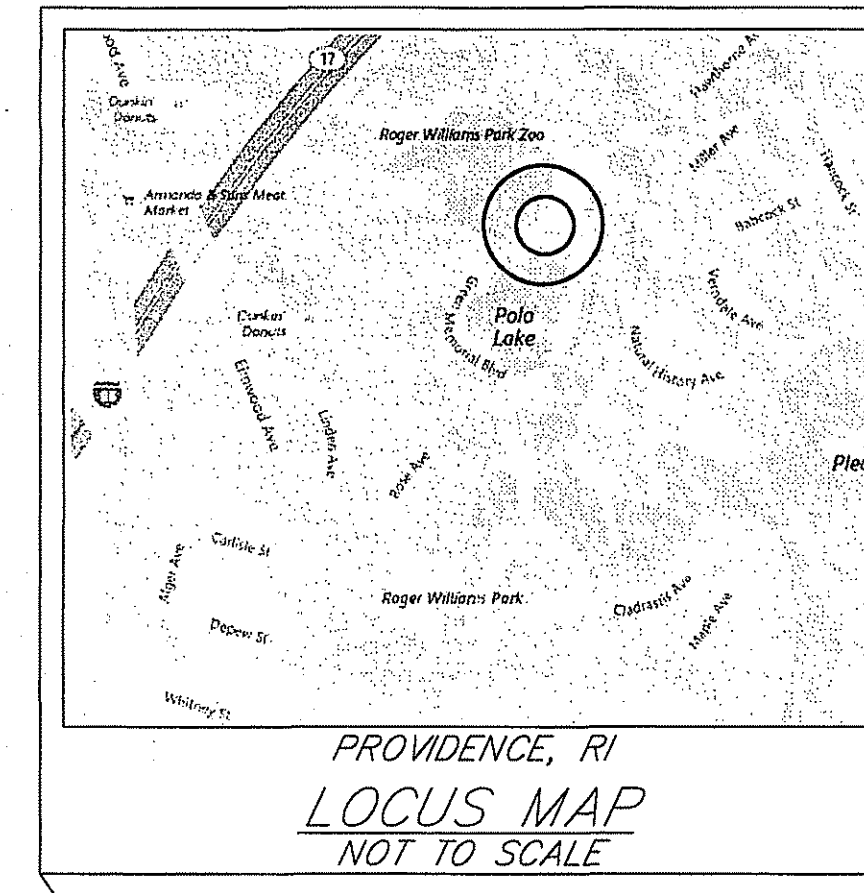
LEGEND

- F.E.S. FLARED END SECTION
- 12"D 12" DECIDUOUS TREE
- 12"E 12" EVERGREEN TREE
- BOLLARD
- LP 24 LIGHT POLE
- UP 25 UTILITY POLE
- U.G.E. UNDERGROUND ELECTRIC
- ⊙ ELECTRIC MANHOLE
- E.H.H. ELECTRIC HAND HOLE
- CHAINLINK FENCE
- WOOD FENCE
- MH MAN HOLE
- LP LIGHT POLE
- TP-1 TEST PIT
- △ AT4 WETLAND FLAG
- ⊙ WATER SHUT-OFF



NOTES:

1. THIS PARCEL LIES WITHIN ZONE 'X' AND ZONE 'A' FOUND ON FLOOD INSURANCE RATE MAP FOR PROVIDENCE COUNTY, RHODE ISLAND PANEL 31 G OF 451, MAP NUMBER 44007C031 G6, EFFECTIVE DATE MARCH 2, 2009. ZONE 'X' = AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. ZONE 'A' = SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
2. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE CONTRACTOR SHALL NOTIFY "DIG SAFE" PRIOR TO EXCAVATION AND SHALL NOTIFY LOCAL UTILITY COMPANIES BEFORE COMMENCEMENT OF WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES AND RELOCATE UTILITIES AS REQUESTED SHOULD THERE BE A CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
3. HORIZONTAL & VERTICAL DATA ON THIS PLAN WERE OBTAINED BY FIELD SURVEY.
4. THE VERTICAL DATA ON THIS PLAN REFERENCES THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

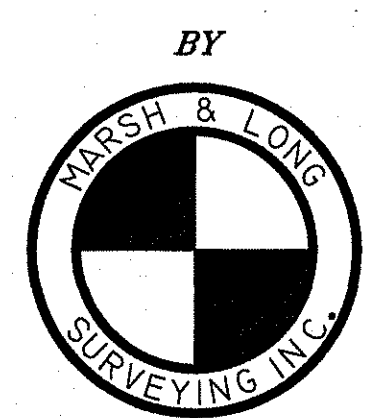


DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
 APPROVED WITH CONDITIONS
 AS SPECIFIED IN THE LETTER OF APPROVAL
 DATED JUL 18 2017 FILE # 17-0109
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Martin D. Wencek

PROVIDENCE, RI
EXISTING CONDITIONS
ZIPLINE AT POLO LAKE
 PREPARED FOR
ROGER WILLIAMS PARK ZOO
 AP 90 LOT 1
 FREDERICK C. GREENE MEMORIAL BLVD.
 APRIL 19, 2017

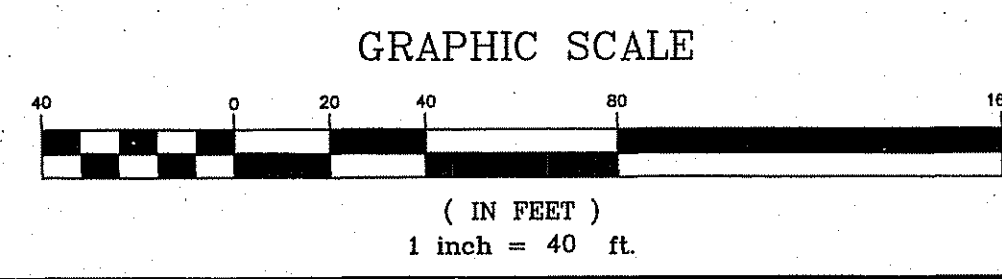
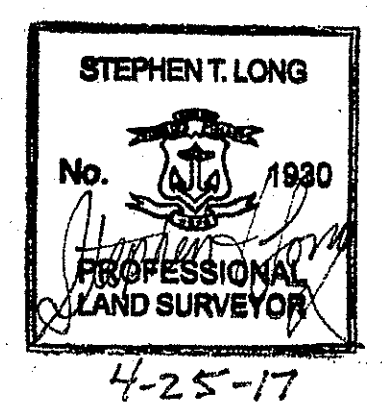
Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.



450 GEO. WASH. HWY. SMITHFIELD, RI
 (401) 231-0800

NO.	DATE	DESCRIPTION	MLS.
1.	4/20/17	ADDITIONAL AREA ADDED	

THIS SURVEY HAS BEEN CONDUCTED AND THE PLAN HAS BEEN PREPARED PURSUANT TO SECTION 9 OF THE RULES AND REGULATIONS ADOPTED BY THE RHODE ISLAND STATE BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS. EFFECTIVE: JANUARY 2016
 THE PURPOSE FOR THE CONDUCT OF THE SURVEY AND FOR THE PREPARATION OF THIS PLAN IS AS FOLLOWS:
 DATA ACCUMULATION SURVEY
 TOPOGRAPHIC SURVEY ACCURACY T-2
 BY: *Stephen T. Long*
 STEPHEN T. LONG NO. 1930
 C.O.A. LS-A538



THIS PLAN TO BE INDEXED BY THE FOLLOWING:
FREDERICK C. GREEN MEMORIAL BLVD.
 SHEET: 3 OF 13

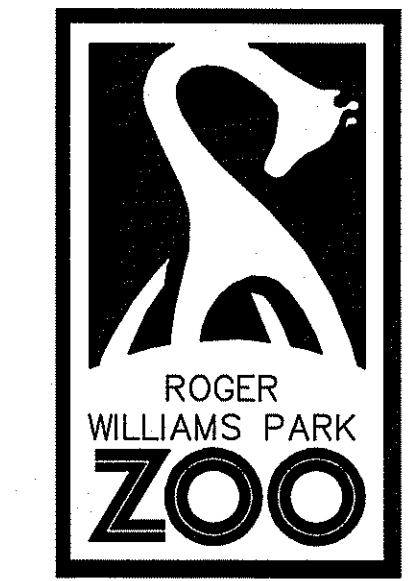
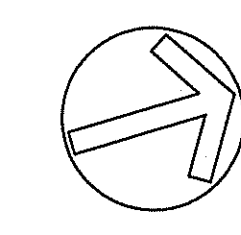
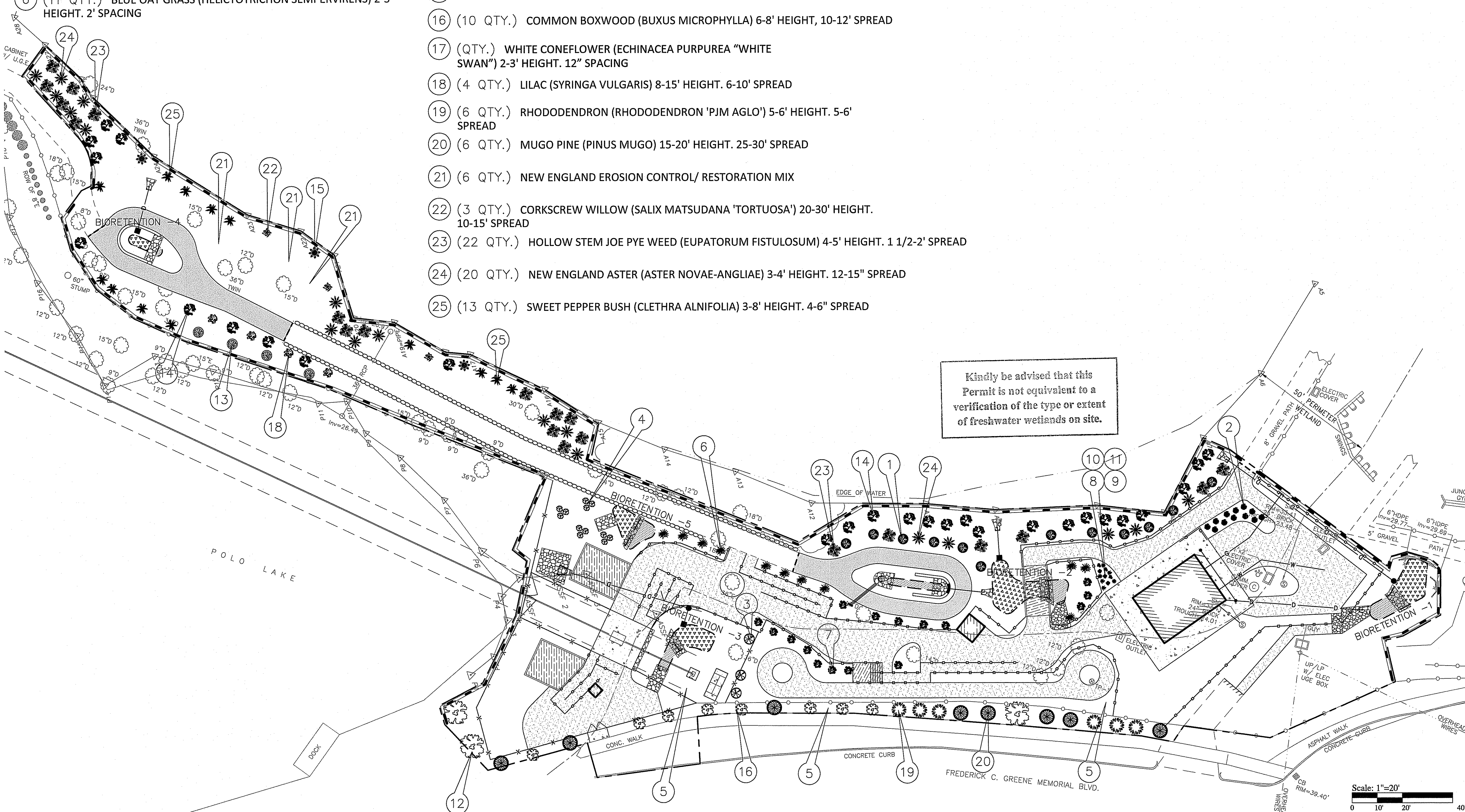
G:\CARLSON PROJECTS\2017\15053R02\WZ\ZIPLINE ADDITIONAL AREA 1.dwg, 24 x 36, KIP 770K, Arch D 24x36, 1:1

GENERAL NOTES:

- 1: IF PLANTINGS DO NOT SURVIVE THROUGH ONE GROWING SEASON, THEY MUST BE REPLACED WITH THE SAME SPECIES.
- 2: THE PURPOSE OF THE VEGETATION IS FOR WILDLIFE FOOD AND COVER.
- 3: THE INSTALLED PLANTINGS WILL BE LEFT TO GROW UNMANICURED.

VEGETATION LEGEND

- | | |
|--|--|
| <ol style="list-style-type: none"> 1 (12 QTY.) SWAMP MILKWEED (ASCLEPIAS INCARNATA) 36-60" HEIGHT. 15-24" SPACING. 2 (12 QTY.) LOW-BUSH BLUEBERRY (VACCINIUM ANGUSTIFOLIUM) 24-36" HEIGHT. 24-30" SPACING. 3 (3 QTY.) EMERALD GREEN ARBORVITAE (THUJA OCCIDENTALIS) 12-14' HEIGHT. 10-15' SPREAD. 4 (4 QTY.) FORSYTHIA (FORSYTHIA INTERMEDIA LYNWOOD GOLD) 6-9' HEIGHT. 4.5 - 6' SPACING. 5 (5000 SQ.FT.) ROGER WILLIAMS ZOO GRASS SUN/ SHADE MIX 6 (11 QTY.) BLUE OAT GRASS (HELICTOTRICHON SEMPERVIRENS) 2-3' HEIGHT. 2' SPACING | <ol style="list-style-type: none"> 7 (16 QTY.) ORANGE AZALEA (RHODODENDRON 'GIBALTAR') 4-6' HEIGHT. 2-3' SPACING 8 (10 QTY.) SEDUM (STONECROP) 'AUTUMN JOY' (HYLOTELEPHIUM AUTUMN JOY) 1.5-2' HEIGHT. 1.5-2' SPREAD 9 (10 QTY.) ORIENTAL LILIES (LILIUM SPECIES) 3-4' HEIGHT. 12" SPACING 10 (10 QTY.) PURPLE CONEFLOWER (ECHINACEA PURPUREA) 2-4' HEIGHT. 12" SPACING 11 (10 QTY.) BLACK-EYED SUSANS (RUDBECKIA HIRTA) 2-3' HEIGHT. 12" SPACING 12 (8 QTY.) RED MAPLE (ACER RUBRUM) 40-70' HEIGHT, 30-50' SPREAD 13 (5 QTY.) RED CEDAR (JUNIPERUS VIRGINIANA) 30-65' HEIGHT, 8-25' SPREAD 14 (17 QTY.) VIBURNUM (VIBURNUM SPECIES) 6-10' HEIGHT, 6-10' SPREAD 15 (3 QTY.) WEEPING WILLOW (SALIX BABYLONICA) 30-40' HEIGHT, 30-40' SPREAD 16 (10 QTY.) COMMON BOXWOOD (BUXUS MICROPHYLLA) 6-8' HEIGHT, 10-12' SPREAD 17 (QTY.) WHITE CONEFLOWER (ECHINACEA PURPUREA "WHITE SWAN") 2-3' HEIGHT. 12" SPACING 18 (4 QTY.) LILAC (SYRINGA VULGARIS) 8-15' HEIGHT. 6-10' SPREAD 19 (6 QTY.) RHODODENDRON (RHODODENDRON 'PJM AGLO') 5-6' HEIGHT. 5-6' SPREAD 20 (6 QTY.) MUGO PINE (PINUS MUGO) 15-20' HEIGHT. 25-30' SPREAD 21 (6 QTY.) NEW ENGLAND EROSION CONTROL/ RESTORATION MIX 22 (3 QTY.) CORKSCREW WILLOW (SALIX MATSUDANA 'TORTUOSA') 20-30' HEIGHT. 10-15' SPREAD 23 (22 QTY.) HOLLOW STEM JOE PYE WEED (EUPATORIUM FISTULOSUM) 4-5' HEIGHT. 1 1/2-2' SPREAD 24 (20 QTY.) NEW ENGLAND ASTER (ASTER NOVAE-ANGLIAE) 3-4' HEIGHT. 12-15" SPREAD 25 (13 QTY.) SWEET PEPPER BUSH (CLETHRA ALNIFOLIA) 3-8' HEIGHT. 4-6" SPREAD |
|--|--|



**1000 ELMWOOD AVE
PROVIDENCE, RI
02907**

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PROJECT NAME:
**SOAR AND EXPLORE
ADVENTURE PARK
AT THE ZOO**

REVISIONS

#	DATE	DESCRIPTION

CONSULTANT:

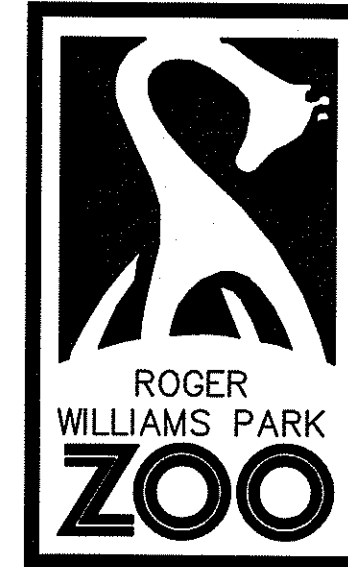
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUL 18 2017 FILE # 17-0108
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Martin D. Wenczek

SHEET TITLE:
**PROPOSED
LANDSCAPE PLAN**

DRAWN BY: AFN
CHECKED BY: RP, AFN, DA
DATE ISSUED: 6-29-17
SCALE: AS NOTED

SHEET NO.:
L - 1
SHEET: 4 OF 13

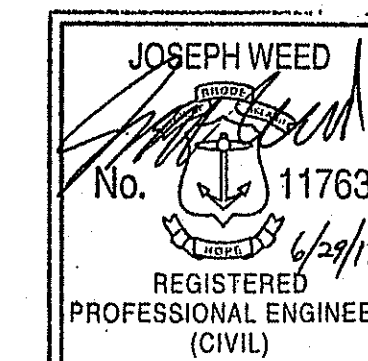


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02907

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PROJECT NAME:
SOAR AND EXPLORE
ADVENTURE PARK
AT THE ZOO



REVISIONS

#	DATE:	REVISION COMMENTS
1	6/29/17	RIDEM COMMENTS

CONSULTANT:



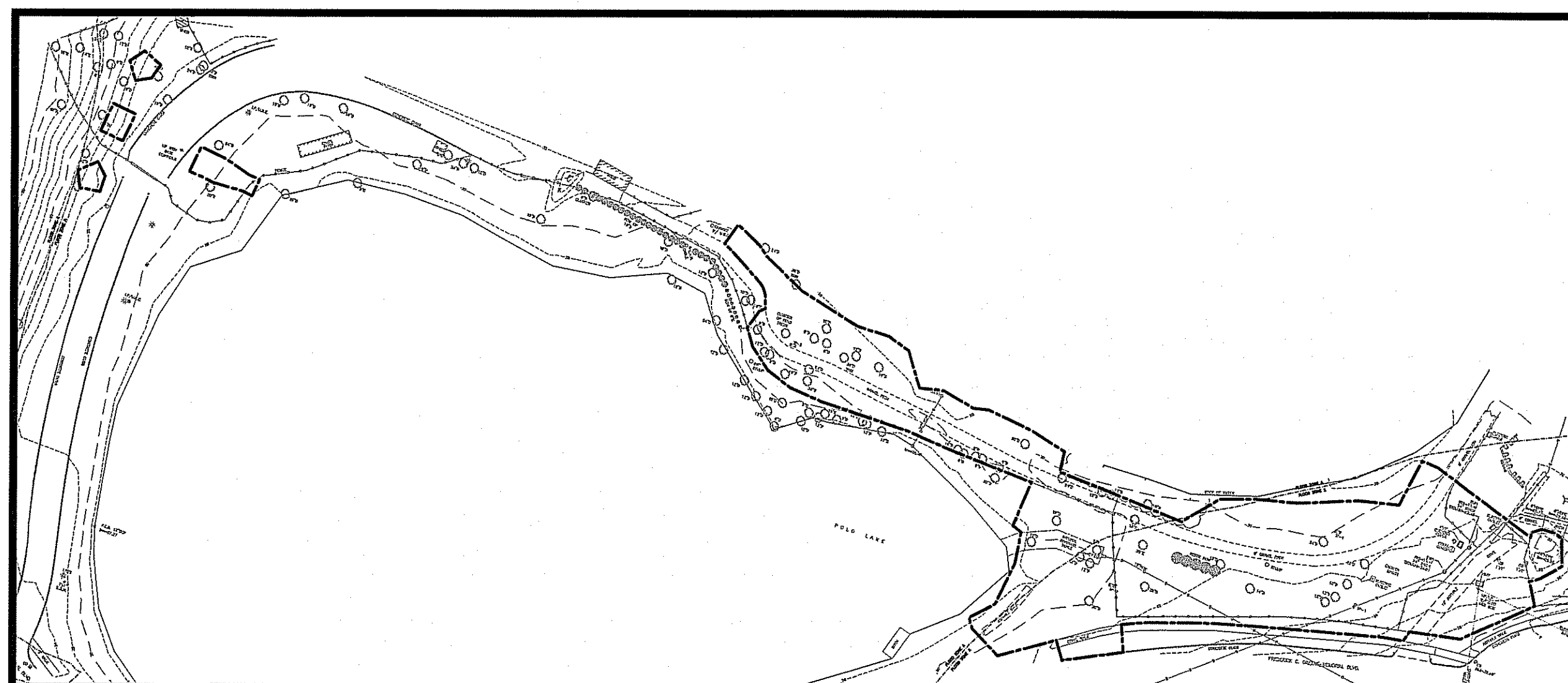
SHEET TITLE :
DEMOLITION,
EROSION & SEDIMENT
CONTROL PLAN

DRAWN BY : AKL
CHECKED BY : JLW
DATE ISSUED : 5-9-17
SCALE : AS NOTED

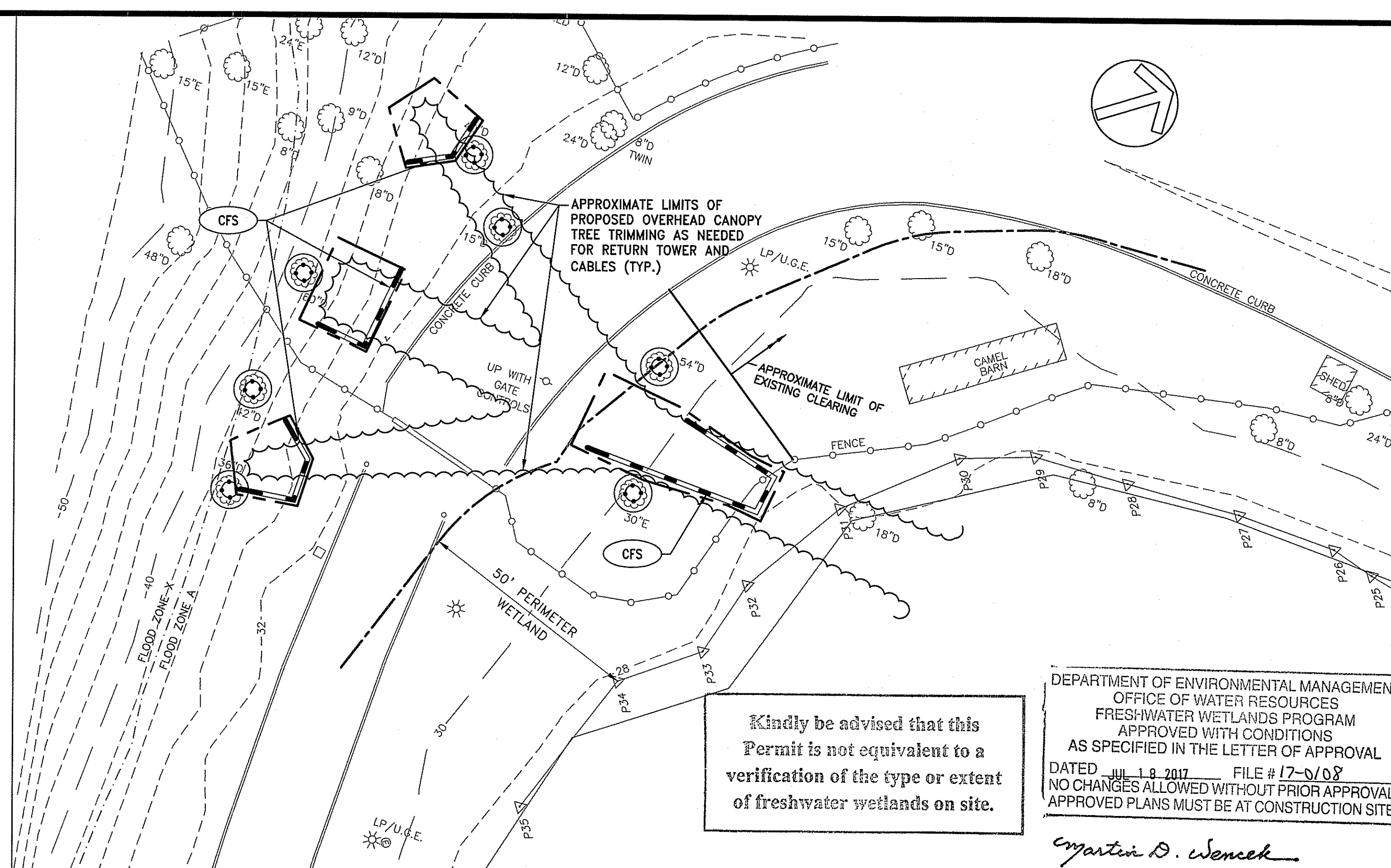
SHEET NO. :

C2.1

SHEET : 5 OF 13



OVERALL SITE PLAN
SCALE: 1"=80'



INSET
SCALE: 1"=20'

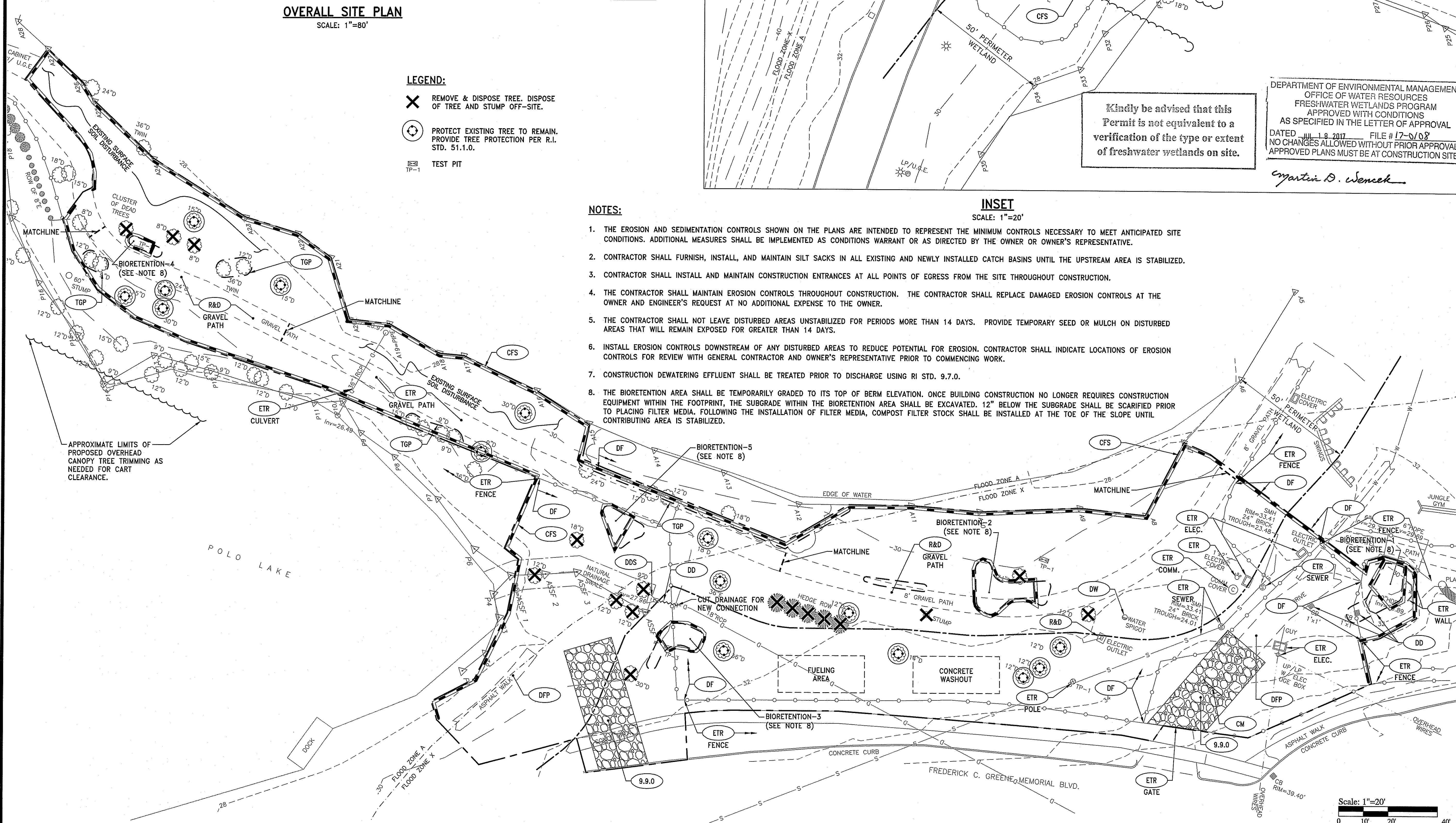
- LEGEND:**
- REMOVE & DISPOSE TREE. DISPOSE OF TREE AND STUMP OFF-SITE.
 - PROTECT EXISTING TREE TO REMAIN. PROVIDE TREE PROTECTION PER R.I. STD. 51.1.0.
 - TEST PIT

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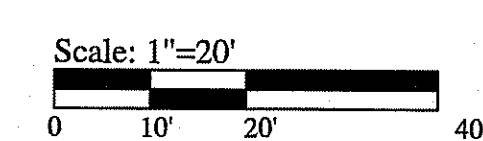
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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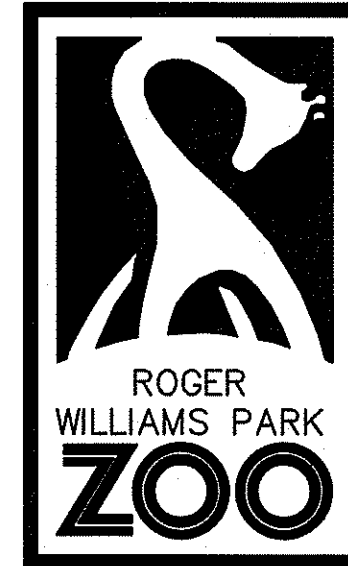
Martin D. Wenczek

- NOTES:**
- THE EROSION AND SEDIMENTATION CONTROLS SHOWN ON THE PLANS ARE INTENDED TO REPRESENT THE MINIMUM CONTROLS NECESSARY TO MEET ANTICIPATED SITE CONDITIONS. ADDITIONAL MEASURES SHALL BE IMPLEMENTED AS CONDITIONS WARRANT OR AS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
 - CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN SILT SACKS IN ALL EXISTING AND NEWLY INSTALLED CATCH BASINS UNTIL THE UPSTREAM AREA IS STABILIZED.
 - CONTRACTOR SHALL INSTALL AND MAINTAIN CONSTRUCTION ENTRANCES AT ALL POINTS OF EGRESS FROM THE SITE THROUGHOUT CONSTRUCTION.
 - THE CONTRACTOR SHALL MAINTAIN EROSION CONTROLS THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL REPLACE DAMAGED EROSION CONTROLS AT THE OWNER AND ENGINEER'S REQUEST AT NO ADDITIONAL EXPENSE TO THE OWNER.
 - THE CONTRACTOR SHALL NOT LEAVE DISTURBED AREAS UNSTABILIZED FOR PERIODS MORE THAN 14 DAYS. PROVIDE TEMPORARY SEED OR MULCH ON DISTURBED AREAS THAT WILL REMAIN EXPOSED FOR GREATER THAN 14 DAYS.
 - INSTALL EROSION CONTROLS DOWNSTREAM OF ANY DISTURBED AREAS TO REDUCE POTENTIAL FOR EROSION. CONTRACTOR SHALL INDICATE LOCATIONS OF EROSION CONTROLS FOR REVIEW WITH GENERAL CONTRACTOR AND OWNER'S REPRESENTATIVE PRIOR TO COMMENCING WORK.
 - CONSTRUCTION DEWATERING EFFLUENT SHALL BE TREATED PRIOR TO DISCHARGE USING RI STD. 9.7.0.
 - THE BIORETENTION AREA SHALL BE TEMPORARILY GRADED TO ITS TOP OF BERM ELEVATION. ONCE BUILDING CONSTRUCTION NO LONGER REQUIRES CONSTRUCTION EQUIPMENT WITHIN THE FOOTPRINT, THE SUBGRADE WITHIN THE BIORETENTION AREA SHALL BE EXCAVATED. 12" BELOW THE SUBGRADE SHALL BE SCARIFIED PRIOR TO PLACING FILTER MEDIA. FOLLOWING THE INSTALLATION OF FILTER MEDIA, COMPOST FILTER STOCK SHALL BE INSTALLED AT THE TOE OF THE SLOPE UNTIL CONTRIBUTING AREA IS STABILIZED.



SAVE DATE: 29-Jun-17 11:18:28 AM PLOT DATE: 29-Jun-17 12:54:37 PM
Z:\JOB\17\JOB17017\00\RW\FZ\ZIP LINE - RIDW\GIS\2.1 DEMOLITION EROSION CONTROL PLAN.DWG





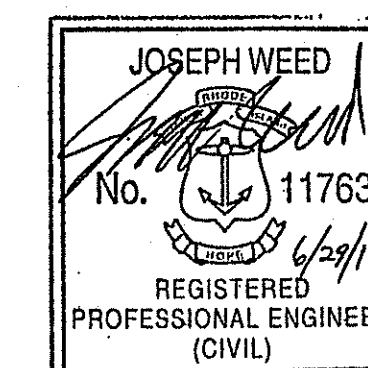
1000 ELMWOOD AVE
PROVIDENCE, RI
02907

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PROJECT NAME:

SOAR AND EXPLORE
ADVENTURE PARK
AT THE ZOO



REVISIONS

#	DATE	COMMENTS
1	6/29/17	RIDEM COMMENTS

CONSULTANT:



SHEET TITLE :

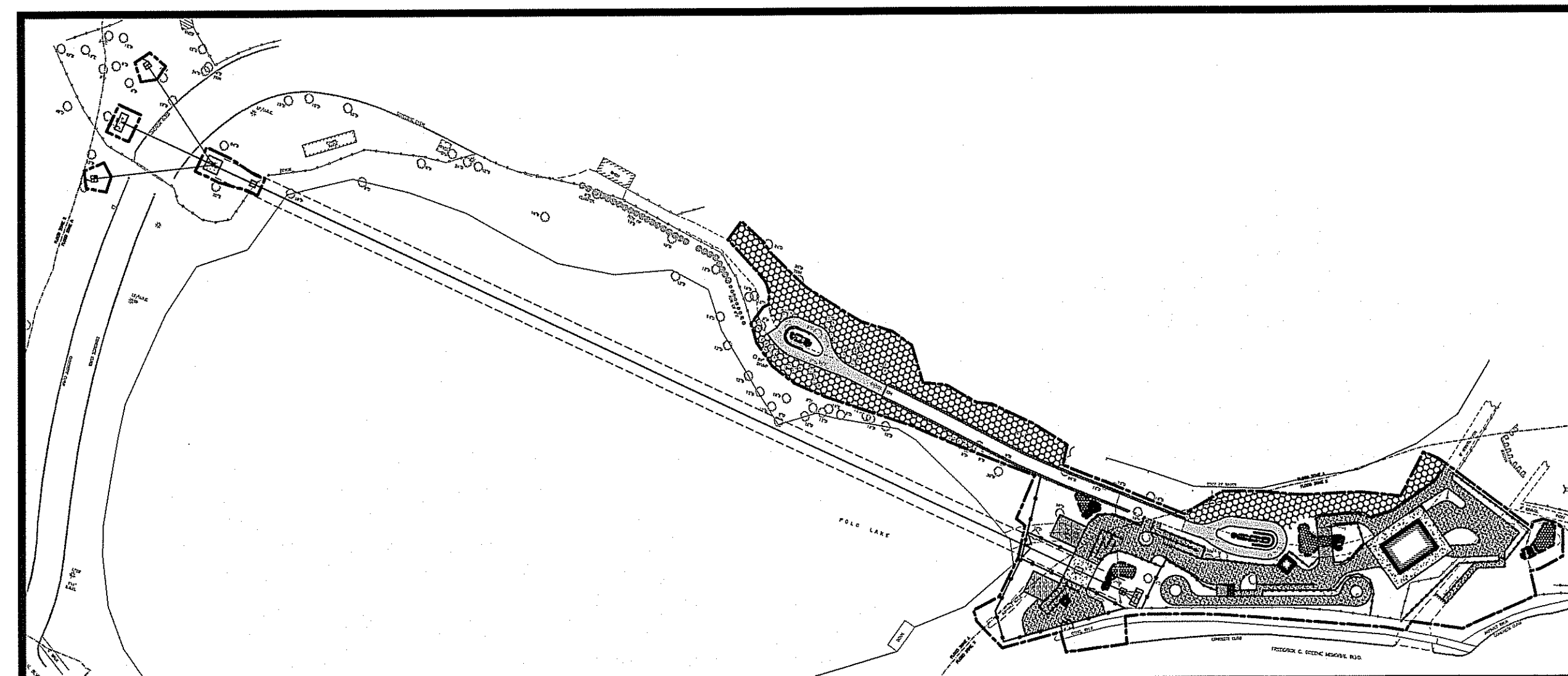
GENERAL PLAN

DRAWN BY : AKL
CHECKED BY : JLW
DATE ISSUED: 5-9-17
SCALE: AS NOTED

SHEET NO. :

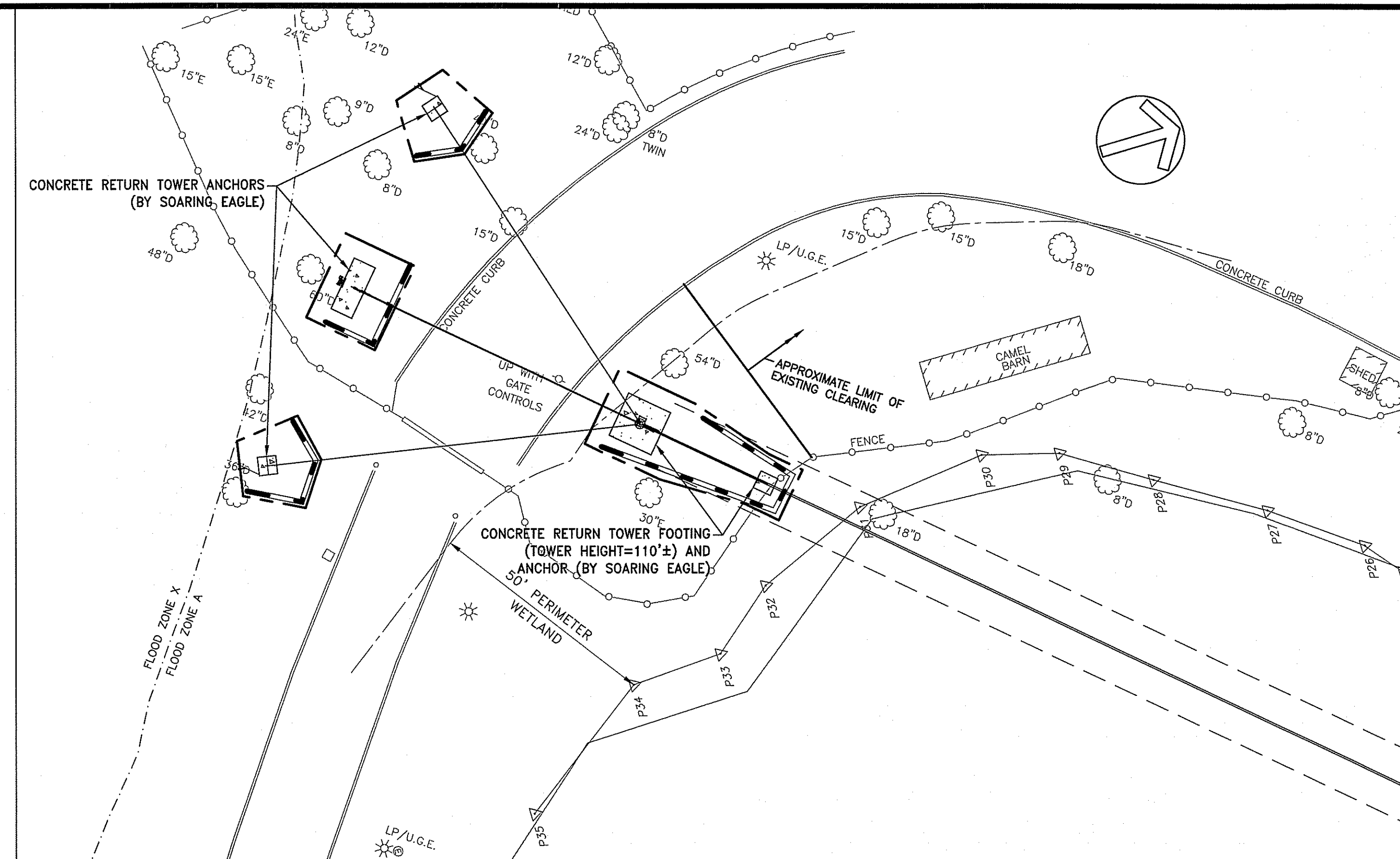
C3.1

SHEET : 6 OF 13



OVERALL SITE PLAN

SCALE: 1"=80'



INSET

SCALE: 1"=20'

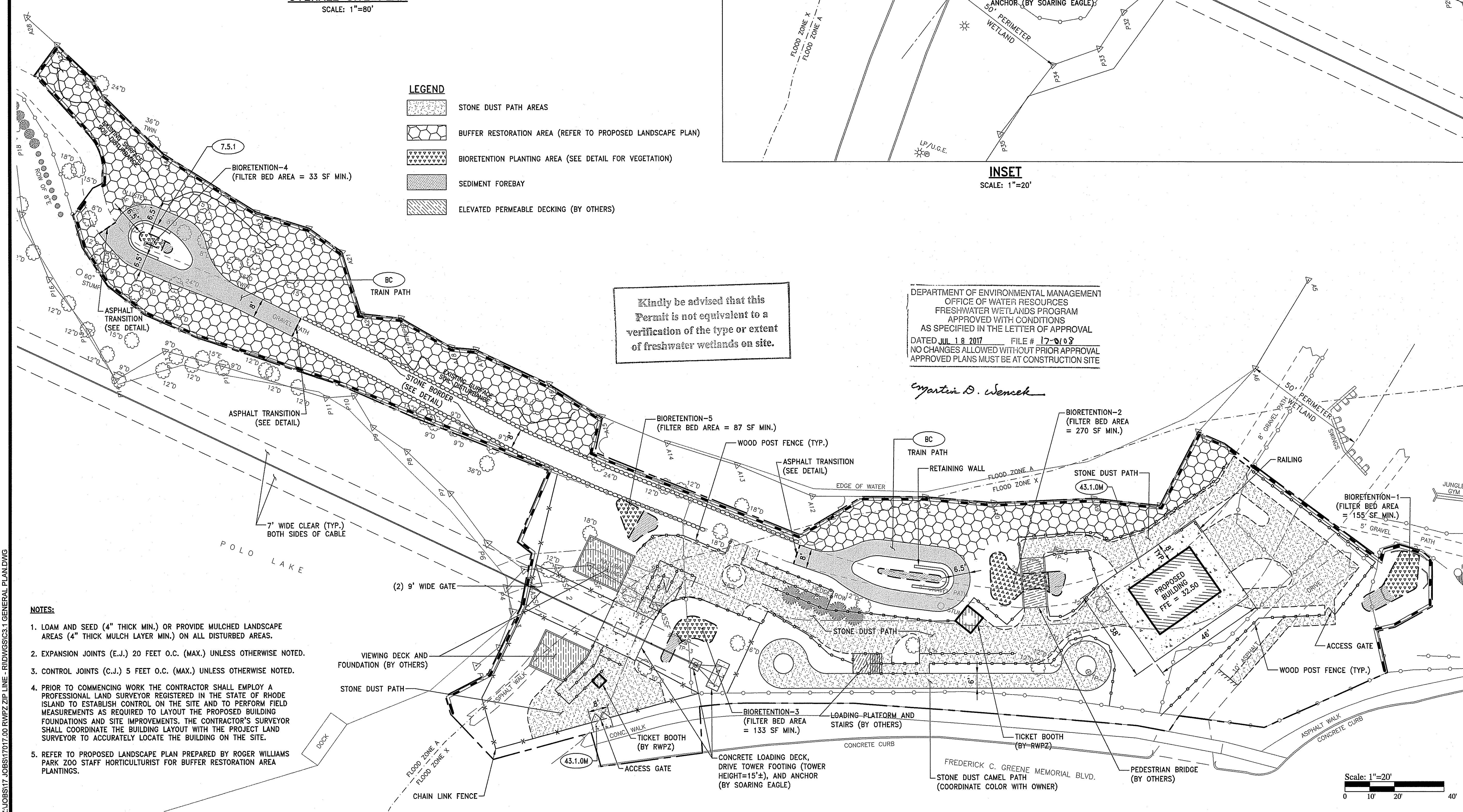
LEGEND

- STONE DUST PATH AREAS
- BUFFER RESTORATION AREA (REFER TO PROPOSED LANDSCAPE PLAN)
- BIORETENTION PLANTING AREA (SEE DETAIL FOR VEGETATION)
- SEDIMENT FOREBAY
- ELEVATED PERMEABLE DECKING (BY OTHERS)

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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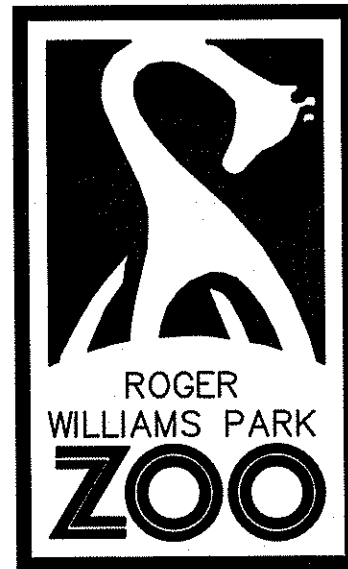
Walter D. Wenczek



NOTES:

1. LOAM AND SEED (4" THICK MIN.) OR PROVIDE MULCHED LANDSCAPE AREAS (4" THICK MULCH LAYER MIN.) ON ALL DISTURBED AREAS.
2. EXPANSION JOINTS (E.J.) 20 FEET O.C. (MAX.) UNLESS OTHERWISE NOTED.
3. CONTROL JOINTS (C.J.) 5 FEET O.C. (MAX.) UNLESS OTHERWISE NOTED.
4. PRIOR TO COMMENCING WORK THE CONTRACTOR SHALL EMPLOY A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF RHODE ISLAND TO ESTABLISH CONTROL ON THE SITE AND TO PERFORM FIELD MEASUREMENTS AS REQUIRED TO LAYOUT THE PROPOSED BUILDING FOUNDATIONS AND SITE IMPROVEMENTS. THE CONTRACTOR'S SURVEYOR SHALL COORDINATE THE BUILDING LAYOUT WITH THE PROJECT LAND SURVEYOR TO ACCURATELY LOCATE THE BUILDING ON THE SITE.
5. REFER TO PROPOSED LANDSCAPE PLAN PREPARED BY ROGER WILLIAMS PARK ZOO STAFF HORTICULTURIST FOR BUFFER RESTORATION AREA PLANTINGS.

SAVE DATE: 25-Jun-17 11:13:03 AM PLOT DATE: 25-Jun-17 12:55:07 PM
Z:\JOBS\17\JOB17017.00\RPZ ZIP LINE - RIDING\CS3.1 GENERAL PLANDING



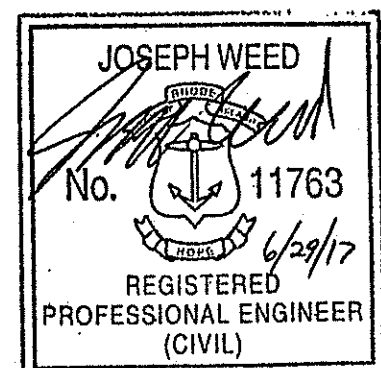
1000 ELMWOOD AVE
PROVIDENCE, RI
02907

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PROJECT NAME:

SOAR AND EXPLORE
ADVENTURE PARK
AT THE ZOO



REVISIONS

#	DATE:	REVISION COMMENTS
1	6/29/17	RIDEM COMMENTS

CONSULTANT:



SHEET TITLE :

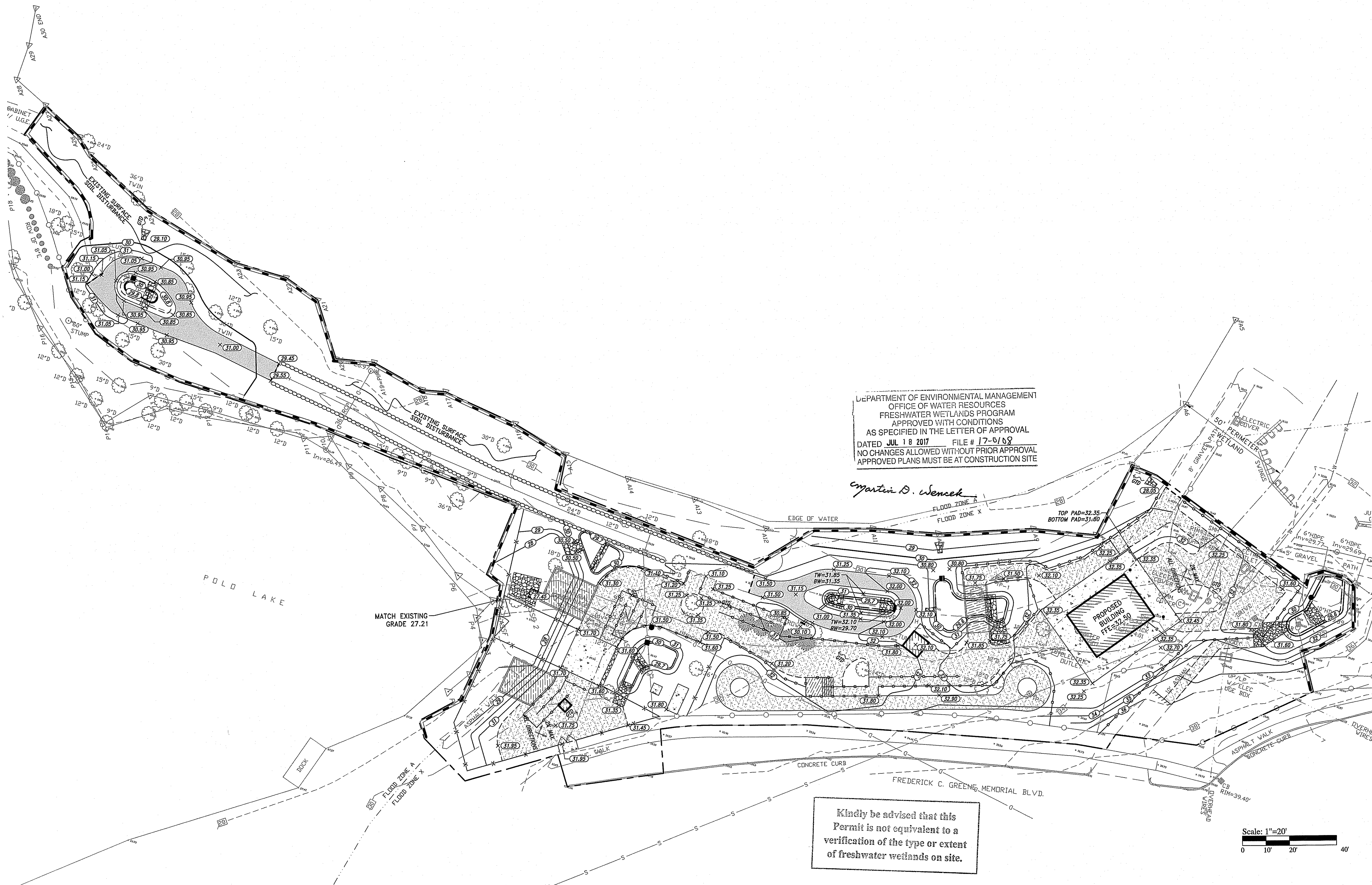
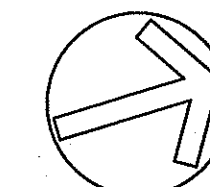
GRADING PLAN

DRAWN BY : AKL
CHECKED BY : JLW
DATE ISSUED: 5-9-17
SCALE: AS NOTED

SHEET NO. :

C4.1

SHEET : 7 OF 13

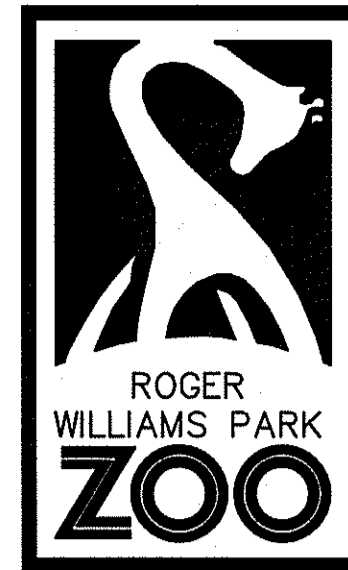


DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
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DATED JUL 18 2017 FILE # 17-9168
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
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of freshwater wetlands on site.



SAVE DATE: 29-Jun-17 11:17:49 AM PLOT DATE: 29-Jun-17 12:55:44 PM
Z:\JOBS\17\JOB1707\00\RMFZ\ZIP LINE - RIDWGSICA.1 GRADING PLAN.DWG

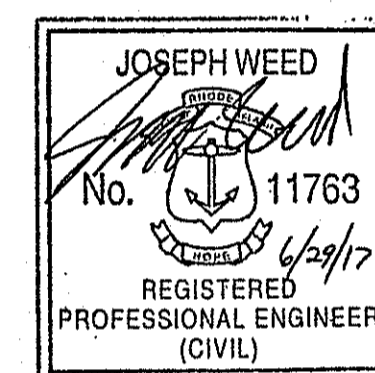


1000 ELMWOOD AVE
PROVIDENCE, RI
02907

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PROJECT NAME:
SOAR AND EXPLORE
ADVENTURE PARK
AT THE ZOO



REVISIONS

#	DATE:	REVISIONS
1	6/29/17	RIDEM COMMENTS

CONSULTANT:



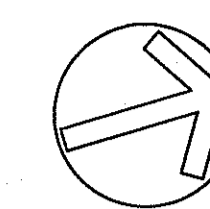
SHEET TITLE:
DRAINAGE & UTILITY PLAN

DRAWN BY: AKL
CHECKED BY: JLW
DATE ISSUED: 5-9-17
SCALE: AS NOTED

SHEET NO.:

C5.1

SHEET: 8 OF 13



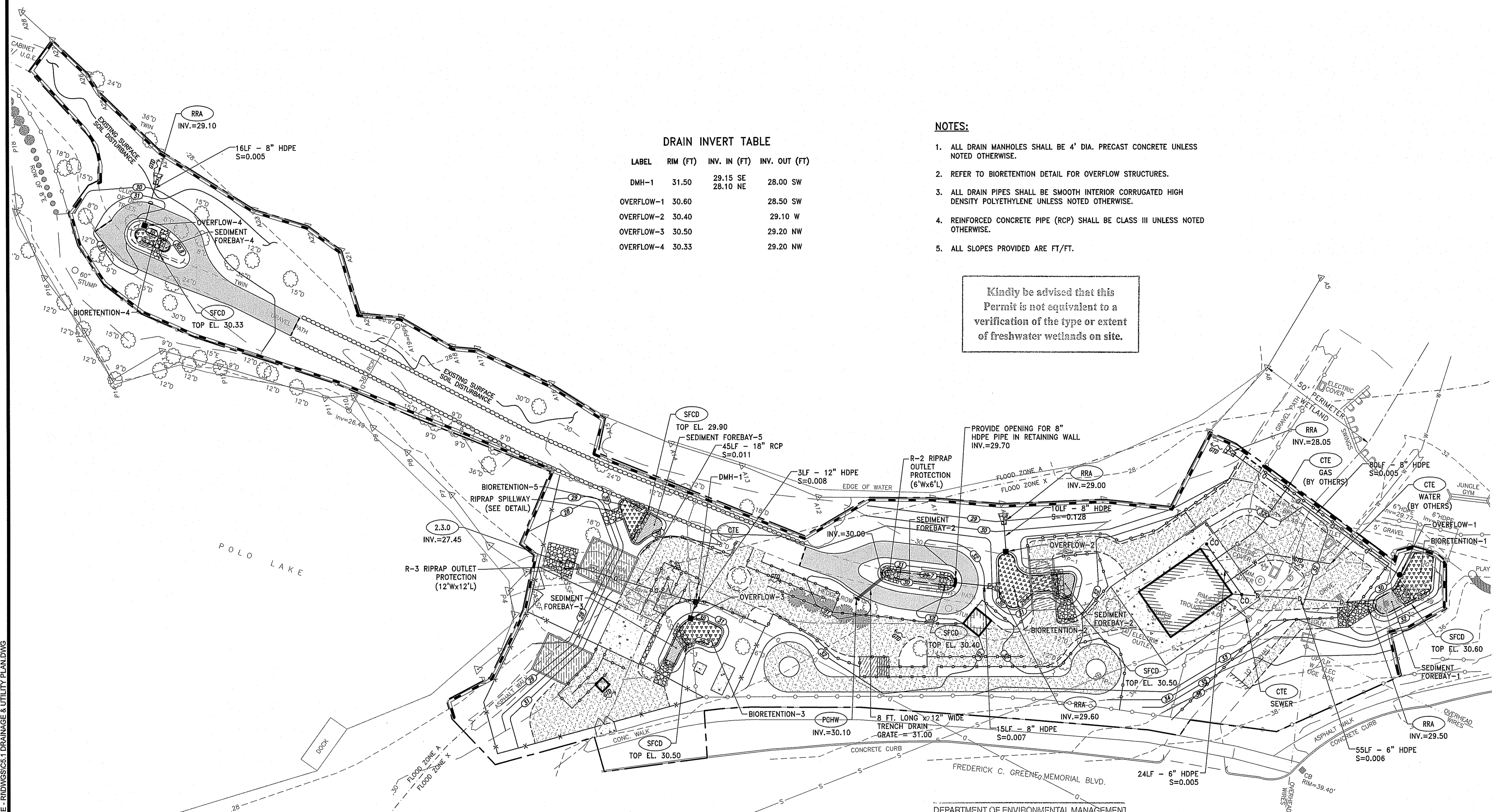
DRAIN INVERT TABLE

LABEL	RIM (FT)	INV. IN (FT)	INV. OUT (FT)
DMH-1	31.50	29.15 SE 28.10 NE	28.00 SW
OVERFLOW-1	30.60		28.50 SW
OVERFLOW-2	30.40		29.10 W
OVERFLOW-3	30.50		29.20 NW
OVERFLOW-4	30.33		29.20 NW

NOTES:

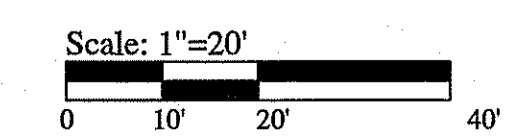
1. ALL DRAIN MANHOLES SHALL BE 4' DIA. PRECAST CONCRETE UNLESS NOTED OTHERWISE.
2. REFER TO BIORETENTION DETAIL FOR OVERFLOW STRUCTURES.
3. ALL DRAIN PIPES SHALL BE SMOOTH INTERIOR CORRUGATED HIGH DENSITY POLYETHYLENE UNLESS NOTED OTHERWISE.
4. REINFORCED CONCRETE PIPE (RCP) SHALL BE CLASS III UNLESS NOTED OTHERWISE.
5. ALL SLOPES PROVIDED ARE FT/FT.

Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

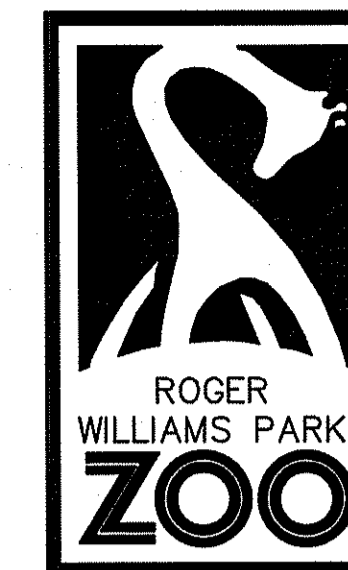


DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUL 18 2017 FILE # 17-0108
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Martin D. Wenczek



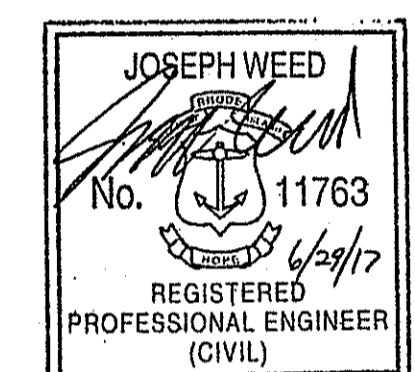
SAVE DATE: 28-Jun-17 11:17:09 AM PLOT DATE: 28-Jun-17 12:56:19 PM
Z:\JOBS\17\JOBS17017.00\RPZ\ZIP LINE - RIDINGSS\5.1 DRAINAGE & UTILITY PLAN.DWG



1000 ELMWOOD AVE
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PROJECT NAME:
SOAR AND EXPLORE
ADVENTURE PARK
AT THE ZOO



REVISIONS		
#	DATE	DESCRIPTION
1	6/29/17	RIDEM COMMENTS

CONSULTANT:



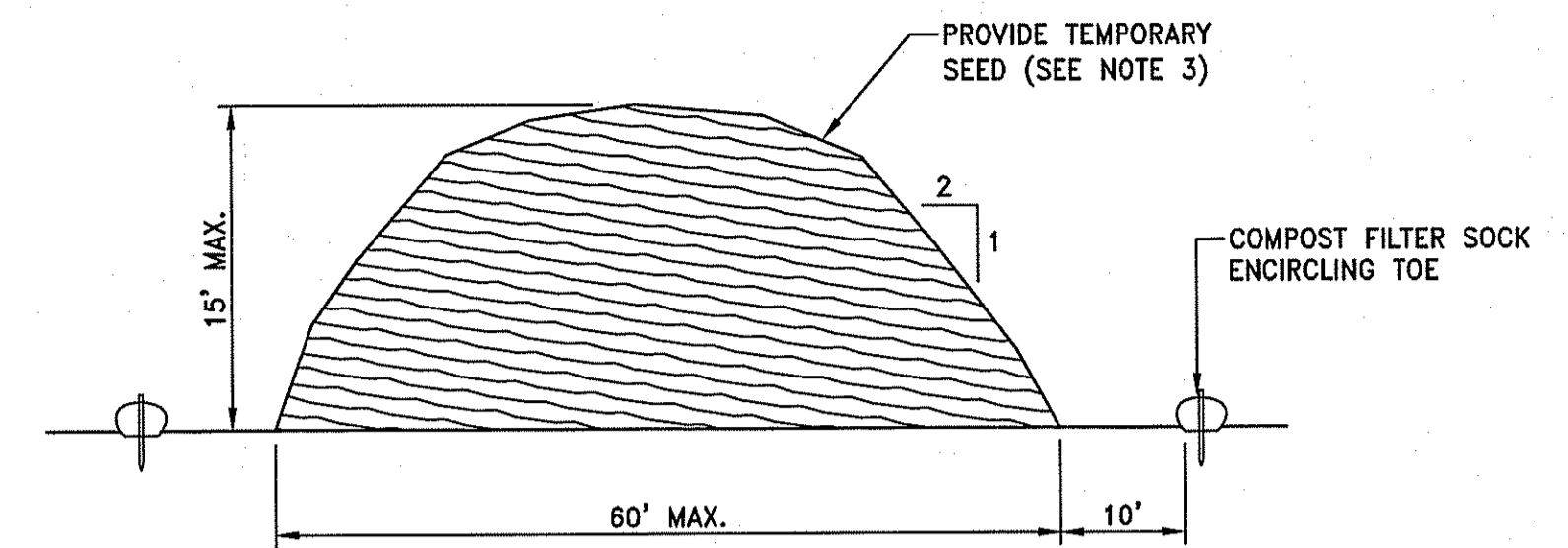
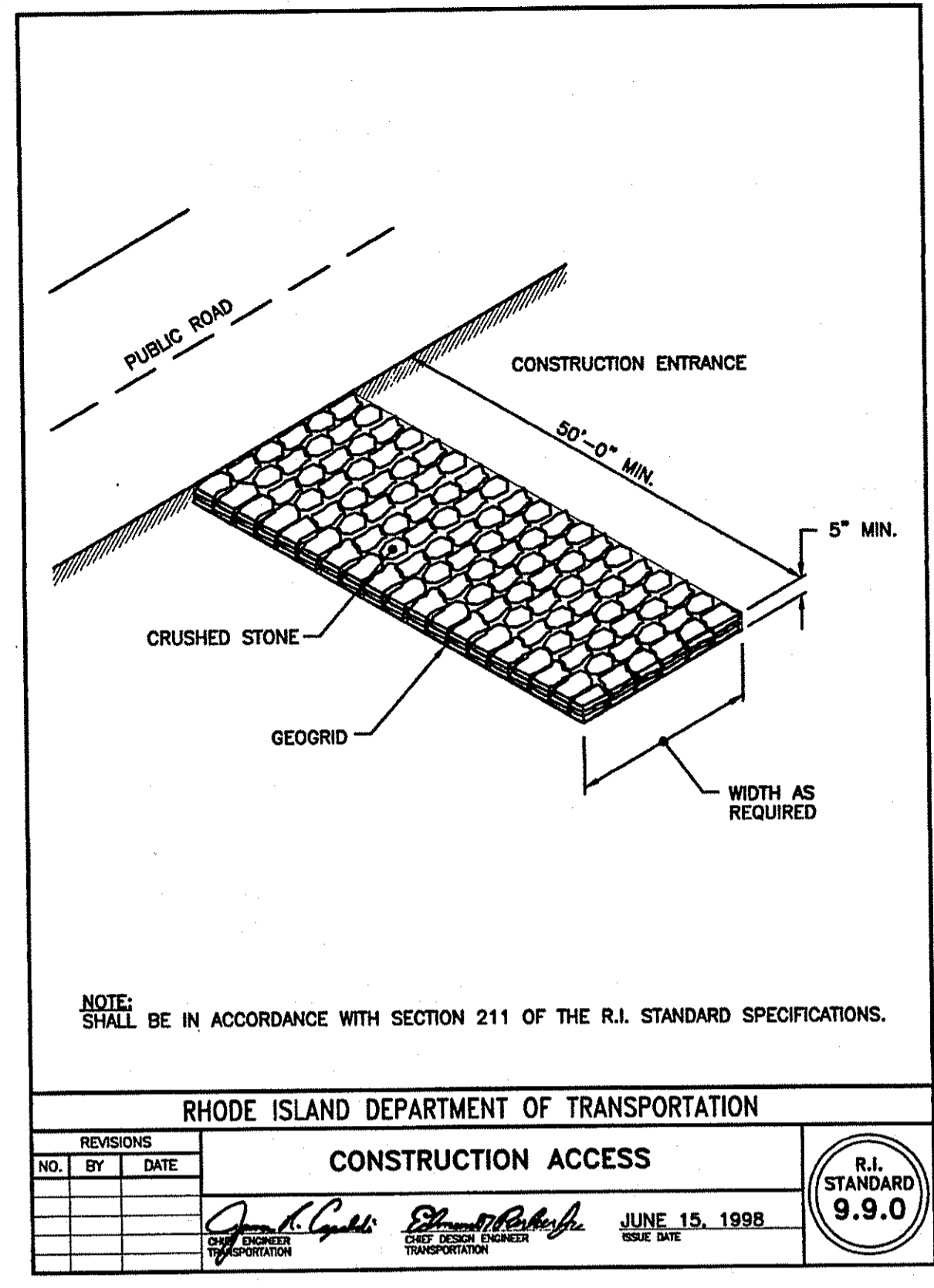
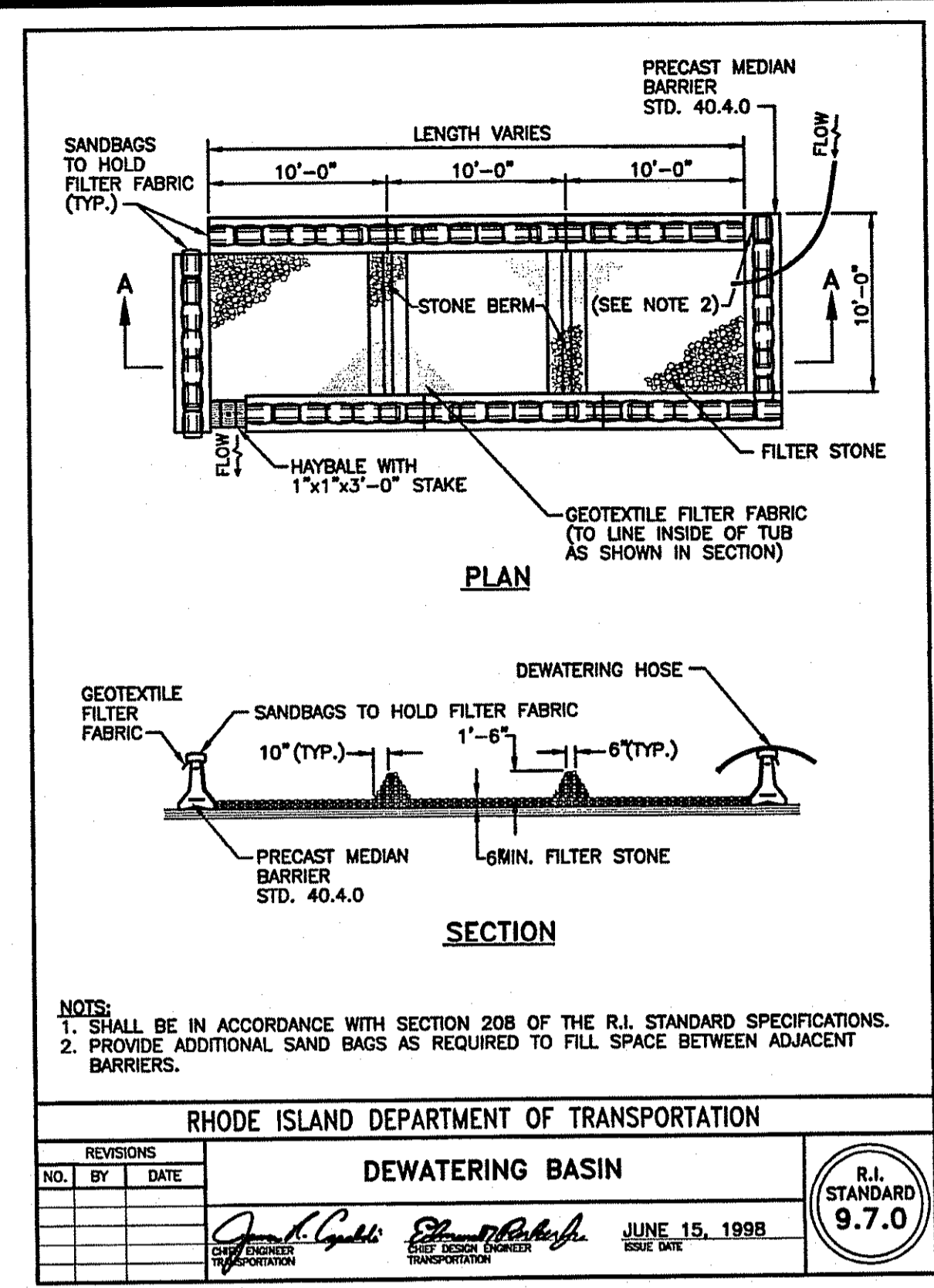
SHEET TITLE:
DETAILS 1

DRAWN BY : AKL
CHECKED BY : JLW
DATE ISSUED: 5-9-17
SCALE: AS NOTED

SHEET NO. :

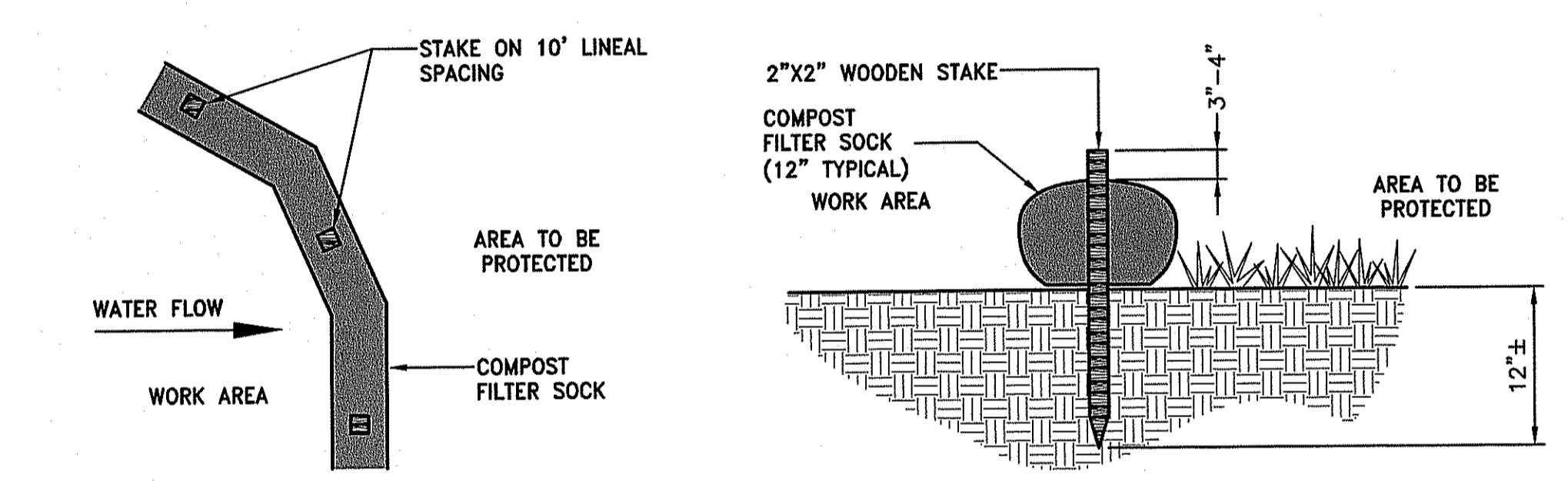
C6.1

SHEET : 9 OF 13



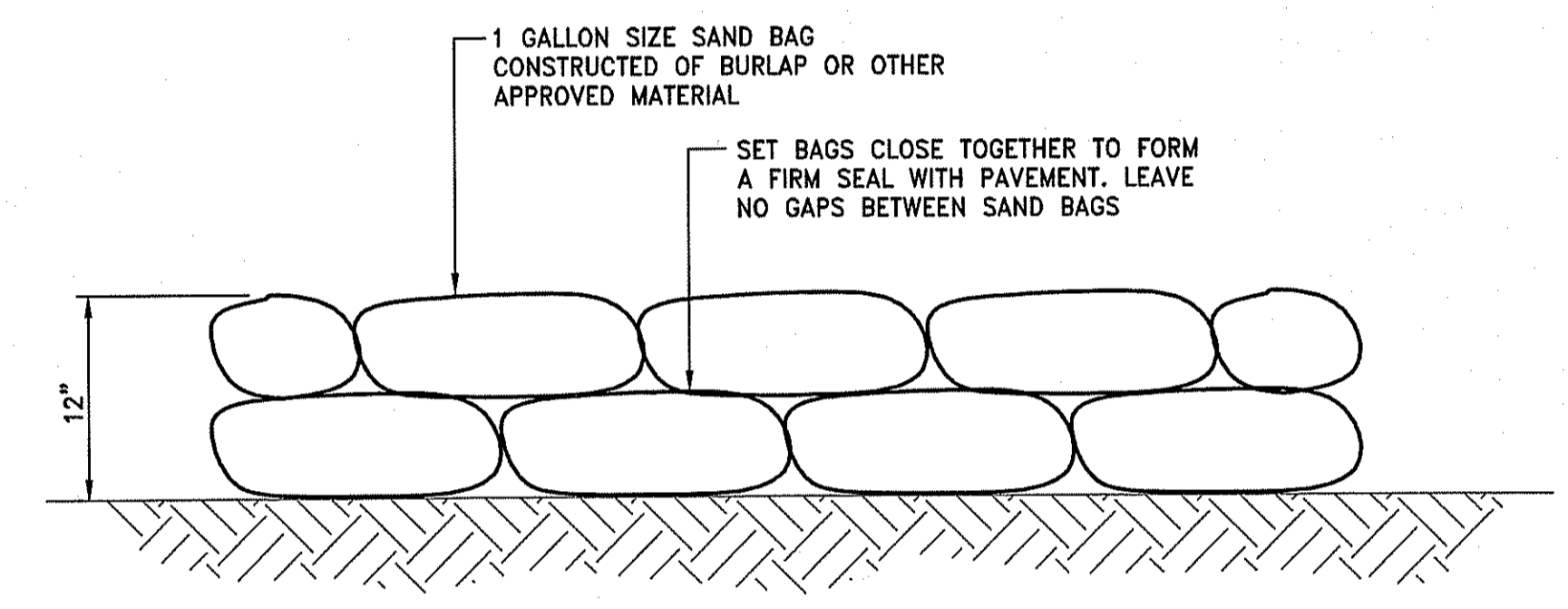
- NOTES:**
- PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL PREPARE A PLAN SHOWING THE PROPOSED LOCATION OF ALL STOCKPILE AREAS.
 - STOCKPILE AREA SHALL NOT EXCEED SPECIFIED DIMENSIONS WITHOUT APPROVAL FROM ENGINEER.
 - STOCKPILED ERODIBLE MATERIAL THAT WILL NOT BE USED FOR GREATER THAN 14 DAYS SHALL BE STABILIZED WITH TEMPORARY SEED IMMEDIATELY FOLLOWING PLACEMENT. USE RIDOT STD. M18.10.5 TEMPORARY SEED MIX.

ERODIBLE MATERIAL STOCKPILE
NOT TO SCALE

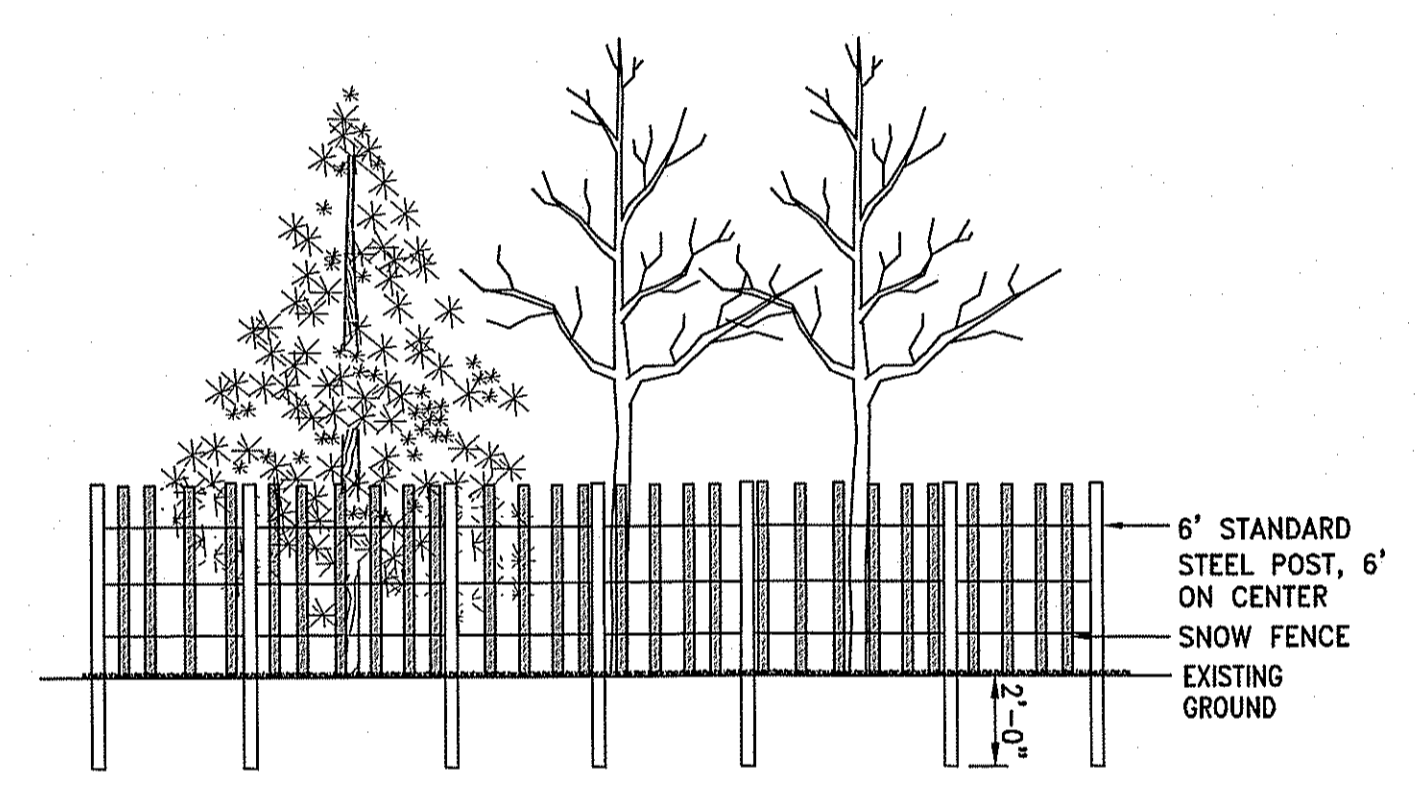


- NOTES:**
- COMPOST/ SOIL/ ROCK/ SEED FILL TO MEET APPLICATION REQUIREMENTS.
 - COMPOST MATERIAL TO BE REMOVED OR DISPERSED ON SITE AS DETERMINED BY ENGINEER.

CFS COMPOST FILTER SOCK DETAIL
NOT TO SCALE



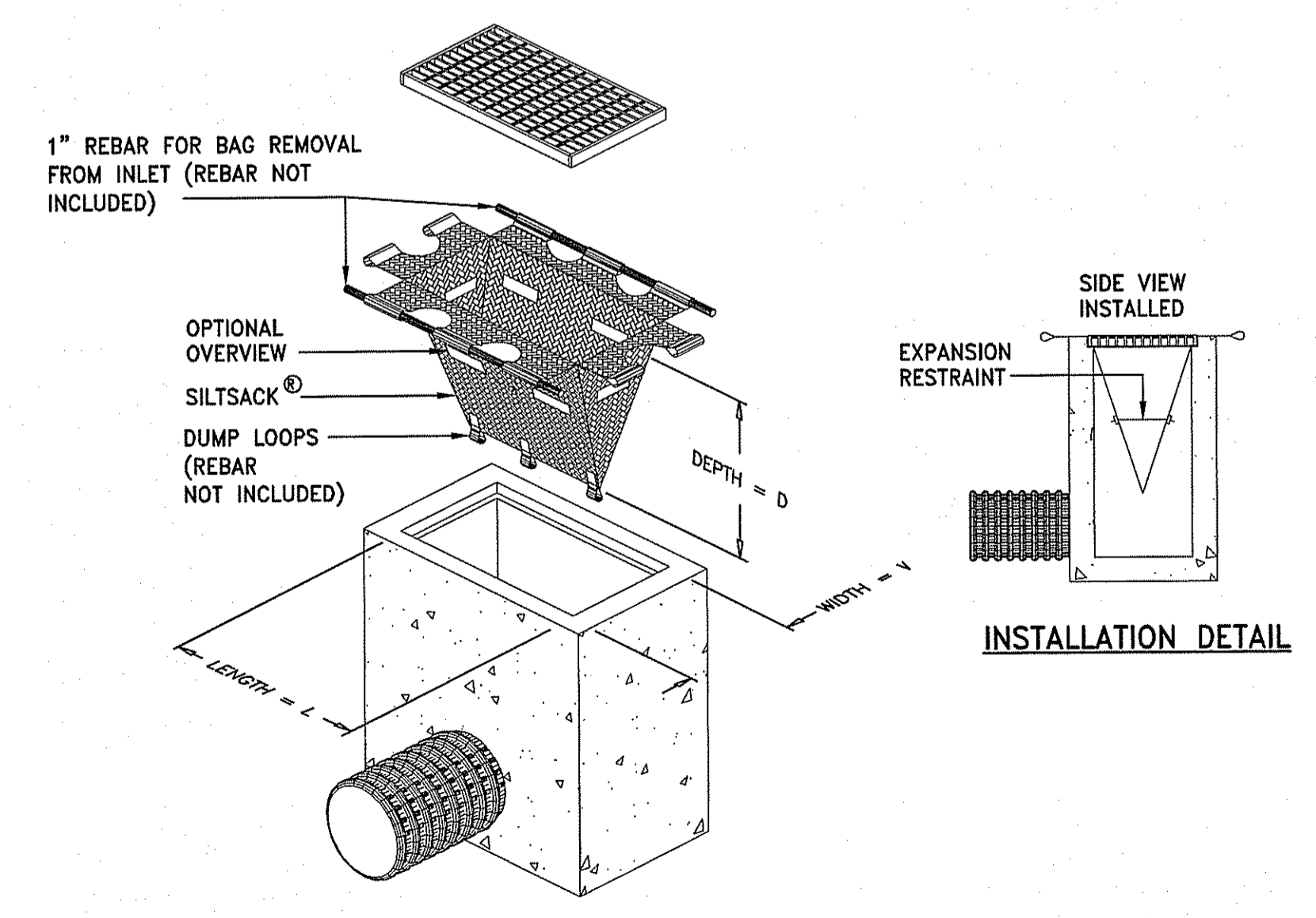
SB SAND BAG EROSION CONTROL BARRIER
NOT TO SCALE



TGP TREE GROUP PROTECTION DETAIL
NOT TO SCALE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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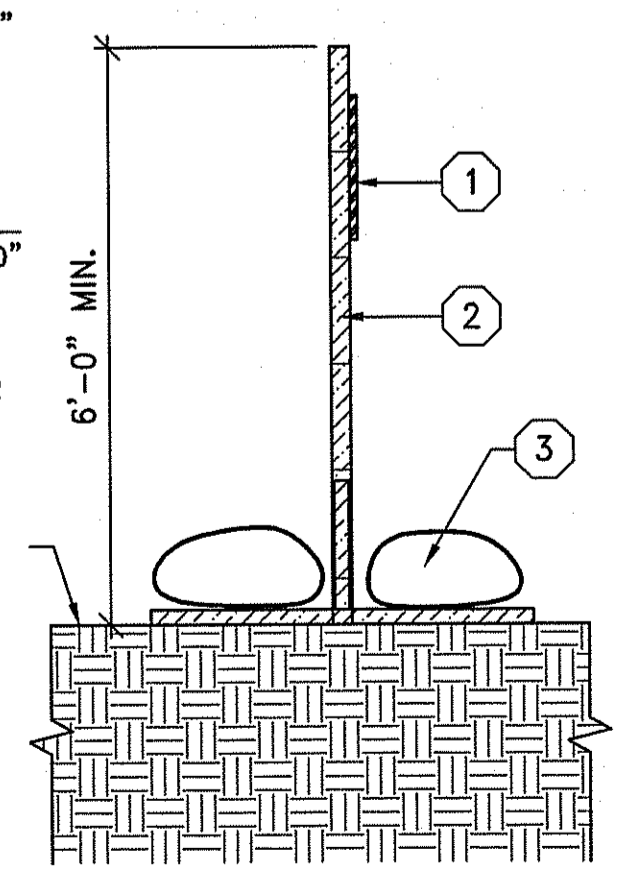
Martin D. Wencsek



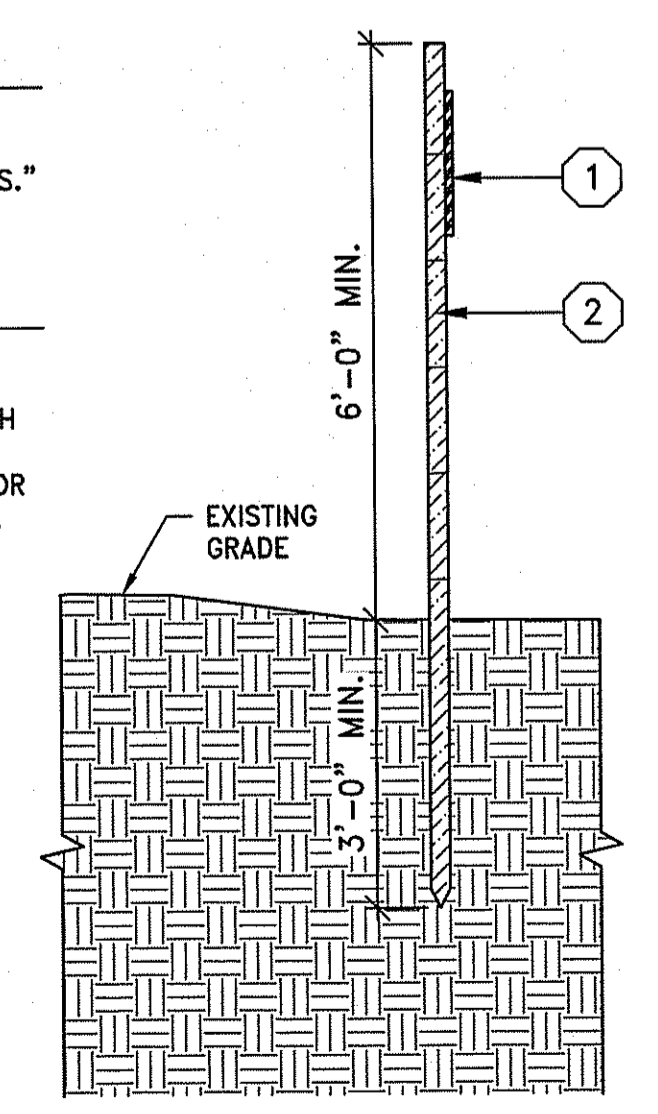
TIP TEMPORARY INLET PROTECTION
NOT TO SCALE

- LEGEND**
- SIGN - "KEEP OUT: SITE PROTECTION ZONE. PENALTIES ASSESSED FOR DAMAGE TO TREES."
 - REMOVABLE SECTION OF FENCE WITH FENCE POSTS SET IN STAND
 - 40LB SAND BAGS, OR EQUAL

- NOTES**
- SIGNS SHALL BE PLACED AT 30'-0" INTERVALS.
 - SIGNS SHALL HAVE BOTH ENGLISH AND SPANISH TRANSLATION.
 - REFER TO "DEMOLITION PLAN" FOR LOCATIONS OF TREE PROTECTION.

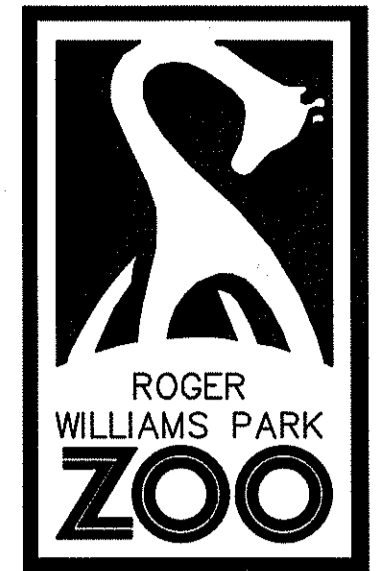


TREE PROTECTION FENCE - SURFACE
NOT TO SCALE



TREE PROTECTION FENCE - AT DRIPLINE
NOT TO SCALE

SAVE DATE: 28-Jun-17 10:37:02 AM PLOT DATE: 28-Jun-17 12:58:32 PM
Z:\08517\JOB\170717\00\RPZ\ZIP LINE - RIDINGS\CS-1-64\DETAILS.DWG

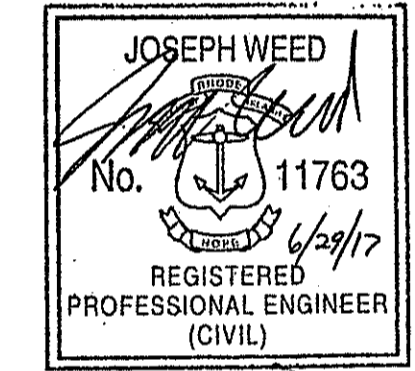


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PROJECT NAME:
SOAR AND EXPLORE
ADVENTURE PARK
AT THE ZOO



REVISIONS		
#	DATE	REVISION
1	6/29/17	RIDEM COMMENTS

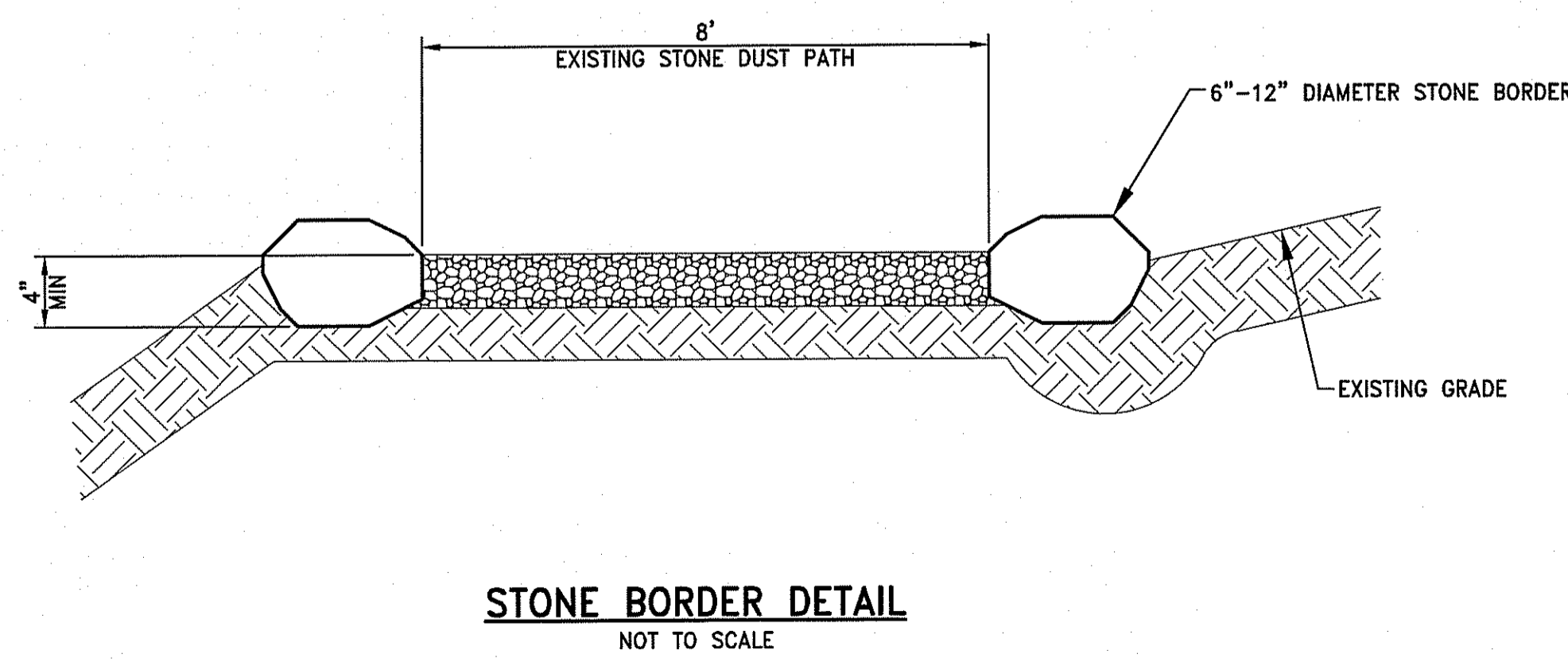
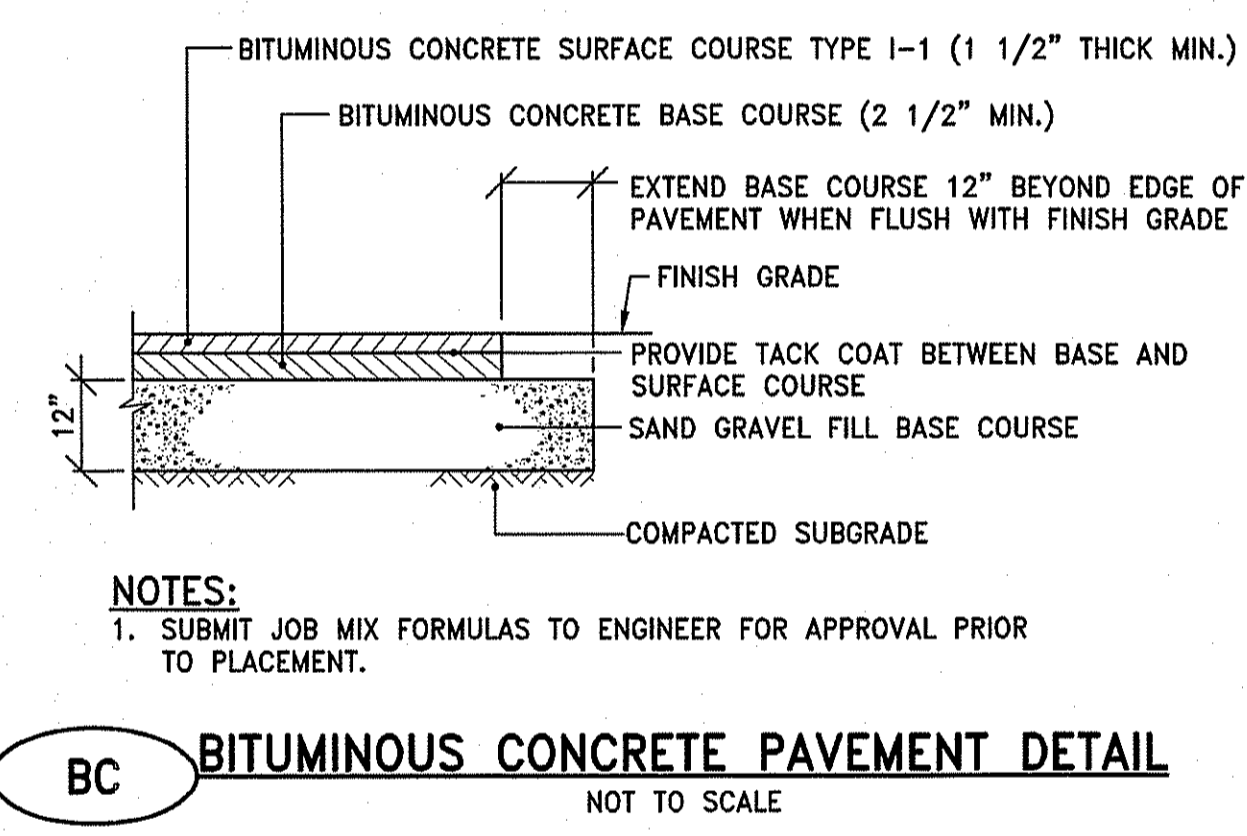
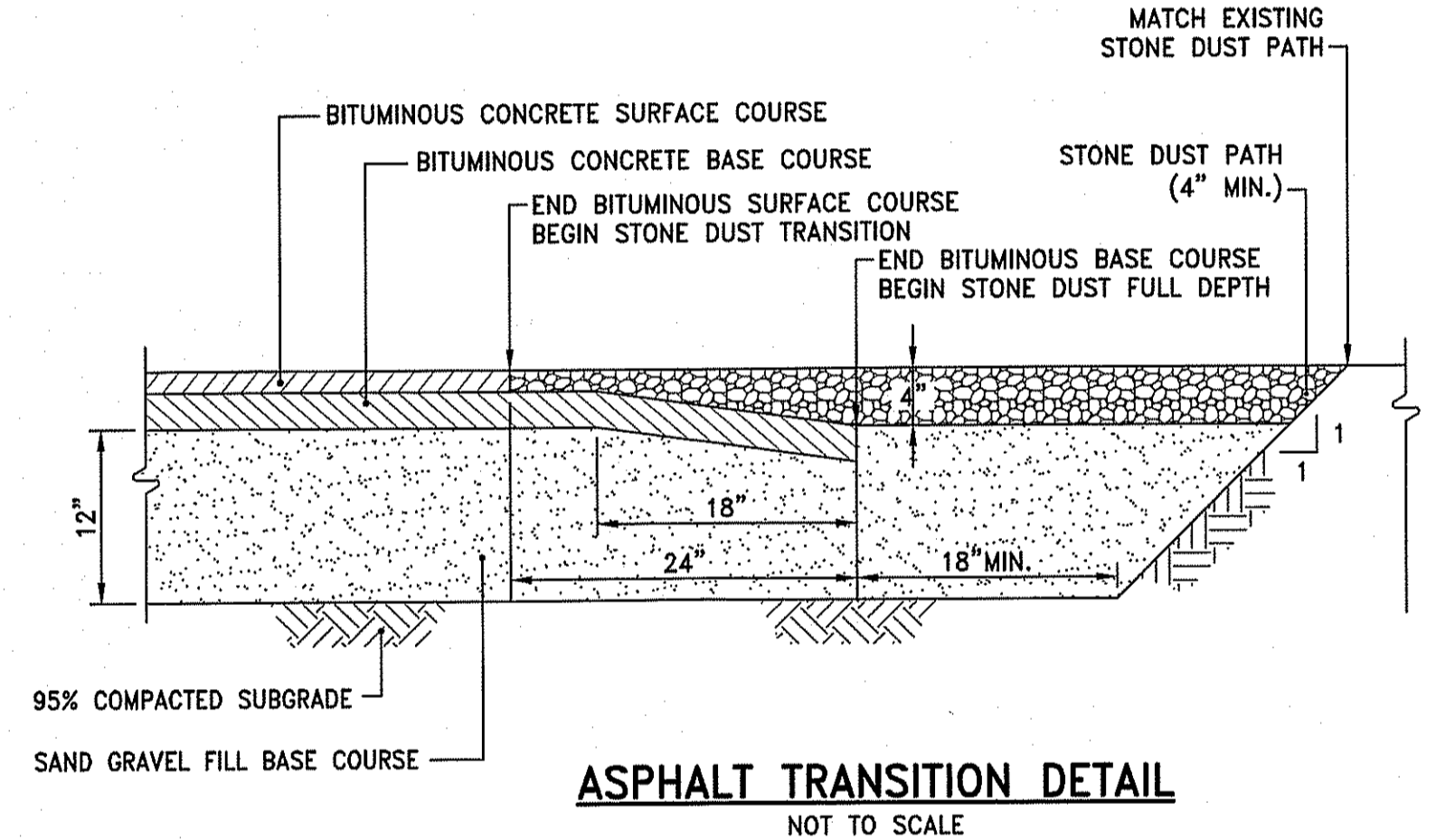
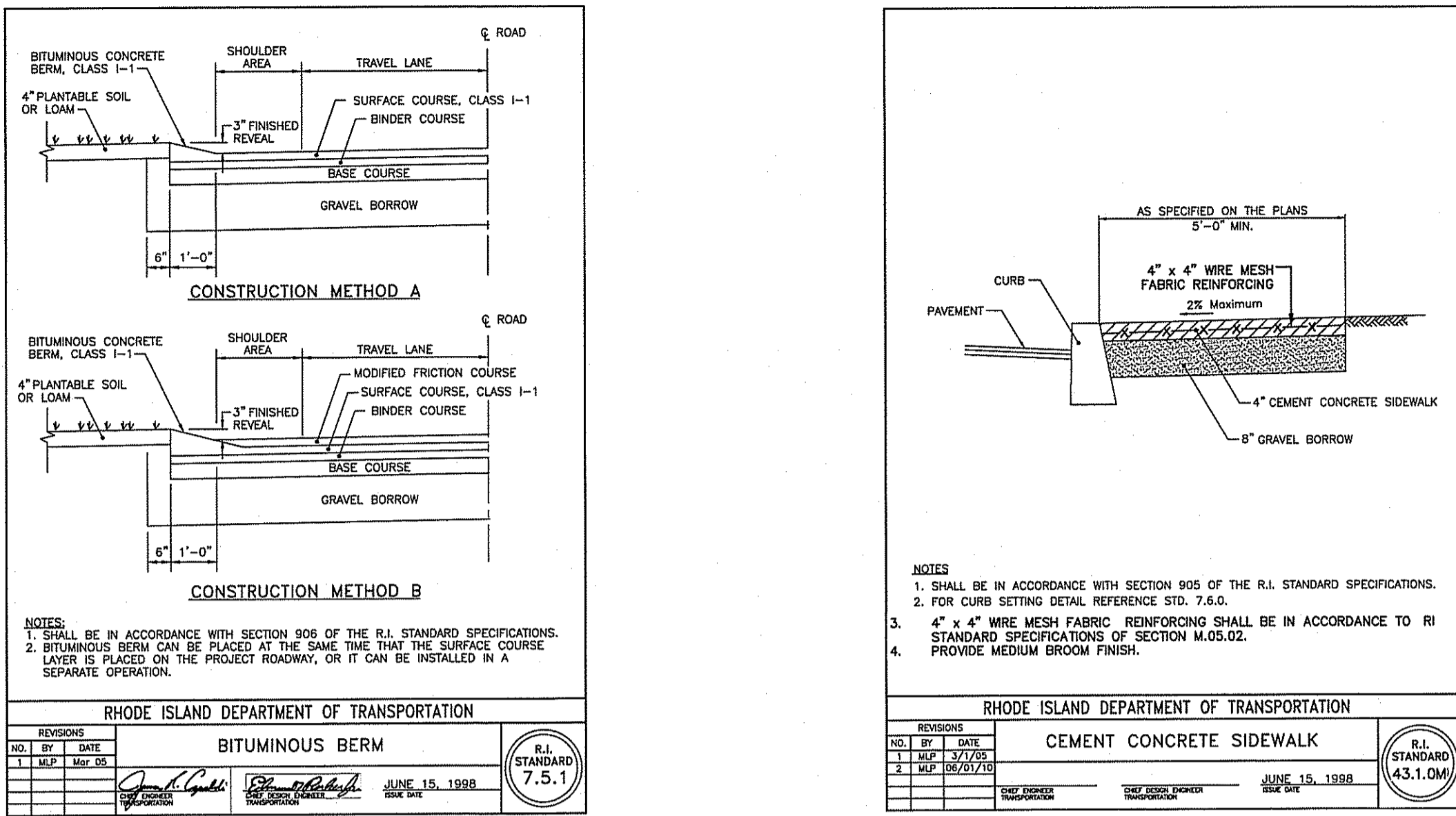
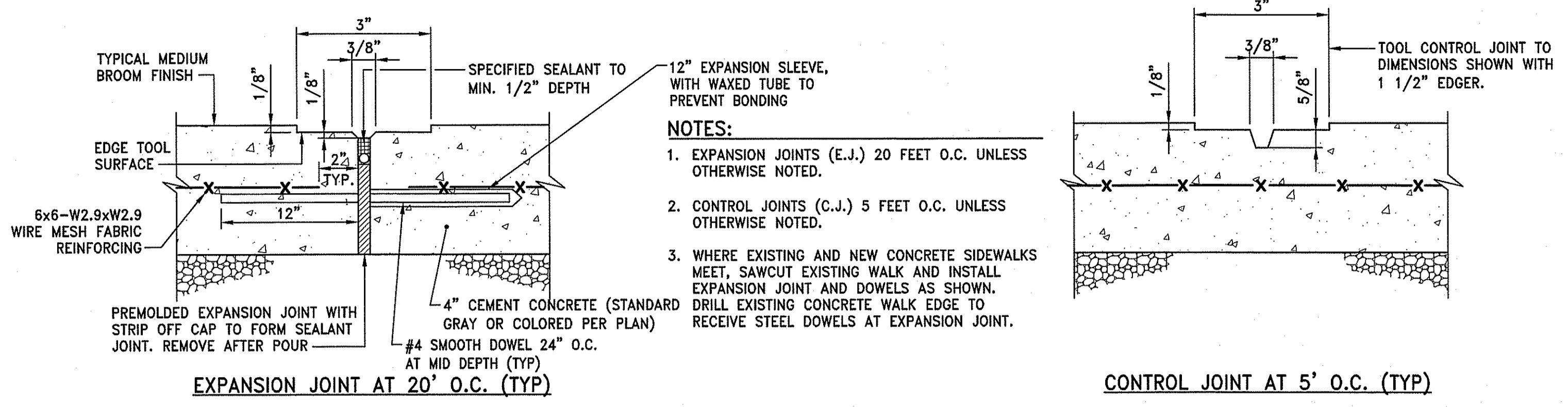
CONSULTANT:



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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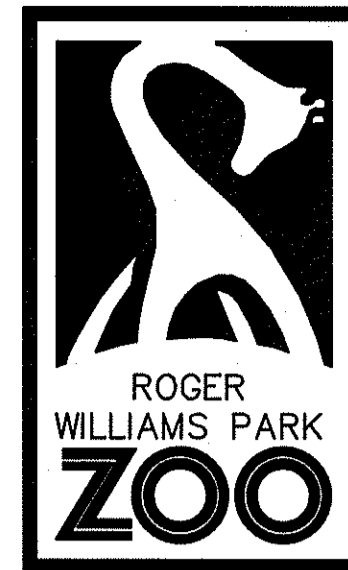
Martin D. Wenczek

SHEET TITLE :	
DETAILS 2	
DRAWN BY :	AKL
CHECKED BY :	JLW
DATE ISSUED :	5-9-17
SCALE :	AS NOTED
SHEET NO. :	
C6.2	
SHEET : 10 OF 13	



NOTES:
EXCAVATE A MINIMUM OF 4" BELOW EXISTING STONE DUST PRIOR TO PLACING STONE BOULDER

SAVE DATE: 28-Jun-17 10:37:02 AM PLOT DATE: 28-Jun-17 12:56:36 PM
Z:\JOBS\17\JOB\17017.00\RWFPZ\IP LINE - RIDINGS\6.1-6.4 DETAILS.DWG

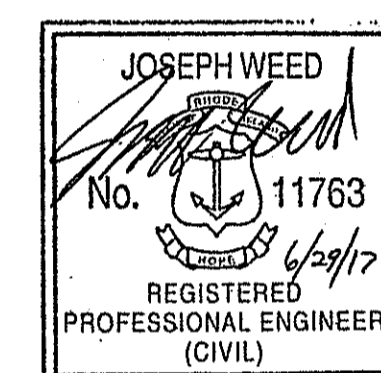


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PROJECT NAME:
**SOAR AND EXPLORE
ADVENTURE PARK
AT THE ZOO**



REVISIONS

#	DATE:	REVISIONS
1	6/29/17	RIDEM COMMENTS

CONSULTANT:

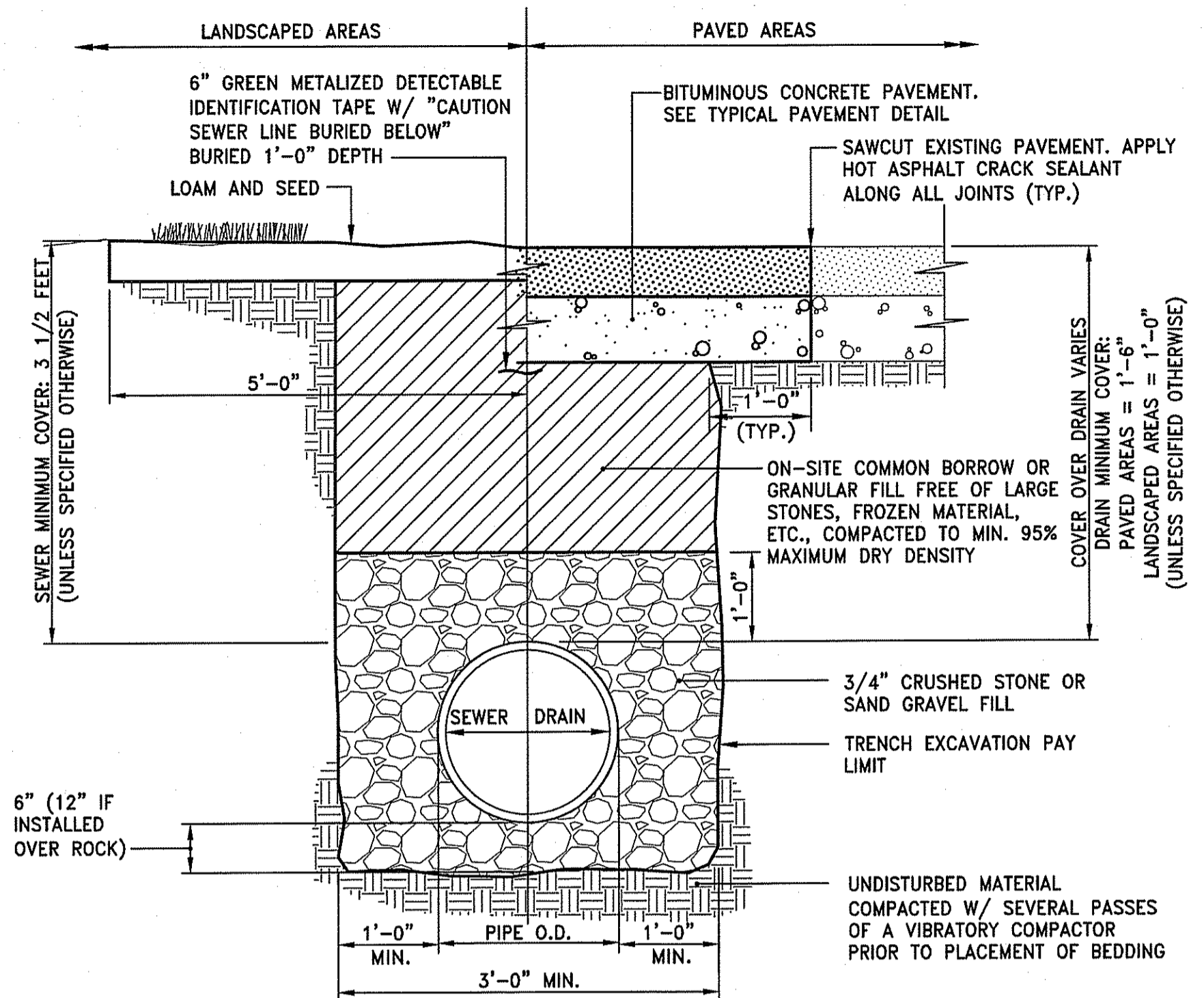
PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
8 BLACKSTONE VALLEY PLACE
LINCOLN, RI 02865
401-334-4100

SHEET TITLE:
DETAILS 3

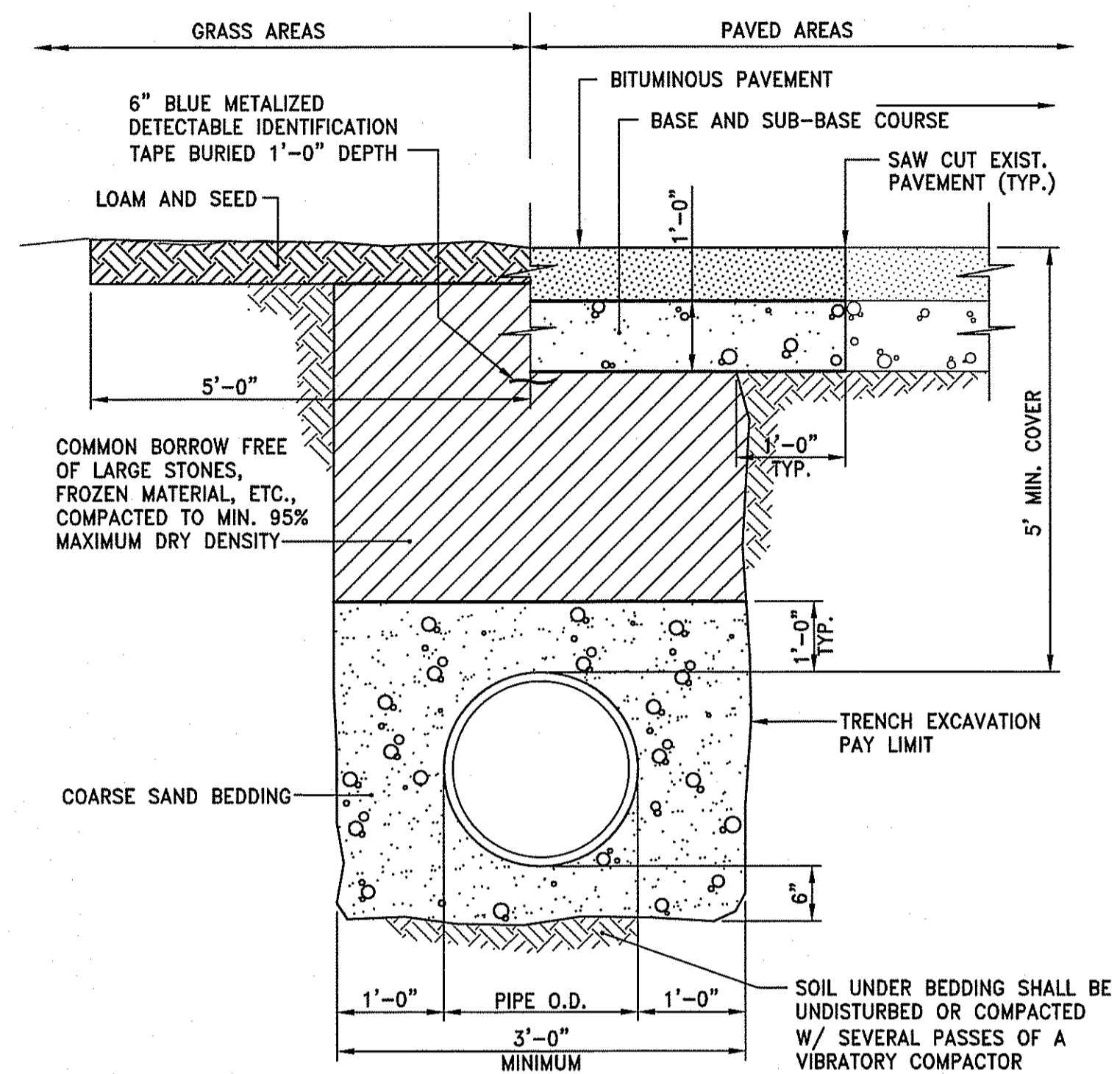
DRAWN BY: AKL
CHECKED BY: JLV
DATE ISSUED: 5-9-17
SCALE: AS NOTED

SHEET NO.:
C6.3

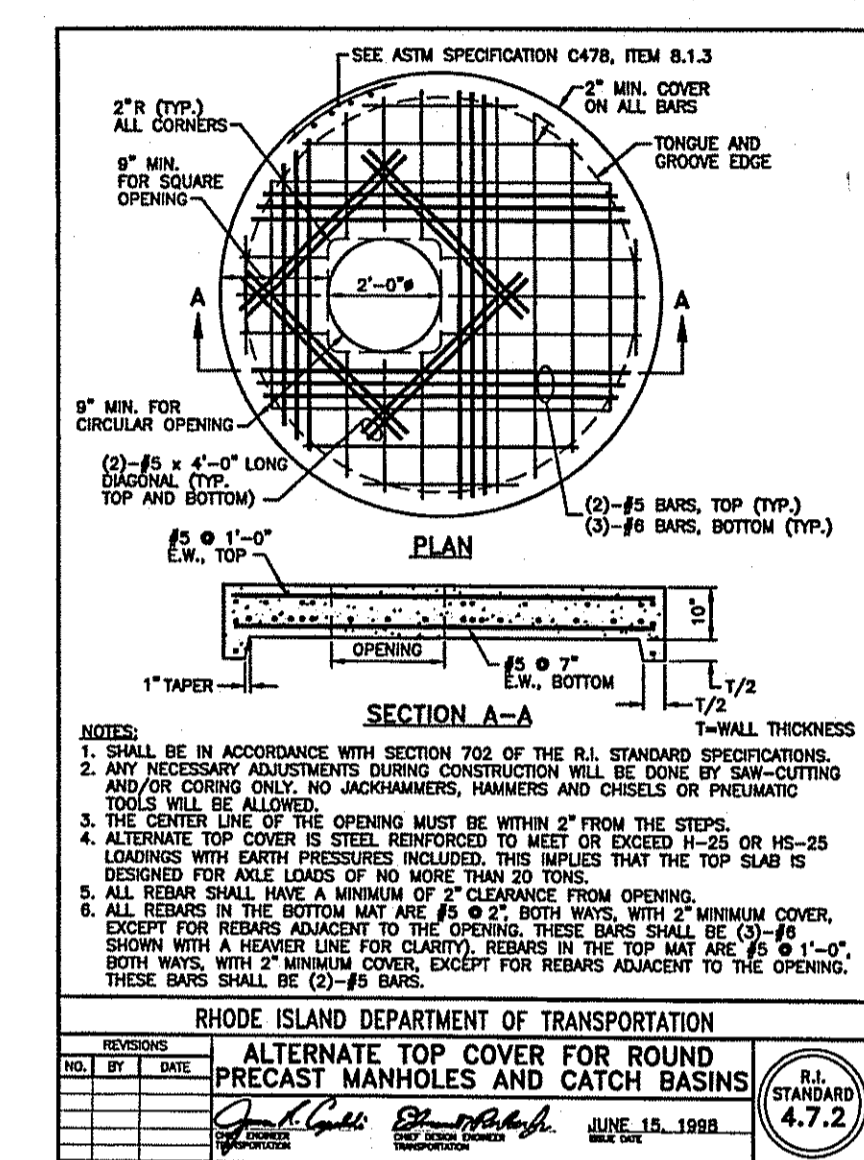
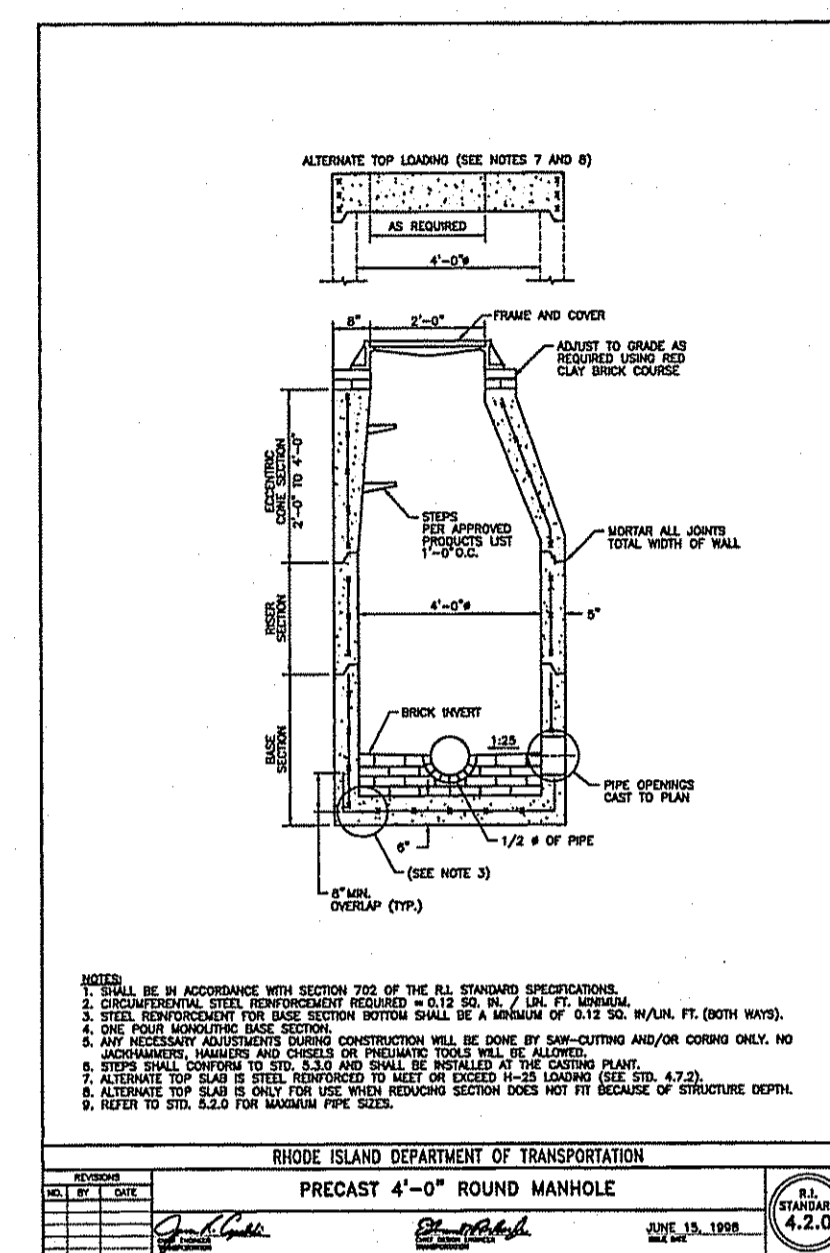
SHEET: 11 OF 13



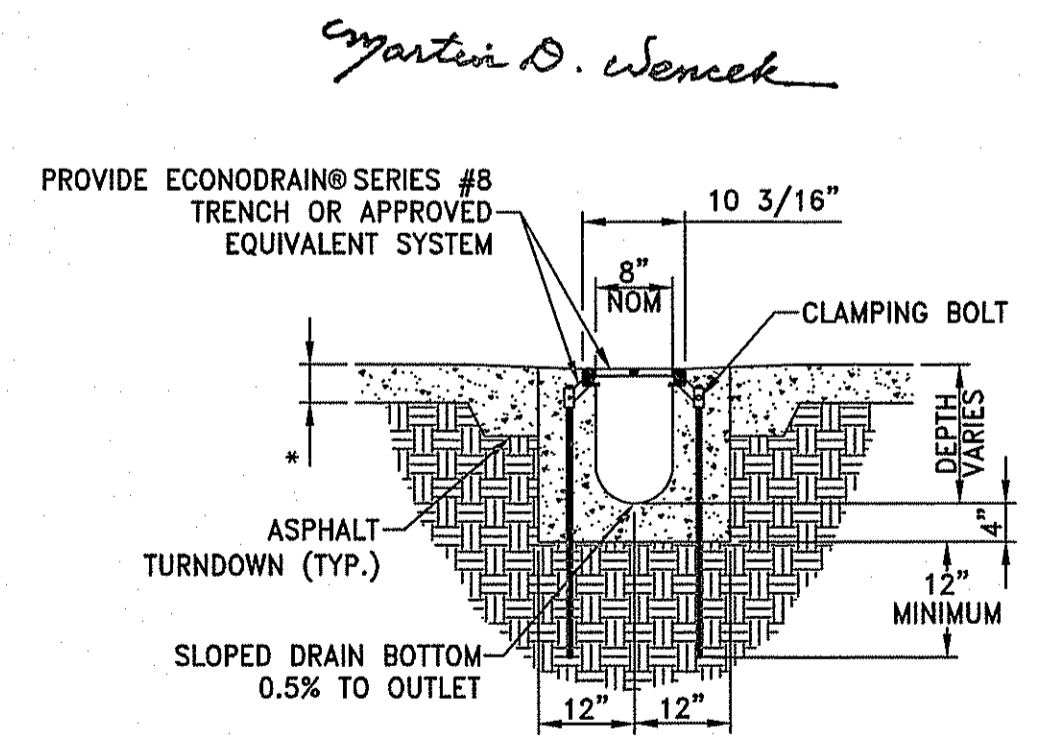
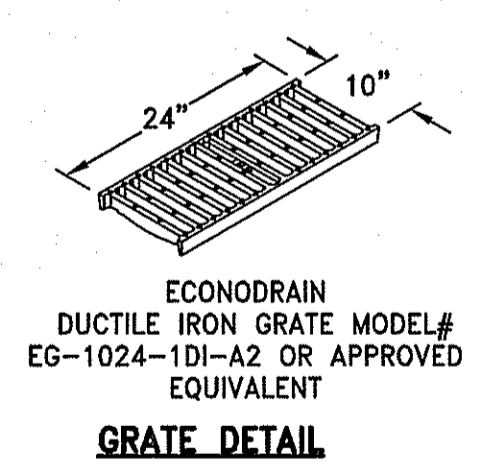
- NOTES:**
- WHERE THE DISTANCE BETWEEN THE SAWCUT AND EDGE OF PAVEMENT IS 3' OR LESS, THE CONTRACTOR SHALL REPLACE THE PAVEMENT FROM THE TRENCH EDGE TO THE EXISTING EDGE OF PAVEMENT.
 - 3/4" DIA. CRUSHED STONE SHALL BE USED AS BEDDING WHERE TRENCH IS BELOW THE GROUND WATER TABLE.



NOTE:
PIPE SHALL BE BEDDED IN 3/4-INCH CRUSHED STONE IF WITHIN GROUNDWATER.



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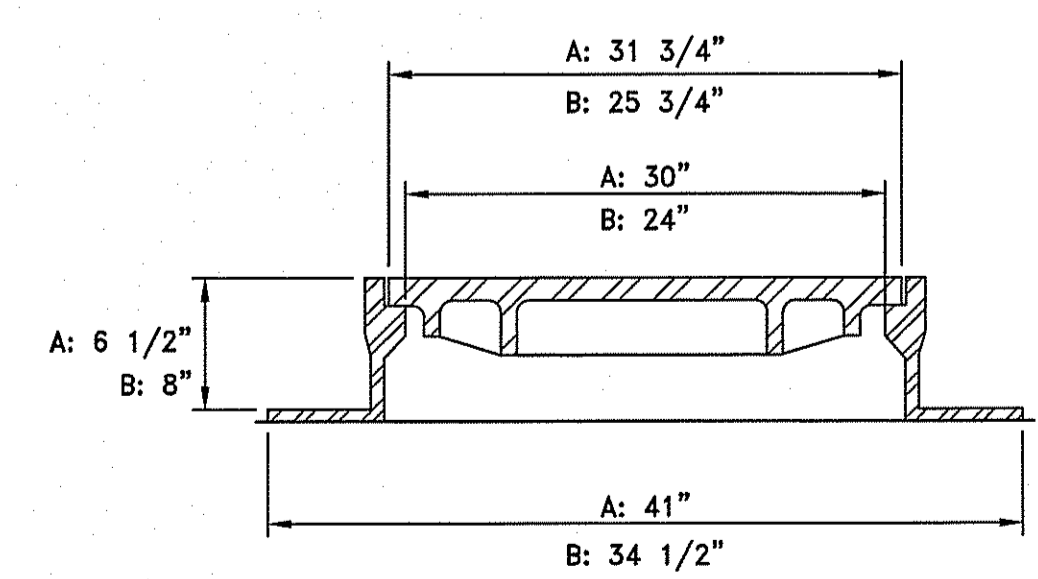
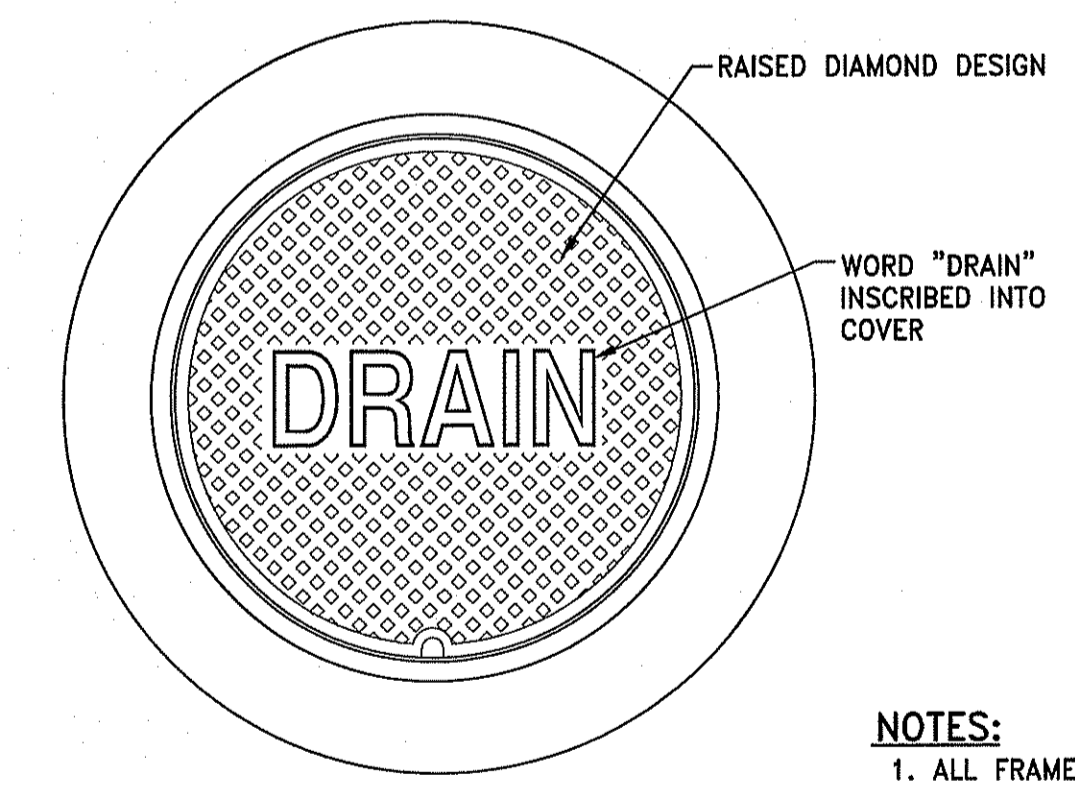
- CONSTRUCTION NOTES:**
- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
 - SECURE OUTLET PIPE PRIOR TO CONCRETING OPERATIONS.
 - GRATE ELEVATIONS SHALL MATCH EXISTING GRADE

TD TRENCH DRAIN DETAIL
NOT TO SCALE

SHALLOW EPS FORMS

EPS FORM	MIN	DEPTH	MAX
23	14-1/2"	15"	

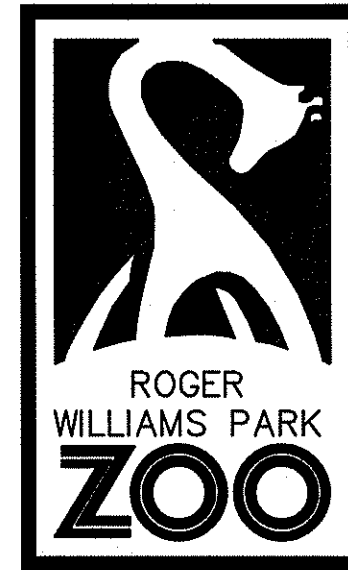
TRENCH DRAIN 1



- NOTES:**
- ALL FRAMES AND COVERS SHALL MEET H-20 LOADING CRITERIA.
 - PROVIDE:
A: 30" DIA. DRAIN MANHOLE FRAME AND COVER SHALL BE NEENAH FOUNDRY, INC. MODEL #R-1557 OR APPROVED EQUIVALENT.
B: 24" DIA. DRAIN MANHOLE FRAME AND COVER SHALL BE NEENAH FOUNDRY, INC. MODEL #R-1556 OR APPROVED EQUIVALENT.
 - ALL DRAIN MANHOLES SHALL HAVE 24" DIA. DRAIN MANHOLE COVER UNLESS NOTED OTHERWISE.

DRAIN MANHOLE FRAME & COVER
NOT TO SCALE

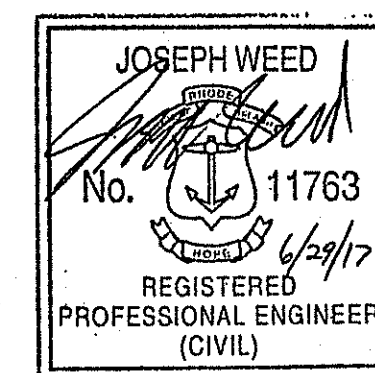
SAVE DATE: 29-Jun-17 10:37:02 AM PLOT DATE: 29-Jun-17 12:55:41 PM
Z:\JOBS\17\JOB\17017.00 RMPZ ZIP LINE - RIDWGS\17017.00 RMPZ ZIP LINE - RIDWGS\C6.1-6.4 DETAILS.DWG



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SOAR AND EXPLORE
ADVENTURE PARK
AT THE ZOO



REVISIONS

#	DATE	REVISION
1	6/29/17	RIDEM COMMENTS



SHEET TITLE :
DETAILS 4

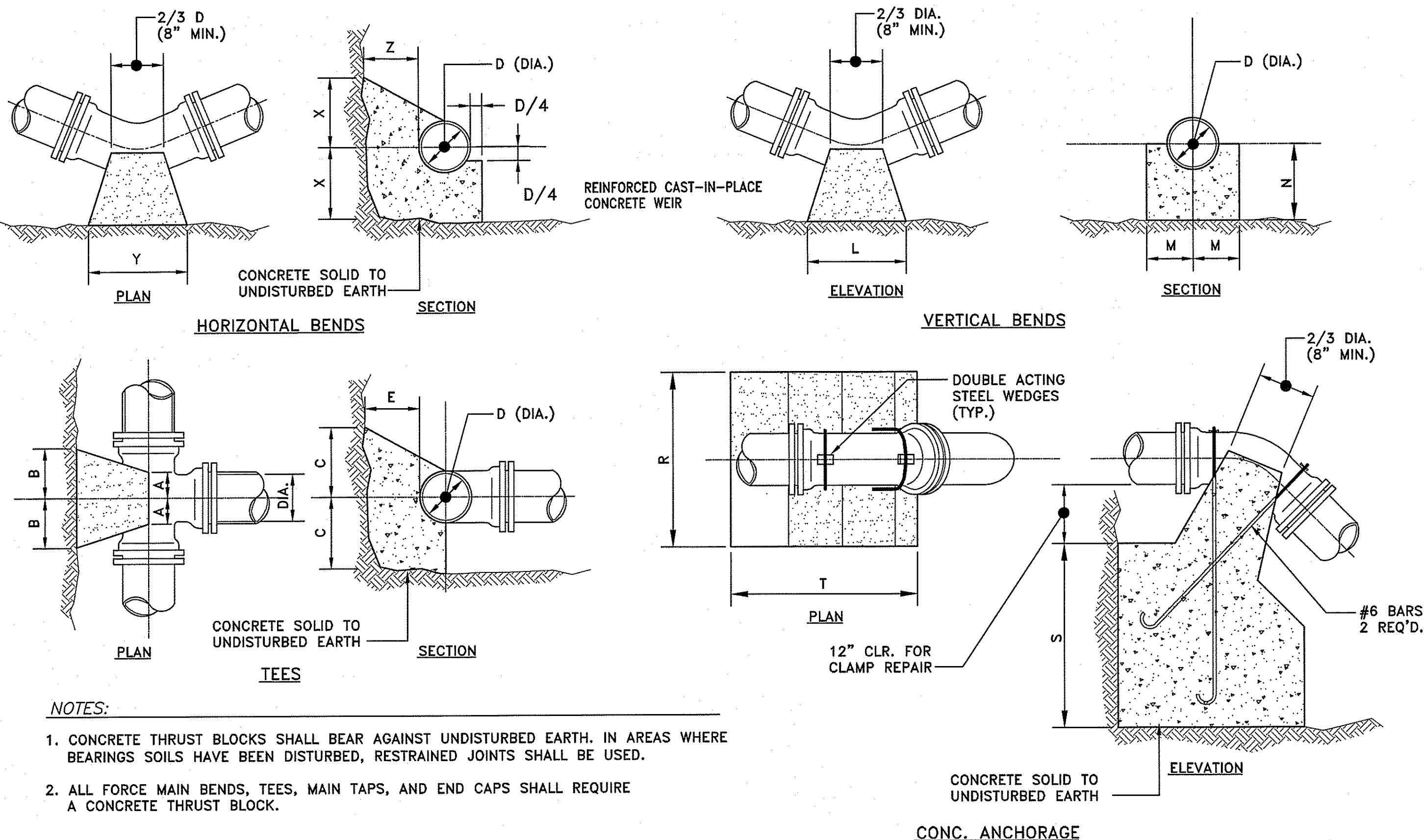
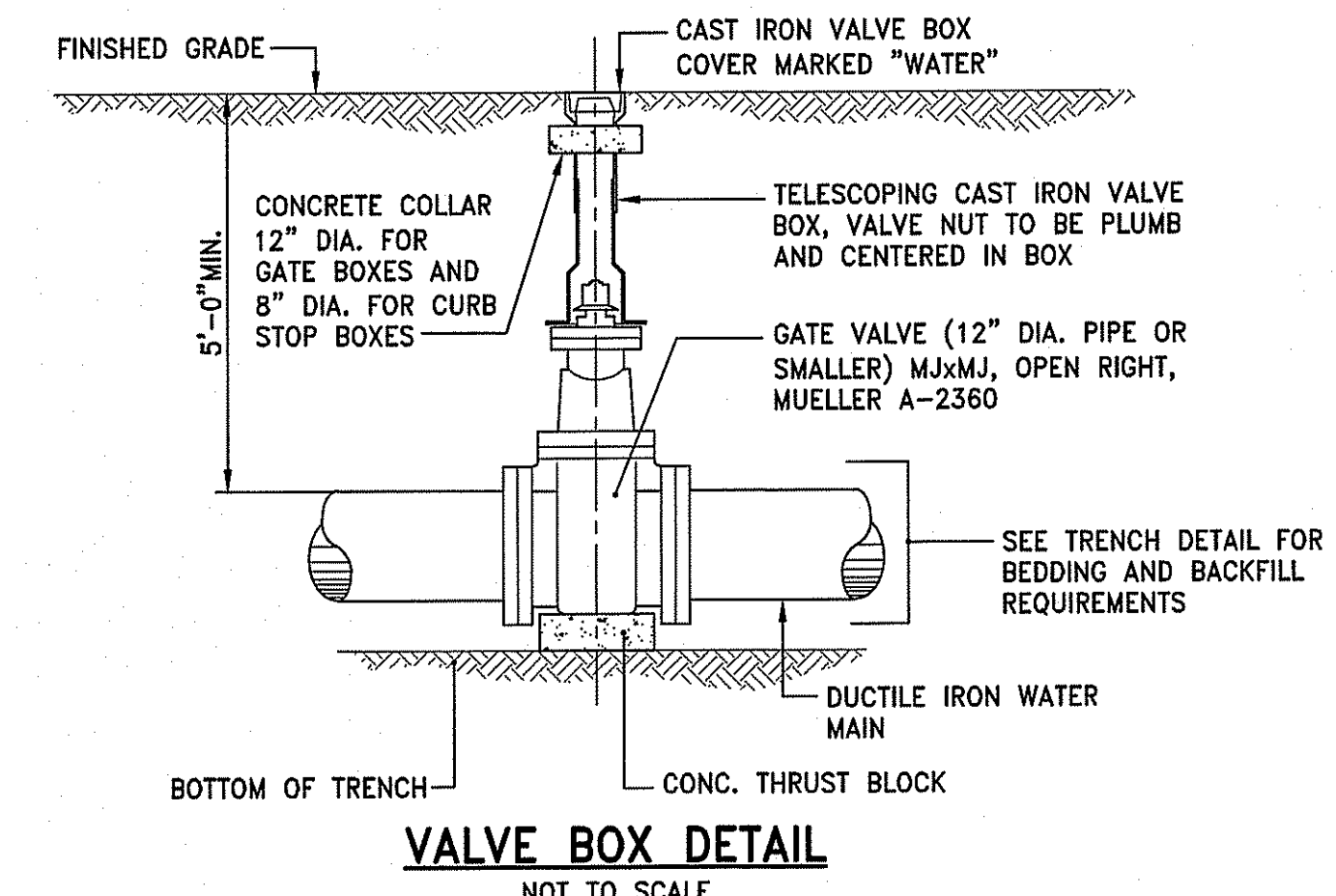
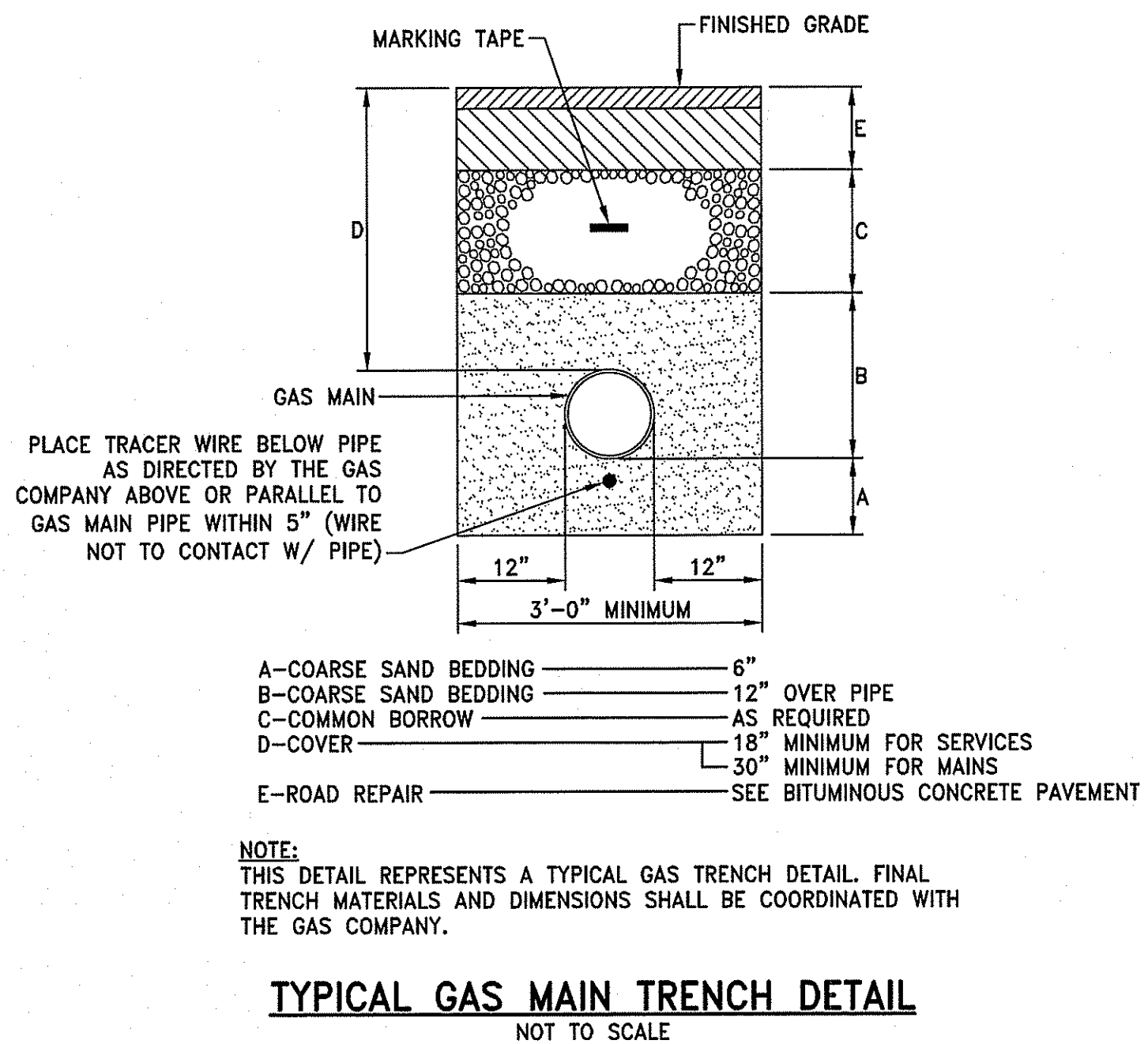
DRAWN BY : AKL
CHECKED BY : JLW
DATE ISSUED: 5-9-17
SCALE: AS NOTED

SHEET NO. :
C6.4

SHEET : 12 OF 13

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Martin D. Wencsek

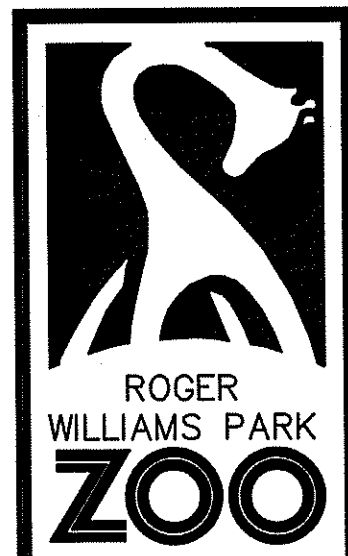


- NOTES:
- CONCRETE THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED EARTH. IN AREAS WHERE BEARINGS SOILS HAVE BEEN DISTURBED, RESTRAINED JOINTS SHALL BE USED.
 - ALL FORCE MAIN BENDS, TEES, MAIN TAPS, AND END CAPS SHALL REQUIRE A CONCRETE THRUST BLOCK.

TEES						HORIZONTAL BENDS						VERTICAL BENDS						ANCHORAGES															
PIPE SIZE-D (DIA.)						PIPE SIZE-D (DIA.)						PIPE SIZE-D (DIA.)						PIPE SIZE-D (DIA.)															
	6"	8"	12"	16"	20"	BEND	6"	8"	12"	16"	20"	BEND	6"	8"	12"	16"	20"	BEND	6"	8"	12"	16"	20"	BEND	6"	8"	12"	16"	20"				
A	8"	10"	1'-0"	1'-3"	1'-6"	1/8	X	1'-0"	1'-0"	1'-0"	1'-3"	1'-6"	1/8	L	1'-3"	1'-8"	2'-6"	3'-6"	4'-8"	1/8	R	2'-6"	3'-0"	4'-6"	5'-4"	6'-0"	1/8	S	2'-6"	2'-9"	3'-6"	2'-6"	3'-6"
B	8"	10"	1'-2"	1'-4"	1'-6"	1/8	Y	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	1/8	M	7"	8"	11"	1'-4"	1'-6"	1/8	T	3'-0"	4'-0"	4'-9"	7'-0"	9'-6"	1/8	N	7"	8"	11"	1'-4"	1'-6"
C	10"	1'-0"	1'-3"	1'-6"	1'-8"	1/8	Z	8"	10"	1'-2"	1'-4"	1'-6"	1/8	L	9"	1'-0"	1'-9"	2'-6"	3'-0"	1/8	R	2'-0"	2'-8"	4'-0"	4'-6"	5'-0"	1/8	N	7"	8"	11"	1'-4"	1'-6"
E	8"	10"	1'-2"	1'-6"	1'-10"	1/16	X	1'-0"	1'-0"	1'-6"	1'-9"	2'-6"	1/16	L	9"	7"	10"	1'-0"	1'-2"	1/16	S	1'-9"	2'-3"	2'-6"	3'-2"	3'-8"	1/16	X	1'-0"	1'-0"	1'-2"	1'-4"	1'-6"
						1/16	Y	1'-0"	1'-4"	1'-6"	1'-9"	2'-6"	1/16	M	7"	7"	10"	1'-0"	1'-2"	1/16	T	2'-6"	3'-4"	4'-0"	6'-0"	8'-6"	1/32	Y	1'-0"	1'-0"	1'-2"	1'-4"	1'-6"
						1/32	Z	8"	10"	1'-2"	1'-4"	1'-6"	1/32	L	6"	8"	11"	1'-0"	1'-9"	1/32	R	1'-6"	2'-0"	3'-0"	3'-8"	4'-3"	1/32	X	1'-0"	1'-0"	1'-2"	1'-4"	1'-6"
													M	7"	7"	10"	1'-0"	1'-2"	1/32	S	1'-3"	1'-9"	2'-0"	2'-4"	2'-6"								
													N	7"	7"	8"	10"	1'-0"	1/32	T	2'-0"	2'-6"	3'-0"	4'-8"	5'-9"								

CONCRETE THRUST BLOCKS
NOT TO SCALE

SAVE DATE: 25-Jun-17 10:37:02 AM PLOT DATE: 25-Jun-17 12:56:48 PM
Z:\JOBS\17\JOB\17017.00\WPZ\ZIP LINE - RIDWSS\CS146.4\DETAILS.DWG



1000 ELMWOOD AVE
PROVIDENCE, RI
02907

THESE PLANS ARE FOR THE CONSTRUCTION OF ONE PROJECT ONLY AND ARE NOT TO BE COPIED IN ANY FORM WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER. ALTHOUGH A LOT OF CARE HAS BEEN TAKEN INTO THE PREPARATION OF THE DRAWINGS TO ENSURE THAT THEY ARE ERROR FREE, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE DRAWINGS FOR ERROR OR OMISSIONS AND TO ADAPT THE DRAWINGS TO ANY SITE CONDITION AS REQUIRED TO COMPLETE CONSTRUCTION. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS.

THE GENERAL CONTRACTOR SHALL NOT SCALE DRAWINGS FOR MEASUREMENTS BUT SHALL VERIFY AT THE SITE ALL LEVELS AND MEASUREMENTS NECESSARY FOR COMPLETE FABRICATION ASSEMBLY AND INSTALLATION OF HIS OR HER WORK. MINOR DETAILS OF THE WORK NOT SPECIFICALLY SHOWN ON THE DRAWINGS SHALL BE ASCERTAINED BY THE CONTRACTOR AT THE SITE OF WORK AND SHALL BE ACCOMPLISHED WITH THE INTENT OF THIS PROJECT.

PROJECT NAME:
SOAR AND EXPLORE
ADVENTURE PARK
AT THE ZOO

JOSEPH WEED
No. 11763
REGISTERED
PROFESSIONAL ENGINEER
(CIVIL)

REVISIONS

#	DATE	COMMENTS
1	6/29/17	RIDEM COMMENTS

CONSULTANT:

PARE
PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
8 BLACKSTONE VALLEY PLACE
LINCOLN, RI 02865
401-334-4100

SHEET TITLE :
DETAILS 5

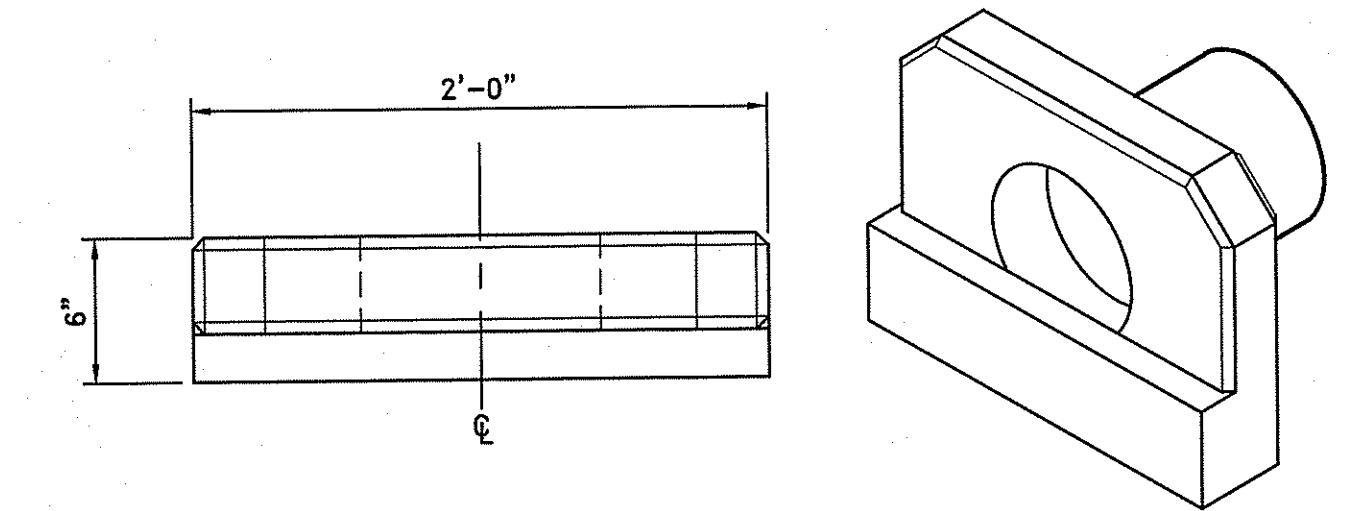
DRAWN BY : AKL
CHECKED BY : JLW
DATE ISSUED: 5-9-17
SCALE: AS NOTED

SHEET NO. :
C6.5

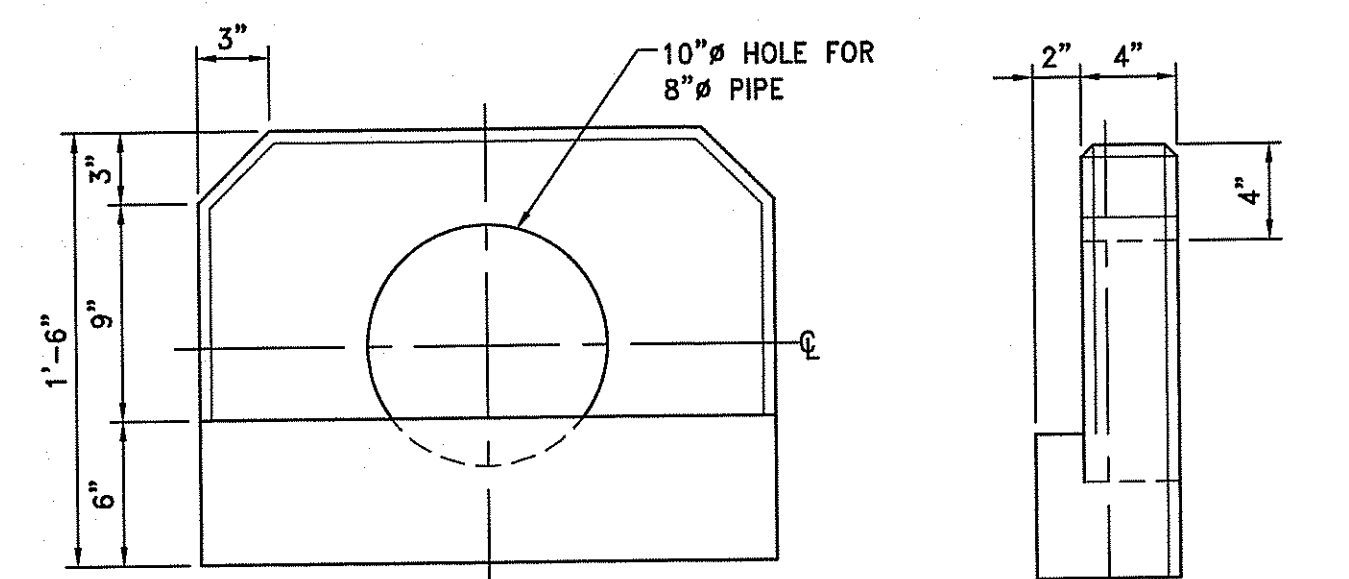
SHEET : 13 OF 13

WEIGHTS

SECTION	WEIGHT
TOTAL	200 LBS



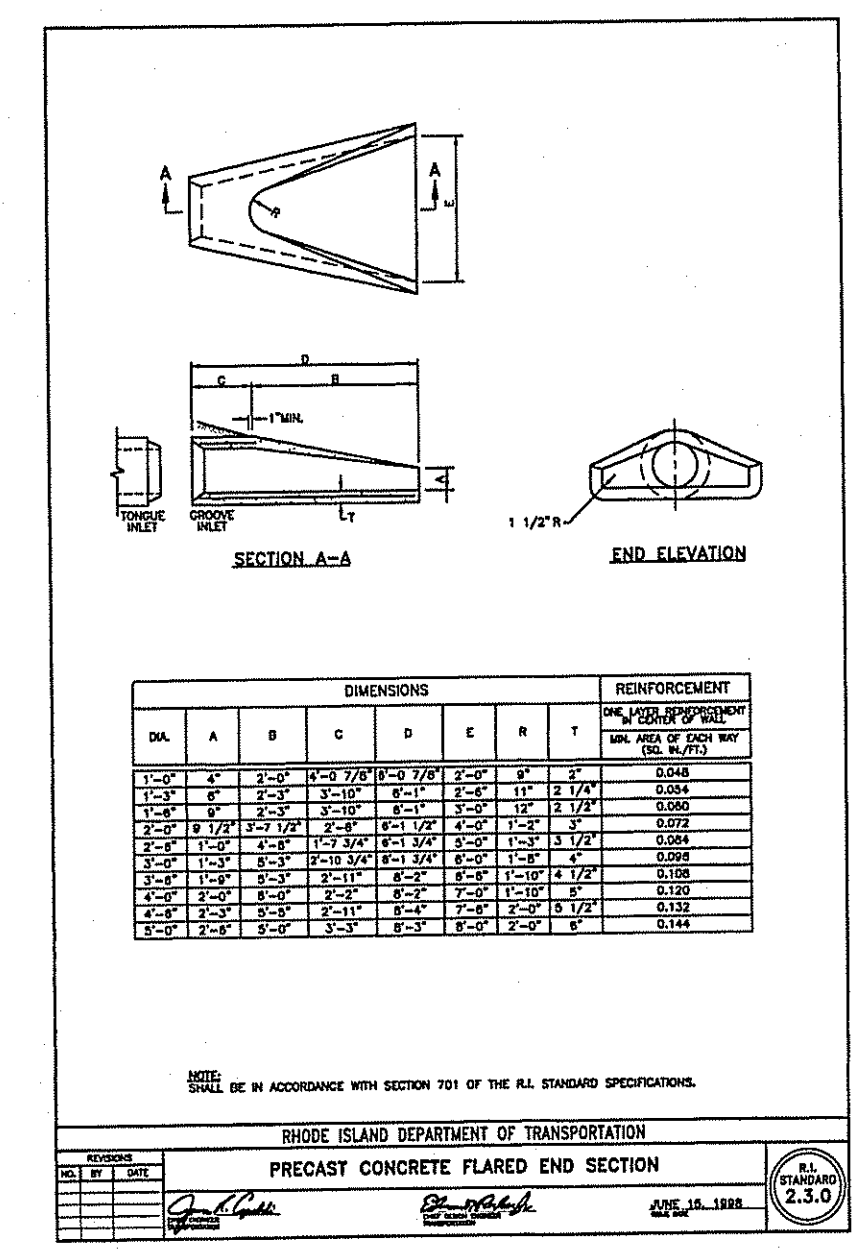
PLAN VIEW NOT TO SCALE
ISO VIEW NOT TO SCALE



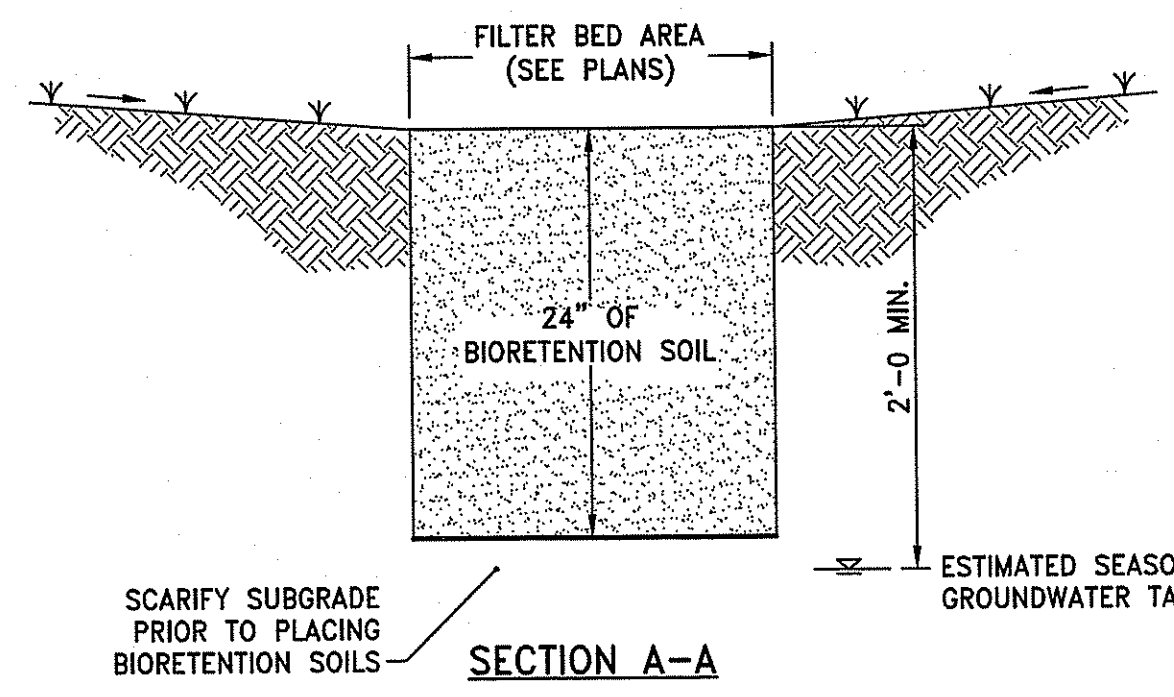
SIDE VIEW NOT TO SCALE
END VIEW NOT TO SCALE

- NOTES:
- Concrete minimum compression strength: $F'c=5,000$ PSI @ 28 days.
 - Reinforcing steel: ASTM A615, $Fy=60,000$ PSI

PCHW PRECAST CONCRETE HEADWALL
NOT TO SCALE



PRECAST CONCRETE FLARED END SECTION



SECTION A-A

BIORETENTION SOIL: 85-88% SAND, 8-12% SILT, 3-5% COMPOST ORGANIC CONTENT SHALL BE 1.5%-3%

BIORETENTION VEGETATION: BIORETENTION AREA TO BE SEEDED WITH NEW ENGLAND WETLAND SEED MIX (WETLAND SEED MIX PER NEW ENGLAND WETLAND PLANTS, INC. OR APPROVED EQUIVALENT) - APPLICATION RATE: 1 LB / 2500 SQUARE FEET

BIO	1	2	3	4	5
(A)	29.60	29.60	29.70	29.80	29.70
(B)	30.60	30.50	30.50	30.33	30.00*
(C)	31.60	31.50	31.20	30.85	30.50
(D)	30.21	30.24	29.81	30.18	29.76
(E)	27.50	27.50	27.70	27.80	27.70

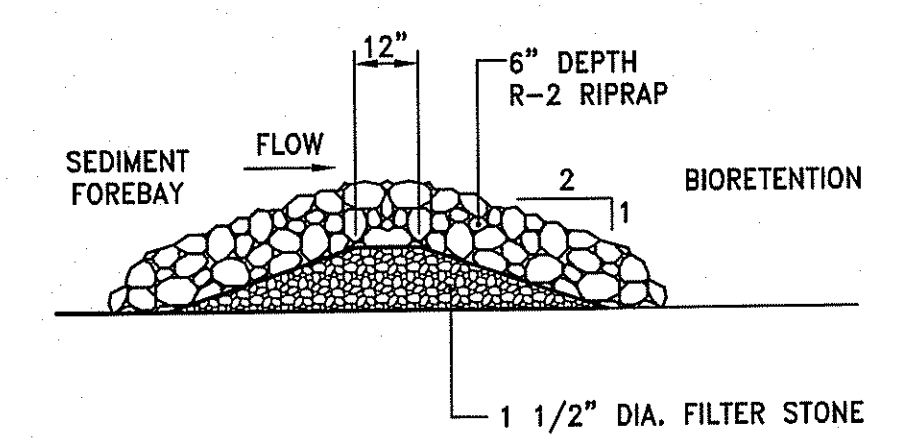
*SPILLWAY CREST OVERFLOW ELEVATION

BIORETENTION DETAIL
NOT TO SCALE

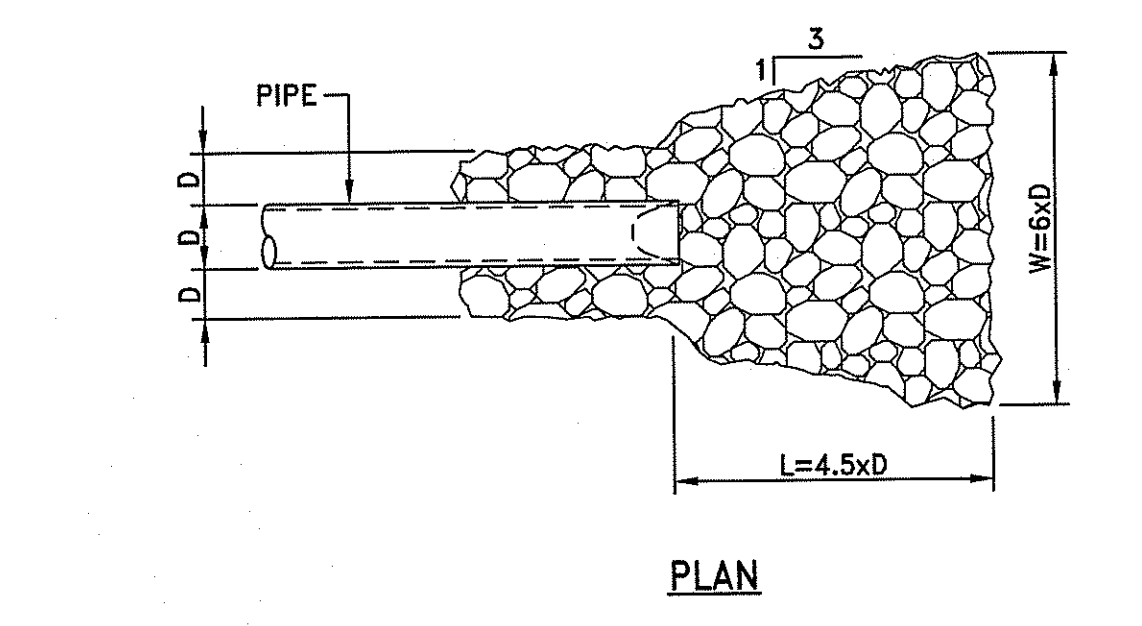
- NOTES:
- DRAIN BASINS SHALL BE CUSTOM MANUFACTURED FOR THE PROJECT WITH THE INLETS & OUTLETS REQUIRED.
 - DRAIN BASINS SHALL BE CONSTRUCTED OF HIGH DENSITY POLYETHYLENE.
 - REDUCED SEPARATION DISTANCE FOR GROUNDWATER REQUESTED BASED ON GB GROUNDWATER CLASSIFICATION.
 - ESHGT WAS DETERMINED BY OBSERVED REDOX IN SOIL FROM TEST PIT DATA PERFORMED ON MARCH 31, 2017.
 - HARDWOOD MULCH LAYER OMITTED TO ACCOMMODATE VEGETATIVE SEED APPLICATION.

New England Wetmix (Wetland Seed Mix)

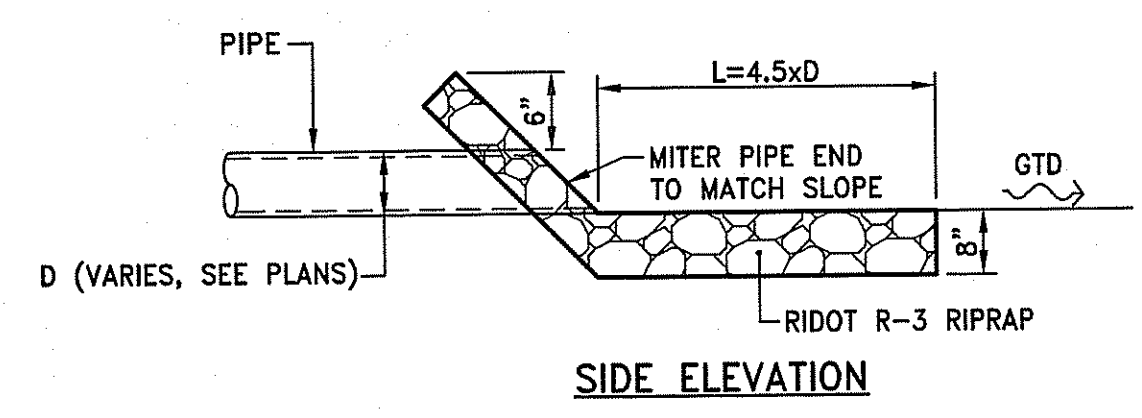
Botanical Name	Common Name	Indicator
<i>Carex vulpinoidea</i>	Fox Sedge	OBL
<i>Carex scoparia</i>	Blunt Broom Sedge	FACW
<i>Verbena hastata</i>	Blue Vervain	FACW
<i>Carex lurida</i>	Lurid Sedge	OBL
<i>Poa palustris</i>	Fowl Bluegrass	FACW
<i>Bidens aristosa</i>	Tickseed Sunflower/Bur Marigold	FACW
<i>Carex lupulina</i>	Hop Sedge	OBL
<i>Scirpus atrovirens</i>	Green Bulrush	OBL
<i>Eleocharis palustris</i>	Creeping Spike Rush	OBL
<i>Juncus effusus</i>	Soft Rush	FACW+
<i>Carex crinita</i>	Fringed Sedge	OBL
<i>Asclepias incarnata</i>	Swamp Milkweed	OBL
<i>Aster puniceus (Symphyotrichum puniceum)</i>	Swamp Aster	OBL
<i>Glyceria canadensis</i>	Rattlesnake Grass	OBL
<i>Mimulus ringens</i>	Square Stemmed Monkey Flower	OBL
<i>Eupatorium maculatum (Eutrochium maculatum)</i>	Spotted Joe Pye Weed	OBL
<i>Iris versicolor</i>	Blue Flag	OBL



SFCDC SEDIMENT FOREBAY CHECK DAM
NOT TO SCALE

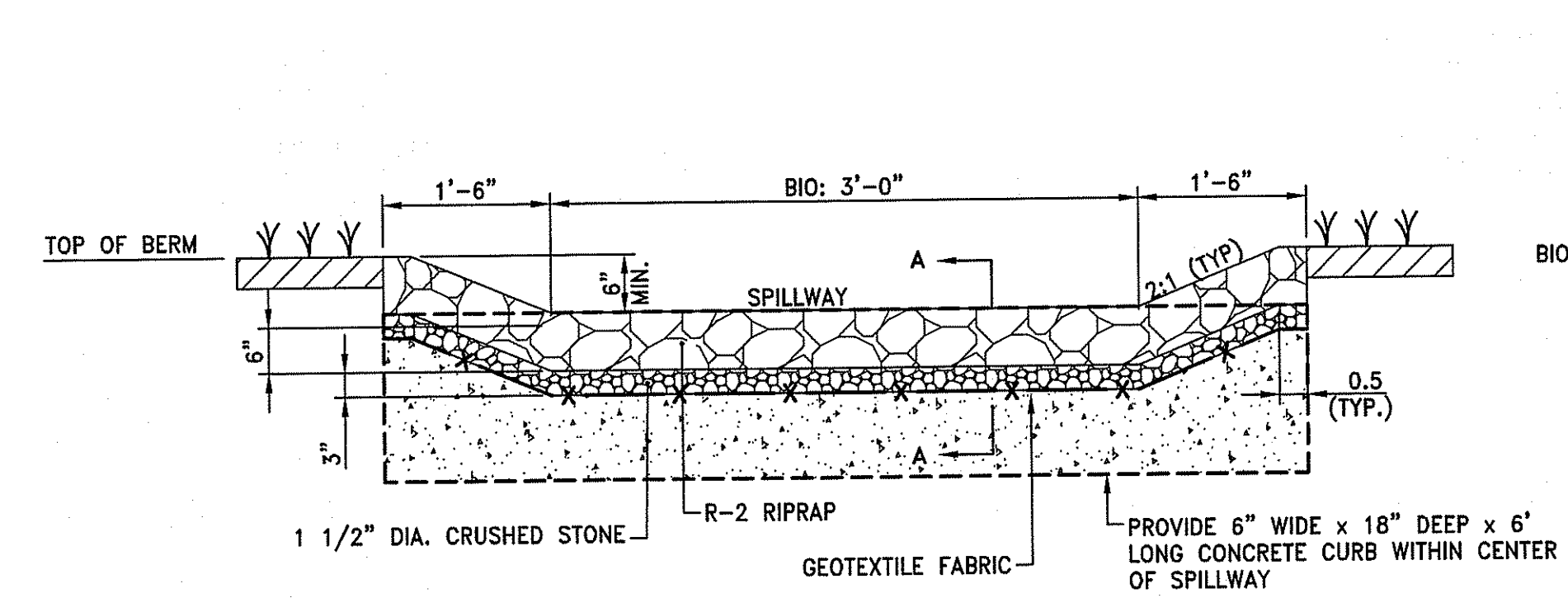


PLAN

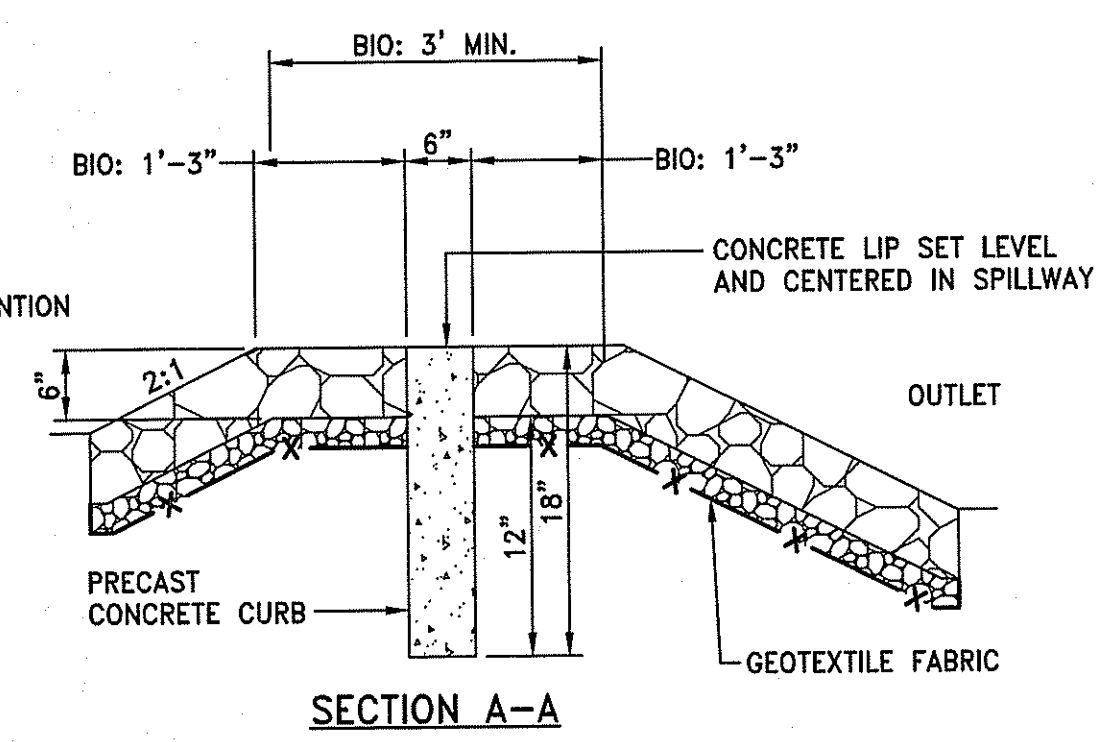


SIDE ELEVATION

RRR RIPRAP APRON
NOT TO SCALE



RIPRAP SPILLWAY DETAIL
NOT TO SCALE



SECTION A-A

NOTE:
CONTRACTOR SHALL FILL VOIDS BETWEEN CURB SECTIONS WITH MORTAR

BIO = BIORETENTION AREA

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUL 18 2017 FILE # 17-0/08
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Martin D. Wemsek

SAVE DATE: 09-Jun-17 10:37:02 AM PLOT DATE: 09-Jun-17 12:56:51 PM
Z:\JOB\B17\JOB\B17017\00\RMFZ\ZIP LINE - RIDMGSC6.1.6.4\DETAILS.DWG