PROJECT TEAM

AMEC FOSTER WHEELER
PROJECT MANAGEMENT & CIVIL ENGINEERING
275 PROMENADE STREET, SUITE 100
PROVIDENCE, RI 02908
401.648.9420

BRYANT ASSOCIATES, INC
TRAFFIC ENGINEERING
640 GEORGE WASHINGTON HIGHWAY
BUILDING C, SUITE 100
LINCOLN, RI 02865
401.722.7660

CHERENZIA & ASSOCIATES, LTD
SITE SURVEY & CIVIL ENGINEERING
99 MECHANIC STREET
STONINGTON, CT 06379
860.629.6500

HALI BECKMAN, LTD
23 BROWN STREET, SUITE 206
WICKFORD, RI 02852
401.294.1684

JCJ ARCHITECTURE
ARCHITECTS
120 HUYSHOPE AVENUE
SUITE 400
HARTFORD, CT 06106
860.240.9339

NATURAL RESOURCE SERVICES, INC.
WETLAND DELINEATION
160 TINKHAM LANE
HARRISVILLE, RI 02830
401.568.7390

DND CONSTRUCTION SERVICES
OWNERS REPRESENTATION
P.O. BOX 119
HARTFORD, CT 06141
860.558.0532

TWIN RIVER - TIVERTON
PROPOSED CASINO & HOTEL

WILLIAM S. CANNING BOULEVARD AND STAFFORD ROAD
PLAT 203 LOT 111 & 107
TIVERTON, RHODE ISLAND

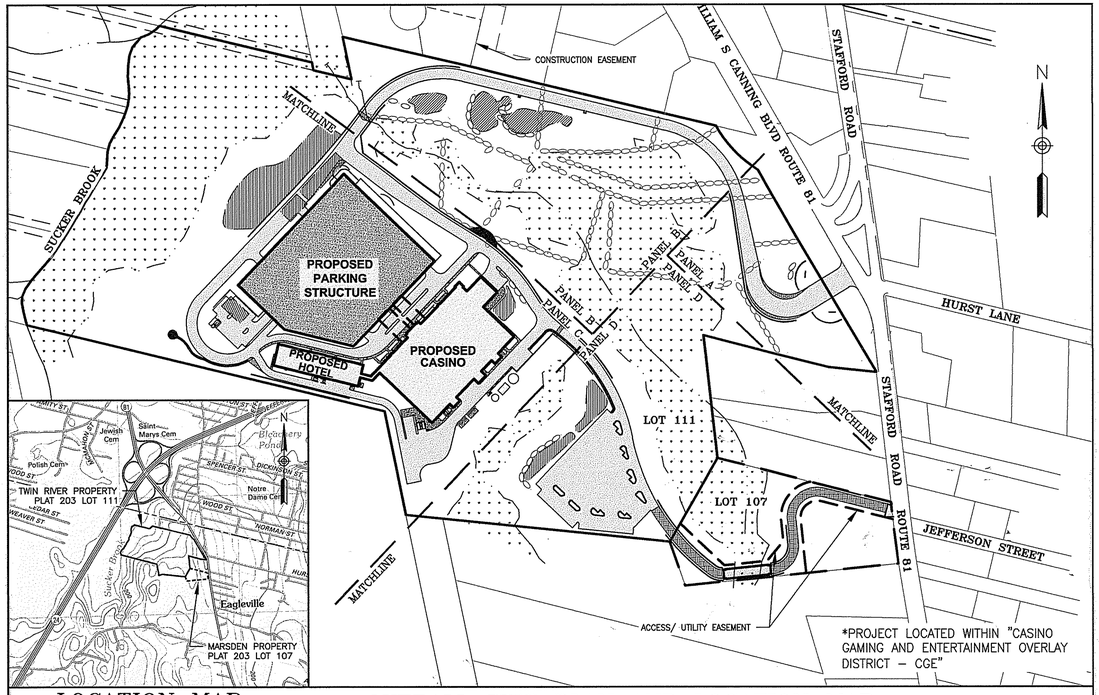
ISSUED FOR PRELIMINARY PLAN

APPLICANT:

TWIN RIVER - TIVERTON, LLC

C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

LATEST ISSUED: JUNE 28, 2017



LOCATION MAP
SCALE: 1"=2,000'

OVERALL SITE PLAN AND LOCATION MAP
SCALE: 1"=200'

PROPERTY OWNERS

PLAT - LOT	PROPERTY ADDRESS	PROPERTY OWNER NAME	MAILING ADDRESS
203-111	0 W.S. CANNING BLVD	TWIN RIVER - TIVERTON, LLC	C/O MARK RUSSO, ESQ 55 PINE STREET, 4TH FLOOR PROVIDENCE, RI 02903
203-107	103 STAFFORD ROAD	BETTY J. MARSDEN	3377 RIVERSIDE AVENUE, SOMERSET, MA 02726

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 2 8 2017 FILE # 17-0086
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Emmartin D. Wenech

amec foster wheeler
AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 100
PROVIDENCE RHODE ISLAND, 02908
PHONE: (401) 648-9420
WEB: WWW.AMECFW.COM

Environmental Management
JUN 2 8 2017
Office of Water Resources

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU-SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
6/28/17

REVISION	DATE	DESCRIPTION
4	6/28/17	RIDEM COMMENT
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
COVER

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	NA
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-0

LEGEND

EXIST	PROP		EXIST	PROP	
27.65 TC 27.15 BC×	27.65 TC 27.15 BC×	TOP/BOTTOM CURB ELEVATION			SUBJECT PROPERTY LINE
21.25×	21.25×	SPOT GRADE			ABUTTERS PROPERTY LINE
SB-1	SB-1	SOIL BORING LOCATION			EASEMENT
TP-1	TP-1	TEST PIT LOCATION	BUILDING SETBACK	BUILDING SETBACK	BUILDING SETBACK
MW-1	MW-1	MONITORING WELL			CURB
BM #1	BM #1	BENCH MARK			LIMIT OF CURB TYPE
	DMH	DRAIN MANHOLE			SAWCUT
CB	CB	CATCH BASIN			MATCHLINE
DCB	DCB	DOUBLE CATCH BASIN			STOP BAR
FES	FES	FLARED END SECTION			GUARD RAIL
		DRAINAGE LINE			STONE DUST PATH
		UNDERDRAIN PIPE			TREE LINE
		STONE TRENCH			CHAIN LINK FENCE
O/H	O/H	OVERHEAD WIRE			STONE WALL
W	W	WATER LINE			RETAINING WALL
W	W	FIRE PROTECTION LINE	sf	SF	SILT FENCE
G	G	GAS LINE	sw	SW	STRAW WATTLE
E	E	UNDERGROUND ELECTRIC		LOD	LIMIT OF DISTURBANCE
T	T	UNDERGROUND TELEPHONE			LOD STAKE
FA	FA	FIRE ALARM	2	4	MINOR CONTOUR
CATV	CATV	CABLE TV	10	10	MAJOR CONTOUR
		PLUG/STUB			BUILDING
S	SMH	SEWER MANHOLE			BUILDING DOOR
S	S	GRAVITY SEWER LINE			BOLLARD
FM	FM	FORCE MAIN SEWER LINE	D	DS	DUMPSTER PAD
		WATER GATE			SIGN
TSV	TSV	TAPPING SLEEVE, VALVE, & BOX			DOUBLE SIGN
		FIRE HYDRANT		10	PARKING COUNT
		WELL			CONC. PAVEMENT
		GAS GATE			PAVEMENT
		ELECTRIC MANHOLE			PERMEABLE PAVERS
		SINGLE LIGHT POLE			GRAVELPAVE/GRASSPAVE
		DOUBLE LIGHT POLE			ADA PARKING
		TRIPLE LIGHT POLE	50' PW		50 FT PERIMETER WETLAND
		QUAD LIGHT POLE	100' RB		100 FT RIVERBANK WETLAND
		BUILDING MOUNTED LIGHT	200' RB		200 FT RIVERBANK WETLAND
		TELEPHONE MANHOLE	A107		WETLAND FLAG
T	DS	TRANSFORMER PAD			WETLAND EDGE
		UTILITY POLE			WETLAND SYMBOL
		GUY POLE			

ABBREVIATIONS

REGEN	ABANDON	MAX	MAXIMUM
ADJ	ADJUST	MIN	MINIMUM
ASSF	AREA SUBJECT TO STORM FLOWAGE	MCC	MONOLITHIC CONCRETE CURB
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS	NTS	NOT TO SCALE
ADA	AMERICANS WITH DISABILITIES ACT	OC	ON CENTER
APPROX	APPROXIMATE	PVC	POLYVINYLCHLORIDE PIPE
BIT	BITUMINOUS	PCC	PRECAST CONCRETE CURB
BCC	BITUMINOUS CURB	PL	PROPERTY LINE
BW	GRADE AT THE BOTTOM OF THE WALL	PROP	PROPOSED
BWL	BROKEN WHITE LINE	R	RADIUS
BYL	BROKEN YELLOW LINE	RCP	REINFORCED CONCRETE PIPE
CCB	CAPE COD BERM	R&D	REMOVE AND DISPOSE
CB	CATCH BASIN	R&R	REMOVE AND RESET
COL	COLUMN	R&S	REMOVE AND STORE
CONC	CONCRETE	SMH	SEWER MANHOLE
CONST	CONSTRUCTION	SESC	SOIL EROSION SEDIMENT CONTROL
CY	CUBIC YARD	SWL	SINGLE WHITE LINE
DBL	DOUBLE	SWCL	SINGLE WHITE CHANNELIZING LINE
DCB	DOUBLE CATCH BASIN	SYL	SINGLE YELLOW LINE
DYL	DOUBLE YELLOW LINE	SYCL	SINGLE YELLOW CHANNELIZING LINE
DMH	DRAIN MANHOLE	SQ FT	SQUARE FEET
DI	DUCTILE IRON	STD	STANDARD
ELEV	ELEVATION	STA	STATION
EOP	EDGE OF PAVEMENT	TSV	TAPPING SLEEVE, VALVE AND BOX
EXIST	EXISTING	TF	TOP OF FRAME
FT	FEET	TRANS	TRANSITION
FES	FLARED END SECTION	TW	ELEVATION OF TOP OF THE WALL
HDPE	HIGH DENSITY POLYETHYLENE	TYP	TYPICAL
HYD	HYDRANT	UP	UTILITY POLE
INV	INVERT ELEVATION	VGC	VERTICAL GRANITE CURB
LA	LANDSCAPE AREA	WG	WATER GATE
LOD	LIMIT OF DISTURBANCE		

GENERAL NOTES

1. 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.
2. 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.
3. THE CONTRACTOR SHALL NOTIFY DIG-SAFE AT LEAST 72 BUSINESS HOURS PRIOR TO INITIATING ANY EXCAVATION WORK.
4. 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.
5. 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."
6. ANY WORK NOT MEETING THE APPROVED STANDARDS SHALL BE REMOVED IMMEDIATELY AND REPLACED BY THE CONTRACTOR AT NO COST TO THE OWNER.
7. 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).
8. 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).
9. THE CONTRACTOR SHALL NOT OBSTRUCT PUBLIC ROADWAYS, SIDEWALKS, OR FIRE HYDRANTS WITHOUT FIRST OBTAINING THE NECESSARY PERMITS TO DO SO.
10. 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.
11. 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.
12. SHOULD THE CONTRACTOR ENCOUNTER SUSPECTED CONTAMINATED SOIL, GROUNDWATER, OR OTHER MATERIAL DURING EXCAVATION, THE CONTRACTOR SHALL IMMEDIATELY STOP WORK IN THAT AREA AND NOTIFY THE OWNER SO THAT APPROPRIATE ACTIONS AND TESTING CAN TAKE PLACE.
13. UNLESS OTHERWISE NOTED ON THE PLANS, ALL UNPAVED/ LANDSCAPE AREAS SHALL RECEIVE SIX (6) 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.
14. 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.
15. HORIZONTAL AND VERTICAL DATUMS ARE PROVIDED ON THE EXISTING CONDITIONS PLANS.

UTILITIES:

1. UTILITY CONTACTS
   a. NORTH TIVERTON WATER DISTRICT (NTWD) (WATER)
      PAUL L'HEUREUX
      241 HILTON STREET
      TIVERTON, RI 02878
      401.624.8432
   b. TOWN OF TIVERTON WASTEWATER DISTRICT (WASTEWATER)
      SARAH STEARNS
      86 MAIN ROAD
      TIVERTON, RI 02878
      401.625.6701
      SARAH@TWWD.ORG
   c. COX COMMUNICATIONS (CATV)
      JAMES DUNSE
      401.639.0411
      JAMES.DUNSE@COX.COM
   d. NATIONAL GRID (ELECTRIC)
      JOHN CAREY
      401.255.8417
      JOHN.CAREY@NATIONALGRID.COM
   e. VERIZON NEW ENGLAND (TEL, FIOS)
      BRIAN DOYLE
      401.727.9511
      BRIAN.J.DOYLE@VERIZON.COM
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES AND WORK TRADES ASSOCIATED WITH THE WORK SHOWN ON THESE PLANS.
3. PRIVATE UTILITIES
   a. SERVICES SHALL BE APPROVED BY AND CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS AND REQUIREMENTS OF PRIVATE UTILITY SERVICE PROVIDERS (GAS, TELEPHONE, ELECTRIC, FIRE ALARM, CABLE, FIOS, ETC.)
   b. THE GAS COMPANY SHALL INSTALL ALL GAS LINES AND APPURTENANCES; THE CONTRACTOR SHALL ONLY BE RESPONSIBLE FOR EXCAVATION AND BACKFILL OF GAS TRENCHES IN ACCORDANCE WITH GAS COMPANY REQUIREMENTS.
   c. CONTRACTOR SHALL FURNISH EXCAVATION, INSTALLATION, AND BACKFILL OF ALL ELECTRIC WORK. THE CONTRACTOR SHALL ALSO FURNISH AND INSTALL CONCRETE ENCASEMENT FOR DUCT BANKS, IF REQUIRED BY THE ELECTRIC COMPANY. PULLING OF ELECTRICAL CONDUIT SHALL BE BY THE ELECTRIC COMPANY.
4. 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.
5. 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.
6. 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.
7. STORM DRAIN PIPING SHALL BE CONSTRUCTED OF HIGH-DENSITY POLYETHYLENE (HDPE) UNLESS OTHERWISE NOTED ON THE PLANS:
8. 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.
9. ALL STRUCTURES UNDER PAVED AREAS SHALL BE DESIGNED TO MEET HS-20 TRUCK LOAD.
10. REFER TO 200, 300, AND 400 SERIES PLANS WITHIN THIS PLAN SET FOR ALL WORK RELATING TO WATER AND SEWER UTILITIES.

LAYOUT AND MATERIALS NOTES

1. 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.
2. 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.
3. 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.
4. PROPOSED BOUNDS AND ANY OTHER EXISTING PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.
5. 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.
6. CURBING SHALL BE PRECAST CONCRETE CURB (PCC) WITH A 3-FOOT RADIUS (3'R), UNLESS OTHERWISE NOTED ON THE PLANS.

DEMOLITION

1. 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.
2. ALL WETLAND DISTURBANCES ASSOCIATED WITH CONSTRUCTION ACTIVITIES SHALL BE RESTORED.
3. WITHIN THE PROPOSED BUILDING ENVELOPE AND TO A DISTANCE OF 10 FEET AROUND THE BUILDING PERIMETER, THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL UNSUITABLE MATERIALS AND SHALL FURNISH AND INSTALL GRAVEL FILL (SEE SPECIFICATION) TO THE PROPOSED BUILDING SUBGRADE.
4. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.
5. 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 DEMOLITION WORK PRIOR TO CONTRACT AWARD AND SHALL NOT BE COMPENSATED FOR UNFORESEEN CONDITIONS ONCE THE WORK HAS COMMENCED.
6. EXISTING UTILITIES SHALL BE TERMINATED IN CONFORMANCE WITH APPLICABLE FEDERAL, STATE, LOCAL, AND SERVICE PROVIDER REQUIREMENTS.
7. 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.
8. CONTRACTOR SHALL REMOVE AND STOCKPILE ALL EXISTING STONE WALLS WITHIN THE LIMIT OF DISTURBANCE FOR FUTURE USE.

100-YEAR FLOOD PLAIN IMPACT AVOIDANCE

1. FOR 100-YEAR FLOOD PLAIN ANALYSES, REFER TO THE REPORT TITLED "FLOOD STUDY" PREPARED FOR TWIN RIVER – TIVERTON, LLC, PREPARED BY AMEC FOSTER WHEELER AND CHERENZIA & ASSOCIATES, LTD, REVISED JUNE 2017 SUBMITTED TO RIDEM.
2. AS INDICATED IN THE ABOVE-REFERENCED FLOOD STUDY, THERE IS NO ANTICIPATED INCREASE IN THE 100-YEAR FLOOD ELEVATIONS RESULTANT FROM THE PROPOSED PROJECT, AS DESIGNED.

ROOF DRAIN CONNECTIONS TO PROPOSED DRAINAGE

1. ROOF RUNOFF FROM ALL BUILDINGS ON-SITE HAVE BEEN INCLUDED IN THE DRAINAGE DESIGN; HOWEVER, DOWNSPOUT LOCATIONS AND CONNECTIONS HAVE NOT YET BEEN DETERMINED FOR ALL LOCATIONS ON THESE PLANS. ROOF DRAIN CONNECTIONS SHALL BE INCLUDED TO PROPOSED DRAINAGE IN THE FINAL SITE DESIGN.

SITE SPECIFIC DATA

1. TOTAL SITE AREA = 47.7± ACRES
2. TOTAL AREA OF DISTURBANCE = 20.5± ACRES
3. LOT 111 AREA = 46.6± ACRES
4. LOT 111 AREA OF DISTURBANCE = 19.7± ACRES
5. LOT 107 (EASEMENT) AREA = 1.1± ACRES
6. LOT 107 (EASEMENT) AREA OF DISTURBANCE = 0.8± ACRES
7. NATURAL HERITAGE AREA (NHA) IMPACT – N/A
8. THREATENED SPECIES OR HABITAT IMPACT – N/A
9. WATERSHED = TRIBUTARY TO SUCKER BROOK: I.D. RI0007037R-01 (NO IMPAIRMENTS/TMDL)

EROSION CONTROLS/CONSTRUCTION SEQUENCING

1. 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.
2. 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.
3. 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."
4. 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.
5. 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.
6. EROSION CONTROL DEVICES
   a. AT LEAST ONE STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED FOR ACCESS TO THE PROJECT BY 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.
   b. ROADS ADJACENT TO THE CONSTRUCTION SITE SHALL BE CLEAN AT THE END OF EACH WORK DAY.
   c. 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.
   d. 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.
   e. 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 A POLYETHYLENE SHEETING OR SIMILAR PRODUCT AT THE END OF EACH DAY TO MINIMIZE DUST
   f. 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."
7. 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.
8. 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.
9. 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.
10. 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.
11. 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.
12. THE CONTRACTOR SHALL INSTALL PERMANENT SEEDING BETWEEN APRIL 15TH AND JUNE 15TH AND/OR AUGUST 15TH TO OCTOBER 15TH.
13. THE CONTRACTOR SHALL APPLY PERMANENT SOIL STABILIZATION MEASURES TO ALL GRADED AREAS WITHIN SEVEN (7) DAYS OF ESTABLISHING FINAL GRADE.
14. 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.
15. 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.
16. NO SNOW SHALL BE PLOWED INTO WETLAND FEATURES OR STORMWATER MANAGEMENT AREAS. ALL EXCESS SNOW MUST BE STOCKPILED IN THE EMPLOYEE PARKING LOT OR REMOVED FROM THE SITE AS NECESSARY.

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:

1. THESE AREAS SHALL NOT BE USED FOR TEMPORARY CONSTRUCTION SEDIMENTATION CONTROL, SEDIMENTATION BASINS, OR DEWATERING AREAS.
2. 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.
3. STORMWATER RUNOFF DURING CONSTRUCTION SHALL BE DIRECTED AWAY FROM THESE AREAS TO THE GREATEST EXTENT PRATICABLE. WHERE NOT FEASIBLE, THE CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROLS UP-GRADIENT OF THESE AREAS TO PREVENT SEDIMENTATION OF THESE AREAS DURING CONSTRUCTION.
4. 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.
5. 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.
6. UPON COMPLETION OF CONSTRUCTION OF ANY OF THESE AREAS, THE CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES TO PREVENT SILTATION OF THE FILTER MATERIALS.
7. DETERMINATION OF COMPACTED SOILS WITHIN INFILTRATION AREAS SHALL BE AT THE DISCRETION OF THE ENGINEER AND REMEDIED BY THE CONTRACTOR PRIOR TO COMPLETION OF CONSTRUCTION. REMEDIAL ACTION TO REPAIR COMPACTED SOILS SHALL INCLUDE, BUT ARE NOT LIMITED TO TILLING, SCARIFYING, AND/OR REPLACEMENT OF COMPACTED SOILS.

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JUN 28 2017
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Martin D. Wenck

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU-SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
6/28/17

REVISION	DATE	DESCRIPTION
4	6/28/17	RIDEM COMMENT
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

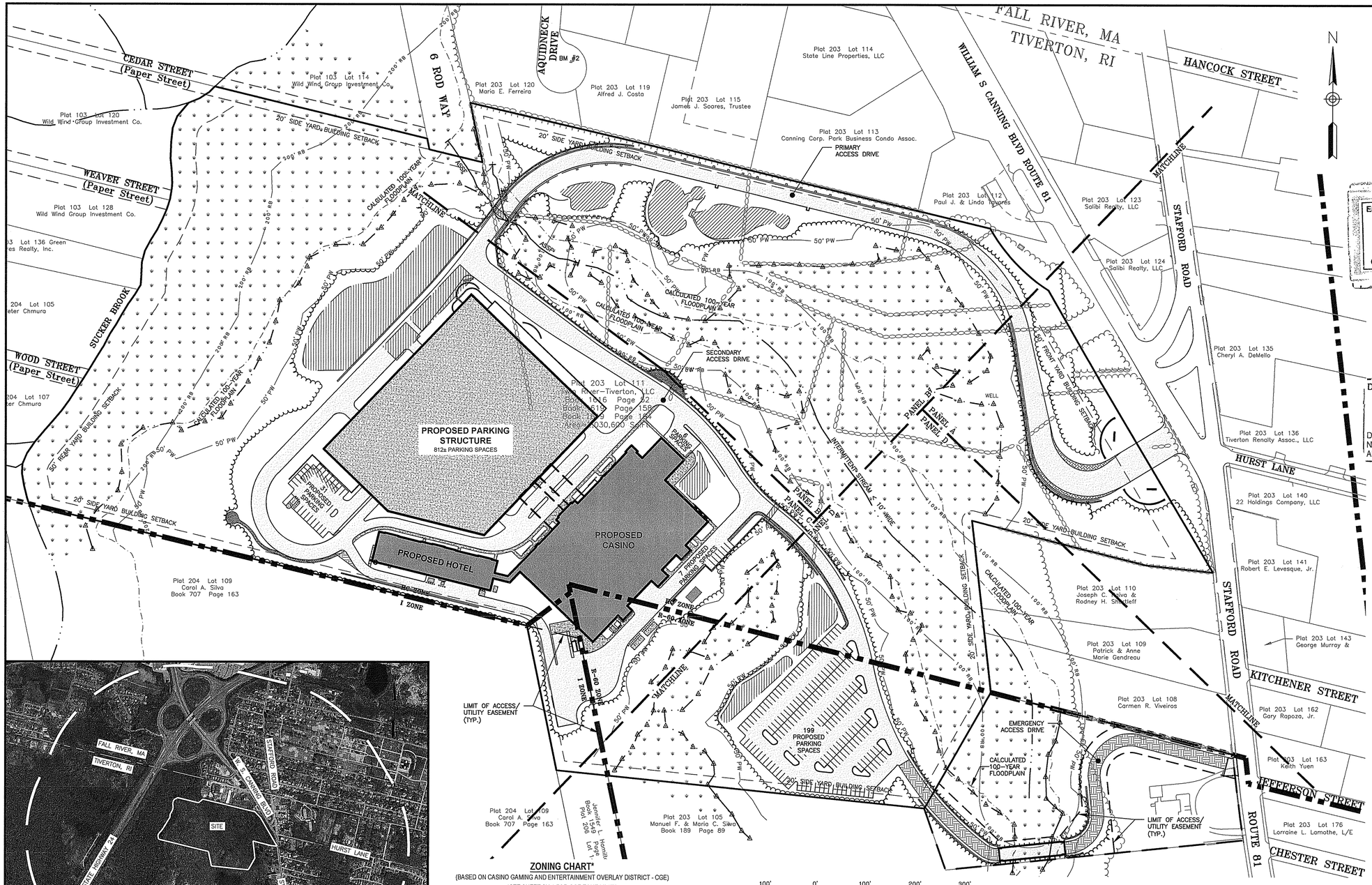
TITLE:
LEGEND & GENERAL NOTES

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	NA
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-1

SHEET 1 OF 46

AMEC FOSTER WHEELER





HALF MILE RADIUS MAP

1,000' 0' 1,000' 2,000' 3,000'

SCALE: 1"=1,000'

ZONING CHART*

(BASED ON CASINO GAMING AND ENTERTAINMENT OVERLAY DISTRICT - CGE)

*SEE SHEET SV-1 FOR CGE ZONE LIMITS

	REQUIRED	PROVIDED**
LOT AREA (ACRE)	40 ACRES	46.6 ACRES
FRONTAGE (FT)	120 FT	824 FT
MAXIMUM DEVELOPABLE AREA	60%	47%
PRINCIPAL BUILDING HEIGHT (FT)	35 FT	TBD
BLDG SETBACK		
- FRONT SETBACK (FT)	50 FT	765 FT
- SIDE SETBACK (FT)	20 FT	50 FT
- REAR SETBACK (FT)	50 FT	657 FT

PARKING CHART

	REQUIRED	PROVIDED**
STD SPACES	1,000-1,200	1,020
ADA SPACES	23	35
TOTAL SPACES	1,000-1,200	1,055

** PROPOSED PERVIOUS SURFACES AND BRIDGE SPAN ON PLAT 203 LOT 107 IS NOT INCLUDED IN BULK TABLE.

NOTES:

1. A "REQUEST TO VERIFY WETLAND EDGES" WAS FILED AND VERIFIED BY RIDEM ON MARCH 17, 2016 BY CHERENZIA & ASSOCIATES (FILE NO. 15-0174). STATE REGULATED WETLANDS INCLUDE SWAMP WETLANDS (FLAGS A-1 TO A-11, A-100 TO A-184, B-1 TO B-20, B-100 TO B-146, AND C-100 TO C-134) WITH AN ASSOCIATED 50-FOOT PERIMETER WETLAND, AND A FORESTED WETLAND (FLAGS E-1 TO E-15) WHICH HAS NO ASSOCIATED PERIMETER WETLAND. STATE REGULATED RIVER AND STREAM CORRIDORS INCLUDE AN INTERMITTENT STREAM WITH AN ASSOCIATED 100-FOOT RIVERBANK WETLAND, SEVERAL AREAS SUBJECT TO STORM FLOWAGE (ASSF), AND A RIVER GREATER THAN 10 FEET WIDE (SUCKER BROOK) WITH AN ASSOCIATED 200-FOOT RIVERBANK WETLAND.
2. THERE ARE NO FEMA REGULATED FLOODPLAINS ON THE PROJECT SITE. CALCULATED LIMITS OF THE 100-YEAR FLOODPLAIN FOR SUCKER BROOK AND THE ONSITE INTERMITTENT STREAM ARE DEPICTED ON THIS PLAN.
3. THE EXISTING SITE IS ENTIRELY WOODED.
4. THERE ARE NO AGRICULTURAL USES CURRENTLY LOCATED ON THE EXISTING SITE.
5. THE PROJECT SITE IS NOT LOCATED WITHIN THE TIVERTON WATERSHED PROTECTION OVERLAY DISTRICT (WPOD). THE PROJECT SITE IS NOT LOCATED WITHIN A GROUNDWATER RESOURCE OR GROUNDWATER RECHARGE AREA, AS DENOTED BY THE RIDEM ENVIRONMENTAL RESOURCE MAP.
6. THE PROJECT SITE IS NOT LOCATED WITHIN A NATURAL HERITAGE AREA (RARE, THREATENED, OR ENDANGERED SPECIES HABITAT), AS DENOTED BY THE RIDEM ENVIRONMENTAL RESOURCE MAP.
7. THERE ARE NO KNOWN HISTORIC SITES OR BUILDINGS LOCATED ON THE PROJECT SITE.

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JUN 28 2017
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No. 5701
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6/28/17

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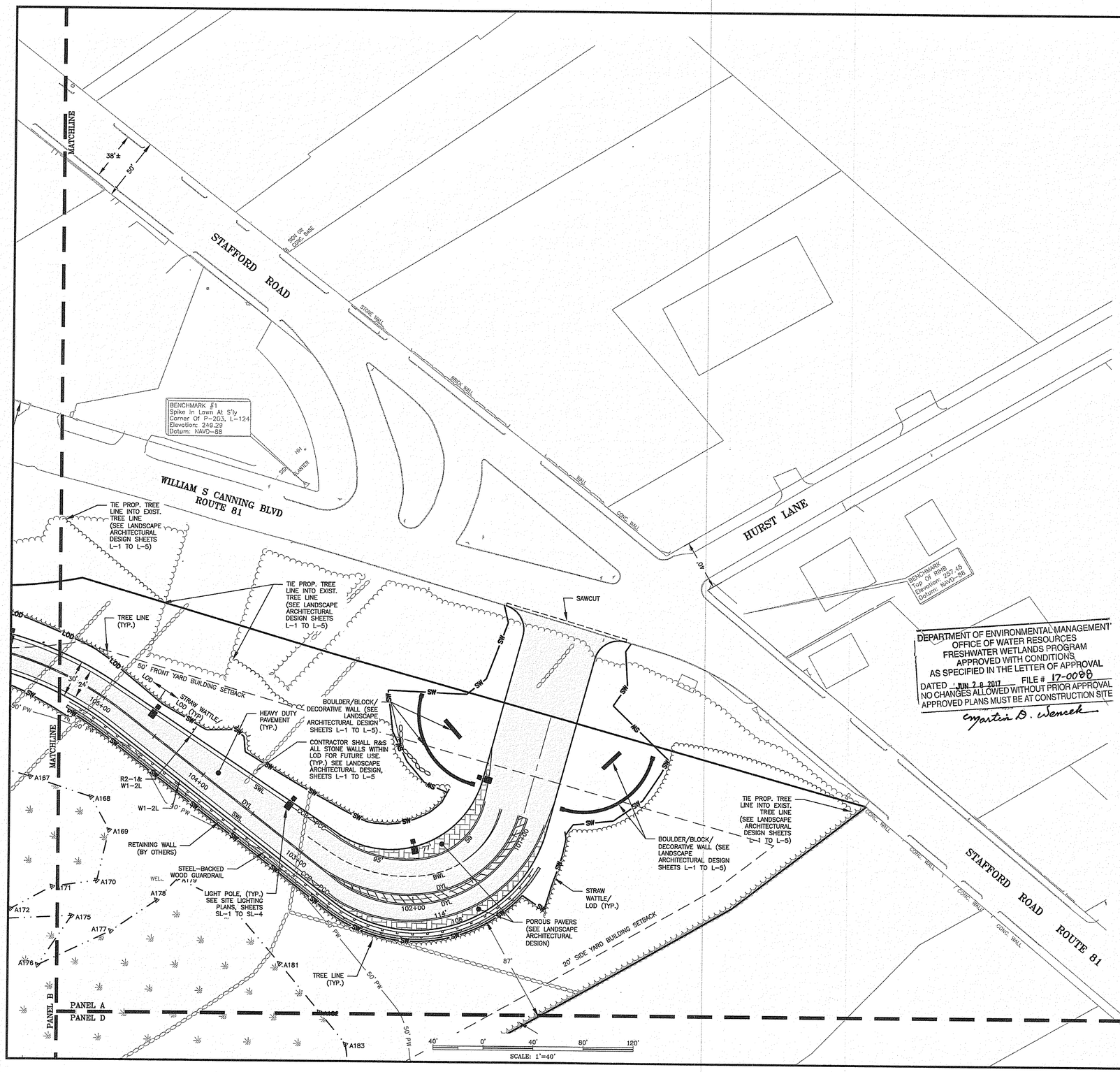
CLIENT:
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C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
OVERALL PLAN

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	1" = 100'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-2



SIGN SUMMARY				
MUTCD SIGN	GRAPHIC	QUANTITY	SIZE	MOUNTING TYPE
M6-1L	ARROW	2	12" X 18"	STD. BREAKAWAY
M6-1R	ARROW	1	12" X 18"	STD. BREAKAWAY
R1-1	STOP	5	30" X 30"	STD. BREAKAWAY
R2-1	SPEED LIMIT 25	2	18" X 24"	STD. BREAKAWAY
R3-1	NO RIGHT TURN	1	24" X 24"	STD. BREAKAWAY
R3-2	NO LEFT TURN	2	24" X 24"	STD. BREAKAWAY
R3-5L	LEFT TURN ONLY	2	24" X 30"	STD. BREAKAWAY
R3-30AA	LEFT AND RIGHT TURN ONLY	1	36" X 30"	STD. BREAKAWAY
R5-1	DO NOT ENTER	10	30" X 30"	STD. BREAKAWAY
R6-1L	ONE WAY	2	12" X 36"	STD. BREAKAWAY
R7-8	RESERVED PARKING	1	12" X 18"	BOLLARD-MOUNTED
R7-8a	RESERVED PARKING - VAN	1	6" X 12"	BOLLARD-MOUNTED
R14-1	TRUCK ROUTE	3	24" X 18"	STD. BREAKAWAY
W1-2L	CURVE LEFT	3	24" X 24"	STD. BREAKAWAY
W1-2R	CURVE RIGHT	2	24" X 24"	STD. BREAKAWAY
W2-2L	SIDE ROAD	1	24" X 24"	STD. BREAKAWAY
W16-9P	AHEAD	1	24" X 12"	STD. BREAKAWAY
NA	ALL TRAFFIC	1	24" X 18"	STD. BREAKAWAY
NA	EMERGENCY VEHICLES ONLY	2	18" X 24"	STD. BREAKAWAY
NA	LEFT TURN TO EXIT	4	24" X 18"	STD. BREAKAWAY
NA	LOWER GARAGE VALET ADDITIONAL PARKING	1	24" X 18"	STD. BREAKAWAY
NA	TRUCK TRAFFIC ONLY	3	12" X 18"	STD. BREAKAWAY
NA	VALET DROP OFF	1	24" X 18"	STD. BREAKAWAY
NA	SELF PARK VALET	4	24" X 18"	STD. BREAKAWAY

NOTE: QUANTITIES SHOWN ABOVE DO NOT INCLUDE ANY SIGNS WITHIN THE PARKING STRUCTURE, SEE NOTE 1.

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NOTES:
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2. ALL PARKING SPACES SHALL BE 9'x18' UNLESS OTHERWISE NOTED.
3. THE MAJORITY OF ADA SPACES SHALL BE LOCATED WITHIN THE PARKING STRUCTURE. SEE NOTE 1.
4. SEE PLAN & PROFILE SHEETS FOR CONSTRUCTION LAYOUT OF PRIMARY, SECONDARY, AND EMERGENCY ACCESS DRIVES.

Environmental Management
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NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU-SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
6/9/17

REVISION	DATE	DESCRIPTION
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1	4/4/17	PRELIM. PLAN

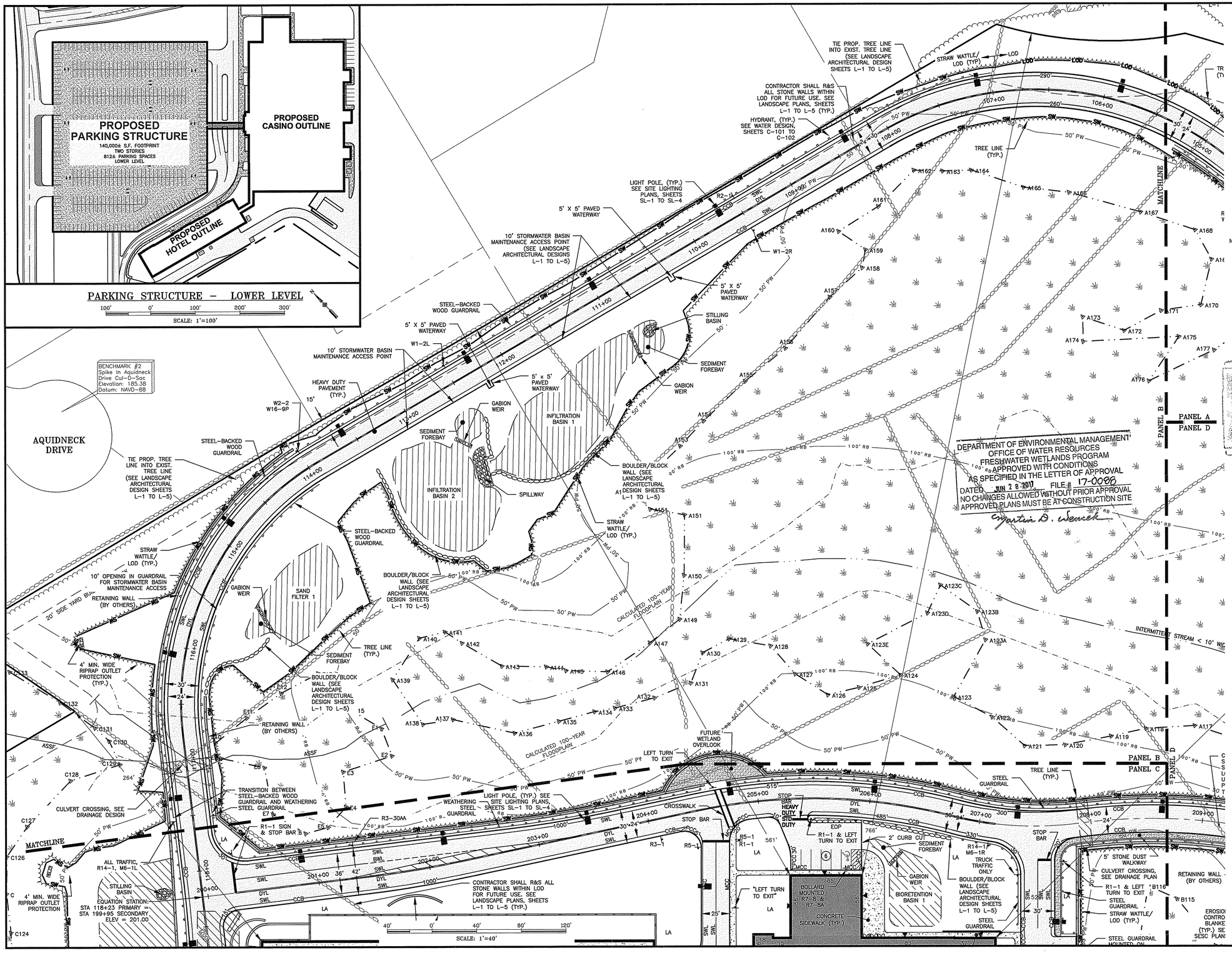
CLIENT:
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C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
LAYOUT & MATERIALS PLAN
PANEL A

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	1" = 40'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

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SHEET 3 OF 46
AMEC FOSTER WHEELER



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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Jonathan D. Wenrick

Environmental Management
JUN 28 2017
Office of Water Resources

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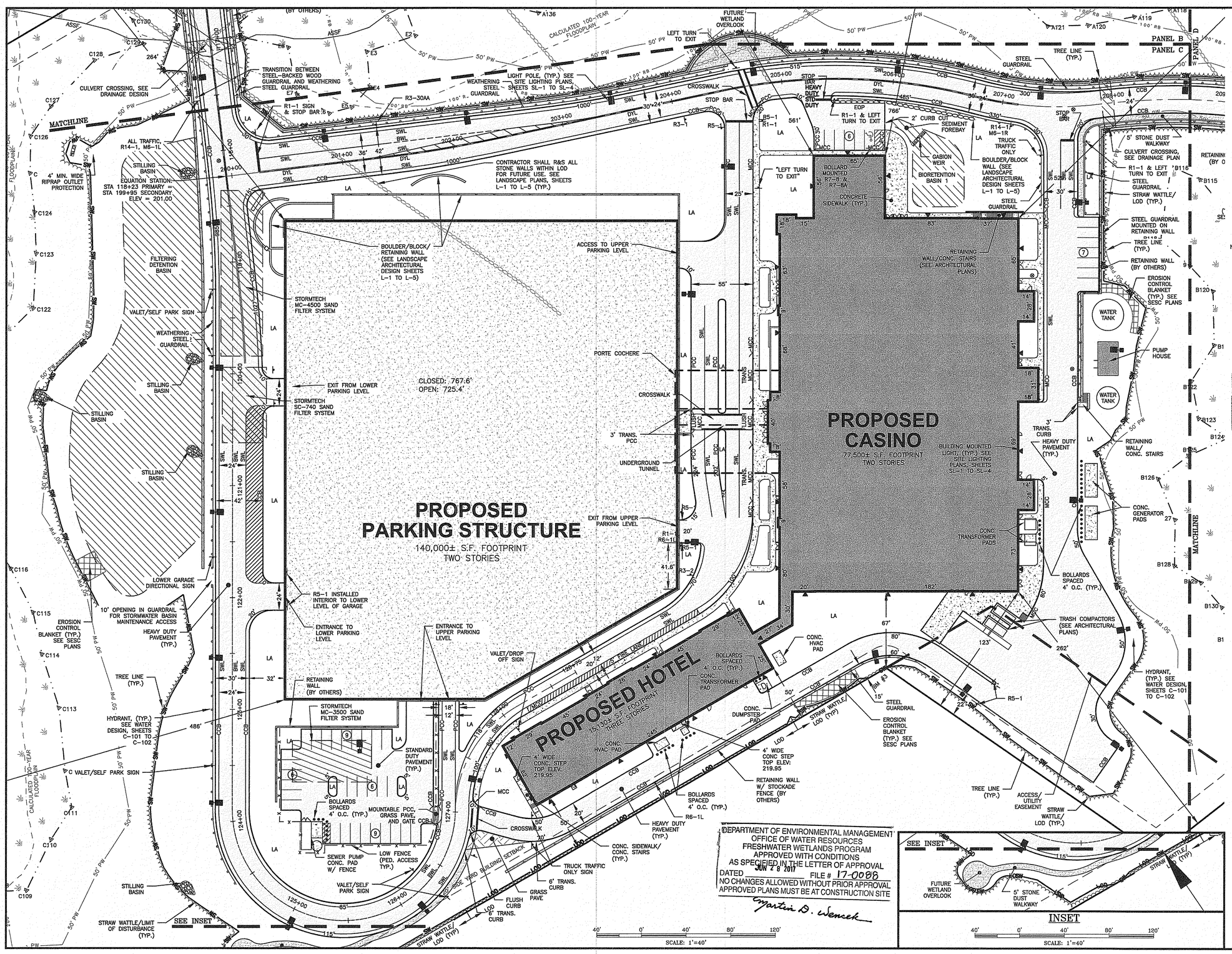
PROJECT:
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PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD & STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
LAYOUT & MATERIALS PLAN
PANEL B

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	1" = 40'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-4
SHEET 4 OF 46

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SEAL:

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REGISTERED PROFESSIONAL ENGINEER (CIVIL)
6/14/17

REVISION	DATE	DESCRIPTION
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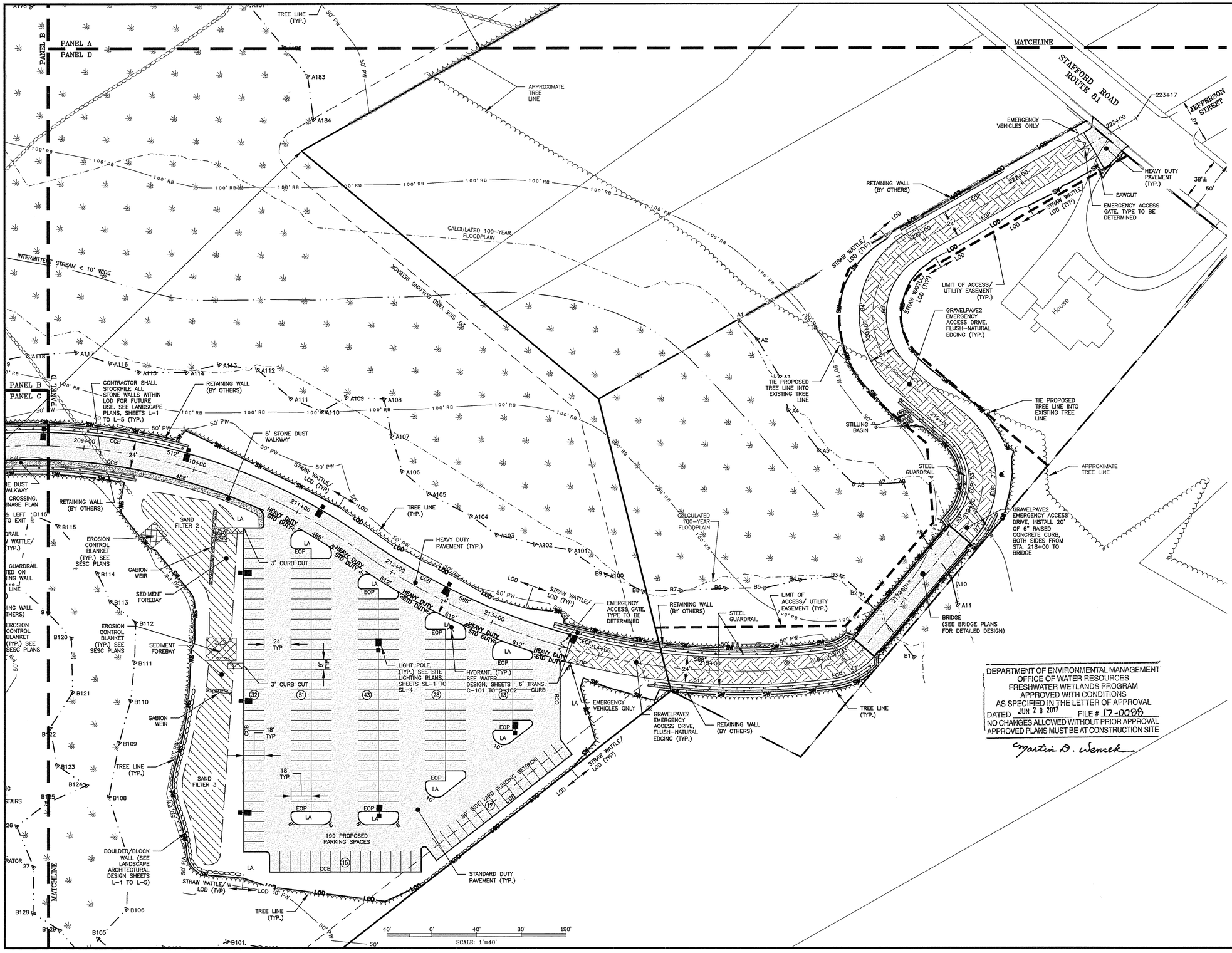
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PROJECT:
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& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
LAYOUT & MATERIALS PLAN
PANEL C

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	1" = 40'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-5
SHEET 5 OF 46
AMEC FOSTER WHEELER



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REVISION	DATE	DESCRIPTION
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3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

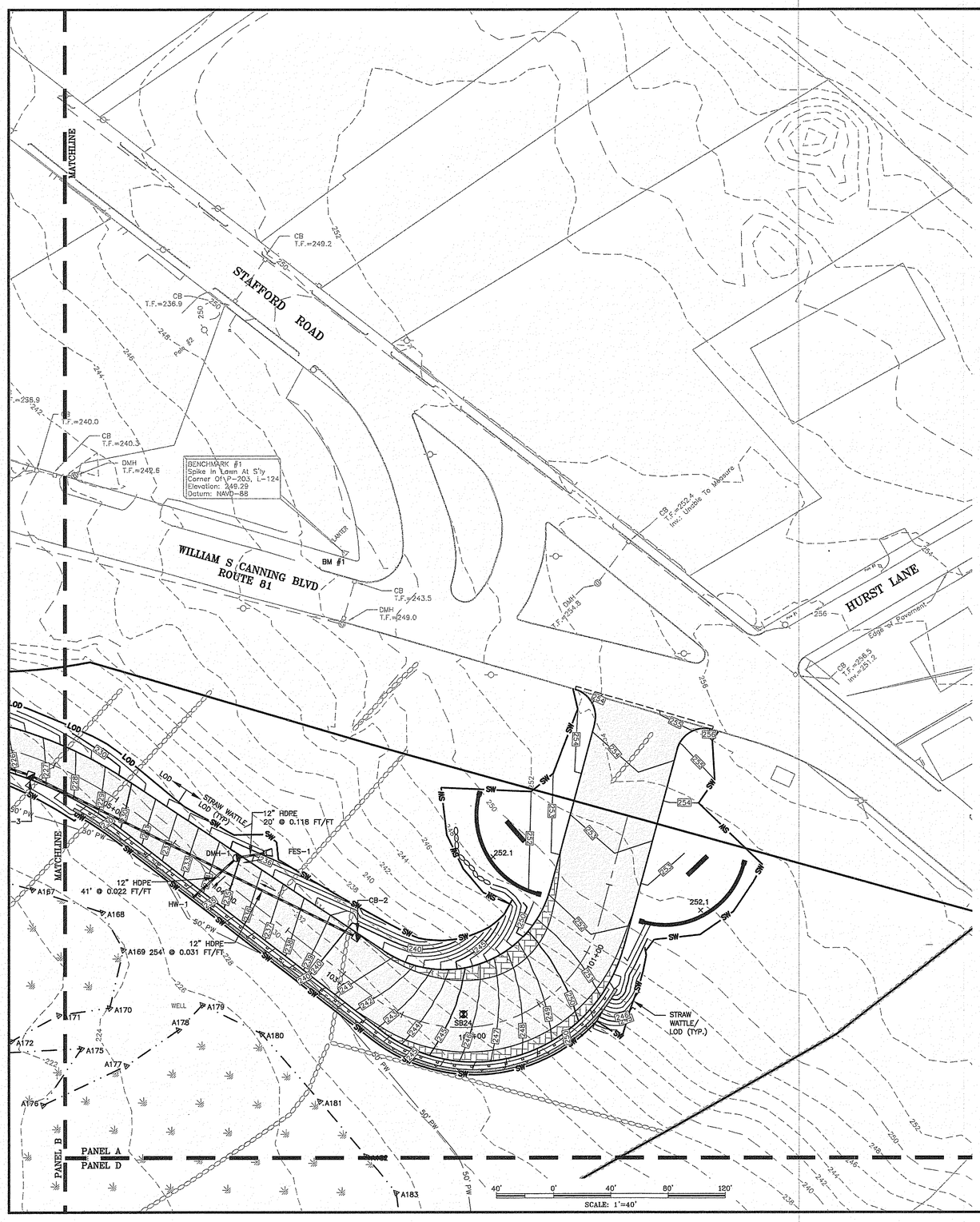
PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
LAYOUT & MATERIALS PLAN
PANEL D

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	1" = 40'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-6
SHEET 6 OF 46

amec foster wheeler
AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 100
PROVIDENCE RHODE ISLAND, 02908
PHONE: (401) 648-9420
WEB: WWW.AMECFW.COM



DRAINAGE STRUCTURE DATA			
STRUCTURE NO.	RIM	INV. IN	INV. OUT
CB-2	240.0		229.7 CB-3
CB-3	226.5	221.9 CB-2	221.8 DMH-4
CB-5	215.6	211.8 DMH-4	211.7 FES-2
CB-10 (DBL)	198.1		188.7 FES-4
CB-12 (DCB)	200.4	194.9 CB-13 (DCB)	194.8 DMH-11
CB-13 (DCB)	200.8	195.8 CB-14	195.7 CB-12 (DCB)
CB-14	203.0	199.0 CB-15	198.9 CB-13 (DCB)
CB-15	213.5	208.4 CB-19 208.4 DMH-16	208.3 CB-14
CB-17	218.4	214.3 CB-18	214.2 DMH-16
CB-18	218.1		214.8 CB-17
CB-19	220.8	217.9 DMH-20	217.8 CB-15
CB-21	229.0	225.2 CB-22	225.1 DMH-20
CB-22	235.4		231.8 CB-21
CB-23	223.1	213.1 UD-2A 214.7 CO-4 213.1 UD-2B	213.0 CO-2
CB-26 (DBL)	194.6	188.4 CB-28 (DBL)	188.4 DMH-24
CB-28 (DBL)	194.6	190.3 DMH-50 189.0 GARAGE	188.9 CB-26 (DBL)
CB-30	202.8	198.4 CB-31	198.3 DMH-50
CB-31	206.5	202.5 CB-33 (DBL)	202.4 CB-30
CB-33 (DBL)	214.0	210.8 DMH-54	210.7 CB-31
CB-34	221.6	216.7 CB-35	216.6 DMH-54
CB-35	227.6	223.7 CB-37	223.6 CB-34
CB-37	232.8	229.3 CB-38 (DBL)	229.2 CB-35
CB-38 (DBL)	236.8		233.3 CB-37
CB-41 (DBL)	215.1	209.0 DMH-42	205.7 DMH-39
CB-43	218.0	213.0 DMH-44	212.9 DMH-42
CB-50	231.3		228.3 FES-12
CB-51	210.1		198.0 DMH-50
CO-1	232.5	223.6 UD-1	223.6 CO-4
CO-2	216.7	208.2 CB-23	208.2 HW-5
CO-3	189.6	183.7 UD-5A	183.7
CO-4	231.4	222.0 CO-1	222.0 CB-23
DMH-1	234.9	231.5 FES-1	229.4 HW-1
DMH-4	222.8	217.4 CB-3	217.3 CB-5
DMH-11	200.6	189.9 DMH-12A 193.8 CB-12 (DCB)	183.1 HW-4
DMH-12A	200.8	188.2 DMH-12B 188.2 MC-4500E	188.2 DMH-11
DMH-12B	200.9	189.9 MC-4500F	188.2 DMH-12A
DMH-16	218.2	213.7 CB-17 213.4 BLDG-A 214.9 YD-5	212.6 CB-15
DMH-20	224.5	220.6 CB-21	220.5 CB-19
DMH-24	196.2	188.0 CB-26 (DBL) 189.9 DMH-25A	183.1 HW-6
DMH-25A	196.4	189.9 DMH-25B 190.1 SC-740A 188.2 MC-4500A	189.9 DMH-24
DMH-25B	196.6	189.9 DMH-25C 190.1 SC-740B 188.2 MC-4500B	189.9 DMH-25A
DMH-25C	196.7	189.9 DMH-25D 190.1 SC-740C 188.2 MC-4500C	189.9 DMH-25B
DMH-25D	196.9	190.1 SC-740D 189.9 MC-4500D	189.9 DMH-25C
DMH-27A	194.9	190.1 SC-740E	190.1 DMH-27B
DMH-27B	195.3	190.1 DMH-27A	190.1 SC-740F
DMH-39	212.4	204.4 CB-41 (DBL) 204.9 DMH-40A	200.7 DMH-46
DMH-40A	212.1	205.4 DMH-40B 203.9	204.9 DMH-39
DMH-40B	212.2	203.9 205.4 DMH-40C	205.4 DMH-40A
DMH-40C	212.2	205.4 205.4 DMH-40D	205.4 DMH-40B
DMH-40D	212.3	205.4 DMH-40E 205.4	205.4 DMH-40C
DMH-40E	212.3	205.4	205.4 DMH-40D
DMH-42	219.1	211.8 CB-43 215.0 YD-2 215.0 YD-3	211.7 CB-41 (DBL)

DRAINAGE STRUCTURE DATA			
STRUCTURE NO.	RIM	INV. IN	INV. OUT
DMH-44	218.4	213.3 BLDG-B	213.2 CB-43
DMH-46	202.4	194.6 DMH-39 198.4 MC-3500 UD	188.9 DMH-47
DMH-47	194.9	185.2 DMH-46	185.1 HW-7
DMH-48	184.5	80.3 Structure - (207)	180.3 FES-9
DMH-49	205.5	202.0 DMH-52	201.9 FES-11
DMH-50	200.7	196.2 CB-30 196.2 CB-51	196.1 CB-28 (DBL)
DMH-52	216.0	212.5 DMH-53	212.4 DMH-49
DMH-53	219.8	216.3 FES-7	216.2 DMH-52
DMH-54	219.9	215.9 CB-34	215.8 CB-33 (DBL)
YD-1	219.8		216.2 YD-2
YD-2	219.0	215.7 YD-1	215.7 DMH-42
YD-3	219.0	215.4 YD-4	215.4 DMH-42
YD-4	219.0		216.2 YD-3
YD-5	219.3		216.2 DMH-16

DRAINAGE STRUCTURE DATA		
STRUCTURE NO.	INV. IN	INV. OUT
BLDG-A	214.4 DMH-16	
BLDG-B	214.0 DMH-44	
FES-1	233.8 DMH-1	
FES-2		209.0 CB-5
FES-4		188.0 CB-10 (DBL)
FES-5	235.7 FES-6	
FES-6		235.0 FES-5
FES-7	218.0 DMH-53	
FES-9		180.0 DMH-48
FES-10		183.0
FES-11		194.0 DMH-49
FES-12		228.0 CB-50
GARAGE	190.0 CB-28 (DBL)	
HW-1		228.5 DMH-1
HW-2	236.9 HW-3	
HW-3		235.7 HW-2
HW-4		183.0 DMH-11
HW-5		206.5 CO-2
HW-6		183.0 DMH-24
HW-7		184.8 DMH-47

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 28 2017 FILE # 17-0088
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Martin D. Wencek

amec foster wheeler
AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 100
PROVIDENCE RHODE ISLAND, 02908
PHONE: (401)648-9420
WEB: WWW.AMECFW.COM

Environmental Management
JUN 28 2017
Office of Water Resources

NOT FOR CONSTRUCTION

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

REVISION	DATE	DESCRIPTION
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

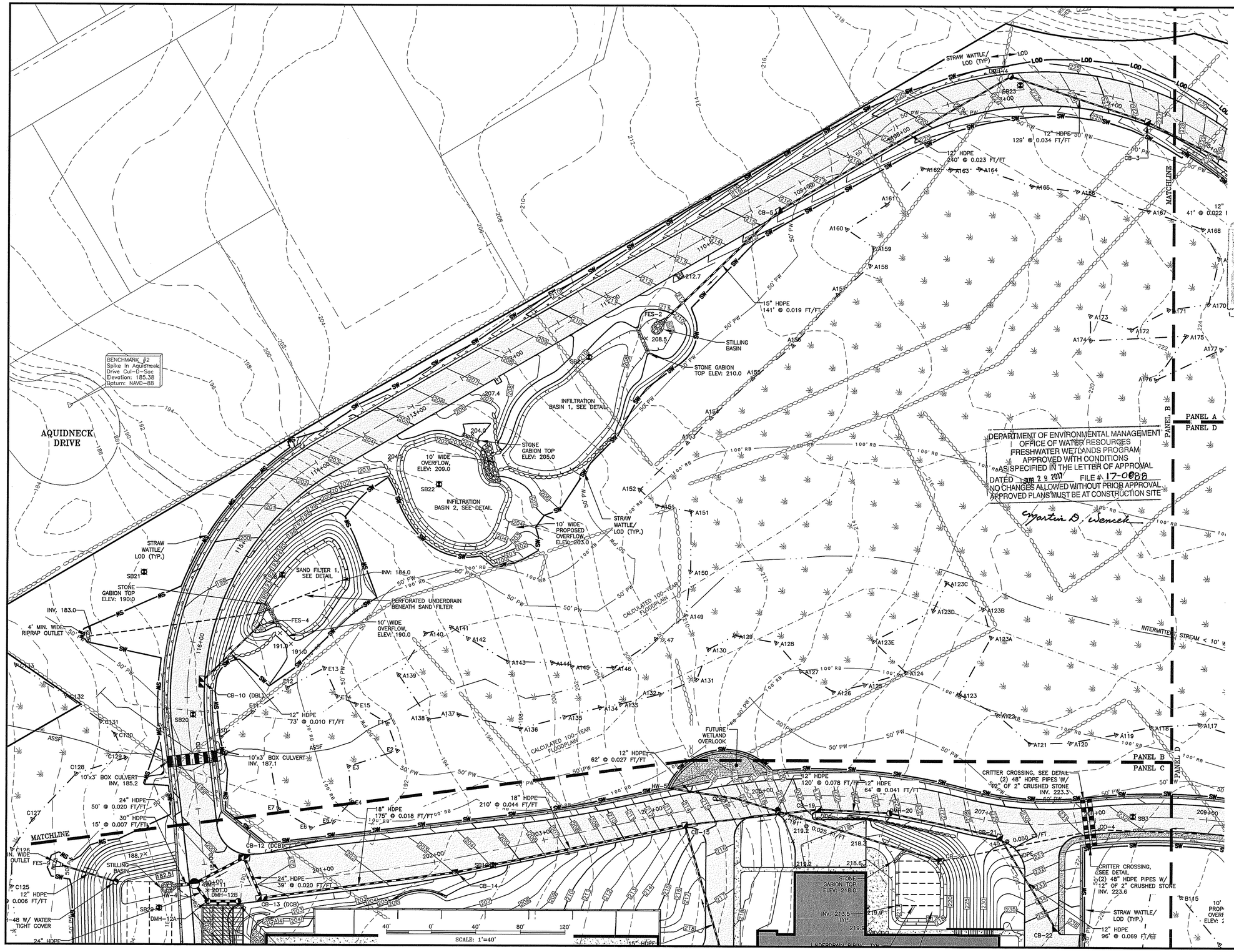
CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
GRADING & DRAINAGE PLAN
PANEL A

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	1" = 40'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-7



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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Environmental Management
JUN 28 2017
Office of Water Resources

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SEAL:

C N BEAULIEU-SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)

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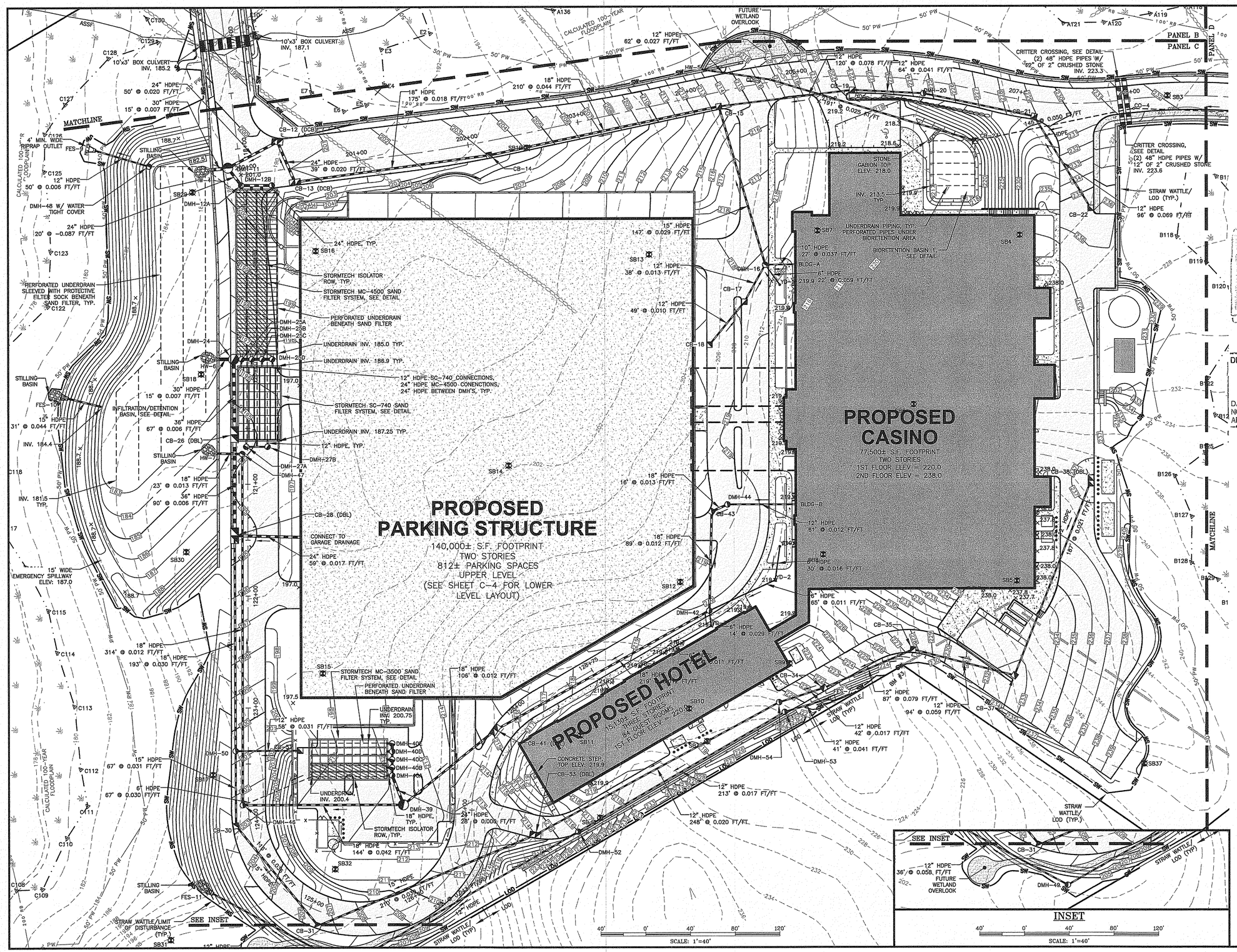
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C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
GRADING & DRAINAGE PLAN
PANEL B

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	1" = 40'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-8
SHEET 8 OF 46



amec foster wheeler

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ENVIRONMENT & INFRASTRUCTURE, INC.
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Environmental Management
JUN 28 2017
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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Martin D. Wencek

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU-SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
4/9/17

REVISION	DATE	DESCRIPTION
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

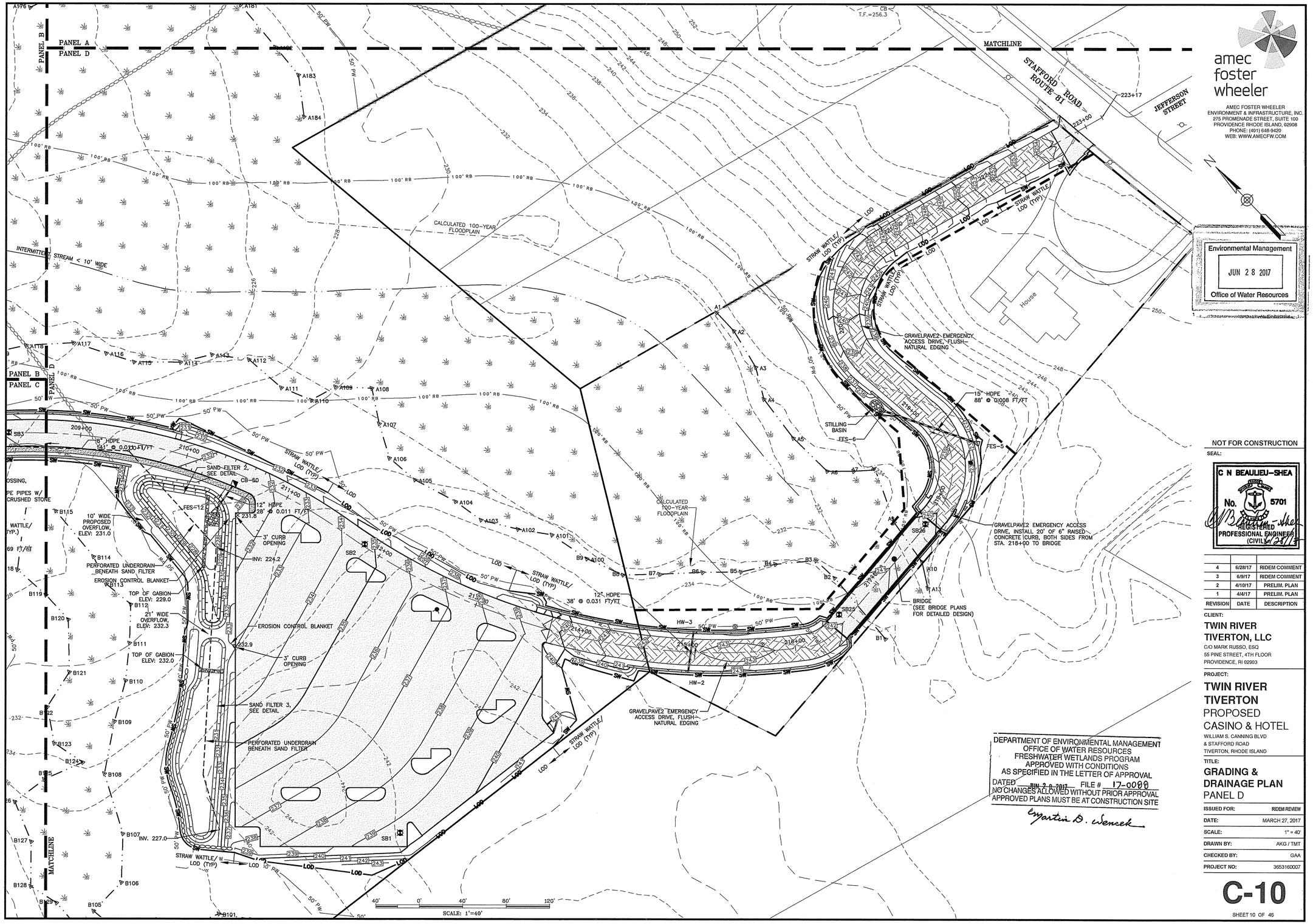
PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
GRADING & DRAINAGE PLAN
PANEL C

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	1" = 40'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-9
SHEET 9 OF 46

AMEC FOSTER WHEELER



NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU-SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
5/25/17

REVISION	DATE	DESCRIPTION
4	6/28/17	RIDEM COMMENT
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

CLIENT:

TWIN RIVER TIVERTON, LLC

C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:

TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:

GRADING & DRAINAGE PLAN
PANEL D

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	1" = 40'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-10

SHEET 10 OF 46

AMEC FOSTER WHEELER

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275 PROMENADE STREET, SUITE 100
PROVIDENCE RHODE ISLAND, 02908
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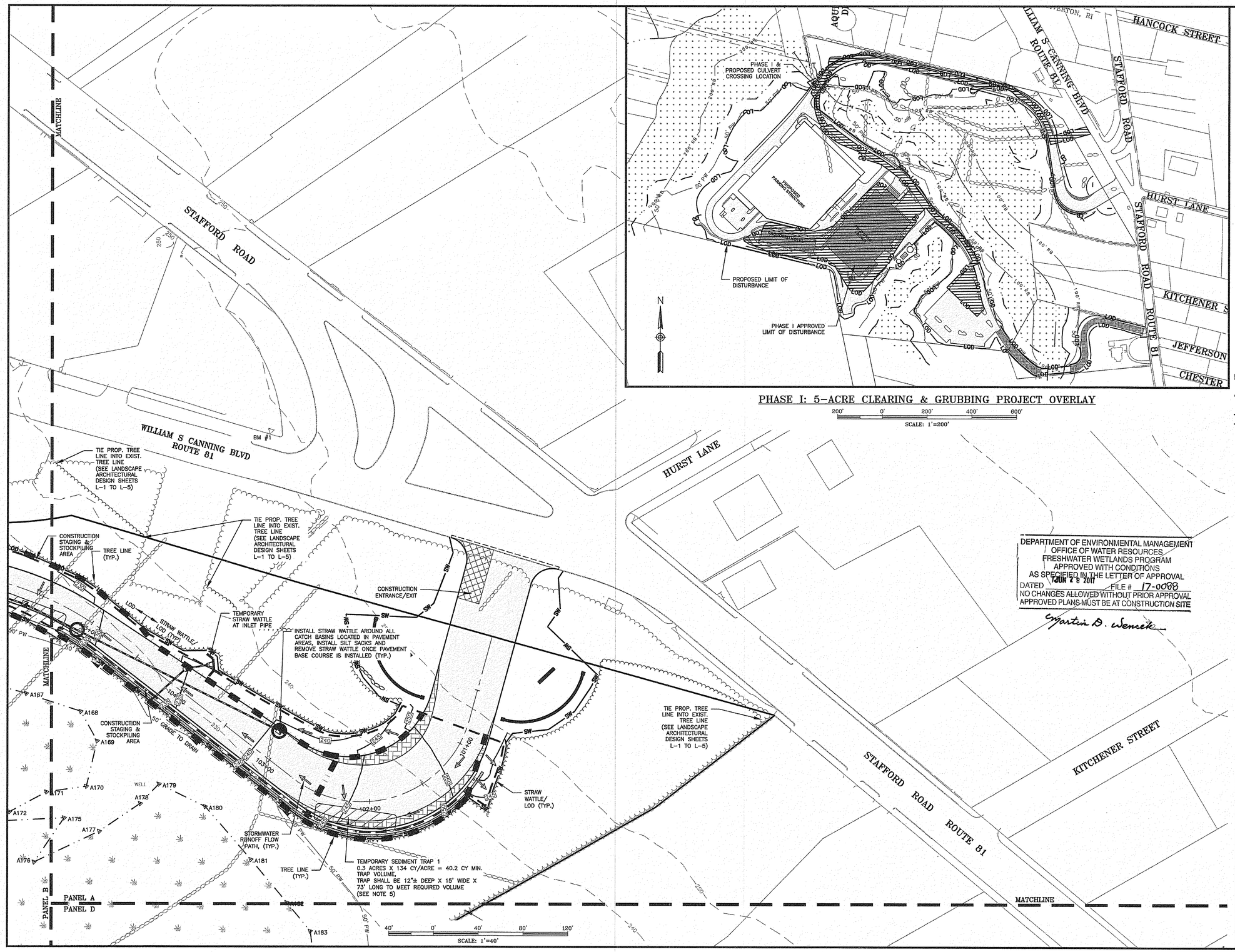
Environmental Management
JUN 28 2017
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 28 2017 FILE # 17-0090
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Martin D. Wencek

PHASE I: 5-ACRE CLEARING & GRUBBING PROJECT OVERLAY

200' 0' 200' 400' 600'

SCALE: 1"=200'



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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DATED JUN 2 8 2017 FILE # 17-0088
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Martin D. Wencek

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AMEC FOSTER WHEELER
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Environmental Management
JUN 2 8 2017
Office of Water Resources

LEGEND
- FLOW DIRECTION
- DRAINAGE DIVIDE DURING CONSTRUCTION
- ALLOWABLE STAGING/ STOCKPILING AREA
- LOD — LOD
- SW — STRAW WATTLE

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU-SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
6/9/17

REVISION	DATE	DESCRIPTION
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

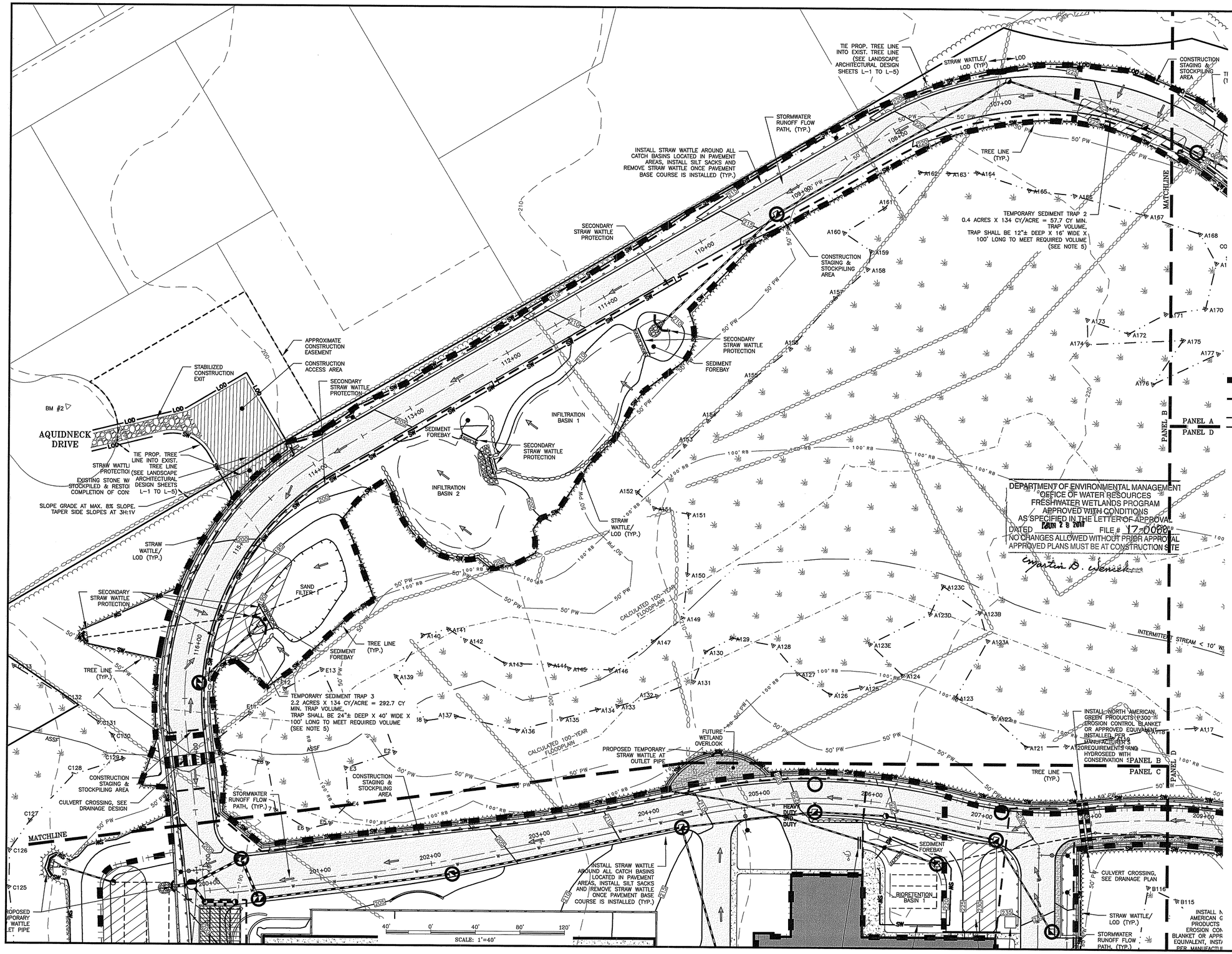
CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
SOIL EROSION & SEDIMENT CONTROL PLAN
PANEL A

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	1" = 40'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-11



LEGEND

- FLOW DIRECTION
- DRAINAGE DIVIDE DURING CONSTRUCTION
- ALLOWABLE STAGING/ STOCKPILING AREA
- LOD — LOD
- SW — STRAW WATTLE

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU-SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
6/28/17

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 28 2017 FILE # 17-0008
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Environmental Management
JUN 28 2017
Office of Water Resources

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REVISION	DATE	DESCRIPTION
4	6/28/17	RIDEM COMMENT
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2	4/10/17	PRELIM. PLAN
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CLIENT:
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PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
SOIL EROSION & SEDIMENT CONTROL PLAN
PANEL B

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	1" = 40'
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C-12
SHEET 12 OF 46

PROPOSED CASINO

PROPOSED PARKING STRUCTURE

PROPOSED HOTEL

MATCHLINE

(SEE NOTE 5)

CALCULATED 100-YEAR FLOODPLAIN

FUTURE WETLAND OVERLOOK

PROPOSED TEMPORARY STRAW WATTLE AT OUTLET PIPE

CONSTRUCTION STAGING & STOCKPILING AREA

CULVERT CROSSING, SEE DRAINAGE DESIGN

STORMWATER RUNOFF FLOW PATH, (TYP.)

INSTALL STRAW WATTLE AROUND ALL CATCH BASINS LOCATED IN PAVEMENT AREAS, INSTALL SILT SACKS AND REMOVE STRAW WATTLE ONCE PAVEMENT BASE COURSE IS INSTALLED (TYP.)

FILTERING DETENTION BASIN

TEMPORARY SEDIMENT TRAP 4
4.9 ACRES X 134 CY/ACRE = 656.6 CY MIN. TRAP VOLUME.
TRAP SHALL BE 12"± DEEP TO MEET REQUIRED VOLUME

STORMTECH MC-4500 SAND FILTER SYSTEM

STORMTECH SC-740 SAND FILTER SYSTEM

UNDERDRAINS TO BE SLEEVED WITH PROTECTIVE FILTER SOCKS. SEDIMENT WITHIN THE INFILTRATION BASIN IS TO BE REMOVED UPON STABILIZATION OF THE SITE. FINAL LOAM SHALL NOT BE INSTALLED WITHIN THE BASIN UNTIL ALL SITE GRADING IS COMPLETE AND PAVEMENT BINDER COURSE HAS BEEN INSTALLED

INSTALL STRAW WATTLE BACKED BY SILT FENCE AT CURB CUT AFTER INSTALLATION OF CURBING & PAVEMENT UNTIL END OF CONSTRUCTION. SEE DETAIL

SECONDARY STRAW WATTLE PROTECTION

TEMPORARY SEDIMENT TRAP 6
1.3 ACRES X 134 CY/ACRE = 175 CY MIN. TRAP VOLUME.
TRAP SHALL BE 24"± DEEP X 20' WIDE X 80' LONG TO MEET REQUIRED VOLUME (SEE NOTE 5)

PROPOSED CASINO & HOTEL AREA HAS BEEN SIZED UNDER PREVIOUS WETLANDS APPLICATION NO. 16-0310/RIPDES FILE NUMBER RIR101521. IF PUMPING IS REQUIRED, ENLARGE TEMPORARY SEDIMENT BASINS 4 & 5 TO ACCOMMODATE

TEMPORARY SEDIMENT TRAP 7
0.7 ACRES X 134 CY/ACRE = 94.5 CY MIN. TRAP VOLUME.
TRAP SHALL BE 24"± DEEP X 20' WIDE X 65' LONG TO MEET REQUIRED VOLUME (SEE NOTE 5)

INSTALLED PER MANUFACTURER'S A120REQUIREMENTS AND HYDROSEED WITH CONSERVATION SEED MIX

PANEL B

PANEL C

PANEL D

TREE LINE (TYP.)

SEDIMENT FOREBAY

BIORETENTION BASIN 1

CULVERT CROSSING, SEE DRAINAGE PLAN

STRAW WATTLE/ LOD (TYP.)

STORMWATER RUNOFF FLOW PATH, (TYP.)

CONCRETE WASHOUT AREA

TREE LINE (TYP.)

NORTH AMERICAN GREEN PRODUCTS P300 EROSION CONTROL BLANKET OR APPROVED EQUIVALENT

INSTALL NORTH AMERICAN GREEN PRODUCTS P300 EROSION-CONTROL BLANKET OR APPROVED EQUIVALENT, INSTALLED PER MANUFACTURER'S REQUIREMENTS AND HYDROSEED WITH CONSERVATION SEED MIX

INSTALL STRAW WATTLE AROUND ALL CATCH BASINS LOCATED IN PAVEMENT AREAS, INSTALL SILT SACKS AND REMOVE STRAW WATTLE ONCE PAVEMENT BASE COURSE IS INSTALLED (TYP.)

CONSTRUCTION STAGING & STOCKPILING AREA

STORMWATER RUNOFF FLOW PATH, (TYP.)

STONE DRAIN, SEE LEDGE CUT DETAIL

TEMPORARY SEDIMENT TRAP 5
4.8 ACRES X 134 CY/ACRE = 646.4 CY MIN. TRAP VOLUME.
TRAP SHALL BE 24"± DEEP TO MEET REQUIRED VOLUME (SEE NOTE 5)

SEE INSET

INSET

SCALE: 1"=40'

SCALE: 1"=40'

LEGEND
- FLOW DIRECTION
- DRAINAGE DIVIDE DURING CONSTRUCTION
- ALLOWABLE STAGING/ STOCKPILING AREA
- LOD — LOD
- SW — STRAW WATTLE

amec foster wheeler

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Environmental Management
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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 JUN 28 2017 FILE # 17-0086
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Martin D. Wencek

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU-SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
6/9/17

REVISION	DATE	DESCRIPTION
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED CASINO & HOTEL
WILLIAM S. CANNING BLVD & STAFFORD ROAD
TIVERTON, RHODE ISLAND

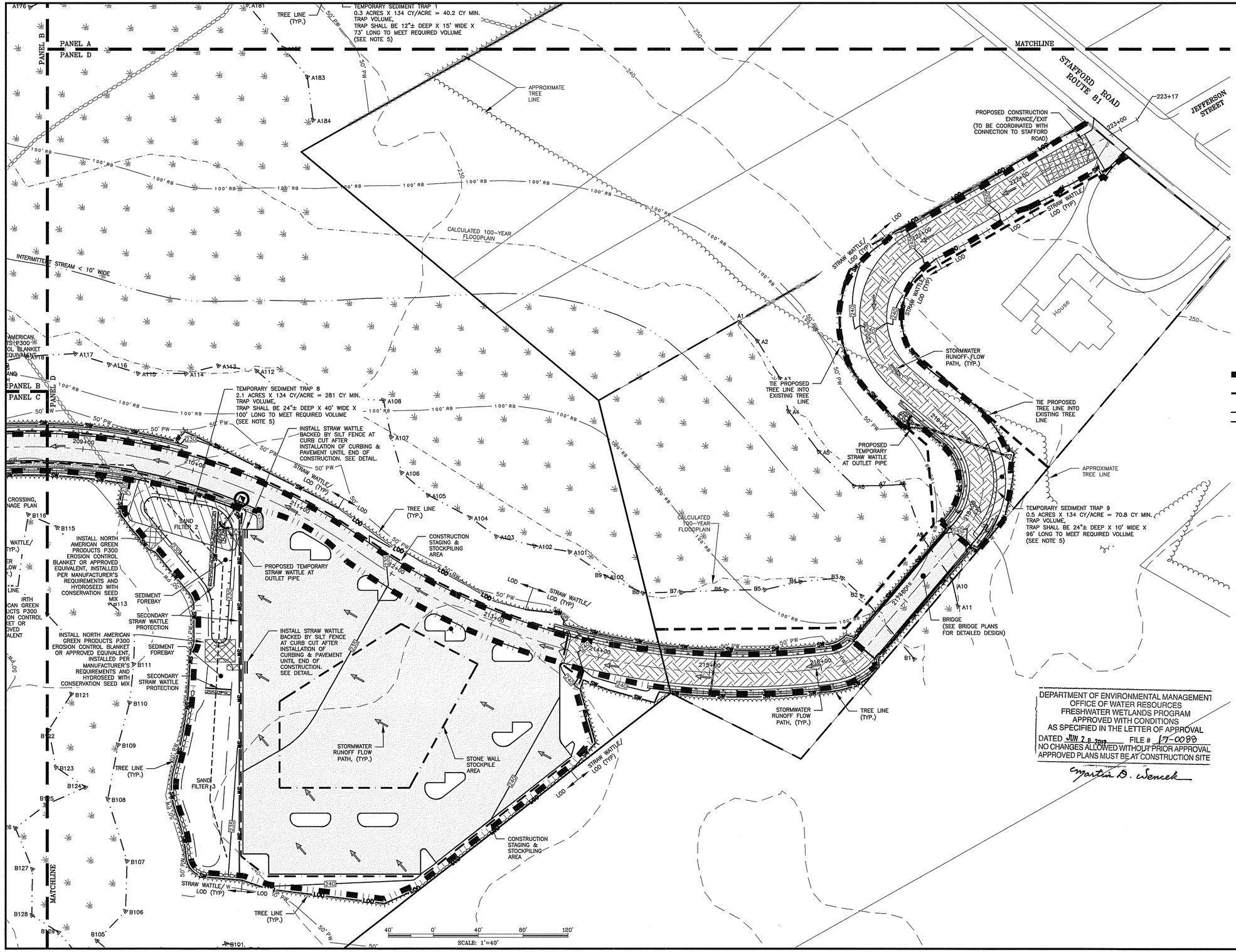
TITLE:
SOIL EROSION & SEDIMENT CONTROL PLAN
PANEL C

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	1" = 40'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-13

SHEET 13 OF 46

AMEC FOSTER WHEELER



amec foster wheeler
AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 100
PROVIDENCE RHODE ISLAND, 02908
PHONE: (401) 648-9420
WEB: WWW.AMECFW.COM

Environmental Management
JUN 28 2017
Office of Water Resources

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU-SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)

REVISION	DATE	DESCRIPTION
4	6/28/17	RIDEM COMMENT
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED CASINO & HOTEL
WILLIAM S. CANNING BLVD & STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
SOIL EROSION & SEDIMENT CONTROL PLAN
PANEL D

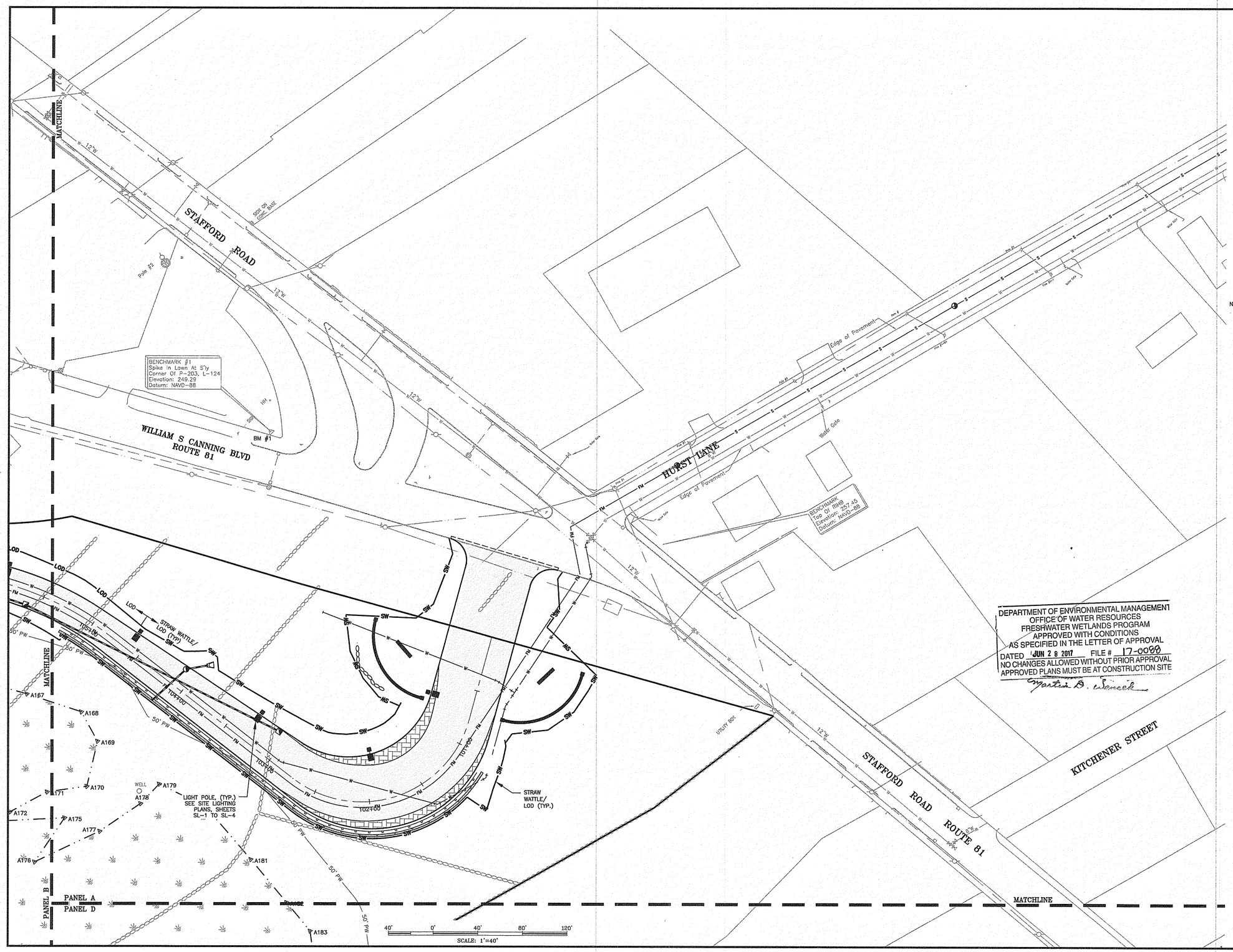
ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	1" = 40'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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DATED JUN 28 2017 FILE # 17-0089
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Martin B. Wencek

C-14

SHEET 14 OF 46

AMEC FOSTER WHEELER



amec foster wheeler

AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 100
PROVIDENCE RHODE ISLAND, 02908
PHONE: (401) 648-9420
WEB: WWW.AMECFW.COM

Environmental Management
JUN 28 2017
Office of Water Resources

NOTES:
1. SEE GRADING & DRAINAGE SHEETS FOR STORMWATER STRUCTURE AND PIPING INFORMATION.
2. SEWER, FORCE MAIN, AND WATERLINE IS SCHEMATIC ONLY, SEE SUPPLEMENTAL UTILITY PLANS FOR FULL DESIGN.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 28 2017 FILE # 17-0088
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Jonathan D. Schnack

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU-SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL) 6/9/17

REVISION	DATE	DESCRIPTION
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

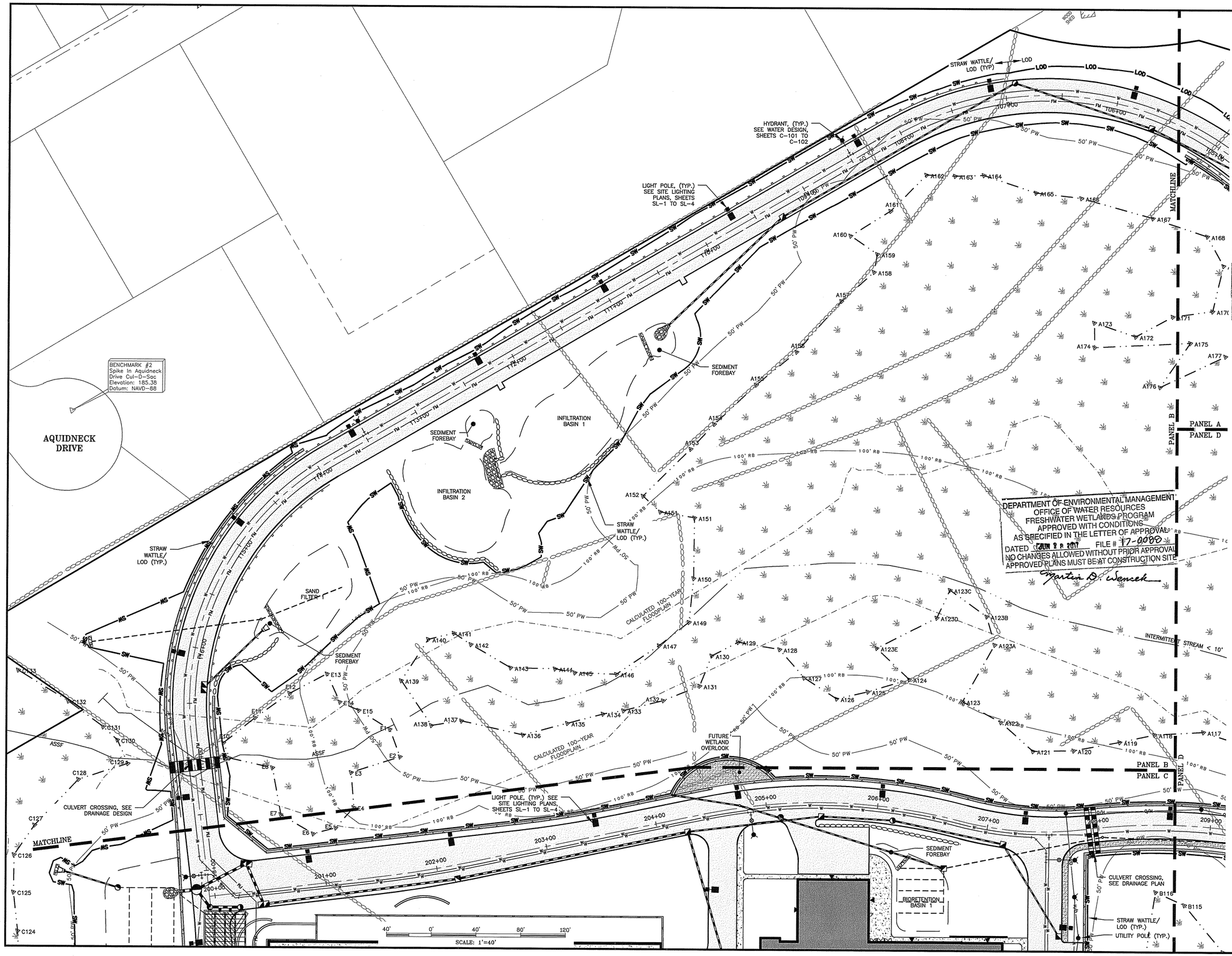
PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
UTILITY PLAN
PANEL A

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	1" = 40'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-15
SHEET 15 OF 46

AMEC FOSTER WHEELER



amec foster wheeler

AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 100
PROVIDENCE RHODE ISLAND, 02908
PHONE: (401) 648-9420
WEB: WWW.AMECFW.COM

Environmental Management
JUN 28 2017
Office of Water Resources

NOTES:
1. SEE "GRADING & DRAINAGE" SHEETS FOR STORMWATER STRUCTURE AND PIPING INFORMATION.
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NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU-SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
6/28/17

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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3	6/8/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

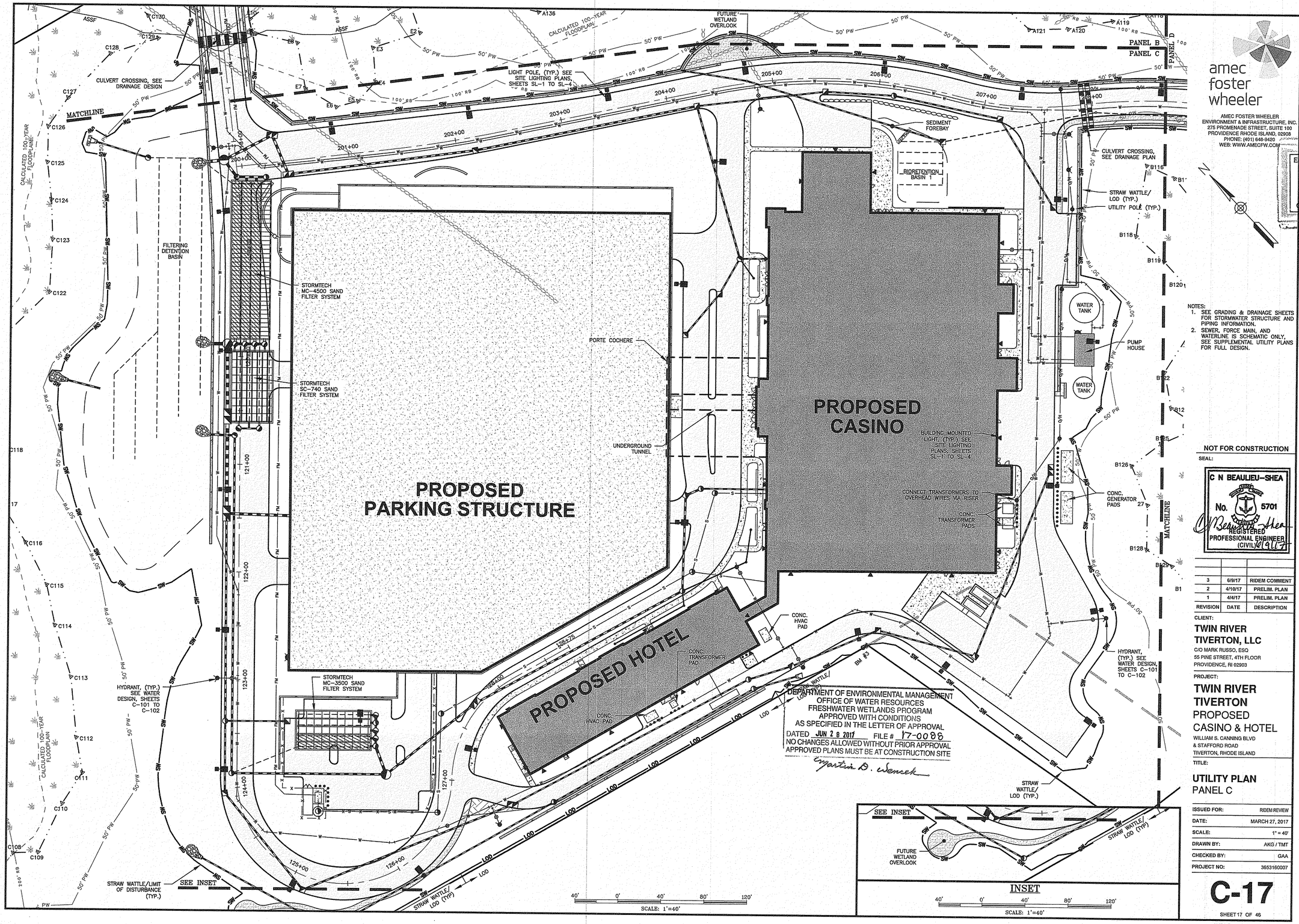
CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
UTILITY PLAN
PANEL B

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	1" = 40'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-16



NOTES:
1. SEE GRADING & DRAINAGE SHEETS FOR STORMWATER STRUCTURE AND PIPING INFORMATION.
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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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DATED JUN 2 8 2017 FILE # 17-0088
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Martin D. Wencek

Environmental Management
JUN 28 2017
Office of Water Resources

amec foster wheeler
AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 100
PROVIDENCE RHODE ISLAND, 02908
PHONE: (401) 648-9420
WEB: WWW.AMECFW.COM

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU-SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
6/9/17

REVISION	DATE	DESCRIPTION
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1	4/4/17	PRELIM. PLAN

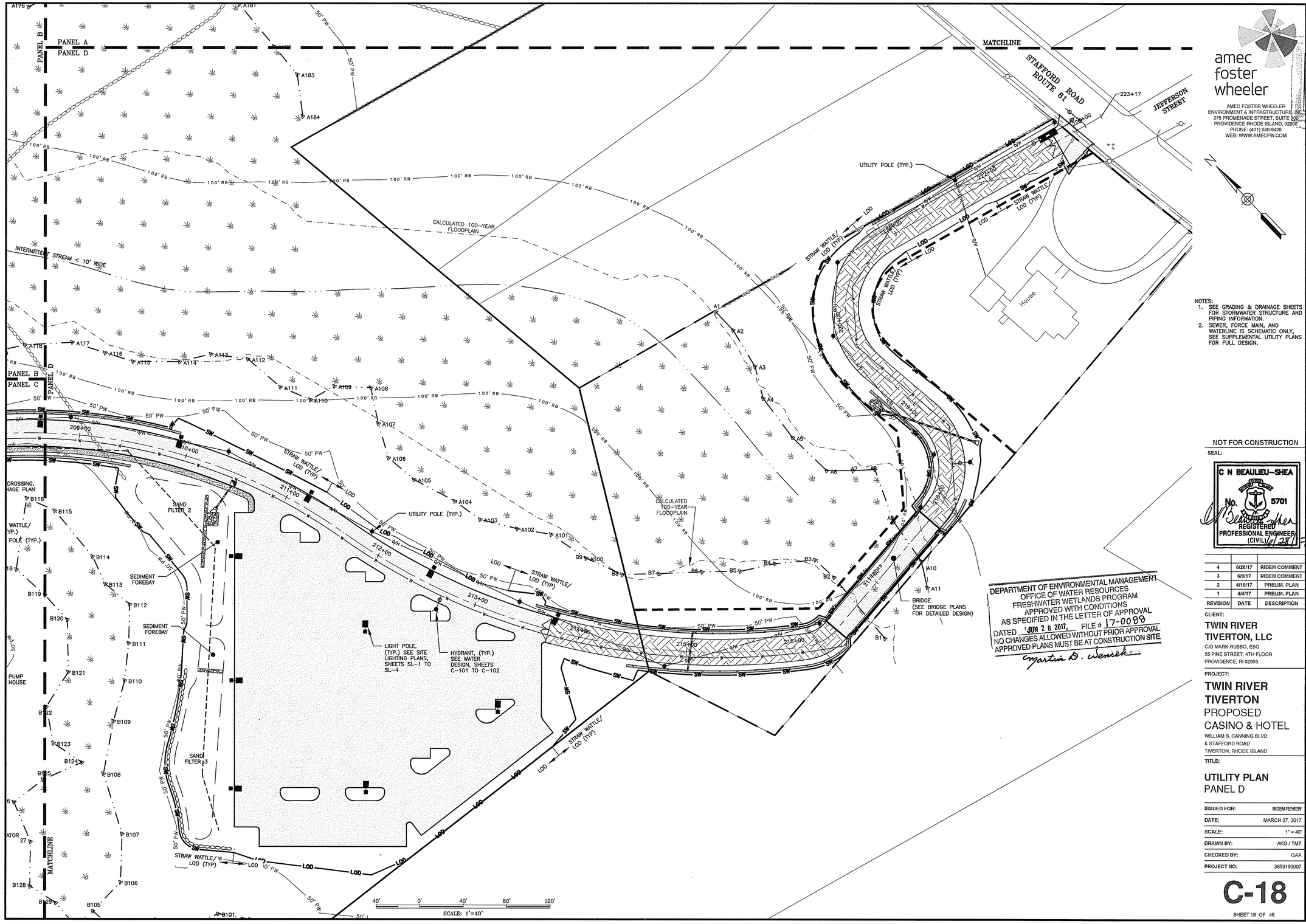
CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
UTILITY PLAN
PANEL C

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	1" = 40'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-17
SHEET 17 OF 46



NOTES:
1. SEE GRADING & DRAINAGE SHEETS FOR STORMWATER STRUCTURE AND PIPING INFORMATION.
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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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DATED JUN 2 8 2017, FILE # 17-0088
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Ingartis D. Wenseck

amec foster wheeler
AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 100
PROVIDENCE RHODE ISLAND, 02908
PHONE: (401) 648-9420
WEB: WWW.AMECFW.COM

Environmental Management
JUN 2 8 2017
Office of Water Resources

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU-SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
6/28/17

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4	6/28/17	RIDEM COMMENT
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

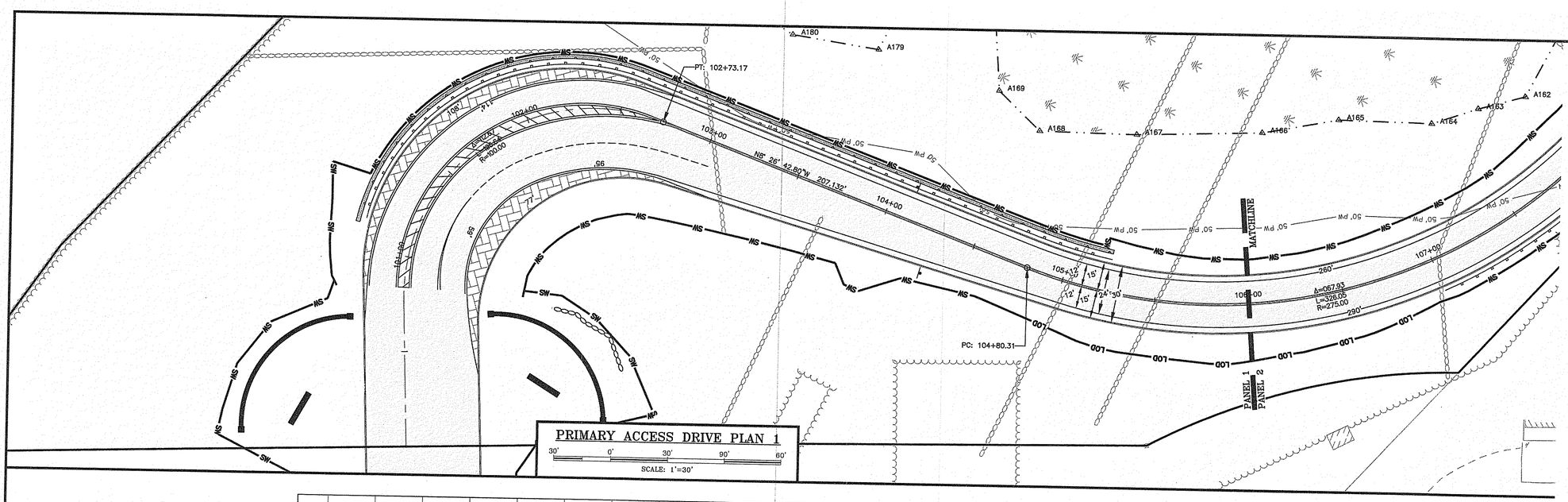
CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

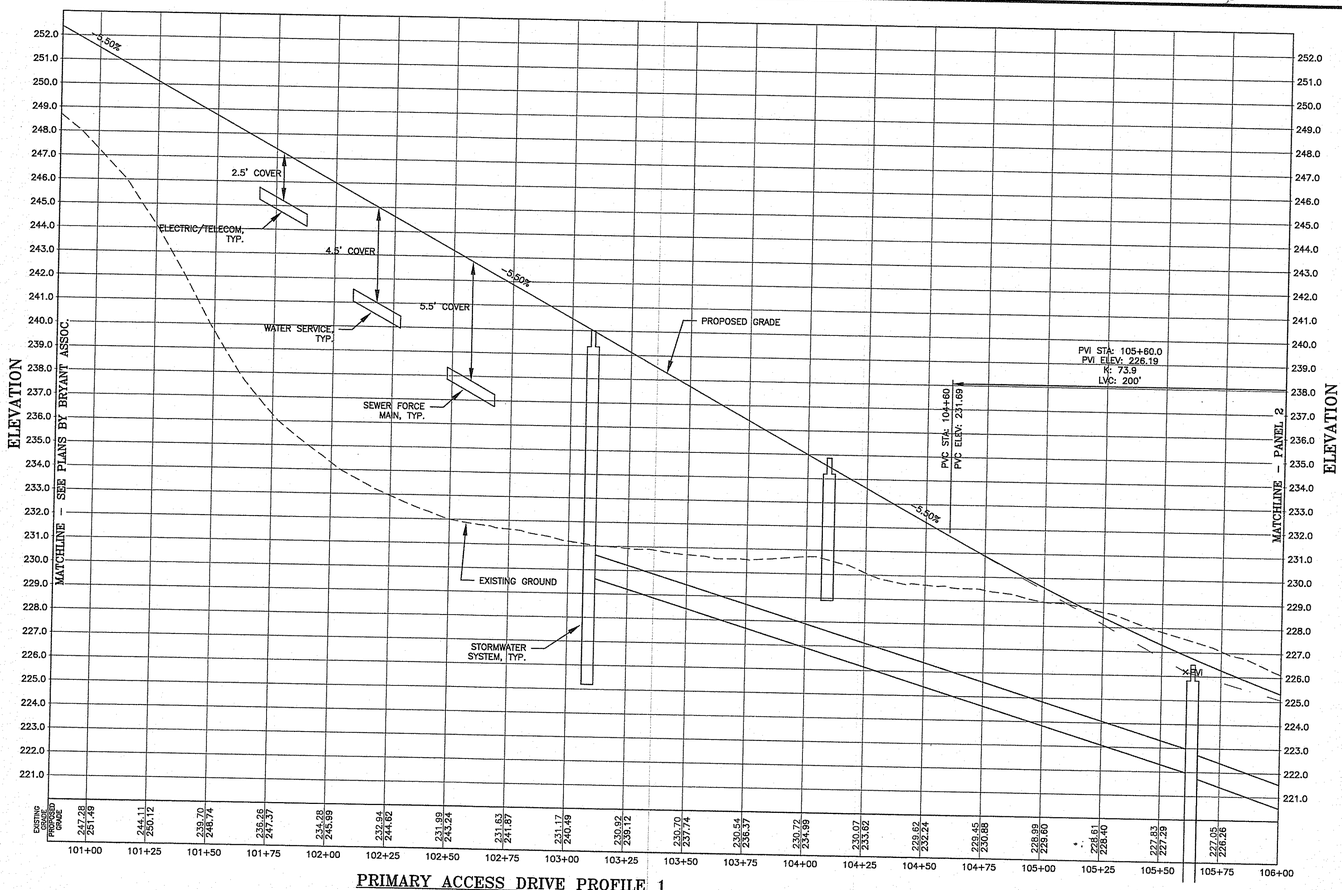
PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
UTILITY PLAN
PANEL D

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	1" = 40'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-18





PRIMARY ACCESS DRIVE PROFILE 1
HORIZ: 1"=30', VERT: 1"=3'

amec foster wheeler
AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 100
PROVIDENCE RHODE ISLAND, 02908
PHONE: (401) 646-9420
WEB: WWW.AMECFW.COM

Environmental Management
JUN 28 2017
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 JUN 28 2017 FILE # 17-0086
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Martin D. Wencek

NOT FOR CONSTRUCTION

SEAL:
C N BEAULIEU-SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
6/9/17

REVISION	DATE	DESCRIPTION
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

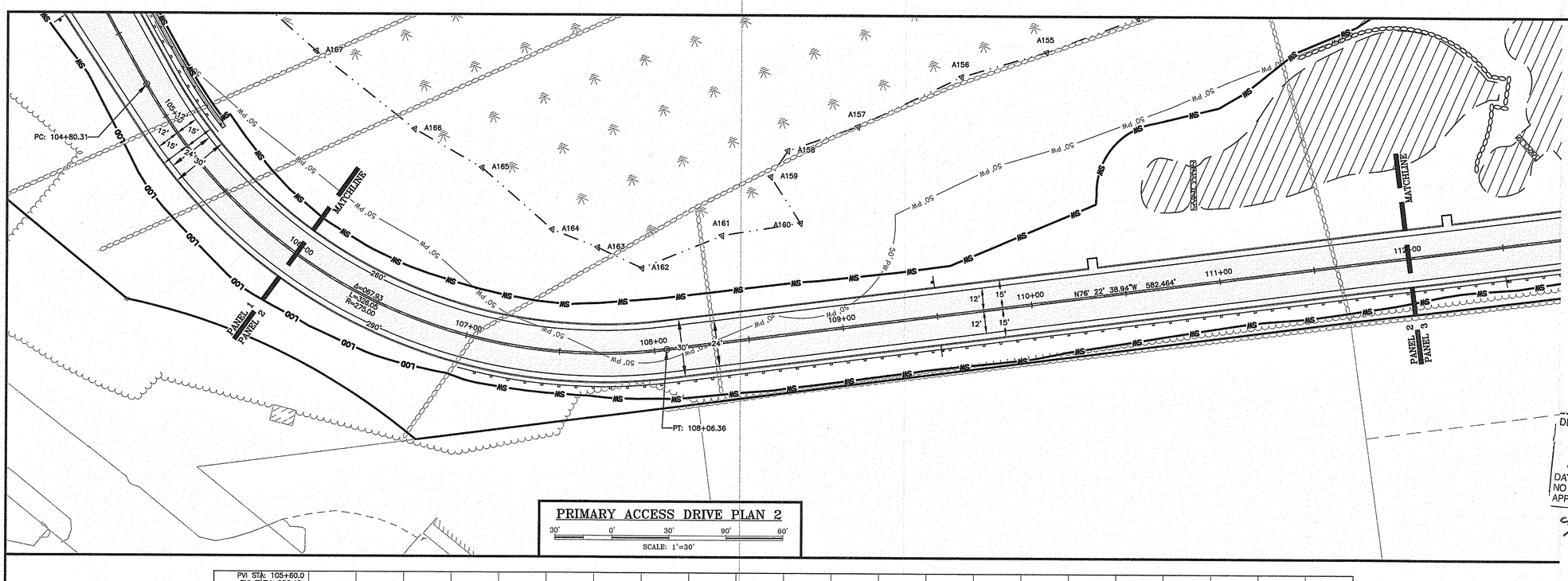
CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
PRIMARY ACCESS DRIVE PLAN & PROFILE 1
STA. 100+84 TO STA. 106+00

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	AS NOTED
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

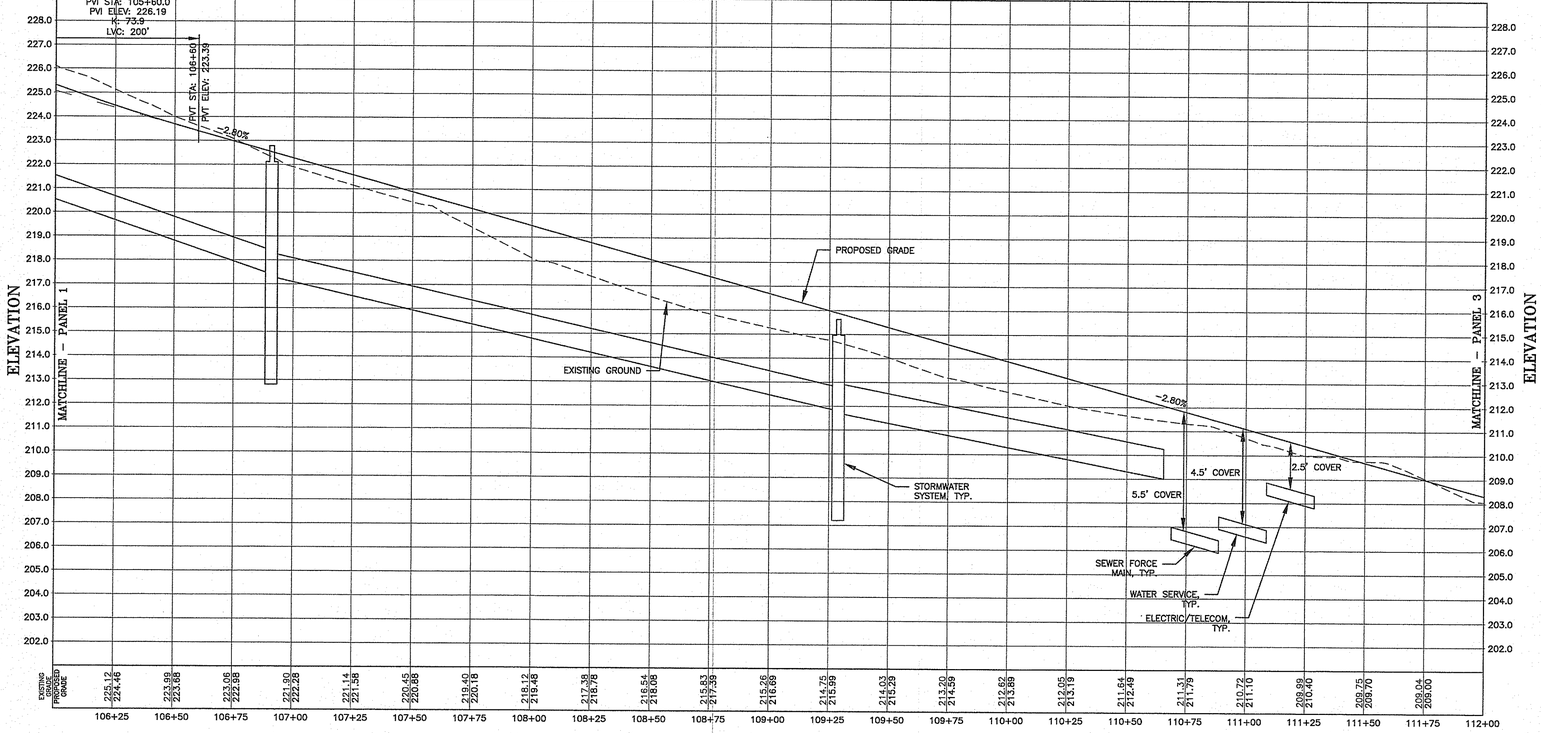
C-19



PRIMARY ACCESS DRIVE PLAN 2

30' 0' 30' 90' 60'

SCALE: 1"=30'



PRIMARY ACCESS DRIVE PROFILE 2

HORIZ: 1"=30', VERT: 1"=3'

amec foster wheeler

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ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 100
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WEB: WWW.AMECFW.COM

Environmental Management
JUN 28 2017
Office of Water Resources

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

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU–SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
6/9/17

REVISION	DATE	DESCRIPTION
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

CLIENT:

TWIN RIVER TIVERTON, LLC

C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:

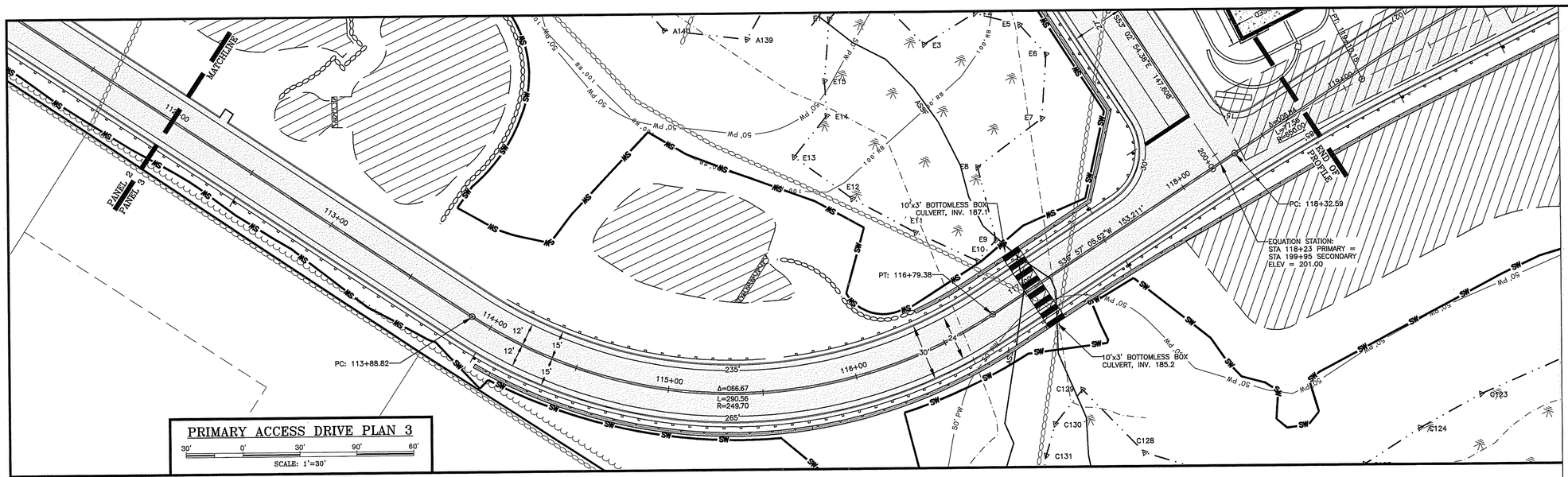
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:

PRIMARY ACCESS DRIVE PLAN & PROFILE 2
STA. 106+00 TO STA. 112+00

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	AS NOTED
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

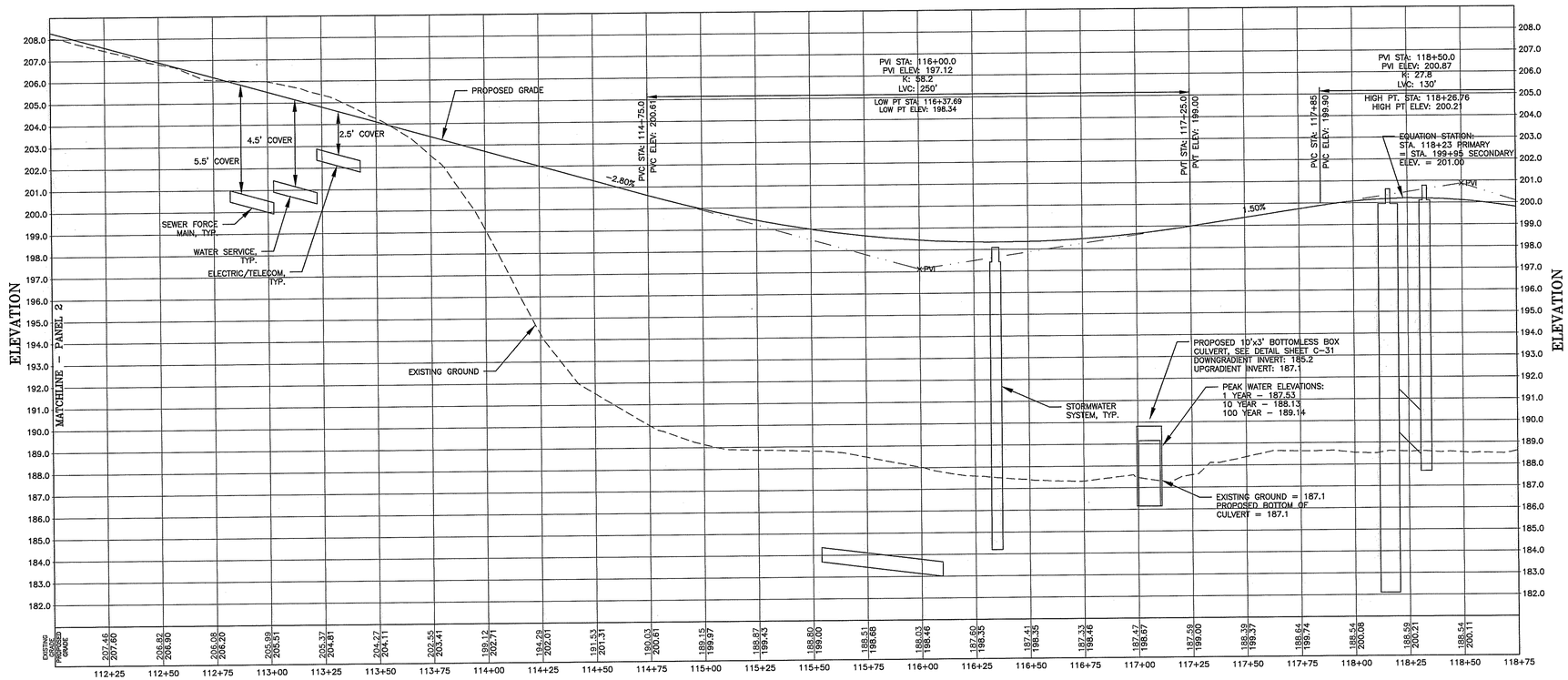
C-20



PRIMARY ACCESS DRIVE PLAN 3

30' 0' 30' 90' 60'

SCALE: 1"=30'



PRIMARY ACCESS DRIVE PROFILE 3

HORIZ: 1"=30', VERT: 1"=3'

amec foster wheeler

AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 100
PROVIDENCE RHODE ISLAND, 02908
PHONE: (401) 648-9420
WEB: WWW.AMECFW.COM

Environmental Management
JUN 28 2017
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 JUN 28 2017 FILE # 17-0008
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Martin D. Wencek

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU–SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
6/28/17

REVISION	DATE	DESCRIPTION
4	6/28/17	RIDEM COMMENT
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

CLIENT:

TWIN RIVER TIVERTON, LLC

C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:

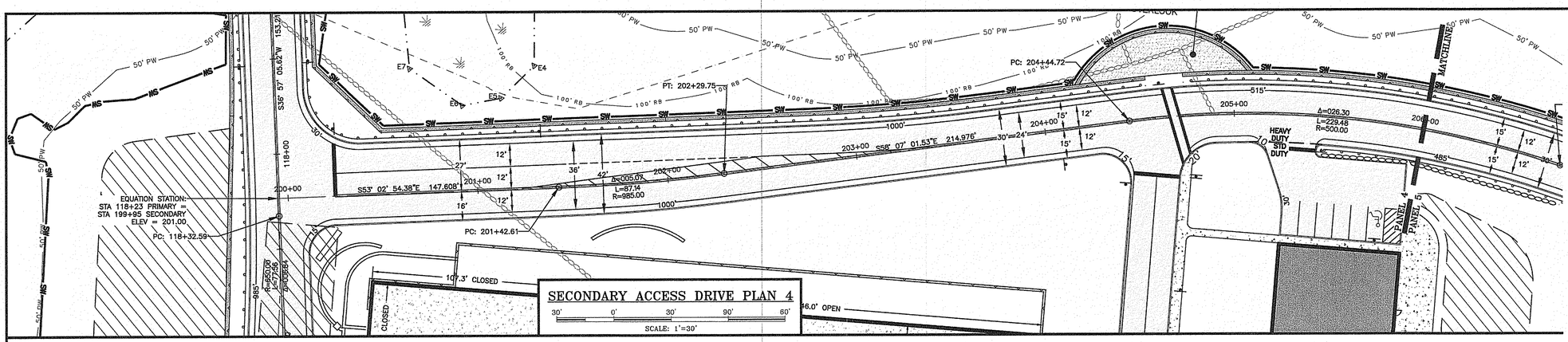
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

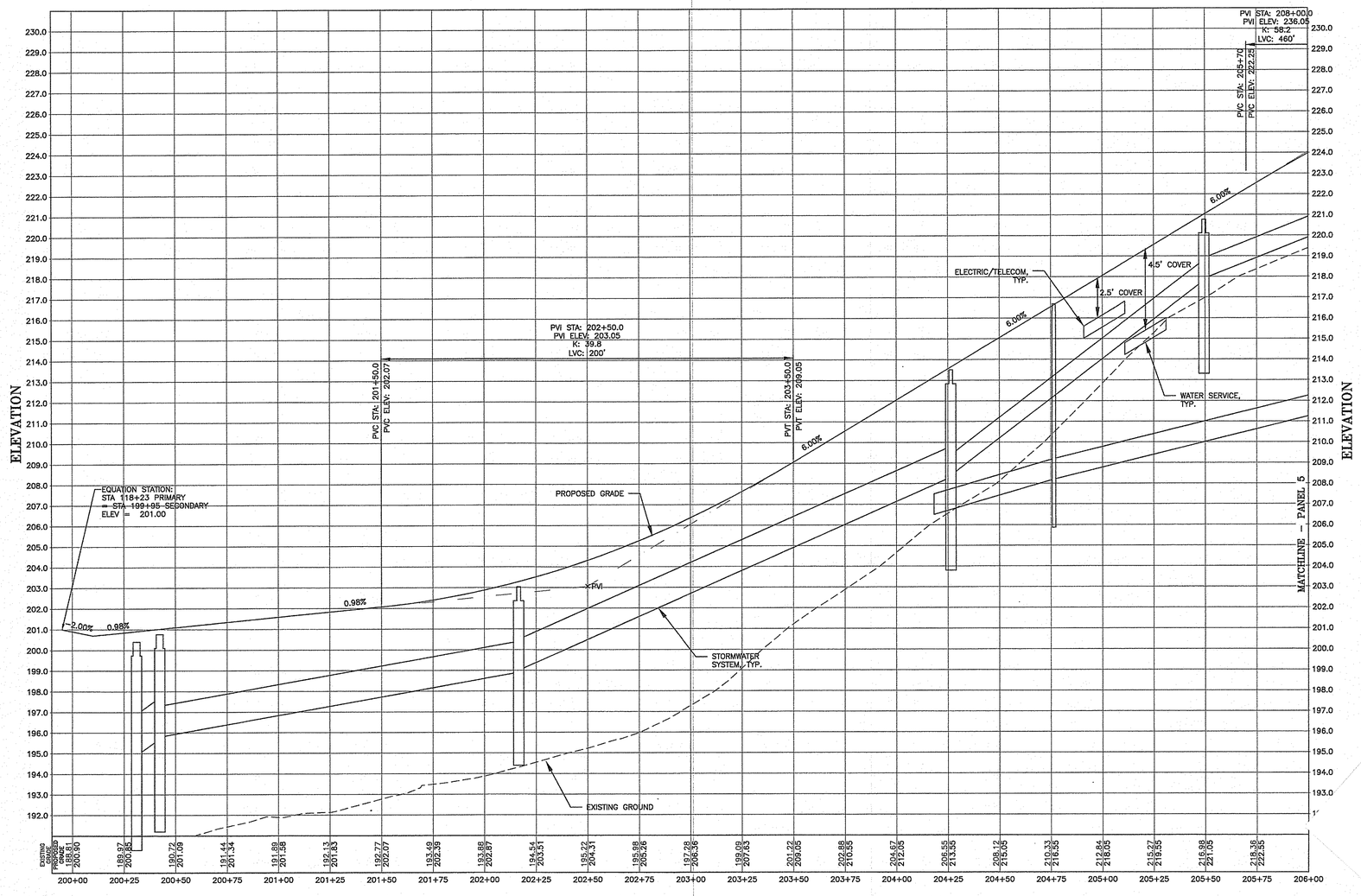
TITLE:

PRIMARY ACCESS DRIVE PLAN & PROFILE 3
STA. 112+00 TO STA. 118+75

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	AS NOTED
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-21





SECONDARY ACCESS DRIVE PROFILE 4

HORIZ: 1"=30', VERT: 1"=3'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
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Martin D. Wencek

amec foster wheeler
AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 100
PROVIDENCE RHODE ISLAND, 02908
PHONE: (401) 648-9420
WEB: WWW.AMECFW.COM

Environmental Management
JUN 28 2017
Office of Water Resources

NOT FOR CONSTRUCTION

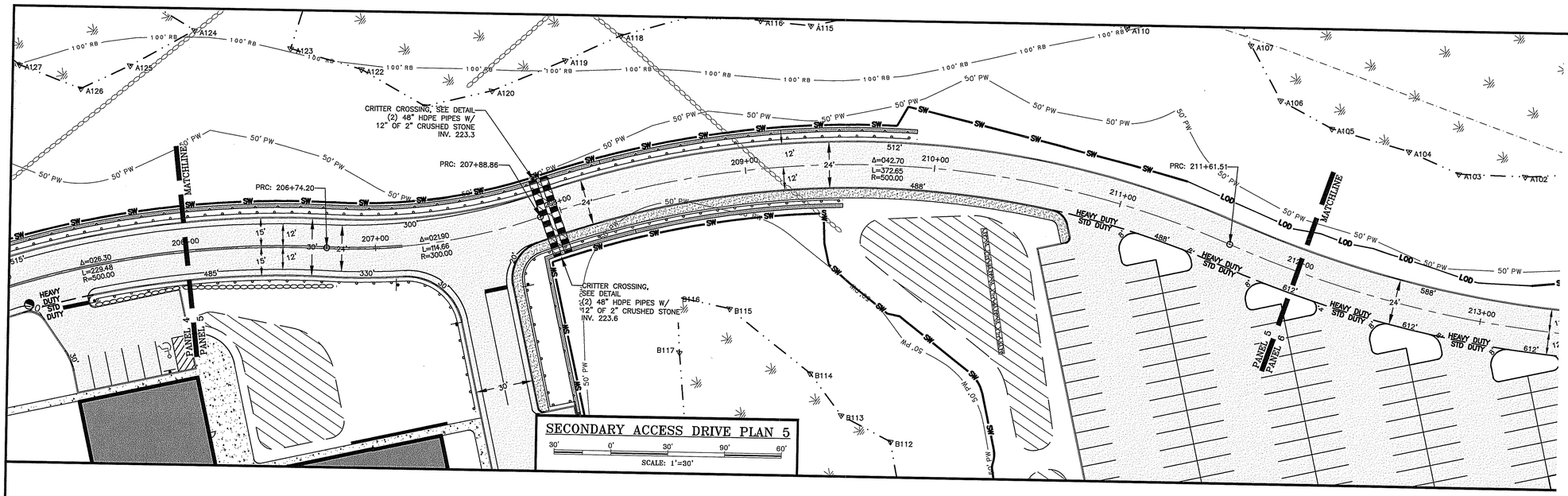
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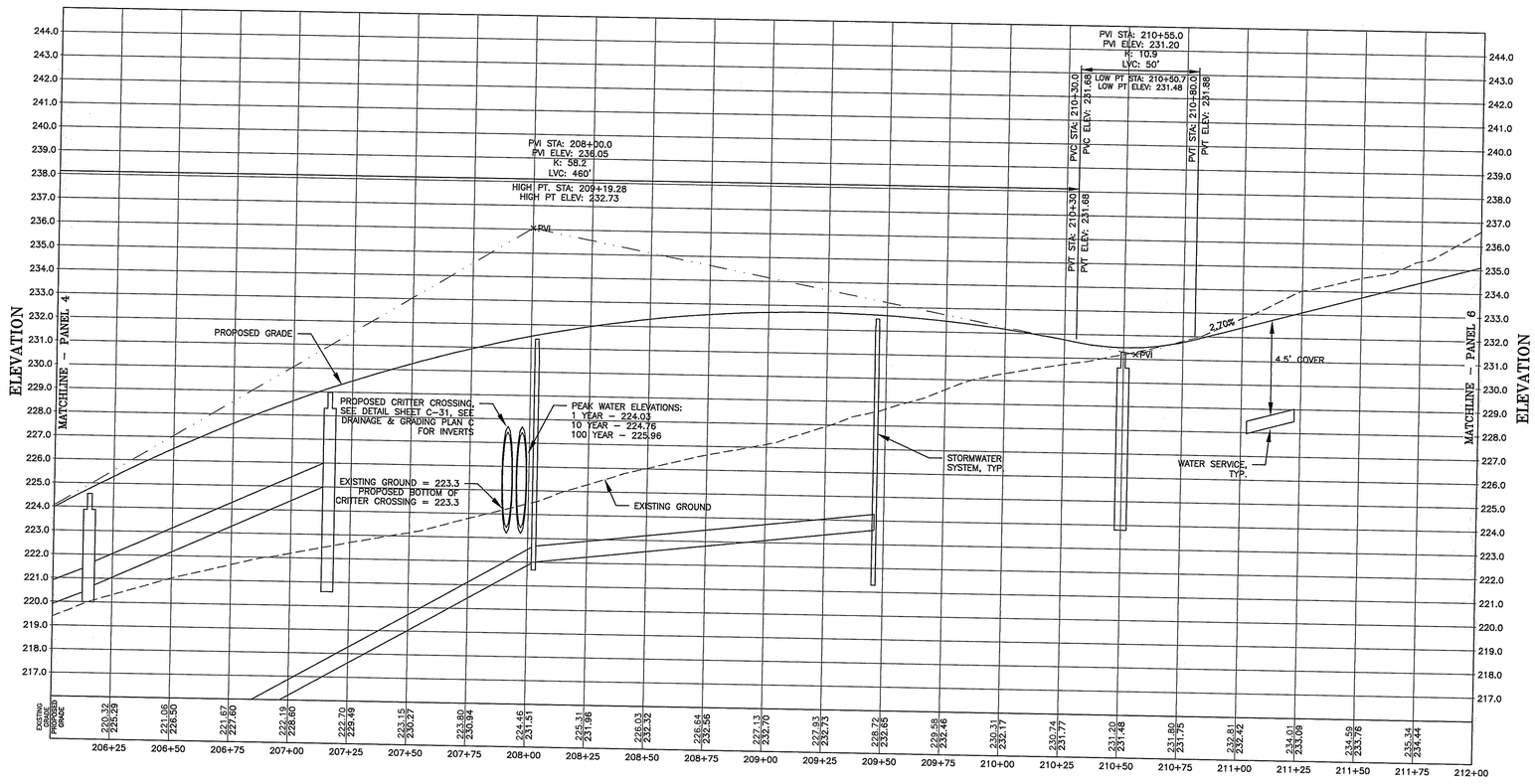
C N BEAULIEU–SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)

3	6/9/17	
2	4/	
1		

REVISIONS

CLIENT





SECONDARY ACCESS DRIVE PROFILE 5
HORIZ: 1"=30', VERT: 1"=3'

amec foster wheeler
AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 100
PROVIDENCE RHODE ISLAND, 02908
PHONE: (401) 648-9420
WEB: WWW.AMECFW.COM

Environmental Management
JUN 28 2017
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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
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DATED JUN 28 2017 FILE # 17-0090
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APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Martin B. Wenck

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU–SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
6/28/17

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2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

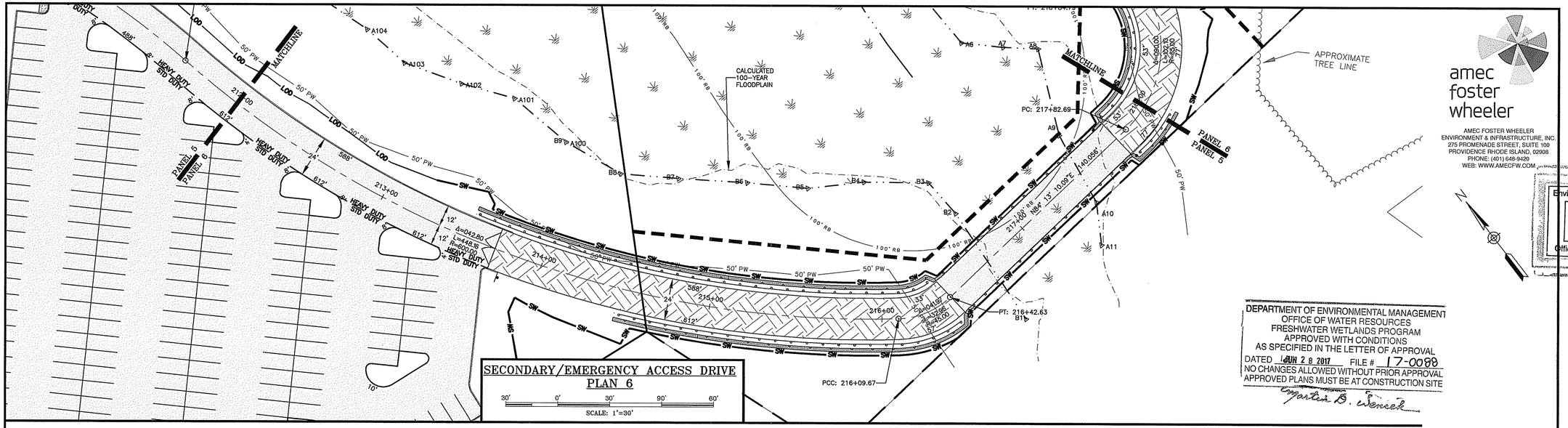
CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
SECONDARY ACCESS DRIVE PLAN & PROFILE 5
STA. 206+00 TO 212+00

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	AS NOTED
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

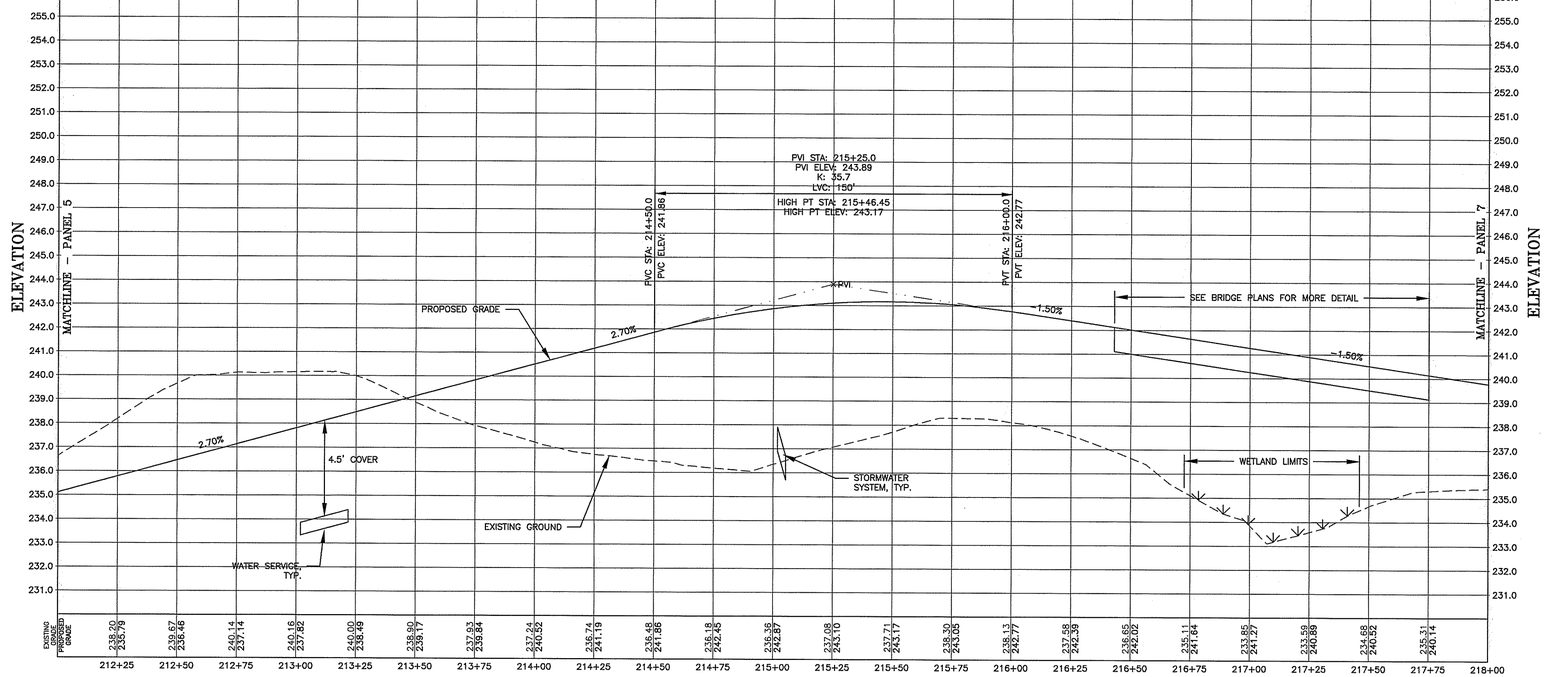
C-23



SECONDARY/EMERGENCY ACCESS DRIVE PLAN 6

30' 0' 30' 90' 60'

SCALE: 1'=30'



SECONDARY/EMERGENCY ACCESS DRIVE PROFILE 6

HORIZ: 1"=30', VERT: 1"=3'

amec foster wheeler

AMEC FOSTER WHEELER
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275 PROMENADE STREET, SUITE 100
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Environmental Management
JUN 28 2017
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 JUN 28 2017 FILE # 17-0098
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU-SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
6/28/17

REVISION	DATE	DESCRIPTION
4	6/28/17	RIDEM COMMENT
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

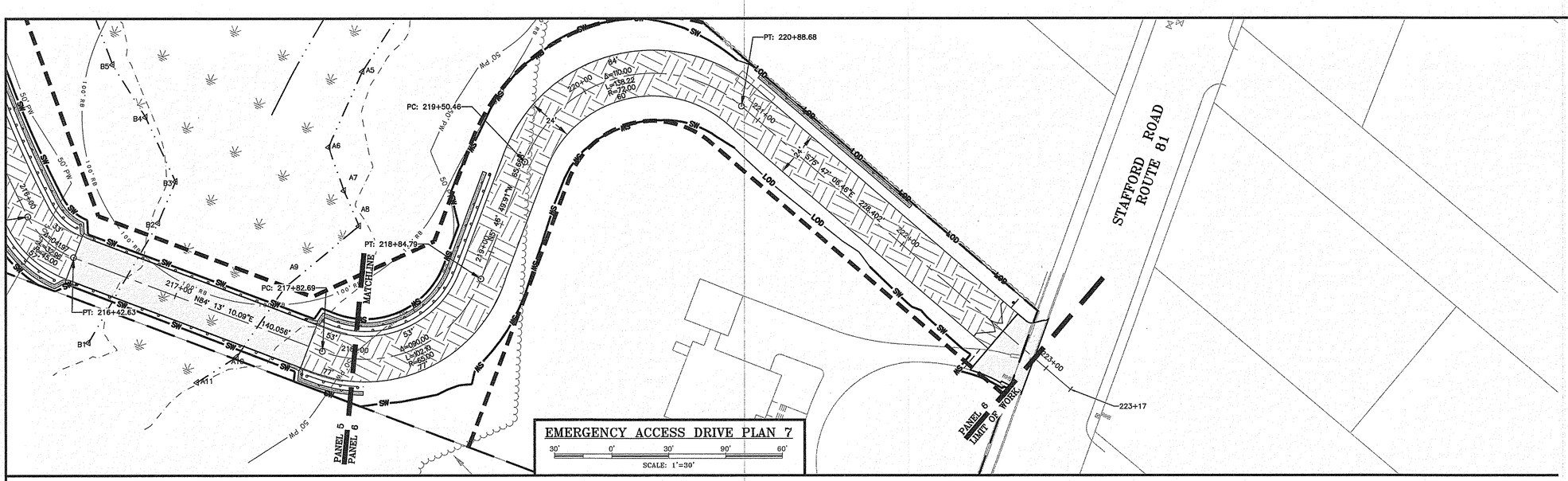
CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

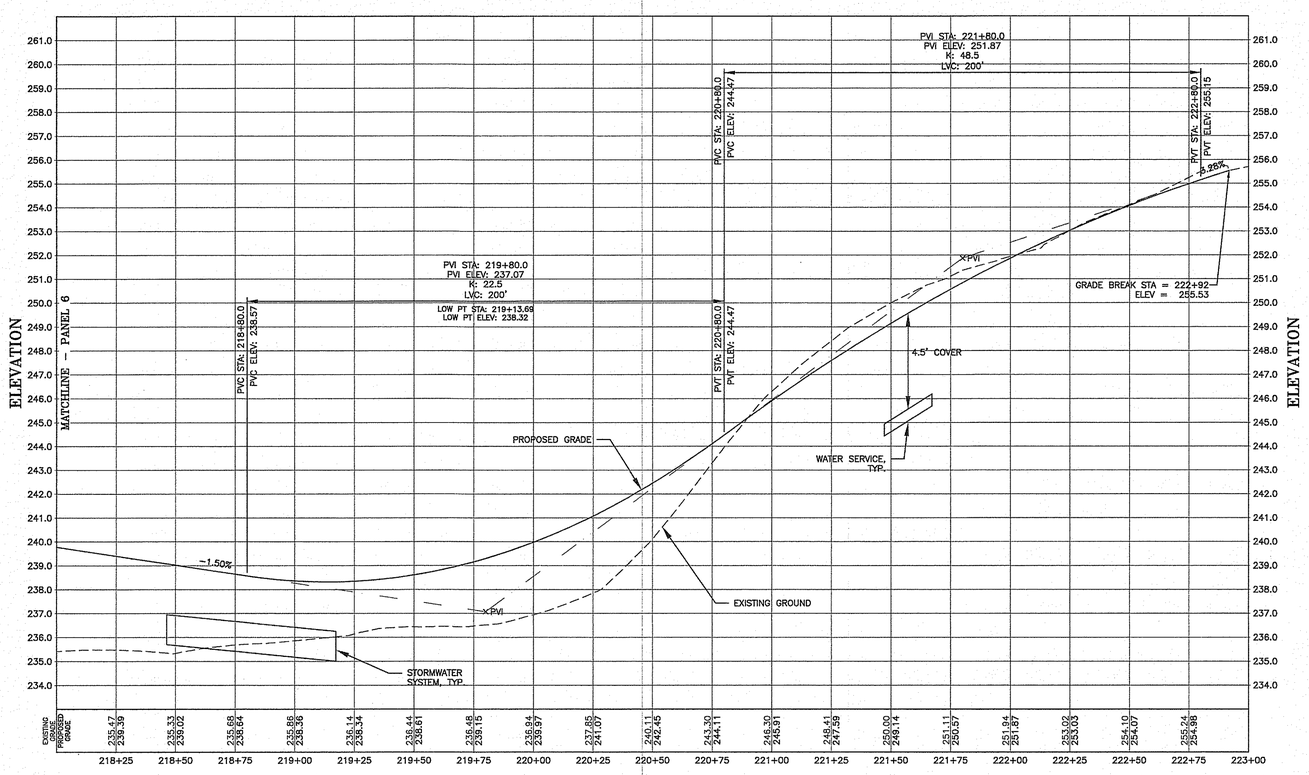
PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
SECONDARY/EMERGENCY ACCESS DRIVE
PLAN & PROFILE 6
STA. 212+00 TO 218+00

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	AS NOTED
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-24





EMERGENCY ACCESS DRIVE PROFILE 7
HORIZ: 1"=30', VERT: 1"=3'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 2 8 2017 FILE # 17-0088
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Martin D. Wencek

amec foster wheeler
AMEC FOSTER WHEELER
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Environmental Management
JUN 2 8 2017
Office of Water Resources

NOT FOR CONSTRUCTION
SEAL:
C N BEAULIEU–SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL) 6/9/17

REVISION	DATE	DESCRIPTION
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

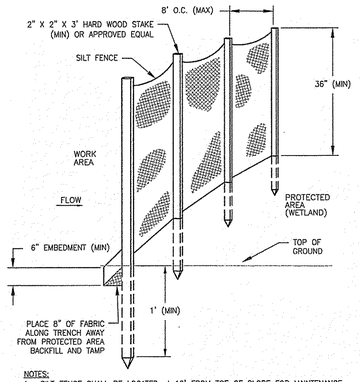
CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
EMERGENCY ACCESS DRIVE
PLAN & PROFILE 7
STA. 218+00 TO 222+92

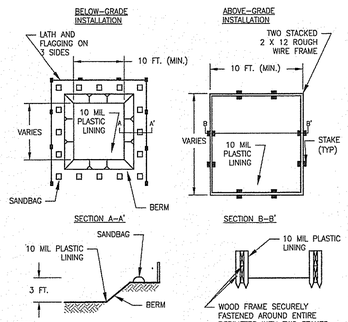
ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	AS NOTED
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-25
SHEET 25 OF 46
AMEC FOSTER WHEELER



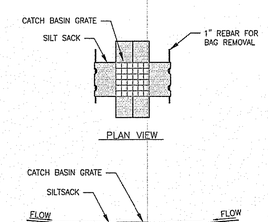
NOTES:
1. SILT FENCE SHALL BE LOCATED at 10' FROM TOE OF SLOPE FOR MAINTENANCE.
2. 8' WITH WIRE OR 6' WITHOUT WIRE (MAX).
3. WIRE FENCING – 6" MESH OPENING (MAX) AND 14 GAUGE (MIN).
4. MAINTAIN UNTIL UP–GRADIENT AREAS HAVE BEEN PERMANENTLY STABILIZED.

SILT FENCE
NTS CA–EC–001



NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. LOCATE A MIN. OF 50 FEET FROM STORM DRAINS, OPEN CHANNELS, WATER BODIES, AND JURISDICTIONAL WETLANDS.
3. SOIL BASE SHALL BE PREPARED FREE OF ROCKS OR OTHER DEBRIS THAT COULD CAUSE A TEAR IN THE LINER.
4. LOCATE WASHOUT AREA AT LEAST 50 FEET FROM SENSITIVE AREAS SUCH AS STORM DRAINS, OPEN DITCHES, OR WATER BODIES, INCLUDING ALL JURISDICTIONAL WETLANDS.

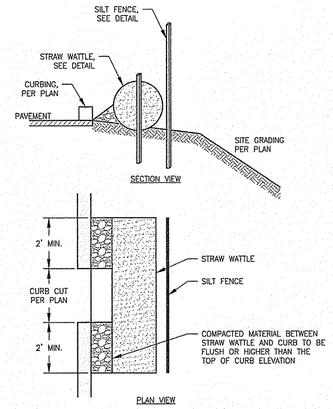
TEMPORARY CONCRETE WASHOUT FACILITY
NTS CA–EC–009



SECTION VIEW

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–GRADIENT AREAS HAVE BEEN PERMANENTLY STABILIZED.

SILT SACK SEDIMENT TRAP
NTS CA–EC–003

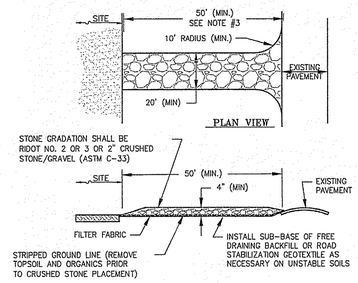


SILT FENCE BACKED STRAW WATTLE
NTS CA–EC–002

SITE SPECIFIC DATA
1. TOTAL SITE AREA = 47.7± ACRES
2. TOTAL AREA OF DISTURBANCE = 20.5± ACRES
3. LOT 111 AREA = 46.6± ACRES
4. LOT 111 AREA OF DISTURBANCE = 19.7± ACRES
5. LOT 107 (EASEMENT) AREA = 1.1± ACRES
6. LOT 107 (EASEMENT) AREA OF DISTURBANCE = 0.8± ACRES
7. NATURAL HERITAGE AREA (NHA) IMPACT – N/A
8. THREATENED SPECIES OR HABITAT IMPACT – N/A
9. WATERSHED = TRIBUTARY TO SUCKER BROOK: I.D. RI0007037R–01 (NO IMPAIRMENTS/TMDL)

EROSION CONTROLS/CONSTRUCTION SEQUENCING
1. 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.
2. 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.
3. 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."
4. 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.
5. 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.
6. EROSION CONTROL DEVICES
   a. AT LEAST ONE STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED FOR ACCESS TO THE PROJECT BY 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.
   b. ROADS ADJACENT TO THE CONSTRUCTION SITE SHALL BE CLEAN AT THE END OF EACH WORK DAY.
   c. 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.
   d. 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.
   e. 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
   f. 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."
7. 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.
8. 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.
9. 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.
10. 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.
11. 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.
12. THE CONTRACTOR SHALL INSTALL PERMANENT SEEDING BETWEEN APRIL 15TH AND JUNE 15TH AND/OR AUGUST 15TH TO OCTOBER 15TH.
13. THE CONTRACTOR SHALL APPLY PERMANENT SOIL STABILIZATION MEASURES TO ALL GRADED AREAS WITHIN SEVEN (7) DAYS OF ESTABLISHING FINAL GRADE.
14. 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.
15. 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.
16. NO SNOW SHALL BE PLOWED INTO WETLAND FEATURES OR STORMWATER MANAGEMENT AREAS. ALL EXCESS SNOW MUST BE STOCKPILED IN THE EMPLOYEE PARKING LOT OR REMOVED FROM THE SITE AS NECESSARY.

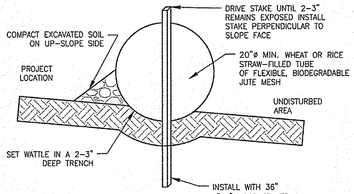
INFILTRATION AREAS
TO ENSURE THE LONG–TERM FUNCTION AND VALUE OF ANY AREA PROPOSED FOR INFILTRATION, INCLUDING BUT NOT LIMITED TO BIORETENTION BASINS, SAND FILTERS, SURFACE INFILTRATION BASINS, AND SUBSURFACE INFILTRATION CHAMBERS, THE CONTRACTOR SHALL EXERCISE THE FOLLOWING BEST MANAGEMENT PRACTICES THROUGHOUT CONSTRUCTION:
1. THESE AREAS SHALL NOT BE USED FOR TEMPORARY CONSTRUCTION SEDIMENTATION CONTROL, SEDIMENTATION BASINS, OR DEWATERING AREAS.
2. 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.
3. STORMWATER RUNOFF DURING CONSTRUCTION SHALL BE DIRECTED AWAY FROM THESE AREAS TO THE GREATEST EXTENT PRATICABLE. WHERE NOT FEASIBLE, THE CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROLS UP–GRADIENT OF THESE AREAS TO PREVENT SEDIMENTATION OF THESE AREAS DURING CONSTRUCTION.
4. 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.
5. 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.
6. UPON COMPLETION OF CONSTRUCTION OF ANY OF THESE AREAS, THE CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES TO PREVENT SILTATION OF THE FILTER MATERIALS.
7. DETERMINATION OF COMPACTED SOILS WITHIN INFILTRATION AREAS SHALL BE AT THE DISCRETION OF THE ENGINEER AND REMEDIED BY THE CONTRACTOR PRIOR TO COMPLETION OF CONSTRUCTION. REMEDIAL ACTION TO REPAIR COMPACTED SOILS SHALL INCLUDE, BUT ARE NOT LIMITED TO TILLING, SCARIFYING, AND/OR REPLACEMENT OF COMPACTED SOILS.



NOTES:
1. ENTRANCE WIDTH SHALL BE TWENTY (20) FEET WIDE MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVED SURFACES. PROVIDE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND. REPAIR ANY MEASURES USED TO TRAP SEDIMENT AS NEEDED. IMMEDIATELY REMOVE ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PAVED SURFACES. ROADS ADJACENT TO A CONSTRUCTION SITE SHALL BE LEFT CLEAN AT THE END OF EACH DAY.
3. 50 FEET MINIMUM WHERE THE SOILS ARE SANDS OR GRAVELS OR 100 FEET MINIMUM WHERE SOILS ARE CLAYS OR SILTS, EXPECT WHERE THE TRAVELED LENGTH IS LESS THAN 50 OR 100 FEET RESPECTIVELY.

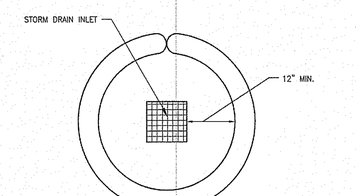
TEMPORARY CONSTRUCTION EXIT
NTS CA–EC–005

SLOPE STEEPNESS	MAXIMUM LENGTH (FT)
2:1	25
3:1	50
4:1	75
5:1 OR FLATTER	100

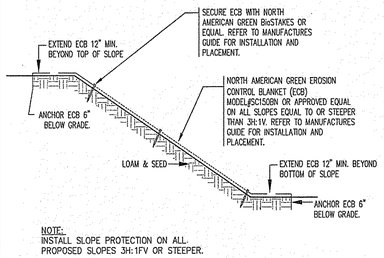


NOTES:
1. BEGIN AT THE LOCATION WHERE THE WATTLE IS TO BE INSTALLED BY EXCAVATING A 2–3" DEEP X 9" WIDE TRENCH ALONG THE CONTOUR OF THE SLOPE. EXCAVATED SOIL SHALL BE PLACED UP–SLOPE FROM THE ANCHOR TRENCH.
2. PLACE THE WATTLE IN THE TRENCH SO THAT IT CONTOURS TO THE SOIL SURFACE. COMPACT THE SOIL FROM THE EXCAVATED TRENCH AGAINST THE WATTLE ON THE UP–HILL SIDE. ADJACENT WATTLES SHOULD TIGHTLY ABUT.
3. SECURE THE WATTLE WITH 18–24" STAKES EVERY 3–4' WITH A STAKE ON EACH END. STAKES SHALL BE DRIVEN THROUGH THE MIDDLE OF THE WATTLES LEAVING AT LEAST SAMPLE LINE 2–3" OF STAKE EXTENDING ABOVE. THE WATTLE STAKES SHALL BE DRIVEN PERPENDICULAR TO SLOPE FACE.
4. MAX. DRAINAGE AREA ≤ 0.25 ACRES/100 LINEAR FEET.

STRAW WATTLE
NTS CA–EC–002

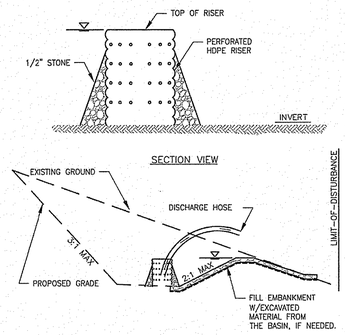


STRAW WATTLE INSTALLATION AT CATCH BASIN
NTS CA–EC–013B



NOTE:
INSTALL SLOPE PROTECTION ON ALL PROPOSED SLOPES 3H:1FV OR STEEPER.

SLOPE PROTECTION TREATMENT REV
NTS CA–EC–013B



NOTES:
1. TRAP CAPACITY: TEMPORARY SEDIMENT TRAP 134 CY/CONTRIBUTING ACRE AND 50% OF THIS VOLUME SHALL BE WET STORAGE.
2. TOTAL MIN. STORAGE VOLUME = 1" X CONTRIBUTING AREA.
3. SEDIMENT SHALL BE REMOVED WHEN THE BASIN IS 1/2 FULL AT A MINIMUM.
4. THE BASIN SHALL REMAIN IN PLACE UNTIL THE SITE HAS BEEN STABILIZED WITH BUILDINGS, PAVEMENT, OR ESTABLISHED VEGETATION, AS APPLICABLE.

TEMPORARY SEDIMENT TRAP
NTS CA–EC–007

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NOTES:
1. ALL DETAILS SHOWN ON THIS SHEET ARE DEPICTED ON SHEETS C–11 THROUGH C–14. (SOIL EROSION SEDIMENT CONTROL PLANS)

Environmental Management
JUN 28 2017
Office of Water Resources

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

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU–SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
6/9/17

REVISION	DATE	DESCRIPTION
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

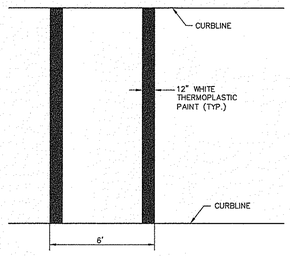
PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
DETAILS 1

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	NA
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

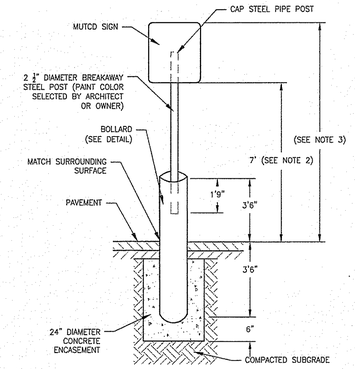
C-26
SHEET 26 OF 46

AMEC FOSTER WHEELER



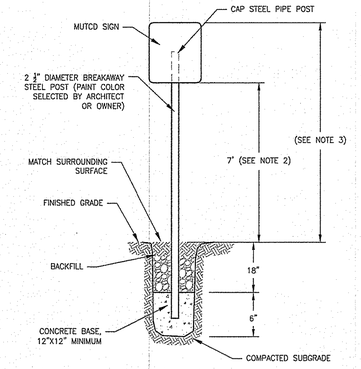
NOTES:
1. TWELVE INCH (12") LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (TWO – 6 INCH LINES) WILL BE ACCEPTED.
2. ALL LONGITUDINAL CROSSWALK LINES TO BE PROPERLY ALIGNED.
3. CROSS WALK SIDESLOPE SHALL NOT EXCEED 1.5%.

CROSSWALK
NTS



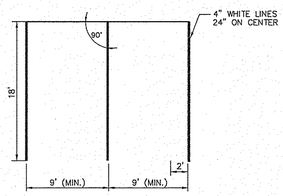
NOTES:
1. REQUIRED IN PARKING LOTS OR TRAVELED WAYS.
2. FOR ADA SIGNAGE, THIS DIMENSION SHALL BE 5' (MIN.)
3. FOR ADA SIGNAGE, THIS DIMENSION SHALL BE 8' (MAX.)

SIGN POST - BOLLARD MOUNTED
NTS CA–SS–002



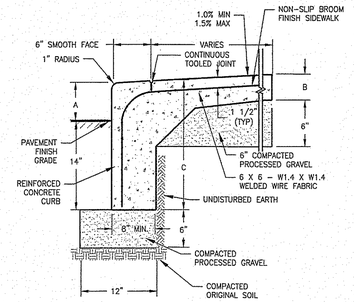
NOTES:
1. FOR USE IN LANDSCAPE AREAS AND SIDEWALKS ONLY. NOT FOR USE IN PARKING LOTS OR TRAVELED WAYS.
2. FOR ADA SIGNAGE, THIS DIMENSION SHALL BE 5' (MIN.)
3. FOR ADA SIGNAGE, THIS DIMENSION SHALL BE 8' (MAX.)

SIGN POST
NTS CA–SS–001



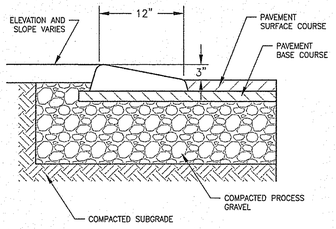
Notes:
1. ALL DIMENSIONS TO CENTER OF 4" PAVEMENT STRIPING.
2. ALL STRIPING SHALL BE 4" WIDE SOLID WHITE PAVEMENT MARKINGS UNLESS OTHERWISE NOTED.

PARKING SPACE
REV
NTS CA–SS–001



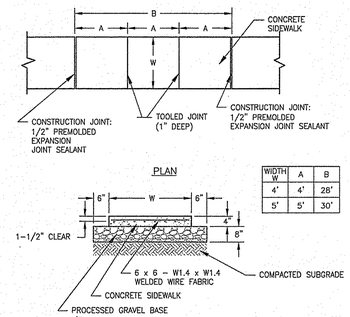
DIMENSION	SIDEWALK	DRIVEWAY
A	6"	1"
B	4"	6"
C	20"	15"

MONOLITHIC CURB AND SIDEWALK
NTS CA–RD–011B



NOTES:
1. ALL CURBING TO BE MACHINE EXTRUDED.

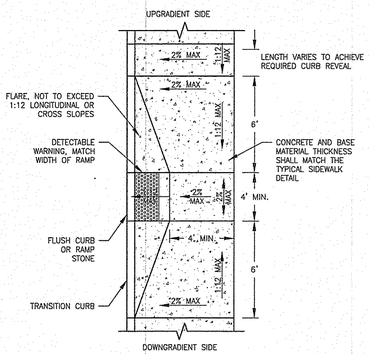
CAPE COD BERM (CCB)
NTS CA–019



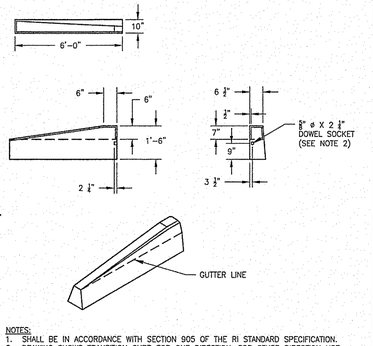
WIDTH W	A	B
4'	4'	28'
5'	5'	30'

NOTES:
1. SIDEWALK SLOPE SHALL BE A MIN. OF 1% AND A MAX. OF <2%.
2. CONCRETE SHALL BE MIN. 4,000 P.S.I., TYPE II.
3. BROOM FINISH PERPENDICULAR TO CURB OR TRAFFIC PATH.
4. PROVIDE A ½" WIDE EXPANSION JOINT WHERE SIDEWALK MEETS FACE–OF–BUILDING OR OTHER FIXED OBJECT.

CONCRETE SIDEWALK
NTS CA–RD–011A

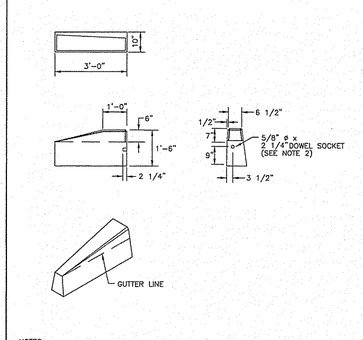


ADA RAMP TYPE A
NTS CA–RD–007



NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE RI STANDARD SPECIFICATION.
2. DRAWING SHOWS TRANSITION CURB FOR ONE DIRECTION. FOR OTHER DIRECTION USE OPPOSITE HAND AND INCLUDE A ½" ø X 4" EPOXY COATED DOWEL.
3. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
4. EXPOSED EDGES TO HAVE A ¾" CHAMFER.

6' PRECAST CONCRETE TRANSITION CURB
NTS CA–007A



NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. DRAWING SHOWS TRANSITION CURB FOR ONE DIRECTION, FOR OTHER DIRECTION USE OPPOSITE HAND AND INCLUDE A 1/2" ø x 4" EPOXY COATED DOWEL.
3. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
4. EXPOSED EDGES TO HAVE A 3/4" CHAMFER.
5. LEFT AND RIGHT SECTIONS SHALL BE INSTALLED AS REQUIRED.

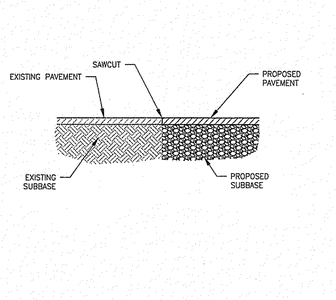
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

REVISIONS		
NO.	BY	DATE
1	MJP	Mar 05
2	MJP	06/01/10

3'–0" PRECAST CONCRETE TRANSITION CURB

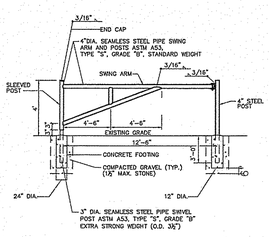
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R.I. STANDARD 7.1.1



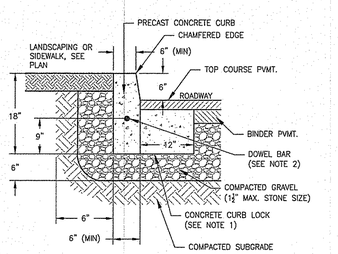
NOTES:
1. CLEAN SAWED JOINTS WITH COMPRESSED AIR.
2. APPLY JOINT SEAL MATERIAL FILLING FROM THE BOTTOM UP.
3. THE HOT–SEAL MATERIAL SHALL COMPLETELY FILL THE SAWCUT SUCH THAT AFTER COOLING THE LEVEL OF THE SEALER WILL NOT BE GRATER THAN ¼ INCH BELOW THE PAVEMENT SURFACE.
4. CARE SHALL BE TAKE DURING THE SEALING OPERATION TO INSURE THAT THE FINAL APPEARANCE WILL PRESENT A NEAT LINE.

PAVEMENT SAWCUT
NTS CA–RD–024



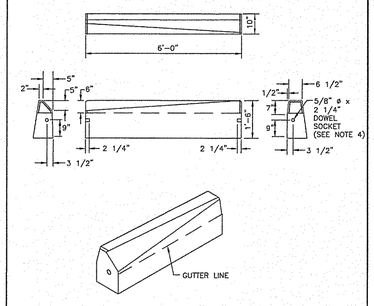
1. SHOP PRIME PAINT EXPOSED SURFACES FIELD PAINT EPOXY ENAMEL–COLOR AS SPECIFIED BY ARCHITECT AND LANDSCAPE ARCHITECT.
2. 3,000 PSI CONCRETE FOOTING.
3. GATE OPENING DEVICE TO BE AS DETERMINED BY THE TIVERTON FIRE DEPARTMENT.

SWING GATE
NTS CA–RD–022



NOTES:
1. 4000 P.S.I. CONCRETE SHALL BE REQUIRED ONLY WHEN THE CURB IS SET AFTER BASE AND/OR BINDER COURSES ARE IN PLACE. WHERE CONCRETE IS NOT REQUIRED, THE GRAVEL SHALL BE BROUGHT UP TO THE BOTTOM OF THE PAVEMENT BASE COURSE.
2. DOWEL BAR SHALL BE ½" x 4" x 4' LONG (MIN.) AND PROJECTING A MIN. OF 2" BEYOND CURB SECTION.

PRECAST CONCRETE CURB
NTS CA–RD–003



NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
3. EXPOSED EDGES TO HAVE A 3/4" CHAMFER.
4. DRAWING SHOWS TRANSITION CURB FOR ONE DIRECTION. FOR OTHER DIRECTION USE OPPOSITE HAND AND INCLUDE A 1/2" ø x 4" EPOXY COATED DOWEL.

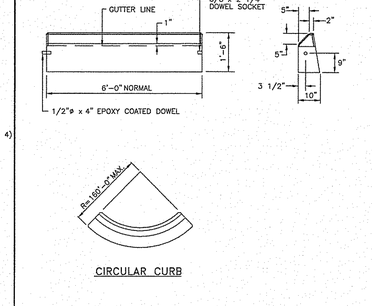
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

REVISIONS		
NO.	BY	DATE
1	MJP	Mar 05

PRECAST CONCRETE TRANSITION CURB (VERTICAL FACE TO SLOPED FACE)

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R.I. STANDARD 7.2.2



CIRCULAR CURB

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
2. MINIMUM LENGTH OF STRAIGHT OR CIRCULAR PIECES TO BE 3'–0".
3. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
4. EXPOSED EDGES TO HAVE A 3/4" CHAMFER.
5. CIRCULAR CURB IS REQUIRED ON CURVES WITH RADII OF 160'–0" OR LESS. STRAIGHT CURB TO BE USED ON CURVES OF MORE THAN 160'–0" RADIUS.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

REVISIONS		
NO.	BY	DATE
1	MJP	Mar 05

PRECAST CONCRETE SLOPED FACE CURB

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R.I. STANDARD 7.2.0

amec foster wheeler
AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 100
PROVIDENCE RHODE ISLAND, 02908
PHONE: (401) 648-9420
WEB: WWW.AMECFW.COM

NOTES:
1. ALL DETAILS SHOWN ON THIS SHEET ARE DEPICTED ON SHEETS C–3 THROUGH C–6. (LAYOUT & MATERIAL PLANS)

Environmental Management
JUN 28 2017
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 JUN 28 2017 FILE# 17-0089
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Martin B. Wenck

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU–SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL) 6/9/17

REVISION	DATE	DESCRIPTION
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

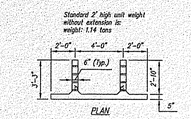
PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
DETAILS 2

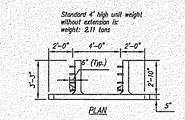
ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	NA
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-27
SHEET 27 OF 46
AMEC FOSTER WHEELER

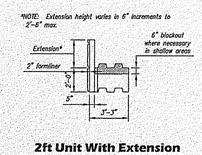
Block Details



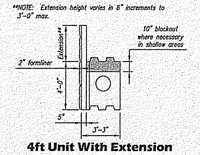
Standard 2ft Unit Details



Standard 4ft Unit Details

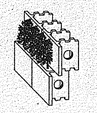


2ft Unit With Extension

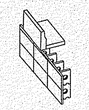


4ft Unit With Extension

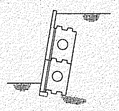
Wall Options



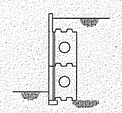
Offset Planter Wall



Wall With Traffic Barrier



Battered Wall

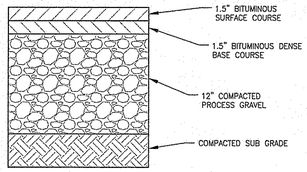


Vertical Wall

NOTES:
1. CONTRACTOR TO PROVIDE A STAMPED, STRUCTURAL DESIGN TO THE CLIENT AND REVIEWING ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.

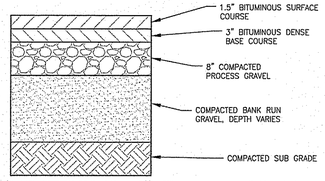
MODULAR RETAINING WALL
NTS CA-001

STANDARD DUTY PAVEMENT



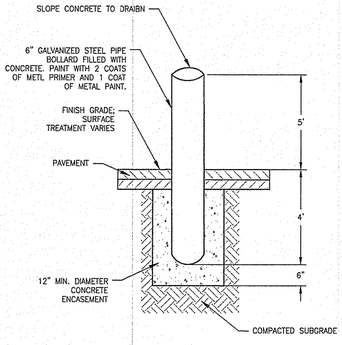
NTS CA-RD-001

HEAVY DUTY PAVEMENT



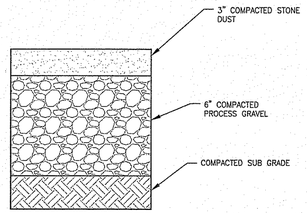
NTS CA-RD-002

BOLLARD



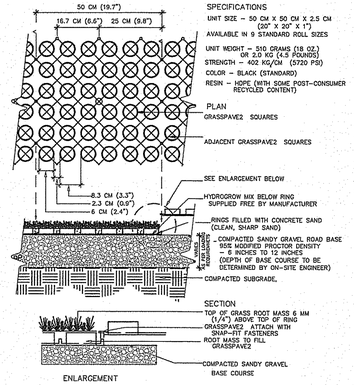
NTS CA-M-003

STONE DUST WALK



NTS CA-RD-022

TYPICAL GRASSPAVE2 DETAIL



NOTE: GRASS/PLANT TYPES SHALL BE SPECIFIED BY A LANDSCAPE ARCHITECT OR LANDSCAPE DESIGNER.

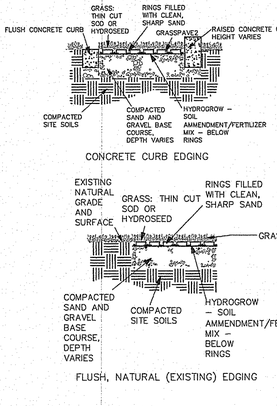
NTS CA-001

amec foster wheeler

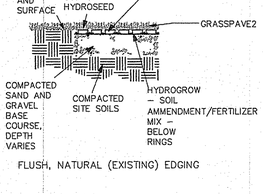
AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 100
PROVIDENCE RHODE ISLAND, 02908
PHONE: (401) 648-9420
WEB: WWW.AMECFW.COM

NOTES:
1. ALL DETAILS SHOWN ON THIS SHEET ARE DEPICTED ON SHEETS C-3 THROUGH C-6. (LAYOUT & MATERIAL PLANS)

Environmental Management
JUN 28 2017
Office of Water Resources

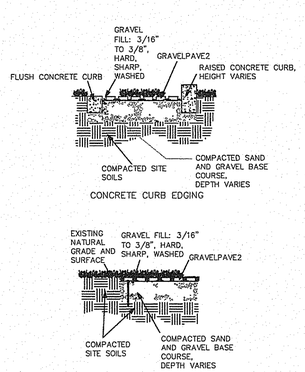


CONCRETE CURB EDGING



FLUSH, NATURAL (EXISTING) EDGING

GRASSPAVE 2 PAVE EDGE DETAIL
NTS CA-RD-022

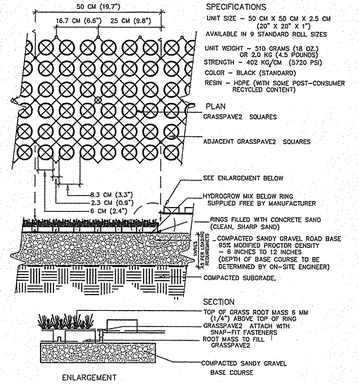


CONCRETE CURB EDGING

FLUSH, NATURAL (EXISTING) EDGING

NOTE: VEGETATION MAY CREEP ONTO GRAVELPAVE2 SYSTEM

GRAVELPAVE2 PAVE EDGE DETAILS
NTS CA-001



NOTE: GRASS/PLANT TYPES SHALL BE SPECIFIED BY A LANDSCAPE ARCHITECT OR LANDSCAPE DESIGNER.

TYPICAL GRAVELPAVE2 DETAIL
NTS CA-001

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 2 6 2017 FILE # 17-0088
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Martin B. Wencek

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU–SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
6/9/17

REVISION	DATE	DESCRIPTION
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

CLIENT:

TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:

TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:

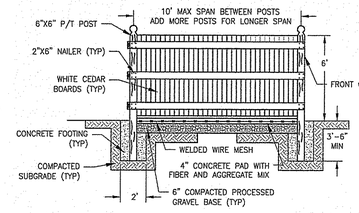
DETAILS 3

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	NA
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

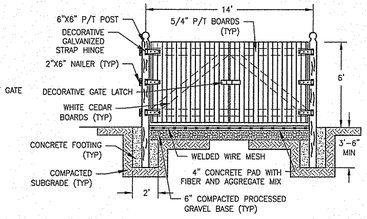
C-28

SHEET 28 OF 46

AMEC FOSTER WHEELER



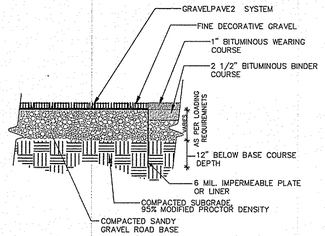
SIDE



FRONT

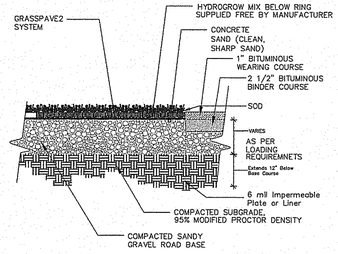
NOTE:
1. ALL CONCRETE WORK TO BE NON-SLIP BROOM FINISH.
2. ALL FASTENERS AND HARDWARE TO BE HOT-DIPPED GALVANIZED.

DUMPSTER ENCLOSURE DETAIL
NTS CA-M-014



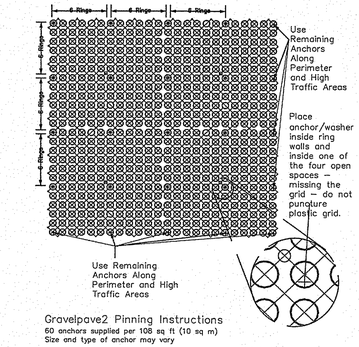
NOTE: GRASS/PLANT TYPES SHALL BE SPECIFIED BY A LANDSCAPE ARCHITECT OR LANDSCAPE DESIGNER

GRAVELPAVE2 AT ASPHALT EDGE
NTS CA-RD-022



NOTE: GRASS/PLANT TYPES SHALL BE SPECIFIED BY A LANDSCAPE ARCHITECT OR LANDSCAPE DESIGNER

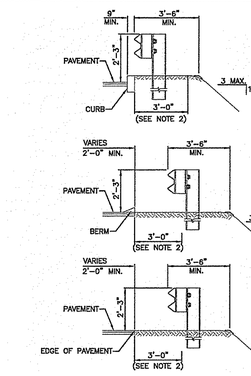
GRASSPAVE2 AT ASPHALT EDGE
NTS CA-RD-022



Gravelpave2 Pinning Instructions
60 anchors supplied per 108 sq ft (10 sq m)
Size and type of anchor may vary

1. Place one anchor (minimum) every six rings
2. Place anchor inside rings, in one of the four open spaces (do not puncture grid).
3. Place remaining anchors around perimeter of site and in high traffic areas

GRAVELPAVE2 PINNING DETAIL
NTS CA-001



NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.
2. TREAT THIS AREA WITH HERBICIDE AFTER THE GUARD RAIL INSTALLATION AS REQUIRED.

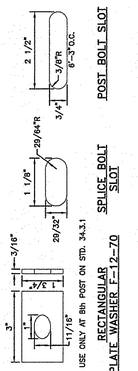
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

TYPICAL GUARDRAIL INSTALLATION — R.I. STANDARD 34.1.0

REVISIONS NO.	BY	DATE

D:\5861\Grgold3.bmp — JUNE 15, 1998

BOLT SELECTION TABLE			
INTENDED USE	BOLT TYPE	THREAD LENGTH L	NUT TYPE
AS SPLICE ON "W" BEAM GUARD RAIL	5/8"ø BUTTON HEAD	1 1/4" FULL	5/8" ø STANDARD
AS SPLICE ON "W" BEAM RAIL TO STEEL POSTS OR BRACKET	5/8"ø BUTTON HEAD	2" 1 1/2" MIN.	5/8" ø HEX
AS SPLICE ON "W" BEAM RAIL FOR CHANNEL RUB RAIL OR "W" BEAM GUARD RAIL	5/8"ø CARRIAGE HEAD	1 1/4" FULL	5/8" ø HEX
FOR FASTENING CHANNEL RUB RAIL ELEMENTS TO "W" BEAM GUARD RAIL	5/8"ø CARRIAGE HEAD	3" 1 1/2" MIN.	5/8" ø HEX
FOR FASTENING STEEL BLOCK TO STEEL POSTS	5/8"ø HEX	1 1/2" FULL	5/8" ø HEX



NOTE:
SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.

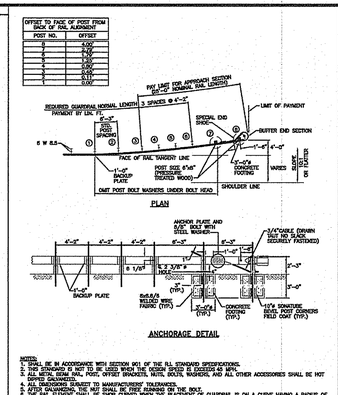
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

STEEL BEAM GUARDRAIL FIXTURES — R.I. STANDARD 34.2.3

REVISIONS NO.	BY	DATE

D:\5861\Grgold2.bmp — D:\5861\Parker.bmp — JUNE 15, 1998

OFFSET TO FACE OF POST FROM BACK OF RAIL ALIGNMENT	
POST NO.	OFFSET
0	4.00'
1	4.25'
2	4.25'
3	4.50'
4	4.50'
5	4.75'
6	4.75'
7	5.00'



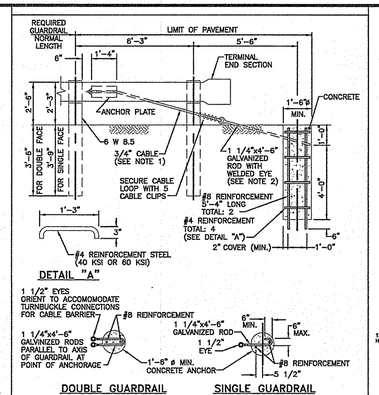
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.
2. THIS STANDARD IS NOT TO BE USED WHEN THE DESIGN SPEED IS EXCEEDS 45 MPH.
3. ALL METAL BEAM RAIL, POST, OFFSET BRACKETS, NUTS, BOLTS, WASHERS, AND ALL OTHER ACCESSORIES SHALL BE HOT DIP GALVANIZED.
4. ALL DIMENSIONS SUBJECT TO MANUFACTURERS' TOLERANCES.
5. AFTER GALVANIZING, THE RAIL SHALL BE FREE BURRING ON THE HOLES.
6. THE RAIL SHALL BE SHOP BENT TO THE RADIUS SHOWN WHERE THE GUARDRAIL IS ON A CURVE HAVING A RADIUS OF 150'-0" OR LESS. NO FIELDBENDING WITHOUT SHOP BENDING WILL BE ALLOWED.
7. POST AND OFFSET BRACKET TO BE FABRICATED FROM 6"x8" X 1/2 LBS. STEEL "H" SECTIONS.
8. POST AND BRACKET BOLT HOLES TO BE OVAL UNLESS OTHERWISE SPECIFIED.
9. ALL HOLES IN OFFSET BRACKETS SHALL BE 13/16".
10. FOR DETAILS ON CABLE, ANCHOR PLATE, END POST, BUFFER END SECTION, AND BACKUP PLATE SEE STD. 34.3.3.
11. TO FACILITATE DRAINAGE, 2" DIAMETER WEEP HOLES SHALL BE PROVIDED AT THE GUARDRAIL IS ON A SAG VERTICAL CURVE. ADDITIONAL DRAINAGE APERTURES OR METAL SLEEVES SHALL TO BE INSTALLED AROUND THE POST FRAME FOR EXISTING THE FOOTINGS (SLEEVE TO BE FILLED WITH CONCRETE SAND.)
12. FOR TYPICAL END OF GUARDRAIL ADJACENT TO BRIDGE PARAPET OR WINGWALL, SEE STD. 34.3.1 FOR TERMINAL SECTION.
13. FOR TYPICAL END OF GUARDRAIL ADJACENT TO EMBANKMENT (NOT TERMINAL SECTION), HOOK TO LAST POST TO BE A LINE POST.
14. USE NO WASHERS UNDER POST BOLT HEADS FROM FIRST THRU SEVENTH POSTS.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

GUARDRAIL END SECTION — R.I. STANDARD 34.3.1

REVISIONS NO.	BY	DATE

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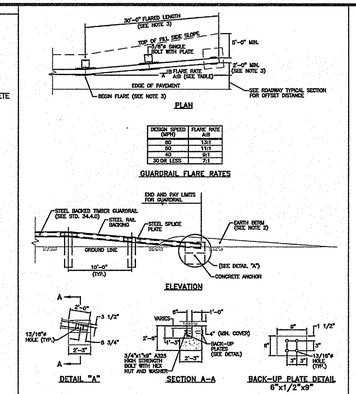
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.
2. CABLE TO BE PARALLEL TO GUARDRAIL FOR STRAIGHT RUNS OF RAIL. CABLE MAY HAVE ANGLE POINT AT ANCHOR PLATE IF GUARDRAIL IS CURVED.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

ANCHORAGE DETAILS TRAILING END SECTION — R.I. STANDARD 34.3.4

REVISIONS NO.	BY	DATE

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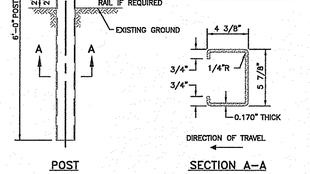
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 900 OF THE R.I. STANDARD SPECIFICATIONS.
2. NOTWITHSTANDING ANY SLOPE SHOWN ON THE CROSS SECTION VIEW TO THE CONTRARY, THE SLOPE OF THE EARTH BERM SHALL BE DESIGNED, AS DIRECTED BY THE ENGINEER, THE GUARDRAIL SHOULD BE FLARED SO THE TERMINAL SECTION IS OUTSIDE THE CLEAR ZONE. WHEN THIS IS NOT PRACTICAL IT SHOULD BE FLARED AS FAR FROM THE ROAD AS PRACTICAL AT THE MAXIMUM RATE SHOWNON ON THE GUARDRAIL FLARE RATES TABLE.
3. SEE STANDARD 34.4.1 FOR STEEL, CONCRETE, STEEL AND HARDWARE DETAILS.
4. BOLDFACED NOTE IS A PAY ITEM.
5. THE BLOCKS SHALL BE INCLUDED IN THE TERMINAL SECTION, EXCEPT ON THE CONCRETE ANCHOR.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

STEEL BACKED TIMBER GUARDRAIL TERMINAL SECTION – TYPE 1 — R.I. STANDARD 34.4.1

REVISIONS NO.	BY	DATE

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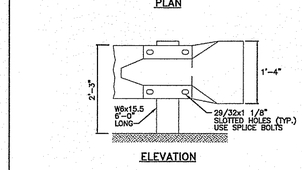
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.
2. ALL HOLES TO BE 13/16" ø.
3. ONLY ONE TYPE OF POST SHALL BE USED IN A SINGLE RUN. OPEN SIDE SHALL FACE AWAY FROM DIRECTION OF ONCOMING TRAFFIC.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

STEEL BEAM GUARDRAIL POST AND OFFSET BRACKET "C" SECTION — R.I. STANDARD 34.2.4

REVISIONS NO.	BY	DATE

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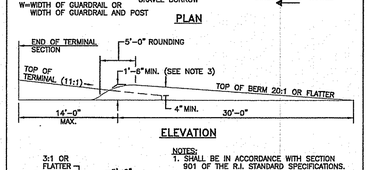
NOTE:
SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

TERMINAL END SECTION (SINGLE FACE) — R.I. STANDARD 34.3.2

REVISIONS NO.	BY	DATE

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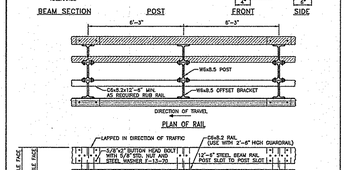
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.
2. THE ACTUAL DIMENSIONS OF THE BERM SHALL VARY IN ACCORDANCE WITH THE VARIABLE DIMENSIONS SHOWN AND AS DIRECTED BY THE ENGINEER.
3. SEE PLANS FOR DETAILS OF SPECIFIED ROADSIDE BARRIER AND TERMINAL SECTIONS.
4. IF THE TAPER ON THE TOP OF THE TERMINAL SECTION IS STEEPER THAN 11:1 THE MINIMUM HEIGHT OF THE BERM SHALL BE 2'-0".

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

EARTH BERM FOR ROADSIDE BARRIER TERMINAL SECTIONS — R.I. STANDARD 34.3.0

REVISIONS NO.	BY	DATE

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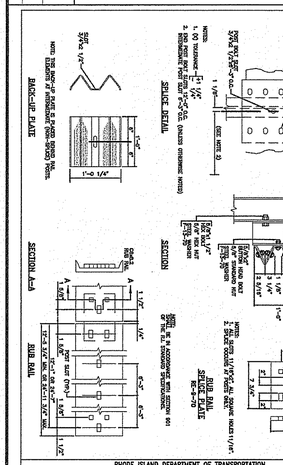
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 901 OF THE R.I. STANDARD SPECIFICATIONS.
2. POST AND OFFSET BRACKET TO BE FABRICATED FROM 6"x8" X 1/2 LBS/FT. STEEL "H" SECTIONS.
3. POST AND BRACKET BOLT HOLES TO BE OVAL UNLESS OTHERWISE SPECIFIED.
4. ALL HOLES IN OFFSET BRACKETS SHALL BE 13/16".

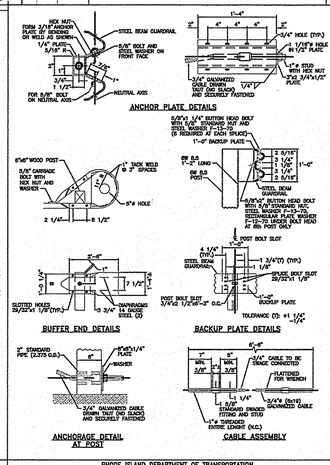
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

STEEL BEAM GUARDRAIL — R.I. STANDARD 34.2.0

REVISIONS NO.	BY	DATE

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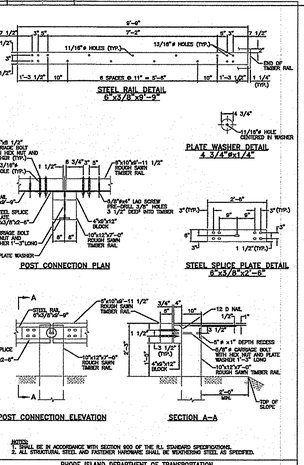


RHODE ISLAND DEPARTMENT OF TRANSPORTATION

STEEL BEAM GUARDRAIL DETAILS — R.I. STANDARD 34.2.1

REVISIONS NO.	BY	DATE

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RHODE ISLAND DEPARTMENT OF TRANSPORTATION

ANCHORAGE DETAILS APPROACH END SECTION — R.I. STANDARD 34.3.5

REVISIONS NO.	BY	DATE

D:\5861\Parker.bmp — JUNE 15, 1998

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

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

STEEL BACKED TIMBER GUARDRAIL — R.I. STANDARD 34.4.0

REVISIONS NO.	BY	DATE

JUNE 15, 1998

amec foster wheeler
AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 100
PROVIDENCE RHODE ISLAND, 02906
PHONE: (401) 648-9420
WEB: WWW.AMECFW.COM

NOTES:
1. ALL DETAILS SHOWN ON THIS SHEET ARE DEPICTED ON SHEETS C-3 THROUGH C-6. (LAYOUT & MATERIAL PLANS)

Environmental Management
JUN 28 2017
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 JUN 28 2017 FILE # 17-0088
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Martin D. Wencek

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU-SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL) 6/9/17

REVISION	DATE	DESCRIPTION
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

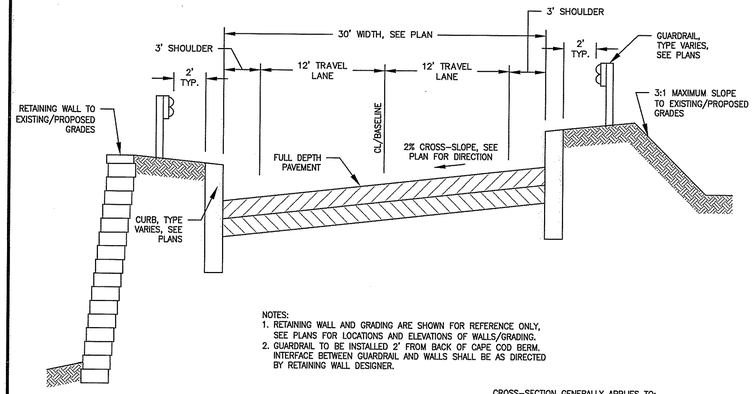
CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD & STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
DETAILS 4

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	NA
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-29



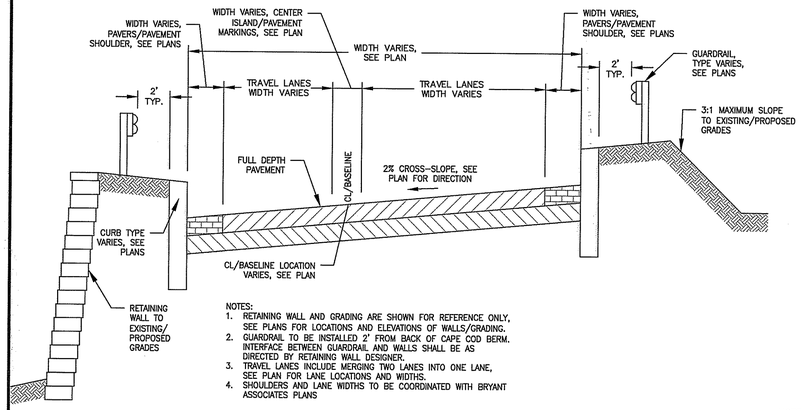
NOTES:
1. RETAINING WALL AND GRADING ARE SHOWN FOR REFERENCE ONLY, SEE PLANS FOR LOCATIONS AND ELEVATIONS OF WALLS/GRADING.
2. GUARDRAIL TO BE INSTALLED 2' FROM BACK OF CAPE COD BERM. INTERFACE BETWEEN GUARDRAIL AND WALLS SHALL BE AS DIRECTED BY RETAINING WALL DESIGNER.

PRIMARY AND SECONDARY ROADWAY CROSS-SECTIONS DETAIL NOTES:

1. THE CROSS-SECTIONS GIVEN ON THIS SHEET INDICATE PROPOSED SUPER ELEVATION, GENERAL EDGE-OF-ROAD TREATMENT, ETC. REFER TO SHEET NOS. C-7, C-8, C-9, AND C-10 ("GRADING & DRAINAGE PLAN" SHEETS) FOR ACTUAL ROADWAY GRADING.

CROSS-SECTION GENERALLY APPLIES TO:
- PRIMARY ACCESS ROAD STA. 105+20± TO 118+20±
- SECONDARY ACCESS ROAD STA. 203+40± TO 207+70±

TYPICAL CROSS-SECTION - 1
NTS

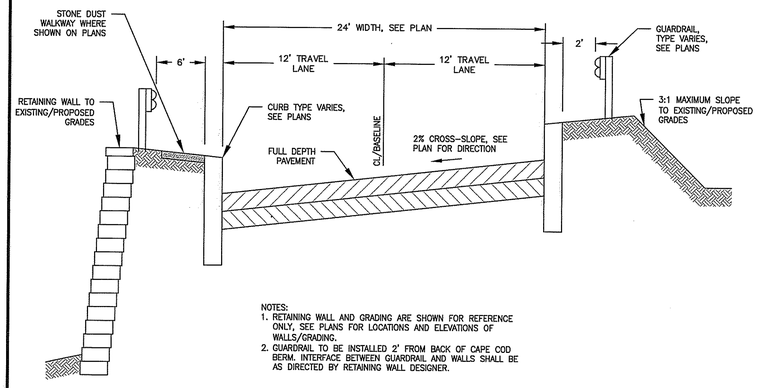


NOTES:
1. RETAINING WALL AND GRADING ARE SHOWN FOR REFERENCE ONLY, SEE PLANS FOR LOCATIONS AND ELEVATIONS OF WALLS/GRADING.
2. GUARDRAIL TO BE INSTALLED 2' FROM BACK OF CAPE COD BERM. INTERFACE BETWEEN GUARDRAIL AND WALLS SHALL BE AS DIRECTED BY RETAINING WALL DESIGNER.
3. TRAVEL LANES INCLUDE MERGING TWO LANES INTO ONE LANE, SEE PLAN FOR LANE LOCATIONS AND WIDTHS.
4. SHOULDERS AND LANE WIDTHS TO BE COORDINATED WITH BRYANT ASSOCIATES PLANS

CROSS-SECTION GENERALLY APPLIES TO:
- PRIMARY ACCESS ROAD STA. 100+80± TO 105+20±
- SECONDARY ACCESS ROAD STA. 200+00± TO 203+40±

TYPICAL CROSS-SECTION - 2
NTS

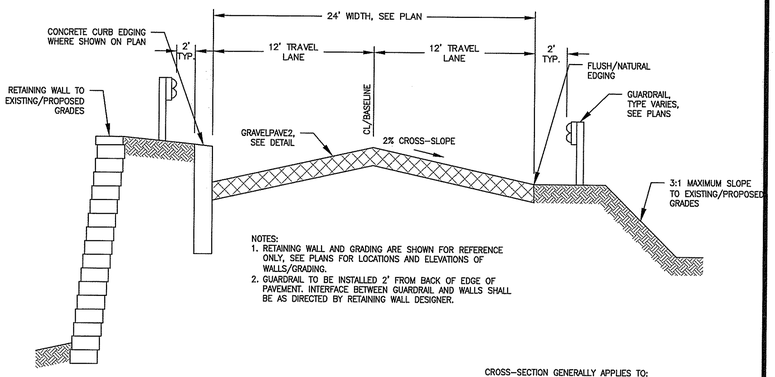
NOTES:
1. ALL CROSS-SECTIONS SHOWN ON THIS SIDE OF THE SHEET ARE DEPICTED ON SHEETS C-3 THROUGH C-6. (LAYOUT & MATERIAL PLANS)



NOTES:
1. RETAINING WALL AND GRADING ARE SHOWN FOR REFERENCE ONLY, SEE PLANS FOR LOCATIONS AND ELEVATIONS OF WALLS/GRADING.
2. GUARDRAIL TO BE INSTALLED 2' FROM BACK OF CAPE COD BERM. INTERFACE BETWEEN GUARDRAIL AND WALLS SHALL BE AS DIRECTED BY RETAINING WALL DESIGNER.

CROSS-SECTION GENERALLY APPLIES TO:
- SECONDARY ACCESS ROAD STA. 207+70± TO 213+70±

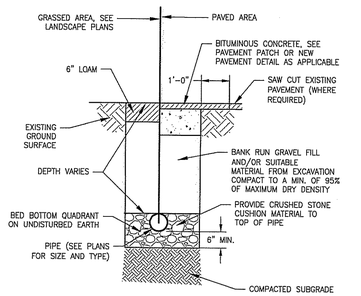
TYPICAL CROSS-SECTION - 3
NTS



NOTES:
1. RETAINING WALL AND GRADING ARE SHOWN FOR REFERENCE ONLY, SEE PLANS FOR LOCATIONS AND ELEVATIONS OF WALLS/GRADING.
2. GUARDRAIL TO BE INSTALLED 2' FROM BACK OF EDGE OF PAVEMENT. INTERFACE BETWEEN GUARDRAIL AND WALLS SHALL BE AS DIRECTED BY RETAINING WALL DESIGNER.

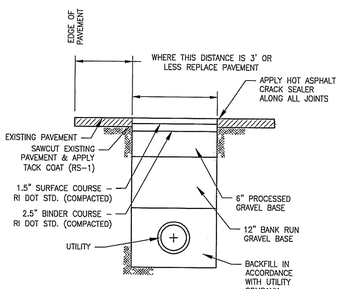
CROSS-SECTION GENERALLY APPLIES TO:
- SECONDARY ACCESS ROAD STA. 213+70± TO 216+40±
- SECONDARY ACCESS ROAD STA. 217+80± TO 222+80±

TYPICAL CROSS-SECTION - EMERGENCY ACCESS ROAD
NTS



NOTES:
1. WIDTH (W) OF TRENCH IS EQUAL TO THE INSIDE DIAMETER OF THE PIPE PLUS 12".
2. SOIL UNDER CRUSHED STONE FOUNDATION SHALL BE UNDISTURBED AND COMPACTED WITH SEVERAL PASSES OF A VIBRATORY PLATE COMPACTOR.
3. CRUSHED STONE FOUNDATION ¾" MAXIMUM SIZE, SHALL BE PLACED 6" UNDER THE PIPE AND UP TO THE PIPE GRADE, THE PIPE LAID THEREON, CRUSHED STONE PULLED AGAINST THE PIPE SIDES TO FIRMLY HOLD THE PIPE IN PLACE.
4. CRUSHED STONE HAUNCHING ¾" MAXIMUM SIZE SHALL BE BROUGHT LEVEL TO THE TOP OF THE PIPE AND OUT TO THE TRENCH WALL AT THIS ELEVATION FOR ALL PIPES.

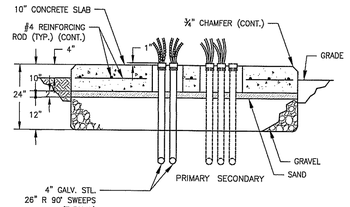
UTILITY TRENCH
NTS CA-U-004



NOTES:
1. IF A TEMPORARY PATCH IS USED, OR REQUIRED, IT SHALL BE A MINIMUM OF 2 INCHES THICK BITUMINOUS CONCRETE.

NOTES:
1. ALL DETAILS SHOWN ON THIS SIDE OF THE SHEET ARE DEPICTED ON SHEETS C-15 THROUGH C-18. (UTILITY PLANS)

UTILITY TRENCH PATCH
NTS CA-U-005



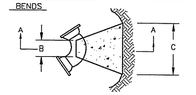
SEE UTILITY DRAWINGS FOR SIZE AND QUANTITY OF LINES

TRANSFORMER PAD
NTS CA-U-009

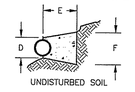
TABLE OF DIMENSIONS

BENDS	B	C	D	E	F	BENDS	B	C	D	E	F
6" 11-1/4"	8"	15"	12"	24"	12"	6" 45°	8"	30"	12"	24"	14"
6" 22-1/2"	"	19"	"	"	13"	6" 90°	"	30"	"	"	27"
8" 11-1/4"	"	20"	"	"	12"	8" 45°	"	30"	"	"	24"
8" 22-1/2"	"	22"	"	"	17"	8" 90°	"	38"	"	"	36"
12 11-1/4"	"	30"	"	"	15"	12" 45°	"	40"	"	"	40"
12" 22-1/2"	"	35"	"	"	25"	12" 90°	"	60"	"	"	52"

BENDS



PLAN

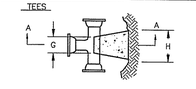


SECTION A-A

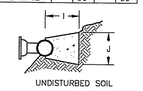
TABLE OF DIMENSIONS

TEES	G	H	I	J	TEES	G	H	I	J
6" x 6" x 6"	12"	24"	24"	18"	12" x 12" x 6"	12"	24"	24"	18"
8" x 8" x 6"	"	"	"	"	12" x 12" x 8"	"	"	"	24"
8" x 8" x 8"	"	"	"	24"	12" x 12" x 12"	"	36"	"	36"

TEES



PLAN



UNDISTURBED SOIL

SECTION A-A

NOTES:
1. PROVIDE BLOCKS FOR TAPPING SLEEVES, DEAD ENDS, GATE VALVES, AND VERTICAL BENDS (SAME SIZE AS REQUIRED FOR TEES). PROVIDE ANCHOR RODS AT VERTICAL BENDS AND GATE VALVES.
2. CONCRETE SHALL NOT BE PLACED AGAINST PIPE BEYOND FITTING.

CONCRETE THRUST BLOCK
NTS CA-U-008

amec foster wheeler
AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 100
PROVIDENCE RHODE ISLAND, 02908
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Environmental Management
JUN 28 2017
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 JUN 28 2017 FILE # 17-0086
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

NOT FOR CONSTRUCTION

SEAL:



REVISION	DATE	DESCRIPTION
4	6/28/17	RIDEM COMMENT
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

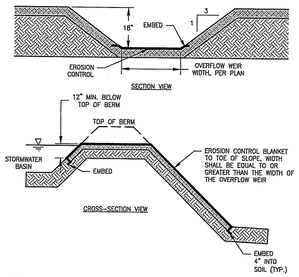
TITLE:
DETAILS 5 UTILITIES

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	NA
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-30

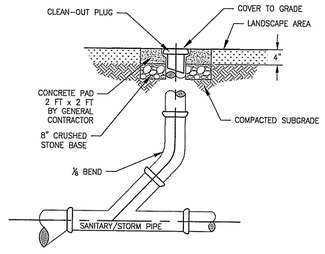
SHEET 30 OF 46

AMEC FOSTER WHEELER

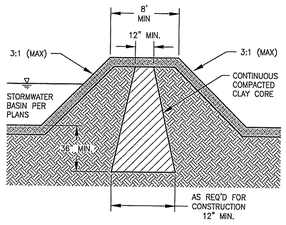


NOTES:
1. EROSION CONTROL BLANKET SHALL BE NORTH AMERICAN GREEN PRODUCTS P300 OR APPROVED EQUIVALENT.
2. EROSION CONTROL BLANKET SHALL BE INSTALLED PER MANUFACTURER'S REQUIREMENTS.

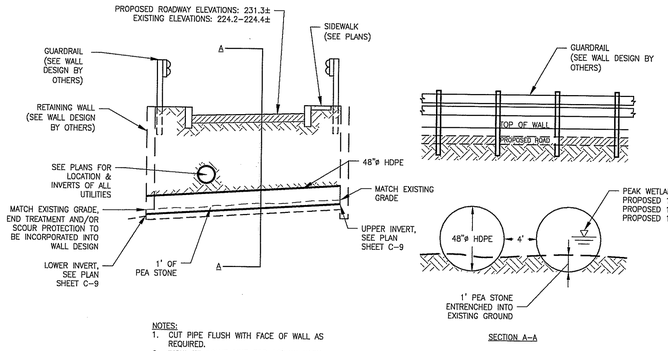
EARTHEN EMERGENCY SPILLWAY
NTS CA-D-029B



CLEANOUT
NTS CA-D-008

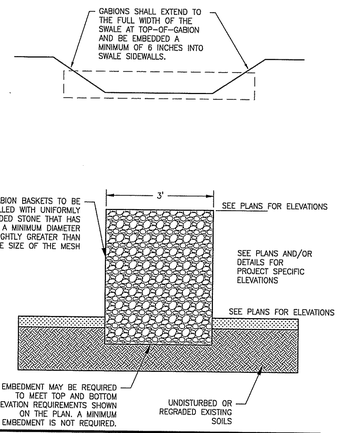


STORMWATER BASIN EMBANKMENT
NTS CA-D-025

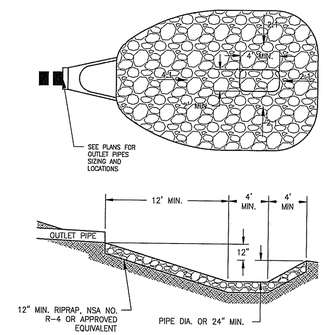


NOTES:
1. CUT PIPE FLUSH WITH FACE OF WALL AS REQUIRED.
2. INSULATE WATER LINE FOR 10' ON EACH SIDE OF CRITTER CROSSING.

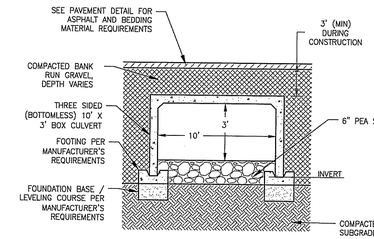
CRITTER CROSSING
NTS CA-D-007B



STONE GABION
NTS CA-D-017

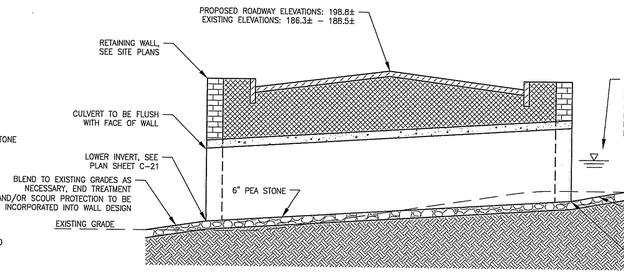


STILLING BASIN-OUTLET CONTROL
NTS CA-D-031A

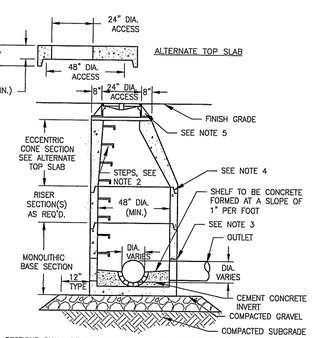


NOTES:
1. REINFORCED CONCRETE BOX CULVERT SHALL CONFORM TO ALL APPLICABLE ASTM REQUIREMENTS AND SHALL MEET OR EXCEED H-20 LOADING DURING CONSTRUCTION.
2. SEE PLAN FOR WIDTH, HEIGHT, AND INVERT REQUIREMENTS.

BOX CULVERT
NTS

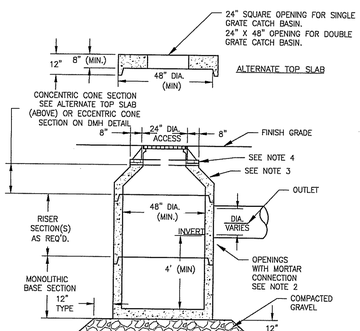


PEAK WETLAND WATER LEVELS:
EXISTING 1-YEAR: 188.5
EXISTING 10-YEAR: 188.8
EXISTING 100-YEAR: 189.3
PROPOSED 1-YEAR: 187.5
PROPOSED 10-YEAR: 188.1
PROPOSED 100-YEAR: 189.1



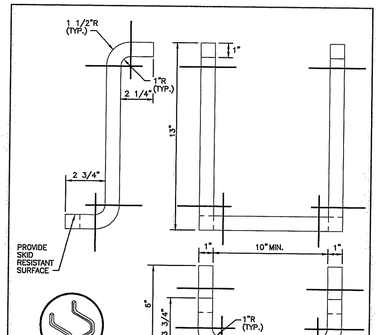
NOTES:
1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING. DIAMETER OF STRUCTURES SHALL BE COORDINATED WITH PIPE CONFIGURATIONS.
2. COPOLYMER MANHOLE STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
3. PROVIDE OPENINGS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED 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 TYPICALLY, 5 BRICK COURSES MAXIMUM).

PRECAST DRAIN MANHOLE
NTS CA-D-002



NOTES:
1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. PROVIDE OPENINGS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
4. CATCH BASIN FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)

SINGLE/DOUBLE CATCH BASIN
NTS CA-D-001



NOTES:
1. STEPS SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.
2. CROSS SECTION AREA MAY BE REDUCED UPON SUBMISSION OF CERTIFIED LOAD TESTS. STEPS MUST SUPPORT 300 LBS.
3. STOCK SHOWN IS 1" SQUARE WHICH MAY BE REPLACED BY 1" DIAMETER.

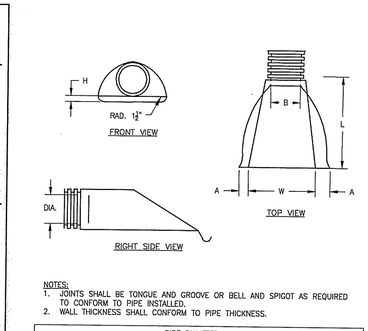
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

REVISIONS NO.	BY	DATE

CATCH BASIN AND MANHOLE STEP

R.I. STANDARD 5.3.0

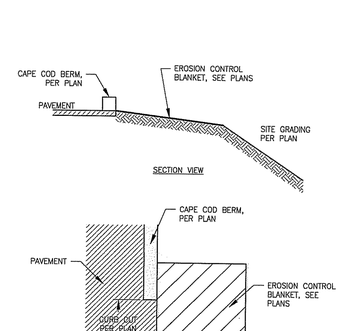
D:\586\Parker.bmp — CHIEF DIVISION ENGINEER TRANSPORTATION — JUNE 15, 1998 — RANGE SHEET



NOTES:
1. JOINTS SHALL BE TONGUE AND GROOVE OR BELL AND SPIGOT AS REQUIRED TO CONFORM TO PIPE INSTALLED.
2. WALL THICKNESS SHALL CONFORM TO PIPE THICKNESS.

PIPE DIAMETER, IN						
DIAMETER IN	12	15	18	24	30	36
A IN	6.5	6.5	7.5	7.5	7.5	7.5
B (MAX) IN	10	10	15.0	18.0	22.0	25.0
H IN	6.5	6.5	6.5	6.5	8.6	8.6
L IN	25.0	25.0	32.0	36.0	58.0	58.0
W IN	29.0	29.0	35.0	45.0	63.0	63.0

HDPE FLARED END SECTION
NTS CA-D-004



CURB CUT
NTS CA-001

amec foster wheeler
AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 100
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PHONE: (401) 648-9420
WEB: WWW.AMECFW.COM

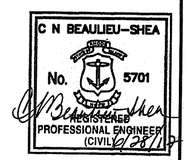
NOTES:
1. ALL DETAILS SHOWN ON THIS SHEET ARE DEPICTED ON SHEETS C-7 THROUGH C-10. (GRADING & DRAINAGE PLANS)

Environmental Management
JUN 28 2017
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 JUN 28 2017 FILE # 17-0086
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Krystal D. Wenceck

NOT FOR CONSTRUCTION

SEAL:



REVISION	DATE	DESCRIPTION
4	6/28/17	RIDEM COMMENT
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

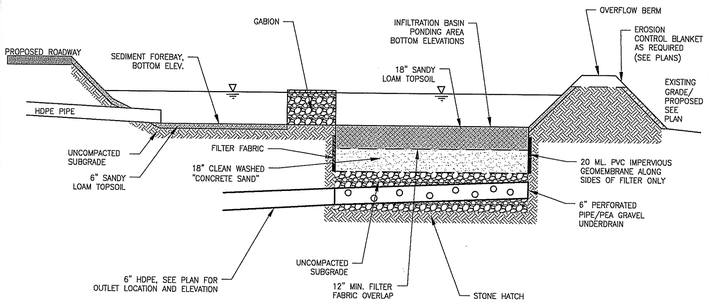
CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
DETAILS 6

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	NA
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-31

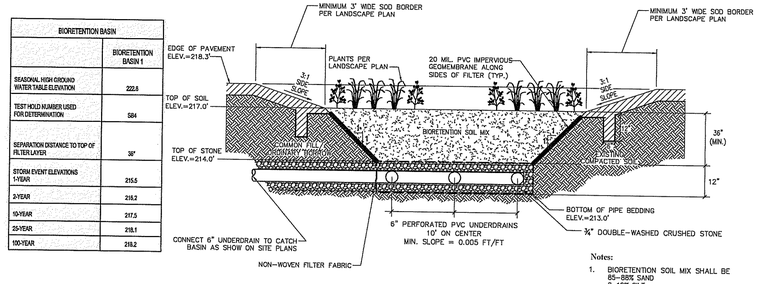


SAND FILTER			
	SAND FILTER 1	SAND FILTER 2	SAND FILTER 3
SEDIMENT FOREBAY BOTTOM	188.0	228.0	231.0
GABION TOP ELEV.	190.0	229.0	232.0
GABION BOTTOM ELEV.	188.0	228.0	231.0
SAND FILTER BOTTOM ELEV.	188.0	228.0	231.0
BOTTOM SAND ELEV.	185.0	225.0	228.0
UNDERDRAIN INVERT	185.5-185.0	225.6-225.4	228.5-227.0
MINIMUM BERM ELEV.	191.0	232.0	233.0
OVERFLOW ELEV.	190.0	231.0	232.3
SEASONAL HIGH GROUND WATER TABLE ELEVATION	190.4	235.0	235.0
TEST HOLE NUMBER USED FOR DETERMINATION	SB28	SB2	SB2
SEPARATION DISTANCE TO TOP OF LAYER	36"	36"	36"
STORM EVENT ELEVATIONS 1-YEAR	186.7	229.3	229.1
2-YEAR	187.6	229.7	229.6
10-YEAR	188.9	230.9	231.2
25-YEAR	189.6	231.1	231.7
100-YEAR	190.1	231.4	232.3

SAND FILTER/SEDIMENT FOREBAY CROSS-SECTION (SAND FILTERS 1, 2 & 3)

NTS

BIORETENTION BASIN	
	BIORETENTION BASIN 1
SEASONAL HIGH GROUND WATER TABLE ELEVATION	222.8
TEST HOLD NUMBER USED FOR DETERMINATION	SB4
SEPARATION DISTANCE TO TOP OF FILTER LAYER	36"
STORM EVENT ELEVATIONS 1-YEAR	215.5
2-YEAR	216.2
10-YEAR	217.5
25-YEAR	218.1
100-YEAR	219.2



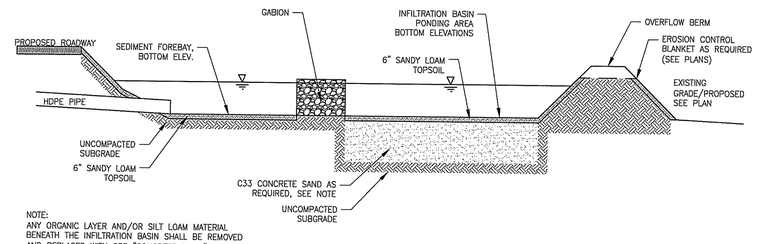
Notes:

1. BIORETENTION SOIL MIX SHALL BE
   85–88% SAND
   8–12% SILT
   0–2% CLAY
   3–5% LEAF COMPOST
2. INSTALL UNDERDRAINS AT 10 FEET ON CENTER. CONNECT TO DRAINS PER PLAN.
3. SIDE SLOPES SHALL BE 3:1 MAX. 2% MIN
4. CONTRACTOR SHALL SUBMIT A SIEVE ANALYSIS OF BIORETENTION SOIL MIX TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.

BIORETENTION BASIN

NTS

CA–001



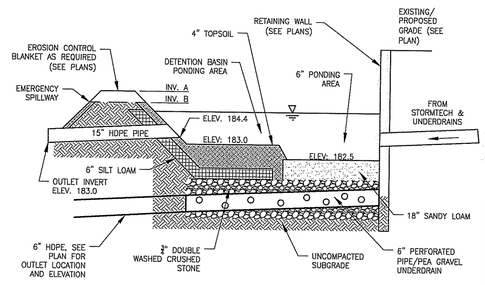
NOTE:
ANY ORGANIC LAYER AND/OR SILT LOAM MATERIAL BENEATH THE INFILTRATION BASIN SHALL BE REMOVED AND REPLACED WITH C33 "CONCRETE SAND."

INFILTRATION BASIN		
	INFILTRATION BASIN 1	INFILTRATION BASIN 2
SEDIMENT FOREBAY BOTTOM	208.5	204.0
GABION TOP ELEV.	210.0	205.0
GABION BOTTOM ELEV.	208.5	204.0
INF. BASIN BOTTOM ELEV.	208.0	202.0
MINIMUM BERM ELEV.	210.0	204.0
OVERFLOW WEIR ELEV.	209.0	203.0
SEASONAL HIGH GROUND WATER TABLE ELEVATION	204.3	197.5
TEST HOLD NUMBER USED FOR DETERMINATION	SB27	SB22
SEPARATION DISTANCE TO BOTTOM OF BASIN	44"	54"
STORM EVENT ELEVATIONS 1-YEAR	208.1	202.0
2-YEAR	208.1	202.0
10-YEAR	208.6	202.1
25-YEAR	208.9	202.1
100-YEAR	209.3	203.1

INFILTRATION BASIN/SEDIMENT FOREBAY CROSS SECTION (INFILTRATION BASINS 1 & 2)

NTS

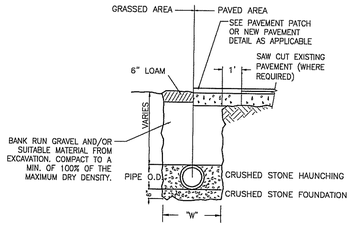
CA–EC



INFILTRATION/DETENTION BASIN	
	INFILTRATION/ DETENTION BASIN
BASIN BOTTOM ELEVATION	183.0
TOP OF BERM (INV. A)	188.7
UNDERDRAIN INVERT	180.7-181.5
EMERGENCY SPILLWAY (INV. B)	187.0
SEASONAL HIGH GROUND WATER TABLE ELEVATION	188.9
TEST HOLE NUMBER USED FOR DETERMINATION	SB18, SB29, SB30
SEPARATION DISTANCE TO TOP OF FILTER SOIL	18"
STORM EVENT ELEVATIONS 1-YEAR	184.7
2-YEAR	184.9
10-YEAR	185.8
25-YEAR	186.7
100-YEAR	187.7

DETENTION BASIN WITH FILTER CROSS-SECTION

NTS



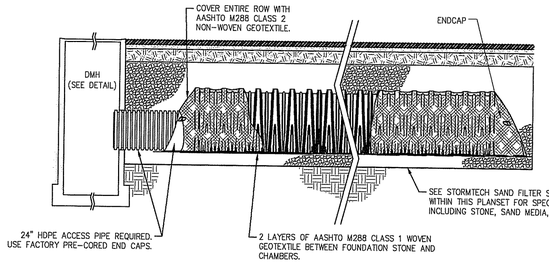
NOTES:

1. WIDTH (W) OF TRENCH IS EQUAL TO THE INSIDE DIAMETER OF THE NOTES: PIPE PLUS 12".
2. SOIL UNDER CRUSHED STONE FOUNDATION SHALL BE UNDISTURBED AND COMPACTED WITH SEVERAL PASSES OF A VIBRATORY PLATE COMPACTOR.
3. CRUSHED STONE FOUNDATION 3/4" MAXIMUM SIZE, SHALL BE PLACED 6" UNDER THE PIPE AND UP TO THE PIPE GRADE. THE PIPE LAID THEREON, CRUSHED STONE PULLED AGAINST THE PIPE SIDES TO FIRMLY HOLD THE PIPE IN PLACE.
4. CRUSHED STONE HAUNCHING 3/4" MAXIMUM SIZE SHALL BE BROUGHT LEVEL TO THE TOP OF THE PIPE AND OUT TO THE TRENCH WALL AT THIS ELEVATION FOR ALL PIPE.

STORM DRAIN TRENCH

NTS

CA–U–013



STORMTECH ISOLATOR ROW

NTS

CA–001

SAND FILTER / INFILTRATION BASIN / DETENTION BASIN NOTES:

1. RE–USE OF EXISTING TOPSOIL – THE CONTRACTOR SHALL ENSURE THAT EXISTING TOPSOIL STRIPPED FROM THE SUBJECT PROJECT SITE IS STOCKPILED AND, AS DIRECTED BY THE ENGINEER, RE–USED AS A SUBSTITUTE FOR THE "SANDY LOAM" TOPSOIL LAYERS SHOWN FOR THE PROPOSED SAND FILTER NOS, 1, 2, AND 3, AS WELL AS THE PROPOSED DETENTION BASIN.

amec foster wheeler

AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 100
PROVIDENCE RHODE ISLAND, 02908
PHONE: (401) 648-9420
WEB: WWW.AMECFW.COM

NOTES:

1. ALL DETAILS SHOWN ON THIS SHEET ARE DEPICTED ON SHEETS C–7 THROUGH C–10. (GRADING & DRAINAGE PLANS)

Environmental Management
JUN 28 2017
Office of Water Resources

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Martin D. Wencek

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU–SHEA
No. 5701
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
6/28/17

REVISION	DATE	DESCRIPTION
4	6/28/17	RIDEM COMMENT
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

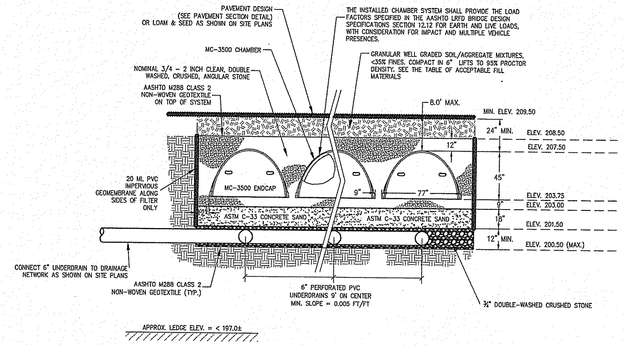
TITLE:
DETAILS 7

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	NA
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

C-32

SHEET 32 OF 46

AMEC FOSTER WHEELER



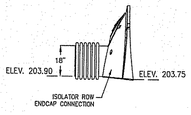
NOTES:
EXTREME CARE MUST BE TAKEN DURING CONSTRUCTION TO AVOID COMPACTION AND SEALING OF THE SYSTEM BOTTOM. THE OPERATION OF HEAVY RUBBER TIRED CONSTRUCTION EQUIPMENT IS NOT ALLOWED IN THE FOOTPRINT OF THE SYSTEM. WHERE POSSIBLE, EXCAVATION EQUIPMENT SHOULD OPERATE ABOVE THE FINISHED SYSTEM BOTTOM WORKING THE EXCAVATION TOWARD THE SIDES

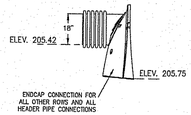
ALL SIDES OF THE INFILTRATION SYSTEM SHALL BE WRAPPED IN FILTER FABRIC. ALL SEAMS SHALL HAVE A MINIMUM 18 INCH OVERLAP.

SYSTEM SHALL BE INSTALLED PER MANUFACTURER SPECIFICATIONS.

MC-3500 STORMTECH SAND FILTER INFILTRATION SYSTEM SHALL CONSIST OF 5 ROWS OF 9 CHAMBERS EACH (PLUS ENDCAPS). 45 CHAMBERS TOTAL (PLUS ENDCAPS).

INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.

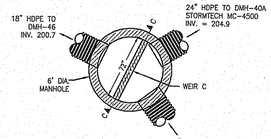




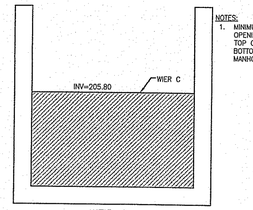
STORMTECH MC-3500 SAND FILTER	
	MC-3500
SEASONAL HIGH GROUND WATER TABLE ELEVATION	198.7
TEST HOLE NUMBER USED FOR DETERMINATION	SB32
SEPARATION DISTANCE TO BOTTOM AND TOP OF FILTER LAYER	18"
STORM EVENT ELEVATIONS 1-YEAR	206.0
2-YEAR	206.1
10-YEAR	206.3
25-YEAR	206.4
100-YEAR	206.6

STORMTECH MC-3500 SAND FILTER
NTS

CA–D–006



PLAN



NOTES:
1. MINIMUM 24" TALL OPENING BETWEEN TOP OF WEIR & BOTTOM OF MANHOLE TOP SLAB.

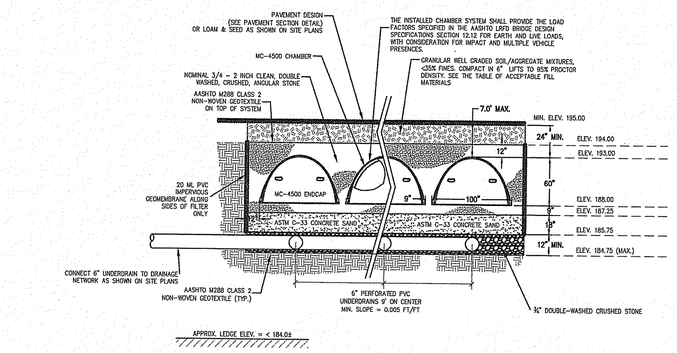
WEIR C
SECTION C–C

MC-3500 FLOW DIVERSION - DMH-39
NTS

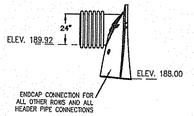
CA–001

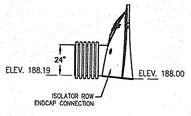
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 2 8 2017 FILE # 17-0088
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Jonathan B. Stewart

Environmental Management
JUN 2 8 2017
Office of Water Resources



NOTES:
- EXTREME CARE MUST BE TAKEN DURING CONSTRUCTION TO AVOID COMPACTION AND SEALING OF THE SYSTEM BOTTOM. THE OPERATION OF HEAVY RUBBER TIRED CONSTRUCTION EQUIPMENT IS NOT ALLOWED IN THE FOOTPRINT OF THE SYSTEM. WHERE POSSIBLE, EXCAVATION EQUIPMENT SHOULD OPERATE ABOVE THE FINISHED SYSTEM BOTTOM WORKING THE EXCAVATION TOWARD THE SIDES
- ALL SIDES OF THE INFILTRATION SYSTEM SHALL BE WRAPPED IN FILTER FABRIC. ALL SEAMS SHALL HAVE A MINIMUM 18 INCH OVERLAP.
- SYSTEM SHALL BE INSTALLED PER MANUFACTURER SPECIFICATIONS.
- MC-4500 STORMTECH SAND FILTER INFILTRATION SYSTEM SHALL CONSIST OF 4 ROWS OF 35 CHAMBERS EACH (PLUS ENDCAPS). 140 CHAMBERS TOTAL (PLUS ENDCAPS).
- INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.

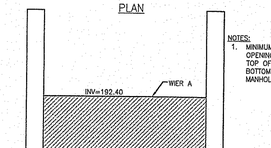




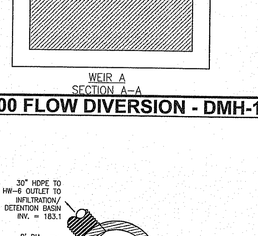
STORMTECH MC-4500 SAND FILTER	
	MC-4500
SEASONAL HIGH GROUND WATER TABLE ELEVATION	193.0
TEST HOLE NUMBER USED FOR DETERMINATION	SB18
SEPARATION DISTANCE TO BOTTOM AND TOP OF FILTER LAYER	18"
STORM EVENT ELEVATIONS 1-YEAR	192.7
2-YEAR	192.9
10-YEAR	193.2
25-YEAR	193.4
100-YEAR	193.7

STORMTECH MC-4500 SAND FILTER
NTS

CA–001



PLAN



NOTES:
1. MINIMUM 24" TALL OPENING BETWEEN TOP OF WEIR & BOTTOM OF MANHOLE TOP SLAB.

WEIR A
SECTION A–A

MC-4500 FLOW DIVERSION - DMH-11
NTS

CA–001

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU–SHEA
REGISTERED PROFESSIONAL ENGINEER
No. 5701
(CIVIL) 6/27/17

REVISION	DATE	DESCRIPTION
4	6/27/17	RIDEM COMMENT
3	6/9/17	RIDEM COMMENT
2	4/10/17	PRELIM. PLAN
1	4/4/17	PRELIM. PLAN

CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO, ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

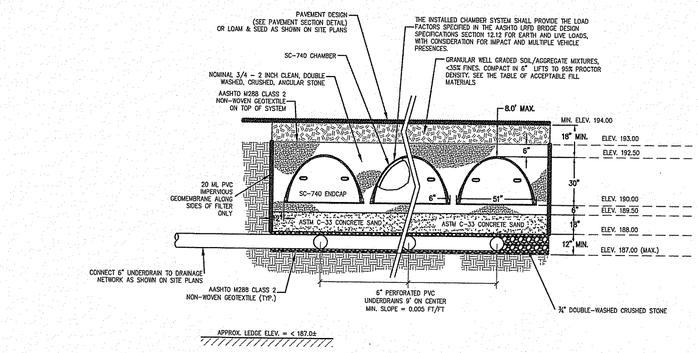
TITLE:
DETAILS 8

ISSUED FOR:	RIDEM REVIEW
DATE:	MARCH 27, 2017
SCALE:	NA
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

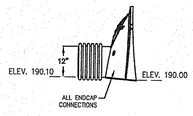
C-33

SHEET 33 OF 46

AMEC FOSTER WHEELER



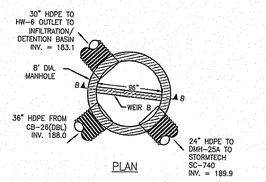
NOTES:
- EXTREME CARE MUST BE TAKEN DURING CONSTRUCTION TO AVOID COMPACTION AND SEALING OF THE SYSTEM BOTTOM. THE OPERATION OF HEAVY RUBBER TIRED CONSTRUCTION EQUIPMENT IS NOT ALLOWED IN THE FOOTPRINT OF THE SYSTEM. WHERE POSSIBLE, EXCAVATION EQUIPMENT SHOULD OPERATE ABOVE THE FINISHED SYSTEM BOTTOM WORKING THE EXCAVATION TOWARD THE SIDES
- ALL SIDES OF THE INFILTRATION SYSTEM SHALL BE WRAPPED IN FILTER FABRIC. ALL SEAMS SHALL HAVE A MINIMUM 18 INCH OVERLAP.
- SYSTEM SHALL BE INSTALLED PER MANUFACTURER SPECIFICATIONS.
- SC-740 STORMTECH SAND FILTER INFILTRATION SYSTEM SHALL CONSIST OF 8 ROWS OF 9 CHAMBERS EACH (PLUS ENDCAPS). 72 CHAMBERS TOTAL (PLUS ENDCAPS).
- INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.



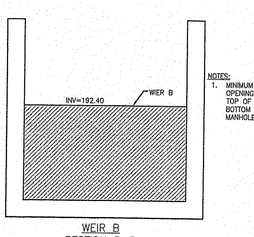
STORMTECH SC-740 SAND FILTER	
	SC-740
SEASONAL HIGH GROUND WATER TABLE ELEVATION	193.0
TEST HOLE NUMBER USED FOR DETERMINATION	SB18
SEPARATION DISTANCE TO BOTTOM AND TOP OF FILTER LAYER	18"
STORM EVENT ELEVATIONS 1-YEAR	192.7
2-YEAR	192.9
10-YEAR	193.2
25-YEAR	193.4
100-YEAR	193.7

STORMTECH SC 740 SAND FILTER
NTS

CA–001



PLAN

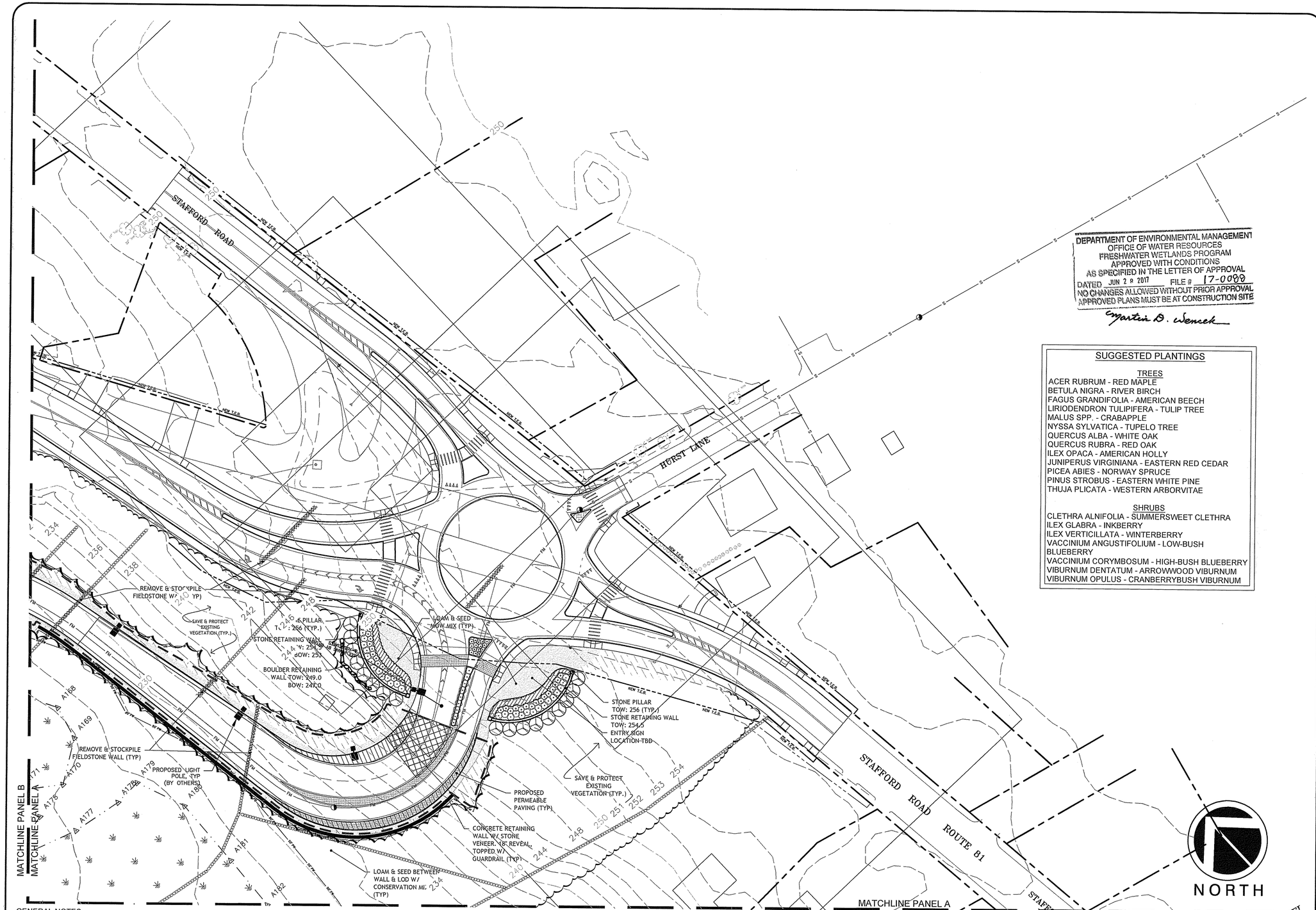


NOTES:
1. MINIMUM 24" TALL OPENING BETWEEN TOP OF WEIR & BOTTOM OF MANHOLE TOP SLAB.

WEIR B
SECTION B–B

SC-740 FLOW DIVERSION - DMH-24
NTS

CA–001



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 2 9 2017 FILE # 17-0099
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Martin D. Wencek

SUGGESTED PLANTINGS

TREES
ACER RUBRUM - RED MAPLE
BETULA NIGRA - RIVER BIRCH
FAGUS GRANDIFOLIA - AMERICAN BEECH
LIRIODENDRON TULIPIFERA - TULIP TREE
MALUS SPP. - CRABAPPLE
NYSSA SYLVATICA - TUPELO TREE
QUERCUS ALBA - WHITE OAK
QUERCUS RUBRA - RED OAK
ILEX OPACA - AMERICAN HOLLY
JUNIPERUS VIRGINIANA - EASTERN RED CEDAR
PICEA ABIES - NORWAY SPRUCE
PINUS STROBUS - EASTERN WHITE PINE
THUJA PLICATA - WESTERN ARBORVITAE

SHRUBS
CLETHRA ALNIFOLIA - SUMMERSWEET CLETHRA
ILEX GLABRA - INKBERRY
ILEX VERTICILLATA - WINTERBERRY
VACCINIUM ANGUSTIFOLIUM - LOW-BUSH BLUEBERRY
VACCINIUM CORYMBOSUM - HIGH-BUSH BLUEBERRY
VIBURNUM DENTATUM - ARROWWOOD VIBURNUM
VIBURNUM OPULUS - CRANBERRYBUSH VIBURNUM

GENERAL NOTES:
1.THE INFORMATION ON THIS PLAN WAS COMPILED FROM DRAWINGS BY AMEC FOSTER-WHEELER, CHERENZIA & ASSOCIATES, BRYANT ENGINEERING 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. CALL 1-800-DIGSAFE & LOCATE ANY AND ALL UTILITIES, BEFORE CONSTRUCTION
3. LOAM AND SEED ALL DISTURBED AREAS WITH SEED MIX A UNLESS OTHERWISE SPECIFIED

STAMP:

HALI BECKMAN, LTD.
23 Brown Street, Suite 206, Wickford, RI 02852 Tel. 401.294.1664 - www.hallbeckman.com Estate Planning - Landscape Architecture

Environmental Management
JUN 2 8 2017
Office of Water Resources

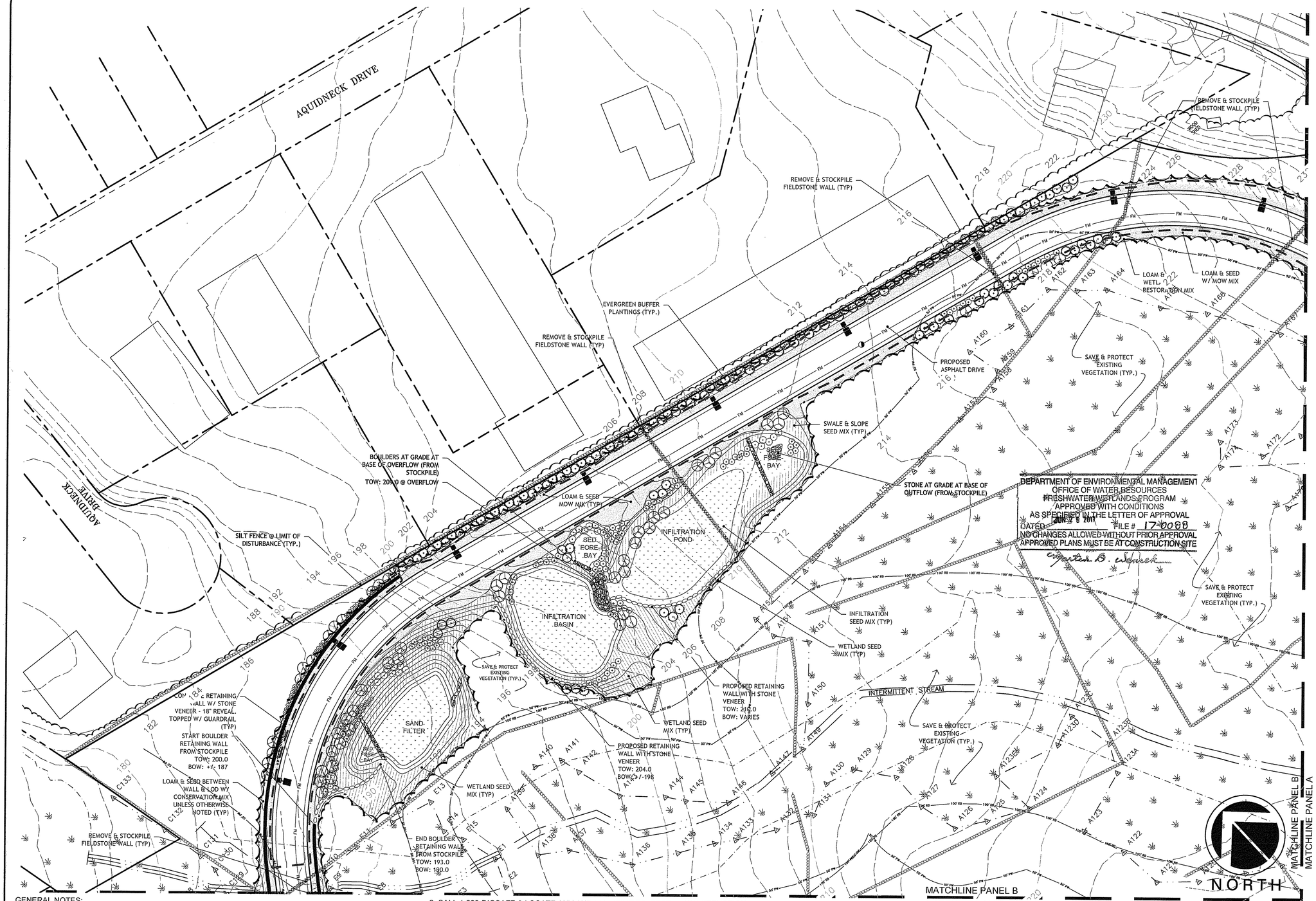
amec foster wheeler
AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 120
PROVIDENCE RHODE ISLAND, 02908
WEB: WWW.AMECFW.COM

PROPOSED LANDSCAPE PLAN

"Issued for Preliminary Plan" PANEL A
TWIN RIVER TIVERTON
WILLIAM S CANNING BLVD & STAFFORD RD
TIVERTON, RI

REVISION: APRIL 4,2017
DATE: MARCH 27, 2017
DRAWN BY: SGG
SCALE: 1"=40'
SHEET L-1
SHEET NO. 34 OF 46
JOB NO.

HALI BECKMAN LTD. COPYRIGHTED MATERIALS 2017



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 2 8 2017 FILE # 17-0088
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Jonathan B. Schreck

GENERAL NOTES:
1. THE INFORMATION ON THIS PLAN WAS COMPILED FROM DRAWINGS BY AMEC FOSTER-WHEELER, CHERENZIA & ASSOCIATES, BRYANT ENGINEERING 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. CALL 1-800-DIGSAFE & LOCATE ANY AND ALL UTILITIES, BEFORE CONSTRUCTION
3. LOAM AND SEED ALL DISTURBED AREAS WITH SEED MIX A UNLESS OTHERWISE SPECIFIED

STAMP:
NO. 5747 REGISTERED PROFESSIONAL ENGINEER DANIEL WILDRICK

HALI BECKMAN, LTD.
23 Brown Street, Suite 206, Wickford, RI 02852 Tel. 401.294.4644 - www.hallibeckman.com Estate Planning - Landscape Architecture

Environmental Management
JUN 28 2017
Office of Water Resources

amec foster wheeler
AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 120
PROVIDENCE RHODE ISLAND, 02908
WEB: WWW.AMECFW.COM

PROPOSED LANDSCAPE PLAN

"Issued for Preliminary Plan" PANEL B
TWIN RIVER TIVERTON
WILLIAM S CANNING BLVD & STAFFORD RD
TIVERTON, RI

REVISION: APRIL 4, 2017

DATE: MARCH 27, 2017
DRAWN BY: SGG
SCALE: 1"=40'

SHEET L-2

SHEET NO. 35 OF 46

JOB NO.

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MATCHLINE PANEL B

MATCHLINE PANEL C

PROPOSED LIGHT POLE, TYP (BY OTHERS)

PROPOSED PARKING STRUCTURE

RAMP DN.

PROPOSED BUILDING MOUNTED LIGHT, TYP (BY OTHERS)

PROPOSED CASINO
FFE: 220.0
FFE: 238.0

WATER TANK

WATER TANK

PUMP HOUSE

MATCHLINE PANEL C

MATCHLINE PANEL D

PROPOSED HOTEL
FFE: 220.0

R-60 ZONE

I ZONE

SEWER PUMP CONCRETE PAD W/ FENCE

GENERAL NOTES:

1. THE INFORMATION ON THIS PLAN WAS COMPILED FROM DRAWINGS BY AMEC FOSTER-WHEELER, CHERENZIA & ASSOCIATES, BRYANT ENGINEERING 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. CALL 1-800-DIGSAFE & LOCATE ANY AND ALL UTILITIES, BEFORE CONSTRUCTION
3. LOAM AND SEED ALL DISTURBED AREAS WITH SEED MIX A UNLESS OTHERWISE SPECIFIED

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 2 8 2017 FILE # 17-0008
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Maarten B. Wenck

NORTH

0 40 40 120 feet

Scale: 1"=40'

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STAMP:

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23 Brown Street, Suite 206, Wickford, RI 02852 Tel. 401.294.1684 • www.halibeckman.com Estate Planning - Landscape Architecture

Environmental Management
JUN 28 2017
Office of Water Resources

amec foster wheeler
AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 120
PROVIDENCE RHODE ISLAND, 02908
WEB: WWW.AMECFW.COM

PROPOSED LANDSCAPE PLAN

"Issued For Preliminary Plan" PANEL C

TWIN RIVER TIVERTON

WILLIAM S CANNING BLVD & STAFFORD RD

TIVERTON, RI

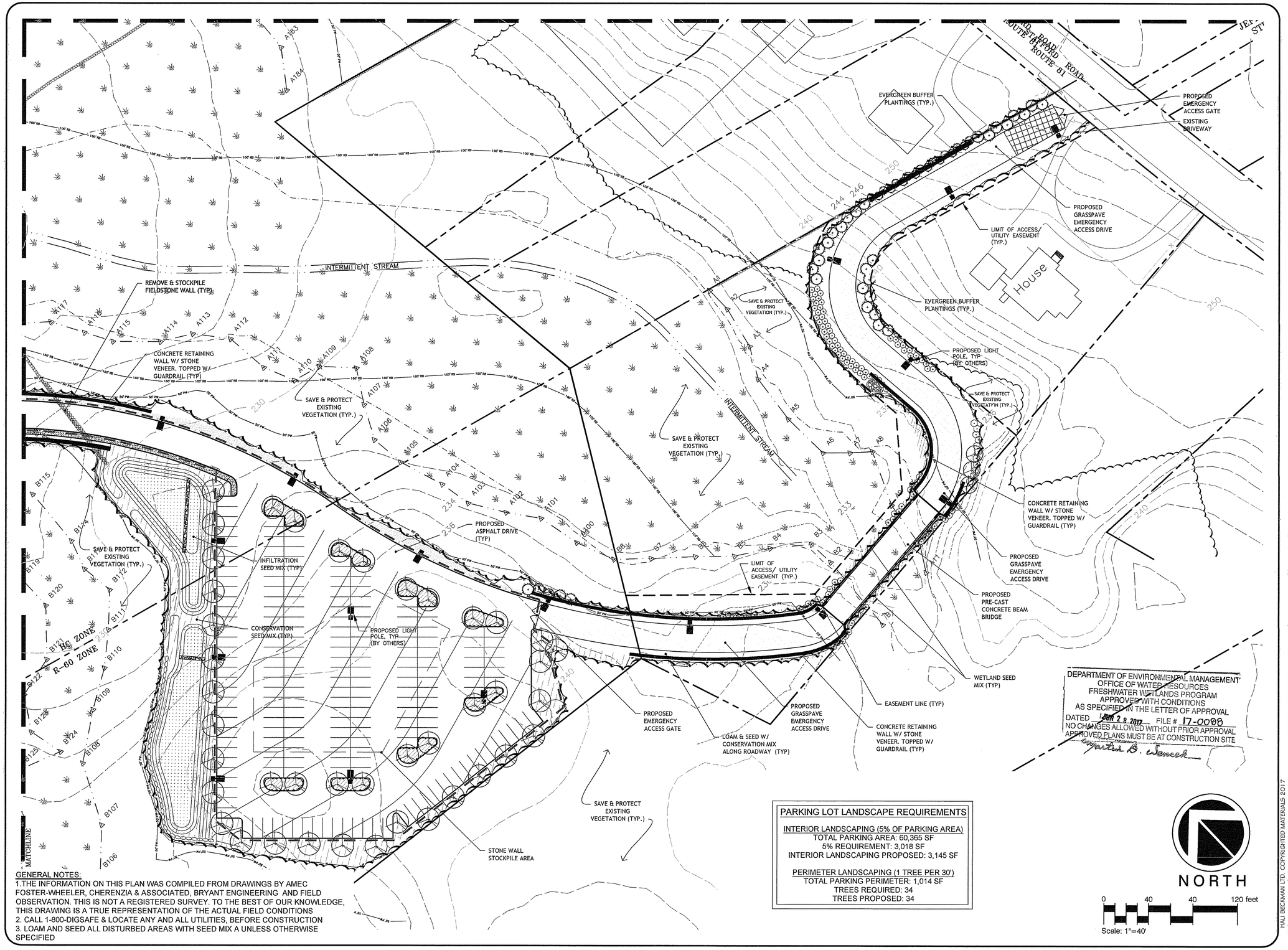
REVISION: APRIL 4,2017

DATE: MARCH 27, 2017
DRAWN BY: SGG
SCALE: 1"=40'

SHEET
L-3

SHEET NO. 36 OF 46

JOB NO.



GENERAL NOTES:
1.THE INFORMATION ON THIS PLAN WAS COMPILED FROM DRAWINGS BY AMEC FOSTER-WHEELER, CHERENZIA & ASSOCIATED, BRYANT ENGINEERING 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. CALL 1-800-DIGSAFE & LOCATE ANY AND ALL UTILITIES, BEFORE CONSTRUCTION
3. LOAM AND SEED ALL DISTURBED AREAS WITH SEED MIX A UNLESS OTHERWISE SPECIFIED

PARKING LOT LANDSCAPE REQUIREMENTS
INTERIOR LANDSCAPING (5% OF PARKING AREA)
TOTAL PARKING AREA: 60,365 SF
5% REQUIREMENT: 3,018 SF
INTERIOR LANDSCAPING PROPOSED: 3,145 SF
PERIMETER LANDSCAPING (1 TREE PER 30')
TOTAL PARKING PERIMETER: 1,014 SF
TREES REQUIRED: 34
TREES PROPOSED: 34

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
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DATED JUN 2 8 2017 FILE # 17-0088
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Patrick D. Vernack

NORTH
0 40 40 120 feet
Scale: 1"=40'

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23 Brown Street, Suite 206, Wickford, RI 02852 Tel. 401.294.1684 - www.halibeckman.com Estate Planning - Landscape Architecture

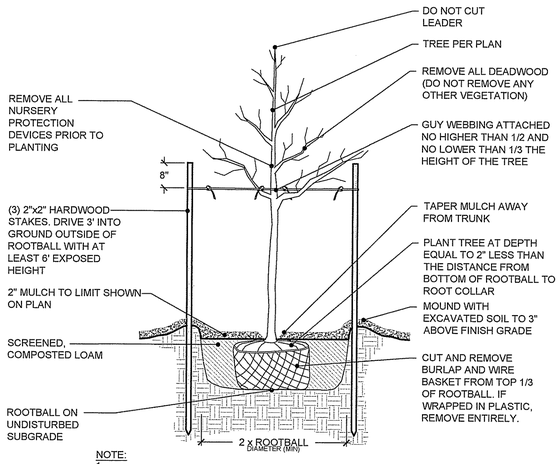
Environmental Management
JUN 2 8 2017
Office of Water Resources

amec foster wheeler
AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 120
PROVIDENCE RHODE ISLAND, 02908
WEB: WWW.AMECFW.COM

PROPOSED LANDSCAPE PLAN

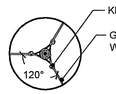
"Issued For Preliminary Plan" PANEL D
TWIN RIVER TIVERTON
WILLIAM S CANNING BLVD & STAFFORD RD
TIVERTON, RI

REVISION: APRIL 4, 2017
DATE: MARCH 27, 2017
DRAWN BY: SGG
SCALE: 1"=40'
SHEET L-4
SHEET NO. 37 OF 46
JOB NO.

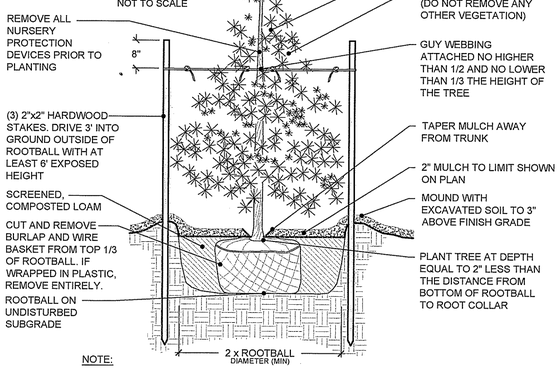


NOTE:
1. AFTER THE GUARANTEE PERIOD THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL OF STAKES AND GUY WEBBING.

DECIDUOUS TREE PLANTING DETAIL
SCALE: NTS

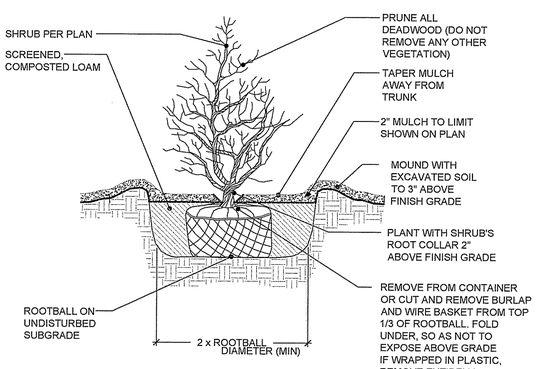


GUYING DETAIL
NOT TO SCALE

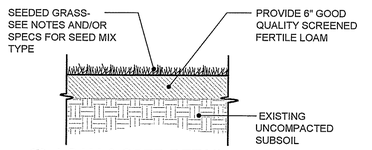


NOTE:
AFTER THE GUARANTEE PERIOD THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL OF STAKES AND GUY WEBBING.

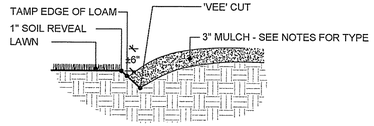
EVERGREEN TREE PLANTING DETAIL
SCALE: NTS



SHRUB PLANTING DETAIL
SCALE: NTS

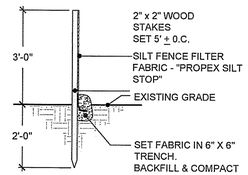


LOAM & SEED DETAIL
SCALE: NTS



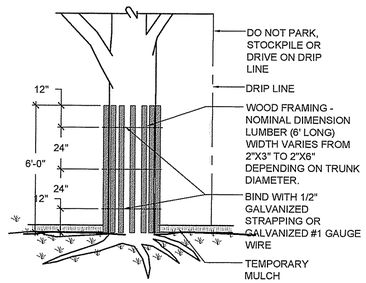
NOTE: LOCATE BEDLINE AS SHOWN ON PLAN.

BEDLINE EDGE DETAIL
SCALE: NTS



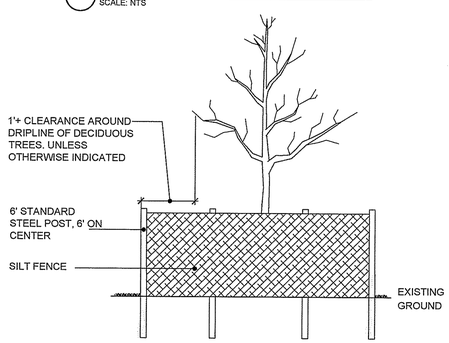
NOTE: SEE PLANS FOR EXTENTS OF SILT FENCE

SILT FENCE DETAIL
SCALE: NTS



NOTE: THIS DETAIL SHALL BE USED TO PROTECT THE TREE'S TRUNK IN SITUATIONS WHERE CONSTRUCTION IS IN CLOSE PROXIMITY.

TREE TRUNK PROTECTION DETAIL
SCALE: NTS



DRIPLINE TREE PROTECTION DETAIL
SCALE: NTS

SEEDING NOTES

1. LOAM SHALL BE SPREAD TO A MINIMUM DEPTH OF 6" OVER ALL AREA DESIGNATED ON PLANS.
2. SHAPE AND SMOOTH THE SURFACE TO THE LINES AND GRADES AS SHOWN ON PLANS.
3. 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.
4. 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 DICING OR OTHER APPROVED METHOD. DISTRIBUTE LIME UNIFORMLY AND WORK INTO TOP 4 INCHES OF TOP SOIL (MINIMUM) AND UNIFORMLY BLEND BY DICING OR ROTOTILLING.
5. ANY LOAM EXPOSED FOR ONE WEEK SHALL BE PLANTED WITH ANNUAL RYE GRASS SEED & SEED MIX #1. ALL LOAM STOCKPILES TO BE SEEDED IMMEDIATELY
6. 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:
      SPRING SEEDING: AUGUST 1 TO MAY 31
      FALL SEEDING: AUGUST 15 TO OCTOBER 15
   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 A
MOWED AREAS SEED MIX

TYPE	% BY WEIGHT
IMPROVED PER. RYE	30
TURF TYPE TALL FESCUE	30
JAMESTOWN CHEWINGS FESCUE	30
KY BLUEGRASS 98/85	10

APPLICATION RATE = 260 LBS. / ACRE

SEED MIX B
CONSERVATION MIX

TYPE	% BY WEIGHT
CREEPING RED FESCUE	25
PERENNIAL RYE GRASS	25
ANNUAL RYE GRASS	25
TALL FESCUE	17
KENTUCKY BLUEGRASS	5
COLONIAL BENTGRASS	1
REDTOP	1
WHITE CLOVER	1

APPLICATION RATE = 220 LBS. / ACRE
MOW TWICE YEARLY

SEED MIX C
RI STATE SLOPE MIX

TYPE	% BY WEIGHT
CREEPING RED FESCUE	70
IMPROVED PER RYE	15
BIRDSFOOT TREFOIL	15

APPLICATION RATE = 153 LBS. / ACRE

SEED MIX D
NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES

SPECIES:
VIRGINIA WILD RYE, CREEPING RED FESCUE, LITTLE BLUESTEM, BIG BLUESTEM, FOX SEDGE, SWITCH GRASS, ROUGH BENTGRASS, NEW ENGLAND ASTER, BONESET, GRASS LEAVED GOLDENROD, GREEN BULRUSH, BLUE VERVAIN, SOFT RUSH, WOOL GRASS.

SEEDING RATE: 35LBS/ACRE; 3/4LB/1000 SQ. FT

SEED MIX E
NEW ENGLAND WET MIX (WETLAND MIX)

SPECIES:
VIRGINIA WILD RYE, CREEPING RED FESCUE, LITTLE BLUESTEM, BIG BLUESTEM, FOX SEDGE, SWITCH GRASS, ROUGH BENTGRASS, NEW ENGLAND ASTER, BONESET, GRASS LEAVED GOLDENROD, GREEN BULRUSH, BLUE VERVAIN, SOFT RUSH, WOOL GRASS.

SEEDING RATE: 35LBS/ACRE; 3/4LB/1000 SQ. FT

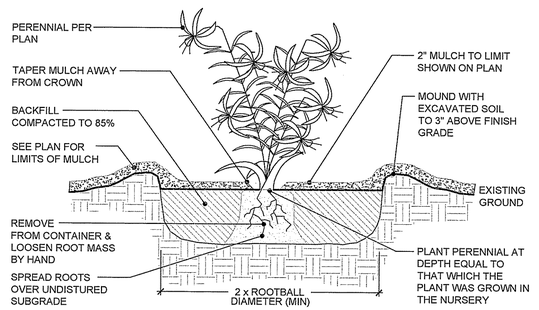
ALL SEED MIXES AVAILABLE FROM ALLEN'S SEED STORE:
800-527-3898
693 SOUTH COUNTY TRAIL EXETER, RI 02832

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 2 8 2017 FILE # 17-0098
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

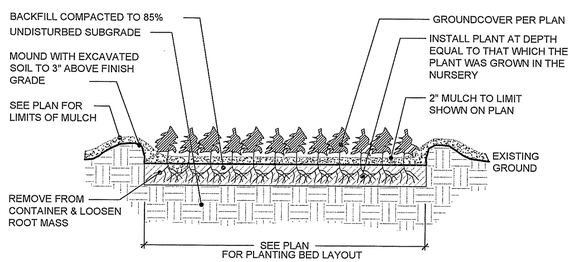
BIO–RETENTION SOIL NOTES

Martin B. Wenck

PREPARE THE INFILTRATION BED WITH THE FOLLOWING SOIL MIX:
- LOAMY SAND TO A SANDY LOAM
  - 85-88% SAND
  - 8-12% SILT
  - 0-2% CLAY
- ADDED ORGANIC MATTER (20% OF MINERAL SOIL MIX BY VOLUME).
- WELL AGED, AERATED HARD-WOOD MULCH (AGED 6 MONTHS IF POSSIBLE).



PERENNIAL PLANTING DETAIL
SCALE: NTS



GROUNDCOVER PLANTING 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 SEEDED WITH A TEMPORARY SEED MIX. STOCKPILES SHOULD ALSO BE ENCLOSED WITH SILT OR HAYBALES.
12. ENTRANCE TO CONSTRUCTION SITE SHOULD BE COVERED WITH GRAVEL TO TRAP SEDIMENT FROM THE TIRES OF VEHICLES EXISTING THE SITE.

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 3/4", AND ROOTS. SPREAD TO A MINIMUM OF 4" 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 PLUMB 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 FIRMING OR TAMPING FORM SAUCERS CAPABLE OF HOLDING WATER ABOUT 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' (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 PRACTICE. CUT BROKEN, DEAD OR INJURED BRANCHES FLUSH WITH 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-THRID. 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, BROAD CAST. 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 TWO (2) 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.

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 6 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 ARE, 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 FACITLY.

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 PROCEEDURES 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.

STAMP:

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

Environmental Management
JUN 28 2017
Office of Water Resources

amec foster wheeler
AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 120
PROVIDENCE RHODE ISLAND, 02908
WEB: WWW.AMECFW.COM

PLANTING DETAILS & NOTE

ISSUED FOR PRELIMINARY PLAN

TWIN RIVER TIVERTON
WILLIAM S CANNING BLVD & STAFFORD RD
TIVERTON, RI

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REVISION: APRIL 4, 2017

DATE: MARCH 27, 2017
DRAWN BY: SGG
SCALE: 1"=40'

SHEET
L-5

SHEET NO. 38 OF 46

JOB NO.

GENERAL NOTES

1. ALL CONSTRUCTION INDICATED ON THESE PLANS SHALL BE IN ACCORDANCE WITH:
   - THE 2004 WITH 2013 AMENDMENTS EDITION OF AND SUPPLEMENTS TO THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (RI STANDARD SPECIFICATIONS).
   - THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, 7th EDITION, 2014, INCLUDING THE LATEST INTERIM REVISIONS.
   - THE SPECIFICATIONS ACCOMPANYING THESE PLANS.
2. DIMENSIONS, STATIONS, AND ELEVATIONS ARE SHOWN TO THE NEAREST ONE–HUNDREDTH OF A FOOT OR ONE–EIGHTH OF AN INCH, EXCEPT STRUCTURAL STEEL DIMENSIONS WHICH ARE TO THE NEAREST ONE–SIXTEENTH OF AN INCH.
3. ALL FOOTINGS SHALL BE APPROVED BY THE ENGINEER AS TO DIMENSIONS, ELEVATIONS, AND SUITABILITY OF FOUNDATION MATERIAL BEFORE THE PLACING OF CONCRETE.
4. ALL ABUTMENTS AND WALLS ARE DRAWN LOOKING AT THE EXPOSED FACES.
5. THE EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND WERE LOCATED USING THE BEST AVAILABLE INFORMATION. NO BUILDING SERVICE CONNECTIONS (ELECTRIC, TELEPHONE, GAS, WATER, SANITARY AND OTHERS) ARE SHOWN. THE CONTRACTOR IS TO ASSUME THAT SERVICES TO ALL BUILDINGS ARE PRESENT.
6. BOTH FEDERAL AND STATE LAW (RI. GENERAL LAW 39–1.2) REQUIRE NOTIFICATION OF APPROPRIATE UTILITY COMPANIES BEFORE DIGGING, TRENCHING, BLASTING, DEMOLISHING, BORING, BACK FILLING, GRADING, LANDSCAPING, OR OTHER EARTH MOVING OPERATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES (INCLUDING THROUGH THE "DIG SAFE" PROGRAM) TO ENSURE THAT ALL UTILITIES, BOTH UNDERGROUND AND OVERHEAD, HAVE BEEN MARKED BEFORE COMMENCEMENT OF SUCH WORK. THE CONTRACTOR SHOULD UNDERSTAND THAT NOT ALL UTILITIES SUBSCRIBE TO THE "DIG SAFE" PROGRAM. ANY DAMAGE TO EXISTING UTILITIES MARKED IN THE FIELD, OR AS A RESULT OF FAILING TO CONTACT THE APPROPRIATE UTILITY COMPANIES, SHALL BE REPAIRED OR REPLACED (AS DEEMED APPROPRIATE BY THE STATE AND/OR THE IMPACTED UTILITY COMPANY) AT NO ADDITIONAL COST TO THE STATE.

DESIGN DATA

1. DESIGN SPECIFICATIONS
   - THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION, 2014, INCLUDING ALL INTERIM REVISIONS TO DATE.
   - THE RHODE ISLAND LRFD BRIDGE DESIGN MANUAL 2007 EDITION INCLUDING ALL REVISIONS TO DATE.
   - ALL OTHER APPLICABLE DESIGN SPECIFICATIONS ARE REFERENCED IN SECTION 1 OF THE RHODE ISLAND LRFD BRIDGE DESIGN MANUAL DATED 2007.
   - THE 2013 REVISION OF AND SUPPLEMENTS TO THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (RI STANDARD SPECIFICATIONS).
   - IN CASE OF CONFLICT, THE RHODE ISLAND LRFD BRIDGE DESIGN MANUAL SHALL GOVERN.
2. LIVE LOADS

   THE DESIGN VEHICULAR LIVE LOAD SHALL BE THE HL–93 DESIGNATION ADJUSTED FOR DYNAMIC LOAD ALLOWANCE AND MULTIPLE PRESENCE FACTOR.

3. FOUNDATION DESIGN DATA

   SPREAD FOOTINGS:

   THE FACTORED BEARING RESISTANCE FOR THE BEARING MATERIAL ARE AS FOLLOWS:

LOCATION	TYPE OF BEARING MATERIAL	FACTORED BEARING RESISTANCE (KSF)	
		STRENGTH LIMIT STATES	EXTREME LIMIT STATES
W. ABUT.	WEATHERED ROCK	*	*

   DEEP FOUNDATIONS:

   THE FACTORED AXIAL AND UPLIFT RESISTANCES FOR THE DEEP FOUNDATION ARE AS FOLLOWS:

LOCATION	TYPE	FACTORED AXIAL RESISTANCE (KIPS)			
		GEOTECHNICAL		STRUCTURAL	
		STRENGTH LIMIT STATES	EXTREME LIMIT STATES	STRENGTH LIMIT STATES	EXTREME LIMIT STATES
E. ABUT.	PILES	*	*	*	*

LOCATION	TYPE	FACTORED UPLIFT RESISTANCE (KIPS)	
		STRENGTH LIMIT STATES	EXTREME LIMIT STATES
*	*	*	*

   - THE FACTORED DESIGN AXIAL RESISTANCE AT EACH LOCATION IS THE LESSER VALUE OF THE FACTORED GEOTECHNICAL AND THE FACTORED STRUCTURAL RESISTANCES INDICATED.
   - THE FACTORED GEOTECHNICAL AXIAL RESISTANCE FOR THE STRENGTH LIMIT STATE IS BASED ON THE NOMINAL AXIAL RESISTANCE AS DETERMINED USING (*DESIGNER TO SPECIFY METHOD*) AND A RESISTANCE FACTOR OF (*DESIGNER TO SPECIFY RESISTANCE FACTOR*).
   - THE FACTORED GEOTECHNICAL AXIAL RESISTANCE FOR THE EXTREME LIMIT STATE IS BASED ON THE NOMINAL AXIAL RESISTANCE AS DETERMINED USING (*DESIGNER TO SPECIFY METHOD*) AND A RESISTANCE FACTOR OF (*DESIGNER TO SPECIFY RESISTANCE FACTOR*).
   - THE FACTORED GEOTECHNICAL UPLIFT RESISTANCE FOR THE STRENGTH LIMIT STATE IS BASED ON THE NOMINAL UPLIFT RESISTANCE AS DETERMINED USING (*DESIGNER TO SPECIFY METHOD*) AND A RESISTANCE FACTOR OF (*DESIGNER TO SPECIFY RESISTANCE FACTOR*).
   - THE FACTORED GEOTECHNICAL UPLIFT RESISTANCE FOR THE EXTREME LIMIT STATE IS BASED ON THE NOMINAL UPLIFT RESISTANCE AS DETERMINED USING (*DESIGNER TO SPECIFY METHOD*) AND A RESISTANCE FACTOR OF (*DESIGNER TO SPECIFY RESISTANCE FACTOR*).
4. WIND LOADING DESIGN DATA

   THE WIND LOADING DESIGN SHALL BE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, THE RHODE ISLAND LRFD BRIDGE DESIGN MANUAL, AND AS MODIFIED HEREIN.
   - EXCEPT DURING CONSTRUCTION, THE DESIGN WIND PRESSURE IS BASED ON A DESIGN WIND SPEED OF 100 MPH.
   - THE DESIGN WIND PRESSURES DURING CONSTRUCTION SHALL BE AS SPECIFIED UNDER THE NOTES TITLED "GENERAL NOTES REGARDING TEMPORARY CONSTRUCTION CONDITIONS".
5. TRAFFIC DATA

   (*THE DESIGNER SHALL PROVIDE ALL PERTINENT TRAFFIC DATA SUCH AS ADT, DHV, AND PERCENT TRUCK TRAFFIC*).
6. HYDRAULIC AND SCOUR DATA

   (*THE DESIGNER SHALL PROVIDE ALL PERTINENT HYDRAULIC DATA IN ACCORDANCE WITH THE RI LRFD BRIDGE DESIGN MANUAL, SECTION 2*).
7. THERMAL DESIGN FORCE DATA

   UNIFORM TEMPERATURE EFFECTS HAVE BEEN TAKEN INTO CONSIDERATION IN ACCORDANCE WITH THE PROCEDURE B OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE MINIMUM DESIGN TEMPERATURE SHALL BE 0 DEGREES F, AND THE MAXIMUM TEMPERATURE SHALL BE 100 DEGREES F.
8. SEISMIC DESIGN DATA
   - THE SEISMIC ANALYSIS AND DESIGN SHALL BE IN ACCORDANCE WITH THE RHODE ISLAND LRFD BRIDGE DESIGN MANUAL (*DESIGNER TO ALSO REFERENCE SITE–SPECIFIC STUDY REPORT IF ONE WAS PERFORMED*).
   - THE COMBINATION OF SEISMIC FORCE EFFECTS IS IN ACCORDANCE WITH THE RHODE ISLAND LRFD BRIDGE DESIGN MANUAL.
   - THIS BRIDGE HAS BEEN CLASSIFIED AS (*DESIGNER TO SPECIFY "CRITICAL" OR "NON–CRITICAL"*).
   - THE SITE HAS BEEN CLASSIFIED AS SITE CLASS (*DESIGNER TO INDICATE A, B, C, D, E OR F*).
   - SCOUR AND LIQUEFACTION EFFECTS HAVE BEEN CONSIDERED IN THE SEISMIC ANALYSIS OF THIS BRIDGE.
   - THE SEISMIC ANALYSIS OF THIS BRIDGE WAS BASED ON THE FOLLOWING DESIGN SPECTRA: (*DESIGNER TO PROVIDE VALUES BASED ON RI LRFD BRIDGE DESIGN MANUAL OR A SITE SPECIFIC STUDY IF ONE WAS PERFORMED*).

HORIZONTAL DESIGN RESPONSE SPECTRA			
UPPER LEVEL EARTHQUAKE (3% IN 75 YEARS, 5% DAMPING)		LOWER LEVEL EARTHQUAKE (15% IN 75 YEARS, 5% DAMPING)	
PERIOD (SEC)	Sa (g)	PERIOD (SEC)	Sa (g)
*	*	*	*
*	*	*	*
*	*	*	*
*	*	*	*
*	*	*	*
*	*	*	*
*	*	*	*

MATERIALS

STRUCTURAL STEEL:
- AASHTO DESIGNATION M 270, GRADE 36
- AASHTO DESIGNATION M 270, GRADE 50

REINFORCING STEEL:
- AASHTO DESIGNATION M 31, GRADE 60, GALVANIZED

PRESTRESSING STEEL:
- UNCOATED SEVEN WIRE LOW–RELAXATION STRAND, AASHTO DESIGNATION M 203, GRADE 270

CONCRETE STRENGTHS:
- CLASS HP ¾" f'c=5,000 PSI: CURB, END POST, ABUTMENT STEM, AND BACKWALL
- CLASS XX ¾" f'c=4,000 PSI: APPROACH SLAB AND FOOTING

FOUNDATIONS

1. THE FURNISHING AND INSTALLING OF THE DEEP FOUNDATIONS TYPES SPECIFIED IN THIS CONTRACT SHALL BE IN ACCORDANCE WITH (*DESIGNER TO REFERENCE THE CONTRACT SPECIAL PROVISIONS OR THE RI STANDARD SPECIFICATIONS AS APPLICABLE*).
2. (*DESIGNER TO INCLUDE A NOTE REGARDING THE DISCLOSURE AND AVAILABILITY OF PROJECT GEOTECHNICAL INFORMATION, DATA AND REPORTS IN ACCORDANCE WITH THE RI LRFD BRIDGE DESIGN MANUAL, SECTION 10*).

CONCRETE NOTES

1. CLASSES OF CONCRETE SHALL BE HIGH PERFORMANCE CLASS HP, CLASS XX AS DESCRIBED IN THE RI STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS OF THE SPECIFICATIONS. REFER TO THE "MATERIAL" NOTES FOR CLASSES OF CONCRETE SPECIFIED FOR VARIOUS COMPONENTS.
2. THE CONTRACTOR MAY, AT THE APPROVAL OF THE ENGINEER, PROPOSE THE USE OF SELF–CONSOLIDATING CONCRETE FOR ANY CLASS OF CONCRETE ON THIS PROJECT. SECTION 606 "SELF CONSOLIDATING CONCRETE (SCC)", CONTAINS THE REQUIREMENTS FOR MODIFYING ALL CLASSES OF CONCRETE MIX DESIGN FOR SELF–CONSOLIDATING APPLICATIONS.
3. ALL PORTLAND CEMENT CONCRETE SHALL BE AIR–ENTRAINED.
4. EXCEPT FOR FOOTINGS CAST BELOW GRADE, ALL REINFORCING STEEL SHALL BE GALVANIZED. ALL WIRE TIES AND MISCELLANEOUS HARDWARE USED FOR PLACEMENT OF GALVANIZED REINFORCING SHALL ALSO BE GALVANIZED. GALVANIZED COATING FOR REINFORCING STEEL SHALL CONFORM TO ASTM A767 CLASS 1.
5. ALL CRITICAL LAP SPLICES SHALL BE AS SHOWN ON THE PLANS. ALL SPLICES NOT SHOWN ON THE PLANS SHALL BE LAPPED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR CLASS C LAP SPLICES.
6. UNLESS OTHERWISE INDICATED ON THE PLANS, ALL MAIN REINFORCING BARS SHALL HAVE THE FOLLOWING MINIMUM COVER UNLESS NOTED OTHERWISE ON THE PLAN:

CONCRETE CAST AGAINST OR PERMANENTLY EXPOSED TO EARTH (FOOTINGS, ABUTMENT AND WALL FACES, BACKWALLS)	3"
STIRRUPS	1.5"
ALL OTHER BARS	2"

7. ALL ANCHOR BOLTS SHALL BE ASTM DESIGNATION A 307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO DESIGNATION M 232 OR METALIZED IN ACCORDANCE WITH SECTION M.05. SWEDGED RODS SHALL BE AASHTO DESIGNATION M 270 GRADE 36 AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO DESIGNATION M 232.
8. ALL ANCHOR BOLTS SHALL BE SET PRIOR TO PLACEMENT OF CONCRETE UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.
9. HORIZONTAL CONSTRUCTION JOINTS OTHER THAN THOSE SHOWN ON PLANS WILL NOT BE PERMITTED WITHOUT A WRITTEN REQUEST BY THE CONTRACTOR AND PRIOR AUTHORIZATION BY THE ENGINEER.
10. UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CONCRETE SURFACES VISIBLE IN ELEVATION TO ONE FOOT BELOW FINAL GROUND LINE, SHALL RECEIVE A CONCRETE SURFACE RUBBED FINISH IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.
11. THE ENTIRE TOPSIDE SURFACES OF ABUTMENT SEATS, AS WELL AS VERTICAL FACES OF BACKWALLS, AND PARAPETS/BARRIERS SHALL BE PROVIDED WITH A FILM–FORMING SEALER (M12.03.1) CONCRETE SURFACE TREATMENT–PROTECTIVE COATING IN ACCORDANCE WITH SECTION 820 OF THE RI STANDARD SPECIFICATIONS.
13. ALL EXPOSED EDGES AND REENTRANT CORNERS NOT OTHERWISE DETAILED ON THE PLANS SHALL HAVE A MINIMUM ¾" CHAMFER.
12. ALL JOINT SEALANT SHALL BE POLYURETHANE, POLYURETHANE ELASTOMERIC, OR SILICONE SEALANT AS DESIGNATED ON THE PLANS. THE COLOR OF THE JOINT SEALANT, WHERE EXPOSED, SHALL BE NEUTRAL (LIGHT GRAY OR TAN). THE COLOR OF THE SEALANT, WHERE NOT EXPOSED, WILL BE AT THE DISCRETION OF THE CONTRACTOR.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING CONCRETE STAINS OR DISCOLORATIONS DURING CONSTRUCTION UNTIL SUCH TIME WHEN THE SURFACES ARE APPROVED AND ACCEPTED. ANY CONCRETE STAINS OR DISCOLORATIONS OCCURRING PRIOR TO ACCEPTANCE OF THE SURFACES SHALL BE REMOVED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
14. UNLESS OTHERWISE NOTED ON THE PLANS, JOINT FILLER IS TO BE A PREFORMED, NON–EXPANSIVE, NON–EXTRUDING TYPE IN ACCORDANCE WITH SECTION M.02.11.1 OF THE RI STANDARD SPECIFICATIONS.
15. EMBEDMENT LENGTHS FOR DRILLED AND GROUTED DOWELS SHALL BE IN ACCORDANCE WITH SECTION 819 OF THE RI STANDARD SPECIFICATIONS.
16. IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS, ALL METAL TIES, NON–METALLIC TIES OR ANCHORAGES WHICH ARE REQUIRED FOR CONCRETE FORMWORK SHALL BE SO CONSTRUCTED THAT THEY CAN BE REMOVED TO AT LEAST ONE INCH BELOW THE EXPOSED SURFACE OF THE CONCRETE WITHOUT CAUSING DAMAGE TO THE CONCRETE SURFACE. SNAP TIES MAY BE USED ONLY IF APPROVED BY THE ENGINEER. IF THE CONTRACTOR PROPOSES TO USE THEM, A CATALOG CUT AND OTHER NECESSARY INFORMATION MUST BE SUBMITTED TO THE ENGINEER TO DEMONSTRATE THAT THE TIES WILL SNAP–OFF FAR ENOUGH INTO THE CONCRETE TO ALLOW FOR PROPER PATCHING. SNAP TIES MUST PROVIDE ADEQUATE STRENGTH TO SUPPORT THE FORMS. ALL CAVITIES SHALL BE FILLED WITH AN APPROVED CEMENT MORTAR MEETING THE REQUIREMENTS OF ASTM C 928.
17. WATER STOPS ARE REQUIRED FOR HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS IN ABUTMENTS AND WALLS WHEN EXPOSED TO BACKFILL EARTH MATERIAL. WATER STOPS SHALL BE INSTALLED AT THE LOCATIONS DETAILED ON THE PLANS, AT THE LOCATIONS AS SPECIFIED ABOVE AND AT ALL LOCATIONS AS DIRECTED BY THE ENGINEER, ALL IN ACCORDANCE WITH SECTION 812 OF THE RI STANDARD SPECIFICATIONS.

STRUCTURAL STEEL NOTES

1. SHOPS FABRICATING THE EXPANSION JOINTS, RAILINGS AND BEARINGS SHALL, AT A MINIMUM, BE CERTIFIED FOR "SIMPLE STEEL BRIDGE STRUCTURES (SBR)".

   THE SHOPS SHALL ALSO BE CERTIFIED UNDER THE AISC "SOPHISTICATED PAINT ENDORSEMENT (SPE)" QUALITY PROGRAM OR THE SSPC–QP3 PAINT CERTIFICATION PROGRAM.

   THE FABRICATOR MUST SUBMIT PROOF OF CURRENT CERTIFICATION AS SPECIFIED.
2. SHOP DRAWINGS FOR ALL FABRICATED STEEL INCLUDING BEARINGS, EXPANSION JOINTS, RAILINGS AND FALSEWORK SHALL BE SUBMITTED TO THE ENGINEER IN SUFFICIENT TIME TO PERMIT CAREFUL CHECKING PRIOR TO FABRICATION.
3. STRUCTURAL STEEL SHAPES AND PLATES SHALL CONFORM TO THE LATEST PROVISIONS OF AASHTO DESIGNATION M 270 GRADE 36 AND GRADE 50 AS DESIGNATED ON THE PLANS.
4. WELDING SHALL BE IN ACCORDANCE WITH THE LATEST BRIDGE WELDING CODE AASHTO/AWS D1.5 (INCLUDING ALL INTERIMS TO DATE) AND APPLICABLE SUPPLEMENTAL AWS PUBLICATIONS.
5. ALL HIGH STRENGTH BOLTS SHALL CONFORM TO AASHTO DESIGNATION M 164, AND THEY SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 824 OF THE RI STANDARD SPECIFICATIONS.
6. WASHERS MEETING AASHTO DESIGNATION M 293 ARE TO BE USED OVER ALL HOLES THAT ARE MORE THAN 1/16" IN DIAMETER GREATER THAN THE BOLT DIAMETER AND UNDER ALL PARTS TURNED DURING ASSEMBLY.
7. WELDING ELECTRODES SHALL HAVE THE SAME CORROSION RESISTANCE AS THE BASE METAL AND SHALL BE FREE OF MOISTURE AT THE TIME OF USE.
8. STEEL SHALL BE PREPARED AND PAINTED IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS.
9. PRIOR TO FABRICATION, ALL MATERIALS SHALL FIRST BE SOLVENT CLEANED TO SSPC–SP1 TO REMOVE ALL OIL, GREASE AND DIRT; FOLLOWED BY BLAST–CLEANING TO SSPC–SP10 TO REMOVE ALL MILL SCALE, RUST, AND OTHER DELETERIOUS MATERIALS FROM THE SURFACES OF THE STEEL TO BE FABRICATED.
10. PRIOR TO SHOP COATING AS SPECIFIED IN SECTION 825 OF THE RI STANDARD SPECIFICATIONS, ALL CORNERS AND EDGES OF STEEL WHICH HAVE BEEN FLAME CUT OR OTHERWISE HARDENED SHALL BE SOFTENED BY GRINDING OR BLAST–CLEANING TO PROVIDE A SURFACE SUITABLE FOR APPLICATION OF THE SPECIFIED PAINT SYSTEM.

    UPON COMPLETION OF ALL FABRICATION AND PRIOR TO THE APPLICATION OF THE SHOP PRIMER COAT THE STRUCTURAL STEEL SHALL BE RESTORED TO AN SSPC–SP10 CONDITION.
11. ALL FILLET WELDS SHALL BE IN ACCORDANCE WITH THE BRIDGE WELDING CODE AASHTO/AWS D1.5 TABLE 2.1 (¼" MINIMUM).
12. WHEN STEEL DIE STAMPS ARE USED TO IDENTIFY PIECES AND MEMBERS, FABRICATORS SHALL UTILIZE LOW STRESS STAMPS.

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Environmental Management
JUN 28 2017
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 JUN 28 2017 FILE # 17-0688
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Jonathan B. Stone

NOT FOR CONSTRUCTION

SEAL:

REVISION	DATE	DESCRIPTION

CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUDDO ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
GENERAL NOTES

ISSUED FOR:	PRELIMINARY PLAN
DATE:	APRIL 4, 2017
SCALE:	1"=X'
DRAWN BY:	CAP
CHECKED BY:	JY
PROJECT NO:	3653160007

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SHEET 39 OF 46
AMEC FOSTER WHEELER

PRESTRESSED CONCRETE NOTES

1. THE FABRICATION OF ALL PRESTRESSED ELEMENTS SHALL BE IN ACCORDANCE WITH SECTION 809 "PRECAST/PRESTRESSED CONCRETE MASONRY" OF THE RI STANDARD SPECIFICATIONS.
2. ANY PRECAST MANUFACTURING PLANT FURNISHING PRECAST PRESTRESSED BRIDGE MEMBERS MUST BE CERTIFIED BY THE PRECAST PRESTRESSED CONCRETE INSTITUTE PLANT CERTIFICATION PROGRAM. THE CERTIFICATION SHALL BE AS A MINIMUM IN THE B3 CATEGORY, EXCEPT FOR DRAPED STRAND BRIDGE MEMBERS IN WHICH CASE A B4 CATEGORY WILL BE REQUIRED. THE MANUFACTURER SHALL SUBMIT PROOF OF CERTIFICATION PRIOR TO THE START OF PRODUCTION.
3. BOX BEAMS ARE DETAILED WITH NOMINAL DIMENSIONS AND NOMINAL ½" JOINTS BETWEEN UNITS TO ACCOUNT FOR CONSTRUCTION TOLERANCES AND TO PROVIDE FOR AN EXACT OVERALL STRUCTURE WIDTH.
4. LIFTING DEVICES ARE THE RESPONSIBILITY OF THE PRECASTER.
5. THE CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 7,000 PSI. THE MINIMUM REQUIRED COMPRESSIVE STRENGTH AT STRESS TRANSFER SHALL NOT BE LESS THAN 6,000 PSI.
6. PRESTRESSING STRANDS SHALL CONSIST OF UNCOATED HIGH STRENGTH SEVEN WIRE LOW-RELAXATION STRANDS HAVING A NOMINAL DIAMETER OF 0.6" CONFORMING TO THE REQUIREMENTS OF AASHTO DESIGNATION M 203 GRADE 270.
7. LATERAL TIES SHALL CONSIST OF UNCOATED HIGH STRENGTH SEVEN WIRE LOW-RELAXATION STRANDS HAVING A NOMINAL DIAMETER OF 0.6" CONFORMING TO THE REQUIREMENTS OF AASHTO DESIGNATION M 203 GRADE 270. CORROSION PROTECTION OF THE LATERAL TIES SHALL BE AS DETAILED ON THE DRAWINGS. COST OF THE LATERAL TIES SHALL BE INCLUDED IN THE UNIT PRICE FOR THE PRESTRESSED BOX BEAM UNITS.
8. NON-PRESTRESSED REINFORCEMENT SHALL CONFORM TO AASHTO DESIGNATION M 31 GRADE 60 AND SHALL BE GALVANIZED.
9. ALL EXPOSED CORNERS SHALL BE CHAMFERED ¾ UNLESS OTHERWISE NOTED.
10. ANY STRUCTURAL MEMBERS DAMAGED DURING FABRICATION, SHIPPING OR ERECTION, SUCH THAT THEIR STRUCTURAL INTEGRITY IS COMPROMISED, SHALL BE REJECTED AND REPLACED AT THE CONTRACTOR'S OWN EXPENSE. THE ENGINEER SHALL BE THE SOLE JUDGE IN DETERMINING THE STRUCTURAL INTEGRITY OF DAMAGED PRESTRESSED MEMBERS. ANY DAMAGE THAT IS NOT STRUCTURAL IN NATURE SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT NO COST TO THE OWNER.
11. DURING HANDLING, THE BEAMS MUST BE MAINTAINED IN AN UPRIGHT POSITION AT ALL TIMES AND MUST BE PICKED UP ONLY BY MEANS OF APPROVED LIFTING DEVICES AT THEIR APPROVED SUPPORT POINTS.
12. DIMENSIONAL TOLERANCES SHALL NOT EXCEED THOSE RECOMMENDED IN THE LATEST EDITION OF THE PCI "MANUAL FOR QUALITY CONTROL FOR PLANTS AND PRODUCTION OF PRECAST AND PRESTRESSED CONCRETE PRODUCTS".
13. THE EXTERIOR FACE OF FASCIA BEAMS SHALL RECEIVE A SELECTED FORMLINER OR RUBBED FINISH (IN FIELD OR IN THE PLANT) IN ACCORDANCE WITH THE RI STANDARD SPECIFICATIONS. THE COST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PRESTRESSED CONCRETE MEMBERS.
14. THE TOP SURFACES OF THE PRESTRESSED BOX BEAMS, SHALL HAVE A SMOOTH FINISH EXCEPT FOR THE TOP SURFACE OF THE EXTERIOR BEAMS UNDER THE CURB SHALL HAVE A RAKED FINISHED (1/4" AMPLITUDE) AS INDICATED ON THE PLANS.
15. ALL SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER IN SUFFICIENT TIME TO PERMIT CAREFUL CHECKING.
16. THE DETAILS OF ALL INSERTS, ANCHORS, AND ANY OTHER ITEMS REQUIRED TO BE CAST INTO THE PRECAST PRESTRESSED UNITS (WHETHER DETAILED ON THE CONTRACT DRAWINGS OR PROVIDED FOR THE CONTRACTOR'S CONVENIENCE) SHALL BE SHOWN ON THE SHOP DRAWINGS. PRECAST UNITS SHALL NOT BE FIRED OR DRILLED INTO FOR ATTACHMENT PURPOSES. ALL HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 232.
17. THE NON-SHRINK GROUT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 10,000 PSI AFTER 28 DAYS AS DETERMINED BY TESTING UNDER ASTM DESIGNATION C-109 AND SHALL NOT EXHIBIT ANY MEASURABLE DECREASE IN VOLUME AFTER CURING. THE CONTRACTOR SHALL STRICTLY FOLLOW THE MANUFACTURER'S RECOMMENDATIONS. GROUTING SHALL BE PERFORMED IN ACCORDANCE WITH THE DETAILS SHOWN. THE GROUT SHALL BE ON THE RIDOT APPROVED MATERIAL LIST.
18. THE ENDS OF BEAMS SHALL BE VERTICAL AFTER ALL DEAD LOADS HAVE BEEN PLACED.
19. HANDHELD VIBRATORS SHALL BE EQUIPPED WITH RUBBER TIPPED HEADS.
20. FOR SIZE AND LOCATION OF ANCHOR BOLTS, SEE SHEET S-10.
21. NO TRAFFIC OR HEAVY EQUIPMENT SHALL BE PERMITTED ON THE BRIDGE UNTIL THE POST TENSIONING OPERATION HAS BEEN COMPLETED AND THE GROUT HAS ATTAINED THE 28 DAY COMPRESSIVE STRENGTH.

GENERAL NOTES REGARDING TEMPORARY CONSTRUCTION CONDITIONS:

1. DESIGN WIND PRESSURES FOR CONSTRUCTION:

   MINIMUM WIND PRESSURES TO BE USED BY THE CONTRACTOR FOR DESIGN DURING THE CONSTRUCTION CONTRACT (WITH THE EXCEPTION OF SIGNS) SHALL BE FROM THE FOLLOWING TABLE:

HEIGHT ABOVE GROUND	WIND PRESSURE (PSF)
UP TO 17'	33
OVER 17' AND UP TO 33'	37
OVER 33' AND UP TO 50'	41
OVER 50' AND UP TO 75'	44
OVER 75' AND UP TO 100'	47

   TABLE NOTES:

   A. APPLICATION OF THE TABULAR PRESSURE:

   - BRIDGE COMPONENTS DURING CONSTRUCTION, PRIOR TO THE INSTALLATION OF THE PERMANENT BRACING SYSTEMS, NOT INCLUDING CRANE LIFTING.
   - FALSE WORK, SHORING, AND SCAFFOLDING AS DEFINED IN FHWA "GUIDE DESIGN SPECIFICATION FOR BRIDGE TEMPORARY WORKS", EXCLUDING 3-DIMENSIONAL LATTICED OR TRUSSED FRAMES OR TOWERS;
   - TEMPORARY SHIELDING.

   WIND PRESSURES FOR ALL OTHER STRUCTURES SHALL BE CALCULATED BASED ON ASCE "DESIGN LOADS ON STRUCTURES DURING CONSTRUCTION", SEI/ASCE 37-02 (ALL REFERENCES TO THE ASCE 7 IN THE SEI/ASCE 37-02 PUBLICATION, SHALL BE THE LATEST REVISION OF ASCE 7). THE EXPOSURE CATEGORY SHALL BE C.

2. ERECTION OF BRIDGE COMPONENTS:

   FOR THE ERECTION OF STRUCTURES, THE FOLLOWING SHALL APPLY:

   - THE CONTRACTOR SHALL SUBMIT AN ERECTION PLAN THAT PROVIDES COMPLETE DETAILS OF THE PROCESS INCLUDING, BUT NOT LIMITED TO, TEMPORARY SUPPORTS, SCHEDULING AND OPERATION SEQUENCING, CRANE PLACEMENT, AND ASSUMED LOADS AND CALCULATED STRESSES DURING VARYING STAGES OF LIFTING. THIS APPLIES TO STRUCTURES OF ANY KIND. THE CAPACITY OF THE CRANE AND ALL LIFTING AND CONNECTING DEVICES SHALL BE ADEQUATE FOR 125 PERCENT OF THE TOTAL PICK LOAD INCLUDING SPREADERS, RIGGING, HOOKS, AND ALL OTHER MATERIALS. THIS FACTOR OF SAFETY SHALL BE IN ADDITION TO ALL MANUFACTURERS' PUBLISHED FACTORS OF SAFETY.
   - A REGISTERED PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF RHODE ISLAND, WILL BE REQUIRED TO STAMP THE CONTRACTOR'S ERECTION PLAN.
   - THE CONTRACTOR'S PROFESSIONAL ENGINEER WILL BE REQUIRED TO INSPECT AND PROVIDE WRITTEN APPROVAL OF INSTALLATION, PRIOR TO ALLOWING VEHICLES OR PEDESTRIANS ON OR BELOW THE STRUCTURE. THE PROFESSIONAL ENGINEER MUST ALSO STAMP ALL CHANGES TO THE CONTRACTOR'S ERECTION PLAN. ADDITIONALLY, ALL PROPOSED CHANGES MUST BE SUBMITTED TO THE OWNER FOR REVIEW AND APPROVAL PRIOR TO IMPLEMENTATION.
   - A MANDATORY PRE-ERECTION CONFERENCE WILL BE HELD AT LEAST TWO WEEKS PRIOR TO THE START OF THE GIRDER INSTALLATION TO DISCUSS THE PLAN AND PROCEDURES, WORK SCHEDULES, CONTINGENCY PLANS, SAFETY REQUIREMENTS AND TRAFFIC CONTROL. THE CONTRACTOR'S PROFESSIONAL ENGINEER AND ERECTION SUBCONTRACTOR WILL BE REQUIRED TO ATTEND THIS MEETING, AS WILL THE RESIDENT ENGINEER, THE DESIGN PROJECT ENGINEER AND THE DESIGN CONSULTANT. BASED UPON DISCUSSIONS AT THIS MEETING AND A REVIEW OF THE CONTRACTOR'S ERECTION PLAN, THE OWNER MAY ORDER THE CONTRACTOR TO MODIFY AND RESUBMIT THE ERECTION PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL.
   - THE CONTRACTOR WILL BE REQUIRED TO PERFORM DAILY INSPECTIONS OF THE ERECTED GIRDERS UNTIL THE BRIDGE DECK IS COMPLETELY POURED.
   - THE COST OF PREPARING AND STAMPING THE ERECTION PLAN, COMPUTATIONS, AND REPORTS, RESPONDING TO OWNER'S COMMENTS AND MAKING THE NECESSARY REVISIONS, AND ATTENDANCE AT MEETINGS SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE SUPERSTRUCTURE PAY ITEM, BE IT CONCRETE, STEEL OR TIMBER.

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TOTAL BILL OF MATERIAL

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Environmental Management
JUN 28 2017
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 JUN 28 2017 FILE # 17-0098
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Martin B. Wenck

NOT FOR CONSTRUCTION

SEAL:

REVISION	DATE	DESCRIPTION

CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

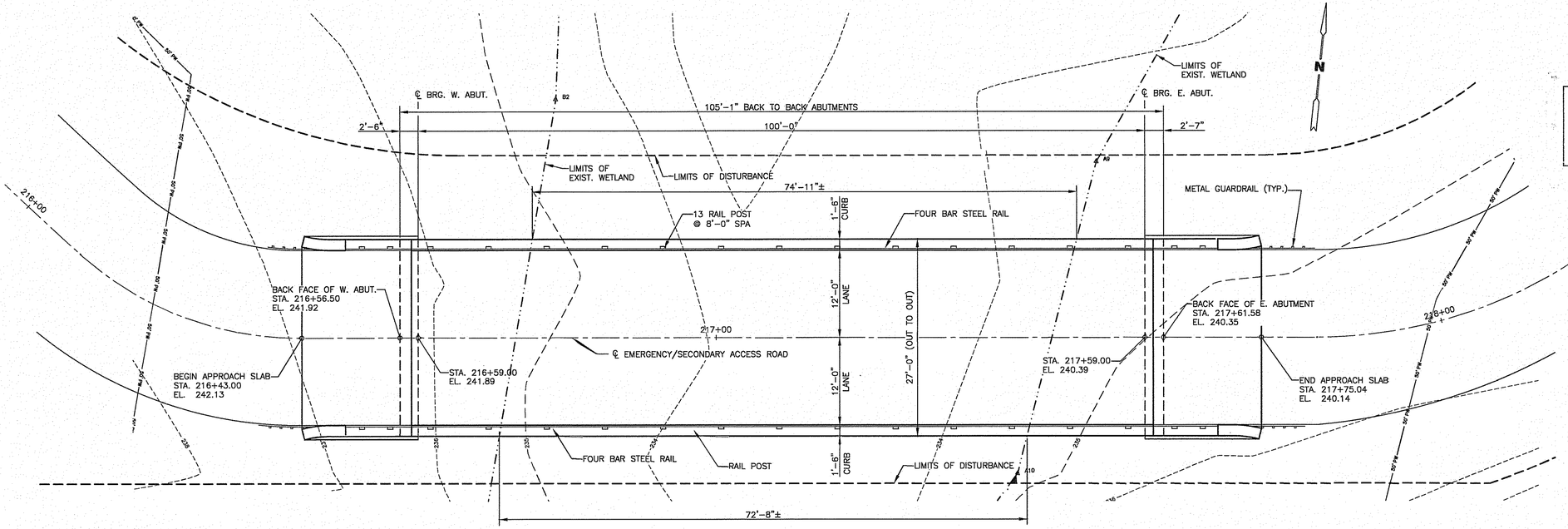
PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
GENERAL NOTES

ISSUED FOR:	PRELIMINARY PLAN
DATE:	APRIL 4, 2017
SCALE:	1" = X'
DRAWN BY:	GAP
CHECKED BY:	JY
PROJECT NO:	3653180007

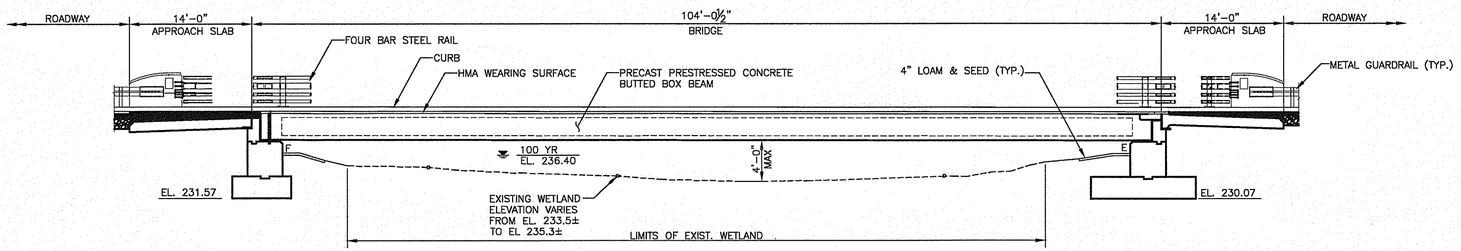
S-2

SHEET 40 OF 46
AMEC FOSTER WHEELER



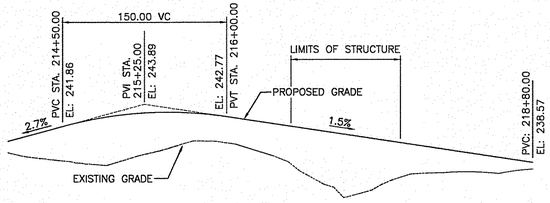
PLAN

SCALE: ½"=1'-0"



ELEVATION

SCALE: ½"=1'-0"



PROFILE GRADE AT ℄ OF EMERGENCY/ACCESS ROAD

SCALE: NTS

L=32.96	L=102.10
Δ=041°58'01"	Δ=090°00'00"
R=45.00	R=65.00
PC=216+09.67	PC=217+82.69
PT=216+26.93	PT=218+84.79

CURVE DATA

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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Environmental Management
JUN 2 8 2017
Office of Water Resources

Environmental Management
JUN 2 8 2017
Office of Water Resources

NOT FOR CONSTRUCTION

SEAL:

REVISION	DATE	DESCRIPTION

CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO ESQ
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PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
GENERAL PLAN AND ELEVATION

ISSUED FOR:	PRELIMINARY PLAN
DATE:	APRIL 4, 2017
SCALE:	1" = X'
DRAWN BY:	GAP
CHECKED BY:	JY
PROJECT NO:	3853160007

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SHEET 41 OF 46

AMEC FOSTER WHEELER

DXF file created by LitePro 2.030 on 3/23/2017 1:28:38 PM

CALCULATION SUMMARY

AREA NAME	DIMENSIONS	GRID / TYPE	# PTS	SPAC	GROUP	AVG	MAX	MIN	AVG/MIN
ROADWAY	2459.00x1583.50Ft	GROUND / H-H	5606	10.00	<+>	0.30	3.52	0.00	N/A
			673	10.00	<+>	0.87	1.79	0.10	8.60
			579	10.00	<F>	1.38	4.35	0.15	9.23
PARKING LOTS	1321.91x1116.11Ft	GROUND / H-H	1078	10.00	<+>	0.93	5.07	0.00	N/A
			1431	10.00	<+>	1.19	3.89	0.38	3.15
			642	10.00	<F>	1.26	4.19	0.29	4.34

Twin River Tiverton (36531700) LUMINAIRE SCHEDULE

TYP	DESCRIPTION	LAMP	LUMENS	MOUNTING/BALLAST	LLF	QTY
AA	Cree Inc TYPE III (1) "A" OSQ Series Type III Dist.	(1) LED	21902		0.94	3
BB	Cree Inc TYPE IV (1) "B" OSQ Series TYPE IV Dist.	(1) LED	21902		0.94	3
CC	Cree Inc TYPE V (1) "C" OSQ Series Type V Dist	(1) LED	21469		0.94	13
EE	Cree Inc XSP1-B-MED-BA (1) "D1" XSP1 Series Type II medium with Backlight Shield	(1) LED	7127		0.94	29
F	Spaulding LMC-30LU-4K-3 LAREDO LMC, 30 LED, 4200K, TYP	(1) NVSL219BT R70	5594	LED40W-054-C070	0.94	27
FF	Cree Inc XSP1 TYP III BA (1) "D2" XSP1 Series Type III medium w/Backlight Shield	(1) LED	6853		0.94	4
VV	Cree Inc TYPE III BACKLI (1) "A1" OSQ Series Type III w/Backlight Shield	(1) LED	17291		0.94	5
XX	Cree Inc (1) "B1" OSQ Series TYPE IV w/Backlight Shield	(1) LED	16830		0.94	2

amec foster wheeler

AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 120
PROVIDENCE RHODE ISLAND, 02908
WEB: WWW.AMECFW.COM

Environmental Management
JUN 28 2017
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 JUN 28 2017 FILE # 17-0088
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Jonathan B. Womack

NOT FOR CONSTRUCTION
SEAL:

REVISION	DATE	DESCRIPTION

CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
SITE LIGHTING PHOTOMETRICS
PANEL A

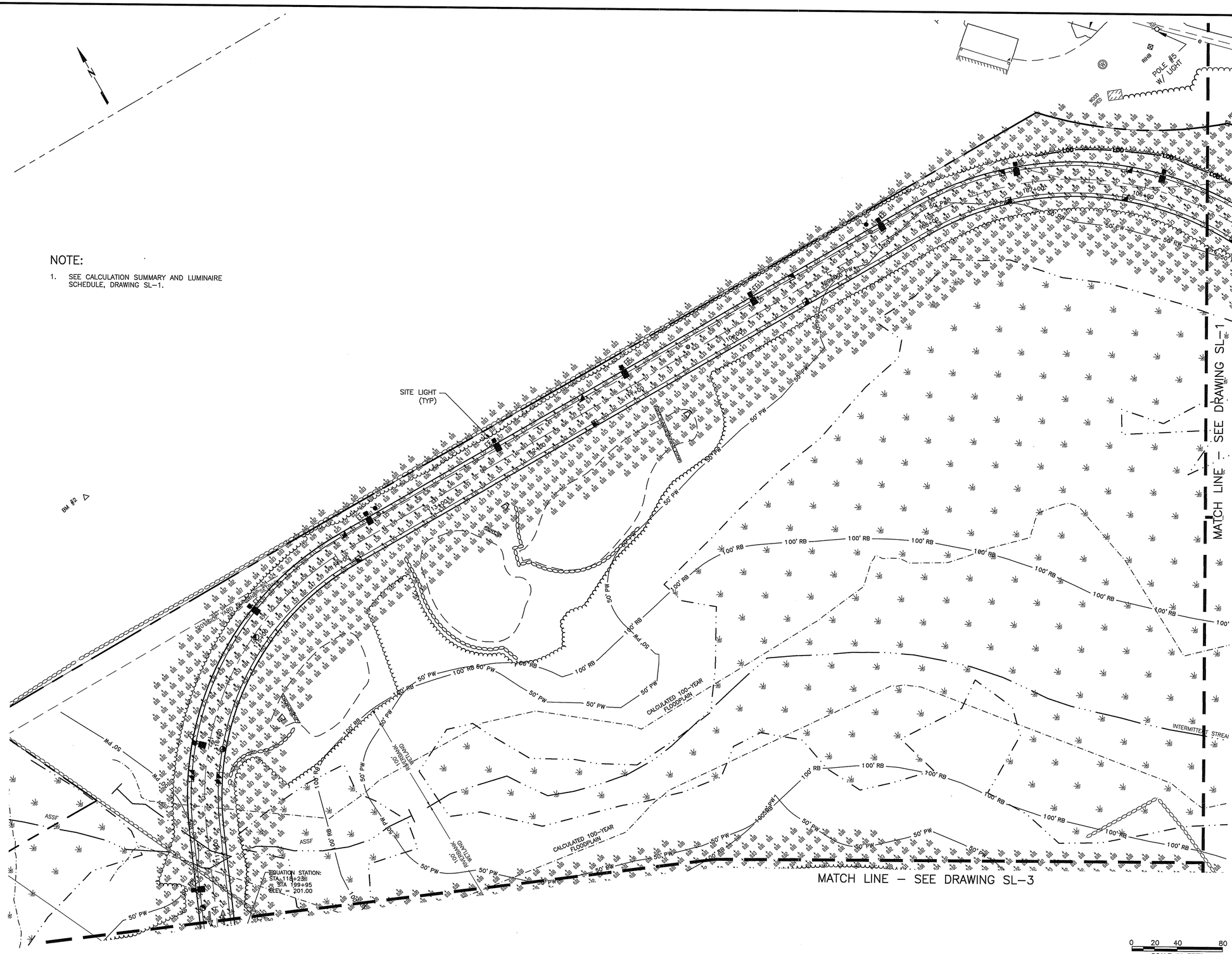
ISSUED FOR:	PRELIMINARY PLAN
DATE:	MARCH 27, 2017
SCALE:	1" = 40'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

0 20 40 80
SCALE IN FEET

SL-1

NOTE:

1. SEE CALCULATION SUMMARY AND LUMINAIRE SCHEDULE, DRAWING SL-1.



0 20 40 80
SCALE IN FEET

amec foster wheeler

AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 120
PROVIDENCE RHODE ISLAND, 02908
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Environmental Management
JUN 28 2017
Office of Water Resources

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DATED JUN 28 2017 FILE # 17-0098
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Martin D. Wencek

NOT FOR CONSTRUCTION

SEAL:

REVISION	DATE	DESCRIPTION

CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
SITE LIGHTING PHOTOMETRICS
PANEL B

ISSUED FOR:	PRELIMINARY PLAN
DATE:	MARCH 27, 2017
SCALE:	1" = 40'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

SL-2

MATCH LINE – SEE DRAWING SL-2

MATCH LINE – SEE DRAWING SL-4

SITE LIGHT (TYP)

RETAINING WALL

BUILDING WALL MOUNT LIGHT (TYP)

CALCULATED 100-YEAR FLOODPLAIN

WATER BANK

50' PW

NOTE:

1. SEE CALCULATION SUMMARY AND LUMINAIRE SCHEDULE, DRAWING SL-1.

0 20 40 80
SCALE IN FEET

amec foster wheeler

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ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 120
PROVIDENCE RHODE ISLAND, 02908
WEB: WWW.AMECFW.COM

Environmental Management
JUN 28 2017
Office of Water Resources

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APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 28 2017 FILE # 17-0096
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Jayantha B. Weerakkody

NOT FOR CONSTRUCTION

SEAL:

REVISION	DATE	DESCRIPTION

CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
SITE LIGHTING PHOTOMETRICS
PANEL C

ISSUED FOR:	PRELIMINARY PLAN
DATE:	MARCH 27, 2017
SCALE:	1" = 40'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

SL-3

MATCH LINE – SEE DRAWING SL–1

MATCH LINE – SEE DRAWING SL–3

STAFFORD ROAD
ROUTE 81

JEFFERSON STREET

House

Pole #447

Pole #448

223+17

223+00

222+00

221+00

220+00

219+00

218+00

217+00

216+00

215+00

214+00

213+00

212+00

211+00

210+00

209+00

208+00

207+00

206+00

205+00

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37+00

36+00

35+00

34+00

33+00

32+00

31+00

30+00

29+00

28+00

27+00

26+00

25+00

24+00

23+00

22+00

21+00

20+00

19+00

18+00

17+00

16+00

15+00

14+00

13+00

12+00

11+00

10+00

9+00

8+00

7+00

6+00

5+00

4+00

3+00

2+00

1+00

0+00

100' RB

50' PW

60' PW

20' SIDE YARD BUILDING SETBACK

50' SIDE YARD

INTERMITTENT STREAM < 10' WIDE

100' RIVERBANK WETLAND

PROPOSED LIGHT POLE, TYP (BY OTHERS)

SITE LIGHT (TYP)

NOTE:

1. SEE CALCULATION SUMMARY AND LUMINAIRE SCHEDULE, DRAWING SL–1.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 2 9 2017 FILE # 17-0088
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
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Martin D. Wenck

Environmental Management
JUN 2 8 2017
Office of Water Resources

0 20 40 80
SCALE IN FEET

amec foster wheeler

AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 120
PROVIDENCE RHODE ISLAND, 02908
WEB: WWW.AMECFW.COM

NOT FOR CONSTRUCTION

SEAL:

REVISION	DATE	DESCRIPTION

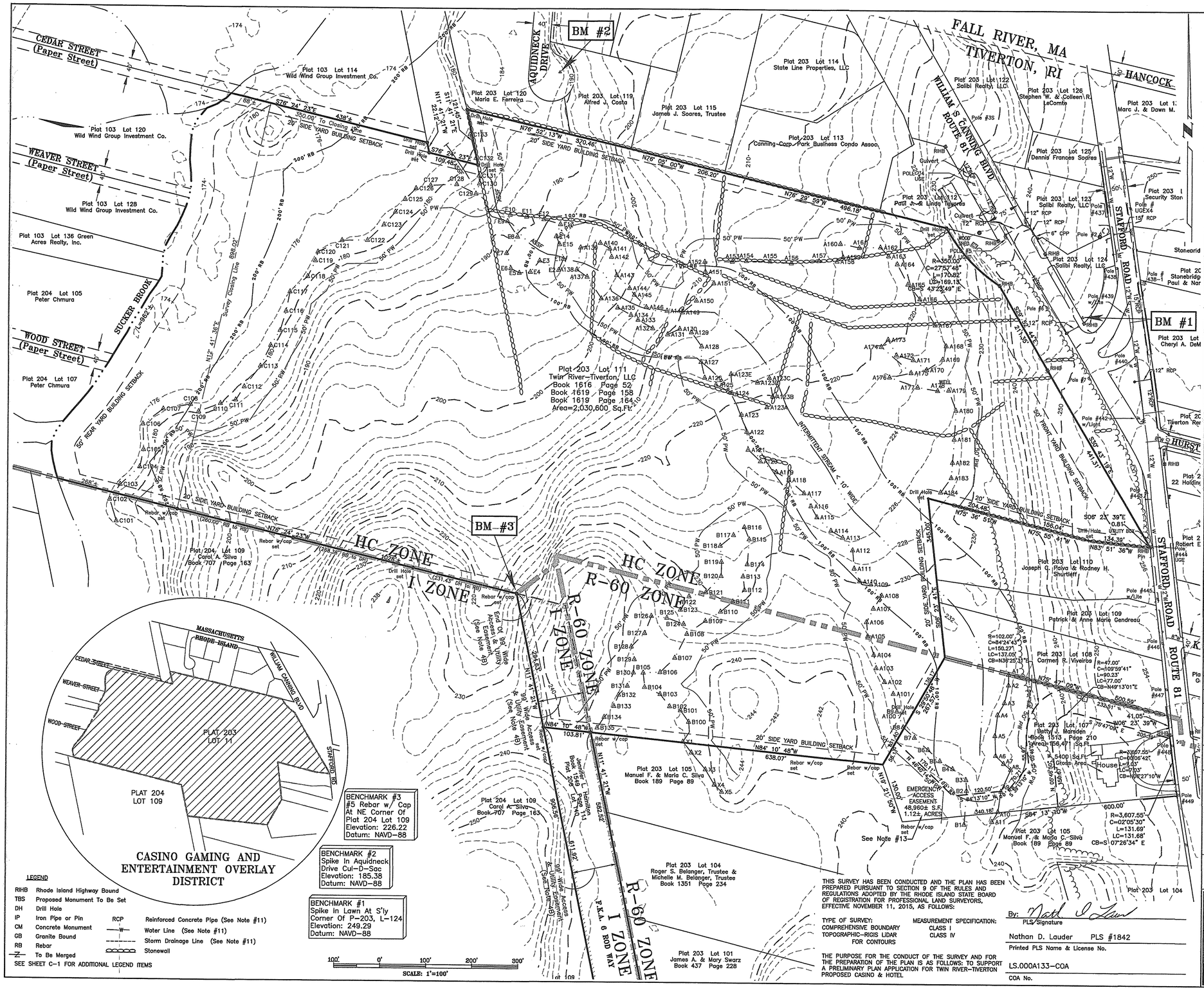
CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

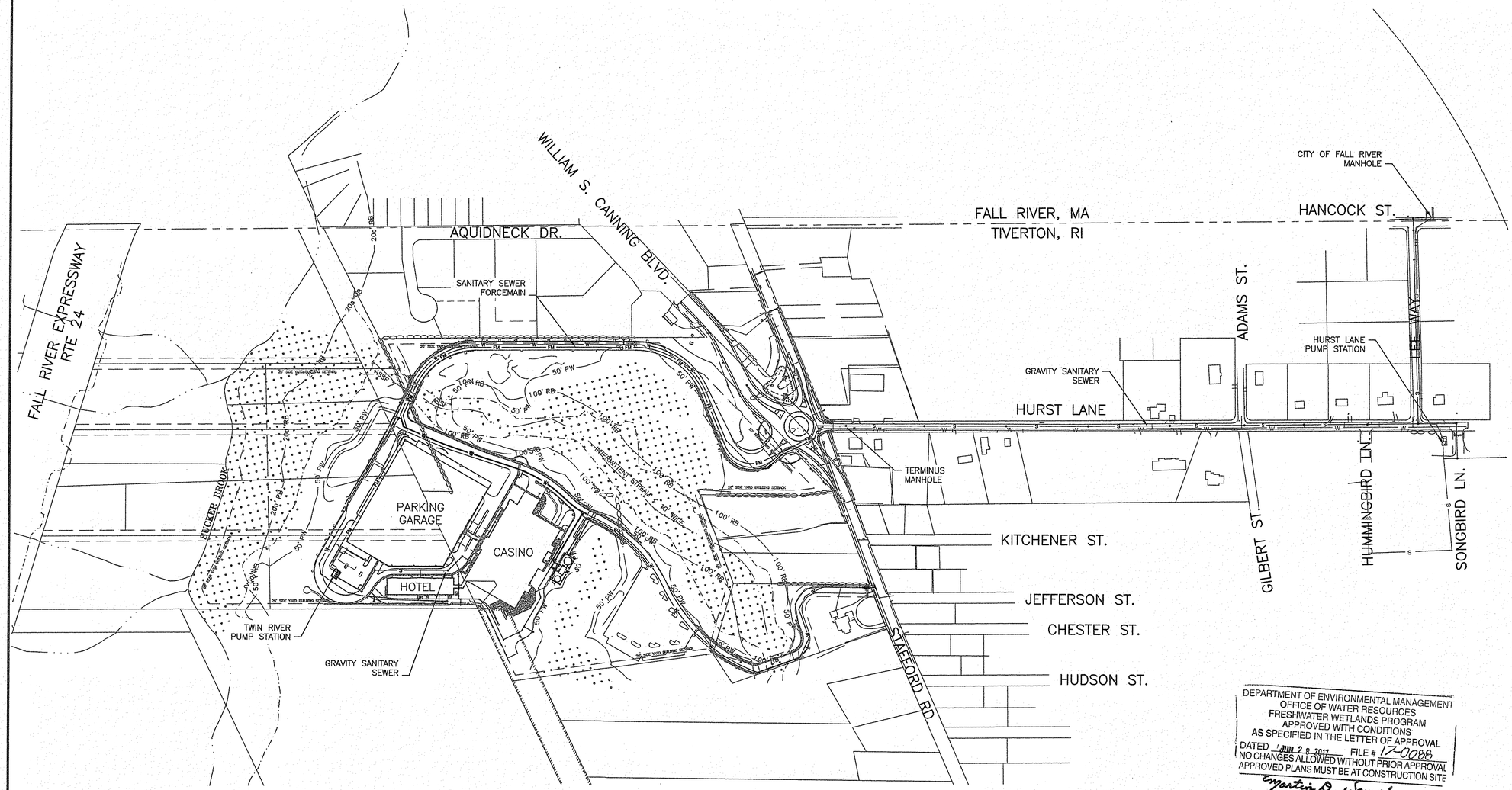
PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
SITE LIGHTING PHOTOMETRICS
PANEL D

ISSUED FOR:	PRELIMINARY PLAN
DATE:	MARCH 27, 2017
SCALE:	1" = 40'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653160007

SL-4


CEDAR STREET (Paper Street)
WEAVER STREET (Paper Street)
WOOD STREET (Paper Street)
SUCKER BROOK
AQUIDNECK DRIVE
FALL RIVER, MA
TIVERTON, RI
WILLIAM S. CANNING BLVD ROUTE 81
STAFFORD ROAD ROUTE 81
HANCOCK
HURST
BM #1
BM #2
BM #3
Plat 203 Lot 111
Twin River-Tiverton, LLC
Book 1616 Page 52
Book 1619 Page 158
Book 1619 Page 164
Area=2,030,600 Sq.Ft.±
Plat 103 Lot 114
Wild Wind Group Investment Co.
Plat 103 Lot 120
Wild Wind Group Investment Co.
Plat 103 Lot 128
Wild Wind Group Investment Co.
Plat 103 Lot 136 Green Acres Realty, Inc.
Plat 204 Lot 105
Peter Chmura
Plat 204 Lot 107
Peter Chmura
Plat 203 Lot 120
Maria E. Ferreira
Plat 203 Lot 119
Alfred J. Costa
Plat 203 Lot 115
James J. Soares, Trustee
Plat 203 Lot 114
State Line Properties, LLC
Plat 203 Lot 122
Solbil Realty, LLC
Plat 203 Lot 126
Stephen W. & Colleen R. LaCorte
Plat 203 Lot 113
Canning Corp. Park Business Condo Assoc.
Plat 203 Lot 125
Dennis Frances Soares
Plat 203 Lot 123
Solbil Realty, LLC
Plat 203 Lot 124
Solbil Realty, LLC
Plat 203 Lot 12
Marc J. & Dawn M.
Plat 203 Lot 12
Patt J. & Linda Tavares
Plat 203 Lot 1
Security Ston
Plat 203 Lot 1
Cheryl A. DeM
Plat 2C
Stonebridg
Paul & Nar
Plat 2C
Tiverton Rer
Plat 2
Robert E
Plat 2
22 Holdin
Plat 203 Lot 107
Betty J. Marsden
Book 1513 Page 210
Area= 156,471 Sq.Ft.±
5400 Sq.Ft.± Gross Area
House
Plat 203 Lot 108
Carmen R. Viveiros
Plat 203 Lot 109
Patrick & Anne Marie Gendreau
Plat 203 Lot 110
Joseph C. Paiva & Rodney H. Shurtleff
Plat 203 Lot 105
Manuel F. & Maria C. Silva
Book 189 Page 89
Plat 203 Lot 104
Roger S. Belanger, Trustee & Michelle M. Belanger, Trustee
Book 1351 Page 234
Plat 203 Lot 101
James A. & Mary Swarz
Book 437 Page 228
Plat 204 Lot 109
Carol A. Silva
Book 707 Page 163
Plat 204, Lot 109
Carol A. Silva
Book 707 Page 163
Jennifer L. Hamilton
Book 1549 Page 111
Plat 203 Lot 105
EMERGENCY ACCESS EASEMENT 46,960± S.F. 1.12± ACRES
See Note #13
Plat 203 Lot 111
Twin River-Tiverton, LLC
Book 1616 Page 52
Book 1619 Page 158
Book 1619 Page 164
Area=2,030,600 Sq.Ft.±
I ZONE
HC ZONE
R-60 ZONE
F.K.A. 6 ROD WAY
INTERMITTENT STREAM < 10' WIDE
50' REAR YARD BUILDING SETBACK
20' SIDE YARD BUILDING SETBACK
50' FRONT YARD BUILDING SETBACK
Survey Closing Line
Rebar w/cap set
Drill Hole set
End Of 30' Wide Access & Utility Easement (See Note #6)
30' Wide Access & Utility Easement (See Note #6)
Culvert
Pole #3S
Pole #438
Pole #439
Pole #440
Pole #441
Pole #442
Pole #443
Pole #444
Pole #445
Pole #446
Pole #447
Pole #448
Pole #449
Pole #450
Pole #451
Pole #452
Pole #453
Pole #454
Pole #455
Pole #456
Pole #457
Pole



amec foster wheeler

AMEC FOSTER WHEELER
ENVIRONMENT & INFRASTRUCTURE, INC.
275 PROMENADE STREET, SUITE 120
PROVIDENCE RHODE ISLAND, 02908
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Environmental Management
JUN 28 2017
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
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DATED JUN 2 8 2017 FILE # 17-0088
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Martin D. Wencek

NOT FOR CONSTRUCTION

SEAL:

C N BEAULIEU - SHEA
No 6801
REGISTERED PROFESSIONAL ENGINEER
6/27/17

REVISION	DATE	DESCRIPTION

CLIENT:
TWIN RIVER TIVERTON, LLC
C/O MARK RUSSO ESQ
55 PINE STREET, 4TH FLOOR
PROVIDENCE, RI 02903

PROJECT:
TWIN RIVER TIVERTON
PROPOSED
CASINO & HOTEL
WILLIAM S. CANNING BLVD
& STAFFORD ROAD
TIVERTON, RHODE ISLAND

TITLE:
CASINO-HOTEL UTILITY OVERVIEW
SANITARY SEWER

ISSUED FOR:	RIDEM REVIEW
DATE:	JUNE 27, 2017
SCALE:	1" = 200'
DRAWN BY:	AKG / TMT
CHECKED BY:	GAA
PROJECT NO:	3653170013

C-34
ADDENDUM SHEET 1

AMEC FOSTER WHEELER