

SITE PLAN SET FOR PROPOSED 11 UNIT RESIDENTIAL DEVELOPMENT TOWER HILL LANDINGS ANNEX, LLC

PLAT MAP 32-4, LOTS 32 and 28
ZONING DISTRICTS: CN and R-10
COMMERCIAL NEIGHBORHOOD and
MEDIUM HIGH DENSITY RESIDENTIAL DISTRICT
and KINGSTOWN ROAD SPECIAL MANAGEMENT DISTRICT

2095 KINGSTOWN ROAD (ROUTE 108)
SOUTH KINGSTOWN, R.I.

OWNER

TOWER HILL LANDINGS, LLC
543 THAMES STREET
NEWPORT, RHODE ISLAND
02840

ENGINEERS and LAND SURVEYORS



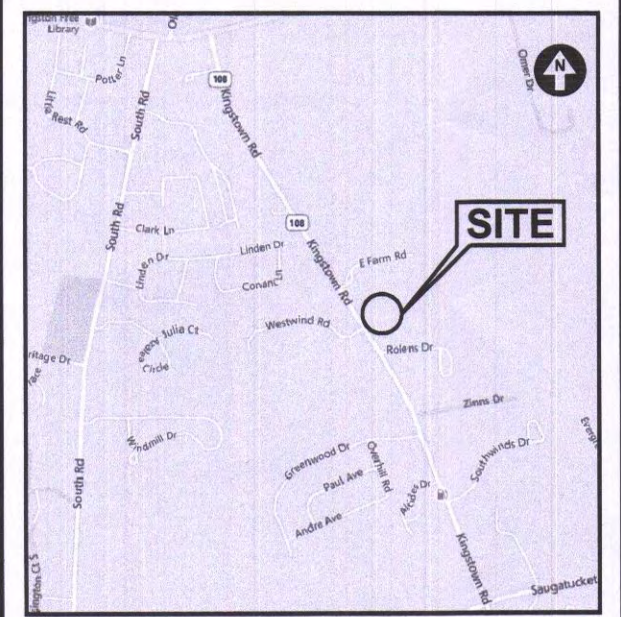
- Civil
- Transportation
- Environmental
- Site Planning
- Surveying
- Permitting
- Landscape Architecture

CROSSMAN ENGINEERING

Rhode Island Massachusetts
151 Centerville Road 103 Commonwealth Avenue
Warwick, RI 02886 North Attleboro, MA 02763
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JULY 2020
SHEET 1 of 18



LOCATION MAP
NOT TO SCALE

INDEX OF DRAWINGS

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REVISIONS:

No.	DESCRIPTION:	DATE:
1	GRADING	09/15/20
2	RIDE COMMENTS	10/14/20
3	STATE RIGHT-OF-WAY LINE	10/28/20

2449-C00-COVER-R3.dwg

GENERAL NOTES

- ALL EXISTING UTILITIES HAVE BEEN PLOTTED BASED UPON BEST AVAILABLE INFORMATION AND REPRESENT APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, BOTH UNDERGROUND AND OVERHEAD, BEFORE EXCAVATION BEGINS IN ACCORDANCE WITH "TUG SAFE PROGRAM LAWS" ENACTED BY THE RHODE ISLAND LEGISLATURE AND BY CONTACTING THE INDIVIDUAL UTILITY COMPANIES. EXCAVATION SHALL BE IN ACCORDANCE WITH ALL STATUTES, ORDINANCES, RULES AND REGULATIONS OF ANY MUNICIPALITY, STATE OR FEDERAL AGENCY THAT MAY APPLY. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY. A MINIMUM ADVANCE NOTICE OF 72 HOURS IS REQUIRED PRIOR TO START OF CONSTRUCTION.
- SPECIFICATIONS TO GOVERN THIS PROJECT ARE R.I.D.O.T. STANDARD INSTALLATION, SPECIFICATIONS AND DETAILS. FOR ALL EXCAVATION, PLACEMENT OF FILL, PIPE BITUMINOUS PAVEMENT, CUTTING INTO CATCH-BASIN/MANHOLES, CONCRETE AND SAWCUTTING, THE CONTRACTOR SHALL PERFORM THE WORK IN FULL COMPLIANCE WITH THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2018 EDITION, WITH LATEST REVISIONS UNLESS OTHERWISE SHOWN ON PLANS. THE "METHOD OF MEASUREMENT" AND "BASIS OF PAYMENT" ARE NOT APPLICABLE.
- THE CONTRACTOR MUST VERIFY PRIOR TO CONSTRUCTION THAT ALL REQUIRED AUTHORIZATION TO PERFORM WORK HAS BEEN OBTAINED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INCLUDING BUT NOT LIMITED TO, PERMITS FOR CONSTRUCTION OPERATIONS INCLUDING ALL ACTIONS OR OMISSIONS OF ANY SUBCONTRACTORS, AGENTS OR EMPLOYEES. THE CONTRACTOR MUST ENSURE THAT THE CONDITIONS OF ALL PERMITS, SPECIFICATIONS AND FEDERAL, STATE AND LOCAL REGULATIONS ARE STRICTLY ENFORCED. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ASPECTS OF ON-SITE SAFETY INCLUDING ANY DAMAGE TO EXISTING STRUCTURES.
- WORK SHOWN ON THE PLANS FOR WHICH THERE ARE NO PARTICULAR DETAILS, SPECIFICATIONS OR PAYMENT ITEM DOES NOT RELIEVE THE CONTRACTOR FROM FURNISHING AND INSTALLING THE WORK. THE CONTRACTOR SHALL THOROUGHLY EXAMINE THE CONTRACT DOCUMENTS AND PLANS AND INSPECT THE SITE. THE BID PRICE SHALL INCLUDE ALL SERVICES AND MATERIALS NECESSARY TO COMPLETE THE PROJECT, ANY CHANGES TO THE PROJECT OR THE INSTALLATION OF AN ITEM FOR WHICH NO PARTICULAR DETAIL OR SPECIFICATION WAS PROVIDED MUST BE REVIEWED BY AND MUST BE ACCEPTABLE TO THE ENGINEER.
- CONTRACTOR IS RESPONSIBLE TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ANY WORK.
- ALL DISTURBED AREAS SHALL BE REPLACED IN KIND UNLESS OTHERWISE SHOWN OR OTHERWISE INSTRUCTED IN WRITING BY THE OWNER.
- CONTRACTOR SHALL EXCAVATE TEST PITS TO CONFIRM UTILITY LOCATIONS/ELEVATIONS AT POTENTIAL CONFLICT POINTS (UTILITY/DRAIN CROSSINGS).
- THE CONTRACTOR SHALL USE CARE WHEN WORKING NEAR UTILITY POLES AND WIRING SO AS TO NOT DISTURB ELECTRICAL/TELEPHONE/CABLE SERVICE TO THE CUSTOMERS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THESE SERVICES AT ALL TIMES.
- THE CONTRACTOR SHALL, AT NO ADDITIONAL EXPENSE, BRACE UTILITY POLES IF REQUIRED, AND REPAIR ANY DAMAGE TO EXISTING UTILITIES, SIDEWALKS, CURBS, PAVING, SHRUBS, TREES, STONE WALLS, LAWNS, ETC.
- CHANGE ORDERS MAY ONLY BE APPROVED FOR PAYMENT BY THE OWNER.
- ALL OPEN EXCAVATIONS SHALL BE ADEQUATELY SAFEGUARDED BY PROVIDING TEMPORARY BARRICADES, CAUTION SIGNS, LIGHTS AND OTHER MEANS TO PREVENT ACCIDENTS TO PERSONS AND DAMAGE TO PROPERTY. THE CONTRACTOR SHALL, AT NO ADDITIONAL EXPENSE TO THE OWNER, PROVIDE SUITABLE AND SAFE CONDITIONS AT ALL AREAS OF THE WORK SITE AND SHALL PROVIDE SAFE VEHICULAR AND PEDESTRIAN ACCESS AROUND ALL WORK AREAS.
- CONTRACTOR SHALL PROVIDE, AT NO ADDITIONAL EXPENSE, ADEQUATE EROSION CONTROL, FRAC TANKS OR SEDIMENTATION CONTROLS FOR THE DISCHARGE OF ANY TRENCH DOWNSIDE.
- OUTSIDE OF THE STATE HIGHWAY, ALL STRUCTURES AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS AND STANDARD SPECIFICATIONS OF THE SOUTH KINGSTOWN DEPARTMENT OF PUBLIC WORKS. ALL EXCAVATION, BACKFILL AND RESTORATION WORK SHALL MEET THE CITY'S SPECIFICATIONS.
- THE LAYOUT SHOWN REPRESENTS A GRAPHICAL DESIGN. ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS ARE TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY ITEM FOUND WHICH DOES NOT MATCH THE PLANS MUST BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO CONSTRUCTION FOR REVIEW. NO WORK SHALL PROCEED UNTIL AUTHORIZED BY THE ENGINEER.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO REMOVAL AND/OR INSTALLATION OF UTILITIES ON SITE. THE COORDINATION IS NECESSARY FOR THE ENGINEER TO SCHEDULE SITE INSPECTIONS. INSTALLATIONS PERFORMED WITHOUT INSPECTIONS BY THE ENGINEER MAY WARRANT COMPLETE REMOVAL AND REINSTALLATION AT THE CONTRACTOR'S SOLE EXPENSE.
- THE CONTRACTOR IS REQUIRED TO MAINTAIN DETAILED AS-BUILT INFORMATION FOR ALL UTILITY INSTALLATIONS. AS-BUILT INFORMATION MUST INCLUDE MATERIAL LIST, PIPE DEPTH AND SWING LOCATIONS (2 MINIMUM) FROM NEW PIPE TO BUILDING CORNERS. ALL PIPE BEND/ELBOW LOCATIONS SHALL BE DIMENSIONED. FINAL PAYMENT WILL NOT BE MADE UNTIL SUITABLE AS-BUILT DATA IS PROVIDED.
- AS-BUILT AUTOCAD FILES AND HARD COPY PLANS SHALL BE PROVIDED UPON COMPLETION OF WORK. CONTRACTOR IS RESPONSIBLE FOR THIS INFORMATION. FINAL PAYMENT TO CONTRACTOR SHALL NOT BE PROVIDED UNTIL ACCEPTABLE AUTOCAD FILES OF THE AS-BUILTS ARE SUBMITTED AND APPROVED BY THE OWNER.
- ALL DRAINAGE PIPE SHALL BE ADS N-12 OR APPROVED EQUAL.

FLOOD ZONE NOTE

THE SITE IS WITHIN FLOOD ZONE X, AREAS TO BE OUTSIDE THE 0.2% CHANCE FLOODPLAIN, ACCORDING TO FLOOD INSURANCE RATE MAP, WASHINGTON COUNTY, RHODE ISLAND, PANEL 185 OF 358, MAP NUMBER 44008C0185, EFFECTIVE DATE APRIL 3, 2020.

PROPOSED POROUS PAVEMENT STRUCTURE (TYPE A)

- 4" POROUS ASPHALT
- 8" FILTER COURSE (ASTM C-33 SAND)
- 3" INTERMEDIATE SETTING BED (3/8" P2A GRAVEL)
- 6" RESERVOIR COURSE (3/4" CRUSHED STONE)

NOTE: UNSUITABLE SOILS BENEATH RESERVOIR COURSE SHALL BE REPLACED WITH ASTM-C33 SAND

PROPOSED PAVEMENT STRUCTURE (TYPE B)

- 1 1/2" BITUMINOUS CONCRETE SURFACE COURSE, CLASS 9.5 HMA
- 2 1/2" BITUMINOUS CONCRETE BASE COURSE, CLASS 12.5 HMA
- 12" GRAVEL BORROW SUBBASE

SIGNAGE NOTE

ALL SIGNAGE SHALL CONFORM TO ARTICLE 8 OF THE TOWN OF SOUTH KINGSTOWN ZONING ORDINANCE

LIGHTING NOTE

ALL LIGHTING MUST BE SHIELDED TO DIRECT LIGHT ONTO PROPERTY AND DARK SKY COMPLIANT

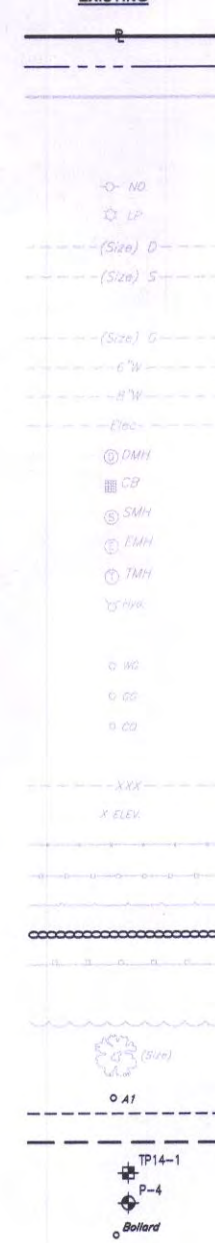
STANDARD NOTES

- ANY DAMAGE TO EXISTING PAVEMENT, BRIDGES, CULVERTS, CONDUIT, SIDEWALK, FENCES, ETC., CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL PLACE ALL EQUIPMENT AND MATERIAL AS FAR AWAY AS POSSIBLE FROM THE EDGE OF THE TRAVEL LANE SO AS NOT TO CAUSE A SAFETY HAZARD.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE EXISTING CONDITIONS ARE NOT OBLITERATED BEFORE CONTROL POINTS ARE LOCATED AND CONSTRUCTION LAYOUT IS ESTABLISHED. THE CONSTRUCTION LAYOUT SHALL BE PROVIDED BY THE CONTRACTOR.
- FOR NON-POROUS PAVEMENT, ASPHALT EMULSION TACK COAT SHALL BE PLACED PRIOR TO PAVEMENT PLACEMENT ON ANY NEW COURSE WHICH HAS BEEN OPEN TO TRAFFIC, OR ANY NEW COURSE WHICH HAS BEEN EXPOSED FOR MORE THAN 3 DAYS, AND/OR AS DIRECTED BY THE ENGINEER. IT SHALL ALSO BE APPLIED TO VERTICAL PAVEMENT FACES BETWEEN ADJOINING PAVEMENT SECTIONS.
- THE LIMITS OF CLEANING AND SURFACE DISTURBANCE MUST BE STRICTLY ADHERED TO IN ALL AREAS. IN ADDITION TO THOSE AREAS SPECIFICALLY DESIGNATED ON THE PLANS, THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING AND PLACING, AT HIS OWN EXPENSE, 2" MULCH IN AREAS WHICH ARE OUTSIDE OF THE PROJECT'S AREAS OF DISTURBANCE AND WHICH ARE IMPACTED BY CONSTRUCTION OPERATIONS INCLUDING THOSE AREAS WHERE VEHICLES, EQUIPMENT AND MATERIALS ARE STORED.
- CLEANING AND SWEEPING OF PAVEMENT WILL INCLUDE REMOVAL OF ALL PAVEMENT DEBRIS PRIOR TO THE PLACEMENT OF EACH BITUMINOUS PAVEMENT LIFT. ALL CLEANING AND SWEEPING SHALL BE DONE TO THE SATISFACTION OF THE ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ROADWAYS FREE OF DEBRIS RESULTING FROM THEIR CONSTRUCTION OPERATIONS. ALL DEBRIS SHALL BE REMOVED TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
- NO FUEL STORAGE, VEHICLE REFUELING, OR EQUIPMENT STORAGE SHALL TAKE PLACE IN DESIGNATED WETLANDS, NOR WITHIN 100' OF ANY WATER BODY. THIS REQUIREMENT SHALL NOT SUPERSEDE ANY FEDERAL, STATE OR LOCAL LAW, ORDINANCE, RULE OR REGULATION THAT APPLIES TO THE SAME, UNLESS THIS REQUIREMENT IS MORE STRINGENT THAN SAID LAW, ORDINANCE, RULE OR REGULATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT AT THE END OF FINAL PAVING OPERATIONS, FLOW TO EXISTING DRAINAGE STRUCTURES HAS BEEN REESTABLISHED AND THAT NO ISOLATED DEPRESSIONS REMAIN. THERE SHALL BE NO SEPARATE PAYMENT FOR THIS PROVISION; IT SHALL BE CONSIDERED INCIDENTAL TO PAVING OPERATIONS.
- ALL EMBANKMENTS AND TRENCH BACKFILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT EXCEEDING 12" (AFTER COMPACTION) AND SHALL BE COMPACTED AS SPECIFIED BEFORE THE NEXT LAYER IS PLACED.

MAINTENANCE AND PROTECTION OF TRAFFIC NOTES

- ALL MAINTENANCE AND PROTECTION OF TRAFFIC CONTROL SETUPS, SIGNS, CHANNELIZING DEVICES, ETC., SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 EDITION.
- ALL SIGN MOUNTINGS SHALL BE IN ACCORDANCE WITH THE STATE D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION.
- THE CONTRACTOR SHALL COVER ALL EXISTING AND/OR TEMPORARY SIGNS THAT ARE NOT RELEVANT TO THE TRAFFIC CONTROL REQUIRED DURING ANY PARTICULAR STAGE OF THE CONTRACT.
- ADVANCE FLAGPERSON SIGNS SHALL BE USED IN ADVANCE OF ANY POINT AT WHICH A POLICE OFFICER HAS BEEN STATIONED TO CONTROL TRAFFIC. WHEN NEEDED, AN APPROPRIATE DISTANCE MESSAGE MAY BE DISPLAYED ON A SUPPLEMENTAL PLATE (24"x18") BELOW THE FLAGPERSON SYMBOL SIGN. THE SIGN SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE FLAGPERSON IS NOT AT THE STATION.
- POLYETHYLENE DRUMS SHALL BE UTILIZED AS A CHANNELIZING DEVICE WHEN A TRAFFIC CONTROL SET-UP IS TO REMAIN BEYOND WORKING HOURS WHEN NO WORKERS ARE PRESENT. CONES SHALL BE UTILIZED WHEN A TRAFFIC CONTROL SET-UP IS TO REMAIN ONLY DURING WORKING HOURS AND IS SUBSEQUENTLY BROKEN DOWN AT THE END OF THE WORKDAY.
- TEMPORARY CONSTRUCTION SIGNS AND OTHER WORKZONE TRAFFIC CONTROL DEVICES THAT ARE DAMAGED OR REQUIRE RELOCATION SHALL BE REPLACED AND / OR RELOCATED UNDER THE PAY ITEM FOR "MAINTENANCE AND MOVEMENT TRAFFIC PROTECTION."
- THE PRIVATE VEHICLES OF CONSTRUCTION WORKERS SHALL NOT BE PARKED ON THE TRAVEL LANES OR SHOULDERS.
- TEMPORARY CONSTRUCTION SIGNS AND OTHER TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF WORK IN ANY AREA OPEN TO TRAFFIC, AND SHALL BE REMOVED AS SOON AS PRACTICAL WHEN THEY ARE NO LONGER APPROPRIATE.
- THE INTENDED VEHICLE PATHS THROUGH EACH WORK ZONE SHALL BE CLEARLY MARKED AT ALL TIMES.

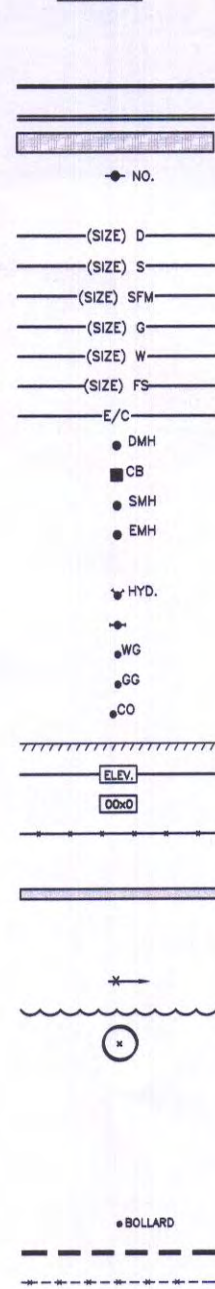
EXISTING



LEGEND

- PROPERTY LINE
- EASEMENT LINE
- CURB
- BITUMINOUS BERM
- POROUS PAVEMENT
- UTILITY POLE
- LIGHT POLE
- DRAIN LINE
- SANITARY SEWER
- SANITARY FORCE MAIN
- GAS LINE
- DOMESTIC WATER LINE
- FIRE SERVICE LINE
- ELECTRIC/CABLE/TELEPHONE
- DRAINAGE MANHOLE
- CATCH BASIN
- SEWER MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- HYDRANT
- REMOTE FIRE DEPARTMENT CONNECTION
- WATER GATE
- GAS GATE
- CLEAN-OUT TO GRADE
- SAWCUT PAVEMENT
- CONTOURS
- SPOT GRADES
- CHAIN LINK FENCE
- STOCKADE FENCE
- RETAINING WALL
- STONE WALL
- GUARDRAIL
- GRADE TO DRAIN
- TREE LINE
- TREE
- WETLAND FLAG
- WETLAND EDGE
- WETLAND BUFFER
- TEXT PIT
- SOIL BORING/PROBE
- BOLLARDS
- LIMIT OF DISTURBANCE
- FILTER SOCK

PROPOSED

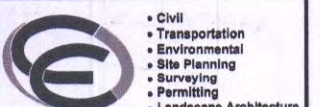


SOIL EVALUATION DATA

SOIL EVALUATIONS WERE CONDUCTED BY CROSSMAN ENGINEERING ON APRIL 30, 2015

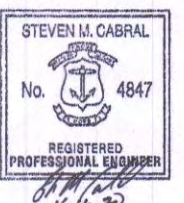
TEST PIT 1	TEST PIT 2	TEST PIT 3	TEST PIT 4	TEST PIT 5
0" Dark Yellowish Brown Fine Sandy Loam 10" Dark Yellowish Brown Loamy Sand 15" Very Dark Gray Sand 28" Very Dark Gray Very Fine Sand 35" Black Silt/Clay 48" 32" Water Seepage 13" Redox Features 12" Design ESHWT	0" Bituminous Pavement 10" Olive Brown Mixture of Loamy Sand, Silt, and Gravel 36" Dark Grayish Brown Very Fine Loamy Sand/Sandy Loam with Pockets of Silt 78" 37" Water Seepage 10" Redox Features 10" Design ESHWT	0" Dark Yellowish Brown Fine Sandy Loam 8" Light Olive Fine Sandy Loam 34" Light Olive Fine Sandy Loam 44" Dark Grayish Brown Very Fine Sandy Loam 86" 42" Water Seepage 10" Redox Features 10" Design ESHWT	0" Bituminous Pavement 8" Dark Yellowish Brown Very Fine Loamy Sand and Gravel with Pockets of Silt 35" Olive Brown Very Fine Loamy Sand and Gravel with Pockets of Silt 72" Olive Gray Gravelly Sand 93" 78" Water Seepage 8" Redox Features 8" Design ESHWT	0" Very Dark Grayish Brown Very Fine Sandy Loam 5" Very Dark Grayish Brown Very Fine Sandy Loam 14" Dark Gray Silt 34" Dark Grayish Brown Very Fine Sandy Loam with Pockets of Silt 101" 38" Water Seepage 14" Redox Features 14" Design ESHWT

* NOTE: REMOVE UNSUITABLE MATERIAL WITHIN SAND FILTER AND POROUS PAVEMENT AREAS.



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PROJECT TITLE:

TOWER HILL LANDINGS ANNEX LLC
PLAT MAP 32-4, LOT 32 and 28
ZONING DISTRICT: CN and R-10
COMMERCIAL NEIGHBORHOOD and
MEDIUM HIGH DENSITY RESIDENTIAL DISTRICT
and KINGSTOWN ROAD
SPECIAL MANAGEMENT DISTRICT
2095 KINGSTOWN ROAD (ROUTE 108)
SOUTH KINGSTOWN, R.I.

PREPARED FOR:

TOWER HILL LANDINGS, LLC
543 THAMES STREET
NEWPORT, RHODE ISLAND
02840

DRAWING TITLE:

GENERAL NOTES and LEGEND

DATE	JULY 2020	SCALE	NO SCALE
DWG. NAME	2449-C01-NOTE-R3.dwg		
REVISIONS			
NUMBER	REMARKS	DATE	
1	GRADING	09/15/20	
2	RIDE COMMENTS	10/14/20	
3	STATE RIGHT-OF-WAY LINE	10/28/20	

DRAWING NUMBER

C1
SHEET: 2 OF 18



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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
11-11-20

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PREPARED FOR:
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543 THAMES STREET
NEWPORT, RHODE ISLAND
02840

DRAWING TITLE:
AERIAL MAP

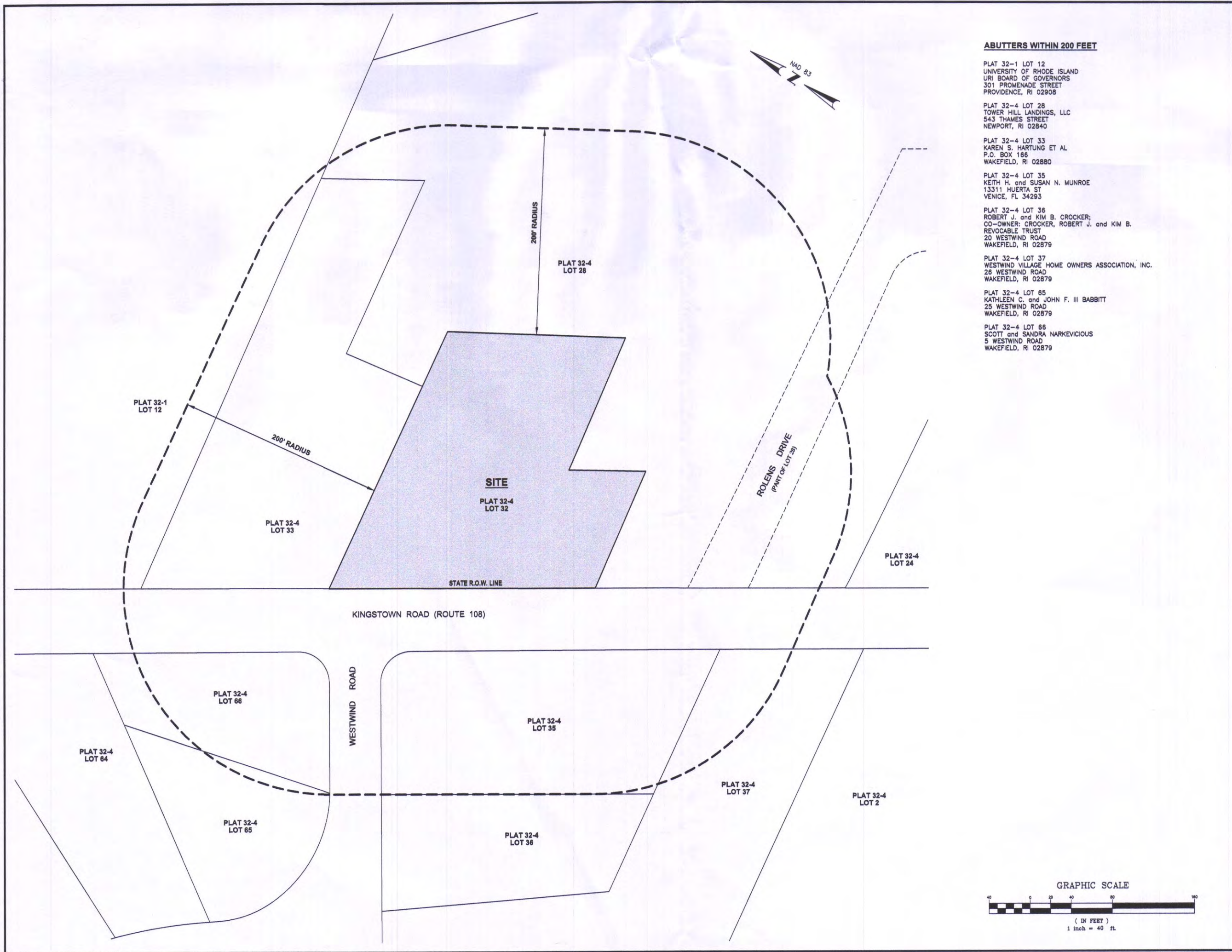
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REVISIONS

NUMBER	REMARKS	DATE
1	GRADING	09/15/20
2	RIEM COMMENTS	10/14/20
3	STATE RIGHT-OF-WAY LINE	10/28/20

DRAWING NUMBER
C2
SHEET: 3 OF 18



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543 THAMES STREET
NEWPORT, RHODE ISLAND
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DRAWING TITLE:
RADIUS MAP

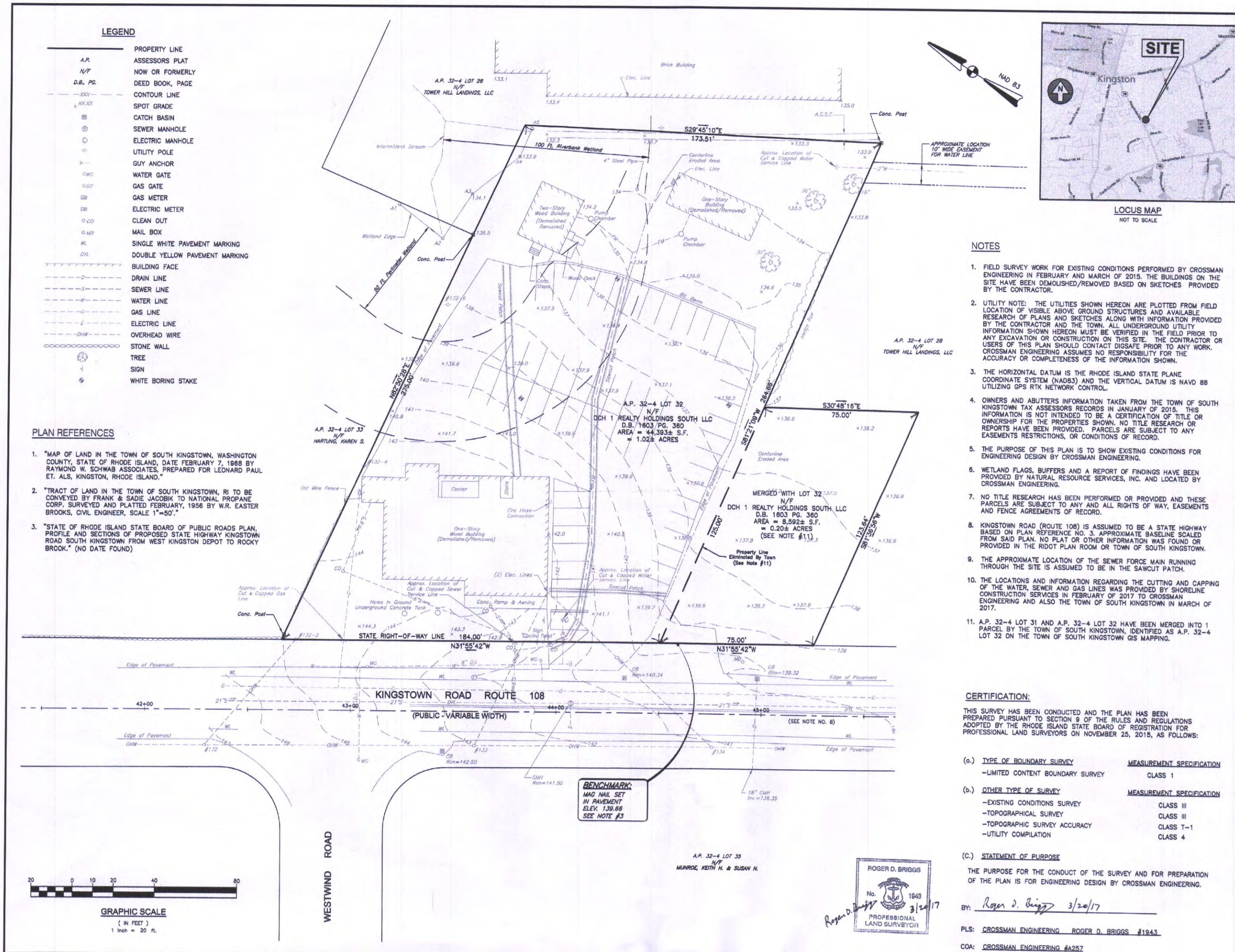
DATE: JULY 2020 SCALE: 1"=20'

DWG. NAME: 2449-C03-RADIUS-R3.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	GRADING	09/15/20
2	RIEM COMMENTS	10/14/20
3	STATE RIGHT-OF-WAY LINE	10/28/20

DRAWING NUMBER
C3
SHEET: 4 OF 18



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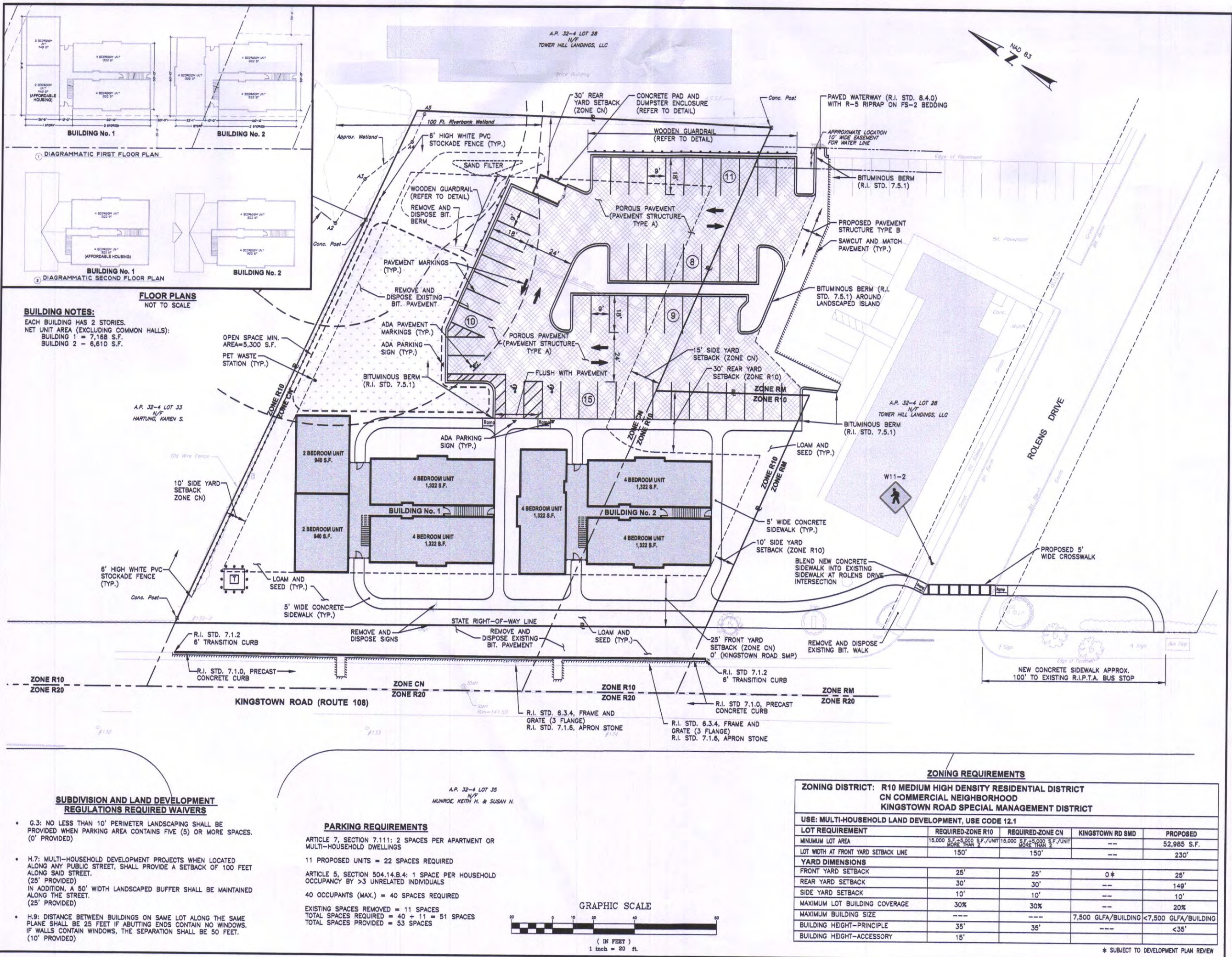
PREPARED FOR:
TOWER HILL LANDINGS, LLC
543 THAMES STREET
NEWPORT, RHODE ISLAND
02840

DRAWING TITLE:
EXISTING CONDITIONS PLAN

DATE: JULY 2020 SCALE: 1"=20'
DWG. NAME: 2449-C04-EXCN-R3

REVISIONS	NUMBER	REMARKS	DATE
1	1	GRADING	08/15/20
2	2	ROAD COMMENTS	10/14/20
3	3	STATE RIGHT-OF-WAY LINE	10/28/20

DRAWING NUMBER
C4
SHEET: 5 OF 18

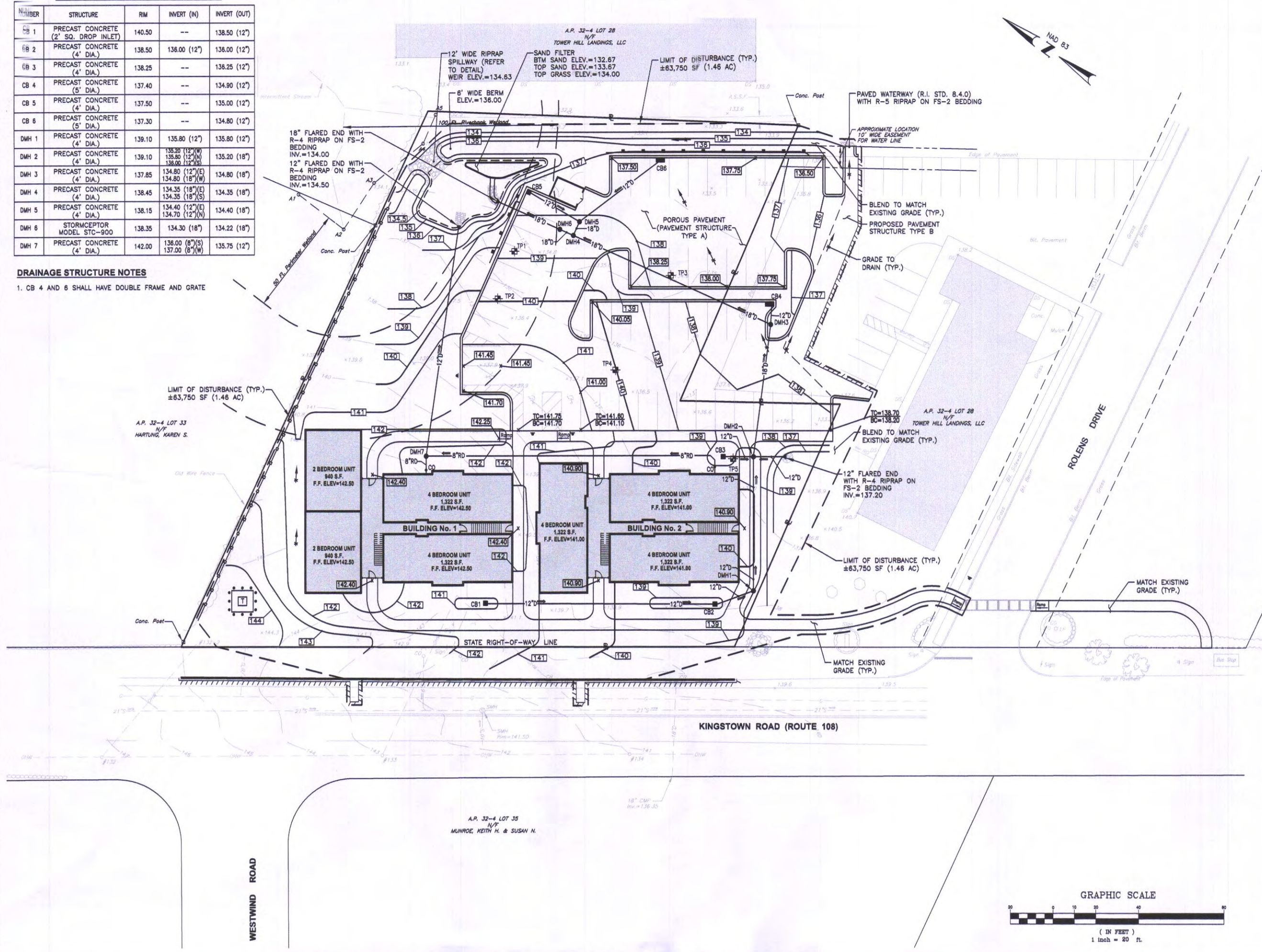


DRAINAGE STRUCTURE TABLE

NUMBER	STRUCTURE	RM	INVERT (N)	INVERT (OUT)
CB 1	PRECAST CONCRETE (2' SQ. DROP INLET)	140.50	--	138.50 (12')
CB 2	PRECAST CONCRETE (4' DIA.)	138.50	136.00 (12')	138.00 (12')
CB 3	PRECAST CONCRETE (4' DIA.)	138.25	--	136.25 (12')
CB 4	PRECAST CONCRETE (4' DIA.)	137.40	--	134.90 (12')
CB 5	PRECAST CONCRETE (4' DIA.)	137.50	--	135.00 (12')
CB 6	PRECAST CONCRETE (4' DIA.)	137.30	--	134.80 (12')
DMH 1	PRECAST CONCRETE (4' DIA.)	139.10	135.80 (12')	135.80 (12')
DMH 2	PRECAST CONCRETE (4' DIA.)	139.10	135.80 (12')	135.20 (18')
DMH 3	PRECAST CONCRETE (4' DIA.)	137.85	134.80 (12')	134.80 (18')
DMH 4	PRECAST CONCRETE (4' DIA.)	138.45	134.35 (18')	134.35 (18')
DMH 5	PRECAST CONCRETE (4' DIA.)	138.15	134.40 (12')	134.40 (18')
DMH 6	STORMCATCHER MODEL STC-900	138.35	134.30 (18')	134.22 (18')
DMH 7	PRECAST CONCRETE (4' DIA.)	142.00	136.00 (8')	135.75 (12')

DRAINAGE STRUCTURE NOTES

- CB 4 AND 6 SHALL HAVE DOUBLE FRAME AND GRATE



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 TOWER HILL LANDINGS ANNEX LLC

PLAT MAP 32-4, LOT 32 and 28
 ZONING DISTRICT: CH and R-40
 COMMERCIAL NEIGHBORHOOD and
 MEDIUM HIGH DENSITY RESIDENTIAL DISTRICT
 and KINGSTOWN ROAD
 SPECIAL MANAGEMENT DISTRICT
 2085 KINGSTOWN ROAD (ROUTE 108)
 SOUTH KINGSTOWN, R.I.

PREPARED FOR:
 TOWER HILL LANDINGS, LLC
 543 THAMES STREET
 NEWPORT, RHODE ISLAND
 02840

DRAWING TITLE:
 GRADING and
 DRAINAGE PLAN

DATE: JULY 2020 **SCALE:** 1"=20'

DWG. NAME: 2449-C06-GRADE-R3.dwg

REVISIONS:

NUMBER	REMARKS	DATE
1	GRADING	08/15/20
2	RDM COMMENTS	10/14/20
3	STATE RIGHT-OF-WAY LINE	10/28/20

DRAWING NUMBER:
C6

SHEET: 7 OF 18

UTILITY NOTES

- PRIOR TO ANY UTILITY CONSTRUCTION, THE CONTRACTOR MUST PERFORM ADDITIONAL TESTS TO:
 - CONFIRM THE EXISTING DEPTHS OF UTILITIES AT ALL PROPOSED CONNECTION POINTS AND POTENTIAL CROSSOVER (CONFLICT) POINTS
 - CONFIRM THE EXTENT OF LEDGE WHICH MAY EXIST IN ALL ANTICIPATED UTILITY TRENCH AREAS. PRIOR TO CONSTRUCTION, THE FINDINGS ARE TO BE REVIEWED BY THE OWNER AND THE ENGINEER. IF NECESSARY, ALTERNATIVES TO MINIMIZE LEDGE REMOVAL AND UTILITY CONFLICTS WILL BE DEVELOPED. NO CONSTRUCTION WILL BE ALLOWED WITHOUT THE OWNERS AUTHORIZATION.
 - THE CONTRACTOR SHALL DIG TEST HOLES TO VERIFY THE ELEVATIONS AND PIPE MATERIAL OF THE EXISTING SANITARY SERVICE LATERAL AT THE PROPOSED TIE-IN LOCATION.
- ANY MODIFICATIONS TO THE PROPOSED UTILITIES TO AVOID CONFLICTS MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION. NO EXTRA PAYMENT TO THE CONTRACTOR DUE TO RELOCATIONS WILL BE AUTHORIZED.
- THE UTILITY PLAN DOES NOT DEPICT THE NECESSARY IRRIGATION PIPING OR ELECTRICAL CONDUIT/WIRING TO SERVICE THE PROPOSED LIGHTING AND SIGNS, WHICH WILL BE PERFORMED BY THE CONTRACTOR FOR NO ADDITIONAL COST.
- THE CONTRACTOR MUST LOCATE THE EXISTING WATER MAIN TO OBTAIN THE PROPER OUTSIDE DIAMETER TO SIZE THE SLEEVE.
- THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL UTILITY PIPE SIZES INCLUDING WATER, SEWER AND GAS ARE VERIFIED BY THE ARCHITECT AND ENGINEER PRIOR TO ORDERING PIPE OR RELATED MATERIAL.
- THE "UTILITY PLAN" DOES NOT REPRESENT THE SITE ELECTRIC/TELEPHONE/ COMMUNICATION SYSTEM DESIGNS.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO ORDERING ANY MATERIAL.
- ALL WASTEWATER MATERIALS AND INSTALLATION OF THE SAME SHALL BE IN STRICT CONFORMANCE WITH THE TOWN OF SOUTH KINGSTOWN PUBLIC SERVICES DEPARTMENT WASTEWATER SPECIFICATIONS CURRENT AT THE TIME OF CONSTRUCTION/INSTALLATION.
- SHOP DRAWING SUBMITTAL IS REQUIRED FOR ALL PROPOSED WASTEWATER SYSTEM COMPONENTS PRIOR TO RECEIPT OF THE SEWER CONNECTION PERMIT BY TOWN OF SOUTH KINGSTOWN DEPARTMENT OF PUBLIC SERVICES.
- WATER CONNECTION DETAILS/DESIGN FOR POTABLE AND FIRE SUPPRESSION LINES MUST BE REVIEWED AND APPROVED BY KINGSTON WATER DISTRICT.

UTILITY DEMOLITION NOTE

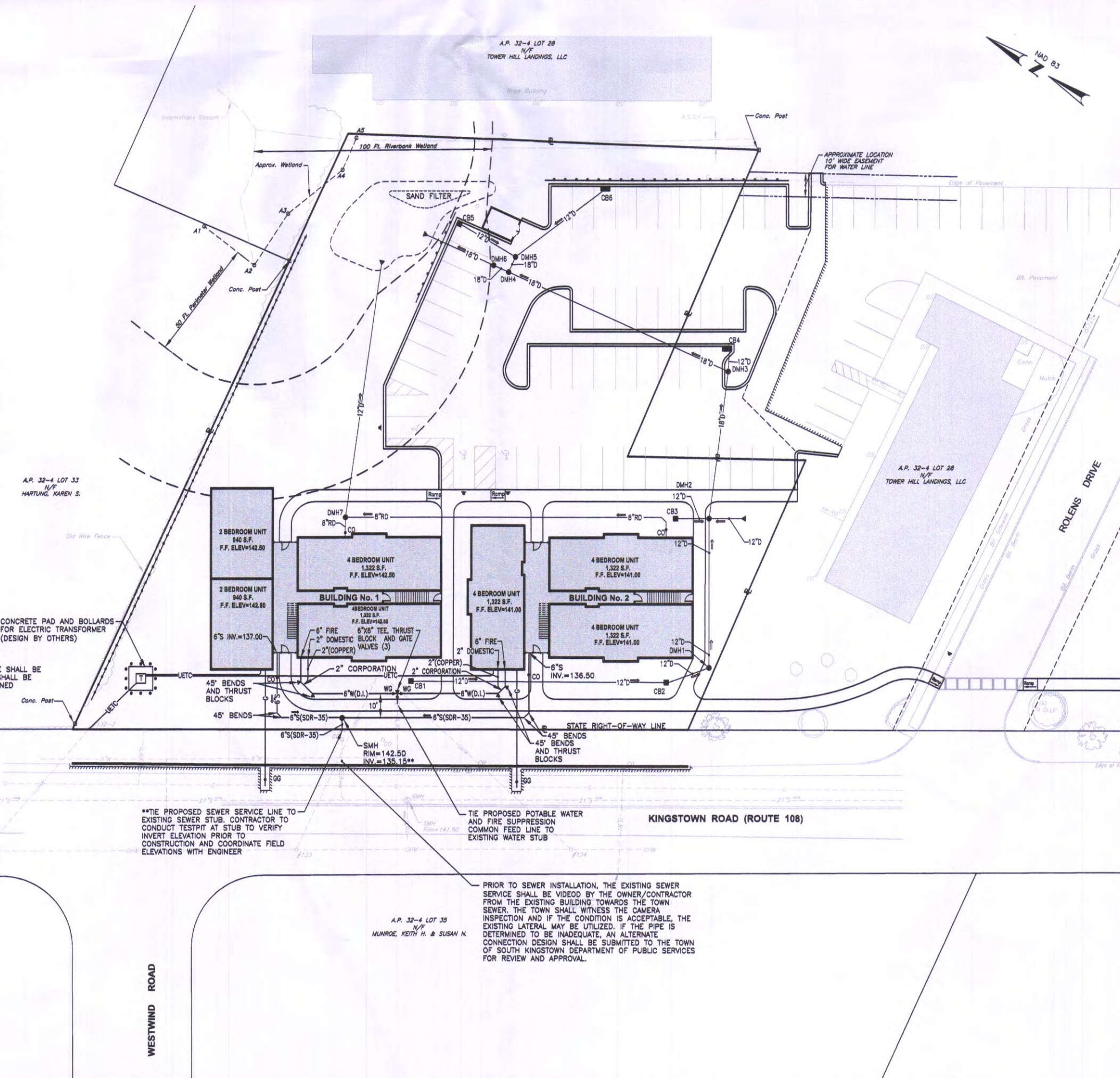
- ALL EXISTING UNDERGROUND UTILITY LINES AND COMPONENTS SHALL BE REMOVED AND PROPERLY DISPOSED PRIOR TO COMMENCEMENT OF NEW/PROPOSED CONSTRUCTION ACTIVITIES. SOME COMPONENTS MAY REQUIRE PUMPING OF SOLIDS/LIQUIDS PRIOR TO REMOVAL.

PIPE MATERIAL NOTE:

- THE PROPOSED SEWER PIPE SHALL BE SDR-35 AND WATER PIPE SHALL BE DUCTILE IRON PIPE CLASS 25.

GRAPHIC SCALE

(IN FEET)
 1 inch = 20 ft.



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 No. 4847
 REGISTERED PROFESSIONAL ENGINEER
 11-11-20

PROJECT TITLE:
 TOWER HILL LANDINGS ANNEX LLC

PLAT MAP 32-4, LOT 32 and 28
 ZONING DISTRICT: CH and R-40
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PREPARED FOR:
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 543 THAMES STREET
 NEWPORT, RHODE ISLAND
 02840

DRAWING TITLE:
 UTILITY PLAN

DATE: JULY 2020 **SCALE:** 1"=20'

DWG. NAME: 2449-C07-UTILITY-R3.dwg

REVISIONS:

NUMBER	REMARKS	DATE
1	GRADING	08/15/20
2	RDM COMMENTS	10/14/20
3	STATE RIGHT-OF-WAY LINE	10/28/20

DRAWING NUMBER:
C7

SHEET: 8 OF 18

DUST CONTROL NOTES

ON AN AS-NEEDED BASIS OR AS DIRECTED BY RIEM OR OWNER, THE CONTRACTOR SHALL UTILIZE ONE OF THE FOLLOWING METHODS TO CONTROL DUST:

- THE EXPOSED SOIL SURFACE SHOULD BE MOISTENED PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST.
 - CALCIUM CHLORIDE SHOULD BE EITHER LOOSE DRY GRANULES OR FLAKES FINE ENOUGH TO FEED THROUGH A SPREADER AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE.
- THE METHODS SHOULD BE REPEATED AS NEEDED, AND SPECIAL ATTENTION MUST BE GIVEN TO THE ACCESS DRIVES.

INSPECTION/MAINTENANCE NOTES

- PRIOR TO COMMENCING GRUBBING OPERATIONS AND EARTHWORK, FILTERSOX SHALL BE PLACED INSIDE SAWCUT EDGE TO PREVENT SEDIMENT FROM ENTERING EXISTING ROADWAY DRAINAGE SYSTEM, WETLAND AREAS AND ADJUTING PROPERTIES.
- EXTREME CARE SHALL BE EXERCISED SO AS TO PREVENT ANY UNSUITABLE MATERIAL FROM ENTERING THE DRAINAGE SYSTEM.
- ALL DISTURBED AREAS WHICH BECOME SUBJECT TO EROSION TENDENCIES WHETHER THEY BE NEWLY FILLED OR EXCAVATED SHALL RECEIVE SLOPE PROTECTION - SUCH AS RIP-RAP.
- DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING DRAINAGE AND RUNOFF FLOW DURING PERIODS OF RAINFALL.
- DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EROSION CONTROL, MAINTENANCE AND SHALL INSPECT / REPLACE DAILY DURING CONSTRUCTION, FOLLOWING RAINFALL AND WEEKLY DURING NON CONSTRUCTION PERIODS.
- ADDITIONAL FILTERSOX OR SANDBAGS SHALL BE LOCATED AS CONDITIONS WARRANT OR AS DIRECTED BY THE ENGINEER.
- THE LATEST VERSION OF THE "RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK" PREPARED BY THE RHODE ISLAND STATE CONSERVATION COMMITTEE (REVISION 2014), MUST BE UTILIZED BY THE CONTRACTOR AS A GUIDE.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL DUST CONTROL AND FOR THE ENTIRE PROJECT DURATION, INCLUDING TEMPORARY SHUT-DOWN PERIODS. MUST MONITOR AND REPAIR, AS NEEDED, ALL SLOPES TO ENSURE A STABLE PRODUCT.

GENERAL PROJECT WIDE NOTES

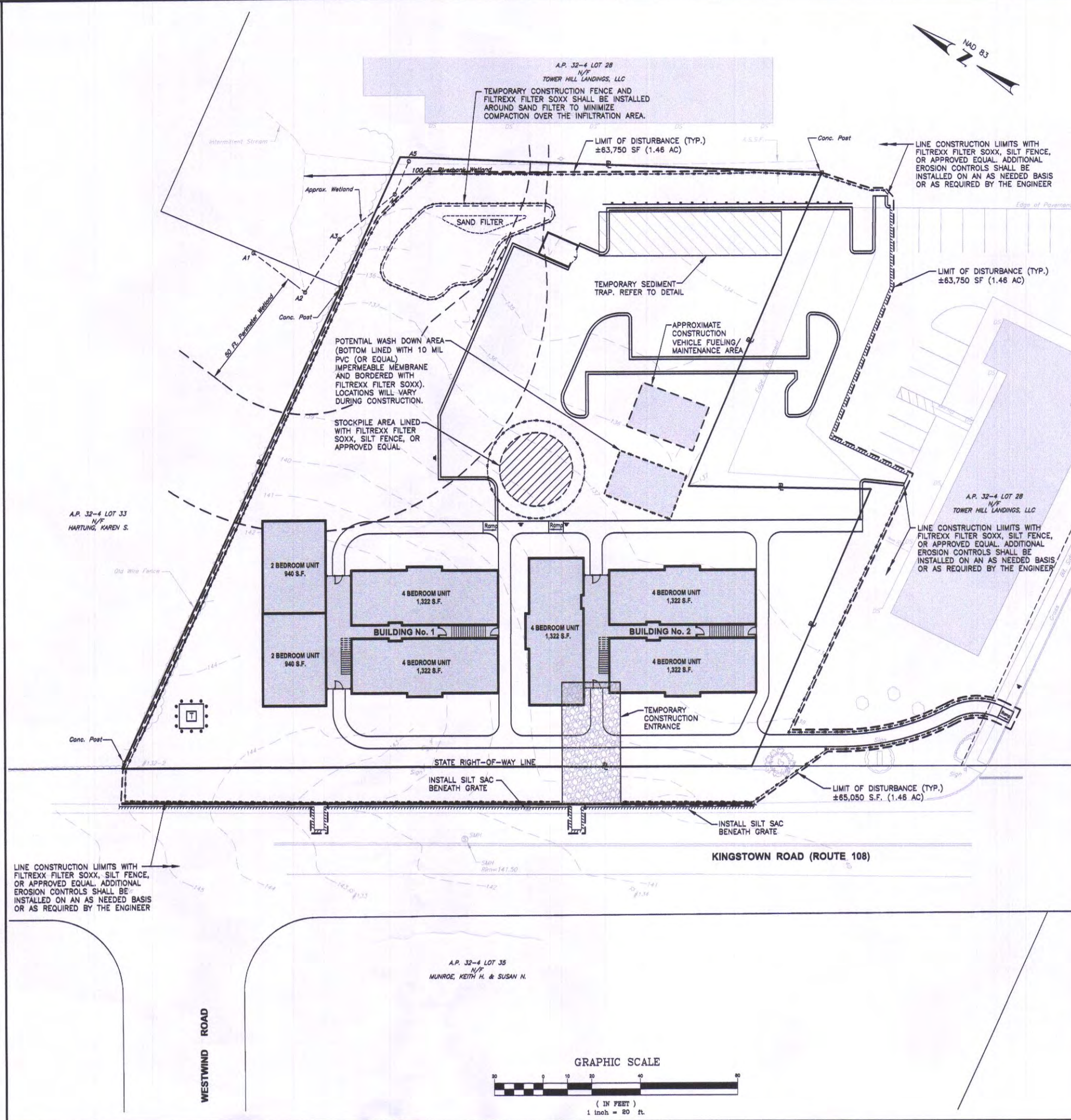
- CONTRACTOR SHALL INSTALL TEMPORARY MEASURES SUCH AS: FIBER MATTING, CRUSHED STONE, HAY OR STRAW IN AREAS WHERE SLOPES OR STABILIZATION HAS FAILED.
- IF SEDIMENT IS TRACKED OR ERODED INTO THE ROADWAY, THE CONTRACTOR WILL BE REQUIRED TO INSTALL SILT SACK OR APPROVED EQUAL UNDER THE EXISTING CATCH BASIN GRATES. REMOVE AFTER CONSTRUCTION.
- FILTER SOX (OR SILT FENCE OR STAKED HAYBALES) SHALL BE INSTALLED AROUND THE PERIMETER OF THE AREA TO BE DISTURBED BY CONSTRUCTION. ADDITIONAL APPLICATIONS OF THESE CONTROLS MEASURES MAY BE REQUIRED DURING THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL INSPECT THE SITE AT A MINIMUM OF ONCE PER WEEK OR WITHIN 24 HOURS AFTER A STORM EVENT.
- IF EROSION OR EROSION TENDENCIES ARE APPARENT ON THE SITE, THE CONTRACTOR IS RESPONSIBLE TO INSTALL ADDITIONAL CONSTRUCTION BMP'S SUCH AS SAND BAGS AS DIRECTED BY THE TOWN OR ENGINEER DURING CONSTRUCTION.
- IF SEDIMENT OR DEBRIS IS TRACKED ONTO EXISTING PAVED AREAS ADJACENT TO THE CONSTRUCTION AREA, THE CONTRACTOR IS REQUIRED TO SWEEP THE PAVEMENT ON A DAILY BASIS. THE AREA SHALL BE INSPECTED DAILY.
- THE CONTRACTOR IS RESPONSIBLE TO KEEP THE SITE CLEAN OF TRASH. RECOMMENDED DAILY PATROL OF THE CONSTRUCTION SHOULD BE CONDUCTED TO PICK-UP TRASH. THE OPERATOR SHALL REQUIRE THE CONTRACTOR TO HAVE PORTABLE SANITARY FACILITIES ON SITE. ROUTING CLEANING AND WASTE DISPOSAL OF THESE PORTABLE SANITARY FACILITIES IS REQUIRED.

FILTREXX SOXX NOTE

CONTRACTOR IS RESPONSIBLE TO BECOME FAMILIAR WITH THE FILTREXX PRODUCTS AND COORDINATE INSTALLATION SCHEDULES AND METHODS WITH THE ENGINEER PRIOR TO PLACEMENT.

EROSION CONTROL AND SOIL STABILIZATION PROGRAM

- EXTREME CARE SHALL BE EXERCISED SO AS TO PREVENT ANY UNSUITABLE MATERIAL FROM ENTERING THE DRAINAGE SYSTEM, WETLAND AREAS, ADJACENT PROPERTY, WETLANDS AND ROADWAYS.
- TEMPORARY TREATMENTS SHALL CONSIST OF A HAY, STRAW, OR FIBER MULCH PROTECTIVE COVERS, SUCH AS A MAT OR FIBER LINING (BURLAP, JUTE, FIBERGLASS NETTING, EXCELOR BLANKETS), THEY SHALL BE INCORPORATED INTO THE WORK AS WARRANTED OR AS ORDERED BY THE OWNER.
- HAY OR STRAW APPLICATIONS SHALL BE IN THE AMOUNT OF 3,000-4,000 LBS/ACRE.
- STOCKPILES SHALL HAVE NO SLOPE STEEPER THAN 2:1 AND SHALL BE SURROUNDED BY STAKED HAY BALES OR SILT FENCING.
- STOCKPILES EXPOSED FOR EXCESSIVE PERIODS SHALL RECEIVE TEMPORARY TREATMENT CONSISTING OF HAY, STRAW OR FIBER MATTING.
- DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EROSION CONTROL MAINTENANCE AND SHALL INSPECT/REPLACE AS NEEDED.
- ADDITIONAL HAY BALES OR SANDBAGS SHALL BE LOCATED AS CONDITIONS WARRANT OR AS DIRECTED BY THE ENGINEER, OWNER, MUNICIPAL REPRESENTATIVES OR LOCAL D.O.T.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING DUST CONTROL AT NO ADDITIONAL COST TO THE OWNER.
- ALL CATCH BASINS ADJACENT TO THE CONSTRUCTION AREA SHALL BE PROTECTED BY SILT SACKS.
- ALL PROPOSED CATCH BASINS SHALL BE PROTECTED BY STAKED HAY BALES, SILT FENCING OR SILT SACKS.
- THE FILTREXX FILTER SOXX MAY BE INSTALLED ON THE EXISTING PAVEMENT /IMPERVIOUS AREAS WITH OUT STAKES. CONTRACTOR SHALL INSPECT DAILY. IF SOIL EROSION OR SEDIMENT IS OBSERVED IN THESE AREAS, THE CONTRACTOR SHALL RELOCATE OR INSTALL ADDITIONAL FILTREXX FILTER SOXX IN LOCATIONS THAT CAN BE STAKED. THIS WORK IS INCLUDED IN THE PROJECT SCOPE.
- SILT FENCE OR STAKED HAYBALES MAY BE USED IN LIEU OF FILTREXX FILTER SOXX.
- AN ALTERNATE COMPOST SOCK OR STRAW WATTLE PRODUCT MAY BE USED IN LIEU OF FILTREXX FILTER SOCK UPON APPROVAL OF THE ENGINEER.
- RUNOFF SHALL NOT BE DIRECTED TO THE STORMWATER MANAGEMENT SYSTEM UNTIL THE SITE IS STABLE.



Crossman Engineering
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 Massachusetts: 103 Commonwealth Avenue, North Attleboro, MA 02763, Phone: (888) 885-1700
 Email: ce@crossmaneng.com

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STEVEN M. CABRAL
 No. 4847
 REGISTERED PROFESSIONAL ENGINEER
 11-11-20

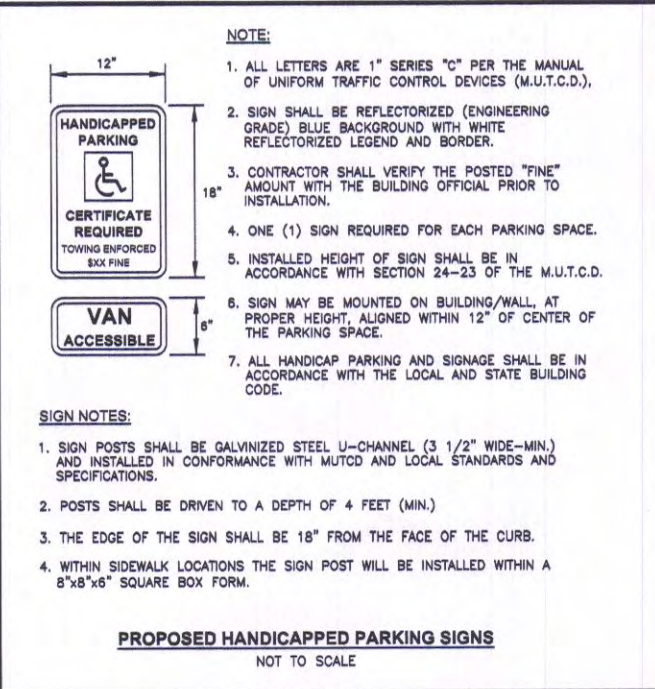
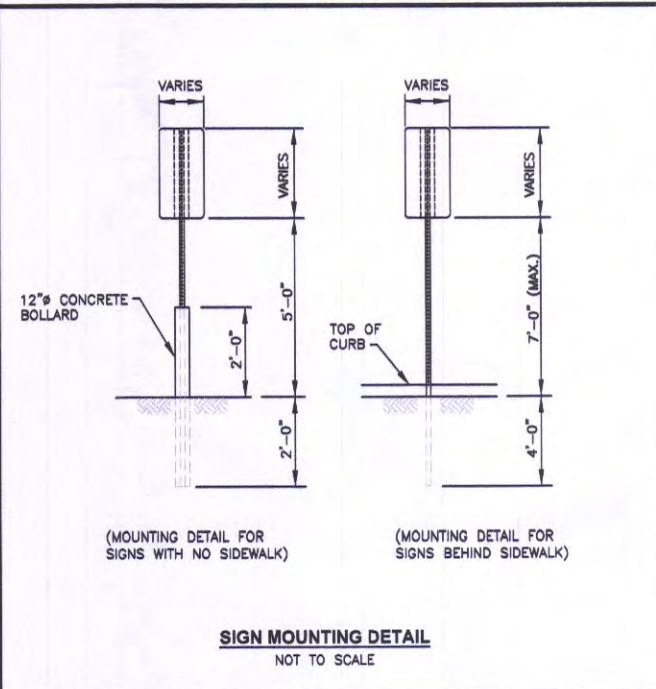
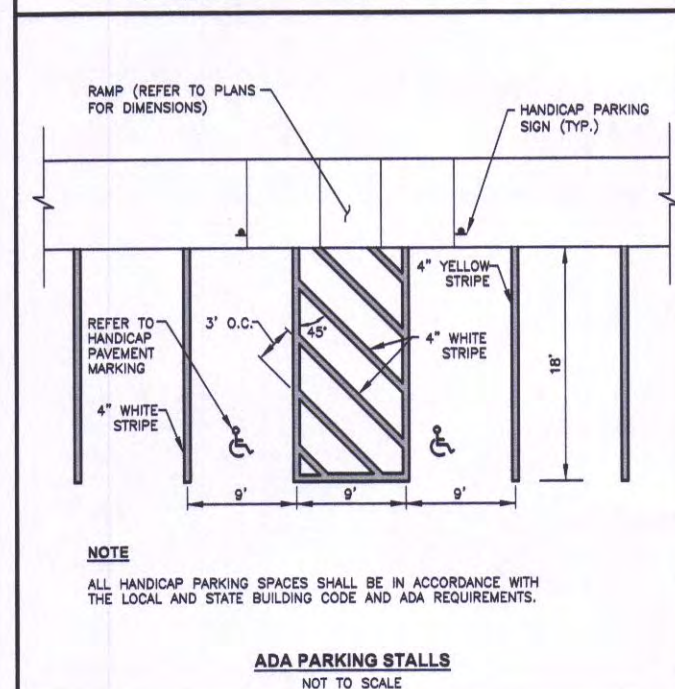
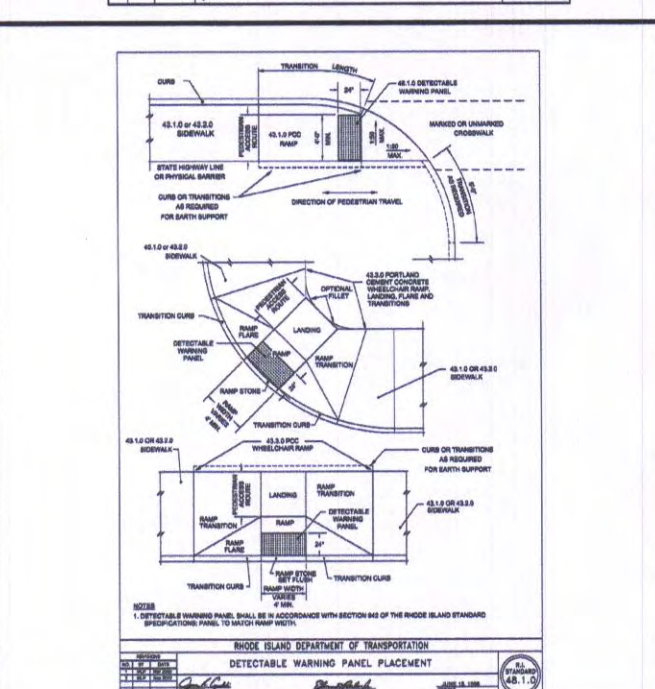
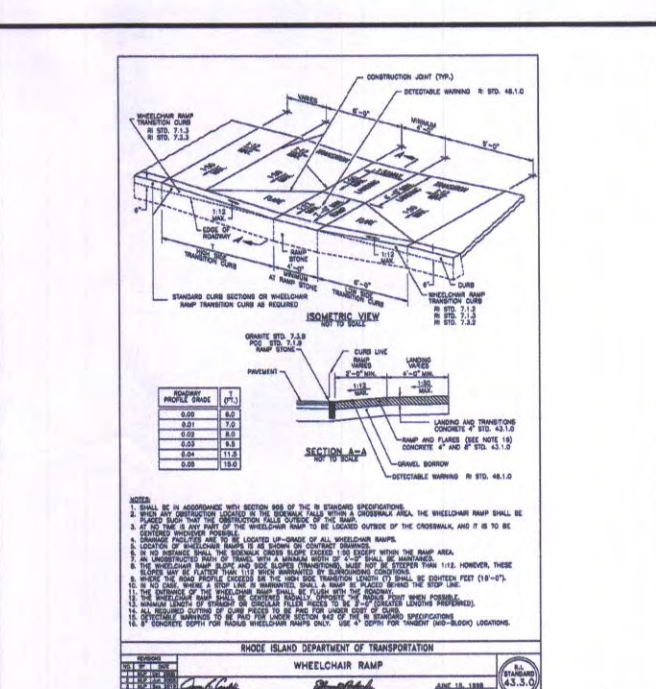
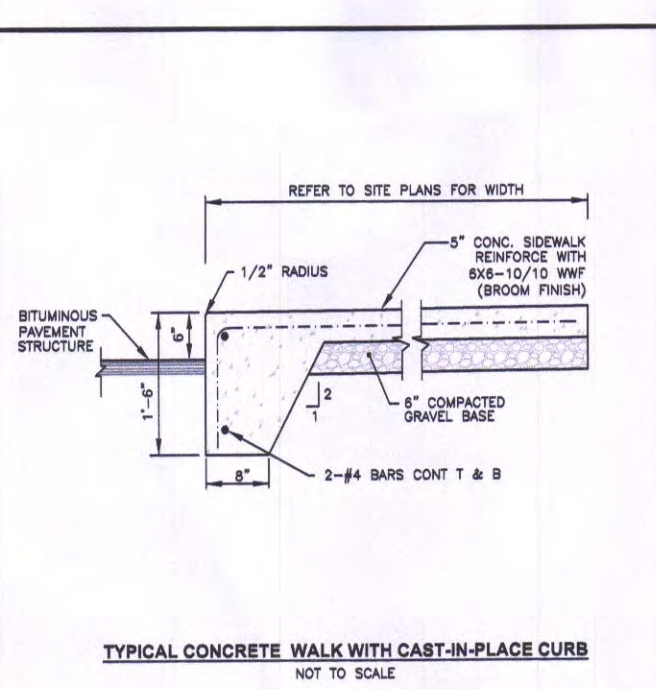
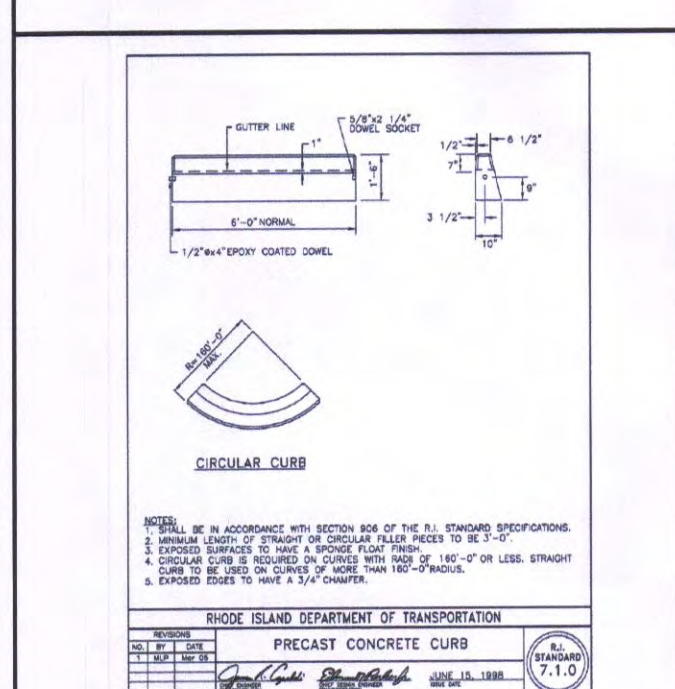
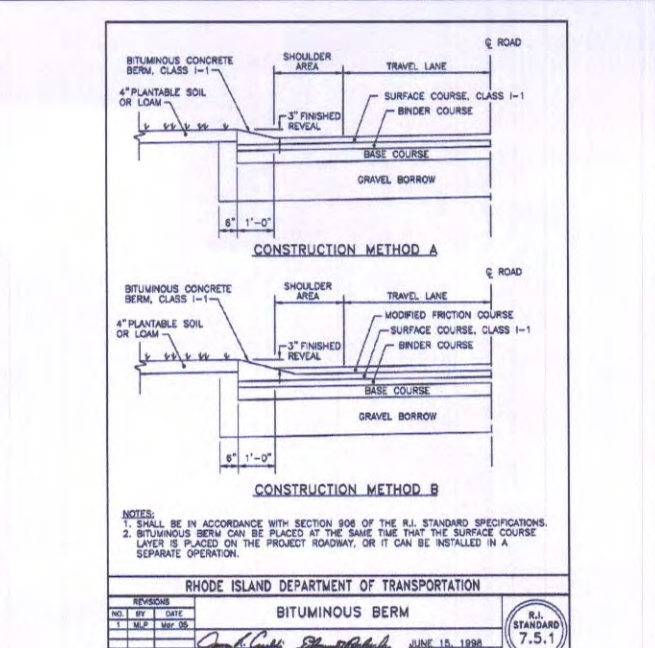
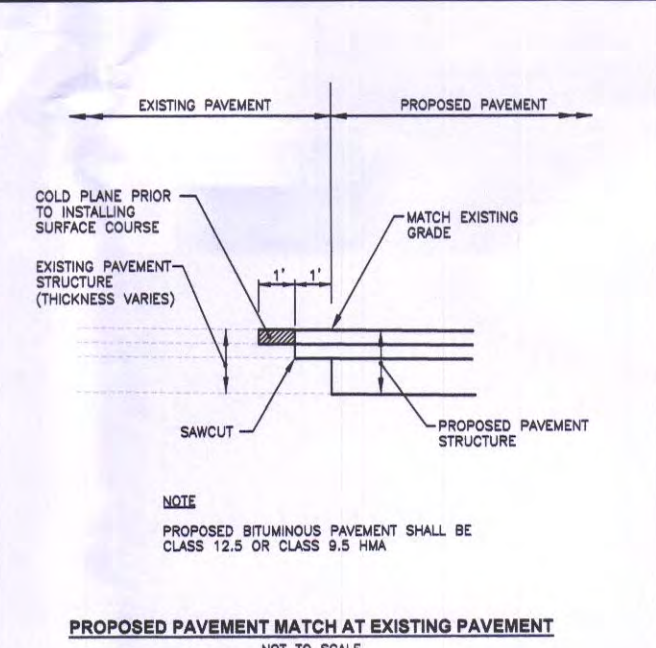
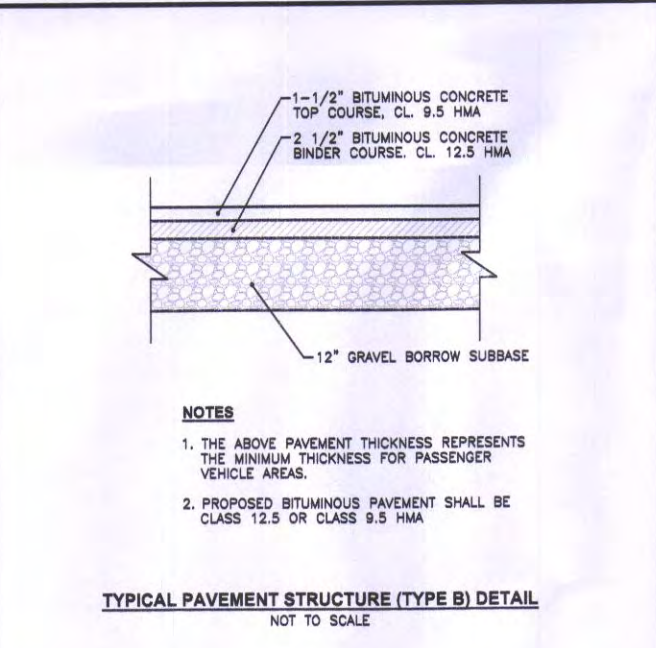
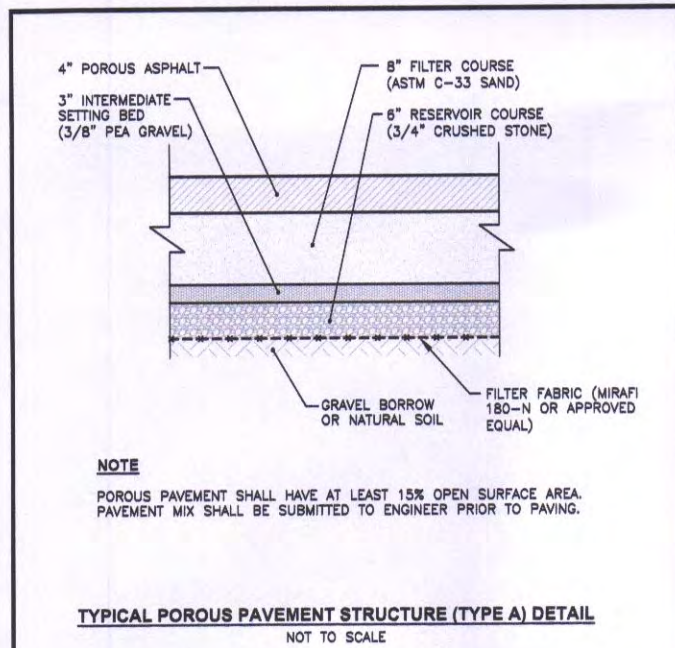
PROJECT TITLE:
 TOWER HILL LANDINGS ANNEX LLC
 PLAT MAP 32-4, LOT 32 and 38
 ZONING DISTRICT: CN and R-10
 COMMERCIAL NEIGHBORHOOD and MEDIUM HIGH DENSITY RESIDENTIAL DISTRICT
 and KINGSTOWN ROAD
 SPECIAL MANAGEMENT DISTRICT
 2095 KINGSTOWN ROAD (ROUTE 108)
 SOUTH KINGSTOWN, R.I.

PREPARED FOR:
 TOWER HILL LANDINGS, LLC
 543 THAMES STREET
 NEWPORT, RHODE ISLAND 02840

DRAWING TITLE:
 SOIL EROSION and SEDIMENT CONTROL PLAN
 DATE: JULY 2020 SCALE: 1"=20'
 DWG. NAME: 2449-C08-SOIL-R3.dwg
 REVISIONS:

NUMBER	REMARKS	DATE
1	GRADING	09/15/20
2	RIEM COMMENTS	10/14/20
3	STATE RIGHT-OF-WAY LINE	10/28/20

DRAWING NUMBER:
C8
 SHEET: 9 OF 18



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 11-11-20

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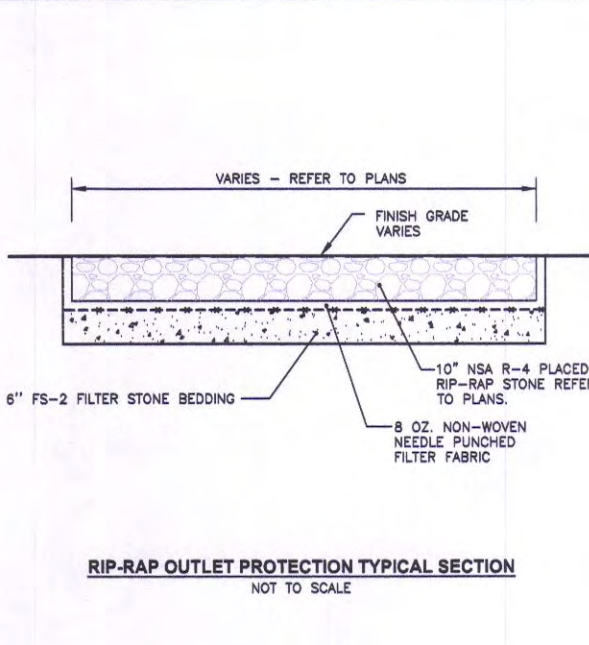
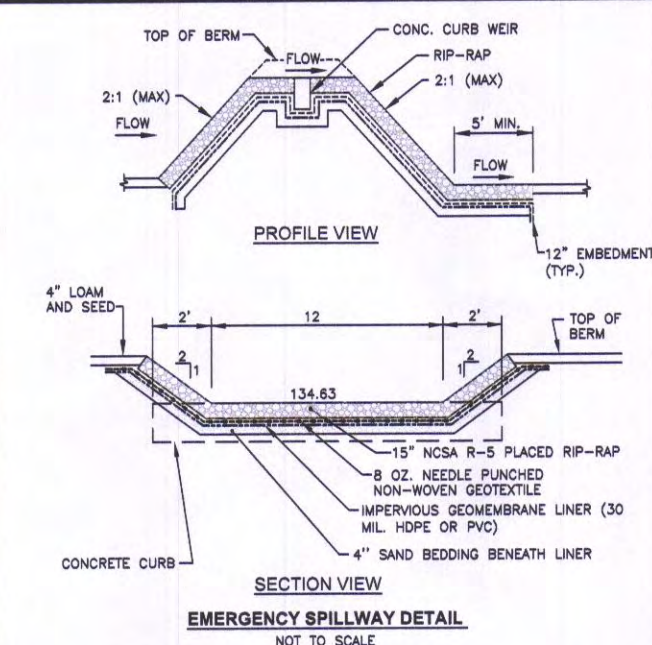
DRAWING TITLE:
 MISCELLANEOUS DETAIL PLAN No. 1
 DATE: JULY 2020 SCALE: AS SHOWN
 DWG. NAME: 2449-C09-DETAIL1-R3.dwg
 REVISIONS:

NUMBER	REMARKS	DATE
1	GRADING	09/15/20
2	RIEM COMMENTS	10/14/20
3	STATE RIGHT-OF-WAY LINE	10/28/20

DRAWING NUMBER:
C9
 SHEET: 10 OF 18

SAND FILTER and DETENTION SYSTEM CONSTRUCTION NOTES

1. WITHIN THE SAND FILTER, THE CONTRACTOR SHALL REMOVE ALL TOPSOIL AND SUBSOIL AREAS (A AND B HORIZONS) AND ANY EXISTING SOILS THAT YIELD A PERMEABILITY RATE <0.27 INCHES/ HOUR. CONTRACTOR SHALL COORDINATE A BOTTOM BED INSPECTION WITH OWNER AND ENGINEER. IF NECESSARY THE AREA SHALL BE PREPARED WITH SAND FILL SOIL MEETING THE MEDIA REQUIREMENTS OF SAND FILTERS AS DESCRIBED IN THE RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL, LATEST EDITION. THE DEPTH OF EXISTING SOIL REMOVAL SHALL BE VERIFIED BY THE ENGINEER. PLACEMENT OF THE SAND FILL (ASTM C-33 SAND), SHALL BE USED TO BRING THE BOTTOM OF BASIN TO THE DESIGN ELEVATIONS.
2. SAND FILTER CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL, LATEST EDITION. AFTER CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE FINAL INSPECTIONS WITH THE OWNER.
3. THE CONTRACTOR IS REQUIRED TO SUBMIT A LIST OF MATERIALS, GRADATIONS AND THE NAME AND ADDRESS OF THE SUPPLIERS TO THE ENGINEER FOR APPROVAL PRIOR TO BRINGING MATERIAL ON SITE. MATERIAL CERTIFICATIONS SHALL ALSO BE REQUIRED FOR REVIEW AND APPROVAL.
4. THE CONTRACTOR IS RESPONSIBLE TO BECOME FAMILIAR WITH THE ABOVE REFERENCED MANUAL. THE MANUAL CAN BE FOUND AT: <http://www.dem.state.ma.us/regs/water/eswmanual15.pdf>
5. GREAT CARE MUST BE TAKEN TO PREVENT THE INFILTRATION AREA FROM COMPACTION. BY MARKING OFF THE SAND FILTER PERIMETER BEFORE THE START OF CONSTRUCTION, AND BY CONNECTING UPSTREAM DRAINAGE AREAS ONLY AFTER CONSTRUCTION IS COMPLETE AND THE CONTRIBUTING AREA IS STABILIZED.
6. IF LARGE ROCKS OR BOULDERS ARE FOUND WITHIN 36" BELOW THE INFILTRATION SYSTEMS, OR WITHIN A 10' PERIMETER AROUND SYSTEM, THE CONTRACTOR SHALL REMOVE THE ROCKS/BOULDERS AND REPLACE WITH GRAVEL BORROW. CONTRACTOR SHALL COORDINATE WITH ENGINEER.
7. THE CONTRACTOR MUST SUBMIT SHOP DRAWINGS FOR THE PIPES TO BE USED IN THE UNDERGROUND DETENTION SYSTEM TO THE ENGINEER PRIOR TO CONSTRUCTION. THE SHOP DRAWINGS MUST VERIFY THAT THE PIPES CAN SUPPORT H-20 LOADING WITH THE SYSTEM SPECIFIC COVER.
8. ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE MANUFACTURER'S REQUIREMENTS AND SPECIFICATIONS. THE CONTRACTOR SHALL COORDINATE WITH A STORMTRAP REPRESENTATIVE FOR INSTALLATION SPECIFICATIONS AND PROCEDURES.



ADS FLARED END SECTION SPECIFICATION

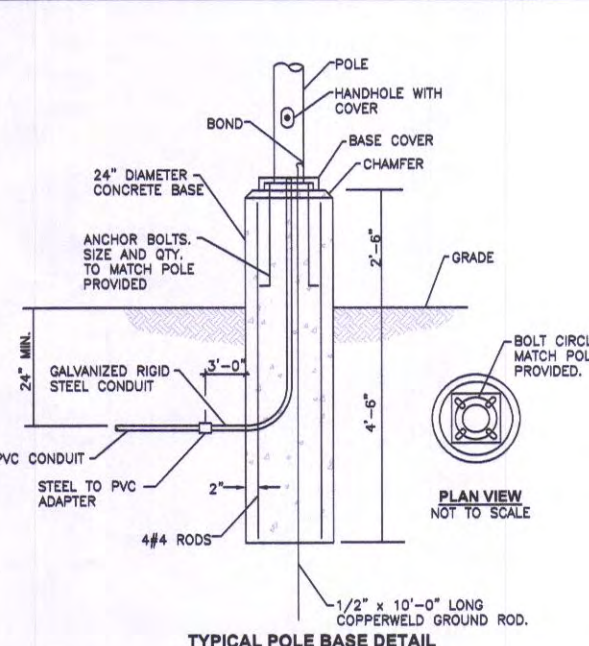
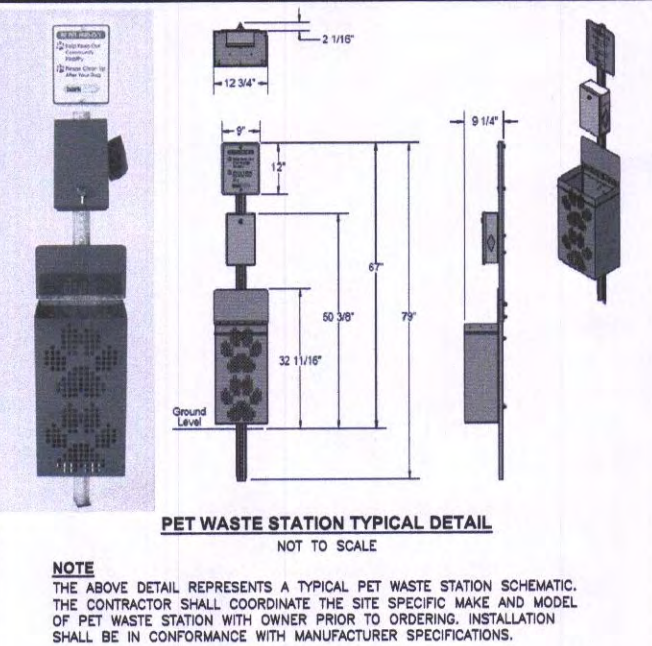
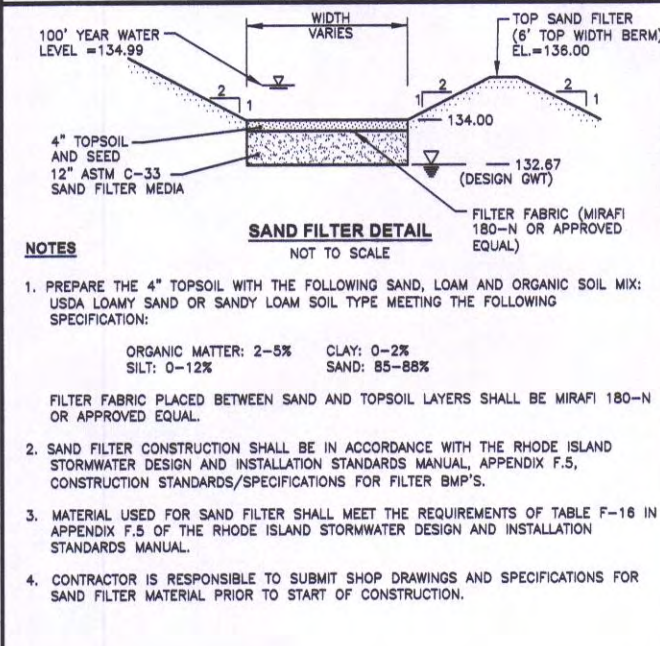
Scope
This specification describes 12- through 96-inch (300 to 900mm) ADS Flared End Sections for use in culvert and drainage outlet applications.

Requirements
The ADS Flared End Section shall be high density polyethylene meeting ASTM D3500 minimum cell classification 2132002; contact manufacturer for additional cell classification information. When provided, the metal threaded fastening rod shall be stainless steel.

Installation
Installation shall be in accordance with ADS installation instructions and with those issued by state or local authorities. Contact your local ADS representative or visit www.ads-pipe.com for the latest installation instructions.

PIPE DIAMETER in mm	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
Weight (lb)	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0
Weight (kg)	0.45	0.68	0.91	1.13	1.36	1.59	1.82	2.05	2.27	2.50	2.72	2.95	3.18	3.41	3.64
Length (ft)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Length (m)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Volume (cu ft)	0.04	0.06	0.08	0.10	0.12	0.14	0.16	0.18	0.20	0.22	0.24	0.26	0.28	0.30	0.32
Volume (cu m)	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.015

FLARED END TYPICAL DETAIL
NOT TO SCALE



ADS FLARED END SECTION SPECIFICATION

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Weight (kg)	0.45	0.68	0.91	1.13	1.36	1.59	1.82	2.05	2.27	2.50	2.72	2.95	3.18	3.41	3.64
Length (ft)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Length (m)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Volume (cu ft)	0.04	0.06	0.08	0.10	0.12	0.14	0.16	0.18	0.20	0.22	0.24	0.26	0.28	0.30	0.32
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FLARED END TYPICAL DETAIL
NOT TO SCALE

- NOTES**
1. PREPARE THE 4" TOPSOIL WITH THE FOLLOWING SAND, LOAM AND ORGANIC SOIL MIX:
USDA LOAMY SAND OR SANDY LOAM SOIL TYPE MEETING THE FOLLOWING SPECIFICATION:
ORGANIC MATTER: 2-5% CLAY: 0-2%
SILT: 0-12% SAND: 85-88%
FILTER FABRIC PLACED BETWEEN SAND AND TOPSOIL LAYERS SHALL BE MIRAFI 180-N OR APPROVED EQUAL.
 2. SAND FILTER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL, APPENDIX F.5, CONSTRUCTION STANDARDS/SPECIFICATIONS FOR FILTER BMP'S.
 3. MATERIAL USED FOR SAND FILTER SHALL MEET THE REQUIREMENTS OF TABLE F-16 IN APPENDIX F.5 OF THE RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL.
 4. CONTRACTOR IS RESPONSIBLE TO SUBMIT SHOP DRAWINGS AND SPECIFICATIONS FOR SAND FILTER MATERIAL PRIOR TO START OF CONSTRUCTION.



ADS FLARED END SECTION SPECIFICATION

Scope
This specification describes 12- through 96-inch (300 to 900mm) ADS Flared End Sections for use in culvert and drainage outlet applications.

Requirements
The ADS Flared End Section shall be high density polyethylene meeting ASTM D3500 minimum cell classification 2132002; contact manufacturer for additional cell classification information. When provided, the metal threaded fastening rod shall be stainless steel.

Installation
Installation shall be in accordance with ADS installation instructions and with those issued by state or local authorities. Contact your local ADS representative or visit www.ads-pipe.com for the latest installation instructions.

PIPE DIAMETER in mm	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
Weight (lb)	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0
Weight (kg)	0.45	0.68	0.91	1.13	1.36	1.59	1.82	2.05	2.27	2.50	2.72	2.95	3.18	3.41	3.64
Length (ft)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Length (m)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Volume (cu ft)	0.04	0.06	0.08	0.10	0.12	0.14	0.16	0.18	0.20	0.22	0.24	0.26	0.28	0.30	0.32
Volume (cu m)	0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.015

FLARED END TYPICAL DETAIL
NOT TO SCALE

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
11/11/20

PROJECT TITLE:
TOWER HILL LANDINGS ANNEX LLC

PLAT MAP 32-4, LOT 32 and 38
ZONING DISTRICT: CN and R-10
COMMERCIAL NEIGHBORHOOD and
MEDIUM HIGH DENSITY RESIDENTIAL DISTRICT
and KINGSTOWN ROAD
SPECIAL MANAGEMENT DISTRICT
2095 KINGSTOWN ROAD (ROUTE 108)
SOUTH KINGSTOWN, R.I.

PREPARED FOR:
TOWER HILL LANDINGS, LLC

543 THAMES STREET
NEWPORT, RHODE ISLAND
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DRAWING TITLE:
MISCELLANEOUS DETAIL PLAN No. 4

DATE: JULY 2020 **SCALE:** AS SHOWN

DWG. NAME: 2449-C12-DETAIL4-R3.dwg

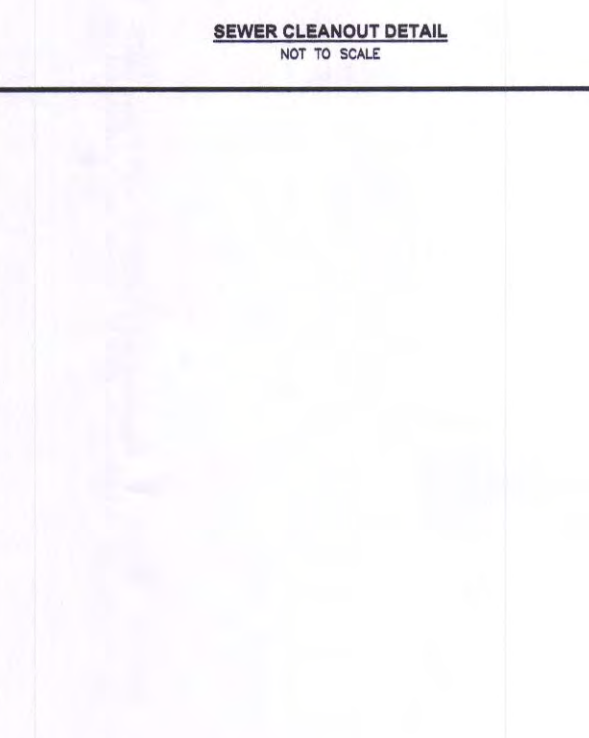
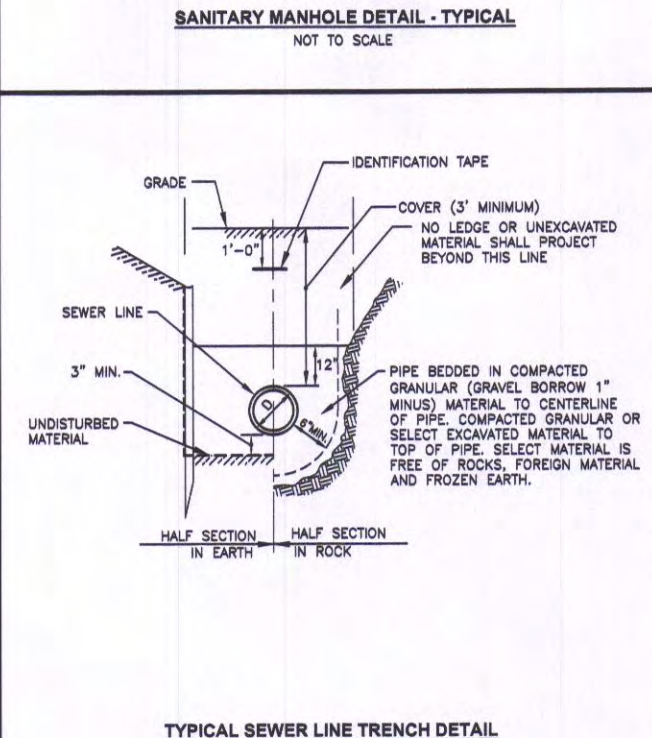
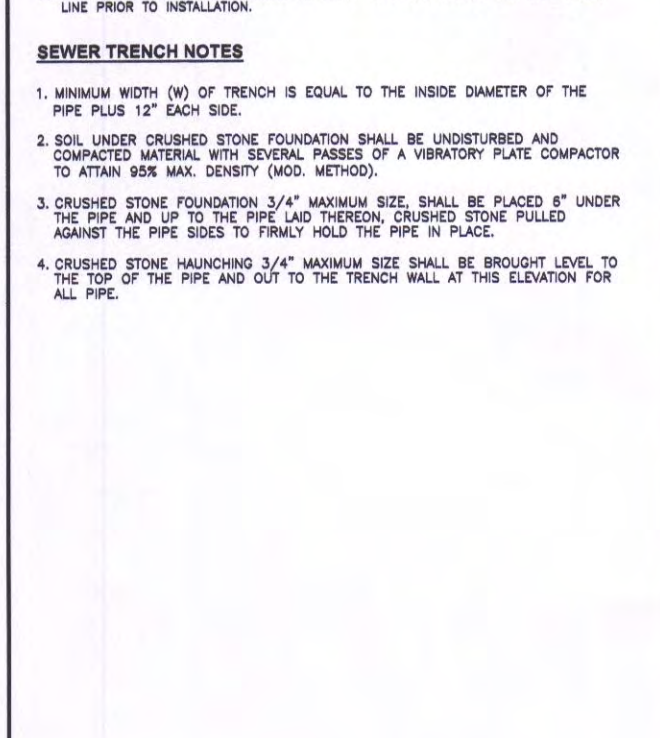
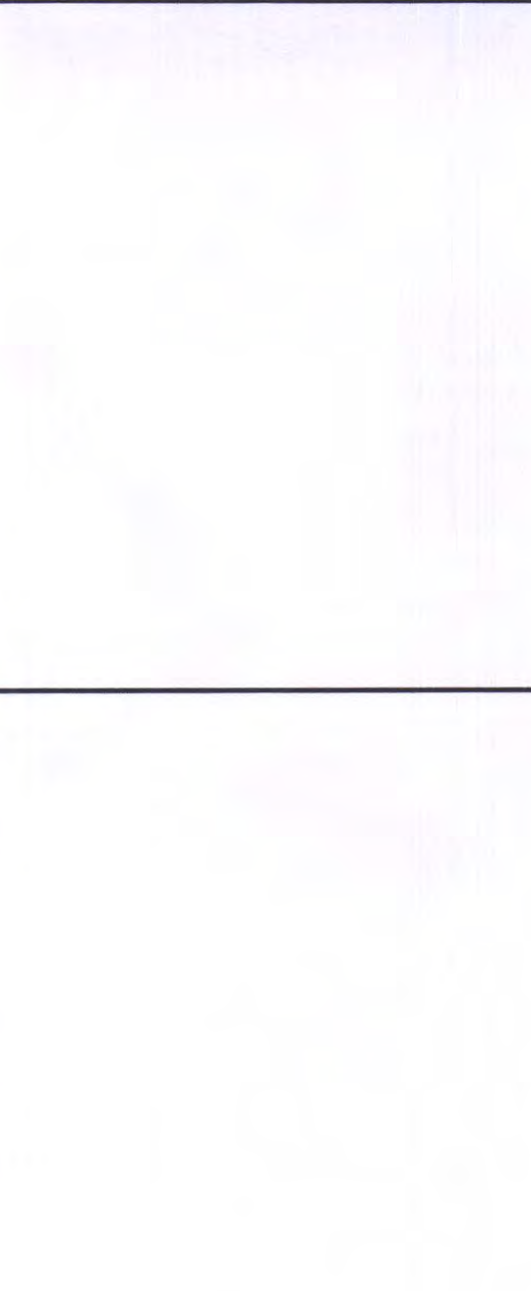
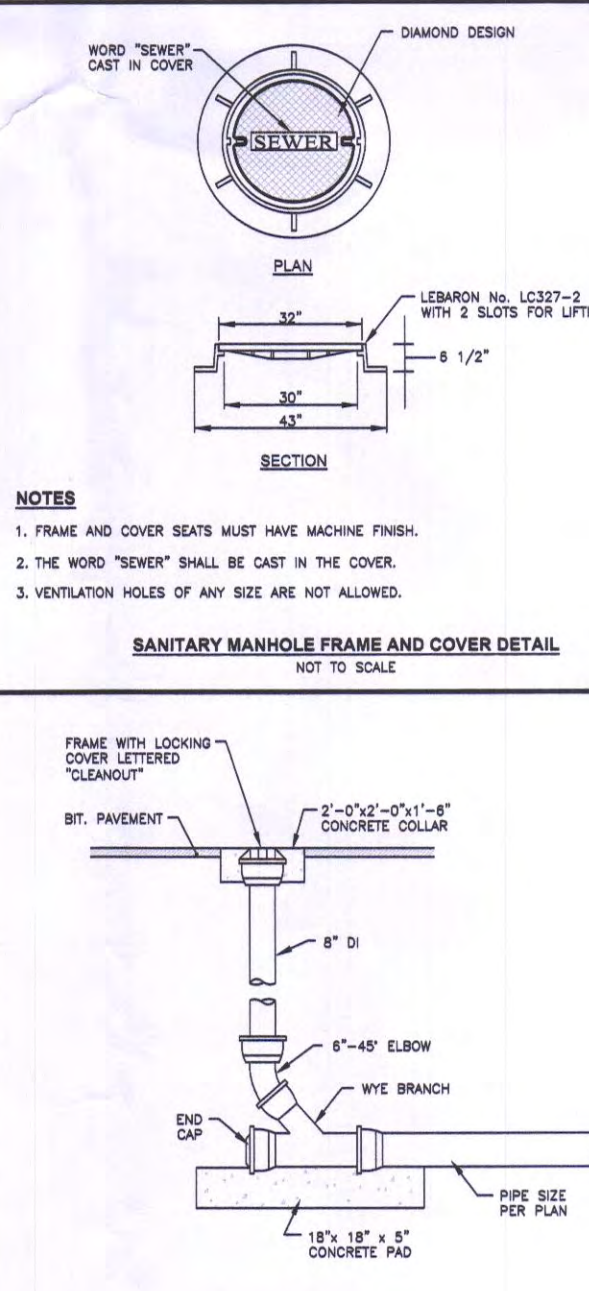
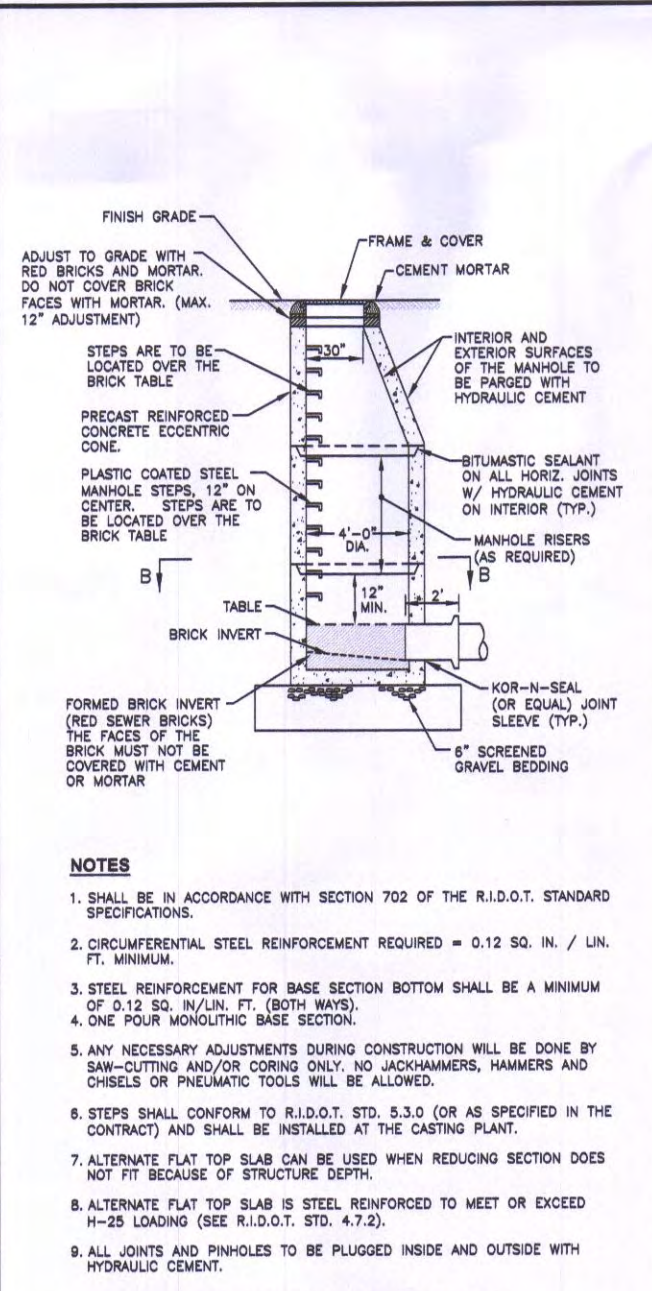
REVISIONS

NUMBER	REMARKS	DATE
1	GRADING	09/15/20
2	RIDEN COMMENTS	10/14/20
3	STATE RIGHT-OF-WAY LINE	10/28/20

DRAWING NUMBER
C12
SHEET 13 OF 18

GENERAL SEWER NOTES

1. INSTALLATION OF THE SEWERAGE FACILITIES SHALL BE IN ACCORDANCE WITH THE TOWN OF SOUTH KINGSTOWN SPECIFICATIONS AND REQUIREMENTS.
2. PRIOR TO RECEIVING AUTHORIZATION TO CONSTRUCT, ALL MATERIALS SHALL MEET THE STANDARDS AND RECEIVE THE WRITTEN APPROVAL, BASED ON MANUFACTURER'S DRAWINGS AND OTHER DATA, OF THE TOWN OF SOUTH KINGSTOWN.
3. ALL SEWERAGE FACILITIES SHALL MEET TESTING AND CLEANING REQUIREMENTS PRIOR TO ACCEPTANCE.
4. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE AS-BUILT LOCATIONS PRIOR TO PIPE BACKFILL. AS-BUILT DRAWINGS SHALL BE FURNISHED AS A CONDITION FOR ACCEPTANCE OF THE NEW SEWERAGE FACILITIES. PLANS SHALL INCLUDE LOCATION OF WYES.
5. NO FLOW WILL BE ACCEPTED UNTIL ALL ABOVE STEPS ARE COMPLETED AND COMPLETION CERTIFICATE IS ISSUED.
6. AFTER THE CONTRACTOR HAS "STAKED OUT" THE FACILITIES TO BE CONSTRUCTED AND HAS THE APPROVED MATERIALS ON THE JOB, THE WASTEWATER DIVISION SHALL BE NOTIFIED IN ADVANCE OF CONSTRUCTION IN ORDER FOR THEM TO ARRANGE FOR THEIR INSPECTOR. THE NOTIFICATION MUST MEET THE TOWN OF SOUTH KINGSTOWN WASTEWATER DIVISION REQUIREMENTS.
7. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPROVED PLANS AND MATERIALS, STANDARDS AND SPECIAL DETAILS, AND STANDARD SPECIFICATIONS, ANY WORK NOT MEETING THE APPROVED STANDARDS SHALL BE IMMEDIATELY REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
8. THE CONTRACTOR SHALL CONFINE HIS OPERATIONS AND ACTIVITIES FOR CONSTRUCTION WITHIN THE LIMITS OF WORK AS SHOWN ON THE DRAWINGS.
9. ALL AREAS DISTURBED BY THE CONTRACTOR SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT NO EXTRA COST TO THE OWNER. ALL GRASSED AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE LOADED AND SEEDED.
10. LOCATION AND DEPTHS OF EXISTING UTILITIES ARE APPROXIMATE AND HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL EXISTING UTILITIES AND NOTIFY THE APPROPRIATE UTILITY AUTHORITIES INCLUDING "DIG-SAFE" PRIOR TO STARTING WORK. ANY DAMAGE TO UTILITIES CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND THE COST OF REPAIRS SHALL BE BORNE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
11. RELATION TO WATER LINES:
A. HORIZONTAL SEPARATION: WHENEVER POSSIBLE, SEWERS SHOULD BE LAID AT A MINIMUM OF 10 FEET (3.0 m), HORIZONTALLY, FROM ANY EXISTING OR PROPOSED WATER LINE. SHOULD LOCAL CONDITIONS PREVENT A LATERAL SEPARATION OF 10 FEET, A SEWER MAY BE LAID CLOSER THAN 10 FEET TO A WATER LINE IF:
1. IT IS LAID IN A SEPARATE TRENCH, OR IF
2. IT IS LAID IN THE SAME TRENCH WITH THE WATER LINE LOCATED AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH, AND IF
3. IN EITHER CASE THE ELEVATION OF THE TOP (CROWN) OF THE SEWER IS AT LEAST 18 INCHES (46 cm) BELOW THE BOTTOM (INVERT) OF THE WATER LINE.
B. VERTICAL SEPARATION: WHENEVER A SEWER MUST CROSS UNDER WATER LINES, THE SEWER SHALL BE LAID AT SUCH AN ELEVATION THAT THE TOP OF THE SEWER IS AT LEAST 18 INCHES (46 cm) BELOW THE BOTTOM OF THE WATER LINE. WHEN THE ELEVATION OF THE SEWER CANNOT BE VARIED TO MEET THE ABOVE REQUIREMENTS, THE WATER LINE SHALL BE RELOCATED TO PROVIDE THIS SEPARATION OR RECONSTRUCTED WITH MECHANICAL-JOINT PIPE FOR A DISTANCE OF 10 FEET (3.0 m) ON EACH SIDE OF THE SEWER. ONE FULL LENGTH OF WATER LINE SHOULD BE CENTERED OVER THE SEWER SO THAT BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE.
C. WHEN IT IS IMPOSSIBLE TO OBTAIN HORIZONTAL AND/OR VERTICAL SEPARATION AS STIPULATED ABOVE, BOTH THE WATER LINE AND SEWER SHALL BE CONSTRUCTED OF MECHANICAL-JOINT CEMENT LINED DUCTILE IRON PIPE OR OTHER EQUIVALENT BASED ON WATER TIGHTNESS AND STRUCTURAL SOUNDNESS. BOTH PIPES SHALL BE PRESSURE TESTED BY AN APPROVED METHOD TO ASSURE WATER TIGHTNESS.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DOWATERING REQUIRED IN THE SEWER INSTALLATION.
13. THE PROPOSED GRAVITY SANITARY SEWER PIPE SHALL BE PVC ASTM 3034 SDR 35, UNLESS OTHERWISE SHOWN ON PLANS. PIPE SIZE TO MATCH UTILITY PLAN.
14. THE CONTRACTOR IS RESPONSIBLE TO VERIFY THE ELEVATION OF EXISTING SEWER LINE PRIOR TO INSTALLATION.



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11/11/20

PROJECT TITLE:
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PLAT MAP 32-4, LOT 32 and 38
ZONING DISTRICT: CN and R-10
COMMERCIAL NEIGHBORHOOD and
MEDIUM HIGH DENSITY RESIDENTIAL DISTRICT
and KINGSTOWN ROAD
SPECIAL MANAGEMENT DISTRICT
2095 KINGSTOWN ROAD (ROUTE 108)
SOUTH KINGSTOWN, R.I.

PREPARED FOR:
TOWER HILL LANDINGS, LLC

543 THAMES STREET
NEWPORT, RHODE ISLAND
02840

DRAWING TITLE:
MISCELLANEOUS DETAIL PLAN No. 5

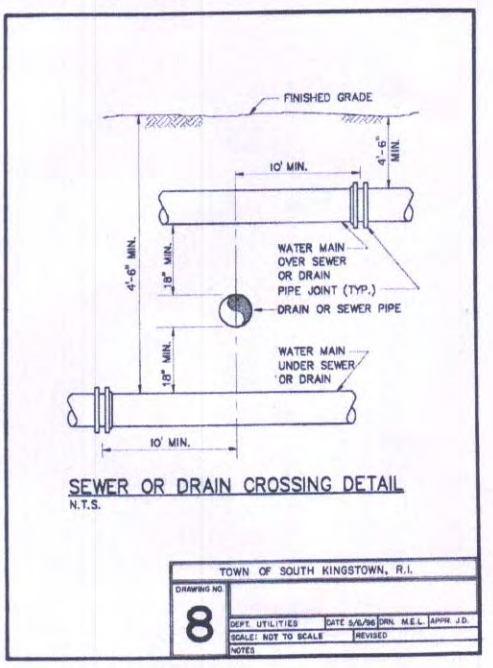
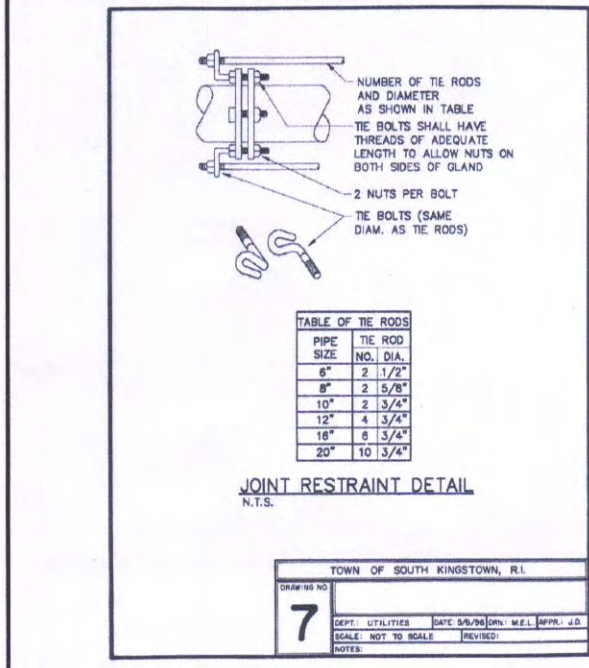
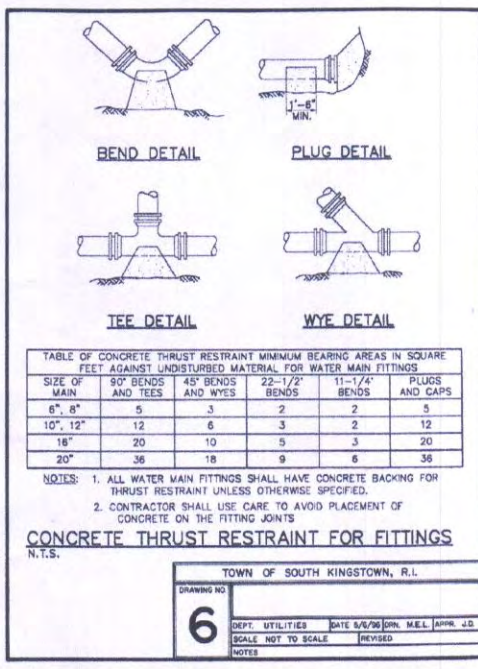
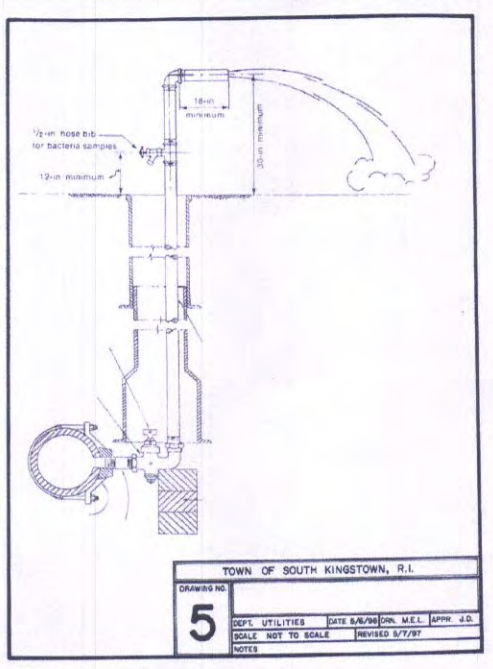
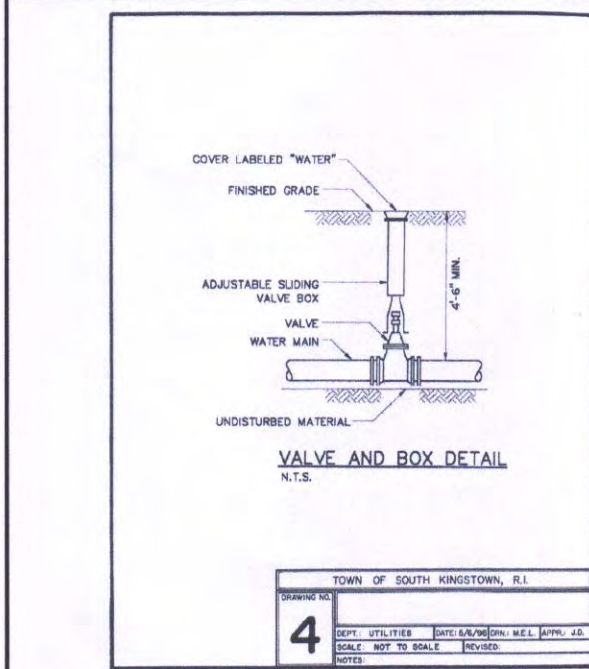
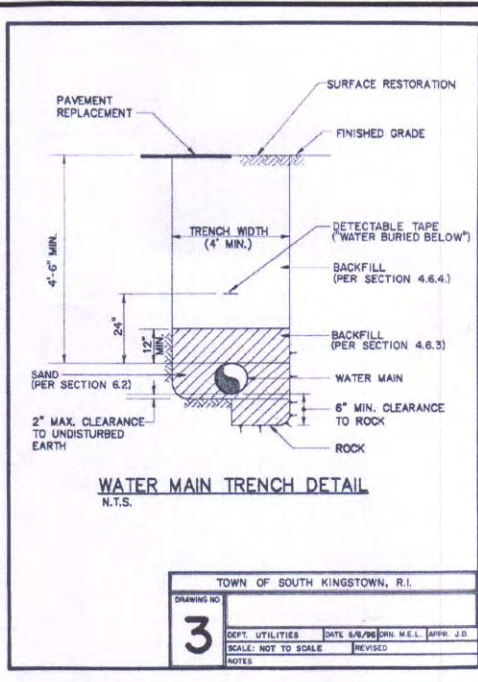
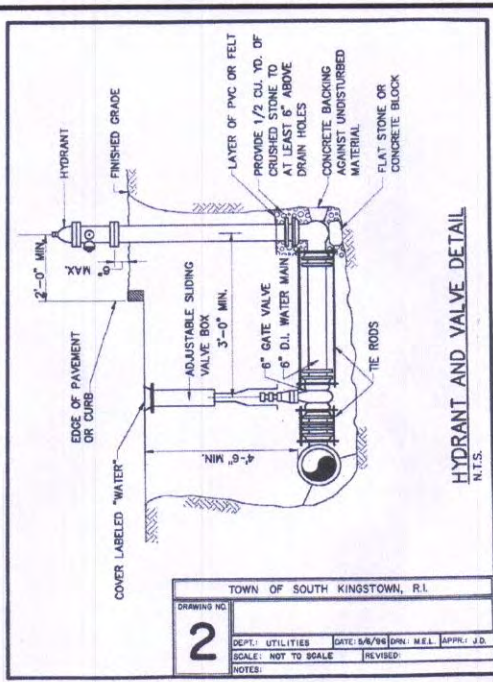
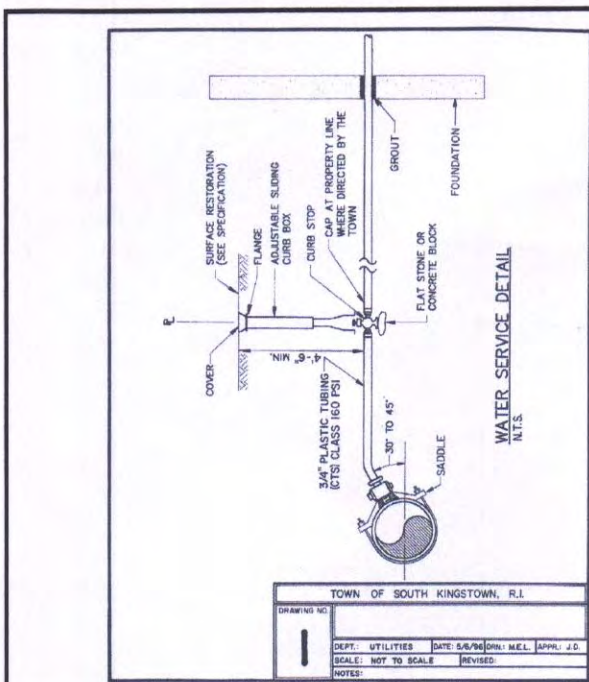
DATE: JULY 2020 **SCALE:** AS SHOWN

DWG. NAME: 2449-C13-DETAIL5-R3.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	GRADING	09/15/20
2	RIDEN COMMENTS	10/14/20
3	STATE RIGHT-OF-WAY LINE	10/28/20

DRAWING NUMBER
C13
SHEET 14 OF 18



- WATER NOTES**
- ALL INSTALLATION, JOINTS, CONSTRUCTION METHODS AND MATERIALS SHALL BE ACCORDING TO THE KINGSTOWN WATER DISTRICT AND SOUTH KINGSTOWN WATER DIVISION REQUIREMENTS, AWWA STANDARDS AND GOVERNMENTAL REQUIREMENTS.
 - ALL FITTINGS SHALL BE DUCTILE IRON MECHANICAL JOINT CLASS 350 CEMENT MORTAR LINED COMPACT STYLE (BY AMERICAN MANUFACTURER ONLY). FITTINGS SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C151/A21.51. MECHANICAL JOINTS SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C11/A21.11.
 - WATER PIPE SHALL BE DOUBLE CEMENT MORTAR LINED DUCTILE IRON PIPE CLASS 2 AND SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C151/A21.51.
 - CONSTRUCTION SHALL INCLUDE ALL PIPE, JOINTS, BENDS, TEES, FITTINGS, MECA-LUG® RESTRAINED MECHANICAL JOINTS, SERVICE CONNECTIONS AND ALL MISCELLANEOUS ITEMS REQUIRED TO CONSTRUCT THE PROPOSED SYSTEM.
 - MECA-LUG® RESTRAINED MECHANICAL JOINTS SHALL BE INSTALLED IN LOCATIONS INDICATED AND AT ALL BENDS, FITTINGS, PLUGS, ETC.
 - PRESSURE AND LEAKAGE TESTS AND DISINFECTING PIPES SHALL BE PERFORMED BY THE CONTRACTOR IN CONFORMANCE TO AMERICAN WATER WORKS ASSOCIATION (AWWA) RECOMMENDATIONS, KINGSTOWN WATER DISTRICT REQUIREMENTS, AND GOVERNMENTAL AGENCIES HAVING JURISDICTION.
 - ALL FITTINGS, PIPE, JOINTS, ETC. SHALL BE DESIGNED FOR 1.5 TIMES WORKING PRESSURE BUT NOT LESS THAN 150 PSI.
 - WATER PIPE SHALL TYPICALLY BE LOCATED AT LEAST TEN (10) FEET HORIZONTALLY FROM SEWER PIPE AND AT A MINIMUM DEPTH OF COVER EQUAL TO 5' WHERE A NEW WATER MAIN IS LESS THAN 18 INCHES CLEAR DISTANCE ABOVE A SEWER OR WHERE A WATER MAIN PASSES BENEATH A SEWER OR STORM DRAIN, ENCASE THE SEWER OR WATER IN 6" OF CONCRETE FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE CROSSING WATER MAIN. THE USE OF DUCTILE IRON TIGHT JOINT SEWER PIPE IN LIEU OF CONCRETE ENCASEMENT WILL BE CONSIDERED UPON CONTRACTOR'S SUBMITTAL OF SPECIFICATIONS TO ENGINEERS FOR APPROVAL.
 - ALL SYSTEM COMPONENTS AND CONSTRUCTION METHODS, SUCH AS PIPE, RESTRAINED MECHANICAL JOINTS, FITTINGS, CASTINGS, ETC. SHALL BE SUBMITTED TO THE WOONSOCKET WATER DEPARTMENT AND ENGINEER FOR APPROVAL PRIOR TO PURCHASE AND INSTALLATION. THIS SUBMISSION SHALL INCLUDE MANUFACTURER'S LITERATURE, SHOP DRAWINGS, PROPOSED CONSTRUCTION METHODS, ETC.
 - WATER LINE TRENCH TO BE AWWA TYPE 5, A METALLIZED DETECTABLE IDENTIFICATION TAPE 2" IN WIDTH, BLUE IN COLOR AND PRINTED WITH "CAUTION WATERLINE BURIED BELOW" SHALL BE UTILIZED OVER ALL MAINS. TAPE SHALL BE SET AT APPROXIMATELY 1'-0" BELOW FINISHED GRADE.
 - PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL COMPLETE AND SUBMIT THE "CONTRACTOR'S MATERIAL AND TEST CERTIFICATE" FOR UNDERGROUND PIPING TO THE KINGSTOWN WATER DISTRICT AND SOUTH KINGSTOWN WATER DIVISION. IN ADDITION, THE CONTRACTOR IS REQUIRED TO SUBMIT THE FOLLOWING ITEMS TO THE ENGINEER FOR THEIR REVIEW AND APPROVAL:
 - TYPE AND MANUFACTURER OF SERVICE BOXES
 - TYPE AND MANUFACTURER OF CORPORATIONS AND CURB STOPS
 - TYPE AND MANUFACTURER OF VALVE BOXES (OPEN LEFT)
 - TYPE AND MANUFACTURER OF D.I. MECHANICAL JOINTS AND FITTINGS
 - TYPE AND MANUFACTURER OF TAPPING SLEEVES
 - TYPE AND MANUFACTURER OF DI PIPING
 - TYPE AND MANUFACTURER OF RESILIENT SEALED GATE VALVES (OPEN LEFT)
 - TYPE AND MANUFACTURER OF COPPER SERVICE LINE
 - WHEN THIS PROJECT IS COMPLETE, THE CONTRACTOR IS RESPONSIBLE TO PROVIDE THE WATER DEPARTMENT AND ENGINEER TWO SETS OF AS BUILT PLANS (ONE BLUE LINE, ONE REPRODUCIBLE COPY-MYLAR OR SEPA) WHICH INDICATES:
 - ALL CURB STOPS WITH APPROPRIATE LOCATING MEASUREMENTS
 - MAN-TO-CURB AND MEASUREMENTS FROM PERMANENT STRUCTURES.
 - THE CONTRACTOR SHALL VERIFY THE FIRE SERVICE PIPE SIZE REQUIREMENT WITH THE BUILDING ARCHITECT AND PLUMBING/FIRE SPRINKLER CONTRACTOR PRIOR TO ORDERING PIPE, METERS AND BACKFLOW PREVENTORS. COORDINATION WITH THE SOUTH KINGSTOWN FIRE CHIEF, KINGSTOWN WATER DIVISION AND SOUTH KINGSTOWN WATER DIVISION IS REQUIRED TO DETERMINE THE EXISTING WATER PRESSURE AVAILABLE.
 - ALL VALVES TO BE RESILIENT WEDGE GATE VALVES (OPEN LEFT).
 - ALL FITTINGS TO BE RESTRAINED WITH MECHANICAL JOINTS. RESTRAINTS TO BE MECA-LUG OR EQUAL. ALL DESIGN AND/OR PLACEMENT SHALL BE REVIEWED AND APPROVED BY THE WOONSOCKET WATER DEPARTMENT.
 - RESTRAIN ALL PUSH-ON BELL JOINTS WITHIN 20 FEET OF MECHANICAL JOINTS. RESTRAINTS TO BE SERIES 800 COVER-ALL BY EBAA IRON OR EQUAL.
 - DOMESTIC WATER SERVICE LINES SHALL BE DUCTILE IRON OR COPPER.
 - ALL HYDRANTS SHALL OPEN LEFT.

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11-11-20

PROJECT TITLE:
TOWER HILL LANDINGS ANNEX LLC

PLAT MAP 32-4, LOT 32 and 38
ZONING DISTRICT: CN and R-10
COMMERCIAL NEIGHBORHOOD and MEDIUM HIGH DENSITY RESIDENTIAL DISTRICT
SPECIAL MANAGEMENT DISTRICT
2085 KINGSTOWN ROAD (ROUTE 108)
SOUTH KINGSTOWN, R.I.

PREPARED FOR:
TOWER HILL LANDINGS, LLC
543 THAMES STREET
NEWPORT, RHODE ISLAND 02840

DRAWING TITLE:
MISCELLANEOUS DETAIL PLAN No. 6

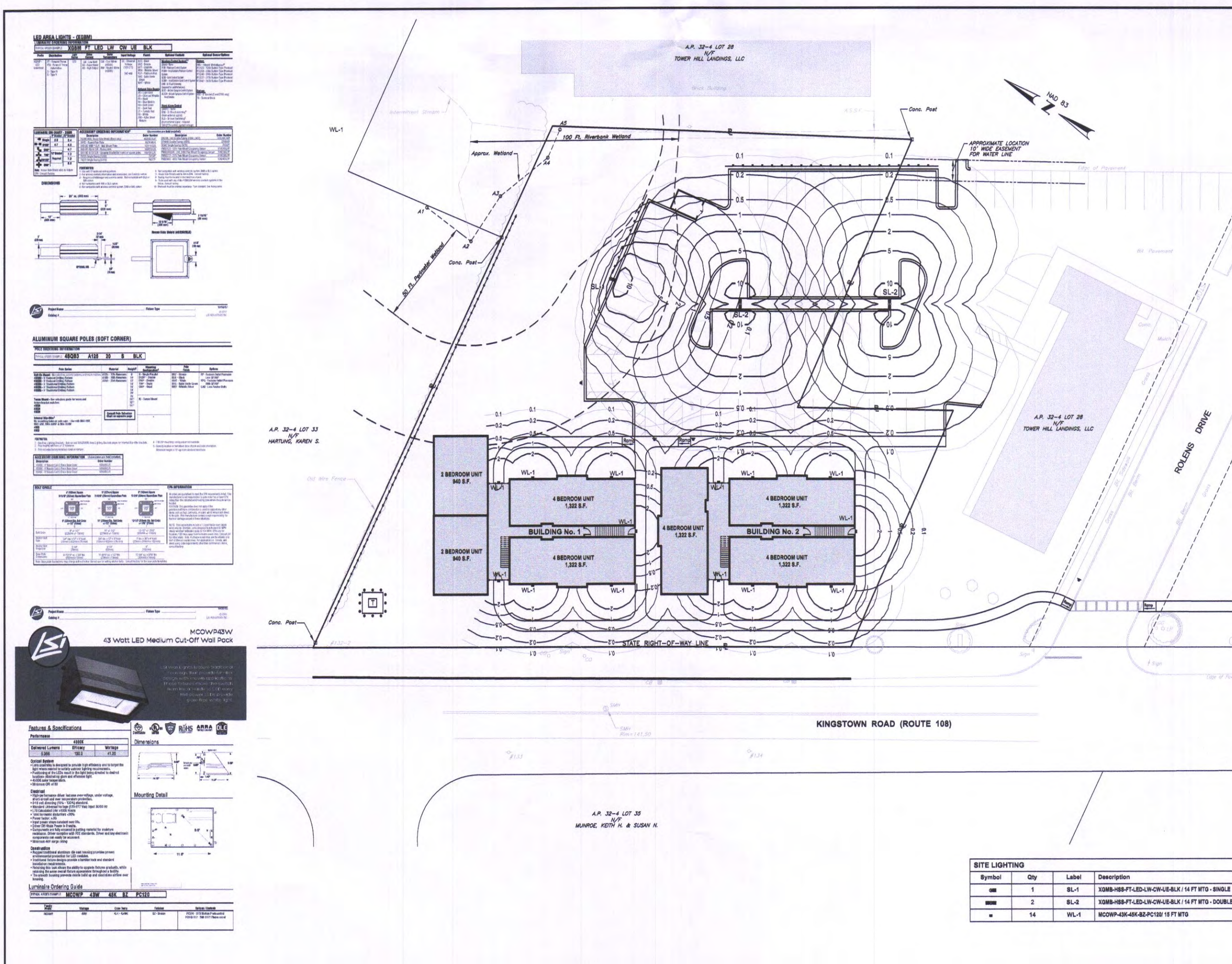
DATE: JULY 2020 **SCALE:** AS SHOWN

DWG. NAME: 2449-C14-DETAILS-R3.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	GRADING	09/15/20
2	RDEN COMMENTS	10/14/20
3	STATE RIGHT-OF-WAY LINE	10/28/20

DRAWING NUMBER
C14
SHEET: 15 OF 18



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11-11-20

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ZONING DISTRICT: CN and R-10
COMMERCIAL NEIGHBORHOOD and MEDIUM HIGH DENSITY RESIDENTIAL DISTRICT
SPECIAL MANAGEMENT DISTRICT
2085 KINGSTOWN ROAD (ROUTE 108)
SOUTH KINGSTOWN, R.I.

PREPARED FOR:
TOWER HILL LANDINGS, LLC
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DRAWING TITLE:
LIGHTING PLAN

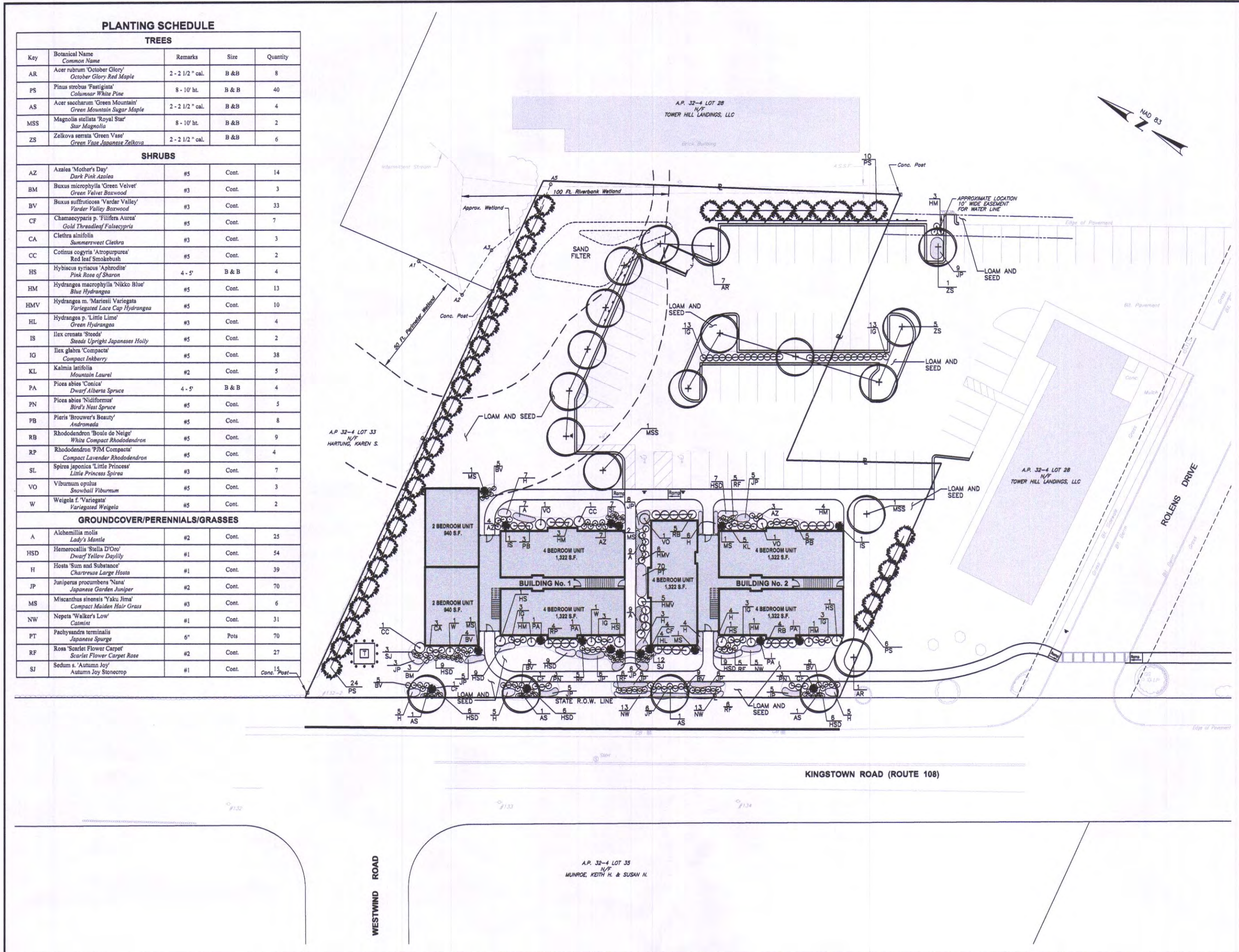
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DWG. NAME: 2449-E01-LIGHT-R3.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	GRADING	09/15/20
2	RDEN COMMENTS	10/14/20
3	STATE RIGHT-OF-WAY LINE	10/28/20

DRAWING NUMBER
E1
SHEET: 16 OF 18



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PROJECT TITLE:
TOWER HILL LANDINGS ANNEX LLC

PLAT MAP 32-4, LOT 32 and 28
ZONING DISTRICT: CN and R-10
COMMERCIAL NEIGHBORHOOD AND
MEDIUM HIGH DENSITY RESIDENTIAL DISTRICT
AND KINGSTOWN ROAD
SPECIAL MANAGEMENT DISTRICT
2088 KINGSTOWN ROAD (ROUTE 108)
SOUTH KINGSTOWN, R.I.

PREPARED FOR:
TOWER HILL LANDINGS, LLC

543 THAMES STREET
NEWPORT, RHODE ISLAND
02840

DRAWING TITLE:
LANDSCAPE PLAN

DATE:
JULY 2020

SCALE:
1"=20'

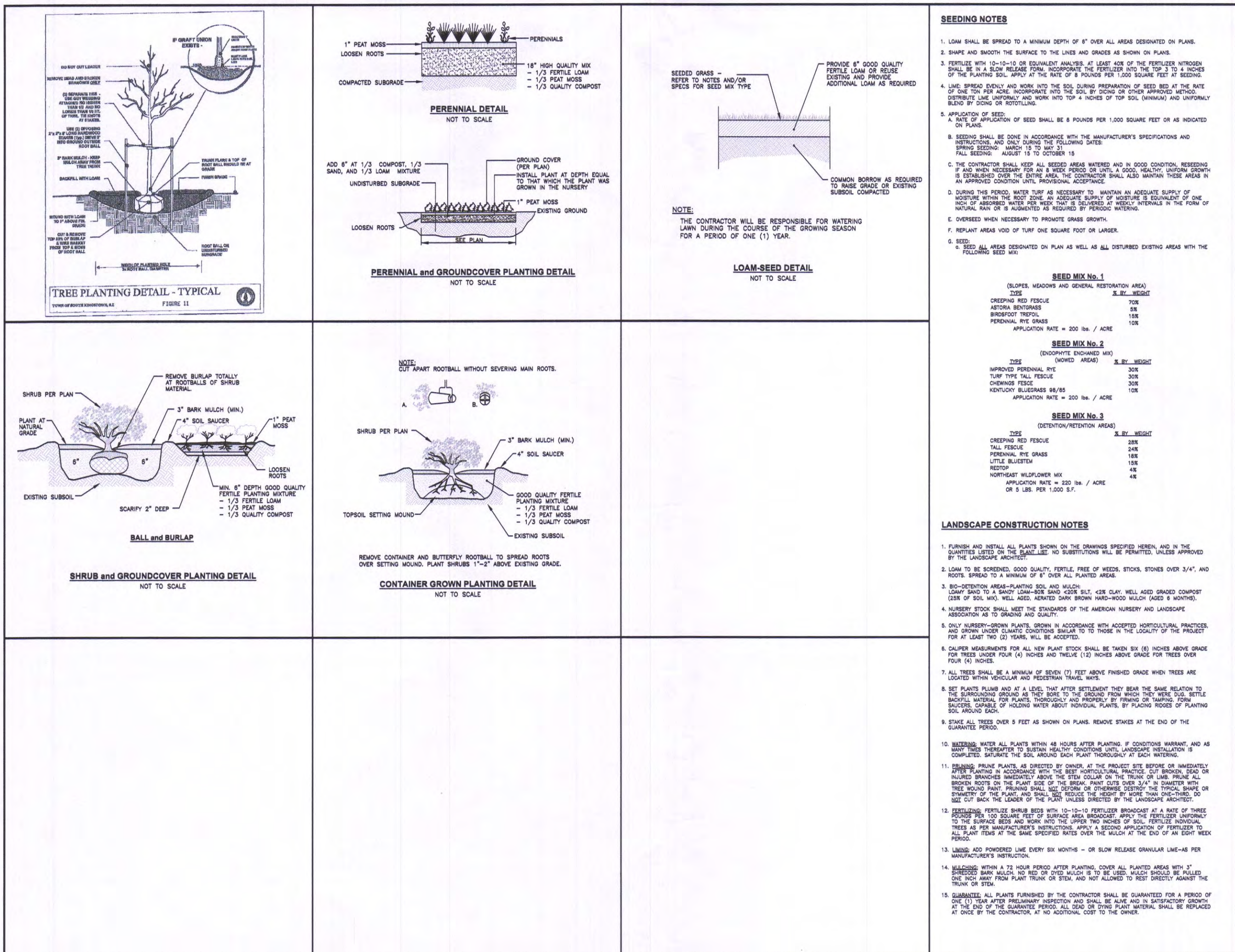
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REVISIONS

NUMBER	REMARKS	DATE
1	GRADING	09/15/20
2	RIDE COMMENTS	10/14/20
3	STATE RIGHT-OF-WAY LINE	10/28/20

DRAWING NUMBER:
L1

SHEET: 17 OF 18



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PREPARED FOR:
TOWER HILL LANDINGS, LLC

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DRAWING TITLE:
LANDSCAPE DETAIL PLAN

DATE:
JULY 2020

SCALE:
AS SHOWN

DWG. NAME:
2449-L02-LINDET-R3.dwg

REVISIONS

NUMBER	REMARKS	DATE
1	GRADING	09/15/20
2	RIDE COMMENTS	10/14/20
3	STATE RIGHT-OF-WAY LINE	10/28/20

DRAWING NUMBER:
L2

SHEET: 18 OF 18