

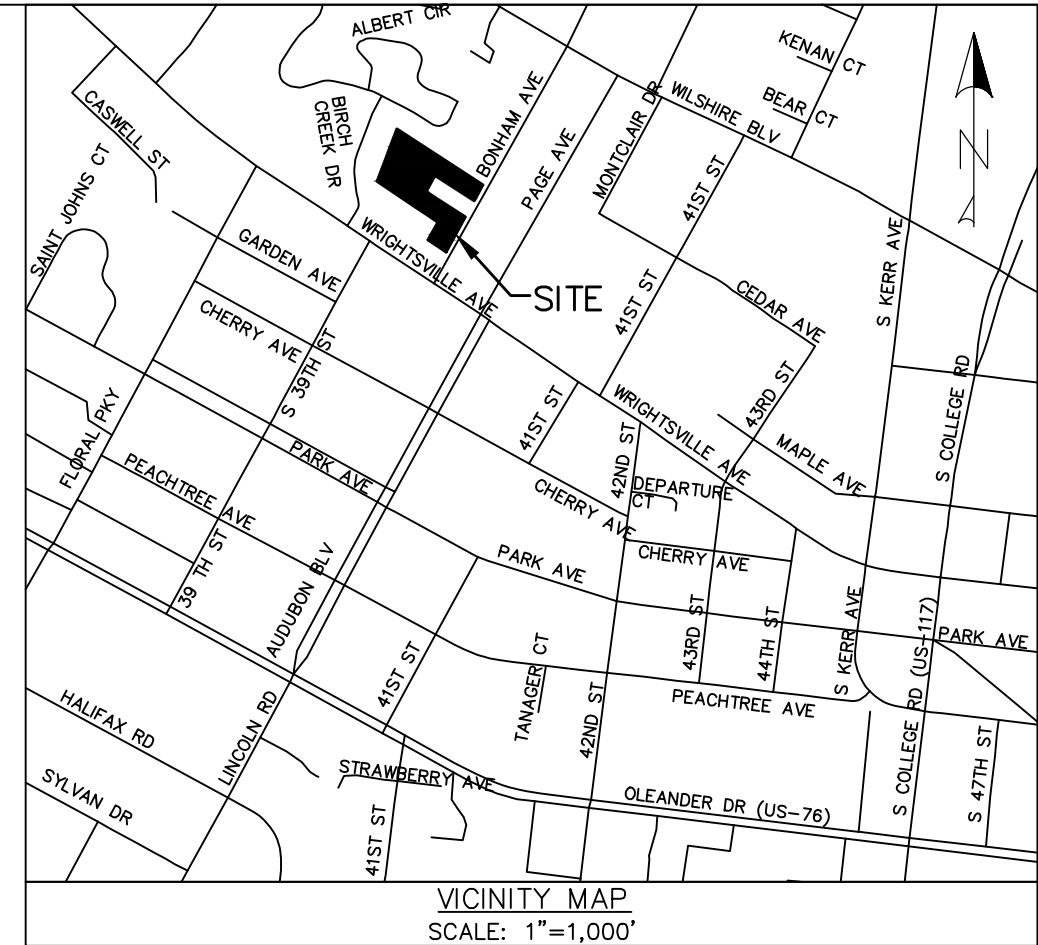
- NOTES**
- BOUNDARY, TOPOGRAPHICAL, & TREE SURVEY PROVIDED BY BATEMAN CIVIL SURVEY COMPANY.
  - LIMITS OF DISTURBANCE (PROJECT AREA) = 45,662 SF = 1.05 ACRES.
  - DISTURBED AREAS WITHIN RIGHT-OF-WAY OF BONHAM AVENUE SHALL BE IMMEDIATELY SEED & STABILIZED WITH EXCELSDOR MAT OR MULCH PRIOR TO ANY RAINFALL EVENT & IN ACCORDANCE WITH GRASS STABILIZATION CHART.
  - UPON COMPLETION OF ANY PHASE OF ACTIVITY SIDE SLOPES WILL BE SEED/STABILIZED IN ACCORDANCE WITH GRASS STABILIZATION CHART.
  - LOCATION OF TREE PROTECTION FENCING SHOWN ON PLAN IS APPROXIMATE. TREE PROTECTION FENCING SHALL BE INSTALLED IN ACCORDANCE WITH DETAIL SD 10-18.
  - ALL ELEVATIONS ARE IN FEET UNLESS OTHERWISE INDICATED.
  - ALL CITY, STATE, & FEDERAL REGULATIONS SHALL BE FOLLOWED.
  - EXISTING SANITARY SEWER MAINS & WATER MAINS WITHIN BONHAM AVENUE ARE OWNED BY CPWA.
  - CONTRACTOR SHALL ABANDON THE EXISTING WATER SERVICES AND SEWER SERVICES AT THE EXISTING MAINS.
  - PROPOSED SANITARY SEWER SERVICE SHALL BE 6".
  - PROPOSED WATER LINE SIZES PER PLAN. PROPOSED DOMESTIC WATER SERVICE & IRRIGATION SERVICE SHALL BE PUBLIC FROM THE EXISTING WATER MAIN TO THE WATER METER & PRIVATE AFTER THE METER. PROPOSED FIRE LINE SHALL BE PUBLIC FROM THE EXISTING WATER MAIN TO THE GATE VALVE AT R/W & PRIVATE AFTER THE VALVE.
  - WATER METER, BACKFLOW PREVENTER, VALVE, FIRE HYDRANT, & CLEANOUT SYMBOLS ARE SYMBOLIC & NOT ACTUAL SIZE.
  - CONTRACTOR TO USE BENDS & FITTINGS AS NECESSARY ON WATER LINES (DOMESTIC, FIRE, & IRRIGATION).
  - CONTRACTOR SHALL ENSURE UTILITY SEPARATION NOTES ARE MET.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH, & OBTAINING NECESSARY RIGHT-OF-WAY PERMITS (STREET CUT, STREET/LANE CLOSURE, ETC.) FROM THE CITY OF WILMINGTON FOR WORK WITHIN THEIR RIGHT-OF-WAY.
  - CONTRACTOR MUST OBTAIN AN UNDERGROUND FIRE LINE PERMIT FROM THE CITY OF WILMINGTON (FIRE & LIFE SAFETY) PRIOR TO INSTALLING THE FIRE LINE.
  - CONTRACTOR TO NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN EXISTING UTILITIES & PROPOSED UTILITIES.
  - CONTRACTOR TO REPAIR ANY DISTURBED AREAS (ASPHALT, STONE, CURB, SIDEWALK, GRASS PLAZA, ETC.) WITHIN BONHAM AVENUE TO PRE-CONSTRUCTION CONDITIONS OR BETTER.
  - SLOPE ON HANDICAP SPACES & ADJACENT ACCESS AISLE SHALL BE 1:50 OR FLATTER.
  - ALL DEVELOPMENT SHALL BE IN ACCORDANCE WITH THE CITY OF WILMINGTON LAND DEVELOPMENT CODE & TECHNICAL STANDARDS MANUAL, EXCEPT WHERE EXEMPTED OR VARIANCES ARE OBTAINED.
  - IT IS THE APPLICANT'S/DEVELOPER'S RESPONSIBILITY TO BE COMPLIANT WITH ALL APPLICABLE ADA REQUIREMENTS.
  - ALL PLANTED & RETAINED LIVING MATERIAL REQUIRED TO MEET THE PROVISIONS OF THE CITY OF WILMINGTON LAND DEVELOPMENT CODE, SHALL BE PERPETUALLY PROTECTED & MAINTAINED TO PROFESSIONALLY ACCEPTED STANDARDS BY JOINT & SEVERAL RESPONSIBILITY OF THE OWNER, OCCUPANT, TENANT, & RESPECTIVE AGENTS OF THE PROPERTY ON WHICH THE MATERIAL IS LOCATED.
  - ANY EXISTING INTERIOR LOT LINES TO BE ABANDONED BY RECOMBINATION PLAT.
  - ALL PROPOSED ON-SITE UTILITY LINES SHALL BE UNDERGROUND.
  - LOCATION OF ANY SITE LIGHTS, ELECTRIC LINES, TELEPHONE LINES, AND/OR NATURAL GAS LINES TO BE DETERMINED BY UTILITY COMPANIES AND/OR OTHERS.
  - THE PROPOSED CURB IN THE PROJECT AREA IS VERTICAL CURB (SD 3-11), EXCEPT WHERE LABELED AS 4" VERTICAL CURB. THE 4" VERTICAL CURB SHALL BE VERTICAL CURB (SD 3-11) WITH THE TOP OF THE CURB ONLY 4" ABOVE THE PAVEMENT.
  - A DOWNSPOUT FILTER (LEAF EATER BY RAIN HARVESTING SYSTEMS, OR SIMILAR) MUST BE INSTALLED ON EVERY ROOF DOWNSPOUT. EACH DOWNSPOUT FILTER SHALL BE LOCATED IN AN AREA THAT ALLOWS FOR INSPECTION.
  - DOWNSPOUT PIPING LOCATIONS ARE APPROXIMATE. CONTRACTOR TO COORDINATE DOWNSPOUT PIPING WITH ARCHITECTURAL DRAWINGS. CONTRACTOR SHALL USE BENDS, FITTINGS, ADAPTERS, ETC. AS NECESSARY TO INSTALL ROOF DOWNSPOUT PIPING. NO MORE THAN 1,000 SF OF ROOF AREA MAY DRAIN TO A SINGLE DISCHARGE INTO THE PERMEABLE PAVEMENT SYSTEM. CONTRACTOR SHALL CONNECT STORM LINE FROM HUB DRAIN IN HVAC CLOSEST TO ROOF DOWNSPOUT PIPING. SEE MECHANICAL PLANS FOR STORM LINE LOCATION.
  - PERVIOUS AREAS (LAWNS, LANDSCAPING, ETC.) SHALL NOT DRAIN TO PERMEABLE PAVEMENT SYSTEM #2, EXCEPT FOR INSTANCES WHERE UNAVOIDABLE (INTERIOR PARKING LOT ISLANDS, ETC.).
  - ALL AREAS (SIDEWALK, PATIO, LANDSCAPING, ETC.) ADJACENT TO BUILDINGS SHALL BE GRADED TO DRAIN AWAY FROM BUILDINGS.
  - BUILDING #3 SHALL USE THE EXISTING DUMPSTER FOR SOLID WASTE DISPOSAL (SEE SHEET 4 FOR LOCATION).
  - THE PROPOSED MAINTENANCE/ACCESS EASEMENT SHOWN ON SHEET 8A FOR THE PERMEABLE PAVEMENT SHALL BE GRANTED IN FAVOR OF THE CITY OF WILMINGTON FOR STORMWATER ENFORCEMENT.
  - THE DEVELOPER SHALL HAVE THE PERMEABLE PAVEMENT OPERATION & MAINTENANCE AGREEMENT IT ENTERED INTO WITH THE CITY OF WILMINGTON FOR PERMEABLE PAVEMENT SYSTEM #2 RECORDED WITH THE COUNTY REGISTER OF DEEDS SO AS TO APPEAR IN THE CHAIN OF TITLE OF ALL SUBSEQUENT PURCHASERS. PERMEABLE PAVEMENT SYSTEM #2 SHALL BE MAINTAINED IN ACCORDANCE WITH THE PERMEABLE PAVEMENT OPERATION & MAINTENANCE AGREEMENT. TRASH/DEBRIS (INCLUDING VEGETATIVE DEBRIS) AND SEDIMENT SHALL BE REMOVED FROM THE SURFACE OF THE PERVIOUS CONCRETE IN ORDER TO PREVENT CLOGGING OF THE SYSTEM.
  - THE 2.5' VEHICLE OVERHANG AREA SHALL NOT BE PLANTED WITH SHRUBS AND/OR TREES.
  - THE FINAL 6" OF THE 50' CONSTRUCTION ENTRANCE SHALL BE INSTALLED ONCE A PORTION OF THE EXISTING HOUSE IS REMOVED TO ALLOW THE INSTALLATION.
  - A PUBLIC ACCESS EASEMENT SHALL BE PROVIDED OVER ANY PORTION OF THE PROPOSED FRONTAGE SIDEWALK ALONG BONHAM AVENUE THAT IS LOCATED OUTSIDE OF THE RIGHT-OF-WAY.
  - DRAIN BASIN STANDARD GRATE (DBSG) & DRAIN BASIN SOLID COVER (DBSC) SHALL BE NYLOPLAST LIGHT DUTY IRRADIATION DRAINS, OR EQUIVALENT. DRAIN BASINS SHALL BE SIZED APPROPRIATELY TO ACCOMMODATE PROPOSED PIPE SIZES AND ANGLES BETWEEN PIPES CONNECTING TO STRUCTURE.

- SUBDIVISION REVIEW BOARD—CONDITIONS OF APPROVAL (SRB-6-1218 ORDER)**
- THE USE AND DEVELOPMENT OF THE SUBJECT PROPERTY SHALL COMPLY WITH ALL REGULATIONS AND REQUIREMENTS IMPOSED BY THE LAND DEVELOPMENT CODE, THE CITY OF WILMINGTON TECHNICAL STANDARDS AND SPECIFICATIONS MANUAL AND ANY OTHER APPLICABLE FEDERAL, STATE OR LOCAL LAW, ORDINANCE OR REGULATION, AS WELL AS ANY CONDITION STATED BELOW. IN THE EVENT OF A CONFLICT, THE MORE STRINGENT REQUIREMENT OR HIGHER STANDARD SHALL APPLY.
  - IF, FOR ANY REASON, ANY CONDITION FOR APPROVAL IS FOUND TO BE ILLEGAL OR INVALID OR IF THE APPLICANT SHOULD FAIL TO ACCEPT ANY CONDITION FOLLOWING APPROVAL, THE APPROVAL OF THE PAYMENT IN LIEU SHALL BE NULL AND VOID.
  - THE USE AND DEVELOPMENT OF THE SUBJECT PROPERTY SHALL BE IN ACCORDANCE WITH THE TECHNICAL REVIEW COMMITTEE APPROVED PLAN AND RECOMMENDATIONS.
  - A FEE OF \$11,073 IN LIEU OF PROVIDING THE TOTAL AMOUNT OF ON-SITE OPEN SPACE SHALL BE PAID PRIOR TO RECORDEMENT OF THE FINAL PLAT IN ACCORDANCE WITH SECTION 18-383 OF THE LAND DEVELOPMENT CODE.
  - STAFF MAY REQUIRE AN ADDITIONAL PAYMENT-IN-LIEU OR REDUCE THE TOTAL AMOUNT OF PAYMENT-IN-LIEU FOR ANY CHANGE TO THE PROPOSED PLAN WHICH MAY RESULT IN A CHANGE IN OPEN SPACE PROVIDED.
  - ALL CITY, STATE AND FEDERAL REGULATIONS SHALL BE FOLLOWED.

- CITY OF WILMINGTON STANDARD NOTES**
- PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING SHALL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
  - ANY TREES AND/OR AREAS DESIGNATED TO BE PROTECTED MUST BE PROPERLY BARRICADED WITH FENCING AND PROTECTED THROUGHOUT CONSTRUCTION TO INSURE THAT NO CLEARING, GRADING OR STAGING OF MATERIALS WILL OCCUR IN THOSE AREAS.
  - NO EQUIPMENT IS ALLOWED ON SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING IS INSTALLED & APPROVED. PROTECTIVE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT, & CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION METHODS.
  - ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY & FOR DRIVEWAYS ARE TO BE THERMOPLASTIC & MEET CITY &/OR NCDOT STANDARDS.
  - ONCE STREETS ARE OPEN TO TRAFFIC, CONTACT TRAFFIC ENGINEERING REGARDING THE INSTALLATION OF TRAFFIC & STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
  - ALL TRAFFIC CONTROL DEVICES (INCLUDING SIGNS & PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
  - CONTACT TRAFFIC ENGINEERING AT 910-341-7889 TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES & EQUIPMENT ARE SHOWN ON THE PLAN.
  - CALL TRAFFIC ENGINEERING AT 910-341-7888 FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.
  - TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING PRIOR TO ACTUAL STRIPING.
  - ALL PARKING STALL MARKINGS & LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
  - ALL TRAFFIC CONTROL SIGNS & MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
  - STOP SIGNS & STREET SIGNS TO REMAIN IN PLACE DURING CONSTRUCTION.
  - TACTILE WARNING MATS WILL BE INSTALLED ON ALL WHEELCHAIR RAMPS.
  - A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET. NOTE THIS ON THE PLAN AND CONTACT 341-5888 FOR MORE DETAILS. IN CERTAIN CASES AN ENTIRE RESURFACING OF THE AREA BEING OPEN CUT MAY BE REQUIRED.
  - ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND CURBING WILL BE REPLACED.
  - CONTACT TRAFFIC ENGINEERING AT 910-341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
  - WATER & SEWER SERVICE SHALL MEET CAPE FEAR PUBLIC UTILITY AUTHORITY (CPFA) DETAILS & SPECIFICATIONS.
  - PROJECT SHALL COMPLY WITH CPFA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METER(S) CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET & THE STATE HAS GIVEN THEIR FINAL APPROVAL. CALL 910-343-3910 FOR INFORMATION.
  - IF THE CONTRACTOR DESIRES CPFA WATER FOR CONSTRUCTION, HE SHALL APPLY IN ADVANCE FOR THIS SERVICE & MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
  - ANY IRRIGATION SYSTEM SUPPLIED BY CPFA WATER SHALL COMPLY WITH THE CPFA CROSS CONNECTION CONTROL REGULATIONS. CALL 910-343-3910 FOR INFORMATION.
  - ANY IRRIGATION SYSTEM SHALL BE EQUIPPED WITH A RAIN & FREEZE SENSOR.
  - ANY BACKFLOW PREVENTION DEVICES REQUIRED BY CPFA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USFCOCHR OR ASSE. CONTRACTOR TO FIELD VERIFY EXISTING WATER & SEWER SERVICE LOCATIONS, SIZES & MATERIALS PRIOR TO CONSTRUCTION. ENGINEER TO BE NOTIFIED OF ANY CONFLICTS.
  - CONTRACTOR SHALL MAINTAIN ALL-WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
  - UNDERGROUND FIRE LINE(S) MUST BE PERMITTED & INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC RIGHT-OF-WAY TO THE BUILDING. CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE & LIFE SAFETY AT 910-341-0696.
  - NO OBSTRUCTIONS ARE PERMITTED IN THE SPACE BETWEEN THIRTY (30) INCHES & TEN (10) FEET ABOVE THE GROUND WITHIN THE TRIANGULAR SIGHT DISTANCE.
  - CONTACT THE NORTH CAROLINA ONE CALL CENTER AT 1-800-632-4949 PRIOR TO DOING ANY DIGGING, CLEARING, OR GRADING.
  - LANDSCAPING PLAN INDICATING THE LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON TRAFFIC ENGINEERING DIVISION AND PARKS AND RECREATION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE RECORDING OF THE FINAL PLAT.

**SHEET INDEX**

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**SITE DATA**  
 PROPERTY OWNER: REMARKABLE PROPERTIES, LLC & ELEVATION APARTMENTS LLC  
 PROJECT ADDRESS: 1016 BONHAM AVENUE, 1022 BONHAM AVENUE, & 2309 EVERMORE WAY  
 PIN NUMBER: R05514-001-019-000, R05514-001-020-000, & R05514-001-022-000  
 ZONING DISTRICT: MF-M  
 FLOOD AREA: THIS SITE IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA, IT IS LOCATED IN ZONE "A" (OTHER AREAS) ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP, MAP NUMBER 37033700K, DATED: AUGUST 25, 2019  
 BUILDING SETBACKS FOR PROJECT AREA, REQUIRED: FRONT & CORNER LOT SIDE-N/A' (PER CITY OF WILMINGTON LAND DEVELOPMENT CODE SEC. 18-184(g)(12), REAR-25', INTERIOR SIDE-20'  
 BUILDING SETBACKS FOR PROJECT AREA, PROPOSED (MIN.): FRONT-15.95', REAR-25.67', INTERIOR SIDE-20.16'  
 SITE AREA: 137,351 SF = 3.15 ACRES ±  
 TOTAL BUILDING LOT COVERAGE (EXISTING + PROPOSED) FOR SITE AREA: (13,984 + 6,756) / 137,351 \* 100% = 15.10%  
 ALLOWABLE MAXIMUM BUILDING HEIGHT (BASED ON REQUIRED SETBACK USED) FOR PROJECT AREA: 35'  
 PROPOSED BUILDING HEIGHT FOR PROJECT AREA (AVG. EX. GROUND ELEV. TO HALFWAY BETWEEN HIGHEST PEAK & EAVE): 35' MAX. (BLDG #3)  
 NUMBER OF EXISTING BUILDINGS FOR SITE AREA: 6 (4 TO BE REMOVED)  
 NUMBER OF PROPOSED BUILDINGS FOR SITE AREA: 1 (12 UNITS, 4 BEDROOMS PER UNIT)
**BUILDING SIZE:**

BUILDING	SQUARE FOOTAGE (1ST STORY)	SQUARE FOOTAGE (2ND STORY)	SQUARE FOOTAGE (3RD STORY)	NUMBER OF UNITS	NUMBER OF ONE BEDROOM UNITS	NUMBER OF TWO BEDROOM UNITS	NUMBER OF THREE BEDROOM UNITS	NUMBER OF FOUR BEDROOM UNITS	EXISTING / PROPOSED
HOUSE	1,640	N/A	N/A	1	0	0	1	0	EXISTING (TO BE REMOVED)
SHED/STORAGE	718	N/A	N/A	N/A	N/A	0	N/A	N/A	EXISTING (TO BE REMOVED)
HOUSE	1,510	N/A	N/A	N/A	N/A	0	N/A	N/A	EXISTING (TO BE REMOVED)
SHED	126	N/A	N/A	N/A	N/A	0	N/A	N/A	EXISTING (TO BE REMOVED)
2	6,039	6,106	6,106	18	6	6	6	0	EXISTING
3	7,945	8,012	8,012	24	6	12	6	0	EXISTING
3	6,756	6,781	6,781	12	0	0	0	12	PROPOSED

**TOTAL AMOUNT & PERCENT OF IMPERVIOUS SURFACE AREAS ON-SITE FOR SITE AREA (EXCLUDES FRONTAGE SIDEWALK ON-SITE):**

BUILDINGS (ROOF OVERHANG)	BEFORE REDEVELOPMENT		AFTER REDEVELOPMENT			
	AREA (SF)	% OF SITE	AREA (SF)	% OF SITE		
BUILDINGS (ROOF OVERHANG)	20,805	15.15	16,258	7.254	23,512	17.12
PAVEMENT	3,874.15	2.82	2,839.15	2.69	3,108.15	2.26
PERVIOUS PAVEMENT (AFTER 75% CREDIT)	6,833.21	4.97	6,671.21	0	6,671.21	4.86
SIDEWALK	3,788.43	2.76	3,788.43	2,155	5,943.43	4.33
OTHER (CONCRETE PATIOS, HVAC PADS, BICYCLE PARKING, WALL)	1,435	1.05	759	550	1,309	0.95
<b>TOTAL</b>	<b>36,735.79</b>	<b>26.75</b>	<b>30,315.79</b>	<b>10,228</b>	<b>40,543.79</b>	<b>29.52</b>

\*6,059 SF IS LOCATED ON THE 2 PARCELS BEING REDEVELOPED. THIS AMOUNT OF BUA IS NOT REQUIRED TO BE TREATED.  
 \*\*PROPOSED PERVIOUS PAVEMENT RECEIVES 100% CREDIT.  
 \*\*\*AMOUNT OF ON-SITE BUA FOR THE SITE AREA THAT IS NOT BEING TREATED IS 1,281 SF.  
 \*\*\*\*REMAINING AVAILABLE BUA THAT CAN BE INSTALLED WITHOUT BEING TREATED IS 4,778 SF.  
**OFF SITE PARKING CALCULATIONS FOR SITE AREA:**  
 MIN. PARKING REQ. (RESIDENTIAL) = [1.5 x 12] (1 BDRM) + [2 x 18] (2 BDRM) + [2.25 x 12] (3 BDRM) + [1 x 4 x 12] (QUAD) = 129 SPACES  
 MAX. PARKING ALLOWED (RESIDENTIAL) = [2.5 x 42] (1, 2, & 3 BDRM) + [(1 x 4 x 12) + (1 / 10 x 12)] (QUAD) = 154 SPACES  
 NUMBER OF PROVIDED PARKING SPACES = 131 (77 ARE EXISTING SPACES TO REMAIN)  
 MAX. NUMBER OF ALLOWABLE SMALL VEHICLE SPACES = 0.25 x 129 = 32 SPACES  
 NUMBER OF PROVIDED SMALL VEHICLE SPACES = 18 (EXISTING SPACES TO REMAIN)  
 MIN. NUMBER OF REQ. HANDICAPPED SPACES = 5 SPACES  
 NUMBER OF PROPOSED HANDICAPPED SPACES = 6 SPACES  
 NUMBER OF REQ. BICYCLE PARKING SPACES = 15 SPACES  
 NUMBER OF PROVIDED BICYCLE PARKING SPACES = 16 SPACES (10 ARE EXISTING SPACES)  
 THIS SITE IS NOT WITHIN A SPECIAL HIGHWAY OVERLAY DISTRICT OR ANY OTHER ZONING OVERLAY DISTRICT PER THE CITY OF WILMINGTON ZONING MAP (MAP 3137-3, DATED: OCTOBER 3, 2018)  
 CAMA LAND USE CLASSIFICATION PER THE 2006 CAMA PLAN UPDATE LAND CLASSIFICATION MAP IS URBAN.  
 THERE ARE NO WETLANDS ON THIS SITE.  
 THIS SITE IS WITHIN THE CAPE FEAR RIVER BASIN & DRAINS TO BURNT MILL CREEK (C:5w)

- FIRE AND LIFE SAFETY NOTES**
- PARKING AND LANDSCAPING CANNOT BLOCK FIRE HYDRANTS OR FDC'S. A 3-FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE HYDRANT AND FDC.
  - FIRE HYDRANTS CANNOT BE FURTHER THAN 8' FROM THE CURB.
  - NEW HYDRANTS MUST BE BROUGHT INTO SERVICE PRIOR TO COMBUSTIBLE MATERIALS BEING DELIVERED TO THE JOB SITE.
  - ALL WEATHER ACCESS ROADS MUST BE MAINTAINED AROUND CONSTRUCTION PERMITS THROUGHOUT THE PROJECT.
  - PRIVATE UNDERGROUND FIRE LINES REQUIRE A SEPARATE UNDERGROUND FIRE LINE PERMIT FROM THE WILMINGTON FIRE & LIFE SAFETY DIVISION AT 910-343-0696.
  - A MINIMUM OF 5' SHALL SEPARATE UNDERGROUND FIRE LINES OR PRIVATE WATER MAINS FROM OTHER UNDERGROUND UTILITIES.
  - FDC'S CAN BE NO FURTHER THAN 150' FROM A FIRE HYDRANT.
  - FDC'S CAN BE NO FURTHER THAN 40' FROM FIRE DEPARTMENT VEHICLE PLACEMENT.
  - BUILDING CONSTRUCTION TYPE ACCORDING TO THE INTERNATIONAL BUILDING CODE IS V-B.
  - HYDRANTS SHALL BE OF SUFFICIENT NUMBERS TO ACCOMMODATE BASE FIRE FLOW REQUIREMENTS OF STRUCTURE.
  - IN ADDITION TO THE STANDARD COMMENTS, ADDITIONAL FIRE PROTECTION AND ACCESSIBILITY REQUIREMENTS MAY BE REQUIRED DUE TO ANY SPECIAL CIRCUMSTANCES CONCERNING THE PROJECT.
  - TAMPER SWITCHES SHALL BE INSTALLED ON ALL VALVES THAT ARE CAPABLE OF TURNING THE WATER SUPPLY OFF TO THE SPRINKLER SYSTEMS.
  - ALL GATES USED FOR VEHICULAR INGRESS AND/OR EGRESS SHALL BE ALARM/SIREN ACTIVATED. WHEN THE INGRESS & EGRESS GATES ARE OPEN THERE SHALL BE NO VERTICAL OBSTRUCTION IN THE ENTIRE WIDTH (24 FEET) OF THE DRIVE AISLE.
  - A LOCK BOX WITH A KEY FOR MANUAL OVERRIDE OF THE VEHICULAR GATES SHALL BE PROVIDED.
  - SENSORS FOR PREVENTING THE GATES FROM OPENING AND CLOSING ON VEHICLES SHALL BE PROVIDED.
  - PROVISION MUST BE MADE FOR AUTOMATIC OPENING OF THE GATES IN THE EVENT OF POWER OUTAGES.
  - AN 800 MHz RADIO SIGNAL STRENGTH SITE TEST SHALL BE PERFORMED TO DETERMINE IF A RADIO AMPLIFIER IS NEEDED.

For each open utility cut of City streets a 325 permit shall be re-issued from the City prior to occupancy and/or project acceptance.

**WILMINGTON NORTH CAROLINA**  
 Public Services • Engineering Division  
 APPROVED STORMWATER MANAGEMENT PLAN  
 Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
 Signed: \_\_\_\_\_

**Approved Construction Plan**  
 Name \_\_\_\_\_ Date \_\_\_\_\_  
 Planning \_\_\_\_\_  
 Traffic \_\_\_\_\_  
 Fire \_\_\_\_\_

**PRELIMINARY PLAT NOT FOR RECORDATION, CONVEYANCES, OR SALES**

**GRAPHIC SCALE**  
 ( IN FEET )  
 1 inch = 40 ft.

1	REVISED PER TRC COMMENTS	2-22-19
2	REVISED PER TRC COMMENTS	3-18-19
3	REVISED PER TRC COMMENTS	4-11-19
4	REVISED PER TRC COMMENTS	4-25-19

**COVER SHEET**  
 1016 BONHAM AVENUE, 1022 BONHAM AVENUE, & 2309 EVERMORE WAY  
**EVERMORE APARTMENTS EXPANSION**  
 CITY OF WILMINGTON WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

**FINAL DRAWING FOR REVIEW PURPOSES ONLY**

MALPASS ENGINEERING & SURVEYING, P.C.  
 1134 SHIPYARD BOULEVARD  
 WILMINGTON, NORTH CAROLINA 28412  
 Phone 910-392-6543  
 Fax 910-392-6503 License No. C-2920

Owner: ELEVATION APARTMENTS LLC & REMARKABLE PROPERTIES, LLC  
 10 S. CAROLINA DRIVE  
 WILMINGTON, NC 28401  
 PHONE: 910-251-5030

DATE: 1-16-19  
 SCALE: 1"=40'  
 DRAWN: JCB  
 CHECKED: JBM  
 PROJECT NO: 219  
 SHEET NO: 1  
 OF: 14

**LEGEND (PROPOSED) - SCALE: 1"=20'**

- BUFFER/SOLID FENCE
- STREET YARD
- STORM DRAIN
- STORM DRAIN DROP INLET (DI)
- DRAIN BASIN STANDARD GRATE (DBSG)
- DRAIN BASIN SOLID COVER (DBSC)
- SANITARY SEWER LINE
- SANITARY SEWER CLEANOUT
- WATER LINE
- WATER METER
- BACKFLOW PREVENTER
- GATE VALVE (G.V.)
- FIRE HYDRANT ASSEMBLY
- SPOT ELEVATION
- CONTOUR
- DRAINAGE FLOW ARROW
- SILT FENCE
- TREE PROTECTION FENCE
- LIMITS OF DISTURBANCE
- INLET PROTECTION
- CONSTRUCTION ENTRANCE
- EASEMENT
- IMPERVIOUS CONCRETE
- PERVIOUS CONCRETE
- RAISED WOODEN WALKWAY
- FOUNDATION PLANTING AREA
- OPEN SPACE
- ACTIVE RECREATION (OPEN SPACE)
- PASSIVE RECREATION (OPEN SPACE)

**LEGEND (EXISTING) - SCALE: 1"=20'**

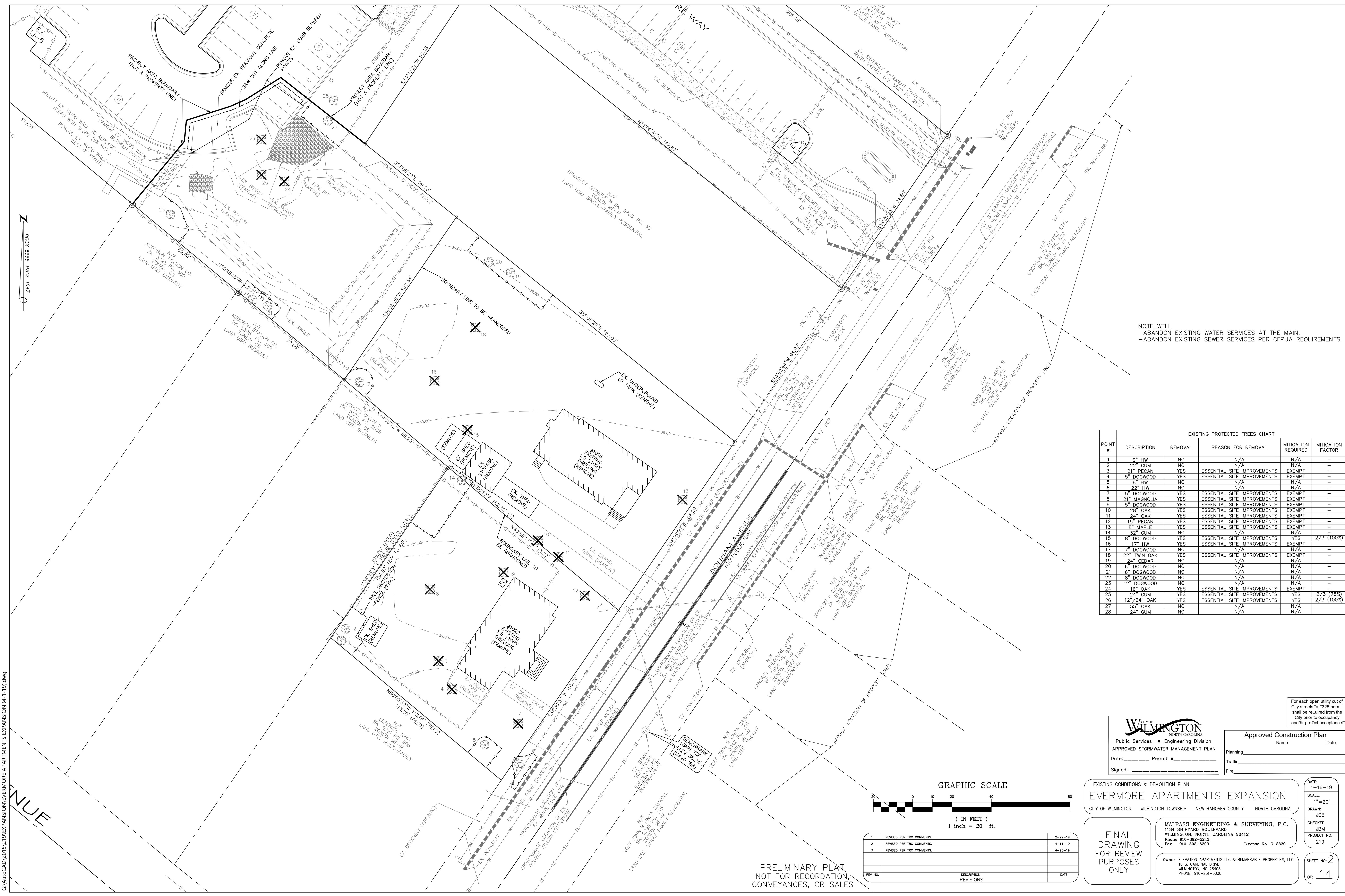
- EXISTING IRON
- SET IRON
- CONC. MONUMENT
- FIRE HYDRANT
- BACK FLOW PREVENTER
- SANITARY SEWER MANHOLE (SSMH)
- SANITARY SEWER CLEANOUT
- DROP INLET (DI)
- WATER METER
- WATER VALVE
- ELECTRIC PEDESTAL
- TELEPHONE PEDESTAL
- LIGHT POLE
- POWER POLE WITH GUY WIRE
- CENTER LINE
- R/W LINE
- ADJACENT PROPERTY LINE
- EASEMENT LINE
- BOUNDARY LINE
- GAS LINE
- OVERHEAD ELECTRIC
- UNDERGROUND ELECTRIC
- SANITARY SEWER LINE
- UNDERGROUND TELEPHONE
- OVERHEAD CABLE
- WATERLINE
- FENCE LINE
- APPROX. SPOT ELEVATION
- TREE WITH POINT # (TO REMAIN)
- TREE WITH POINT # (TO BE REMOVED)
- TREE WITH POINT # (TO BE RELOCATED)
- IMPERVIOUS CONCRETE
- GRAVEL OR RIP RAP

**WATER & SEWER CAPACITY FOR PROJECT AREA**

EXISTING WATER CAPACITY:	2 UNITS x 400 GPD/UNIT = 800 GPD
EXISTING SEWER CAPACITY:	2 UNITS x 360 GPD/UNIT = 720 GPD
PROPOSED WATER CAPACITY:	12 UNITS x 480 GPD/UNIT = 5,760 GPD
PROPOSED SEWER CAPACITY:	12 UNITS x 480 GPD/UNIT = 5,760 GPD
ADDITIONAL WATER CAPACITY REQUESTED:	4,960 GPD
ADDITIONAL SEWER CAPACITY REQUESTED:	5,040 GPD

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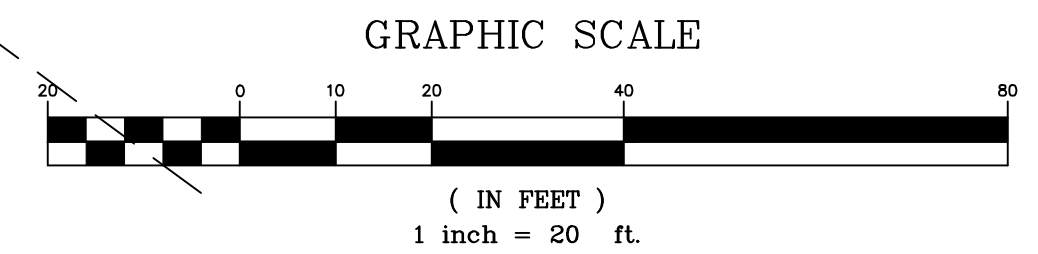
**NOTE WELL**  
 -ABANDON EXISTING WATER SERVICES AT THE MAIN.  
 -ABANDON EXISTING SEWER SERVICES PER CFPUA REQUIREMENTS.

EXISTING PROTECTED TREES CHART					
POINT #	DESCRIPTION	REMOVAL	REASON FOR REMOVAL	MITIGATION REQUIRED	MITIGATION FACTOR
1	9" HW	NO	N/A	N/A	--
2	22" GUM	NO	N/A	N/A	--
3	21" PECAN	YES	ESSENTIAL SITE IMPROVEMENTS	EXEMPT	--
4	5" DOGWOOD	YES	ESSENTIAL SITE IMPROVEMENTS	EXEMPT	--
5	8" HW	NO	N/A	N/A	--
6	22" HW	NO	N/A	N/A	--
7	5" DOGWOOD	YES	ESSENTIAL SITE IMPROVEMENTS	EXEMPT	--
8	21" MAGNOLIA	YES	ESSENTIAL SITE IMPROVEMENTS	EXEMPT	--
9	5" DOGWOOD	YES	ESSENTIAL SITE IMPROVEMENTS	EXEMPT	--
10	28" OAK	YES	ESSENTIAL SITE IMPROVEMENTS	EXEMPT	--
11	24" OAK	YES	ESSENTIAL SITE IMPROVEMENTS	EXEMPT	--
12	15" PECAN	YES	ESSENTIAL SITE IMPROVEMENTS	EXEMPT	--
13	8" MAPLE	YES	ESSENTIAL SITE IMPROVEMENTS	EXEMPT	--
14	32" GUM	NO	N/A	N/A	--
15	8" DOGWOOD	YES	ESSENTIAL SITE IMPROVEMENTS	YES	2/3 (100%)
16	17" HW	YES	ESSENTIAL SITE IMPROVEMENTS	EXEMPT	--
17	7" DOGWOOD	NO	N/A	N/A	--
18	22" TWIN OAK	YES	ESSENTIAL SITE IMPROVEMENTS	EXEMPT	--
19	24" CEDAR	NO	N/A	N/A	--
20	6" DOGWOOD	NO	N/A	N/A	--
21	6" DOGWOOD	NO	N/A	N/A	--
22	8" DOGWOOD	NO	N/A	N/A	--
23	12" DOGWOOD	NO	N/A	N/A	--
24	16" OAK	YES	ESSENTIAL SITE IMPROVEMENTS	EXEMPT	--
25	24" GUM	YES	ESSENTIAL SITE IMPROVEMENTS	YES	2/3 (75%)
26	12"/24" OAK	YES	ESSENTIAL SITE IMPROVEMENTS	YES	2/3 (100%)
27	55" OAK	NO	N/A	N/A	--
28	24" GUM	NO	N/A	N/A	--

For each open utility cut of City streets a 325 permit shall be required from the City prior to occupancy and/or project acceptance.

**WILMINGTON**  
 NORTH CAROLINA  
 Public Services • Engineering Division  
 APPROVED STORMWATER MANAGEMENT PLAN  
 Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
 Signed: \_\_\_\_\_

**Approved Construction Plan**  
 Name \_\_\_\_\_ Date \_\_\_\_\_  
 Planning \_\_\_\_\_  
 Traffic \_\_\_\_\_  
 Fire \_\_\_\_\_



REV NO.	DESCRIPTION	DATE
1	REVISED PER TRC COMMENTS.	2-22-19
2	REVISED PER TRC COMMENTS.	4-11-19
3	REVISED PER TRC COMMENTS.	4-25-19

PRELIMINARY PLAN  
 NOT FOR RECORDATION,  
 CONVEYANCES, OR SALES

EXISTING CONDITIONS & DEMOLITION PLAN  
**EVERMORE APARTMENTS EXPANSION**  
 CITY OF WILMINGTON WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

**FINAL DRAWING FOR REVIEW PURPOSES ONLY**

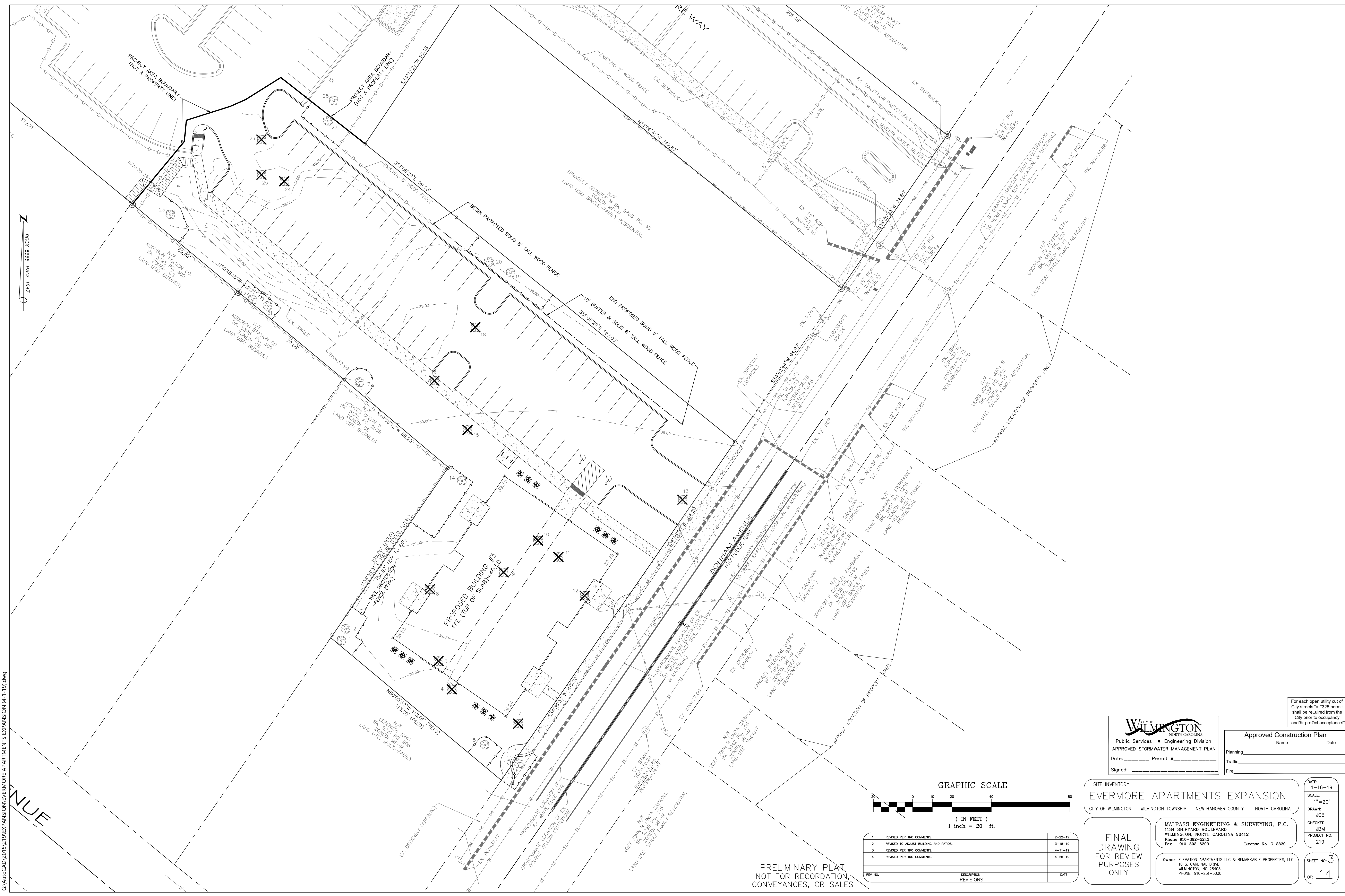
**MALPASS ENGINEERING & SURVEYING, P.C.**  
 1134 SHIPYARD BOULEVARD  
 WILMINGTON, NORTH CAROLINA 28412  
 Phone 910-392-6643  
 Fax 910-392-6993 License No. C-2920

Owner: ELEVATION APARTMENTS LLC & REMARKABLE PROPERTIES, LLC  
 10 S. CAROLINA DRIVE  
 WILMINGTON, NC 28403  
 PHONE: 910-251-5030

DATE: 1-16-19  
 SCALE: 1"=20'  
 DRAWN: JCB  
 CHECKED: JBM  
 PROJECT NO: 219  
 SHEET NO: 2  
 OF: 14

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BOOK 5665, PAGE 1647

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For each open utility cut of City streets a 325 permit shall be required from the City prior to occupancy and/or project acceptance.

**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
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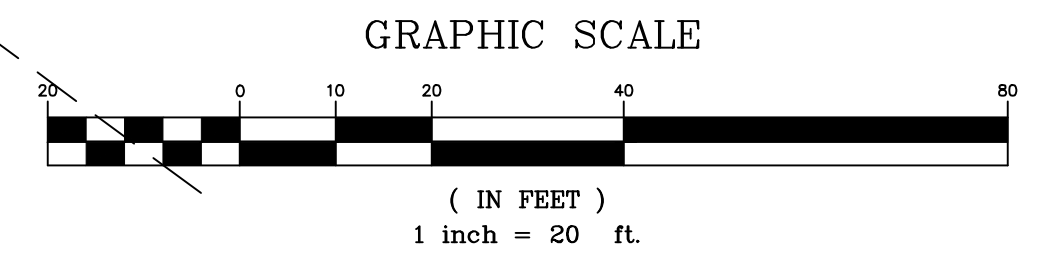
**Approved Construction Plan**

Name \_\_\_\_\_ Date \_\_\_\_\_

Planning \_\_\_\_\_

Traffic \_\_\_\_\_

Fire \_\_\_\_\_



REV NO.	DESCRIPTION	DATE
1	REVISED PER TRC COMMENTS.	2-22-19
2	REVISED TO ADJUST BUILDING AND PATIOS.	3-18-19
3	REVISED PER TRC COMMENTS.	4-11-19
4	REVISED PER TRC COMMENTS.	4-25-19

PRELIMINARY PLAN  
NOT FOR RECORDATION,  
CONVEYANCES, OR SALES

**SITE INVENTORY**  
**EVERMORE APARTMENTS EXPANSION**  
CITY OF WILMINGTON WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

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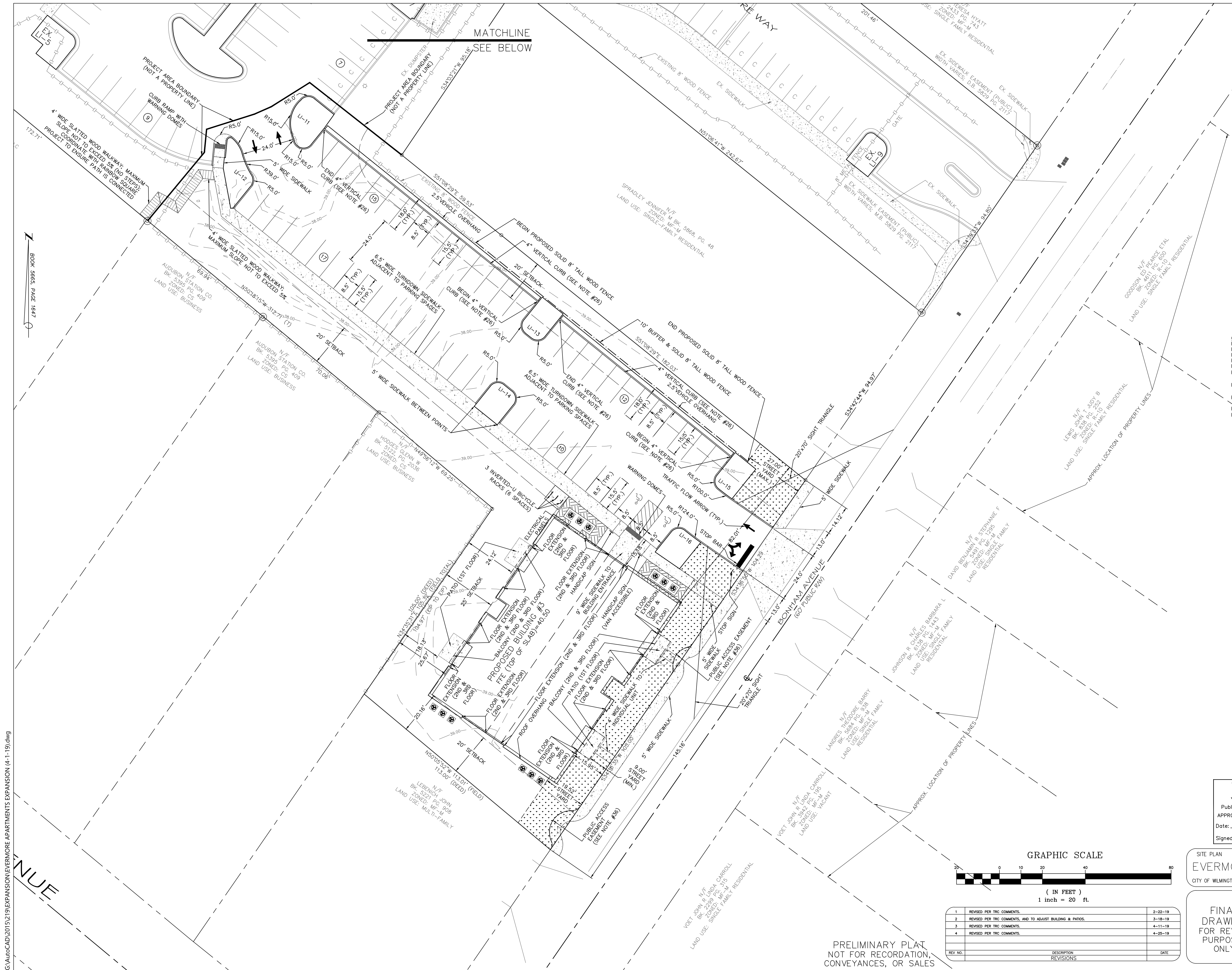
**MALPASS ENGINEERING & SURVEYING, P.C.**  
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SHEET NO: 3  
OF: 14





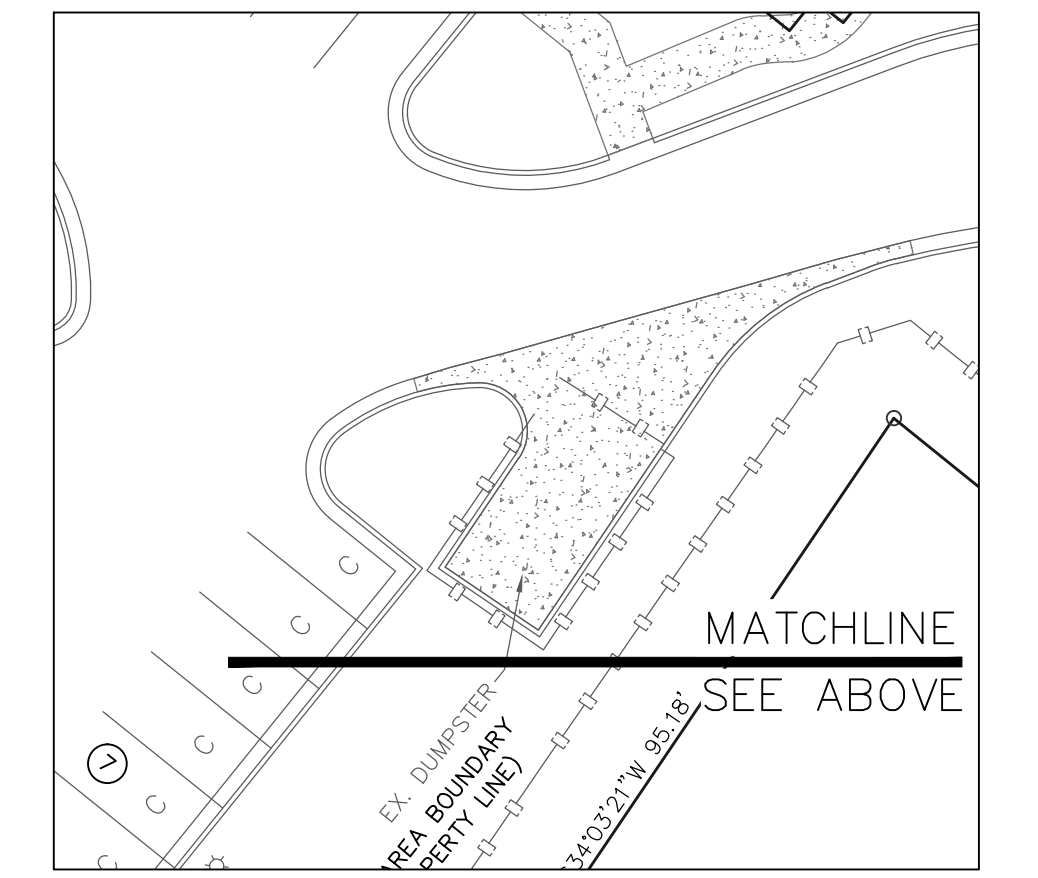
**STREET YARD ALONG BONHAM AVENUE (PROJECT AREA)**  
 STREET FRONTAGE = 105.00 + 104.29 = 209.29 FT  
 REQUIRED STREET YARD = 18' \* 184.29 = 3,317.22 SF  
 PROVIDED STREET YARD = 667.20 + 2,650.67 = 3,317.87 SF  
 IMPERVIOUS AREA = 275 SF (SIDEWALK TO BUILDING = 57 SF, SIDEWALK TO SITE = 83 SF, PATIOS = 16 SF, & FRONTAGE SIDEWALK IN EASEMENT = 119 SF)  
 PERCENT IMPERVIOUS = 275 / 3,317.87 \* 100% = 8.29%  
 REQUIRED PLANTINGS = 3,317.87 / 600 = 5.53, 6 CANOPY TREES (OR 3 UNDERSTORY TREES PER 1 CANOPY TREE)  
 PROVIDED PLANTINGS = SEE LANDSCAPE PLAN  
 \*SEE LANDSCAPE PLAN FOR PROVIDED TREES & SHRUBS

**FOUNDATION PLANTING-NORTHEAST SIDE OF BUILDING #3**  
 REQUIRED FOUNDATION PLANTING (MAX.) = (70' \* 35') \* 0.12 = 294 SF  
 PROVIDED FOUNDATION PLANTING = 171.03 + 127.89 = 298.92 SF  
 \*SEE LANDSCAPE PLAN FOR PROVIDED PLANTINGS

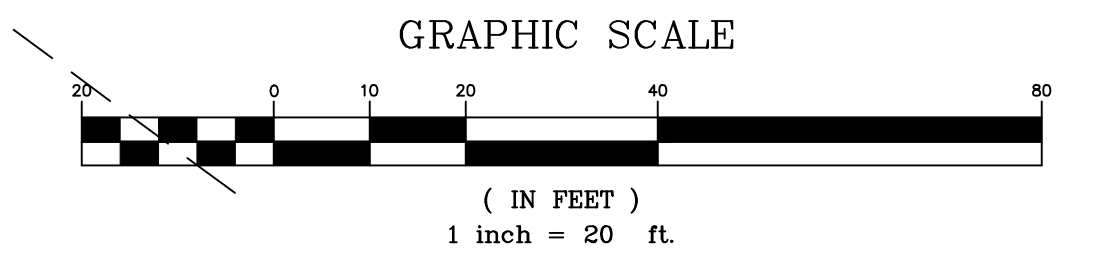
**INTERIOR LANDSCAPING ISLANDS (SITE AREA)**

LANDSCAPE ISLAND	TOTAL AREA (SF)	IMPERVIOUS AREA (SF)	PERCENT IMPERVIOUS	INTERIOR SHADING (SF)
EX. LI-1	217.17	0	0	354
EX. LI-2	217.86	0	0	354
EX. LI-3	250.28	0	0	707
EX. LI-4	251.82	0	0	354
EX. LI-5	288.65	0	0	354
EX. LI-6	REMOVED DUE TO DRIVE AISLE CONNECTION			
EX. LI-7	242.07	0	0	707
EX. LI-8	217.76	0	0	157
EX. LI-9	216.90	0	0	707
EX. LI-10	1,466.92	0	0	2,749
EX. LI-11	309.84	0	0	707
LI-12	267.77	0	0	707
LI-13	216.31	0	0	707
LI-14	218.18	0	0	707
LI-15	216.54	0	0	707
LI-16	216.25	0	0	707

**OPEN SPACE (SITE AREA)**  
 REQUIRED OPEN SPACE = 0.35 \* 137,351 = 48,073 SF  
 REQUIRED RECREATION AREA = 0.5 \* 48,073 = 24,037 SF  
 REQUIRED ACTIVE RECREATION AREA = 0.5 \* 24,037 = 12,019 SF  
 PROVIDED ACTIVE RECREATION AREA = 5,069 SF  
 REQUIRED PASSIVE RECREATION AREA = 0.5 \* 24,037 = 12,019 SF  
 PROVIDED PASSIVE RECREATION AREA = 11,804 SF (2,468 SF OF AREA IS SIDEWALK & SLATED WOOD WALKWAY)  
 PROVIDED TOTAL RECREATION AREA (ACTIVE & PASSIVE) = 5,069 + 11,804 = 16,873 SF (2,468 SF OF AREA IS SIDEWALK & SLATED WOOD WALKWAY)  
 PROVIDED OPEN SPACE (ACTIVE REC AREA, PASSIVE REC AREA, & OPEN SPACE) = 5,069 + 11,804 + 29,343 = 46,216 SF  
 REQUIRED OPEN SPACE NOT PROVIDED = 48,073 - 46,216 = 1,857 SF  
 PAYMENT IN LIEU FOR OPEN SPACE NOT PROVIDED (\$3.85/SF PER SRB APPROVAL) = 3.85 \* 1,857 = \$7,149.45



**City of Wilmington**  
 Public Services • Engineering Division  
 APPROVED STORMWATER MANAGEMENT PLAN  
 Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Planning: \_\_\_\_\_  
 Traffic: \_\_\_\_\_  
 Fire: \_\_\_\_\_  
 Signed: \_\_\_\_\_ Permit # \_\_\_\_\_



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2	REVISED PER TRC COMMENTS, AND TO ADJUST BUILDING & PATIOS.	3-18-19
3	REVISED PER TRC COMMENTS.	4-11-19
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PRELIMINARY PLAN  
 NOT FOR RECORDATION,  
 CONVEYANCES, OR SALES

**SITE PLAN**  
**EVERMORE APARTMENTS EXPANSION**  
 CITY OF WILMINGTON WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

**FINAL DRAWING FOR REVIEW PURPOSES ONLY**

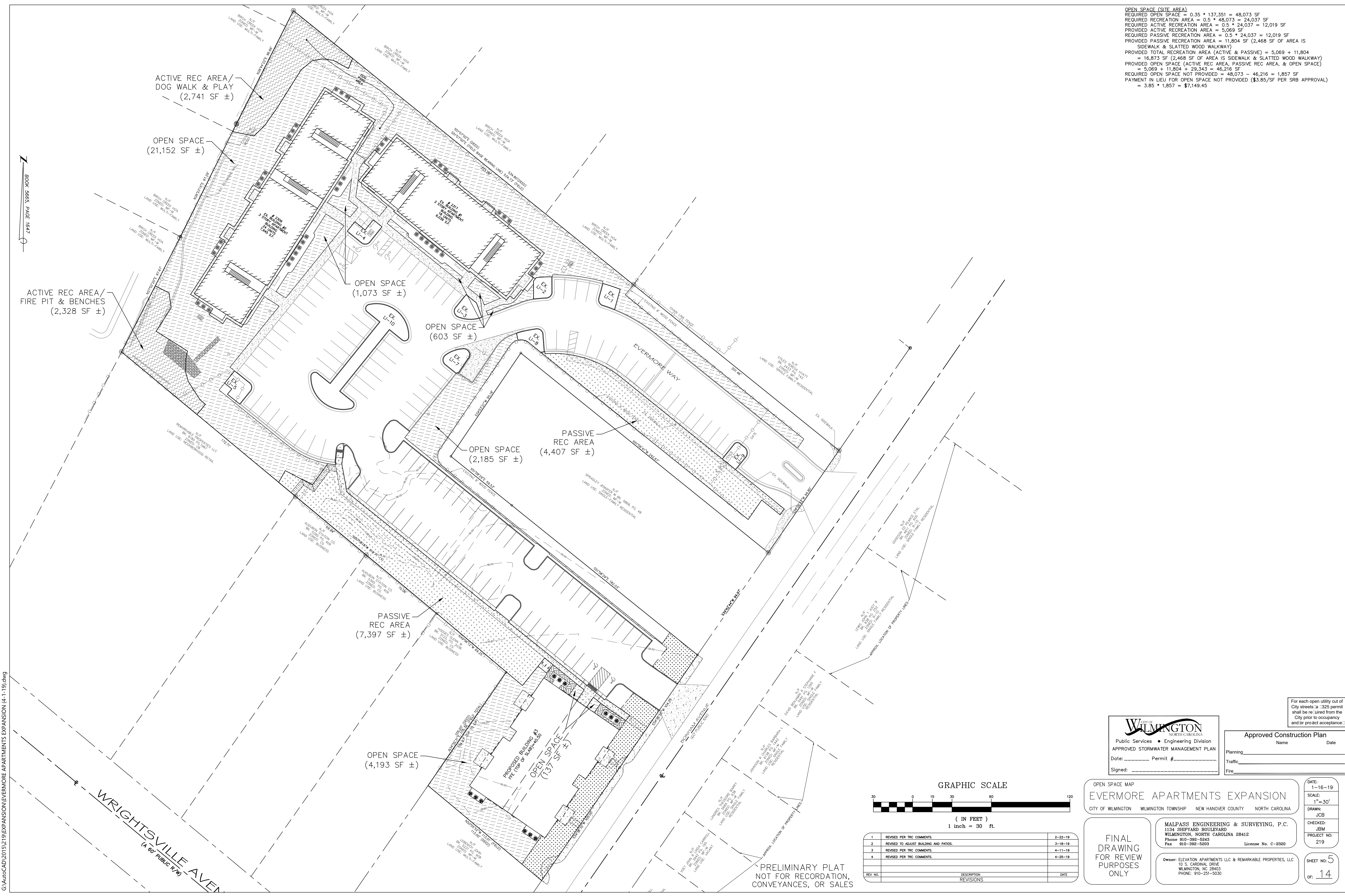
**MALPASS ENGINEERING & SURVEYING, P.C.**  
 1134 SHIPYARD BOULEVARD  
 WILMINGTON, NORTH CAROLINA 28412  
 Phone: 910-392-6643  
 Fax: 910-392-6693  
 License No. C-2920

**Owner: ELEVATION APARTMENTS LLC & REMARKABLE PROPERTIES, LLC**  
 10 S. CAROLINA DRIVE  
 WILMINGTON, NC 28403  
 PHONE: 910-251-5030

DATE: 1-16-19  
 SCALE: 1"=20'  
 DRAWN: JCB  
 CHECKED: JBM  
 PROJECT NO: 219  
 SHEET NO: 4  
 OF: 14



**OPEN SPACE (SITE AREA)**  
 REQUIRED OPEN SPACE =  $0.35 \times 137,351 = 48,073$  SF  
 REQUIRED RECREATION AREA =  $0.5 \times 48,073 = 24,037$  SF  
 REQUIRED ACTIVE RECREATION AREA =  $0.5 \times 24,037 = 12,019$  SF  
 PROVIDED ACTIVE RECREATION AREA = 5,069 SF  
 REQUIRED PASSIVE RECREATION AREA =  $0.5 \times 24,037 = 12,019$  SF  
 PROVIDED PASSIVE RECREATION AREA = 11,804 SF (2,468 SF OF AREA IS SIDEWALK & SLATTED WOOD WALKWAY)  
 PROVIDED TOTAL RECREATION AREA (ACTIVE & PASSIVE) = 5,069 + 11,804 = 16,873 SF (2,468 SF OF AREA IS SIDEWALK & SLATTED WOOD WALKWAY)  
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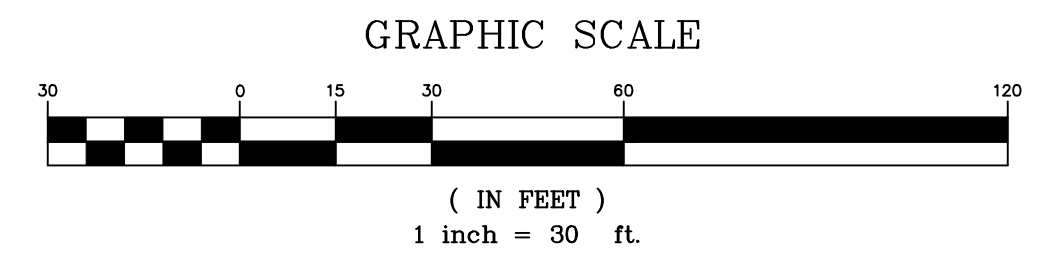
BOOK 5665, PAGE 1647

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For each open utility cut of City streets a 325 permit shall be required from the City prior to occupancy and/or project acceptance.

Public Services • Engineering Division  
 APPROVED STORMWATER MANAGEMENT PLAN  
 Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
 Signed: \_\_\_\_\_

**Approved Construction Plan**  
 Name \_\_\_\_\_ Date \_\_\_\_\_  
 Planning \_\_\_\_\_  
 Traffic \_\_\_\_\_  
 Fire \_\_\_\_\_



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OPEN SPACE MAP  
**EVERMORE APARTMENTS EXPANSION**  
 CITY OF WILMINGTON WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

**FINAL DRAWING FOR REVIEW PURPOSES ONLY**

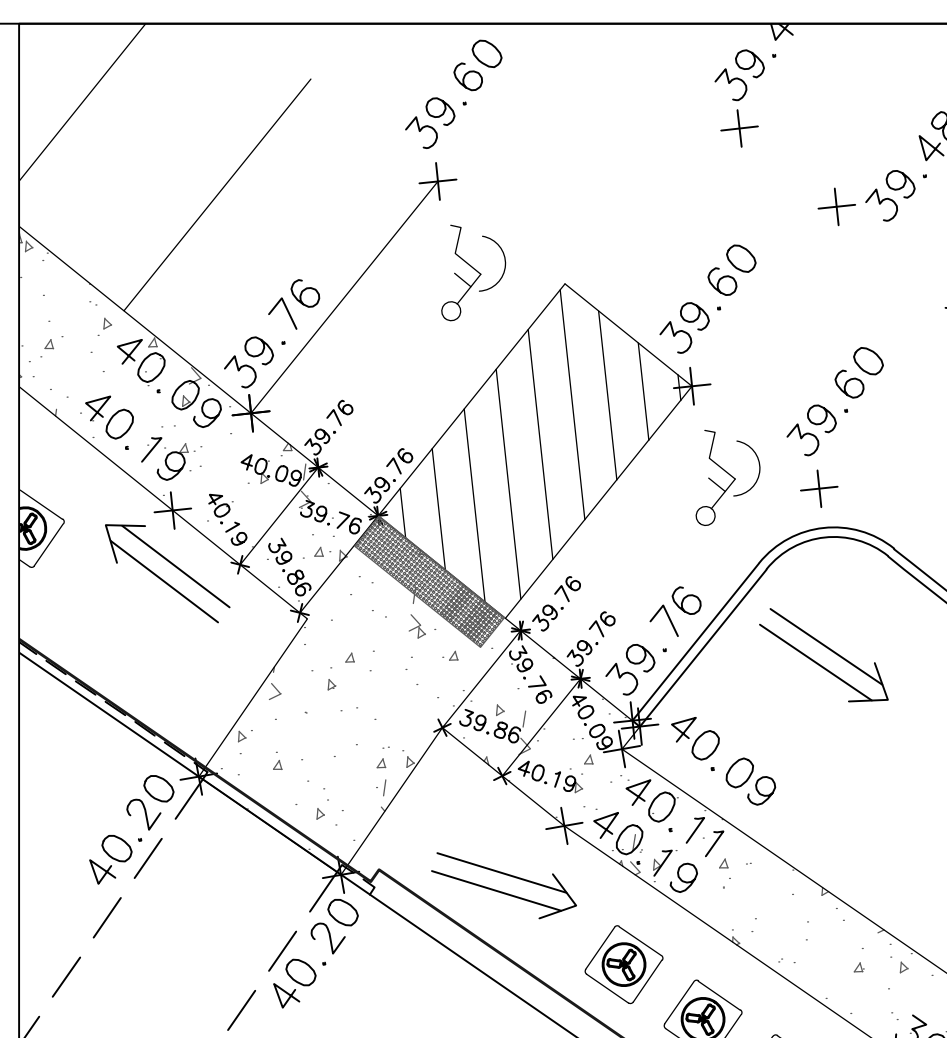
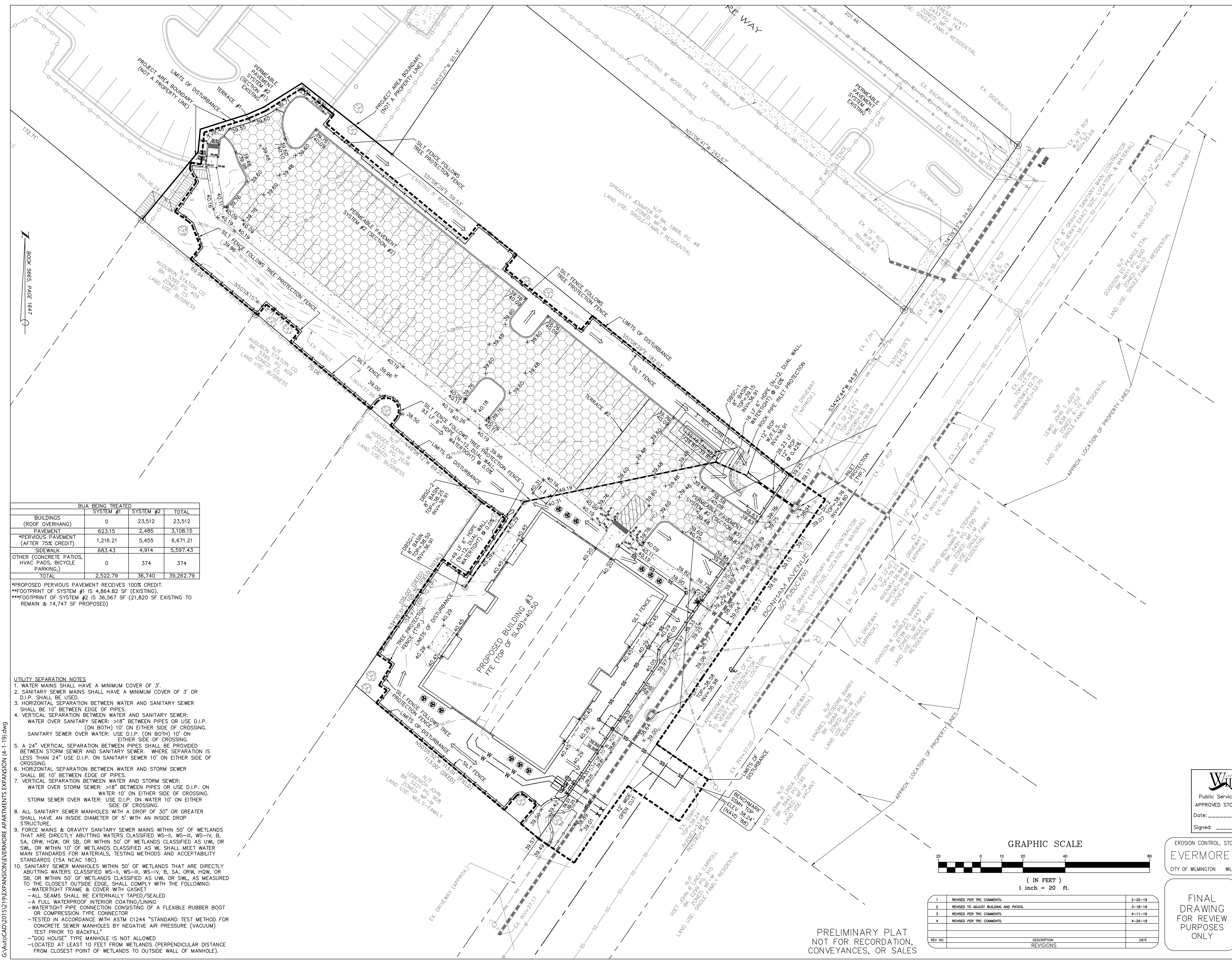
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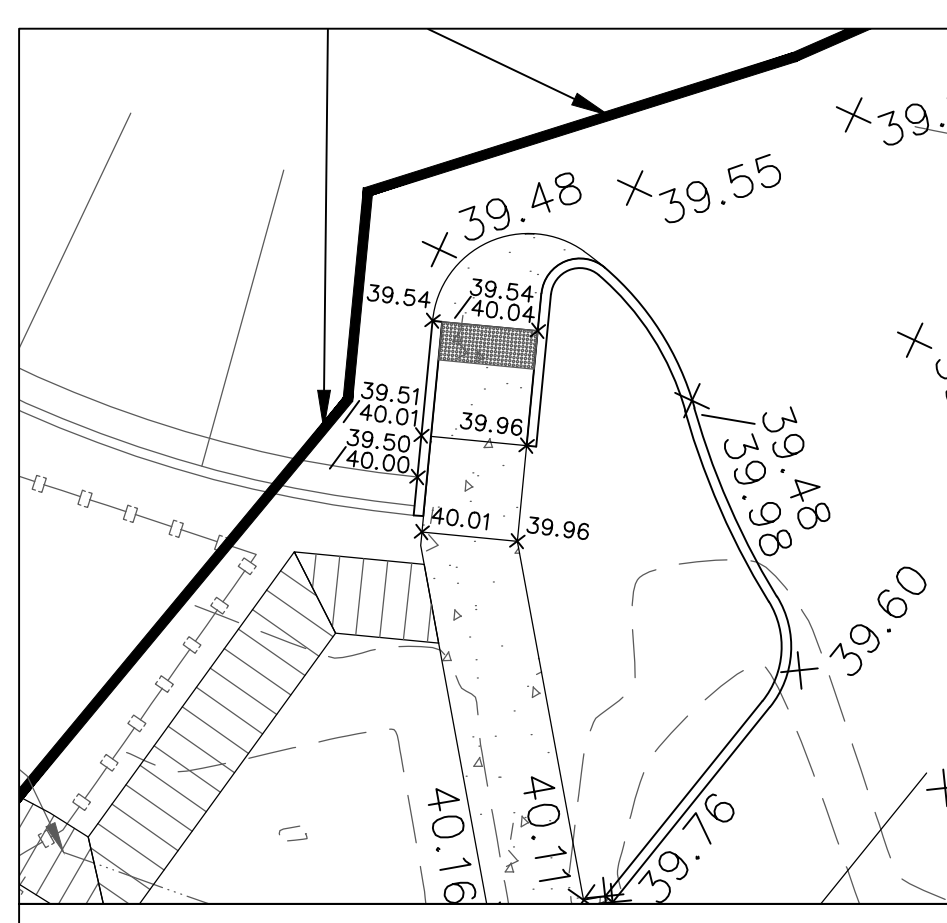
DATE: 1-16-19  
 SCALE: 1"=30'  
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 CHECKED: JBM  
 PROJECT NO: 219  
 SHEET NO: 5  
 OF: 14

PRELIMINARY PLAT  
 NOT FOR RECORDATION,  
 CONVEYANCES, OR SALES





ENLARGED GRADING PLAN AT HANDICAP PARKING  
SCALE: 1"=10'



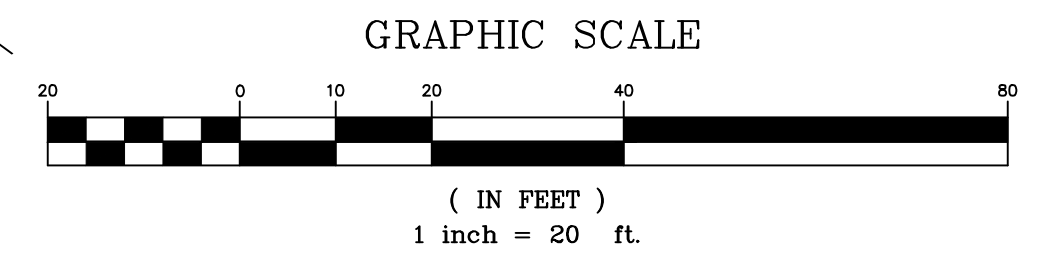
ENLARGED GRADING PLAN AT CURB RAMP  
SCALE: 1"=10'

BUA BEING TREATED	SYSTEM #1	SYSTEM #2	TOTAL
BUILDINGS (ROOF OVERHANG)	0	23,512	23,512
PAVEMENT	623.15	2,485	3,108.15
*PERVIOUS PAVEMENT (AFTER 75% CREDIT)	1,216.21	5,455	6,671.21
SIDEWALK	683.43	4,914	5,597.43
OTHER (CONCRETE PATIOS, HVAC PADS, BICYCLE PARKING)	0	374	374
<b>TOTAL</b>	<b>2,522.79</b>	<b>36,740</b>	<b>39,262.79</b>

\*PROPOSED PERVIOUS PAVEMENT RECEIVES 100% CREDIT.  
 \*\*FOOTPRINT OF SYSTEM #1 IS 4,864.82 SF (EXISTING).  
 \*\*\*FOOTPRINT OF SYSTEM #2 IS 36,567 SF (21,820 SF EXISTING TO REMAIN & 14,747 SF PROPOSED)

- UTILITY SEPARATION NOTES**
1. WATER MAINS SHALL HAVE A MINIMUM COVER OF 3'.
  2. SANITARY SEWER MAINS SHALL HAVE A MINIMUM COVER OF 3' OR D.I.P. SHALL BE USED.
  3. HORIZONTAL SEPARATION BETWEEN WATER AND SANITARY SEWER SHALL BE 10' BETWEEN EDGE OF PIPES.
  4. VERTICAL SEPARATION BETWEEN WATER AND SANITARY SEWER: WATER OVER SANITARY SEWER: >18" BETWEEN PIPES OR USE D.I.P. WATER 10' ON EITHER SIDE OF CROSSING. SANITARY SEWER OVER WATER: USE D.I.P. (ON BOTH) 10' ON EITHER SIDE OF CROSSING.
  5. A 24" VERTICAL SEPARATION BETWEEN PIPES SHALL BE PROVIDED BETWEEN STORM SEWER AND SANITARY SEWER. WHERE SEPARATION IS LESS THAN 24" USE D.I.P. ON SANITARY SEWER 10' ON EITHER SIDE OF CROSSING.
  6. HORIZONTAL SEPARATION BETWEEN WATER AND STORM SEWER SHALL BE 10' BETWEEN EDGE OF PIPES.
  7. VERTICAL SEPARATION BETWEEN WATER AND STORM SEWER: WATER OVER STORM SEWER: >18" BETWEEN PIPES OR USE D.I.P. ON WATER 10' ON EITHER SIDE OF CROSSING. STORM SEWER OVER WATER: USE D.I.P. ON WATER 10' ON EITHER SIDE OF CROSSING.
  8. ALL SANITARY SEWER MANHOLES WITH A DROP OF 30" OR GREATER SHALL HAVE AN INSIDE DIAMETER OF 5' WITH AN INSIDE DROP STRUCTURE.
  9. FORCE MAINS & GRAVITY SANITARY SEWER MAINS WITHIN 50' OF WETLANDS THAT ARE DIRECTLY ABUTTING WATERS CLASSIFIED WS-II, WS-III, WS-IV, B, SA, ORW, HQW, OR SB, OR WITHIN 50' OF WETLANDS CLASSIFIED AS UWL OR SWL, OR WITHIN 10' OF WETLANDS CLASSIFIED AS WL SHALL MEET WATER MAIN STANDARDS FOR MATERIALS, TESTING METHODS AND ACCEPTABILITY STANDARDS (15A NCAC 18C).
    - WATERTIGHT FRAME & COVER WITH GASKET
    - ALL SEAMS SHALL BE EXTERNALLY TAPED/SEALED
    - A FULL WATERPROOF INTERIOR COATING/LINING
    - WATERTIGHT PIPE CONNECTION CONSISTING OF A FLEXIBLE RUBBER BOOT OR COMPRESSION TYPE CONNECTOR
    - TESTED IN ACCORDANCE WITH ASTM C1244 "STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY NEGATIVE AIR PRESSURE (VACUUM) TEST PRIOR TO BACKFILL"
    - "DOG HOUSE" TYPE MANHOLE IS NOT ALLOWED
    - LOCATED AT LEAST 10 FEET FROM WETLANDS (PERPENDICULAR DISTANCE FROM CLOSEST POINT OF WETLANDS TO OUTSIDE WALL OF MANHOLE).
  10. SANITARY SEWER MANHOLES WITHIN 50' OF WETLANDS THAT ARE DIRECTLY ABUTTING WATERS CLASSIFIED WS-II, WS-III, WS-IV, B, SA, ORW, HQW, OR SB, OR WITHIN 50' OF WETLANDS CLASSIFIED AS UWL OR SWL, AS MEASURED TO THE CLOSEST OUTSIDE EDGE, SHALL COMPLY WITH THE FOLLOWING:
    - WATERTIGHT FRAME & COVER WITH GASKET
    - ALL SEAMS SHALL BE EXTERNALLY TAPED/SEALED
    - A FULL WATERPROOF INTERIOR COATING/LINING
    - WATERTIGHT PIPE CONNECTION CONSISTING OF A FLEXIBLE RUBBER BOOT OR COMPRESSION TYPE CONNECTOR
    - TESTED IN ACCORDANCE WITH ASTM C1244 "STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY NEGATIVE AIR PRESSURE (VACUUM) TEST PRIOR TO BACKFILL"
    - "DOG HOUSE" TYPE MANHOLE IS NOT ALLOWED
    - LOCATED AT LEAST 10 FEET FROM WETLANDS (PERPENDICULAR DISTANCE FROM CLOSEST POINT OF WETLANDS TO OUTSIDE WALL OF MANHOLE).

- CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:**
1. ALL PROPOSED ADDITIONS TO THE CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) WATER DISTRIBUTION AND SANITARY SEWER COLLECTION SYSTEMS, AS SHOWN AND SPECIFIED HEREIN, SHALL BE DESIGNED AND CONSTRUCTED TO CONFORM TO STATE RULES AND THE CFPUA'S MINIMUM TECHNICAL STANDARDS. THE CFPUA MINIMUM TECHNICAL STANDARDS ARE CONTAINED IN THE CURRENT DESIGN GUIDANCE MANUAL, MATERIAL SPECIFICATION MANUAL, TECHNICAL SPECIFICATIONS FOR CONSTRUCTION, AND STANDARD DRAWING DETAILS.
  2. SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
  3. WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE 18" INSIDE RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE 18" INSIDE RIGHT-OF-WAY LINE. ALL SEWER SERVICES CONNECTING INTO DUCTILE IRON MAINS SHALL ALSO BE CONSTRUCTED OF DIP.
  4. MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
  5. NO FLEXIBLE COUPLINGS SHALL BE USED.
  6. ALL STAINLESS STEEL FASTENERS SHALL BE TYPE 316.
  7. CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS.
  8. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.
  9. UNUSED SERVICES SHALL BE ABANDONED. ABANDONED WATER SERVICES SHALL BE DISCONNECTED FROM MAIN.
  10. A MINIMUM OF 10' OF MAIN LINE SHALL BE REPLACED FOR NEW CONNECTIONS TO EXISTING CLAY GRAVITY SEWER MAINS.



REV NO.	DESCRIPTION	DATE
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2	REVISED TO ADJUST BUILDING AND PATIOS.	3-18-19
3	REVISED PER TRC COMMENTS.	4-11-19
4	REVISED PER TRC COMMENTS.	4-25-19

PRELIMINARY PLAT  
NOT FOR RECORDATION,  
CONVEYANCES, OR SALES

**WILMINGTON**  
NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN

Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Planning: \_\_\_\_\_  
 Traffic: \_\_\_\_\_  
 Fire: \_\_\_\_\_

Signed: \_\_\_\_\_ Permit # \_\_\_\_\_

EROSION CONTROL, STORMWATER, & UTILITY PLAN  
**EVERMORE APARTMENTS EXPANSION**  
 CITY OF WILMINGTON WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

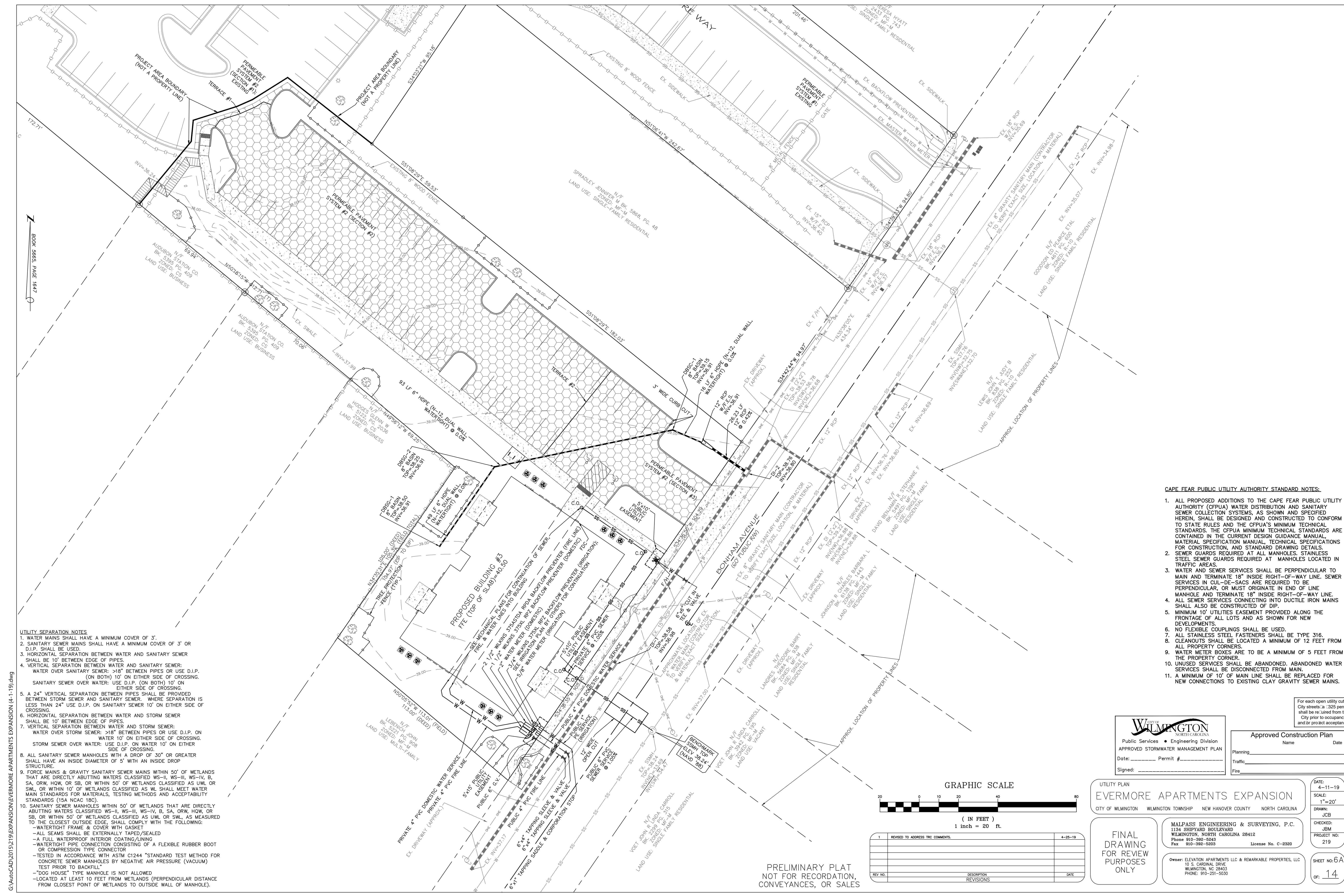
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 CHECKED: JBM  
 PROJECT NO: 219  
 SHEET NO: 6  
 OF: 14

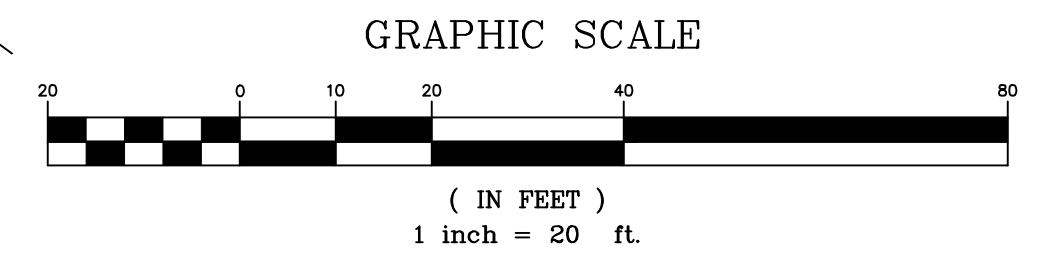
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- UTILITY SEPARATION NOTES**
1. WATER MAINS SHALL HAVE A MINIMUM COVER OF 3'.
  2. SANITARY SEWER MAINS SHALL HAVE A MINIMUM COVER OF 3' OR D.I.P. SHALL BE USED.
  3. HORIZONTAL SEPARATION BETWEEN WATER AND SANITARY SEWER SHALL BE 10' BETWEEN EDGE OF PIPES.
  4. VERTICAL SEPARATION BETWEEN WATER AND SANITARY SEWER: WATER OVER SANITARY SEWER: >18" BETWEEN PIPES OR USE D.I.P. SANITARY SEWER OVER WATER: USE D.I.P. (ON BOTH) 10' ON EITHER SIDE OF CROSSING.
  5. A 24" VERTICAL SEPARATION BETWEEN PIPES SHALL BE PROVIDED BETWEEN STORM SEWER AND SANITARY SEWER. WHERE SEPARATION IS LESS THAN 24" USE D.I.P. ON SANITARY SEWER 10' ON EITHER SIDE OF CROSSING.
  6. HORIZONTAL SEPARATION BETWEEN WATER AND STORM SEWER SHALL BE 10' BETWEEN EDGE OF PIPES.
  7. VERTICAL SEPARATION BETWEEN WATER AND STORM SEWER: WATER OVER STORM SEWER: >18" BETWEEN PIPES OR USE D.I.P. ON WATER 10' ON EITHER SIDE OF CROSSING. STORM SEWER OVER WATER: USE D.I.P. ON WATER 10' ON EITHER SIDE OF CROSSING.
  8. ALL SANITARY SEWER MANHOLES WITH A DROP OF 30" OR GREATER SHALL HAVE AN INSIDE DIAMETER OF 5' WITH AN INSIDE DROP STRUCTURE.
  9. FORCE MAINS & GRAVITY SANITARY SEWER MAINS WITHIN 50' OF WETLANDS THAT ARE DIRECTLY ABUTTING WATERS CLASSIFIED WS-II, WS-III, WS-IV, B, SA, ORW, HQW, OR SB, OR WITHIN 50' OF WETLANDS CLASSIFIED AS UWL OR SWL, OR WITHIN 10' OF WETLANDS CLASSIFIED AS WL SHALL MEET WATER MAIN STANDARDS FOR MATERIALS, TESTING METHODS AND ACCEPTABILITY STANDARDS (15A NCAC 18C).
    - WATERTIGHT FRAME & COVER WITH GASKET
    - ALL SEAMS SHALL BE EXTERNALLY TAPED/SEALED
    - A FULL WATERPROOF INTERIOR COATING/LINING
    - WATERTIGHT PIPE CONNECTION CONSISTING OF A FLEXIBLE RUBBER BOOT OR COMPRESSION TYPE CONNECTOR
    - TESTED IN ACCORDANCE WITH ASTM C1244 "STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY NEGATIVE AIR PRESSURE (VACUUM) TEST PRIOR TO BACKFILL"
    - "DOG HOUSE" TYPE MANHOLE IS NOT ALLOWED
    - LOCATED AT LEAST 10 FEET FROM WETLANDS (PERPENDICULAR DISTANCE FROM CLOSEST POINT OF WETLANDS TO OUTSIDE WALL OF MANHOLE).
  10. SANITARY SEWER MANHOLES WITHIN 50' OF WETLANDS THAT ARE DIRECTLY ABUTTING WATERS CLASSIFIED WS-II, WS-III, WS-IV, B, SA, ORW, HQW, OR SB, OR WITHIN 50' OF WETLANDS CLASSIFIED AS UWL OR SWL, AS MEASURED TO THE CLOSEST OUTSIDE EDGE, SHALL COMPLY WITH THE FOLLOWING:
    - WATERTIGHT FRAME & COVER WITH GASKET
    - ALL SEAMS SHALL BE EXTERNALLY TAPED/SEALED
    - A FULL WATERPROOF INTERIOR COATING/LINING
    - WATERTIGHT PIPE CONNECTION CONSISTING OF A FLEXIBLE RUBBER BOOT OR COMPRESSION TYPE CONNECTOR
    - TESTED IN ACCORDANCE WITH ASTM C1244 "STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY NEGATIVE AIR PRESSURE (VACUUM) TEST PRIOR TO BACKFILL"
    - "DOG HOUSE" TYPE MANHOLE IS NOT ALLOWED
    - LOCATED AT LEAST 10 FEET FROM WETLANDS (PERPENDICULAR DISTANCE FROM CLOSEST POINT OF WETLANDS TO OUTSIDE WALL OF MANHOLE).

- CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:**
1. ALL PROPOSED ADDITIONS TO THE CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) WATER DISTRIBUTION AND SANITARY SEWER COLLECTION SYSTEMS, AS SHOWN AND SPECIFIED HEREIN, SHALL BE DESIGNED AND CONSTRUCTED TO CONFORM TO STATE RULES AND THE CFPUA'S MINIMUM TECHNICAL STANDARDS. THE CFPUA MINIMUM TECHNICAL STANDARDS ARE CONTAINED IN THE CURRENT DESIGN GUIDANCE MANUAL, MATERIAL SPECIFICATION MANUAL, TECHNICAL SPECIFICATIONS FOR CONSTRUCTION, AND STANDARD DRAWING DETAILS.
  2. SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
  3. WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE 18" INSIDE RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE 18" INSIDE RIGHT-OF-WAY LINE. ALL SEWER SERVICES CONNECTING INTO DUCTILE IRON MAINS SHALL ALSO BE CONSTRUCTED TO D.I.P.
  4. MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
  5. NO FLEXIBLE COUPLINGS SHALL BE USED.
  6. ALL STAINLESS STEEL FASTENERS SHALL BE TYPE 316.
  7. CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS.
  8. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.
  9. UNUSED SERVICES SHALL BE ABANDONED. ABANDONED WATER SERVICES SHALL BE DISCONNECTED FROM MAIN.
  10. A MINIMUM OF 10' OF MAIN LINE SHALL BE REPLACED FOR NEW CONNECTIONS TO EXISTING CLAY GRAVITY SEWER MAINS.



REV. NO.	DESCRIPTION	DATE
1	REVISED TO ADDRESS TRC COMMENTS.	4-25-19

PRELIMINARY PLAT  
NOT FOR RECORDATION,  
CONVEYANCES, OR SALES

**WILMINGTON**  
NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN

Name \_\_\_\_\_ Date \_\_\_\_\_  
Permit # \_\_\_\_\_  
Signed: \_\_\_\_\_

UTILITY PLAN  
**EVERMORE APARTMENTS EXPANSION**  
CITY OF WILMINGTON WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

DATE: 4-11-19  
SCALE: 1"=20'  
DRAWN: JCB  
CHECKED: JBM  
PROJECT NO: 219

**MALPASS ENGINEERING & SURVEYING, P.C.**  
1134 SHIPYARD BOULEVARD  
WILMINGTON, NORTH CAROLINA 28412  
Phone 910-382-8543  
Fax 910-392-5293 License No. C-2920

Owner: ELEVATION APARTMENTS LLC & REMARKABLE PROPERTIES, LLC  
10 S. CAROLINA DRIVE  
WILMINGTON, NC 28403  
PHONE: 910-251-5030

SHEET NO: 6A  
OF: 14

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**Permanent Seeding**  
 Specifications #6.11 – Specifications  
 (Specifications are as per the "Erosion and Sediment Control Planning and Design Manual" of the state of North Carolina)  
 Table 6.11p – Seeding No. 10P for: Well-to Poorly Drained soils with Good Moisture Retention; Low Maintenance  
 Seeding mixture  
 Species Rate (lb/acre)  
 Tall fescue 80  
 Pensacola Bahiagrass 50  
 Sericea lespedeza 30  
 Kobe lespedeza 10

**Seeding Notes**  
 1. From Sept. 1 – Mar. 1, use unscarified sericea seed  
 2. On poorly drained sites omit sericea and increase Kobe to 30 lb/acre.  
 3. Where a neat appearance is desired, omit sericea and increase Kobe to 40 lb/acre.

**Nurse plants**  
 Between Apr. 15 & Aug. 15, add 10 lb/acre German millet or 15 lb/acre Sudangrass. Prior to May 1 or after Aug. 15, add 25 lb/acre rye (grain).

**Seeding dates**  
 Best Possible  
 Early spring: Feb. 15 – Mar. 20 Feb. 15 – Apr. 30  
 Fall: Sept. 1 – Sept. 30 Sept. 1 – Oct. 31

**Soil amendments** – Apply lime and fertilizer according to soil tests, or apply 3,000–5,000 lb/acre ground agricultural limestone (use the lower rate on sandy soils) and 1,000 lb/acre 10–10–10 fertilizer.  
 Mulch – Apply 4,000 lb/acre grain straw or equivalent cover of another suitable mulch. Anchor straw by tacking with asphalt, netting, or riving or by crimping with a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.  
 Maintenance – If growth is less than fully adequate, reseed, refer to soil tests or topdress with 500 lb/acre 10–10–10 fertilizer. Mow as needed when sericea is omitted from the mixture. Reseed, fertilize, and mulch damaged areas immediately.

**Table 6.11q – Seeding No. 20P for: Well-to Poorly Drained soils with Good Moisture Retention; High Maintenance**  
 Seeding mixture  
 Species Rate (lb/acre)  
 Tall fescue (blend of two or three improved varieties) 200  
 Rye (grain) 25

**Seeding dates**  
 Best: Sept. 15 – Oct. 15  
 Possible: Sept. 1 – Oct. 31 or Feb. 15 – Apr. 30

**Soil amendments** – Apply lime and fertilizer according to soil tests, or apply 3,000–5,000 lb/acre ground agricultural limestone (use the lower rate on sandy soils) and 1,000 lb/acre 10–10–10 fertilizer.  
 Mulch – Apply 4,000 lb/acre grain straw or equivalent cover of another suitable mulch. Anchor straw by tacking with asphalt, netting, or riving or by crimping with a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.  
 Maintenance – Fertilize according to soil tests or apply 40 lb/acre nitrogen in Jan. or Feb., 40 lb in Sept., and 40 lb in Nov., from a 12–4–8, 16–4–8, or similar turf fertilizer. Avoid fertilizer applications during warm weather, as this increases stand losses to disease. Reseed, fertilize, and mulch damaged areas immediately. Mow to a height of 2.5–3.5 inches as needed.

**Table 6.11r – Seeding No. 30P for: Dry Sands to Sandy Loams; High Maintenance, Fine Turf**  
 Seeding mixture  
 Species Rate (bu/1,000 ft<sup>2</sup>)  
 Tifway or Tifway II Minimum: 3  
 hybrid Bermudagrass Rapid cover: 10

**Seeding Notes**  
 1. Sprig or sod (Practice 6.12, Sodding). Moisture is essential during initial establishment. Sod must be kept well watered for 2–3 weeks, but can be planted earlier or later than sprigs.  
 2. Common Bermuda can be seeded or sprigged but does not produce a high-quality turf. It is also less cold tolerant than the hybrids, more weed prone, and a pest in flower beds and specimen plantings.

**Planting dates**  
 Apr. – July

**Soil amendments** – Apply lime and fertilizer according to soil tests, or apply 3,000 lb/acre ground agricultural limestone and 500 lb/acre 10–10–10 fertilizer, or 50 lb/acre nitrogen from turf-type slow-release fertilizer. Add 25–50 lb/acre nitrogen at 2- to 3-week intervals through midsummer.  
 Sprigging – Plant sprigs in furrows with a tractor-drawn transplanter, or broadcast by hand.  
 Furrows should be 4–6 inches deep and 2 ft apart. Place sprigs about 2 ft apart in the row with one end at or above ground level (Figure 6.11d).  
 Broadcast at rates shown above, and press sprigs into the top 1/2–2 inches of soil with a disk set straight so that sprigs are not brought back toward the surface.

**Mulch** – Do not mulch.  
 Maintenance – Water as needed and mow to 3/4- to 1-inch height. Topdress with 40 lb/acre nitrogen in Apr., 50 lb in May, 50 lb in June, 30 lb in July, and 25–50 lb in Aug.

**Table 6.11s – Seeding No. 40P for: Well-Drained Sandy Loams to Dry Sands, Coastal Plain and Eastern Edge of Piedmont; Low-to Medium-Care Lawns**  
 Seeding mixture  
 Species Rate  
 Centipedegrass 10–20 lb/acre (seed) or 33 bu/acre (sprigs)

**Seeding dates**  
 Mar. – June  
 (Sprigging can be done through July where water is available for irrigation.)

**Soil amendments** – Apply lime and fertilizer according to soil tests, or apply 300 lb/acre 10–10–10.  
 Sprigging – Plant sprigs in furrows with a tractor-drawn transplanter, or broadcast by hand.  
 Furrows should be 4–6 in ches deep and 2 ft apart. Place sprigs about 2 ft apart in the row with one end at or above ground level (Figure 6.11d).  
 Broadcast at rates shown above, and press sprigs into the top 1/2–2 inches of soil with a disk set straight so that sprigs are not brought back toward the surface.  
 Mulch – Do not mulch.  
 Maintenance – Fertilize very sparingly – 20 lb/acre nitrogen in spring with no phosphorus. Centipedegrass cannot tolerate high pH or excess fertilizer.

**Table 6.11t – Seeding No. 50P for: Well-Drained Sandy Loams to Dry Sands; Low Maintenance**  
 Seeding mixture  
 Species Rate (lb/acre)  
 Pensacola Bahiagrass 50  
 Sericea lespedeza 30  
 Common Bermudagrass 10  
 German millet 10

**Seeding Notes**  
 1. Where a neat appearance is desired, omit sericea.  
 2. Use common Bermuda only on isolated sites where it cannot become a pest. Bermudagrass may be replaced with 5 lb/acre centipedegrass.

**Seeding dates**  
 Apr. 1 – July 15

**Soil amendments** – Apply lime and fertilizer according to soil tests, or apply 3,000 lb/acre ground agricultural limestone and 500 lb/acre 10–10–10 fertilizer.  
 Mulch – Apply 4,000 lb/acre grain straw or equivalent cover of another suitable mulch. Anchor by tacking with asphalt, riving, or netting or by crimping with a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.  
 Maintenance – Refertilize the following Apr. with 50 lb/acre nitrogen. Repeat as growth requires. May be mowed only once a year. Where a neat appearance is desired, omit sericea and mow as often as need.

**Table 6.11v – Seeding No. 70P for: Grass-lined Channels; Coastal Plain, Lower Piedmont, and Dry Soils in the Central Piedmont**  
 Seeding mixture  
 Species Rate (lb/acre)  
 Common Bermudagrass 40–80 (1–2 lb/1,000 ft<sup>2</sup>)

**Seeding dates**  
 Coastal Plain: Apr. – July  
 Piedmont: Apr. 15 – June 30

**Soil amendments** – Apply lime and fertilizer according to soil tests, or apply 3,000 lb/acre ground agricultural limestone and 500 lb/acre 10–10–10 fertilizer.  
 Mulch – Use jute, excelsior matting, or other effective channel lining material to cover the bottom of channels and ditches. The lining should extend above the highest calculated depth of flow. On channel side slopes above this height, and in drainages not requiring temporary linings, apply 4,000 lb/acre grain straw and anchor straw by stapling netting over the top.  
 Mulch and anchoring materials must not be allowed to wash down slopes where they can clog drainage devices.  
 Maintenance – A minimum of 3 weeks is required for establishment. Inspect and repair mulch frequently. Refertilize the following Apr. with 50 lb/acre nitrogen.  
 Refer to Appendix 8.02 for botanical names.

**Temporary Seeding**  
 Specifications #6.10 – Specifications  
 (Specifications are as per the "Erosion and Sediment Control Planning and Design Manual" of the state of North Carolina)  
 Table 6.10a – Temporary Seeding Recommendations  
 for Late Winter and Early Spring

**Seeding Mixture**  
 Species Rate (lb/acre)  
 Rye (grain) 120  
 Annual lespedeza (Kobe in Piedmont and Coastal Plain, Korean in Mountains) 50

**Seeding dates**  
 Mountains – Above 2500 ft: Feb. 15–May 15  
 Below 2500 ft: Feb. 1–May 1  
 Piedmont – Jan. 1–May 1  
 Coastal Plain – Dec. 1–Apr. 15

**Soil amendments** – Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10–10–10 fertilizer.  
 Mulch – Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.  
 Maintenance – Refertilize if growth is not fully adequate. Reseed, refer to soil tests or topdress with 500 lb/acre 10–10–10 fertilizer. Mow as needed when sericea is omitted from the mixture. Reseed, fertilize, and mulch damaged areas immediately.

**Table 6.10b Temporary seeding Recommendations for Summer**  
 Seeding mixture  
 Species Rate (lb/acre)  
 German millet 40

**Seeding dates**  
 Mountains – May 15–Aug. 15  
 Piedmont – May 1–Aug. 15  
 Coastal Plain – Apr. 15–Aug. 15

**Soil amendments** – Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10–10–10 fertilizer.  
 Mulch – Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.  
 Maintenance – Refertilize if growth is not fully adequate. Reseed, refer to soil tests or topdress with 500 lb/acre 10–10–10 fertilizer. Mow as needed when sericea is omitted from the mixture. Reseed, fertilize, and mulch damaged areas immediately.

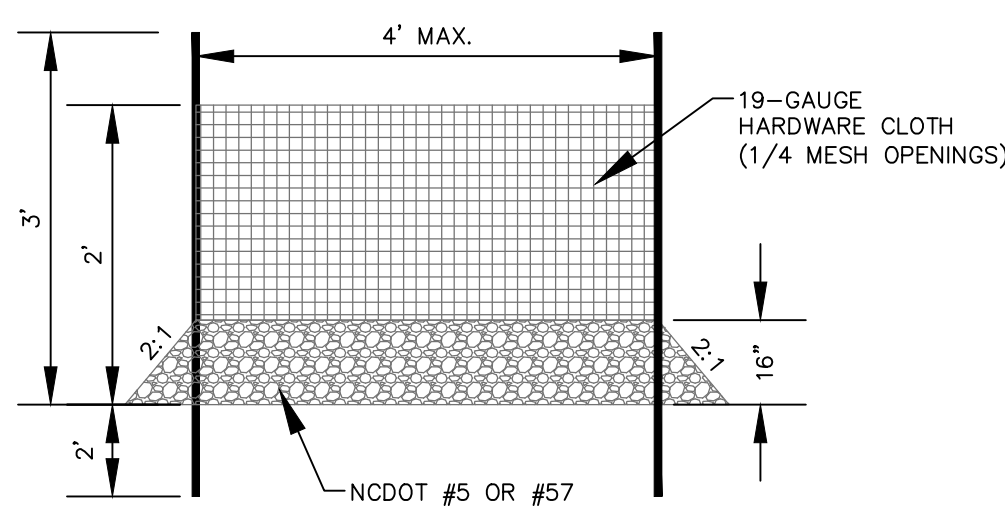
**Table 6.10c Temporary Seeding Recommendations for Fall**  
 Seeding mixture  
 Species Rate (lb/acre)  
 Rye (grain) 120

**Seeding dates**  
 Mountains – Aug. 15–Dec. 30  
 Coastal Plain and Piedmont – Aug. 15–Dec. 30

**Soil amendments** – Follow soil tests or apply 2,000 lb/acre ground agricultural limestone and 1,000 lb/acre 10–10–10 fertilizer.  
 Mulch – Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.  
 Maintenance – Repair and refer to soil tests or topdress with 50 lb/acre of nitrogen in March. If it is necessary to extend temporary cover beyond June 15, overseed with 50 lb/acre Kobe (Piedmont and Coastal Plain) or Korean (Mountains) lespedeza in late February or early March.

SITE AREA DESCRIPTION	GROUND STABILIZATION	
	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10 FEET OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE (EXCEPT FOR PERIMETERS AND HQW ZONES)

\*NEW HANOVER COUNTY LAND QUALITY SEEDING DEADLINES: 21 CALENDAR DAYS FOR ALL SLOPES & 15 WORKING DAYS FOR ALL OTHER AREAS.  
 \*\*THE SHORTER STABILIZATION TIME FRAME BETWEEN THE ABOVE CHART AND THE NEW HANOVER COUNTY LAND QUALITY SEEDING DEADLINES, FOR THE RESPECTIVE AREAS, SHALL BE FOLLOWED.



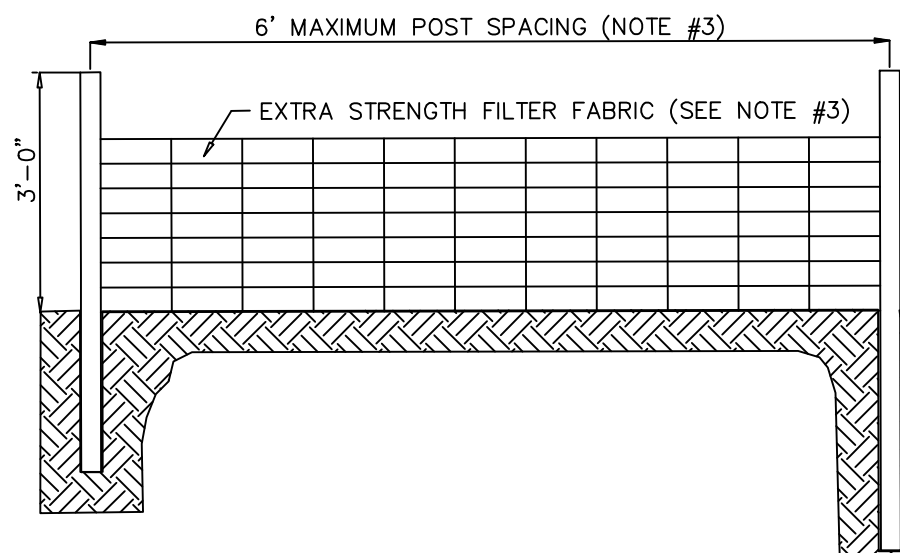
**NOTES:**  
 1. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.  
 2. DRIVE 5-FOOT STEEL POSTS 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET. A MAXIMUM OF 4 FEET APART.  
 3. SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM. FLAGGING A 2-FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.

**HARDWARE CLOTH & GRAVEL INLET PROTECTION DETAIL**  
 NOT TO SCALE

TEMPORARY SILT FENCE MATERIAL PROPERTY REQUIREMENTS (FROM NCDEQ EROSION & SEDIMENT CONTROL PLANNING & DESIGN MANUAL)					
	TEST MATERIAL	UNITS	SUPPORTED <sup>1</sup> SILT FENCE	UN-SUPPORTED SILT FENCE	TYPE OF VALUE
GRAB STRENGTH	ASTM D 4632	N (LBS)	400	550	MARV
MACHINE DIRECTION			(90)	(90)	
X-MACHINE DIRECTION			400	450	MARV
			(90)	(90)	
PERMITTIVITY <sup>2</sup>	ASTM D 4491	sec-1	0.05	0.05	MARV
APPARENT OPENING SIZE <sup>2</sup>	ASTM D 4751	mm	0.60	0.60	MAX. ARV <sup>3</sup>
		(US SIEVE #)	(30)	(30)	
ULTRAVIOLET STABILITY	ASTM D 4355	% RETAINED STRENGTH	70% AFTER 500h OF EXPOSURE	70% AFTER 500h OF EXPOSURE	TYPICAL

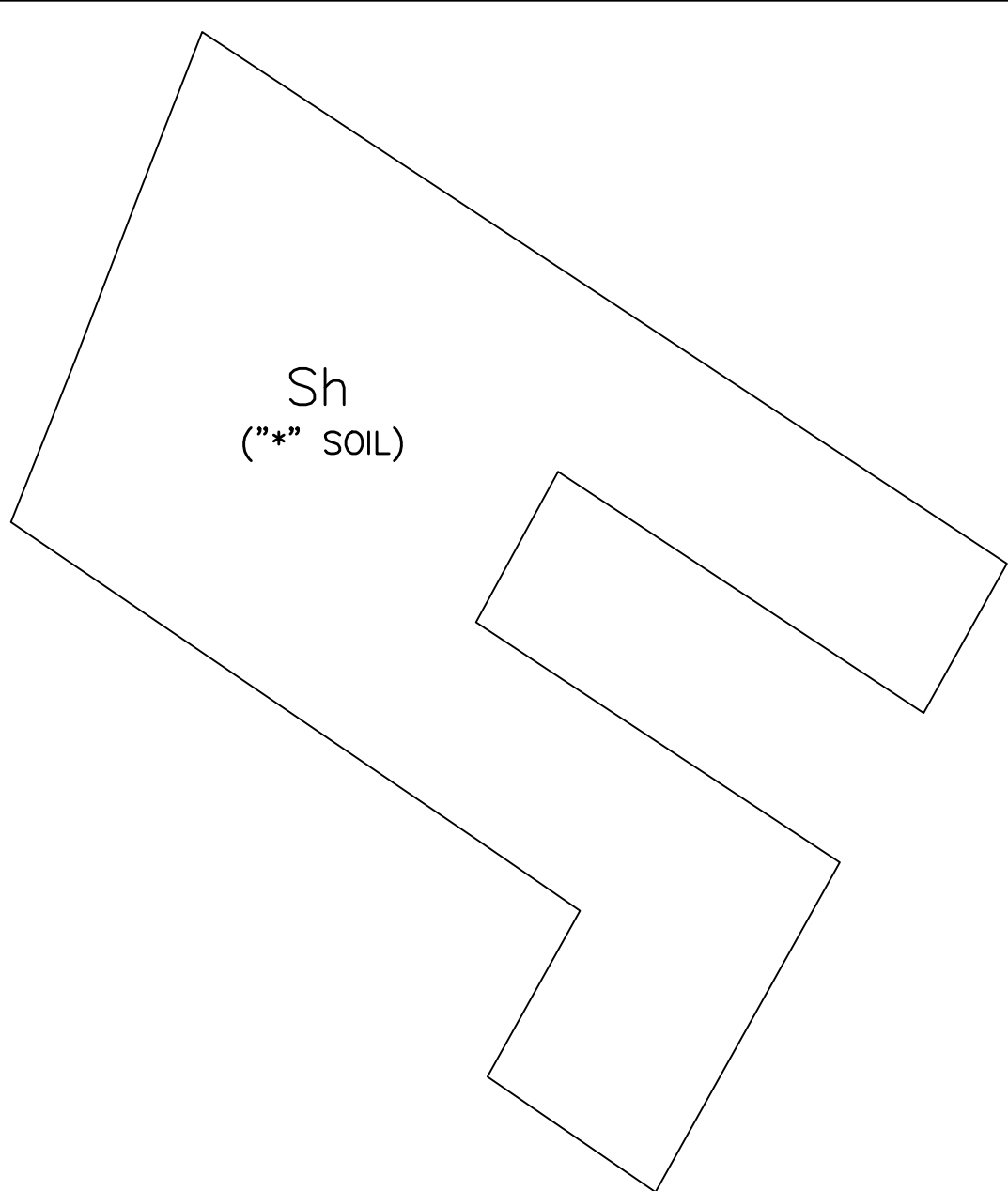
<sup>1</sup> SILT FENCE SUPPORT SHALL CONSIST OF 14 GAGE STEEL WIRE WITH A MESH SPACING OF 150 mm (6 INCHES), OR PREFABRICATED POLYMER MESH OF EQUIVALENT STRENGTH.  
<sup>2</sup> THESE DEFAULT VALUES ARE BASED ON EMPIRICAL EVIDENCE WITH A VARIETY OF SEDIMENT. FOR ENVIRONMENTALLY SENSITIVE AREAS, A REVIEW OF PREVIOUS EXPERIENCE AND/OR SITE OR REGIONALLY SPECIFIC GEOTEXTILE TESTS IN ACCORDANCE WITH TEST METHOD D 5141 SHOULD BE PERFORMED BY THE AGENCY TO CONFIRM SUITABILITY OF THESE REQUIREMENTS.  
<sup>3</sup> AS MEASURED IN ACCORDANCE WITH TEST METHOD D 4632.

STEEL POST (1.25 LB/LINEAR FT MINIMUM STEEL WITH MINIMUM LENGTH OF 5 FEET)

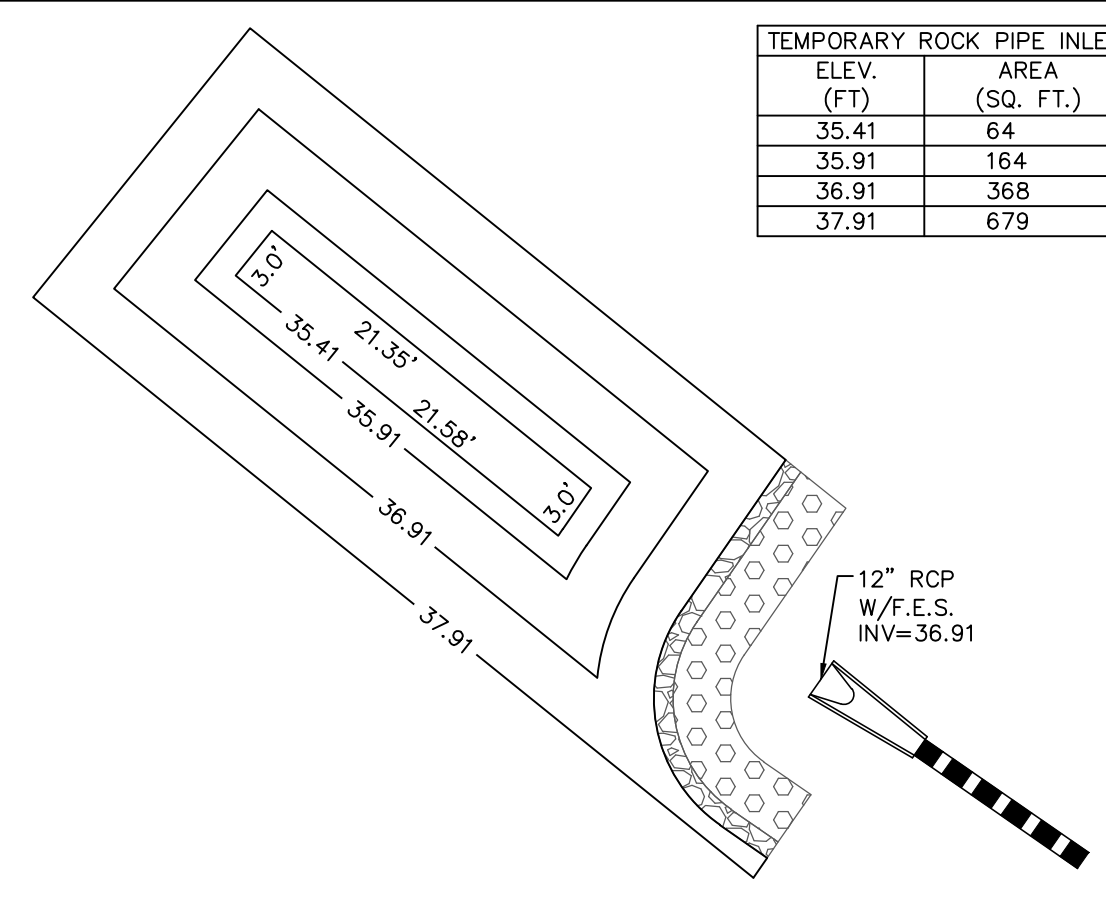


**NOTES:**  
 1. FILTER FABRIC SHALL BE A MINIMUM OF 36" IN WIDTH AND SHALL BE FASTENED ADEQUATELY TO THE WIRE AS DIRECTED BY THE ENGINEER.  
 2. STEEL POST SHALL BE 5' 0" IN HEIGHT AND BE OF SELF FASTENER ANGLE STEEL TYPE.  
 3. IF STANDARD STRENGTH FILTER FABRIC IS USED THEN A 4 GAGE STEEL WIRE WITH A MESH SPACING OF 6 INCHES, OR PREFABRICATED POLYMER MESH OR EQUIVALENT STRENGTH, SHALL BE USED, & POST SPACING MAY BE A MAXIMUM OF 8 FEET APART.

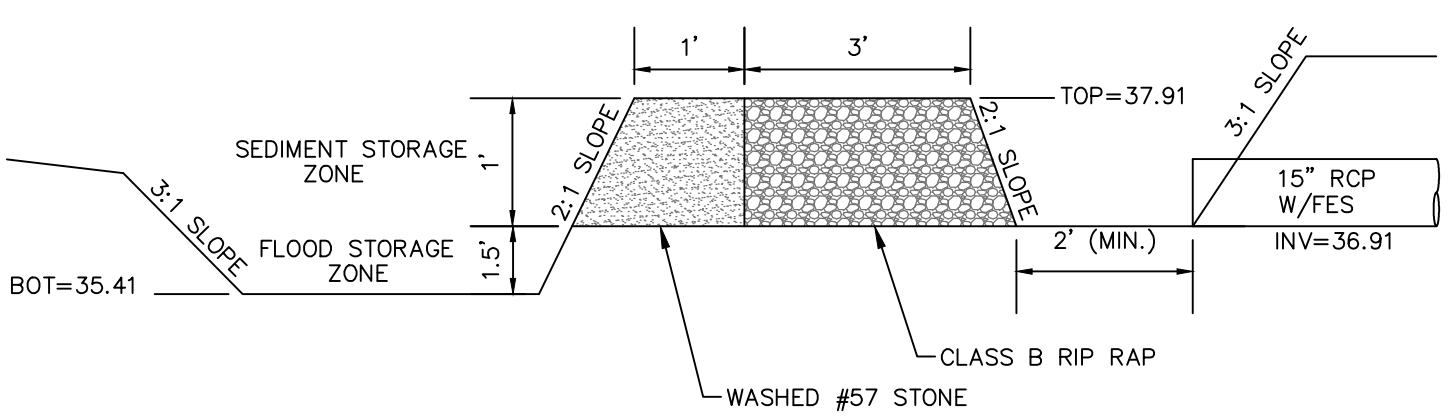
**GUIDELINES FOR TEMPORARY SILT FENCE DETAIL**  
 NOT TO SCALE



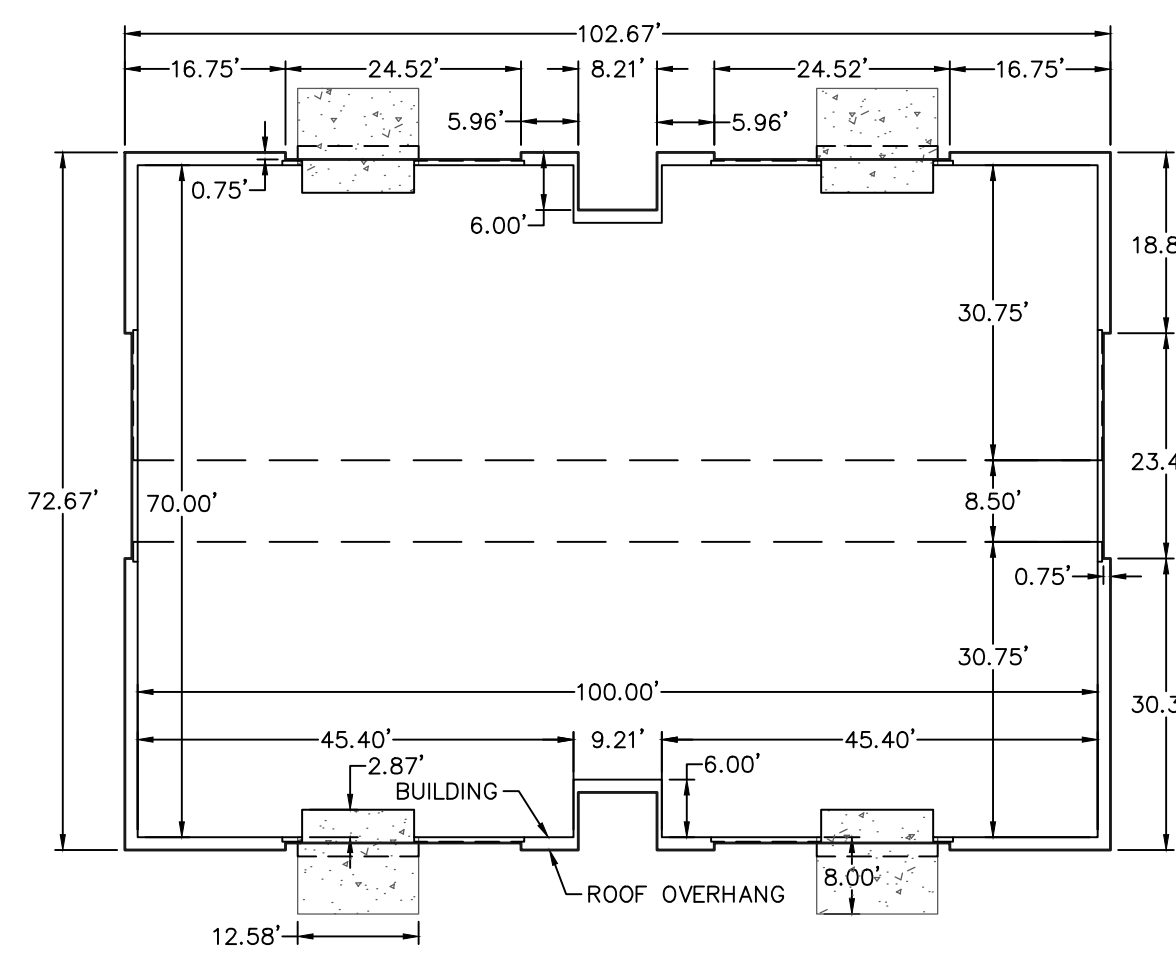
**SOILS MAP**  
 SCALE: 1"=100'



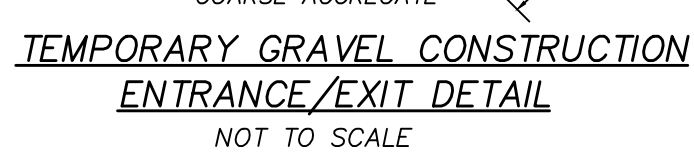
**TEMPORARY ROCK PIPE INLET PROTECTION-PLAN VIEW DETAIL**  
 N.T.S.



**TEMPORARY ROCK PIPE INLET PROTECTION-CROSS SECTION DETAIL**  
 N.T.S.



**BUILDING DIMENSION DETAIL**  
 SCALE: 1"=20'



**TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT DETAIL**  
 NOT TO SCALE

- MAINTENANCE PLAN**
- ALL EROSION CONTROL MEASURES WILL BE CHECKED AT LEAST ONCE PER 7 CALENDAR DAYS AND WITHIN 24 HOURS OF A RAIN EVENT > 1.0 INCH IN 24 HOURS. THE RAIN INSPECTION RESETS THE REQUIRED 7 CALENDAR DAY INSPECTION REQUIREMENT.
  - SEDIMENT WILL BE REMOVED FROM BEHIND SILT FENCES WHERE SEDIMENT IS 0.5 FEET DEEP AND REPAIR FABRIC IF TORN, LEAKING OR FAILING.
  - ALL POINTS OF EGRESS WILL HAVE CONSTRUCTION ENTRANCES THAT WILL BE PERIODICALLY TOP-DRESSED WITH AN ADDITIONAL 2 INCHES OF #4 STONE TO MAINTAIN PROPER DEPTH. THEY WILL BE MAINTAINED IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE. IMMEDIATELY REMOVE OBJECTIONABLE MATERIAL SPILLED, WASHED, OR TRACKED ONTO THE CONSTRUCTION ENTRANCE OR ROADWAY.
  - CHECK SEDIMENT BASINS AFTER PERIODS OF SIGNIFICANT RUNOFF. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE DESIGN DEPTH. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE RISER AND POOL AREA. GRAVEL WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS PROPERLY OR IF THE ROCK IS DISLOADED.
  - INSPECT TEMPORARY SEDIMENT TRAPS AFTER EACH SIGNIFICANT RAINFALL. REMOVE SEDIMENT AND RESTORE THE TRAP TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN THE DESIGNED DISPOSAL AREA AND REPLACE THE CONTAMINATED PART OF THE GRAVEL FACING. CHECK THE STRUCTURE FOR DAMAGE FROM EROSION OR PIPING. PERIODICALLY CHECK THE DEPTH OF THE SPILLWAY TO ENSURE IT IS A MINIMUM OF 1.5 FT BELOW THE LOW POINT OF THE EMBANKMENT. IMMEDIATELY FILL ANY SETTLEMENT OF THE EMBANKMENT TO SLIGHTLY ABOVE GRADE. ANY RIPRAP DISPLACED FROM THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE RISER AND POOL AREA. GRAVEL WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS PROPERLY OR IF THE ROCK IS DISLOADED.
  - INSPECT RIPRAP OUTLET STRUCTURES AFTER HEAVY RAINS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE OR IF STONES HAVE BEEN DISLOADED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.
  - RIP RAP SHOULD BE INSPECTED PERIODICALLY FOR SCOUR OR DISLOADED STONES. CONTROL OF WEED AND BRUSH GROWTH MAY BE NEEDED IN SOME LOCATIONS.
  - ROCK DAM: CHECK SEDIMENT AFTER EACH RAINFALL. REMOVE SEDIMENT AND RESTORE ORIGINAL VOLUME WHEN SEDIMENT ACCUMULATES TO ABOUT ONE-HALF THE DESIGN VOLUME.
  - CHECK THE STRUCTURE FOR EROSION, PIPING, AND ROCK DISPLACEMENT AFTER EACH SIGNIFICANT RAINSTORM AND REPAIR IMMEDIATELY.
  - INSPECT ALL MULCHES PERIODICALLY AND AFTER RAINSTORMS TO CHECK FOR RILL EROSION, DISLOCATION, OR FAILURE. WHERE EROSION IS OBSERVED, APPLY ADDITIONAL MULCH. IF WASHOUT OCCURS, REPAIR THE SLOPE GRADE, RESEED, AND REINSTALL MULCH. CONTINUE INSPECTIONS UNTIL VEGETATION IS FIRMLY ESTABLISHED.
  - INSPECT CHECK DAMS AND CHANNELS FOR DAMAGE AFTER EACH RUNOFF EVENT. ANTICIPATE SUBMERGENCE AND DEPOSITION ABOVE THE CHECK DAM AND PROTECT FROM HIGH FLOWS AROUND THE EDGES OF THE DAM. CORRECT ALL DAMAGE IMMEDIATELY. IF SIGNIFICANT EROSION OCCURS BETWEEN DAMS, INSTALL A PROTECTIVE RIPRAP LINER IN THAT PORTION OF THE CHANNEL. REMOVE SEDIMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION. ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. ADD STONES TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.
  - INSPECT BAFFLES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY. BE SURE TO MAINTAIN ACCESS TO THE BAFFLES. SHOULD THE FABRIC OF A BAFFLE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY. REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE BAFFLES. TAKE CARE TO AVOID DAMAGING THE BAFFLES DURING CLEANOUT. SEDIMENT DEPTH SHOULD NEVER EXCEED HALF THE DESIGNED STORAGE DEPTH. AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, REMOVE ALL BAFFLE MATERIALS AND UNSTABLE SEDIMENT DEPOSITS, BRING THE AREA TO GRADE, AND STABILIZE IT.
  - INSPECT INLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT. SEDIMENT WILL BE REMOVED FROM HARDWARE CLOTH AND GRAVEL INLET PROTECTION, BLOCK AND GRAVEL INLET PROTECTION, ROCK DOUGHNUT INLET PROTECTION AND ROCK PIPE INLET PROTECTION WHEN THE DESIGNED STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS AS DESIGNED. DEBRIS WILL BE REMOVED FROM THE ROCK AND HARDWARE CLOTH TO ALLOW PROPER DRAINAGE. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING SEDIMENT REMOVAL. SILT SACKS WILL BE EMPTIED ONCE A WEEK AND AFTER EVERY RAIN EVENT. SEDIMENT WILL BE REMOVED FROM AROUND BEAVER DAMS, DANDY SACKS AND SOCKS ONCE A WEEK AND AFTER EVERY RAIN EVENT.
  - INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED. WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND LEVEL AND APPROPRIATELY STABILIZE IT.
  - INSPECT SKIMMER SEDIMENT BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (ONE-HALF INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE HEIGHT OF THE FIRST BAFFLE. PULL THE SKIMMER TO ONE SIDE SO THAT THE SEDIMENT UNDERNEATH IT CAN BE EXCAVATED. EXCAVATE THE SEDIMENT FROM THE ENTIRE BASIN, NOT JUST AROUND THE SKIMMER OR THE FIRST CELL. MAKE SURE VEGETATION GROWING IN THE BOTTOM OF THE BASIN DOES NOT HOLD DOWN THE SKIMMER. REPAIR THE BAFFLES IF THEY ARE DAMAGED. RE-ANCHOR THE BAFFLES IF WATER IS FLOWING UNDERNEATH OR AROUND THEM. IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASIN, USUALLY JERKING ON THE ROPE WILL MAKE THE SKIMMER BOB UP AND DOWN AND DISLOGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK, PULL THE SKIMMER OVER TO THE SIDE OF THE BASIN AND REMOVE THE DEBRIS. ALSO CHECK THE ORIFICE INSIDE THE SKIMMER TO SEE IF IT IS CLOGGED. IF SO REMOVE THE DEBRIS. IF THE SKIMMER ARM OR BARRIER PIPE IS CLOGGED, THE ORIFICE CAN BE REMOVED AND THE OBSTRUCTION CLEARED WITH A PLUMBER'S SNAKE OR BY FLUSHING WITH WATER. BE SURE AND REPLACE THE ORIFICE BEFORE REPOSITIONING THE SKIMMER. CHECK THE FABRIC LINED SPILLWAY FOR DAMAGE AND MAKE ANY REQUIRED REPAIRS WITH EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE SKIMMER AND POOL AREAS. FREEZING WEATHER CAN RESULT IN ICE FORMING IN THE BASIN. SOME SPECIAL PRECAUTIONS SHOULD BE TAKEN IN THE WINTER TO PREVENT THE SKIMMER FROM PLUGGING WITH ICE.
  - ALL SEEDED AREAS WILL BE FERTILIZED, RESEED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER. SEE GROUND STABILIZATION CHART FOR STABILIZATION TIME FRAME.

**WILMINGTON**  
 NORTH CAROLINA  
 Public Services • Engineering Division  
 APPROVED STORMWATER MANAGEMENT PLAN  
 Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
 Signed: \_\_\_\_\_

**Approved Construction Plan**  
 Name \_\_\_\_\_ Date \_\_\_\_\_  
 Planning \_\_\_\_\_  
 Traffic \_\_\_\_\_  
 Fire \_\_\_\_\_

**EROSION CONTROL & STORMWATER DETAIL SHEET**  
**EVERMORE APARTMENTS EXPANSION**  
 CITY OF WILMINGTON WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

**FINAL DRAWING FOR REVIEW PURPOSES ONLY**

**MALPASS ENGINEERING & SURVEYING, P.C.**  
 1134 SHIPYARD BOULEVARD  
 WILMINGTON, NORTH CAROLINA 28412  
 Phone 910-392-6643  
 Fax 910-392-5093 License No. C-2920

**Owner: ELEVATION APARTMENTS LLC & REMARKABLE PROPERTIES, LLC**  
 10 S. CAROLINA DRIVE  
 WILMINGTON, NC 28403  
 PHONE: 910-251-5030

DATE: 1-16-19  
 SCALE: N.T.S.  
 DRAWN: JCB  
 CHECKED: JBM  
 PROJECT NO: 219  
 SHEET NO: 7  
 OF: 14

REV NO.	DESCRIPTION	DATE
1	REVISED TO ADD DETAILS.	2-22-19
2	REVISED TO ADJUST SILT FENCE DETAIL, BUILDING DIMENSION DETAIL, & #1 UNDER MAINTENANCE PLAN.	3-18-19
3	REVISED TO ADJUST PIPE SIZE ON TEMPORARY ROCK PIPE INLET PROTECTION DETAIL.	4-11-19

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For each open utility cut of City streets a 325 permit shall be required from the City prior to occupancy and/or project acceptance.



**GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT**

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

**Temporary and Permanent Groundcover\***

STABILIZATION TIMEFRAMES (Effective Aug. 3, 2011)		
SITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME EXCEPTIONS
Perimeter dikes, swales, ditches, slopes	7 days	None
High Quality Water (HQW) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed.
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length.
All other areas with slopes flatter than 4:1	14 days	None, except for perimeters and HQW Zones.

\*-For Falls Lake watershed, in disturbed areas where grading activities are incomplete, provide temporary groundcover no later than seven (7) days for slopes steeper than 3:1; ten (10) days for slopes equal to or flatter than 3:1; fourteen (14) days for areas with no slope.

**GROUND STABILIZATION SPECIFICATION**

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
<ul style="list-style-type: none"> <li>Temporary grass seed covered with straw or other mulches and tackifiers</li> <li>Hydroseeding</li> <li>Rolled erosion control products with or without temporary grass seed</li> <li>Appropriately applied straw or other mulch</li> <li>Plastic sheeting</li> </ul>	<ul style="list-style-type: none"> <li>Permanent grass seed covered with straw or other mulches and tackifiers</li> <li>Geotextile fabrics such as permanent soil reinforcement matting</li> <li>Hydroseeding</li> <li>Shrubs or other permanent plantings covered with mulch</li> <li>Uniform and evenly distributed ground cover sufficient to restrain erosion</li> <li>Structural methods such as concrete, asphalt or retaining walls</li> </ul>

**POLYACRYLAMIDES (PAMS) AND FLOCCULANTS**

- Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
- Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
- Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
- Provide ponding area for containment of treated Stormwater before discharging offsite.
- Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.



**EQUIPMENT AND VEHICLE MAINTENANCE**

- Maintain vehicles and equipment to prevent discharge of fluids.
- Provide drip pans under any stored equipment.
- Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
- Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
- Remove leaking vehicles and construction equipment from service until the problem has been corrected.
- Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

**LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE**

- Never bury or burn waste. Place litter and debris in approved waste containers.
- Provide a sufficient number of waste containers on site to manage the quantity of waste produced.
- Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
- Cover waste containers at the end of each workday and before storm events. Repair or replace damaged waste containers.
- Anchor all lightweight items in waste containers during times of high winds.
- Empty waste containers as needed to prevent overflow.
- Dispose waste off-site at an approved disposal facility.

**PAINT AND OTHER LIQUID WASTE**

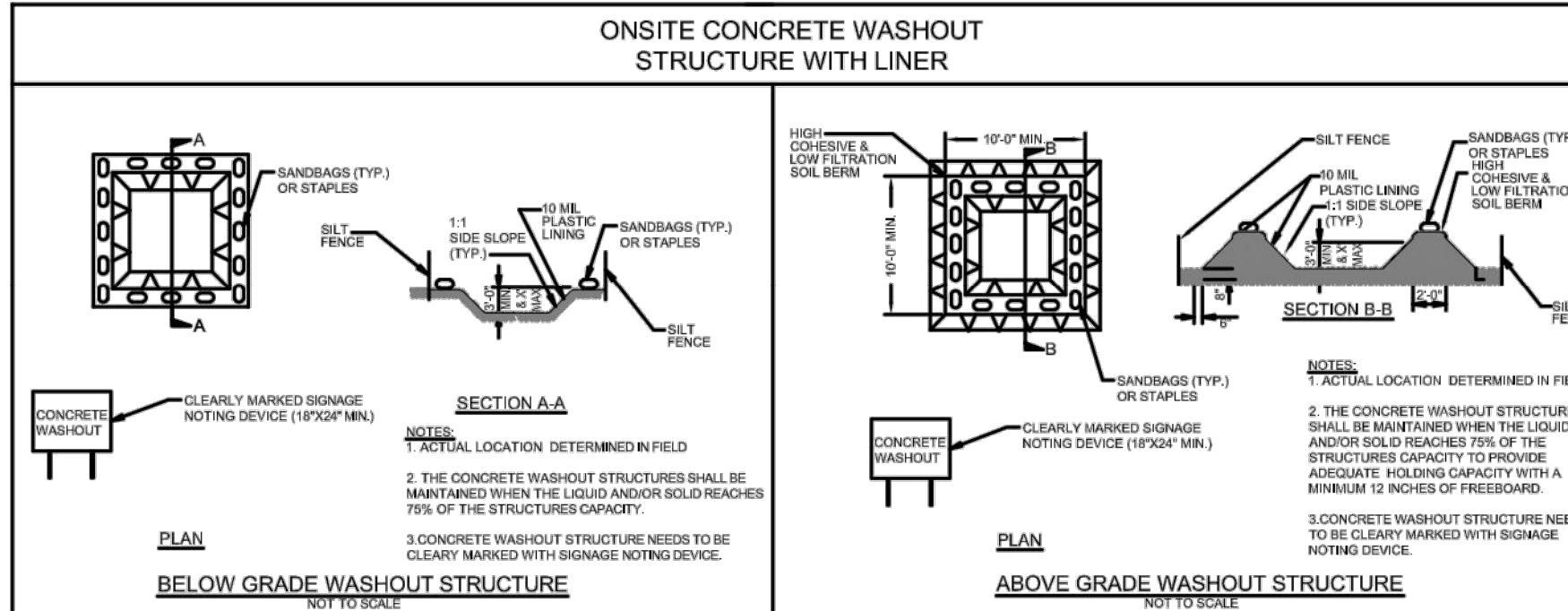
- Do not dump paint and other liquid waste into storm drains, streams or wetlands.
- Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Contain liquid wastes in a controlled area.
- Containment must be labeled, sized and placed appropriately for the needs of site.
- Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

**PORTABLE TOILETS**

- Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
- Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
- Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

**EARTHEN STOCKPILE MANAGEMENT**

- Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
- Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
- Provide stable stone access point when feasible.
- Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



**CONCRETE WASHOUTS**

- Do not discharge concrete or cement slurry from the site.
- Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
- Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
- Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
- Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
- Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
- Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
- Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
- Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
- At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

**HERBICIDES, PESTICIDES AND RODENTICIDES**

- Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
- Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
- Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
- Do not stockpile these materials onsite.

**HAZARDOUS AND TOXIC WASTE**

- Create designated hazardous waste collection areas on-site.
- Place hazardous waste containers under cover or in secondary containment.
- Do not store hazardous chemicals, drums or bagged materials directly on the ground.

For each open utility cut of City streets a .325 permit shall be required from the City prior to occupancy and/or project acceptance.

Approved Construction Plan

Name \_\_\_\_\_ Date \_\_\_\_\_

Planning \_\_\_\_\_

Traffic \_\_\_\_\_

Fire \_\_\_\_\_

City of Wilmington  
Public Services • Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN

Date: \_\_\_\_\_ Permit # \_\_\_\_\_

Signed: \_\_\_\_\_

**NCG01 GROUND STABILIZATION AND MATERIALS HANDLING**

**EFFECTIVE: 03/01/19**

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REV NO.	DESCRIPTION	DATE
1	REVISED TO MOVE DETAIL TO NEW SHEET AND ENLARGE DETAIL.	3-18-19

PRELIMINARY PLAT  
NOT FOR RECORDATION,  
CONVEYANCES, OR SALES

EROSION CONTROL & STORMWATER DETAIL SHEET

**EVERMORE APARTMENTS EXPANSION**

CITY OF WILMINGTON WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

DATE: 2-22-19  
SCALE: N.T.S.  
DRAWN: JCB  
CHECKED: JBM  
PROJECT NO: 219

MALPASS ENGINEERING & SURVEYING, P.C.  
1134 SHIPYARD BOULEVARD  
WILMINGTON, NORTH CAROLINA 28412  
Phone 910-392-6543  
Fax 910-392-6593 License No. C-2920

Owner: ELEVATION APARTMENTS LLC & REMARKABLE PROPERTIES, LLC  
10 S. CAROLINA DRIVE  
WILMINGTON, NC 28403  
PHONE: 910-251-5030

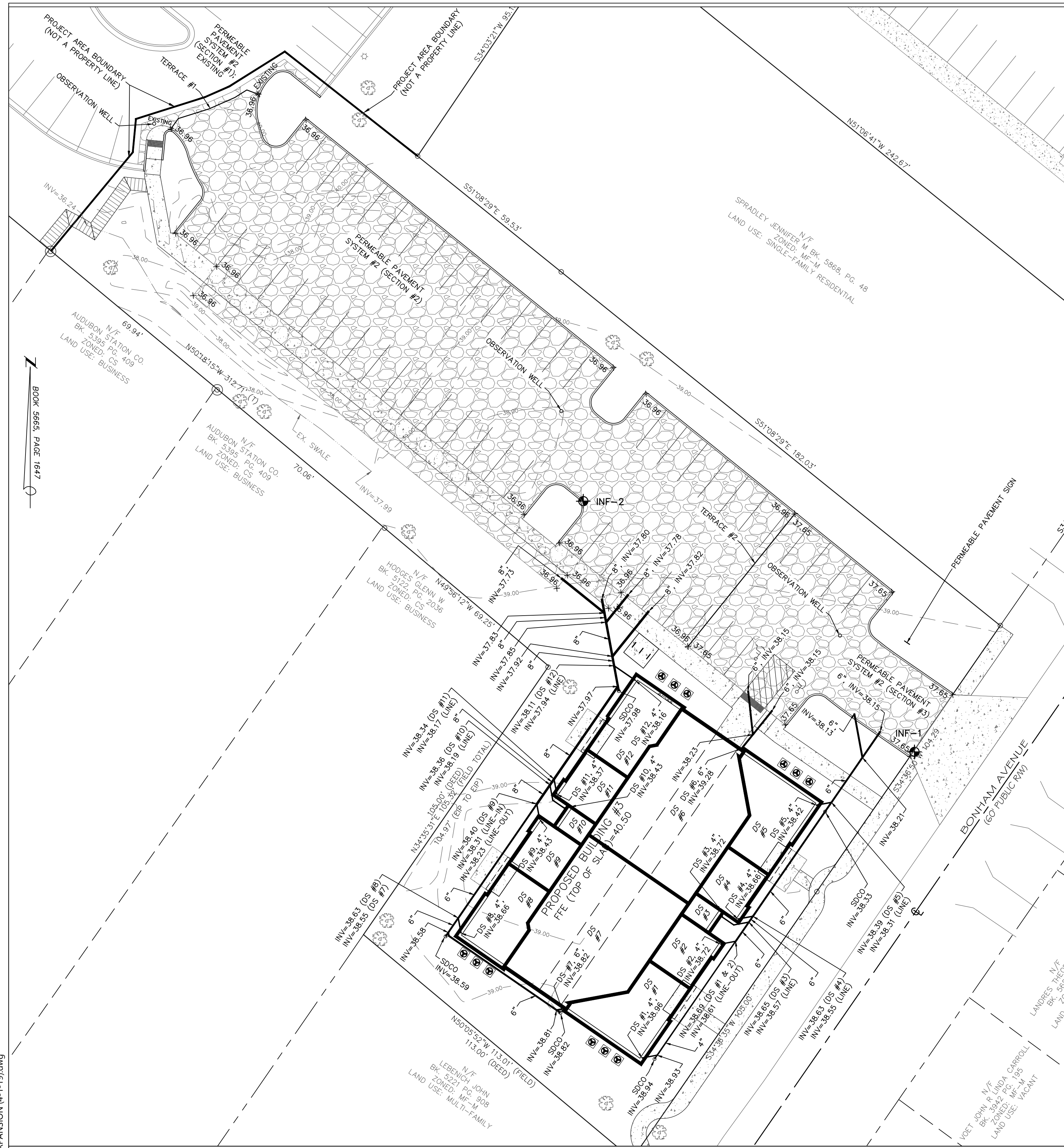
SHEET NO: 7A  
OF: 14

FINAL DRAWING FOR REVIEW PURPOSES ONLY





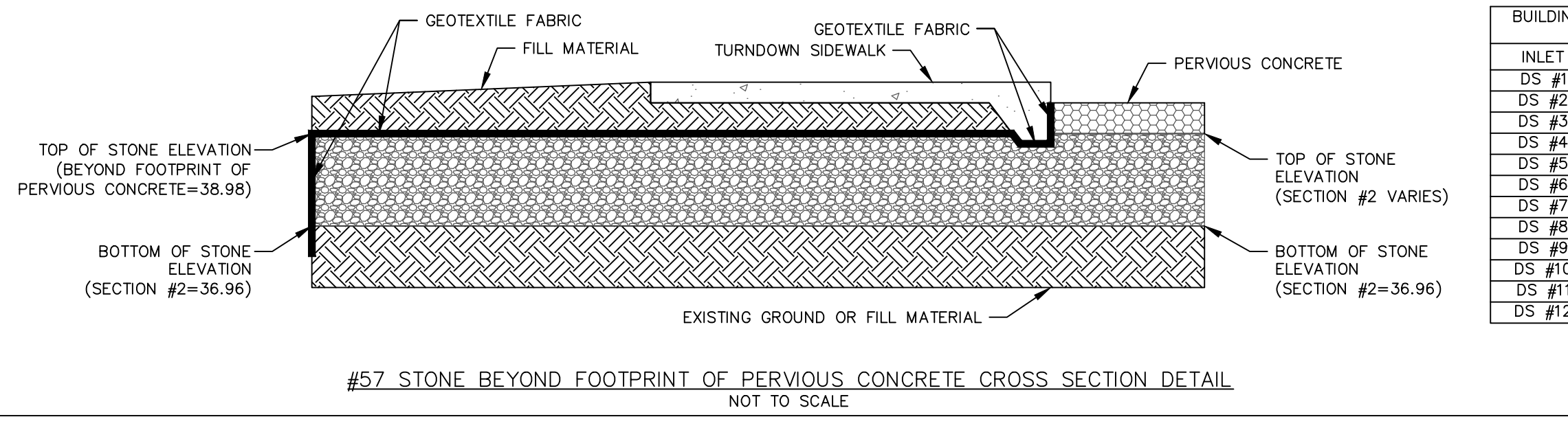




ROOF DOWNSPOUT PIPING (LAYOUT & DRAINAGE AREA MAP), TERRACE LOCATIONS, SUBGRADE GRADING, SOIL TEST LOCATIONS, OBSERVATION WELL LOCATIONS, & PERMEABLE PAVEMENT SIGN LOCATION MAP  
SCALE: 1"=20'

TEST LOCATION	EXISTING GROUND ELEVATION (FEET)**	SHWT (INCHES BELOW GROUND SURFACE)**	SHWT ELEVATION (FEET)**	CALCULATED FIELD SATURATED HYDRAULIC CONDUCTIVITY (INCHES PER HOUR)**
INF-1	39.31	79	32.73	4.50
INF-2	38.59	76	32.26	6.00

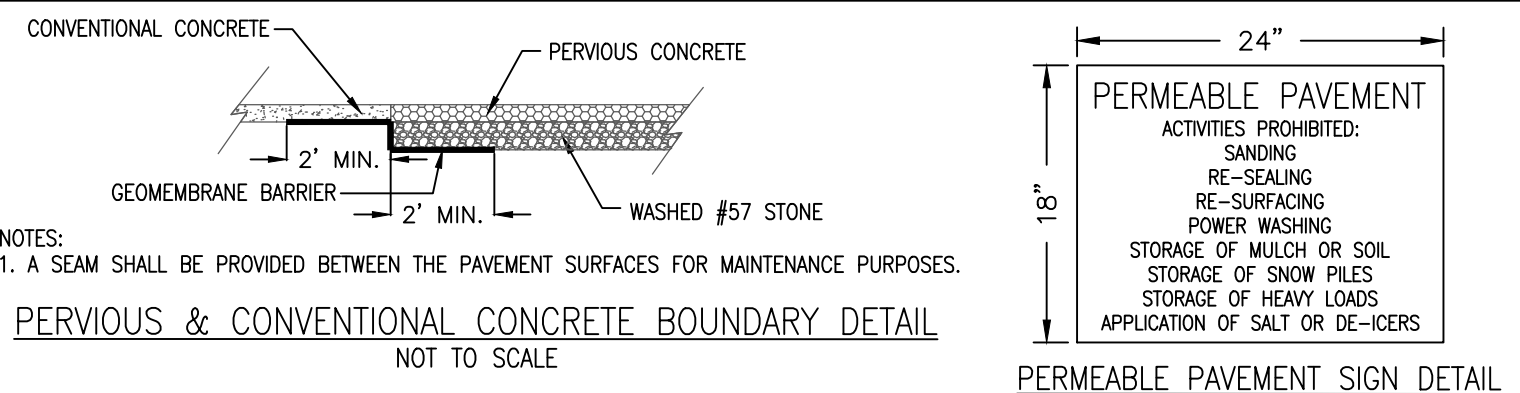
\*\* INFORMATION PROVIDED BY BATEMAN CIVIL SURVEY COMPANY.  
\*\*\* INFORMATION PROVIDED BY REFS, PLLC.  
\*\*\* CALCULATED BASED ON INFORMATION PROVIDED BY OTHERS.



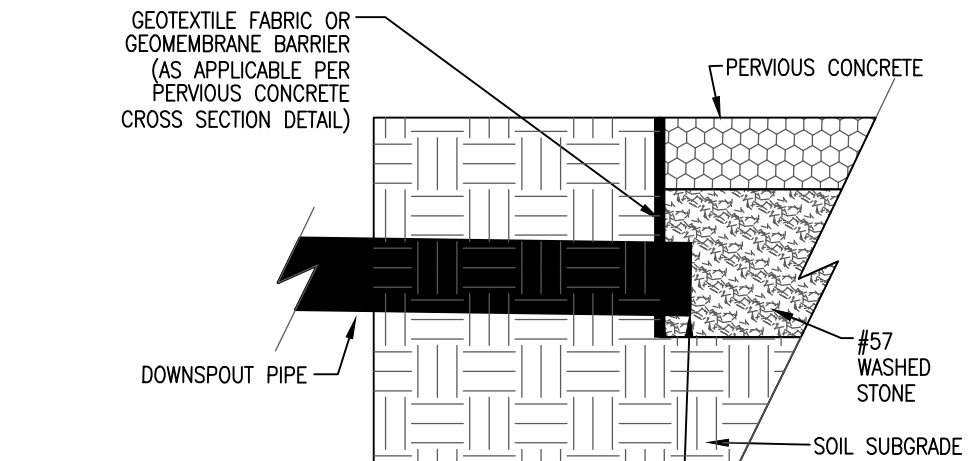
#57 STONE BEYOND FOOTPRINT OF PERVIOUS CONCRETE CROSS SECTION DETAIL  
NOT TO SCALE

INLET DRAINAGE AREA (ACRES)	
DS #1	0.014
DS #2	0.007
DS #3	0.002
DS #4	0.007
DS #5	0.014
DS #6	0.043
DS #7	0.043
DS #8	0.012
DS #9	0.007
DS #10	0.002
DS #11	0.007
DS #12	0.012

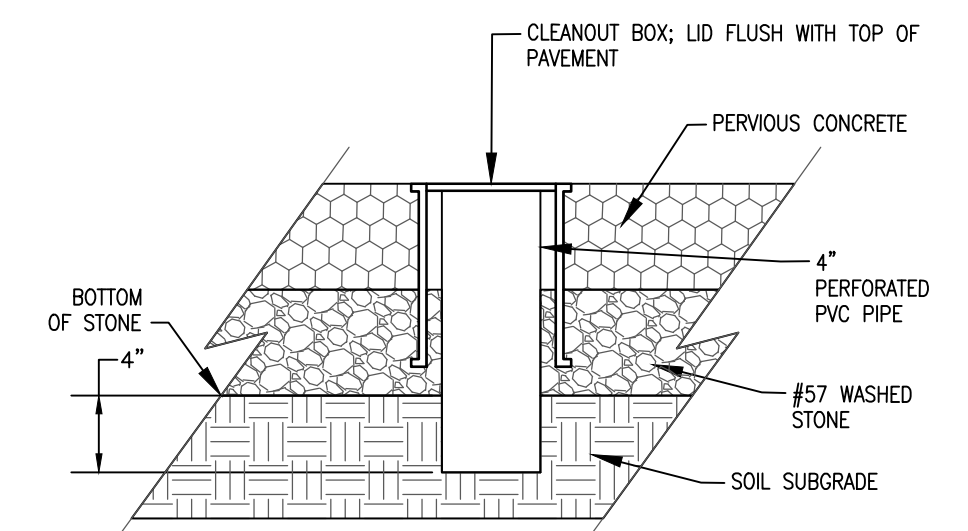
PRELIMINARY PLAT  
NOT FOR RECORDATION,  
CONVEYANCES, OR SALES



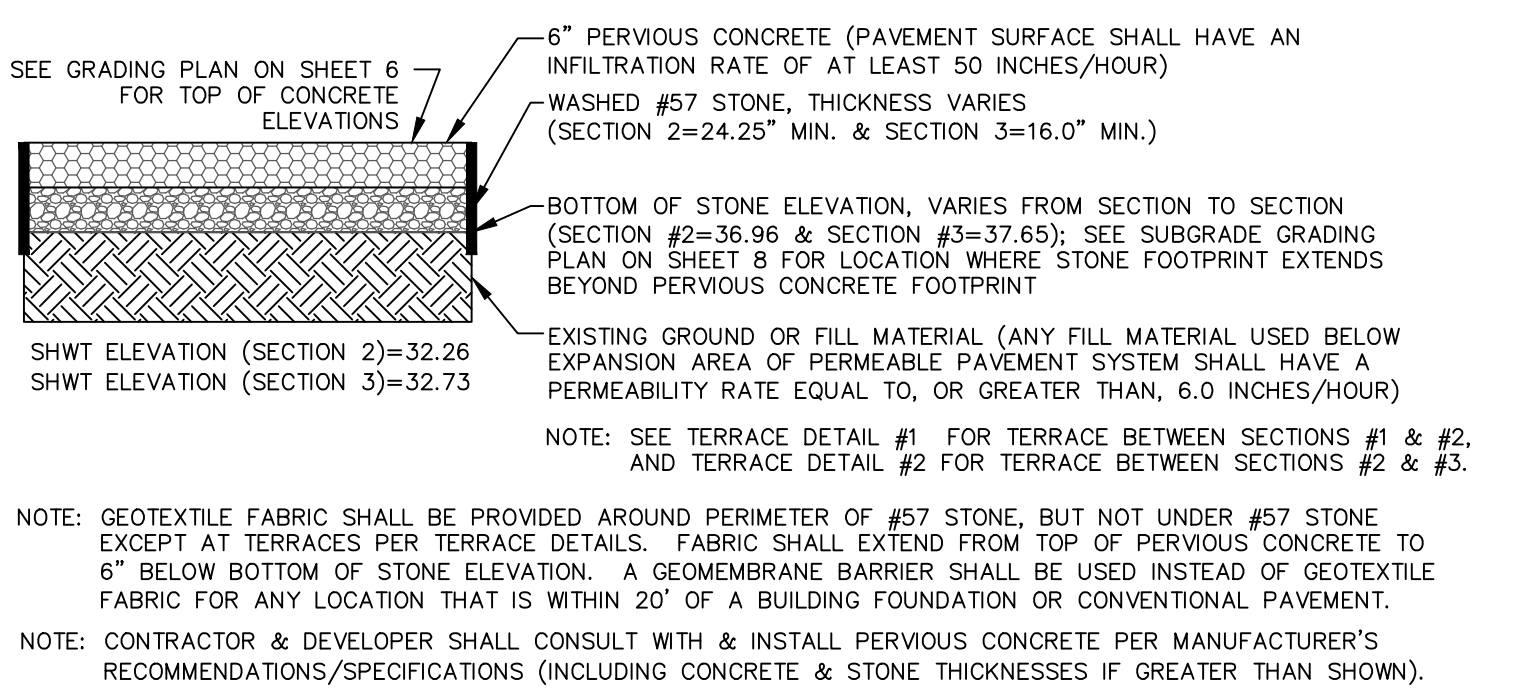
PERMEABLE PAVEMENT SIGN DETAIL  
NOT TO SCALE



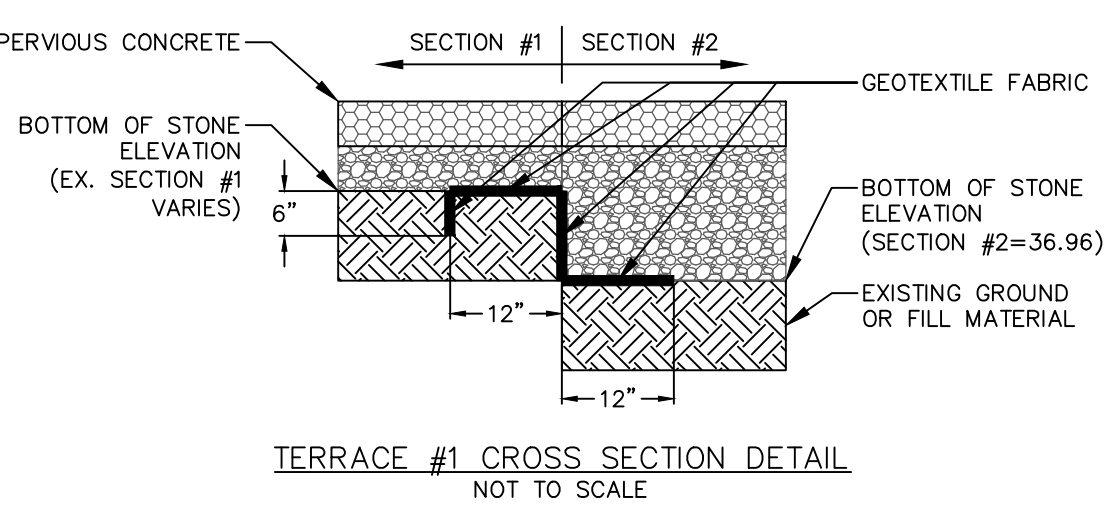
PERVIOUS & CONVENTIONAL CONCRETE BOUNDARY DETAIL  
NOT TO SCALE



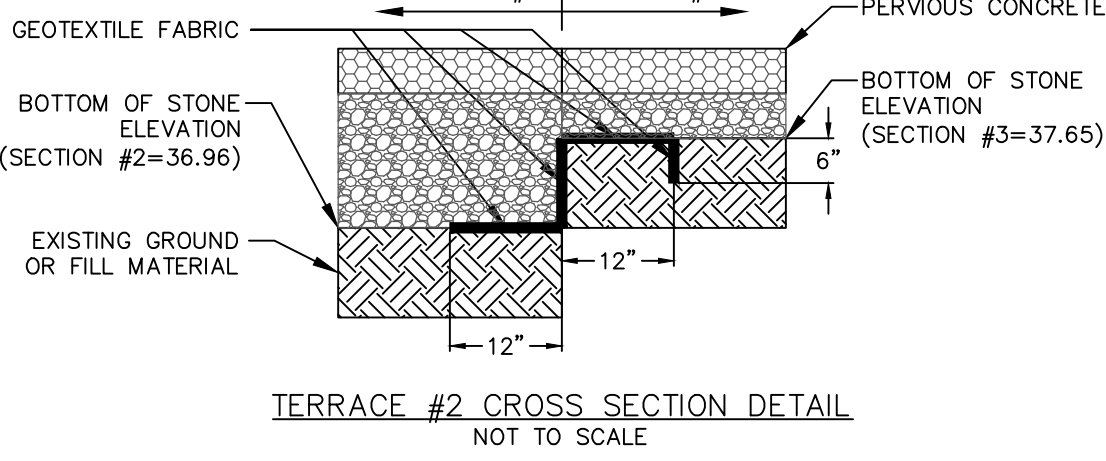
OBSERVATION WELL DETAIL  
NOT TO SCALE



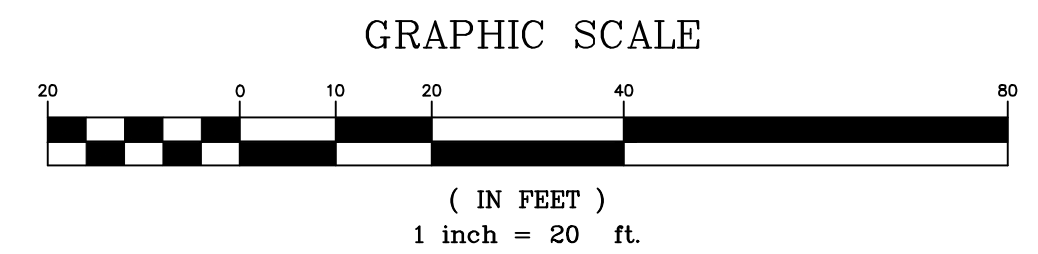
PERMEABLE PAVEMENT SYSTEM #2 - EXPANSION AREA CROSS SECTION DETAIL  
NOT TO SCALE



TERRACE #1 CROSS SECTION DETAIL  
NOT TO SCALE



TERRACE #2 CROSS SECTION DETAIL  
NOT TO SCALE



REV NO.	DESCRIPTION	DATE
1	REVISED TO ADD DETAILS.	2-22-19
2	REVISED TO ADJUST BUILDING & PATIOS, AND ADD ROOF DOWNSPOUT PIPING & DRAINAGE AREAS.	3-18-19
3	REVISED PER TRC COMMENTS.	4-11-19
4	REVISED PER TRC COMMENTS.	4-25-19

- CONSTRUCTION SEQUENCE FOR INSTALLATION OF PERMEABLE PAVEMENT (MOSTLY FROM NCDOT STORMWATER DESIGN MANUAL C-5)
- ENSURE ACCEPTABLE CONDITIONS FOR CONSTRUCTION
    - PERVIOUS SURFACES MUST BE GRADED TO DRAIN AWAY FROM THE PERMEABLE PAVEMENT, EXCEPT WHERE THIS IS UNAVOIDABLE, SUCH AS PARKING LOT ISLANDS, AREA BETWEEN BUILDINGS & PARKING LOT, & REDEVELOPMENT PROJECTS.
    - IMPERVIOUS AREAS THAT WILL DRAIN TO THE PERMEABLE PAVEMENT ARE COMPLETED.
    - AREAS ADJACENT TO THE PERMEABLE PAVEMENT ARE STABILIZED (VEGETATION, MULCH, STRAW, SEED, SOD, FIBER BLANKETS, ETC.) IN ORDER TO PREVENT EROSION & POSSIBLE CONTAMINATION WITH SEDIMENTS.
    - CONSTRUCTION ACCESS TO OTHER PORTIONS OF THE SITE IS ESTABLISHED SO THAT NO CONSTRUCTION TRAFFIC PASSES THROUGH THE PERMEABLE PAVEMENT SITE DURING INSTALLATION. INSTALL BARRIERS/FENCES AS NEEDED.
    - WEATHER FORECAST CALLS FOR A WINDOW OF DRY WEATHER TO PREVENT EXCESS COMPACTION OR SMEARING OF THE PERVIOUS CONCRETE.
    - ALL PERMEABLE PAVEMENT AREAS ARE CLEARLY MARKED ON THE SITE.
  - EXCAVATE PERMEABLE PAVEMENT AREA & PREPARE SUBGRADE SURFACE
    - EXCAVATE IN DRY SUBGRADE CONDITIONS & AVOID EXCAVATING IMMEDIATELY AFTER STORMS WITHOUT A SUFFICIENT DRYING PERIOD.
    - DO NOT ALLOW EQUIPMENT TO CROSS THE PAVEMENT AREA AFTER EXCAVATION HAS BEGUN.
    - OPERATE EXCAVATION EQUIPMENT FROM OUTSIDE THE EXCAVATION AREA OR FROM UNEXCAVATED PORTIONS OF THE AREA USING AN EXCAVATION STAGING PLAN.
    - USE EQUIPMENT WITH TRACKS RATHER THAN TIRES TO MINIMIZE SOIL COMPACTION WHEN EQUIPMENT ON THE SUBGRADE SURFACE IS UNAVOIDABLE.
    - DIG THE FINAL 9 TO 12 INCHES BY USING THE TEETH OF THE EXCAVATOR BUCKET TO LOOSEN SOIL & DO NOT SMEAR THE SUBGRADE SOIL SURFACE. FINAL GRADING OR SMOOTHING OF THE SUBGRADE SHOULD BE DONE BY HAND IF POSSIBLE.
    - THE FINAL SUBGRADE SLOPE SHALL NOT EXCEED 2.0%. THE FINAL SUBGRADE SHALL BE SURVEYED BEFORE PROCEEDING WITH INSTALLATION.
    - MINIMIZE THE TIME BETWEEN EXCAVATION AND PLACEMENT OF THE AGGREGATE.
    - AFTER THE SUBGRADE SLOPE IS VERIFIED, SCARIFY THE SOIL SUBGRADE SURFACE TO MAINTAIN THE SOILS PRE-DISTURBANCE INFILTRATION RATE.
    - TO SCARIFY THE PAVEMENT, USE THE EXCAVATOR BUCKET'S TEETH TO RAKE THE SURFACE OF THE SUBGRADE.
  - TEST THE SUBGRADE SOIL INFILTRATION RATE (INFILTRATION SYSTEMS ONLY)
    - IMMEDIATELY AFTER EXCAVATION & BEFORE THE AGGREGATE IS PLACED, CONDUCT A DIRECT MEASUREMENT OF THE SOIL'S INFILTRATION RATE. INFILTRATION TESTING SHALL BE PERFORMED BY AN APPROPRIATELY-QUALIFIED PROFESSIONAL.
    - RESULTS OF THE INFILTRATION TESTING SHALL BE PROVIDED TO THE ENGINEER.
    - IF THE SOIL TEST SHOWS INFILTRATION RATE(S) THAT ARE LOWER THAN THE RATE(S) USED IN THE DESIGN, THEN ADDITIONAL SCARIFICATION, RIPPING, OR TRENCHING OF THE SOIL WILL BE NEEDED.
    - CONTRACTOR SHALL CONTACT & RECEIVE APPROVAL FROM ENGINEER OF RECORD TO CONTINUE INSTALLATION OF PERMEABLE PAVEMENT SYSTEM.
  - PLACE GEOTEXTILES AND GEOMEMBRANE (IF APPLICABLE)
    - FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR THE APPROPRIATE OVERLAP BETWEEN ROLLS OF MATERIAL. SECURE THE MATERIAL TO ENSURE IT DOES NOT MOVE OR WRINKLE WHEN PLACING AGGREGATE.
  - PLACE OBSERVATION WELL(S)
    - PLACE OBSERVATION WELL(S) ACCORDING TO THE PLAN AND VERIFY THAT THE ELEVATIONS ARE CORRECT.
  - PLACE & COMPACT AGGREGATE BASE
    - INSPECT ALL AGGREGATES TO ENSURE THEY ARE CLEAN, FREE OF FINES, AND CONFORM TO THE PLANS.
    - IF AGGREGATE DELIVERED TO THE SITE CANNOT BE IMMEDIATELY PLACED INTO THE EXCAVATION, THEY SHOULD BE STOCKPILED ON AN IMPERVIOUS SURFACE OR GEOTEXTILE TO KEEP THE AGGREGATE FREE OF SEDIMENT.
    - IF AGGREGATE BECOMES CONTAMINATED WITH SEDIMENT, THEN IT SHALL BE REPLACED WITH CLEAN AGGREGATE.
    - BEFORE PLACING THE AGGREGATE BASE, REMOVE ANY ACCUMULATION OF SEDIMENTS ON THE FINISHED SOIL SUBGRADE USING LIGHT, TRACKED EQUIPMENT.
    - IF THE EXCAVATED SUBGRADE SURFACE HAS BEEN SUBJECTED TO RAINFALL BEFORE PLACEMENT OF THE AGGREGATE, THEN THE RESULTING SURFACE CRUST MUST BE EXCAVATED TO AT LEAST AN ADDITIONAL 2-INCH DEPTH, RAKED OR SCARIFIED TO BREAK UP THE CRUST, AND REGRADING SHALL BE DONE BY HAND.
    - REMOVE ANY ACCUMULATED SEDIMENTS FROM, AND CHECK PLACEMENT OF, ANY IMPERMEABLE LINERS OR GEOTEXTILES.
    - SLOPES & ELEVATIONS SHALL BE CHECKED ON THE SOIL SUBGRADE AND THE FINISHED ELEVATION OF BASE (AFTER COMPACTION) OR BEDDING MATERIALS TO ASSURE THEY CONFORM TO THE PLANS AND SPECIFICATIONS.
    - ALL AGGREGATE SHALL BE SPREAD (NOT DUMPED) BY A FRONT-END LOADER OR FROM DUMP TRUCKS DEPOSITING FROM NEAR THE EDGE OF THE EXCAVATED AREA OR RESTING DIRECTLY ON DEPOSITED AGGREGATE PILES. MOISTEN AND SPREAD THE WASHED STONE WITHOUT DRIVING ON THE SOIL SUBGRADE. BE CAREFUL NOT TO DAMAGE THE OBSERVATION WELLS DURING COMPACTION.
    - FOLLOW COMPACTION RECOMMENDATIONS BY THE PERMEABLE PAVEMENT MANUFACTURER OR THAT FROM INDUSTRY GUIDELINES.
    - BE SURE THAT CORNERS, AREAS AROUND UTILITY STRUCTURES AND OBSERVATION WELLS, & TRANSITION AREAS TO OTHER PAVEMENTS ARE ADEQUATELY COMPACTED.
    - DO NOT CRUSH AGGREGATES DURING COMPACTION.
  - INSTALL CURB RESTRAINTS AND PAVEMENT BARRIERS
    - EDGE RESTRAINTS AND BARRIERS BETWEEN PERMEABLE AND IMPERVIOUS PAVEMENT SHALL BE INSTALLED PER THE PLAN.
    - BEFORE MOVING ON TO CONSTRUCTION STEP 8, BE CERTAIN THE DESIGN AND INSTALLATION ARE CONSISTENT.
  - INSTALL PAVEMENT COURSE
    - PERVIOUS CONCRETE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST VERSION OF ACI 522.1 SPECIFICATION FOR PERVIOUS CONCRETE.
    - INSTALLATION OF THE PERVIOUS CONCRETE MAY BE ACCOMPLISHED USING EITHER THE ONE-STEP OR THE TWO-STEP METHOD.
  - PROTECT THE PAVEMENT THROUGH PROJECT COMPLETION
    - IF IT IS NOT POSSIBLE TO INSTALL THE PERMEABLE PAVEMENT AT THE END OF THE SITE CONSTRUCTION TIMELINE, THEN PROTECT THE PAVEMENT UNTIL PROJECT COMPLETION. THIS SHALL BE DONE BY:
      - ROUTING CONSTRUCTION ACCESS THROUGH OTHER PORTIONS OF THE SITE SO THAT NO CONSTRUCTION TRAFFIC PASSES THROUGH THE PERMEABLE PAVEMENT SITE (INSTALL BARRIERS/FENCES AS NEEDED).
      - IF THIS IS NOT POSSIBLE, PROTECT THE PAVEMENT PER THE CONSTRUCTION DOCUMENTS. PROTECTION TECHNIQUES THAT MAY BE USED INCLUDE MATS, PLASTIC SHEETING, BARRIERS TO LIMIT ACCESS, OR MOVING THE STABILIZED CONSTRUCTION ENTRANCE.
      - SCHEDULE STREET SWEEPING DURING AND AFTER CONSTRUCTION TO PREVENT SEDIMENT FROM ACCUMULATING ON THE PAVEMENT.

OPERATION & MAINTENANCE PLAN FOR PERMEABLE PAVEMENT  
AT ALL TIMES, THE PAVEMENT SHALL BE KEPT FREE OF:  
-DEBRIS AND PARTICULATE MATTER THROUGH FREQUENT BLOWING THAT REMOVES SUCH DEBRIS, PARTICULARLY DURING THE FALL AND SPRING.  
-PILES OF SOIL, SAND, MULCH, BUILDING MATERIALS OR OTHER MATERIALS THAT COULD DEPOSIT PARTICULATES ON THE PAVEMENT.  
-PILES OF SNOW AND ICE.  
-CHEMICALS OF ALL KINDS, INCLUDING DEICERS.  
THE PERMEABLE PAVEMENT WILL BE INSPECTED ONCE A QUARTER. RECORDS OF OPERATION AND MAINTENANCE WILL BE KEPT IN A KNOWN SET LOCATION AND WILL BE AVAILABLE UPON REQUEST.  
INSPECTION ACTIVITIES SHALL BE PERFORMED AS FOLLOWS. ANY PROBLEMS THAT ARE FOUND SHALL BE REPAIRED IMMEDIATELY:

BMP ELEMENT:	POTENTIAL PROBLEM:	HOW TO REMEDIATE THE PROBLEM:
THE ENTIRE BMP	TRASH/DEBRIS IS PRESENT.	REMOVE THE TRASH/DEBRIS.
THE PERIMETER OF THE PERMEABLE PAVEMENT	AREAS OF BARE SOIL AND/OR EROSION GULLIES.	REGRADE THE SOIL IF NECESSARY TO REMOVE THE GULLY, THEN PLANT GROUND COVER AND WATER UNTIL ESTABLISHED.
THE INLET DEVICE	A VEGETATED AREA DRAINS TOWARD THE PAVEMENT. THE PIPE IS CLOGGED.	REGRADE THE AREA SO THAT IT DRAINS AWAY FROM THE PAVEMENT, THEN PLANT GROUND COVER AND WATER UNTIL ESTABLISHED. UNCLOG THE PIPE. DISPOSE OF THE SEDIMENT OFF-SITE.
THE SURFACE OF THE PERMEABLE PAVEMENT	THE PIPE IS CRACKED OR OTHERWISE DAMAGED.	REPLACE THE PIPE.
THE SURFACE OF THE PERMEABLE PAVEMENT	TRASH/DEBRIS IS PRESENT. WEEDS	REMOVE THE TRASH/DEBRIS. DO NOT PULL THE WEEDS (MAY PULL OUT MEDIA AS WELL). SPRAY THEM WITH A SYSTEMIC HERBICIDE SUCH AS GLYPHOSATE AND THEN RETURN WITHIN THE WEEK TO REMOVE THEM BY HAND. (ANOTHER OPTION IS TO POUR BOILING WATER ON THEM OR STEAM THEM.)
THE SURFACE OF THE PERMEABLE PAVEMENT	SEDIMENT	VACUUM SWEEP THE PAVEMENT.
THE SURFACE OF THE PERMEABLE PAVEMENT	RUTTING, CRACKING OR SLUMPING OR DAMAGED STRUCTURE	CONSULT AN APPROPRIATE PROFESSIONAL
OBSERVATION WELL	WATER PRESENT MORE THAN FIVE DAYS AFTER A STORM EVENT.	CLEAN OUT CLOGGED UNDERDRAIN PIPES. CONSULT AN APPROPRIATE PROFESSIONAL FOR CLOGGED SOIL SUBGRADE.
EDUCATIONAL SIGN	MISSING OR IS DAMAGED.	REPLACE THE SIGN
THE OUTLET DEVICE	CLOGGING HAS OCCURRED.	CLEAN OUT THE OUTLET DEVICE. DISPOSE OF THE SEDIMENT OFF-SITE.
THE OUTLET DEVICE	THE OUTLET DEVICE IS DAMAGED.	REPAIR OR REPLACE THE OUTLET DEVICE.
THE RECEIVING WATER	EROSION OR OTHER SIGNS OF DAMAGE HAVE OCCURRED AT THE OUTLET.	CONTACT THE LOCAL NC DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES REGIONAL OFFICE.

For each open utility cut of City streets 3" 325 permit shall be required from the City prior to occupancy and/or project acceptance.

City of WILMINGTON, NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
Signed: \_\_\_\_\_

STORMWATER DETAIL SHEET  
**EVERMORE APARTMENTS EXPANSION**  
CITY OF WILMINGTON WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

DATE: 1-16-19  
SCALE: 1"=20'  
DRAWN: JCB  
CHECKED: JBM  
PROJECT NO: 219

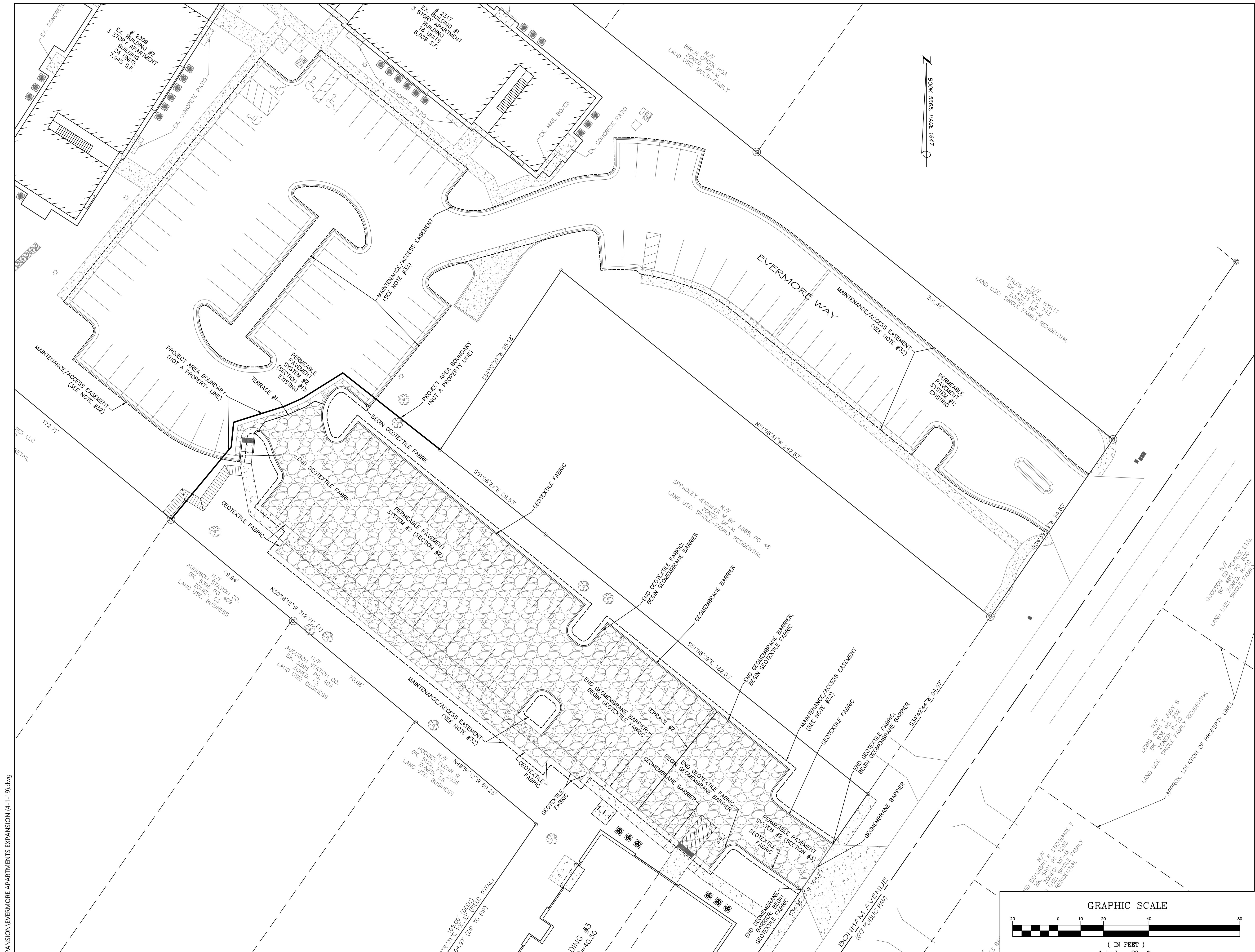
MALPASS ENGINEERING & SURVEYING, P.C.  
WILMINGTON, NORTH CAROLINA 28412  
1134 SHIPYARD BOULEVARD  
Phone: 910-392-8543  
Fax: 910-392-5203 License No. C-2920

Owner: ELEVATION APARTMENTS LLC & REMARKABLE PROPERTIES, LLC  
10 S. CAROLINA DRIVE  
WILMINGTON, NC 28403  
PHONE: 910-251-5030

FINAL DRAWING FOR REVIEW PURPOSES ONLY

SHEET NO: 8 OF 14

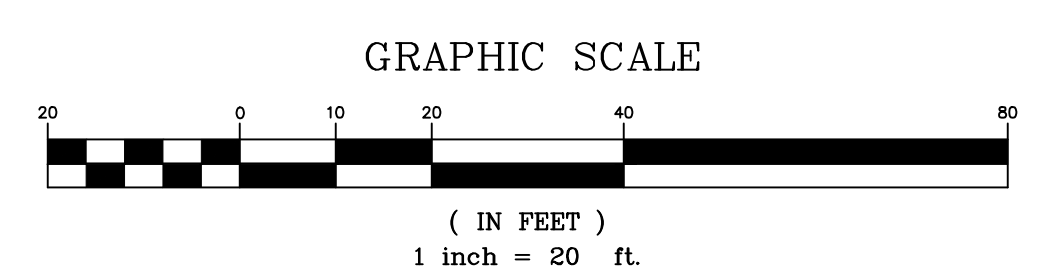




BOOK 5665, PAGE 1647

**GEOTEXTILE/GEOMEMBRANE LOCATION MAP FOR PERMEABLE PAVEMENT SYSTEM #2 WITHIN PROJECT AREA & MAINTENANCE/ACCESS EASEMENT FOR PERMEABLE PAVEMENT SYSTEMS**  
SCALE: 1"=20'

PRELIMINARY PLAT  
NOT FOR RECORDATION,  
CONVEYANCES, OR SALES



REV NO.	DESCRIPTION	DATE
1	REVISED TO ADD LOCATION OF GEOTEXTILE & GEOMEMBRANE FABRIC.	3-18-19
2	REVISED PER TRC COMMENTS.	4-11-19
3	REVISED PER TRC COMMENTS.	4-25-19

**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
Signed: \_\_\_\_\_

**Approved Construction Plan**  
Name \_\_\_\_\_ Date \_\_\_\_\_  
Planning \_\_\_\_\_  
Traffic \_\_\_\_\_  
Fire \_\_\_\_\_

STORMWATER DETAIL SHEET  
**EVERMORE APARTMENTS EXPANSION**  
CITY OF WILMINGTON WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

**FINAL DRAWING FOR REVIEW PURPOSES ONLY**

**MALPASS ENGINEERING & SURVEYING, P.C.**  
1134 SHIPYARD BOULEVARD  
WILMINGTON, NORTH CAROLINA 28412  
Phone 910-392-6643  
Fax 910-392-6693 License No. C-2920

Owner: ELEVATION APARTMENTS LLC & REMARKABLE PROPERTIES, LLC  
10 S. CAROLAN DRIVE  
WILMINGTON, NC 28403  
PHONE: 910-251-5030

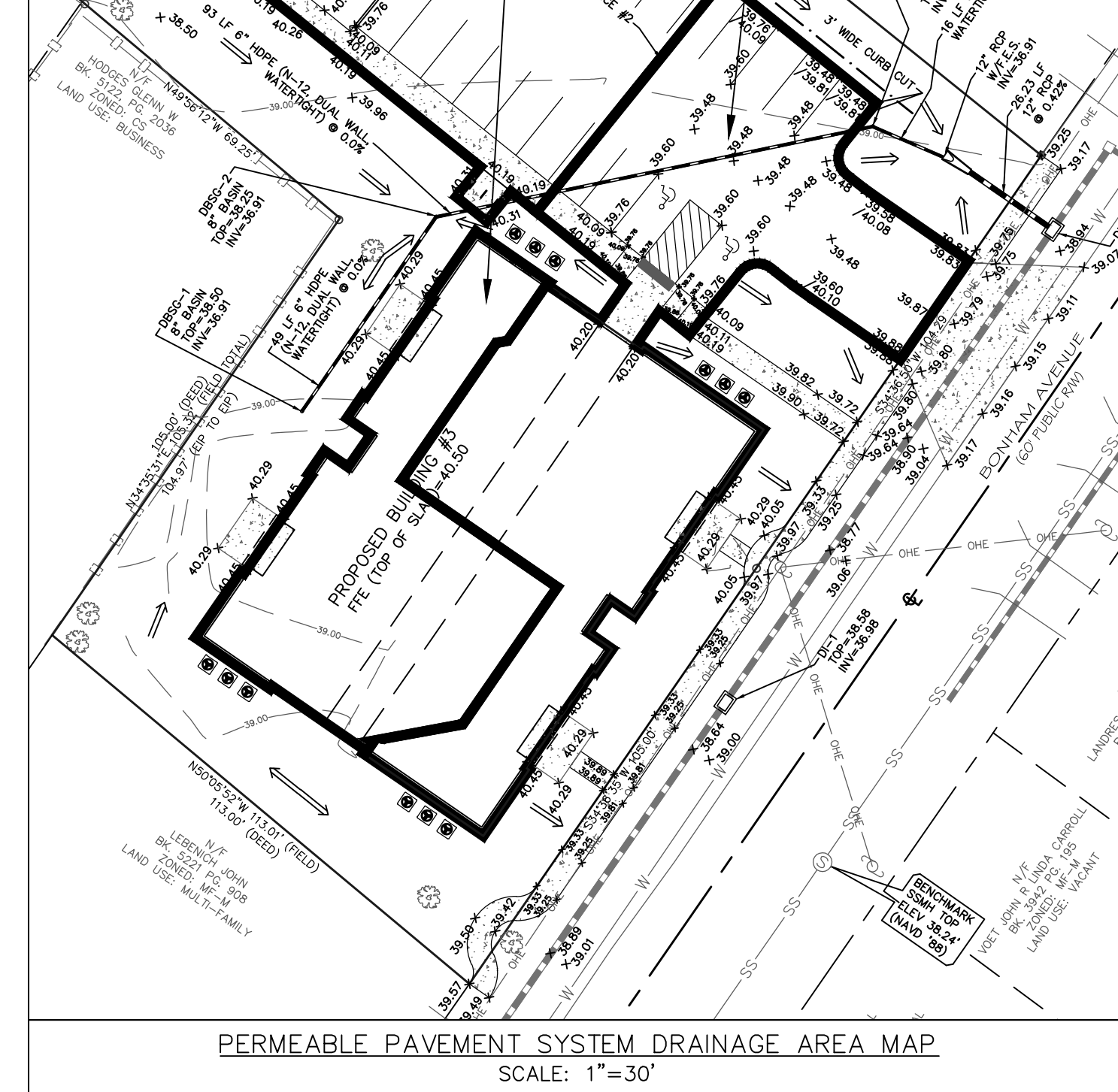
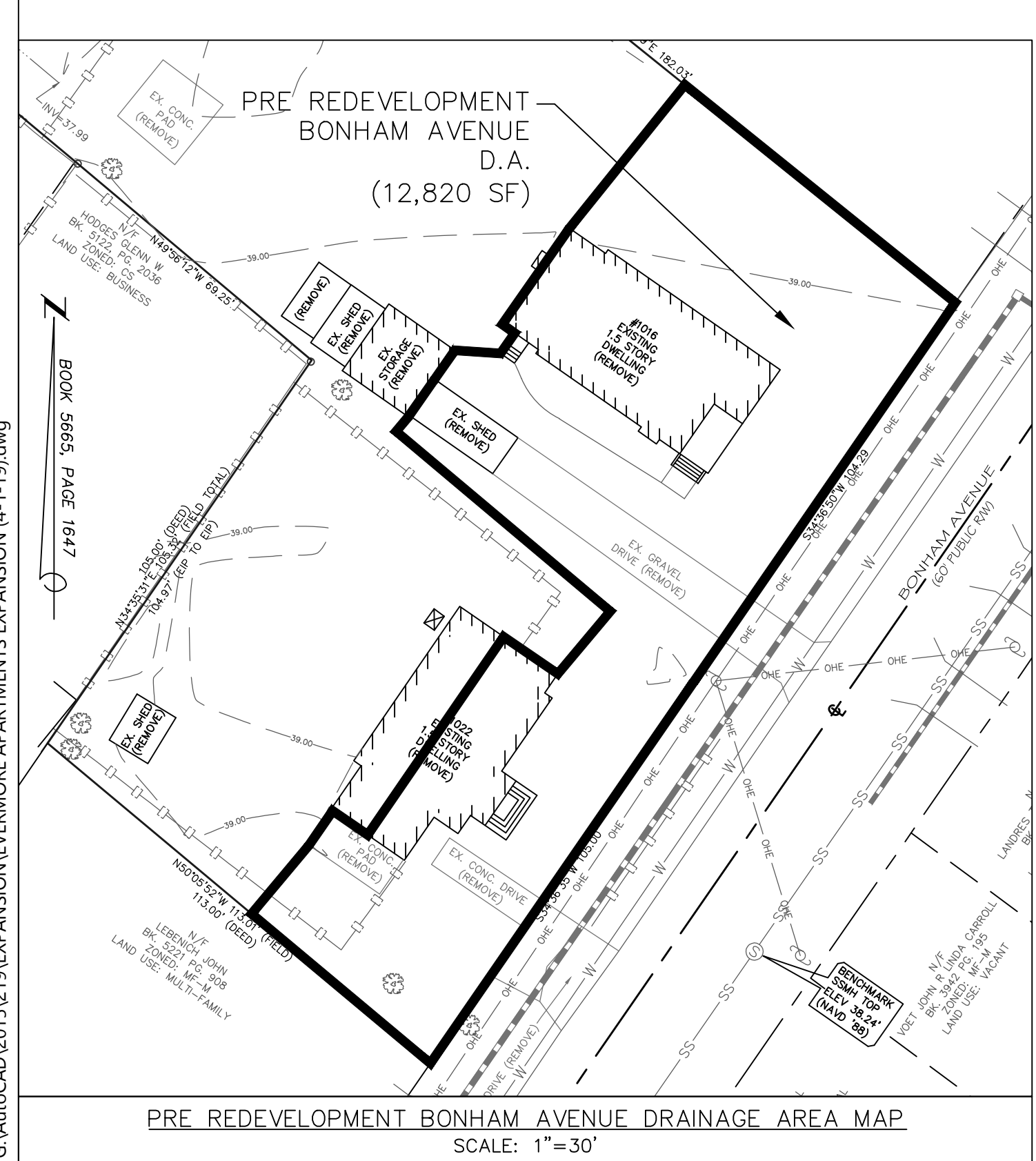
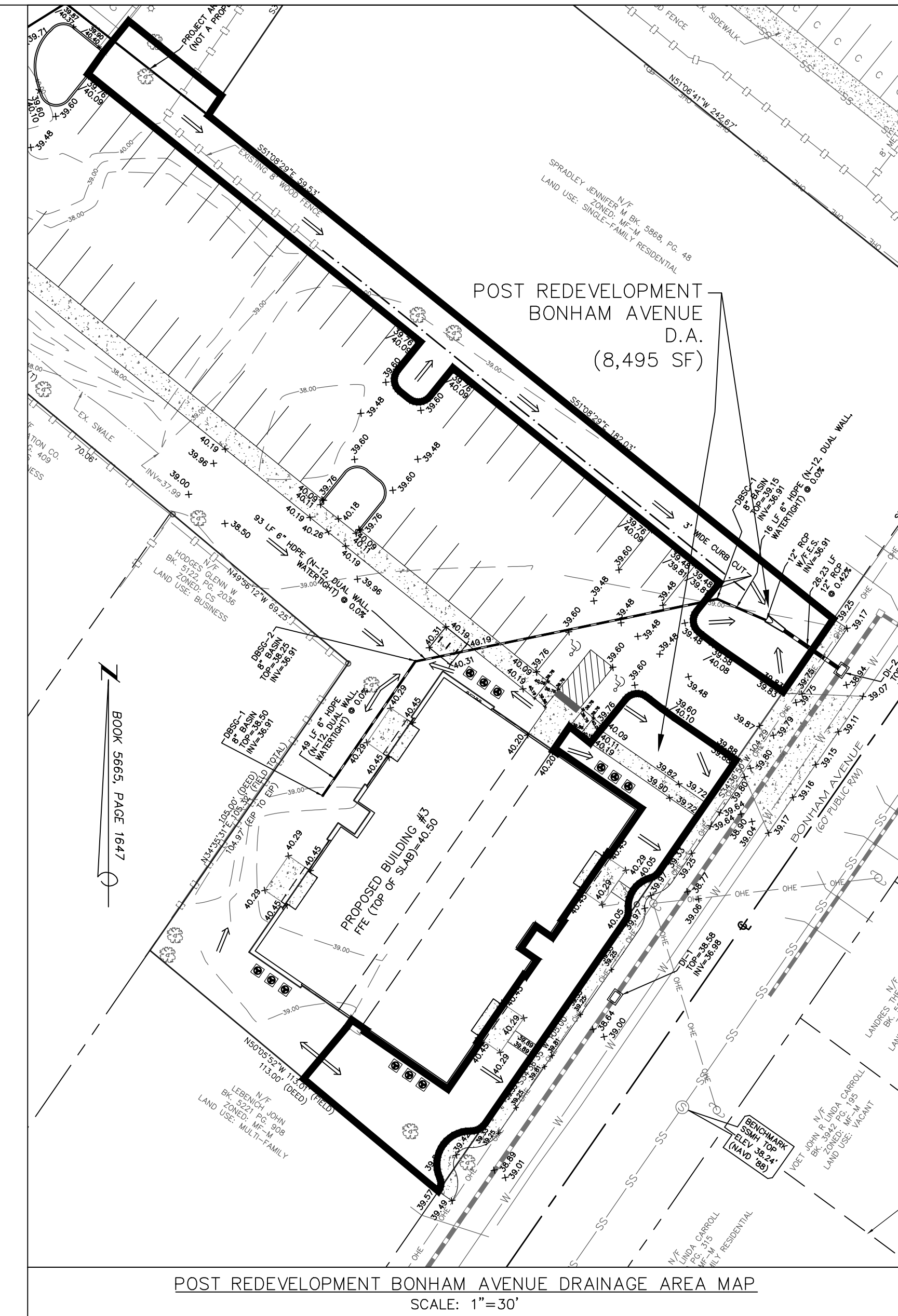
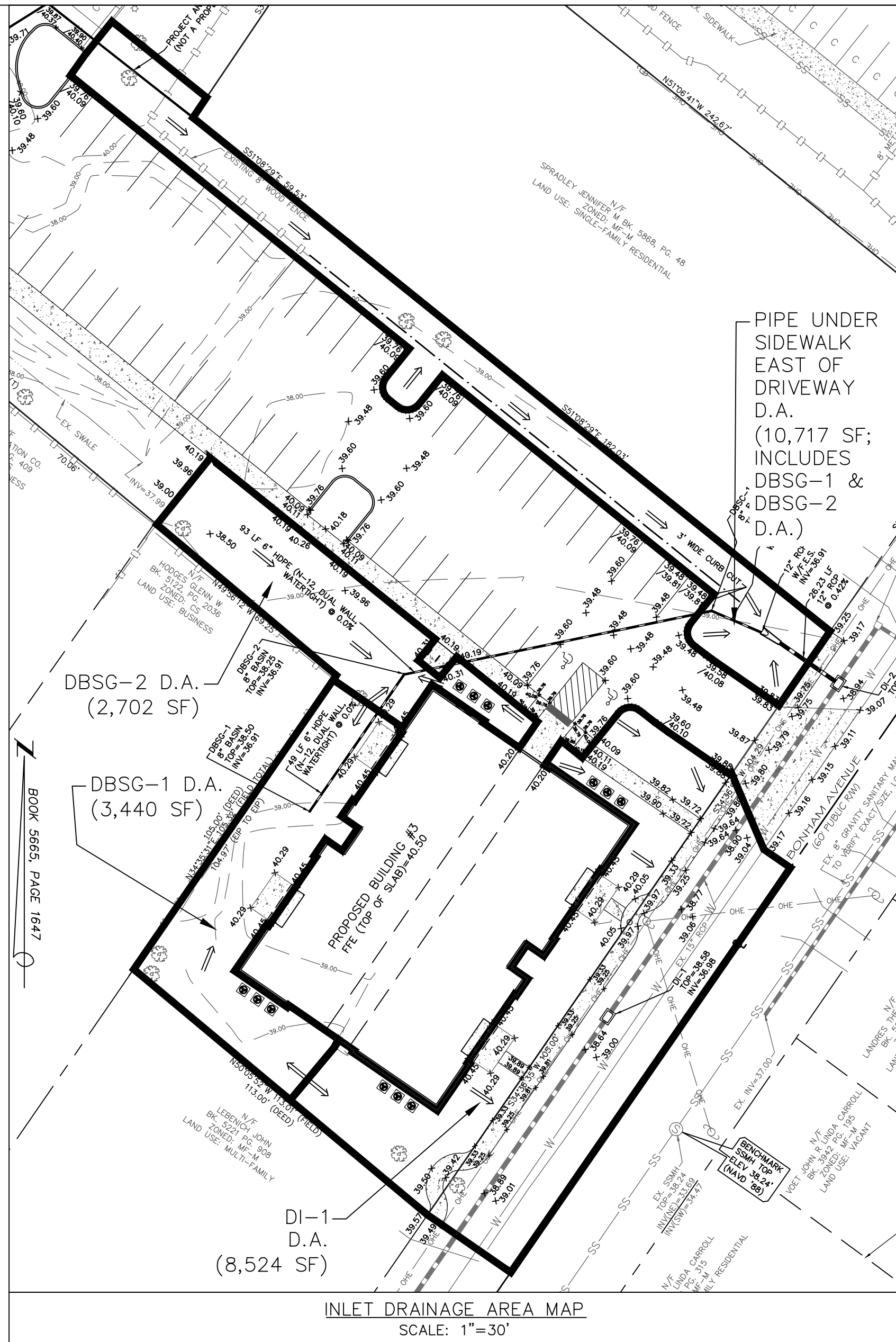
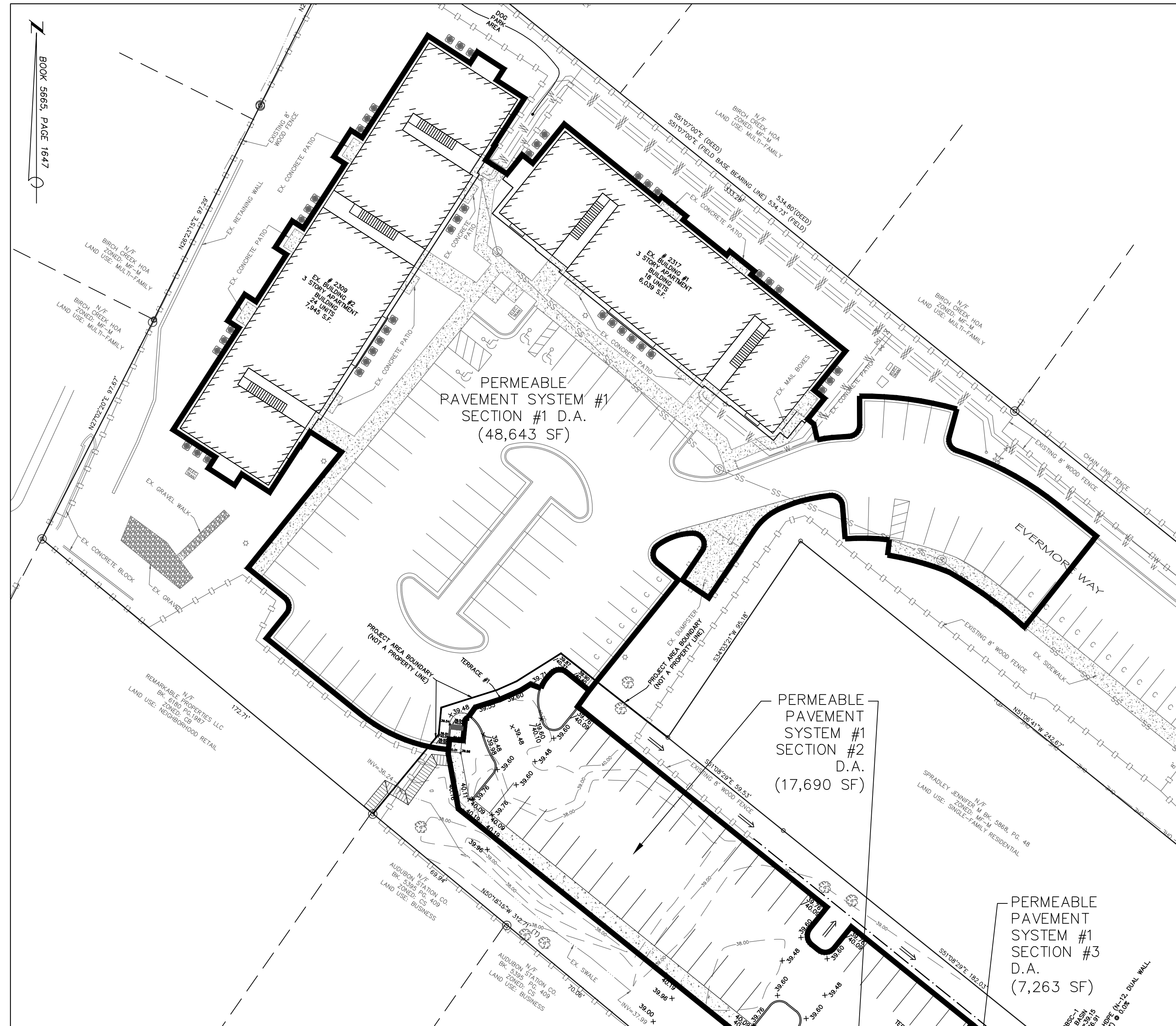
For each open utility cut of City streets a 325 permit shall be required from the City prior to occupancy and/or project acceptance.

DATE: 2-22-19  
SCALE: 1"=20'  
DRAWN: JCB  
CHECKED: JBM  
PROJECT NO: 219

SHEET NO: 8A  
OF: 14

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PRELIMINARY PLAT NOT FOR RECORDATION, CONVEYANCES, OR SALES

GRAPHIC SCALE (IN FEET) 1 inch = 30 ft.

REV NO.	DESCRIPTION REVISIONS	DATE
1	REVISED TO ADJUST BUILDING, PATIOS, & DRAINAGE AREAS.	3-18-19
2	REVISED PER TRC COMMENTS.	4-11-19
3	REVISED PER TRC COMMENTS.	4-25-19

City of WILMINGTON, NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN

Approved Construction Plan  
Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Planning: \_\_\_\_\_  
Traffic: \_\_\_\_\_  
Fire: \_\_\_\_\_

DATE: 2-22-19  
SCALE: 1"=30'  
DRAWN: JCB  
CHECKED: JBM  
PROJECT NO: 219

MALPASS ENGINEERING & SURVEYING, P.C.  
1134 SHIPYARD BOULEVARD  
WILMINGTON, NORTH CAROLINA 28412  
Phone 910-392-8543  
Fax 910-392-8293 License No. C-2920

Owner: ELEVATION APARTMENTS LLC & REMARKABLE PROPERTIES, LLC  
10 S. CAROLINA DRIVE  
WILMINGTON, NC 28403  
PHONE: 910-251-5030

FINAL DRAWING FOR REVIEW PURPOSES ONLY

SHEET NO: 9 OF: 14

For each open utility cut of City streets a 3325 permit shall be required from the City prior to occupancy and/or project acceptance.

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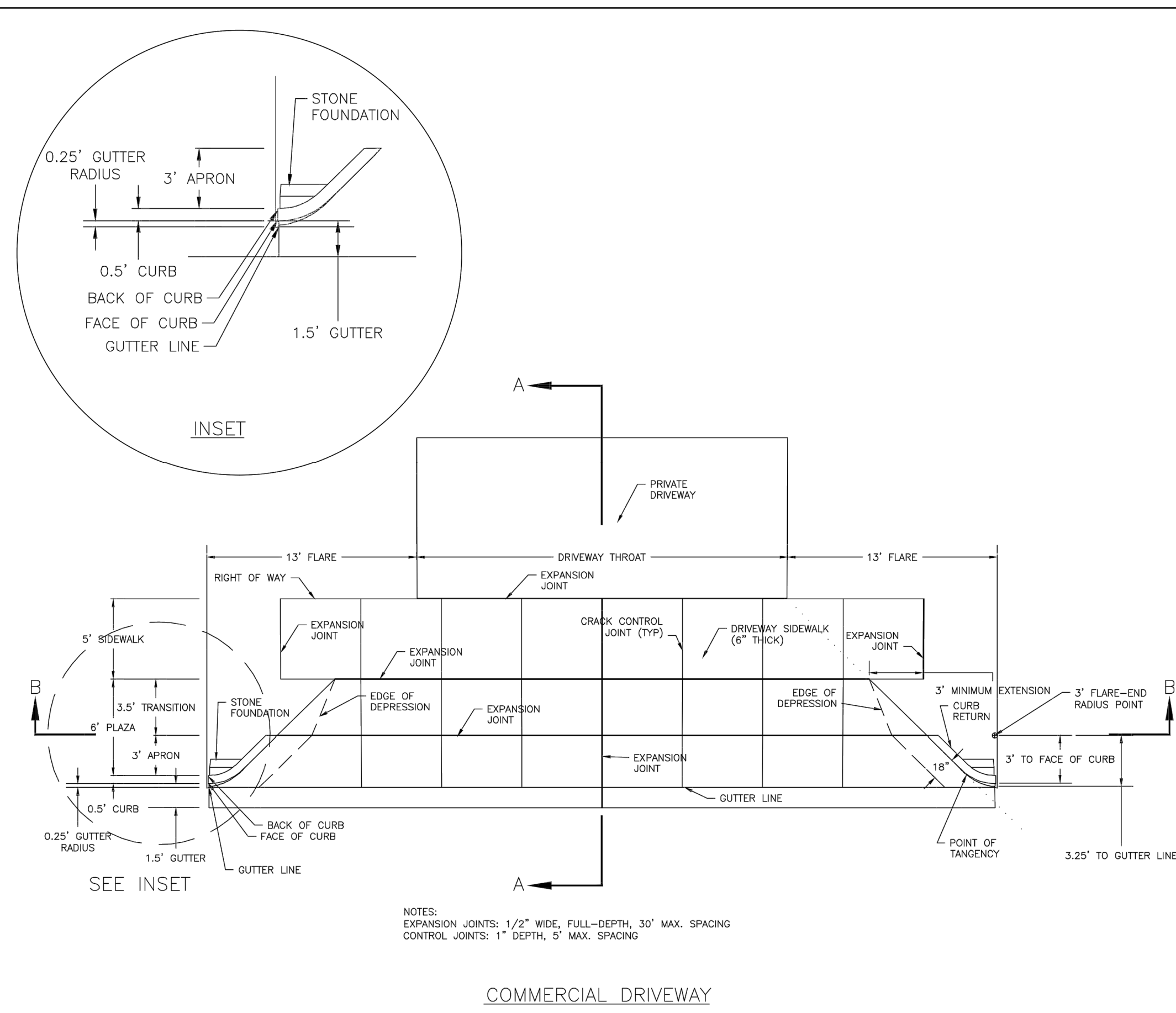


DATE: FEB. 14, 2017  
 DRAWN BY: JSR  
 CHECKED BY: D.E.C., P.E.  
 SCALE: NOT TO SCALE

STANDARD DETAIL  
**COMMERCIAL DRIVEWAY PLAN (VERTICAL CURB)**  
 1 of 2

WILMINGTON NORTH CAROLINA  
 CITY OF WILMINGTON ENGINEERING  
 PO BOX 1810 WILMINGTON, N.C. 28402  
 (910) 341-7807

SD 3-03.3

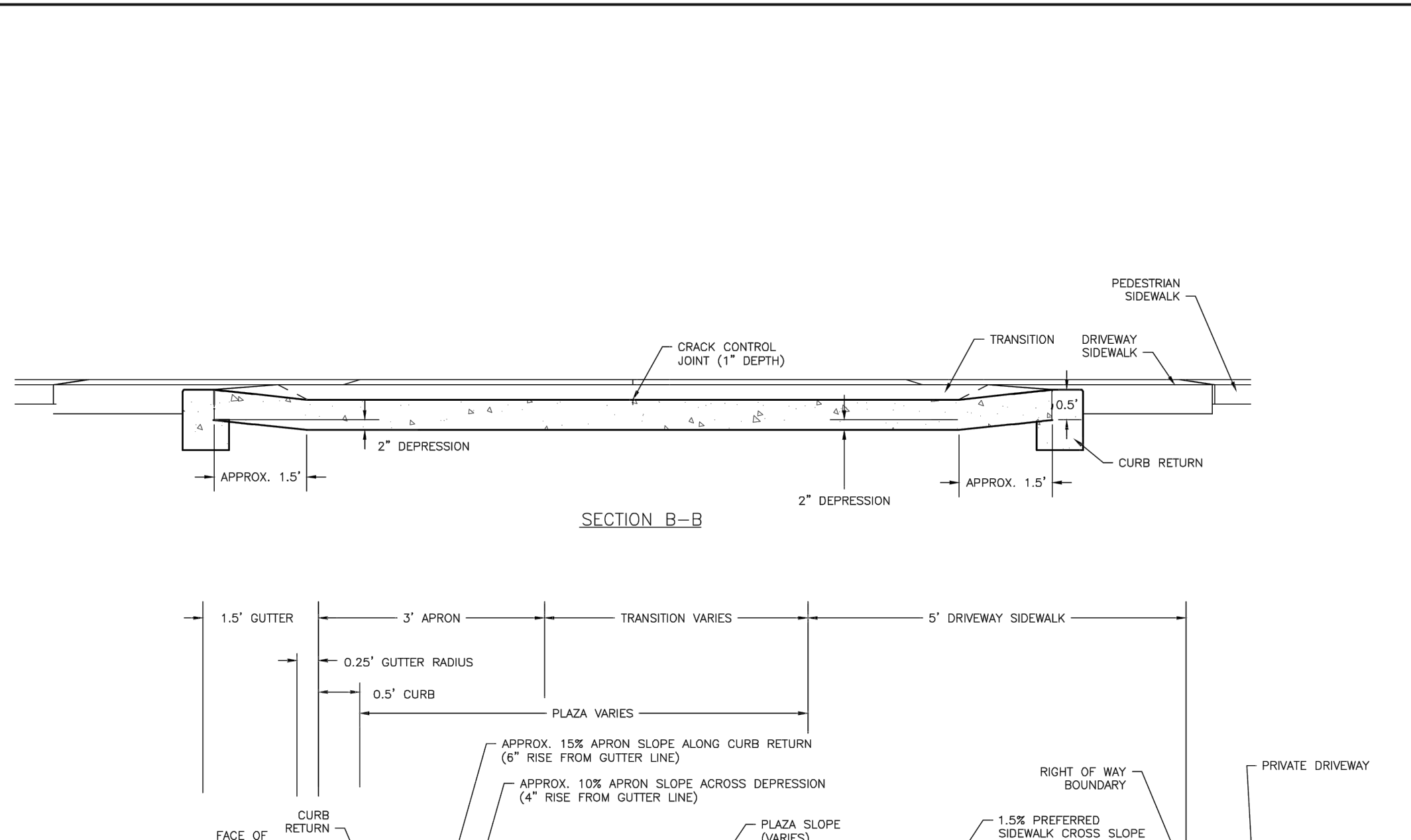


DATE: FEB. 14, 2017  
 DRAWN BY: JSR  
 CHECKED BY: D.E.C., P.E.  
 SCALE: NOT TO SCALE

STANDARD DETAIL  
**COMMERCIAL DRIVEWAY SECTIONS (VERTICAL CURB)**  
 2 of 2

WILMINGTON NORTH CAROLINA  
 CITY OF WILMINGTON ENGINEERING  
 PO BOX 1810 WILMINGTON, N.C. 28402  
 (910) 341-7807

SD 3-03.4

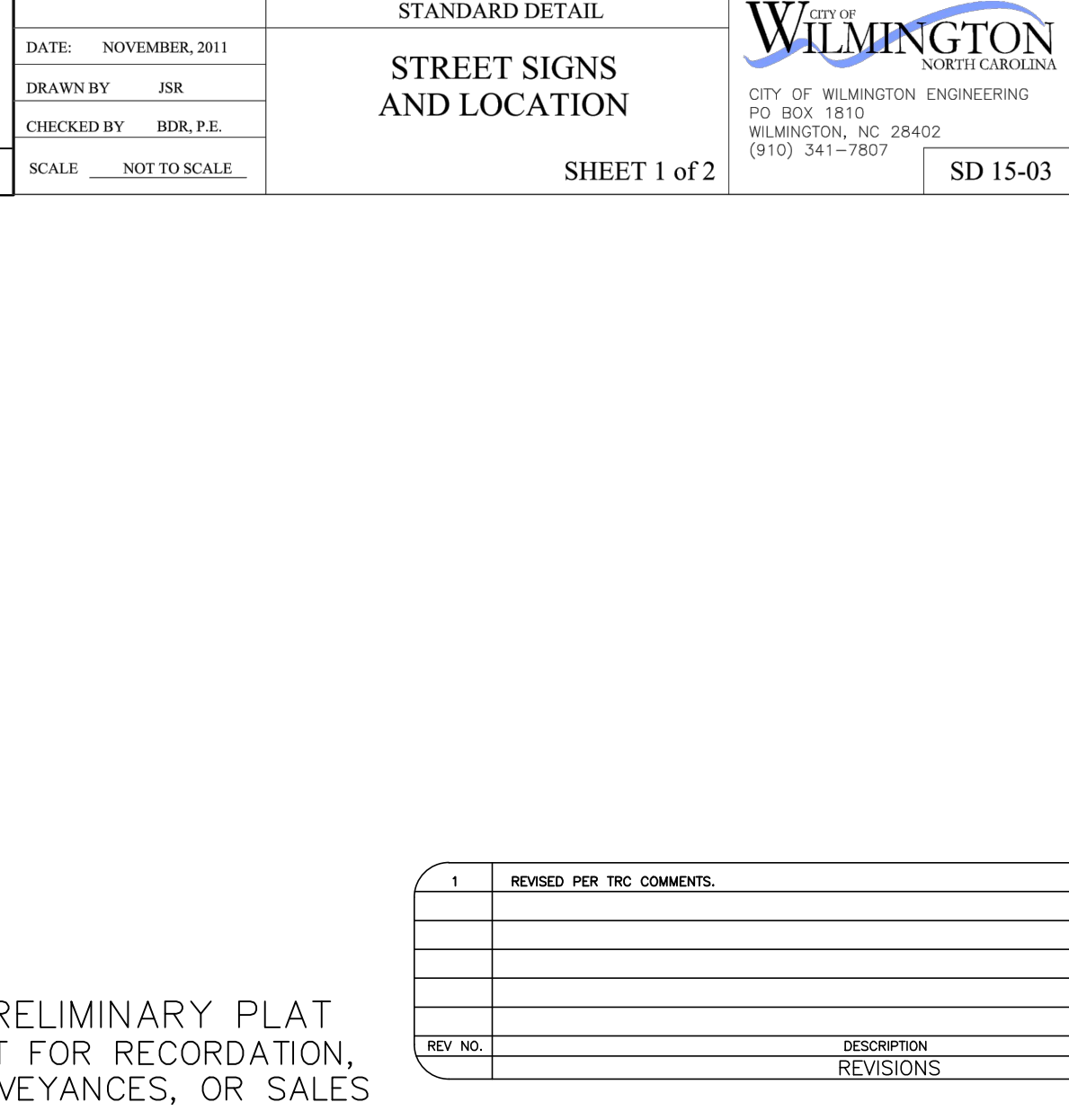
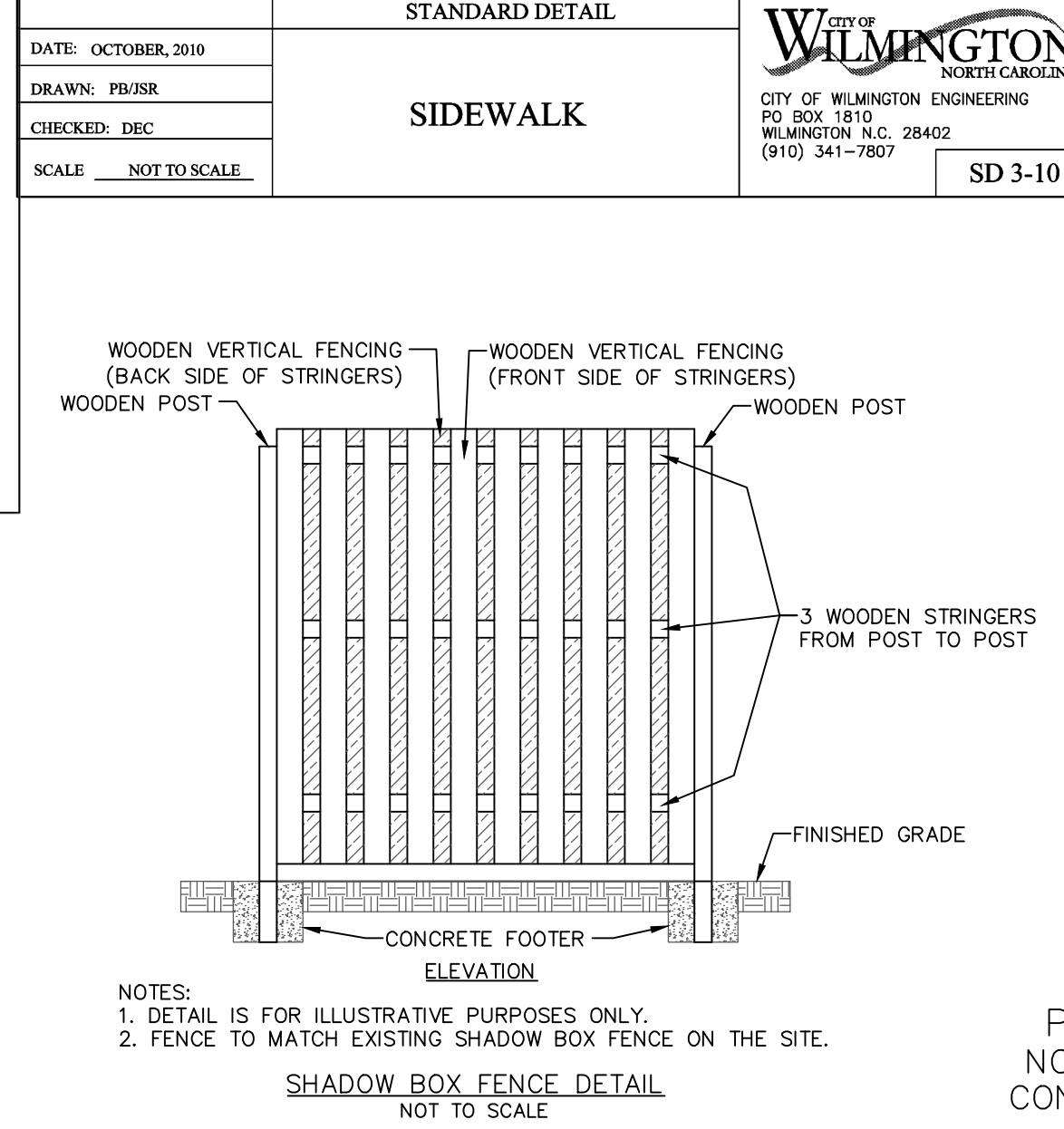
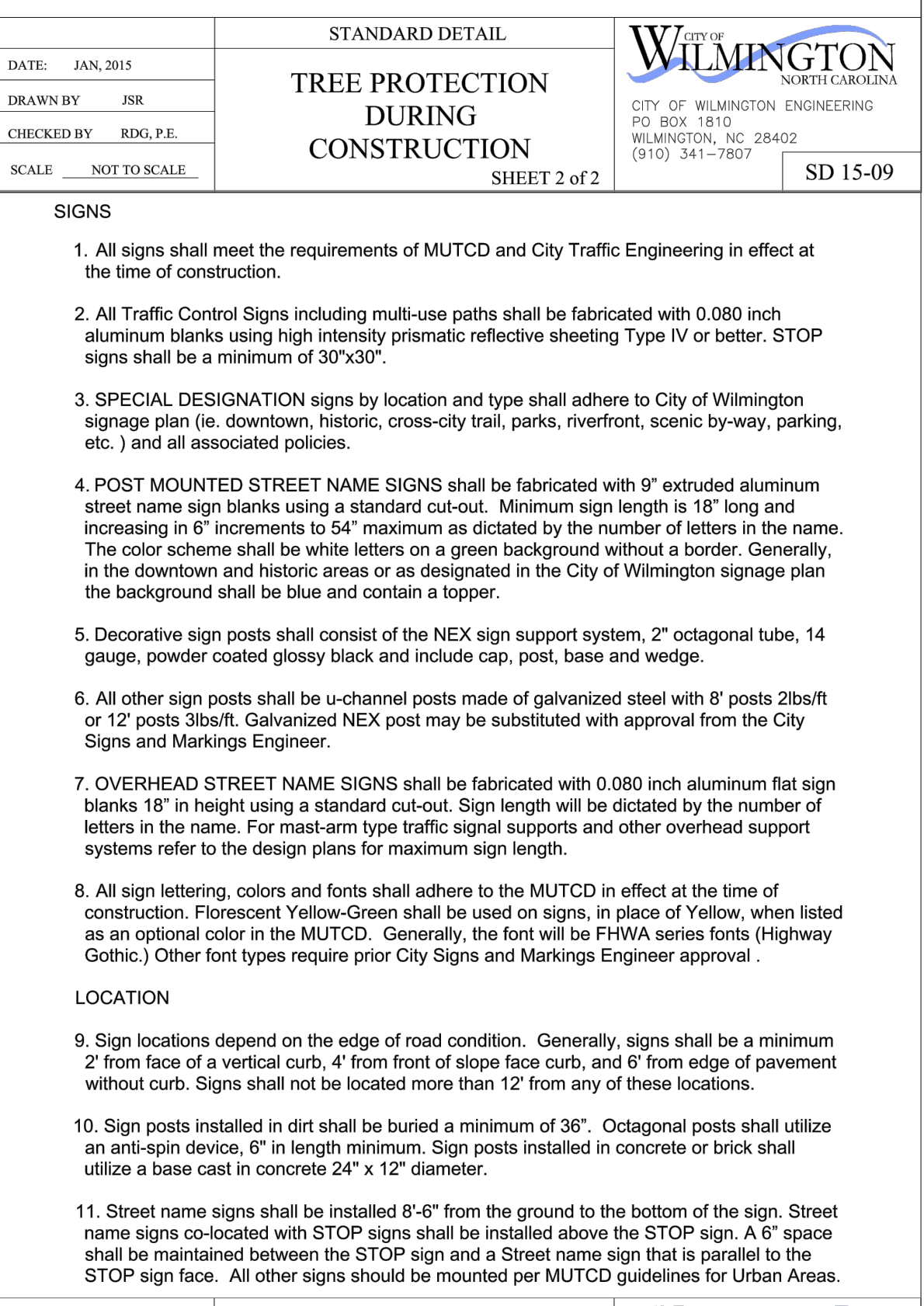
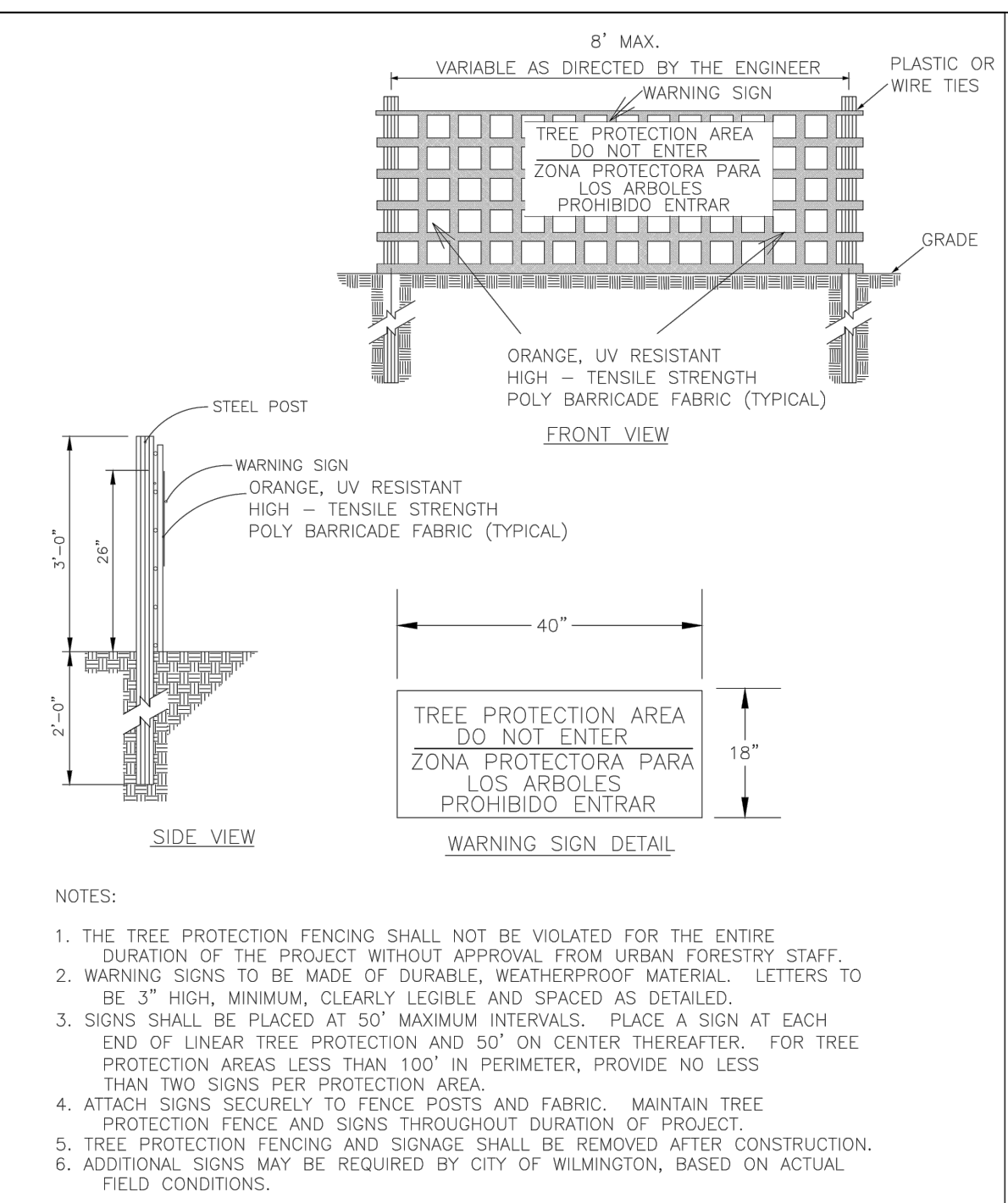
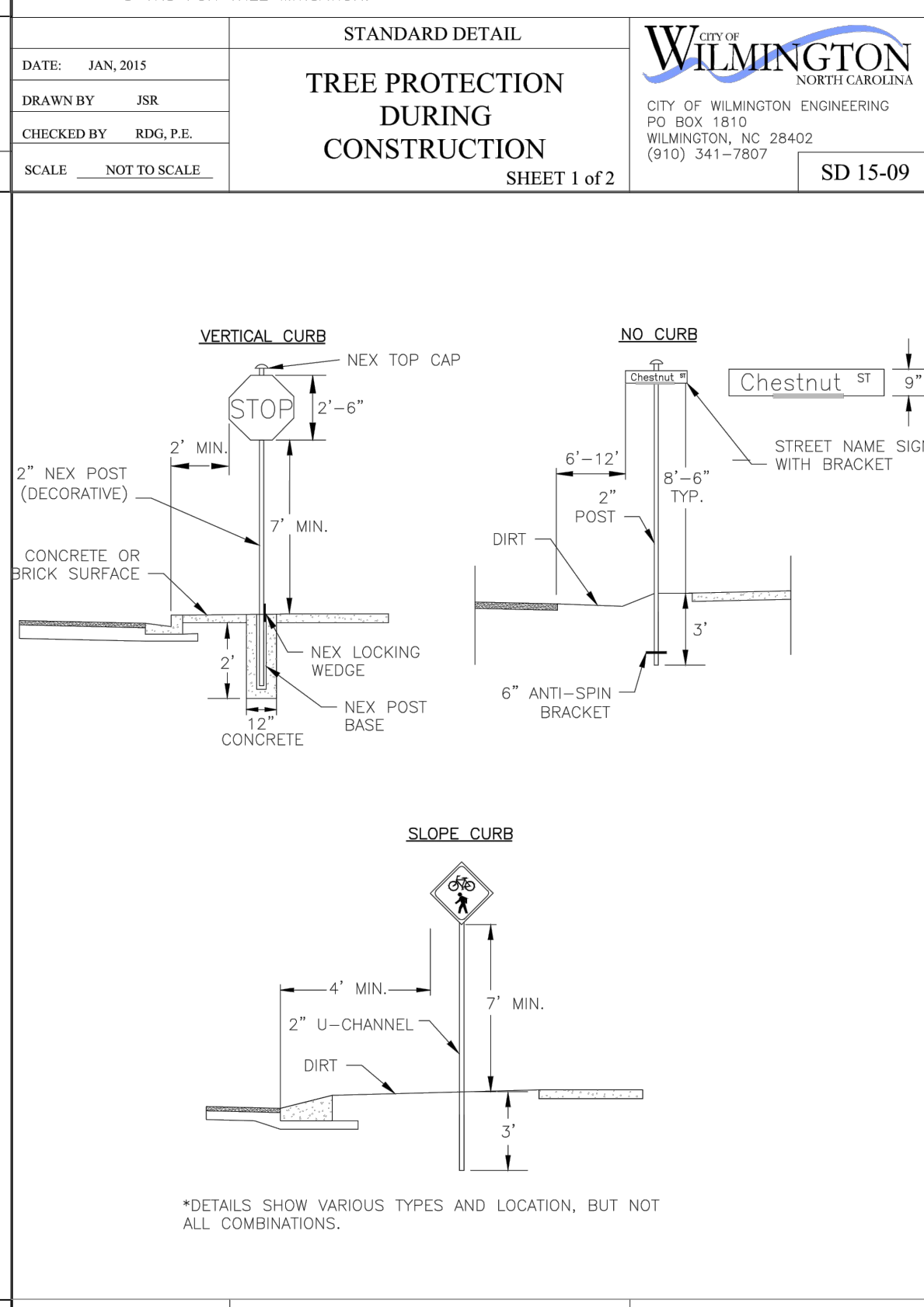
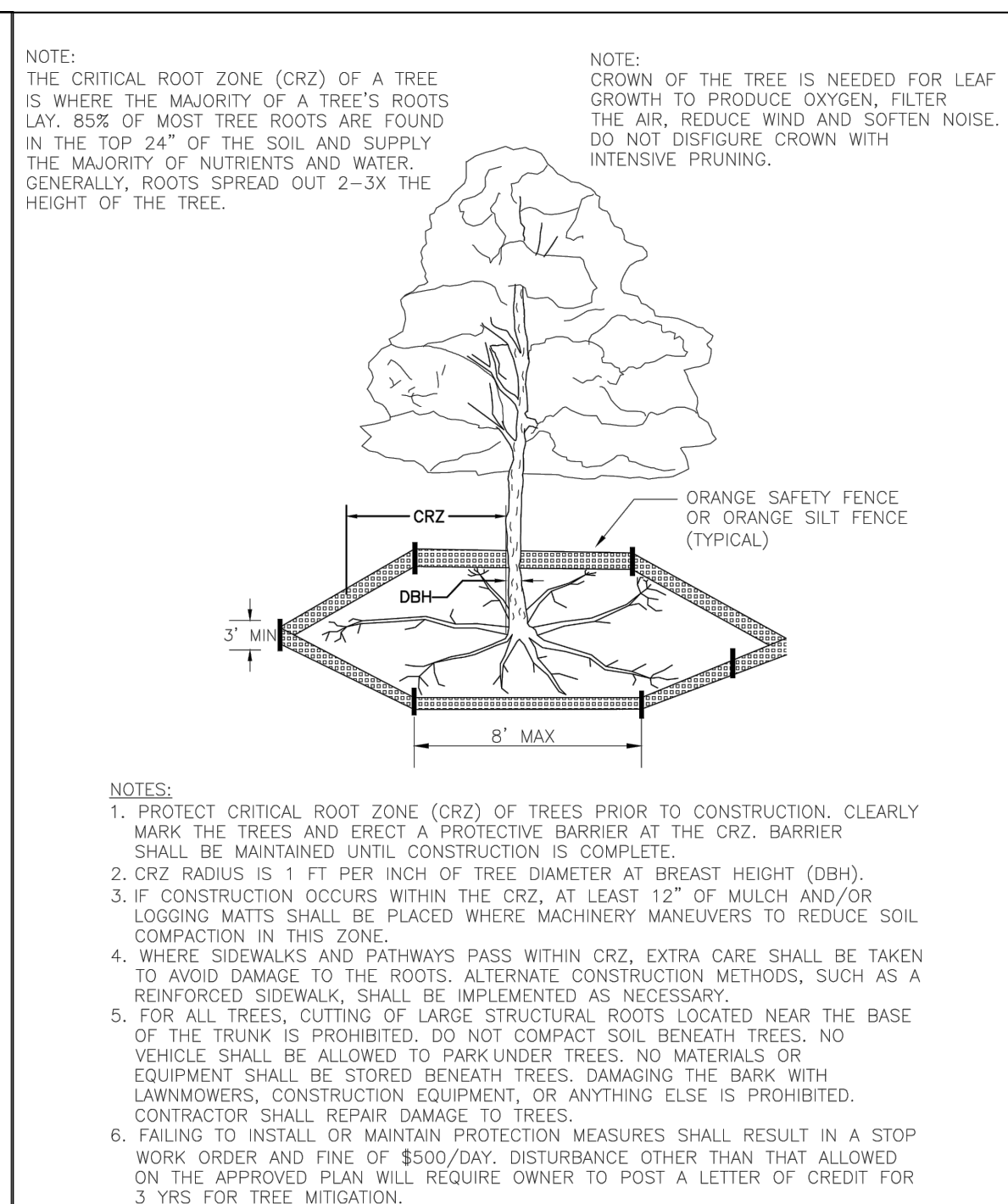
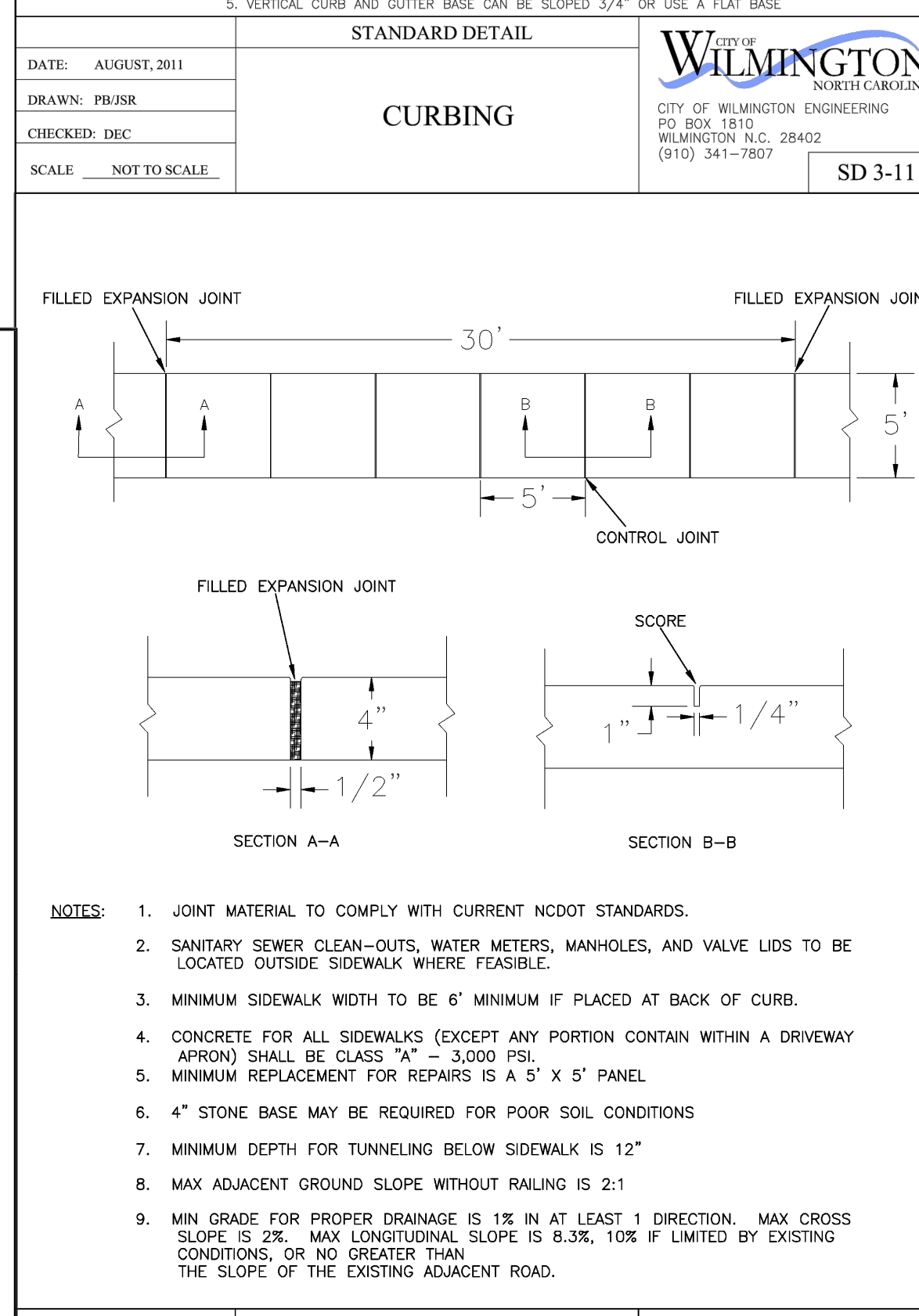
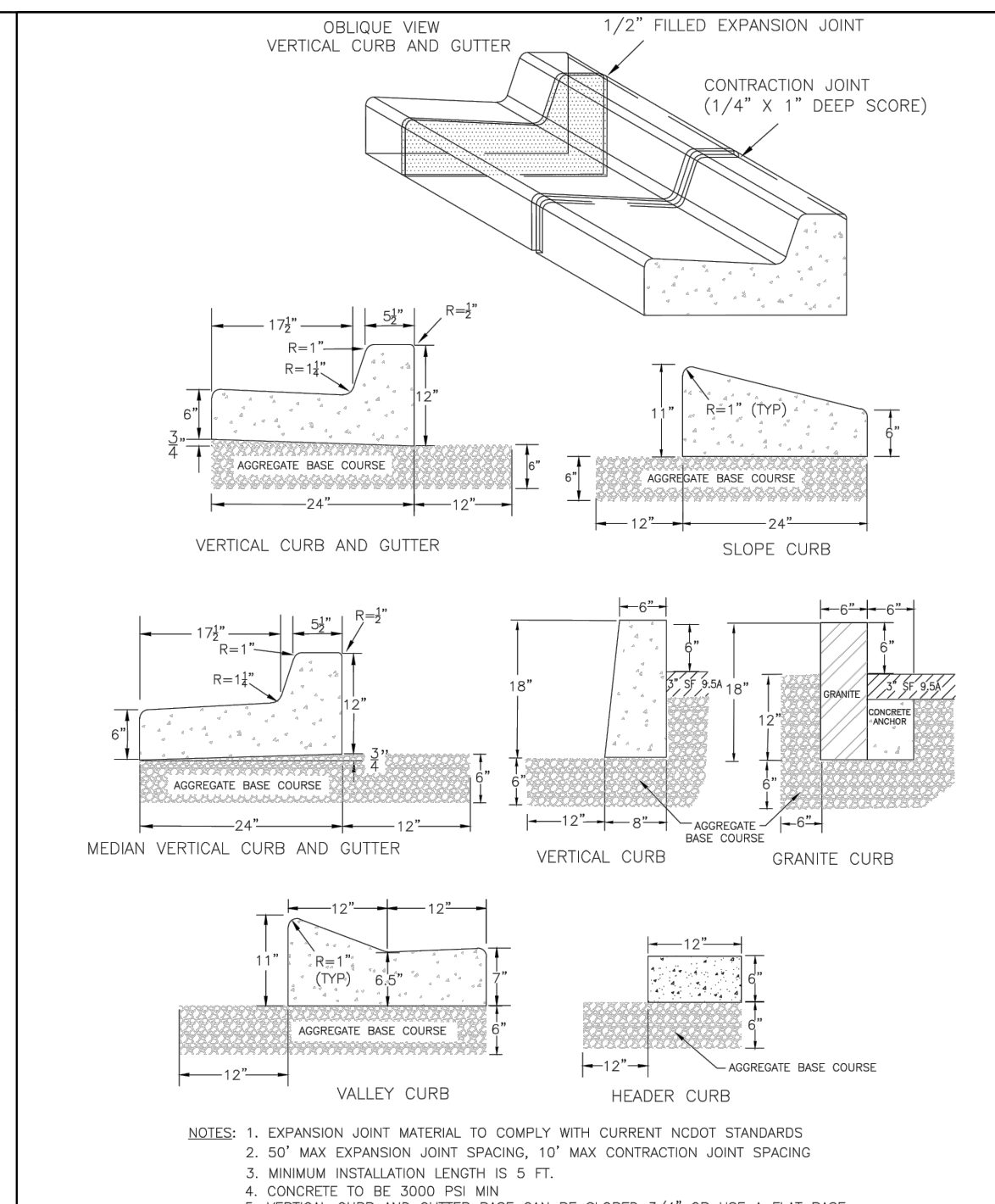
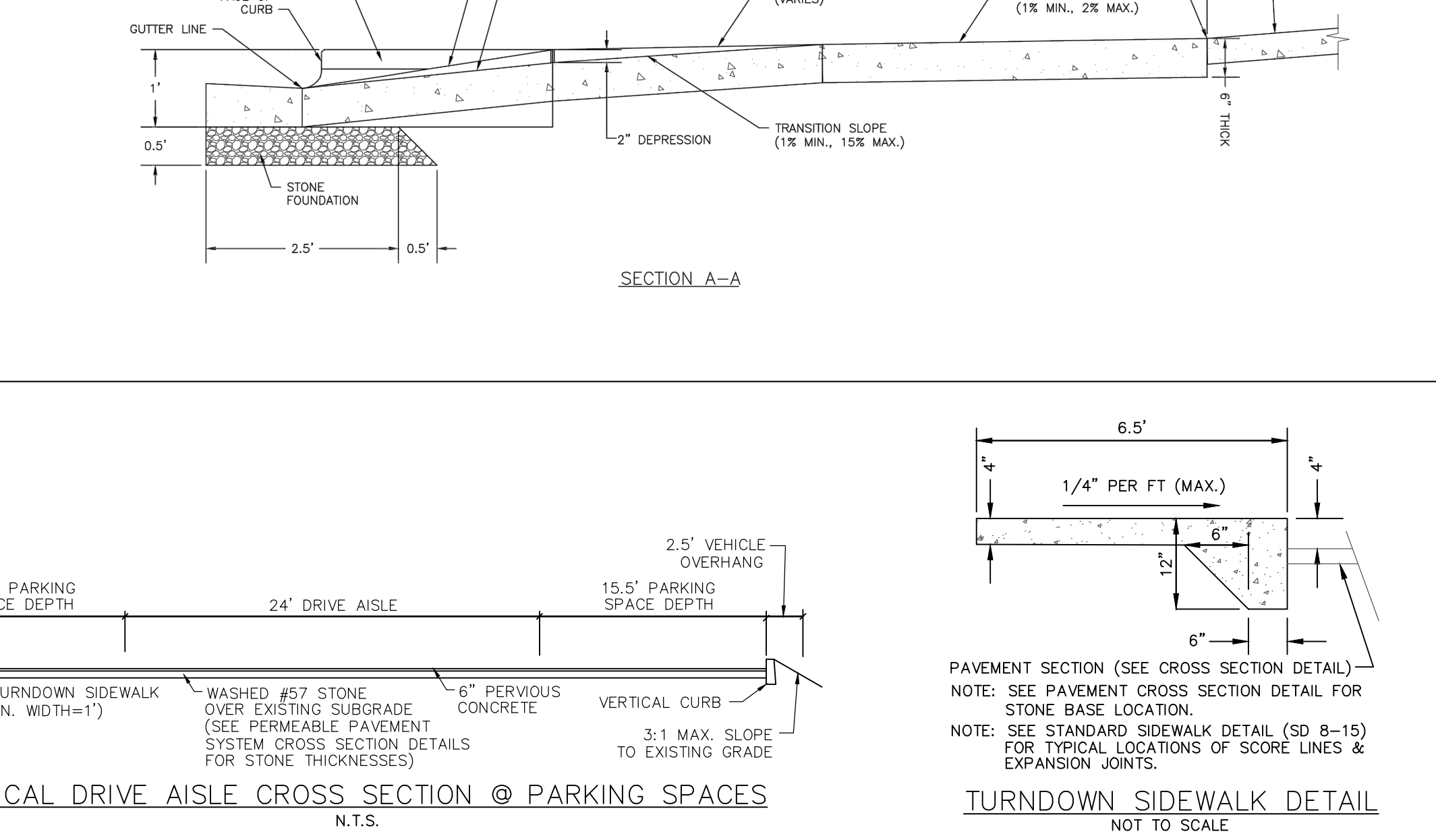


DATE: FEB. 14, 2017  
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 CHECKED BY: D.E.C., P.E.  
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STANDARD DETAIL  
**COMMERCIAL DRIVEWAY SECTIONS (VERTICAL CURB)**  
 2 of 2

WILMINGTON NORTH CAROLINA  
 CITY OF WILMINGTON ENGINEERING  
 PO BOX 1810 WILMINGTON, N.C. 28402  
 (910) 341-7807

SD 3-03.4



STANDARD DETAIL  
**STREET SIGNS AND LOCATION**  
 SHEET 2 of 2

WILMINGTON NORTH CAROLINA  
 CITY OF WILMINGTON ENGINEERING  
 PO BOX 1810 WILMINGTON, N.C. 28402  
 (910) 341-7807

SD 15-03

For each open utility cut of City streets a 325 permit shall be required from the City prior to occupancy and/or project acceptance.

Approved Construction Plan  
 Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Planning: \_\_\_\_\_  
 Traffic: \_\_\_\_\_  
 Fire: \_\_\_\_\_

DETAIL SHEET  
**EVERMORE APARTMENTS EXPANSION**  
 CITY OF WILMINGTON WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

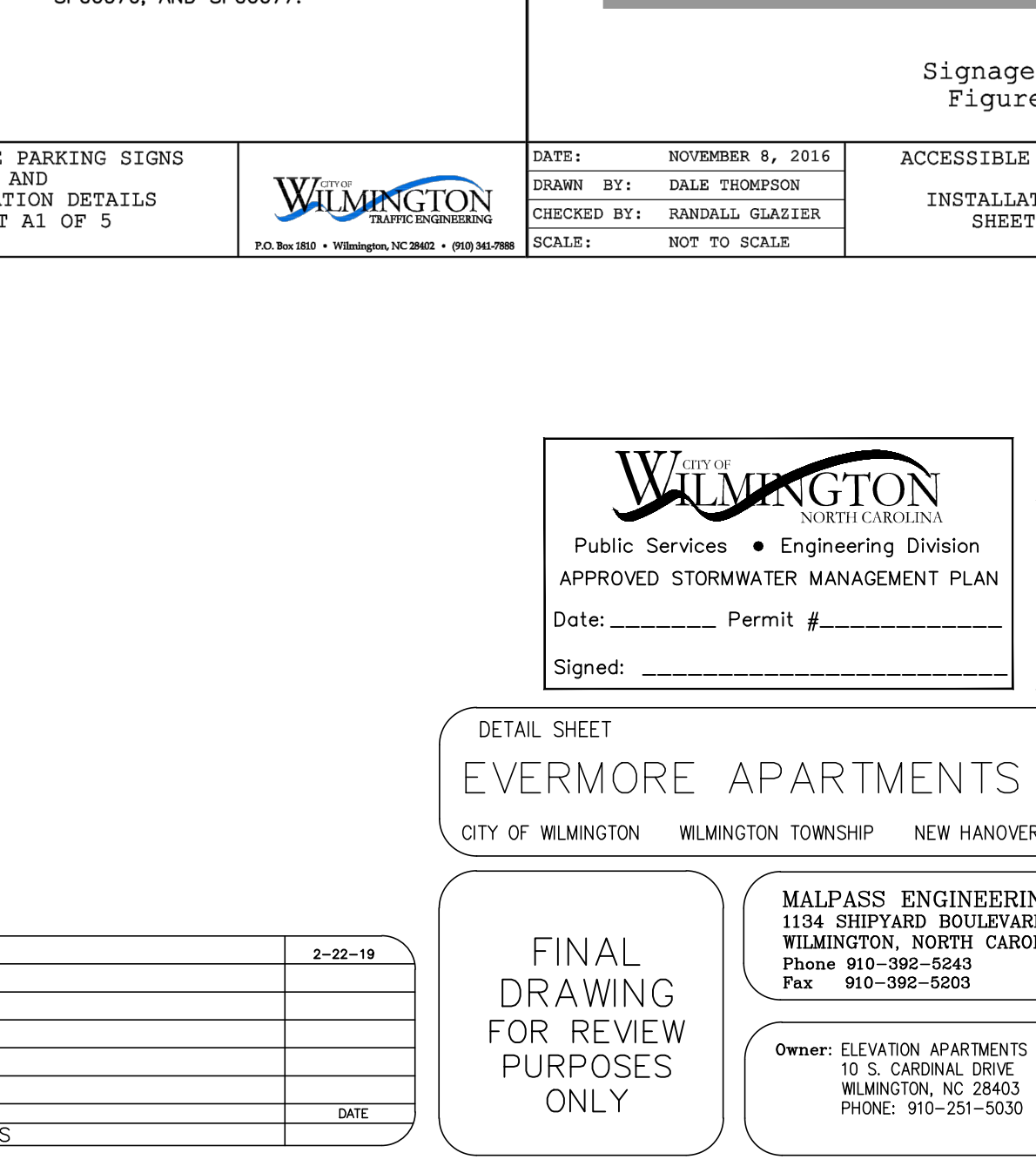
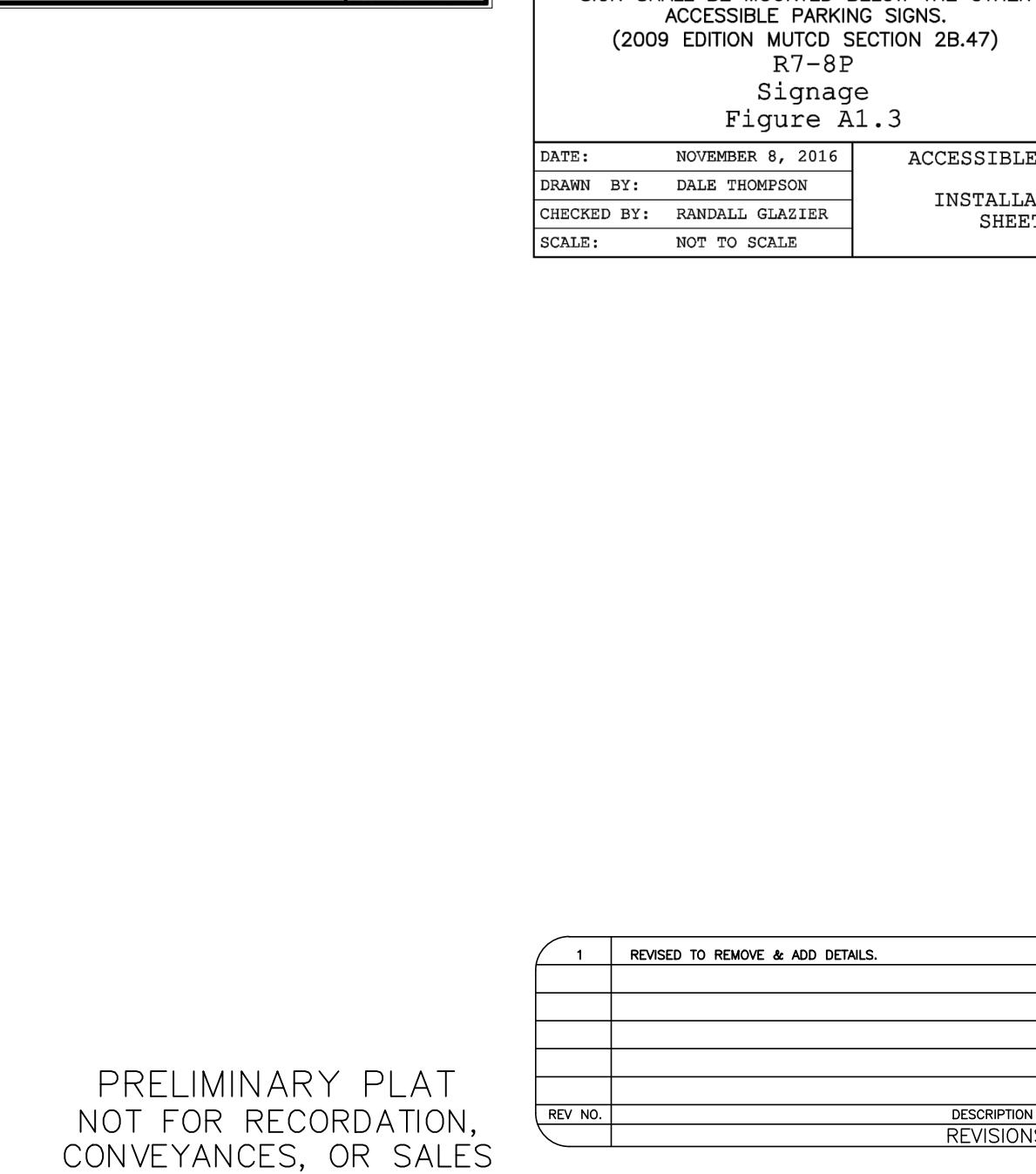
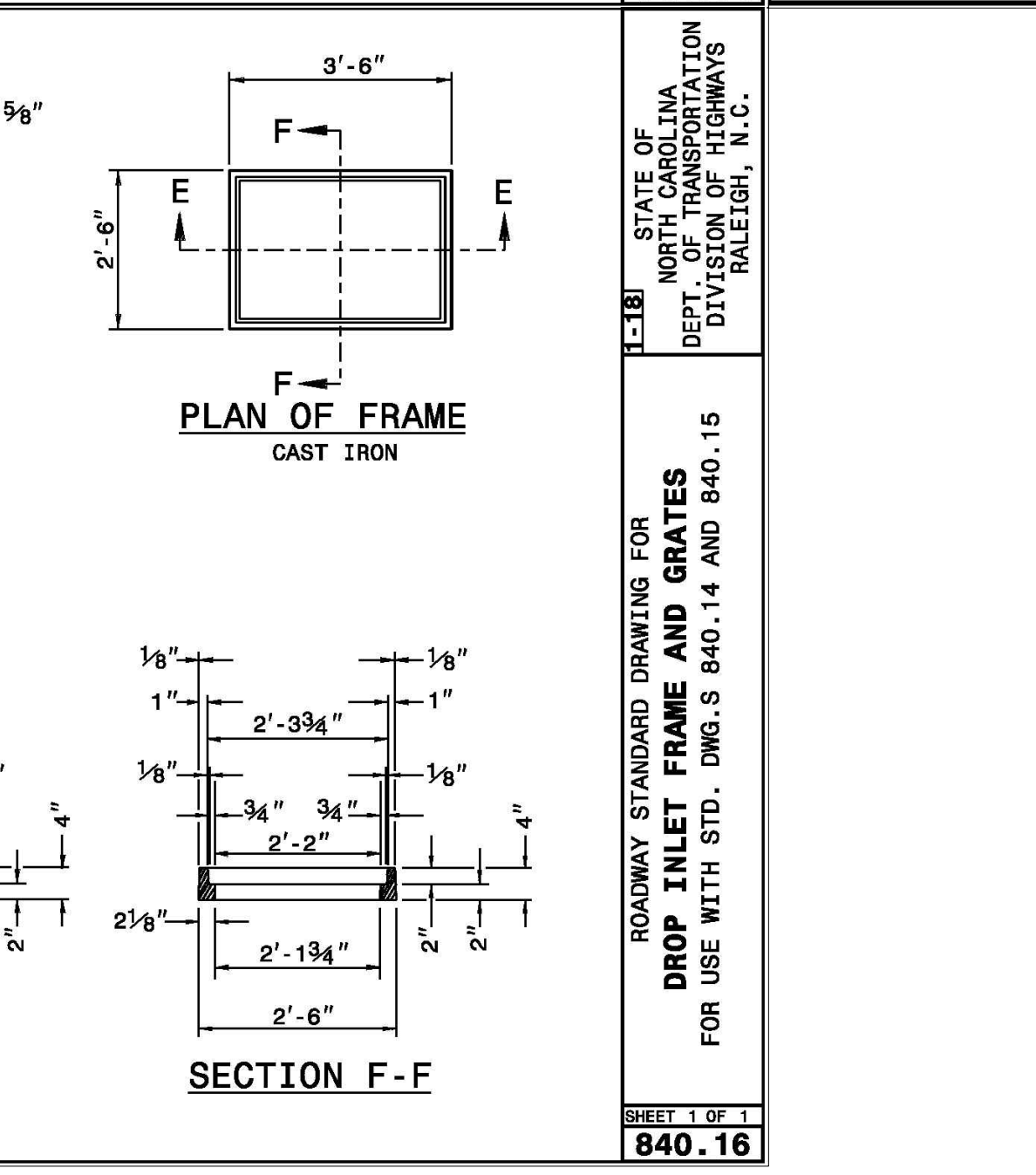
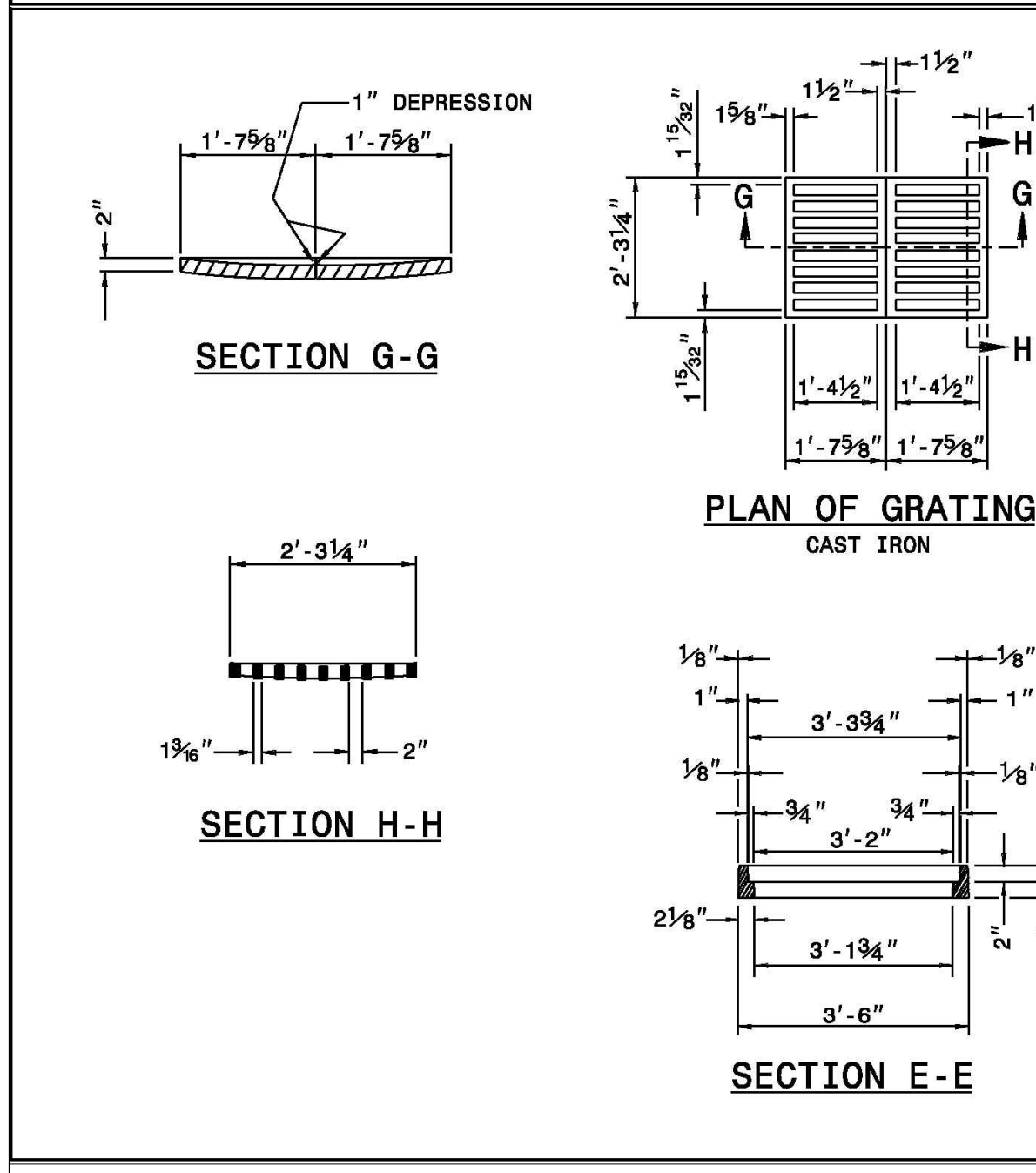
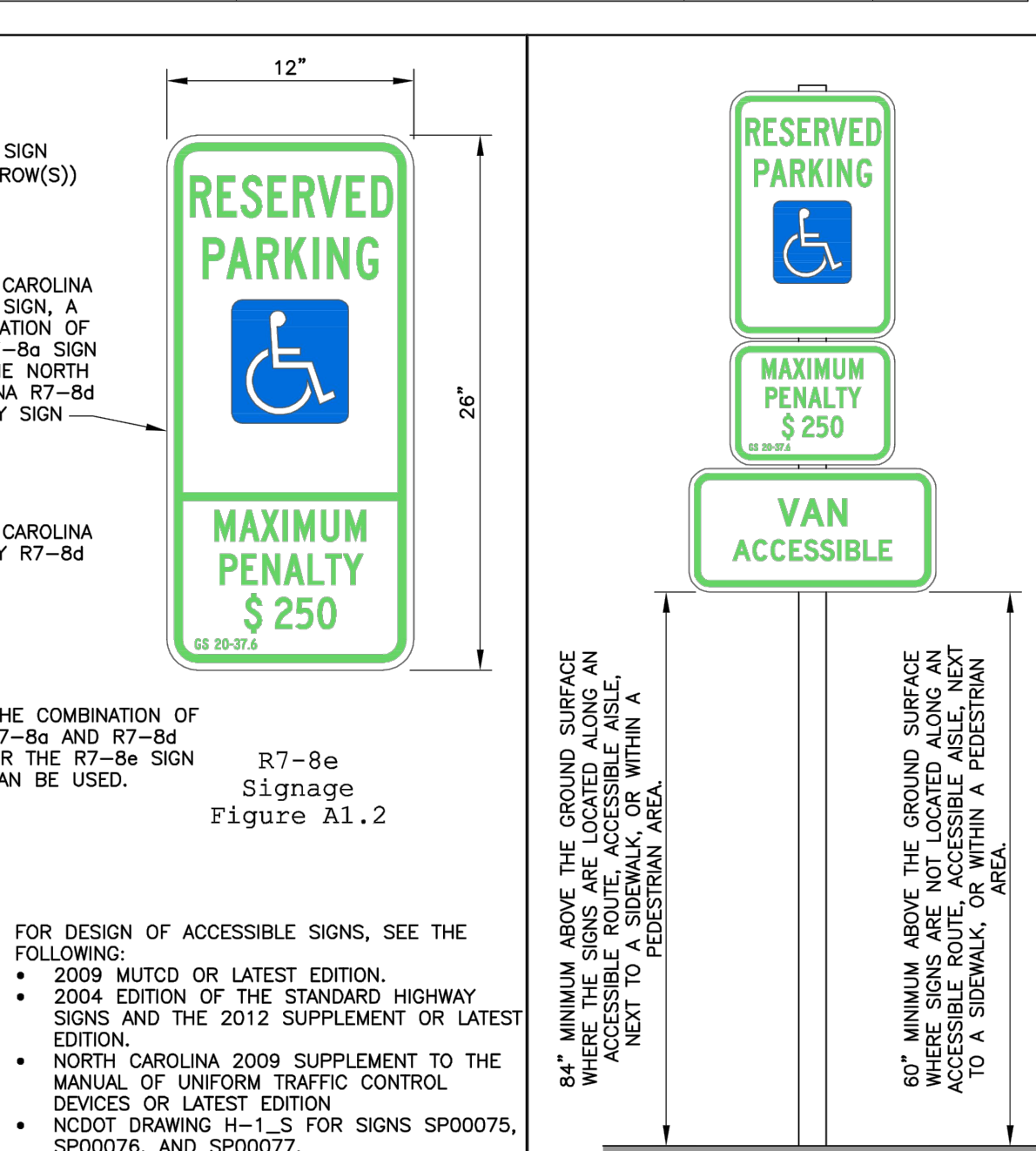
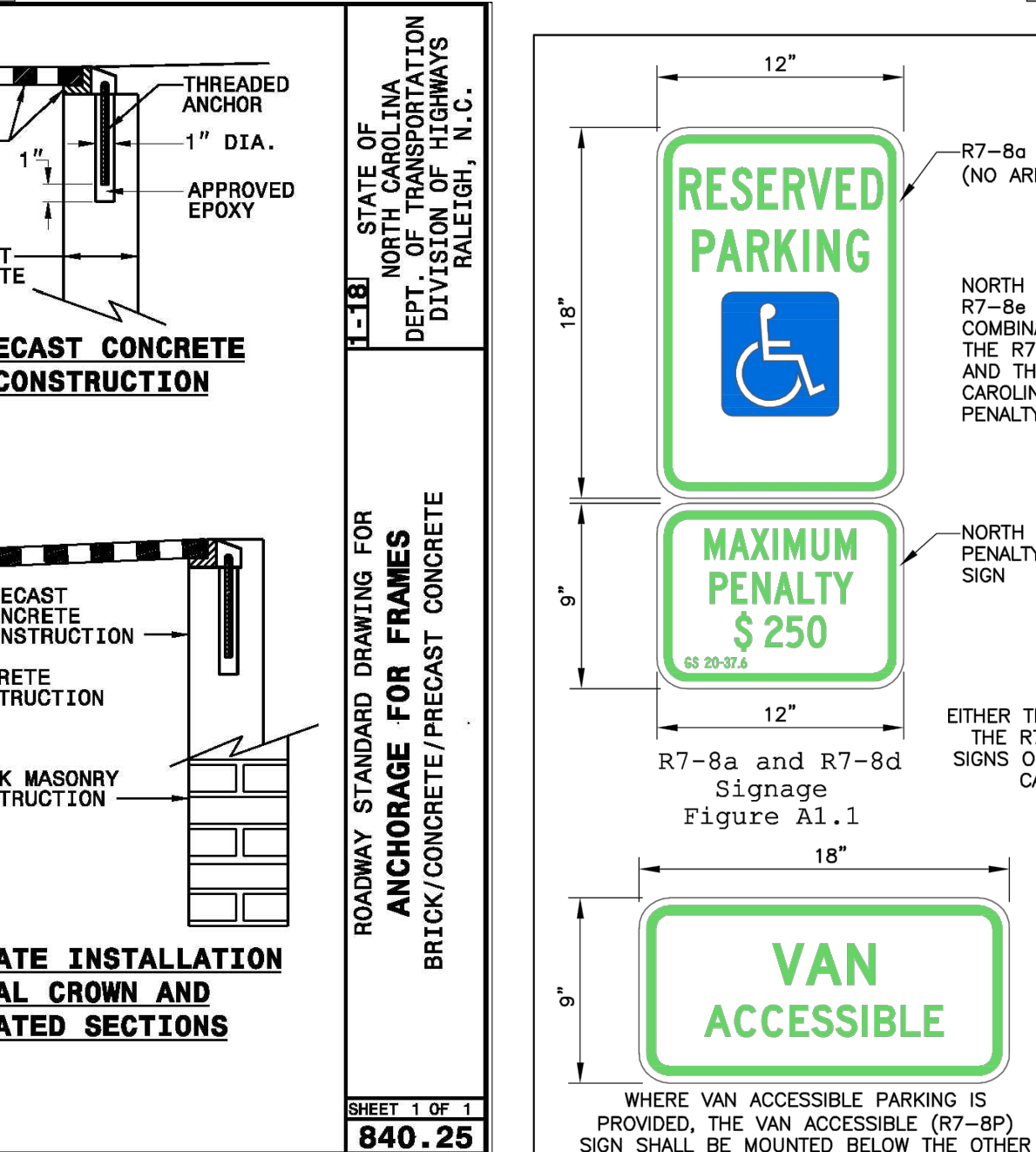
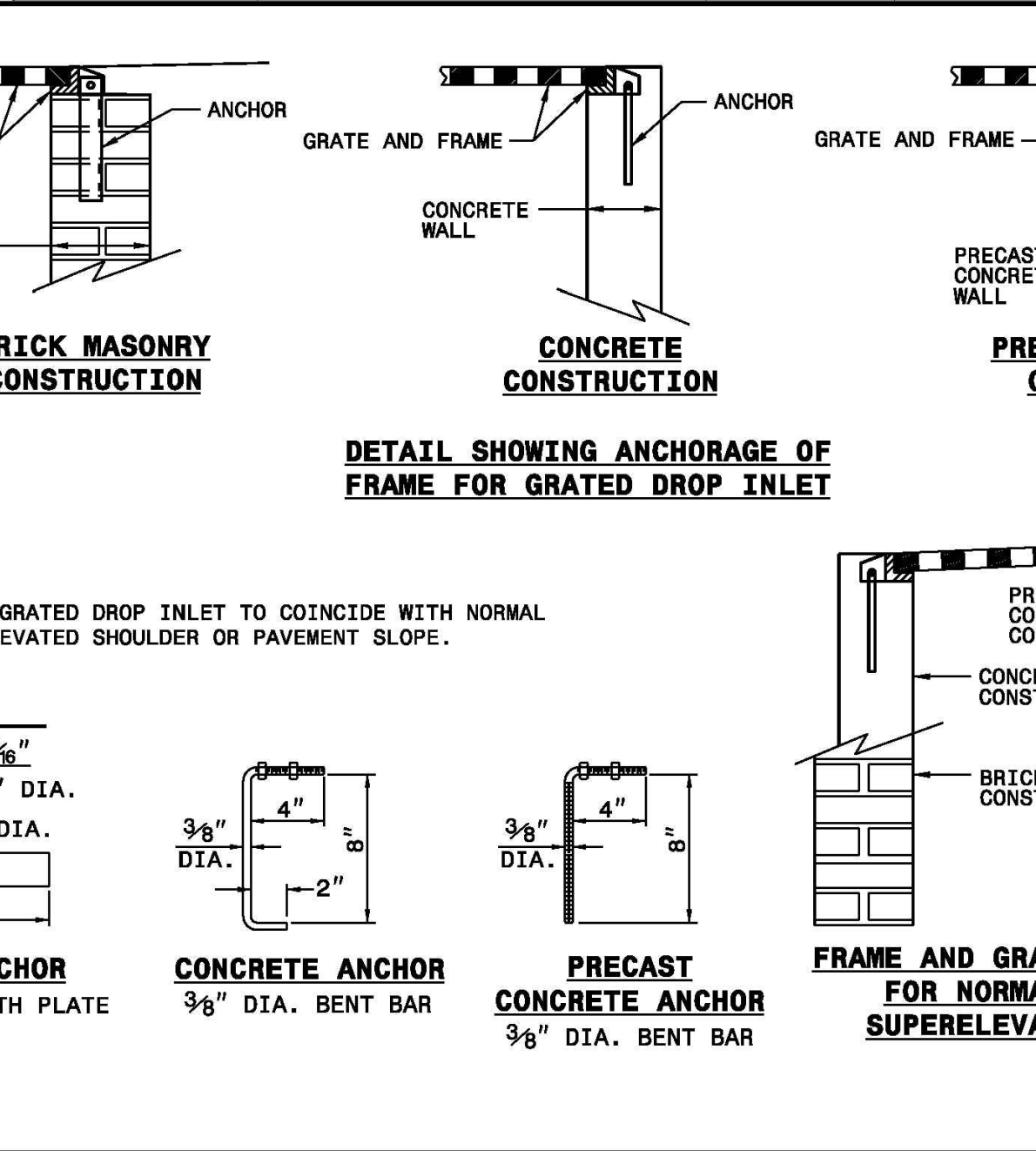
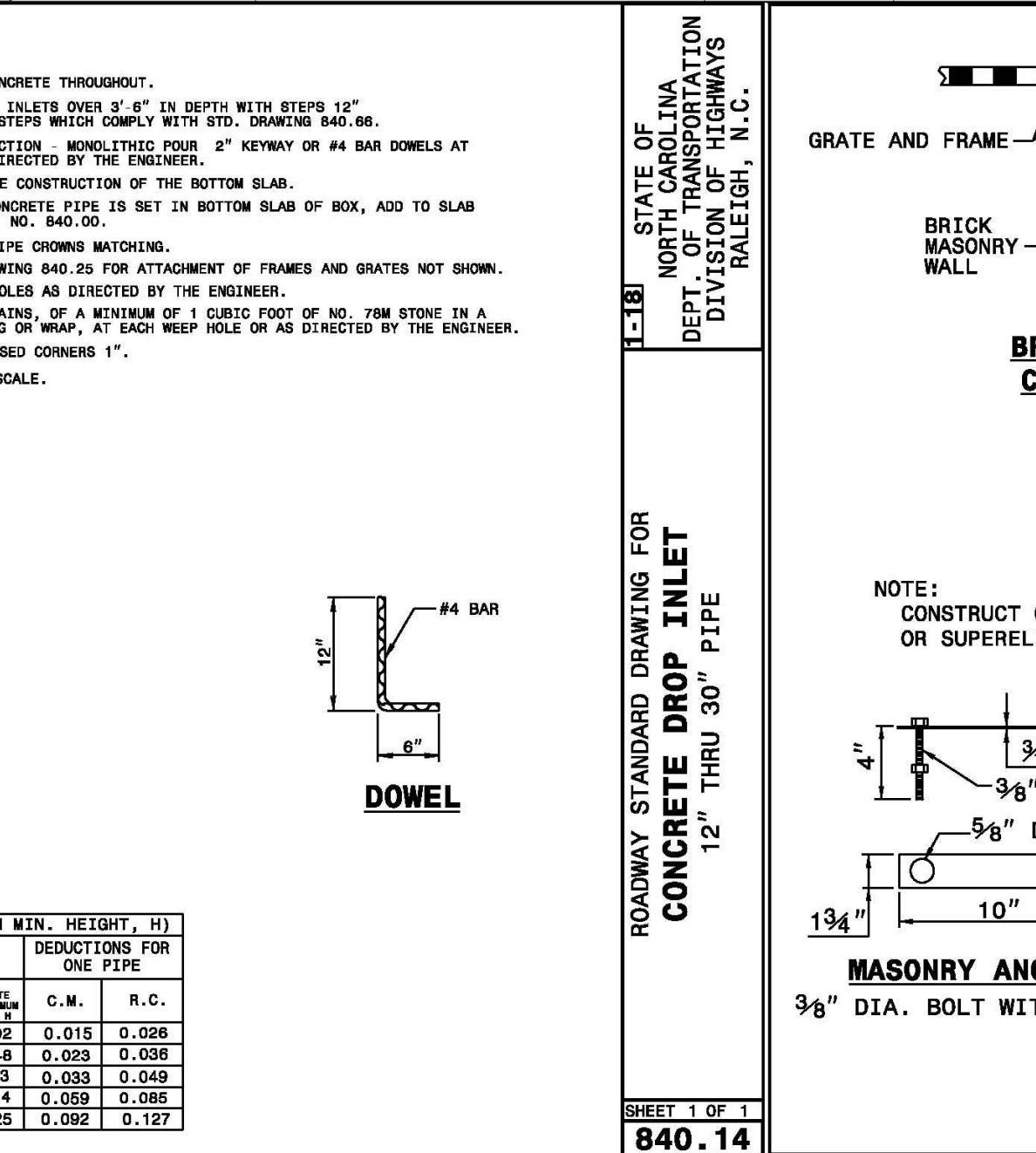
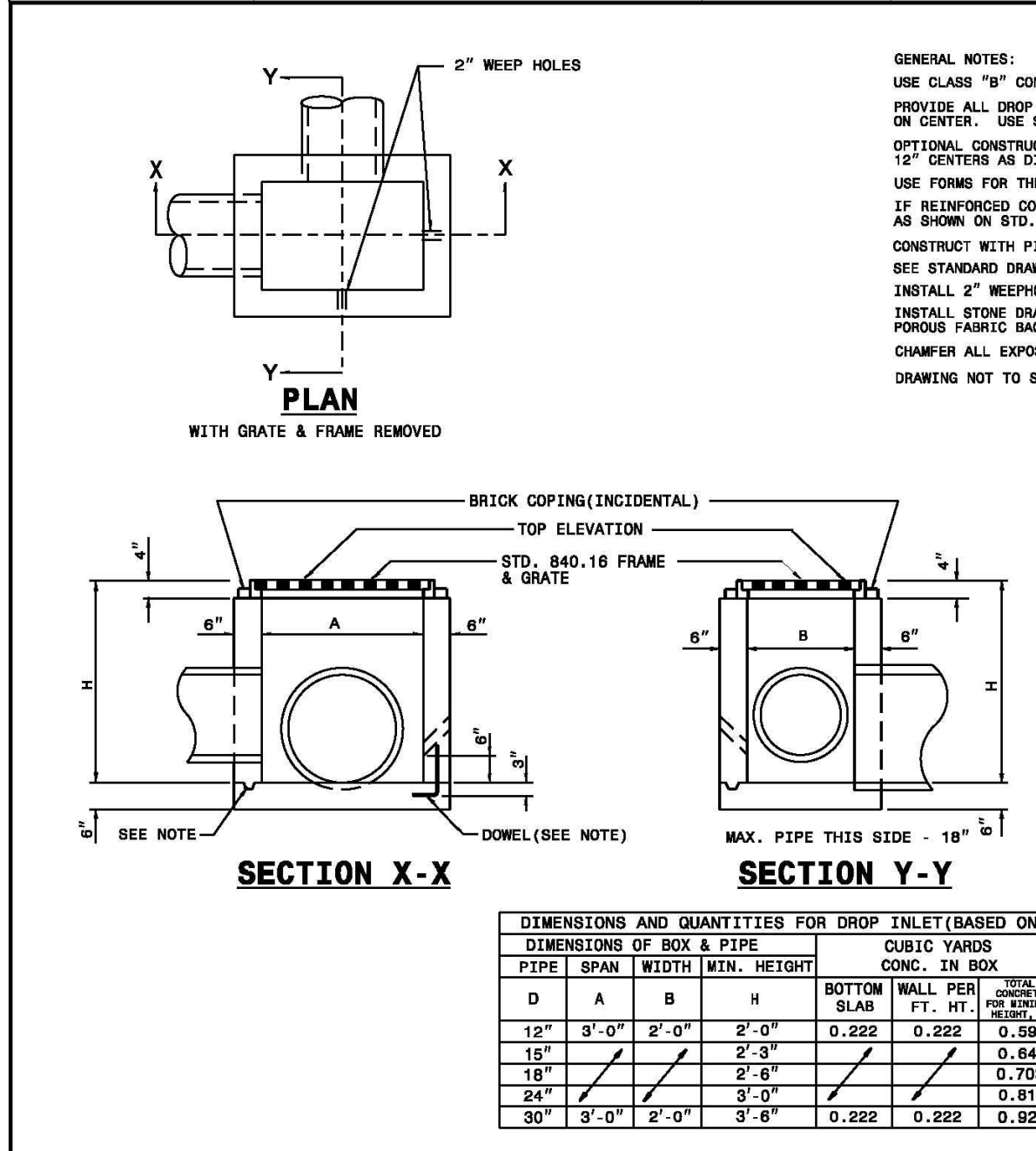
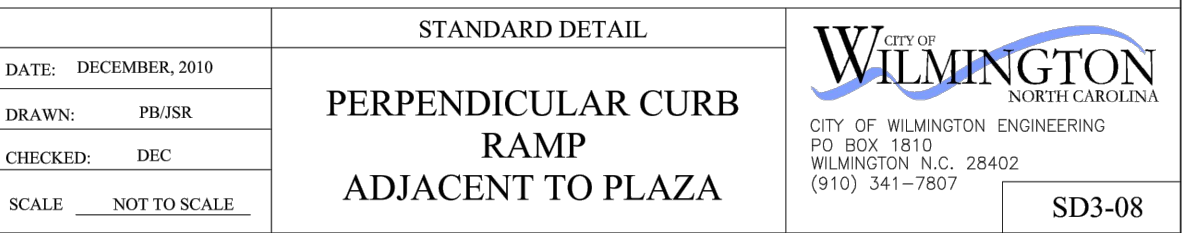
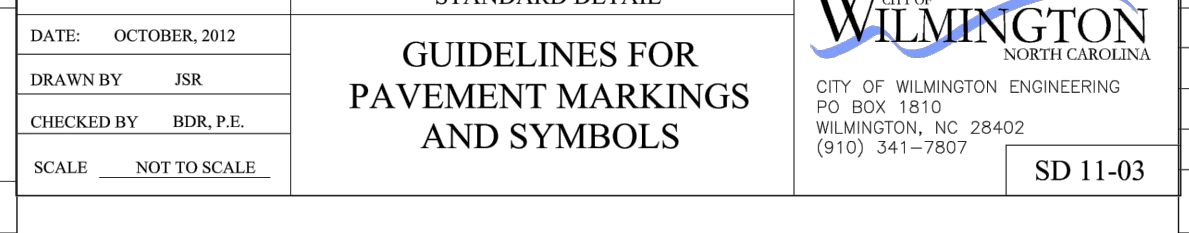
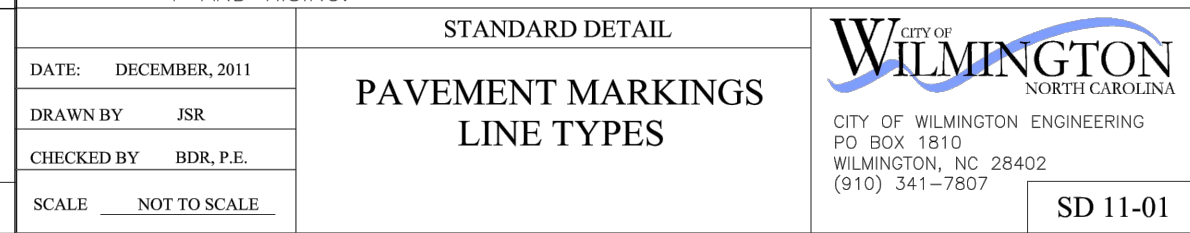
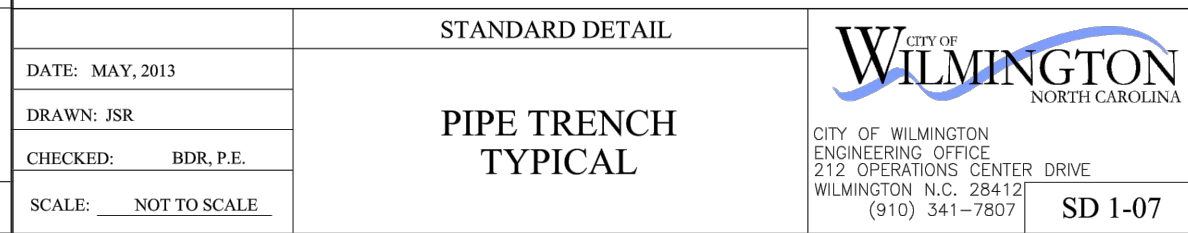
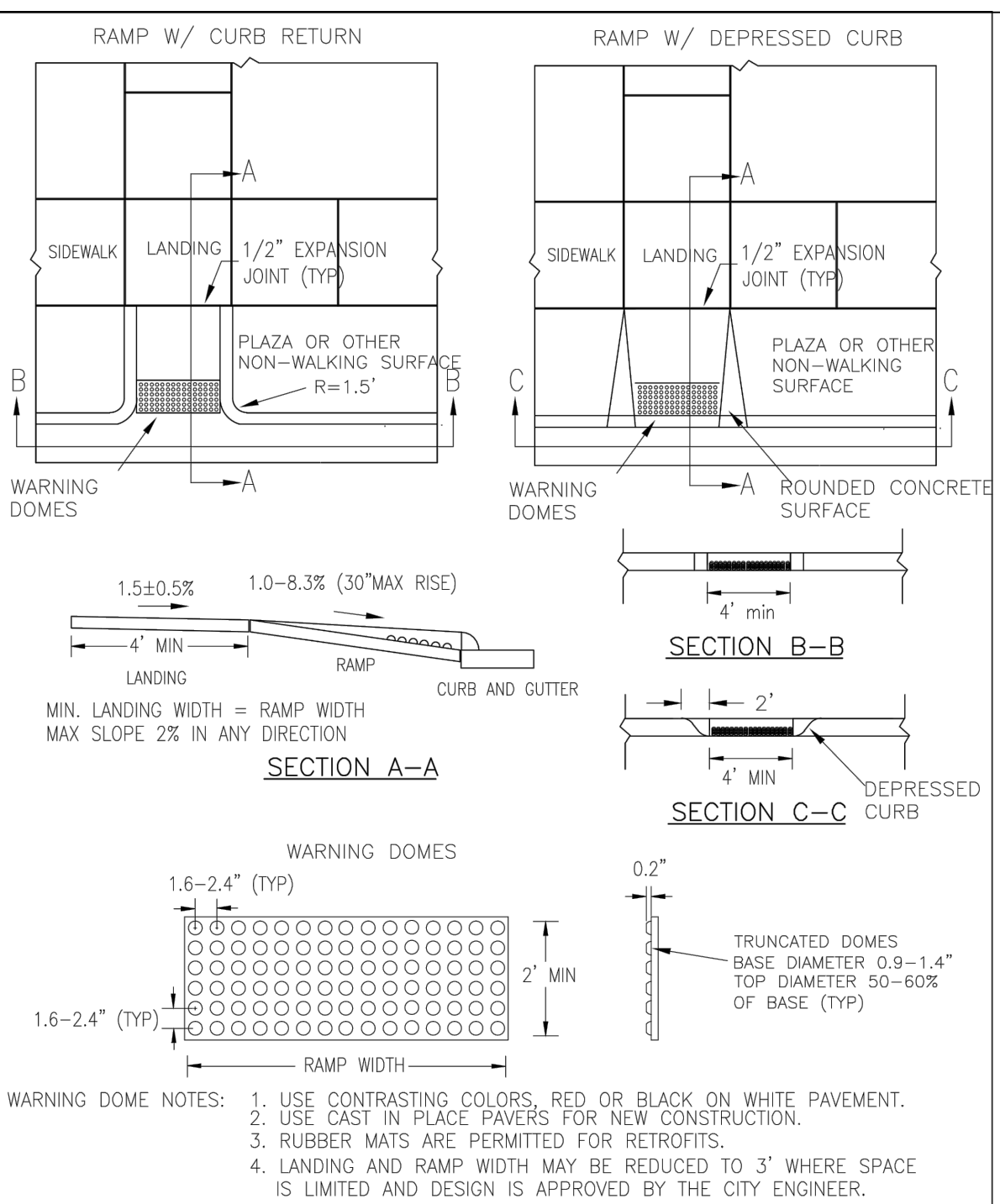
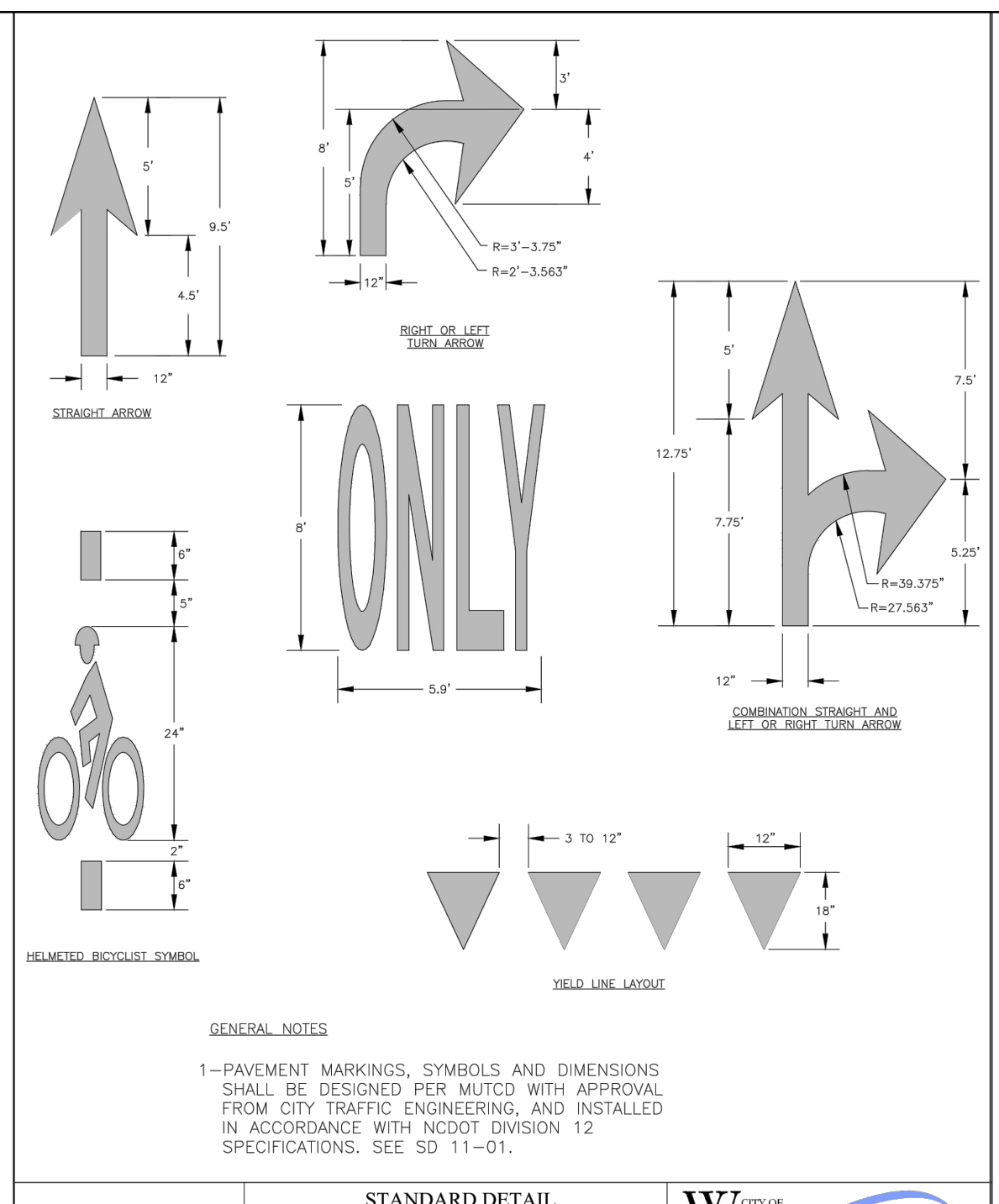
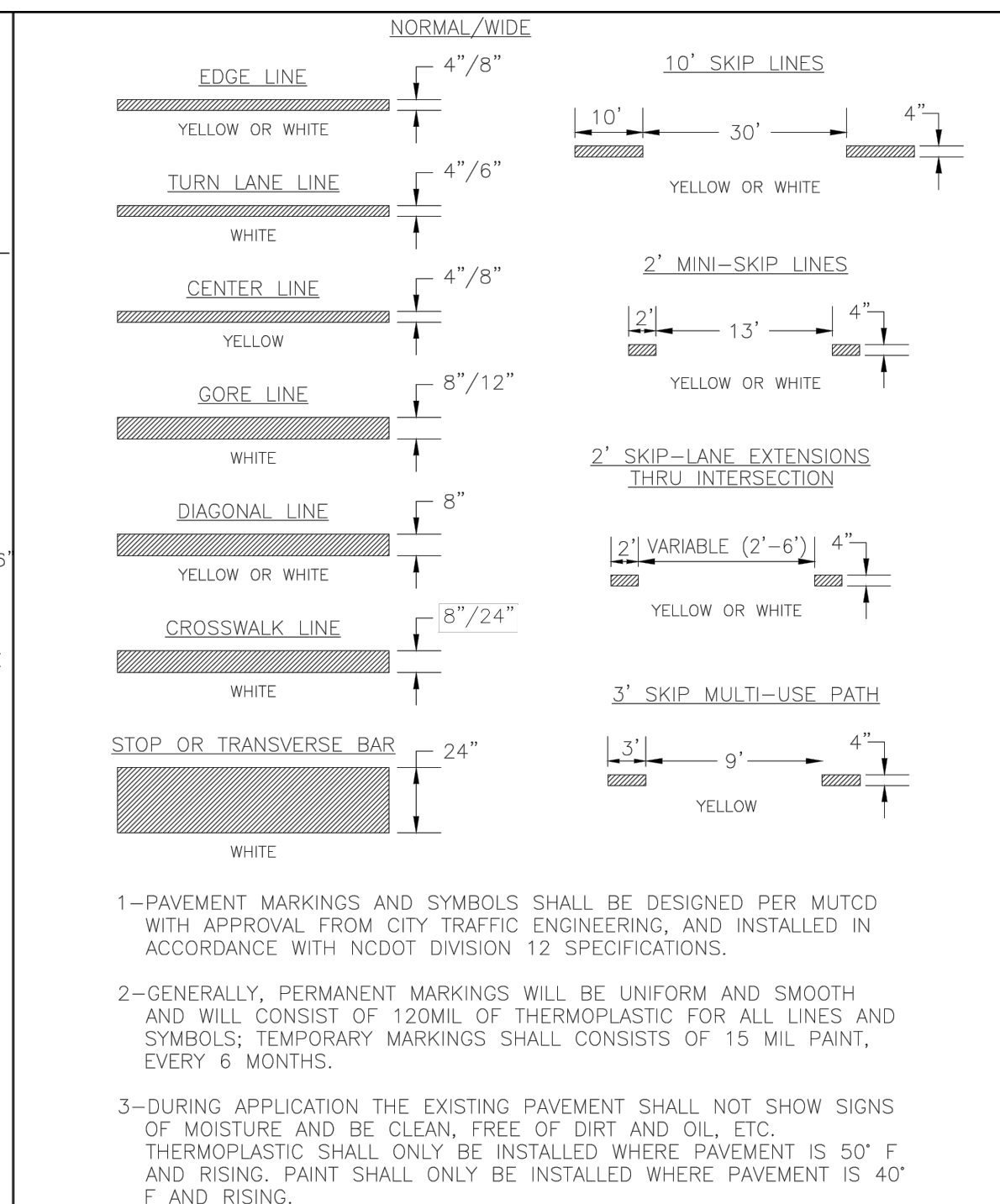
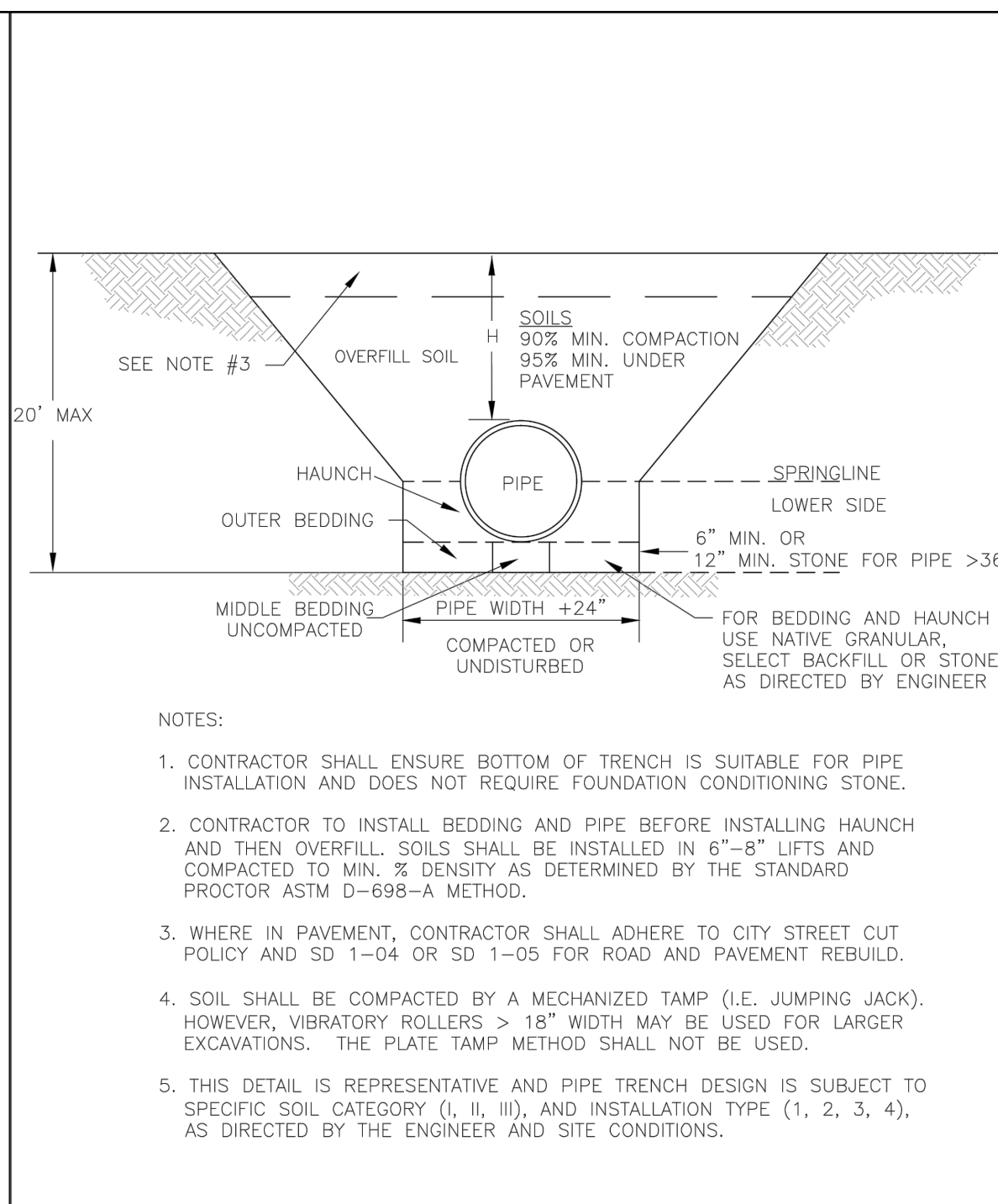
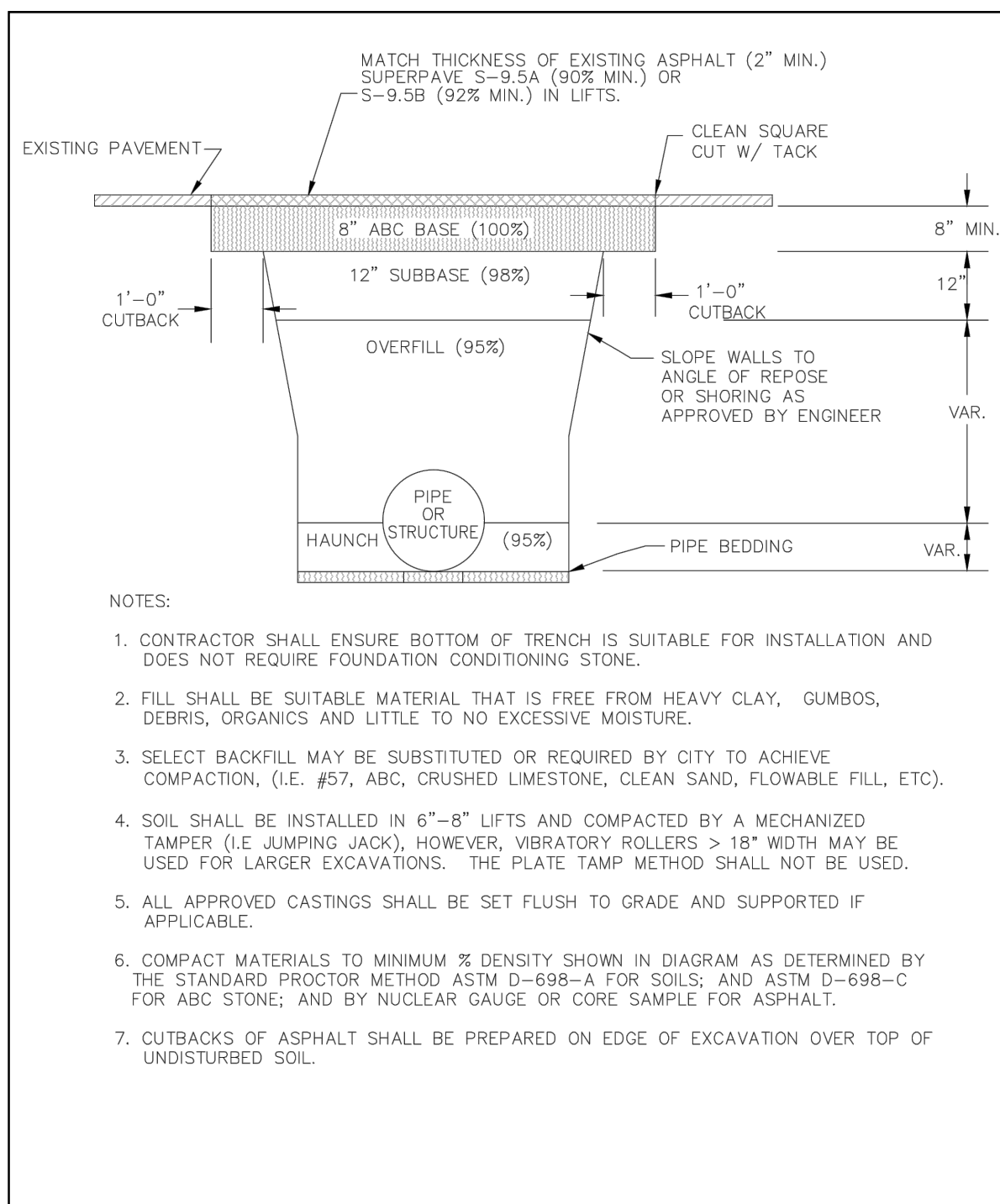
FINAL DRAWING FOR REVIEW PURPOSES ONLY

MALPASS ENGINEERING & SURVEYING, P.C.  
 1134 SHIPYARD BOULEVARD  
 WILMINGTON, NORTH CAROLINA 28412  
 Phone 910-392-6643  
 Fax 910-392-6603 License No. C-2920

Owner: ELEVATION APARTMENTS LLC & REMARKABLE PROPERTIES, LLC  
 10 S. CAROLINA DRIVE  
 WILMINGTON, NC 28403  
 PHONE: 910-251-5030

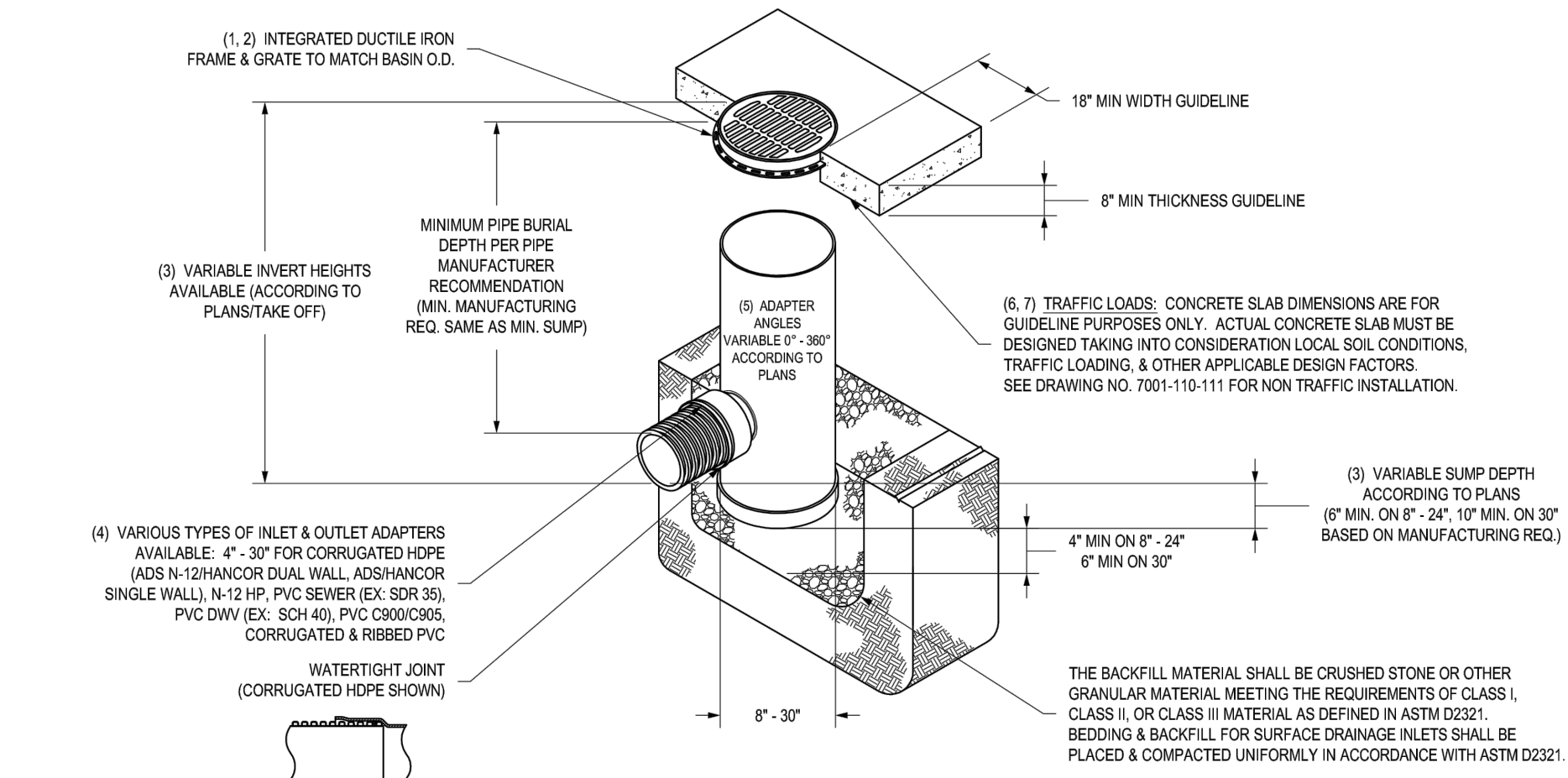
DATE: 1-18-19  
 SCALE: N.T.S.  
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 CHECKED: JBM  
 PROJECT NO: 219  
 SHEET NO: 10  
 OF: 14







**NYLOPLAST DRAIN BASIN WITH STANDARD GRATE**

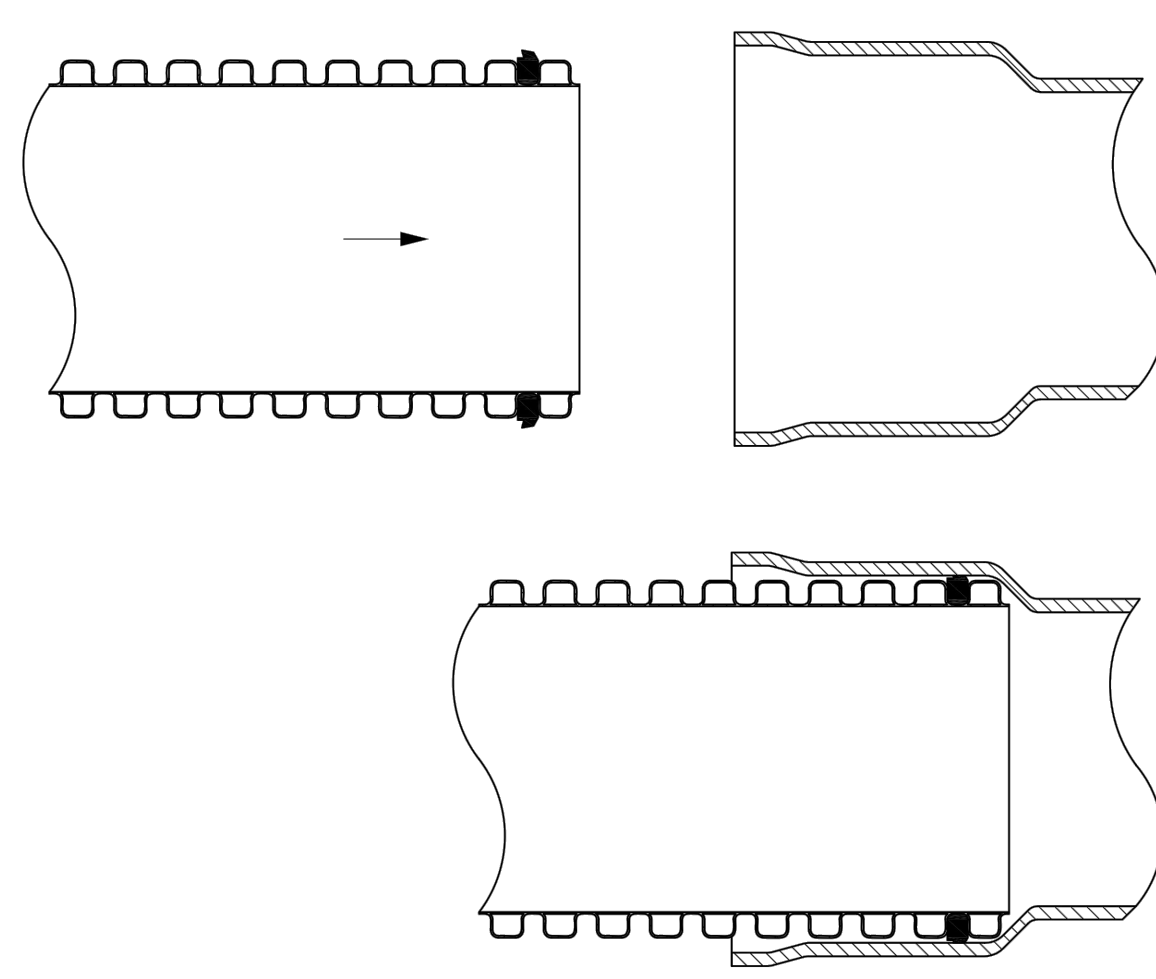


- 8" - 30" STANDARD GRATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-5.
- 12" - 30" FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-5.
- 12" - 30" STANDARD GRATES FIT DIRECTLY ON TO DRAIN BASINS WITH THE USE OF A PVC BODY TOP. SEE DRAWING NO. 7001-110-046.
- DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 4' DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
- DRAINAGE CONNECTION BY RUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12 HANDED DUAL WALL, N-12 HP & PVC SEWER (EX. SDR 35), PVC DWV (EX. SCH 40), PVC C900/C905, CORRUGATED & RIBBED PVC).
- ADAPTERS CAN BE MOUNTED ON ANY ANGLE 90° TO 300°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.
- 12" - 30" STANDARD GRATES SHALL MEET 1/2" LOAD RATING.
- 8" & 12" STANDARD GRATES ARE RATED FOR LIGHT DUTY APPLICATIONS ONLY. NO CONCRETE COLLAR NEEDED FOR LIGHT DUTY RATING.

THIS PRINT DISCLOSES SUBJECT MATTER IN WHICH NYLOPLAST HAS PROPRIETARY RIGHTS. THE RECEIPT OR POSSESSION OF THIS PRINT DOES NOT CONFER, TRANSFER, OR LICENSE THE USE OF THE DESIGN OR TECHNICAL INFORMATION SHOWN HEREIN. REPRODUCTION OF THIS PRINT OR ANY INFORMATION CONTAINED HEREIN, OR MANUFACTURE OF ANY ARTICLE HEREFROM, FOR THE DISCLOSURE TO OTHERS IS FORBIDDEN, EXCEPT BY SPECIFIC WRITTEN PERMISSION FROM NYLOPLAST.

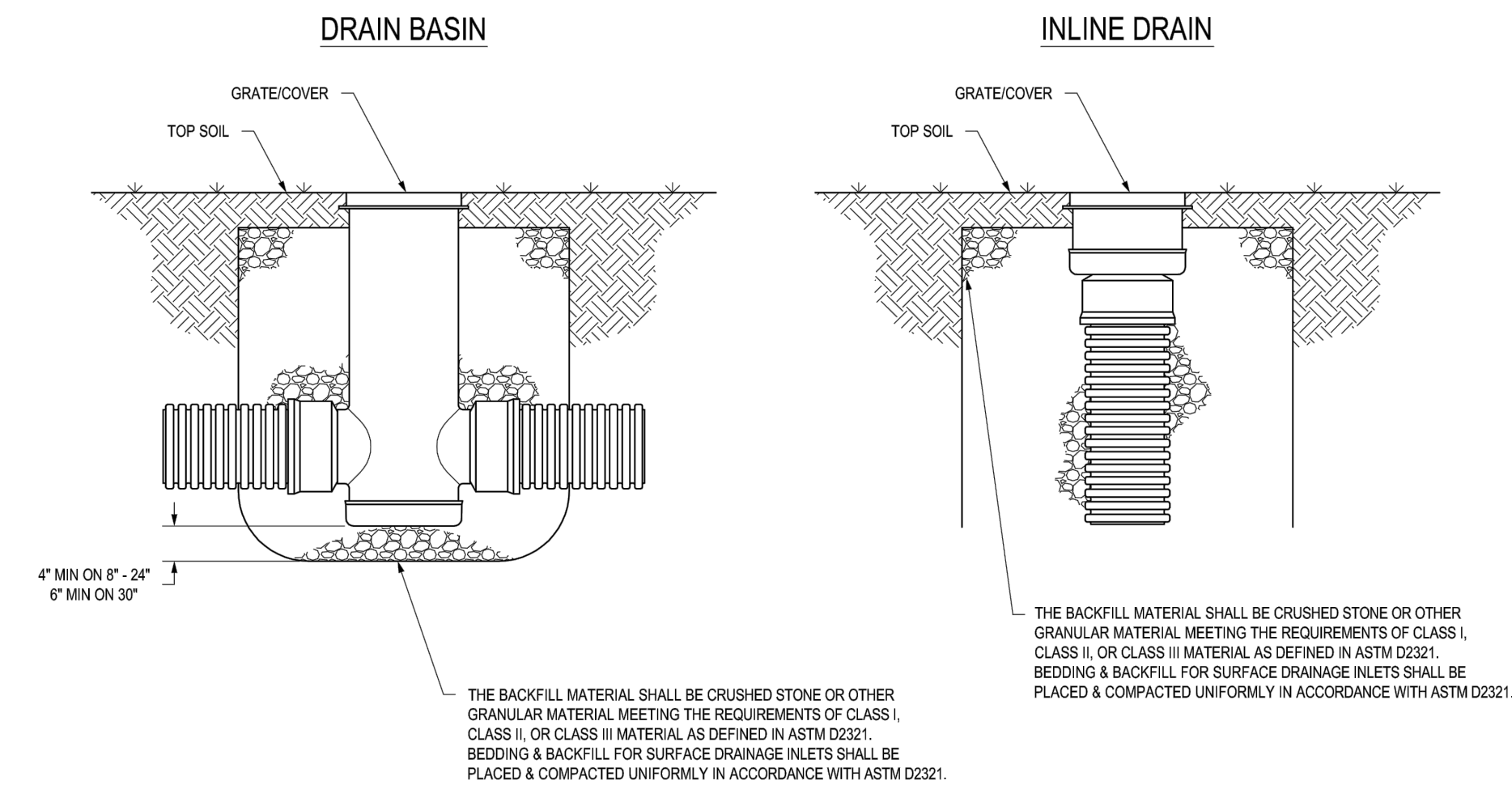
DATE	1-23-06	BY	EBK	MATERIAL	3130 VERONA AVE BURLINGTON, GA 30619 PHN (770) 932-2443 FAX (770) 932-2400 www.nyloplast.com
REVISED BY	NWH	PROJECT NO.	NAME	TITLE	DRAIN BASIN WITH STANDARD GRATE QUICK SPEC INSTALLATION DETAIL
DATE	03-11-16	DWG NO.	7001-110-144	SCALE	1:40 SHEET 1 OF 1
DWG SIZE	A	SCALE	1:40	SHEET	1 OF 1
DWG NO.	7001-110-144	REV	H		

**WATER TIGHT JOINT**



DATE	2-25-03	BY	CJA	MATERIAL	3130 VERONA AVE BURLINGTON, GA 30619 PHN (770) 932-2443 FAX (770) 932-2400 www.nyloplast.com
REVISED BY	EBK	PROJECT NO.	NAME	TITLE	ADS N-12 HANDED DUAL WALL & N-12 HP WATER TIGHT JOINT DETAIL
DATE	3-15-10	DWG NO.	7001-110-115	SCALE	1:40 SHEET 1 OF 1
DWG SIZE	A	SCALE	1:40	SHEET	1 OF 1
DWG NO.	7001-110-115	REV	C		

**NON TRAFFIC INSTALLATION**

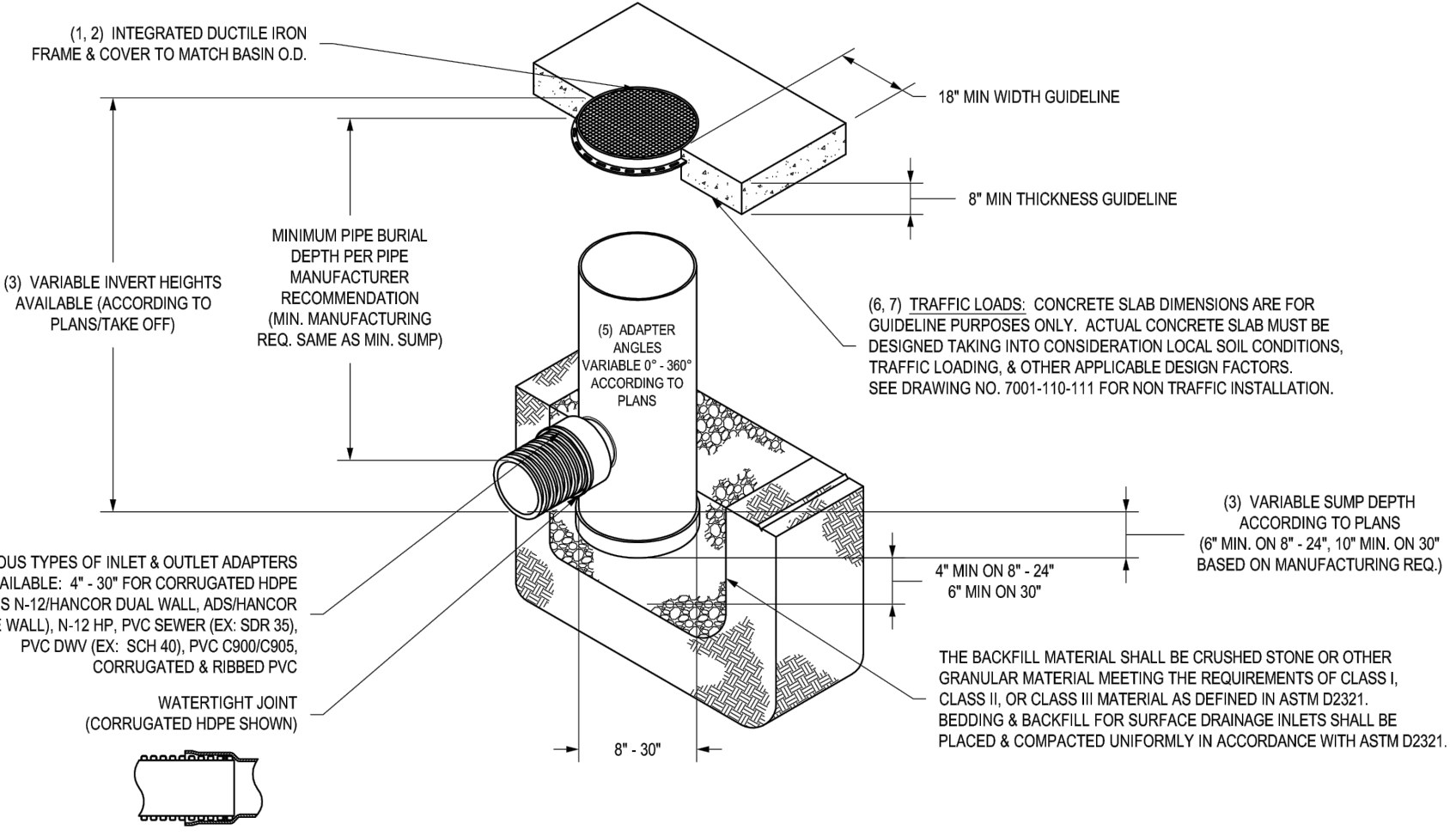


- 8" - 30" SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-5.
- 12" - 30" FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-5.
- 12" - 30" SOLID COVERS FIT DIRECTLY ON TO DRAIN BASINS WITH THE USE OF A PVC BODY TOP. SEE DRAWING NO. 7001-110-046.
- DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 4' DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
- DRAINAGE CONNECTION BY RUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12 HANDED DUAL WALL, N-12 HP & PVC SEWER (EX. SDR 35), PVC DWV (EX. SCH 40), PVC C900/C905, CORRUGATED & RIBBED PVC).
- ADAPTERS CAN BE MOUNTED ON ANY ANGLE 90° TO 300°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.
- 12" - 30" SOLID COVERS SHALL MEET 1/2" LOAD RATING.
- 8" & 12" SOLID COVERS ARE RATED FOR LIGHT DUTY APPLICATIONS ONLY. NO CONCRETE COLLAR NEEDED FOR LIGHT DUTY RATING.

THIS PRINT DISCLOSES SUBJECT MATTER IN WHICH NYLOPLAST HAS PROPRIETARY RIGHTS. THE RECEIPT OR POSSESSION OF THIS PRINT DOES NOT CONFER, TRANSFER, OR LICENSE THE USE OF THE DESIGN OR TECHNICAL INFORMATION SHOWN HEREIN. REPRODUCTION OF THIS PRINT OR ANY INFORMATION CONTAINED HEREIN, OR MANUFACTURE OF ANY ARTICLE HEREFROM, FOR THE DISCLOSURE TO OTHERS IS FORBIDDEN, EXCEPT BY SPECIFIC WRITTEN PERMISSION FROM NYLOPLAST.

DATE	03-30-09	BY	CJA	MATERIAL	3130 VERONA AVE BURLINGTON, GA 30619 PHN (770) 932-2443 FAX (770) 932-2400 www.nyloplast.com
REVISED BY	NWH	PROJECT NO.	NAME	TITLE	DRAIN BASIN & INLINE DRAIN NON TRAFFIC INSTALLATION
DATE	03-11-16	DWG NO.	7001-110-111	SCALE	1:25 SHEET 1 OF 1
DWG SIZE	A	SCALE	1:25	SHEET	1 OF 1
DWG NO.	7001-110-111	REV	E		

**NYLOPLAST DRAIN BASIN WITH SOLID COVER**

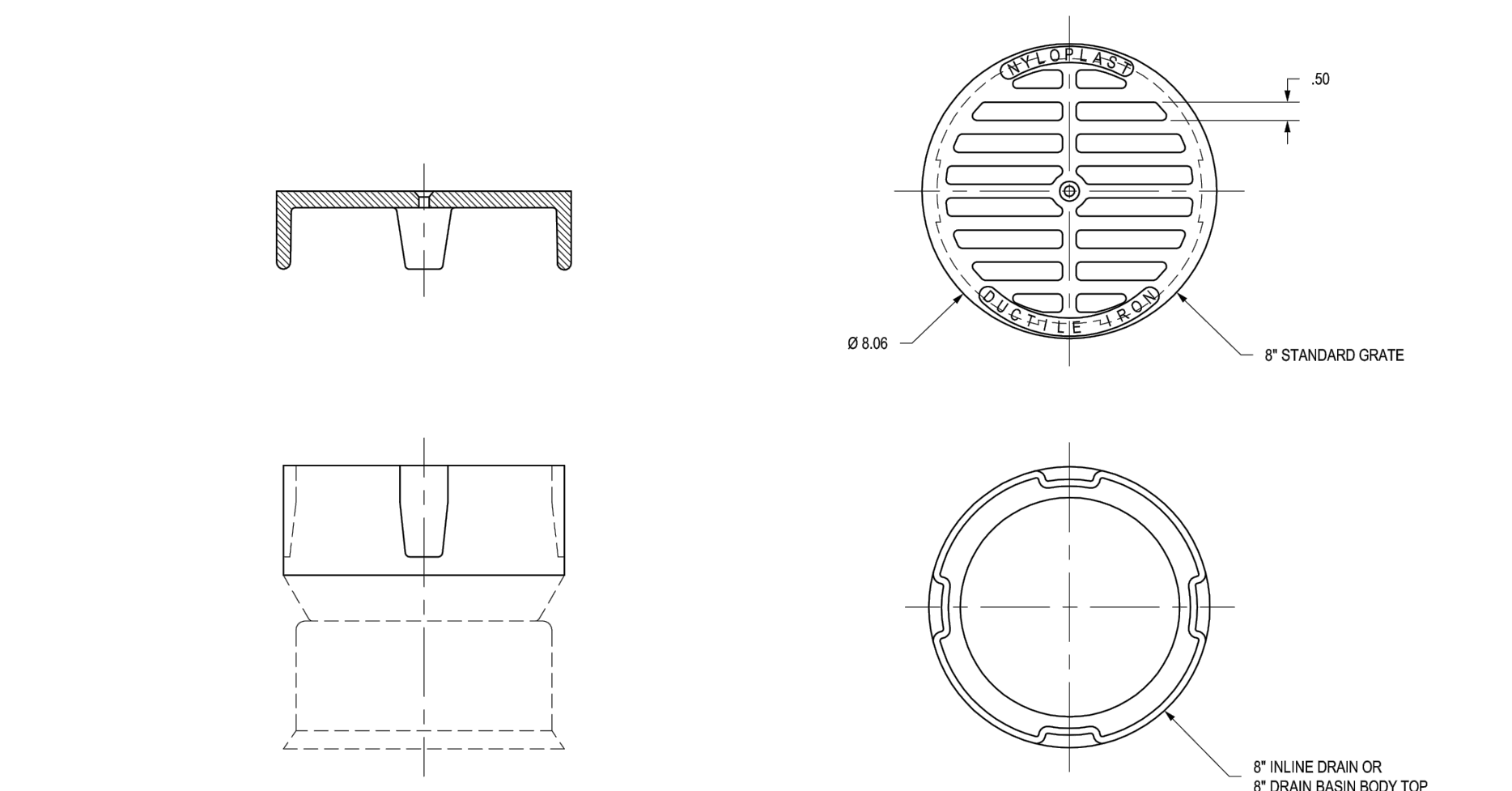


- 8" - 30" SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-5.
- 12" - 30" FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-5.
- 12" - 30" SOLID COVERS FIT DIRECTLY ON TO DRAIN BASINS WITH THE USE OF A PVC BODY TOP. SEE DRAWING NO. 7001-110-046.
- DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 4' DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
- DRAINAGE CONNECTION BY RUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12 HANDED DUAL WALL, N-12 HP & PVC SEWER (EX. SDR 35), PVC DWV (EX. SCH 40), PVC C900/C905, CORRUGATED & RIBBED PVC).
- ADAPTERS CAN BE MOUNTED ON ANY ANGLE 90° TO 300°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.
- 12" - 30" SOLID COVERS SHALL MEET 1/2" LOAD RATING.
- 8" & 12" SOLID COVERS ARE RATED FOR LIGHT DUTY APPLICATIONS ONLY. NO CONCRETE COLLAR NEEDED FOR LIGHT DUTY RATING.

DATE	03-11-16	BY	EBK	MATERIAL	3130 VERONA AVE BURLINGTON, GA 30619 PHN (770) 932-2443 FAX (770) 932-2400 www.nyloplast.com
REVISED BY	NWH	PROJECT NO.	NAME	TITLE	DRAIN BASIN WITH SOLID COVER QUICK SPEC INSTALLATION DETAIL
DATE	03-11-16	DWG NO.	7001-110-288	SCALE	1:40 SHEET 1 OF 1
DWG SIZE	A	SCALE	1:40	SHEET	1 OF 1
DWG NO.	7001-110-288	REV	D		

**0899CGS**

APPROX. DRAIN AREA = 18.77 SQ IN  
APPROX. WEIGHT = 3.06 LBS



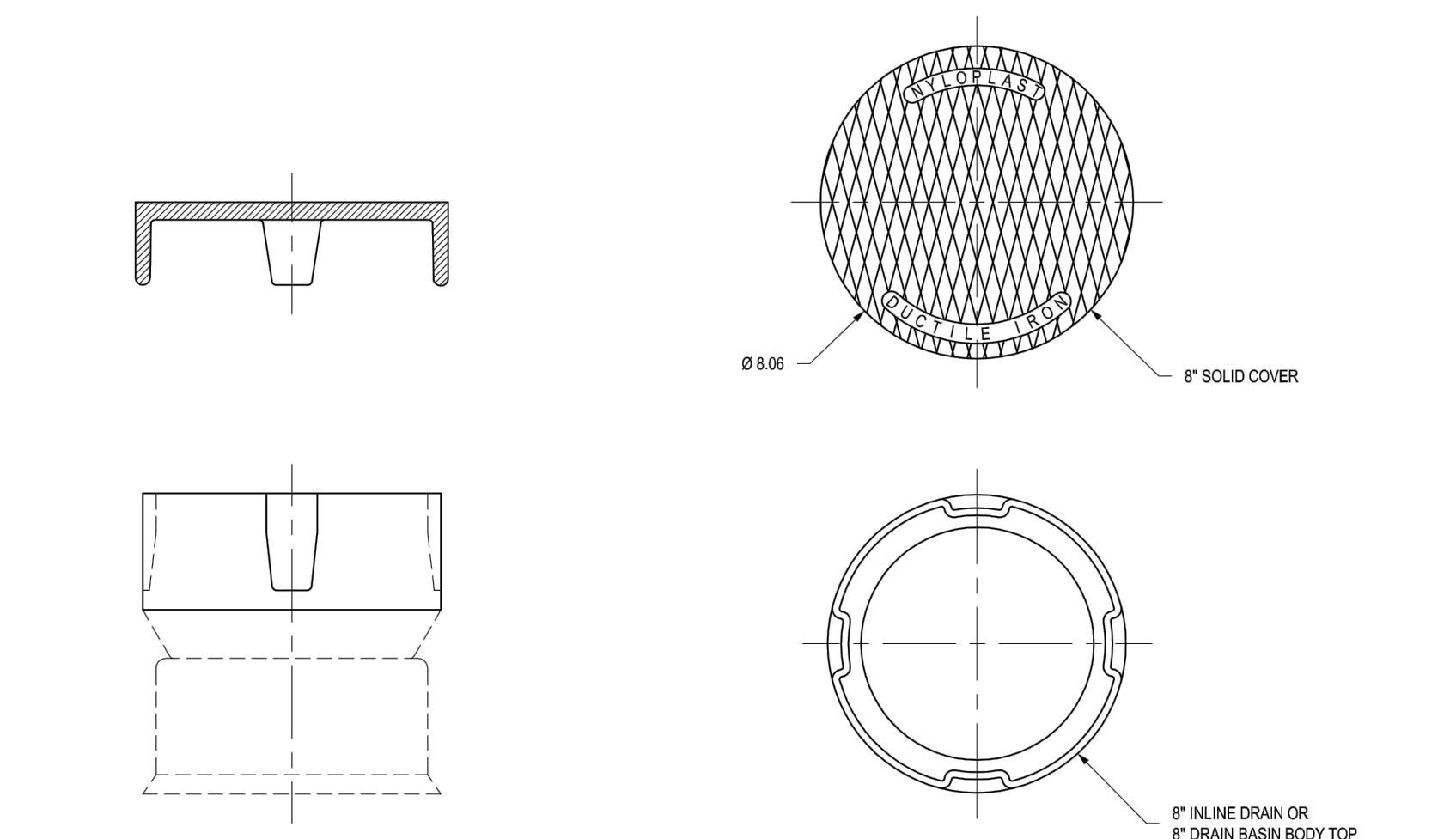
- DIMENSIONS ARE FOR REFERENCE ONLY. ACTUAL DIMENSIONS MAY VARY.
- GRATE HAS LIGHT DUTY RATING.
- QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-5. PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT. SIZE OF OPENING MEETS REQUIREMENTS OF AMERICAN DISABILITY ACT AS STATED IN FEDERAL REGISTER PART II, DEPARTMENT OF JUSTICE, 28 CFR PART 36.
- LOCKING DEVICE AVAILABLE UPON REQUEST SEE DRAWING NO. 7001-110-028.

THIS PRINT DISCLOSES SUBJECT MATTER IN WHICH NYLOPLAST HAS PROPRIETARY RIGHTS. THE RECEIPT OR POSSESSION OF THIS PRINT DOES NOT CONFER, TRANSFER, OR LICENSE THE USE OF THE DESIGN OR TECHNICAL INFORMATION SHOWN HEREIN. REPRODUCTION OF THIS PRINT OR ANY INFORMATION CONTAINED HEREIN, OR MANUFACTURE OF ANY ARTICLE HEREFROM, FOR THE DISCLOSURE TO OTHERS IS FORBIDDEN, EXCEPT BY SPECIFIC WRITTEN PERMISSION FROM NYLOPLAST.

DATE	3-3-06	BY	EBK	MATERIAL	3130 VERONA AVE BURLINGTON, GA 30619 PHN (770) 932-2443 FAX (770) 932-2400 www.nyloplast.com
REVISED BY	EBK	PROJECT NO.	NAME	TITLE	8\"/>
DATE	3-13-10	DWG NO.	7001-110-194	SCALE	1:4 SHEET 1 OF 1
DWG SIZE	A	SCALE	1:4	SHEET	1 OF 1
DWG NO.	7001-110-194	REV	B		

**0899CGC**

APPROX. WEIGHT = 3.38 LBS



- DIMENSIONS ARE FOR REFERENCE ONLY. ACTUAL DIMENSIONS MAY VARY.
- COVER HAS LIGHT DUTY RATING.
- QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-5. PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT. LOCKING DEVICE AVAILABLE UPON REQUEST SEE DRAWING NO. 7001-110-028.

DATE	3-3-06	BY	EBK	MATERIAL	3130 VERONA AVE BURLINGTON, GA 30619 PHN (770) 932-2443 FAX (770) 932-2400 www.nyloplast.com
REVISED BY	EBK	PROJECT NO.	NAME	TITLE	8\"/>
DATE	3-13-10	DWG NO.	7001-110-195	SCALE	1:4 SHEET 1 OF 1
DWG SIZE	A	SCALE	1:4	SHEET	1 OF 1
DWG NO.	7001-110-195	REV	B		

PRELIMINARY PLAT  
NOT FOR RECORDATION,  
CONVEYANCES, OR SALES

REV. NO.	DESCRIPTION	DATE

**City of WILMINGTON**  
Public Services • Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN

Approved Construction Plan  
Name \_\_\_\_\_ Date \_\_\_\_\_  
Planning \_\_\_\_\_  
Traffic \_\_\_\_\_  
Fire \_\_\_\_\_  
Signed: \_\_\_\_\_ Permit # \_\_\_\_\_

DETAIL SHEET  
**EVERMORE APARTMENTS EXPANSION**  
CITY OF WILMINGTON WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

DATE: 4-11-19  
SCALE: N.T.S.  
DRAWN: JCB  
CHECKED: JBM  
PROJECT NO: 219  
SHEET NO: 11A  
OF: 14

MALPASS ENGINEERING & SURVEYING, P.C.  
1134 SHIPPARD BOULEVARD  
WILMINGTON, NORTH CAROLINA 28412  
Phone 910-382-8543  
Fax 910-392-5293 License No. C-2920

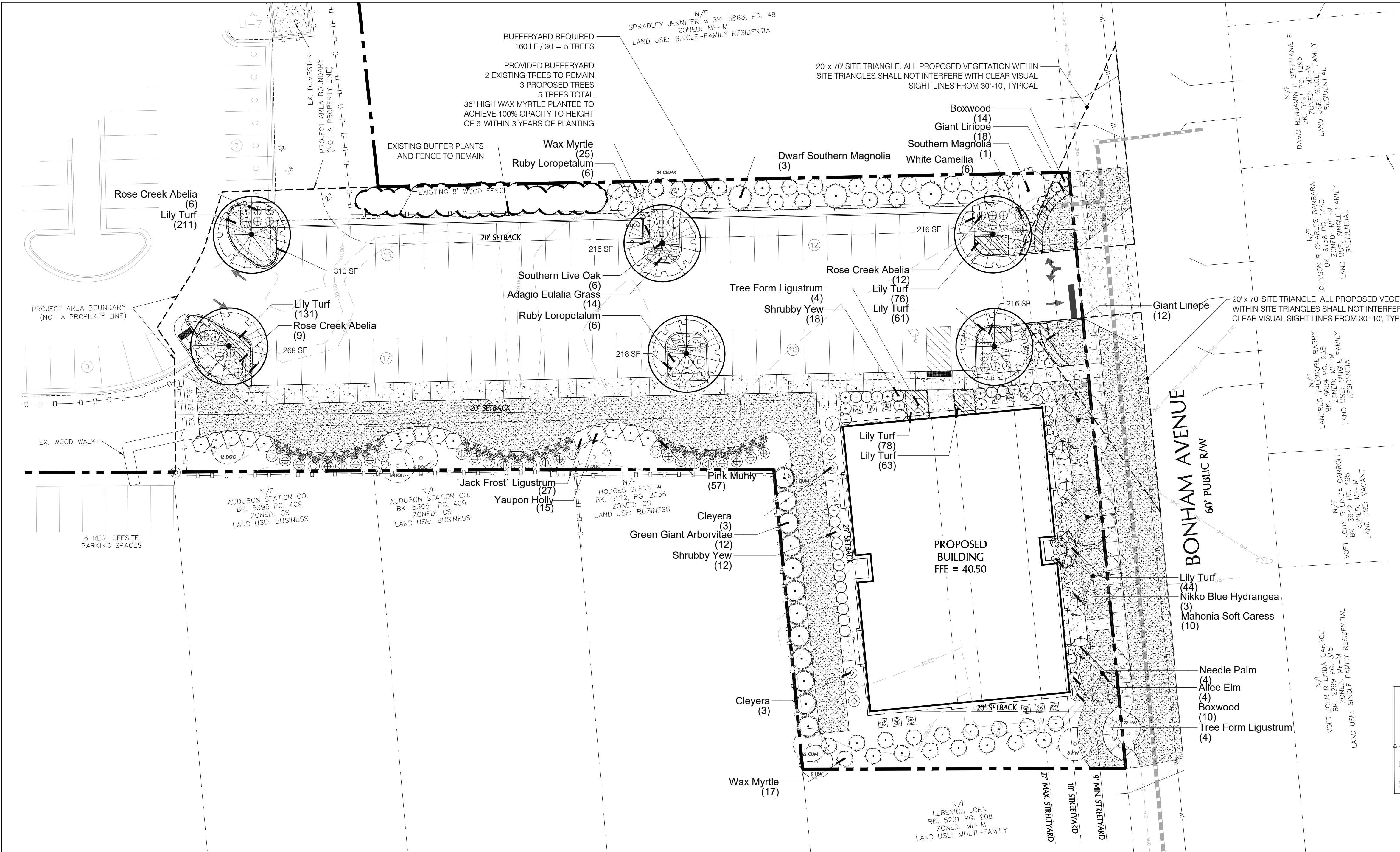
Owner: ELEVATION APARTMENTS LLC & REMARKABLE PROPERTIES, LLC  
10 S. CAROLINA DRIVE  
WILMINGTON, NC 28403  
PHONE: 910-251-5030

G:\AutoCAD\2015\2019\EXPANSION\EVERMORE APARTMENTS EXPANSION.dwg (4-11-19).dwg









For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

**SITE DATA**

ADDRESS	1016 BONHAM AVE
PARCEL ID	R055144-001-020-000
EXISTING USE	RESIDENTIAL LOT
EXISTING ZONING	MF-M
PARCEL AREA	+/- .43 AC (18,731 SF)
ADDRESS	1022 BONHAM AVE
PARCEL ID	R05514-001-019-000
EXISTING USE	RESIDENTIAL LOT
EXISTING ZONING	MF-M
PARCEL AREA	+/- .27 AC (11,761 SF)
ADDRESS	2309 EVERMORE WAY
PARCEL ID	R05514-001-022-000
EXISTING USE	APARTMENT COMPLEX
EXISTING ZONING	MF-M
PARCEL AREA	+/- 2.48 AC (108,029 SF)

**LANDSCAPE REQUIREMENTS**

	REQUIRED	PROVIDED
<b>PARKING LOT CANOPY COVERAGE</b> (50,212 SF x 20%)	10,042 SF 1 LARGE SHADE TREE = (707 SF) 1 SM. SHADE TREE = (314 SF)	6,443 SF EXISTING 4,242 SF PROPOSED 6 LARGE SHADE TREES (707 SF)
<b>STREET YARD PLANTING</b> PRIMARY STREET YARD BONHAM AVENUE TREES REQUIRED	3,318 SF (184.29 LF x 18) 6 (1/600 SF)	3,318 SF 5 PROPOSED TREES 1 EXISTING TREES
SHRUBS REQUIRED	33 (6/600 SF)	35 PROPOSED SHRUBS
<b>FOUNDATION PLANTING</b> NORTHEAST ELEVATION (70 LF x 35 x .12)	294 SF	299 SF

**RETAINED TREE CREDITS:**

QUANTITY	SIZE	TREE	CREDITS
1	8"	HARDWOOD	2
1	9"	HARDWOOD	2
1	22"	HARDWOOD	4
1	22"	GUM	4
1	24"	GUM	4
1	32"	GUM	5
1	55"	OAK	9
1	24"	CEDAR	4
2	6"	DOGWOOD	4
1	7"	DOGWOOD	2
1	8"	DOGWOOD	2
1	12"	DOGWOOD	3
<b>TOTAL</b>			<b>45 TREE CREDITS</b>

**TREE MITIGATION REQUIREMENTS**

**REMOVED SIGNIFICANT TREES**

QUANTITY	SIZE	COMMON NAME	% MITIGATION
1	8"	DOGWOOD	100
1	24"	OAK	100
1	24"	GUM	75

32" x (2) x (1) = 64' / 3 = 22 TREES  
24" x (2) x (1.75) = 36' / 3 = 12 TREES  
**TOTAL: 34 TREES REQUIRED FOR MITIGATION**

TOTAL TREES REQUIRED FOR MITIGATION = 34 TREES  
TREE CREDITS USED TO SATISFY MITIGATION = 34 TREES

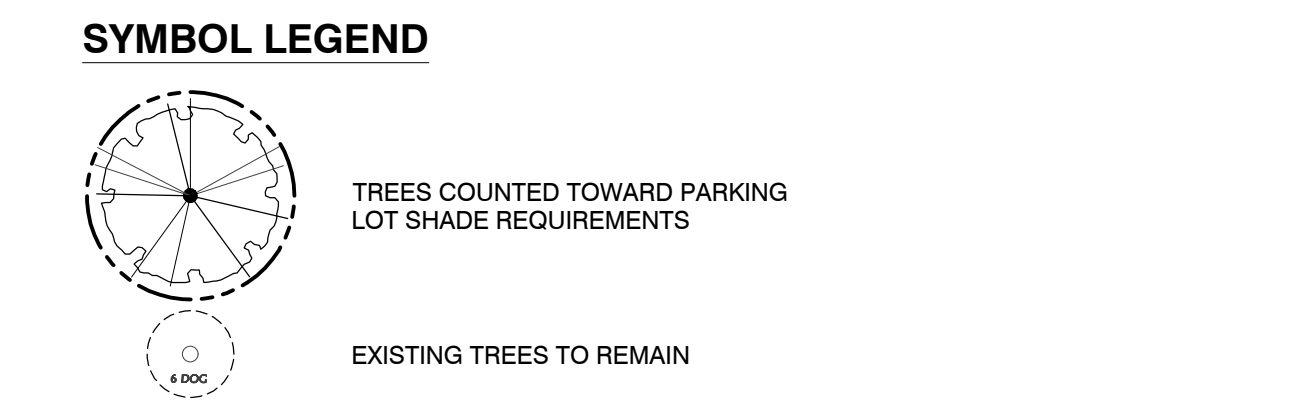
**TREE REQUIREMENTS PER DISTURBED ACRE**  
15 TREES PER DISTURBED ACRE MUST BE RETAINED OR PLANTED ON SITE.

**REQUIRED:** 1 ACRE DISTURBED x 15 TREES = 15 TREES REQUIRED  
**PROVIDED:** 15 TREES PROPOSED - REFER TO PLANTING LEGEND, THIS SHEET  
**TOTAL:** 52 TREES PROVIDED

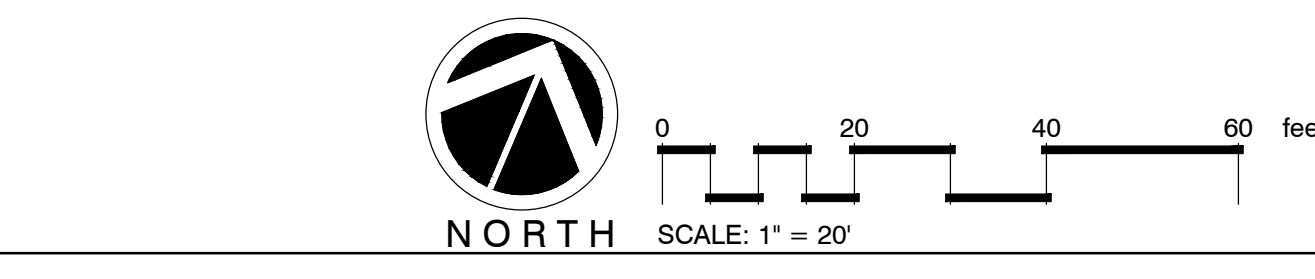
**Approved Construction Plan**

Name	Date
Planning	
Public Utilities	
Traffic	
Fire	

City of Wilmington, North Carolina  
Public Services Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
Signed: \_\_\_\_\_



- GENERAL PLANTING NOTES**
- THIS WORK INCLUDES, BUT IS NOT LIMITED TO THE FURNISHING OF ALL LABOR, MATERIALS, EQUIPMENT, FINAL GRADING, SEEDING, SOIL AMENDMENTS, ETC., AS MAY BE REQUIRED FOR A COMPLETE INSTALLATION.
  - QUANTITIES SHOWN IN PLANT LISTS ARE FOR CONVENIENCE ONLY. PLANS SHALL GOVERN.
  - THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OF ANY DISCREPANCIES IN PLANT LOCATIONS OR INSUFFICIENT PLANT QUANTITIES DUE TO DIFFERENCES IN PLAN AND ACTUAL FIELD CONDITIONS.
  - ALL TREE AND SHRUB MATERIAL SPECIFIED MUST MEET STANDARD INDUSTRY SPECIFICATIONS FOR THE CONTAINER SIZE INDICATED. DOWNSIZING OR SUBSTITUTION OF PLANT MATERIAL WITHOUT PRIOR APPROVAL OF LANDSCAPE ARCHITECT WILL NOT BE ALLOWED.
  - ALL LANDSCAPE AREAS SHALL BE GRADED TO A SMOOTH EVEN SURFACE PRIOR TO ANY PLANT INSTALLATION. ALL PLANT MATERIALS SHALL BE INSTALLED USING GOOD HORTICULTURAL PRACTICES IN ACCORDANCE WITH THE PLANS AND DETAILS.
  - TREES SHALL NOT BE PLANTED CLOSER THAN FOUR (4) FEET FROM ANY WALKWAY OR PUBLIC SIDEWALK EXCEPT WHERE TREE WELLS OR PARKWAYS ARE PROVIDED IN THE SIDEWALK AREA. ALL TREE PLANTED WITHIN FIVE (5) FEET OF WALKS OR PUBLIC UTILITIES SHALL RECEIVE DEEP ROOT BARRIERS.
  - TREE LOCATIONS SHOWN ON PLAN MAY REQUIRE ADJUSTMENT IN THE FIELD, WHENEVER FEASIBLE. TREES SHOULD BE PLANTED A MINIMUM OF TEN (10) FEET FROM ALL UNDERGROUND UTILITIES, STREETLIGHTS, HYDRANTS, AND OUT OF DRAINAGE FLOW LINES. SHOULD THIS NOT BE POSSIBLE, CONTACT THE LANDSCAPE ARCHITECT FOR DECISION ON PLACEMENT.
  - ALL TREES IN TURF AREAS SHALL HAVE 12" MIN. CLR. CIRCUMFERENCE AROUND THE TRUNK BASE. PROVIDE 2" MIN. THK. MULCH AT BASE OF TRUNK.
  - GROUND COVER TYPE SHOWN SHALL BE PLANTED IN ALL SHRUB AREAS AS SPECIFIED ON PLANS. GROUND COVER SHALL BE PLANTED AT 8" ON-CENTER UNIFORM TRIANGULAR SPACING, AND SHALL BE CONTINUOUS UNDER ALL TREE AND SHRUB MASSES AS SHOWN ON PLAN.
  - MATURE PLANTINGS SHALL NOT INTERFERE WITH UTILITIES AND TRAFFIC SIGHT LINES.
  - ALL PLANTING AREAS SHALL BE MULCHED WITH PINESTRAW, EXCEPT FOR AREAS PLANTED WITH GROUND COVER. ALL AREAS PLANTED WITH GROUND COVER SHALL BE MULCHED WITH HARDWOOD MULCH.



**PLANT SCHEDULE**

TREES	BOTANICAL NAME / COMMON NAME	CONT	CAL	RANGE	QTY
	Magnolia g. 'D.D. Blanchard' TM / Southern Magnolia	B & B	3" CAL	7-8' HT	1
	Magnolia g. 'Little Gem' / Dwarf Southern Magnolia	B & B	3" CAL	7-8' HT	3
	Quercus virginiana / Southern Live Oak	B & B	3" CAL	10-12' HT	7
	Thuja - 'Green Giant' / Green Giant Arborvitae	15 GAL	5-6' HT		12
	Ulmus p. 'Emer II' / Allee Elm	B&B	3" CAL	12-14' HT	4
SHRUBS	BOTANICAL NAME / COMMON NAME	SIZE	RANGE	QTY	
	Abelia x grandiflora 'Rose Creek' / Rose Creek Abelia	3 gal	18-24" HT	27	
	Buxus m. 'Wintergreen' / Boxwood	7 gal	12-18" HT	24	
	Camellia s. 'Hana Jiman' / White Camellia	7 gal	24-36" HT	6	
	Cleyera japonica / Cleyera	3 gal	18-24" HT	6	
	Hydrangea m. 'Nikko Blue' / Nikko Blue Hydrangea	3 gal	18-24" HT	3	
	Ilex vomitoria / Yaupon Holly	15 gal	4-5' HT	15	

	Ligustrum japonicum / Tree Form Ligustrum	B&B	6-7' HT		8
	Ligustrum japonicum 'Jack Frost' / 'Jack Frost' Ligustrum	7 gal	24-36" HT		27
	Loropetalum c. 'Ruby' / Ruby Loropetalum	3 gal	18-24" HT		12
	Mahonia e. 'Soft Caress' / Mahonia Soft Caress	3 gal	18-24" HT		10
	Miscanthus s. 'Adagio' / Adagio Eulalia Grass	3 gal	18-24" HT		14
	Muhlenbergia capillaris / Pink Muhly	3 gal	18-24" HT		57
	Myrica cerifera / Wax Myrtle	7 gal	36-42" HT		42
	Podocarpus macrophyllus maki / Shrubby Yew	7 gal	3-4' HT		30
	Rhapidothylus hystrix / Needle Palm	7 gal	24-30" HT		4
GROUND COVERS	BOTANICAL NAME / COMMON NAME	SIZE	RANGE	SPACING	QTY
	Liriope gigantea / Giant Liriope	1 GAL	12-18" HT	24" o.c.	30
	Liriope muscari / Lily Turf	1 gal	12-15" HT	12" o.c.	664
SOD/SEED	BOTANICAL NAME / COMMON NAME	SIZE	RANGE	SPACING	QTY
	Eremochloa ophiuroides / Centipede Sod	sod			



Revisions

**CLIENT**  
**TRIBUTE PROPERTIES**  
 10 S. CARDINAL DRIVE  
 WILMINGTON, NC

**PROJECT**  
**EVERMORE APARTMENT EXPANSION**  
 BONHAM AVENUE  
 WILMINGTON, NC  
 LANDSCAPE PLAN

CONSTRUCTION DOCUMENT REVIEW SET

Date: 2019-03-12  
 Phase:  
 Job Number: 830-06  
 Designed by: MLD  
 Drawn by: MAS  
 Checked by: JWM  
 Sheet Title: **PLANTING PLAN**

Sheet Number:  
**L1.0**  
 of X sheets





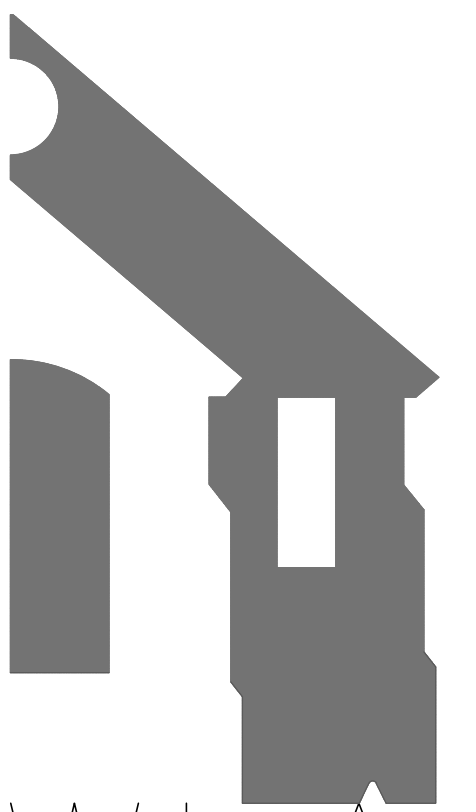
1 BONHAM AVENUE ELEVATION  
A5.01 REAR ELEVATION SIMILAR

1/8"=1'-0"



2 PARKING SIDE ELEVATION  
A5.01 OTHER SIDE ELEVATION SIMILAR

1/8"=1'-0"



Watts Leaf Architecture  
101 North McDowell Street  
Charlotte, North Carolina  
PH 704 376 1200 FX

Xref: P:\1823\_Tribute\_Elev

PROJECT 1823  
DATE 06MAR19  
DRAWN BY WJP  
CHECKED BY CMW

EXTERIOR  
ELEVATIONS

A5.01