

SITE DATA
 PROPERTY OWNER: GREENFIELD STREET PROPERTIES, LLC
 PROJECT ADDRESS: 110 GREENFIELD STREET
 PIN NUMBER: R05417-014-003-000
 ZONING DISTRICT: UM
 FLOOD AREA: THIS TRACT IS LOCATED IN ZONE "X" & "AE" ELEV. 9' ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP, COMMUNITY-PANEL NUMBER 3720311700K, DATED: 6/2/2006 (PER BATEMAN CIVIL SURVEY COMPANY, PC)
 MAXIMUM ALLOWABLE BUILDING HEIGHT: 4 STORIES OR 45' (ALONG ARTERIAL STREETS), 35' OR 2 STORIES (ALONG RESIDENTIAL & COLLECTOR STREETS)
 MAXIMUM EXISTING BUILDING HEIGHT (AVG. EX. GROUND ELEV. TO HALFWAY BETWEEN HIGHEST PEAK & EAVE): 20+2.5+(10.81-5.81) = 27.50' (BUILDING #1; APPROX. PER GOOGLE EARTH)
 MAXIMUM PROPOSED BUILDING HEIGHT (AVG. EX. GROUND ELEV. TO ROOF ELEV.): 29+(11.7-9) = 31.70' (BUILDING #3)
 BUILDING SETBACKS, REQUIRED: NONE
 SITE AREA: 88,619 SF ± 2.03 ACRES ±
 NUMBER OF PROPOSED BUILDINGS: 2
 NUMBER OF EXISTING BUILDINGS: 3 (2 TO BE DEMOLISHED & 1 TO REMAIN)
 BUILDING SIZE (GROSS FLOOR AREA):

BUILDING	POST DEVELOPMENT SQUARE FOOTAGE	FIRST STORY	POST DEVELOPMENT SQUARE FOOTAGE SECOND STORY
1	14,926 (BREWERY) & 3,070 (RESTAURANT)		N/A
2	2,500 (RESTAURANT) & 1,140 (RETAIL)		2,770 (OFFICE)
3	3,764 (RETAIL)		2,894 (OFFICE)

TOTAL AMOUNT & PERCENT OF IMPERVIOUS SURFACE AREAS ON-SITE (REPLACEMENT OF EXISTING PARKING AREAS DUE TO STORM DRAIN PIPE SYSTEM & UTILITIES INSTALLATION REMAIN LISTED/TREATED AS EXISTING, NOT PROPOSED):

BEFORE DEVELOPMENT			AFTER DEVELOPMENT				
BUILDINGS	AREA (SF)	% OF SITE	BUILDINGS (FOOTPRINT)	EX. (SF)	PROPOSED (SF)	TOTAL (SF)	% OF SITE
BUILDINGS	24,140	27.24	18,062	7,658	25,720	29.02	
PARKING	18,607	21.00	11,554	4,507	16,061	18.12	
OTHER	15,626	17.63	0	0	0	0.00	
TOTAL	58,373	65.87					

BEFORE DEVELOPMENT			AFTER DEVELOPMENT		
BUILDINGS (FOOTPRINT)	EX. (SF)	PROPOSED (SF)	TOTAL (SF)	% OF SITE	
BUILDINGS (FOOTPRINT)	18,062	3,402	21,464	27.35	
PARKING	11,554	4,507	16,061	20.47	
PARKING-PERVIOUS (AFTER 100% CREDIT REDUCTION)	0	0	0	0.00	
SIDEWALK	0	2,389	2,389	2.70	
OTHER (RAMP, WALL, ETC.)	265	7,259	7,524	8.49	
*FUTURE	0	1,177	1,177	1.33	
TOTAL	29,881	22,990	52,871	59.66	

TOTAL AMOUNT & PERCENT OF IMPERVIOUS SURFACE AREAS ON-SITE WITHIN AREA CLASSIFIED AS CONSERVATION (78,477 SF) PER THE CAMA LAND USE PLAN (REPLACEMENT OF EXISTING PARKING AREAS DUE TO STORM DRAIN PIPE SYSTEM & UTILITIES INSTALLATION REMAIN LISTED/TREATED AS EXISTING, NOT PROPOSED):

BEFORE DEVELOPMENT			AFTER DEVELOPMENT				
BUILDINGS	AREA (SF)	% OF SITE	BUILDINGS (FOOTPRINT)	EX. (SF)	PROPOSED (SF)	TOTAL (SF)	% OF SITE
BUILDINGS	21,691	23.74	18,062	3,402	21,464	27.35	
PARKING	18,607	21.00	11,554	4,507	16,061	20.47	
OTHER	14,986	19.10	0	0	0	0.00	
TOTAL	55,284	70.45					

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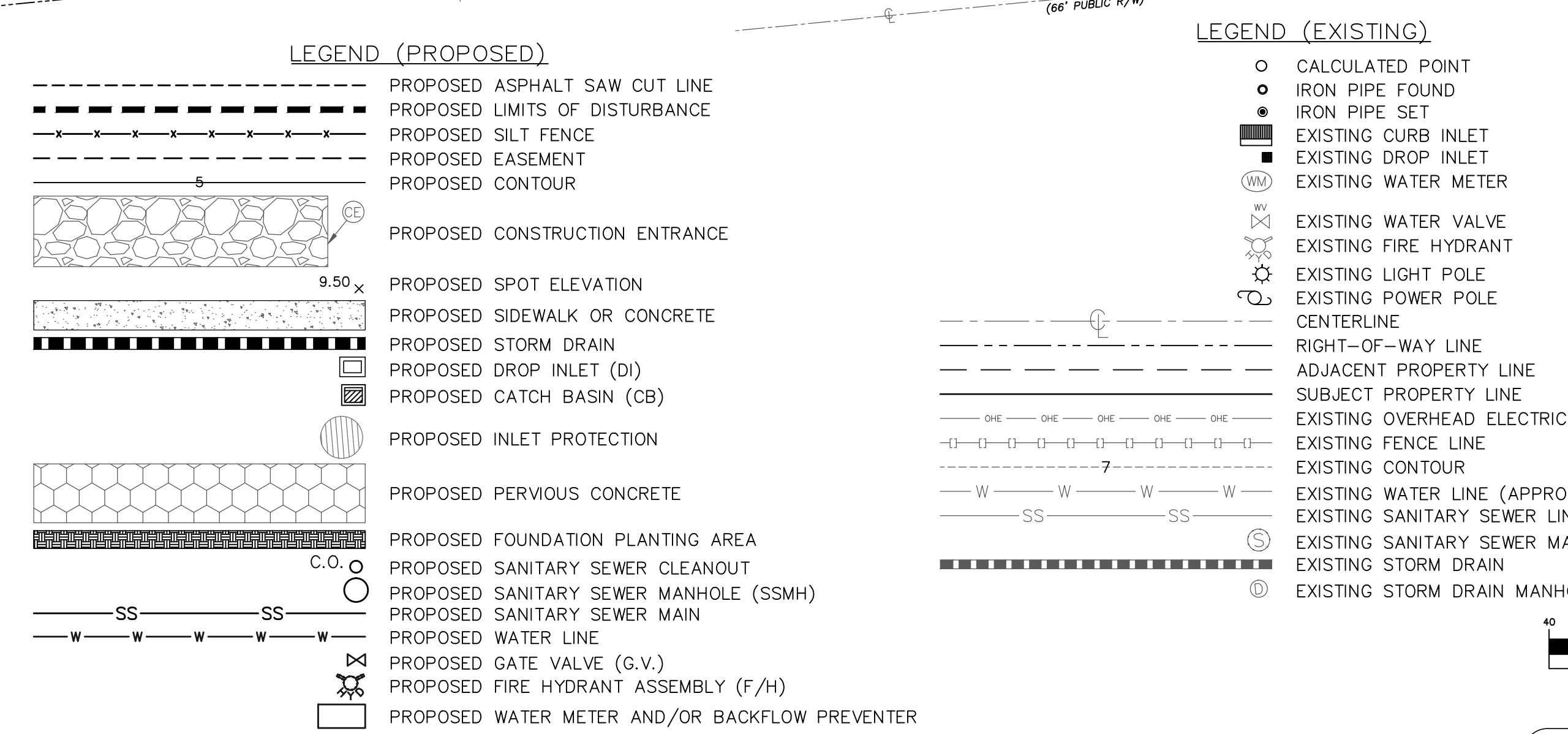
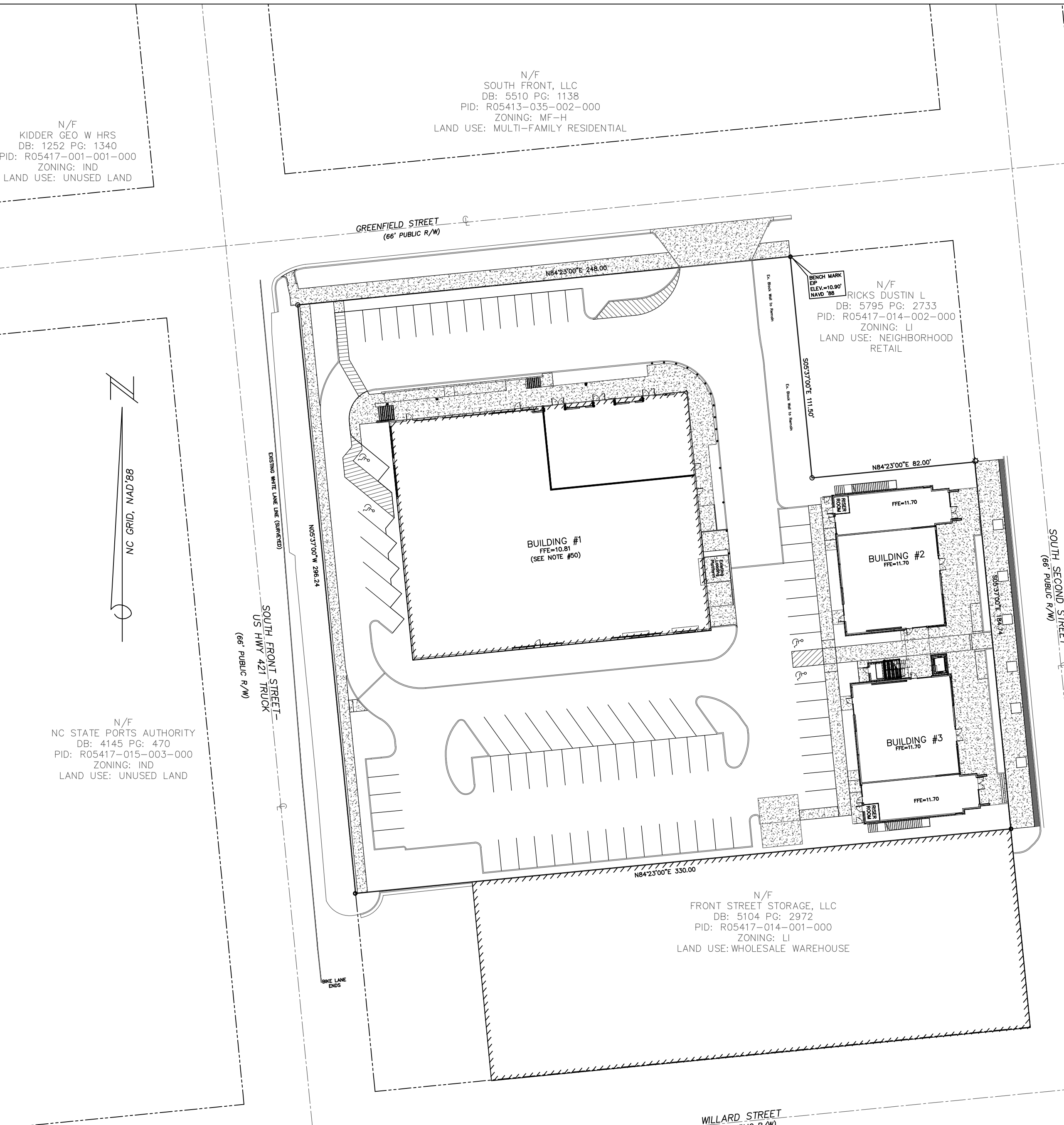
TOTAL PROPOSED IMPERVIOUS AREAS OFF-SITE (INCLUDES FRONTAGE SIDEWALK ON-SITE):	
DRIVEWAY/CURB	AREA (SF)
DRIVEWAY/CURB	5,748
SIDEWALK	6,865
TOTAL	12,613

OFF STREET PARKING CALCULATIONS:
 MIN. PARKING REQ. = N/A
 MAX. PARKING ALLOWED = 1 SPACE / 200 SF x 5,664 SF (OFFICES) + 1 SPACE / 1,000 SF x 14,926 SF (BREWERY) + 1 SPACE / 65 SF x 0.6 x 5,570 SF (RESTAURANT-ASSUME KITCHEN & RESTROOM FACILITIES ARE 40% OF AREA) + 1 SPACE / 200 SF x 4,904 SF (RETAIL) = 119 SPACES
 NUMBER OF PROPOSED PARKING SPACES = 81
 MIN. NUMBER OF REQ. HANDICAPPED SPACES PER ADA STANDARDS FOR ACCESSIBLE DESIGN = 4
 NUMBER OF PROPOSED HANDICAPPED SPACES = 4
 NUMBER OF REQ. BICYCLE PARKING SPACES = 1 SPACE / 5,000 SF x 5,664, OR 2 SPACES, WHICHEVER IS GREATER (OFFICES) + 1 SPACE / 1,000 SF x 25,400, OR 5 SPACES, WHICHEVER IS GREATER (COMMERCIAL/RETAIL) = 27
 NUMBER OF PROPOSED BICYCLE PARKING SPACES = 28
 REQUIRED NUMBER OF LOADING SPACES = 1
 PROVIDED NUMBER OF LOADING SPACES = 1
 THIS SITE IS NOT WITHIN A SPECIAL HIGHWAY OVERLAY DISTRICT OR ANY OTHER ZONING OVERLAY DISTRICT PER THE CITY OF WILMINGTON ZONING MAP (REVISED OCTOBER 27, 2015)
 CAMA LAND USE CLASSIFICATION PER THE 2006 CAMA PLAN UPDATE LAND CLASSIFICATION MAP IS URBAN & CONSERVATION.

CITY OF WILMINGTON STANDARD NOTES
 1. PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES AND NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
 2. NO LAND DISTURBANCE INCLUDING TREE REMOVAL IS TO OCCUR OUTSIDE THE LIMITS OF DISTURBANCE SHOWN ON THE PLANS.
 3. NO EQUIPMENT IS ALLOWED ON THE SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING HAS BEEN INSTALLED AND APPROVED.
 4. PROTECTIVE TREE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.
 5. LAND CLEARING AND CONSTRUCTION CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION REQUIREMENTS AND METHODS.
 6. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
 7. IT SHALL BE THE RESPONSIBILITY OF THE SUBDIVIDER TO ERECT OFFICIAL STREET NAME SIGNS AT ALL INTERSECTIONS ASSOCIATED WITH THE SUBDIVISION IN ACCORDANCE WITH THE TECHNICAL STANDARDS AND SPECIFICATIONS MANUAL.
 8. CONTACT TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
 9. TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCO (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
 10. CALL TRAFFIC ENGINEERING AT 341-7888 TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN. CALL TRAFFIC ENGINEERING AT 341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.
 11. ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY APRON PANELS, OR CURB AND GUTTER SECTIONS SHALL BE REPLACED.
 12. CONTACT TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
 13. PROJECT SHALL COMPLY WITH CFPWA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METER(S) CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND THE STATE HAS GIVEN THEIR FINAL APPROVAL. CALL 332-6558 FOR INFORMATION.
 14. IF THE CONTRACTOR DESIRES CFPWA 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.
 15. ANY IRRIGATION SYSTEM SUPPLIED BY CFPWA WATER SHALL COMPLY WITH THE CFPWA CROSS CONNECTION CONTROL REGULATIONS. CALL 332-6558 FOR INFORMATION AND FDC.
 16. ANY BACKFLOW PREVENTION DEVICES REQUIRED BY CFPWA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USCOCCHOR OR ASSE.
 17. ALL TRAFFIC CONTROL SIGNS & MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCO STANDARDS.
 18. ALL PAVEMENT MARKINGS REGULATING TRAFFIC FLOW MUST BE THERMOPLASTIC.
 19. A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET (CONTACT 341-5888 FOR MORE DETAILS). IN CERTAIN CASES, AN ENTIRE RESURFACING OF THE AREA BEING OPEN CUT MAY BE REQUIRED.
 20. TRAFFIC ENGINEERING MUST APPROVE ANY UTILITY PRIOR TO ACTUAL STRIPING.
 21. A 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 PLAN.
 22. CONTACT THE NORTH CAROLINA ONE CALL CENTER PRIOR TO DOING ANY DIGGING. 1-800-632-4949.
 23. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
 24. INSTALL REFLECTORS PER CITY AND NCDOT STANDARDS.

SITE INVENTORY NOTES
 1. SOIL ON SITE PER THE NEW HANOVER COUNTY SOIL SURVEY IS URBAN LAND (U).
 2. THERE ARE NO CAMA ACES WITHIN THE BOUNDARIES OF THE SUBJECT SITE PER SOUTHERN ENVIRONMENTAL GROUP, INC.
 3. THERE ARE NO KNOWN CONSERVATION RESOURCES WITHIN OR ADJACENT TO THE SUBJECT SITE PER SOUTHERN ENVIRONMENTAL GROUP, INC.
 4. ACCORDING TO THE NORTH CAROLINA STATE HISTORIC PRESERVATION OFFICE HP06W GIS SERVICE, THE SUBJECT SITE CONTAINS NO LOCAL, STATE, OR FEDERALLY RECOGNIZED HISTORIC STRUCTURE(S) OR ARCHEOLOGICAL RESOURCES WITHIN ITS BOUNDARIES PER SOUTHERN ENVIRONMENTAL GROUP, INC.
 5. THERE ARE NO KNOWN CEMETERIES, BURIAL SITES, OR BURIAL GROUNDS WITHIN THE BOUNDARIES OF THE SUBJECT SITE PER SOUTHERN ENVIRONMENTAL GROUP, INC.
 6. THE SITE IS AN EXISTING COMMERCIAL/INDUSTRIAL SITE WITH NO FORESTED AREAS.
 7. THERE ARE NO SECTION 404 WETLANDS WITHIN THE BOUNDARIES OF THE SUBJECT SITE PER SOUTHERN ENVIRONMENTAL GROUP, INC.
 8. THE SUBJECT SITE CONTAINS NO NATURAL AREAS OR HABITAT FOR ANY OF THE LISTED SPECIES WITHIN NEW HANOVER COUNTY PER SOUTHERN ENVIRONMENTAL GROUP, INC.
 9. THIS TRACT IS LOCATED IN ZONE "X" & "AE" ELEV. 9' ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP, COMMUNITY-PANEL NUMBER 3720311700K, DATED: 6/2/2006 (PER BATEMAN CIVIL SURVEY COMPANY, PC).
 10. THERE ARE NO KNOWN EXISTING OR PROPOSED THROUGHFARES, BIKE ROUTES, PEDESTRIAN SIDEWALKS OR TRAILS, OR TRANSIT FACILITIES LOCATED WITHIN THE BOUNDARIES OF THE SUBJECT PARCEL PER SOUTHERN ENVIRONMENTAL GROUP, INC. ONLY EXISTING FRONTAGE SIDEWALK AROUND BLOCK IS LOCATED IN FRONT OF ADJACENT PROPERTY ON GREENFIELD STREET. FRONTAGE SIDEWALKS ALONG SOUTH FRONT STREET, GREENFIELD STREET, & SOUTH 2ND STREET ARE PROPOSED AS PART OF THE DEVELOPMENT PLAN FOR THIS PROJECT.
 11. THE TRACT IS WITHIN THE CAPE FEAR RIVER BASIN & DRAINS TO GREENFIELD CREEK (S.C.S.W.)
 12. CAMA LAND USE CLASSIFICATION PER THE 2006 CAMA PLAN UPDATE LAND CLASSIFICATION MAP IS URBAN & CONSERVATION.

FIRE AND LIFE SAFETY NOTES
 1. 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.
 2. FIRE HYDRANTS CANNOT BE FURTHER THAN 8' FROM THE CURB.
 3. NEW HYDRANTS MUST BE BROUGHT INTO SERVICE PRIOR TO COMBUSTIBLE MATERIALS BEING DELIVERED TO THE JOB SITE.
 4. ALL WEATHER ACCESS ROAD MUST BE MAINTAINED AROUND CONSTRUCTION SITE AT ALL TIMES.
 5. PRIVATE UNDERGROUND FIRE LINES REQUIRE A SEPARATE UNDERGROUND FIRE LINE PERMIT FROM THE WILMINGTON FIRE & LIFE SAFETY DIVISION AT 910-343-0696.
 6. A MINIMUM OF 5' SHALL SEPARATE UNDERGROUND FIRE LINES OR PRIVATE WATER MAINS FROM OTHER UNDERGROUND UTILITIES.
 7. FDC'S CAN BE NO FURTHER THAN 150' FROM A FIRE HYDRANT.
 8. FDC'S CAN BE NO FURTHER THAN 40' FROM FIRE DEPARTMENT VEHICLE PLACEMENT.
 9. TAMPER SWITCHES SHALL BE INSTALLED ON ALL VALVES THAT ARE CAPABLE OF TURNING THE WATER SUPPLY OFF TO THE SPRINKLER SYSTEMS.
 10. HYDRANTS SHALL BE OF SUFFICIENT NUMBERS TO ACCOMMODATE BASE FLOW REQUIREMENTS OF STRUCTURE.
 11. IN ADDITION TO THE STANDARD COMMENTS, ADDITIONAL FIRE PROTECTION AND ACCESSIBILITY REQUIREMENTS MAY BE REQUIRED DUE TO ANY SPECIAL CIRCUMSTANCES CONCERNING THE PROJECT.
 12. BUILDING CONSTRUCTION TYPE ACCORDING TO THE INTERNATIONAL BUILDING CODE IS I-B (BUILDING #1) & V-B (BUILDINGS #2 & 3).



WATER & SEWER CAPACITY	
EXISTING SEWER CAPACITY (APPROX.):	3 LOADING BAYS x 100 GPD/LOADING BAY + 5 EMPLOYEES x 25 GPD/EMPLOYEE + 2 EMPLOYEES x 25 GPD/EMPLOYEE = 475 GPD
EXISTING WATER CAPACITY (APPROX.):	475 GPD
PROPOSED SEWER CAPACITY:	4,904 SF x 130 GPD/1,000 SF + (0.6 x 5,570 SF) x 1 SEAT/15 SF x 40 GPD/SEAT + 5,664 SF x 1 EMPLOYEE/200 SF x 1 SHIFT + 25 GPD/EMPLOYEE/SHIFT + 14,926 SF x 1 EMPLOYEE/1,000 SF x 1 SHIFT x 25 GPD/EMPLOYEE/SHIFT = 10,631 GPD
PROPOSED WATER CAPACITY:	10,631 GPD

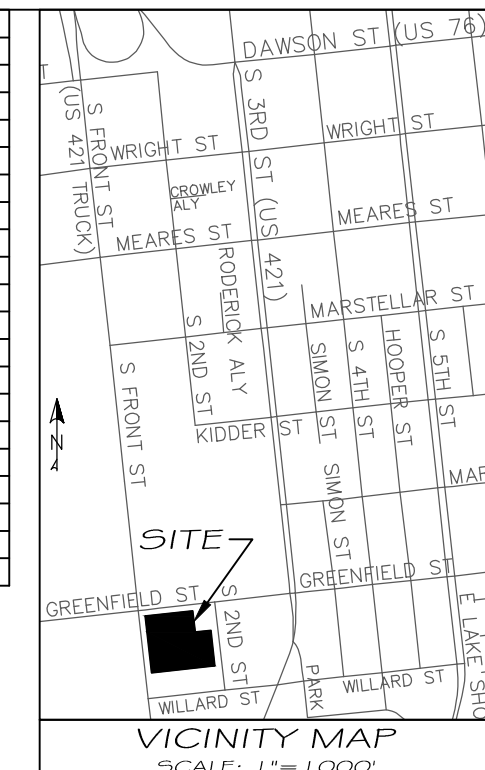
N/F SOUTH FRONT, LLC
 DB: 5914 PG: 504
 PID: R05413-035-002-000
 ZONING: MF-H
 LAND USE: MULTI-FAMILY RESIDENTIAL

N/F SOUTH FRONT, LLC
 DB: 5795 PG: 2733
 PID: R05417-014-002-000
 ZONING: LI
 LAND USE: NEIGHBORHOOD RETAIL

N/F SOUTH FRONT BLOCK, LLC
 DB: 5914 PG: 504
 PID: R05417-013-004-000
 ZONING: UM-X
 LAND USE: MIXED USE

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NOTES
 1. BOUNDARY & TOPOGRAPHICAL SURVEY PROVIDED BY BATEMAN CIVIL SURVEY COMPANY, PC (MAP TITLED 'SURVEY EXCLUSIVELY FOR TRIBUTE INVESTMENT & DEVELOPMENT, INC. OF TRACT 2, TBD PROPERTIES, LLC' WITH SEAL DATE OF 1/28/16 & MAP TITLED 'TOPOGRAPHIC SURVEY EXCLUSIVELY FOR GREENVILLE STREET PROPERTIES, LLC' WITH SEAL DATE OF 12/14/16).
 2. ALL ELEVATIONS ARE IN FEET UNLESS OTHERWISE INDICATED.
 3. ALL CITY, STATE, & FEDERAL REGULATIONS SHALL BE FOLLOWED.
 4. EXISTING SANITARY SEWER MAINS ARE OWNED BY CFPWA.
 5. EXISTING WATER MAINS ARE OWNED BY CFPWA.
 6. SLOPE ON HANDICAP SPACES SHALL BE 1:50 OR FLATTER.
 7. TACTILE WARNING MATS ARE TO BE INSTALLED ON ALL WHEELCHAIR RAMPS.
 8. IT IS THE APPLICANT'S/DEVELOPER'S RESPONSIBILITY TO BE COMPLIANT WITH ALL APPLICABLE ADA REQUIREMENTS.
 9. LIMITS OF DISTURBANCE = 77,322 SF = 1.78 ACRES.
 10. DISTURBED AREAS WITHIN RIGHTS-OF-WAY OF SOUTH FRONT STREET, SOUTH SECOND STREET, AND/OR GREENFIELD STREET, SHALL BE IMMEDIATELY SEEDED & STABILIZED WITH MULCH OR EXCELSTOR MAT PRIOR TO ANY RAINFALL EVENT.
 11. UPON COMPLETION OF ANY PHASE OF ACTIVITY SIDE SLOPES WILL BE SEEDED/STABILIZED IN ACCORDANCE WITH THE GROUND STABILIZATION CHART.
 12. RAISED PATIO(S), STEPS/STAIRS, RAMPS, HANDRAILS, WALLS, & RETAINING WALLS SHALL BE DESIGNED BY OTHERS. MALPASS ENGINEERING & SURVEYING, P.C. IS NOT RESPONSIBLE FOR DESIGN OF RAISED PATIO(S), STEPS/STAIRS, RAMPS, HANDRAILS, WALLS, & RETAINING WALLS.
 13. ALL DEVELOPMENT SHALL BE IN ACCORDANCE WITH THE CITY OF WILMINGTON LAND DEVELOPMENT CODE & TECHNICAL STANDARDS MANUAL, EXCEPT WHERE EXEMPTED OR VARIANCES ARE OBTAINED.
 14. THE PROPOSED CURB ON THE SITE IS VERTICAL CURB (SD 3-1), EXCEPT WHERE LABELED AS 4" VERTICAL CURB. THE 4" VERTICAL CURB SHALL BE VERTICAL CURB (SD 3-1) WITH THE TOP OF THE CURB ONLY 4" ABOVE THE PAVEMENT.
 15. MANHOLES, CATCH BASINS, & DROP INLETS SHALL BE SIZED APPROPRIATELY TO ACCOMMODATE OVERSIZED PIPES.
 16. REMOVE EXISTING MIXED/COMPACTED FILL MATERIAL THAT SHOW POTENTIAL COMPACTION DOWN TO THE NATURAL SOIL SURFACE (APPROXIMATELY 18") & BACKFILL AS NECESSARY WITH A CLEAN SOIL GROUP 1 SAND (10 INCHES/HOUR OR GREATER PERMEABILITY RATE) TO THE PROPOSED SUBGRADE ELEVATION PER THE JANUARY 23, 2017 SOILS REPORT BY APPLIED RESOURCE MANAGEMENT, P.C. SEE THE SOILS REPORT FOR MAP (FIGURE 1) OF AREA TO BE EXCAVATED AND BACKFILLED. RECOMMENDATIONS IN THE REPORT ARE TO BE FOLLOWED.
 17. 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.
 18. CONTRACTOR SHALL CONTACT & COORDINATE WITH POWER COMPANY REGARDING REMOVAL OF EXISTING ON-SITE POWER POLES, AND INSTALLATION OF PROPOSED UTILITIES, STORM DRAIN, & SWALE EXISTING POWER POLES.
 19. ALL PROPOSED VEGETATION WITHIN THE SIGN TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30'-10'.
 20. EXTERIOR SITE LIGHTING TO BE LOCATED/DESIGNED BY OTHERS. EXTERIOR SITE LIGHTING SHALL MEET THE CITY OF WILMINGTON'S UM-X STANDARD FOR SITE LIGHTING, WHICH IS AS FOLLOWS: "ALL SITE LIGHTING SHALL BE LOCATED, ANGLED, SHIELDED, AND/OR LIMITED IN INTENSITY SO AS TO CAUSE NO DIRECT LIGHT UPON ADJACENT PROPERTIES, SHALL MINIMIZE OFF-SITE BACKLIGHTING GLARE, AND UP-LIGHTING. LIGHT POSTS SHALL BE NO TALLER THAN TWELVE (12) FEET." ALSO, SITE LIGHTING SHALL NOT DIRECTLY BE DIRECTED AT A RIGHT-OF-WAY.
 21. CONTRACTOR TO NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN EXISTING UTILITIES & PROPOSED UTILITIES.
 22. CONTRACTOR SHALL ENSURE UTILITY SEPARATION NOTES ARE MET.
 23. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH & OBTAINING NECESSARY RIGHT-OF-WAY PERMITS (STREET CUT, STREET/LANE CLOSURE, SIDEWALK CLOSURE, ETC.) FROM THE CITY OF WILMINGTON FOR WORK WITHIN THEIR RIGHTS-OF-WAY.
 24. BOLLARDS SHALL HAVE A MINIMUM DIAMETER OF 3.5" & A MINIMUM HEIGHT ABOVE GRADE OF 36". IF THE TWO BOLLARDS TO BE INSTALLED WITHIN THE 5' STRIPED WALKWAY NEAR THE NORTHWEST CORNER OF THE SITE ARE LARGER THAN THE MINIMUM, THEN THE WESTERN EDGE OF THE BOLLARDS SHALL BE HELD TO MAINTAIN THE 4' OF WALKWAY WIDTH AT THE BOLLARDS.
 25. A LANDSCAPING PLAN INDICATING THE LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON TRAFFIC ENGINEERING DIVISION AND PARKS & RECREATION DEPARTMENT FOR REVIEW & APPROVAL PRIOR TO THE RECORDING OF THE FINAL PLAN.
 26. ALL PROPOSED ON-SITE UTILITY LINES SHALL BE UNDERGROUND.
 27. LOCATION OF SITE LIGHTS, ELECTRIC LINES, TELEPHONE LINES, AND/OR NATURAL GAS LINES TO BE DETERMINED BY UTILITY COMPANIES AND/OR OTHERS.
 28. THE 2.5' VEHICLE OVERHANG AREA SHALL NOT BE PLANTED WITH SHRUBS.
 29. SILT SACKS SHALL BE INSTALLED IN EXISTING DROP INLETS ON THE SITE. SILT SACKS ARE TEMPORARY EROSION CONTROL DEVICES & SHALL BE REMOVED FROM AN INLET WHEN THE ENTIRE AREA DRAINING TO THE INLET IS STABILIZED.
 30. CONTRACTOR TO REPAIR ANY DISTURBED AREAS (ASPHALT, STONE, CURB, SIDEWALK, GRASS PLAZA, ETC.) WITHIN SOUTH FRONT ST, GREENFIELD ST, OR SOUTH SECOND ST TO PRE-CONSTRUCTION CONDITIONS OR BETTER.
 31. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AN UNDERGROUND FIRE LINE PERMIT FROM THE CITY OF WILMINGTON (FIRE & LIFE SAFETY) PRIOR TO INSTALLING FIRE LINE(S).
 32. AN IN-LINE DOWNSPOUT FILTER MUST BE INSTALLED ON EVERY ROOF DOWNSPOUT THAT DRAINS TO PERMEABLE PAVEMENT SYSTEM #1. EACH IN-LINE DOWNSPOUT FILTER SHALL BE LOCATED IN AN AREA THAT ALLOWS FOR INSPECTION.
 33. DELETED.
 34. CONTRACTOR AND/OR DEVELOPER SHALL ENSURE THAT THE DOWNSPOUTS & DOWNSPOUT PIPING ON THE NORTH SIDE OF THE ADJACENT EXISTING BUILDING (MINI STORAGE BUILDING) ALONG THE SITE'S SOUTHERN PROPERTY LINE ARE ALL CONNECTED AND FUNCTIONING. IF REPAIR IS NEEDED, THE DEVELOPER SHALL GET THE ADJACENT PROPERTY OWNER TO REPAIR IT, OR THE CONTRACTOR SHALL REPAIR IT. RUNOFF FROM THE ADJACENT BUILDING SHALL NOT BE ALLOWED TO DRAIN TO PERMEABLE PAVEMENT SYSTEM #1. IF NECESSARY, CONTRACTOR SHALL RELOCATE EXISTING DOWNSPOUT PIPING ALONG THE NORTH SIDE OF THE ADJACENT BUILDING TO AVOID CONFLICTS WITH PROPOSED UTILITIES, ROOF DOWNSPOUT PIPING FOR BUILDING #3, DUMPMSTER PAD & ENCLOSURE, AND/OR PERMEABLE PAVEMENT SYSTEM #1.
 35. WATER METER, BACKFLOW PREVENTER, VALVE, & FIRE HYDRANT SYMBOLS ARE SYMBOLIC & NOT ACTUAL SIZE.
 36. DOMESTIC WATER MAIN SHALL BE PUBLIC FROM THE EXISTING WATER MAIN IN GREENFIELD ST. THROUGH THE MASTER WATER METER & PRIVATE AFTER THE METER. FIRE LINE SHALL BE PUBLIC FROM THE EXISTING WATER MAIN IN GREENFIELD ST. TO THE 8" GATE VALVE AT THE R/W & PRIVATE BEGINNING AFTER THE VALVE.
 37. A SEPARATE WATER SERVICE SHALL BE PROVIDED FROM THE PROPOSED PRIVATE WATER MAIN TO EACH UNIT IN BUILDINGS #1, 2, & 3 AS SHOWN ON THE UTILITY PLAN. WATER SERVICE LINE SIZE, WATER METER SIZE, & BACKFLOW PREVENTER SIZE FOR EACH UNIT'S WATER SERVICE PER MECHANICAL PLANS.
 38. CONTRACTOR TO COORDINATE LOCATION OF BUILDING/UNIT WATER & SEWER SERVICES WITH MECHANICAL PLANS.
 39. SANITARY SEWER MAIN SHALL BE PUBLIC FROM EX. SSMH TO SSMH-1 AND PRIVATE FROM SSMH-1 TO SSMH-2.
 40. THE VENT FROM SSMH-1 SHALL BE LOCATED A MINIMUM OF 3 FEET BEYOND THE PROPOSED EDGE OF PAVEMENT ON THE WEST SIDE OF THE DRIVEWAY.
 41. DUMPMSTER ENCLOSURE DESIGN/DETAILS ON SHEET 9 PER ORA ARCHITECTURE ARE SHOWN FOR REFERENCE PURPOSES ONLY. CONTRACTOR SHALL USE ORA ARCHITECTURE PLANS TO CONSTRUCT DUMPMSTER PAD & ENCLOSURE. MALPASS ENGINEERING & SURVEYING, P.C. IS NOT RESPONSIBLE FOR DUMPMSTER ENCLOSURE DESIGN/DETAILS.
 42. THE PROPOSED MAINTENANCE/ACCESS EASEMENT SHOWN ON SHEET 6 FOR PERMEABLE PAVEMENT SYSTEM #1 SHALL BE GRANTED IN FAVOR OF THE CITY OF WILMINGTON FOR STORMWATER ENFORCEMENT.
 43. THE DEVELOPER SHALL HAVE THE PERMEABLE PAVEMENT OPERATION & MAINTENANCE AGREEMENT IT ENTERED INTO WITH THE CITY OF WILMINGTON RECORDED WITH THE COUNTY REGISTER OF DEEDS SO AS TO APPEAR IN THE CHAIN OF TITLE OF ALL SUBSEQUENT PURCHASERS.
 44. HVAC EQUIPMENT SHALL BE LOCATED ON THE ROOF OF THE BUILDINGS BEHIND PARAPET WALLS PER ORA ARCHITECTURE.
 45. A HANDRAIL SHALL BE INSTALLED ALONG THE TOP OF THE RETAINING WALL LOCATED BETWEEN THE SOUTH FRONT ST. R/W & THE FRONTAGE SIDEWALK, EXCEPT WHERE A WALL IS PROPOSED ON TOP OF THE RETAINING WALL NEAR THE ONE-WAY DRIVE AVENUE. WHERE A WALL IS PROPOSED ON TOP OF THE RETAINING WALL, THE WALL CONTRACTOR SHALL PROVIDE SUFFICIENT OPENINGS AT THE BOTTOM OF THE WALL/TOP OF SIDEWALK TO SUFFICIENTLY DRAIN RUNOFF FROM SIDEWALK.
 46. SSMH-1 SHALL BE NCDOT STD 840.31 (C) 840.32. ADJUST VERTICAL DIMENSIONS BASED ON PROPOSED TOP & INVERT GRADES.
 47. DI-2 SHALL BE NCDOT STD 840.35. ADJUST VERTICAL DIMENSIONS BASED ON PROPOSED TOP & INVERT GRADES.
 48. CONTRACTOR TO ENLARGE CB (SE) TOWARDS THE EAST, IF NECESSARY, IN ORDER TO INSTALL PROPOSED 18" RCP.
 49. SIDEWALK PAVING SHALL BE FLUSH WITH DRIVE AVENUE.
 50. ALL GRADES, INCLUDING FINISHED BUILDING #1 FINISHED FLOOR ELEVATION OF 10.81' SHOWN ON THE PLAN, ARE BASED ON A BENCHMARK ON THE SITE. THE ACTUAL FINISHED FLOOR ELEVATION OF BUILDING #1 IS 11.0' BASED ON AN ELEVATION CERTIFICATE BY ARNOLD CARSON OF BATEMAN CIVIL SURVEY COMPANY, PC.
 51. BOLLARDS NEAR NORTHEAST CORNER OF BUILDING #1 AND EAST OF BUILDING #1 SHALL BE 6" DIAMETER PIPE BOLLARDS. BOLLARDS NEAR NORTHEAST CORNER OF BUILDING #1 SHALL BE SPACED APPROXIMATELY 6' ON CENTER.

LEGEND (EXISTING)

- CALCULATED POINT
- IRON PIPE FOUND
- IRON PIPE SET
- EXISTING CURB INLET
- EXISTING DROP INLET
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING LIGHT POLE
- EXISTING POWER POLE
- CENTERLINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- SUBJECT PROPERTY LINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE LINE
- EXISTING CONTOUR
- EXISTING WATER LINE (APPROX. LOCATION)
- EXISTING SANITARY SEWER LINE
- EXISTING SANITARY SEWER MANHOLE (SSMH)
- EXISTING STORM DRAIN
- EXISTING STORM DRAIN MANHOLE (SDMH)

GRAPHIC SCALE
 0 20 40 60 80 100
 (IN FEET)
 1 inch = 40 ft

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: _____

GREENFIELD COMMERCIAL
 WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

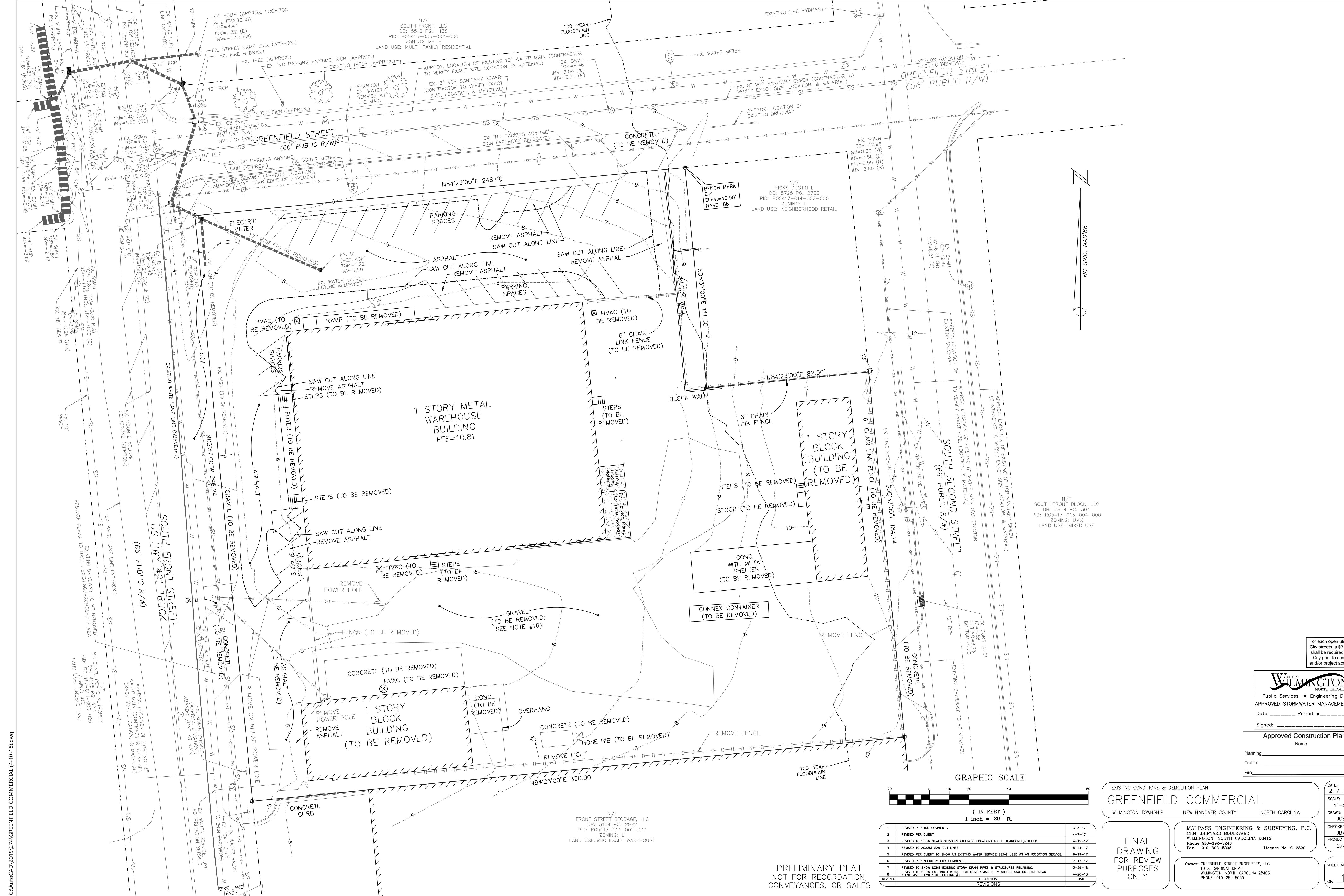
FINAL DRAWING FOR REVIEW PURPOSES ONLY

MALPASS ENGINEERING & SURVEYING, P.C.
 1134 SHIPYARD BOULEVARD
 WILMINGTON, NORTH CAROLINA 28412
 Phone: 910-392-8243
 Fax: 910-392-8203 License No. C-2320

Owner: GREENFIELD STREET PROPERTIES, LLC
 110 S. CAROLINA DRIVE
 WILMINGTON, NORTH CAROLINA 28403
 PHONE: 910-251-5630

SHEET NO. 1 OF 18

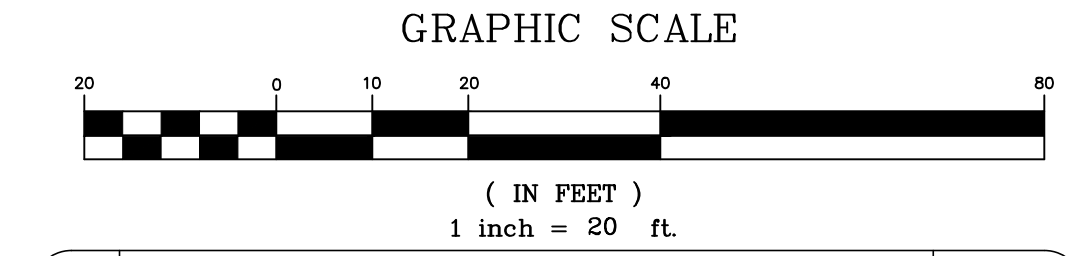
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N/F
SOUTH FRONT BLOCK, LLC
DB: 5964 PG: 504
PID: R05417-013-004-000
ZONING: UMX
LAND USE: MIXED USE

N/F
FRONT STREET STORAGE, LLC
DB: 5104 PG: 2972
PID: R05417-014-001-000
ZONING: LI
LAND USE: WHOLESALE WAREHOUSE



REV NO.	DESCRIPTION	DATE
1	REVISED PER TRC COMMENTS.	3-3-17
2	REVISED PER CLIENT.	4-7-17
3	REVISED TO SHOW SEWER SERVICES (APPROX. LOCATION) TO BE ABANDONED/CAPPED.	4-12-17
4	REVISED TO ADJUST SAW CUT LINES.	5-24-17
5	REVISED PER CLIENT TO SHOW AN EXISTING WATER SERVICE BEING USED AS AN IRRIGATION SERVICE.	6-19-17
6	REVISED PER NODOT & CITY COMMENTS.	7-17-17
7	REVISED TO SHOW SOME EXISTING STORM DRAIN PIPES & STRUCTURES REMAINING.	3-29-18
8	REVISED TO SHOW EXISTING LOADING PLATFORM REMAINING & ADJUST SAW CUT LINE NEAR NORTHEAST CORNER OF BUILDING #1.	4-26-18

PRELIMINARY PLAT
NOT FOR RECORDATION,
CONVEYANCES, OR SALES

City of WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____
Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____

EXISTING CONDITIONS & DEMOLITION PLAN
GREENFIELD COMMERCIAL
WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

FINAL DRAWING FOR REVIEW PURPOSES ONLY

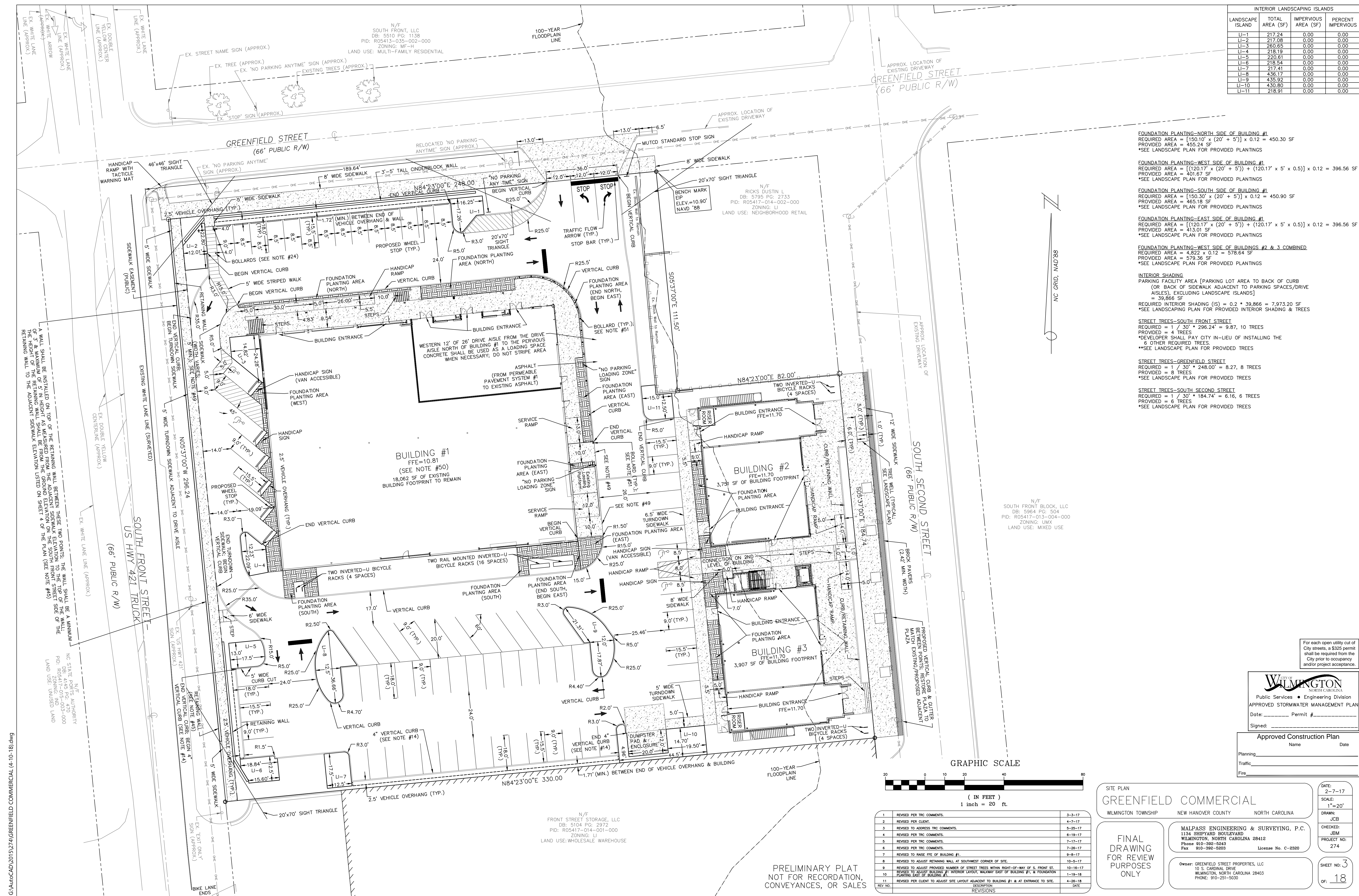
MALPASS ENGINEERING & SURVEYING, P.C.
1134 SHIPYARD BOULEVARD
WILMINGTON, NORTH CAROLINA 28412
Phone 910-392-5243
Fax 910-392-5203 License No. C-2920

Owner: GREENFIELD STREET PROPERTIES, LLC
10 S. CAROLINA DRIVE
WILMINGTON, NORTH CAROLINA 28403
PHONE: 910-251-5630

DATE: 2-7-17
SCALE: 1"=20'
DRAWN: JCB
CHECKED: JBM
PROJECT NO: 274
SHEET NO: 2
OF: 18

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

INTERIOR LANDSCAPING ISLANDS			
LANDSCAPE ISLAND	TOTAL AREA (SF)	IMPERVIOUS AREA (SF)	PERCENT IMPERVIOUS
LI-1	217.24	0.00	0.00
LI-2	217.08	0.00	0.00
LI-3	260.65	0.00	0.00
LI-4	218.19	0.00	0.00
LI-5	229.61	0.00	0.00
LI-6	218.54	0.00	0.00
LI-7	217.41	0.00	0.00
LI-8	436.17	0.00	0.00
LI-9	435.92	0.00	0.00
LI-10	430.80	0.00	0.00
LI-11	218.91	0.00	0.00



FOUNDATION PLANTING-NORTH SIDE OF BUILDING #1
 REQUIRED AREA = $[(150.10' \times (20' + 5')) \times 0.12] = 450.30$ SF
 PROVIDED AREA = 455.24 SF
 *SEE LANDSCAPE PLAN FOR PROVIDED PLANTINGS

FOUNDATION PLANTING-WEST SIDE OF BUILDING #1
 REQUIRED AREA = $[(120.17' \times (20' + 5')) + (120.17' \times 5' \times 0.5)] \times 0.12 = 396.56$ SF
 PROVIDED AREA = 401.67 SF
 *SEE LANDSCAPE PLAN FOR PROVIDED PLANTINGS

FOUNDATION PLANTING-SOUTH SIDE OF BUILDING #1
 REQUIRED AREA = $[(150.30' \times (20' + 5')) \times 0.12] = 450.90$ SF
 PROVIDED AREA = 465.18 SF
 *SEE LANDSCAPE PLAN FOR PROVIDED PLANTINGS

FOUNDATION PLANTING-EAST SIDE OF BUILDING #1
 REQUIRED AREA = $[(120.17' \times (20' + 5')) + (120.17' \times 5' \times 0.5)] \times 0.12 = 396.56$ SF
 PROVIDED AREA = 413.01 SF
 *SEE LANDSCAPE PLAN FOR PROVIDED PLANTINGS

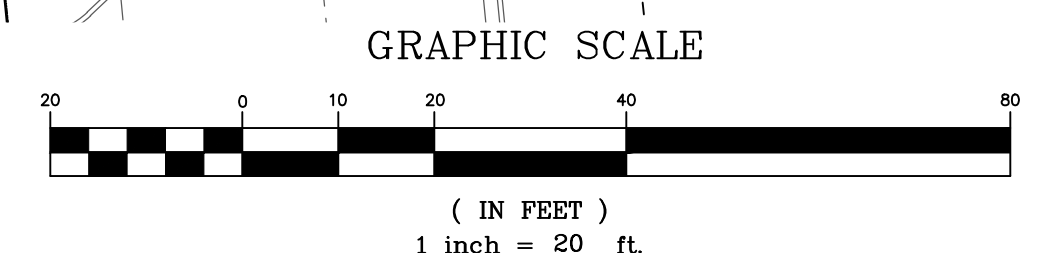
FOUNDATION PLANTING-WEST SIDE OF BUILDINGS #2 & 3 COMBINED
 REQUIRED AREA = $4,822 \times 0.12 = 578.64$ SF
 PROVIDED AREA = 579.36 SF
 *SEE LANDSCAPE PLAN FOR PROVIDED PLANTINGS

INTERIOR SHADING
 PARKING FACILITY AREA (PARKING LOT AREA TO BACK OF CURB (OR BACK OF SIDEWALK ADJACENT TO PARKING SPACES/DRIVE AISLES), EXCLUDING LANDSCAPE ISLANDS)
 REQUIRED INTERIOR SHADING (IS) = $0.2 \times 39,866 = 7,973.20$ SF
 PROVIDED = 7,973.20 SF
 *SEE LANDSCAPING PLAN FOR PROVIDED INTERIOR SHADING & TREES

STREET TREES-SOUTH FRONT STREET
 REQUIRED = $1 / 30' \times 296.24' = 9.87$, 10 TREES
 PROVIDED = 4 TREES
 *DEVELOPER SHALL PAY CITY IN-LIEU OF INSTALLING THE 6 OTHER REQUIRED TREES.
 **SEE LANDSCAPE PLAN FOR PROVIDED TREES

STREET TREES-GREENFIELD STREET
 REQUIRED = $1 / 30' \times 248.00' = 8.27$, 8 TREES
 PROVIDED = 8 TREES
 *SEE LANDSCAPE PLAN FOR PROVIDED TREES

STREET TREES-SOUTH SECOND STREET
 REQUIRED = $1 / 30' \times 184.74' = 6.16$, 6 TREES
 PROVIDED = 6 TREES
 *SEE LANDSCAPE PLAN FOR PROVIDED TREES



REV. NO.	DESCRIPTION	DATE
1	REVISED PER THE COMMENTS.	3-3-17
2	REVISED PER CLIENT.	4-7-17
3	REVISED TO ADDRESS THE COMMENTS.	5-25-17
4	REVISED PER THE COMMENTS.	6-19-17
5	REVISED PER THE COMMENTS.	7-17-17
6	REVISED PER THE COMMENTS.	7-26-17
7	REVISED TO RAISE FFE OF BUILDING #1.	9-8-17
8	REVISED TO ADJUST RETAINING WALL AT SOUTHWEST CORNER OF SITE.	10-5-17
9	REVISED TO ADJUST PROVIDED NUMBER OF STREET TREES WITHIN RIGHT-OF-WAY OF S. FRONT ST.	10-16-17
10	REVISED TO ADJUST BUILDING #1 INTERIOR LAYOUT, WALKWAY EAST OF BUILDING #1, & FOUNDATION PLANTING EAST OF BUILDING #1.	1-19-18
11	REVISED PER CLIENT TO ADJUST SITE LAYOUT ADJACENT TO BUILDING #1 & AT ENTRANCE TO SITE.	4-28-18

PRELIMINARY PLAN
 NOT FOR RECORDATION,
 CONVEYANCES, OR SALES

SITE PLAN
GREENFIELD COMMERCIAL
 WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

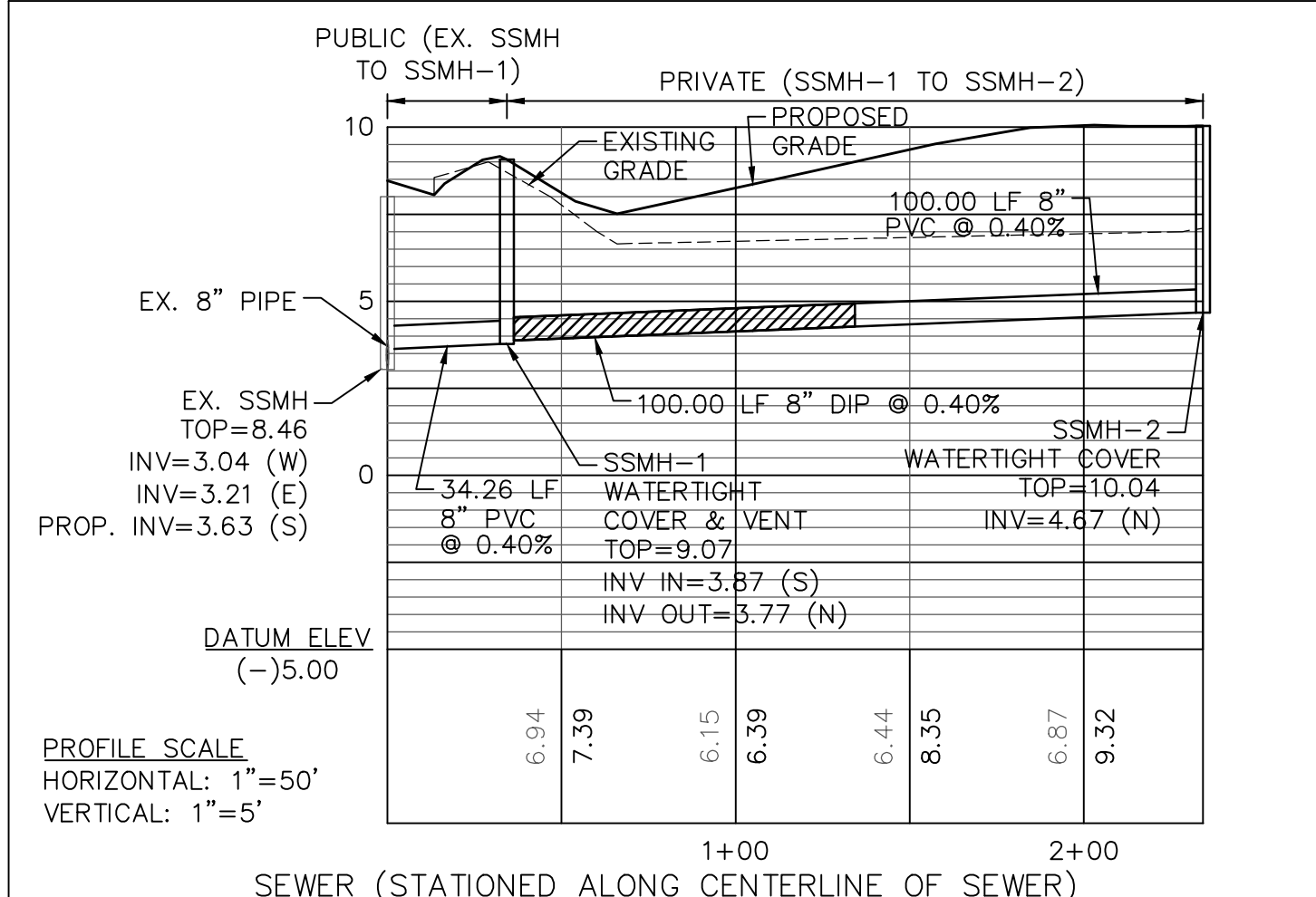
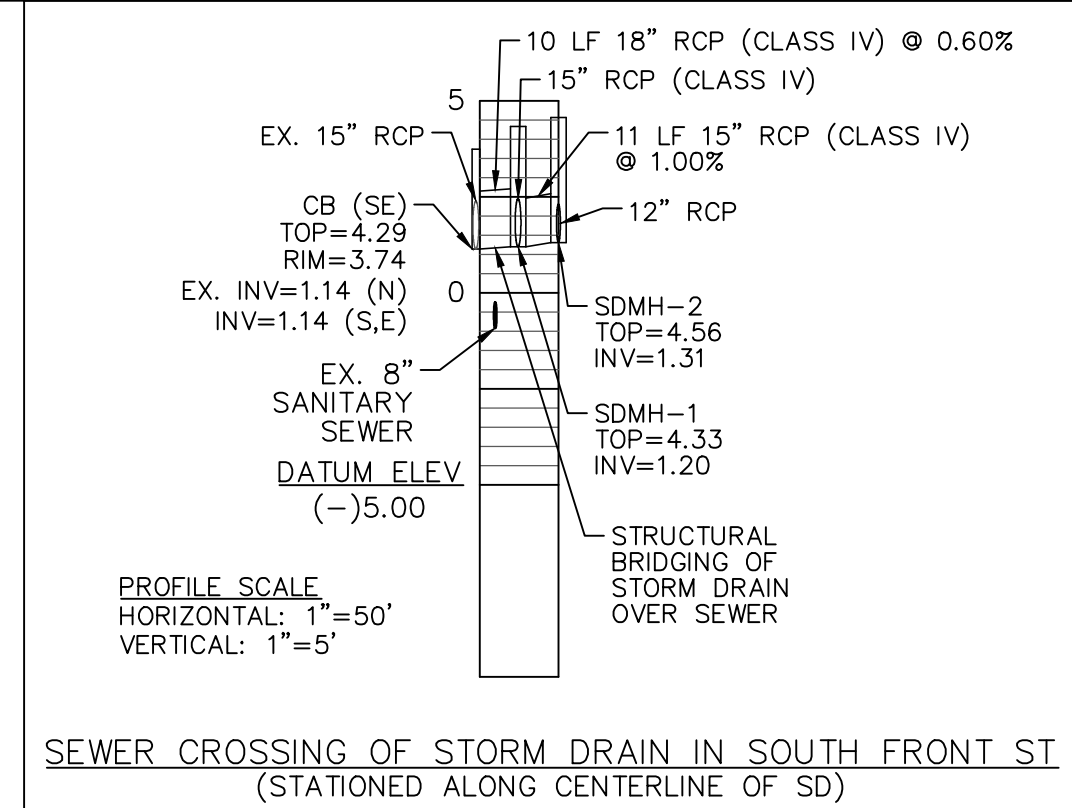
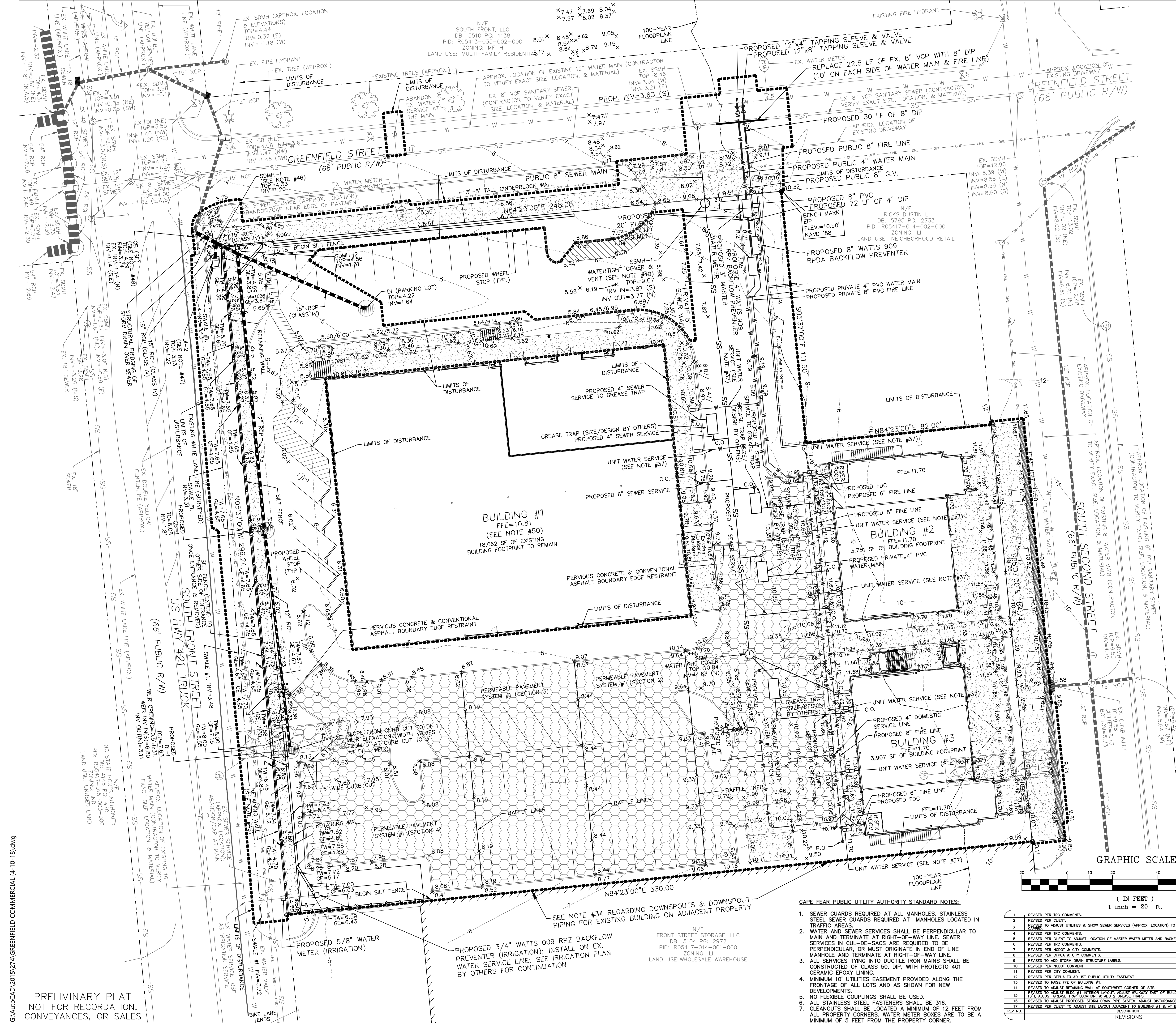
FINAL DRAWING FOR REVIEW PURPOSES ONLY

MALPASS ENGINEERING & SURVEYING, P.C.
 1134 SHIPYARD BOULEVARD
 WILMINGTON, NORTH CAROLINA 28412
 Phone 910-392-5243 Fax 910-392-5203 License No. C-2320

Owner: GREENFIELD STREET PROPERTIES, LLC
 10 S. CAROLINA DRIVE
 WILMINGTON, NORTH CAROLINA 28403
 PHONE: 910-251-5630

DATE: 2-7-17
 SCALE: 1"=20'
 DRAWN: JCB
 CHECKED: JBM
 PROJECT NO: 274
 SHEET NO: 3
 OF: 18

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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. (ON BOTH) 10' ON EITHER SIDE OF CROSSING.
 5. SANITARY SEWER OVER WATER: USE D.I.P. (ON BOTH) 10' ON EITHER SIDE OF CROSSING.
 6. HORIZONTAL SEPARATION BETWEEN STORM SEWER & SANITARY SEWER SHALL BE 5' BETWEEN EDGE OF PIPES.
 7. A 24" VERTICAL SEPARATION BETWEEN PIPES SHALL BE PROVIDED BETWEEN STORM SEWER AND SANITARY SEWER: WHERE SEPARATION IS LESS THAN 24" & SANITARY IS OVER STORM USE D.I.P. ON SANITARY SEWER 10' ON EITHER SIDE OF CROSSING. WHERE SEPARATION IS LESS THAN 12" & STORM IS OVER SANITARY BRIDGING IS REQUIRED (SEE SANITARY SEWER DETAIL). WHERE SEPARATION IS 12"-24" & STORM IS OVER SANITARY BRIDGING OR D.I.P. ON SANITARY SEWER 10' ON EITHER SIDE OF CROSSING.
 8. HORIZONTAL SEPARATION BETWEEN WATER AND STORM SEWER SHALL BE 5' BETWEEN EDGE OF PIPES.
 9. 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.
 10. STORM SEWER OVER WATER: USE D.I.P. ON WATER 10' ON EITHER SIDE OF CROSSING.
 11. ALL SANITARY SEWER MANHOLES WITH A DROP OF 30" OR GREATER SHALL HAVE AN INSIDE DIAMETER OF 5' WITH AN INSIDE DROP STRUCTURE.
 12. GRAVITY SANITARY SEWER WITHIN 50' OF WETLANDS SHALL MEET WATER MAIN MATERIALS, TESTING METHODS AND ACCEPTABILITY STANDARDS (15A NCAC 18C).
 13. SANITARY SEWER MANHOLES MUST BE GREATER THAN 50' FROM WETLANDS, AS MEASURED TO THE CLOSEST OUTSIDE EDGE.
 14. NO PIPE JOINTS SHALL BE INSIDE ANY INTERFERENCE MANHOLE/CATCH BASIN.

- SOUTH FRONT STREET SHOULDER CLOSURE NOTES:**
1. CONSTRUCTION PLANS SHALL BE USED IN CONJUNCTION WITH THE NCDOT & CITY OF WILMINGTON APPROVED TRAFFIC CONTROL PLAN.
 2. WHERE CURBING IS REMOVED, IT SHALL BE REMOVED & REPLACED TO AN EXISTING JOINT.
 3. CONTRACTOR SHALL CONTACT DUKE ENERGY TO BRACE POLE(S), IF NECESSARY.

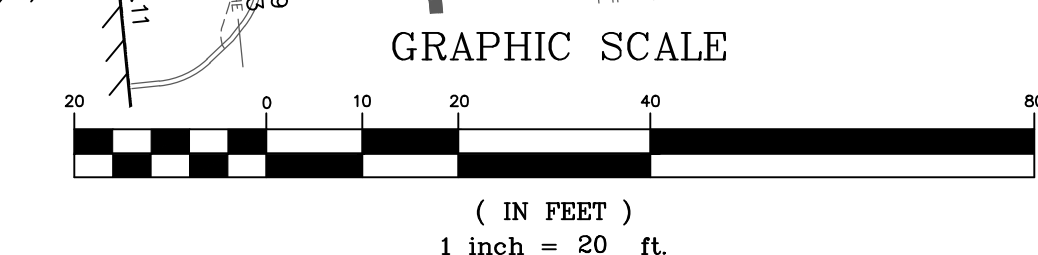
For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

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

Date: _____ Permit # _____
Signed: _____

Approved Construction Plan

Planning	Name	Date
Traffic		
Fire		



- CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:**
1. SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
 2. WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT 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 AT RIGHT-OF-WAY LINE.
 3. ALL SERVICES TYING INTO DIAPHRAGM IRON MANS SHALL BE CONSTRUCTED OF CLASS 50, DIP, WITH PROTECTO 401 CERAMIC EPOXY LINING.
 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 316.
 7. CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS, WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.

REV. NO.	DESCRIPTION	DATE
1	REVISED PER TRC COMMENTS.	3-3-17
2	REVISED PER CLIENT.	4-7-17
3	REVISED TO ADJUST UTILITIES & SHOW SEWER SERVICES (APPROX. LOCATION) TO BE ABANDONED/CHANGED.	4-12-17
4	REVISED PER TRC COMMENTS.	5-25-17
5	REVISED PER CLIENT TO ADJUST LOCATION OF MASTER WATER METER AND BACKFLOW PREVENTERS.	5-30-17
6	REVISED PER TRC COMMENTS.	6-13-17
7	REVISED PER NCDOT & CITY COMMENTS.	7-17-17
8	REVISED PER EPA & CITY COMMENTS.	7-28-17
9	REVISED TO ADD STORM DRAIN STRUCTURE LABELS.	7-28-17
10	REVISED PER NCDOT COMMENT.	7-31-17
11	REVISED PER CITY COMMENT.	8-10-17
12	REVISED TO RAISE FFE OF BUILDING #1.	8-10-17
13	REVISED TO RAISE FFE OF BUILDING #1.	8-10-17
14	REVISED TO ADJUST RETAINING WALL AT SOUTHWEST CORNER OF SITE.	10-12-17
15	REVISED TO ADJUST PUBLIC #1 INTERIOR LAYOUT, ADJUST WALKWAY EAST OF BUILDING #1, RELOCATE PERMITS TO ADJUST STORM DRAIN PIPE SYSTEM, ADJUST DISTURBANCE, & ADD NOTES.	1-19-18
16	REVISED TO ADJUST PROPOSED STORM DRAIN PIPE SYSTEM, ADJUST DISTURBANCE, & ADD NOTES.	3-29-18
17	REVISED PER CLIENT TO ADJUST SITE LAYOUT ADJACENT TO BUILDINGS #1 & AT ENTRANCE TO SITE.	4-26-18

EROSION CONTROL, STORMWATER, & UTILITY PLAN

GREENFIELD COMMERCIAL

WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

FINAL DRAWING FOR REVIEW PURPOSES ONLY

Owner: GREENFIELD STREET PROPERTIES, LLC
10 S. CAROLINA DRIVE
WILMINGTON, NORTH CAROLINA 28403
PHONE: 910-251-5030

DATE: 2-7-17
SCALE: 1"=20'
DRAWN: JCB
CHECKED: JBM
PROJECT NO: 274
SHEET NO: 4
OF: 18

PRELIMINARY PLAT
NOT FOR RECORDATION,
CONVEYANCES, OR SALES

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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
 Koba lespedeza 10
 Seeding Notes
 1. From Sept. 1 – Mar. 1, use unscarified sericea seed
 2. On poorly drained sites omit sericea and increase Koba to 30 lb/acre.
 3. Where a neat appearance is desired, omit sericea and increase Koba 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, referitize in the second year, according 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 stone 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 ft²)
 Hybrid Bermudagrass Minimum: 3
 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 6.11a).
 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 inches deep and 2 ft apart. Place sprigs about 2 ft apart in the row with one end at or above ground level (Figure 6.11a).
 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 – Referitize 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.

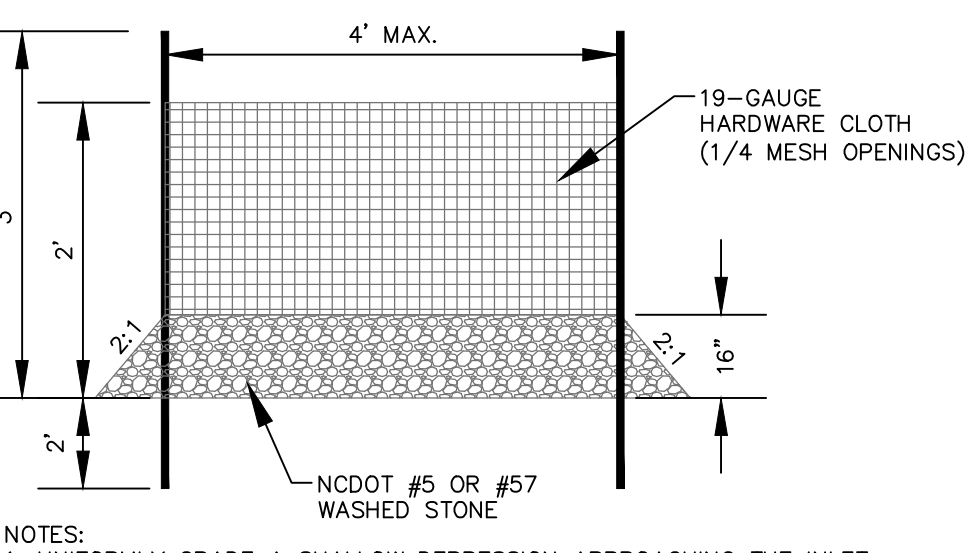
Table 6.11v – Seeding No. 70P for: Grass-lined Channels; Coastal Plain, Lower Piedmont, and Dry Soils in the Central Piedmont
 Seeding mixture
 Species Rate (lb/acre)
 Common Bermudagrass 40–80 (1–2 lb/1,000 ft²)
 Seeding dates
 Coastal Plain: Apr. – July
 Piedmont: Apr. 15 – June 30
 Soil amendments – 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. Referitize 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 (Koba in Piedmont and Coastal Plain, Korean in Mountains) 50
 Omit annual lespedeza when duration of temporary cover is not to extend beyond June.
 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 – Referitize if growth is not fully adequate. Reseed, referitize and mulch immediately following erosion or other damage.

Table 6.10b Temporary seeding Recommendations for Summer
 Seeding mixture
 Species Rate (lb/acre)
 German millet 40
 In the Piedmont and Mountains, a small-stemmed Sudangrass may be substituted at a rate of 50 lb/acre.
 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 – Referitize if growth is not fully adequate. Reseed, referitize and mulch immediately following erosion or other damage.

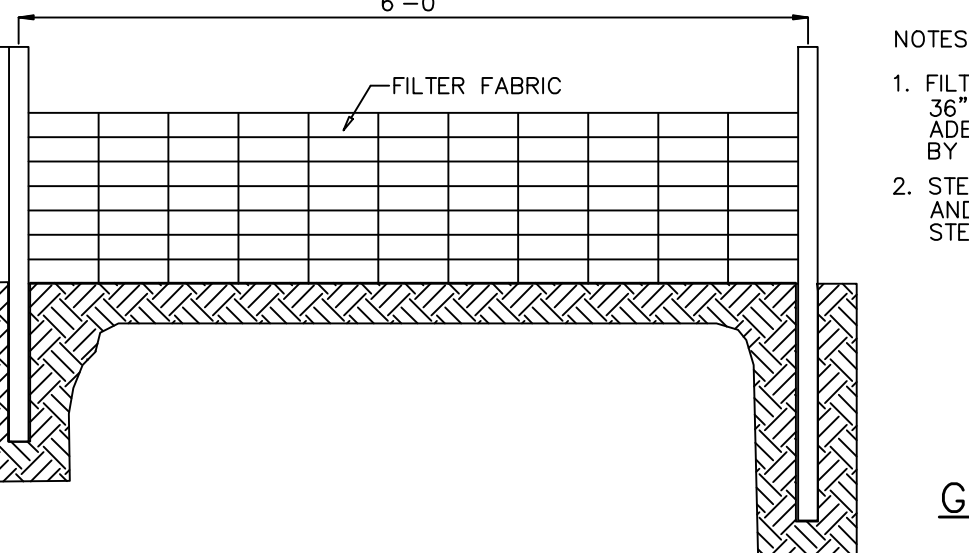
Table 6.10c Temporary Seeding Recommendations for Fall
 Seeding mixture
 Species Rate (lb/acre)
 Rye (grain) 120
 Seeding dates
 Mountains – Aug. 15–Dec. 30
 Coastal Plain and Piedmont – Aug. 15–Dec. 30
 Soil amendments – Follow soil tests or apply 2,000 lb/acre ground agricultural limestone and 1,000 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 referitize damaged areas immediately. 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 Koba (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 (HOW) 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 HOW 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.		



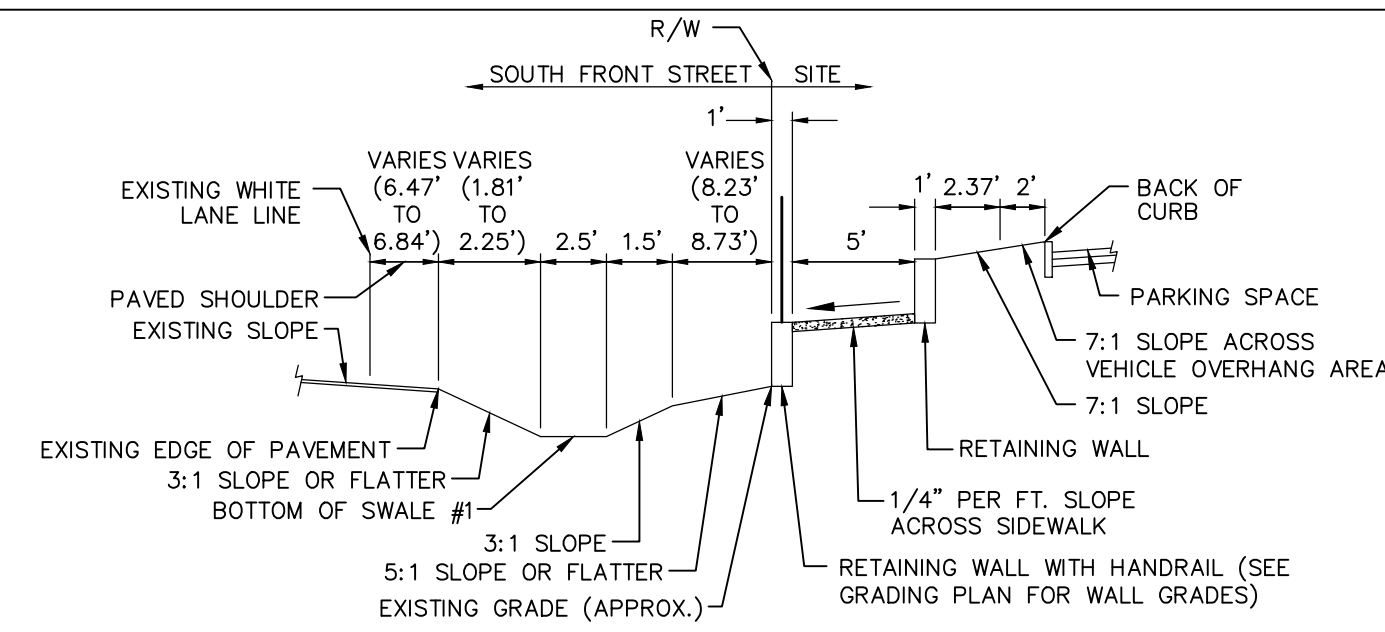
NOTES:
 1. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
 2. DRIVE 5-FOOT STEEL POSTS 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4 FEET APART.
 3. SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH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

HARDWARE CLOTH & GRAVEL INLET PROTECTION DETAIL
 NOT TO SCALE

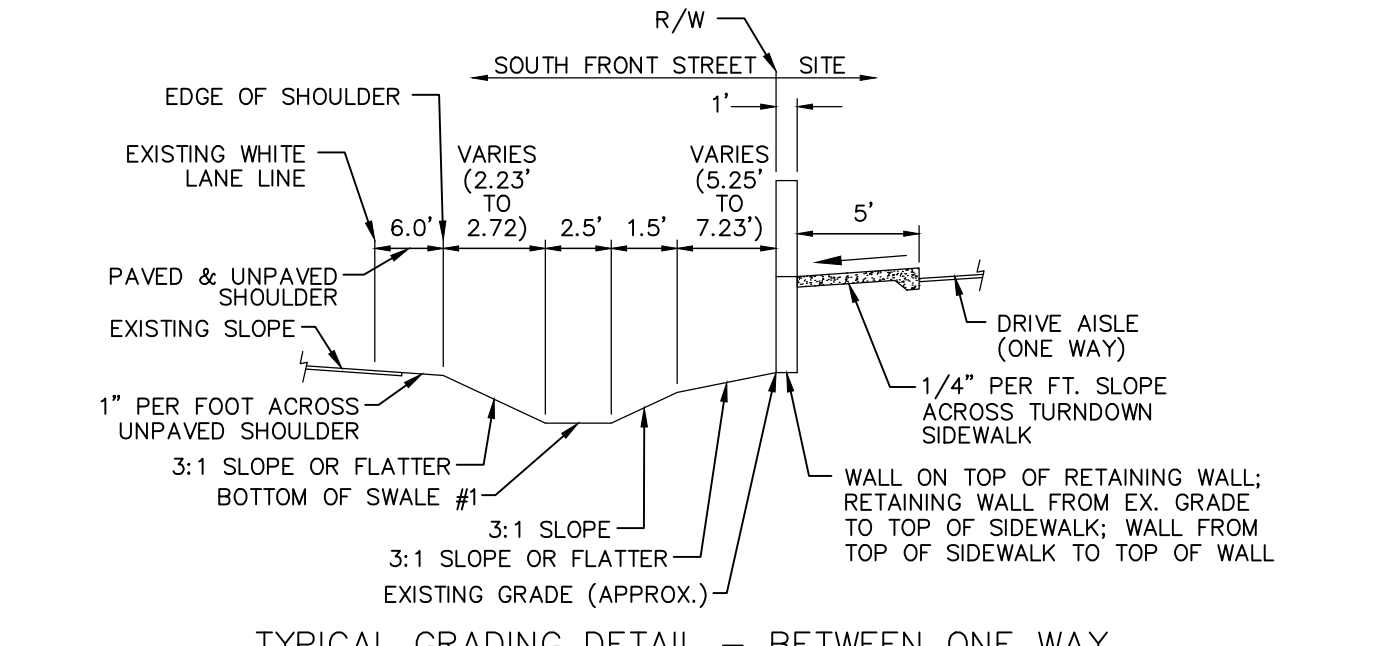


NOTES:
 1. FILTER FABRIC SHALL BE A MINIMUM OF 36" IN WIDTH AND SHALL BE FASTENED AROUND THE PERIMETER OF THE CHANNEL BY THE ENGINEER.
 2. STEEL POST SHALL BE 5" O" IN HEIGHT AND BE SELF FASTENER ANGLE STEEL TYPE.

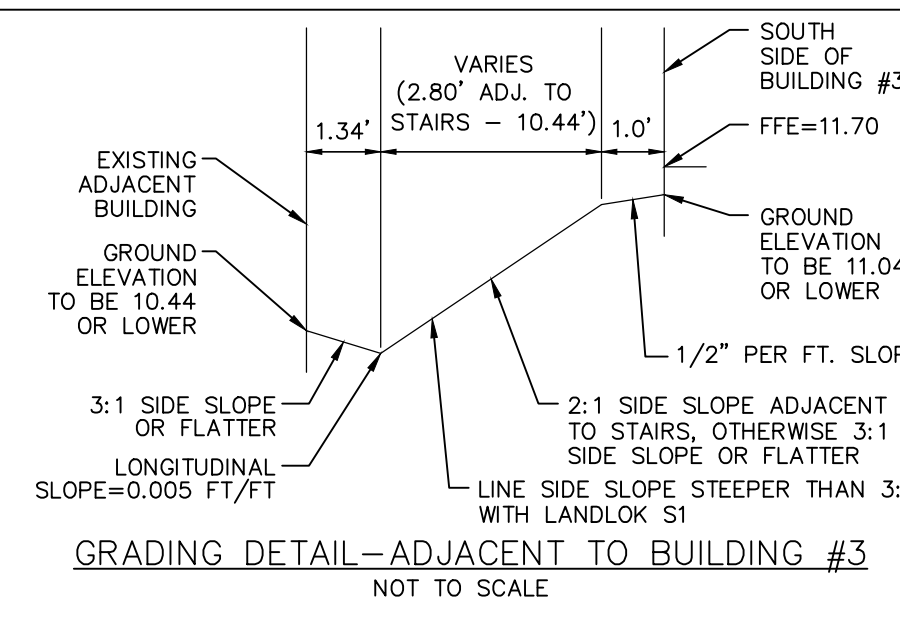
GUIDELINES FOR TEMPORARY SILT FENCE DETAIL
 NOT TO SCALE



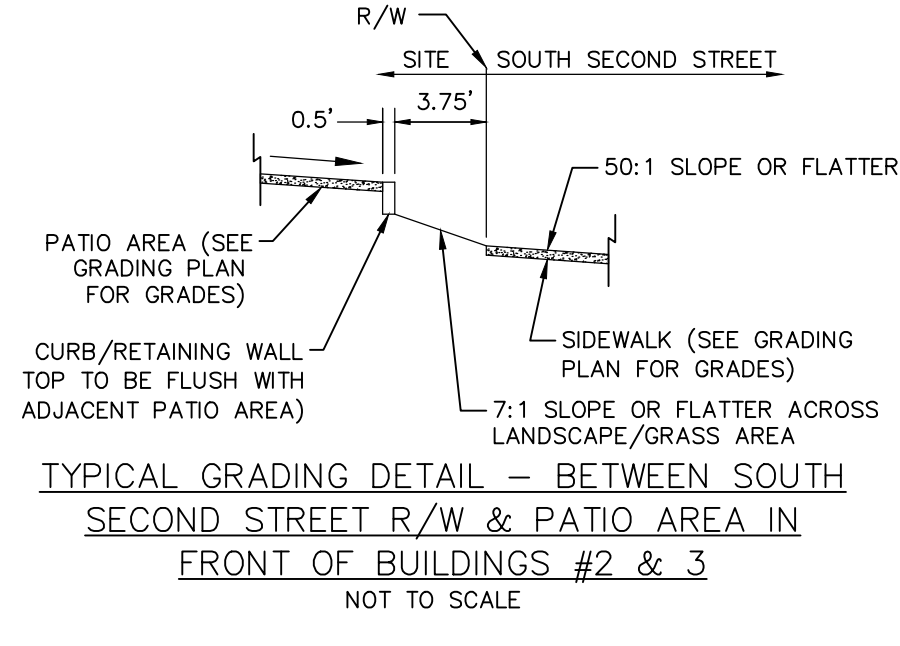
TYPICAL GRADING DETAIL - BETWEEN PERPENDICULAR PARKING (SOUTHERN PORTION OF SITE) & SOUTH FRONT STREET
 NOT TO SCALE



TYPICAL GRADING DETAIL - BETWEEN ONE WAY DRIVE AISLE & SOUTH FRONT STREET
 NOT TO SCALE



TYPICAL GRADING DETAIL - ADJACENT TO BUILDING #3
 NOT TO SCALE



TYPICAL GRADING DETAIL - BETWEEN SOUTH SECOND STREET R/W & PATIO AREA IN FRONT OF BUILDINGS #2 & 3
 NOT TO SCALE

- MAINTENANCE PLAN**
- ALL EROSION CONTROL MEASURES WILL BE CHECKED EVERY 7 DAYS OR AFTER EACH RAIN PRODUCING 1/4 INCHES OR MORE WHICH EVER COMES FIRST.
 - 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 DRAIN. THEY WILL BE MAINTAINED IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE. IMMEDIATELY REMOVE OBSTRUCTIONABLE MATERIAL SPILLED, WASHED, OR TRACKED ONTO THE CONSTRUCTION ENTRANCE OR ROADWAYS.
 - 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 DISLODGED.
 - 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 FRONT OF THE EMBANKMENT. IMMEDIATELY FILL ANY SETTLEMENT OF THE EMBANKMENT TO SLIGHTLY ABOVE GRADE. ANY RIPRAP DISPLACED FROM THE SPILLWAY MUST BE REPLACED IMMEDIATELY. AFTER ALL SEDIMENT-PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND STABILIZE PROPERLY.
 - INSPECT RIPRAP OUTLET STRUCTURES AFTER HEAVY RAINS TO SEE IF ANY EROSION HAS OCCURRED OR BELOW RIPRAP HAS TAKEN PLACE OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.
 - RIP RAP SHOULD BE INSPECTED PERIODICALLY FOR SCOUR OR DISLODGED 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 CHANNEL WHEN SEDIMENT ACCUMULATES TO ABOUT ONE-HALF THE DESIGN VOLUME. CHECK THE STRUCTURE FOR EROSION, PIPING, AND ROCK DISPLACEMENT AFTER EACH SIGNIFICANT RAINFALL AND REPAIR IMMEDIATELY.
 - INSPECT ALL MULCH AREAS PERIODICALLY AND AFTER RAINFALLS TO CHECK FOR RILL EROSION, DISLOCATION, OR FAILURE. WHERE EROSION IS OBSERVED, APPLY ADDITIONAL MULCH. IF WASHOUT OCCURS, REPAIR THE SOLE GRADE, RESEED, AND REINSTATE 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 EROSION 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 BETWEEN 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 BAFFLES BECOME DAMAGED, 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 REPAIR PRESSURES 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 (1/4 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 USED TO PROTECT THE WIRE MESH FROM DAMAGE. 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 DISLODGE 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 BARREL 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 FABRIC THAT SPANS THE FULL WIDTH OF THE SPILLWAY. 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 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 VEGETATION COVER. SEE GROUND STABILIZATION CHART FOR STABILIZATION TIME FRAME.

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

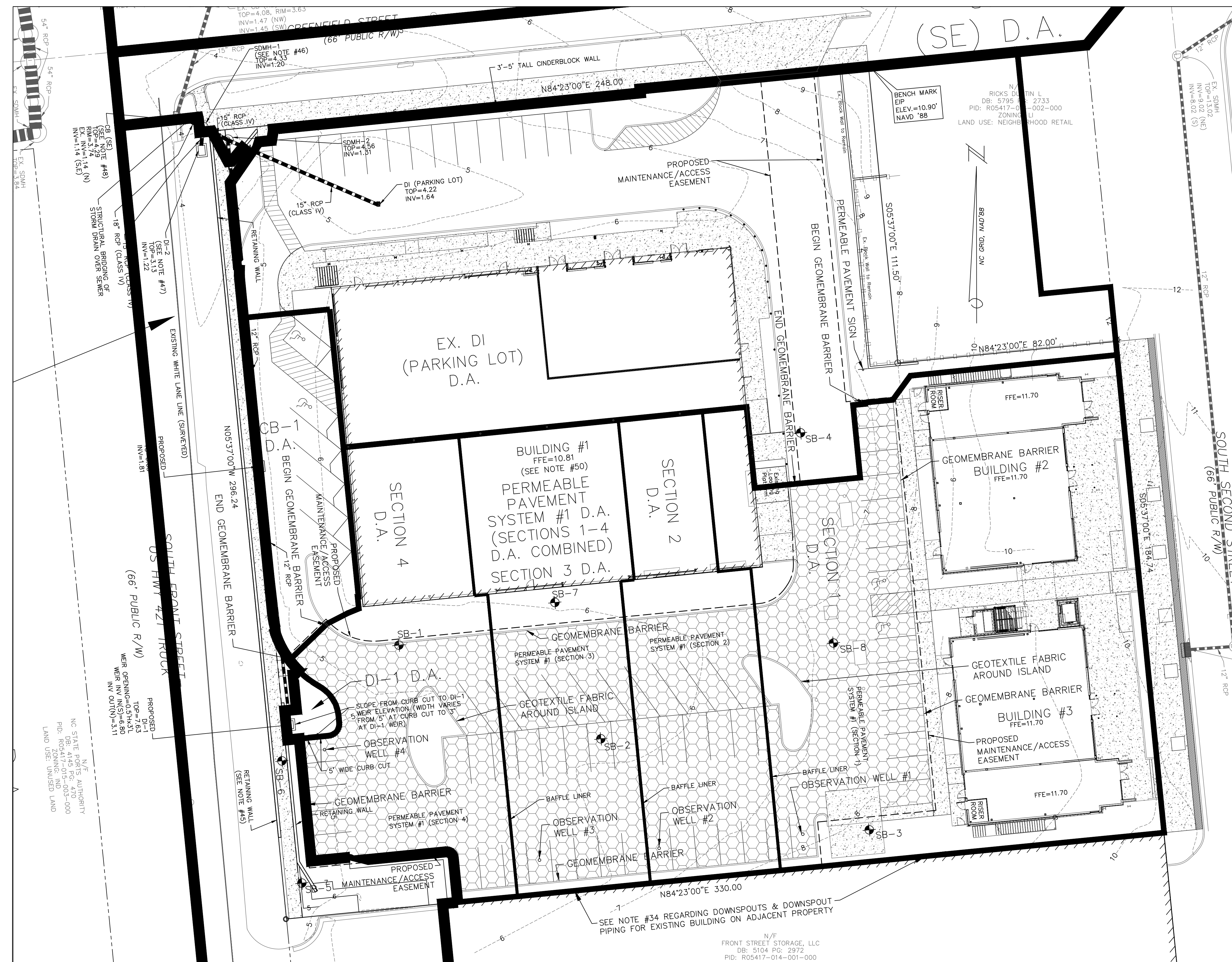
WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: _____ Permit # _____
 Signed: _____

Approved Construction Plan
 Name _____ Date _____
 Planning _____
 Traffic _____
 Fire _____

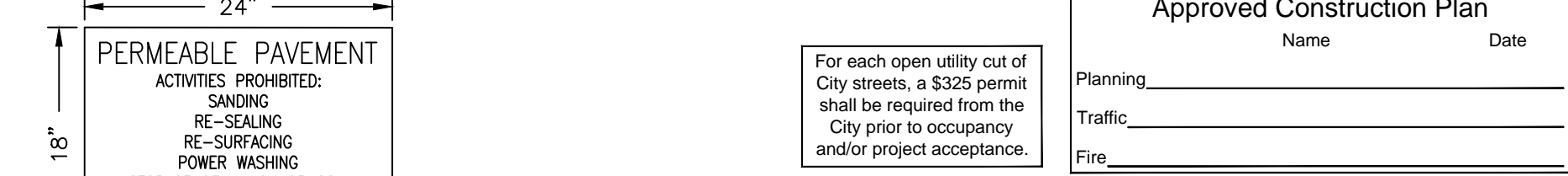
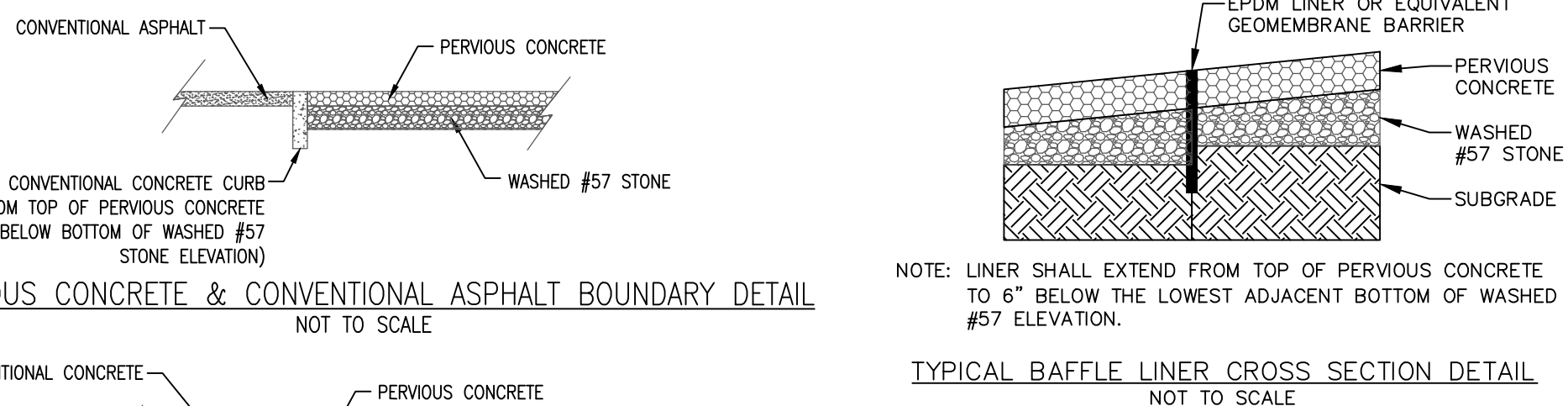
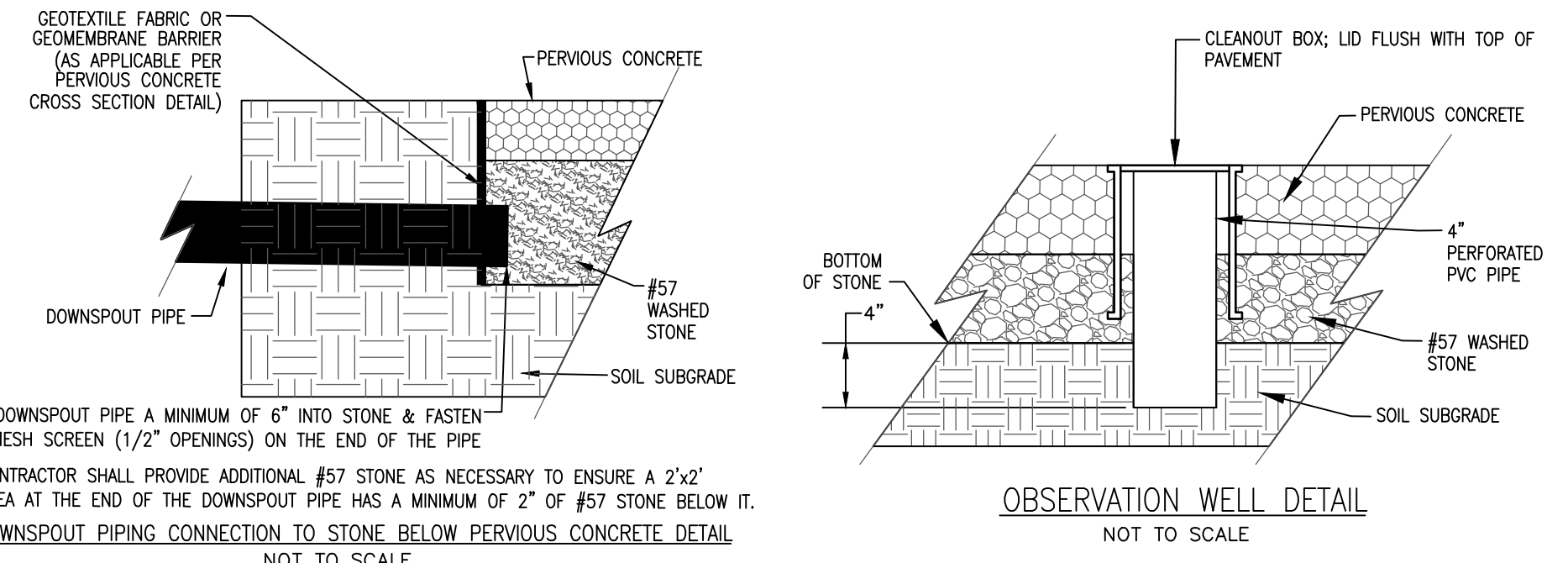
EROSION CONTROL & STORMWATER DETAIL SHEET
GREENFIELD COMMERCIAL
 WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA
FINAL DRAWING FOR REVIEW PURPOSES ONLY
 MALPASS ENGINEERING & SURVEYING, P.C.
 1134 SHIPYARD BOULEVARD
 WILMINGTON, NORTH CAROLINA 28412
 Phone 910-392-5243 Fax 910-392-2803 License No. C-2320
 Owner: GREENFIELD STREET PROPERTIES, LLC
 10 S. CAROLINA DRIVE
 WILMINGTON, NORTH CAROLINA 28403
 PHONE: 910-251-5630
 DATE: 4-7-17
 SCALE: N.T.S.
 DRAWN: JCB
 CHECKED: JBM
 PROJECT NO: 274
 SHEET NO: 5 OF 18

REV NO.	DESCRIPTION	DATE
1	REVISED TO ADJUST DETAILS.	4-7-17
2	REVISED TO ADJUST GRADING DETAILS.	5-25-17
3	REVISED PER NCDOT & CITY COMMENTS.	7-17-17
4	REVISED PER CITY COMMENTS.	7-26-17
5	REVISED TO REMOVE PLAN VIEW.	3-29-18

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- 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 PERMEABLE PAVEMENT ARE COMPLETED.
 - AREAS ADJACENT TO THE PERMEABLE PAVEMENT ARE STABILIZED (VEGETATION, MULCH, STRAW, SEED, SOD, FIBER BLENKETS, 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 SOIL SUBGRADE WHILE IT IS EXPOSED.
 - 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.
 - 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 ARE 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.
 - 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 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.



APPROVED CONSTRUCTION PLAN

Name: _____ Date: _____

Planning: _____

Traffic: _____

Fire: _____

GREENFIELD COMMERCIAL

WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

FINAL DRAWING FOR REVIEW PURPOSES ONLY

Owner: GREENFIELD STREET PROPERTIES, LLC
10 S. CAROLINA DRIVE
WILMINGTON, NORTH CAROLINA 28403
Phone: 910-392-5243 Fax: 910-392-5203 License No. C-2920

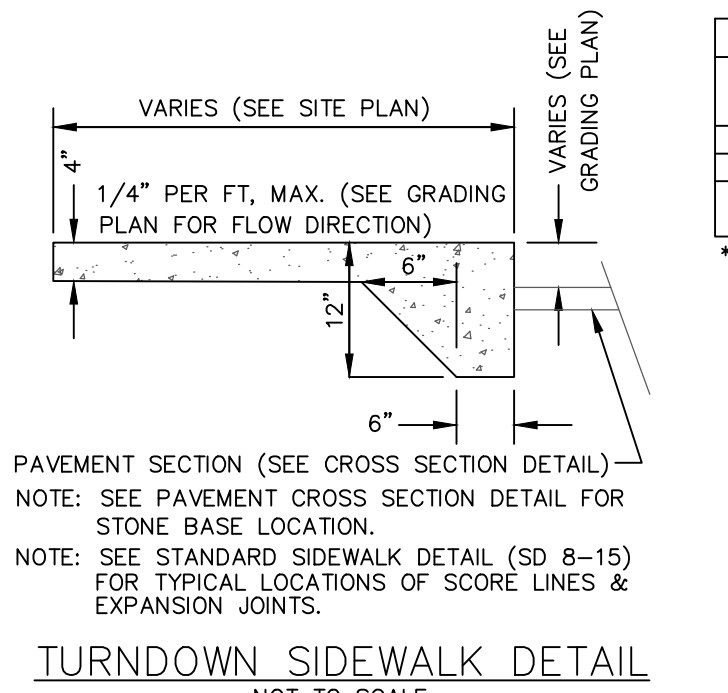
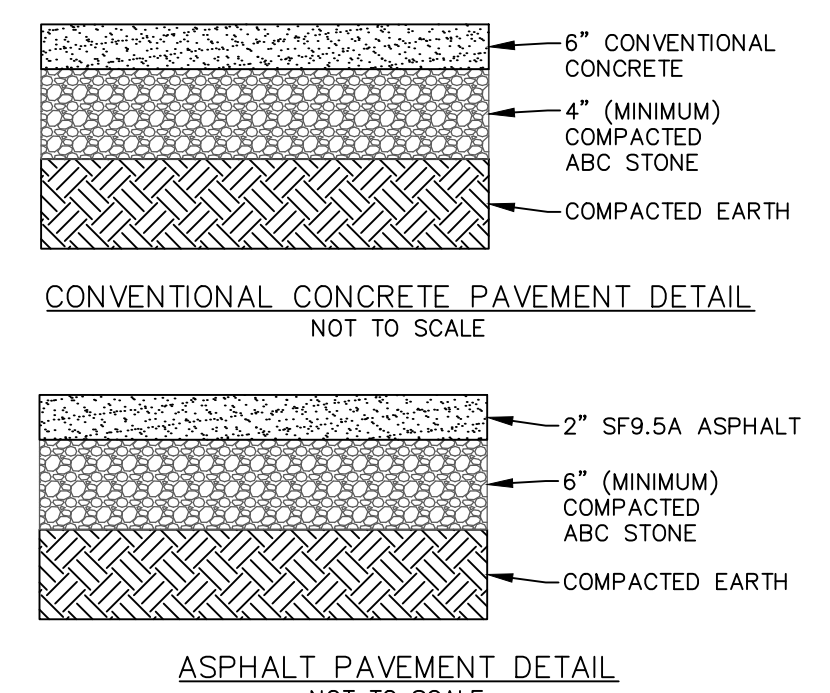
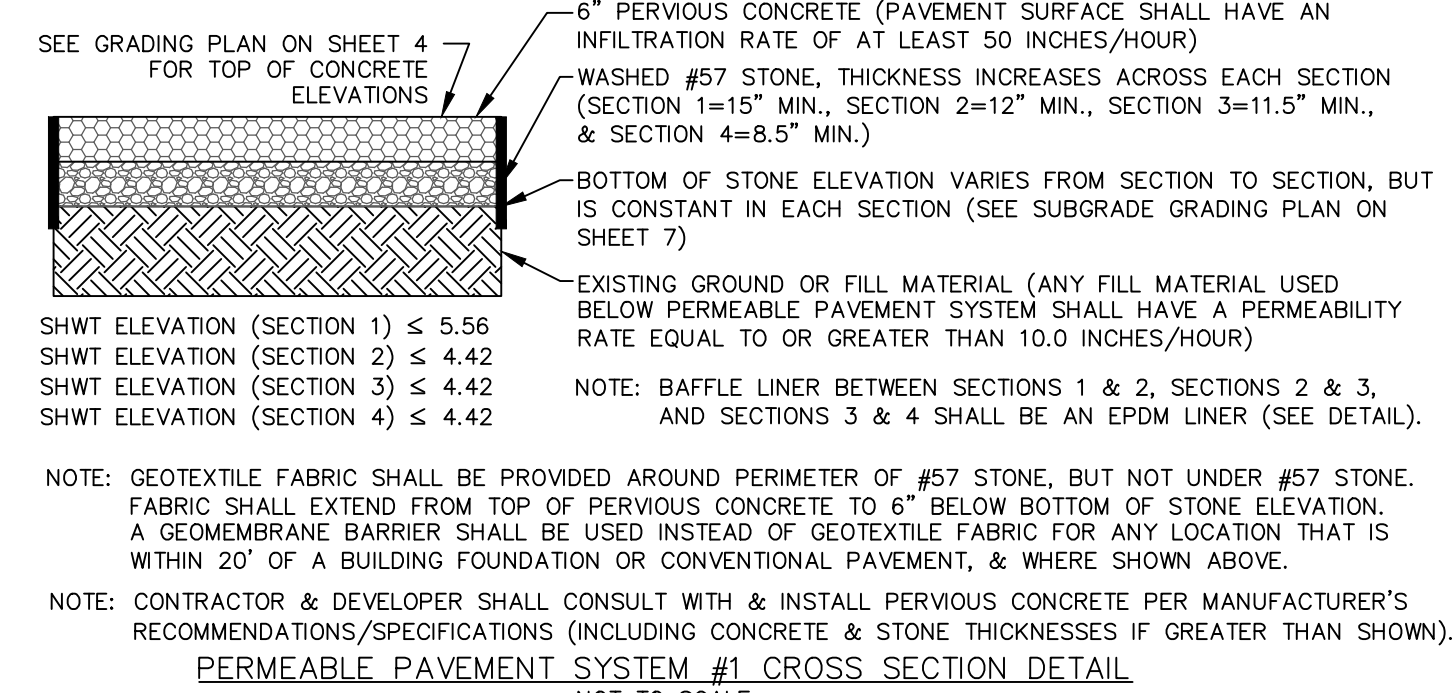
DATE: 3-3-17
SCALE: N.T.S.
DRAWN: JCB
CHECKED: JBM
PROJECT NO: 274
SHEET NO: 6 OF 18

SOIL TEST RESULTS PER APPLIED RESOURCE MANAGEMENT, PC

TEST LOCATION	EXISTING GROUND ELEVATION (FEET)**	SHWT (INCHES BELOW GROUND SURFACE)**	SHWT ELEVATION (FEET)**	HYDRAULIC CONDUCTIVITY RATE (INCHES PER HOUR)**
SB 1	5.75	16	4.42	11.92
SB 2	5.72	18	4.22	5.07
SB 3	8.24	36	5.24	0.37
SB 4	6.39	10	5.56	0.41
SB 5	4.13	< 12	3.13-4.13	3.34
SB 6	4.67	< 12	3.67-4.67	2.18
SB 7	6.07	36	3.07	2.75
SB 8	7.25	32	4.59	2.18
				2.51
				1.07
				1.43
				0.78
				8.38
				8.10

NOTE: GEOTEXTILE FABRIC SHALL BE PROVIDED AROUND PERIMETER OF #57 STONE, BUT NOT UNDER #57 STONE. FABRIC SHALL EXTEND FROM TOP OF PERVIOUS CONCRETE TO 6" BELOW BOTTOM OF STONE ELEVATION. A GEOMEMBRANE BARRIER SHALL BE USED INSTEAD OF GEOTEXTILE FABRIC FOR ANY LOCATION THAT IS WITHIN 20' OF A BUILDING FOUNDATION OR CONVENTIONAL PAVEMENT, & WHERE SHOWN ABOVE.

NOTE: CONTRACTOR & DEVELOPER SHALL CONSULT WITH & INSTALL PERVIOUS CONCRETE PER MANUFACTURER'S RECOMMENDATIONS/SPECIFICATIONS (INCLUDING CONCRETE & STONE THICKNESSES IF GREATER THAN SHOWN).

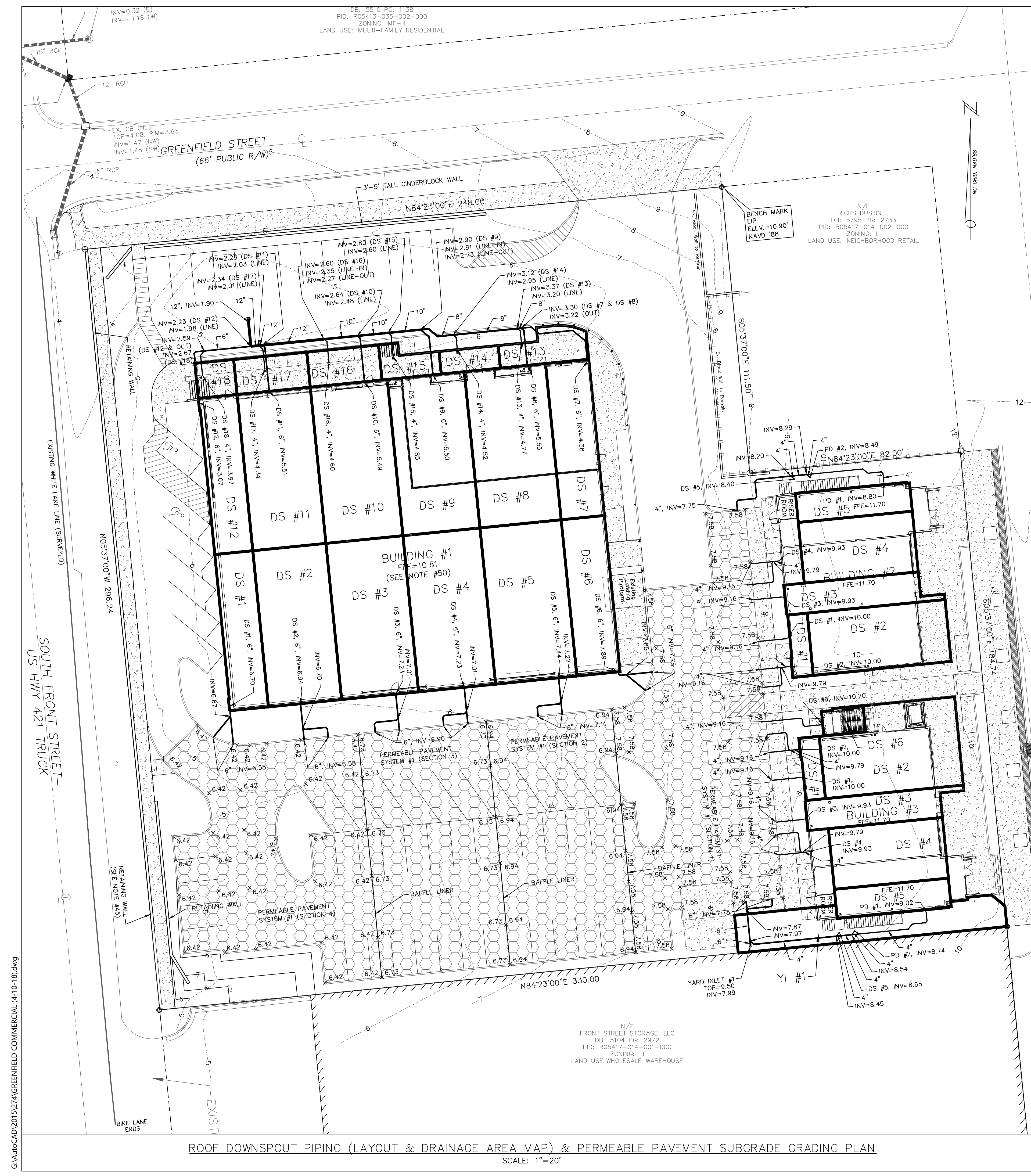


INLET DRAINAGE AREA CHART

INLET	DRAINAGE AREA (ACRES)
CB-1	0.10
#1-1	0.01
PERMEABLE PAVEMENT SYSTEM #1	1.18

*DI-1 D.A. DOES NOT INCLUDE PERMEABLE PAVEMENT SYSTEM #1 D.A.

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BUILDING #1 DOWNSPOUT PIPE SYSTEM DRAINAGE AREA CHART

INLET	DRAINAGE AREA (ACRES)
DS #1	0.021
DS #2	0.040
DS #3	0.042
DS #4	0.042
DS #5	0.045
DS #6	0.024
DS #7	0.024
DS #8	0.045
DS #9	0.042
DS #10	0.042
DS #11	0.040
DS #12	0.021
DS #13	0.010
DS #14	0.005
DS #15	0.006
DS #16	0.009
DS #17	0.009
DS #18	0.005

BUILDING #2 DOWNSPOUT PIPE SYSTEM DRAINAGE AREA CHART

INLET	DRAINAGE AREA (ACRES)
DS #1	0.01
DS #2	0.03
DS #3	0.02
DS #4	0.03
DS #5	0.02
PD #1	0.01
PD #2	0.01

*PD #1 & PD #2 D.A. IS LOCATED UNDER DS #5 D.A.

BUILDING #3 DOWNSPOUT PIPE SYSTEM DRAINAGE AREA CHART

INLET	DRAINAGE AREA (ACRES)
DS #1	0.01
DS #2	0.04
DS #3	0.02
DS #4	0.03
DS #5	0.02
DS #6	0.01
PD #1	0.01
PD #2	0.01
YARD INLET #1	0.03

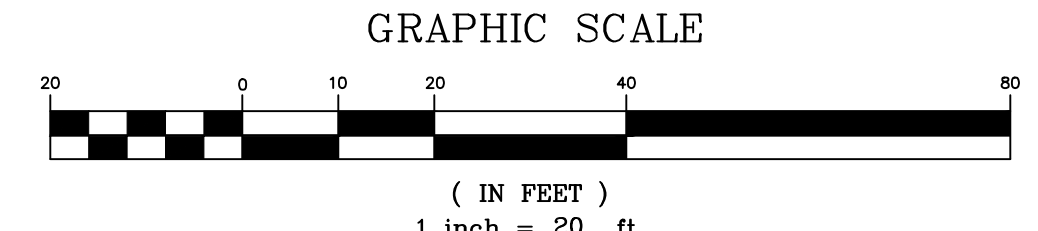
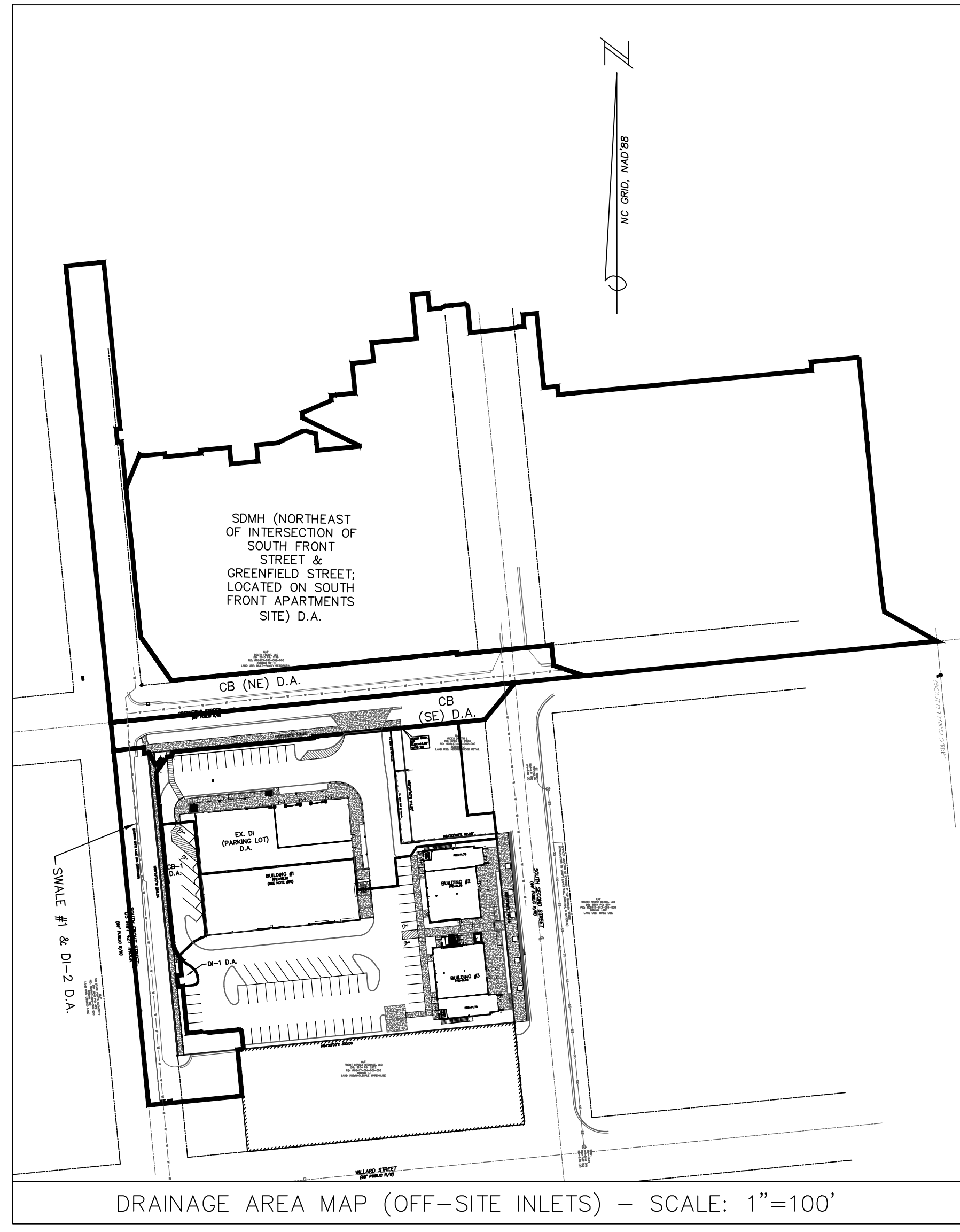
*PD #1 & PD #2 D.A. IS LOCATED UNDER DS #5 D.A.

STORM DRAIN PIPE SYSTEM TABLE

FROM	TO	SIZE (INCHES)	LENGTH (LF)	SLOPE (%)	U.S. INVERT	D.S. INVERT	MATERIAL
DI-1	CB-1	12	95	1.37	3.11	1.81	RCP (CLASS III)
CB-1	SDMH-2	12	122	0.41	1.81	1.31	RCP (CLASS III)
DI (PARKING LOT)	SDMH-2	15	61	0.54	1.64	1.31	RCP (CLASS IV)
SDMH-2	SDMH-1	15	11	1.00	1.31	1.20	RCP (CLASS IV)
DI-2	SDMH-1	15	7	0.29	1.22	1.20	RCP (CLASS IV)
SDMH-1	CB (SE)	18	10	0.60	1.20	1.14	RCP (CLASS IV)

DOWNSPOUT PIPING NOTES:

1. AN IN-LINE DOWNSPOUT FILTER MUST BE INSTALLED ON EVERY ROOF DOWNSPOUT DRAINING TO PERMEABLE PAVEMENT SYSTEM #1. EACH IN-LINE DOWNSPOUT FILTER SHALL BE LOCATED IN AN AREA THAT ALLOWS FOR INSPECTION.
2. DOWNSPOUT PIPING LOCATIONS ARE APPROXIMATE. CONTRACTOR TO COORDINATE DOWNSPOUT PIPING WITH ARCHITECTURAL DRAWINGS.
3. NO MORE THAN 1,000 SF OF ROOF AREA MAY DRAIN TO A SINGLE DISCHARGE POINT INTO PERMEABLE PAVEMENT SYSTEM #1.
4. BENDS, REDUCERS, FITTINGS, ETC. AS NECESSARY.



REV. NO.	DESCRIPTION	DATE
1	REVISED PER CLIENT.	4-7-17
2	REVISED TO ADJUST ROOF DOWNSPOUT PIPING FOR BUILDING #1 & ADD NOTES.	4-17-17
3	REVISED PER TRC COMMENTS.	5-25-17
4	REVISED PER TRC COMMENTS.	6-19-17
5	REVISED PER NCOOT & CITY COMMENTS.	7-17-17
6	REVISED PER CITY COMMENTS.	7-26-17
7	REVISED TO RAISE FFE OF BUILDING #1.	8-8-17
8	REVISED TO ADJUST STORM DRAIN PIPE SYSTEM LAYOUT AT SOUTHWEST CORNER OF SITE.	10-5-17
9	REVISED TO ADJUST ROOF DOWNSPOUT PIPING LAYOUT & DRAINAGE AREAS.	1-19-18
10	REVISED TO ADJUST STORM DRAIN PIPE SYSTEM TABLE.	3-29-18
11	REVISED PER CLIENT TO ADJUST SITE LAYOUT ADJACENT TO BUILDING #1 & AT ENTRANCE TO SITE.	4-26-18

PRELIMINARY PLAT NOT FOR RECORDATION, CONVEYANCES, OR SALES

ROOF DOWNSPOUT PIPING, SUBGRADE GRADING, & DRAINAGE AREA MAP

GREENFIELD COMMERCIAL

WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

FINAL DRAWING FOR REVIEW PURPOSES ONLY

DATE: 3-3-17
SCALE: 1"=20'
DRAWN: JCB
CHECKED: JBM
PROJECT NO: 274

Owner: GREENFIELD STREET PROPERTIES, LLC
10 S. CAROLINA DRIVE
WILMINGTON, NORTH CAROLINA 28403
PHONE: 910-251-5630

SHEET NO: 7 OF 18

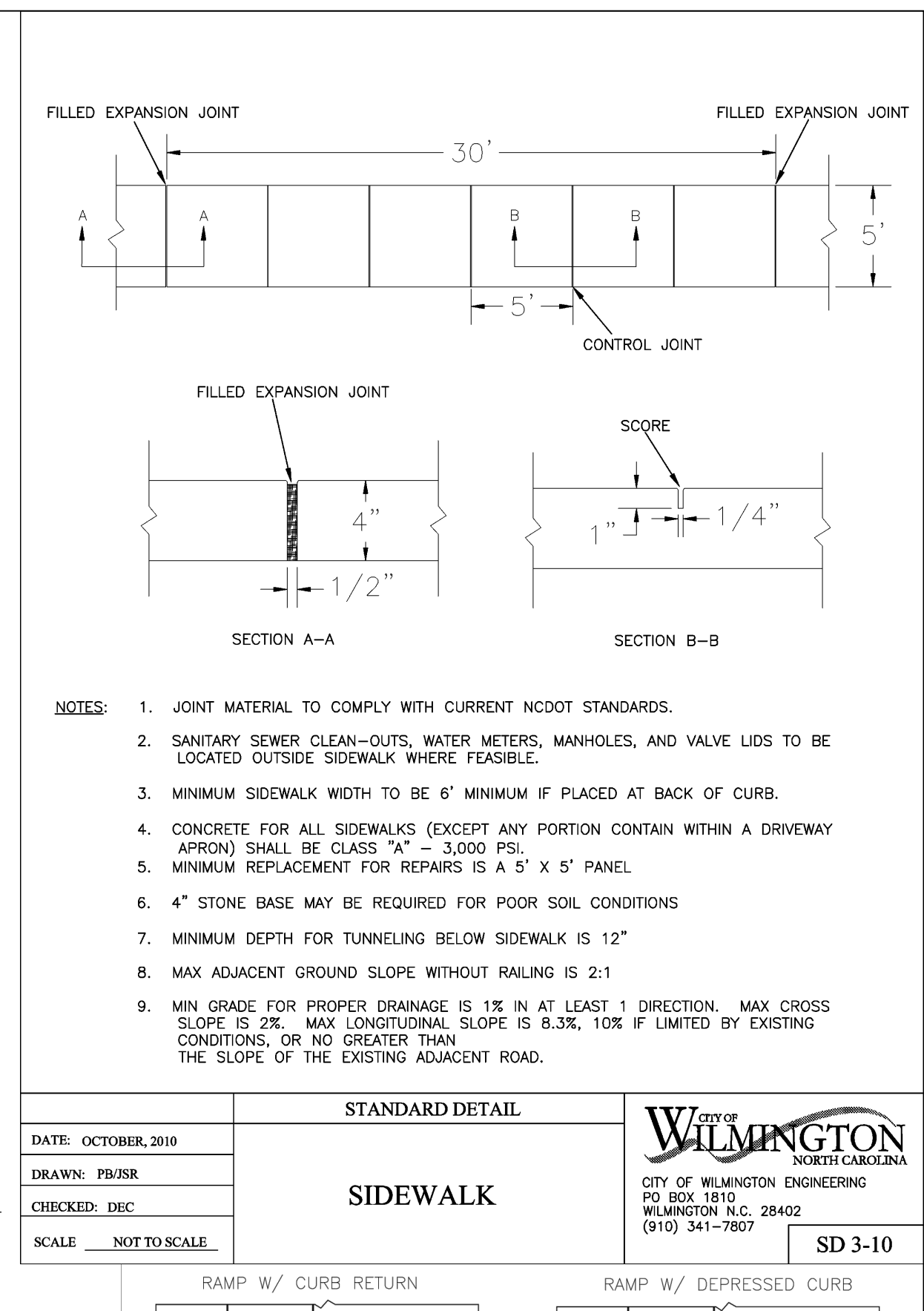
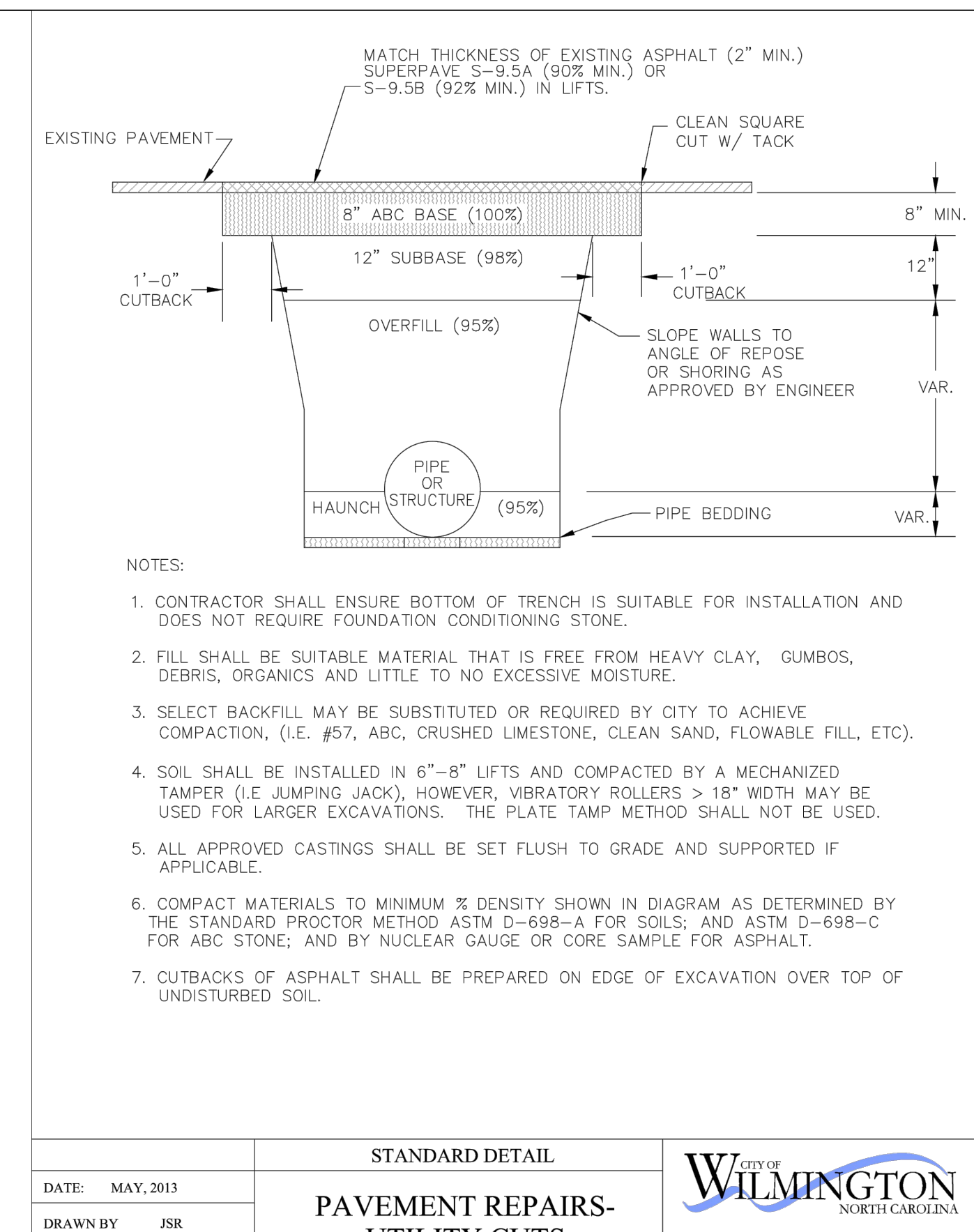
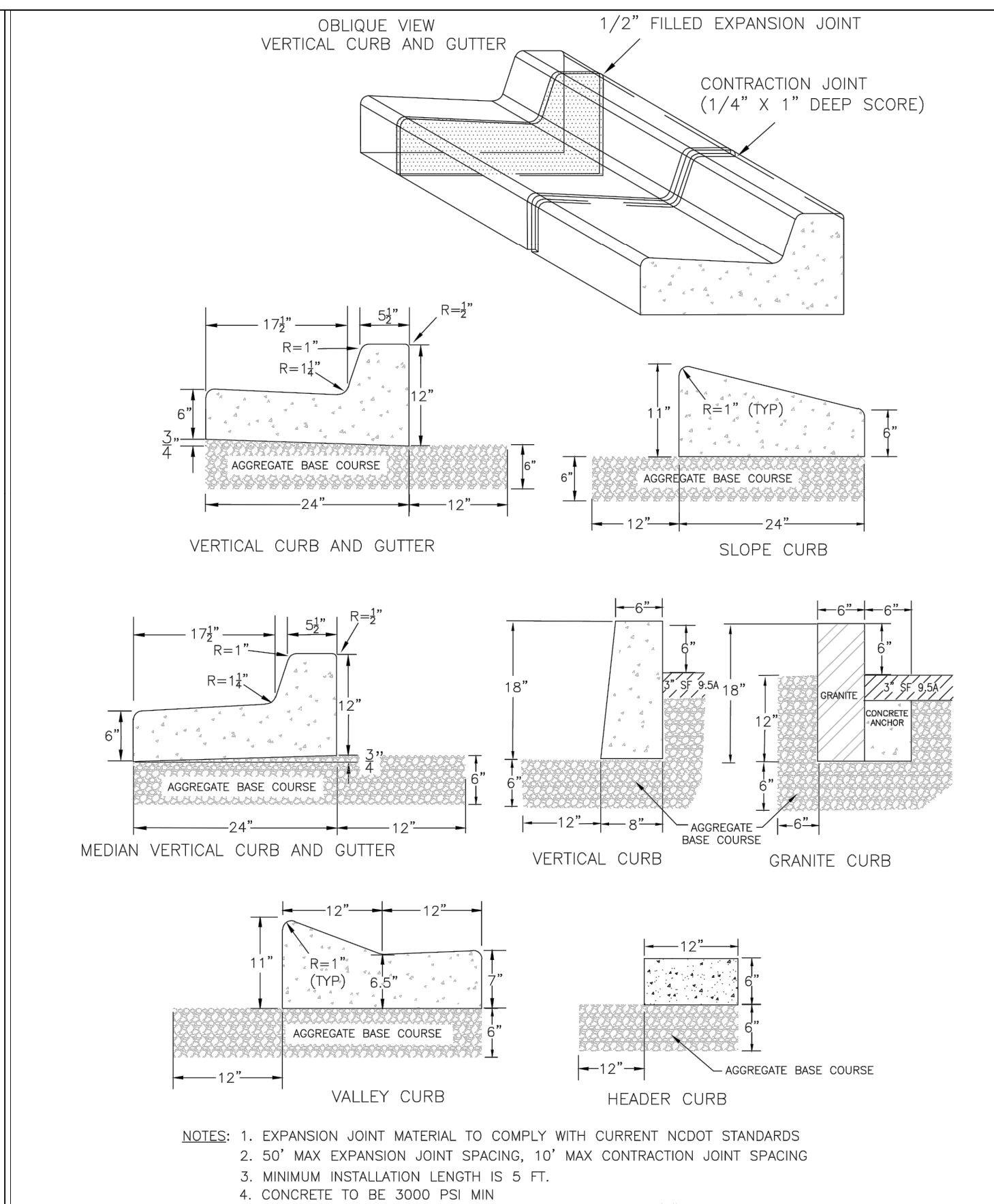
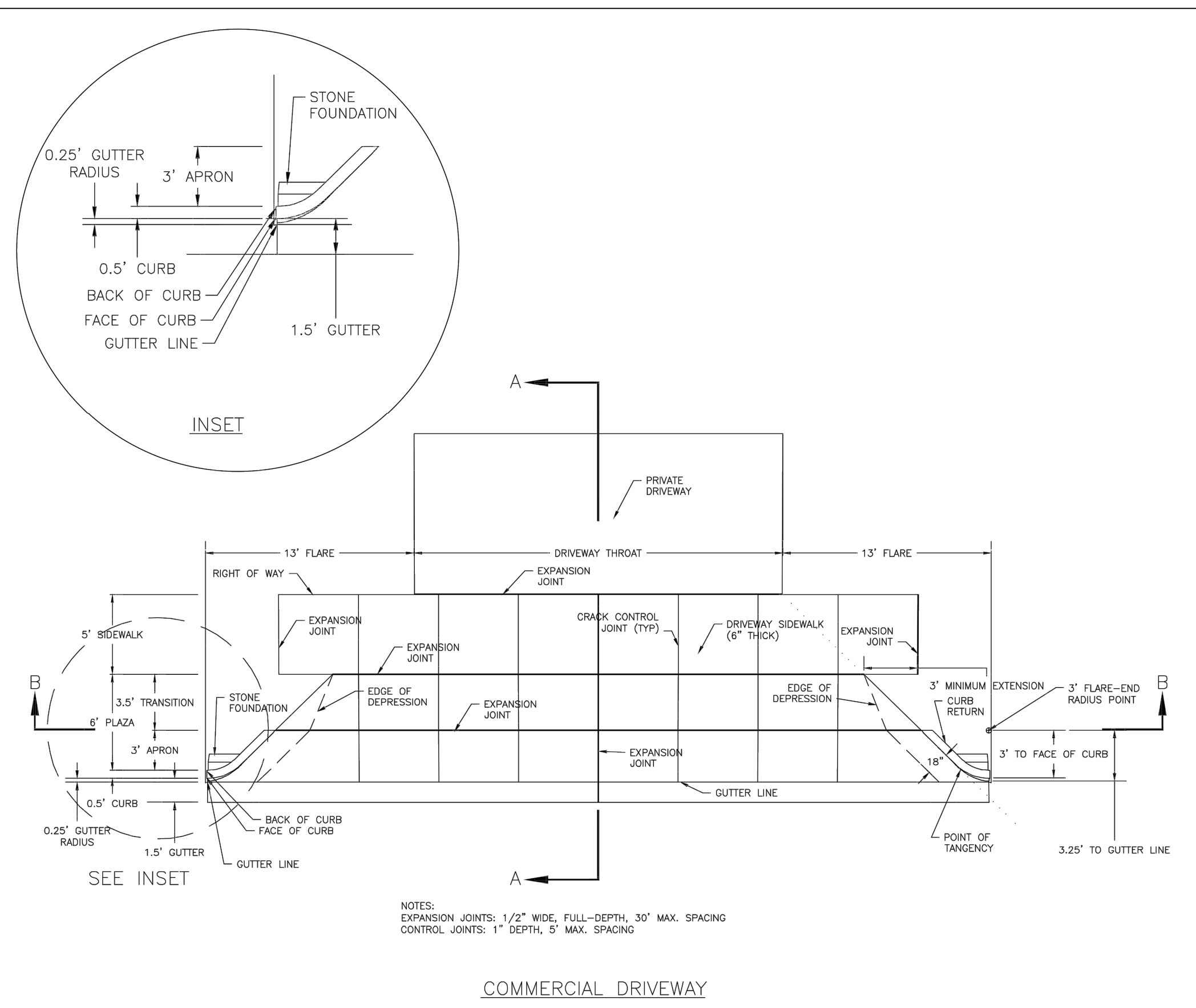
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 PID: R05413-035-002-000
 ZONING: MF-H
 LAND USE: MULTI-FAMILY RESIDENTIAL
 DB: 5795 PGS: 2733
 PID: R05417-014-002-000
 ZONING: LI
 LAND USE: NEIGHBORHOOD RETAIL
 DB: 5104 PGS: 2972
 PID: R05417-014-001-000
 ZONING: LI
 LAND USE: WHOLESALE WAREHOUSE
 N/F RICKS DUSTIN L
 DB: 5795 PGS: 2733
 PID: R05417-014-002-000
 ZONING: LI
 LAND USE: NEIGHBORHOOD RETAIL

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

COMMERCIAL DRIVEWAY PLAN (VERTICAL CURB)

1 of 2

SD 3-03.3

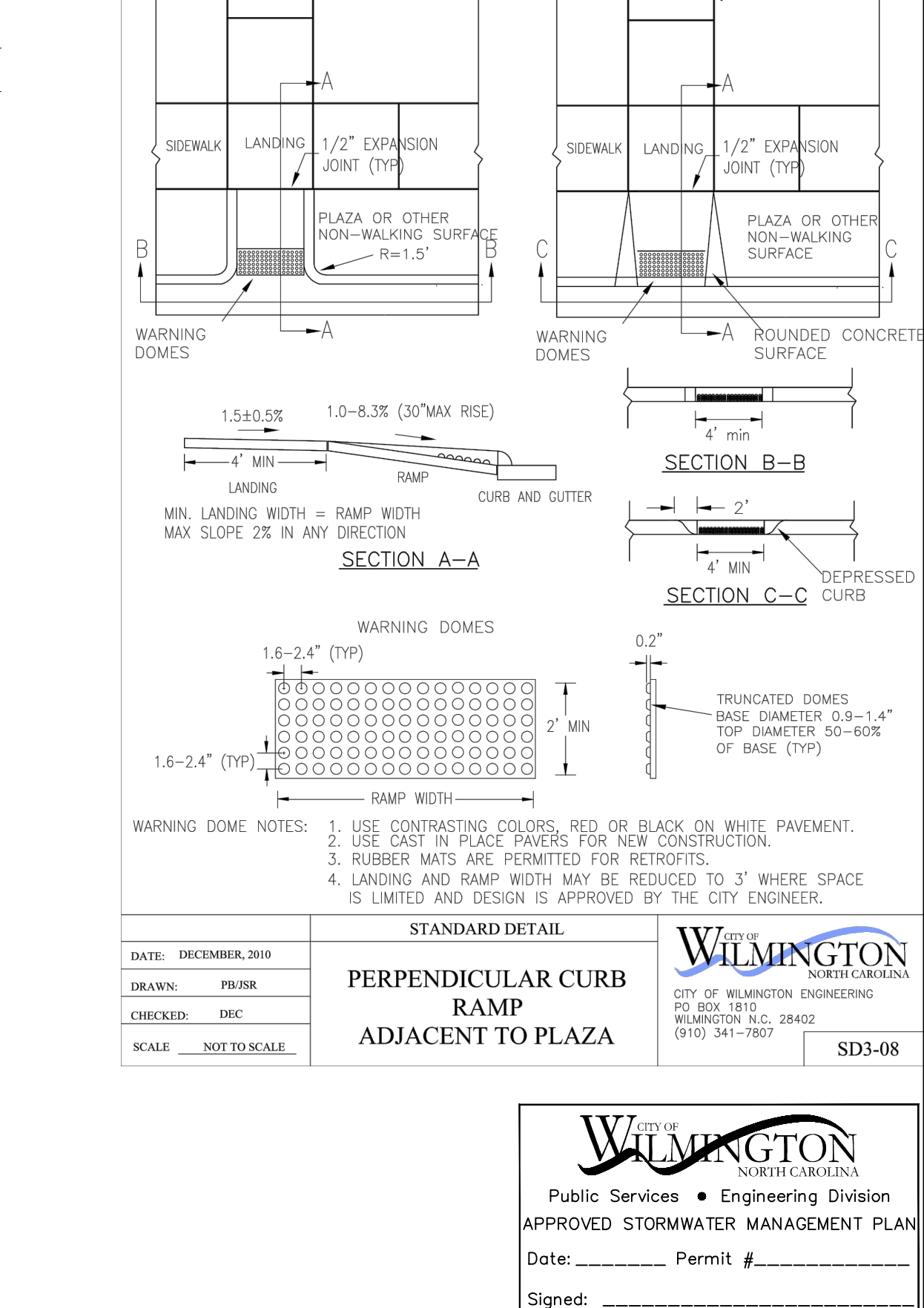
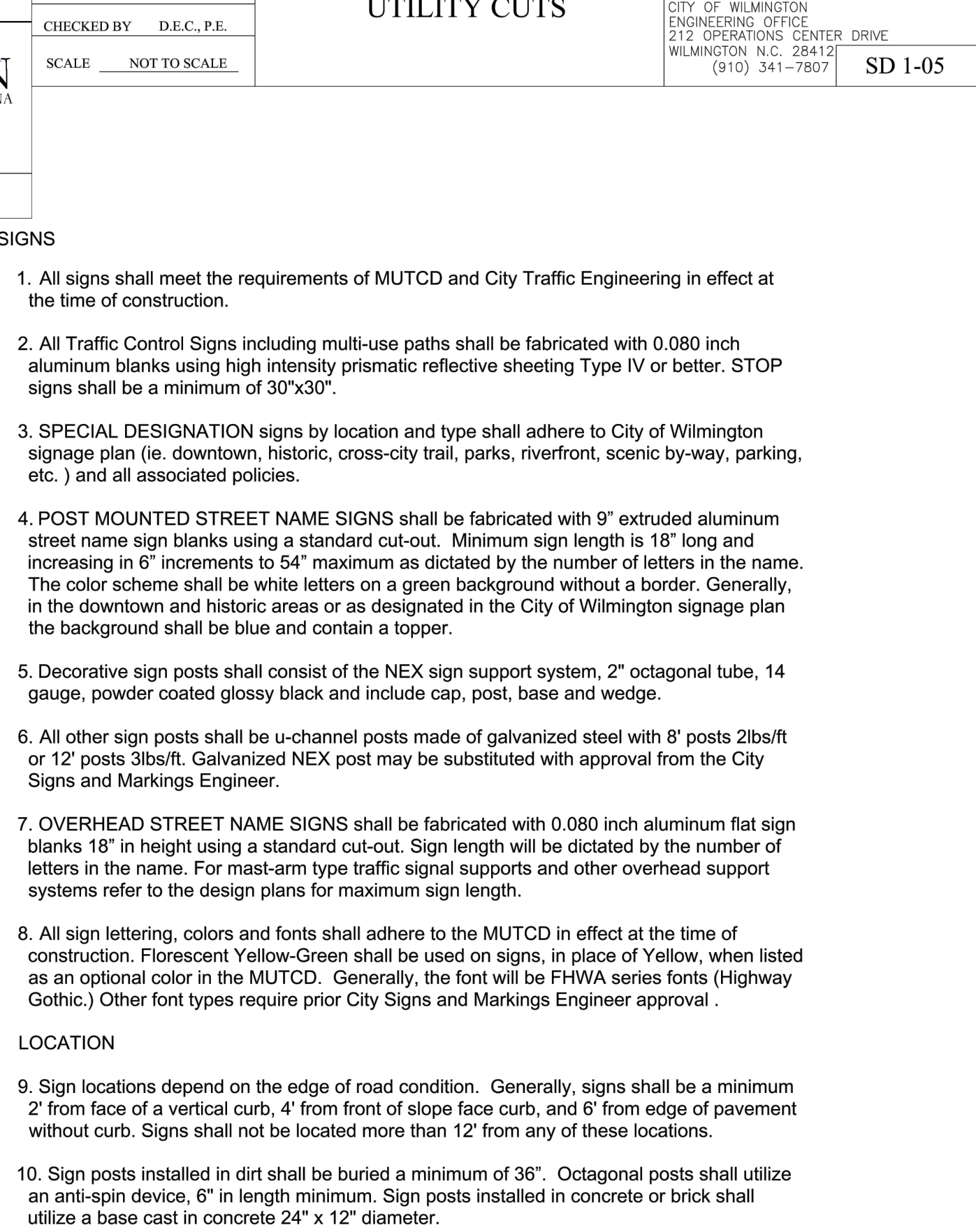
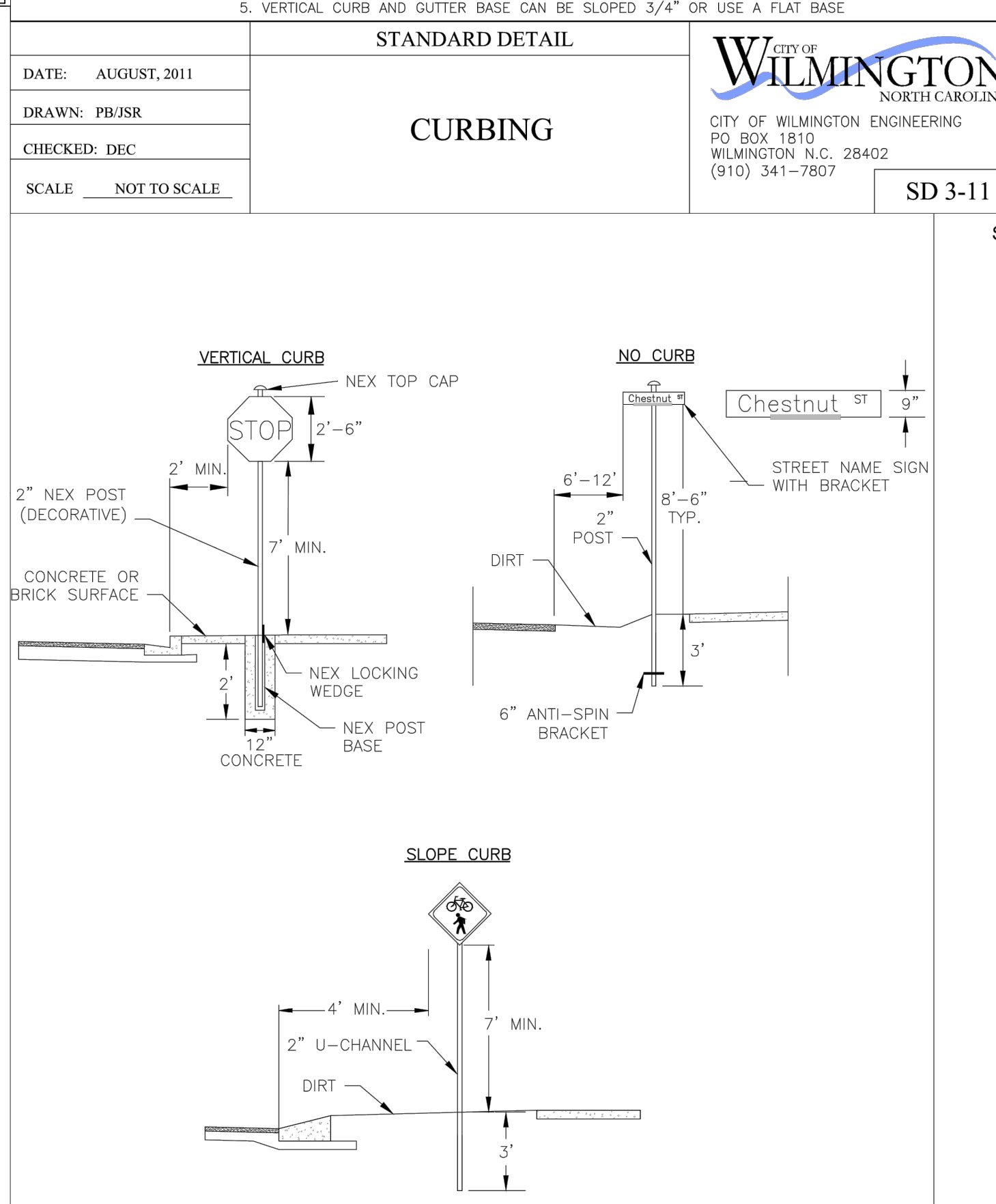
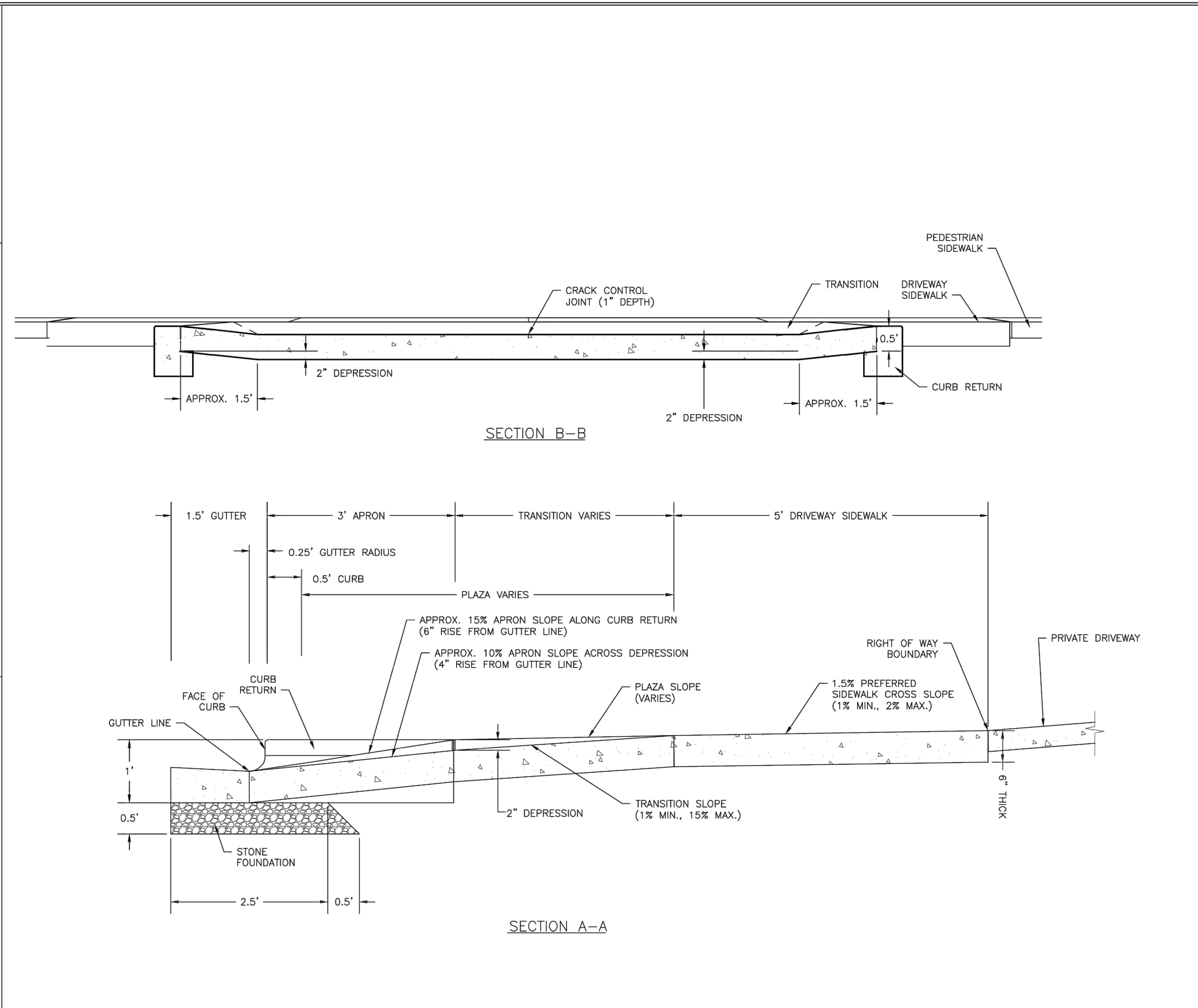


DATE: FEB 14, 2017
 DRAWN BY: JSR
 CHECKED BY: D.E.C., P.E.
 SCALE: NOT TO SCALE

COMMERCIAL DRIVEWAY SECTIONS (VERTICAL CURB)

2 of 2

SD 3-03.4

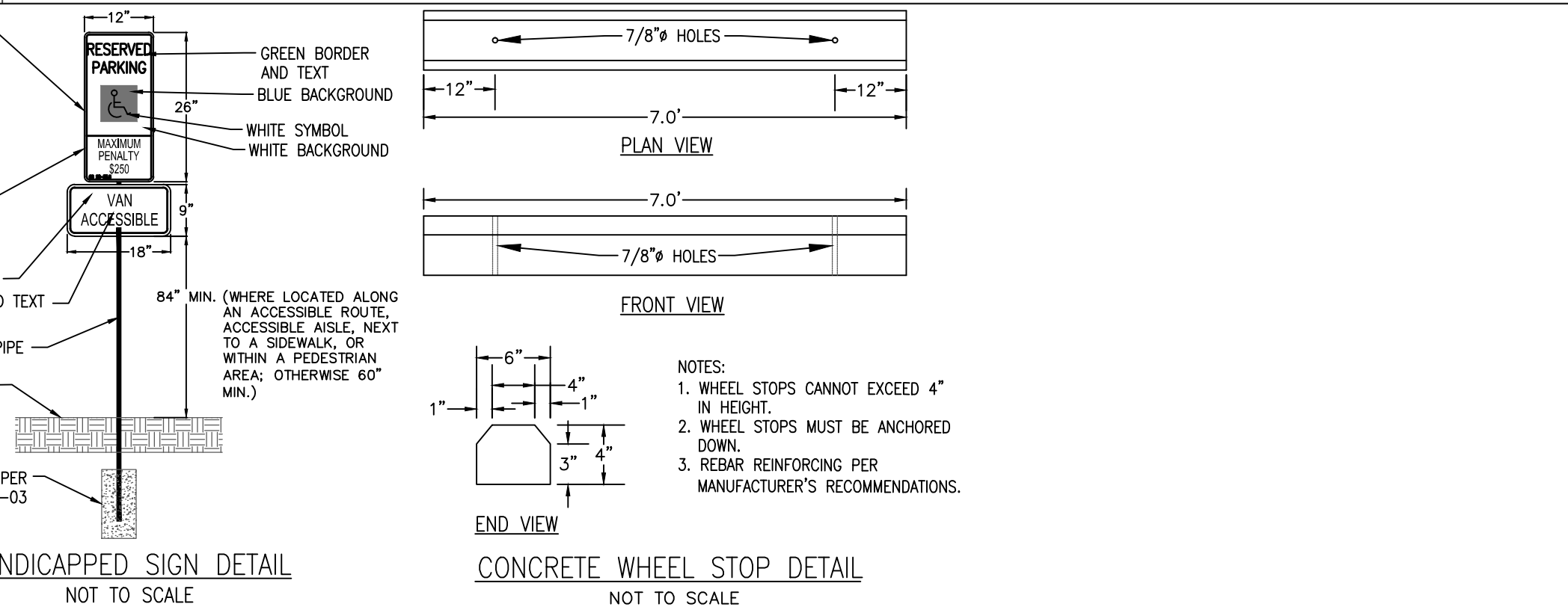


DATE: NOVEMBER, 2011
 DRAWN BY: JSR
 CHECKED BY: BDR, P.E.
 SCALE: NOT TO SCALE

STREET SIGNS AND LOCATION

SHEET 1 of 2

SD 15-03



DATE: NOVEMBER, 2011
 DRAWN BY: JSR
 CHECKED BY: BDR, P.E.
 SCALE: NOT TO SCALE

STREET SIGNS AND LOCATION

SHEET 2 of 2

SD 15-03

DATE: NOVEMBER, 2011
 DRAWN BY: JSR
 CHECKED BY: BDR, P.E.
 SCALE: NOT TO SCALE

STREET SIGNS AND LOCATION

SHEET 2 of 2

SD 15-03

DATE: 3-3-17
 SCALE: N.T.S.
 DRAWN: JCB
 CHECKED: JBM
 PROJECT NO: 274

GREENFIELD COMMERCIAL

WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

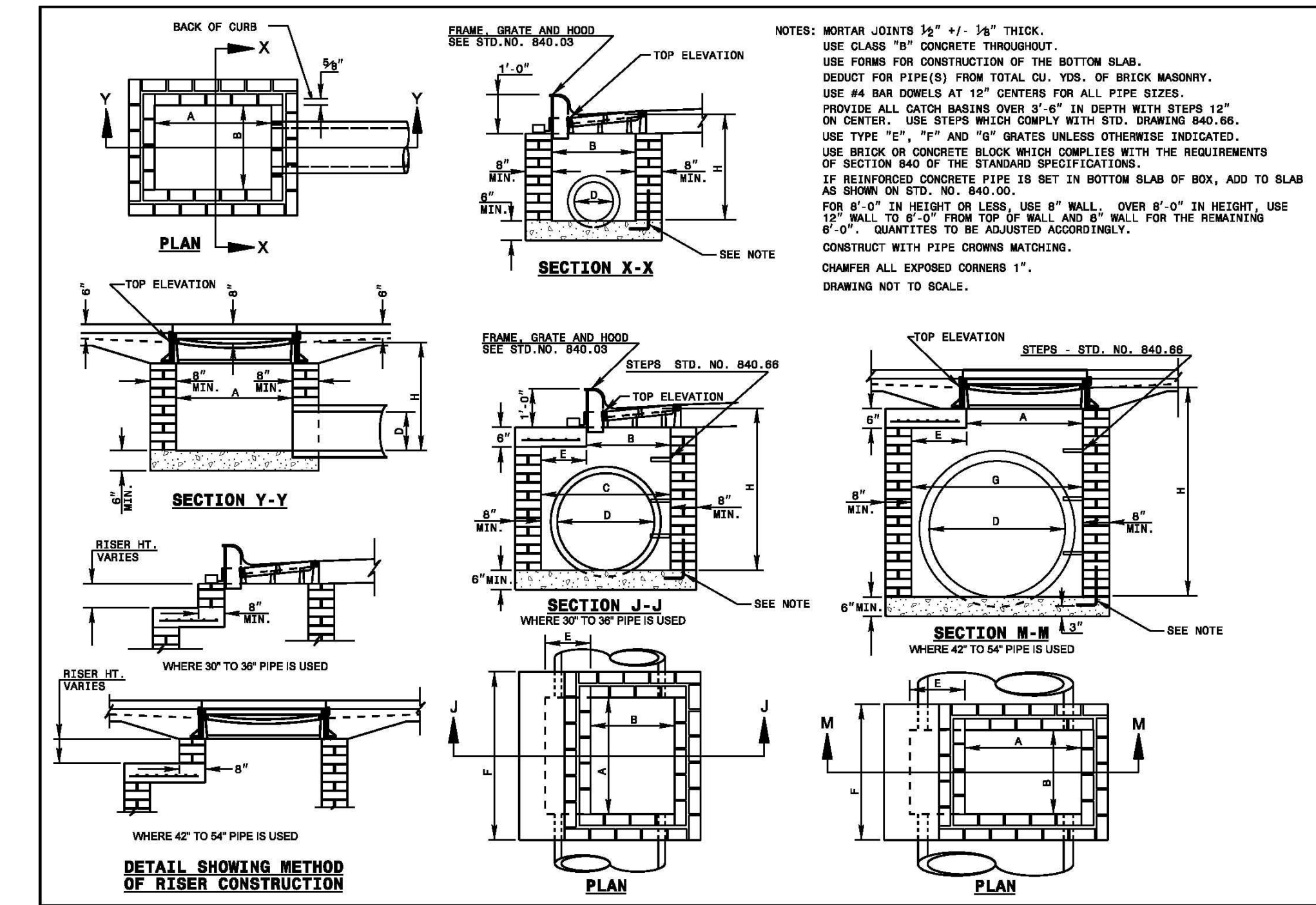
FINAL DRAWING FOR REVIEW PURPOSES ONLY

MALPASS ENGINEERING & SURVEYING, P.C.
 1134 SHIPYARD BOULEVARD
 WILMINGTON, NORTH CAROLINA 28412
 Phone: 910-392-5243 Fax: 910-392-5203 License No. C-2920

Owner: GREENFIELD STREET PROPERTIES, LLC
 10 S. CAROLINA DRIVE
 WILMINGTON, NORTH CAROLINA 28403
 PHONE: 910-251-5630

SHEET NO: 8 OF: 18

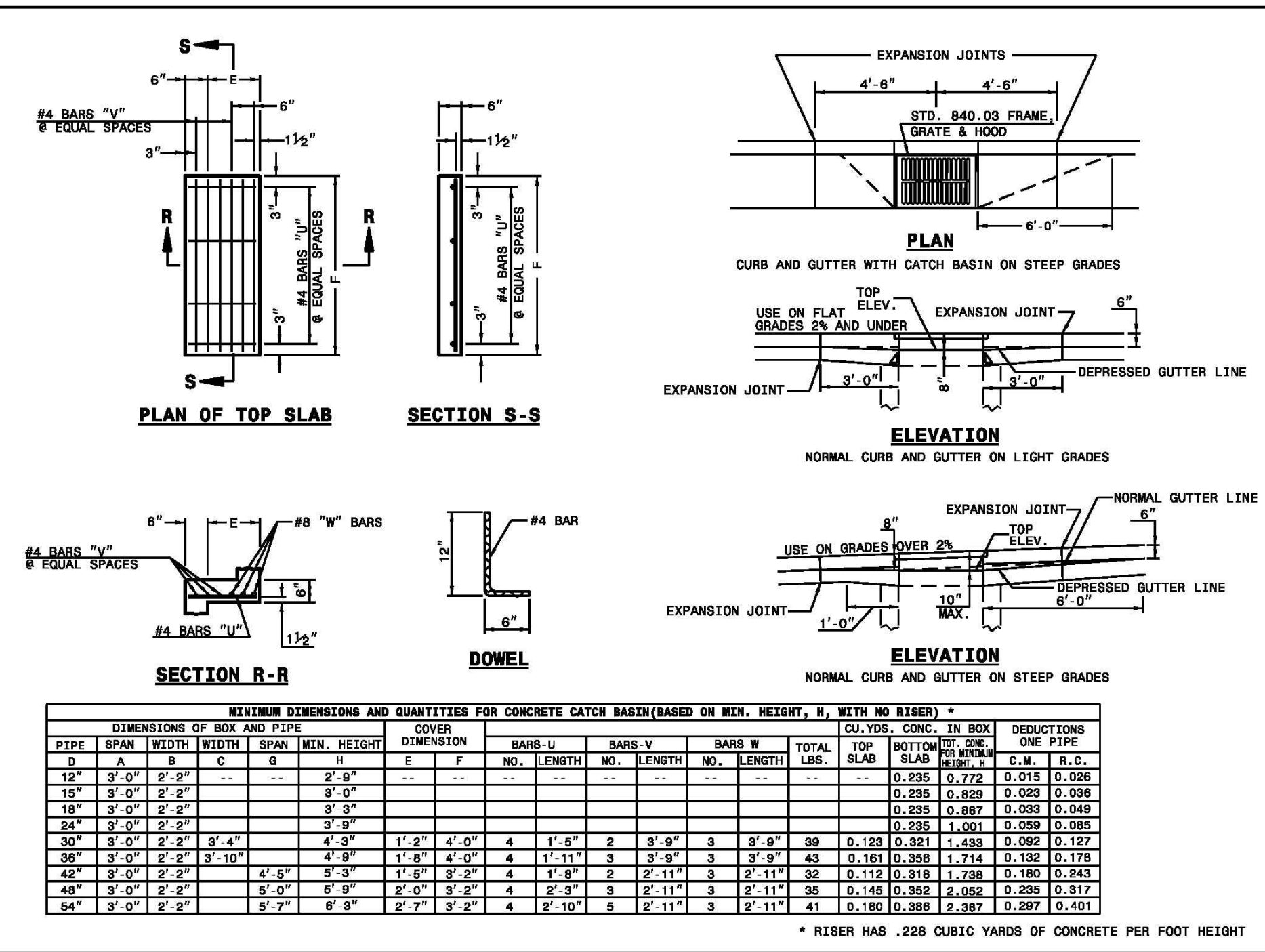
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

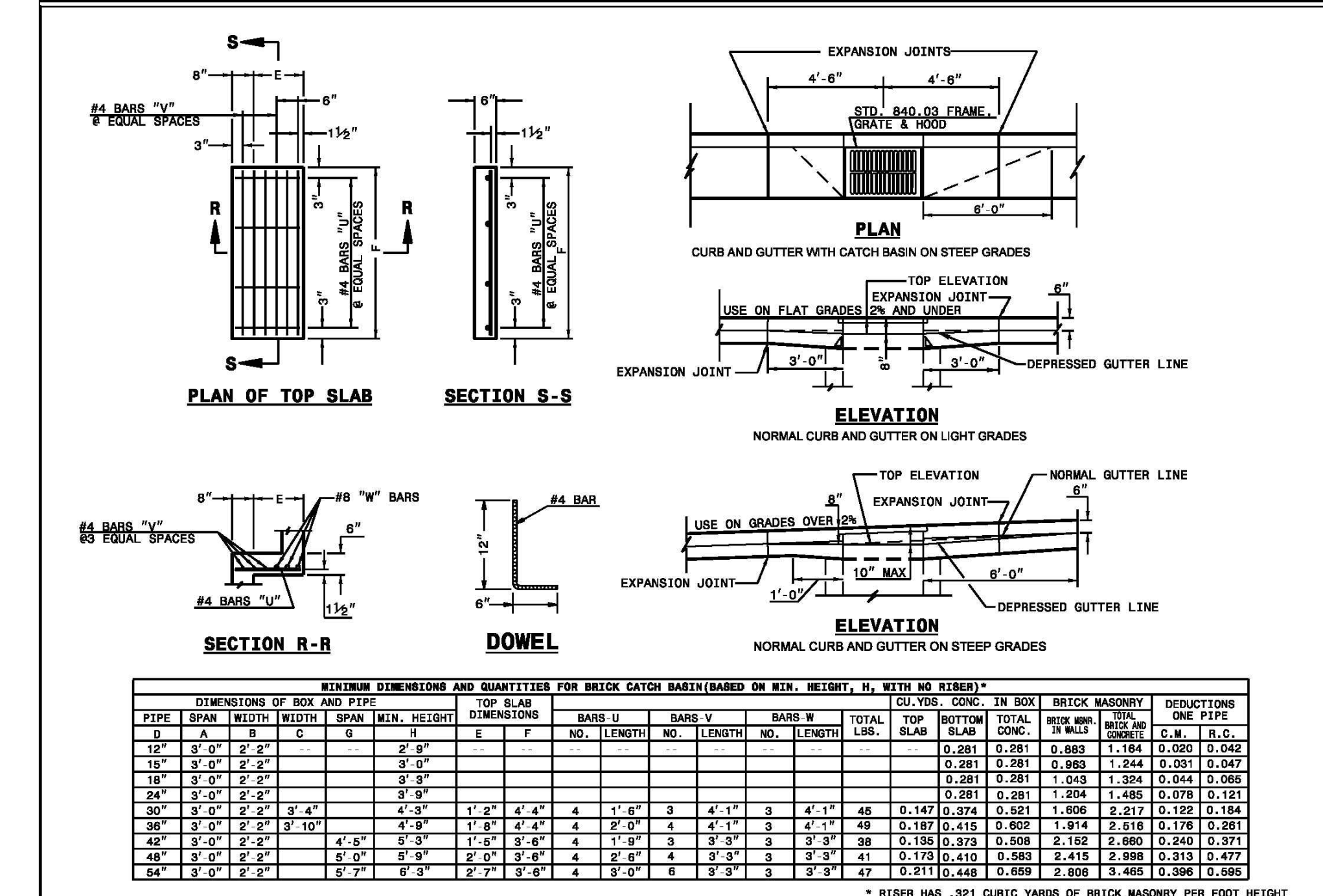
SHEET 1 OF 2
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

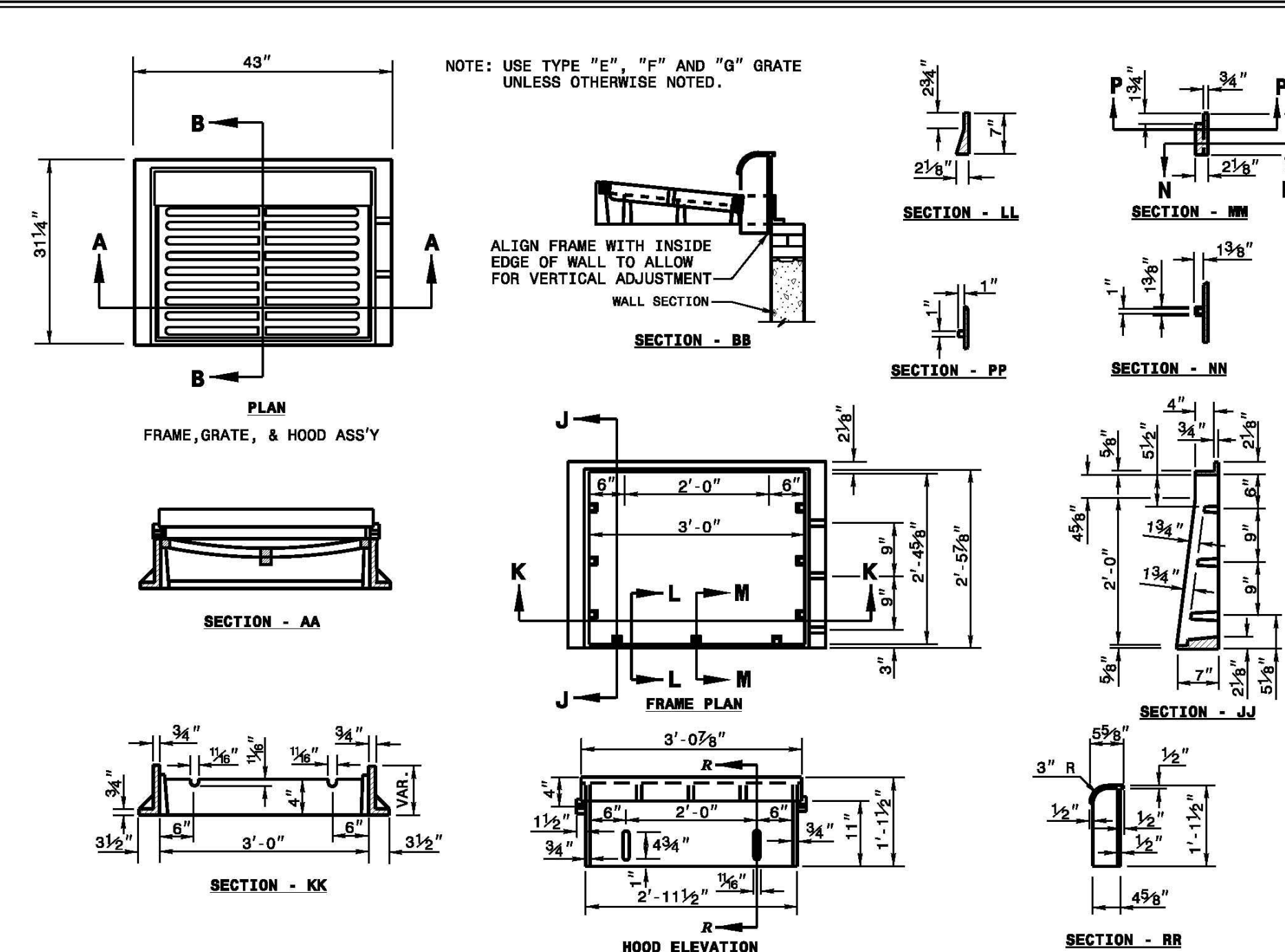
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

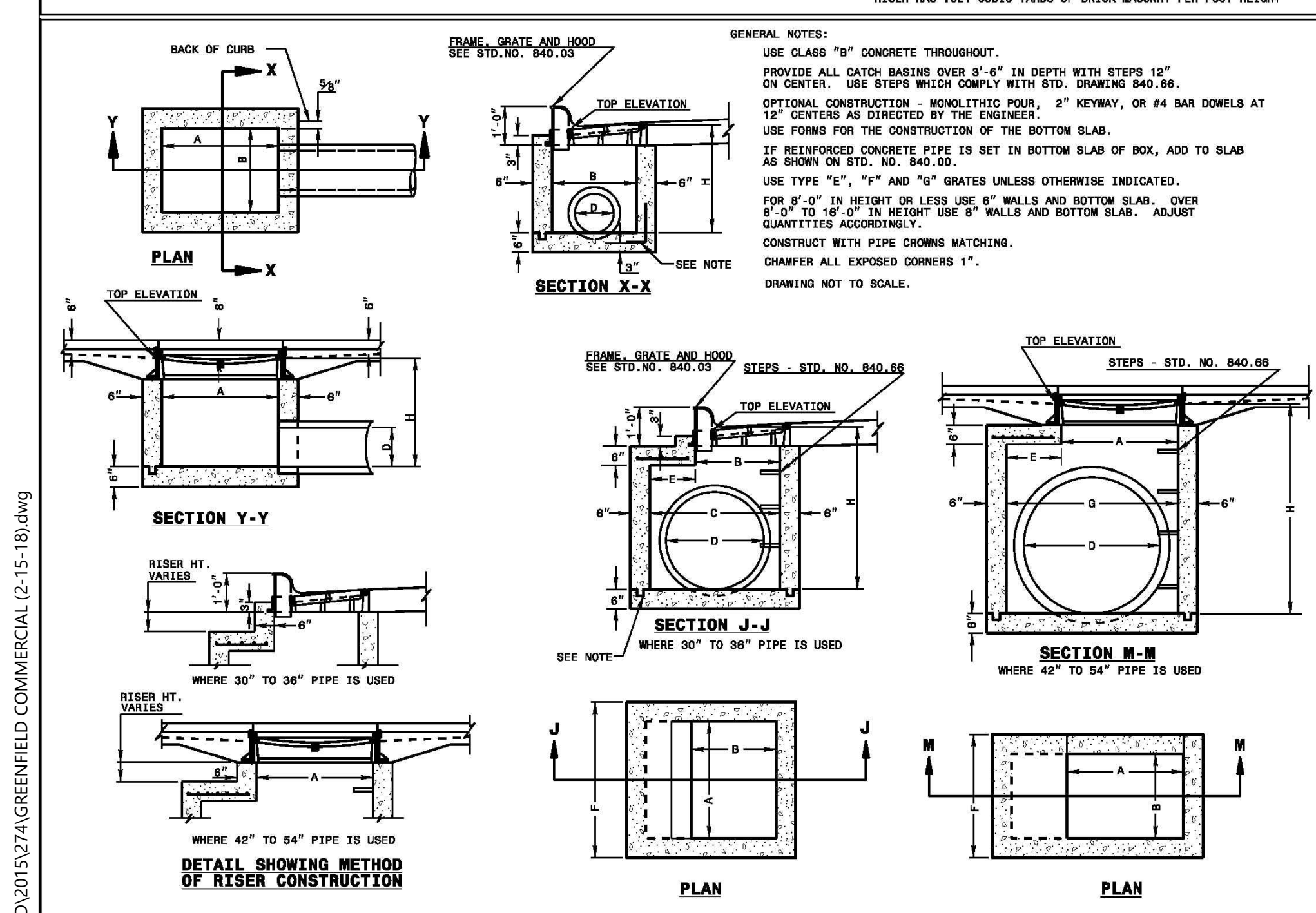
SHEET 2 OF 2
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
FRAME, GRATES, AND HOOD
FOR USE ON STANDARD CATCH BASIN

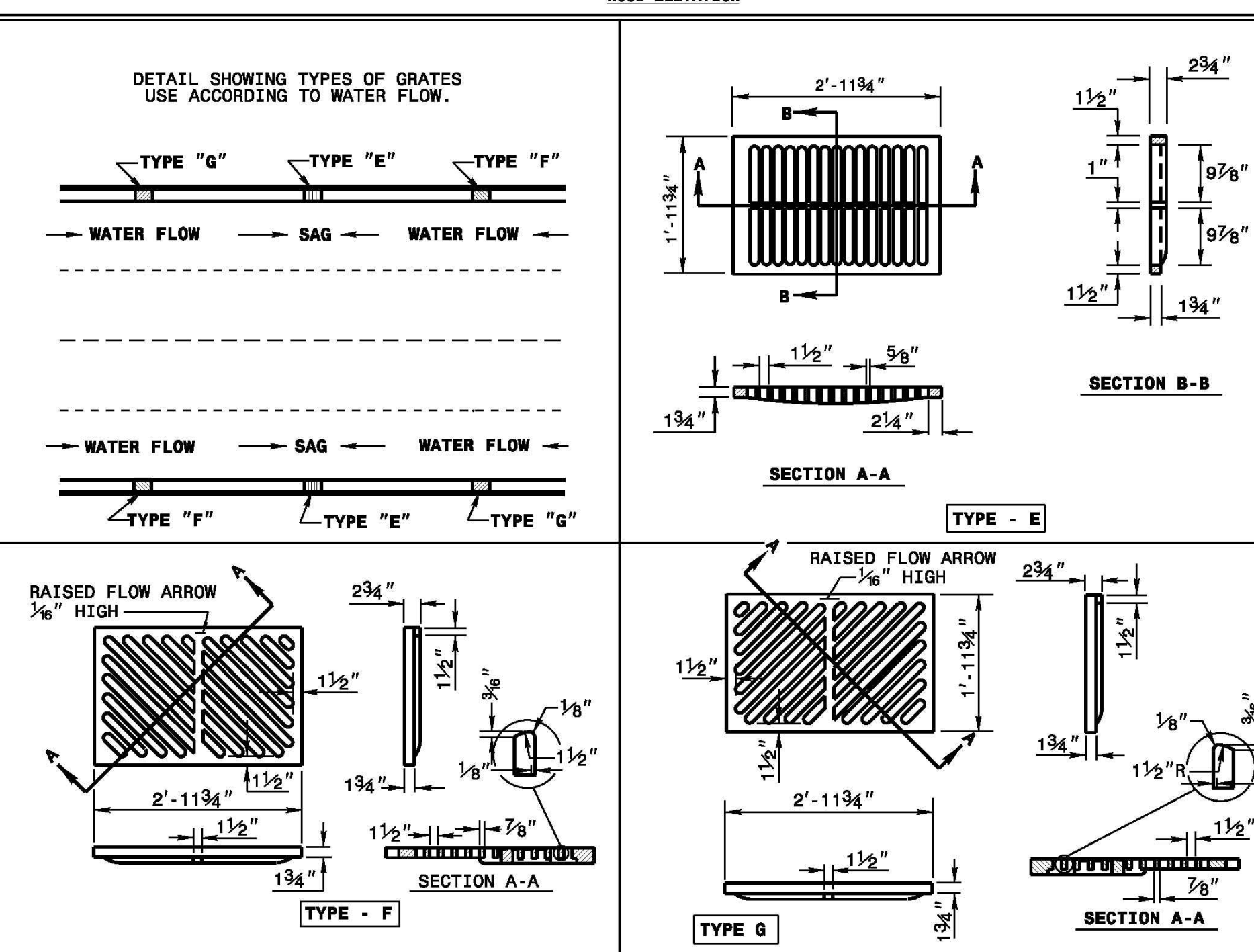
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
RALEIGH, N.C.

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CONCRETE CATCH BASIN
12" THRU 54" PIPE

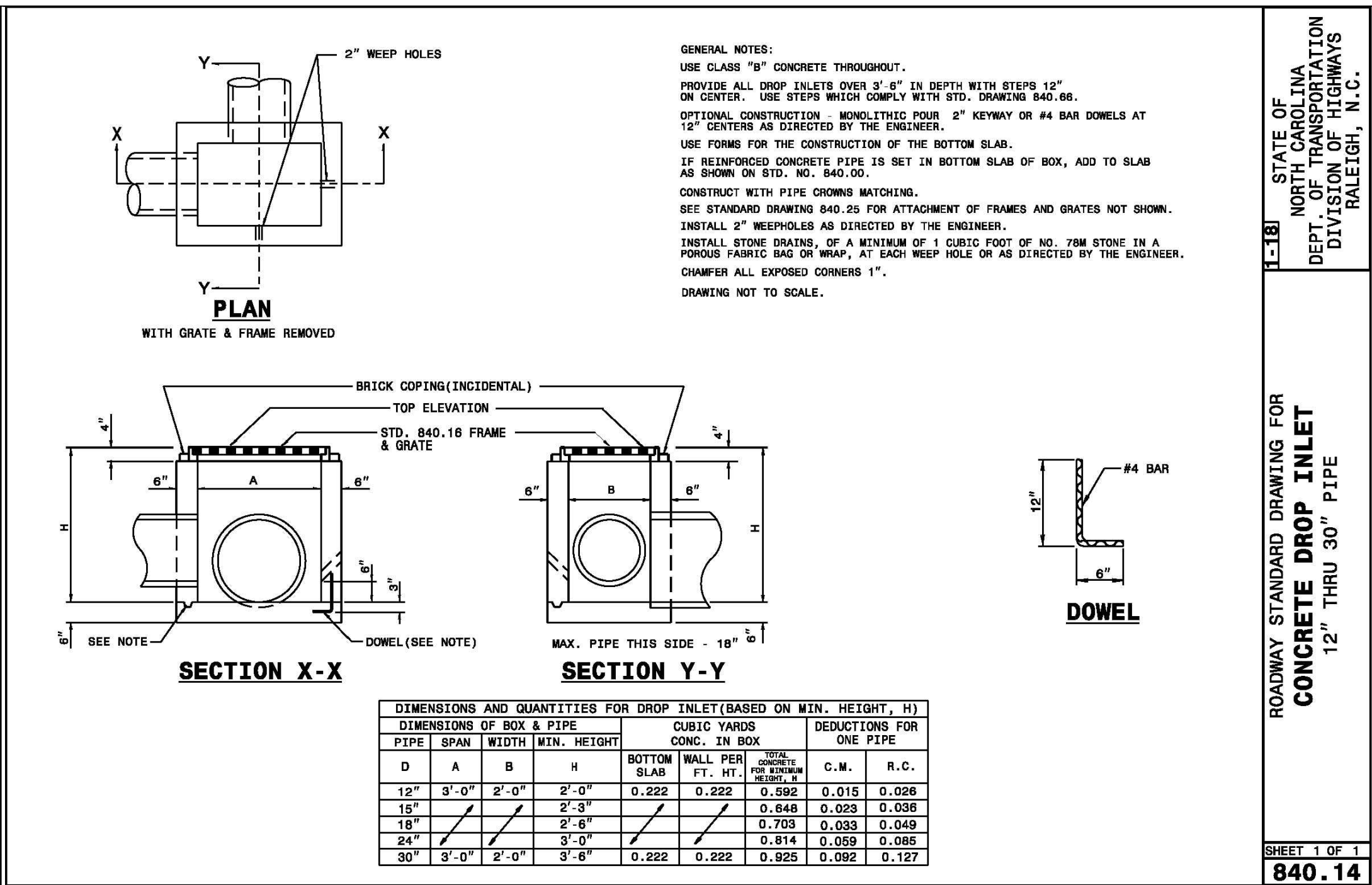
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
FRAME, GRATES, AND HOOD
FOR USE ON STANDARD CATCH BASIN

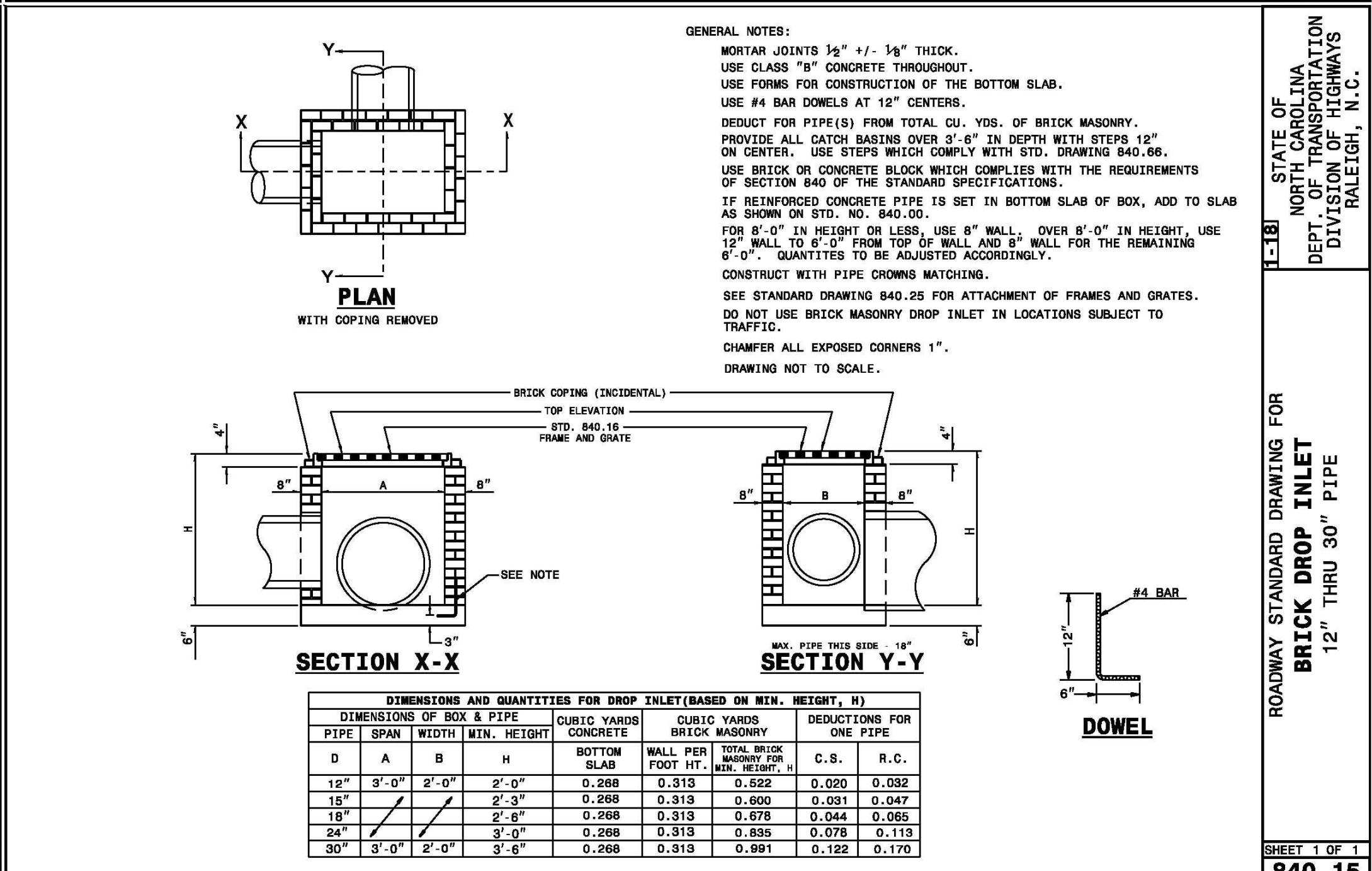
SHEET 2 OF 2
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
CONCRETE DROP INLET
12" THRU 30" PIPE

SHEET 1 OF 1
840.14



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
CONCRETE DROP INLET
12" THRU 30" PIPE

SHEET 1 OF 1
840.15

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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	REVISIONS	DATE
1	REVISED TO SWITCH DETAILS.		4-7-17
2	REVISED TO SWITCH DETAILS.		7-17-17
3	REVISED TO PROVIDE CURRENT DETAILS.		3-28-18

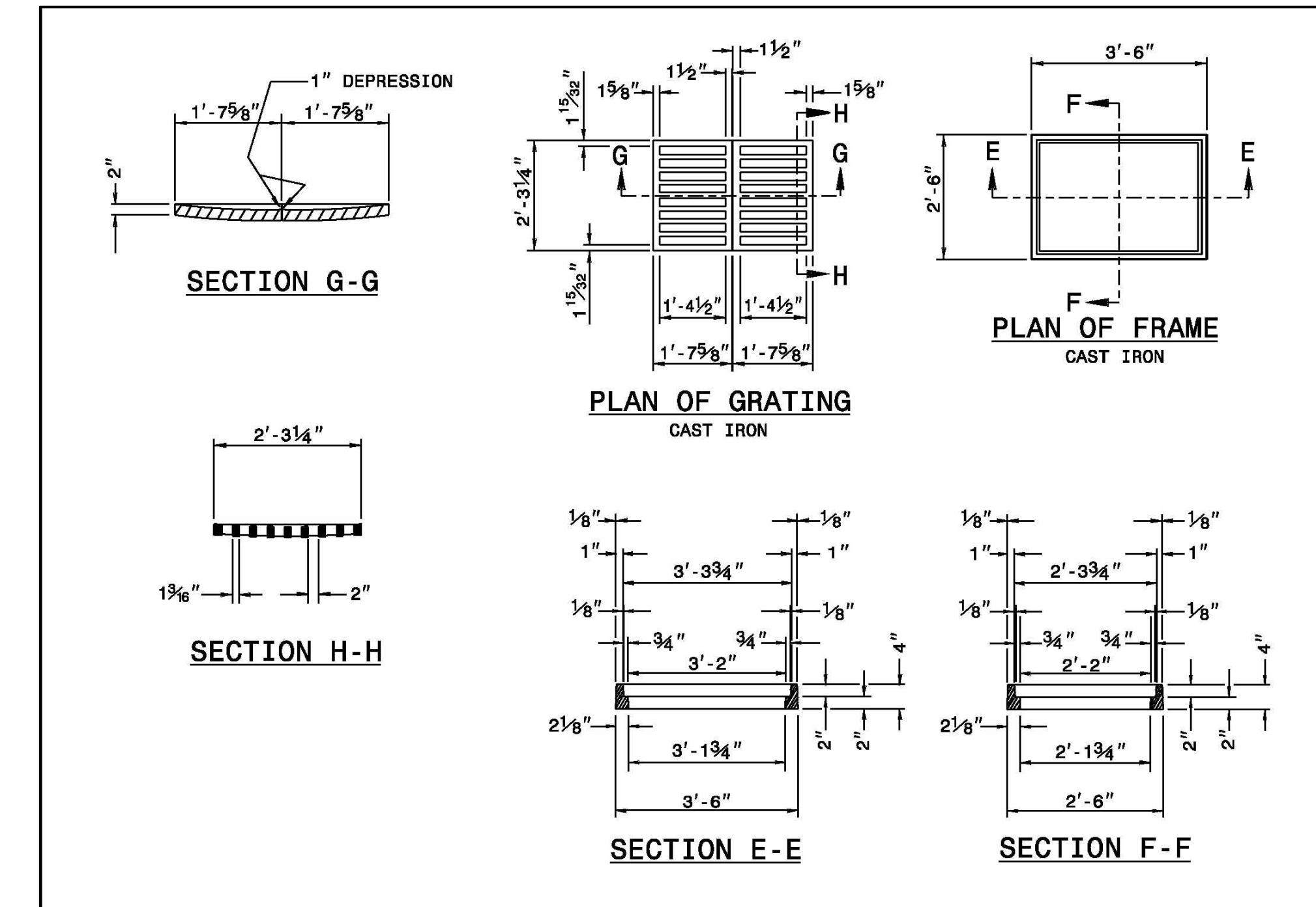
DETAIL SHEET
GREENFIELD COMMERCIAL
WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

FINAL DRAWING FOR REVIEW PURPOSES ONLY

MALPASS ENGINEERING & SURVEYING, P.C.
1134 SHIPYARD BOULEVARD
WILMINGTON, NORTH CAROLINA 28412
Phone 910-392-5243 Fax 910-392-5203 License No. C-2920

Owner: GREENFIELD STREET PROPERTIES, LLC
10 S. CARDINAL DRIVE
WILMINGTON, NORTH CAROLINA 28403
PHONE: 910-251-5630

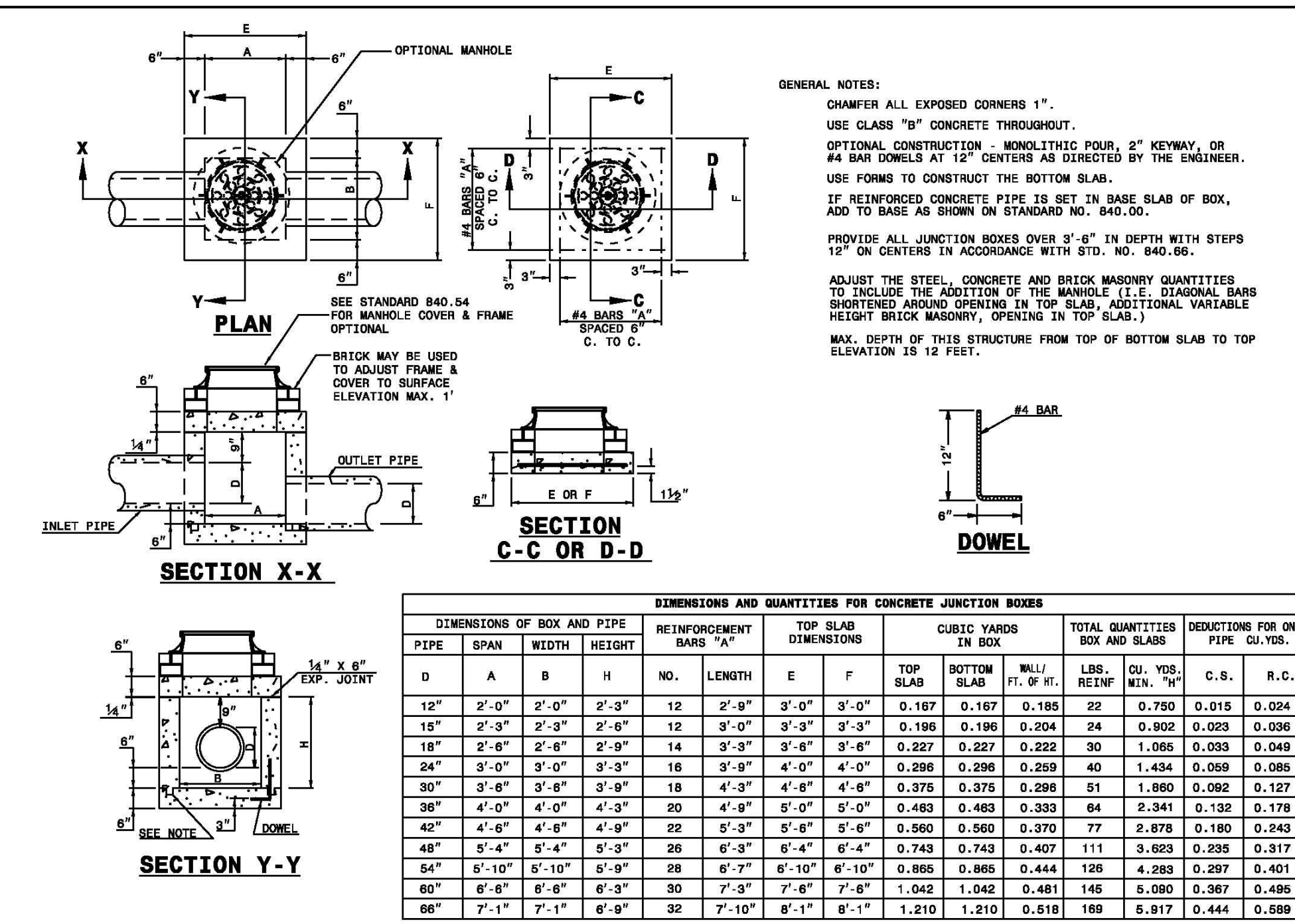
DATE: 4-7-17
SCALE: N.T.S.
DRAWN: JCB
CHECKED: JBM
PROJECT NO: 274
SHEET NO: 10
OF: 18



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
DROP INLET FRAME AND GRATES
FOR USE WITH STD. DWG.S 840.14 AND 840.15

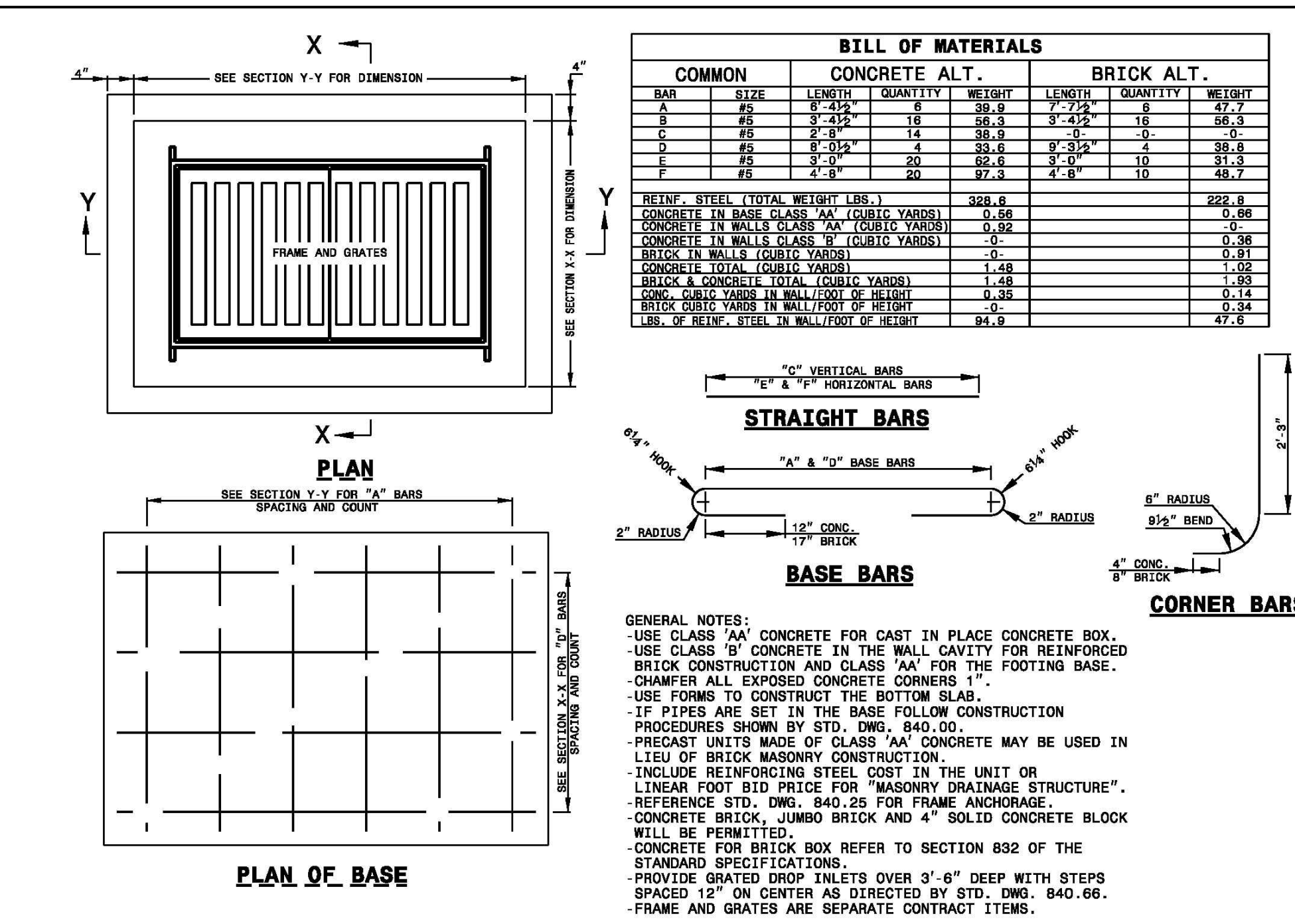
SHEET 1 OF 1
840.16



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
CONCRETE JUNCTION BOX
(WITH OPTIONAL MANHOLE)
12" THRU 66" PIPE

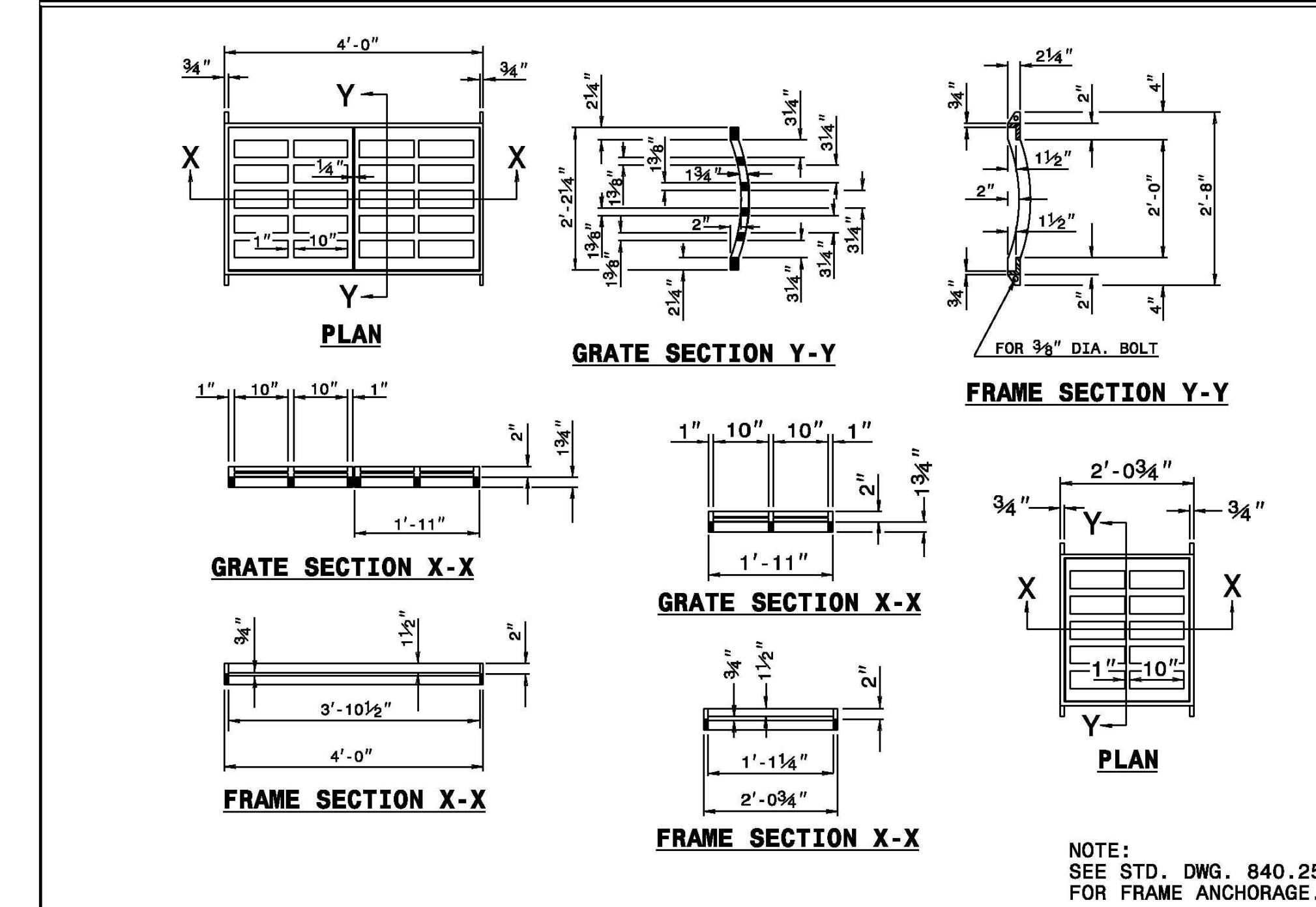
SHEET 1 OF 1
840.31



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
BRICK JUNCTION BOX
(WITH OPTIONAL MANHOLE)
12" THRU 66" PIPE

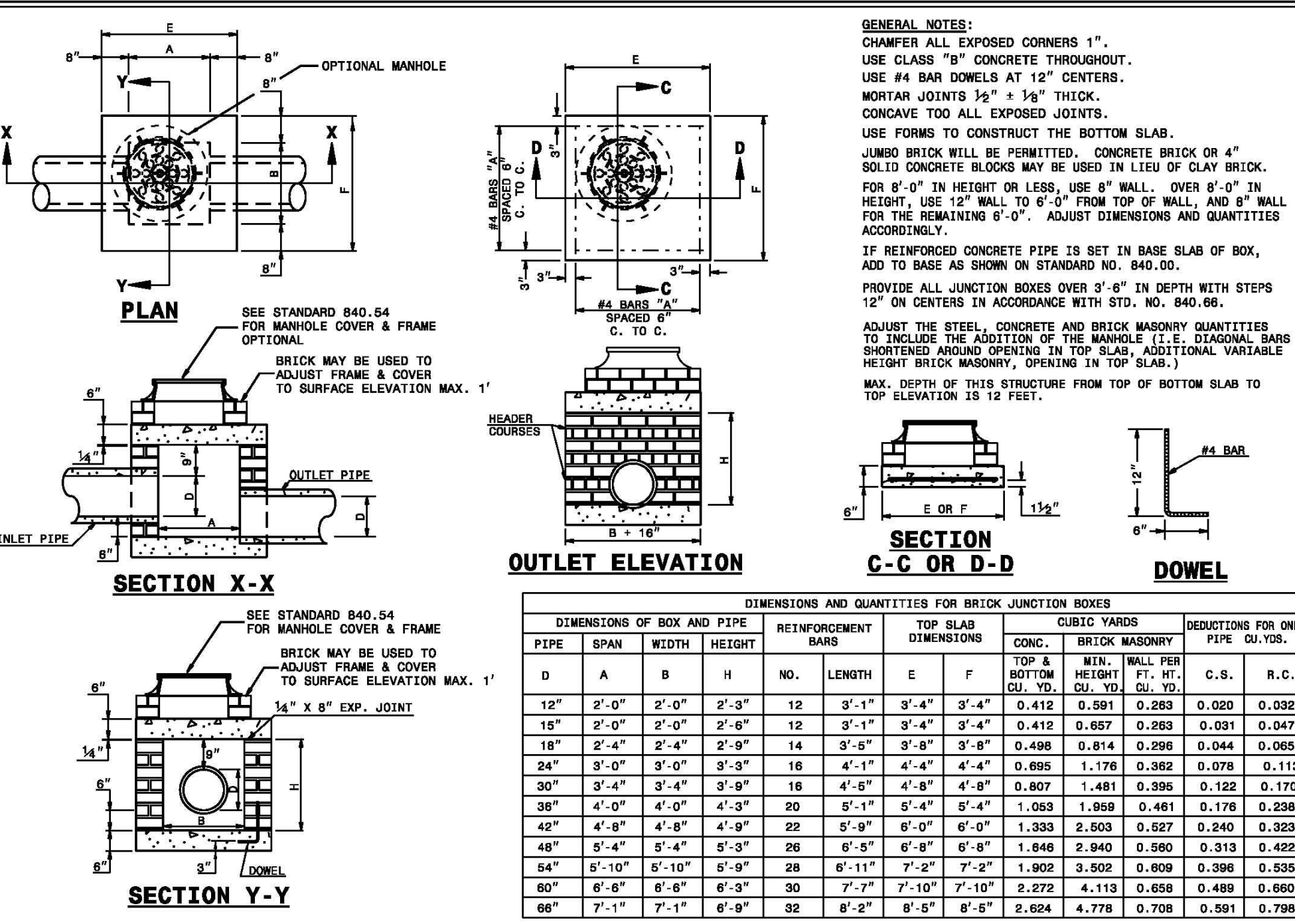
SHEET 1 OF 1
840.32



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
FRAMES AND WIDE SLOT SAG GRATES

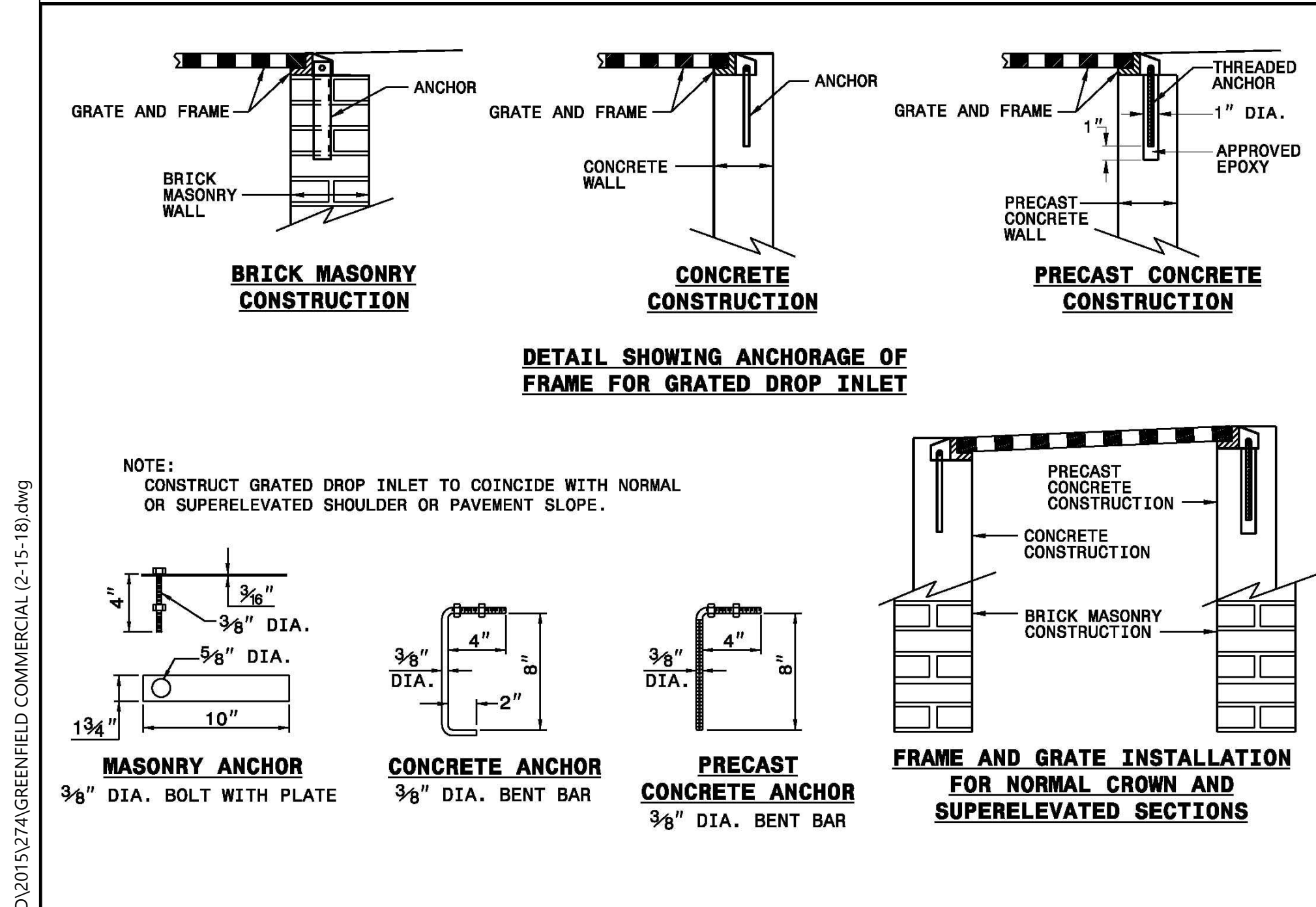
SHEET 1 OF 1
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
BRICK JUNCTION BOX
(WITH OPTIONAL MANHOLE)
12" THRU 66" PIPE

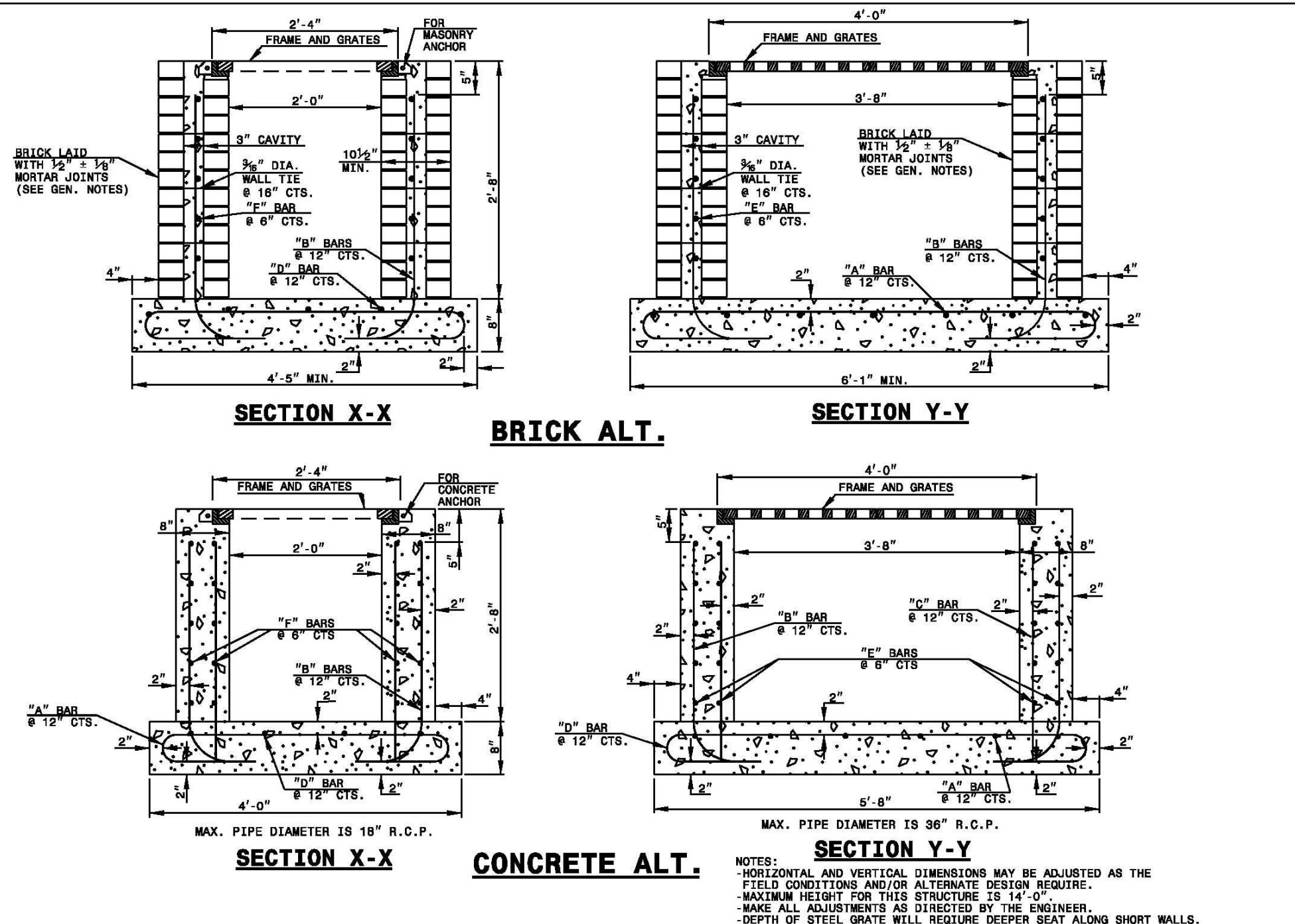
SHEET 1 OF 1
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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
ANCHORAGE FOR FRAMES
BRICK/CONCRETE/PRECAST CONCRETE

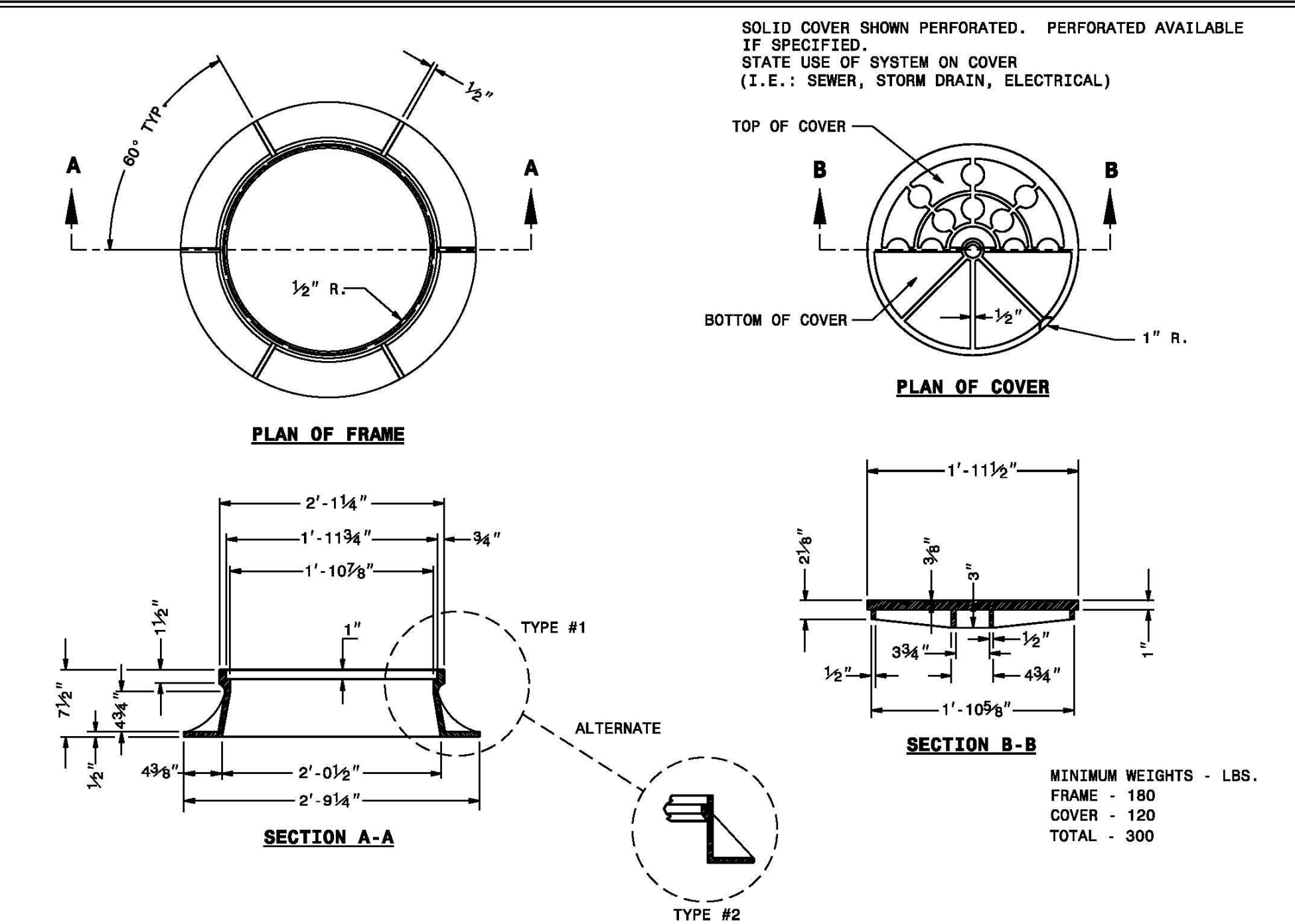
SHEET 1 OF 1
840.25



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
TRAFFIC BEARING GRATED DROP INLET
FOR CAST IRON DOUBLE FRAME AND GRATES

SHEET 1 OF 2
840.35



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
MANHOLE FRAME AND COVER

SHEET 1 OF 1
840.54

G:\AutoCAD\2015\24\GREENFIELD COMMERCIAL (2-15-18).dwg

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	REVISIONS	DATE
1	REVISED TO SWITCH DETAILS.		4-7-17
2	REVISED TO SWITCH DETAILS.		7-17-17
3	REVISED TO ADD DETAIL.		7-26-17
4	REVISED TO PUNCH CURRENT DETAILS.		3-29-18

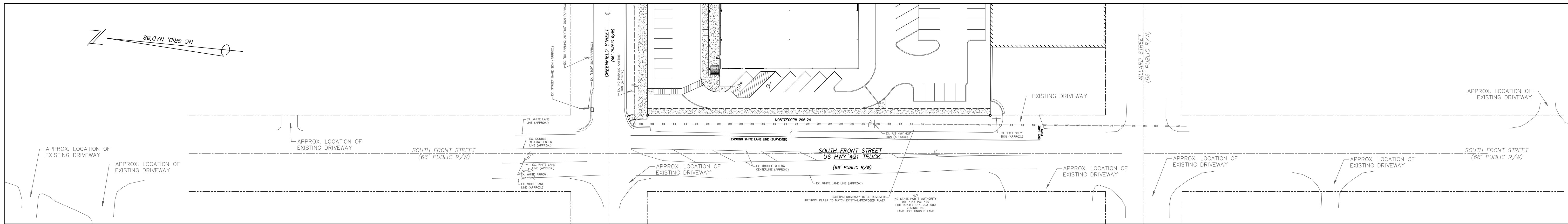
DETAIL SHEET
GREENFIELD COMMERCIAL
WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

FINAL DRAWING FOR REVIEW PURPOSES ONLY

MALPASS ENGINEERING & SURVEYING, P.C.
1134 SHIPYARD BOULEVARD
WILMINGTON, NORTH CAROLINA 28412
Phone 910-392-5243
Fax 910-392-5203 License No. C-2920

Owner: GREENFIELD STREET PROPERTIES, LLC
10 S. CAROLINA DRIVE
WILMINGTON, NORTH CAROLINA 28403
PHONE: 910-251-5630

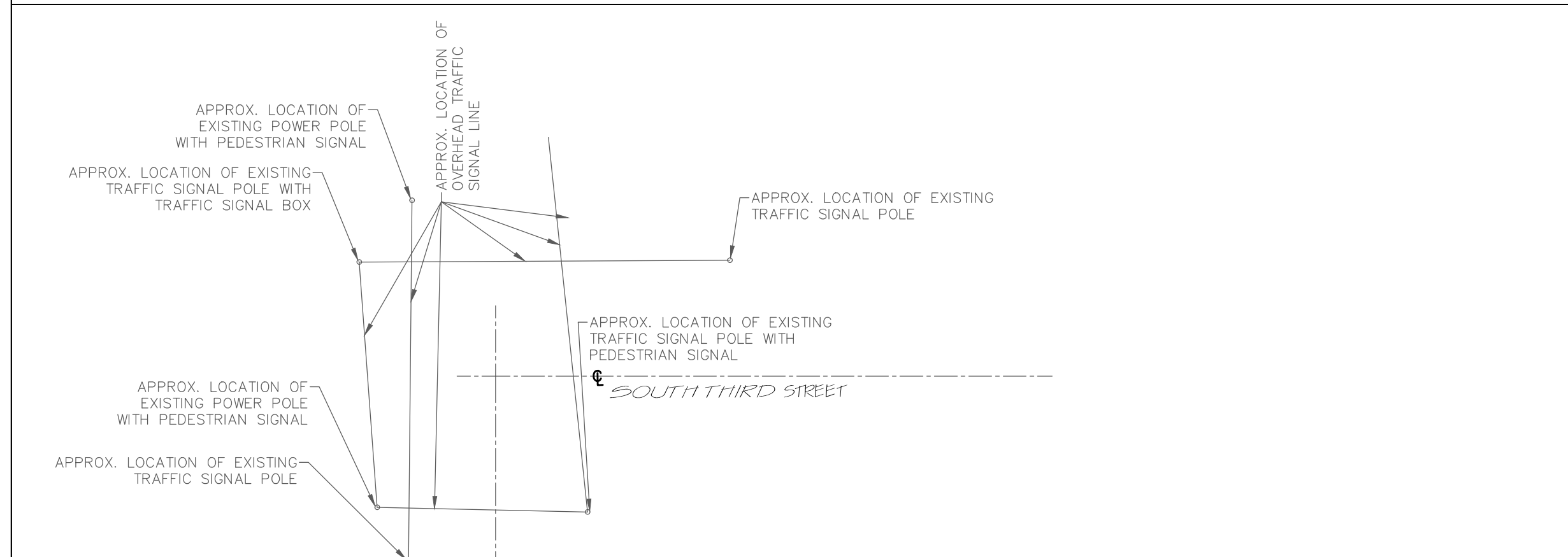
DATE: 3-3-17
SCALE: N.T.S.
DRAWN: JCB
CHECKED: JBM
PROJECT NO: 274
SHEET NO: 11
OF: 18



NOTE: DRIVEWAYS TRACED FROM NHC GIS 2010 AERIAL.

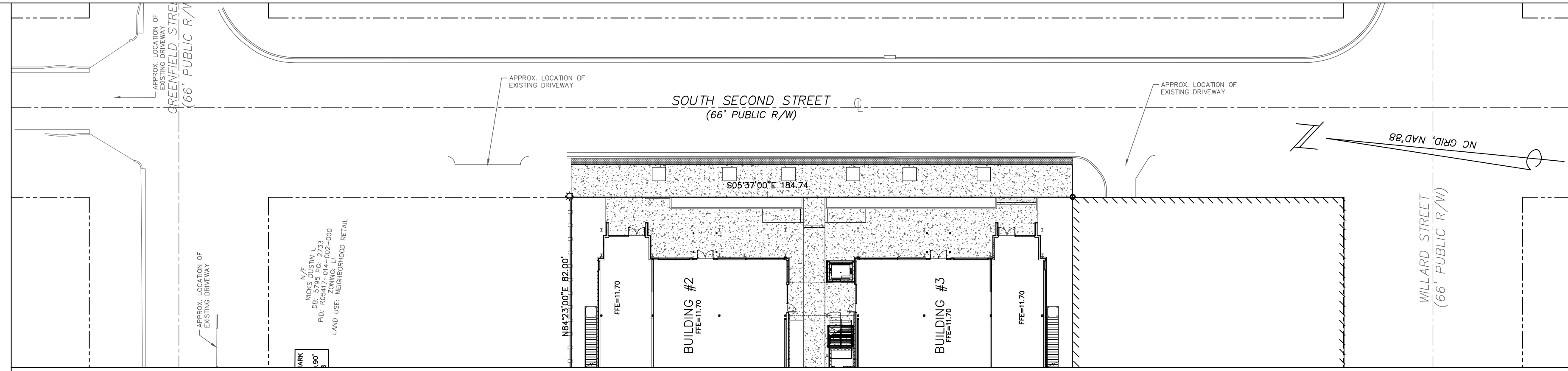
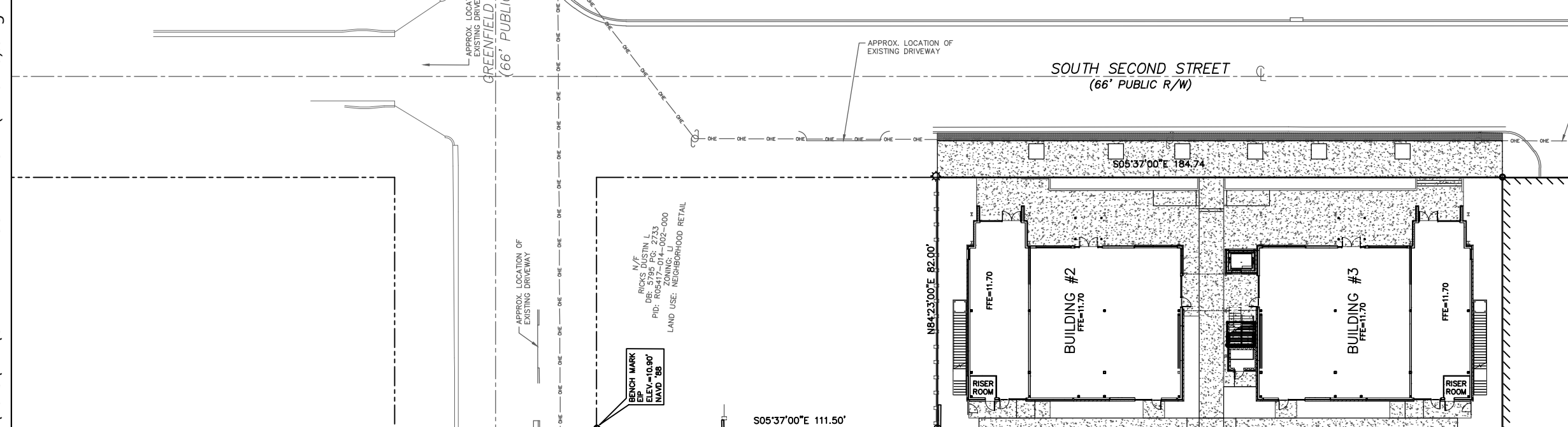
DRIVEWAYS WITHIN 500' OF SITE ALONG SOUTH FRONT STREET

SCALE: 1"=40'



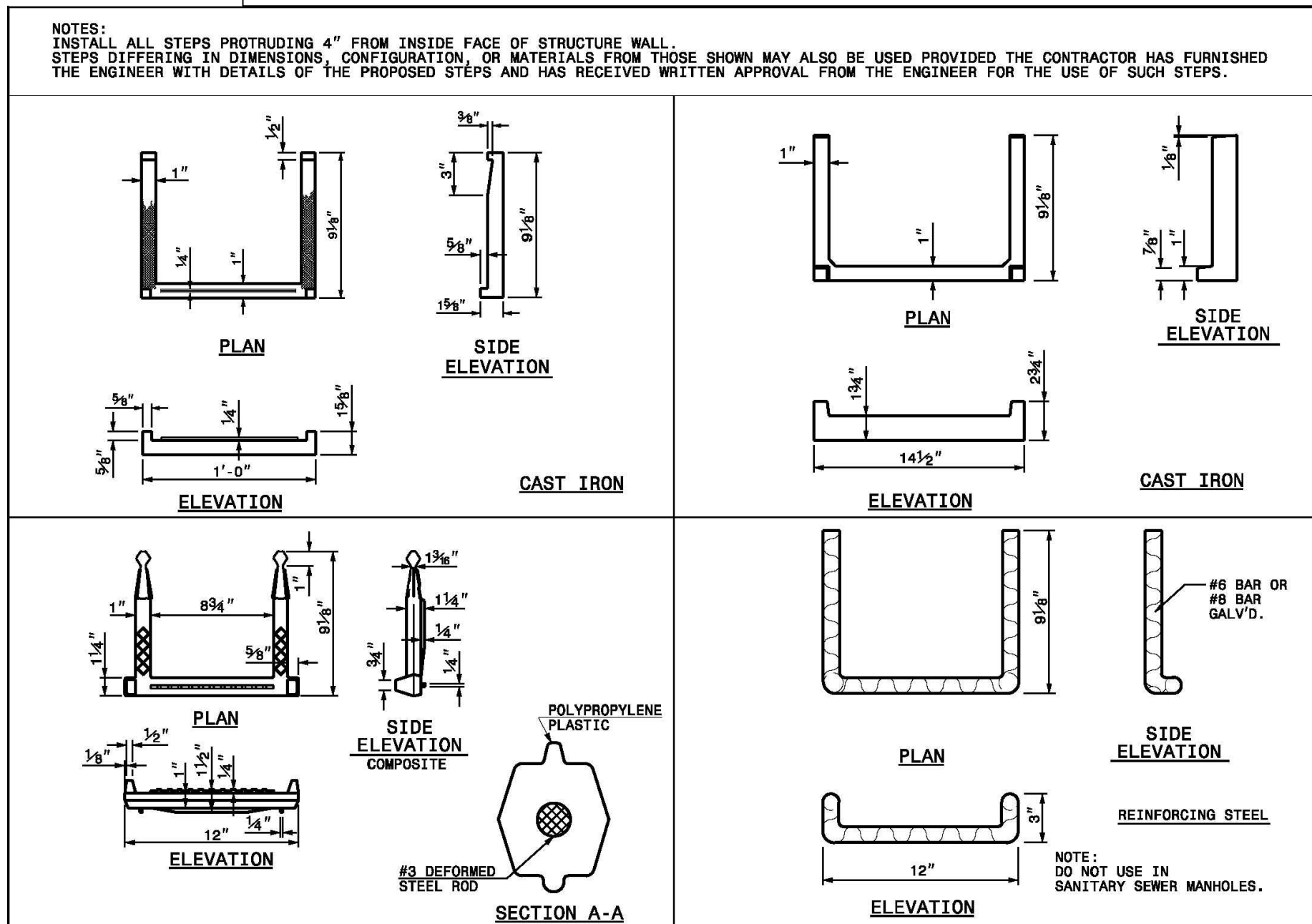
TRAFFIC SIGNALS WITHIN 500' OF SITE

SCALE: 1"=40'

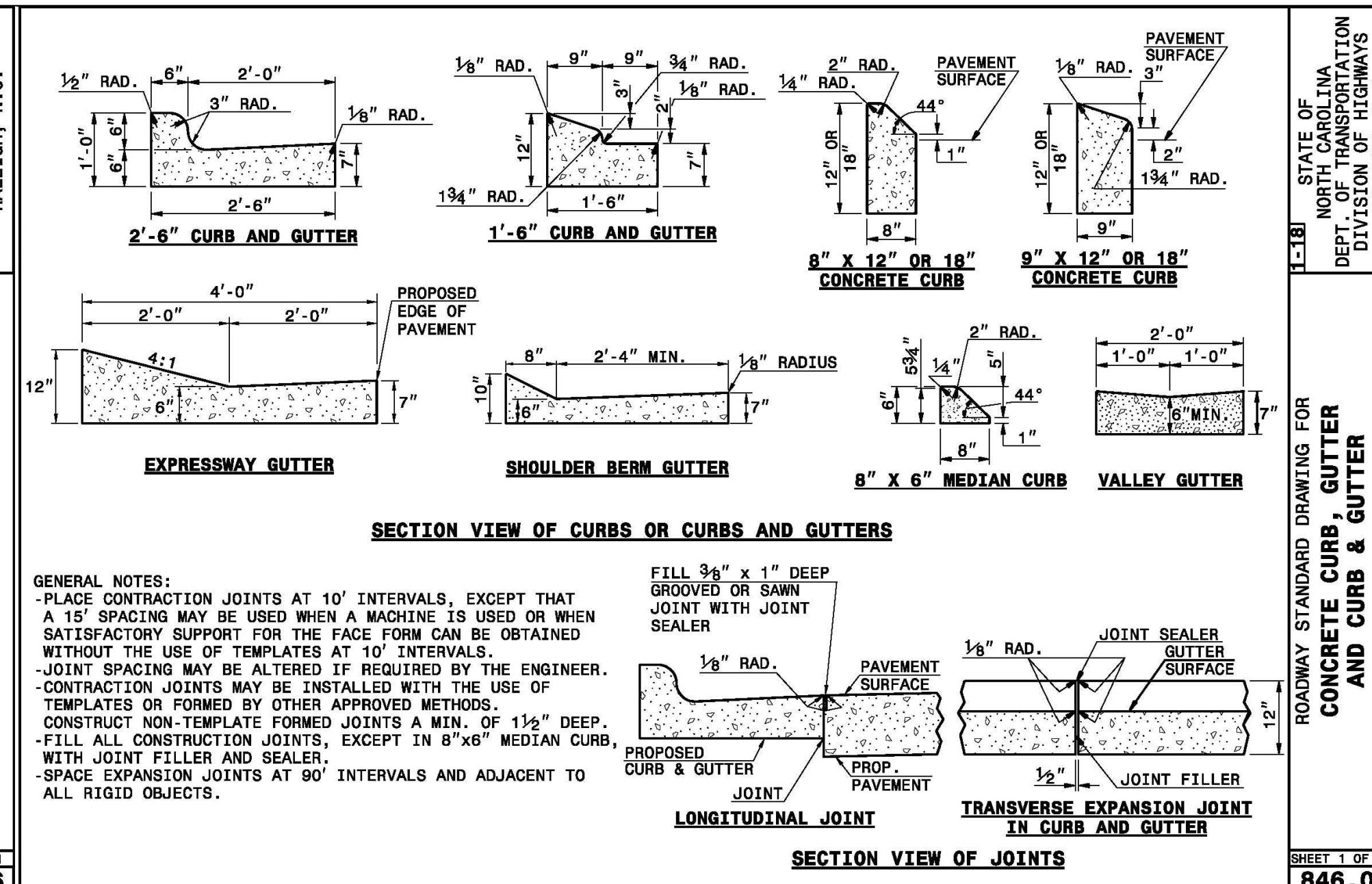


DRIVEWAYS ALONG SOUTH SECOND STREET

SCALE: 1"=30'



STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.



SHEET 1 OF 1
 840.66

SHEET 1 OF 3
 846.01

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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.

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

Name _____ Date _____
 Planning _____
 Traffic _____
 Signed: _____

REV. NO.	DESCRIPTION	DATE
1	REVISED PER CLIENT.	4-7-17
2	REVISED PER THE COMMENTS.	5-24-17
3	REVISED PER THE COMMENTS.	8-19-17
4	REVISED PER CITY COMMENTS.	7-17-17
5	REVISED PER NCDOT COMMENT.	7-28-17
6	REVISED PER NCDOT COMMENT.	7-31-17
7	REVISED PER NCDOT & CITY COMMENTS.	8-2-17
8	REVISED PER NCDOT.	9-8-17
9	REVISED TO ADD SOUTH FRONT STREET ROAD/LANE CLOSURE NOTE #9.	9-22-17
10	REVISED TO ADD DETAILS AND REMOVE PLAN VIEW, NOTES, & DETAILS.	3-29-18
11	REVISED PER CLIENT TO ADJUST SITE LAYOUT ADJACENT TO BUILDING #1 & AT ENTRANCE TO SITE.	4-26-18

ADJACENT DRIVEWAYS, TRAFFIC SIGNALS, & DETAIL SHEET
GREENFIELD COMMERCIAL
 WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

FINAL DRAWING FOR REVIEW PURPOSES ONLY

DATE: 3-3-17
 SCALE: N.T.S.
 DRAWN: JCB
 CHECKED: JBM
 PROJECT NO: 274

Owner: GREENFIELD STREET PROPERTIES, LLC
 10 S. CAROLINA DRIVE
 WILMINGTON, NORTH CAROLINA 28403
 PHONE: 910-251-5030

License No. C-2920

SHEET NO: 12
 OF: 18