

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 HALF-WAY 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	16,673 (OFFICES)	13,545 (OFFICES)
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	
AREAS	% OF SITE	AREAS	% OF SITE
BUILDINGS	24,140	18,062	20.4
PARKING	18,607	21,000	23.7
OTHER	15,626	17,633	19.8
TOTAL	58,373	56,695	63.9

BEFORE DEVELOPMENT		AFTER DEVELOPMENT	
AREAS	% OF SITE	AREAS	% OF SITE
BUILDINGS (FOOTPRINT)	18,062	3,402	3.8
PARKING	11,596	3,940	4.4
PARKING-PERVIOUS (AFTER 100% CREDIT REDUCTION)	0	0	0.0
SIDEWALK	0	2,280	2.6
OTHER (RAMP, WALL, ETC.)	103	7,919	8.9
FUTURE	0	682	0.8
TOTAL	29,761	22,539	25.5

TOTAL AMOUNT & PERCENT OF IMPERVIOUS SURFACE AREAS OFF-SITE (INCLUDES FRONTAGE SIDEWALK ON-SITE):

BEFORE DEVELOPMENT		AFTER DEVELOPMENT	
AREAS	% OF SITE	AREAS	% OF SITE
BUILDINGS	21,691	27,64	31.2
PARKING	18,607	23,71	27.0
OTHER	15,626	19,10	21.6
TOTAL	55,924	70,45	79.8

BEFORE DEVELOPMENT		AFTER DEVELOPMENT	
AREAS	% OF SITE	AREAS	% OF SITE
BUILDINGS (FOOTPRINT)	18,062	3,402	3.8
PARKING	11,596	3,940	4.4
PARKING-PERVIOUS (AFTER CREDIT REDUCTION)	0	0	0.0
SIDEWALK (RAMPS, PATIOS)	0	1,775	2.0
OTHER (WALL, DOCK, ETC.)	83	4,820	5.5
FUTURE	0	1,000	1.1
TOTAL	29,741	14,937	16.8

BEFORE DEVELOPMENT		AFTER DEVELOPMENT	
AREAS	% OF SITE	AREAS	% OF SITE
DRIVEWAY/CURB	995	995	1.1
SIDEWALK	5,954	6,349	7.2
TOTAL	6,949	7,344	8.3

OFF STREET PARKING CALCULATIONS:
 MIN. PARKING REQ. = N/A
 MAX. PARKING ALLOWED = 1 SPACE / 200 SF x 35,882 SF (OFFICES) + 1 SPACE / 65 SF x 0.6 x 2,500 SF (RESTAURANT-ASSUME KITCHEN & RESTROOM FACILITIES ARE 40% OF AREA) + 1 SPACE / 200 SF x 4,904 SF (RETAIL) = 227 SPACES
 NUMBER OF PROPOSED PARKING SPACES = 84
 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 35,882, OR 2 SPACES, WHICHEVER IS GREATER (OFFICES) + (1 SPACE / 1,000 SF x 7,404, OR 5 SPACES, WHICHEVER IS GREATER (COMMERCIAL/RETAIL) = 15
 NUMBER OF PROPOSED BICYCLE PARKING SPACES = 16
 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 (MAP 3117-4, DATED: OCTOBER 27, 2015)
 CAMA LAND USE CLASSIFICATION PER THE 2006 CAMA PLAN UPDATE LAND CLASSIFICATION MAP IS URBAN & CONSERVATION.

- CITY OF WILMINGTON STANDARD NOTES**
- 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.
 - NO LAND DISTURBANCE INCLUDING TREE REMOVAL IS TO OCCUR OUTSIDE THE LIMITS OF DISTURBANCE SHOWN ON THE PLANS.
 - NO EQUIPMENT IS ALLOWED ON THE SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING HAS BEEN INSTALLED AND APPROVED.
 - PROTECTIVE TREE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.
 - LAND CLEARING AND CONSTRUCTION CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION REQUIREMENTS AND METHODS.
 - ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
 - 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.
 - 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.
 - TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
 - 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 TO DISCUSS INSTALLATION OF TRAFFIC AND STREET NAME SIGNS.
 - ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY APRON PANELS, OR CURB AND CUTTER SECTIONS SHALL BE REPLACED.
 - CONTACT TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS INSTALLATION OF TRAFFIC AND STREET NAME SIGNS.
 - 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.
 - 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.
 - ANY IRRIGATION SYSTEM SUPPLIED BY CFPWA WATER SHALL COMPLY WITH THE CFPWA CROSS CONNECTION CONTROL REGULATIONS. CALL 332-6558 FOR INFORMATION.
 - ANY BACKFLOW PREVENTION DEVICES REQUIRED BY CFPWA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USCFOCHR OR ASSE.
 - ALL TRAFFIC CONTROL SIGNS & MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
 - ALL PAVEMENT MARKINGS REGULATING TRAFFIC FLOW MUST BE THERMOPLASTIC.
 - 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.
 - TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING LAYOUT PRIOR TO ACTUAL STRIPING.
 - 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.
 - CONTACT THE NORTH CAROLINA ONE CALL CENTER PRIOR TO DOING ANY DIGGING. 1-800-632-4949.
 - ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
 - INSTALL REFLECTORS PER CITY AND NCDOT STANDARDS.

- SITE INVENTORY NOTES**
- SOIL ON SITE PER THE NEW HANOVER COUNTY SOIL SURVEY IS URBAN LAND (U).
 - THERE ARE NO CAMA AECs WITHIN THE BOUNDARIES OF THE SUBJECT SITE PER SOUTHERN ENVIRONMENTAL GROUP, INC.
 - THERE ARE NO KNOWN CONSERVATION RESOURCES WITHIN OR ADJACENT TO THE SUBJECT SITE PER SOUTHERN ENVIRONMENTAL GROUP, INC.
 - ACCORDING TO THE NORTH CAROLINA STATE HISTORIC PRESERVATION OFFICE HPWEB 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.
 - THERE ARE NO KNOWN CEMETERIES, BURIAL SITES, OR BURIAL GROUNDS WITHIN THE BOUNDARIES OF THE SUBJECT SITE PER SOUTHERN ENVIRONMENTAL GROUP, INC.
 - THE SITE IS AN EXISTING COMMERCIAL/INDUSTRIAL SITE WITH NO FORESTED AREAS.
 - THERE ARE NO SECTION 404 WETLANDS WITHIN THE BOUNDARIES OF THE SUBJECT SITE PER SOUTHERN ENVIRONMENTAL GROUP, INC.
 - THE SUBJECT SITE CONTAINS NO NATURAL AREAS OR HABITAT FOR ANY OF THE LISTED SPECIES WITHIN NEW HANOVER COUNTY PER SOUTHERN ENVIRONMENTAL GROUP, INC.
 - 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).
 - 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 IS LOCATED IN 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.
 - THE TRACT IS WITHIN THE CAPE FEAR RIVER BASIN & DRAINS TO GREENFIELD CREEK (SC-5).
 - CAMA LAND USE CLASSIFICATION PER THE 2006 CAMA PLAN UPDATE LAND CLASSIFICATION MAP IS URBAN & CONSERVATION.

- 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 ROAD MUST BE MAINTAINED AROUND CONSTRUCTION SITE AT ALL TIMES.
 - 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.
 - TAMPER SWITCHES SHALL BE INSTALLED ON ALL VALVES THAT ARE CAPABLE OF TURNING THE WATER SUPPLY OFF TO THE SPRINKLER SYSTEMS.
 - 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.
 - BUILDING CONSTRUCTION TYPE ACCORDING TO THE INTERNATIONAL BUILDING CODE IS V-B.

N/F
 KIDDER GEO W HRS
 DB: 1252 PG: 1340
 PID: R05417-001-001-000
 ZONING: IND
 LAND USE: UNUSED LAND

N/F
 SOUTH FRONT, LLC
 DB: 5510 PG: 1138
 PID: R05413-035-002-000
 ZONING: MF-H
 LAND USE: MULTI-FAMILY RESIDENTIAL

N/F
 SOUTH FRONT, LLC
 DB: 5795 PG: 2733
 PID: R05413-035-002-000
 ZONING: MF-H
 LAND USE: MULTI-FAMILY RESIDENTIAL

N/F
 DRICKS DUSTIN L
 DB: 5795 PG: 2733
 PID: R05417-014-002-000
 ZONING: LI
 LAND USE: NEIGHBORHOOD RETAIL

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

N/F
 NC STATE PORTS AUTHORITY
 DB: 4145 PG: 470
 PID: R05417-013-003-000
 ZONING: IND
 LAND USE: UNUSED LAND

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

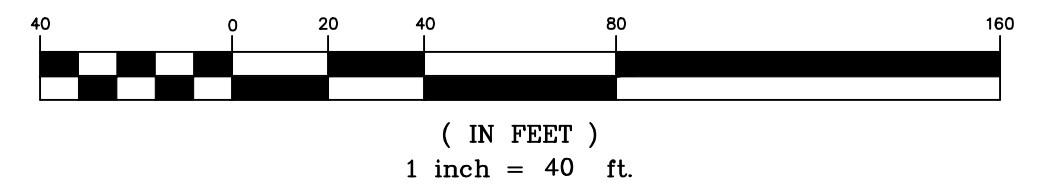
LEGEND (PROPOSED)

- PROPOSED ASPHALT SAW CUT LINE
- PROPOSED LIMITS OF DISTURBANCE
- PROPOSED SILT FENCE
- PROPOSED EASEMENT
- PROPOSED CONTOUR
- PROPOSED CONSTRUCTION ENTRANCE
- PROPOSED SPOT ELEVATION
- PROPOSED SIDEWALK OR CONCRETE
- PROPOSED STORM DRAIN
- PROPOSED DROP INLET (DI)
- PROPOSED CATCH BASIN (CB)
- PROPOSED INLET PROTECTION
- PROPOSED PERVIOUS CONCRETE
- PROPOSED FOUNDATION PLANTING AREA
- PROPOSED SANITARY SEWER CLEANOUT
- PROPOSED SANITARY SEWER MANHOLE (SSMH)
- PROPOSED SANITARY SEWER MAIN
- PROPOSED WATER LINE
- PROPOSED GATE VALVE (G.V.)
- PROPOSED FIRE HYDRANT ASSEMBLY (F/H)
- PROPOSED WATER METER AND/OR BACKFLOW PREVENTER

LEGEND (EXISTING)

- CALCULATED POINT
- IRON PIPE FOUND
- 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 (APPROX. LOCATION)
- EXISTING SANITARY SEWER MANHOLE (SSMH)
- EXISTING STORM DRAIN
- EXISTING STORM DRAIN MANHOLE (SDMH)

GRAPHIC SCALE



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.):	1.1 x 475 = 523 GPD
PROPOSED SEWER CAPACITY:	4,904 SF x 130 GPD/1,000 SF + (0.6 x 2,500 SF) x 1 SEAT/15 SF x 40 GPD/SEAT + 35,882 SF x 1 EMPLOYEE/200 SF x 1 SHIFT x 25 GPD/EMPLOYEE/SHIFT = 9,137 GPD
PROPOSED WATER CAPACITY:	1.1 x 9,137 GPD = 10,051 GPD

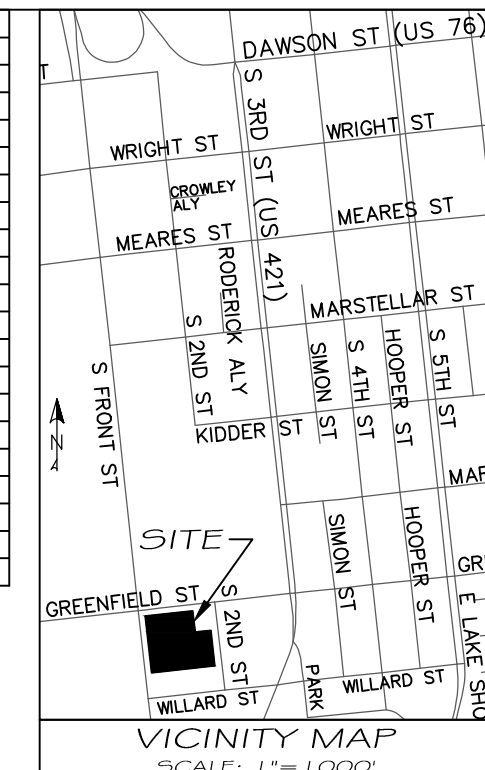
TOTAL LENGTH OF PUBLIC SANITARY SEWER MAIN = 34.26 LF
 TOTAL LENGTH OF PRIVATE SANITARY SEWER MAIN = 200.00 LF
 TOTAL LENGTH OF PUBLIC WATER MAIN = 59 LF
 TOTAL LENGTH OF PRIVATE WATER MAIN = 302 LF
 TOTAL LENGTH OF PUBLIC FIRE LINE = 50 LF
 TOTAL LENGTH OF PRIVATE FIRE LINE (INCLUDES LINES TO EACH BUILDING & FIRE HYDRANT) = 410 LF

PRELIMINARY PLAN
 NOT FOR RECORDATION,
 CONVEYANCES, OR SALES

REV. NO.	DESCRIPTION	DATE
1	REVISED PER TRC COMMENTS.	3-3-17
2	REVISED PER CLIENT.	4-7-17
3	REVISED TO ADJUST SHEET INDEX, AND ADD NOTES, ITEMS TO LEGEND, & WATER & SEWER CAPACITY.	4-12-17
4	REVISED PER TRC COMMENTS.	5-25-17

SHEET INDEX

1	COVER SHEET
2	EXISTING CONDITIONS & DEMOLITION PLAN
3	SITE PLAN
4	EROSION CONTROL, STORMWATER, & UTILITY PLAN
5	EROSION CONTROL & STORMWATER DETAIL SHEET
6	DRAINAGE AREA MAP & STORMWATER DETAIL SHEET
7	ROOF DOWNSPOUT PIPING, SUBGRADE GRADING, & DRAINAGE AREA MAP
8	DETAIL SHEET
9	DETAIL SHEET
10	DETAIL SHEET
11	DETAIL SHEET
12	ADJACENT DRIVEWAYS, TRAFFIC SIGNALS, & DETAIL SHEET
13	SANITARY SEWER DETAIL SHEET
14	SANITARY SEWER DETAIL SHEET
15	SANITARY SEWER DETAIL SHEET
16	SANITARY SEWER DETAIL SHEET
17	WATER DETAIL SHEET
18	WATER DETAIL SHEET
L-1	LANDSCAPE PLAN
L-2	LANDSCAPE PLAN



- NOTES**
- 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 "TOPOGRAPHICAL SURVEY EXCLUSIVELY FOR GREENVILLE STREET PROPERTIES, LLC" WITH SEAL DATE OF 12/14/16).
 - ALL ELEVATIONS ARE IN FEET UNLESS OTHERWISE INDICATED.
 - CITY, STATE, & FEDERAL REGULATIONS SHALL BE FOLLOWED.
 - EXISTING SANITARY SEWER MAINS ARE OWNED BY CFPWA.
 - EXISTING WATER MAINS ARE OWNED BY CFPWA.
 - SLOPE ON HANDICAPPED SPACES SHALL BE 1:50 OR FLATTER.
 - TACTILE WARNING MATS ARE TO BE INSTALLED ON ALL WHEELCHAIR RAMPS.
 - IT IS THE APPLICANT'S/DEVELOPER'S RESPONSIBILITY TO BE COMPLIANT WITH ALL APPLICABLE ADA REQUIREMENTS.
 - LIMITS OF DISTURBANCE = 80,413 SF = 1.85 ACRES.
 - 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 EXCELISUR MAT PRIOR TO ANY RAINFALL EVENT.
 - UPON COMPLETION OF ANY PHASE OF ACTIVITY SIDE SLOPES WILL BE SEEDED/STABILIZED IN ACCORDANCE WITH GRADING & STABILIZATION CHART.
 - 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.
 - ALL DEVELOPMENT SHALL BE IN ACCORDANCE WITH THE CITY OF WILMINGTON LAND DEVELOPMENT CODE & TECHNICAL STANDARDS MANUAL, EXCEPT WHERE EXEMPTED OR VARIANCES ARE OBTAINED.
 - THE PROPOSED CURB ON THE SITE 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.
 - MANHOLES, CATCH BASINS, & DROP INLETS SHALL BE SIZED APPROPRIATELY TO ACCOMMODATE OVERSIZED PIPES.
 - REMOVE EXISTING MIXED/COMPACTED FILL MATERIAL THAT SHOWS POTENTIAL COMPACTION DOWN TO THE NATURAL SOIL SURFACE (APPROXIMATELY 18" DEEP) 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.
 - 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.
 - CONTRACTOR SHALL CONTACT & COORDINATE WITH POWER COMPANY REGARDING REMOVAL OF EXISTING ON-SITE POWER POLES.
 - ALL PROPOSED VEGETATION WITHIN THE SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES.
 - EXTERIOR SITE LIGHTING TO BE LOCATED/DESIGNED BY OTHERS. EXTERIOR SITE LIGHTING SHALL MEET THE CITY OF WILMINGTON'S UMX STANDARD FOR SITE LIGHTING, WHICH IS AS FOLLOWS: "ALL SITE LIGHTING SHALL BE LOCATED, ANGLED, SHIELDED, AND/OR LIMITED IN INTENSITY SO AS TO CAST NO DIRECT LIGHT UPON ADJACENT PROPERTIES. SHALL MINIMIZE OFF-SITE BACKLIGHTING CLARE, AND UP-LIGHTING. LIGHT POSTS SHALL BE NO TALLER THAN TWELVE (12) FEET."
 - CONTRACTOR TO NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN EXISTING UTILITIES & PROPOSED UTILITIES.
 - 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, SIDEWALK CLOSURE, ETC.) FROM THE CITY OF WILMINGTON FOR WORK WITHIN THEIR RIGHTS-OF-WAY.
 - 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' STRIPPED 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.
 - 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.
 - 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 2.5" VEHICLE OVERHANG AREA SHALL NOT BE PLANTED WITH SHRUBS.
 - 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.
 - CONTRACTOR TO REPAIR ANY DISTURBED AREAS (ASPHALT, STONE, CURB, SIDEWALK, GRASS PLAZA, ETC.) WITHIN SOUTH FRONT ST. OR SOUTH SECOND ST. TO PRE-CONSTRUCTION CONDITIONS OR BETTER.
 - 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).
 - 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.
 - CONTRACTOR TO ADJUST VERTICAL ALIGNMENT OF EXISTING WATER MAIN, IF NECESSARY, TO AVOID CONFLICT WITH STORM DRAIN. IF ADJUSTMENT OF VERTICAL ALIGNMENT IS NOT NECESSARY THEN THE TWO 12" GATE VALVES SHALL NOT BE INSTALLED. IF EXISTING WATER MAIN AT CROSSING WITH STORM DRAIN IS NOT DIP FOR A DISTANCE OF 10' ON EACH SIDE OF THE CROSSING, THEN CONTRACTOR SHALL REPLACE WATER MAIN WITH 20 LF (MIN.) OF 12" DIP CENTERED ON STORM DRAIN CROSSING.
 - 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, EITHER 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, DUMPSTER PAD & ENCLOSURE, AND/OR PERMEABLE PAVEMENT SYSTEM #1.
 - WATER METER, BACKFLOW PREVENTER, VALVE, & FIRE HYDRANT SYMBOLS ARE SYMBOLIC & NOT ACTUAL SIZE.
 - DOMESTIC WATER MAIN SHALL BE PUBLIC FROM THE EXISTING WATER MAIN IN GREENFIELD STREET THROUGH THE MASTER WATER METER & PRIVATE AFTER THE METER. FIRE LINE SHALL BE PUBLIC FROM THE EXISTING WATER MAIN IN GREENFIELD STREET TO THE 8" GATE VALVE AT THE R/W & PRIVATE BEGINNING AFTER THE VALVE.
 - A SEPARATE WATER SERVICE SHALL BE PROVIDED FROM THE PROPOSED PRIVATE WATER MAIN TO EACH UNIT IN BUILDINGS #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.
 - CONTRACTOR TO COORDINATE LOCATION OF BUILDING/UNIT WATER & SEWER SERVICES WITH MECHANICAL PLANS.
 - SANITARY SEWER MAIN SHALL BE PUBLIC FROM EX. SSMH TO SSMH-1 AND PRIVATE FROM SSMH-1 TO SSMH-2.
 - THE VENT FROM SSMH-1 SHALL BE INSTALLED A MINIMUM OF 3 FEET BEYOND THE PROPOSED EDGE OF PAVEMENT ON THE WEST SIDE OF THE DRIVEWAY.
 - DUMPSTER ENCLOSURE DESIGN/DETAILS ON SHEET 9 PER ORA ARCHITECTURE AND ARE SHOWN FOR REFERENCE PURPOSES ONLY. CONTRACTOR SHALL USE ORA ARCHITECTURE PLANS TO CONSTRUCT DUMPSTER PAD & ENCLOSURE. MALPASS ENGINEERING & SURVEYING, P.C. IS NOT RESPONSIBLE FOR DUMPSTER ENCLOSURE DESIGN/DETAILS.
 - 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.
 - THE DEVELOPER SHALL HAVE THE PERMEABLE PAVEMENT OPERATION AND 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.

WILMINGTON
 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Name: _____ Date: _____
 Planning: _____
 Traffic: _____
 Fire: _____
 Signed: _____
 Date: _____

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

GREENFIELD COMMERCIAL
 WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

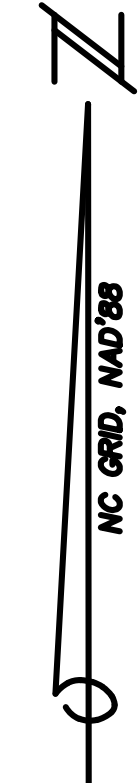
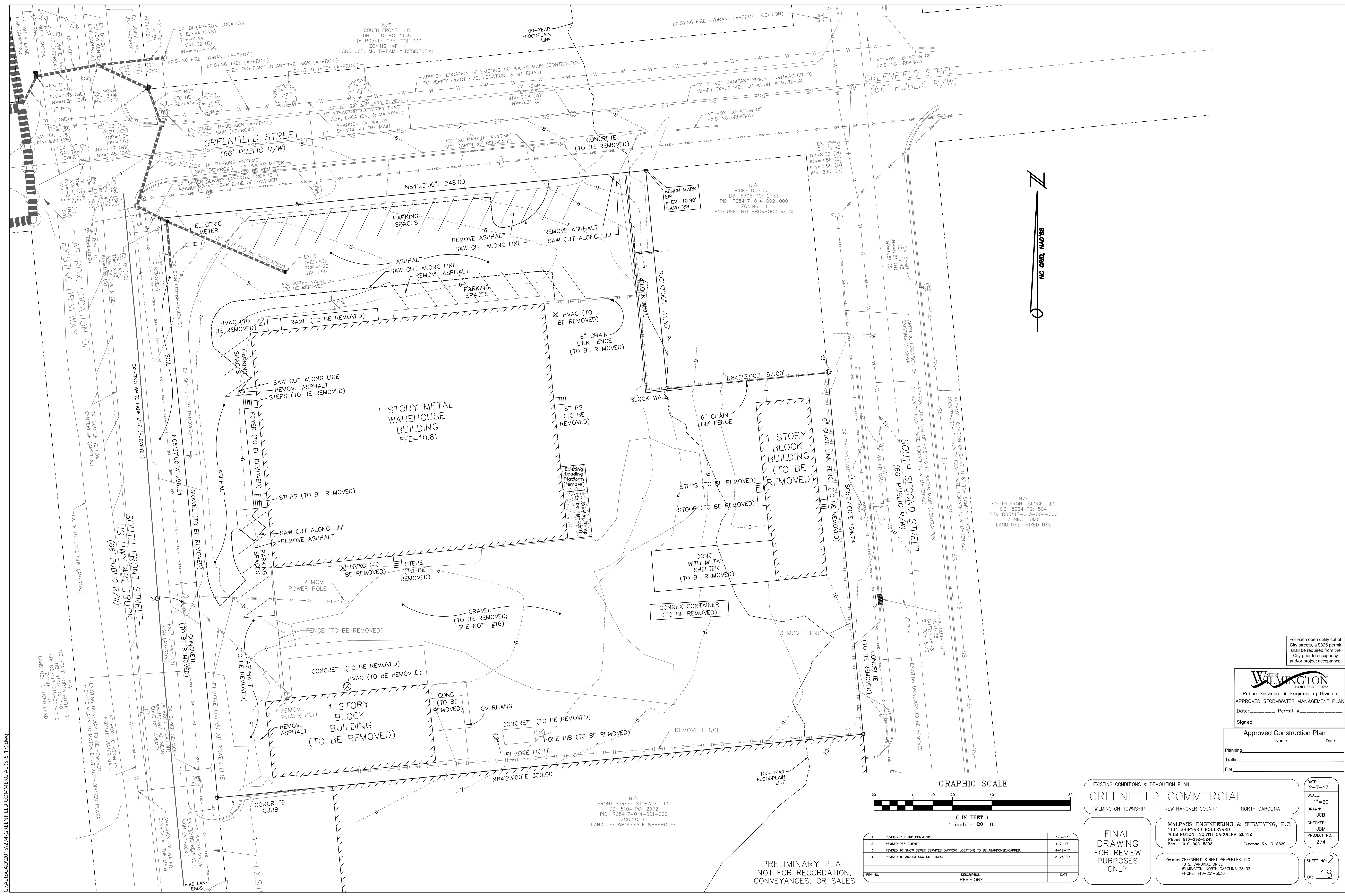
MALPASS ENGINEERING & SURVEYING, P.C.
 1134 SHIPYARD BOULEVARD
 WILMINGTON, NORTH CAROLINA 28412
 Phone: 910-392-5843
 Fax: 910-392-5803 License No. C-2920

Owner: GREENFIELD STREET PROPERTIES, LLC
 10 S. CAROLINA DRIVE
 WILMINGTON, NORTH CAROLINA 28403
 PHONE: 910-251-6030

FINAL DRAWING FOR REVIEW PURPOSES ONLY

DATE: 2-7-17
 SCALE: 1"=40'
 DRAWN: JCB
 CHECKED: JBM
 PROJECT NO: 274
 SHEET NO: 1
 OF: 18

C:\A\10\2017\1527\GREENFIELD COMMERCIAL (15-17) DWG

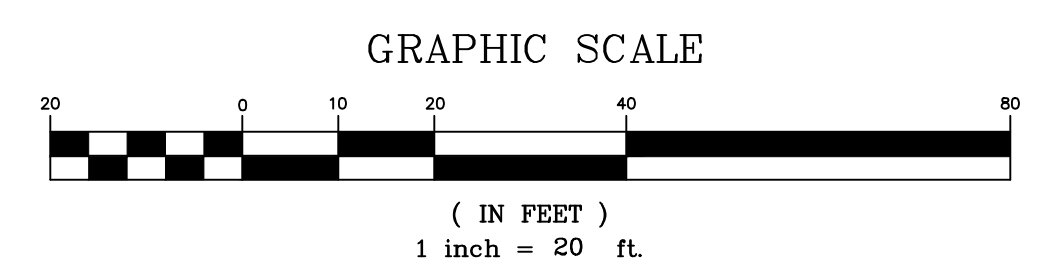


N/F
SOUTH FRONT BLOCK, LLC
DB: 5964 PG: 504
PID: R05417-013-004-000
ZONING: UMX
LAND USE: MIXED USE

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 # _____
Signed: _____

Approved Construction Plan	
Name	Date
Planning	
Traffic	
Fire	



REV NO.	DESCRIPTION	DATE
1	REVISED PER TRC COMMENTS.	3-5-17
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

PRELIMINARY PLAT
NOT FOR RECORDATION,
CONVEYANCES, OR SALES

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. CARDINAL 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

S:\AUGCAD\2015\274\GREENFIELD COMMERCIAL (5-5-17).dwg

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

N/F
NO STATE RIGHTS AUTHORITY
NO. DB: 4445 PG: 470-900
PID: R05417-013-004-000
LAND USE: UNUSED LAND

INTERIOR LANDSCAPING ISLANDS			
LANDSCAPE ISLAND	TOTAL AREA (SF)	IMPERVIOUS AREA (SF)	PERCENT IMPERVIOUS
LI-1	226.03	0.00	0.00
LI-2	217.08	0.00	0.00
LI-3	216.22	0.00	0.00
LI-4	221.50	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 = 454.54 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 = 426.19 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 = 726.26 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) = $0.2 \times 39,798 = 7,959.60$ SF
 *SEE LANDSCAPING PLAN FOR PROVIDED INTERIOR SHADING & TREES

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

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 # _____
 Signed: _____

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

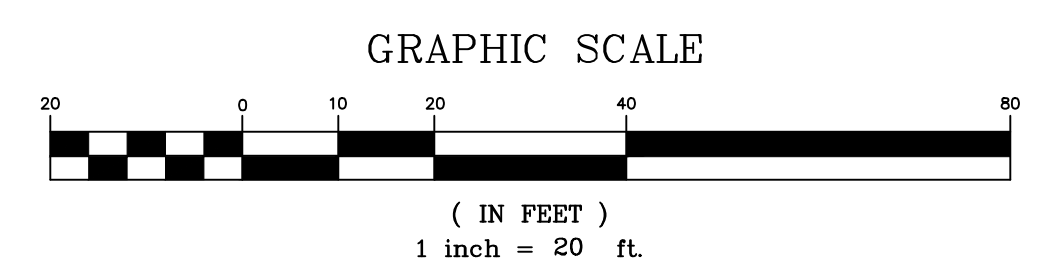
SITE PLAN
GREENFIELD COMMERCIAL
 WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

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-2920

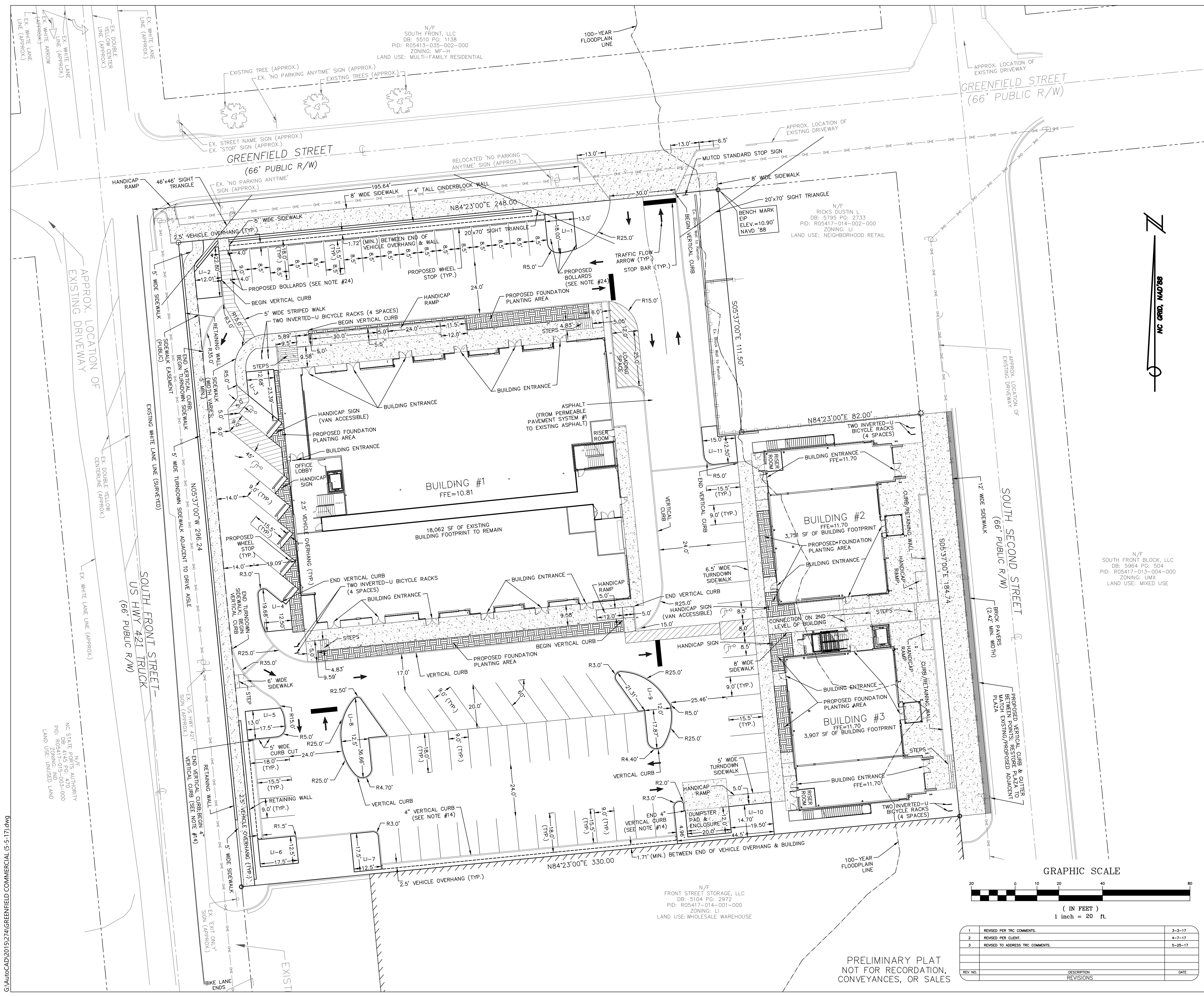
Owner: GREENFIELD STREET PROPERTIES, LLC
 10 S. CAROLINA DRIVE
 WILMINGTON, NORTH CAROLINA 28403
 PHONE: 910-251-5630

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



REV NO.	DESCRIPTION	DATE
1	REVISED PER TRC COMMENTS.	3-3-17
2	REVISED PER CLIENT.	4-7-17
3	REVISED TO ADDRESS TRC COMMENTS.	5-25-17

PRELIMINARY PLAT
 NOT FOR RECORDATION,
 CONVEYANCES, OR SALES



N/F SOUTH FRONT, LLC
 DB: 5510 PG: 1138
 PID: R05413-035-002-000
 ZONING: MF-H
 LAND USE: MULTI-FAMILY RESIDENTIAL

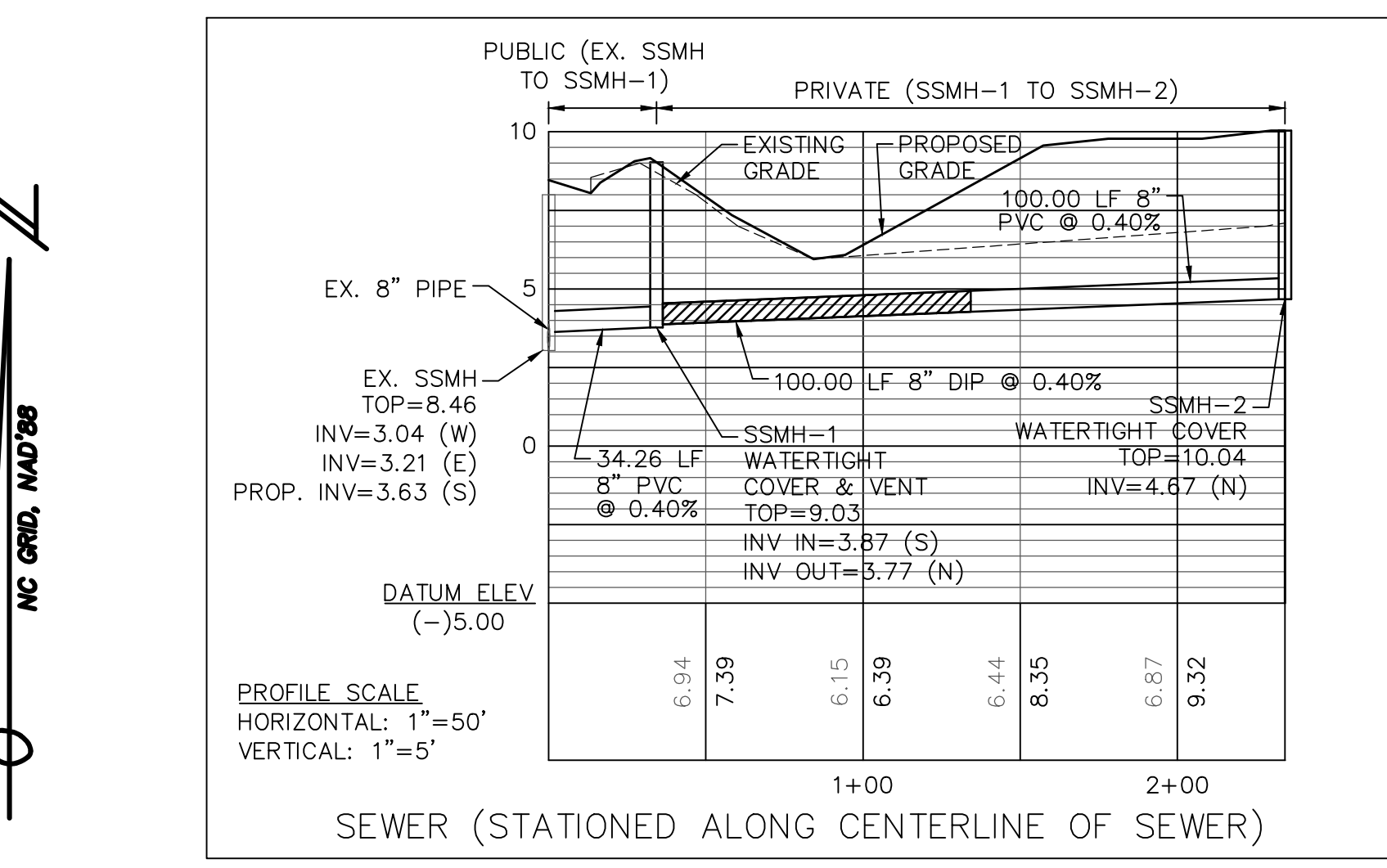
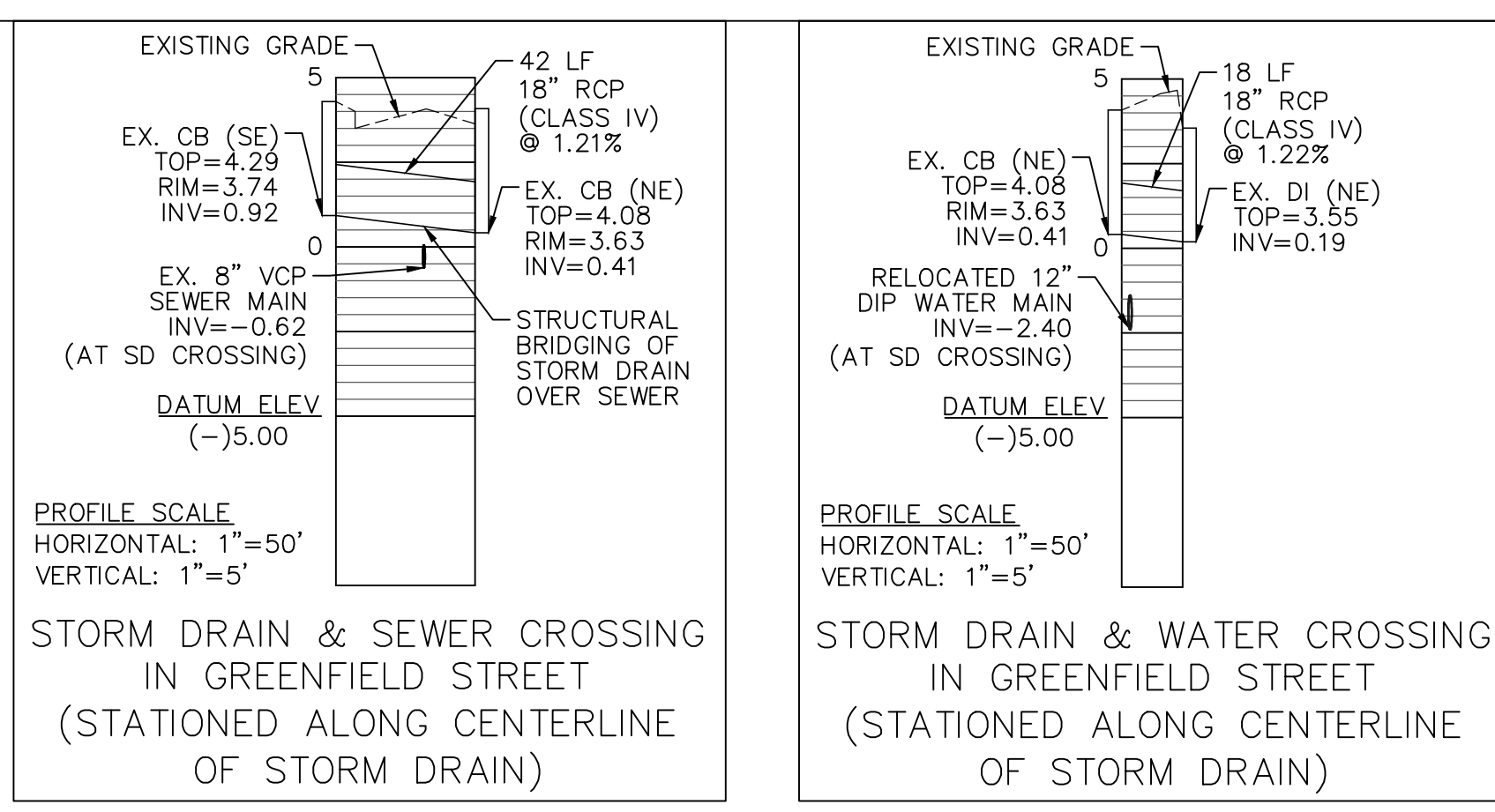
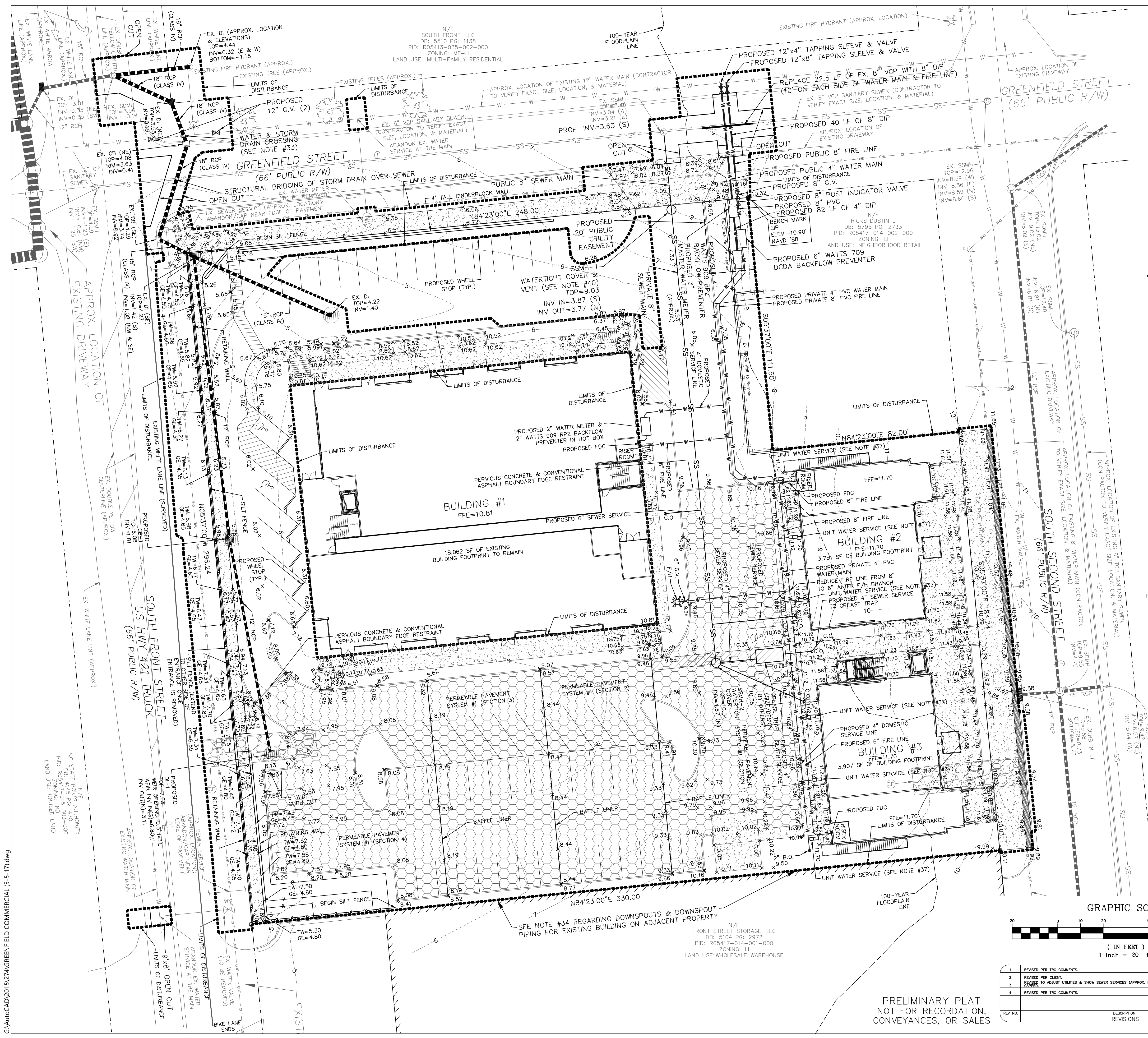
N/F RICKS DUSTIN L
 DB: 5795 PG: 2733
 PID: R05417-014-002-000
 ZONING: LI
 LAND USE: NEIGHBORHOOD RETAIL

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: 2922
 PID: R05417-014-001-000
 ZONING: LI
 LAND USE: WHOLESALE WAREHOUSE

NC STATE PORTS AUTHORITY
 DB: 4145 PG: 470-900
 PID: R05417-013-004-000
 LAND USE: UNUSUED LAND

5-AUG-CAD-2015-1274-GREENFIELD COMMERCIAL (5-5-17).dwg



- 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. SANITARY SEWER OVER WATER: USE D.I.P. ON WATER 10' ON EITHER SIDE OF CROSSING.
 5. HORIZONTAL SEPARATION BETWEEN STORM SEWER & SANITARY SEWER SHALL BE 5' BETWEEN EDGE OF PIPES.
 6. 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.
 7. HORIZONTAL SEPARATION BETWEEN WATER AND STORM SEWER SHALL BE 5' BETWEEN EDGE OF PIPES.
 8. 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.
 9. ALL SANITARY SEWER MANHOLES WITH A DROP OF 30" OR GREATER SHALL HAVE AN INSIDE DIAMETER OF 5" WITH AN INSIDE DROP STRUCTURE.
 10. GRAVITY SANITARY SEWER WITHIN 50' OF WETLANDS SHALL MEET WATER MAIN MATERIALS, TESTING METHODS AND ACCEPTABILITY STANDARDS 151A NCAC 18C1.
 11. SANITARY SEWER MANHOLES MUST BE GREATER THAN 50' FROM WETLANDS, AS MEASURED TO THE CLOSEST OUTSIDE EDGE.

- 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 DUCTILE IRON MAINS 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.

EROSION CONTROL, STORMWATER, & UTILITY PLAN

GREENFIELD COMMERCIAL

WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

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. 4
OF 18

PRELIMINARY PLAT NOT FOR RECORDATION, CONVEYANCES, OR SALES

GRAPHIC SCALE
 1 inch = 20 ft.

CAUTION: 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: _____

REVISIONS

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/CANCELLED.	4-12-17
4	REVISED PER TRC COMMENTS.	5-25-17

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. 10CP 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, fertilize 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. 20CP 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. 30CP for: Well-Drained Sandy Soils to Sandy Loams; High Maintenance, Fine Turf
 Seeding mixture
 Species Rate (lb/1,000 ft²)
 Tifway II 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 4–8 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, 50 lb in July, and 25–50 lb in Aug.

Table 6.11s – Seeding No. 40CP 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 6.11d).

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. 50CP 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. 70CP 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. 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
 Seeding mixture for Late Winter and Early Spring
 Species Rate (lb/acre)
 Rye (grain) 120
 Annual lespedeza (Kobe 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 – Refertilize if growth is not fully adequate. Reseed, refertilize 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 – Refertilize if growth is not fully adequate. Reseed, refertilize 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

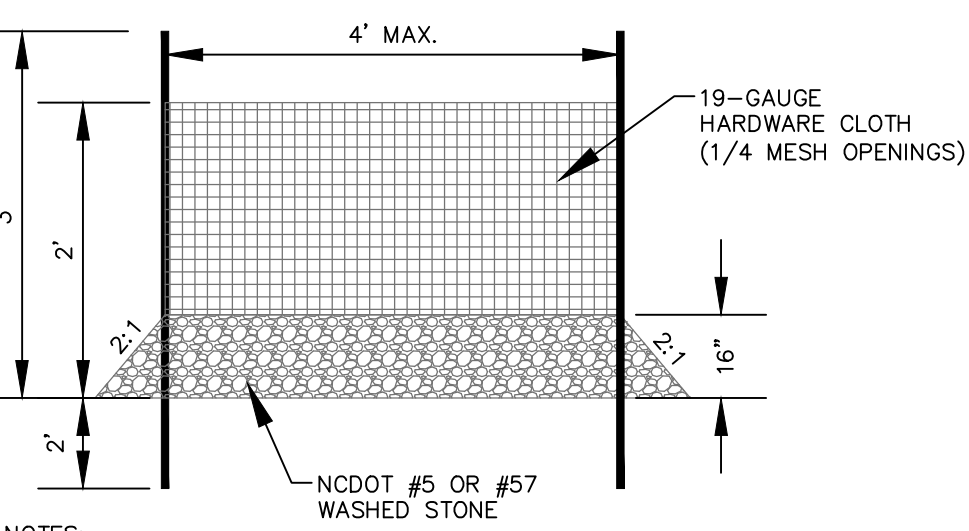
Seeding dates
 Mountains – Aug. 15–Dec. 30
 Coastal Plain and Piedmont – Aug. 15–Dec. 30

Soil amendments – Follow soil tests or apply 2,000 lb/acre ground agricultural limestone and 1,000 lb/acre 10–10–10 fertilizer.

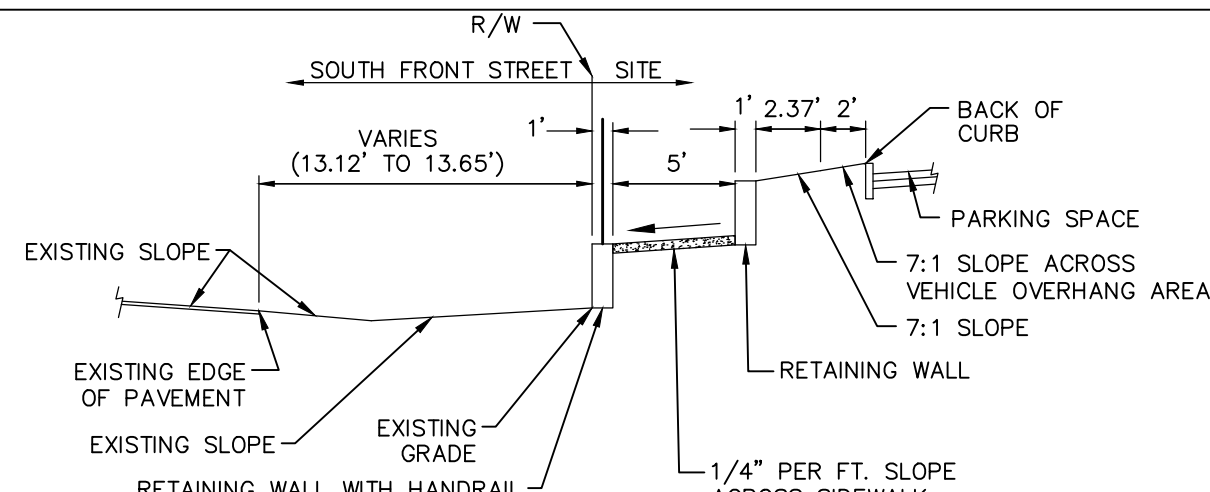
Mulch – Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance – Repair and refertilize 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 Kobe (Piedmont and Coastal Plain) or Korean (Mountains) lespedeza in late February or early March.

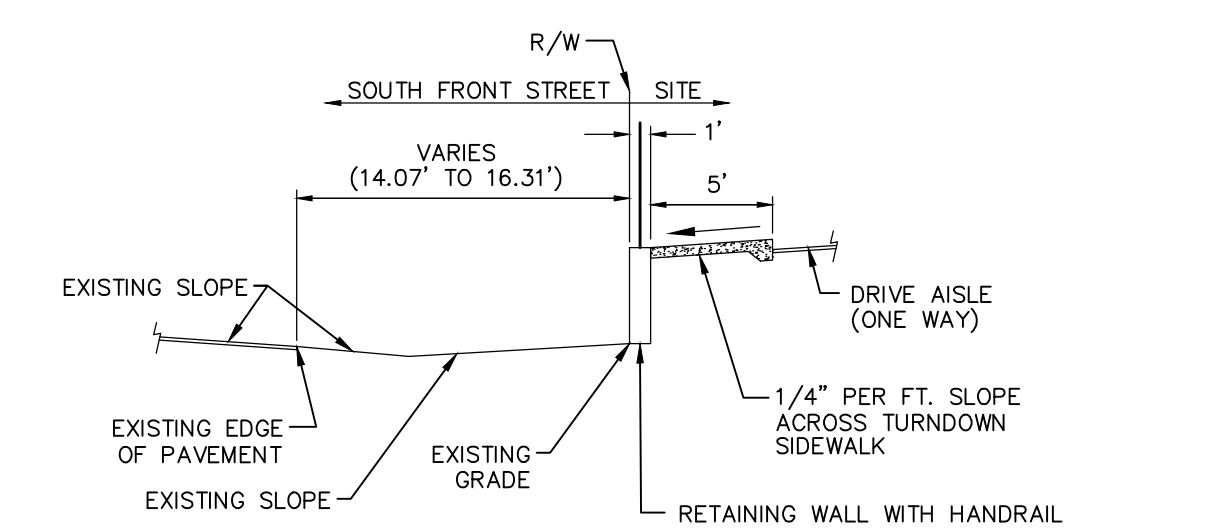
SITE AREA DESCRIPTION	GROUND STABILIZATION	
	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HOW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10 FEET OR LESS IN LENGTH AND ARE NOT STEEPER THAN 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.		



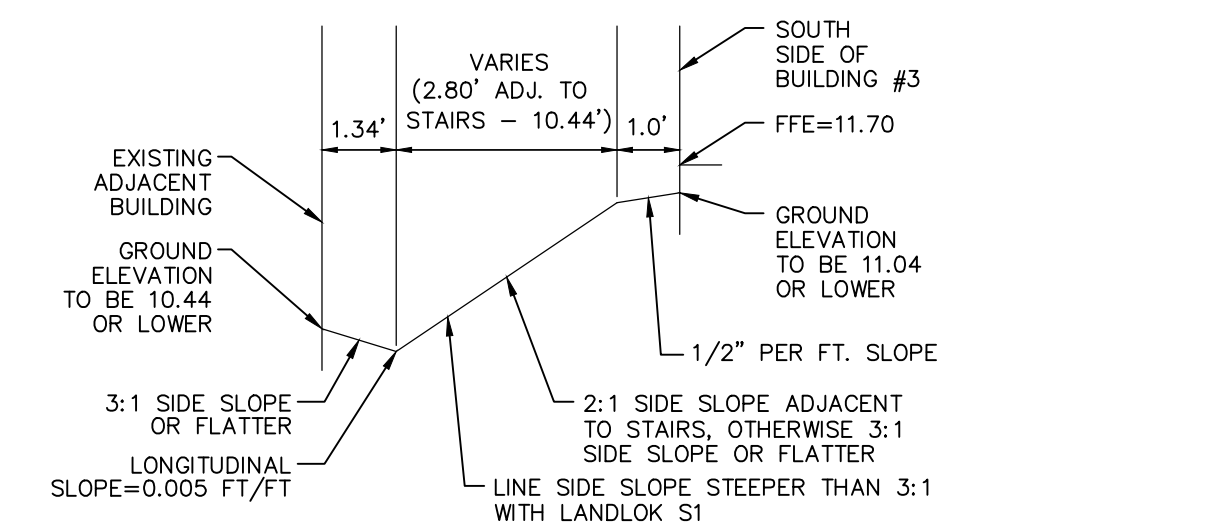
HARDWARE CLOTH & GRAVEL INLET PROTECTION DETAIL
 NOT TO SCALE



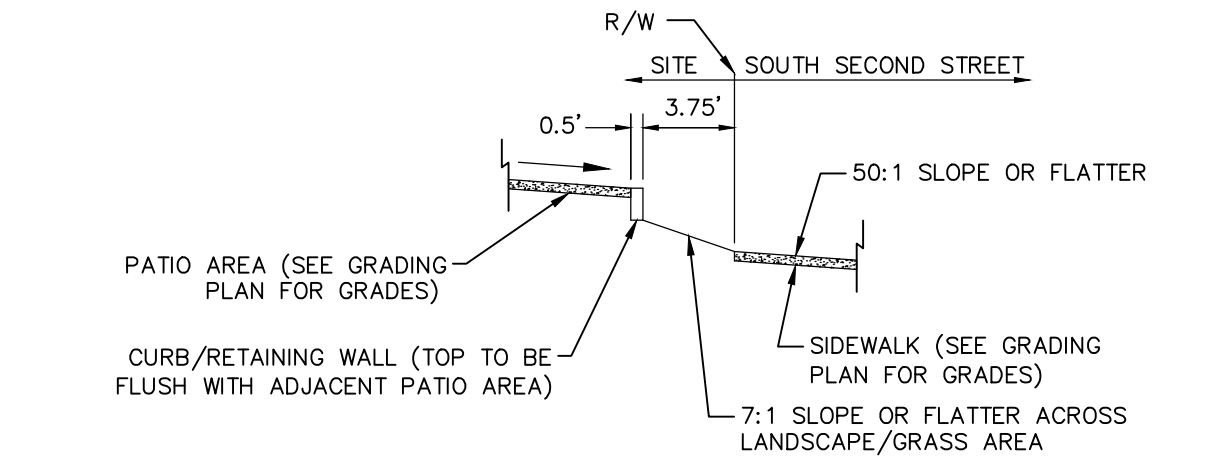
TYPICAL GRADING DETAIL – BETWEEN PERPENDICULAR PARKING (SOUTHERN PORTION OF SITE) & SOUTH FRONT STREET
 NOT TO SCALE



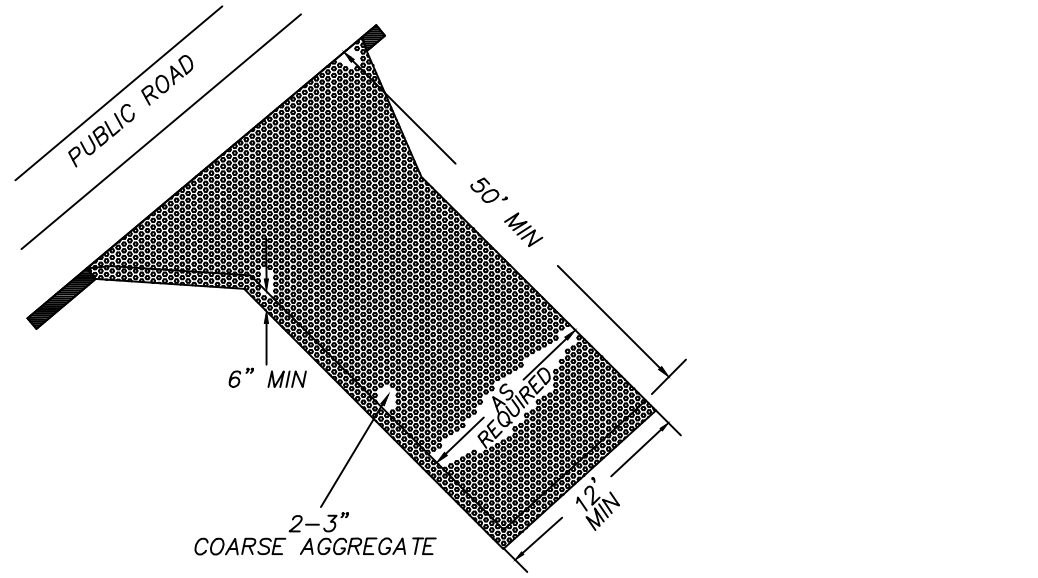
TYPICAL GRADING DETAIL – BETWEEN ONE WAY DRIVE AISLE & SOUTH FRONT STREET
 NOT TO SCALE



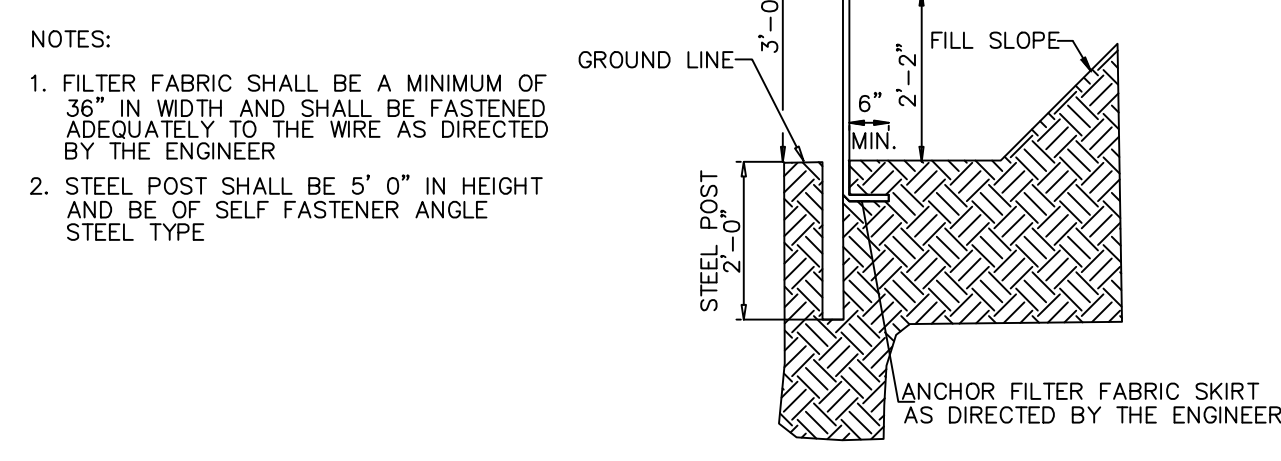
GRADING DETAIL – ADJACENT TO BUILDING #3
 NOT TO SCALE



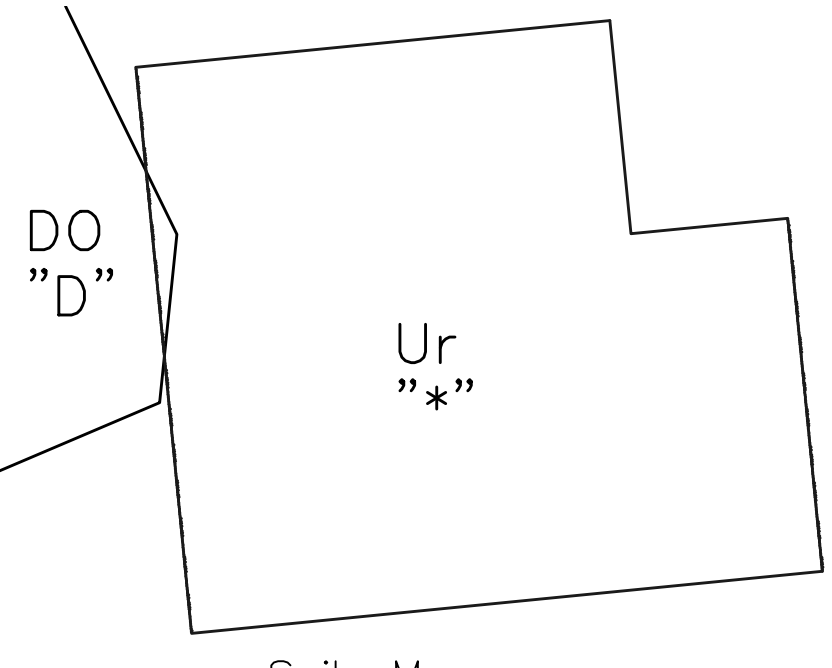
TYPICAL GRADING DETAIL – BETWEEN SOUTH SECOND STREET R/W & PATIO AREA IN FRONT OF BUILDINGS #2 & 3
 NOT TO SCALE



TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT
 NOT TO SCALE



GUIDELINES FOR TEMPORARY SILT FENCE DETAIL
 NOT TO SCALE



Soils Map
 Scale: 1"=100'

REV. NO.	DESCRIPTION	DATE
1	REVISED TO ADJUST DETAILS.	4-7-17
2	REVISED TO ADJUST GRADING DETAILS.	5-25-17

- 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 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 ROADWAYS.
 - CHECK SEDIMENT BASINS AFTER PERIODS OF SIGNIFICANT RUNOFF. REMOVE SEDIMENT AND RESTORE TO ITS ORIGINAL DIMENSIONS WHEN NECESSARY. 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. 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. 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 VOLUME 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 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 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 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 THE BAFFLES 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 (1/4 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 FULL 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 EMPLOYED 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 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 BARGE 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 VEGETATIVE 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

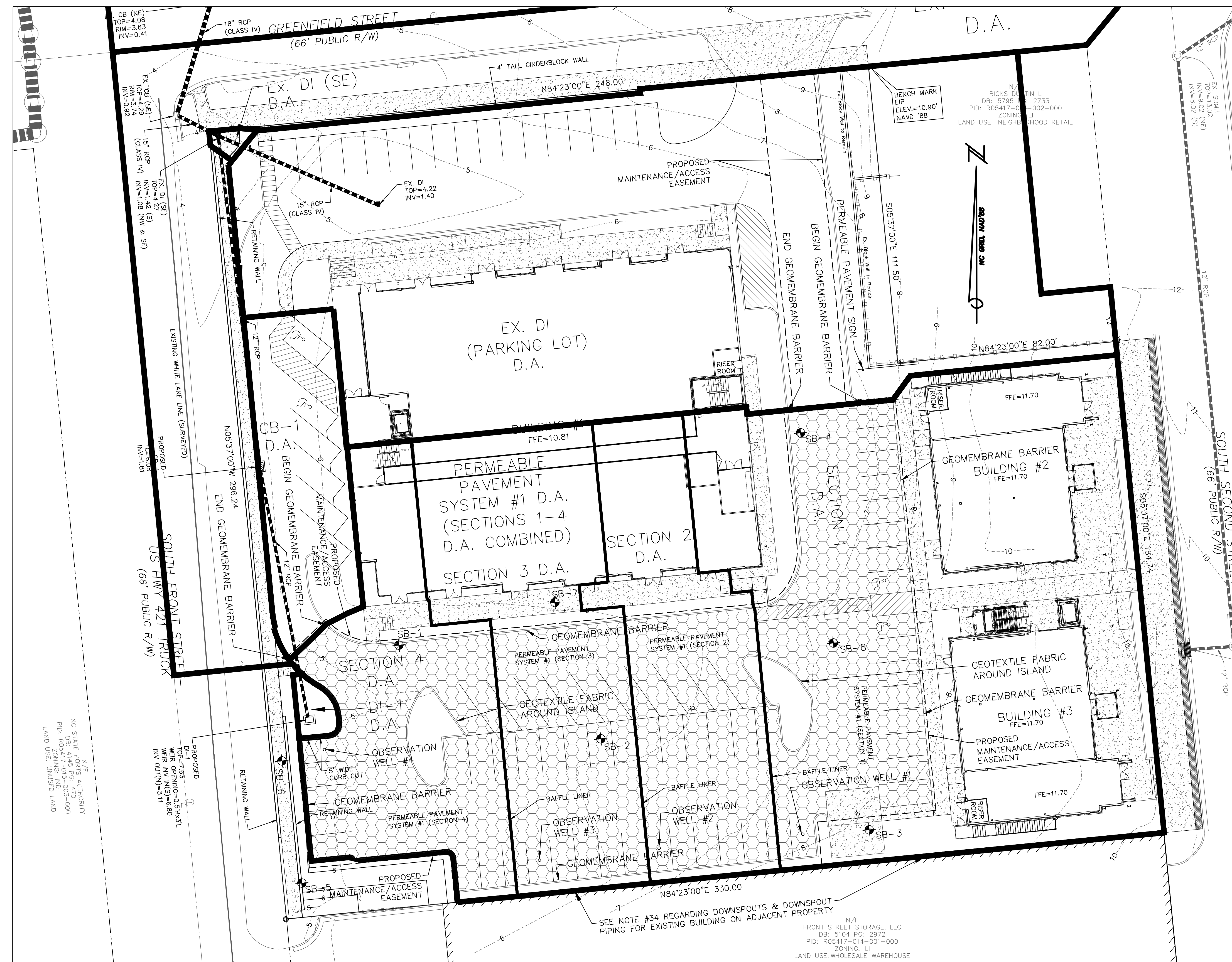
FINAL DRAWING FOR REVIEW PURPOSES ONLY

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

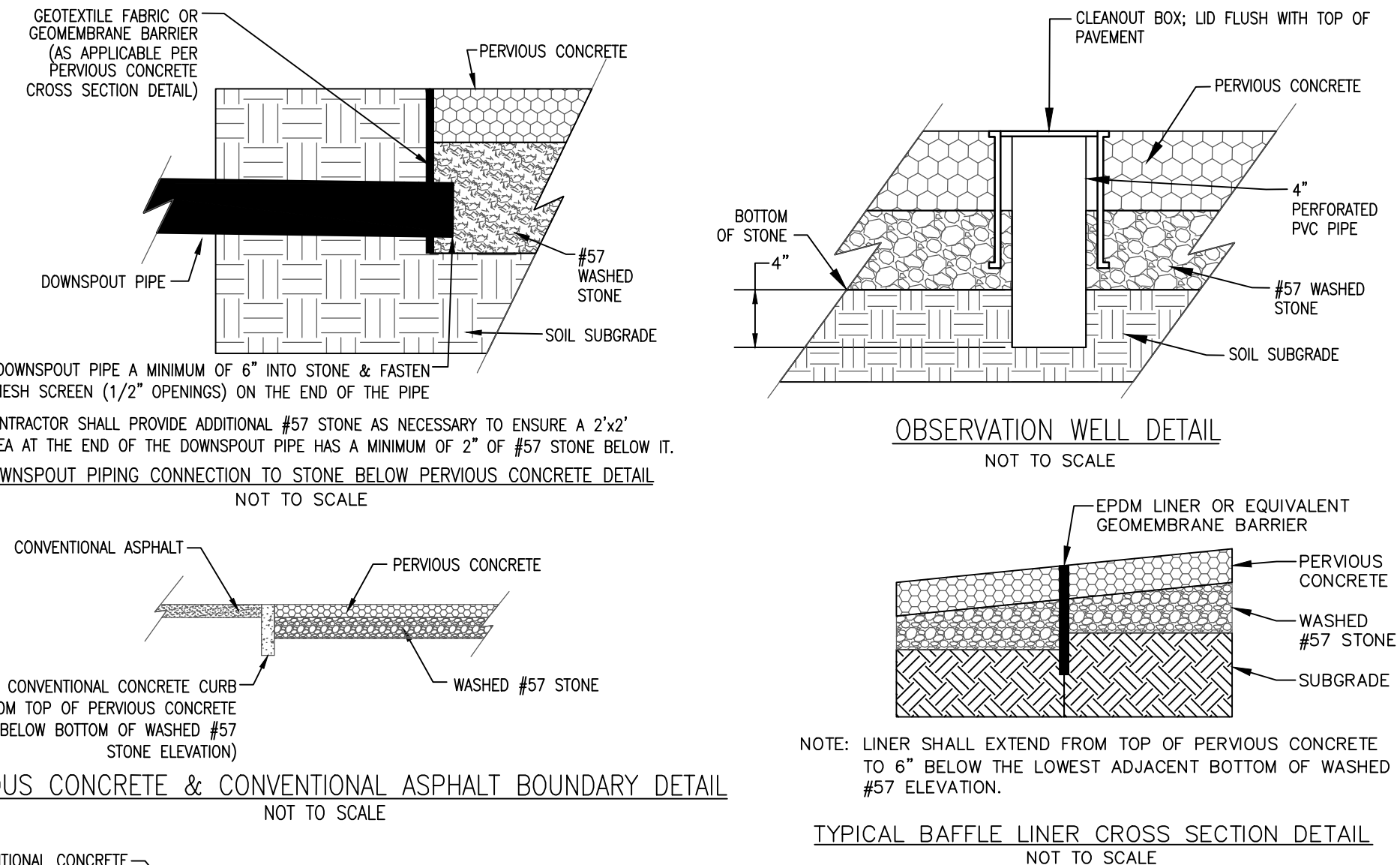
Owner: GREENFIELD STREET PROPERTIES, LLC
 10 S. CAROLINA DRIVE
 WILMINGTON, NORTH CAROLINA 28403
 PHONE: 910-251-5630

DATE: 5-17
 SCALE: N.T.S.
 DRAWN: JCB
 CHECKED: JBM
 PROJECT NO: 274
 SHEET NO: 5
 OF: 18

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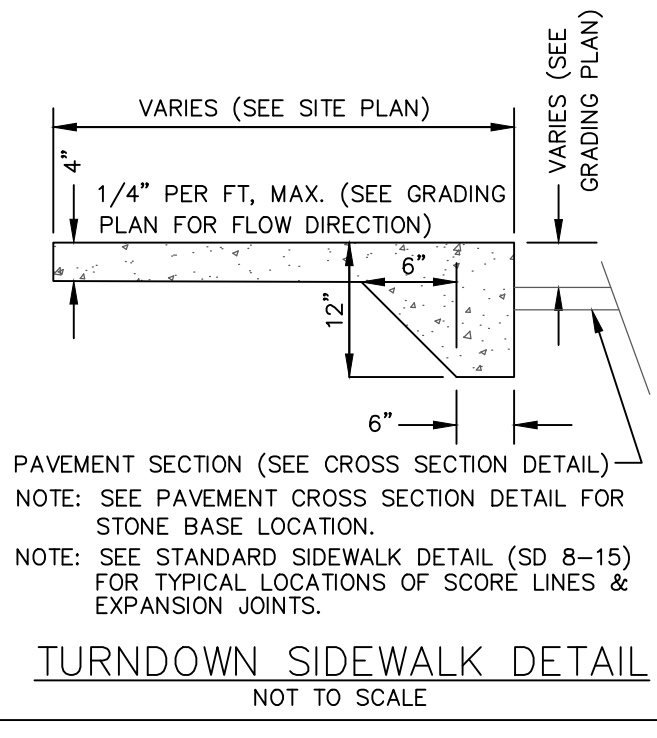
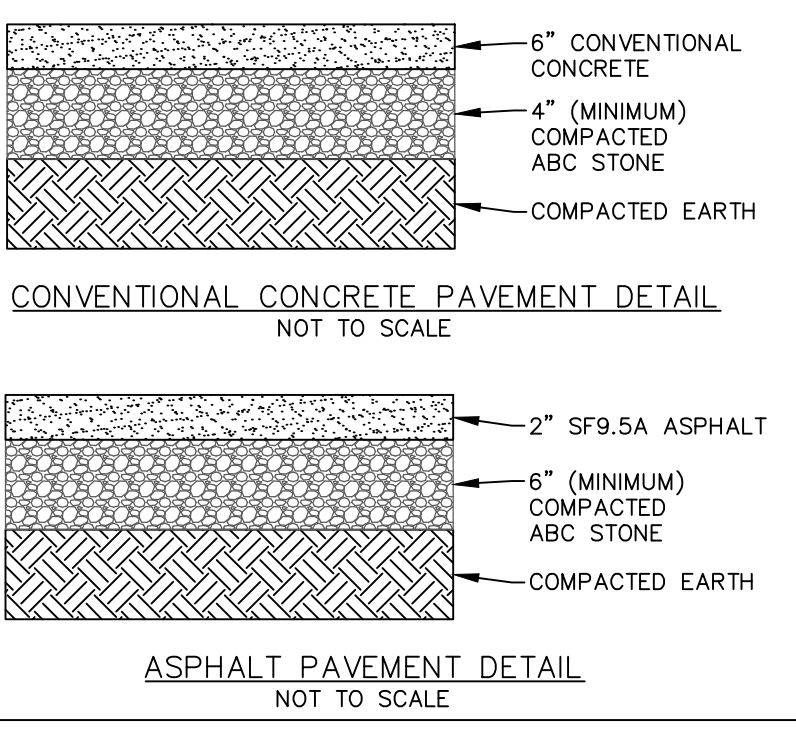
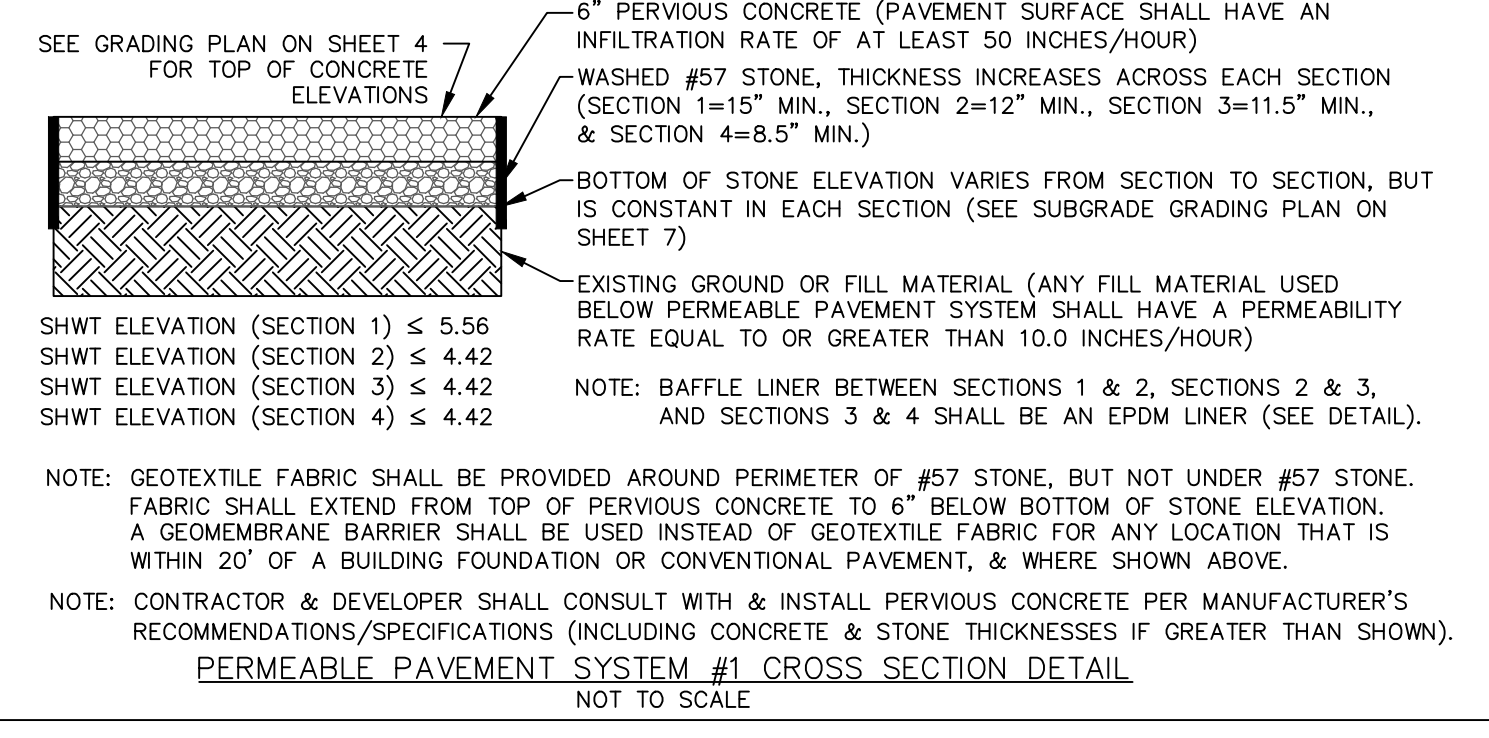
- CONSTRUCTION SEQUENCE FOR INSTALLATION OF PERMEABLE PAVEMENT (MOSTLY FROM NCDEQ STORMWATER DESIGN MANUAL C-5)**
- ENSURE ACCEPTABLE CONDITIONS FOR CONSTRUCTION
 - PREVIOUS SURFACES MUST BE GRADED TO DRAIN AWAY FROM THE PERMEABLE PAVEMENT, EXCEPT WHERE THIS IS UNAVOIDABLE, SUCH AS PARKING LOT ISLANDS, 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 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 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 IMPERVIOUS 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 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 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 CONSTRUCTION ENTRANCE.
 - SCHEDULE STREET SWEEPING DURING AND AFTER CONSTRUCTION TO PREVENT SEDIMENT FROM ACCUMULATING ON THE PAVEMENT.



DRAINAGE AREA, SOIL TEST LOCATIONS, OBSERVATION WELL LOCATIONS, PERMEABLE PAVEMENT SIGN LOCATION & GEOTEXTILE/GEOMEMBRANE LOCATION MAP
SCALE: 1"=20'

SOIL TEST RESULTS PER APPLIED RESOURCE MANAGEMENT, PC

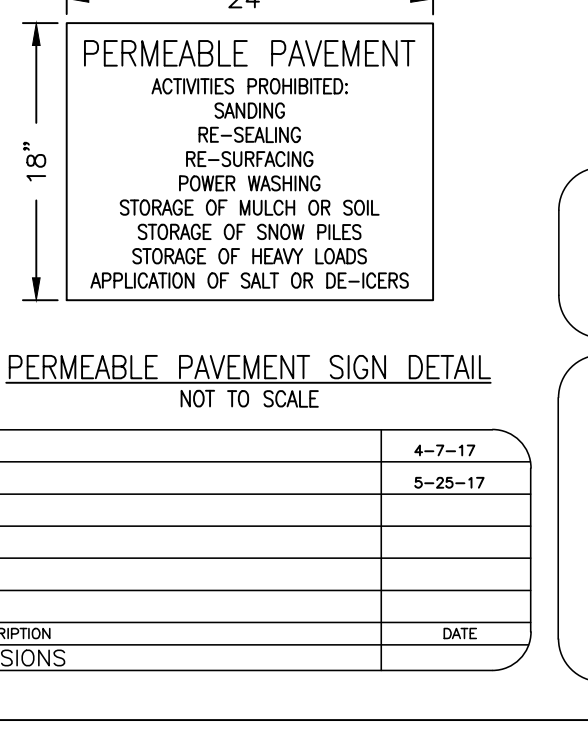
TEST LOCATION	EXISTING GROUND ELEVATION (FEET)**	SHWT (INCHES BELOW GROUND SURFACE)**	SHWT ELEVATION (FEET)**	HYDRAULIC CONDUCTIVITY RATE (INCHES PER HOUR)**
SB 1	5.75	16	4.42	11.92
SB 2	5.72	18	4.22	5.07
SB 3	8.24	36	5.24	0.37
SB 4	6.39	10	5.56	0.41
SB 5	4.13	< 12	3.13-4.13	3.34
SB 6	4.67	< 12	3.67-4.67	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



INLET DRAINAGE AREA CHART

INLET	DRAINAGE AREA (ACRES)
CB-1	0.10
#DI-1	0.01
PERMEABLE PAVEMENT SYSTEM #1	1.21

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



DRAINAGE AREA MAP & DETAIL SHEET

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: 910-251-5630

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

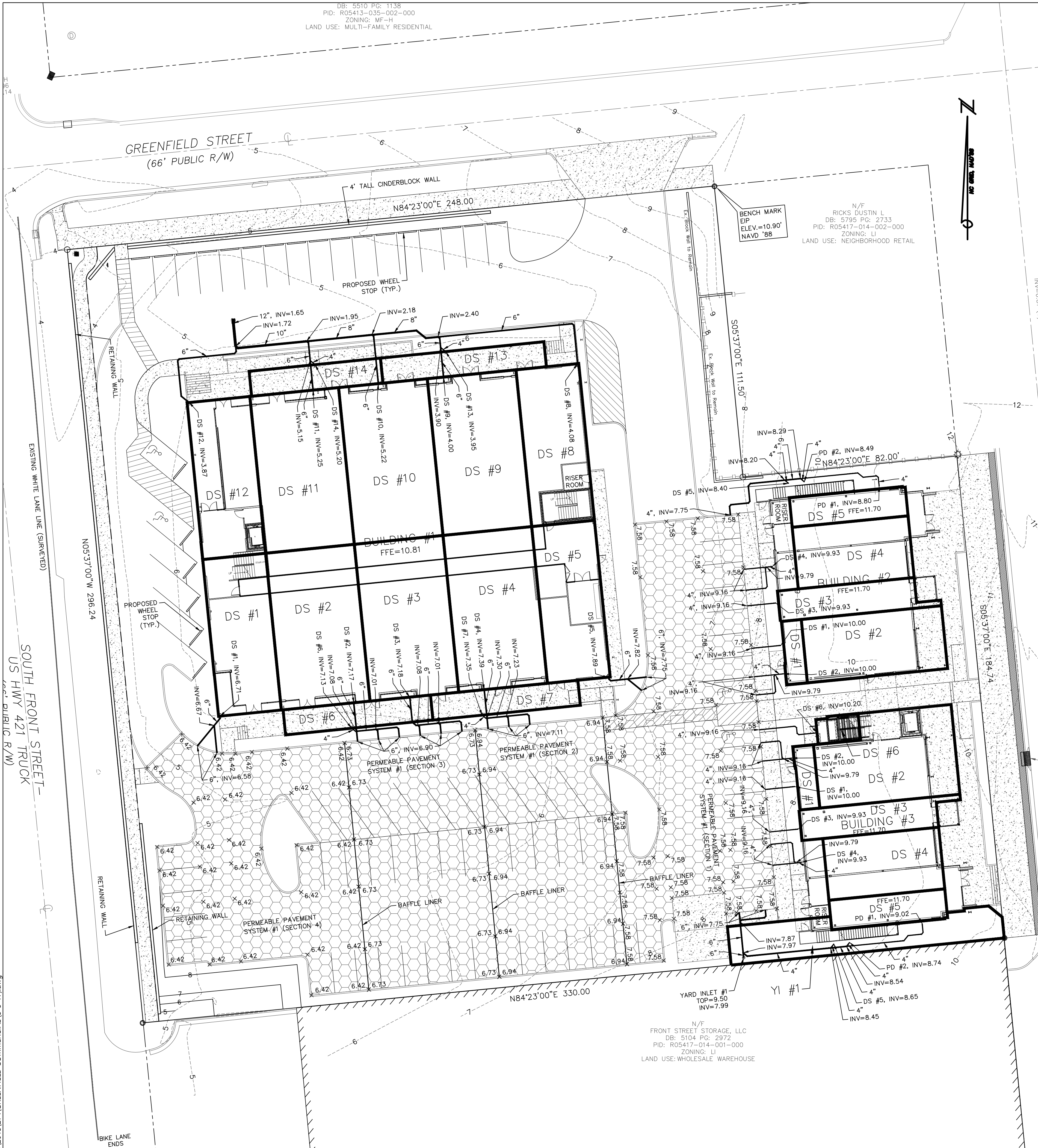
SHEET NO: 6 OF 18

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 N/C STATE PORTS AUTHORITY
 V/E
 P/O: 4145 PG. 470-000
 P/O: 603410 AND
 LAND USE: UNDEVELOPED LAND

DB: 5510 PG: 11.38
 PID: R05413-035-002-000
 ZONING: MF-H
 LAND USE: MULTI-FAMILY RESIDENTIAL

N/F
 RICKS DUSTIN L
 DB: 5795 PG: 2733
 PID: R05417-014-002-000
 ZONING: LI
 LAND USE: NEIGHBORHOOD RETAIL

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



ROOF DOWNSPOUT PIPING (LAYOUT & DRAINAGE AREA MAP) & PERMEABLE PAVEMENT SUBGRADE GRADING PLAN
 SCALE: 1"=20'

BUILDING #1 DOWNSPOUT PIPE SYSTEM DRAINAGE AREA CHART

INLET	DRAINAGE AREA (ACRES)
DS #1	0.04
DS #2	0.05
DS #3	0.05
DS #4	0.05
DS #5	0.04
DS #6	0.02
DS #7	0.02
DS #8	0.04
DS #9	0.05
DS #10	0.05
DS #11	0.05
DS #12	0.04
DS #13	0.02
DS #14	0.02

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

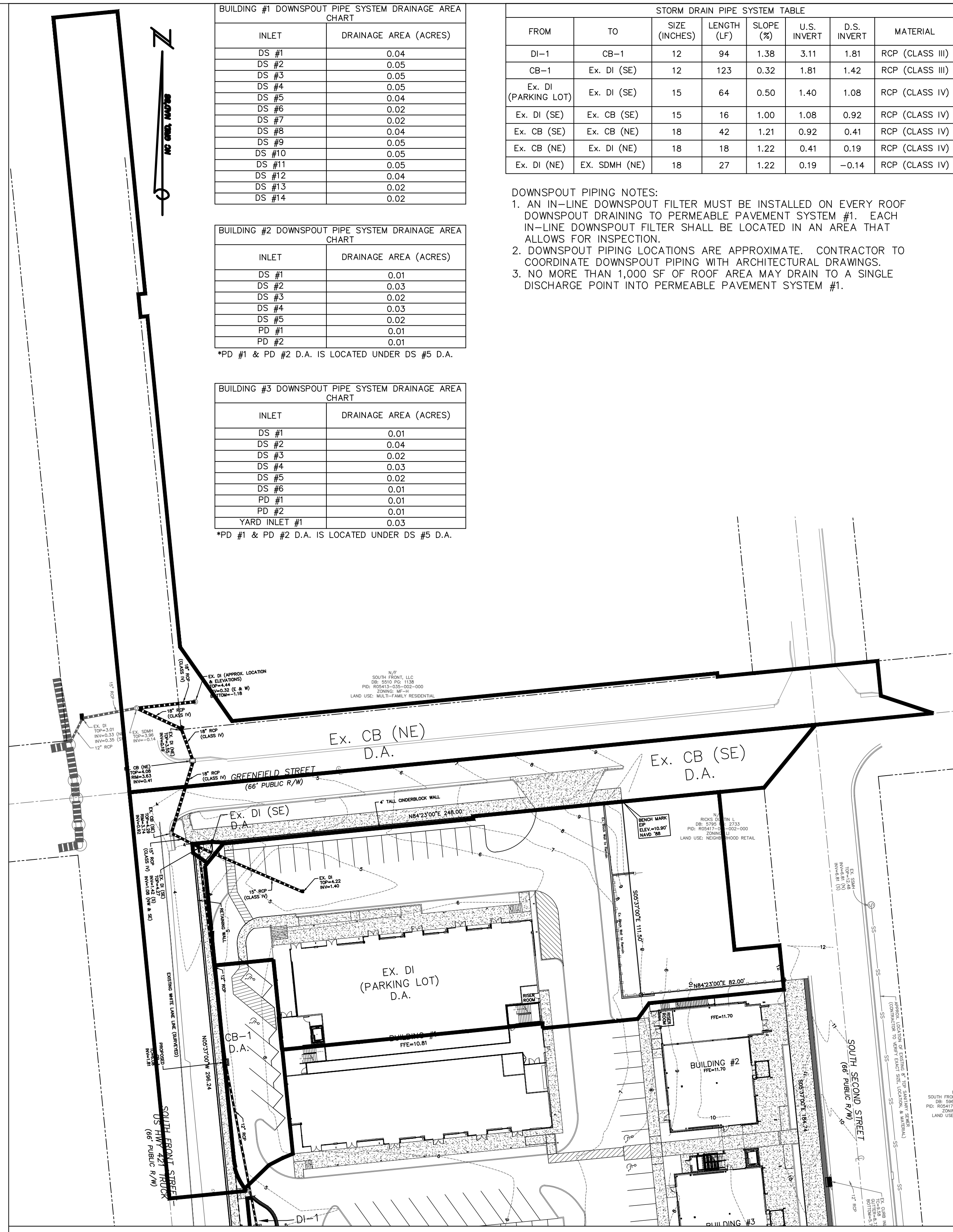
INLET	DRAINAGE AREA (ACRES)
DS #1	0.01
DS #2	0.04
DS #3	0.02
DS #4	0.03
DS #5	0.02
DS #6	0.01
PD #1	0.01
PD #2	0.01
YARD INLET #1	0.03

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

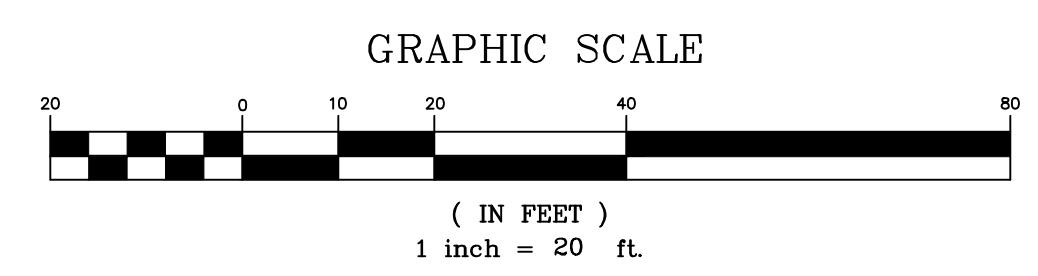
STORM DRAIN PIPE SYSTEM TABLE

FROM	TO	SIZE (INCHES)	LENGTH (LF)	SLOPE (%)	U.S. INVERT	D.S. INVERT	MATERIAL
DI-1	CB-1	12	94	1.38	3.11	1.81	RCP (CLASS II)
CB-1	Ex. DI (SE)	12	123	0.32	1.81	1.42	RCP (CLASS III)
Ex. DI (PARKING LOT)	Ex. DI (SE)	15	64	0.50	1.40	1.08	RCP (CLASS IV)
Ex. DI (SE)	Ex. CB (SE)	15	16	1.00	1.08	0.92	RCP (CLASS IV)
Ex. CB (SE)	Ex. CB (NE)	18	42	1.21	0.92	0.41	RCP (CLASS IV)
Ex. CB (NE)	Ex. DI (NE)	18	18	1.22	0.41	0.19	RCP (CLASS IV)
Ex. DI (NE)	Ex. SDMH (NE)	18	27	1.22	0.19	-0.14	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.



DRAINAGE AREA MAP (OFF-SITE INLETS) - SCALE: 1"=40'



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

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 _____

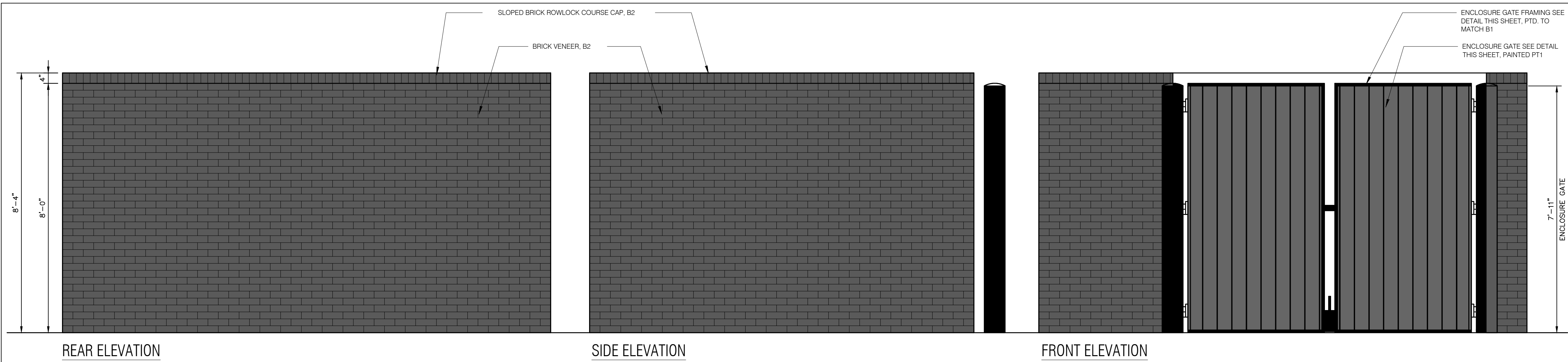
ROOF DOWNSPOUT PIPING, SUBGRADE GRADING, & DRAINAGE AREA MAP
GREENFIELD COMMERCIAL
 WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

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

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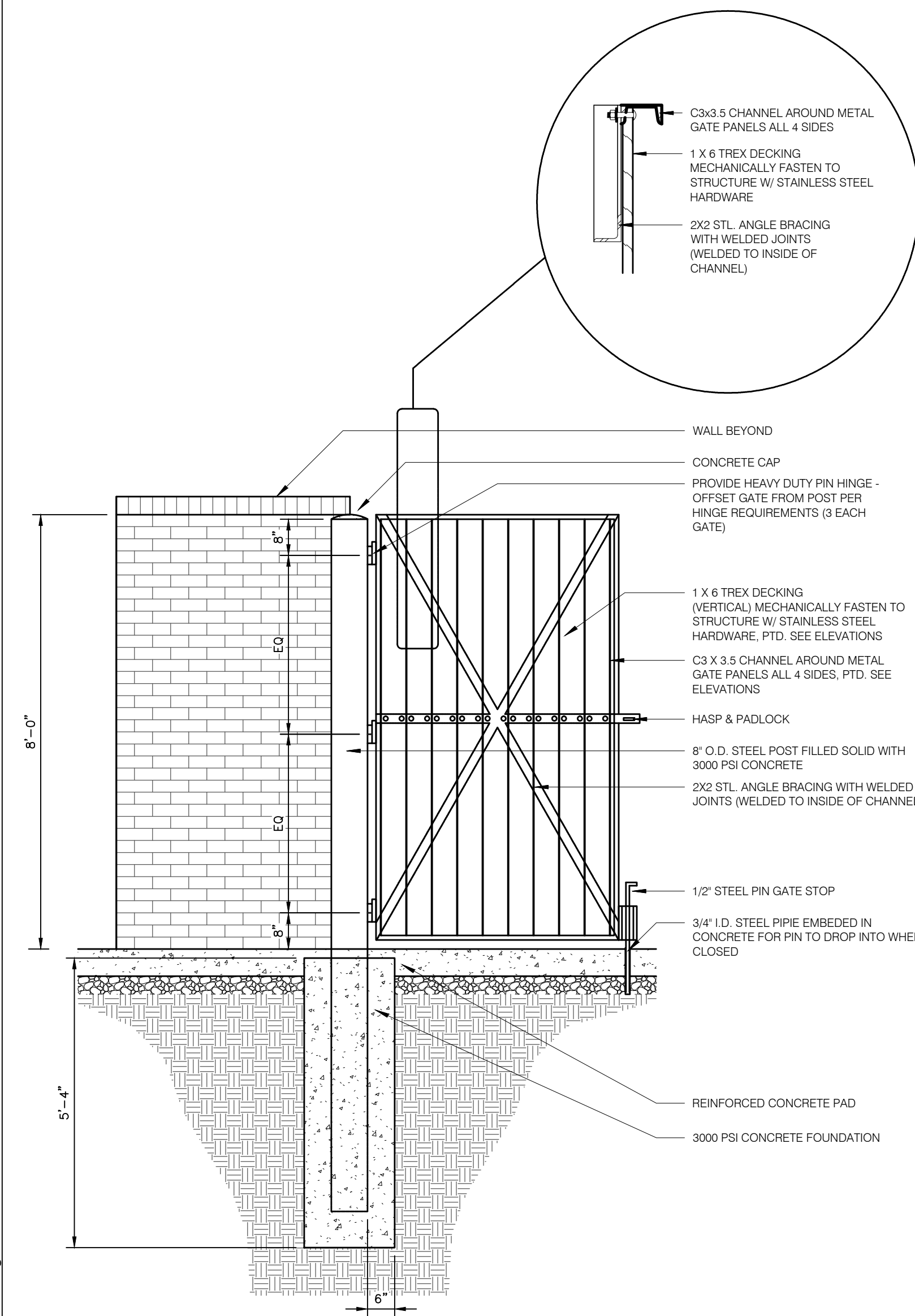
REAR ELEVATION

SIDE ELEVATION

FRONT ELEVATION

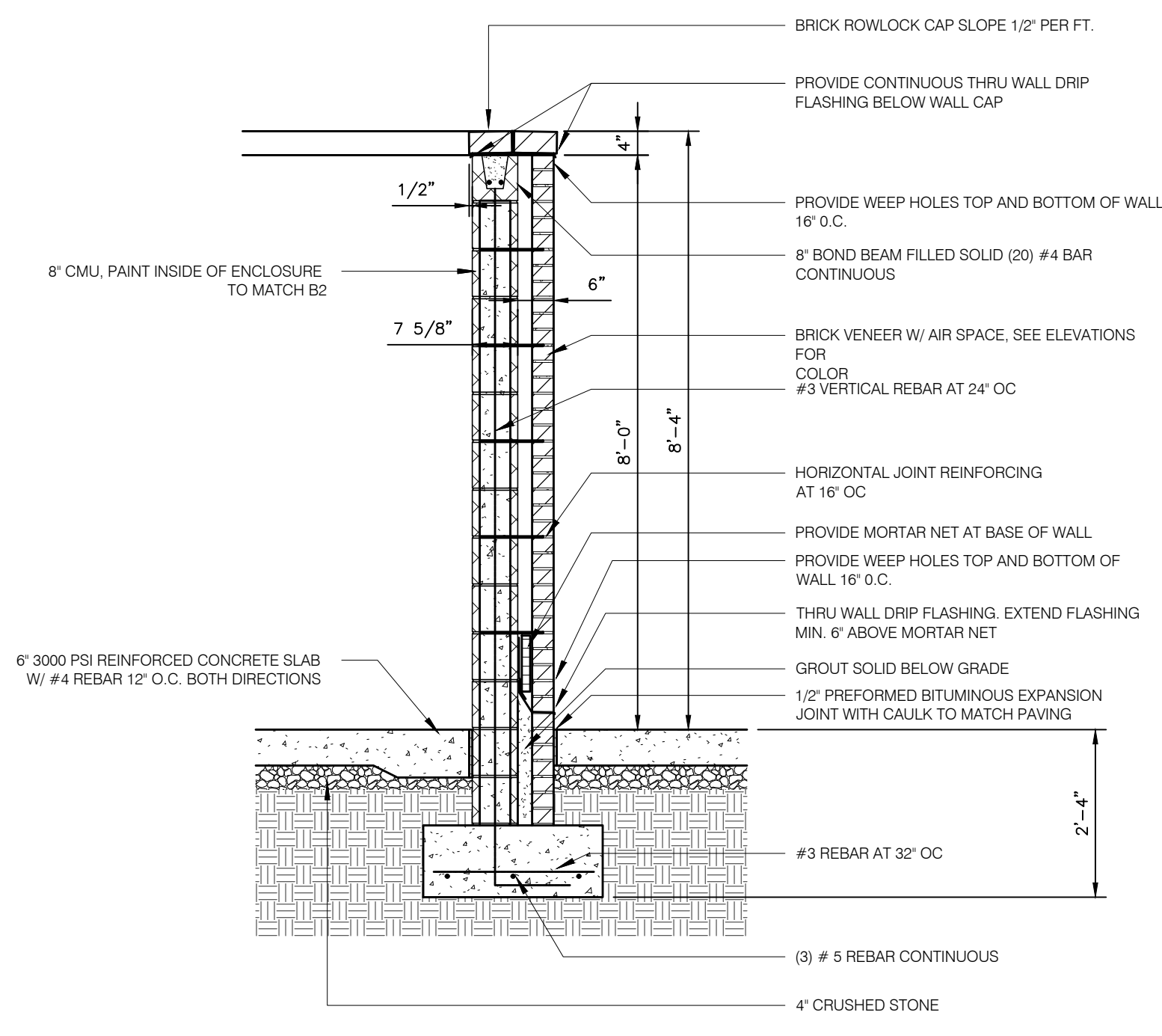
DUMPSTER ENCLOSURE ELEVATIONS DETAIL

NOT TO SCALE



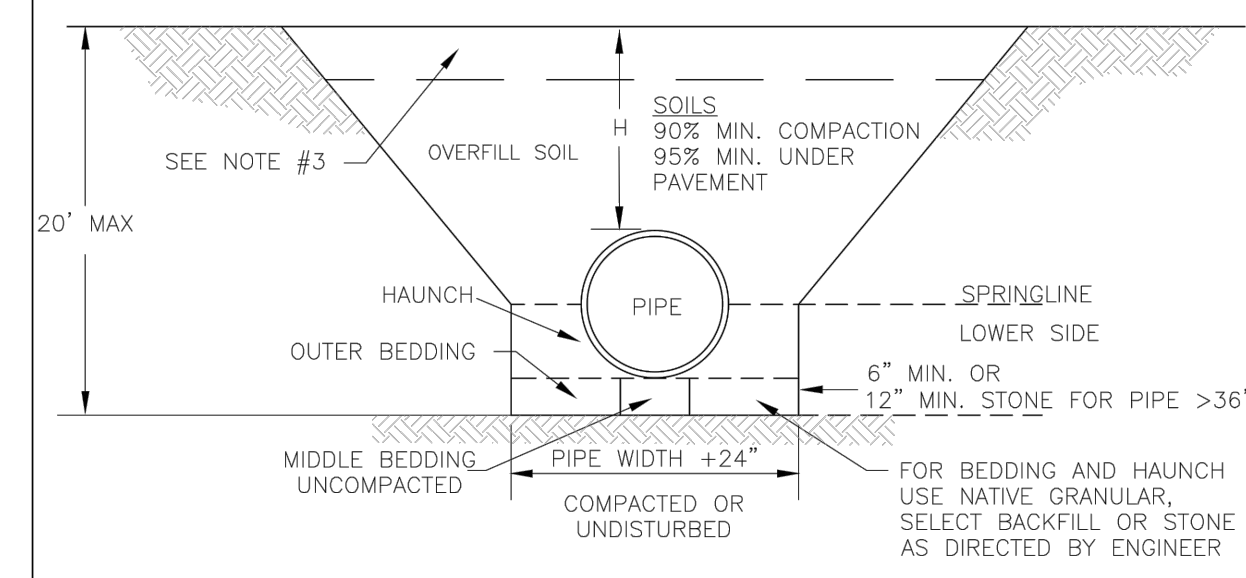
DUMPSTER ENCLOSURE GATE DETAIL

NOT TO SCALE



SECTION @ ENCLOSURE WALL DETAIL

NOT TO SCALE



- NOTES:
1. CONTRACTOR SHALL ENSURE BOTTOM OF TRENCH IS SUITABLE FOR PIPE INSTALLATION AND DOES NOT REQUIRE FOUNDATION CONDITIONING STONE.
 2. CONTRACTOR TO INSTALL BEDDING AND PIPE BEFORE INSTALLING HAUNCH AND THEN OVERFILL SOILS SHALL BE INSTALLED IN 6"-8" LIFTS AND COMPACTED TO MIN. % DENSITY AS DETERMINED BY THE STANDARD PROCTOR ASTM D-698-A METHOD.
 3. WHERE IN PAVEMENT, CONTRACTOR SHALL ADHERE TO CITY STREET CUT POLICY AND SD 1-04 OR SD 1-05 FOR ROAD AND PAVEMENT REBUILD.
 4. SOIL SHALL BE COMPACTED BY A MECHANIZED TAMP (I.E. JUMPING JACK). HOWEVER, VIBRATORY ROLLERS > 18" WIDTH MAY BE USED FOR LARGER EXCAVATIONS. THE PLATE TAMP METHOD SHALL NOT BE USED.
 5. THIS DETAIL IS REPRESENTATIVE AND PIPE TRENCH DESIGN IS SUBJECT TO SPECIFIC SOIL CATEGORY (I, II, III), AND INSTALLATION TYPE (1, 2, 3, 4), AS DIRECTED BY THE ENGINEER AND SITE CONDITIONS.

DATE: MAY, 2013	STANDARD DETAIL	<p>CITY OF WILMINGTON ENGINEERING OFFICE 212 OPERATIONS CENTER DRIVE WILMINGTON, N.C. 28412 (910) 341-7807</p>
DRAWN: JSR	PIPE TRENCH TYPICAL	
CHECKED: BDR, P.E.		
SCALE: NOT TO SCALE		

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Public Services • Engineering Division

 APPROVED STORMWATER MANAGEMENT PLAN

 Date: _____ Permit # _____

 Signed: _____

Approved Construction Plan		
Name	Date	
Planning		
Traffic		
Fire		

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

REV. NO.	DESCRIPTION	DATE

DETAIL SHEET GREENFIELD COMMERCIAL WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA	DATE: 5-24-17 SCALE: N.T.S. DRAWN: JCB CHECKED: JBM PROJECT NO: 274
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	SHEET NO: 9 OF: 18

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

1-12

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

2" WEEP HOLES

PLAN

WITH GRATE & FRAME REMOVED

GENERAL NOTES:
 USE CLASS "B" CONCRETE THROUGHOUT.
 PROVIDE ALL DROP INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
 OPTIONAL CONSTRUCTION - MONOLITHIC POUR 2" KEYWAY OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
 USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
 IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
 CONSTRUCT WITH PIPE CROWNS MATCHING.
 SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.
 INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.
 INSTALL STONE DRAINS OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER. CHAMFER ALL EXPOSED CORNERS 1".
 DRAWING NOT TO SCALE.

SECTION X-X

SECTION Y-Y

MAX. PIPE THIS SIDE - 18"

DOWEL (SEE NOTE)

#4 BAR

DOWEL

DIMENSIONS AND QUANTITIES FOR DROP INLET (BASED ON MIN. HEIGHT, H)				CUBIC YARDS		DEDUCTIONS FOR ONE PIPE		
PIPE	SPAN	WIDTH	MIN. HEIGHT	BOTTOM SLAB	WALL PER FT. HT.	TOTAL CONCRETE FOR MINIMUM HEIGHT	C.M.	R.C.
12"	3'-0"	2'-0"	2'-0"	0.222	0.222	0.592	0.015	0.026
15"	/	/	2'-3"	/	/	0.648	0.023	0.036
18"	/	/	2'-6"	/	/	0.703	0.033	0.049
24"	3'-0"	3'-0"	3'-0"	0.814	0.814	0.814	0.059	0.085
30"	3'-0"	2'-0"	3'-6"	0.222	0.222	0.925	0.092	0.127

SHEET 1 OF 1

840.14

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

1-12

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

BRICK MASONRY CONSTRUCTION

CONCRETE CONSTRUCTION

PRECAST CONCRETE CONSTRUCTION

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

NOTE:
 CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.

MASONRY ANCHOR

CONCRETE ANCHOR

PRECAST CONCRETE ANCHOR

3/8" DIA. BOLT WITH PLATE

3/8" DIA. BENT BAR

3/8" DIA. BENT BAR

FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS

SHEET 1 OF 1

840.25

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

1-12

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

SECTION G-G

1" DEPRESSION

PLAN OF GRATING

CAST IRON

PLAN OF FRAME

CAST IRON

SECTION E-E

SECTION F-F

SECTION H-H

SHEET 1 OF 1

840.16

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

1-12

ENGLISH STANDARD DRAWING FOR DRAINAGE STRUCTURE STEPS

NOTE:
 INSTALL ALL STEPS PROTRUDING 4" FROM INSIDE FACE OF STRUCTURE WALL.
 STEPS DIFFERING IN DIMENSIONS, CONFIGURATION, OR MATERIALS FROM THOSE SHOWN MAY ALSO BE USED PROVIDED THE CONTRACTOR HAS FURNISHED THE ENGINEER WITH DETAILS OF THE PROPOSED STEPS AND HAS RECEIVED WRITTEN APPROVAL FROM THE ENGINEER FOR THE USE OF SUCH STEPS.

PLAN

SIDE ELEVATION

CAST IRON

PLAN

SIDE ELEVATION

COMPOSITE

POLYPROPYLENE PLASTIC

#3 DEFORMED STEEL ROD

PLAN

SIDE ELEVATION

REINFORCING STEEL

NOTE:
 DO NOT USE IN SANITARY SEWER MANHOLES.

SHEET 1 OF 1

840.66

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City of 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 TO SWITCH DETAILS.	6-7-17

DETAIL SHEET

GREENFIELD COMMERCIAL

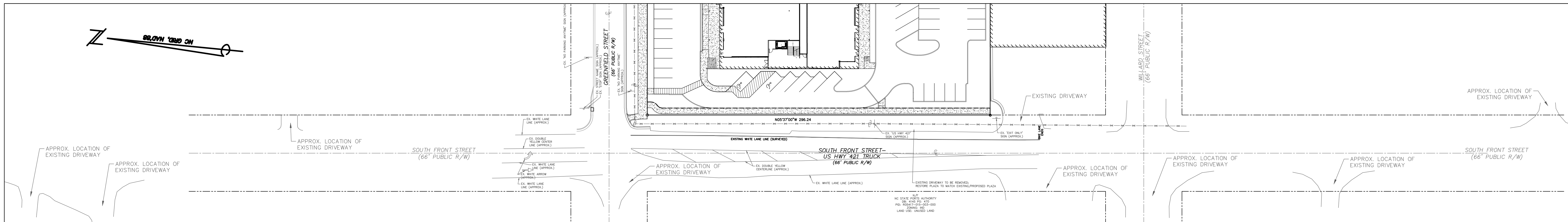
WILMINGTON TOWNSHIP NEW HANOVER COUNTY NORTH CAROLINA

MALPASS ENGINEERING & SURVEYING, P.C.
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 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

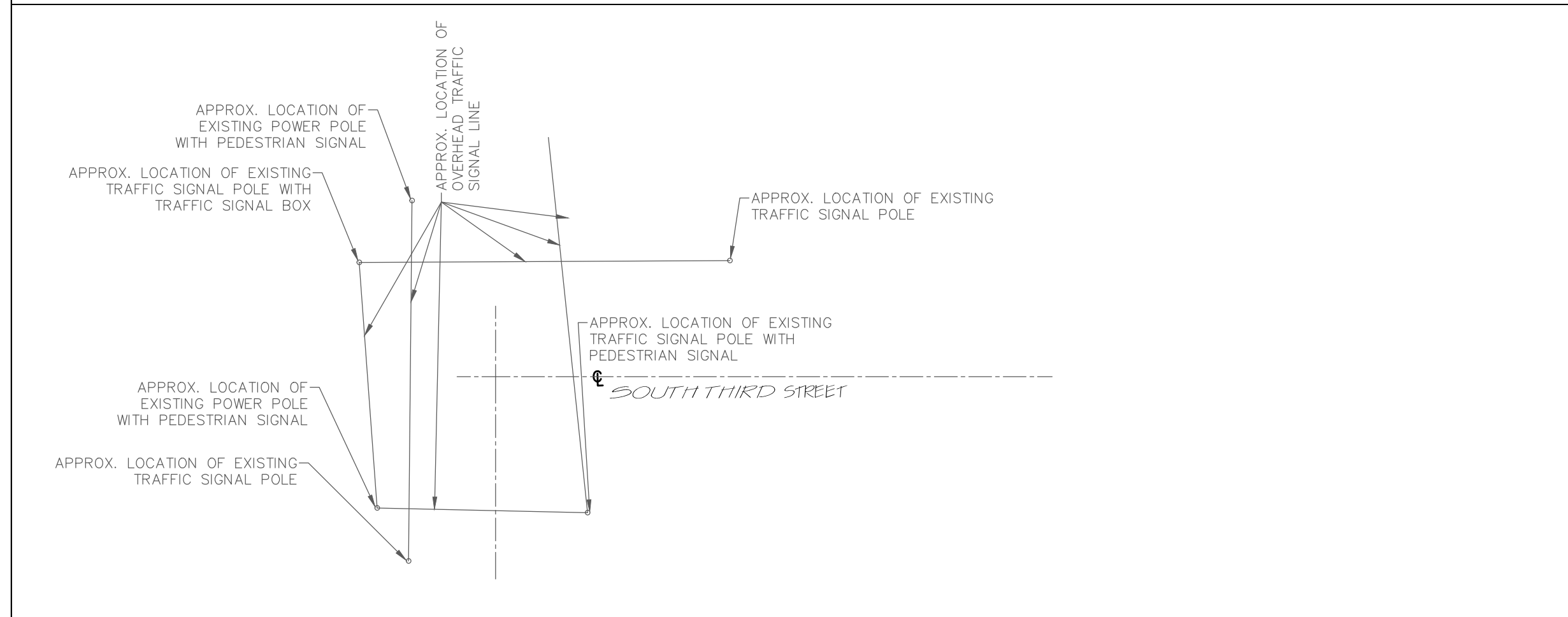
SHEET NO: 11
 OF: 18



NOTE: DRIVEWAYS TRACED FROM NHC GIS 2010 AERIAL.

DRIVEWAYS WITHIN 500' OF SITE ALONG SOUTH FRONT STREET

SCALE: 1"=40'



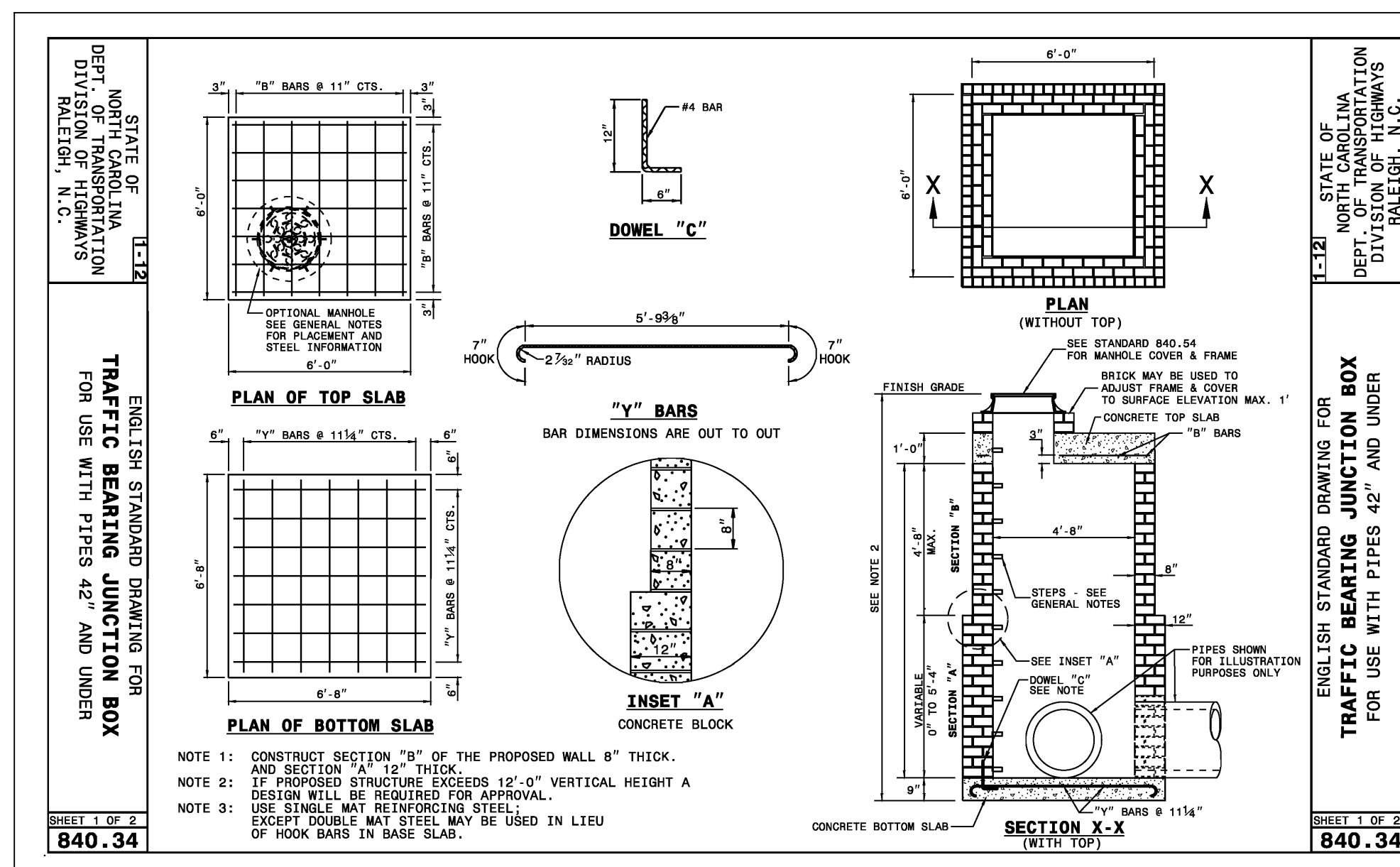
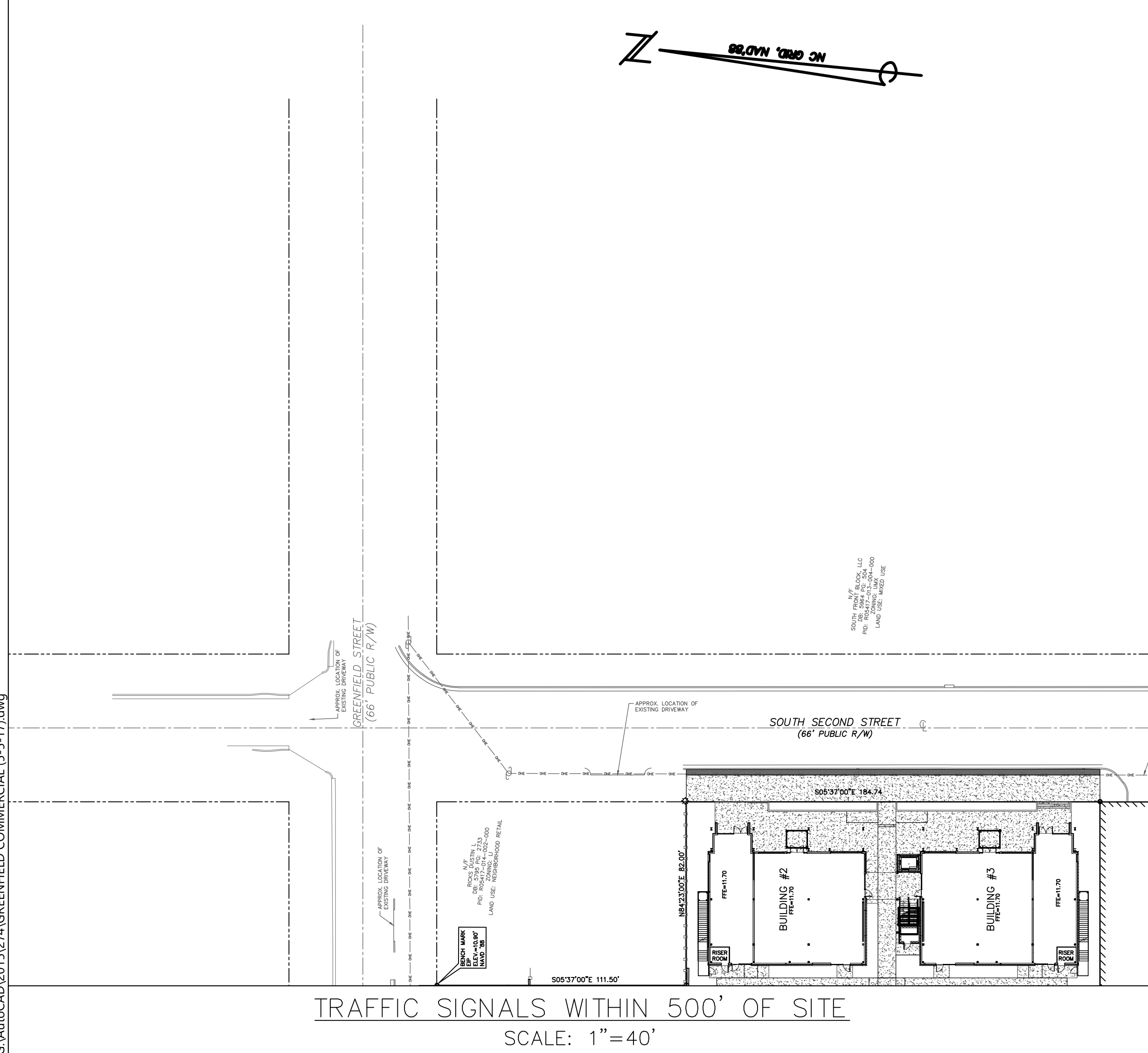
TRAFFIC SIGNALS WITHIN 500' OF SITE

SCALE: 1"=40'



DRIVEWAYS ALONG SOUTH SECOND STREET

SCALE: 1"=30'



NOTE 1: CONSTRUCT SECTION "B" OF THE PROPOSED WALL 8" THICK, AND SECTION "A" 12" THICK.
 NOTE 2: IF PROPOSED STRUCTURE EXCEEDS 12'-0" VERTICAL HEIGHT A DESIGN WILL BE REQUIRED FOR APPROVAL.
 NOTE 3: USE SINGLE MAT REINFORCING STEEL EXCEPT DOUBLE MAT STEEL MAY BE USED IN LIEU OF HOOK BARS IN BASE SLAB.

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

ENGLISH STANDARD DRAWING FOR TRAFFIC BEARING JUNCTION BOX FOR USE WITH PIPES 42" AND UNDER

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

ENGLISH STANDARD DRAWING FOR TRAFFIC BEARING JUNCTION BOX FOR USE WITH PIPES 42" AND UNDER

GENERAL NOTES:
 USE STANDARD OR JUMBO BRICK FOR WALL CONSTRUCTION. SOLID CONCRETE BRICK OR BLOCK ARE OPTIONAL WALL CONSTRUCTION MATERIAL.
 PRECAST UNITS MADE OF CLASS "AA" CONCRETE MAY BE USED IN LIEU OF BRICK MASONRY CONSTRUCTION. SUBMIT DESIGN OF PRECAST UNITS FOR APPROVAL PRIOR TO CONSTRUCTION.
 INCLUDE ALL ADJUSTMENTS TO WALLS, SLABS OR REINFORCING MATERIAL IN THE UNIT PRICE BID FOR EACH UNIT.
 INSTALL OPTIONAL MANHOLE IN POSITION AS DIRECTED BY THE ENGINEER. CUT OR BEND ALL REBAR CROSSING THIS OPENING TO ALLOW 2" MINIMUM CONCRETE COVERAGE. ENCLOSE THE OPENING WITH 8 "A" BARS TIED TO THE REBAR MAT AND SET SO A MINIMUM OF 3" CONCRETE COVER IS ATTAINED. REFERENCE STD. NO. 840.54 FOR MANHOLE INFORMATION.
 PROVIDE JUNCTION BOXES WITH MANHOLES OVER 3'-6" IN DEPTH WITH STEPS PLACED ON 12" CENTERS. REFERENCE STD. NO. 840.66.
 MAXIMUM DEPTH OF THIS UNIT AS SHOWN IS 12".
 CONSTRUCT THE JUNCTION BOX IN ACCORDANCE WITH SECTIONS 830, 832, 834 AND 840 OF THE STANDARD SPECIFICATIONS.

BAR	QTY	SIZE	LENGTH	WEIGHT
A	8	#5	1'-0"	9.7
B	14	#5	5'-6"	82.9
C	28	#3	1'-0"	26.1
Y	14	#5	10'-11 1/2"	101.5
STEEL TOTAL WEIGHT				137.6
CONC.	YIELD	CLASS "AA" CONC.	2.8	
CONC.	YIELD	BRICK/FT. HT. (8")	0.63	
CONC.	YIELD	BRICK/FT. HT. (12")	0.84	

840.34

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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 _____

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

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

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: 12 OF 18

REV. NO.	DESCRIPTION	DATE
1	REVISED PER CLIENT.	4-7-17
2	REVISED PER TRC COMMENTS.	5-24-17