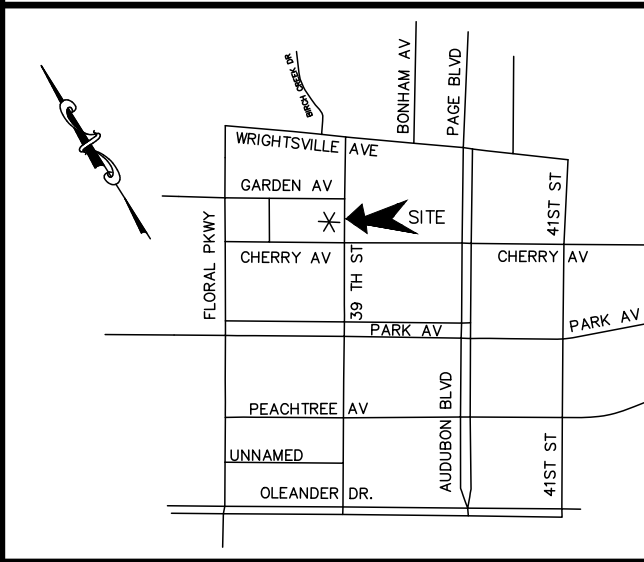


LOCATION MAP
NOT TO SCALE



RECEIVED
By waltonj at 12:19 pm, Jul 29, 2021

CONSTRUCTION DRAWINGS for
FLITWICK FLATS
LOCATED IN CITY OF WILMINGTON
NEW HANOVER COUNTY, NORTH CAROLINA

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

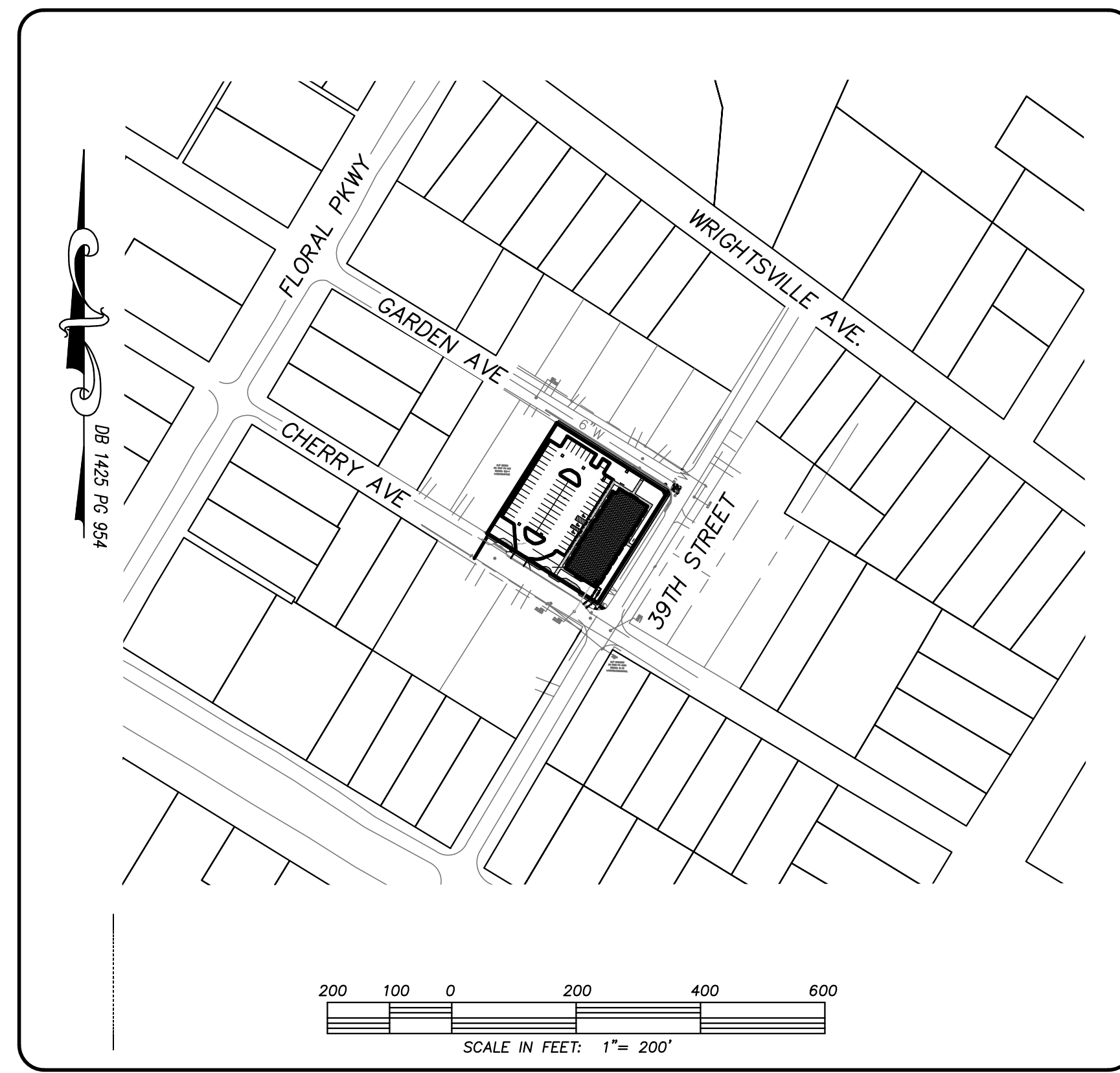
Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____

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

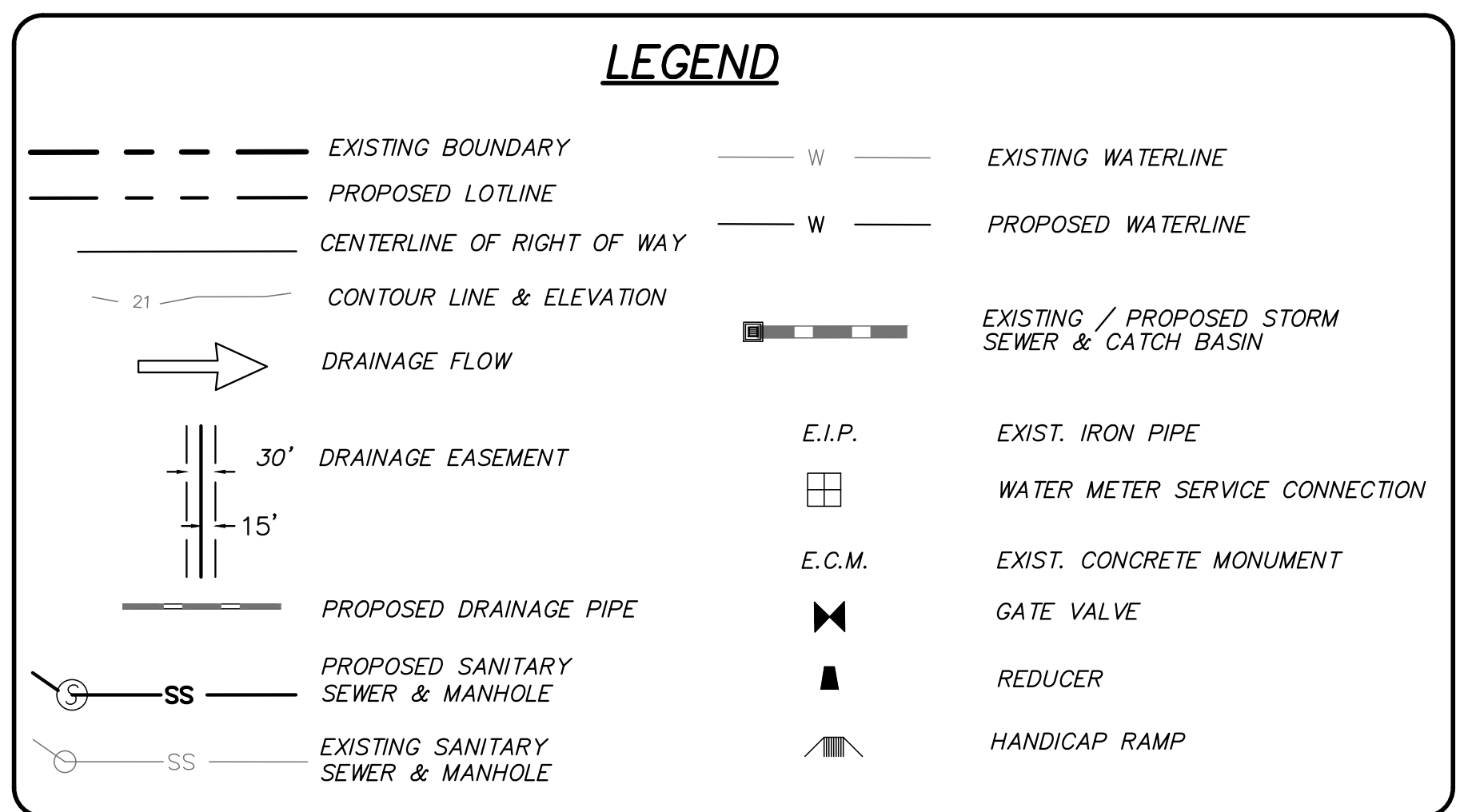
CSD ENGINEERING
LICENSE # C-2710
ENGINEERING
LAND PLANNING
COMMERCIAL / RESIDENTIAL
P.O. BOX 4041
WILMINGTON, NC 28406
(910) 791-4441

- GENERAL NOTES:**
1. NEW HANOVER COUNTY PARCEL NUMBERS: PID = R04809-037-011-000
 2. TOTAL PROJECT AREA: 44,100 (1.01 AC.)
 3. EXISTING ZONING DISTRICT: O&I-1
 4. CAMA LAND CLASSIFICATION: URBAN
 5. THIS SITE IS LOCATED WITHIN ZONE "X" ACCORDING TO FEMA FIRM COMMUNITY PANEL NUMBER 3720311800L, EFFECTIVE DATE 8/28/18
 6. SITE ADDRESS: 3807 CHERRY AVE.
 7. EXISTING IMPERVIOUS ONSITE = 0.0 SF
 8. AS-BUILT, BOUNDARY AND TOPOGRAPHIC SURVEY PERFORMED AND PROVIDED TO CSD ENGINEERING BY MICHAEL UNDERWOOD AND ASSOCIATES; VERTICAL DATUM = 88
 9. STORMWATER DRAINS TO BURNT MILL CREEK, C, SW 18-74-63-2
LAND OWNER - REMARKABLE PROPERTIES, LLC
10 S. CARDINAL DRIVE
WILMINGTON, NC 28403

- WATER & SEWER USAGE NOTES:**
- CURRENT WATER USAGE 0 GPD PROPOSED WATER USAGE 11,140 GPD
CURRENT SEWER USAGE 0 GPD PROPOSED SEWER USAGE 11,140 GPD
WATER - 46 (1) BEDROOM X 240 GPD = 11,040 GPD
COMMERCIAL 4 EMPLOYEES X 25 GAL/SHIFT = 100 GPD
SEWER - 46 (1) BEDROOMS X 240 GPD = 11,040 GPD
COMMERCIAL 4 EMPLOYEES X 25 GAL/SHIFT = 100 GPD



- NOTES:**
1. ASBUILT, BOUNDARY AND TOPOGRAPHIC SURVEY PERFORMED AND PROVIDED TO CSD ENGINEERING BY MICHAEL UNDERWOOD AND ASSOCIATES
 2. THIS MAP IS NOT FOR CONVEYANCE, RECORDATION, OR SALES.
 3. THIS PROPERTY IS LOCATED WITHIN ZONE "X" ACCORDING TO THE FEMA FLOOD INSURANCE RATE MAP, 3720311800L, EFFECTIVE DATE 8/28/18
 4. THIS PROPERTY IS ZONED O&I-1
 5. CFPWA WATER
 6. CFPWA SEWER
 7. ALL CONSTRUCTION TO CONFORM TO NEW HANOVER COUNTY STANDARDS AND APPLICABLE STATE & LOCAL CODES.
 8. CONTRACTOR TO COORDINATE ANY REQUIRED TRAFFIC CONTROL WITH CITY OF WILMINGTON AND OR NCDOT.
 9. CARE SHALL BE TAKEN DURING FINAL GRADING TO ENSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND TO RECEIVING STRUCTURES. ROOF DRAIN DOWNSPOUTS TO BE CONNECTED TO STORM DRAINAGE STUBOUTS OR DIRECTED TO STREET/PARKING AREAS.
 10. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ANY RELOCATIONS, RE-ALIGNMENTS, DISCONNECTIONS OR CONNECTIONS OF EXISTING UTILITIES WITH APPLICABLE AUTHORITIES.
 11. CLEARING AND GRUBBING OF SITE TO INCLUDE REMOVAL OF EXISTING CURB, ASPHALT, INLETS, AND ANY OTHER STRUCTURES INCLUDING TREES, STUMPS AND DEBRIS EXISTING ON SITE. TREES NOT REQUIRED TO BE CLEARED FOR CONSTRUCTION SHALL REMAIN UNLESS OTHERWISE DIRECTED.
 12. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT ELEVATIONS AND LOCATIONS OF ALL EXISTING UTILITIES AT ALL CROSSINGS PRIOR TO COMMENCING TRENCH EXCAVATION. IF ACTUAL CLEARANCES ARE LESS THAN INDICATED ON PLAN, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION. ANY CONDITION DISCOVERED OR EXISTING THAT WOULD NECESSITATE A MODIFICATION OF THESE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.
 13. NO CONSTRUCTION IS TO BEGIN BEFORE LOCATION OF EXISTING UTILITIES HAS BEEN DETERMINED. CALL "NC ONE-CALL" AT LEAST 48 HOURS BEFORE COMMENCING CONSTRUCTION.
 14. CONTRACTOR SHALL ADJUST ALL MANHOLES, VALVE & CURB BOXES TO FINAL GRADE UPON COMPLETION OF ALL CONSTRUCTION. ANY BOXES DAMAGED OR OTHERWISE DISTURBED BY THE CONTRACTOR SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.
 15. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST AND EROSION DURING CONSTRUCTION AT HIS EXPENSE. PARKING AREAS SHALL BE WATERED TO CONTROL DUST WHEN ORDERED BY THE ENGINEER.
 16. NO GEOTECHNICAL TESTING HAS BEEN PERFORMED ON SITE. NO WARRANTY IS MADE FOR SUITABILITY OF SUBGRADE, AND UNDERCUT AND ANY REQUIRED REPLACEMENT WITH SUITABLE MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
 17. CONTRACTOR TO ENSURE THAT PAVEMENT IS PLACED SO AS TO DRAIN POSITIVELY TO THE STREET INLETS AND CATCH BASINS. ALL FUTURE ROOF DRAIN DOWNSPOUTS TO BE DIRECTED TO THE STORM DRAINAGE STUBOUTS.
 18. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS.
 19. THIS PLAN IS FOR SITE GRADING, UTILITIES, SITING, AND DRAINAGE ONLY. SEE BUILDING PLANS FOR DETAILED HOOKUPS TO BUILDINGS, ETC.
 20. CONTRACTOR AND BUILDER ARE RESPONSIBLE FOR COORDINATING FINISHED FLOOR ELEVATION OF ALL BUILDINGS WITH THE OWNER. ELEVATIONS GIVEN ARE MINIMUM GROUND ELEVATIONS AT THE BUILDING SITE AND DO NOT PURPORT TO BE FINISHED FLOOR. MINIMUM RECOMMENDED FF ELEVATIONS SHOWN ON PLANS.
 21. AFFECTED NON-MUNICIPAL UTILITIES SHALL BE CONTACTED AND PROVIDED WITH PLANS AND OTHER PERTINENT INFORMATION, WHEN FEASIBLE, TO COORDINATE APPROPRIATE SCHEDULING AND PLACEMENT.
 22. EXTREME CARE SHALL BE TAKEN TO ENSURE MINIMUM SEPARATIONS AT ALL UTILITY CROSSINGS.
 23. MINIMUM SEPARATION SHALL BE MAINTAINED AS FOLLOWS:
 - a. HORIZONTAL SEPARATION OF 10 FEET BETWEEN SANITARY SEWER AND WATER MAINS AND STORM SEWER.
 - b. WHERE VERTICAL CLEARANCE IS LESS THAN 24" BETWEEN SANITARY SEWER AND WATER OR WHERE SEWER LINE CROSSES ABOVE WATER MAIN, BOTH PIPES SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10' EITHER SIDE OF CROSSING.
 - c. WHERE VERTICAL CLEARANCE IS LESS THAN 24" BETWEEN SANITARY SEWER AND STORM DRAIN, SANITARY SEWER SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10 FEET EITHER SIDE OF CROSSING.
 - d. WHERE VERTICAL CLEARANCE IS LESS THAN 12" BETWEEN SANITARY SEWER AND STORM DRAIN, SANITARY SEWER SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10' EITHER SIDE OF CROSSING, AND BRIDGING SHALL BE INSTALLED PER APPLICABLE UTILITY AUTHORITY'S DETAILS.
 - e. IN NO CASE SHALL THERE BE LESS THAN 18" OF SEPARATION BETWEEN OUTSIDE OF WATER MAIN AND OUTSIDE OF SEWER OR STORM DRAINAGE.
 - f. MINIMUM COVER OF 36" SHALL BE PROVIDED FOR ALL BURIED WATER MAINS AND SANITARY SEWER MAINS.
 24. SEE DETAIL SHEETS FOR TYPICAL UTILITIES HOOKUPS.
 25. ALL SANITARY SEWER MAINS TO BE 8" UNLESS OTHERWISE INDICATED.
 26. ALL WATER MAINS TO BE 8" UNLESS OTHERWISE INDICATED.
 27. TWO VALVES ARE REQUIRED AT "T" INTERSECTIONS AND ONE VALVE ON THE WATER LINE TO FIRE HYDRANTS.
 28. A BLOW-OFF VALVE IS REQUIRED AT THE TERMINUS OF ALL "DEAD END" WATER LINES.



OWNER:
REMARKABLE PROPERTIES, LLC
10 S. CARDINAL DRIVE
WILMINGTON, NC 28403

INDEX TO DRAWINGS

SHEET No.	DESCRIPTION	DRAWING No.
1 OF 8	COVER SHEET	CD_COVER
2 OF 8	EXISTING BOUNDARY AND TOPOGRAPHY, ADJACENT TRAFFIC	CD_EX-COND
3 OF 8	SITE PLAN	SITE_PLAN
4 OF 8	CITY OF WILMINGTON CONSTRUCTION DETAILS	SP_DET-1
5 OF 8	CITY OF WILMINGTON CONSTRUCTION DETAILS	SP_DET-2
6 OF 8	GRADING PLAN	GP
7 OF 8	CFPUA DETAILS	CFPUA_DET_1
8 OF 8	CFPUA DETAILS	CFPUA_DET_2
EC1 OF EC4	STORMWATER & EROSION CONTROL PLANS	EC1
EC2 OF EC4	STORMWATER & EROSION CONTROL PLANS	EC2
EC3 OF EC4	STORMWATER & EROSION CONTROL PLANS	EC3
EC4 OF EC4	STORMWATER & EROSION CONTROL PLANS	EC4
DA1 OF DA1	DRAINAGE AREAS	DA

COVER SHEET
FLITWICK FLATS

COVER SHEET for
FLITWICK FLATS
LOCATED IN CITY OF WILMINGTON
NEW HANOVER COUNTY, NORTH CAROLINA
OWNER: REMARKABLE PROPERTIES, LLC
10 S. CARDINAL DRIVE
WILMINGTON, NC 28403

REV.	NO.	DATE	BY	REMARKS
1	1	7-29-21	RLW	PLOTTED FOR CITY SIGNATURES
2	2	10-14-19	MRB	PLOTTED FOR CITY SIGNATURES
3	3	10-14-19	RLW	REVISION PER IRC COMMENTS, CHANGED SHEET NUMBERS

DATE: 7-9-19
HORZ. SCALE: 1" = 20'
VERT. SCALE: N/A
DRAWN BY: RLW
CHECKED BY: HSR
PROJECT NO.: 05-0083
Sheet No. **1** of **8**



Point Table		Point Table		Point Table	
Point #	Raw Description	Point #	Raw Description	Point #	Raw Description
80	18" GUM	111	8" SYCAMORE	141	15" GUM
81	12" LAUREL	112	9" SYCAMORE	142	13" GUM
82	12" GUM	113	8" SYCAMORE	143	16" WALNUT
83	20" GUM	114	20" SYCAMORE	144	9" GUM
84	18" GUM	115	18" PINE	145	9" PECAN
85	14" PINE	116*	13" PINE	146	12" PECAN
86	14" PINE	117*	13" PINE	147	12" WALNUT
87	11" GUM	118	15" PINE	148	16" GUM
88	10" GUM	119	8" GUM	149	11" GUM
89	12" GUM	120	8" GUM	150	12" GUM
90	17" GUM	121	16" PINE	151	18" GUM
91	16" GUM	122	10" LAUREL	152	14" PINE
92	20" PINE	123	12" PINE	153	18" PINE
93	12" PINE	124	9" WALNUT	154	13" PECAN
94	18" PINE	125	22" PINE	155	18" PINE
95	15" OAK	126	13" GUM	156	10" PECAN
96	12" GUM	127	10" GUM	157	8" OAK
97	18" MAGNOLIA	128	18" WALNUT	162	13" PINE
98	11" GUM	129	12" GUM	163	22" PINE
99	13" MAGNOLIA	130	15" WALNUT	164*	18" PINE
100	16" GUM	131	16" GUM	167	18" PINE
101	20" PINE	132	11" GUM	174	12" WALNUT
102	18" PINE	133	20" GUM	175	8" WALNUT
103	14" PINE	134	19" GUM	176*	13" WALNUT
104	23" PINE	135	10" WALNUT	180	20" SYCAMORE
105	6" MAGNOLIA	136	12" WALNUT		
106	6" MAGNOLIA	137	12" WALNUT		
107	12" OAK	138	16" WALNUT		
109	8" LAUREL	139	13" GUM		
110	11" SYCAMORE	140	19" WALNUT		

* = STORM DAMAGED TREE

Point Table	
Point #	Raw Description
108	20' SYCAMORE
158	9" OAK
159	9" OAK
160	29" GUM
161	15" WALNUT
165	20" PINE
166	18" PINE
168	9" GUM
169	9" GUM
170	8" GUM
171	19" SYCAMORE
172	20" SYCAMORE
177	15" GUM
179	12" GUM

× TREES SCHEDULED FOR REMOVAL

● TREES TO BE SAVED

CSD ENGINEERING
LICENSE # C-2710
ENGINEERING
LAND PLANNING
COMMERCIAL / RESIDENTIAL
P.O. BOX 4041
WILMINGTON, NC 28406
(910) 791-4441

EX. CONDITIONS / SITE INVENTORY
FUTWICK FLATS

EXISTING CONDITIONS / SITE INVENTORY
FUTWICK FLATS
LOCATED IN CITY OF WILMINGTON
NEW HANOVER COUNTY, NORTH CAROLINA
OWNER: NEW HANOVER 39TH STREET LLC
106 FOSTER AVE
CHARLOTTE, NC 28203



REV.	NO.	DATE	BY	REMARKS
8				
7				
6				
5				
4				
3				
2				
1				

DATE: 3-21-19
HORIZ. SCALE: AS NOTED
VERT. SCALE: N/A
DRAWN BY: RLW
CHECKED BY: HSR
PROJECT NO.: 05-0083

Approved Construction Plan

Name: _____ Date: _____

Planning: _____

Traffic: _____

Fire: _____

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

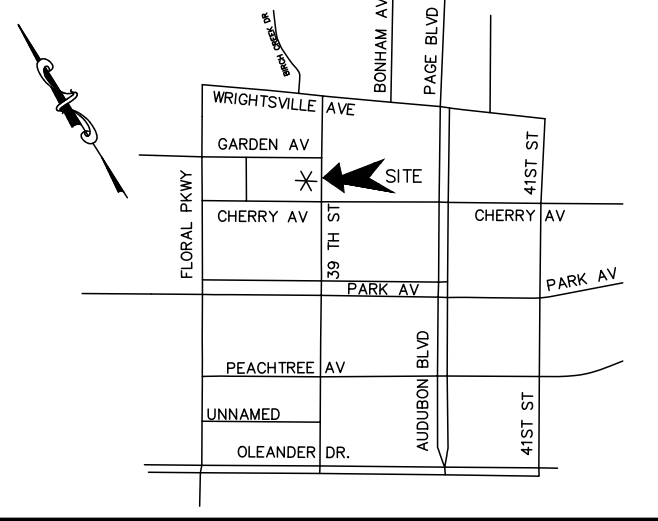
Date: _____ Permit # _____

Signed: _____

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

LOCATION MAP

NOT TO SCALE



Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____

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

Date: _____ Permit # _____

Signed: _____

GENERAL NOTES:

- NEW HANOVER COUNTY PARCEL NUMBERS:
PID = R04809-037-011-000
- TOTAL PROJECT AREA: 44,100 (1.01 AC.)
- EXISTING ZONING DISTRICT: O&J-1
- CAMA LAND CLASSIFICATION: URBAN
- THIS SITE IS LOCATED WITHIN ZONE "X" ACCORDING TO FEMA FIRM COMMUNITY PANEL NUMBER 3720311800L, EFFECTIVE DATE 8/28/18
- SITE ADDRESS: 3807 CHERRY AVE.
- EXISTING IMPERVIOUS ON SITE = 0.0 SF
- AS-BUILT, BOUNDARY AND TOPOGRAPHIC SURVEY PERFORMED AND PROVIDED TO CSD ENGINEERING BY MICHAEL UNDERWOOD AND ASSOCIATES: VERTICAL DATUM = 88
- STORMWATER DRAINS TO BURNT MILL CREEK, C/SW 18-74-63-2
- LAND OWNER - REMARKABLE PROPERTIES, LLC
10 S. CARDINAL DRIVE
WILMINGTON, NC 28403

WATER & SEWER USAGE NOTES:

CURRENT WATER USAGE 0 GPD PROPOSED WATER USAGE 11,140 GPD
CURRENT SEWER USAGE 0 GPD PROPOSED SEWER USAGE 11,140 GPD

WATER - 46 (1) BEDROOM X 240 GPD = 11,040 GPD
COMMERCIAL 4 EMPLOYEES X 25 GAL/SHIFT = 100 GPD

SEWER - 46 (1) BEDROOM X 240 GPD = 11,040 GPD
COMMERCIAL 4 EMPLOYEES X 25 GAL/SHIFT = 100 GPD

SITE & BUILDING DATA:

TOTAL LOT AREA = 44,100 SF (1.01 AC.)
PROPERTY ADDRESS IS 3807 CHERRY AVE.
PID = R05514-013-004-000

EXISTING ON-SITE DATA:
EXISTING BUILDINGS ON SITE = 0 SF
EXISTING ASPHALT = 0 SF
TOTAL = 0 SF

EXISTING OR IMPERVIOUS:
PROPOSED IMPERVIOUS:
PROPOSED BUILDINGS = 9,236 SF
PROPOSED ASPHALT = 20,022 SF
PROPOSED SIDEWALK = 1,692 SF
TOTAL = 30,950 SF

30,950 / 44,100 = 0.702 or 70% IMPERVIOUS

SOILS ON-SITE: JO (JOHNSTON), SH (SEAGATE-URBAN)
JO - SCS SOIL GROUP "A/D" PER USDA SOIL SURVEY WEBSITE
SH - SCS SOIL GROUP "B" PER USDA SOIL SURVEY WEBSITE

PROPOSED IMPERVIOUS OFFSITE:
SIDEWALKS = 1,773 SF
DRIVEWAY CONNECTION = 502 SF

BUILDING DATA:

NUMBER OF BUILDINGS = 1
46 - 1 BEDROOM STUDIO UNITS
1 - 922 SF COMMERCIAL UNIT
BUILDING HEIGHT = 35 FT
NUMBER OF STORES = 3
SQUARE FOOTAGE PER FLOOR

BLD	1ST FLOOR	2ND FLOOR	3RD FLOOR	TOTAL
A	9,455	9,455	9,455	28,365

BUILDING TYPE = 10 WITH 1.3R SPRINKLERS
BUILDING AREA: 9,235 SF
LOT COVERAGE: 9,235 SF / 44,100 SF = 0.217
PROPOSED 21% BUILDING LOT COVERAGE

BUILDING SETBACKS:

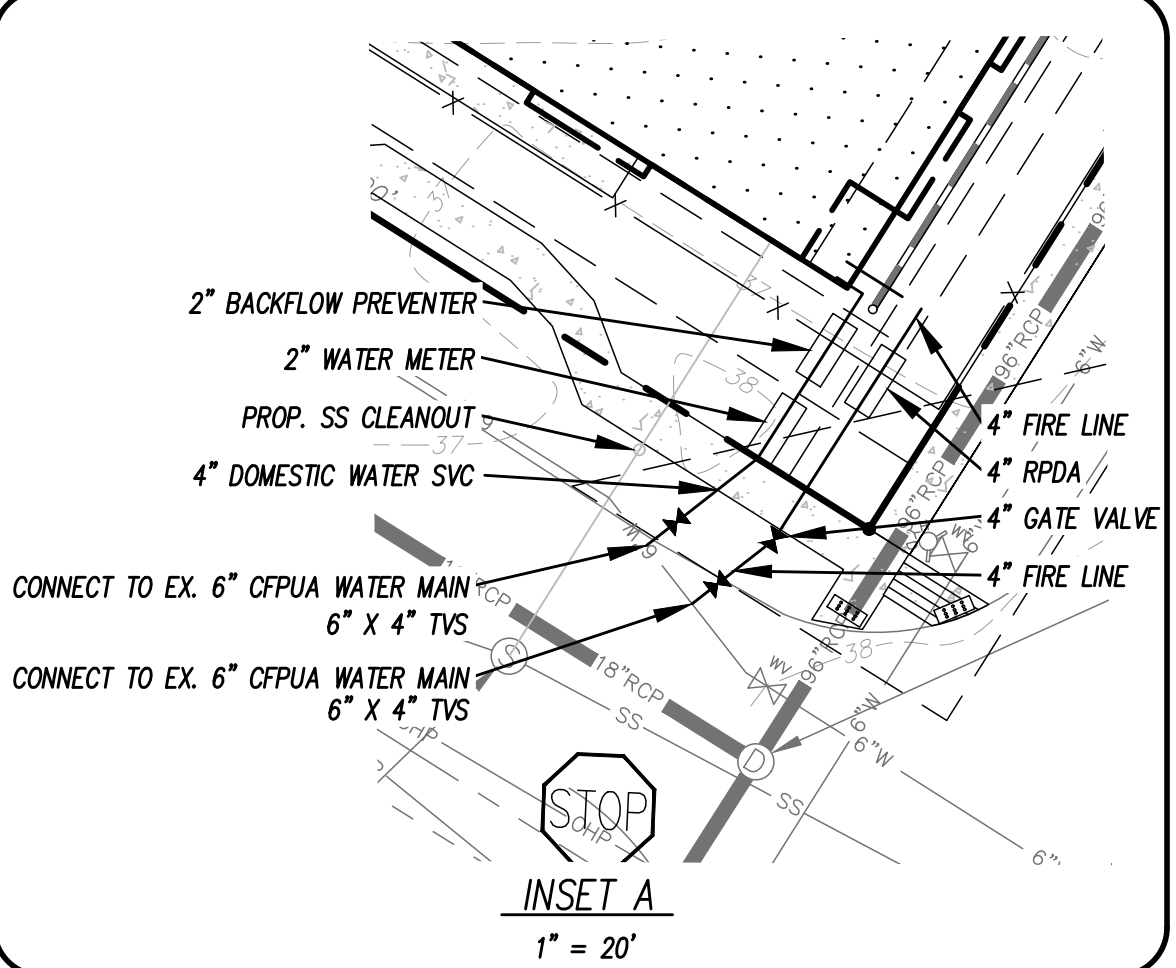
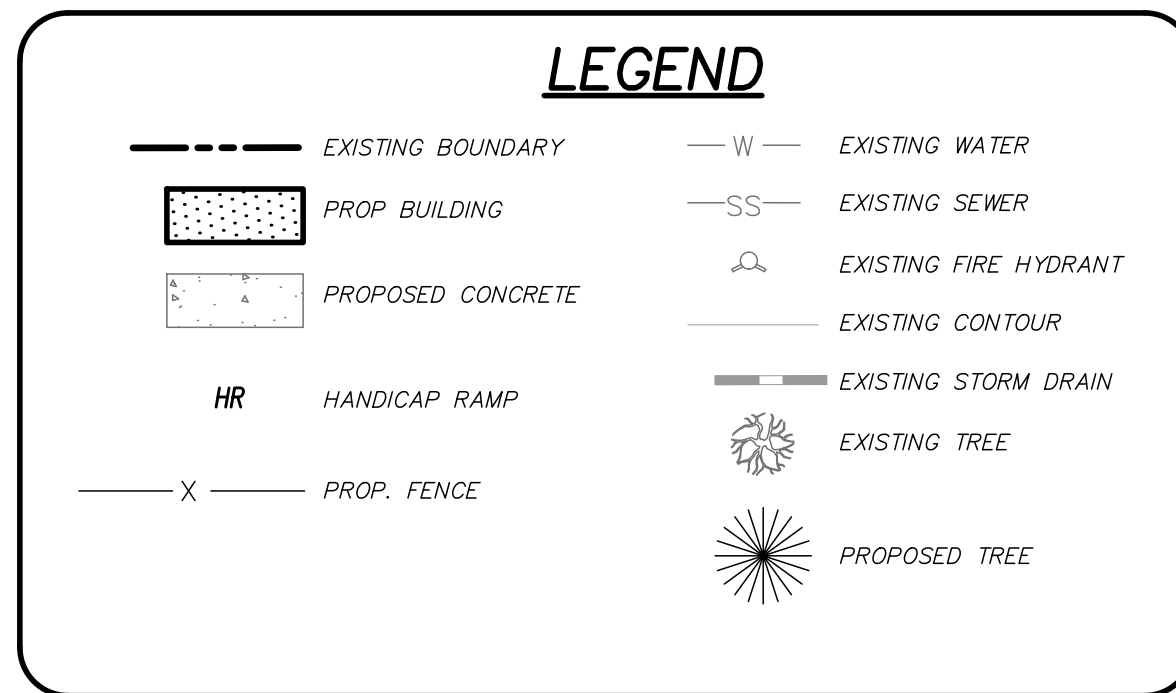
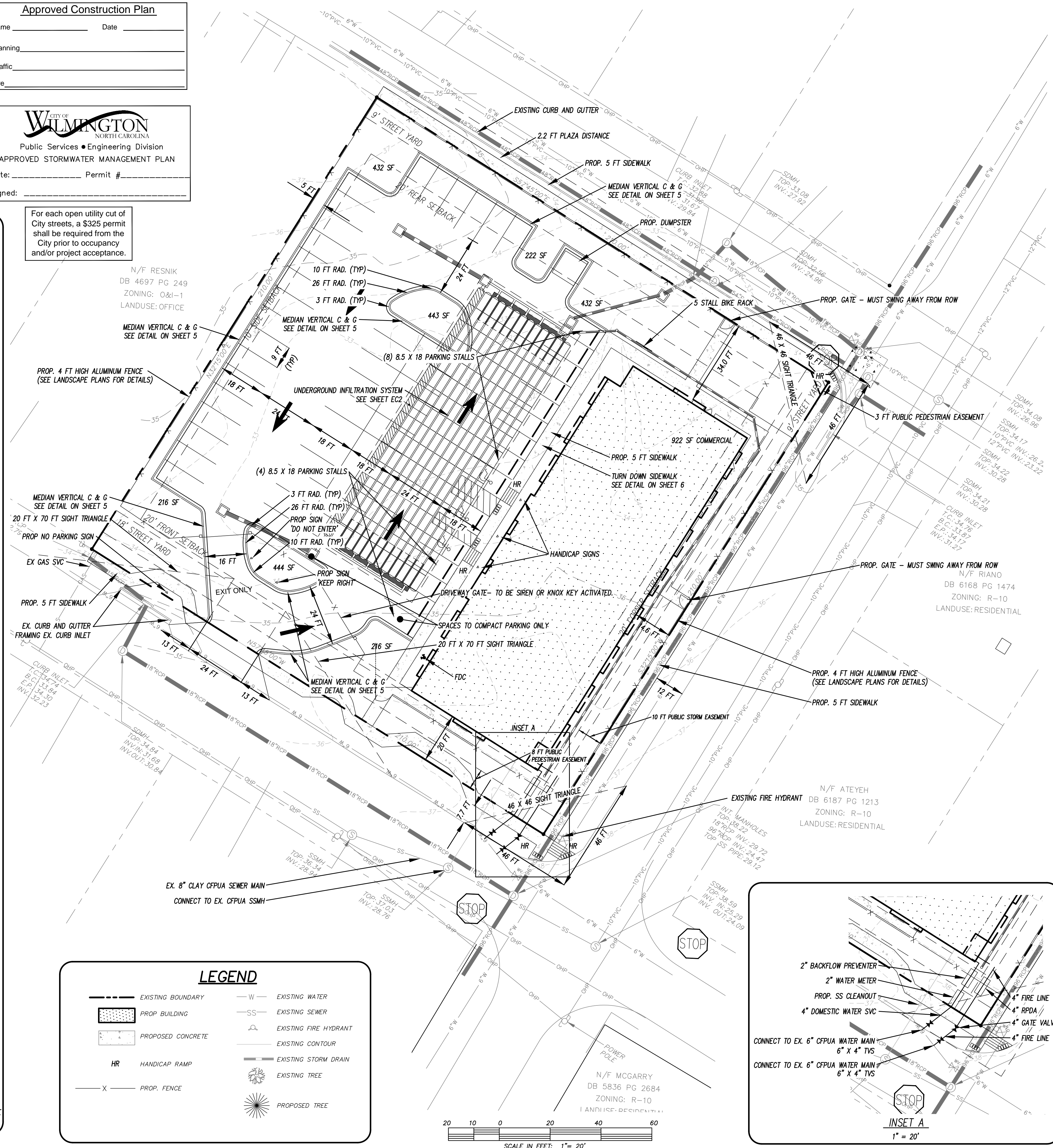
EX. BUILDING	REQUIRED SETBACKS	PROPOSED SETBACKS
FRONT	20 FT	20 FT
SIDE	10 FT, 20 FT	> 10 & 14.6 FT
REAR	20 FT	34 FT

FIRE & LIFE SAFETY NOTES:

- LANDSCAPING OR PARKING CANNOT BLOCK OR IMPEDE FIRE HYDRANTS OR FDC'S. A 3 FT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE HYDRANT.
- CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
- PRIVATE UNDERGROUND FIRE LINES REQUIRE A SEPARATE FIRE LINE PERMIT FROM COW FIRE AND LIFE SAFETY DIVISION, 910-343-0696.
- ALL FDC LOCATIONS TO BE SHOWN ON FINAL PLAN.
- FDC MUST BE ON THE FRONT OF THE BUILDING(S) UNLESS OTHERWISE APPROVED.
- FIRE HYDRANTS TO BE INSTALLED PER CITY OF WILMINGTON ORDINANCE AND CFPWA STANDARDS.
- WATER FLOW ANALYSIS WILL BE REQUIRED TO DETERMINE THE CORRECT MAIN SIZE TO MEET FIRE FLOW DEMAND.
- NEW HYDRANTS TO BE BROUGHT INTO SERVICE PRIOR TO COMBUSTIBLE MATERIALS DELIVERED TO THE JOB SITE.
- HYDRANT MUST BE WITHIN 150 FT OF THE FDC (MEASURED AS THE TRUCK DRIVES).
- FDC MUST BE WITHIN 40 FT OF FIRE APPARATUS PLACEMENT.
- IN ADDITION TO THE STANDARD COMMENTS, ADDITIONAL FIRE PROTECTION AND ACCESSIBILITY REQUIREMENTS MAY BE REQUIRED DUE TO ANY SPECIAL CIRCUMSTANCES CONCERNING THE PROJECT.
- CONTRACTOR SHALL SUBMIT A RADIO STRENGTH STUDY THAT DEMONSTRATES THAT EXISTING EMERGENCY RESPONDER RADIO SIGNAL LEVELS MEET THE REQUIREMENTS OF SECTION 510 OF THE 2018 NC FIRE CODE.

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

N/F RESNIK
DB 4697 PG 249
ZONING: O&J-1
LANDUSE: OFFICE



DEVELOPMENT NOTES:

- ALL SIGNS AND PAVEMENT MARKINGS IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD STANDARDS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF EXISTING UTILITIES DURING CONSTRUCTION. CALL U-LOCO AT 1-800-632-4949. CONTRACTOR IS RESPONSIBLE FOR THE REPAIR AND REPLACEMENT OF ANY UTILITIES, CURB AND CUTTER, SIDEWALK PANELS, PAVEMENT, ETC., THAT MAY BE DAMAGED DURING CONSTRUCTION. DAMAGED ITEMS SHALL BE REPAIRED TO AT LEAST THE QUALITY OR WORKMANSHIP FOUND IN THE ORIGINAL ITEM.
- SOLID WASTE DISPOSAL WILL BE HAND TOTES.
- HAND TOTES TO BE STORED IN GARAGES.
- ALL DEVELOPMENT SHALL BE IN ACCORDANCE WITH THE CITY OF WILMINGTON ZONING ORDINANCE & SUBDIVISION REGULATIONS.
- APPROVAL OF THIS PLAN DOES NOT CONSTITUTE APPROVAL OF PROPOSED SIGNAGE FOR THIS SITE. A SEPARATE SIGN PERMIT MUST BE OBTAINED.
- APPLICABLE STREET FRONTAGES SHALL HAVE NATURAL VEGETATIVE SCREENING MEETING CITY REQUIREMENTS.
- THE DEVELOPMENT SHALL COMPLY WITH ALL CITY TECHNICAL STANDARDS AND DEVELOPMENT REGULATIONS.
- PRIMARY BUILDING ENTRANCES SHALL BE CLEARLY DEFINED AND SHALL BE RECESSED AT LEAST FIVE FEET OF FRAMED BY AN ARCHITECTURAL ELEMENT. PRIMARY ENTRANCES SHOULD BE CLEARLY DISTINCTIVE FROM OTHER ENTRANCES. SECONDARY OUTSIDE BUILDING ENTRANCES TO UPPER FLOORS ON THE PRIMARY FACADE SHALL ALIGN WITH THE OUTER MOST WINDOW ON THE FRONT FACADE.

UTILITY NOTES:

- PROJECT SHALL COMPLY WITH THE CITY OF WILMINGTON AND CFPWA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METER(S) CANNOT BE SET AND ACTIVATED ON NEW MAINS UNTIL ALL REQUIREMENTS ARE MET. CALL 343-3910 FOR INFORMATION.
- IF THE CONTRACTOR DESIRES WATER FOR CONSTRUCTION HE/SHE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
- COMMERCIAL WATER SERVICES AND ANY IRRIGATION SYSTEMS SUPPLIED BY CFPWA WATER SHALL HAVE A BACKFLOW PREVENTION DEVICE ACCEPTABLE TO THE CFPWA AND APPROVED BY USDFCCOHR OR ASSE. CALL 799-6064 FOR INFORMATION.
- WHEN PVC WATER MAINS AND/OR POLYETHYLENE SERVICES ARE PROPOSED, THE PIPES ARE TO BE MARKED WITH NO. 10 INSULATED COPPER WIRE INSTALLED THE ENTIRE LENGTH AND STRAPPED TO THE PIPES WITH DUCT TAPE. THE INSULATED WIRE IS TO BE STRIPPED TO BARE WIRE AND SECURED TO ALL VALVES AND FITTINGS. THE WIRE IS TO BE ACCESSIBLE AT ALL FIRE HYDRANTS AND WATER METER BOXES TO AID IN FUTURE LOCATION OF FACILITIES.
- MINIMUM COVER OVER ALL WATER MAINS.
- ANY SEPARATE CONNECTION FOR IRRIGATION SHALL COMPLY WITH CITY AND CFPWA CROSS-CONNECTION REQUIREMENTS WITH APPROVED BACKFLOW PREVENTION DEVICES.
- AT LOCATIONS WHERE WATER MAIN CROSSES UNDER SANITARY SEWER, DUCTILE IRON PIPE SHALL BE USED ALONG WITH PROVIDING 24" MINIMUM OF VERTICAL SEPARATION.
- WATER SERVICES CAN NOT BE ACTIVATED ON NEW WATER MAINS UNTIL ENGINEER'S CERTIFICATION AND APPLICANT'S CERTIFICATION HAVE BEEN PROVIDED TO NCDENR AND "FINAL APPROVAL" ISSUED.
- UNDERGROUND UTILITIES- ALL NEW UTILITIES SHALL BE INSTALLED UNDERGROUND, EXCEPT WHERE SUCH PLACEMENT IS PROHIBITED OR DEEMED IMPRACTICAL BY THE UTILITY PROVIDER. UNDERGROUND FACILITIES FOR STREET LIGHTING ALONG ALL PUBLIC STREETS ABUTTING THE SUBJECT SITE SHALL BE INSTALLED BY THE DEVELOPER.

ENVIRONMENTAL NOTES:

- NO LAND DISTURBANCE IS PERMITTED OUTSIDE THE DESIGNATED LIMITS OF DISTURBANCE FOR SITE IMPROVEMENTS OTHER THAN WHAT IS NECESSARY TO THE INTO EXISTING CONTOURS OR MEET LANDSCAPING REQUIREMENTS.

PARKING NOTES:

- RESIDENTIAL MAX = 46 X 2.5 = 115
- RESIDENTIAL MIN = 46 X 1.0 = 46
- COMMERCIAL MAX = 922 / 200 = 4.6
- COMMERCIAL MIN = 922 / 400 = 2.3
- MAX PARKING = 115 + 2.3 = 117.3
- MIN PARKING = 46 + 2.3 = 48.3
- PARKING PROVIDED = 59 SPACES
- 3 HANDICAP SPACES REQUIRED, 3 PROVIDED
- PARKING STALLS ARE 9 X 18 UNLESS OTHERWISE NOTED.
- 5 BIKE PARKING STALLS REQUIRED; 5 PROVIDED
- ONE DEDICATED PARKING SPACE SHALL BE PROVIDED FOR EACH DWELLING UNIT ON SITE. THE PARKING SPACE MUST BE AVAILABLE TO THE OCCUPANTS AT ALL TIMES AND CLEARLY DESIGNATED OR RESERVED FOR RESIDENTIAL TENANTS ONLY.

TRAFFIC ENGINEERING NOTES:

- 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 RECORDING OF THE FINAL PLAT. PLAN SHALL ADHERE TO SD 15-17.
- TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD STANDARDS.
- OPEN CUT NOTES:
 - A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET. CONTACT 910-341-5888 FOR MORE DETAILS. IN CERTAIN CASES AN ENTIRE RESURFACING OF THE AREA BEING OPEN CUT MAY BE REQUIRED.
 - CONTRACTOR TO COORDINATE WITH CITY OF WILMINGTON FOR ACCEPTABLE HOURS OF CONSTRUCTION AND TRAFFIC CONTROL DURING INSTALLATION OF UTILITIES IN CITY ROADS.
 - SUITABLE COMPACTION AND APPROVED STONE & BASE COURSES TO BE INSTALLED IN PLACE OF OPEN CUT.
 - OPEN CUT TO BE SAW CUT.
- 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. THE SUBDIVIDER MAY ACQUIRE AND ERECT OFFICIAL STREET NAME SIGNS OR MAY CHOOSE TO CONTRACT WITH THE CITY TO INSTALL THE STREET SIGNS AND THE SUBDIVIDER SHALL PAY THE COST OF SUCH INSTALLATION. CONTACT TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS INSTALLATION OF TRAFFIC AND AND STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
- CALL TRAFFIC ENGINEERING AT 341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.
- TACTILE WARNING MATS ARE TO BE INSTALLED ON ALL WHEELCHAIR RAMPS.
- ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND CURBING WILL BE REPLACED.
- ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT OF WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
- ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREA SHALL BE WHITE.
- CONTACT TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
- ALL PROPOSED VEGETATION WITHIN SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30 INCHES - 10 FT.

CSD ENGINEERING

LICENSE # C-2710
ENGINEERING
LAND PLANNING
COMMERCIAL / RESIDENTIAL

P.O. BOX 4041
WILMINGTON, NC 28406
(910) 791-4441

SITE PLAN FOR
FUTWICK FLATS

DB 6168 PG 1474
ZONING: R-10
LANDUSE: RESIDENTIAL

SITE PLAN FOR
FUTWICK FLATS

LOCATED IN CITY OF WILMINGTON
NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: REMARKABLE PROPERTIES, LLC
10 S. CARDINAL DRIVE
WILMINGTON, NC 28403

REV. NO.	DATE	BY	REMARKS
1	7-29-21	RLW	
2	8-15-21	SM	
3	8-15-21	RLW	
4	11-17-20	RLW	
5	9-25-20	MBR	
6	10-14-19	RLW	
7	10-11-19	RLW	
8	8-22-19	RLW	

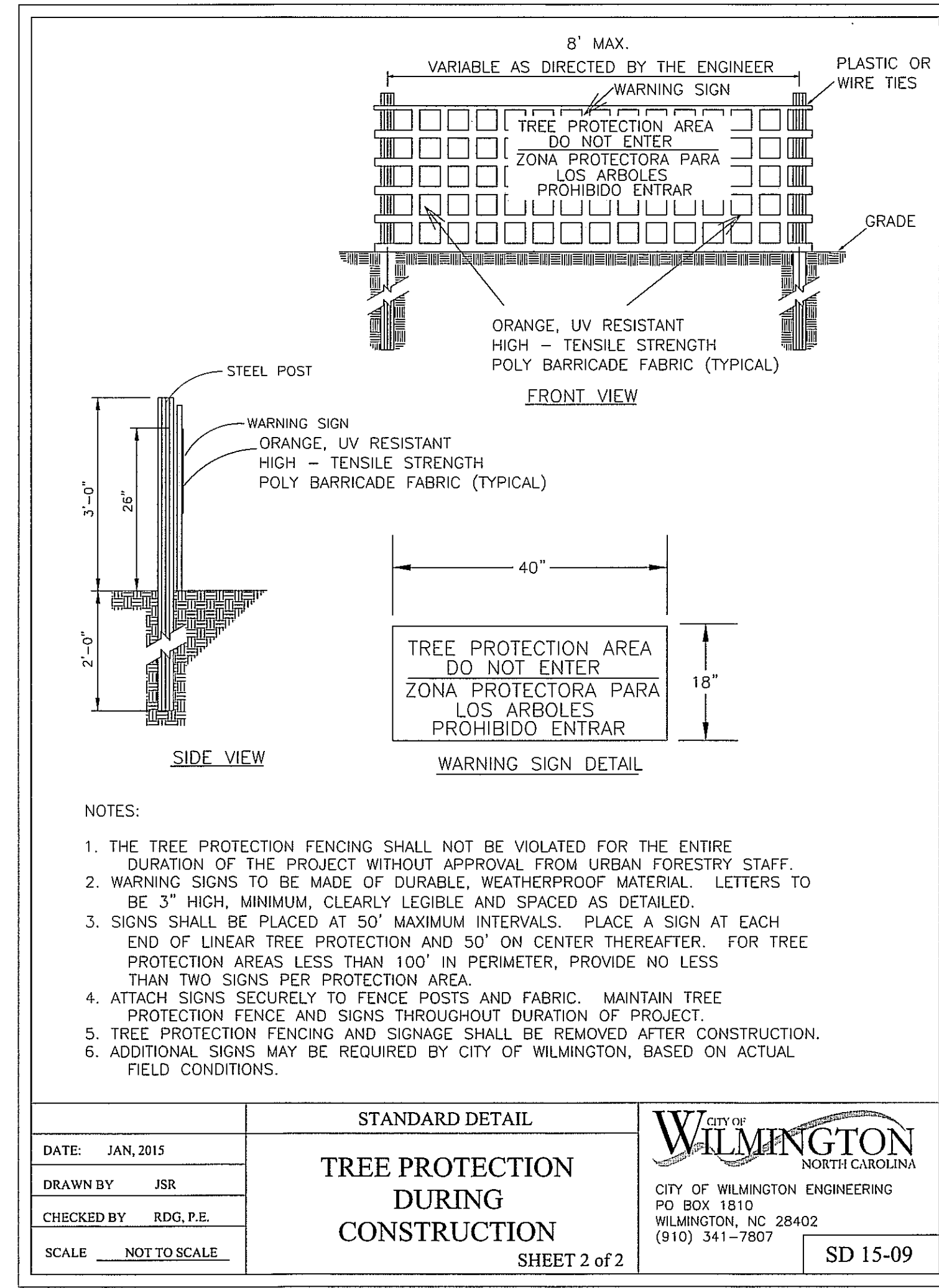
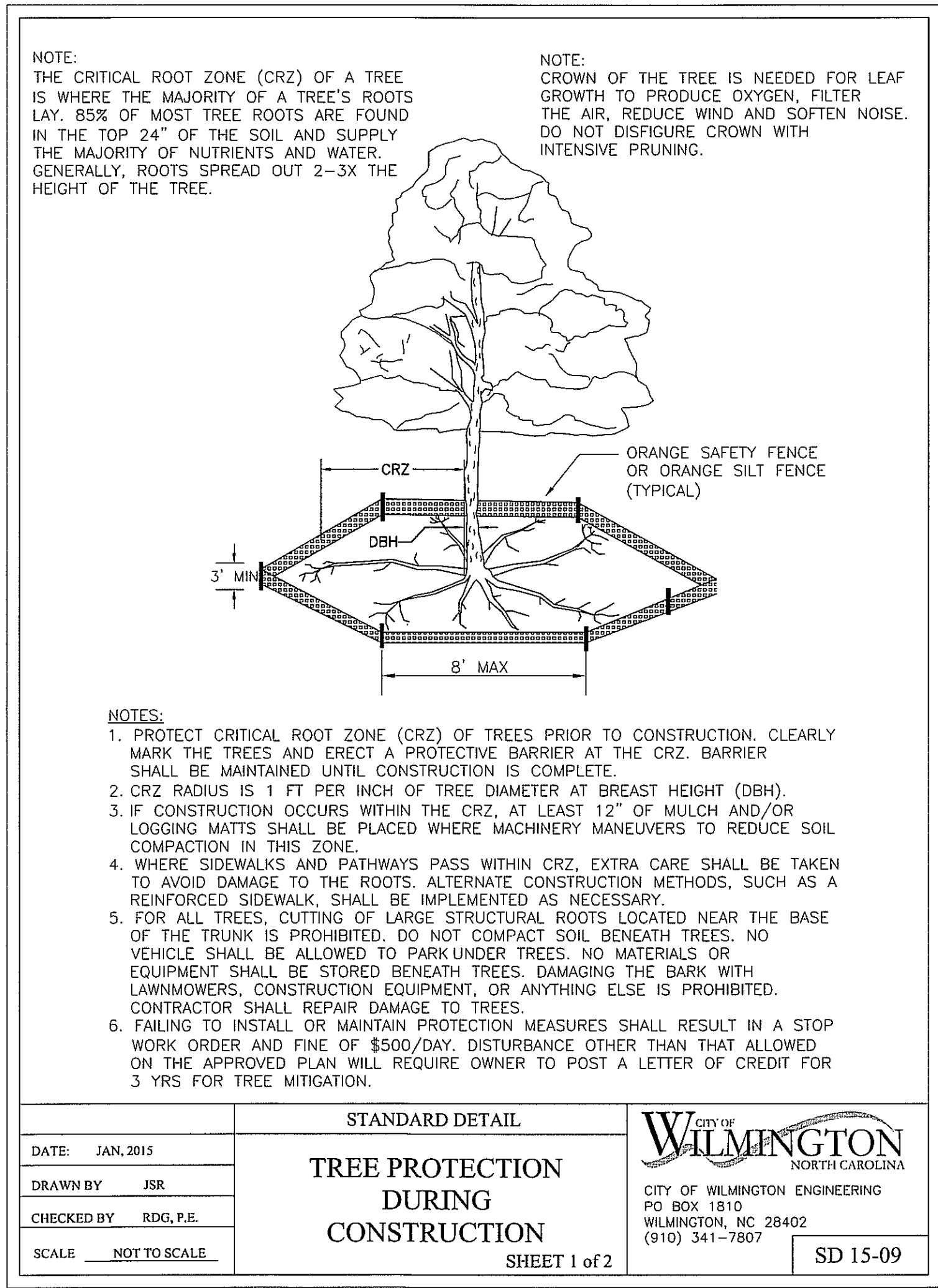
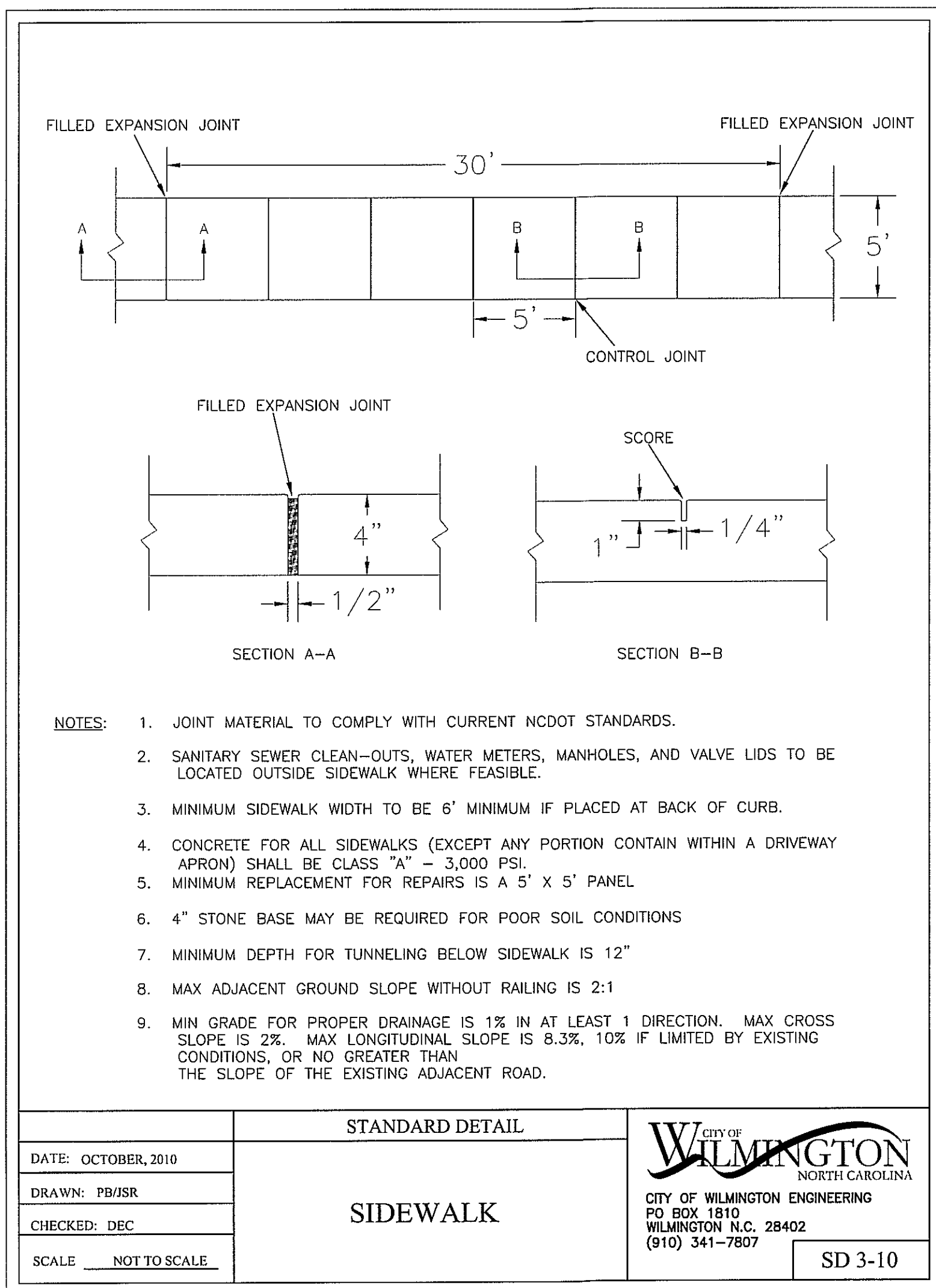
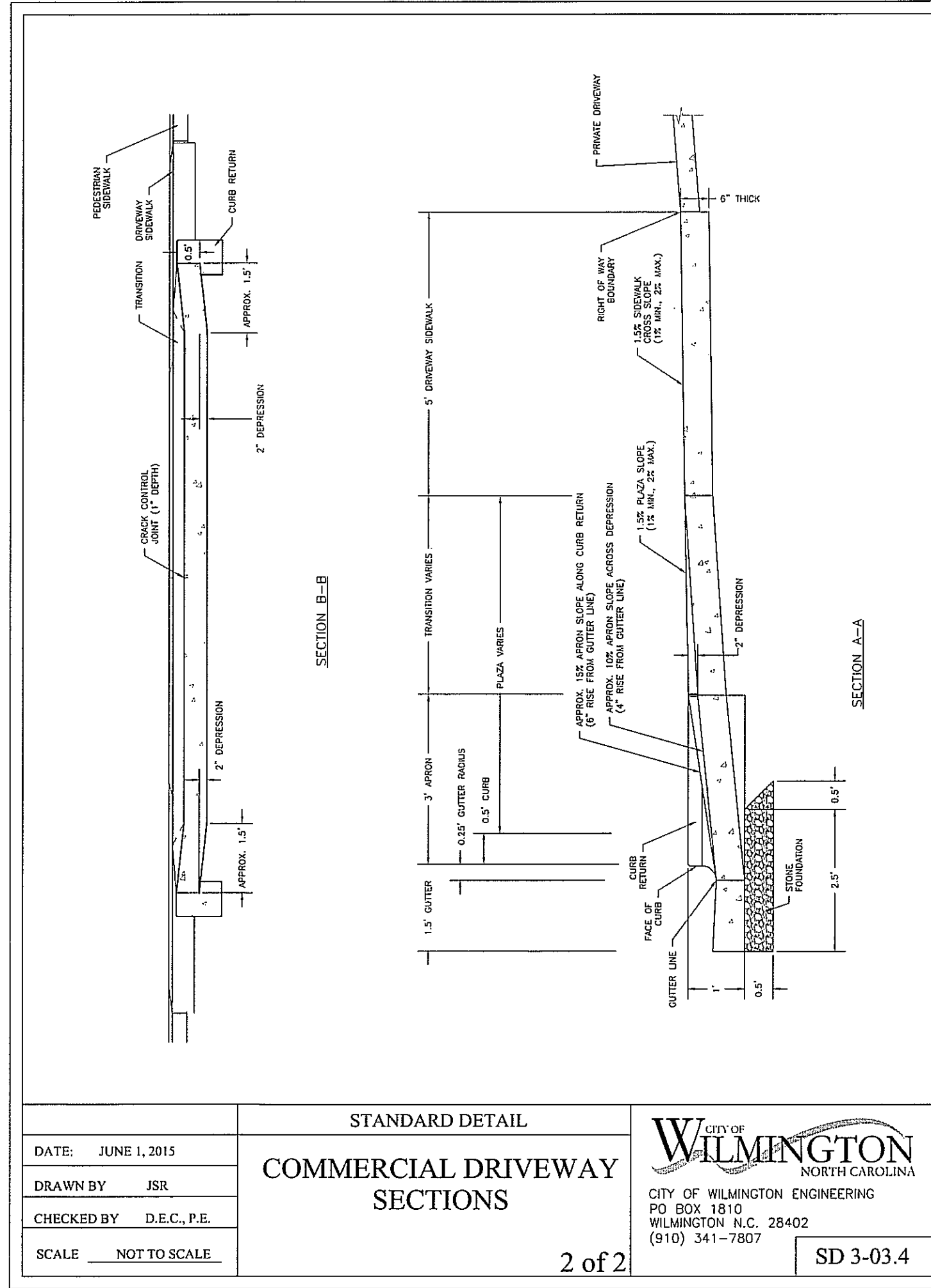
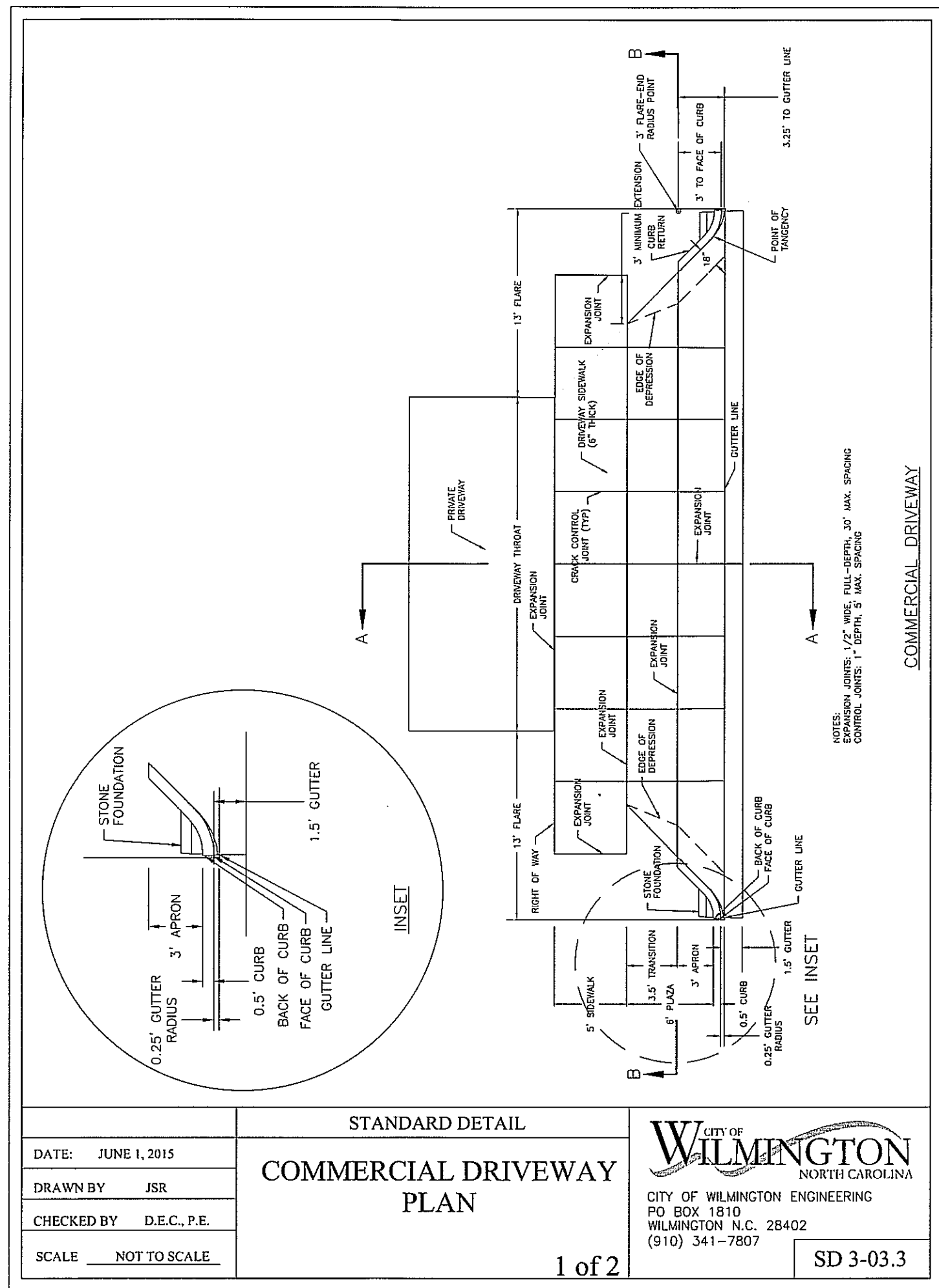
REV. NO.	DATE	BY	REMARKS
9	3-21-19	RLW	
10			

DATE: 3-21-19
HORIZ. SCALE: 1" = 20'
VERT. SCALE: N/A

DRAWN BY: RLW
CHECKED BY: HSR

PROJECT NO.: 05-0083

Sheet No. **3** of **8**



Approved Construction Plan

Name: _____ Date: _____
 Planning: *Jeff Walter* 10-14-19
 Traffic: *W. Smith* 10-14-19
 Fire: *James Reinit* 10-15-19

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: 10/14/2019 Permit # 2019059
Signed: *Tait Boston for RAC*

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

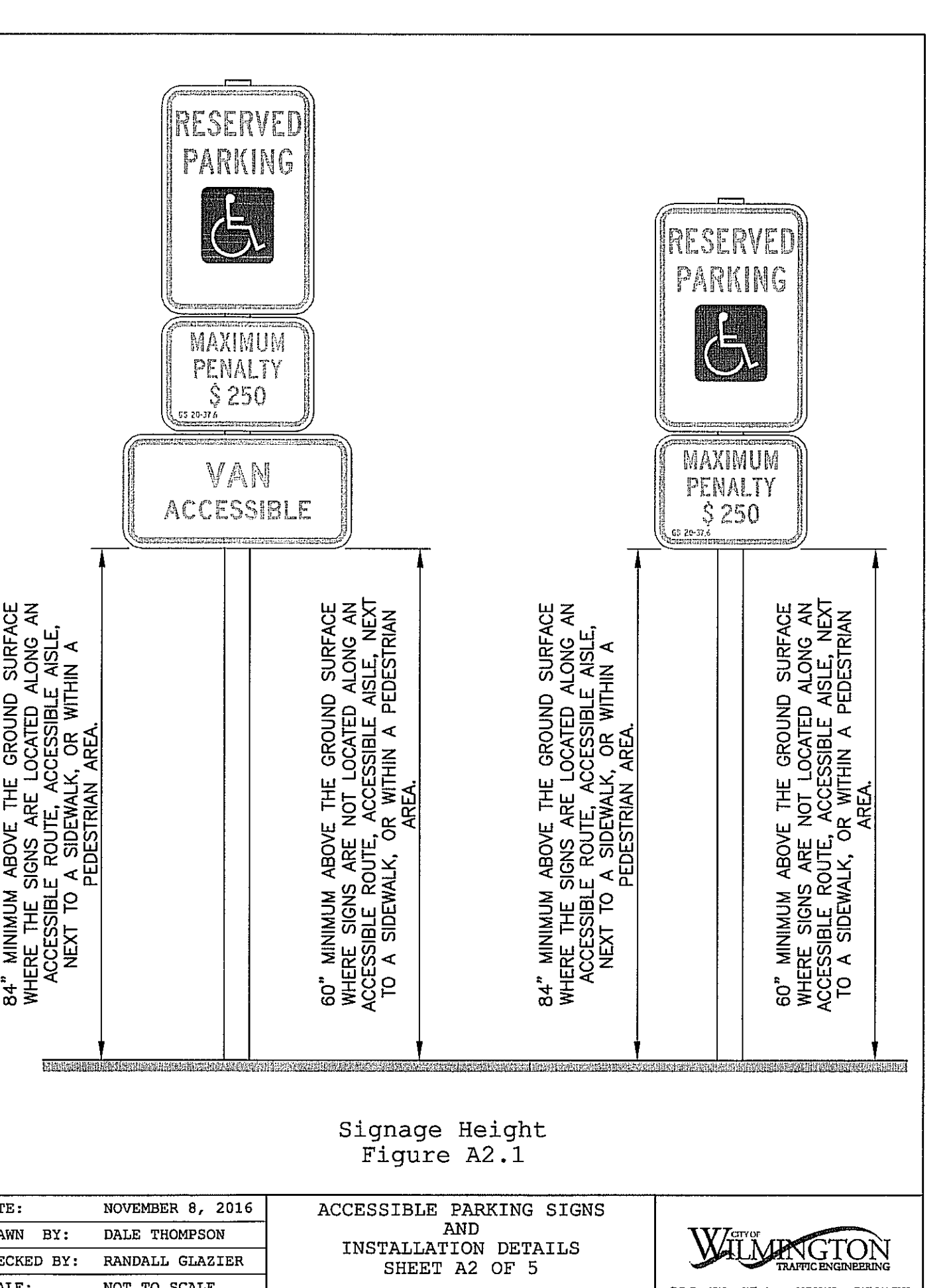
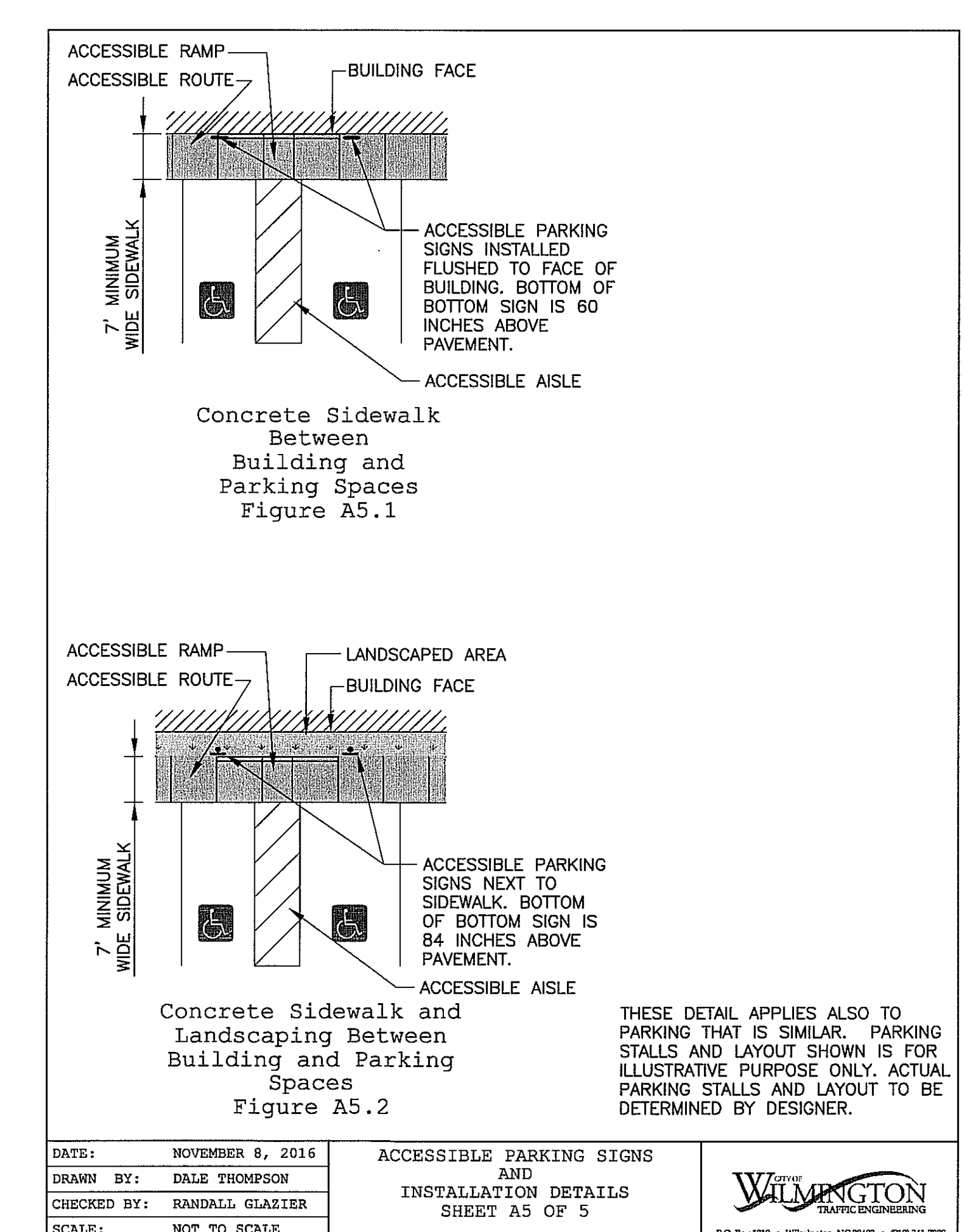
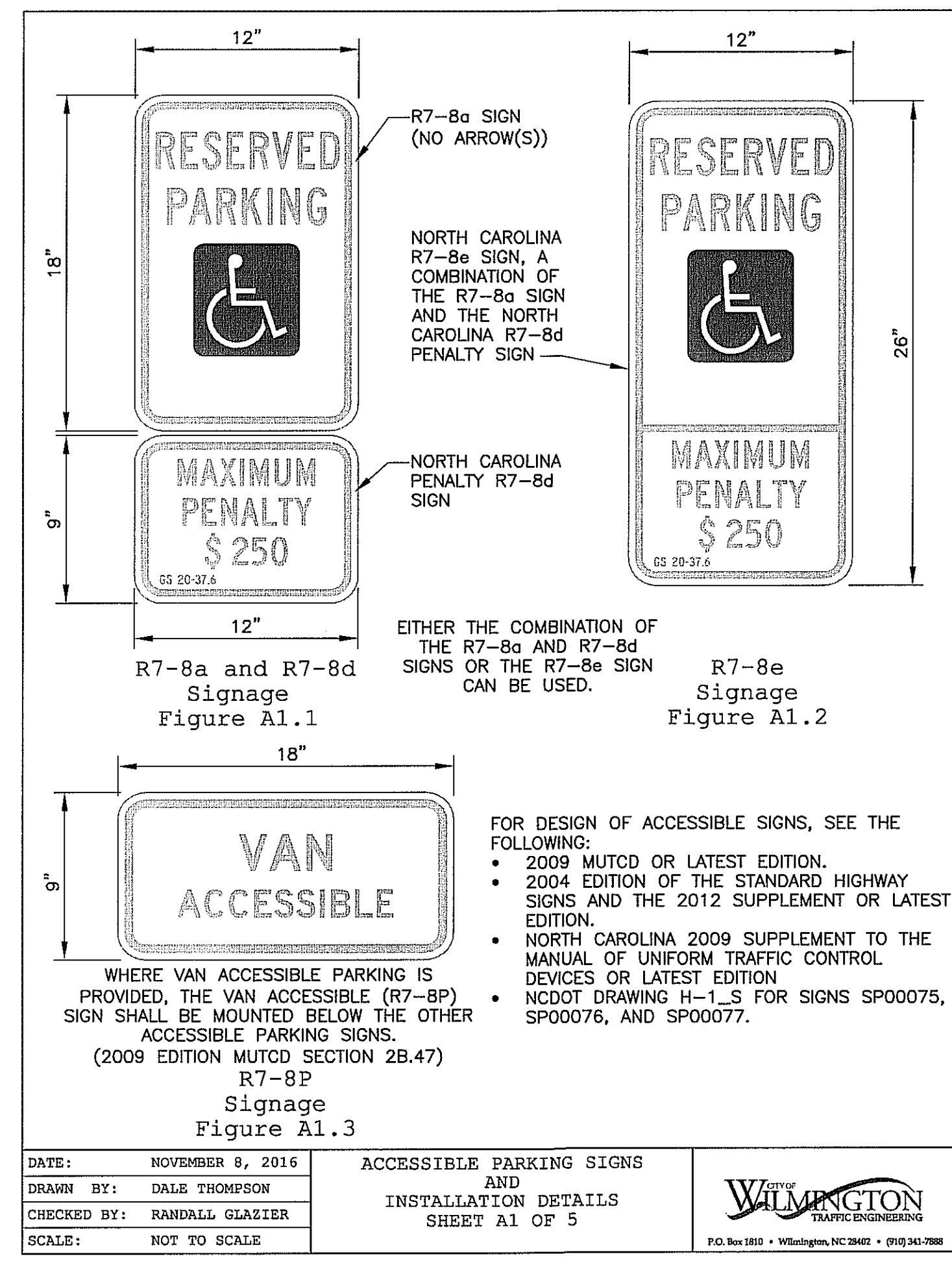
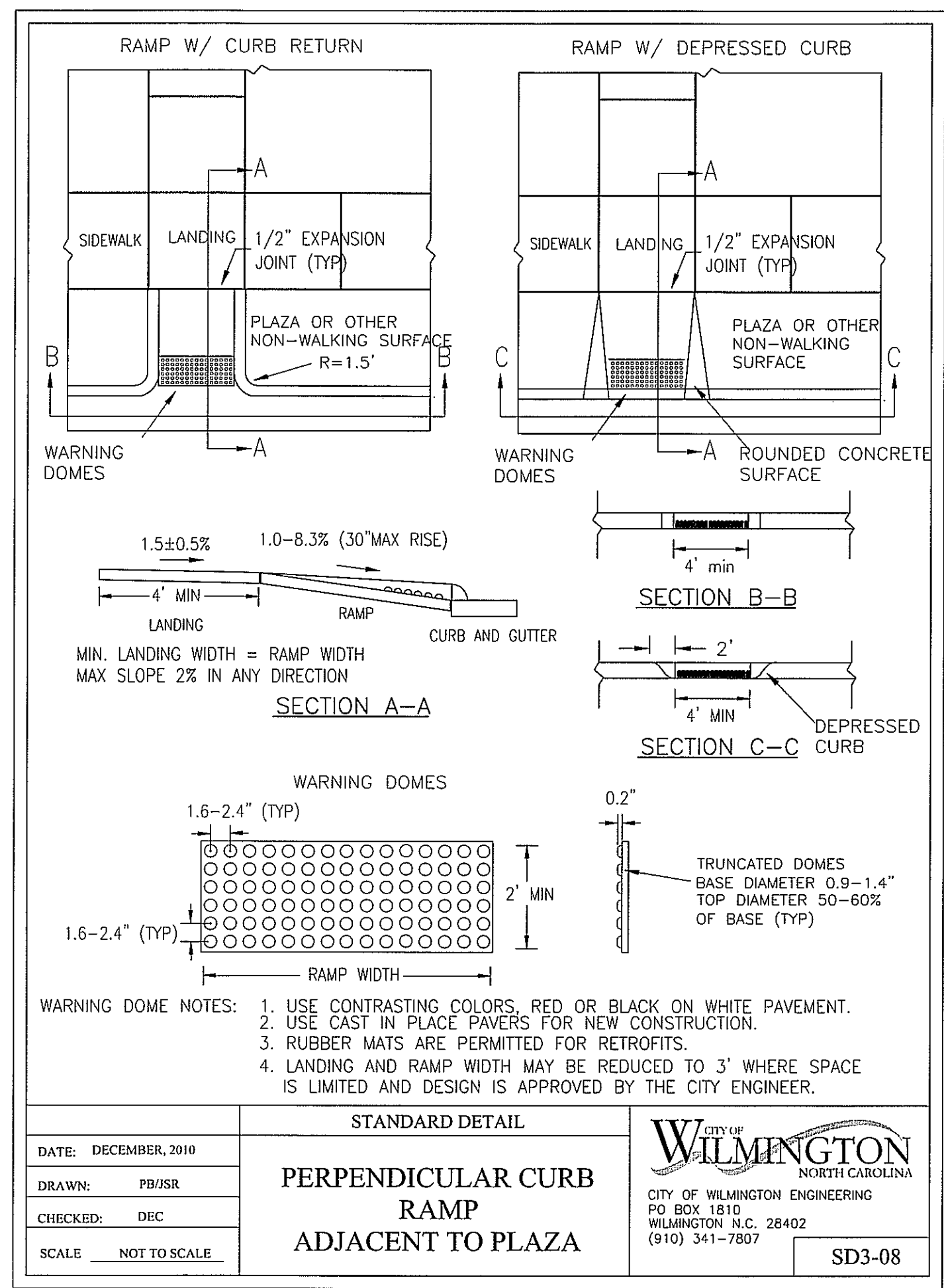
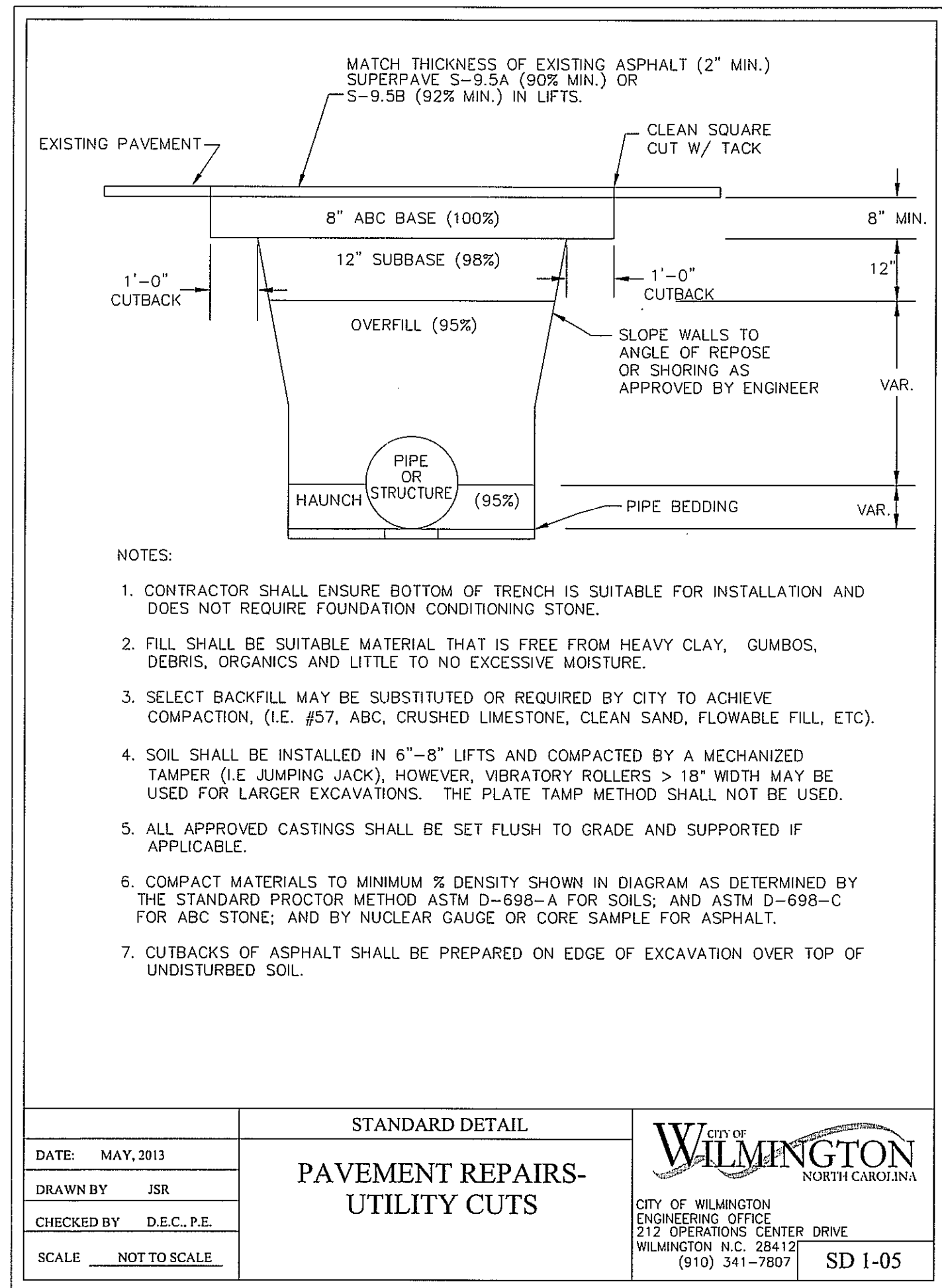
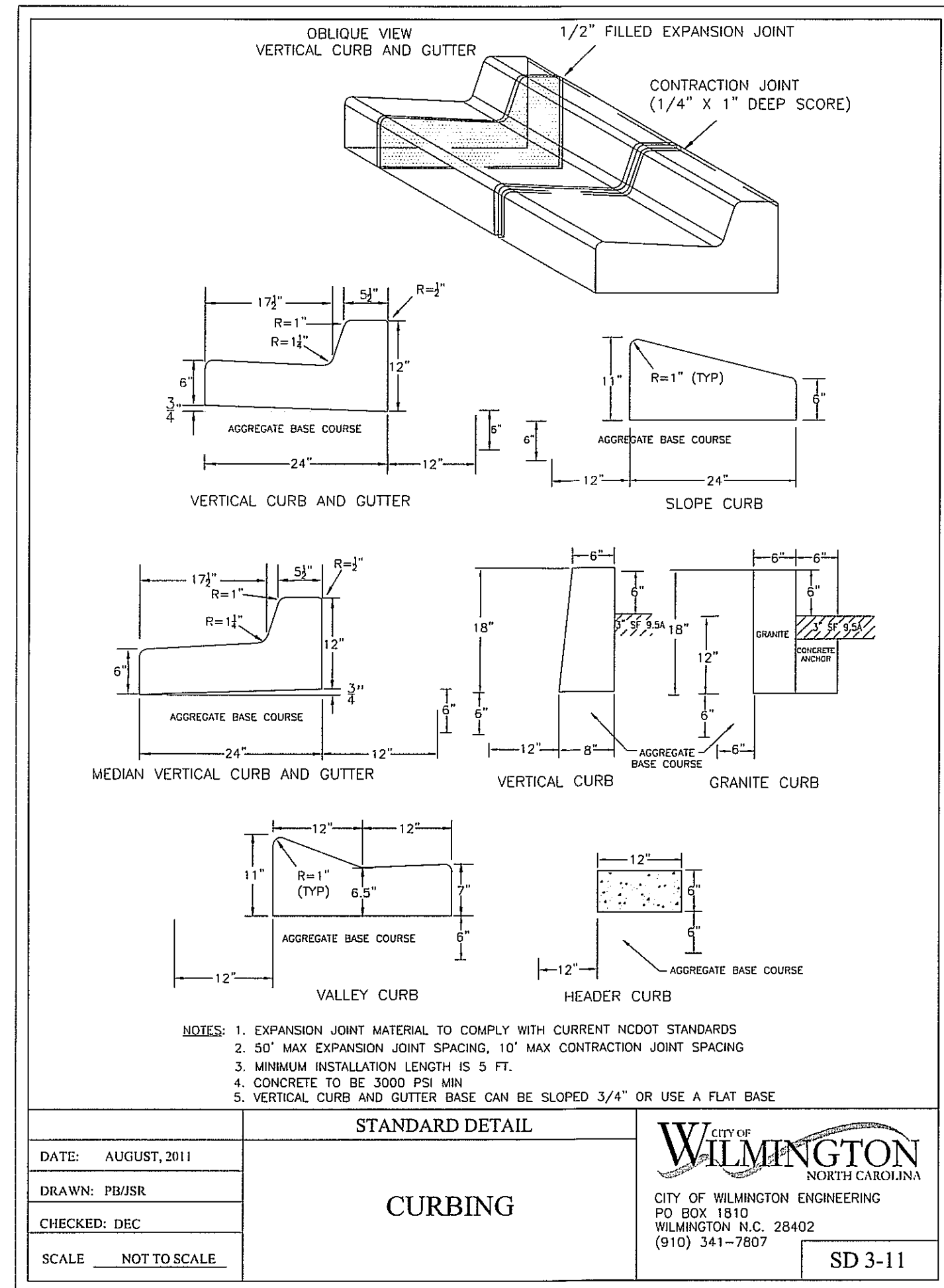
CSD ENGINEERING
LICENSE # C-2710
ENGINEERING
LAND PLANNING
COMMERCIAL / RESIDENTIAL
P.O. BOX 4041
WILMINGTON, NC 28406
(910) 791-4441

SITE PLAN DETAILS
FLITWICK FLATS

FLITWICK FLATS
LOCATED IN CITY OF WILMINGTON
NEW HANOVER COUNTY, NORTH CAROLINA
OWNER: REMARKABLE PROPERTIES, LLC
10 S CARDINAL DRIVE
WILMINGTON, NC 28403

REV. NO.	DATE	BY	REMARKS
1	10-14-19	RLW	PLOTTED FOR CITY SIGNATURES
2	10-15-19	RLW	REVISED SHEET NUMBER
3			

DATE: 3-21-19
 HORZ. SCALE: AS NOTED
 VERT. SCALE: N/A
 DRAWN BY: RLW
 CHECKED BY: HSR
 PROJECT NO.: 05-0083



Approved Construction Plan

Name: _____ Date: _____
 Planning: *J. Williams* 10-14-19
 Traffic: *V. Smith* 10-14-19
 File: *Jama Mendt* 10-15-19

WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: 10/14/2019 Permit # 2019059
Signed: *Tom Butler* for RAC

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

CSD ENGINEERING

LICENSE # C-2710
ENGINEERING
LAND PLANNING
COMMERCIAL / RESIDENTIAL

P.O. BOX 4041
WILMINGTON, NC 28406
(910) 791-4441

SITE PLAN DETAILS
FUTWICK FLATS

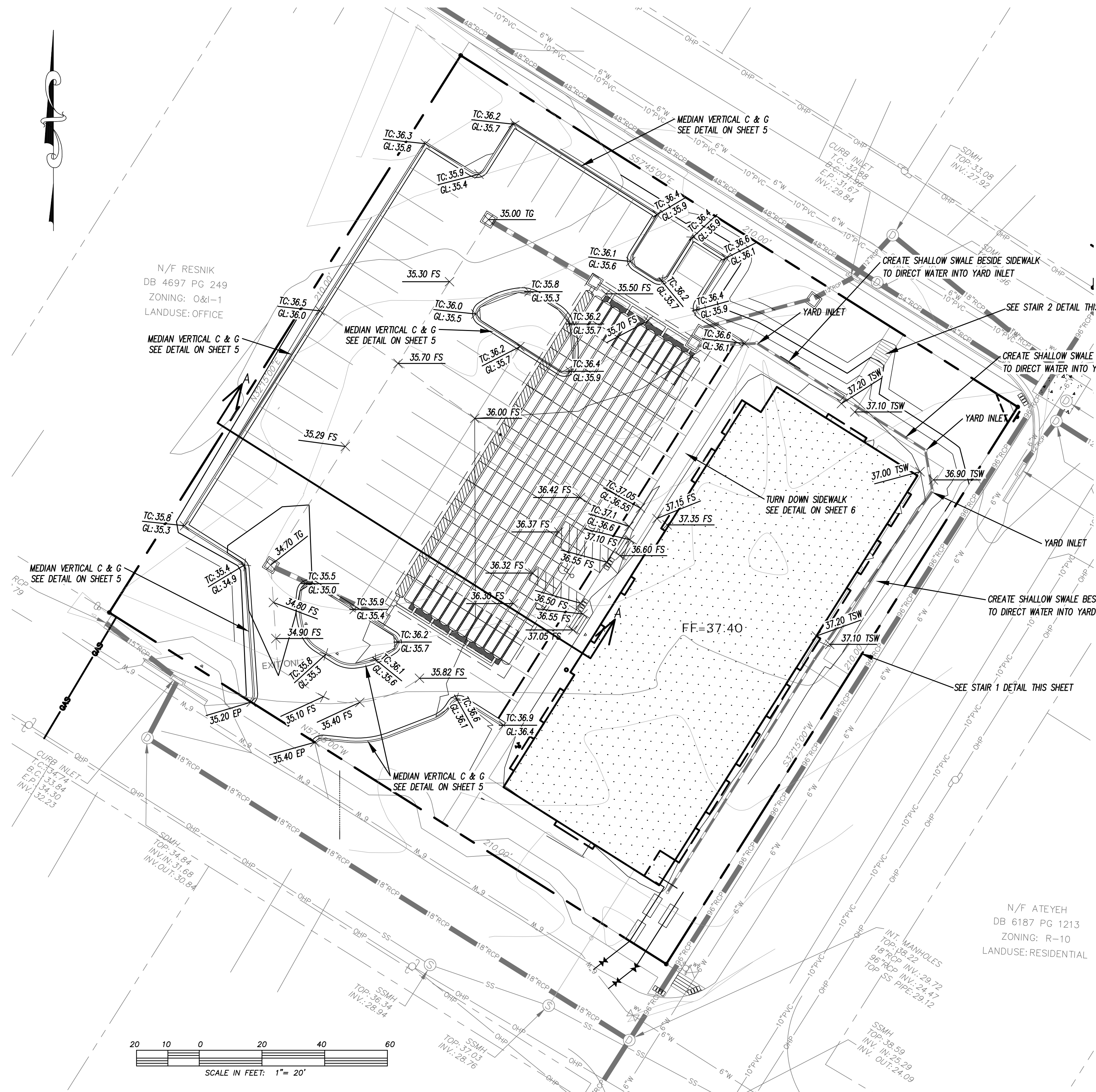
FOR THE CITY OF WILMINGTON, NORTH CAROLINA
 PROJECT NO. 05-0083
 SHEET NO. 5 OF 8

REMARKABLE PROPERTIES, LLC
10 S CAROLINA DRIVE
WILMINGTON, NC 28403

REVISIONS

REV. NO.	DATE	REMARKS
1	10-14-19	FOR CITY SIGNAGES
2	10-14-19	REVISED SHEET NUMBER
3	10-14-19	REVISED SHEET NUMBER

DATE: 3-21-19
 HORZ. SCALE: AS NOTED
 VERT. SCALE: N/A
 DRAWN BY: RLW
 CHECKED BY: HSR
 PROJECT NO.: 05-0083



Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

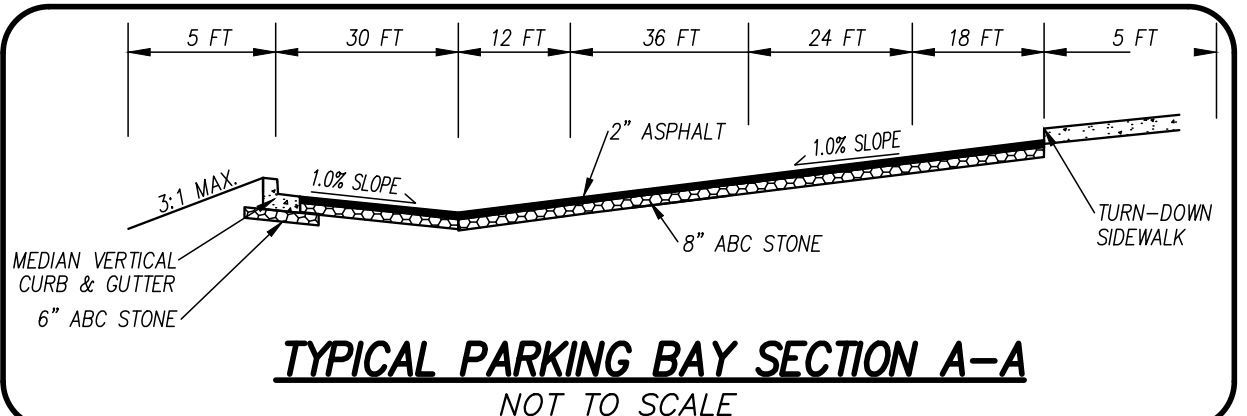
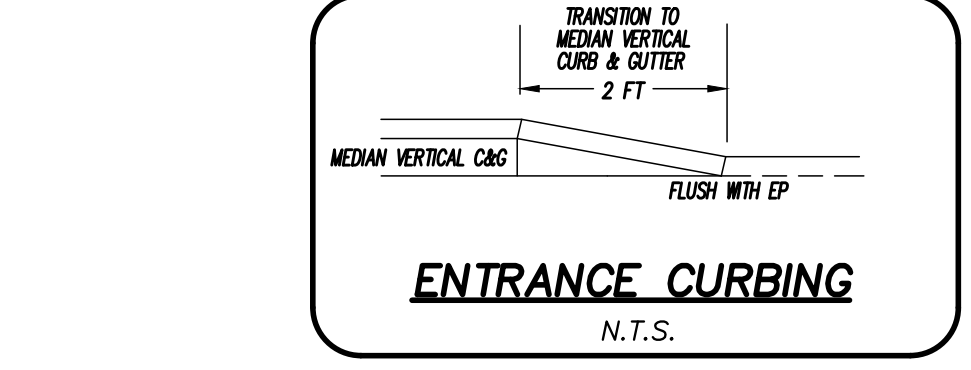
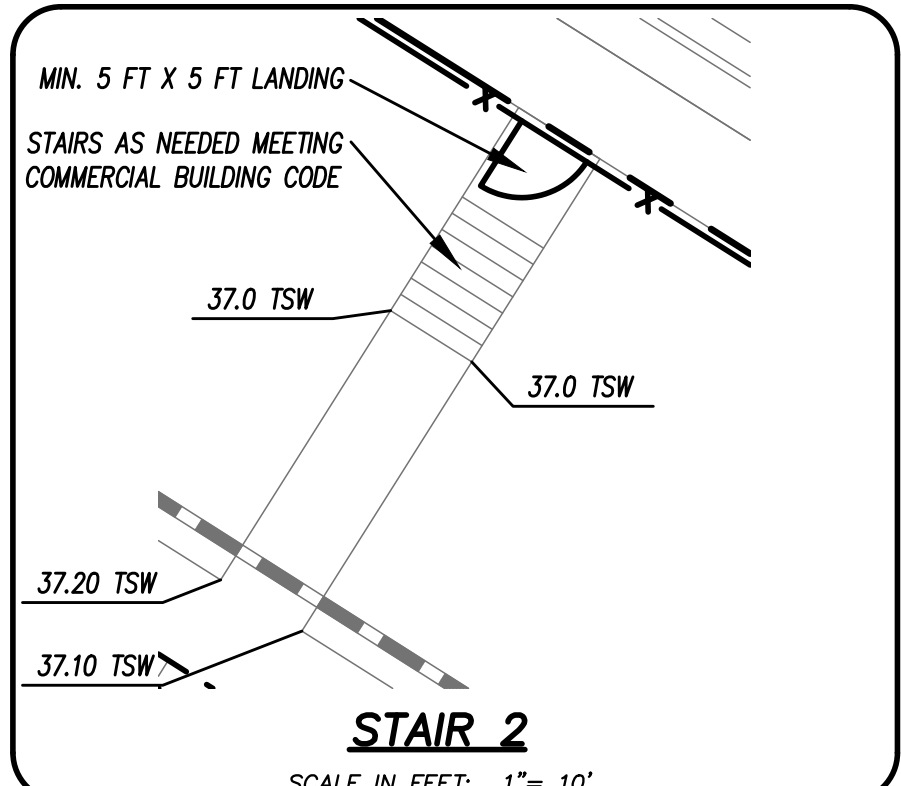
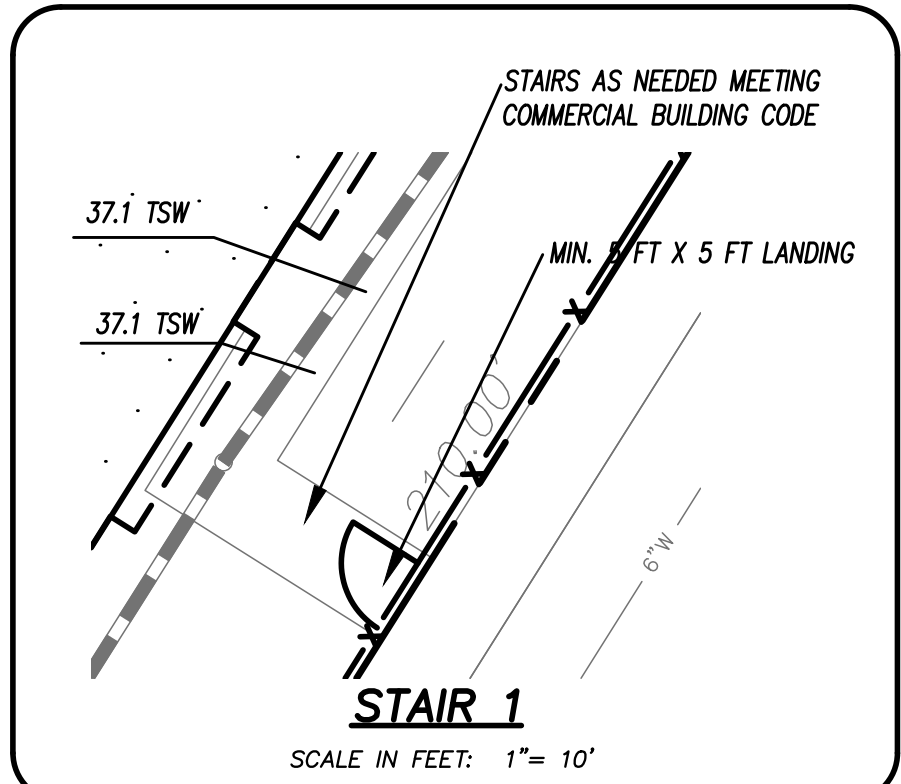
Fire _____

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

Date: _____ Permit #: _____

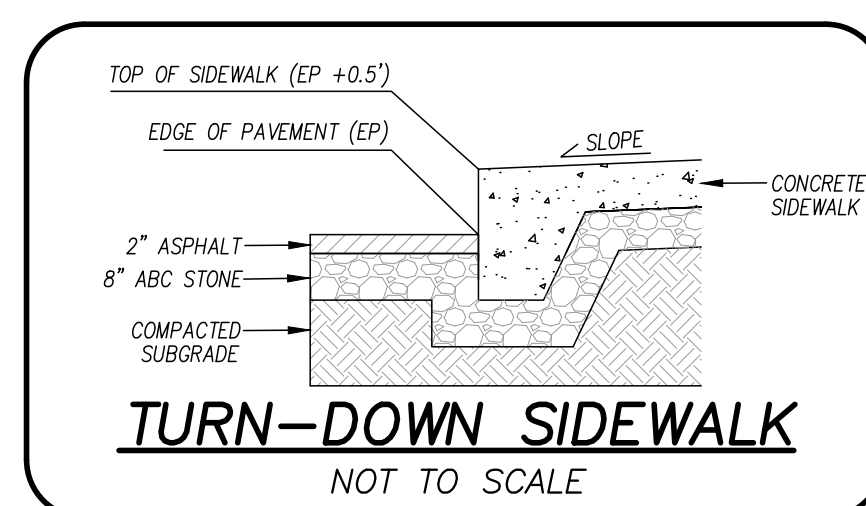
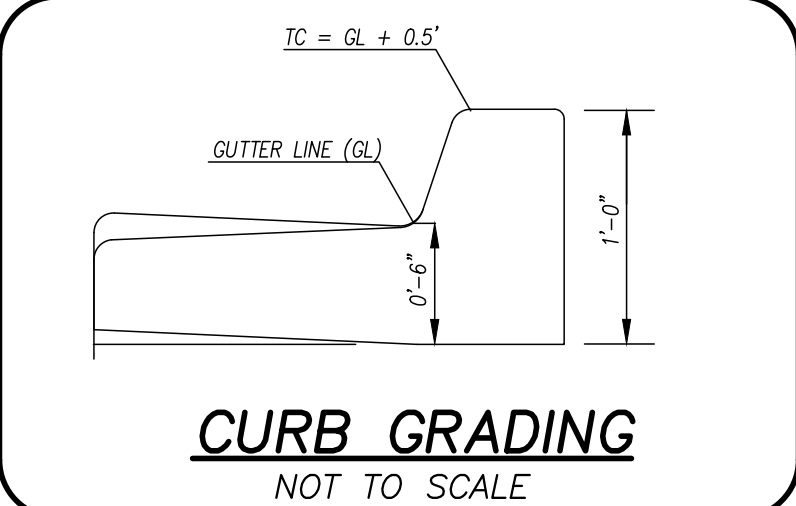
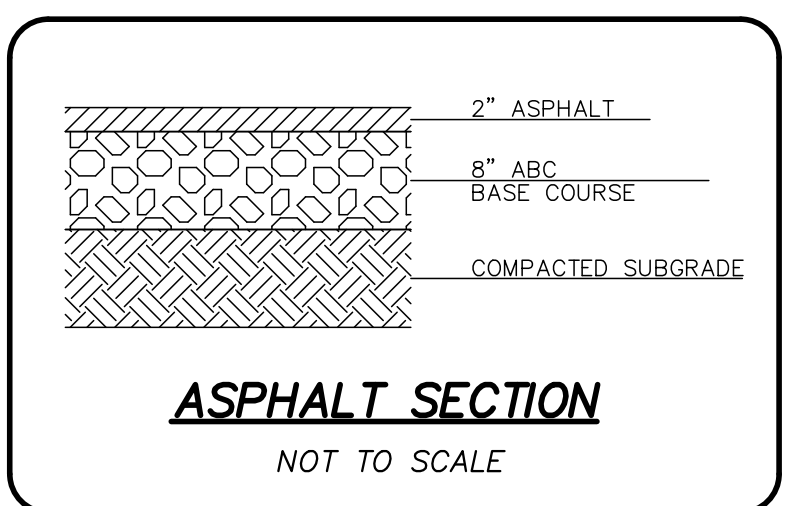
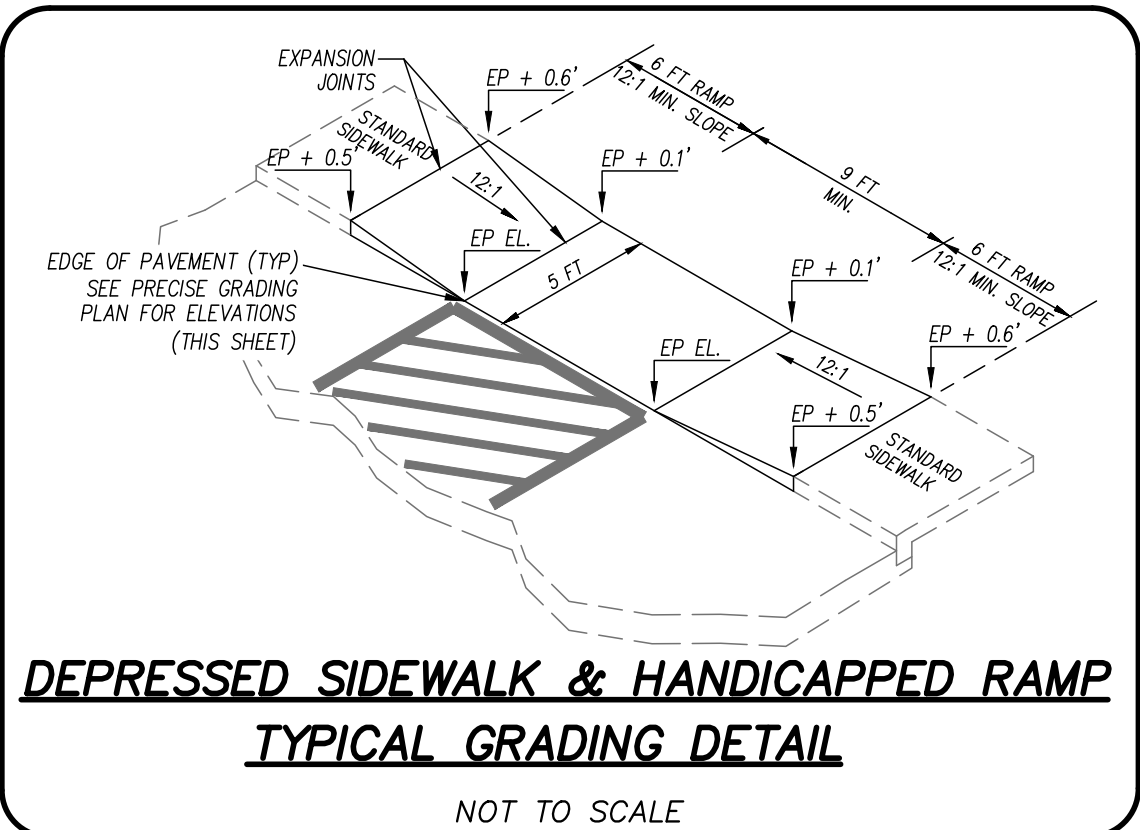
Signed: _____

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



- GRADING NOTES:**
- CONTRACTOR TO MAKE SMOOTH TRANSITION FROM INVERTED CROWN TO SHEET FLOW IN DESIGNATED AREAS
 - CONTRACTOR TO ENSURE POSITIVE DRAINAGE IN ALL FINISHED AREAS.
 - ALL BUILDING ROOF DRAINS MUST BE DIRECTED INTO THE STORM DRAINAGE COLLECTION SYSTEM OR INTO THE PARKING LOT.

- GRADING KEY**
- UNLESS NOTED ALL ELEVATIONS ARE TO FINISHED GRADE.
- TG - TOP OF GRATE
 - GL - GUTTER LINE
 - TC - TOP OF CURB
 - EP - EDGE OF PAVEMENT
 - FS - FINISHED SURFACE
 - PROPOSED STORM SEWER & CATCH BASIN



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COMMERCIAL / RESIDENTIAL

P.O. BOX 4041
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(910) 791-4441

GRADING PLAN
FLUTWICK FLATS

GRADING PLAN
FLUTWICK FLATS

LOCATED IN CITY OF WILMINGTON
NEW HANOVER COUNTY, NORTH CAROLINA

OWNER: REMARKABLE PROPERTIES, LLC
TO S. CARDINAL DRIVE
WILMINGTON, NC 28403

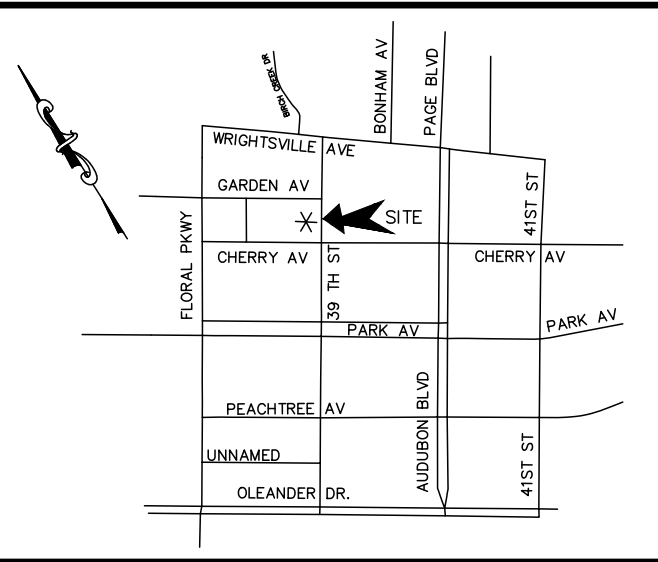
REV.	NO.	DATE	BY	REMARKS
6		7-9-19	RLW	REVISION UNDERGROUND SYSTEM
5		6-15-19	JSM	UPDATED FOR CITY SIGNATURES
4		5-15-19	RLW	ADDED STAIRS AT SIDEWALK CONNECTIONS
3		9-21-19	RLW	REVISION GRADING ON NORTH SIDE OF BUILDING
2		10-14-19	MRB	PLOTTED FOR CITY SIGNATURES
1		8-22-19	RLW	REVISION PER TRC COMMENTS

DATE: 7-9-19
HORIZ. SCALE: 1" = 20'
VERT. SCALE: N/A
DRAWN BY: RLW
CHECKED BY: HSR
PROJECT NO.: 05-0083

Sheet No. **6** of **8**

LOCATION MAP

NOT TO SCALE



BORING	SHWT DEPTH (M)	SHWT ELEV.	INFILTRATION RATE (M/HR)
B1	47	30.0	1.10
B2	44	31.8	0.61

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 DATA:

PROPERTY AREA
44,100 SF (1.01 AC)

SOIL TYPE(S)
16,157 SF (0.37 AC) = Jb
27,943 SF (0.64 AC) = Sh

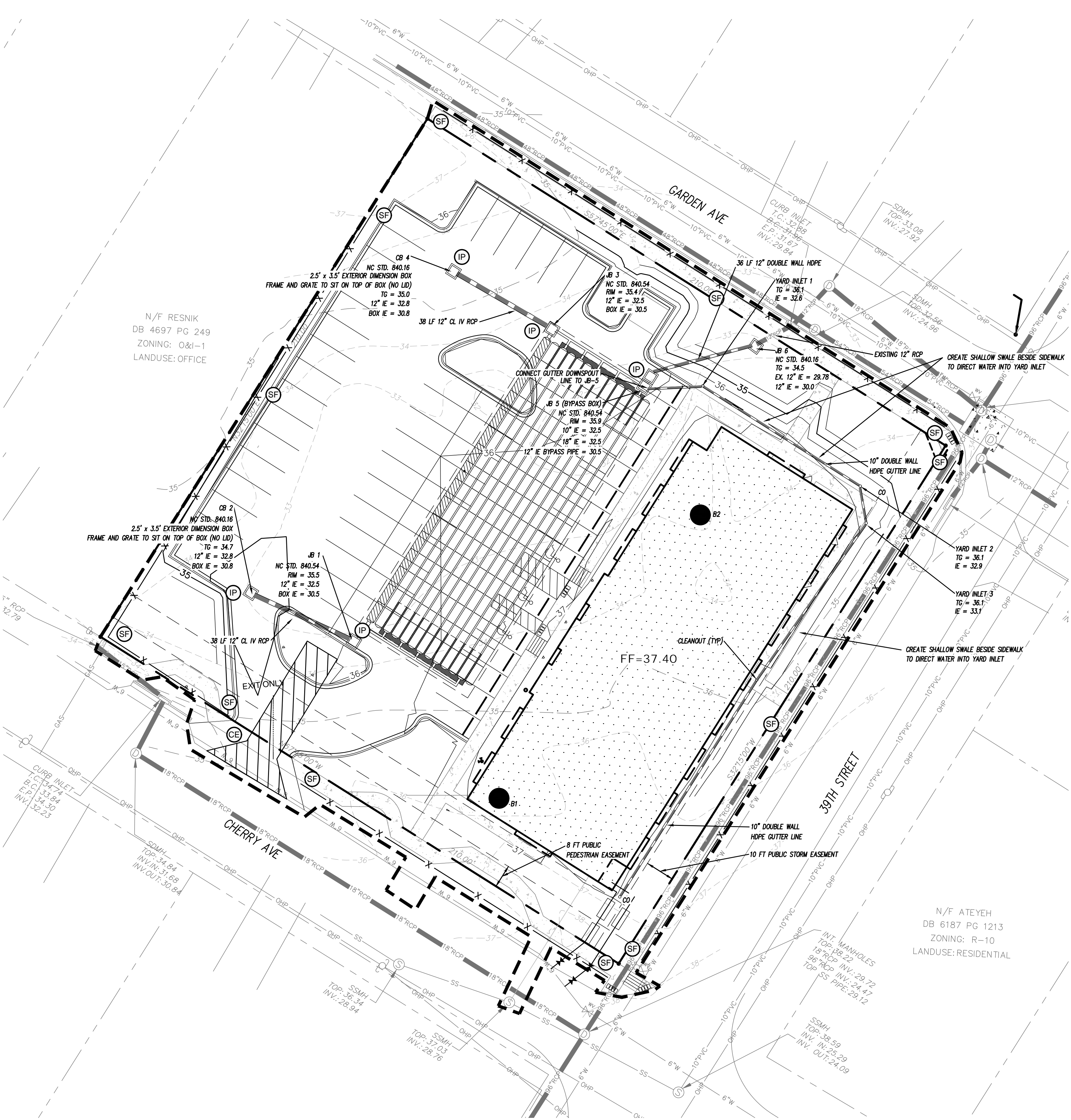
PROPOSED BUILDINGS = 9,236 SF
PROPOSED ASPHALT = 20,308 SF
PROPOSED SIDEWALK = 1,692 SF
TOTAL = 31,236 SF

% IMP = 31,236/44,100 = 0.708 OR 71%
SQUARE FOOTAGE OF DISTURBANCE
49,199 SF (1.13 AC)

LEGEND

- EXISTING BOUNDARY
- PROP BUILDING FOOTPRINT
- PROPOSED STORM SEWER & CATCH BASIN
- CONSTRUCTION ENTRANCE
- SILT FENCE

- NOTE WELL:**
- SOIL STABILIZATION SHALL BE ACHIEVED ON ANY AREA OF A SITE WHERE LAND ACTIVITIES HAVE TEMPORARILY CEASED ACCORDING TO THE FOLLOWING SCHEDULE:
 - ALL PERIMETER DIKES, SWALES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1 SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 7 CALENDAR DAYS FROM LAST LAND-DISTURBING ACTIVITY.
 - ALL OTHER DISTURBED AREAS SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 14 CALENDAR DAYS FROM LAST LAND-DISTURBING ACTIVITY.
 - DEMUDED AREAS MUST BE STABILIZED WITHIN FIFTEEN (15) WORKING DAYS OF CEASE OF ANY PHASE OF ACTIVITY. ALL SLOPES MUST BE STABILIZED WITHIN TWENTY-ONE (21) CALENDAR DAYS OF CEASE OF ANY PHASE OF ACTIVITY. THIS INCLUDES SLOPES, SWALES, CHANNELS AND STOCKPILES.
 - THIS PLAN TO BE UTILIZED AND REVIEWED ONLY IN CONJUNCTION WITH THE WRITTEN NARRATIVE, WHICH IS AN INTEGRAL PART OF THIS EROSION AND SEDIMENT CONTROL PLAN.
 - ALL SLOPES SHALL BE 3:1 OR FLATTER.
 - ALL ROOF DRAINS TO BE DIRECTED TO STORM DRAINAGE SYSTEM IN PARKING LOT.
 - NO WETLANDS EXIST ON SITE.
 - BOUNDARY AND TOPOGRAPHY SURVEYED PERFORMED BY MICHAEL UNDERWOOD AND ASSOCIATES
 - ELEVATION DATUM: NAVD 88



- CONSTRUCTION SCHEDULE -**
- OBTAIN APPROVAL OF PLAN AND ANY NECESSARY PERMITS, AND HOLD A PRE-CONSTRUCTION CONFERENCE PRIOR TO COMMENCING ANY WORK.
 - FLAG WORK LIMITS AND STAKE-OUT PARKING LOT AND STORM DRAINAGE STRUCTURES FOR PRELIMINARY GRADING.
 - INSTALL GRAVEL CONSTRUCTION ENTRANCES.
 - INSTALL SILT FENCING PRIOR TO ROUGH GRADING THE REMAINING SITE AND ANY STOCKPILING OF MATERIAL AND TOPSOIL NECESSARY.
 - INSTALL SWALES, GRASS LINED CHANNELS, SEDIMENT TRAPS & BASINS AND ANY OTHER SEDIMENT CONTROL PRACTICES SHOWN, PRIOR TO ROUGH GRADING ROADWAYS AND SITE, STOCKPILING TOPSOIL, AS NECESSARY.
 - INSTALL UTILITIES IN ROADWAY, ESTABLISH FINAL ROAD GRADES AND STABILIZE ROAD WITH STONE BASE COURSE.
 - FINAL GRADE, INSTALL NON-MUNICIPAL UTILITIES AS NEEDED, AND VEGETATIVELY STABILIZE AREAS WHERE BUILDING CONSTRUCTION IS NOT IMMINENT.
 - ALL EROSION AND SEDIMENT CONTROL PRACTICES ARE TO BE INSPECTED WEEKLY AND AFTER ANY RAINFALL, AND REPAIRED AS NECESSARY.
 - UPON COMPLETION OF CONSTRUCTION, THE ROADWAY IS TO BE PAVED AND ALL AREAS PERMANENTLY VEGETATIVELY STABILIZED. AFTER SITE STABILIZATION, TEMPORARY MEASURES ARE TO BE REMOVED.

- MAINTENANCE PLAN -**
- ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL, BUT IN NO CASE, LESS THAN ONCE EVERY WEEK AND WITHIN 24 HOURS OF EVERY 0.5" RAINFALL.
 - 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 OBSTRUCTIVE MATERIAL SPILLED, WASHED OR TRACKED ONTO THE CONSTRUCTION ENTRANCE OR ROADWAYS.
 - SEDIMENT WILL BE REMOVED FROM HARDWARE CLOTH AND GRAVEL INLET PROTECTION, BLOCK AND GRAVEL INLET PROTECTION, ROCK DOWNDRAIN PROTECTION AND ROCK PIPE INLET PROTECTION WHEN THE DESIGN 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. SILT SOCKS WILL BE EMPTIED ONCE A WEEK AND AFTER EVERY RAIN EVENT. SEDIMENT WILL BE REMOVED FROM AROUND WAILES, BEAVER DAMS, DANDY SOCKS AND SOCKS ONCE A WEEK AND AFTER RAIN EVENT. DIVERSION DITCHES WILL BE CLEANED OUT IMMEDIATELY TO REMOVE SEDIMENT OR OBSTRUCTIONS FROM THE FLOW AREA. THE DIVERSION RIDGES WILL ALSO BE REPAIRED. SWALES WILL BE TEMPORARILY STABILIZED WITHIN 21 CALENDAR DAYS OF CEASE OF ANY PHASE OF ACTIVITY ASSOCIATED WITH A SWALE.
 - SEDIMENT WILL BE REMOVED FROM THE SEDIMENT FENCE WHEN IT BECOMES HALF FILLED. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. STAKES MUST BE STEEL, STAKE SPACING WILL BE 6 FEET MAX, WITH THE USE OF EXTRA STRENGTH FABRIC, WITHOUT WIRE BACKING. STAKE SPACING WILL BE 8 FEET MAX, WHEN STANDARD STRENGTH FABRIC AND WIRE BACKING ARE USED. IF ROCK FILTERS ARE DESIGNED AT LOW POINTS IN THE SEDIMENT FENCE, THE ROCK WILL BE REPAIRED OR REPLACED IF IT BECOMES HALF FULL OF SEDIMENT, NO LONGER DRAINS AS DESIGNED OR IS DAMAGED.
 - SEDIMENT WILL BE REMOVED FROM SEDIMENT TRAPS WHEN THE DESIGN STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. THE ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS OR WHEN THE ROCK IS DISLOADED. BAFFLES WILL BE REPAIRED OR REPLACED IF THE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE. THEY WILL BE REPLACED PROMPTLY. SEDIMENT WILL BE REMOVED FROM BAFFLES WHEN DEPOSITS REACH HALF THE HEIGHT OF THE 1ST BAFFLE. FLOATING SKIMMERS WILL BE INSPECTED WEEKLY AND WILL BE KEPT CLEAN.
 - SEDIMENT WILL BE REMOVED FROM THE SEDIMENT BASH WHEN THE DESIGN STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS OR THE ROCK IS DISLOADED. BAFFLES WILL BE REPAIRED OR REPLACED IF THEY COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE. THEY WILL BE REPLACED PROMPTLY. SEDIMENT WILL BE REMOVED FROM BAFFLES WHEN DEPOSITS REACH HALF THE HEIGHT OF THE 1ST BAFFLE. FLOATING SKIMMERS WILL BE INSPECTED WEEKLY AND WILL BE KEPT CLEAN.
 - ALL SEEDING AREAS WILL BE STABILIZED WITHIN 15 WORKING DAYS.
 - FLOCCULANTS WILL BE USED TO ADDRESS TURBIDITY ISSUES. THE PUMPS, TANKS, HOSES AND INJECTION SYSTEMS WILL BE CHECKED FOR PROBLEMS OR TURBID DISCHARGES DAILY.
 - INSPECT CHECK DAMS AND CHANNELS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT AND REPAIR IMMEDIATELY. CLEAN OUT SEDIMENT, STRAW LIMBS, OR OTHER DEBRIS THAT COULD CLOG THE CHANNEL WHEN NEEDED.
- VEGETATIVE PLAN -**
- PERMANENT VEGETATION TO BE ESTABLISHED IN ACCORDANCE WITH "NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL," SECTION 6.11, LATEST VERSION.

- PLANNED EROSION AND SEDIMENT CONTROL PRACTICES -**
- TEMPORARY GRAVEL CONSTRUCTION ENTRANCE**
Practice 6.06
SHALL BE INSTALLED AT THE ENTRANCES TO THE PROJECT FROM AN EXISTING ROADWAY. DRAINAGE SHOULD BE AWAY FROM THE ROAD AND EROSION WILL BE CONTROLLED WITH DOWNSTREAM PRACTICES. DURING WET WEATHER IT MAY BE NECESSARY TO WASH TRUCK TIRES AT THESE LOCATIONS.
 - LAND GRADING**
Practice 6.02
GRADING SHOULD BE LIMITED TO AREAS AS SHOWN ON THE PLANS. CUT AND FILL SLOPES SHALL BE 3:1 OR FLATTER EXCEPT WHERE SPECIFICALLY INDICATED. CARE SHALL BE TAKEN DURING LAND GRADING ACTIVITIES NOT TO DAMAGE EXISTING TREES THAT ARE IDENTIFIED AS "TO BE PRESERVED".
 - SEDIMENT FENCE**
Practice 6.02
SEDIMENT FENCING SHOULD BE INSTALLED AS SHOWN ON THE PLAN, TO DELINEATE AND PROTECT WETLANDS AND SPECIFIED AREAS, AND AROUND ANY TEMPORARY STOCKPILE AREAS AS NECESSARY TO PREVENT ANY GRADED INTERIOR AREAS FROM ERODING ONTO ADJACENT LANDS OR ROADWAY, OR INTO INLETS, OR AS DIRECTED BY ENGINEER OR NEW HANOVER COUNTY EROSION CONTROL PERSONNEL.
 - INLET PROTECTION**
Practice 6.02
STORM SEWER INLET BARRIERS OF BLOCK AND GRAVEL INLET PROTECTION ARE TO BE CONSTRUCTED TO HELP PREVENT SEDIMENT FROM ENTERING THE STORM SEWER SYSTEM.
 - TREE PROTECTION**
PRACTICE 6.05
RESTRICT ACCESS TO TP2 WITH TALL BRIGHT PROTECTIVE FENCING ON AREAS INDICATED ON PLAN.

- STORMWATER DRAINAGE STRUCTURE NOTES**
- CONTRACTOR AND PRECASTER TO DETERMINE STORM BOX STRUCTURE SIZES.
 - CURB FRAME AND GRATES TO BE NCDOT STD 840.03 OR EQUIV.
 - RING AND COVERS TO BE NCDOT STD. 840.54 OR EQUIV.
 - PRECAST STORM STRUCTURES TO MEET HS-20-44 LOADING.
 - DROP INLET FRAME AND GRATES TO BE NCDOT STD 840.16 OR EQUIV.
 - CATCH BASINS 1 AND 2 MUST HAVE 2 FT SUMP BELOW LOWEST PIPE INVERT.



CSD ENGINEERING
LICENSE # C-2710
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P.O. BOX 4041
WILMINGTON, NC 28406
(910) 791-4441

STORMWATER AND EROSION CONTROL PLAN FOR FLUTWICK FLATS

OWNER: REMARKABLE PROPERTIES, LLC
TO S. CARDINAL DRIVE
WILMINGTON, NC 28403

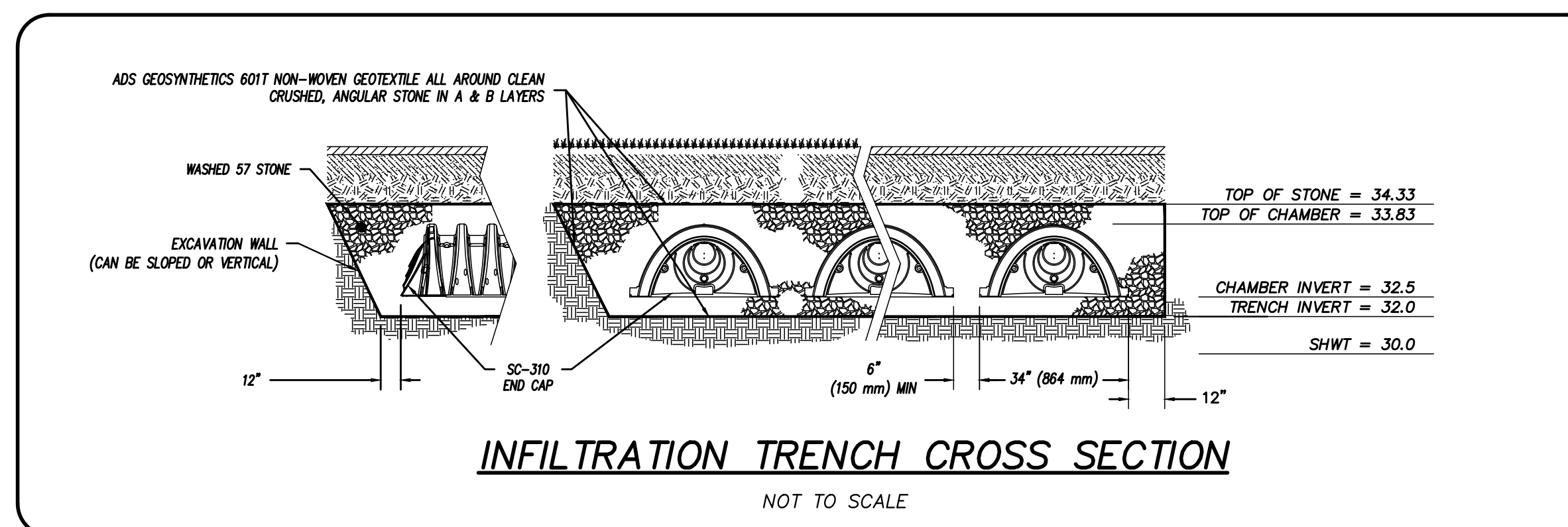
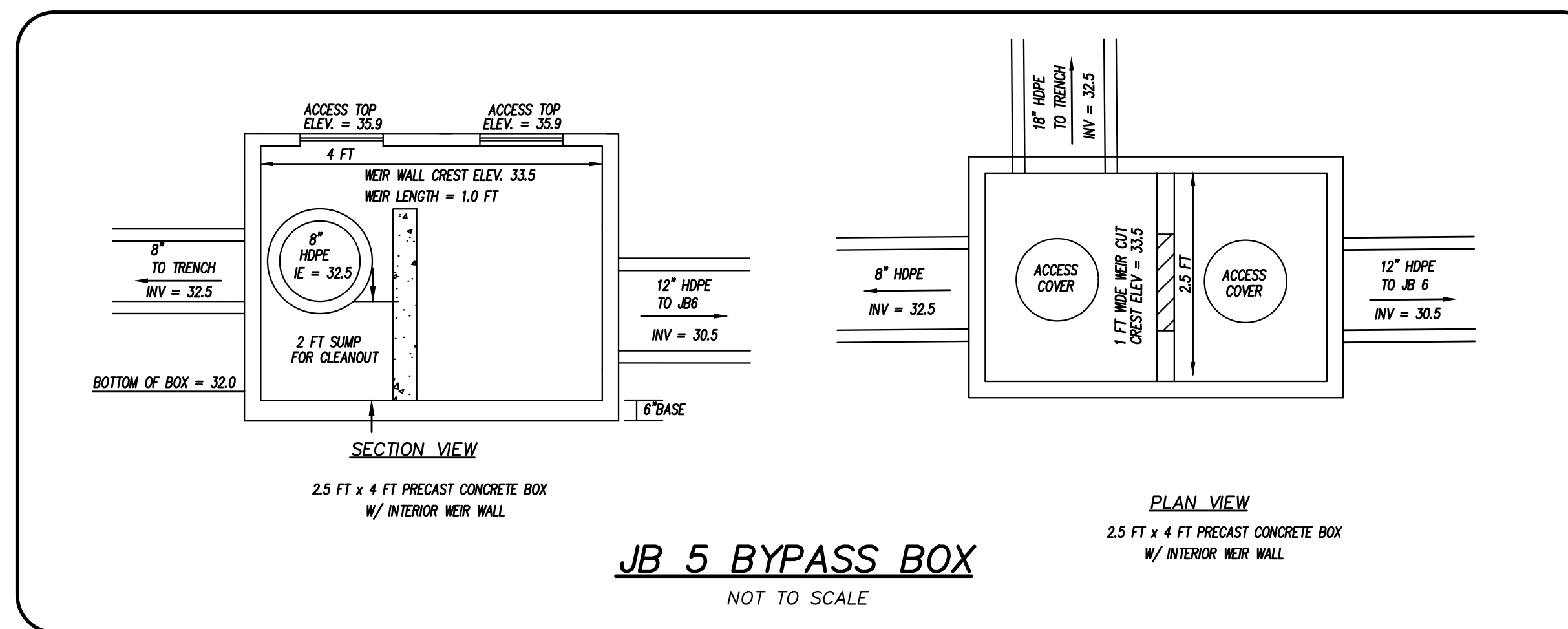
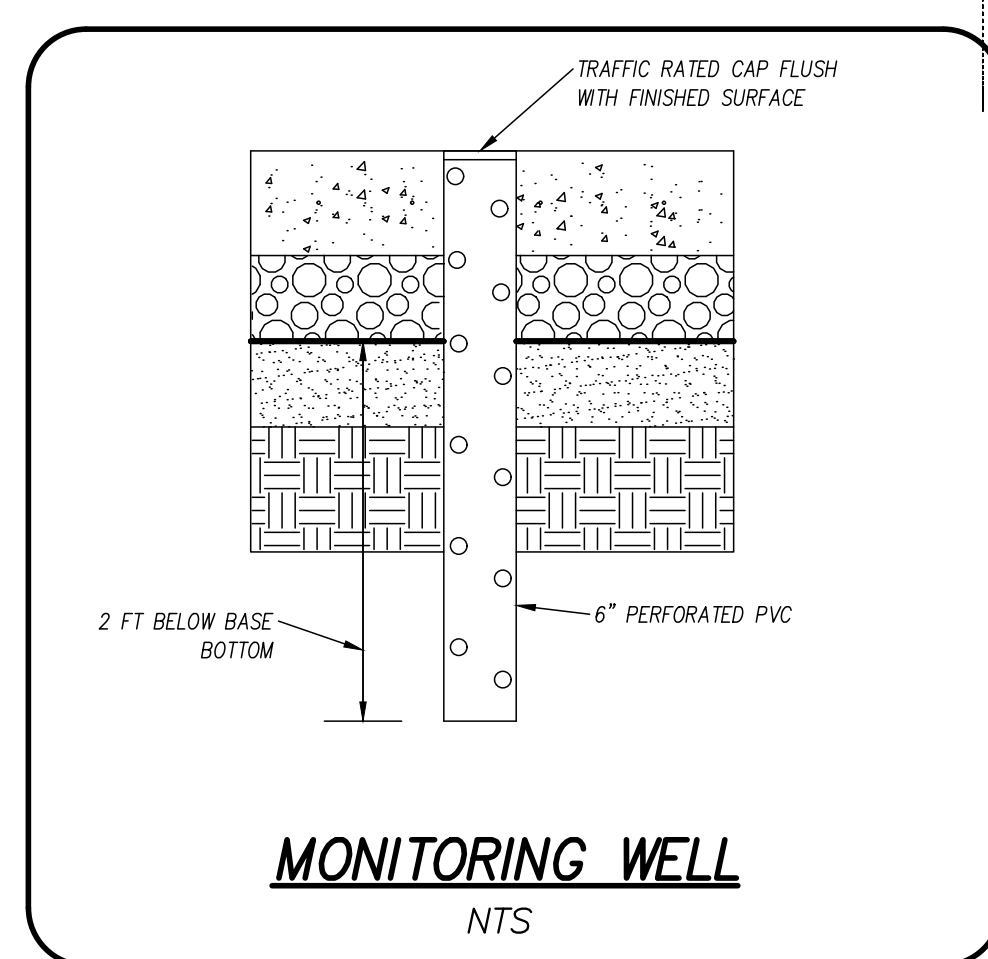
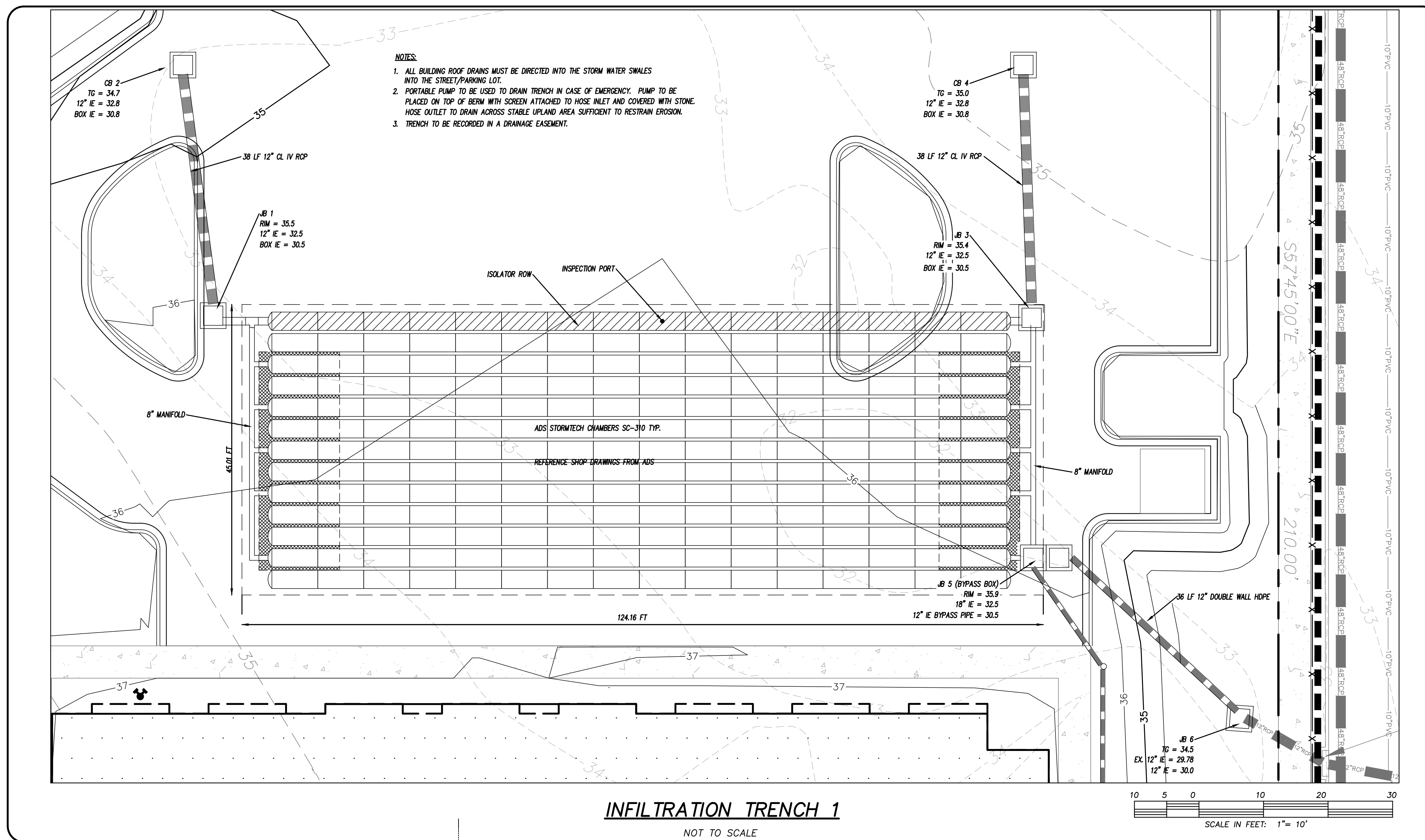
STORMWATER AND EROSION CONTROL PLAN FOR

REV. NO.	DATE	BY	REMARKS
1	7-9-19	RLW	REVISED UNDERGROUND INFILTRATION SYSTEM
2	6-15-21	JSM	ADDED YARD INLETS ON NORTH SIDE
3	9-23-20	MLB	ADDED YARD INLETS ON NORTH SIDE
4	10-14-19	MLB	FLATTED FOR CITY SIGNATURES
5	8-22-19	MLB	REVISED PER TRC COMMENTS

PLANNED IN CITY OF WILMINGTON
NEW HANOVER COUNTY, NORTH CAROLINA
OWNER: REMARKABLE PROPERTIES, LLC
TO S. CARDINAL DRIVE
WILMINGTON, NC 28403

REV. NO.	DATE	BY	REMARKS
1	7-9-19	RLW	REVISED UNDERGROUND INFILTRATION SYSTEM
2	6-15-21	JSM	ADDED YARD INLETS ON NORTH SIDE
3	9-23-20	MLB	ADDED YARD INLETS ON NORTH SIDE
4	10-14-19	MLB	FLATTED FOR CITY SIGNATURES
5	8-22-19	MLB	REVISED PER TRC COMMENTS

DATE: 7-9-19
HORIZ. SCALE: 1" = 20'
VERT. SCALE: N/A
DRAWN BY: RLW
CHECKED BY: HSR
PROJECT NO.: 05-0083



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 _____



CSD ENGINEERING

LICENSE # C-2710
ENGINEERING
LAND PLANNING
COMMERCIAL / RESIDENTIAL

P.O. BOX 4041
WILMINGTON, NC 28406
(910) 791-4441

STORMWATER AND EROSION CONTROL
PLAN FOR
FLITWICK FLATS

STORMWATER AND EROSION CONTROL PLAN FOR
FLITWICK FLATS
LOCATED IN CITY OF WILMINGTON
NEW HANOVER COUNTY, NORTH CAROLINA
OWNER: REMARKABLE PROPERTIES, LLC
TO S. CARDINAL DRIVE
WILMINGTON, NC 28403

REV. NO.	DATE	BY	REMARKS
4	7-29-21	RLW	REVISED UNDERGROUND INFILTRATION SYSTEM
3	6-15-21	JSN	UPDATED PLAN FOR CITY SIGNATURES
2	10-14-19	MRB	PLOTTED FOR CITY SIGNATURES
1	8-22-19	RLW	REVISED PER CITY ENG. COMMENTS

DATE: 7-9-19
HORIZ. SCALE: 1" = 10'
VERT. SCALE: N/A
DRAWN BY: RLW
CHECKED BY: HSR
PROJECT NO.: 05-0083

Sheet No. **EC2** of **EC4**

Construction Road Stabilization
Specification # 6.60 - Construction Specifications

1. Clear roadbed and parking areas of all vegetation, roots and other objectionable material.
2. Ensure that road construction follows the natural contours of the terrain if it is possible.
3. Locate parking areas on naturally flat areas if they are available. Keep grades sufficient for drainage but never steeper than 2 to 3%.
4. Provide surface drainage, and divert excess runoff to stable areas by using water bars or turnouts (References: Runoff Control Measures).
5. Keep cuts and fills at 2:1 or flatter for safety and stability and to facilitate establishment of vegetation and maintenance.
6. Spread a 6-inch course of "ABC" crushed stone evenly over the full width of the road and smooth to avoid depressions.
7. Where seepage areas or seasonally wet areas must be crossed, install subsurface drains or geotextile fabric cloth before placing the crushed stone (Practice 6.81, Subsurface Drain).
8. Vegetate all roadside ditches, cuts, fills and other disturbed areas or otherwise appropriately stabilize as soon as grading is complete (References: Surface Stabilization).
9. Provide appropriate sediment control measures to prevent off-site sedimentation.

Maintenance
Inspect construction roads and parking areas periodically for condition of surface. Topdress with new gravel as needed. Check road ditches and other seeded areas for erosion and sedimentation after runoff-producing rains. Maintain all vegetation in a healthy, vigorous condition. Sediment-producing areas should be treated immediately.

Temporary Gravel Construction Entrance/Exit
Specification # 6.06 - Construction Specifications

1. Clear the entrance and exit area of all vegetation, roots and other objectionable material and properly grade it.
2. Place the gravel to the specific grade and dimensions shown on the plans and smooth it.
3. Provide drainage to carry water to a sediment trap or other suitable outlet.
4. Use geotextile fabric because they improve stability of the foundation in locations subject to seepage or high water table.

Maintenance
Maintain the gravel pad in a condition to prevent mud or sediment from leaving the construction site. This may require periodic topdressing with 2-inch stone. After each rainfall, inspect any structure used to trap sediment and clean it out as necessary. Immediately remove any objectionable materials spilled, washed, or tracked onto public roadways.

Temporary Seeding
Specification # 6.10 - Specifications

Complete grading before preparing seedbeds and install all necessary erosion control practices, such as dikes, waterways and basins. Minimize steep slopes because they make seedbed preparation difficult and increase the erosion hazard. If soils become compacted during grading, loosen them to a depth of 6-8 inches using a ripper, harrow, or chisel plow.

Seedbed Preparation
Good seedbed preparation is essential to successful plant establishment. A good seedbed is well-pulverized, loose and uniform. Where hydroseeding methods are used, the surface may be left with a more irregular surface of large clods and stones.

Liming - Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone of the rate of 1 to 1 1/2 tons/acre on coarse-textured soils and 2-3 tons/acre on fine-textured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.

Fertilizer - Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700-1,000 lb./acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertilizer more than 30 minutes before application.

Surface roughening - If recent tillage operations have resulted in a large surface, additional roughening may not be required except to break up loose clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by disking, raking, harrowing, or other suitable methods. Groove or furrow slopes steeper than 3:1 on the contour before seeding (Practice 6.03, Surface Roughening).

Plant Selection
Select an appropriate species or species mixture from Table 6.10a, for seeding in late winter and early spring, Table 6.10b for summer, and Table 6.10c for fall.

Seeding
Evenly apply seed using a cyclone seeder (broadcast), drill, cultipacker seeder, or hydroseeder. Use seeding rates given in Table 6.10a-6.10c. Broadcast seeding and hydroseeding are appropriate for steep slopes where equipment cannot be driven. Hand broadcasting is not recommended because of the difficulty in achieving a uniform distribution. Small grains should be planted no more than 1/2 inch deep, and grasses and legumes no more than 1/2 inch. Broadcast seed must be covered by raking or chain dragging, and then lightly firmed with a roller or cultipacker. Hydroseeded mixtures should include a wood fiber (cellulose) mulch.

Mulching
The use of appropriate mulch will help ensure establishment under normal conditions and is essential to seeding success under harsh site conditions (Practice 6.14, Mulching). Harsh site conditions include:

- seeding in fall for winter cover (wood fiber mulches are not considered adequate for this use),
 - slopes steeper than 3:1,
 - excessively hot or dry weather,
 - adverse soils (saline, rocky, or high in clay or sand), and
 - areas receiving concentrated flow.
- If the area to be mulched is subject to concentrated water flow, as in channels, anchor mulch with netting (Practice 6.14, Mulching).

Permanent Seeding
Specifications # 6.11 - Specifications

Seedbed Requirements
Establishment of vegetation should not be attempted on sites that are unsuitable due to inappropriate soil texture (Table 6.11a), poor drainage, concentrated overland flow, or steepness of slope until measures have been taken to correct these problems.

To maintain a good stand of vegetation, the soil must meet certain minimum requirements as a growth medium. The existing soil should have these criteria:

- Enough fine-grained (silt and clay) material to maintain adequate moisture and nutrient supply (available water capacity of at least .05 inches water to 1 inch of soil).
- Sufficient pore space to permit root penetration.
- Sufficient depth of soil to provide an adequate root zone. The depth to rock or impermeable layers such as hardpans should be 12 inches or more, except on slopes steeper than 2:1 where the addition of soil is not feasible.
- A favorable pH range for plant growth, usually 6.0-6.5.
- Freedom from large roots, branches, stones, large clods of earth, or trash of any kind. Clods and stones may be left on slopes steeper than 3:1 if they are to be hydroseeded.

If any of the above criteria are not met - i.e., if the existing soil is too coarse, dense, shallow or acidic to foster vegetation - special amendments are required. The soil conditioners described below may be beneficial or, preferably, topsoil may be applied in accordance with Practice 6.04, Topsoiling. Soil Conditioners

In order to improve the structure or drainage characteristics of a soil, the following material may be added. These amendments should only be necessary where soils have limitations that make them poor for plant growth or for fine turf establishment (See Chapter 3, Vegetation Considerations).

Peat - Appropriate types are sphagnum moss peat, lagoon moss peat, reedsedge peat, or peat humus, all from fresh-water sources. Peat should be shredded and conditioned in storage piles for at least 6 months after excavation.

Sand - Clean and free of toxic materials.

Vermiculite - horticultural grade and free of toxic substances.

Rotted manure - stable or cattle manure not containing undue amounts of straw or other bedding materials.

Thoroughly rotted sawdust - free of stones and debris. Add 6 lb. of nitrogen to each cubic yard.

Sludge - Treated sewage and industrial sludges are available in various forms; these should be used only in accordance with local, State and Federal regulations.

Species Selection
Use the key to Permanent Seeding Mixtures (Table 6.11b) to select the most appropriate seeding mixture based on the general site and maintenance factors. A listing of species, including scientific names and characteristics, is given in Appendix 8.02.

Seedbed Preparation
Install necessary mechanical erosion and sedimentation control practices before seeding, and complete grading according to the approved plan. Lime and fertilizer needs should be determined by soil tests. Soil testing is performed free of charge by the North Carolina Department of Agriculture soil testing laboratory. Directions, sample cartons, and information sheets are available through county agricultural extension offices or from NCDAS. Because the NCDAS soil testing lab requires 1-8 weeks for sample turn-around, sampling must be planned well in advance of final grading. Testing is also done by commercial laboratories.

When soil test are not available, follow rates suggested on the individual specification sheet for the seeding mix chosen (Tables 6.11a through 6.11c). Application rates usually fall into the following ranges:

- Ground agricultural limestone
- Light-textured, sandy soils: 1-1 1/2 tons/acre
- Heavy textured, clayey soils: 2-3 tons/acre
- Fertilizer
- Grasses 800-1200 lb/acre of 10-10-10 (or the equivalent)
- Grass-legume mixtures: 800-1200 lb/acre of 5-10-10 (or the equivalent)

Apply lime and fertilizer evenly and incorporate into the top 4-6 inches of soil by disking or other suitable means. Operate machinery on the contour. When using a hydroseeder, apply lime and fertilizer to a rough, loose surface.

Roughen surfaces according to Practice 6.03, Surface Roughening. Complete seedbed preparation by breaking up large clods and raking into a smooth, uniform surface (slope less than 3:1). Fill in or level depressions that can collect water. Broadcast seed into a freshly loosened seedbed that has not been sealed by rainfall.

Table 6.11a - Seeding No. 40P for: Well-Drained Sandy Loams to Dry Sands, Coastal Plain; Low to Medium-Care Lawns

Seeding mixture
Species - Centipedegrass - Rate - 10-20 lb/acre (seed) or 33 lb/acre (sprigs)
Seeding dates - Mar - Ann. (Sprigging can be done through July where water is available for irrigation.)
Soil amendments - Apply lime and fertilizer according to soil test, 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 2ft 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 1/2 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.

Maintenance
Table 6.11b - Seeding No. 50P for: Well-Drained Sandy Loams to Dry Sands; Low Seeding mixture

Species	Rate (lb/acre)
Panicum Bahiagrass	50
Setaria lespedeza	30
Common Bermudagrass	10
German millet	10

Seeding notes
1. Where a neat appearance is desired, omit sericea
2. Use common Bermudagrass 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, raking and 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 - Refer to the following Apr. with 50 lb/acre nitrogen. Repeat as growth requires. May be moved only once a year. Where a neat appearance is desired, omit sericea and now as often as needed.

Table 6.11c - Seeding No. 70P for: Grass-lined Channels; Coastal Plain

Seeding Mixture
Species - Common Bermudagrass - Rate - 40-80 (1/2 lb/1,000 ft)
Seeding dates - Coastal Plain: 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.

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 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. Refer to the following Apr. with 50 lb/acre

Refer to Appendix 8.02 for botanical names

Land Grading

Specification # 6.02 - Construction Specifications

1. Construct and maintain all erosion and sedimentation control practices and measures in accordance with the approved sedimentation control plan and construction schedule.

2. Remove good topsoil from areas to be graded and filled, and preserve it for use in finishing the grading of all critical areas.

3. Scarify areas to be topsoiled to a minimum depth of 2 inches before placing topsoil (Practice 6.04, Topsoiling).

4. Clear and grub areas to be filled to remove trees, vegetation, roots, or other objectionable material that would affect the planned stability of the fill.

5. Ensure that fill material is free of brush, rubbish, rocks, logs, stumps, building debris, and other materials inoperative for constructing stable fills.

6. Place all fill in layers not to exceed 9 inches in thickness, and compact the layers as required to reduce erosion, slippage, settlement, or other related problems.

7. Do not incorporate frozen material or soft, mucky, or highly compressible materials into fill slopes.

8. Do not place fill on a frozen foundation, due to possible subsidence and slippage.

9. Keep diversions and other water conveyance measures free of sediment during all phases of development.

10. Handle seeps or springs encountered during construction in accordance with approved methods (Practice 6.81, Subsurface Drain).

11. Permanently stabilize all graded areas immediately after final grading is completed on each area in the grading plan. Apply temporary stabilization measures on all graded areas when work is to be interrupted or delayed for 30 working days or longer.

12. Ensure that topsoil stockpiles, borrow areas, and spoil areas are adequately protected from erosion with temporary and final stabilization measures, including sediment fencing and temporary seeding as necessary.

Maintenance
Periodically check all graded areas and the supporting erosion and sedimentation control practices, especially after heavy rainfalls. Promptly remove all sediment from diversions and other water disposal practices. If washouts or breaks occur, repair them immediately. Prompt maintenance of small eroded areas before they become significant gullies is an essential part of an effective erosion and sedimentation control plan.

Temporary Seeding (continued)

Table 6.10a - Temporary Seeding Recommendation for Late Winter and Early Spring Seeding mixture

Species - Ryegrass, Annual lespedeza (Kobe in Piedmont and Coastal Plain)
Rate (lb/acre) - 120
Omit annual lespedeza when duration of temporary cover is not to extend beyond June

Seeding dates - 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 - Refer to 6.11 if growth is not fully adequate. Re-seed, refer to 6.11 and mulch immediately following erosion or other damage.

Table 6.10b - Temporary Seeding Recommendation for Summer Seeding mixture

Species - German millet
Rate (lb/acre) - 40
Seeding dates - 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 - Refer to 6.11 if growth is not fully adequate. Re-seed, refer to 6.11 and mulch immediately following erosion or other damage.

Table 6.10c - Temporary Seeding Recommendation for Fall Seeding mixture

Species - Ryegrass
Rate (lb/acre) - 120
Seeding dates - Coastal Plain and Piedmont - Aug 15 - Dec. 30
Soil amendments - Follow soil tests or apply 2,000 lb/acre ground agricultural limestone and 1,000 lb/acre 10-10-10 fertilizer.

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

Maintenance - Repair and refer to 6.11 if growth is not fully adequate. 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)

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: 10/14/2019 Permit # 2019059
Signed: *Trent Butler* for RAC

Approved Construction Plan

Name	Date
Planning	<i>John Walt</i> 10-14-19
Traffic	<i>James Melvitt</i> 10/14/19
Fire	<i>James Melvitt</i> 10/15/19

SF

Sediment Fence (Silt Fence)

Specification 6.62 - Construction Specifications
MAINTENANCE

1. Use a synthetic filter fabric or a porous sheet of polypropylene, nylon, polyester, or polyethylene yarn, which is certified by the manufacturer or supplier as conforming to the requirements shown in Table 6.62b. Synthetic filter fabric should contain ultraviolet ray inhibitors and stabilizers to provide a minimum of 6 months of expected usable construction life at a temperature range of 0 to 120 F.

2. Ensure that posts for sediment fences are 1.33 lb/linear ft steel with a minimum length of 4 ft. Make sure that steel post have projects to facilitate fastening the fabric.

3. For reinforcement of standard strength filter fabric, use wire fence with a minimum 14 gauge and a maximum mesh spacing of 6 inches.

Table 6.62b
Specifications For Sediment Fence Fabric
Physical Property Requirements
Filtering Efficiency - 85% (min)
Tensile Strength at Standard Strength - 30 lb/in (min)
Extra Strength - 50 lb/in (min)
Sturdy Flow Rate - 0.3 gal/sq ft/Hr (min)

CONSTRUCTION
1. Construct the sediment barrier of standard strength or extra strength synthetic filter fabric.

2. Ensure that the height of the sediment fence does not exceed 18 inches above the ground surface. (Higher fences may impound volumes of water sufficient to cause failure of the structure.)

3. Construct the filter fabric from a continuous roll cut to the length of the barrier to avoid joints. When joints are necessary, securely fasten the filter cloth only at a support post with overlap to the next post.

4. Support standard strength filter fabric by wire mesh fastened securely to the up slope side of the posts using heavy duty wire staples at least 1 inch long, or tie wires. Extend the wire mesh support to the bottom of the trench.

5. When a wire mesh support fence is used, space posts a maximum of 8 ft apart. Support posts should be driven securely into the ground to a minimum of 18 inches.

6. Extra strength filter fabric with 6ft post spacing does not require wire mesh support fence. Staple or wire the filter fabric directly to posts.

7. Excavate a trench approximately 4 inches wide and 8 inches deep along the proposed line of posts and upslope from the barrier (Figure 6.62a).

8. Backfill the trench with compacted soil or gravel placed over the filter fabric.

9. Do not attach filter fabric to existing trees.

Maintenance
Inspect sediment fences at least once a week and after each rainfall. Make any required repairs immediately.

Should the fabric of a sediment fence collapse, tear, decompose or become ineffective, replace it promptly. Replace during very dry days.

Remove sediment deposits as necessary to provide adequate storage volume for the next rain and to reduce pressure on the fence. Take care to avoid undermining the fence during cleanout.

Remove all filter materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.

IP

HARDWARE CLOTH & GRAVEL INLET PROTECTION

Specification # 6.51 - Construction Specifications
MAINTENANCE

1. Uniformly grade a shallow depression approximating the inlet.

2. Drive 5 FT steel post 2 FT into the ground surrounding the inlet.
Space post evenly around the perimeter of the inlet, a maximum of 4 FT apart.

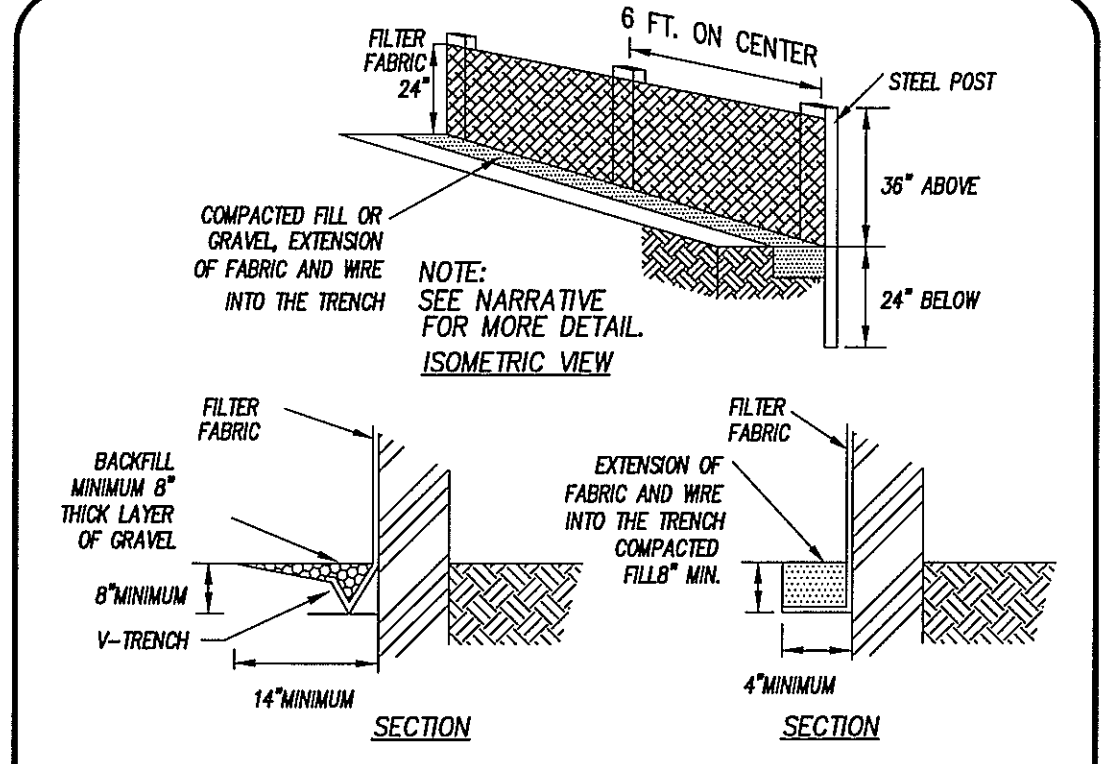
3. Surround the posts with wire mesh hardware cloth. Secure the wire mesh to steel posts at the top, middle, and bottom. Placing a 2 FT flap of the wire mesh under the gravel for anchoring is recommended.

4. Place clean gravel (No. 20 or #57 stone) on a 2:1 slope with a height of 16 inches around the wire, and smooth to an even grade.

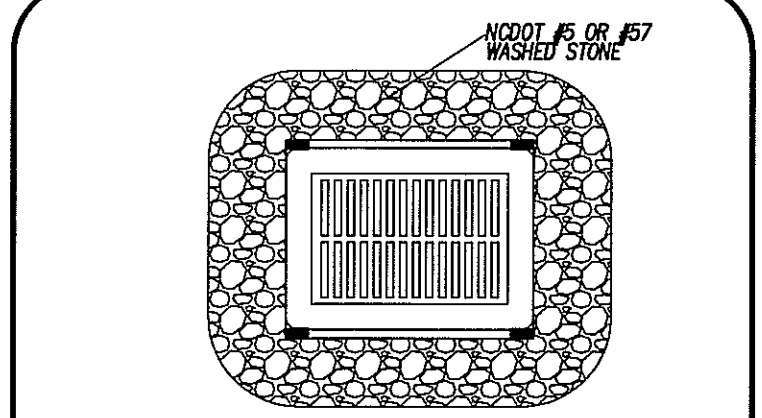
5. Once the contributing drainage area has been stabilized, remove accumulated sediment, and establish final grading elevations.

6. Compact the area properly and stabilize it with ground cover.

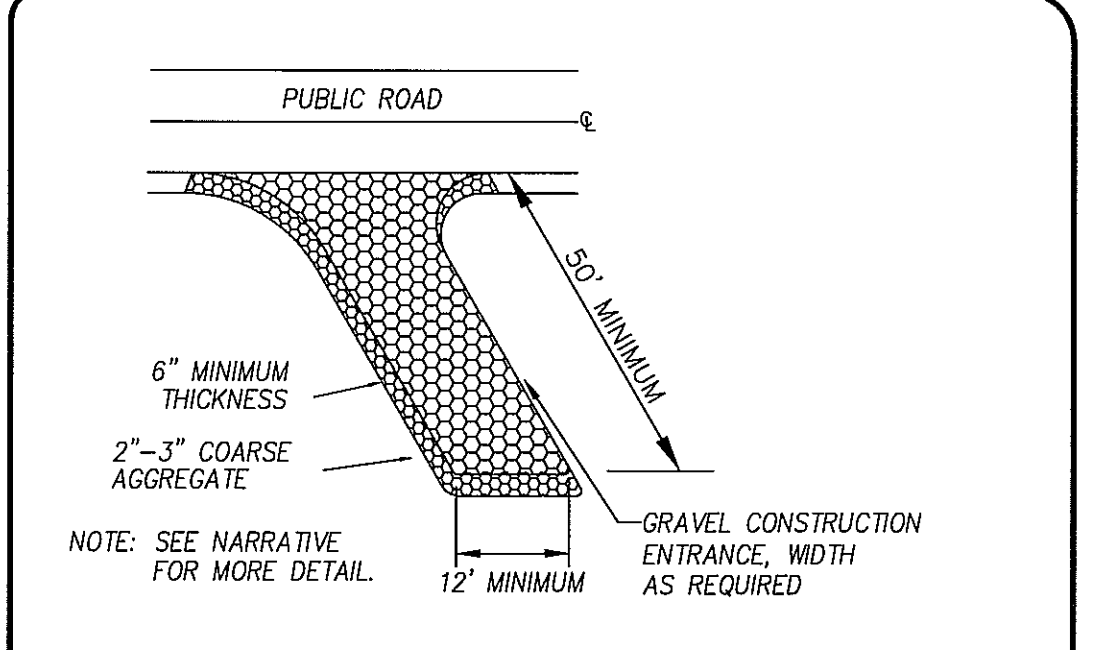
Maintenance
Inspect bluffs at least weekly and after each significant (0.5 in or greater) rainfall event. Clear the mesh wire of any debris or other objects to provide adequate flow for subsequent rains. Take care not to damage or undercut the wire mesh during sediment removal. Replace stone as needed.



SF SEDIMENT FENCE (SILT FENCE)
Practice 6.62
NTS



IP HARDWARE CLOTH & GRAVEL DROP INLET PROTECTION
Practice 6.51
NOT TO SCALE



CE TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT DETAIL
Practice 6.06
NTS

CSD ENGINEERING
LICENSE # C-2710
ENGINEERING
LAND PLANNING
COMMERCIAL / RESIDENTIAL
P.O. BOX 4041
WILMINGTON, NC 28406
(910) 791-4441

STORMWATER AND EROSION CONTROL PLAN FOR FLUTWICK FLATS
LOCATED IN CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
OWNER: REMARKABLE PROPERTIES, LLC
10 S CARDINAL DRIVE
WILMINGTON, NC 28403

FLUTWICK FLATS
LOCATED IN CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
OWNER: REMARKABLE PROPERTIES, LLC
10 S CARDINAL DRIVE
WILMINGTON, NC 28403

STORMWATER AND EROSION CONTROL PLAN FOR FLUTWICK FLATS
LOCATED IN CITY OF WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
OWNER: REMARKABLE PROPERTIES, LLC
10 S CARDINAL DRIVE
WILMINGTON, NC 28403

REV. NO.	BY	DATE	REMARKS
1	MB	10-14-19	PLOTTED FOR CITY SUBMITTALS

DATE: 7-9-19
HORZ. SCALE: N/A
VERT. SCALE: N/A
DRAWN BY: RLW
CHECKED BY: HSR
PROJECT NO.: 05-0083

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

SECTION E: GROUND STABILIZATION		
Required Ground Stabilization Timeframes		
Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed -7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones
(d) Slopes 3:1 to 4:1	14	-7 days for Falls Lake Watershed -10 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones unless there is zero slope
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

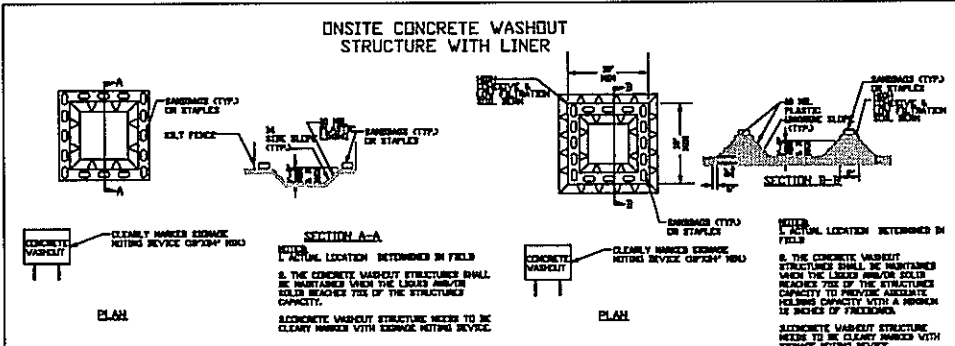
GROUND STABILIZATION SPECIFICATION	
Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:	
Temporary Stabilization	Permanent Stabilization
<ul style="list-style-type: none"> Temporary grass seed covered with straw or other mulches and tackifiers Hydroseeding Roll erosion control products with or without temporary grass seed Appropriately applied straw or other mulch Plastic sheeting 	<ul style="list-style-type: none"> Permanent grass seed covered with straw or other mulches and tackifiers Geotextile fabrics such as permanent soil reinforcement matting Hydroseeding Shrubs or other permanent plantings covered with mulch Uniform and evenly distributed ground cover sufficient to restrain erosion Structural methods such as concrete, asphalt or retaining walls Roll erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

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

EQUIPMENT AND VEHICLE MAINTENANCE

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



LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

- Never bury or burn waste. Place litter and debris in approved waste containers.
- Provide a sufficient number and size of waste containers (e.g. dumpster, trash receptacle) on site to contain construction and domestic wastes.
- Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
- Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
- Anchor all lightweight items in waste containers during times of high winds.
- Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
- Dispose waste off-site at an approved disposal facility.
- On business days, clean up and dispose of waste in designated waste containers.

CONCRETE WASHOUTS

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

PAINT AND OTHER LIQUID WASTE

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

PORTABLE TOILETS

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

EARTHEN STOCKPILE MANAGEMENT

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



NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION
 Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&S Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outlets (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outlets inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases. If the stream or wetland has increased visible sedimentation or a stream has witnessed increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Record of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit or this permit.
(5) Streams or wetlands onsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. The phase of grading (installation of perimeter E&S measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.



NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING
1. E&S Plan Documentation
 The approved E&S plan as well as any approved deviation shall be kept on the site. The approved E&S plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&S plan shall be documented in the manner described:

Item to Document	Documentation Requirements
(a) Each E&S Measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&S Plan.	Initial and date each E&S Measure on a copy of the approved E&S Plan or complete, date and sign an inspection report that lists each E&S Measure shown on the approved E&S Plan. This documentation is required upon the initial installation of the E&S Measures or if the E&S Measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&S Plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&S Plan.	Initial and date a copy of the approved E&S Plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&S Measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&S Measures.	Initial and date a copy of the approved E&S Plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation
 In addition to the E&S Plan documents above, the following items shall be kept on the site and available for agency inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

- This general permit as well as the certificate of coverage, after it is received.
- Records of inspections made during the previous 30 days. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.
- All data used to complete the Notice of Intent and older inspection records shall be maintained for a period of three years after project completion and made available upon request. (40 CFR 122.41)

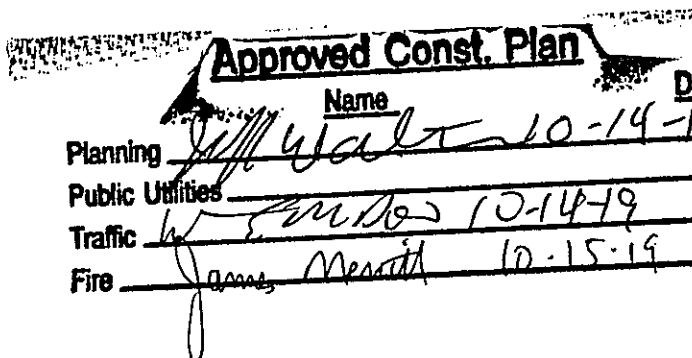
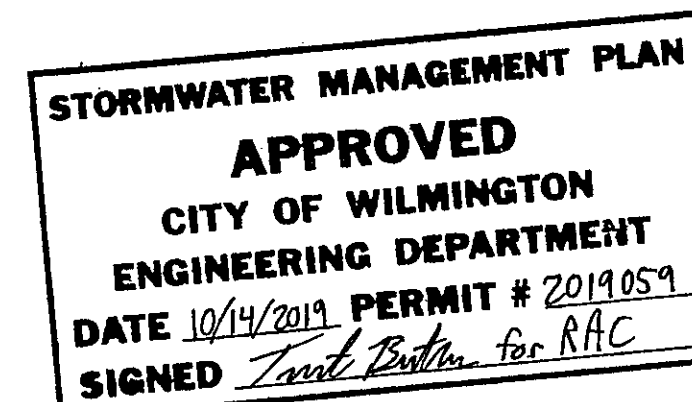
PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING
1. Occurrences that must be reported
 Permittees shall report the following occurrences:
 (a) Visible sediment deposition in a stream or wetland.
 (b) Oil spills if:
 • They are 25 gallons or more,
 • They are less than 25 gallons but cannot be cleaned up within 24 hours,
 • They cause sheen on surface waters (regardless of volume), or
 • They are within 100 feet of surface waters (regardless of volume).

(a) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.
 (b) Anticipated bypasses and unanticipated bypasses.
 (c) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements
 After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	<ul style="list-style-type: none"> Within 24 hours, an oral or electronic notification. Within 7 calendar days, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	<ul style="list-style-type: none"> Within 24 hours, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release. A report at least ten days before the date of the bypass, if possible. The report shall include an evaluation of the anticipated quality and effect of the bypass. Within 24 hours, an oral or electronic notification. Within 7 calendar days, a report that includes an evaluation of the quality and effect of the bypass.
(c) Anticipated bypasses (40 CFR 122.41(m)(3))	<ul style="list-style-type: none"> A report at least ten days before the date of the bypass, if possible. The report shall include an evaluation of the anticipated quality and effect of the bypass. Within 24 hours, an oral or electronic notification. Within 7 calendar days, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times; and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. (40 CFR 122.41(m)(6)). Division staff may waive the requirement for a written report on a case-by-case basis.
(d) Unanticipated bypasses (40 CFR 122.41(m)(3))	<ul style="list-style-type: none"> Within 24 hours, an oral or electronic notification. Within 7 calendar days, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times; and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. (40 CFR 122.41(m)(6)). Division staff may waive the requirement for a written report on a case-by-case basis.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment (40 CFR 122.41(f)(7))	<ul style="list-style-type: none"> Within 24 hours, an oral or electronic notification. Within 7 calendar days, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times; and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. (40 CFR 122.41(m)(6)). Division staff may waive the requirement for a written report on a case-by-case basis.



LICENSE # C-2710
 ENGINEERING
 LAND PLANNING
 COMMERCIAL / RESIDENTIAL
 P.O. BOX 4041
 WILMINGTON, NC 28406
 (910) 791-4441

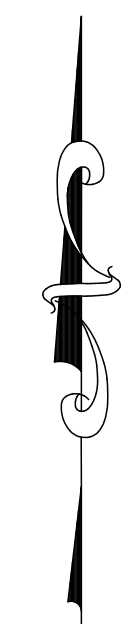
NCG01 PERMIT REQUIREMENTS for FLITWICK FLATS

NCG01 PERMIT REQUIREMENTS for FLITWICK FLATS
 LOCATED IN CITY OF WILMINGTON
 NEW HARBINGER GOLFCLUB, NORTH CAROLINA
 OWNER: NEW HARBINGER 39TH STREET LLC
 106 FOSTER AVE
 CHARLOTTE, NC 28203

NO.	DATE	BY	REMARKS
1	10-14-19	MSB	PLOTTED FOR CITY SWIMWAYS

DATE: 7-9-19
 HORIZ. SCALE: N/A
 VERT. SCALE: N/A
 DRAWN BY: RLW
 CHECKED BY: HSR
 PROJECT NO.: 05-0083

Sheet No. EC4 of EC4



Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

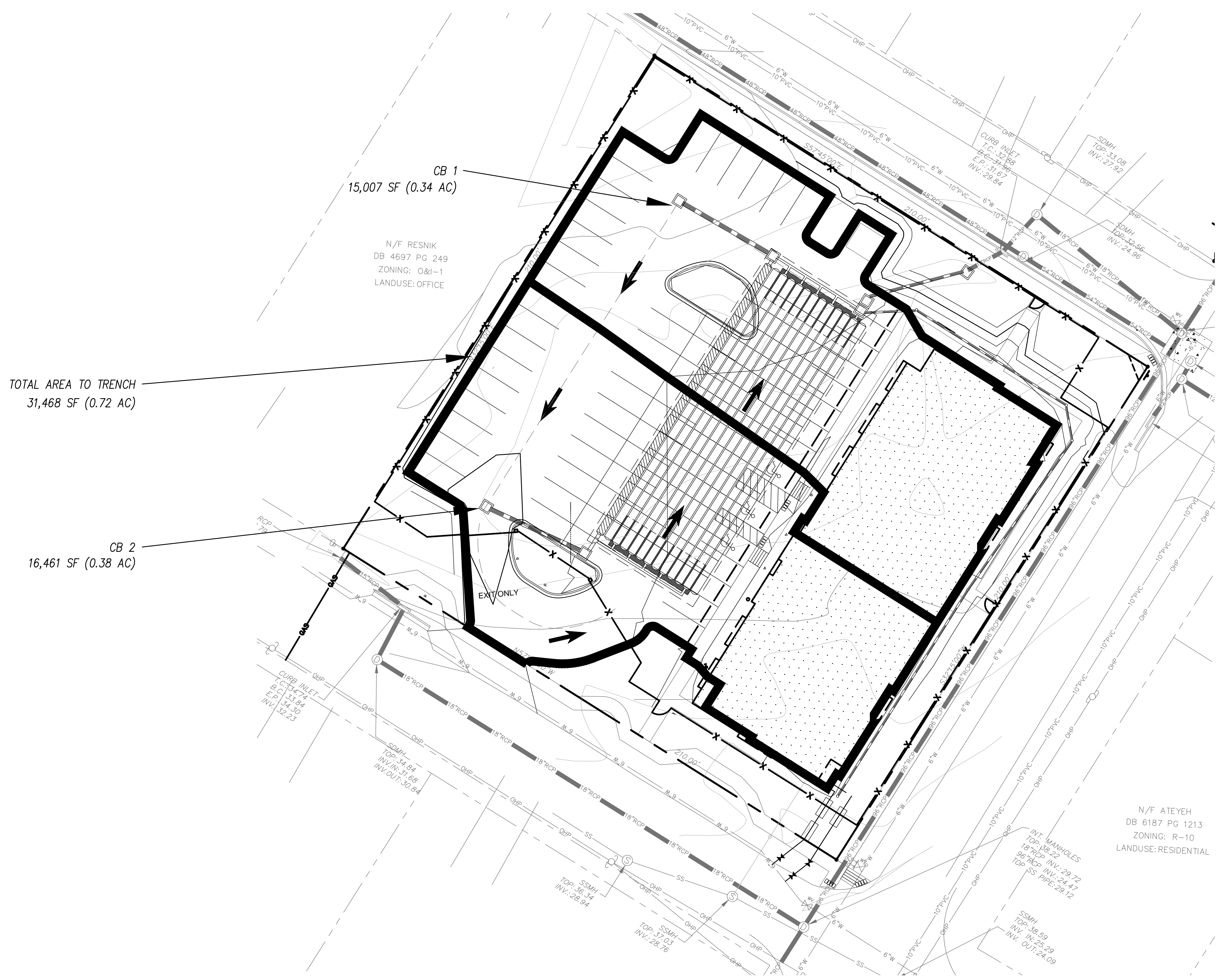
Fire _____

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

Date: _____ Permit #: _____

Signed: _____

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



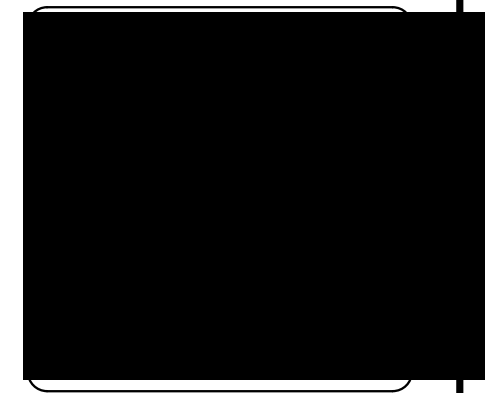
CSD ENGINEERING

LICENSE # C-2710
ENGINEERING
LAND PLANNING
COMMERCIAL / RESIDENTIAL

P.O. BOX 4041
WILMINGTON, NC 28406
(910) 791-4441

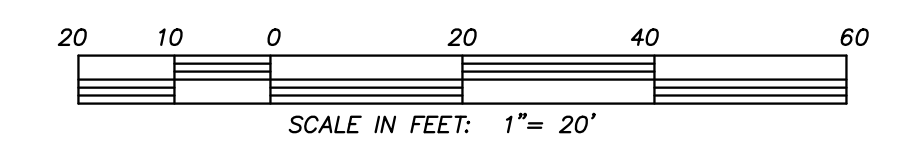
DRAINAGE AREA
FLITWICK FLATS

DRAINAGE AREA
FLITWICK FLATS
LOCATED IN CITY OF WILMINGTON
NEW HANOVER COUNTY, NORTH CAROLINA
OWNER: REMARKABLE PROPERTIES, LLC
10 S. CARDINAL DRIVE
WILMINGTON, NC 28403



REV. NO.	DATE	BY	REMARKS
3	7-29-21	RLW	PLOTTED FOR CITY SIGNATURES, REVISED UNDERGROUND SYSTEM LAYOUT
2	10-14-19	MRB	PLOTTED FOR CITY SIGNATURES
1	8-2-19	RLW	REVISED PER TRC COMMENTS

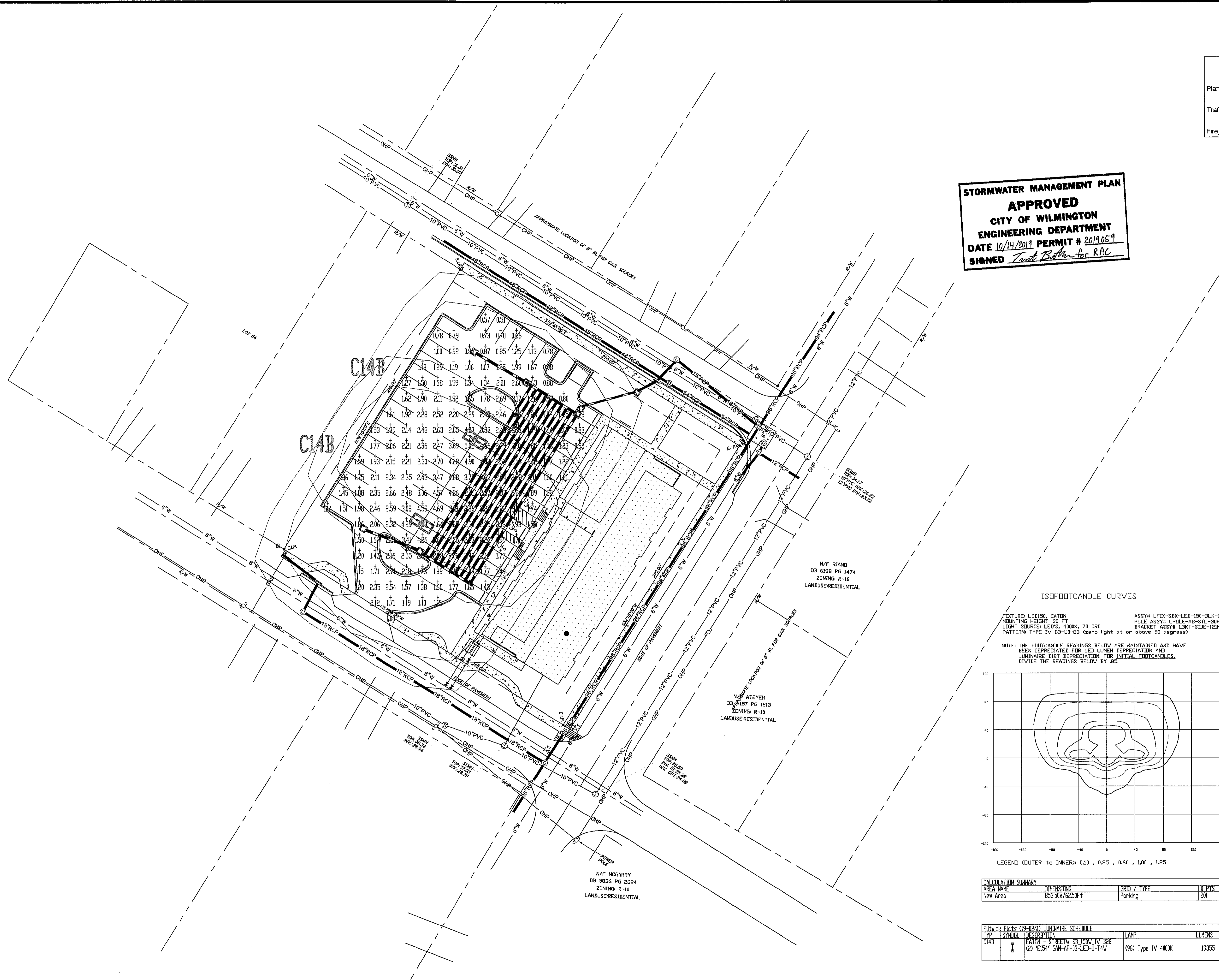
DATE: 6-7-19
HORIZ. SCALE: 1" = 20'
VERT. SCALE: N/A
DRAWN BY: RLW
CHECKED BY: HSR
PROJECT NO.: 05-0083



Sheet No. **DA** of **DA**

Approved Construction Plan	
Name	Date
Planning <i>Raffi Weller</i>	<i>10.14.19</i>
Traffic <i>W. P. ...</i>	<i>10.14.19</i>
Fire <i>James M... ..</i>	<i>10.15.19</i>

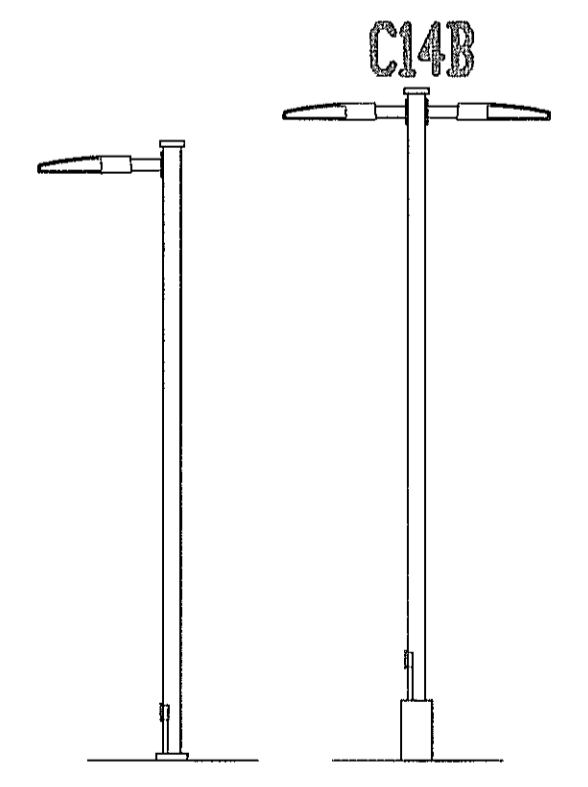
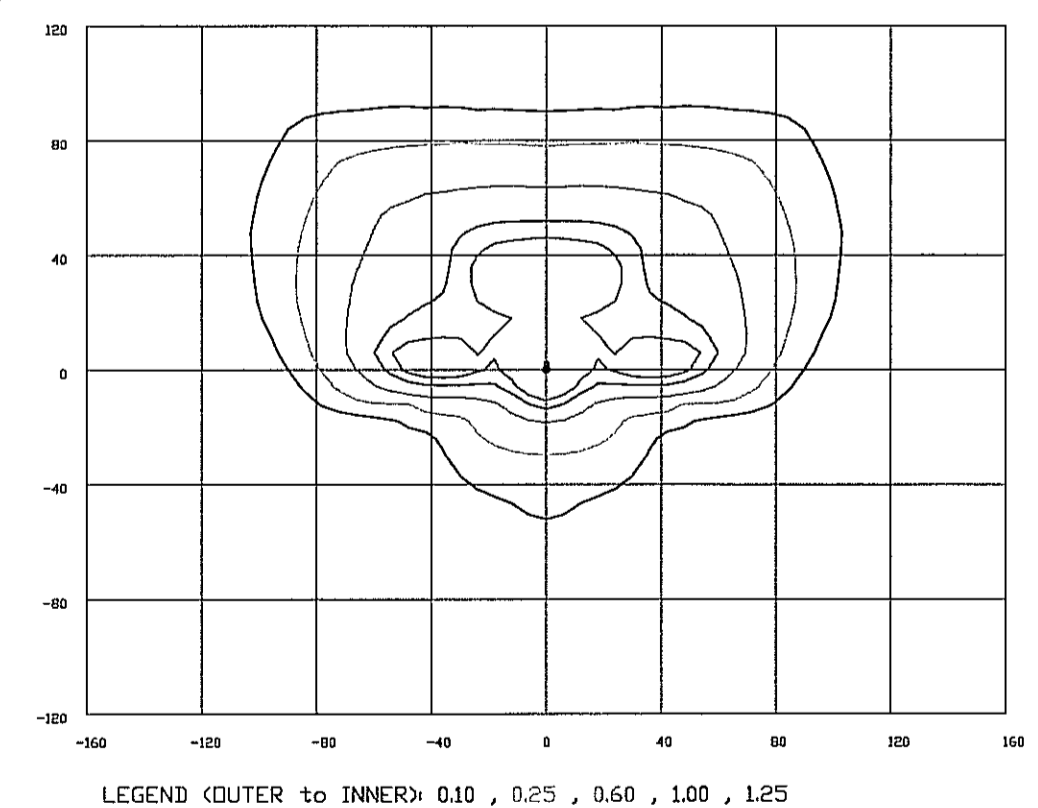
STORMWATER MANAGEMENT PLAN
APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
DATE 10/14/2019 PERMIT # 2019059
SIGNED *Trent Butler* for RAC



ISOFOOTCANDLE CURVES

FIXTURE: LED150, EATON
 MOUNTING HEIGHT: 30 FT
 LIGHT SOURCE: LED'S, 4000K, 70 CRI
 PATTERN TYPE: IV B3-U0-G3 (zero light at or above 90 degrees)

NOTE: THE FOOTCANDLE READINGS BELOW ARE MAINTAINED AND HAVE BEEN DEPRECIATED FOR LED LUMEN DEPRECIATION AND LUMINAIRE DIRT DEPRECIATION FOR INITIAL FOOTCANDLES. DIVIDE THE READINGS BELOW BY .85.



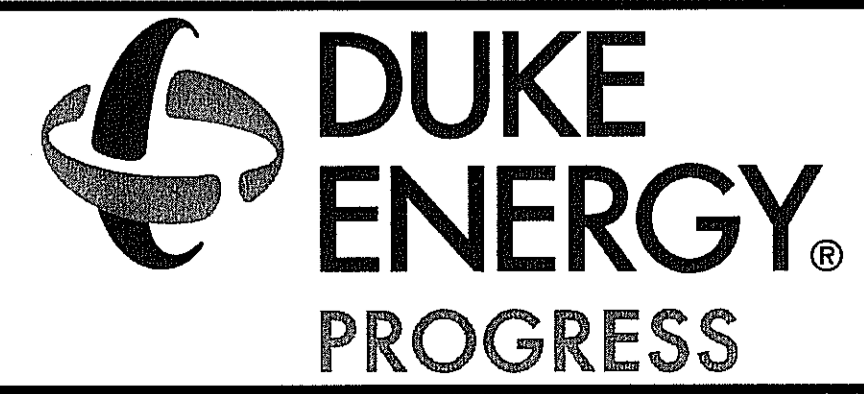
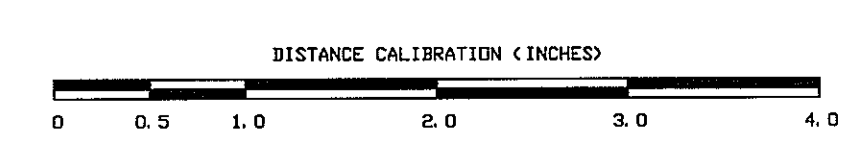
AREA NAME	DIMENSIONS	GRID / TYPE	# PIS	SPAC	GROUP	AVE	MAX	MIN	MAX/MIN	AVE/MIN
New Area	8533067/6250' x	Parking	201	10.00	(*)	2.07	5.02	0.51	9.80	4.84

FLITWICK FLATS (19-0241) LUMINAIRE SCHEDULE	LAMP	LUMENS	MOUNTING/BALLAST	LLF	QTY
C14B	EATON - STREETW SB 150W IV B2B (2) 'E15' GAN-AF-93-LED-U-TAV	(96) Type IV 4000K	30' HI Back to Back	0.83	2

LIGHTING DESIGN TOLERANCE

The calculated footcandle light levels in this lighting design are predicted values and are based on specific information that has been supplied to Duke Energy Progress. Any inaccuracies in the supplied information, differences in luminaire installation, lighted area geometry including elevation differences, reflective properties of surrounding surfaces, obstructions (foliage or otherwise) in the lighted area, or lighting from sources other than listed in this design may produce different results from the predicted values. Normal tolerances of voltage, lamp output, and ballast and luminaire manufacture will also affect results.

Customer approval _____ Date _____



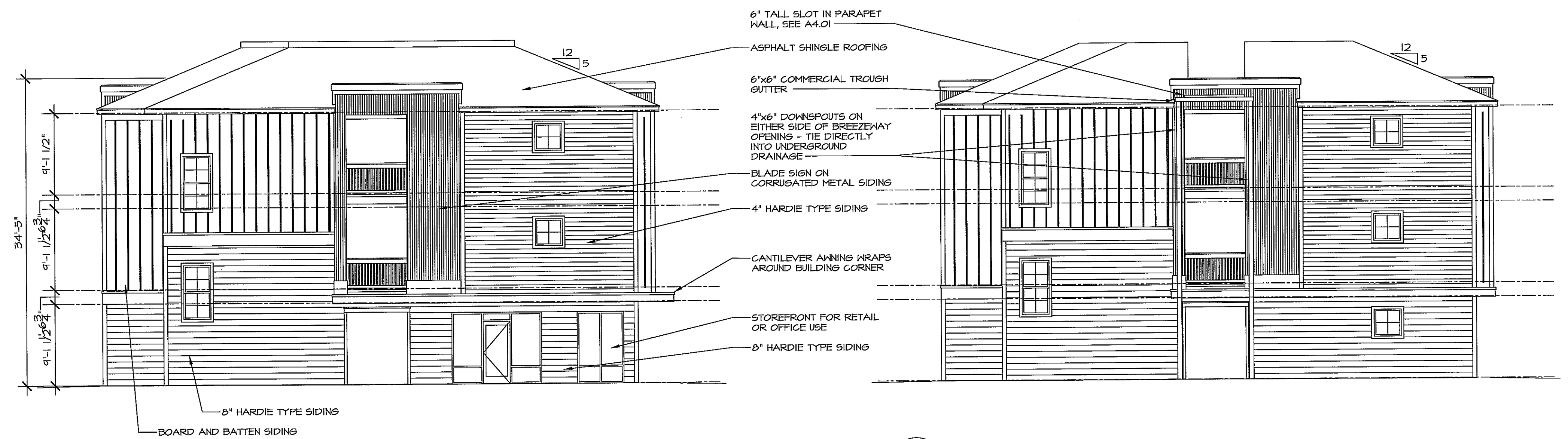
PROPRIETARY & CONFIDENTIAL

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FLITWICK FLATS
WILMINGTON, NC
SITE LIGHTING PLAN
Designed by <u>DEP LIGHTING SOLUTIONS</u>
Reviewed by <u>N. Johnson</u> Scale <u>1" = 30'</u>
Date <u>08/23/2019</u> Size <u>"Arch D"</u>
Description <u>LED 150 Shoebox</u>
Drawing No. <u>19-0241A</u> Sht. <u>1</u> OF <u>1</u>

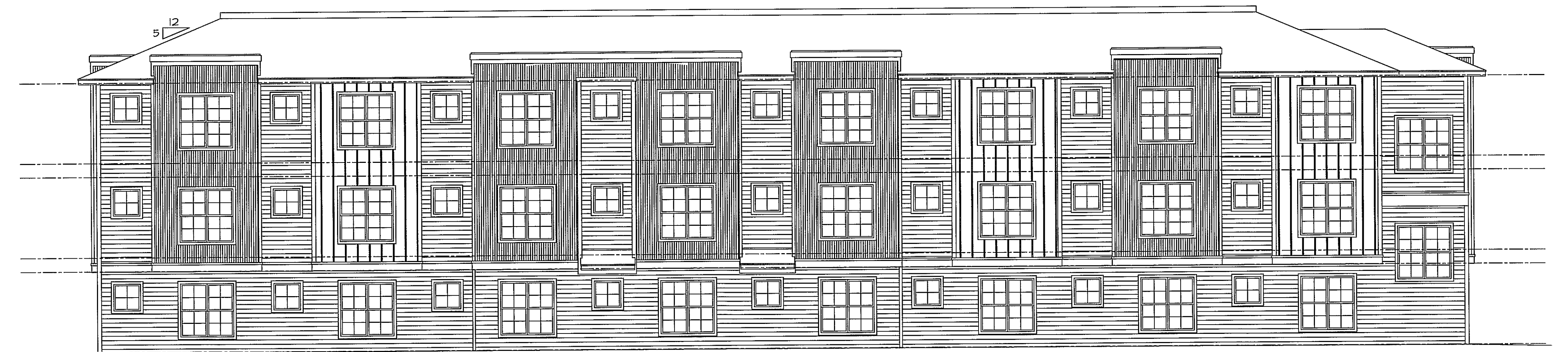


1 FRONT ELEVATION
 A5.01



2 LEFT SIDE (STREET) ELEVATION
 A5.01

3 RIGHT SIDE ELEVATION
 A5.01



4 REAR ELEVATION
 A5.01

STORMWATER MANAGEMENT PLAN
APPROVED
 CITY OF WILMINGTON
 ENGINEERING DEPARTMENT
 DATE 10/14/2019 PERMIT # 2019059
 SIGNED *Scott Bottom* for RAC

Approved Construction Plan
 Name Date
 Planning *Jill Wilson* 10-14-19
 Traffic *W Scott Bottom* 10-14-19
 Fire *Jane Mena* 10.15.19

FLITWICK FLATS APARTMENTS
 a Multi-Family Community Development in
 Wilmington, NC
 TRIBUTE PROPERTIES

PROJECT 1914
 DATE 20SEP19
 DRAWN BY CMW
 CHECKED BY CMW

EXTERIOR ELEVATIONS

A5.01