

# THE FLATS ON FRONT

## CITY OF WILMINGTON, NC

APRIL 18, 2019

### RELEASE FOR CONSTRUCTION PLANS

#### COUNTY AND AGENCY CONTACTS

**A. City of Wilmington**  
 Planning Department  
 102 North Third Street  
 PO BOX 1810  
 Wilmington, NC 28402-1810  
 (910)342-2782  
 Contact: Jeff Walton  
 Email: Jeff.Walton@wilmingtonnc.gov

**B. City of Wilmington**  
 Engineering  
 212 Operations Center Drive  
 PO BOX 1810  
 Wilmington, NC 28402-1810  
 (910) 341-7807  
 Contact: Richard Christensen  
 Email: Richard.Christensen@wilmingtonnc.gov

**C. New Hanover County**  
 Sediment and Erosion Control  
 230 Government Center Drive, Suite 160  
 Wilmington, NC 28403  
 (910) 798-7432  
 Contact: Beth Wetherill  
 Email: BWetherill@nhcgov.com

**D. Cape Fear Public Utility Authority**  
 235 Government Center Drive  
 Wilmington, NC 28403  
 (910) 332-6626  
 Contact: David Dailey  
 Email: David.Dailey@cfpua.org

#### PROJECT DATA

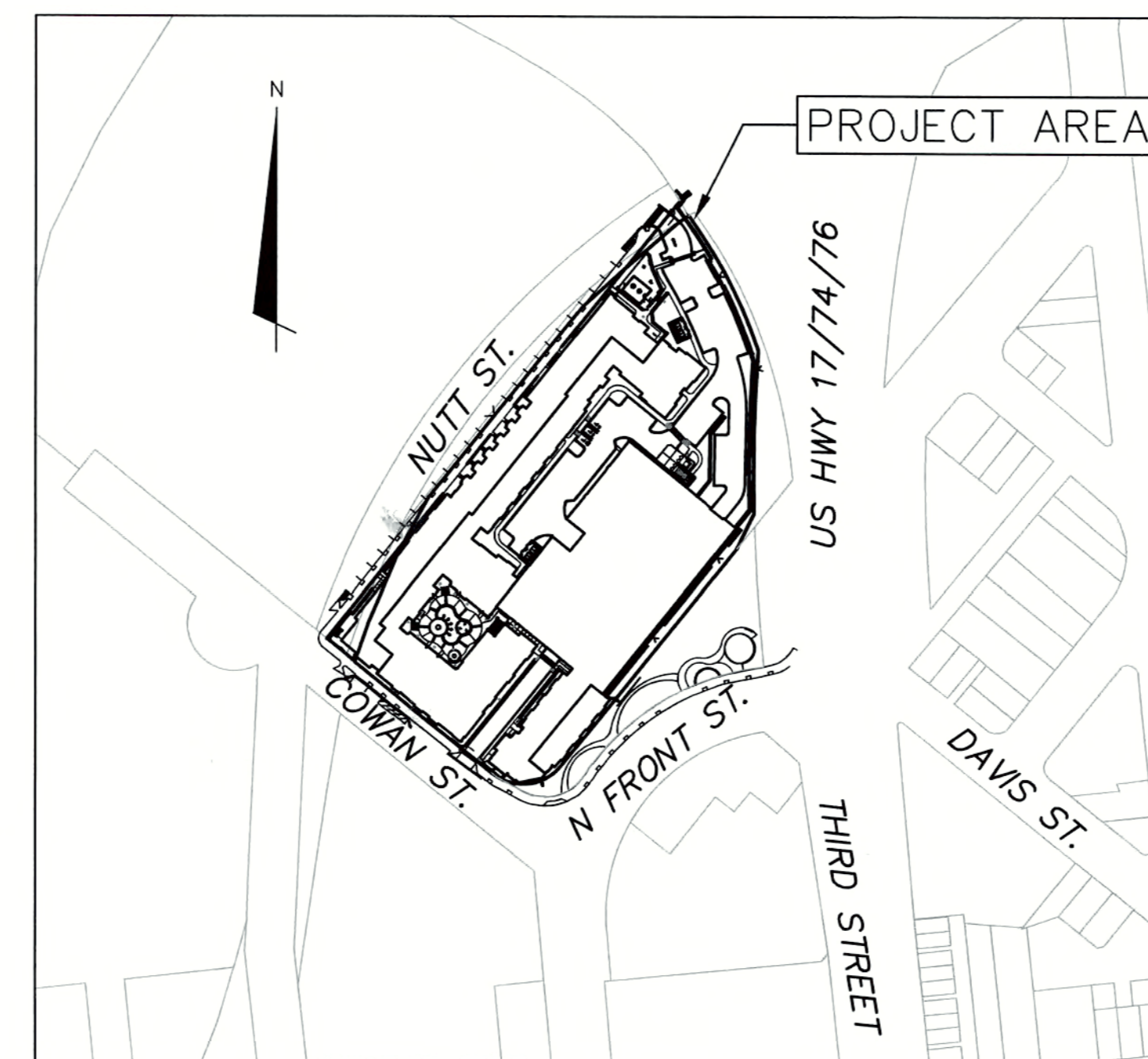
**NAME OF PROJECT:**  
 THE FLATS OF FRONT  
 1055 NORTH FRONT STREET  
 WILMINGTON, NORTH CAROLINA  
 NEW HANOVER COUNTY

**OWNER/DEVELOPER:**  
 FLYWAY RESIDENTIAL, LLC  
 1539 TIPPAH PARK COURT  
 CHARLOTTE, NC 28205  
 CONTACT: PORTER JONES  
 EMAIL: PJONES@DPJRESIDENTIAL.COM

**ARCHITECT:**  
 CLINE DESIGN  
 2923 SOUTH TRYON STREET  
 SUITE 103  
 CHARLOTTE, NC 28208  
 ARCHITECT: MARK WARD  
 EMAIL: MARKW@CLINEDESIGNASSOC.COM

**LAND PLANNER:**  
 CLINE DESIGN  
 125 NORTH HARRINGTON STREET  
 RALEIGH, NC 27603  
 CONTACT: JANET MOUNTCASTLE  
 EMAIL: JANETM@CLINEDESIGNASSOC.COM

**PREPARED BY:**  
 MCKIM & CREED, INC  
 243 NORTH FRONT ST  
 WILMINGTON, NC 28401  
 PHONE: (910)343-1048  
 FAX: (910)251-8282  
 CONTACT: KATHRYN ESPINOZA, PE  
 EMAIL: KESPINOZA@MCKIMCREED.COM



VICINITY MAP  
 1"=200'

SHEET LIST TABLE		
SHEET NUMBER	SHEET TITLE	SHEET DESCRIPTION
1	G-001	COVER
2	G-002	GENERAL NOTES
3	G-003	CLOSE-OUT NOTES
4	CX-100	EXISTING CONDITIONS/ SITE INVENTORY
5	CX-101	BOUNDARY SURVEY
6	CX-102	EXISTING CONDITIONS SURVEY
7	CE-101	PHASE 1 SEDIMENT AND EROSION CONTROL
8	CE-102	PHASE 2 SEDIMENT AND EROSION CONTROL
9	CD-101	DEMOLITION PLAN
10	CS-100	OVERALL SITE PLAN
11	SD1.00	OVERALL HARDSCAPE KEY PLAN
12	SD1.10	STREETSCAPE LAYOUT PLAN
13	SD1.20	STREETSCAPE LAYOUT PLAN
14	SD1.21	STREETSCAPE GRADING PLANS
15	SD1.30	PARK PLAZA LAYOUT PLAN
16	SD1.40	DOG PARK LAYOUT PLAN
17	SD2.00	SITE DETAILS
18	SD2.10	LIGHTING DETAILS
19	SD2.20	TRASH AREA LAYOUT PLAN AND DETAILS
20	SD2.30	SITE DETAILS
21	CG-100	GRADING AND STORMWATER PLAN
22	CU-100	OVERALL UTILITY PLAN
23	LPL.00	OVERALL PLANTING PLAN
24	LPL.10	ENLARGED PLANTING PLAN
25	LPL.20	ENLARGED PLANTING PLAN
26	LPL.30	ENLARGED PLANTING PLAN
27	LP2.00	PLANT SCHEDULE AND DETAILS
28	CE-501	SEDIMENT AND EROSION CONTROL DETAILS
29	CE-502	SEDIMENT AND EROSION CONTROL DETAILS
30	CS-501	SITE DETAILS
31	CS-502	SITE DETAILS
32	A-1	OVERALL BASEMENT PLAN
33	A-2	OVERALL FIRST FLOOR PLAN
34	A-3	OVERALL EXTERIOR ELEVATIONS
35	A-4	OVERALL EXTERIOR ELEVATIONS
36	CG-501	STORM DRAINAGE DETAILS
37	CG-502	STORM DRAINAGE DETAILS
38	CG-503	STORM DRAINAGE DETAILS
39	CG-504	STORM DRAINAGE DETAILS
40	CG-505	STORM DRAINAGE DETAILS

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

1 inch

Approved Construction Plan		
Name	Date	
Planning: <i>J. Walton</i>	4-23-19	
Traffic: <i>W. Christensen</i>	4-23-19	
Fire: <i>J. Wetherill</i>	4-23-19	

**CITY OF WILMINGTON**  
 NORTH CAROLINA  
 Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: 4-23-19 Permit # 2019023

Signed: *E. F. Lee*



REV 0: IFC PLANS - CITY OF WILMINGTON 04/18/2019



243 North Front Street  
 Wilmington, North Carolina 28401  
 Phone: (910)343-1048 , Fax: (910)251-8282  
 License: F-1222  
 www.mckimcreed.com



Know what's below.  
 Call before you dig.

RECEIVED  
 APR 23 2019  
 PLANNING DEPARTMENT

CONSTRUCTION NOTES

- 1. CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF WILMINGTON STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR IS FULLY RESPONSIBLE FOR ACQUIRING THE LOCATION OF EXISTING UTILITIES FROM THE APPROPRIATE PARTIES PRIOR TO CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR PLACING BARRICADES, USING FLAGMEN, ETC. AS NECESSARY TO INSURE SAFETY TO THE PUBLICS.

DEMOLITION NOTES

- 1. THE CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIARIZED WITH FIELD DEMOLITION CONDITIONS.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL DEMOLISHED DEBRIS ASSOCIATED WITH THE PROJECT IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
3. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST GENERATED BY THE WORK, INCLUDING BUT NOT LIMITED TO DEMOLITION AND CONSTRUCTION ACTIVITIES, SITE VEHICULAR TRAFFIC AND RELATED OPERATIONS.

Approved Construction Plan
Name: [Signature] Date: 4-23-19
Planning: [Signature] 4-23-19
Traffic: [Signature] 4-23-19
Fire: [Signature] 4-23-19

CITY OF WILMINGTON
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: 4-23-19 Permit #2019023
E-592

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

1 inch

EXCAVATION, GRADING, AND BACKFILLING NOTES

- 1. ANY UNDERCUTTING IN GOOD SOIL SHALL BE REPLACED AND THE REPLACEMENT MATERIAL SHALL BE COMPACTED TO NINETY-FIVE (95) PERCENT OF MAXIMUM DENSITY OBTAINED AT OPTIMUM MOISTURE CONTENT, AS DETERMINED BY THE ASTM D 698 STANDARD PROCTOR TEST METHOD.
2. BEFORE BACKFILLING IS COMMENCED OVER PIPES AND OTHER INSTALLATIONS, EARTH FILL SHALL BE SOLIDLY TAMPED AROUND AND ABOVE THE PIPE TO A DEPTH OF ONE (1) FOOT ABOVE THE TOP OF THE PIPE.

STORM DRAINAGE AND GRADING NOTES

- 1. IN ACCORDANCE WITH NC GENERAL STATUTES, NPDES REGULATIONS, AND NCDENR REQUIREMENTS, STORMWATER DISCHARGE OUTFALLS SHALL BE INSPECTED BY THE CONTRACTOR. INSPECTIONS SHALL BE PERFORMED BY THE CONTRACTOR AFTER EACH STORM EVENT OF 1/2 INCH OR GREATER, WITH ONE WEEKLY INSPECTION MINIMUM.
2. INLET PROTECTION SHALL BE INSTALLED AROUND OUTFALL DEVICES SHALL BE CONSTRUCTED TO FINAL PROPOSED CONDITION UPON STABILIZATION OF CONTRIBUTING GROUND SURFACES AND REMOVAL OF SEDIMENT FROM STORM PIPES.

MATERIALS AND EASEMENT NOTES:

- ALL CATCH BASINS ARE NCDOT STD 840.02, 840.03
• ALL DROP INLETS ARE NCDOT STD 840.14, 840.16
• ALL STORM DRAINAGE PIPING TO BE CLASS III RCP OR HDPE, UNLESS OTHERWISE NOTED
• ALL STORM DRAINAGE PIPING CONVEYING DISCHARGE FROM THE PUBLIC RIGHT-OF-WAY SHALL BE CONTAINED WITHIN A PUBLIC DRAINAGE EASEMENT WHOSE WIDTH IS DETERMINED BY THE DEPTH OF BURY

UTILITY COMPANY CONTACTS

DUKE/PROGRESS ENERGY: SID LIVINGSTON/MARK HATFIELD (910) 452-2777
DUKE ENERGY (TRANSMISSION): BILL WILDER (910) 772-4903
AT&T: JAMES BATSON (910) 452-5300
SPECTRUM: ROBERT JOHN (910) 216-4494
PIEDMONT NATURAL GAS: PAUL GONKA (910) 512-2841
DJ MEDEIROS (910) 431-3233
CAPE FEAR PUBLIC UTILITY AUTHORITY: (910) 332-6550

UTILITY NOTES

- 1. SCHEDULE A PRECONSTRUCTION MEETING WITH CAPE FEAR PUBLIC UTILITY AUTHORITY 48 HOURS PRIOR TO CONSTRUCTION OF WATER AND SEWER LINES.
2. WATER AND SANITARY SEWER UTILITY MAINS ARE PRIVATE BEYOND THE PUBLIC STREET RIGHT-OF-WAY.
3. THIS PROJECT SHALL COMPLY WITH THE CFPWA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METERS(S) CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND NCDENR HAS ISSUED THE "FINAL APPROVAL".

RELATION OF WATER MAINS TO SANITARY SEWERS:

- 1. LATERAL SEPARATION OF SANITARY SEWERS AND WATER MAINS: WATER MAINS SHALL BE LAID AT LEAST 10 FEET LATERALLY FROM EXISTING OR PROPOSED SEWERS UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 10 FOOT LATERAL SEPARATION, IN WHICH CASE:
1.1. THE WATER MAIN IS LAID IN A SEPARATE TRENCH, WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, OR
1.2. THE WATER MAIN IS LAID IN THE SAME TRENCH AS THE SEWER WITH THE WATER MAIN LOCATED AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH, AND ABOVE THE TOP OF THE SEWER.

EROSION CONTROL NOTES

- 1. ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE COUNTY EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE.
2. GRADING MORE THAN ONE ACRE WITHOUT AN APPROVED EROSION CONTROL PLAN IS A VIOLATION OF STATE LAW AND IS SUBJECT TO A FINE. ANY BUILDER THAT ANTICIPATED THE DISTURBANCE OF MORE THAN ONE ACRE WILL BE REQUIRED TO GET AN EROSION CONTROL PERMIT FROM NEW HANOVER COUNTY.
3. GROUND COVER MUST BE PROVIDED ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS FOLLOWING COMPLETION OF ANY PHASE OF GRADING; AND, A PERMANENT GROUND COVER FOR ALL DISTURBED AREAS WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.

EROSION CONTROL MAINTENANCE PLAN:

- 1. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED AND REPAIRED, AS NECESSARY, EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS OF EVERY ONE-HALF (0.5) INCH OR GREATER RAINFALL.
2. ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
3. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT BECOMES ABOUT 0.5 FEET DEEP. THE SEDIMENT FENCE WILL BE REPAIRED OR REPLACED AS NECESSARY TO MAINTAIN A BARRIER. SILT FENCE OUTLETS WILL BE INSPECTED ON A REGULAR BASIS AND AFTER EACH RAINFALL. CLOGGED SEDIMENT STONE WILL BE REMOVED AND REPLACED.

NOTE (G.S. 113A-57 (2))
THE ANGLE FOR GRADED SLOPES AND FILLS SHALL BE NO GREATER THAN THE ANGLE THAT CAN BE RETAINED BY VEGETATIVE COVER OR OTHER ADEQUATE EROSION CONTROL DEVICES OR STRUCTURES. IN ANY EVENT, SLOPES LEFT EXPOSED WILL, WITHIN 21 CALENDAR DAYS OF COMPLETION OF ANY GRADING, BE PLANTED OR OTHERWISE PROVIDED WITH TEMPORARY OR PERMANENT GROUND COVER, DEVICES, OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION.

CITY OF WILMINGTON STANDARD NOTES

- 1. CONTACT THE NORTH CAROLINA ONE CALL CENTER PRIOR TO DOING ANY DIGGING AT 1-800-632-4949.
2. PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING SHALL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES AND NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
3. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS. CONTACT CITY OF WILMINGTON TRAFFIC ENGINEERING AT (910)341-7888 AND CONSTRUCTION MANAGEMENT (910)341-7807 TO DISCUSS PAVEMENT MARKINGS PRIOR TO INSTALLATION.

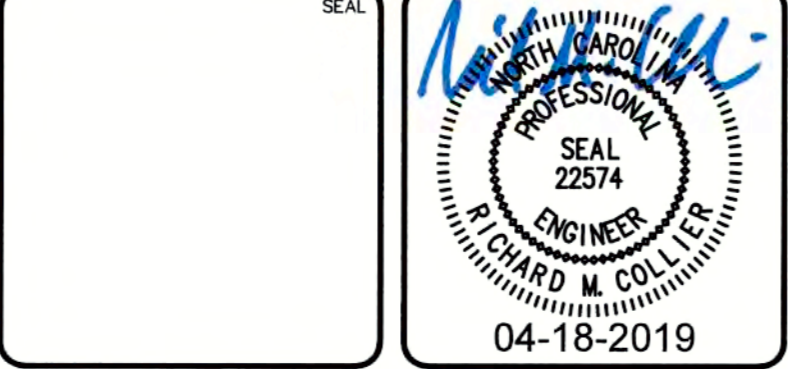
FIRE PROTECTION NOTES

- 1. HYDRANT MUST BE WITHIN 150' OF THE FDC.
2. THE FDC MUST BE WITHIN 40' OF FIRE APPARATUS PLACEMENT.
3. LANDSCAPING OR PARKING CANNOT BLOCK OR IMPEDE THE FDC OR FIRE HYDRANTS. A 3-FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE HYDRANT AND FDC.
4. HYDRANTS MUST BE LOCATED WITHIN 8' OF THE CURB PER CITY OF WILMINGTON STANDARDS. HYDRANTS WILL BE LOCATED WITHIN 6' OF THE CURB PER CFPWA STANDARDS.

Table with 3 columns: SITE AREA DESCRIPTION, STABILIZATION TIMEFRAME, STABILIZATION TIMEFRAME EXCEPTIONS. Includes rows for PERIMETER DIKES, SWALES, DITCHES AND SLOPES, HIGH QUALITY WATER ZONES, SLOPES STEEPER THAN 3:1, SLOPES 3:1 OR FLATTER, and ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1.

DATE: 04/18/2019
MCE PROJ. # 7402-0001
DRAWN: ALM/KCE
DESIGNED: ALM
CHECKED: RMC
PROJ. MGR. KCE
SCALE: HORIZONTAL: N/A, VERTICAL: N/A
MFC FILE NUMBER: G-002
DRAWING NUMBER: 2
REVISION: 0
STATUS: ISSUED FOR CONSTRUCTION

Table with 3 columns: REVNO., DESCRIPTIONS, DATE. Includes a row for CITY OF WILMINGTON - RELEASE FOR CONSTRUCTION PLANS dated 04/18/2019.



THE FLATS ON FRONT
WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
GENERAL NOTES

**CAPE FEAR PUBLIC UTILITY AUTHORITY CONSTRUCTION PROCEDURE:**

- THE DESIGN ENGINEERING SHALL SUBMIT 3 SETS OF FINAL DESIGN PLANS AND APPROVED SPECIFICATIONS PRIOR TO SCHEDULING THE PRE-CONSTRUCTION MEETING.
- SUBMITTALS FOR MATERIALS SHOULD BE MADE IN ACCORDANCE WITH CFPUA SPECIFICATION SECTION 01340. MATERIAL SHOP DRAWING SUBMITTALS ARE REQUIRED FOR ALL PHYSICAL ASSETS TO ENSURE THEY COMPLY WITH CFPUA TECHNICAL SPECIFICATIONS AND DETAILS. THESE SUBMITTALS ARE PROJECT-SPECIFIC AND MUST INCLUDE OR HIGHLIGHT ONLY THE SPECIFIC MATERIALS TO BE USED IN THE PROJECT. THE SUBMITTAL APPROVAL PROCESS IS GENERALLY AS FOLLOWS:  
 MATERIAL VENDOR FURNISHES SUBMITTALS TO THE CONTRACTOR BASED ON THE PROJECT REQUIREMENTS.  
 CONTRACTOR REVIEWS THE SUBMITTALS FOR COMPLIANCE WITH THE APPROVED CONSTRUCTION DRAWINGS, CFPUA TECHNICAL SPECIFICATIONS AND DETAILS, AND FORWARDS TO THE DEVELOPER'S ENGINEER-OF-RECORD WHEN COMPLETE.  
 THE DEVELOPER'S ENGINEER-OF-RECORD VERIFIES COMPLIANCE, STAMPS AND SIGNS THE SUBMITTAL, AND FORWARDS THE PACKAGE TO THE CFPUA CONSTRUCTION MANAGER. IF IT IS DETERMINED THAT THE MATERIAL SHOP DRAWING SUBMITTAL IS NOT IN COMPLIANCE, THE ENGINEER SHALL RETURN IT TO THE CONTRACTOR FOR CORRECTION AND RESUBMISSION AS NOTED ABOVE.  
 CFPUA'S CONSTRUCTION MANAGER REVIEWS THE SUBMITTAL FROM THE DEVELOPER'S ENGINEER-OF-RECORD, VERIFIES COMPLIANCE, AND NOTIFIES THE ENGINEER THAT THE MATERIALS ARE APPROVED FOR CONSTRUCTION. IF IT IS DETERMINED THAT THE MATERIAL SHOP DRAWING SUBMITTAL IS NOT IN COMPLIANCE, THE SUBMITTAL WILL BE RETURNED TO THE ENGINEER FOR CORRECTION AND RESUBMISSION AS NOTED ABOVE.
- ANY REQUEST FOR DEVIATIONS FROM THE STAMPED DRAWINGS AND MATERIAL SUBMITTALS MUST BE SUBMITTED TO THE CFPUA CONSTRUCTION MANAGER. THE DEVIATION WILL BE REVIEWED BY CFPUA STAFF, THE ENGINEER, CONTRACTOR AND CFPUA INSPECTOR. IF IT IS APPROVED, NEEDS TO BE REVISED AND RESUBMITTED OR REJECTED. ANY CHANGES TO THE STAMPED CONSTRUCTION DOCUMENTS MADE IN THE FIELD BY THE CONTRACTOR MUST BE APPROVED BY THE ENGINEER OF RECORD AND CFPUA CONSTRUCTION MANAGER. THE CFPUA INSPECTOR CANNOT APPROVE MAJOR CHANGES FROM THE STAMPED CONSTRUCTION DOCUMENTS.
- THE CFPUA INSPECTOR SHALL BE NOTIFIED WHEN ANY MATERIAL IS DELIVERED TO THE JOB SITE. THE CFPUA INSPECTOR WILL VERIFY THAT ALL MATERIALS MEET CFPUA SPECIFICATIONS, DETAILS, AND/OR APPROVED SUBMITTAL. THE CFPUA INSPECTOR WILL NOTIFY THE CONTRACTOR AND THE CFPUA CONSTRUCTION MANAGER OF ANY UNAPPROVED MATERIAL, AND THAT THE UNAPPROVED MATERIAL MUST BE REMOVED FROM THE PROJECT SITE.
- CONTRACTOR SHALL GIVE TWO (2) BUSINESS DAYS NOTIFICATION FOR SCHEDULING TO THE ASSIGNED CFPUA INSPECTOR FOR EACH OF THE FOLLOWING:
  - OPERATING A CFPUA VALVE (INCLUDES TAPPING VALVES)
  - WHEN BEGINNING CONSTRUCTION AND IF THE CONTRACTOR PULLS OFF THE SITE
  - LAYING OUT OF ANY CONNECTION IN EXISTING MANHOLE
  - CUTTING IN ANY NEW MANHOLES ON EXISTING LINES
  - CORING ANY MANHOLES
  - CONNECTING TO AN EXISTING SEWER FORCE MAINS
  - CONNECTING ONTO EXISTING WATER LINES
  - ANY BORES AND THREADING CARRIER PIPES
  - ALL CAMERA WORK, TESTING, CHLORINATION AND WATER SAMPLING
  - ALL TESTING

**CAPE FEAR PUBLIC UTILITY AUTHORITY TESTING PROCEDURE:**

- ALL STRUCTURES, PRESSURE PIPING AND GRAVITY SEWER PIPING SHALL BE TESTED BY THE CONTRACTOR AS SPECIFIED IN THE CFPUA SPECIFICATIONS IN ACCORDANCE WITH APPLICABLE REGULATIONS AND AS DIRECTED BY THE CFPUA INSPECTOR. ALL TESTING MUST BE CONDUCTED IN THE PRESENCE OF THE CFPUA INSPECTOR. THE CONTRACTOR IS TO GIVE TWO (2) BUSINESS DAYS NOTIFICATION FOR SCHEDULING, TO THE ASSIGNED CFPUA INSPECTOR FOR ALL TESTING.
- ALL PRESSURE PIPE LINES MUST BE SUBJECTED TO HYDROSTATIC TESTING IN ACCORDANCE WITH THE APPROPRIATE CFPUA SPECIFICATION. THESE PIPE LINES SHALL BE TESTED TO 150 PSI FOR A PERIOD OF TWO (2) HOURS. IF THE PRESSURE DROPS MORE THAN THREE (3) PSI, THE TEST FAILS. REFER TO THE APPROPRIATE CFPUA SPECIFICATION FOR MORE INFORMATION ON THE PROCEDURE.
- ALL WATER MAINS AND SERVICES MUST BE FLUSHED, CHLORINATED AND SAMPLED IN ACCORDANCE WITH THE CFPUA SPECIFICATION 02660 AND AS DIRECTED BY THE CFPUA INSPECTOR.
- SEWER LINE SEGMENT TESTING: EACH SEWER LINE SEGMENT (THE SEWER MAIN BETWEEN MANHOLES) SHALL BE TESTED:  
 THIRTY (30) DAYS AFTER INSTALLATION AND PRIOR TO FINAL ACCEPTANCE OF THE PROJECT, ALL SEWER LINE SEGMENTS AND ALL SERVICES SHALL BE CAMERA INSPECTED AND VIDEO RECORDED. THE CFPUA INSPECTOR WILL REVIEW THE VIDEO RECORDING FOR ACCEPTANCE.  
 AS AN ALTERNATIVE TO WAITING THIRTY (30) DAYS TO PERMIT STABILIZATION OF THE SOIL-PIPE SYSTEM, THE CFPUA MAY ACCEPT CERTIFICATION FROM A SOIL TESTING FIRM VERIFYING THAT THE BACKFILL OF THE TRENCH HAS BEEN COMPACTED TO AT LEAST 95% MAXIMUM DENSITY.  
 AFTER TWO (2) PAPER COPIES OF THE AS-BUILTS HAVE BEEN SUBMITTED TO THE CFPUA INSPECTOR.  
 AFTER GRAVEL HAS BEEN INSTALLED ON ALL ROADWAYS.
- VIDEO INSPECTION TESTING: THE CONTRACTOR SHALL PROVIDE A DVD(S) OF EACH SEWER LINE SEGMENT AND SERVICE LINE TO ENSURE THAT THE LINES MEET MINIMUM STANDARDS. THE DVD(S) WILL BE REVIEWED IN THE ORDER THEY ARE RECEIVED. THE TYPICAL REVIEW TIME IS GENERALLY TEN (10) TO FIFTEEN (15) BUSINESS DAYS BUT WILL DEPEND ON THE COMPLEXITY OF THE PROJECT, SIZE, QUALITY OF THE DVD(S), ETC.  
 THE MAIN LINE CAMERA INSPECTION MUST HAVE PROJECT NAME, FOOTAGES, MANHOLE NUMBERS, AND DATES OF INSPECTION.  
 THE SERVICE LINE CAMERA INSPECTION MUST INCLUDE PROJECT NAME, FOOTAGES, ADDRESS AND/OR LOT NUMBER, AND DATE OF INSPECTION.  
 THE CAMERA INSPECTION MUST SHOW THE FULL DIAMETER OF THE PIPE.  
 THE CAMERA INSPECTION MUST BE PERFORMED UPON COMPLETION OF CLEANING AND POTABLE WATER INTRODUCED INTO THE SYSTEM TO BE TESTED. ALL DEFECTS IN THE PIPELINE AND APPURTENANCES SHALL BE REMEDIATED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE CFPUA AND WILL BE RE-INSPECTED AS OUTLINED ABOVE.
- TWO (2) SETS OF AS-BUILT RECORD DRAWINGS SHALL BE PROVIDED IN ACCORDANCE WITH CFPUA SPECIFICATION SECTION 01720 FOR REVIEW.

**CITY OF WILMINGTON RECORD DRAWING REQUIREMENTS:**

- RECORD DRAWINGS (AS-BUILTS) SHALL BE FILED IN THE ENGINEERING OFFICE FOR ASSET MANAGEMENT AND FUTURE USE. RECORD DRAWINGS SHOULD INDICATE WHAT HAS BEEN LOCATED BY THE SURVEYOR AND REFLECT WHAT IS ON AND IN THE GROUND AT A PARTICULAR SITE. ALL INFORMATION PERTAINS TO PUBLIC AND/OR PRIVATE INFRASTRUCTURE, SUCH AS STREETS, WATER, SEWER, AND DRAINAGE. ALL INFRASTRUCTURE SHOWN ON PLANS SHALL BE INDICATED PUBLIC OR PRIVATE. RECORD DRAWINGS SHALL BE SUBMITTED IN BOTH DIGITAL AND HARD COPY FORM. DIGITAL FILES SHALL BE AUTOCAD VERSION 2000 OR LATER. HARD COPIES SHALL HAVE AN ENGINEER'S SEAL AFFIXED AND THE SURVEYOR'S "STANDARDS OF PRACTICE" STATEMENT SIGNED AND SEALED.
- PLANS SHALL INCLUDE**
- LOCATIONS, TOP ELEVATIONS, INVERT ELEVATIONS FOR ALL MANHOLES
  - FIRE HYDRANTS, WATER METERS AND SANITARY SEWER CLEANOUTS
  - NOTE OR SHOW UTILITY CROSSINGS
  - STREETS AND CURBLINES (LABELED 'PUBLIC' OR 'PRIVATE') WITH SPOT ELEVATIONS PROVIDED AT THE TOP OF CURB, EDGE OF PAVEMENT AND AT THE CENTERLINE EVERY 200 FT AND AT ALL STREETS SHOULD ALSO BE LABELED WITH THE COMPACTED STONE BASED THICKNESS AND ASPHALT THICKNESS
  - PAVEMENT MARKINGS AND ALL TRAFFIC SIGNS
  - SIDEWALKS WITH SPOT ELEVATIONS PROVIDED AT THE INSIDE EDGE, OUTSIDE EDGE AND AT THE CENTERLINE EVERY 100 FT AND AT ALL GRADE BREAKS
  - SIZE, SLOPE AND MATERIAL FOR ALL STORM DRAINAGE PIPES
  - FOR STORM DRAINAGE: TYPE/MATERIAL OF STRUCTURE, TOP ELEVATION, INVERTS IN AND OUT.
  - LOCATIONS OF STREET LIGHTING AND TYPE
  - VICINITY MAP
  - NORTH ARROW
  - DATE
  - SCALE FOR DRAWINGS SHALL BE 1"=20' OR 1"=30'; THE EXCEPTION BEING UTILITY PLANS, WHICH MAY BE SUBMITTED AT 1"=40' OR LESS. NO PLANS ACCEPTED AT 1"=50' OR MORE.
  - LEGEND
  - DETAILS IF NEEDED
  - VERTICAL DATUM
  - LOT NUMBERS AND LOT LINES
  - RIGHT-OF-WAY AND EASEMENT LINES
  - ANY STATE OF NC PERMIT NUMBERS (IF APPLICABLE)
  - HARD COPIES OF PLANS SHALL BE SIGNED/SEALED/DATED BY A LICENSED SURVEYOR

**REQUIREMENTS FOR VIDEO INSPECTION OF STORM SEWER SYSTEMS:**

- GENERAL**
- ALL EQUIPMENT USED FOR CLEANING AND VIDEO INSPECTION SHALL BE SPECIFICALLY DESIGNED FOR THE WORK DESCRIBED HEREIN. ALL CAMERAS SHALL BE SELF-POWERED UNITS WITH COLOR, PAN-AND-TILT, MINIMUM RESOLUTION OF 640X480, AND THE ABILITY TO OPERATE IN 100% HUMIDITY CONDITIONS. THE LENS SHALL HAVE NOT LESS THAN A 65-DEGREE VIEWING ANGLE WITH EITHER AUTOMATIC OR REMOTE FOCUS AND IRIS CONTROLS.
  - ALL WORK DESCRIBED HEREIN SHALL BE COMPLETED IN ACCORDANCE WITH NASCO PIPELINE ASSESSMENT AND CERTIFICATION PROGRAM/ MANHOLE ASSESSMENT AND CERTIFICATION PROGRAM (PACP/MACP) GUIDELINES.
  - THE CITY OF WILMINGTON (COW) RESERVES THE RIGHT TO REFUSE ANY RECORDING OR REPORT ON THE BASIS OF SUBSTANDARD QUALITY.
- EXECUTION**
- ALL STORM PIPE INSTALLATIONS SHALL BE COMPLETELY INSTALLED A MINIMUM OF 30 DAYS PRIOR TO VIDEO INSPECTION. GENERALLY, INSPECTIONS SHALL OCCUR 30 DAYS PRIOR TO ASPHALT PAVING.
  - THE CONTRACTOR'S CLEANING OPERATIONS SHALL BE PERFORMED PRIOR TO THE VIDEO INSPECTION, AND SHALL FULLY CLEAN THE PIPES AND STRUCTURES AS WELL AS REMOVE ALL SEDIMENT, ROOTS, DEBRIS, ETC.
  - INSPECTIONS OF EACH PIPE SEGMENT SHALL BEGIN IN THE CENTER OF THE START DRAINAGE STRUCTURE AND END IN THE CENTER OF THE END DRAINAGE STRUCTURE. THE CAMERA SHALL BE MOVED THROUGH THE LINE IN EITHER DIRECTION AT A UNIFORM RATE BUT NOT GREATER THAN 30 FEET PER MINUTE (0.5 FT/SEC).
  - THE CAMERA SHALL BE STOPPED AT EACH PIPE JOINT, DEFECT, IMPERFECTION, ETC. AT THESE LOCATIONS, THE CAMERA SHALL BE PANNED, TILTED AND ROTATED TO FULLY VIEW AND DOCUMENT THE CONDITION OF THE JOINTS, DEFECTS, IMPERFECTIONS, ETC.
  - THE DIGITAL RECORDING SHALL BE FREE OF ELECTRICAL INTERFERENCE AND SHALL PRODUCE A CLEAR AND STABLE IMAGE.
  - VIDEO OVERLAY SHALL INCLUDE, AT A MINIMUM, THE OWNER NAME, PROJECT NAME, STREET NAME, DIAMETER OF PIPE, PIPE MATERIAL, DATE AND TIME OF INSPECTION, DIRECTION OF VIDEO (UPSTREAM OR DOWNSTREAM), DRAINAGE STRUCTURE NUMBER DESIGNATION FOR EACH DRAINAGE STRUCTURE ON THE PIPE SEGMENT INSPECTED THAT CORRESPONDS TO THE CONSTRUCTION PLANS. A CONSTANT OVERLAY DISPLAY OF THE STREET NAME, DRAINAGE STRUCTURE DESIGNATIONS (I.E. MH START#/MH END#), DATE AND DISTANCE SHALL APPEAR ON THE SCREEN. THE INSPECTOR SHALL MOVE THE CONSTANT OVERLAY DISPLAY SO IT DOES NOT INTERFERE WITH THE INSPECTION REVIEW.
  - INSPECTION OF EACH PIPE SEGMENT SHALL BE PROVIDED IN A SEPARATE VIDEO FILE. IN SITUATIONS WHERE REVERSE INSPECTION IS NECESSARY, THE REVERSE INSPECTION SHALL BE PROVIDED IN A SEPARATE VIDEO FILE.
  - ALL OBSERVATIONS/DEFECTS SHALL BE NOTED BY THE INSPECTOR, WHERE A TEXT DISPLAY SHALL APPEAR DESCRIBING THE OBSERVATION/DEFECT. TEXT SHALL DISPLAY FOR A MINIMUM OF 4 SECONDS. THE VIDEO FILE RECORDING SHALL PAUSE AS THE OPERATOR SELECTS THE OBSERVATION/DEFECT NOTATION, ELIMINATING "ON HOLD" VIDEO.
  - AN INSPECTION FORM SHALL BE COMPLETED AND SUBMITTED FOR EACH PIPE SEGMENT AND DRAINAGE STRUCTURE INSPECTED AND VIDEOED. AT A MINIMUM, OBSERVATION/DEFECT NOTES SHALL INCLUDE GENERAL INFO, DISTANCE WITHIN THE PIPE SEGMENT, DESCRIPTION, A SEVERITY RATING, AND A STILL PHOTOGRAPH.
- DELIVERABLES**
- CORRESPONDENCE FROM THE ENGINEER OF RECORD CONFIRMING THAT HE/SHE HAS REVIEWED THE VIDEO INSPECTION PACKAGE FOR COMPLIANCE TO CONTENT AND HAS MADE AN EVALUATION WITH RECOMMENDATIONS FOR REPAIR AS NEEDED PER THE CITY GUIDELINES.
  - INSPECTIONS CAPTURED LIVE OFF OF THE INSPECTION CAMERA TO BE SUBMITTED TO ON A DVD COMPATIBLE WITH WINDOWS MEDIA PLAYER. THE INSPECTIONS MUST BE IN ORDER AND COMPLETE.
  - ALL INSPECTION REPORTS COMPLETED FOR EACH PIPE SEGMENT AND DRAINAGE STRUCTURE WHETHER VIDEOED OR NOT SHALL BE SUBMITTED.

**CITY OF WILMINGTON MATERIALS DOCUMENTATION AND TESTING (PROVIDED FOR INFORMATION ONLY/SUBJECT TO CHANGE):**

TEST TYPE:	LOCATION FOR:	TEST TARGET:	SPEC:	FREQUENCY AND TEST SECTIONS:	DOCUMENTATION:
SOIL PROCTORS	FOR USE WITH SOIL DENSITY TESTS	OPTIMUM MOISTURE AND MAXIMUM DRY DENSITY RESULTS	STANDARD PROCTOR - ASTM D698-A	EACH PROJECT; WHERE SOILS CHANGE	SOIL PROFILE TESTS (LAB)
DENSITY - NUCLEAR GAUGE	EMBANKMENTS	≥ 95% COMPACTION	NUCLEAR GAUGE	1 / BLOCK OR EVERY 500'	ON DELIVERY - COLLECT TICKETS
	PIPE TRENCH AND OVERFILL	≥ 95% COMPACTION	ASTM D6938	PER LIFT (12" MAX) EVERY 100'	DENSITY REPORTS.
	SUBBASE (FINAL 12" FILL)	≥ 98% COMPACTION		*4 / BLOCK OR EVERY 500' WHERE PVMT < 32' WIDTH OR 8 / BLOCK OR EVERY 500' WHERE PVMT > 32' WIDTH"	
DENSITY - ALTERNATES	FOR ALL, SEE ABOVE	SEE ABOVE	SAND CONE METHOD -ASTM D1556 OR;	SEE ABOVE	DENSITY REPORTS.
PROOFROLL	SUBBASE AT GRADE	VISUAL CHECK OF STABILITY / MOISTURE	LOADED TANDEM TRUCK	ALL AREAS UNDER ROAD	PROOFROLL REPORT.
DYNAMIC CONE PENETROMETER	EXCAVATION BACKFILLS	# BLOWS PER 1.75" (TYP. 25-30)	ASTM D6951	ANY AREA TO CHECK FOR RELATIVE COMPACTION	REPORT.
DENSITY - NUCLEAR GAUGE	ROAD BASE (ABC)	EACH ≥ 95% WITH AVG. ≥ 98%	NUCLEAR GAUGE - ASTM D6938	*4 / BLOCK OR EVERY 500' WHERE PVMT < 32' WIDTH OR 8 / BLOCK OR EVERY 500' WHERE PVMT > 32' WIDTH"	DENSITY REPORTS.
	CURBLINES (ABC)	EACH ≥ 95% WITH AVG. ≥ 98%		4 / BLOCK OR EVERY 500'	
PROOFROLL	STONE BASE AT GRADE	VISUAL CHECK OF STABILITY / MOISTURE	LOADED TANDEM TRUCK	ALL AREAS UNDER ROAD	PROOFROLL REPORT.
SAMPLING, MAKING & CURING TEST SPECIMENS	CURBING, SIDEWALKS, DRIVEWAYS	PROPER COLLECTION AND CURING IN FIELD AND LABORATORY	SAMPLING CONCRETE - ASTM C172; ASTM C31; ASTM C39	4 CYLINDERS PER DAY/BATCH FOR EVERY 50 CUBIC YARDS	*FORM 312U MIX DESIGN. VERIFY JMF ON-SITE. "
AIR TEST	SEE ABOVE	UP TO 8% PER MIX DESIGN	PRESSURE AIR METER - ASTM C231	TRUCK #1; AIR, SLUMP, TEMP, CYLINDERS	NCDOT M&T 903 (BATCH TIX)
SLUMP TEST	SEE ABOVE	UP TO 5", PER MIX DESIGN	SLUMP TEST - ASTM C143	TRUCKS #2-4; AIR	250 DAILY PLANT REPORT WHEN NEEDED
COMPRESSIVE STRENGTH	CURBING, SIDEWALKS, DRIVEWAYS	BREAKS RESULTS @ REQUIRED STRENGTH (I.E. 3000PSI)	ASTM C39	*7 DAY BREAK (TYP @ 75% OF STRENGTH), 28 DAY BREAK @ DESIGN STRENGTH "	CONCRETE BREAK REPORTS.
ASPHALT MIX	ROADWAY/PATH	SURFACE UP TO 3" DEPTH	PVMT DESIGN OR		VERIFY JMF ON-SITE.
(JOB MIX FORMULAE)		INTERMEDIATE UP TO 4" DEPTH	CITY POLICY	FOR CONTROL STRIP WHEN NEEDED, REF. NCDOT 2012 STANDARD SPECIFICATIONS SECTION 609-7	ON DELIVERY - COLLECT TICKETS
		BASE UP TO 8" DEPTH			
ASPHALT TEMPERATURE	AIR TEMPERATURE	40° IN THE SHADE AND RISING	NCDOT	TEST BEFORE PLACEMENT	
	SURFACE TEMPERATURE	50°	SECTION 610-4	ALSO, NO WET PAVEMENT AFFECTING BONDING	
DENSITY - NUCLEAR GAUGE CONTROL WITH CORE CHECKS	ROADWAY/PATH	90% COMPACTION - 9.5A	NUCLEAR DENSITY TESTS - ASTM D2950	*QC = 5 NUCLEAR GAUGE SHOTS PER 500'/EACH PAVER LAYDOWN WIDTH / LOT QA = VERIFICATION, TEST REQUESTS AND LOCATION"	FORMS - CITY OR NCDOT QC-5, 516QC, QA-515, ETC
(CORE CONTROL AND CONTROL STRIPS WHEN NEEDED)		92% COMPACTION-SURFACE OTHER, INTERMEDIATE, BASE	BULK DENSITY (CORES) - ASTM D2726	QC = 1 CORE CHECK PER 500'/EACH PAVER LAYDOWN WIDTH. PRIMARILY IN BASE LAYERS.	*CERTIFICATIONS: GAUGE CALIBRATION QMS ROADWAYTECHNICIAN, NUCLEAR GAUGE OPERATOR, ETC"

**Approved Construction Plan**  
 Name: *J. Walter* Date: *4-23-19*  
 Planning: *J. Walter* 4-23-19  
 Traffic: *J. Walter* 4-23-19  
 Fire: *J. Walter* 4-23-19

CITY OF WILMINGTON  
 NORTH CAROLINA  
 Public Services Engineering Division  
 APPROVED STORMWATER MANAGEMENT PLAN  
 Date: *4-23-19* Permit #*2019023*  
 Signed: *E. J. J. J.*

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

1 inch

REVNO.	DESCRIPTION	DATE
0	CITY OF WILMINGTON - RELEASE FOR CONSTRUCTION PLANS	04/18/2019

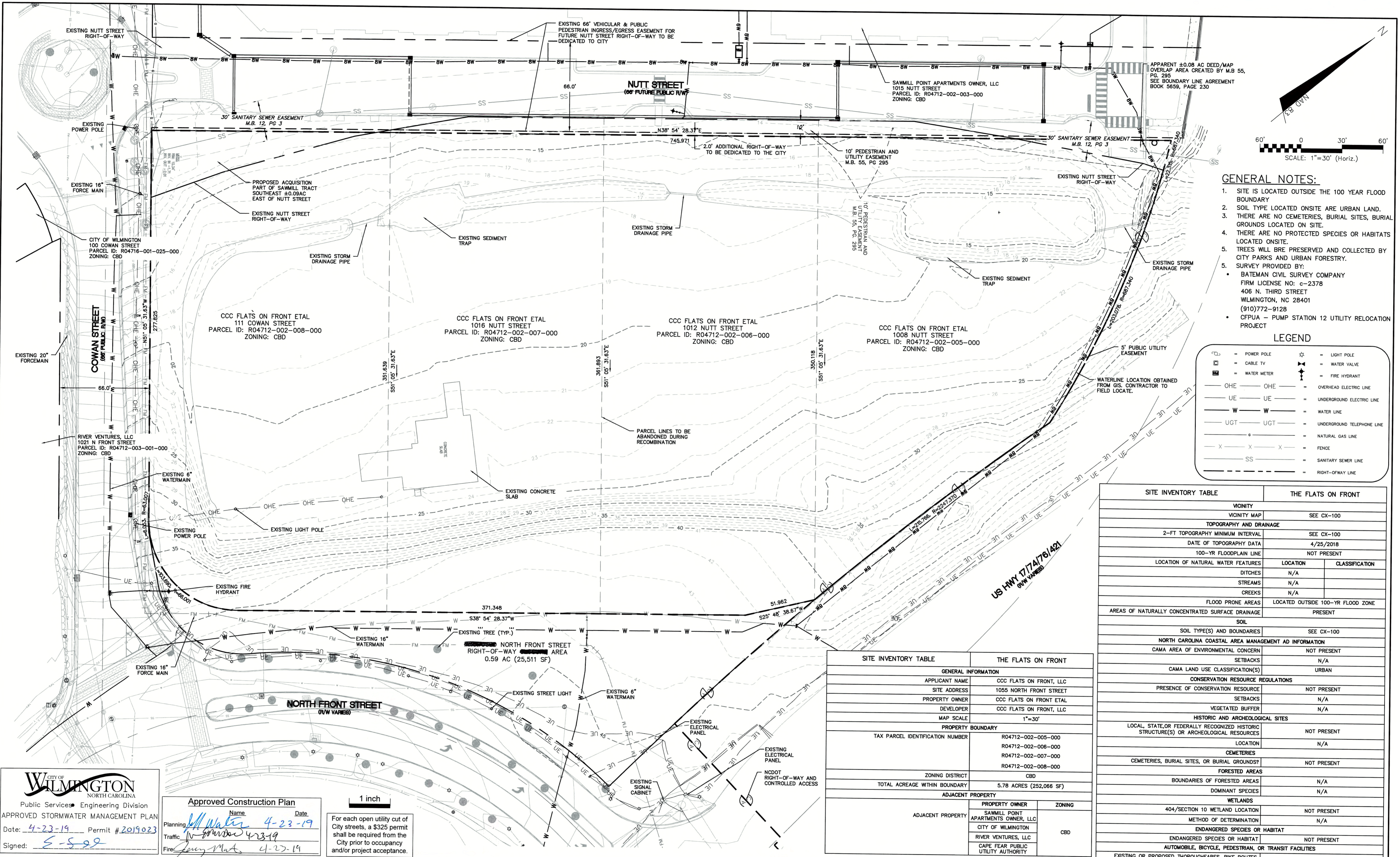
Professional Engineer Seal for *J. Walter*, License No. 22574, State of North Carolina, expires 04-18-2019.

**MCKIM & CREED**  
 243 North Front Street  
 Wilmington, North Carolina 28401  
 Phone: (910)343-1048, Fax: (910)251-8282  
 License: F-1222  
 www.mckimcreed.com

**CLINE DESIGN**  
 Residential

**THE FLATS ON FRONT**  
 WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA  
**CLOSE-OUT NOTES**

DATE: *04/18/2019*  
 MCE PROJ. # *7402-0001*  
 DRAWN: *ALM/KCE*  
 DESIGNED: *ALM*  
 CHECKED: *RMC*  
 PROJ. MGR.: *KCE*  
 SCALE: HORIZONTAL: N/A, VERTICAL: N/A  
 M&C FILE NUMBER: G-003  
 DRAWING NUMBER: 3  
 STATUS: **IFC PLAN SET** ISSUED FOR CONSTRUCTION  
 REVISION: 0



- GENERAL NOTES:**
- SITE IS LOCATED OUTSIDE THE 100 YEAR FLOOD BOUNDARY
  - SOIL TYPE LOCATED ONSITE ARE URBAN LAND.
  - THERE ARE NO CEMETERIES, BURIAL SITES, BURIAL GROUNDS LOCATED ON SITE.
  - THERE ARE NO PROTECTED SPECIES OR HABITATS LOCATED ONSITE.
  - TREES WILL BE PRESERVED AND COLLECTED BY CITY PARKS AND URBAN FORESTRY.
  - SURVEY PROVIDED BY:
    - BATEMAN CIVIL SURVEY COMPANY
    - FIRM LICENSE NO: c-2378
    - 406 N. THIRD STREET
    - WILMINGTON, NC 28401
    - (910)772-9128
    - CFPUA - PUMP STATION 12 UTILITY RELOCATION PROJECT

**LEGEND**

⊙	= POWER POLE	☆	= LIGHT POLE
⊠	= CABLE TV	⊕	= WATER VALVE
⊞	= WATER METER	⊞	= FIRE HYDRANT
— OHE —	= OVERHEAD ELECTRIC LINE	— UE —	= UNDERGROUND ELECTRIC LINE
— W —	= WATER LINE	— UGT —	= UNDERGROUND TELEPHONE LINE
— X —	= FENCE	— SS —	= SANITARY SEWER LINE
---	= RIGHT-OF-WAY LINE		

SITE INVENTORY TABLE		THE FLATS ON FRONT	
VICINITY		SEE CX-100	
VICINITY MAP		SEE CX-100	
TOPOGRAPHY AND DRAINAGE		SEE CX-100	
2-FT TOPOGRAPHY MINIMUM INTERVAL		4/25/2018	
DATE OF TOPOGRAPHY DATA		NOT PRESENT	
100-YR FLOODPLAIN LINE		LOCATION	
LOCATION OF NATURAL WATER FEATURES		CLASSIFICATION	
DITCHES		N/A	
STREAMS		N/A	
CREEKS		N/A	
FLOOD PRONE AREAS		LOCATED OUTSIDE 100-YR FLOOD ZONE	
AREAS OF NATURALLY CONCENTRATED SURFACE DRAINAGE		PRESENT	
SOIL		SEE CX-100	
SOIL TYPE(S) AND BOUNDARIES		SEE CX-100	
NORTH CAROLINA COASTAL AREA MANAGEMENT AD INFORMATION		NOT PRESENT	
CAMA AREA OF ENVIRONMENTAL CONCERN		SETBACKS	
CAMA LAND USE CLASSIFICATION(S)		N/A	
CONSERVATION RESOURCE REGULATIONS		URBAN	
PRESENCE OF CONSERVATION RESOURCE		NOT PRESENT	
HISTORIC AND ARCHEOLOGICAL SITES		N/A	
LOCAL, STATE, OR FEDERALLY RECOGNIZED HISTORIC STRUCTURE(S) OR ARCHEOLOGICAL RESOURCES		N/A	
CEMETERIES		LOCATION	
CEMETERIES, BURIAL SITES, OR BURIAL GROUNDS		N/A	
CEMETERIES, BURIAL SITES, OR BURIAL GROUNDS		NOT PRESENT	
FORESTED AREAS		N/A	
BOUNDARIES OF FORESTED AREAS		N/A	
DOMINANT SPECIES		N/A	
WETLANDS		N/A	
404/SECTION 10 WETLAND LOCATION		NOT PRESENT	
METHOD OF DETERMINATION		N/A	
ENDANGERED SPECIES OR HABITAT		N/A	
ENDANGERED SPECIES OR HABITAT		NOT PRESENT	
AUTOMOBILE, BICYCLE, PEDESTRIAN, OR TRANSIT FACILITIES		N/A	
EXISTING OR PROPOSED THOROUGHFARES, BIKE ROUTES, PEDESTRIAN SIDEWALKS OR TRAILS, AND TRANSIT FACILITIES		SIDEWALK	

SITE INVENTORY TABLE		THE FLATS ON FRONT	
GENERAL INFORMATION			
APPLICANT NAME	CCC FLATS ON FRONT, LLC	PROPERTY OWNER	CCC FLATS ON FRONT ETAL
SITE ADDRESS	1055 NORTH FRONT STREET	DEVELOPER	CCC FLATS ON FRONT, LLC
MAP SCALE	1"=30'		
PROPERTY BOUNDARY			
TAX PARCEL IDENTIFICATION NUMBER	R04712-002-005-000	TAX PARCEL IDENTIFICATION NUMBER	R04712-002-006-000
	R04712-002-007-000		R04712-002-008-000
ZONING DISTRICT	CBD		
TOTAL ACREAGE WITHIN BOUNDARY	5.78 ACRES (252,066 SF)		
ADJACENT PROPERTY			
ADJACENT PROPERTY	PROPERTY OWNER	ADJACENT PROPERTY	ZONING
	SAWMILL POINT APARTMENTS OWNER, LLC		CBD
	CITY OF WILMINGTON		
	RIVER VENTURES, LLC		
	CAPE FEAR PUBLIC UTILITY AUTHORITY		

**CITY OF WILMINGTON**  
 NORTH CAROLINA  
 Public Services Engineering Division  
 APPROVED STORMWATER MANAGEMENT PLAN  
 Date: 4-23-19 Permit # 2019023  
 Signed: E-S-22

**Approved Construction Plan**  
 Name: [Signature] Date: 4-23-19  
 Planning: [Signature] 4-23-19  
 Traffic: [Signature] 4-23-19  
 Fire: [Signature] 4-23-19

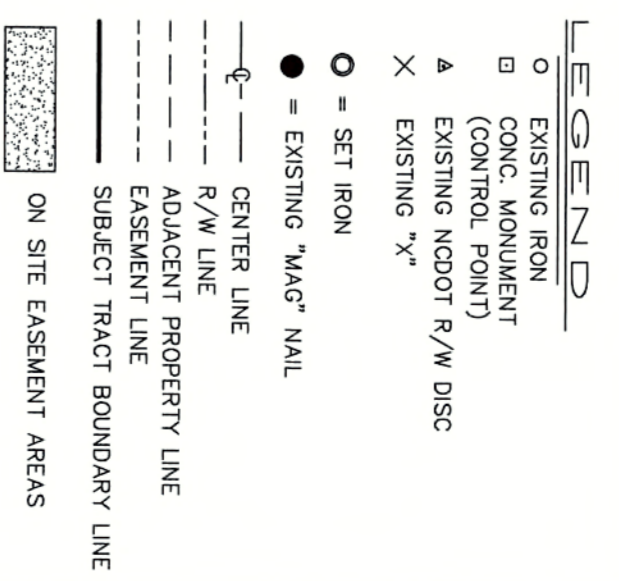
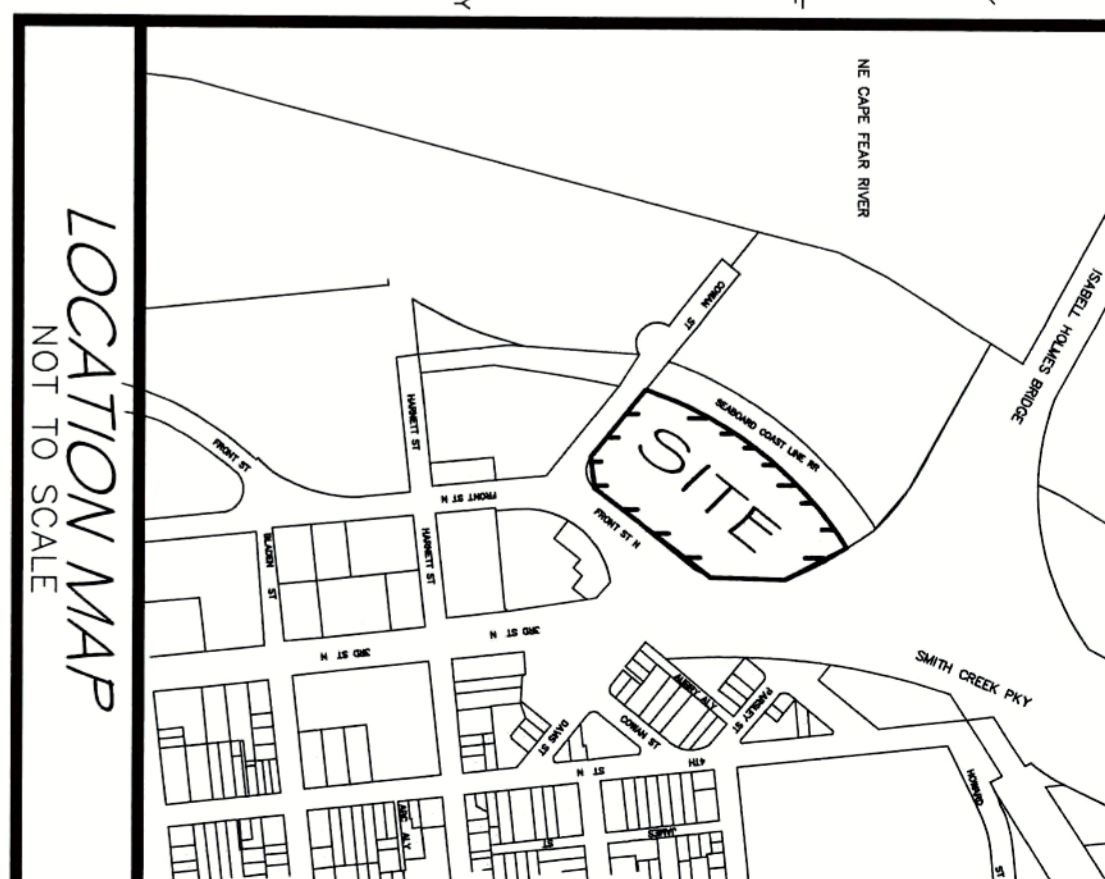
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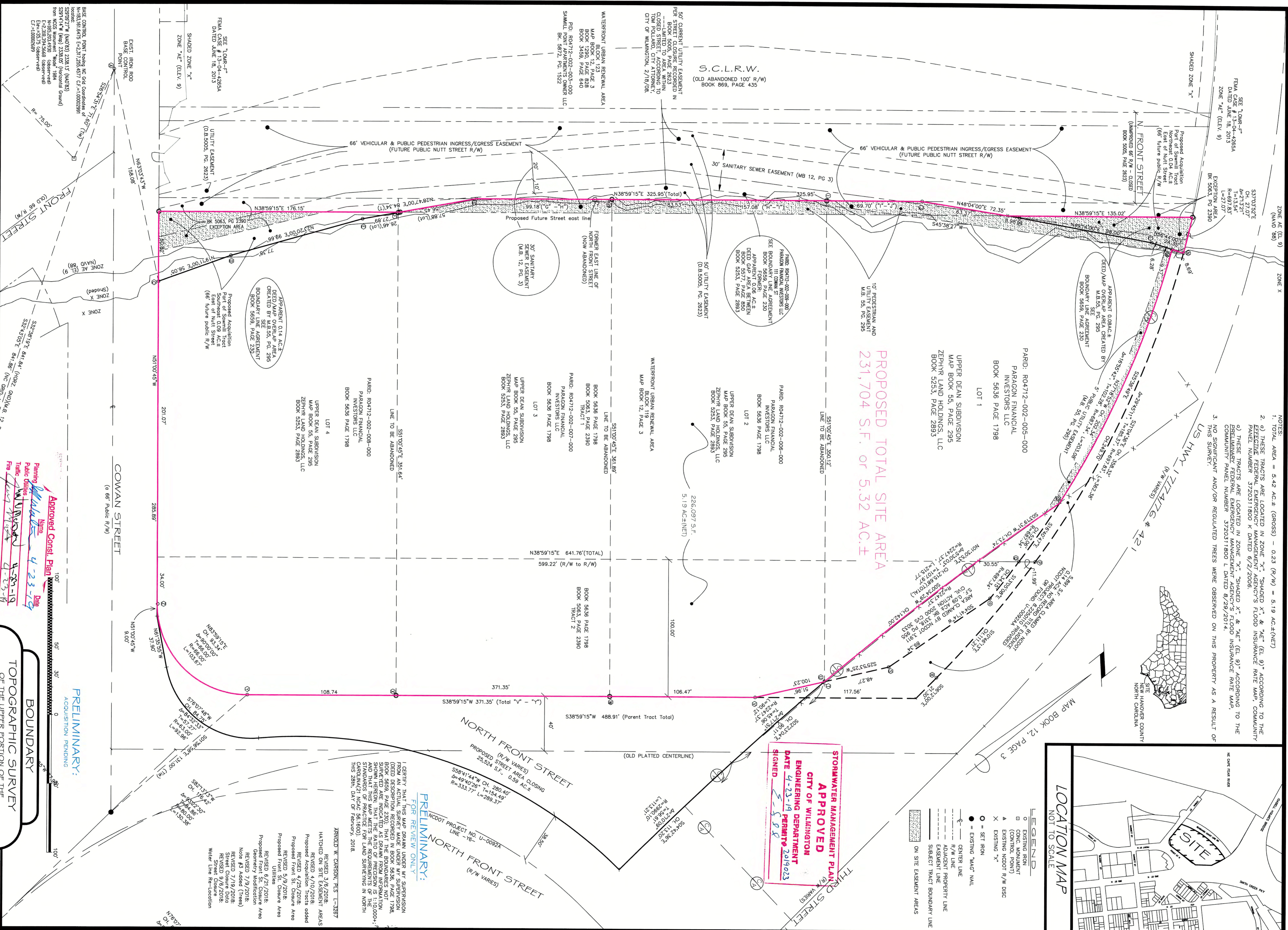
**THE FLATS ON FRONT**  
 WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA  
**EXISTING CONDITIONS/ SITE INVENTORY**

DATE:	04/18/2019	SCALE:	1"=30'	MAC FILE NUMBER:	CX-100
MCE PROJ. #	7402-0001	DRAWN:	ALM/KCE	HORIZONTAL:	1"=30'
DESIGNED:	ALM	CHECKED:	RLC	VERTICAL:	N/A
PROJ. MGR.:	KCE				
STATUS: IFC PLAN SET					REVISION:
ISSUED FOR CONSTRUCTION					0

- NOTES:
1. TOTAL AREA = 5.42 AC.± (GROSS) - 0.23 (R/W) = 5.19 AC.±(NET)
  2. THESE TRACTS ARE LOCATED IN ZONE "X", "SHADED X" & "4E" (E) 9' ACCORDING TO THE EFFECTIVE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 3720311800 K DATED 6/2/2006.
  3. THESE TRACTS ARE LOCATED IN ZONE "X", "SHADED X" & "4E" (E) 9' ACCORDING TO THE PRELIMINARY FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 3720311800 L DATED 8/29/2014.
  4. NO SIGNIFICANT AND/OR REGULATED TREES WERE OBSERVED ON THIS PROPERTY AS A RESULT OF THIS SURVEY.



PROPOSED TOTAL SITE AREA  
231,704 S.F. or 5.32 AC.±



PRELIMINARY:  
FOR REVIEW ONLY

I CERTIFY THAT THIS MAP WAS DRAWN UNDER MY SUPERVISION AND THAT I AM A LICENSED SURVEYOR IN THE STATE OF NORTH CAROLINA. I HAVE REVIEWED THE INFORMATION AND DATA SUBMITTED TO ME AND I AM Satisfied THAT THE INFORMATION AND DATA ARE TRUE AND CORRECT AND THAT THIS MAP MEETS THE REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA. I HAVE REVIEWED THE INFORMATION AND DATA SUBMITTED TO ME AND I AM Satisfied THAT THE INFORMATION AND DATA ARE TRUE AND CORRECT AND THAT THIS MAP MEETS THE REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA. I HAVE REVIEWED THE INFORMATION AND DATA SUBMITTED TO ME AND I AM Satisfied THAT THE INFORMATION AND DATA ARE TRUE AND CORRECT AND THAT THIS MAP MEETS THE REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA.

REVISIONS:

NO.	DATE	DESCRIPTION
1	3/6/2018	HATCHED OVER THE DESIGN AREAS
2	3/6/2018	REVISED 3/6/2018
3	4/29/2018	Proposed Acquisition Tracts added
4	5/9/2018	Proposed Front St. Closure Area
5	5/9/2018	Proposed Front St. Closure Area
6	6/21/2018	Proposed Front St. Closure Area
7	7/9/2018	Geometry Modification
8	7/9/2018	Note #3 Added (Trees)
9	7/9/2018	REVISED 7/9/2018
10	9/6/2018	REVISED 9/6/2018
11	9/6/2018	Street Closure
12	9/6/2018	Water Line Re-location

PRELIMINARY:  
ACQUISITION PENDING

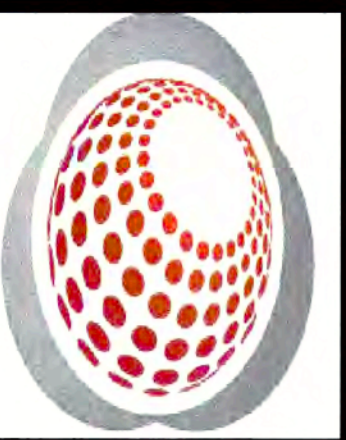
BOUNDARY

TOPOGRAPHIC SURVEY  
OF THE UPPER PORTION OF THE  
DEAN PROPERTY

DEAN RESIDENTIAL LLC  
1539 TIPPAN PARK COURT, CHARLOTTE, NC 28205

SH. 1 of 2

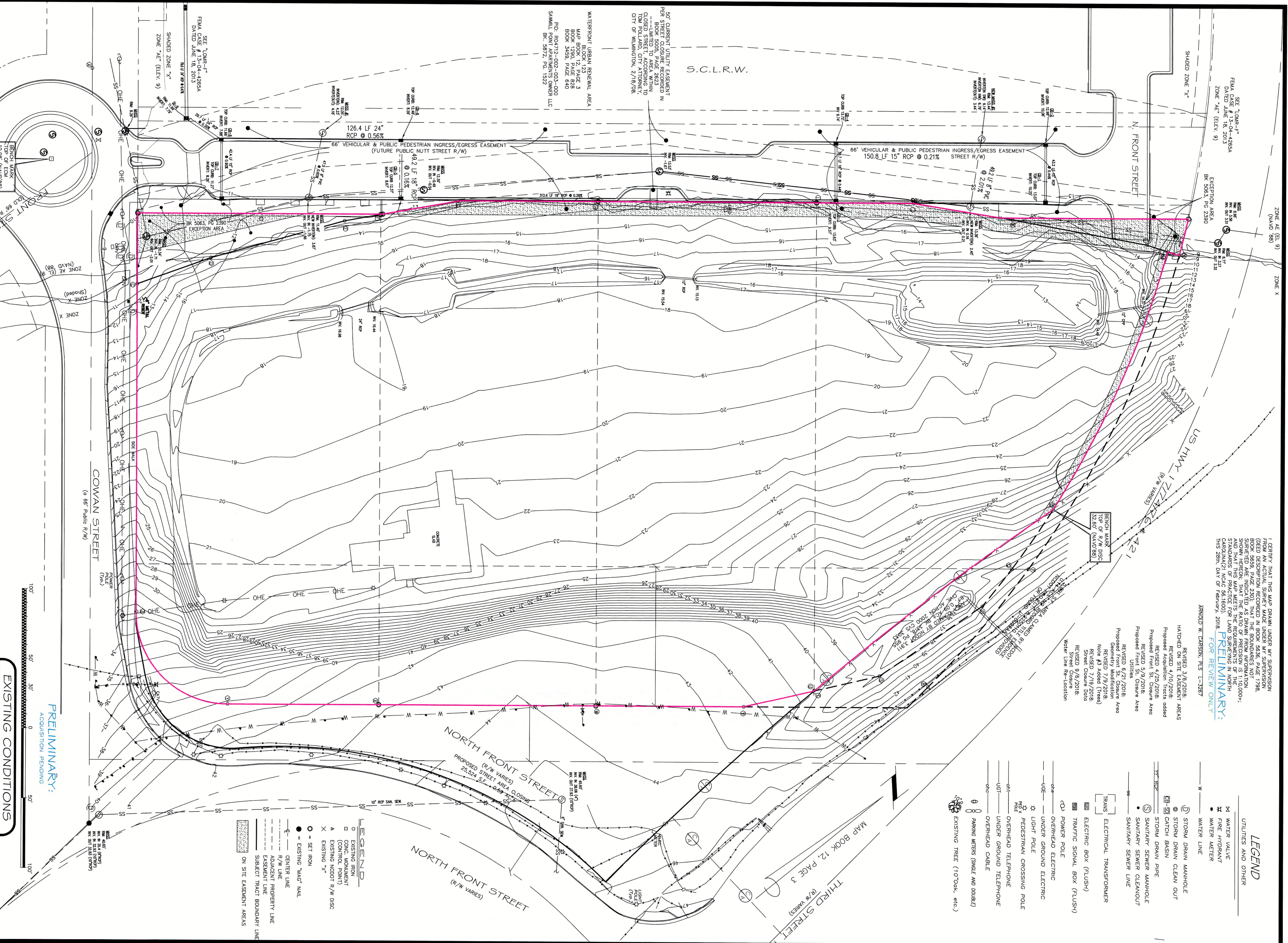
Bateman Civil Survey Company  
Engineers • Surveyors • Planners  
406 N. Third Street, Wilmington, NC 28401  
Phone 910.772.9113 Fax: 910.772.9128  
NCEBS# FIRM No. C-2378





**Bateman Civil Survey Company**

Engineers • Surveyors • Planners  
406 N. Third Street, Wilmington, NC 28401  
Phone: 910.772.9113 Fax: 910.772.9128  
NCBELS FIRM No. C-2378



I CERTIFY THAT THIS MAP DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (SEE DESCRIPTION RECORDED IN BOOK 5636, PAGE 1798, SURVEYED AND INDICATED AS DRAWN FROM INFORMATION SHOWN HEREON, THAT THE RATIO OF PRECISION IS 1:10,000+; THAT I AM A LICENSED SURVEYOR IN THE STATE OF NORTH CAROLINA (LIC NO. 561600), AND THAT I AM THE AUTHOR OF THIS 28th DAY OF February, 2018.  
**PRELIMINARY:**  
FOR REVIEW ONLY  
ARNDT W. CARSON, PLS. C-2387

REVISED 3/6/2018:  
HATCHED ON SITE EASEMENT AREAS  
REVISED 4/10/2018: added  
Proposed Front St. Closure Area  
REVISED 4/25/2018:  
Proposed Front St. Closure Area  
REVISED 5/9/2018:  
Proposed Front St. Closure Area  
REVISED 7/9/2018:  
Geometry Modification  
REVISED 7/19/2018:  
Note #3 Added (trees)  
REVISED 9/8/2018:  
Street Closure  
Water Line Re-Location

- LEGEND**  
UTILITIES AND OTHER
- ⊗ WATER VALVE
  - ⊗ FIRE HYDRANT
  - ⊗ WATER METER
  - WATER LINE
  - ⊙ STORM DRAIN MANHOLE
  - ⊙ STORM DRAIN CLEAN OUT
  - ⊙ CATCH BASIN
  - STORM DRAIN PIPE
  - ⊙ SANITARY SEWER MANHOLE
  - SANITARY SEWER CLEANOUT
  - SANITARY SEWER LINE
  - ⊠ ELECTRICAL TRANSFORMER
  - ⊠ ELECTRIC BOX (FLUSH)
  - ⊠ TRAFFIC SIGNAL BOX (FLUSH)
  - ⊠ POWER POLE
  - OVERHEAD ELECTRIC
  - UNDER GROUND ELECTRIC
  - ⊙ LIGHT POLE
  - PEDESTRIAN CROSSING POLE
  - OVERHEAD TELEPHONE
  - UNDER GROUND TELEPHONE
  - OVERHEAD CABLE
  - ⊙ PARKING METERS (SINGLE AND DOUBLE)
  - ⊙ EXISTING TREE (10"Oak, etc.)

- LEGEND**
- EXISTING IRON
  - CONC. MONUMENT (CONTROL POINT)
  - ▲ EXISTING NCDOT R/W DISC
  - × EXISTING "X"
  - SET IRON
  - EXISTING "MAG" NAIL
  - CENTER LINE
  - R/W LINE
  - ADJACENT PROPERTY LINE
  - EASEMENT LINE
  - SUBJECT TRACT BOUNDARY LINE
  - ON SITE EASEMENT AREAS

**PRELIMINARY:**  
ACQUISITION PENDING

100' 50' 0' 50' 100'

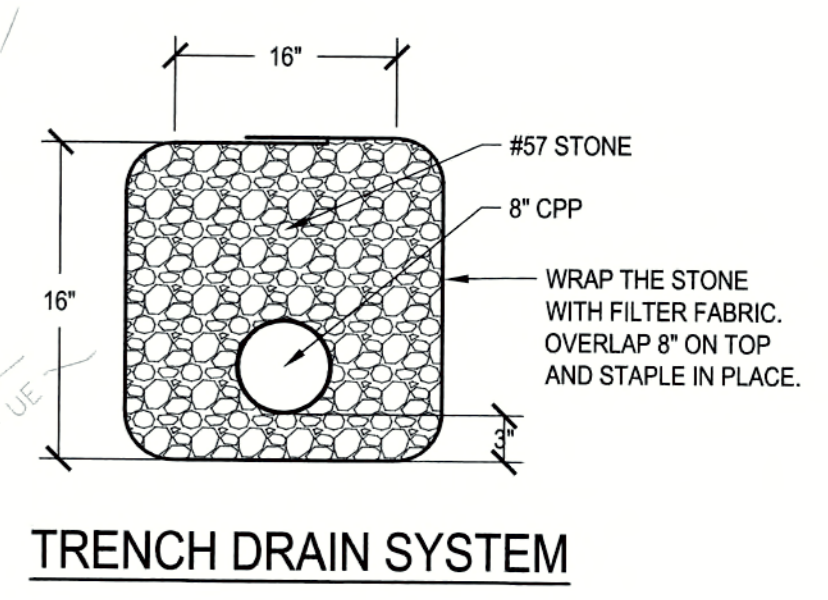
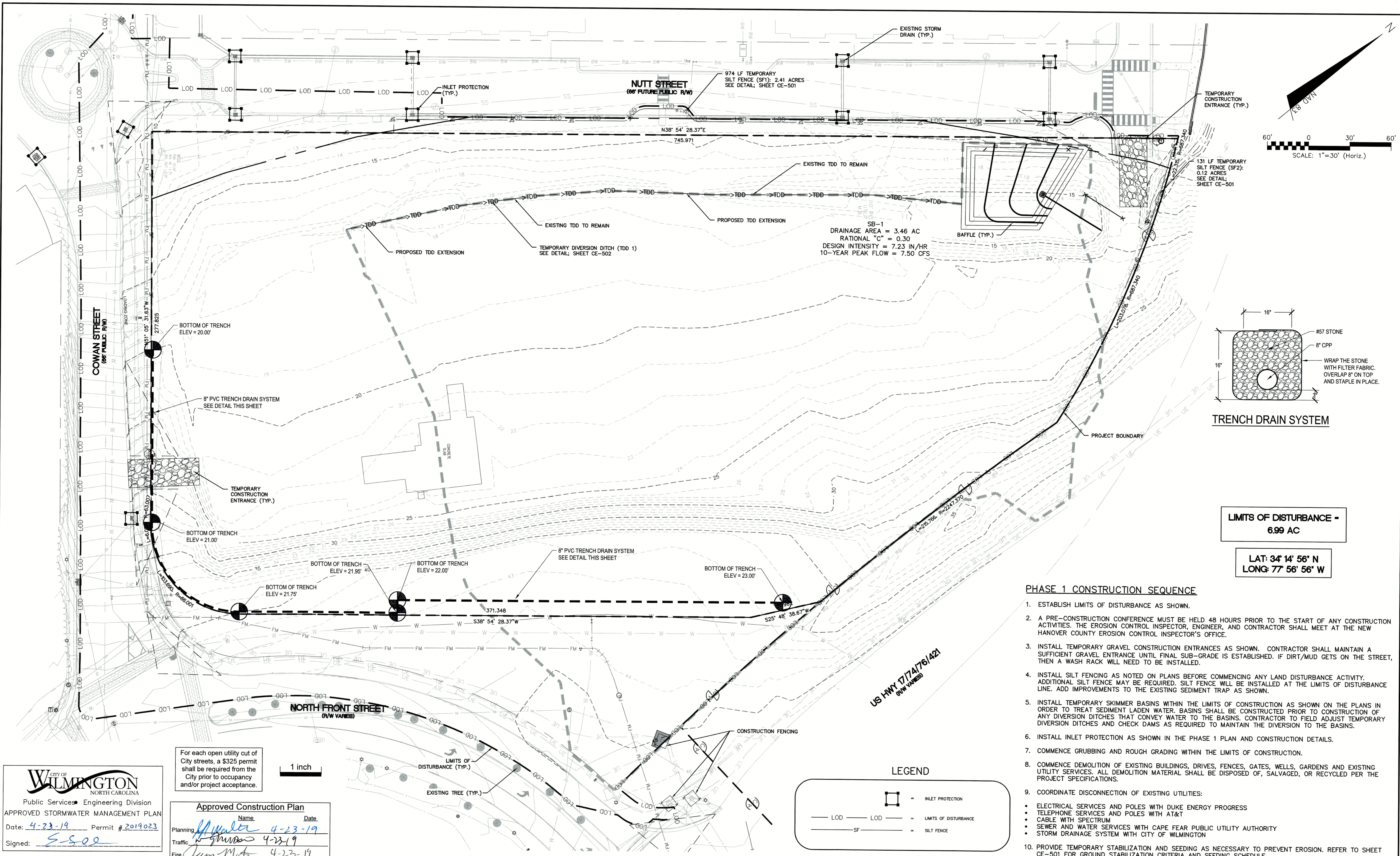
**EXISTING CONDITIONS**

**TOPOGRAPHIC SURVEY**

**DEAN PROPERTY**

AS RECORDED IN BOOK 5636, PAGE 1798, BOOK 5639, PAGE 230, AND MAP BOOK 12, PAGE 3 OF THE NEW HANOVER COUNTY REGISTRY, CITY OF WILMINGTON TOWNSHIP -- NEW HANOVER COUNTY -- NORTH CAROLINA FEBRUARY 27, 2018  
Scale: 1" = 50'

Flyway Residential LLC  
1539 Tippah Park Court, Charlotte, NC 28205

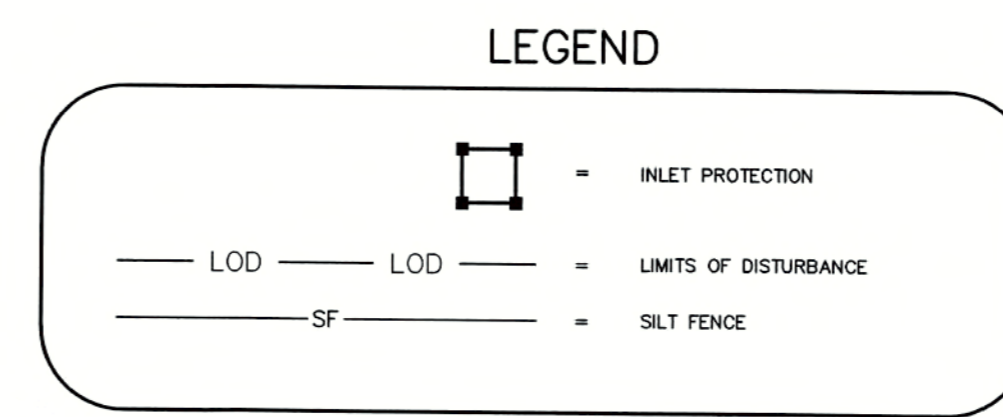


**LIMITS OF DISTURBANCE = 6.99 AC**

**LAT: 34° 14' 56" N  
LONG: 77° 56' 56" W**

**PHASE 1 CONSTRUCTION SEQUENCE**

1. ESTABLISH LIMITS OF DISTURBANCE AS SHOWN.
2. A PRE-CONSTRUCTION CONFERENCE MUST BE HELD 48 HOURS PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES. THE EROSION CONTROL INSPECTOR, ENGINEER, AND CONTRACTOR SHALL MEET AT THE NEW HANOVER COUNTY EROSION CONTROL INSPECTOR'S OFFICE.
3. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCES AS SHOWN. CONTRACTOR SHALL MAINTAIN A SUFFICIENT GRAVEL ENTRANCE UNTIL FINAL SUB-GRADE IS ESTABLISHED. IF DIRT/MUD GETS ON THE STREET, THEN A WASH RACK WILL NEED TO BE INSTALLED.
4. INSTALL SILT FENCING AS NOTED ON PLANS BEFORE COMMENCING ANY LAND DISTURBANCE ACTIVITY. ADDITIONAL SILT FENCE WILL BE INSTALLED AT THE LIMITS OF DISTURBANCE LINE. ADD IMPROVEMENTS TO THE EXISTING SEDIMENT TRAP AS SHOWN.
5. INSTALL TEMPORARY SKIMMER BASINS WITHIN THE LIMITS OF CONSTRUCTION AS SHOWN ON THE PLANS IN ORDER TO TREAT SEDIMENT LADEN WATER. BASINS SHALL BE CONSTRUCTED PRIOR TO CONSTRUCTION OF ANY DIVERSION DITCHES THAT CONVEY WATER TO THE BASINS. CONTRACTOR TO FIELD ADJUST TEMPORARY DIVERSION DITCHES AND CHECK DAMS AS REQUIRED TO MAINTAIN THE DIVERSION TO THE BASINS.
6. INSTALL INLET PROTECTION AS SHOWN IN THE PHASE 1 PLAN AND CONSTRUCTION DETAILS.
7. COMMENCE GRUBBING AND ROUGH GRADING WITHIN THE LIMITS OF CONSTRUCTION.
8. COMMENCE DEMOLITION OF EXISTING BUILDINGS, DRIVES, FENCES, GATES, WELLS, GARDENS AND EXISTING UTILITY SERVICES. ALL DEMOLITION MATERIAL SHALL BE DISPOSED OF, SALVAGED, OR RECYCLED PER THE PROJECT SPECIFICATIONS.
9. COORDINATE DISCONNECTION OF EXISTING UTILITIES:
  - ELECTRICAL SERVICES AND POLES WITH DUKE ENERGY PROGRESS
  - TELEPHONE SERVICES AND POLES WITH AT&T
  - CABLE WITH SPECTRUM
  - SEWER AND WATER SERVICES WITH CAPE FEAR PUBLIC UTILITY AUTHORITY
  - STORM DRAINAGE SYSTEM WITH CITY OF WILMINGTON
10. PROVIDE TEMPORARY STABILIZATION AND SEEDING AS NECESSARY TO PREVENT EROSION. REFER TO SHEET CE-501 FOR GROUND STABILIZATION CRITERIA AND SEEDING SCHEDULE.



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: *M. Miller* 4-23-19

Traffic: *J. Smith* 4-23-19

Fire: *J. Mob* 4-23-19

**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
Date: 4-23-19 Permit # 2019023  
Signed: *S-502*

REV.	DESCRIPTION	DATE
0	CITY OF WILMINGTON - RELEASE FOR CONSTRUCTION PLANS	04/18/2019

**PROFESSIONAL ENGINEER**  
RICHARD M. COLLIER  
04-18-2019

**MCKIM & CREED**  
243 North Front Street  
Wilmington, North Carolina 28401  
Phone: (910)343-1048, Fax: (910)251-8282  
License: F-1222  
www.mckimcreed.com

**dj RESIDENTIAL**  
**CLINE DESIGN**

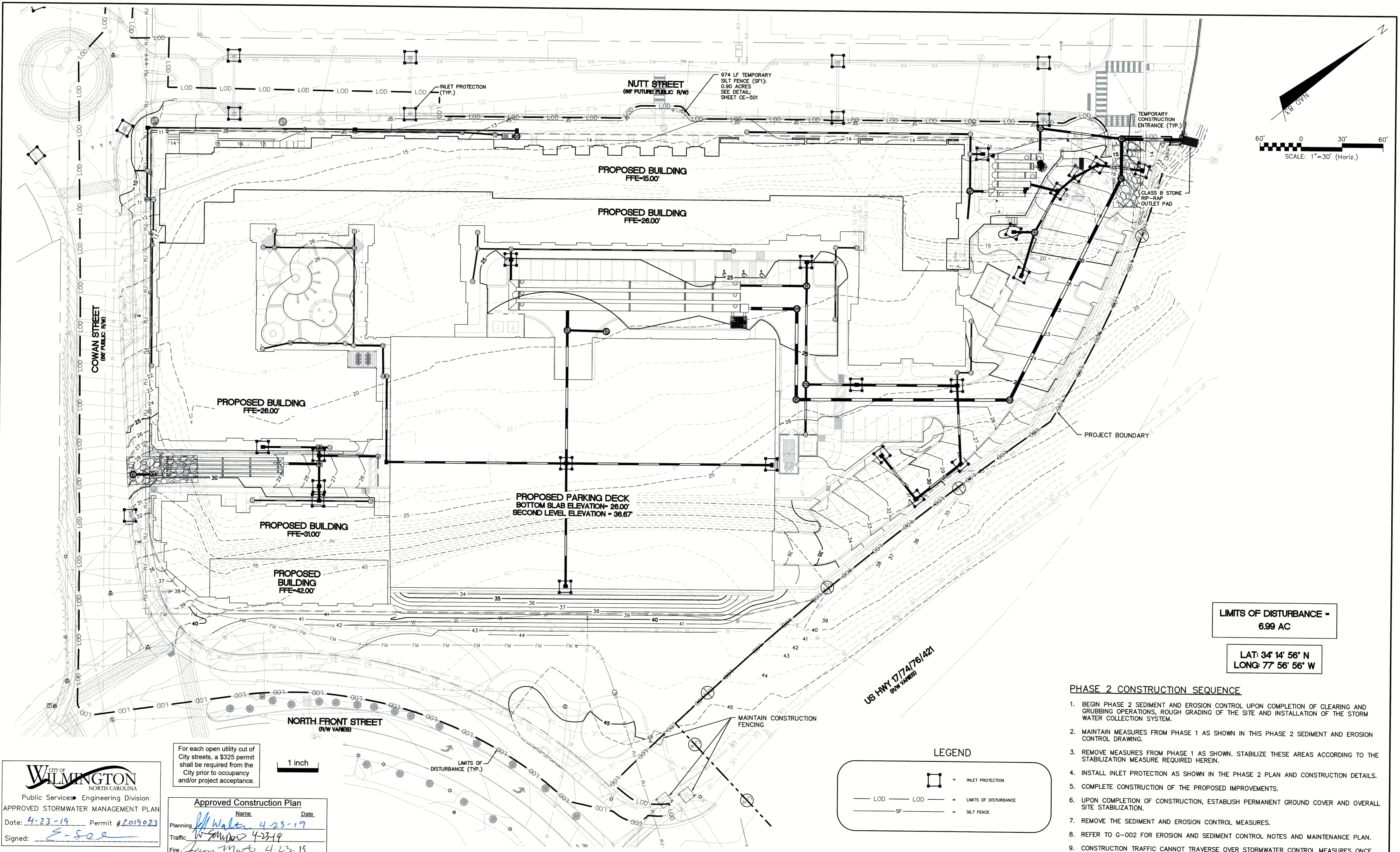
**THE FLATS ON FRONT**  
WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA  
**PHASE 1 SEDIMENT AND EROSION CONTROL**

DATE: 04/18/2019  
MCE PROJ. #: 7402-0001  
DRAWN: ALM/KCE  
DESIGNED: ALM  
CHECKED: RMC  
PROJ. MGR.: KCE

SCALE: HORIZONTAL: 1"=30'  
VERTICAL: N/A

MAC FILE NUMBER: CE-101  
DRAWING NUMBER: 7  
REVISION: 0

STATUS: IFC PLAN SET  
ISSUED FOR CONSTRUCTION



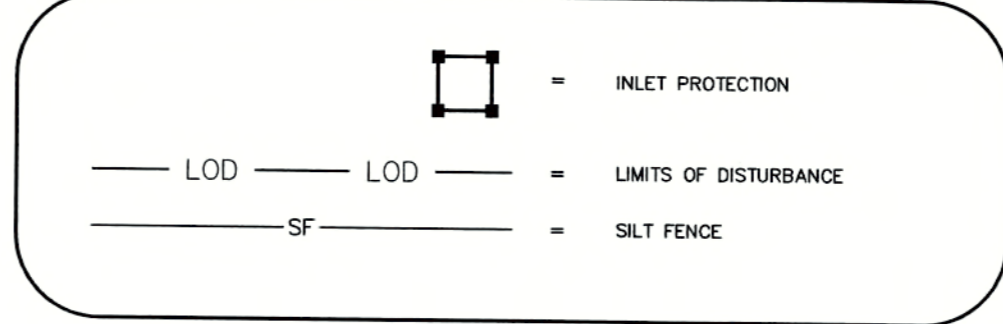
LIMITS OF DISTURBANCE -  
6.99 AC

LAT: 34° 14' 56" N  
LONG: 77° 56' 56" W

**PHASE 2 CONSTRUCTION SEQUENCE**

- BEGIN PHASE 2 SEDIMENT AND EROSION CONTROL UPON COMPLETION OF CLEARING AND GRUBBING OPERATIONS, ROUGH GRADING OF THE SITE AND INSTALLATION OF THE STORM WATER COLLECTION SYSTEM.
- MAINTAIN MEASURES FROM PHASE 1 AS SHOWN IN THIS PHASE 2 SEDIMENT AND EROSION CONTROL DRAWING.
- REMOVE MEASURES FROM PHASE 1 AS SHOWN. STABILIZE THESE AREAS ACCORDING TO THE STABILIZATION MEASURE REQUIRED HEREIN.
- INSTALL INLET PROTECTION AS SHOWN IN THE PHASE 2 PLAN AND CONSTRUCTION DETAILS.
- COMPLETE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
- UPON COMPLETION OF CONSTRUCTION, ESTABLISH PERMANENT GROUND COVER AND OVERALL SITE STABILIZATION.
- REMOVE THE SEDIMENT AND EROSION CONTROL MEASURES.
- REFER TO G-002 FOR EROSION AND SEDIMENT CONTROL NOTES AND MAINTENANCE PLAN.
- CONSTRUCTION TRAFFIC CANNOT TRAVERSE OVER STORMWATER CONTROL MEASURES ONCE INSTALLED.

**LEGEND**



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

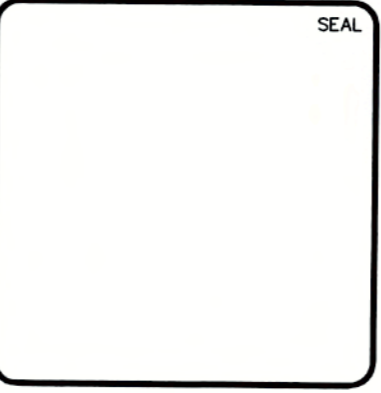
1 inch

**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
Date: 4-23-19 Permit # 2019023  
Signed: S-502

**Approved Construction Plan**

Name: *Walter* Date: *4-23-19*  
 Planning: *Walter* 4-23-19  
 Traffic: *Walter* 4-23-19  
 Fire: *Walter* 4-23-19

REV. NO.	DESCRIPTIONS	DATE
0	CITY OF WILMINGTON - RELEASE FOR CONSTRUCTION PLANS	04/18/2019



**MCKIM & CREED**  
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Phone: (910)343-1048, Fax: (910)251-8282  
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**doj** RESIDENTIAL  
**CLINE DESIGN**

**THE FLATS ON FRONT**  
WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA  
**PHASE 2 SEDIMENT AND EROSION CONTROL**

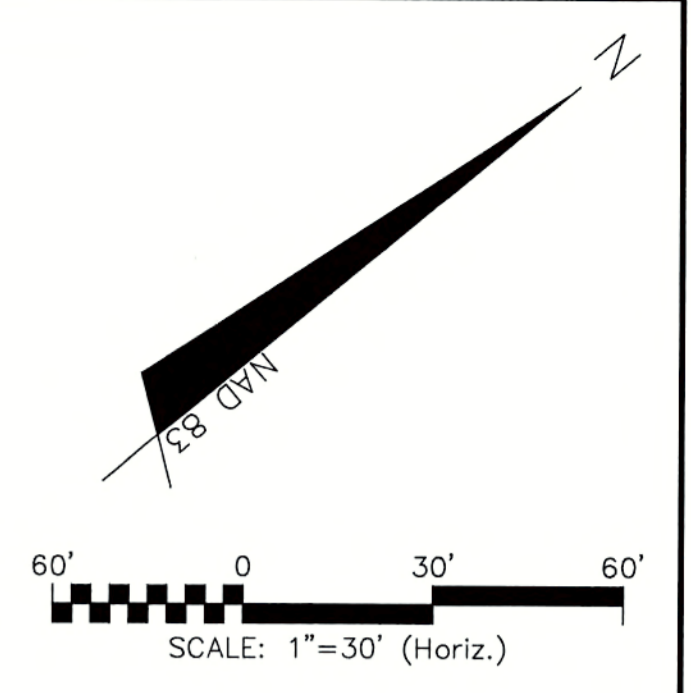
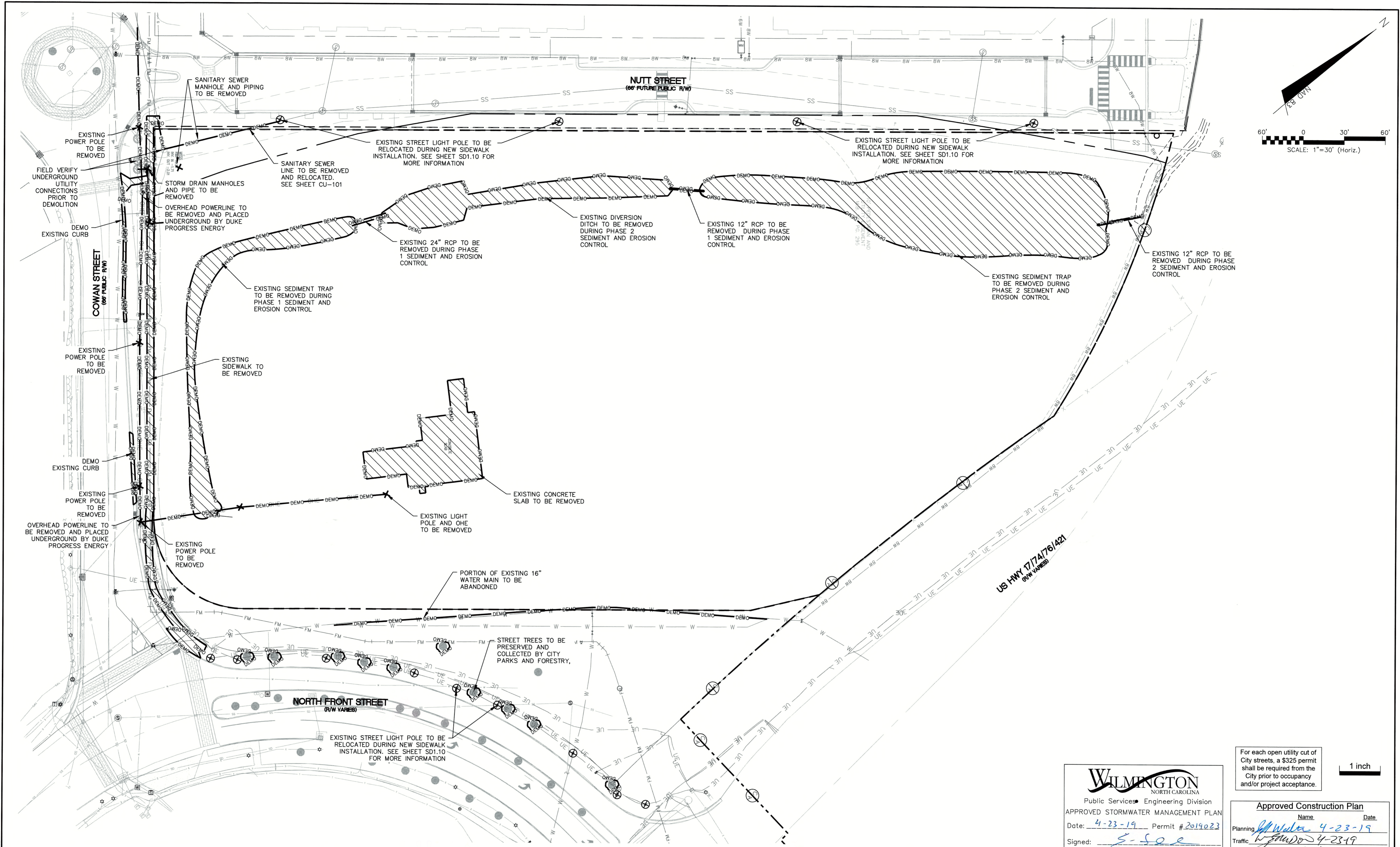
DATE: 04/18/2019  
MCE PROJ. #: 7402-0001  
DRAWN: ALM/KCE  
DESIGNED: ALM  
CHECKED: RMC  
PROJ. MGR.: KCE

SCALE: HORIZONTAL: 1"=30'  
VERTICAL: N/A

M&E FILE NUMBER: CE-102  
DRAWING NUMBER: 8

STATUS: IFC PLAN SET  
ISSUED FOR CONSTRUCTION  
REVISION: 0





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

1 inch

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

Date: 4-23-19 Permit # 2019023  
Signed: S. S. S.

**Approved Construction Plan**

Name \_\_\_\_\_ Date \_\_\_\_\_  
Planning J. W. W. 4-23-19  
Traffic W. S. S. 4-23-19  
Fire J. M. M. 4-23-19

REVNO.	DESCRIPTIONS	DATE
0	CITY OF WILMINGTON - RELEASE FOR CONSTRUCTION PLANS	04/18/2019

SEAL

**PROFESSIONAL ENGINEER**  
SEAL 22574  
RICHARD M. COLLIER  
04-18-2019

**MCKIM & CREED**  
243 North Front Street  
Wilmington, North Carolina 28401  
Phone: (910)343-1048, Fax: (910)251-8282  
License: F-1222  
www.mckimcreed.com

**dj**  
RESIDENTIAL

**CLINE DESIGN**

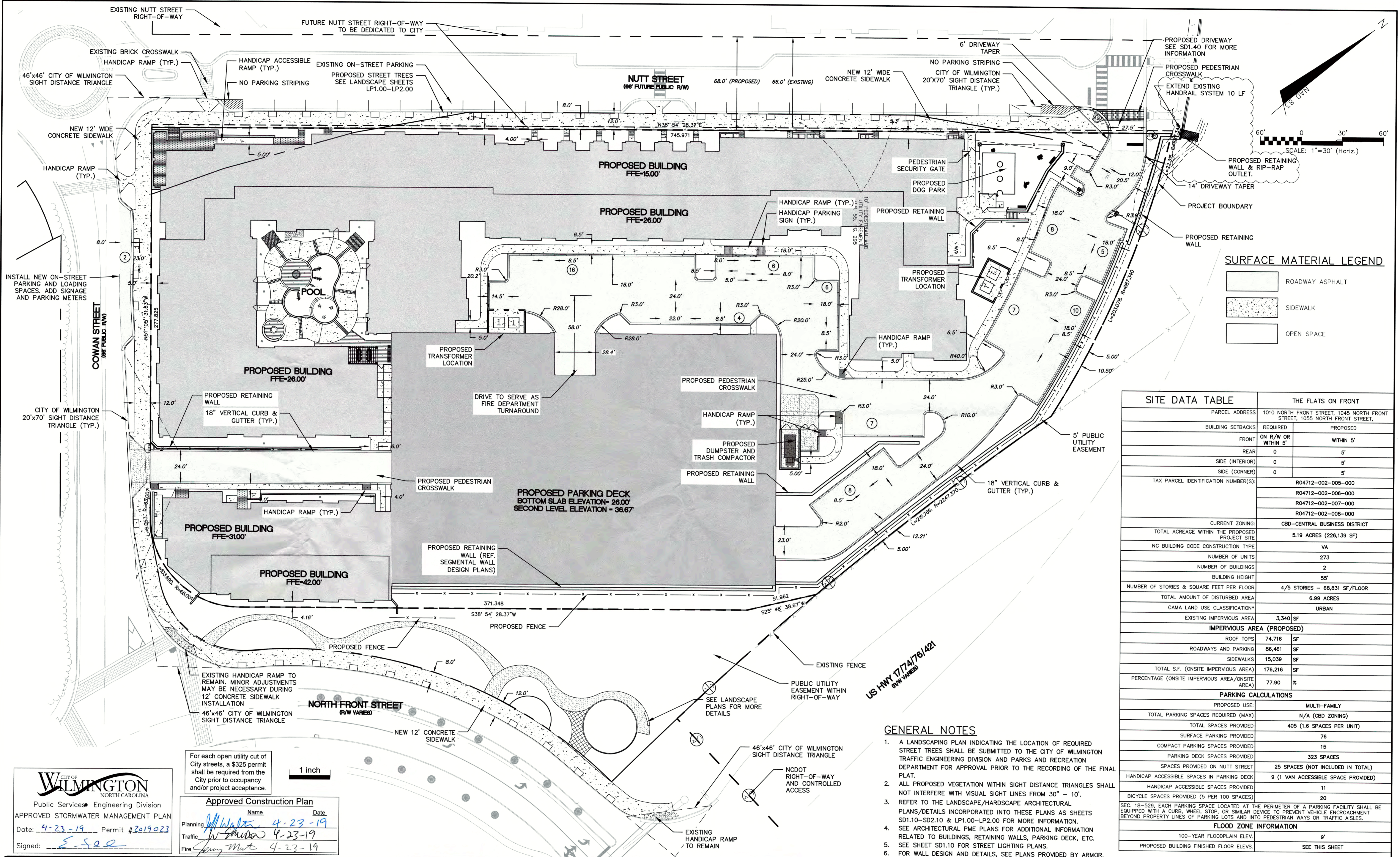
**THE FLATS ON FRONT**  
WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

**DEMOLITION PLAN**

DATE: 04/18/2019	SCALE: 1"=30'	M&C FILE NUMBER: CD-101
M&C PROJ. # 7402-0001	HORIZONTAL: 1"=30'	DRAWING NUMBER: 9
DRAWN: ALM/KCE	VERTICAL: N/A	
DESIGNED: ALM		
CHECKED: RMC		
PROJ. MGR.: KCE		

STATUS: **IFC PLAN SET**  
ISSUED FOR CONSTRUCTION

REVISION 0



**SURFACE MATERIAL LEGEND**

[Pattern]	ROADWAY ASPHALT
[Pattern]	SIDEWALK
[Pattern]	OPEN SPACE

SITE DATA TABLE		THE FLATS ON FRONT	
PARCEL ADDRESS	1010 NORTH FRONT STREET, 1045 NORTH FRONT STREET, 1055 NORTH FRONT STREET,		
BUILDING SETBACKS	REQUIRED	PROPOSED	
FRONT	ON R/W OR WITHIN 5'	0	5'
REAR	0	0	5'
SIDE (INTERIOR)	0	0	5'
SIDE (CORNER)	0	0	5'
TAX PARCEL IDENTIFICATION NUMBER(S)	R04712-002-005-000 R04712-002-006-000 R04712-002-007-000 R04712-002-008-000		
CURRENT ZONING	CBD-CENTRAL BUSINESS DISTRICT		
TOTAL ACREAGE WITHIN THE PROPOSED PROJECT SITE	5.19 ACRES (226,139 SF)		
NC BUILDING CODE CONSTRUCTION TYPE	VA		
NUMBER OF UNITS	273		
NUMBER OF BUILDINGS	2		
BUILDING HEIGHT	55'		
NUMBER OF STORIES & SQUARE FEET PER FLOOR	4/5 STORIES - 68,831 SF/FLOOR		
TOTAL AMOUNT OF DISTURBED AREA	6.99 ACRES		
CAMA LAND USE CLASSIFICATION*	URBAN		
EXISTING IMPERVIOUS AREA	3,340	SF	
<b>IMPERVIOUS AREA (PROPOSED)</b>			
ROOF TOPS	74,716	SF	
ROADWAYS AND PARKING	86,461	SF	
SIDEWALKS	15,039	SF	
TOTAL S.F. (ONSITE IMPERVIOUS AREA)	176,216	SF	
PERCENTAGE (ONSITE IMPERVIOUS AREA/ONSITE AREA)	77.90	%	
<b>PARKING CALCULATIONS</b>			
PROPOSED USE:	MULTI-FAMILY		
TOTAL PARKING SPACES REQUIRED (MAX)	N/A (CBD ZONING)		
TOTAL SPACES PROVIDED	405 (1.6 SPACES PER UNIT)		
SURFACE PARKING PROVIDED	76		
COMPACT PARKING SPACES PROVIDED	15		
PARKING DECK SPACES PROVIDED	323 SPACES		
SPACES PROVIDED ON NUTT STREET	25 SPACES (NOT INCLUDED IN TOTAL)		
HANDICAP ACCESSIBLE SPACES IN PARKING DECK	9 (1 VAN ACCESSIBLE SPACE PROVIDED)		
HANDICAP ACCESSIBLE SPACES PROVIDED	11		
BICYCLE SPACES PROVIDED (5 PER 100 SPACES)	20		
SEC. 18-529, EACH PARKING SPACE LOCATED AT THE PERIMETER OF A PARKING FACILITY SHALL BE EQUIPPED WITH A CURB, WHEEL STOP, OR SIMILAR DEVICE TO PREVENT VEHICLE ENCROACHMENT BEYOND PROPERTY LINES OF PARKING LOTS AND INTO PEDESTRIAN WAYS OR TRAFFIC AISLES.			
<b>FLOOD ZONE INFORMATION</b>			
100-YEAR FLOODPLAIN ELEV.	9'		
PROPOSED BUILDING FINISHED FLOOR ELEV.	SEE THIS SHEET		

**GENERAL 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 APPROVAL PRIOR TO THE RECORDING OF THE FINAL PLAT.
- ALL PROPOSED VEGETATION WITHIN SIGHT DISTANCE TRIANGLES SHALL NOT INTERFERE WITH VISUAL SIGHT LINES FROM 30' - 10'.
- REFER TO THE LANDSCAPE/HARDSCAPE ARCHITECTURAL PLANS/DETAILS INCORPORATED INTO THESE PLANS AS SHEETS SD1.10-SD2.10 & LP1.00-LP2.00 FOR MORE INFORMATION.
- SEE ARCHITECTURAL PME PLANS FOR ADDITIONAL INFORMATION RELATED TO BUILDINGS, RETAINING WALLS, PARKING DECK, ETC.
- SEE SHEET SD1.10 FOR STREET LIGHTING PLANS.
- FOR WALL DESIGN AND DETAILS, SEE PLANS PROVIDED BY ARMOR.

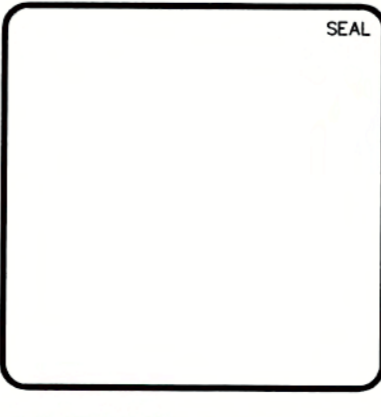
For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

**Approved Construction Plan**

Name	Date
Planning: <i>W. Walter</i>	4-23-19
Traffic: <i>W. Walter</i>	4-23-19
Fire: <i>Sping Mart</i>	4-23-19

**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
Date: 4-23-19 Permit # 2019023  
Signed: *E. See*

NO.	DESCRIPTION	DATE
0	CITY OF WILMINGTON - RELEASE FOR CONSTRUCTION PLANS	04/18/2019
1	REVISIONS	



**MCKIM & CREED**  
243 North Front Street  
Wilmington, North Carolina 28401  
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**dpr RESIDENTIAL**  
**CLINE DESIGN**

**THE FLATS ON FRONT**  
WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA  
**OVERALL SITE PLAN**

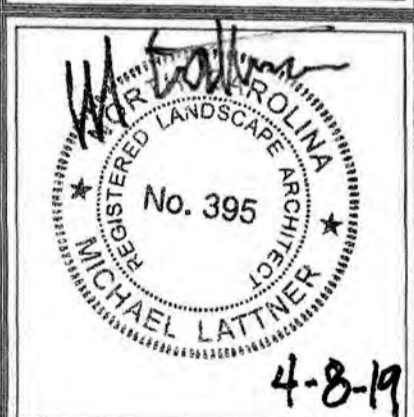
DATE: 04/18/2019  
MCE PROJ. #: 7402-0001  
DRAWN: ALM/KCE  
DESIGNED: ALM  
CHECKED: RMC  
PROJ. MGR.: KCE

SCALE: HORIZONTAL: 1"=30'  
VERTICAL: N/A

MAC FILE NUMBER: CS-100  
DRAWING NUMBER: 10

STATUS: IFC PLAN SET  
ISSUED FOR CONSTRUCTION

REVISION: 0



PROJECT: 218022  
DATE: 11.29.2018

REVISIONS:	DATE
1st TRC Sub	07.11.18
2nd TRC Sub	09.28.18
3rd TRC Sub	11.05.18
4th TRC Sub	12.18.18

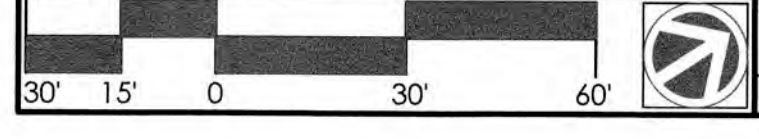
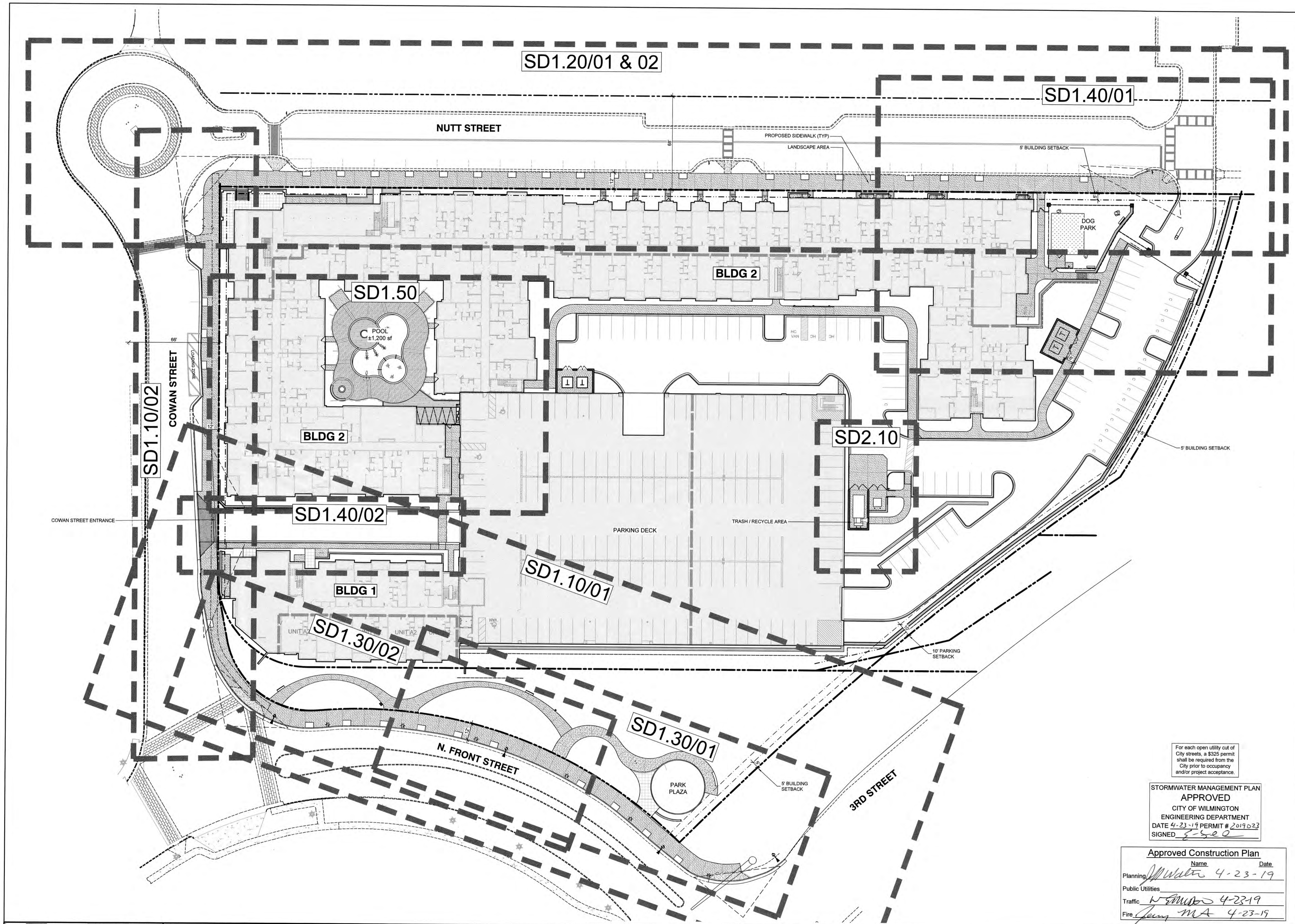
Permit	04.08.19
Final TRC Sub	04.18.19
DRAWN BY:	SP
CHECKED BY:	JBM
Overall Hardscape	
Key Plan	

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

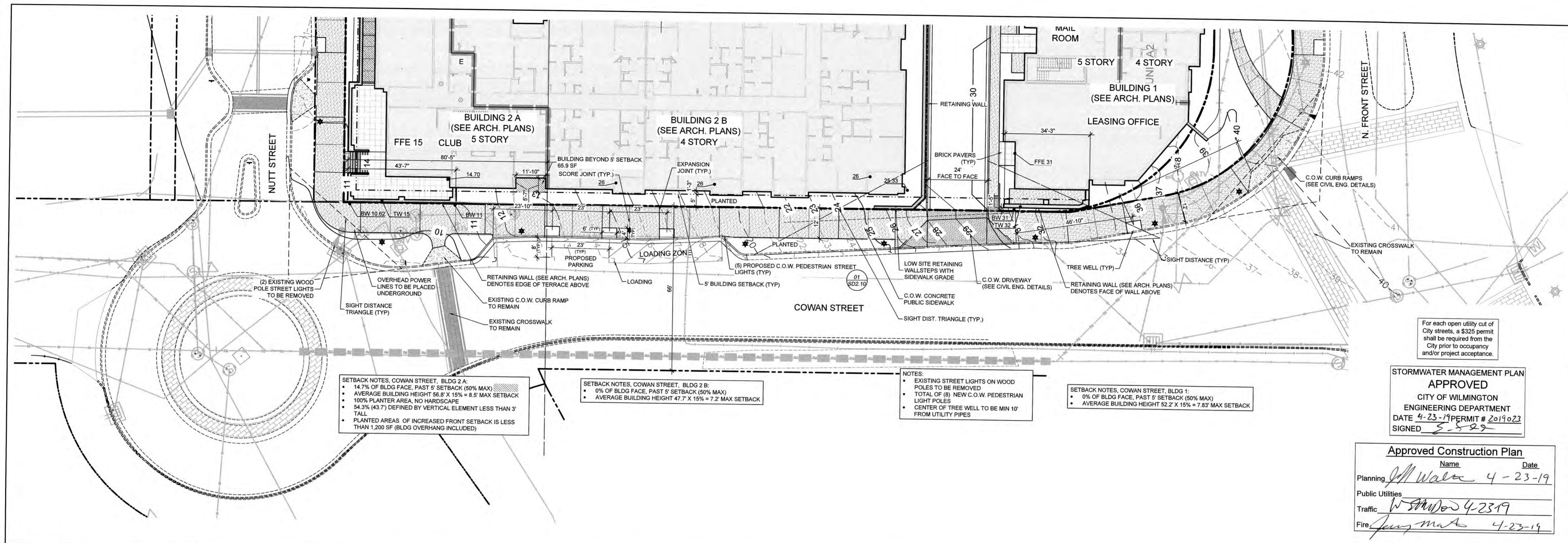
STORMWATER MANAGEMENT PLAN  
**APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 4-23-19 PERMIT # 2019023  
SIGNED *[Signature]*

**Approved Construction Plan**

Name	Date
Planning <i>[Signature]</i>	4-23-19
Public Utilities	
Traffic <i>[Signature]</i>	4-23-19
Fire <i>[Signature]</i>	4-23-19



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**SETBACK NOTES, COWAN STREET, BLDG 2 A:**

- 14.7% OF BLDG FACE, PAST 5' SETBACK (50% MAX)
- AVERAGE BUILDING HEIGHT 56.8' X 15% = 8.5' MAX SETBACK
- 100% PLANTER AREA, NO HARDSCAPE
- 54.3% (43.7') DEFINED BY VERTICAL ELEMENT LESS THAN 3' TALL
- PLANTED AREAS OF INCREASED FRONT SETBACK IS LESS THAN 1,200 SF (BLDG OVERHANG INCLUDED)

**SETBACK NOTES, COWAN STREET, BLDG 2 B:**

- 0% OF BLDG FACE, PAST 5' SETBACK (50% MAX)
- AVERAGE BUILDING HEIGHT 47.7' X 15% = 7.2' MAX SETBACK

**NOTES:**

- EXISTING STREET LIGHTS ON WOOD POLES TO BE REMOVED
- TOTAL OF (8) NEW C.O.W. PEDESTRIAN LIGHT POLES
- CENTER OF TREE WELL TO BE MIN 10' FROM UTILITY PIPES

**SETBACK NOTES, COWAN STREET, BLDG 1:**

- 0% OF BLDG FACE, PAST 5' SETBACK (50% MAX)
- AVERAGE BUILDING HEIGHT 52.2' X 15% = 7.83' MAX SETBACK

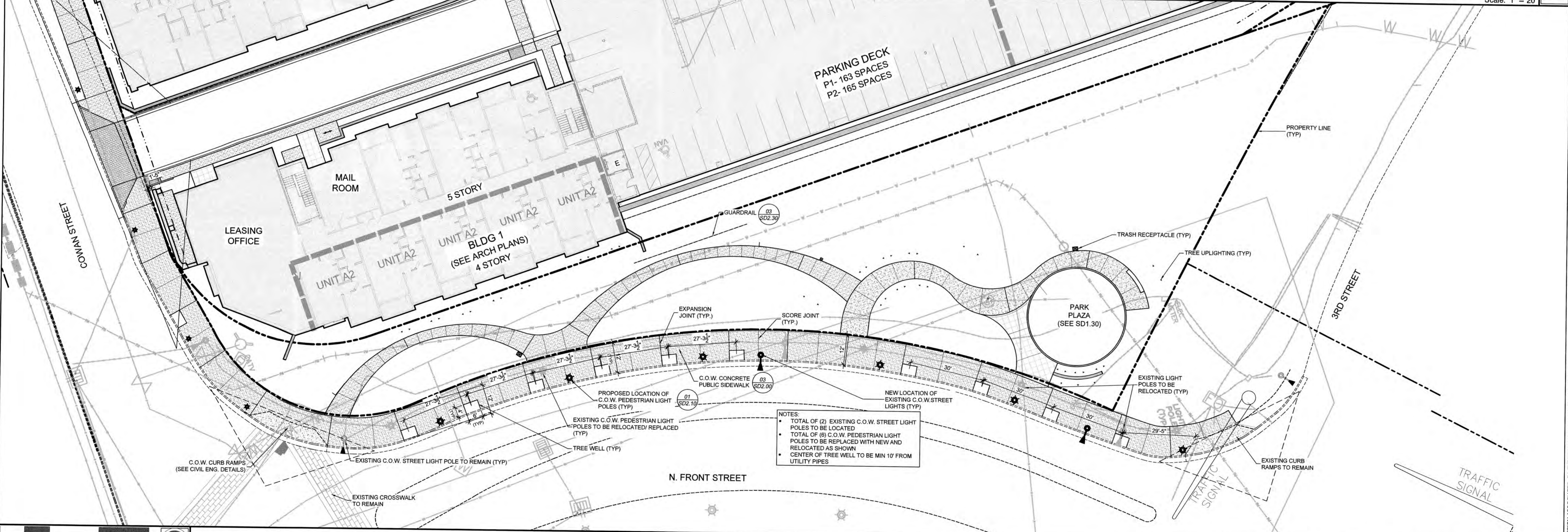
For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

**STORMWATER MANAGEMENT PLAN APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 4-23-19 PERMIT # 2019023  
SIGNED S-S-22

**Approved Construction Plan**

Name	Date
Planning <i>JM Walter</i>	4-23-19
Public Utilities	
Traffic <i>W Stinson</i>	4-23-19
Fire <i>Jim Math</i>	4-23-19

Streetscape Layout & Grading Plan - Cowan Street 02 Scale: 1" = 20'



**NOTES:**

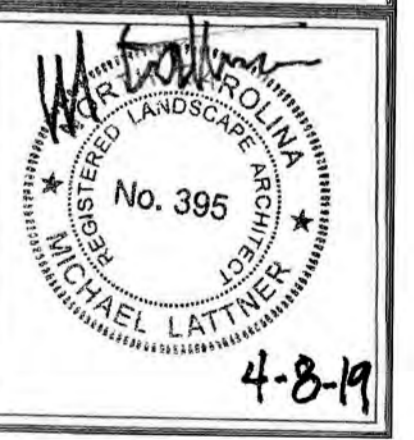
- TOTAL OF (2) EXISTING C.O.W. STREET LIGHT POLES TO BE LOCATED
- TOTAL OF (6) C.O.W. PEDESTRIAN LIGHT POLES TO BE REPLACED WITH NEW AND RELOCATED AS SHOWN
- CENTER OF TREE WELL TO BE MIN 10' FROM UTILITY PIPES

Streetscape Layout Plan - N. Front Street 01 Scale: 1" = 20'

DPJ Residential, LLC

**The Flats on Front**  
111 Cowan Street  
Wilmington, North Carolina

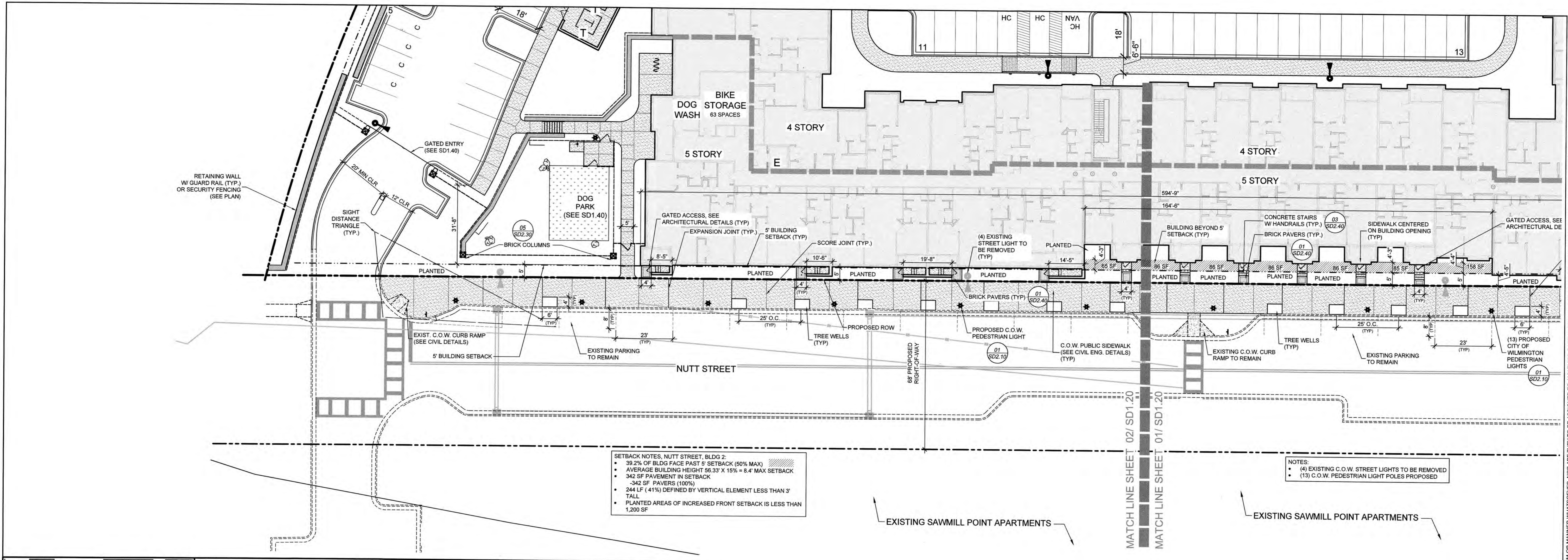
FINAL TRC



PROJECT: 218022  
DATE: 11.29.2018

REVISIONS:	DATE
1st TRC Sub	07.11.18
2nd TRC Sub	09.28.18
3rd TRC Sub	11.05.18
4th TRC Sub	12.18.18
Permit	04.08.19
Final TRC Sub	04.18.19

DRAWN BY: JP  
CHECKED BY: JBM  
Streetscape Layout Plans



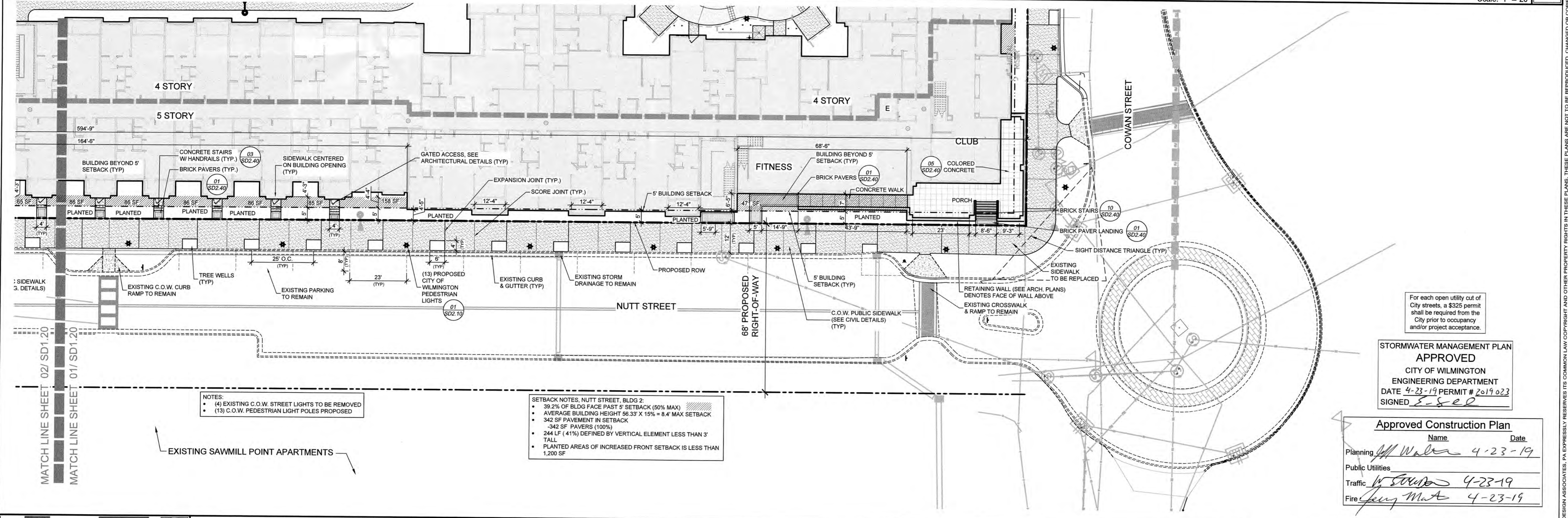
**SETBACK NOTES, NUTT STREET, BLDG 2:**

- 39.2% OF BLDG FACE PAST 5' SETBACK (50% MAX)
- AVERAGE BUILDING HEIGHT 56.33' X 15% = 8.4' MAX SETBACK
- 342 SF PAVEMENT IN SETBACK
- 342 SF PAVERS (100%)
- 244 LF (41%) DEFINED BY VERTICAL ELEMENT LESS THAN 3' TALL
- PLANTED AREAS OF INCREASED FRONT SETBACK IS LESS THAN 1,200 SF

**NOTES:**

- (4) EXISTING C.O.W. STREET LIGHTS TO BE REMOVED
- (13) C.O.W. PEDESTRIAN LIGHT POLES PROPOSED

Streetscape Layout Plan - Nutt Street 02  
Scale: 1" = 20'



**SETBACK NOTES, NUTT STREET, BLDG 2:**

- 39.2% OF BLDG FACE PAST 5' SETBACK (50% MAX)
- AVERAGE BUILDING HEIGHT 56.33' X 15% = 8.4' MAX SETBACK
- 342 SF PAVEMENT IN SETBACK
- 342 SF PAVERS (100%)
- 244 LF (41%) DEFINED BY VERTICAL ELEMENT LESS THAN 3' TALL
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**NOTES:**

- (4) EXISTING C.O.W. STREET LIGHTS TO BE REMOVED
- (13) C.O.W. PEDESTRIAN LIGHT POLES PROPOSED

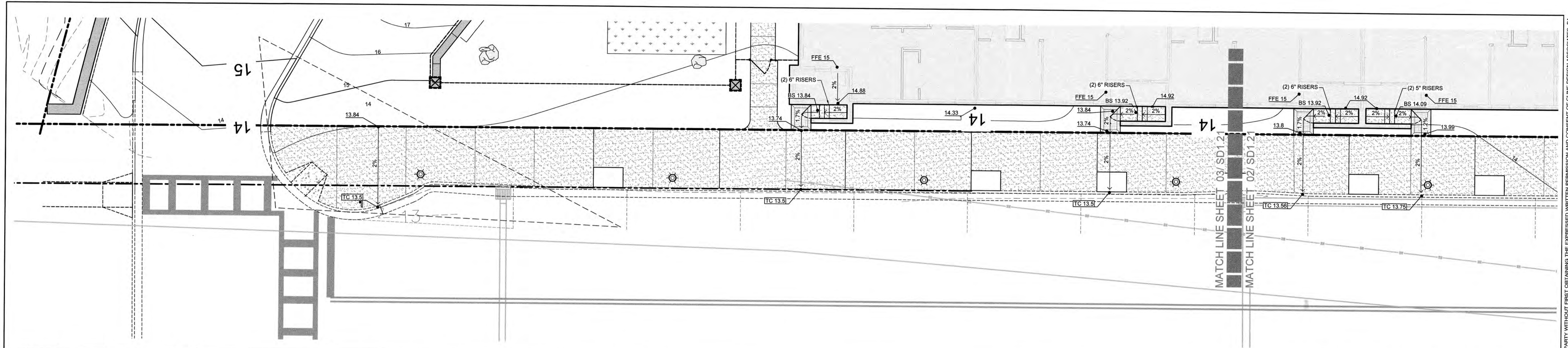
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**STORMWATER MANAGEMENT PLAN APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 4-23-19 PERMIT # 2019023  
SIGNED *E. S. E.*

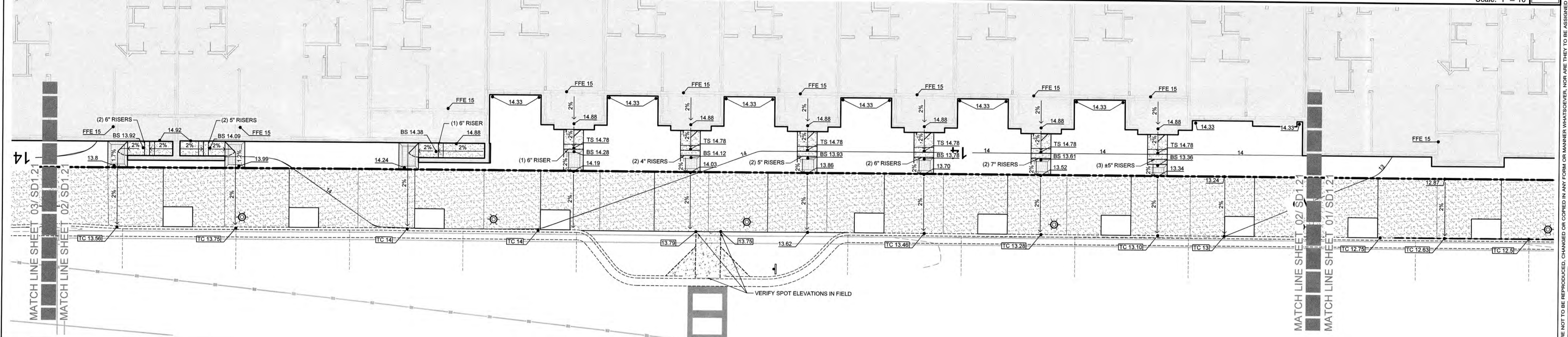
**Approved Construction Plan**

Name	Date
Planning <i>W. Walker</i>	4-23-19
Public Utilities	
Traffic <i>W. Edwards</i>	4-23-19
Fire <i>Jerry M. A.</i>	4-23-19

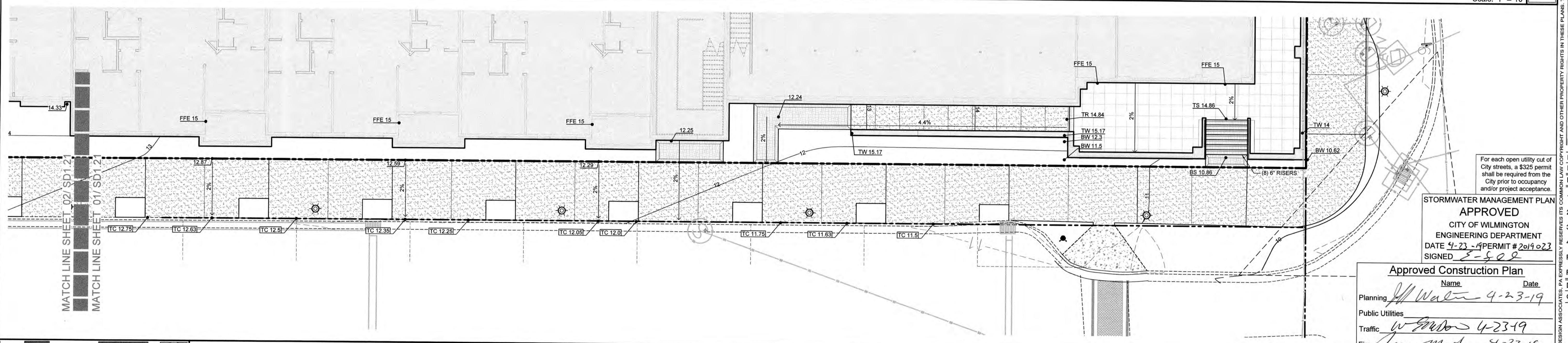
Streetscape Layout Plan - Nutt Street 01  
Scale: 1" = 20'



Streetscape Grading Plan - Nutt Street **03**  
Scale: 1" = 10'



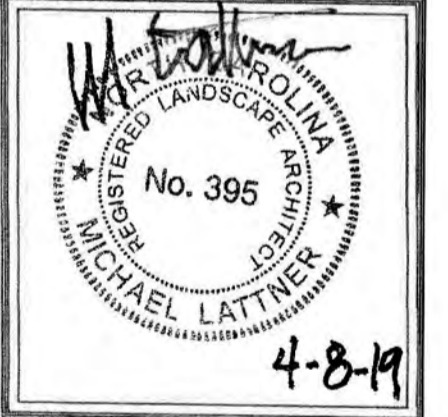
Streetscape Grading Plan - Nutt Street **02**  
Scale: 1" = 10'



Streetscape Grading Plan - Nutt Street **01**  
Scale: 1" = 10'

DPJ Residential, LLC  
**The Flats on Front**  
111 Cowan Street  
Wilmington, North Carolina

FINAL TRC



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

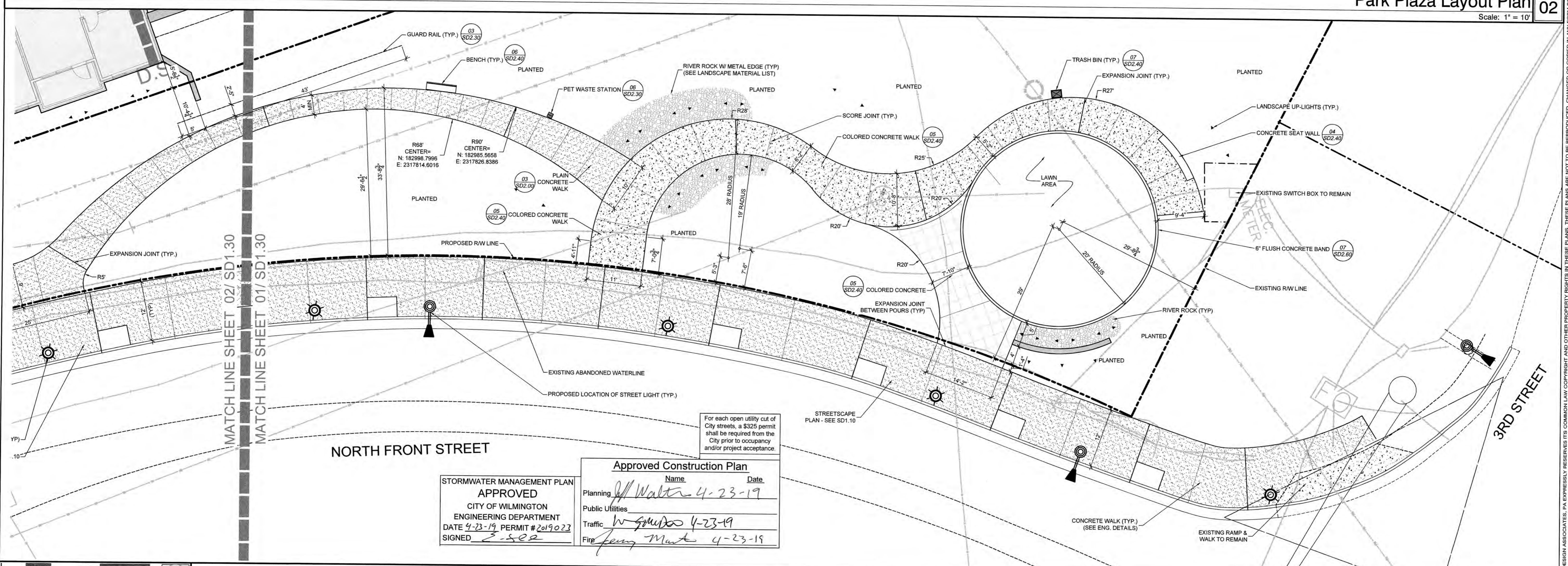
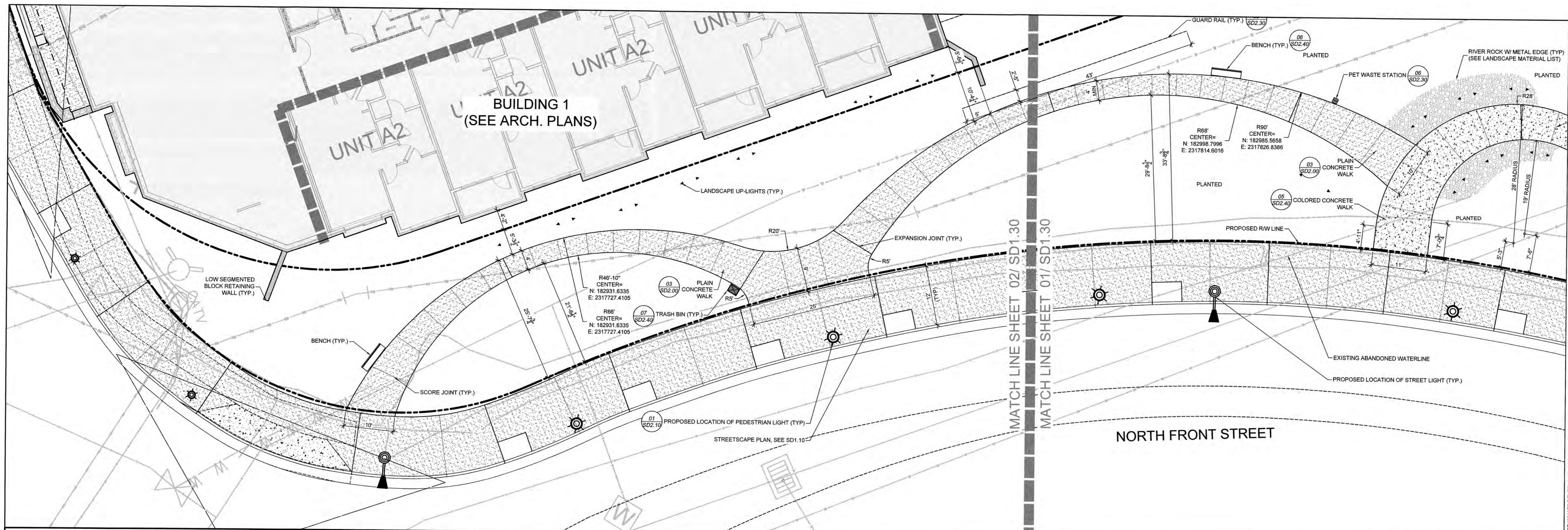
**STORMWATER MANAGEMENT PLAN APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 4-23-19 PERMIT # 2019 023  
SIGNED *[Signature]*

**Approved Construction Plan**

Name	Date
Planning <i>[Signature]</i>	4-23-19
Public Utilities <i>[Signature]</i>	4-23-19
Traffic <i>[Signature]</i>	4-23-19
Fire <i>[Signature]</i>	4-23-19

REVISIONS:	DATE
1st TRC Sub	07.11.18
2nd TRC Sub	09.28.18
3rd TRC Sub	11.05.18
4th TRC Sub	12.18.18
Permit	04.08.19
Final TRC Sub	04.18.19

DRAWN BY: SP  
CHECKED BY: ML/UBM  
Streetscape Grading Plans

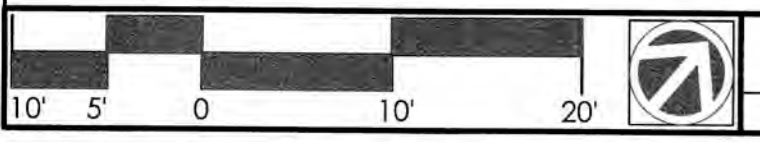


Park Plaza Layout Plan 02  
Scale: 1" = 10'

STORMWATER MANAGEMENT PLAN  
APPROVED  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 4-23-19 PERMIT # 2019023  
SIGNED [Signature]

Approved Construction Plan  
Name Date  
Planning [Signature] 4-23-19  
Public Utilities  
Traffic [Signature] 4-23-19  
Fire [Signature] 4-23-19

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



Park Plaza Layout Plan 01  
Scale: 1" = 10'

**CLINE DESIGN**  
125 N. Harrington St.  
Raleigh, NC 27603  
919/833-6413  
919/836-1280 FAX  
ClineDesignAssoc.com

DPJ Residential, LLC  
**The Flats on Front**  
111 Cowan Street  
Wilmington, North Carolina

FINAL TRC

PROJECT: 218022  
DATE: 11.29.2018

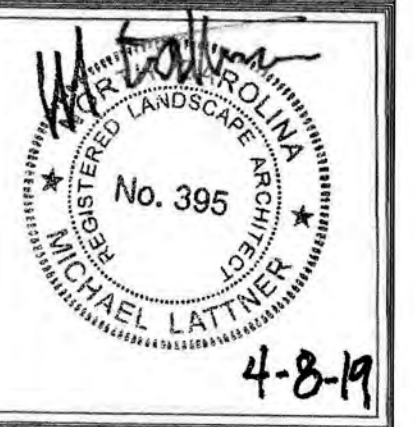
REVISIONS:	DATE
1st TRC Sub	07.11.18
2nd TRC Sub	09.28.18
3rd TRC Sub	11.05.18
4th TRC Sub	12.18.18
Permit	04.08.19
Final TRC Sub	04.18.19

DRAWN BY: BA  
CHECKED BY: ML/UBM  
Park Plaza Layout Plan

SD1.30

DPJ Residential, LLC  
**The Flats on Front**  
111 Cowan Street  
Wilmington, North Carolina

FINAL TRC



PROJECT: 218022  
DATE: 11.29.2018

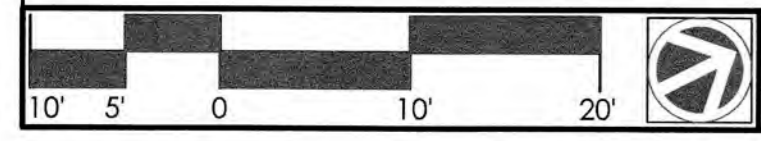
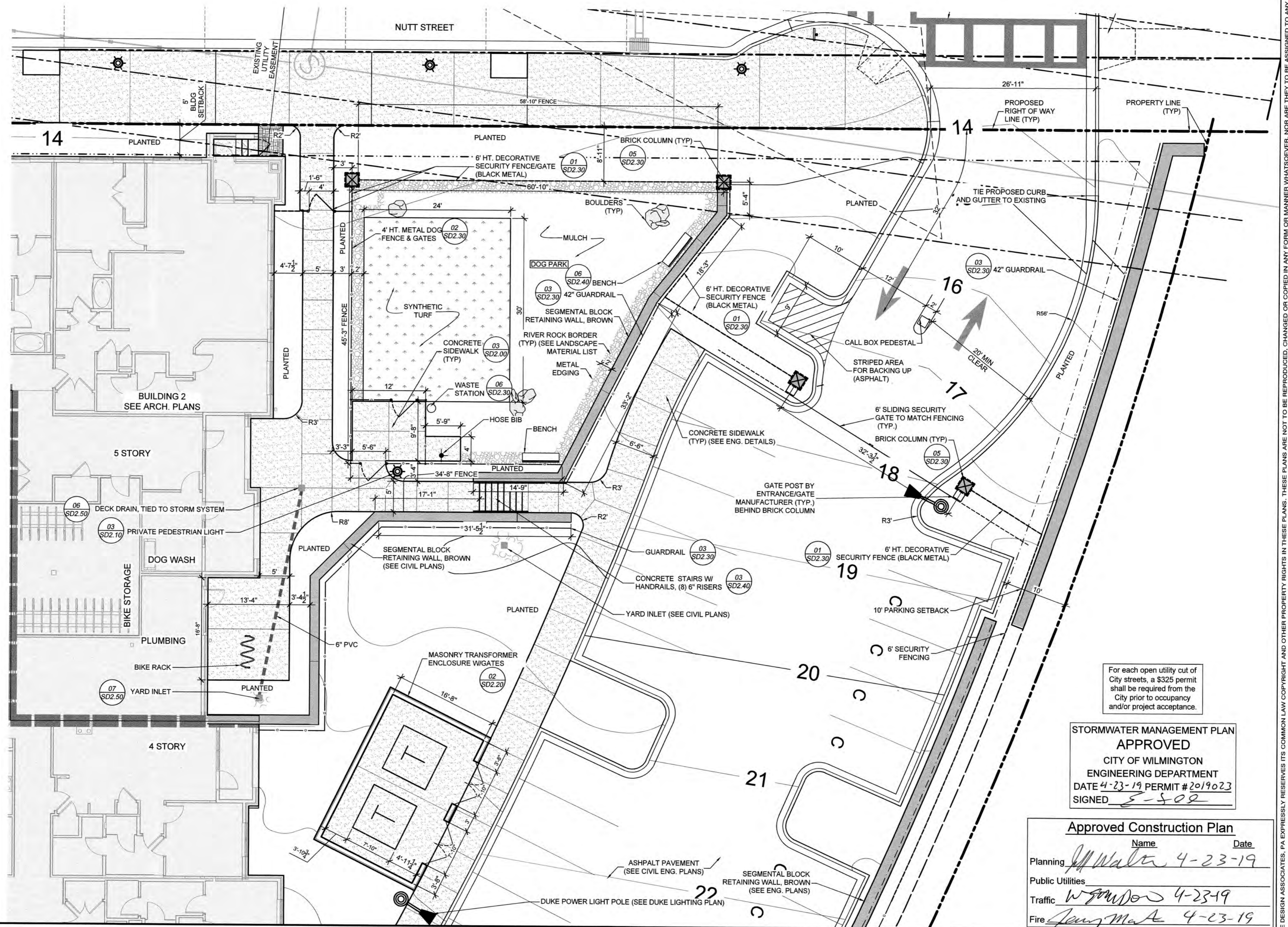
REVISIONS:	DATE
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2nd TRC Sub	09.28.18
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Permit	04.08.19
Final TRC Sub	04.18.19

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

**STORMWATER MANAGEMENT PLAN**  
**APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 4-23-19 PERMIT #2019023  
SIGNED *S-502*

**Approved Construction Plan**

Name	Date
Planning <i>J. Walter</i>	4-23-19
Public Utilities <i>W. Gordon</i>	4-23-19
Traffic <i>J. Mangione</i>	4-23-19
Fire <i>J. Mangione</i>	4-23-19

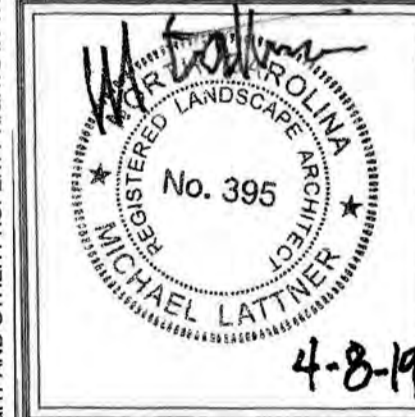


**Dog Park Layout Plan** 01  
Scale: 1" = 10'

SD1.40

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PROJECT: 218022  
DATE: 11.29.2018

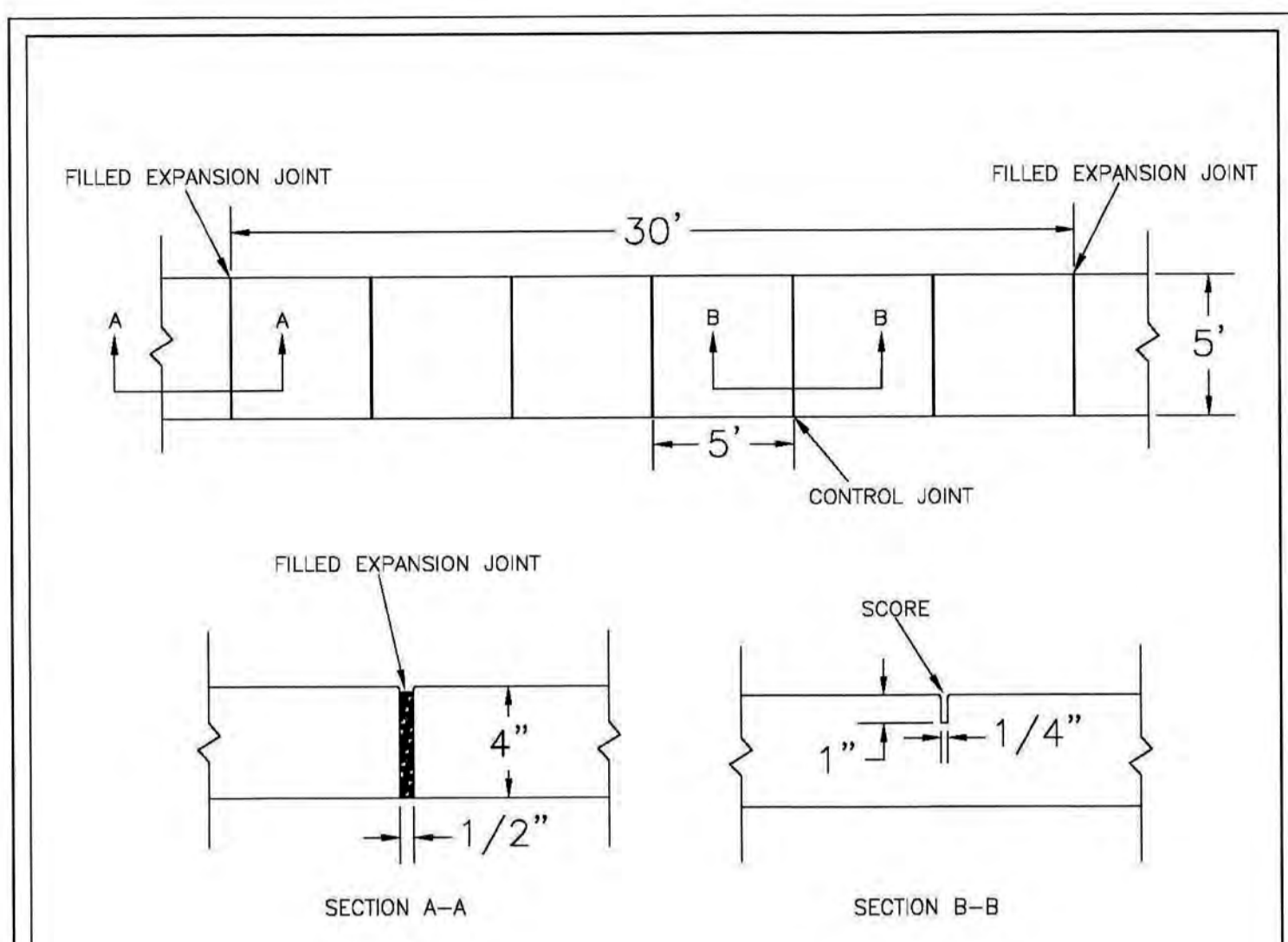
REVISIONS:	DATE
1st TRC Sub	07.11.18
2nd TRC Sub	09.28.18
3rd TRC Sub	11.05.18
4th TRC Sub	12.18.18
Permit	04.08.19
Final TRC Sub	04.18.19

DRAWN BY: SP  
CHECKED BY: MWL/JBM  
Site Details

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

STORMWATER MANAGEMENT PLAN  
APPROVED  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 4-23-19 PERMIT # 2019023  
SIGNED *E. S. Lee*

Approved Construction Plan  
Name \_\_\_\_\_ Date \_\_\_\_\_  
Planning *J. Walker* 4-23-19  
Public Utilities \_\_\_\_\_  
Traffic *W. Smith* 4-23-19  
Fire *J. M. Lee* 4-23-19



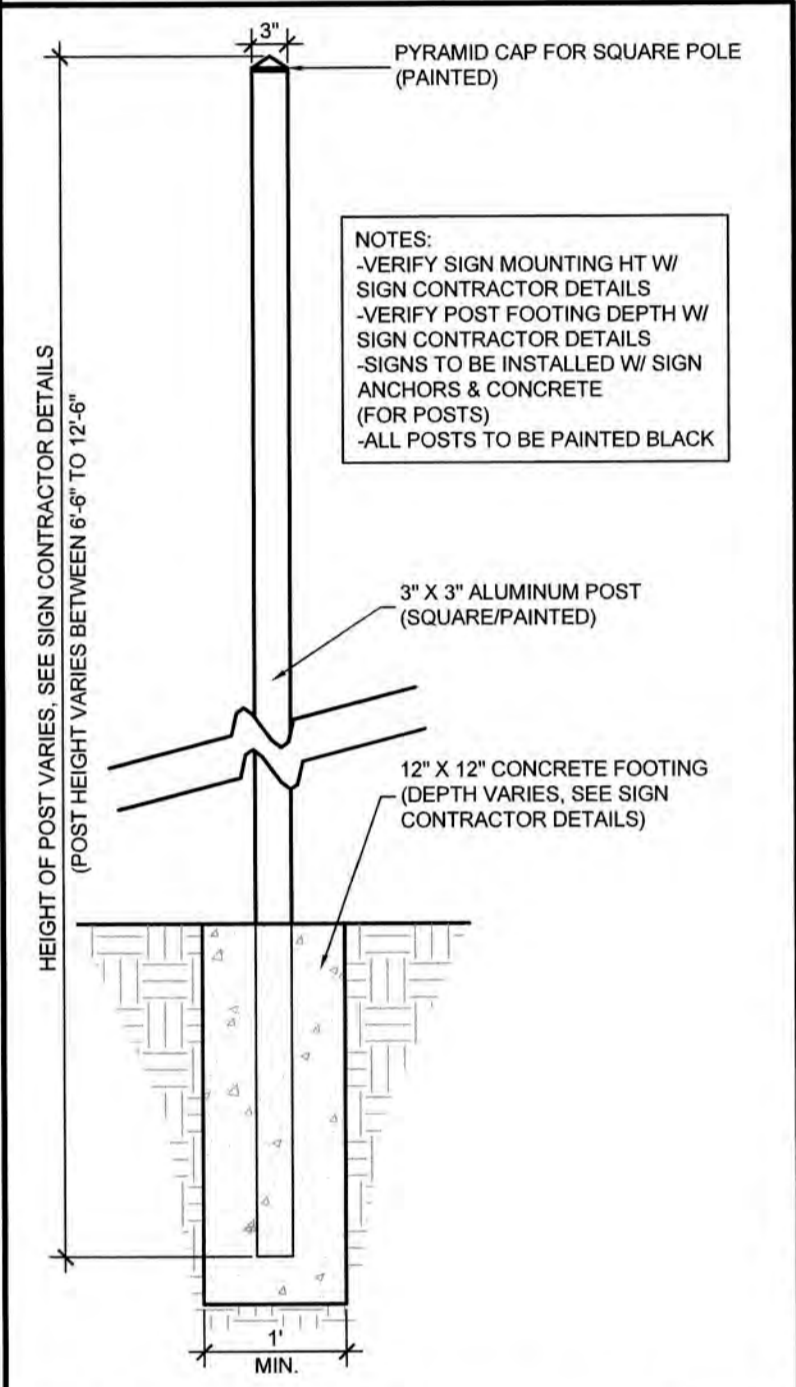
- NOTES:
- JOINT MATERIAL TO COMPLY WITH CURRENT NCDOT STANDARDS.
  - SANITARY SEWER CLEAN-OUTS, WATER METERS, MANHOLES, AND VALVE LIDS TO BE LOCATED OUTSIDE SIDEWALK WHERE FEASIBLE.
  - MINIMUM SIDEWALK WIDTH TO BE 6' MINIMUM IF PLACED AT BACK OF CURB.
  - CONCRETE FOR ALL SIDEWALKS (EXCEPT ANY PORTION CONTAIN WITHIN A DRIVEWAY APRON) SHALL BE CLASS "A" - 3,000 PSI.
  - MINIMUM REPLACEMENT FOR REPAIRS IS A 5' X 5' PANEL.
  - 4" STONE BASE MAY BE REQUIRED FOR POOR SOIL CONDITIONS.
  - MINIMUM DEPTH FOR TUNNELING BELOW SIDEWALK IS 12"
  - MAX ADJACENT GROUND SLOPE WITHOUT RAILING IS 2:1
  - MIN GRADE FOR PROPER DRAINAGE IS 1% IN AT LEAST 1 DIRECTION. MAX CROSS SLOPE IS 2%. MAX LONGITUDINAL SLOPE IS 8.3%, 10% IF LIMITED BY EXISTING CONDITIONS, OR NO GREATER THAN THE SLOPE OF THE EXISTING ADJACENT ROAD.

STANDARD DETAIL  
**SIDEWALK**

DATE: OCTOBER, 2010  
DRAWN: PB/JSR  
CHECKED: DEC  
SCALE: NOT TO SCALE

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

SD 3-10



- NOTES:
- VERIFY SIGN MOUNTING HT W/ SIGN CONTRACTOR DETAILS
  - VERIFY POST FOOTING DEPTH W/ SIGN CONTRACTOR DETAILS
  - SIGNS TO BE INSTALLED W/ SIGN ANCHORS & CONCRETE (FOR POSTS)
  - ALL POSTS TO BE PAINTED BLACK

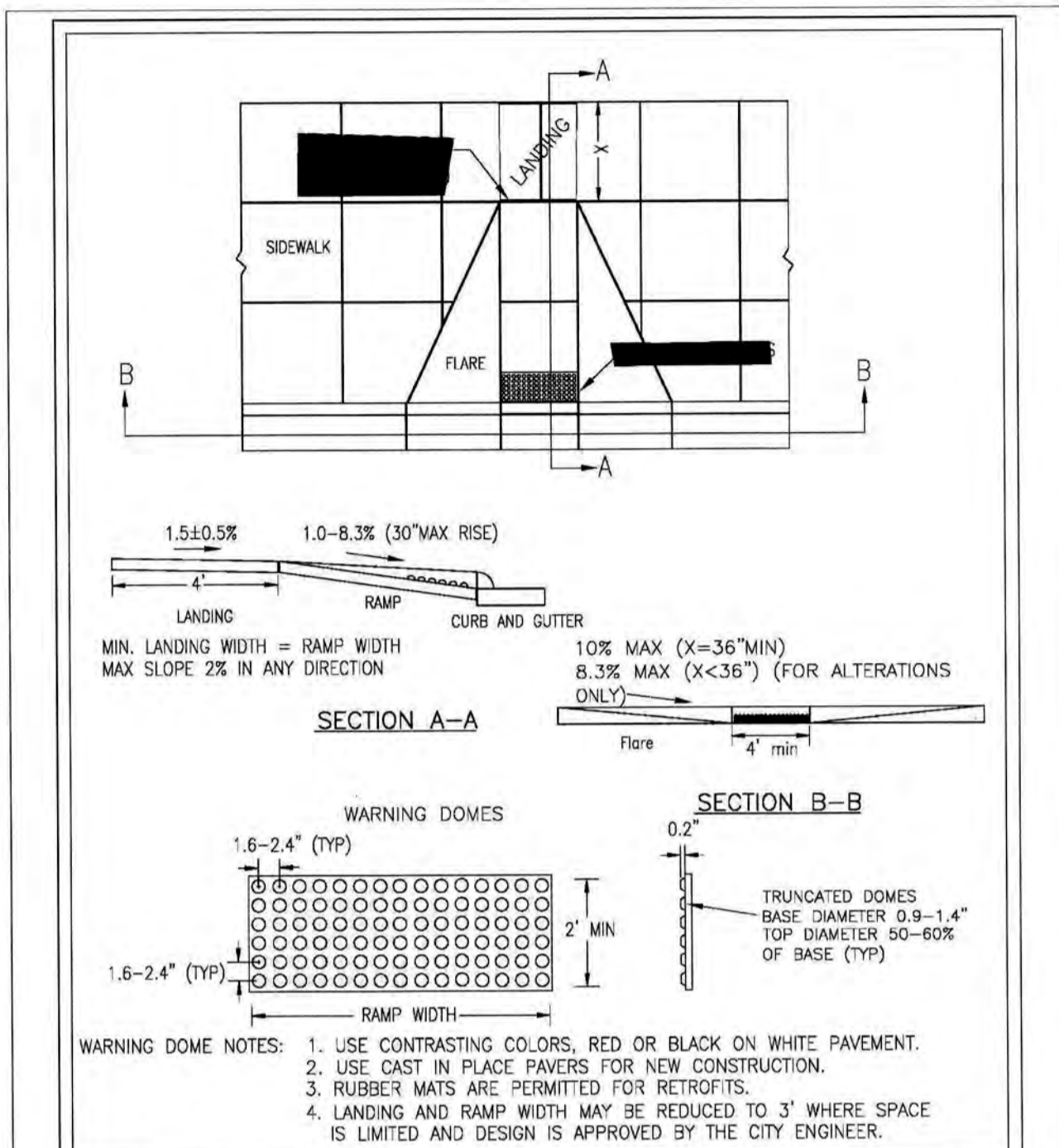
STANDARD DETAIL  
**Sign Post Detail**

DATE: OCTOBER, 2010  
DRAWN: PB/JSR  
CHECKED: DEC  
SCALE: NOT TO SCALE

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

SD 3-10

COW Concrete Sidewalk 03  
Not to Scale



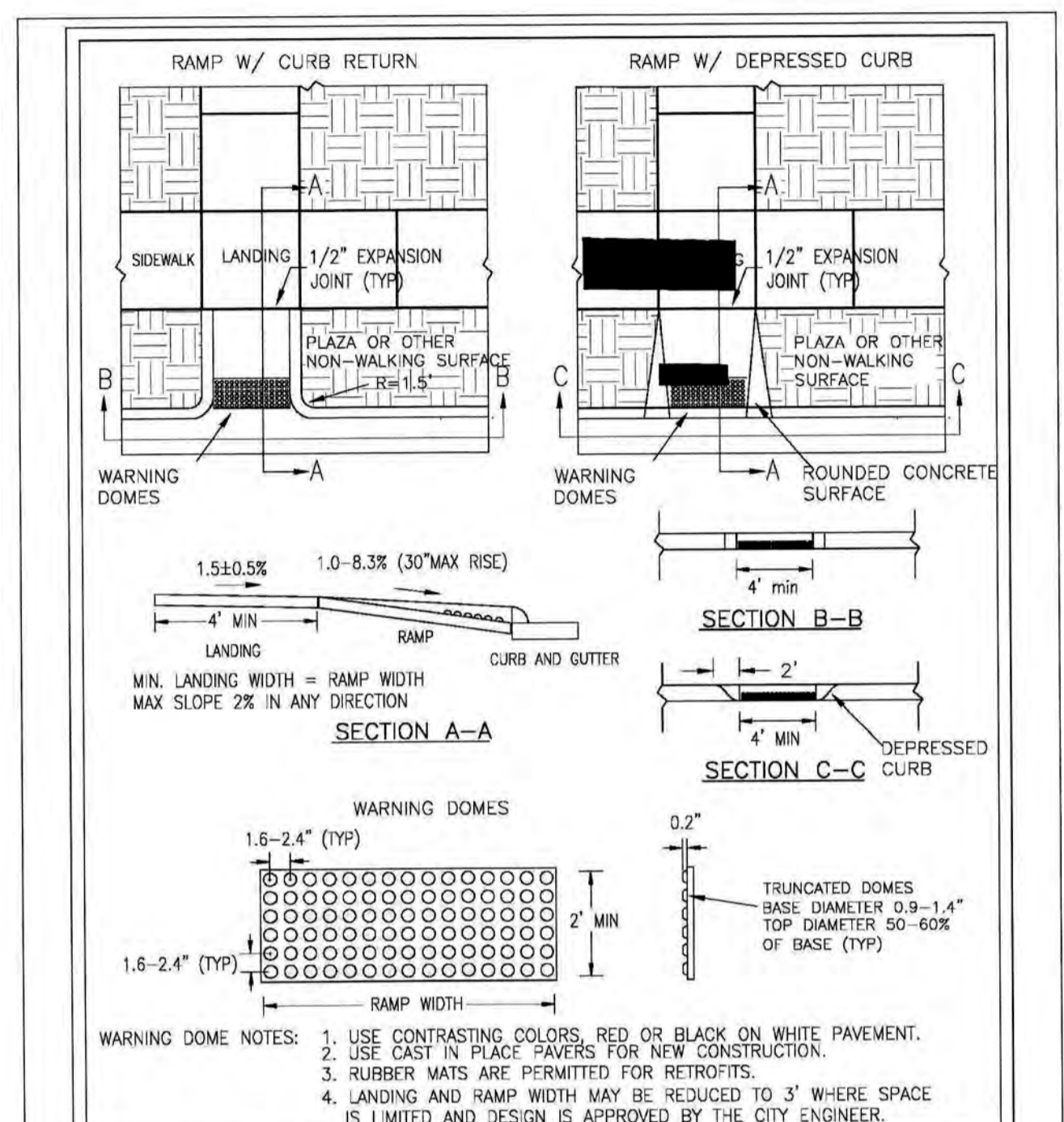
STANDARD DETAIL  
**PERPENDICULAR CURB RAMP ADJACENT TO WALKING SURFACE**

DATE: DECEMBER, 2010  
DRAWN: PB/JSR  
CHECKED: DEC  
SCALE: NOT TO SCALE

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

SD 3-07

COW Accessible Ramp 04  
Not to Scale



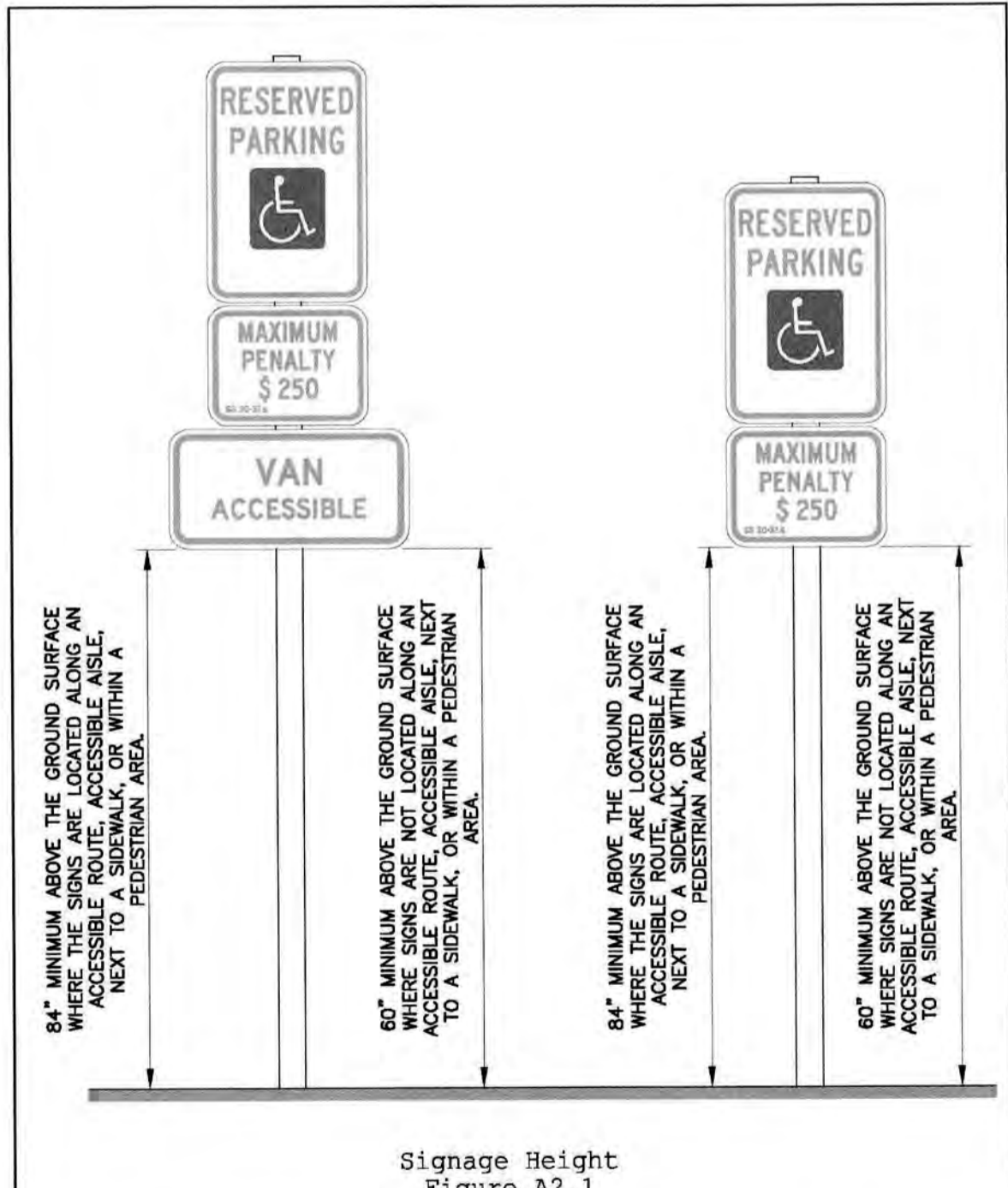
STANDARD DETAIL  
**PERPENDICULAR CURB RAMP ADJACENT TO PLAZA**

DATE: DECEMBER, 2010  
DRAWN: PB/JSR  
CHECKED: DEC  
SCALE: NOT TO SCALE

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

SD3-08

COW Handicap Parking Space Signage 01  
Not to Scale

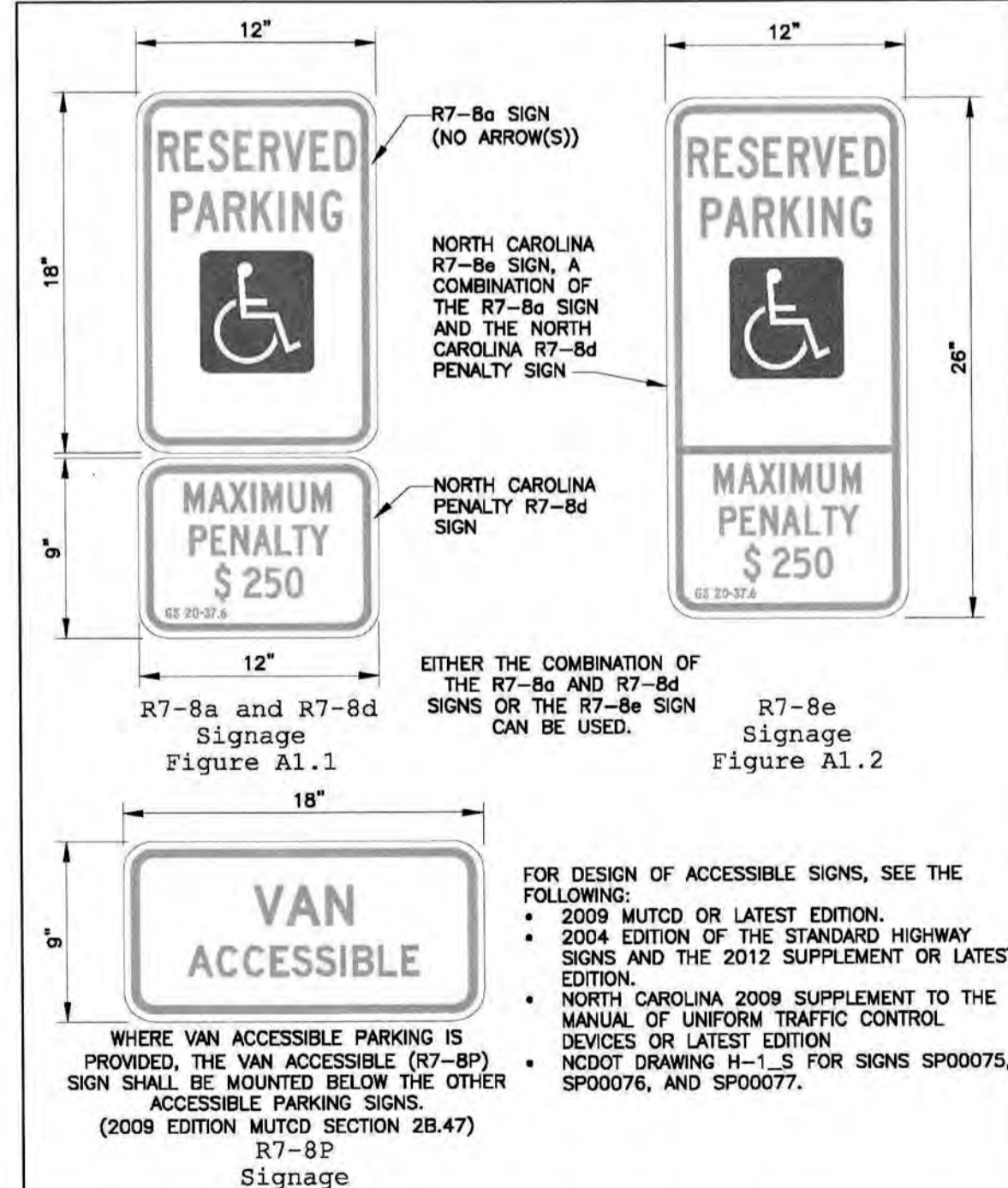


STANDARD DETAIL  
**ACCESSIBLE PARKING SIGNS**

DATE: NOVEMBER 8, 2016  
DRAWN BY: DALE THOMPSON  
CHECKED BY: RANDALL GLASTER  
SCALE: NOT TO SCALE

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

SD 15-19

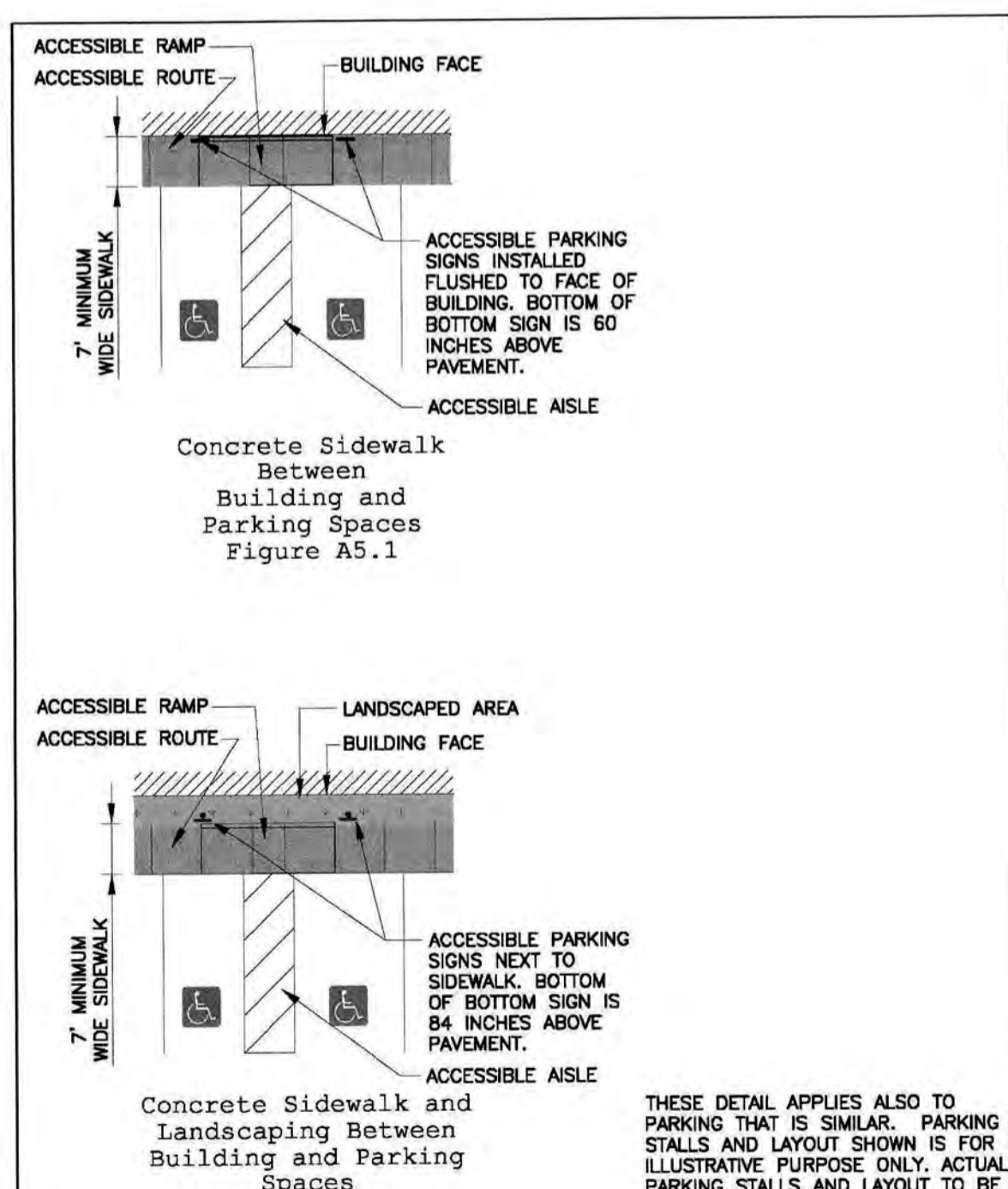


STANDARD DETAIL  
**ACCESSIBLE PARKING SIGNS**

DATE: NOVEMBER 8, 2016  
DRAWN BY: DALE THOMPSON  
CHECKED BY: RANDALL GLASTER  
SCALE: NOT TO SCALE

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

SD 15-19

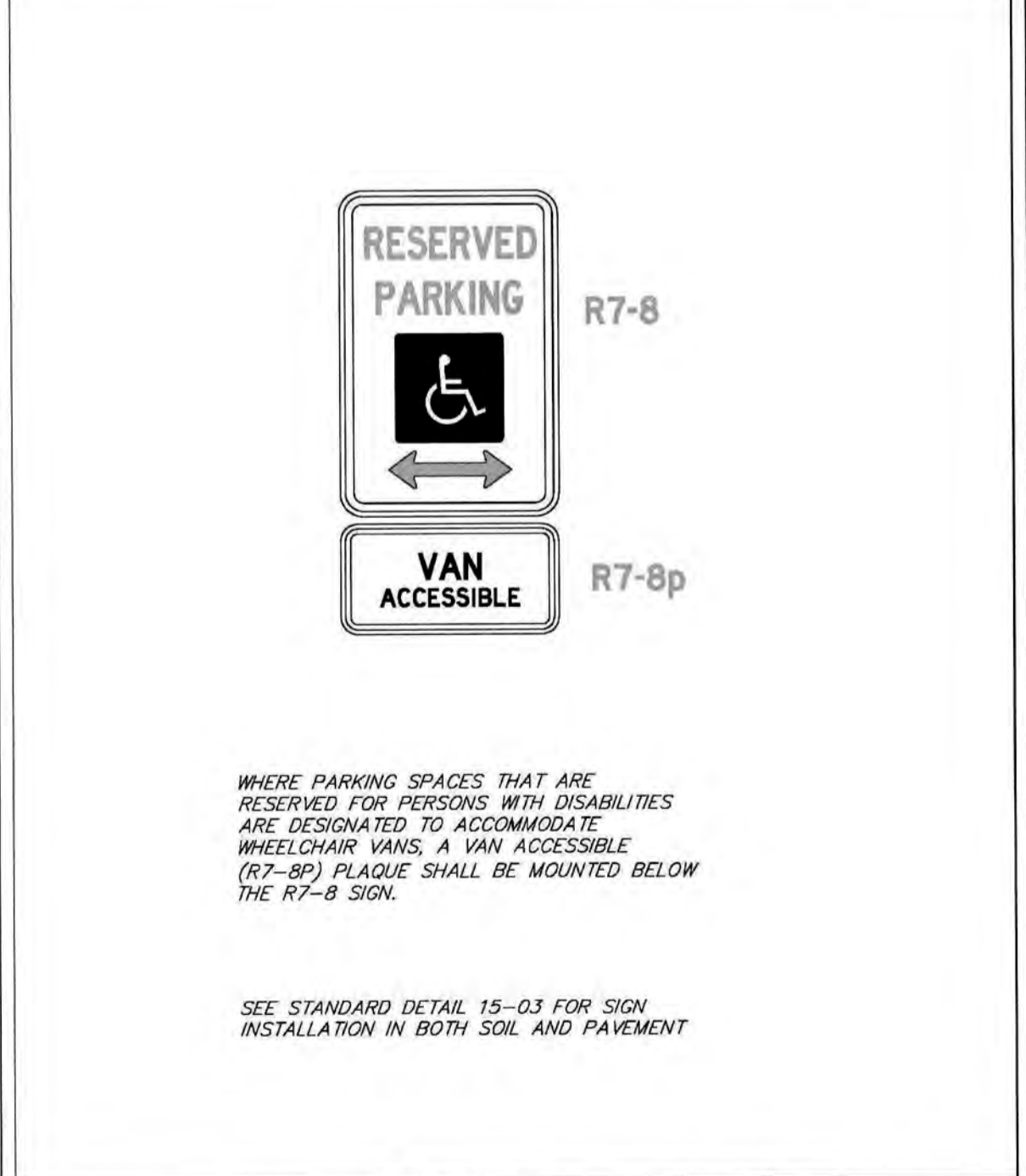


STANDARD DETAIL  
**ACCESSIBLE PARKING SIGNS**

DATE: NOVEMBER 8, 2016  
DRAWN BY: DALE THOMPSON  
CHECKED BY: RANDALL GLASTER  
SCALE: NOT TO SCALE

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

SD 15-19



STANDARD DETAIL  
**VAN ACCESSIBLE PARKING SIGNAGE**

DATE: MAY, 2016  
DRAWN BY: JSR  
CHECKED BY: PBL/P.E.  
SCALE: NOT TO SCALE

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

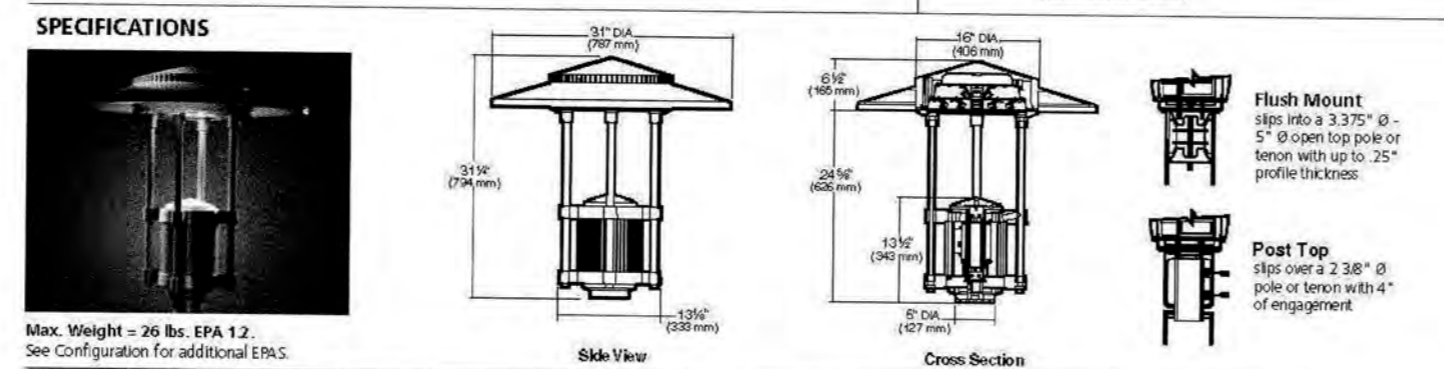
SD 15-19

COW Handicap Parking Space Signage 01  
Not to Scale

**KIM LIGHTING** BNS1 Bounce® PicoEmitter® LED kl\_bns1e2d\_spec.pdf

JOB \_\_\_\_\_ TYPE \_\_\_\_\_  
 NOTES \_\_\_\_\_ APPROVALS \_\_\_\_\_

- FEATURES**
- Full Cutoff PicoEmitter technology
  - Available in 580nm, 3000K, 4000K and 5000K standard CCT
  - Type 1, 2, 3, 4, 5, R & L distributions
  - 0-10V dimming drivers standard
  - Sealed optical chamber, IP66 certified



Max. Weight = 26 lbs. EPA 12. See Configuration for additional ETCs.

**ORDERING CODE**

Configuration	ETC	Feature	Electrical	Mounting	Finish
• FM Flush Mount, 4" O.D. Pole only	12	BNS1	6W LED, 60W	UL	DL Black
• PT Pole Top Mount, 2" Pipe only	12	H1 Type I	6W LED, 60W	UL	DB Dark Bronze
• 15A Single-arm, side-mount, 4" or 5" O.D. Pole only	18	H2 Type II	3K 3000K	UL	LG Light Gray
• 25B Two-arm, 4" or 5" O.D. Pole only	36	H3 Type III	4K 4000K	UL	PS Platinum Silver
• TW Single Wall Mount with 1/4" x 1/4" hole	n/a	H4 Type IV	5K 5000K	UL	TI Titanium
		H5 Type V		UL	WH White
		MR Type R Right		UL	CC Custom Color, consult representative
		ML Type L Left		UL	

Photocell Options	Time Options	Lens Options	RFID Options	Other Options	Accessories
A30 120V Button Photocell	SF 12V, 27V, 34V Line Volt.	CP Clear Polycarbonate*	NFO Neighbor Friendly Optic. Photometry available for Type III/IV. All others consult factory.	BBC Black Ballast Cover for full cutoff applications	SQR Round Pole Mounted Occupancy Sensor up to 16'
A31 208V Button Photocell	DF 20V, 24V, 48V Line Volt.				SQS Square Pole Mounted Occupancy Sensor up to 16'
A32 240V Button Photocell					SCH-R Round Pole Mounted Occupancy Sensor 12' to 30'
A33 120V Button Photocell					SCH-S Square Pole Mounted Occupancy Sensor 10' to 30'
A34 480V Button Photocell					
A35 347V Button Photocell					

**Mounting Options**

3.3 3.3" O.D. Pole	4.0 4" O.D. Pole	4.5 4.5" O.D. Pole	5.0 5" O.D. Pole	6.0 6" O.D. Pole
--------------------	------------------	--------------------	------------------	------------------

Kim Lighting reserves the right to change specifications without notice.

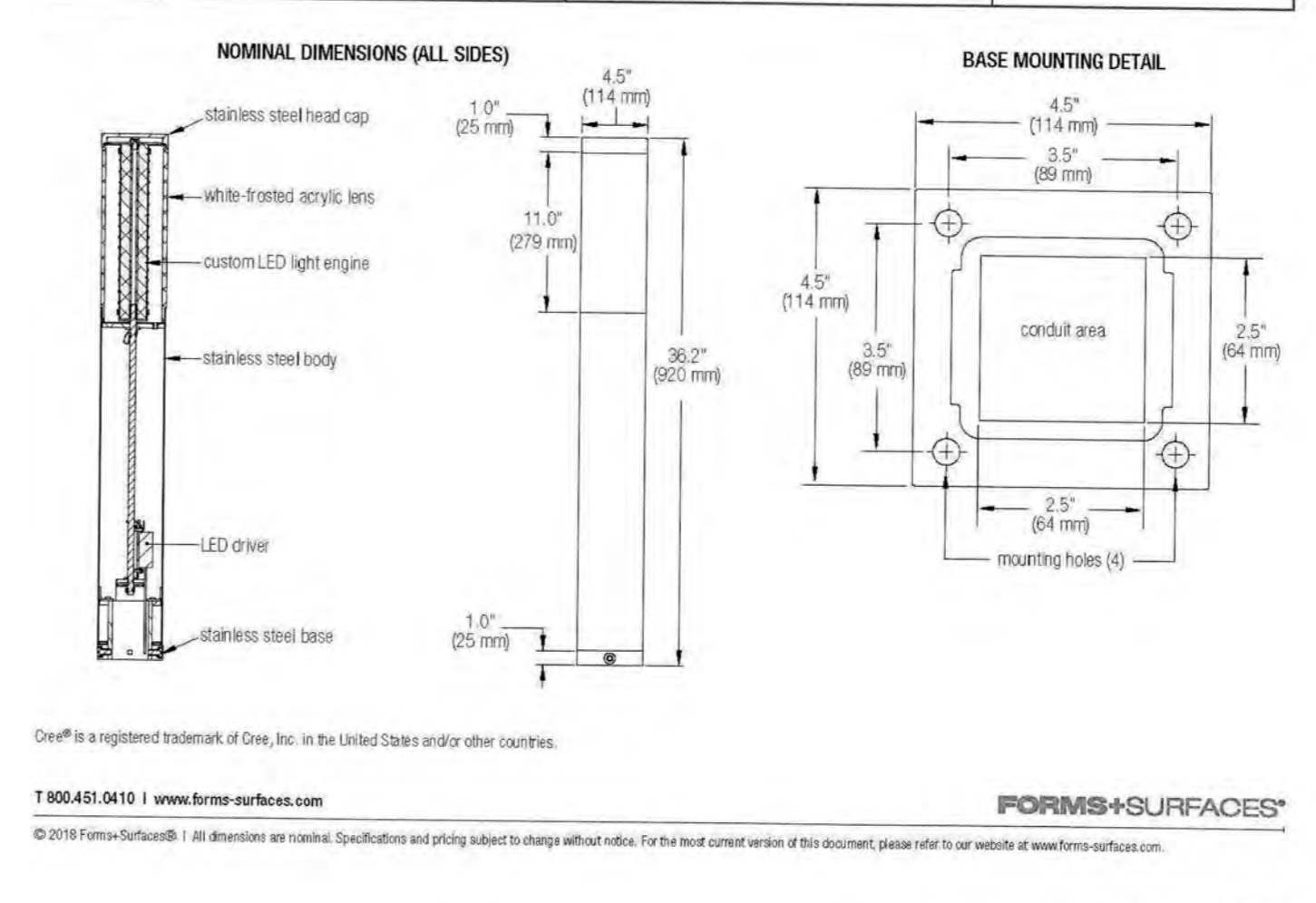
© 2017 KIM LIGHTING | 17750 Rowland Street | City of Industry | CA 91748  
 P 626 968 5666 | F 626 369 2695 | www.kimlighting.com | Rev. May, 30 2018

**RINCON™ BOLLARD**

The Rincon Bollard blends a minimalist form, stainless steel construction, and the unparalleled performance of Cree® LEDs. Precision manufacturing gives shape to the 4.5" square profile and creates a virtually seamless appearance. Optional perforated shields add to the bollard's versatility. Coordinating Rincon Pathway Bollards and Rincon Pedestrian Lighting make it easy to carry Rincon's aesthetic across a project.

**MATERIALS & CONSTRUCTION DETAILS**

MATERIALS & FINISHES	LED LIGHT ENGINE & DRIVER	INSTALLATION & MAINTENANCE
• Head consists of a 2.5" (64 mm) thick white frosted acrylic lens and a cast stainless steel head cap with a satin finish. • Body is constructed from .06" (1.5 mm) stainless steel with a Satin finish or powdercoat finish. See the Forms+Surfaces Powdercoat Chart. Custom (RAL) colors are available for an upcharge. • Stainless steel cast base with a Satin finish and powdercoat finish. • Shields are stainless steel with a Satin finish and measure 10.76" (273 mm) high x 4.18" (106 mm) wide.	• Custom LED light engine with Cree® LEDs. • Features advanced LED technology with 14W, 3000K warm white and 4000K neutral white LEDs. • LED driver includes high efficiency, constant output current, with over-voltage, short circuit, and over-heat protection. • LED driver input power is 100-277V. • Driver has 0-10V dimming capabilities. • LED driver certifications include IP66 (weatherproof enclosure, and Class 2 rated output 6L1310/L18/50).	• Surface mounted with four tamper-resistant bolts. • Installation of a surge protector as part of each unit's wiring is recommended. • Stainless steel hardware is included. Templates are available upon request. • Metal surfaces can be cleaned as needed using a soft cloth or brush with warm water and a mild detergent. Avoid abrasive cleaners.

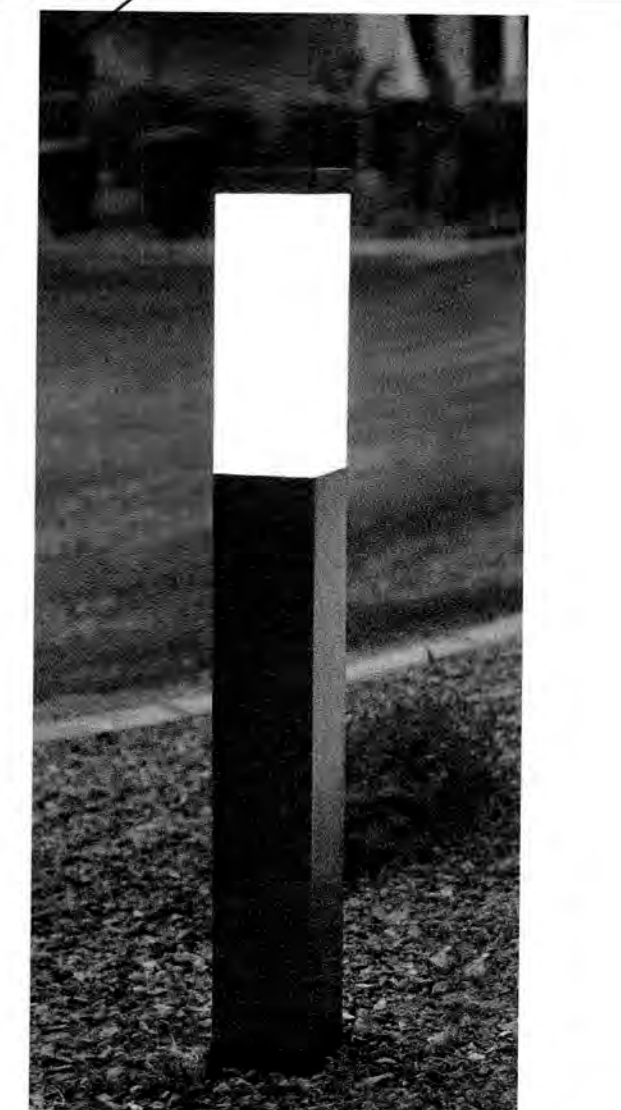


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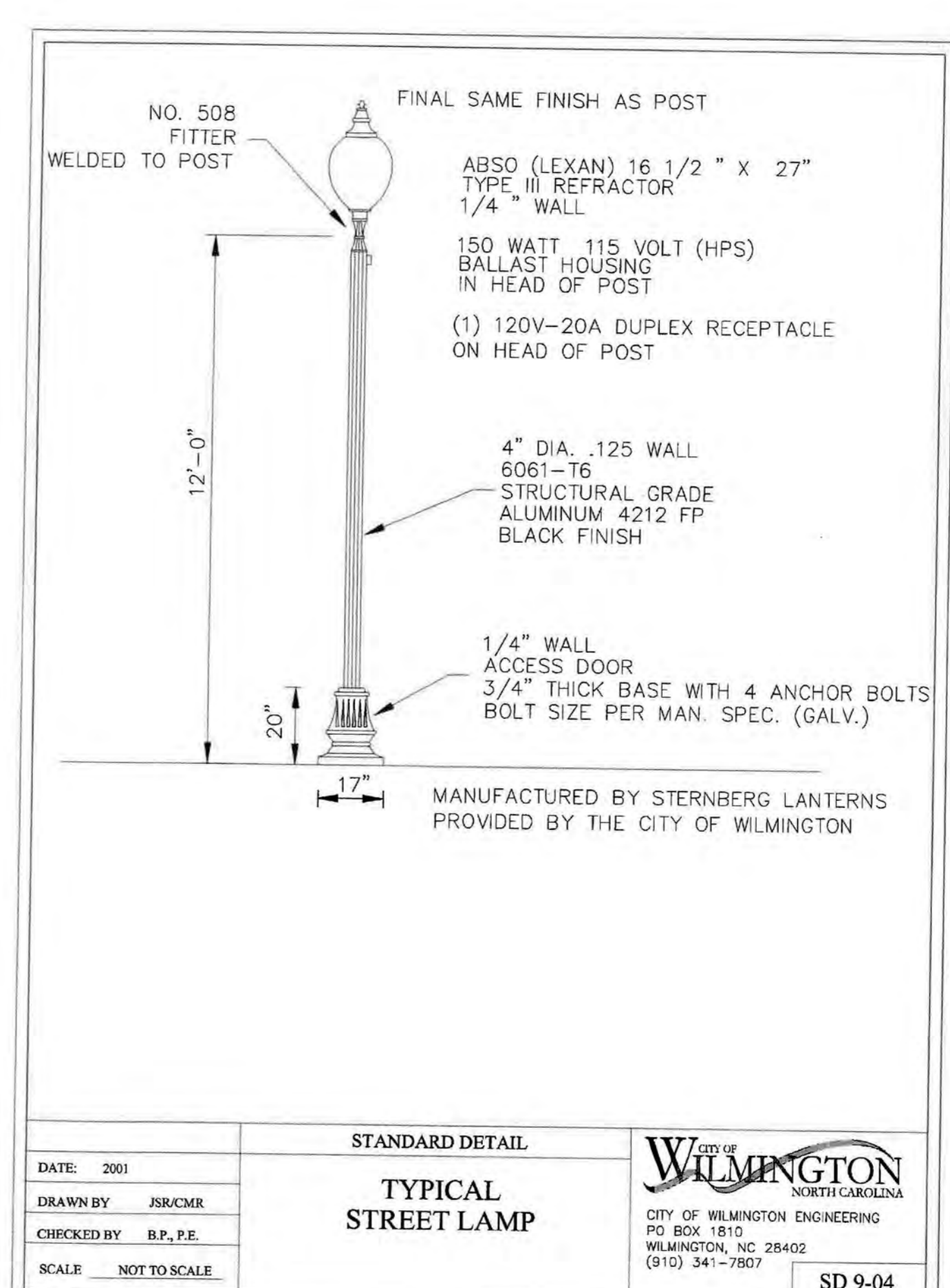
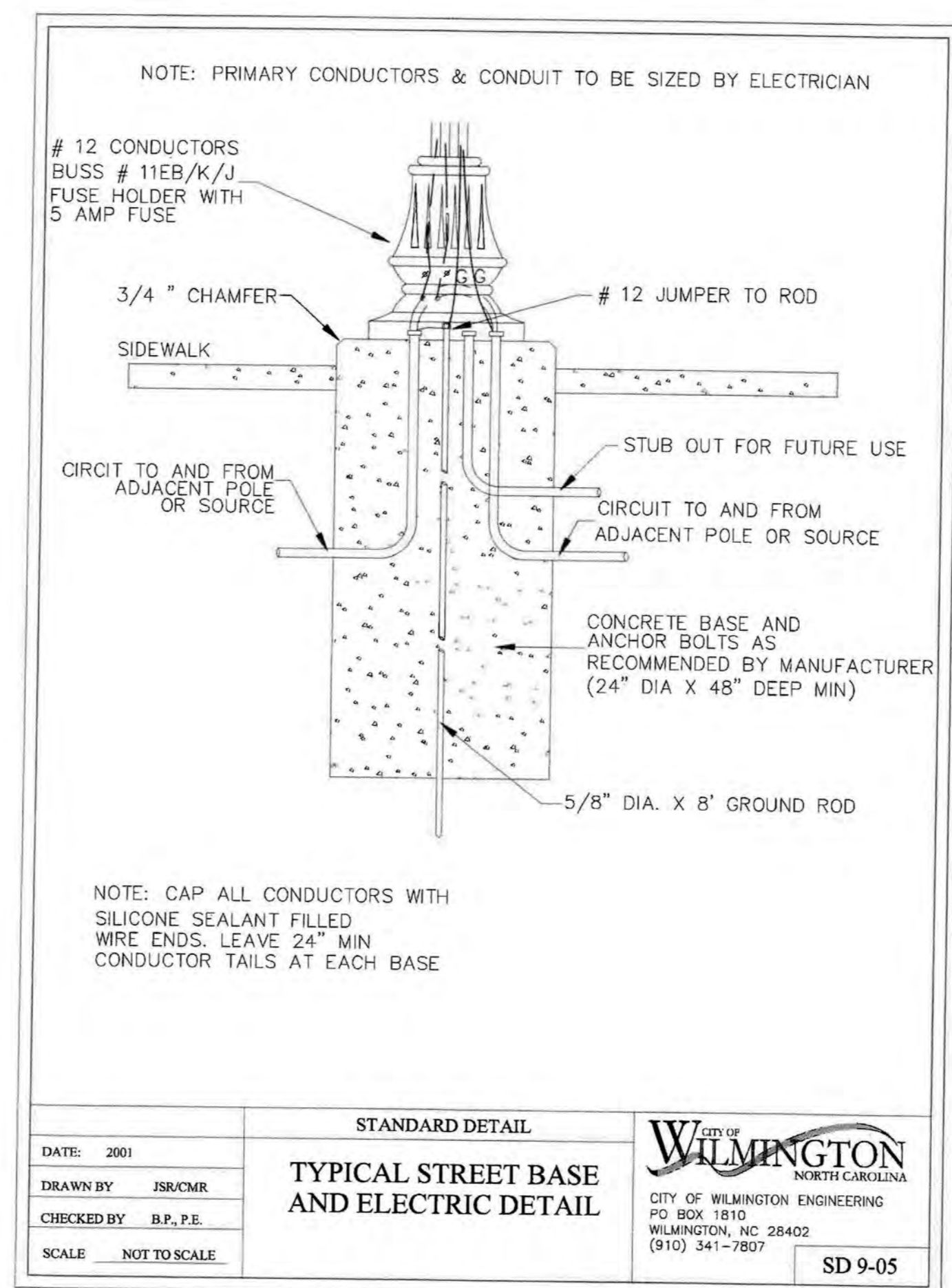
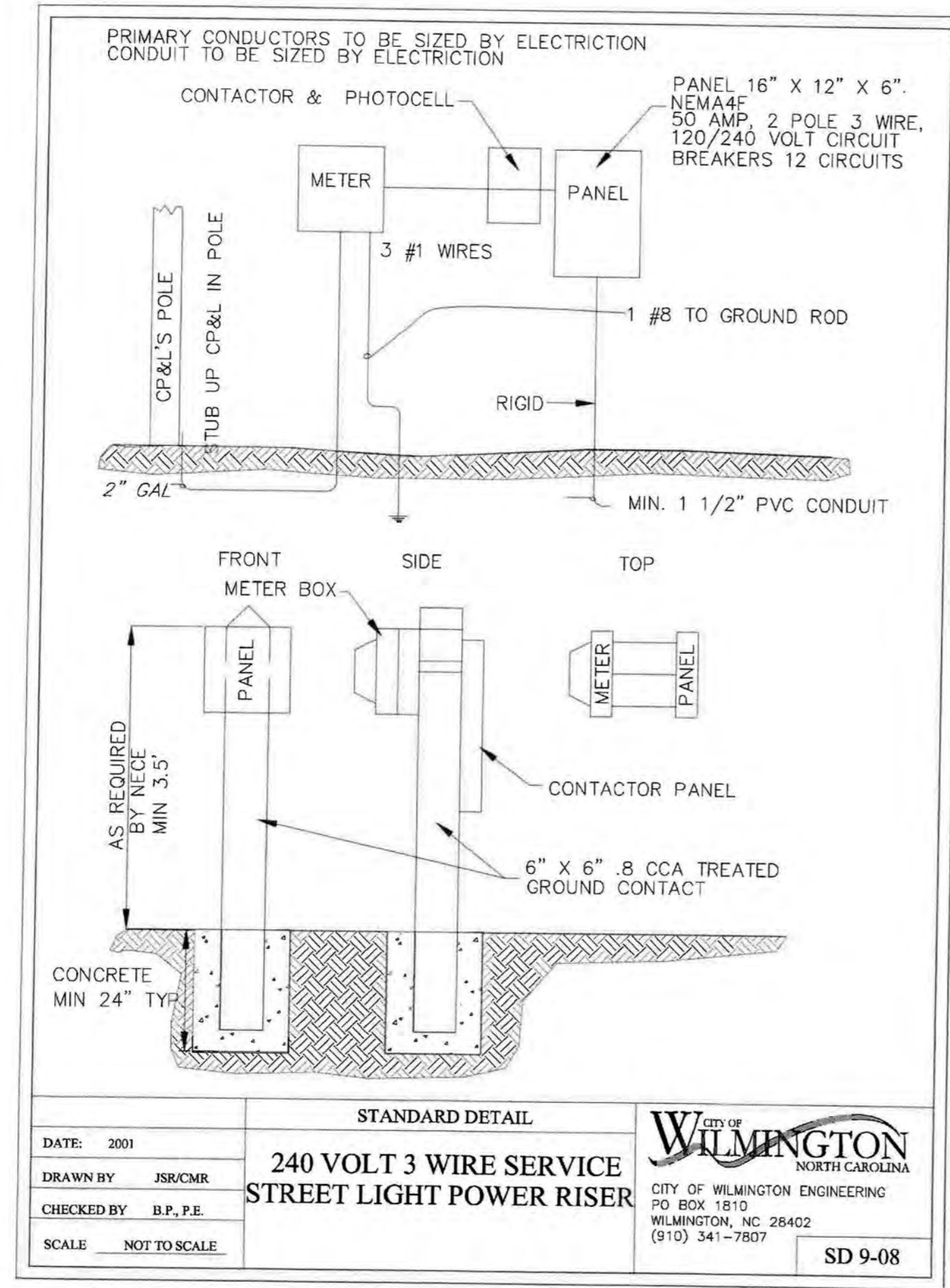
**STORMWATER MANAGEMENT PLAN**  
 APPROVED  
 CITY OF WILMINGTON  
 ENGINEERING DEPARTMENT  
 DATE 4-23-19 PERMIT # 2019023  
 SIGNED E-S-E-E

**Approved Construction Plan**

Name \_\_\_\_\_ Date \_\_\_\_\_  
 Planning J. Walter 4-23-19  
 Public Utilities \_\_\_\_\_  
 Traffic W. Stedon 4-23-19  
 Fire J. M. Math 4-23-19



**Pool Deck/ Private Pedestrian Lighting** 03



**COW Typical Pedestrian Lighting Details** 01

**CLINE DESIGN**

125 N. Harrington St.  
 Raleigh, NC 27603  
 919/833-6413  
 919/836-1280 FAX  
 ClineDesignAssoc.com

**DPJ Residential, LLC**  
**The Flats on Front**  
 111 Cowan Street  
 Wilmington, North Carolina

**FINAL TRC**

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

PROJECT: 218022  
 DATE: 11.29.2018

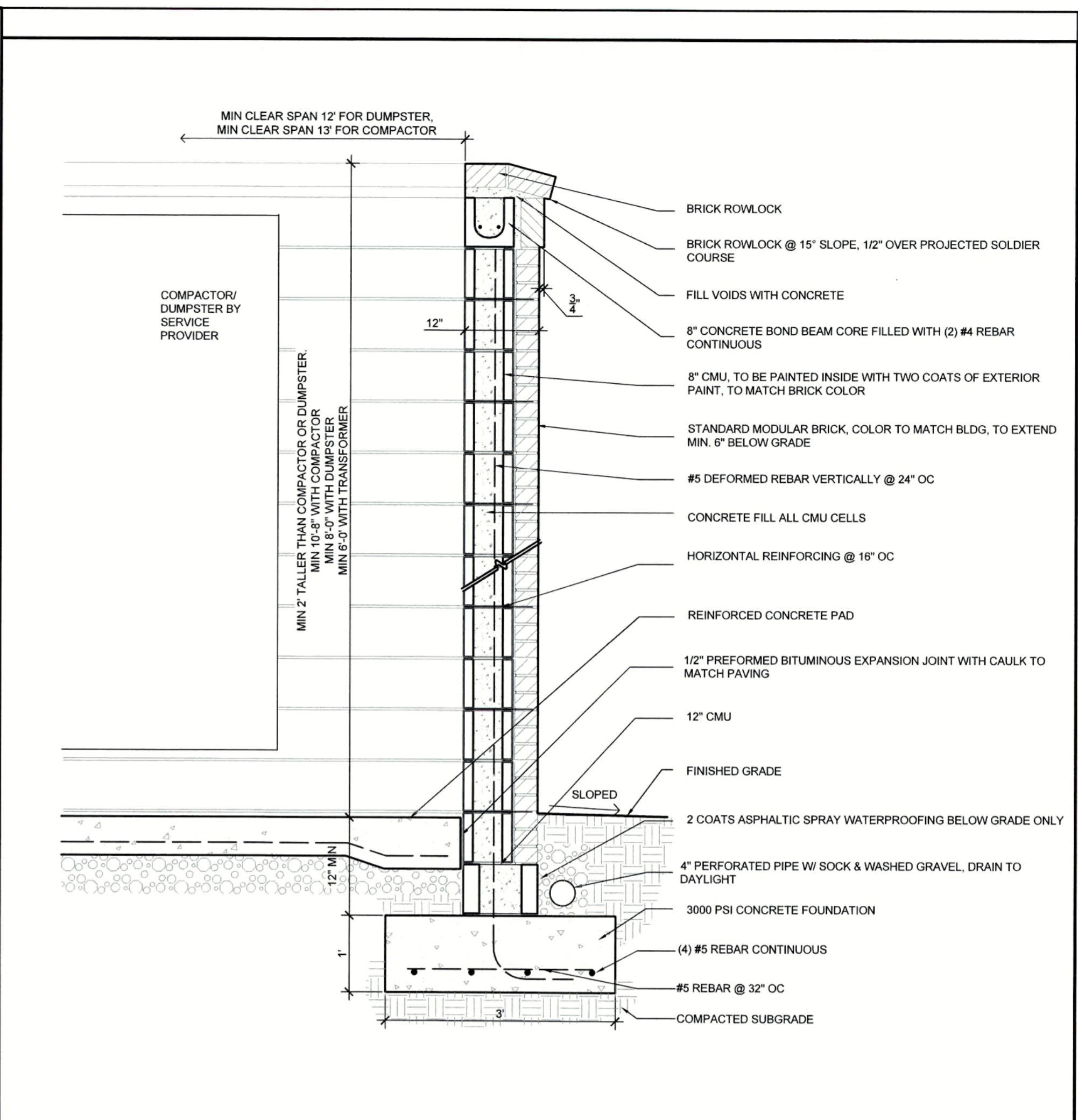
REVISIONS:	DATE
1st TRC Sub	07.11.18
2nd TRC Sub	09.28.18
3rd TRC Sub	11.05.18
4th TRC Sub	12.18.18
Permit	04.08.19
Final TRC Sub	04.18.19

DRAWN BY: SP  
 CHECKED BY: MWL/JBM  
 Lighting Details

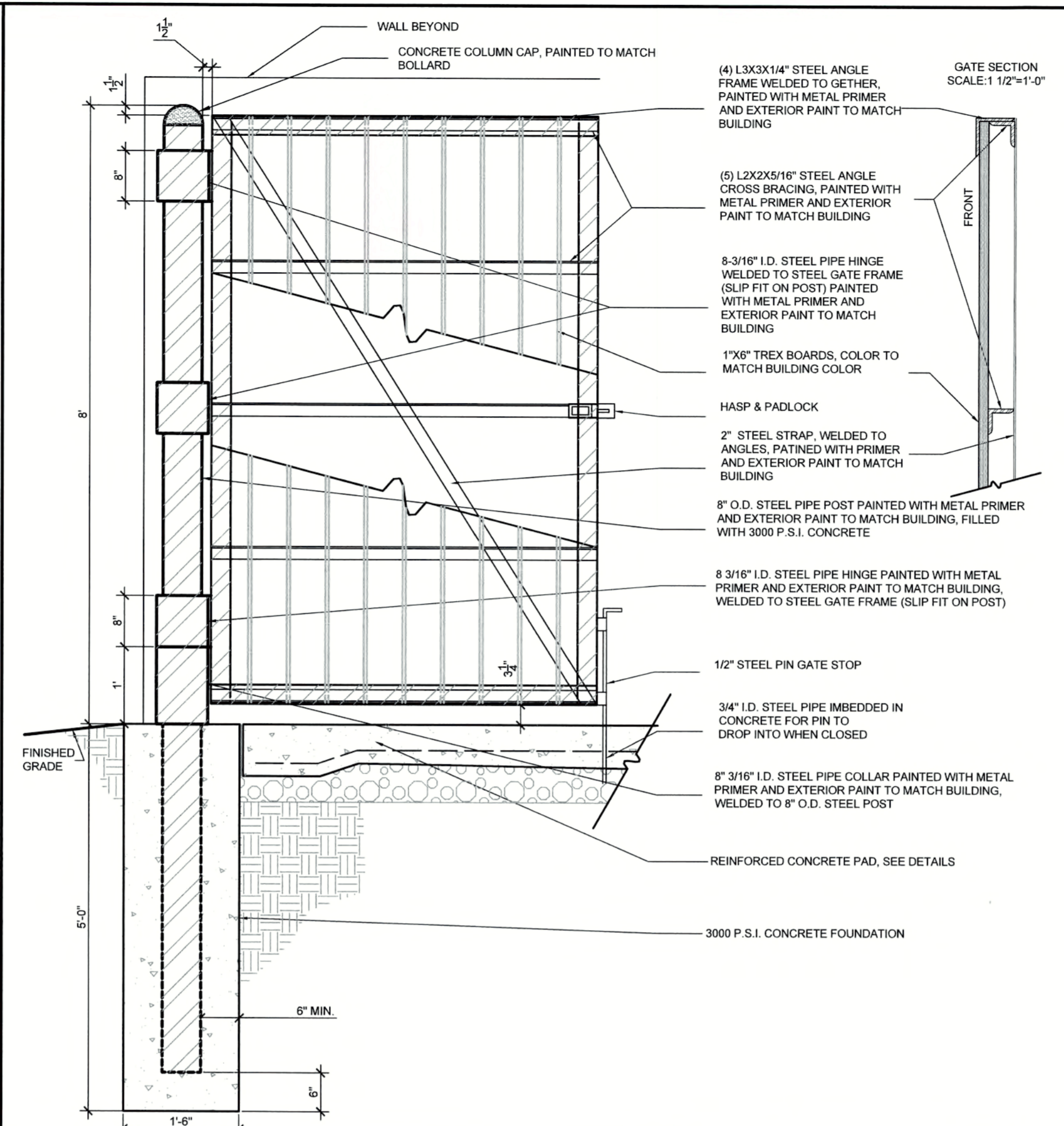
SD2.10

REVISIONS:	DATE
1st TRC Sub	07.11.18
2nd TRC Sub	09.28.18
3rd TRC Sub	11.05.18
4th TRC Sub	12.18.18
Permit	04.08.19
Final TRC Sub	04.18.19

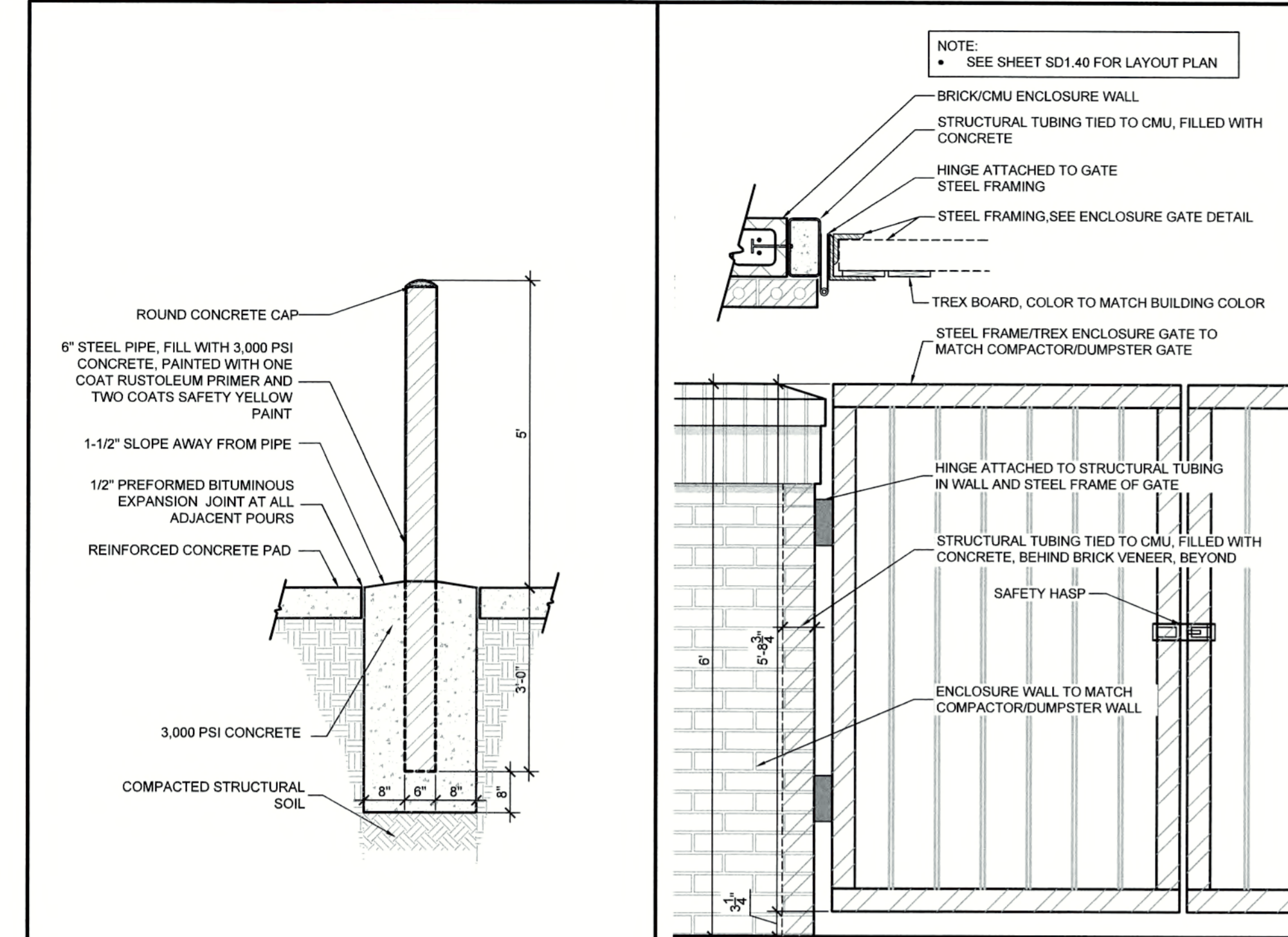
APPROVED CONSTRUCTION PLAN  
Name: *H. Walter* Date: *4-23-19*  
DRAWN BY: *W. Edwards*  
CHECKED BY: *ML/JBM*  
Traffic: *W. Edwards* 4-23-19  
Fire: *Jay Mott* 4-23-19



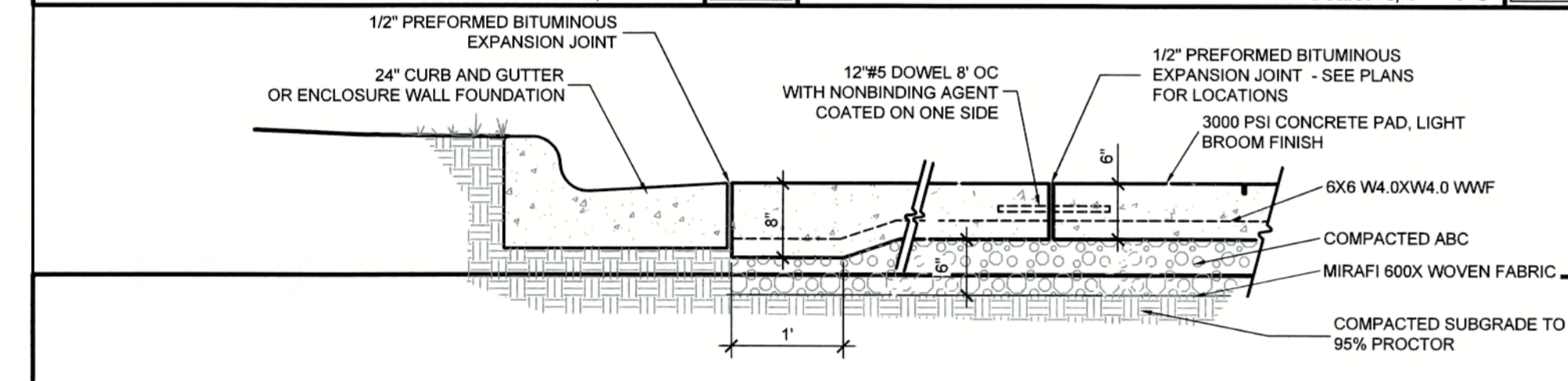
**Enclosure Wall 02**  
Scale: 3/4" = 1'-0"



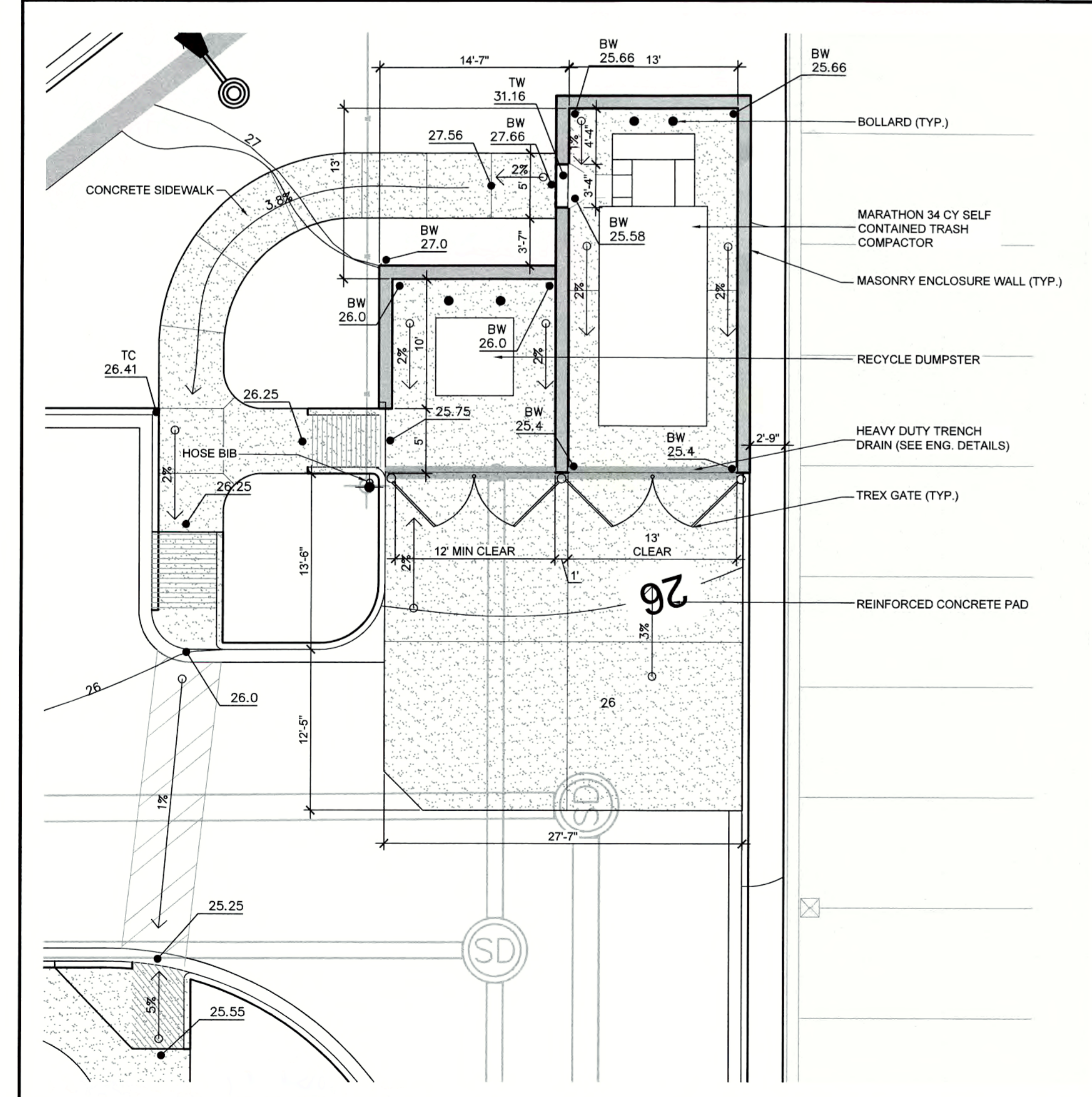
**Trex Enclosure Gate 03**  
Scale: 3/4" = 1'-0"



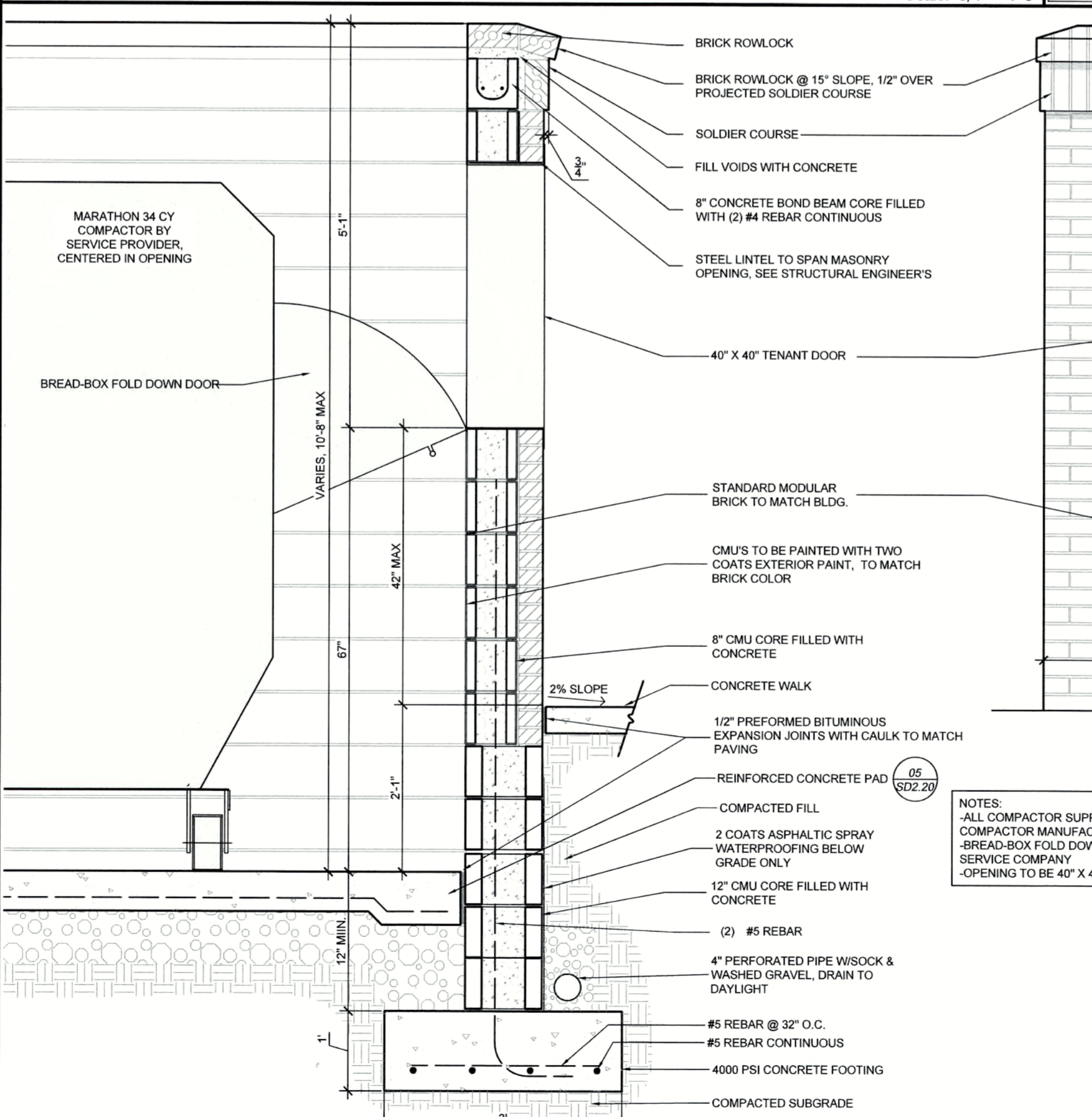
**Bollard 07** Scale: 1/2" = 1'-0"  
**Transformer Gate 06** Scale: 3/4" = 1'-0"



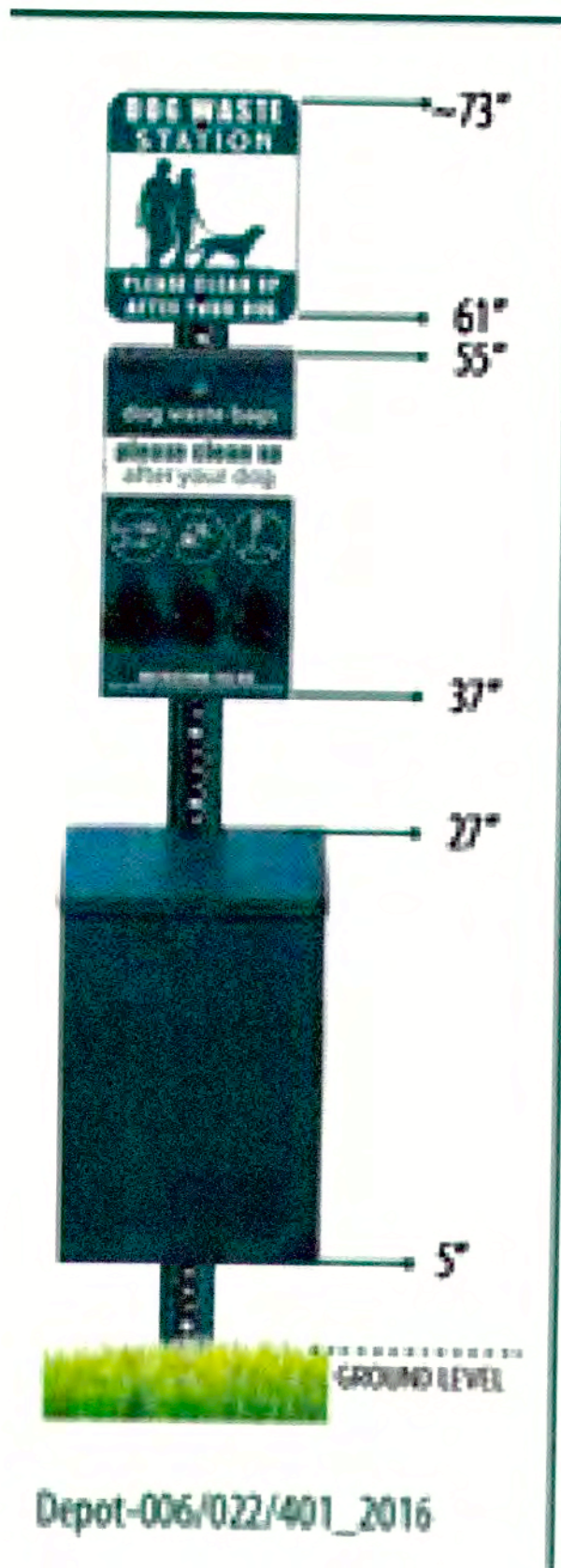
**Reinforced Concrete Pad 05**  
Scale: 3/4" = 1'-0"



**Trash Area Layout Plan 04**  
Scale: 1/8" = 1'-0"



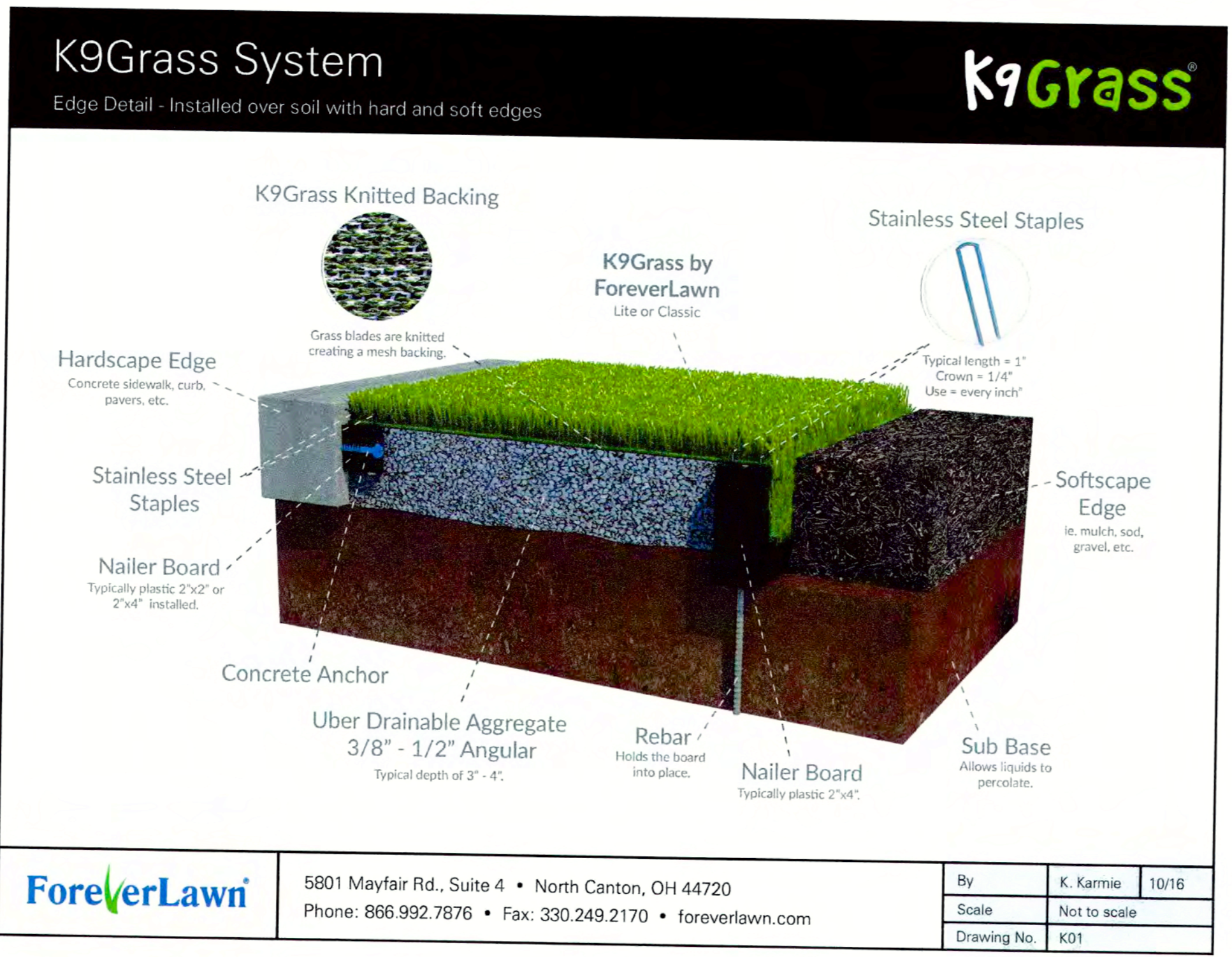
**Compactor Enclosure Throw Window 01**  
Scale: 3/4" = 1'-0"



Depot-006/022/401\_2016

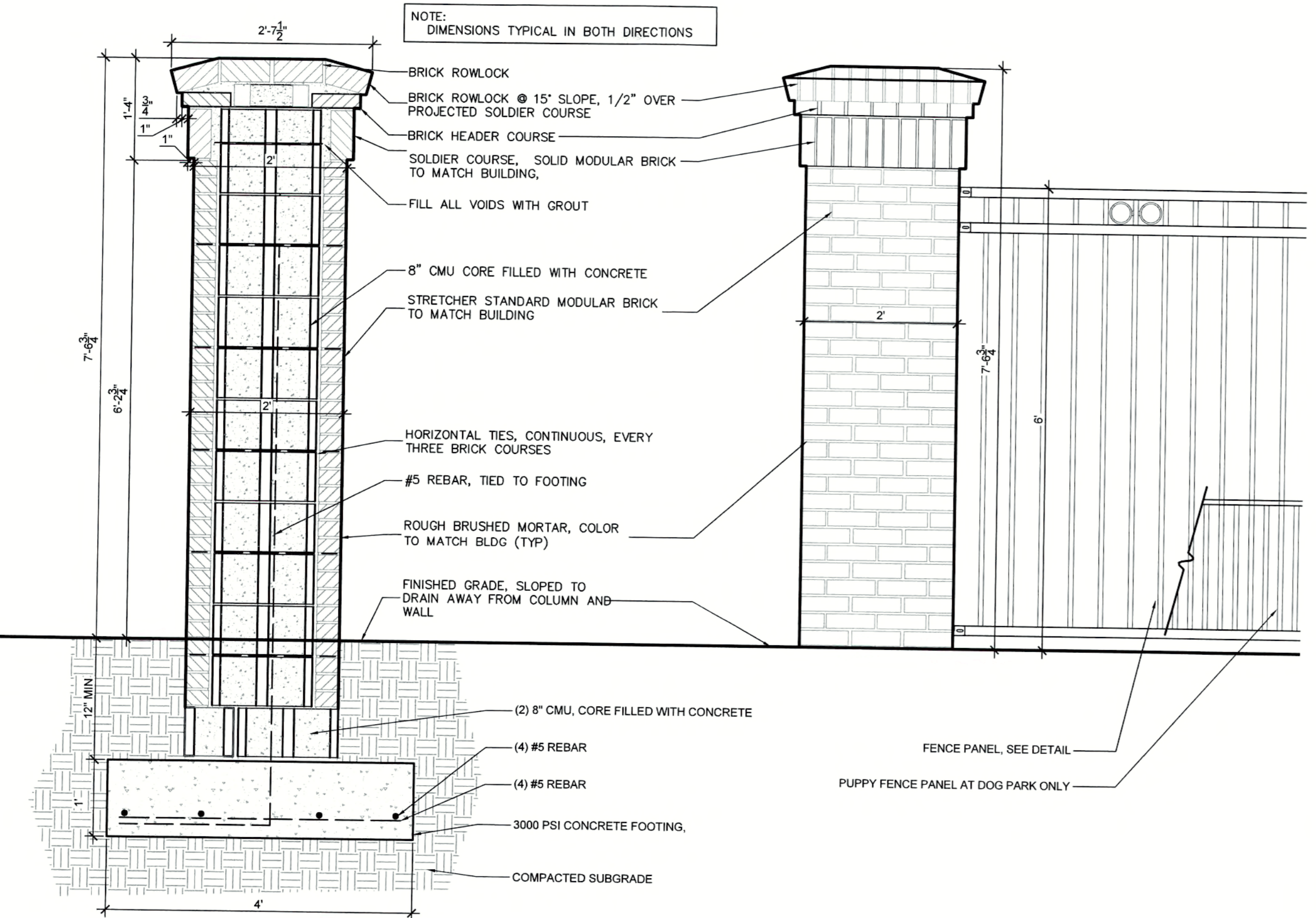
Item #: Depot-006/022/401

SQUARE CAN DOG WASTE STATIONS

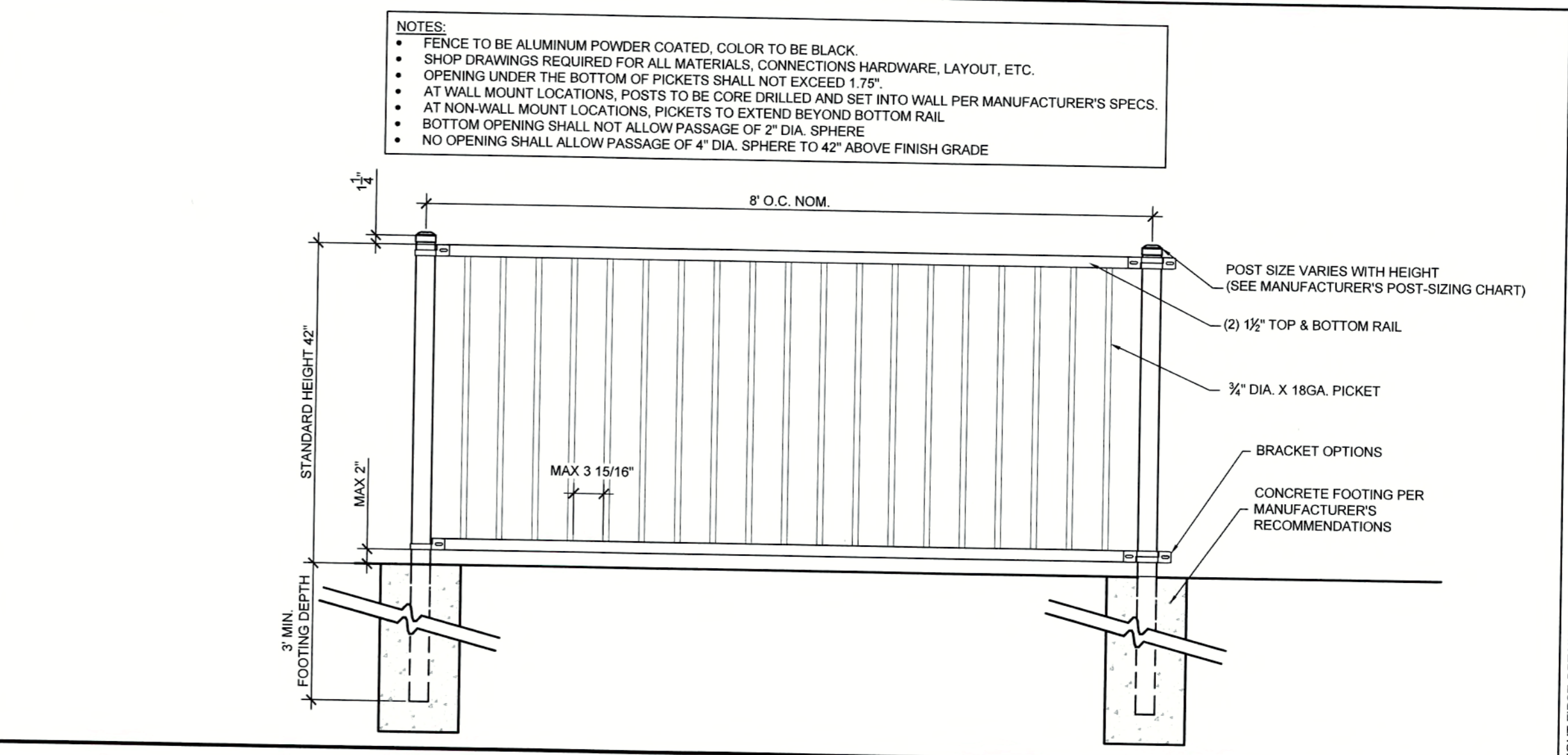


**Dog Waste Station 06**  
Not to Scale

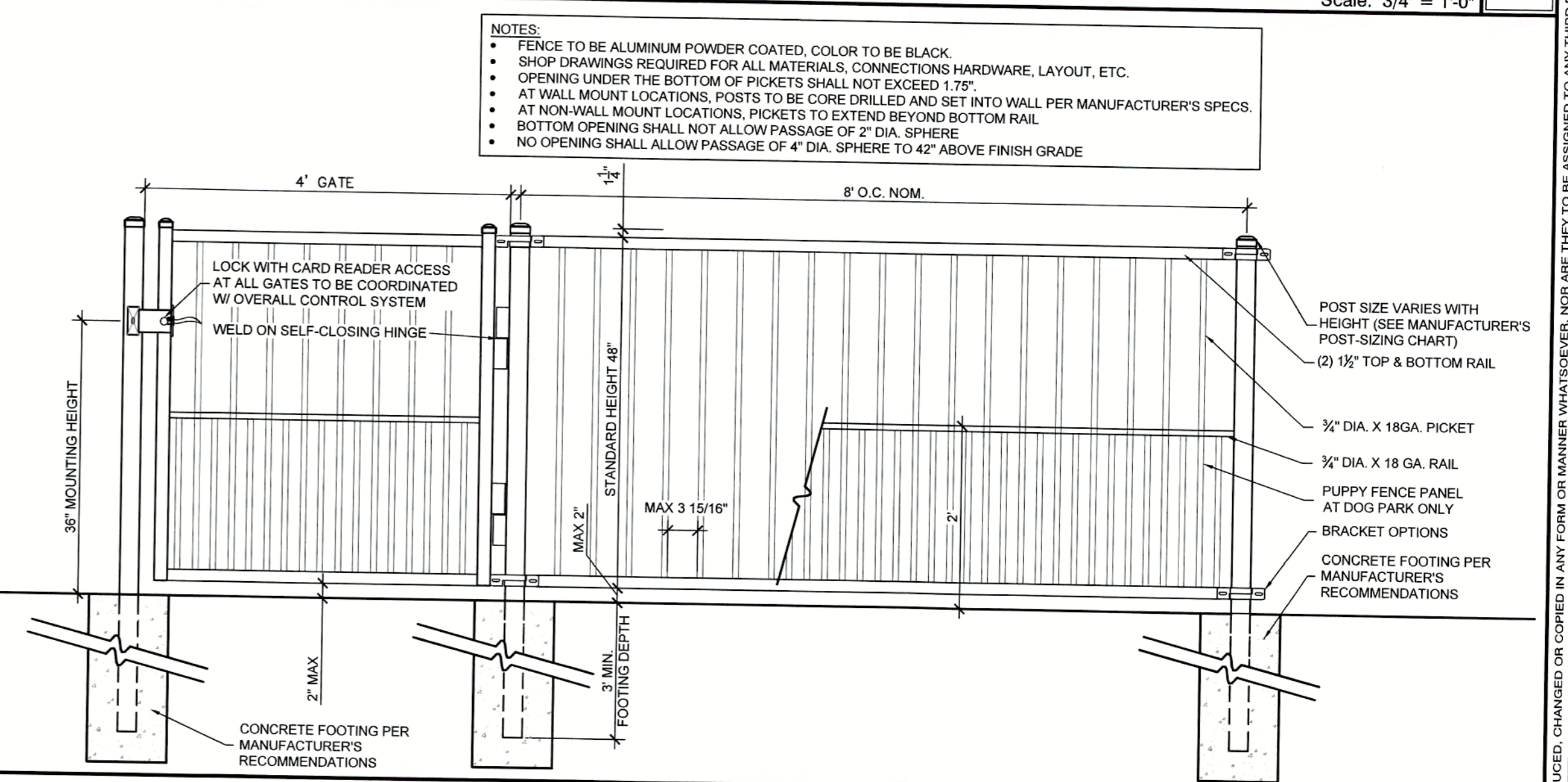
**Synthetic Turf - Dog Park 04**  
Not to Scale



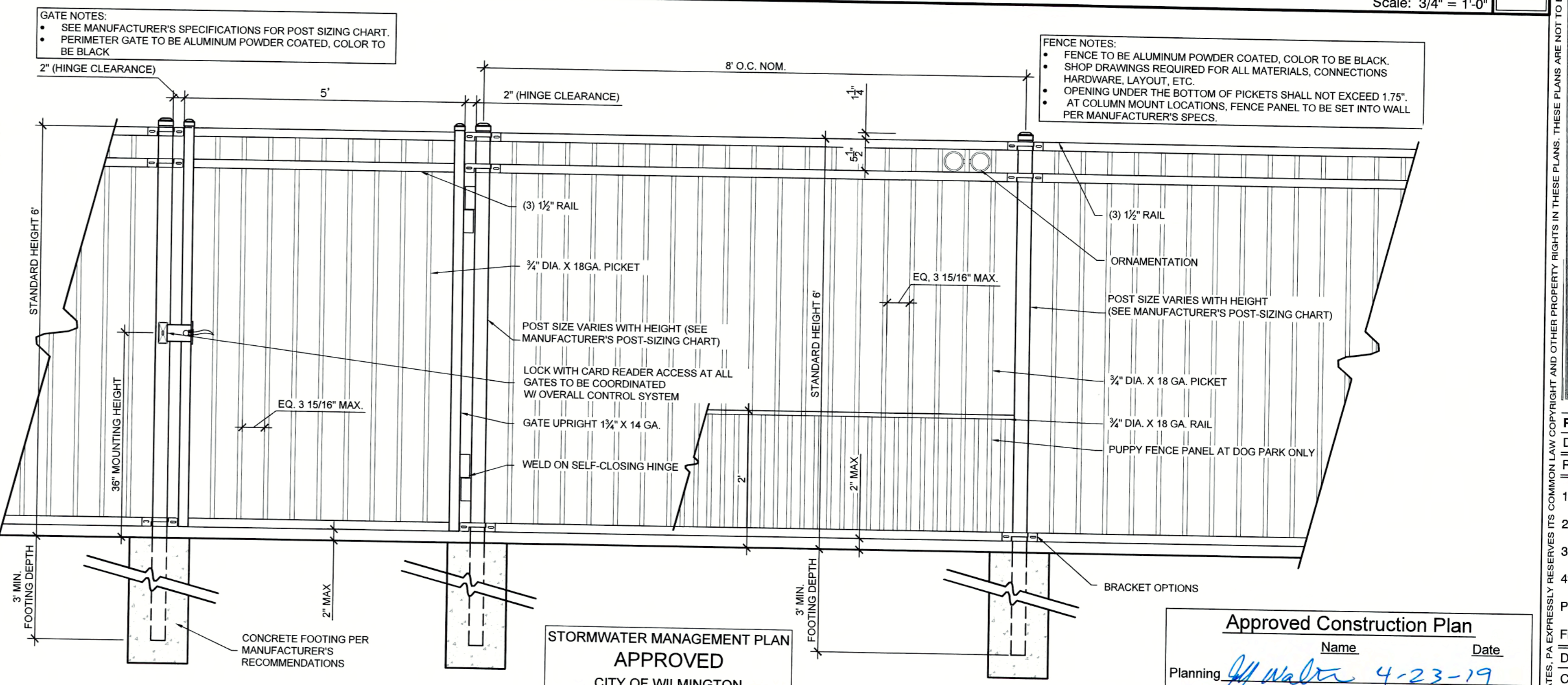
**8" Brick Column 05**  
Scale: 3/4" = 1'-0"



**Guardrail 03**  
Scale: 3/4" = 1'-0"



**Dog Park Gate & Fence 02**  
Scale: 3/4" = 1'-0"



STORMWATER MANAGEMENT PLAN  
**APPROVED**  
 CITY OF WILMINGTON  
 ENGINEERING DEPARTMENT  
 DATE 4-23-19 PERMIT # 2019023  
 SIGNED [Signature]

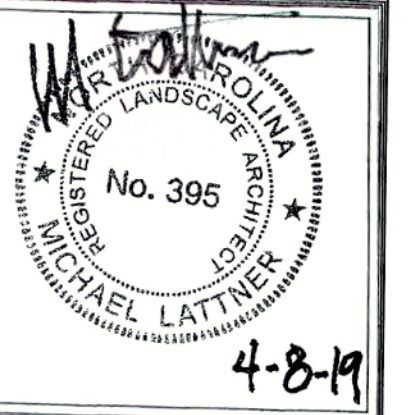
Approved Construction Plan  
 Name: [Signature] Date: 4-23-19  
 Planning: [Signature] 4-23-19  
 Public Utilities: [Signature] 4-23-19  
 Traffic: [Signature] 4-23-19  
 Fire: [Signature] 4-23-19

**6' Decorative Metal Fencing 01**  
Scale: 3/4" = 1'-0"

**CLINE DESIGN**  
 125 N. Harrington St.  
 Raleigh, NC 27603  
 919/833-6413  
 919/836-1280 FAX  
 ClineDesignAssoc.com

DPJ Residential, LLC  
**The Flats on Front**  
 111 Cowan Street  
 Wilmington, North Carolina

FINAL TRC

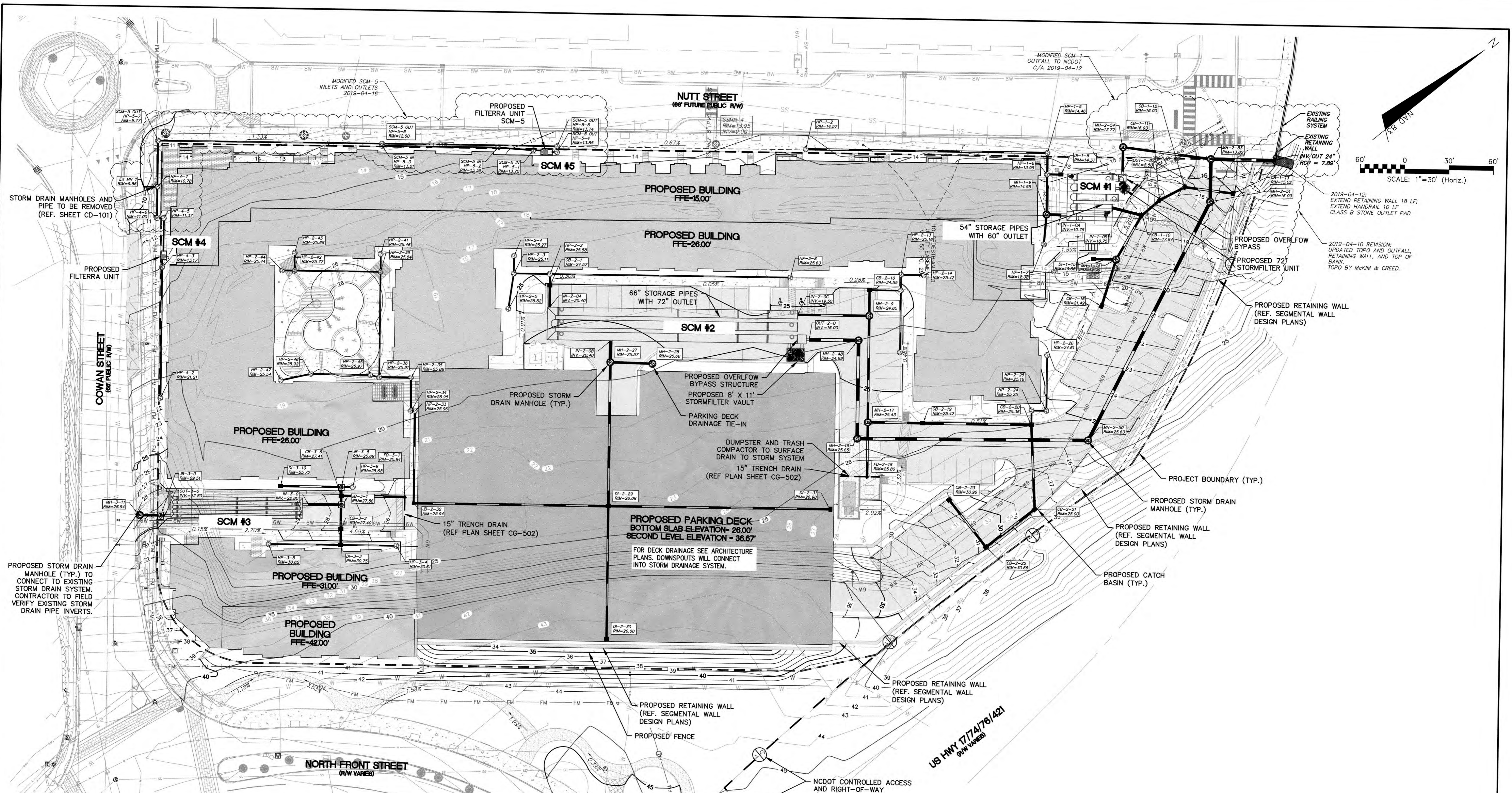


PROJECT: 218022  
 DATE: 11.29.2018

REVISIONS:	DATE
1st TRC Sub	07.11.18
2nd TRC Sub	09.28.18
3rd TRC Sub	11.05.18
4th TRC Sub	12.18.18
Permit	04.08.19
Final TRC Sub	04.18.19

DRAWN BY: SP  
 CHECKED BY: MWL/JBM  
 Site Details

SD2.30



Public Services • Engineering Division
   
 APPROVED STORMWATER MANAGEMENT PLAN
   
 Date: 4-23-19 Permit #2019023
   
 Signed: E. Soe

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

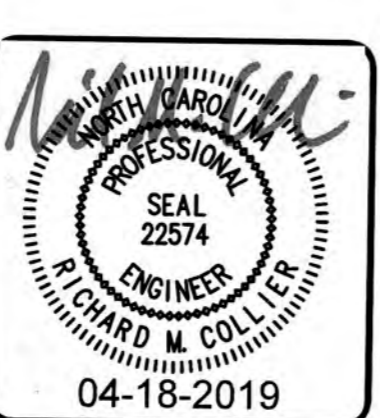
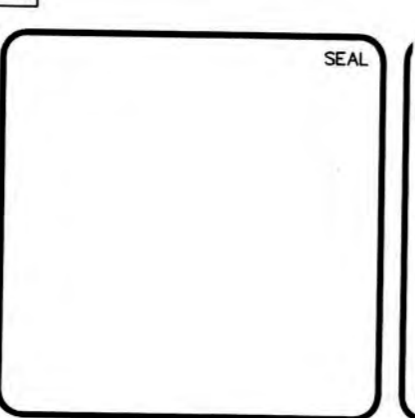
**Approved Construction Plan**

Name	Date
Planning: <i>[Signature]</i>	4-23-19
Traffic: <i>[Signature]</i>	4-23-19
Fire: <i>[Signature]</i>	4-23-19

1 inch

- NOTES:**
- THE GENERAL CONTRACTOR TO SHORE ANY WALLS OR EXCAVATIONS FOR THE CONSTRUCTION OF ANY NEW WALLS THROUGHOUT THE PROJECT. ANY COSTS ASSOCIATED WITH SHORING IS THE RESPONSIBLE OF THE GENERAL CONTRACTOR.
  - THE GENERAL CONTRACTOR TO PAINT ALL MANHOLES AND CURB INLETS BLACK BEFORE INSTALLATION.
  - CONTRACTOR SHALL REFER TO THE SEGMENTAL BLOCK RETAINING WALL PLAN SET FOR ELEVATIONS, DETAILS, AND INSTALLATION GUIDANCE FOR ALL SEGMENTAL BLOCK RETAINING WALLS, AND STRUCTURAL RETAINING WALLS.
- 2019-04-10 REVISION: ADDED NOTE 3 REGARDING SEGMENTAL BLOCK RETAINING WALL REFERENCE.

REV. NO.	DESCRIPTION	DATE
0	CITY OF WILMINGTON - RELEASE FOR CONSTRUCTION PLANS	04/18/2019



243 North Front Street
   
 Wilmington, North Carolina 28401
   
 Phone: (910)343-1048, Fax: (910)251-8282
   
 License: F-1222
   
 www.mckimcreed.com

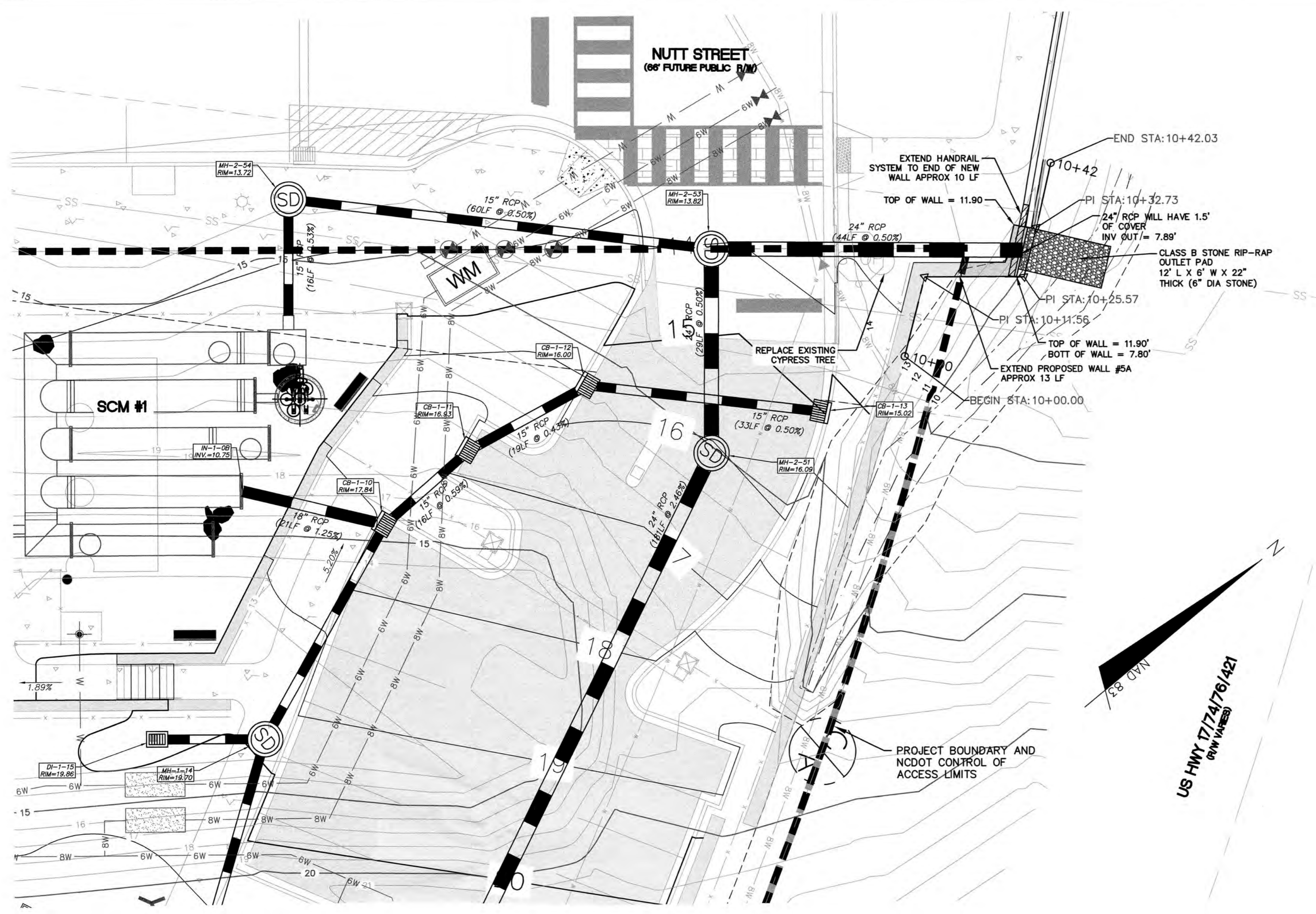
RESIDENTIAL

CLINE DESIGN

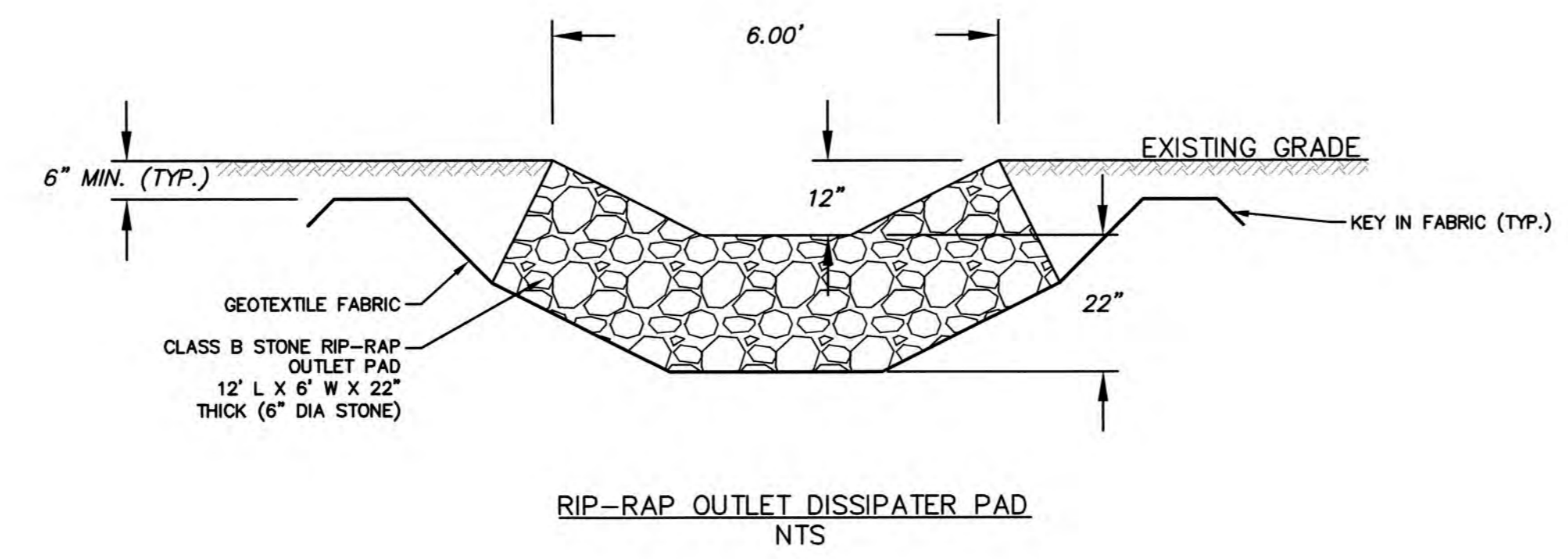
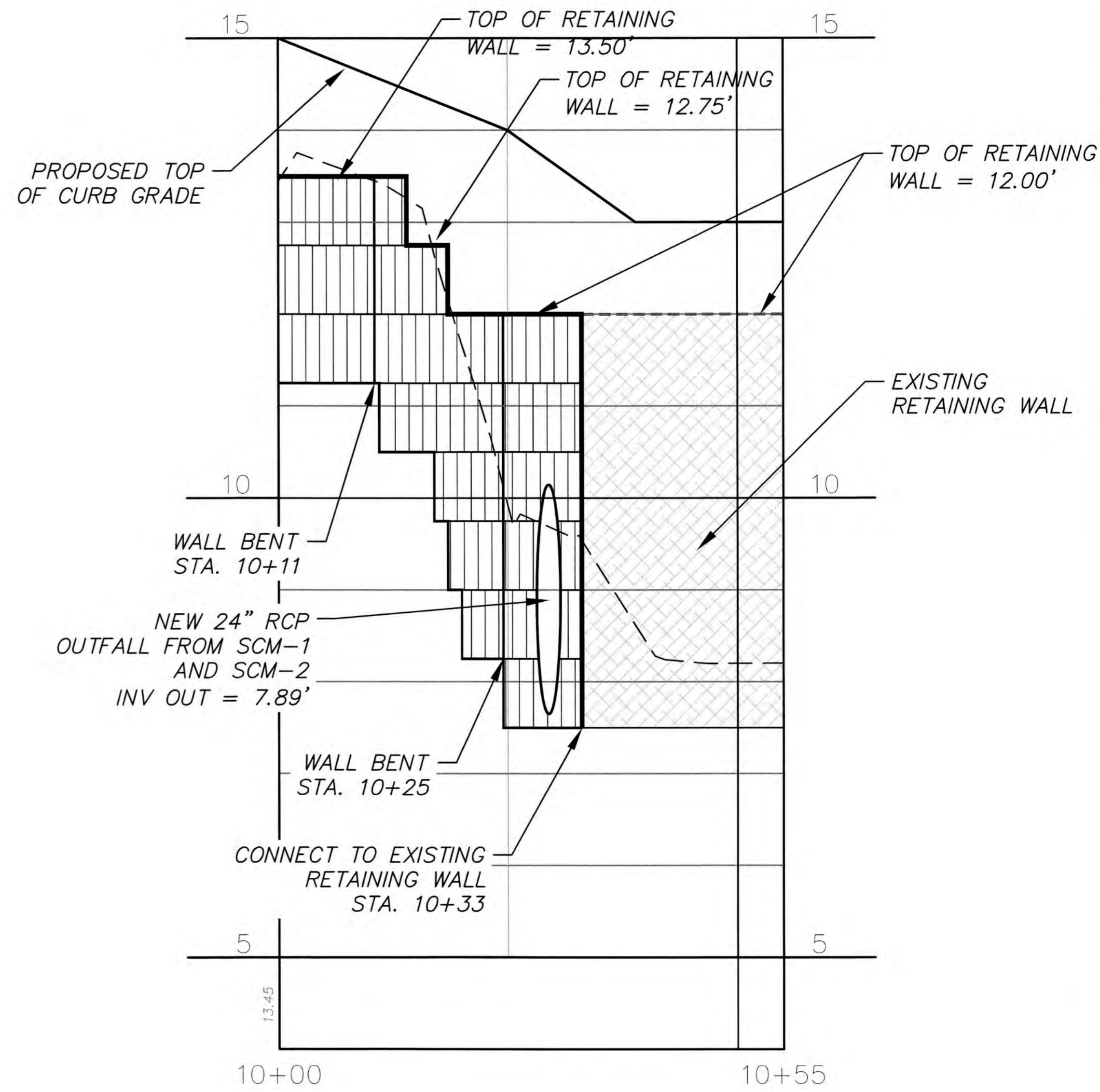
**THE FLATS ON FRONT**
  
 WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

**GRADING AND STORMWATER PLAN**

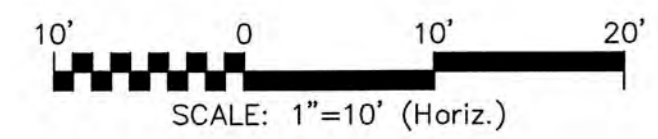
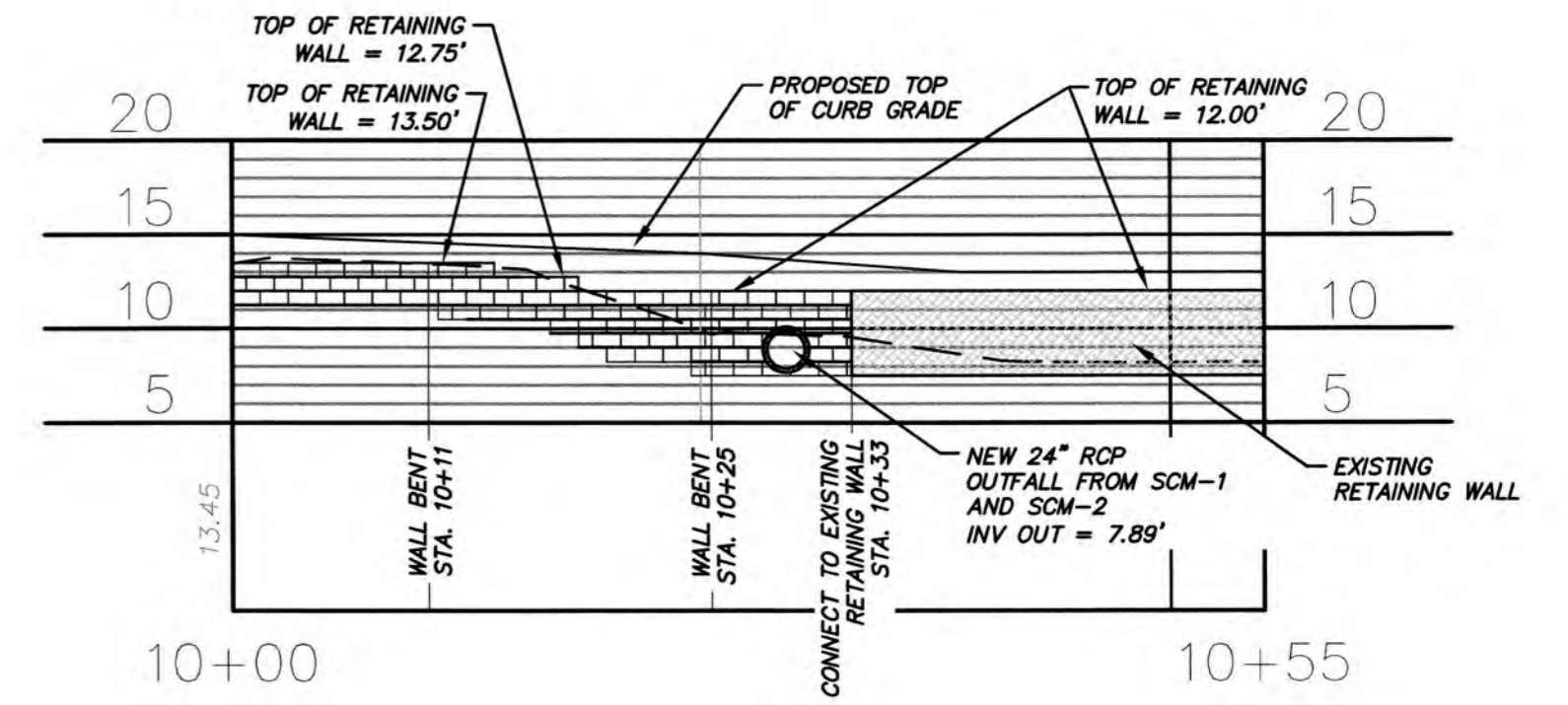
DATE: 04/18/2019	SCALE: HORIZONTAL: 1"=30'	MAC FILE NUMBER: CG-100
MCE PROJ. # 7402-0001	VERTICAL: N/A	DRAWING NUMBER: 21
DRAWN: ALM/KCE		
DESIGNED: ALM		
CHECKED: RMC		
PROJ. MGR.: KCE		
STATUS: IFC PLAN SET		REVISION: 0
ISSUED FOR CONSTRUCTION		



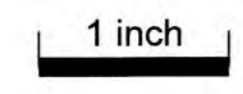
CLIN-Wall 5A Extension  
 PROFILE VIEW: PV - (4)  
 SCALE: 1  
 DATUM: 5.00



CLIN-Wall 5A Extension  
 PROFILE VIEW: WALL 5A EXTENSION AT 10 X 10  
 SCALE: 10  
 DATUM: 5.00



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

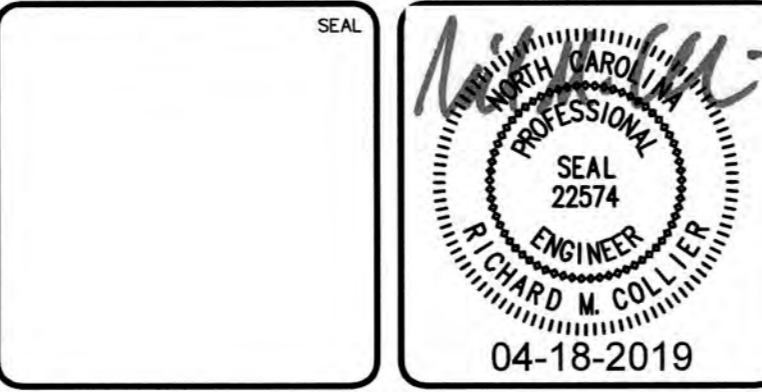


**CITY OF WILMINGTON**  
 NORTH CAROLINA  
 Public Services Engineering Division  
 APPROVED STORMWATER MANAGEMENT PLAN  
 Date: 4-23-19 Permit # 2019023  
 Signed: [Signature]

**Approved Construction Plan**  
 Name: [Signature] Date: 4-23-19  
 Planning: [Signature] 4-23-19  
 Traffic: [Signature] 4-23-19  
 Fire: [Signature] 4-23-19

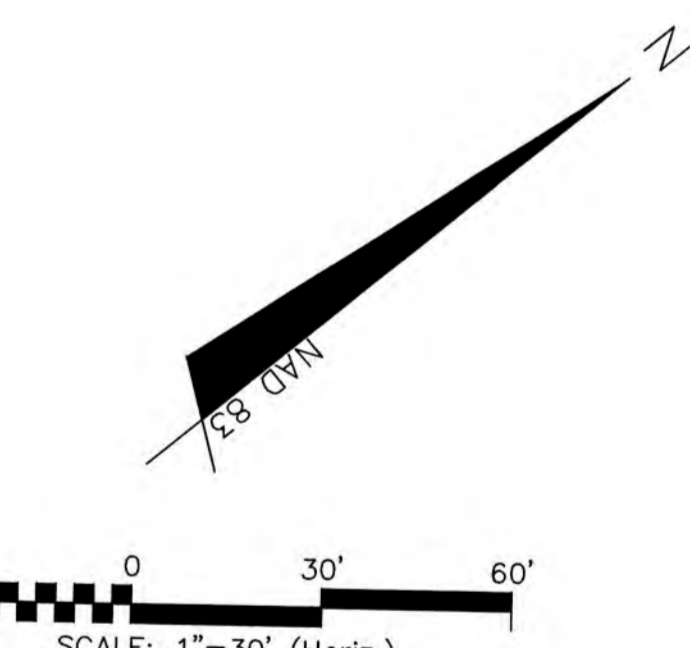
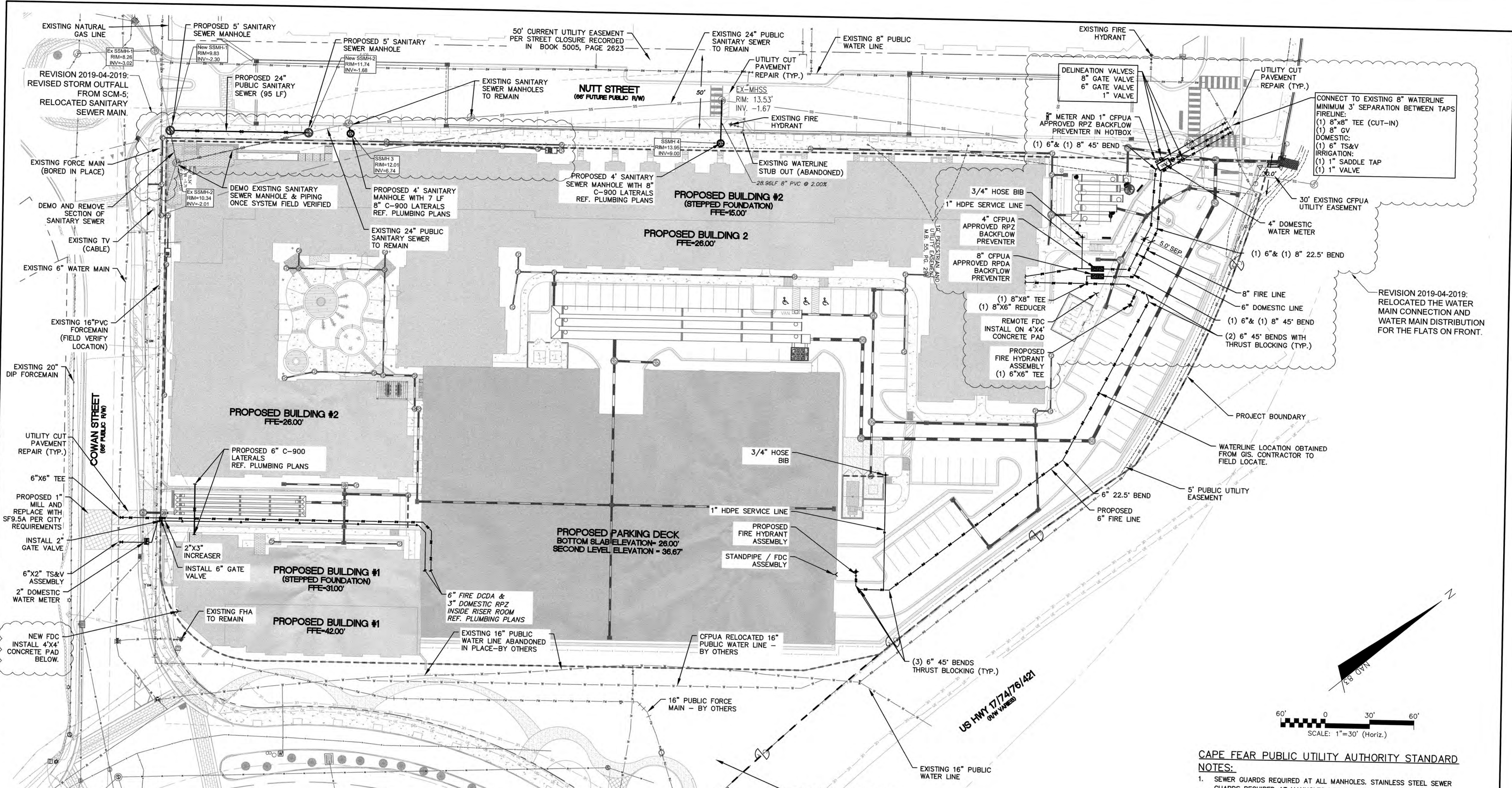
- NOTES:**
1. THE GENERAL CONTRACTOR TO SHORE ANY WALLS OR EXCAVATIONS FOR THE CONSTRUCTION OF ANY NEW WALLS THROUGHOUT THE PROJECT. ANY COSTS ASSOCIATED WITH SHORING IS THE RESPONSIBLE OF THE GENERAL CONTRACTOR.
  2. THE GENERAL CONTRACTOR TO PAINT ALL MANHOLES AND CURB INLETS BLACK BEFORE INSTALLATION.

REVNO.	DESCRIPTIONS	DATE
0	CITY OF WILMINGTON - RELEASE FOR CONSTRUCTION PLANS	04/18/2019



**THE FLATS ON FRONT**  
 WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA  
**NCDOT 24" RCP OUTFALL PIPE**

DATE: 04/18/2019	SCALE: 1"=10'	M&C FILE NUMBER: CG-101
M&C PROJ. # 7402-0001	HORIZONTAL: 1"=10'	DRAWING NUMBER: 21A
DRAWN: ALM/KCE	VERTICAL: AS NOTED	REVISION: 0
DESIGNED: ALM	STATUS: IFC PLAN SET	
CHECKED: RMC	ISSUED FOR CONSTRUCTION	
PROJ. MGR.: KCE		



**CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:**

- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
- WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE IN RIGHT-OF-WAY LINE.
- ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF CLASS 50, DIP, WITH PROTECTO 401 CERAMIC EPOXY LINING. UTILITY CONNECTIONS OUTSIDE OF PROJECT BOUNDARIES SUBJECT TO OBTAINING EASEMENT.
- NO FLEXIBLE COUPLINGS SHALL BE USED.
- ALL STAINLESS STEEL FASTENERS SHALL BE 316.
- CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.

**NOTES:**

- THE GENERAL CONTRACTOR TO INSTALL ALL CONDUITS FOR POWER TO INCLUDE PRIMARY AND SECONDARY LINES.

**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
Date: 4-23-19 Permit #2019023  
Signed: E-Joe

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: *John W. ...* Date: *4-23-19*  
Planning: *W. ...* 4-23-19  
Traffic: *...* 4-23-19  
Fire: *...* 4-23-19

REV. NO.	DESCRIPTION	DATE
0	CITY OF WILMINGTON - RELEASE FOR CONSTRUCTION PLANS	04/18/2019

SEAL  
Professional Engineer  
RICHARD M. COLLIER  
04-18-2019

**MCKIM & CREED**  
243 North Front Street  
Wilmington, North Carolina 28401  
Phone: (910)343-1048, Fax: (910)251-8282  
License: F-1222  
www.mckimcreed.com

**dpr** RESIDENTIAL  
**CLINE DESIGN**

**THE FLATS ON FRONT**  
WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA  
**OVERALL UTILITY PLAN**

DATE: 04/18/2019  
MCE PROJ. #: 7402-0001  
DRAWN: ALM/KCE  
DESIGNED: ALM  
CHECKED: RMC  
PROJ. MGR.: KCE

SCALE: HORIZONTAL: 1"=50'  
VERTICAL: N/A

MAC FILE NUMBER: CU-100  
DRAWING NUMBER: 22  
REVISION: 0

STATUS: IFC PLAN SET  
ISSUED FOR CONSTRUCTION

N/F SAWMILL POINT APARTMENTS OWNER, LLC  
PARID: R04712-002-003-000  
ZONING: CBD  
MULTI FAMILY

**OWNER**

DPJ RESIDENTIAL, LLC  
1539 TIPPAN PARK COURT  
CHARLOTTE, NC 28205

**CBD, CENTRAL BUSINESS DISTRICT**

**SEC. 18-196(c)(3) STREET TREES:**

FRONT STREET, 289.5 LF  
REQUIRED TREES 10 TREES REQUIRED  
-289.5 LF X (1 TREE / 30 LF)  
PROPOSED TREES 10 TREES PROPOSED

COWAN STREET, 315.7 LF  
REQUIRED TREES 11 TREES REQUIRED  
-315.7 LF X (1 TREE / 30 LF)  
PROPOSED TREES 7 TREES PROPOSED\*\*  
\*\*PAYMENT-IN-LIEU: 4 TREES

NUTT STREET, 699.6 LF  
REQUIRED TREES 23 TREES REQUIRED  
-699.6 LF X (1 TREE / 30 LF)  
PROPOSED TREES 20 TREES PROPOSED\*\*  
\*\*PAYMENT-IN-LIEU: 3 TREES

**ARTICLE 8**

**SEC. 18-448 (d) - GENERAL:**

REQUIRED MINIMUM TREES 79 TREES REQ. MIN.  
-5.28 AC X (15 TREES / ACRE)  
PROPOSED TREES 89 TREES PROPOSED

**SEC. 18-481 - INTERIOR PARKING AREA LANDSCAPING:**

- ISLANDS 12' X 18' AND 216 SF MIN PER SINGLE TREE
- ISLANDS 12' X 36' AND 432 SF MIN PER TWO TREES
- UP TO 15% OF ISLAND MAY BE DEVOTED TO PEDESTRIAN WALKWAYS
- NO PARKING SPACE SHALL BE LOCATED MORE THAN 120' FROM AN ISLAND
- MINIMUM 20% PARKING SHALL BE SHADED BY CANOPY TREES.
- ALL ISLANDS SHALL BE COVERED BY SHRUBS OR GROUNDCOVER

PARKING AREA = 41,219 SF  
REQUIRED SHADE AREA 8,244 SF SHADE AREA REQUIRED  
-41,219 SF X .20  
PROPOSED SHADE AREA 15,554 SF SHADE AREA PROPOSED  
-22 PARKING TREES X (707 SF / TREE)

**SEC. 18-483 PARKING AREA SCREENING:**

PARKING WITHIN 50' ROW = 32 LF  
REQUIRED 3' HT X 5' WIDE SCREEN  
PROPOSED 3' HT X 5' WIDE SCREEN

**SEC. 18-490 - FOUNDATION PLANTING:**

REQUIRED LANDSCAPE AREA 6,347 SF LANDSCAPE AREA  
PROPOSED LANDSCAPE AREA 7,460 SF LANDSCAPE AREA  
\*\*SEE TABLE BELOW

BUILDING FAÇADE LANDSCAPE AREAS				
BLDG FACE ADJACENT TO PARKING	FACE AREA	PERCENT	REQUIRED LANDSCAPE AREA	PROVIDED LANDSCAPE AREA
#1	8428 X	0.12 =	1011	1080
#2	3736 X	0.12 =	448	694
#3	4507 X	0.12 =	541	543
#4	14420 X	0.12 =	1730	1757
#5	3810 X	0.12 =	457	852
#6	10603 X	0.12 =	1272	1278
#7	7670 X	0.12 =	920	1256
TOTAL SF			6381	7460
REQUIRED				
PROPOSED				

NOTE:  
WITHIN SIGHT DISTANCE TRIANGLES, TREES WILL BE LIMBED UP TO 8' AND VEGETATION PLANTED TO PROVIDE A CLEAR VISUAL SIGHT DISTANCE BETWEEN 30" AND 8' FROM TOP OF CURB LINE.

BUILDING SF:  
HEATED 283,323 SF  
GROSS 370,198 SF  
DECK 102,454 SF

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

STORMWATER MANAGEMENT PLAN  
APPROVED  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 4-23-19 PERMIT # 2019023  
SIGNED *[Signature]*

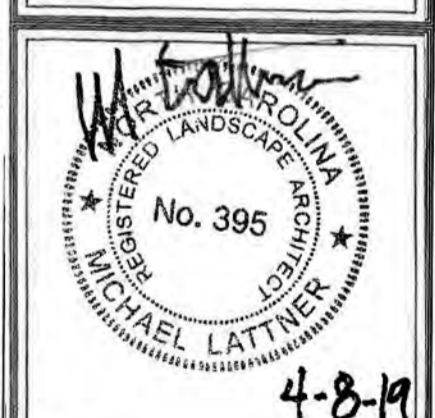
**Approved Construction Plan**

Name	Date
Planning <i>[Signature]</i>	4-23-19
Public Utilities	
Traffic <i>[Signature]</i>	4-23-19
File <i>[Signature]</i>	4-23-19

DPJ Residential, LLC

**The Flats on Front**  
111 Cowan Street  
Wilmington, North Carolina

FINAL TRC



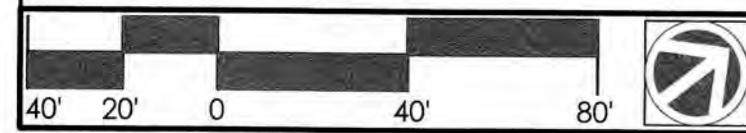
PROJECT: 218022

DATE: 11.29.2018

REVISIONS:	DATE
1st TRC Sub	07.11.18
2nd TRC Sub	09.28.18
3rd TRC Sub	11.05.18
4th TRC Sub	12.18.18
Permit	04.08.19
Final TRC Sub	04.18.19

DRAWN BY: SP  
CHECKED BY: ML/JBM  
Overall Planting Plan

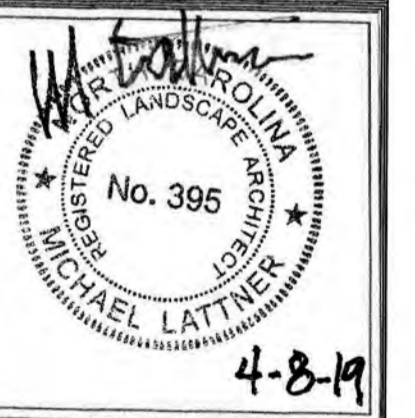
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DPJ Residential, LLC  
**The Flats on Front**  
111 Cowan Street  
Wilmington, North Carolina

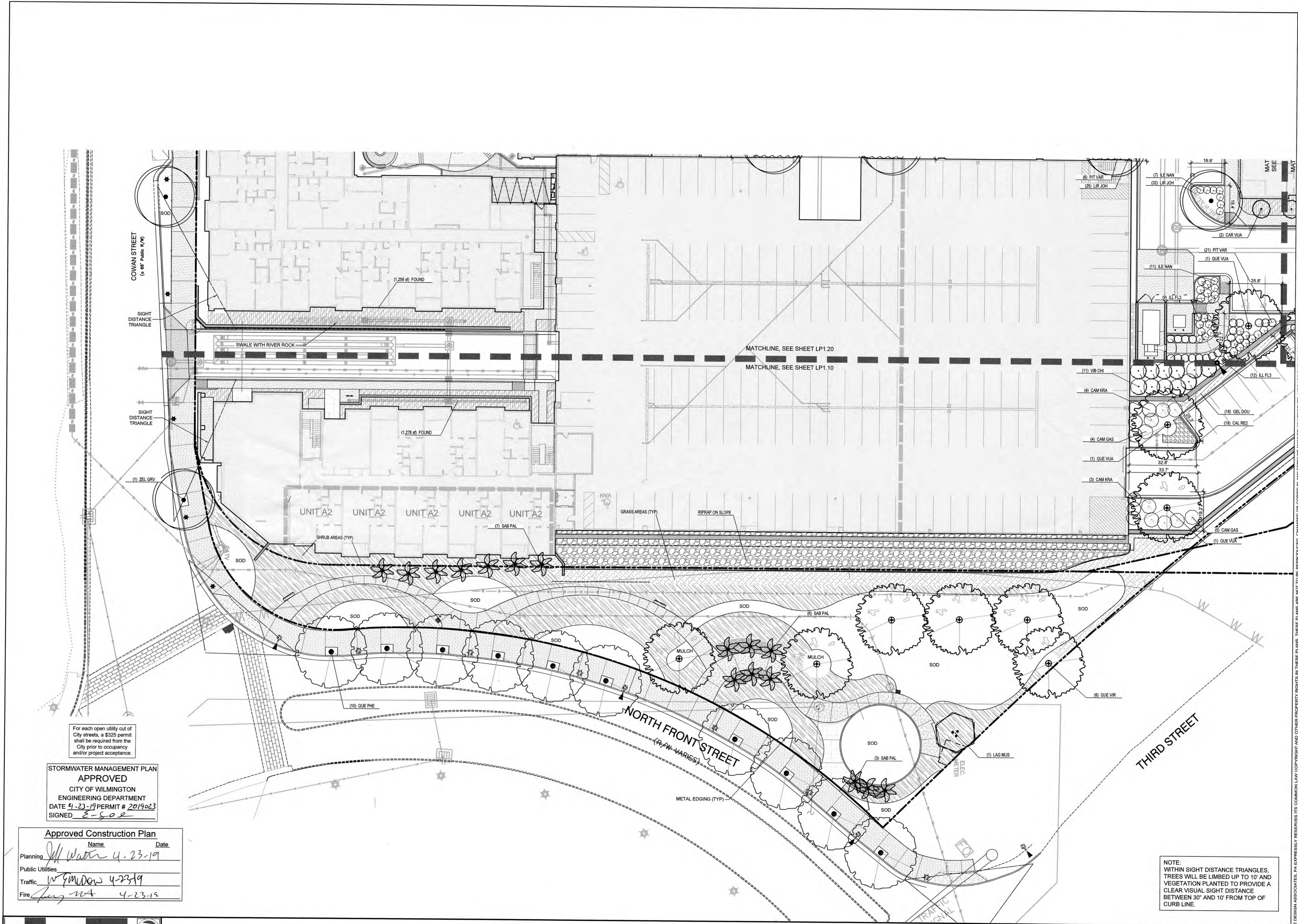
FINAL TRC



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4th TRC Sub	12.18.18
Permit	04.08.19
Final TRC Sub	04.18.19

DRAWN BY: SP  
CHECKED BY: MLJUBM  
Enlarged Planting Plan

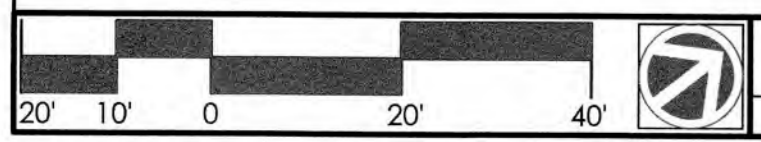


For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

**STORMWATER MANAGEMENT PLAN APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 4-23-19 PERMIT # 2019023  
SIGNED E-SOR

**Approved Construction Plan**

Name	Date
Planning: <i>[Signature]</i>	4-23-19
Public Utilities:	
Traffic: <i>[Signature]</i>	4-23-19
Fire: <i>[Signature]</i>	4-23-19



NOTE:  
WITHIN SIGHT DISTANCE TRIANGLES,  
TREES WILL BE LIMBED UP TO 10' AND  
VEGETATION PLANTED TO PROVIDE A  
CLEAR VISUAL SIGHT DISTANCE  
BETWEEN 30' AND 10' FROM TOP OF  
CURB LINE.

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DPJ Residential, LLC

**The Flats on Front**  
111 Cowan Street  
Wilmington, North Carolina

FINAL TRC



PROJECT: 218022  
DATE: 11.29.2018

REVISIONS:	DATE
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3rd TRC Sub	11.05.18
4th TRC Sub	12.18.18
Permit	04.08.19
Final TRC Sub	04.18.19

DRAWN BY: SP  
CHECKED BY: ML/JBM  
Enlarged Planting Plan

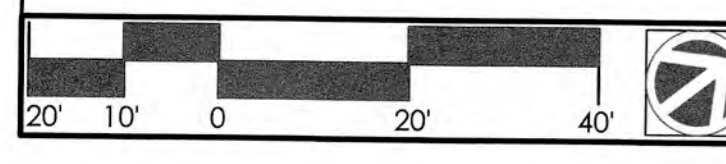
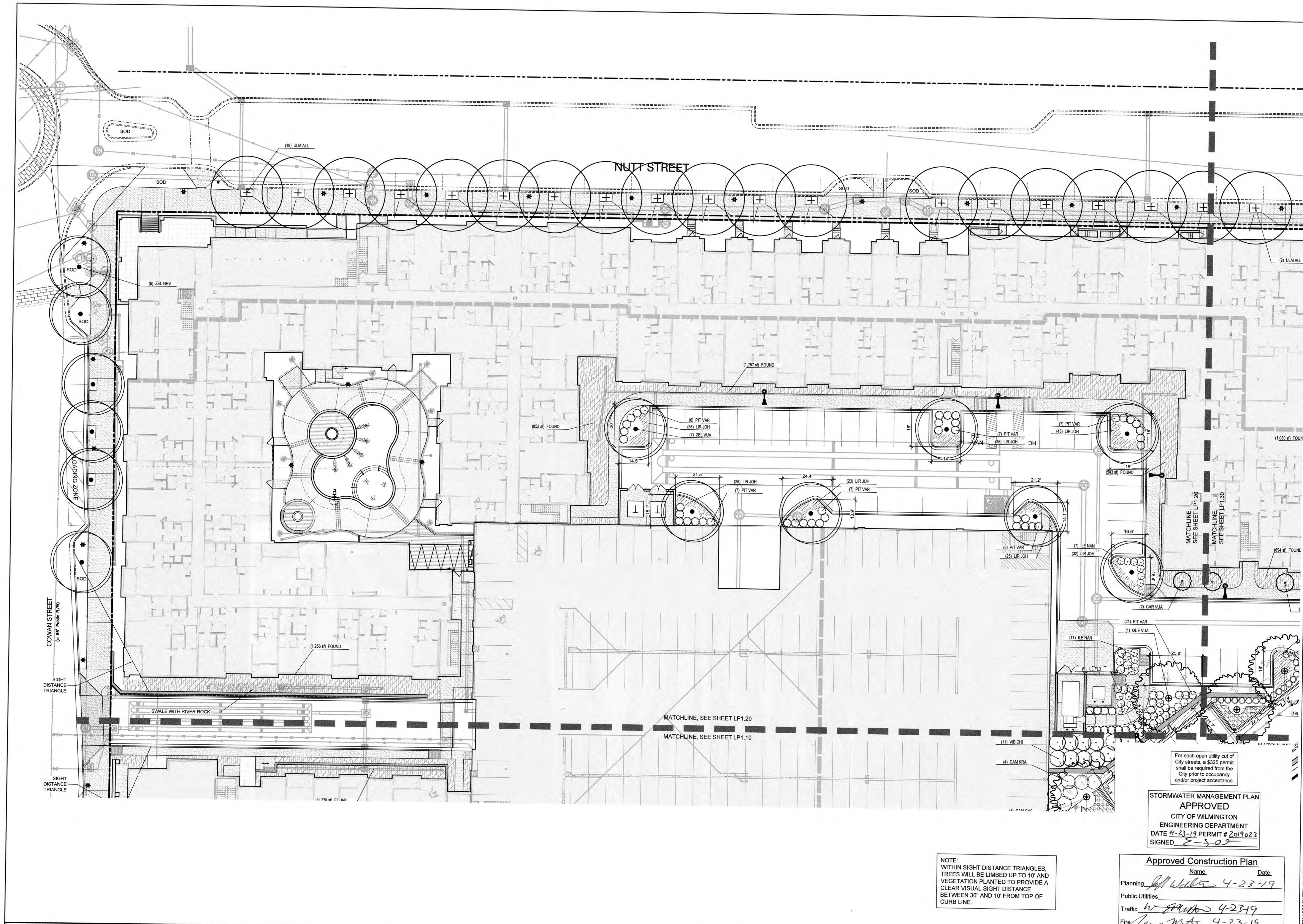
STORMWATER MANAGEMENT PLAN  
APPROVED  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 4-23-19 PERMIT # 2019023  
SIGNED [Signature]

Approved Construction Plan

Name	Date
Planning [Signature]	4-23-19
Public Utilities	
Traffic [Signature]	4-23-19
Fire [Signature]	4-23-19

NOTE:  
WITHIN SIGHT DISTANCE TRIANGLES,  
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CLEAR VISUAL SIGHT DISTANCE  
BETWEEN 30' AND 10' FROM TOP OF  
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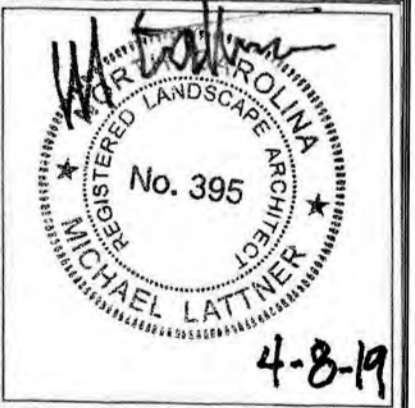
For each open utility out of  
City streets, a \$325 permit  
shall be required from the  
City prior to occupancy  
and/or project acceptance.



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DPJ Residential, LLC  
**The Flats on Front**  
111 Cowan Street  
Wilmington, North Carolina

FINAL TRC



PROJECT: 218022

DATE: 11.29.2018

REVISIONS: DATE

REVISIONS:	DATE
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4th TRC Sub	12.18.18
Permit	04.08.19
Final TRC Sub	04.18.19
DRAWN BY: SP	
CHECKED BY: ML/UBM	
Enlarged Planting Plan	

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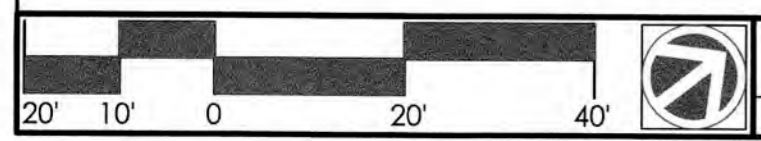
STORMWATER MANAGEMENT PLAN  
**APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 4-23-19 PERMIT # 2019023  
SIGNED *E-Slee*

Approved Construction Plan

Name	Date
Planning <i>Jill Wallis</i>	4-23-19
Public Utilities	
Traffic <i>W. Souda</i>	4-23-19
Fire <i>Jung</i>	4-23-19

NOTE:  
WITHIN SIGHT DISTANCE TRIANGLES, TREES WILL BE LIMBED UP TO 10' AND VEGETATION PLANTED TO PROVIDE A CLEAR VISUAL SIGHT DISTANCE BETWEEN 30' AND 10' FROM TOP OF CURB LINE.

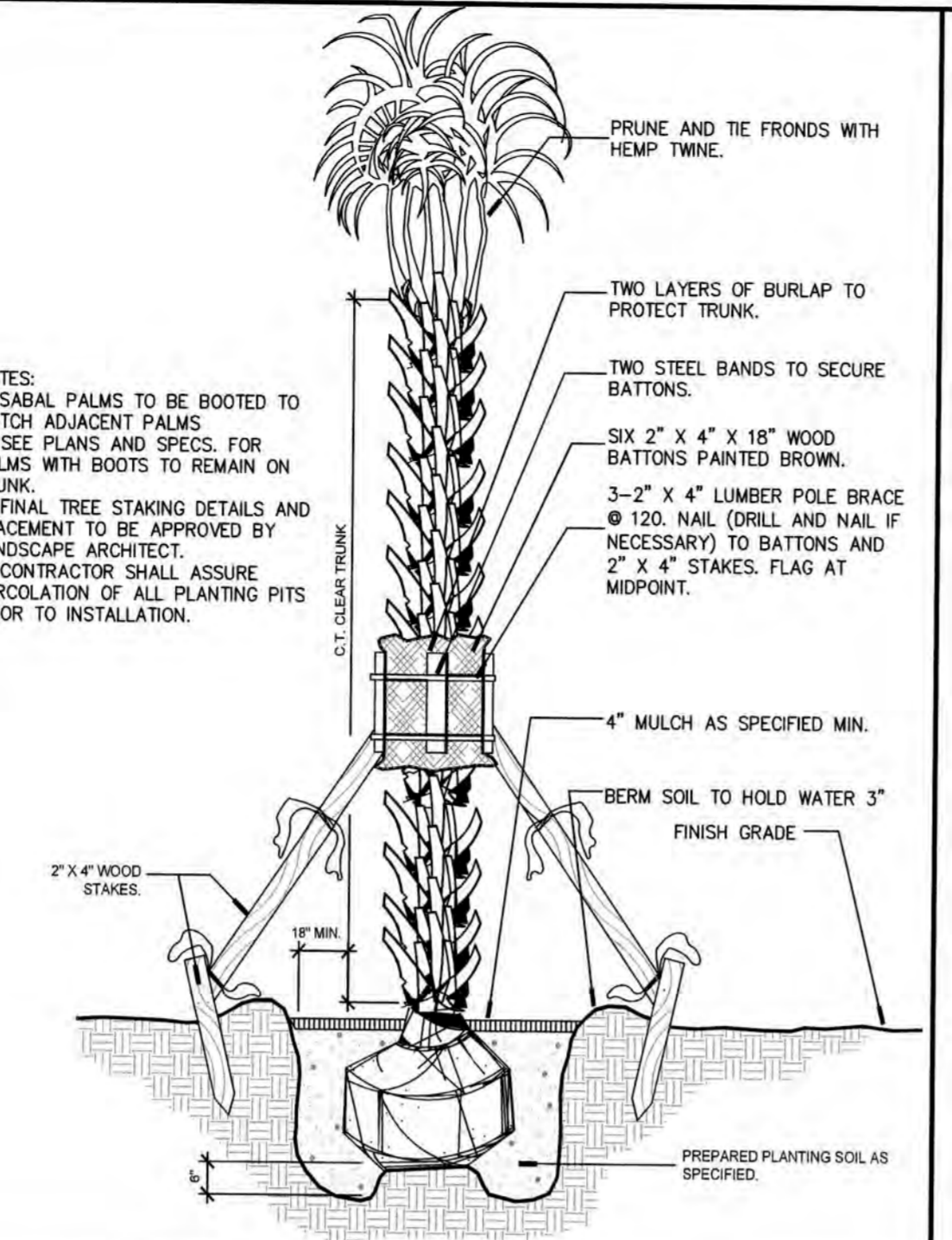
US HWY 17/74/76 & 421  
(R/W MARKED)



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REVISIONS:	DATE
1st TRC Sub	07.11.18
2nd TRC Sub	09.28.18
3rd TRC Sub	11.05.18
4th TRC Sub	12.18.18
Permit	04.08.19
Final TRC Sub	04.18.19

DRAWN BY: SP  
CHECKED BY: MWL  
Plant Schedule  
And Details



- NOTES:
- SABAL PALMS TO BE BOOTED TO MATCH ADJACENT PALMS.
  - SEE PLANS AND SPECS. FOR PALMS WITH BOOT TO REMAIN ON TRUNK.
  - FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY LANDSCAPE ARCHITECT.
  - CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

**Landscape Maintenance Notes**  
THE OWNERS OF THE PROPERTY AND THEIR AGENTS, HEIRS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE INSTALLATION, PRESERVATION AND MAINTENANCE OF ALL PLANTINGS AND PHYSICAL FEATURES SHOWN ON THIS PLAN. THE OWNERS SHALL BE RESPONSIBLE FOR ANNUAL MAINTENANCE OF THE VEGETATION TO INCLUDE BUT NOT LIMITED TO:

A. Fertilization: Avoid any nitrogen fertilization of cool-season grasses, such as tall fescue, after the February application until September. Fertilize lawns three times per year September 15, October 31, and February 15 according to soil test. Fertilize warm season grasses once during growing season per soil test.

B. Pruning: Purpose of pruning is to improve health and vigor of woody plants, adjustments to the foliage and branching density for visual screens and managing competition, and improving the appearance of trees and shrubs. Pruning shall be limited to removal of dead wood or branches for trees or for sight distances/safety reasons for the first year. The ANSI A300 Tree Care Operations standards should be adhered to. The pruning of shrubs shall be limited to the pruning necessary to maintain the natural shape of the plant except for sheared hedges.

- Shrubs in buffers allowed to remain full to ground and 6-8' height.
- Shrubs in streetscape buffer trimmed to continuous soft hedges below trees.
- Shrubs in planting islands kept trimmed to 30" maximum height.

C. Pest Control: Pre-emergent weed control for lawns and shrub beds may be applied in February. Chemical treatment for insect infestation and disease may be applied and shall be specific to the problem.

D. Mulching: Mulching shall be maintained at a depth of 2'-3" in plant beds. Mulch shall be reapplied every year.

E. Mowing primary fescue lawns shall be maintained at a height of 3". Secondary turf areas may be maintained higher and less frequently. Warm season grasses shall be mowed as needed during the growing season to maintain the recommended height of the species of turf grass.

F. Plant protection: Avoid excess intrusion into the root zone area of established plantings. Install tree protection fencing as shown during construction.

G. Watering: If any irrigation system is utilized, the system shall be regulated to provide approximately 1" of rainfall per week during the growing season.

H. Maintenance notes for Bio-retention Basin plant materials:

- Visually inspect and repair erosion around bio-retention areas on a monthly basis.
- Inspect mulch cover monthly and replace any void area as needed, additional mulch shall be applied in the spring where needed.
- Remove and replace all dead or diseased vegetation twice annually. Treat all diseased shrubs and trees as needed to insure proper growth.
- All plant materials shall be watered by hand for two weeks after installation.
- Replace any deficient stakes or wires whenever needed.
- Remove all trash weekly.

**Landscape Planting Notes**

- Verification of total landscape material quantities as shown on the landscape plans and in the plant list shall be the responsibility of the landscape contractor. The landscape architect shall be notified of any discrepancies prior to final bidding or installation.
- All landscape materials shall conform to the most recent American Standards for Nursery Stock established by the American Association of Nurserymen (A.A.N.).
- Soil analysis shall be obtained by landscape contractor prior to planting. See Soil Preparation and Amendment Notes
- Shrub bed area preparation is highly preferred to individually dug holes.
- Trees with root flare covered by more than 1.5" of soil will be rejected prior to installation.
- Landscape material placed in prepared holes shall be properly backfilled prior to the end of the working day.
- All saucers shall be soaked with water and mulched immediately following installation.
- All prepared ground cover and annual bed installations shall be properly soaked and mulched prior to the end of the day.
- Landscape Architect shall approve any on-site plant storage area for accessibility, shade conditions, heating in much material and temporary watering methods.
- Lift and set the tree by root ball only. Do not lift using the tree trunk. Do not use tree trunk as a lever.
- All root balls removed from containers shall be scarified by hand prior to placement and back filling with prepared soils. Hand tools are not to be used to scarify root balls.
- All rope and wrapping twine shall be cut and removed from around the upper parts of the root ball. Metal basket wires and burlap shall be pulled back and tucked under the edges of the saucer rings on all trees and large shrubs. All synthetic burlap shall be removed from plant balls prior to back filling.
- All plant beds or raised saucer rings shall be edged with smooth, continuous curves.
- All plant material shall be planted at heights as illustrated in plant details.
- Tree guying shall be performed within a week of planting. The landscape contractor shall be responsible for removing all tree guying strapping and stakes after the first full growing season or one year, whichever ever comes first.
- B & B as listed under "root" in the plant list indicates balled and burlapped.
- Contractor shall verify locations of underground utilities prior to planting. Any exposed or uncovered lines shall be shown to general contractor prior to backfilling.
- All plant beds and raised saucer rings shall be graded to provide adequate drainage and shall be mulched as specified.
- All materials, planting and landscape work shall conform to the current municipal authority's standard specifications and details.
- All landscape areas that are not planted and mulched or paved shall be seeded or sodded per owner's direction with rebel IV turf type tall fescue, unless otherwise noted.
- Tree protection fence shall be installed, inspected and approved prior to the issuance of any grading or other permits.
- First year pruning of tree crown shall be limited to removal of dead & damaged wood.
- The owner shall be responsible for the maintenance of all required landscaping by keeping lawns mowed, all plants maintained as disease free, all planting beds groomed and kept weed free (except in areas of preserved existing natural vegetation i.e. thickets) and kept them free from trash, debris and other materials.
- The owner shall be responsible for the replacement of any required planting, which is removed or dies after the date of planting. Such replacement shall occur during the next planting season.
- Trees within Public Right-of-Way to be planted from October 1st to April 30th only.

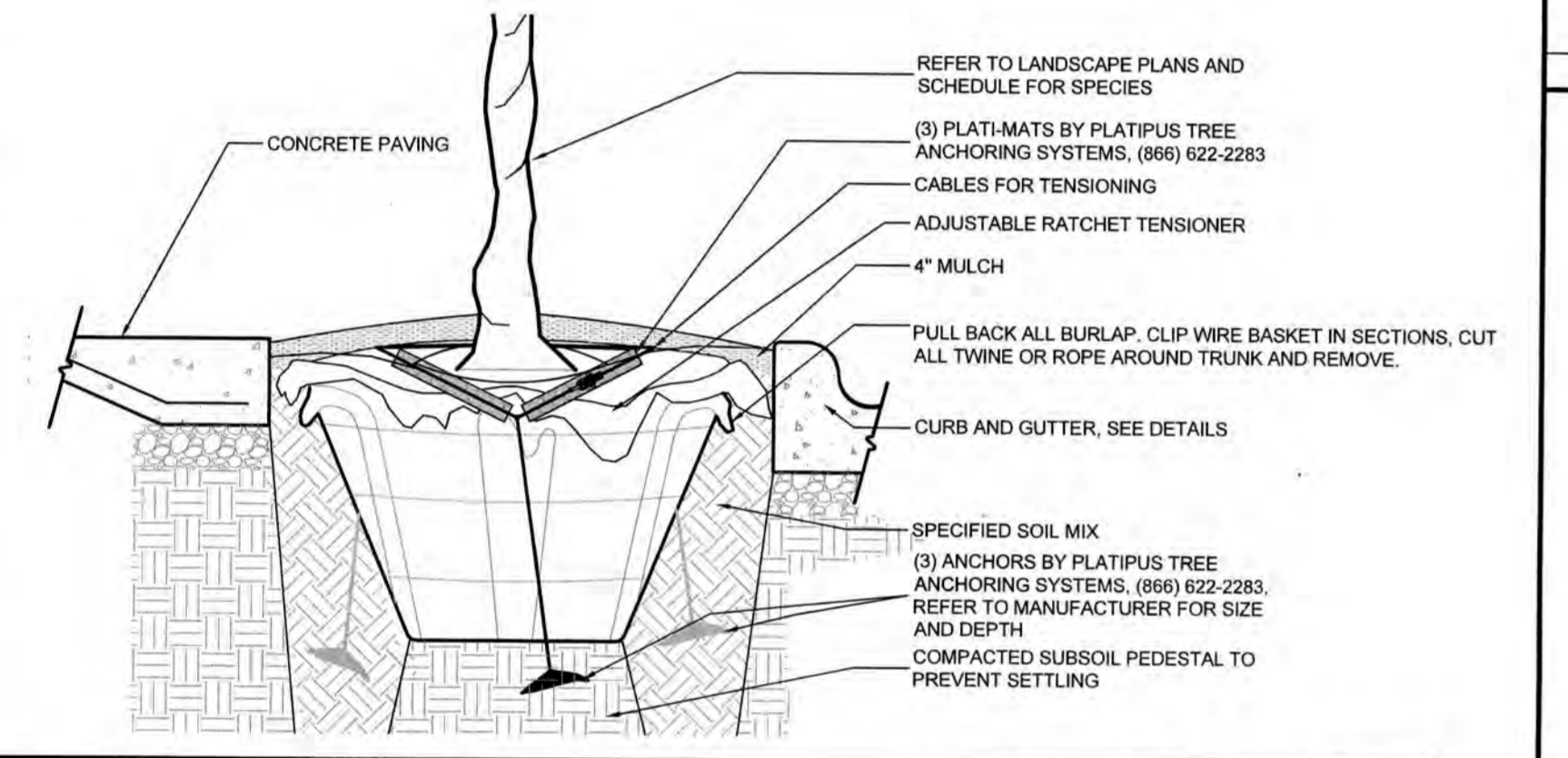
**Soil Preparation and Amendment Notes**

- Soil samples shall be taken and submitted for soil analysis.
- Per recommendation of soils report, landscape contractor to supplement soil with lime, macronutrients and micronutrients.
- Contractor to amend soil with organic material and/or sand to yield the final soil ratio:  
33.3% Sand/Silt  
33.3% Clay  
33.3% Organic Material \*  
\* Organic material to be Compost made solely from plant-based products. Peat moss is allowed in sandy soils
- Native soil, Lime, Nutrients and Amendments to be tilled to a minimum width of 3-5 x root ball for trees. Shrub and groundcover planting areas shall be tilled to a minimum 4" below rootball or a minimum 12" deep.

**Landscape Maintenance Notes 06**

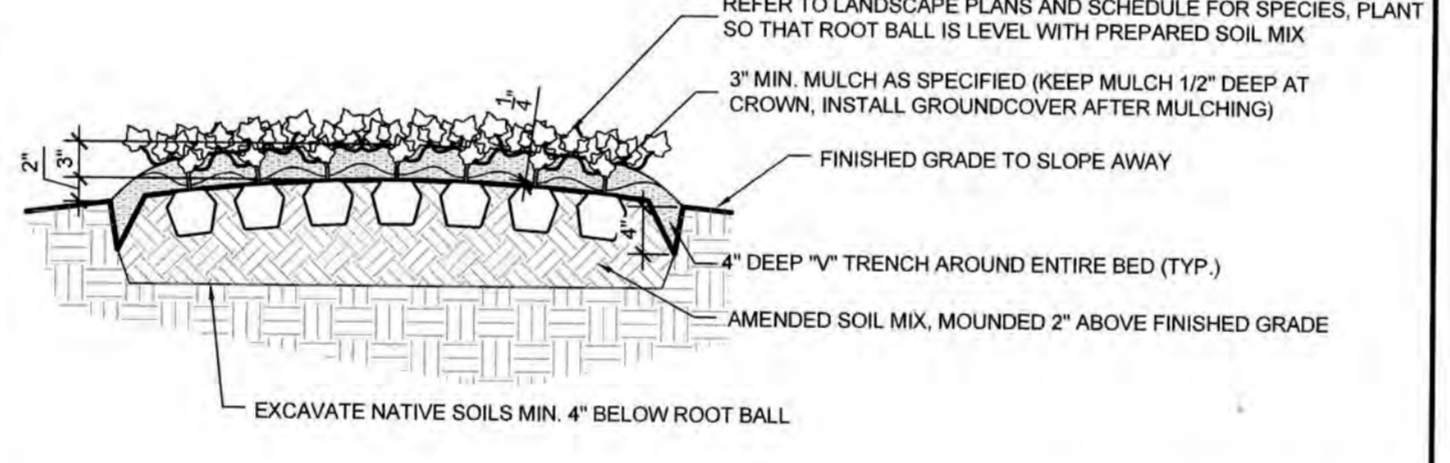
**Landscape Maintenance Notes 03**

**Planting and Soil Notes 02**



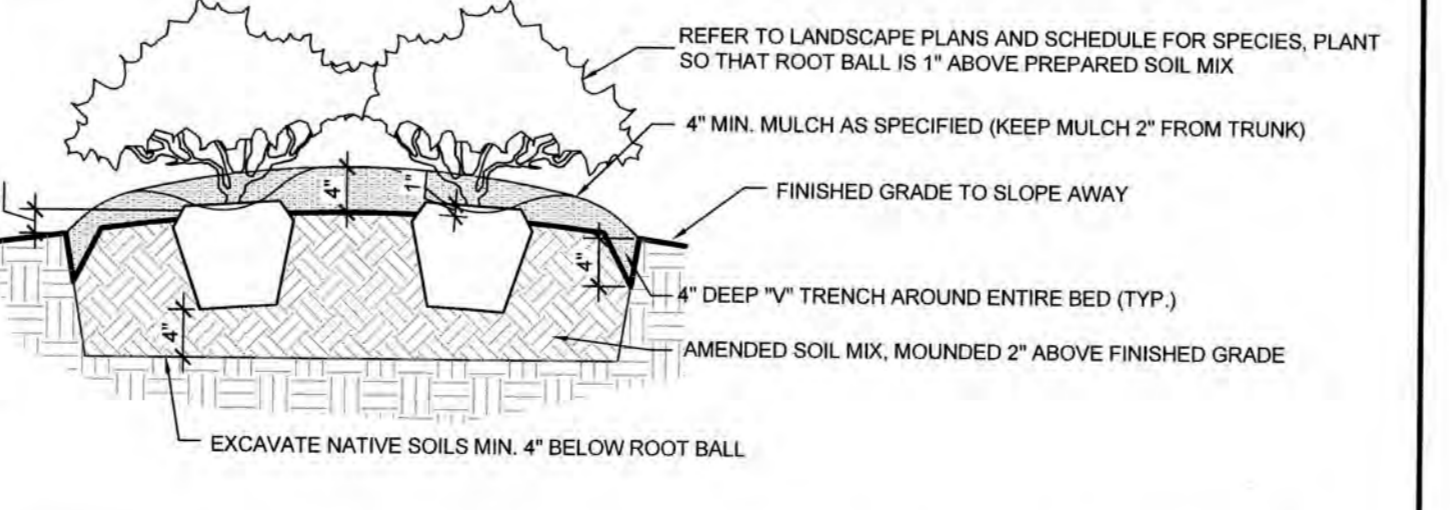
**Tree Well Anchoring 08**  
Scale: 3/4" = 1'-0"

- GENERAL NOTES:
- THOROUGHLY TILL IN PLANTING MIXTURE AMENDMENTS TO A MIN. DEPTH OF 12" IN ENTIRE BED AREA.
  - WORK SOIL TO A LOOSE, UNIFORM TEXTURE.
  - HAND-TAMP BACKFILL TO REMOVE VOIDS/AIR POCKETS.
  - WATER IMMEDIATELY AFTER INSTALLATION UNTIL NO MORE WATER IS ABSORBED.
  - SEE SOIL PREPARATION AND AMENDMENT NOTES



**Typical Groundcover Planting 05**  
Scale: 3/4" = 1'-0"

- NOTES:
- PLANT SO THAT TOP OF ROOT BALL IS 1" ABOVE FINISH GRADE
  - SCARIFY SIDES AND BOTTOM OF PLANTING PIT
  - BACKFILL PLANTING PIT WITH SPECIFIED PLANTING SOIL MIXTURE (OR AMENDED SOIL) IN 8" LAYERS, HAND-TAMPED, TO REMOVE VOIDS
  - WHEN PLANTING PIT IS 2/3 BACKFILLED, WATER MATERIAL
  - AFTER PLACING AND HAND-TAMPING FINAL LAYERS, WATER AGAIN UNTIL NO MORE IS ABSORBED.
  - ROOTBALL IS TO BE DISTURBED SO THAT ROOTS WILL GROW OUT INTO SOIL MIX
  - SEE SOIL PREPARATION AND AMENDMENT NOTES



**Typical Shrub Planting 04**  
Scale: 3/4" = 1'-0"

**PLANT SCHEDULE**

TREES	QTY	BOTANICAL / COMMON NAME	CAL.	HT.	SPR.	REMARKS
QUE VIR	6	QUERCUS VIRGINIANA	4"	16-18'	8-10'	FULL HEAD, MATCHED
SAB PAL	16	SABAL PALMETTO	-	8-10'	3-5'	FULL, MATCHED
<b>STREET TREES</b>						
QUE PHE	10	QUERCUS PHELLOS	2.5-3"	12-14'	6-7'	FULL, MATCHED
ULM ALL	20	ULMUS PARVIFOLIA 'UPMT'	2.5-3"	12-14'	6-7'	FULL HEAD, MATCHED
ZEL GRV	7	ZELKOVA SERRATA 'GREEN VASE'	2.5-3"	12-14'	6-7'	FULL, MATCHED
<b>UNDERSTORY TREES</b>						
LAG MUS	1	LAGERSTROEMIA FAURIEI 'MUSKOGEE'	-	8-10'	6-8'	FULL HEAD, MATCHED, 3" TRUNK, MIN. LIMBED UP
<b>VEHICULAR TREES</b>						
CAR VUA	4	CARPINUS BETULUS 'FRANS FONTAINE'	2"	10'-12'	3'-5'	FULL
QUE VUA	11	QUERCUS VIRGINIANA	2.5-3"	12-14'	6-8'	FULL HEAD, MATCHED
ZEL VUA	7	ZELKOVA SERRATA 'GREEN VASE'	2.5-3"	12-14'	6-7'	FULL, MATCHED
<b>SHRUBS</b>						
CAM KRA	7	CAMELLIA JAPONICA 'KRAMER'S SUPREME' TM	HT.	24-36"	SPR. 15-20"	FULL
CAM GAS	9	CAMELLIA SASANQUA 'SHISHI GASHIRA'	HT.	18-24"	SPR. 24-30"	FULL
ILE BUR	11	ILEX CORNUTA 'BURFORDI NANA'	HT.	36"-42"	SPR. 24-28"	FULL
ILE NAN	41	ILEX VOMITORIA 'NANA'	HT.	18" MIN.	SPR. 12"	FULL
ILL FL3	21	ILLICIAM PARVIFLORUM 'FLORIDA SUNSHINE'	HT.	18-24"	SPR. 12-18"	FULL
JAS FLO	19	JASMINUM FLORIDUM	HT.	18"	SPR. 15"	FULL
LOR EVE	11	LOROPETALUM CHINENSE 'EVER RED'	HT.	18-24"	SPR. 12-18"	FULL
OSM FRA	15	OSMANTHUS FRAGRANS	HT.	24-36"	SPR.	FULL
PIT VAR	61	PITOSPORUM TOBIRA 'VARIEGATA'	HT.	18-24"	SPR. 12-18"	FULL
VIB CHI	11	VIBURNUM AWABUKI 'CHINDO'	HT.	36"-48"	SPR. 24-30"	FULL
<b>SHRUB AREAS</b>						
FOUND	7,460 SF	FOUNDATION LANDSCAPE	CONT.	SPACING	REMARKS	VARIETY OF SHRUBS AND GROUNDCOVERS
GRASS	259	GRASS AREAS / GRASSES	1 GAL	36" o.c.	FULL	VARIETY OF SHRUBS AND GROUNDCOVERS
PARK	8,969 SF	PARK SHRUB AREAS / MIXED SHRUBS	VARIES			
<b>GRASS AREAS</b>						
CAL REZ	112	CALAMAGROSTIS BRACHYTRICHA	CONT.	HT.	SPR.	SPACING
		KOREAN FEATHER REED GRASS	1 GAL			30" o.c.
<b>GROUND COVERS</b>						
GEL DOU	34	GESEMIUM SEMPERVIRENS & RANKINII DOUBLE SHOT	CONT.	HT.	SPR.	SPACING
		DOUBLE SHOT JESSAMINE	1 GAL	3-5"	36" RUNNERS	42" o.c.
LIR JOH	282	LIRIOPE MUSCARI 'JOHN BURCH'	CONT.	HT.	SPR.	SPACING
		LILY TURF	1 GAL	4-6"	4-6"	18" o.c.
<b>SOD</b>						
MULCH		ZOYSIA DOUBLE SHREDDED HARDWOOD				

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**

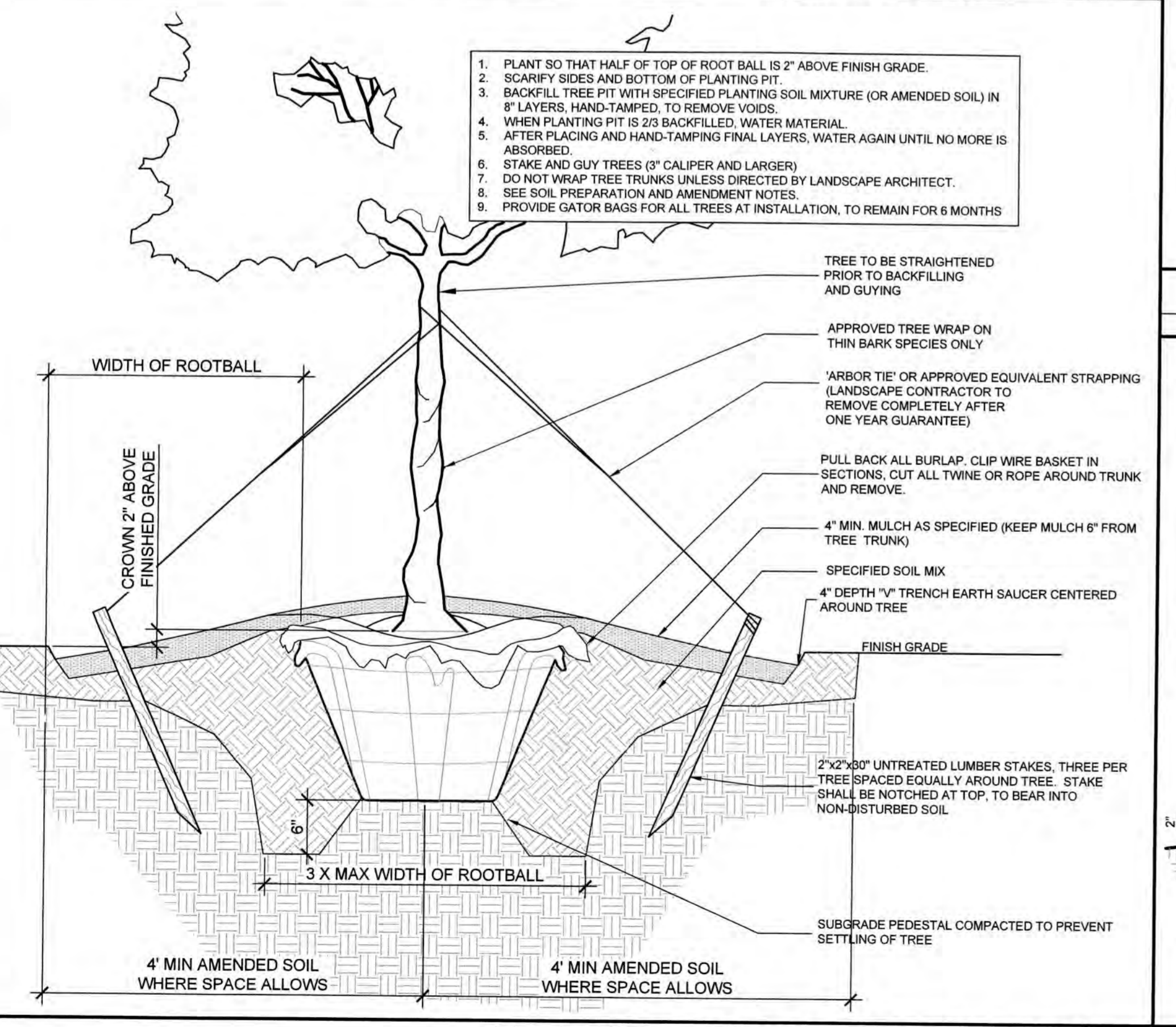
Stormwater Management Plan  
APPROVED  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 4-23-19 PERMIT # 2019 023  
SIGNED S-SOR

Name: [Signature]  
Date: 4-23-19

Public Utilities: [Signature]  
Date: 4-23-19

Traffic: [Signature]  
Date: 4-23-19

Fire: [Signature]  
Date: 4-23-19



**Typical Tree Planting (Sandy Soils) 07**  
Scale: 1" = 10'

**SEEDBED PREPARATION:**

1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
2. RIP THE ENTRANCE AREA TO 6 INCHES DEPTH.
3. REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
4. APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELOW\*).
5. CONTINUE TILLAGE UNTIL A WELL - PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
6. SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
7. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
8. INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
9. CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.
10. APPLY:  
AGRICULTURAL LIMESTONE - 2 TONS/ACRE  
FERTILIZER - 1000 LBS/ACRE (10-10-10)  
SUPERPHOSPHATE - 500 LBS/ACRE (20%)  
MULCH - 2 TONS/ACRE (SMALL GRAIN STRAW)  
ANCHOR - ASPHALT EMULSION AT 450 GAL/ACRE

**TREE PROTECTION NOTES:**

1. NO LAND DISTURBANCE INCLUDING TREE REMOVAL IS TO OCCUR OUTSIDE THE LIMITS OF DISTURBANCE SHOWN ON THE PLANS. [18-457(b)]
2. PROTECTIVE FENCING IS TO BE PROPERLY MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. [18-458]
3. LAND CLEARING AND CONSTRUCTION CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION REQUIREMENTS AND METHODS. [18-457(d)]
4. ANY TREES AND/OR AREAS DESIGNATED TO BE PROTECTED MUST PROPERLY BARRICADED WITH FENCING AND PROTECTED THROUGHOUT CONSTRUCTION TO INSURE THAT NO CLEARING AND GRADING OR STAGING OF MATERIALS WILL OCCUR IN THOSE AREAS. [18-458]
5. NO EQUIPMENT IS ALLOWED ON THE SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING HAS BEEN INSTALLED AND APPROVED. [18-458]
6. REGULATED AND SIGNIFICANT TREES IN THE STREET YARD [18-456(c)] AND ANY TREES IN ANY REQUIRED BUFFERS [18-456(b)] ARE REQUIRED TO BE RETAINED.

**6 GENERAL NOTES**

N/A

**GROUND STABILIZATION CRITERIA**

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

**PERMANENT SEEDING**

GRASS TYPE	AMOUNT/1000 S.F.	TIME OF SEEDING	INITIAL
BERMUDA COMMON	1-2 LBS.	APRIL - JUNE	25 LBS. 10-10-10
FESCUE, TALL (KENTUCKY 31)	5-7 LBS	JUNE - AUGUST FEB. - OCT.	25 LBS 10-10-10
SERICEA LESPEDEZA (SLOPES)	1-2 LBS	MARCH - APRIL	25 LBS 10-10-10

**TEMPORARY SEEDING**

GRASS TYPE	AMOUNT/1000 S.F.	TIME OF SEEDING	INITIAL
RYE GRAIN	1-2 LBS.	APRIL - JUNE	25 LBS. 10-10-10
BROWNTOP MILLET	1-2 LBS	JUNE - AUGUST	25 LBS 10-10-10

**NOTE (G.S. 113A-57 (2))**

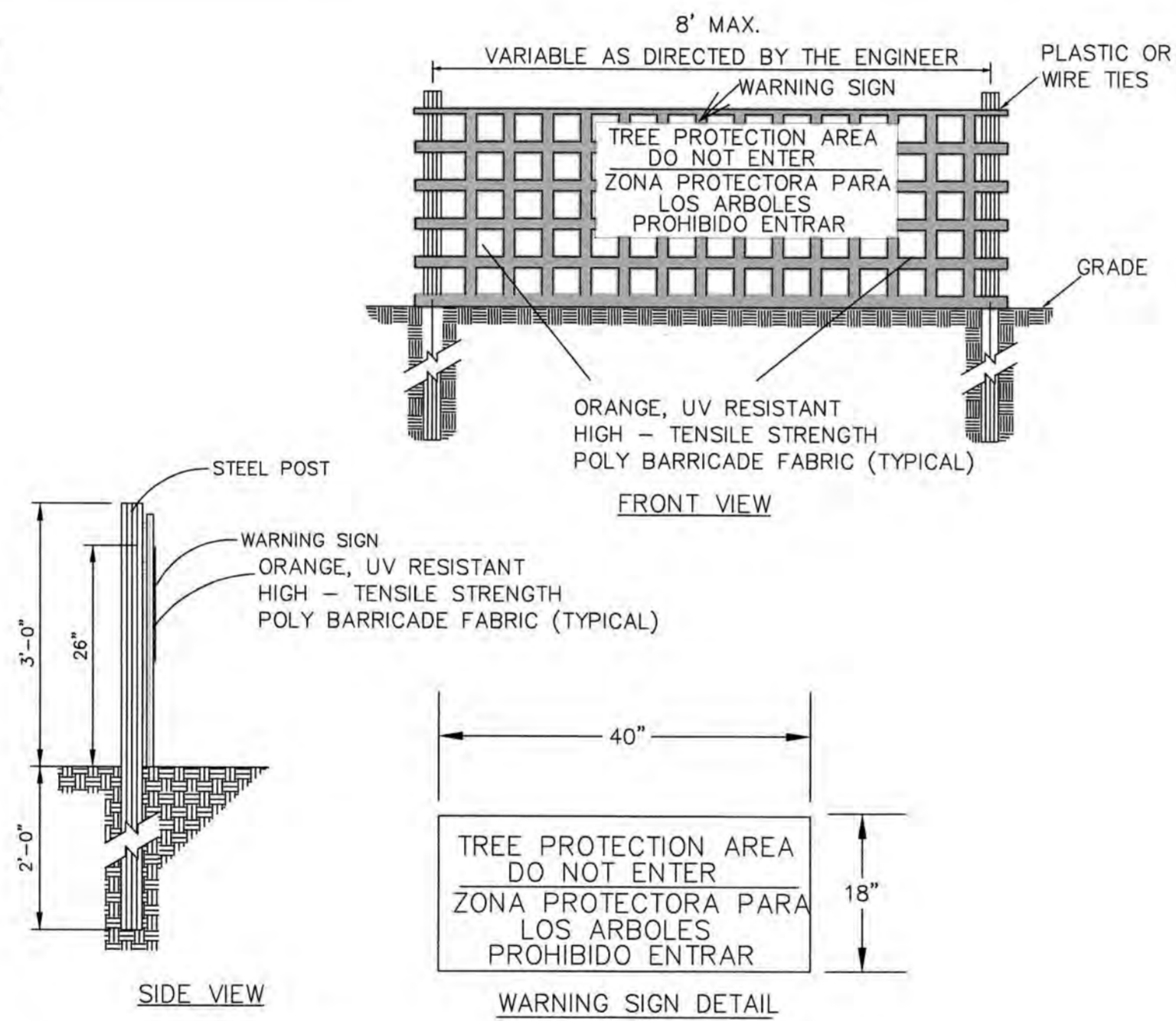
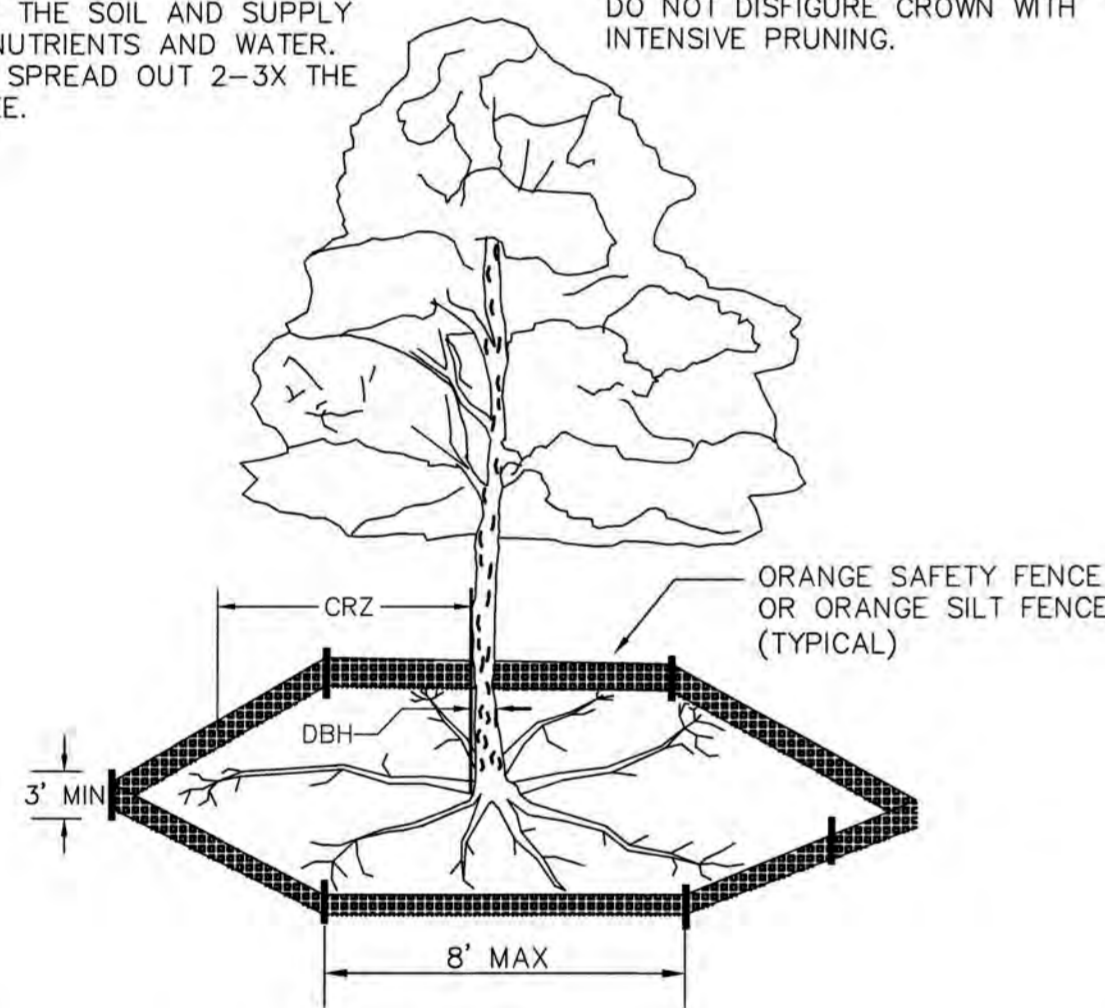
THE ANGLE FOR GRADED SLOPES AND FILLS SHALL BE NO GREATER THAN THE ANGLE THAT CAN BE RETAINED BY VEGETATIVE COVER OR OTHER ADEQUATE EROSION CONTROL DEVICES OR STRUCTURES. IN ANY EVENT, SLOPES LEFT EXPOSED WILL, WITHIN 21 CALENDAR DAYS OF COMPLETION OF ANY GRADING, BE PLANTED OR OTHERWISE PROVIDED WITH TEMPORARY OR PERMANENT GROUND COVER, DEVICES, OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION.

**5 GENERAL NOTES**

N/A

NOTE: THE CRITICAL ROOT ZONE (CRZ) OF A TREE IS WHERE THE MAJORITY OF A TREE'S ROOTS LAY. 85% OF MOST TREE ROOTS ARE FOUND IN THE TOP 24" OF THE SOIL AND SUPPLY THE MAJORITY OF NUTRIENTS AND WATER. GENERALLY, ROOTS SPREAD OUT 2-3X THE HEIGHT OF THE TREE.

NOTE: CROWN OF THE TREE IS NEEDED FOR LEAF GROWTH TO PRODUCE OXYGEN, FILTER THE AIR, REDUCE WIND AND SOFTEN NOISE. DO NOT DISFIGURE CROWN WITH INTENSIVE PRUNING.



NOTES:

1. THE TREE PROTECTION FENCING SHALL NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT WITHOUT APPROVAL FROM URBAN FORESTRY STAFF.
2. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH, MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
3. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER. FOR TREE PROTECTION AREAS LESS THAN 100' IN PERIMETER, PROVIDE NO LESS THAN TWO SIGNS PER PROTECTION AREA.
4. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. MAINTAIN TREE PROTECTION FENCE AND SIGNS THROUGHOUT DURATION OF PROJECT.
5. TREE PROTECTION FENCING AND SIGNAGE SHALL BE REMOVED AFTER CONSTRUCTION.
6. ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF WILMINGTON, BASED ON ACTUAL FIELD CONDITIONS.

**METHOD OF TREE PROTECTION DURING CONSTRUCTION**

SD 15-09

**7 TREE SAVE**

N/A

**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
Date: 4-23-19 Permit #2019023  
Signed: *E. S. S.*

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: *J. W. W.* 4-23-19  
Traffic: *W. S. S.* 4-23-19  
Fire: *J. S. S.* 4-23-19

1 inch

**DANDY SACK™**

NOTE: THE DANDY SACK™ WILL BE MANUFACTURED BY THE U.S.A. FROM A NON MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

Mechanical Properties	Test Method	Units	MARY
Grab Tensile Strength	ASTM D 4832	KN (lbs)	1.78 (400) x 1.40 (315)
Grab Tensile Elongation	ASTM D 4832	%	16 x 16
Structure Strength	ASTM D 4832	KN (lbs)	0.47 (100)
Mullen Burst Strength	ASTM D 3786	KPa (psi)	2500 (360)
Trapezoidal Tear Strength	ASTM D 4832	KN (lbs)	0.67 (150) x 0.33 (75)
UV Resistance	ASTM D 4355	%	80
Apparent Opening Size	ASTM D 4751	mm (IN. Std. Sieve)	0.425 (10)
Flow Rate	ASTM D 4491	l/min/m² (gal/min/ft²)	2852 (700)
Permittivity	ASTM D 4491	Sec⁻¹	0.90

Mechanical Properties	Test Method	Units	MARY
Grab Tensile Strength	ASTM D 4832	KN (lbs)	1.62 (365) x 0.89 (200)
Grab Tensile Elongation	ASTM D 4832	%	24 x 10
Structure Strength	ASTM D 4832	KN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	KPa (psi)	2000 (290)
Trapezoidal Tear Strength	ASTM D 4832	KN (lbs)	0.51 (115) x 0.33 (75)
UV Resistance	ASTM D 4355	%	80
Apparent Opening Size	ASTM D 4751	mm (IN. Std. Sieve)	0.425 (10)
Flow Rate	ASTM D 4491	l/min/m² (gal/min/ft²)	2852 (700)
Permittivity	ASTM D 4491	Sec⁻¹	2.1

REGULAR FLOW DANDY SACK™ (BLACK)

HI-FLOW DANDY SACK™ (SAFETY ORANGE)

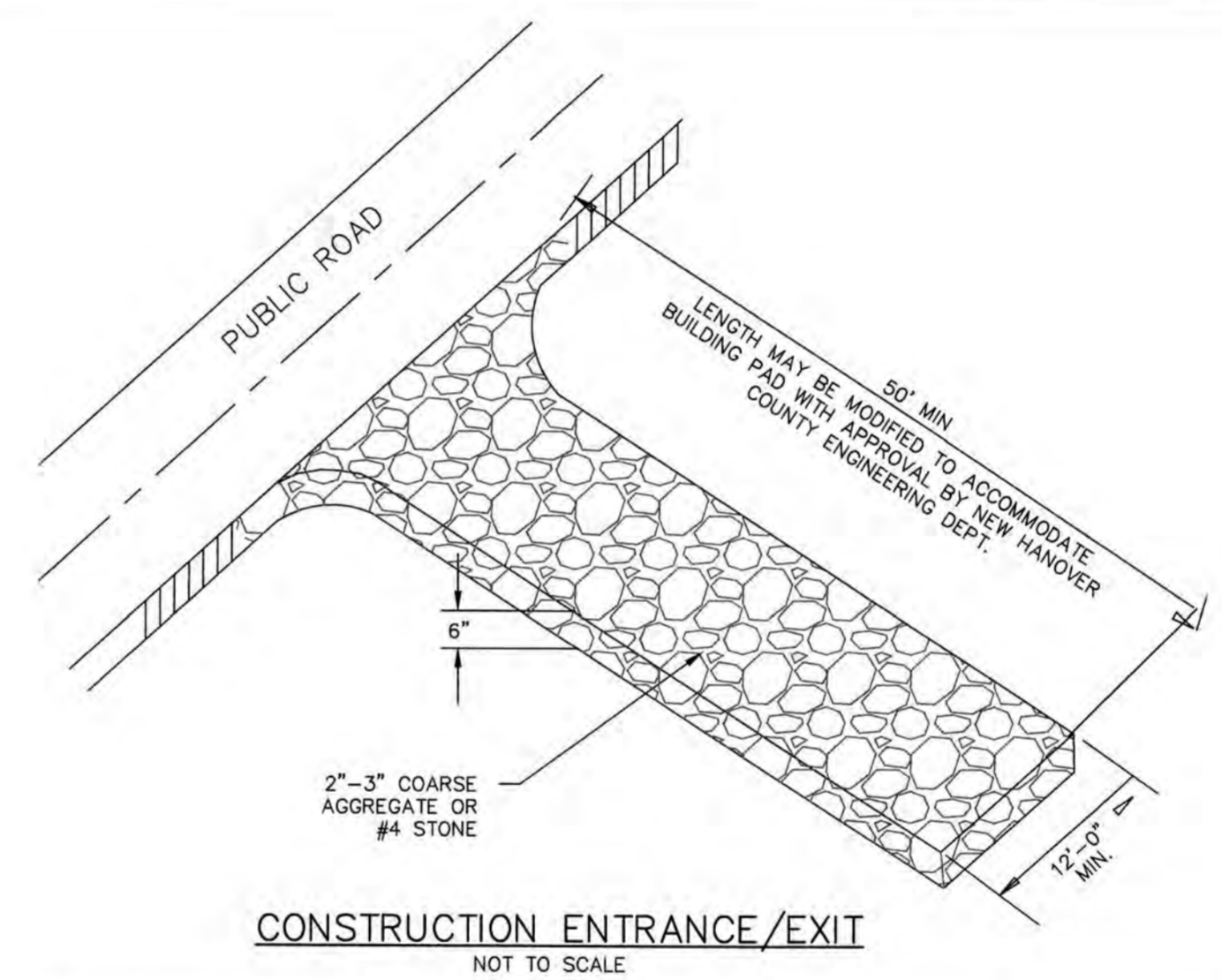
\*Note: All Dandy Sacks™ can be ordered with our optional oil absorbent pillows

**TEMPORARY DANDY SACK® INLET PROTECTION**

NOT TO SCALE

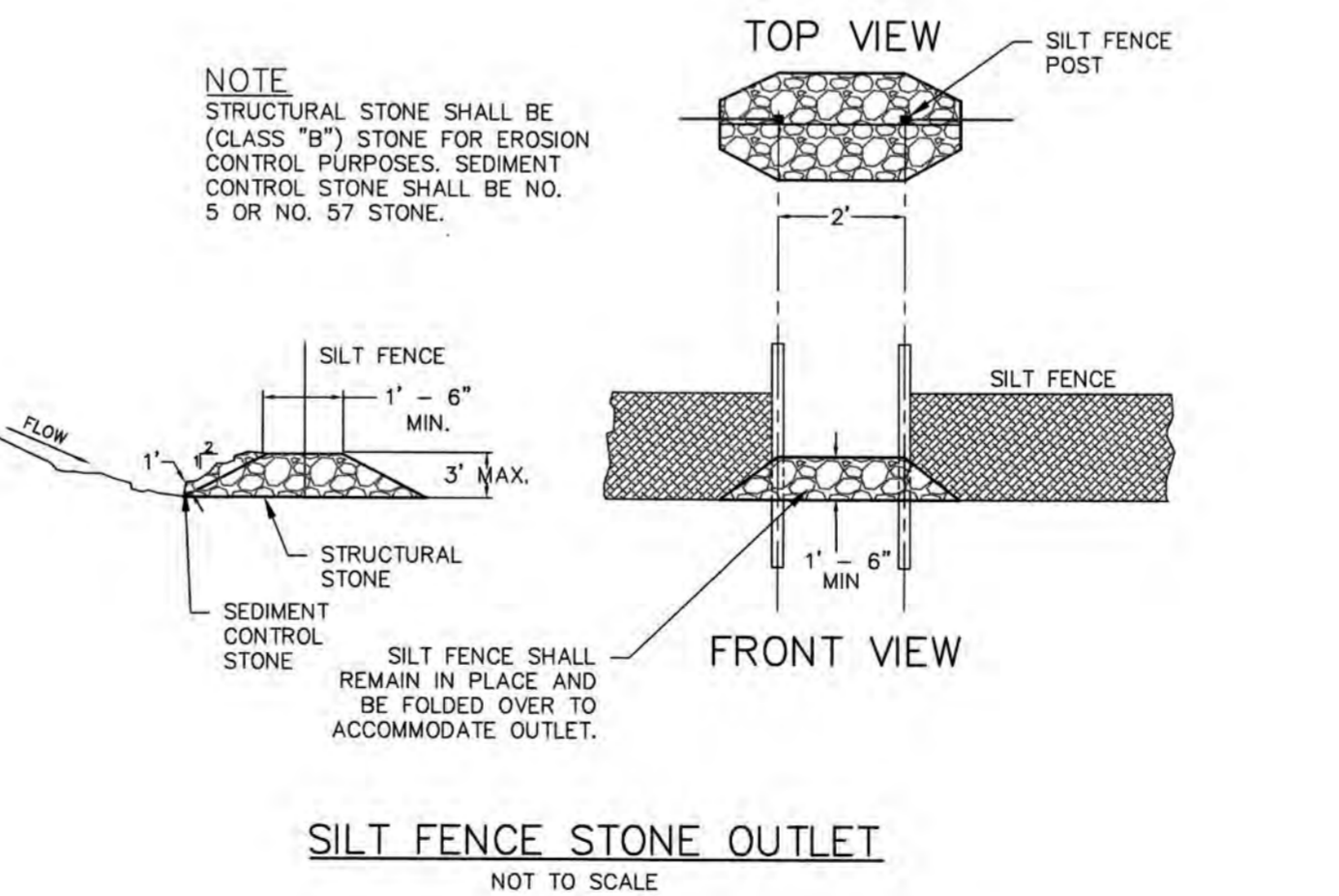
**1 INLET PROTECTION**

NOT TO SCALE



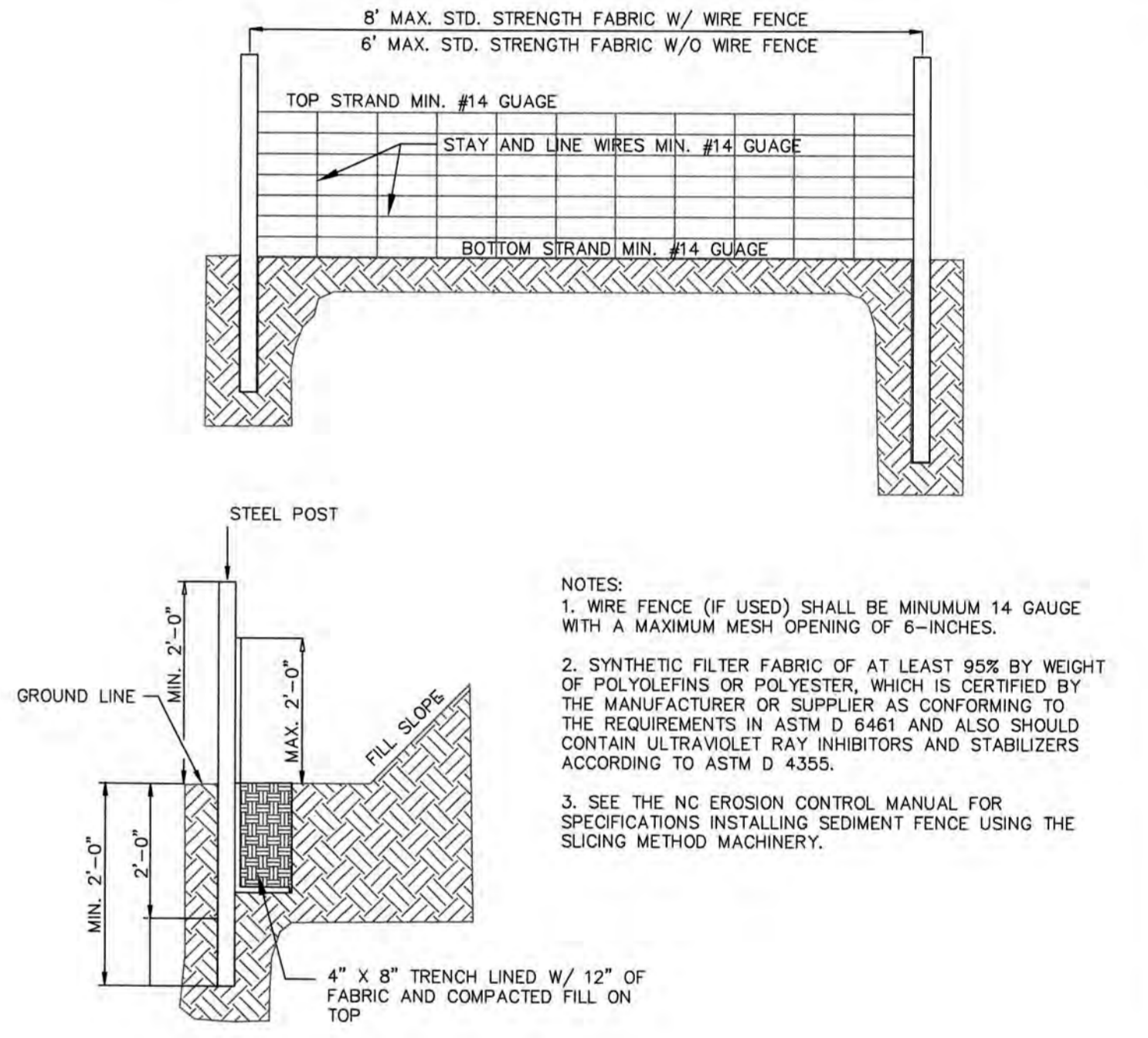
**3 CONSTRUCTION ENTRANCE**

NOT TO SCALE



**4 SILT FENCE OUTLET**

NOT TO SCALE



**TEMPORARY SILT FENCE**

NOT TO SCALE

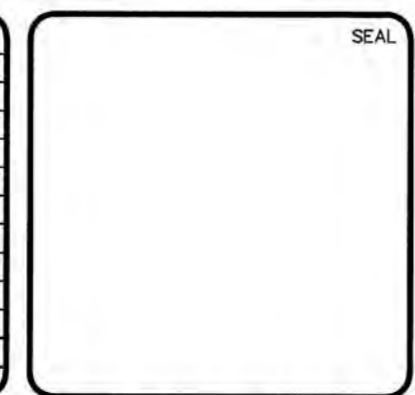
SILT FENCE No.	Drainage Area ac	Length ft	Acres per 100 ft	0.25 Acres per 100 ft	YES/NO
PHASE 1 AND 2 SILT FENCE					
SF1	2.41	973.00	0.25	YES	
SF2	0.12	131.00	0.09	YES	

Notes:  
1. Calculation taken from Table 6.62a of the NCDENR ESC Manual for slopes < 2% only.

**2 TEMPORARY SILT FENCE**

NOT TO SCALE

REV.	DESCRIPTIONS	DATE
0	CITY OF WILMINGTON - RELEASE FOR CONSTRUCTION PLANS	04/18/2019



**MCKIM & CREED**  
243 North Front Street  
Wilmington, North Carolina 28401  
Phone: (910)343-1048, Fax: (910)251-8282  
License: F-1222  
www.mckimcreed.com

**dj RESIDENTIAL**  
**CLINE DESIGN**

**THE FLATS ON FRONT**  
WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA  
**SEDIMENT AND EROSION CONTROL DETAILS**

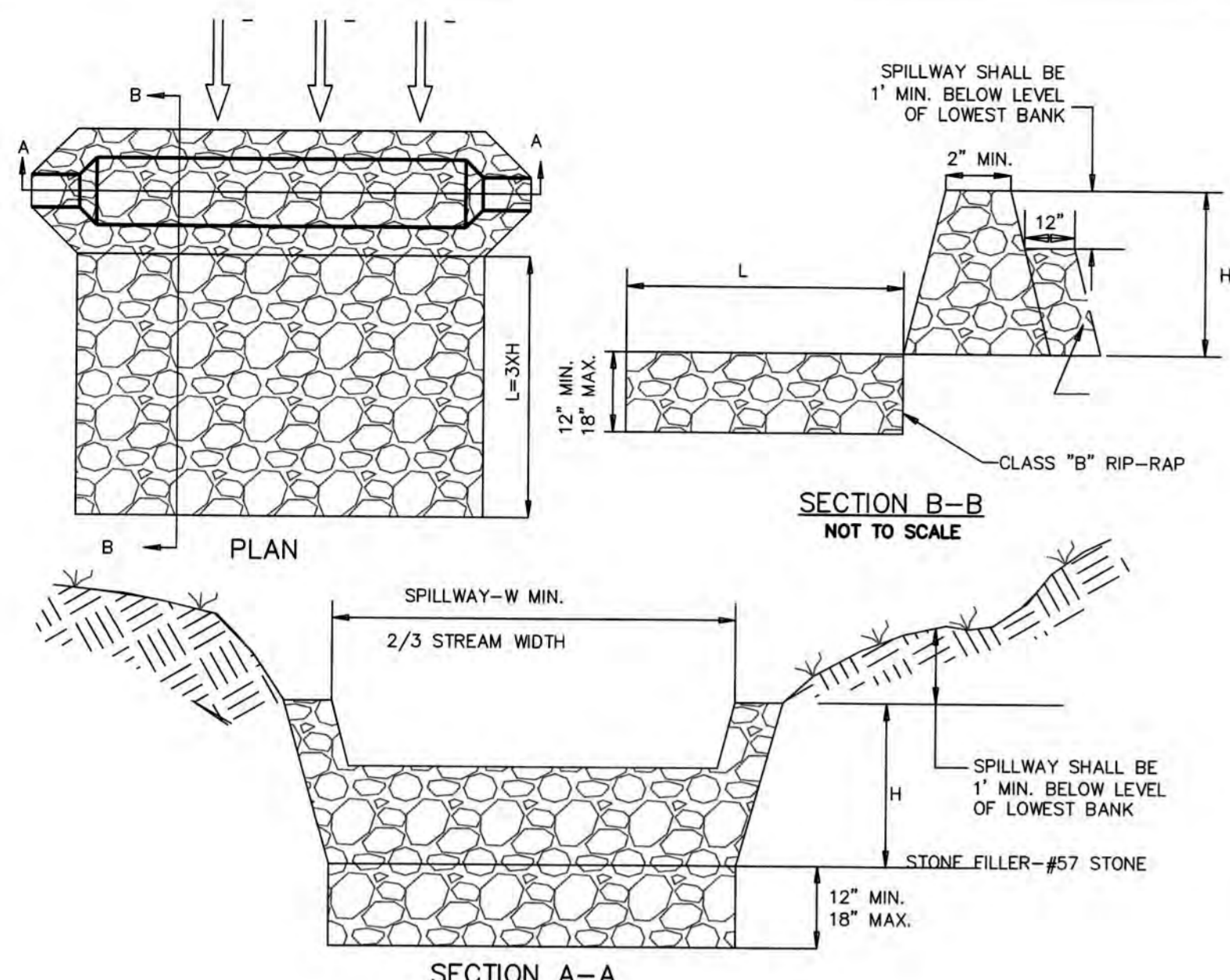
DATE: 04/18/2019  
MCE PROJ. #: 7402-0001  
DRAWN: ALM/KCE  
DESIGNED: ALM  
CHECKED: RMC  
PROJ. MGR.: KCE

SCALE: HORIZONTAL: N/A  
VERTICAL: N/A

M/C FILE NUMBER: CE-501  
DRAWING NUMBER: 28

STATUS: IFC PLAN SET  
ISSUED FOR CONSTRUCTION

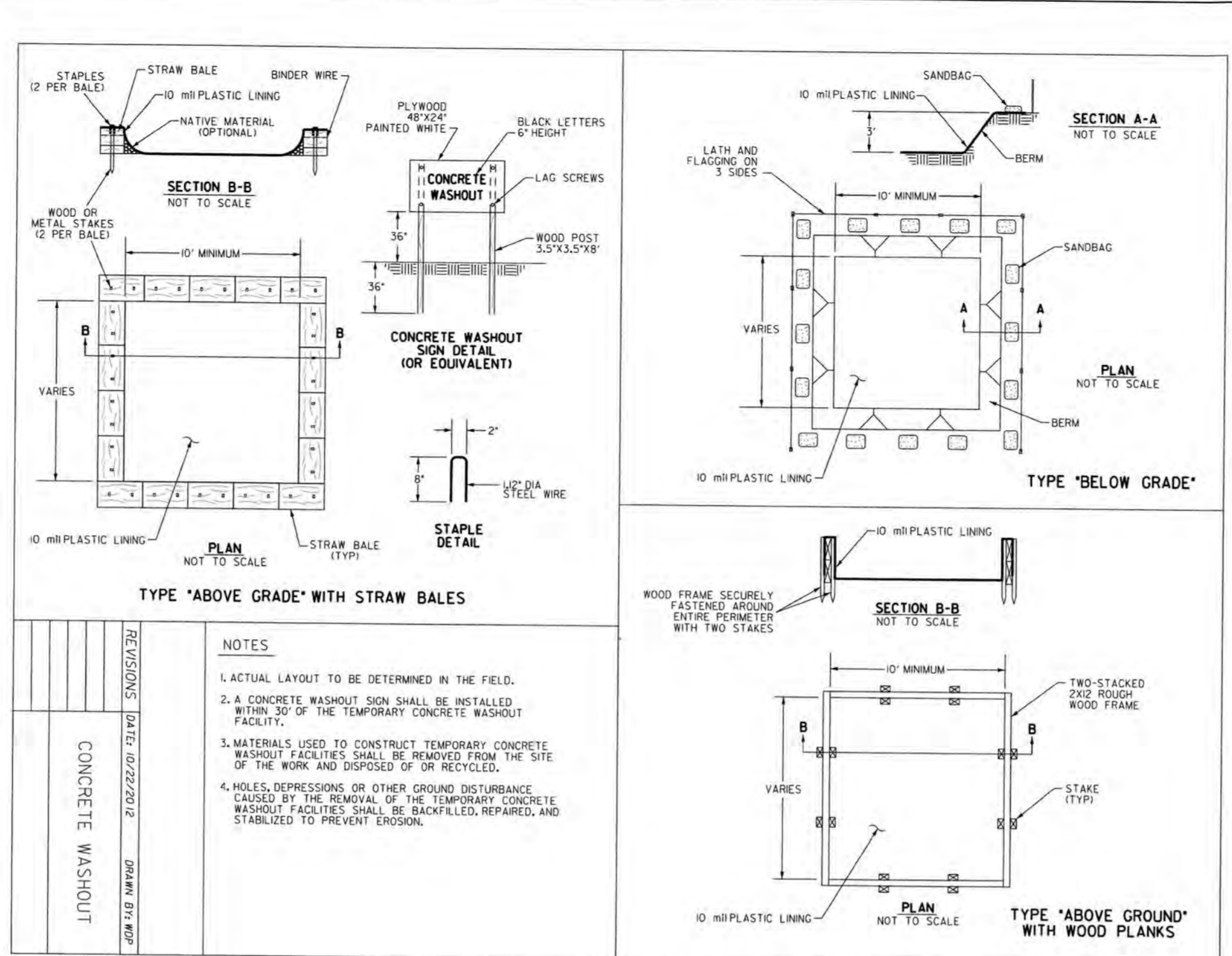
REVISION: 0



**DITCH CHECK DAM**  
SD 13-04  
NOT TO SCALE

7 DITCH CHECK DAM

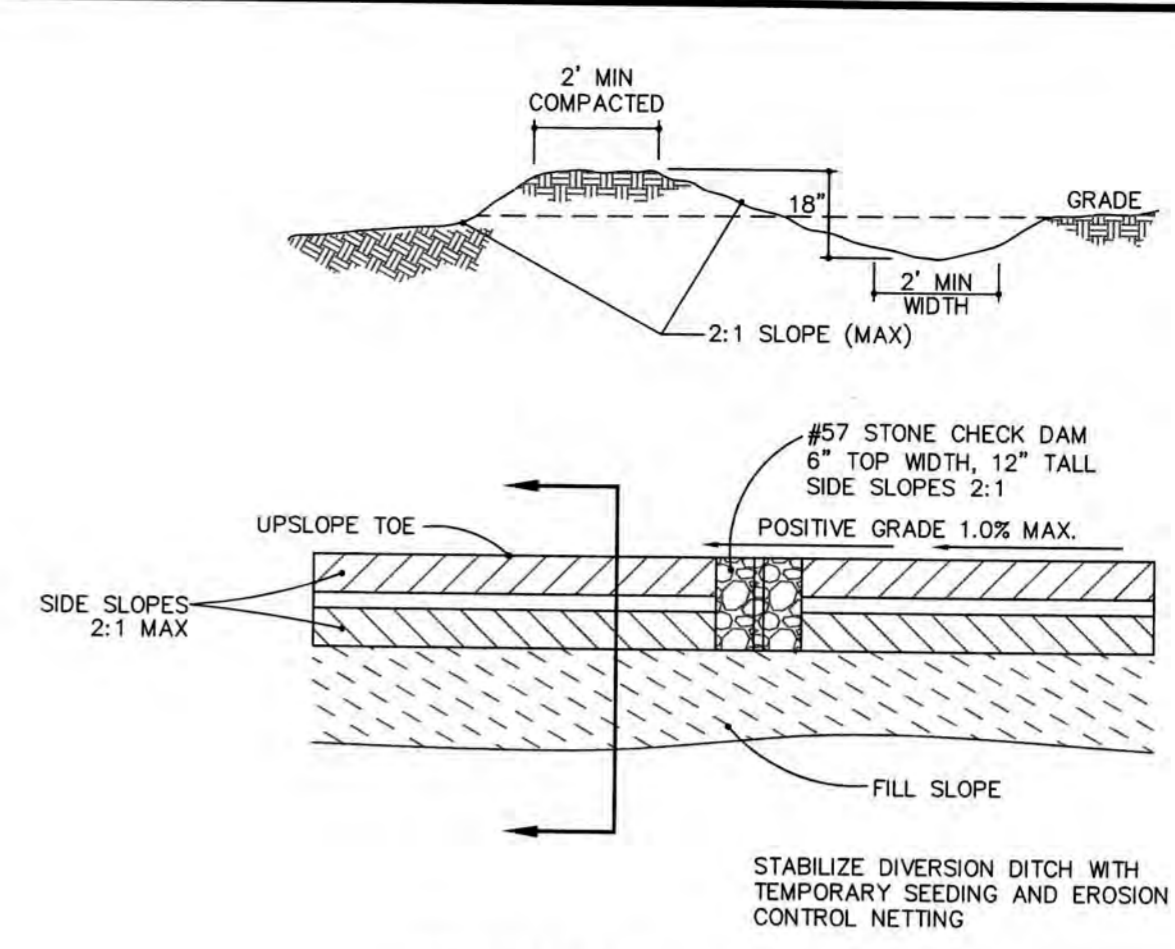
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**CONCRETE WASHOUT DETAIL**

8

N/A



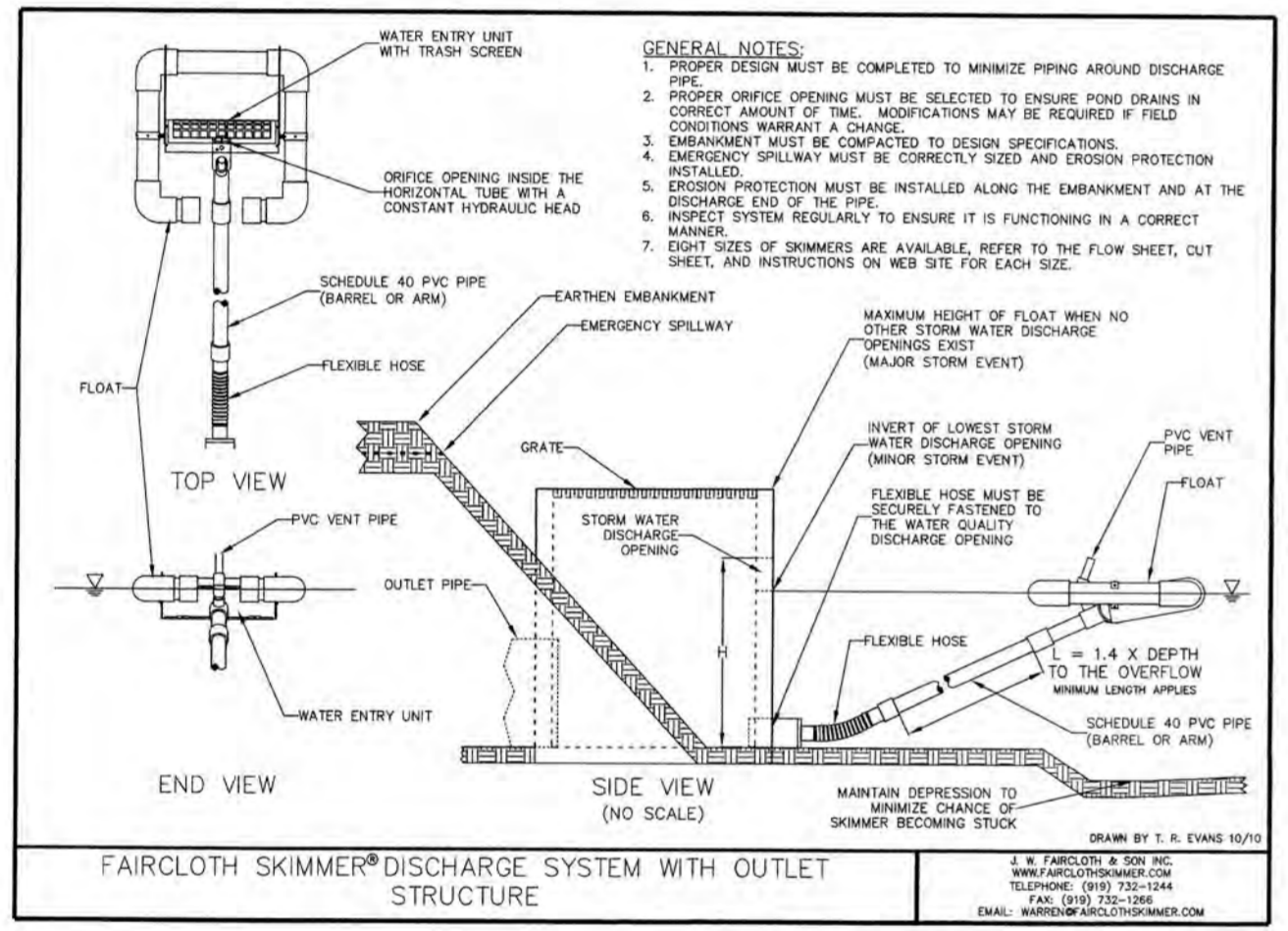
**TEMPORARY DIVERSION DITCH**  
NOT TO SCALE

TDD NUMBER	DA (AQ)	Q 10 (CFS)	LENGTH (FT)	HIGH (FT)	LOW (FT)	ELEVATION DIFF. (FT)	SLOPE (%)	INITIAL LINING	MANNING n	VELOCITY (FPS)	COMMENT	BMP #
TDD1	2.87	6.2	450	17.00	14.00	3.00	0.67	BARE EARTH	0.020	3.17	LINING REQ	SB-1

TDD NUMBER	SECONDARY LINING	MANNING n	VELOCITY (FPS)	DEPTH in	MIN. DEPTH in	CHECK DAM SPACING (FT)	NUMBER REQUIRED	NUMBER PROVIDED	BMP #
TDD1	EXCELSIOR	0.035	2.06	10.2	18	300	1	1	SB-1

1 TEMPORARY DIVERSION DITCH DETAIL

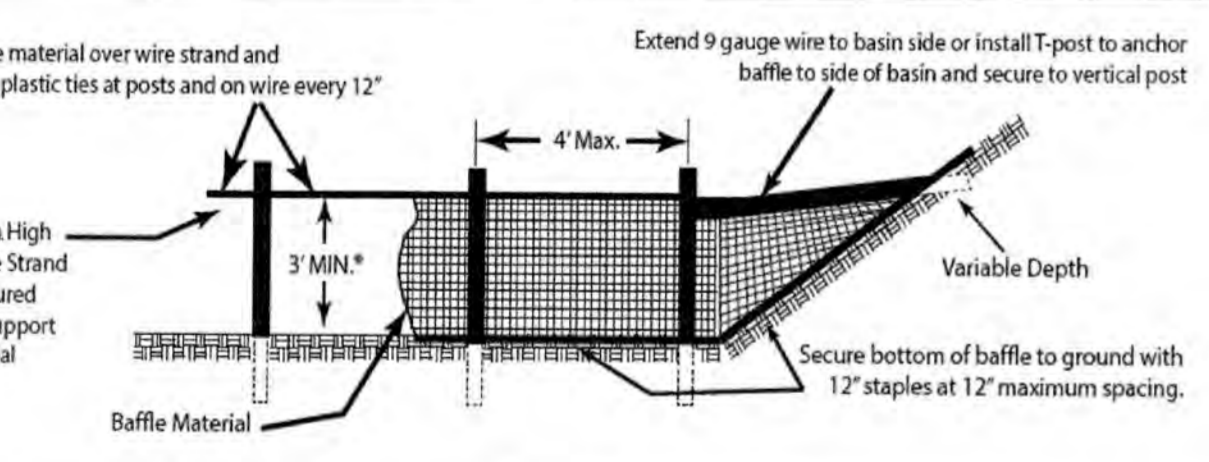
N/A



**SKIMMER DETAIL WITH OUTLET STRUCTURE**  
NOT TO SCALE

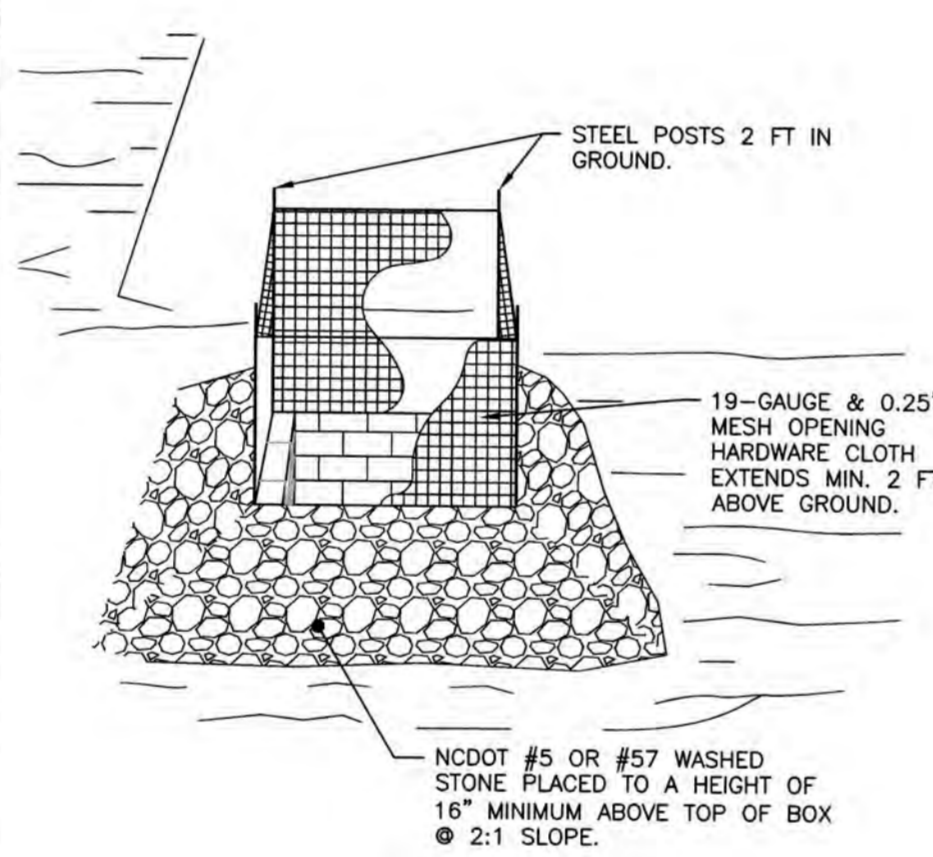
6 SKIMMER OUTLET STRUCTURE

NTS



5 COIR BAFFLE DETAIL

NTS



**TEMP. STORM DRAIN INLET PROTECTION**  
NOT TO SCALE

4 INLET PROTECTION

N/A

**1. GROUND STABILIZATION**

SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES, AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (H2O) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 2:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 30 FEET IN LENGTH
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE (EXCEPT FOR PERIMETERS AND H2O ZONES)

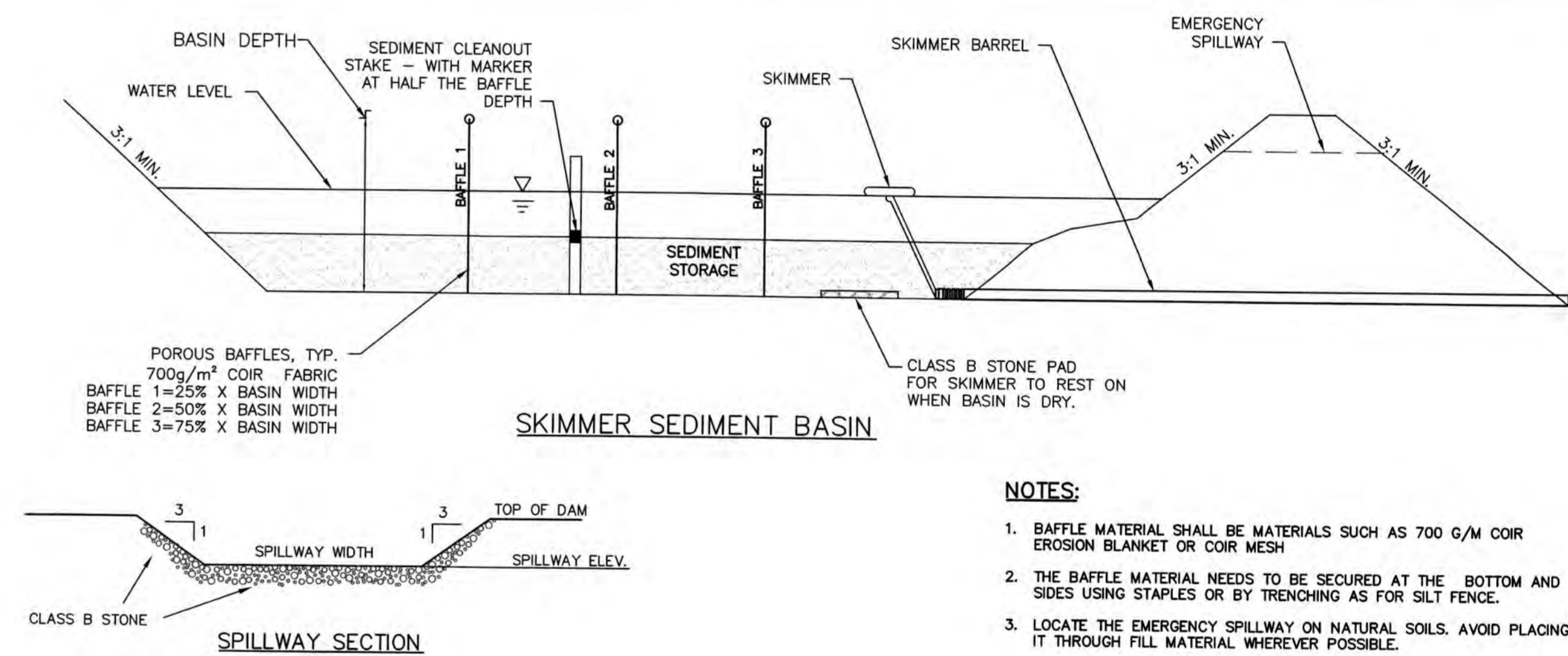
- 2. BUILDING WASTES HANDLING**
- NO PAINT OR LIQUID WASTE IN STREAM OR STORM DRAINS.
  - DEDICATED AREAS FOR DEMOLITION, CONSTRUCTION AND OTHER WASTES MUST BE LOCATED 50' FROM STORM DRAINS AND STREAMS UNLESS NO REASONABLE ALTERNATIVES AVAILABLE.
  - EARTHEN MATERIALS STOCKPILES MUST BE LOCATED 50' FROM STORM DRAINS AND STREAMS UNLESS NO REASONABLE ALTERNATIVES AVAILABLE.
  - CONCRETE MATERIALS MUST BE CONTROLLED TO AVOID CONTACT WITH SURFACE WATERS, WETLANDS, OR BUFFERS.

- 3. INSPECTIONS**
- SAME WEEKLY INSPECTION REQUIREMENTS.
  - SAME RAIN GAUGE & INSPECTIONS AFTER 0.5" RAIN EVENT.
  - INSPECTIONS ARE ONLY REQUIRED DURING 'NORMAL BUSINESS HOURS'.
  - INSPECTION REPORTS MUST BE AVAILABLE ON-SITE DURING BUSINESS HOURS UNLESS A SITE-SPECIFIC EXEMPTION IS APPROVED.
  - RECORDS MUST BE KEPT FOR 3 YEARS AND AVAILABLE UPON REQUEST.
  - ELECTRONICALLY AVAILABLE RECORDS MAY BE SUBSTITUTED UNDER CERTAIN CONDITIONS.

- 4. SEDIMENT BASINS**
- OUTLET STRUCTURES MUST WITHDRAW FROM BASIN SURFACE UNLESS DRAINAGE AREA IS LESS THAN 1 ACRE.
  - USE ONLY DMO-APPROVED FLOCCULENTS.
- NPDES - SPECIFIC PLAN SHEETS NOTES**
- THIS PAGE IS SUBMITTED TO COMPLY WITH NPDES GENERAL STORMWATER PERMIT NCGD10000.
  - THIS PAGE CAN BE APPROVED BY THE COUNTY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCGD10000 ONLY.
  - THIS PAGE OF THE APPROVED PLANS IS ENFORCEABLE EXCLUSIVELY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCGD10000.
  - THE COUNTY IS NOT AUTHORIZED TO ENFORCE THIS PAGE OF THE PLANS AND IT IS NOT A PART OF THE APPROVED PLANS FOR THE PURPOSES OF ENFORCEMENT ACTION UNDER THE COUNTY CODE.

3 NPDES INFORMATION

N/A



**SKIMMER SEDIMENT BASIN**

- NOTES:**
- BAFFLE MATERIAL SHALL BE MATERIALS SUCH AS 700 G/M COIR EROSION BLANKET OR COIR MESH.
  - THE BAFFLE MATERIAL NEEDS TO BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR SILT FENCE.
  - LOCATE THE EMERGENCY SPILLWAY ON NATURAL SOILS. AVOID PLACING IT THROUGH FILL MATERIAL WHEREVER POSSIBLE.
  - ALL RUNOFF MUST DISCHARGE TO THE INLET SIDE OF THE BASIN. DISCHARGE RUNOFF INTO THE BASIN IN A MANNER THAT MINIMIZES EROSION.

- NOTES:**
- ORIFICE SIZES ARE FOR THE FAIRCLOTH SKIMMER. IF ANOTHER TYPE OF SKIMMER IS USED THE DEVICE MUST BE ABLE TO DRAIN THE BASIN WITHIN 24 - 72 HOURS.

2 SKIMMER SEDIMENT BASIN

N/A

**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
Date: 4-23-19 Permit # 2019023  
Signed: S. S. S.

**Approved Construction Plan**  
Name: [Signature] Date: 4-23-19  
Planning: [Signature] Traffic: [Signature] Fire: [Signature]  
1 inch



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Phone: (910)343-1048, Fax: (910)251-8282  
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**CLINE DESIGN**  
RESIDENTIAL

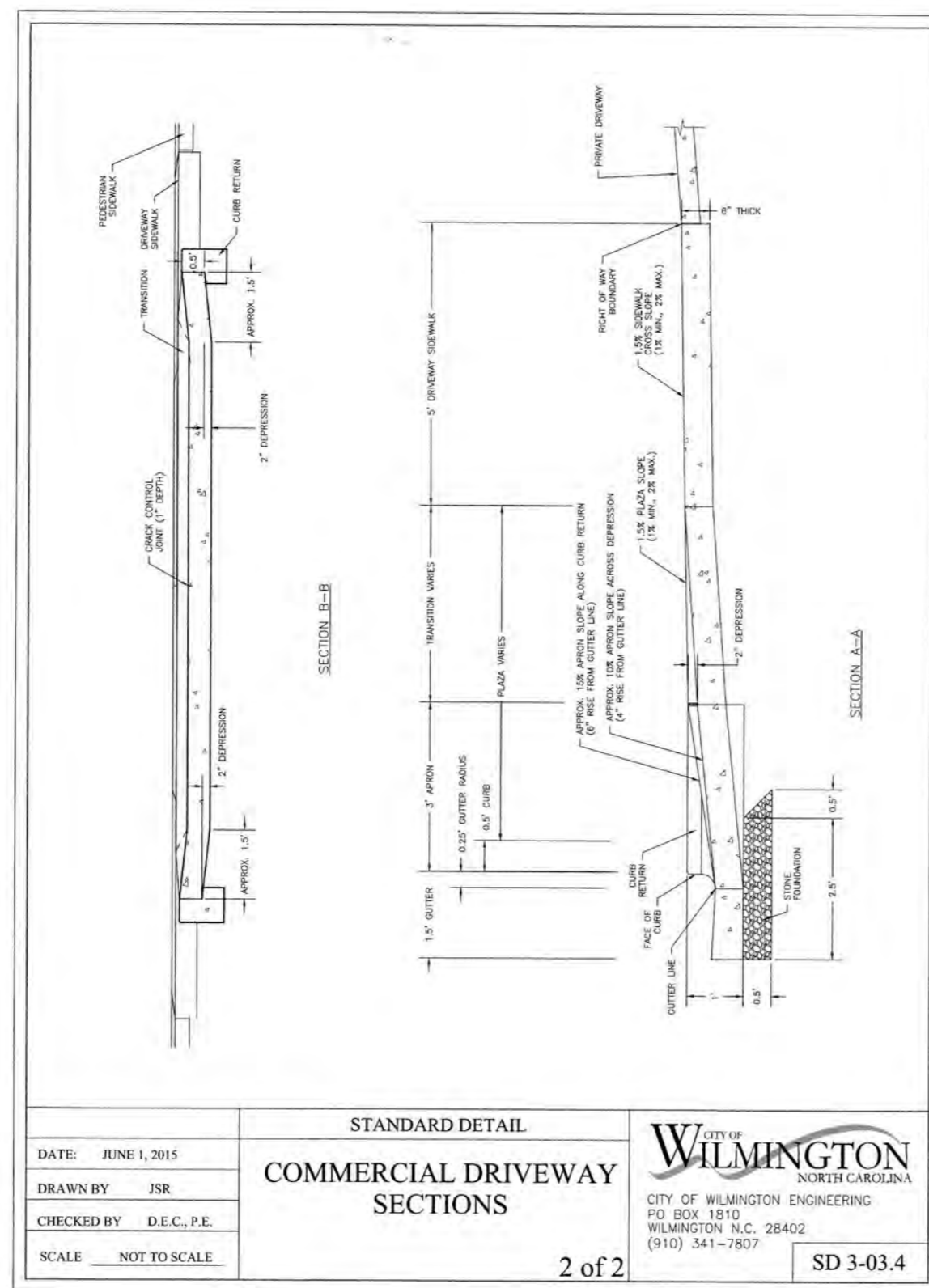
**THE FLATS ON FRONT**  
WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA  
**SEDIMENT AND EROSION CONTROL DETAILS**

DATE: 04/18/2019  
MCE PROJ. #: 7402-0001  
DRAWN: ALM/KCE  
DESIGNED: ALM  
CHECKED: RMC  
PROJ. MGR.: KCE

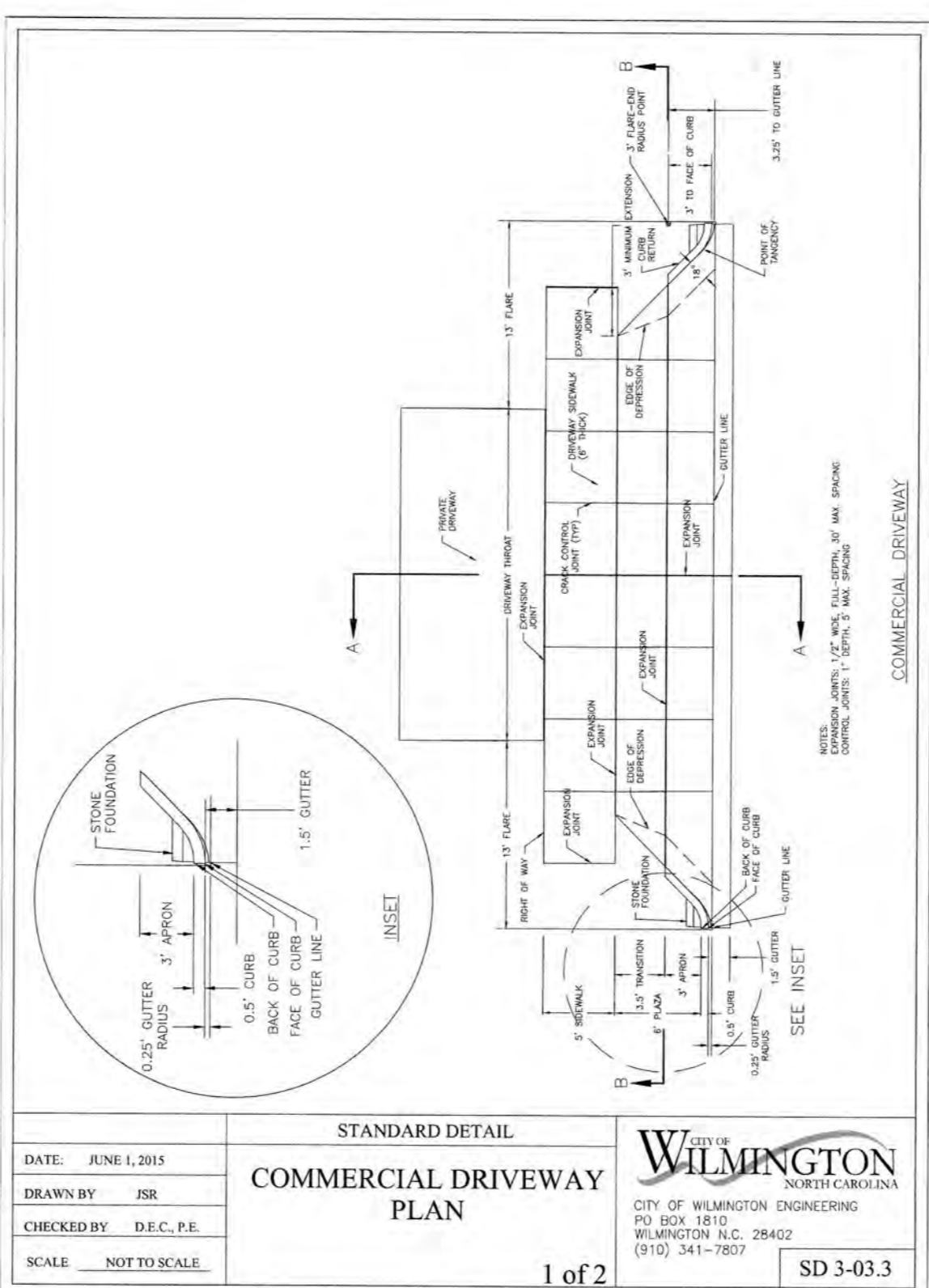
SCALE: HORIZONTAL: N/A  
VERTICAL: N/A

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DRAWING NUMBER: 29  
REVISION: 0

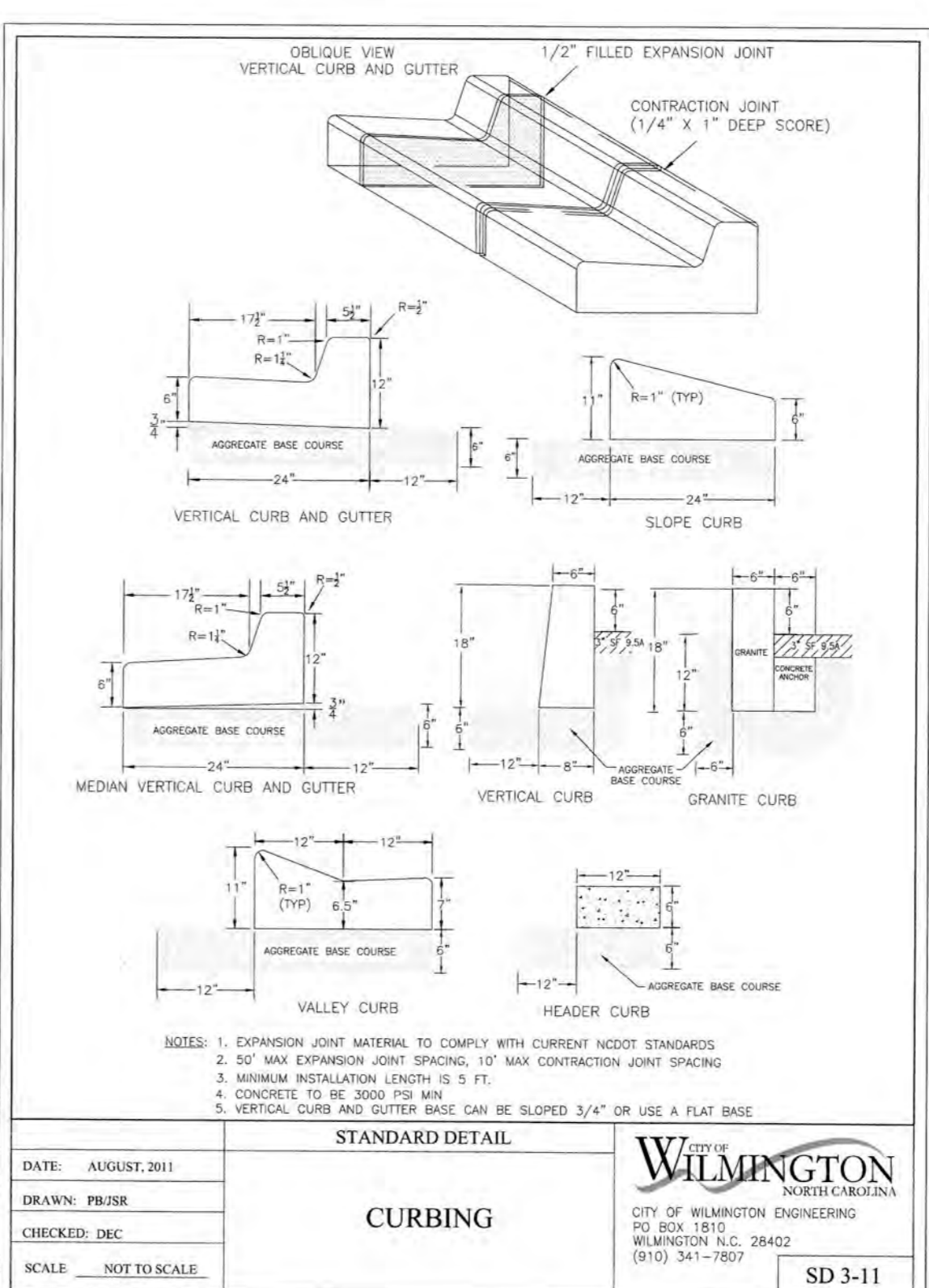
STATUS: IFC PLAN SET  
ISSUED FOR CONSTRUCTION



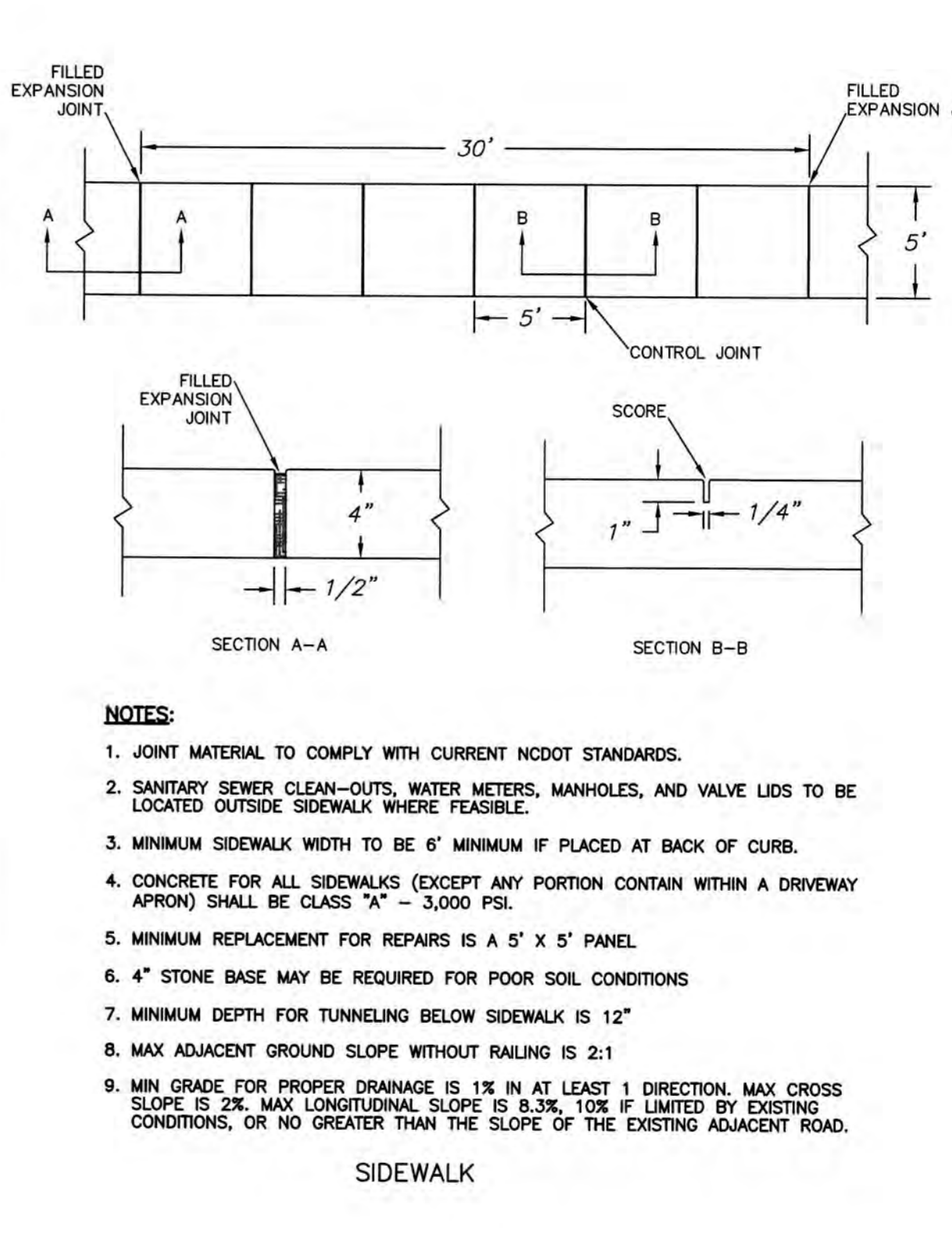
4 COMMERCIAL DRIVEWAY DETAIL N/A



3 COMMERCIAL DRIVEWAY DETAIL N/A



2 CURBING NOT TO SCALE



1 SIDEWALK DETAIL N/A

- GENERAL NOTES**
1. IN ACCORDANCE WITH N.C.G.S. 136-44.14, ALL STREET CURBS BEING CONSTRUCTED OR RECONSTRUCTED SHALL PROVIDE WHEELCHAIR RAMPS FOR THE PHYSICALLY HANDICAPPED ON EACH SIDE OF ANY STREET OR ROAD, WHERE CURBS AND SIDEWALKS ARE PROVIDED AND AT OTHER MAJOR POINTS OF PEDESTRIAN FLOW.
  2. WHEELCHAIR RAMPS SHALL BE LOCATED AS INDICATED IN DETAIL DRAWINGS; HOWEVER, EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. MAY AFFECT PLACEMENT.
  3. CURB RAMPS SHALL HAVE DETECTABLE WARNINGS EXTENDING THE FULL WIDTH OF THE RAMP AND A MINIMUM OF 2-FT. IN LENGTH.

- CONSTRUCTION NOTES**
1. CONSTRUCTION SHALL CONFORM WITH CONSTRUCTION STANDARDS OF THE GOVERNING BODY WHICH HAS JURISDICTION OF THE PARTICULAR STREET.
  2. WHEELCHAIR RAMPS SHALL BE CONSTRUCTED OF CLASS "A" CONCRETE WITH THE SURFACE HAVING A ROUGH NON-SKID TYPE FINISH.
  3. A 1/2-IN. EXPANSION JOINT SHALL BE REQUIRED WHERE THE CONCRETE WHEELCHAIR RAMP JOINS ANY RIGID PAVEMENT OR STRUCTURE.
  4. IN NO CASE SHALL THE WIDTH OF A CURB RAMP OR CURB CUT BE LESS THAN 40-IN. (3-FT. 4-IN.), NOT INCLUDING THE FLARED SIDES.
  5. TRANSITIONS FROM RAMPS TO WALKS, GUTTERS OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.
  6. THE MAXIMUM SLOPE ON THE CURB RAMP RUN IS 1:12.
  7. THE MAXIMUM CROSS SLOPE OF THE CURB RAMP IS 1:50.
  8. MAXIMUM SLOPES OF ADJOINING GUTTERS, ROAD SURFACE IMMEDIATELY ADJACENT TO THE CURB RAMP, OR ACCESSIBLE ROUTE SHALL NOT EXCEED 1:20.
  9. ANY RAISED ISLANDS IN CROSSINGS SHALL BE CUT THROUGH LEVEL WITH THE STREET OR HAVE CURB RAMPS AT BOTH SIDES AND A LEVEL AREA AT LEAST 48-IN. LONG BETWEEN THE CURB RAMPS.

- ADDITIONAL NOTES**
10. DETECTABLE WARNINGS SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9-IN., A HEIGHT OF NOMINAL 0.2-IN. AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35-IN. AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT.

- ADDITIONAL NOTES**
1. STOP BARS SHALL BE USED WHERE IT IS IMPORTANT TO INDICATE THE POINT BEHIND WHICH VEHICLES ARE REQUIRED TO STOP IN COMPLIANCE WITH A TRAFFIC SIGNAL, STOP SIGN OR OTHER LEGAL REQUIREMENT.
  2. PARKING SHALL BE A MINIMUM OF 20 FEET BACK OF THE PEDESTRIAN CROSSWALK.
  3. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION. THIS DOCUMENT IS AVAILABLE FROM THE SUPERINTENDENT OF DOCUMENTS, U.S. GOVERNMENT PRINTING OFFICE, WASHINGTON, D.C. 20402.
  4. INSTALL REFLECTORS PER CITY AND NCDOT STANDARDS. TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING LAYOUT PRIOR TO ACTUAL STRIPING.
  5. CURB RAMPS AT MARKED CROSSINGS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING ANY FLARED SIDES.
  6. THE BOTTOM OF DIAGONAL (CORNER TYPE) CURB RAMPS AT MARKED CROSSINGS SHALL HAVE 48-IN. MINIMUM CLEAR SPACE WITHIN THE MARKINGS.
  7. IF DIAGONAL CURB RAMPS HAVE FLARED SIDES, THEY SHALL HAVE AT LEAST A 24-IN. LONG SEGMENT OF STRAIGHT CURB LOCATED ON EACH SIDE OF THE CURB RAMP AND WITHIN THE MARKED CROSSING.

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

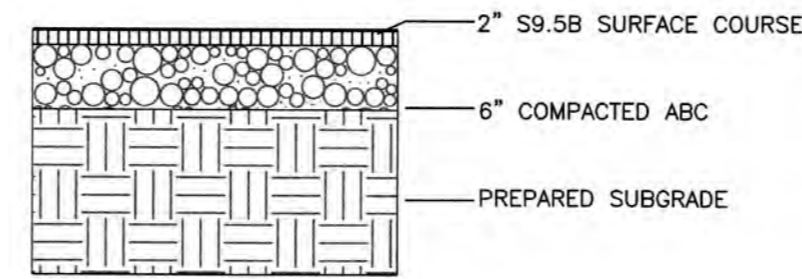
**Approved Construction Plan**

Name: Walter Date: 4-23-19

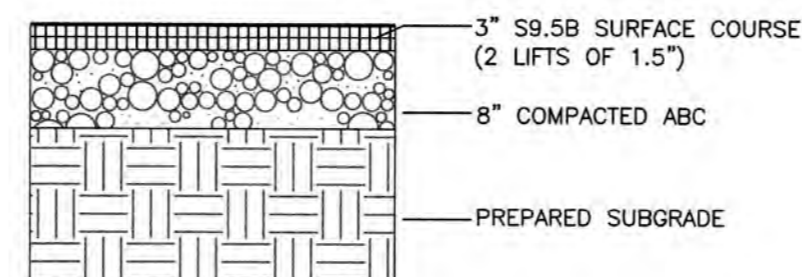
Permitting: Walter 4-23-19

Traffic: Walter 4-23-19

Fire: Walter 4-23-19



ASPHALT PAVEMENT SECTION (PARKING STALL SECTION)

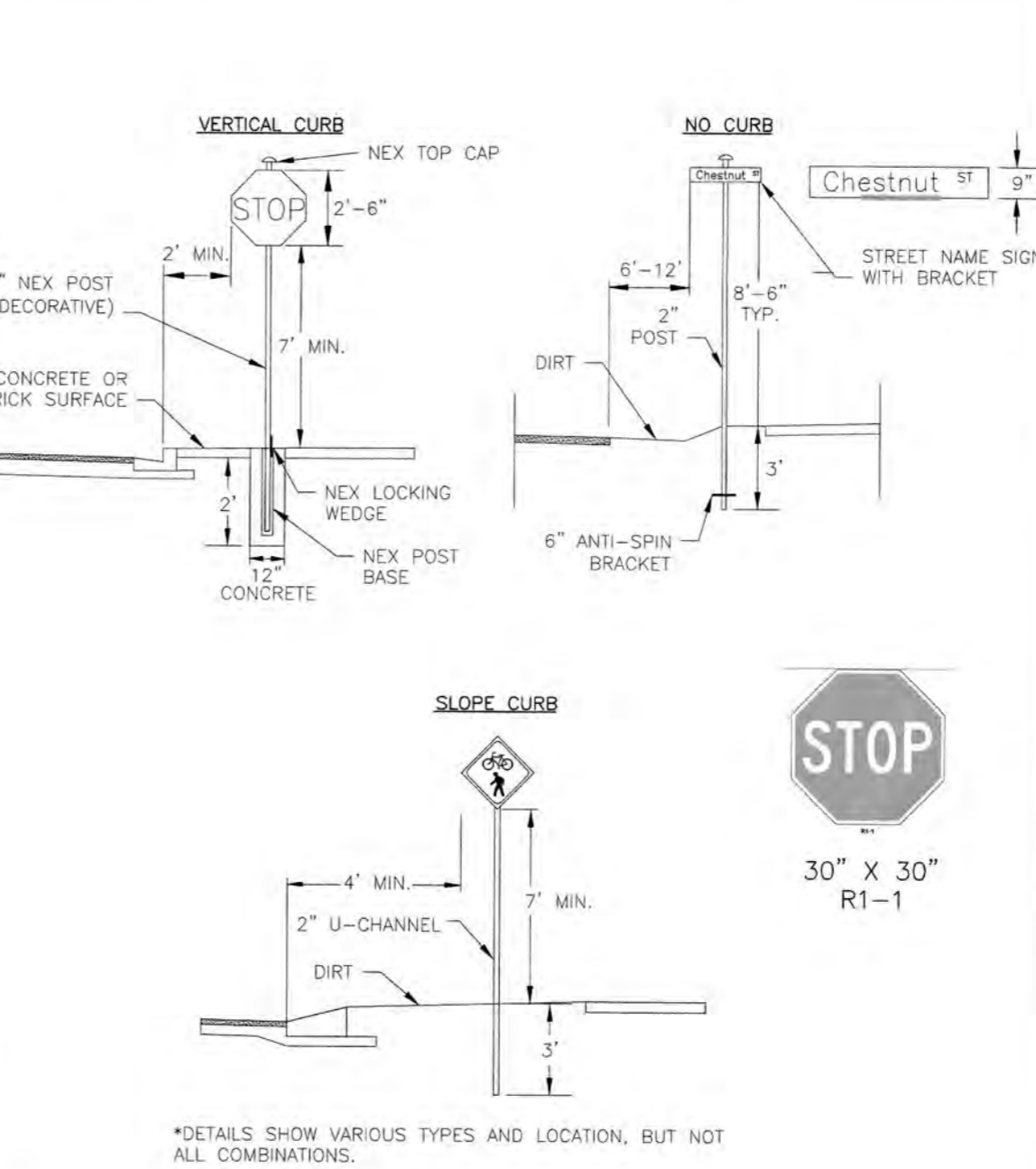


ASPHALT PAVEMENT SECTION (DRIVE AISLE SECTION)

**\*\* COMPACTED ABC NOTE-1:**  
COMPACTED ABC MUST MEET THE NCDOT STANDARD SPECIFICATION GRADATION. REFER TO NCDOT STD SPECS (JAN 2012 EDITION) SECTION 520, AND SECTIONS 1005, 1006, AND 1010 FOR ALL OF THE MATERIAL GRADATION AND SPECIFICATIONS.

**\*\* COMPACTED ABC NOTE-2:**  
GRANITE BASED ABC IS NOT REQUIRED FOR THIS PROJECT. THE FOLLOWING TYPE OF MATERIALS MAY BE USED FOR ABC:  
1. MARL - 6" IN DEPTH;  
2. CRUSHED CONCRETE - CAN REDUCE TO 4" IN DEPTH;  
3. ASPHALT MILLING CRUSHED TO 1/2" DIAMETER - 6" IN DEPTH.

7 PAVEMENT SECTIONS NOT TO SCALE



6 STREET SIGN LOCATIONS NOT TO SCALE

- SIGNS**
1. All signs shall meet the requirements of MUTCD and City Traffic Engineering in effect at the time of construction.
  2. All Traffic Control Signs including multi-use paths shall be fabricated with 0.080 inch aluminum blanks using high intensity reflective sheeting Type IV or better. STOP signs shall be a minimum of 30"x30".
  3. SPECIAL DESIGNATION signs by location and type shall adhere to City of Wilmington signage plan (i.e. downtown, historic, cross-city trail, parks, riverfront, scenic by-way, parking, etc.) and all associated policies.
  4. POST MOUNTED STREET NAME SIGNS shall be fabricated with 8" extruded aluminum street name sign blanks using a standard cut-out. Minimum sign length is 18" long and increasing in 6" increments to 54" maximum as dictated by the number of letters in the name. The color scheme shall be white letters on a green background without a border. Generally, in the downtown and historic areas or as designated in the City of Wilmington signage plan the background shall be blue and contain a topper.
  5. Decorative sign posts shall consist of the NEX sign support system, 2" octagonal tube, 14 gauge, powder coated glossy black and include cap, post, base and wedge.
  6. All other sign posts shall be u-channel posts made of galvanized steel with 8" posts 2lbs/ft or 12" posts 3lbs/ft. Galvanized NEX post may be substituted with approval from the City Signs and Markings Engineer.
  7. OVERHEAD STREET NAME SIGNS shall be fabricated with 0.080 inch aluminum flat sign blanks 18" in height using a standard cut-out. Sign length will be dictated by the number of letters in the name. For mast-arm type traffic signal supports and other overhead support systems refer to the design plans for maximum sign length.
  8. All sign lettering, colors and fonts shall adhere to the MUTCD in effect at the time of construction. Fluorescent Yellow-Green shall be used on signs, in place of Yellow, when listed as an optional color in the MUTCD. Generally, the font will be FHWA series fonts (Highway Gothic). Other font types require prior City Signs and Markings Engineer approval.
- LOCATION**
9. Sign locations depend on the edge of road condition. Generally, signs shall be a minimum 2' from face of a vertical curb, 4' from front of slope face curb, and 6' from edge of pavement without curb. Signs shall not be located more than 12' from any of these locations.
  10. Sign posts installed in dirt shall be buried a minimum of 36". Octagonal posts shall utilize an anti-spin device, 6" in length minimum. Sign posts installed in concrete or brick shall utilize a base cast in concrete 24" x 12" diameter.
  11. Street name signs shall be installed 8'-6" from the ground to the bottom of the sign. Street name signs co-located with STOP signs shall be installed above the STOP sign. A 6" space shall be maintained between the STOP sign and a Street name sign that is parallel to the STOP sign face. All other signs should be mounted per MUTCD guidelines for Urban Areas.

**STANDARD DETAIL**

STREET SIGNS AND LOCATION

DATE: NOVEMBER, 2011

DRAWN BY: JSR

CHECKED BY: BDR, P.E.

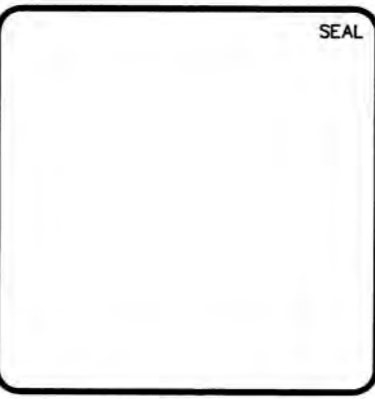
SCALE: NOT TO SCALE

SHEET 2 of 2

SD 15-03

5 STREET SIGN LOCATIONS NOT TO SCALE

REVNO.	DESCRIPTIONS	DATE
0	CITY OF WILMINGTON - RELEASE FOR CONSTRUCTION PLANS	04/18/2019



**MCKIM & CREED**

243 North Front Street  
Wilmington, North Carolina 28401  
Phone: (910)343-1048, Fax: (910)251-8282  
License: F-1222  
www.mckimcreed.com

**dpj** RESIDENTIAL

**CLINE DESIGN**

**THE FLATS ON FRONT**

WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

**SITE DETAILS**

DATE: 04/18/2019

MCE PROJ. #: 7402-0001

DRAWN: ALM/KCE

DESIGNED: ALM

CHECKED: RMC

PROJ. MGR.: KCE

SCALE: HORIZONTAL: N/A, VERTICAL: N/A

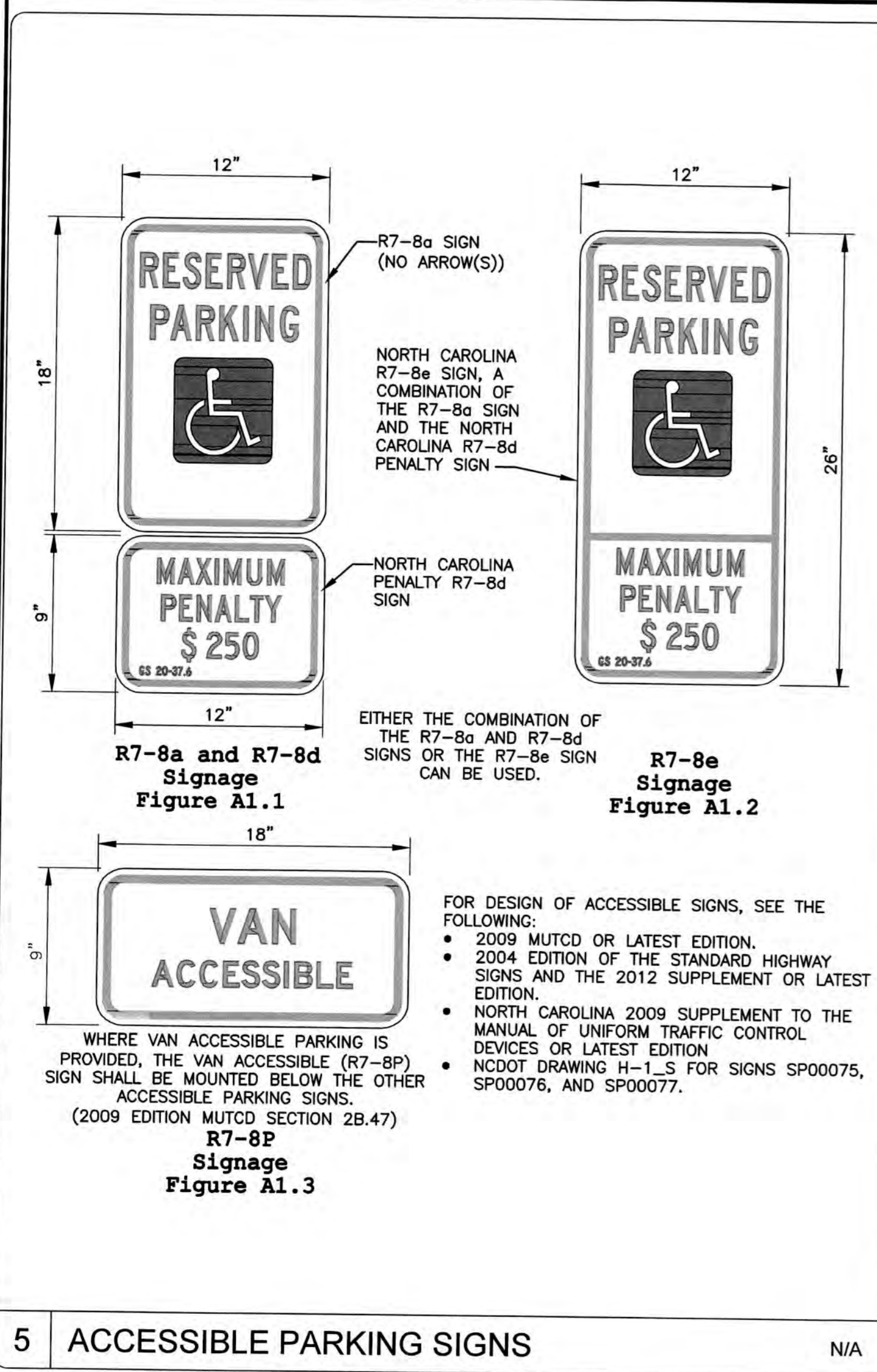
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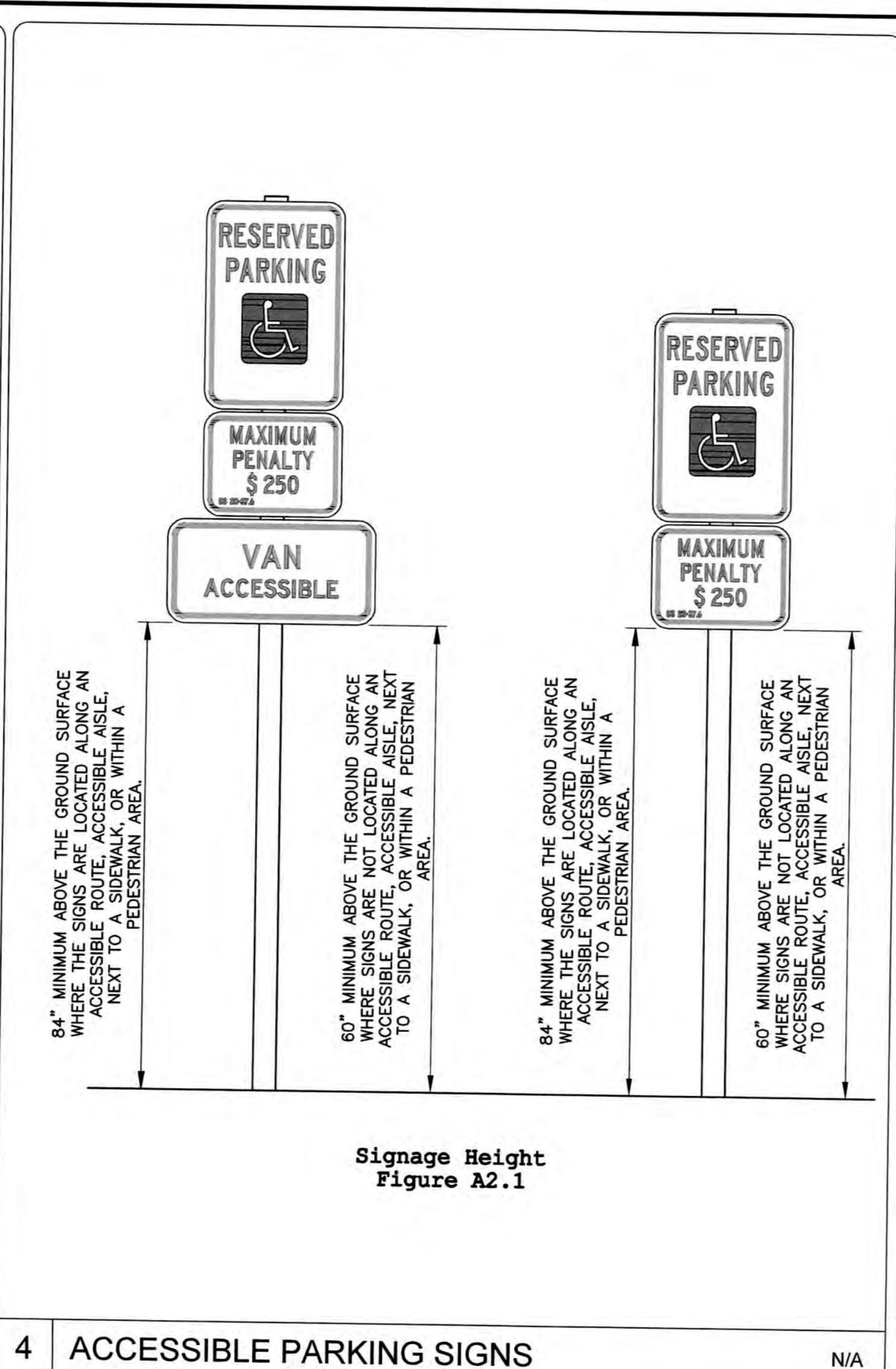
STATUS: IFC PLAN SET

ISSUED FOR CONSTRUCTION

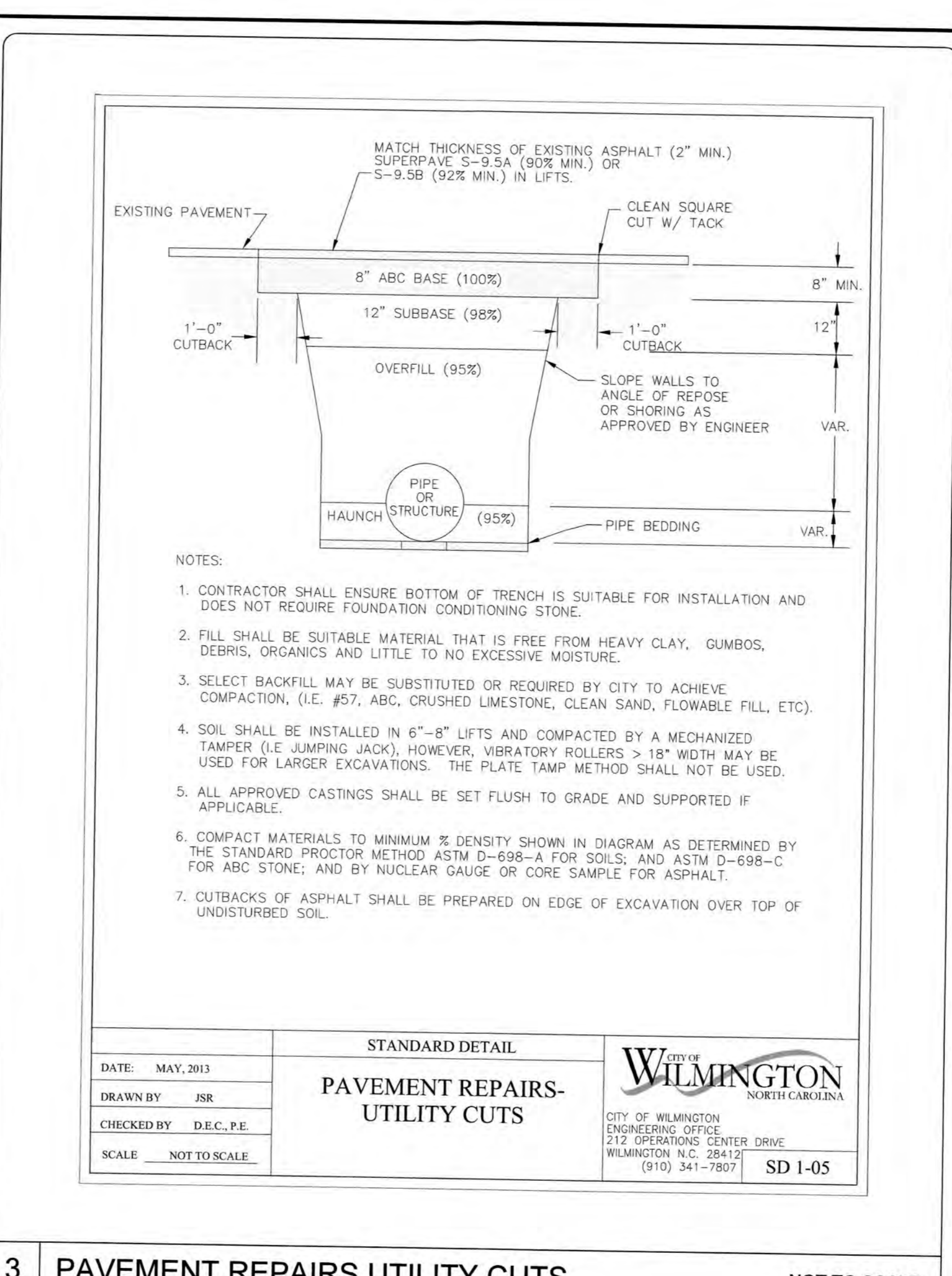
REVISION: 0



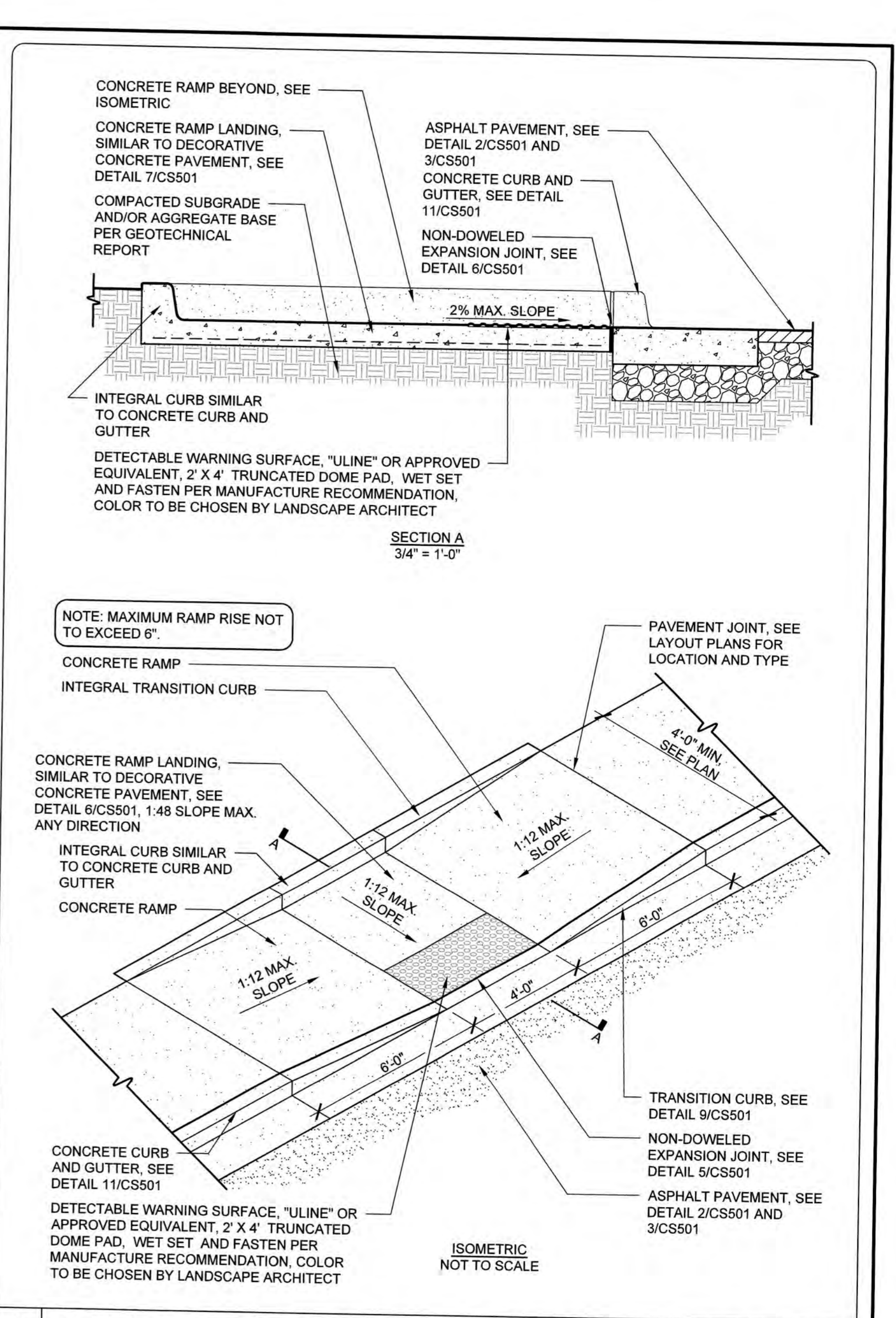
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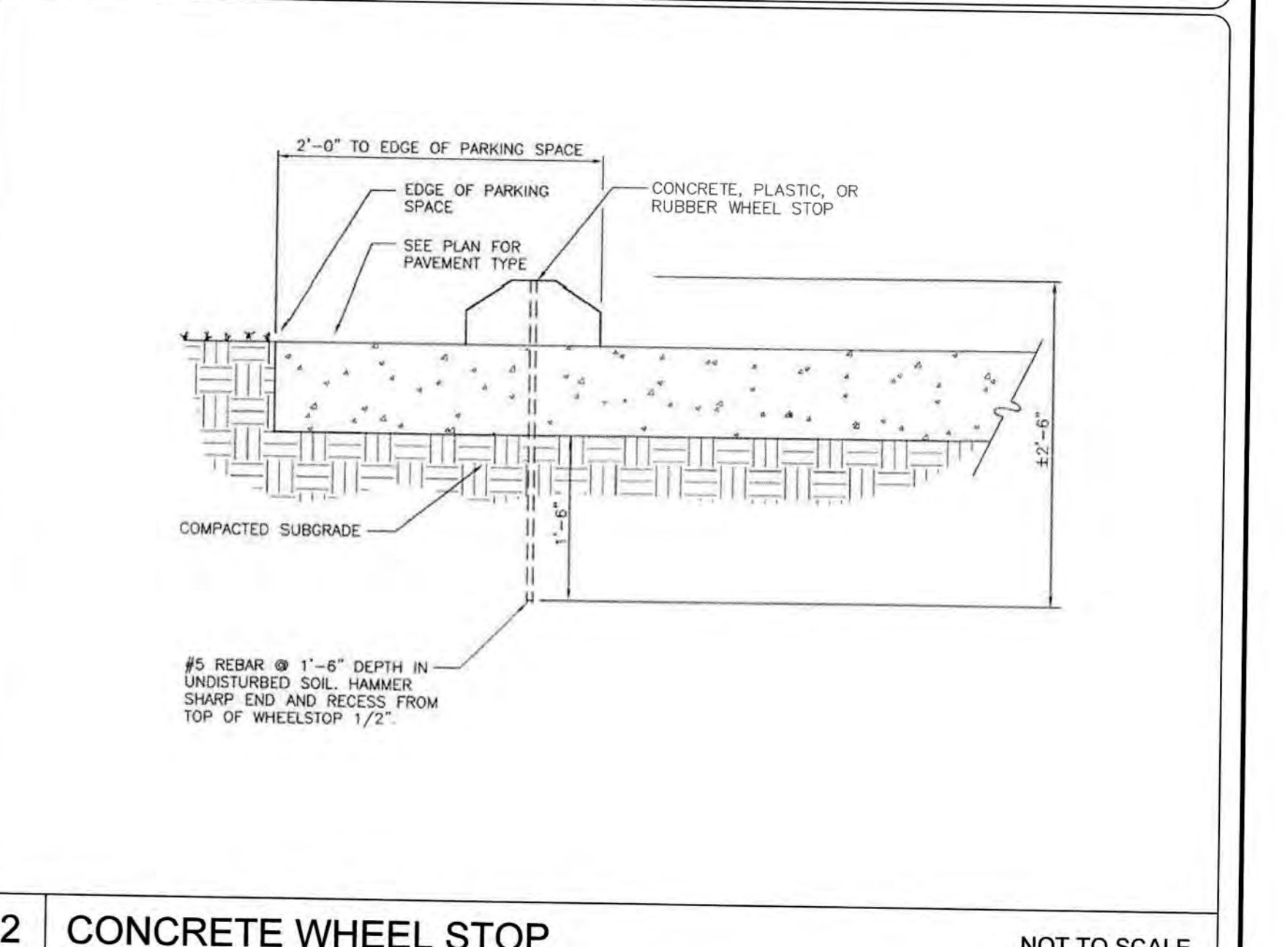
4 ACCESSIBLE PARKING SIGNS N/A



3 PAVEMENT REPAIRS UTILITY CUTS NOT TO SCALE

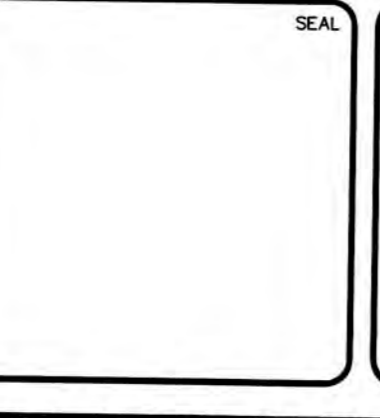


1 CURBED HANDICAP ACCESSIBLE RAMP NOT TO SCALE



2 CONCRETE WHEEL STOP NOT TO SCALE

REV. NO.	DESCRIPTION	DATE



**THE FLATS ON FRONT**  
WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

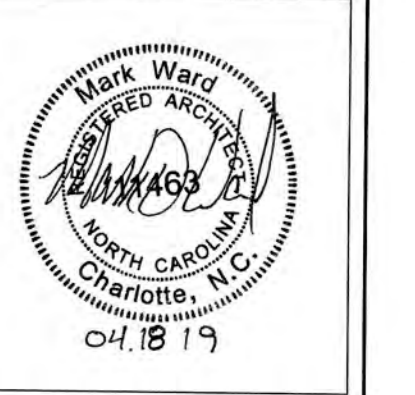
**SITE DETAILS**

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DRAWN: ALM/KCE	VERTICAL: N/A	
DESIGNED: ALM		
CHECKED: RMC		
PROJ. MGR.: KCE		

STATUS: IFC PLAN SET ISSUED FOR CONSTRUCTION REVISION: 0



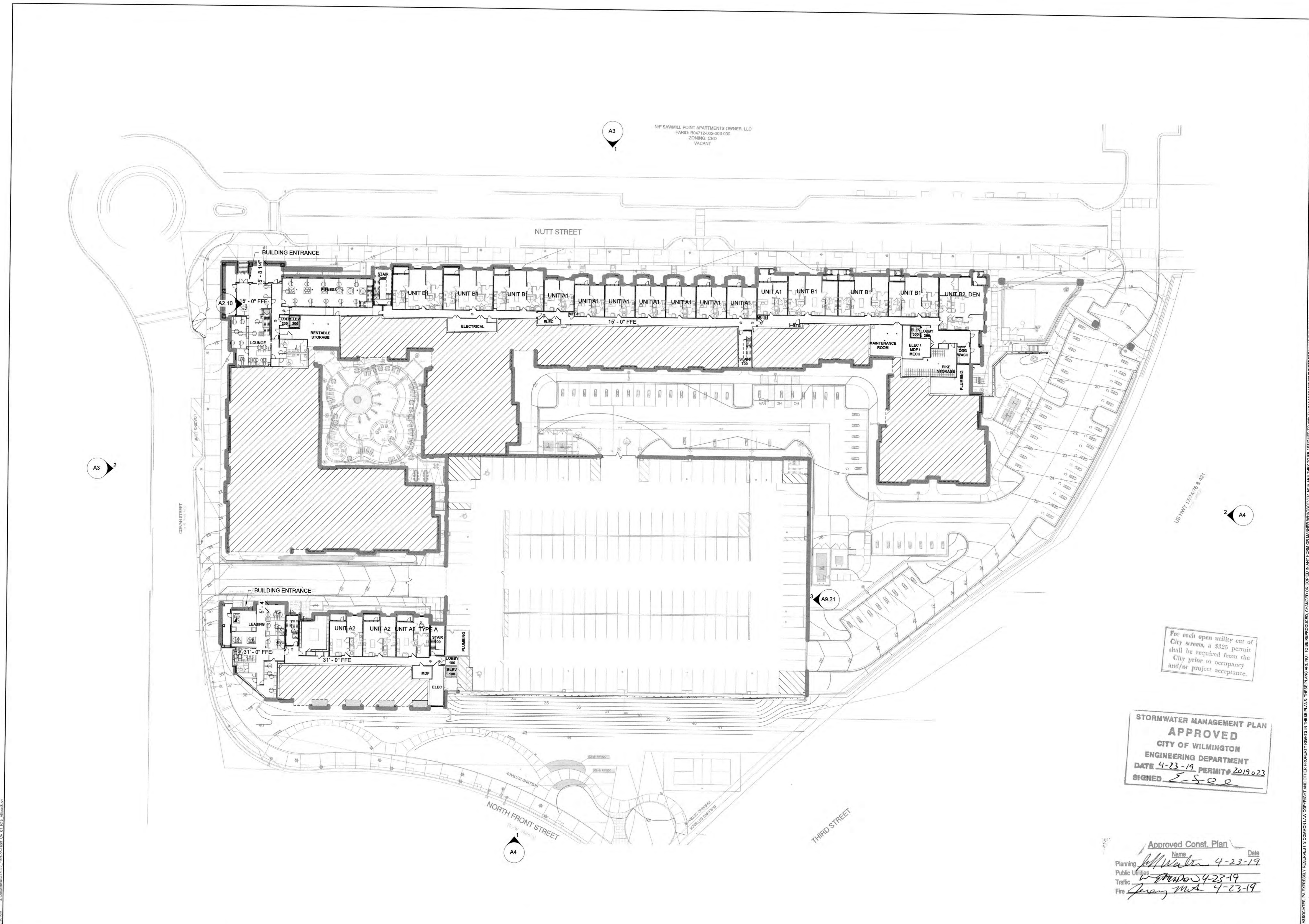
DPJ RESIDENTIAL  
**FLATS ON FRONT**  
1055 N FRONT ST  
WILMINGTON, NORTH CAROLINA



PROJECT:	218022
DATE:	04.18.19
REVISIONS:	DATE

DRAWN BY:	Author
CHECKED BY:	Checker

**OVERALL BASEMENT PLAN (TRC)**



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

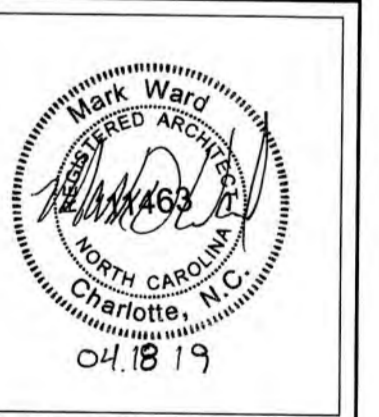
**STORMWATER MANAGEMENT PLAN APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 4-23-19 PERMIT# 2019.023  
SIGNED *E.S.O.*

Approved Const. Plan  
Name *Mark Ward* Date *4-23-19*  
Planning Public Utilities Traffic Fire  
*W. Ward* *4-23-19*  
*Jeremy M...* *4-23-19*

4/18/2019 11:36:28 AM C:\Documents\318022\_Flats on Front\_CAD\1\_1919\_A1.dwg

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DPJ RESIDENTIAL  
**FLATS ON FRONT**  
1055 N FRONT ST  
WILMINGTON, NORTH CAROLINA



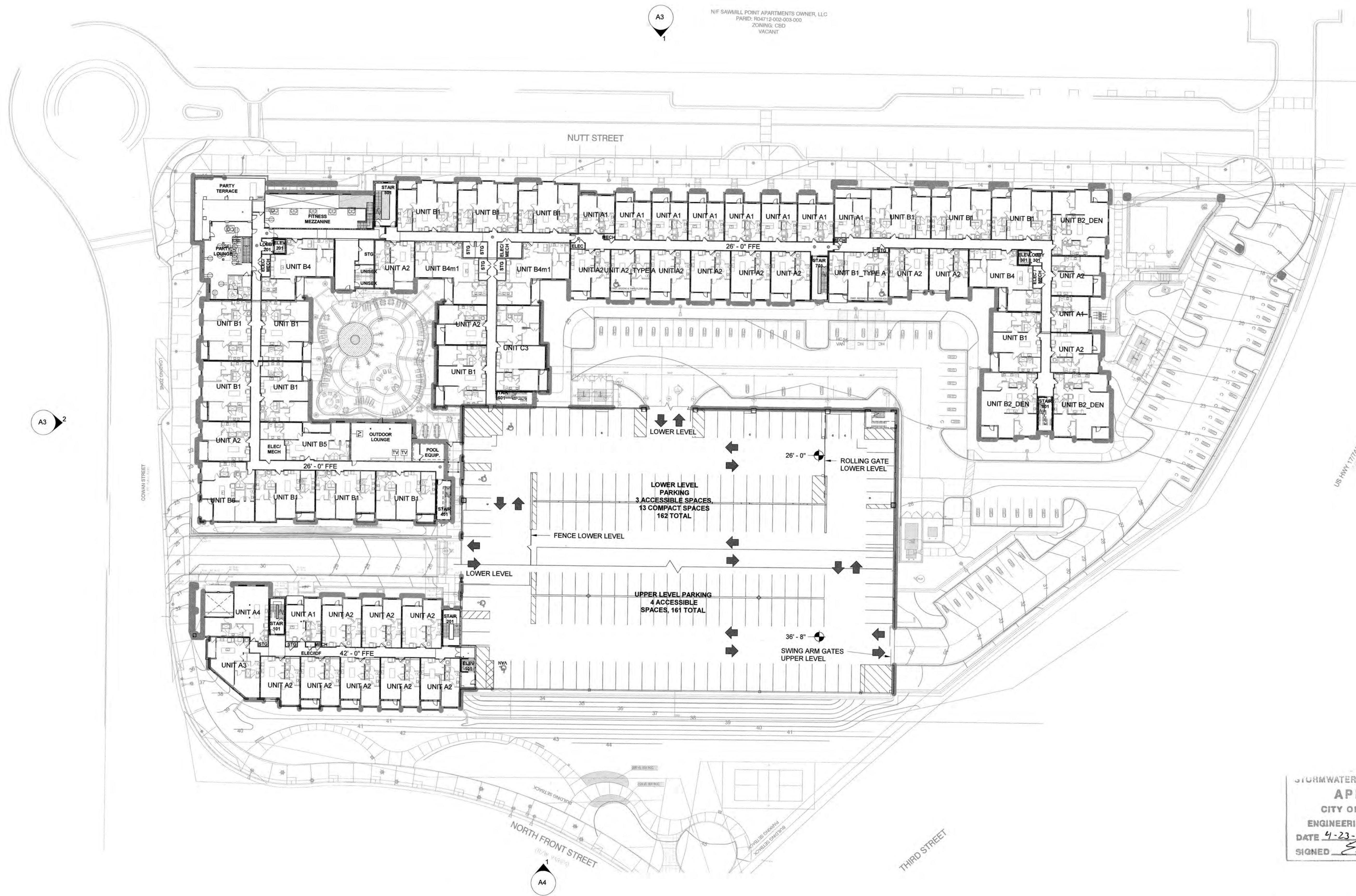
PROJECT:	218022
DATE:	04.18.19
REVISIONS:	DATE

DRAWN BY:	Author
CHECKED BY:	Checker
<b>OVERALL FIRST FLOOR PLAN (TRC)</b>	

STORMWATER MANAGEMENT PLAN  
**APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 4-23-19 PERMIT# 2019023  
SIGNED E. S. S. S.

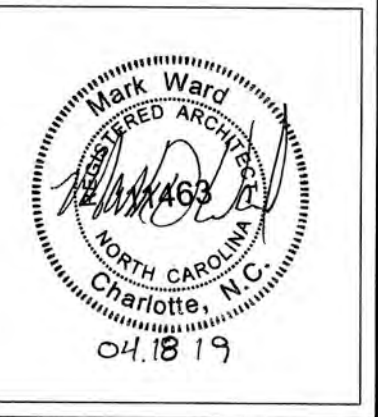
Approved Const. Plan  
Name Mark Wray Date 4-23-19  
Planning Mark Wray  
Public Utilities Mark Wray  
Traffic Mark Wray  
Fire Mark Wray

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



4/18/2019 11:18:20 AM C:\Documents\218022 - Flats on Front - CA\_01.dwg - AutoCAD

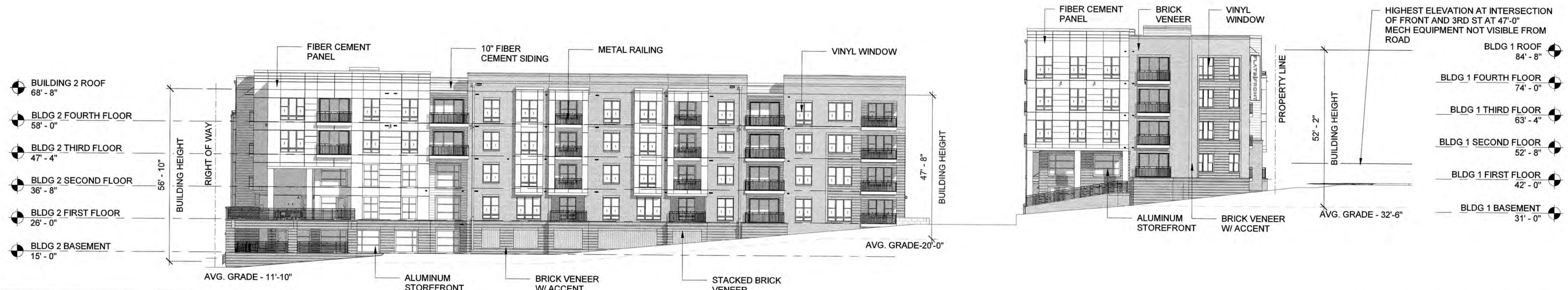
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PROJECT:	218022
DATE:	04.18.19
REVISIONS:	DATE

DRAWN BY:	Author
CHECKED BY:	Checker

OVERALL EXTERIOR ELEVATIONS (TRC)



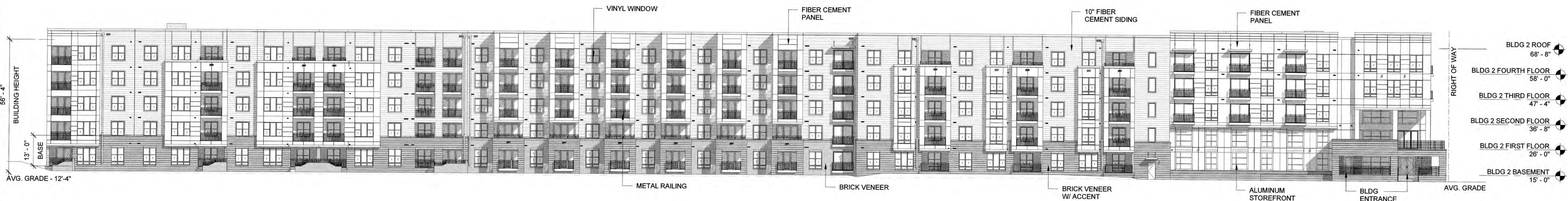
**BLDG 1 OPEN AREA CALCULATIONS:**  
TOTAL AREA OF WALL = 1,046.75 S.F.  
TOTAL AREA OF OPENINGS = 555.14 S.F.  
MINIMUM ALLOWABLE AREA = >50%  
ACTUAL OPENING PERCENTAGE = 555.14 S.F. / 1,046.75 S.F. = 53.03%

**BLDG 2 OPEN AREA CALCULATIONS:**  
TOTAL AREA OF WALL = 2,431.71 S.F.  
TOTAL AREA OF OPENINGS = 1,259.98 S.F.  
MINIMUM ALLOWABLE AREA = >50%  
ACTUAL OPENING PERCENTAGE = 1,259.98 S.F. / 2,431.71 S.F. = 51.81%

NOTE: ALL GROUND FLOOR GLAZING TO BE CLEAR.

BUILDING 1 + 2 - OVERALL COWAN ST. ELEVATION 2

3/64" = 1'-0"



**OPEN AREA CALCULATIONS:**  
TOTAL AREA OF WALL = 5,989.75 S.F.  
TOTAL AREA OF OPENINGS = 3,000.40 S.F.  
MINIMUM ALLOWABLE AREA = >50%  
ACTUAL OPENING PERCENTAGE = 3,000.40 S.F. / 5,989.75 S.F. = 50.09%

For each open utility cut of City streets, a \$925 permit shall be required from the City prior to occupancy and/or project acceptance.

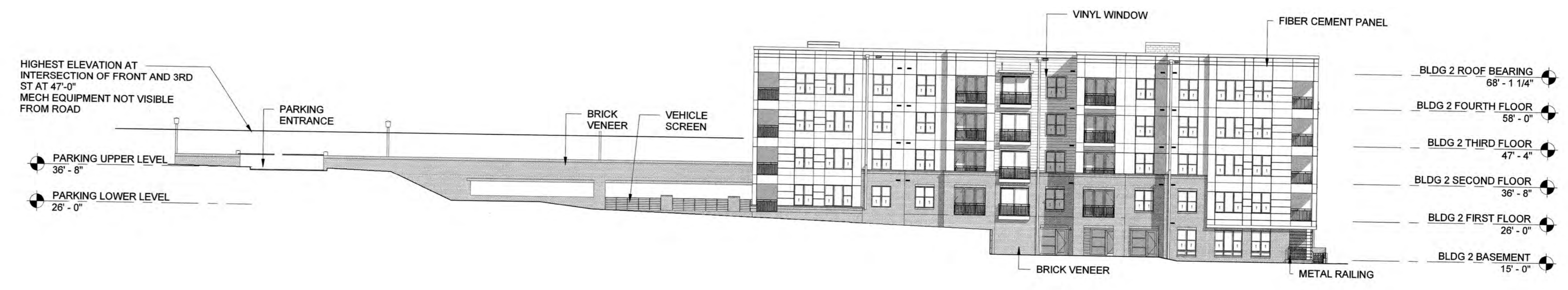
STORMWATER MANAGEMENT PLAN  
**APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 4-23-19 PERMIT 2019023  
SIGNED S-SOO

Approved Const. Plan  
Name: Mark Ward Date: 4-23-19  
Planning: W. Edwards 4-23-19  
Public Utilities: Jim W... 4-23-19  
Fire: Jim W... 4-23-19

NOTE: ALL GROUND FLOOR GLAZING TO BE CLEAR.

BUILDING 2 - OVERALL NUTT ST. ELEVATION 1

3/64" = 1'-0"

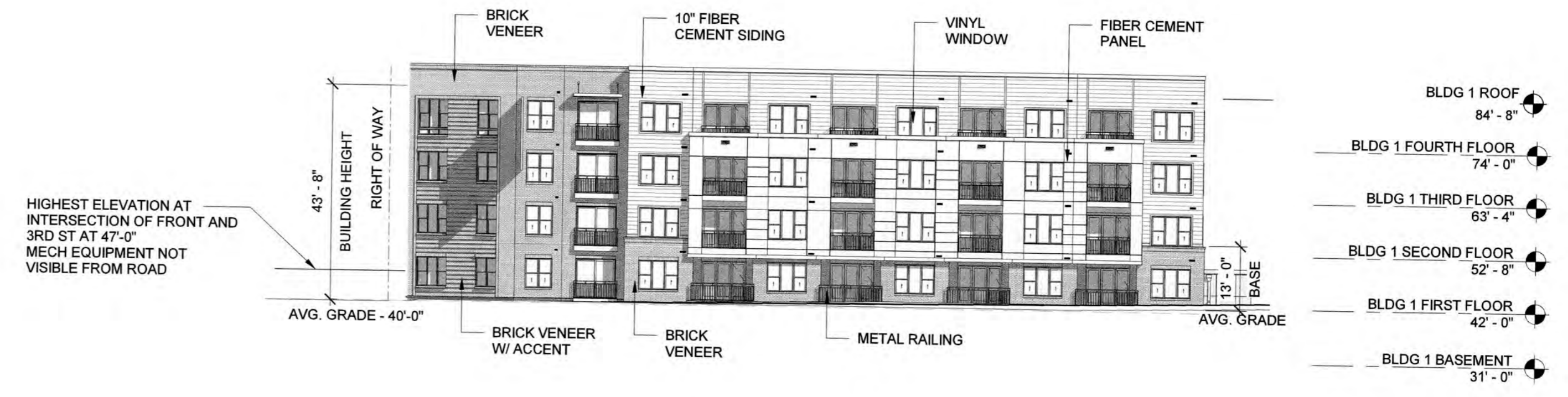


PARKING GARAGE 3RD ST. ELEVATION 2  
3/84" = 1'-0"

**STORMWATER MANAGEMENT PLAN**  
**APPROVED**  
CITY OF WILMINGTON  
ENGINEERING DEPARTMENT  
DATE 4-23-19 PERMIT 2019023  
SIGNED E-SOL

Approved Const. Plan  
Name Date  
Planning *[Signature]* 4-23-19  
Public Utilities  
Traffic *[Signature]* 4-23-19  
Fire *[Signature]* 4-23-19

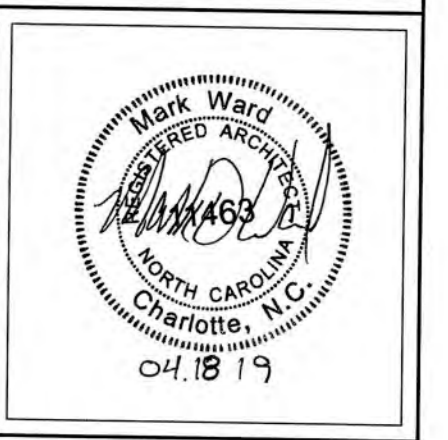
For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.



NOTE: ALL GROUND FLOOR GLAZING TO BE CLEAR.

**OPEN AREA CALCULATIONS:**  
TOTAL AREA OF WALL = 1,421.38 S.F.  
TOTAL AREA OF OPENINGS = 716.37 S.F.  
MINIMUM ALLOWABLE AREA = >=50%  
ACTUAL OPENING PERCENTAGE = 716.37 S.F. / 1,421.38 S.F. = 50.40%

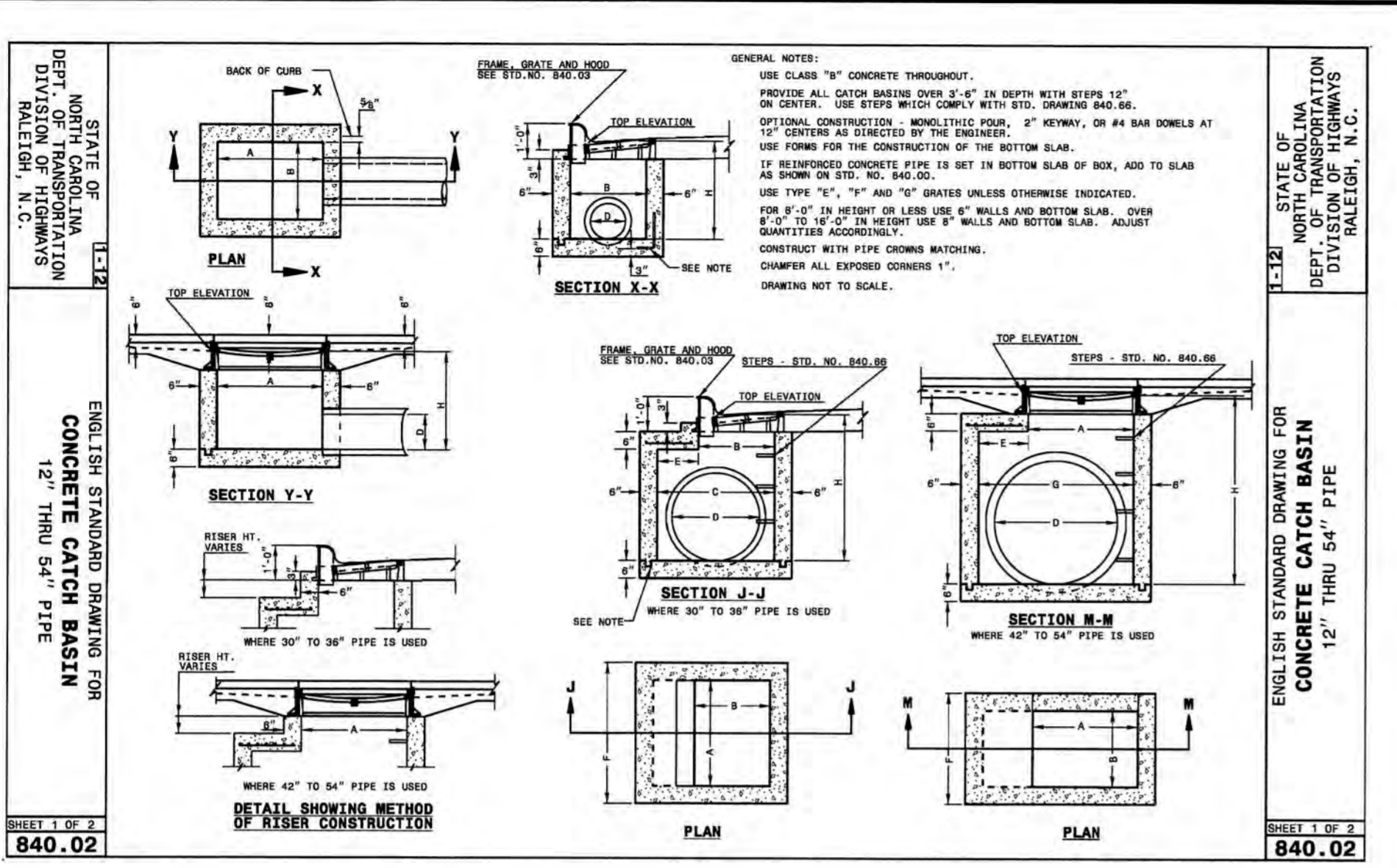
BUILDING 1 - OVERALL NORTH FRONT ST. ELEVATION 1  
3/84" = 1'-0"



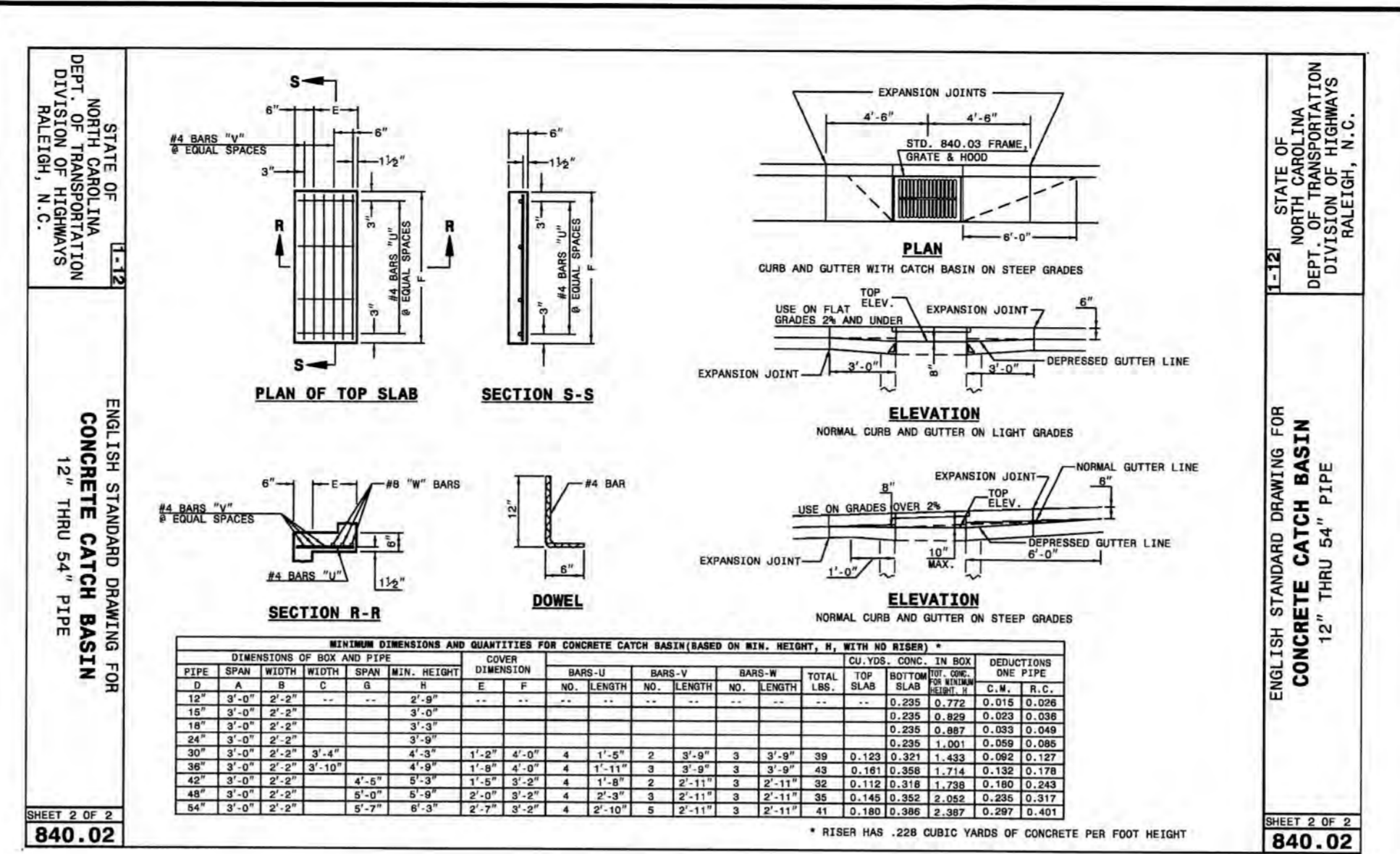
PROJECT: 218022  
DATE: 04.18.19  
REVISIONS: DATE

DRAWN BY: Author  
CHECKED BY: Checker

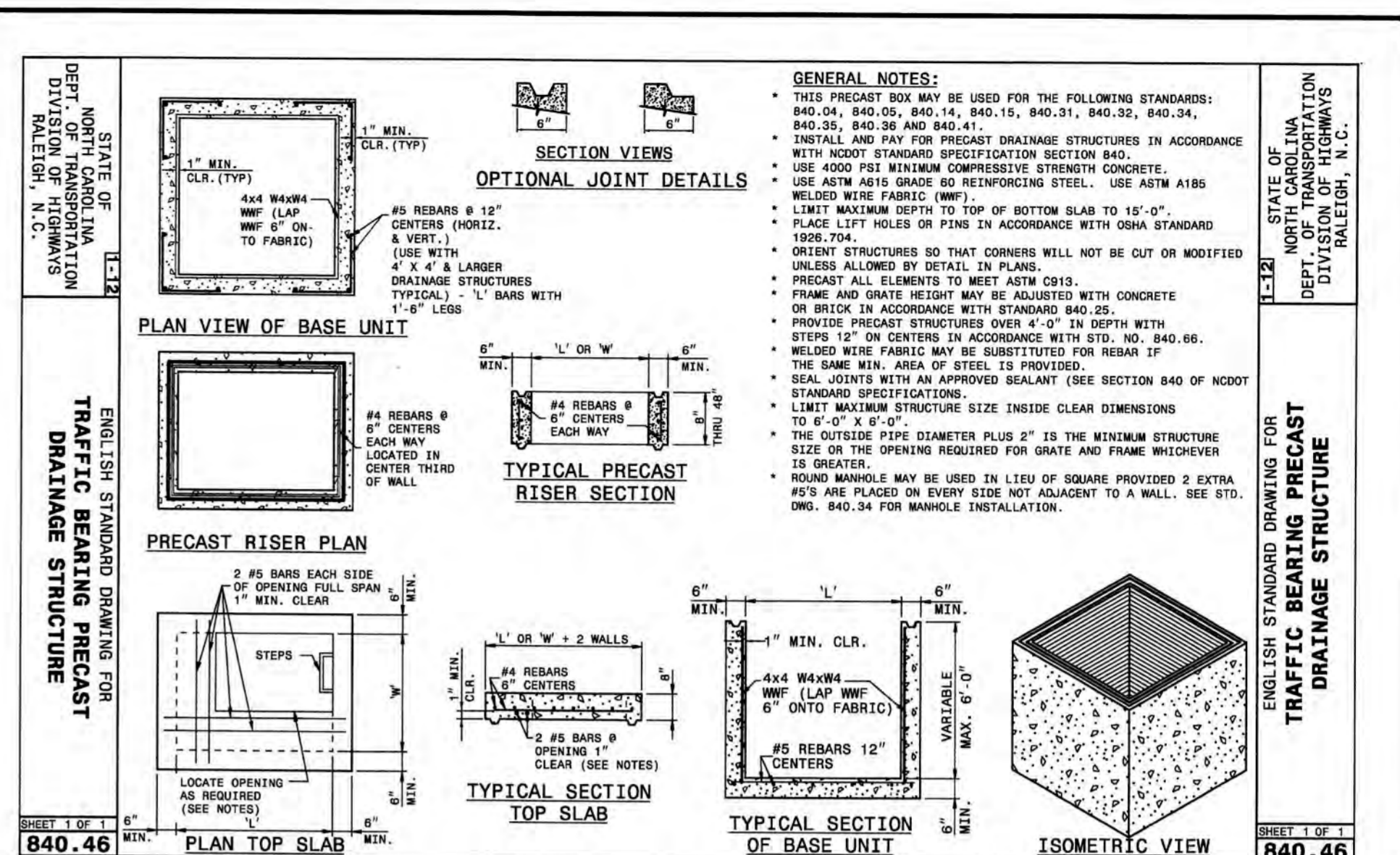
**OVERALL EXTERIOR ELEVATIONS (TRC)**



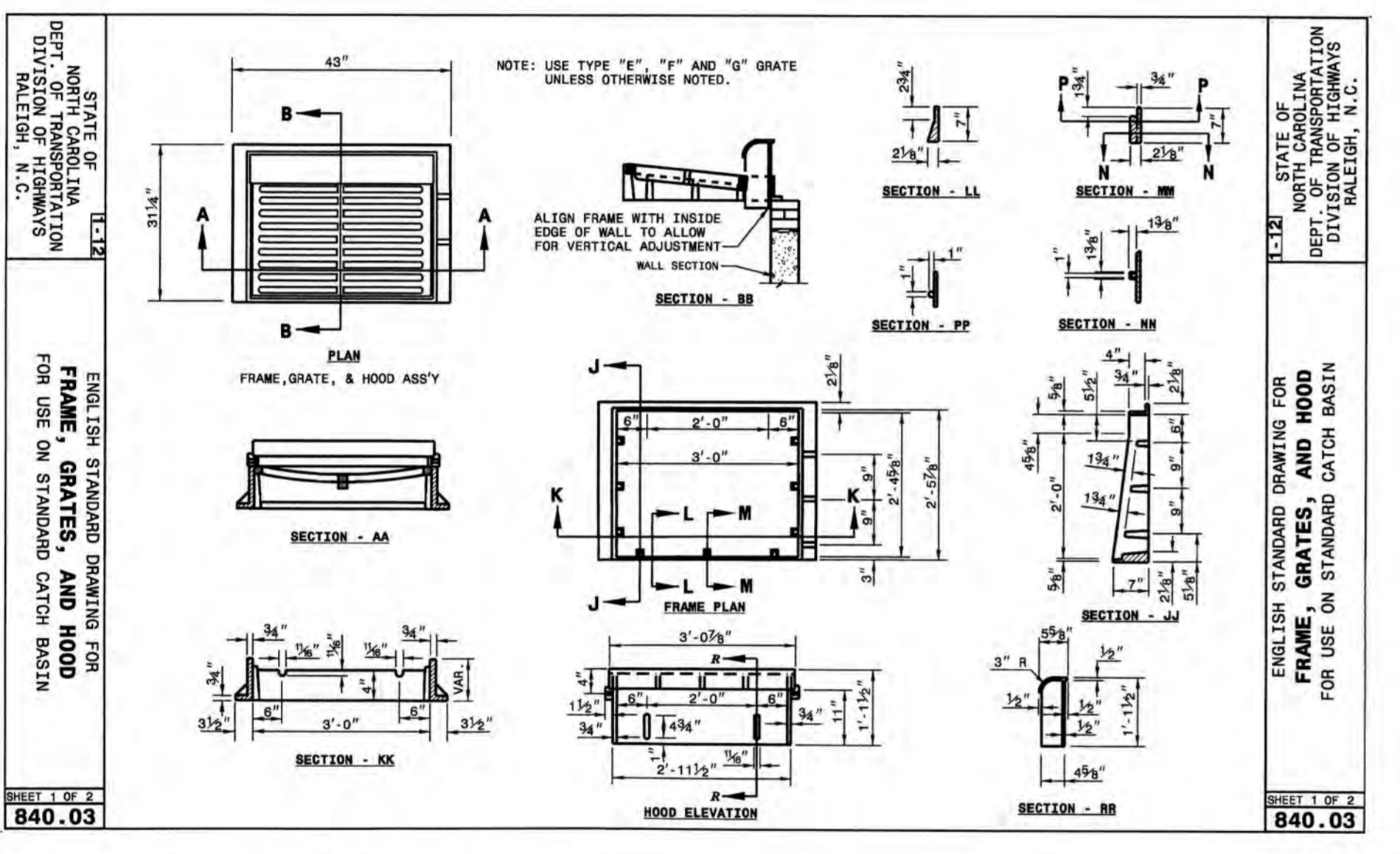
7 CONCRETE CATCH BASIN NOT TO SCALE



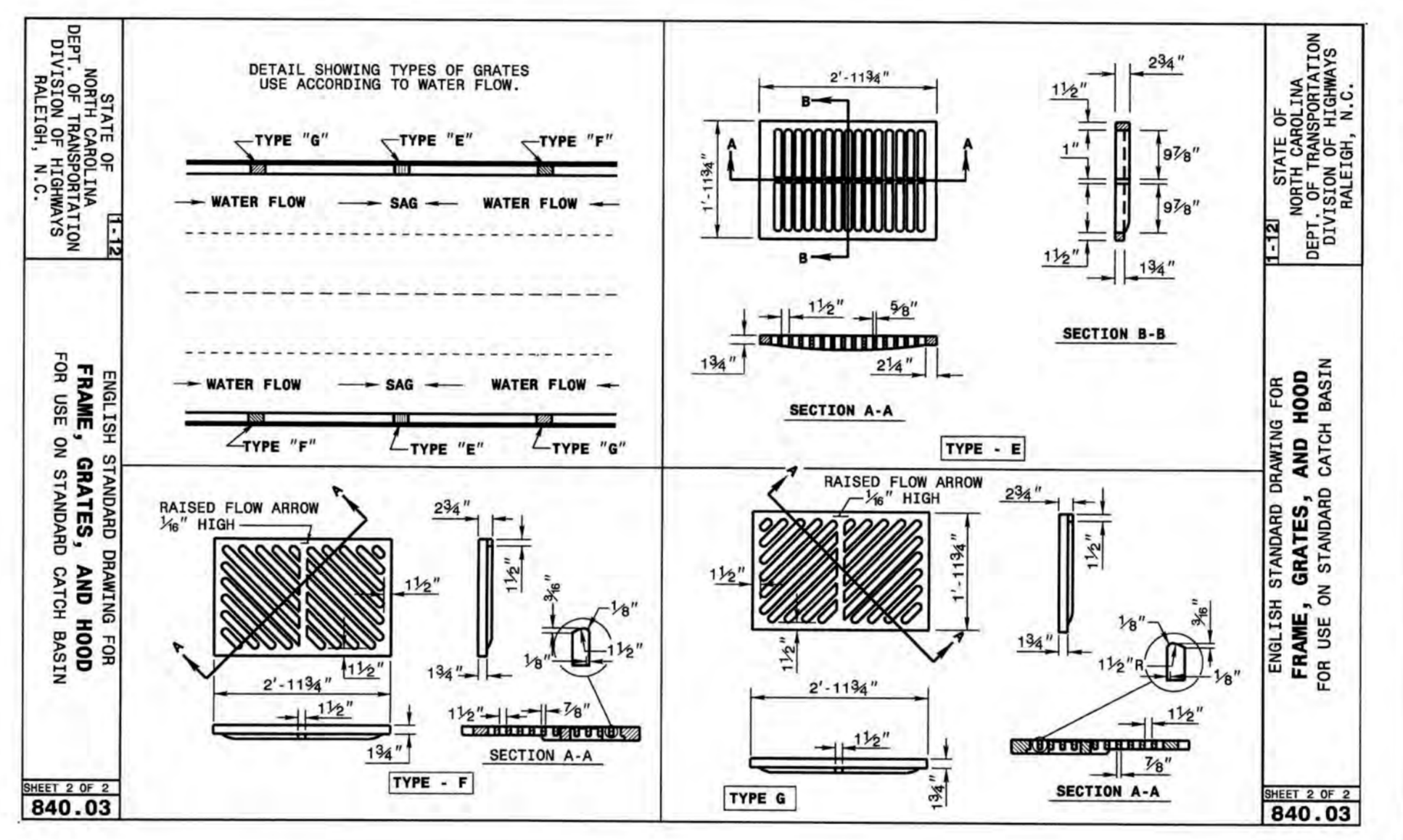
4 CONCRETE CATCH BASIN NOT TO SCALE



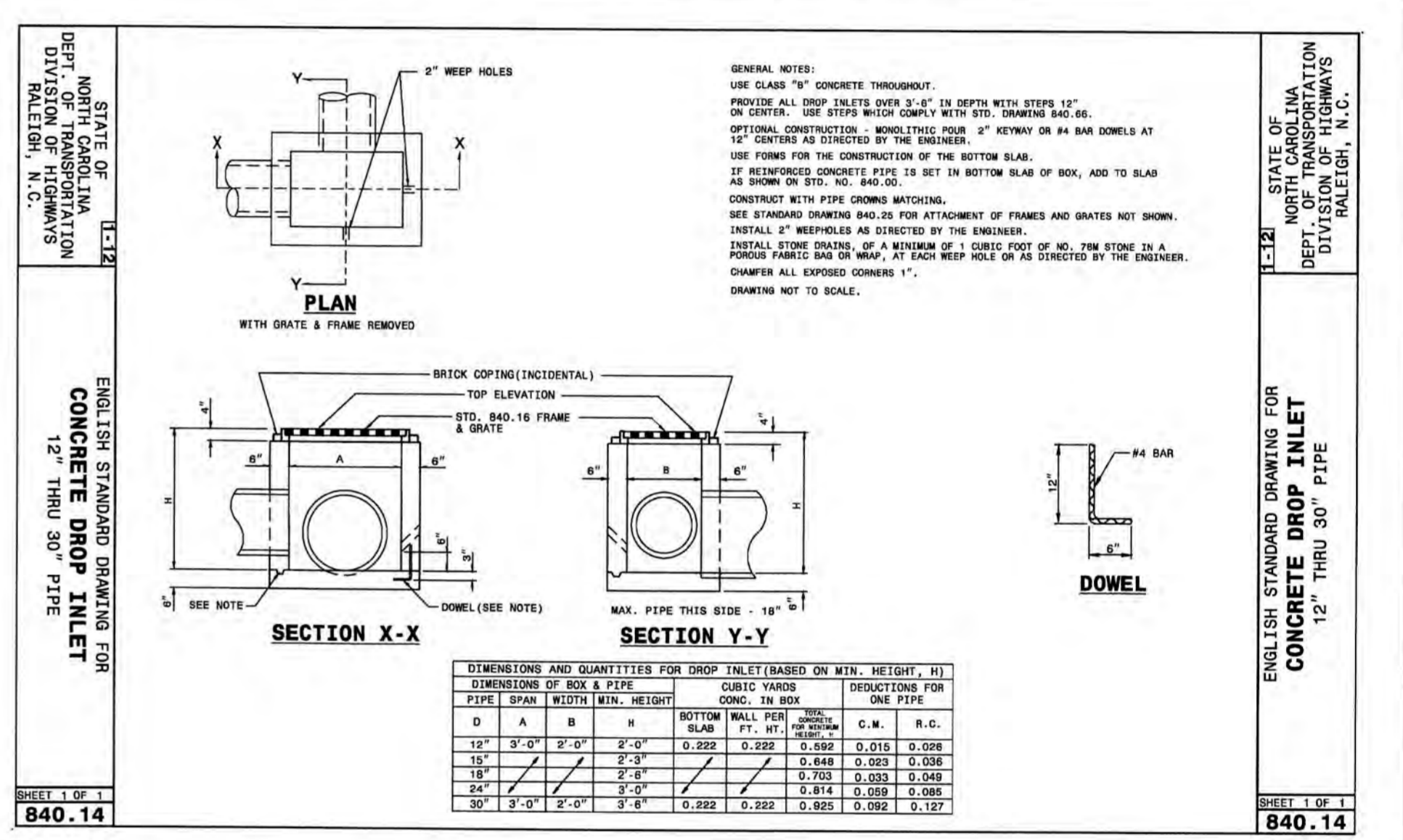
1 TRAFFIC BEARING PRECAST DRAINAGE STRUCTURE NOT TO SCALE



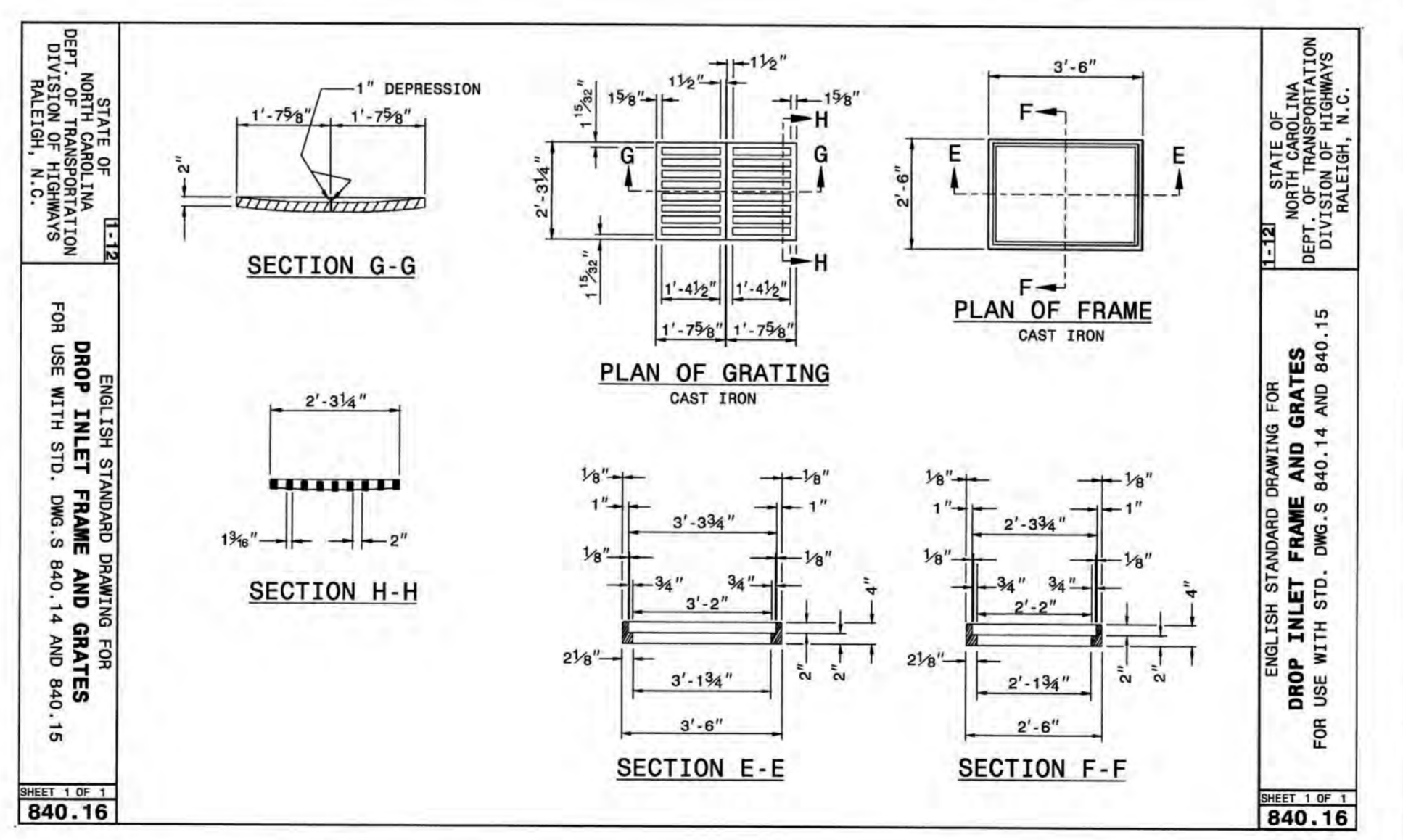
8 FRAMES, GRATES, AND HOOD NOT TO SCALE



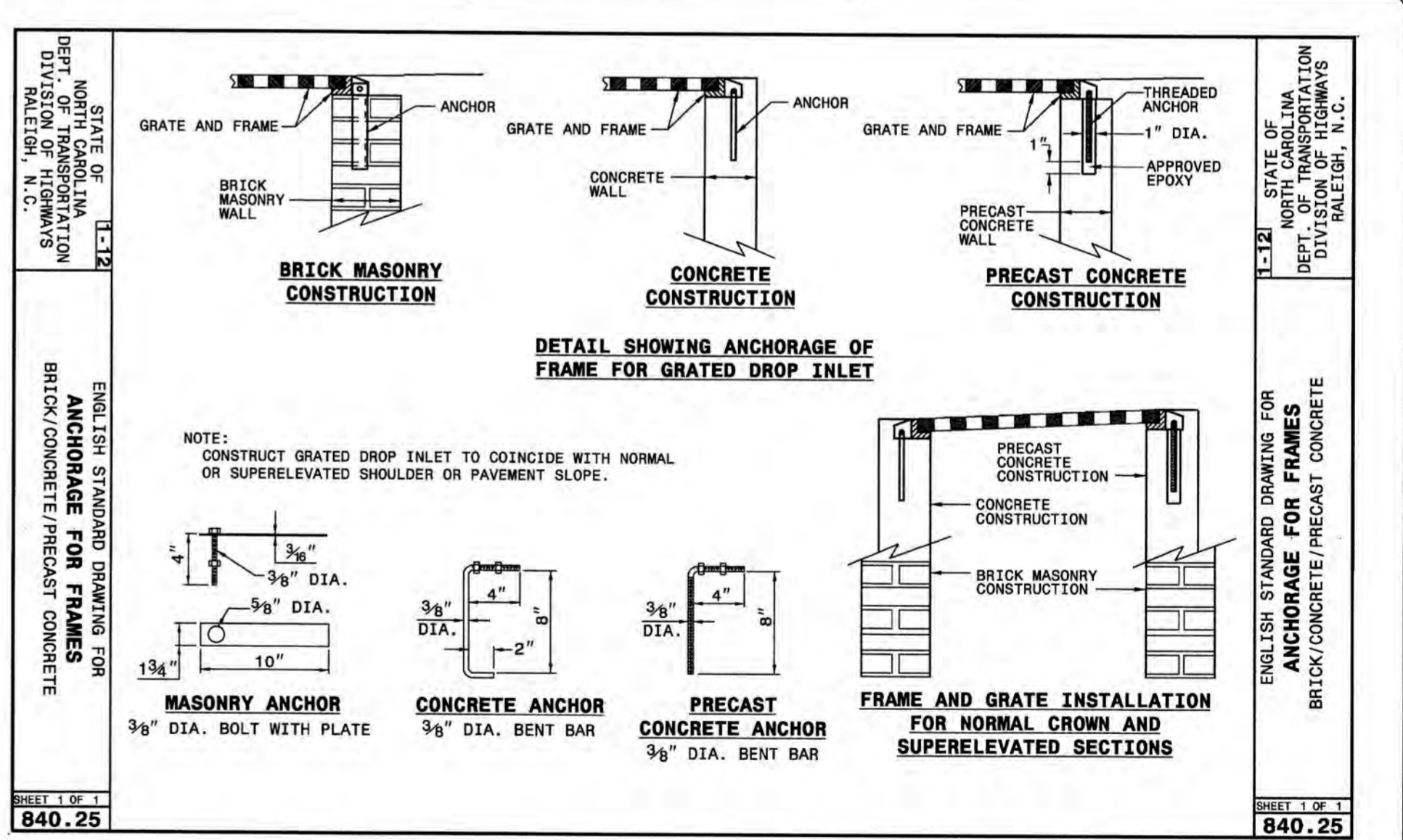
5 FRAME, GRATES, AND HOOD NOT TO SCALE



2 CONCRETE DROP INLET NOT TO SCALE



6 DROP INLET FRAME AND GRATES NOT TO SCALE



3 ANCHORAGE FOR FRAMES NOT TO SCALE

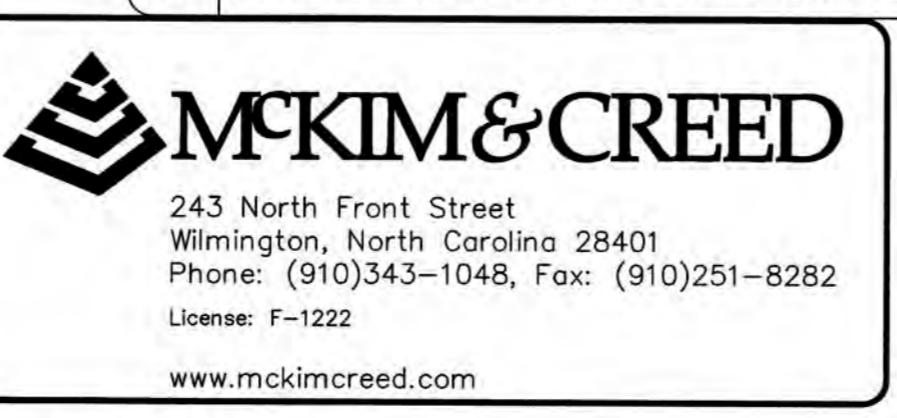
**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
Date: 4-23-19 Permit # 2019023  
Signed: *E. S. S.*

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

1 inch

Approved Construction Plan  
Name: *W. Watson* Date: *4-23-19*  
Planning: *W. Watson*  
Traffic: *J. Spawton* Date: *4-23-19*  
Fire: *Greg M.* Date: *4-23-19*

REV.	DATE	DESCRIPTION
0	04/18/2019	CITY OF WILMINGTON - RELEASE FOR CONSTRUCTION PLANS

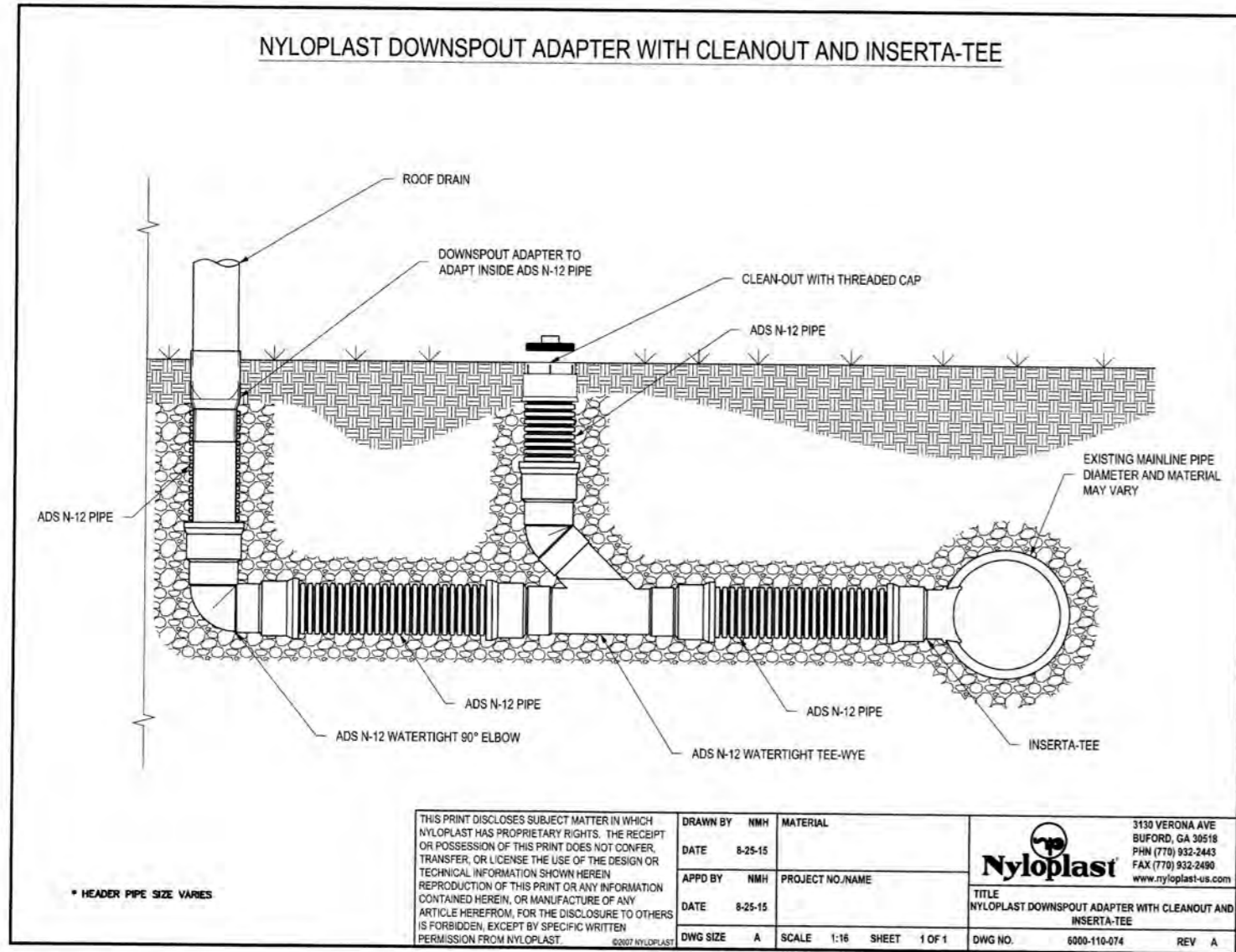


**THE FLATS ON FRONT**  
WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA  
STORM DRAINAGE DETAILS

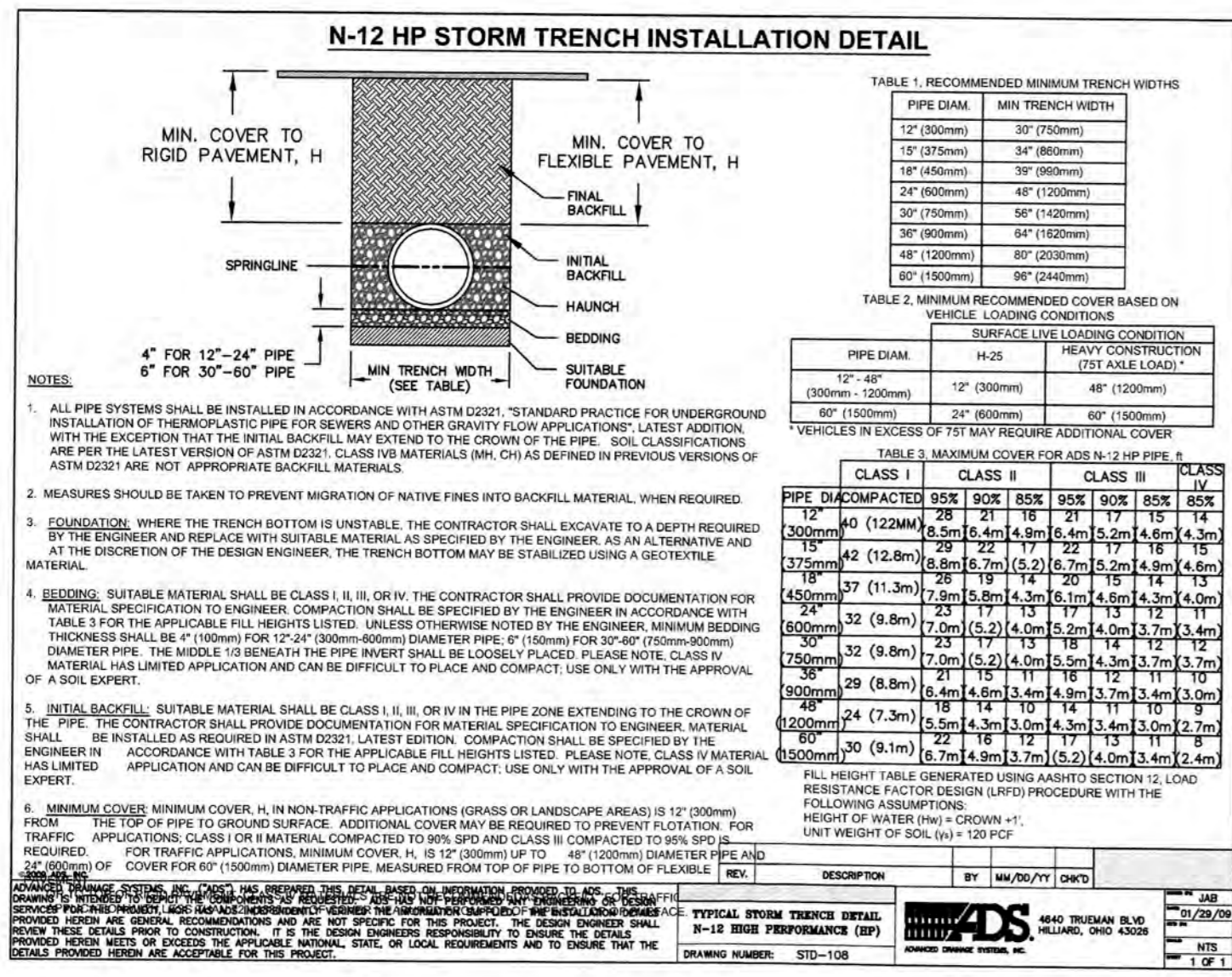
DATE: 04/18/2019  
SCALE: CG-501  
DRAWN: ALM/KCE  
DESIGNED: ALM  
CHECKED: RMC  
PROJ. MGR.: KCE

MAC FILE NUMBER: CG-501  
DRAWING NUMBER: 36

STATUS: IFC PLAN SET ISSUED FOR CONSTRUCTION  
REVISION: 0



9 NYLOPLAST DOWNSPOUT DETAIL WITH CLEANOUT AND INSERTA-TEE N/A

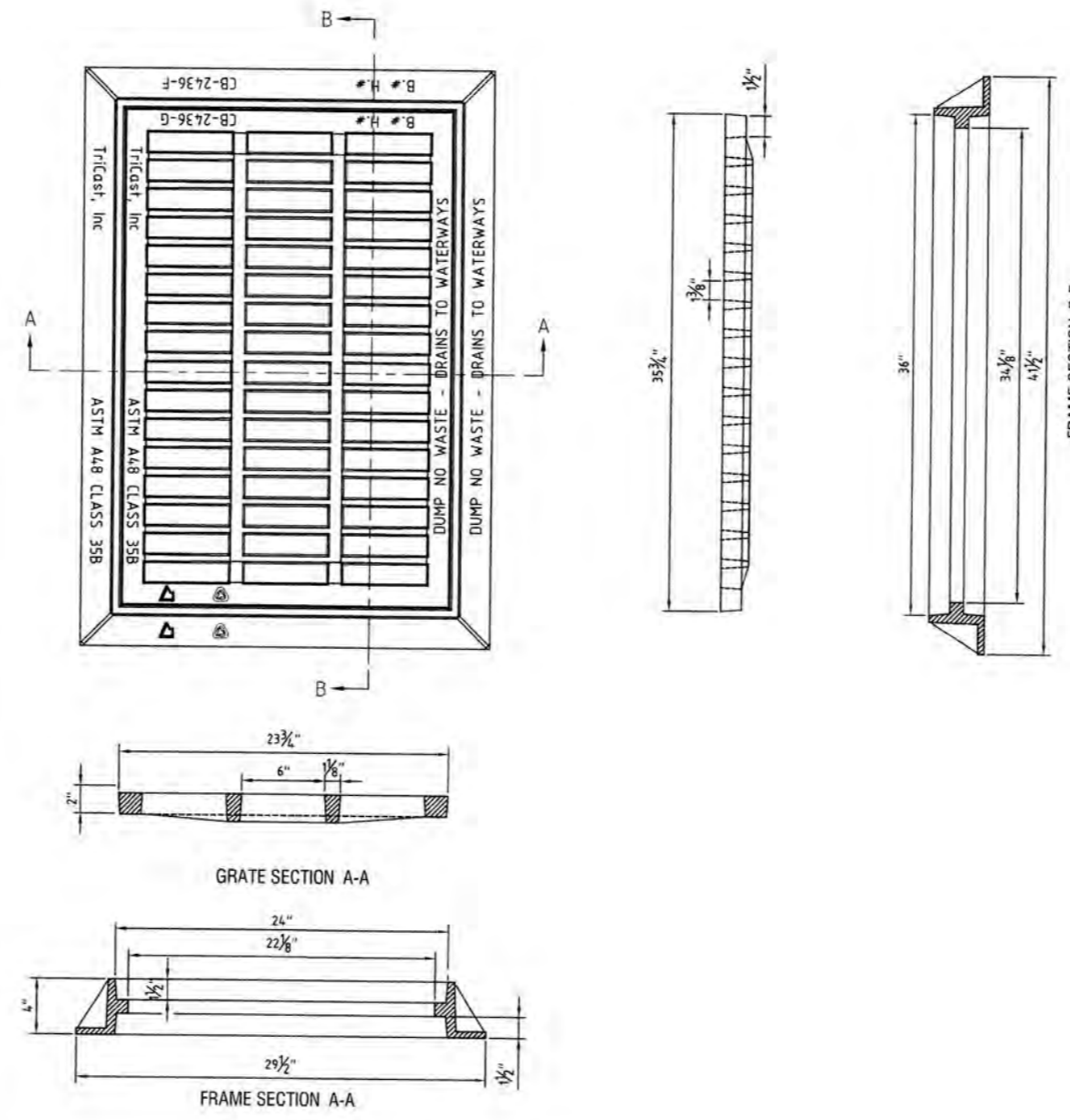


8 NYLOPLAST DETAIL N/A

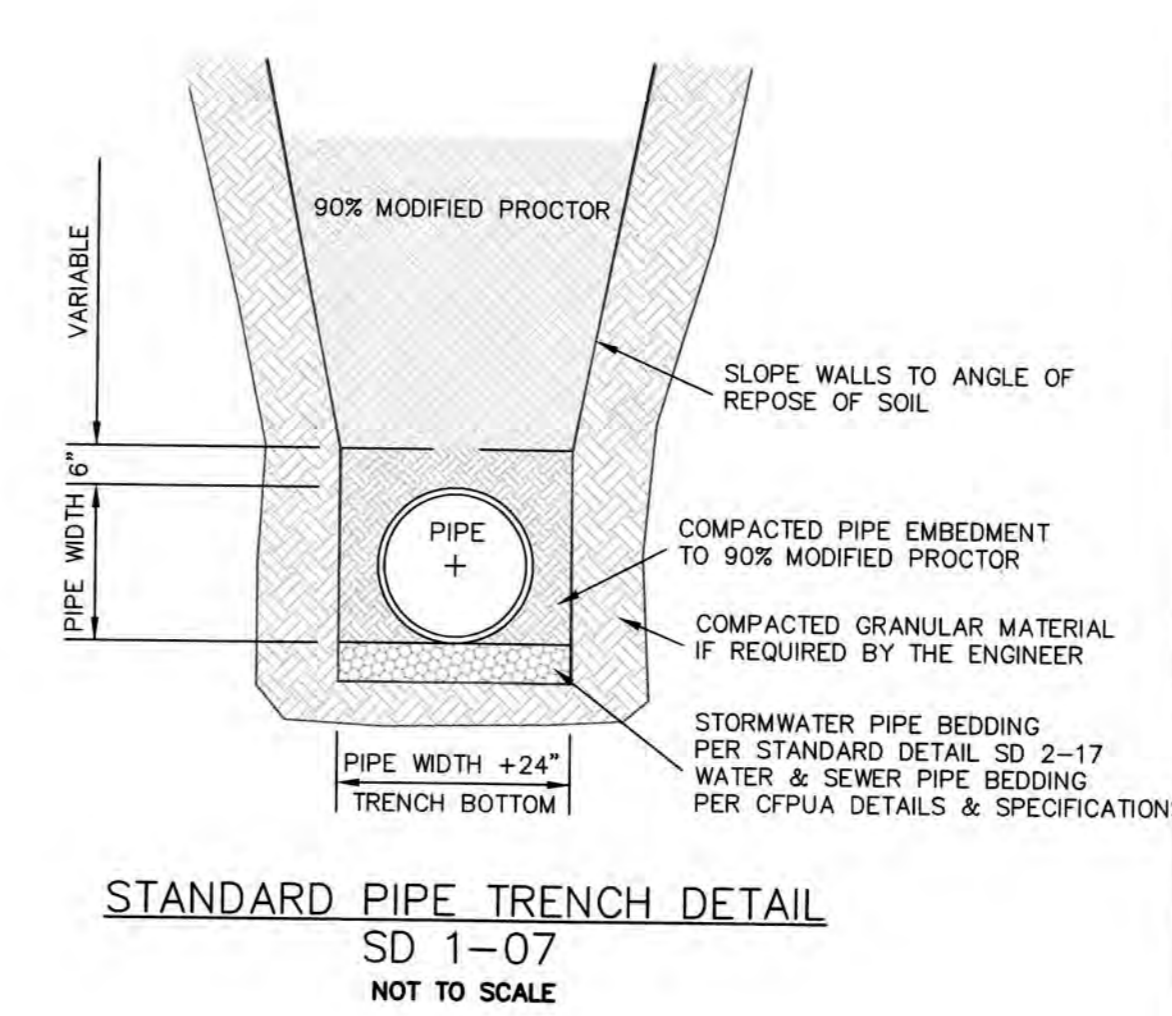
**STORM DRAINAGE NOTES:**

1. ALL PIPE BEDDING SHALL BE CLASS "C" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
2. ALL STORM DRAINAGE PIPES SHALL BE RCP CLASS III UNLESS OTHERWISE NOTED ON THE PLANS.
3. DO NOT PLANT TREES WITHIN UTILITY AND DRAINAGE EASEMENTS.
4. THE ENGINEER AND THE CONTRACTOR SHALL INSPECT ALL EXISTING PIPES USED IN THE FINAL DRAINAGE SYSTEM AND AGREE ON THE CONDITION OF THE PIPES PRIOR TO CONSTRUCTION. IF DAMAGE OCCURS TO THESE PIPES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF THE PIPE(S).
5. THE CONTRACTOR SHALL CONTACT ONECALL BEFORE COMMENCING ANY WORK. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES WHETHER INDICATED ON THE DRAWINGS OR NOT. THE CONTRACTOR WILL ASSURE THE PRESENCE ON-SITE OF A REPRESENTATIVE OF THE GAS COMPANY WHEN WORKING IN THE VICINITY OF ANY GAS MAINS.

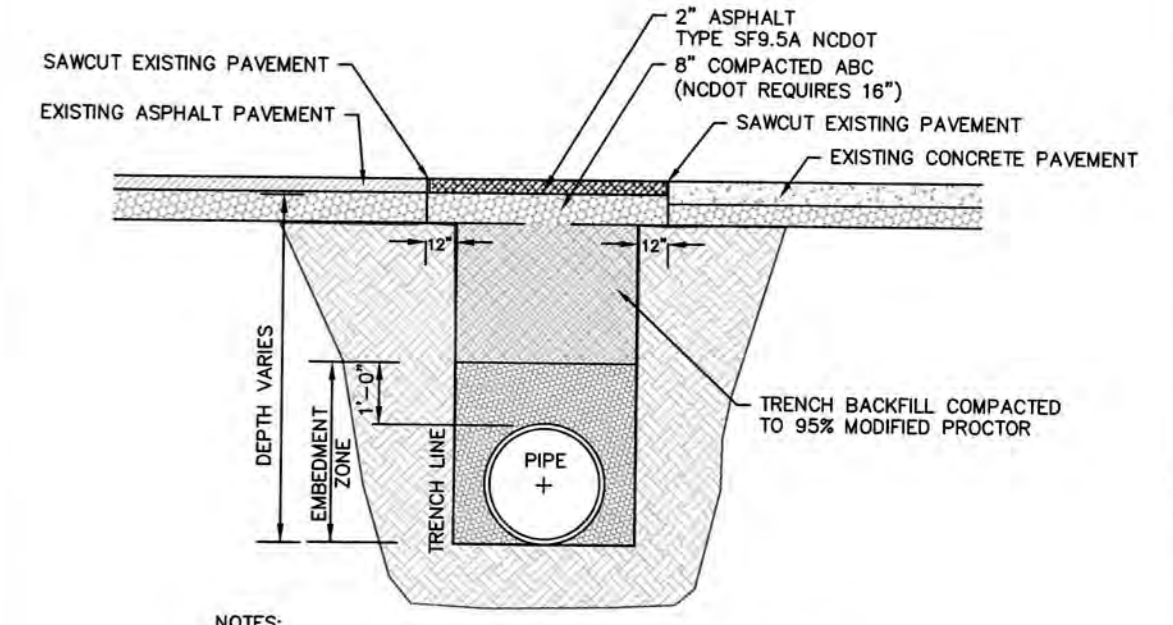
7 STORM DRAINAGE NOTES N/A



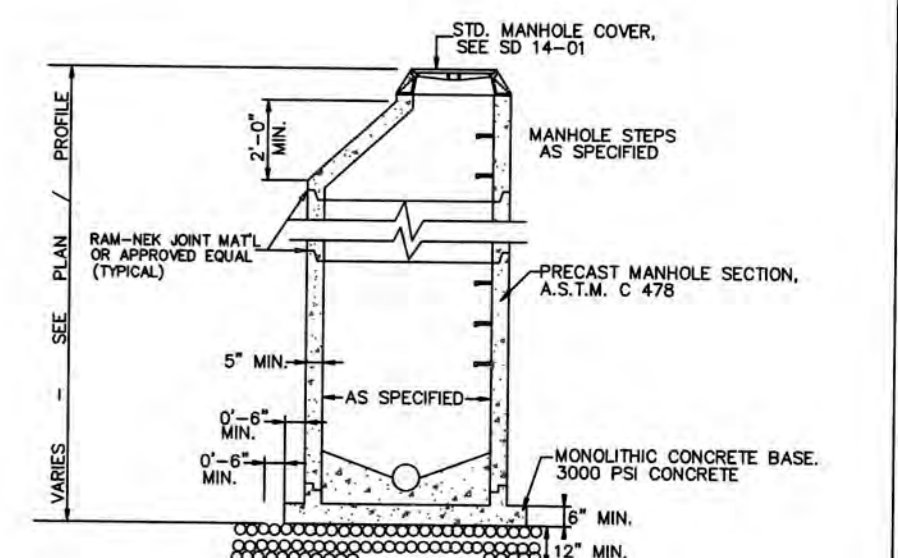
5 24"X36" CASTING DETAIL N/A



4 STANDARD PIPE TRENCH DETAIL N/A



3 PAVEMENT REPAIR DETAIL N/A



2 PRECAST MANHOLE DETAIL N/A

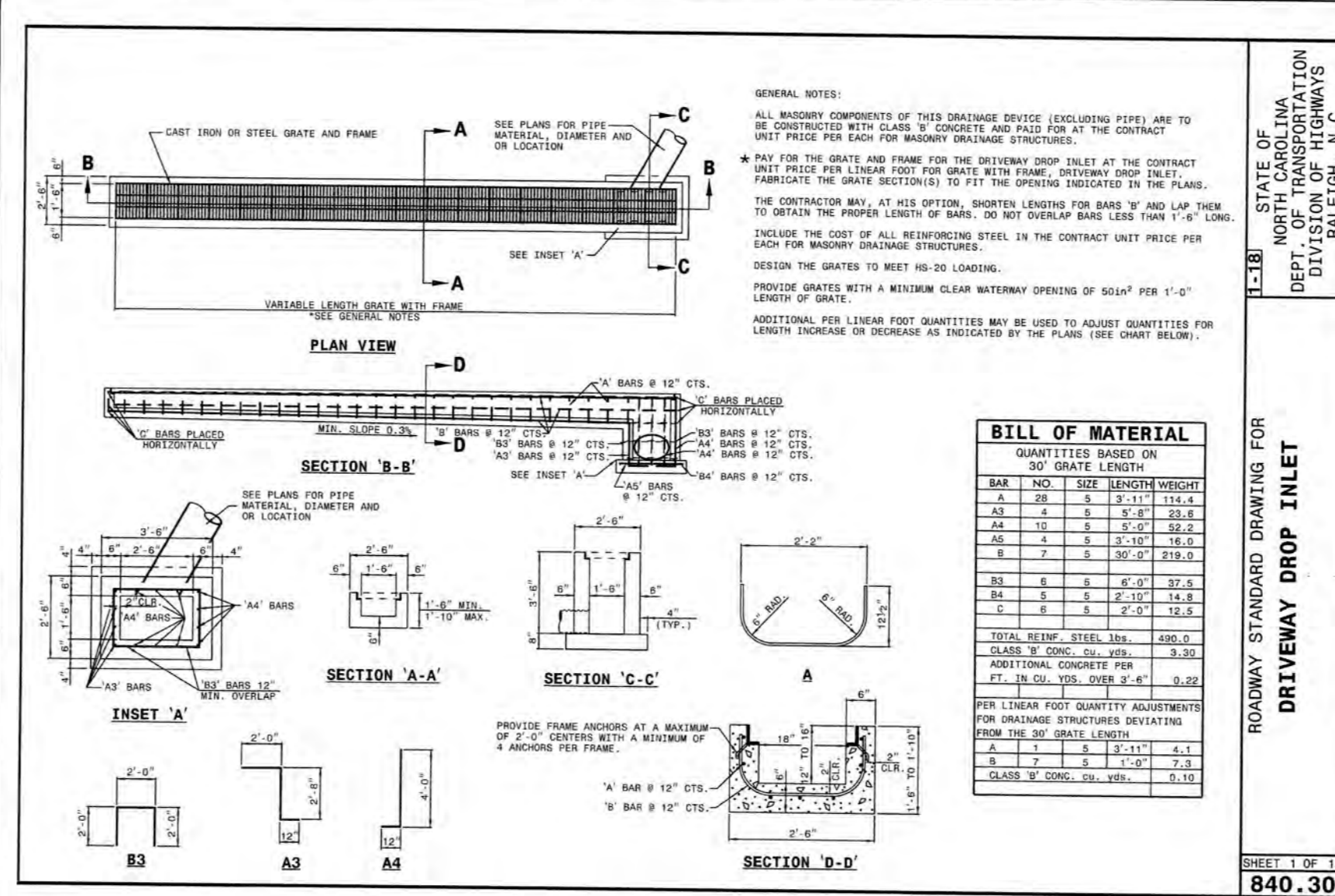
For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

1 inch

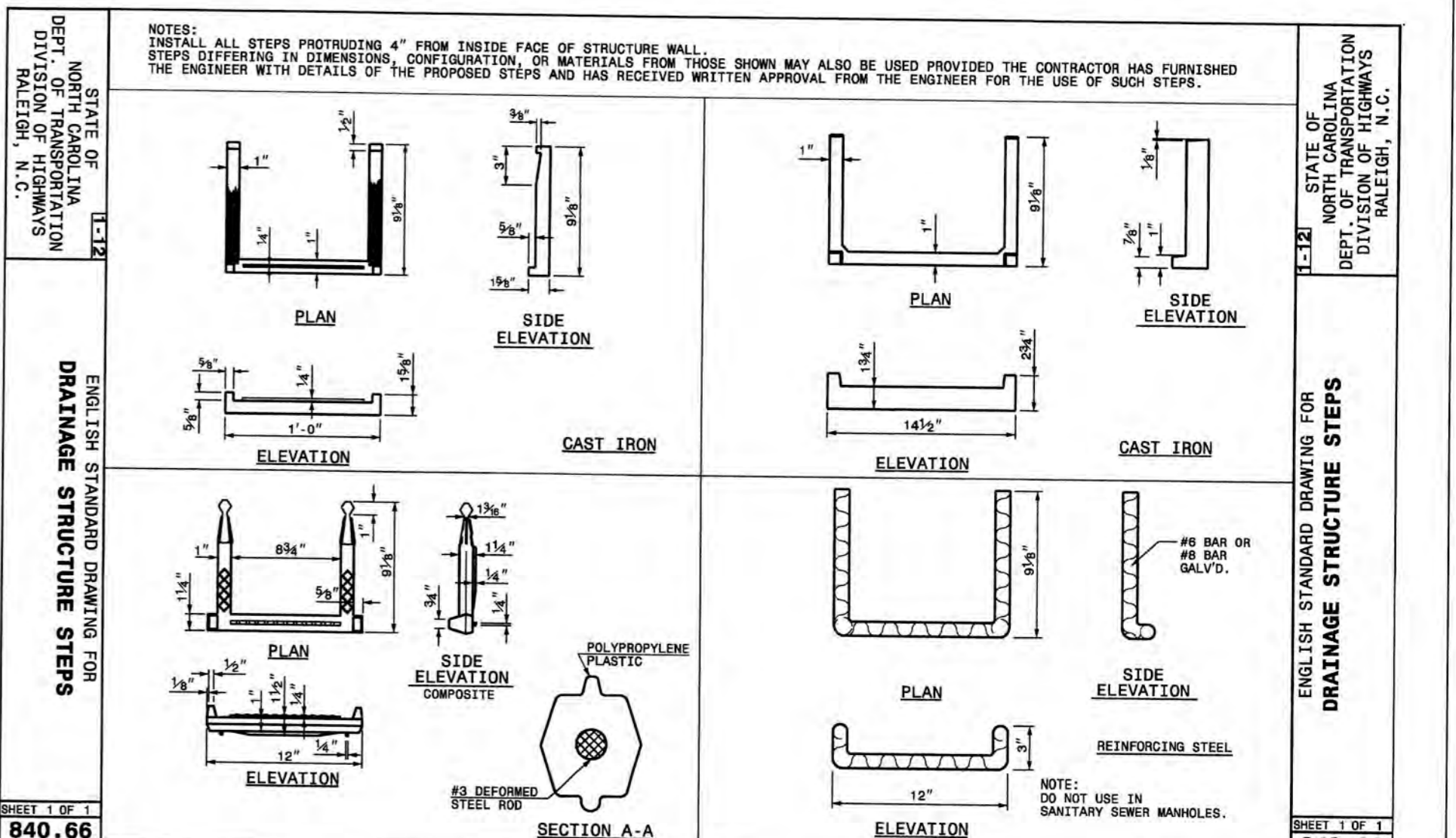
**Approved Construction Plan**

Name	Date
Planning <i>Jeff White</i>	4-23-19
Traffic <i>N. Edwards</i>	4-23-19
Fire <i>Jeff White</i>	4-23-19

**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
Date: 4-23-19 Permit #2019023  
Signed: *E.S. 02*



6 DRIVEWAY DROP INLET DETAIL NOT TO SCALE



1 DRAINAGE STRUCTURE STEPS NOT TO SCALE

REV. NO.	DESCRIPTION	DATE
0	CITY OF WILMINGTON - RELEASE FOR CONSTRUCTION PLANS	04/18/2019
	REVISIONS	

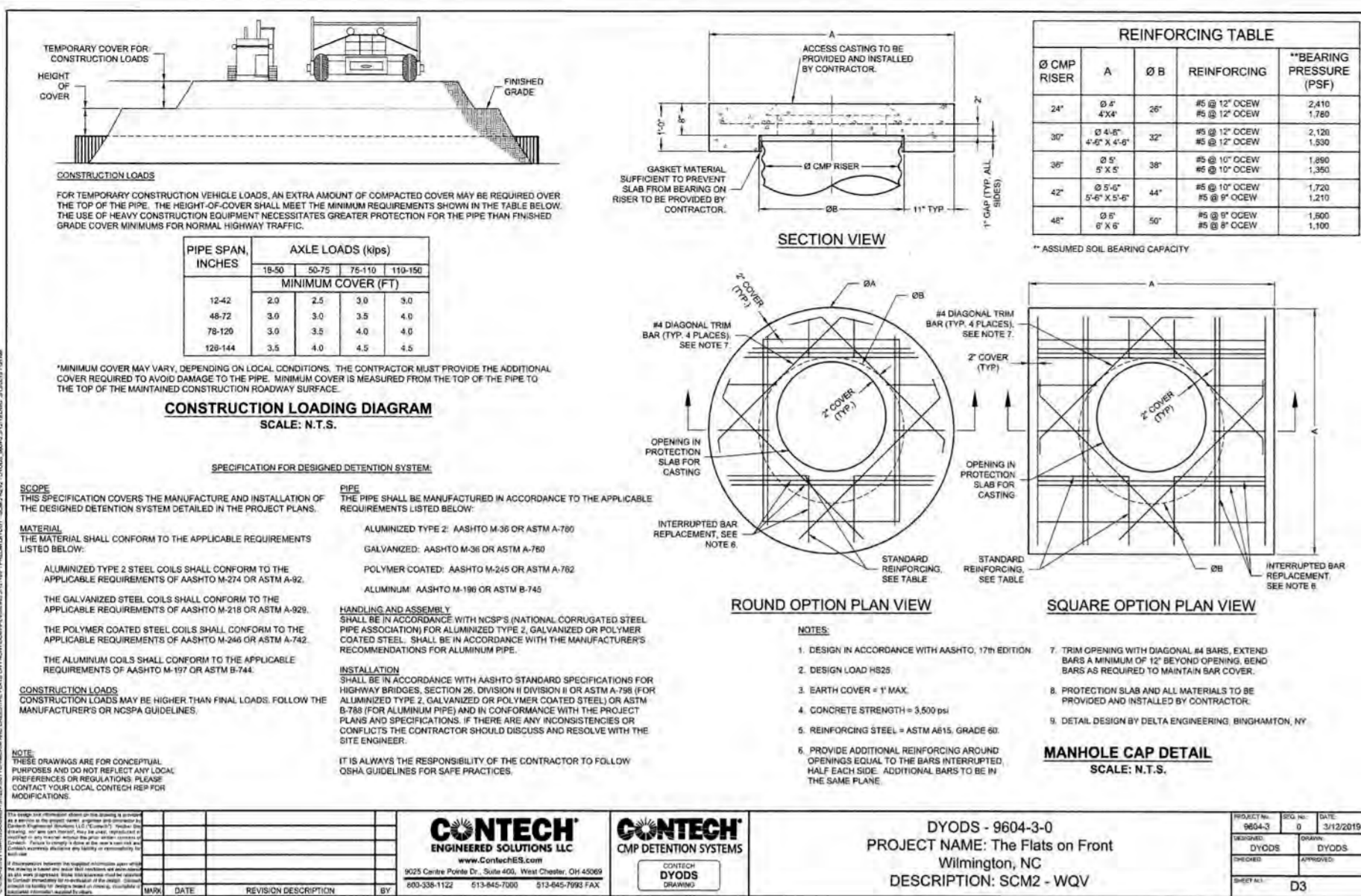


**THE FLATS ON FRONT**  
WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

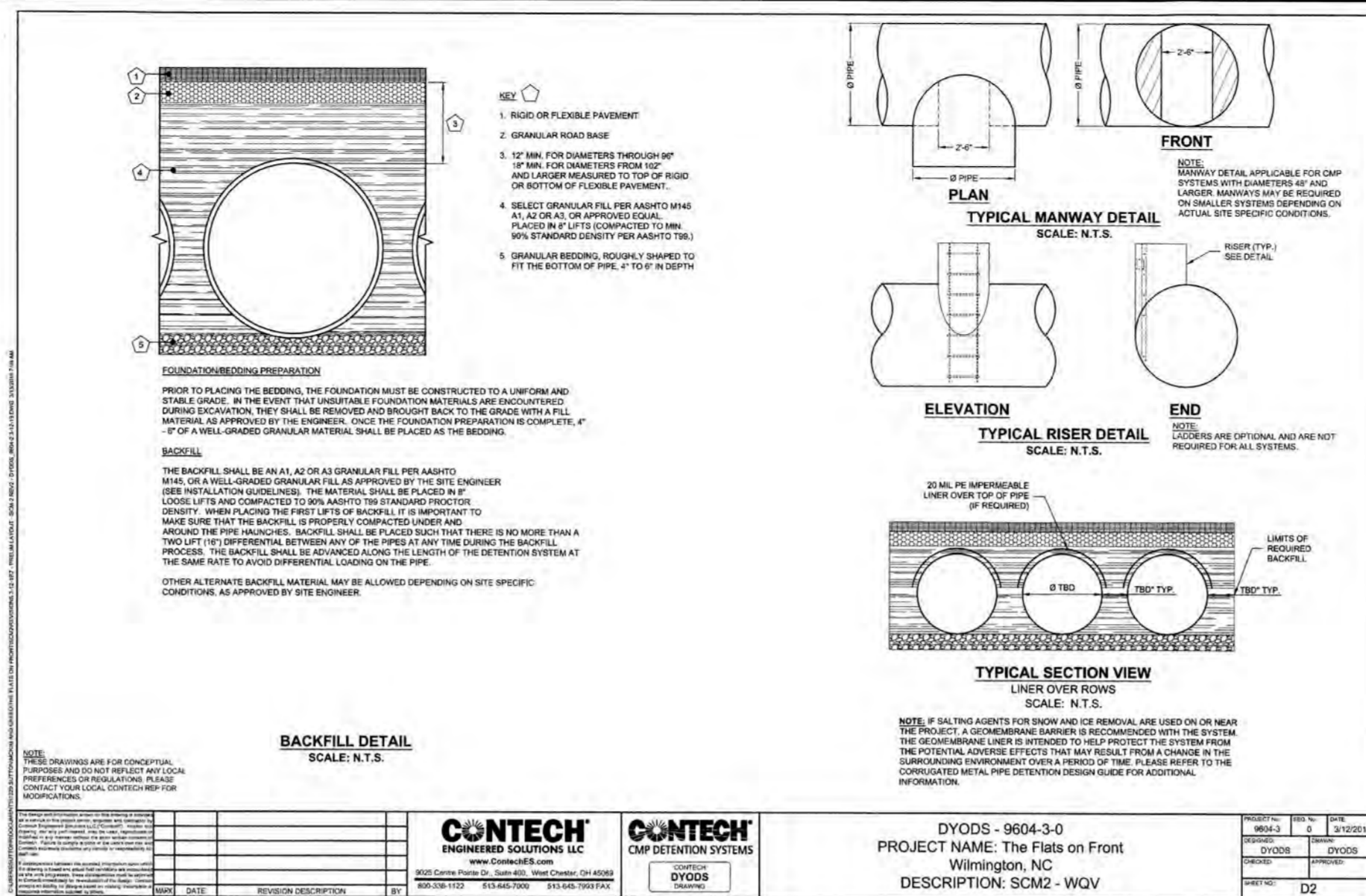
**STORM DRAINAGE DETAILS**

DATE: 04/18/2019  
SCALE: HORIZONTAL: 1"=30', VERTICAL: N/A  
MCE PROJ. #: 7402-0001  
DRAWN: ALM/KCE  
DESIGNED: ALM  
CHECKED: RMC  
PROJ. MGR.: KCE  
STATUS: IFC PLAN SET  
ISSUED FOR CONSTRUCTION

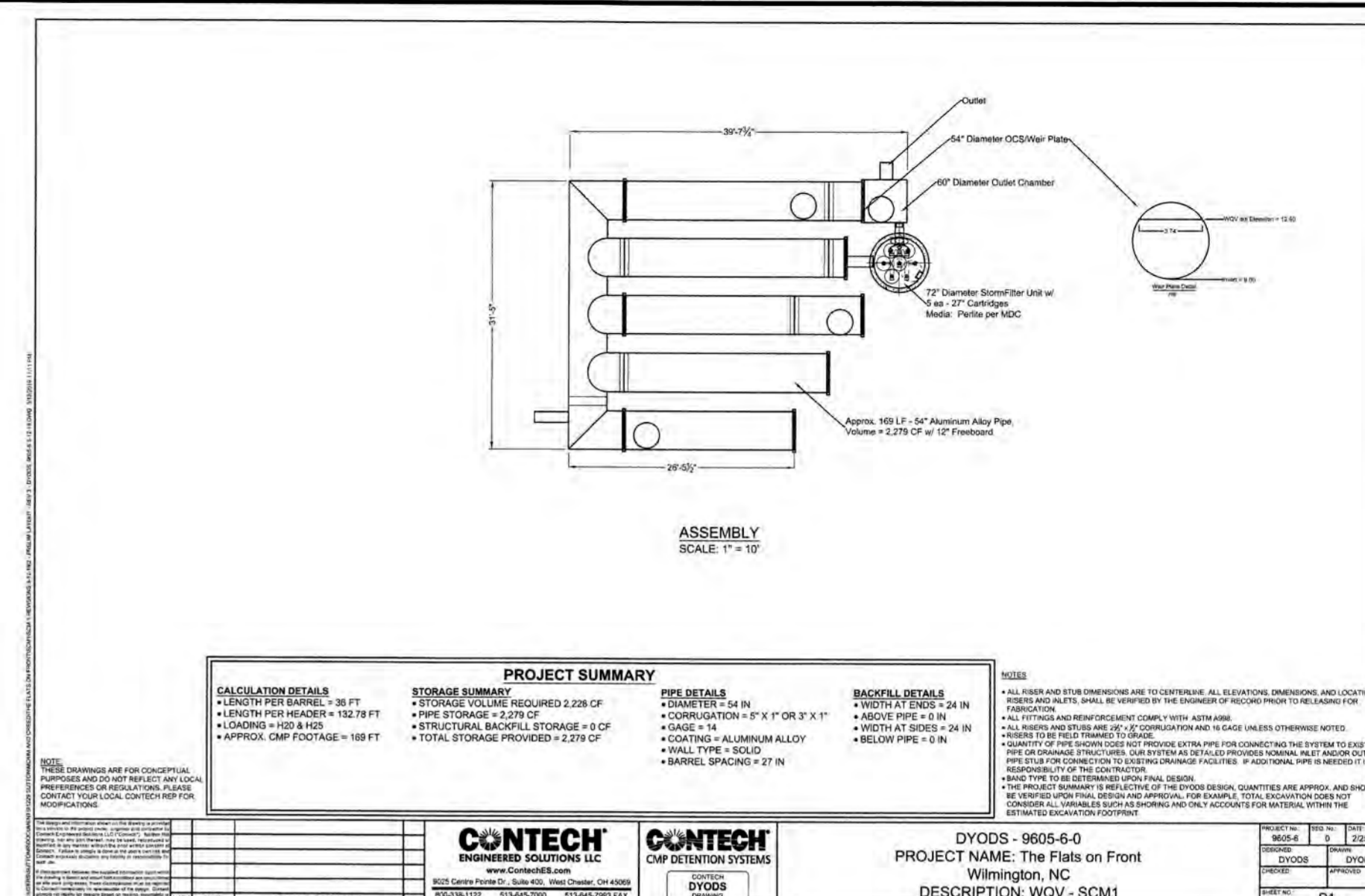
MAC FILE NUMBER: CG-502  
DRAWING NUMBER: 37  
REVISION: 0



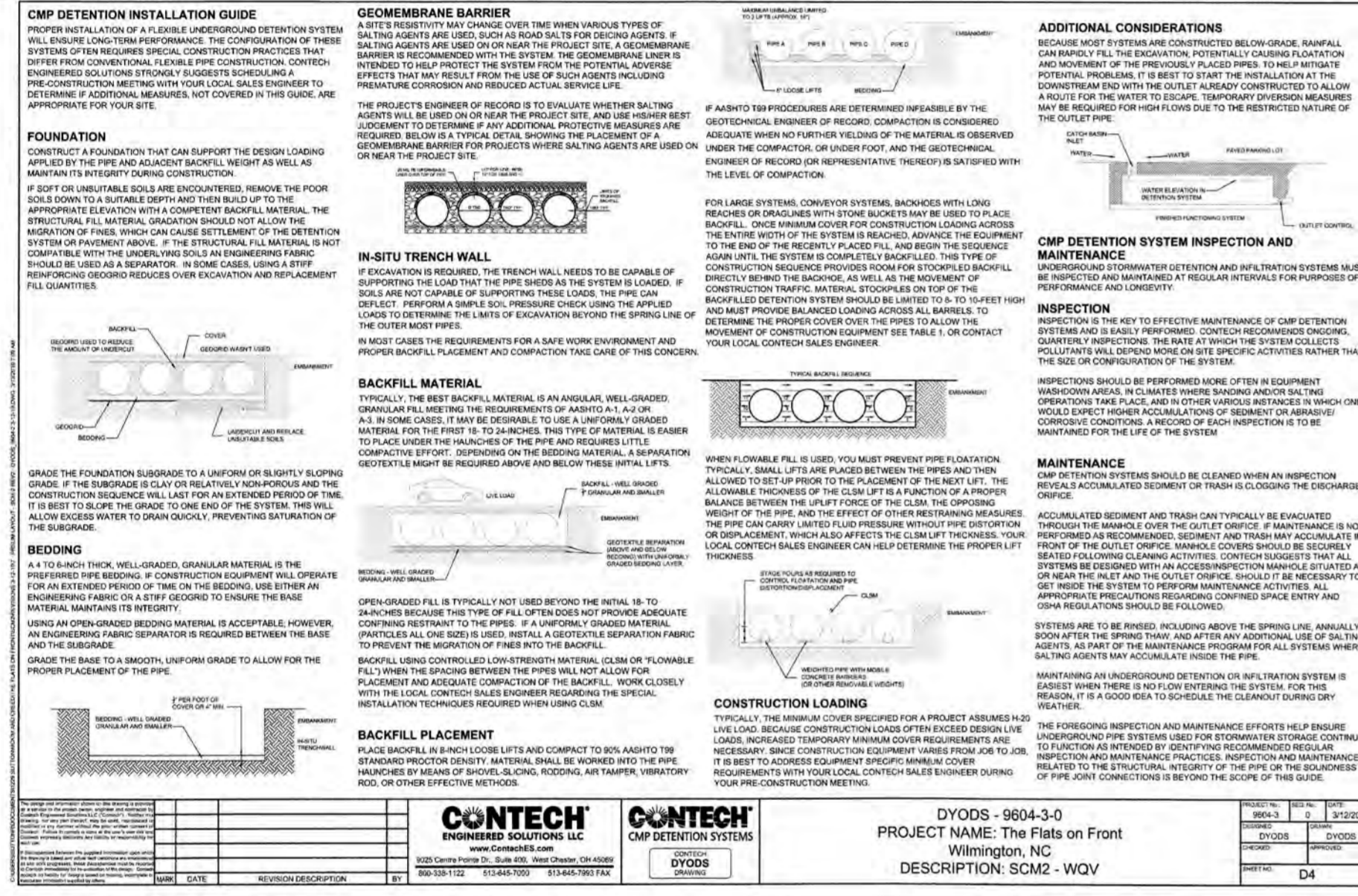
9 SCM-2 PIPE STORAGE SYSTEM DETAILS NOT TO SCALE



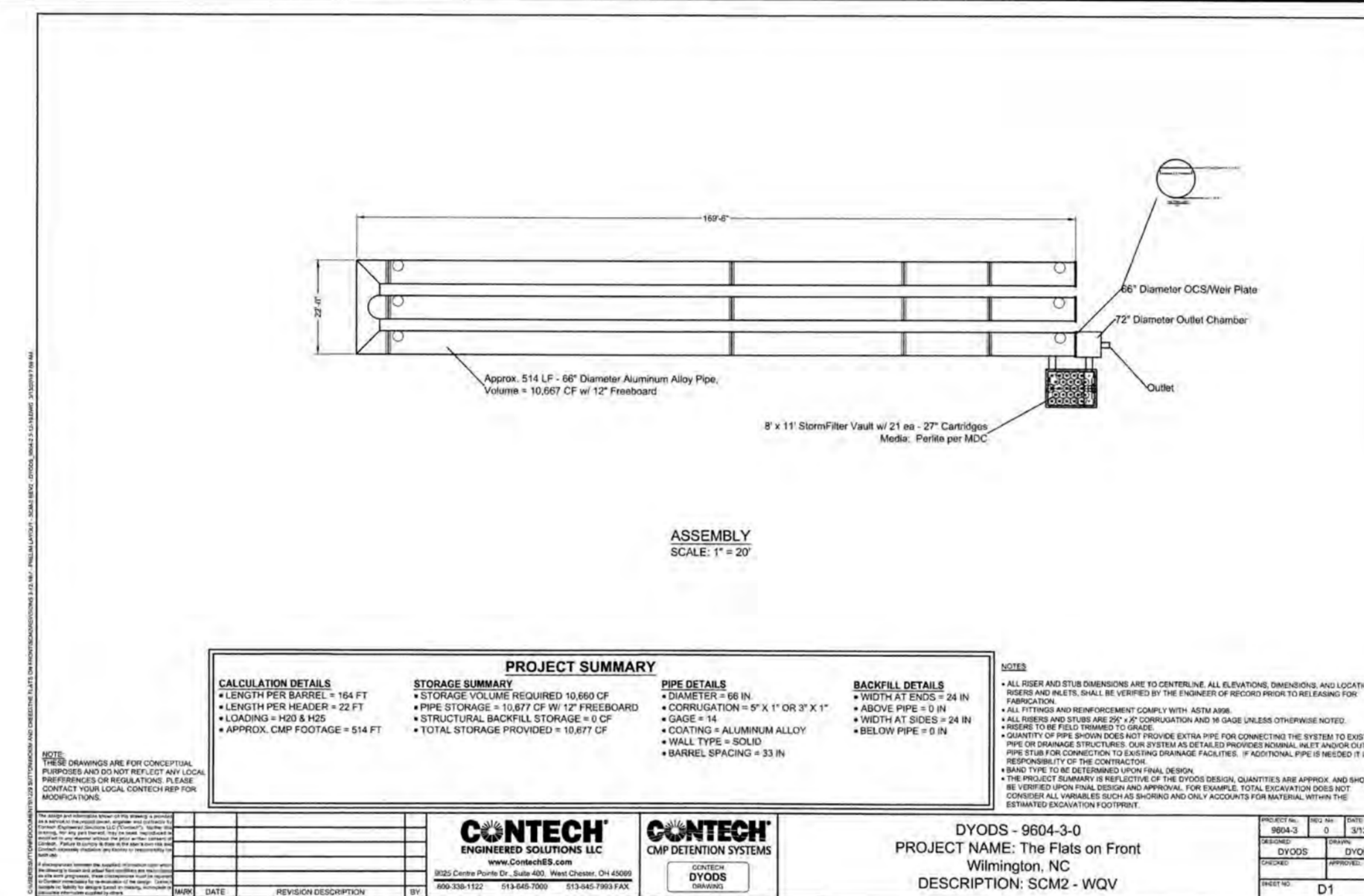
6 SCM-2 PIPE STORAGE SYSTEM DETAILS NOT TO SCALE



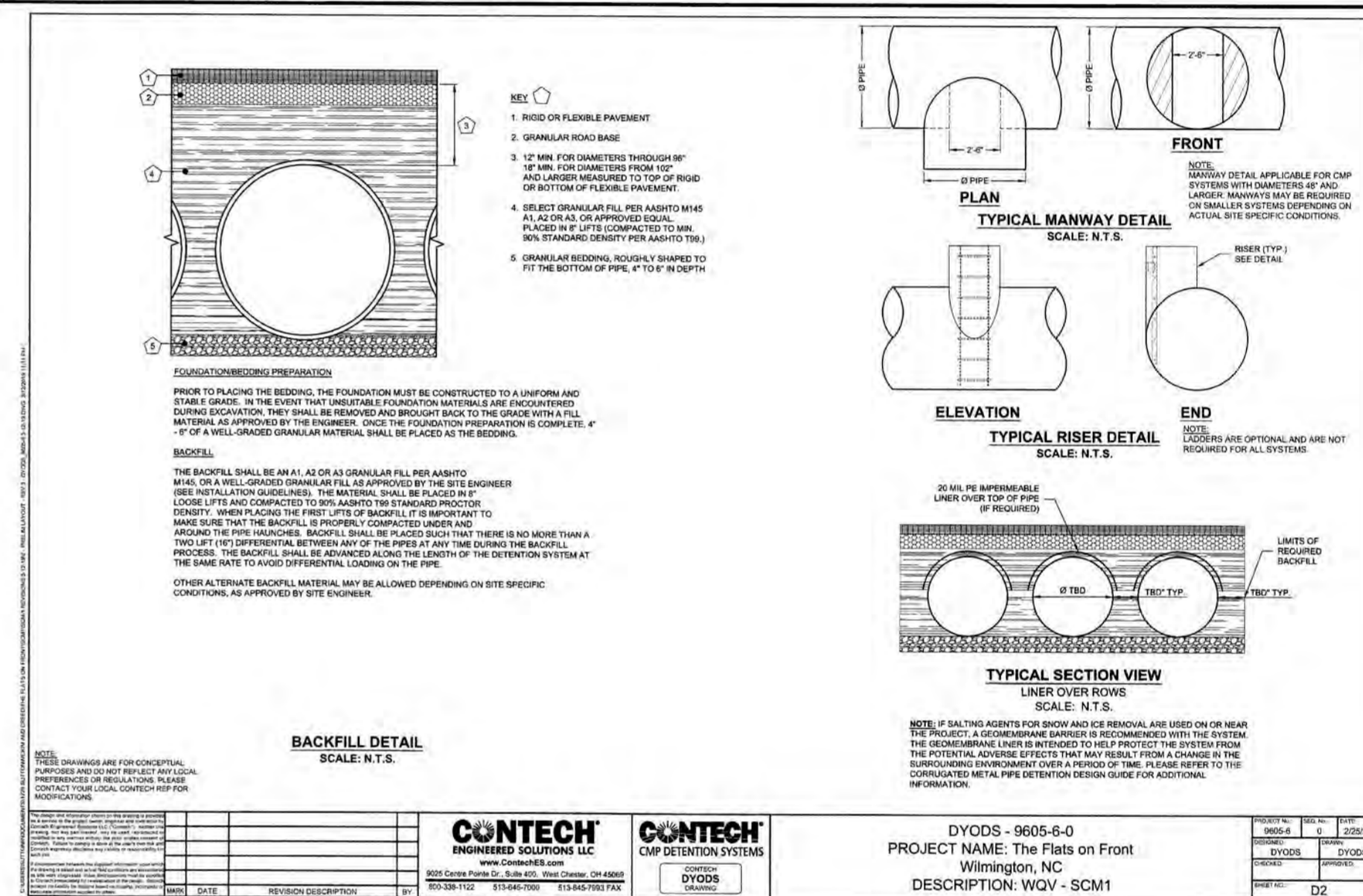
3 SCM-1 PIPE STORAGE SYSTEM DETAILS NOT TO SCALE



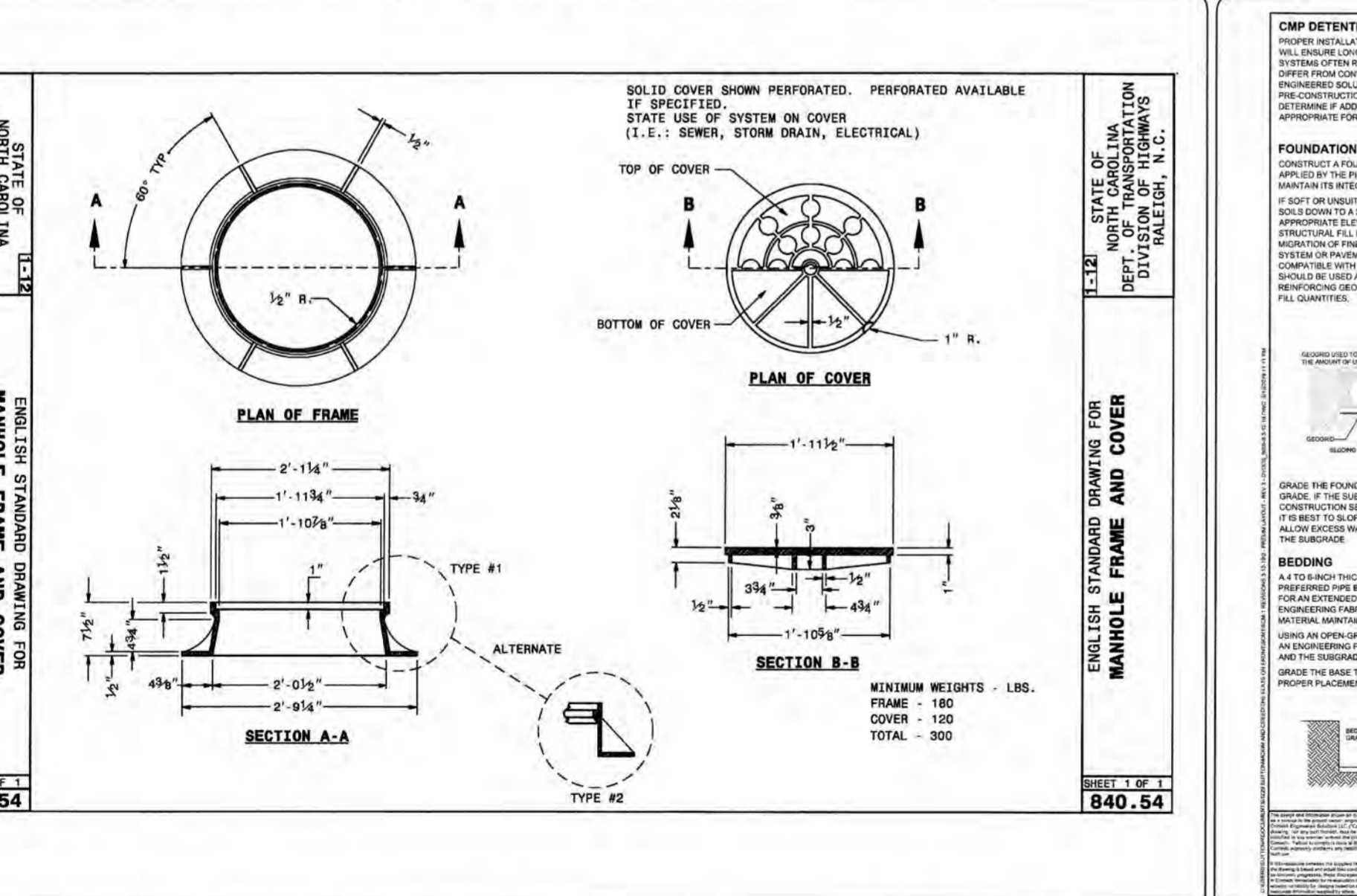
8 SCM-2 PIPE STORAGE SYSTEM DETAILS NOT TO SCALE



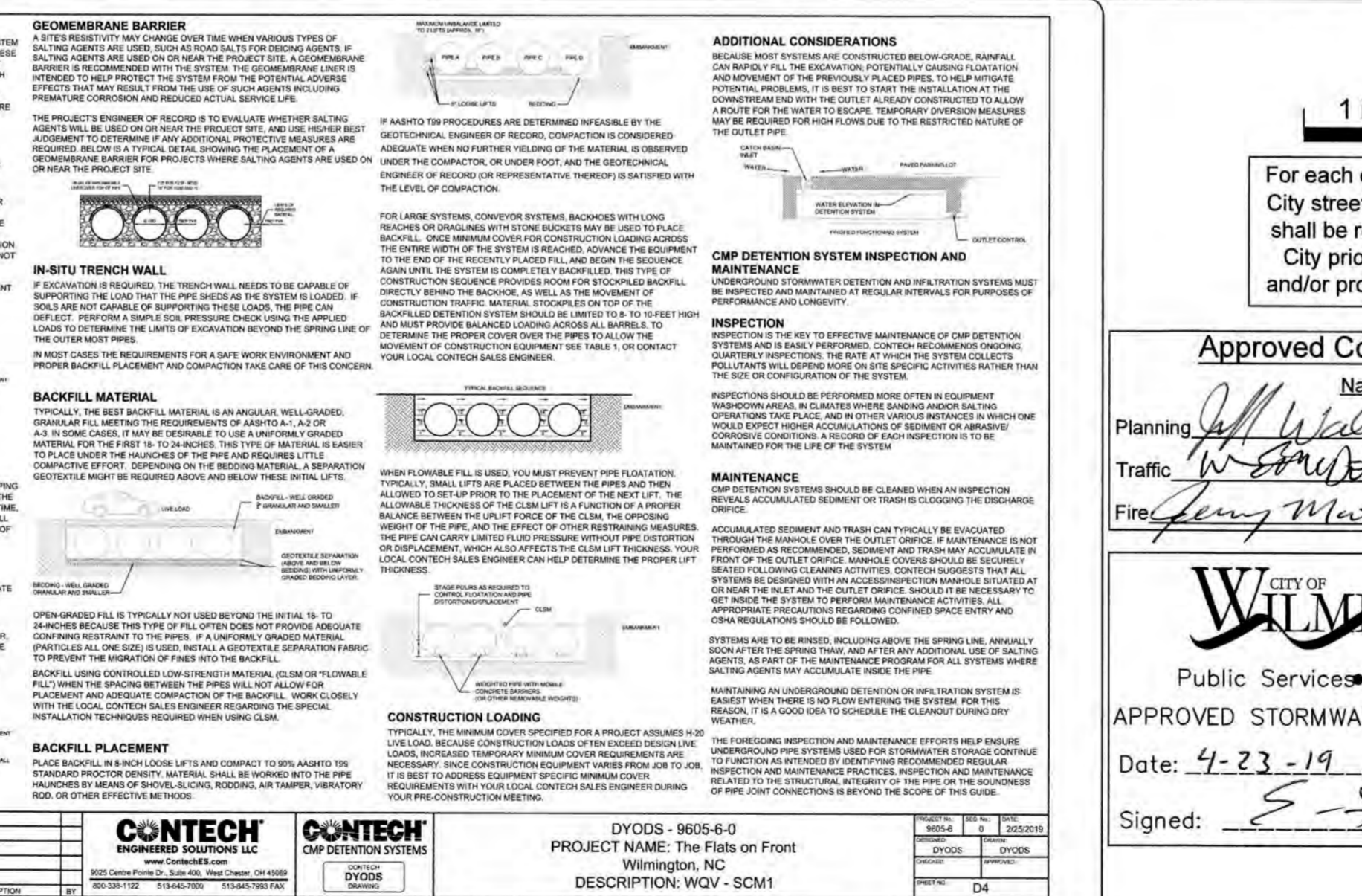
5 SCM-2 PIPE STORAGE SYSTEM DETAILS NOT TO SCALE



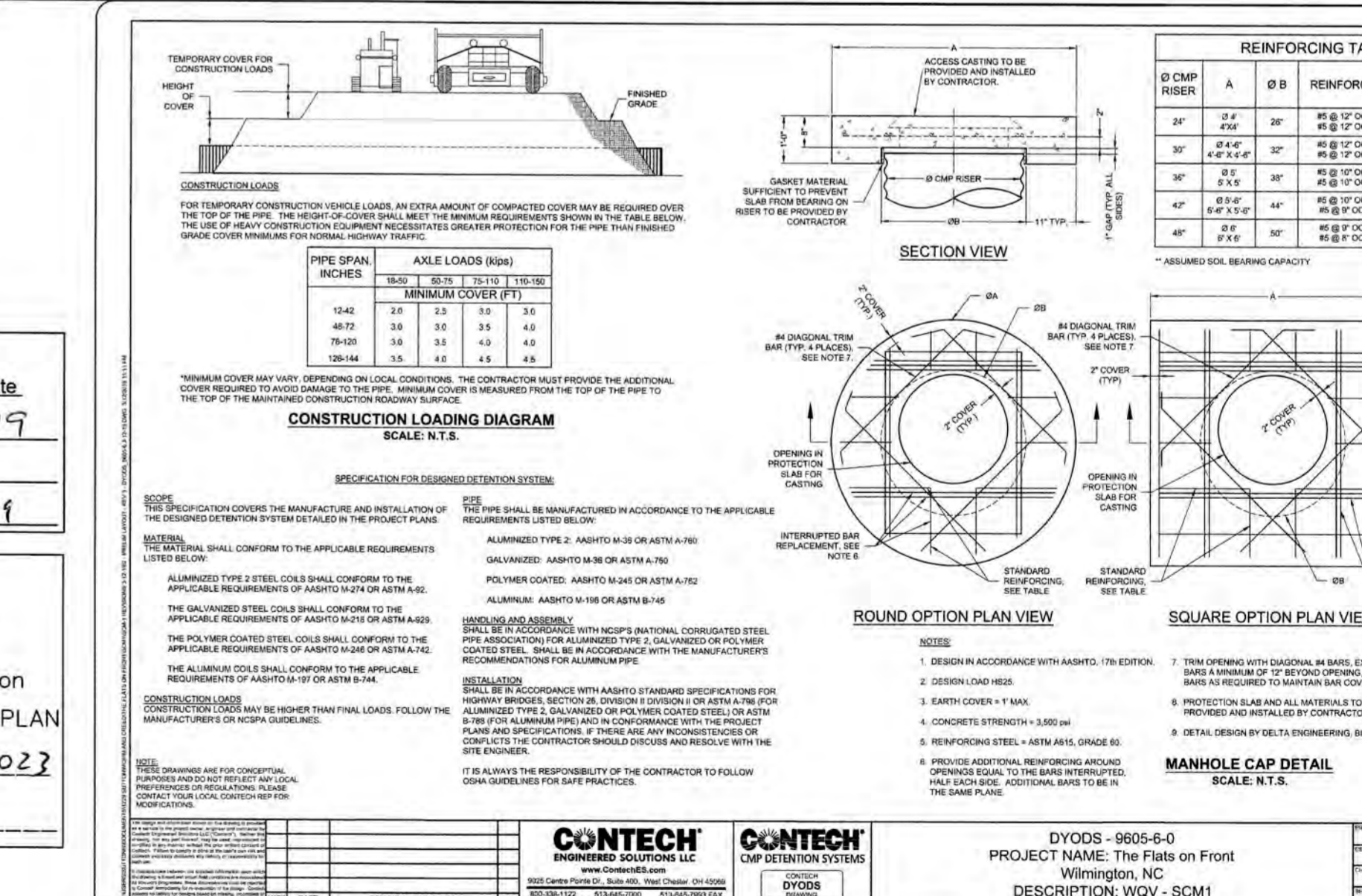
2 SCM-1 PIPE STORAGE SYSTEM DETAILS NOT TO SCALE



7 MANHOLE FRAME AND COVER NOT TO SCALE



4 SCM-1 PIPE STORAGE SYSTEM DETAILS NOT TO SCALE



1 SCM-1 PIPE STORAGE SYSTEM DETAILS NOT TO SCALE

**Approved Construction Plan**

Name: *[Signature]* Date: 4-23-19

Traffic: *[Signature]* 4-23-19

Fire: *[Signature]* 4-23-19

**CITY OF WILMINGTON**  
NORTH CAROLINA

Public Service Engineering Division

Approved Stormwater Management Plan

Date: 4-23-19 Permit #2019023

Signed: *[Signature]*

**THE FLATS ON FRONT**  
WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

**STORM DRAINAGE DETAILS**

DATE: 04/18/2019  
MCE PROJ #: 7402-0001  
DRAWN: ALM/KCE  
DESIGNED: ALM  
CHECKED: RMC  
PROJ. MGR.: KCE

SCALE: HORIZONTAL: 1" = 30'  
VERTICAL: N/A

MAC FILE NUMBER: CG-503  
DRAWING NUMBER: 38

STATUS: IFC PLAN SET  
ISSUED FOR CONSTRUCTION

REVISION: 0

**MCKIM & CREED**

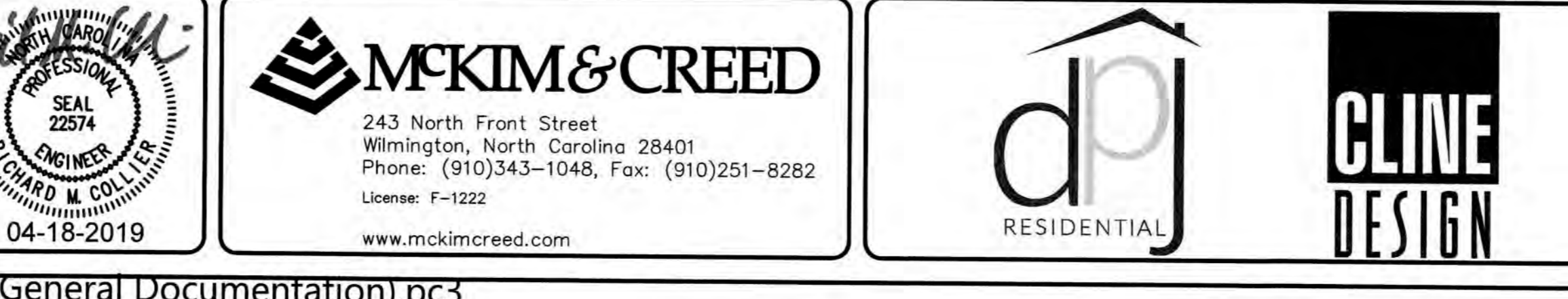
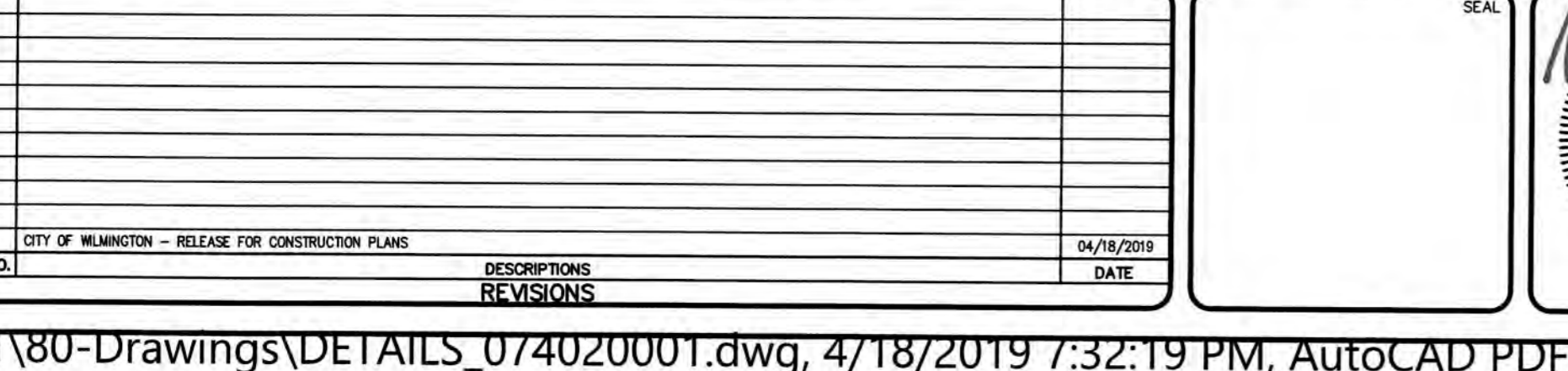
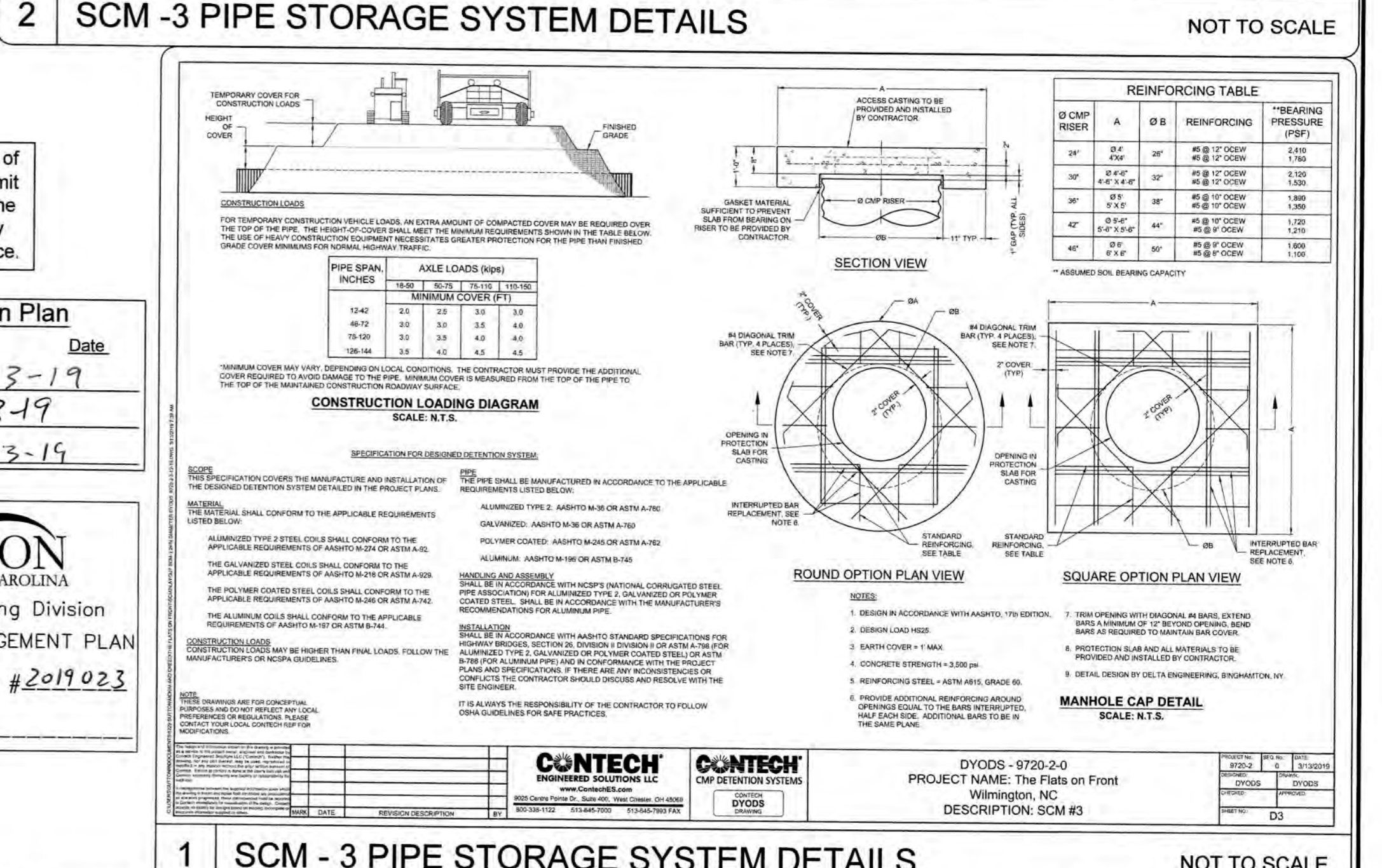
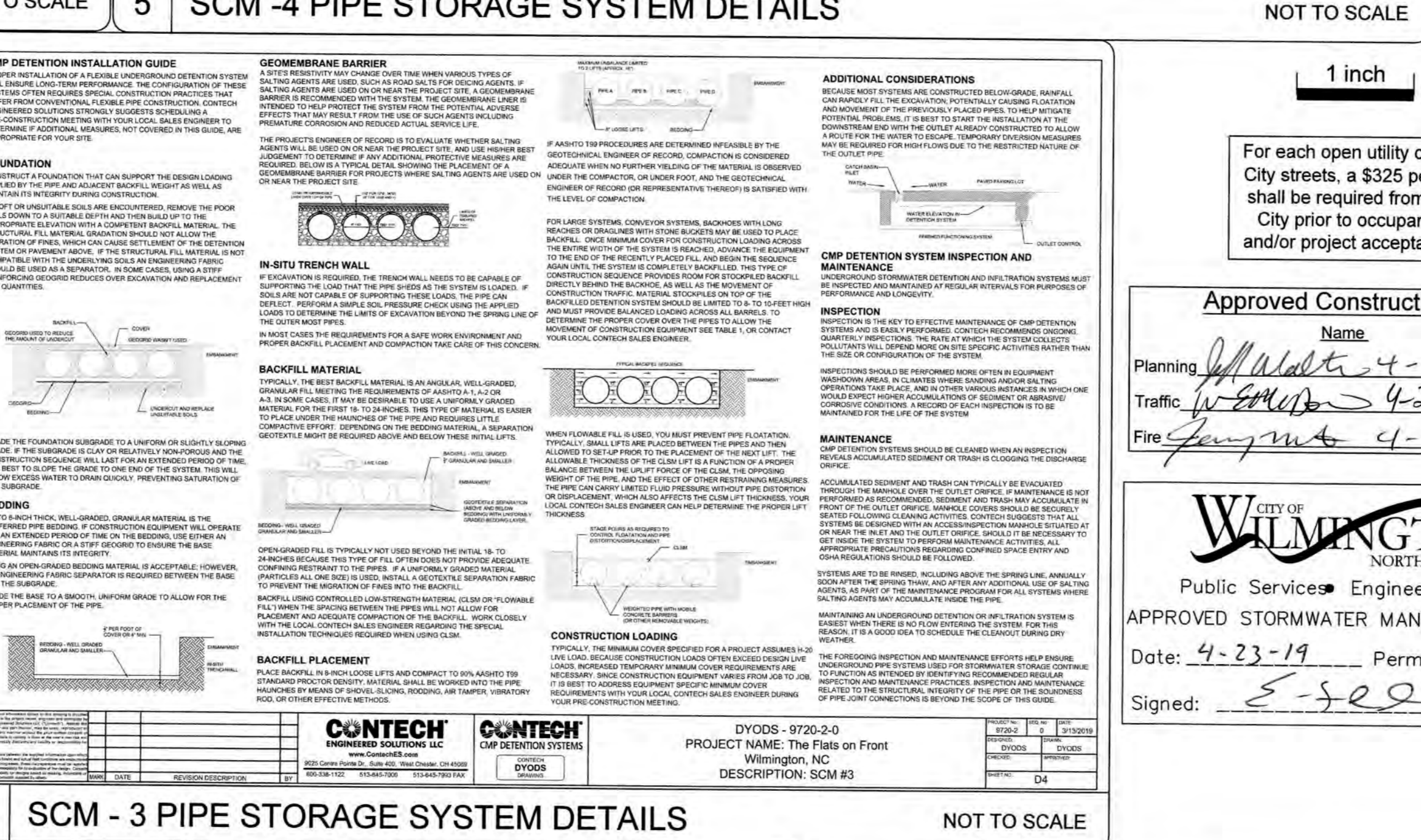
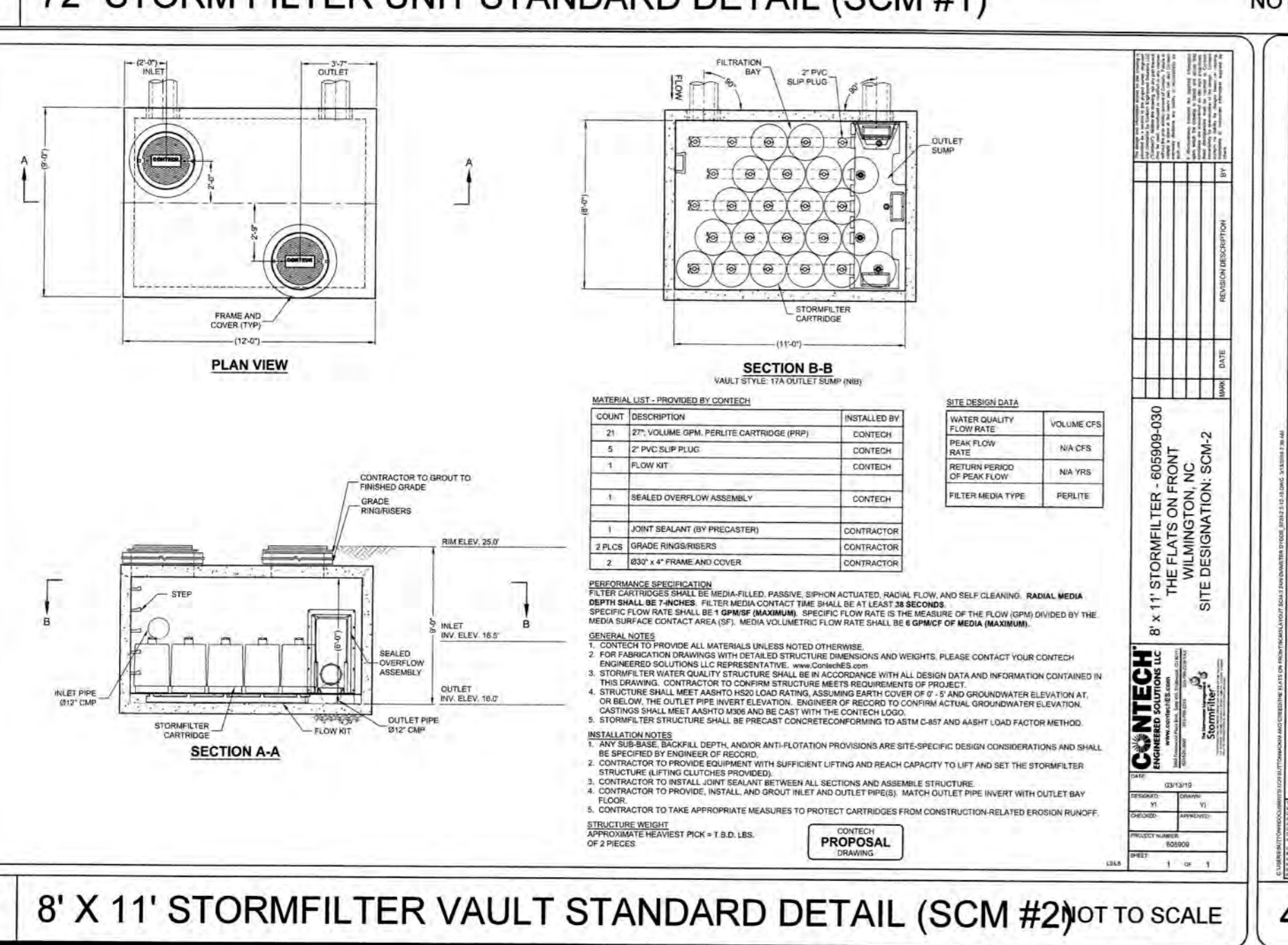
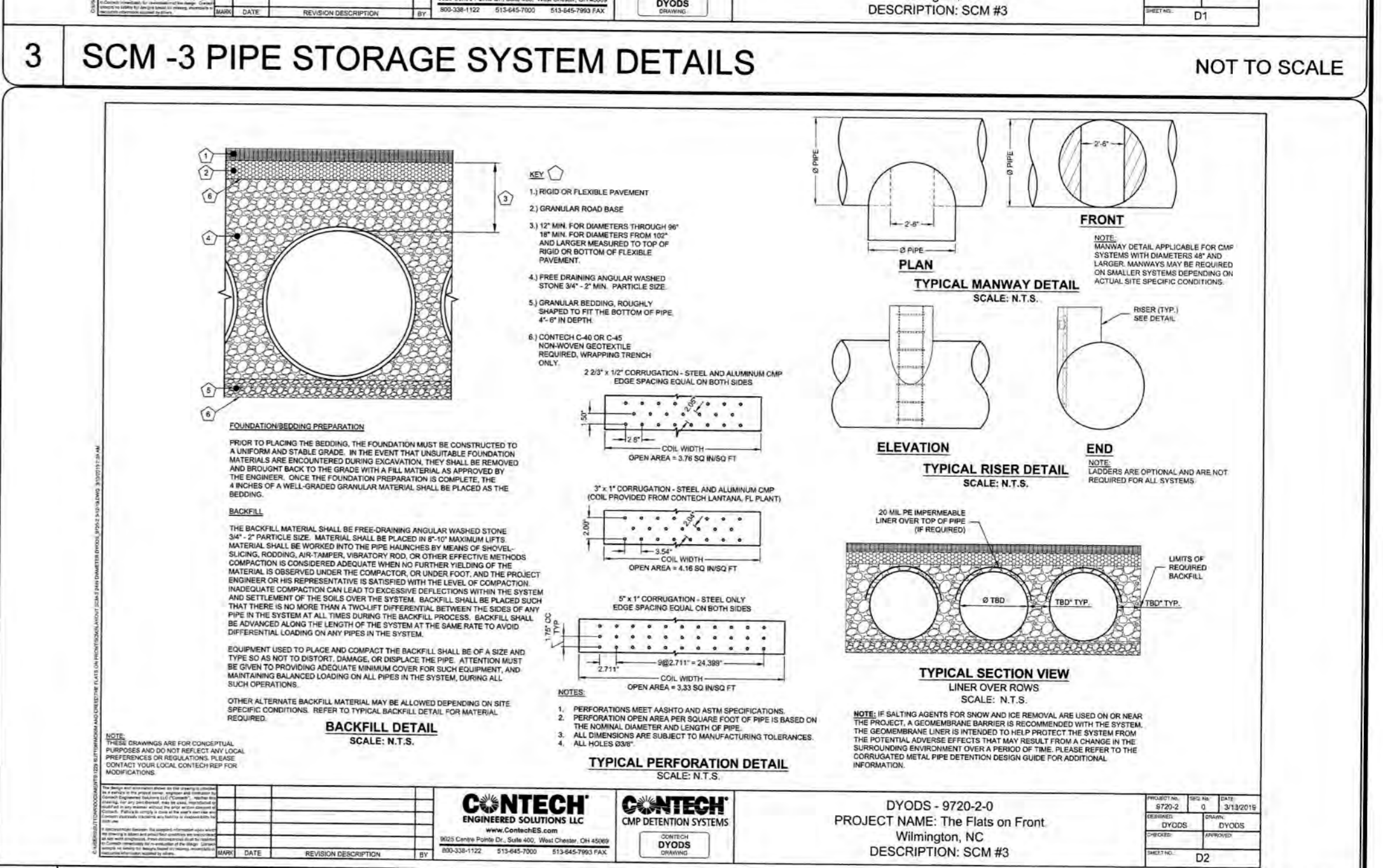
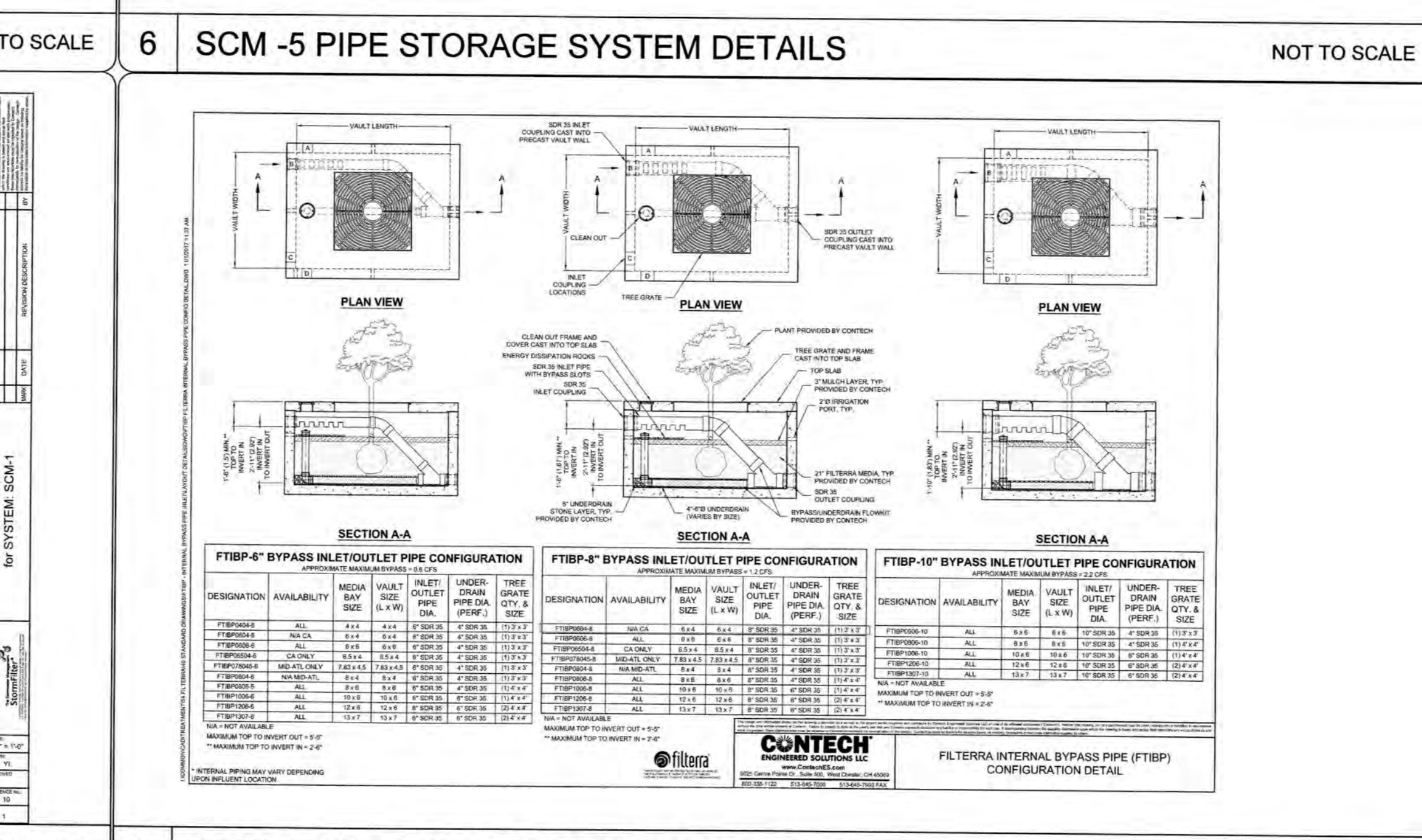
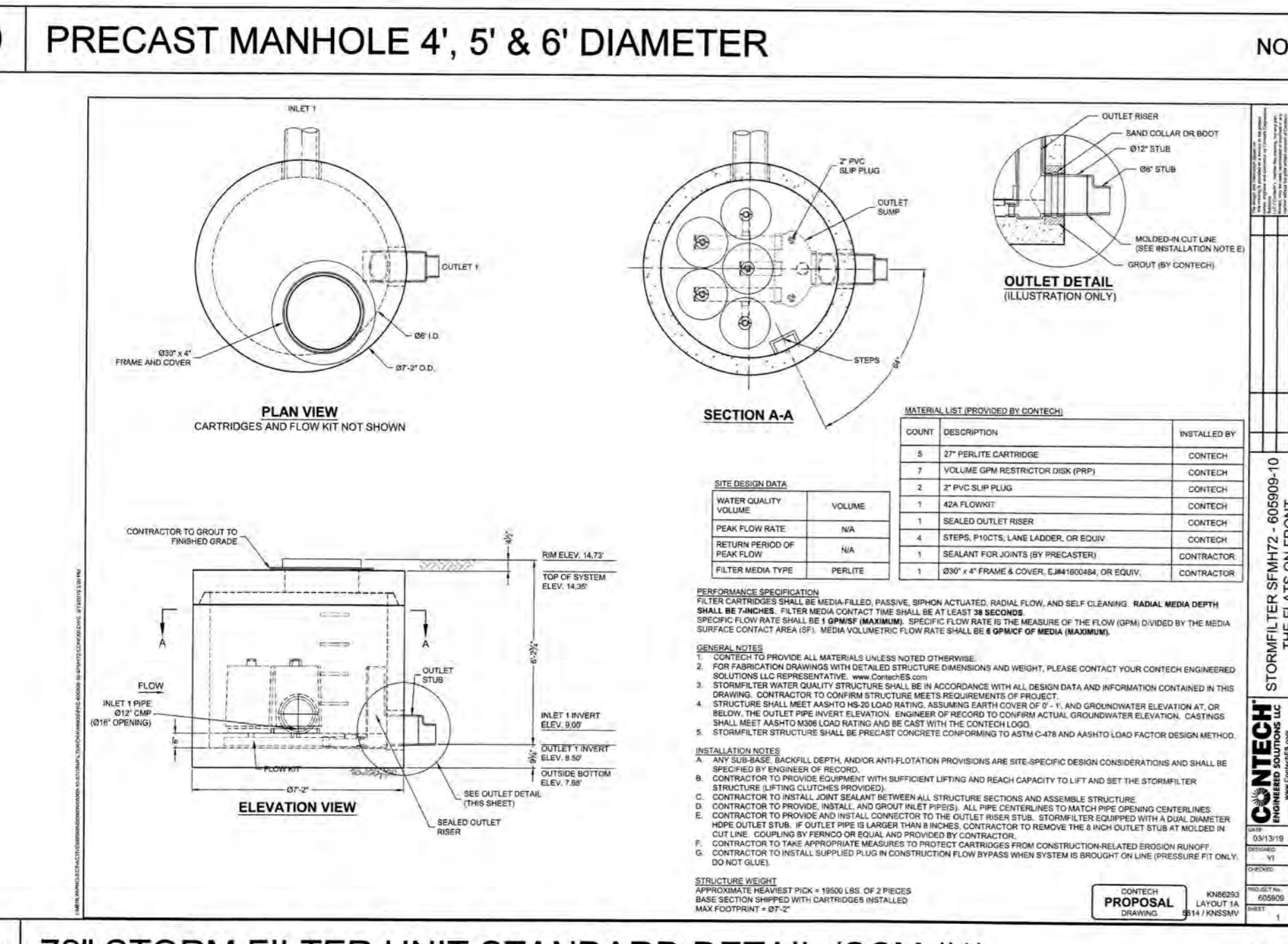
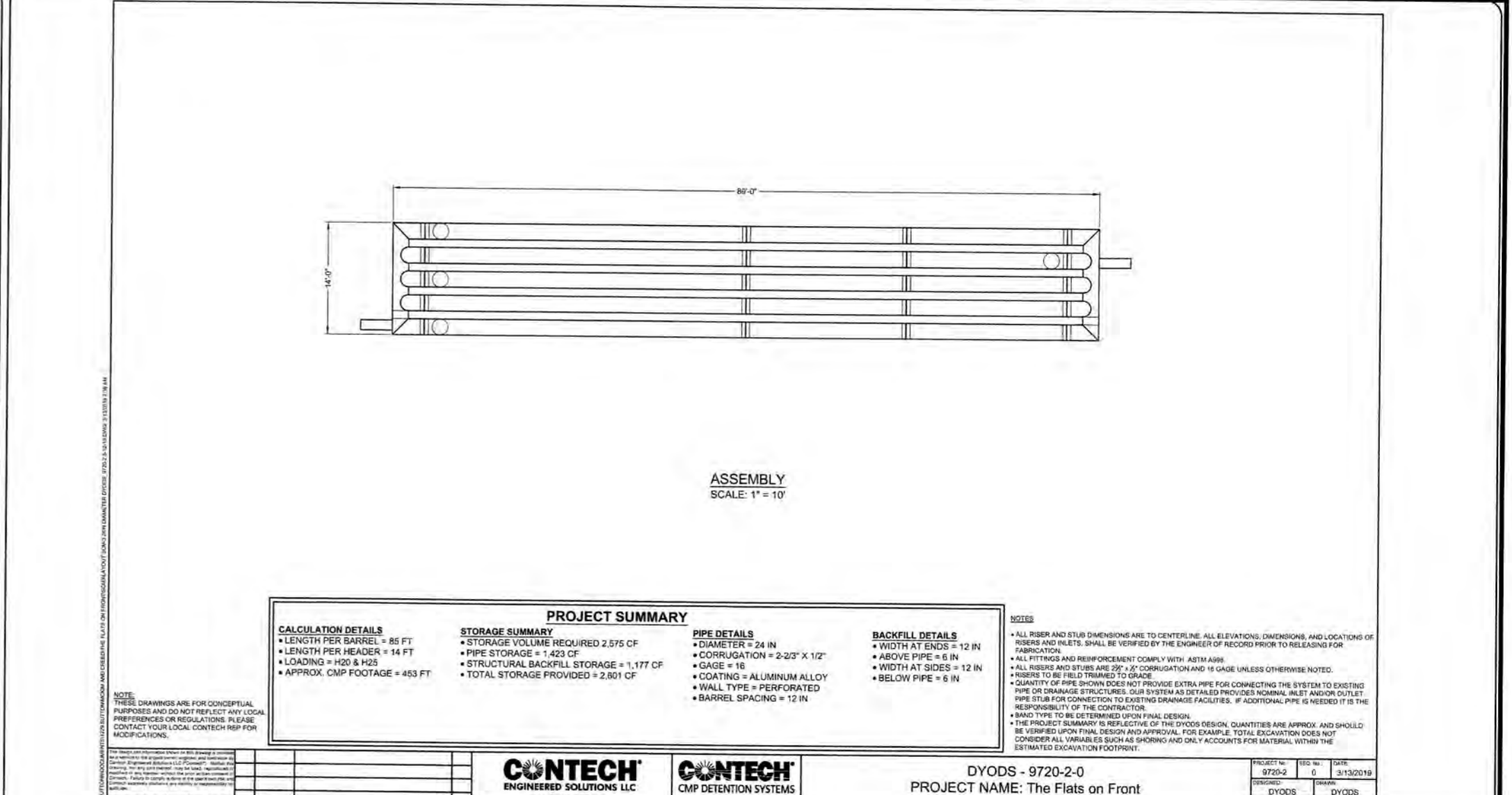
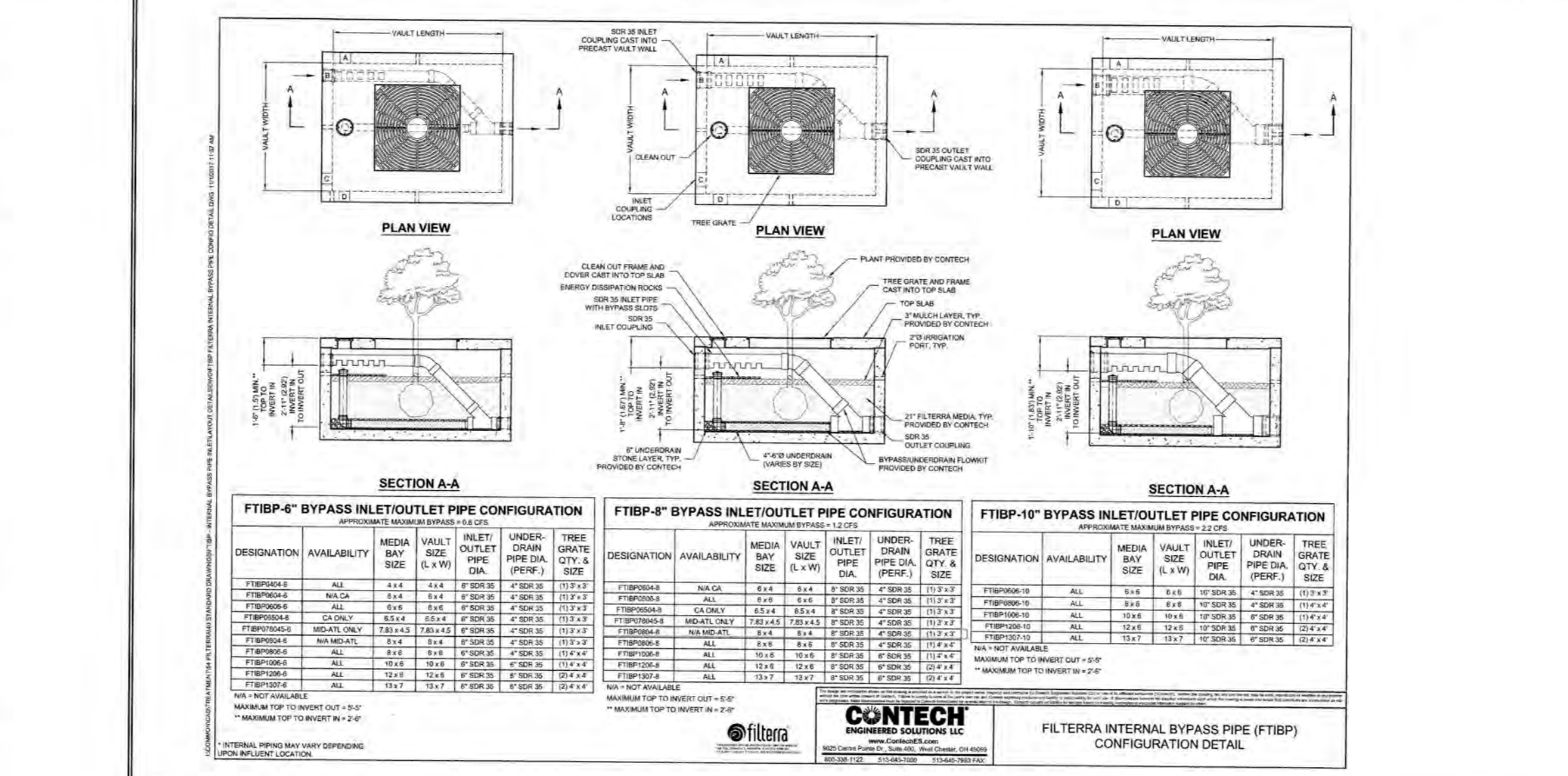
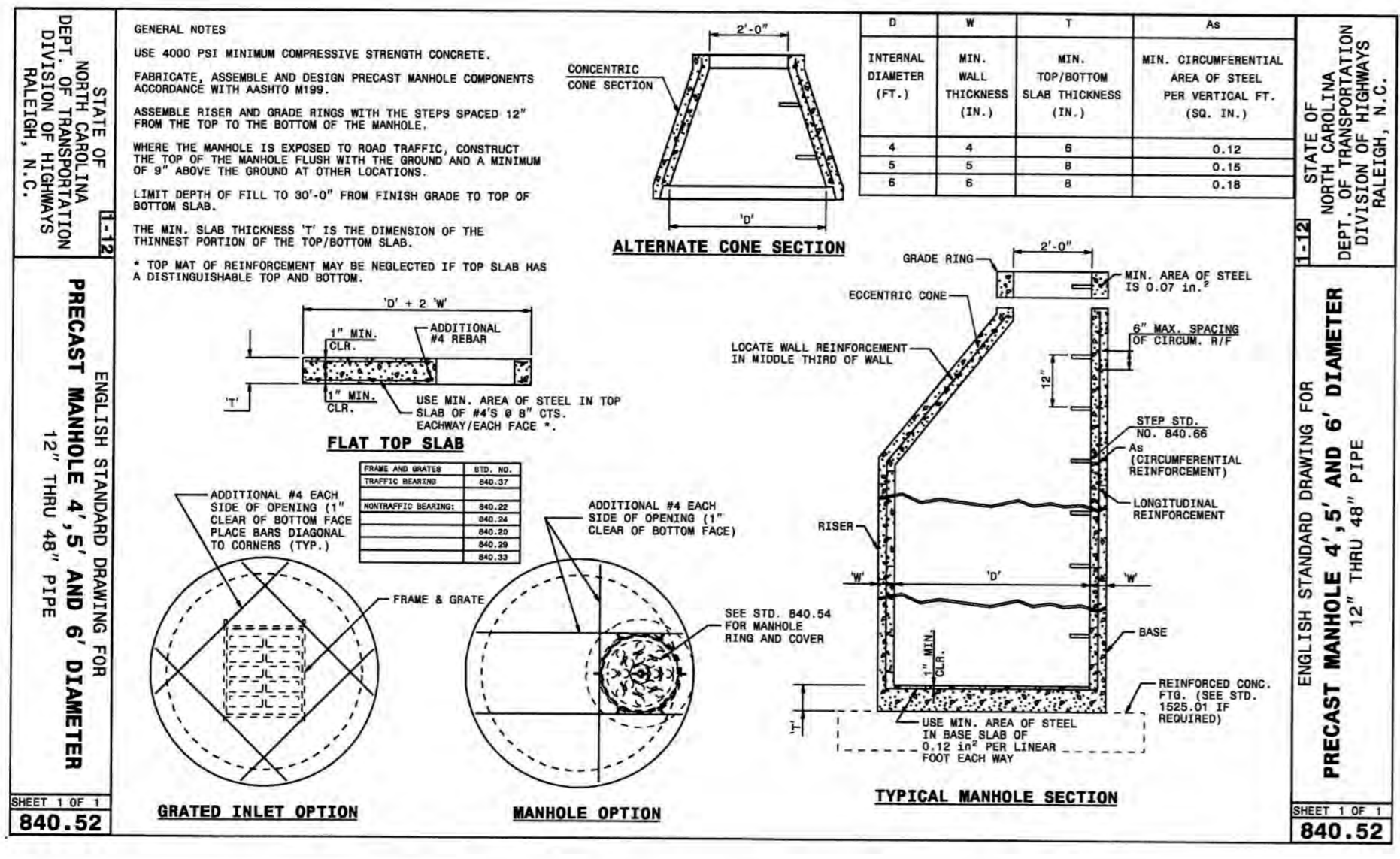
243 North Front Street  
Wilmington, North Carolina 28401  
Phone: (910)343-1048, Fax: (910)251-8282  
License: F-1222

**CLINE DESIGN**

RESIDENTIAL

Professional Engineer Seal: 22574, 04-18-2019

REV.	DESCRIPTION	DATE
0	CITY OF WILMINGTON - RELEASE FOR CONSTRUCTION PLANS	04/18/2019





**CITY OF WILMINGTON**  
 NORTH CAROLINA  
 Public Services Engineering Division  
 APPROVED STORMWATER MANAGEMENT PLAN  
 Date: 4-23-19 Permit # 2019 023  
 Signed: *[Signature]*

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: *[Signature]* Date: 4-23-19  
 Planning: *[Signature]* Traffic: *[Signature]* Fire: *[Signature]*

STRUCTURE TABLE	
STRUCTURE NAME	DETAILS
CB-1-10	RIM = 17.84 INV IN = 11.01 INV OUT = 13.40 INV OUT = 11.01
CB-1-11	RIM = 16.93 INV IN = 11.10 INV OUT = 11.10
CB-1-12	RIM = 15.98 INV IN = 11.18 INV OUT = 11.18
CB-1-13	RIM = 15.02 INV OUT = 11.34
CB-1-16	RIM = 21.49 INV OUT = 17.05
CB-2-1	RIM = 24.57 INV IN = 20.50 INV OUT = 20.50
CB-2-10	RIM = 24.55 INV IN = 20.50 INV OUT = 20.50
CB-2-19	RIM = 25.42 INV IN = 20.50 INV OUT = 20.50
CB-2-20	RIM = 25.36 INV IN = 20.86 INV OUT = 20.86
CB-2-21	RIM = 28.00 INV IN = 23.56 INV OUT = 23.56
CB-2-22	RIM = 30.66 INV IN = 26.32 INV OUT = 26.32
CB-2-23	RIM = 30.96 INV OUT = 26.52
CB-3-2	RIM = 27.40 INV IN = 22.92 INV OUT = 22.92
CB-3-6	RIM = 27.41 INV IN = 22.90 INV OUT = 22.90
DI-1-8	RIM = 14.37 INV OUT = 11.20
DI-1-15	RIM = 19.86 INV OUT = 15.75
DI-2-29	RIM = 26.08 INV IN = 22.05 INV IN = 20.96 INV IN = 20.96 INV OUT = 20.96
DI-2-30	RIM = 26.00 INV OUT = 21.41
DI-2-31	RIM = 26.98 INV OUT = 21.71
DI-3-3	RIM = 30.75 INV IN = 22.96 INV IN = 22.96 INV OUT = 22.96
DI-3-10	RIM = 25.72 INV IN = 23.05
EX CB-1	RIM = -4.02
EX CB-3	RIM = -3.90
EX CB-5	RIM = 9.61
EX MH 1	RIM = 9.86 INV IN = 6.50
FD-2-18	RIM = 25.80 INV OUT = 20.68
FD-3-7	RIM = 25.84 INV OUT = 23.03
HP-1-2	RIM = 14.57 INV OUT = 12.00
HP-1-5	RIM = 14.46 INV IN = 11.19 INV OUT = 11.19

2 STRUCTURE TABLE

STRUCTURE TABLE	
STRUCTURE NAME	DETAILS
HP-1-6	RIM = 13.95 INV IN = 11.12 INV IN = 11.12 INV OUT = 11.12
HP-1-7	RIM = 12.38 INV OUT = 11.15
HP-2-2	RIM = 25.58 INV IN = 20.58 INV IN = 20.58 INV OUT = 20.58
HP-2-3	RIM = 25.22 INV IN = 20.83 INV IN = 20.83 INV OUT = 20.83
HP-2-4	RIM = 25.33 INV OUT = 20.95
HP-2-5	RIM = 25.52 INV OUT = 21.07
HP-2-8	RIM = 25.63 INV OUT = 22.21
HP-2-11	RIM = 24.96 INV IN = 20.71 INV IN = 20.71 INV OUT = 20.71
HP-2-13	RIM = 25.16 INV IN = 20.82 INV OUT = 20.82
HP-2-14	RIM = 25.33 INV OUT = 20.95
HP-2-15	RIM = 24.98 INV OUT = 21.12
HP-2-24	RIM = 25.25 INV IN = 20.96 INV OUT = 20.96
HP-2-25	RIM = 25.16 INV IN = 21.06 INV IN = 21.06
HP-2-26	RIM = 24.61 INV OUT = 21.44
HP-2-33	RIM = 25.96 INV IN = 21.93 INV IN = 21.93
HP-2-34	RIM = 25.95 INV IN = 21.94 INV OUT = 21.94
HP-2-35	RIM = 25.88 INV IN = 22.05 INV IN = 22.05
HP-2-36	RIM = 25.91 INV IN = 22.16 INV IN = 22.16 INV OUT = 22.16
HP-2-39	RIM = 25.84 INV IN = 22.52 INV IN = 22.52 INV OUT = 22.52
HP-2-41	RIM = 25.46 INV OUT = 22.58
HP-2-42	RIM = 25.77 INV IN = 22.81 INV IN = 22.81 INV OUT = 22.81
HP-2-43	RIM = 25.68 INV OUT = 22.87
HP-2-44	RIM = 25.44 INV OUT = 22.85
HP-2-45	RIM = 25.97 INV IN = 22.20 INV IN = 22.20 INV OUT = 22.20
HP-2-46	RIM = 25.92 INV IN = 22.40 INV OUT = 22.40
HP-2-47	RIM = 25.54 INV OUT = 22.50
HP-3-4	RIM = 30.61 INV OUT = 23.08
HP-3-5	RIM = 30.62 INV OUT = 23.11
HP-3-9	RIM = 25.68 INV OUT = 22.95

STRUCTURE TABLE	
STRUCTURE NAME	DETAILS
HP-4-2	RIM = 21.21 INV OUT = 18.51
HP-4-3	RIM = 13.17 INV IN = 11.25 INV OUT = 11.25
HP-4-5	RIM = 11.37 INV IN = 7.98 INV OUT = 7.98
HP-4-6	RIM = 11.00 INV IN = 7.95 INV OUT = 7.95
HP-4-7	RIM = 10.78 INV IN = 7.84 INV IN = 7.84 INV OUT = 6.75
HP-5-1	RIM = 13.70 INV IN = 11.49 INV OUT = 11.30
HP-5-2	RIM = 13.78 INV IN = 11.61 INV IN = 11.61
HP-5-3	RIM = 13.21 INV OUT = 12.00
HP-5-4	RIM = 13.85 INV IN = 8.30 INV OUT = 8.30
HP-5-5	RIM = 13.74 INV IN = 8.28 INV OUT = 8.28
HP-5-6	RIM = 12.60 INV IN = 7.69 INV OUT = 7.69
HP-5-7	RIM = 9.77 INV IN = 6.93 INV OUT = 6.93
IN-1-0A	RIM = 12.27 INV IN = 10.75
IN-1-0B	RIM = 12.55 INV IN = 10.75
IN-2-0A	RIM = 21.92 INV IN = 20.40
IN-2-0B	RIM = 22.78 INV IN = 20.40
IN-2-0C	RIM = 21.02 INV IN = 19.50
IN-3-0	RIM = 24.60 INV IN = 22.80
IN-4-0	RIM = 11.75 INV IN = 11.00
IN-5-0	RIM = 12.00 INV IN = 11.25
JB-2-32	RIM = 25.94 INV IN = 21.60 INV OUT = 21.60
JB-3-0	RIM = 25.46 INV IN = 22.70 INV IN = 22.70 INV OUT = 21.50
JB-3-1	RIM = 27.56 INV IN = 22.87 INV IN = 22.87 INV OUT = 22.87
JB-3-8	RIM = 25.69 INV IN = 22.92 INV IN = 22.92 INV OUT = 22.92
MH-1-9	RIM = 14.55 INV IN = 10.95 INV IN = 10.95 INV OUT = 10.95
MH-1-14	RIM = 19.70 INV IN = 15.50 INV IN = 15.50 INV OUT = 15.50
MH-2-9	RIM = 24.65 INV IN = 19.96 INV IN = 19.96 INV OUT = 19.96
MH-2-17	RIM = 25.43 INV IN = 20.31 INV IN = 20.31 INV OUT = 20.31
MH-2-27	RIM = 25.57 INV IN = 20.50 INV IN = 20.50 INV OUT = 20.50

NOT TO SCALE

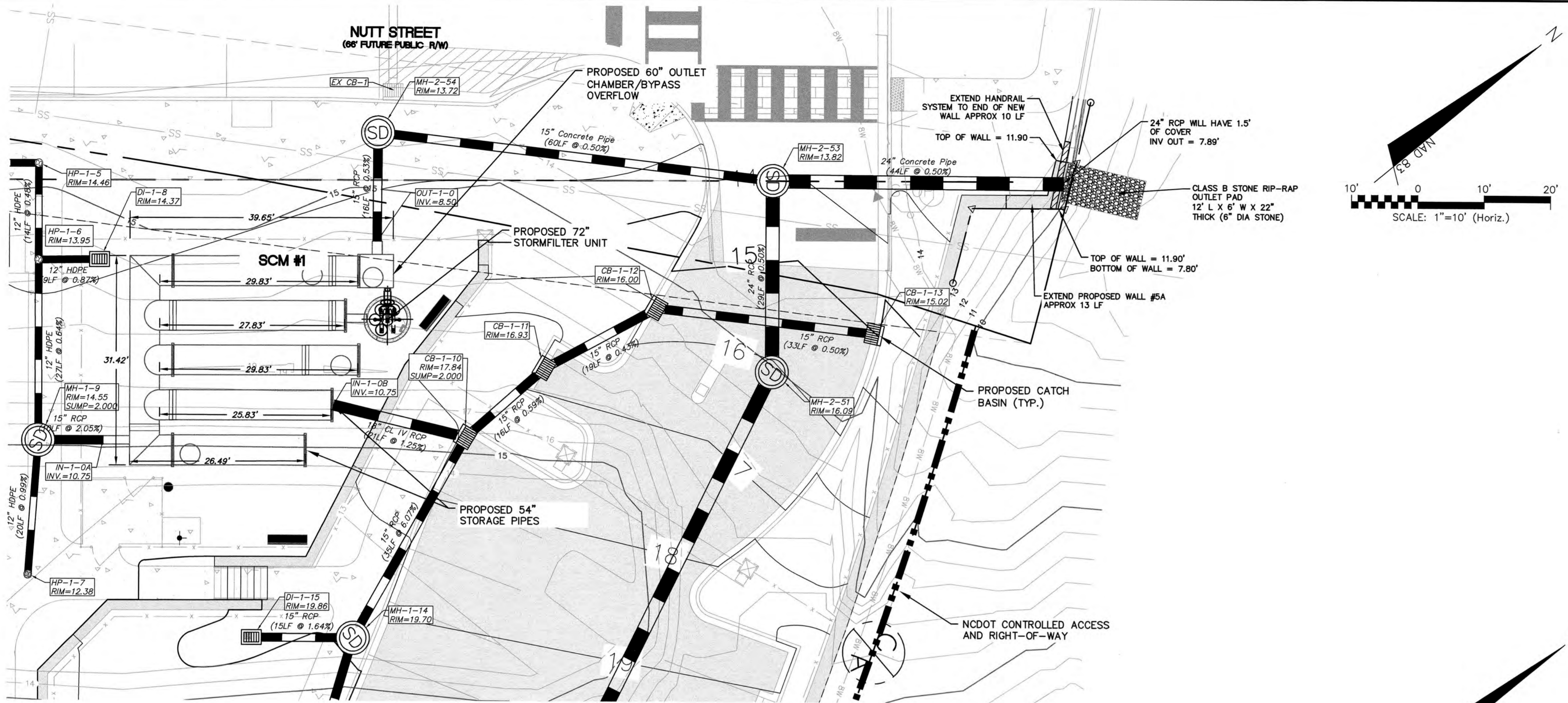
STRUCTURE TABLE	
STRUCTURE NAME	DETAILS
MH-2-28	RIM = 25.66 INV OUT = 20.70
MH-2-48	RIM = 24.69 INV IN = 15.83 INV OUT = 15.83
MH-2-49	RIM = 25.65 INV IN = 15.50 INV OUT = 15.50
MH-2-50	RIM = 25.63 INV IN = 14.72 INV OUT = 14.72
MH-2-51	RIM = 16.09 INV IN = 10.25 INV OUT = 8.75
MH-2-53	RIM = 14.12 INV IN = 8.11 INV IN = 8.11 INV OUT = 8.11
MH-2-54	RIM = 13.72 INV IN = 8.41 INV IN = 8.41
MH-3-11	RIM = 28.54 INV IN = 21.20
NCDOT OUT-1	RIM = 10.27
OUT-1-0	RIM = 12.16 INV OUT = 8.50
OUT-2-0	RIM = 18.88 INV OUT = 16.00
OUT-3-0	RIM = 28.51 INV OUT = 22.80
OUT-4-0	RIM = 9.02 INV OUT = 8.08
OUT-5-0	RIM = 9.08 INV OUT = 8.33

STORM DRAINAGE PIPE DATA TABLE							
FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	UPSTREAM INVERT	DOWNSTREAM INVERT
OUT-5-0	HP-5-4	3.00'	8"	HDPE	1.00%	8.33	8.30
OUT-4-0	HP-4-5	21.98'	8"	HDPE	0.45%	8.08	7.98
OUT-3-0	JB-3-0	2.99'	15"	RCP	3.34%	22.80	22.70
OUT-2-0	MH-2-48	33.45'	24"	RCP	0.50%	16.00	15.83
OUT-1-0	MH-2-54	16.33'	15"	RCP	0.53%	8.50	8.41
MH-2-54	MH-2-53	59.97'	15"	Concrete Pipe	0.50%	8.41	8.11
MH-2-53	NCDOT-OUT	43.85'	24"	Concrete Pipe	0.50%	8.11	7.89
MH-2-51	MH-2-53	28.73'	24"	RCP	0.50%	8.75	8.61
MH-2-50	MH-2-51	181.35'	24"	RCP	2.46%	14.72	10.25
MH-2-49	MH-2-50	156.23'	24"	RCP	0.50%	15.50	14.72
MH-2-48	MH-2-49	66.26'	24"	RCP	0.50%	15.83	15.50
MH-2-28	MH-2-27	28.49'	15"	RCP	0.70%	20.70	20.50
MH-2-27	IN-2-0B	14.47'	24"	RCP	0.69%	20.50	20.40
MH-2-17	MH-2-9	71.84'	15"	RCP	0.48%	20.31	19.96
MH-2-9	IN-2-0C	48.31'	15"	RCP	0.95%	19.96	19.50
MH-1-14	CB-1-10	34.60'	15"	RCP	6.07%	15.50	13.40
MH-1-9	IN-1-0A	9.77'	15"	RCP	2.05%	10.95	10.75
JB-3-8	CB-3-6	6.05'	15"	CL IV RCP	0.33%	22.92	22.90
JB-3-1	IN-3-0	22.21'	18"	RCP	0.32%	22.87	22.80
JB-3-0	MH-3-11	13.98'	15"	RCP	2.15%	21.50	21.20
JB-2-32	DI-2-29	131.65'	15"	RCP	0.49%	21.60	20.96
HP-5-7	HP-4-7	31.42'	8"	HDPE	0.50%	6.93	6.77
HP-5-6	HP-5-7	151.71'	8"	HDPE	0.50%	7.69	6.93
HP-5-5	HP-5-6	118.39'	8"	HDPE	0.50%	8.28	7.69
HP-5-4	HP-5-5	4.00'	8"	HDPE	0.50%	8.30	8.28
HP-5-3	HP-5-2	78.46'	8"	HDPE	0.50%	12.00	11.61
HP-5-2	HP-5-1	24.00'	8"	HDPE	0.50%	11.61	11.49
HP-5-1	IN-5-0	4.99'	8"	HDPE	1.00%	11.30	11.25
HP-4-7	EX MH 1	9.42'	8"	HDPE	2.65%	6.75	6.50
HP-4-6	HP-4-7	20.92'	8"	HDPE	0.53%	7.95	7.84
HP-4-5	HP-4-6	4.69'	8"	HDPE	0.64%	7.98	7.95
HP-4-3	IN-4-0	5.02'	8"	HDPE	4.98%	11.25	11.00
HP-4-2	HP-4-3	88.14'	8"	HDPE	8.24%	18.51	11.25
HP-3-9	JB-3-8	7.84'	12"	HDPE	0.38%	22.95	22.92
HP-3-5	DI-3-3	48.81'	8"	HDPE	0.31%	23.11	22.96
HP-3-4	DI-3-3	37.77'	8"	HDPE	0.32%	23.08	22.96
HP-2-47	HP-2-46	20.75'	8"	HDPE	0.48%	22.50	22.40
HP-2-46	HP-2-45	40.33'	8"	HDPE	0.50%	22.40	22.20
HP-2-45	HP-2-46	6.19'	8"	HDPE	0.65%	22.20	22.16
HP-2-44	HP-2-42	8.37'	8"	HDPE	0.48%	22.85	22.81
HP-2-43	HP-2-42	12.06'	8"	HDPE	0.50%	22.87	22.81
HP-2-42	HP-2-39	58.23'	8"	HDPE	0.50%	22.81	22.52
HP-2-41	HP-2-39	12.01'	8"	HDPE	0.50%	22.58	22.52
HP-2-39	HP-2-36	71.07'	8"	HDPE	0.51%	22.52	22.16
HP-2-36	HP-2-35	21.48'	12"	HDPE	0.51%	22.16	22.05
HP-2-35	HP-2-34	22.38'	12"	HDPE	0.49%	22.05	21.94
HP-2-34	HP-2-33	2.61'	12"	HDPE	0.38%	21.94	21.93
HP-2-33	JB-2-32	62.46'	12"	HDPE	0.53%	21.93	21.60
HP-2-26	HP-2-25	37.62'	8"	HDPE	1.01%	21.44	21.06
HP-2-25	HP-2-24	10.03'	8"	HDPE	1.00%	21.06	20.96

1 PIPE DATA TABLE

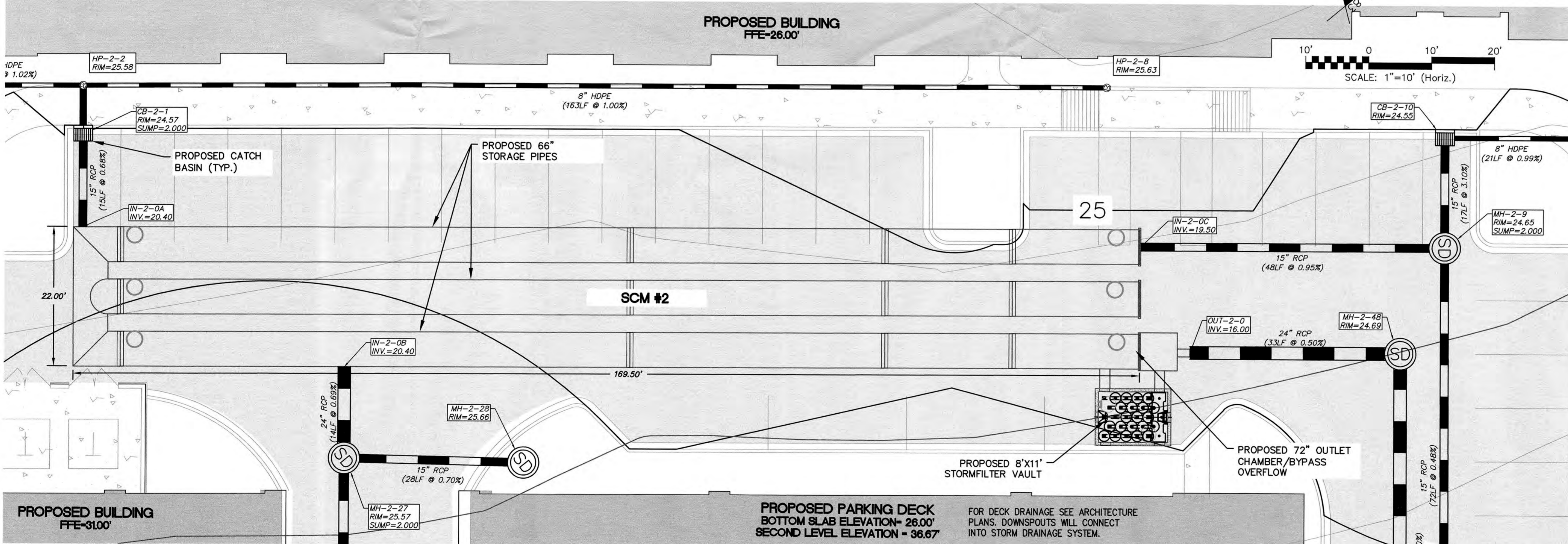
NOT TO SCALE

STORM DRAINAGE PIPE DATA TABLE							
FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	UPSTREAM INVERT	DOWNSTREAM INVERT
HP-2-24	CB-2-20	9.59'	8"	HDPE	1.04%	20.96	20.86
HP-2-15	HP-2-11	41.56'	8"	HDPE	0.99%	21.12	20.71
HP-2-14	HP-2-13	15.43'	8"	HDPE	0.84%	20.95	20.82
HP-2-13	HP-2-11	10.70'	8"	HDPE	1.03%	20.82	20.71
HP-2-11	CB-2-10	21.24'	8"	HDPE	0.99%	20.71	20.50
HP-2-8	HP-2-2	162.70'	8"	HDPE	1.00%	22.21	20.58
HP-2-5	HP-2-3	24.14'	8"	HDPE	0.99%	21.07	20.83
HP-2-4	HP-2-3	11.84'	8"	HDPE	1.01%	20.95	20.83
HP-2-3	HP-2-2	24.48'	8"	HDPE	1.02%	20.83	20.58
HP-2-2	CB-2-1	7.71'	12"	HDPE	1.04%	20.58	20.50
HP-1-7	MH-1-9	20.22'	12"	HDPE	0.99%	11.15	10.95
HP-1-6	MH-1-9	27.06'	12"	HDPE	0.64%	11.12	10.95
HP-1-5	HP-1-6	14.50'	12"	HDPE	0.48%	11.19	11.12
HP-1-2	HP-1-5	163.57'	12"	HDPE	0.50%	12.00	11.19
FD-3-7	CB-3-6	43.07'	15"	RCP	0.30%	23.03	22.90
FD-2-18	MH-2-17	36.75'	15"	RCP	1.00%	20.68	20.31
DI-3-10	JB-3-8	41.26'	12"	HDPE	0.32%	23.05	22.92
DI-3-3	CB-3-2	10.83'	15"	CL IV RCP	0.37%	22.96	22.92
DI-2-31	DI-2-29	150.50'	15"	RCP	0.50%	21.71	20.96
DI-2-30	DI-2-29	89.71'	15"	RCP	0.50%	21.41	20.96
DI-2-29	MH-2-27	97.18'	18"	RCP	0.47%	20.96	20.50
DI-1-15	MH-1-14	15.27'	15"	RCP	1.64%	15.75	15.50
DI-1-8	HP-1-6	9.18'	12"	HDPE	0.87%	11.20	11.12
CB-3-6	JB-3-1	6.09'	15"	RCP	0.49%	22.90	22.87
CB-3-2	JB-3-1	16.21'	15"	RCP	0.31%	22.92	22.87
CB-2-23	CB-2-22	40.30'	15"	RCP	0.50%	26.52	26.32
CB-2-22	CB-2-21	41.70'	15"	RCP	6.62%	26.32	23.56
CB-2-21	CB-2-20	57.17'	15"	RCP	4.72%	23.56	20.86
CB-2-20	CB-2-19	73.62'	18"	RCP	0.49%	20.86	20.50
CB-2-19	MH-2-17	37.12'	15"	RCP	0.50%	20.50	20.31
CB-2-10	MH-2-9	17.42'	15"	RCP	3.10%	20.50	19.96
CB-2-1	IN-2-0A	14.71'	15"	RCP	0.68%	20.50	20.40
CB-1-16	MH-1-14	33.08'	15"	RCP	4.69%	17.05	15.50
CB-1-13	CB-1-12						



STORMFILTER UNIT WITH UNDERGROUND STORAGE - SCM #1

STORMFILTER/STORAGE SYSTEM TABLE		
DESIGN	SCM #1	SCM #2
# OF RUNS	5	3
LENGTH PER RUN	VARIES	169.5'
PIPE DIAMETER (IN)	54"	66"
BOTTOM ELEV. (FT)	9.0	16.5
OUTLET DIAMETER (FT)	60"	72"
STORMFILTER SIZE	72" DIA	8'X11'
# OF CARTRIDGES	5	22
WEIR PLATE ELEV.	12.48	20.85



STORMFILTER UNIT WITH UNDERGROUND STORAGE - SCM #2

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1 inch

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

Date: 4-23-19 Permit # 2019023  
Signed: S. See

**Approved Construction Plan**  
Name: [Signature] Date: 4-23-19  
Planning: [Signature] 4-23-19  
Traffic: [Signature] 4-23-19  
Fire: [Signature] 4-23-19

REVNO.	DESCRIPTIONS	DATE
0	CITY OF WILMINGTON - RELEASE FOR CONSTRUCTION PLANS	04/18/2019

SEAL

**PROFESSIONAL ENGINEER**  
CHARD M. COLLIER  
04-18-2019

**MCKIM & CREED**  
243 North Front Street  
Wilmington, North Carolina 28401  
Phone: (910)343-1048, Fax: (910)251-8282  
License: F-1222  
www.mckimcreed.com

**dpj**  
RESIDENTIAL

**CLINE**  
DESIGN

**THE FLATS ON FRONT**  
WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

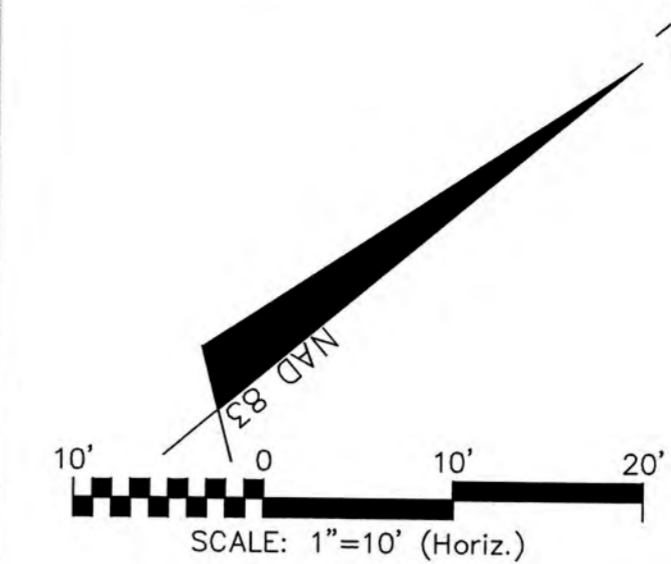
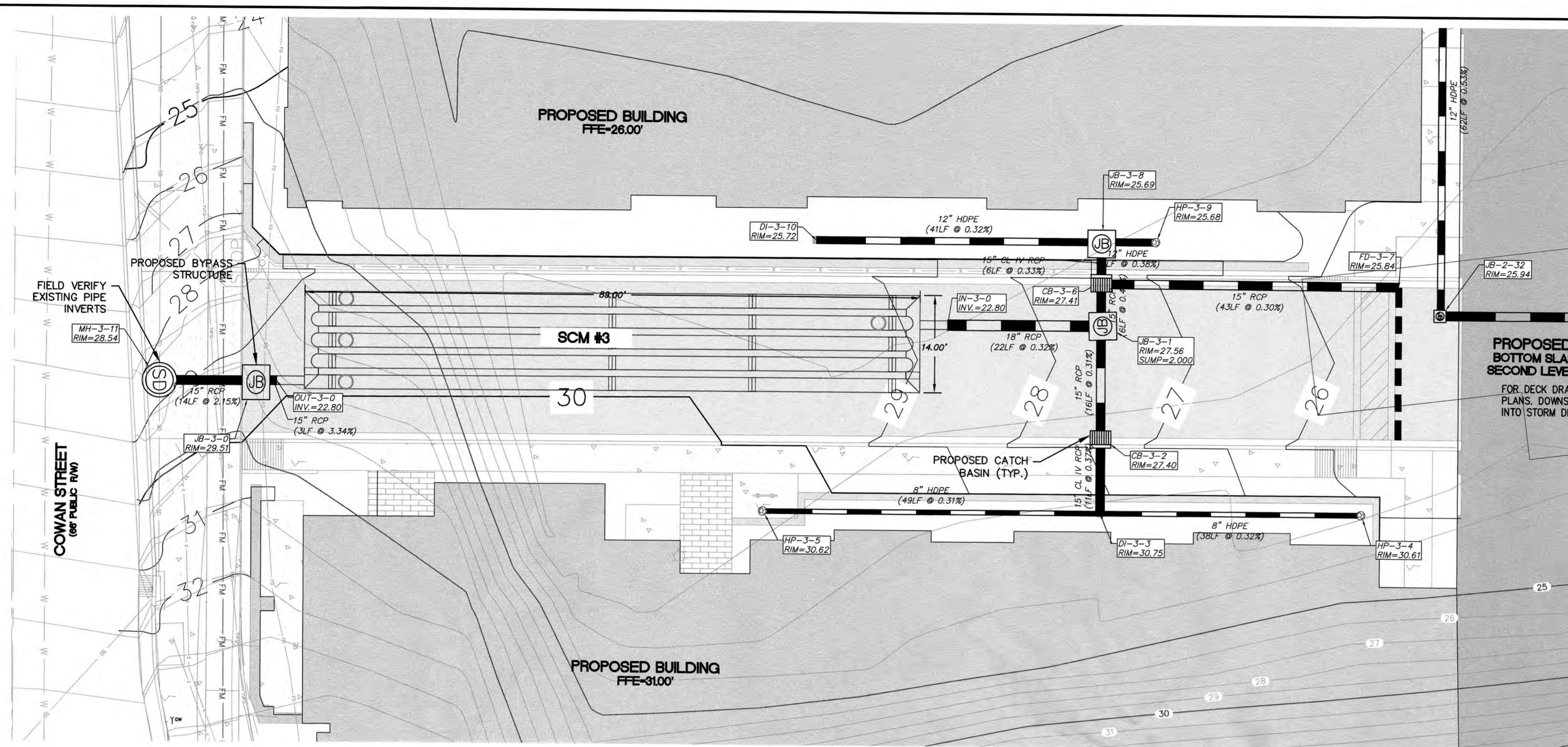
**STORMWATER MANAGEMENT DETAILS**

DATE: 04/18/2019  
MCE PROJ # 7402-0001  
DRAWN: ALM/KCE  
DESIGNED: ALM  
CHECKED: RMC  
PROJ. MGR.: KCE

SCALE  
HORIZONTAL: 1"=30'  
VERTICAL: N/A

MAC FILE NUMBER  
**CN-501**  
DRAWING NUMBER  
**41**

STATUS: IFC PLAN SET  
ISSUED FOR CONSTRUCTION  
REVISION  
**0**

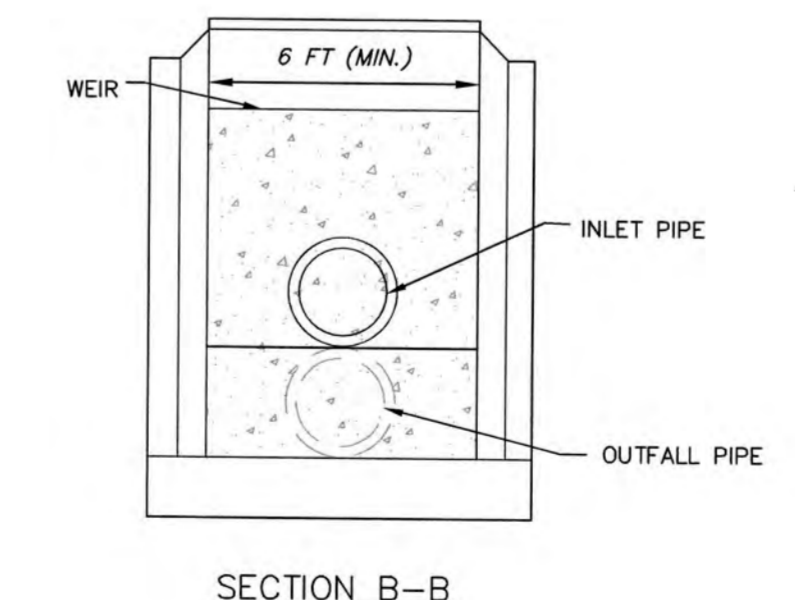
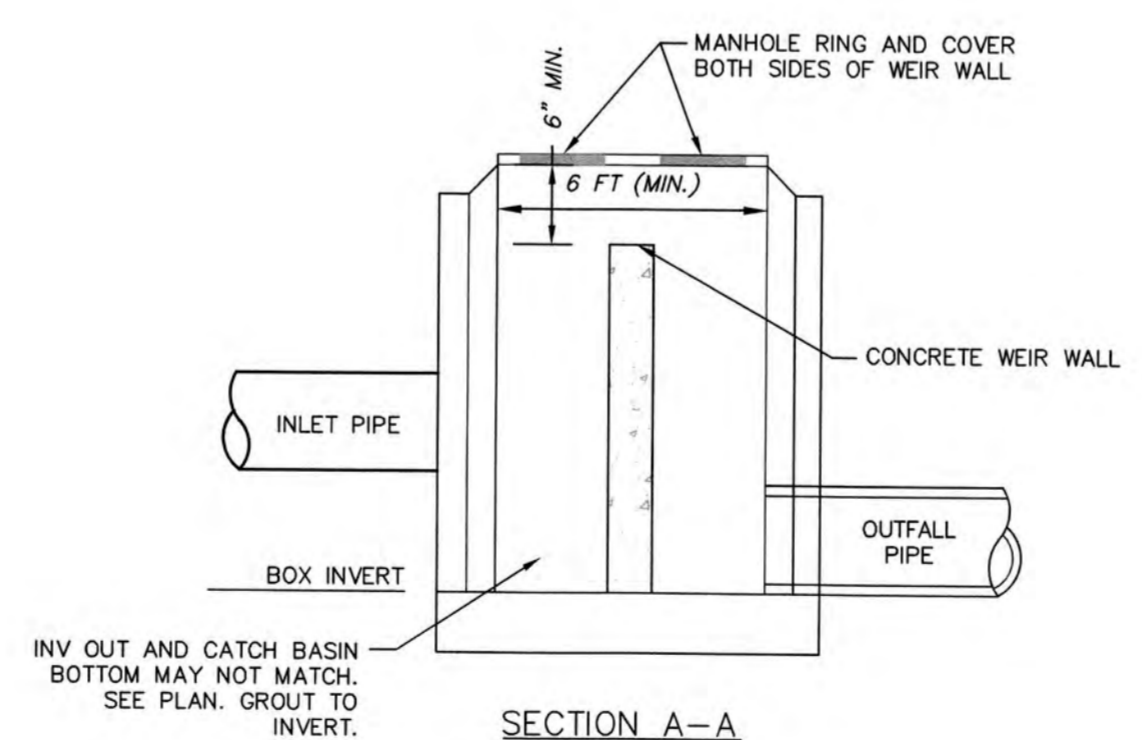
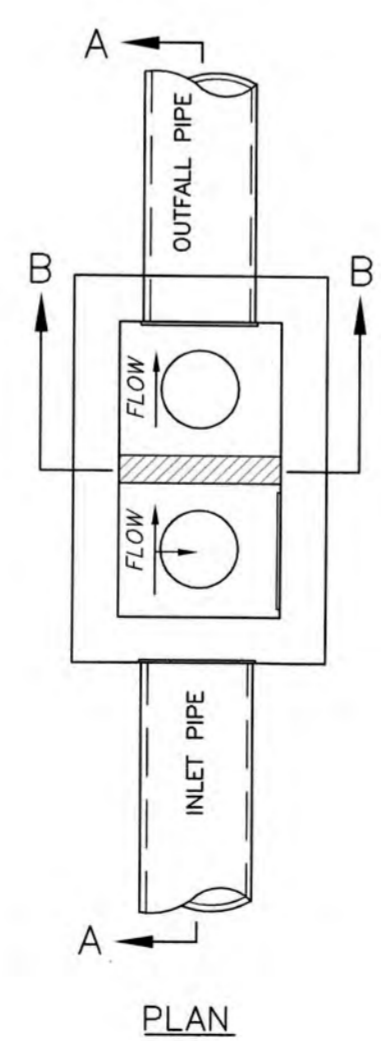


INFILTRATION TRENCH SYSTEM TABLE	
DESIGN	SCM #3
# OF RUNS	5
LENGTH PER RUN	89'
PIPE DIAMETER (IN)	24"

**INFILTRATION TRENCH - SCM #3**

**INFILTRATION GALLERY SCM #3**  
 DA= 0.60 AC  
 WQV STORAGE REQD.= 2,575 CF  
 STORAGE PROV.= 2,601 CF

WEIR STRUCTURE TABLE	
DESIGN	JB-3-0
RIM ELEVATION	29.51'
WEIR ELEVATION	24.80'
SUMP INVERT IN	22.8'
OUTFALL PIPE INVERT	21.5'



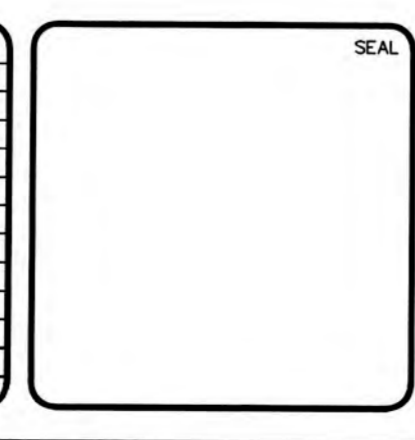
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**CITY OF WILMINGTON**  
 NORTH CAROLINA  
 Public Services Engineering Division  
 APPROVED STORMWATER MANAGEMENT PLAN  
 Date: 4-23-19 Permit # 2019023  
 Signed: E. S. O. R.

**Approved Construction Plan**  
 Name: W. W. W. Date: 4-23-19  
 Planning: W. W. W. 4-23-19  
 Traffic: W. W. W. 4-23-19  
 Fire: W. W. W. 4-23-19

REV. NO.	DESCRIPTIONS / REVISIONS	DATE
0	CITY OF WILMINGTON - RELEASE FOR CONSTRUCTION PLANS	04/18/2019



**MCKIM & CREED**  
 243 North Front Street  
 Wilmington, North Carolina 28401  
 Phone: (910)343-1048, Fax: (910)251-8282  
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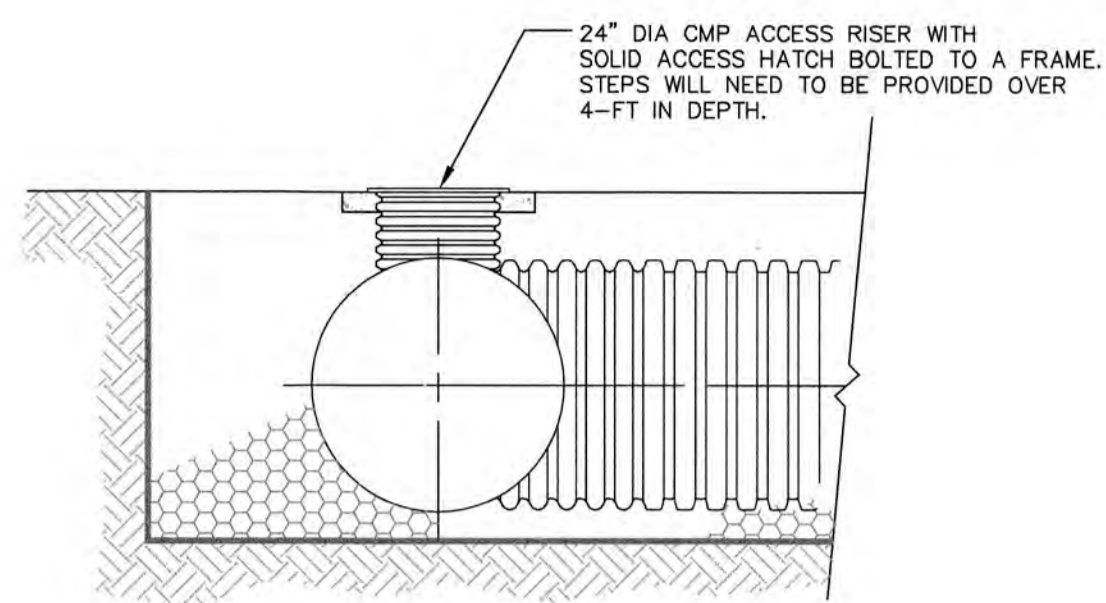
**dj RESIDENTIAL**  
**CLINE DESIGN**

**THE FLATS ON FRONT**  
 WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA  
**STORMWATER MANAGEMENT DETAILS**

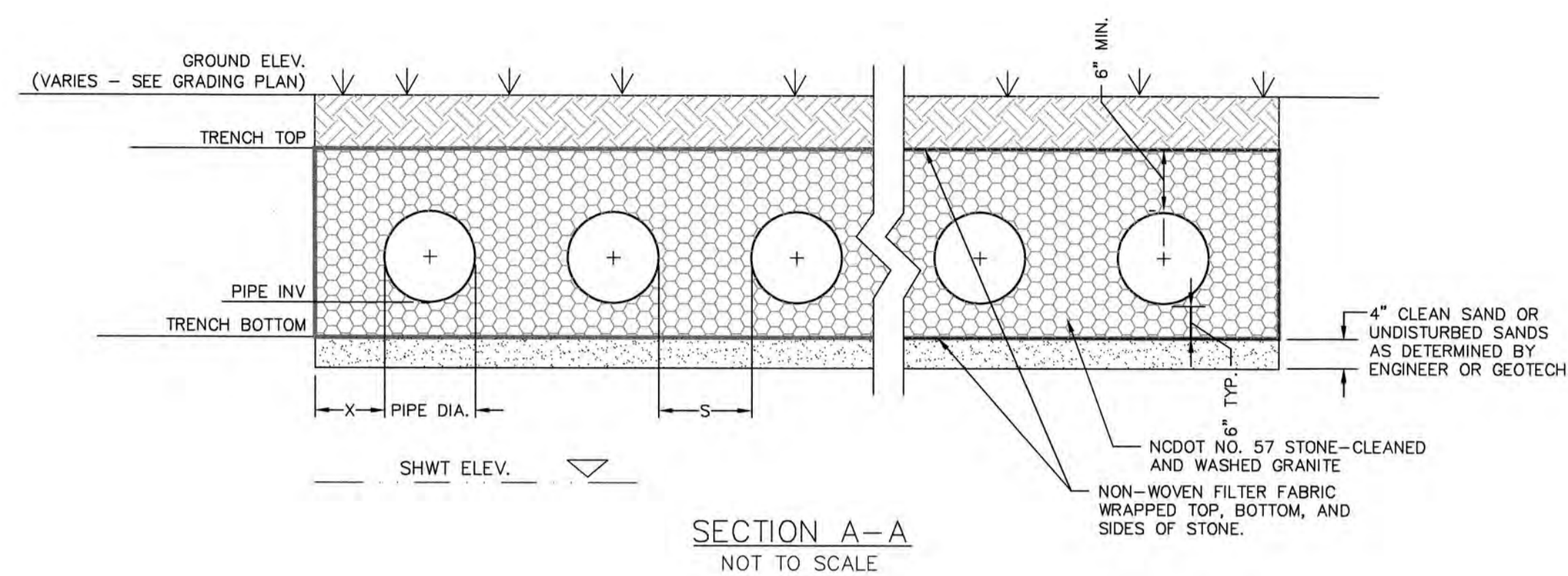
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 MCE PROJ. #: 7402-0001  
 DRAWN: ALM/KCE  
 DESIGNED: ALM  
 CHECKED: RMC  
 PROJ. MGR.: KCE

SCALE: 1"=30'  
 HORIZONTAL: 1"=30'  
 VERTICAL: N/A

M&C FILE NUMBER: CN-502  
 DRAWING NUMBER: 42  
 STATUS: IFC PLAN SET  
 ISSUED FOR CONSTRUCTION  
 REVISION: 0



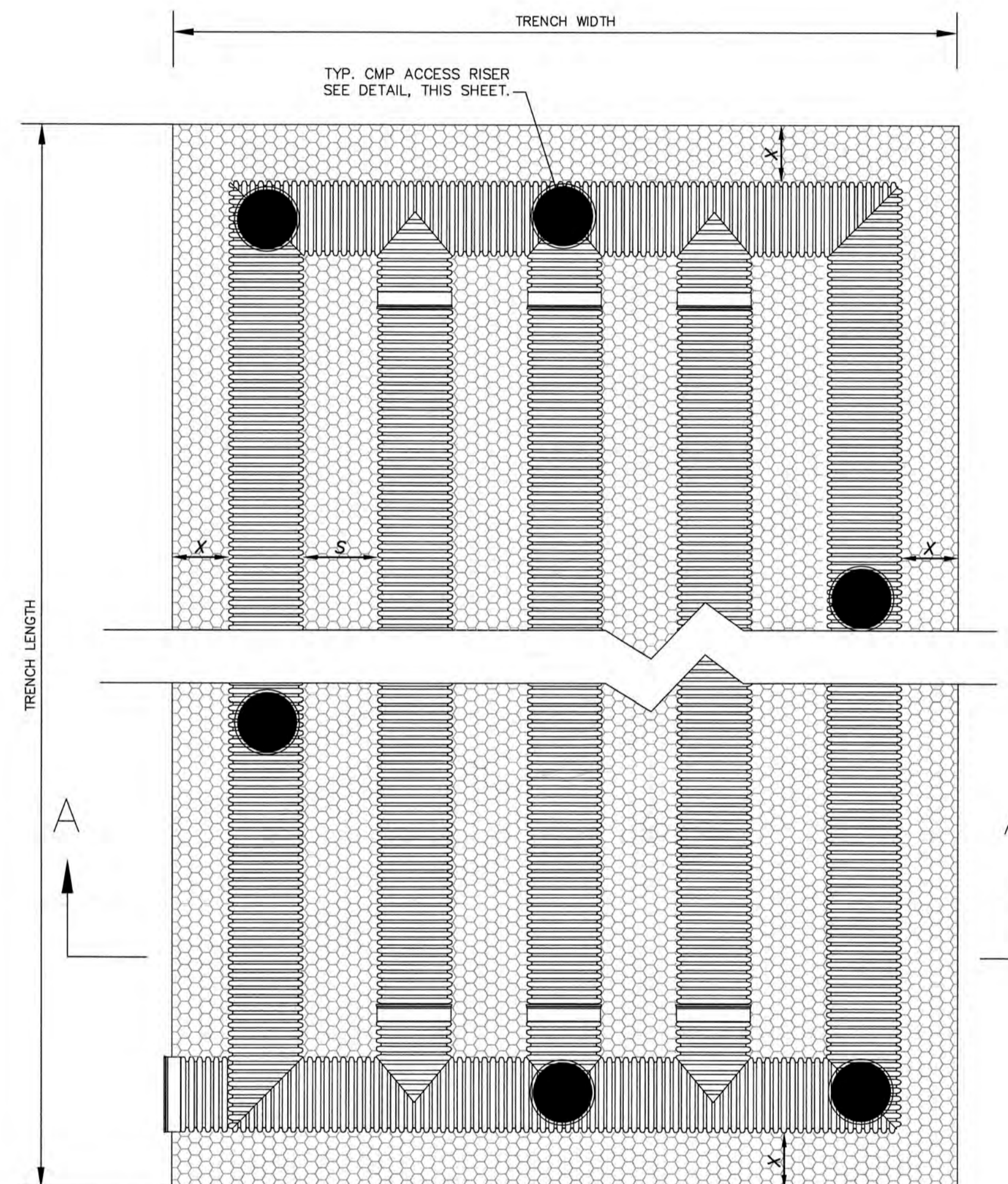
**TYP. CMP ACCESS RISER**  
NOT TO SCALE



**SECTION A-A**  
NOT TO SCALE

INFILTRATION TRENCH SYSTEM TABLE	
DESIGN	INFILTRATION GALLERY SCM #3
# OF RUNS	5
LENGTH PER RUN	89'
PIPE DIAMETER (IN)	24"
MIN. X (IN)	12"
MIN. S (IN)	12"
TRENCH WIDTH (FT)	16'
TRENCH LENGTH (FT)	91'
SHWT ELEVATION	20.2'
TRENCH BOTTOM ELEVATION	22.3'
PIPE TRENCH INVERT	22.8'
TRENCH TOP ELEVATION	25.3'

- NOTES:**
- SHWT ELEVATIONS AND INFILTRATION RATES TAKEN FROM SITE & SOILS EVALUATION REPORT BY ECS SOUTHEAST, LLP DATED AUGUST 3, 2018 FOR DPJ RESIDENTIAL, LLC.
  - EXISTING ELEVATIONS TAKEN FROM COMBINATION OF TOPOGRAPHY SURVEY BY BATEMAN CIVIL SURVEY COMPANY AND CPWA PROJECT SURVEY.



**PLAN VIEW**  
NOT TO SCALE

**NOTES:**

- INFILTRATION TRENCH PIPE SHALL BE CONTECH PERFORATED ALUMINIZED OR ALUMINUM CMP PIPE MEETING AASHTO M-36, CLASS 2 PERFORATIONS (3/8" DIA); OR PERFORATED HDPE MEETING AASHTO CLASS 2, TYPE S PERFORATIONS. CONTRACTOR TO SUBMIT INFILTRATION TRENCH SPECIFICATION FOR ENGINEER APPROVAL.
- CMP OR HDPE PIPE TO BE INSTALLED PER ASTM & MANUFACTURER'S RECOMMENDATIONS. PIPE JOINTS TO BE PER MANUFACTURER'S RECOMMENDATIONS AS AN UNDERGROUND INFILTRATION SYSTEM.
- SEE TABLE FOR NUMBER OF PIPE RUNS AND DIMENSIONS.
- IT IS IMPORTANT THAT FILL MATERIAL FOR THE INFILTRATION TRENCHES SHALL BE SAME MATERIAL AS EXISTING SOILS UNDERLYING THE TRENCH. BE SURE NOT TO COMPACT THE SAND UNDER THE TRENCH SO THAT PROPER INFILTRATION RATES CAN OCCUR BELOW THE TRENCHES.

**TYP. INFILTRATION TRENCH SYSTEM**  
NOT TO SCALE

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1 inch

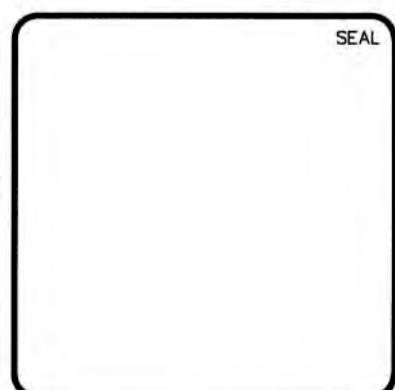
**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN

Date: 4-23-19 Permit # 2019023  
Signed: E-S-22

**Approved Construction Plan**

Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Planning: [Signature] 4-23-19  
Traffic: [Signature] 4-23-19  
Fire: [Signature] 4-23-19

REV. NO.	DESCRIPTIONS	DATE
0	CITY OF WILMINGTON - RELEASE FOR CONSTRUCTION PLANS	04/18/2019



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**dpj** RESIDENTIAL  
**CLINE DESIGN**

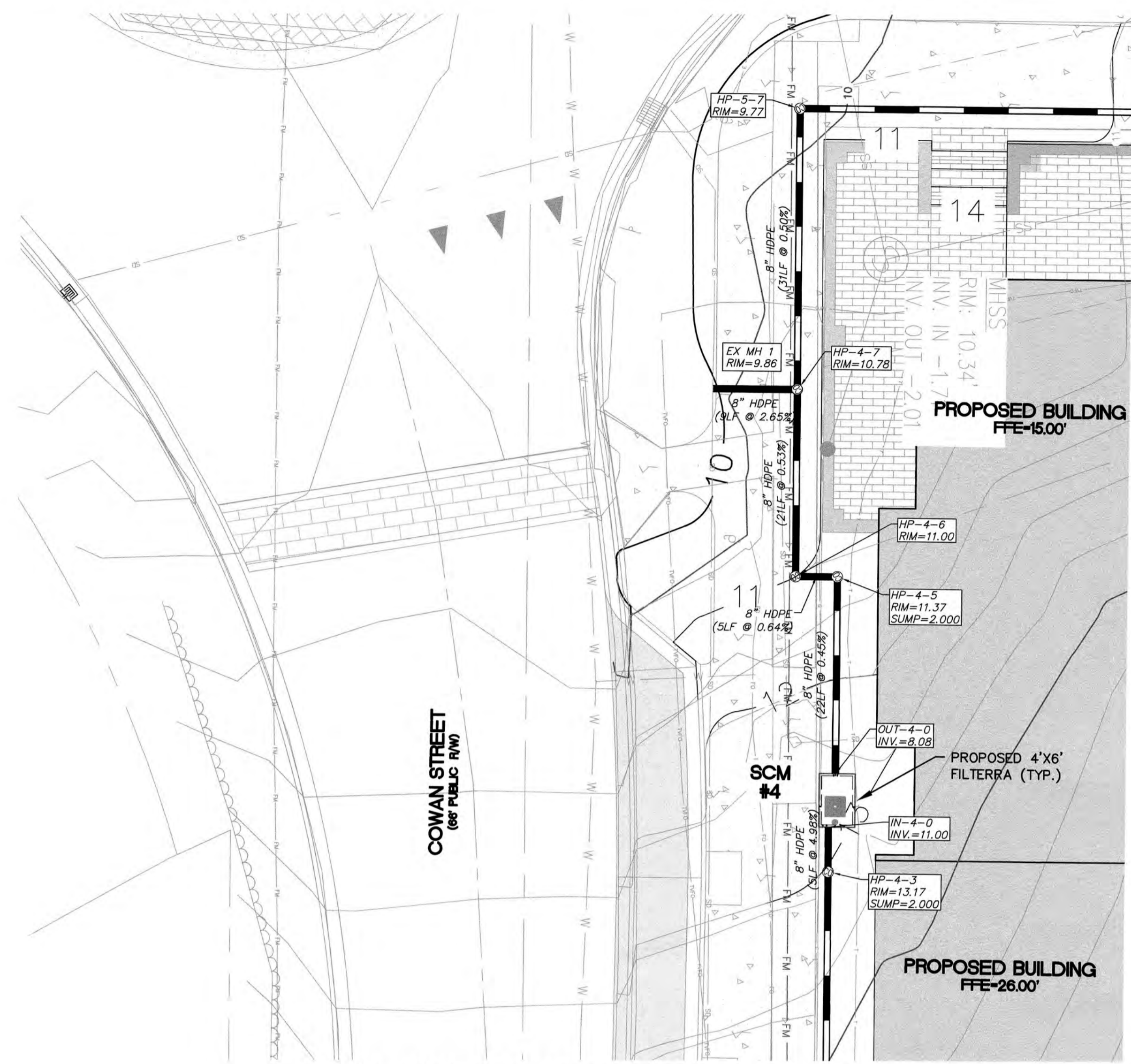
**THE FLATS ON FRONT**  
WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA  
**STORMWATER MANAGEMENT DETAILS**

DATE: 04/18/2019  
MCE PROJ # 7402-0001  
DRAWN ALM/KCE  
DESIGNED ALM  
CHECKED RMC  
PROJ. MGR. KCE

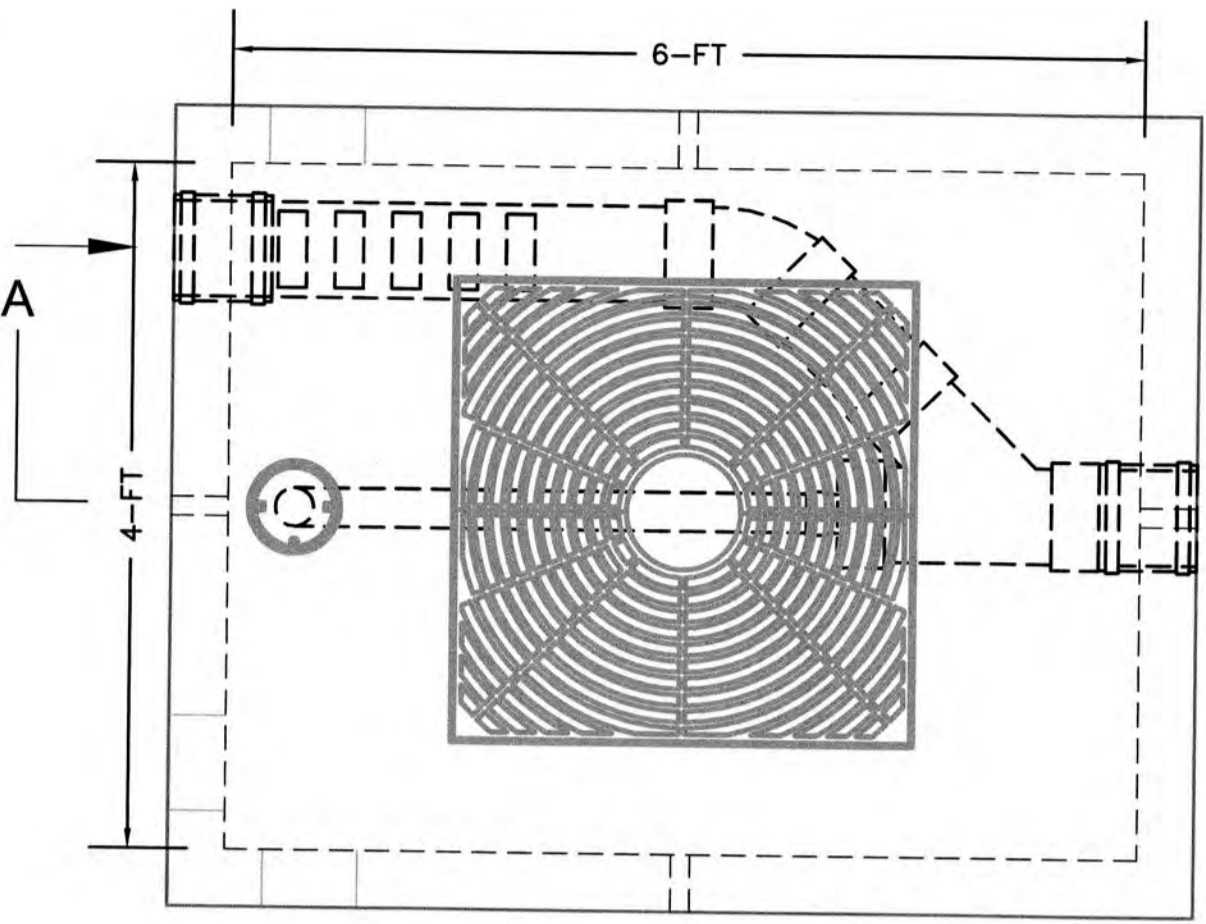
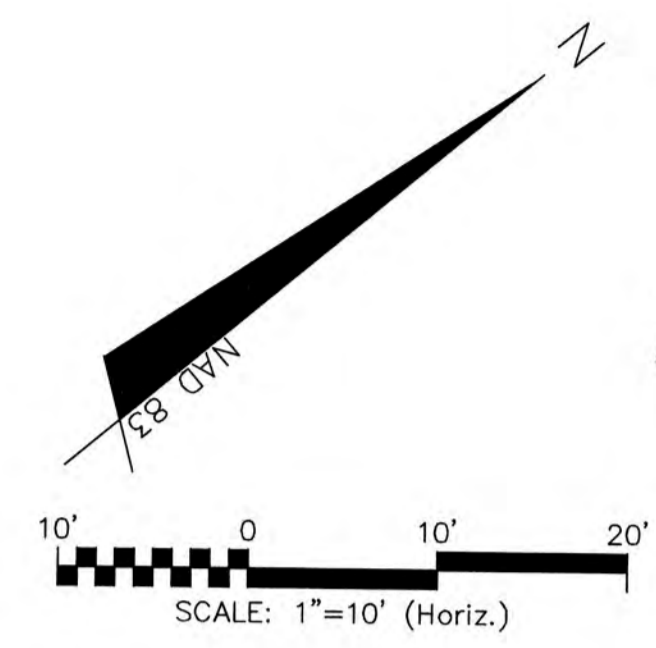
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VERTICAL: N/A

MAC FILE NUMBER: CN-503  
DRAWING NUMBER: 43  
REVISION: 0

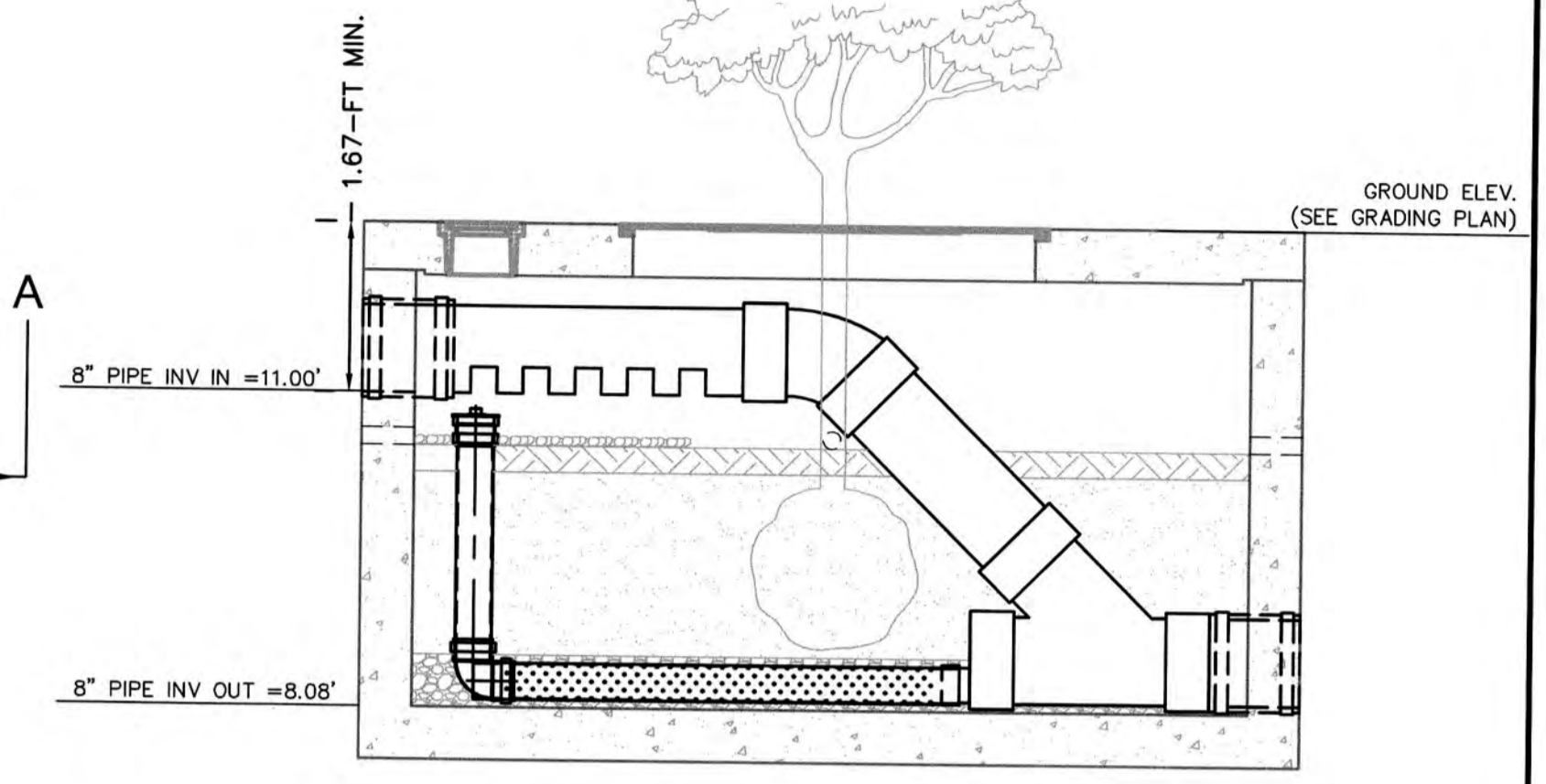
STATUS: IFC PLAN SET  
ISSUED FOR CONSTRUCTION



FILTERRA BIOFILTRATION (TYP.) - SC#4

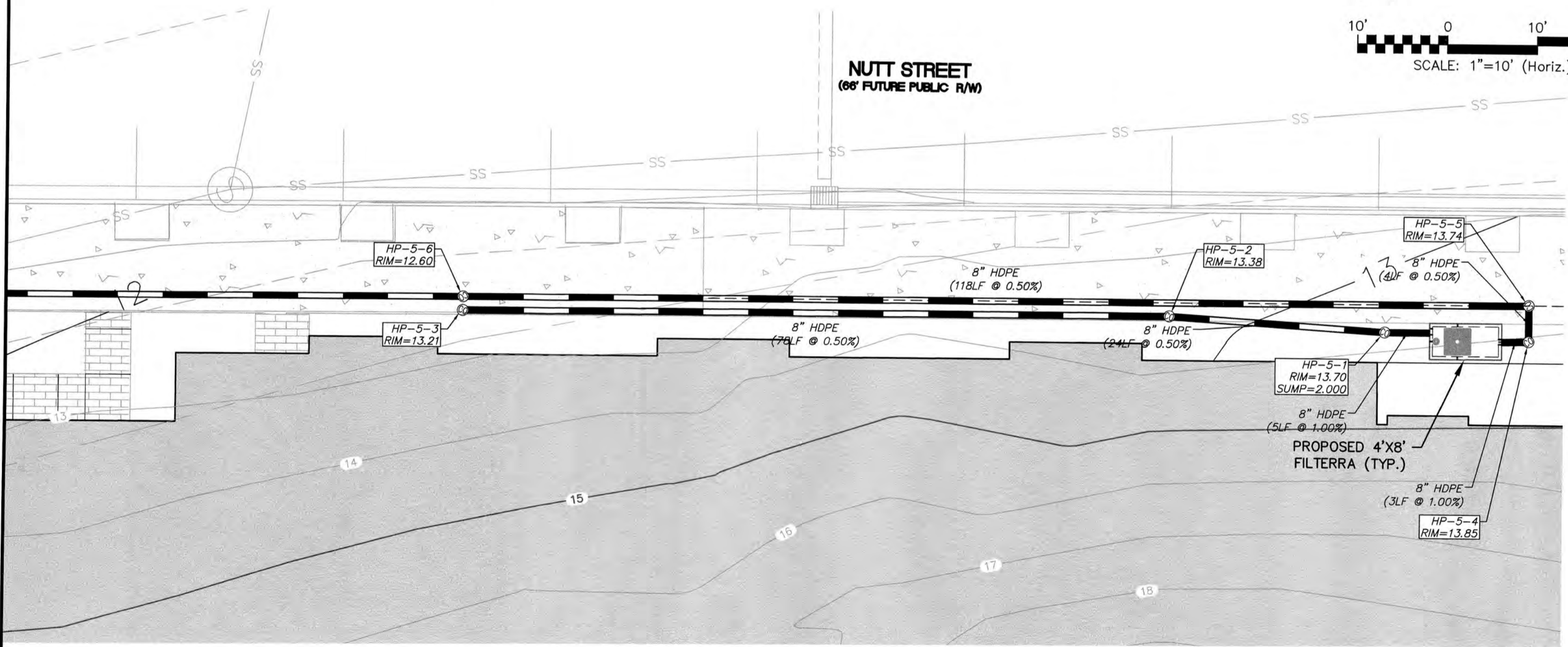


PLAN VIEW-NTS

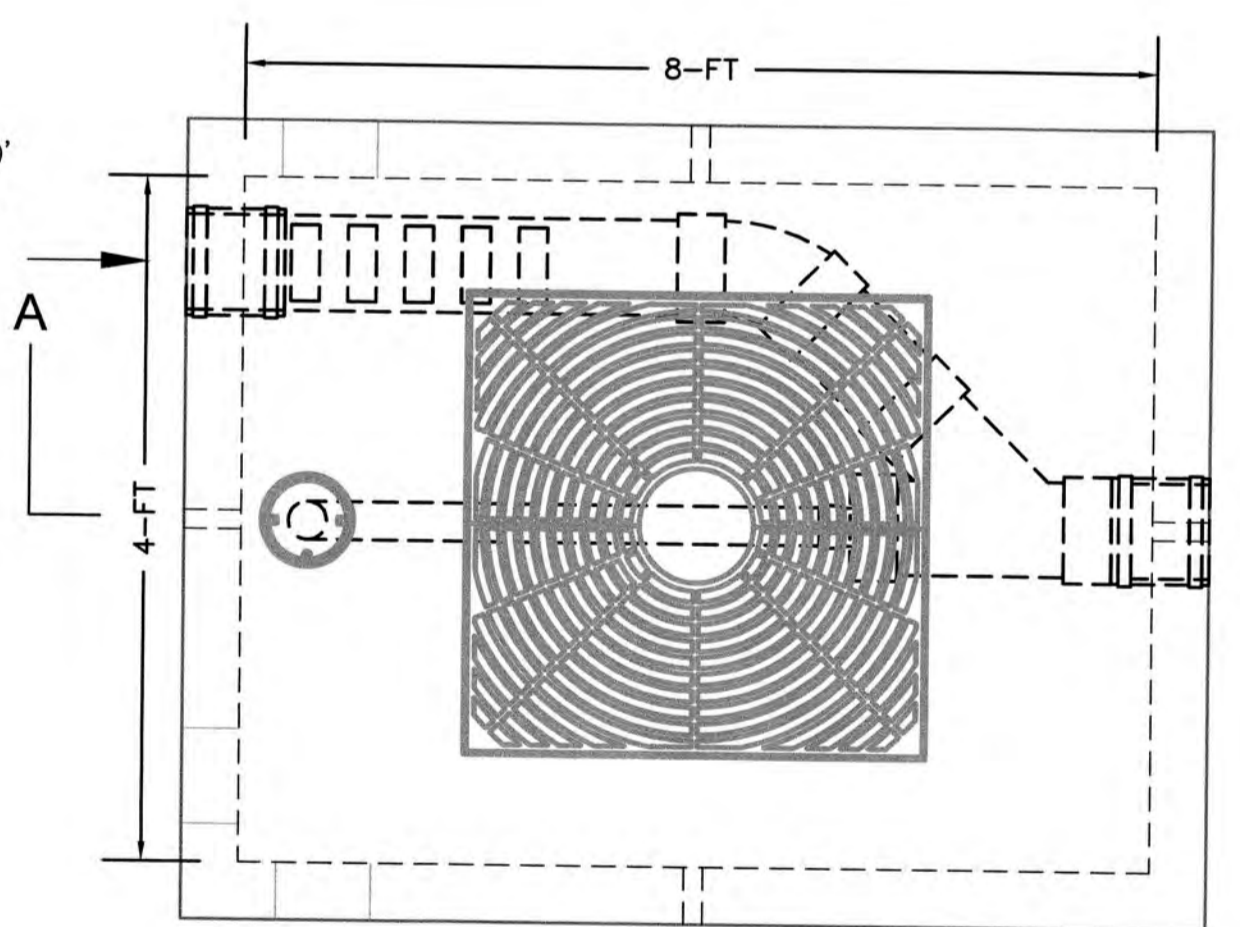
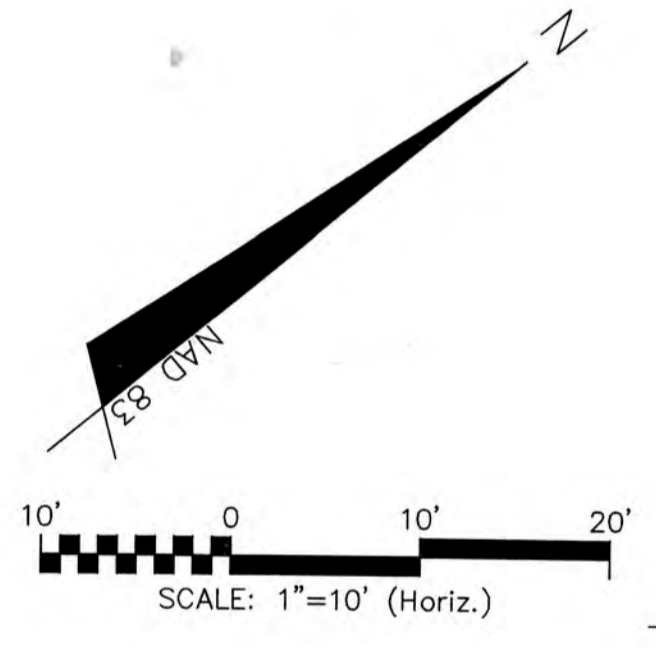


SECTION A-A

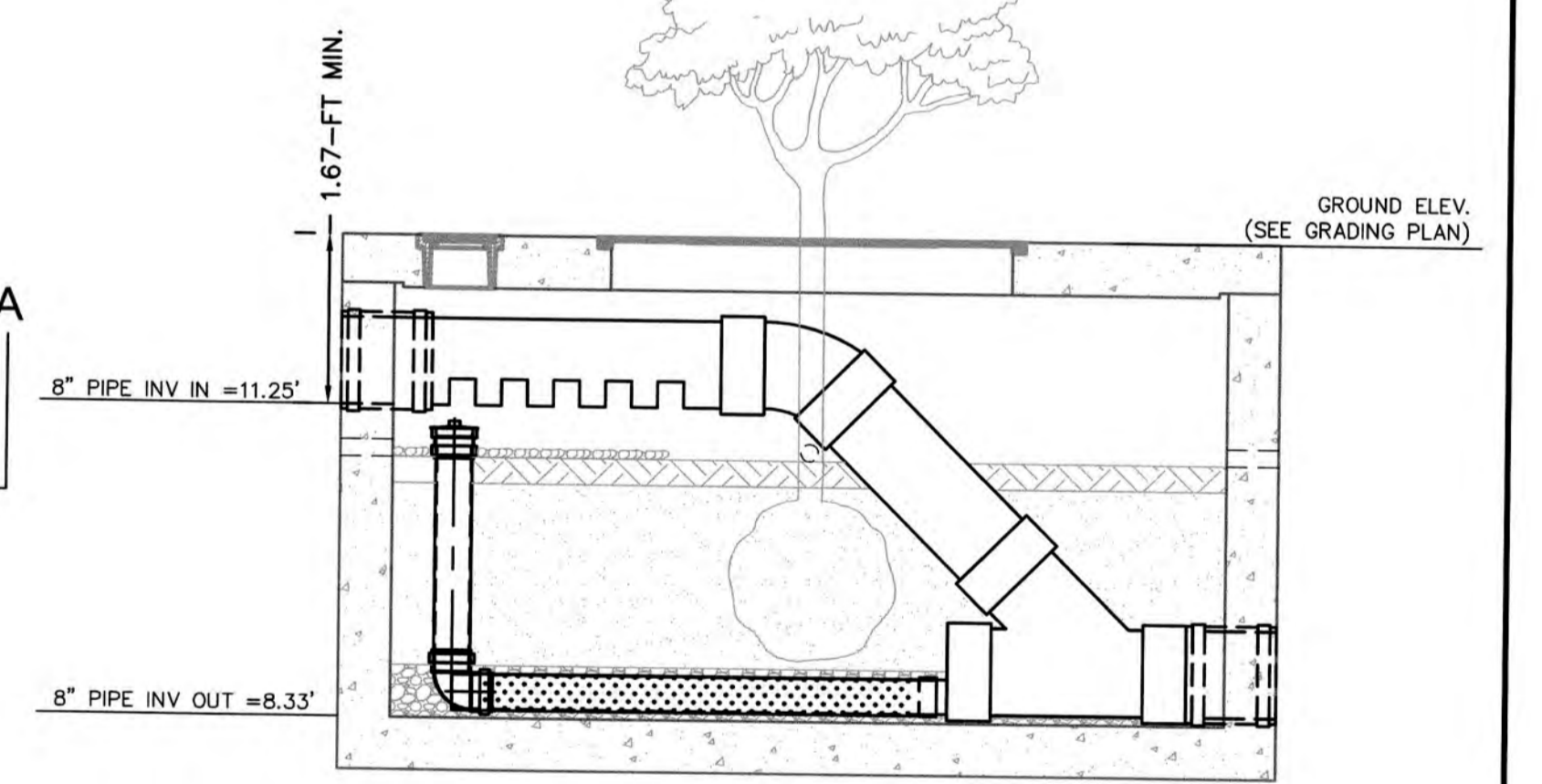
- NOTES:**
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FILTERRA BIOFILTRATION (TYP.) - SC#5



PLAN VIEW-NTS



SECTION A-A

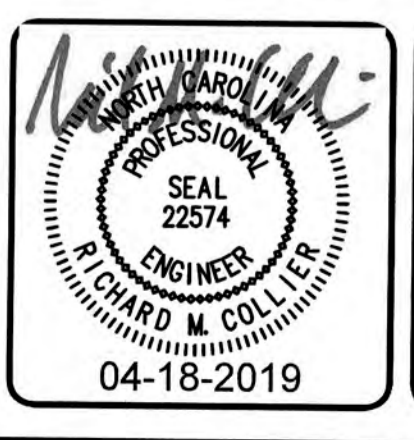
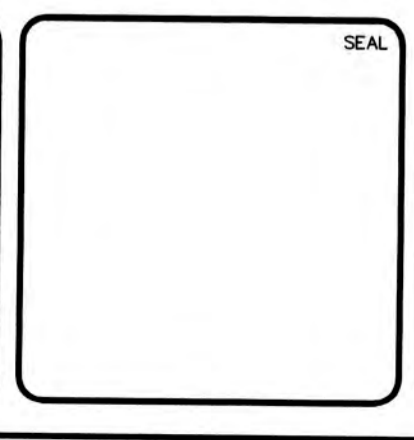
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1 inch

Approved Construction Plan		
Name	Date	
Planning: <i>[Signature]</i>	4-23-19	
Traffic: <i>[Signature]</i>	4-23-19	
Fire: <i>[Signature]</i>	4-23-19	

**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services Engineering Division  
APPROVED STORMWATER MANAGEMENT PLAN  
Date: 4-23-19 Permit # 2019023  
Signed: *[Signature]*

REV.	DESCRIPTIONS	DATE



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**dpr** RESIDENTIAL  
**CLINE DESIGN**

**THE FLATS ON FRONT**  
WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA  
**STORMWATER MANAGEMENT DETAILS**

DATE: 04/18/2019	SCALE: 1"=30'	M&C FILE NUMBER: CN-504
M&C PROJ. # 7402-0001	HORIZONTAL: 1"=30'	DRAWING NUMBER: 44
DRAWN: ALM/KCE	VERTICAL: N/A	
DESIGNED: ALM		
CHECKED: RMC		
PROJ. MGR.: KCE		
STATUS: IFC PLAN SET		REVISION: 0
ISSUED FOR CONSTRUCTION		