





**PROJECT SUMMARY**

**PROPERTY**

PROJECT NAME: GREENFIELD - FDS  
 OWNER/DEVELOPER/APPLICANT: WILMINGTON FDS 712614, LLC  
 PLANS PREPARED BY: BURTON ENGINEERING ASSOCIATES PHONE #: (704)553-8881  
 ZONING: UMX PETITION NO.: N/A TAX PARCEL#: R05414-021-002-000/R05414-021-003-000  
 JURISDICTION: CITY OF WILMINGTON WATERSHED DISTRICT: N/A  
 CAMA LAND USE CLASSIFICATION: DEVELOPED  
 FEMA PANEL No.: 3720312700J FEMA PANEL DATE: 04/03/06 FLOOD ZONE: OUT  
 LOT SIZE: 1.11 ACRES  
 SETBACK REQUIREMENTS  
 STREET SETBACK (GREENFIELD STREET): 5 FT. FROM R/W  
 INTERIOR SIDE YARD: 5 FT.  
 REAR YARD: 5 FT.  
 REQUIRED BUFFERS:  
 FRONT: (NO)YES     FT. REAR: (NO)YES     FT.  
 SIDE (STREET): (NO)YES     FT. SIDE (STREET): (NO)YES     FT.

**BUILDING**

PROPOSED USE: RETAIL SALES LESS THAN OR EQUAL TO 10,000 SQUARE FEET  
 BUILDING HEIGHT: 26.0' FEET, STORIES: 1  
 BUILDING COVERAGE: 8,240 SQ. FT. GROSS FLOOR AREA: 8,240 SQ. FT.

**WATER & SEWER CAPACITY**

WATER: 0 GPD (CURRENT) WATER: 200 GPD (PROPOSED)  
 SEWER: 0 GPD (CURRENT) SEWER: 200 GPD (PROPOSED)

**SOILS**

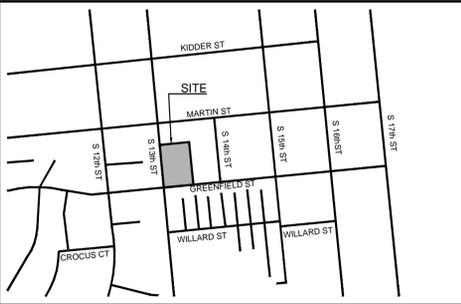
APPROX. 62% OF SITE: BAYMEADE-URBAN LAND COMPLEX (BH)  
 APPROX. 38% OF SITE: PAMLICO MUCK (PM)

**NOTES**

1. TOPOGRAPHY PER FORESITE SURVEYING SURVEY DATED 09/18/15.
2. THIS SITE IS NOT WITHIN A 100-YEAR FLOOD PLAIN (BASED ON FEMA PANEL No. 3720312700J DATED 04/03/06).
3. THIS SITE CONTAINS NO CAMA AREAS OF CONCERN (AEC).
4. THIS SITE CONTAINS CONSERVATION RESOURCES: 0.064 ACRES OF HEADWATER SWAMP WETLANDS.
5. THIS SITE IS NOT RECOGNIZED AS A LOCAL, STATE OR FEDERAL HISTORIC OR ARCHEOLOGICAL SITE.
6. THIS SITE CONTAINS NO CEMETERIES, BURIAL SITES, OR BURIAL GROUNDS.
7. THIS SITE CONTAINS NO PROTECTED SPECIES.
8. THIS SITE CONTAINS NO EXISTING OR PROPOSED THOROUGHFARES, BIKE ROUTES, PEDESTRIAN SIDEWALKS OR TRAILS AND TRANSIT FACILITIES.
9. THIS SITE CONTAINS 0.064 ACRES OF U.S. ARMY CORPS OF ENGINEERS SECTION 404 WETLANDS.

**VICINITY MAP**

NOT TO SCALE



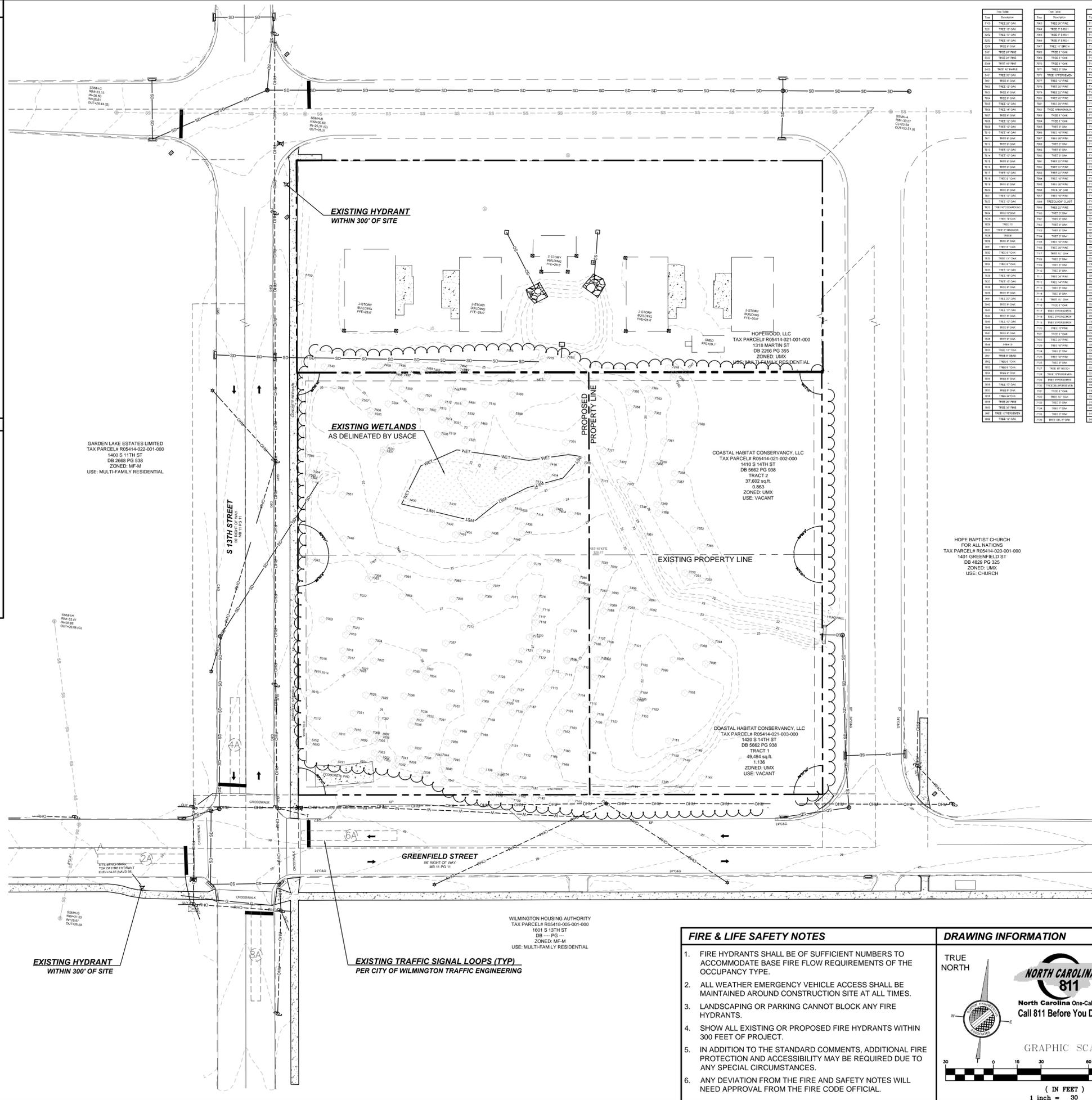
**WILMINGTON**  
 NORTH CAROLINA  
 Public Services • Engineering Division  
 APPROVED STORMWATER MANAGEMENT PLAN  
 Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
 Signed: \_\_\_\_\_

**Approved Construction Plan**

Name	Date
Planning	
Traffic	
Fire	

OWNER/DEVELOPER:  
**Wilmington FDS 712614, LLC**  
 Contact: Jason Mathis  
 106 Foster Avenue  
 Charlotte, NC 28203  
 Phone: (704) 319-8347

ENGINEER:  
**Burton Engineering Associates**  
 Carlton Burton; Luke Bugenske  
 5950 Fairview Road, Suite 100  
 Charlotte, NC 28210  
 Phone: 704-553-8881



Tree ID	Species	DBH (in)	Height (ft)	Health	Tree ID	Species	DBH (in)	Height (ft)	Health
T001	DOGWOOD	4.0	15	FAIR	T001	DOGWOOD	4.0	15	FAIR
T002	DOGWOOD	4.0	15	FAIR	T002	DOGWOOD	4.0	15	FAIR
T003	DOGWOOD	4.0	15	FAIR	T003	DOGWOOD	4.0	15	FAIR
T004	DOGWOOD	4.0	15	FAIR	T004	DOGWOOD	4.0	15	FAIR
T005	DOGWOOD	4.0	15	FAIR	T005	DOGWOOD	4.0	15	FAIR
T006	DOGWOOD	4.0	15	FAIR	T006	DOGWOOD	4.0	15	FAIR
T007	DOGWOOD	4.0	15	FAIR	T007	DOGWOOD	4.0	15	FAIR
T008	DOGWOOD	4.0	15	FAIR	T008	DOGWOOD	4.0	15	FAIR
T009	DOGWOOD	4.0	15	FAIR	T009	DOGWOOD	4.0	15	FAIR
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T099	DOGWOOD	4.0	15	FAIR	T099	DOGWOOD	4.0	15	FAIR
T100	DOGWOOD	4.0	15	FAIR	T100	DOGWOOD	4.0	15	FAIR

**FIRE & LIFE SAFETY NOTES**

1. FIRE HYDRANTS SHALL BE OF SUFFICIENT NUMBERS TO ACCOMMODATE BASE FIRE FLOW REQUIREMENTS OF THE OCCUPANCY TYPE.
2. ALL WEATHER EMERGENCY VEHICLE ACCESS SHALL BE MAINTAINED AROUND CONSTRUCTION SITE AT ALL TIMES.
3. LANDSCAPING OR PARKING CANNOT BLOCK ANY FIRE HYDRANTS.
4. SHOW ALL EXISTING OR PROPOSED FIRE HYDRANTS WITHIN 300 FEET OF PROJECT.
5. IN ADDITION TO THE STANDARD COMMENTS, ADDITIONAL FIRE PROTECTION AND ACCESSIBILITY MAY BE REQUIRED DUE TO ANY SPECIAL CIRCUMSTANCES.
6. ANY DEVIATION FROM THE FIRE AND SAFETY NOTES WILL NEED APPROVAL FROM THE FIRE CODE OFFICIAL.

**DRAWING INFORMATION**

TRUE NORTH

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

THIS DRAWING IS THE PROPERTY OF BURTON ENGINEERING ASSOCIATES AND IS NOT TO BE REPRODUCED OR COPIED IN WHOLE OR IN PART. IT IS NOT TO BE USED ON ANY OTHER PROJECT AND IS TO BE RETURNED UPON REQUEST.

DEVELOPED BY:  
**THE DURBAN GROUP**  
 BUILDING VALUES  
 106 FOSTER AVENUE  
 CHARLOTTE, NC 28203  
 (P) 704.319.8347

**BURTON ENGINEERING ASSOCIATES**  
 CIVIL ENGINEERS  
 LAND PLANNERS  
 5950 Fairview Rd., Suite 100, Charlotte, NC 28210  
 (704) 553-8881 • Fax (704) 553-8660  
 Firm License # 1557

Seal: **Carlton T. Burton**, Professional Engineer, License No. 12557, State of North Carolina, expires 12/02/2015.

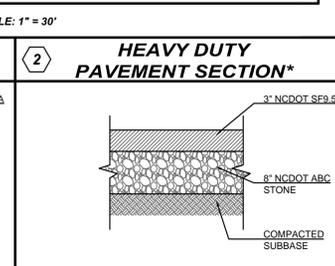
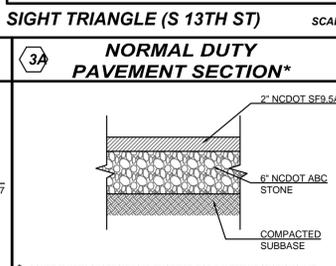
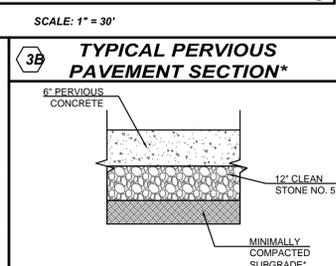
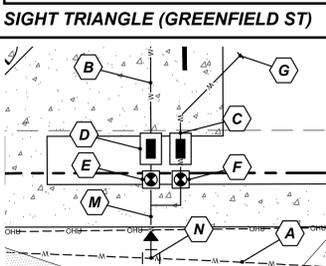
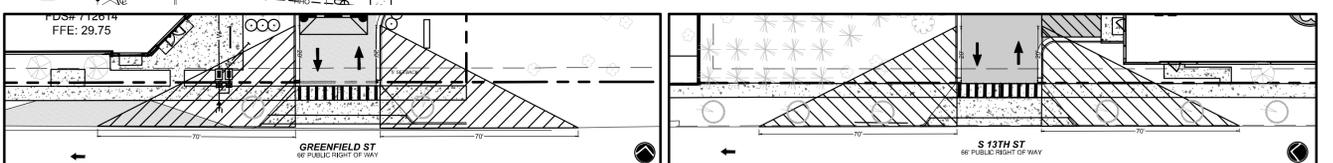
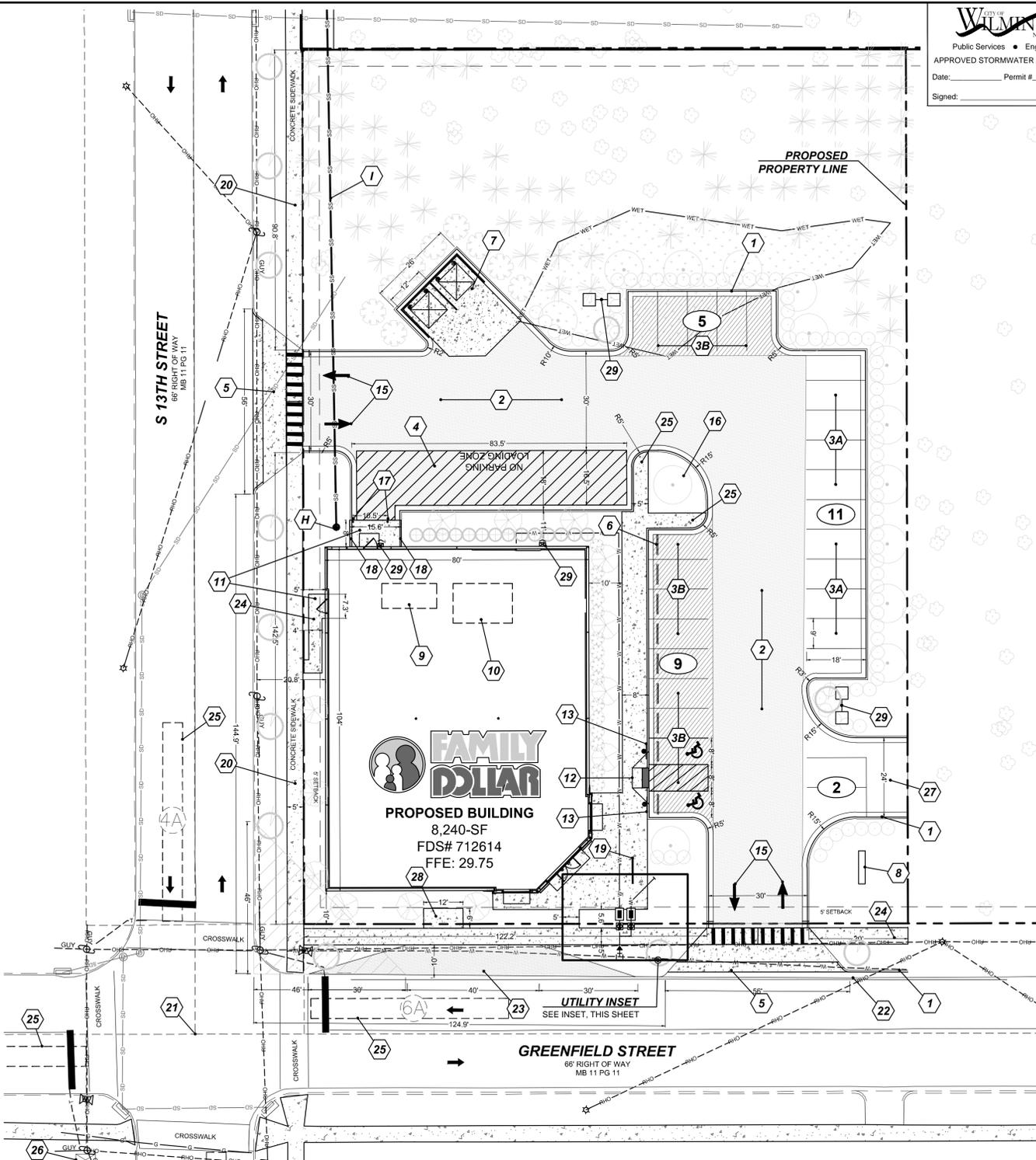
**GREENFIELD - FDS**  
 1313 GREENFIELD STREET  
 WILMINGTON, NORTH CAROLINA  
**SITE INVENTORY MAP**

Project: **CTB**  
 Engineer: **LJB**  
 Drawn By: **JWB**  
 Date: **9/21/15**

Revisions:  
 1- 11/10/15 PER TRC & CP/PA COMMENTS  
 2- 12/02/15 PER TRENKINGENGINEERING.COMMENTS

Project Number: **487-064**  
**C2.1**  
 Sheet 3 of 21





Approved Construction Plan	
Name	Date
Planning	
Traffic	
Fire	

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

### PARKING REQUIREMENTS

MINIMUM REQUIRED VEHICLE PARKING:  
NO MINIMUM REQUIRED

MAXIMUM ALLOWED VEHICLE PARKING:  
1 PER 200 SF GFA x 8,240 SF = 41 ALLOWED SPACES

PROPOSED NEW VEHICLE PARKING (ON-SITE):  
TOTAL PROPOSED = 27 SPACES  
REGULAR SPACES = 23 SPACES  
COMPACT SPACES = 0 SPACES  
TEMPORARY SPACES = 2 SPACES  
ACCESSIBLE SPACES = 2 SPACES (INCLUDING 1 VAN)

REQUIRED LOADING SPACE:  
1 LOADING SPACE PROVIDED, SIZED PER CITY OF WILMINGTON STANDARDS

BICYCLE PARKING  
1 PER 1,000 GSF = 9 REQUIRED SPACES  
9 BICYCLE SPACES PROVIDED

### IMPERVIOUS CALCULATIONS

BUILDING	8,240 S.F.
PAVEMENT	2,240 S.F.
TOTAL IMPERVIOUS	28,970 S.F.
TOTAL SITE	48,397 S.F.
TOTAL GREEN SPACE	19,427 S.F.

IMPERVIOUS PERCENTAGE 59.86%  
PRE-DEVELOPMENT IMPERVIOUS 0%

### BUILDING COVERAGE

PROPOSED BUILDING	8,240 S.F.
TOTAL SITE	48,397 S.F.

BUILDING COVERAGE 17.03%  
PRE-DEVELOPMENT COVERAGE 0%

- ### CITY OF WILMINGTON NOTES
- PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING SHALL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
  - ANY TREES AND/OR AREAS DESIGNATED TO BE PROTECTED MUST BE PROPERLY BARRICADED WITH FENCING AND PROTECTED THROUGHOUT CONSTRUCTION TO INSURE THAT NO CLEARING, GRADING OR STAGING OF MATERIALS WILL OCCUR IN THOSE AREAS.
  - NO EQUIPMENT IS ALLOWED ON SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING IS INSTALLED AND APPROVED. PROTECTIVE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT, AND CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTIONS ON TREE PROTECTION METHODS.
  - ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVERS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
  - ONCE STREETS ARE OPEN TO TRAFFIC, CONTACT TRAFFIC ENGINEERING REGARDING THE INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
  - TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
  - CONTACT TRAFFIC ENGINEERING AT 910-341-7888 TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN.
  - CALL TRAFFIC ENGINEERING AT 910-341-7888 FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT-OF-WAY.
  - TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING PRIOR TO ACTUAL STRIPING.
  - ALL PARKING STALL MARKINGS AND LAKE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
  - ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER.
  - STOP SIGNS AND STREET SIGNS TO REMAIN IN PLACE DURING CONSTRUCTION.
  - TACTILE WARNING MATS WILL BE INSTALLED ON ALL WHEELCHAIR RAMPS.
  - A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET.
  - ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND CURBING WILL BE REPLACED.
  - CONTACT TRAFFIC ENGINEERING AT (910) 341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
  - WATER AND SEWER SERVICE SHALL MEET CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) DETAILS AND SPECIFICATIONS.
  - PROJECT SHALL COMPLY WITH CFPUA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METERS CANNOT BE RELOCATED UNTIL ALL REQUIREMENTS ARE MET AND THE STATE HAS GIVEN THEIR FINAL APPROVAL. CALL 910-343-3910 FOR INFORMATION.
  - IF THE CONTRACTOR DESIRES CFPUA WATER FOR CONSTRUCTION, HE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
  - ANY IRRIGATION SYSTEM SUPPLIED BY CFPUA WATER SHALL COMPLY WITH THE CFPUA CROSS CONNECTION CONTROL REGULATIONS. CALL 919-343-3910 FOR INFORMATION.
  - ANY IRRIGATION SYSTEM SHALL BE EQUIPPED WITH A RAIN AND FREEZER SENSOR.
  - ANY BACKFLOW PREVENTION DEVICES REQUIRED BY THE CFPUA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USFCCOCHR OR ASSE.
  - CONTRACTOR TO FIELD VERIFY EXISTING WATER AND SEWER SERVICE LOCATIONS, SIZES AND MATERIALS PRIOR TO CONSTRUCTION. ENGINEER TO BE NOTIFIED OF ANY CONFLICTS.
  - CONTRACTOR SHALL MAINTAIN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION. ENGINEER TO BE NOTIFIED OF ANY CONFLICTS.
  - NO OBSTRUCTIONS ARE PERMITTED IN THE SPACE BETWEEN THIRTY (30) INCHES AND TEN (10) FEET ABOVE THE GROUND WITHIN THE TRIANGULAR SIGHT DISTANCE.
  - CONTACT THE NORTH CAROLINA ONE CALL CENTER AT 1-800-632-4949 PRIOR TO DOING ANY DIGGING, CLEARING, OR GRADING.

- ### ADDITIONAL CITY OF WILMINGTON NOTES
- A TREE REMOVAL PERMIT IS REQUIRED PRIOR TO THE REMOVAL OF ANY TREES ON THE SITE.
  - IF APPLICABLE, CONTRACTOR TO VERIFY THE LOCATION OF THE CITY OF WILMINGTON TRAFFIC SIGNAL SYSTEM FIBER RUNNING ALONG GREENFIELD ST AND S 13TH ST. CONTACT TRAFFIC ENGINEERING AT (910) 341-7888 TO DETERMINE IF THIS FIBER MUST BE RELOCATED ALONG WITH THE OTHER UTILITIES.
  - IMMEDIATELY NOTIFY CITY OF WILMINGTON TRAFFIC ENGINEERING AT (910) 341-7888 IF ANY TRAFFIC SIGNAL FACILITIES OR CITY OWNED STREET LIGHT FACILITIES ARE DAMAGED.
  - DAMAGED FACILITIES SHALL BE REPLACED BY AN APPROVED CONTRACTOR, ACCORDING TO STANDARD NCDOT REPLACEMENT SCHEDULES AND CURRENT NCDOT DESIGN STANDARDS.
  - ALL REPAIRS AND REPLACEMENT OF TRAFFIC SIGNAL INFRASTRUCTURE SHALL BE COORDINATED WITH THE CITY OF WILMINGTON TRAFFIC ENGINEERING DIVISION.
  - A PERMIT MUST BE OBTAINED FROM THE CITY ENGINEER PRIOR TO THE REMOVAL, ALTERATION OR CONSTRUCTION OF ANY CURB, DRIVEWAY, GUTTER AND/OR PAVEMENT OR PRIOR TO THE PERFORMANCE OF ANY OTHER WORK IN ANY PUBLIC OR PRIVATE STREET. CONDITIONS GOVERNING THE ISSUANCE OF SUCH A PERMIT ARE:
    - A CONTINUING INDEMNITY BOND WITH SUFFICIENT SURETY ACCEPTABLE TO THE CITY MAY BE REQUIRED OF THE PARTY PERFORMING THE WORK. ALL WORK MUST BE DONE IN CONFORMITY WITH THE STANDARDS ESTABLISHED HEREIN.
    - THE CITY SHALL BE INDEMNIFIED FOR ANY DAMAGES IT MIGHT SUSTAIN AS A RESULT OF THE BREACH OF CONDITION ABOVE. THE DAMAGES PAYABLE TO THE CITY SHALL BE THE AMOUNT REQUIRED TO MAKE SUCH IMPROVEMENT CONFORM TO CITY STANDARDS.
  - A FEE IN ACCORDANCE WITH THE CITY'S ADOPTED FEE SCHEDULE SHALL BE PAID TO THE CITY AT THE TIME THE APPLICATION FOR A DRIVEWAY PERMIT IS MADE.
  - AS PART OF SITE IMPROVEMENTS FOR A SUBDIVISION OR SITE PLAN, ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND CURBING ADJACENT TO THE PROJECT AREA SHALL BE REPLACED BY THE DEVELOPER. THIS SHALL BE REQUIRED WHETHER THE DAMAGE EXISTED PRIOR TO THE START OF CONSTRUCTION OR MAY HAVE BEEN CAUSED DURING CONSTRUCTION.
  - PER THE REQUIREMENTS OF THE STORMWATER PERMIT, THE FOLLOWING SHALL OCCUR PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY OR OPERATION OF THE PERMITTED FACILITY:
    - AS-BUILT DRAWINGS FOR ALL STORMWATER MANAGEMENT FACILITIES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON ENGINEERING DIVISION.
    - AN ENGINEER'S CERTIFICATION SHALL ALSO BE SUBMITTED, ALONG WITH ALL SUPPORTING DOCUMENTATION THAT SPECIFICALLY STATES THAT THE AS-BUILT STORMWATER MEASURES, CONTROLS AND DEVICES ARE IN COMPLIANCE WITH THE APPROVED STORMWATER MANAGEMENT PLANS.
    - A FINAL INSPECTION BY CITY OF WILMINGTON ENGINEERING PERSONNEL.
    - ALL REQUIRED EASEMENT MAPS SHALL BE RECEIVED BY CITY STAFF AND RECORDED PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
    - ALL NEW SERVICES SHALL MEET ALL NO BUILDING CODE REQUIREMENTS.

- ### SITE KEYS
- NEW 2'-0" CONCRETE CURB AND GUTTER. SEE DETAIL ON SHEET C8.0.
  - NEW HEAVY DUTY ASPHALT PAVEMENT. SEE GENERAL NOTES ON SHEET THIS SHEET.
  - NEW NORMAL DUTY ASPHALT PAVEMENT. SEE GENERAL NOTES ON SHEET THIS SHEET.
  - NEW PERVIOUS PAVEMENT. SEE PAVEMENT SECTION ON SHEET THIS SHEET.
  - NEW LOADING SPACE PER ZONING AND TENANT REQUIREMENTS. "NO PARKING LOADING ZONE" TO BE PAINTED IN WHITE, 24" STENCILED LETTERING.
  - NEW DRIVEWAY. DRIVEWAY TO BE TO CITY OF WILMINGTON STANDARDS. SEE DETAIL SD-3-03 ON SHEET C8.0.
  - NEW CONCRETE WHEEL STOPS. ALL WHEEL STOPS TO BE DOWELED TO PAVEMENT AND LOCATED 2' FROM FACE OF OBSTRUCTION. EDGE OF PAVEMENT AND FACE OF CURB (2.5' FROM BACK OF CURB). PAINT WHEEL STOPS SAFETY YELLOW.
  - DUMPS/STER PAD & APPROX. DUMPS/STER PAD APPROX SHALL BE MIN. 8" 3,500 PSI CONCRETE SLAB REINFORCED WITH #4 REBARS @ 12" ON CENTER IN EACH DIRECTION LOCATED IN THE UPPER THIRD OF SLAB. PROVIDE (2) PIPE BOLLARDS (PER FDS DETAIL) AT REAR OF PAD-BEHIND EACH DUMPS/STER. IF AN ENCLOSURE IS REQUIRED BY LOCAL CODE OR ORDINANCE, PROVIDE A DETAIL FOR FAMILY DOLLAR TO REVIEW AND APPROVE. ALL ENCLOSURES SHALL HAVE GATES CONSTRUCTED OUT OF STEEL FRAME TUBING (MINIMUM) WITH PIVOT HINGES MOUNTED ON 6" PIPE BOLLARDS. SET PIPE BOLLARDS IN MINIMUM 12" x 12" x 3'-0" DEEP CONCRETE FILL FOOTING. PROPER LATCHING & LOCK HARDWARE SHALL BE PROVIDED IN ORDER TO RESTRAIN AND/OR LOCK ENCLOSURE GATES. SEE DETAIL SHEET C8.0.
  - APPROXIMATE LOCATION OF NEW FAMILY DOLLAR PROTOTYPICAL MONUMENT SIGN "MS-2C".
  - ROOF MOUNTED COOLER CONDENSER (REFER TO ARCHITECTURAL PLANS).
  - ROOF MOUNTED HVAC (REFER TO ARCHITECTURAL PLANS).
  - NEW CONCRETE PAD AT DELIVERY & EMERGENCY EXIT DOORS PER FAMILY DOLLAR SPECIFICATIONS.
  - NEW ACCESSIBLE RAMP/DEPRESSED CURB, IN ACCORDANCE WITH N.C. ACCESSIBILITY CODE, ADA & CITY OF WILMINGTON REQUIREMENTS. SEE DETAIL ON SHEET C8.0.
  - NEW ACCESSIBLE PARKING SIGNAGE. SEE DETAIL ON SHEET C8.0.
  - NEW STOP BAR PER MUTCD STANDARDS.
  - 2" SOLID WHITE PAINTED DIRECTIONAL ARROWS. SEE DETAIL ON SHEET C8.0.
  - LANDSCAPE ISLAND (MULCH).
  - NEW PIPE BOLLARD. SEE DETAIL ON SHEET C8.0. COORDINATE WITH ARCHITECTURAL PLANS.
  - NEW CURB TO TAPER TO BUILDING.
  - BICYCLE PARKING: NEW 9-BIKE STEEL WAVE RACK TO BE BOLTED TO CONCRETE.
  - EXISTING 5' SIDEWALK.
  - EXISTING TRAFFIC SIGNALS.
  - NEW EDGE OF PAVEMENT TO TIE INTO EXISTING PAVEMENT.
  - NEW BUS STOP PER CITY OF WILMINGTON REQUIREMENTS.
  - NEW CONCRETE SIDEWALK, PER CITY OF WILMINGTON STANDARDS. SEE DETAIL ON SHEET C8.0.
  - EXISTING TRAFFIC SIGNAL LOOPS PER CITY OF WILMINGTON TRAFFIC ENGINEERING (NOT FIELD VERIFIED).
  - EXISTING TRAFFIC CONTROL CABINET PER CITY OF WILMINGTON TRAFFIC ENGINEERING (NOT FIELD VERIFIED).
  - NEW SIGN WITH THE FOLLOWING TEXT: "FUTURE CONNECTION WILL BE OPENED WHEN THE ADJACENT PROPERTY DEVELOPS".
  - NEW 6" x 12" CONCRETE PAD FOR BUS STOP (4" THICK AND AT LEAST 3,000 PSI). BENCH AND TRASH CAN TO BE PROVIDED BY WAVE TRANSIT.
  - NEW LIGHTING. SEE ARCHITECTURAL PLANS FOR DETAILS.

- ### LEGEND
- EXISTING WATERLINE: ---W---W---W---
- EXISTING SEWER LINE: ---S---S---S---
- EXISTING SEWER MANHOLE: ---S---
- PROPOSED WATERLINE: ---W---W---W---
- PROPOSED WATER METER: [Symbol]
- PROPOSED BACKFLOW PREVENTER: [Symbol]
- PROPOSED SEWER LINE: ---S---S---S---
- PROPOSED SEWER CLEANOUT: [Symbol]
- ### UTILITY KEYS
- (A) EXISTING 8" WATERLINE (NOT FIELD VERIFIED), PROVIDED BY CFPUA.
- (B) NEW PRIVATE 1" DOMESTIC WATERLINE (SDR 21 PVC). (NOTE: NO PVC ALLOWED WITHIN 5 FT. OF EITHER END OF BACKFLOW PREVENTER. PROVIDE BLOCKING AT BENDS.)
- (C) NEW PRIVATE 1" IRRIGATION WATERLINE (SDR 21 PVC) WITH 1" METER AND 1" REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY INSTALLED ABOVE-GROUND WITHIN ENCLOSURE PER CAPE FEAR PUBLIC UTILITY AUTHORITY REQUIREMENTS.
- (D) NEW 1" (DOM. WATER) REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY INSTALLED ABOVE-GROUND WITHIN ENCLOSURE PER CAPE FEAR PUBLIC UTILITY AUTHORITY REQUIREMENTS.
- (E) NEW 1" WATER METER TO BE USED FOR FAMILY DOLLAR DOMESTIC SERVICE.
- (F) NEW 1" IRRIGATION WATER METER IN BELOW-GRADE BOX.
- (G) NEW 1" TEMPORARY PLUG FOR IRRIGATION LINE.
- (H) NEW SANITARY SEWER CLEANOUT.
- (I) NEW 8" PRIVATE DUCTILE IRON GRAVITY SANITARY SEWER SERVICE.
- (J) TIE INTO EXISTING SANITARY SEWER MANHOLE, AS SHOWN. CONTRACTOR TO VERIFY DEPTH OF EXISTING MANHOLE PRIOR TO CONSTRUCTING NEW SEWER MAIN.
- (K) EXISTING 8" PVC SANITARY SEWER (NOT FIELD VERIFIED), PROVIDED BY CFPUA.
- (L) NEW 8" PUBLIC DUCTILE IRON GRAVITY SANITARY SEWER SERVICE (NOTE: ALL SERVICE WITHIN ROW IS PUBLIC).
- (M) NEW 1" PRIVATE DOMESTIC WATER SERVICE LINE (CTS - PE TUBING, SDR 9 ASTM D2737).
- (N) NEW 8" x 2" TAPPING SLEEVE AND VALVE PER CAPE FEAR PUBLIC UTILITY AUTHORITY REQUIREMENTS. REDUCES TO 1" LINE.
- ### UTILITY NOTES
- CONTRACTOR SHALL COORDINATE WITH THE PROPER UTILITY COMPANIES & GOVERNMENT AGENCIES PRIOR TO COMMENCEMENT OF WORK.
  - DIMENSIONS TO, OR COORDINATES OF MANHOLES, VALVES, PIPELINES, ETC., ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
  - THE OWNER SHALL OBTAIN & PAY FOR, PRIOR TO THE BEGINNING OF ANY WORK, ALL PERMITS & LICENSES NECESSARY TO ACCOMPLISH WORK. PERMITS CAN INCLUDE, BUT ARE NOT LIMITED TO, CITY OF WILMINGTON ENCROACHMENT PERMIT, GRADING PERMIT, & OR UTILITY COMPANY'S PERMIT FOR THE WORK TO BE PERFORMED ON THEIR RESPECTIVE FACILITIES.
  - ANY WORK TO BE PERFORMED ON THE PROJECT SHALL FAMILIARIZE HIMSELF WITH THE JOB SITE & LOCATION OF ALL EXISTING FACILITIES & UNDERGROUND UTILITIES SHOWN OR NOT SHOWN ON THESE PLANS. THE CONTRACTOR WILL BE UNILATERALLY RESPONSIBLE FOR ANY DAMAGE DONE TO EXISTING FACILITIES OR UNDERGROUND UTILITIES THAT ARE SHOWN OR NOT SHOWN ON THESE PLANS, & IF DAMAGED, THEY SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER AT NO COST TO THE OWNER.
  - CONTRACTOR SHALL RE-SET ALL MANHOLE COVERS, CATCH BASIN GRATINGS & ANY OTHER UTILITY ACCESS COVERS TO FINISHED PAVEMENT SURFACE OR SIDEWALK GRADE.
  - THE CONTRACTOR SHALL PROTECT UNDERGROUND UTILITIES & THEIR APPURTENANCES TO REMAIN ON SITE FROM DAMAGE DURING CONSTRUCTION OPERATIONS.
  - SEWER CLEANOUTS TO BE PROVIDED AT ALL BENDS ON 8" OR LESS LINES. CLEAN OUTS SHALL BE PROVIDED EVERY 80' ON 4" LINES & 60' LINES. SEWER LATERALS TO BE PLACED AT A MIN. SLOPE OF 1/4" PER FOOT ON 4" LINES & 1/8" PER FOOT ON 6" LINES.
  - WHEN WATER MAIN IS ABOVE SEWER, BUT WITH LESS THAN 18" CLEARANCE, OR WHEN THE SEWER IS ABOVE THE WATER MAIN, BOTH WATER MAIN & SEWER LINE SHALL BE CONSTRUCTED OF FERROUS MATERIALS WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A MINIMUM LATERAL DISTANCE, MEASURED AT RIGHT ANGLES TO THE SEWER, OF 10' ON EACH SIDE OF THE CROSSING WITH FULL SIGHT CLEARANCE AT THE POINT OF CROSSING.
  - UPON COMPLETION OF CONSTRUCTION & BEFORE ACTIVATION OF SEWER LINES & WATER MAINS, THE CONTRACTOR SHALL PROVIDE AS-BUILT SURVEY INFORMATION (PERFORMED BY LICENSED N.C. SURVEYOR) TO THE ENGINEER.
  - THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER-USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER & ITS CAPE FEAR PUBLIC UTILITY AUTHORITY-REQUIRED BACKFLOW PREVENTER.
  - CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY TO RELOCATE ANY EXISTING UTILITY POLES. ALL EXISTING FACILITIES WHICH CONFLICT WITH THE IMPROVEMENTS UNDER THE SCOPE OF THIS PROJECT MUST BE RELOCATED & SHALL BE INCLUDED IN THE CONTRACTOR'S BID.
  - ALL CONSTRUCTION SHALL MEET CAPE FEAR PUBLIC UTILITY AUTHORITY AND NCDENR STANDARDS.
  - CONTRACTOR RESPONSIBLE FOR TERMINATING EXISTING AND UNUSED WATER AND SEWER SERVICES. TERMINATION TO BE TO NCDENR AND CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARDS.
  - ALL ON-SITE PRIVATE WATER AND SEWER LINES TO BE MAINTAINED BY OWNER.
  - ALL STANDARD NCDENR/CAPE FEAR PUBLIC UTILITY AUTHORITY UTILITY SEPARATIONS MUST BE PROVIDED FOR WATER AND SEWER MAINS.
  - ALL EXISTING UTILITIES ARE SHOWN BASED ON FIELD EVIDENCE.

- ### GENERAL NOTES
- ALL CONCRETE SIDEWALKS SHALL BE FULL 4" THICK 4000 PSI CONCRETE W/1" DEEP GROOVE CONTROL JOINTS AT INTERVALS INDICATED ON SITE PLAN. PROVIDE EXPANSION JOINTS ADJACENT TO ALL RIGID STRUCTURES. EXPANSION JOINT SPACING SHALL NOT EXCEED 30'.
  - ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
  - SEE ARCHITECTURAL PLAN FOR EXACT LOCATION & SIZE OF WATER, SEWER CONNECTIONS & ROOF DOWNSPOUTS.
  - SEE ARCHITECTURAL PLAN FOR BUILDING DIMENSIONS, FEATURES, STAIRS & HANDRAILS, ETC.
  - DRIVEWAYS SHALL BE CONSTRUCTED TO STATE & LOCAL CODES.
  - ACCESSIBLE PARKING:
    - AN ACCESSIBLE PARKING SPACE SHALL HAVE NO GREATER SLOPE THAN 1/4" PER FOOT ACROSS THE SPACE.
    - HANDRAILS ARE TO BE PROVIDED ON ACCESSIBLE RAMPS WITH A DROP OF 2" OR MORE.
    - MAX. SLOPE FOR AN ACCESSIBLE ROUTE (SIDEWALK) SHALL BE 5.0% (1:20).
    - ALL ACCESSIBLE PARKING SPACES SHALL DISPLAY APPROVED RESERVED PARKING SPACE SIGNS AS PRESCRIBED BY THE N.C.D.O.T. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES & APPROVED FOR USE UNDER N.C. GENERAL STATUTE 77-8, 77-8D "PENALTY" SIGN & HERE APPLICABLE, "VAN ACCESSIBLE" SIGN.
  - THE CONTRACTOR SHALL VISIT THE SITE & FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS BEFORE SUBMITTING HIS BID.
  - ALL DISTANCES & DATA SHALL BE CHECKED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. IN CASE OF CONFLICT, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY SO THAT CLARIFICATIONS MAY BE MADE PRIOR TO THE START OF WORK.
  - THE PROPOSED GRADES AS SHOWN IN THESE PLANS ARE THE FINISHED GRADES UNLESS OTHERWISE NOTED.
  - THE CONTRACTOR SHALL SUPPLY & ESTABLISH SURVEY CONTROL, INCLUDING THE HORIZONTAL & VERTICAL CONTROL POINTS. THE CONTRACTOR SHALL MAINTAIN THIS CONTROL & PROVIDE ALL BENCHMARKS, STAKES, GRADES, LEVELS & LINES NECESSARY FOR CONSTRUCTION. CONTRACTORS SHALL PROVIDE ADEQUATE SUPERVISION TO PREVENT DAMAGE & MOVEMENT FROM EQUIPMENT WORKING AROUND CONSTRUCTION STAKES. THESE CONSTRUCTION STAKES SHALL REMAIN IN PLACE & BE PROTECTED UNTIL OWNER APPROVES THEIR REMOVAL, AND STAKES THAT HAVE BEEN DISPLACED AS A RESULT OF CONSTRUCTION ACTIVITY ARE TO BE REPLACED BY A LICENSED LAND SURVEYOR ENGAGED BY THE CONTRACTOR AT NO COST TO THE OWNER.
  - ALL EXISTING IMPROVEMENTS DAMAGED AS A RESULT OF CONSTRUCTION OPERATIONS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION TO THE SATISFACTION OF THE OWNER.
  - ALL EXISTING PAVEMENT & CONCRETE TO BE JOINED SHALL BE SAW-CUT.
  - BURNING ON, OR NEAR THE JOB SITE WILL NOT BE PERMITTED.
  - ALL FILL SHALL BE COMPACTED TO 95% PER ASTM D 698. SEE GEOTECHNICAL REPORT FOR ADDITIONAL FILL REQUIREMENTS.
  - UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL CLEAN THE ENTIRE SITE OF ALL CONSTRUCTION RELATED MATERIAL & DEBRIS.
  - LAND DEVELOPMENT INSPECTOR TO BE GIVEN 24 HOURS NOTICE PRIOR TO START OF CONSTRUCTION.
  - APPROVAL OF THIS PLAN IS NOT AN AUTHORIZATION TO GRADE ON ADJACENT PROPERTIES, WHEN FIELD CONDITIONS WARRANT OFFSITE GRADING. WRITTEN PERMISSION MUST BE OBTAINED FROM THE AFFECTED PROPERTY OWNER(S).
  - COORDINATE ALL CURB & STREET GRADES IN INTERSECTION WITH CITY OF WILMINGTON COUNTY INSPECTOR.
  - IN ORDER TO ENSURE PROPER DRAINAGE, KEEP A MINIMUM SLOPE OF 0.5% ON CURB.
  - INSTALL ALL EROSION CONTROL MEASURES PRIOR TO START OF CONSTRUCTION. SEE SHEETS C8.0 & C8.1 FOR EROSION CONTROL PLANS.
  - THE LOCATION OF EXISTING UTILITIES, STORM DRAINAGE STRUCTURES & OTHER ABOVE & BELOW-GRADE IMPROVEMENTS ARE APPROXIMATELY AS SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATION, SIZE & INVERT ELEVATIONS OF SUCH PRIOR TO START OF CONSTRUCTION.
  - ALL ROAD IMPROVEMENTS AT GREENFIELD STREET & S 13TH STREET TO BE COORDINATED WITH CITY OF WILMINGTON PRIOR TO CONSTRUCTION.
  - PE SEALED SHOP DRAWINGS FOR RETAINING WALL(S) MUST BE SUBMITTED TO THE CITY OF WILMINGTON ENGINEER PRIOR TO CONSTRUCTION.
  - NON-STANDARD ITEMS (IE: PAVERS, IRRIGATION SYSTEMS, ETC.) IN THE ROW REQUIRE A ROW ENCROACHMENT AGREEMENT WITH THE CITY OF WILMINGTON BEFORE INSTALLATION.
  - THE ENGINEER WILL NOT BE CONTINUOUSLY PRESENT IN THE FIELD. IT IS SPECIFICALLY UNDERSTOOD THAT HE DOES NOT UNDERTAKE NOR ASSUME ANY OBLIGATION FOR SUPERVISION OF CONSTRUCTION, SAFETY MEASURES TAKEN DURING THE COURSE OF CONSTRUCTION, RESPONSIBILITY FOR SCHEDULING THE WORK FOR INSURING COMPLETE COMPLIANCE WITH THE CONTRACT DOCUMENTS AND/OR ALL CODE REQUIREMENTS, RULES & REGULATIONS OF ANY PUBLIC OR PRIVATE AUTHORITY HAVING JURISDICTION OVER THE WHOLE OR ANY PART OF THE WORK. IN ADDITION, THE ENGINEER NEITHER UNDERTAKES, ASSUMES, NOR GUARANTEES THE WORK AND/OR PERFORMANCE OF THE CONTRACTOR.
  - ALL CONSTRUCTION SHALL MEET CITY OF WILMINGTON, STATE OF NORTH CAROLINA & ALL OTHER APPLICABLE STANDARDS.
  - BEFORE YOU DIG, STOP. CALL THE NC ONE-CALL CENTER AT 811. IT'S THE LAW.
  - ANY STRUCTURE TO BE REMOVED SHALL REQUIRE A DEMOLITION PERMIT FROM BUILDING INSPECTIONS.
  - EXTERIOR EXIT DISCHARGE ILLUMINATION / LIGHTING SHALL BE REQUIRED FROM ALL EXIT DOORS TO THE PUBLIC WAY IN COMPLIANCE WITH NORTH CAROLINA BUILDING CODE (NCBC) 109.
  - ALL MATERIALS USED FOR WATER AND SEWER SERVICES SHALL BE TO CAPE FEAR PUBLIC UTILITY AUTHORITY UTILITY STANDARDS.

### PAVEMENT HATCH LEGEND

[Symbol]	NORMAL DUTY PAVEMENT SECTION
[Symbol]	HEAVY DUTY PAVEMENT SECTION
[Symbol]	PERVIOUS PAVEMENT SECTION

### SITE INFORMATION

LOCATION: 1313 GREENFIELD STREET, WILMINGTON, NC 28415  
ZONING: UMX JURISDICTION: CITY OF WILMINGTON  
TAX PARCEL: R05414-021-002-000 & R5414-021-003-000  
CAMA LAND USE CLASSIFICATION: DEVELOPED  
FEMA PANEL No: 37203127001 FEMA PANEL DATE: 04/03/06 100yr FLOOD ZONE: OUT  
PROPOSED USE: RETAIL SALES LESS THAN OR EQUAL TO 10,000 SQUARE FEET

### SETBACKS:

	FRONT	SIDE	REAR
REDD(MIN)	5'	5'	5'
PROVIDED	10.1'	6.9'	95.6' 149.2'

WATER LINE: CFPUA SERVICE: 1" LINE USAGE: 200 GPD  
WASTEWATER LINE: CFPUA SERVICE: 4" LINE USAGE: 200 GPD  
ELECTRIC SERVICE: DUKE SERVICE: OVERHEAD

\*ALL SIGHT LIGHTING SHALL BE LOCATED, ANGLED, SHIELDED AND/OR LIMITED IN INTENSITY SO AS TO CAST NO DIRECT LIGHT UPON ADJACENT PROPERTIES. SHALL MINIMIZE OFF-SITE BACKLIGHTING GLARE, AND UP LIGHTING. LIGHT POST SHALL BE NO TALLER THAN 12 FEET.

### DRAWING INFORMATION

TRUE NORTH  
North Carolina One-Call Center  
Call 811 Before You Dig  
GRAPHIC SCALE  
1 inch = 20 ft.

THIS DRAWING IS THE PROPERTY OF BURTON ENGINEERING ASSOCIATES AND IS NOT TO BE REPRODUCED OR COPIED IN WHOLE OR IN PART. IT IS NOT TO BE USED ON ANY OTHER PROJECT AND IS TO BE RETURNED UPON REQUEST.

DEVELOPED BY: THE DURBAN GROUP  
BUILDING VALUES

BURTON ENGINEERING ASSOCIATES  
CIVIL ENGINEERS  
LAND PLANNERS

5950 Fairview Rd., Suite 100, Charlotte, NC 28210  
(704) 553-8881 Fax (704) 553-8660  
Firm License # 1557

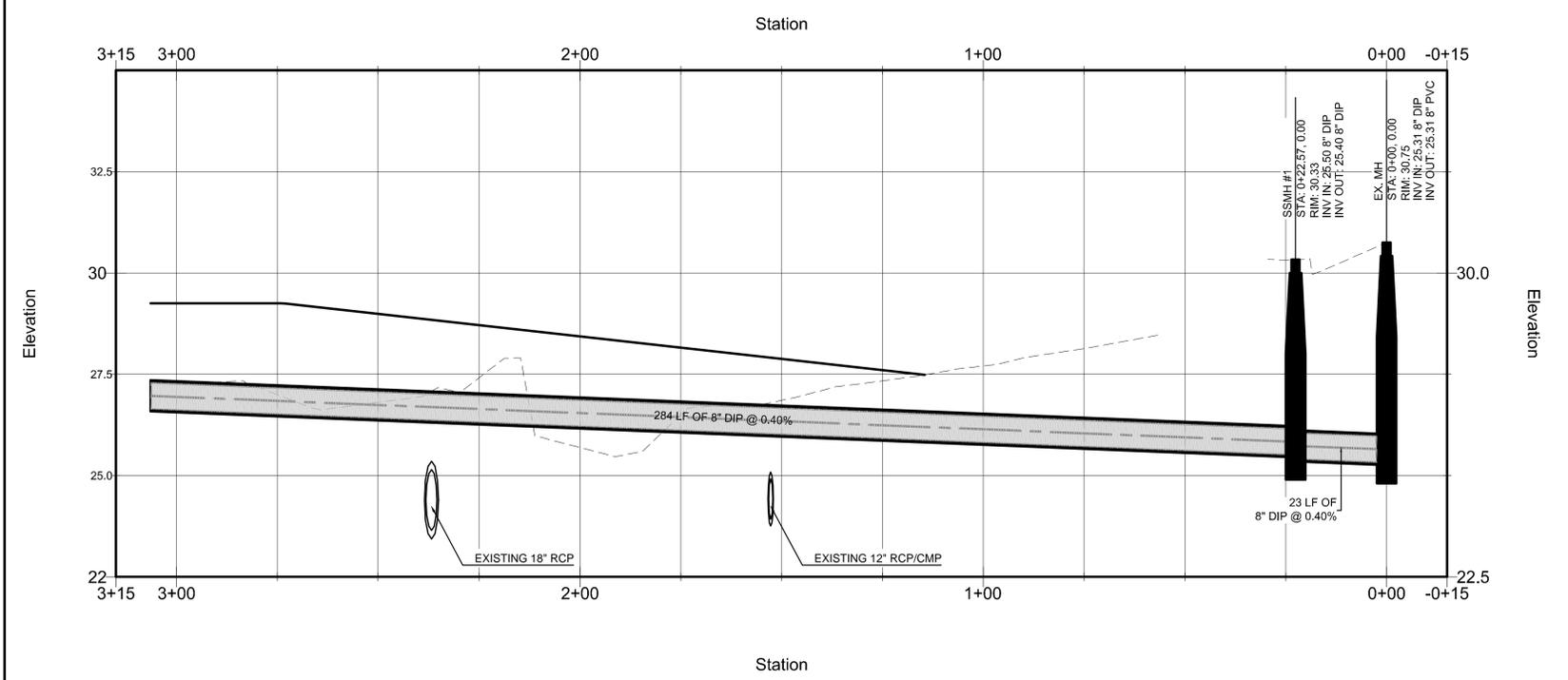
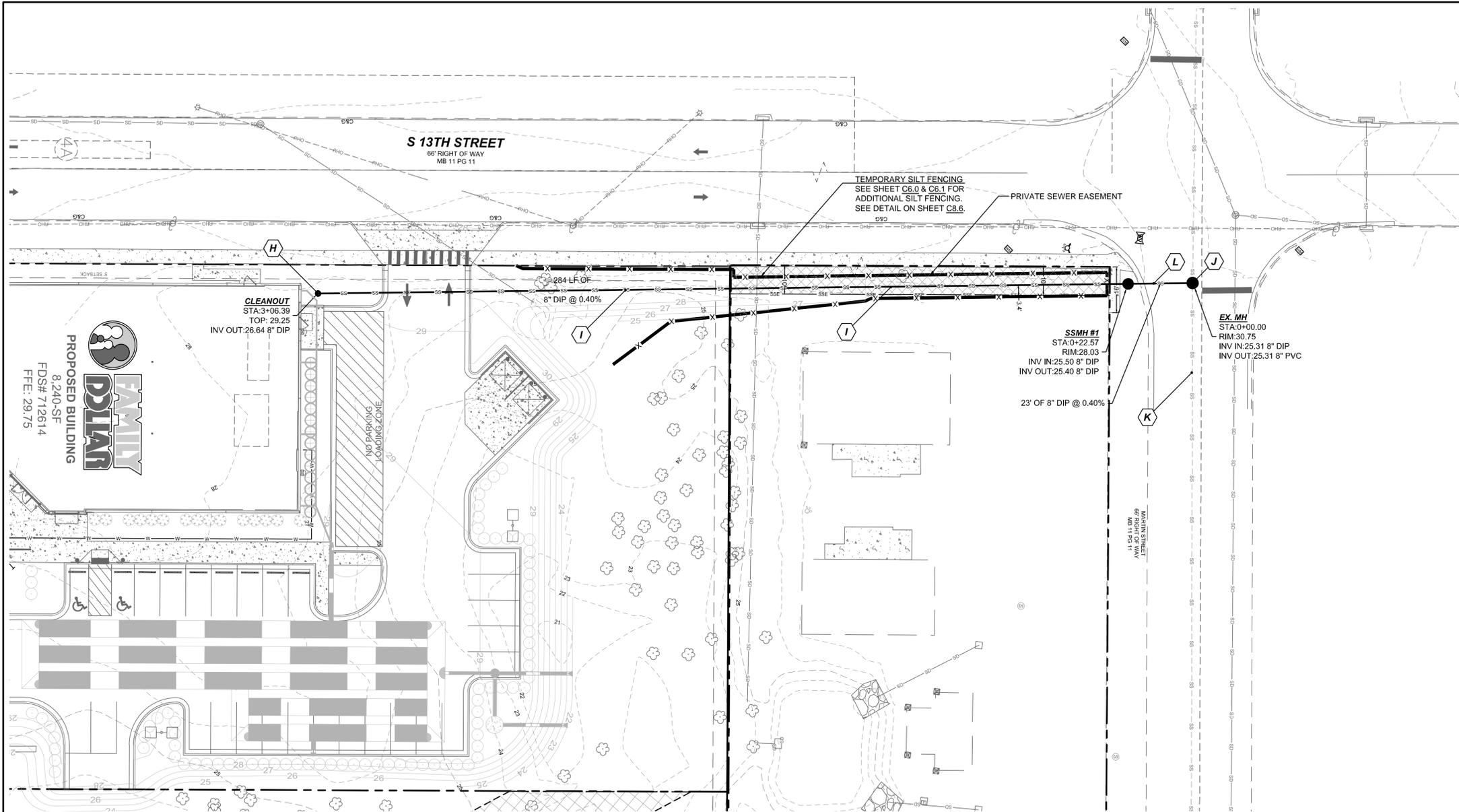
Seal: [Professional Engineer Seal for Carlton T. Burton, License # 12022/2015]

GREENFIELD - FDS  
1313 GREENFIELD STREET  
WILMINGTON, NORTH CAROLINA

Project: CTB  
Engineer: LJB  
Drawn By: 9/21/15  
Date: \_\_\_\_\_

Revisions: \_\_\_\_\_

Project Number: 487-064  
Sheet of 21



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

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

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

**Approved Construction Plan**

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

Planning \_\_\_\_\_

Traffic \_\_\_\_\_

Fire \_\_\_\_\_

- CFPUA STANDARD SEWER NOTES**
- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
  - SERVICES SHALL BE PERPENDICULAR TO THE MAIN AND TERMINATE AT THE RIGHT-OF-WAY LINE. SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN MANHOLE AND TERMINATE AT RIGHT-OF-WAY LINE.
  - ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF CLASS 50 DIP WITH PROTECTO 401 CERAMIC EPOXY LINING.
  - MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
  - NO FLEXIBLE COUPLINGS SHALL BE USED.
  - ALL STAINLESS STEEL FASTENERS SHALL BE 316.

- CFPUA GENERAL NOTES**
- NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
  - THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
  - THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
  - THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.
  - THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN AND STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL CODES AND STATE REGULATIONS).

- LEGEND**
- EXISTING WATERLINE
  - EXISTING SEWER LINE
  - EXISTING SEWER MANHOLE
  - PROPOSED WATERLINE
  - PROPOSED WATER METER
  - PROPOSED BACKFLOW PREVENTER
  - PROPOSED SEWER LINE
  - PROPOSED SEWER CLEANOUT

- UTILITY KEYS**
- A EXISTING 8" WATERLINE (NOT FIELD VERIFIED), PROVIDED BY CFPUA.
  - B NEW PRIVATE 1" DOMESTIC WATERLINE (SDR 21 PVC). (NOTE: NO PVC ALLOWED WITHIN 5 FT. OF EITHER END OF BACKFLOW PREVENTER. PROVIDE BLOCKING AT BENDS.)
  - C NEW PRIVATE 1" IRRIGATION WATERLINE (SDR 21 PVC) WITH 1" METER AND 1" REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY INSTALLED ABOVE-GROUND WITHIN ENCLOSURE PER CAPE FEAR PUBLIC UTILITY AUTHORITY REQUIREMENTS.
  - D NEW 1" (DOM. WATER) REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY INSTALLED ABOVE-GROUND WITHIN ENCLOSURE PER CAPE FEAR PUBLIC UTILITY AUTHORITY REQUIREMENTS.
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  - J TIE INTO EXISTING SANITARY SEWER MANHOLE, AS SHOWN. CONTRACTOR TO VERIFY DEPTH OF EXISTING MANHOLE PRIOR TO CONSTRUCTING NEW SEWER MAIN.
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  - ANY CONTRACTOR PERFORMING WORK ON THIS PROJECT SHALL FAMILIARIZE HIMSELF WITH THE THE JOB SITE & LOCATION OF ALL EXISTING FACILITIES & UNDERGROUND UTILITIES SHOWN OR NOT SHOWN ON THESE PLANS. THE CONTRACTOR WILL BE UNILATERALLY RESPONSIBLE FOR ANY DAMAGE DONE TO EXISTING FACILITIES OR UNDERGROUND UTILITIES THAT ARE SHOWN OR NOT SHOWN ON THESE PLANS, & IF DAMAGED, THEY SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER AT NO COST TO THE OWNER.
  - THE CONTRACTOR SHALL RE-SET ALL MANHOLE COVERS, CATCH BASIN GRATES & ANY OTHER UTILITY ACCESS COVERS TO FINISHED PAVEMENT SURFACE OR SIDEWALK GRADE.
  - THE CONTRACTOR SHALL PROTECT UNDERGROUND UTILITIES & THEIR APPURTENANCES TO REMAIN ON SITE FROM DAMAGE DURING CONSTRUCTION OPERATIONS.
  - SEWER CLEAN-OUTS TO BE PROVIDED AT ALL BENDS ON 6" Ø OR LESS LINES. CLEAN OUTS SHALL BE PROVIDED EVERY 80' ON 4"Ø LINES & 6"Ø LINES. SEWER LATERALS TO BE PLACED AT A MIN. SLOPE OF 1/4" PER FOOT ON 4"Ø LINES & 1/8" PER FOOT ON 6"Ø LINES.
  - WHEN WATER MAIN IS ABOVE SEWER, BUT WITH LESS THAN 18" CLEARANCE, OR WHEN THE SEWER IS ABOVE THE WATER MAIN, BOTH WATER MAIN & SEWER LINE SHALL BE CONSTRUCTED OF FERROUS MATERIALS WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A MINIMUM LATERAL DISTANCE, MEASURED AT RIGHT ANGLES TO THE SEWER, OF 10' ON EACH SIDE OF THE CROSSING WITH FULL SECTIONS CENTERED AT THE POINT OF CROSSING.
  - UPON COMPLETION OF CONSTRUCTION & BEFORE ACTIVATION OF SEWER LINES & WATER MAINS, THE CONTRACTOR SHALL PROVIDE AS-BUILT SURVEY INFORMATION (PERFORMED BY LICENSED N.C. SURVEYOR) TO THE ENGINEER.
  - THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER-USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER & ITS CAPE FEAR PUBLIC UTILITY AUTHORITY-REQUIRED BACKFLOW PREVENTER.
  - CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY TO RELOCATE ANY EXISTING UTILITY POLES. ALL EXISTING FACILITIES WHICH CONFLICT WITH THE IMPROVEMENTS UNDER THE SCOPE OF THIS PROJECT MUST BE RELOCATED, & SHALL BE INCLUDED IN THE CONTRACTORS BID.
  - ALL CONSTRUCTION SHALL MEET CAPE FEAR PUBLIC UTILITY AUTHORITY AND NCDENR STANDARDS.
  - CONTRACTOR RESPONSIBLE FOR TERMINATING EXISTING AND UNUSED WATER AND SEWER SERVICES. TERMINATION TO BE TO NCDENR AND CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARDS.
  - ALL ON-SITE PRIVATE WATER AND SEWER LINES TO BE MAINTAINED BY OWNER
  - ALL STANDARD NCDENR/CAPE FEAR PUBLIC UTILITY AUTHORITY UTILITY SEPARATIONS MUST BE PROVIDED FOR WATER AND SEWER MAINS.
  - ALL EXISTING UTILITIES ARE SHOWN BASED ON FIELD EVIDENCE.

- UTILITY NOTES**
- CONTRACTOR SHALL COORDINATE WITH THE PROPER UTILITY COMPANIES & GOVERNMENT AGENCIES PRIOR TO COMMENCEMENT OF WORK.
  - DIMENSIONS TO, OR COORDINATES OF MANHOLES, VALVES, PIPELINES, ETC., ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
  - THE OWNER SHALL OBTAIN & PAY FOR, PRIOR TO THE BEGINNING OF ANY WORK, ALL PERMITS & LICENSES NECESSARY TO ACCOMPLISH WORK. PERMITS CAN INCLUDE, BUT ARE NOT LIMITED TO CITY OF WILMINGTON ENCROACHMENT PERMIT, GRADING PERMIT, &/OR UTILITY COMPANY'S PERMIT FOR THE WORK TO BE PERFORMED ON THEIR RESPECTIVE FACILITIES.
  - ANY CONTRACTOR PERFORMING WORK ON THIS PROJECT SHALL FAMILIARIZE HIMSELF WITH THE THE JOB SITE & LOCATION OF ALL EXISTING FACILITIES & UNDERGROUND UTILITIES SHOWN OR NOT SHOWN ON THESE PLANS. THE CONTRACTOR WILL BE UNILATERALLY RESPONSIBLE FOR ANY DAMAGE DONE TO EXISTING FACILITIES OR UNDERGROUND UTILITIES THAT ARE SHOWN OR NOT SHOWN ON THESE PLANS, & IF DAMAGED, THEY SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER AT NO COST TO THE OWNER.
  - THE CONTRACTOR SHALL RE-SET ALL MANHOLE COVERS, CATCH BASIN GRATES & ANY OTHER UTILITY ACCESS COVERS TO FINISHED PAVEMENT SURFACE OR SIDEWALK GRADE.
  - THE CONTRACTOR SHALL PROTECT UNDERGROUND UTILITIES & THEIR APPURTENANCES TO REMAIN ON SITE FROM DAMAGE DURING CONSTRUCTION OPERATIONS.
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  - ALL STANDARD NCDENR/CAPE FEAR PUBLIC UTILITY AUTHORITY UTILITY SEPARATIONS MUST BE PROVIDED FOR WATER AND SEWER MAINS.
  - ALL EXISTING UTILITIES ARE SHOWN BASED ON FIELD EVIDENCE.

**DRAWING INFORMATION**

TRUE NORTH

PLAN NORTH

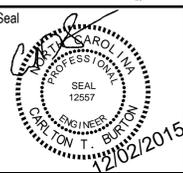
**NORTH CAROLINA 811**  
North Carolina One-Call Center  
Call 811 Before You Dig

GRAPHIC SCALE  
0 10 20 30 40 50  
( IN FEET )  
1 inch = 20 ft.

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DEVELOPED BY:  
**THE DURBAN GROUP**  
BUILDING VALUES  
106 FOSTER AVENUE  
CHARLOTTE, NC 28203  
(P) 704-319-8347

**BURTON ENGINEERING ASSOCIATES**  
CIVIL ENGINEERS  
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5950 Fairview Rd., Suite 100, Charlotte, NC 28210  
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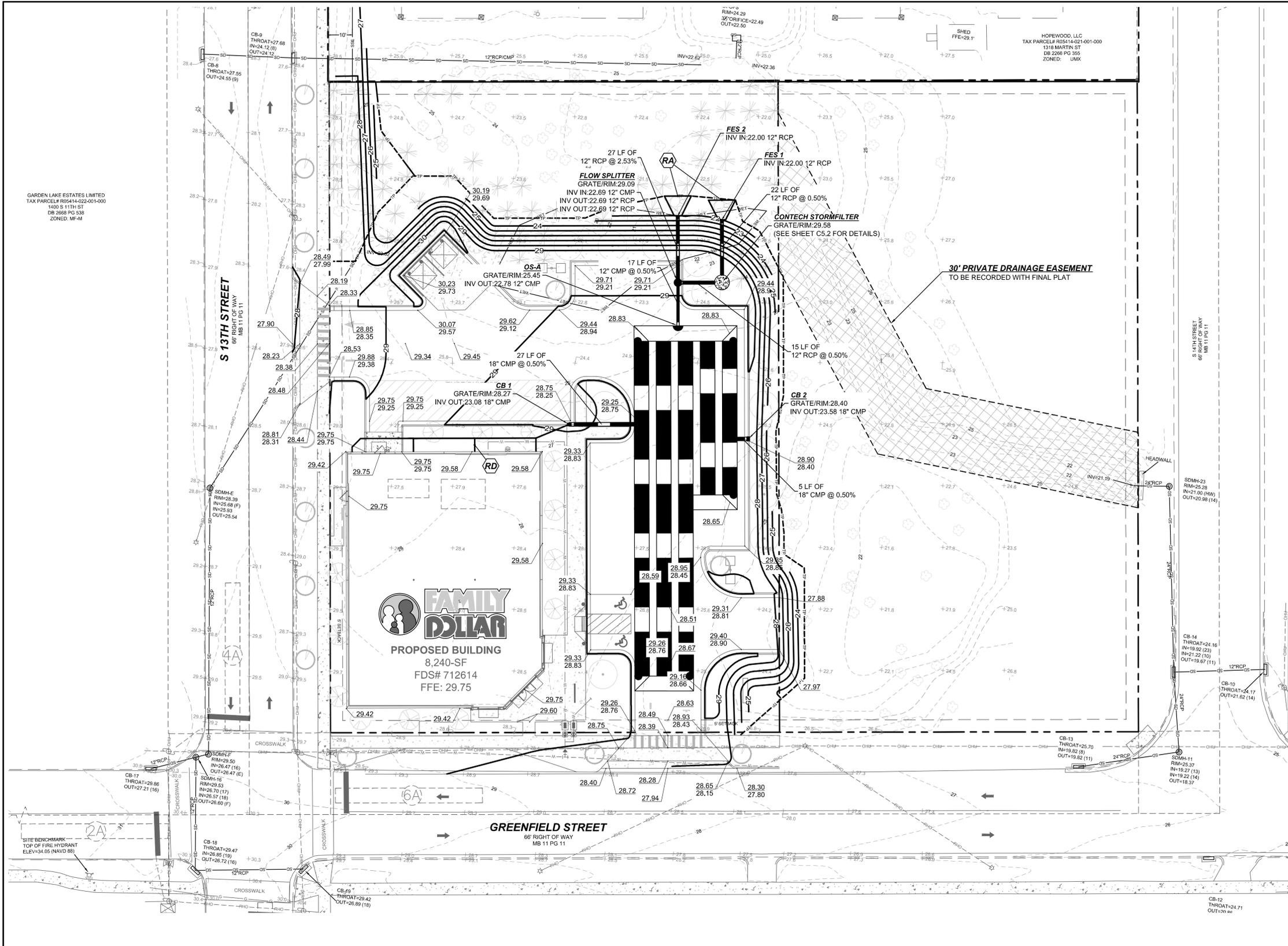
**GREENFIELD - FDS**  
1313 GREENFIELD STREET  
WILMINGTON, NORTH CAROLINA  
**SEWER EXTENSION PLAN**

Project: **CTB**  
Engineer: **LJB**  
Drawn By: **JLB**  
Date: **9/21/15**

Revisions:  
1- 11/10/15 PER TRC & CFPUA COMMENTS  
2- 12/02/15 PER TRC/ENGINEERING COUNTY COMMENTS

Project Number: **487-064**

**C4.1**  
Sheet 6 of 21



**NOTE:**  
CONTRACTOR TO SAVE SUFFICIENT TOPSOIL ON SITE TO BE RE-SPREAD AFTER GRADING IS COMPLETE. HAUL OFF ANY EXCESS TOP SOIL.

**LEGEND**

- EXIST. CONTOUR
- EXIST. SPOT ELEV.
- PROP. CONTOUR
- PROP. SPOT ELEV. (AT CURB: TOC/BOC)
- PROP. SPOT ELEV. (NO CURB)
- PROP. SPOT ELEV. (TOP OF CURB)
- PROP. JUNCTION BOX
- PROP. CATCH BASIN
- PROP. FES
- PROP. LIMITS OF CONSTRUCTION
- PROP. TREE PROTECTION FENCING
- RA PROP. CLASS B RIPRAP APRON (8'x11')
- RD TYPICAL 6" PVC ROOF DRAINAGE STORM LINE WITH MINIMUM SLOPE OF 1.00%. MAINTAIN MINIMUM OF 1' SEPARATION FROM WATERLINE.

**GENERAL GRADING NOTES**

- LAND DEVELOPMENT/EROSION CONTROL INSPECTOR TO BE GIVEN 24 HOURS NOTICE PRIOR TO START OF CONSTRUCTION.
- THE CONTRACTOR SHALL MAINTAIN EACH STREAM, CREEK, OR BACKWASH CHANNEL IN AN UNOBSTRUCTED STATE AND SHALL REMOVE FROM THE CHANNEL AND BANKS OF THE STREAM ALL DEBRIS, LOGS, TIMBER, JUNK AND OTHER ACCUMULATIONS.
- PE SEALED SHOP DRAWINGS FOR RETAINING WALL(S) MUST BE SUBMITTED TO CITY ENGINEER PRIOR TO CONSTRUCTION.
- APPROVAL OF THIS SITE PLAN IS NOT AN AUTHORIZATION TO GRADE ADJACENT PROPERTIES. WHEN FIELD CONDITIONS WARRANT OFF-SITE GRADING, PERMISSION MUST BE OBTAINED FROM THE AFFECTED PROPERTY OWNERS.
- NON-STANDARD ITEMS (I.E.: PAVERS, IRRIGATION SYSTEMS, ETC.) IN THE RIGHT-OF-WAY REQUIRE A RIGHT-OF-WAY ENCROACHMENT AGREEMENT WITH THE CITY OF WILMINGTON BEFORE INSTALLATION.
- LANDINGS OUTSIDE ALL DOORS SHALL BE SIZED PER THE NORTH CAROLINA BUILDING CODE (NCBC), BE AT THE SAME ELEVATION AS THE FINISHED FLOOR ELEVATION AND HAVE A MAXIMUM 2% SLOPE IN ANY DIRECTION INCLUDING DIAGONAL.
- THE SLOPES IN THE HANDICAP PARKING SPACES / ACCESS AISLE AREAS SHALL NOT EXCEED 2% IN ANY DIRECTION INCLUDING IN THE DIAGONAL.
- THERE SHALL BE LEVEL TURNING AREAS (MAX. 2% SLOPE IN ANY DIRECTION INCLUDING IN THE DIAGONAL) ON ALL SIDEWALKS WHERE AN INTERSECTING SIDEWALK CONNECTS WITH IT.
- THERE SHALL BE NO DESIGNATED PEDESTRIAN ROUTES / SIDEWALKS WITHIN THE SITE, EXCEPT WHERE LABELED AS A RAMP WITH RAILS, WHICH EXCEED A 5% SLOPE IN THE DIRECTION OF TRAVEL AND A 2% CROSS-SLOPE.

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

**Approved Construction Plan**

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

Planning \_\_\_\_\_

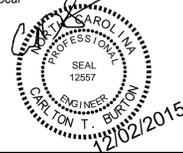
Traffic \_\_\_\_\_

Fire \_\_\_\_\_

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**GREENFIELD - FDS**  
1313 GREENFIELD STREET  
WILMINGTON, NORTH CAROLINA  
**GRADING AND DRAINAGE PLAN**

Project: \_\_\_\_\_  
Sheet Title: \_\_\_\_\_  
CTB  
Engineer  
LJB  
Drawn By  
9/21/15  
Date

Revisions

- 1-11/10/15 PER TRC & CP/UA COMMENTS
- 2-12/02/15 PER TRO/ENGINEERING/COUNTY COMMENTS

**STORM DRAINAGE CHART**

PROJECT: GREENFIELD - FDS  
LOCATION: 1313 GREENFIELD STREET, WILMINGTON, NC  
STORM FREQUENCY (ON-SITE): 10 YR. - C=SEE CHART I=9.72 (10 yr.) PER NOAA  
\*\* ALL PIPE SHALL BE CL III RCP UNLESS NOTED OTHERWISE.

DATE: 09/21/2015  
REVISED:  
JOB NO: 487-064  
COMPUTED BY: LJB  
CHECKED BY: CTB

LINE	DRAINAGE AREA (ACRES)			TIME (MIN)	Q(CFS)			PIPE DATA			INVERT ELEVATIONS		VELOC.	INLET/RIM ELEVATION	REMARKS						
	FROM	TO	TOTAL		10 yr.	TOTAL (10 YR.)	PERCENT SLOPE	LENGTH IN FEET	SIZE IN INCHES	UPSTREAM	DOWNSTREAM	FPS				FT.					
CB 1	UGD	---	0.33	0.33	---	5.0	0.90	2.89	0.09	N/A	8.05	0.012	0.50	27	18	23.08	22.95	4.17	CB 1 = 28.27	CMP	
CB 2	UGD	---	0.32	0.32	---	5.0	0.90	2.80	0.09	N/A	8.05	0.012	0.50	5	18	23.58	23.56	4.14	CB 2 = 28.40	CMP	
**SEE SHEET C5.1 AND C5.2 FOR UNDERGROUND DETENTION PIPE DETAILS**																					
OS-A	FS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	OS-A = 25.45	CMP
FS	SF	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	FS = 29.09	RCP
SF	FES 1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	SF = 29.58	RCP
FS	FES 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	FS = 29.09	RCP

**DRAWING INFORMATION**

TRUE NORTH

**NORTH CAROLINA 811**  
North Carolina One-Call Center  
Call 811 Before You Dig

PLAN NORTH

GRAPHIC SCALE  
( IN FEET )  
1 inch = 20 ft.

Project Number  
487-064  
**C5.0**  
Sheet 7 of 21

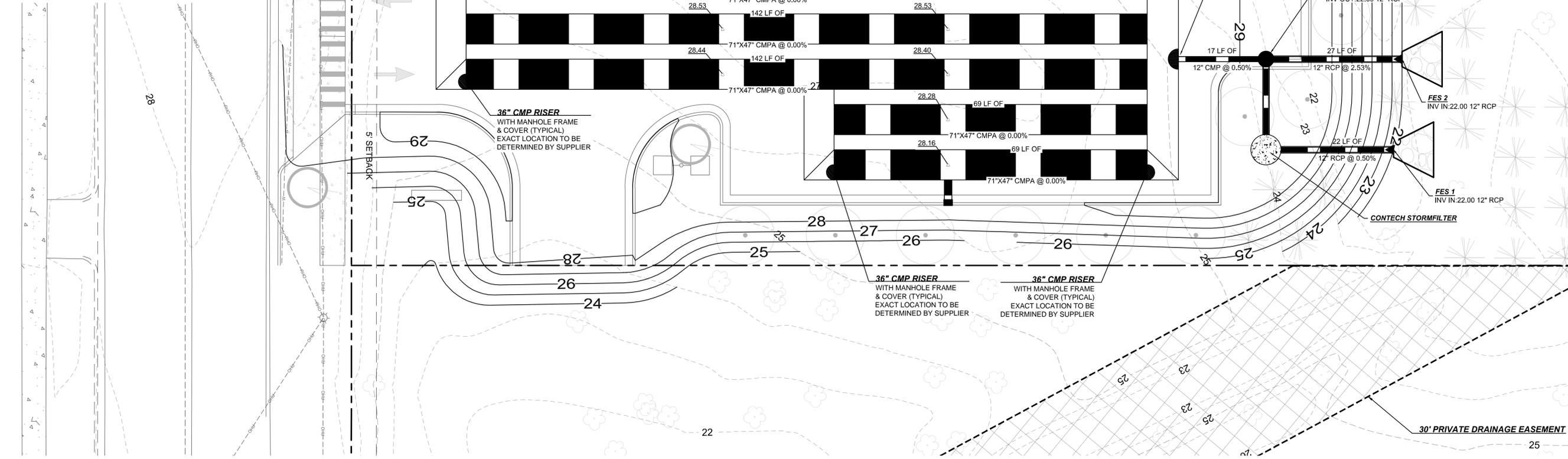
TRUE NORTH



GRAPHIC SCALE



( IN FEET )  
1 inch = 10 ft.



**SPECIFICATION FOR CORRUGATED STEEL PIPE-ALUMINIZED TYPE 2 STEEL**

**SCOPE:**  
THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE CORRUGATED STEEL PIPE (CSP) DETAILED IN THE PROJECT PLANS.

**MATERIAL:**  
THE ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M 274 OR ASTM A 929.

**PIPE:**  
THE CSP SHALL BE MANUFACTURED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF AASHTO M-36 OR ASTM A760. THE PIPE SIZES, GAUGES AND CORRUGATIONS SHALL BE AS SHOWN ON THE PROJECT PLANS.

**HANDLING AND ASSEMBLY:**  
SHALL BE IN ACCORDANCE WITH NCSPA'S (NATIONAL CORRUGATED STEEL PIPE ASSOCIATION) RECOMMENDATIONS

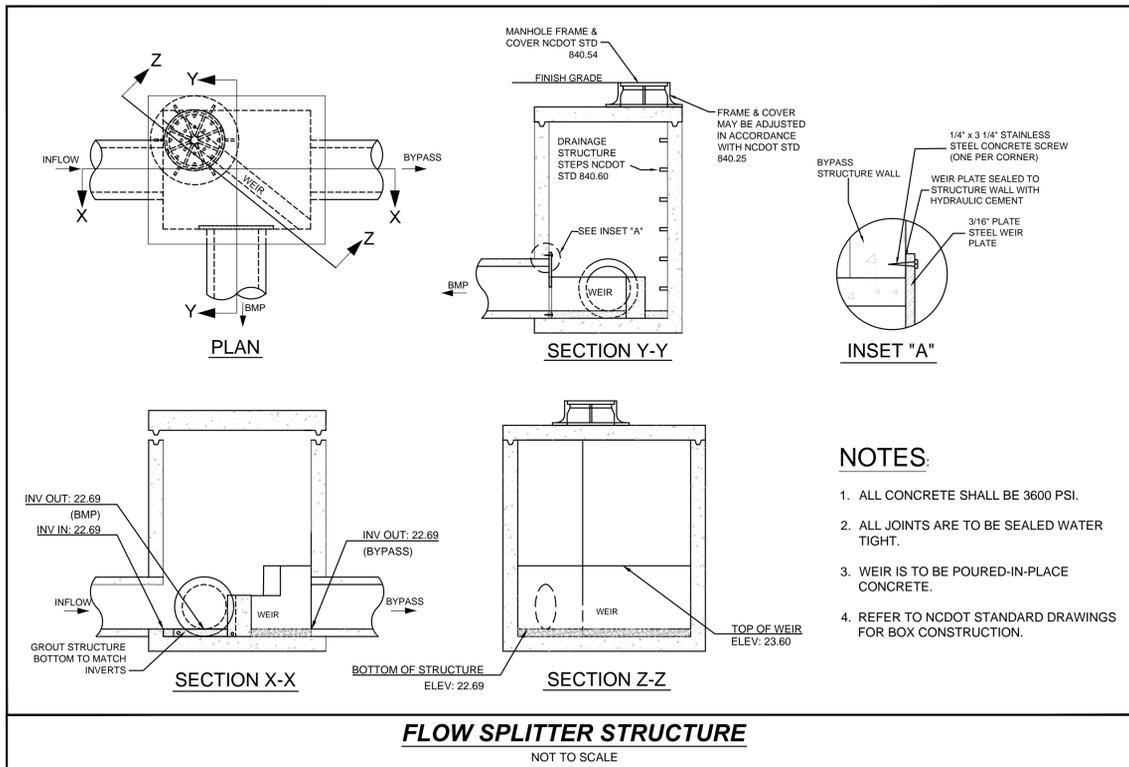
**INSTALLATION:**  
SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II OR ASTM A 798 AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE PROJECT ENGINEERING.

IT IS ALWAYS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

**CONSTRUCTION LOADS:**  
CONSTRUCTION LOADS MAY BE HIGHER THAN FINAL LOADS. FOLLOW THE MANUFACTURER'S OR NCSPA GUIDELINES.

City of Wilmington logo and permit information fields including Date, Permit #, and Signature.

Approved Construction Plan form with Name, Date, Planning, Traffic, and Fire checkboxes.



**STORMFILTER OPERATION & MAINTENANCE PLAN**

I WILL KEEP A MAINTENANCE RECORD ON THIS BMP. THIS MAINTENANCE RECORD WILL BE KEPT IN A LOG IN A KNOWN SET LOCATION. ANY DEFICIENT BMP ELEMENTS NOTED IN THE INSPECTION WILL BE CORRECTED, REPAIRED OR REPLACED IMMEDIATELY. THESE DEFICIENCIES CAN AFFECT THE INTEGRITY OF STRUCTURES, SAFETY OF THE PUBLIC, AND THE REMOVAL EFFICIENCY OF THE BMP.

Table with 3 columns: BMP ELEMENT, POTENTIAL PROBLEM, and HOW I WILL REMEDIATE THE PROBLEM. Rows include Entire BMP, Flow Diversion Structure, Stormfilter Cartridges, Outlet Device, and Receiving Water.

- NOTES:
1. ALL CONCRETE SHALL BE 3600 PSI.
2. ALL JOINTS ARE TO BE SEALED WATER TIGHT.
3. WEIR IS TO BE POURED-IN-PLACE CONCRETE.
4. REFER TO NCDOT STANDARD DRAWINGS FOR BOX CONSTRUCTION.

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DEVELOPED BY: THE DURBAN GROUP BUILDING VALUES 106 FOSTER AVENUE CHARLOTTE, NC 28203 (P) 704-319-8347

BURTON ENGINEERING ASSOCIATES ENGINEERS LAND PLANNERS 5950 Fairview Rd., Suite 100, Charlotte, NC 28210 (704) 553-8881 Fax (704) 553-8660 Firm License # 1557



GREENFIELD - FDS 1313 GREENFIELD STREET WILMINGTON, NORTH CAROLINA STORMWATER MANAGEMENT PLAN

Project: CTB Engineer LJB Drawn By 9/21/15 Date

Revisions: 1-11/10/15 PER TRC & CPJIA COMMENTS 2-12/02/15 PER TROENGINEERING/COUNTY COMMENTS

Project Number 487-064

C5.1 Sheet 8 of 21

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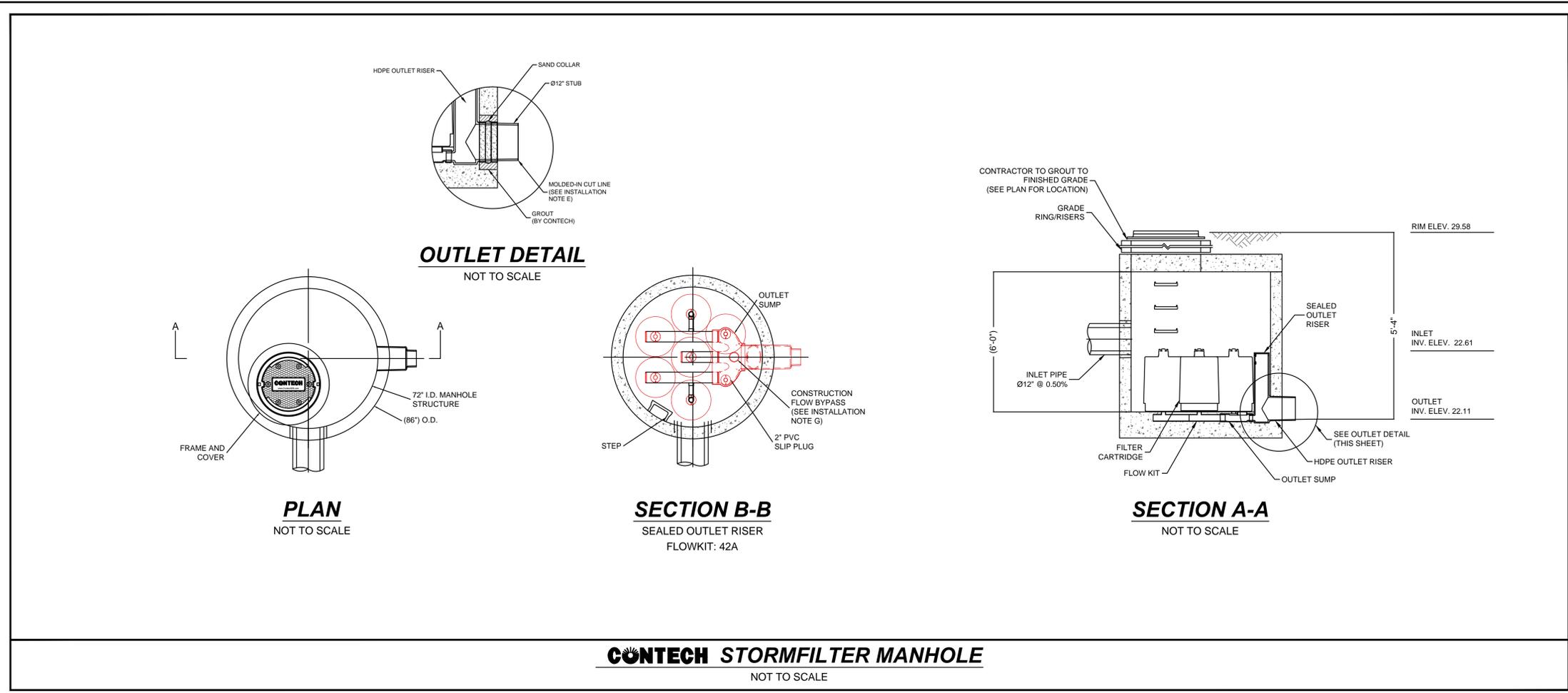
GREENFIELD - FDS  
1313 GREENFIELD STREET  
WILMINGTON, NORTH CAROLINA  
STORMWATER  
MANAGEMENT PLAN

Project  
CTB  
Engineer  
LJB  
Drawn By  
9/21/15  
Date

Revisions  
1- 11/10/15 PER TRC & CP/UA COMMENTS  
2- 12/02/15 PER TRC/ENGINEERING/COUNTY COMMENTS

Project Number  
487-064

C5.2  
Sheet 9 of 21



**CONTECH STORMFILTER MANHOLE**  
NOT TO SCALE

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

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

**Approved Construction Plan**

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

Planning \_\_\_\_\_

Traffic \_\_\_\_\_

Fire \_\_\_\_\_

**PERFORMANCE SPECIFICATION**  
FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF-CLEANING. **RADIAL MEDIA DEPTH SHALL BE 7-INCHES.** FILTER MEDIA CONTACT TIME SHALL BE AT LEAST **37 SECONDS**.  
SPECIFIC FLOW RATE SHALL BE **1 GPM/SF (MAXIMUM)**. SPECIFIC FLOW RATE IS THE MEASURE OF THE FLOW (GPM) DIVIDED BY THE MEDIA SURFACE CONTACT AREA (SF). MEDIA VOLUMETRIC FLOW RATE SHALL BE **6 GPM/CF OF MEDIA (MAXIMUM)**.

**GENERAL NOTES**

- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
- FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. [www.contech.com](http://www.contech.com)
- STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
- STRUCTURE SHALL MEET AASHTO H200 LOAD RATING, ASSUMING EARTH COVER OF 0' 6" AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.

**INSTALLATION NOTES**

- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE (LIFTING CLUTCHES PROVIDED).
- CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL SECTIONS AND ASSEMBLE STRUCTURE.
- CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET PIPES.
- CONTRACTOR TO PROVIDE AND INSTALL CONNECTOR TO THE OUTLET RISER STUB. STORMFILTER EQUIPPED WITH A DUAL DIAMETER HDPE OUTLET STUB AND SAND COLLAR. IF OUTLET PIPE IS LARGER THAN 8 INCHES, CONTRACTOR TO REMOVE THE 8 INCH OUTLET STUB AT MOLDED-IN CUT LINE. COUPLING BY FERROCO OR EQUAL AND PROVIDED BY CONTRACTOR.
- CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
- CONTRACTOR TO INSTALL SUPPLIED PLUG IN CONSTRUCTION FLOW BYPASS WHEN SYSTEM IS BROUGHT ON LINE (PRESSURE FIT ONLY, DO NOT GLUE).

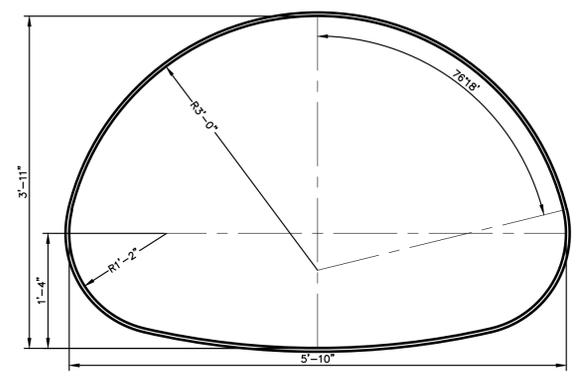
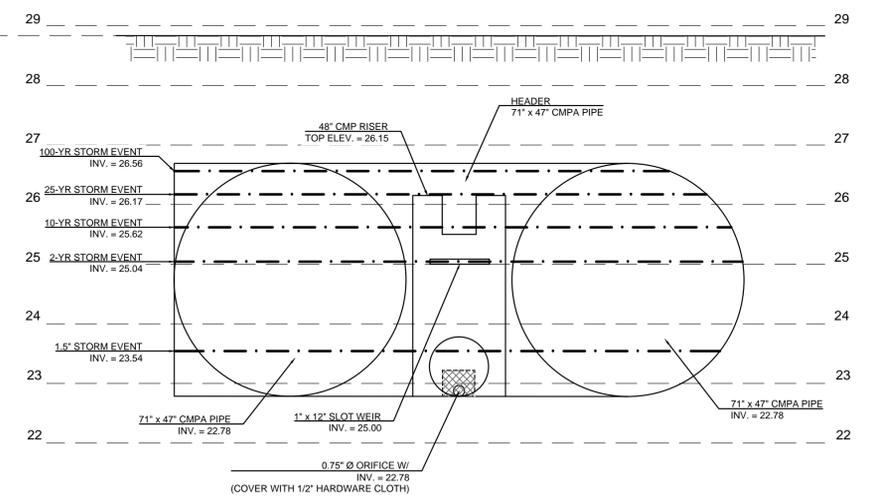
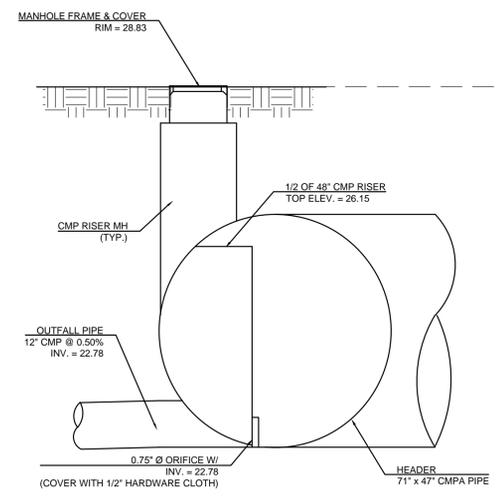
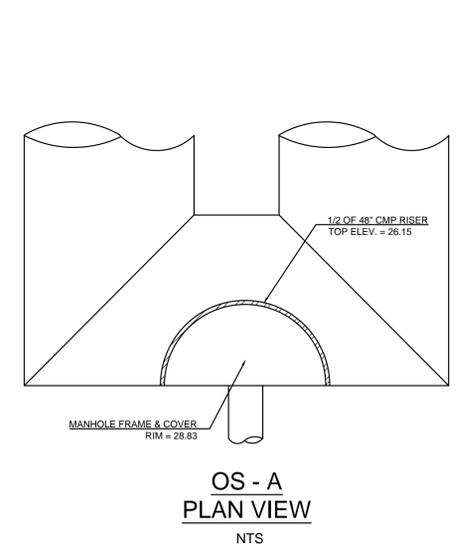
**STRUCTURE WEIGHT**  
APPROXIMATE HEAVIEST PICK = 19,500 LBS.

**MATERIAL LIST - PROVIDED BY CONTECH**

COUNT	DESCRIPTION	INSTALLED BY
7	LOW DROP (LD18), 22.5 GPM, PERLITE CARTRIDGE (PRP)	PRECASTER
0	2" PVC SLIP PLUG	PRECASTER
1	SEALED OUTLET RISER	PRECASTER
1	FLOW KIT	PRECASTER
1	JOINT SEALANT (BY PRECASTER)	CONTRACTOR
1	PLC GRADE RINGS/RISERS	CONTRACTOR
1	Ø30" x 4" FRAME AND COVER	CONTRACTOR

**SITE DESIGN DATA**

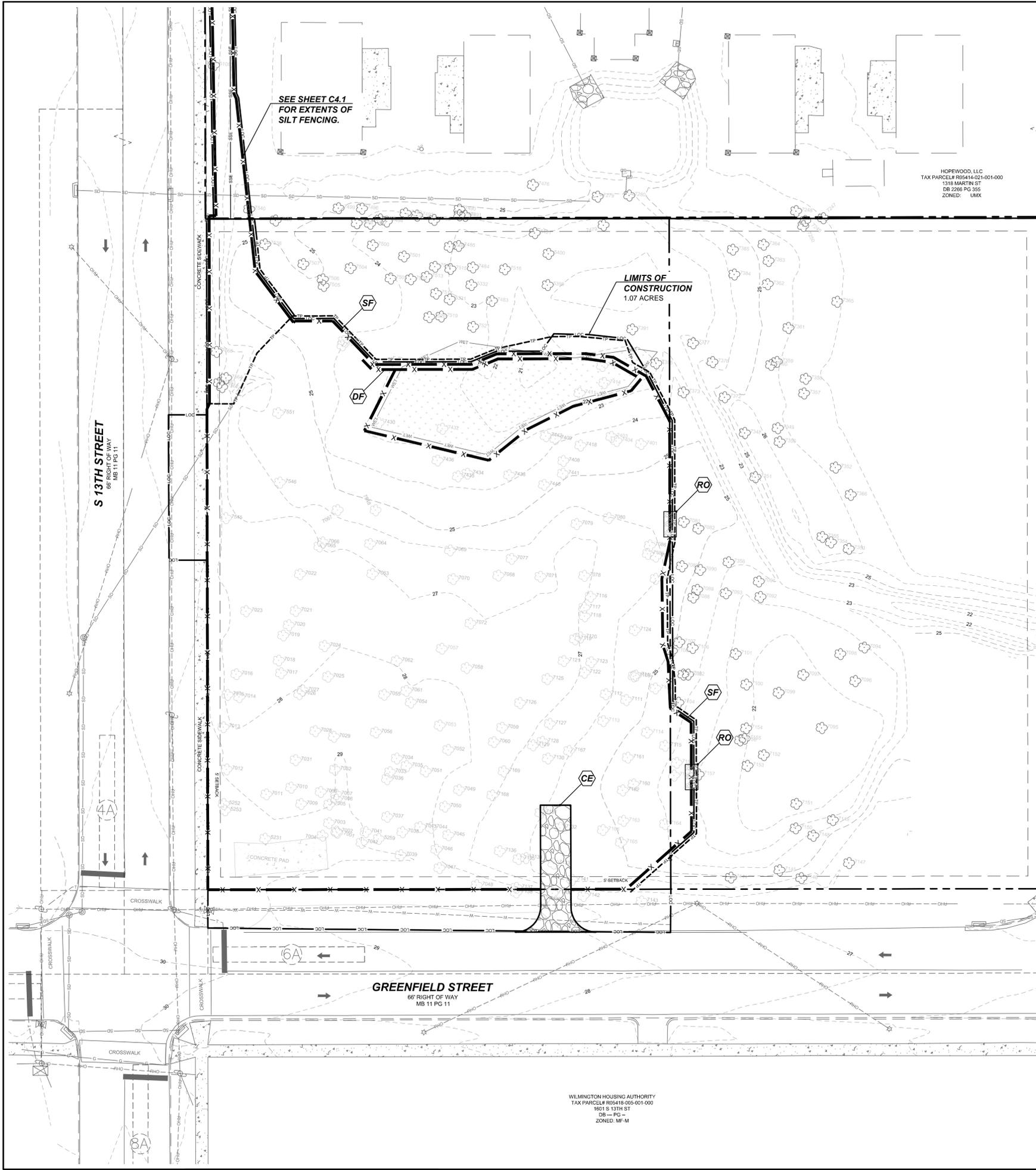
WATER QUALITY FLOW RATE	0.12 CFS
PEAK FLOW RATE	N/A CFS
RETURN PERIOD OF PEAK FLOW	N/A YRS
FILTER MEDIA TYPE	PERLITE



**CMP ARCH PIPE DETAILS & NOTES**

PIPE SIZE: 71" x 47" CMPA  
WALL TYPE: SOLID  
EQUIVALENT SIZE: 60" Ø  
TOTAL LENGTH: 430 LF  
TOTAL VOLUME: 10,152 CF  
LOADING: H20/H25  
FINISH: ALT2  
MAINLINE PIPE GAUGE: 16

- ALL RISER AND STUB DIMENSIONS ARE TO BE CENTERLINE.
- ALL ELEVATIONS, DIMENSIONS AND LOCATIONS OF RISERS AND INLETS SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE 2-2/3" x 1/2" CORRUGATION AND 16 GAUGE UNLESS OTHERWISE NOTED.
- RISERS ARE TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES.



**PERMANENT SEEDING SPEC'S.**

3:1 SLOPES OR FLATTER  
APPLY AGRICULTURAL LIME AT A RATE OF 90 LBS/1000 S.F. UNLESS SOIL TEST INDICATES OTHERWISE.

APPLY 10-10-10 COMMERCIAL FERTILIZER AT THE RATE OF 20 LBS/1000 S.F. UNLESS SOIL TEST INDICATES OTHERWISE.

SEED AT A RATE OF 6 LBS/1000 S.F.

DATE	TYPE
NOV. 1 TO MAY 1	ANNUAL RYE GRAIN AND TURF TYPE TALL FESCUE
MAY 1 TO AUG. 15	TURF TYPE TALL FESCUE
AUG. 15 TO NOV. 1	TURF TYPE TALL FESCUE

MULCH WITH UNCHOPPED, UNWEATHERED SMALL GRAIN STRAW FREE OF SEEDS APPLIED AT THE RATE OF 1 - 2 TONS/ACRE - HEAVILY MULCHED DURING JANUARY - MARCH PERIOD.

THE CONTRACTOR SHALL MAINTAIN THE PERMANENT VEGETATIVE COVER BY MOWING, IRRIGATION, REPAIR OR PLANTING FAILURES OR OTHER METHODS FOR THE DURATION OF THE PROJECT & UNTIL THE PROJECT IS ACCEPTED BY THE OWNER.

THE PLAN SHOULD INCLUDE PROVISIONS FOR PERMANENT GROUND COVER FOR ALL DISTURBED AREAS WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER), FOLLOWING COMPLETION OF CONSTRUCTION AND DEVELOPMENT.

**MAINTENANCE:**  
INSPECT SEEDING AFTER HEAVY RAINS AND REPAIR SEED AND MULCH BARE AREAS UNTIL VEGETATIVE COVER IS ESTABLISHED. INSPECT SEEDED AREAS PERIODICALLY UNTIL VEGETATION HAS PERMANENTLY STABILIZED. REPAIR DAMAGED OR FAILURE AREAS ACCORDINGLY.

**TEMP. EROSION CONTROL SEEDING**

3:1 SLOPES OR FLATTER  
APPLY AGRICULTURAL LIME AT A RATE OF 90 LBS/1000 S.F. UNLESS SOIL TEST INDICATES OTHERWISE.

APPLY 10-10-10 COMMERCIAL FERTILIZER AT THE RATE OF 20 LBS/1000 S.F. UNLESS SOIL TEST INDICATES OTHERWISE.

SEED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE & APPLICATION RATES.

DATE	TYPE	PLANTING RATE
NOV. 1 TO MAY 1	ANNUAL RYE GRAIN AND TURF TYPE TALL FESCUE	150 LBS/ACRE 100 LBS/ACRE
MAY 1 TO AUG. 15	GERMAN MILLET AND TURF TYPE TALL FESCUE	60 LBS/ACRE 100 LBS/ACRE
AUG. 15 TO NOV. 1	TURF TYPE TALL FESCUE	250 LBS/ACRE

MULCH WITH STRAW APPLIED AT THE RATE OF 145-100 LBS/1000 S.F. - HEAVILY MULCHED DURING JANUARY - MARCH PERIOD.

IF GERMAN MILLET IS USED FOR TEMPORARY COVER DURING SUMMER MONTHS, CONTRACTOR MUST KEEP TEMPORARY MILLET MOWED AND CONTRACTOR MUST OVERSEED WITH THE SPECIFIED RATE OF TURF TYPE TALL FESCUE AFTER THE HEAT OF SUMMER IS PAST BUT NOT BEFORE SEPT. 15 NOR LATER THAN NOV. 1.

**MAINTENANCE:**  
RESEED AND MULCH AREAS WHERE SEEDLING EMERGENCE IS POOR, OR WHERE EROSION OCCURS, AS SOON AS POSSIBLE. DO NOT MOW. PROTECT FROM TRAFFIC AS MUCH AS POSSIBLE.

**CONSTRUCTION SEQUENCE**

**PHASE 1**

- OBTAIN GRADING/EROSION CONTROL PLAN APPROVAL FROM NCDENR.
- SET UP AN ON-SITE PRE-CONSTRUCTION CONFERENCE WITH THE NCDENR EROSION CONTROL INSPECTOR.
- INSTALL CONSTRUCTION ENTRANCE.
- INSTALL SILT FENCING, INLET PROTECTION AND OTHER MEASURES SHOWN ON THE PHASE 1 EROSION CONTROL PLANS, CLEARING ONLY AS NECESSARY TO INSTALL THESE DEVICES.
- BEGIN DEMOLITION AND REMOVAL OF EXISTING FEATURES ACCORDING TO DEMOLITION PLAN (SHEET C3.D).
- AFTER ALL PHASE 1 EROSION CONTROL MEASURES HAVE BEEN INSTALLED, CLEARING AND GRADING WITHIN THE PERMITTED CONSTRUCTION LIMITS MAY BEGIN AS SHOWN IN THE PHASE 2 EROSION CONTROL PLAN (SHEET C6.1).

THE CONTRACTOR SHALL DILIGENTLY AND CONTINUOUSLY MAINTAIN ALL EROSION CONTROL DEVICES AND STRUCTURES. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE N. C. EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.

**SEEDBED PREPARATION**

- AREAS TO BE SEEDDED SHALL BE RIPPED OR TILLED AND SPREAD WITH AVAILABLE TOPSOIL 4" DEEP. TOTAL SEEDBED PREPARED DEPTH SHALL BE 6".
- ROCKS, ROOTS & OTHER OBSTRUCTIONS & CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE SURFACE OF THE SEEDBED. SURFACE OF COMPLETED PREPARED SEEDBED SHALL BE LOOSE SMOOTH & UNIFORM. CONTRACTOR SHALL TILL, DISC AND/OR HARROW IF NECESSARY TO ACHIEVE THIS.
- IF NO SOIL TEST IS TAKEN, FERTILIZER AND LIME SHALL BE APPLIED ACCORDING TO THE SEEDING SPECIFICATIONS.
- IF SOIL TEST IS TAKEN, APPLY FERTILIZER AND LIME IN ACCORDANCE W/ SOIL TEST RECOMMENDATIONS.
- LIME AND FERTILIZER SHALL BE APPLIED UNIFORMLY AND MIXED WITH THE SOIL DURING SEEDBED PREPARATION.
- IMMEDIATELY AFTER SEEDING, MULCH ALL SEEDDED AREAS WITH A THIN DENSE LAYER OF CLEAN WHEAT STRAW.

**STABILIZATION NOTE:**

- ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 7 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.
- ALL OTHER DISTURBED AREAS SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 14 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.

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

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

Approved Construction Plan

	Name	Date
Planning	_____	_____
Traffic	_____	_____
Fire	_____	_____

**NOTE:**  
CONTRACTOR TO SAVE SUFFICIENT TOPSOIL ON SITE TO BE RE-SPREAD AFTER GRADING IS COMPLETE. HAUL OFF ANY EXCESS TOP SOIL.

**LEGEND**

EXIST. CONTOUR

EXIST. SPOT ELEV.

PROP. CONTOUR

PROP. JUNCTION BOX

PROP. CATCH BASIN

PROP. FES

PROP. DIVERSION DITCH

PROP. SILT FENCE (DETAIL C8.6)

PROP. INLET PROTECTION (DETAIL C8.6)

PROP. LIMITS OF CONSTRUCTION

PROP. RIP RAP APRON - SEE CHART FOR SIZING (DETAIL C8.6)

PROP. TREE PROTECTION FENCING

**EROSION CONTROL KEYS**

**CB** STABILIZED CONSTRUCTION ENTRANCE. SEE DETAIL ON SHEET C8.6

**SF** TEMPORARY SILT FENCING. SEE DETAIL ON SHEET C8.6

**DF** TEMPORARY DOUBLE ROW OF SILT FENCING. SEE DETAIL ON SHEET C8.6

**IP** TEMPORARY HARDWARE CLOTH AND GRAVEL INLET PROTECTION. SEE DETAIL ON SHEET C8.6

**RO** TEMPORARY ROCK OUTLET IN SILT FENCE. SEE DETAIL ON SHEET C8.6

**NEW STABILIZATION TIMEFRAMES**  
(Effective Aug. 3, 2019)

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

**EROSION CONTROL MAINTENANCE NOTES**

- ALL EROSION SEDIMENT CONTROL STRUCTURES SHALL BE INSPECTED AT LEAST ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS OF ANY STORM EVENT OF GREATER THAN 1/2" RAIN IN A 24 HOUR PERIOD. A RAIN GAUGE SHALL BE MAINTAINED ON THE SITE AND A RECORD OF THE RAINFALL AMOUNTS AND DATES SHALL BE KEPT.
- A RECORD OF INSPECTIONS BY THE CONTRACTOR SHALL BE KEPT AND MADE AVAILABLE TO THE INSPECTOR UPON REQUEST. VISIBLE SEDIMENTATION FOUND OUTSIDE THE DENUDEED AREA LIMITS SHALL BE RECORDED AND A BRIEF EXPLANATION KEPT WITH THE RECORDS AS TO THE MEASURES TAKEN TO CONTROL FUTURE RELEASES. ANY MEASURES TAKEN TO CLEAN UP THE SEDIMENT THAT HAS LEFT THE DENUDEED AREA LIMITS SHALL ALSO BE RECORDED.
- ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL, BUT IN NO CASE, LESS THAN ONCE EVERY WEEK AND WITHIN 24 HOURS OF EVERY HALF INCH RAINFALL.
- ALL POINTS OF EGRESS WILL HAVE CONSTRUCTION ENTRANCES THAT WILL BE PERIODICALLY TOP-DRESSED WITH AN ADDITIONAL 2 INCHES OF #4 STONE TO MAINTAIN PROPER DEPTH. THEY WILL BE MAINTAINED IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE. IMMEDIATELY REMOVE OBJECTIONABLE MATERIAL SPILLED, WASHED OR TRACKED ONTO THE CONSTRUCTION ENTRANCE OR ROADWAYS.
- SEDIMENT WILL BE REMOVED FROM HARDWARE CLOTH AND GRAVEL INLET PROTECTION, BLOCK AND GRAVEL INLET PROTECTION, ROCK DOUGHNUT INLET PROTECTION AND ROCK PIPE INLET PROTECTION WHEN THE DESIGNED STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS AS DESIGNED. DEBRIS WILL BE REMOVED FROM THE ROCK AND HARDWARE CLOTH TO ALLOW PROPER DRAINAGE. SILT SACKS WILL BE EMPTIED ONCE A WEEK AND AFTER EVERY RAIN EVENT. SEDIMENT WILL BE REMOVED FROM AROUND WATTLES, BEAVER DAMS, DANDY SACKS AND SOCKS ONCE A WEEK AND AFTER EVERY RAIN EVENT.
- DIVERSION DITCHES WILL BE CLEANED OUT IMMEDIATELY TO REMOVE SEDIMENT OR OBSTRUCTIONS FROM THE FLOW AREA. THE DIVERSION RIDGES WILL ALSO BE REPAIRED. SWALES MUST BE TEMPORARILY STABILIZED WITHIN 21 CALENDAR DAYS OF CEASE OF ANY PHASE OF ACTIVITY ASSOCIATED WITH A SWALE.
- SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WITH IT BECOMES HALF FILLED. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. STAKES MUST BE STEEL. STAKE SPACING WILL BE 6 FEET MAX., WITH THE USE OF EXTRA STRENGTH FABRIC, WITHOUT THE WIRE BACKING. IF ROCK FILTERS ARE DESIGNED AT LOW POINTS AT LOW POINTS IN THE SEDIMENT FENCE, THE ROCK WILL BE REPAIRED OR REPLACED IF IT BECOMES HALF FULL OF SEDIMENT, NO LONGER DRAINS AS DESIGNED OR IS DAMAGED.
- ALL SEEDDED AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER. ALL SLOPES WILL BE STABILIZED WITHIN 21 CALENDAR DAYS. ALL OTHER AREAS WILL BE STABILIZED WITHIN 15 WORKING DAYS.

**DRAWING INFORMATION**

TRUE NORTH

PLAN NORTH

**NORTH CAROLINA 811**  
North Carolina One-Call Center  
Call 811 Before You Dig

GRAPHIC SCALE

( IN FEET )  
1 inch = 20 ft.

Project Number  
487-064

**C6.0**  
Sheet 10 of 21

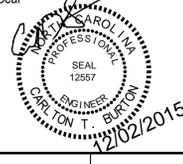
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DEVELOPED BY:  
THE DURBAN GROUP  
BUILDING VALUES

BURTON ENGINEERING ASSOCIATES  
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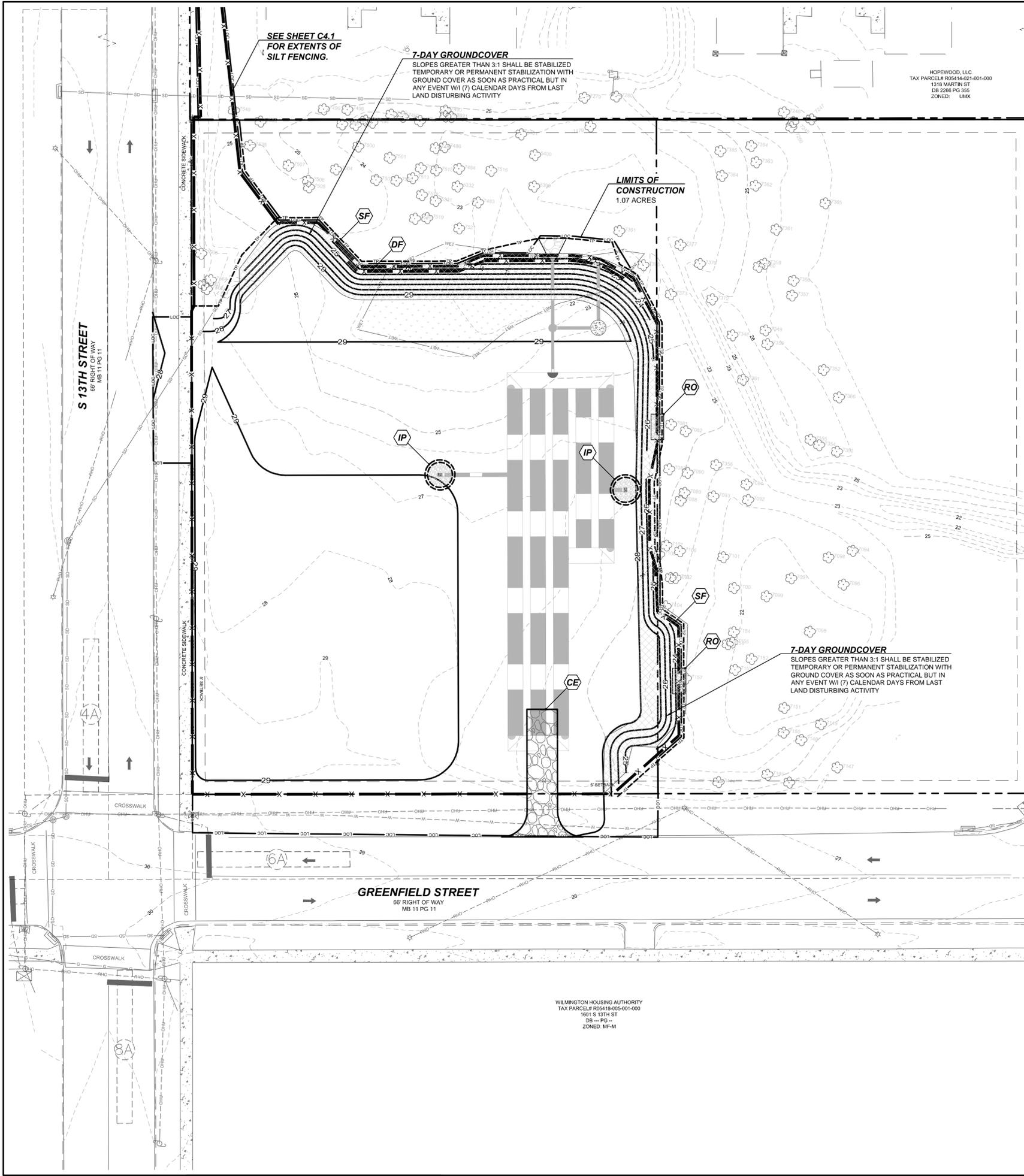
GREENFIELD - FDS  
1313 GREENFIELD STREET  
WILMINGTON, NORTH CAROLINA

Project  
Sheet Title  
**PHASE 1 - EROSION CONTROL PLAN**

CTB  
Engineer  
LJB  
Drawn By  
9/21/15  
Date

Revisions

1-	11/10/15 PER TRC & CP/UA COMMENTS
2-	12/02/15 PER TROENGINEERING/COUNTY COMMENTS



**PERMANENT SEEDING SPEC'S.**

3:1 SLOPES OR FLATTER  
APPLY AGRICULTURAL LIME AT A RATE OF 90 LBS/1000 S.F. UNLESS SOIL TEST INDICATES OTHERWISE.

APPLY 10-10-10 COMMERCIAL FERTILIZER AT THE RATE OF 20 LBS/1000 S.F. UNLESS SOIL TEST INDICATES OTHERWISE.

SEED AT A RATE OF 6 LBS/1000 S.F.

DATE	TYPE
NOV. 1 TO MAY 1	ANNUAL RYE GRAIN AND TURF TYPE TALL FESCUE
MAY 1 TO AUG. 15	TURF TYPE TALL FESCUE
AUG. 15 TO NOV. 1	TURF TYPE TALL FESCUE

MULCH WITH UNCHOPPED, UNWEATHERED SMALL GRAIN STRAW FREE OF SEEDS APPLIED AT THE RATE OF 1-2 TONS/ACRE - HEAVILY MULCHED DURING JANUARY - MARCH PERIOD.

THE CONTRACTOR SHALL MAINTAIN THE PERMANENT VEGETATIVE COVER BY MOWING, IRRIGATION, REPAIR OR PLANTING FAILURES OR OTHER METHODS FOR THE DURATION OF THE PROJECT & UNTIL THE PROJECT IS ACCEPTED BY THE OWNER.

THE PLAN SHOULD INCLUDE PROVISIONS FOR PERMANENT GROUND COVER FOR ALL DISTURBED AREAS WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER), FOLLOWING COMPLETION OF CONSTRUCTION AND DEVELOPMENT.

**MAINTENANCE:**  
INSPECT SEEDING AFTER HEAVY RAINS AND REPAIR SEED AND MULCH BARE AREAS UNTIL VEGETATIVE COVER IS ESTABLISHED. INSPECT SEED AREAS PERIODICALLY UNTIL VEGETATION HAS PERMANENTLY STABILIZED. REPAIR DAMAGED OR FAILURE AREAS ACCORDINGLY.

**TEMP. EROSION CONTROL SEEDING**

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APPLY AGRICULTURAL LIME AT A RATE OF 90 LBS/1000 S.F. UNLESS SOIL TEST INDICATES OTHERWISE.

APPLY 10-10-10 COMMERCIAL FERTILIZER AT THE RATE OF 20 LBS/1000 S.F. UNLESS SOIL TEST INDICATES OTHERWISE.

SEED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE & APPLICATION RATES.

DATE	TYPE	PLANTING RATE
NOV. 1 TO MAY 1	ANNUAL RYE GRAIN AND TURF TYPE TALL FESCUE	150 LBS/ACRE / 100 LBS/ACRE
MAY 1 TO AUG. 15	GERMAN MILLET AND TURF TYPE TALL FESCUE	60 LBS/ACRE / 100 LBS/ACRE
AUG. 15 TO NOV. 1	TURF TYPE TALL FESCUE	250 LBS/ACRE

MULCH WITH STRAW APPLIED AT THE RATE OF 145-100 LBS/1000 S.F. - HEAVILY MULCHED DURING JANUARY - MARCH PERIOD.

IF GERMAN MILLET IS USED FOR TEMPORARY COVER DURING SUMMER MONTHS, CONTRACTOR MUST KEEP TEMPORARY MILLET MOWED AND CONTRACTOR MUST OVERSEED WITH THE SPECIFIED RATE OF TURF TYPE TALL FESCUE AFTER THE HEAT OF SUMMER IS PAST BUT NOT BEFORE SEPT. 15 NOR LATER THAN NOV. 1.

**MAINTENANCE:**  
RESEED AND MULCH AREAS WHERE SEEDLING EMERGENCE IS POOR, OR WHERE EROSION OCCURS, AS SOON AS POSSIBLE. DO NOT MOW. PROTECT FROM TRAFFIC AS MUCH AS POSSIBLE.

**CONSTRUCTION SEQUENCE**

**PHASE II**

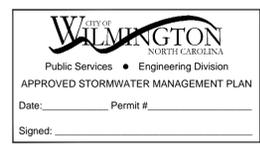
- AFTER ALL PHASE I EROSION CONTROL MEASURES HAVE BEEN INSTALLED AND INSPECTED BY AN NCDENR INSPECTOR, CLEARING AND GRADING WITHIN THE PERMITTED CONSTRUCTION LIMITS MAY BEGIN. USE TEMPORARY GROUND COVER STABILIZATION MEASURES AS PRESCRIBED IN THE GROUND COVER REQUIREMENTS TABLE.
- INSTALL STORM DRAINAGE PIPE AND INLET PROTECTION.
- INSTALL ANY OTHER UNDERGROUND UTILITIES TO INCLUDE WATER AND SEWER SERVICES.
- BEGIN FINE GRADING, PAVING AND BUILDING CONSTRUCTION. MAINTAIN EXCAVATED DROP INLET PROTECTION AS LONG AS POSSIBLE. WHEN CONTRIBUTING DRAINAGE AREA TO EACH INLET HAS BEEN STABILIZED, INLET PROTECTION MAY BE REMOVED AND PAVING IN THIS AREA MAY BE PERFORMED.
- PERMANENTLY STABILIZE ENTIRE SITE AND INSTALL LANDSCAPING.
- REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.

**SEEDBED PREPARATION**

- AREAS TO BE SEEDED SHALL BE RIPPED OR TILLED AND SPREAD WITH AVAILABLE TOPSOIL 4" DEEP. TOTAL SEEDBED PREPARED DEPTH SHALL BE 6".
- ROCKS, ROOTS & OTHER OBSTRUCTIONS & CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE SURFACE OF THE SEEDBED. SURFACE OF COMPLETED PREPARED SEEDBED SHALL BE LOOSE SMOOTH & UNIFORM. CONTRACTOR SHALL TILL, DISC AND/OR HARROW IF NECESSARY TO ACHIEVE THIS.
- IF NO SOIL TEST IS TAKEN, FERTILIZER AND LIME SHALL BE APPLIED ACCORDING TO THE SEEDING SPECIFICATIONS.
- IF SOIL TEST IS TAKEN, APPLY FERTILIZER AND LIME IN ACCORDANCE WITH SOIL TEST RECOMMENDATIONS.
- LIME AND FERTILIZER SHALL BE APPLIED UNIFORMLY AND MIXED WITH THE SOIL DURING SEEDBED PREPARATION.
- IMMEDIATELY AFTER SEEDING, MULCH ALL SEEDED AREAS WITH A THIN DENSE LAYER OF CLEAN WHEAT STRAW.

**STABILIZATION NOTE:**

- ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 7 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.
- ALL OTHER DISTURBED AREAS SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 14 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.



**Approved Construction Plan**

Name	Date
Planning _____	_____
Traffic _____	_____
Fire _____	_____

**NOTE:**  
CONTRACTOR TO SAVE SUFFICIENT TOPSOIL ON SITE TO BE RE-SPREAD AFTER GRADING IS COMPLETE. HAUL OFF ANY EXCESS TOP SOIL.

**LEGEND**

EXIST. CONTOUR  
EXIST. SPOT ELEV.  
PROP. CONTOUR  
PROP. JUNCTION BOX  
PROP. CATCH BASIN  
PROP. FES  
PROP. DIVERSION DITCH  
PROP. SILT FENCE (DETAIL C8.6)  
PROP. INLET PROTECTION (DETAIL C8.6)  
PROP. LIMITS OF CONSTRUCTION (DETAIL C8.6)  
PROP. RIP RAP APRON - SEE CHART FOR SIZING (DETAIL C8.6)  
7-DAY GROUND COVER LOCATION  
PROP. TREE PROTECTION FENCING

**EROSION CONTROL KEYS**

CE STABILIZED CONSTRUCTION ENTRANCE. SEE DETAIL ON SHEET C8.6  
SF TEMPORARY SILT FENCING. SEE DETAIL ON SHEET C8.6  
DF TEMPORARY DOUBLE ROW OF SILT FENCING. SEE DETAIL ON SHEET C8.6  
IP TEMPORARY HARDWARE CLOTH AND GRAVEL INLET PROTECTION. SEE DETAIL ON SHEET C8.6  
RO TEMPORARY ROCK OUTLET IN SILT FENCE. SEE DETAIL ON SHEET C8.6

**NEW STABILIZATION TIMEFRAMES**  
(Effective Aug. 3, 2015)

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

**EROSION CONTROL MAINTENANCE NOTES**

- ALL EROSION SEDIMENT CONTROL STRUCTURES SHALL BE INSPECTED AT LEAST ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS OF ANY STORM EVENT OF GREATER THAN 1/2" RAIN IN A 24 HOUR PERIOD. A RAIN GAUGE SHALL BE MAINTAINED ON THE SITE AND A RECORD OF THE RAINFALL AMOUNTS AND DATES SHALL BE KEPT.
- A RECORD OF INSPECTIONS BY THE CONTRACTOR SHALL BE KEPT AND MADE AVAILABLE TO THE INSPECTOR UPON REQUEST. VISIBLE SEDIMENTATION FOUND OUTSIDE THE DENUDE AREA LIMITS SHALL BE RECORDED AND A BRIEF EXPLANATION KEPT WITH THE RECORDS AS TO THE MEASURES TAKEN TO CONTROL FUTURE RELEASES. ANY MEASURES TAKEN TO CLEAN UP THE SEDIMENT THAT HAS LEFT THE DENUDE AREA LIMITS SHALL ALSO BE RECORDED.
- ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL, BUT IN NO CASE, LESS THAN ONCE EVERY WEEK AND WITHIN 24 HOURS OF EVERY HALF INCH RAINFALL.
- ALL POINTS OF EGRESS WILL HAVE CONSTRUCTION ENTRANCES THAT WILL BE PERIODICALLY TOP-DRESSED WITH AN ADDITIONAL 2 INCHES OF #4 STONE TO MAINTAIN PROPER DEPTH. THEY WILL BE MAINTAINED IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE. IMMEDIATELY REMOVE OBJECTIONABLE MATERIAL SPILLED, WASHED OR TRACKED ONTO THE CONSTRUCTION ENTRANCE OR ROADWAYS.
- SEDIMENT WILL BE REMOVED FROM HARDWARE CLOTH AND GRAVEL INLET PROTECTION, BLOCK AND GRAVEL INLET PROTECTION, ROCK DOUGHNUT INLET PROTECTION AND ROCK PIPE INLET PROTECTION WHEN THE DESIGNED STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS AS DESIGNED. DEBRIS WILL BE REMOVED FROM THE ROCK AND HARDWARE CLOTH TO ALLOW PROPER DRAINAGE. SILT SACKS WILL BE EMPTIED ONCE A WEEK AND AFTER EVERY RAIN EVENT. SEDIMENT WILL BE REMOVED FROM AROUND WATTLES, BEAVER DAMS, DANDY SACKS AND SOCKS ONCE A WEEK AND AFTER EVERY RAIN EVENT.
- DIVERSION DITCHES WILL BE CLEANED OUT IMMEDIATELY TO REMOVE SEDIMENT OR OBSTRUCTIONS FROM THE FLOW AREA. THE DIVERSION RIDGES WILL ALSO BE REPAIRED. SWALES MUST BE TEMPORARILY STABILIZED WITHIN 21 CALENDAR DAYS OF CEASE OF ANY PHASE OF ACTIVITY ASSOCIATED WITH A SWALE.
- SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WITH IT BECOMES HALF FILLED. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. STAKES MUST BE STEEL. STAKE SPACING WILL BE 6 FEET MAX., WITH THE USE OF EXTRA STRENGTH FABRIC, WITHOUT THE WIRE BACKING. IF ROCK FILTERS ARE DESIGNED AT LOW POINTS AT LOW POINTS IN THE SEDIMENT FENCE, THE ROCK WILL BE REPAIRED OR REPLACED IF IT BECOMES HALF FULL OF SEDIMENT, NO LONGER DRAINS AS DESIGNED OR IS DAMAGED.
- ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER. ALL SLOPES WILL BE STABILIZED WITHIN 21 CALENDAR DAYS. ALL OTHER AREAS WILL BE STABILIZED WITHIN 15 WORKING DAYS.

**DRAWING INFORMATION**

TRUE NORTH  
PLAN NORTH

**NORTH CAROLINA 811**  
North Carolina One-Call Center  
Call 811 Before You Dig

GRAPHIC SCALE  
0 10 20 30 40 50  
( IN FEET )  
1 inch = 20 ft.

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DEVELOPED BY:  
**THE DURBAN GROUP**  
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**BURTON ENGINEERING ASSOCIATES**  
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(704) 553-8811 • Fax (704) 553-8660  
Firm License # 1557

Seal  
Professional Engineer  
T. BURTON  
12/22/2015

**GREENFIELD - FDS**  
1313 GREENFIELD STREET  
WILMINGTON, NORTH CAROLINA

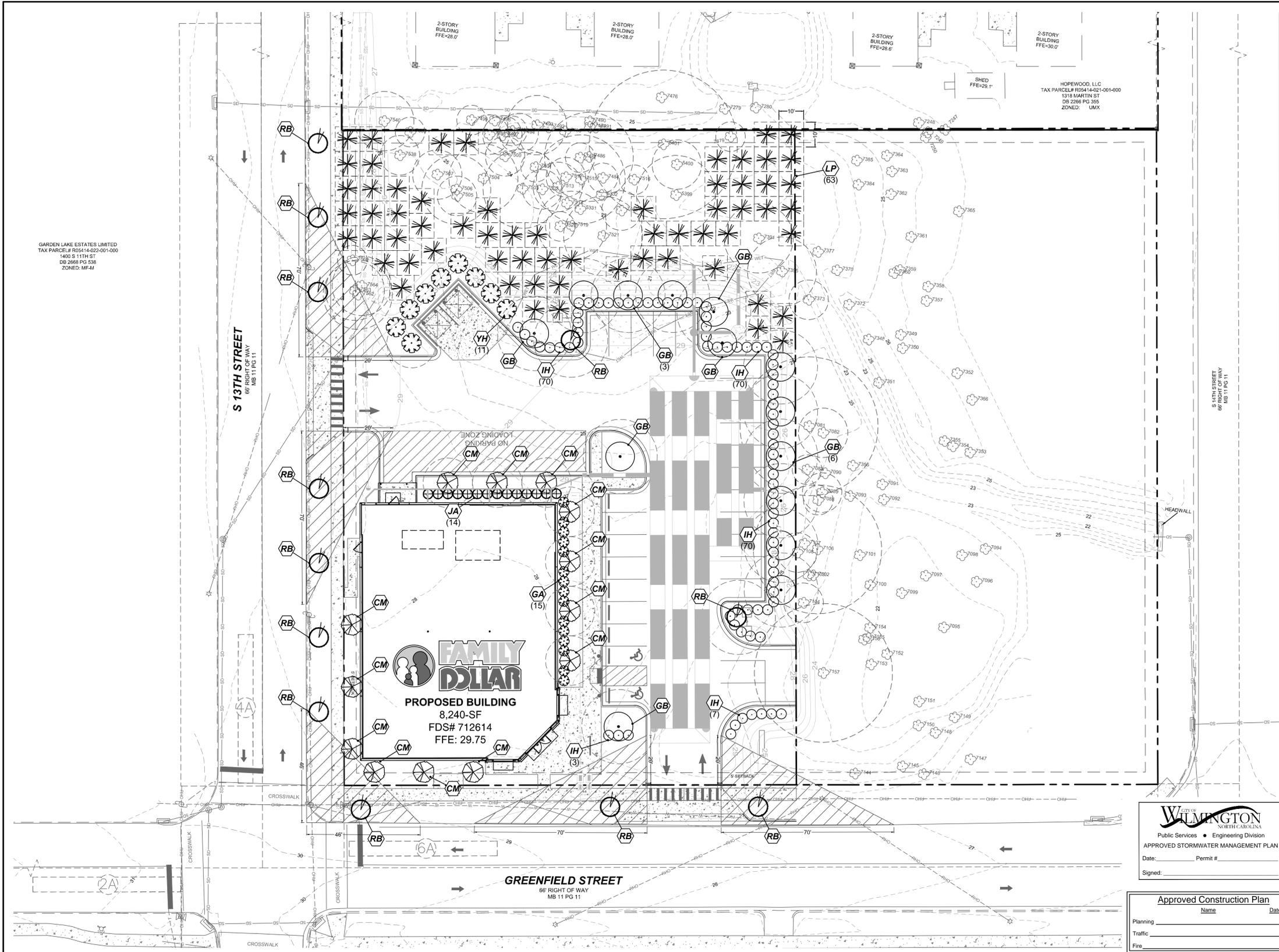
Project Title  
**PHASE 2 - EROSION CONTROL PLAN**

Project  
CTB  
Engineer  
LJB  
Drawn By  
9/21/15  
Date

Revisions  
1-11/10/15 PER TRC & CPWA COMMENTS  
2-12/22/15 PER TROENGINEERING/COUNTY COMMENTS

Project Number  
487-064

**C6.1**  
Sheet 11 of 21

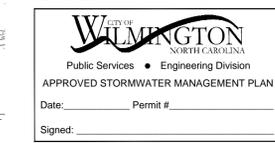


- ### LANDSCAPE NOTES
- ALL PLANTS SHALL MEET OR EXCEED THE MINIMUM STANDARDS SET FORTH IN THE AMERICAN STANDARDS FOR NURSERY STOCK BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC., WASHINGTON, D.C.
  - ALL PLANTS SHALL BE COMPACT, UNIFORM & WELL GROWN. PLANTS SHALL NOT BE LOOSE, OPEN PLANTS. THE CLIENT'S LANDSCAPE ARCHITECT RESERVES THE RIGHT, IN OUR SOLE OPINION, TO REJECT ANY & ALL MATERIALS WHICH DO NOT MEET THESE REQUIREMENTS.
  - ALL PLANTING BEDS SHALL BE MULCHED A MINIMUM OF 4" WITH PINE NEEDLE MULCH.
  - ALL PLANTS SHALL BE FREE FROM DISEASE, INSECT INFESTATIONS, & INJURIES.
  - ALL PLANT BEDS SHALL HAVE A 4" V-CUT TRENCH INSTALLED AT THE PERIMETER OF THE BED.
  - CONTRACTOR MUST PROVIDE A ONE YEAR WRITTEN GUARANTEE FOR ALL PLANT MATERIALS FROM THE DATE OF FINAL ACCEPTANCE BY THE LANDSCAPE ARCHITECT.
  - THE SPECIES, VARIETIES, & SIZE LISTED SHALL BE PROVIDED AS SPECIFIED. SUBSTITUTIONS WILL BE PERMITTED ONLY UPON WRITTEN APPLICATION BY THE CONTRACTOR TO THE LANDSCAPE ARCHITECT, & WHEN APPROVAL BY SAID LANDSCAPE ARCHITECT IS IN WRITING.
  - SYMBOLS: B&B = BALLED & BURLAPPED, D.C. = ON CENTER, GAL = GALLON CONTAINER, M.S. = MULTI-STEM, HT. = HEIGHT, CAL. = CALIPER.
  - THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL PLANTS ILLUSTRATED ON THE PLANTING PLAN. IF ANY DISCREPANCIES EXIST BETWEEN THE QUANTITIES LISTED ON THE PLANT LIST & THE QUANTITIES SHOWN ON THE PLAN, THE CONTRACTOR SHALL PROVIDE ALL QUANTITIES ILLUSTRATED ON THE PLAN. IF ANY PLANTS ARE SHOWN NOT LABELED, THE CONTRACTOR SHALL VERIFY THE PLANT IDENTITY WITH THE LANDSCAPE ARCHITECT & THESE PLANTINGS SHALL BE INCLUDED IN THE CONTRACTOR'S INITIAL BID.
  - SOIL AMENDMENTS SHALL BE UNIFORMLY SPREAD & CULTIVATED THOROUGHLY BY A MECHANICAL TILLER INTO THE TOP 12" OF SOIL THROUGHOUT SHRUB BEDS.
  - THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT & THE OWNER IN WRITING OF ALL SOIL CONDITIONS THE CONTRACTOR CONSIDERS DETRIMENTAL TO THE GROWTH OF PLANT MATERIALS. PROPER DRAINAGE MUST BE ASSURED.
  - FOR NEW PLANTING AREAS, REMOVE ALL PAVEMENT, GRAVEL SUB-BASE & CONSTRUCTION DEBRIS BEFORE PREPARING SOIL & PLANTING TREES.
  - REMOVE COMPACTED SOIL & ADD 24" NEW TOPSOIL/PLANTING MIX OR UNCOMPACT & AMEND TOP 24" OF EXISTING SOIL TO MEET TOPSOIL/PLANTING MIX STANDARDS FOR TREES.
  - ALL STRAPPING & TOP 2/3 OF WIRE BASKET MUST BE REMOVED FROM ROOT BALL PRIOR TO BACK FILLING PLANTING PIT. REMOVE TOP 1/3 OF BURLAP FROM ROOT BALL.
  - ALL SIGNAGE & SITE LIGHTING TO BE COORDINATED AROUND THE TREES LOCATED ON THE PLANTING PLAN. ALL TREES SHOWN ON THE PLANTING PLAN MUST GO IN AS SPECIFIED. ANY CHANGES TO THE PLANTING PLAN COULD RESULT IN A DELAY IN RECEIVING & OCCUPANCY PERMIT.
  - CONSULT PLANT LIST FOR PLANT SIZES & SPECIFICATIONS.
  - CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO INSTALLATION. NOTIFY ARCHITECT IF FIELD CONDITIONS WARRANT ADJUSTMENT OF PLANT LOCATIONS.
  - CONTRACTOR IS RESPONSIBLE FOR ALL PLANTS SHOWN ON PLANS. QUANTITIES ARE FOR CONVENIENCES ONLY.
  - MULCH TO BE PINE NEEDLES.
  - GENERAL CONTRACTOR TO SEED ALL DISTURBED AREAS BEYOND PARKING LOT PERIMETER. LANDSCAPE CONTRACTOR SHALL SEED ALL AREAS WITHIN PARKING AS NOTED.
  - CONTRACTOR MAY CONTACT THE COUNTY INSPECTOR FOR A PRELIMINARY MEETING TO NEGOTIATE CREDIT FOR EXISTING TREES IN THE BUFFER AREA.
  - CONTRACTOR IS RESPONSIBLE FOR ALL PLANTS SHOWN ON PLANS. QUANTITIES ARE FOR CONVENIENCES ONLY.
  - COORDINATE LIGHTING PLAN WITH LANDSCAPE PLAN. DO NOT INSTALL LIGHTING OR OTHER UTILITIES IN THE PARKING LOT TREE ISLANDS.

NOTE: ALL TREES LOCATED WITHIN SIGHT TRIANGLES MUST HAVE BRANCHED TRIMMED TO A HEIGHT OF NO LESS THAN EIGHT FEET.

- ### SEEDBED PREPARATION
- AREAS TO BE SEEDED SHALL BE RIPPED OR TILLED AND SPREAD WITH AVAILABLE TOPSOIL 4" DEEP. TOTAL SEEDBED PREPARED DEPTH SHALL BE 6".
  - ROCKS, ROOTS & OTHER OBSTRUCTIONS & CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE SURFACE OF THE SEEDBED. SURFACE OF COMPLETED PREPARED SEEDBED SHALL BE LOOSE SMOOTH & UNIFORM. CONTRACTOR SHALL TILL, DISC AND/OR HARROW IF NECESSARY TO ACHIEVE THIS.
  - IF NO SOIL TEST IS TAKEN, FERTILIZER AND LIME SHALL BE APPLIED ACCORDING TO THE SEEDING SPECIFICATIONS.
  - IF SOIL TEST IS TAKEN, APPLY FERTILIZER AND LIME IN ACCORDANCE W/SOIL TEST RECOMMENDATIONS.
  - LIME AND FERTILIZER SHALL BE APPLIED UNIFORMLY AND MIXED WITH THE SOIL DURING SEEDBED PREPARATION.
  - IMMEDIATELY AFTER SEEDING, MULCH ALL SEEDED AREAS WITH A THIN DENSE LAYER OF CLEAN WHEAT STRAW.

- ### PERMANENT SEEDING SPEC'S.
- 3:1 SLOPES OR FLATTER  
APPLY AGRICULTURAL LIME AT A RATE OF 90 LBS/1000 S.F. UNLESS SOIL TEST INDICATES OTHERWISE.
- APPLY 10-10-10 COMMERCIAL FERTILIZER AT THE RATE OF 20 LBS/1000 S.F. UNLESS SOIL TEST INDICATES OTHERWISE.
- SEED AT A RATE OF 6 LBS/1000 S.F.
- | DATE              | TYPE                                       |
|-------------------|--------------------------------------------|
| NOV. TO MAY 1     | ANNUAL RYE GRASS AND TURF TYPE TALL FESCUE |
| MAY 1 TO AUG. 15  | TURF TYPE TALL FESCUE                      |
| AUG. 15 TO NOV. 1 | TURF TYPE TALL FESCUE                      |
- MULCH WITH UNCHOPPED, UNWEATHERED SMALL GRAIN STRAW FREE OF SEEDS APPLIED AT THE RATE OF 1 - 2 TONS/ACRE - HEAVILY MULCHED DURING JANUARY - MARCH PERIOD.
- THE CONTRACTOR SHALL MAINTAIN THE PERMANENT VEGETATIVE COVER BY MOWING, IRRIGATION, REPAIR OR PLANTING FAILURES OR OTHER METHODS FOR THE DURATION OF THE PROJECT & UNTIL THE PROJECT IS ACCEPTED BY THE OWNER.



**Approved Construction Plan**

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

Planning \_\_\_\_\_

Traffic \_\_\_\_\_

Fire \_\_\_\_\_

### LANDSCAPING CALCULATIONS

**STREET TREE REQUIREMENTS**  
1 TREE PER 30-LF OF FRONTAGE  
S 13TH ST (265-LF FRONTAGE):  
7 TREES PROVIDED  
GREENFIELD ST (183-LF FRONTAGE):  
3 TREES PROVIDED

**INTERIOR LANDSCAPING REQUIREMENTS**  
NO PARKING SPACE MOVE THAN 120' FROM PLANTING ISLAND.  
20% OF PARKING AREA TO BE COVERED BY TREE CANOPY.  
15,950-SF x 20% = 3,190-SF REQUIRED  
3,296-SF PROVIDED

**PARKING PERIMETER TREE REQUIREMENTS**  
1 CANOPY TREE PER 18 TO 27-LF & 3-5' HIGH SHRUB HEDGE  
14 TREES PROVIDED (@ 18' O.C.)  
70 SHRUBS PROVIDED (@ 4' O.C.)

**FOUNDATION PLANTINGS REQUIREMENTS**  
AREA EQUAL TO 12% OF BUILDING FACE MUST BE LANDSCAPED.  
4,186-SF x 12% = 502-SF REQUIRED  
1,419-SF OF LANDSCAPING PROVIDED (7 TREES & 29 SHRUBS)

### LANDSCAPE SCHEDULE

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	LOCATION	TYPE	ROOT/CONTAINER	HEIGHT/SIZE	SPACING
GB	14	GINKGO BILBOA (MALE ONLY)	GINKGO	PARKING/STREET YARD	LARGE MATURING	B & B	2" CAL./8' TALL	AS SHOWN
CM	13	LAGERSTROEMIA INDICA 'NATCHEZ'	CRAPE MYRTLE	BUFFER YARD/BUILDING	UNDERSTORY	B & B	MULTI-STEM MIN. 8' @ INSTALL	AS SHOWN
RB	12	CERCIS CANADENSIS 'TEXENSIS'	TEXAS REDBUD	PARKING/STREET YARD	UNDERSTORY	B & B	2" CAL./8' TALL	AS SHOWN
YH	9	ILEX VOMITORIA	YAUPON HOLLY	DUMPSTER SCREENING	EVERGREEN	B & B.	MIN. 8' @ INSTALL	AS SHOWN
GA	15	ABELIA X GRANDIFLORA 'KALEIDOSCOPE'	GLOSSY ABELIA	FOUNDATION PLANTING	EG SHRUB	3 GAL.	SPECIMEN	4' O.C.
JA	14	AUCUBA JAPONICA	JAPANESE AUCUBA	FOUNDATION PLANTING	EG SHRUB	3 GAL.	SPECIMEN	4' O.C.
IH	80	RAPHIOLEPIS UMBELLATA 'VARIEGATA'	INDIAN HAWTHORN	PARKING SCREENING	EG SHRUB	3 GAL.	MIN. 3' @ INSTALL	4' O.C.
LP	63	PINUS PALUSTRIS	LONGLEAF PINE	MITIGATION	LARGE MATURING	PLUG	INDUSTRY STANDARD	AS SHOWN

### LANDSCAPE LEGEND

	GINKGO		LONGLEAF PINE
	CREPE MYRTLE		INDIAN HAWTHORN
	TEXAS REDBUD		GLOSSY ABELIA
	YAUPON HOLLY		JAPANESE AUCUBA

### DRAWING INFORMATION

TRUE NORTH

PLAN NORTH

**NORTH CAROLINA 811**  
North Carolina One-Call Center  
Call 811 Before You Dig

GRAPHIC SCALE  
1 inch = 20 ft

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DEVELOPED BY:  
**THE DURBAN GROUP**  
BUILDING VALUES

**BURTON ENGINEERING ASSOCIATES**  
LANDSCAPE ARCHITECTS  
5950 Fairview Rd., Suite 100, Charlotte, NC 28210  
(704) 553-8811 • Fax (704) 553-8660  
Firm License # 1557

**GREENFIELD - FDS**  
1313 GREENFIELD STREET  
WILMINGTON, NORTH CAROLINA

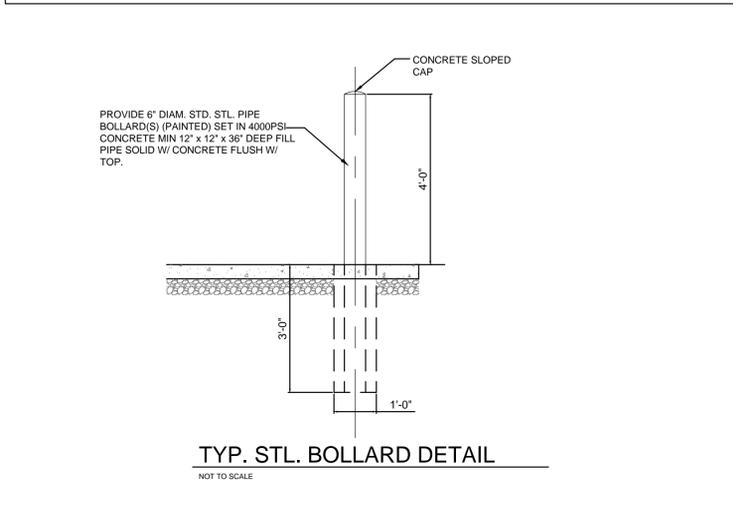
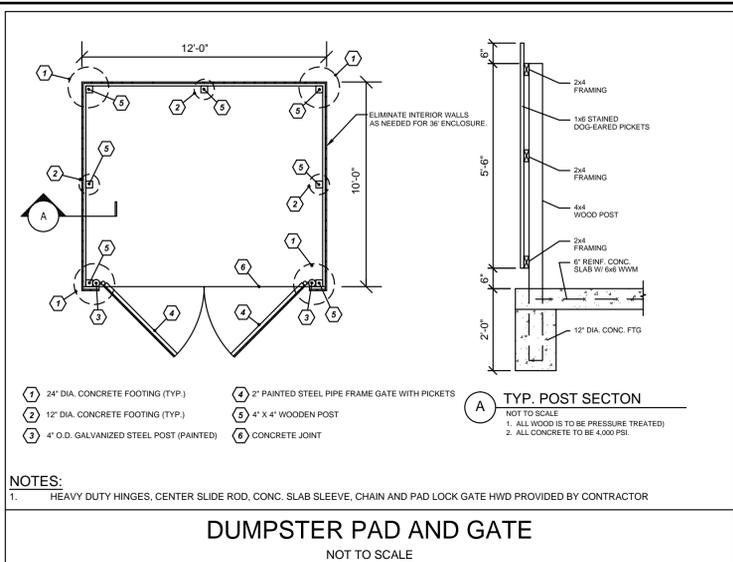
**LANDSCAPE PLAN**

Project: **CTB**  
Engineer: **LJB**  
Drawn By: **9/21/15**  
Date: \_\_\_\_\_

Revisions  
1-11/10/15 PER TRC & CP/UA COMMENTS  
2-12/02/15 PER TRO/ENGINEERING/COUNTY COMMENTS

Project Number: **487-064**

**C7.0**  
Sheet 12 of 21



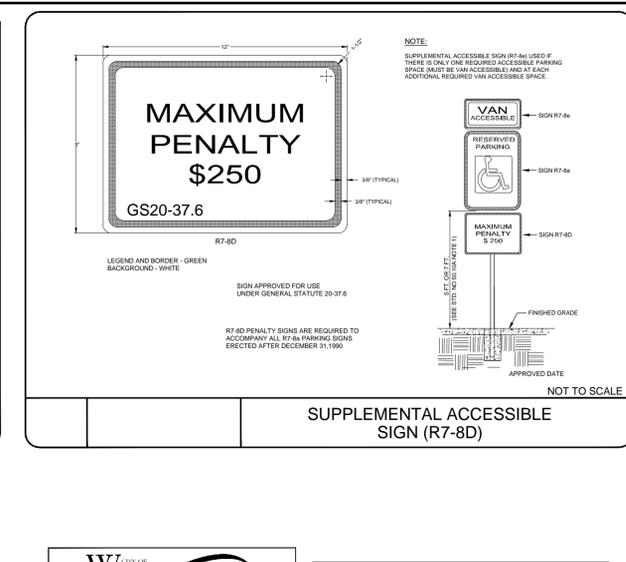
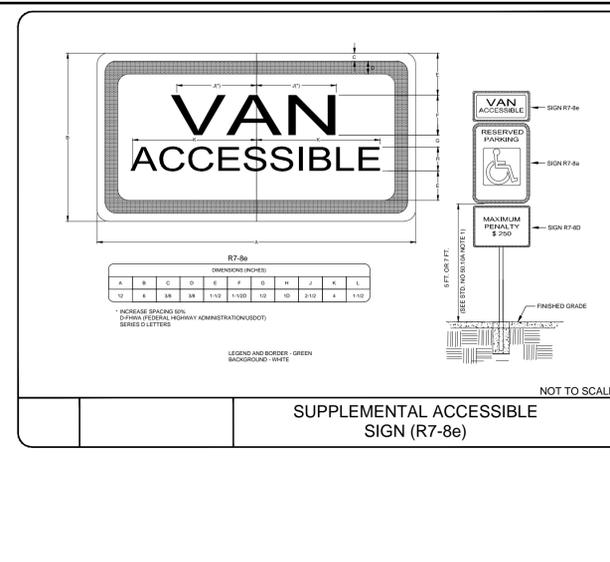
**ACCESSIBLE PARKING REQUIREMENTS**

TOTAL PARKING SPACES PROVIDED	MINIMUM NUMBER OF ACCESSIBLE SPACES REQUIRED	MINIMUM NUMBER OF ACCESSIBLE SPACES REQUIRED TO BE VAN ACCESSIBLE
1 TO 25	1	0
26 TO 75	2	1
76 TO 150	3	1
151 TO 200	4	1
201 TO 300	5	1
301 TO 400	6	1
401 TO 500	7	1
501 TO 1000	8	2
1001 AND OVER	2% OF TOTAL	1% IN EVERY 5 ACCESSIBLE SPACES

**NOTES:**

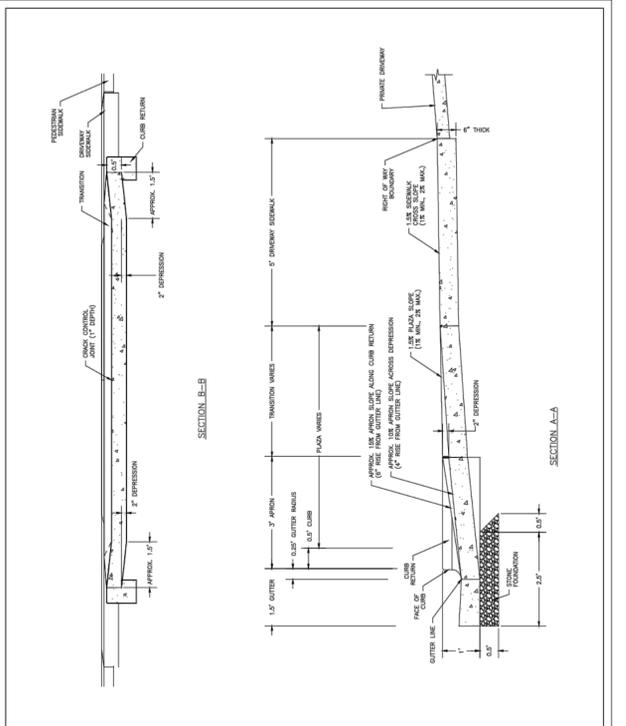
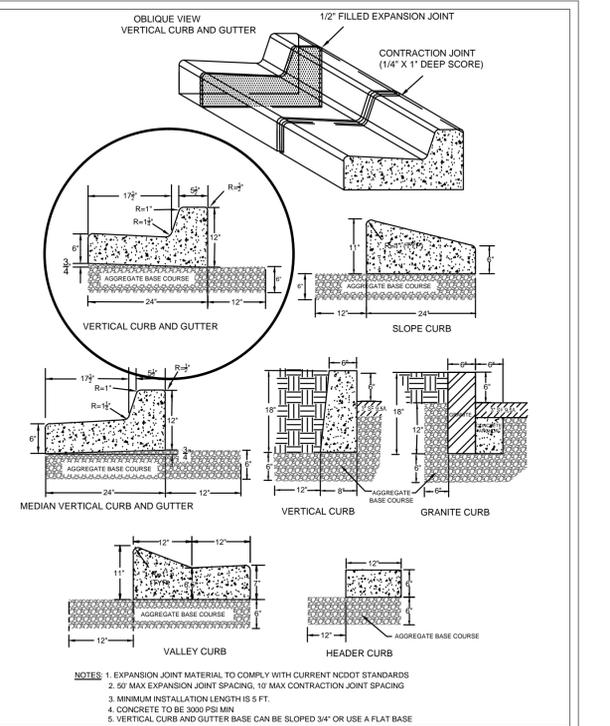
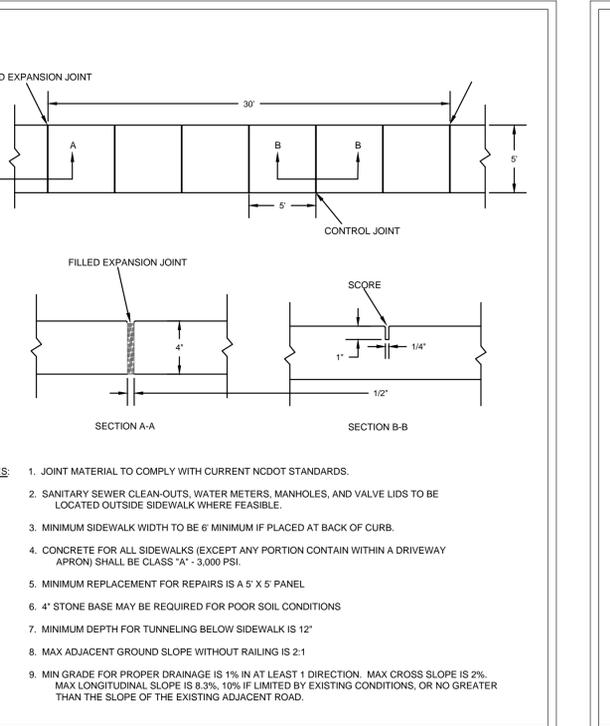
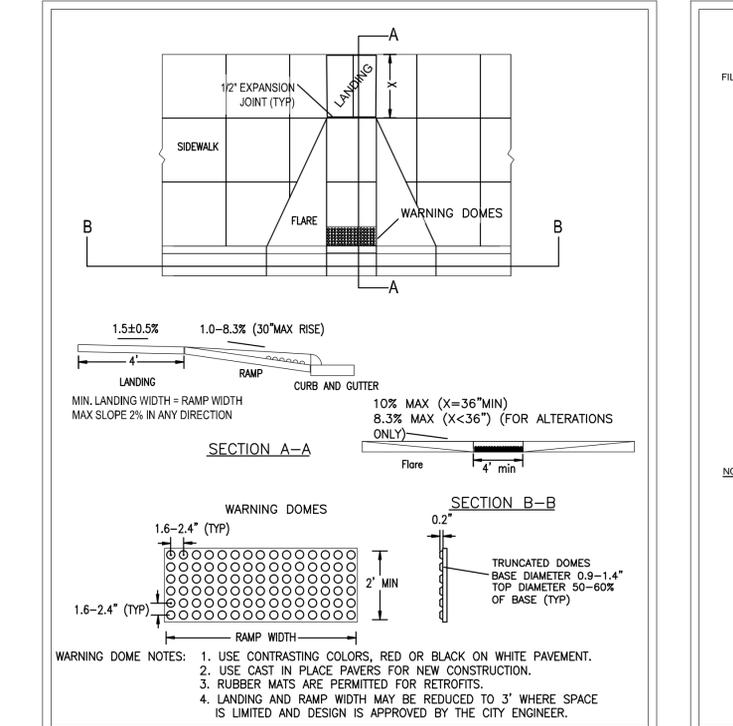
- ALL VAN ACCESSIBLE SPACES BY AN 8'11\"/>
- REFER TO MANUAL ON VEHICLE TRAFFIC CONTROL DEVICES, PART 10: U.S. DEPARTMENT OF TRANSPORTATION AND NORTH CAROLINA DEPARTMENT OF TRANSPORTATION EQUIPMENT.
- IF ACCESSIBLE ROUTE IS A RAISED SIDEWALK AREA, THEN HANDS ARE REQUIRED BY LANDING SIDE AREA.

**ACCESSIBLE PARKING AND SIGNAGE STANDARDS**



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106 FOSTER AVENUE  
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(704) 319-8347  
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BURTON ENGINEERING ASSOCIATES  
ENGINEERS  
LAND PLANNERS  
5950 Fairview Rd., Suite 100 Charlotte, NC 28210  
(704) 552-8881 Fax (704) 552-9860  
Firm License # 1557

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

Seal  
Professional Engineer  
T. BURTON  
12/02/2015

GREENFIELD - FDS  
1313 GREENFIELD STREET  
WILMINGTON, NORTH CAROLINA

GENERAL DETAILS

Project Title  
CTB  
Engineer  
LJB  
Drawn By  
9/21/15  
Date

Revisions  
1-11/10/15 PER TRC & CP/PA COMMENTS  
2-12/02/15 PER TRO/ENGINEERING/COUNTY COMMENTS

Project Number  
487-064

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

STANDARD DETAIL  
PERPENDICULAR CURB RAMP ADJACENT TO WALKING SURFACE

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

SD 3-07

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

STANDARD DETAIL  
SIDEWALK

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

SD 3-10

DATE: AUGUST, 2011  
DRAWN: PB/JSR  
CHECKED: DEC  
SCALE: NOT TO SCALE

STANDARD DETAIL  
CURBING

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

SD 3-11

DATE: JUNE 1, 2015  
DRAWN BY: JSR  
CHECKED BY: D.E.C., P.E.  
SCALE: NOT TO SCALE

STANDARD DETAIL  
COMMERCIAL DRIVEWAY SECTIONS

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

2 of 2  
SD 3-03.4

C8.0  
Sheet 13 of 21

SOILS 90% MIN. COMPACTION 95% MIN. UNDER PAVEMENT

OVERFILL SOIL

HAUNCH

PIPE

SPRINGLINE LOWER SIDE

OUTER BEDDING

MIDDLE BEDDING UNCOMPACTED

PIPE WIDTH +24"

6" MIN. OR 12" MIN. STONE FOR PIPE >36"

FOR BEDDING AND HAUNCH USE NATIVE GRANULAR, SELECT BACKFILL OR STONE AS DIRECTED BY ENGINEER

20" MAX

NOTES:

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

STANDARD DETAIL  
DATE: MAY, 2013  
DRAWN: JSR  
CHECKED: BDR, P.E.  
SCALE: NOT TO SCALE

**PIPE TRENCH TYPICAL**

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

SD 1-07

DIAMETER

"X"

E

PLAN

C

D

B

SLOPE

DIAMETER + 1"

RIP RAP

SCOUR PROTECTION

20'

SEE SHEET 2 OF 2 FOR DIMENSION TABLE

SECTION X-X

SHEET 1 OF 2

STANDARD DETAIL  
DATE: 2001  
DRAWN BY: JSR, CMR  
CHECKED BY: B.P., P.E.  
SCALE: NOT TO SCALE

**FLARED END SECTION OUTLET**

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

SD 1-17

NOTE:  
1. STRUCTURAL DESIGN OF END SECTION SHALL CONFORM WITH THAT OF STANDARD REINFORCED CONCRETE.

PIPE DIAMETER	WALL THICKNESS	SLOPE	B	C	D	E	UNIT WEIGHT
12	2 1/4	3:1	24	49	73	24	730
15	2 1/4	3:1	27	46	73	30	910
18	2 1/2	3:1	27	46	73	36	1190
21	2 3/4	3:1	36	37	73	42	1370
24	3	3:1	42	31 1/2	73 1/2	48	1770
27	3 1/4	3:1	48	25 1/2	73 1/2	54	2130
30	3 1/2	3:1	54	19 3/4	73 3/4	60	2380
33	3 3/4	3:1	60	36	96	66	3870
36	4	3:1	63	34 3/4	97 3/4	72	5320
42	4 1/2	3:1	63	35	98	78	5920
48	5	3:1	72	26	98	84	7470
54	5 1/2	2.4:1	66	34	100	90	8810
60	6	2:1	60	39	99	96	11180
72	7	2:1	78	21	99	108	13980

DIMENSIONS IN INCHES WEIGHTS IN POUNDS

STANDARD DETAIL  
DATE: 2001  
DRAWN BY: JSR, CMR  
CHECKED BY: B.P., P.E.  
SCALE: NOT TO SCALE

**FLARED END SECTION OUTLET DIMENSION TABLE**

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

SD 1-17

CURB GRADE

VARIES

8" BRICK WALLS  
3/4" CEMENT PLASTER

OUTLET

SECTION "A-A"

SECTION "B-B"

5'-10" MIN.  
5'-4"  
4'-0"

PVMT.  
CURB & GUTTER

CASTING

2'-10"  
3'-10"  
4'-4" MIN.

NOTE:  
1. 4" DEEP X 8" WIDE CONCRETE COPING ALL AROUND BASIN CASTING.  
2. ALL CONCRETE TO BE CLASS "A"  
3. FOR CASTING DETAIL SEE SD 2-16

STANDARD DETAIL  
DATE: 2006  
DRAWN BY: JSR, CMR  
CHECKED BY: B.P., P.E.  
SCALE: NOT TO SCALE

**CATCH BASIN**

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

SD 2-01

PLAN

SECTION "A-A"

SECTION "B-B"

FINISH AS GRADED

STD. CITY OF WILMINGTON M.H. COVER. SEE DETAIL SHEET SD-14-01 & 14-02

3/4" CEMENT PLASTER  
MAX. CORBEL 1" PER COURSE

STEPS

VARIES - SEE PLAN / PROFILE

STANDARD DETAIL  
DATE: 2001  
DRAWN BY: JSR, CMR  
CHECKED BY: B.P., P.E.  
SCALE: NOT TO SCALE

**GUIDELINES FOR STORM DRAIN MANHOLE**

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

SD 2-03

RADIUS FRONT WHEN REQ.

1/2" ROD  
3/8" GROOVE

DIAMOND GRID TOP

DETAIL OF HANDLE

MINIMUM AVERAGE WEIGHT FRAME (EACH) 65LBS.  
COVER (RADIUS) 225 LBS.  
COVER (STR.) 225 LBS.

SECTION "A-A"

TOP VIEW

LEFT ENDS RIGHT

3/4" HOLES

SECTION "B-B"

SIDE

STANDARD DETAIL  
DATE: 2001  
DRAWN BY: JSR, CMR  
CHECKED BY: B.P., P.E.  
SCALE: NOT TO SCALE

**CATCH BASIN CASTINGS DETAIL**

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

SD 2-16

PLAN  
FRAME, GRATE & HOOD ASSY

SECTION - BB

SECTION - PP

SECTION - AA

SECTION - NN

HOOD ELEVATION

SECTION - RR

SECTION - JJ

SECTION - KK

NOTE: USE TYPE "E", "F", & "G" GRATE UNLESS OTHERWISE INDICATED

STANDARD DETAIL  
DATE: 2001  
DRAWN BY: JSR, CMR  
CHECKED BY: B.P., P.E.  
SCALE: NOT TO SCALE

**CATCH BASIN CASTING FOR 24" HOOD AND GRATE**

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

SD 2-21

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

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

Approved Construction Plan

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

Planning \_\_\_\_\_  
Traffic \_\_\_\_\_  
Fire \_\_\_\_\_

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DEVELOPED BY:  
**THE DURBAN GROUP**  
BUILDING VALUES  
106 FOSTER AVENUE  
CHARLOTTE, NC 28203  
(P) 704-319-8347

**BURTON ENGINEERING ASSOCIATES**  
ENGINEERS  
LAND PLANNERS  
5950 Fairview Rd., Suite 100 Charlotte, NC 28210  
(704) 552-8881 • Fax (704) 552-8860  
Firm License # 1557



**GREENFIELD - FDS**  
1313 GREENFIELD STREET  
WILMINGTON, NORTH CAROLINA

**STORM DETAILS**

Project  
Engineer  
**LJB**  
Drawn By  
9/21/15  
Date

Revisions  
1-11/10/15 PER TRC & CP/UA COMMENTS  
2-12/02/15 PER TRO/ENGINEERING/COUNTY COMMENTS

Project Number  
**487-064**

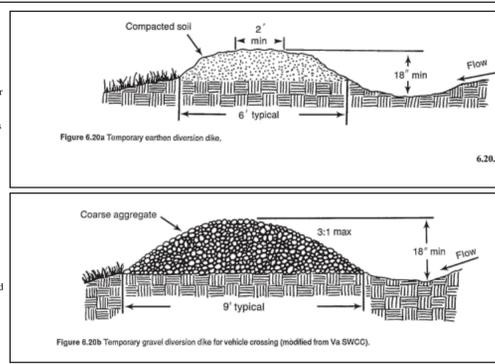
**C8.5**  
Sheet 18 of 21

**Construction Specifications**

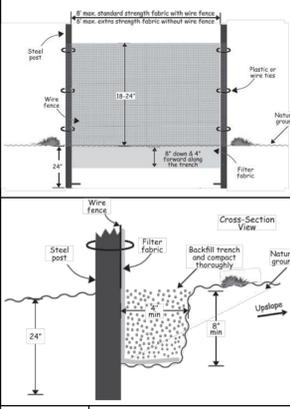
1. Remove and properly dispose of all trees, brush, stumps, and other objectionable material.
2. Ensure that the minimum constructed cross section meets all design requirements.
3. Ensure that the top of the dike is not lower at any point than the design elevation plus the specified settlement.
4. Provide sufficient room around diversions to permit machine regrading and cleanout.
5. Vegetate the ridge immediately after construction, unless it will remain in place less than 30 working days.

**Maintenance**

Inspect temporary diversions once a week and after every rainfall. Immediately remove sediment from the flow area and repair the diversion dike. Carefully check outlets and make timely repairs as needed. When the area protected is permanently stabilized, remove the dike and the channel to blend with the natural ground level and appropriately stabilize it.



TD TEMPORARY DIVERSIONS E.C. STD. 6.20



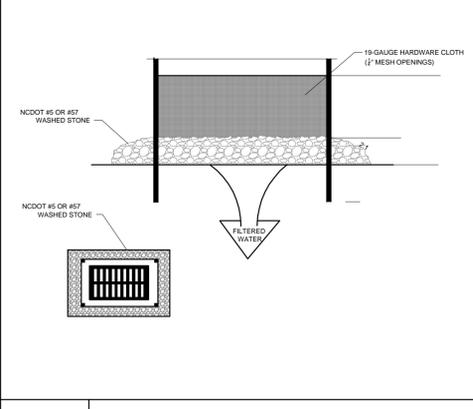
**NOTES:**

1. THE BASE OF BOTH END POSTS SHOULD BE AT LEAST ONE FOOT HIGHER THAN THE MIDDLE OF THE FENCE. CHECK WITH A LEVEL IF NECESSARY.
2. INSTALL POSTS 4-FEET APART IN CRITICAL AREAS AND 6-FEET APART ON STANDARD APPLICATIONS.
3. INSTALL POSTS 2-FEET DEEP ON THE DOWNSTREAM SIDE OF THE SILT FENCE, AND AS CLOSE AS POSSIBLE TO THE FABRIC, ENABLING POSTS TO SUPPORT THE FABRIC FROM THE UPSTREAM WATER PRESSURE.
4. INSTALL POSTS WITH THE NIPPLES FACING AWAY FROM THE SILT FABRIC.
5. ATTACH THE FABRIC TO EACH POST WITH THREE TIES, ALL SPACED WITHIN THE TOP 6-INCHES OF THE FABRIC. ATTACH EACH TIE DIAGONALLY 45-DEGREES THROUGH THE FABRIC, WITH EACH PUNCTURE AT LEAST 1-INCH VERTICALLY APART. ALSO, EACH TIE SHOULD BE POSITIONED TO HANG ON A POST NIPPLE WHEN TIGHTENED TO PREVENT SAGGING.
6. WRAP APPROXIMATELY 6-INCHES OF FABRIC AROUND THE END POSTS AND SECURE WITH 3 TIES.
7. NO MORE THAN 24-INCHES OF A 36-INCH FABRIC IS ALLOWED ABOVE GROUND LEVEL.
8. THE INSTALLATION SHOULD BE CHECKED AND CORRECTED FOR ANY DEVIATIONS BEFORE COMPACTION.
9. COMPACTION IS VITALLY IMPORTANT FOR EFFECTIVE RESULTS. COMPACT THE SOIL IMMEDIATELY NEXT TO THE SILT FENCE FABRIC WITH THE FRONT WHEEL OF THE TRACTOR, SKID STEER, OR ROLLER EXERTING AT LEAST 60 PSI. COMPACT THE UPSTREAM SIDE FIRST, AND THEN EACH SIDE TWICE FOR A TOTAL OF 4 TRIPS.

**MAINTENANCE:**

- INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
- SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
- REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING THE CLEANOUT.
- REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

SF SILT FENCING E.C. STD. 6.62



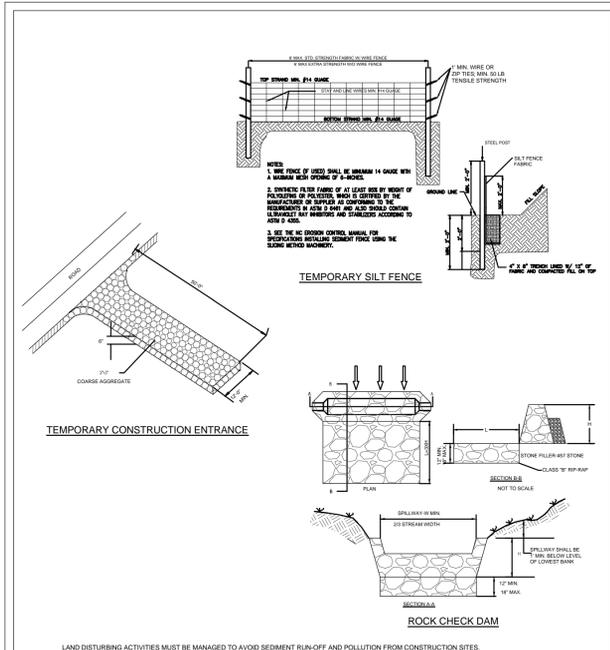
**GENERAL NOTES:**

1. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
2. DRIVE 5-FOOT STEEL POSTS 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4 FEET APART.
3. SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM, PLACING A 2-FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING. IS RECOMMENDED.
4. PLACE CLEAN GRAVEL (NO. 57 OR #7 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 16 INCHES AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.
5. ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT, AND ESTABLISH FINAL GRADING ELEVATIONS.
6. COMPACT THE AREA PROPERLY AND STABILIZED IT WITH GROUND COVER.

**MAINTENANCE:**

- INSPECT INLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT.
- CLEAR THE MESH WIRE OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS.
- TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING SEDIMENT REMOVAL.
- REPLACE STONE AS NEEDED.

IP HARDWARE CLOTH & GRAVEL INLET PROTECTION E.C. STD. 6.51



LAND DISTURBING ACTIVITIES MUST BE MANAGED TO AVOID SEDIMENT RUN-OFF AND POLLUTION FROM CONSTRUCTION SITES. WHERE PERMITTED LOCALLY BY NEW HANOVER COUNTY, AN EROSION AND SEDIMENT CONTROL (EASC) PLAN WILL CONTAIN DETAILS AND GUIDANCE. EASC PLANS ARE PERFORMANCE BASED AND OFTEN REQUIRE ADJUSTMENTS OR REPAIRS AS PERMITTED BY NCDCR, DIVISIONS OF WATER QUALITY AND LAND RESOURCES. A STORMWATER PERMIT WILL REQUIRE SELF-MONITORING REPORTS (WEEKLY, 1\"/>

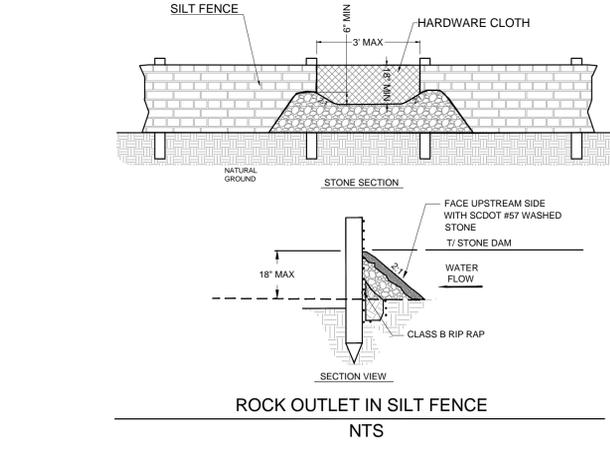
STANDARD DETAIL

GUIDELINES FOR SEDIMENT CONTROL BMPs

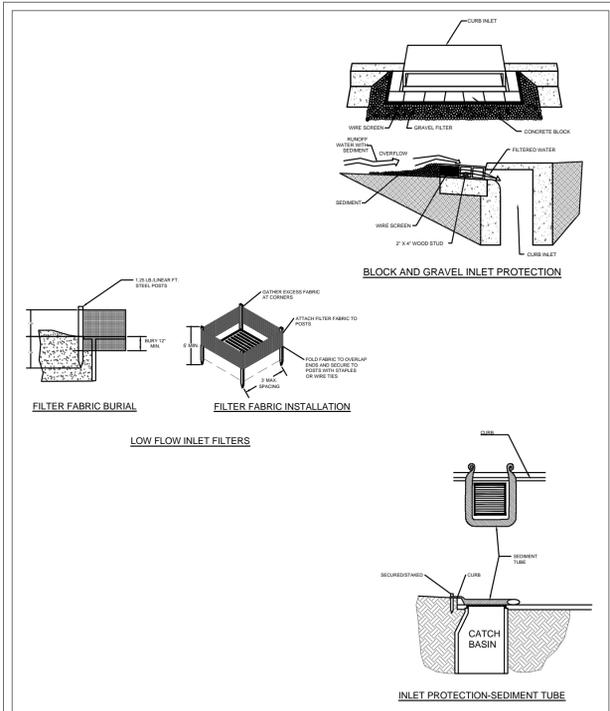
DATE: SEPTEMBER, 2012  
DRAWN BY: JSR  
CHECKED BY: BDR, P.E.  
SCALE: NOT TO SCALE

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

SHEET 1 OF 2 SD 3-104



IP ROCK OUTLET IN SILT FENCE E.C. STD. 6.51



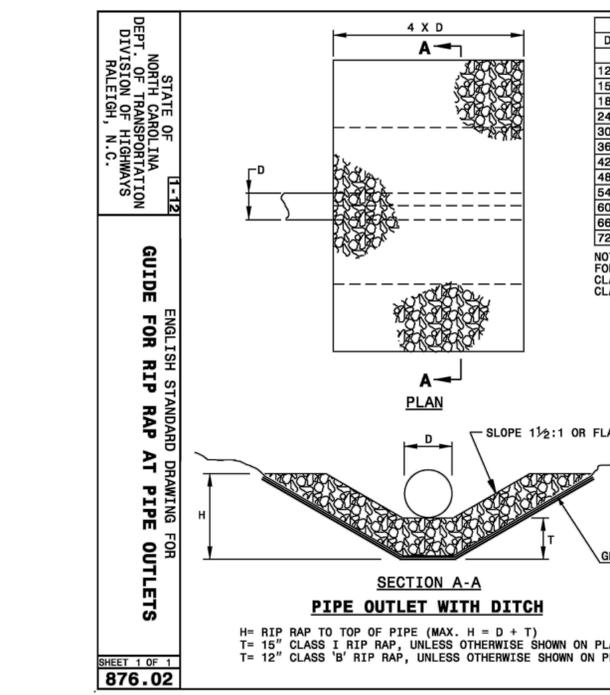
STANDARD DETAIL

GUIDELINES FOR SEDIMENT CONTROL BMPs

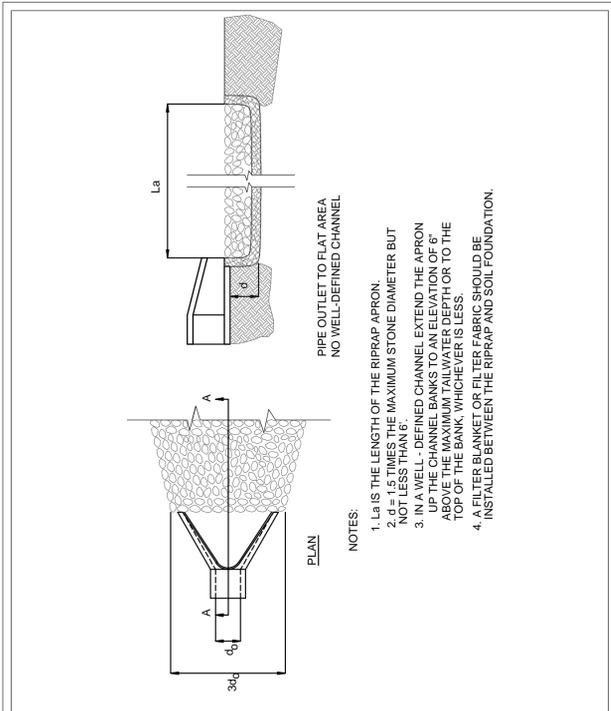
DATE: SEPTEMBER, 2012  
DRAWN BY: JSR  
CHECKED BY: BDR, P.E.  
SCALE: NOT TO SCALE

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SHEET 2 OF 2 SD 3-104



876.02



STANDARD DETAIL

PIPE OUTLET PROTECTION

DATE: 2001  
DRAWN BY: JSR,CMR  
CHECKED BY: B.P., P.E.  
SCALE: NOT TO SCALE

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

SHEET 2 OF 2 SD 2-15

ENGLISH STANDARD DRAWING FOR GUIDE FOR RIP RAP AT PIPE OUTLETS

D	OUTLET W/DITCH			OUTLET W/O DITCH		
	CLASS 'B' RIP RAP	CLASS I RIP RAP	CLASS I RIP RAP	CLASS 'B' RIP RAP	CLASS I RIP RAP	CLASS I RIP RAP
TONS	TONS	TONS	TONS	TONS	TONS	TONS
12"	2	5	5	2	5	1
15"	2	7	7	3	7	1
18"	3	10	9	4	10	2
24"	5	14	15	7	15	3
30"	8	21	21	11	22	5
36"	11	28	29	15	30	7
42"	15	37	39	20	39	10
48"	-	-	49	26	50	-
54"	-	-	60	33	62	-
60"	-	-	73	40	75	-
66"	-	-	87	48	89	-
72"	-	-	102	57	104	-

NOTE: FOR CALCULATION PURPOSES  
CLASS 'B' RIP RAP = 100 LBS./FT<sup>3</sup>  
CLASS I RIP RAP = 105 LBS./FT<sup>3</sup>

876.02

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BURTON ENGINEERING ASSOCIATES  
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Firm License # 1557



GREENFIELD - FDS  
1313 GREENFIELD STREET  
WILMINGTON, NORTH CAROLINA  
EROSION CONTROL DETAILS

Project: CTB  
Engineer: LJB  
Drawn By: 9/21/15  
Date: \_\_\_\_\_  
Revisions: \_\_\_\_\_  
1-11/10/15 PER TRC & CPJIA COMMENTS  
2-12/02/15 PER TROENGINEERING/COUNTY COMMENTS

Project Number: 487-064  
Sheet Title: C8.6  
Sheet 19 of 21

Approved Construction Plan

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

Planning: \_\_\_\_\_

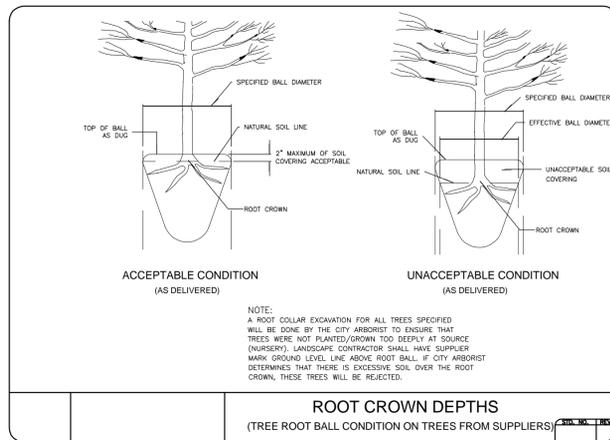
Traffic: \_\_\_\_\_

File: \_\_\_\_\_

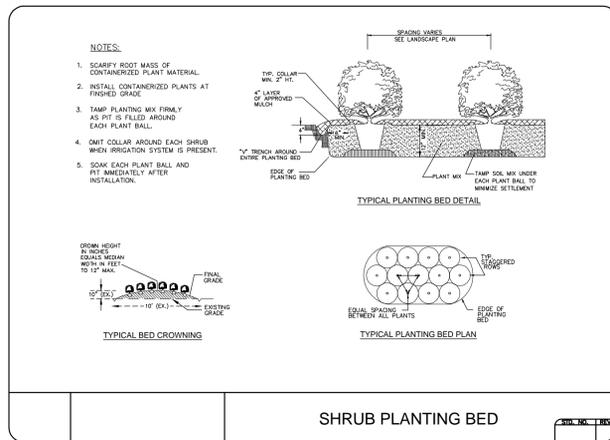
APPROVED STORMWATER MANAGEMENT PLAN

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

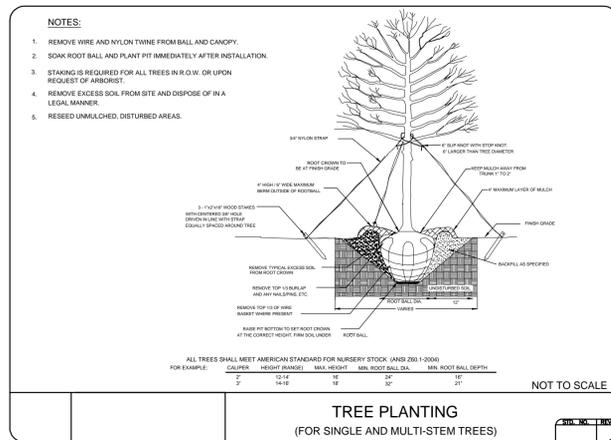
Signed: \_\_\_\_\_



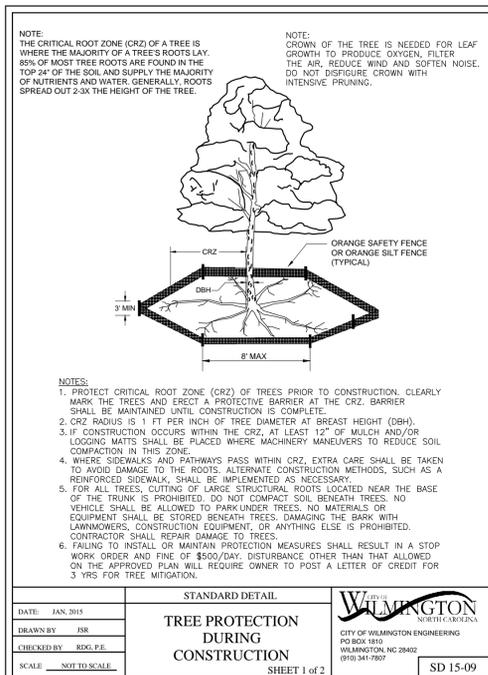
**ROOT CROWN DEPTHS**  
(TREE ROOT BALL CONDITION ON TREES FROM SUPPLIERS)



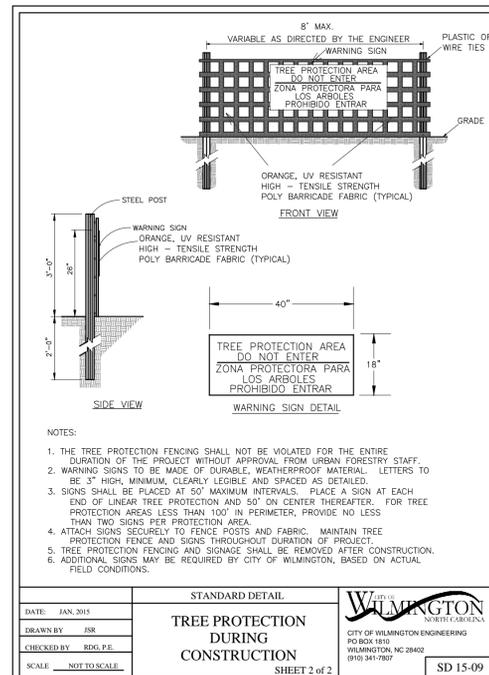
**SHRUB PLANTING BED**



**TREE PLANTING**  
(FOR SINGLE AND MULTI-STEM TREES)



**TREE PROTECTION DURING CONSTRUCTION**  
SHEET 1 of 2



**TREE PROTECTION DURING CONSTRUCTION**  
SHEET 2 of 2

**LANDSCAPE NOTES**

- No plantings over thirty (30) inches in height allowed in vision clearance.
- Protection from vehicular traffic provided around all landscaping with a minimum height of six (6) inches.
- Owner is responsible for maintenance to ensure plant material lives and prospers.
- Planting plans shall be approved by Landscape Designer prior to installation.
- Landscaping shall be required at the ends of all parking rows.
- A low buffer shall be required where parking is within fifty (50) feet of the Right-of-Way.
- Landscaped islands shall be a minimum width of twelve (12) feet (back of curb to back of curb) and a minimum of two hundred and sixteen (216) square feet.
- A minimum of fifteen (15) trees 2 inches or greater in diameter as measured 6 inches above ground per disturbed acre.
- For recommended Plant List see "Landscape" T-10.4.

**LANDSCAPE NOTES**



**Approved Construction Plan**

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

Planning \_\_\_\_\_

Traffic \_\_\_\_\_

Fire \_\_\_\_\_

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DEVELOPED BY:  
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**BURTON ENGINEERING ASSOCIATES**  
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Firm License # 1557



**GREENFIELD - FDS**  
1313 GREENFIELD STREET  
WILMINGTON, NORTH CAROLINA

**LANDSCAPING DETAILS**

Project: **CTB**  
Engineer: **LJB**  
Drawn By: **9/21/15**  
Date:

Revisions  
1- 11/10/15 PER TRC & CP/PA COMMENTS  
2- 12/02/15 PER TRC/ENGINEERING/COUNTY COMMENTS

Project Number: **487-064**  
**C8.7**  
Sheet 20 of 21

LL OR GC IS TO PROVIDE AND INSTALL A MAIL BOX IF LOCAL POST OFFICE REQUIRES. COORDINATE WITH FAMILY DOLLAR FOR MAIL BOX SIZE REQUIREMENTS.

**SITE SOILS NOTE:**  
THE SERVICES OF A GEOTECHNICAL ENGINEER LICENSED PER LOCAL REQUIREMENTS SHALL BE RETAINED TO PROVIDE A SUBSURFACE EXPLORATION OF THE SITE SOILS AND PROVIDE RECOMMENDATIONS FOR PREPARATION AND DEVELOPMENT OF SOILS. GEOTECHNICAL INVESTIGATION RECOMMENDATIONS OF THE SOILS BELOW THE BUILDING AND PARKING LOT ARE TO BE FOLLOWED. LL IS RESPONSIBLE FOR BORINGS @ FINAL BLDG. LOCATION CHOSEN. VERIFY GRADING PER CIVIL DRAWINGS. CONSULT ARCH/STRUCTURAL ENG. IF GRADING REQUIRES STEPPED FOOTINGS, PRIOR TO CONSTRUCTION.

SITE PLAN TO INDICATE FINISH FLOOR ELEVATION OF SLAB.  
FINISH GRADE SHALL BE A MINIMUM OF 4" BELOW THE FINISHED SLAB (TYP)

PROVIDE INSECT/TERMITE TREATMENT PER BONDED (WARRANTED) AUTHORIZED INSTALLING SUBCONTRACTOR AND LL IS TO FORWARD PROOF OF SAME TO FDS.

## FAMILY DOLLAR CRITERIA

### SITE PLAN REQUIREMENTS

ALL SITE PLANS MUST BE APPROVED BY FDS PRIOR TO SUBMISSIONS FOR BUILDING AND SITE PERMITS  
ALL SITE PLANS MUST CONTAIN THE FOLLOWING INFORMATION AND BE DRAWN ACCORDINGLY. PREPARE SITE PLANS CAREFULLY AND THOROUGHLY. SITE PLANS NOT APPROVED BY THE ENGINEER WILL BE REJECTED. OUTRIGHT OR BENT BACK FOR REVISIONS RESULTING IN DELAYS DELAYS IN CORPORATE SITE REVIEW/ APPROVAL PROCESS AND/OR LEASE PREPARATION.  
ALL DRAWINGS, INCLUDING BUT NOT LIMITED TO, SHALL BE PREPARED IN CAD (DW) FORMAT AND SUBMITTED AS A SCANNED IMAGE FILE (PDF, TIF, JPG OR DWG) AS E-MAIL OR ON CD/DVD TO FAMILY DOLLAR STORES AFTER ALL APPROVALS HAVE BEEN OBTAINED.  
REPORT IS COMPLETED. THIS SLR REPORT, WHEN FINISHED, WILL CONTAIN IMPORTANT INFORMATION, CRITERIA, SPECIFICATIONS, REQUIREMENTS, ETC. IMPORTANT IN CREATING ACCURATE SITE PLANS.

### SITE DESIGN

#### GENERAL INSTRUCTIONS

- PLANS SHALL BE SUBMITTED AT A SCALE OF EITHER 1" = 20' OR 1" = 30', UNLESS OTHERWISE INDICATED BY FAMILY DOLLAR STORES. ALL PLANS MUST BE PREPARED BY A CIVIL ENGINEER LICENSED PER LOCAL REQUIREMENTS. NO HAND DRAWN SITE PLANS WILL BE ACCEPTED.
- ALL DRAWINGS, INCLUDING BUT NOT LIMITED TO, SHALL BE PREPARED IN CAD (DW) FORMAT AND SUBMITTED AS A SCANNED IMAGE FILE (PDF, TIF, JPG OR DWG) AS E-MAIL OR ON CD/DVD TO FAMILY DOLLAR STORES AFTER ALL APPROVALS HAVE BEEN OBTAINED.
- LANDLORD IS REQUIRED TO SUBMIT PAPER COPY, CAD OR PDF, AS-BUILT SURVEY. SITE PLANS MUST BE LEGIBLE. SEND IN LARGEST COPY POSSIBLE ON 24" X 36"
- OUR PREFERRED BUILDINGS ARE 102' X 90' X 102', 104' X 80', 80' X 104', 107' X 80' AND 80' X 107'. THE 70' X 130' OR 130' X 70' ARE NOT PREFERRED AND SHOULD BE USED ONLY BY EXCEPTION. EACH SIMPLE PLAN ATTACHED HAS A MIRROR IMAGE BUILDING ON LEFT SIDE IS 'A' AND BUILDING ON RIGHT IS 'B'. DECIDING ON WHICH TO USE IS A FUNCTION OF MANY FACTORS INCLUDING BUILDING VISIBILITY, LOCATION OF CURB CUT, TRAFFIC GOING HOME SIDE, ETC. CONSULT WITH YOUR R.E.M.
- PLAN SET SHALL INCLUDE SEPARATE GENERAL PLAN OF OVERALL DEVELOPMENT INCLUDING ALL PROPOSED BUILDINGS, ENTRANCES, DRIVE AISLES AND INTERSECTING TRUCK ROUTES INCLUDING DIMENSIONS.
- THE HORIZONTAL AND VERTICAL LOCATION OF THE BUILDING AND FREE-STANDING SIGNS SHALL BE PLACED IN SUCH A MANNER AS TO NOT IMPAIR THE VISIBILITY OF THE BUILDING OR SIGNS.

### PROPERTY DETAIL REQUIRED ON EACH PLAN

- SHOW ENTIRE SITE AND ALL PROPERTY LINE METES & BOUNDARIES WITH NORTH ARROW CLEARLY IDENTIFIED
- SHOW AND LABEL ALL BUILDING AND PARKING SETBACK LINES AS REQUIRED BY LOCAL CODE OR ORDINANCE. SHOW AND LABEL ALL LANDSCAPING OR ENVIRONMENTAL BUFFERS AS REQUIRED BY LOCAL CODE OR ORDINANCE.
- SHOW ALL BUILDINGS, BOTH EXISTING AND PROPOSED
- LABEL NAME OF EACH ROAD USED TO ACCESS SITE, AS WELL AS ALL ROADS ADJACENT TO PROPERTY. LABEL HIGHWAY NUMBER(S), IF APPLICABLE
- SHOW EXISTING PAVEMENTS IF APPLICABLE & ALL PROPOSED PAVEMENTS. ALL PROPOSED PAVEMENTS SHALL BE CONSTRUCTED OF EITHER ASPHALT OR CONCRETE. GRAVELS, PARKING OR DRIVE AREAS ARE STRICTLY PROHIBITED
- SHOW PROPOSED ROAD/PLANT SIGN LOCATIONS, AS WELL AS ANY EXISTING SIGN LOCATIONS, IF APPLICABLE
- SHOW DUMPSTER PAD & NUMBER OF DUMPSTERS. REFER TO LEASE AGREEMENT FOR SIZE AND VOLUME OF DUMPSTERS
- DUMPSTER PAD MUST BE ADJACENT TO THE DELIVERY DOOR AND MUST BE EASILY ACCESSIBLE TO LARGE TRASH COLLECTION TRUCKS
- DUMPSTER PAD & APPROX. DUMPSTER PAD AND APPROX SHALL BE MIN. 4" 3500 PSI CONCRETE SLAB REINFORCED WITH MIN. #4 REBARS @ 12-IN. ON CENTER IN EACH DIRECTION LOCATED IN THE UPPER THIRD OF SLAB. PROVIDE (2) PIPE BOLLARDS PER FDS DETAIL AT REAR OF PAD BEHIND EACH DUMPSTER. IF AN ENCLOSURE IS REQUIRED BY LOCAL CODE OR ORDINANCE, PROVIDE A DETAIL FOR FAMILY DOLLAR TO REVIEW AND APPROVE. ALL ENCLOSURES SHALL HAVE GATES CONSTRUCTED OUT OF STEEL FRAME TUBING (MINIMUM WITH PIVOT HINGES MOUNTED ON 1" PIPE BOLLARDS. SET PIPE BOLLARDS IN MINIMUM 12" X 12" X 3" DEEP CONCRETE FOOTING. PROPER LATCHING & LOCK HARDWARE SHALL BE PROVIDED IN ORDER TO RESTRAIN AND/OR LOCK ENCLOSURE GATES
- PROVIDE MIN. 8-FT. X 4-IN. THICK 3,500 PSI CONCRETE PAD WITH (1) 6" PIPE BOLLARD @ EACH CORNER OF THE PAD FURTHEST AWAY FROM THE BUILDING. REINFORCE CONCRETE PAD WITH MIN. #6 @ 12" ON CENTER IN EACH DIRECTION
- PROVIDE MIN. 8-FT. X 4-IN. THICK 3,500 PSI CONCRETE PAD AT EVERY MAIN DOOR THAT DOES NOT EXIT DIRECTLY TO A SIDEWALK. REINFORCE CONCRETE PADS) WITH MIN. #6 @ 12" ON CENTER IN EACH DIRECTION
- PROVIDE #4 THICK 3,500 PSI CONCRETE PAD AT HVAC EQUIPMENT LOCATIONS. SIZE OF PADS) SHALL BE BASED UPON SIZE OF SELECTED EQUIPMENT WITH PROPER CLEARANCES. REINFORCE CONCRETE PADS) WITH #4 REBARS @ 12-IN. ON CENTER IN EACH DIRECTION LOCATED IN THE UPPER THIRD OF SLAB

### BUILDING AND PARKING

- ALL PAVEMENTS, LANDSCAPE AND GRADING BUFFERS SHALL BE SHOWN ON THE PLANS, AS REQUIRED BY LOCAL ORDINANCE. BUILDING SHOULD FACE PRIMARY ROAD WITH HIGHEST TRAFFIC COUNT, POSITION BUILDING FOR OPTIMUM VISIBILITY
- PROVIDE ALL BUILDING DIMENSIONS
- IDENTIFY STORE FRONT, FRONT DOORS, AND DELIVERY AREA DOOR
- SHOW SIDEWALK. PREFER 18" BUT WILL ACCEPT 18" DEPTH. ADD 3" SIDEWALK TO SIDE OF BUILDING IF THERE IS PARKING AGAINST BUILDING. UNDER NO CIRCUMSTANCE WILL PARKING BE ALLOWED AGAINST THE BUILDING WITHOUT A SIDEWALK BETWEEN THE BUILDING AND THE PARKING
- ALL SIDEWALKS TO BE CONSTRUCTED OF MIN. 4-IN THICK 3,500 PSI CONCRETE REINFORCED WITH #6 @ 12" ON CENTER IN EACH DIRECTION. SIDEWALKS SHALL HAVE TOOLED CONTROL JOINTS NOT EXCEEDING 10 FT. SPACING IN ANY DIRECTION
- PREFERRED NUMBER OF PARKING SPACES FOR FREESTANDING SITES IS 36. MINIMUM IS 25 DEPENDING ON LAYOUT, ALL PARKING SHOULD BE DESIGNED TO BE CONVENIENT AND CLOSE TO FRONT DOOR. SHOW MIN. 2 HANDICAPPED SPACES, AND SATISFY ALL ZONING ORDINANCES
- MINIMUM PARKING ISLAND DIMENSIONS SHALL BE 8' X 18' AND SATISFY ALL ZONING ORDINANCES
- STRIPES ISLANDS AT BAY ENDS UNLESS REQUIRED FOR TRAFFIC CONTROL OR LOCAL ORDINANCE
- ALL PAVEMENT MARKINGS SHALL BE ACCOMPLISHED WITH USE OF PAINTING MACHINES AND/OR STENCILS. ALL PAINT FOR PAVEMENT MARKINGS SHALL MEET THE REQUIREMENTS OF SOLVENT RESISTANT APPLICATIONS STATED BELOW. PARKING STALL AND ISLAND STRIPING SHALL BE 4-IN WIDE AND SHALL BE STRAIGHT WITH A "CLEAN" EDGE. ALL DIRECTIONAL ARROWS, STOP BARS, ETC. SHALL CONFORM WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
- ALL PARKING SPACES ARE REQUIRED TO HAVE WHEEL STOPS PROVIDED, UNLESS PREVIOUSLY APPROVED BY FAMILY DOLLAR
- PARKING AREA DRIVE AISLES ARE TO BE MIN. 30'. (REFER TO SHEET C-2 FOR TYPICAL SITE PLAN EXAMPLES).

### PAVEMENT DESIGN

- ASPHALT PAVEMENT
  - STANDARD (LIGHT) DUTY MINIMUM SECTION IS ONE (1) INCH ASPHALT SURFACE COURSE, TWO (2) INCHES OF BINDER COURSE, AND SIX(6) INCHES OF COMPACTED STONE BASE COURSE. TO BE USED WHEN PERFORMING CALCULATIONS.
  - HEAVY DUTY MINIMUM SECTION IS ONE (1) INCH ASPHALT SURFACE COURSE, TWO (2) INCH BINDER COURSE, AND EIGHT (8) INCHES COMPACTED STONE BASE COURSE. TO BE USED WHEN PERFORMING CALCULATIONS FOR ALL TRUCK CIRCULATION AREAS.
- CONCRETE PAVEMENT
  - CONCRETE PAVEMENT SHALL BE DESIGNED USING ACI 308R-08 GUIDE FOR THE DESIGN AND CONSTRUCTION OF CONCRETE PARKING LOTS. THE CONCRETE DESIGN RECOMMENDATIONS SHOULD BE BASED ON CBR TESTS THAT ARE CORRELATED TO THE MODULUS OF SUBGRADE REACTION ("K" VALUE) DESIGN SHALL INCLUDE RECOMMENDATIONS FOR BOTH STANDARD DUTY AND HEAVY DUTY SECTIONS
  - WHEN USING THE ACI 308R-08, THE CONCRETE PAVEMENT SECTIONS SHALL BE DESIGNED BY A GEOTECHNICAL ENGINEER FOR A 20 (TWENTY) YEAR DESIGN LIFE WITH A 95% RELIABILITY FOR XX LOADED TRACTOR TRAILERS PER DAY AND XX CARS PER DAY.
  - FAMILY DOLLAR MINIMUM REQUIRED CONCRETE STRENGTH IS 4,000 PSI CORRESPONDING TO A FLEXURAL STRENGTH OF 800 PSI. FAMILY DOLLAR MAXIMUM ALLOWABLE DESIGN SUBGRADE K VALUE IS 30 IN PSI. THE CONCRETE PAVEMENT TYPE SHALL BE UNREINFORCED OR JOINTED PLAN CONCRETE (JPC). JOINTING RECOMMENDATIONS SHOULD FOLLOW ACI 308R-08 SECTION 3.7 AND APPENDIX C. FAMILY DOLLAR MAXIMUM JOINT SPACING IS 24' X CONCRETE PAVEMENT THICKNESS, NOT TO EXCEED 15 FEET. A JOINTING PLAN SHALL BE PROVIDED BY THE DESIGN ENGINEER IDENTIFYING LOCATION & SPACING OF CONTRACTION AND ISOLATION JOINTS.
  - STANDARD (LIGHT) DUTY MINIMUM SECTION IS FIVE (5) INCHES OF 4000 PSI PORTLAND CEMENT CONCRETE OVER COMPACTED SUBGRADE. WHEN DESIGNING THE LIGHT DUTY AREA, GRANULAR BASE SHOULD ONLY BE CONSIDERED FOR UNUSUAL SOIL CONDITIONS AND THE RECOMMENDATION WILL NEED TO BE JUSTIFIED. RECONDITIONING OF SOIL WITH CEMENT, FLY ASH, OR LIME TO A MINIMUM DEPTH OF 6 INCHES MAY BE RECOMMENDED IN LIEU OF GRANULAR BASE FOR A WORKING PLATFORM, AND SHOULD BE USED TO MITIGATE EXPANSIVE SUBGRADE SOILS IN LIEU OF GRANULAR BASE.
  - STANDARD HEAVY DUTY MINIMUM SECTION IS SIX (6) INCHES OF 4,000 PSI PORTLAND CEMENT CONCRETE OVER COMPACTED SUBGRADE. WHEN DESIGNING THE HEAVY DUTY AREA, 4 INCHES OF COMPACTED GRANULAR BASE SHOULD BE CONSIDERED WHEN THE NATURAL SUBGRADE K-VALUE IS LESS THAN 200 PSIN. THE INCLUSION OF GRANULAR BASE SHOULD INCREASE THE EFFECTIVE K-VALUE ACCORDING TO TABLE 3.2 IN ACI 308R-08.

### SOLVENT/SOILS APPLICATION RECOMMENDATION

- SURFACES SHOULD BE CLEAN, DRY AND FREE FROM LOOSE AND PEELING PAINT. DO NOT APPLY WHEN AIR OR SURFACE TEMPERATURES ARE BELOW 32 DEGREES, AND WHEN THE RELATIVE HUMIDITY EXCEEDS 90%.
- THE PRESENCE OF CONCRETE SEALERS OR EFFLORESCENCE ON NEW CONCRETE MAY INTERFERE WITH ADHESION AND SHOULD BE REMOVED BY EXTENDED.
- MOST PREVIOUSLY PAINTED LINES MAY BE REPAIRED WITHOUT ADDITIONAL SURFACE PREPARATION PROVIDED THAT THE OLD PAINT IS STILL THICKLY ADHERED TO THE SURFACE. MULTIPLE COATS OF PAINT ARE ALLOWED.
- NEW ASPHALT SURFACES SHOULD IDEALLY BE ALLOWED TO AGE SEVERAL MONTHS PRIOR TO STRIPING. SOLVENT BASED PAINT MAY CAUSE THE TARS TO BLEED THROUGH ON NEW ASPHALT OR RECENTLY SEALED ASPHALT. APPLY A TEST STRIP TO DETERMINE IF THE ASPHALT HAS AGED SUFFICIENTLY. IF IT IS NECESSARY TO PAINT A FRESH ASPHALT SURFACE, USE A WATERBORNE PAINT FOLLOWING THE RECOMMENDED PROCEDURE.

### APPLICATION NOTES

THE RECOMMENDED APPLICATION RATE IS 15 MGS/YEFT FLM THICKNESS FOR NEW LINES. FOR REPAIRS OF EXISTING LINES, A THINNER LINE FILM OF 10 MGS IS OFTEN ADEQUATE. EXCEEDING THE RECOMMENDED FILM THICKNESS WILL RESULT IN MUCH SLOWER DRY TIMES AND MAY RESULT IN LIFTING, CRACKING OR POOR ADHESION.

### SLIP RESISTANT ADDITIVE

APPROXIMATELY 8 POUNDS PER GALLON OF SLIP RESISTANT ADDITIVE IS REQUIRED.

MSDS	ITEM#	DESCRIPTION
8000-5981	TM272	PROMAR LOW VOC WHITE (ACETONE)
8000-5923	TM273	PROMAR LOW VOC YELLOW (ACETONE)
80006979	TM 5628	PROMAR LOW VOC RED (ACETONE)
80005441	TM 5629	PROMAR LOW VOC BLACK (ACETONE)
800051484	TM5627	CALIFORNIA VOC-YELLOW
800030212	TM5626	CALIFORNIA VOC-WHITE

TO ACHIEVE THE HANDICAPPED COLOR BLUE, THE ADDITION OF 4 OUNCES OF SHERWIN-WILLIAMS L-2 BLUE COLORANT PER GALLON IS REQUIRED. HANDICAPPED STENCILS ARE AVAILABLE UPON ORDER REQUEST.

### GRADING

- GENERAL:
  - BALANCE SOILS ON-SITE IF POSSIBLE. DETERMINE SOURCES OF DISPOSAL/ACQUISITION OF SOILS, IF NECESSARY.
  - BUILDING SHALL BE ACCESSIBLE BY GRADE LEVEL PARKING ONLY, ENTRY DOOR, AND EXIT, RECEIVING DOOR). STEPS AND STAIRS ARE NOT PERMITTED.
  - LL REQUIRED TO SUBMIT "AS-BUILT" SURVEY AND "CERTIFICATION OF SLAB ELEVATION"
- PARKING LOT SLOPES:
  - MAXIMUM SLOPE 4%.
  - MINIMUM SLOPE 1.0%.
  - MAXIMUM 2% GROSS SLOPE WITHIN 150' OF FRONT DOOR.
  - MAXIMUM SLOPE 6% FOR ENTRANCES AND ACCESS DRIVES.
  - MINIMUM 2% SLOPE WHERE EXPANSIVE SOILS ARE STABILIZED OR NOT REMOVED AS ALLOWED BY GEOTECHNICAL ENGINEER
  - DELIVERY AREA SLOPE MAX SHALL NOT EXCEED 1.5%.
- PROPOSED SPOT GRADES:
  - FLOOR ELEVATION SHOWN.
  - BUILDING PERIMETER SIDEWALKS.
  - PARKING PERMETER CURBING.
  - LANDSCAPED PARKING ISLAND WITH CURBING.
- SITE COMPACTATION AND GRADING:
  - PROVIDE 4" CURB FACE AT ALL SIDEWALKS AT THE PERIMETER OF THE BUILDING
  - FAMILY DOLLAR STORE FINISHED FLOOR ELEVATION SHALL BE A MINIMUM OF 1'-0" (FOR B1TS) OR 18" (FOR FEE DEVELOPMENT) ABOVE THE ESTABLISHED 10-YEAR FLOOD PLAIN ELEVATION (AS DETERMINED BY THE U.S. ARMY CORPS OF ENGINEERS.)
  - PROVIDE A RETAINING WALL WHERE GRADE VARIATIONS EXCEED THE 1 TO 1 (HORIZONTAL TO VERTICAL) SLOPE AND/OR THE SOILS INVESTIGATION REPORT RECOMMENDED MAXIMUM SLOPE. COMPLETELY DETAIL ALL RETAINING WALLS.
- GUARD RAIL IS REQUIRED ON ALL RETAINING WALLS WITH A GRADE DIFFERENCE GREATER THAN 2 IN HEIGHT. GUARD RAIL IS TO BE DESIGNED IN ACCORDANCE WITH ALL LOCAL BUILDING CODES AND ORDINANCES.
  - PROVIDE SLOPE STABILIZATION ON ALL SITE SLOPES. STABILIZATION MAY BE BY TURF GRASSES, SOD, VEGETATION, GEOTEXTILE FABRICS OR OTHER MEANS AS REQUIRED BY THE DEGREE OF SLOPE AND TYPE OF SOIL TO BE PROTECTED.
  - DESIGN ALL SITE GRADING IN CONFORMANCE WITH BARRIER FREE DESIGN CRITERIA.
- MAXIMUM LAWN SLOPE IN ACCORDANCE WITH GEOTECHNICAL REPORT:
  - ALL NON-PAVED SLOPED AREAS SHALL NOT EXCEED A 2:1 SLOPE UNLESS SPECIFICALLY APPROVED BY THE SOILS ENGINEER. PROVIDE SLOPE STABILIZATION AS REQUIRED.
- SEDIMENT & EROSION CONTROL PROCEDURES SHOULD BE IMPLEMENTED DURING CONSTRUCTION BASED UPON LOCAL CODES & ORDINANCES. AT A MINIMUM, A STABILIZED ROCK CONSTRUCTION ENTRANCE AND SEDIMENT FENCING AROUND DISTURBED AREAS SHALL BE INSTALLED.
- ANY DISTURBED AREAS THAT WILL NOT BE STABILIZED BY PAVEMENT OR BUILDING BASE COURSES SHALL BE SOODED OR SEEDED & MULCHED IMMEDIATELY AFTER ESTABLISHING FINAL GRADES. IF FINAL GRADES WILL NOT BE ESTABLISHED WITHIN 31-DAYS, TEMPORARY SEEDING & MULCHING SHALL BE USED TO STABILIZE DISTURBED AREAS.
- ALL BACK FILL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER. BACK FILL SHALL BE NON-PLASTIC IN NATURE, FREE FROM ROOTS, VEGETATIVE MATTER, WASTE, CONSTRUCTION MATERIALS, OR OTHER UNDESIRABLE MATERIAL. BACK FILL MATERIALS SHALL BE CAPABLE OF BEING COMPACTED BY MECHANICAL MEANS AND THE MATERIAL SHALL HAVE NO TENDENCY TO FLOW OR BEHAVE IN A PLASTIC MANNER UNDER TAMPING BLOWS OR PROOF ROLLING. ALL BACK FILL MATERIAL SHALL BE PLACED IN LOOSE 6-IN. LIFTS AND COMPACTED, BY MECHANICAL MEANS, AS SPECIFIED BY THE GEOTECHNICAL ENGINEER OR AS LISTED IN NOTE 10.
- ALL BUILDING, SIDEWALK, AND PAVEMENT SUB-GRADES SHALL BE COMPACTED TO 98% OF ASTM D698 TO A DEPTH OF 12-IN AND TO 95% OF ASTM D698 BELOW 12-IN DEPTHS. ALL OTHER NON-STRUCTURAL AREAS SHALL BE COMPACTED TO 90% OF ASTM D698.
- ALL BUILDING, SIDEWALK AND PAVEMENT SUB-GRADES COMPACTATIONS SHALL BE INTERMEDIATELY TESTED AND APPROVED BY THE GEOTECHNICAL ENGINEER. ALL SUB-GRADES SHALL BE THOROUGHLY PROOF-ROLLED TO IDENTIFY SMALL LOCALIZED AREAS OF UNSUITABLE SOILS. ALL UNSUITABLE SOILS SHALL BE UNDERCUT, REPLACED WITH STRUCTURAL FILL, AND COMPACTED AS LISTED IN NOTE 10.

### UTILITIES

- GENERAL:
  - ALL UTILITIES TO THE FAMILY DOLLAR BUILDING WILL BE SOLELY FOR FAMILY DOLLARS' USE AND WILL NOT BE SHARED (OR SUB-METERED) FOR ANY OTHER

### OCCUPANTS IN THE DEVELOPMENT CENTER

- UTILITIES/MECHANICAL SPACES OR FAMILY DOLLAR STORE SHALL NOT RUN THROUGH OR UNDER THE FAMILY DOLLAR STORE BUILDING PAD.
- UTILITY LOCATIONS:
  - FAMILY DOLLAR STORES SHALL HAVE AN APPROVED SEWER WITH DOMESTIC AND IRRIGATION WATER LINES THAT SERVE FAMILY DOLLAR STORE ONLY.
  - SEPARATE METERS REQUIRED FOR GAS, DOMESTIC WATER AND IRRIGATION WATER, AND ELECTRICAL LINES.
  - UTILITY LOCATIONS ARE DEPENDENT ON THE SPECIFIC SITE. THE FAMILY DOLLAR STORE ALLOWS FOR ALTERNATE LOCATIONS AS DICTATED BY SITE CONDITIONS WITH VARYING IMPACT ON THE STORE LAYOUT AND DESIGN. CONTACT FAMILY DOLLAR FOR APPROVAL PRIOR TO SELECTING A UTILITY LOCATION.)
- SEE FAMILY DOLLAR STORE PREFERRED SITE UTILITY POINTS OF CONNECTION. (FAMILY DOLLAR STANDARD CRITERIA PLAN.)
- EXTEND ALL UTILITIES TO WITHIN 5 FEET OF THE BUILDING AT THE LOCATIONS SHOWN ON THE PLUMBING/ELECTRICAL AND UTILITY SITE PLAN.
- PROVIDE A COMPLETE SANITARY SEWER SYSTEM INCLUDING ALL PIPING, MANHOLES, CLEANOUTS, ETC.
  - PROVIDE 4" MINIMUM SANITARY SEWER LEAD OR SIZE AS REQUIRED BY CITY, COUNTY OR STATE ORDINANCES.
  - ALL SANITARY SEWERS SHALL HAVE A POSITIVE GRAVITY OUTFALL. LIFT STATIONS, FORCE MAINS, SEPTIC DISPOSAL FIELDS OR PACKAGE TREATMENT PLANTS SHALL BE USED ONLY WHERE A POSITIVE OUTFALL IS NOT ATTAINABLE, AND SHALL BE APPROVED BY FAMILY DOLLAR STORES, INC. (AS OWNER HEREIN REFERRED TO TITLE SHEET, 1-1) PRIOR TO DESIGN AND SUCH EXCEPTION PACKAGE SHALL BE TOTALLY GUARANTEED AND MAINTAINED BY THE DEVELOPER.
- WATER SERVICE:
  - PROVIDE A COMPLETE WATER DISTRIBUTION SYSTEM TO SERVE BOTH DOMESTIC AND FIRE PROTECTION (IF REQUIRED BY CODE) REQUIREMENTS INCLUDING ALL PIPING, METERS, VALVES, PITS, HYDRANTS, THRUST BLOCKS, BACKFLOW PREVENTERS, ETC.
  - 3/4" DOMESTIC SERVICE LINE.
  - ALL FIRE PROTECTION SYSTEMS (IF REQUIRED BY CODE) SHALL BE APPROVED BY THE LOCAL OFFICIALS, AND OR, THE LOCAL FIRE MARSHAL AND FAMILY DOLLAR STORES, INC.
  - 6" MINIMUM LINE SIZE WITH RESIDUAL PRESSURE WITH SUFFICIENT CAPACITY FOR SPRINKLER SYSTEM WITHOUT WATER PUMP, AS APPROVED BY THE LOCAL OFFICIALS AND THE LOCAL FIRE MARSHAL.
  - PROVIDE WATER SERVICE TO THE IRRIGATION SYSTEM AS REQUIRED (WITH SEPARATE METER).
  - FIRE DEPARTMENT CONNECTION (F.D.C. OR SIAMSE CONNECTION, IF REQUIRED BY CODE).
  - LOCATE HYDRANT ON SITE (IF REQUIRED BY CODE).
- PROVIDE A COMPLETE GAS DISTRIBUTION SYSTEM (WHERE APPLICABLE) INCLUDING ALL PIPING, METERS, PITS, VALVES, ETC.
  - SHOW GAS METER AND BUILDING LEAD (GAS METER SHOULD NOT BE LOCATED WITHIN ANY PAVED AREA).
- PROVIDE A COMPLETE ELECTRICAL SERVICE SYSTEM INCLUDING ALL POWER POLES, WEATHER HEADS, UNDERGROUND CONDUITS, WIRING, SPICE BOXES, TRANSFORMERS, ETC.
  - SHOW ELECTRICAL TRANSFORMER LOCATION (120/208 VOLT, 3 PHASE, 4 WIRE, 400 AMP SERVICE). (ELECTRIC METER SHOULD NOT BE LOCATED WITHIN ANY PAVED AREA.)
  - PROVIDE ELECTRICAL SERVICE TO ALL RELATED SITE ELEMENTS (PYLON SIGNS, LIFT STATIONS, WIRING, TREATMENT PLANTS, SITE LIGHTING, ETC.) WHERE APPLICABLE.
- PROVIDE A COMPLETE TELEPHONE SERVICE SYSTEM INCLUDING ALL POLES, UNDERGROUND CONDUITS, PIPING, SPICE BOXES, ETC. DEMARK TO BE MOUNTED TO PHONE BOARD AS SHOWN ON SCHEDULE SHEET M-1.
  - TELEPHONE AND ELECTRIC SERVICE CONDUITS MAY BE PLACED IN COMMON TRENCH, AND BROUGHT TO THE INTERIOR OF SPACE (AS PER ARCHITECTURAL PLANS).
  - PLACE PHONE LINES UNDERGROUND ON ALL SITES. PHONE BOARD LOCATION TO BE DETERMINED BY PLAN.

### DRAINAGE

- PROVIDE DETENTION OR RETENTION POND ONLY WHEN REQUIRED BY LOCAL ORDINANCE.
  - PROVIDE A FENCE WITH GATE (ONE 6" GATE MINIMUM FOR MAINTENANCE) AROUND LAWN AREA BASIN.
  - PROVIDE RETENTION POND SIGNAGE - GREEN SIGN WITH WHITE LETTERS 16" X 20" WHICH MUST READ "WARNING - DO NOT ENTER - NO SWIMMING". PLACE SIGNAGE ON FENCING AROUND RETENTION POND 20' APART.
  - NO RETENTION IS ALLOWED ON PAVEMENT AREAS.
- DESIGN ON-SITE STORM SEWER SYSTEM MINIMUM CONFORM LOCAL CODE TO ASSURE ADEQUATE DESIGN.
  - PROVIDE ADEQUATE CATCH BASINS FOR LOCAL CONDITIONS.
  - COLLECT DRAINAGE NO CLOSER THAN 50 FEET FROM STORE FRONT.
  - ALL UNDERGROUND PIPE MATERIAL SHALL BE REINFORCED CONCRETE PIPE OR PLASTIC WITH PROPER SOIL COVER.
- OFF-SITE DRAINAGE SHALL BE COLLECTED AT THE PERIMETER OF PARKING LOT. UNDER NO CIRCUMSTANCES SHALL OFF-SITE DRAINAGE BE PERMITTED TO ENTER PARKING LOT.
  - PROVIDE DIVERSION SWALES OR EDGE DRAINS AT LARGE SLOPES.
  - PROTECT PAVEMENT SUBGRADE FROM SURFACE WATER INFILTRATION.
  - IF TRUCK WELLS ARE USED, PROVIDE GRAVITY DISCHARGE FROM TRUCK WELLS.
- SIZE BUILDING ROOF DOWNSPOUT LEADERS & HEADERS FOR 50-YEAR STORM WITH NO HYDRAULIC SURCHARGE IF CONNECTING TO AN UNDERGROUND SYSTEM
- THE PAVEMENT & BUILDING AREAS SHALL SURFACE DRAIN INTO RETENTION PONDS, STORM IRLT STRUCTURES PART OF AN UNDERGROUND STORM SEWER SYSTEM, OR OTHER STORM WATER CONVEYANCE FEATURES, WHICH DIRECT STORM WATER AWAY FROM THE BUILDING AND THE PROPERTY.
- PARKING LOT SURFACE MAY NOT BE USED FOR RETENTION OR OVERFLOW RETENTION IN THE SITE DESIGN CALC.
- SURFACE DRAINAGE SHALL NOT BE DIRECTED TOWARDS BUILDING, USE SWALES OR PIPING TO REDIRECT ALL WATER AWAY FROM EDGE OF BUILDING.
- NO RETENTION PONDS ARE ALLOWED AT THE FRONT OF SITE OR AT THE FRONT FACING PORTION OF THE BUILDING.
- UNDERGROUND DETENTION SYSTEMS ARE ALLOWED BASED UPON LOCAL CODE & ORDINANCE REQUIREMENTS, AS WELL AS SITE CONSTRAINTS. LL SHALL BE RESPONSIBLE FOR MAINTAINING AND INSPECTING UNDERGROUND DETENTION SYSTEMS AS REQUIRED BY LOCAL JURISDICTION.

### LANDSCAPE AND IRRIGATION

- GENERAL:
  - DEVELOPER'S LANDSCAPE DESIGN INCLUDES SITE DESIGN AND IRRIGATION.
  - REQUIRED DRAWINGS AND SPECIFICATIONS FOR LANDSCAPE AND IRRIGATION WILL BE SHOWN ON LANDSCAPE CONSULTANT'S DRAWINGS.
  - LOCAL AUTHORITY HAVING JURISDICTION BASES LANDSCAPE DESIGN ON MINIMUM REQUIREMENTS.
  - UTILIZE REUSE WATER FOR IRRIGATION WHERE AVAILABLE. (GRAY WATER).
- LANDSCAPING:
  - NO GENERAL LANDSCAPE AREAS, UNLESS REQUIRED BY CODE. FAMILY DOLLARS FIRST PREFERENCE FOR LANDSCAPING IS FILTER FABRIC AND STONE OR ROCK. IF ALLOWED BY LOCAL CODE, STONE OR ROCK MUST BE 3/4" TO 1" IN SIZE AND THE GROUND COVER MUST BE 2" MINIMUM.
  - PLANTING SHALL NOT OBSTRUCT LINE OF SIGHT AT ENTRANCES AND SITE DRIVES.
  - LANDSCAPING MUST NOT BLOCK VISIBILITY OF SIGNAGE.
  - SITE PERMETER PLANTING SHALL NOT BE CONCENTRATED AT THE MAIN ENTRANCE AND ALLOW VIEW OF ROAD SIGN AND BUILDING FROM FRONTAGE ROAD.
  - PARKING LOT PLANTINGS SHALL NOT CONFLICT WITH SITE LIGHTING, BUILDING SIGNAGE AND UTILITY LOCATIONS. LANDSCAPE DESIGN TO ALLOW FOR ANNUAL SHRUB GROWTH AS NOT TO OBSTRUCT PLYED SIGN VISIBILITY
  - PARKING LOT ISLAND SHALL HAVE STONE OR ROCK SIZE 1" TO 3" GROUND COVER. NO SOD SHALL BE PERMITTED.
- IRRIGATION:
  - IF SITE IS REQUIRED TO HAVE LANDSCAPE PLANTINGS SUCH AS, BUT NOT LIMITED TO, TREES, PLANTS, SOD, ETC., THE SITE MUST BE FULLY IRRIGATED WITH PROPER COVERAGE AND A SEPARATE IRRIGATION METER IS THEREBY REQUIRED.
  - IRRIGATION TO HAVE RAIN GUARD.

### CURBING AND WHEEL STOPS

- FDS DOES NOT REQUIRE CURBING UNLESS LOCAL CODES OR SITE CONDITIONS DICTATE. ALL CURBING SHALL BE DEFINED ON THE SITE WORKING DRAWINGS AS TO CURB TYPE AND LOCATION. EXTRUDED CONCRETE CURBING EXPEDITED TO THE PAVEMENT SURFACE IS NOT PERMITTED. ALL PERMANENT CURBING SHALL BE CONCRETE.
- CONCRETE CURB AND GUTTER SHALL BE USED WHERE SURFACE RUNOFF IS DIRECTED TOWARD AND ALONG THE EDGE OF THE PAVEMENT OR ALONG THE PERIMETER OF LANDSCAPED PLANTING BEDS OR TRAFFIC ISLANDS. MINIMUM CURB SLOPE SHALL BE 0.5%.
- CONCRETE STANDING CURB OR CONCRETE WITH REVERSE GUTTER SHALL BE USED TO RETAIN THE EARTH AT THE BASE OF AN EMBANKMENT OR AN ABRUPT CHANGE IN GRADE OR ALONG THE PERIMETER OF LANDSCAPED PLANTING BEDS OR TRAFFIC ISLANDS.
- PRE-CAST CONCRETE WHEEL STOPS SHALL BE PROVIDED AT EACH PARKING STALL.
  - ALL WHEEL STOPS SHALL BE DOWELED TO PAVEMENT & LOCATED 2 FT. FROM EDGE OF OBSTRUCTION, EDGE OF PAVEMENT, OR FACE OF CURB.
  - SHALL BE USED AS PARKING CONTROL, ALONG THE BUILDING OR RETAINING WALL.
  - PAINT ALL WHEEL STOPS "SAFETY YELLOW", OR AS CODE REQUIRES.
- TEMPORARY ASPHALT CURBING SHALL ONLY BE USED ALONG PAVEMENT EDGES ADJACENT TO FUTURE DEVELOPMENT AREAS.
- CURBING MAY BE OMITTED WHERE PAVING TERMINATES AGAINST OTHER PAVED AREAS.

### CURB CUTS AND DRIVE AISLES

- SITE DESIGN SHALL CONFORM TO ONE OF THE APPROVED STANDARD DELIVERY TEMPLATES THAT REQUIRES CONDITIONAL APPROVAL FOR ALL EXCEPTIONS.
- NOTE: PROPER ACCESS FOR FAMILY DOLLARS' 75' LONG FREIGHT TRUCKS IS REQUIRED DURING NORMAL BUSINESS HOURS. THIS INCLUDES A TRUCK PATH THAT IS FREE OF LANDSCAPE ISLANDS, SIGNS, LIGHT POLES AND OTHER BARRIERS WHILE MAINTAINING NORMAL RADIUS CURVES AT ALL ENTRANCES AND EXITS.
- SHOW LOCATION AND SIZE OF ALL CURB CUTS. PREFER TWO ON PRIMARY ROAD & ONE ON SECONDARY ROAD BUT WILL ACCEPT ONE. PREFER 36" WIDE, ABSOLUTE MINIMUM IS 30". CURB CUTS SHOULD BE SWEEPING OR ROUNDED; NOT SHARP 90 DEGREE TURNS.
- IF A CORNER SITE, ADD CURB CUT NEAR DELIVERY AREA.
- FRONT DRIVEWAY SHOULD BE MINIMUM OF 30' WIDE; PREFER 36'. SIDE DRIVEWAYS WHERE TRUCK BACKS INTO DELIVERY AREA SHOULD BE 36' ALSO, 30' IS ABSOLUTE MINIMUM WIDTH.
- IDENTIFY PROPOSED TRUCK DELIVERY PATH ON SITE PLAN ITSELF.
  - DELIVERY DOOR TO BE AT PARKING LOT GRADE (NO DOCKS ALLOWED)
  - IN ORDER TO ELIMINATE CURBING AND LANDSCAPING AND TO FACILITATE DELIVERY TRUCK MANUEVERABILITY, CERTAIN AREAS ARE INTENTIONALLY STRIPED OUT.
  - TRUCK DRIVE AISLE TO BE MIN. 30'

IMPORTANT TO NOTE: IN ADDITION TO REAL ESTATE AND STORE PLANNING REVIEWING AND APPROVING ALL PROPOSED SITE PLANS, SO DOES FAMILY DOLLARS' TRANSPORTATION DEPARTMENT. IT IS EXTREMELY IMPORTANT THAT ALL CRITERIA LISTED HERE, ESPECIALLY CURB CUTS AND DRIVEWAYS, BE ADHERED TO IN ORDER TO FACILITATE THEIR TIMELY SITE PLAN REVIEW.

### EASEMENTS AND ALLEYS

- SHOW LOCATION OF ALL EXISTING AND PROPOSED EASEMENTS, BOTH ON SITE AND OFF-SITE, REQUIRED FOR CUSTOMER INGRESS/EGRESS, DELIVERIES, AND SERVICES.
- SHOW ALL ALLEYS
- DESIGNATE OFF-SITE SIGN EASEMENT AREAS AS WELL AS UTILITY EASEMENTS TO PROVIDE FOR SIGN INSTALLATION AND ELECTRICAL SERVICE.

### SITE SIGNAGE

- PROVIDE "HANDICAPPED PARKING" SIGN WITH IDENTIFYING SYMBOL AT DESIGNATED HANDICAPPED PARKING STALLS
- SIGN SHALL BE 12" X 18", .090 ALUMINUM WITH BAKED ENAMEL FINISH. INSTALLED IN BOLLARD, TO CONFORM WITH ADA STANDARDS OR AS REQUIRED BY CODE.
- SIGNS SHALL HAVE WHITE LETTERING ON BLUE BACKGROUND.
- PARKING LOT SIGNS (SUCH AS STOP, RIGHT TURN, LEFT TURN, ONE WAY, ETC.) SHALL BE INSTALLED AS REQUIRED BY LOCAL CODE OR ORDINANCE.

### OFF-SITE

- IDENTIFY ALL STREETS, ALLEYS, INGRESS/EGRESS EASEMENTS OR OTHER ACCESS ROUTES BORDERING SITE WITH TRAFFIC PATTERNS.
- SHOW IMPROVEMENTS AND EXISTING TRAFFIC PATTERN ON ANY ADJACENT PROPERTY BEING CONSIDERED FOR CROSS ACCESS.
- IN R.O.W. SHOW WIDTH AND NUMBER OF LANES. INDICATE ANY DECELERATION OR ACCELERATION LANES, SHOW ALL CENTER LINES, MEDANS, MEDIAN BARRIERS, ETC. AND ACTUAL TURNING MOVEMENTS. THIS IS CRITICAL INFORMATION TO EVALUATE THE DELIVERABLE ROUTE OF A PROPOSED LOCATION BY OUF FLEET OF 75 LONG FREIGHT TRUCKS.

### PARKING ILLUMINATION SPECIFICATION - FAMILY DOLLAR STORES

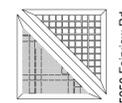
- SYSTEM DESCRIPTION:
  - FURNISH AND INSTALL A COMPLETE SYSTEM INCLUDING CONCRETE BASES, POLES, LUMINAIRES, CONDUIT, WIRING SYSTEM AND COMPLETE CONNECTION.
  - LUMINAIRES SHALL BE ONE OF THE FOLLOWING FOUR (4) TYPES LISTED IN PREFERRED SYSTEMS.
- PREFERRED SYSTEMS:
  - 320 WATT METAL HALIDE, POLE MOUNTED (OR SUPER METAL HALIDE), HORIZONTAL LAMP UNIT SQUARE UNIT SQUARE UNIT WITH TYPE IV WIDE DISTRIBUTION, LUTRONICA - KAD 320M R4 TB SC04 SP009 LP)
  - POLE MOUNTED FLOOD 12' HFT ON STANCHION POLES TO LIGHT THE FACADE OF THE BUILDING. LUTRONICA - TTL 320M R42 TB SC04 IS LP)
  - BUILDING MOUNTED CUT-OFF WALL PACK. TO BE USED ONLY ON INCANDESCENT AREAS THAT DO NOT SERVE AS CUSTOMER ENTRANCES OR POINTS OF VIEW FROM MAJOR VENUES. (LSQ WP NW UNP SM 82)
  - FRONT ENTRANCE TO BE LIT WITH LUTRONICA ALX LED 115-4 1000X16 SR3 MVXL D008)
  - NO OTHER SYSTEMS ARE ACCEPTABLE UNLESS REQUESTED AND PRE-APPROVED IN WRITING BY FAMILY DOLLAR STORES OR JUCE 100% LIGHTING CONTACT INFO: WWW.JUCE100LIGHTING.COM LIGHTING CONSULTANT FOR FAMILY DOLLAR STORES.
- DESIGN REQUIREMENTS:
  - DESIGN AND LAYOUT LIGHTING SYSTEM IN CONFORMANCE WITH THE FOLLOWING ILLUMINATION PARAMETERS AND POLE/FIXTURE REQUIREMENTS. DEVIATIONS FROM SET, FORTH REQUIREMENTS NECESSITATED BY LOCAL REQUIREMENTS OR EXISTING CONDITIONS REQUIRED APPROVAL PRIOR TO SUBMISSION OF DESIGN. ALL SUBMISSION FOR CHANGE SHALL BE SUBMITTED IN WRITING TO FAMILY DOLLAR STORES.
  - NUMBER OF LUMINAIRES AND POSITIONS:
    - MAIN PARKING AREA OF IN-FIELD STANDARDS SHALL HAVE TWO (2) LUMINAIRES PER POLE MAXIMUM.

- DRIVE, ROADWAY OR PERMETER STANDARDS MAY HAVE A SINGLE LUMINARY.
- A SINGLE FLOOD WILL BE USED ON DESIGNATED POLES TO ILLUMINATE THE FACADE.
- A STANCHION MOUNT FLOOD SHOULD BE USED IN LIEU OF A WALL PACK IF A BUILDING IS ADJACENT TO A ROADWAY.
- WALL PACKS INDICATED ON WALLS OF THE BUILDING TO PROVIDE SECURITY LIGHTING AT 11' 6" MOUNTING HEIGHT.
- MOUNTING HEIGHTS:
  - PARKING AREA LUMINAIRES MOUNTING HEIGHT SHALL BE NOT MORE THAN 25 FEET.
  - DRIVE OR ROADWAY LUMINAIRES MOUNTING HEIGHT SHALL BE NOT MORE THAN 25 FEET.
  - MOUNTING HEIGHT IS THE DISTANCE FROM LUMINAIRES TO PAVED SURFACE AND INCLUDES BASE HEIGHT, POLE LENGTH, AND ARM SWEEP (IF ANY).
  - FLOODS WILL BE MOUNTED AT A HEIGHT OF 12 FEET UTILIZING THE SAME POLE AS THE AREA LIGHT WHERE REQUIRED.
- DESIGN PARAMETERS:
  - MAINTENANCE FACTOR SHALL BE COMPUTED AS FOLLOWS:
    - LED LAMP SOURCE
    - LAMP LUMEN DEPRECIATION (L70) 0.70 (L70 FOR LED UNLESS OTHERWISE INDICATED BY MANUFACTURER INFORMATION)
    - LUMINAIRE DIRT DEPRECIATION (LDD) 0.90
    - TOTAL LIGHT LOSS FACTOR (LLF) = 0.63 FOR LED UNLESS OTHERWISE INDICATED BY MANUFACTURER INFORMATION.
  - LUMINAIRES SHALL BE PROVIDED TO MEET THE FOLLOWING PARAMETERS IN THIS ORDER OF IMPORTANCE:
    - MINIMUM ILLUMINANCE AT ANY POINT OF THE PAVED SURFACE SHALL BE 1.6 FOOT CANDLES TAKEN AT GRADE.
    - AVERAGE/MINIMUM RATIO SHOULD BE LESS THAN OR EQUAL TO 5 (AVG:MIN = 5:1)
    - MAXIMUM/MINIMUM RATIO SHOULD BE LESS THAN OR EQUAL TO 10 (MAX:MIN = 10:1)

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**BURTON ENGINEERING ASSOCIATES**  
ENGINEERS  
LAND PLANNERS



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Seal  


Seal  
12557  
T. DURBAN  
NORTH CAROLINA  
ENGINEER  
12/22/2015

**GREENFIELD - FDS**  
1313 GREENFIELD STREET  
WILMINGTON, NORTH CAROLINA

**FAMILY DOLLAR CRITERIA**

Project  
CTB  
Engineer  
LJB  
Drawn By  
9/21/15  
Date

Revisions  
1-11/10/15 PER TRC & CPJ/A COMMENTS  
2-12/02/15 PER TROENGINEERING/COUNTY COMMENTS

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