

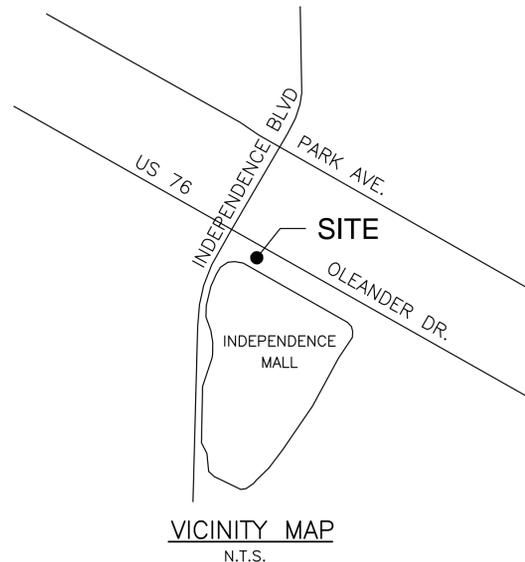
SITE IMPROVEMENTS FOR:

Panera



B R E A D®

**3506 OLEANDER DRIVE
WILMINGTON, NC**



DEVELOPER:

THE HUTTON COMPANY
736 CHERRY STREET
CHATTANOOGA, TN 37402
(423) 756-9267

CIVIL
ENGINEER:

BERRY
ENGINEERS LLC

3555 KEITH STREET, SUITE 109
CLEVELAND, TN 37312 (423) 790-5880

ARCHITECT:

NORR ARCHITECTS
325 N. LASALLE STREET, SUITE 700
CHICAGO, IL 60654
(312) 873-1028

INDEX OF SHEETS

CIVIL ENGINEERING PLANS

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- BOUNDARY & TOPOGRAPHIC SURVEY
- A-0.45 DUMPSTER ENCLOSURE DETAIL (FOR REFERENCE ONLY, SEE BUILDING PLANS)

LOCAL CONTACTS

PLANNING
CITY OF WILMINGTON
MS. DAWN SNOTHERLY
910-341-4677
DAWN.SNOTHERLY@WILMINGTONNC.GOV

WATER & SEWER
CAPE FEAR PUBLIC UTILITY AUTHORITY
MS. BERNICE JOHNSON
910-332-6620
MR. DAVID DALEY
910-332-6626

BUILDING OFFICIAL
CITY OF WILMINGTON ENGINEERING
MR. ROB GORDON, PE
910-341-5856
ROB.GORDON@WILMINGTONNC.GOV

STORMWATER
NCDENR
MS. CHRISTINE NELSON
910-796-7323
CRISTINE.NELSON@NCDENR.GOV

TRAFFIC ENGINEER
MR. DAVE BRENT
910-341-4677
MR. BILL MCDOW
910-341-7819

ELECTRIC
DUKE ENERGY PROGRESS
866-582-6345

NATURAL GAS
PIEDMONT NATURAL GAS
MS. CATHY PLEASANT
910-512-9391

TELEPHONE
BELLSOUTH
MR. STEVE DAYVAULT
910-392-8712

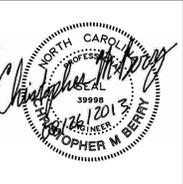
CITY OF WILMINGTON GENERAL NOTES

1. PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES AND NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING;
2. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS;
3. 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;
4. ALL TRAFFIC SIGNAL FACILITIES AND CITY-OWNED STREETLIGHT EQUIPMENT ALONG THE SITE PROPERTY LINES AND/OR WITHIN THE LIMITS OF CONSTRUCTION SHALL BE SHOWN ON THE PLAN. CONTACT CITY OF WILMINGTON TRAFFIC ENGINEERING AT 910-341-7888 FOR HELP LOCATING THESE FACILITIES;
5. ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS, AND CURBING WILL BE REPLACED;
6. PROJECT SHALL COMPLY WITH CITY OF WILMINGTON CROSS CONNECTION CONTROL REQUIREMENTS. WATER METER(S) CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND THE STATE HAS GIVEN THEIR FINAL APPROVAL. CALL 343-3910 FOR INFORMATION;
7. IF THE CONTRACTOR DESIRES CITY 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;
8. ANY IRRIGATION SYSTEM SUPPLIED BY CITY WATER SHALL COMPLY WITH THE CITY'S CROSS CONNECTION CONTROL REGULATIONS. CALL 343-3910 FOR INFORMATION;
9. ANY BACKFLOW PREVENTION DEVICES REQUIRED BY THE CITY WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USCFCCCHR OR ASSE;
10. ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT OF WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS;
11. A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET. NOTE THIS ON THE PLAN AND CONTACT 910-341-5888 FOR MORE DETAILS. IN CERTAIN CASES AN ENTIRE RESURFACING OF THE AREA BEING OPEN CUT MAY BE REQUIRED;
12. CONTACT TRAFFIC ENGINEERING AT 910-341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE PROPERLY LOCATED;
13. IMMEDIATELY NOTIFY CITY OF WILMINGTON TRAFFIC ENGINEERING AT 910-341-7888 IF ANY TRAFFIC SIGNAL FACILITIES OR CITY-OWNED STREETLIGHT FACILITIES ARE DAMAGED;
14. DAMAGED FACILITIES SHALL BE REPLACED BY AN APPROVED CONTRACTOR ACCORDING TO STANDRAD NCDOT REPLACEMENT SCHEDULES AND CURRENT NCDOT DESIGN STANDARDS;
15. ALL REPAIR/REPLACEMENT OF TRAFFIC SIGNAL INFRASTRUCTURE SHALL BE COORDINATED WITH THE CITY OF WILMINGTON TRAFFIC ENGINEERING DIVISION.

CIVIL ENGINEER:
BERRY
ENGINEERS LLC
3555 KEITH ST NW, SUITE 109
CLEVELAND, TN 37312 TEL: (423) 790-5880
DBA BERRY ENGINEERS, PLLC; FIRM LICENSE: P-1188

DEVELOPER:
THE HUTTON COMPANY
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PROJECT:
Panera
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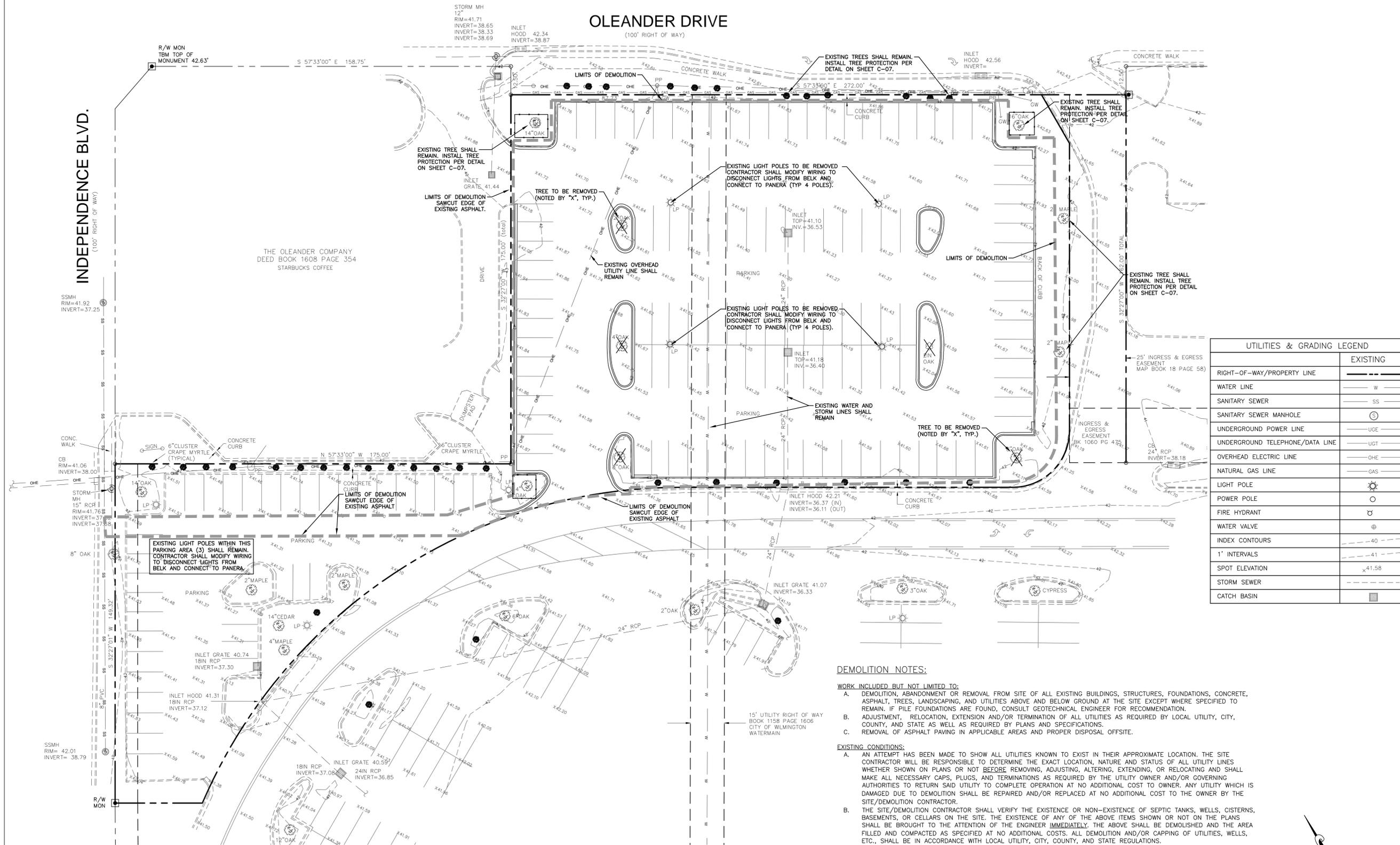
REVISIONS		
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SHEET NAME:
COVER SHEET

DATE: 08/29/2013
DRAWN BY: BMB
CHECKED BY: CMB
PROJECT NO.: 13015
SHEET NUMBER:
C-00

INDEPENDENCE BLVD.
(100' RIGHT OF WAY)

OLEANDER DRIVE
(100' RIGHT OF WAY)



UTILITIES & GRADING LEGEND	
	EXISTING
RIGHT-OF-WAY/PROPERTY LINE	---
WATER LINE	— W —
SANITARY SEWER	— SS —
SANITARY SEWER MANHOLE	⊙
UNDERGROUND POWER LINE	— UGE —
UNDERGROUND TELEPHONE/DATA LINE	— UGT —
OVERHEAD ELECTRIC LINE	— OHE —
NATURAL GAS LINE	— GAS —
LIGHT POLE	☀
POWER POLE	○
FIRE HYDRANT	⊕
WATER VALVE	⊕
INDEX CONTOURS	— 40 —
1' INTERVALS	— 41 —
SPOT ELEVATION	× 41.58
STORM SEWER	---
CATCH BASIN	■

DEMOLITION NOTES:

- WORK INCLUDED BUT NOT LIMITED TO:**
- DEMOLITION, ABANDONMENT OR REMOVAL FROM SITE OF ALL EXISTING BUILDINGS, STRUCTURES, FOUNDATIONS, CONCRETE, ASPHALT, TREES, LANDSCAPING, AND UTILITIES ABOVE AND BELOW GROUND AT THE SITE EXCEPT WHERE SPECIFIED TO REMAIN. IF PILE FOUNDATIONS ARE FOUND, CONSULT GEOTECHNICAL ENGINEER FOR RECOMMENDATION.
 - ADJUSTMENT, RELOCATION, EXTENSION AND/OR TERMINATION OF ALL UTILITIES AS REQUIRED BY LOCAL UTILITY, CITY, COUNTY, AND STATE AS WELL AS REQUIRED BY PLANS AND SPECIFICATIONS.
 - REMOVAL OF ASPHALT PAVING IN APPLICABLE AREAS AND PROPER DISPOSAL OFFSITE.
- EXISTING CONDITIONS:**
- AN ATTEMPT HAS BEEN MADE TO SHOW ALL UTILITIES KNOWN TO EXIST IN THEIR APPROXIMATE LOCATION. THE SITE CONTRACTOR WILL BE RESPONSIBLE TO DETERMINE THE EXACT LOCATION, NATURE AND STATUS OF ALL UTILITY LINES WHETHER SHOWN ON PLANS OR NOT BEFORE REMOVING, ADJUSTING, ALTERING, EXTENDING, OR RELOCATING AND SHALL MAKE ALL NECESSARY CAPS, PLUGS, AND TERMINATIONS AS REQUIRED BY THE UTILITY OWNER AND/OR GOVERNING AUTHORITIES TO RETURN SAID UTILITY TO COMPLETE OPERATION AT NO ADDITIONAL COST TO OWNER. ANY UTILITY WHICH IS DAMAGED DUE TO DEMOLITION SHALL BE REPAIRED AND/OR REPLACED AT NO ADDITIONAL COST TO THE OWNER BY THE SITE/DEMOLITION CONTRACTOR.
 - THE SITE/DEMOLITION CONTRACTOR SHALL VERIFY THE EXISTENCE OR NON-EXISTENCE OF SEPTIC TANKS, WELLS, CISTERNS, BASEMENTS, OR CELLARS ON THE SITE. THE EXISTENCE OF ANY OF THE ABOVE ITEMS SHOWN OR NOT ON THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY. THE ABOVE SHALL BE DEMOLISHED AND THE AREA FILLED AND COMPACTED AS SPECIFIED AT NO ADDITIONAL COSTS. ALL DEMOLITION AND/OR CAPPING OF UTILITIES, WELLS, ETC., SHALL BE IN ACCORDANCE WITH LOCAL UTILITY, CITY, COUNTY, AND STATE REGULATIONS.
 - THE SITE/DEMOLITION CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID TO SATISFY HIMSELF AS TO THE EXISTING CONDITIONS AND WORK TO BE DONE.
- PREPARATION:**
- ESTABLISH IMPROVEMENT TO BE REMOVED AND COORDINATE WORK WITH LOCAL AUTHORITIES, OCCUPANT, AND GENERAL CONTRACTOR.
 - MAINTAIN BENCHMARKS, MONUMENTS, AND OTHER REFERENCE POINTS. RE-ESTABLISH IF DISTURBED OR DESTROYED, AT NO COST TO OWNER.
 - BEFORE START OF DEMOLITION, ESTABLISH THE LOCATION AND EXTENT OF UTILITIES IN THE WORK AREAS. IF APPLICABLE, NOTIFY UTILITIES TO REMOVE AND/OR RELOCATE LINES WHICH WILL BE AFFECTED BY DEMOLITION AND OBTAIN APPROVAL OF ALL APPLICABLE AUTHORITIES TO PERFORM WORK AND/OR PAY ALL COSTS FOR AUTHORITIES TO PERFORM WORK.
 - MAINTAIN, PROTECT, REROUTE OR EXTEND AS REQUIRED, EXISTING UTILITIES TO REMAIN IN SERVICE WHICH PASS THROUGH THE WORK AREA.

EXISTING CONDITIONS SHOWN ARE BASED ON A SURVEY BY OTHERS. REFER TO THE SURVEY FOR ADDITIONAL INFORMATION.

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THE HUTTON COMPANY
736 CHERRY STREET
CHATTANOOGA, TN 37402

Panera Bread
3506 OLEANDER DR
WILMINGTON, NC

Professional Engineer Seal for Christopher M. Berry, State of North Carolina, License No. 39998, dated 12/20/12.

REVISIONS		
1	BULLETIN #1	10/22/13
2	BULLETIN #2	11/12/13
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SHEET NAME:
EXISTING CONDITIONS PLAN

DATE: 08/29/2013

DRAWN BY: BMB

CHECKED BY: CMB

PROJECT NO.: 13015

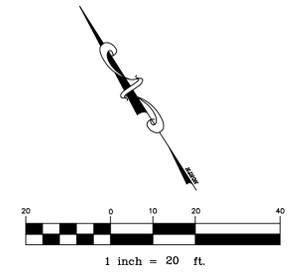
SHEET NUMBER:
C-01

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

Date: _____ Permit # _____
Signed: _____

Approved Construction Plan

Name	Date
Planning	_____
Traffic	_____
Fire	_____



OLEANDER DRIVE

INDEPENDENCE BLVD.

PARKING AND PAVING NOTES

- ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODES, REGULATIONS, AND/OR LOCAL STANDARDS IMPOSED BY LOCAL UTILITY, CITY, COUNTY, AND STATE. IT IS THE CONTRACTOR'S RESPONSIBILITY THAT ALL THE CONSTRUCTION BE IN ACCORDANCE WITH THE CITY OF WILMINGTON AND NCDOT STANDARD DETAILS AND SPECIFICATIONS.
- CONTRACTOR SHALL COMPLY WITH ALL PERTINENT PROVISIONS OF THE "MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION" ISSUED BY AGC OF AMERICA, INC. AND THE SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION ISSUED BY THE U.S. DEPARTMENT OF LABOR.
- CONTRACTOR SHALL PROVIDE ALL NECESSARY BARRICADES, SUFFICIENT LIGHTS, SIGNS AND OTHER TRAFFIC CONTROL METHODS AS MAY BE NECESSARY FOR THE PROTECTION AND SAFETY OF THE PUBLIC AND SHALL BE PROVIDED AND MAINTAINED THROUGHOUT ALL CONSTRUCTION ADJACENT TO AND WITHIN ALL ROADWAYS. CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLAN TO CITY AND STATE FOR APPROVAL.
- THE CONTRACTOR SHALL TAKE NECESSARY MEASURES TO SEPARATE WORK AREAS FROM PEDESTRIAN TRAFFIC AND TO INSURE SAFE PEDESTRIAN PASSAGE AT ALL TIMES.
- ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. A MINIMUM CLEARANCE OF 2.5 FEET SHALL BE MAINTAINED BETWEEN THE FACE OF CURB AND ANY PART OF A TRAFFIC SIGN OR LIGHT POLE. CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES WITH OTHER CONTRACTORS ON SIGNS OR LIGHT POLES.
- CONTRACTOR SHALL FURNISH AND INSTALL ALL PAVEMENT MARKINGS AS SHOWN. ALL PAVEMENT MARKINGS SHALL BE FOUR (4") WIDE SOLID WHITE UNLESS INDICATED OTHERWISE ON THE DRAWINGS. PAINT SHALL BE APPLIED IN TWO COATS FOR A MINIMUM DRY FILM THICKNESS OF 15 MIL. THERMOPLASTIC STRIPING, IF REQUIRED, SHALL BE SPRAY TYPE, APPLIED IN ACCORDANCE WITH DOT STANDARDS. CONTRACTOR SHALL RE-STRIP ALL PAVEMENT MARKINGS SIX MONTHS AFTER GRADING.
- CONTRACTOR SHALL SAW-CUT TO PROVIDE SMOOTH TRANSITIONS AT TIE-INS TO EXISTING EDGES OF PAVEMENT AND AT COLD JOINTS OF RECENTLY PAVED ASPHALT.
- JOINTS OR SCORE MARKS ARE TO BE SHARP AND CLEAN WITHOUT SHOWING EDGES OF JOINTING TOOL.
- CONTRACTOR SHALL SAW-CUT TIE-INS AT EXISTING CURBS AS NECESSARY TO ENSURE SMOOTH TRANSITIONS. CONTRACTOR SHALL SAW-CUT AND TRANSITION TO MEET EXISTING PAVEMENT AS NECESSARY AND AS DIRECTED BY INSPECTOR TO INSURE POSITIVE DRAINAGE. (TYPICAL @ ALL INTERSECTIONS)
- PAVING CONTRACTOR SHALL INSTALL PAPER BREAKAWAY EDGES AT COLD JOINTS OR SAWCUT AS REQUIRED TO INSURE A STRAIGHT, FULL-DEPTH JOINT FACE IMMEDIATELY PRIOR TO INSTALLING ABUTTING HOT ASPHALT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COST OF PAVEMENT REPLACEMENT WHERE UTILITY LINES ARE EXTENDED ACROSS EXISTING ASPHALT.
- ASPHALT SURFACE COURSE SHALL BE LAID WITH THE DIRECTION OF TRAFFIC IN ALL DRIVE LINES WITHIN PARKING FIELDS.
- BASE AND ASPHALT THICKNESSES ARE MINIMUM REQUIRED. REFER TO SPECIFICATIONS FOR TYPE OF PAVING AND BASE TO BE USED.
- ALL CONCRETE SHALL BE CLASS A 4000 P.S.I. UNLESS NOTED OTHERWISE. DO NOT POUR ANY CONCRETE BEFORE FORMS ARE INSPECTED AND APPROVED BY THE INSPECTOR.
- ALL RAMPS CONSTRUCTED ARE NOT TO EXCEED A SLOPE OF 1:12. ALL SIDEWALKS SHALL NOT HAVE A CROSS-SLOPE GREATER THAN 1:50.
- CONCRETE DUMPSTER PADS TO BE FLUSH WITH PAVEMENT UNLESS INDICATED OTHERWISE. SEE SHEET C-06 FOR ADDITIONAL DETAILS ON STRIPING, SIGNS, ETC.

SITE DATA

PROJECT DESCRIPTION: NEW CONSTRUCTION OF PANERA BREAD OLEANDER
LOCATION: 3506 OLEANDER DRIVE, WILMINGTON N.C.
TAX ID: TAX PARCEL NO. 00517-008-009-002
PROPERTY OWNER: HUTTON GROWTH ONE, LLC
ZONING OF PARCEL: RB (REGIONAL BUSINESS)
CAMA LAND USE CLASSIFICATION: URBAN

ZONING OF ADJACENT PROPERTIES: RB (REGIONAL BUSINESS)
OWNER OF ADJACENT PROPERTIES: THE OLEANDER COMPANY
LAND USE OF ADJACENT PROPERTIES: TB BANK & RESTAURANT-STARBUCKS
ZONING OF ACROSS STREET PROPERTY: RB (REGIONAL BUSINESS)
OWNER OF ACROSS STREET PROPERTY: THE OLEANDER COMPANY
LAND USE OF ACROSS STREET PROPERTY: RESTAURANT-CHICK FILLET

FLOOD ZONE: ZONE X, AS SHOWN ON FEMA MAP NO. 3720313700J, DATED APRIL 3, 2006.

SITE AREA: 1.33 ACRES
DISTURBED AREA: 0.99 ACRES

LOT COVERAGE
 BUILDING AREA: 4,750 SF (8% COVERAGE)
 NEW PARKING: 21,000 SF
 SIDEWALKS: 3,350 SF
 EXISTING PARKING: 11,360 SF
 TOTAL IMPERVIOUS AREA: 40,460 SF (70% COVERAGE)

EXISTING IMPERVIOUS AREA: 47,960 SF

BUILDING SETBACKS:	REQUIRED	PROVIDED
FRONT (NORTH)	25'	63.2'
REAR (SOUTH)	15'	33.8'
SIDE (WEST)	0'	149.5'
SIDE (EAST)	0'	25.5'

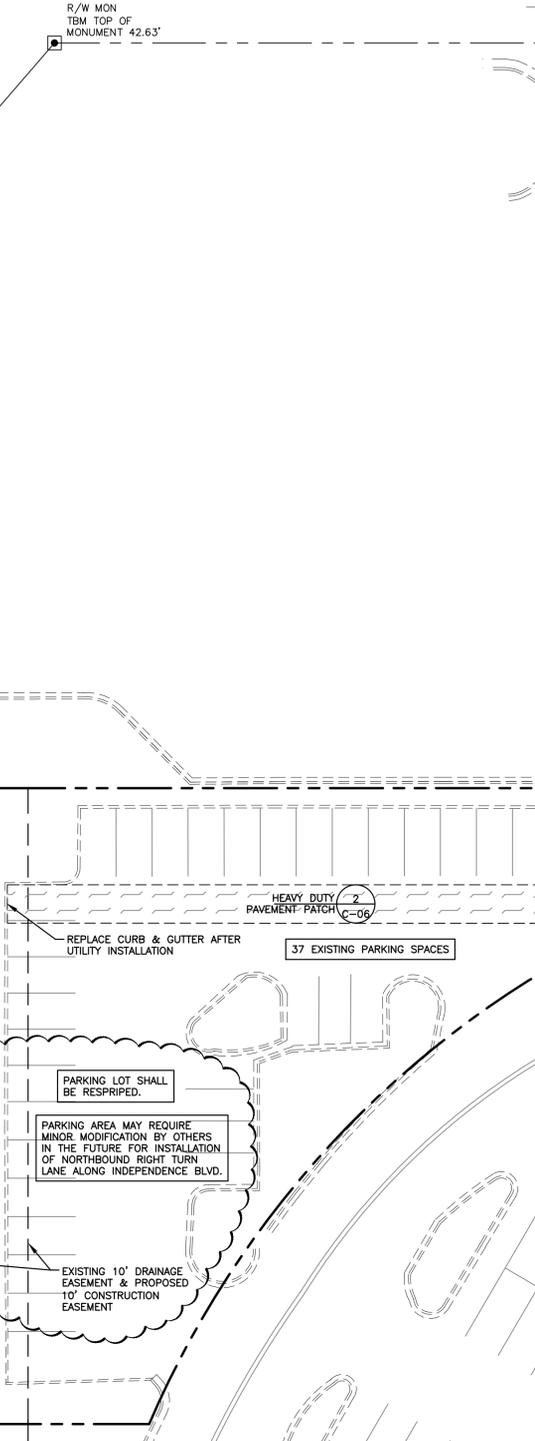
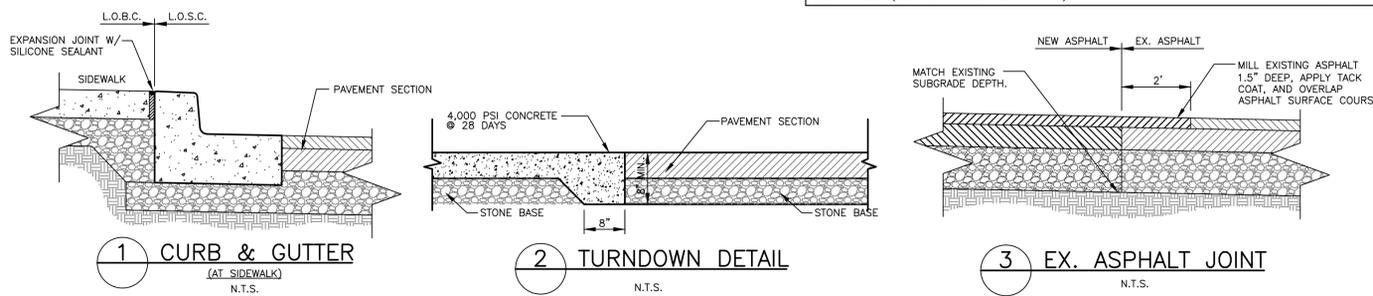
BUILDING HEIGHT: 21'-3"
PARKING SUMMARY:
 STANDARD: 38
 ACCESSIBLE: 2
 TOTAL: 40
 BIKE PARKING: 2
 *159 SEATS x 1 SPACE PER 4 SEATS = 40 SPACES

OLEANDER BUFFER CALCULATIONS
 REQUIRED BUFFER AREA = 6042 SF (25' AVERAGE)
 PROVIDED BUFFER AREA = 6078 SF (12.5' MIN., 37.5' MAX)

FOUNDATION PLANTINGS
 REQUIRED AREA = 70'x16'x0.12 = 135 SF
 (12% OF WESTERN BUILDING WALL)
 PROVIDED AREA = 460 SF (ALONG WESTERN ELEVATION)

WATER & SEWER CAPACITY:	CURRENT	PROPOSED
WATER	0 GPD	6360 GPD
SEWER	0 GPD	6360 GPD

PARKING & PAVING LEGEND	
PROPERTY LINE	---
CONCRETE CURB & GUTTER (C & G)	=====
EXISTING CURB & GUTTER	=====
DIRECTIONAL ARROW, PAINTED WHITE	→
TRAFFIC SIGN	○
LANDSCAPE AREA/ SODDED AREAS (SEE LANDSCAPE PLANS)	[Pattern]
CONCRETE	[Pattern]
HEAVY DUTY PAVEMENT	[Pattern]
WHITE STOP LINE (WSL) (24" WIDE)	—
STRIPING:	
SINGLE SOLID WHITE (SSW)	—
DOUBLE SOLID YELLOW (DSY)	—
LIGHT POLE (SEE SITE ELECTRICAL PLANS)	□



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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 3555 KEITH ST NW, SUITE 109
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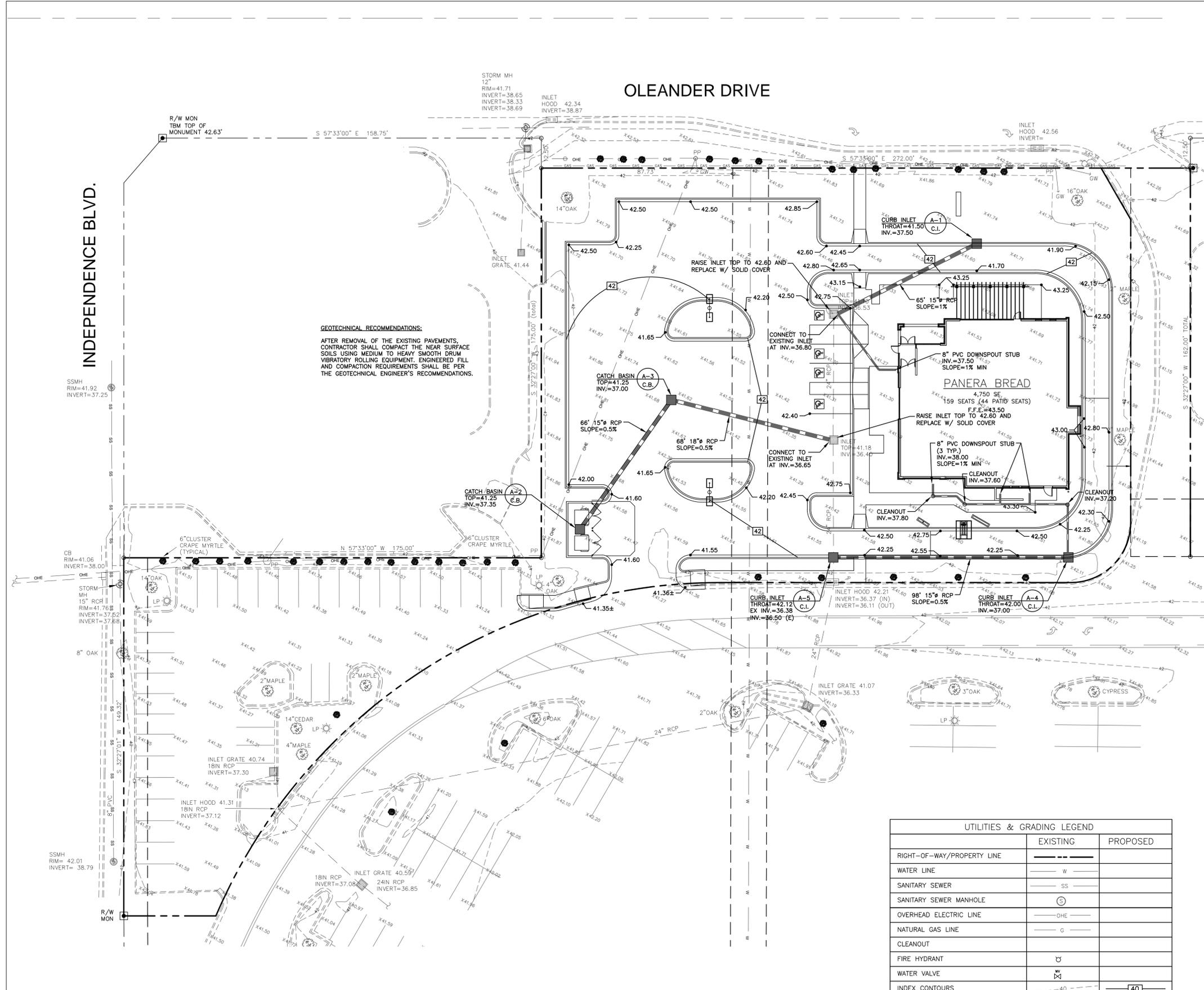
Panera BREAD
 PROJECT:
 3506 OLEANDER DR
 WILMINGTON, NC

NORTH CAROLINA
 39998
 12/21/2012
 CLOPPER M. BERRY

REVISIONS		
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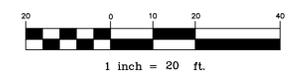
SHEET NAME:
SITE LAYOUT & PAVING PLAN

DATE: 08/29/2013
 DRAWN BY: BMB
 CHECKED BY: CMB
 PROJECT NO.: 13015
 SHEET NUMBER:
C-02



- ### SITE GRADING NOTES
- BOUNDARY AND TOPOGRAPHIC INFORMATION WAS TAKEN FROM A SURVEY DATED 07/09/2013 BY: HANOVER DESIGN SERVICES TEL: 910-343-8002
 - EXISTING SOIL INFORMATION IS AVAILABLE FROM: TERRACON TEL: 919-873-2211
 - SOIL REPORT DATED 08/30/2013
 - CONTRACTOR SHALL FOLLOW ALL RECOMMENDATIONS MADE IN THIS REPORT UNLESS OTHERWISE NOTED.
 - NEW FINISHED CONTOURS SHOWN ARE TOP OF FUTURE PAVING IN AREAS TO RECEIVE PAVEMENT AND TOP OF TOPSOIL IN PLANTING AREAS.
 - ROUGH GRADE ELEVATIONS SHALL BE AS FOLLOWS:
 - BELOW FINISHED CONTOURS IN GRASS AREAS.
 - BELOW FINISHED CONTOURS IN CONCRETE PAVED AREAS.
 - BELOW FINISHED CONTOURS IN CONCRETE DUMPSTER AREAS.
 - BELOW FLOOR ELEVATIONS WITHIN THE BUILDING AND SIDEWALK AREAS, UNLESS OTHERWISE NOTED.
 - 12.5' BELOW FINISHED CONTOURS IN HEAVY DUTY ASPHALT AREAS
 - 9.5' BELOW FINISHED CONTOURS IN STANDARD DUTY ASPHALT AREAS
 - RCP STORM DRAIN PIPE IS CLASS III REINFORCED CONCRETE CONFORMING TO ASTM C-76. PVC STORM DRAIN PIPE IS SDR35. HDPE STORM DRAIN PIPE IS ADS N-12 1/2 WT.
 - DIMENSIONS ON BUILDINGS ARE FOR GRADING PURPOSES ONLY AND ARE NOT TO BE USED TO LAY-OUT FOOTINGS. REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION INFORMATION.
 - GRADING CONTRACTOR SHALL NOTIFY AND COOPERATE WITH ALL UTILITY COMPANIES OR FIRMS HAVING FACILITIES ON OR ADJACENT TO THE SITE BEFORE DISTURBING, ALTERING, REMOVING, RELOCATING, ADJUSTING OR CONNECTING TO SAID FACILITIES. CONTRACTOR SHALL PAY ALL COSTS IN CONNECTION WITH THE ALTERATION OF OR RELOCATION OF THE FACILITIES. CONTRACTORS SHALL RAISE OR LOWER TOPS OF EXISTING MANHOLES TO REMAIN AS REQUIRED TO MATCH FINISHED GRADES.
 - GRADING CONTRACTOR SHALL COOPERATE AND WORK WITH ALL OTHER CONTRACTORS PERFORMING WORK ON THIS PROJECT TO INSURE PROPER AND TIMELY COMPLETION OF THIS PROJECT.
 - THE GRADING CONTRACTOR SHALL USE WHATEVER MEASURES ARE REQUIRED TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES. CONTRACTOR SHALL COMPLY WITH ALL LOCAL EROSION, CONSERVATION, AND SILTATION ORDINANCES. CONTRACTORS SHALL REMOVE ALL TEMPORARY EROSION CONTROL STRUCTURES UPON COMPLETION OF PERMANENT DRAINAGE FACILITIES AND NOT BEFORE THE ESTABLISHMENT OF A STAND OF GRASS SUFFICIENT TO PREVENT EROSION.
 - FOR ANY WORK ON THE STATE OR CITY RIGHT-OF-WAY, THE GRADING CONTRACTOR SHALL:
 - NOT STORE MATERIAL, EXCESS DIRT, OR EQUIPMENT IN THE RIGHT-OF-WAY IN CASE OF MULTILANE HIGHWAYS. THE PAVEMENT SHALL BE KEPT FREE FROM ANY MUD OR EXCAVATION WASTE FROM TRUCKS OR OTHER EQUIPMENT. ON COMPLETION OF THE WORK, ALL EXCESS MATERIAL SHALL BE REMOVED FROM THE RIGHT-OF-WAY.
 - PROVIDE ALL NECESSARY AND ADEQUATE SAFETY PRECAUTIONS SUCH AS SIGNS, FLAGS, LIGHT BARRICADES, AND FLAGMEN AS REQUIRED BY THE LOCAL AUTHORITIES AND IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. THE GRADING CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND HOLD HARMLESS THE CITY, STATE, ARCHITECT, ENGINEER, AND OWNER FOR ANY CLAIMS FOR DAMAGE DONE TO EXISTING PRIVATE PROPERTY, PUBLIC UTILITIES, OR TO THE TRAVELING PUBLIC.
 - COMPLETE WORK TO THE SATISFACTION OF THE CITY PUBLIC WORKS DEPARTMENT AND OBTAIN A LETTER FROM THE DEPARTMENT STATING THAT THE WORK IS ACCEPTABLE.
 - A QUALIFIED SOILS LABORATORY SHALL BE ON-SITE DURING EXCAVATING TO DETERMINE THE SUITABILITY OF THE EXISTING SUB-GRADE AND EXISTING ON-SITE MATERIAL PRIOR TO BEGINNING ANY FILLING OPERATION.
 - GRADING CONTRACTOR SHALL TAKE ALL AVAILABLE PRECAUTIONS TO CONTROL DUST. CONTRACTOR SHALL CONTROL DUST BY SPRINKLING, OR BY OTHER METHODS AS DIRECTED BY ENGINEER AND/OR OWNER'S REPRESENTATIVE, AT NO ADDITIONAL COST TO OWNER.
 - SITE GRADING CONTRACTOR SHALL TERMINATE ALL STORM DRAIN PIPES FIVE FEET MAXIMUM FROM BUILDING UNLESS OTHERWISE NOTED.
 - STORM SEWER LEAD-INS TO BUILDING SHALL NOT BE INSTALLED UNTIL BUILDING PLANS ARE COMPLETED AND LOCATIONS ESTABLISHED ON THE ARCHITECTURAL PLANS. LEAD-INS MAY CHANGE 15' HORIZONTALLY AND 3' VERTICALLY PRIOR TO INSTALLATION AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL REQUEST AND RECEIVE WRITTEN APPROVAL FROM PRIME CONTRACTOR PRIOR TO INSTALLATION OF LEAD-INS. CONTRACTOR SHALL COORDINATE LOCATIONS, SIZE, AND INVERT ELEVATIONS OF STORM SEWERS WITH APPROVED BUILDING PLUMBING PLANS.
 - ALL EXCAVATING IS UNCLASSIFIED AND SHALL INCLUDE ALL MATERIALS ENCOUNTERED.
 - BEFORE ANY MACHINE WORK IS DONE, CONTRACTOR SHALL STAKE OUT AND MARK THE ITEMS ESTABLISHED BY THE SITE PLAN. CONTROL POINTS SHALL BE PRESERVED AT ALL TIMES DURING THE COURSE OF THE PROJECT. LACK OF PROPER WORKING POINTS AND GRADE STAKES MAY REQUIRE CESSATION OF OPERATIONS UNTIL SUCH POINTS AND GRADES HAVE BEEN PLACED TO THE OWNER'S SATISFACTION. OWNER MUST APPROVE STAKED ITEMS PRIOR TO CONSTRUCTION.
 - TEMPORARY EROSION CONTROL DEVICES TO BE INSTALLED PRIOR TO BEGINNING OF GRADING. CONTRACTOR SHALL MAINTAIN ALL TEMPORARY EROSION CONTROL DEVICES AND SHALL REMOVE SILT FROM BERM DITCHES, SILT DAMS, AND SILT FENCES AS NEEDED. INSPECT DEVICES WITH GENERAL CONTRACTOR AT LEAST ONCE A WEEK.
 - CONTRACTOR TO COORDINATE ALL WORK WITH OTHER UTILITY INSTALLATIONS NOT COVERED IN THESE PLANS, (ELECTRIC, TELEPHONE, GAS, CABLE, ETC.) AND ALLOW FOR THEIR OPERATIONS & CONSTRUCTION TO BE PERFORMED.
 - CUT AND FILL SLOPES ARE NOT TO EXCEED 3:1 UNLESS OTHERWISE NOTED.
 - IN NO CASE SHALL ANY PAVED AREAS BE LESS THAN A SLOPE OF 1.25%. ALL ACCESSIBLE SIDEWALKS AND AISLE SLOPES NOT TO EXCEED 2% CROSS-SLOPE.
 - CONTRACTOR SHALL REPAIR OR REPLACE IN-KIND ANY DAMAGE THAT OCCURS AS RESULT OF HIS WORK.
 - ALL LINEAR FOOTAGE FOR ALL UTILITY PIPES ARE APPROXIMATE, ACTUAL INSTALLED QUANTITIES MAY VARY.
 - GRADING CONTRACTOR SHALL RESTORE TO GRADE AND COMPACTION ALL AREAS DISTURBED BY BUILDING CONSTRUCTION PRIOR TO BASE AND PAVING OPERATIONS COMMENCING.

UTILITIES & GRADING LEGEND		
	EXISTING	PROPOSED
RIGHT-OF-WAY/PROPERTY LINE	---	---
WATER LINE	— W —	— W —
SANITARY SEWER	— SS —	— SS —
SANITARY SEWER MANHOLE	⊙	⊙
OVERHEAD ELECTRIC LINE	— OHE —	— OHE —
NATURAL GAS LINE	— G —	— G —
CLEANOUT	—	—
FIRE HYDRANT	⊕	⊕
WATER VALVE	⊕	⊕
INDEX CONTOURS	— 40 —	— 40 —
1' INTERVALS	— 41 —	— 41 —
SPOT ELEVATION	x 41.58	● 41.58
STORM SEWER	---	---
CATCH BASIN	■	■
LIGHT POLE (SEE SITE ELECTRICAL PLANS)	⊕	⊕



BERRY ENGINEERS LLC

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CLEVELAND, TN 37312
TEL: (423) 790-5880
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THE HUTTON COMPANY
736 CHERRY STREET
CHATTANOOGA, TN 37402

Panera BREAD

3506 OLEANDER DR
WILMINGTON, NC



REVISIONS		
1	BULLETIN #1	10/22/13
2		
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SHEET NAME:
SITE GRADING & DRAINAGE PLAN

DATE: 08/29/2013

DRAWN BY: BMB

CHECKED BY: CMB

PROJECT NO.: 13015

SHEET NUMBER:
C-03

CITY OF WILMINGTON
NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____

Approved Construction Plan

Name	Date
Planning	_____
Traffic	_____
Fire	_____

SOILS DATA		
MAP UNIT SYMBOL	MAP UNIT NAME	PERCENT OF SITE
Mu	MURVILLE FINE SAND	100%

CONTACT PERSON RESPONSIBLE FOR MAINTENANCE:
BOB ELLIOTT - HUTTON CONSTRUCTION
423-643-9231 (OFFICE)
386-481-4962 (CELL)

INDEPENDENCE BLVD.

R/W MON
TBM TOP OF
MONUMENT 42.63'

STABILIZATION TABLE

SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	EXEMPTIONS
Perimeter dikes, swales, ditches, & slopes	7 days	none
High Quality Water Zones (HQW)	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 feet in length
All other areas with slopes flatter than 4:1	14 days	none (except for perimeters and HQW zones)

**Extensions of time may be approved by the permitting authority based on weather or other site-specific conditions that make compliance impracticable.

OLEANDER DRIVE

PANERA BREAD
4,750 SE
59 SEATS (44 PATIO SEATS)
F.F.E. #4.50

EROSION CONTROL NOTES

- NO TREES ARE TO BE REMOVED AND/OR VEGETATION DISTURBED EXCEPT AS NECESSARY FOR GRADING PURPOSES.
- TOPSOIL IS TO BE STRIPPED FROM ALL CUT AND FILL AREAS, STOCKPILED, AND REDISTRIBUTED OVER ALL GRADED AREAS TO A MINIMUM OF 4". ALL AREAS NOT COVERED BY BUILDINGS OR PAVING TO RECEIVE TOPSOIL.
- ALL GRADED AREAS INCLUDING SLOPES ARE TO BE STABILIZED WITHIN 14 DAYS AFTER GRADING IS COMPLETED. COORDINATE WITH LANDSCAPING DRAWINGS AS TO TYPE OF PERMANENT GROUND COVER TO BE USED. AT A MINIMUM, ALL DISTURBED AREAS ARE TO BE SEEDED AND MULCHED.
- CUT AND FILL SLOPES ARE NOT TO EXCEED 2.5:1 UNLESS OTHERWISE NOTED.
- CONSTRUCT EROSION CONTROL DEVICES AS SHOWN AND WHERE DESIGNATED BY THE ENGINEER.
- ALL NEW STRUCTURES AND EXISTING STRUCTURES SHALL HAVE ALL SEDIMENT CONTROL DEVICES SHALL BE SUBJECT TO ADJUSTMENT AS NECESSARY TO BE EFFECTIVE.
- WHEN THE TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL DEVICES ARE NO LONGER REQUIRED FOR THE INTENDED PURPOSE THEY SHALL BE REMOVED, OR AS DIRECTED.
- SILT FENCES ARE TO BE REPLACED WHEN EFFECTIVENESS IS SIGNIFICANTLY REDUCED, OR AS DIRECTED.
- EROSION CONTROL MEASURES SHALL MEET OR EXCEED MINIMUM CRITERIA, STANDARDS AND SPECIFICATIONS SET BY THE CITY OF WILMINGTON AND NCDENR.
- CONTRACTOR SHALL ENSURE THAT ANY EROSION CONTROL MEASURES DO NOT CAUSE WATER TO ENTER ONTO ROADWAY.
- CONTRACTOR IS RESPONSIBLE TO PERFORM ALL REQUIRED INSPECTIONS AND TO SUBMIT ALL REQUIRED DOCUMENTATION TO THE LOCAL AUTHORITY.
- TOPSOIL MATERIAL AND SEEDING
 - STOCKPILED TOPSOIL MATERIAL HAS BEEN SAVED FOR USE IN FINISH GRADING. AFTER SIFTING OUT ALL PLANT GROWTH, RUBBISH, AND STONES, USE FOR AREAS DESIGNATED TO RECEIVE GRASS. IF STOCKPILED TOPSOIL IS NOT SUFFICIENT QUANTITY TO COMPLETE WORK, FURNISH ACCEPTABLE TOPSOIL FOR GRASS AREAS UNLESS NOTED OTHERWISE ON THE DRAWINGS. GRASS AREAS SHALL BE DEFINED AS THAT GRADED AREA DISTURBED DURING CONSTRUCTION NOT TO BE PAVED OR BUILT UPON.
 - ACCEPTABLE TOPSOIL MATERIAL SHALL BE DEFINED AS NATURAL FERTILE, AGRICULTURAL SOIL, CAPABLE FOR SUSTAINING VIGOROUS PLANT GROWTH, UNIFORM COMPOSITION THROUGHOUT, WITHOUT ADMIXTURE OF SUBSOIL, FREE OF STONES, LUMPS, PLANTS AND THEIR ROOTS, STICKS, OR OTHER EXTRANEOUS MATTER; DO NOT DELIVER WHILE IN A FROZEN OR MUDDY CONDITION.
 - GRASS SEED SHALL BE OF THE PREVIOUS SEASON'S CROP AND THE DATE OF ANALYSIS SHOWN ON EACH BAG FOR TESTING. GRADING CONTRACTOR SHALL HIRE A QUALIFIED LANDSCAPE CONTRACTOR TO PREP FOR AND PERFORM ALL PERMANENT SEEDING.
 - THE SEED SHALL COMPLY WITH ALL PROVISIONS OF THE U.S. DEPARTMENT OF AGRICULTURE AS TO LABELING, PURITY, AND GERMINATION.
 - PERMANENT STAND OF GRASS SHALL BE ESTABLISHED 30 DAYS PRIOR TO GRASS OPENING. ALL WATERING, MAINTENANCE, MOWING, ETC. SHALL BE PERFORMED BY THE SITE CONTRACTOR WITH ACCEPTANCE BY OWNER.

GENERAL PERMIT NOTES

- EROSION CONTROL MEASURES SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS LISTED IN THE NCDENR CONSTRUCTION GENERAL PERMIT NCG010000.
- TOPSOIL STOCKPILES AND DEDICATED AREAS FOR DEMOLITION, CONSTRUCTION AND OTHER WASTES MUST BE LOCED 50' FROM STORM DRAINS AND STREAMS. NO PAINT OR LIQUID WASTES SHALL ENTER STREAMS OR STORM DRAINS. CONCRETE MATERIALS MUST BE CONTROLLED TO AVOID CONTACT WITH SURFACE WATERS, WETLANDS, OR BUFFERS.
- EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.50 INCHES. A RAIN GAUGE SHALL BE MAINTAINED ON SITE AND A WRITTEN RECORD OF DAILY RAINFALL AMOUNTS SHALL BE RETAINED. INSPECTION REPORTS MUST BE AVAILABLE ON-SITE AND KEPT FOR 3 YEARS FOLLOWING THE COMPLETION OF THE PROJECT.
- USE ONLY DWO-APPROVED FLOCCULATES WHEN NEEDED.
- CONTRACTOR IS RESPONSIBLE FOR PERMITTING ANY OFF-SITE BORROW/WASTE AREAS.

STABILIZATION PRACTICES

- Contractor shall provide temporary and permanent stabilization to all disturbed areas not otherwise covered by buildings or parking area.
- Temporary stabilization is required as soon as possible after final grade is achieved, but no later than 7 days for slope areas and 14 days for all other areas. Temporary stabilization includes mulching and seeding.
- Refer to the landscape plans for final stabilization details around the building and parking area. Permanent groundcover shall be established within 15 working days or 90 calendar days (whichever is shorter) following completion of construction or development.
- The seeded areas will be checked regularly to ensure that a good stand is maintained. Areas should be fertilized and re-seeded as needed.

STABILIZATION TABLES

FOR SLOPES BETWEEN 2:1 AND 3:1

Date	Type	Planting Rate
Mar 1 - June 1	Sericea Lespedeza (scarified)	50 lbs./acre
Mar 1 - Apr 15	Add Tall Fescue	120 lbs./acre
Mar 1 - June 30	Add Hulled Common Bermudagrass	25 lbs./acre
June 1 - Sept 1	***Tall Fescue and ***Browntop Millet or ***Sorghum-Sudan Hybrids	120 lbs./acre 35 lbs./acre 30 lbs./acre
Sept 1 - Mar 1	Sericea Lespedeza (unhulled/unscarified)	70 lbs./acre
Nov 1 - Mar 1	Add Tall Fescue Add Abruzzi Rye	120 lbs./acre 25 lbs./acre

FOR ALL OTHER AREAS

Date	Type	Planting Rate
Aug 15 - Nov 1	Tall Fescue	300 lbs./acre
Nov 1 - Mar 1	Tall Fescue and Abruzzi Rye	300 lbs./acre
Mar 1 - Apr 15	Tall Fescue	300 lbs./acre
Apr 15 - June 30	Hulled Common Bermudagrass	25 lbs./acre
July 15 - Aug 15	Tall Fescue and ***Browntop Millet or ***Sorghum-Sudan Hybrids	35 lbs./acre

***Temporary - Reseed according to optimum season for desired permanent vegetation. Do not allow temporary cover to grow over 12 inches in height before mowing to keep fescue from being shaded out.

Seeding and Mulching shall be done immediately following grading. The top 3 inches shall be pulverized to provide a uniform seedbed. Agricultural lime shall be applied at the rate of 95 lb/1000 sq. ft. immediately before planting. Grass seed shall be applied at the rates outlined in the Stabilization Tables. Reuse of topsoil and/or other measures to assure final soil conditions are conducive to rapid establishment of vegetation cover is required. 5-10-10 fertilizer shall be applied to all disturbed areas at a rate of 21 lb/1000 sq. ft., and mulching shall consist of small grain straw applied at a rate of 70 lb/1000 sq. ft. Mulched areas shall be tacked with asphalt at a rate of 200 to 400 gallons per acre, or other approved method sufficient to hold the straw in place.

ACTIVITY SCHEDULE

ACTIVITY	ACTIVITY (WEEKS)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
EROSION CONTROL MEASURES																								
CLEARING AND GRUBBING																								
ROUGH GRADING																								
TEMPORARY STABILIZATION																								
FINAL GRADING																								
STORM AND UTILITIES																								
PAVING																								
FINAL STABILIZATION																								

ANTICIPATED STARTING DATE: 1-2-14 ANTICIPATED COMPLETION DATE: 8-1-14

EROSION CONTROL LEGEND

	TEMPORARY GRAVEL CONSTRUCTION EXIT
	SILT FENCE (TYPE A, NON-WIRE BACKED)
	SILT FENCE (TYPE C, WIRE BACKED)
	INLET PROTECTION (SILT FENCE)
	CONCRETE TRUCK WASH OUT AREA
	LIMITS OF CLEARING (0.96± ACRES)

Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	

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

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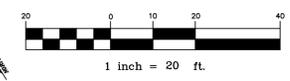
PROJECT:

REVISIONS

#	BULLETIN #2	DATE
1		11/12/13
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SHEET NAME:
EROSION CONTROL PLAN

DATE: 08/29/2013
DRAWN BY: BMB
CHECKED BY: CMB
PROJECT NO.: 13015
SHEET NUMBER:
C-04

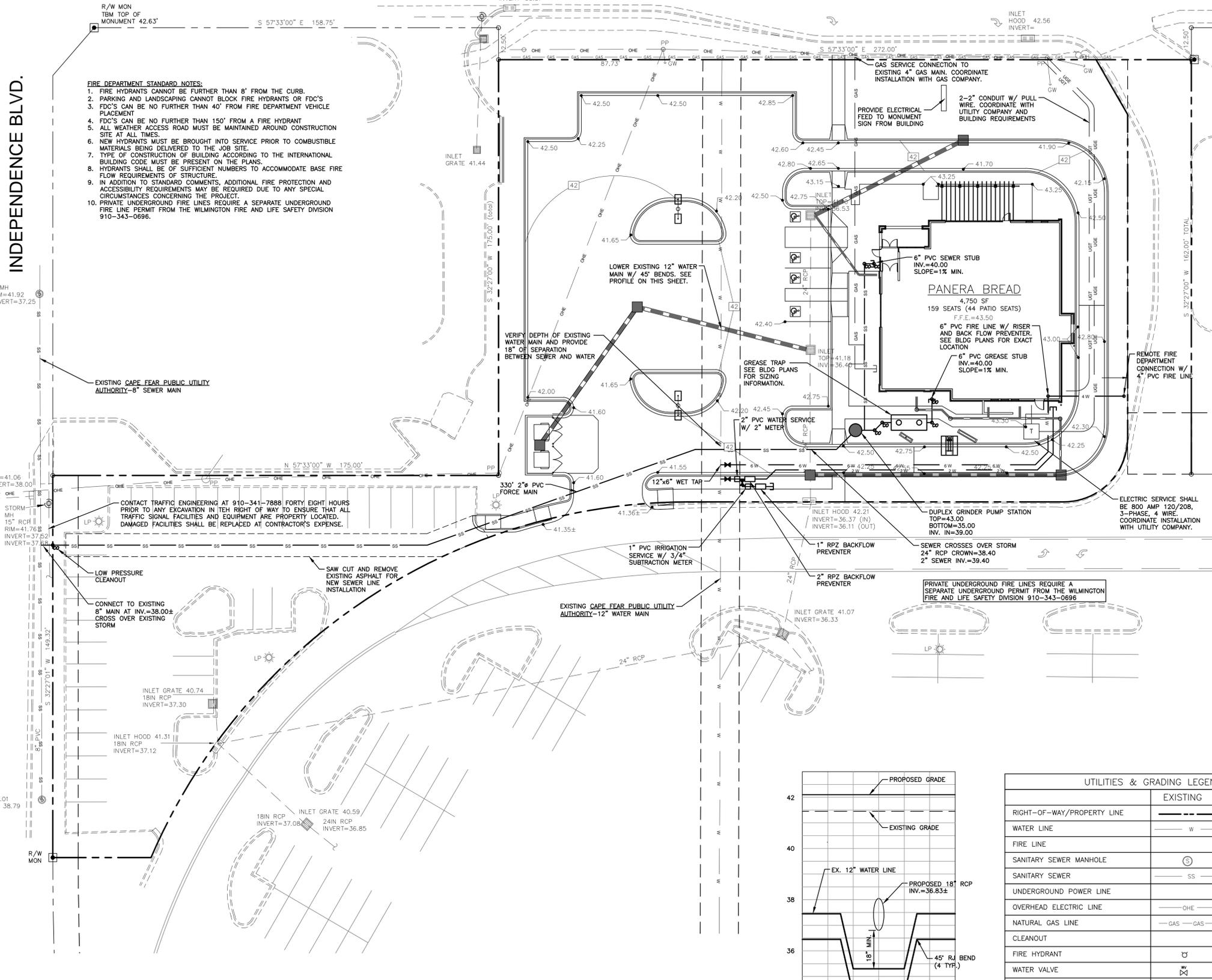


OLEANDER DRIVE

INDEPENDENCE BLVD.

FIRE DEPARTMENT STANDARD NOTES:

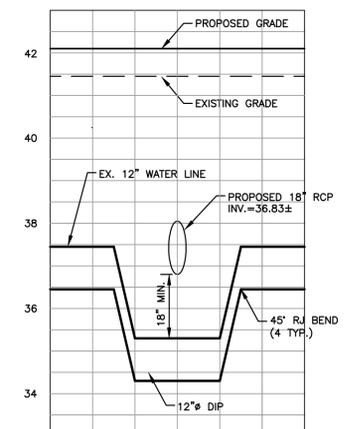
1. FIRE HYDRANTS CANNOT BE FURTHER THAN 8' FROM THE CURB.
2. PARKING AND LANDSCAPING CANNOT BLOCK FIRE HYDRANTS OR FDC'S
3. FDC'S CAN BE NO FURTHER THAN 40' FROM FIRE DEPARTMENT VEHICLE PLACEMENT
4. FDC'S CAN BE NO FURTHER THAN 150' FROM A FIRE HYDRANT
5. ALL WEATHER ACCESS ROAD MUST BE MAINTAINED AROUND CONSTRUCTION SITE AT ALL TIMES.
6. NEW HYDRANTS MUST BE BROUGHT INTO SERVICE PRIOR TO COMBUSTIBLE MATERIALS BEING DELIVERED TO THE JOB SITE.
7. TYPE OF CONSTRUCTION OF BUILDING ACCORDING TO THE INTERNATIONAL BUILDING CODE MUST BE PRESENT ON THE PLANS.
8. HYDRANTS SHALL BE OF SUFFICIENT NUMBERS TO ACCOMMODATE BASE FIRE FLOW REQUIREMENTS OF STRUCTURE.
9. IN ADDITION TO STANDARD COMMENTS, ADDITIONAL FIRE PROTECTION AND ACCESSIBILITY REQUIREMENTS MAY BE REQUIRED DUE TO ANY SPECIAL CIRCUMSTANCES CONCERNING THE PROJECT.
10. PRIVATE UNDERGROUND FIRE LINES REQUIRE A SEPARATE UNDERGROUND FIRE LINE PERMIT FROM THE WILMINGTON FIRE AND LIFE SAFETY DIVISION 910-343-0696.



SITE UTILITY NOTES

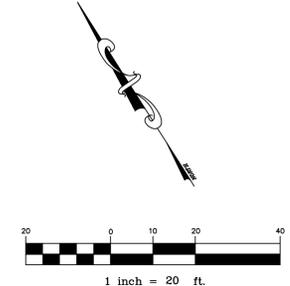
1. THE SITE UTILITY PLAN IS FOR SANITARY SEWER AND WATER LINE CONSTRUCTION ONLY. DO NOT USE FOR GRADING OR STORM SEWER CONSTRUCTION.
2. ALL PIPE LENGTHS ARE HORIZONTAL DISTANCES AND ARE APPROXIMATE.
3. ALL DOMESTIC WATER AND SANITARY SEWER STUBS TO BE TERMINATED 5 FEET OUTSIDE OF THE BUILDING UNLESS OTHERWISE NOTED. THE END OF THESE SERVICE LINES SHALL BE TIGHTLY PLUGGED OR CAPPED AND MARKED UNTIL SUCH TIME AS CONNECTION IS MADE INSIDE BUILDING BY PLUMBING CONTRACTOR. SEE DETAIL SHEET C-8 FOR FIRE LINE RISER DETAIL.
4. SITE UTILITY CONTRACTOR SHALL PROVIDE ALL THE MATERIALS AND APPURTENANCES NECESSARY FOR THE COMPLETE INSTALLATION OF THE UTILITIES. ALL PIPE AND FITTINGS SHALL BE INSPECTED BY THE WATER DEPARTMENT INSPECTOR PRIOR TO BEING COVERED. THE INSPECTOR MUST ALSO BE PRESENT DURING PRESSURE TESTING AND DISINFECTION OF THE LATERALS AND HIS SIGNATURE OF APPROVAL IS REQUIRED.
5. ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODES, REGULATIONS, AND/OR LOCAL STANDARDS IMPOSED BY LOCAL UTILITY, AND THE CITY OF WILMINGTON.
6. THE SITE UTILITY CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE LOCAL UTILITY AUTHORITIES FOR CONNECTION TO THE EXISTING MAINS AND PAY ALL APPLICABLE FEES.
7. ALL WATER LINES SHALL HAVE A MINIMUM COVER OF 36" ABOVE TOP OF PIPE.
8. CONTRACTOR SHALL ADJUST LOCATION OF PROPOSED WATER LINES AS REQUIRED TO AVOID CONFLICTS WITH STORM SEWER OR OTHER UTILITIES AT NO EXTRA COST.
9. BASED ON THE CURRENT EDITION OF THE INTERNATIONAL PLUMBING CODE, CLEANOUTS ARE REQUIRED AT A MAXIMUM SPACING OF 100 FEET ON UTILITY LEAD-INS TO BUILDING. CONTRACTOR TO PROVIDE A CLEANOUT WITHIN 5 FEET OF BUILDING AND AT ALL BENDS.
10. THE SITE UTILITY CONTRACTOR SHALL COOPERATE AND WORK WITH ALL OTHER CONTRACTORS ON THE SITE.
11. ALL MATERIALS SHALL BE U.L. LISTED AND APPROVED BY THE LOCAL UTILITY COMPANY UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
12. THE EXISTING UTILITY FACILITIES AND LOCATIONS SHOWN ON THE DRAWINGS ARE TAKEN FROM READILY AVAILABLE INFORMATION. THE ACTUAL LOCATIONS OF THE UTILITY FACILITIES MAY VARY SOMEWHAT FROM THE LOCATIONS SHOWN OR INDICATED ON THE DRAWINGS. THE SITE UTILITY CONTRACTOR SHALL CONTACT ALL AGENCIES WITH UTILITY FACILITIES IN THE VICINITY OF THE WORK AND SHALL LOCATE ALL UNDERGROUND FACILITIES BEFORE BEGINNING WORK. THE CONTRACTOR SHALL PROTECT ALL UTILITY FACILITIES AND REPAIR ANY DAMAGES RESULTING FROM THEIR WORK, IN CONFORMANCE WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS AND RELOCATE IF REQUIRED.
13. ALL PVC WATER LINES SHALL MEET AWWA C900 SPECIFICATIONS WITH GASKET JOINTS MEETING ASTM F477 AND ASTM D3139. PVC WATER LINES OVER 4" SHALL BE PRESSURE CLASS DR 25 (165 PSI). FIRE LINES TO BUILDINGS SHALL BE PRESSURE CLASS DR 18 (235 PSI). PVC WATER LINES 4" OR LESS SHALL BE SDR-21 OR SDR-26 MEETING ASTM D-2241. POLYETHYLENE (PE) PLASTIC PIPE OR TUBING MAY BE USED FOR 2" OR LESS SERVICE LINES. PE PIPE OR TUBING SHALL MEET AWWA C901 SPECIFICATIONS AND ASTM D2239 OR ASTM D2737.
14. ALL SANITARY SEWER PIPE SHALL BE SDR 35 MEETING ASTM D3034 WITH GASKET TYPE JOINTS MEETING ASTM F477.
15. UTILITY LEAD-INS TO BUILDING SHALL NOT BE INSTALLED UNTIL BUILDING PLANS ARE COMPLETED AND LOCATIONS ESTABLISHED ON THE ARCHITECTURAL PLUMBING PLANS. LEAD-INS MAY CHANGE 15' HORIZONTALLY AND 3' VERTICALLY PRIOR TO INSTALLATIONS AT NO ADDITIONAL COST TO THE OWNER. UTILITY CONTRACTOR SHALL REQUEST AND RECEIVE WRITTEN APPROVAL FROM PRIME CONTRACTOR PRIOR TO INSTALLATION OF LEAD-INS. LOCATION, SIZE, AND INVERT ELEVATIONS OF SANITARY SEWER SHALL BE COORDINATED WITH THE APPROVED PLUMBING PLANS FOR THE BUILDING.
16. BUILDING PLUMBING CONTRACTOR SHALL PAY ALL COST FOR WATER METERS, METER BOXES, VALVES, ETC. TO PROVIDE A COMPLETE JOB PER LOCAL AUTHORITY REQUIREMENTS.
17. THRUST BLOCKS SHALL BE PROVIDED AT ALL TEES, ELBOWS, AND BENDS OF SUFFICIENT SIZE TO COMPLY WITH MINIMUM STANDARDS OF N.F.P.A. - EXISTING SOIL CONDITIONS.
18. SHOULD LATENT SOIL CONDITIONS NECESSITATE, CONTRACTOR SHALL INSTALL SPECIAL SUPPORTS FOR PIPING AND/OR APPURTENANCES INCLUDING THE REMOVAL OF UNSUITABLE MATERIAL AND BACKFILLING WITH GRAVEL OR OTHER MATERIAL. CONTRACTOR SHALL PERFORM ANY SUCH WORK AS DIRECTED BY THE CIVIL ENGINEER AND/OR SOILS ENGINEER AT NO COST TO OWNER.
19. CONTRACTOR TO COORDINATE ALL WORK WITH OTHER UTILITY INSTALLATIONS NOT COVERED IN THESE PLANS (ELECTRIC, TELEPHONE, GAS, CABLE, ETC.) AND ALLOW FOR THEIR OPERATIONS AND CONSTRUCTION TO BE PREPARED.
20. THE SITE UTILITY CONTRACTOR SHALL COORDINATE AND PAY FOR ALL SANITARY SEWER CONNECTIONS. SANITARY SEWER CONNECTION FINAL TIE-IN TO THE EXISTING MANHOLE(S) SHALL NOT BE MADE UNTIL COMPLETION OF THE PROPOSED SYSTEM AND ALL MANHOLES HAVE BEEN BROUGHT ABOVE GROUND TO INSURE SEDIMENT DOES NOT ENTER SYSTEM. LINES SHALL BE PROPERLY CLEANED, IF NEEDED.
21. CONNECTIONS TO EXISTING WATER LINE MAY BE PERFORMED BY THE CAPE FEAR PUBLIC UTILITY AUTHORITY. THE SITE UTILITY CONTRACTOR SHALL VERIFY REQUIREMENTS AND PAY ALL COSTS.
22. SITE UTILITY CONTRACTOR TO COORD. WITH IRRIGATION CONTRACTOR TO PROVIDE POWER IN CONDUIT TO IRRIGATION CONTROLLER PER MANUFACTURERS RECOMMENDATIONS. VERIFY EXACT LOCATION OF CONTROLLER W/ OWNER PRIOR TO INSTALLATION.
23. SEE SHEET C-8 ADDITIONAL UTILITY DETAILS.

NO FIRE CODE FIRE FLOW DATA
 BUILDING CONSTRUCTION TYPE 2B
 REQUIRED FIRE FLOW = 1,500 GPM
 LESS 75% FOR SPRINKLERED BUILDING = N/A
 USE MINIMUM OF 1,500 GPM
 1 HYDRANT REQUIRED PER TABLE C105.1, 1 PROVIDED



WATER MAIN RELOCATION PROFILE

UTILITIES & GRADING LEGEND		
	EXISTING	PROPOSED
RIGHT-OF-WAY/PROPERTY LINE	---	---
WATER LINE	---	6 W
FIRE LINE	---	4 W
SANITARY SEWER MANHOLE	⊙	⊙
SANITARY SEWER	SS	SS
UNDERGROUND POWER LINE	---	UGE
OVERHEAD ELECTRIC LINE	OHE	OHE
NATURAL GAS LINE	GAS	GAS
CLEANOUT	⊕	⊕
FIRE HYDRANT	⊕	⊕
WATER VALVE	⊕	⊕
INDEX CONTOURS	---	40
1' INTERVALS	---	41
SPOT ELEVATION	41.58	41.58
STORM SEWER	---	---
CATCH BASIN	⊕	⊕
LIGHT POLE (SEE SITE ELECTRICAL PLANS)	⊕	⊕



Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____

Approved Construction Plan

Name	Date
Planning	_____
Traffic	_____
Fire	_____

3555 KEITH ST NW, SUITE 109
CLEVELAND, TN 37312
TEL: (423) 790-5880
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THE HUTTON COMPANY
736 CHERRY STREET
CHATTANOOGA, TN 37402

3506 OLEANDER DR
WILMINGTON, NC

REVISIONS

#	BULLETIN #1	DATE
1		10/22/13
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SHEET NAME:
SITE UTILITIES PLAN

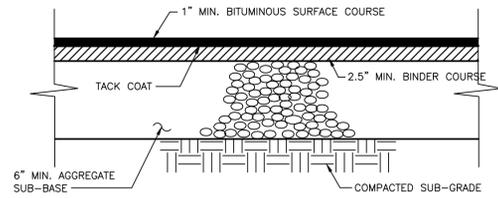
DATE: 08/29/2013

DRAWN BY: BMB

CHECKED BY: CMB

PROJECT NO.: 13015

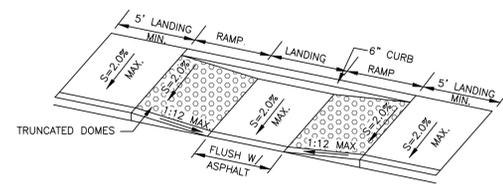
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C-05



STANDARD DUTY PAVEMENT SECTION

ASPHALT CONCRETE AGGREGATES AND BASE COURSE MATERIALS SHOULD CONFORM TO THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES", LATEST EDITION. CRUSHED AGGREGATE BASE SHALL BE NCDOT CABG TYPE 1 OR 2, ASPHALT BINDER SHALL BE NCDOT I-19.0B, & ASPHALT SURFACE SHALL BE S-9.5A.

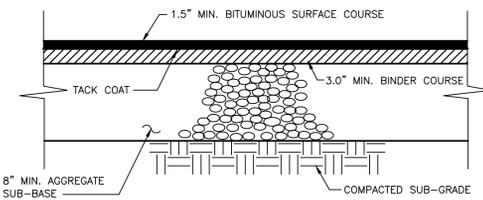
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PARALLEL SIDEWALK RAMP DETAIL

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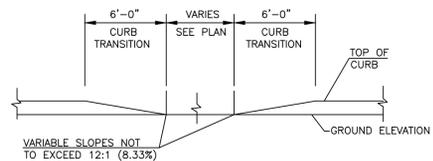
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HEAVY DUTY PAVEMENT SECTION

ASPHALT CONCRETE AGGREGATES AND BASE COURSE MATERIALS SHOULD CONFORM TO THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES", LATEST EDITION. CRUSHED AGGREGATE BASE SHALL BE NCDOT CABG TYPE 1 OR 2, ASPHALT BINDER SHALL BE NCDOT I-19.0B, & ASPHALT SURFACE SHALL BE S-9.5A.

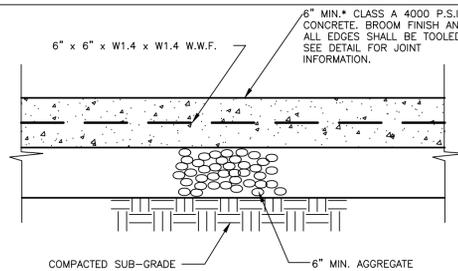
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TAPERED CURB DETAIL

N.T.S.

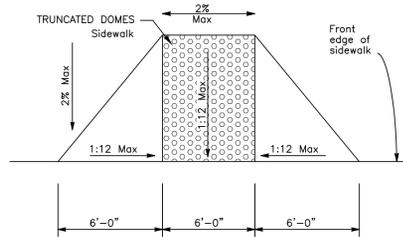
7



CONCRETE PAVEMENT SECTION

*4" CONC. @ ALL SIDEWALKS W/ 4" MIN. AGGREGATE BASE
*7" CONC. @ DUMPSTER W/ 6" MIN. AGGREGATE BASE

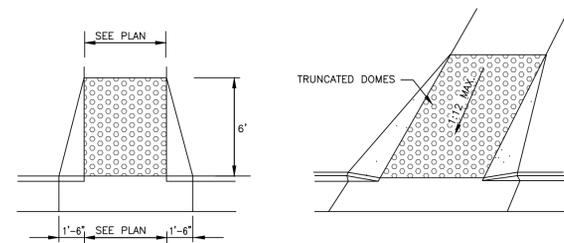
3



CONCRETE FLARED RAMP DETAIL

N.T.S.

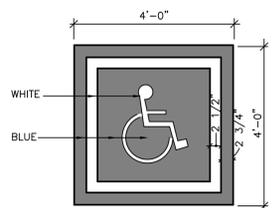
8



CURB RAMP DETAIL

N.T.S.

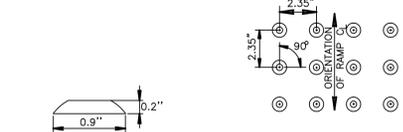
9



PAINTED ACCESSIBLE SYMBOL

N.T.S.

5

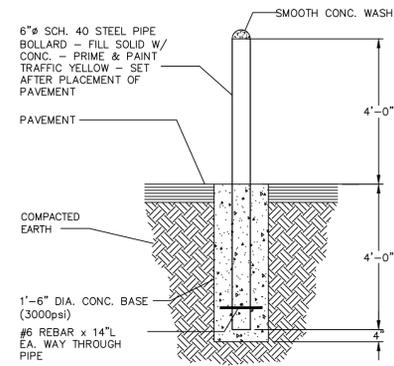


TRUNCATED DOMES DETAIL

N.T.S.

TRUNCATED DOMES MUST EXTEND THE FULL WIDTH AND DEPTH OF THE RAMP. FOR OTHER CONDITIONS, DOMES MUST EXTEND 36" FROM BACK OF CURB IN THE DIRECTION OF TRAVEL. MATERIAL SHALL BE CAST IN PLACE TILES FROM ARMOR-TILE.COM (COLOR-COLONIAL RED). CONCRETE STAMPED PATTERNS WILL NOT BE ACCEPTED. CONTRACTOR SHALL SUBMIT MATERIAL SAMPLES TO THE ARCHITECT BEFORE INSTALLING.

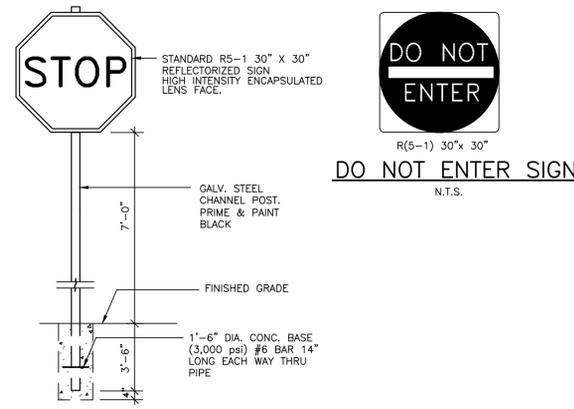
10



BOLLARD DETAIL

N.T.S.

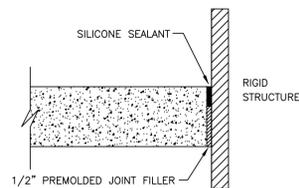
11



STOP SIGN DETAIL

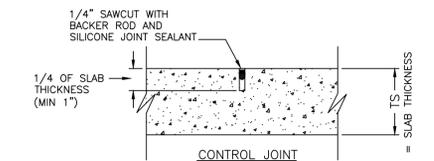
N.T.S.

12



ISOLATION JOINT

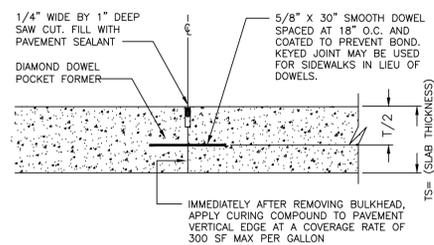
PROVIDE ISOLATION JOINT WHERE CONCRETE PAVEMENT ABUTS A RIGID STRUCTURE (BUILDING, CURB, LIGHT POLE BASE, ETC.)



CONTROL JOINT

SAW CUT SCHEDULE
4" = 10'x10'x1" DEEP
5" = 12'x12'x1.25" DEEP
6" = 15'x15'x1.5" DEEP
8" = 15'x15'x2" DEEP

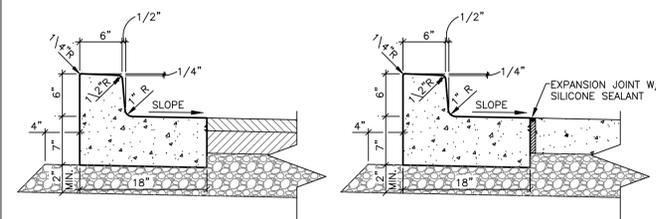
*ALL PANELS SHALL BE AS CLOSE TO SQUARE AS POSSIBLE. FOR EXAMPLE, A 6' WIDE SIDEWALK SHALL HAVE CONTROL JOINTS SPACED AT 6' O.C.
**ALL SAW CUTS SHALL BE MADE 4-12 HOURS AFTER CONCRETE PLACEMENT.



CONCRETE PAVEMENT JOINT DETAILS

N.T.S.

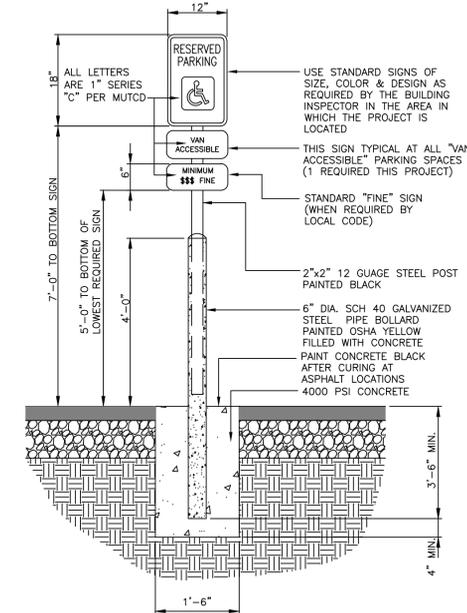
13



CURB & GUTTER DETAIL

GENERAL NOTES
1. CONCRETE SHALL BE CLASS "A" 4,000 PSI. CURING COMPOUND SHALL BE CLEAR BOND BY GUARDIAN CHEMICAL.
2. CONTRACTION JOINTS SHALL BE SPACED AT 10' (REDUCED TO NO LESS THAN 6' FOR CLOSURES).
3. EDGES OF JOINTS SHALL BE FINISHED WITH 1/4" RADIUS.
4. EXPANSION JOINTS (3/4" PREMOLDED FIBER) ARE REQUIRED AT 100' INTERVALS.
5. BROOM FINISH IN TRANSVERSE DIRECTION.
6. GUTTER SLOPE SHALL MATCH SLOPE OF PAVEMENT. THIS DETAIL IS SHOWN AS A SPILL CURB, HOWEVER CATCH CURB CONDITIONS ARE ALSO REQUIRED.

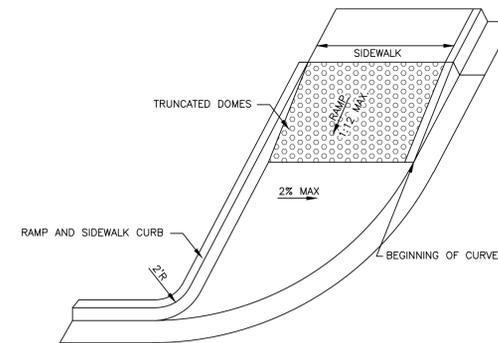
14



ACCESSIBLE PARKING SIGN DETAIL

N.T.S.

15



STRAIGHT SIDEWALK RAMP DETAIL

N.T.S.

16



REVISIONS		
1	BULLETIN #1	10/22/13
2	BULLETIN #2	11/12/13
3		
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SHEET NAME:
SITE DETAILS

DATE: 08/29/2013

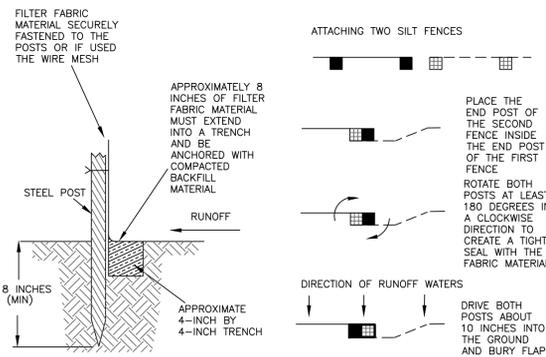
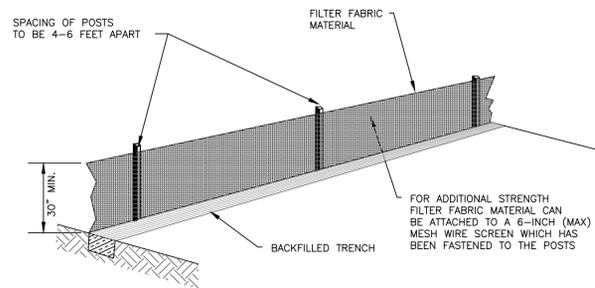
DRAWN BY: BMB

CHECKED BY: CMB

PROJECT NO.: 13015

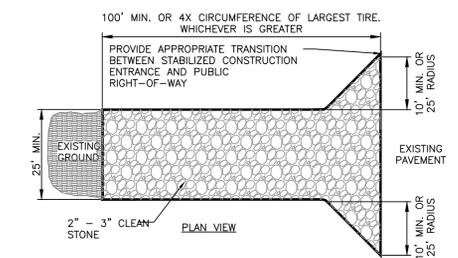
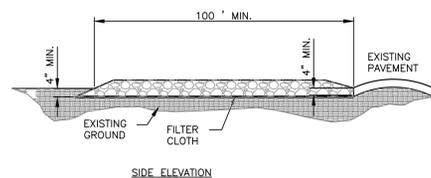
SHEET NUMBER:

C-06



SILT FENCE DETAIL
N.T.S.

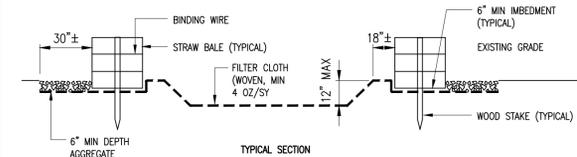
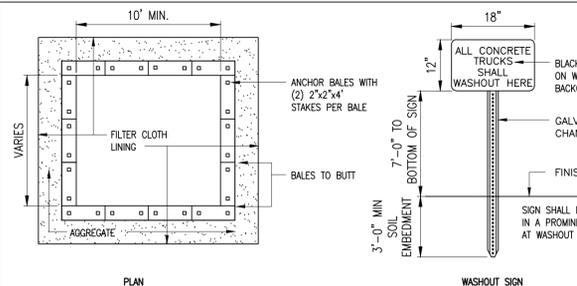
MAINTENANCE NOTES:
Inspect sediment fences at least once a week and after each rainfall. Make any required repairs immediately. Should the fabric of a sediment fence collapse, tear, decompose or become ineffective, replace promptly. Remove sediment deposits as necessary to provide adequate storage volume for the next rain to reduce pressure on the fence. Take care to avoid undermining the fence during 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.



CONSTRUCTION SPECIFICATIONS

- STONE - USE COARSE AGGREGATE (2 - 3 INCH STONE)
- LENGTH - AS EFFECTIVE, BUT NOT LESS THAN 100 FEET.
- THICKNESS - NOT LESS THAN EIGHT (8) INCHES.
- WIDTH - NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
- WASHING - WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH USE OF SAND BAGS, GRAVEL, BOARDS OR OTHER APPROVED METHODS.
- MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
- 12" X 24" METAL GRATE MAY BE USED. GRATE SHALL BE 25' AWAY FROM PAVEMENT AND APPROPRIATE SEDIMENT CONTROL TRAPPING DEVICE SHALL BE USED AT GRATE OUTLET POINT.

CONSTRUCTION EXIT DETAIL
N.T.S.



- NOTES:**
- WASHOUT AREA(S) SHALL BE INSTALLED IN A LOCATION EASILY ACCESSIBLE BY CONCRETE TRUCKS.
 - ONE OR MORE AREAS MAY BE INSTALLED ON THE CONSTRUCTION SITE AND MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
 - AT LEAST WEEKLY REMOVE ACCUMULATION OF SAND AND AGGREGATE AND DISPOSE OF PROPERLY.

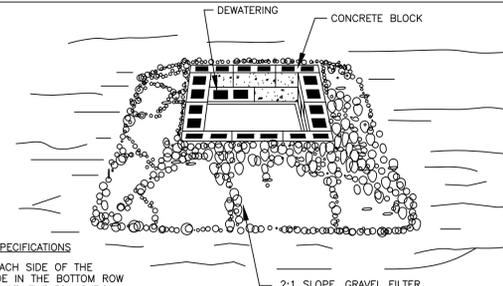
CONCRETE WASHOUT AREA DETAIL
N.T.S.

3

6

STORM DRAIN INLET PROTECTION

MAINTENANCE NOTES:
Inspect the barrier at least weekly and after each significant (1/2 inch or greater) rainfall and make repairs as needed. Remove sediment as necessary to provide adequate storage volume for subsequent rains. When the contributing drainage area has been adequately stabilized, remove all materials and any unstable soil, and either salvage or dispose of it properly. Bring the disturbed area to proper grade, then smooth and compact it. Appropriately stabilize all bare areas around the inlet.

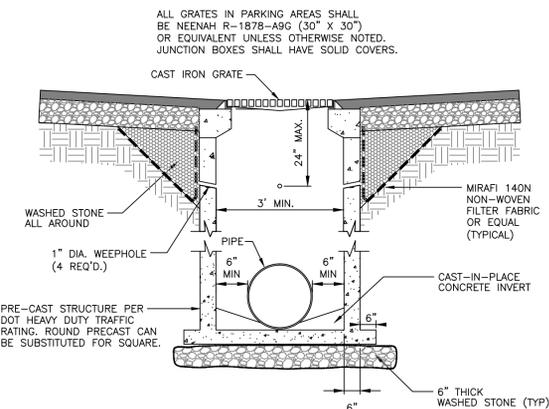


CONSTRUCTION SPECIFICATIONS

- LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE IN THE BOTTOM ROW TO ALLOW POOL DRAINAGE. THE FOUNDATION SHOULD BE EXCAVATED AT LEAST 2 INCHES BELOW THE CREST OF THE STORM DRAIN. PLACE THE BOTTOM ROW OF BLOCKS AGAINST THE EDGE OF THE STORM DRAIN FOR LATERAL SUPPORT AND TO AVOID WASHOUTS WHEN OVERFLOW OCCURS. IF NEEDED, GIVE LATERAL SUPPORT TO SUBSEQUENT ROWS BY PLACING 2 X 4 WOOD STUDS THROUGH BLOCK OPENINGS.
- CAREFULLY FIT HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2-INCH OPENINGS OVER ALL BLOCK OPENINGS TO HOLD GRAVEL IN PLACE.
- USE CLEAN GRAVEL, 3/4- TO 1/2-INCH IN DIAMETER, PLACED 2 INCHES BELOW THE TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER AND SMOOTH IT TO AN EVEN GRADE. DOT #57 WASHED STONE IS RECOMMENDED.

STORM DRAIN INLET PROTECTION
N.T.S.

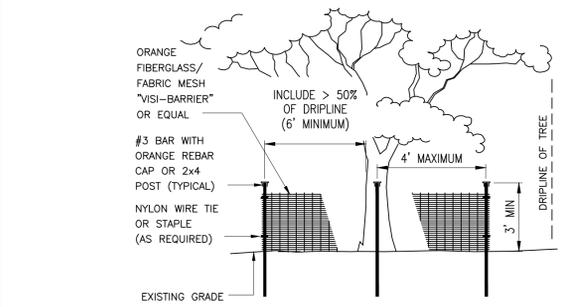
6



CATCH BASIN/JUNCTION BOX
N.T.S.

SITE GRADING/STORM CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL CATCH BASINS DURING CONSTRUCTION.

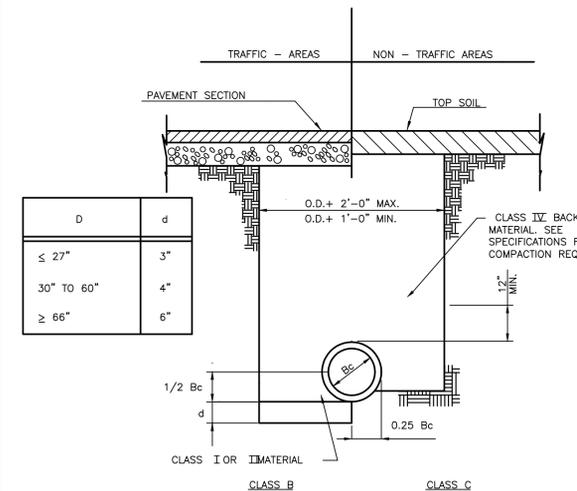
7



TREE PROTECTION DETAIL
N.T.S.

4

7



RCP PIPE TRENCHING & BACKFILL REQUIREMENTS
(NOTE: SEE SPECIFICATIONS FOR CLASS OF BEDDING TO BE USED)

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8

SECTION 02200 - EARTHWORK

PART II PRODUCTS

- 2.01 MATERIALS:**
- Soil Fill Material:** All soil fill material shall be clean subsoil, free from debris, roots, topsoil, and frozen material. The amount of rock fragments retained on a 3/4-inch sieve shall be less than 30 percent with the maximum rock size less than 4 inches in maximum dimension.
 - Borrow Fill Material:** If and when required shall be clean subsoil, free from debris, roots, topsoil and frozen material. The amount of rock fragments retained in a 3/4-inch sieve shall be less than 30 percent with the maximum rock size less than 4 inches in maximum dimension.
 - Material shall be capable of compaction to required densities as specified and as approved by Soils Engineer. Material shall be approved by Soils Engineer prior to its being transported to fill area. Approval of borrow material shall be based upon soil tests and visual inspection by Soils Engineer. In particular the material shall have plasticity index less than 25 and shall have at least 20% fines. Sand/gravel (GW/GP, SW/SP) with less than 20% fines may also be used.
 - Unsuitable fill material shall be defined as that which fails to conform to the requirements of the preceding paragraphs. Unsuitable fill shall be removed from the site at no additional cost to Owner.

PART III EXECUTION

- 3.01 PREPARATION:**
- Establish and identify required lines, levels, contours, and datum.
 - Maintain benchmarks, monuments, and other reference points. Re-establish if disturbed or destroyed, at no cost to Owner.
 - Before start of grading, establish the location and extent of utilities in the work area.
 - Maintain, protect, re-route or extend, as required, existing utilities to remain which pass through the work area at no additional cost to Owner.
- 3.02 REMOVAL OF ASPHALT & CONCRETE:**
- Remove all asphalt & concrete waste within the limits of work as shown on the plans. Existing aggregate may be saved for use as fill.
- 3.03 REMOVAL OF TOPSOIL:**
- Prior to starting general excavation, strip from within the site topsoil, for finish grading. Do not strip topsoil in a muddy condition and avoid admixture of subsoil. Remove all topsoil, to whatever depth found, from areas over which any construction is to be placed, such as buildings, drives, parking areas, roads, walks, etc. Stock the stripped topsoil within the site at locations where it will not hinder construction operations. Topsoil stockpiles shall be free from trash, brush, stones over 2 inches in diameter, and other extraneous material. Protect the stockpiled topsoil against loss and the admixture of debris. Place silt fences around all stockpile areas.
 - All topsoil shall be kept free of tree stumps, large roots and other objectionable material. All topsoil stockpile locations must be approved by Prime Contractor. Place silt fences around all stockpile areas.
 - Do not drive heavy equipment over stockpiled topsoil. Dress stockpile.
- 3.04 ROUGH GRADING:**
- Rough grade site to required levels, profiles, contours, and elevations ready for finish grading and surface treatment, as indicated in the General Notes on the plans.
 - Subgrade to Receive Fill:** Fill shall be placed only on a non-lying subgrade. After the topsoil, asphalt, and aggregate has been stripped, the existing ground shall be compacted in place with a vibratory smooth drum roller making at least six passes. The site shall then be proof rolled in order to locate pockets of soft or unstable soils. If required, undercutting shall be performed to establish a firm subgrade, prior to the placement of any fill material.
 - Building Structural Fill:** Fill shall extend a minimum of ten (10) feet outside of building lines. For building areas requiring structural fill, the subgrade shall be compacted to 98 percent of the maximum dry density to within 3% of optimum moisture content as determined by the Standard Proctor (ASTM D-698) immediately prior to the construction of grade slabs.
 - Pavement Structural Fill:** Fill shall extend a minimum of five (5) feet outside of pavement areas. Slope of fill shall not exceed 3:0 (H), 1:0 (V). For pavement areas requiring structural fill, the subgrade shall be compacted to 95 percent of the maximum dry density to within 3% of optimum moisture content as determined by the Standard Proctor (ASTM D-698).
 - Cut Areas:** All cut areas shall be compacted in place with a vibratory smooth drum roller making at least six passes after rough grades have been attained. Then proof-roll areas in order to locate pockets of soft or unstable soils. If required, undercutting shall be performed to establish a firm subgrade. Once the required undercutting is completed and prior to the placement of any fill material, the exposed surface shall be proof rolled. If proof roll yields soft spots then undercut and replace as directed by Soils Engineer.
- 3.05 SURPLUS MATERIAL:**
- Remove surplus materials from site at no additional cost to Owner. Surplus material is not expected.
- 3.06 PROOF ROLLING:**
- Entire site shall be rolled with heavy, approved construction equipment. Any soft areas thus determined, shall be cut out and replaced with suitable material compacted as indicated for backfill.
 - Areas to be Filled:** Proof-roll subgrade prior to commencement of filling operations. Proof-rolling should be performed after stripping of topsoil and after a suitable period of dry weather to avoid degrading the subgrade.
 - Cut Areas:** Proof-roll all cut areas after rough grades have been attained.
- 3.07 PLACING FILL AND COMPACTION:**
- All horizontal layers not to exceed eight (8) inches in loose thickness. Compact each layer to required density.
- Moisture Control:** Water content of material to receive compaction shall be uniform throughout each layer of the material. Allowable ranges of moisture content shall be determined to Soil Testing Inspector. Contractor may be directed to add necessary moisture to material, or manipulate and aerate to reduce excessive moisture.
 - Non-Cohesive Fills:** All fills to be placed in 8' lifts. Where the fill consists of sand or gravel materials, compacting equipment shall consist of pneumatic-tired or steel wheel rollers, either of the vibratory or static loaded type. The effective load shall not be less than 4,000 pounds per foot of drum lengths for compaction of a layer (8") inches in thickness. For lesser pressures, the thickness of the lift will be reduced, but in no case shall the pressure be less than 200 pounds per foot of tire or drum width.
 - Pneumatic rollers shall consist of two axes, on which there are mounted not less than nine pneumatic tires, in a manner such that the rear wheels will not follow in the track of the forward group. The roller shall have a rigid frame, provided with a platform for carrying the vibratory equipment or ballast.
 - Cohesive Soil Fills:** All fill to be placed in eight (8") inch lifts. Where cohesive soils are used as fill, each layer shall be compacted with a sheepfoot roller. The rollers shall have a staggered row of feet, projecting not less than seven (7) inches from the drum, and shall be loaded to produce a pressure of at least 200 pounds per square inch of contact with the soil.
 - Protection:** Fill materials placed shall be protected from freezing. No materials shall be placed on top of frozen materials.
- 3.08 ROCK EXCAVATION:**
- All excavation work shall be considered unclassified as discussed between Contractor and Owner.
 - Should rock be encountered in the cut areas or in the trenches, use a backhoe or ripper until the use of such equipment is not practical.
 - Remove rock below slabs, footings, and pavement, and below areas to receive lawns and planting.
 - Perform blasting only after receiving written approval from the Engineer and/or Prime Contractor and notifying the Owner's Insurance Company through the Prime Contractor of the intent. Also, refer to requirements for insurance as specified in General Conditions of these Specifications. Engage skilled mechanics to perform blasting. Provide heavy mats to minimize concussion. Handle, store and use explosives in accordance with the "Manual of Accident Prevention in Construction" of the Associated General Contractors of America, Inc. copyright 1958 with amendments. Pre-blast surveys and notification of Fire Marshall is recommended.
 - If rock is fragmented to meet material size requirements and mixed with sufficient cohesive soils to achieve low permeability, then rock can be used in fill areas. Otherwise, Contractor shall remove rock from site.
- 3.09 CLASSIFICATION OF FILLS AND COMPACTION DENSITY:**
- Structural Fill:** In building areas structural fill shall be extended a minimum of 10 feet outside all building lines. The fill shall be placed in thin loose lifts not exceeding 8 inches in thickness and, the subgrade shall be compacted to 98 percent of the maximum dry density to within 3% of optimum moisture content as determined by the Standard Proctor (ASTM D-698).
 - Pavement Areas:** In fill areas, compact and/or density the subgrade material to 95 percent of the soil's maximum Standard Proctor density value (ASTM D-698) prior to placement of the base course material.
 - Non-Structural Fill:** Non-structural fill includes landscaped areas & berms. Future building areas shall be compacted per structural fill requirements.
 - Subgrade shall be compacted to 90 percent of the maximum dry density as determined by the Standard Proctor (ASTM D-698). Non-structural fill to be placed in 12 inch lifts.
- 3.10 FINISH GRADE AREAS:**
- Grade areas to lines and elevations indicated, including adjacent transition areas. Smooth finished surface within specified tolerances, compact and bring to uniform levels or slopes between points where elevations are shown, or between such points and existing grades.
 - Finish surfaces shall be free from irregular surface changes, and as follows:
 - Surfaces Under Walks and Pavements: Shape surface of areas under walks to line, grade and cross-section, with finish surface not more than 0.10' above or below required subgrade elevation.
 - Surface Under Building Slabs and Foundations: Grade level, free of voids, compacted as specified and within 1/2" of required elevation.
 - Grassed Areas: Shape areas to receive topsoil to within 0.10' above or below required subgrade elevation.
 - Grade areas adjacent to building lines to drain away from building and to prevent ponding. Finish grades shall be within 1/2" of indicated elevations.
 - Where compacted areas are disturbed by construction operations, scarify surface, reshape and recompact to required density.
 - Redistribute stockpiled topsoil to uniform depth over graded areas, shown to be landscaped or seeded.
 - Remove excess topsoil and other soil matter and debris from site.
 - At completion of finish grading operation, site shall be ready for seeding.
 - Where finish grading meets or abuts curbs, walks, or pavements, uphill grades shall be slightly higher than pavements to permit drainage.
 - Protection of Graded Areas: Protect newly graded surfaces from traffic and erosion. Keep free of debris. Where graded or compacted surfaces are damaged by subsequent operations, return to indicated grade and state of compaction.

8

BERRY ENGINEERS LLC
3555 KEITH ST NW, SUITE 109
CLEVELAND, TN 37312
TEL: (423) 790-5880
DBA BERRY ENGINEERS, PLLC; FIRM LICENSE: P-1188

THE HUTTON COMPANY
736 CHERRY STREET
CHATTANOOGA, TN 37402

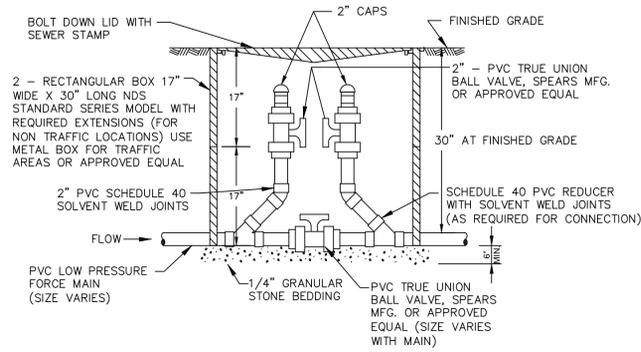
Blaxera BREAD
3506 OLEANDER DR
WILMINGTON, NC

Professional Engineer Seal:
NORTH CAROLINA
Professional Engineer
39995
2012
KOPPER M. BERRY

REVISIONS		
NO.	BULLETIN #2	DATE
1		11/12/13
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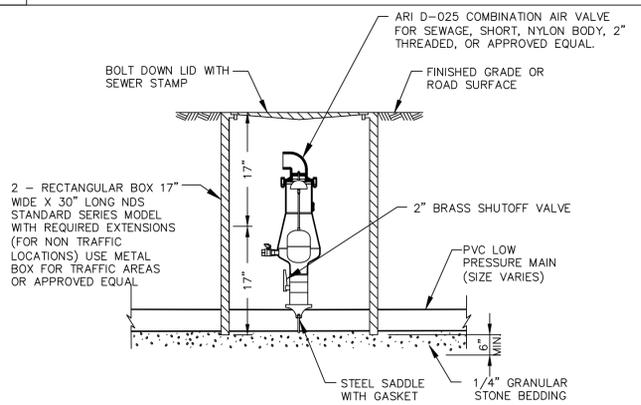
SHEET NAME: **SITE DETAILS**

DATE: 08/29/2013
DRAWN BY: BMB
CHECKED BY: CMB
PROJECT NO.: 13015
SHEET NUMBER: **C-07**



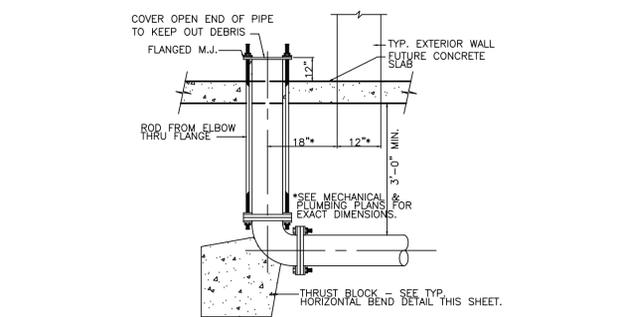
LOW PRESSURE INLINE CLEANOUT
NOT TO SCALE

1



LOW PRESSURE AIR RELEASE VALVE
NOT TO SCALE

2



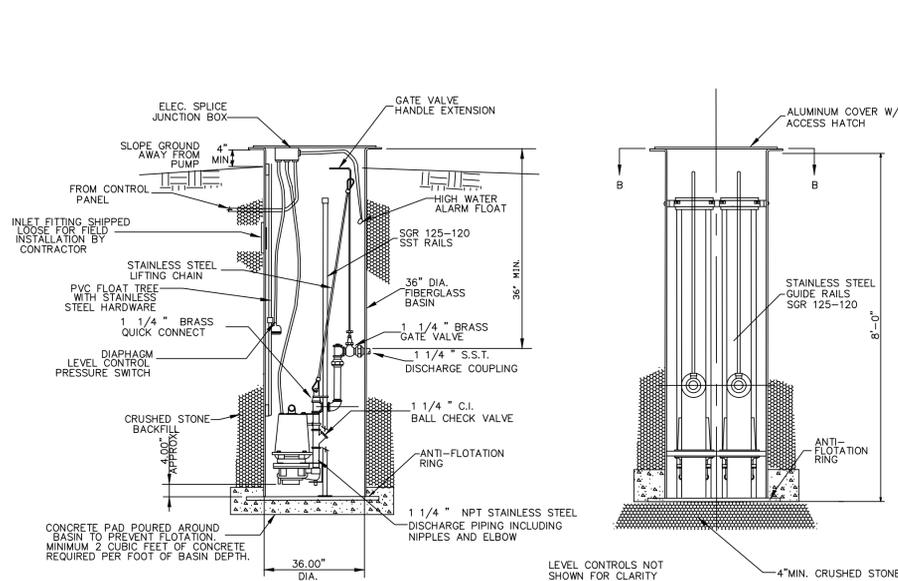
TYP. FIRE LINE ENTRY INTO BUILDING
N.T.S.

3



REMOTE FIRE DEPARTMENT CONNECTION
N.T.S.

4



DUPLEX GRINDER SEWAGE PUMP STATION
NOT TO SCALE

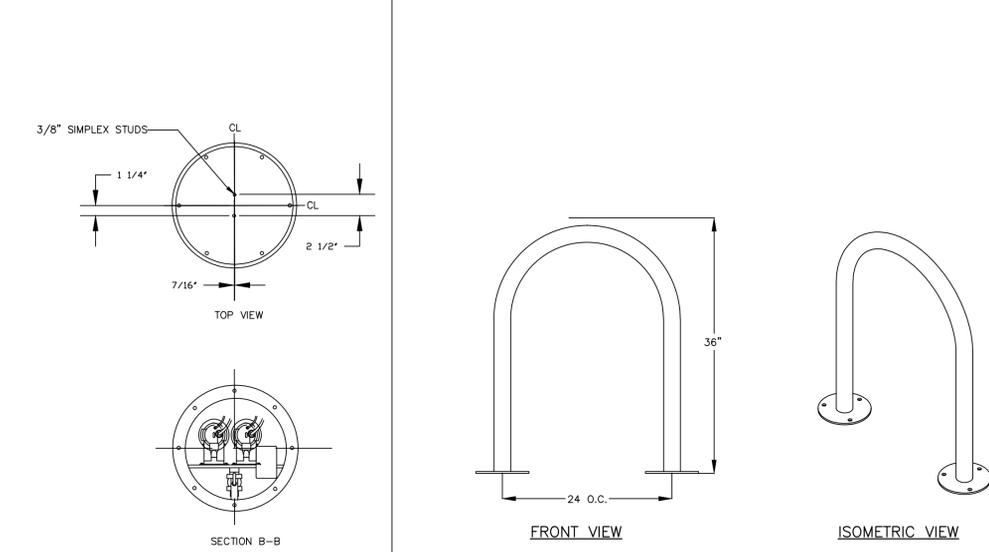
NOTES

- SUPPLY TWO (2) GRINDER PUMPS, SIZED TO MEET THE REQUIRED FLOW RATE AND TOTAL DYNAMIC HEAD, DUAL SEALS, 3 PHASE POWER.
- DUPLEX PUMP CONTROL PANEL, NEMA 3R ENCLOSURE, PUMP BREAKERS, CONTACTORS, OVERLOADS, ALTERNATOR, PHASE/VOLTAGE MONITOR, H-O-A SWITCHES, RUN LIGHTS, SEAL FAIL LIGHTS, HIGH WATER ALARM WITH FLASHING LIGHT & HORN.
- DUPLEX FIBERGLASS TANK W/ ANTI-FLOAT FLANGE, ALUMINUM COVER WITH ACCESS HATCH, SST GUIDE RAILS, SST DISCHARGE PIPE, ELECTRICAL J-BOX, SST FLOAT BRACKET, SST PUMP LIFTING CHAINS, CAST IRON PUMP BASES, 4 EA. MERCURY FLOAT SWITCHES.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND PUMP CURVES FOR PUMP STATION. CONTRACTOR SHALL COORDINATE PUMP STATION WITH BUILDING ELECTRICAL REQUIREMENTS.

PUMP REQUIREMENTS
GPM - 28 GPM
TOTAL DYNAMIC HEAD - 24 FT
ELEVATION HEAD - 6 FT
FRICTION HEAD - 8 FT
CONNECTION PRESSURE - 0
PUMP LOSS - 10 FT (ASSUMED)

ELEVATION INFORMATION
BOTTOM ELEV.=0.0'
PUMP OFF ELEV.=+0.5'
PUMP #1 ON ELEV.=+2.5'
PUMP #2 ON ELEV.=+3.5'
INLET ELEV.=+4.0
DISCHARGE ELEV.=+5.0
HIGH WATER ALARM ELEV.=+ 4.5
TOP ELEV.=+8.0'

5



BIKE RACK DETAIL (INVERTED U)

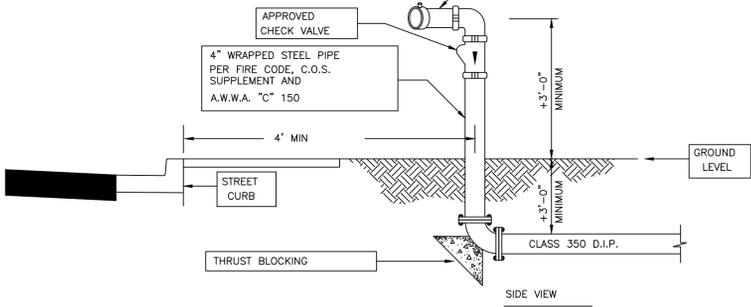
GENERAL NOTES

- TUBING SHALL BE 2.375\"/>

7

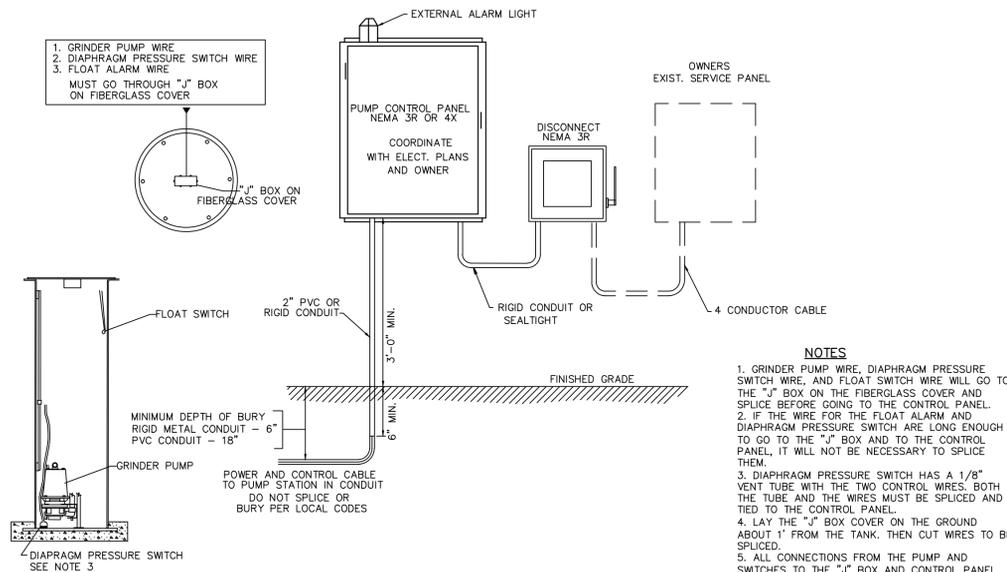
GENERAL NOTES

- Provide Building I.D. On Remote Fire Dept. Connection.
- No Trees, Bushes Or Walls Within 5' Radius Of Fire Dept. Connection
- If Fire Sprinkler Design Indicates Demand Of 1000 GPM Or Greater, The Underground Fire Dept. Connection Line Shall Be Increased To 6\"/>



REMOTE FIRE DEPARTMENT CONNECTION
N.T.S.

6



\"/>

NOT TO SCALE
(VERIFY AND ADAPT TO SPECIFIC FIELD CONDITIONS)

8

BERRY ENGINEERS LLC
CIVIL ENGINEER:
3555 KEITH ST NW, SUITE 109
CLEVELAND, TN 37312
TEL: (423) 790-5880
DBA BERRY ENGINEERS, PLLC; FIRM LICENSE: P-1188

THE HUTTON COMPANY
736 CHERRY STREET
CHATTANOOGA, TN 37402

DEVELOPER:

Panera Bread
3506 OLEANDER DR
WILMINGTON, NC

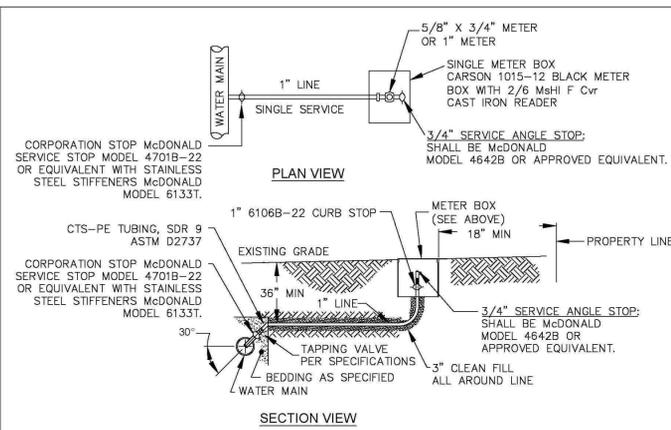
PROJECT:

Christopher M. Berry
Professional Engineer
No. 35998
Exp. 12/2012
TOPHER M. BERRY

REVISIONS	
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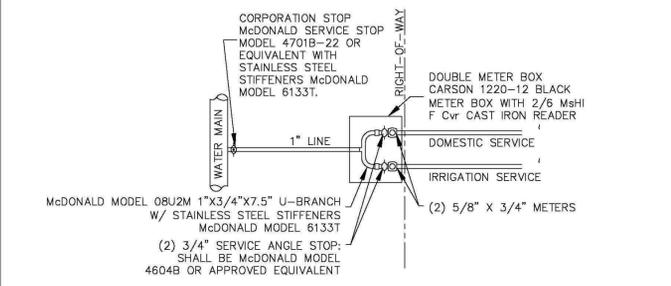
SHEET NAME:
SITE DETAILS

DATE: 08/29/2013
DRAWN BY: BMB
CHECKED BY: CMB
PROJECT NO.: 13015
SHEET NUMBER:
C-08

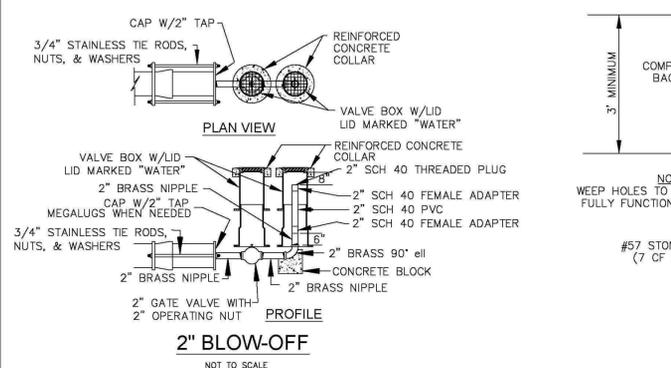


NOTES:
 1. NO JOINT SHALL BE INSTALLED BETWEEN THE MAIN SERVICE TAP AND THE METER STOP. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
 2. SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY; SADDLE McDONALD 3801 OR EQUIVALENT
 3. METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS (SIP MODEL 4240 OR APPROVED EQUIVALENT)

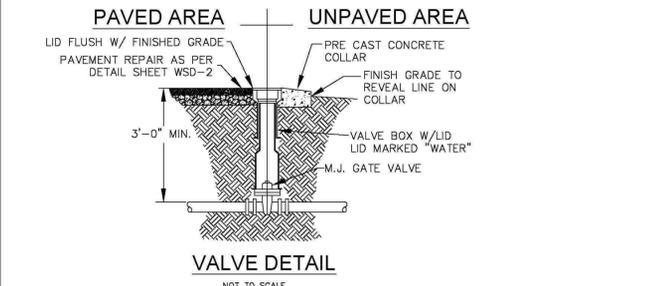
SINGLE SERVICE CONNECTION
 TYPICAL WATER SERVICE CONNECTION FOR RESIDENTIAL SINGLE FAMILY HOME ON CFPWA WATER SYSTEM
 NOT TO SCALE



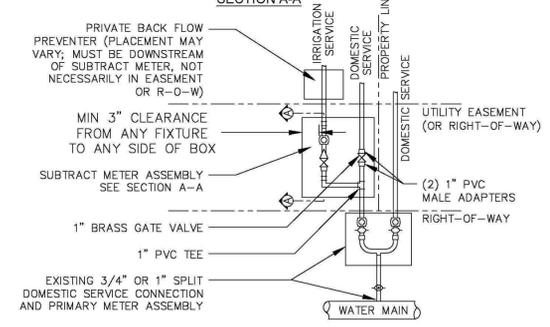
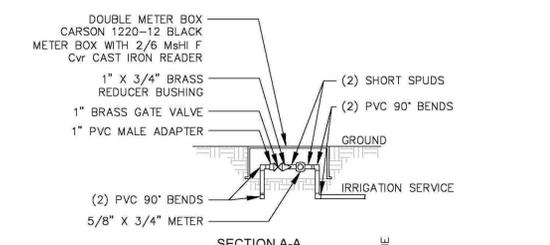
DOUBLE SERVICE CONNECTION
 (ONE DOMESTIC SERVICE PER TAP)
 NOT TO SCALE



**2\"/>
 NOT TO SCALE**

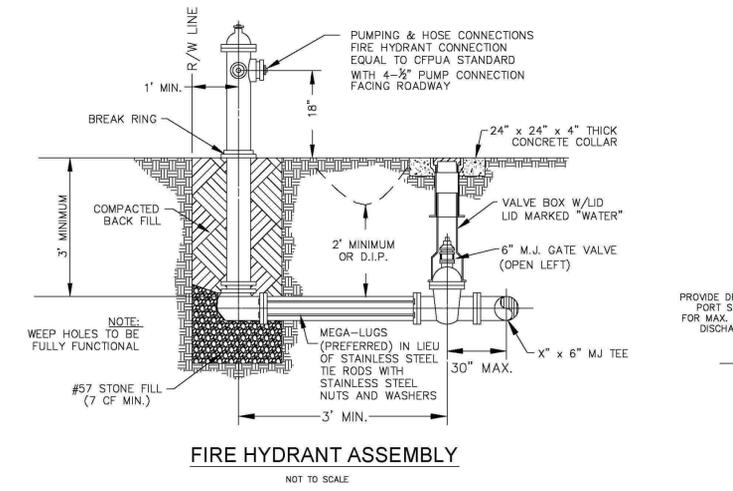


VALVE DETAIL
 NOT TO SCALE

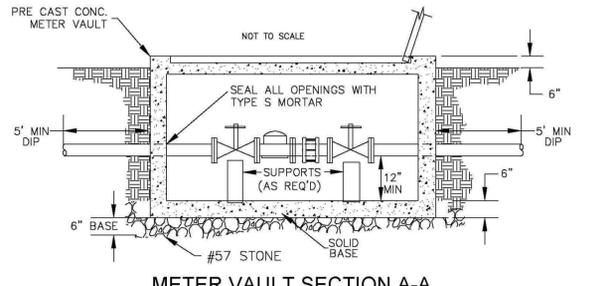


NOTES:
 -BEYOND THE PRIMARY DOMESTIC METER ASSEMBLY, CFPWA IS ONLY RESPONSIBLE FOR METER AND WASHERS OF SUBTRACT METER ASSEMBLY
 -ALL PIPE AND FITTINGS UP TO FINAL SERVICE LINE TO BE 1\"/>

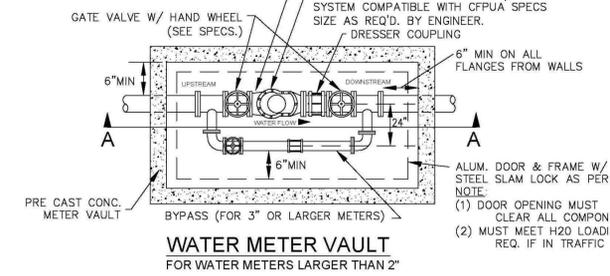
DOUBLE SERVICE CONNECTION USING SUBTRACT METER
 (MULTIPLE DOMESTIC SERVICES PER TAP)
 NOT TO SCALE



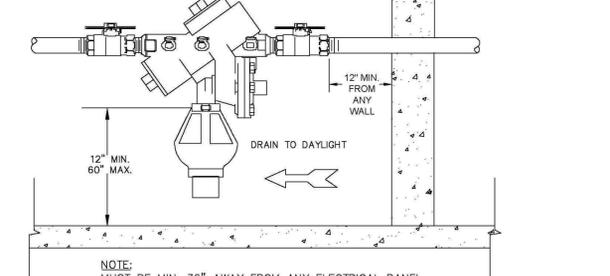
FIRE HYDRANT ASSEMBLY
 NOT TO SCALE



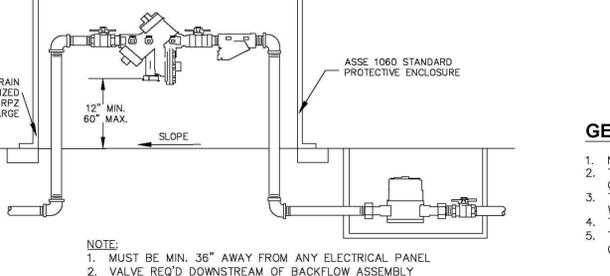
METER VAULT SECTION A-A
 NOT TO SCALE



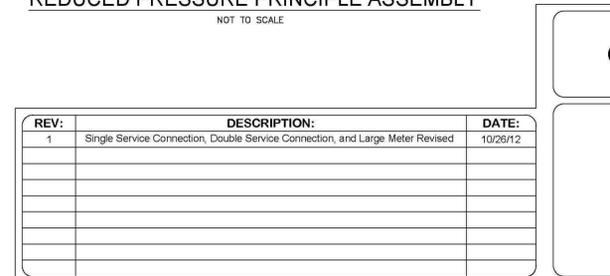
WATER METER VAULT
 FOR WATER METERS LARGER THAN 2\"/>



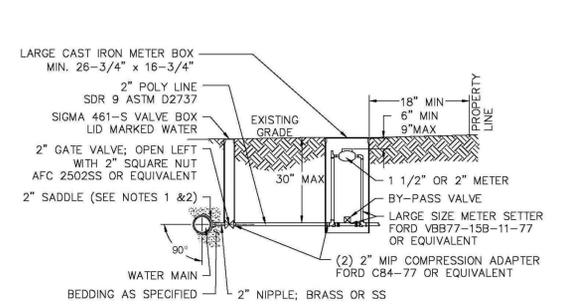
INDOOR HORIZONTAL INSTALLATION
 NOTE: MUST BE MIN. 36\"/>



INDOOR VERTICAL INSTALLATION
 NOTE: MUST BE MIN. 36\"/>

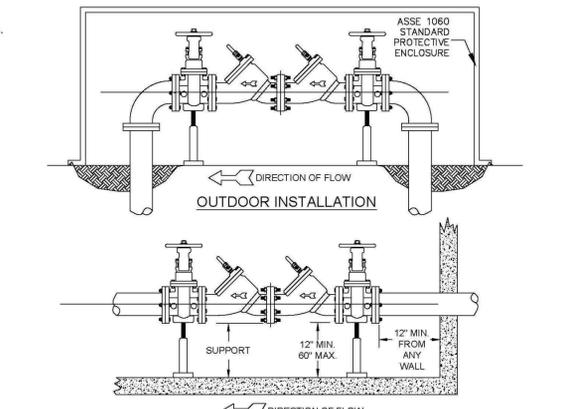


REDUCED PRESSURE PRINCIPLE ASSEMBLY
 NOT TO SCALE



NOTES:
 1. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
 2. SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY; SADDLE McDONALD 3801 OR EQUIVALENT
 3. METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS (OLDCASTLE PRECAST MODEL B1730 OR APPROVED EQUIVALENT).
 4. METER BOXES SUSCEPTIBLE TO INCIDENTAL, NON-DELIBERATE TRAFFIC SHALL CONFORM TO ANSI/SCTE 77 TIER 15 LOAD RATING STANDARDS (SYNERTECH MODEL DUO 17x30 OR APPROVED EQUIVALENT).
 5. NON-TRAFFIC METER BOXES SHALL BE SIGMA MB2203 OR APPROVED EQUIVALENT.
 6. 3\"/>

LARGE METER
 FOR 1 1/2\"/>
 NOT TO SCALE



NOTES:
 1. MUST BE MIN. 36\"/>

DOUBLE CHECK VALVE ASSEMBLY
 NOT TO SCALE

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

THE DETAILS SHOWN HEREON SUPERCEDE CFPWA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

CFPUA WATER DISTRIBUTION SYSTEM

DATE: 1/9/12
 SCALE: N/A
 DRAWN BY: CFPWA
 CHECKED BY: CFPWA
 PROJECT NO.:

STANDARD DETAILS

CAPE FEAR PUBLIC UTILITY AUTHORITY
 235 GOVERNMENT CENTER DRIVE
 WILMINGTON, NC 28403
 OFFICE: (910)332-6560

SHEET NO.: WSD-1

REV:	DESCRIPTION:	DATE:
1	Single Service Connection, Double Service Connection, and Large Meter Revised	10/26/12

BERRY ENGINEERS LLC
 CIVIL ENGINEER
 3555 KEITH ST NW, SUITE 109
 CLEVELAND, TN 37312
 TEL: (423) 790-5880
 DBA BERRY ENGINEERS, PLLC; FIRM LICENSE: P-1188

THE HUTTON COMPANY
 736 CHERRY STREET
 CHATTANOOGA, TN 37402

DEVELOPER:

Panera BREAD
 3506 OLEANDER DR
 WILMINGTON, NC

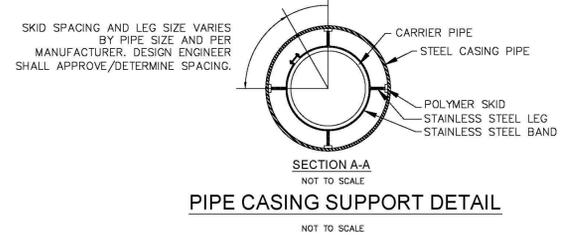
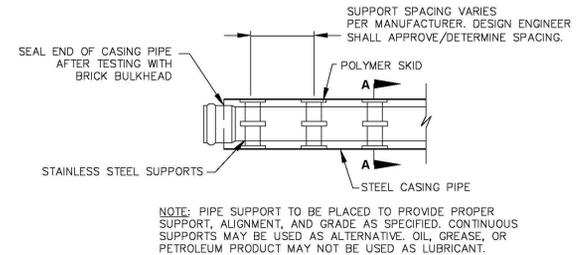
PROJECT:

Chapman
 NORTH CAROLINA
 39998
 1/26/2012
 JOSEPH M. BERRY

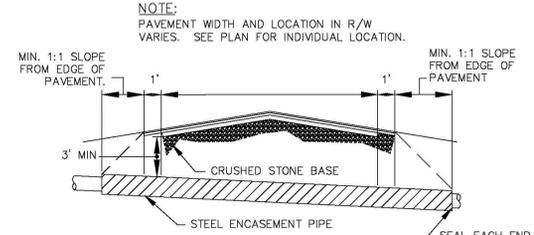
REVISIONS	
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SHEET NAME:
CITY WATER DETAILS

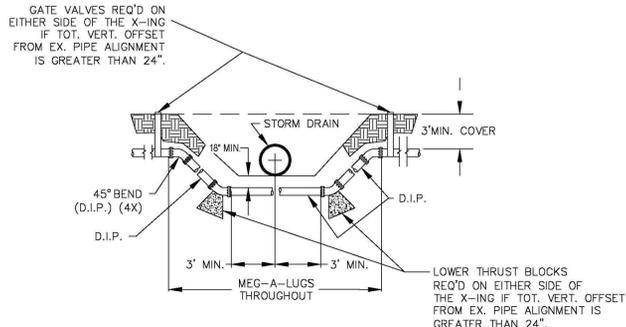
DATE: 08/29/2013
 DRAWN BY: BMB
 CHECKED BY: CMB
 PROJECT NO.: 13015
 SHEET NUMBER:
C-09



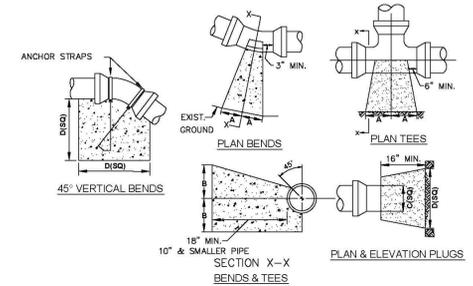
PIPE CASING SUPPORT DETAIL
NOT TO SCALE



TYPICAL BORING/JACKING DETAIL
NOT TO SCALE



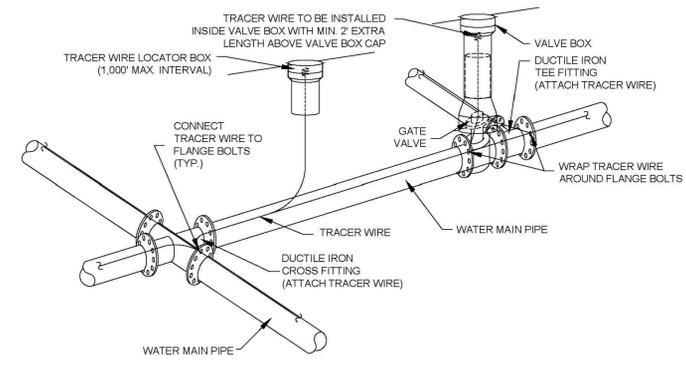
WATER MAIN DITCH & STORM DRAIN CROSSING
NOT TO SCALE



SIZE	90° BENDS		45° BENDS		22 1/2° BENDS		TEES/PLUGS		45° VERT. BENDS
	A	B	A	B	A	B	A	B	
3"	8"	6"	5"	6"	3"	7"	6"	8"	27"
4"	8"	9"	5"	8"	3"	11"	6"	9"	28"
6"	14"	11"	9"	9"	8"	8"	12"	9"	36"
8"	16"	16"	12"	12"	10"	13"	14"	13"	42"
10"	18"	22"	15"	14"	14"	16"	18"	15"	50"
12"	20"	28"	18"	17"	16"	16"	22"	18"	62"
14"	26"	29"	21"	19"	18"	18"	26"	20"	72"
16"	33"	29"	25"	21"	20"	21"	32"	21"	83"
18"	40"	30"	28"	24"	22"	23"	36"	24"	88"

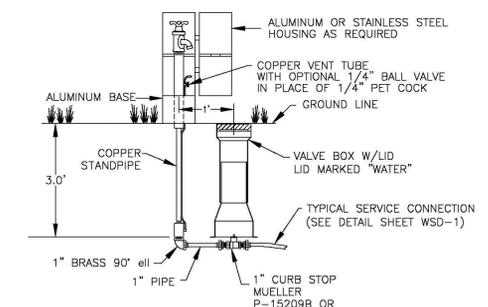
- NOTES: 1. BASED ON 160 PSI TEST PRESSURE AND 2000 PSF SOIL BEARING CAPACITY.
2. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.
3. USE MEG-A-LUG (PREFERRED) IN LIEU OF BLOCKING AND RODDING.

THRUST BLOCK DETAIL
NOT TO SCALE

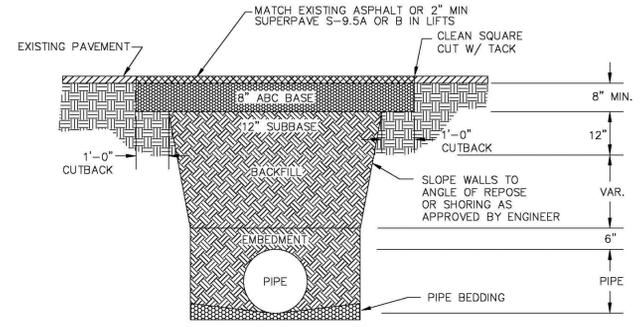


- NOTES: 1. TRACER WIRE SHALL BE #10 COPPER SOLID CORE COPPER WIRE WITH GAS AND OIL RESISTANT INSULATION.
2. WIRE SHALL BE STRAPPED TO ALL PVC WATER MAIN PIPING WITH DUCT TAPE AT 12-FT. INTERVALS.
3. SECURE WIRE TO ALL TEE AND CROSS FITTINGS.
4. ALL WIRE SPLICES SHALL HAVE WATER PROOF WIRE CONNECTIONS.

TRACER WIRE DETAIL

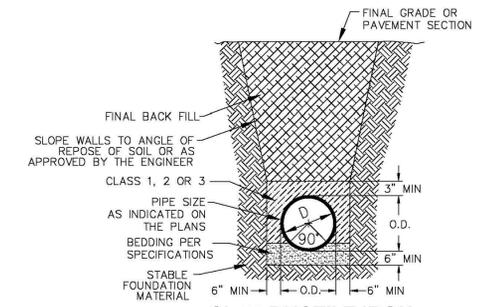


SAMPLING STATION
NOT TO SCALE



- NOTES: 1. BACKFILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBOS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.
2. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION, (I.E. #57, ABC, CRUSHED LIMESTONE, CLEAN SAND, FLOWABLE FILL, ETC).
3. 8-INCH OF ABC BASE MATERIAL SHALL BE USED ON CITY STREETS.
4. BACKFILL AND BASE MATERIALS SHALL BE COMPACTED 12" MINIMUM LIFTS.
5. SOIL SHALL BE COMPACTED BY A MECHANIZED TAMPER (I.E. JUMPING JACK), HOWEVER, VIBRATORY ROLLERS > 18" WIDTH MAY BE USED FOR LARGER EXCAVATIONS. THE PLATE TAMP METHOD SHALL NOT BE USED.
6. ALL APPROVED CASTINGS SHALL BE SET FLUSH TO GRADE AND SUPPORTED IF APPLICABLE.
7. ABC BASE AND SUBBASE COMPACTED TO 98% AND BACKFILL AND EMBEDMENT COMPACTED TO 90% AS DETERMINED BY THE MODIFIED PROCTOR AASHTO METHOD T-99.
8. 1-FOOT CUTBACKS OF ASPHALT SHALL BE PREPARED ON UNDISTURBED SOIL. MINIMUM ASPHALT DENSITY IS 90%.

PAVEMENT REPAIR WHERE PIPE INSTALLED
(FOR PRIVATE ROADS AND PAVED AREAS. CONTRACTOR TO MEET MIN. REQUIREMENTS AS DEFINED BY RIGHT-OF-WAY OWNER FOR PUBLIC ROAD REPAIRS)
NOT TO SCALE



CL 50 DUCTILE IRON DR 18 PVC PIPE TRENCH DETAIL
NOT TO SCALE

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 & STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

CFPUA WATER DISTRIBUTION SYSTEM

REV:	DESCRIPTION:	DATE:

DATE: 1/9/12
SCALE: N/A
DRAWN BY: CFPUA
CHECKED BY: CFPUA
PROJECT NO.:
SHEET NO.: WSD-2

STANDARD DETAILS

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560
Stewardship. Sustainability. Service.

BERRY ENGINEERS LLC
3555 KEITH ST NW, SUITE 109
CLEVELAND, TN 37312
TEL: (423) 790-5880
DBA BERRY ENGINEERS, PLLC; FIRM LICENSE: P-1188

THE HUTTON COMPANY
736 CHERRY STREET
CHATTANOOGA, TN 37402

Panera Bread
3506 OLEANDER DR
WILMINGTON, NC

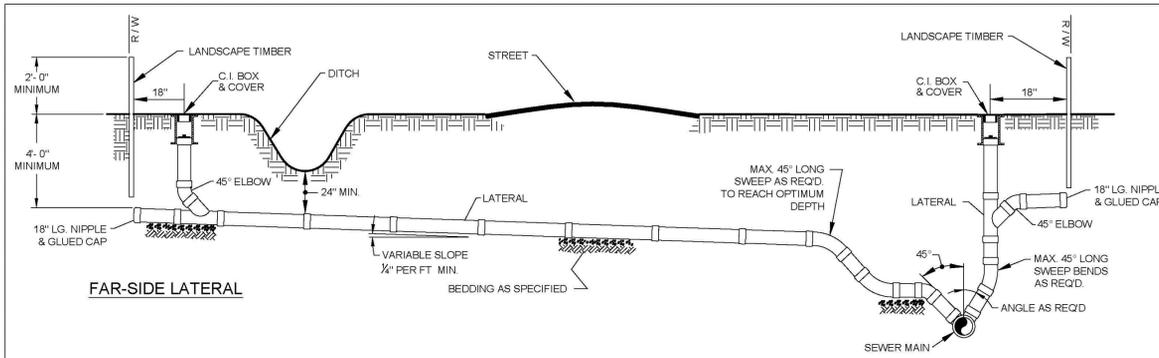
Professional Engineer Seal for Christopher M. Berry, State of North Carolina, License No. 39998, dated 12/26/2012.

REVISIONS

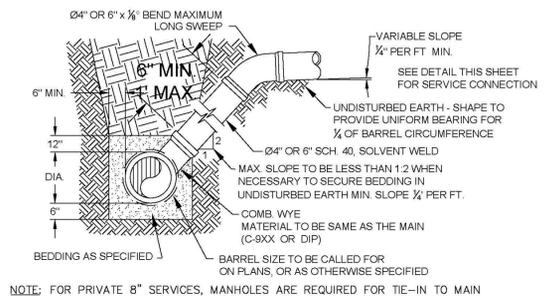
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SHEET NAME:
CITY WATER DETAILS

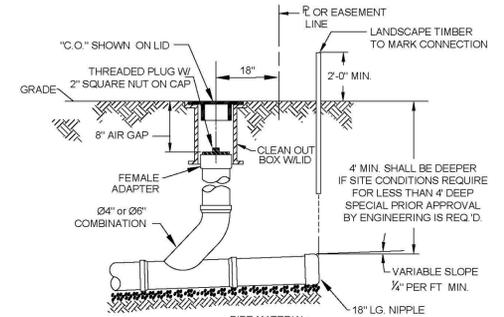
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DRAWN BY: BMB
CHECKED BY: CMB
PROJECT NO.: 13015
SHEET NUMBER:
C-10



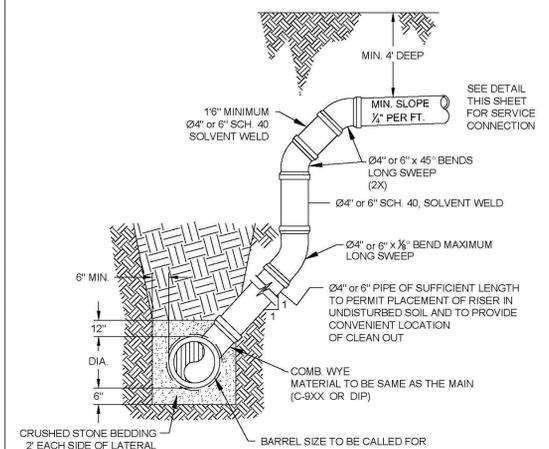
STANDARD SERVICE CONNECTION TO SANITARY SEWER
 NOTE: FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR TIE-IN TO MAIN
 NOT TO SCALE



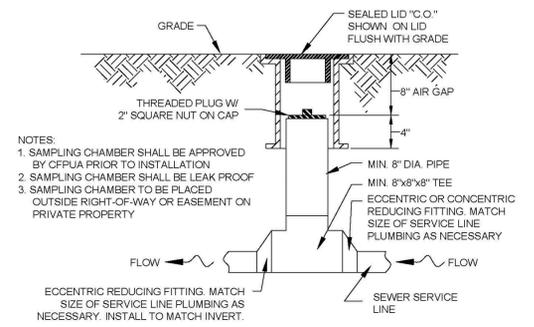
STANDARD SERVICE LATERAL
 (MAIN DEPTH LESS THAN 8ft)
 NOT TO SCALE



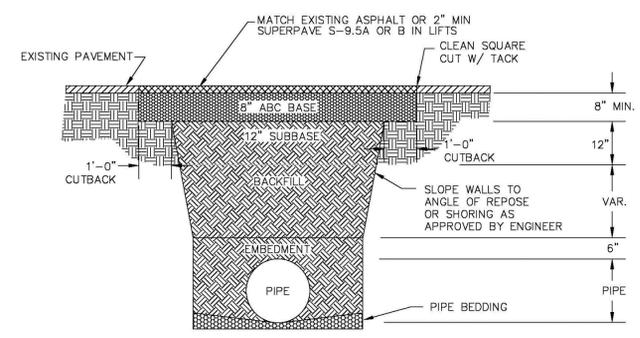
SERVICE CONNECTION & CLEAN-OUT
 NOTE: FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR TIE-IN TO MAIN
 NOT TO SCALE



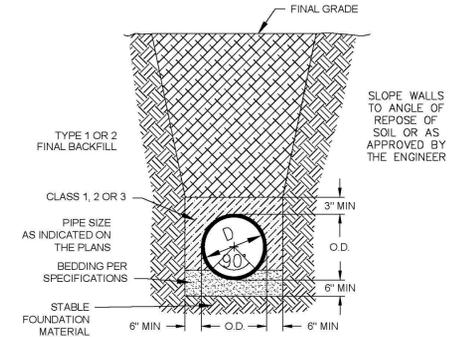
DEEP SERVICE LATERAL
 (MAIN DEPTH GREATER THAN 8ft)
 NOT TO SCALE



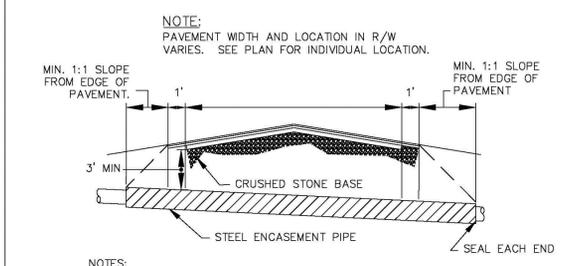
SAMPLING CHAMBER
 NOT TO SCALE



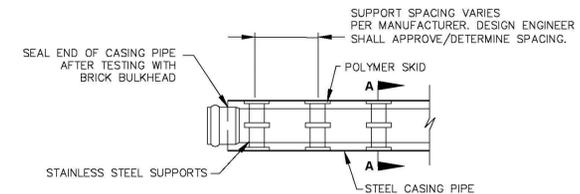
PAVEMENT REPAIR WHERE PIPE INSTALLED
 (FOR PRIVATE ROADS AND PAVED AREAS; CONTRACTOR TO MEET MIN. REQUIREMENTS AS DEFINED BY RIGHT-OF-WAY OWNER FOR PUBLIC ROAD REPAIRS)
 NOT TO SCALE



CL 50 DUCTILE IRON DR 18 PVC PIPE TRENCH DETAIL
 NOT TO SCALE



TYPICAL BORING/JACKING DETAIL
 NOT TO SCALE



PIPE CASING SUPPORT DETAIL
 NOT TO SCALE

- NOTES:
- BACKFILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBOS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.
 - SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION, (I.E. #57, ABC, CRUSHED LIMESTONE, CLEAN SAND, FLOWABLE FILL, ETC).
 - 8-INCH OF ABC BASE MATERIAL SHALL BE USED ON CITY STREETS.
 - BACKFILL AND BASE MATERIALS SHALL BE COMPACTED 12" MINIMUM LIFTS
 - SOIL SHALL BE COMPACTED BY A MECHANIZED TAMPER (I.E. JUMPING JACK), HOWEVER, VIBRATORY ROLLERS > 18" WIDTH MAY BE USED FOR LARGER EXCAVATIONS. THE PLATE TAMP METHOD SHALL NOT BE USED.
 - ALL APPROVED CASTINGS SHALL BE SET FLUSH TO GRADE AND SUPPORTED IF APPLICABLE.
 - ABC BASE AND SUBBASE COMPACTED TO 98% AND BACKFILL AND EMBEDMENT COMPACTED TO 90% AS DETERMINED BY THE MODIFIED PROCTOR AASHTO METHOD T-99.
 - 1-FOOT CUTBACKS OF ASPHALT SHALL BE PREPARED ON UNDISTURBED SOIL. MINIMUM ASPHALT DENSITY IS 90%.

- 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 & STOCKPILE AREAS (TO ARRANGE AND INSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

REV:	DESCRIPTION:	DATE:
1	SAMPLING CHAMBER REVISED	10/26/12

CFPUA SANITARY SEWER

STANDARD DETAILS

CAPE FEAR PUBLIC UTILITY AUTHORITY
 235 GOVERNMENT CENTER DRIVE
 WILMINGTON, NC 28403
 OFFICE: (910)332-6560

DATE: 1/9/12
 SCALE: N/A
 DRAWN BY: CFPUA
 CHECKED BY: CFPUA
 PROJECT NO.:
 SHEET NO.: SSD-2

BERRY ENGINEERS LLC
 CIVIL ENGINEER
 3555 KEITH ST NW, SUITE 109
 CLEVELAND, TN 37312
 TEL: (423) 790-5880
 DBA BERRY ENGINEERS, PLLC; FIRM LICENSE: P-1188

THE HUTTON COMPANY
 736 CHERRY STREET
 CHATTANOOGA, TN 37402

Panera BREAD
 3506 OLEANDER DR
 WILMINGTON, NC

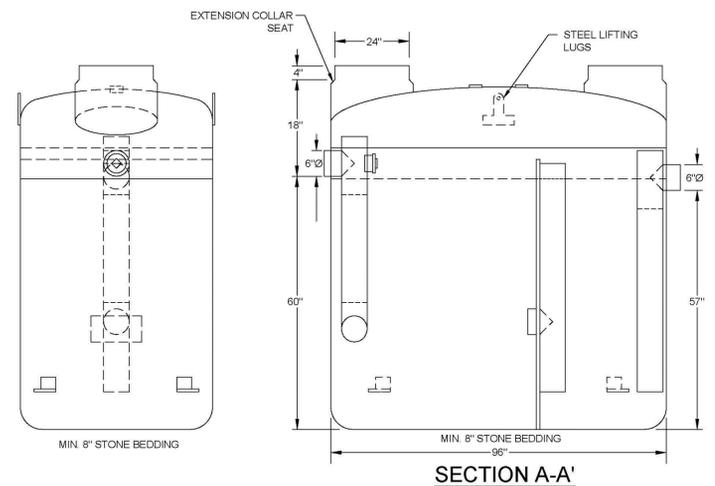
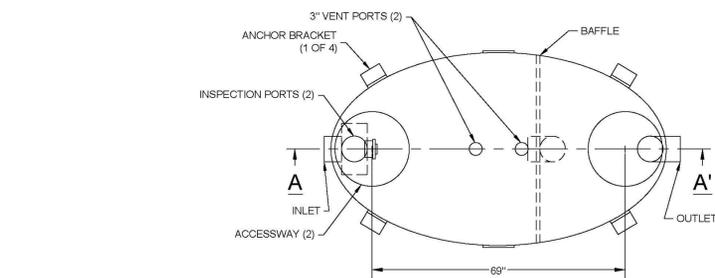
Professional Engineer Seal for Christopher M. Berry, State of North Carolina, License No. 35995, dated 10/26/12.

REVISIONS

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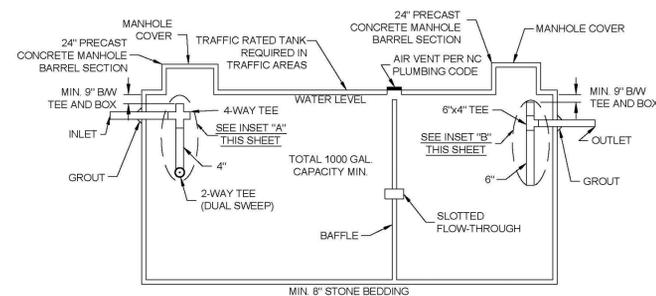
SHEET NAME: CITY SEWER DETAILS

DATE: 08/29/2013
 DRAWN BY: BMB
 CHECKED BY: CMB
 PROJECT NO.: 13015
 SHEET NUMBER: C-11

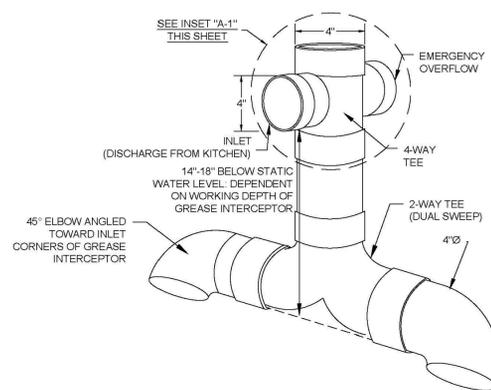


- NOTES:
1. FOR GRAVITY APPLICATIONS ONLY
 2. MIN. THICKNESS 1/4" WALL AND 3/8" TOP AND BOTTOM BOWLS
 3. STANDARD PIPE STUDS ARE SOCKET SDR 35 PVC
 4. EXTENSION COLLARS SHALL BE CAULKED WITH SIKAFLEX OR EQUIVALENT FOR WATERTIGHT SEAL
 5. FOLLOW MANUFACTURE'S SPECS FOR TRAFFIC OR PEDESTRIAN LOADING

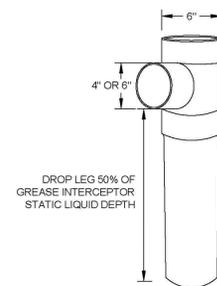
FIBERGLASS GREASE INTERCEPTOR
NOT TO SCALE



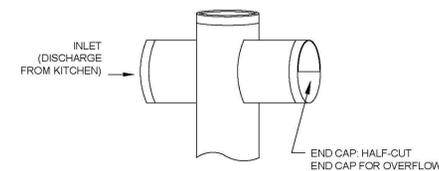
CONCRETE GREASE INTERCEPTOR
NOT TO SCALE



**GREASE INTERCEPTOR
INSET "A"
4" SANITARY TEE**
NOT TO SCALE



**GREASE INTERCEPTOR
INSET "B"
6" X 6" X 4" OUTLET
SANITARY TEE**
NOT TO SCALE



**GREASE INTERCEPTOR INSET "A-1"
EMERGENCY OVERFLOW CLOSE-UP**
NOT TO SCALE

GENERAL NOTES:

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

**THE DETAILS SHOWN HEREON SUPERCEDE CFPUA
WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04**

REV:	DESCRIPTION:	DATE:

CFPUA SANITARY SEWER		DATE: 1/9/12
STANDARD DETAILS		SCALE: N/A
 CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560 <small>Stewardship. Sustainability. Service.</small>		DRAWN BY: CFPUA
SHEET NO: SSD-4		CHECKED BY: CFPUA
PROJECT NO.:		PROJECT NO.:

BERRY ENGINEERS LLC

3555 KEITH ST NW, SUITE 109
CLEVELAND, TN 37312
TEL: (423) 790-5880
DBA BERRY ENGINEERS, PLLC; FIRM LICENSE: P-1188

THE HUTTON COMPANY
736 CHERRY STREET
CHATTANOOGA, TN 37402

Panera
BREAD
3506 OLEANDER DR
WILMINGTON, NC

REVISIONS	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

SHEET NAME:
**CITY GREASE TRAP
DETAILS**

DATE: 08/29/2013

DRAWN BY: BMB

CHECKED BY: CMB

PROJECT NO.: 13015

SHEET NUMBER:
C-12



Legend

Common Name	Size	Qty	
Chastetree, Shoal Creek, TF, M-Stem	2.5" Cal.	1	7-8'Ht. Small Tree
Allee Elm	2.5" Cal.	4	10'Ht. Large Tree
Maple, Trident	2.5" Cal.	4	10'Ht. Large Tree
Holly, Emily Bruner, Tree Form	2" Cal.	2	8'Ht. Small Tree
Hornbeam, Columnar	3" Cal.	7	10'Ht. Large Tree
Nandina, Gulfstream	3 Gal.	6	21"Ht. Shrub
Pittosporum Compacta	3 Gal.	13	21"Ht. Shrub
Drift Rose, Pink	3 Gal.	25	Groundcover
Elephant Ear, Black	3 Gal.	12	Perennial
Yew, Japanese Upright	7 Gal.	51	36"Ht. Shrub
Azalea Fashion	3 Gal.	19	18"Ht. Shrub
Boxwood Wintergreen	3 Gal.	15	18"Ht. Shrub
Breeze Grass	3 Gal.	35	18"Ht. Shrub
Blush Loropetalum	3 Gal.	7	18"Ht. Shrub
Camellia Sasanqua Kanjiro	7 Gal.	8	48"Ht. Shrub
Camellia Sasanqua Yuletide	7 Gal.	3	36"Ht. Shrub
Lantana, Goldmound	1 Gal.	8	Perennial
Asiatic Jasmine	4" Pot	325	Groundcover
Liriope, Evergreen Giant	1 Gal.	86	Groundcover
Holly, Yaupon, Dwarf	3 Gal.	28	18"Spr.
Empire Zoysia Sod	Sq. Yd.	448	
Cleyera Japonica (along Independence Blvd)	7 Gal.	18	36"Ht. Shrub
Chocolate Dyed Mulch	Cu. Yd.	95	
Ginkgo Biloba	3" Cal.	4	10'Ht. Large Tree
Sky Pencil Holly	7 Gal.	5	36"Ht. Shrub

PRIMARY STREETYARD: 235' L x 25' W = 5875 SF x 50% = 2938 SF
 SECONDARY STREETYARD: 133' L x 12.5' W = 1663 SF x 50% = 831 SF

PANERA BREAD
 3500 OLEANDER DRIVE
 OWNER: HUTTON GROWTH ONE, LLC
 736 CHERRY ST., CHATTANOOGA, TN, 37402
 ZONE: RB; CANA LAND USE CLASSIFICATION: URBAN
 SITE AREA: 1.33 ACRES x 15 = 20 TREES 2" CAL. REQ'D & PROV'D.
 NEW PARKING AREA: 21,000 SF x 20% = 4,200 SF SHADING REQ'D.
 8,125 SF SHADING PROV'D.

LANDSCAPING SHALL BE COMPLETE BEFORE ISSUANCE OF A C.O.
 A rain/freeze sensor shall be used if there is an irrigation system.
 USING THE CREATIVE STANDARD OF THE CODE 50% OF THE STREETYARDS SHALL BE PLANTED AS CALLED OUT.
 PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
 The areas within the triangular sight distance shall be maintained free of all obstructions between 30" and 10'.
 All planted and retained living material required to meet the provisions of the City of Wilmington Land Development Code, shall be perpetually protected and maintained to professionally accepted standards by joint and several responsibility of the owner, tenant and respective agents of the property on which the material is located.
 The area within the triangular sight distance shall be maintained free of all obstructions between 30" and 10'.

jim@freemanlandscape.com
 910-796-1166

Revision #: 3
 Date: 11/12/2013

Scale:
 0' 1" = 20' 0"

Landscape Plan:
Panera Bread - Oleander

Landscape Design by: James S. Freeman - NCLC# 408
Freeman Landscape, Inc.

HUTTON GROWTH ONE, LLC TRACT

CITY OF WILMINGTON
NEW HANOVER COUNTY
NORTH CAROLINA

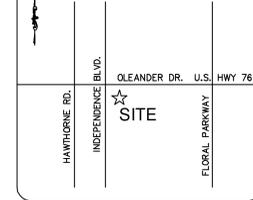
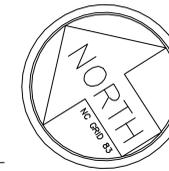
DATE: JULY 9, 2013

OLEANDER DRIVE

(PUBLIC RIGHT OF WAY)

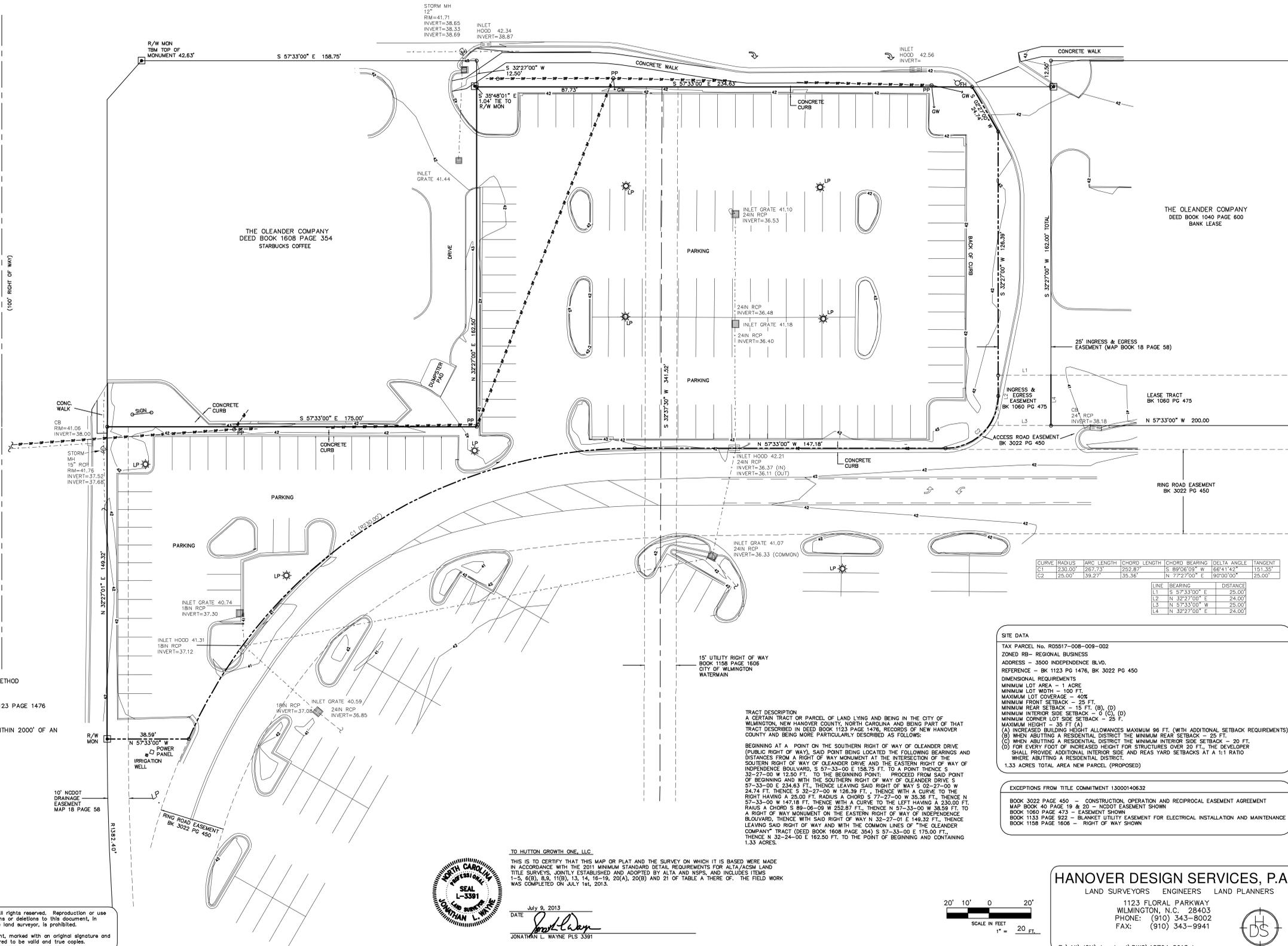
LOCATION MAP

(NOT TO SCALE)



INDEPENDENCE BLVD.

(100' Right of Way)



CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE	TANGENT
C1	230.00'	267.13'	252.87'	S 89°06'09" W	66°41'42"	151.35'
C2	25.00'	39.27'	36.94'	N 77°27'00" E	90°00'00"	25.00'

LINE	BEARING	DISTANCE
L1	S 57°33'00" E	25.00'
L2	N 32°27'00" E	24.00'
L3	N 57°33'00" W	29.00'
L4	N 32°27'00" E	24.00'

SITE DATA
 TAX PARCEL No. R05817-008-009-002
 ZONED RB - REGIONAL BUSINESS
 ADDRESS - 3500 INDEPENDENCE BLVD.
 REFERENCE - BK 1123 PG 1476, BK 3022 PG 450

DIMENSIONAL REQUIREMENTS
 MINIMUM LOT AREA - 1 ACRE
 MINIMUM LOT WIDTH - 100 FT.
 MAXIMUM LOT COVERAGE - 40%
 MINIMUM FRONT SETBACK - 25 FT.
 MINIMUM REAR SETBACK - 15 FT. (B), (D)
 MINIMUM INTERIOR SIDE SETBACK - 0 (C), (D)
 MINIMUM CORNER LOT SIDE SETBACK - 25 FT.
 MAXIMUM HEIGHT - 35 FT. (A)
 (A) INCREASED BUILDING HEIGHT ALLOWANCES MAXIMUM 96 FT. (WITH ADDITIONAL SETBACK REQUIREMENTS)
 (B) WHEN ABUTTING A RESIDENTIAL DISTRICT THE MINIMUM REAR SETBACK - 25 FT.
 (C) WHEN ABUTTING A RESIDENTIAL DISTRICT THE MINIMUM INTERIOR SIDE SETBACK - 20 FT.
 (D) FOR EVERY FOOT OF INCREASED HEIGHT FOR STRUCTURES OVER 20 FT., THE DEVELOPER SHALL PROVIDE ADDITIONAL INTERIOR SIDE AND REAR YARD SETBACKS AT A 1:1 RATIO WHERE ABUTTING A RESIDENTIAL DISTRICT

1.33 ACRES TOTAL AREA NEW PARCEL (PROPOSED)

EXCEPTIONS FROM TITLE COMMITMENT 13000140632
 BOOK 3022 PAGE 450 - CONSTRUCTION, OPERATION AND RECIPROCAL EASEMENT AGREEMENT
 MAP BOOK 40 PAGE 19 & 20 - NCDOT EASEMENT SHOWN
 BOOK 1060 PAGE 473 - EASEMENT SHOWN
 BOOK 1153 PAGE 922 - BLANKET UTILITY EASEMENT FOR ELECTRICAL INSTALLATION AND MAINTENANCE
 BOOK 1158 PAGE 1608 - RIGHT OF WAY SHOWN

- NOTES**
- AREA COMPUTED BY COORDINATE METHOD
 - ALL DISTANCES ARE HORIZONTAL
 - FOR REFERENCE SEE DEED BOOK 1123 PAGE 1476
 - SURVEYED JUNE 2013
 - THIS PROPERTY IS NOT LOCATED WITHIN 2000' OF AN EXISTING N.C. GRID MONUMENT
 - ELEVATIONS BASED ON NAVD 88.

- LEGEND**
- E.I.P. = EXISTING IRON PIPE
 - MH = MAN HOLE
 - GV = GAS VALVE
 - CB = CATCH BASIN
 - PP = POWER POLE
 - LP = LIGHT POLE
 - FH = FIRE HYDRANT
 - R/W = RIGHT OF WAY
 - WM = WATER MAIN
 - WV = WATER VALVE
 - W- = OVER HEAD POWER
 - GW = GUY WIRE

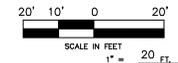
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 Only copies from the original of this document, marked with an original signature and original seal of the surveyor shall be considered to be valid and true copies.



TO HUTTON GROWTH ONE, LLC.
 THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA\ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1-5, 6(B), 8, 9, 11(B), 13, 14, 16-19, 20(A), 20(B) AND 21 OF TABLE A THERE OF. THE FIELD WORK WAS COMPLETED ON JULY 1st, 2013.

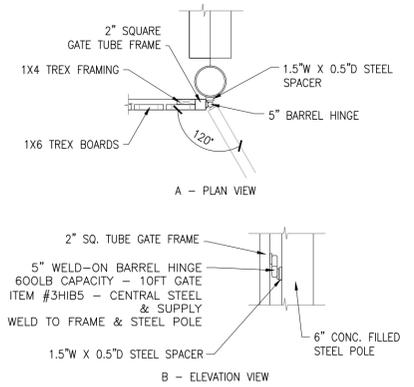
July 9, 2013
 DATE

 JONATHAN L. WAYNE PLS 3391

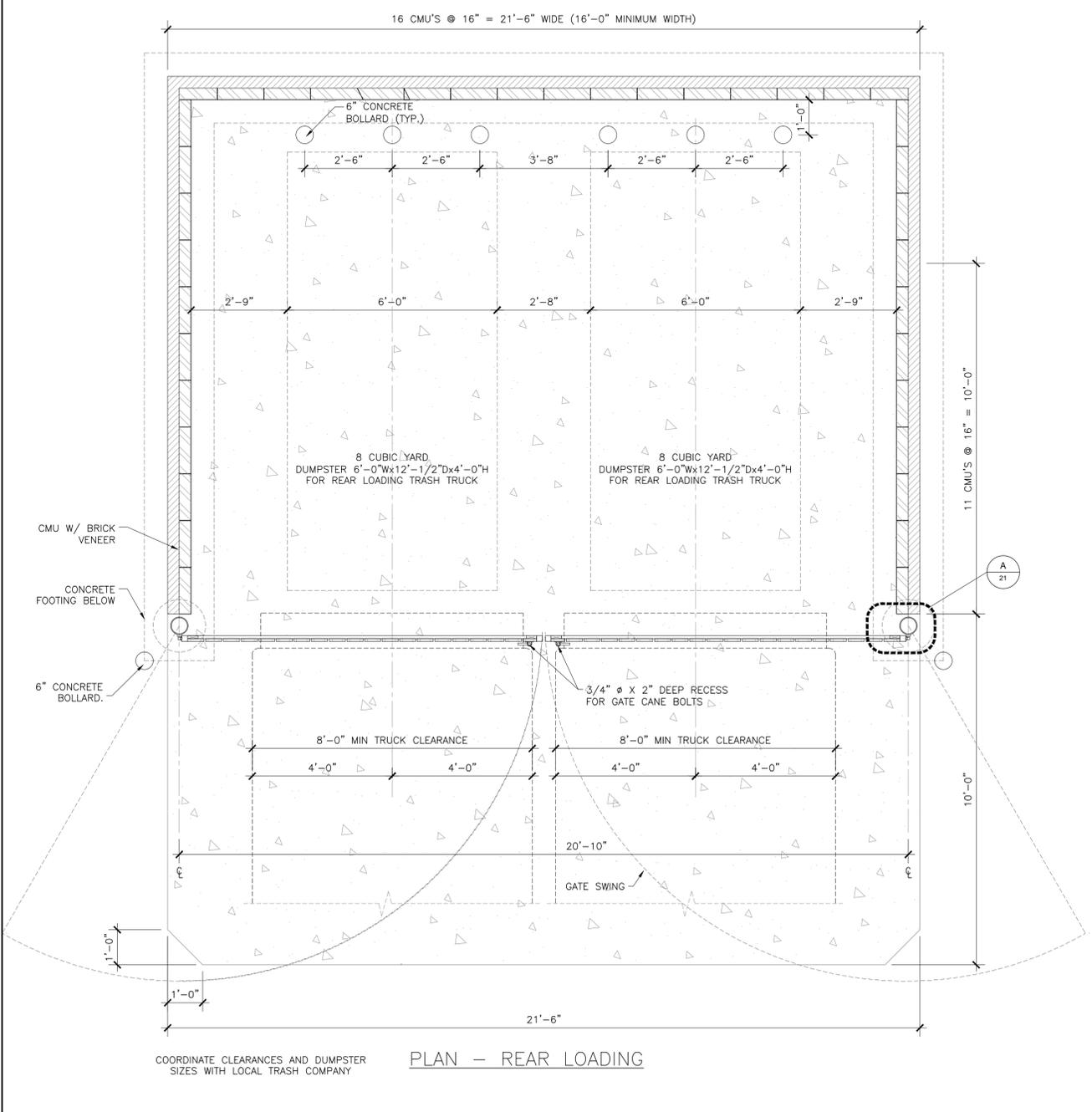


HANOVER DESIGN SERVICES, P.A.
 LAND SURVEYORS ENGINEERS LAND PLANNERS
 1123 FLORAL PARKWAY
 WILMINGTON, N.C. 28403
 PHONE: (910) 343-8002
 FAX: (910) 343-9941

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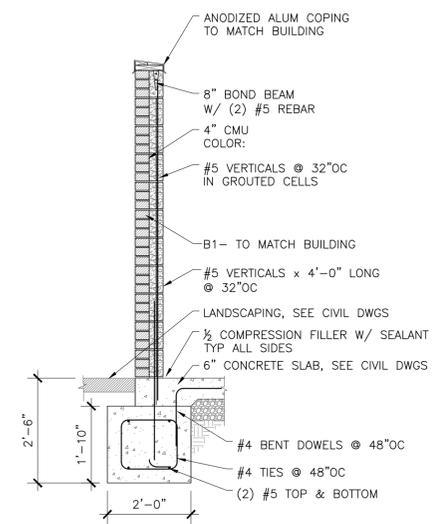


21 **DETAIL @ TRASH ENCLOSURE GATE HINGE**
SCALE: 3/4"=1'-0"

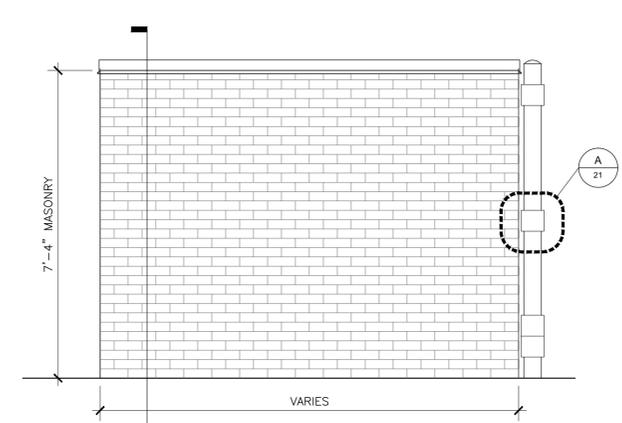


COORDINATE CLEARANCES AND DUMPSTER SIZES WITH LOCAL TRASH COMPANY
PLAN - REAR LOADING

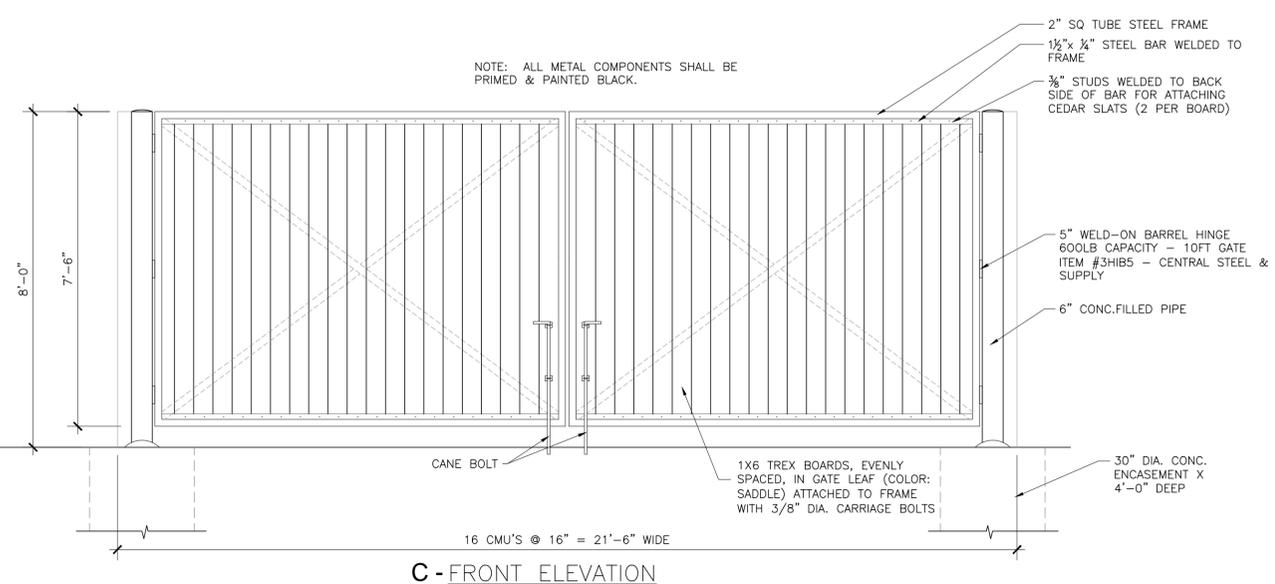
12 **PLAN @ TRASH & RECYCLE ENCLOSURE FOR REAR LOADING TRUCK**
SCALE: 1/2"=1'-0"



A - SECTION



B - SIDE ELEVATION



C - FRONT ELEVATION

12 **TRASH & RECYCLE ENCLOSURE DETAILS**
SCALE: 1/2"=1'-0"

BAKERY CAFE:
#1775
SYSTEM: G3 (GLOW)
PHOTO UPDATE: 2012-02

ENGINEER:
William J. Alkemeyer, P.E.
353 Marquette Avenue
St. Louis, Missouri 63119
Phone: (314) 772-1792
Fax: (314) 372-2514

ARCHITECT:
NORR ARCHITECTS
PLANNERS
335 N. LaSalle St., Suite 700 | Chicago, IL 60654
1.312.424.2400 | 1.312.424.2414 | www.norr.com

THIS DOCUMENT IS RELEASED FOR PURPOSE OF PHASE 1 REVIEW. IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

BAKERY CAFE #1775
OLEANDER DRIVE
WILMINGTON, NC

Panera BREAD

REVISION	DATE	BY
PHASE 1	xx.xx.xx	xx.xx.xx

ISSUE DATE: xx.xx.xx
PROJECT #: NICH13.0256.00
DRAWN BY: NORR
DPM: G. JOHNSON
DM: P. SULLIVAN
CPM: J. PLESCIA

SHEET NO:
A-0.45
TRASH ENCLOSURE
DETAILS
FILE: 1775_A-0.45.dwg