

VICINITY MAP

SCALE 1" = ±300'

# KNIGHTDALE STATION PRESCHOOL

## SITE PLANS

### PROJECT NARRATIVE:

THIS PROJECT IS FOR A 11,400 SF PRESCHOOL AND ASSOCIATED ACCESS, PARKING, AND UTILITIES. THE PROJECT IS LOCATED IN KNIGHTDALE, NORTH CAROLINA ON AN EXISTING 1.78 ACRE PARCEL, IN THE KNIGHTDALE STATION DEVELOPMENT. THERE ARE NO 100 YEAR FLOODPLAINS OR NEUSE BASIN RIPARIAN BUFFERS ON THE PROPERTY. STORM WATER RUNOFF IS COLLECTED AND DIRECTED VIA EROSION AND SEDIMENTATION CONTROL MEASURES TO A TEMPORARY SEDIMENT BASIN DURING GRADING. IN THE FINAL CONDITION, A MAJORITY OF THE DEVELOPED AREA WILL COLLECTED IN A STORM DRAINAGE SYSTEM AND OULET TO A BIORETENTION POND. THE BIORETENTION POND WILL REDUCE RUN-OFF FROM THE DEVELOPED AREAS TO BELOW PRE-DEVELOPMENT LEVELS FOR THE 1-YR, 24 HOUR STORM EVENTS.

TOWN OF KNIGHTDALE PROJECT NUMBER: ZCP-1-17

#### ADDITIONAL USE STANDARDS FOR CHILD CARE CENTER

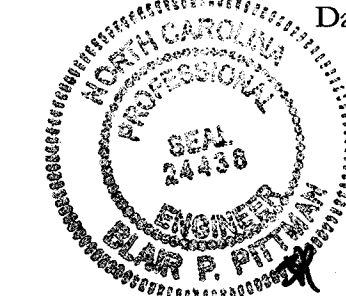
CHILD/ADULT DAY CARE CENTER (6 OR MORE PEOPLE) (RR, UR, RMX, NMX) (2.3C(3)F)

- IN ADDITION TO MEETING THE REQUIREMENTS OF SECTION 4.8, FENCING ENCLOSING ANY REQUIRED RECREATION SPACE SHALL BE A MINIMUM OF FOUR (4) FEET IN HEIGHT AND CONSTRUCTED WITH GATES IN SUCH A MANNER THAT MAXIMUM SAFETY TO THE PERSON IS ENSURED.
- DAY CARE CENTERS SHALL BE LOCATED ON LOTS WHICH PROVIDE AMPLE OUTDOOR PLAY AREA. A FENCED RECREATION AREA OF A MINIMUM OF 2,250 SQUARE FEET SHALL BE PROVIDED IN THE REAR OR SIDE YARD. REQUIRED BUFFER YARDS MAY NOT BE COUNTED TOWARDS THIS REQUIREMENT.
- HOURS OF OPERATION SHALL BE PERMITTED ONLY FROM 6:00 AM UNTIL 9:00 PM.

**Professional Design Engineer Certification.** These improvements shall be constructed in accordance with the following drawings and with the Standard Specifications of the Town of Knightdale.

I, Blair Pittman, PE, certify that the Standard Specifications of the Town of Knightdale have been thoroughly checked and found to be applicable to this project. All exceptions to the applicable Town standards have been previously approved by the Town of Knightdale and said exceptions are shown on Sheet(s) 4/10 of these drawings.

By: Blair Pittman, PE  
Date: 2/14/17



**Town Approved Standards Shall Control.** In the event of a conflict or inconsistency between these construction drawings and the Town of Knightdale's Approved Standards for this project, the Approved Standards shall control. Town of Knightdale Approved Standards shall mean all development documents necessary for approval for the Property including, but not limited to, any special use permit, subdivision plan, site plan, subdivision plat(s), phasing schedule, Development Agreement, Utility Allocation Agreement, Annexation Agreement, the Town of Knightdale Standard Specification and Details Manual and applicable provisions of the North Carolina State Building Code.

**Town Certification.** This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.

By: Blair Pittman, PE Date: 2-12-17  
Town Engineer

These plans are approved by the Town of Knightdale and serve as construction plans for this project.

By: Blair Pittman, PE Date: 2-17  
Administrator

ESTIMATED SEWAGE FLOW FOR 225 EMPLOYEES/STUDENTS (15 GPD) IS 3,375 GPD (PER 15A NCAC 18A .1949)

### PROJECT LOCATION:

THIS PROJECT IS LOCATED IN THE TOWN OF KNIGHTDALE, NORTH CAROLINA ON LIGHTRAIL DRIVE, WEST OF THE INTERSECTION WITH CAROLINIAN AVE.

#### SITE DATA

OWNER / DEVELOPER	RED ELEPHANT INVESTMENTS LLC
STREET	100 MATRIX DR # 8000
CITY	CARY, NC 27513
DESIGNER	BOBBITT DESIGN-BUILD, INC. ATTN: BLAIR PITTMAN, PE (24438)
STREET	600 GERMANTOWN ROAD
CITY	RALEIGH, NC 27607
EMAIL ADDRESS	bpittman@bobbitt.com
PHONE NUMBER	919.851.1980
SITE ADDRESS	710 LIGHTRAIL DRIVE
PIN NUMBER	1754-76-5578
TOTAL DEEDED ACREAGE	1.78
JURISDICTION	KNIGHTDALE
INSIDE CITY LIMITS	YES
ZONED	UR12
SURROUNDING ZONING	UR12
WATERSHED	NEUSE - MARKS CREEK
EXISTING USE	VACANT
PROPOSED BUILDING USE	PRESCHOOL
PHASED PROJECT	NO
BUILDING AREA	±11,400 SF
BUILDING HEIGHT	1 STORY
BUILDING HEIGHT ALLOWED	3 STORIES
REQUIRED OPEN SPACE	N/A

#### BUILDING SETBACKS:

FRONT	10'
SIDE	0'
REAR	30'

IMPERVIOUS	TOTAL
BUILDING AREA:	11,400 SF
PROPOSED VEHICLE PVMT. AREA:	19,505 SF
NON-VEHICLE PVMT. AREA:	4,082 SF
TOTAL IMPERVIOUS	34,987 SF / 45.1%
DISTURBED/DENUDED AREA	1.73 ACRES
<b>PARKING REQUIREMENTS:</b>	
PRESCHOOL - 200 STUDENTS	70 MAXIMUM / 35 MINIMUM
0.35 SPACE PER CHILD - MAXIMUM	
1/2 MAXIMUM ALLOWED - MINIMUM	
TOTAL REQUIRED	35 (MINIMUM)
PROPOSED:	49
HANDICAP SPACES REQ'D/PROV'D:	2/2 (2 VAN)
BICYCLE PARKING REQ'D/PROV'D:	3 (2 RACKS - 4 SPACES)
1/20 VEHICLE SPACES	
<b>LANDSCAPE REQUIREMENTS:</b>	
ADJACENT TO UR12	NOT REQUIRED

#### NOTE:

- BOUNDARY, SURVEY AND TOPOGRAPHIC INFORMATION PROVIDED BY CAWTHORNE, MOSS & PANCIERA, P.C. PROFESSIONAL LAND SURVEYORS, C-1525, 333 S. WHITE STREET, P.O. BOX 1253, WAKE FOREST N.C., 27588, (919) 556-3148 SURVEY DATED: SEPTEMBER 29, 2016.

#### FLOODPLAIN INFORMATION

THIS SITE DOES NOT CONTAIN A 100-YR FLOOD PLAIN AREA AS SHOWN ON FIRM PANEL 3720175400J DATED 2 MAY 2006

#### INDEX OF SHEETS

SHEET NUMBER	DESCRIPTION
CO.0	COVER SHEET
CO.1	EXISTING CONDITIONS
C1.0	STAKING PLAN
C2.0	EROSION CONTROL PHASE I
C2.1	EROSION CONTROL PHASE II
C3.0	GRADING PLAN
C4.0	UTILITY PLAN
C5.0	LANDSCAPE PLAN
C6.0	LIGHTING PLAN (BY DUKE ENERGY)
C7.0	DETAIL SHEET
C7.1	DETAIL SHEET
C7.2	DETAIL SHEET
C7.3	DETAIL SHEET
C7.4	DETAIL SHEET
A1	ARCHITECTURAL FLOOR PLAN
A2	ARCHITECTURAL ELEVATIONS

**CALL BEFORE YOU DIG!**  
NORTH CAROLINA LAW REQUIRES NOTIFICATION OF THE UNDERGROUND FACILITY OWNER NOT LESS THAN TWO (2) BUT NO MORE THAN TEN (10) WORKING DAYS PRIOR TO EXCAVATION OR DEMOLITION

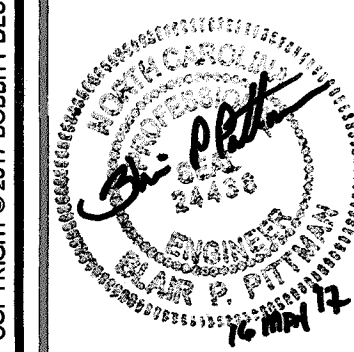
**www.nc811.org**  
1-800-632-4949

**North Carolina One-Call Center, Inc.**

REVISIONS			
No.	DATE	DESCRIPTION	REV. BY
▲	31 MARCH '17	REVISED PER TOWN OF KNIGHTDALE COMMENTS	JBG
▲	15 MAY '17	RVS'D PER KNIGHTDALE COMMENTS SUBMIT FOR SIGNATURES	JBG
▲			
▲			

**APPROVED FOR CONSTRUCTION**

THESE PLANS WERE USED FOR PERMITTING AND DO NOT REFLECT CHANGE ORDERS OR MODIFICATIONS MADE DURING CONSTRUCTION.



**BOBBITT DESIGN-BUILD**  
600 GERMANTOWN ROAD, SUITE 100, RALEIGH, NORTH CAROLINA 27607  
PH (919) 851-1980 | FAX (919) 851-1981 | EMAIL: info@bobbitt.com

COORDINATOR: Blair Pittman

DRAWN BY: Jason Galloway

CHK BY: BPP

**KNIGHTDALE STATION PRESCHOOL**  
710 Lightrail Drive  
KNIGHTDALE, NORTH CAROLINA

24 X 36

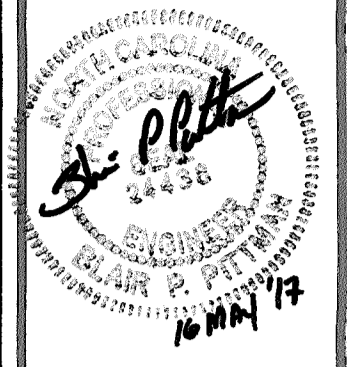
8 FEBRUARY 2017

1954-0015

COVER

**CO.0**





**BOBBITT**  
DESIGN-BUILD  
600 Cameron Road | Raleigh, North Carolina 27607  
Ph: (919) 851-1880 | Fax: (919) 851-1882 | design@bobbitt.com  
Firm Lic. # D-0181

COORDINATOR:  
Blair Pittman

DRAWN BY:  
Jason Galloway

CHK BY: BPP

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710 Lightrail Drive  
KNIGHTDALE, NORTH CAROLINA

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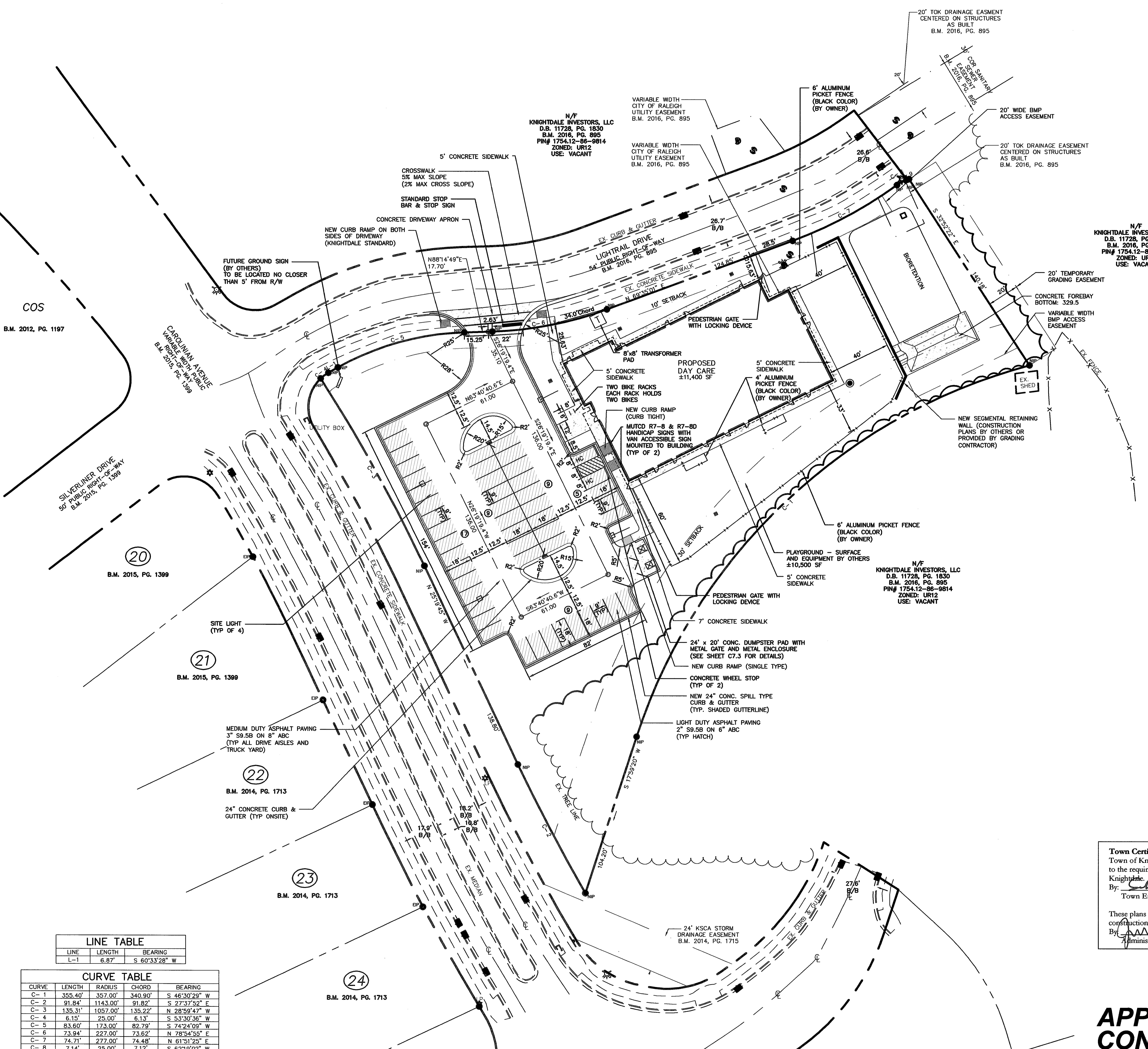
8 FEBRUARY 2017

1954-0015

STAKING  
PLAN

**C1.0**

- GENERAL NOTES: STAKING PLAN**
- BOUNDARY, SURVEY AND TOPOGRAPHIC INFORMATION PROVIDED BY CAWTHORNE, MOSS & PANCIERA, P.C. PROFESSIONAL LAND SURVEYORS, C-1525, 333 S. WHITE STREET, P.O. BOX 1253, WAKE FOREST N.C., 27588, (919) 556-3148 SURVEY DATED: SEPTEMBER 29, 2016
  - ALL DENUDED AREAS TO BE PERMANENTLY SEEDED PER ATTACHED SEEDING SCHEDULE.
  - CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS FOR CONSTRUCTION SHOWN ON THESE PLANS.
  - ALL DIMENSIONS AND STAKING POINT LOCATIONS ARE TO BACK OF CURB/EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
  - ANY WORK SHOWN ON THESE PLANS THAT IS FOUND TO BE IN CONFLICT WITH LOCAL ZONING SETBACK REQUIREMENTS SHALL BE IMMEDIATELY REPORTED TO THE CIVIL ENGINEER FOR ADJUSTMENT.
  - LOCATIONS FOR EXISTING UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE, CONTRACTOR SHALL CALL UTILITY LOCATOR TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES.
  - CONTRACTOR SHALL AT ALL TIMES MAINTAIN ADEQUATE SAFETY MEASURES, ACTIVITIES, AND BARRICADES FOR THE PROTECTION OF ALL PERSONS ON OR ABOUT THE LOCATION OF THE SITE.
  - CONTRACTOR SHALL INSTALL SIGNS, AND CONSTRUCT NECESSARY RAMPS, AS PER THE NORTH CAROLINA STATE BUILDING CODE, FOR ALL HANDICAP PARKING SPACES NOTED ON THE PLANS.
  - FOR ALL HANDICAPED PARKING SPACES, AS PER ADA CODE:
    - REGARDLESS OF AGE, ALL ACCESSIBLE SPACES SHALL BE IDENTIFIED BY ABOVE GROUND SIGNS ONLY;
    - NEW SPACES SHALL NOT USE GROUND-PAINTED SYMBOLS;
    - ACCESSIBLE SPACES ARE REQUIRED TO BE STRIPED OFF ONLY; BLUE COLORING IS NOT NECESSARY NOR REQUIRED;
    - STRIPING IS WHITE ON DARK PAVEMENT; BLACK ON LIGHT PAVEMENT.
  - ALL PAVEMENT MARKINGS INCLUDING TRAFFIC CONTROL, STOP BARS, FIRE LANES AND CROSS WALKS SHALL BE MADE WITH REFLECTORIZED THERMOPLASTIC STRIPING WITH A MINIMUM THICKNESS IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS FOR ROADS & STRUCTURES. ALL MARKINGS SHALL BE 120 MIL THICK WITH THE EXCEPTION OF SYMBOLS WHICH SHALL BE 90 MIL THICK. PARKING STALL STRIPING IN A PRIVATE PARKING LOT IS EXEMPT FROM USE OF THERMOPLASTICS. THE THERMOPLASTIC STRIPING TYPE OF MARKING MATERIAL SHALL BE APPLIED BY FUSING TO THE PAVEMENT SURFACE BY APPLICATION OF HEAT.
  - ALL CONSTRUCTION TO BE PERFORMED TO THE TOWN OF KNIGHTDALE DESIGN AND CONSTRUCTION STANDARDS.



**LINE TABLE**

LINE	LENGTH	BEARING
L-1	6.87'	S 60°33'28\" W

**CURVE TABLE**

CURVE	LENGTH	RADIUS	CHORD	BEARING
C-1	355.40'	357.00'	340.90'	S 46°30'29\" W
C-2	91.84'	1143.00'	91.82'	S 27°37'52\" E
C-3	135.31'	1057.00'	135.22'	N 28°59'47\" W
C-4	6.15'	25.00'	6.13'	S 53°30'36\" W
C-5	83.60'	173.00'	82.79'	S 74°24'09\" E
C-6	73.94'	227.00'	73.62'	N 78°54'59\" E
C-7	74.71'	277.00'	74.48'	N 51°51'23\" E
C-8	7.14'	25.00'	7.12'	S 62°19'02\" W
C-9	1.40'	25.00'	1.40'	S 72°06'39\" W

**Town Certification.** This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.

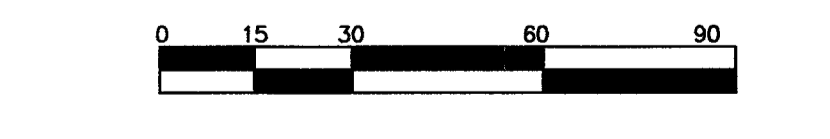
By: [Signature] Date: 6.12.17  
Town Engineer

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By: [Signature] Date: 6.12.17  
Administrator

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North Carolina One-Call Center, Inc.



**REVISIONS**

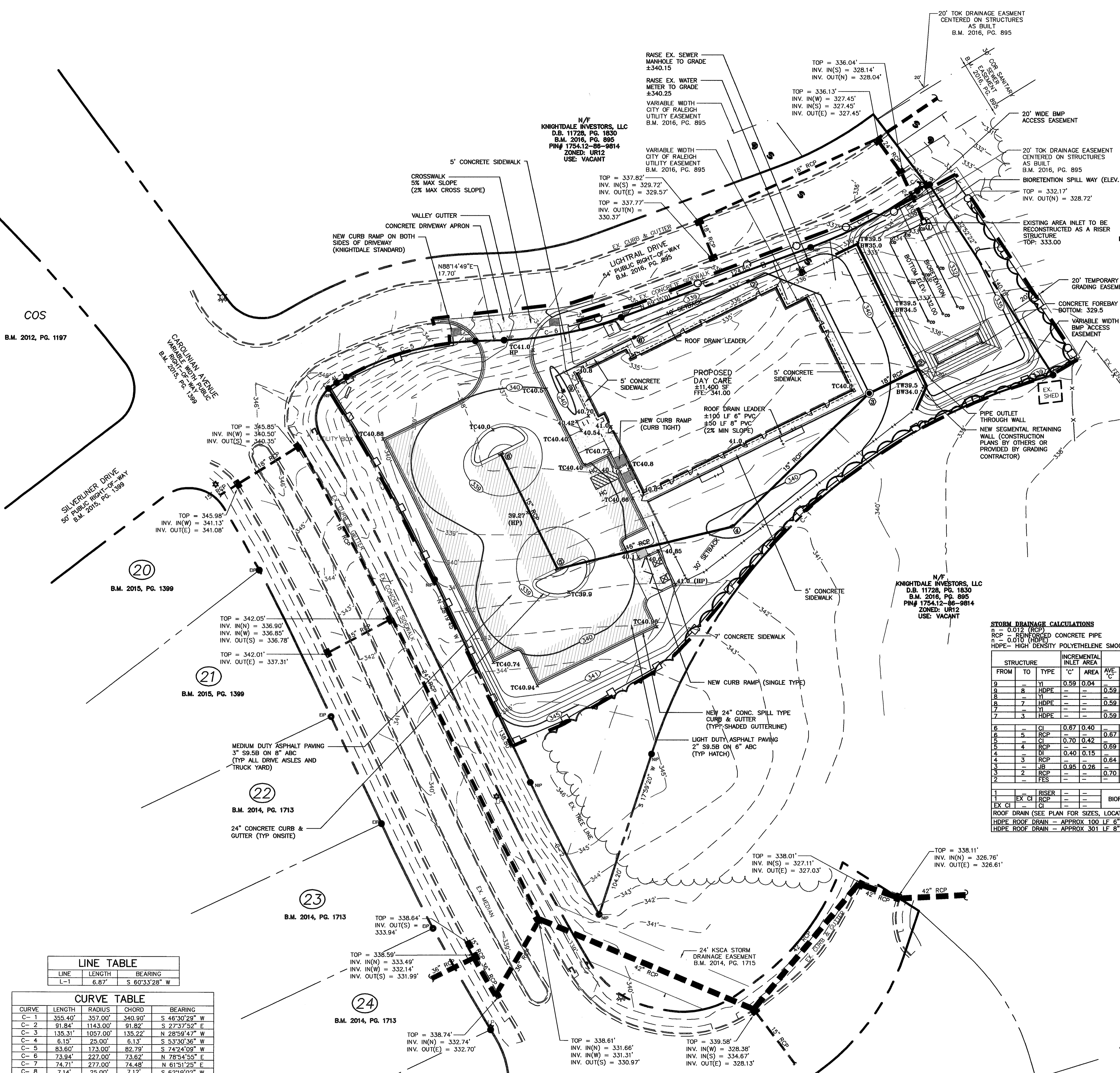
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2	15 MAY 17	REVISED SITE ADDRESS IN TITLE BLOCK SUBMIT FOR SIGNATURES	JBG

**APPROVED FOR CONSTRUCTION**

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GENERAL NOTES: GRADING PLAN

- BOUNDARY, SURVEY AND TOPOGRAPHIC INFORMATION PROVIDED BY CAWTHORNE, MOSS & PANCIERA, P.C. PROFESSIONAL LAND SURVEYORS, C-1525, 333 S. WHITE STREET, P.O. BOX 1253, WAKE FOREST N.C., 27588, (919) 556-3148 SURVEY DATED: SEPTEMBER 29, 2016
- BIORETENTION TO RETAIN STORMWATER RUN-OFF TO PRE-DEVELOPMENT CONDITIONS FOR THE 1 YEAR, 24 HOUR STORM EVENT. BIORETENTION TO PROVIDE NITROGEN REMOVAL, BASED ON TOWN OF KNIGHTDALE STANDARDS, PER STORMWATER MANUAL AND NODEHNR BMP MANUAL.
- THE REFERENCED BMP'S SHOWN AND LOCAL ORDINANCES IMPOSE CERTAIN CONTINUING INSPECTION, MAINTENANCE REPAIR AND OTHER REQUIREMENTS UPON THE OWNER. AFTER INITIAL CERTIFICATION OR CERTIFICATE OF OCCUPANCY, THESE PLANS DO NOT INCLUDE ANY RESPONSIBILITY ON THE PART OF THE CONTRACTOR TO COMPLY WITH THOSE REQUIREMENTS ON THE OWNER'S BEHALF.
- CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS FOR CONSTRUCTION SHOWN ON THESE PLANS.
- CONTRACTOR SHALL AT ALL TIMES MAINTAIN ADEQUATE SAFETY MEASURES, ACTIVITIES, AND BARRICADES FOR THE PROTECTION OF ALL PERSONS ON OR ABOUT THE LOCATION OF THE SITE.
- CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION. NOTIFY ENGINEER OF ANY DISCREPANCIES.
- GRADING MORE THAN ONE ACRE WITHOUT AN APPROVED EROSION CONTROL PLAN IS A VIOLATION AND IS SUBJECT TO A FINE.
- TREE PROTECTION FENCING MUST BE IN PLACE PRIOR TO ANY LAND DISTURBANCE AND SHALL INCLUDE WARNING SIGNS POSTED IN BOTH ENGLISH AND SPANISH, AS FOLLOWS: NO TRESPASSING/TREE PROTECTION AREA/PROHIBIDO ENTRAR/ZONA PROTECTORA PARA LOS ARBOLES.
- GRADING BEYOND THE DENUDED LIMITS INDICATED ON CONSTRUCTION DOCUMENTS IS A VIOLATION AND IS SUBJECT TO A FINE.
- ALL EXISTING UTILITIES AND STORM STRUCTURES ARE SHOWN PER SURVEY DATA AND ARE APPROXIMATE. CONTRACTOR IS FULLY RESPONSIBLE TO FIELD VERIFY ACTUAL LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION AND SHALL CALL UTILITY LOCATOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES.
- ALL SIDEWALKS, STOOPS, TERRACES AND OTHER PAVED AREAS SHALL SLOPE AWAY FROM BUILDING(S) AT 2%(MIN).
- THE CONTRACTOR SHALL MAINTAIN EACH DITCH IN AN UNOBSTRUCTED CONDITION AND SHALL REMOVE FROM THESE AREAS ALL DEBRIS, LOGS, TIMBER, TRASH, JUNK AND OTHER ACCUMULATIONS.
- TOPSOIL STRIPPED FROM THE SITE IS TO BE STOCKPILED AND USED FOR BACKFILLING ALL LANDSCAPE ISLANDS, BEDS AND LAWN AREAS. TOPSOIL IS TO BE SPREAD TO A DEPTH OF AT LEAST 6" AS SOIL IS AVAILABLE.
- ALL AREAS NOT COVERED WITH PAVING, GRAVEL, BUILDING OR PLANTING BEDS SHALL BE SEEDED AS SHOWN IN THE SEEDED PREP. AND SEEDING SCHEDULE NOTES. (SEE THE LANDSCAPE PLAN FOR SPECIFIC LAWN AREAS)
- ALL CONSTRUCTION TO BE PERFORMED TO THE TOWN OF KNIGHTDALE DESIGN AND CONSTRUCTION STANDARDS.



STORM DRAINAGE CALCULATIONS

STORM FREQUENCY - 10 YR. C - AS NOTED  
 n = 0.012 (RCP)  
 RCP - REINFORCED CONCRETE PIPE  
 n = 0.010 (HDPE)  
 HDPE - HIGH DENSITY POLYETHYLENE SMOOTH CORE, DOUBLE WALLED PIPE

STRUCTURE	INCREMENTAL INLET AREA	DESIGN FLOW	STORM SEWER DESIGN	STORM PIPE INVERTS	GRATE TOP	HEADWATER	COMMENTS										
FROM	TO	TYPE	'C'	AREA	AVE. 'C'	TOTAL AREA	Q (CFS)	LENGTH (ft.)	DI. (in.)	SLOPE (%)	DEPTH OF FLOW (FT)	VELOCITY (F/S)	CAPACITY FULL (CFS)	INV. IN	INV. OUT	REQ'D	AVAIL. (-0.5 @ 100)
9	8	YI	0.59	0.04	0.59	0.04	7.22	0.17	62	8	2.0	-	-	338.70	337.48	339.80	-
8	7	YI	-	-	0.59	0.04	7.22	0.17	76	8	2.0	-	-	337.48	335.94	340.70	-
7	3	HDPE	-	-	0.59	0.04	7.22	0.17	113	8	1.5	-	-	335.94	334.24	340.00	-
6	5	CI	0.67	0.40	0.67	0.40	7.22	1.93	78	15	0.50	0.55	3.9	335.47	335.08	338.50	0.62
5	4	RCP	0.70	0.42	0.69	0.82	7.22	4.09	108	15	0.50	0.89	4.5	334.98	334.44	338.50	0.95
4	3	YI	0.40	0.15	0.64	0.97	7.22	4.48	115	15	0.50	0.91	4.7	334.34	333.76	339.30	1.05
4	3	RCP	-	-	0.64	0.97	7.22	4.48	115	15	0.50	0.91	4.7	334.34	333.76	339.30	1.05
3	2	YI	0.85	0.26	0.70	1.27	7.22	6.42	51	18	0.50	1.00	5.0	333.68	333.50	340.60	0.95
2	1	RCP	-	-	0.70	1.27	7.22	6.42	51	18	0.50	1.00	5.0	333.68	333.50	340.60	0.95
1	EX CI	RISER	-	-	-	-	-	-	-	-	-	-	-	328.72	328.14	333.00	-
EX CI	CI	BIORETENTION OUTLET	-	-	-	-	-	-	31	24	1.87	-	-	328.72	328.14	336.04	-

ROOF DRAIN (SEE PLAN FOR SIZES, LOCATIONS AND SLOPE)  
 HDPE ROOF DRAIN - APPROX 100 LF 6"  
 HDPE ROOF DRAIN - APPROX 301 LF 8"

Town Certification. This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.  
 By: *[Signature]* Date: 6.17.17  
 Town Engineer

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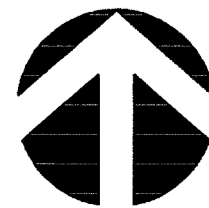
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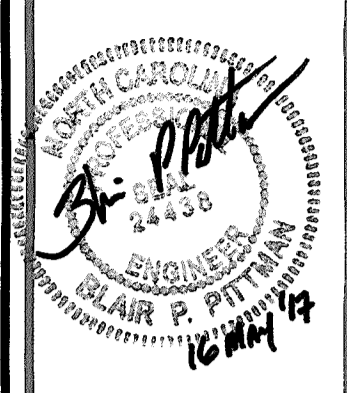
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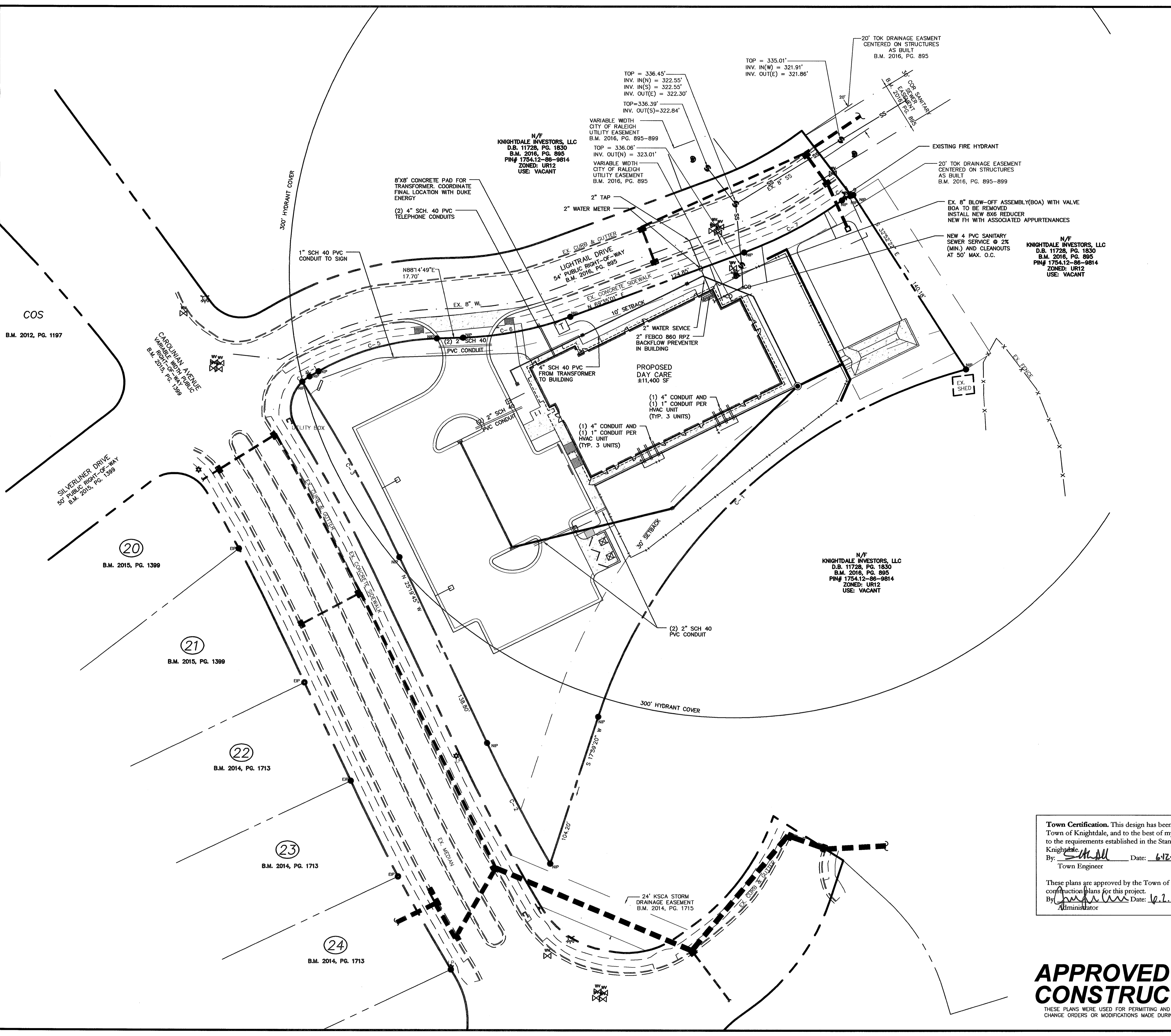
1954-0015

UTILITY PLAN

**C4.0**

**GENERAL NOTES: UTILITY PLAN**

- BOUNDARY, SURVEY AND TOPOGRAPHIC INFORMATION PROVIDED BY CAWTHORNE, MOSS & PANCIERA, P.C. PROFESSIONAL LAND SURVEYORS, C-1525, 333 S. WHITE STREET, P.O. BOX 1253, WAKE FOREST N.C., 27588, (919) 556-3148 SURVEY DATED: SEPTEMBER 29, 2016
- ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF KNIGHTDALE AND THE STATE OF NORTH CAROLINA STANDARDS AND SPECIFICATIONS.
- CONTRACTOR SHALL HAVE NORTH CAROLINA ONE CALL (1-800-632-4949) LOCATE ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
- CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO BEGINNING CONSTRUCTION.
- CONTRACTOR SHALL COORDINATE THE LOCATION OF THE ELECTRIC, GAS, AND TELEPHONE SERVICE WITH THE APPROPRIATE UTILITY COMPANY PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL PROVIDE CONDUITS AS REQUIRED FOR THESE UTILITIES UNDER PAVED AREAS.
- CONTRACTOR SHALL COORDINATE THE LOCATION OF THE CONDUITS NECESSARY FOR THE IRRIGATION SYSTEM, SITE LIGHTING, AND SIGNAGE PRIOR TO BEGINNING CONSTRUCTION.
- THIS PLAN IS DIAGRAMMATIC AND REPRESENTS THE APPROXIMATE LOCATION OF UTILITIES UNLESS SPECIFICALLY DIMENSIONED. THE CONTRACTOR SHALL COORDINATE THE ACTUAL AND PROPOSED LOCATION OF UTILITIES TO AVOID CONFLICTS.
- REFER TO SHEET. NO. C6.0 FOR SITE LIGHTING PLAN
- REFER TO SHEET. NO. C7.0 THRU C7.3 FOR SITE CONSTRUCTION DETAILS.
- CONTRACTOR SHALL COORDINATE THE LOCATION OF THE WATER AND SEWER SERVICE TO THE BUILDING WITH THE BUILDING PLUMBING CONTRACTOR AND THE BUILDING PLANS. NOTIFY ENGINEER OF ANY DISCREPANCIES.
- KITCHEN TO BE FOR WARMING ONLY. NO GREASE TRAP REQUIRED.
- ALL CONSTRUCTION TO BE PERFORMED TO THE TOWN OF KNIGHTDALE DESIGN AND CONSTRUCTION STANDARDS.



CITY OF RALEIGH  
PUBLIC UTILITIES  
DEPARTMENT

CONSTRUCTION  
APPROVAL  
NOT REQUIRED

6/8/17  
SIGNED: *[Signature]*

**Town Certification.** This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.

By: *[Signature]* Date: 6/2/17  
Town Engineer

These plans are approved by the Town of Knightdale and serve as construction plans for this project.

By: *[Signature]* Date: 6/2/17  
Administrator

**CALL BEFORE YOU DIG!**  
NORTH CAROLINA LAW REQUIRES NOTIFICATION OF THE UNDERGROUND FACILITY OWNER NOT LESS THAN TWO (2) BUT NO MORE THAN TEN (10) WORKING DAYS PRIOR TO EXCAVATION OR DEMOLITION

**NORTH CAROLINA 811**  
www.nc811.org  
1-800-632-4949

**North Carolina One-Call Center, Inc.**



REVISIONS			
No.	DATE	DESCRIPTION	REV. BY
▲	31 MARCH '17	REVISED PER TOWN OF KNIGHTDALE COMMENTS	JBG
▲	15 MAY '17	REVISED PER KNIGHTDALE COMMENTS SUBMIT FOR SIGNATURES	JBG
▲			
▲			

**APPROVED FOR CONSTRUCTION**

THESE PLANS WERE USED FOR PERMITTING AND DO NOT REFLECT CHANGE ORDERS OR MODIFICATIONS MADE DURING CONSTRUCTION.

COS  
B.M. 2012, PG. 1197

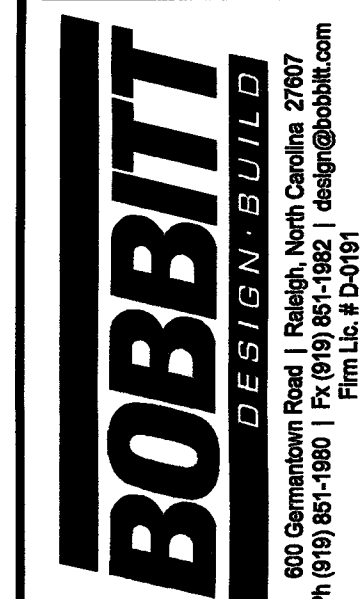
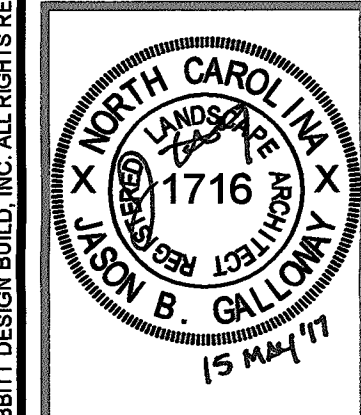
20  
B.M. 2015, PG. 1399

21  
B.M. 2015, PG. 1399

22  
B.M. 2014, PG. 1713

23  
B.M. 2014, PG. 1713

24  
B.M. 2014, PG. 1713



COORDINATOR: Blair Pittman

DRAWN BY: Jason Galloway

CHK BY: BPP

KNIGHTDALE STATION PRESCHOOL  
710 Lightrail Drive  
KNIGHTDALE, NORTH CAROLINA

24 X 36  
1" = 30'

8 FEBRUARY 2017

1954-0015

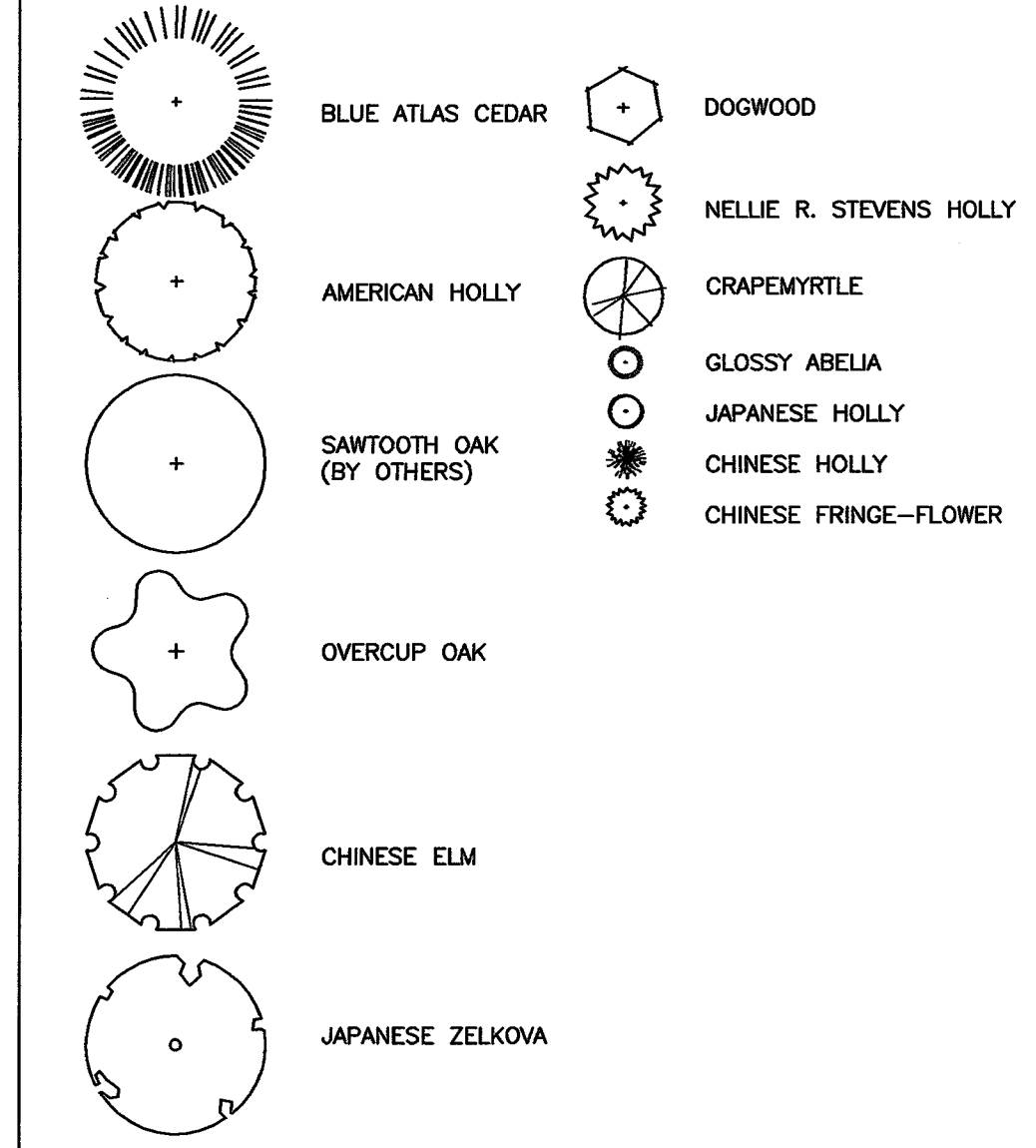
LANDSCAPE PLAN

C5.0

LANDSCAPING NOTES & SPECIFICATIONS:

- 1. BOUNDARY, SURVEY AND TOPOGRAPHIC INFORMATION PROVIDED BY CAWTHORNE, MOSS & PANCIERA, P.C. PROFESSIONAL LAND SURVEYORS, 0-1525, 333 S. WHITE STREET, P.O. BOX 1253, WAKE FOREST N.C., 27588, (919) 556-3148 SURVEY DATED: SEPTEMBER 29, 2016.
2. SITE IS EXEMPT FROM TREE PROTECTION, LESS THAN 2 ACRES.
3. THIS PLAN IS FOR PLANTING PURPOSES ONLY. FOR INFORMATION RELATING TO GRADING, REFER TO GRADING PLAN.
4. VERIFICATION OF TOTAL QUANTITIES AS SHOWN IN THE PLANT LIST SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.
5. ALL PLANTS AND PLANTING PROCEDURES SHALL CONFORM TO ACCEPTED STANDARDS ESTABLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN LATEST EDITION.
6. ALL SAUCERS SHALL BE SOAKED WITH WATER AND MULCHED IMMEDIATELY FOLLOWING PLANTING.
7. ALL TREES AND SHRUBS SHALL BE FULL-WELL BRANCHED PLANTS WHICH ARE CHARACTERISTIC OF THE SPECIES.
8. ALL GRASS IS TO BE HULLED BERMUDA, OR BETTER QUALITY (SEE SEEDING SCHEDULE). ALL ROOT BALLS REMOVED FROM CONTAINERS SHALL BE SCARIFIED PRIOR TO BACKFILLING.
9. REMOVE ALL STRING AND WIRE FROM BASE OF ALL PLANT MATERIAL.
10. MULCH ALL BEDS WITH 3" OF CLEAN PINE NEEDLES, UNLESS OTHERWISE NOTED.
11. ALL AREAS NOT COVERED WITH PAVING, GRAVEL, BUILDINGS OR PLANTING BEDS SHALL BE SEED AS SHOWN IN THE SEEDBED PREP AND SEEDING SCHEDULE.
12. LAWN AREAS SHALL BE RAKED TO REMOVE ROCKS, STICKS, ROOTS AND OTHER TRASH AND DEBRIS AND SHALL BE SMOOTH FOR EASE OF MOWING.
13. ALL PLANTINGS OF TREES & SHRUBS SHALL BE A MINIMUM OF 3' BEHIND ALL CURBS, WHERE NO CURB AND GUTTER IS PROPOSED BORDERING PARKING SPACES, WHEEL STOPS MUST BE PROVIDED TO PREVENT DAMAGE TO PLANT MATERIAL.
14. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SOO.
15. AT TIME OF INSTALLATION, CANOPY TREES SHALL BE A MINIMUM OF 2" CALIPER AND 8' IN HEIGHT; UNDERSTORY TREES SHALL BE A MINIMUM OF 1 1/4" CALIPER AND 6' IN HEIGHT; AND SHRUBS SHALL BE AT LEAST 18" IN HEIGHT AND A 3 GALLON CONTAINER SIZE.
16. ANY ABOVE GROUND UTILITIES HAVE TO BE SCREENED IN ACCORDANCE WITH UDO SECTION 8.7. NO PINE STRAW OR ANY OTHER MATERIAL WITH A FIRE RATE OF SPREAD MORE THAN 24 INCHES PER MINUTE AS DETERMINED BY THE MOST RECENT STUDY OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY SHALL BE PLACED, KEPT OR STORED WITHIN TEN FEET OF BUILDINGS WITH ANY PORTION OF THE EXTERIOR WALL COVERED WITH COMBUSTIBLE MATERIAL.
17. ALL CONSTRUCTION TO BE PERFORMED TO THE TOWN OF KNIGHTDALE DESIGN AND CONSTRUCTION STANDARDS.

LANDSCAPING LEGEND



SEEDING SCHEDULE -BERMUDA

AMEND SOIL PER SOIL REPORT PRIOR TO SEEDING (SOIL REPORTS CAN BE OBTAINED FROM THE NC DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES. 3-4 WEEK PROCESS TIME)
PLANTING TIME: APRIL-JULY
RATE: COATED BERMUDAGRASS - 2 TO 3 POUNDS PER 1,000 SF.
NOTES:
1. DRAG SOIL AFTER APPLICATION TO PROVIDE SOIL COVERAGE OVER SEEDS.
2. MAINTAIN SOIL MOISTURE FOR 1 TO 3 WEEKS AFTER SEEDING

PLANT LIST

Table with columns: QTY., BOTANICAL NAME, COMMON NAME, ROOT, CAL/GAL, SIZE, REMARKS. Includes sections for Canopy Trees, Understory Trees, and Shrubs.

\*\*\*ALL PLANT MATERIAL SHALL CONFORM W/ AMERICAN STANDARD FOR NURSERY STOCK ANSI 260.1

Town Certification. This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.
By: [Signature] Date: 6/21/17
Town Engineer

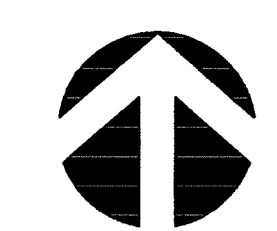
These plans are approved by the Town of Knightdale and serve as construction plans for this project.
By: [Signature] Date: 6/21/17
Administrator



REVISIONS

Table with columns: No., DATE, DESCRIPTION, REV. BY. Shows two revisions dated 31 MARCH '17 and 15 MAY '17.

APPROVED FOR CONSTRUCTION



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CALL BEFORE YOU DIG! NORTH CAROLINA LAW REQUIRES NOTIFICATION OF THE UNDERGROUND FACILITY OWNER NOT LESS THAN TWO (2) BUT NO MORE THAN TEN (10) WORKING DAYS PRIOR TO EXCAVATION OR DEMOLITION.
North Carolina One-Call Center, Inc. www.nc811.org 1-800-632-4949

BUFFERS - SEC 8.6

NOT REQUIRED - ADJACENT PROPERTIES ZONED UR12

SCREENING VEHICLE ACCOMMODATION AREA SEC 8.7.A

ALL SIDES OF PARKING LOTS SHALL BE SCREENED WITH A TYPE A BUFFER YARD.

3 CANOPY TREES, 2 UNDERSTORY TREES, & 20 SHRUBS PER 100 LF

Table with columns: CANOPY, UNDERSTORY, SHRUBS. Shows required and provided quantities.

STREET TREES - SEC 8.10

394 LF OF STREET FRONTAGE - 37 LF SUBTRACTED FOR DRIVEWAY ENTRANCE 357 LF / 1 TREE PER 40 LF = 9 TREES REQ'D/PROP.

OVERALL TREE CANOPY - SEC 8.11

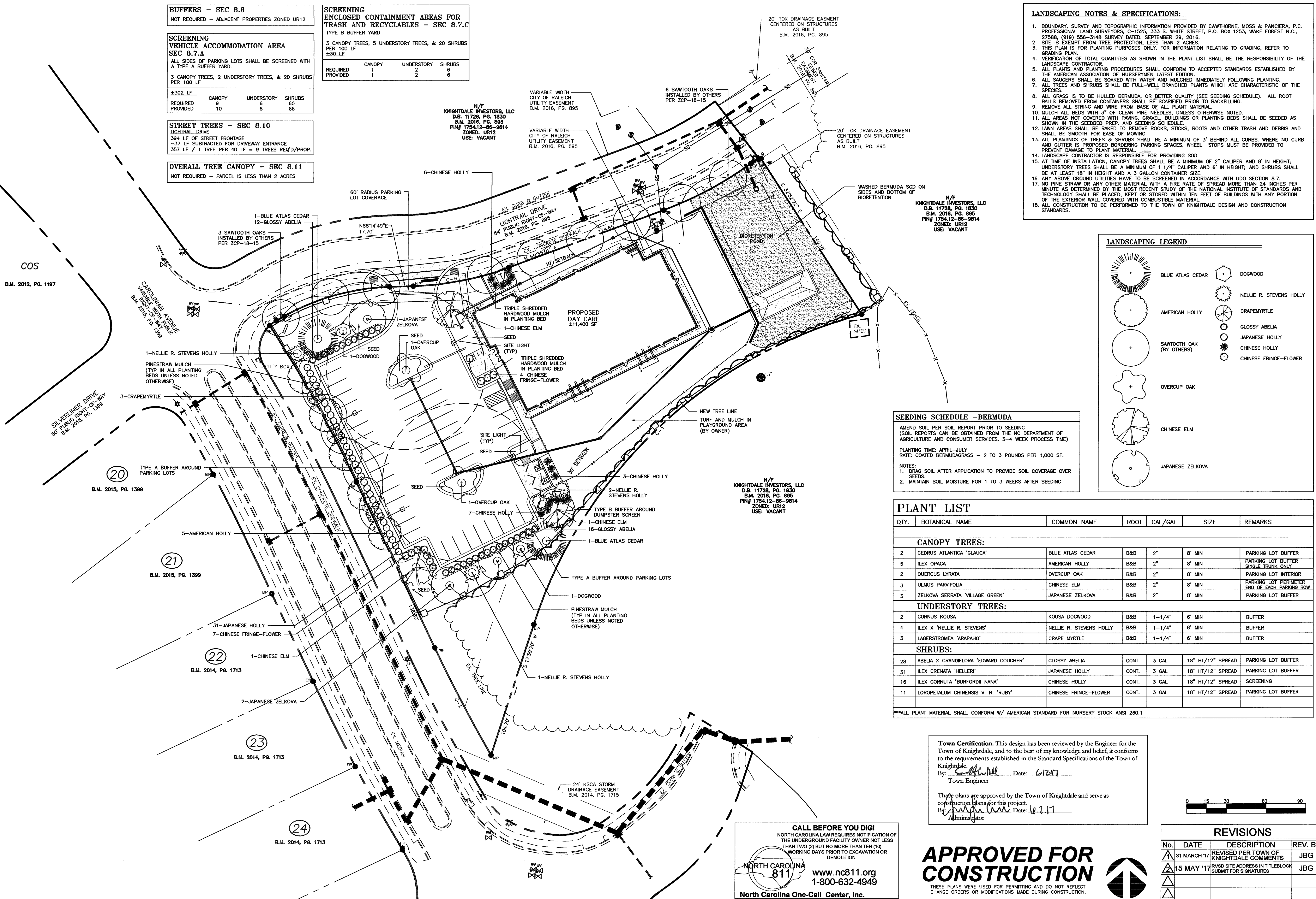
NOT REQUIRED - PARCEL IS LESS THAN 2 ACRES

SCREENING ENCLOSED CONTAINMENT AREAS FOR TRASH AND RECYCLABLES - SEC 8.7.C

TYPE B BUFFER YARD

3 CANOPY TREES, 5 UNDERSTORY TREES, & 20 SHRUBS PER 100 LF

Table with columns: CANOPY, UNDERSTORY, SHRUBS. Shows required and provided quantities.



COS B.M. 2012, PG. 1197

SILVERLINER DRIVE 50' PUBLIC RIGHT-OF-WAY B.M. 2015, PG. 1399

20 B.M. 2015, PG. 1399

21 B.M. 2015, PG. 1399

22 B.M. 2014, PG. 1713

23 B.M. 2014, PG. 1713

24 B.M. 2014, PG. 1713

N/F KNIGHTDALE INVESTORS, LLC D.B. 11728, PG. 1830 B.M. 2016, PG. 895 PIN# 1754.12-86-9814 ZONED: UR12 USE: VACANT

VARIABLE WIDTH CITY OF RALEIGH UTILITY EASEMENT B.M. 2016, PG. 895

VARIABLE WIDTH CITY OF RALEIGH UTILITY EASEMENT B.M. 2016, PG. 895

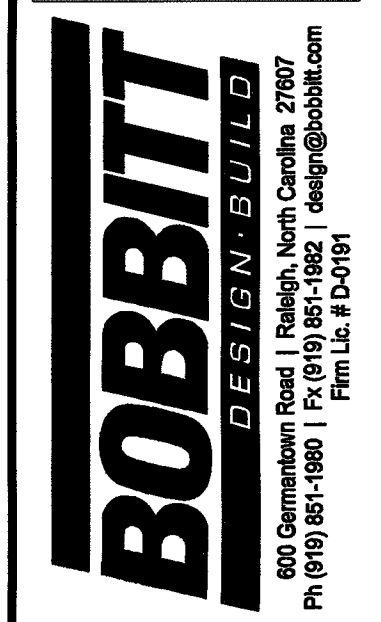
20' TOK DRAINAGE EASEMENT CENTERED ON STRUCTURES AS BUILT B.M. 2016, PG. 895

20' TOK DRAINAGE EASEMENT CENTERED ON STRUCTURES AS BUILT B.M. 2016, PG. 895

N/F KNIGHTDALE INVESTORS, LLC D.B. 11728, PG. 1830 B.M. 2016, PG. 895 PIN# 1754.12-86-9814 ZONED: UR12 USE: VACANT

N/F KNIGHTDALE INVESTORS, LLC D.B. 11728, PG. 1830 B.M. 2016, PG. 895 PIN# 1754.12-86-9814 ZONED: UR12 USE: VACANT

24" KSCA STORM DRAINAGE EASEMENT B.M. 2014, PG. 1713

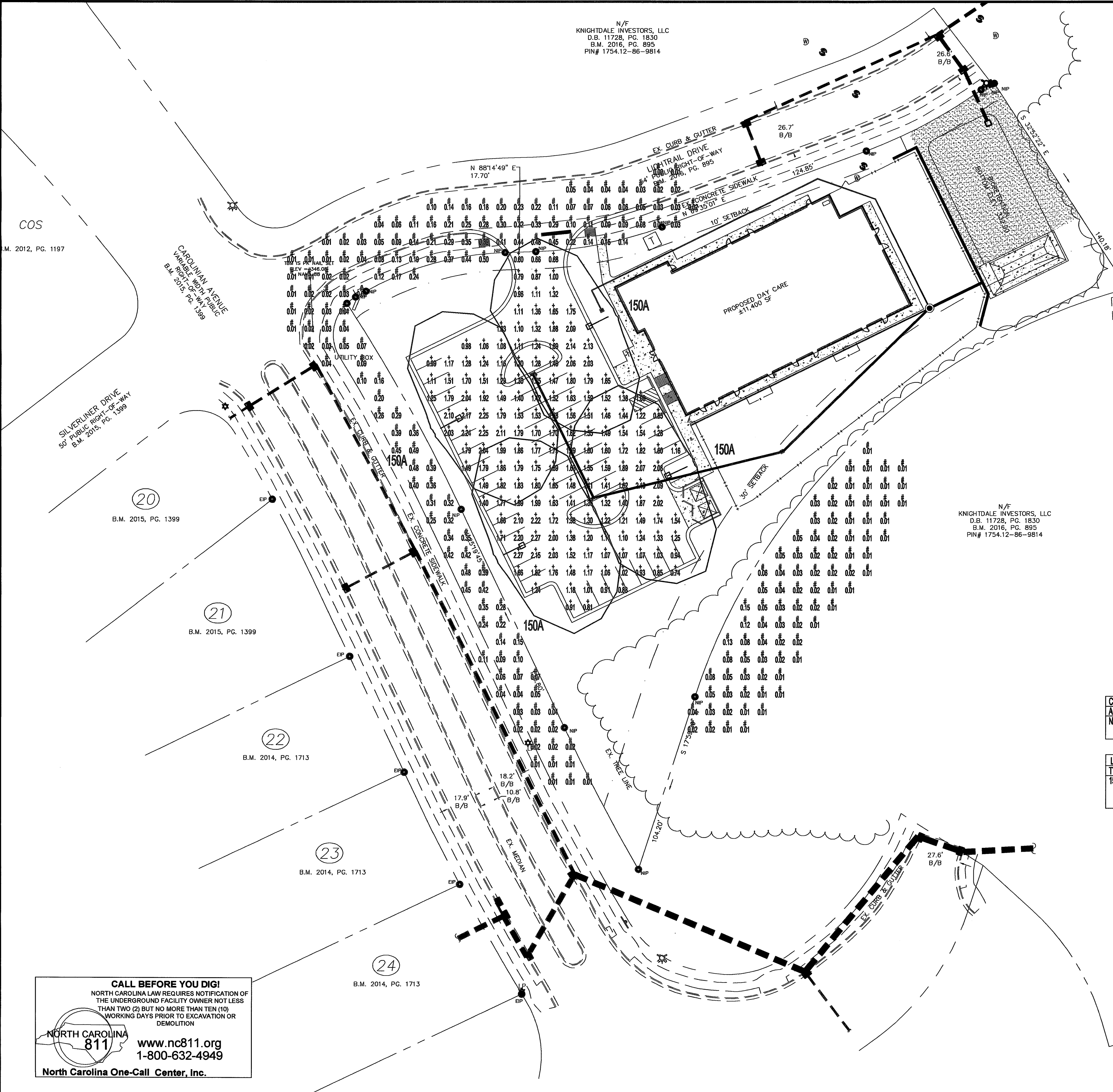


COORDINATOR:  
Blair Pittman  
DRAWN BY:  
Jason Galloway  
CHK BY: BPP

**KNIGHTDALE STATION PRESCHOOL**  
710 Lightrail Drive  
KNIGHTDALE, NORTH CAROLINA

24 X 36  
1" = 30'  
8 FEBRUARY 2017  
1954-0015  
LIGHTING PLAN  
C6.0

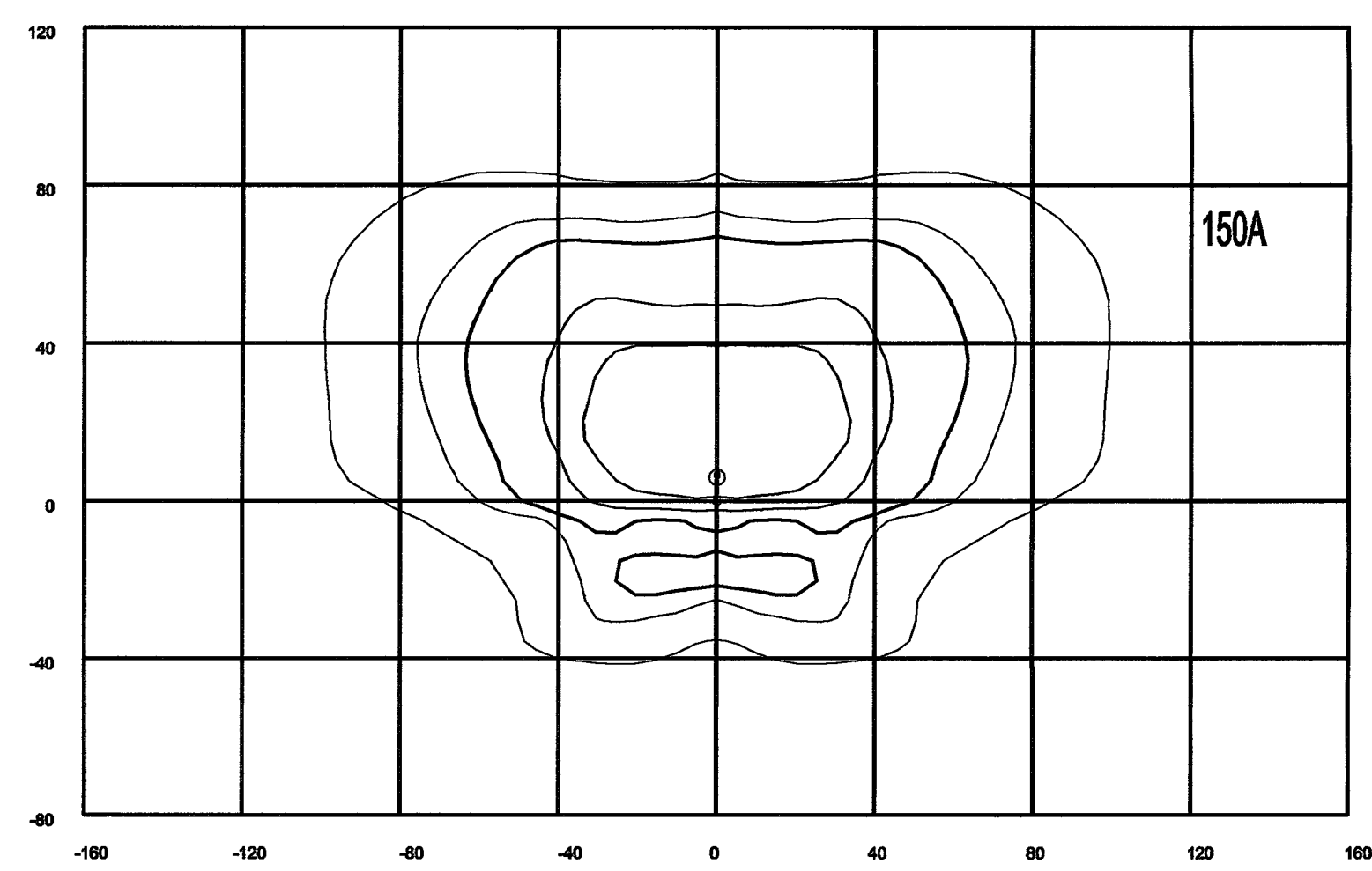
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N/F  
KNIGHTDALE INVESTORS, LLC  
D.B. 11728, PG. 1830  
B.M. 2016, PG. 895  
PIN# 1754.12-86-9814

**ISOFOOTCANDLE CURVES**  
FIXTURE: LED 150 - AEL  
MOUNTING HEIGHT: 30 FT  
LIGHT SOURCE: 40 LED'S, 4000K, 70 CRI  
PATTERN: TYPE III, B2-U0-G2(zero light at or above 90 degrees)  
ASSY# L12KLED15RWMC  
POLE ASSY# PLFG30GYC (GRAY)

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



LEGEND (OUTER TO INNER): 0.100 , 0.250 , 0.350 , 0.650 , 1.00

CALCULATION SUMMARY										
AREA NAME	DIMENSIONS	GRID / TYPE	# PTS	SPAC	GROUP	AVE	MAX	MIN	MAX/MIN	AVER/MIN
New Area	776.75x643.75FT	Parking Property Line	182 240	10.00 10.00	<<-> <->	1.51 0.11	2.27 0.50	0.60 0.01	3.81 79.28	2.54 17.11

LUMINAIRE SCHEDULE						
TYP	SYMBOL	DESCRIPTION	LAMP	LUMENS	MOUNTING/BALLAST	LLF QTY
150A	⬢	American Elec LED150 1/POLE (1) L150 LED150 1-4/POLE	(1) 12820 lumens	12820	30' MT HT Autobahn	0.85 4

**Town Certification.** This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.  
By: *[Signature]* Date: 6-17-17  
Town Engineer

These plans are approved by the Town of Knightdale and serve as construction plans for this project.  
By: *[Signature]* Date: 6-2-17  
Administrator

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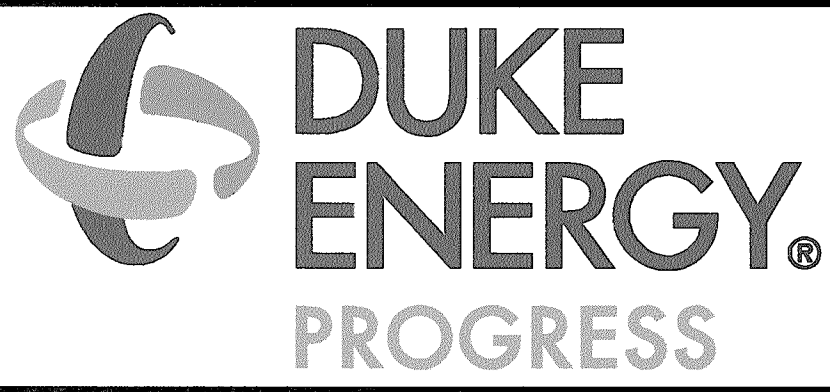
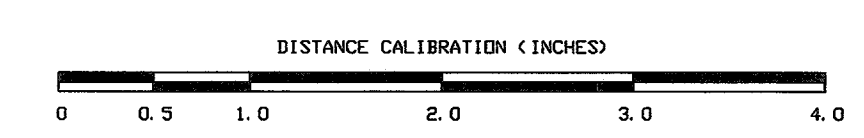
REVISIONS			
No.	DATE	DESCRIPTION	REV. BY
1	31 MARCH '17	REVISED PER TOWN OF KNIGHTDALE COMMENTS	JBG
2	15 MAY '17	R/VS'D SITE ADDRESS IN TITLEBLOCK SUBMIT FOR SIGNATURES	JBG



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NORTH CAROLINA 811 www.nc811.org 1-800-632-4949  
North Carolina One-Call Center, Inc.

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

Customer approval \_\_\_\_\_ Date \_\_\_\_\_



**PROPRIETARY & CONFIDENTIAL**  
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KNIGHTDALE STATION PRESCHOOL			
KNIGHTDALE, NC			
SITE LIGHTING PLAN			
Designed by	DEP LIGHTING SOLUTIONS	Scale	1" = 30'
Reviewed by	T. Ferguson	Size	"Arch D"
Date	03/22/2017		
Description	LED 150 Roadway		
Drawing No.	17-0018B	Sht.	1 OF 1

**PLANT PROTECTIVE FENCING**

**WOOD FENCE DETAIL**

**WARNING SIGN DETAIL**

**PLAN VIEW OF PROTECTIVE FENCING**

**PERFORATED PLASTIC FENCE DETAIL**

**PLAN VIEW OF PROTECTIVE FENCING**

**NOTES:**

- REMOVE ALL BARRIERS UPON COMPLETION OF PROJECT.
- LANDSCAPING PLANS SHALL SHOW LOCATIONS OF ALL TREE PROTECTION FENCES.
- ALL PLANTS TO BE SAVED SHALL BE PROTECTED BY FENCING AS NOTED IN THIS DETAIL.
- CONTRACTOR SHALL CALL FOR INSPECTION AND APPROVAL OF PROTECTIVE FENCING PRIOR TO BEGINNING ANY CONSTRUCTION OR GRADING.
- PROTECTIVE FENCING SHALL BE LOCATED 5' OUTSIDE DRIFELINE OF TREES AND 1' MINIMUM OUTSIDE SHRUBS OR OTHER PLANTS.

**REVISIONS**

DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS      **2.10**

**CURB INLET SEDIMENT FILTER**

**BLOCK & GRAVEL CURB INLET SEDIMENT FILTER**

**SPECIFIC APPLICATION:**

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.

**MAINTENANCE:**

- THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
- SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP.
- REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
- STRUCTURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

**REVISIONS**

DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS      **2.08**

**TEMPORARY CONSTRUCTION ENTRANCE/EXIT**

**NOTE:**

APPLICABLE AT ALL POINTS OF INGRESS & EGRESS UNTIL SITE IS STABILIZED. FREQUENT CHECKS OF THE DEVICE AND TIMELY MAINTENANCE MUST BE PROVIDED.

**REVISIONS**

DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS      **2.04**

**TEMPORARY SILT FENCE**

**NOTE:**

TOTAL DRAINAGE AREA FLOWING TO SILT FENCE MAY NOT EXCEED 1 ACRE.

SILT FENCES SHOULD NOT BE USED AT PIPE OUTLETS OR IN AREAS OF CONCENTRATED FLOW (CREVICS, DITCHLINES, SWELLS, ETC.).

TO INCREASE STORAGE CAPACITY AND PROLONG THE LIFE OF THE SILT FENCE, IT IS GENERALLY ADVISABLE TO DIG A SEDIMENT PIT IN FRONT OF YOUR SILT FENCE WHENEVER POSSIBLE.

12 GAUGE 4"x4" OR 2"x4" WELDED WIRE HOOKED INTO PREFORMED CHANNELS ON METAL POSTS OR FASTENED TO CEDAR OR WOOD POSTS W/ NO. 8 STAPLES.

ULTRAVIOLET RESISTANT (BLACK) MIRRIR FABRIC OR EQUIVALENT SECURED TO WIRE W/ METAL CLIPS OR WIRE AT 8" OFF CENTER.

MAX. SEDIMENT STORAGE LEVEL. REMOVE SEDIMENT WHEN THIS LEVEL IS REACHED OR AS DIRECTED BY CONSERVATION INSPECTOR.

SHEET DRAINAGE (ONLY)

NATURAL GRADE

CARRY APPROX. 12" OF FABRIC INTO TRENCH. COVER W/ SOIL & TAMP BACKFILL.

CARRY 6" OF WIRE INTO TRENCH.

METAL, CEDAR OR 4"x4" TREATED WOOD POSTS AT 10' O.C. MAX.

CEDAR & WOOD POSTS SHOULD BE 3" DEEP MIN.

**REVISIONS**

DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS      **2.03**

**TEMPORARY DIVERSION BERM/DITCH**

**NOTE:**

MACHINE COMPACTION OF ALL FILL IS REQUIRED. DIVERSIONS SUFFICIENT TO DIRECT ALL SEDIMENT-LOADED STORMWATER INTO A SEDIMENT CONTROL DEVICE MUST BE INSTALLED PRIOR TO CLEARING AND GRUBBING OF THE AREA (OR IN CONJUNCTION WITH THIS OPERATION IF SEDIMENT CONTROLS AND DIVERSIONS ARE INSTALLED AS ONE CRITICAL POINT IS REACHED).

DIVERSIONS SHOULD BE LOCATED TO MINIMIZE DAMAGES BY CONSTRUCTION OPERATIONS.

DIVERSIONS SHOULD BE SEEDED AND MULCHED IF THEY ARE TO REMAIN IN PLACE OVER 30 DAYS.

CHECK DEVICE AFTER EACH RAIN, BUT ONCE A WEEK REGARDLESS. REPAIR AS NECESSARY.

SLOPE 2:1 MAX

3" MIN

NATURAL GROUND OR FILL CUT SLOPES

BERM

COMPACTED FILL

18" MIN

3" MIN

18" MIN

BERM/DITCH

**NOTE:**

POSITIVE GRADE MUST BE PROVIDED TO ASSURE DRAINAGE. IF SLOPE EXCEEDS 2:1, SEED AND MULCH DIVERSION. TRY NOT TO EXCEED 20% VEGETATION REDUCTION. MAXIMUM DRAINAGE AREA = 5 ACRES WITHOUT SUPPORTING CALC. DIVERSIONS AT THE TOP OF SLOPE MUST BE CONSTRUCTED WITH AN APPROVED SLOPE DRAIN. BERM/DITCH IS MOST COMMONLY USED.

**REVISIONS**

DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS      **2.02**

**TEMPORARY SLOPE DRAIN**

**NOTES:**

- PLACE SLOPE DRAIN ON UNDISTURBED SOIL OR WELL COMPACTED FILL. LOCATIONS AND ELEVATIONS SHOWN ON PLANS.
- SLIGHTLY SLOPE THE SECTION OF PIPE UNDER THE DIKE TOWARDS ITS OUTLET.
- HAND TAMP THE SOIL UNDER AND AROUND THE ENTRANCE SECTION IN LIFTS NOT TO EXCEED 6 INCHES.
- ENSURE THAT FILL OVER THE DRAIN AT THE TOP OF THE SLOPE HAS MINIMUM DIMENSIONS OF 1.5 FT. DEPTH, 4 FT. TOP WIDTH, AND 3:1 SIDE SLOPES.
- ENSURE THAT ALL SLOPE DRAIN CONNECTIONS ARE WATER-TIGHT.
- ENSURE THAT ALL FILL MATERIAL IS WELL-COMPACTED. SECURELY FASTEN THE EXPOSED SECTION OF THE DRAIN WITH ORNAMENTS OR STAKES SPACED NO MORE THAN 10 FT. APART.
- EXTEND THE DRAIN BEYOND THE TOE OF THE SLOPE AND ADEQUATELY PROTECT THE OUTLET FROM EROSION.
- MAKE THE SETTLED, COMPACTED DIKE RIDGE NO LESS THAN 1 FT ABOVE THE TOP OF THE PIPE AT EVERY POINT.
- IMMEDIATELY STABILIZE ALL DISTURBED AREAS FOLLOWING CONSTRUCTION.

**REVISIONS**

DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS      **N.T.S.**

**STANDARD SKIMMER BASIN**

**NOTES:**

- BASIN SHOULD BE CLEANED OUT WHEN CAPACITY REACHES AN ELEVATION REPRESENTING THAT THE BASIN IS HALF-FULL.
- THE TARP USED TO PROTECT THE WEIR SHALL BE THE WIDTH SPECIFIED. THE LENGTH OF THE TARP SHALL BE ACCORDING TO AVAILABLE SUPPLY. IF MULTIPLE TARPS ARE TO BE USED, THEN TARPS SHALL BE OVERLAPPED AT LEAST 12". THE UPSTREAM 12" TARP SHALL OVERLAP THE DOWNSTREAM TARP. THE TARPS SHALL BE 50 MIL. HEAVY DUTY SILVER TARPS/PLASTICS OR EQUIVALENT FOR U.V. RESISTANCE.
- PROVIDE A MINIMUM OF THREE POROUS BAFFLES TO EVENLY DISTRIBUTE FLOW ACROSS THE BASIN, REDUCING TURBULENCE.
- BAFFLE MATERIAL MUST BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR A SILT FENCE.
- MOST OF THE SEDIMENT WILL ACCUMULATE IN THE FIRST BAY, SO THIS SHOULD BE READILY AVAILABLE FOR MAINTENANCE.
- DURING THE CONSTRUCTION PHASE OF THE PROJECT, PERMANENT STORMWATER RISER SHALL ONLY DEWATER FROM THE TOP OF PIPE.
- POND SHALL NOT BE CONVERTED FOR STORMWATER USE UNTIL APPROVED BY ENVIRONMENTAL ENGINEER.

**REVISIONS**

DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS      **N.T.S.**

**STANDARD CATCH BASIN/YARD INLET PROTECTION**

**NOTE:**

DRAINAGE AREA MAY NOT EXCEED 1 ACRE.

STANDARD METAL POSTS 2"-0" IN GROUND

CALVANIZED HARDWARE WIRE EXTENDS TO THE TOP OF BOX. 2" X 2" IN GROUND IN AN L SHAPE. (16 GAUGE)

# 57 WASHED STONE PLACED TO A HEIGHT OF 16" MIN. ABOVE TOP OF BOX.

SEE DENR STANDARDS & SPECS. FOR COMPLETE DESIGN CRITERIA & MAINTENANCE

**STANDARD TEMPORARY SILT / TREE PROTECTION FENCE**

**NOTES:**

- WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL.
- LETTERS TO BE 3" HIGH MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
- SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS.
- PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER.
- FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
- ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
- MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.
- ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF RALEIGH INSPECTIONS DEPARTMENT BASED ON ACTUAL FIELD CONDITIONS.
- PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER.
- FOR CONDITIONS WHERE PRACTICE APPLIES, PLANNING CONSIDERATIONS (HOWEVER FLOW SHALL NOT RUN PARALLEL WITH THE FENCE) AND DESIGN CRITERIA.
- END OF SILT FENCE NEEDS TO BE TURNED UPWIND.
- SEE N.C. STATE DENR PRACTICE & SPECIFICATION SEDIMENTS FENCE SECTION FOR CONDITIONS WHERE PRACTICE APPLIES; PLANNING CONSIDERATIONS.
- SEE N.C. STATE DENR PRACTICE & SPECIFICATION SEDIMENTS FENCE SECTION (HOWEVER FLOW SHALL NOT RUN PARALLEL WITH THE FENCE).

**REVISIONS**

DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS      **N.T.S.**

**SEEDING SCHEDULE**

SEEDING PERIOD	SEEDING TYPE	APPLICATION RATE (LBS/ACRE)
AUGUST 15 - NOVEMBER 01	TALL FESCUE	300
NOVEMBER 01 - MARCH 01	TALL FESCUE AND ABRUZZI RYE	25
	TALL FESCUE	300
MARCH 01 - APRIL 15	TALL FESCUE	300
APRIL 15 - JUNE 30	HULLED COMMON BERMLADGRASS	25
JULY 01 - AUGUST 15	TALL FESCUE AND BROWNTOP MILLET OR PSONENSI-SUDAN HYBRIDS	30
	TALL FESCUE AND BROWNTOP MILLET OR PSONENSI-SUDAN HYBRIDS	120
MARCH 01 - JUNE 01	SERICEA LESPEDEZA (SCARIFIED) AND TALL FESCUE OR	50
MARCH 01 - APRIL 15	TALL FESCUE OR	120
MARCH 01 - JUNE 30	NEEPIING LOVEGRASS OR HULLED COMMON BERMLADGRASS	25
	TALL FESCUE AND BROWNTOP MILLET OR PSONENSI-SUDAN HYBRIDS	30
JUNE 01 - SEPTEMBER 01	TALL FESCUE AND BROWNTOP MILLET OR PSONENSI-SUDAN HYBRIDS	120
	SERICEA LESPEDEZA (UNSCARIFIED) AND TALL FESCUE OR	70
SEPTEMBER 01 - MARCH 01	TALL FESCUE OR	120
NOVEMBER 01 - MARCH 01	ABRUZZI RYE	25

**REVISIONS**

DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS      **2.01**

**STANDARD SILT BAG - INLET SEDIMENT CONTROL DEVICE**

**NOTES:**

- SOME MUNICIPALITIES DO NOT ALLOW GUTTER PROTECTION ON PUBLIC ROADS. SILT BAGS SHOULD BE USED WITH THESE CASES.
- BAGS SHOULD BE CLEANED OUT AFTER EVERY RAIN EVENT AND/OR AS NEEDED.

**REVISIONS**

DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS      **EFFECTIVE: 01/31/08**

**SKIMMER**

**NOTES:**

- SKIMMER SEDIMENT BASINS ARE NEEDED WHERE DRAINAGE AREAS ARE TOO LARGE FOR TEMPORARY TRAPS. DO NOT LOCATE THE SKIMMER SEDIMENT BASIN IN INTERMITTENT OR PERENNIAL STREAMS.

**REVISIONS**

DATE	DESCRIPTION

TOWN OF KNIGHTDALE STANDARD DETAILS      **N.T.S.**

**Town Certification.** This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.

By: *[Signature]* Date: 6-23-17  
Town Engineer

These plans are approved by the Town of Knightdale and serve as construction plans for this project.

By: *[Signature]* Date: 6-2-17  
Administrator

**CALL BEFORE YOU DIG!**

NORTH CAROLINA LAW REQUIRES NOTIFICATION OF THE UNDERGROUND FACILITY OWNER NOT LESS THAN TWO (2) BUT NO MORE THAN TEN (10) WORKING DAYS PRIOR TO EXCAVATION OR DEMOLITION.

**www.nc811.org**  
1-800-632-4949

**North Carolina One-Call Center, Inc.**

**REVISIONS**

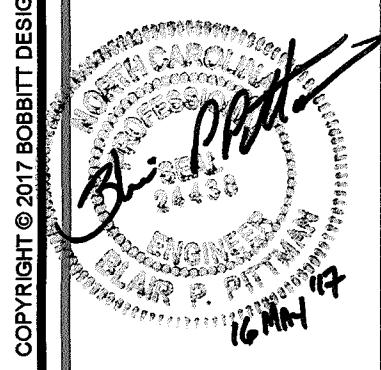
No.	DATE	DESCRIPTION	REV. BY
1	31 MARCH '17	REVISED PER TOWN OF KNIGHTDALE COMMENTS	JBG
2	5 APRIL 17	ADD WAKE COUNTY DETAILS	BPP
3	5 MAY '17	REVISE SITE ADDRESS SUBMIT FOR SIGNATURES	JBG

**APPROVED FOR CONSTRUCTION**

THESE PLANS WERE USED FOR PERMITTING AND DO NOT REFLECT CHANGE ORDERS OR MODIFICATIONS MADE DURING CONSTRUCTION.







**BOBBITT**  
DESIGN/BUILD  
600 Gammerton Road | Raleigh, North Carolina 27607  
Ph: (919) 881-1860 | Fax: (919) 881-1861 | Email: info@bobbitt.com

COORDINATOR:  
Blair Pittman

DRAWN BY:  
Jason Galloway

CHK BY: BPP

**KNIGHTDALE STATION PRESCHOOL**  
710 Lightrail Drive  
KNIGHTDALE, NORTH CAROLINA

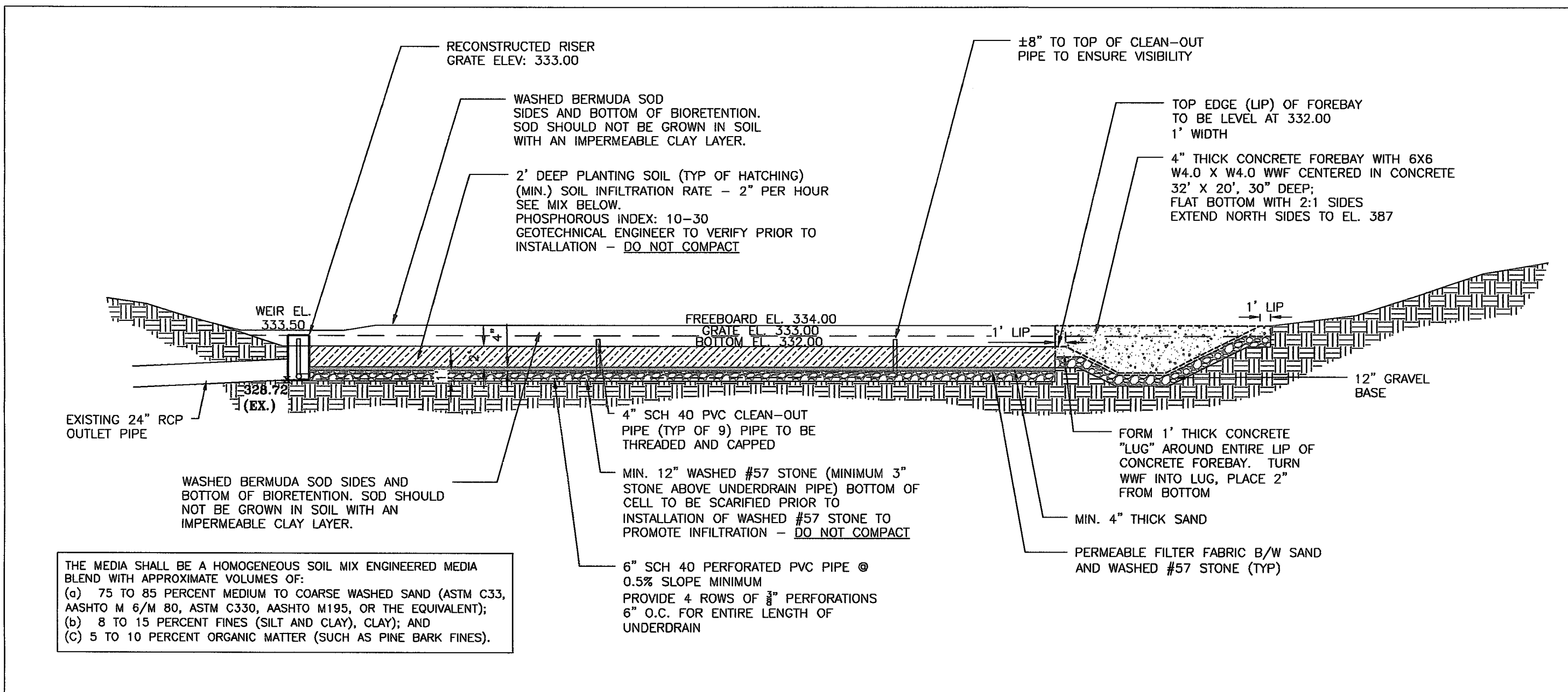
24 X 36

8 FEBRUARY 2017

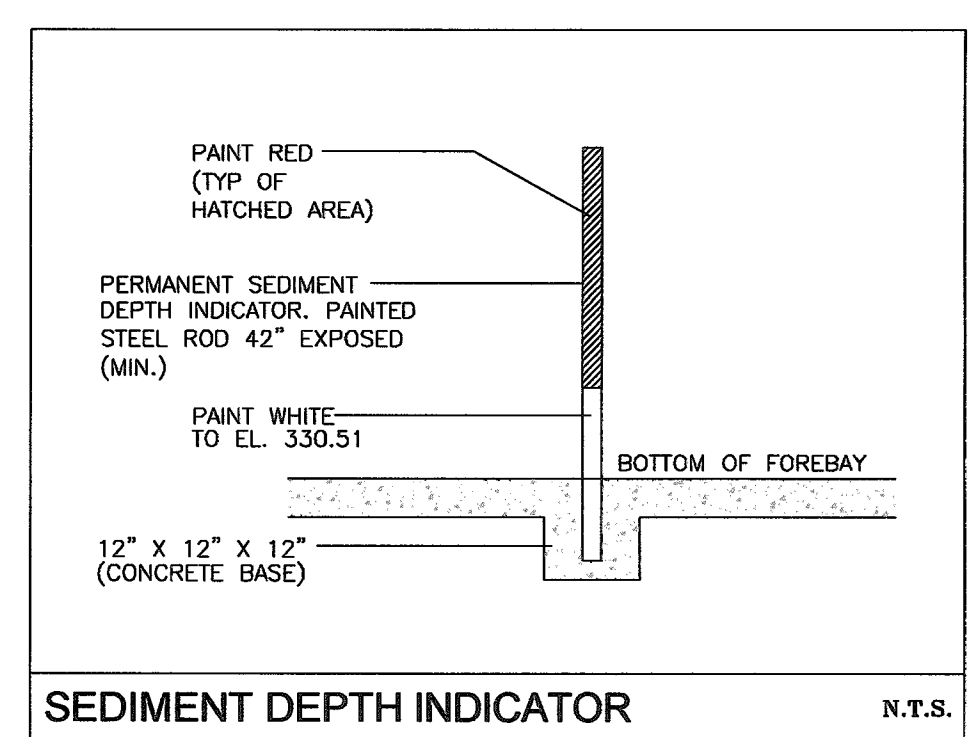
1954-0015

DETAILS

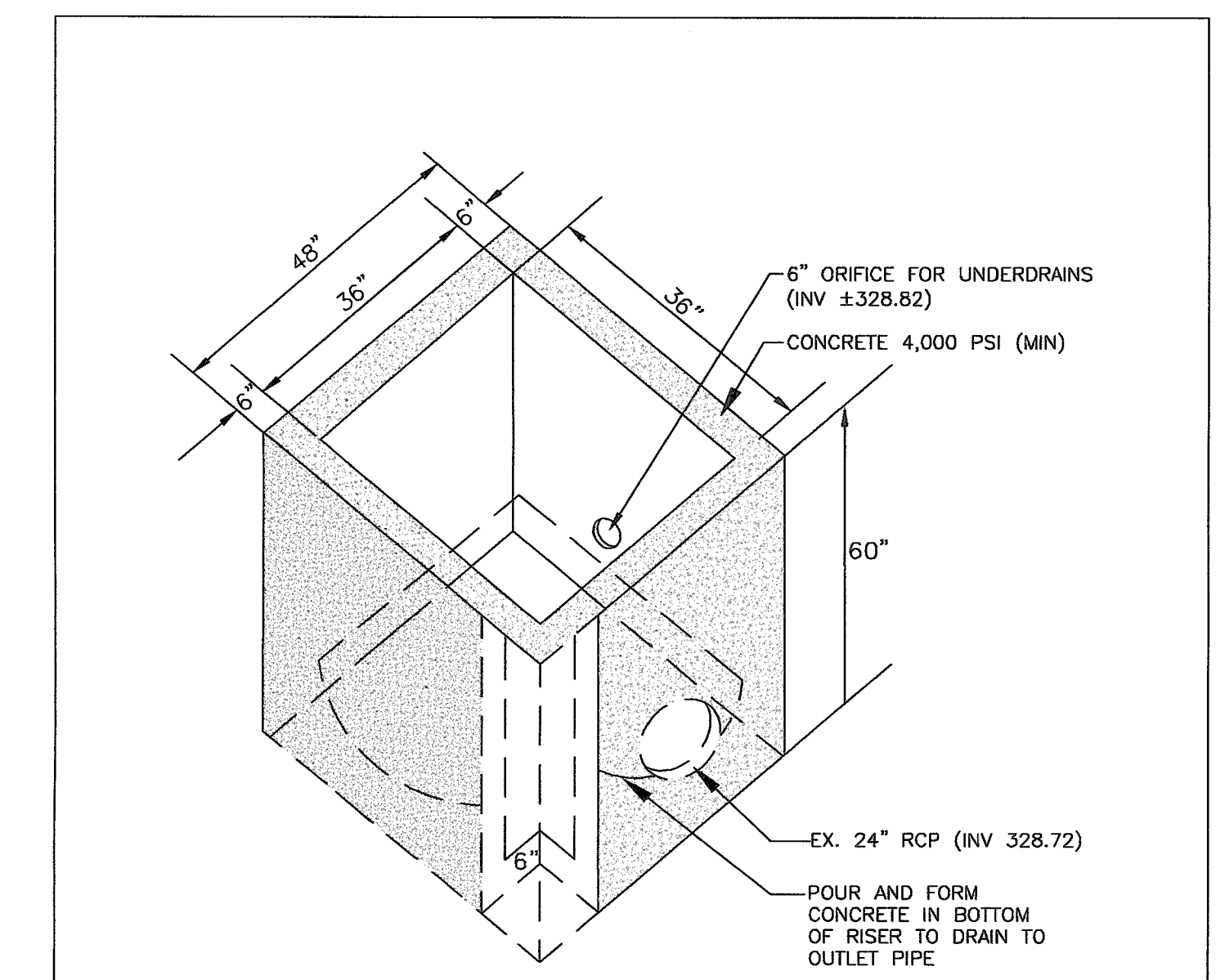
**C7.2**



BIORETENTION CELL - SECTION A  
SCALE 1" = 10' (V)  
SCALE 1" = 10' (H)



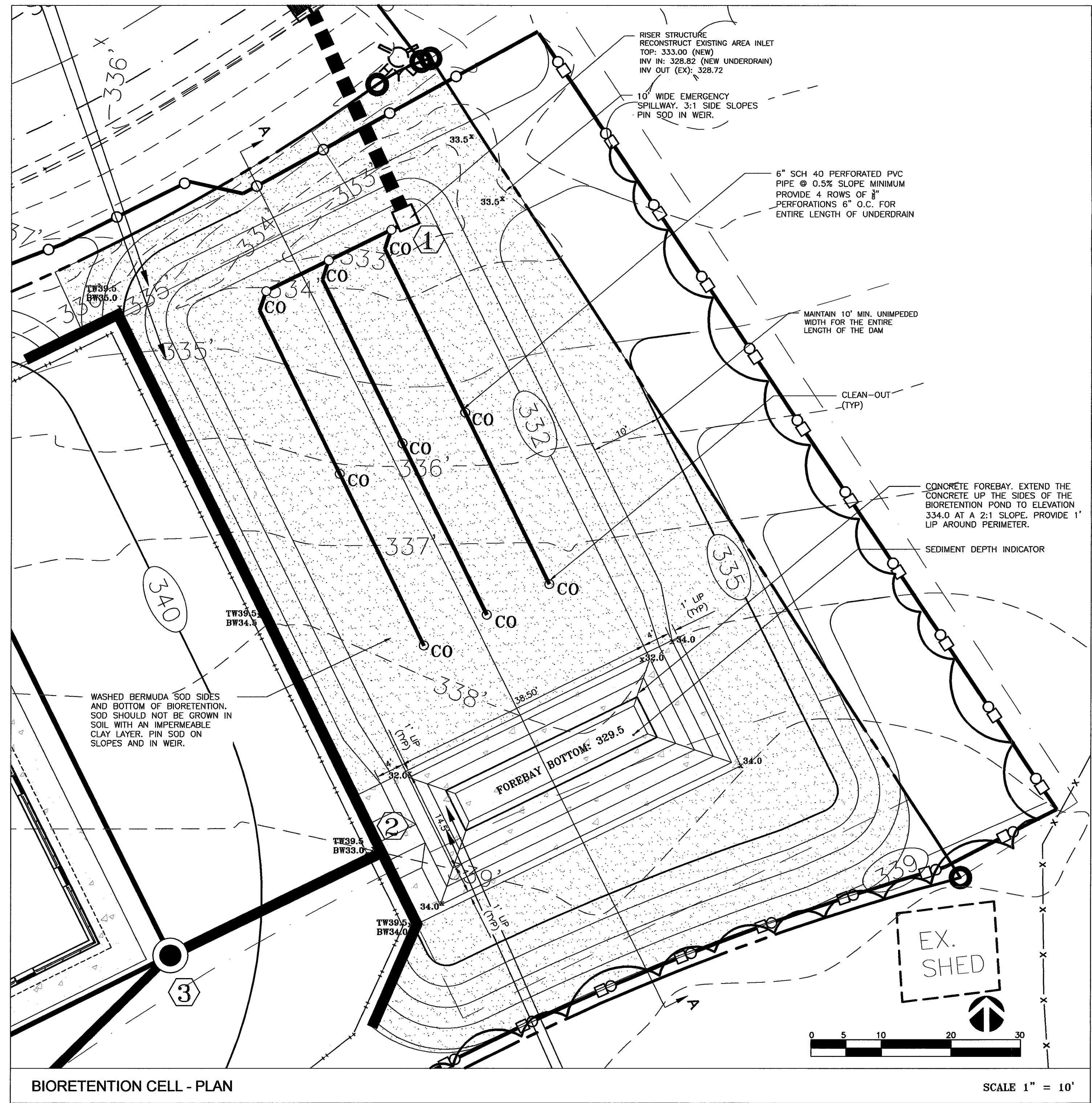
SEDIMENT DEPTH INDICATOR N.T.S.



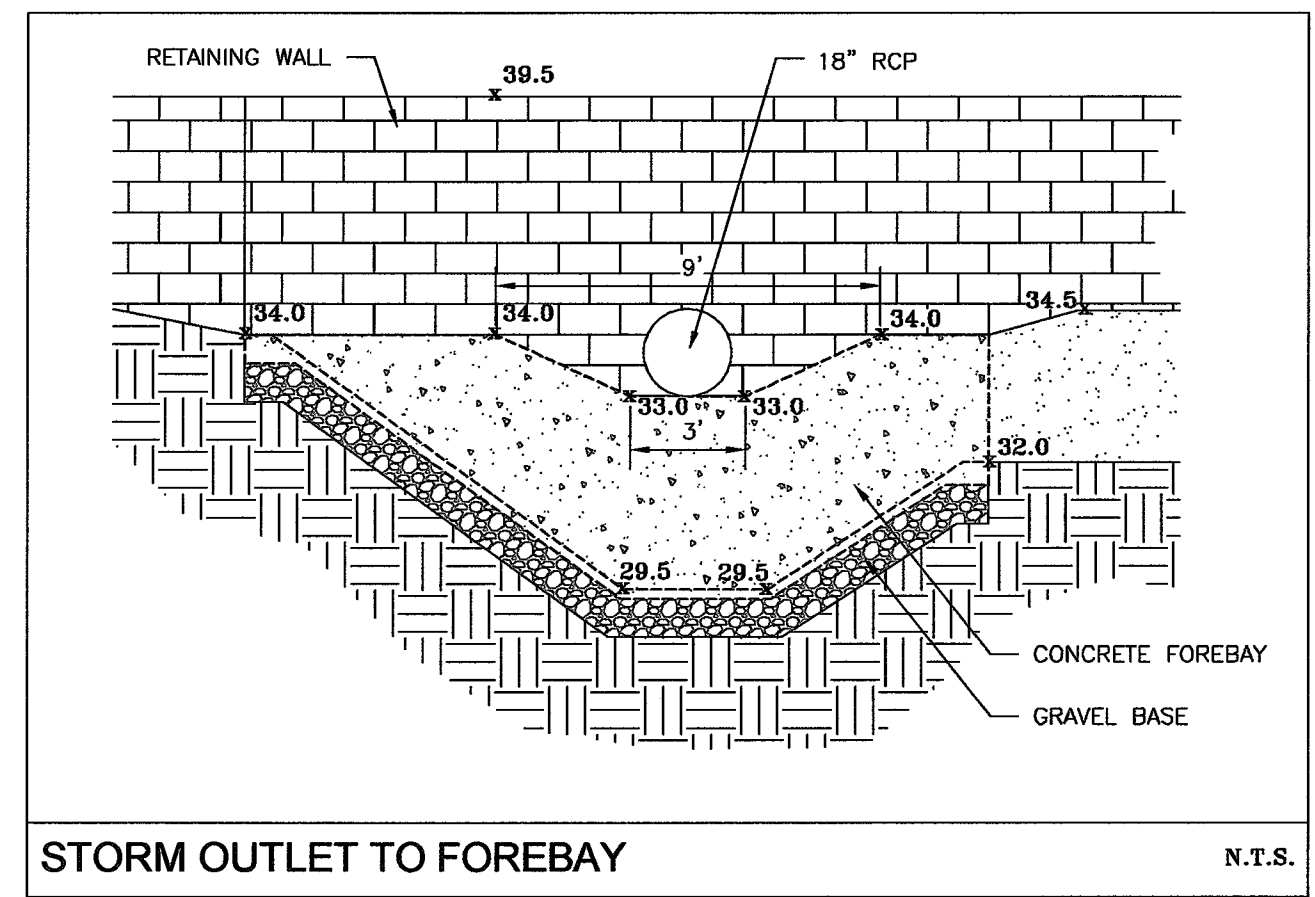
REINFORCED CONCRETE RISER STRUCTURE DIMENSIONS: 48" X 48" OD N.T.S.

**DAM EMBANKMENT CONSTRUCTION STANDARDS**

1. CONTROLLED FILL, AS SPECIFIED BY THE GEOTECHNICAL ENGINEER, IN THE DAM EMBANKMENT SHALL BE PLACED IN 6-INCH LOOSE LAYERS (3-INCH LOOSE LAYERS WITHIN 3- FEET OF EITHER SIDE OF THE PRINCIPAL SPILLWAY PIPE TO A DEPTH OF 2- FEET OVER THE PIPE) AND SHALL BE COMPACTED TO A DENSITY OF NO LESS THAN 95% OF THE STANDARD PROCTOR MAXIMUM DENSITY AT A MOISTURE CONTENT OF + OR - TWO PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D698.
2. ALL VISIBLE ORGANIC DEBRIS SUCH AS ROOTS AND LIMBS SHALL BE REMOVED FROM THE FILL MATERIAL PRIOR TO COMPACTING TO THE REQUIRED DENSITY. SOILS WITH ORGANIC MATTER CONTENT EXCEEDING 5% BY WEIGHT SHALL NOT BE USED. STONES GREATER THAN 3-INCH (IN ANY DIRECTION) SHALL BE REMOVED FROM THE FILL PRIOR TO COMPACTING.
3. FILL MATERIAL PLACED AT DENSITIES LOWER THAN SPECIFIED MINIMUM DENSITIES OR AT MOISTURE CONTENTS OUTSIDE THE SPECIFIED RANGES OR OTHERWISE NOT CONFORMING TO SPECIFIED REQUIREMENTS SHALL BE REMOVED AND REPLACED WITH ACCEPTABLE MATERIALS.
4. ANY FILL LAYER THAT IS SMOOTH DRUM ROLLED TO REDUCE MOISTURE PENETRATION DURING A STORM EVENT SHALL BE PROPERLY SCARIFIED PRIOR TO THE PLACEMENT OF THE NEXT SOIL LIFT.
5. ON-SITE STORMWATER SHALL BE CONTINUOUSLY CONTROLLED THROUGHOUT CONSTRUCTION AND THE PLACEMENT OF CONTROLLED FILL.
6. FOUNDATION AREAS MAY REQUIRE UNDERCUTTING OF COMPRESSIBLE AND/OR UNSUITABLE SOILS. IN ADDITION TO THAT INDICATED ON THE PLANS, ALL SUCH UNDERCUTTING SHALL BE PERFORMED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER AND SHALL BE MONITORED AND DOCUMENTED. IN NO CASE SHALL THERE BE AN ATTEMPT TO STABILIZE ANY PORTIONS OF THE FOUNDATION SOILS WITH CRUSHED STONE.
7. TREATMENT OF SEEPAGE AREAS, SUBGRADE PREPARATION, FOUNDATION DOWELING AND ROCK FOUNDATION PREPARATION (I.E., TREATMENT WITH SLUSH GROUTING, DENTAL CONCRETE, ETC.) MAY BE REQUIRED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER. ALL SUCH ACTIVITIES SHALL BE CLOSELY MONITORED AND DOCUMENTED BY THE GEOTECHNICAL ENGINEER.
8. FILL ADJACENT TO THE RISER AND PRINCIPAL SPILLWAY PIPE SHALL BE PLACED SO THAT LIFTS ARE AT THE SAME LEVEL ON BOTH SIDES OF THE STRUCTURES. (3 LIFTS ARE REQUIRED)
9. EARTHWORK COMPACTING WITHIN 3- FEET OF ANY STRUCTURES SHALL BE ACCOMPLISHED BY MEANS OF HAND TAMPERS, MANUALLY DIRECTED POWER TAMPERS OR PLATE COMPACTORS OR MINIATURE SELF-PROPELLED ROLLERS.
10. COMPACTING BY MEANS OF DROP WEIGHTS FROM A CRANE OR HOIST SHALL NOT BE PERMITTED.
11. HEAVY EQUIPMENT SHALL NOT BE ALLOWED TO PASS OVER CAST-IN-PLACE STRUCTURES (INCLUDING THE GRADLE) UNTIL ADEQUATE CURING TIME HAS ELAPSED.
12. TO RE-ESTABLISH VEGETATION AFTER CONSTRUCTION, A 2- TO 3- INCH LAYER OF TOPSOIL SHALL BE PLACED ON THE DISTURBED EMBANKMENT SURFACE AND THE AREA SHALL BE LINED WITH SOD.
13. TESTS OF THE DEGREE (%) OF COMPACTATION OF THE PLACED FILL IN THE DAM SHALL BE PERFORMED AS PART OF THE PERMITTEE'S NORMAL QUALITY CONTROL PROGRAM FOR THE DAM. TESTS SHALL BE CONDUCTED CONCURRENT WITH THE INSTALLATION OF THE COMPACTED FILL AND THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF THE DAM SO THAT TESTING CAN BE COMPLETED. SHOULD THE RESULTS OF THE TESTS INDICATE THAT THE SPECIFIED DEGREE OF COMPACTATION HAS NOT BEEN OBTAINED, THE PORTIONS OF THE DAM REPRESENTED BY SUCH TEST SHALL BE REWORKED OR REBUILT. ALL PORTIONS OF THE DAM SHALL ACHIEVE THE SPECIFIED MINIMUM DEGREE OF COMPACTATION.



BIORETENTION CELL - PLAN SCALE 1" = 10'



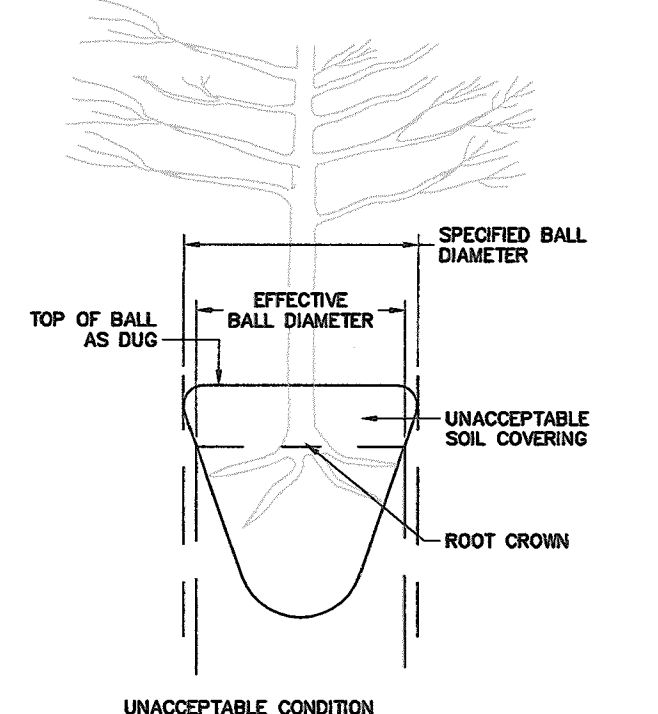
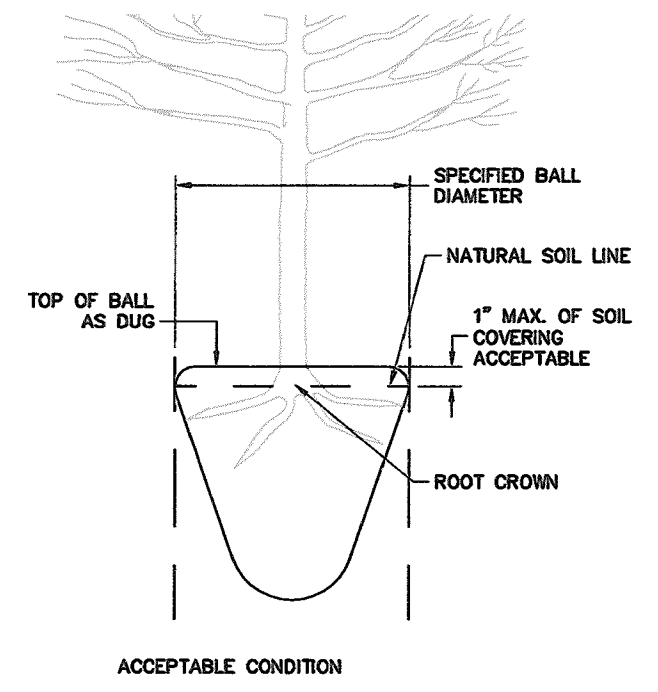
STORM OUTLET TO FOREBAY N.T.S.

**Town Certification.** This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.  
By: SAHALL Date: 6/2/17  
Town Engineer  
  
These plans are approved by the Town of Knightdale and serve as construction plans for this project.  
By: [Signature] Date: 6.2.17  
Administrator

**CALL BEFORE YOU DIG!**  
NORTH CAROLINA LAW REQUIRES NOTIFICATION OF THE UNDERGROUND FACILITY OWNER NOT LESS THAN TWO (2) BUT NO MORE THAN TEN (10) WORKING DAYS PRIOR TO EXCAVATION OR DEMOLITION.  
www.nc811.org  
1-800-632-4949  
North Carolina One-Call Center, Inc.

REVISIONS			
No.	DATE	DESCRIPTION	REV. BY
▲	31 MARCH '17	REVISED PER TOWN OF KNIGHTDALE COMMENTS	JBG
▲	15 MAY '17	REVISED SITE ADDRESS IN TITLEBLOCK SUBMIT FOR SIGNATURES	JBG
▲			
▲			

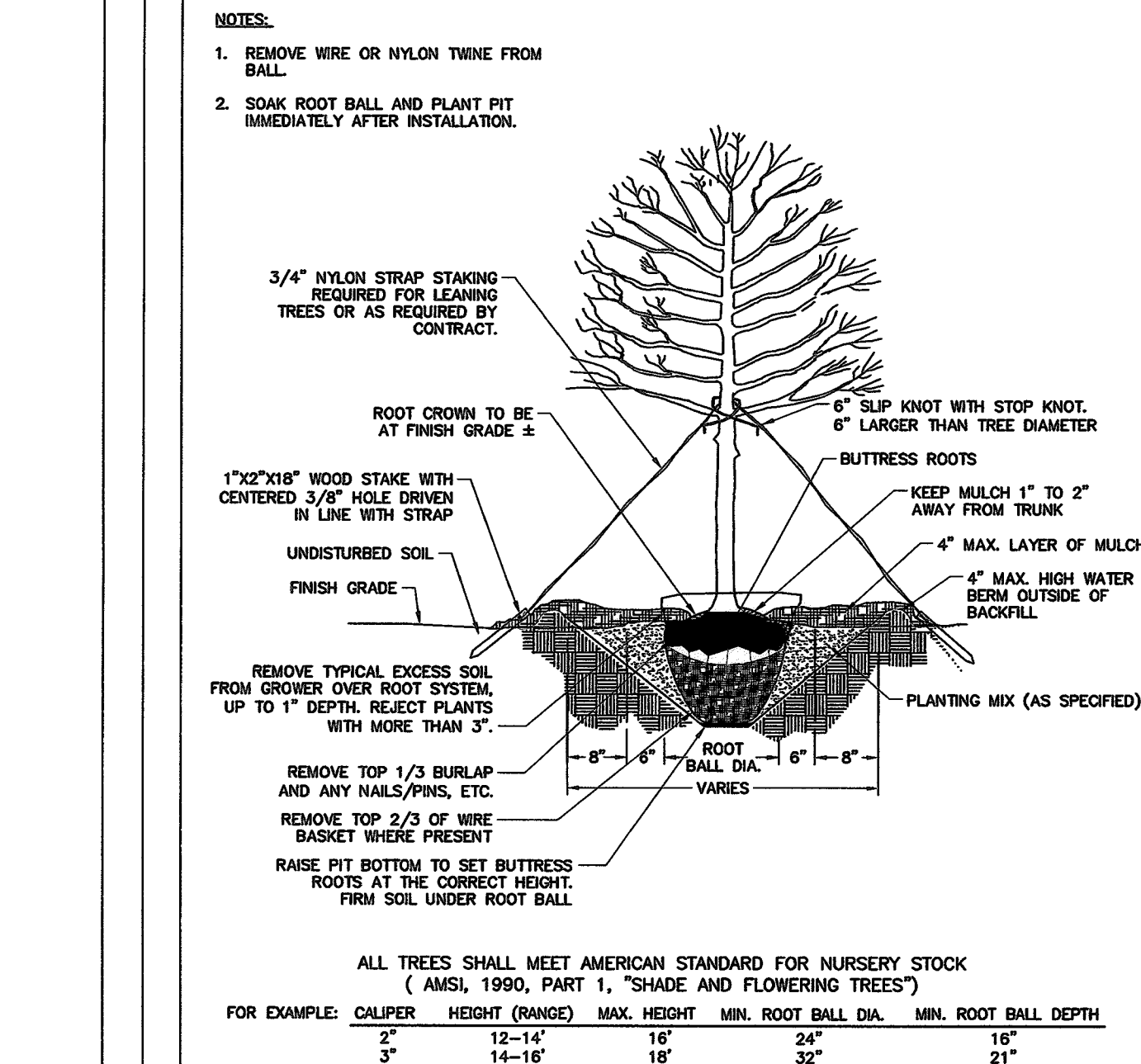
**APPROVED FOR CONSTRUCTION**  
THESE PLANS WERE USED FOR PERMITTING AND DO NOT REFLECT CHANGE ORDERS OR MODIFICATIONS MADE DURING CONSTRUCTION.



NOTE:  
A ROOT COLLAR EXCAVATION FOR ALL TREES SPECIFIED WILL BE DONE BY THE TOWN TO ENSURE THAT TREES WERE NOT PLANTED TOO DEEPLY AT SOURCE (NURSERY). LANDSCAPE CONTRACTOR SHALL HAVE SUPPLIER MARK GROUND LEVEL LINE ABOVE ROOT BALL. IF TOWN DETERMINES THAT THERE IS EXCESSIVE SOIL OVER THE ROOT CROWN, THESE TREES WILL BE REJECTED.

REVISIONS	DATE	DESCRIPTION

TOWN OF KNIGHTDALE  
STANDARD DETAILS



NOTE:  
1. REMOVE WIRE OR NYLON TWINE FROM BALL.  
2. SOAK ROOT BALL AND PLANT FIT IMMEDIATELY AFTER INSTALLATION.

3/4" NYLON STRAP STAKING REQUIRED FOR LEANING TREES OR AS REQUIRED BY CONTRACT.

1"X2"X18" WOOD STAKE WITH CENTERED 3/8" HOLE DRIVEN IN LINE WITH STRAP

UNDISTURBED SOIL

FINISH GRADE

REMOVE TYPICAL EXCESS SOIL FROM GROWER OVER ROOT SYSTEM UP TO 1" DEPTH. REJECT PLANTS WITH MORE THAN 3"

REMOVE TOP 1/3 BURLAP AND ANY NAILS/PINS, ETC.

REMOVE TOP 2/3 OF WIRE BASKET WHERE PRESENT

RAISE FIT BOTTOM TO SET BUTTRESS ROOTS AT THE CORRECT HEIGHT.

REMOVE TOP 1/3 BURLAP AND ANY NAILS/PINS, ETC.

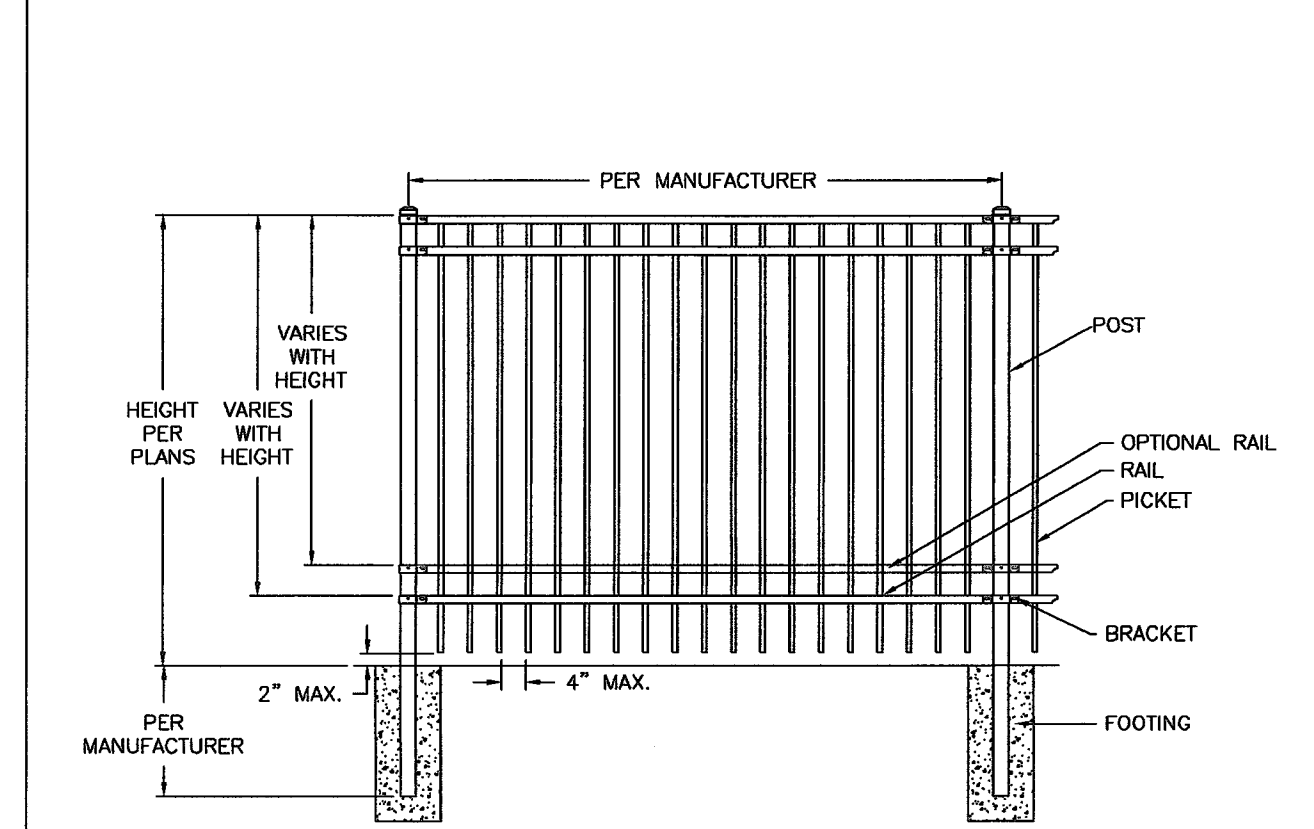
REMOVE TOP 2/3 OF WIRE BASKET WHERE PRESENT

RAISE FIT BOTTOM TO SET BUTTRESS ROOTS AT THE CORRECT HEIGHT.

ALL TREES SHALL MEET AMERICAN STANDARD FOR NURSERY STOCK (AMSI, 1990, PART 1, "SHADE AND FLOWERING TREES")

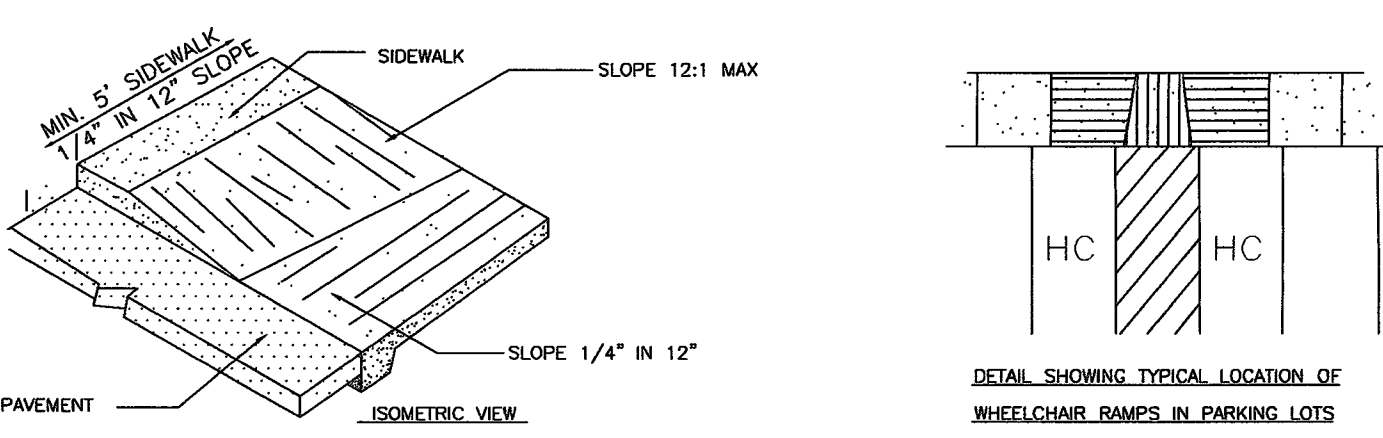
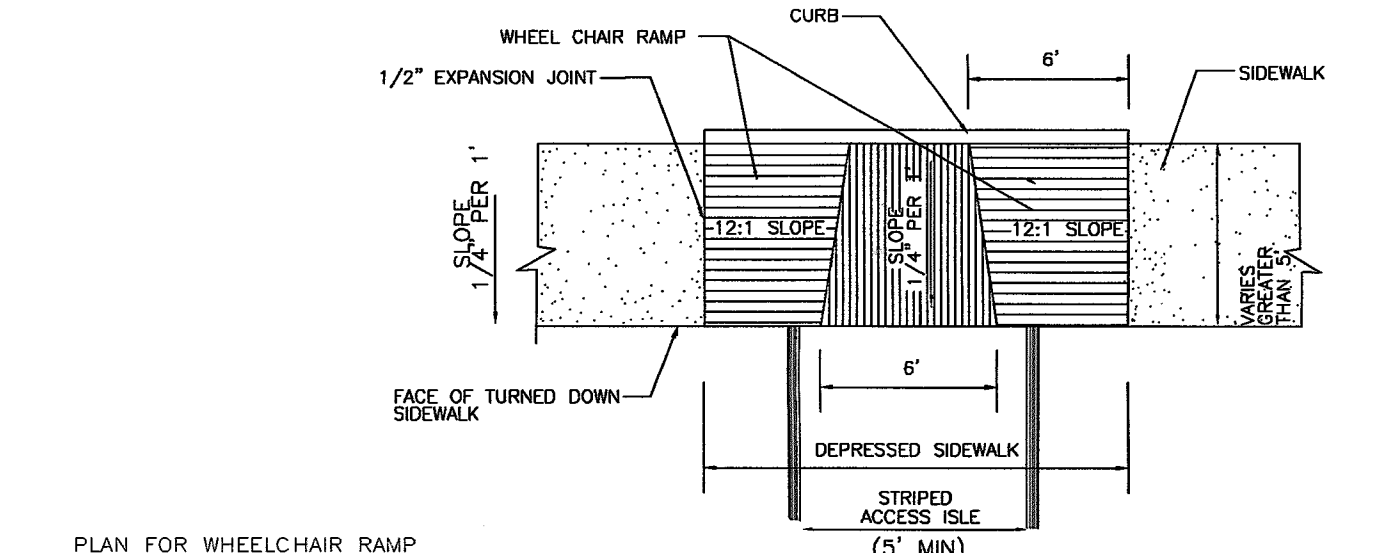
FOR EXAMPLE:	CALIPER	HEIGHT (RANGE)	MAX. HEIGHT	MIN. ROOT BALL DIA.	MIN. ROOT BALL DEPTH
	2"	12-14'	16'	24"	16"
	3"	14-16'	18'	32"	21"

TOWN OF KNIGHTDALE  
STANDARD DETAILS

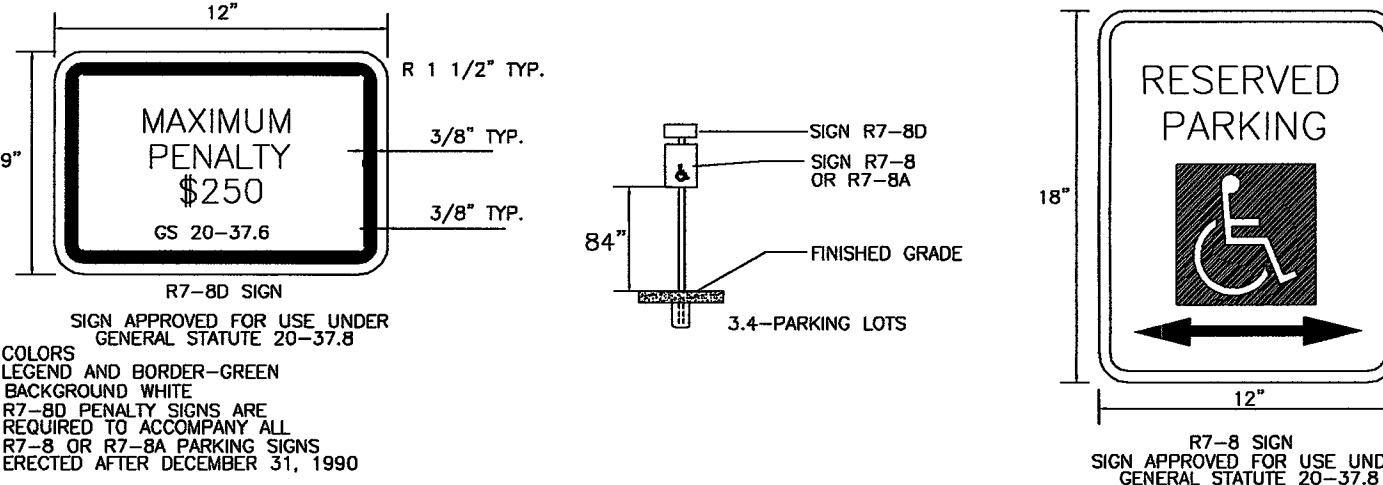


NOTE:  
1. FENCE MATERIAL TO BE ALUMINUM  
2. FENCE TO BE BLACK IN COLOR.

FENCE N.T.S.



HANDICAP RAMP (CURB TIGHT) N.T.S.



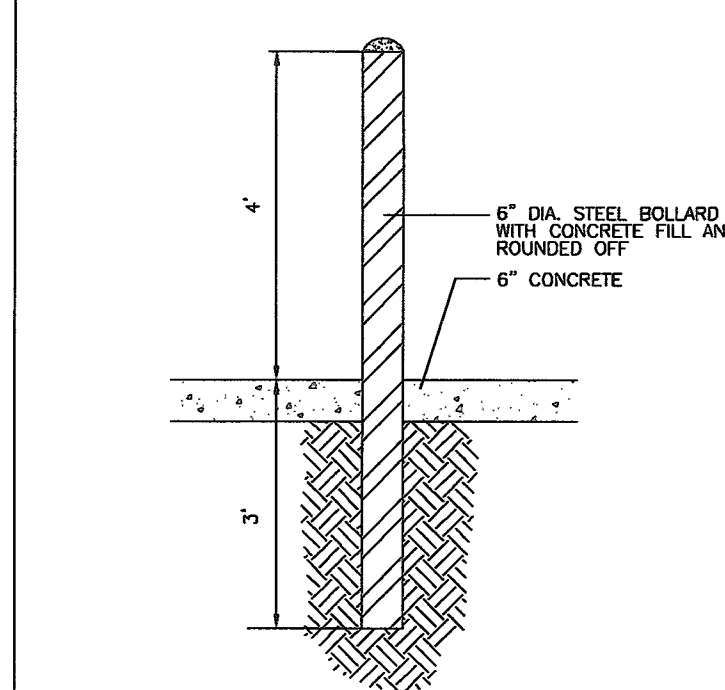
NOTE: BEGINNING JAN. 1, 1990 ALL ACCESSIBLE PARKING SPACES (INCLUDING THOSE SPACES EXISTING PRIOR TO JULY 1, 1979) SHALL BE IDENTIFIED BY AN R7-8 OR R7-8A SIGN.

NOTE: FOR THIS APPLICATION, THE SIGN MAY BE MOUNTED ON A POST, THE BUILDING FACE, A COLUMN OR ANY OTHER FIXED MOUNTING SURFACE.

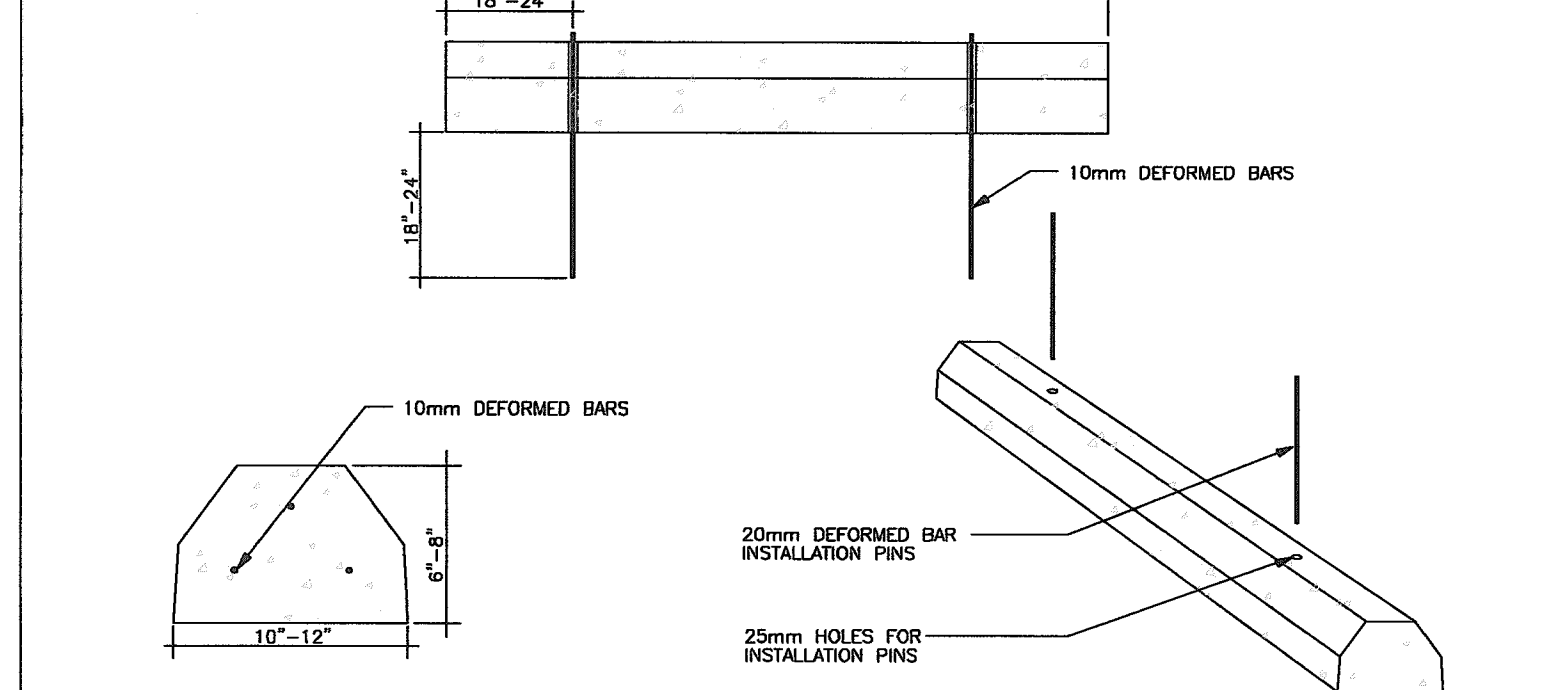
NOTE: R7-8 SIGN APPROVED FOR USE UNDER GENERAL STATUTE 20-37.8

NOTE: R7-8A SIGN APPROVED FOR USE UNDER GENERAL STATUTE 20-37.8

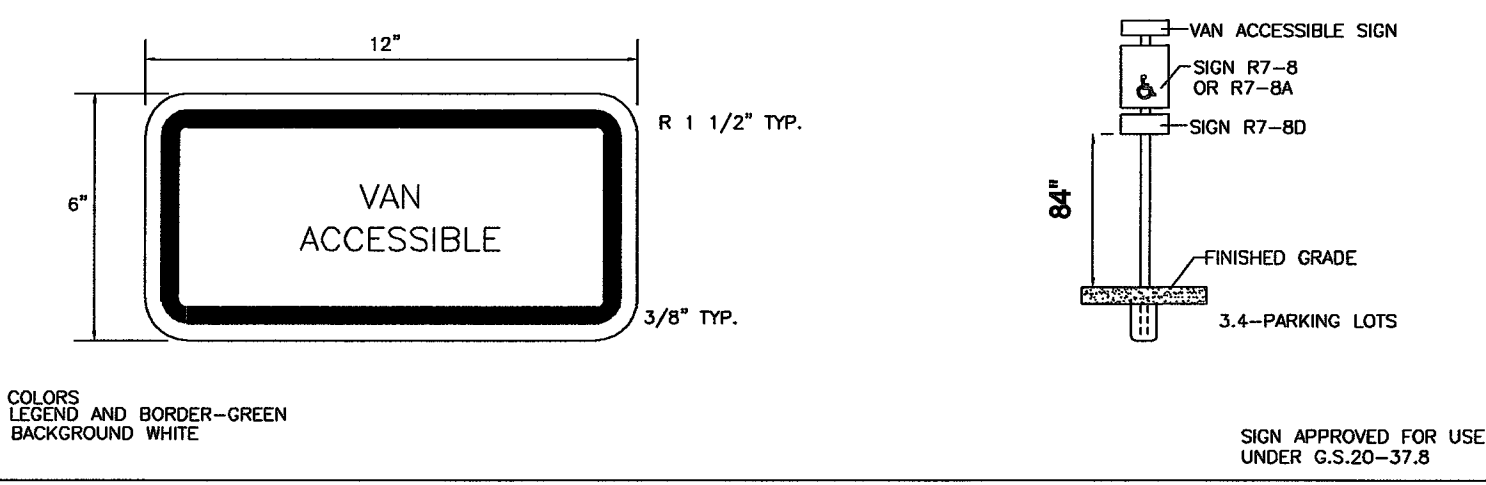
R7-8 & R7-8D SIGNS N.T.S.



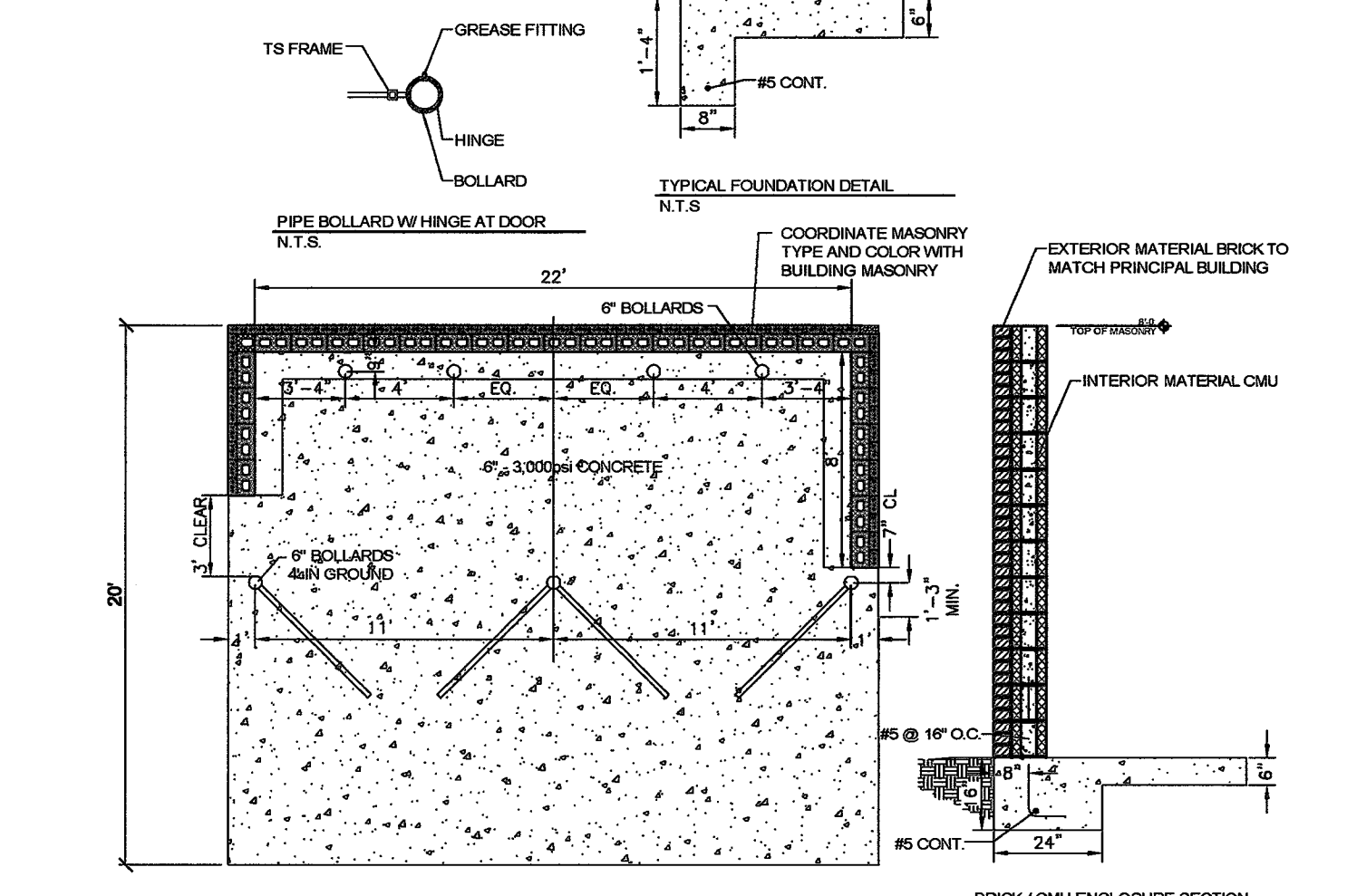
BOLLARD DETAIL N.T.S.



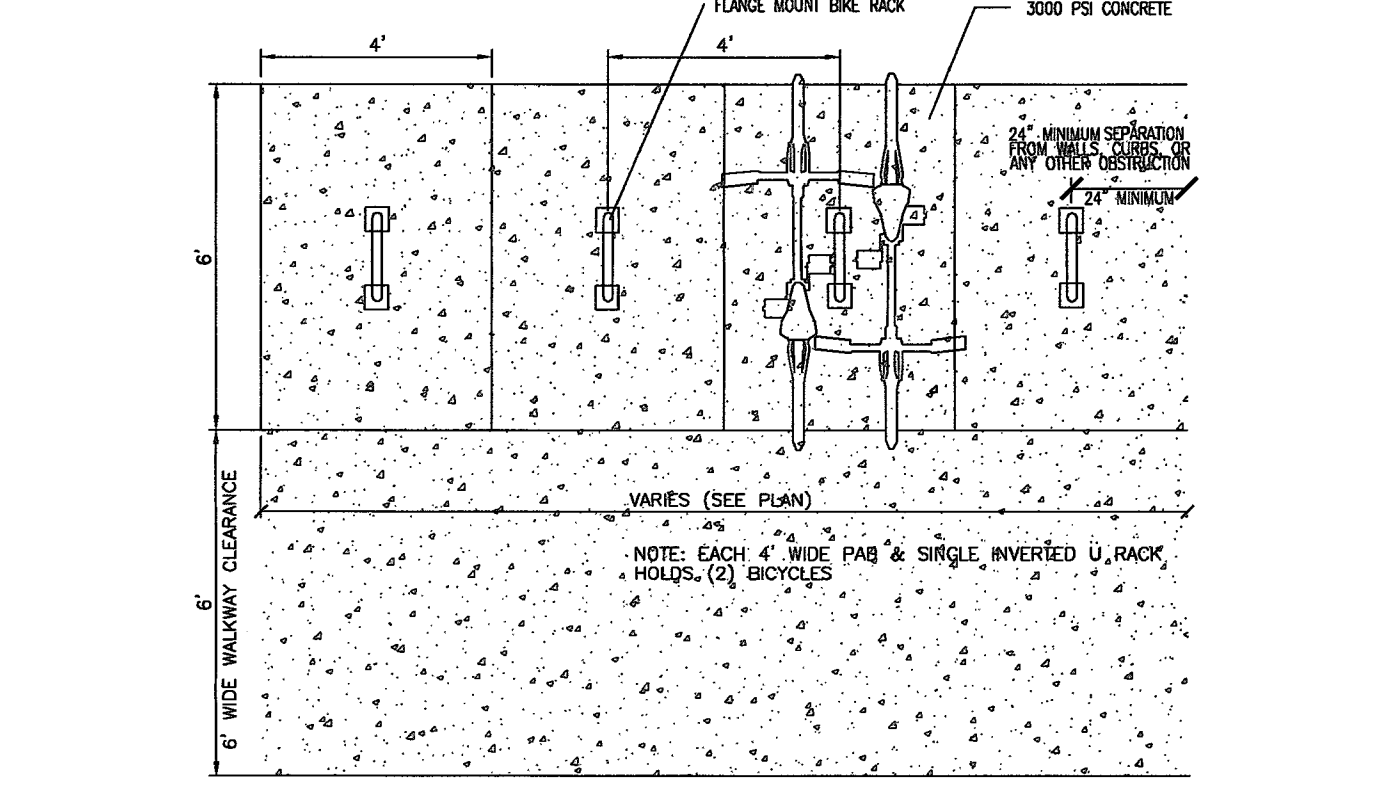
CONCRETE WHEEL STOP N.T.S.



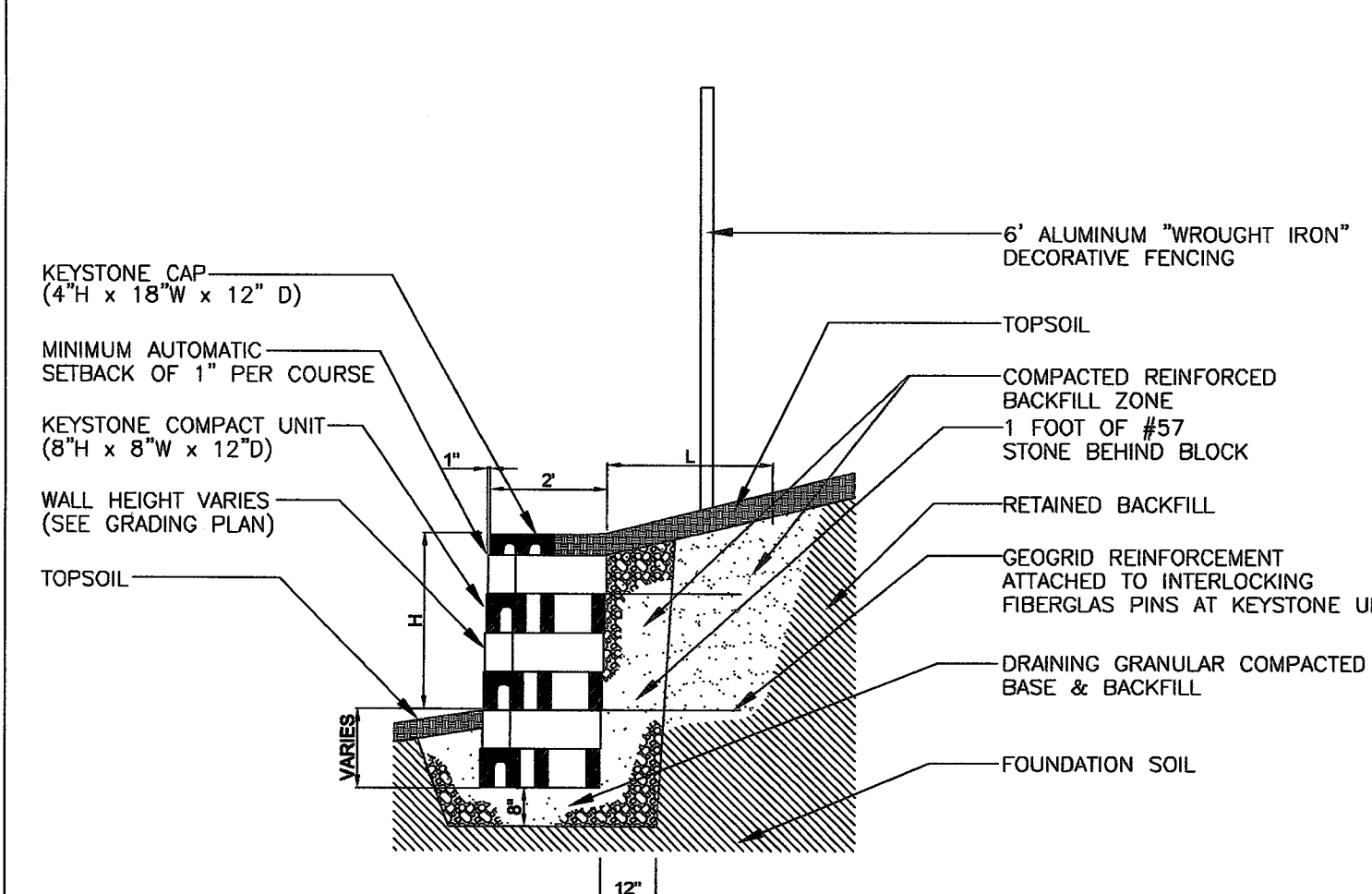
VAN ACCESSIBLE SIGN N.T.S.



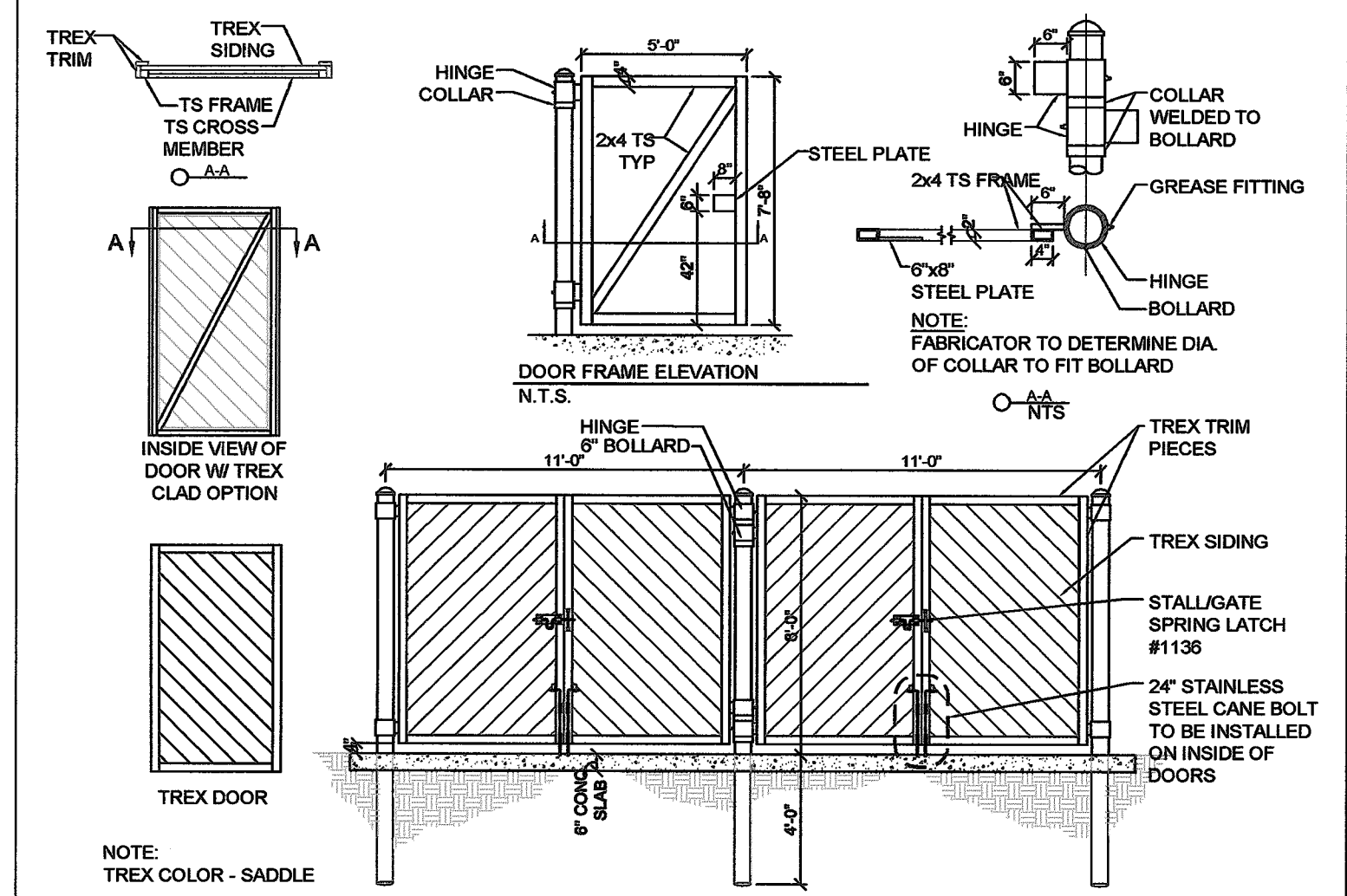
CMU & BRICK DUMPSTER ENCLOSURE N.T.S.



INVERTED U BIKE PARKING RACK N.T.S.



SEGMENTAL BLOCK RETAINING WALL N.T.S.



TREX CLAD GATES N.T.S.

Town Certification. This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.

By: *[Signature]* Date: 6-22-17  
Town Engineer

These plans are approved by the Town of Knightdale and serve as construction plans for this project.

By: *[Signature]* Date: 6-2-17  
Administrator

CALL BEFORE YOU DIG!  
NORTH CAROLINA LAW REQUIRES NOTIFICATION OF THE UNDERGROUND FACILITY OWNER NOT LESS THAN TWO (2) BUT NO MORE THAN TEN (10) WORKING DAYS PRIOR TO EXCAVATION OR DEMOLITION

www.nc811.org  
1-800-632-4949

North Carolina One-Call Center, Inc.

**APPROVED FOR CONSTRUCTION**

THESE PLANS WERE USED FOR PERMITTING AND DO NOT REFLECT CHANGE ORDERS OR MODIFICATIONS MADE DURING CONSTRUCTION.

REVISIONS			
No.	DATE	DESCRIPTION	REV. BY
1	31 MARCH 17	REVISED PER TOWN OF KNIGHTDALE COMMENTS	JBG
2	15 MAY 17	REVISED PER KNIGHTDALE COMMENTS SUBMIT FOR SIGNATURES	JBG

**BOBBITT**  
DESIGN-BUILD

888 Constitution Road | Raleigh, North Carolina 27607  
Ph: (919) 981-1880 | Fax: (919) 981-1882 | Email: info@bobbitt.com  
Firm Lic. # D0181

COORDINATOR:  
Blair Pittman

DRAWN BY:  
Jason Galloway

CHK BY: BPP

**KNIGHTDALE STATION PRESCHOOL**  
710 Lightrail Drive  
KNIGHTDALE, NORTH CAROLINA

24 X 36

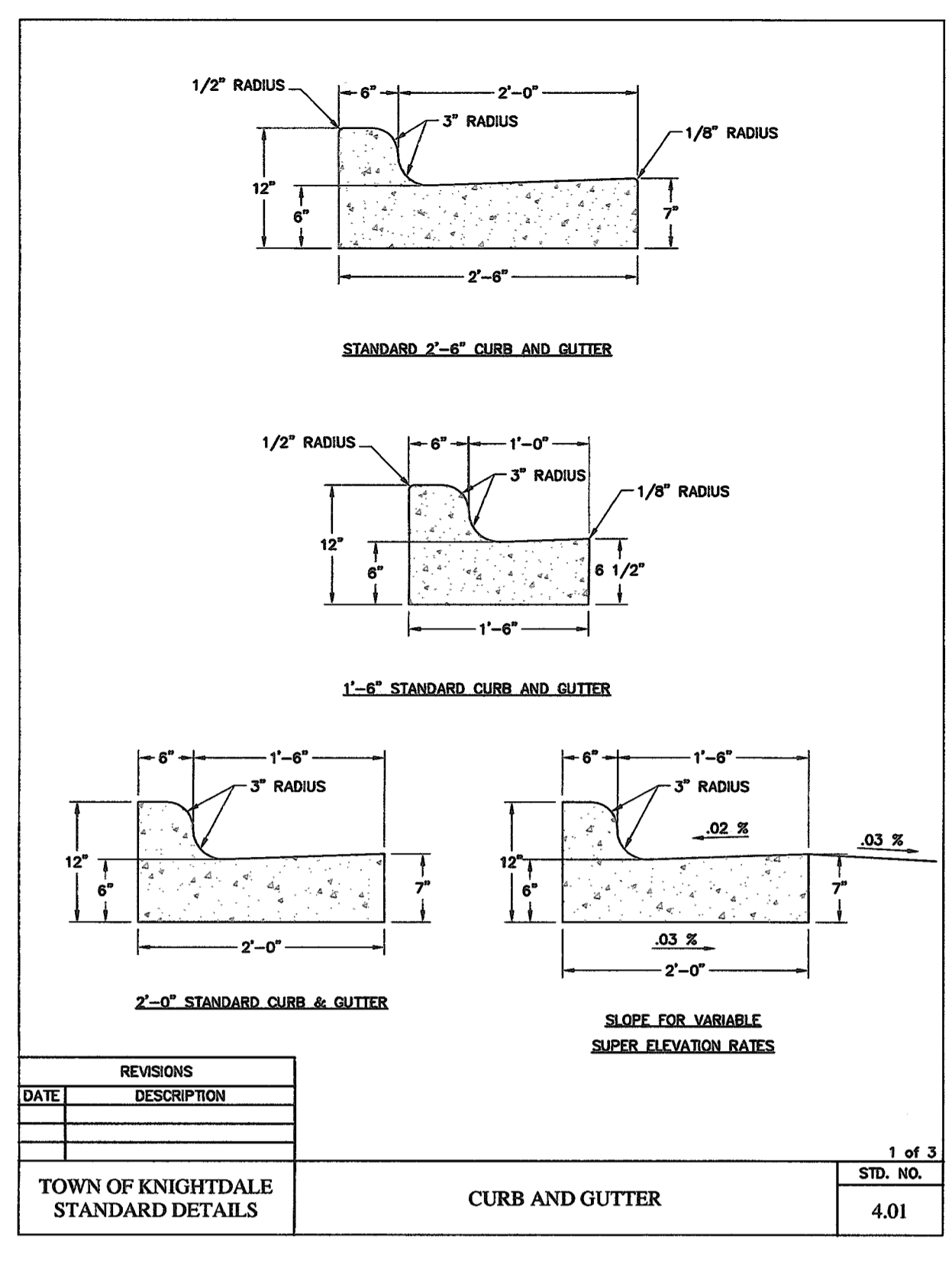
8 FEBRUARY 2017

1954-0015

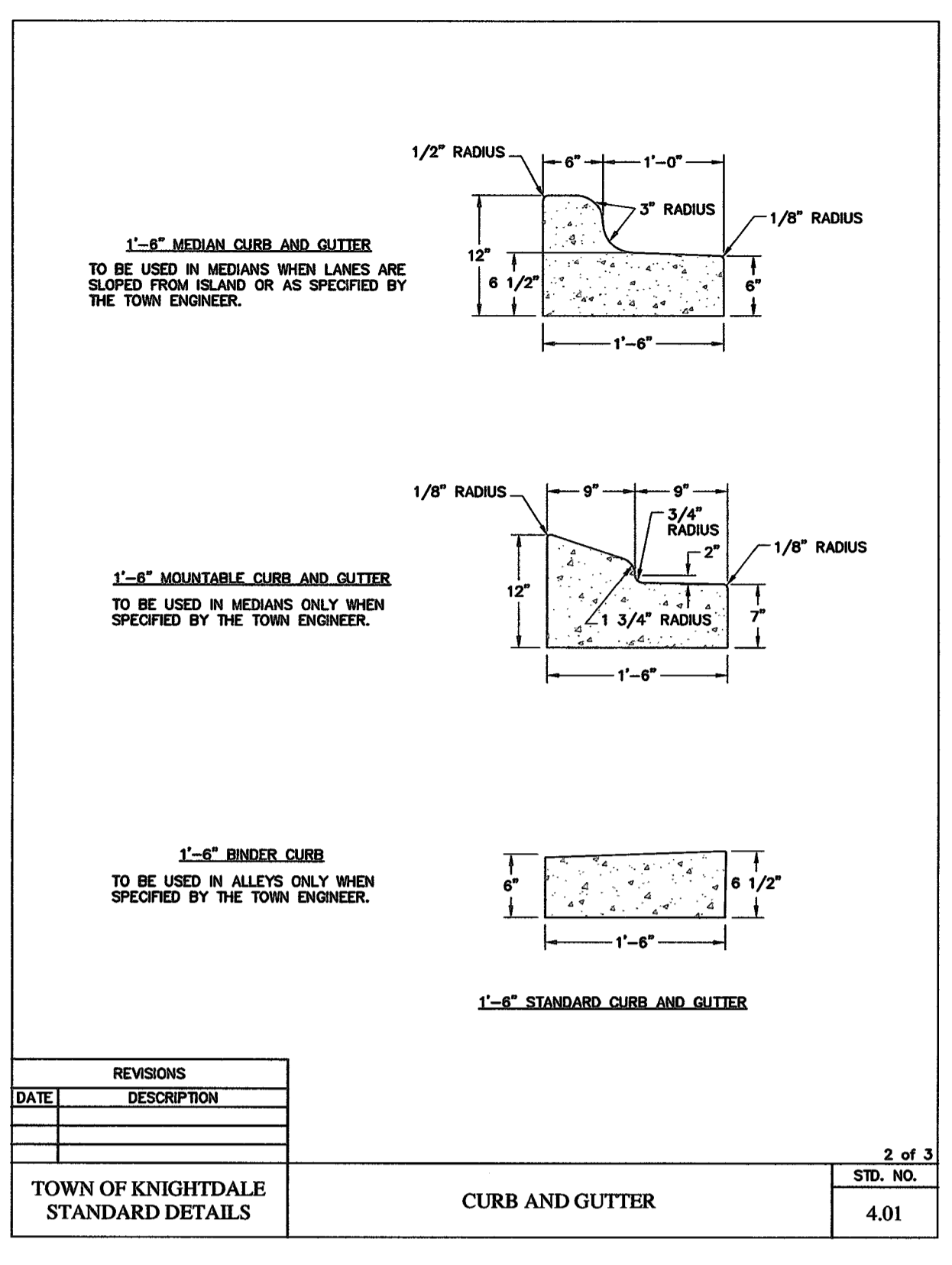
DETAILS

**C7.3**

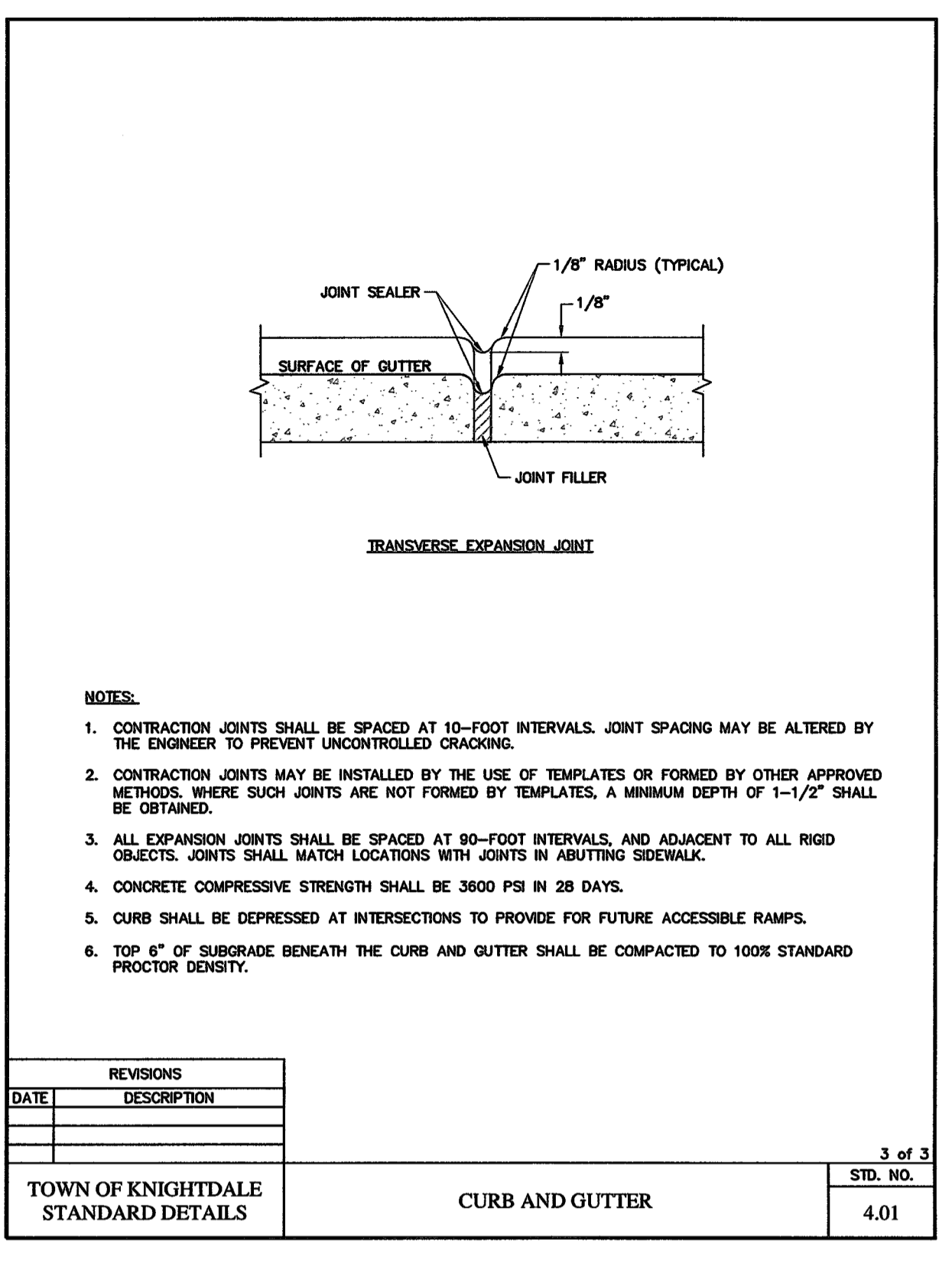
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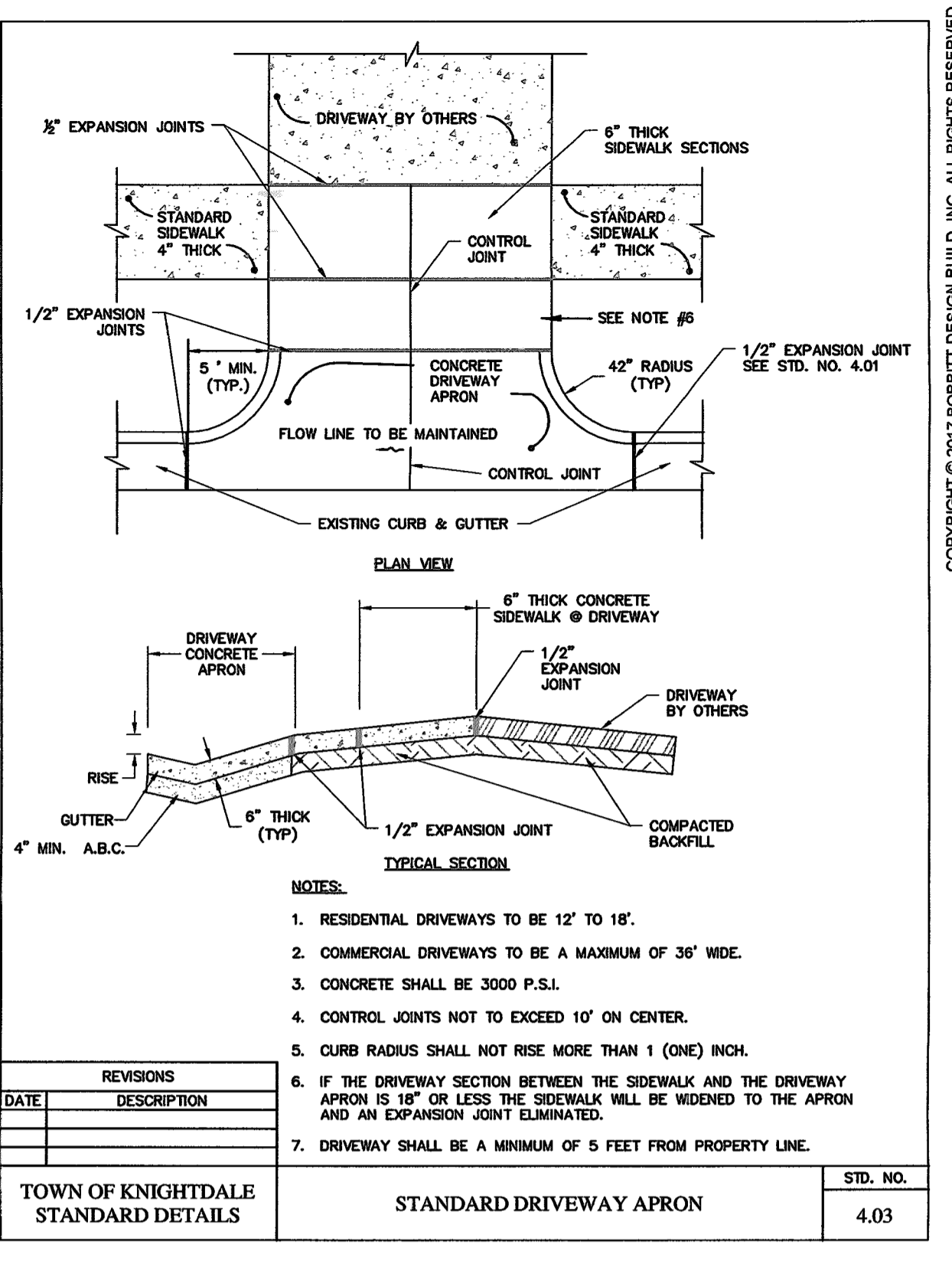
REVISIONS		1 of 3
DATE	DESCRIPTION	STD. NO.
		4.01



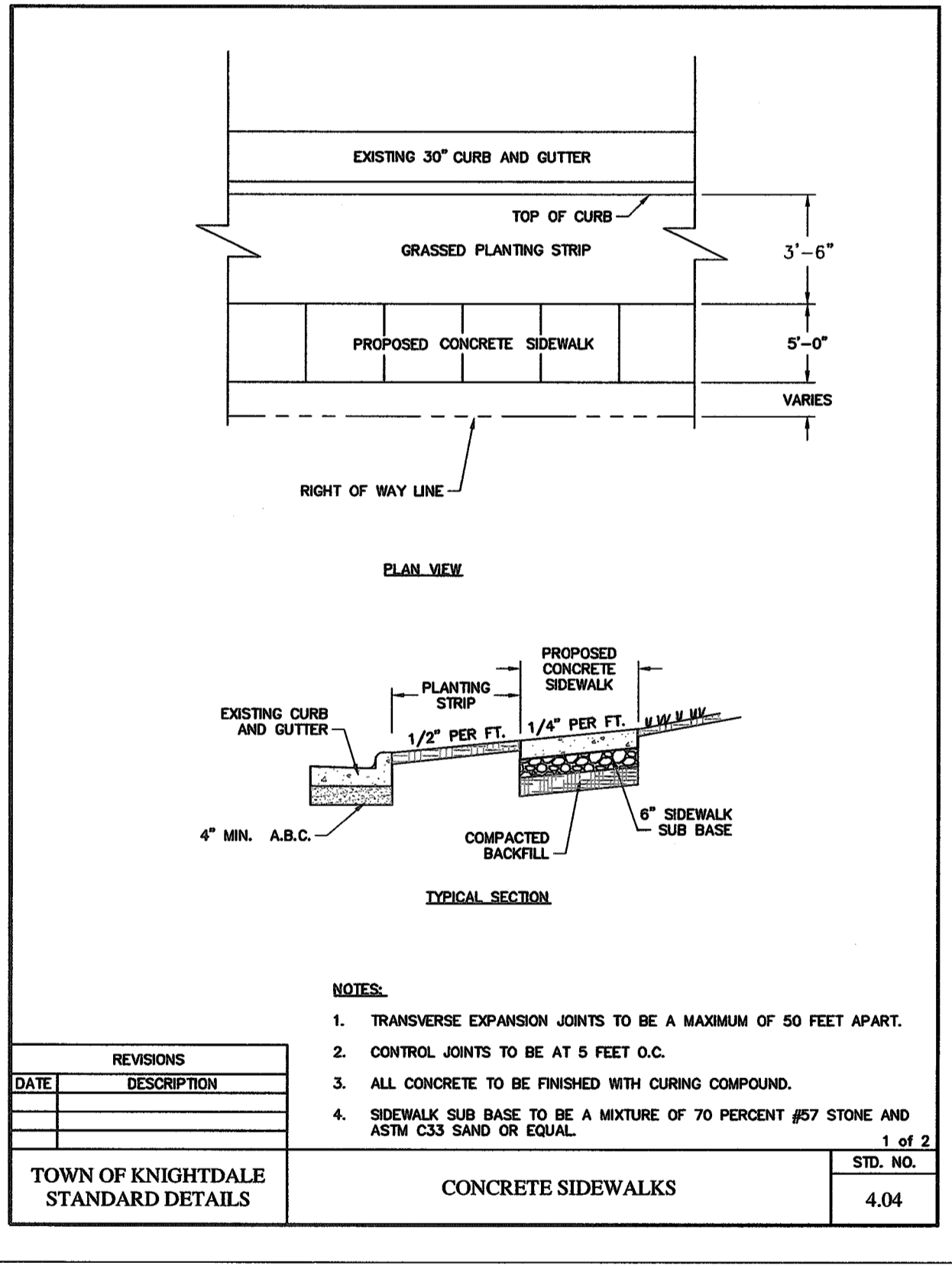
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DATE	DESCRIPTION	STD. NO.
		4.01



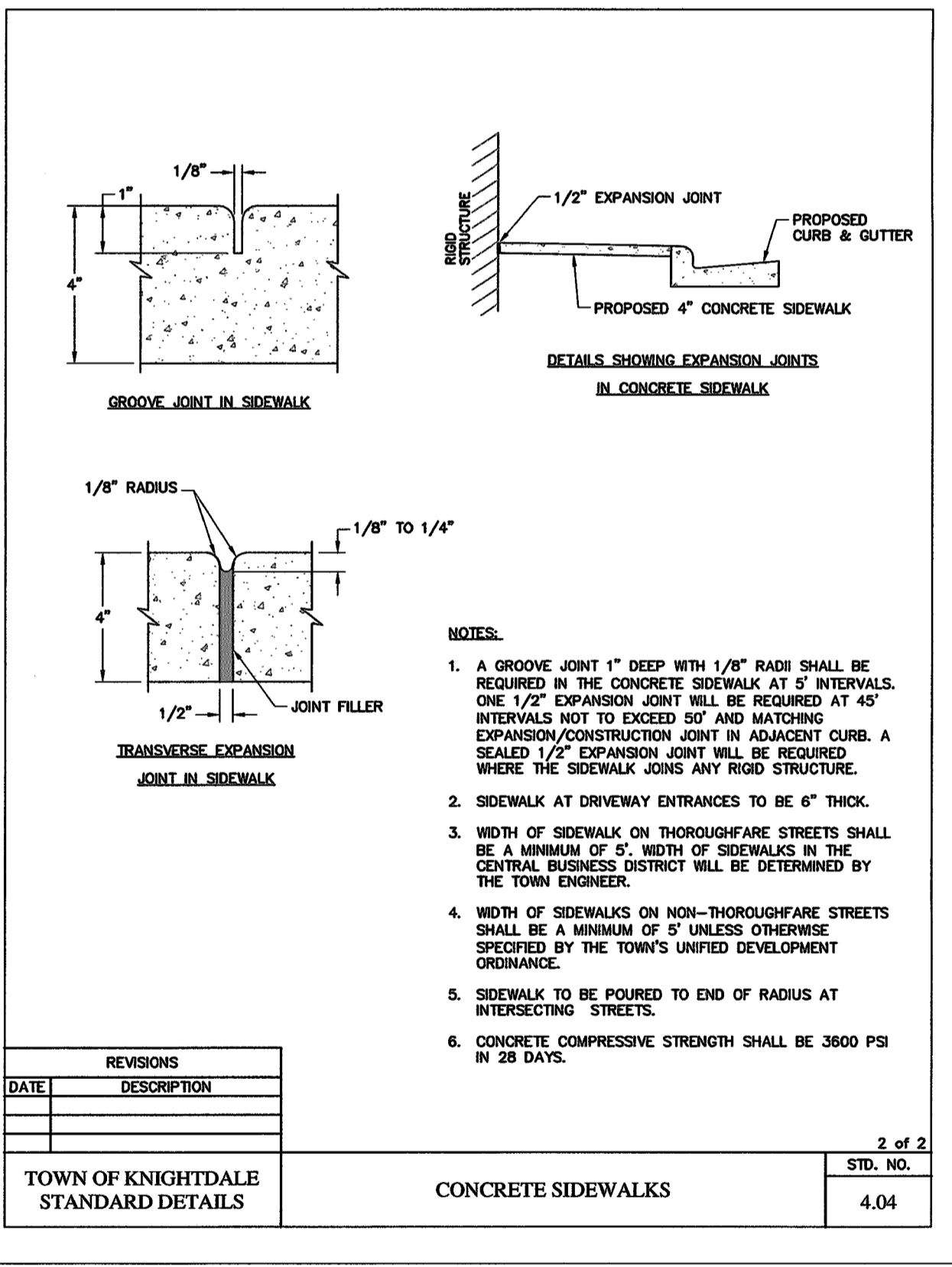
REVISIONS		3 of 3
DATE	DESCRIPTION	STD. NO.
		4.01



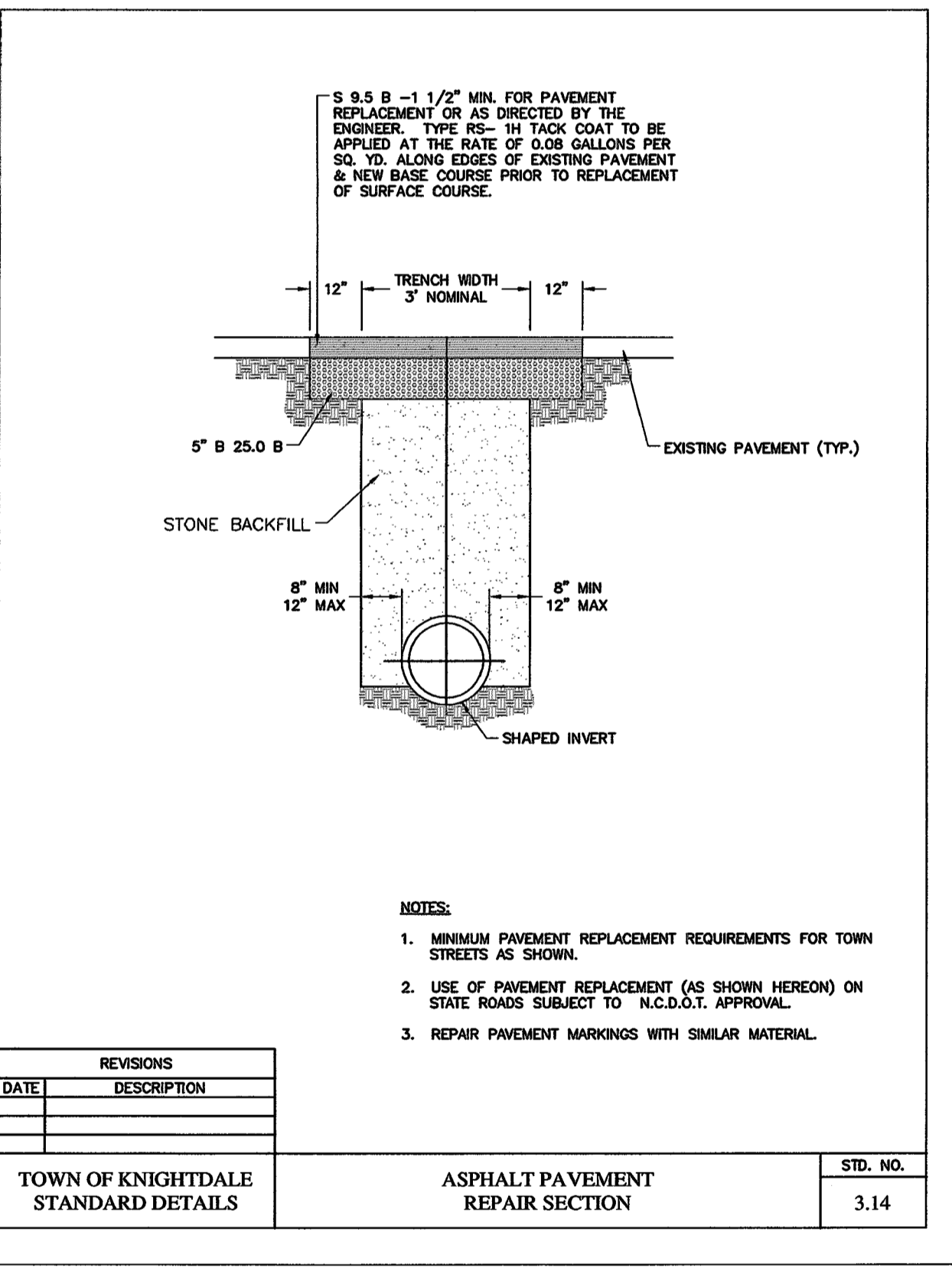
REVISIONS		STD. NO.
DATE	DESCRIPTION	
		4.03



REVISIONS		1 of 2
DATE	DESCRIPTION	STD. NO.
		4.04



REVISIONS		2 of 2
DATE	DESCRIPTION	STD. NO.
		4.04



REVISIONS		STD. NO.
DATE	DESCRIPTION	
		3.14

**Town Certification.** This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.  
 By: [Signature] Date: 6.17.17  
 Town Engineer

These plans are approved by the Town of Knightdale and serve as construction plans for this project.  
 By: [Signature] Date: 6.17.17  
 Administrator

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 www.nc811.org  
 1-800-632-4949  
 North Carolina One-Call Center, Inc.

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REVISIONS			
No.	DATE	DESCRIPTION	REV. BY
▲	15 MAY 17	REVISED SITE ADDRESS IN TITLEBLOCK SUBMIT FOR SIGNATURES	JBG
▲			
▲			
▲			

think, design, build

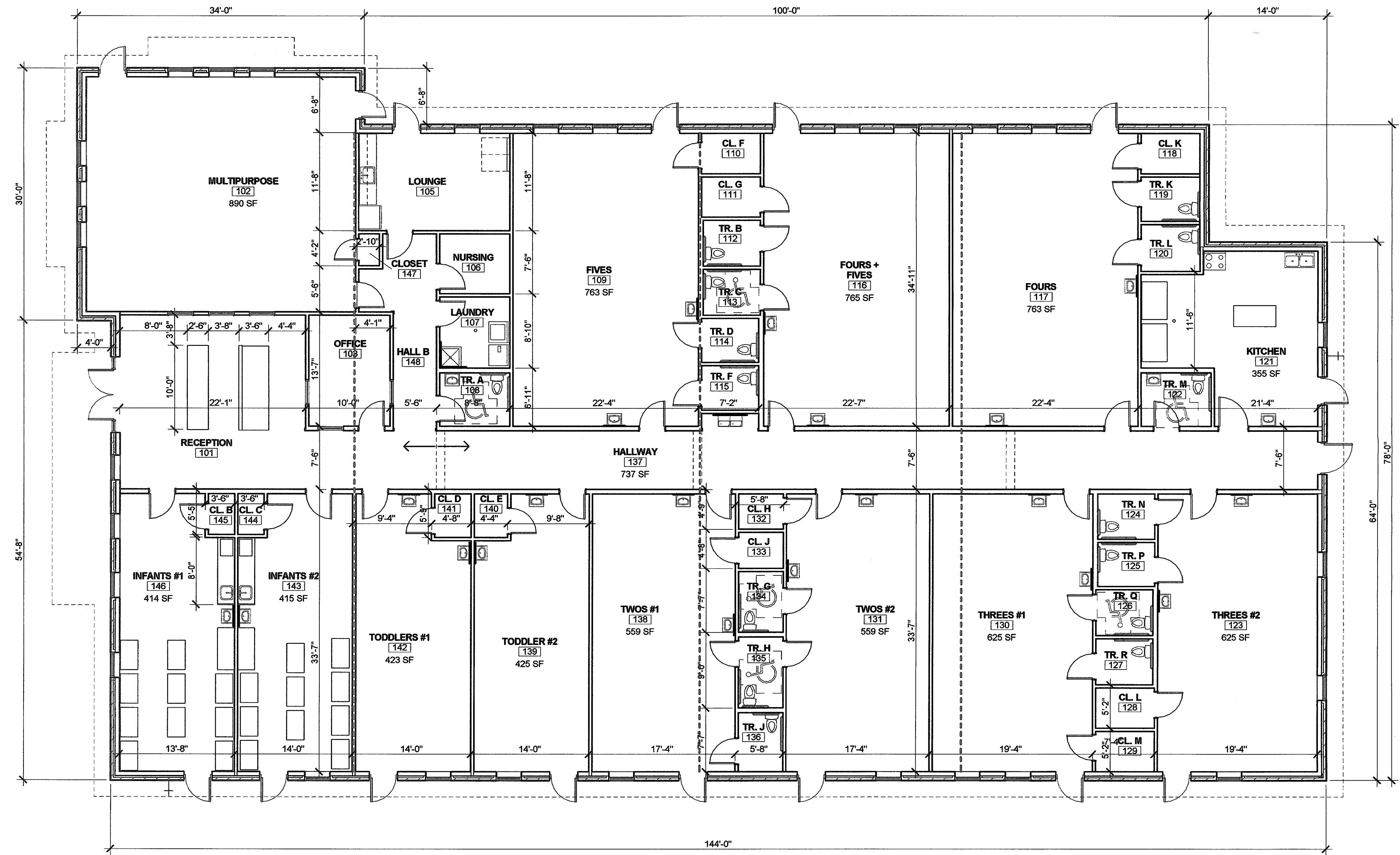
**BOBBITT DESIGN-BUILD**  
 600 Germantown Road | Raleigh, North Carolina 27607  
 Ph: (919) 681-1860 | Fax: (919) 681-1881 | Email: info@bobbitt.com

COORDINATOR: Blair Pittman  
 DRAWN BY: Jason Galloway  
 CHK BY: BPP

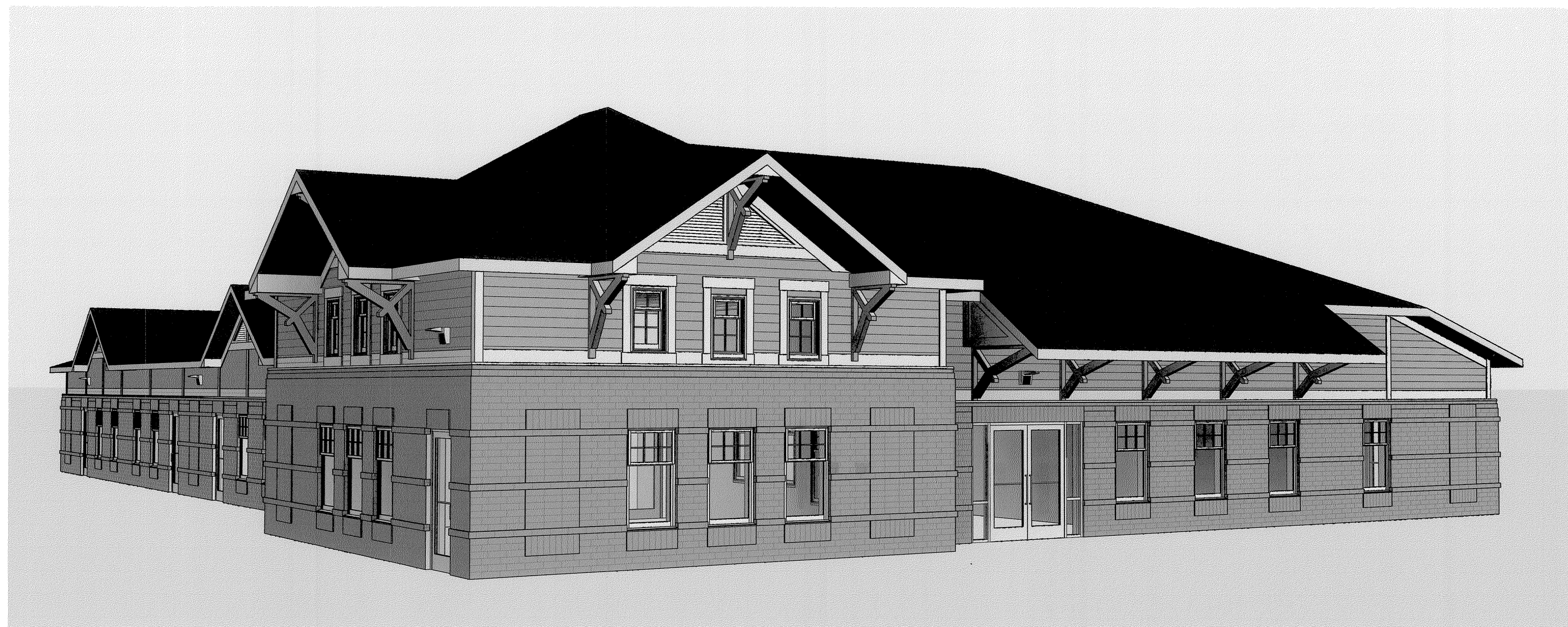
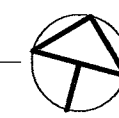
**KNIGHTDALE STATION PRESCHOOL**  
 710 Lightrail Drive  
 KNIGHTDALE, NORTH CAROLINA

24 X 36  
 31 MARCH 2017  
 1954-0015  
 DETAILS  
**C7.4**

BOBBITT A&E, PLLC  
600 Germantown Road  
Raleigh, North Carolina 27607  
Phone: (919) 851-2767  
Fax: (919) 851-1892  
design@bobbitta.com



1 FLOOR PLAN  
1/8" = 1'-0"



APPROVAL:  
DATE:

BOBBITT A&E, PLLC  
600 Germantown Road  
Raleigh, North Carolina 27607

**BOBBITT**  
DESIGN-BUILD  
600 Germantown Road | Raleigh, North Carolina 27607  
Phone: (919) 851-2767  
Fax: (919) 851-1892  
design@bobbitta.com

COORDINATOR:  
JGF

DRAWN BY:  
JGF

CHK BY:

**KNIGHTDALE STATION PRESCHOOL**  
CAROLINIAN AVENUE  
KNIGHTDALE, NORTH CAROLINA

24 X 36  
1/8" = 1'-0"

1/28/17

1954-0015

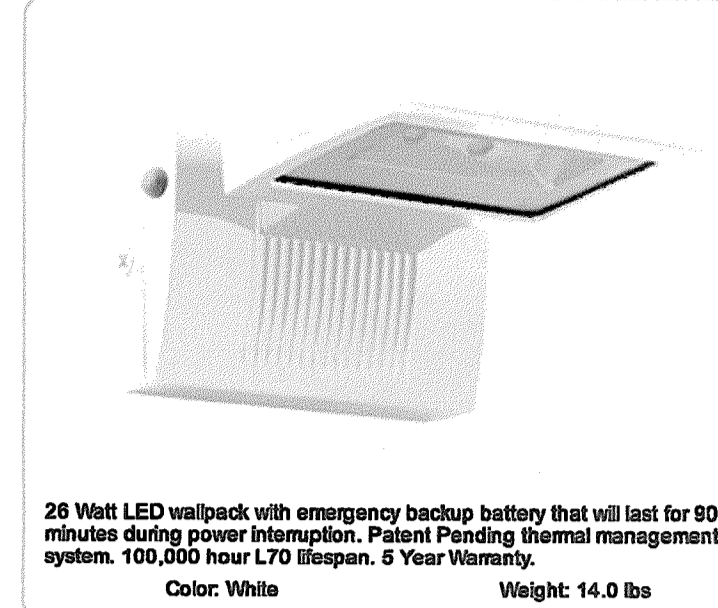
FLOOR PLAN

**A1**  
OF 2

**Town Certification.** This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.  
By: [Signature] Date: 6-22-17  
Town Engineer

These plans are approved by the Town of Knightdale and serve as construction plans for this project.  
By: [Signature] Date: 6-22-17  
Administrator

**WPLED26YW/EC**



26 Watt LED wallpack with emergency backup battery that will last for 90 minutes during power interruption. Patent Pending thermal management system. 100,000 hour L70 lifespan. 5 Year Warranty.  
Color: White Weight: 14.0 lbs

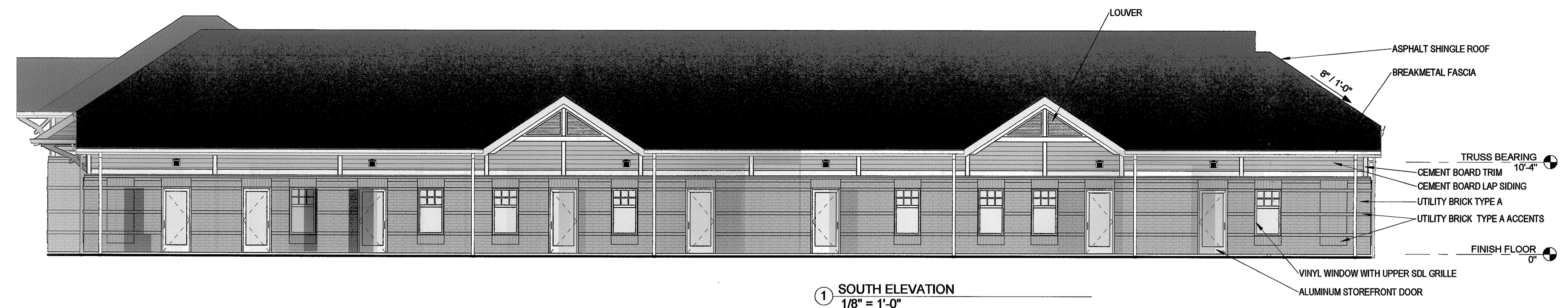
Project:	Type:
Prepared By:	Date:
<b>Driver Info</b>	<b>LED Info</b>
Type: Constant Current	Watts: 26W
120V: 0.28A	Color Temp: 3000K
200V: 0.18A	Color Accuracy: 83 CRI
240V: 0.14A	L70 Lifespan: 100000
277V: 0.12A	Lumens: 1,994
Input Watts: 29W	Efficacy: 69 LPW
Efficiency: 90%	

**Technical Specifications**

**Other**  
Cold Start WPLED26 with Battery Backup: Minimum starting temperature is -20°C/-4°F.  
California Title 24: See WPLED26/PC for a 2013 California Title 24 compliant model.  
Patents: The WPLED design is protected by U.S. Patent D334578 and Patents pending in the U.S., Canada, China, Taiwan and Mexico.  
Country of Origin: Designed by RAB in New Jersey and assembled in the USA by RAB's IBEW Local 3 workers.  
Buy American Act Compliant: This product is a COTS item manufactured in the United States, and is compliant with the Buy American Act.  
Recovery Act (ARRA) Compliant: This product complies with the 52.225-21 "Required Use of American Iron, Steel, and Manufactured Goods- Buy American Act- Construction Materials (October 2010).  
OSHA Schedule: Suitable in accordance with FAR Subpart 25.4.  
Equivalency: Equivalent to 175W Metal Halide.  
Listings: UL Listing: Suitable for Wet Locations as downlight, Wall Mount Only, Battery Backup UL 924 Listed Emergency Lighting Power Supply.  
LED Characteristics: Lifespan: 100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

**LED**  
Two (2) 13W high-output, long-life LEDs.  
Color Consistency: 3-step Macadam Ellipse binning to achieve consistent future-to-future color.  
Color Stability: LED color temperature is warranted to shift no more than 200K in CCT over a 5 year period.  
Color Uniformity: RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2015.  
**Electrical**  
Battery Mode: Light output uses LLD of 7 to simulate light output during battery mode operation.  
Driver: Constant Current, Class 2, 50/60 Hz, 120-277VAC 0.4 Arms.  
THD: 7.8% at 120V, 10.9% at 277V  
THD: 12.9% at 120V  
**Battery Backup**  
Backup Battery: Two field-replaceable, high-temperature, maintenance-free, nickel-cadmium batteries.  
Construction: Ambient Temperature: Suitable for use in 35°C (95°F) ambient temperatures.

**Thermal Management:**  
Optimized using computational fluid dynamics software to ensure long LED and driver lifespan.  
Gaskets: High temperature silicone.  
Housing: Precision die-cast aluminum housing, lens frame and mounting arm  
Finish: Our environmentally friendly polyester powder coatings are formulated for high-durability and long-lasting color, and contains no VOC or toxic heavy metals.  
Thermal Management: Cast aluminum Thermal Management system for optimal heat sinking. The LPACK is designed for cool operation, most efficient output and maximum LED life by minimizing LED junction temperature.  
Green Technology: Mercury and UV free, RoHS compliant components. Polyester powder coat finish formulated without the use of VOC or toxic heavy metals.  
Optical: BUG Rating: B1 U0 G0  
BUG Rating: B1 U0 G0



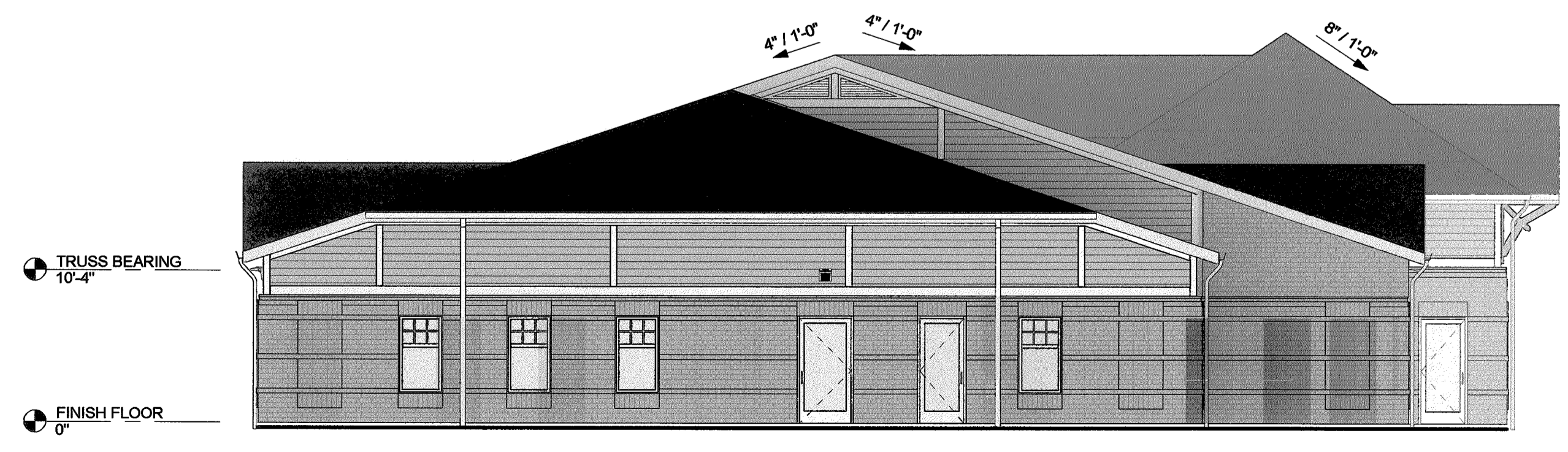
1 SOUTH ELEVATION  
1/8" = 1'-0"



2 WEST ELEVATION  
1/8" = 1'-0"



3 NORTH ELEVATION  
1/8" = 1'-0"



4 EAST ELEVATION  
1/8" = 1'-0"

Date(s) of selection: 1/12/17  
Job name: Knightdale Station Preschool  
Job number: 1954-0015  
Project developer: CHRIS GOINS  
Exterior designer: JEFF FORD

**EXTERIOR FINISH SELECTIONS**

Brick A: TRIANGLE UTILITY BRICK "CASTLESTONE"

Mortar: Grapevine joints, Natural with buff sand. EXAMPLE:

Control joint: Match Brick A

Siding: Hardboard cement board wood-grain lap siding  
Siding paint color: SW 2626 "Colonial Revival Green Stone"

Window tint: Clear

Brackets: Stain to match Minwax "Pickled Oak"

Masonry lintels: Paint White to match storefront  
Exterior storefront: White anodized aluminum  
Vinyl windows: White with upper simulated divided lite grilles  
Window sill: Match window  
Trim: White smooth finish Hardboard  
Soffit material: White aluminum, vented  
Louver/fan: White  
Fascia: White breakmetal  
Gutters: White  
Downspouts: White

Roof: GAF Timberline HD "Barkwood"

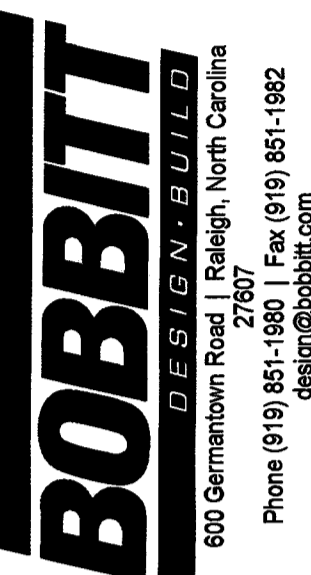
Exterior door hardware: Brushed stainless, US 26D

**Town Certification.** This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.  
By: *[Signature]* Date: 6-12-17  
Town Engineer

These plans are approved by the Town of Knightdale and serve as construction plans for this project.  
By: *[Signature]* Date: 12-2-17  
Administrator

APPROVAL:  
DATE:

BOBBITT A&E, PLLC  
600 Germantown Road  
Raleigh, North Carolina 27607



COORDINATOR:  
JGF

DRAWN BY:  
JGF

CHK BY:

**KNIGHTDALE STATION PRESCHOOL**  
CAROLINIAN AVENUE  
KNIGHTDALE, NORTH CAROLINA

24 X 36  
As indicated

3/1/17

1954-0015

ELEVATIONS

**A2**  
OF 2