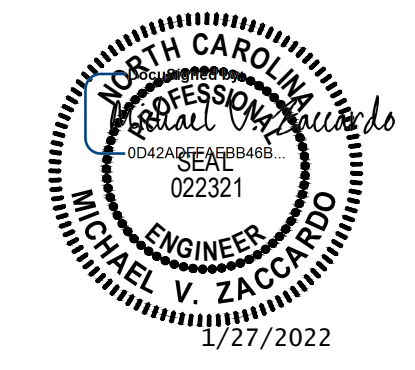


HAYWOOD GLEN - PHASE 3

CONSTRUCTION DOCUMENTS

TOWN OF KNIGHTDALE, WAKE COUNTY, NORTH CAROLINA



THIS DRAWING PREPARED AT THE
RALEIGH OFFICE
5410 Trinity Road, Suite 102 | Raleigh, NC 27607
TEL: 919-866-4951 FAX: 919-859-8824 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION	DATE
	01/27/2022

DRAWN BY
JD. MACMILLAN

DESIGNED BY
E. ANGE

CHECKED BY
M. ZACCARDO

SCALE
N/A

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

HAYWOOD GLEN PHASE 3

OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA

COVER

JOB NO.
43202

SHEET NO.
C0.0

RELEASED FOR CONSTRUCTION

Sheet List Table	
Sheet Number	Sheet Title
C0.0	COVER
C1.0	EXISTING CONDITIONS
C1.1	ENVIRONMENTAL SURVEY
C2.0	SITE PLAN
C2.1	SIGNAGE AND MARKING PLAN
C3.0	UTILITY PLAN
C3.1	SANITARY SEWER SCHEDULE
C4.0	GRADING AND DRAINAGE PLAN
C4.1	STORM SEWER SCHEDULE
C5.1	BLUE TANSY ROAD PLAN & PROFILE
C5.2	HAYWOOD GLEN DRIVE PLAN & PROFILE
C5.3	LEMON BASIL DRIVE PLAN & PROFILE
C5.4	GINGER MINT CIRCLE PLAN & PROFILE
C5.5	WHITE SAGE DRIVE PLAN & PROFILE
C5.6	JUNIPER BERRY ROAD PLAN & PROFILE
C5.7	CLOVE PINE DRIVE PLAN & PROFILE
C5.8	ALLEY B PLAN & PROFILE (1 OF 2)
C5.9	ALLEY B PLAN & PROFILE (2 OF 2)
C5.10	ALLEY A PLAN & PROFILE
C5.11	SANITARY SEWER OUTFALL
C5.12	STORM SEWER OUTFALL
C6.1	SCM 1 PLAN & PROFILE
C6.2	SCM 2 PLAN & PROFILE
C6.3	SCM NOTES & DETAILS
C6.4	SCM PLANTING PLAN
C7.0	SITE DETAILS
C7.1	SITE DETAILS
C7.2	SITE DETAILS
C7.3	WATER & SEWER DETAILS
C7.4	WATER & SEWER DETAILS
C7.5	STORM DETAILS
C8.0	EROSION & SEDIMENT CONTROL - PHASE 1
C8.1	EROSION & SEDIMENT CONTROL - PHASE 2
C8.2	EROSION & SEDIMENT CONTROL DETAILS
C8.3	EROSION & SEDIMENT CONTROL DETAILS
C8.4	EROSION & SEDIMENT CONTROL DETAILS
C9.0	LANDSCAPE AND LIGHTING PLAN
C9.1	LANDSCAPE AND LIGHTING DETAILS
C9.2	ACTIVE OPEN SPACE
C9.3	ACTIVE OPEN SPACE
C10.1	ROAD IMPROVEMENTS OLD KNIGHT ROAD (1 OF 2)
C10.2	ROAD IMPROVEMENTS OLD KNIGHT ROAD (2 OF 2)

ARCHITECTURAL STANDARDS

- SINGLE-FAMILY 2 STORY HOMES BUILT ON LOTS AT LEAST 60-FEET WIDE WILL HAVE A MINIMUM HEATED AREA OF 2,000 SQUARE FEET.
- SINGLE FAMILY 1 OR 1.5 STORY HOMES BUILT ON LOTS AT LEAST 60-FEET WIDE WILL HAVE A MINIMUM HEATED AREA OF 1,600 SQUARE FEET.
- SINGLE-FAMILY HOMES BUILT ON LOTS LESS THAN 60-FEET WIDE WILL HAVE A MINIMUM HEATED AREA OF 1,600 SQUARE FEET.
- NINETY PERCENT (90%) OF THE SINGLE-FAMILY HOMES BUILT ON LOTS AT LEAST 60-FEET WIDE WILL HAVE A MINIMUM HOUSE WIDTH OF 40-FEET. TEN PERCENT (10%) OF THE SINGLE-FAMILY HOMES BUILT ON LOTS AT LEAST 60-FEET WIDE WILL HAVE A MINIMUM HOUSE WIDTH OF 35-FEET.
- ALL SINGLE-FAMILY HOMES WITH CRAWL SPACES WILL BE WRAPPED IN BRICK OR STONE ON ALL SIDES.
- ALL SINGLE-FAMILY HOMES WITH STEM WALL OR SLAB FOUNDATIONS WILL BE A MINIMUM OF 2 STAIR RISERS (14 INCHES) ABOVE FINISHED GRADE AND WILL BE WRAPPED IN EITHER BRICK OR STONE ON ALL SIDES.
- ALL SINGLE-FAMILY HOMES WILL HAVE A COMBINATION OF TWO OR MORE OF THE FOLLOWING MATERIALS ON THE FRONT FACADE (NOT COUNTING FOUNDATION): STONE, BRICK, LAP SIDING, FIBER CEMENT SIDING, SHAKES OR BOARD AND BATTEN UNLESS THE HOME IS ONLY STONE OR BRICK. THE EXTERIOR SIDING MATERIAL ON THE SIDE AND REAR FACADES WILL BE FIBER CEMENT. WHEN TWO MATERIALS ARE USED, THE MATERIALS SHALL BE DIFFERENT BUT COMPLEMENTARY COLORS. VINYL MAY BE USED ONLY FOR SOFFITS, FASCIA AND CORNER BOARDS.
- ALL SINGLE-FAMILY HOMES WILL HAVE A FRONT PORCH WITH A MINIMUM DEPTH OF FIVE FEET. FRONT PORCH POSTS WILL BE AT LEAST 6"x6".
- MAIN ROOF PITCHES (EXCLUDING PORCHES) FRONTING THE STREET FOR 2-STORY HOMES WILL BE AT LEAST 8:12.
- MAIN ROOF PITCHES (EXCLUDING PORCHES) FRONTING THE STREET FOR 1-STORY AND 1.5-STORY HOMES WILL BE AT LEAST 6:12 UNLESS AN ALTERNATE IS APPROVED BY STAFF.
- GARAGES WILL NOT PROTRUDE MORE THAN 6 FEET FROM THE FRONT PORCH OR STOOP, AND ALL GARAGE DOORS SHALL CONTAIN WINDOW INSERTS.
- FOR EVERY 30 FEET (OR FRACTION) OF CONTINUOUS SIDE ELEVATION (CALCULATED ON A PER FLOOR BASIS), THERE SHALL BE ONE WINDOW OR DOOR ADDED TO THE SIDE ELEVATIONS. ANY SIDING BREAK ON THE SIDE OF THE HOME SUCH AS A FIREPLACE, SIDE PORCH, WALL OFFSETS COULD BE USED AS AN ALTERNATE TO WINDOWS.
- THERE SHALL BE A MINIMUM 12" OVERHANG ON EVERY GABLE END FOR EVERY SINGLE-FAMILY HOME.

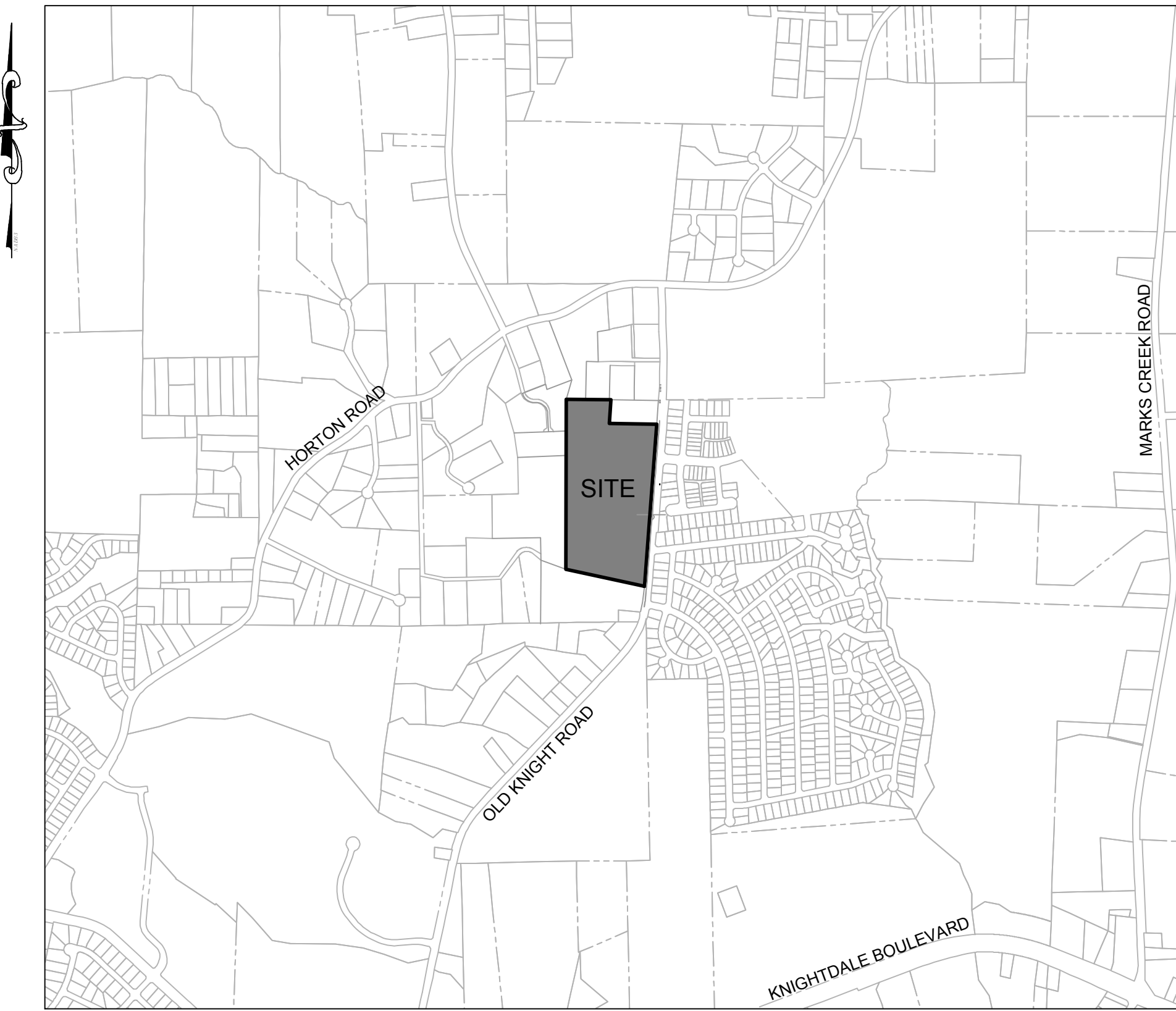
UDO EXCEPTIONS

SECTION 2.7 OF THE KNIGHTDALE UNIFIED DEVELOPMENT ORDINANCE REQUIRES THAT ANY LOT LESS THAN 80' IN WIDTH BE ACCESSED VIA AN ALLEY OR REAR LANE ACCESS. ADDITIONALLY, THE UDO REQUIRES THAT SIDE SETBACKS BE A MINIMUM OF 20% OF THE LOT WIDTH, AND DRIVEWAY LENGTH BE A MINIMUM OF 35'. THE MINIMUM LOT WIDTH STANDARD BE REDUCED TO 60', THE 20% AGGREGATE SIDE SETBACK BE ELIMINATED, AND DRIVEWAY LENGTHS BE REDUCED TO A MINIMUM OF 20 FEET IN ORDER TO BE ADEQUATELY DEVELOPED WITHIN THE SITE'S CONSTRAINTS AND TO MAINTAIN CONSISTENCY WITH THE EXISTING 2 PHASES OF HAYWOOD GLEN.

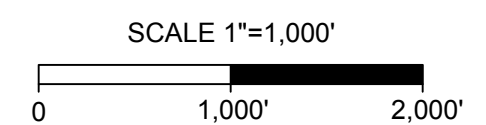
SECTION 2.7 OF THE KNIGHTDALE UNIFIED DEVELOPMENT ORDINANCE REQUIRES THAT ANY DEVELOPMENT IN A GR-3 DISTRICT WILL HAVE A MAXIMUM DEVELOPMENT DENSITY OF 3 DU/A. THE DENSITY IS HIGHER THAN GR-3 DISTRICT REQUIREMENTS. HAYWOOD GLEN PHASES 1-3 COMBINED HAVE A DENSITY OF 3.07 DU/A.

SECTION 6.2 OF THE KNIGHTDALE UNIFIED DEVELOPMENT ORDINANCE STATES THAT LOTS LESS THAN 60' ARE EXEMPT FROM THE RESIDENTIAL CLEARING AND GRADING REQUIREMENTS OF THAT SECTION. THE DEVELOPMENT WILL HAVE A MAXIMUM LOT WIDTH OF 60', THOUGH THE MAJORITY WILL BE 35' WITH REAR-LOADED GARAGES. LIMITED EXEMPTIONS TO THE CLEARING AND GRADING REQUIREMENTS PRESENTED IN SECTION 6.2 OF THE UDO ARE REQUESTED FOR LOTS THAT ARE 60' WIDE OR WIDER.

APPROVED MASTER PLAN: ZMA-7-20



VICINITY MAP



OWNERS OF RECORD

1755-73-7189
D.R. HORTON - TERRAMOR, LLC
7208 FALLS OF NEUSE ROAD, STE. 201
RALEIGH, NC 27615



SITE DATA

PROJECT:	HAYWOOD GLEN PHASE 3	
ENGINEER:	TIMMONS GROUP 5410 TRINITY ROAD, SUITE 102 RALEIGH, NC 27607 PHONE: 919-532-3281 FAX: 919-859-5663 MIKE ZACCARDO, PE EMAIL: MIKE.ZACCARDO@TIMMONS.COM	
DEVELOPER:	TERRAMOR HOMES 7208 FALLS OF NEUSE ROAD, SUITE 201 RALEIGH, NC 27615 PHONE: 919-809-4207 JON HOLTVEDT, PE EMAIL: JHOLTVEDT@TERRAMORHOMES.COM	
PROPERTY LOCATION:	1501 OLD KNIGHT ROAD WAKE COUNTY, NORTH CAROLINA	
PIN:	1755-73-7189	
ZONING:	GR3 PUD	
TOWNSHIP:	ST. MATTHEWS	
PROPOSED USE:	SINGLE FAMILY RESIDENTIAL	
TOTAL DEVELOPED TRACT AREA:	23.06 ACRES	
TOTAL IMPERVIOUS AREA:	12.41 ACRES	
TOTAL IMPERVIOUS AREA PER LOT:	REAR LOADED = 3,812 SF FRONT LOADED = 4,542 SF	
TOTAL PROPOSED UNITS:	78 SINGLE FAMILY 17 FRONT LOADED + 61 REAR LOADED	
PROPOSED DENSITY:	3.07 DU/A (OVERALL SITE) 3.38 DU/A (PHASE 3)	
TOTAL OPEN SPACE:	3.86 ACRES	
TOTAL ON STREET PARKING:	47 SPACES	
SETBACKS:	FRONT LOAD FRONT: 10' DRIVEWAY LENGTH: 20' REAR: 25' SIDE: 5'	REAR LOAD FRONT: 10' REAR: 20' DRIVEWAY LENGTH: 20' SIDE: 3'

EROSION AND SEDIMENT CONTROL

APPROVED PLAN
DATE _____
PERMIT NO. S-_____
Wake County Environmental Services
Sedimentation & Erosion Control
919-856-7400

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the standards and specifications of the City's Public Utilities Handbook. City of Raleigh Public Utilities Department Permit # S-4902

City of Raleigh Development Approval _____
Raleigh Water Review Officer _____

Water and Sewer Permits (if applicable)

The City of Raleigh consents to the connection and extension of the City's Public Sewer System as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. City of Raleigh Public Utilities Department Permit # S-4902

The City of Raleigh consents to the connection and extension of the City's Public Water System as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. City of Raleigh Public Utilities Department Permit # W-3836

The City of Raleigh consents to the connection to its public sewer system and extension of the private sewer collection system as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. City of Raleigh Public Utilities Department Permit # _____

a. **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.

b. **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, _____, 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) _____ of these drawings.

Seal By: _____, PE
Date: _____

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

SURVEY NOTE
SURVEY PROVIDED BY TIMMONS GROUP
CERTIFIED BY TERRY L. WESTENDORF, PLS

SITE QUANTITIES

Sewer	
Manholes	20 EA
8" Public Sanitary Sewer	3,698 LF
Sewer Stubs	80 EA
Water	
8" Public Watermain	3,733 LF
Water Stubs	84 EA
Concrete/Asphalt	
Private Streets	2,448 LF
Public Streets	3,763 LF
Public 6' Sidewalk	6,413 LF
30" Curb & Gutter	12,090 LF
Site Data	
Number of Lots	78
GPD Usage Water	19,500
GPD Usage Sewer	19,500
Calculation for GPD Water (per Unit)	250
Calculation for GPD Sewer (per Unit)	250
Tree Protection Fencing (LF)	5,763

WATER ALLOCATION POLICY	
Haywood Glen - Phase 3 Water Allocation Points:	
ITEM	POINTS
4 On-Street Parking Spaces	4
Resort-Style Pool (phase 1 & 2)	2
Deck/Patio Greater than 3,000 SF (phase 1 & 2)	3
Water Playground with Apparatus (phase 1 & 2)	2
Clubhouse with Bathrooms Only (phase 1 & 2)	3
IFEMA Certified Playground Equipment	4
Fountain	4
Total	22

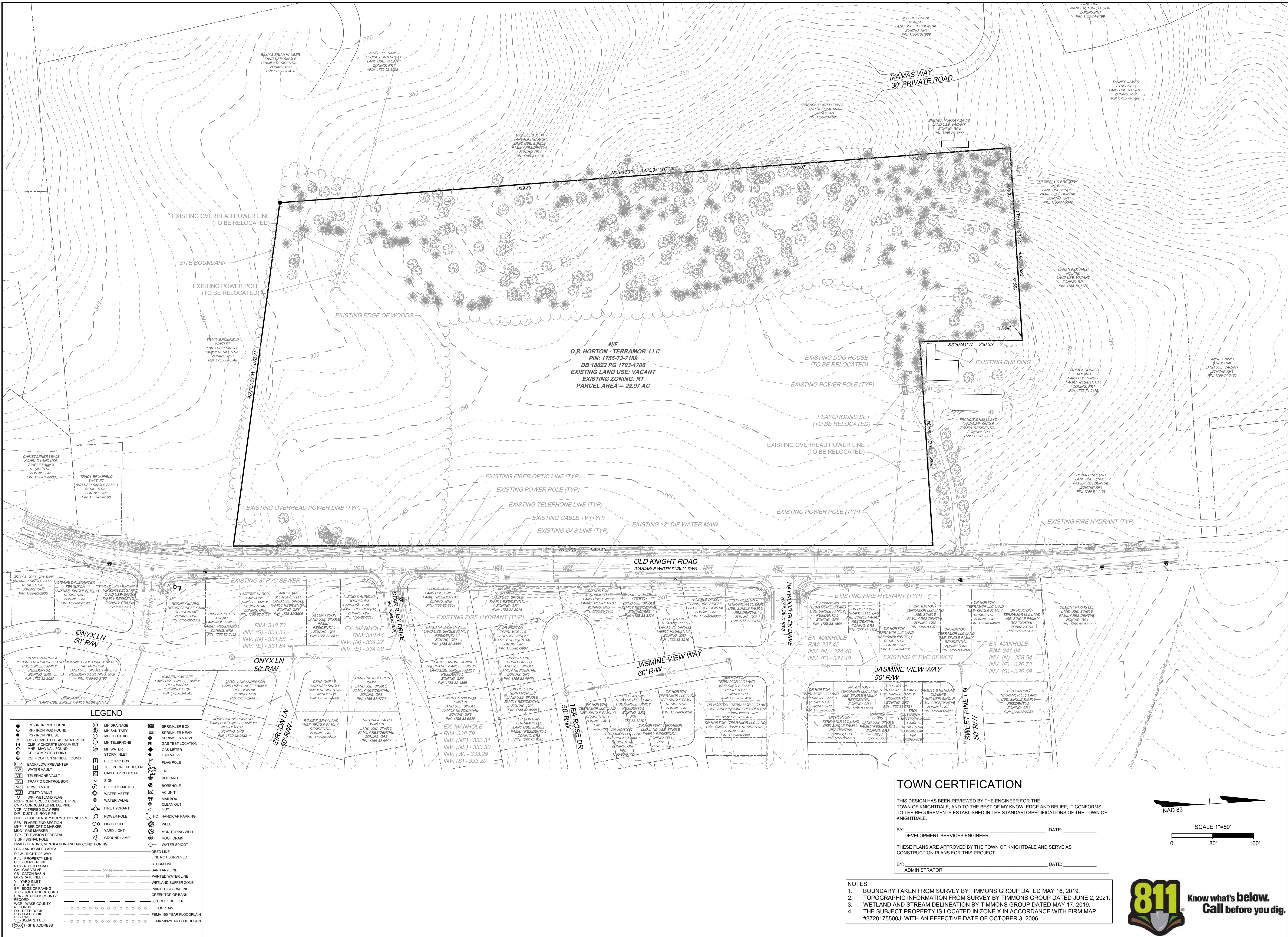
ATTENTION CONTRACTORS

The Construction Contractor responsible for the extension of water, sewer, and/or reuse, as approved in these plans, is responsible for contacting the **Public Works Department** at (919) 996-2409, and the **Public Utilities Department** at (919) 996-4540 at least **twenty four hours** prior to beginning any of their construction.

Failure to notify both City Departments in advance of beginning construction, will result in the issuance of **monetary fines**, and require reinstallation of any water or sewer facilities not inspected as a result of this notification failure.

Failure to call for **Inspection, Install a Downstream Plug**, have **Permitted Plans** on the **Jobsite**, or any other **Violation of City of Raleigh Standards** will result in a **Fine and Possible Exclusion** from future work in the **City of Raleigh**.





THIS DRAWING PREPARED AT THE
RALEIGH OFFICE
 5410 Trinity Road, Suite 102 | Raleigh, NC 27607
 TEL 919-866-9511 FAX 919-853-8124 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

DATE	01/27/2022
DRAWN BY	JD. MACMILLAN
DESIGNED BY	E. ANGE
CHECKED BY	M. ZACCARDO
SCALE	1" = 80'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652
HAYWOOD GLEN PHASE 3
 OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA

EXISTING CONDITIONS

JOB NO. 43202
 SHEET NO. C1.0

RELEASED FOR CONSTRUCTION

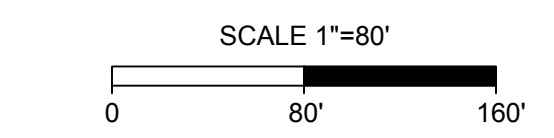
TOWN CERTIFICATION

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: _____ DATE: _____
 DEVELOPMENT SERVICES ENGINEER

BY: _____ DATE: _____
 ADMINISTRATOR

- NOTES:
- BOUNDARY TAKEN FROM SURVEY BY TIMMONS GROUP DATED MAY 16, 2019.
 - TOPOGRAPHIC INFORMATION FROM SURVEY BY TIMMONS GROUP DATED JUNE 2, 2021.
 - WETLAND AND STREAM DELINEATION BY TIMMONS GROUP DATED MAY 17, 2019.
 - THE SUBJECT PROPERTY IS LOCATED IN ZONE X IN ACCORDANCE WITH FIRM MAP #3720175500J, WITH AN EFFECTIVE DATE OF OCTOBER 3, 2006.

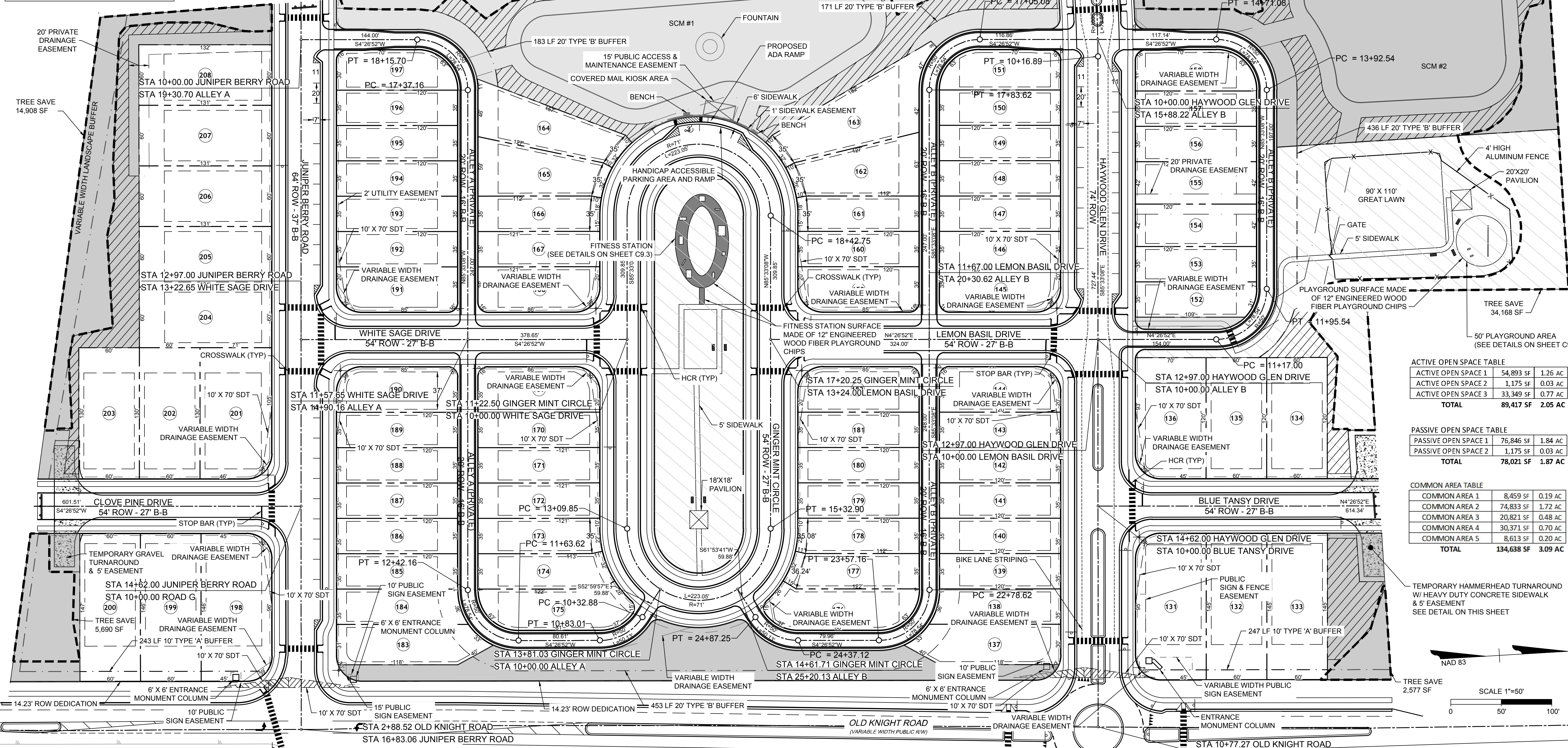


LEGEND

● IRP - IRON PIPE FOUND	⊙ MH DRAINAGE	⊙ SPRINKLER BOX
● IRP - IRON ROD FOUND	⊙ MH SANITARY	⊙ SPRINKLER VALVE
● IRP - IRON PIPE SET	⊙ MH ELECTRIC	⊙ GAS TEST LOCATION
● CP - COMPUTED CASSIMET POINT	⊙ MH TELEPHONE	⊙ GAS METER
● CMP - CONCRETE MONUMENT	⊙ MH WATER	⊙ CP - COMPUTED POINT
● MNF - MAG NAIL FOUND	⊙ ELECTRIC BOX	⊙ CP - COTTON SPINDLE FOUND
● CP - COMPUTED POINT	⊙ TELEPHONE PEDESTAL	⊙ WATER VAULT
● CSF - COTTON SPINDLE FOUND	⊙ CABLE TV PEDESTAL	⊙ TELEPHONE VAULT
⊙ BACKFLOW PREVENTER	⊙ SIGN	⊙ TRAFFIC CONTROL BOX
⊙ WATER VAULT	⊙ ELECTRIC METER	⊙ POWER VAULT
⊙ TELEPHONE VAULT	⊙ WATER METER	⊙ UTILITY VAULT
⊙ TRAFFIC CONTROL BOX	⊙ WATER VALVE	⊙ WF - WETLAND FLAG
⊙ POWER VAULT	⊙ GUY	⊙ MCP - REINFORCED CONCRETE PIPE
⊙ UTILITY VAULT	⊙ FIRE HYDRANT	⊙ CMP - CORRUGATED METAL PIPE
⊙ WF - WETLAND FLAG	⊙ CLEAN OUT	⊙ CDP - CORRUGATED METAL PIPE
⊙ MCP - REINFORCED CONCRETE PIPE	⊙ HC - HANDICAP PARKING	⊙ DCP - DUCTILE IRON PIPE
⊙ CMP - CORRUGATED METAL PIPE	⊙ WELL	⊙ DP - DUCTILE IRON PIPE
⊙ CDP - CORRUGATED METAL PIPE	⊙ MONITORING WELL	⊙ HDPE - HIGH DENSITY POLYETHYLENE PIPE
⊙ DP - DUCTILE IRON PIPE	⊙ ROOF DRAIN	⊙ FES - FLARED END SECTION
⊙ HDPE - HIGH DENSITY POLYETHYLENE PIPE	⊙ WATER SPOUT	⊙ MFO - FIBER OPTIC MARKER
⊙ FES - FLARED END SECTION	⊙ DEED LINE	⊙ MGS - GAS MARKER
⊙ MFO - FIBER OPTIC MARKER	⊙ LINE NOT SURVEYED	⊙ TYP - TELEVISION PEDESTAL
⊙ MGS - GAS MARKER	⊙ STORM LINE	⊙ SIGP - SIGNAL POLE
⊙ TYP - TELEVISION PEDESTAL	⊙ SANITARY LINE	⊙ HVAC - HEATING, VENTILATION AND AIR CONDITIONING
⊙ SIGP - SIGNAL POLE	⊙ PAINTED WATER LINE	⊙ LSA - LANDSCAPED AREA
⊙ HVAC - HEATING, VENTILATION AND AIR CONDITIONING	⊙ WETLAND BUFFER ZONE	⊙ R/W - RIGHT OF WAY
⊙ LSA - LANDSCAPED AREA	⊙ PAINTED STORM LINE	⊙ P/L - PROPERTY LINE
⊙ R/W - RIGHT OF WAY	⊙ CREEK TOP OF BANK	⊙ C/L - CENTERLINE
⊙ P/L - PROPERTY LINE	⊙ FLOODPLAIN	⊙ NTS - NOT TO SCALE
⊙ C/L - CENTERLINE	⊙ FLOODPLAIN	⊙ NTS - NOT TO SCALE
⊙ NTS - NOT TO SCALE	⊙ FLOODPLAIN	⊙ CB - CATCH BASIN
⊙ CB - CATCH BASIN	⊙ FLOODPLAIN	⊙ QV - GAS VALVE
⊙ QV - GAS VALVE	⊙ FLOODPLAIN	⊙ CF - CATCH BASIN
⊙ CF - CATCH BASIN	⊙ FLOODPLAIN	⊙ V1 - YARD INLET
⊙ V1 - YARD INLET	⊙ FLOODPLAIN	⊙ QI - GUY INLET
⊙ QI - GUY INLET	⊙ FLOODPLAIN	⊙ EP - EDGE OF PAVING
⊙ EP - EDGE OF PAVING	⊙ FLOODPLAIN	⊙ TRC - TOP BACK OF CURB
⊙ TRC - TOP BACK OF CURB	⊙ FLOODPLAIN	⊙ CCR - CHATHAM COUNTY RECORD
⊙ CCR - CHATHAM COUNTY RECORD	⊙ FLOODPLAIN	⊙ WCR - WAKE COUNTY RECORDS
⊙ WCR - WAKE COUNTY RECORDS	⊙ FLOODPLAIN	⊙ DB - DEED BOOK
⊙ DB - DEED BOOK	⊙ FLOODPLAIN	⊙ PB - PLAT BOOK
⊙ PB - PLAT BOOK	⊙ FLOODPLAIN	⊙ SF - SQUARE FEET
⊙ SF - SQUARE FEET	⊙ FLOODPLAIN	⊙ ○ - SITE ADDRESS

LEGEND

- PROPERTY LINE
- PROPOSED RIGHT OF WAY
- PROPOSED LOT LINE
- TREE SAVE AREA
- ACTIVE OPEN SPACE
- PASSIVE OPEN SPACE
- COMMON AREA
- TREE REPLACEMENT AREA



ACTIVE OPEN SPACE TABLE

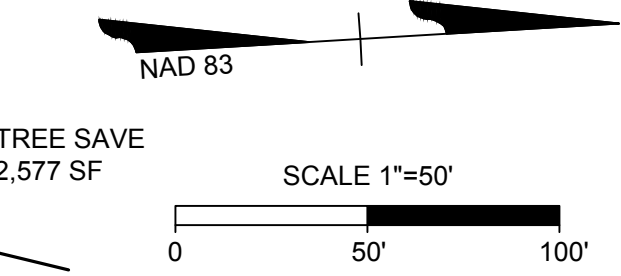
ACTIVE OPEN SPACE 1	54,893 SF	1.26 AC
ACTIVE OPEN SPACE 2	1,175 SF	0.03 AC
ACTIVE OPEN SPACE 3	33,349 SF	0.77 AC
TOTAL	89,417 SF	2.05 AC

PASSIVE OPEN SPACE TABLE

PASSIVE OPEN SPACE 1	76,846 SF	1.84 AC
PASSIVE OPEN SPACE 2	1,175 SF	0.03 AC
TOTAL	78,021 SF	1.87 AC

COMMON AREA TABLE

COMMON AREA 1	8,459 SF	0.19 AC
COMMON AREA 2	74,833 SF	1.72 AC
COMMON AREA 3	20,821 SF	0.48 AC
COMMON AREA 4	30,371 SF	0.70 AC
COMMON AREA 5	8,613 SF	0.20 AC
TOTAL	134,638 SF	3.09 AC



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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

SITE DATA

DEVELOPER: TERRAMOR HOMES
7208 FALLS OF NEUSE ROAD, SUITE 201
RALEIGH, NC 27615
PHONE: 919-809-4207
JON HOLTVEDT, PE
EMAIL: JHOLTVEDT@TERRAMORHOMES.COM

ENGINEER: TIMMONS GROUP
MIKE ZACCARDO, PE
5410 TRINITY ROAD, STE. 102
RALEIGH, NC 27607
PHONE: 919-532-3281

OWNER OF RECORD: WAYNE AND EUGENE HARPER
4113 BREWSTER DRIVE
RALEIGH, NC 27606-1711
PIN # = 1755-73-7189
DB = 6075, PG = 0508
FIRM MAP# = 3720175500J

TOTAL EXISTING TRACT = 23.06 AC.
ZONING = GR3 PUD

TOTAL PROPOSED NUMBER OF LOTS = 78
ALLEY LOADED LOTS = 61
FRONT LOADED LOTS = 17
PROPOSED DENSITY = 3.38 DU/A

MINIMUM PROVIDED REAR-LOADED LOT WIDTH = 35'
MINIMUM PROVIDED FRONT-LOADED LOT WIDTH = 60'
MINIMUM LOT SIZE REQUIRED = 4,000 S.F.
MINIMUM LOT SIZE PROVIDED = 4,100 S.F.
AVERAGE LOT SIZE PROVIDED = 5,393 S.F.

OPEN SPACE REQUIRED = 3.3 AC.
ACTIVE OPEN SPACE REQUIRED = 1.65 AC.
TOTAL LENGTH OF ROADS = 6,211 L.F.

SETBACKS:
FRONT LOAD FRONT: 10' REAR: 10'
DRIVEWAY LENGTH: 20' DRIVEWAY LENGTH: 20'
SIDE: 5' SIDE: 3'

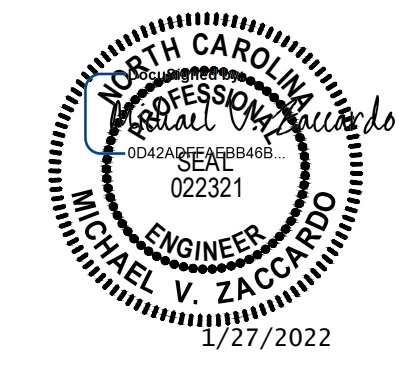
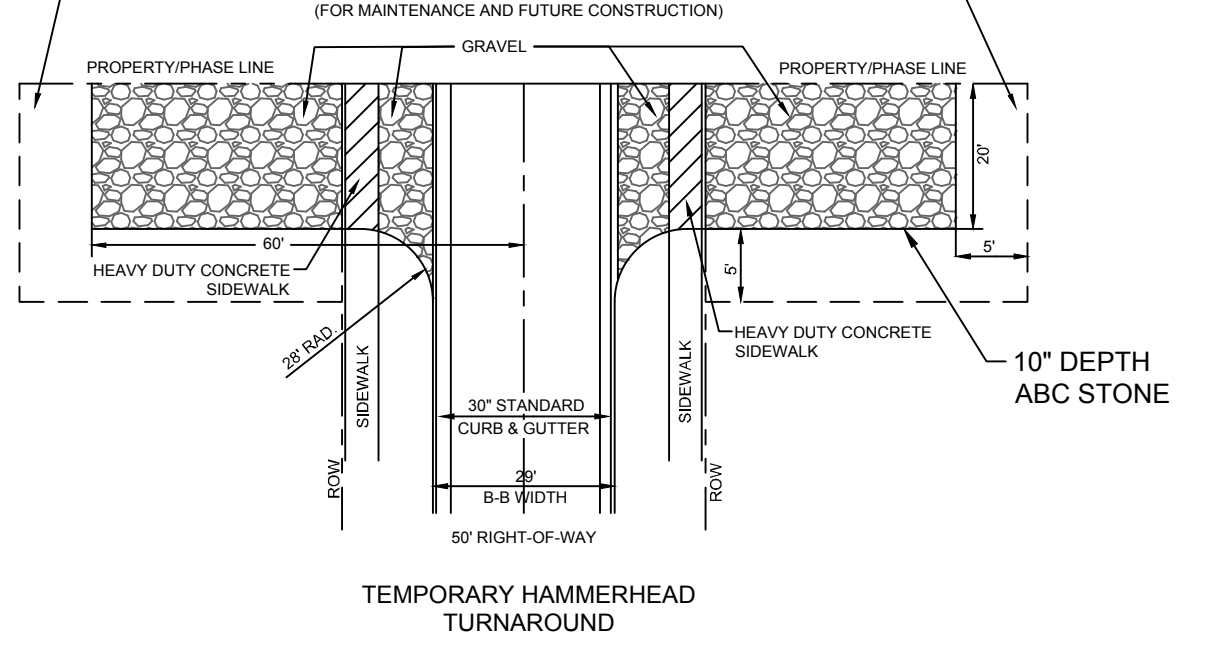
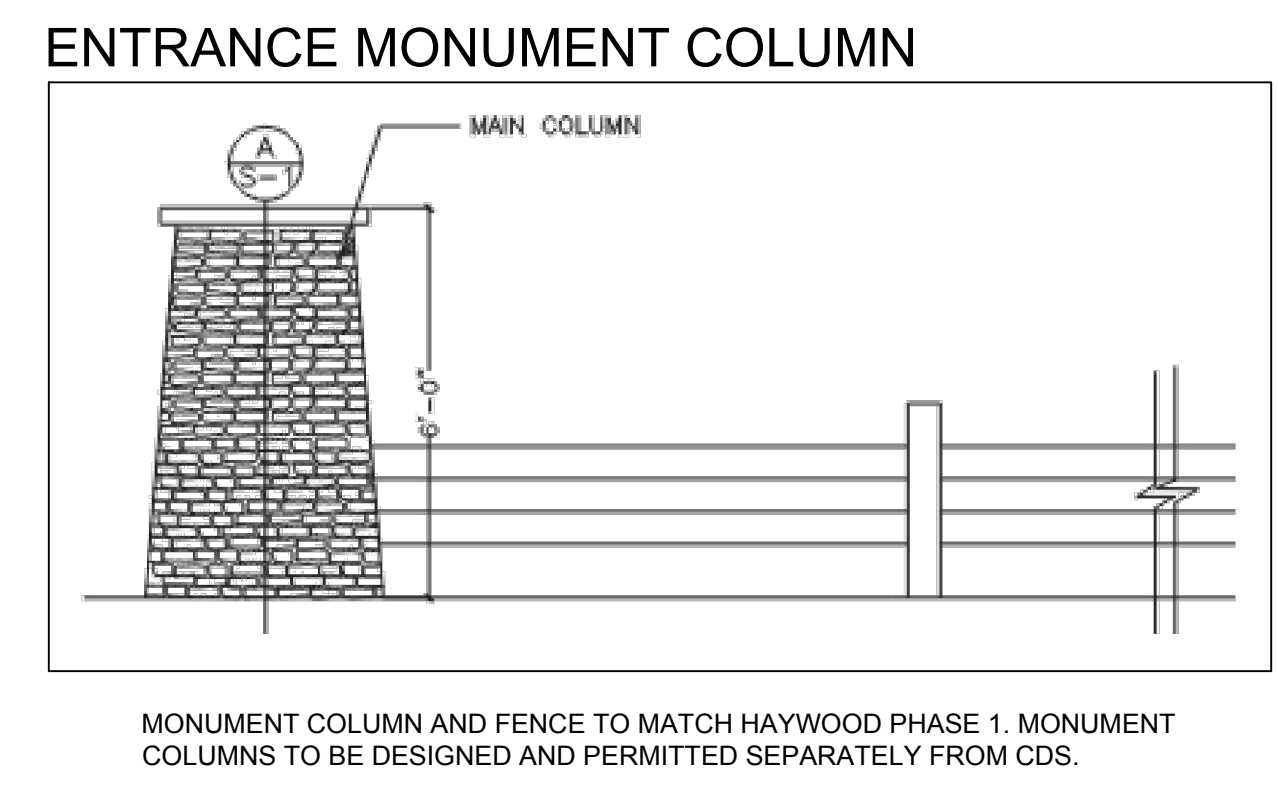
GENERAL SITE NOTES

- ALL CONSTRUCTION SHALL CONFORM TO TOWN OF KNIGHTDALE AND CITY OF RALEIGH STANDARDS AND SPECIFICATIONS.
- ROADS AND DRIVEWAYS SHALL COMPLY WITH NCDOT AND TOWN OF KNIGHTDALE STANDARDS.
- SIGN PERMITS SHALL BE REQUIRED FOR ANY ENTRANCE SIGNAGE. PERMITS SHALL BE REQUIRED PRIOR TO FABRICATION OR INSTALLATION OF SIGNS. SIGNAGE SHALL BE RESTRICTED TO AN ON-SITE LOCATION.
- THE WATER AND SEWER SYSTEMS SHALL COMPLY WITH CITY OF RALEIGH STANDARDS.
- ALL DESIGN AND CONSTRUCTION METHODS SHALL COMPLY WITH WAKE COUNTY'S SEDIMENTATION AND EROSION CONTROL REGULATIONS. AN EROSION CONTROL PLAN SHALL BE APPROVED BY WAKE COUNTY PRIOR TO ANY GRADING.
- CONSTRUCTION DRAWINGS SHALL BE SUBMITTED AND APPROVED BY THE TOWN OF KNIGHTDALE AND CITY OF RALEIGH PRIOR TO CONSTRUCTION.
- ALL STREETS WITHIN THE SUBDIVISION WILL HAVE A POSTED SPEED LIMIT OF 25 MPH.
- RESTRICTIVE COVENANTS SHALL BE APPROVED AND RECORDED PRIOR TO RECORDING OF FINAL PLAN.
- STORMWATER CONTROL MEASURES SHALL BE CONTAINED IN AND ACCESSED VIA OPEN SPACE MAINTAINED AND OWNED BY THE HOMEOWNER'S ASSOCIATION. A MAINTENANCE PLAN MUST BE DEVELOPED TO ADDRESS THE STORMWATER CONTROL MEASURES.
- PRIVATE STORM DRAINAGE EASEMENTS SHALL BE MAINTAINED BY THE HOA.
- SUBDIVISION LOTS MUST BE LOTS OF RECORD PRIOR TO RECEIVING A BUILDING PERMIT.
- PER UDO CH 17.3.G.2, ALL UTILITIES SHALL BE PLACED UNDERGROUND - INCLUDING EXISTING POLES ON OLD KNIGHT RD.

USPS NOTE

CLUSTER MAILBOXES TO BE LOCATED WITHIN NEIGHBORHOOD OPEN SPACE 3. KIOSK LOCATION SHALL BE APPROVED BY USPS PRIOR TO SUBDIVISION APPROVAL. IF TEMPORARY LOCATIONS ARE REQUIRED, APPROVAL OF LOCATIONS SHALL BE RECEIVED FROM USPS. MAIL KIOSK WILL HAVE ADA COMPLIANT RAMPS AND PARKING SPACES.

A HOMEOWNER'S ASSOCIATION (HOA) WILL OWN AND MAINTAIN ALL OPEN SPACE PARCELS, PRIVATE ALLEYS, AND WILL BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING REQUIRED BY TOWN OF KNIGHTDALE UNIFIED DEVELOPMENT ORDINANCE (UDO).



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YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION	DATE
	01/27/2022

DRAWN BY: JD. MACMILLAN
DESIGNED BY: E. ANGE
CHECKED BY: M. ZACCARDO
SCALE: 1" = 50'

DATE: 01/27/2022

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652
HAYWOOD GLEN PHASE 3
OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA
SITE PLAN

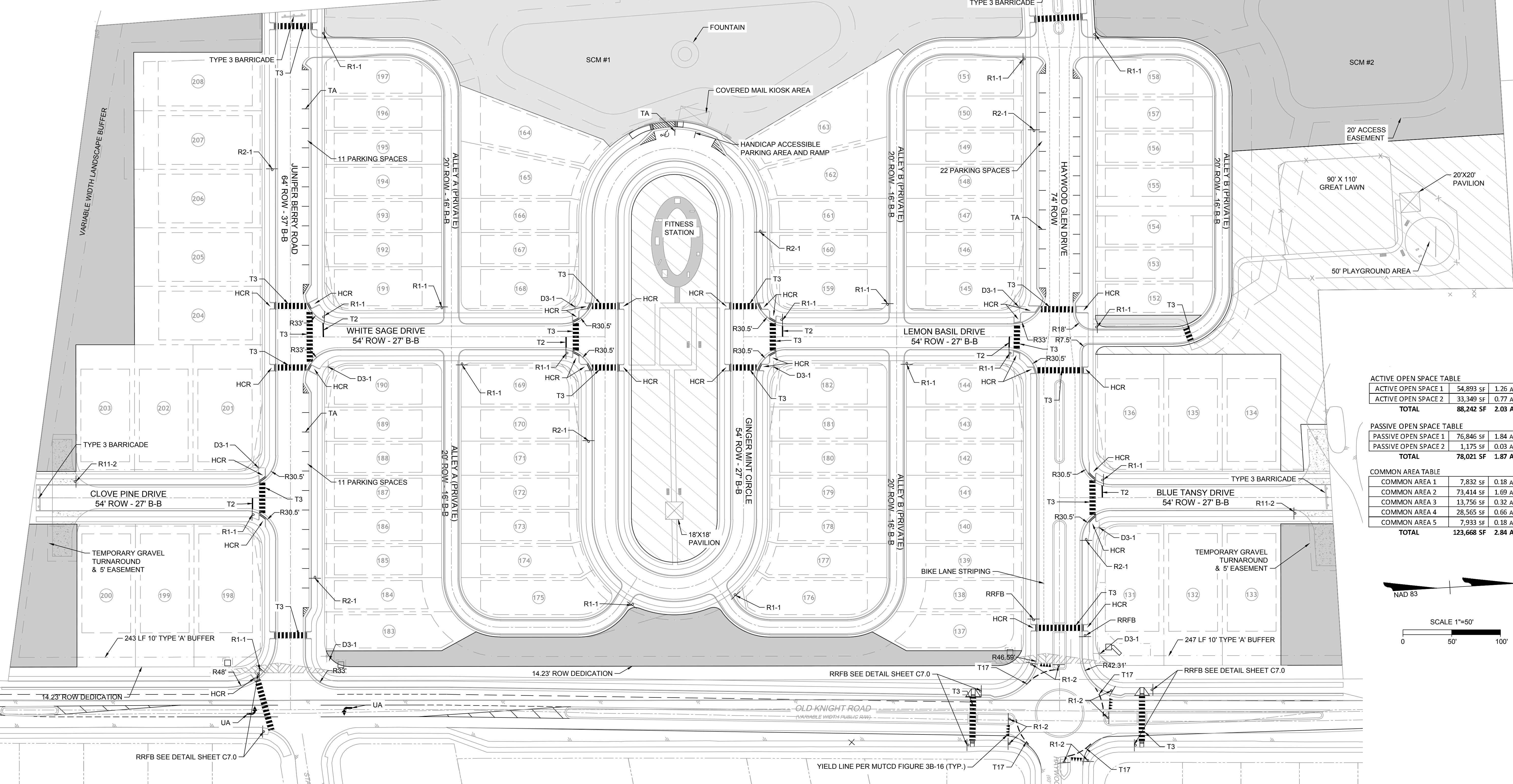
JOB NO. 43202
SHEET NO. C2.0

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LEGEND

- PROPERTY LINE
- PROPOSED RIGHT OF WAY
- PROPOSED LOT LINE
- TREE SAVE AREA
- ACTIVE OPEN SPACE
- PASSIVE OPEN SPACE
- COMMON AREA



ACTIVE OPEN SPACE TABLE

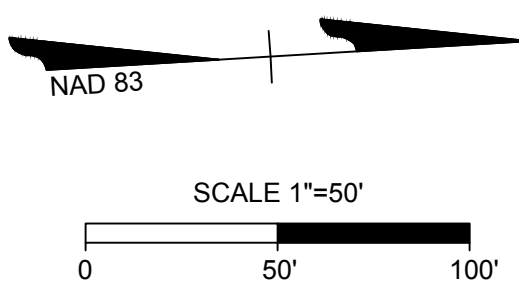
ACTIVE OPEN SPACE 1	54,893 SF	1.26 AC
ACTIVE OPEN SPACE 2	33,349 SF	0.77 AC
TOTAL	88,242 SF	2.03 AC

PASSIVE OPEN SPACE TABLE

PASSIVE OPEN SPACE 1	76,846 SF	1.84 AC
PASSIVE OPEN SPACE 2	1,175 SF	0.03 AC
TOTAL	78,021 SF	1.87 AC

COMMON AREA TABLE

COMMON AREA 1	7,832 SF	0.18 AC
COMMON AREA 2	73,414 SF	1.69 AC
COMMON AREA 3	13,756 SF	0.32 AC
COMMON AREA 4	28,565 SF	0.66 AC
COMMON AREA 5	7,933 SF	0.18 AC
TOTAL	123,668 SF	2.84 AC



USPS NOTE

CLUSTER MAILBOXES TO BE LOCATED WITHIN NEIGHBORHOOD OPEN SPACE 3. KIOSK LOCATION SHALL BE APPROVED BY USPS PRIOR TO SUBDIVISION APPROVAL. IF TEMPORARY LOCATIONS ARE REQUIRED, APPROVAL OF LOCATIONS SHALL BE RECEIVED FROM USPS. MAIL KIOSK WILL HAVE ADA COMPLIANT RAMPS AND PARKING SPACES.

A HOMEOWNER'S ASSOCIATION (HOA) WILL OWN AND MAINTAIN ALL OPEN SPACE PARCELS, PRIVATE ALLEYS, AND WILL BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING REQUIRED BY TOWN OF KNIGHTDALE UNIFIED DEVELOPMENT ORDINANCE (UDO).

- GENERAL SITE NOTES**
- ALL CONSTRUCTION SHALL CONFORM TO TOWN OF KNIGHTDALE AND CITY OF RALEIGH STANDARDS AND SPECIFICATIONS.
 - ROADS AND DRIVEWAYS SHALL COMPLY WITH NCDOT AND TOWN OF KNIGHTDALE STANDARDS.
 - SIGN PERMITS SHALL BE REQUIRED FOR ANY ENTRANCE SIGNAGE. PERMITS SHALL BE REQUIRED PRIOR TO FABRICATION OR INSTALLATION OF SIGNS. SIGNAGE SHALL BE RESTRICTED TO AN ON-SITE LOCATION.
 - THE WATER AND SEWER SYSTEMS SHALL COMPLY WITH CITY OF RALEIGH STANDARDS.
 - ALL DESIGN AND CONSTRUCTION METHODS SHALL COMPLY WITH WAKE COUNTY'S SEDIMENTATION AND EROSION CONTROL REGULATIONS. AN EROSION CONTROL PLAN SHALL BE APPROVED BY WAKE COUNTY PRIOR TO ANY GRADING.
 - CONSTRUCTION DRAWINGS SHALL BE SUBMITTED AND APPROVED BY THE TOWN OF KNIGHTDALE AND CITY OF RALEIGH PRIOR TO CONSTRUCTION.
 - ALL STREETS WITHIN THE SUBDIVISION WILL HAVE A POSTED SPEED LIMIT OF 25 MPH.
 - RESTRICTIVE COVENANTS SHALL BE APPROVED AND RECORDED PRIOR TO RECORDING OF FINAL PLAN.
 - STORMWATER CONTROL MEASURES SHALL BE CONTAINED IN AND ACCESSED VIA OPEN SPACE MAINTAINED AND OWNED BY THE HOMEOWNERS ASSOCIATION. A MAINTENANCE PLAN MUST BE DEVELOPED TO ADDRESS THE STORMWATER CONTROL MEASURES.
 - PRIVATE STORM DRAINAGE EASEMENTS SHALL BE MAINTAINED BY THE HOA.
 - SUBDIVISION LOTS MUST BE LOTS OF RECORD PRIOR TO RECEIVING A BUILDING PERMIT.
 - PER UDO CH 17.0.2.2, ALL UTILITIES SHALL BE PLACED UNDERGROUND - INCLUDING EXISTING POLES ON OLD KNIGHT RD.

SITE DATA

DEVELOPER:
MARK EISENBEIS
OLD EAST PROPERTIES
410 N. BOYLAN AVENUE
RALEIGH, NC 27603
MARK@OLDEASTPROPERTIES.COM
PHONE: 919-825-1135

ENGINEER:
TIMMONS GROUP
MIKE ZACCARDO, PE
5410 TRINITY ROAD, STE. 102
RALEIGH, NC 27607
PHONE: 919-532-3281

OWNER OF RECORD:
WAYNE AND EUGENE HARPER
4113 BREWSTER DRIVE
RALEIGH, NC 27606-1711

PIN # = 1755-73-7189
DB = 6075, PG = 0508
FIRM MAP# = 3720175500J

TOTAL EXISTING TRACT = 23.06 AC.
EXISTING ZONING = RT
PROPOSED ZONING = GR3 PUD

TOTAL PROPOSED NUMBER OF LOTS = 78
ALLEY LOADED LOTS = 61
FRONT LOADED LOTS = 17
PROPOSED DENSITY = 3.38 DU/A

MINIMUM PROVIDED REAR-LOADED LOT WIDTH = 35'
MINIMUM PROVIDED FRONT-LOADED LOT WIDTH = 60'
MINIMUM LOT SIZE REQUIRED = 4,000 S.F.
MINIMUM LOT SIZE PROVIDED = 4,100 S.F.
AVERAGE LOT SIZE PROVIDED = 5,393 S.F.

OPEN SPACE REQUIRED = 3.3 AC.
ACTIVE OPEN SPACE REQUIRED = 1.65 AC.
TOTAL LENGTH OF ROADS = 6,211 L.F.

SETBACKS:
FRONT LOAD FRONT: 10' REAR: 25' SIDE: 5'
REAR LOAD REAR: 20' DRIVEWAY LENGTH: 20' SIDE: 3'

- SIGN LEGEND**
- ALL SITE SIGNAGE SHALL BE IN ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND NCDOT STANDARDS.
 - ALL SIGNS SHALL BE MOUNTED WITH 7-FT. MIN. VERTICAL CLEARANCE TO THE BOTTOM OF THE SIGN ON 3-1/2" GALV. STEEL U-CHEMEL POST SET IN 3-FT DEEP X 12-IN DIA. CONCRETE FOOTING.
 - ALL SIGNAGE SHALL BE FIELD STAKED AND THE LOCATIONS APPROVED BY THE TOWN OF KNIGHTDALE AND/OR NCDOT PRIOR TO SIGN INSTALLATION. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AS REQUIRED BY THE TOWN OF KNIGHTDALE THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND ALL NCDOT STANDARDS AND SPECIFICATIONS.
 - THE TOWN OF KNIGHTDALE REQUIRES ALL REGULATORY PAVEMENT MARKINGS TO BE HI-VIS THERMOPLASTIC, EXCEPT FOR PARKING SPACE STRIPING WHICH MAY BE WHITE PAINT.
 - PER MUTCD APPROVAL IA-21, THE RRFB CAN BE USED WITH THE PEDBIKE SIGN (W11-15) AS WELL AS OVERHEAD MOUNTED W11-2, S1-1, AND W11-15 SIGNS. IT MUST INCLUDE ACCESSIBLE PEDESTRIAN ACTUATION FEATURES. THE FLASH RATE MUST FOLLOW A PRESCRIBED FLASH PATTERN OF STEADY 75 FLASHES PER SECOND, THE BRIGHTNESS WILL BE DIMMED AT NIGHT, A R10-25 PUSH BUTTON TO TURN ON WARNING LIGHTS SIGN MUST BE INSTALLED WITH THE RRFB.

Pavement Marking Symbols - English

Symbol	Description	Material	Transport Pay Item No.	Linear Length Adjustment
T2	WHITE STOPBAR (24", 120 MIL)	Thermo	471000000-E	1
T3	WHITE CROSSWALK LINE (24", 120 MIL)	Thermo	471000000-E	1
T6	WHITE EDGELINE (8", 90 MIL)	Thermo	468800000-E	1
TA	WHITE EDGELINE (4", 90 MIL)	Thermo	468500000-E	1
T17	3 FT. - 3 FT./SP WHITE MINISKIP (8", 120 MIL) (Roundabouts only)	Thermo	469700000-E	.5
UA	LEFT TURN ARROW (90 MIL)	Thermo	472500000-E	1

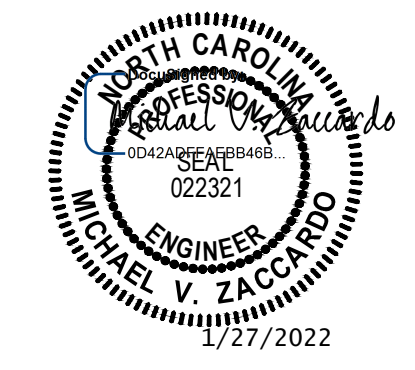
TOWN CERTIFICATION

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR



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DATE: 01/27/2022
DRAWN BY: JD.MACMILLAN
DESIGNED BY: E.ANGE
CHECKED BY: M.ZACCARDO
SCALE: 1" = 50'

REVISION DESCRIPTION

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

HAYWOOD GLEN PHASE 3
OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA
SIGNAGE AND MARKING PLAN

JOB NO. 43202
SHEET NO. C2.1

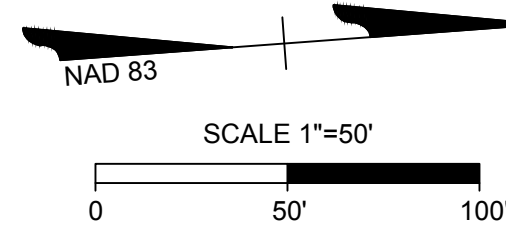
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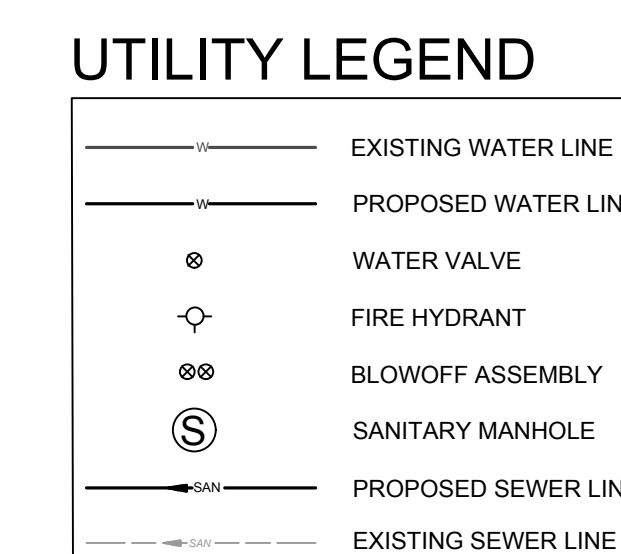
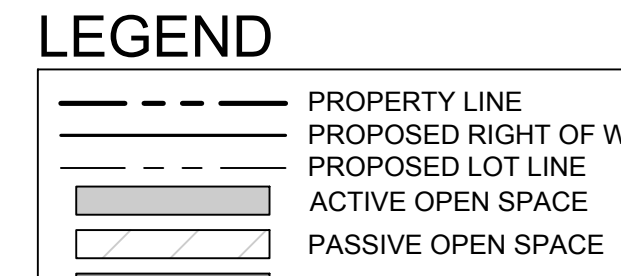
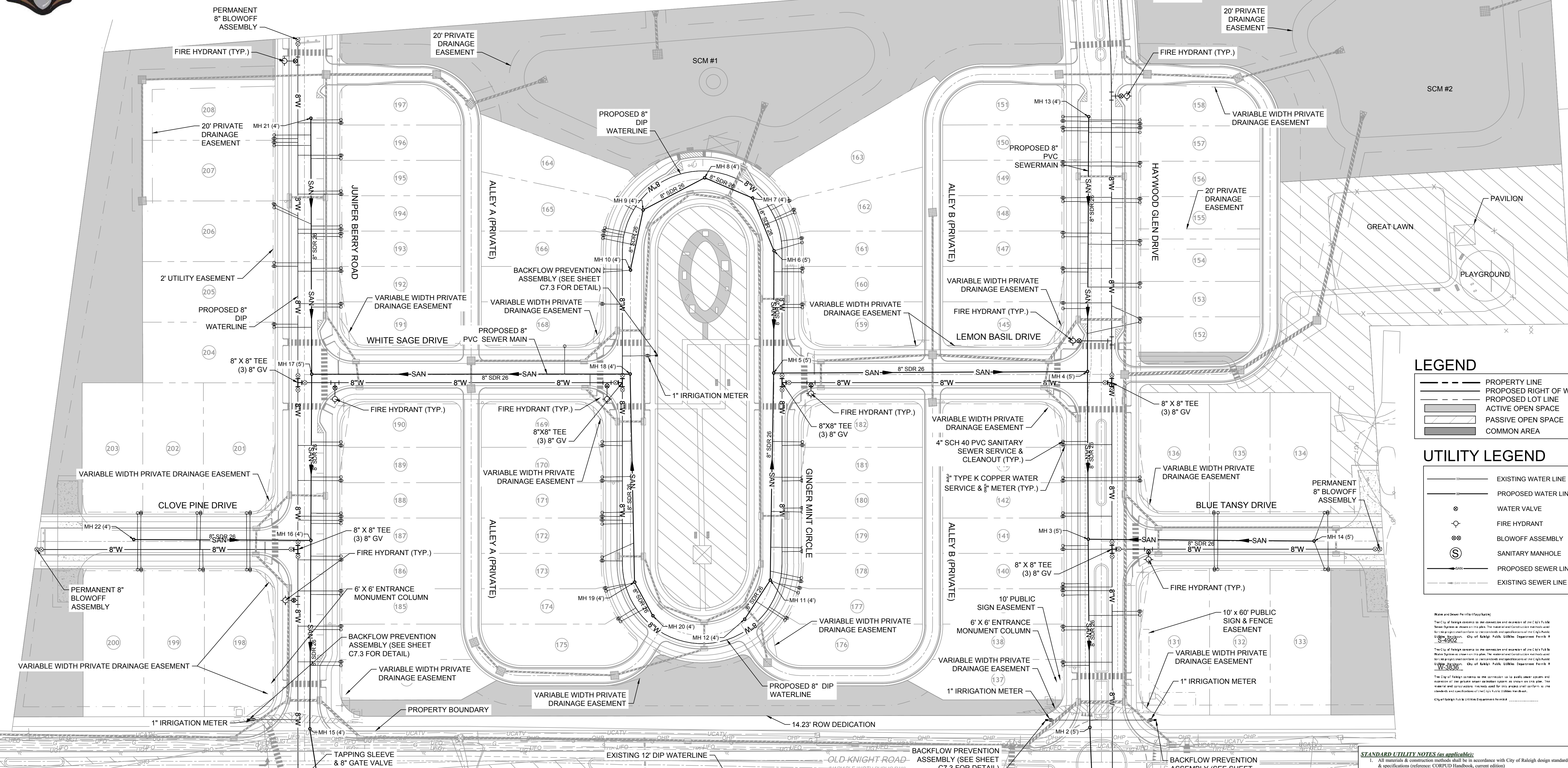


UTILITY CONSTRUCTION APPROVAL IS REQUIRED FOR PROJECT DEVELOPMENT.

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF KNIGHTDALE, CITY OF RALEIGH AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS.

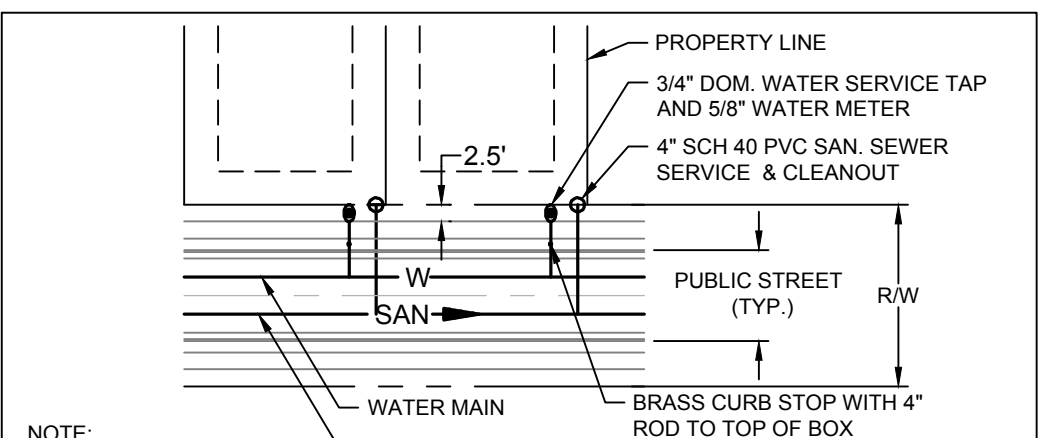


ALL METERS AND SEWER SERVICES TO BE 1' CLEAR SPACE BEHIND SIDEWALK MINIMUM.



Water and Sewer Service (Applicable)
The City of Raleigh reserves the right to inspect and approve all utility plans...
The City of Raleigh reserves the right to inspect and approve all utility plans...
The City of Raleigh reserves the right to inspect and approve all utility plans...

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.



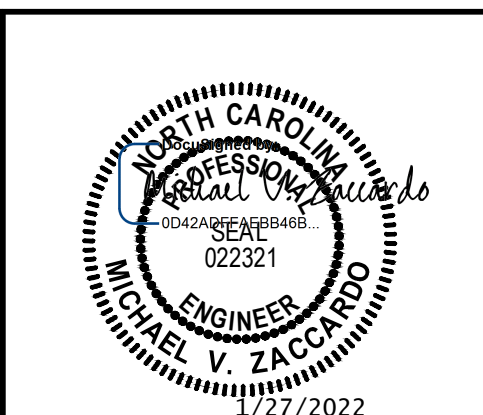
NOTE:
1. DOMESTIC WATER AND SAN. SEWER SERVICES SHALL BE INSTALLED PER CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS.
2. DOMESTIC WATER AND SAN. SEWER SERVICES SHALL BE INSTALLED ON THE LOW SIDE OF THE LOT.

UTILITY NOTES

- 1. ALL UTILITY DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES (CORPUD) STANDARDS AND SPECIFICATIONS. UTILITY DESIGN SHALL ALSO MEET FIRE FLOW REQUIREMENTS OF NCFC.
2. UTILITY SIZES AND LOCATIONS ARE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY AND ARE SUBJECT TO CHANGE BASED ON FINAL DESIGN AND CONSTRUCTION DRAWING APPROVAL. THIS SHALL INCLUDE BUT NOT LIMITED TO FIRE HYDRANT LOCATIONS.
3. ANY EXISTING WATER AND SEWER LINES TO BE USED AS PART OF THE FINAL DESIGN OF THE PROJECT, SHALL BE LOCATED BY SURVEY, TESTED BY A LICENSED CONTRACTOR AND APPROVED BY THE CITY OF RALEIGH INSPECTOR PRIOR TO SUBMITTAL OF CONSTRUCTION DRAWINGS.
4. AS PART OF CONSTRUCTION DRAWING SUBMITTAL, FIRE FLOW CALCULATIONS SHALL BE PROVIDED SHOWING COMPLIANCE WITH NCFC. PROJECT MAY BE DEVELOPED IN PHASES AND ALL PHASES SHALL BE REQUIRED TO MEET THE MINIMUM REQUIRED FIRE FLOWS PER OCCUPANCY PROPOSED IN EACH PHASE.
5. AN APPROVED WATER SUPPLY FOR FIRE SUPPRESSION (TEMPORARY OR PERMANENT) SHALL BE PROVIDED AS SOON AS COMBUSTIBLE MATERIALS ARRIVE ON SITE.
6. UTILITY CONSTRUCTION APPROVAL IS REQUIRED FOR THIS PROJECT. PLANS TO BE PREPARED BY NC PROFESSIONAL ENGINEER.
7. RIGHT OF WAY AND/OR EASEMENT DEDICATION PLAT IS REQUIRED FOR THIS PROJECT (PRIOR TO CITY ACCEPTANCE OF UTILITIES).
8. ALL NECESSARY WETLAND, RIPARIAN BUFFER AND FLOODPLAIN PERMITS FROM USACE, NCDWQ & FEMA SHALL BE OBTAINED PRIOR TO CONSTRUCTION.
9. PROJECT SHALL EXTEND PUBLIC WATER MAINS ALONG ALL INTERIOR AND ABUTTING RIGHT OF WAYS OF DEVELOPMENT.
10. FIRE HYDRANT ASSEMBLIES SHALL BE INSTALLED AT EVERY INTERSECTION AND AT 500' (RESIDENTIAL) MAX INTERVALS ALONG SITE FRONTAGE.
11. ALL MAINS UP TO 12 INCHES IN SIZE SHALL BE DESIGNED WITH A BLOW-OFF ASSEMBLY THE SAME SIZE AS THE DIAMETER OF THE PIPE.
12. ALL WATER MAINS SHALL BE PRESSURE CLASS OR THICKNESS CLASS DUCTILE IRON PIPE DESIGNED IN ACCORDANCE WITH AWWA STANDARD C-150.
13. PROJECT SHALL EXTEND PUBLIC GRAVITY SEWER TO PERIPHERY OF DEVELOPMENT BASED ON NATURAL TOPOGRAPHY.
14. ALL CITY OF RALEIGH SANITARY SEWER EASEMENTS SHALL BE A MINIMUM OF 30 FEET.
15. THE SANITARY SEWER DESIGN SHALL BE EVALUATED DURING THE CONSTRUCTION DRAWING REVIEW TO ENSURE ADJACENT PROPERTIES HAVE ACCESS TO SANITARY SEWER WHERE FEASIBLE AND IN COMPLIANCE WITH THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT STANDARDS AND SPECIFICATIONS.
16. ALL OFF-SITE EASEMENTS SHALL BE ACQUIRED BY THE DEVELOPER. THESE OFF-SITE EASEMENTS SHALL BE RECORDED BY MAP AND BY DEED OF EASEMENT PRIOR TO CONSTRUCTION APPROVAL. THE EASEMENTS SHALL BE DEDICATED TO THE CITY OF RALEIGH AND ENTITLED "CITY OF RALEIGH SANITARY SEWER EASEMENT".
17. MAINTAIN APPROPRIATE COVER AND SEPARATION ON UTILITIES AND LABEL IN PROFILES; ANY UTILITY CROSSINGS ARE SUBJECT TO MINIMUM REQUIREMENTS.
18. CONSTRUCTION APPROVAL WILL BE REQUIRED FOR ANY EXTENSIONS OF PUBLIC WATER OR SEWER MAINS.
19. PLAT RECORDATION REQUIRED AFTER CONSTRUCTION APPROVAL PRIOR TO BUILDING PERMIT.
20. DOT ENCROACHMENT AGREEMENT REQUIRED.
21. PRIVATE WATER SERVICES DESIGNED 3" - 2" SHOULD BE TYPE "K" SOFT COPPER AND IN ACCORDANCE WITH PU HANDBOOK, APP. B, STANDARD WATER DETAIL W-23 AND W-25. IF WATER METERS CANNOT BE LOCATED WITHIN THE RIGHT-OF-WAY THEY MUST BE WITHIN RECORDED "CITY OF RALEIGH WATERLINE EASEMENTS."
22. EXISTING POLES ON OLD KNIGHT RD TO BE RELOCATED UNDERGROUND.

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION
Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.
City of Raleigh Development Approval
Raleigh Water Review Officer

- STANDARD UTILITY NOTES (as applicable):
1. All materials & construction methods shall be in accordance with City of Raleigh design standards, details & specifications (reference CORPUD Handbook, current edition).
2. Utility separation requirements:
a) A distance of 100' shall be maintained between sanitary sewer & any private or public water supply source such as an impounded reservoir used as a source of drinking water. If adequate lateral separation cannot be achieved, ferrous sanitary sewer pipe shall be specified & installed to satisfy specifications. However, the minimum separation shall not be less than 25' from a private well or 50' from a public well.
b) When installing water & sewer mains, the horizontal separation between utilities shall be 10'. If this separation cannot be maintained due to existing conditions, the variation allowed is the water main in a separate trench with the elevation of the water main at least 18" above the top of the sewer & must be approved by the Public Utilities Director. All distances are measured from outside diameter to outside diameter.
c) Where it is impossible to obtain proper separation, or anytime a sanitary sewer passes over a watermain, DIP materials or steel encasement extended 10' on each side of crossing must be specified & installed to satisfy specifications.
d) 3/4" minimum horizontal separation is required along all sanitary sewer & storm sewer facilities, unless DIP material is specified for sanitary sewer.
e) Maintain 18" min. vertical separation at all watermain & RCP storm drain crossings; maintain 18" min. vertical separation at all sanitary sewer & RCP storm drain crossings. Where adequate separation cannot be achieved, specify DIP material & a concrete traffic bearing of 7" min. clearance per CORPUD details W-41 & S-49.
f) All other underground utilities shall cross water & sewer facilities with 18" min. vertical separation required.
3. Any necessary field revisions are subject to review & approval of an amended plan &/or profile by the City of Raleigh Public Utilities Department prior to construction.
4. Developer shall provide 30 days advance written notice to owner for any work required within an existing City of Raleigh Utility Easement traversing private property.
5. Contractor shall maintain continuous water & sewer service to existing residences & businesses throughout construction of project. Any necessary service interruptions shall be provided by a 24-hour advance notice to the City of Raleigh Public Utilities Department.
6. 3/4" minimum cover is required on all water mains & sewer force mains. 4.0' minimum cover is required on all storm mains.
7. It is the developer's responsibility to abandon or remove existing water & sewer services not being used in redevelopment of a site unless otherwise directed by the City of Raleigh Public Utilities Department. This includes abandoning tap at main & removal of services from ROW or easement per CORPUD Handbook procedure.
8. Install 1/2" copper water services with meters located at ROW or within a 2'x2' Waterline Easement immediately adjacent. NOTE: If the applicant's responsibility to properly site the water service for each connection is provided elsewhere, then proceed.
9. Install 4" PVC sewer services @ 1.0% minimum grade with cleanouts located at ROW or easement line & spaced every 75 linear feet maximum.
10. Pressure reducing valves are required on all water services exceeding 80 psi; backwater valves are required on all sanitary sewer service lines having building drains lower than 10' above the street pavement finished grade.
11. All environmental permits applicable to the project must be obtained from NCDWQ, USACE &/or FEMA for any riparian buffer, wetland &/or floodplain impacts (respectively) prior to construction.
12. NCDOT: Railroad Encroachment Agreements are required for any utility work (including main extensions & service taps) within state or railroad ROW prior to construction.
13. Green Infrastructure: On Water Separation sizing calculations & installation specifications shall be approved by the CORPUD IOG Program Coordinator prior to issuance of a Building Permit. Contact Stephen Calvey at (919) 996-2334 or stephen.calvey@raleigh.gov for more information.
14. Cross-connection control protection devices are required based on degree of health hazard involved as listed in Appendix B of the Rules Governing Public Water Systems in North Carolina. These guidelines are the minimum requirements. The devices shall meet American Society of Sanitary Engineering (ASSE) standards or be on the University of Southern California approved list. The devices shall be installed and tested (both initial and periodic testing thereafter) in accordance with the manufacturer's recommendations or the local cross-connection control program, whichever is more stringent. A Certificate of Compliance shall also be obtained for each device prior to issuance of a Building Permit. Contact James Harley at (919) 996-9223 or james.harley@raleigh.gov for more information.



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DESIGNED BY: E.ANGE
CHECKED BY: M.ZACCARDO

SCALE: 1" = 50'

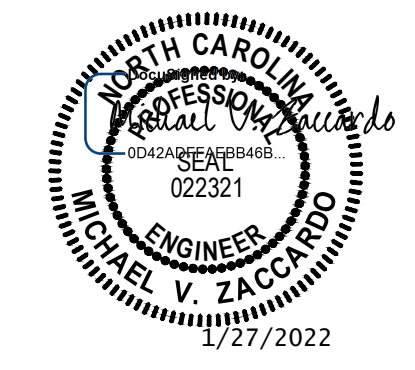
REVISION DESCRIPTION

NORTH CAROLINA LICENSE NO. C-1652
HAYWOOD GLEN PHASE 3
OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA

UTILITY PLAN

JOB NO. 43202
SHEET NO. C3.0

RELEASED FOR CONSTRUCTION



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TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652
HAYWOOD GLEN PHASE 3
OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA
SANITARY SEWER SCHEDULE
JOB NO.
43202
SHEET NO.
C3.1

SANITARY SEWER SCHEDULE						
STRUCTURE UP	HEIGHT	TOP	INV IN	INV OUT	OUTLET PIPE	STRUCTURE DOWN
EX MH 1 (4')	13.06'	337.50	324.46' (8" SDR 26) MH 2 (5')			
EX MH 2 (4')	6.21'	340.46	334.27' (8" SDR 26) MH 15 (4')			
MH 2 (5')	16.75'	344.13	327.60' (8" SDR 26) MH 3 (5')	327.40' (8" SDR 26)	238' @ 1.23%	EX MH 1 (4')
MH 3 (5')	18.09'	346.77	328.90' (8" SDR 26) MH 4 (5') 329.20' (8" SDR 26) MH 14 (5')	328.70' (8" SDR 26)	186' @ 0.59%	MH 2 (5')
MH 4 (5')	15.62'	345.40	332.30' (8" SDR 26) MH 13 (4') 330.00' (8" SDR 26) MH 5 (5')	329.80' (8" SDR 26)	166' @ 0.54%	MH 3 (5')
MH 5 (5')	14.77'	346.35	333.90' (8" SDR 26) MH 11 (4') 331.80' (8" SDR 26) MH 6 (5')	331.60' (8" SDR 26)	311' @ 0.52%	MH 4 (5')
MH 6 (5')	11.22'	343.70	332.70' (8" SDR 26) MH 7 (4')	332.50' (8" SDR 26)	121' @ 0.58%	MH 5 (5')
MH 7 (4')	10.60'	343.58	333.20' (8" SDR 26) MH 8 (4')	333.00' (8" SDR 26)	56' @ 0.53%	MH 6 (5')
MH 8 (4')	9.42'	343.32	334.10' (8" SDR 26) MH 9 (4')	333.90' (8" SDR 26)	52' @ 1.36%	MH 7 (4')
MH 9 (4')	7.34'	344.14	337.00' (8" SDR 26) MH 10 (4')	336.80' (8" SDR 26)	69' @ 3.93%	MH 8 (4')
MH 10 (4')	6.97'	345.37		338.40' (8" SDR 26)	61' @ 2.30%	MH 9 (4')
MH 11 (4')	10.16'	345.14	335.20' (8" SDR 26) MH 12 (4')	335.00' (8" SDR 26)	205' @ 0.54%	MH 5 (5')
MH 12 (4')	10.63'	346.11		335.50' (8" SDR 26)	46' @ 0.65%	MH 11 (4')
MH 13 (4')	8.89'	352.29		343.40' (8" SDR 26)	252' @ 4.40%	MH 4 (5')
MH 14 (5')	10.49'	349.77		339.30' (8" SDR 26)	224' @ 4.52%	MH 3 (5')
MH 15 (4')	9.52'	344.70	335.40' (8" SDR 26) MH 16 (4')	335.20' (8" SDR 26)	170' @ 0.55%	EX MH 2 (4')
MH 16 (4')	11.38'	347.76	336.60' (8" SDR 26) MH 17 (5') 338.10' (8" SDR 26) MH 22 (4')	336.40' (8" SDR 26)	186' @ 0.54%	MH 15 (4')
MH 17 (5')	11.95'	349.43	337.70' (8" SDR 26) MH 21 (4') 338.80' (8" SDR 26) MH 18 (4')	337.50' (8" SDR 26)	164' @ 0.55%	MH 16 (4')
MH 18 (4')	7.05'	347.43	340.60' (8" SDR 26) MH 19 (4')	340.40' (8" SDR 26)	315' @ 0.51%	MH 17 (5')
MH 19 (4')	7.20'	348.88	341.90' (8" SDR 26) MH 20 (4')	341.70' (8" SDR 26)	206' @ 0.53%	MH 18 (4')
MH 20 (4')	5.55'	348.13		342.60' (8" SDR 26)	38' @ 1.84%	MH 19 (4')
MH 21 (4')	8.18'	347.16		339.00' (8" SDR 26)	253' @ 0.51%	MH 17 (5')
MH 22 (4')	10.45'	350.03		339.60' (8" SDR 26)	175' @ 0.86%	MH 16 (4')

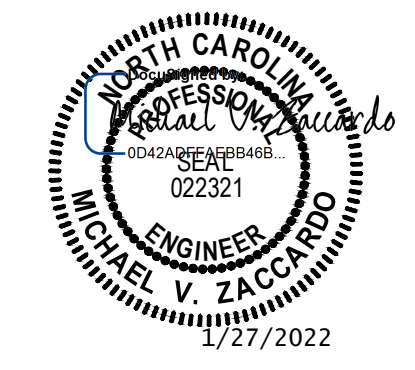
Water and Sewer Permits (if applicable)
The City of Raleigh consents to the connection and extension of the City's **Public Sewer System** as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit # S-4902**
The City of Raleigh consents to the connection and extension of the City's **Public Water System** as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit # W-3836**
The City of Raleigh consents to the connection to its public sewer system and extension of the **private sewer collection** system as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.
City of Raleigh Public Utilities Department Permit # _____

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION
Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.
City of Raleigh Development Approval _____
Raleigh Water Review Officer _____

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER
THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.
BY: _____ DATE: _____
ADMINISTRATOR

RELEASED FOR CONSTRUCTION

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YOUR VISION ACHIEVED THROUGH OURS.

DATE
01/27/2022

DRAWN BY
JD. MACMILLAN

DESIGNED BY
E. ANGE

CHECKED BY
M. ZACCARDO

SCALE
1" = 50'

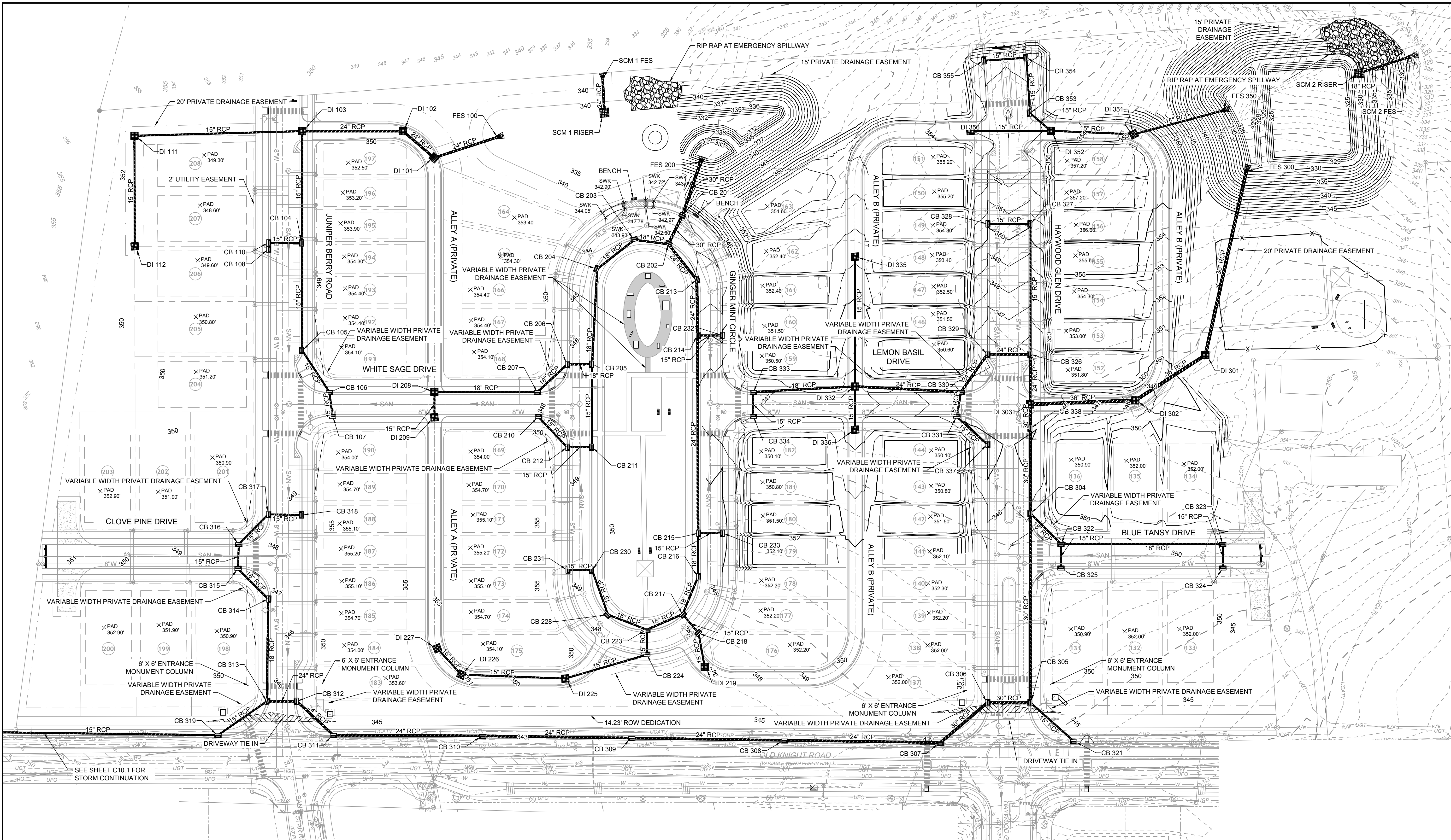
TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

HAYWOOD GLEN PHASE 3
OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA

GRADING AND DRAINAGE PLAN

JOB NO.
43202
SHEET NO.
C4.0

RELEASED FOR CONSTRUCTION



GRADING AND STORMWATER PLAN NOTES:

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF KNIGHTDALE STANDARDS AND SPECIFICATIONS.
- ALL PERMITS SHALL BE OBTAINED FROM THE TOWN OF KNIGHTDALE, WAKE COUNTY, NCDOT, NCDQE-DWR, AND USACE AS APPLICABLE PRIOR TO BEGINNING CONSTRUCTION. A COPY OF ALL PERMITS SHALL BE SUBMITTED TO THE TOWN OF KNIGHTDALE FOR THEIR RECORDS.
- SCMS SHALL BE DESIGNED TO CONTROL AND TREAT THE DIFFERENCE IN STORMWATER RUNOFF VOLUME LEAVING THE PROJECT SITE BETWEEN THE PRE- AND POST- DEVELOPMENT CONDITIONS FOR, AT A MINIMUM, THE 1-YEAR, 24-HOUR STORM.
- SCMS SHALL BE DESIGNED TO HAVE A MINIMUM OF 85% AVERAGE ANNUAL REMOVAL FOR TOTAL SUSPENDED SOLIDS.
- ALL SCMS ASSOCIATED WITH THIS PROJECT WILL REQUIRE MAINTENANCE EASEMENTS AND AN OPERATION AND MAINTENANCE AGREEMENT TO BE NOTED ON THE FINAL PLAT. ALL OF THESE ITEMS WILL NEED TO BE RECORDED WITH THE COUNTY REGISTER OF DEEDS.

NOTE:
RETAINING WALLS AND ASSOCIATED DRAINAGE TO BE DESIGNED BY OTHERS.
CONTRACTOR SHALL COORDINATE DESIGN AND SUBMIT SEALED PLAN FOR REVIEW AND APPROVAL BY THE TOWN INSPECTIONS DEPARTMENT.

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

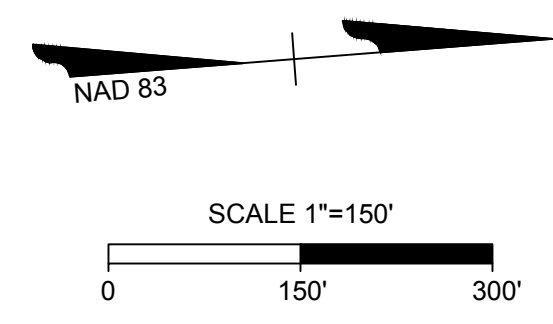
THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

LEGEND

- PROPOSED CONTOUR
- EXISTING CONTOUR
- FENCE
- PROPOSED DRAIN EASEMENT
- PROPOSED PERIMETER BUFFER
- 100-YR FLOODPLAIN
- WETLANDS

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL TOWN OF KNIGHTDALE AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS.



STORM PIPE TABLE							
PIPE #	DIA	FROM - TO	UPSTREAM INVERT	DOWNSTREAM INVERT	SLOPE	LENGTH	DESCRIPTION
SCM 1 2" WQ ORIFICE	1"	- SCM 1 RISER	336.00	336.00	0.00%	3.44 LF	1" PVC
SCM 1 RISER OUTLET	24"	SCM 1 RISER - SCM 1 FES	336.00	335.00	2.66%	37.61 LF	24 inch RCP
SCM 2 2" WQ ORIFICE	1"	- SCM 2 RISER	329.00	329.00	0.00%	3.45 LF	1" PVC
SCM 2 RISER OUTLET	18"	SCM 2 RISER - SCM 2 FES	329.00	326.86	3.79%	56.43 LF	18 inch RCP

STORM STRUCTURE TABLE			
STRUCTURE #	TOP	STRUCTURE HEIGHT	DESCRIPTION
CB 304	346.41	13.02'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 305	343.83	9.44'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 306	343.83	9.14'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 307	344.72	9.62'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 308	344.01	7.52'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 309	343.28	5.99'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 310	343.63	5.54'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 311	344.71	5.82'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 312	344.83	5.64'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 313	344.89	5.50'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 314	347.09	6.50'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 315	348.18	7.29'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 316	348.17	6.88'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 317	348.96	7.17'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 318	348.83	6.04'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 319	346.44	5.90'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 321	344.60	8.60'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 322	347.81	9.92'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 323	349.49	7.14'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 324	349.49	6.69'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 325	347.81	10.56'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 326	345.99	8.43'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 327	349.85	6.55'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 328	350.60	6.80'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 329	345.99	7.93'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 330	345.22	7.02'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 331	345.64	6.48'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 333	347.03	7.06'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 334	346.51	6.16'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 337	345.11	5.51'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 338	345.18	12.08'	NCDOT 840.02 CONCRETE CATCH BASIN
DI 301	350.72	19.42'	36 x 36 inch Rectangular Structure
DI 302	348.26	16.46'	36 x 36 inch Rectangular Structure
DI 303	345.42	13.02'	36 x 36 inch Rectangular Structure
DI 332	347.26	8.35'	36 x 36 inch Rectangular Structure
DI 335	351.09	10.28'	36 x 36 inch Rectangular Structure
DI 336	347.38	7.07'	36 x 36 inch Rectangular Structure
FES 300	333.33	N/A	NCDOT ES-1 for 36 inch Pipe
FES 339	347.44	???'	NCDOT ES-1 for 15 inch Pipe

STORM PIPE TABLE							
PIPE #	DIA	FROM - TO	UPSTREAM INVERT	DOWNSTREAM INVERT	SLOPE	LENGTH	DESCRIPTION
101-100	24"	DI 101 - FES 100	336.30	336.00	0.41%	72.36 LF	24 inch RCP
102-101	24"	DI 102 - DI 101	336.50	336.30	0.45%	44.49 LF	24 inch RCP
103-102	24"	DI 103 - DI 102	337.00	336.50	0.46%	109.42 LF	24 inch RCP
104-103	15"	CB 104 - DI 103	340.20	337.75	2.02%	121.41 LF	15 inch RCP
105-104	15"	CB 105 - CB 104	342.80	340.20	2.22%	116.94 LF	15 inch RCP
106-105	15"	CB 106 - CB 105	344.50	342.80	3.15%	53.93 LF	15 inch RCP
107-106	15"	CB 107 - CB 106	345.00	344.50	1.84%	27.23 LF	15 inch RCP
108-110	15"	CB 108 - CB 110	342.70	342.40	4.17%	7.19 LF	15 inch RCP
110-104	15"	CB 110 - CB 104	342.40	340.20	5.95%	37.00 LF	15 inch RCP
111-103	15"	DI 111 - DI 103	338.50	337.75	0.41%	182.18 LF	15 inch RCP
112-111	15"	DI 112 - DI 111	339.00	338.50	0.42%	120.00 LF	15 inch RCP

STORM PIPE TABLE							
PIPE #	DIA	FROM - TO	UPSTREAM INVERT	DOWNSTREAM INVERT	SLOPE	LENGTH	DESCRIPTION
351-350	15"	DI 351 - FES 350	339.00	330.00	8.94%	100.69 LF	15 inch RCP
352-351	15"	DI 352 - DI 351	342.35	339.00	3.72%	90.10 LF	15 inch RCP
353-352	15"	CB 353 - DI 352	342.55	342.35	0.67%	29.90 LF	15 inch RCP
354-353	15"	CB 354 - CB 353	342.95	342.55	0.67%	60.14 LF	15 inch RCP
355-354	15"	CB 355 - CB 354	345.00	342.95	4.36%	47.00 LF	15 inch RCP
356-352	15"	DI 356 - DI 352	345.60	342.35	3.72%	87.41 LF	15 inch RCP

STORM STRUCTURE TABLE			
STRUCTURE #	TOP	STRUCTURE HEIGHT	DESCRIPTION
CB 104	346.38	6.39'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 105	348.24	5.63'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 106	350.77	6.45'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 107	350.71	5.89'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 108	346.51	5.81'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 110	346.50	4.31'	NCDOT 840.02 CONCRETE CATCH BASIN
DI 101	350.83	14.74'	36 x 36 inch Rectangular Structure
DI 102	350.05	13.76'	36 x 36 inch Rectangular Structure
DI 103	348.40	11.61'	36 x 36 inch Rectangular Structure
DI 111	346.70	8.38'	36 x 36 inch Rectangular Structure
DI 112	343.52	4.71'	36 x 36 inch Rectangular Structure
FES 100	338.25	N/A	NCDOT ES-1 for 24 inch Pipe

STORM STRUCTURE TABLE			
STRUCTURE #	TOP	STRUCTURE HEIGHT	DESCRIPTION
CB 201	342.89	6.79'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 202	343.06	6.77'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 203	343.38	5.89'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 204	344.56	6.77'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 205	346.77	6.98'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 206	346.77	5.58'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 207	348.38	6.59'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 210	348.35	4.35'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 211	348.78	5.27'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 212	348.57	4.86'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 213	343.59	6.60'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 214	345.22	7.93'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 215	344.81	6.76'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 216	345.11	6.22'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 217	346.13	7.04'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 218	346.17	6.68'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 223	347.20	7.91'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 224	347.22	7.43'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 228	348.35	6.31'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 230	349.63	5.19'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 231	349.63	4.99'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 232	345.14	6.95'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 233	344.81	5.80'	NCDOT 840.02 CONCRETE CATCH BASIN
DI 208	350.78	7.99'	36 x 36 inch Rectangular Structure
DI 209	350.79	7.47'	36 x 36 inch Rectangular Structure
DI 219	346.73	6.69'	36 x 36 inch Rectangular Structure
DI 225	348.87	8.48'	36 x 36 inch Rectangular Structure
DI 226	351.12	9.33'	36 x 36 inch Rectangular Structure
DI 227	351.92	9.13'	36 x 36 inch Rectangular Structure
FES 200	338.79	N/A	NCDOT ES-1 for 30 inch Pipe

STORM STRUCTURE TABLE			
STRUCTURE #	TOP	STRUCTURE HEIGHT	DESCRIPTION
CB 353	352.97	10.63'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 354	351.63	8.87'	NCDOT 840.02 CONCRETE CATCH BASIN
CB 355	351.63	6.83'	NCDOT 840.02 CONCRETE CATCH BASIN
DI 351	355.08	16.08'	36 x 36 inch Rectangular Structure
DI 352	353.18	11.04'	36 x 36 inch Rectangular Structure
DI 356	353.06	7.46'	36 x 36 inch Rectangular Structure
FES 350	331.44	N/A	NCDOT ES-1 for 15 inch Pipe

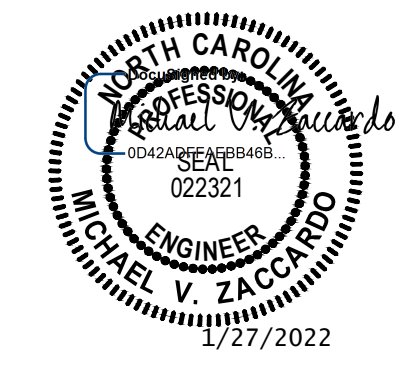
STORM STRUCTURE TABLE			
STRUCTURE #	TOP	STRUCTURE HEIGHT	DESCRIPTION
SCM 1 FES	337.25	N/A	NCDOT ES-1 for 24 inch Pipe
SCM 1 RISER	339.40	8.40'	48 x 48 inch Rectangular Structure
SCM 2 FES	329.21	N/A	NCDOT ES-1 for 18 inch Pipe
SCM 2 RISER	333.80	9.80'	48 x 48 inch Rectangular Structure

STORM PIPE TABLE							
PIPE #	DIA	FROM - TO	UPSTREAM INVERT	DOWNSTREAM INVERT	SLOPE	LENGTH	DESCRIPTION
201-200	30"	CB 201 - FES 200	336.30	336.00	0.50%	60.30 LF	30 inch RCP
202-201	30"	CB 202 - CB 201	336.50	336.30	0.56%	35.50 LF	30 inch RCP
203-202	18"	CB 203 - CB 202	337.70	337.50	0.54%	37.24 LF	18 inch RCP
204-203	18"	CB 204 - CB 203	338.00	337.70	0.58%	51.36 LF	18 inch RCP
205-204	18"	CB 205 - CB 204	340.00	338.00	1.93%	103.54 LF	18 inch RCP
206-205	18"	CB 206 - CB 205	341.40	340.00	5.19%	27.00 LF	18 inch RCP
207-206	18"	CB 207 - CB 206	342.00	341.40	1.36%	44.18 LF	18 inch RCP
208-207	18"	DI 208 - CB 207	343.00	342.00	0.90%	111.72 LF	18 inch RCP
209-208	15"	DI 209 - DI 208	343.50	343.25	0.91%	27.54 LF	15 inch RCP
210-207	15"	CB 210 - CB 212	344.20	343.90	0.66%	45.49 LF	15 inch RCP
211-205	15"	CB 211 - CB 205	343.70	340.25	3.82%	90.20 LF	15 inch RCP
212-211	15"	CB 212 - CB 211	343.90	343.70	0.74%	27.00 LF	15 inch RCP
213-202	24"	CB 213 - CB 202	337.20	337.00	0.40%	49.33 LF	24 inch RCP
214-213	24"	CB 214 - CB 213	337.50	337.20	0.50%	60.55 LF	24 inch RCP
215-214	24"	CB 215 - CB 214	338.30	337.50	0.37%	214.86 LF	24 inch RCP
216-215	18"	CB 216 - CB 215	339.10	338.80	0.63%	47.34 LF	18 inch RCP
217-216	18"	CB 217 - CB 216	339.30	339.10	0.46%	43.88 LF	18 inch RCP
218-217	15"	CB 218 - CB 217	339.70	339.55	0.55%	27.12 LF	15 inch RCP
219-218	15"	DI 219 - CB 218	340.25	339.70	1.48%	37.10 LF	15 inch RCP
223-217	18"	CB 223 - CB 217	339.50	339.30	0.47%	42.30 LF	18 inch RCP
224-223	15"	CB 224 - CB 223	340.00	339.75	0.92%	27.24 LF	15 inch RCP
225-224	15"	DI 225 - CB 224	340.60	340.00	0.65%	92.22 LF	15 inch RCP
226-225	15"	DI 226 - DI 225	342.00	340.60	1.24%	112.85 LF	15 inch RCP
227-226	15"	DI 227 - DI 226	343.00	342.00	2.58%	38.81 LF	15 inch RCP
228-223	15"	CB 228 - CB 223	342.25	339.75	5.51%	45.34 LF	15 inch RCP
230-228	15"	CB 230 - CB 228	344.65	342.25	4.68%	51.27 LF	15 inch RCP
231-230	15"	CB 231 - CB 230	344.85	344.65	0.74%	27.00 LF	15 inch RCP
232-214	15"	CB 232 - CB 214	338.40	338.25	0.55%	27.51 LF	15 inch RCP
233-215	15"	CB 233 - CB 215	339.20	339.05	0.56%	27.00 LF	15 inch RCP

STORM PIPE TABLE							
PIPE #	DIA	FROM - TO	UPSTREAM INVERT	DOWNSTREAM INVERT	SLOPE	LENGTH	DESCRIPTION
301-300	36"	DI 301 - FES 300	331.30	330.00	0.64%	204.48 LF	36 inch RCP
302-301	36"	DI 302 - DI 301	331.80	331.30	0.55%	90.56 LF	36 inch RCP
303-302	36"	DI 303 - DI 302	332.40	331.80	0.52%	114.36 LF	36 inch RCP
304-338	30"	CB 304 - CB 338	333.60	333.10	0.54%	92.64 LF	30 inch RCP
305-304	30"	CB 305 - CB 304	334.60	333.60	0.49%	205.61 LF	30 inch RCP
306-305	30"	CB 306 - CB 305	334.90	334.60	0.64%	47.00 LF	30 inch RCP
307-306	30"	CB 307 - CB 306	335.30	334.90	0.60%	66.78 LF	30 inch RCP
308-307	24"	CB 308 - CB 307	336.70	335.80	0.53%	169.44 LF	24 inch RCP
309-308	24"	CB 309 - CB 308	337.50	336.70	0.48%	165.66 LF	24 inch RCP
310-309	24"	CB 310 - CB 309	338.30	337.50	0.49%	161.88 LF	24 inch RCP
311-310	24"	CB 311 - CB 310	339.10	338.30	0.49%	162.10 LF	24 inch RCP
312-311	24"	CB 312 - CB 311	339.40	339.10	0.55%	54.20 LF	24 inch RCP
313-312	24"	CB 313 - CB 312	339.60	339.40	0.61%	32.60 LF	24 inch RCP
314-313	18"	CB 314 - CB 313	340.80	340.10	0.63%	111.13 LF	18 inch RCP
315-314	18"	CB 315 - CB 314	341.10	340.80	0.65%	46.27 LF	18 inch

UTILITY NOTES:

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH WAKE COUNTY STANDARDS AND SPECIFICATIONS.
- MINIMUM UTILITY HORIZONTAL SEPARATION DISTANCES:
WATER AND SANITARY SEWER MAINS - 10 FT.
WATER AND STORM SEWER MAINS - 5 FT.
SANITARY SEWER AND STORM SEWER MAINS - 5 FT.
GRAVITY SANITARY SEWER AND FORCE MAINS - 5 FT.
- MINIMUM UTILITY VERTICAL SEPARATION DISTANCES:
WATER AND SANITARY SEWER MAINS - 18 IN.
WATER AND STORM SEWER MAINS - 18 IN.
SANITARY SEWER AND STORM SEWER MAINS - 24 IN.



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YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
01/27/2022	

DRAWN BY
JD. MACMILLAN

DESIGNED BY
E. ANGE

CHECKED BY
M. ZACCARDO

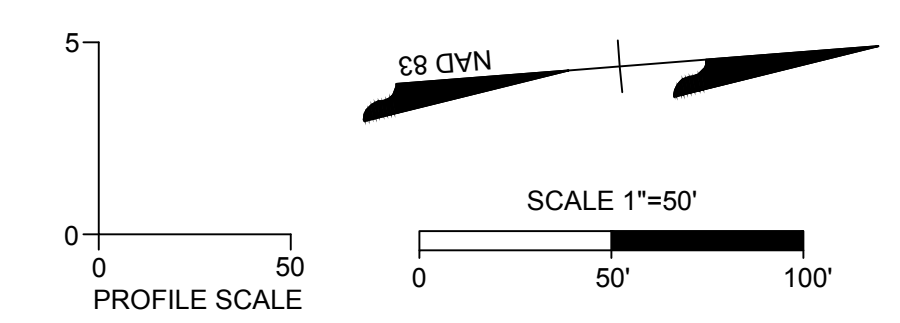
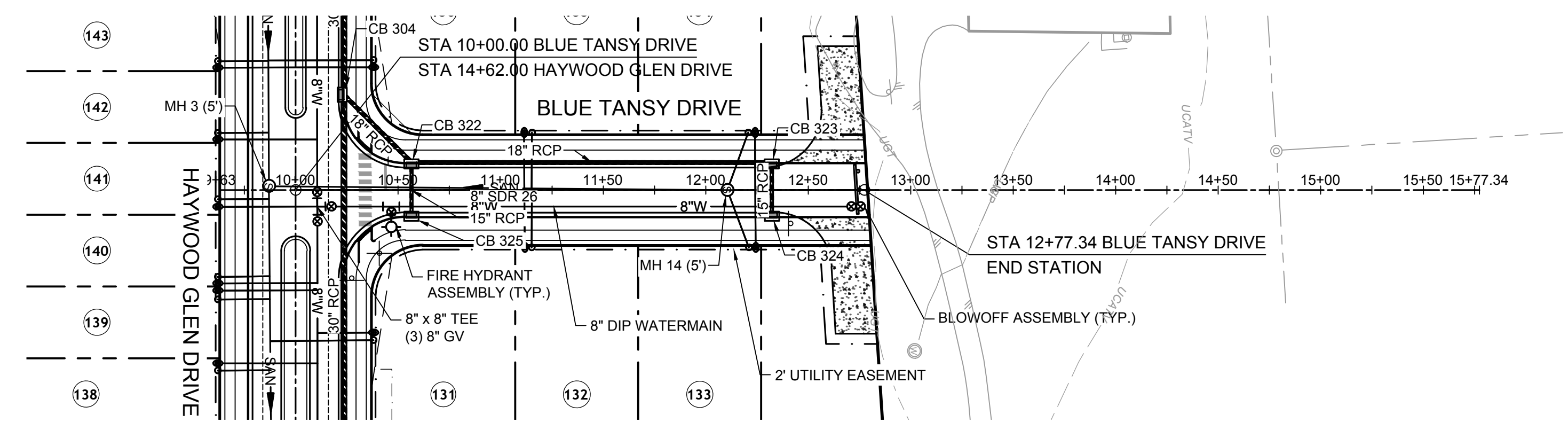
SCALE
 H: 1" = 50'
 V: 1" = 5'

TIMMONS GROUP
 NORTH CAROLINA LICENSE NO. C-1652
HAYWOOD GLEN PHASE 3
 OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA
BLUE TANSY ROAD PLAN & PROFILE

JOB NO.
43202

SHEET NO.
C5.1

RELEASED FOR CONSTRUCTION



TOWN CERTIFICATION

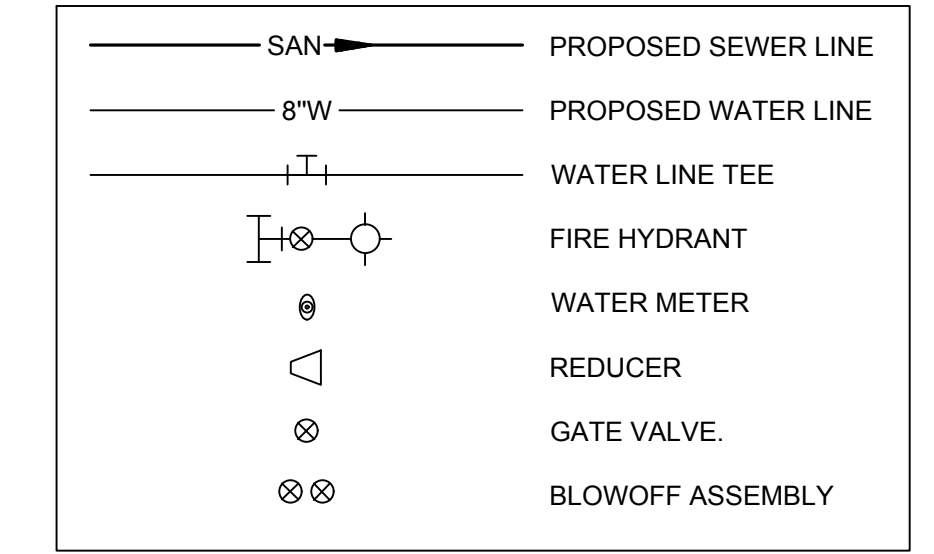
THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

BY: _____ DATE: _____
 DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
 ADMINISTRATOR

UTILITY LEGEND



Water and Sewer Permits (If applicable)

The City of Raleigh consents to the connection and extension of the City's **Public Sewer System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit # S-4902**

The City of Raleigh consents to the connection and extension of the City's **Public Water System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit # W-3836**

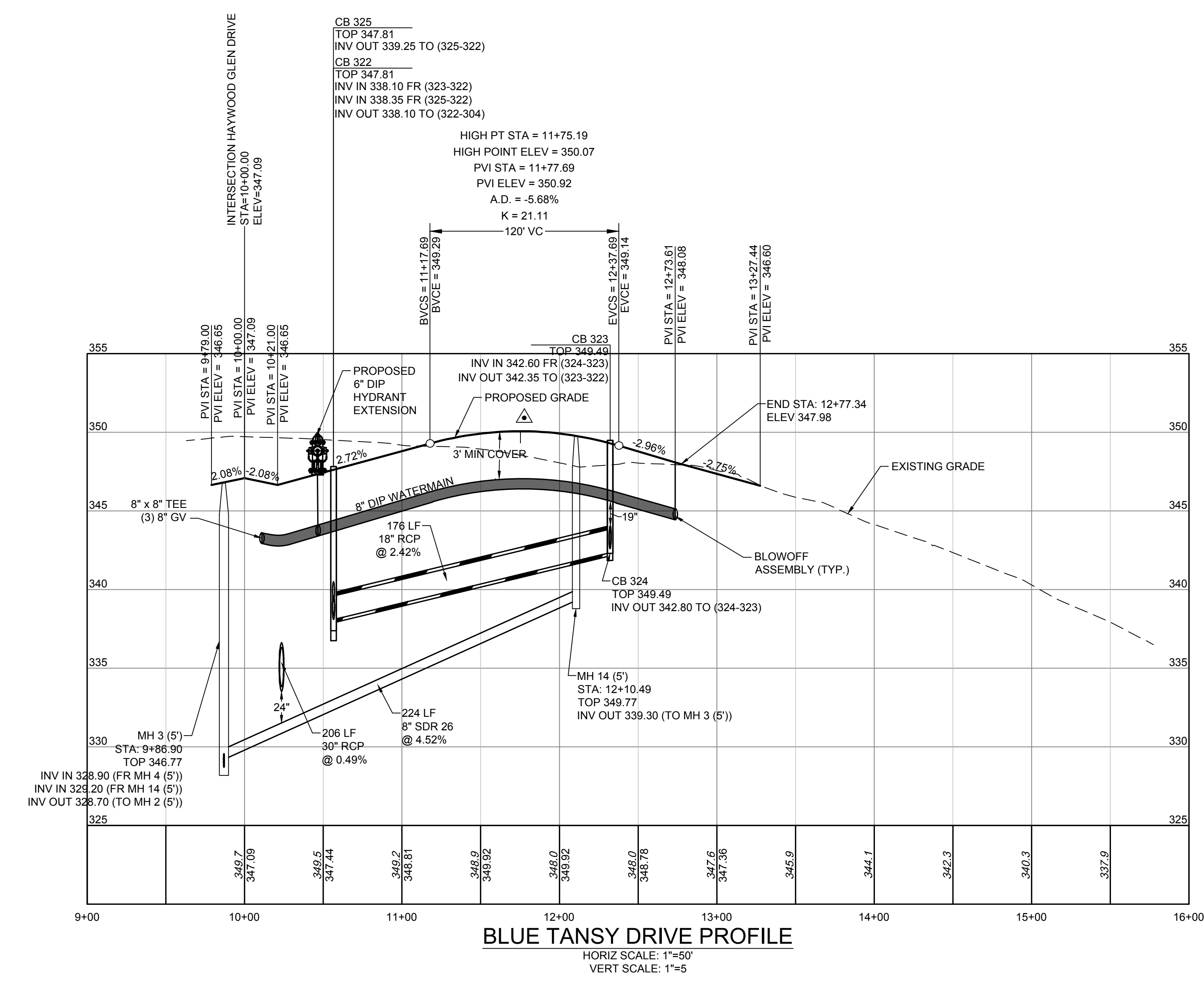
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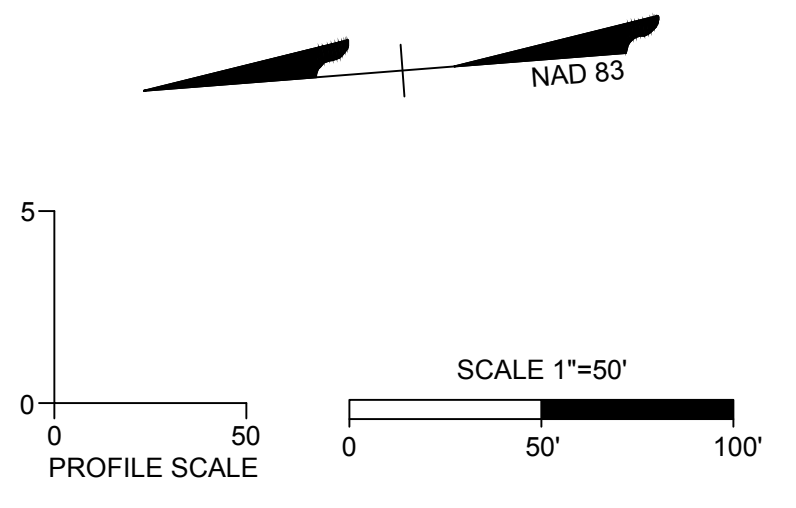
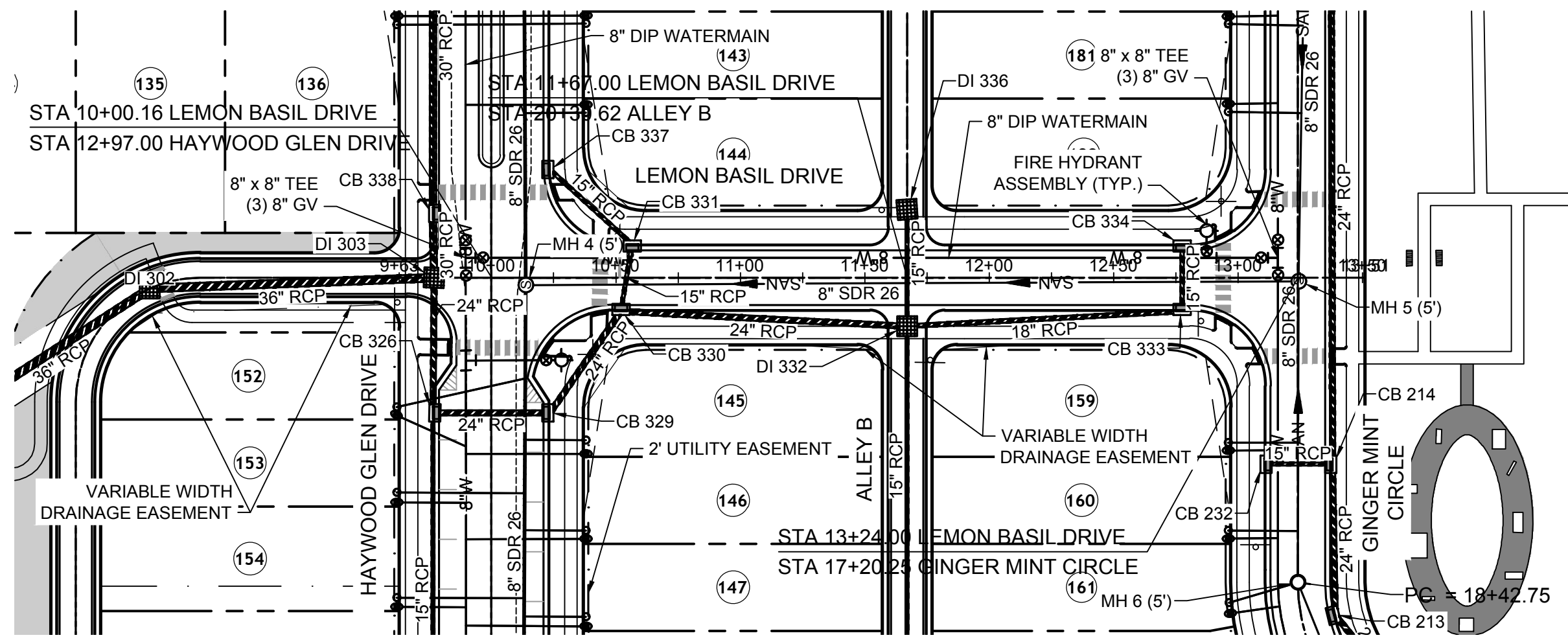
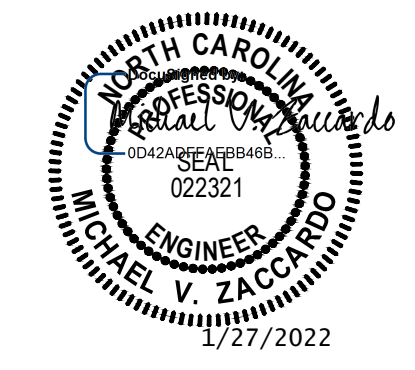
City of Raleigh Public Utilities Department Permit # _____

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____
 Raleigh Water Review Officer





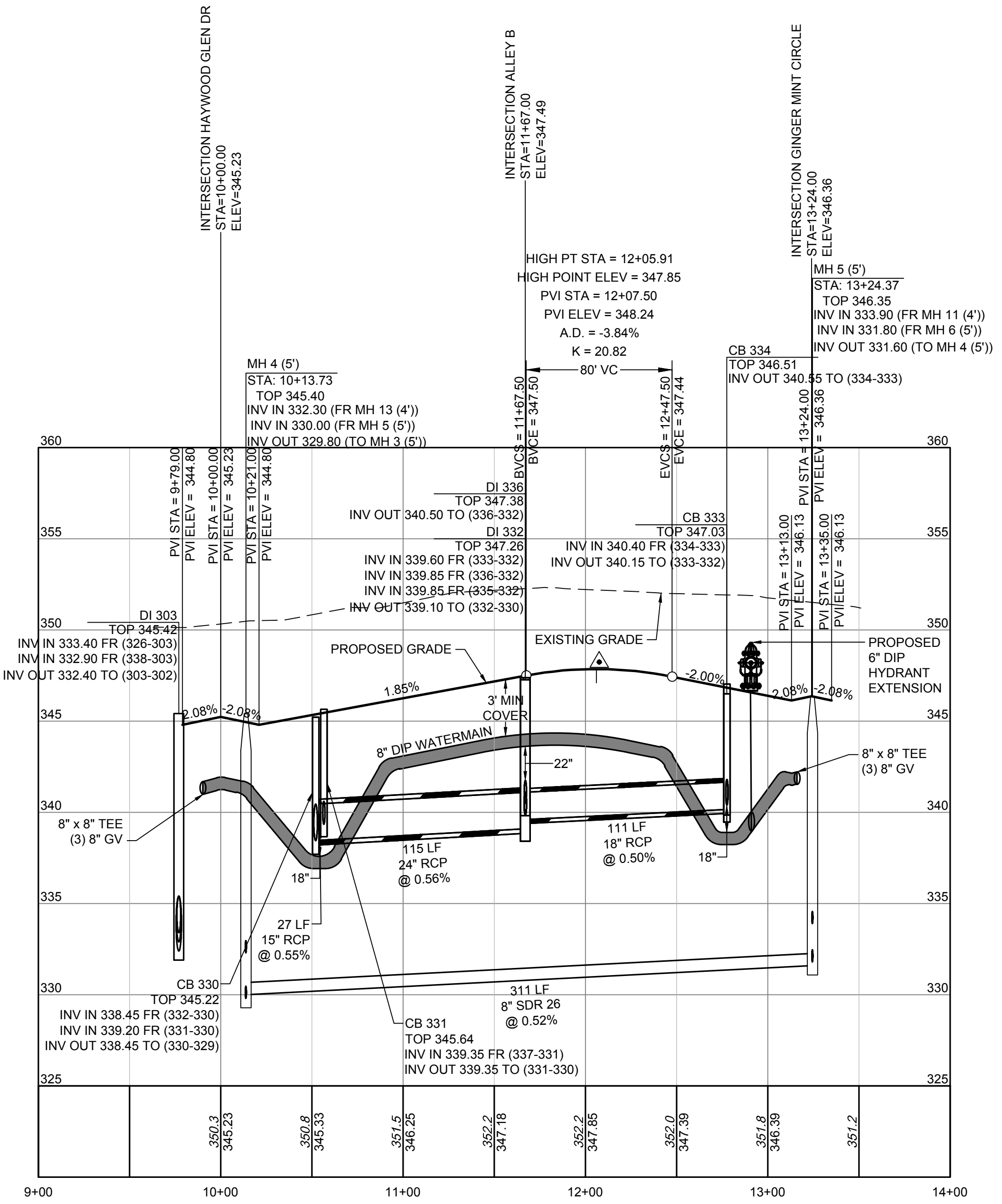
TOWN CERTIFICATION

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BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

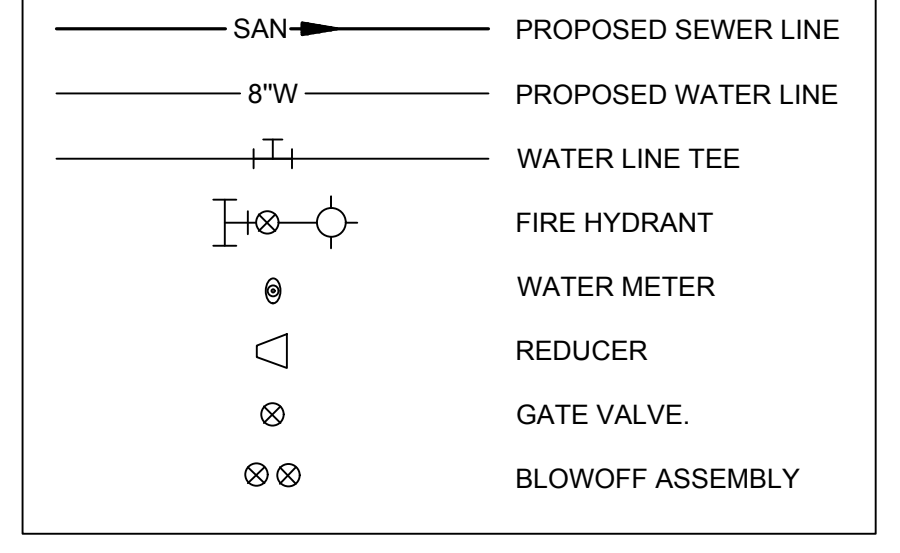
THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR



LEMON BASIL DRIVE PROFILE
HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5'

UTILITY LEGEND



Water and Sewer Permits (If applicable)

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City of Raleigh Public Utilities Department Permit # _____

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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City of Raleigh Development Approval _____

Raleigh Water Review Officer

UTILITY NOTES:

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH WAKE COUNTY STANDARDS AND SPECIFICATIONS.
- MINIMUM UTILITY HORIZONTAL SEPARATION DISTANCES:
WATER AND SANITARY SEWER MAINS - 10 FT.
WATER AND STORM SEWER MAINS - 5 FT.
SANITARY SEWER AND STORM SEWER MAINS - 5 FT.
GRAVITY SANITARY SEWER AND FORCE MAINS - 5 FT.
- MINIMUM UTILITY VERTICAL SEPARATION DISTANCES:
WATER AND SANITARY SEWER MAINS - 18 IN.
WATER AND STORM SEWER MAINS - 18 IN.
SANITARY SEWER AND STORM SEWER MAINS - 24 IN.



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YOUR VISION ACHIEVED THROUGH OURS.

DATE: 01/27/2022
DRAWN BY: JD.MACMILLAN
DESIGNED BY: E.ANGE
CHECKED BY: M.ZACCARDO

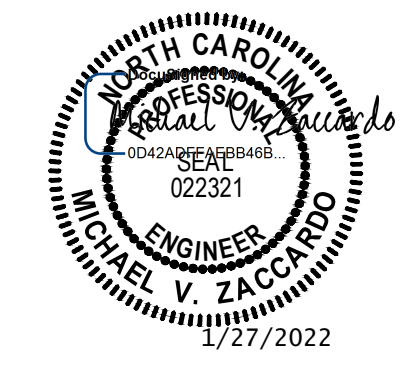
SCALE:
H: 1" = 50'
V: 1" = 5'

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652
HAYWOOD GLEN PHASE 3
OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA
LEMON BASIL DRIVE PLAN & PROFILE

JOB NO. 43202
SHEET NO. C5.3

RELEASED FOR CONSTRUCTION

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YOUR VISION ACHIEVED THROUGH OURS.

DATE
01/27/2022

DRAWN BY
JD.MACMILLAN

DESIGNED BY
E.ANGE

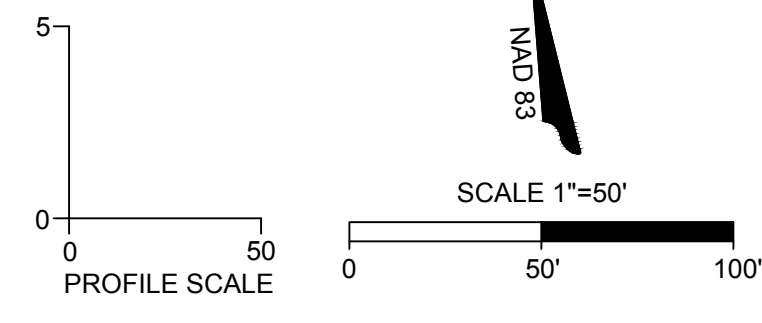
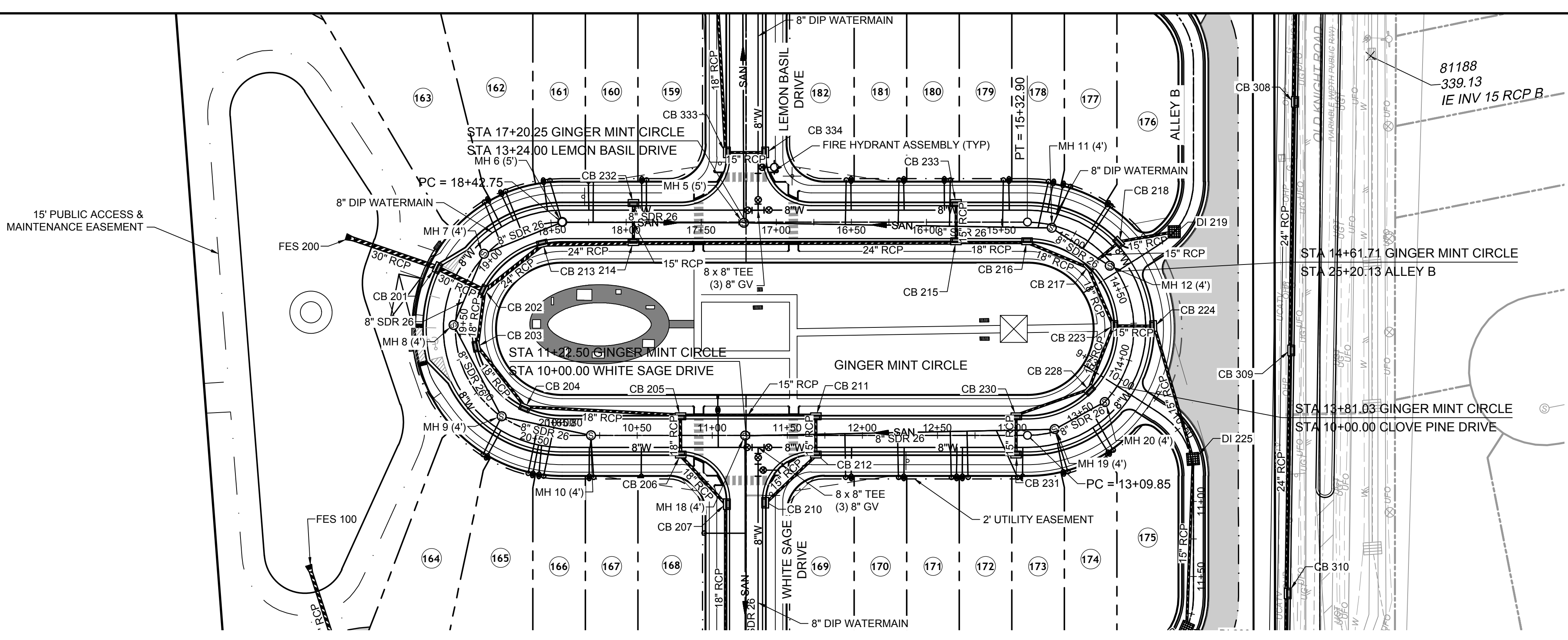
CHECKED BY
M.ZACCARDO

SCALE
H: 1" = 50'
V: 1" = 5'

JOB NO.
43202

SHEET NO.
C5.4

RELEASED FOR CONSTRUCTION



TOWN CERTIFICATION

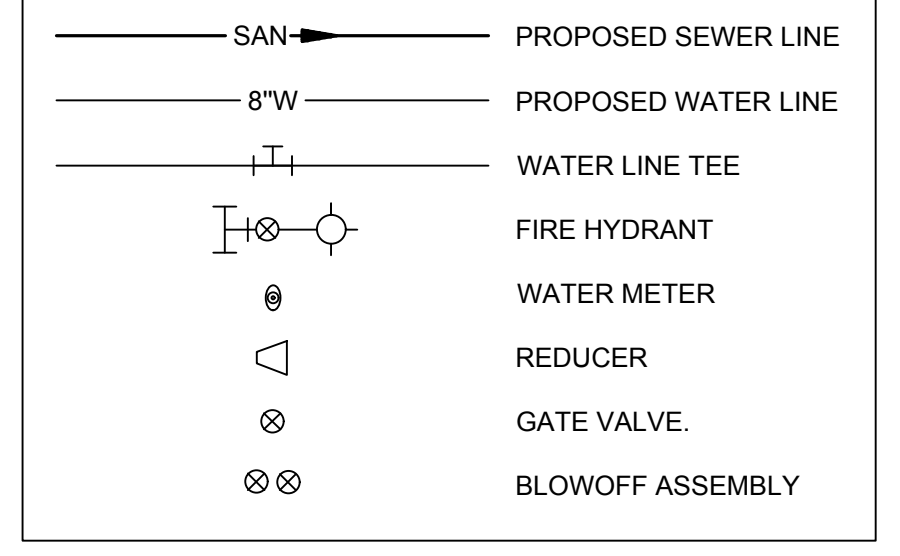
THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

UTILITY LEGEND



Water and Sewer Permits (If applicable)

The City of Raleigh consents to the connection and extension of the City's **Public Sewer System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit # S-4902**

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City of Raleigh Public Utilities Department Permit # _____

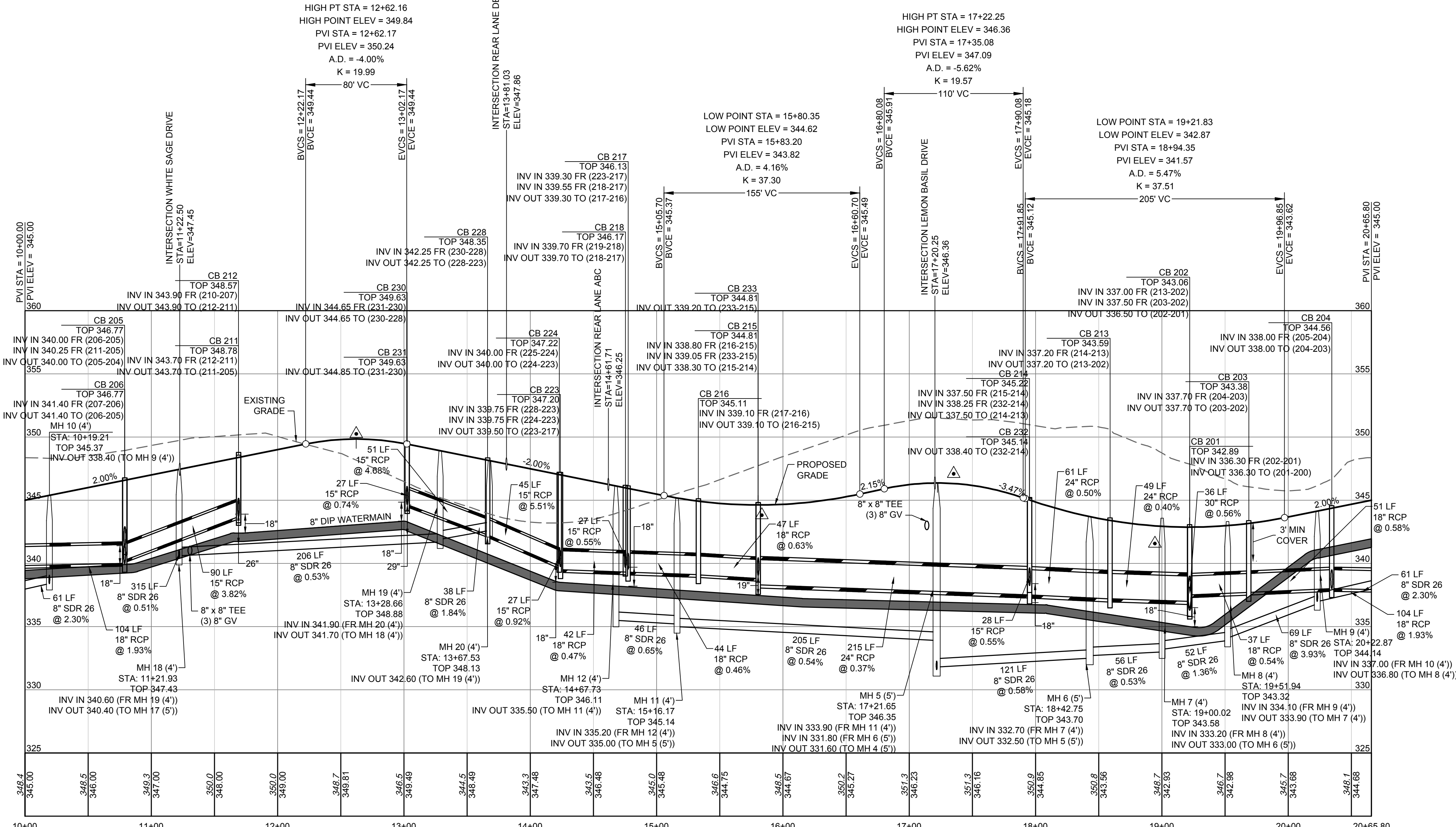
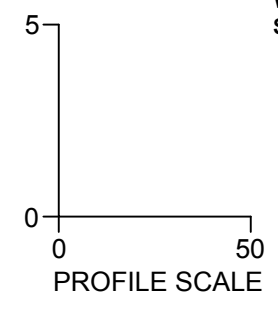
CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited or issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____
Raleigh Water Review Officer

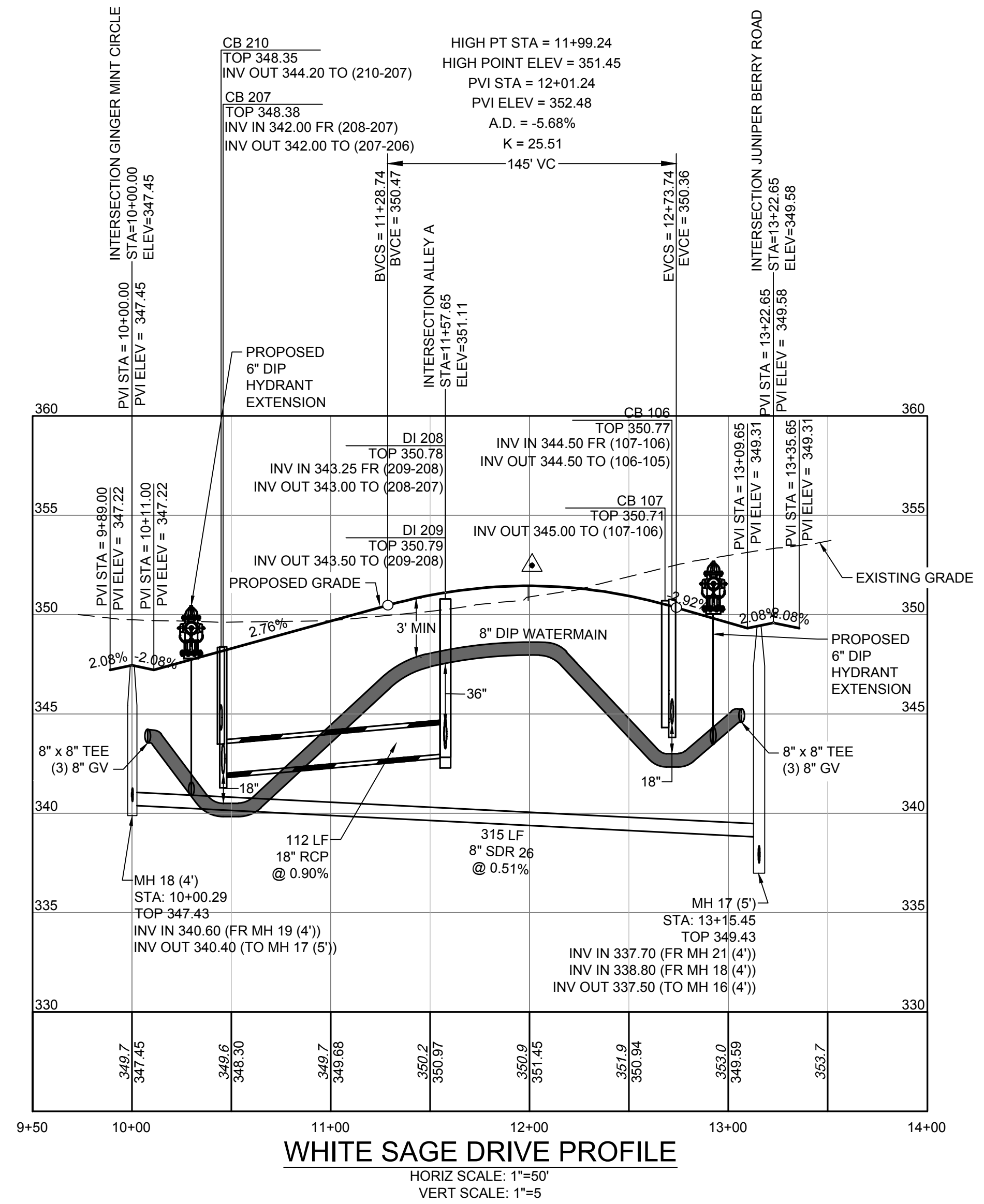
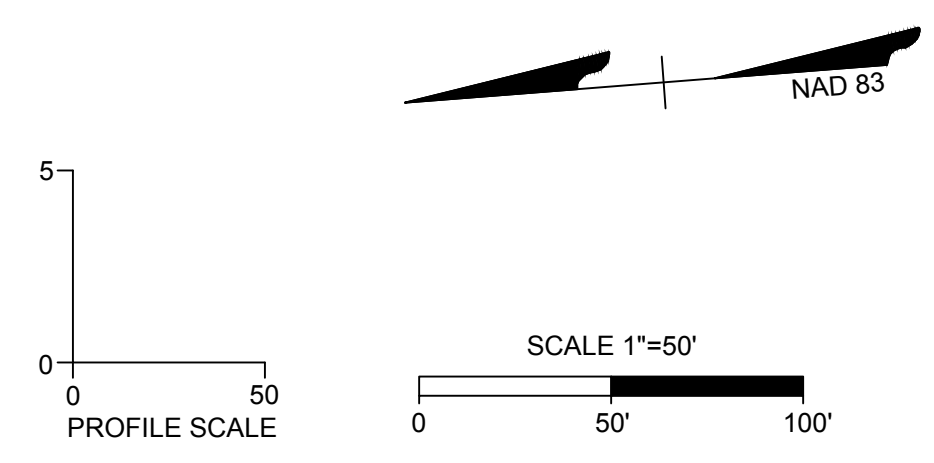
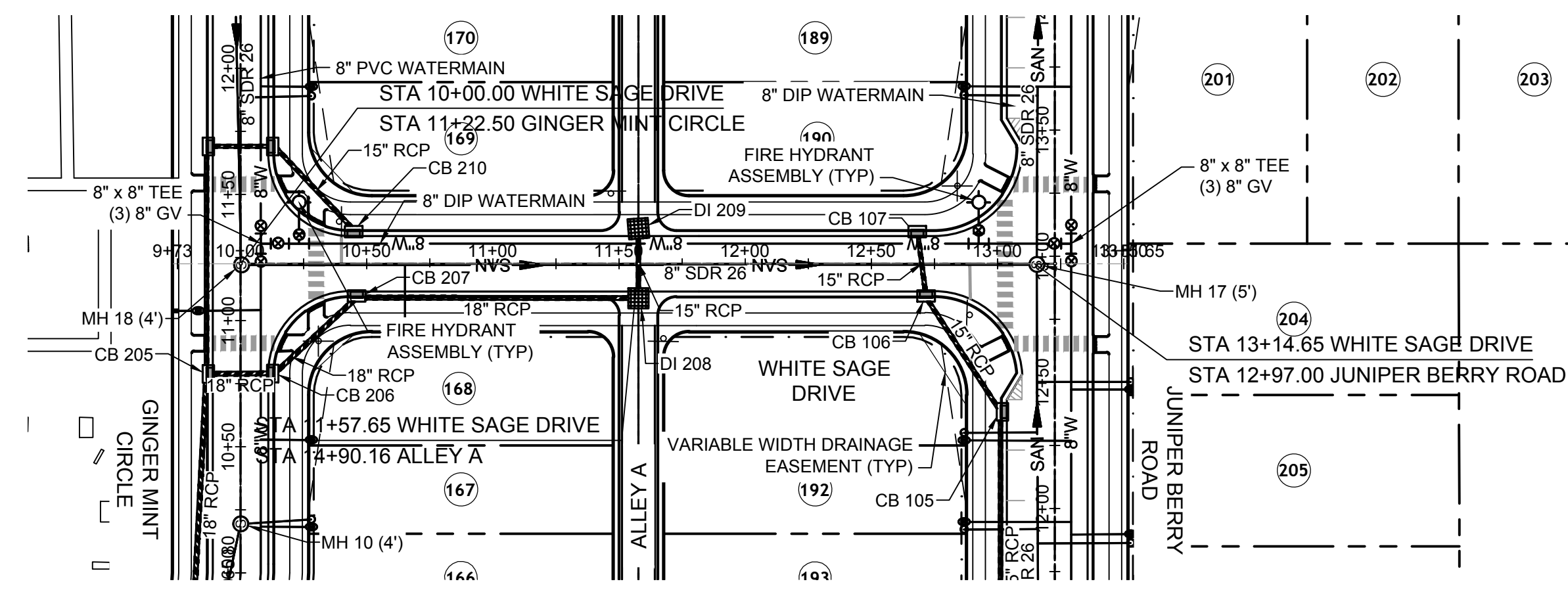
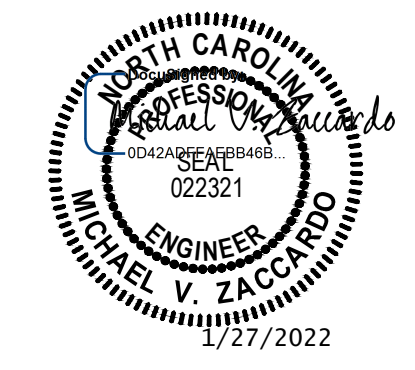
UTILITY NOTES:

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH WAKE COUNTY STANDARDS AND SPECIFICATIONS.
- MINIMUM UTILITY HORIZONTAL SEPARATION DISTANCES:
WATER AND SANITARY SEWER MAINS - 10 FT.
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SANITARY SEWER AND STORM SEWER MAINS - 5 FT.
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WATER AND SANITARY SEWER MAINS - 18 IN.
WATER AND STORM SEWER MAINS - 18 IN.
SANITARY SEWER AND STORM SEWER MAINS - 24 IN.



GINGER MINT CIRCLE PROFILE
HORIZ SCALE: 1"=50'
VERT SCALE: 1"=5'



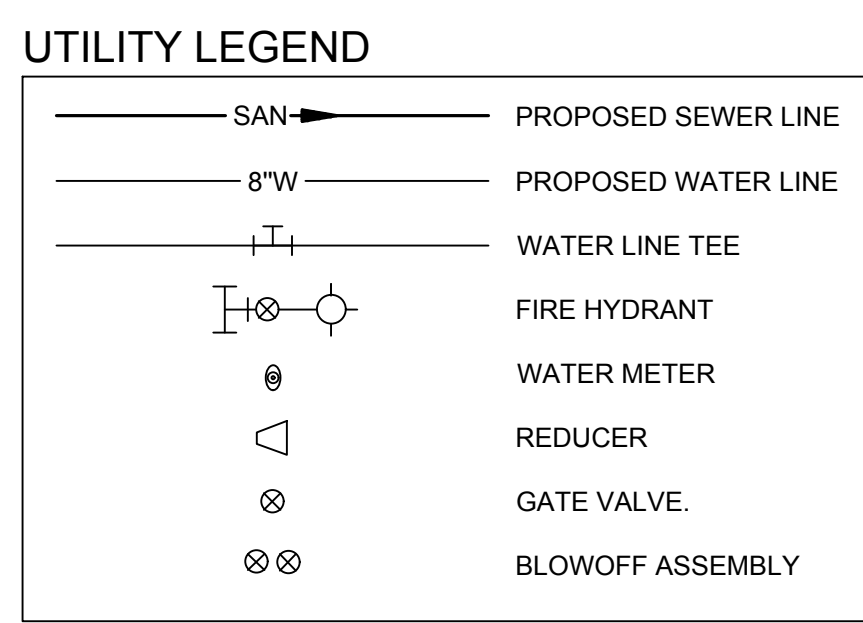


TOWN CERTIFICATION

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

BY: _____ DATE: _____
ADMINISTRATOR



- UTILITY NOTES:**
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Water and Sewer Permits (If applicable)

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City of Raleigh Public Utilities Department Permit # _____

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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City of Raleigh Development Approval _____
Raleigh Water Review Officer



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DATE	REVISION DESCRIPTION
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TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

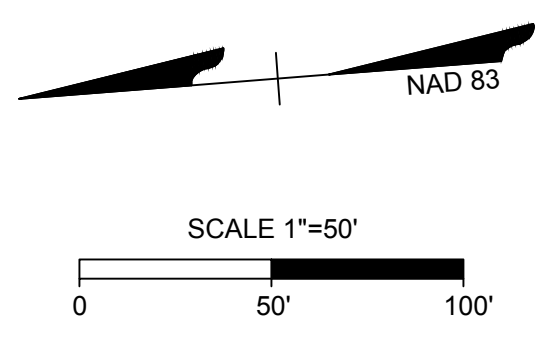
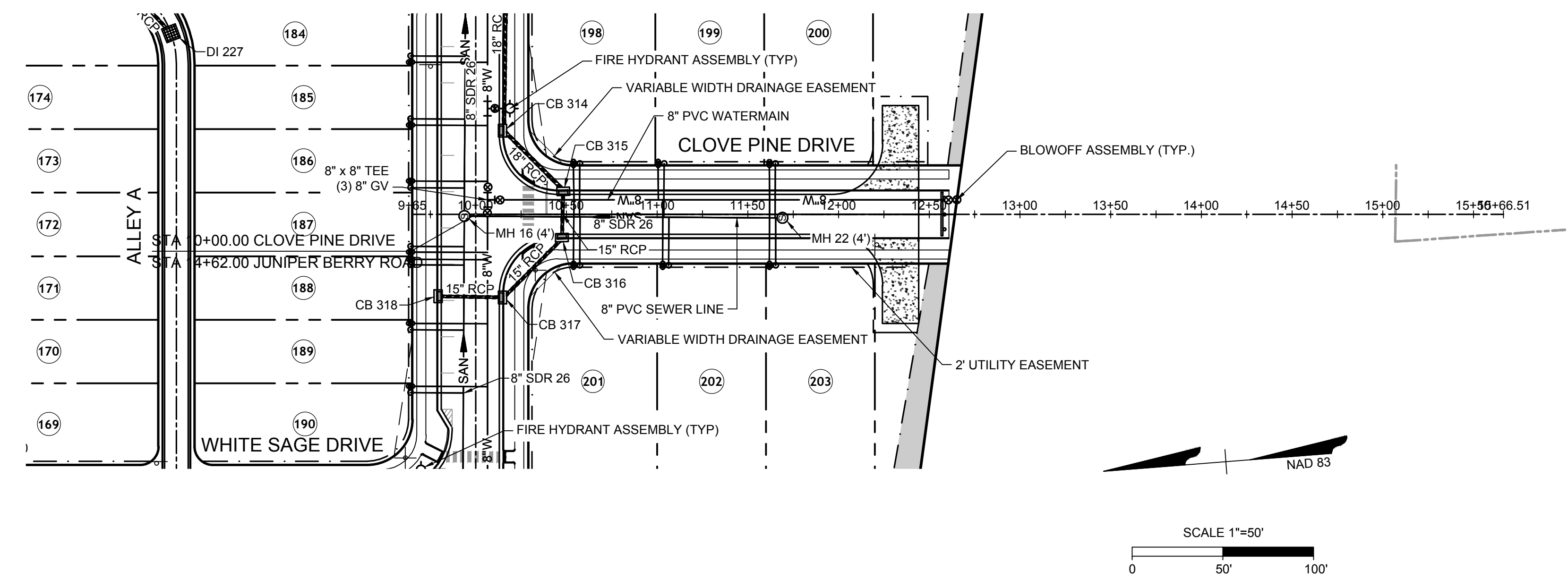
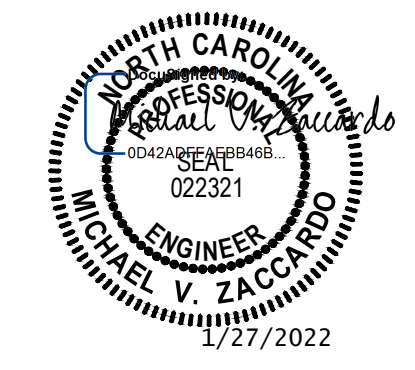
HAYWOOD GLEN PHASE 3
OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA

WHITE SAGE DRIVE PLAN & PROFILE

JOB NO. 43202
SHEET NO. C5.5

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UTILITY NOTES:

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 SANITARY SEWER AND STORM SEWER MAINS - 5 FT.
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- MINIMUM UTILITY VERTICAL SEPARATION DISTANCES:
 WATER AND SANITARY SEWER MAINS - 18 IN.
 WATER AND STORM SEWER MAINS - 18 IN.
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TOWN CERTIFICATION

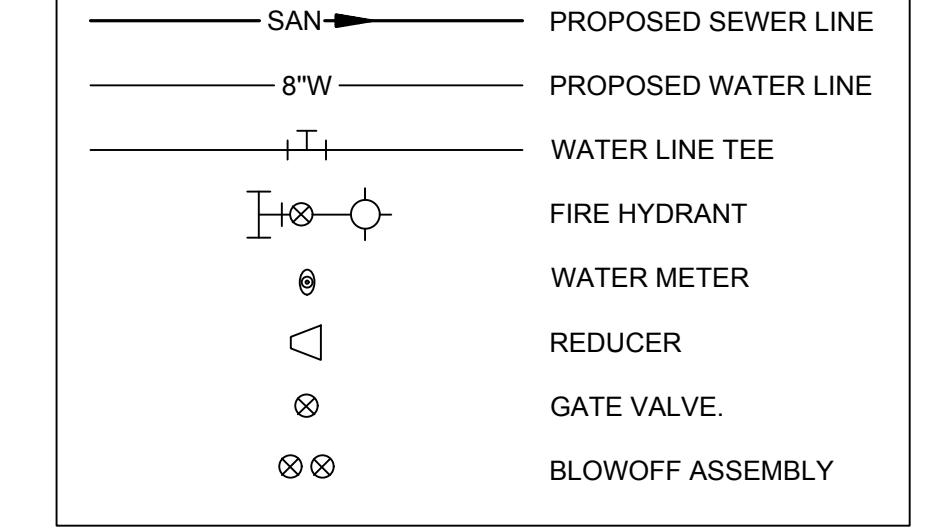
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BY: _____ DATE: _____
 DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
 ADMINISTRATOR

UTILITY LEGEND



Water and Sewer Permits (If applicable)

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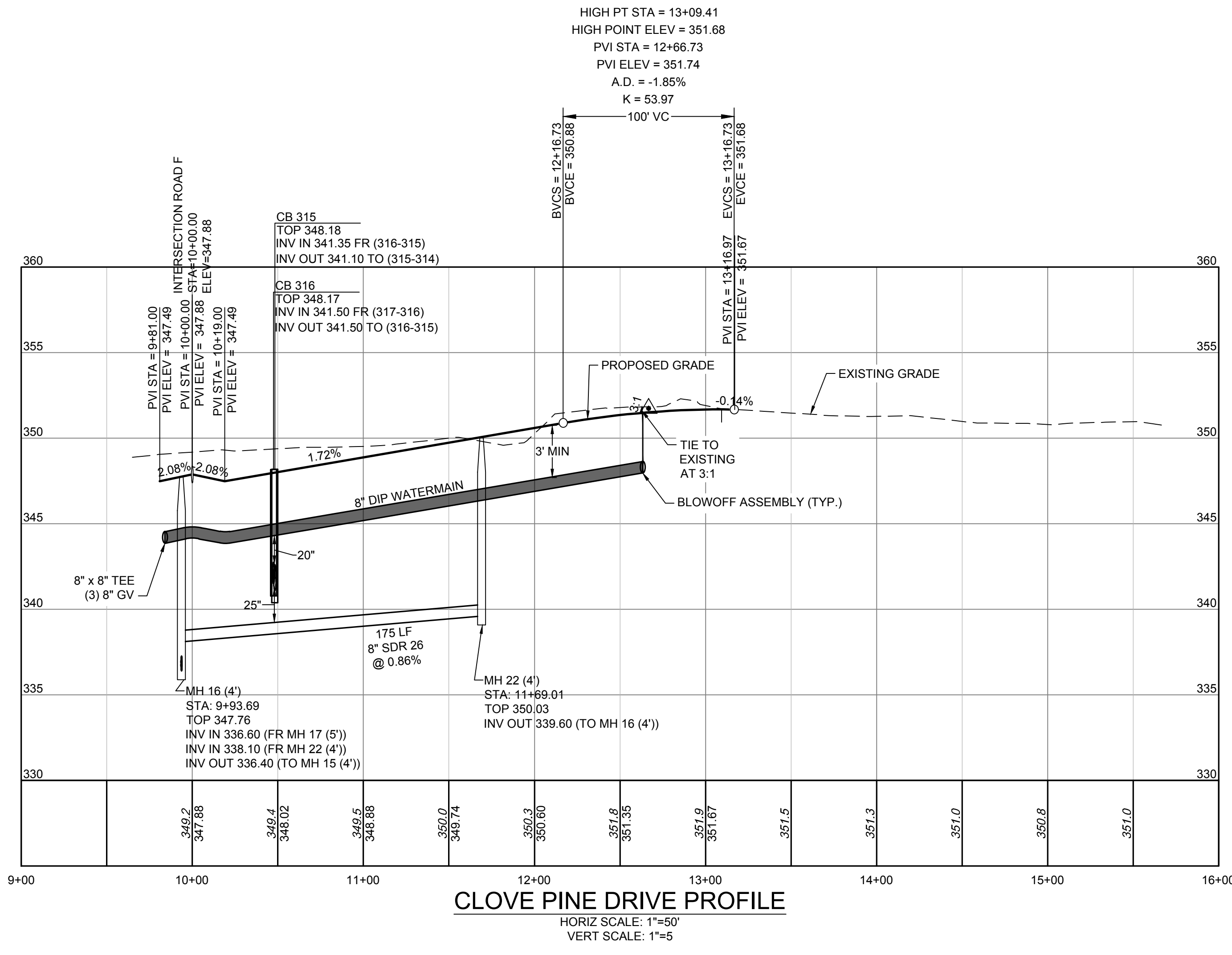
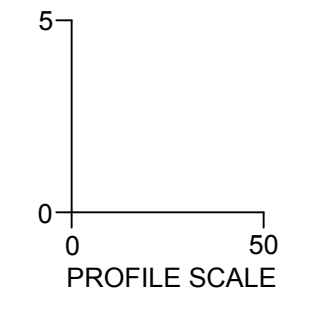
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City of Raleigh Public Utilities Department Permit # _____

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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City of Raleigh Development Approval _____
 Raleigh Water Review Officer



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YOUR VISION ACHIEVED THROUGH OURS.

DATE: 01/27/2022
 DRAWN BY: JD.MACMILLAN
 DESIGNED BY: E.ANGE
 CHECKED BY: M.ZACCARDO

SCALE:
 H: 1" = 50'
 V: 1" = 5'

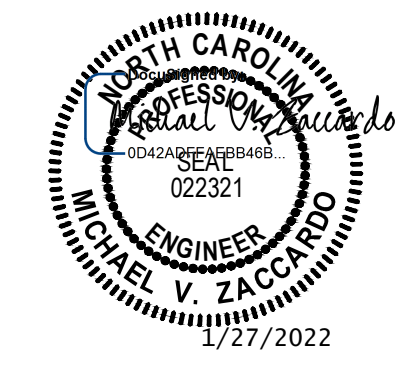
TIMMONS GROUP
 NORTH CAROLINA LICENSE NO. C-1652
HAYWOOD GLEN PHASE 3
 OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA
CLOVE PINE DRIVE PLAN & PROFILE

JOB NO. 43202
 SHEET NO. C5.7

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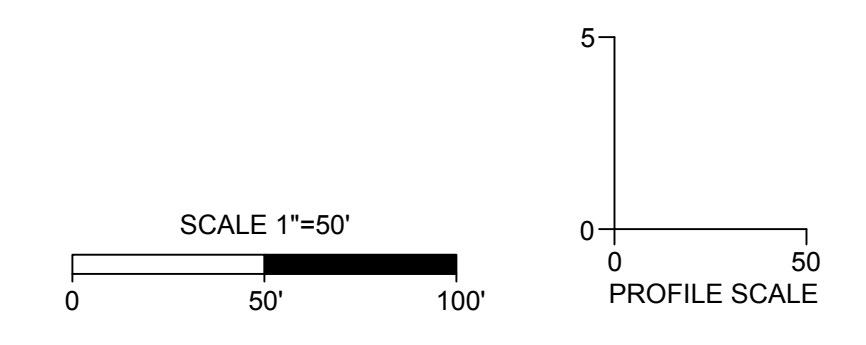
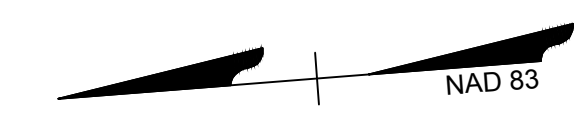
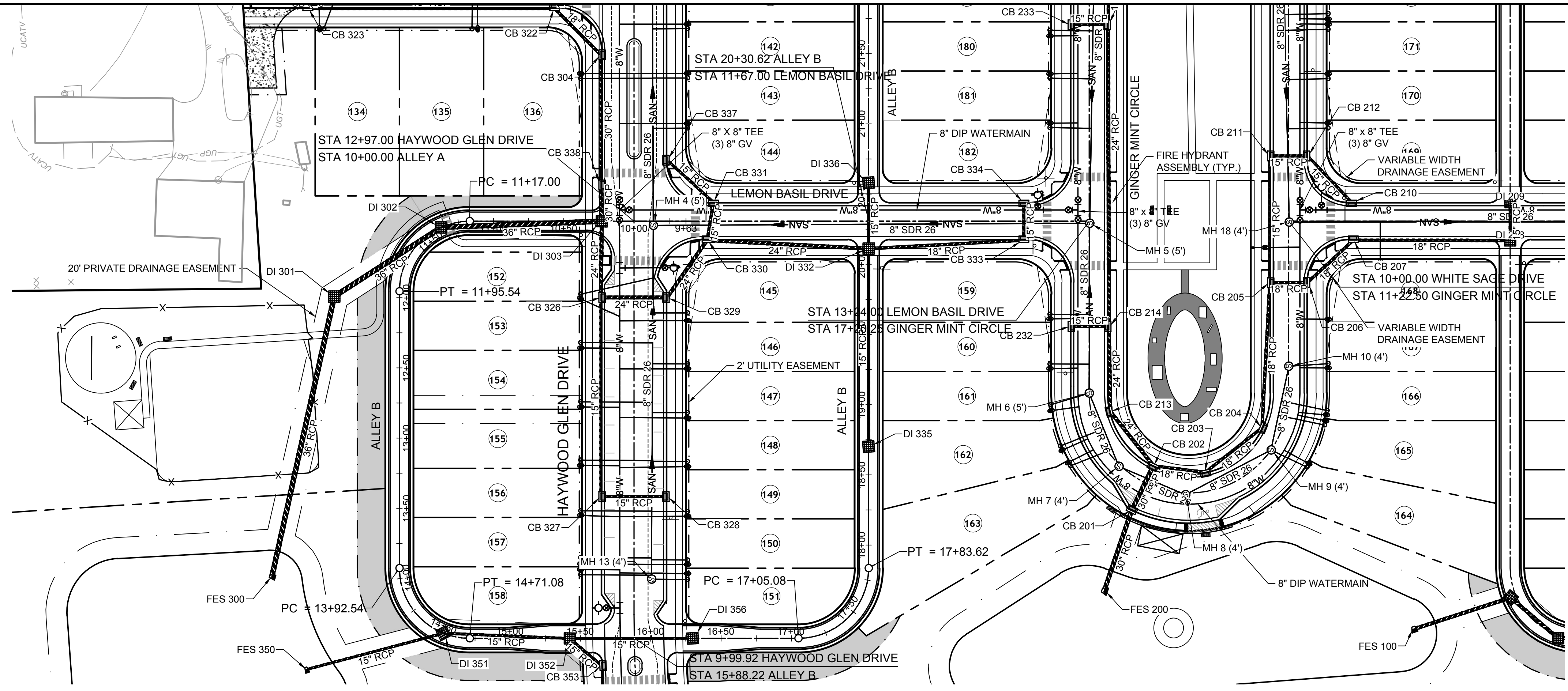
DATE	REVISION DESCRIPTION
01/27/2022	

DATE: 01/27/2022
 DRAWN BY: JD.MACMILLAN
 DESIGNED BY: E.ANGE
 CHECKED BY: M.ZACCARDO
 SCALE: H: 1" = 50'
 V: 1" = 5'

TIMMONS GROUP
 NORTH CAROLINA LICENSE NO. C-1652
HAYWOOD GLEN PHASE 3
 OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA
ALLEY B PLAN & PROFILE (1 OF 2)

JOB NO. 43202
 SHEET NO. C5.8

RELEASED FOR CONSTRUCTION



TOWN CERTIFICATION

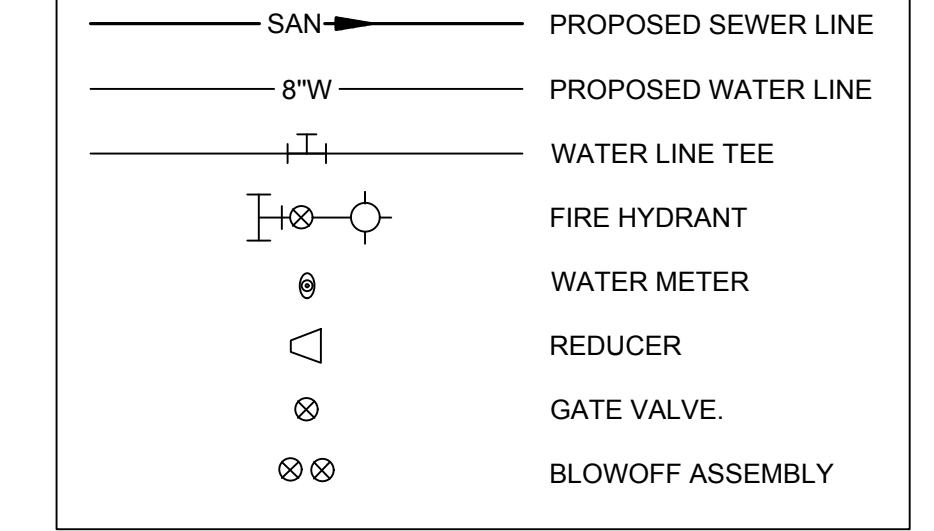
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BY: _____ DATE: _____
 DEVELOPMENT SERVICES ENGINEER

BY: _____ DATE: _____
 ADMINISTRATOR

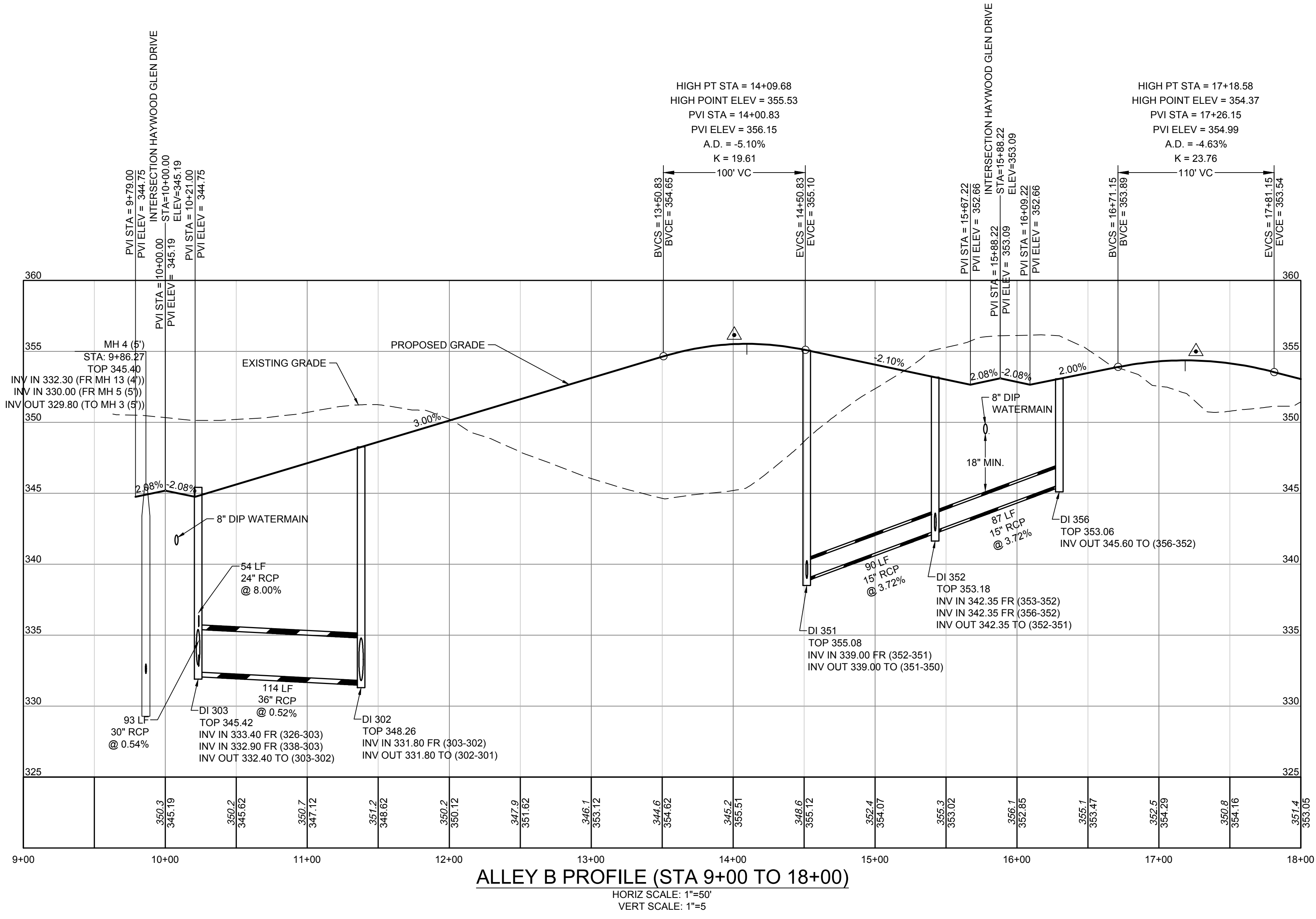
THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

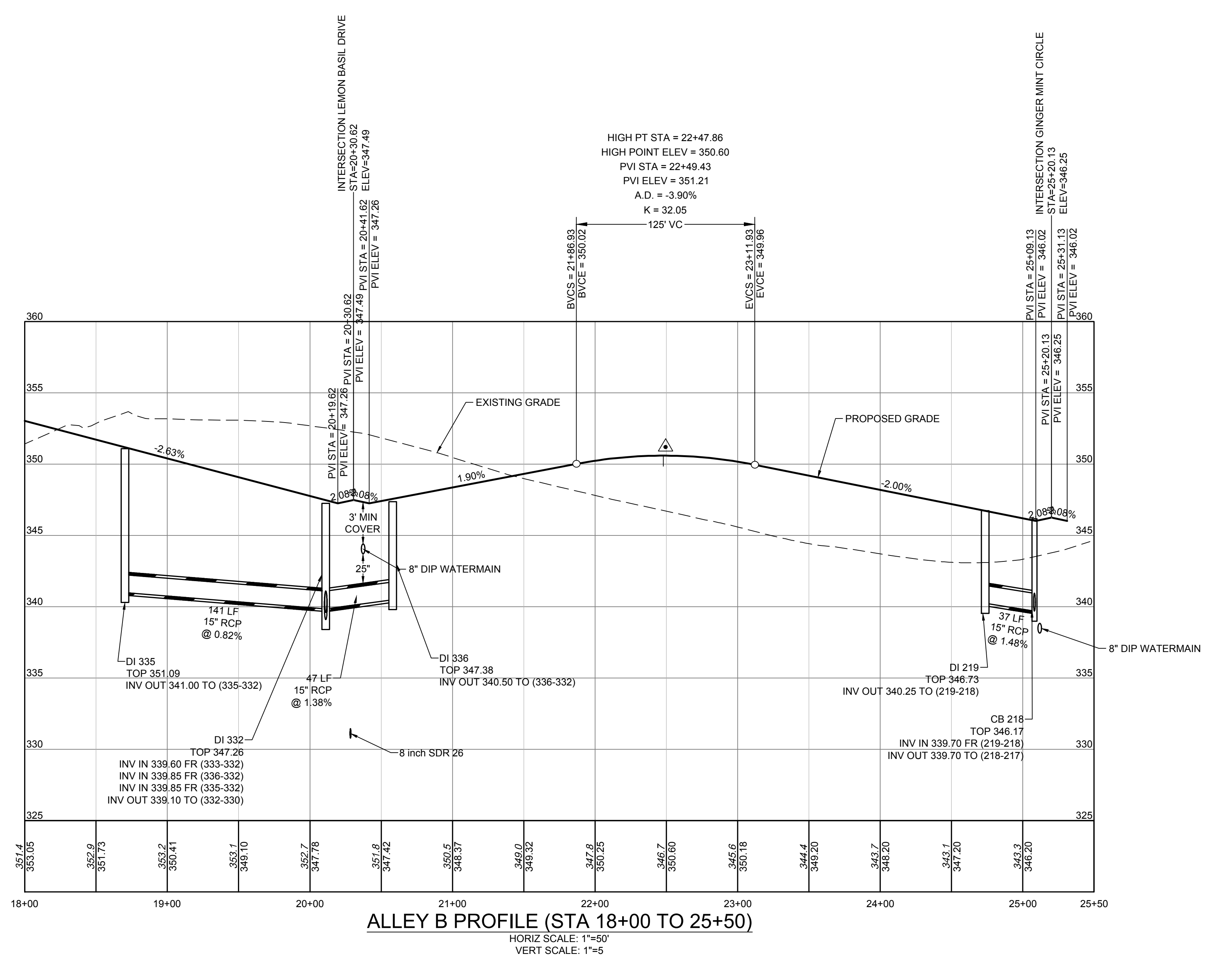
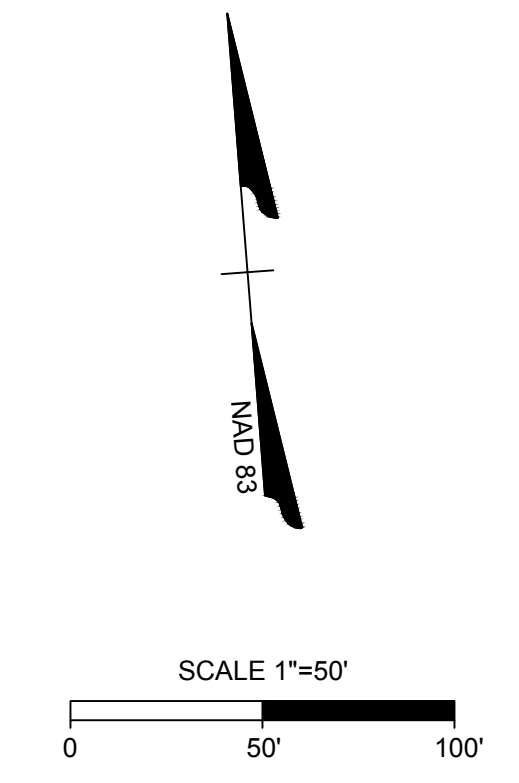
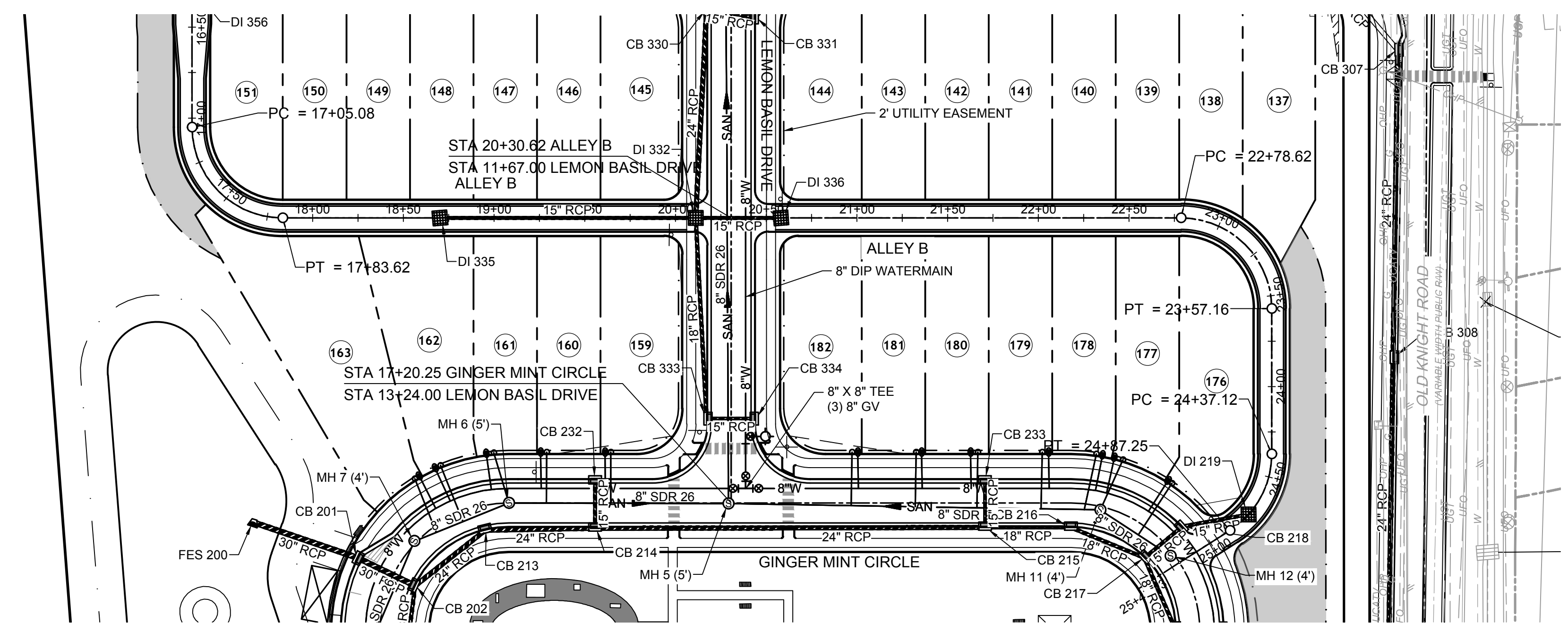
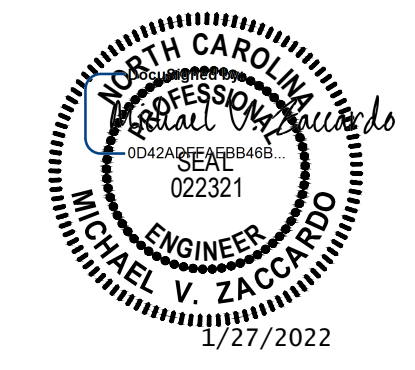
UTILITY LEGEND



UTILITY NOTES:

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 WATER AND STORM SEWER MAINS - 18 IN.
 SANITARY SEWER AND STORM SEWER MAINS - 24 IN.



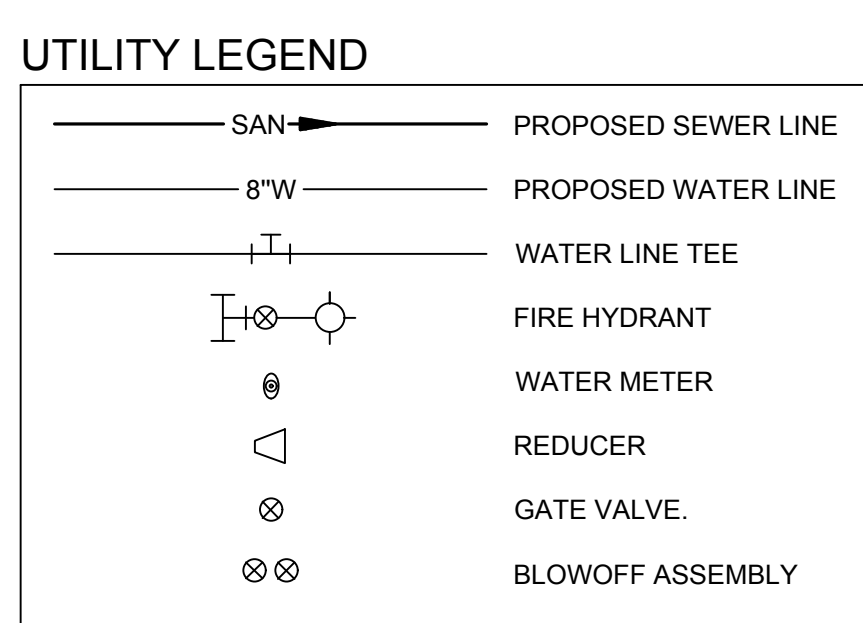


TOWN CERTIFICATION

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: _____ DATE: _____
 DEVELOPMENT SERVICES ENGINEER

BY: _____ DATE: _____
 ADMINISTRATOR



- UTILITY NOTES:**
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH WAKE COUNTY STANDARDS AND SPECIFICATIONS.
 - MINIMUM UTILITY HORIZONTAL SEPARATION DISTANCES:
 WATER AND SANITARY SEWER MAINS - 10 FT.
 WATER AND STORM SEWER MAINS - 5 FT.
 SANITARY SEWER AND STORM SEWER MAINS - 5 FT.
 GRAVITY SANITARY SEWER AND FORCE MAINS - 5 FT.
 - MINIMUM UTILITY VERTICAL SEPARATION DISTANCES:
 WATER AND SANITARY SEWER MAINS - 18 IN.
 WATER AND STORM SEWER MAINS - 18 IN.
 SANITARY SEWER AND STORM SEWER MAINS - 24 IN.

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REVISION DESCRIPTION	DATE

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 NORTH CAROLINA LICENSE NO. C-1652

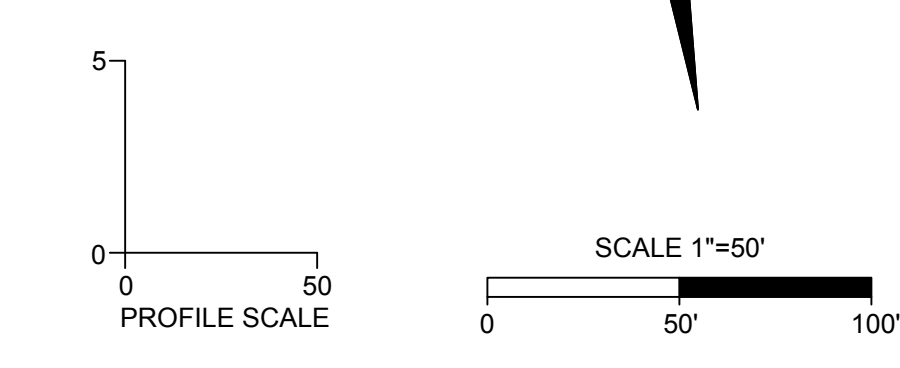
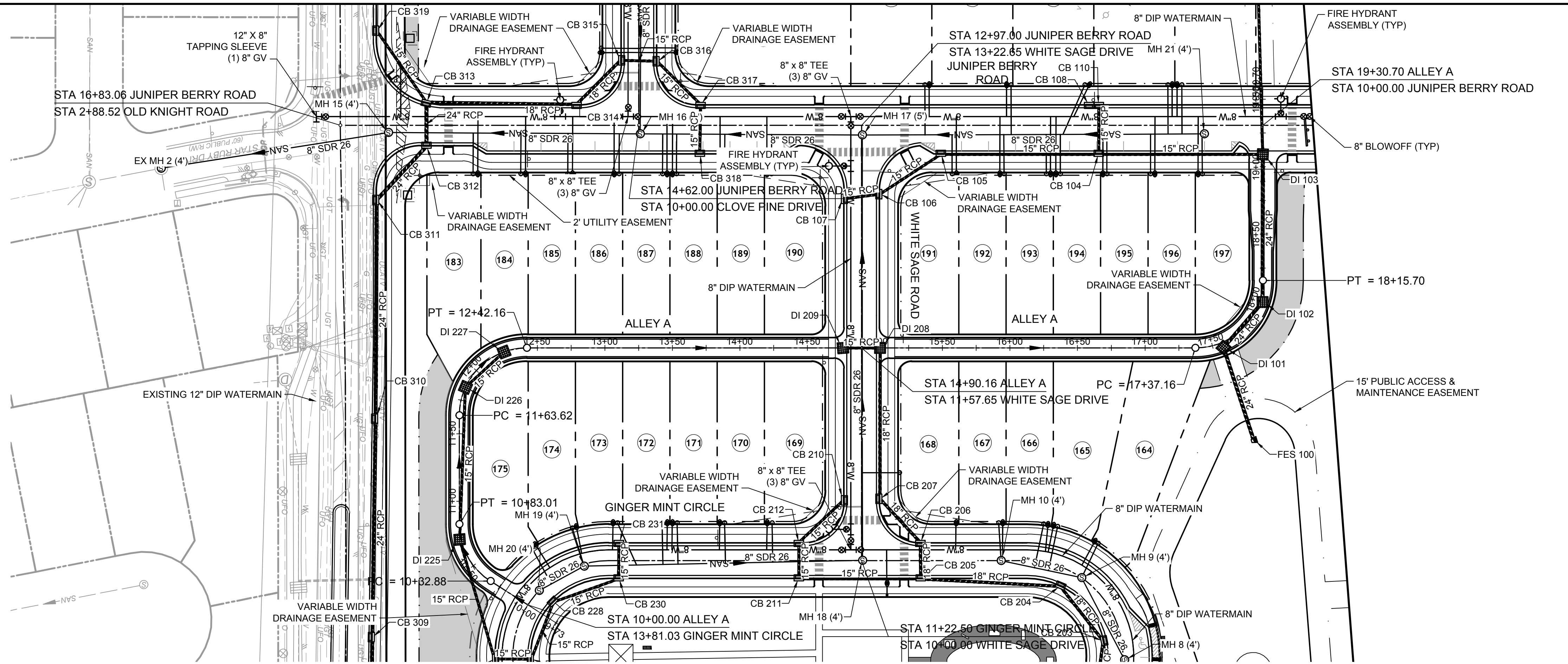
HAYWOOD GLEN PHASE 3
 OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA
ALLEY B PLAN & PROFILE (2 OF 2)

JOB NO. 43202
 SHEET NO. C5.9



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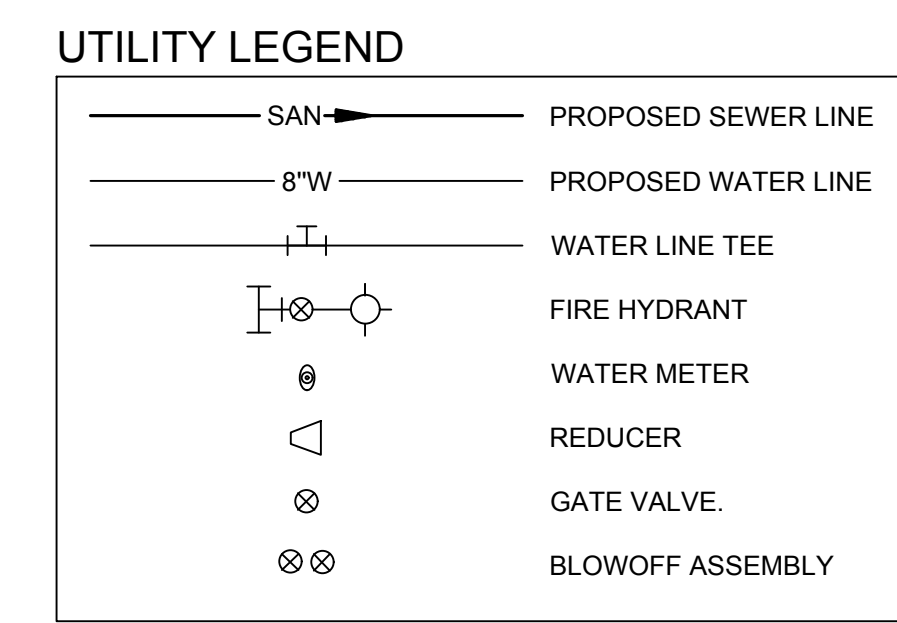
TOWN CERTIFICATION

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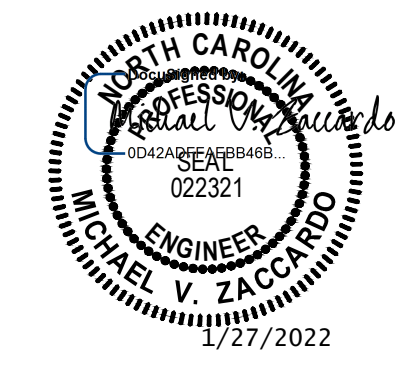
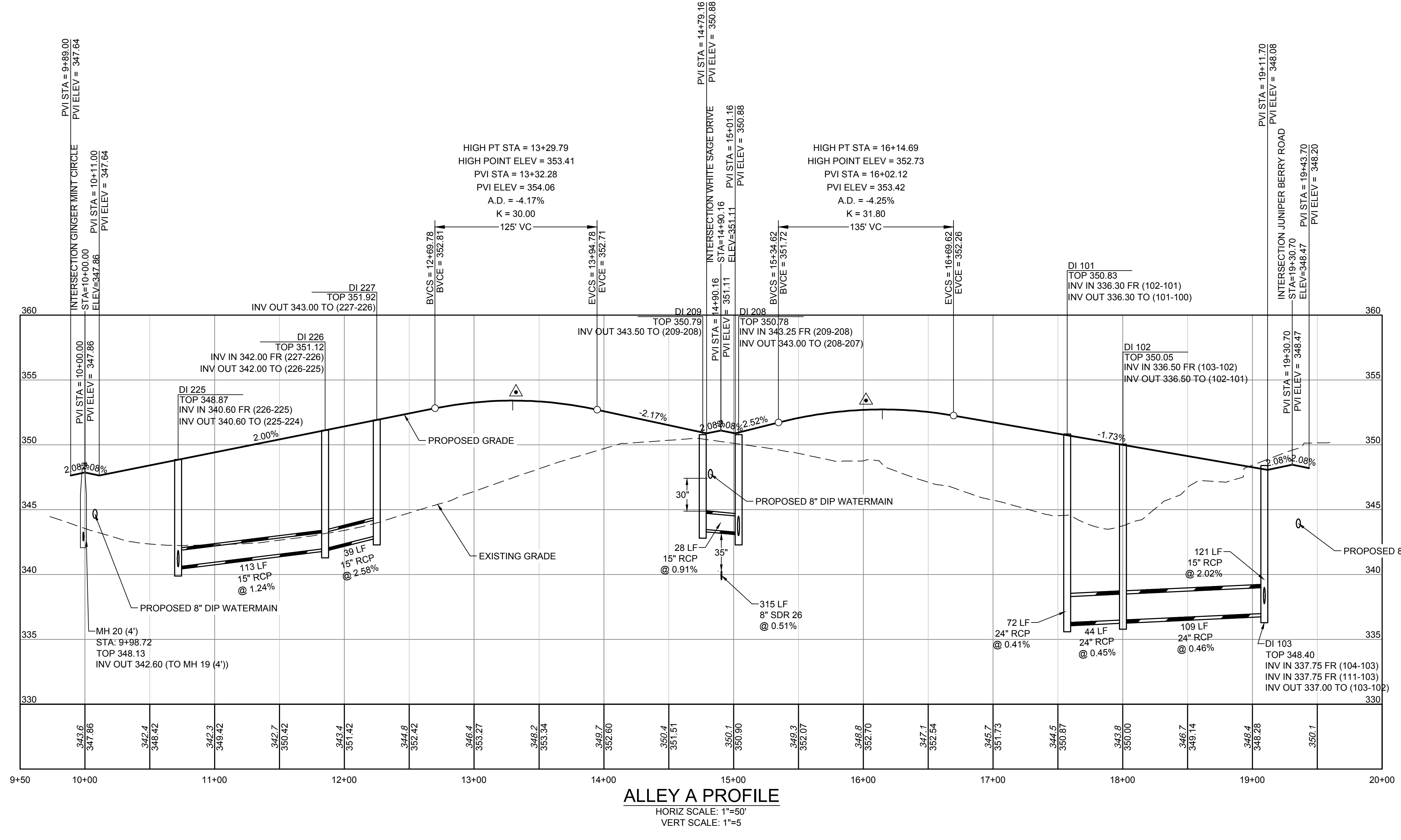
BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

BY: _____ DATE: _____
ADMINISTRATOR

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.



- UTILITY NOTES:**
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH WAKE COUNTY STANDARDS AND SPECIFICATIONS.
 - MINIMUM UTILITY HORIZONTAL SEPARATION DISTANCES:
WATER AND SANITARY SEWER MAINS - 10 FT.
WATER AND STORM SEWER MAINS - 5 FT.
SANITARY SEWER AND STORM SEWER MAINS - 5 FT.
GRAVITY SANITARY SEWER AND FORCE MAINS - 5 FT.
 - MINIMUM UTILITY VERTICAL SEPARATION DISTANCES:
WATER AND SANITARY SEWER MAINS - 18 IN.
WATER AND STORM SEWER MAINS - 18 IN.
SANITARY SEWER AND STORM SEWER MAINS - 24 IN.



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DATE	REVISION DESCRIPTION
01/27/2022	

DATE: 01/27/2022
DRAWN BY: JD.MACMILLAN
DESIGNED BY: E.ANGE
CHECKED BY: M.ZACCARDO
SCALE: H: 1" = 50', V: 1" = 5'

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

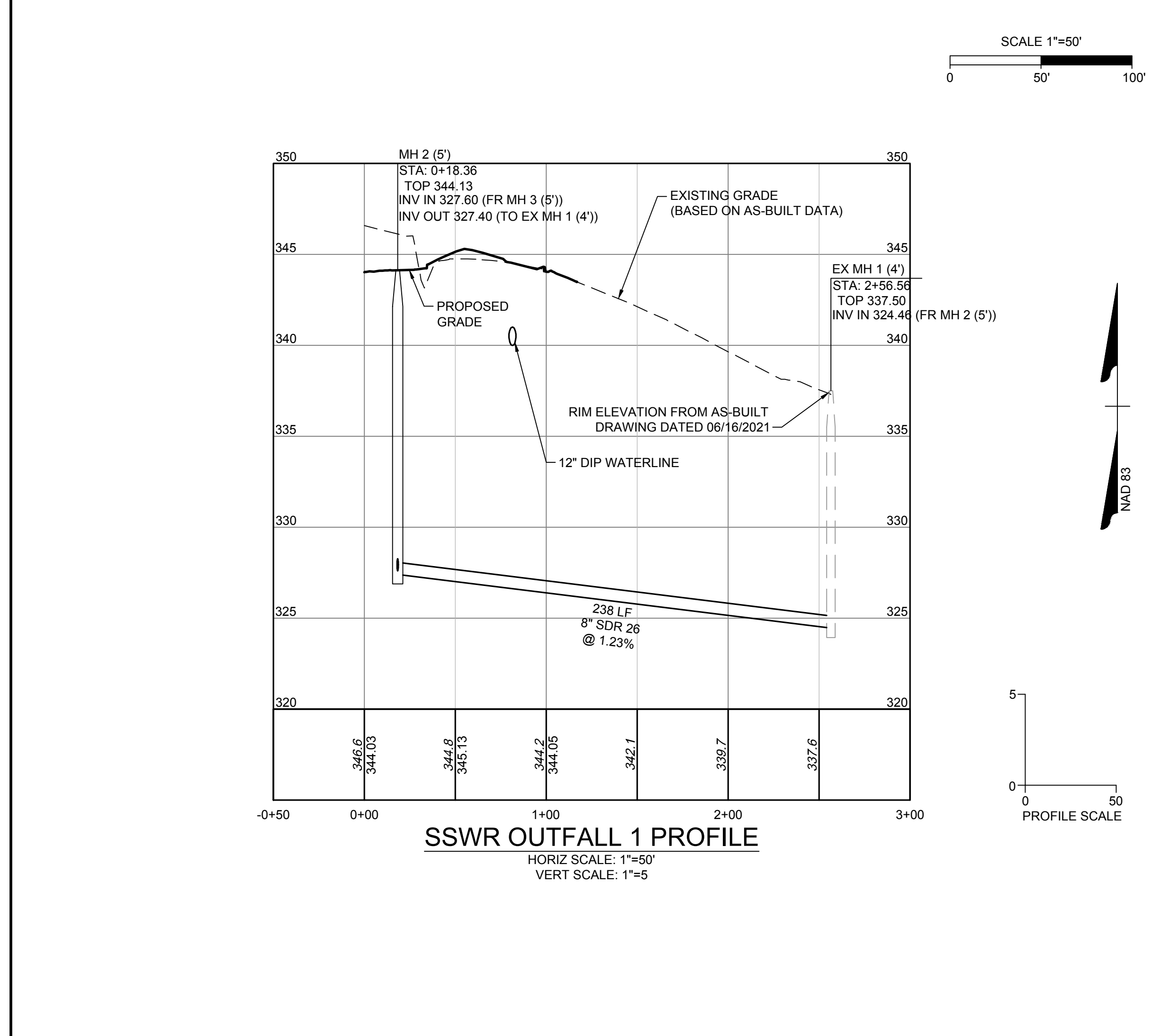
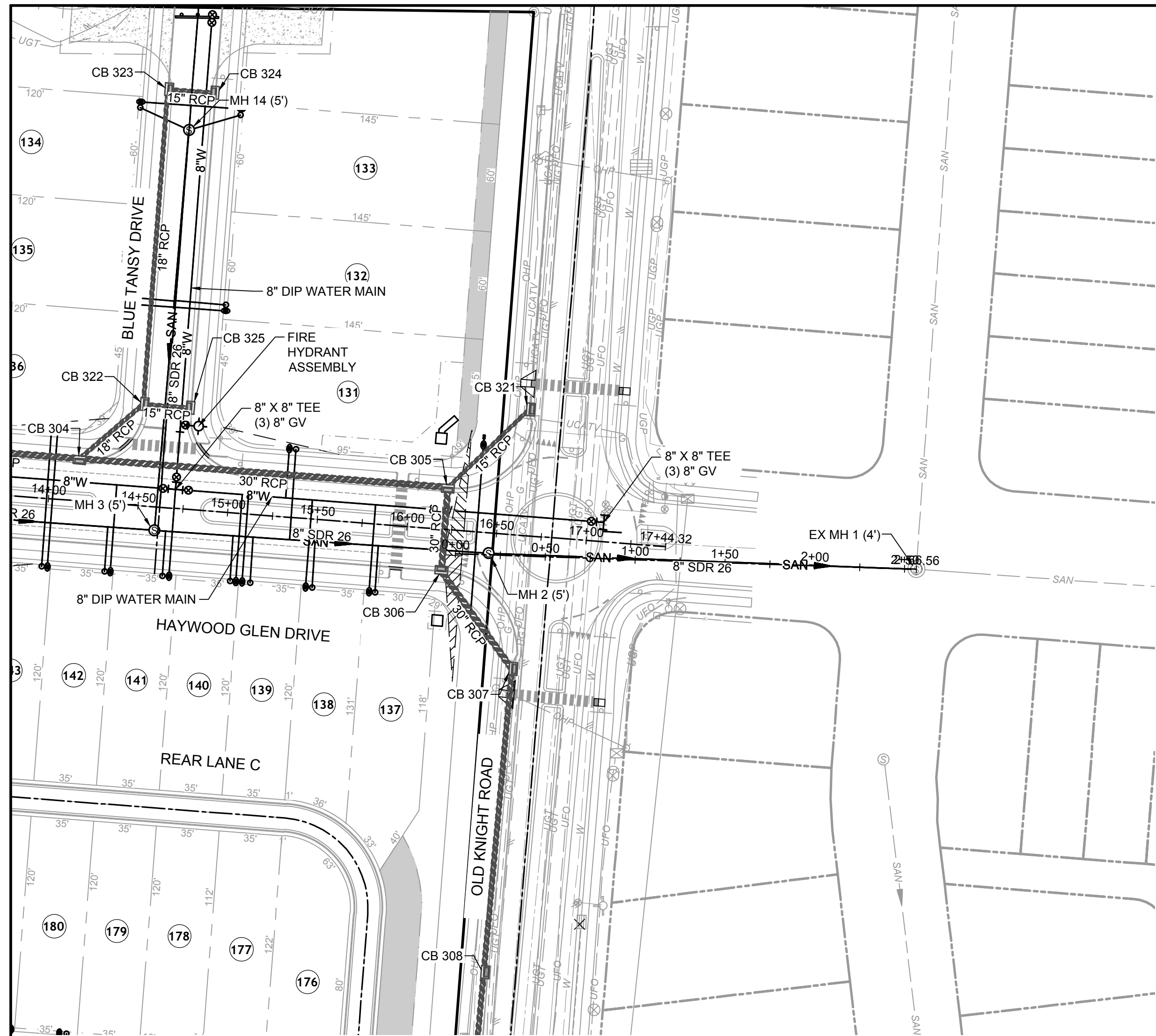
HAYWOOD GLEN PHASE 3
OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA
ALLEY A PLAN & PROFILE

JOB NO. 43202
SHEET NO. C5.10



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CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

Raleigh Water Review Officer _____

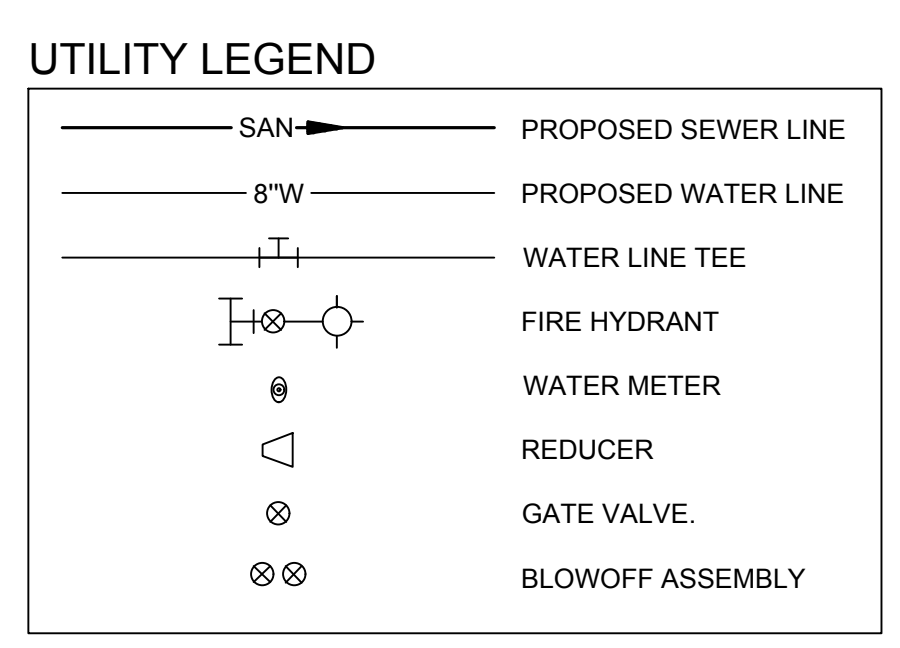
Water and Sewer Permits (if applicable)

The City of Raleigh consents to the connection and extension of the City's Public Sewer System as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. City of Raleigh Public Utilities Department Permit # S-4902

The City of Raleigh consents to the connection and extension of the City's Public Water System as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. City of Raleigh Public Utilities Department Permit # W-3836

The City of Raleigh consents to the connection to its public sewer system and extension of the private sewer collection system as shown on this plan. The material and construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh Public Utilities Department Permit # _____



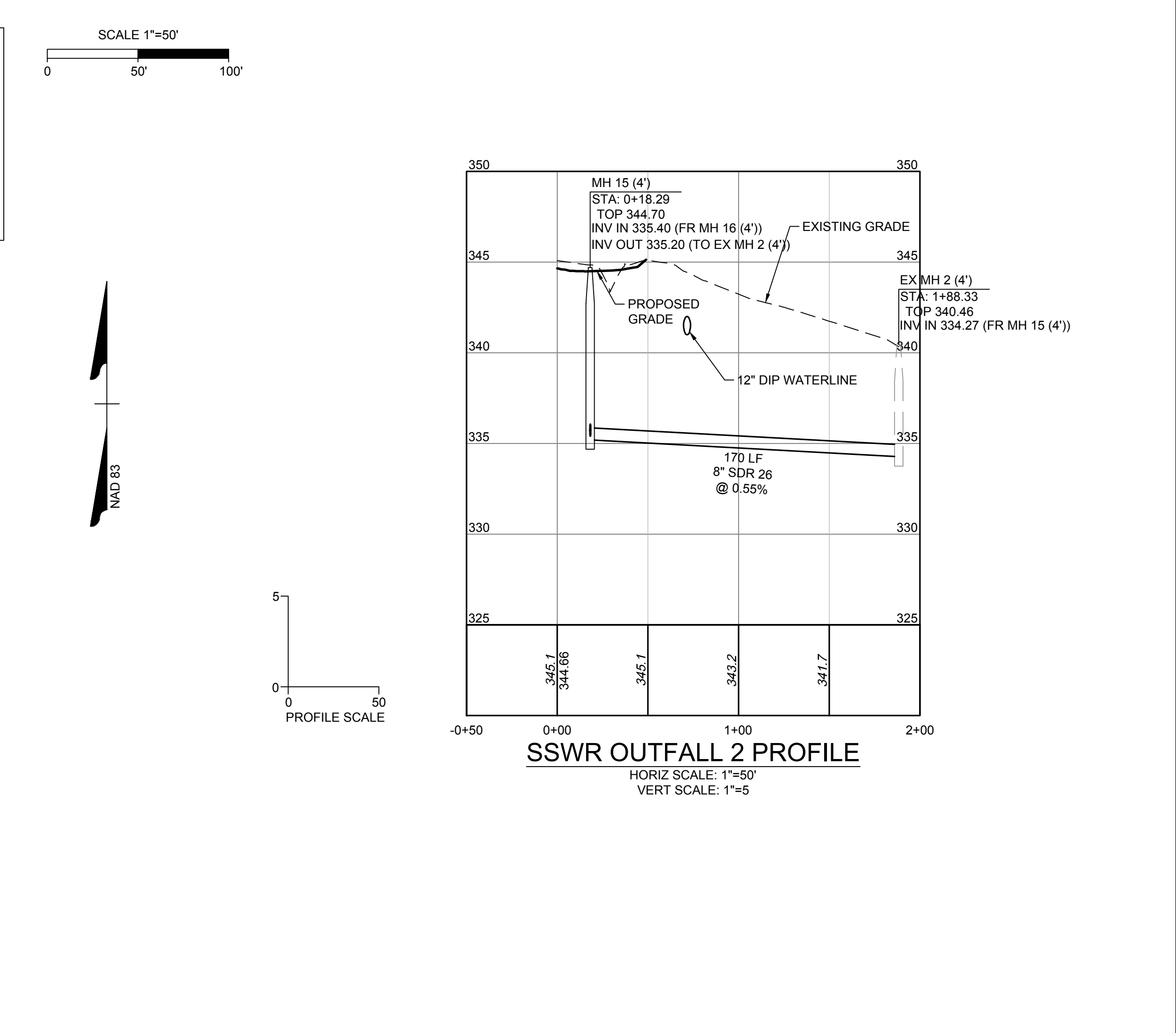
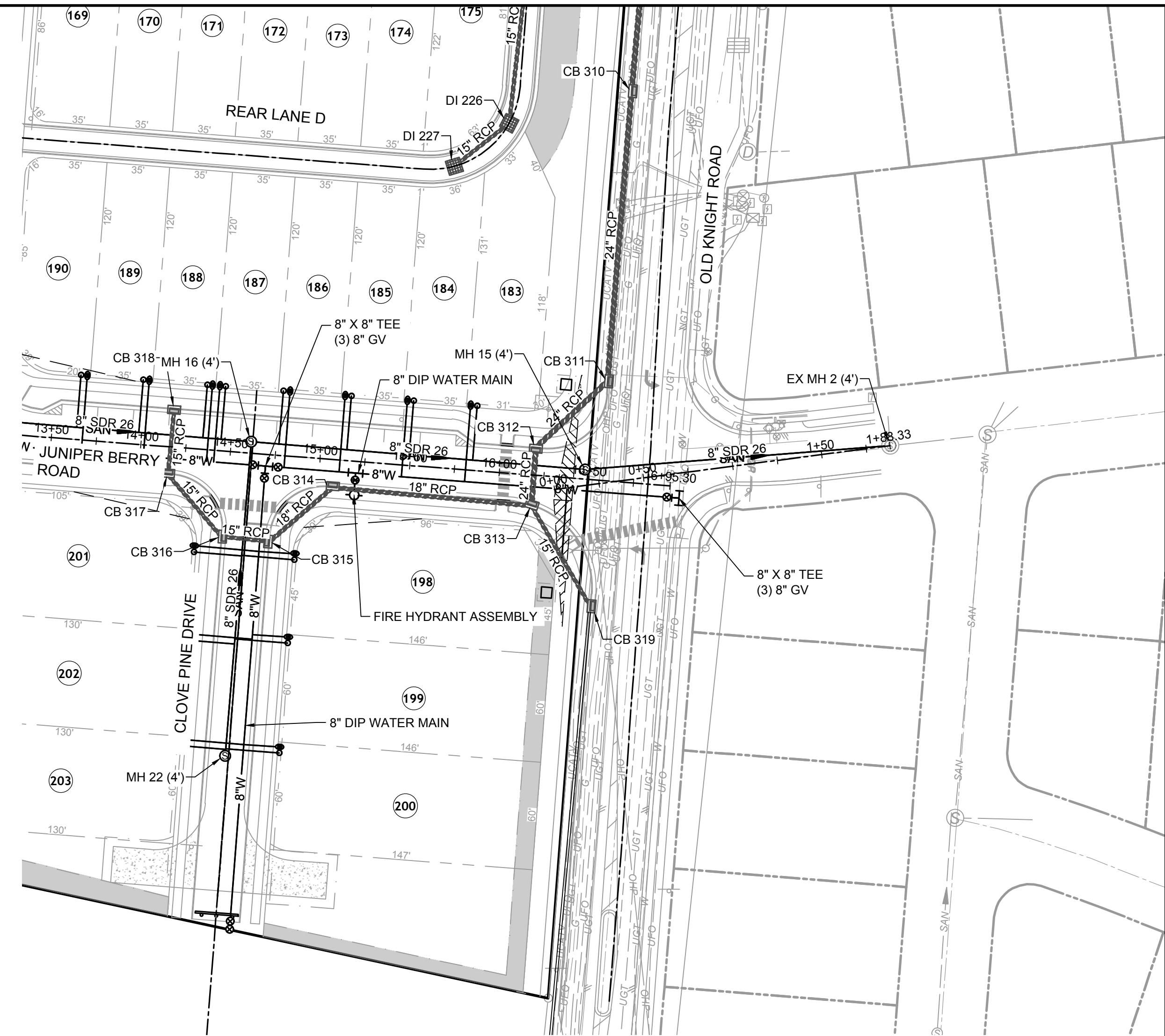
TOWN CERTIFICATION

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BY: _____ DATE: _____
 DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
 ADMINISTRATOR



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DATE: 01/27/2022
 DRAWN BY: JD.MACMILLAN
 DESIGNED BY: E.ANGE
 CHECKED BY: M.ZACCARDO
 SCALE: H: 1" = 50', V: 1" = 5'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

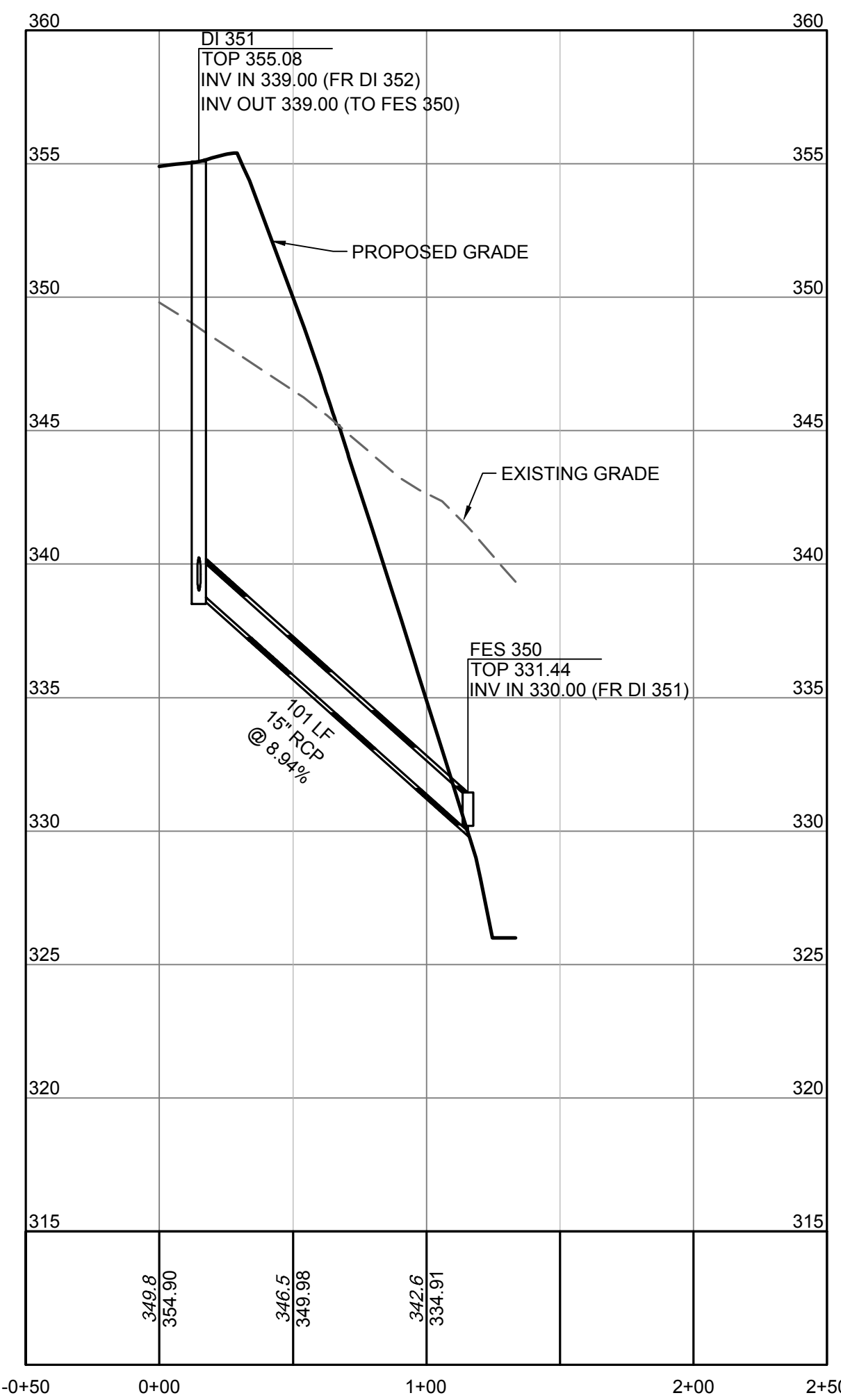
HAYWOOD GLEN PHASE 3
 OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA

SANITARY SEWER OUTFALL

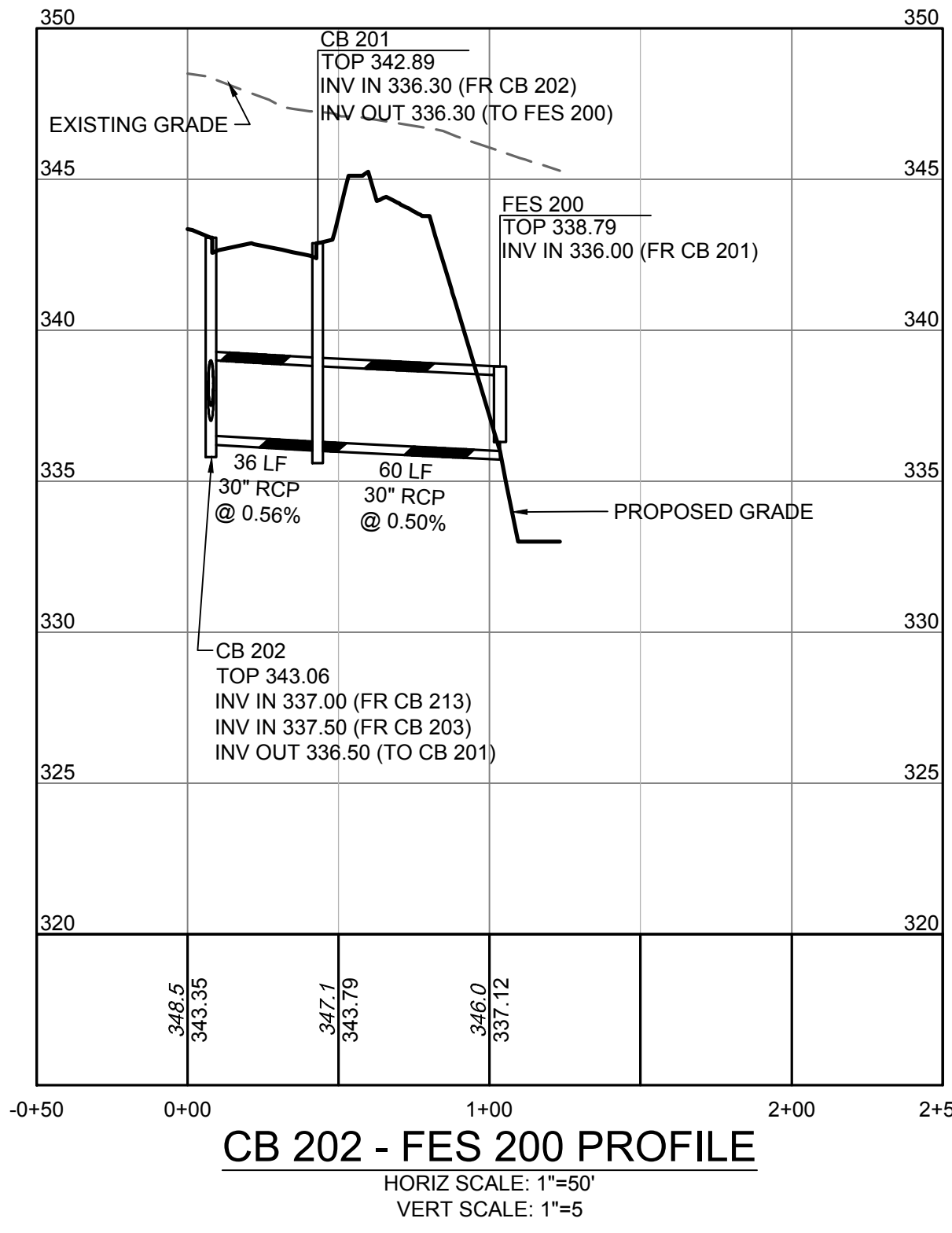
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 SHEET NO. C5.11

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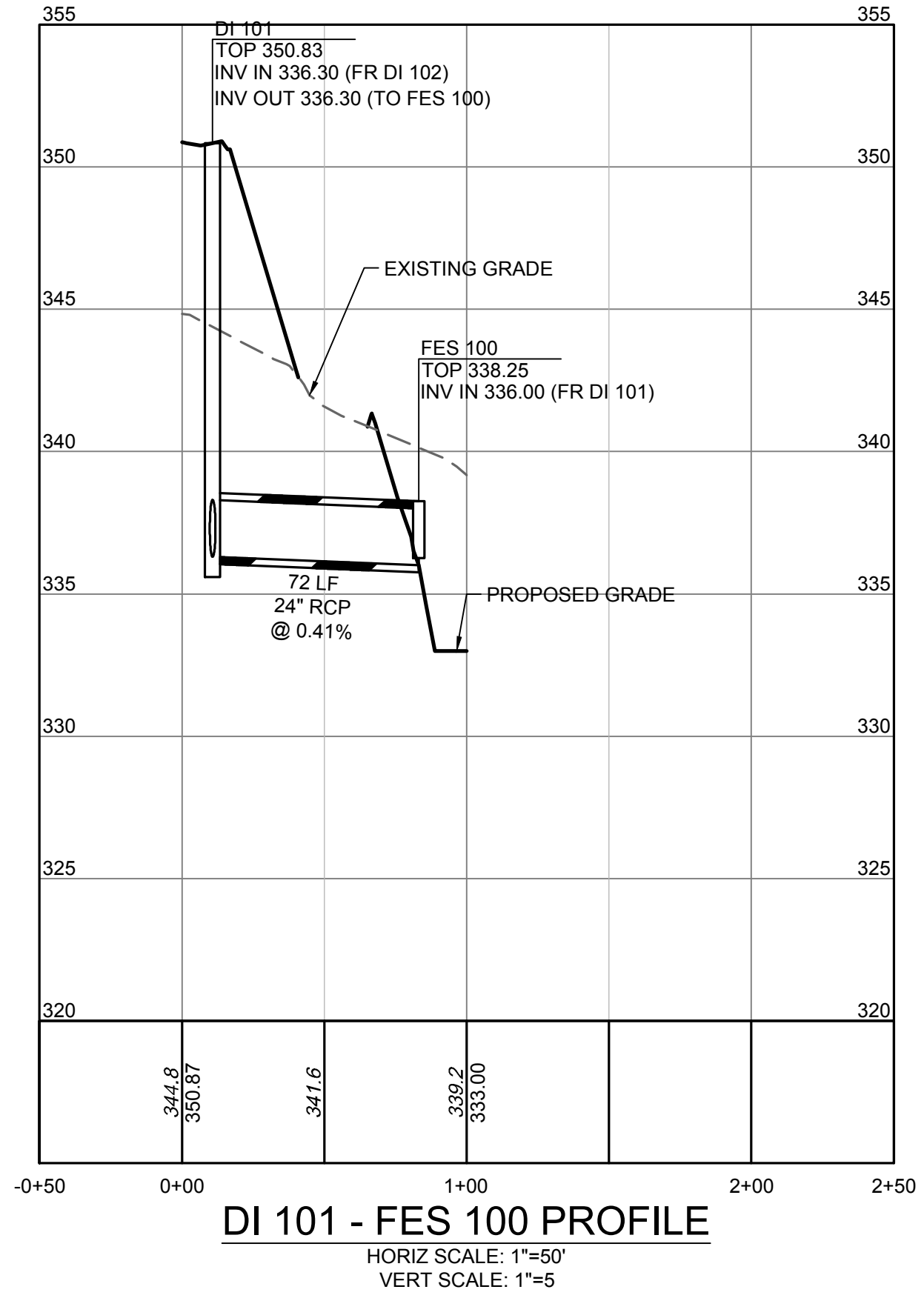
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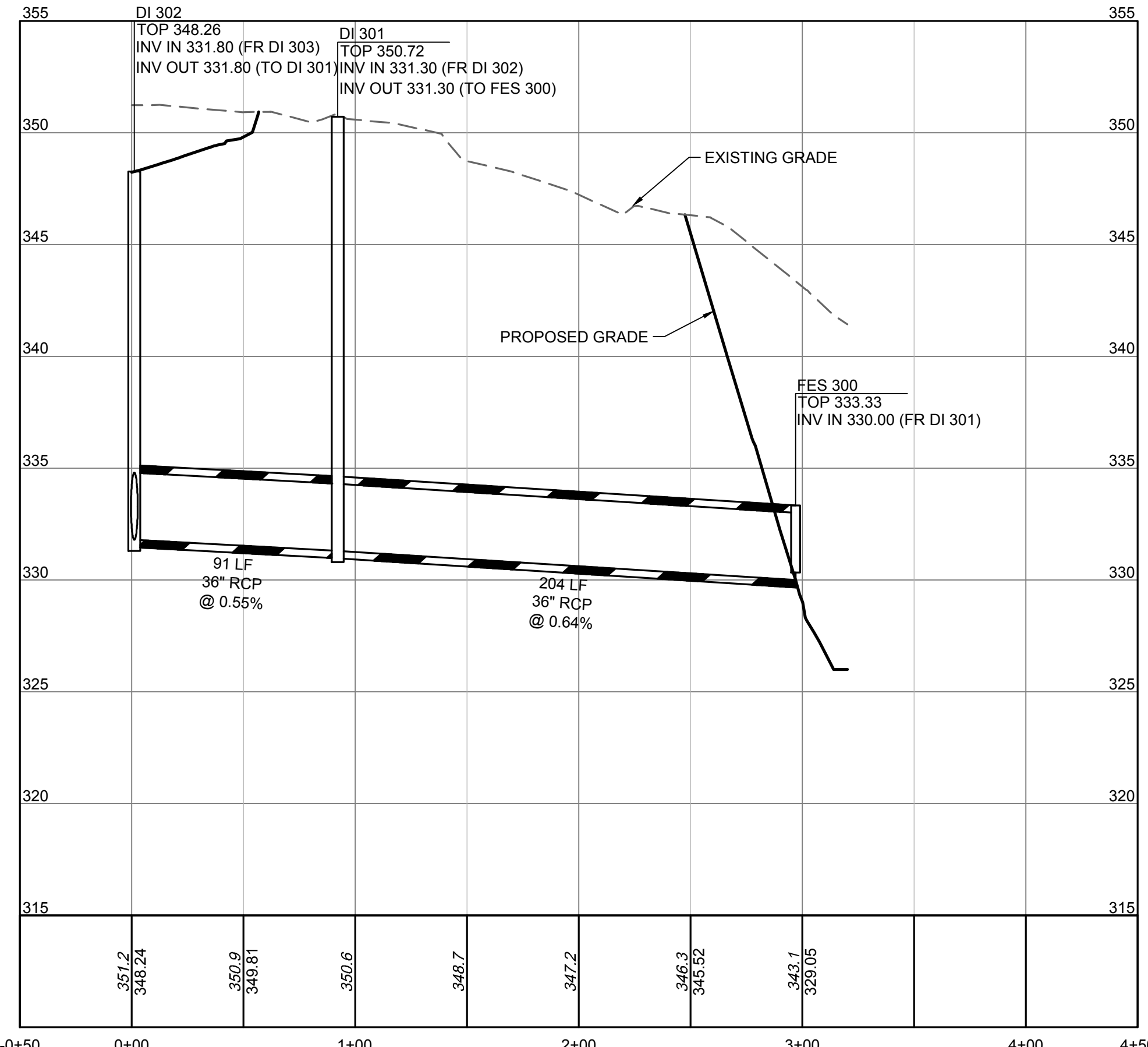
DI 351 - FES 350 PROFILE
 HORIZ SCALE: 1"=50'
 VERT SCALE: 1"=5'



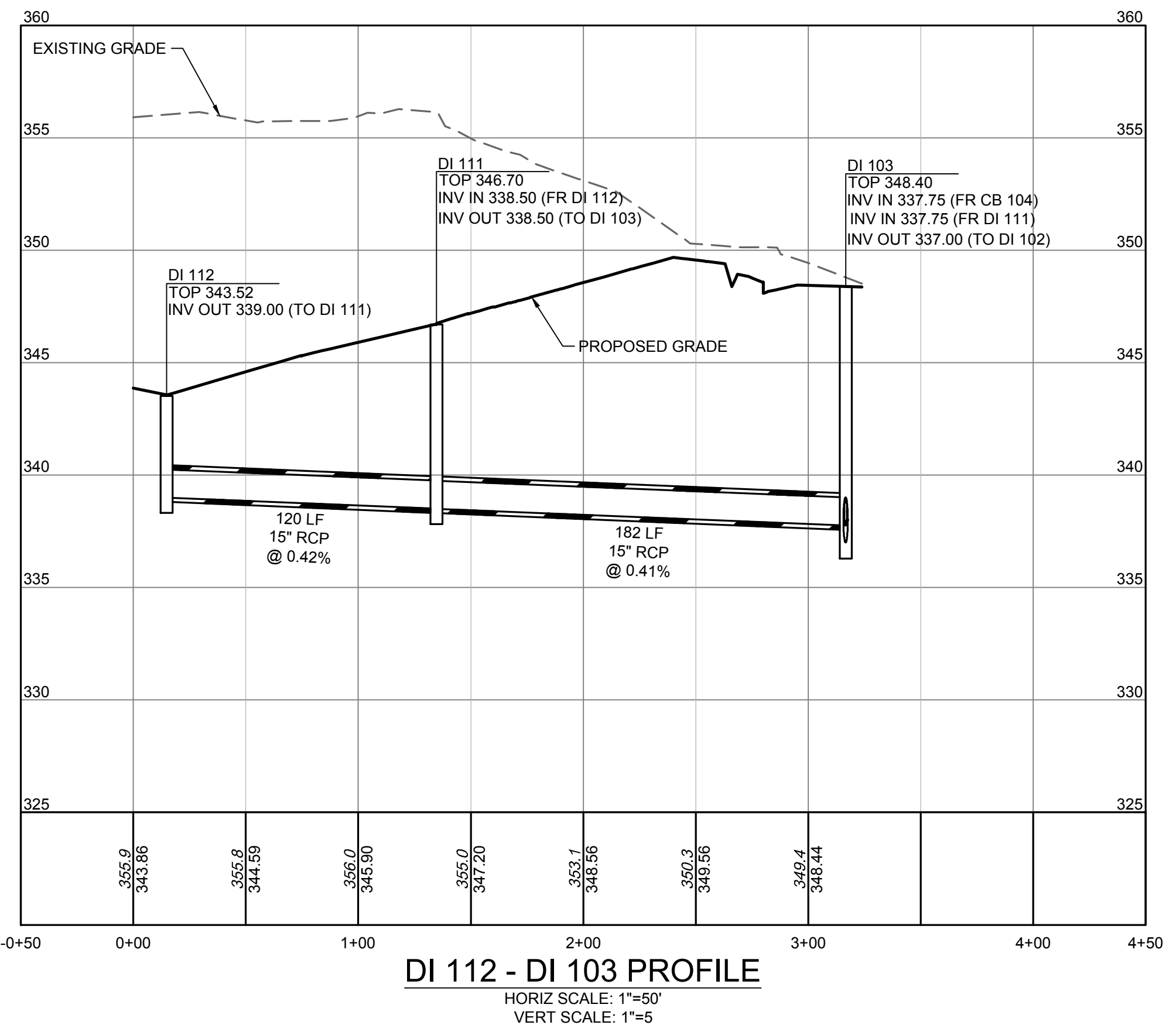
CB 202 - FES 200 PROFILE
 HORIZ SCALE: 1"=50'
 VERT SCALE: 1"=5'



DI 101 - FES 100 PROFILE
 HORIZ SCALE: 1"=50'
 VERT SCALE: 1"=5'



DI 302 - FES 300 PROFILE
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 VERT SCALE: 1"=5'



DI 112 - DI 103 PROFILE
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 VERT SCALE: 1"=5'

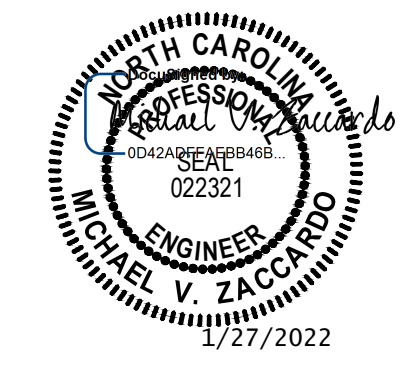
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BY: _____ DATE: _____
 DEVELOPMENT SERVICES ENGINEER

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BY: _____ DATE: _____
 ADMINISTRATOR



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 DESIGNED BY:
 CHECKED BY:

SCALE
 H: 1"=50'
 V: 1"=5'

TIMMONS GROUP
 NORTH CAROLINA LICENSE NO. C-1652
HAYWOOD GLEN PHASE 3
 OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA

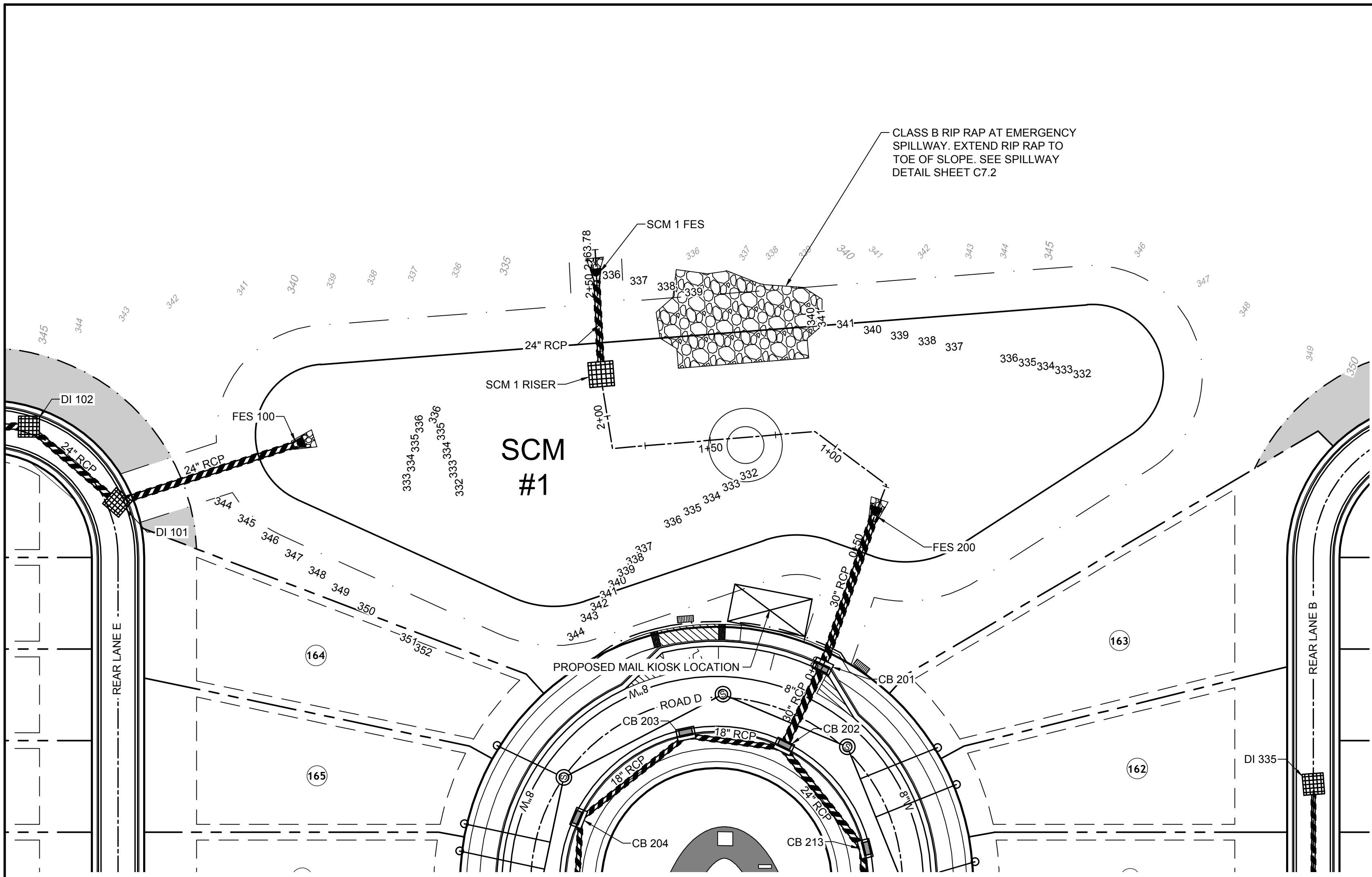
STORM SEWER OUTFALL

JOB NO.
43202

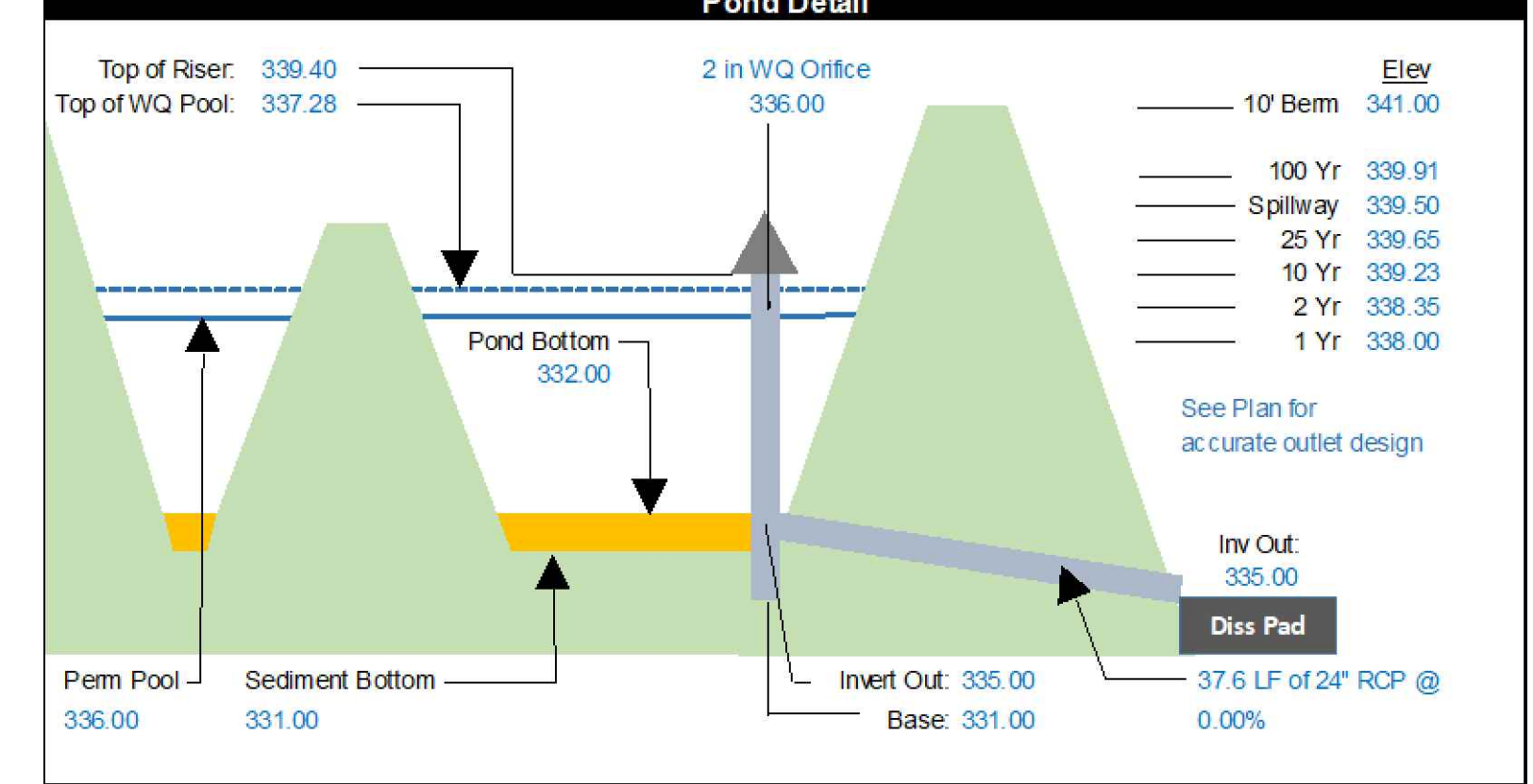
SHEET NO.
C5.12

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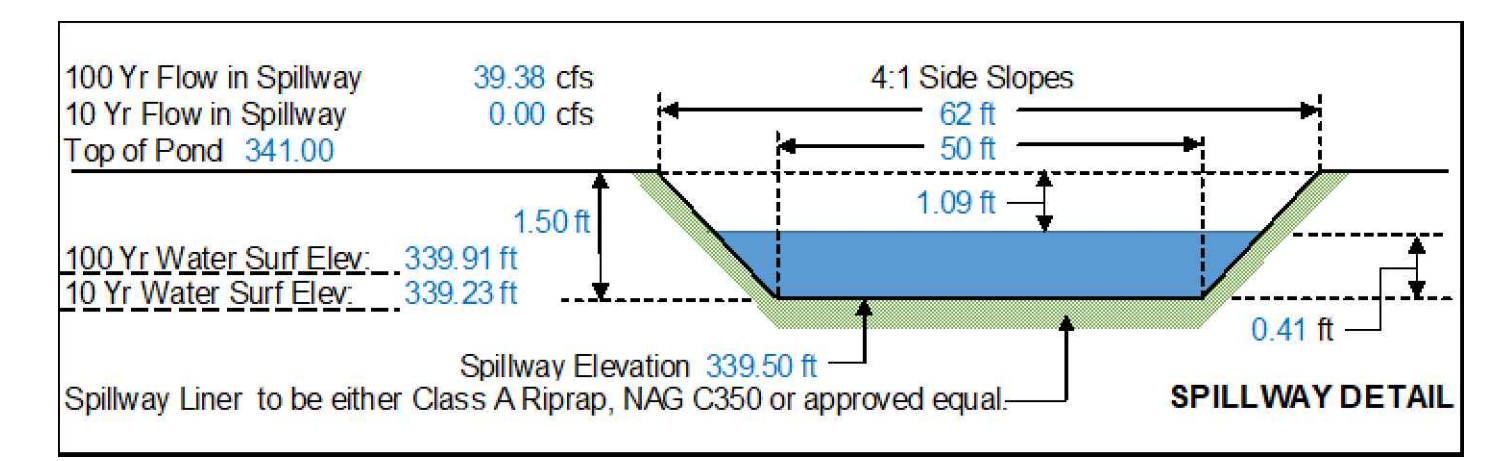
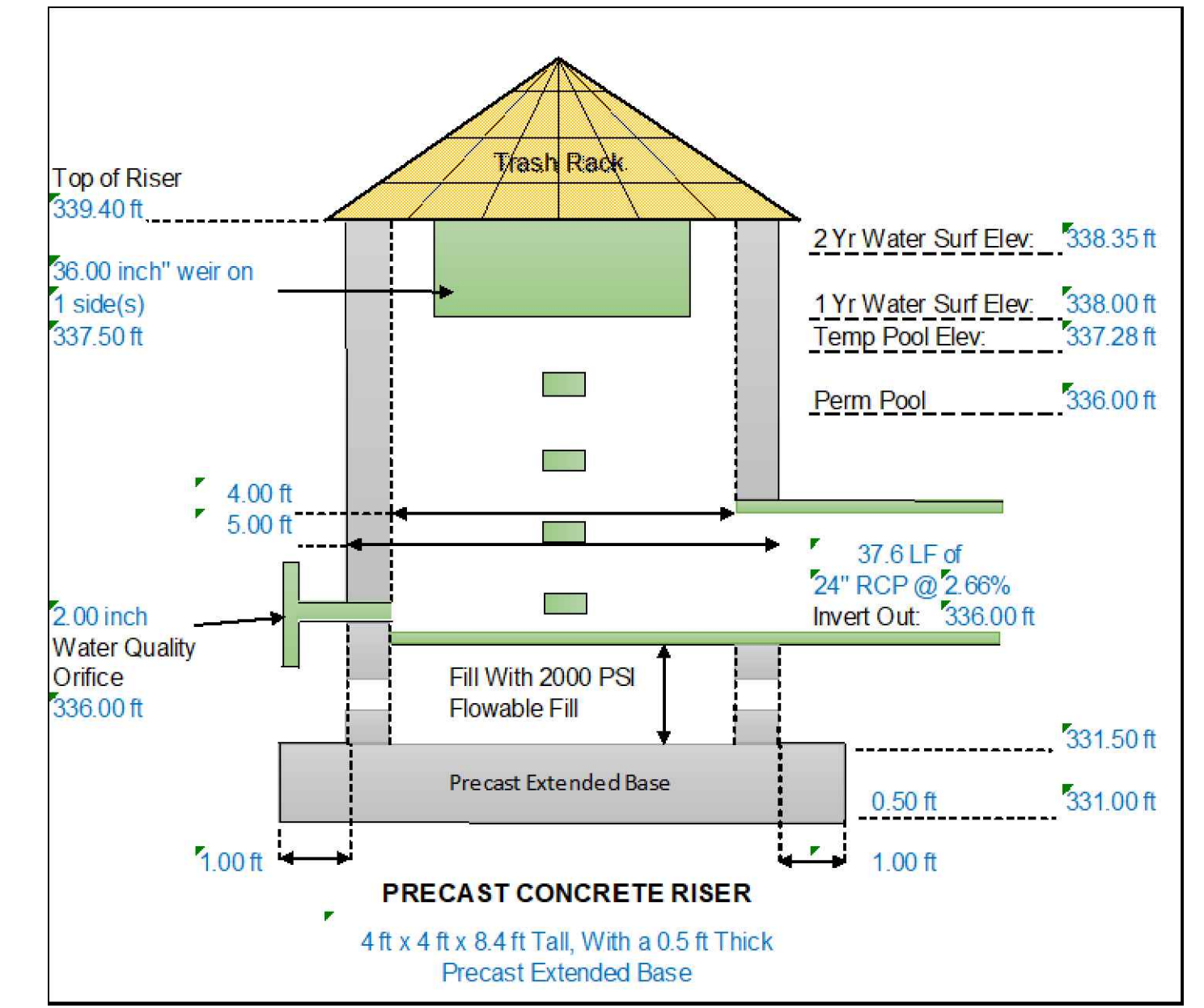
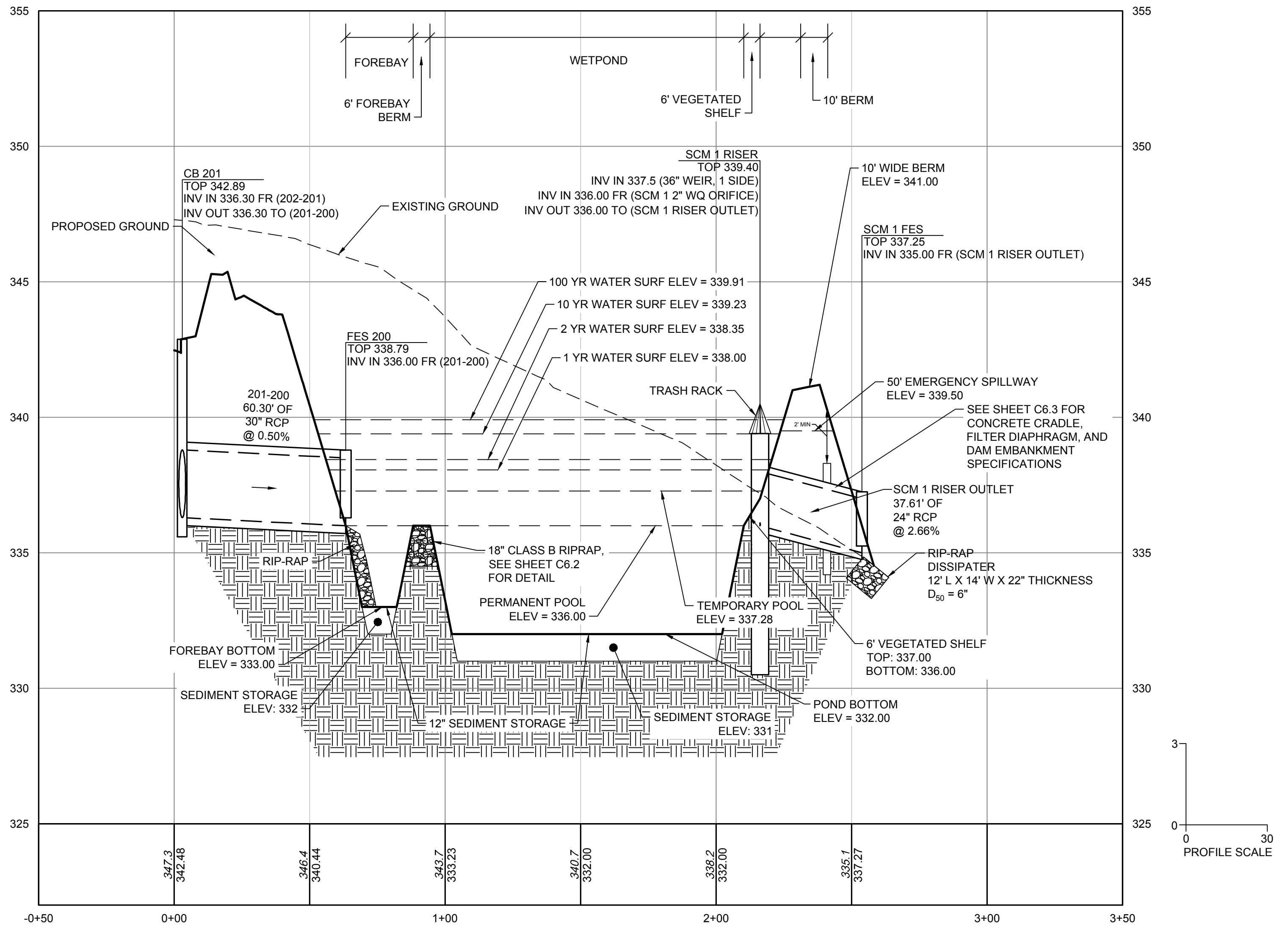
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Pond / Riser Data & Elevations		
Pond Type	Wet Pond	
TSS Removal	85%	
Top of Pond / Berm	341.00 ft	
Secondary Spillway Width	50.00 ft	
Bottom of Secondary Spillway	339.50 ft	
Top of Riser	339.40 ft (at least 1' Above TPE)	
Riser Type / Size	4x4 ft	
Top of Water Quality / Temp Pool Elev	337.28 ft (1" Runoff)	
Top of Veg. Shelf	337.00 ft	
Permanent Pool Elevation (Normal Pool)	336.00 ft	
Water Quality Orifice Elevation & Size	336.00 ft 2.00 in	
Secondary Orifice Elevation & Size (Rise & Span)	NA ft	0.00 inch Rise, 0.00 inch Span
Weir Elevation, Size, and # of Sides	337.50 ft	36.00 inch Rise, 1 side(s) Span
Bottom of Veg. Shelf	336.00 ft	
Top of Sediment Storage / Pond Bottom	332.00 ft	
Bottom of Sediment Storage	331.00 ft (Min 1 ft)	
Invert Out of Riser	335.00 ft	
Outlet Pipe Size	24.00 in Diameter RCP	
Outlet Pipe Length & Slope	37.60 ft 0.00 %	
Downstream Outlet Elevation	335.00 ft	
1 Yr Water Surface Elev / Peak Flow (CFS)	338.00 ft 3.66 CFS	
2 Yr Water Surface Elev Peak Flow (CFS)	338.35 ft 7.91 CFS	
10 Yr Water Surface Elev Peak Flow (CFS)	339.23 ft 18.44 CFS	
25 Yr Water Surface Elev Peak Flow (CFS)	339.65 ft 30.53 CFS	
100 Yr Water Surface Elev Peak Flow (CFS)	339.91 ft 57.64 CFS	



Anti-Bouyancy Calculations for the Riser Structure		
Riser Dimensions	Weight of Structure	Displaced Volume
Outside Width 5.00 ft	Walls = 11,340 LBS	V = LxWx(H) = C.F.
Inside Width 4.00 ft	Base = 3,675 LBS	
Outside Length 5.00 ft	FILL = 10,800 lbs	Displaced Water =
Inside Length 4.00 ft		C.F. * 62.4 PCF = LBS
Height 8.40 ft	Outlet Pipe = 236 LBS	
Base Thick' (ft) 0.50 ft	WQ Orifice = 2 LBS	Add 15% Factor of Safety
Wall Thick' (ft) 0.50 ft		
Ext Base (ft) 1.00 ft	Weir #1 = 0 LBS	V = 210 C.F.
Areas removed from Riser	Weir #2 = 0 LBS	Disp. Water = 13,104 LBS
Outlet Pipe 3.14 ft	Weir #3 = 0 LBS	15% F.S. = 1,966 LBS
WQ Orifice 0.02 ft	Weir #4 = 0 LBS	
Orifice #1 0.00 ft	Other #1 = 0 LBS	Safety Factor 1.70
Orifice #2 0.00 ft		
Orifice #3 0.00 ft	Weight = 25,578 LBS	Weight = 15,070 LBS
Orifice #4 0.00 ft	Precast Concrete Riser Structure to be 4 ft x 4 ft x 8.4 ft Tall, With a 0.5 ft Thick Precast Extended Base	
Other 0.00 ft		



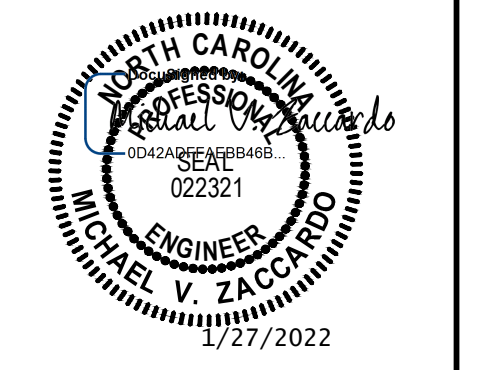
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BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR



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DATE	REVISION DESCRIPTION
01/27/2022	YOUR VISION ACHIEVED THROUGH OURS.

DRAWN BY
JD.MACMILLAN

DESIGNED BY
E.ANGE

CHECKED BY
M.ZACCARDO

SCALE
1" = 30'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

HAYWOOD GLEN PHASE 3
OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA

SCM 1 PLAN & PROFILE

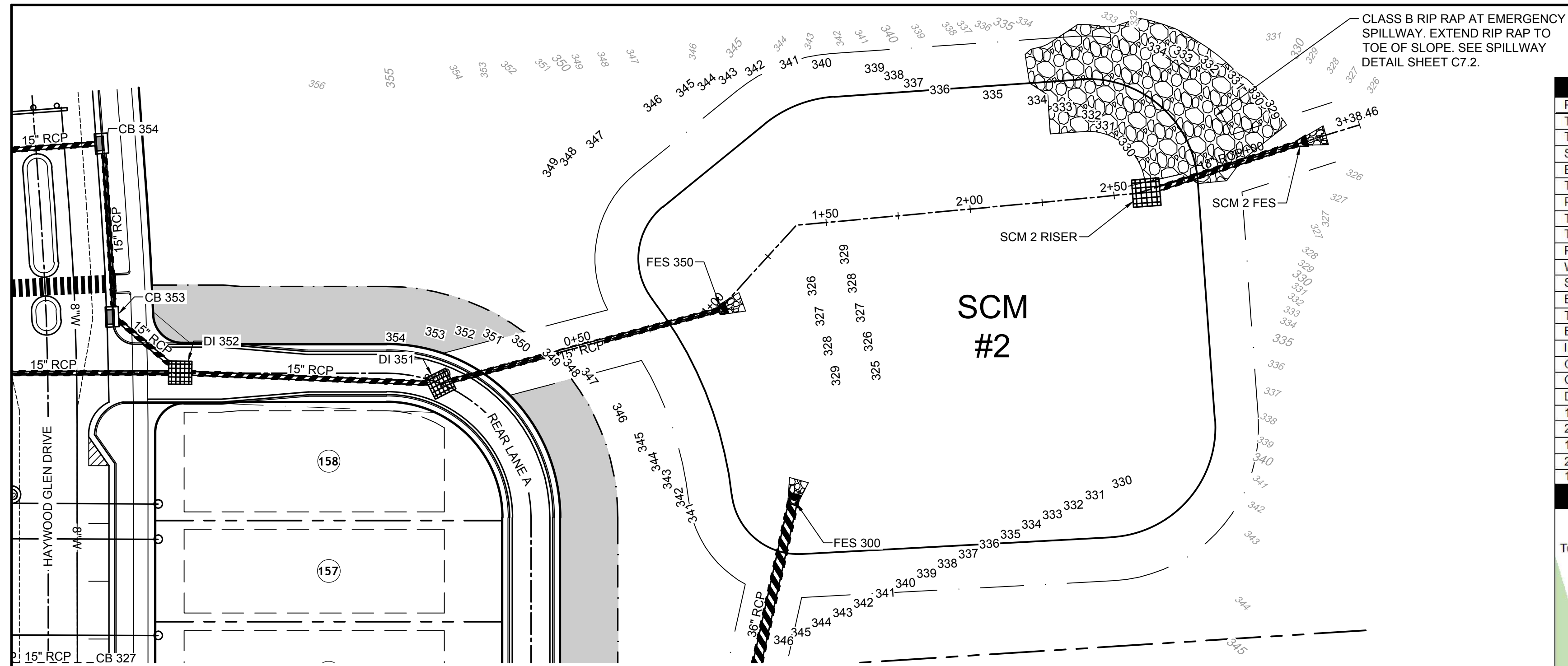
JOB NO.
43202

SHEET NO.
C6.1

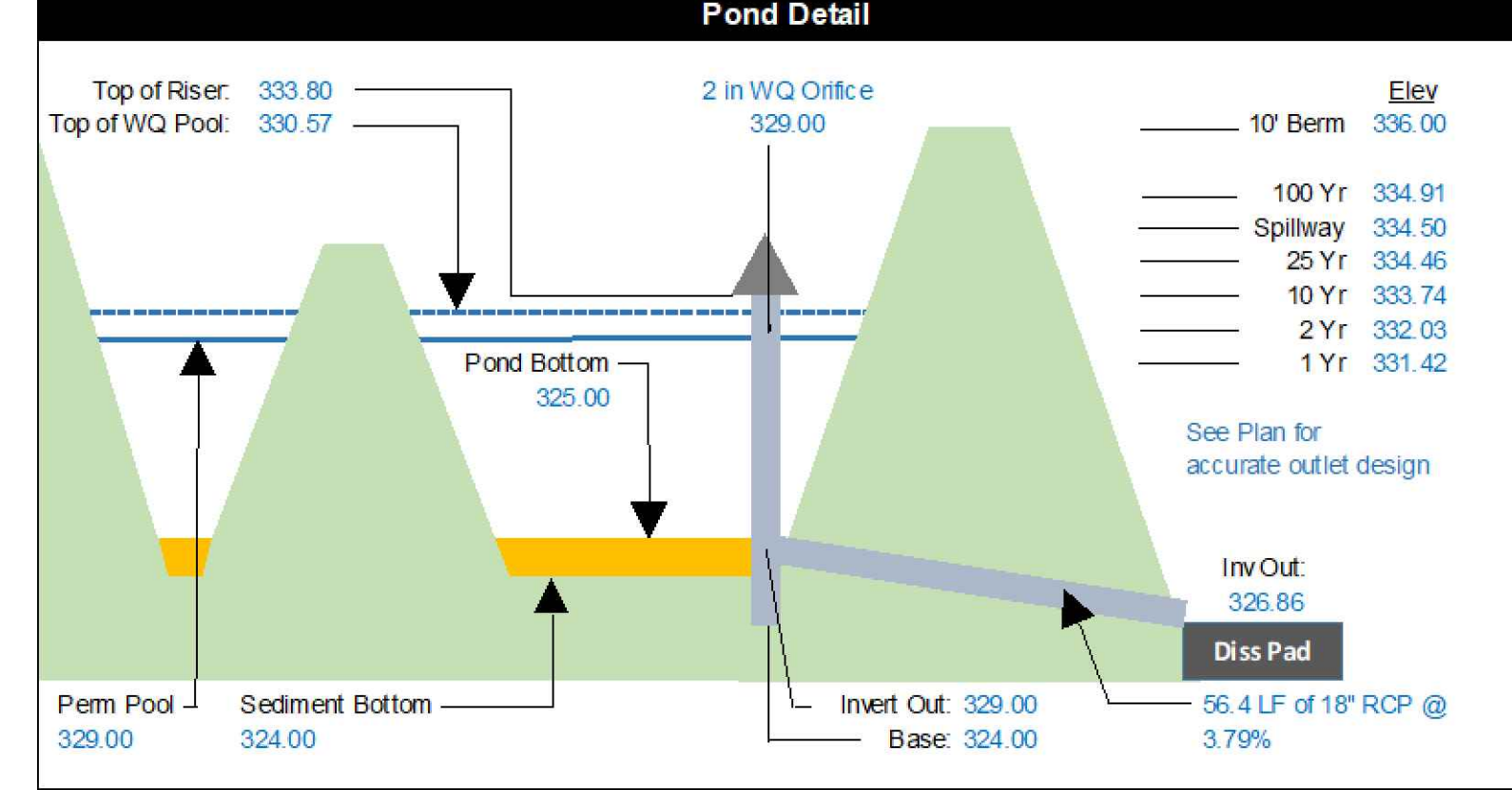
NOTE: CONTRACTOR SHALL PROVIDE AS-BUILT TOPOGRAPHIC SURVEY PERFORMED BY A PROFESSIONAL LAND SURVEYOR CERTIFYING STORMWATER POND AREA DIMENSIONS, ELEVATIONS, OUTLET STRUCTURE INVERTS, ORIFICE DIAMETER, PIPE SIZES AND CLEANOUT LOCATIONS. TOPOGRAPHY SHALL EXTEND 20 FEET OUTSIDE LIMITS OF POND.

NOTE: THESE PLANS AND ASSOCIATED DOCUMENTS ARE THE EXCLUSIVE PROPERTY OF TIMMONS GROUP AND MAY NOT BE REPRODUCED IN WHOLE OR IN PART AND SHALL NOT BE USED FOR ANY PURPOSE WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION, BIDDING, AND/OR CONSTRUCTION STAKING WITHOUT THE EXPRESS WRITTEN CONSENT OF TIMMONS GROUP.

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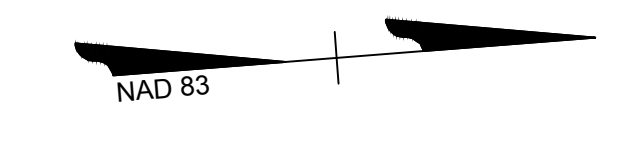
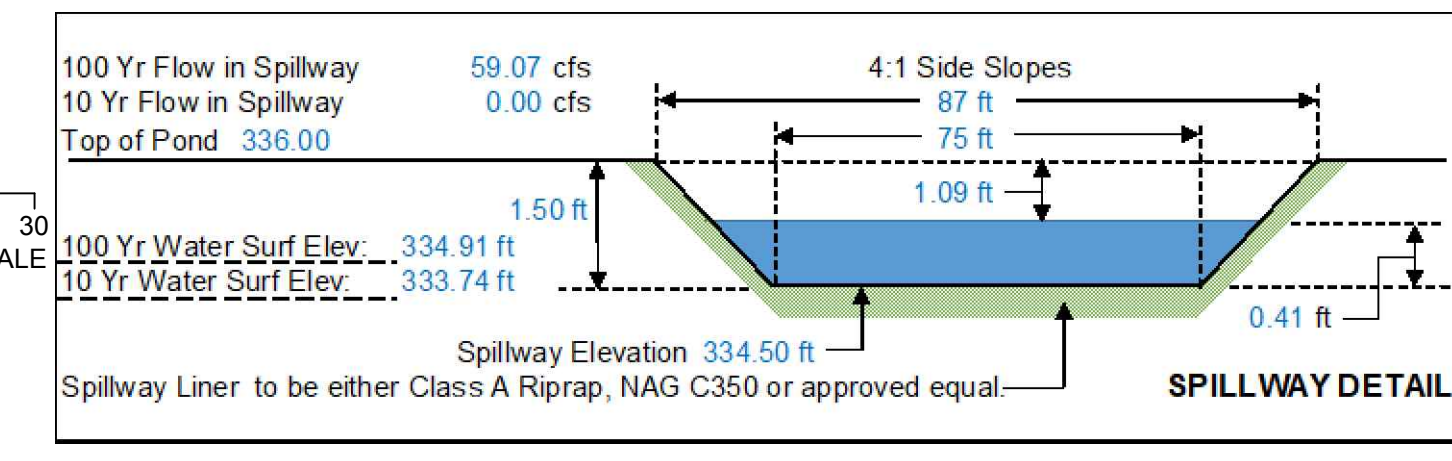
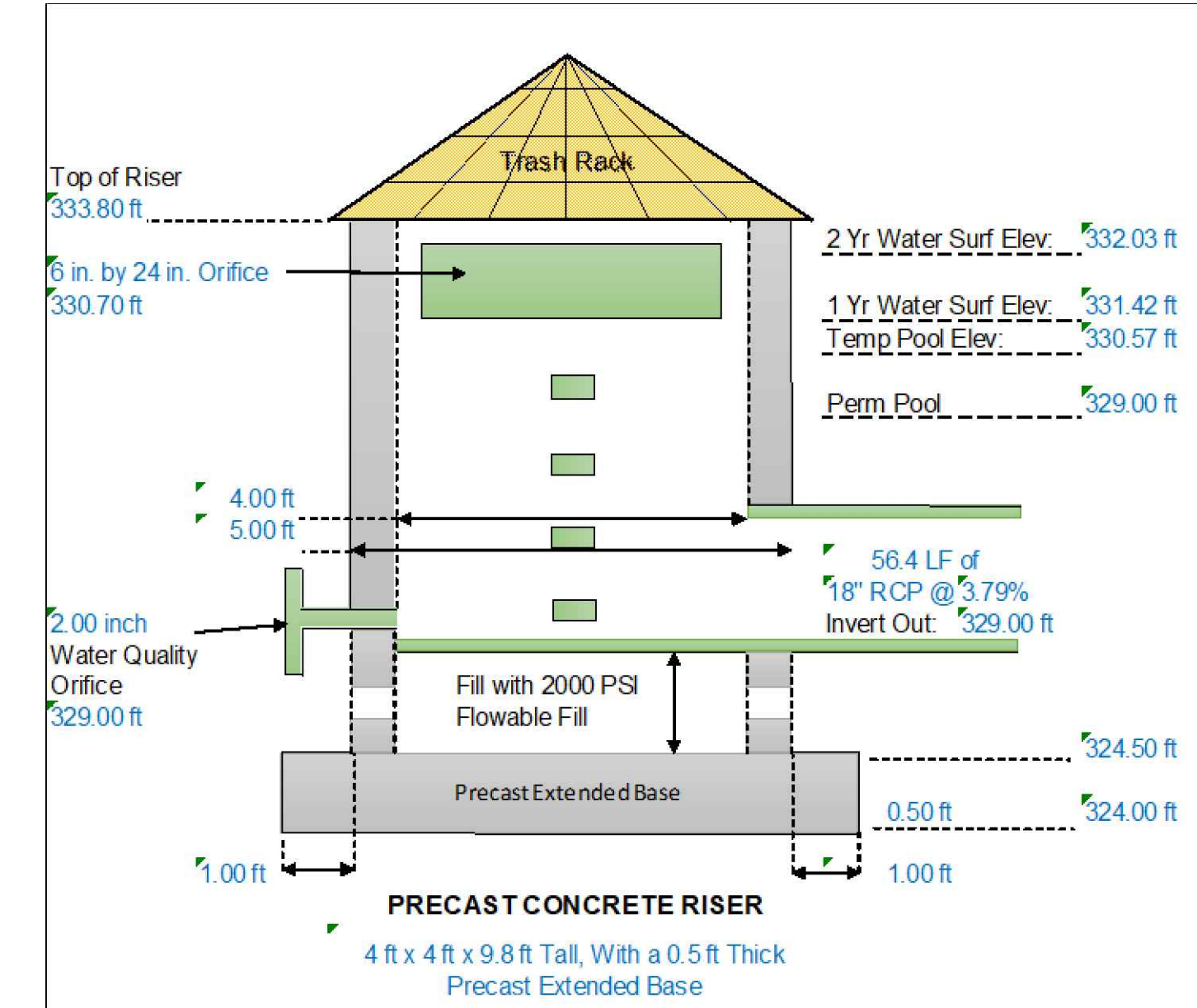
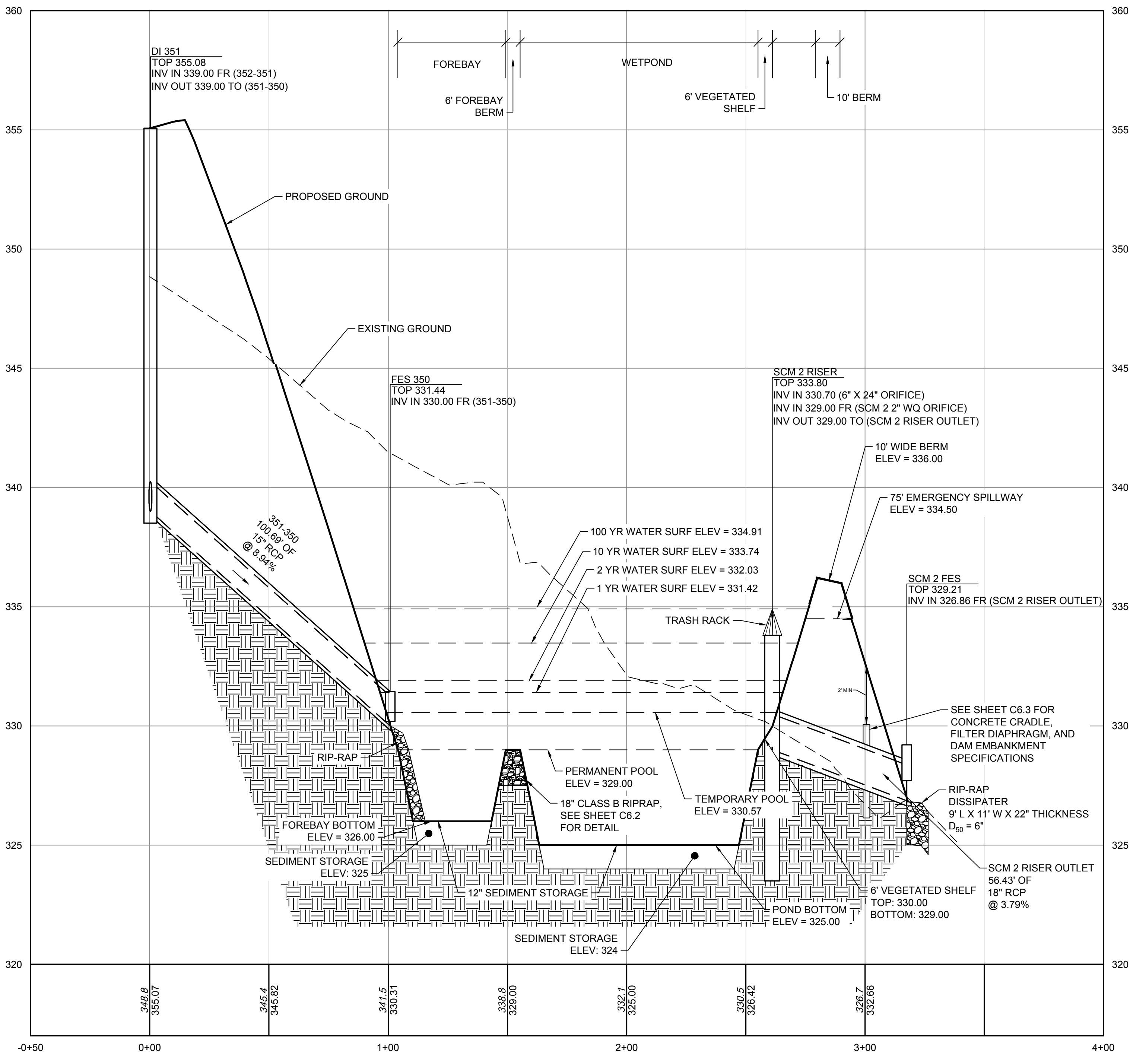


Pond / Riser Data & Elevations	
Pond Type	Wet Pond
TSS Removal	85%
Top of Pond / Berm	336.00 ft
Secondary Spillway Width	75.00 ft
Bottom of Secondary Spillway	334.50 ft
Top of Riser	333.80 ft (at least 1' Above TPE)
Riser Type / Size	4x4 ft
Top of Water Quality / Temp Pool Elev	330.57 ft (1" Runoff)
Top of Veg. Shelf	329.00 ft
Permanent Pool Elevation (Normal Pool)	329.00 ft
Water Quality Orifice Elevation & Size	329.00 ft 2.00 in
Secondary Orifice Elevation & Size (Rise & Span)	330.70 ft 6.00 inch x 24.00 inch
Bottom of Veg. Shelf	329.00 ft
Top of Sediment Storage / Pond Bottom	325.00 ft
Bottom of Sediment Storage	324.00 ft (Min 1 ft)
Invert Out of Riser	329.00 ft
Outlet Pipe Size	18.00 in Diameter RCP
Outlet Pipe Length & Slope	56.40 ft 3.79 %
Downstream Outlet Elevation	326.86 ft
1 Yr Water Surface Elev / Peak Flow (CFS)	331.42 ft 3.42 CFS
2 Yr Water Surface Elev Peak Flow (CFS)	332.03 ft 5.15 CFS
10 Yr Water Surface Elev Peak Flow (CFS)	333.74 ft 8.22 CFS
25 Yr Water Surface Elev Peak Flow (CFS)	334.46 ft 18.22 CFS
100 Yr Water Surface Elev Peak Flow (CFS)	334.91 ft 70.59 CFS



Anti-Bouyancy Calculations for the Riser Structure		
Riser Dimensions	Weight of Structure	Displaced Volume
Outside Width: 5.00 ft	Walls = 13,230 LBS	V = LxWx(H) = C.F.
Inside Width: 4.00 ft	Base = 3,675 LBS	
Outside Length: 5.00 ft	FILL = 10,800 lbs	Displaced Water =
Inside Length: 4.00 ft		C.F. * 62.4 PCF = LBS
Height: 9.80 ft	Outlet Pipe = 132 LBS	
Base Thick (ft): 0.50 ft	WQ Orifice = 2 LBS	Add 15% Factor of Safety
Wall Thick (ft): 0.50 ft	Weir #1 = 75 LBS	V = 245 C.F.
Ext Base (ft): 1.00 ft	Weir #2 = 0 LBS	Disp. Water = 15,288 LBS
Areas removed from Riser	Weir #3 = 0 LBS	15% F.S. = 2,293 LBS
Outlet Pipe: 1.77 ft	Weir #4 = 0 LBS	
WQ Orifice: 0.02 ft	Other #1 = 0 LBS	Safety Factor: 1.56
Orifice #1: 1.00 ft		
Orifice #2: 0.00 ft		
Orifice #3: 0.00 ft	Weight = 27,496 LBS	Weight = 17,581 LBS
Orifice #4: 0.00 ft		
Other: 0.00 ft		

Precast Concrete Riser Structure to be 4 ft x 4 ft x 9.8 ft Tall, With a 0.5 ft Thick Precast Extended Base



AS-BUILT SURVEY REQUIREMENTS

NOTE: CONTRACTOR SHALL PROVIDE AS-BUILT TOPOGRAPHIC SURVEY PERFORMED BY A PROFESSIONAL LAND SURVEYOR CERTIFYING STORMWATER POND AREA DIMENSIONS, ELEVATIONS, OUTLET STRUCTURE INVERTS, ORIFICE DIAMETER, PIPE SIZES AND CLEANOUT LOCATIONS. TOPOGRAPHY SHALL EXTEND 20 FEET OUTSIDE LIMITS OF POND.



TOWN CERTIFICATION

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BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR



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01/27/2022	YOUR VISION ACHIEVED THROUGH OURS.

DRAWN BY: JD.MACMILLAN
DESIGNED BY: E.ANGE
CHECKED BY: M.ZACCARDO
SCALE: 1" = 30'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

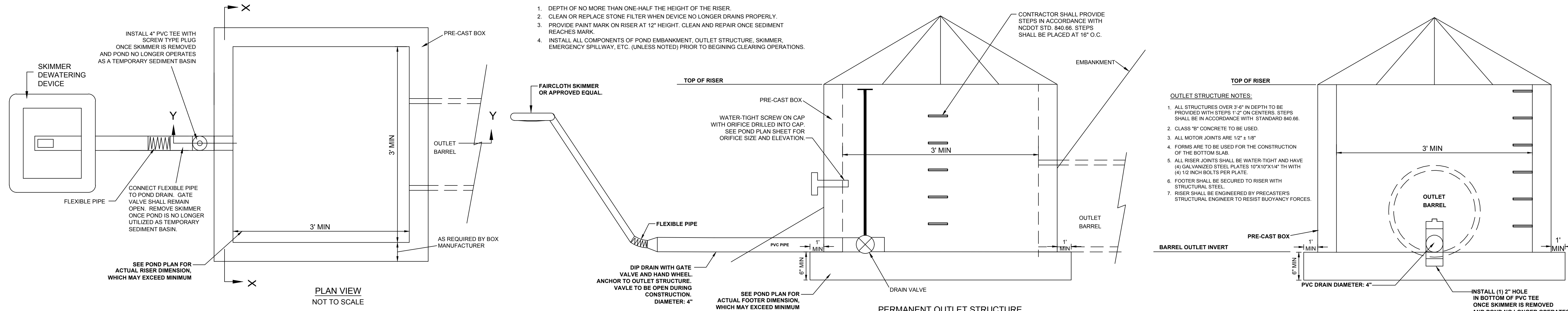
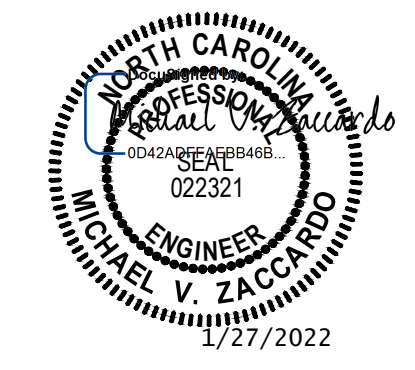
HAYWOOD GLEN PHASE 3
OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA

SCM 2 PLAN & PROFILE

JOB NO. 43202
SHEET NO. C6.2

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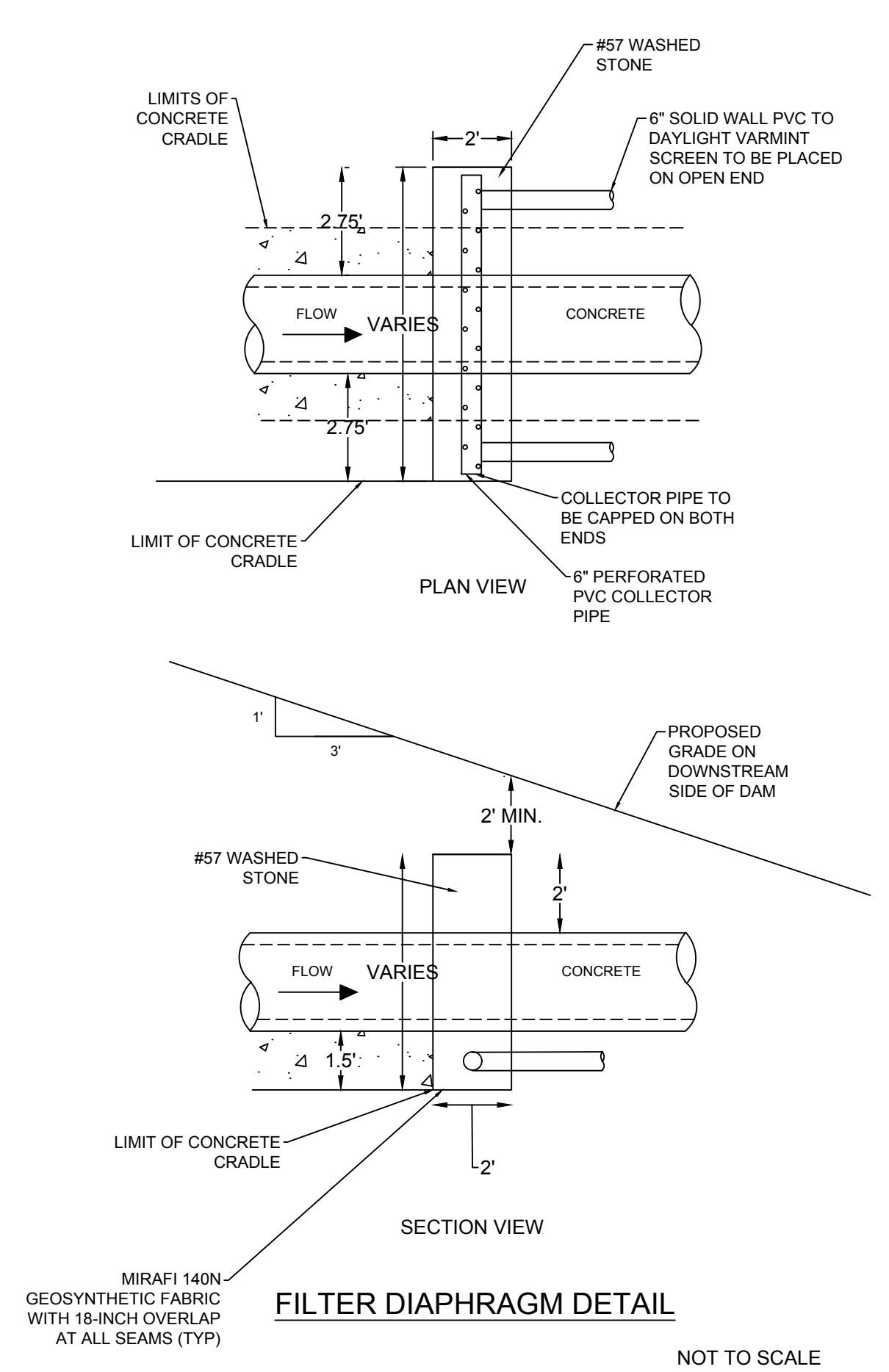
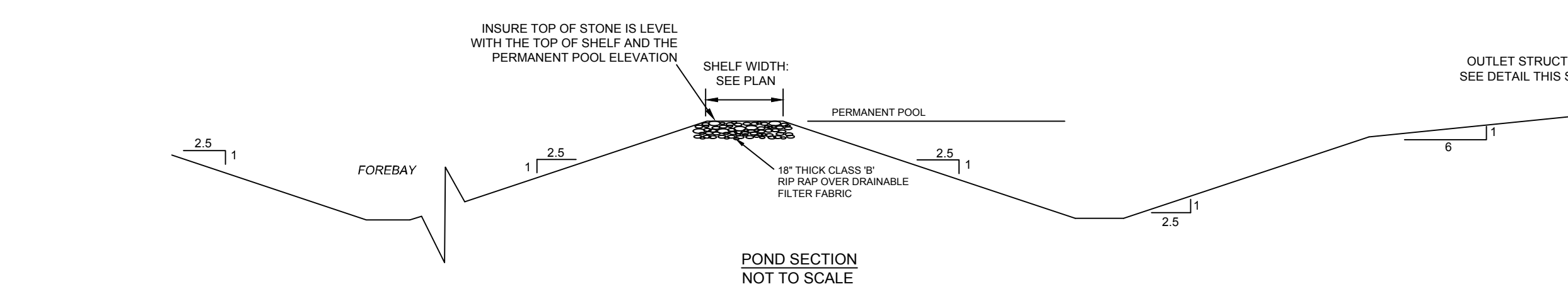
TOWN CERTIFICATION

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

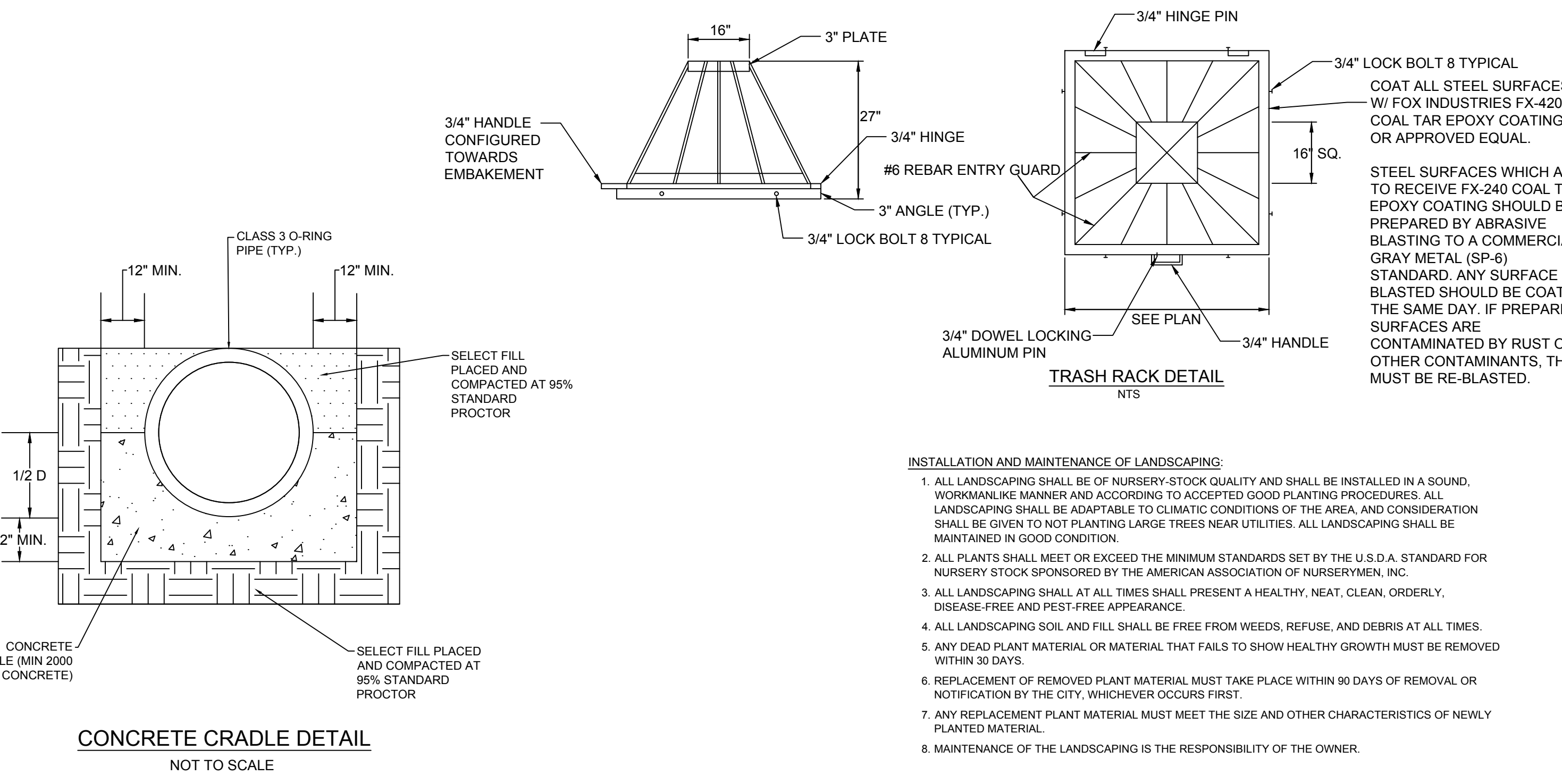
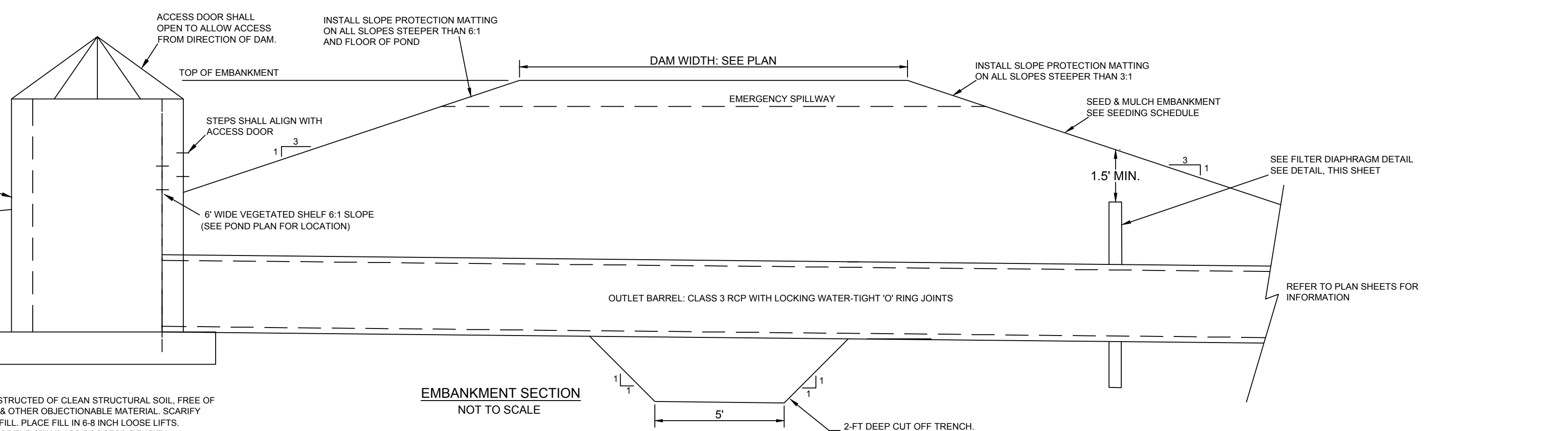


NOTES:

- EMBANKMENT SHALL BE CONSTRUCTED OF CLEAN STRUCTURAL SOIL, FREE OF ROOTS, VEGETATION, ROCKS & OTHER OBJECTIONABLE MATERIAL. SCARIFY SURFACES BEFORE PLACING FILL. PLACE FILL IN 6-8 INCH LOOSE LIFTS, COMPACTS TO AT LEAST 95% OF THE STANDARD PROCTOR DENSITY.
- CONTRACTOR TO SUPPLY SHOP DRAWINGS OF RISER STRUCTURES PRIOR TO FABRICATION.
- ALL RISERS SHALL BE PRECAST CONCRETE SOLID 6" WALL STRUCTURES.
- 4-6 INCH LAYER OF AMENDED SOIL IS RECOMMENDED IN ANY AREA WHERE PLANTINGS ARE REQUIRED (SEE NCDEN BMP DESIGN MANUAL).

DAM EMBANKMENT CONSTRUCTION NOTES:

- CONSTRUCTION OF THIS DAM SHALL BE DONE UNDER THE OBSERVATION OF A QUALIFIED GEOTECHNICAL ENGINEER WHO IS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF NORTH CAROLINA. 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.
- ALL VISIBLE ORGANIC DEBRIS SUCH AS ROOTS AND LIMBS SHALL BE REMOVED FROM THE FILL MATERIAL PRIOR TO COMPACTION 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 COMPACTION.
- 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.
- 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.
- SURFACE WATER AND STREAM FLOW SHALL BE CONTINUOUSLY CONTROLLED THROUGHOUT CONSTRUCTION AND THE PLACEMENT OF CONTROLLED FILL.
- 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.
- TREATMENT OF SEEPAGE AREAS, SUBGRADE PREPARATION, FOUNDATION DEWATERING 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.
- 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.
- EARTHWORK COMPACTION 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.
- COMPACTION BY MEANS OF DROP WEIGHTS FROM A CRANE OR HOIST SHALL NOT BE PERMITTED.
- HEAVY EQUIPMENT SHALL NOT BE ALLOWED TO PASS OVER CAST-IN-PLACE STRUCTURES (INCLUDING THE CRADLE) UNTIL ADEQUATE CURING TIME HAS ELAPSED.
- 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 SEEDED AND MULCHED OR HYDROSEEDED.
- THE EMBANKMENT MATERIAL SHALL BE COMPRISED OF CLAYEY SAND OR SANDY CLAY WITH A MINIMUM OF 30% PASSING THE #20 SIEVE, A LIQUID LIMIT OF AT LEAST 25 AND A PLASTICITY INDEX OF AT LEAST 10%, AND LESS THAN 5% ORGANICS. THIS MATERIAL SHALL ALSO HAVE A UNIFIED SOIL CLASSIFICATION OF SC OR CL.



THIS DRAWING PREPARED AT THE
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REVISION DESCRIPTION	DATE
	01/27/2022

DRAWN BY
JD.MACMILLAN

DESIGNED BY
E.ANGE

CHECKED BY
M.ZACCARDO

SCALE
N/A

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

HAYWOOD GLEN PHASE 3
OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA

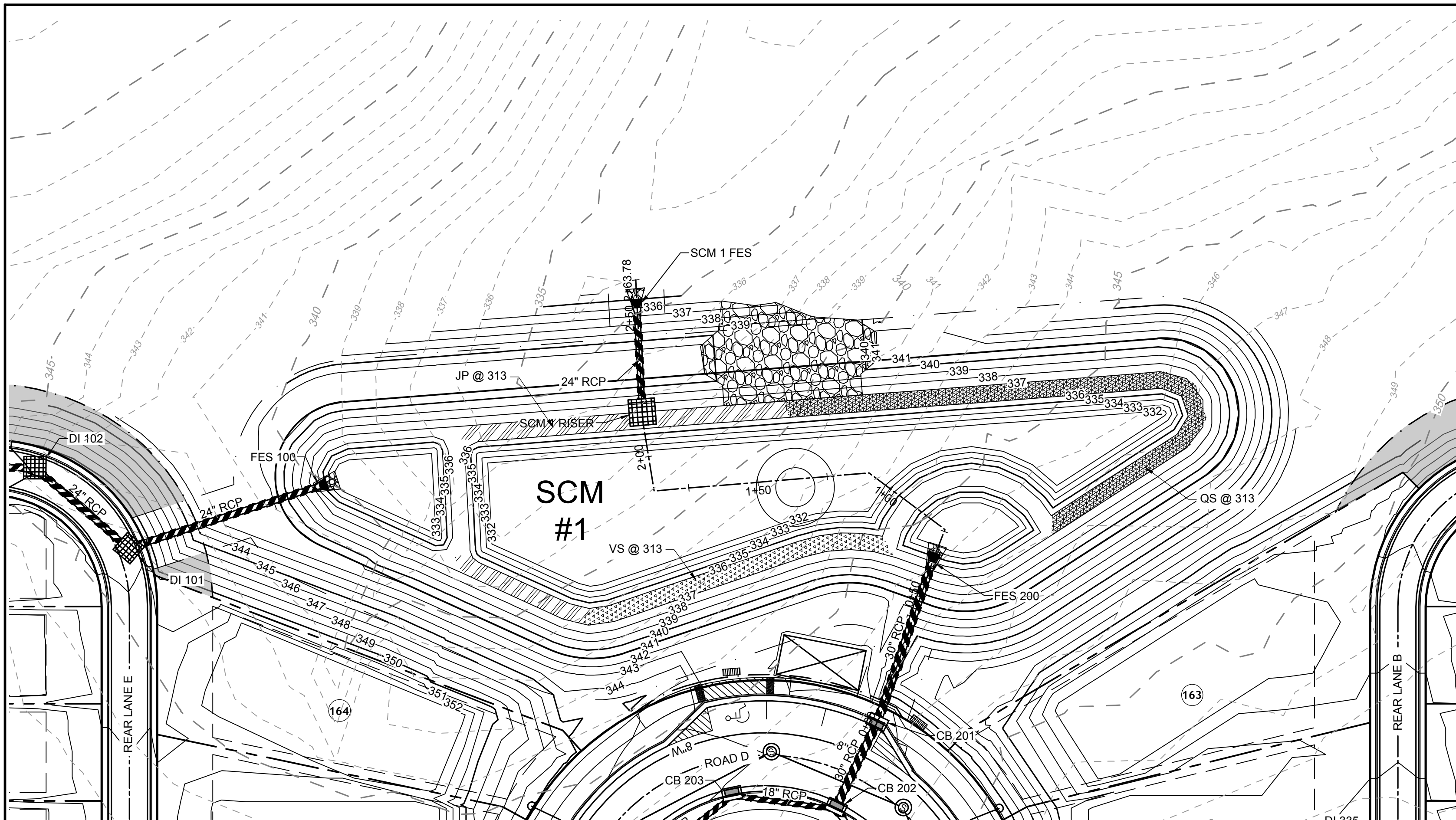
SCM NOTES & DETAILS

JOB NO.
43202

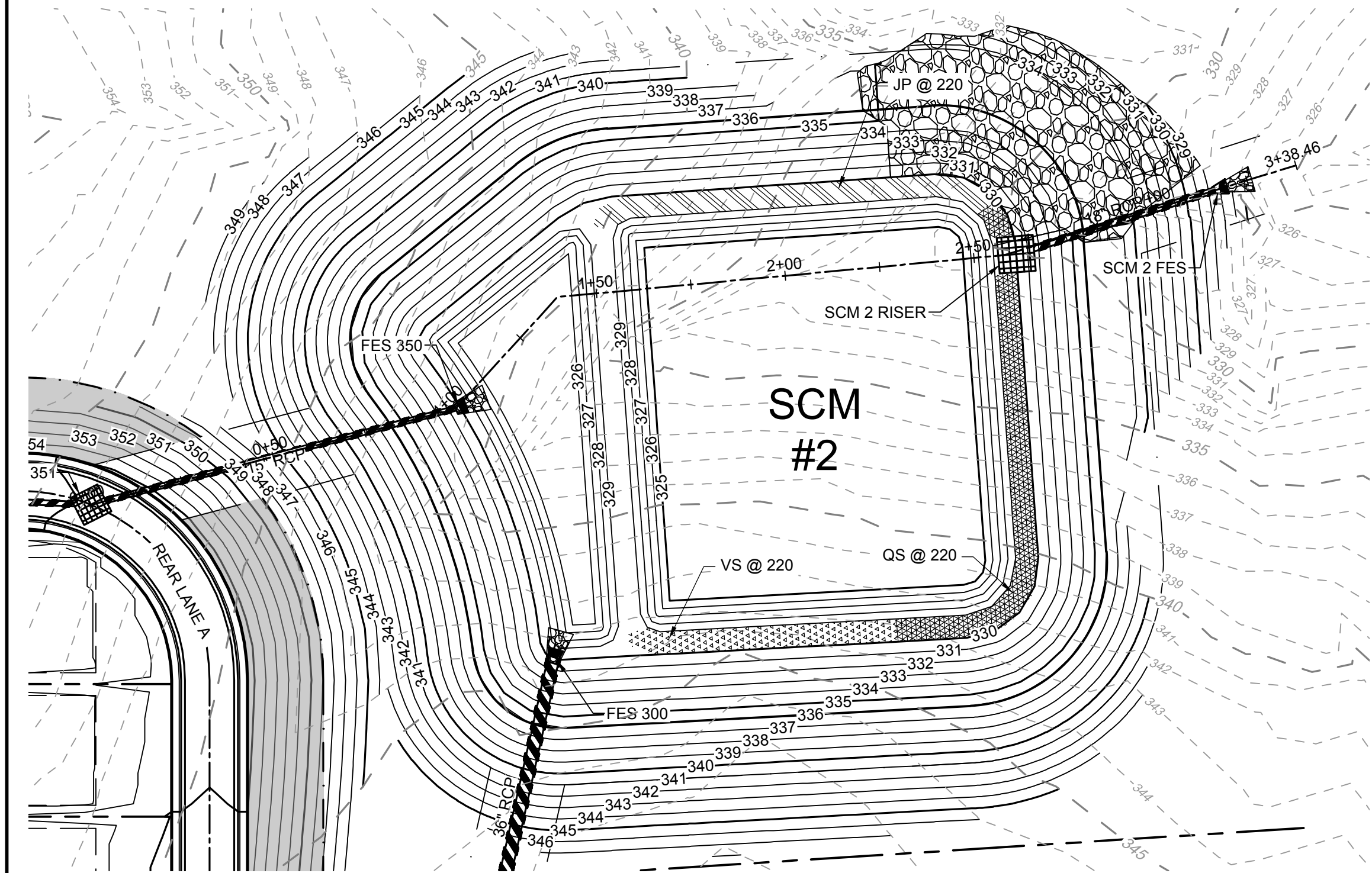
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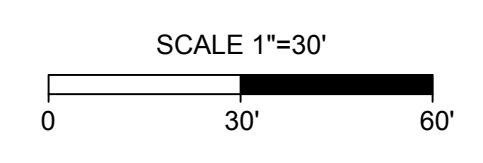
Planting Summary Requirements						
Dam / Berm		Area of Shelf = 3750 SF		Non-Clumping Turf Grass (50 Plants per 200 SF of Area)		
Quantity	Type	Root	Common Name	Scientific Name	Planting Size	Notes
313	Herbaceous	Container	Quill Sedge	Cerex Tenera	4" Pot	24"-36" OC
313	Herbaceous	Container	Virginia Sweetspire	Itea Virginica	4" Pot	24"-36" OC
313	Herbaceous	Container	Joe Pye Weed	Eupat Fistulosus	4" Pot	24"-36" OC



Planting Summary Requirements						
Dam / Berm		Area of Shelf = 2640 SF		Non-Clumping Turf Grass (50 Plants per 200 SF of Area)		
Quantity	Type	Root	Common Name	Scientific Name	Planting Size	Notes
220	Herbaceous	Container	Quill Sedge	Cerex Tenera	4" Pot	24"-36" OC
220	Herbaceous	Container	Virginia Sweetspire	Itea Virginica	4" Pot	24"-36" OC
220	Herbaceous	Container	Joe Pye Weed	Eupat Fistulosus	4" Pot	24"-36" OC

PLANTING PLAN LEGEND

- QUILL SEDGE (CEREX TENERA)
- VIRGINIA SWEETSPIRE (ITEA VIRGINICA)
- JOE PYE WEED (EUPAT FISTULOSUS)



AS-BUILT SURVEY REQUIREMENTS

NOTE: CONTRACTOR SHALL PROVIDE AS-BUILT TOPOGRAPHIC SURVEY PERFORMED BY A PROFESSIONAL LAND SURVEYOR CERTIFYING STORMWATER POND AREA DIMENSIONS, ELEVATIONS, OUTLET STRUCTURE INVERTS, ORIFICE DIAMETER, PIPE SIZES AND CLEANOUT LOCATIONS. TOPOGRAPHY SHALL EXTEND 20 FEET OUTSIDE LIMITS OF POND.



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: _____ DATE: _____
 DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

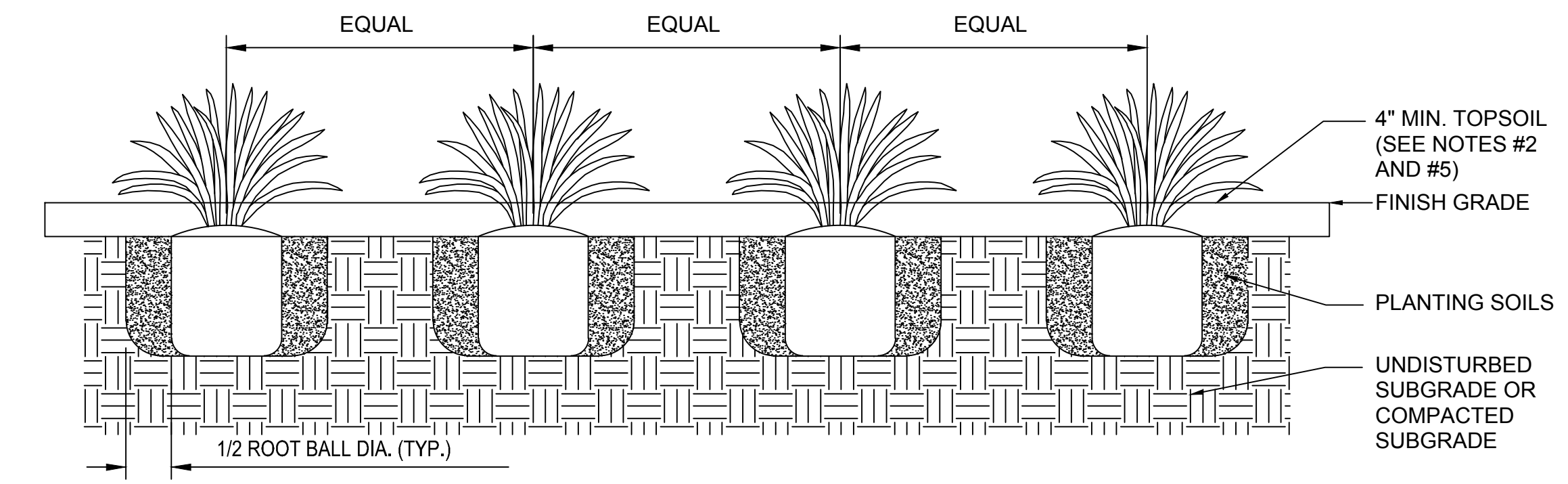
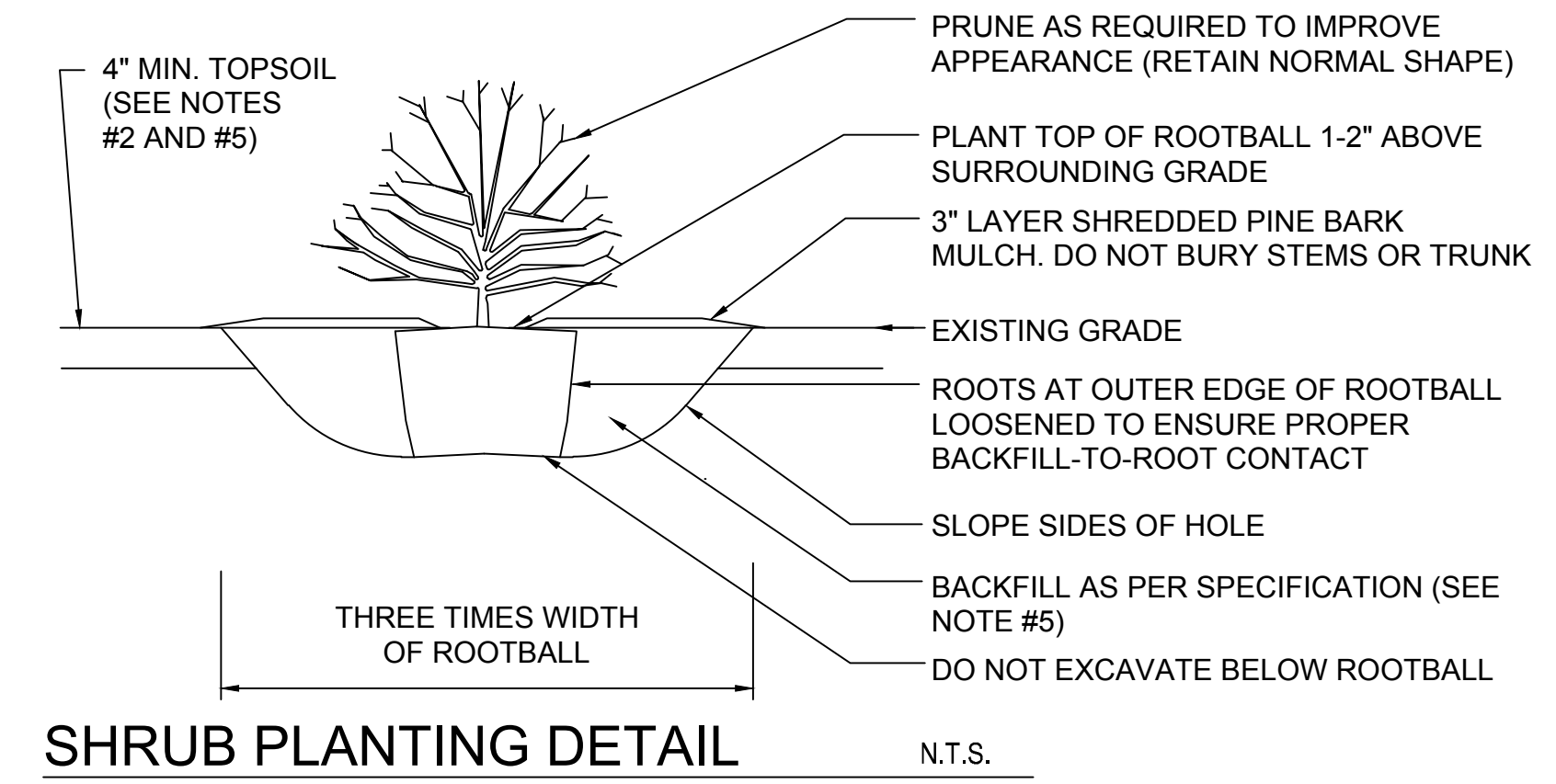
BY: _____ DATE: _____
 ADMINISTRATOR

PLANTING NOTES:

- THE DAM STRUCTURE, INCLUDING FRONT AND BACK EMBANKMENT SLOPES, OF THE POND SHALL BE VEGETATED WITH NON-CLUMPING TURF GRASS OR SOD. TREES AND WOODY SHRUBS SHALL NOT BE ALLOWED.
- THE VEGETATED SHELF SHALL BE PLANTED WITH A MINIMUM OF THREE DIVERSE SPECIES OF HERBACEOUS, NATIVE VEGETATION AT A MINIMUM DENSITY OF 50 PLANTS PER 200 SQUARE FEET OF SHELF AREA.
- CONTRACTOR TO WORK WITH SOILS SCIENTIST TO ENSURE SOILS ARE ADEQUATE TO SUPPORT ESTABLISHMENT AND GROWTH OF THE WETLAND PLANTINGS. CONTRACTOR TO AMEND SOILS AND INSTALL SOILS IN PLANT, SHRUB, AND TREE AREAS PER DETAILS, SOIL SPECIFICATIONS, NCDENR SPECIFICATION, AND SOIL SCIENTIST RECOMMENDATIONS.
- ALL DISTURBED AREAS AROUND THE OUTSIDE OF THE WET POND SHALL BE SEEDED WITH A LAWN AREA SEED MIX (PER SEEDING SPECIFICATIONS) NATIVE GRASSES, LEGUMES, CLOVERS AND WILDFLOWERS.
- IF THE WETPOND WAS USED DURING CONSTRUCTION AS A SEDIMENT BASIN OR TRAP, THE BASIN MUST BE CLEANED OUT, GRADED, APPROPRIATE AREAS COVERED WITH 4" OF TOPSOIL AS SPECIFIED IN NOTE #2 ABOVE, AND VEGETATED WITHIN 14 DAYS OF THE COMPLETION OF THE CONSTRUCTION.
- CONTRACTOR SHALL WATER ALL VEGETATION AND GRASS ON A WEEKLY BASIS AS NEEDED TO ENSURE GRASS AND PLANT SURVIVAL UNTIL AFTER THE SCM IS CERTIFIED AND ACCEPTED BY THE MUNICIPALITY.

INSTALLATION AND MAINTENANCE OF LANDSCAPING:

- ALL LANDSCAPING SHALL BE OF NURSERY-STOCK QUALITY AND SHALL BE INSTALLED IN A SOUND, WORKMANLIKE MANNER AND ACCORDING TO ACCEPTED GOOD PLANTING PROCEDURES. ALL LANDSCAPING SHALL BE ADAPTABLE TO CLIMATIC CONDITIONS OF THE AREA, AND CONSIDERATION SHALL BE GIVEN TO NOT PLANTING LARGE TREES NEAR UTILITIES. ALL LANDSCAPING SHALL BE MAINTAINED IN GOOD CONDITION.
- ALL PLANTS SHALL MEET OR EXCEED THE MINIMUM STANDARDS SET BY THE U.S.D.A. STANDARD FOR NURSERY STOCK SPONSORED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.
- ALL LANDSCAPING SHALL AT ALL TIMES SHALL PRESENT A HEALTHY, NEAT, CLEAN, ORDERLY, DISEASE-FREE AND PEST-FREE APPEARANCE.
- ALL LANDSCAPING SOIL AND FILL SHALL BE FREE FROM WEEDS, REFUSE, AND DEBRIS AT ALL TIMES.
- ANY DEAD PLANT MATERIAL OR MATERIAL THAT FAILS TO SHOW HEALTHY GROWTH MUST BE REMOVED WITHIN 30 DAYS.
- REPLACEMENT OF REMOVED PLANT MATERIAL MUST TAKE PLACE WITHIN 90 DAYS OF REMOVAL OR NOTIFICATION BY THE CITY, WHICHEVER OCCURS FIRST.
- ANY REPLACEMENT PLANT MATERIAL MUST MEET THE SIZE AND OTHER CHARACTERISTICS OF NEWLY PLANTED MATERIAL.
- MAINTENANCE OF THE LANDSCAPING IS THE RESPONSIBILITY OF THE OWNER.



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REVISION DESCRIPTION	DRAWN BY	JD.MACMILLAN
	DESIGNED BY	E.ANGE
	CHECKED BY	M.ZACCARDO
	SCALE	1" = 30'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

HAYWOOD GLEN PHASE 3
 OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA

SCM PLANTING PLAN

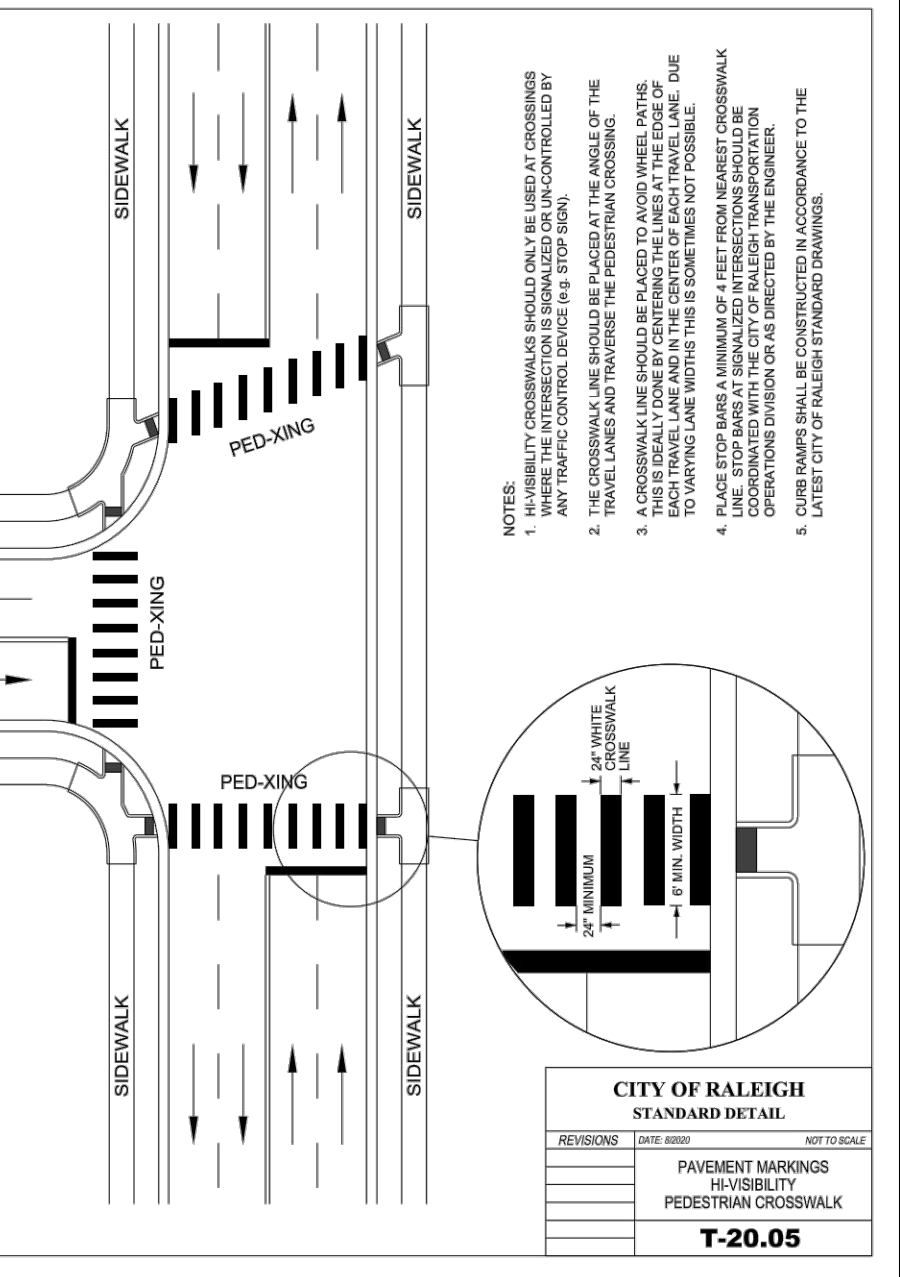
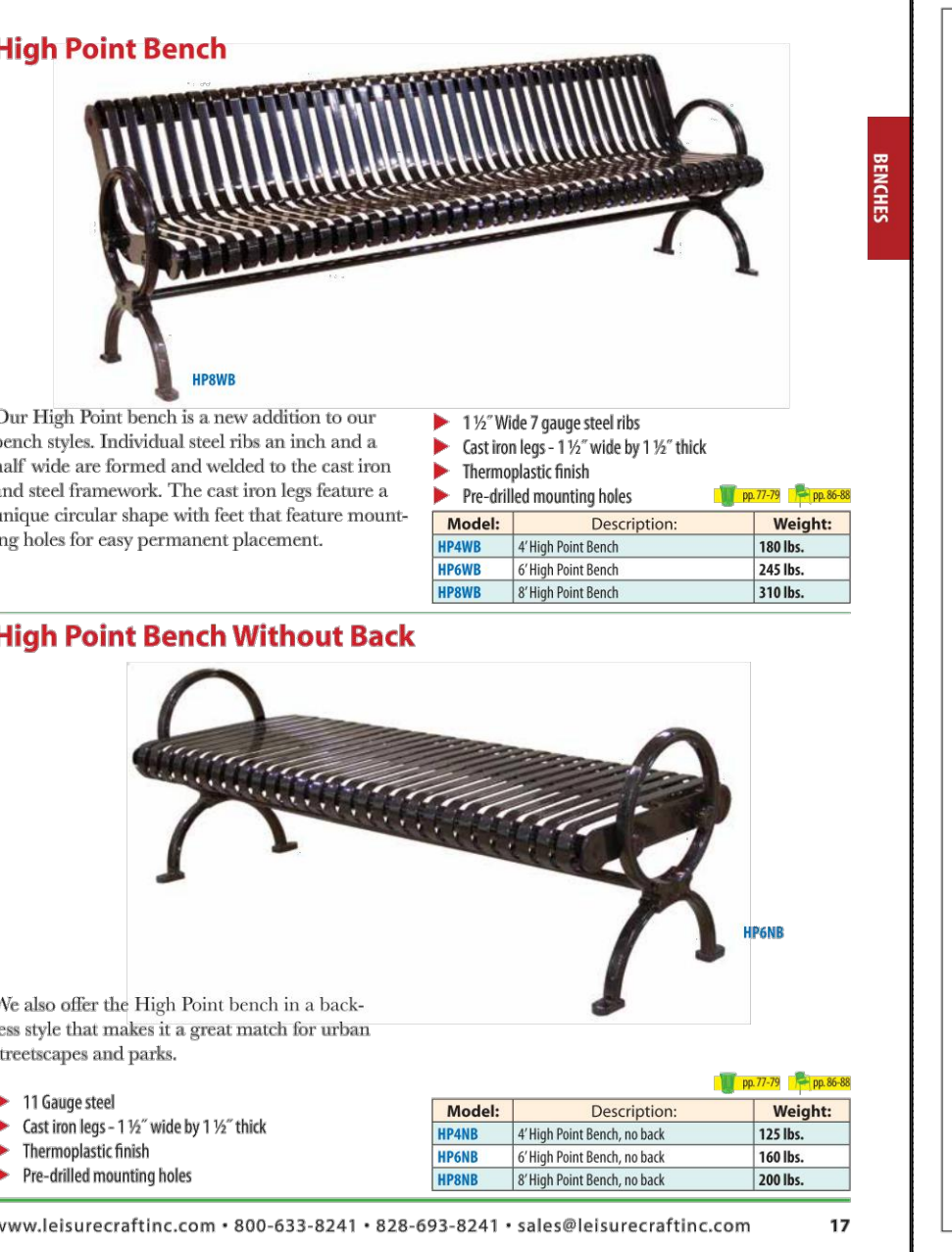
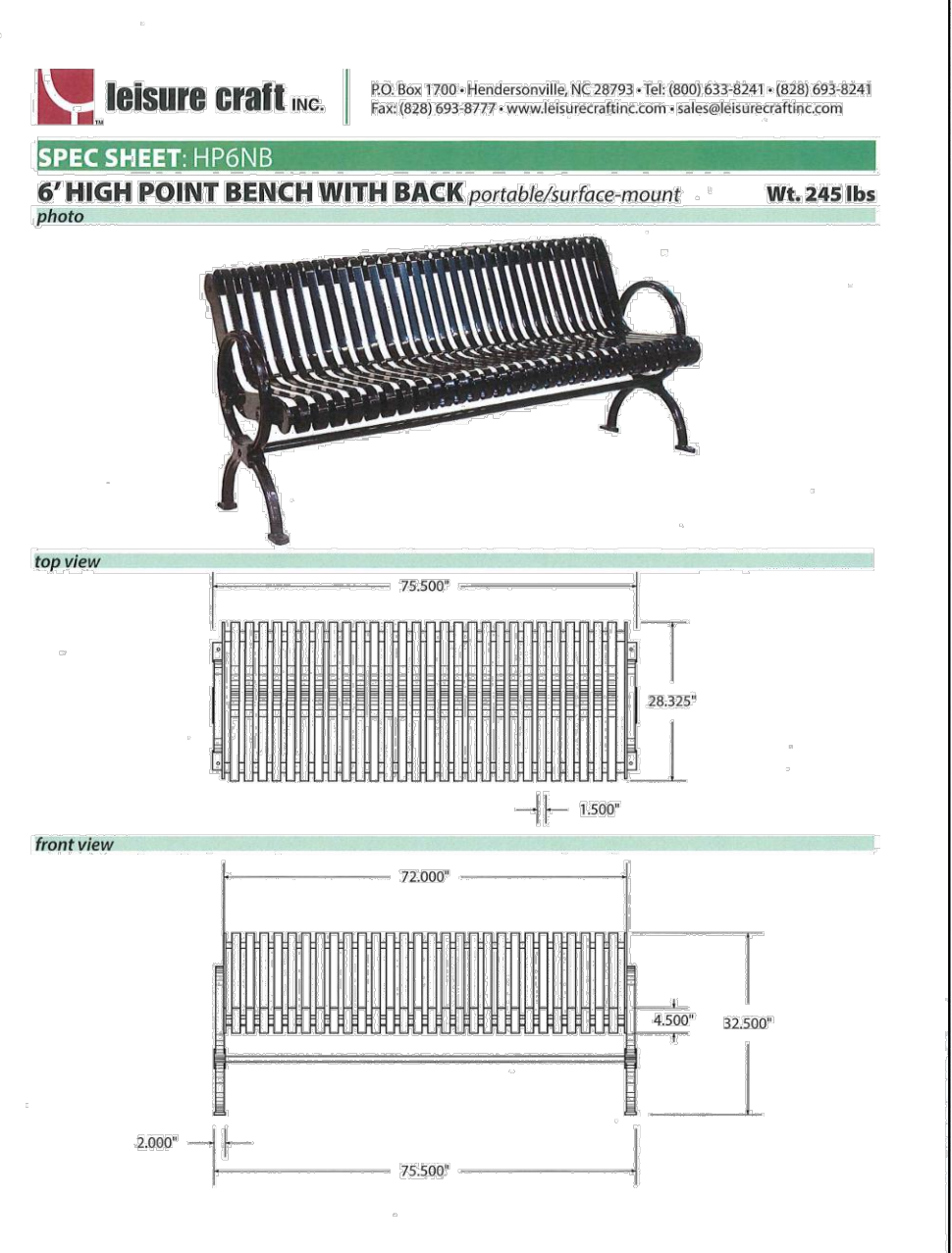
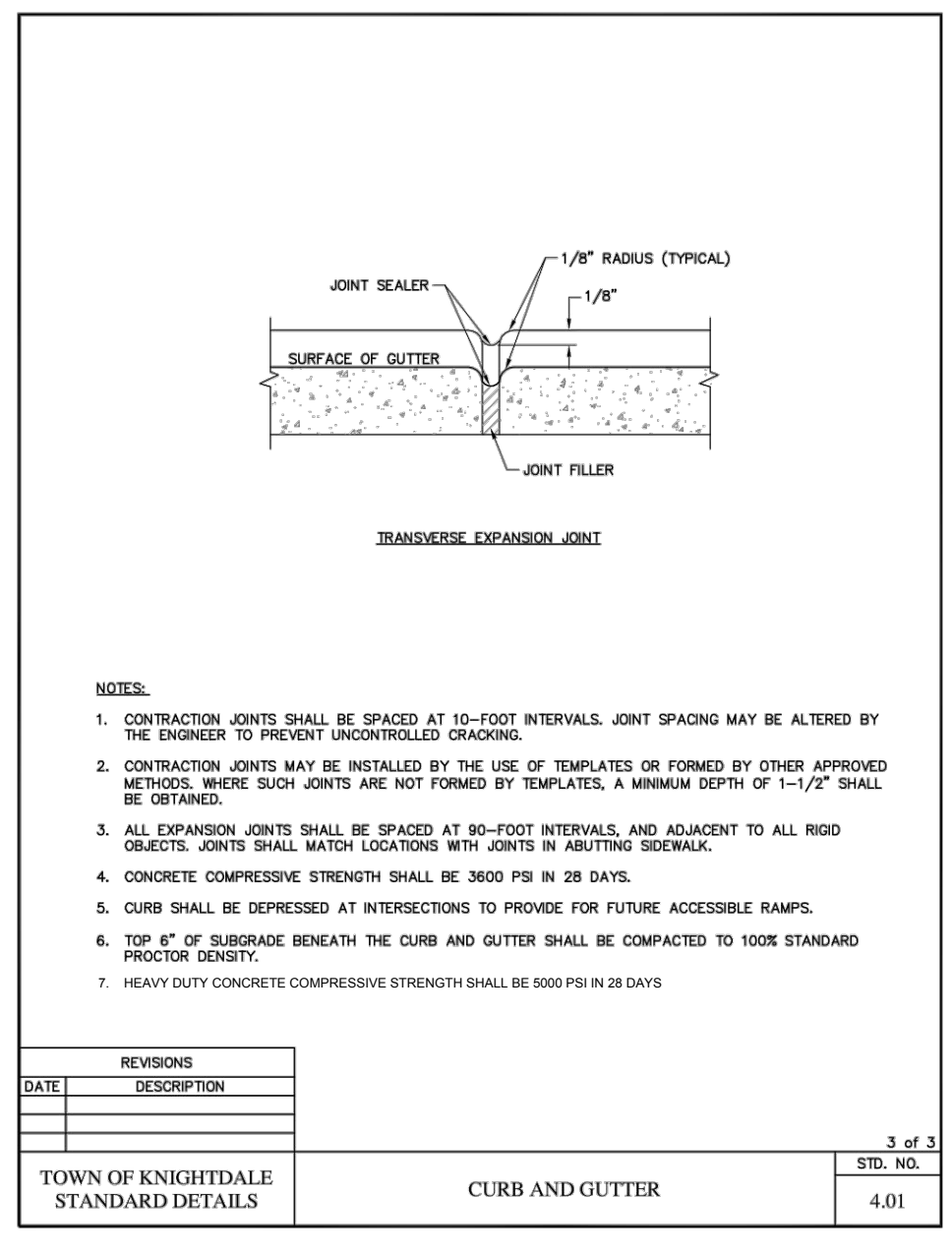
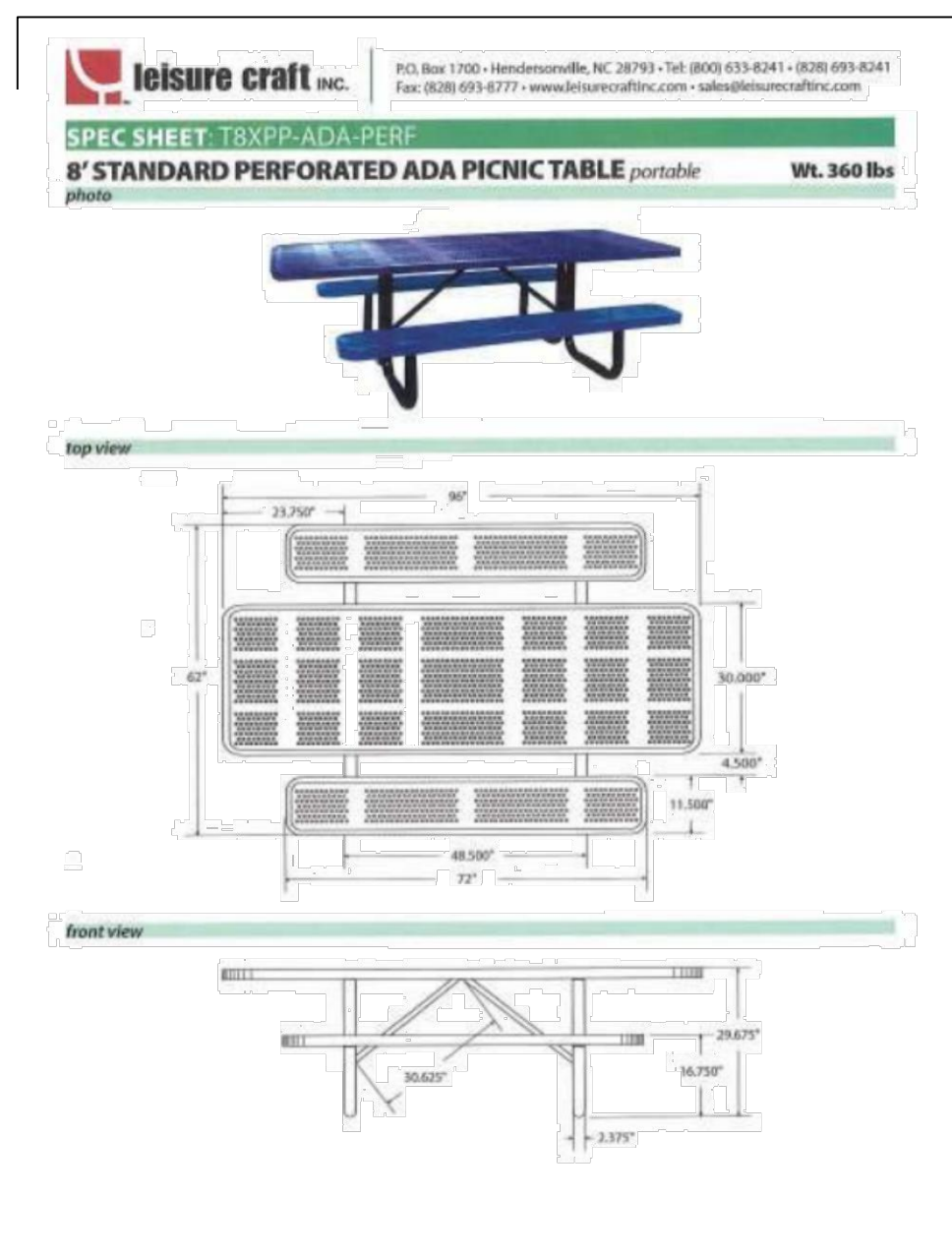
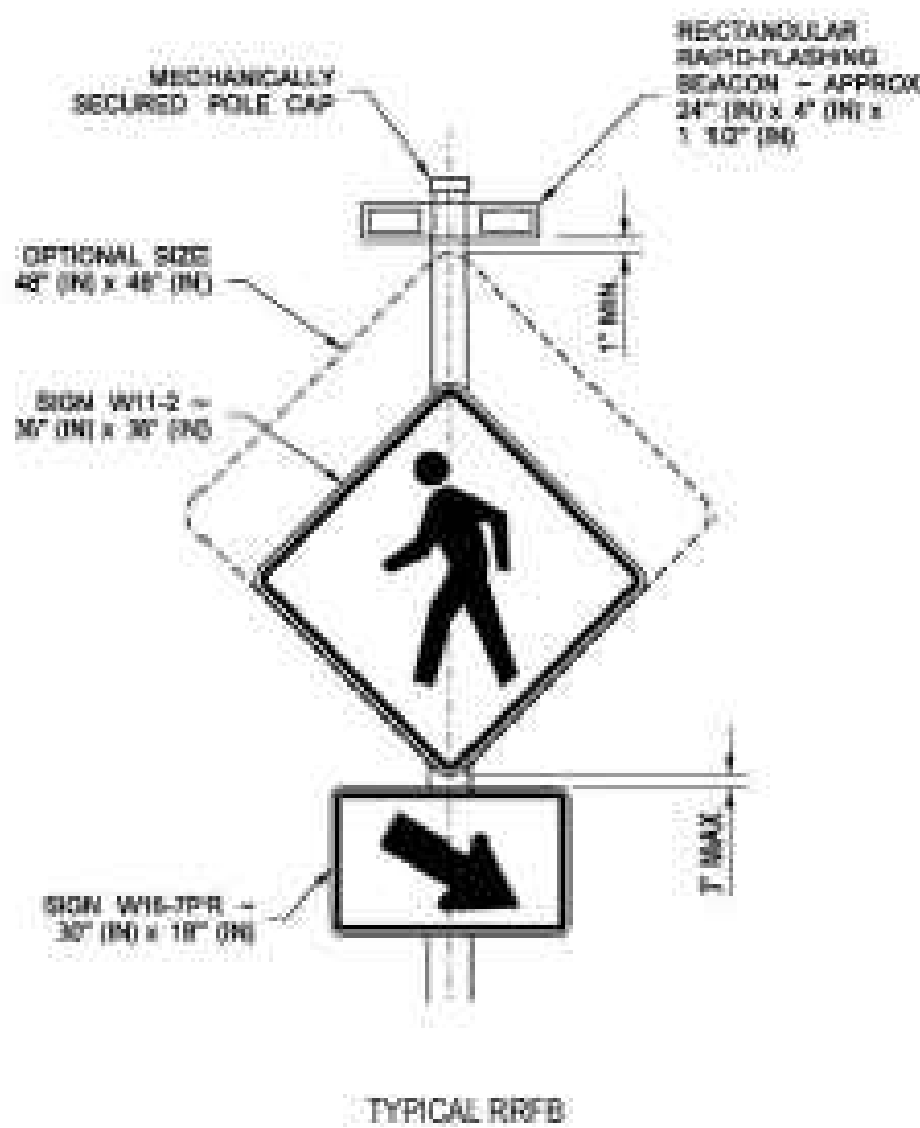
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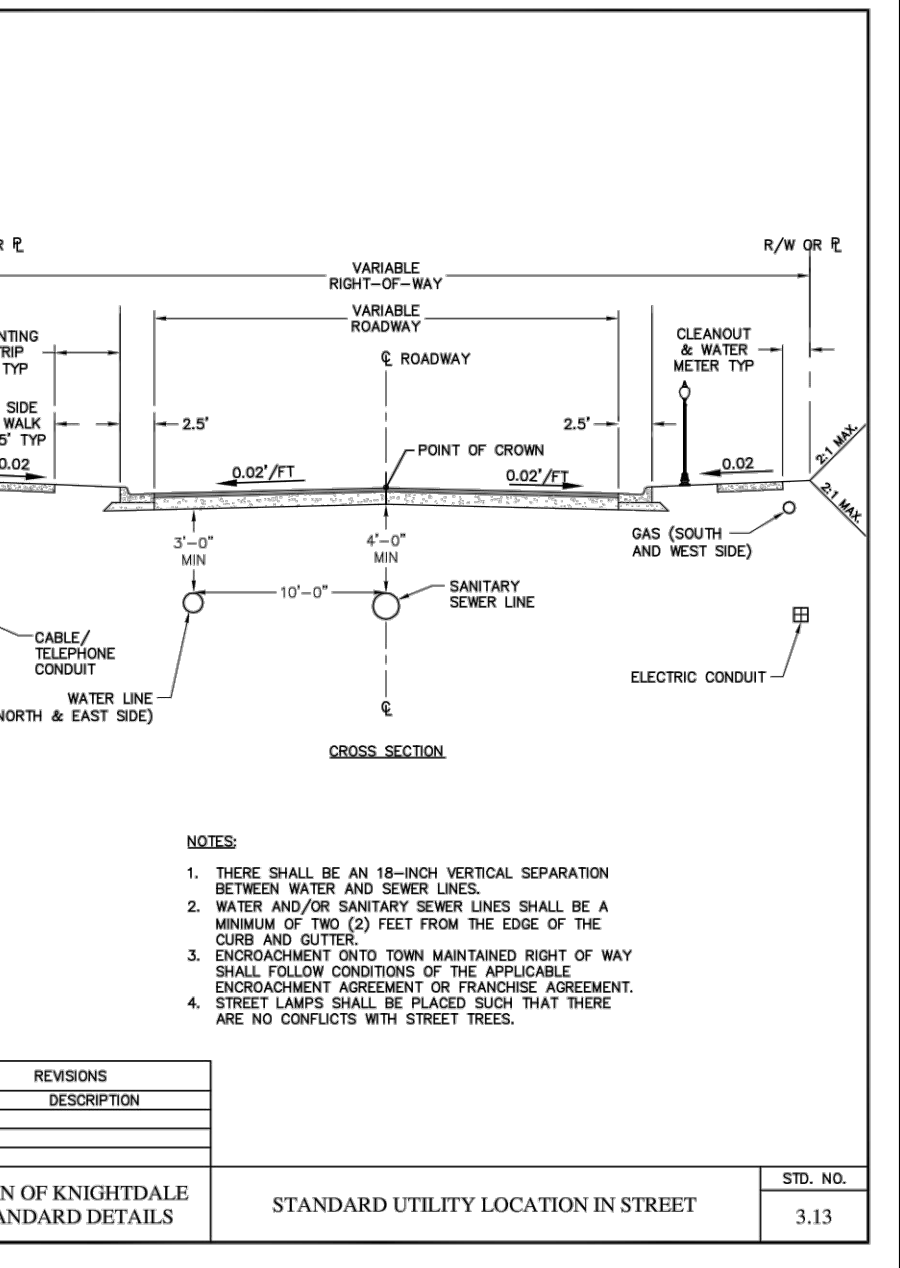
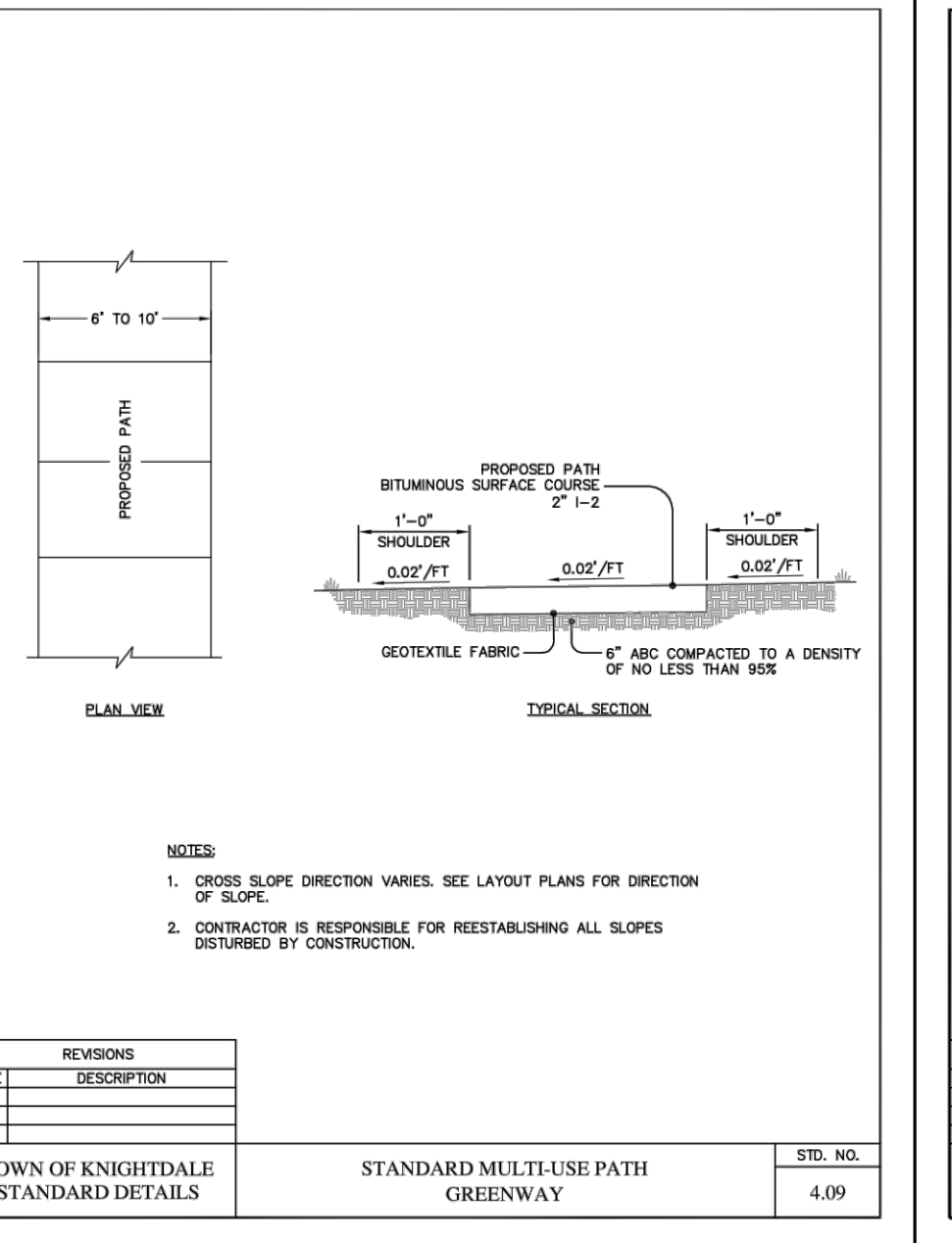
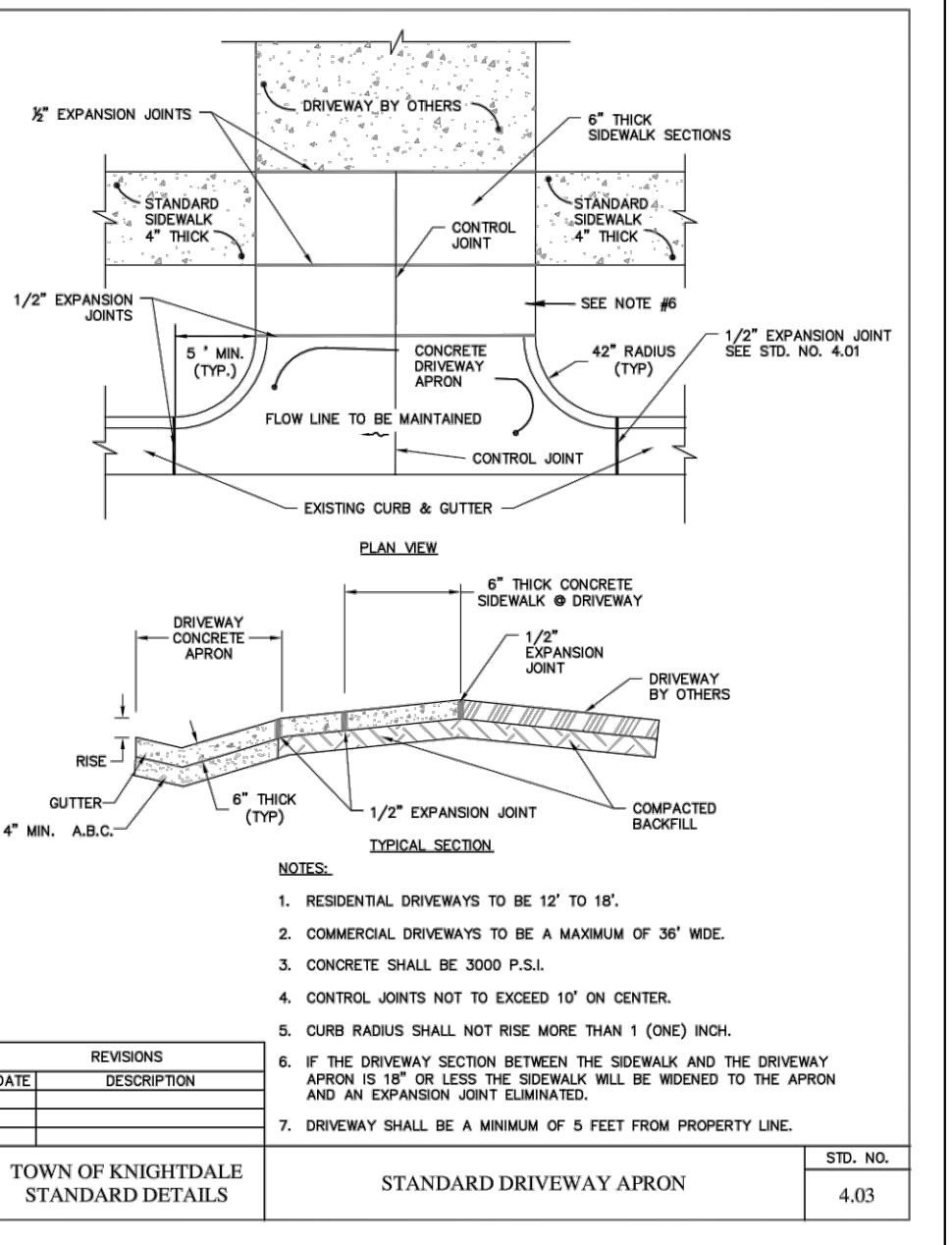
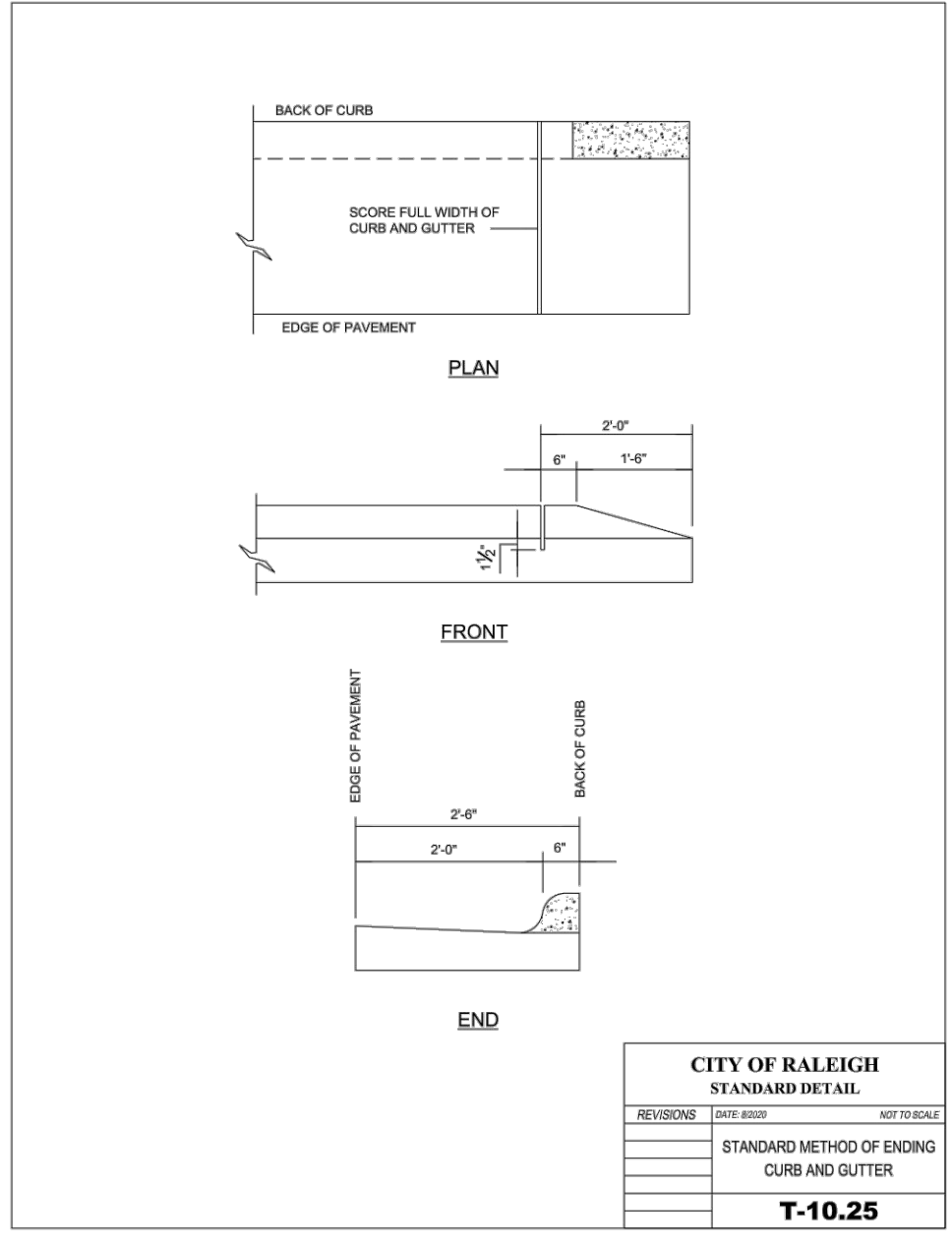
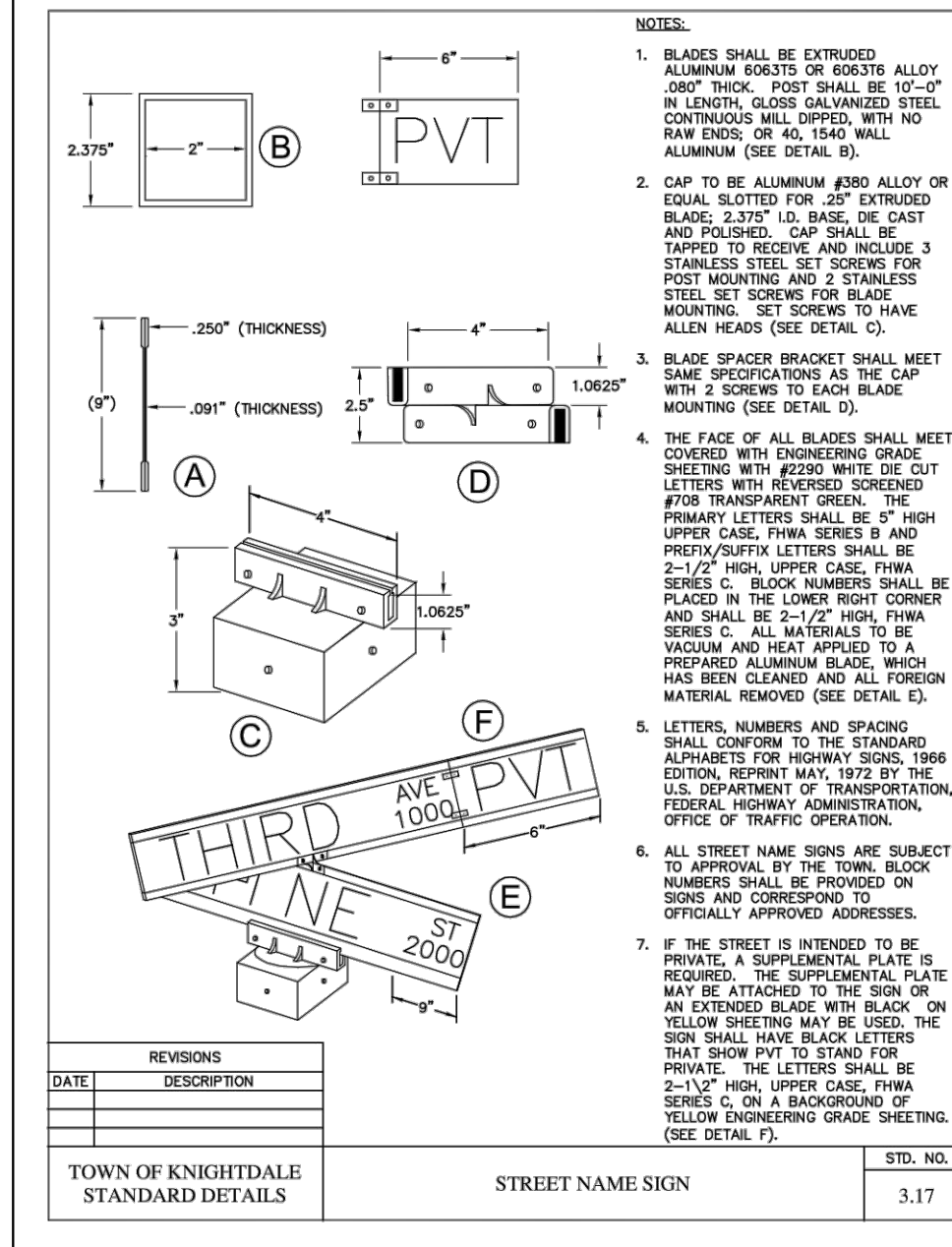
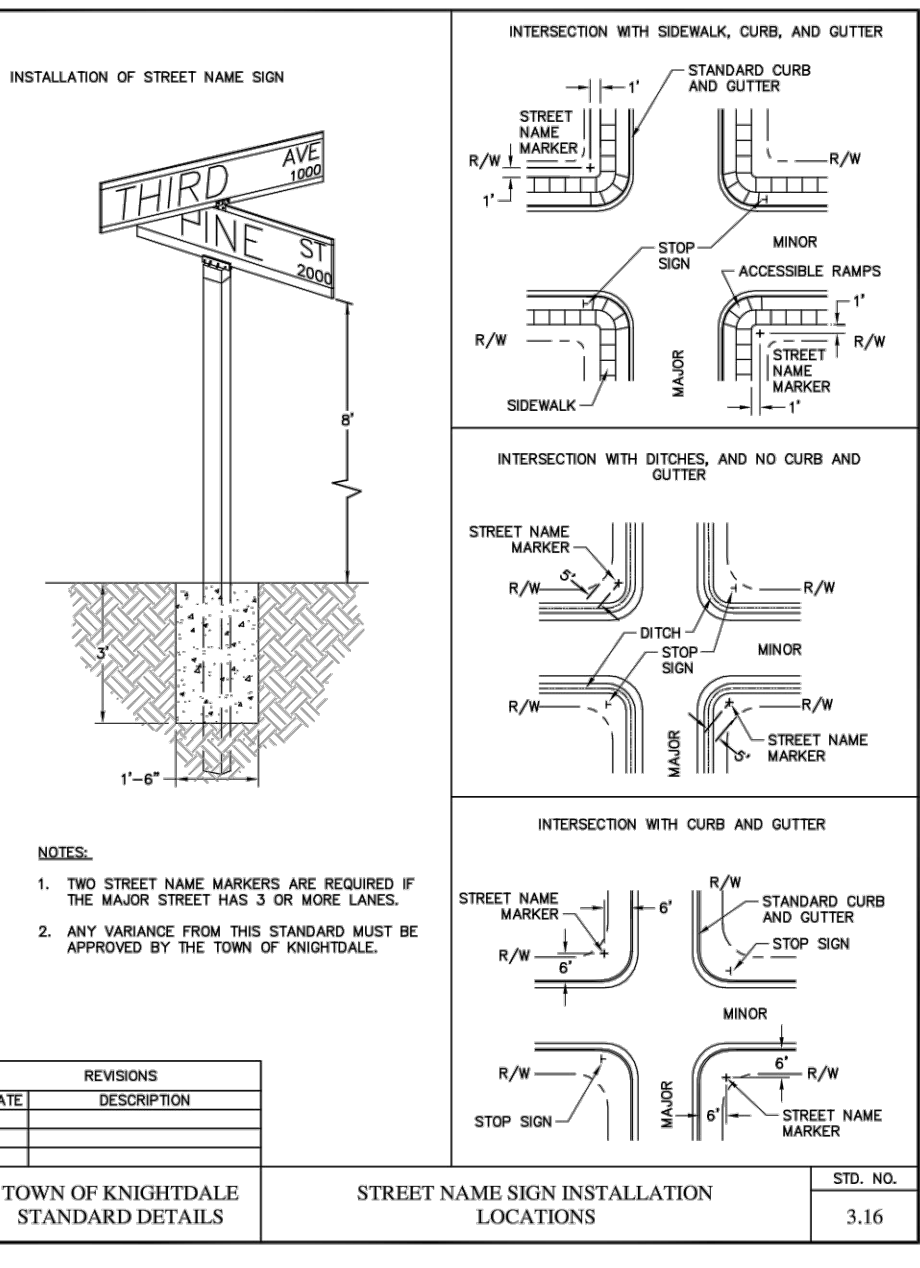
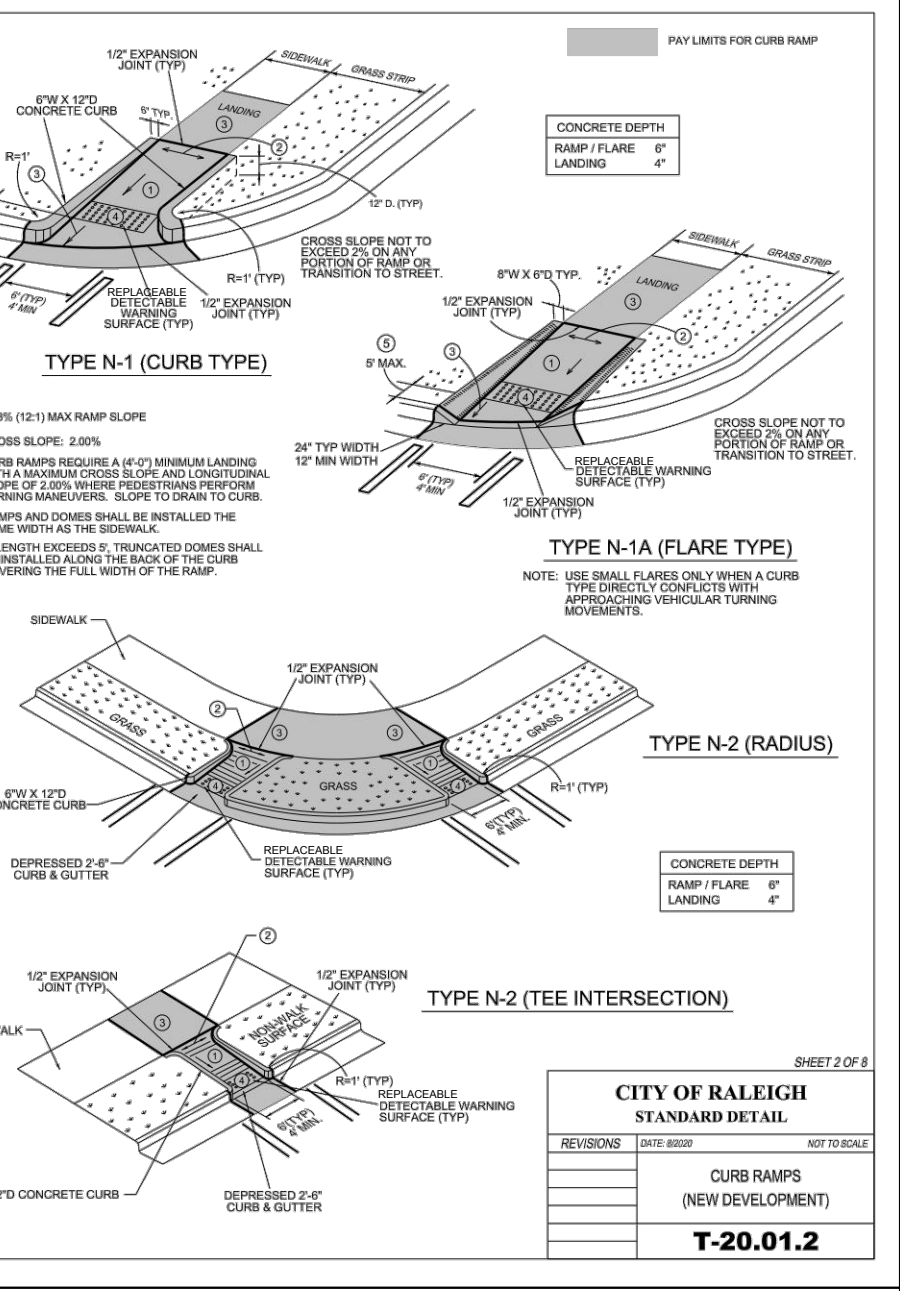
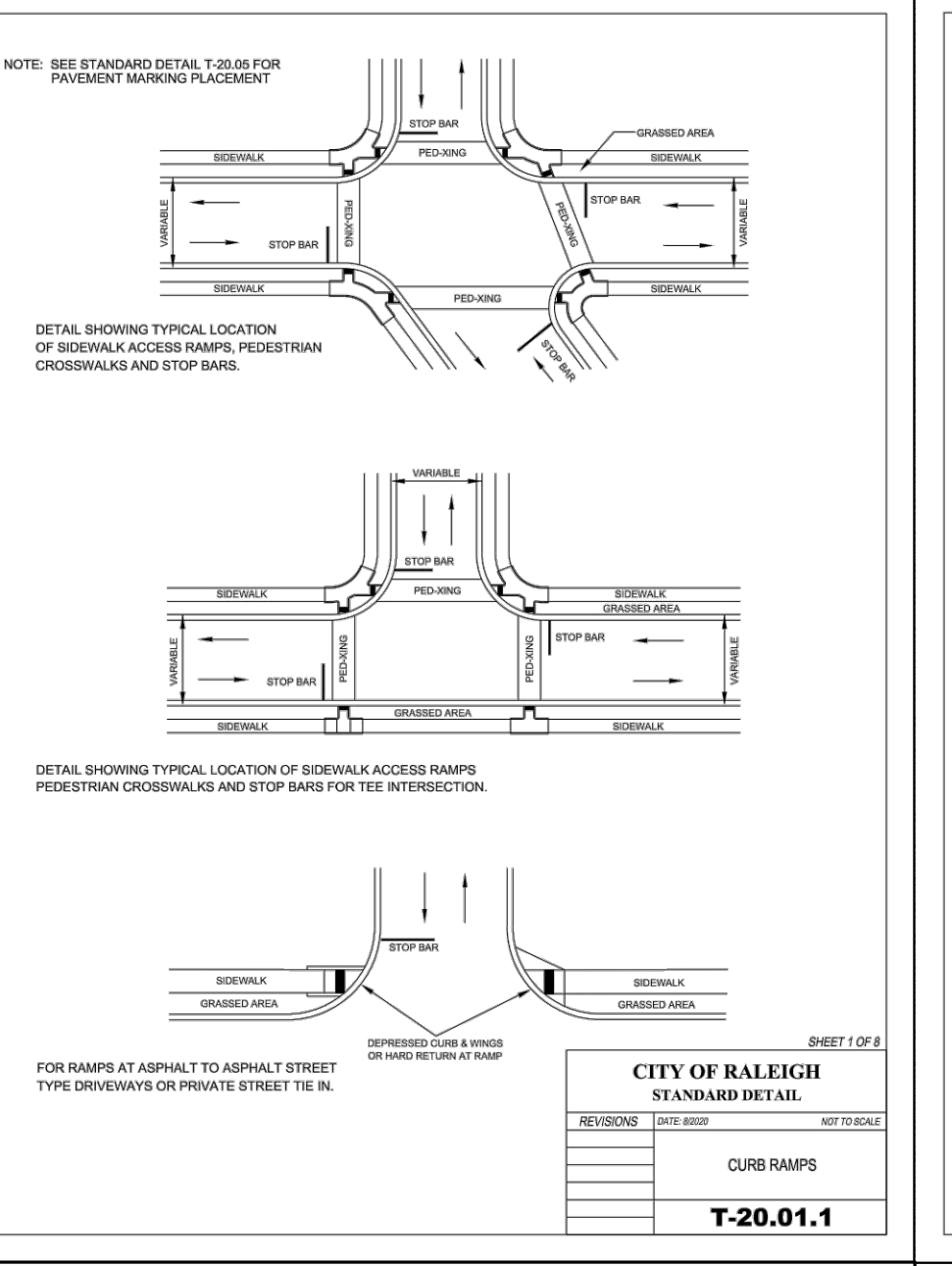
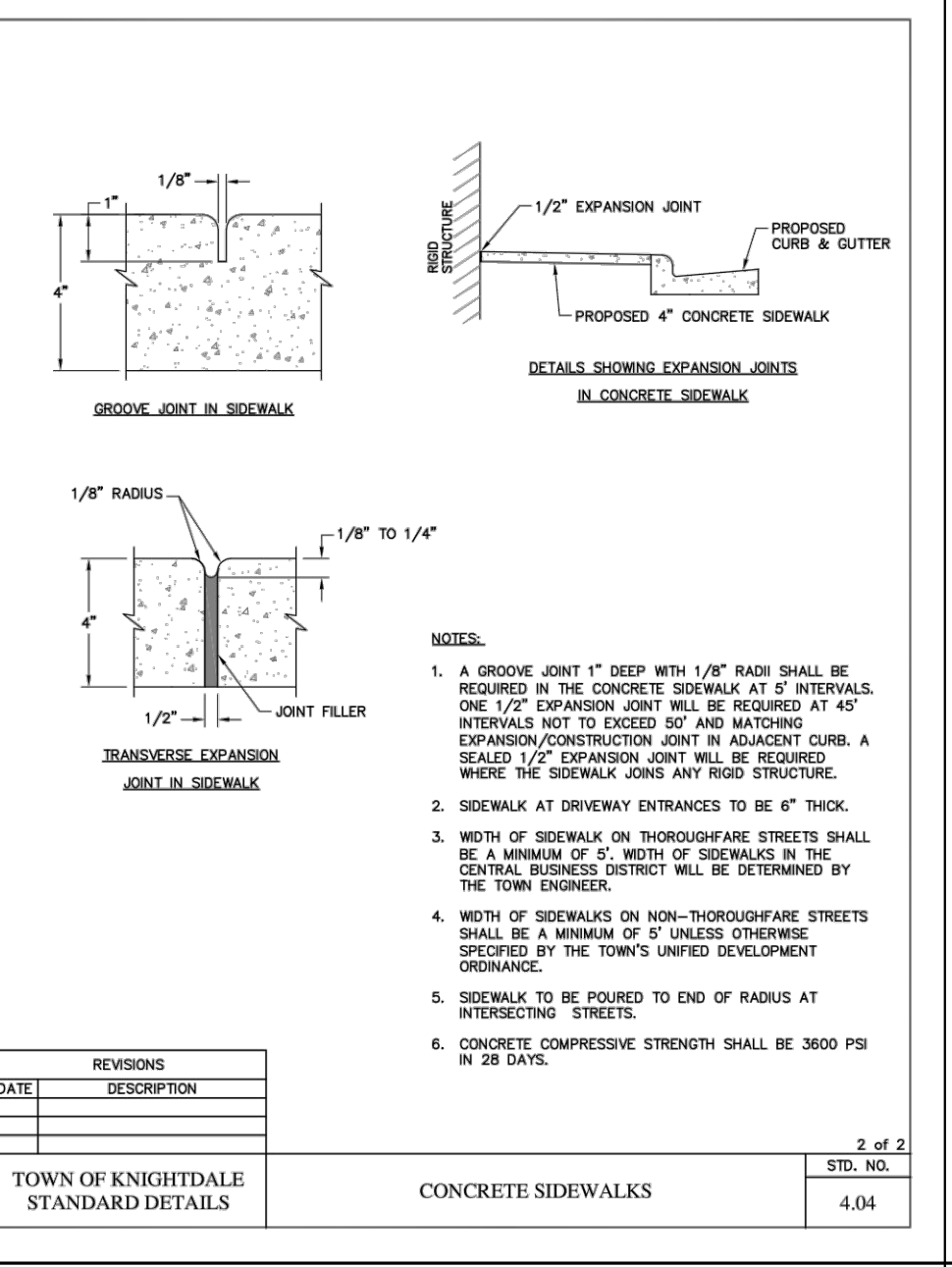
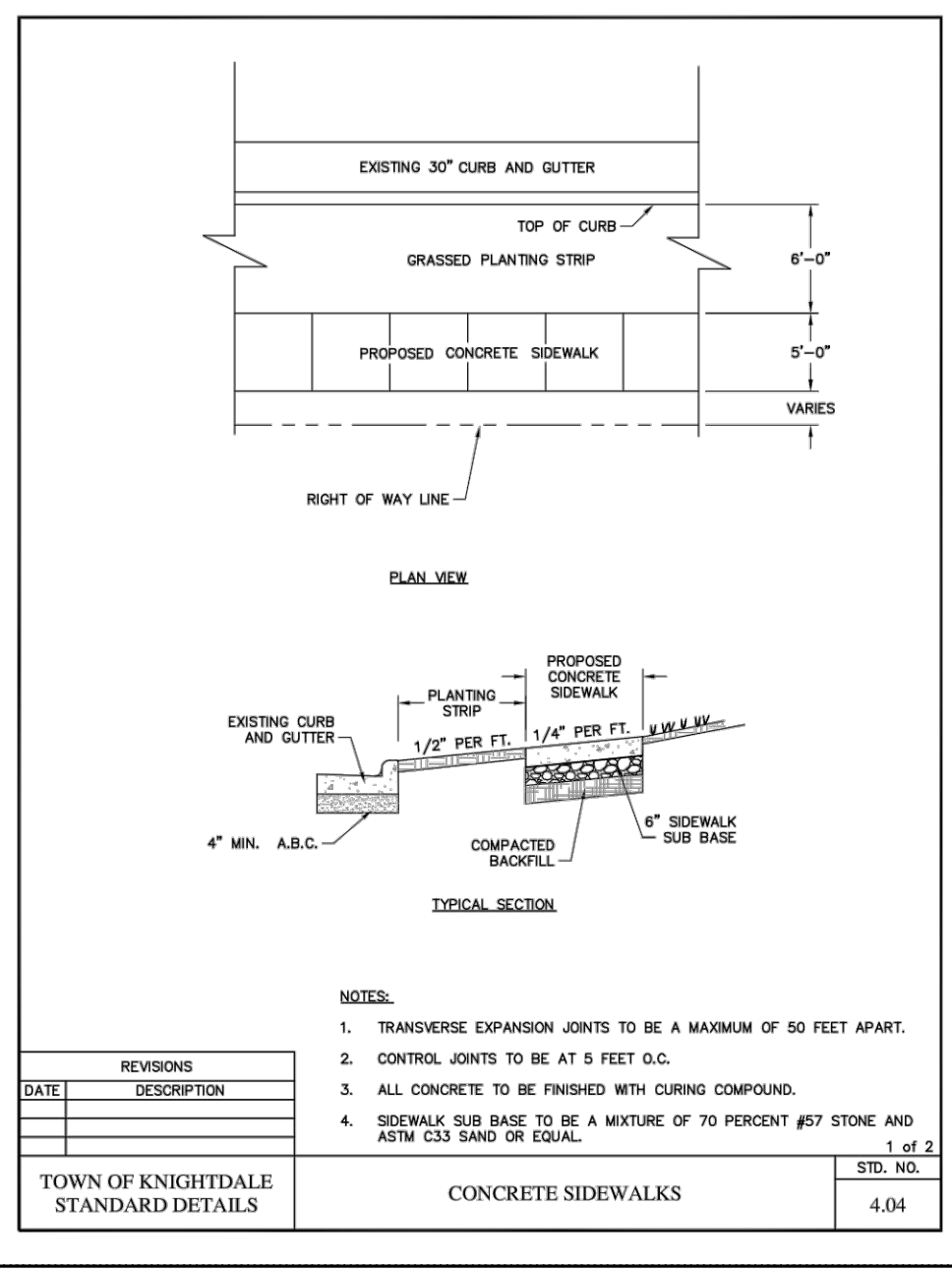
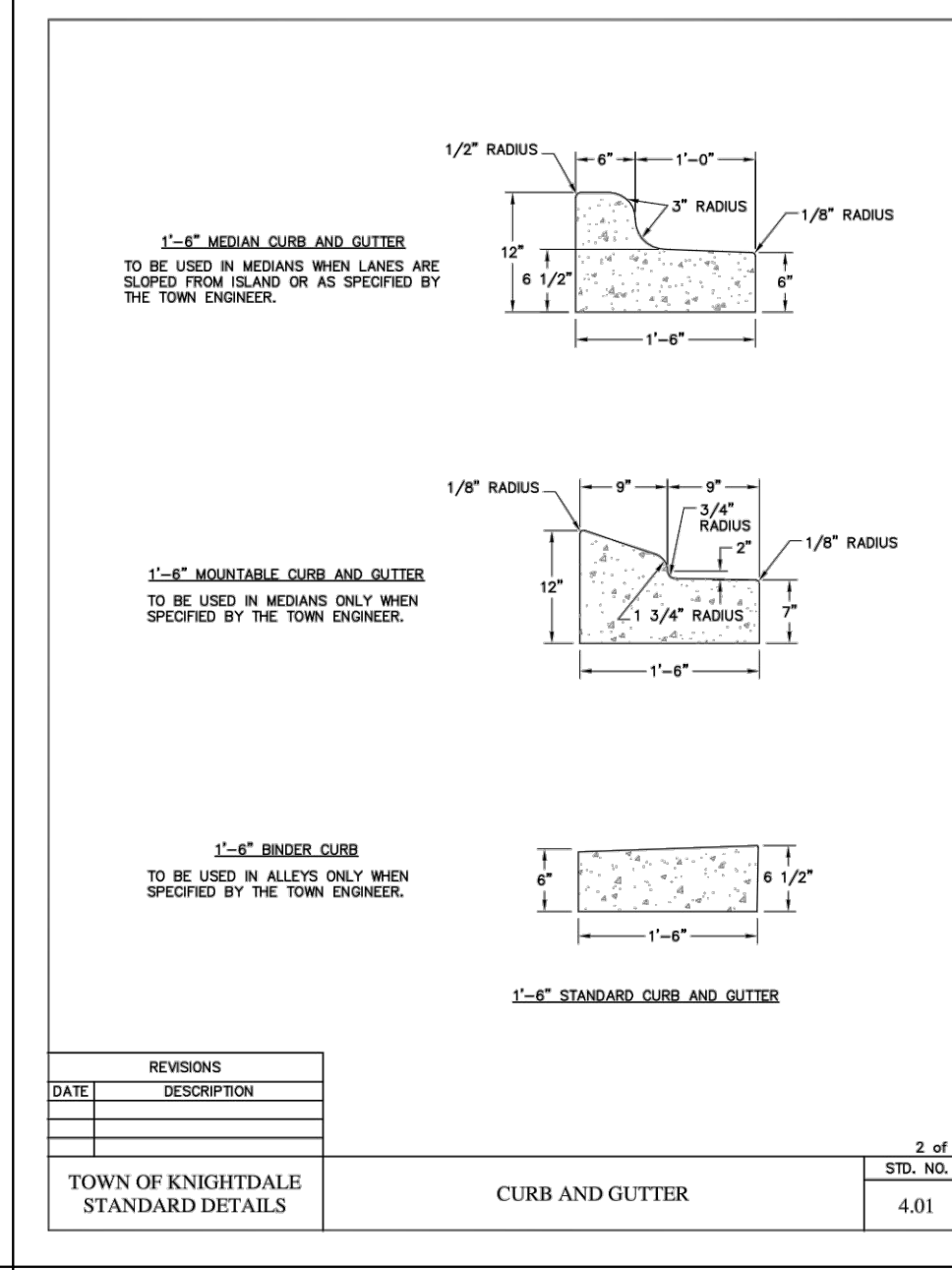
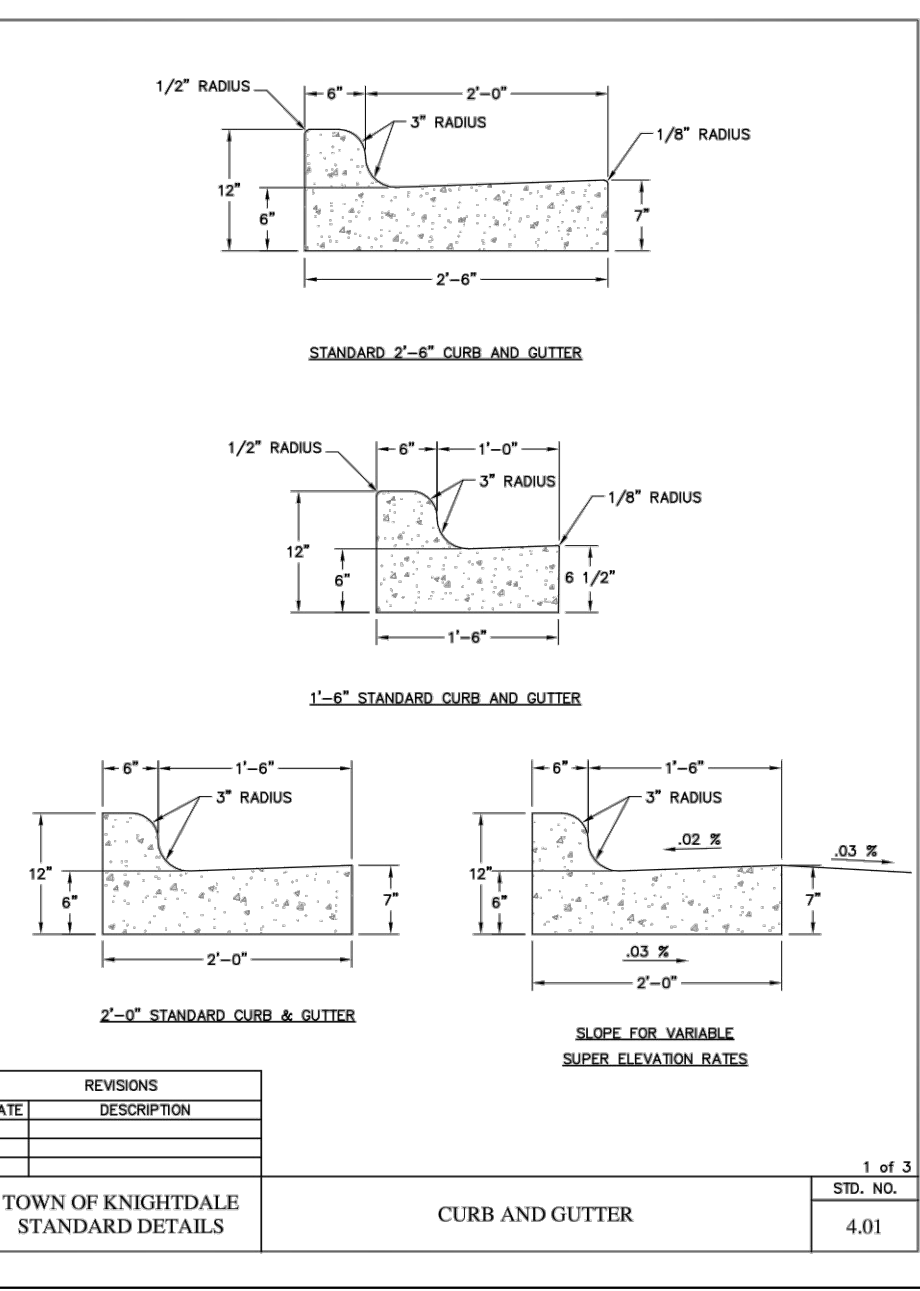
RRFB SIGNAGE DESCRIPTION

PER MUTCD APPROVAL IA-21. THE RRFB CAN BE USED WITH THE PED/BIKE SIGN (W11-15) AS WELL AS OVERHEAD MOUNTED W11-2, S1-1, AND W11-15 SIGNS. IT MUST INCLUDE ACCESSIBLE PEDESTRIAN ACTUATION FEATURES. THE FLASH RATE MUST FOLLOW A PRESCRIBED FLASH PATTERN OF STEADY 75 FLASHES PER SECOND. THE BRIGHTNESS MAY BE DIMMED AT NIGHT. A R10-25 PUSH BUTTON TO TURN ON WARNING LIGHTS SIGN MUST BE INSTALLED WITH THE RRFB.



TOWN CERTIFICATION
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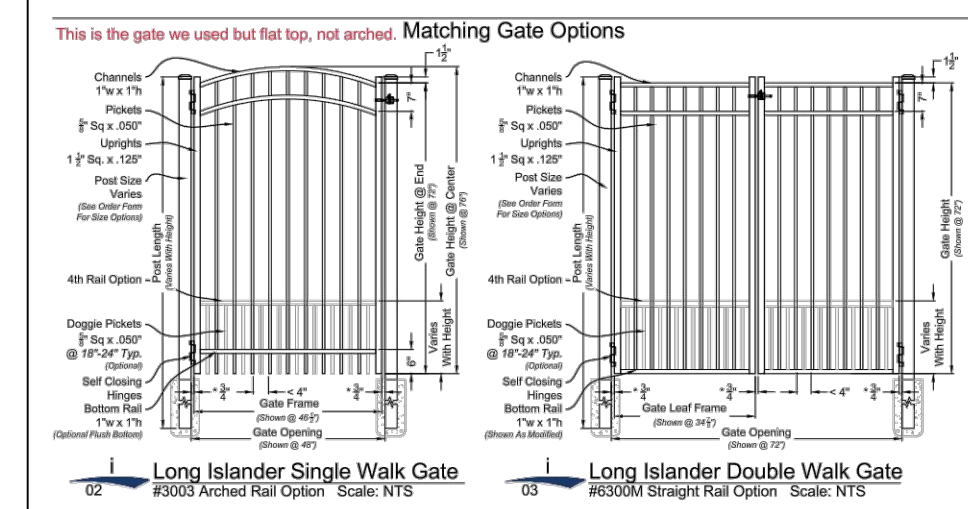
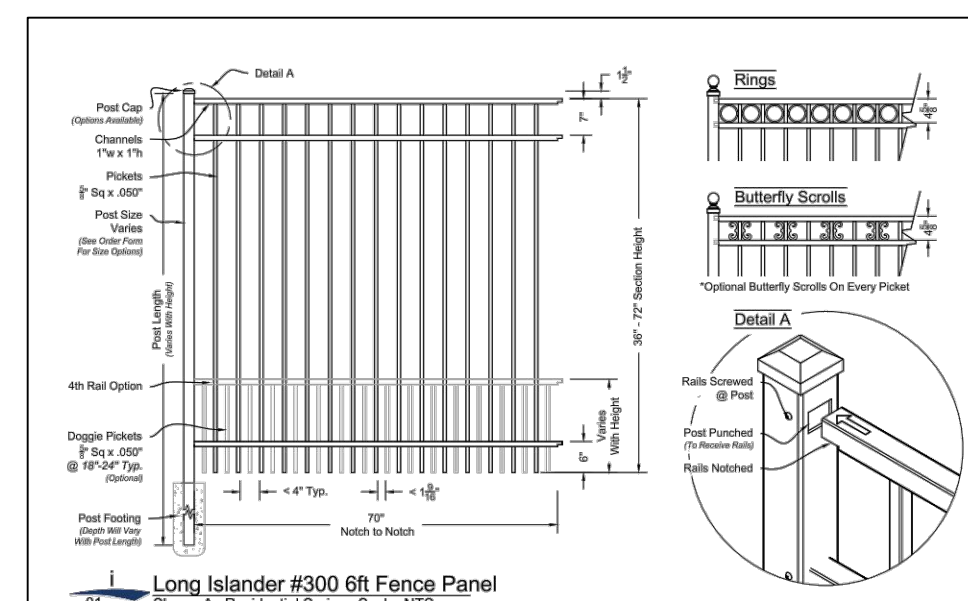
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DATE: 01/27/2022
DRAWN BY: JD. MACMILLAN
DESIGNED BY: E. ANGE
CHECKED BY: M. ZACCARDO
SCALE: N/A



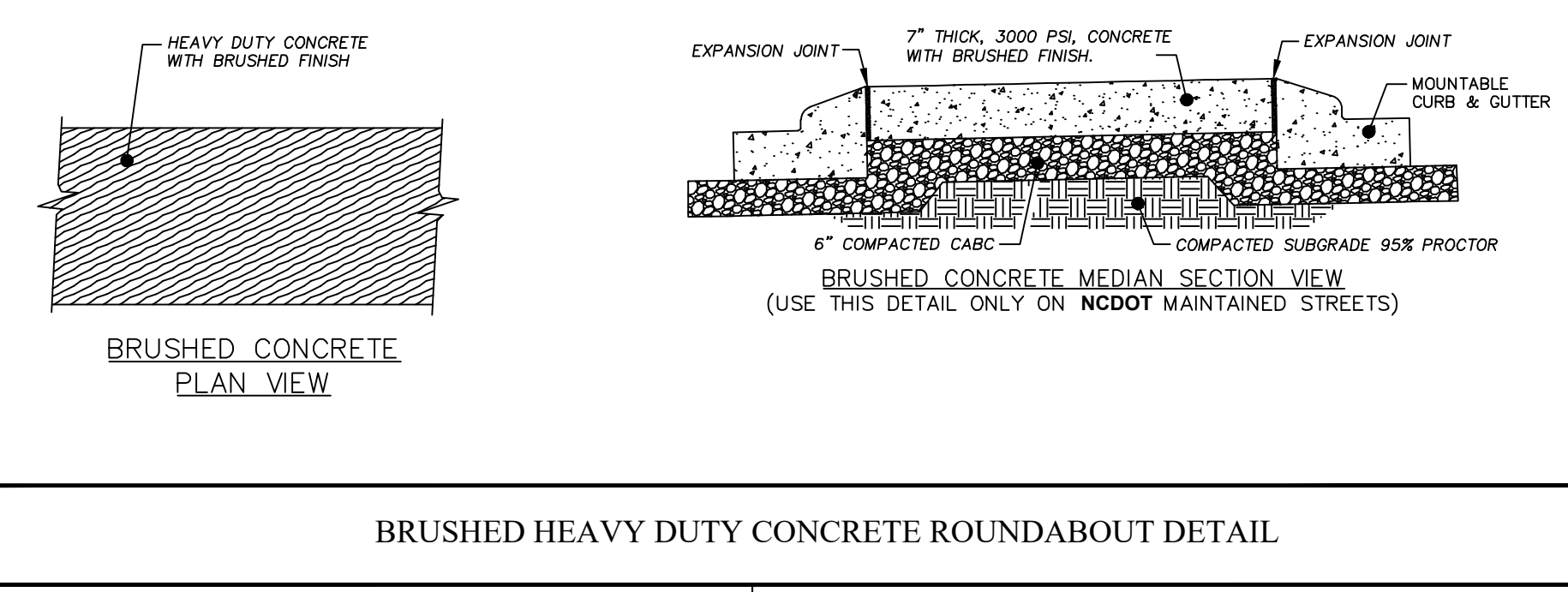
TOWN OF KNIGHTDALE STANDARD DETAILS
JOB NO. 43202
SHEET NO. C7.0

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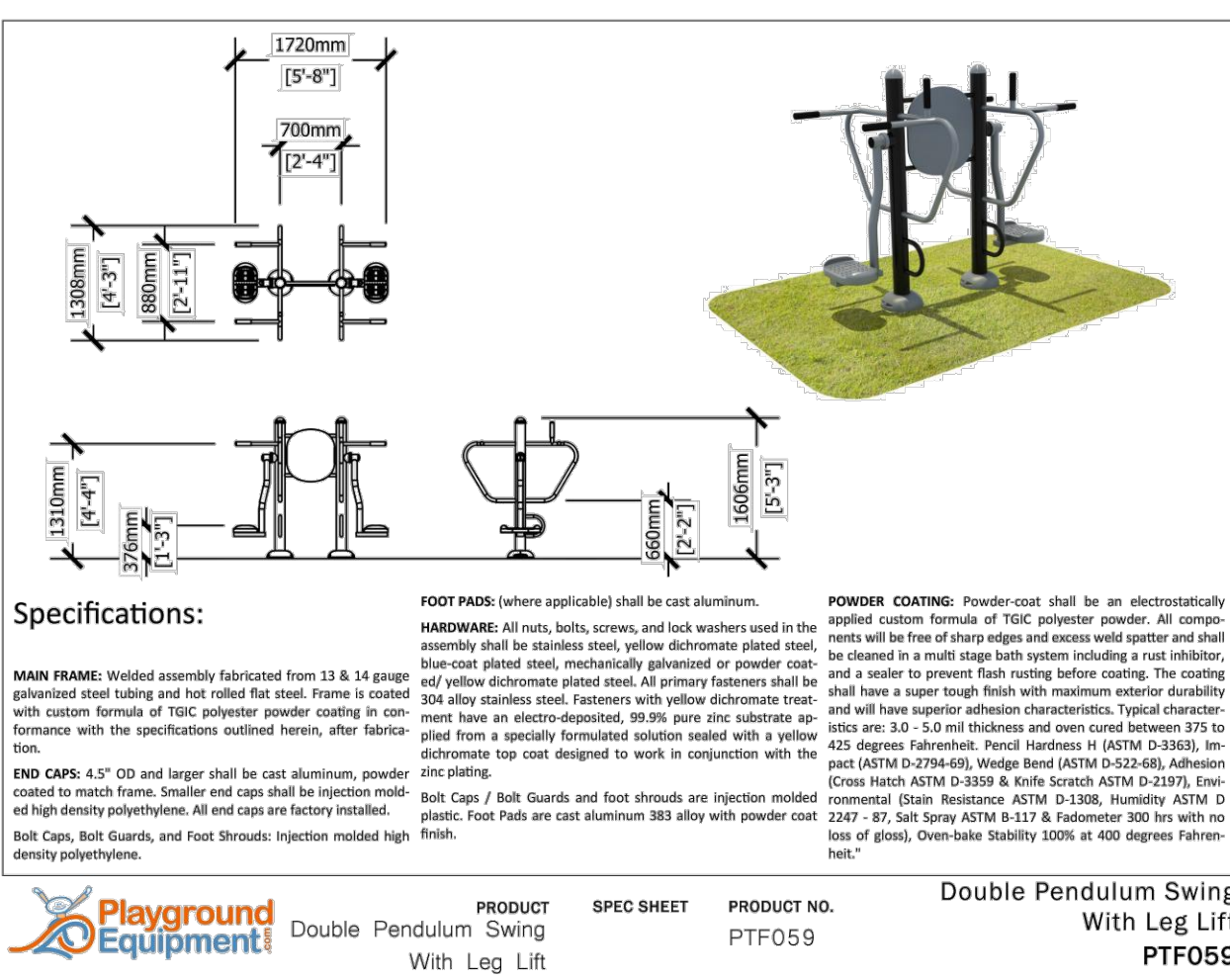
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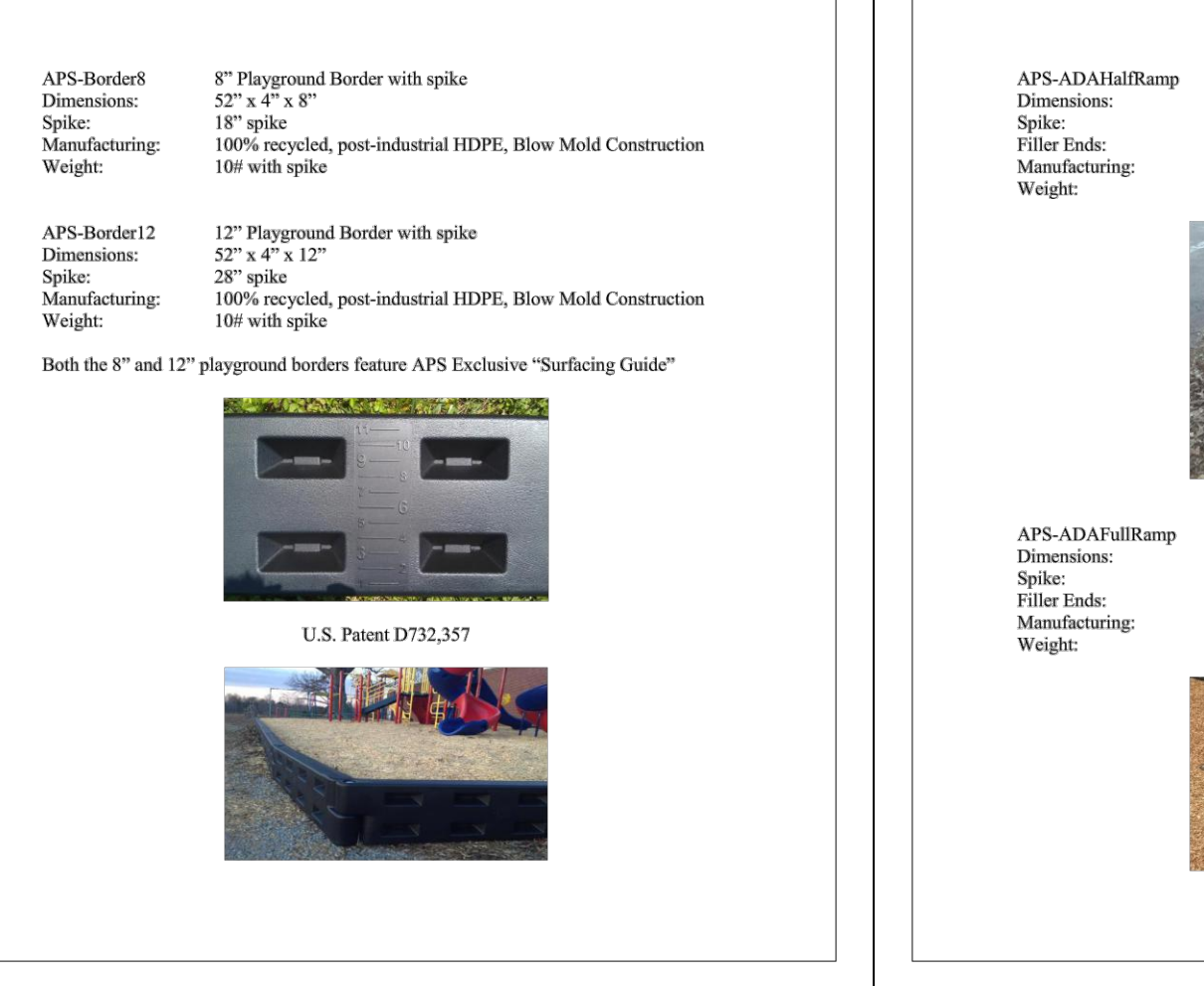
Long Islander Fence & Gate
Residential Series #300
Approved by: [Signature]
Drawn by: [Signature]



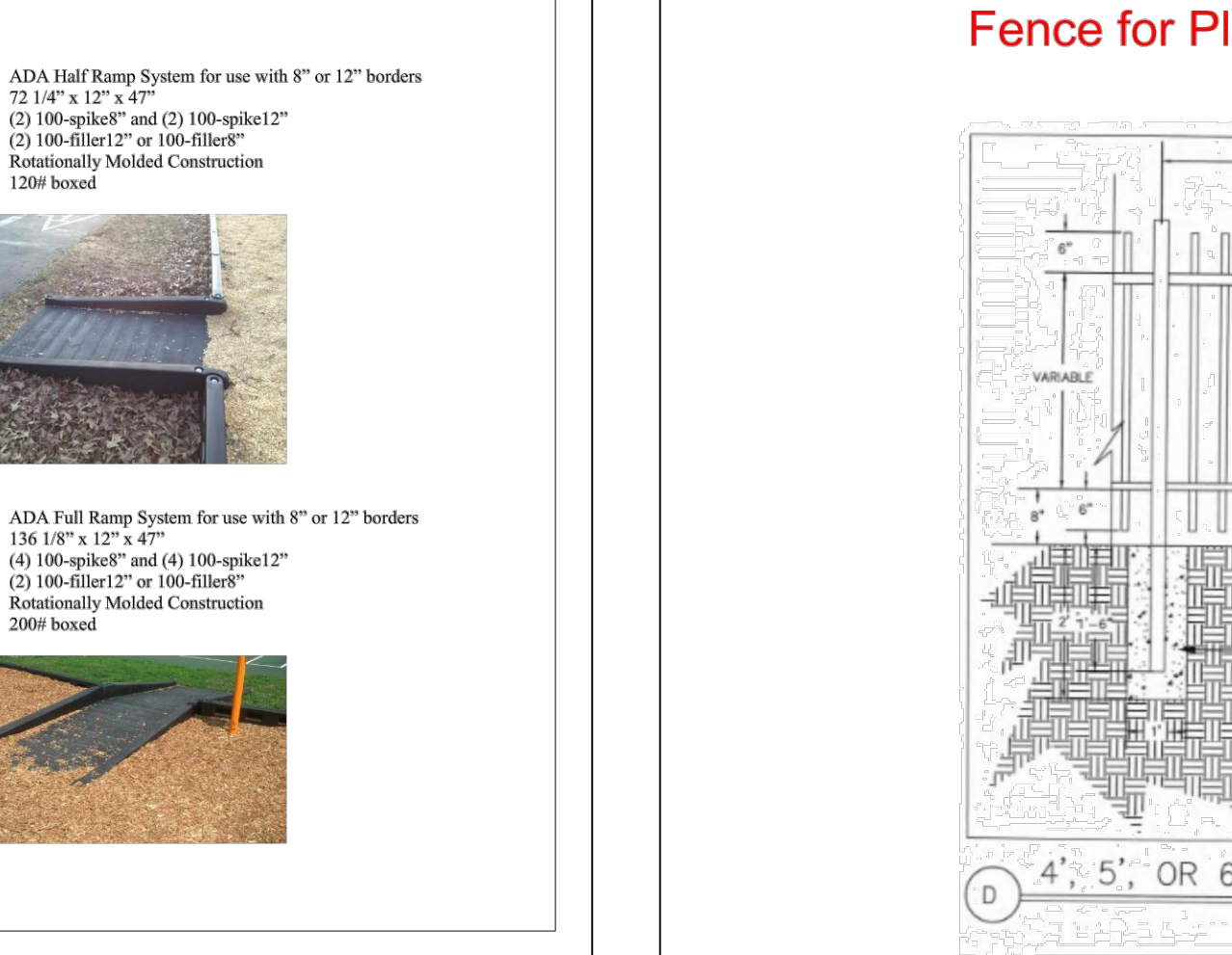
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Cornelius, NC 28031



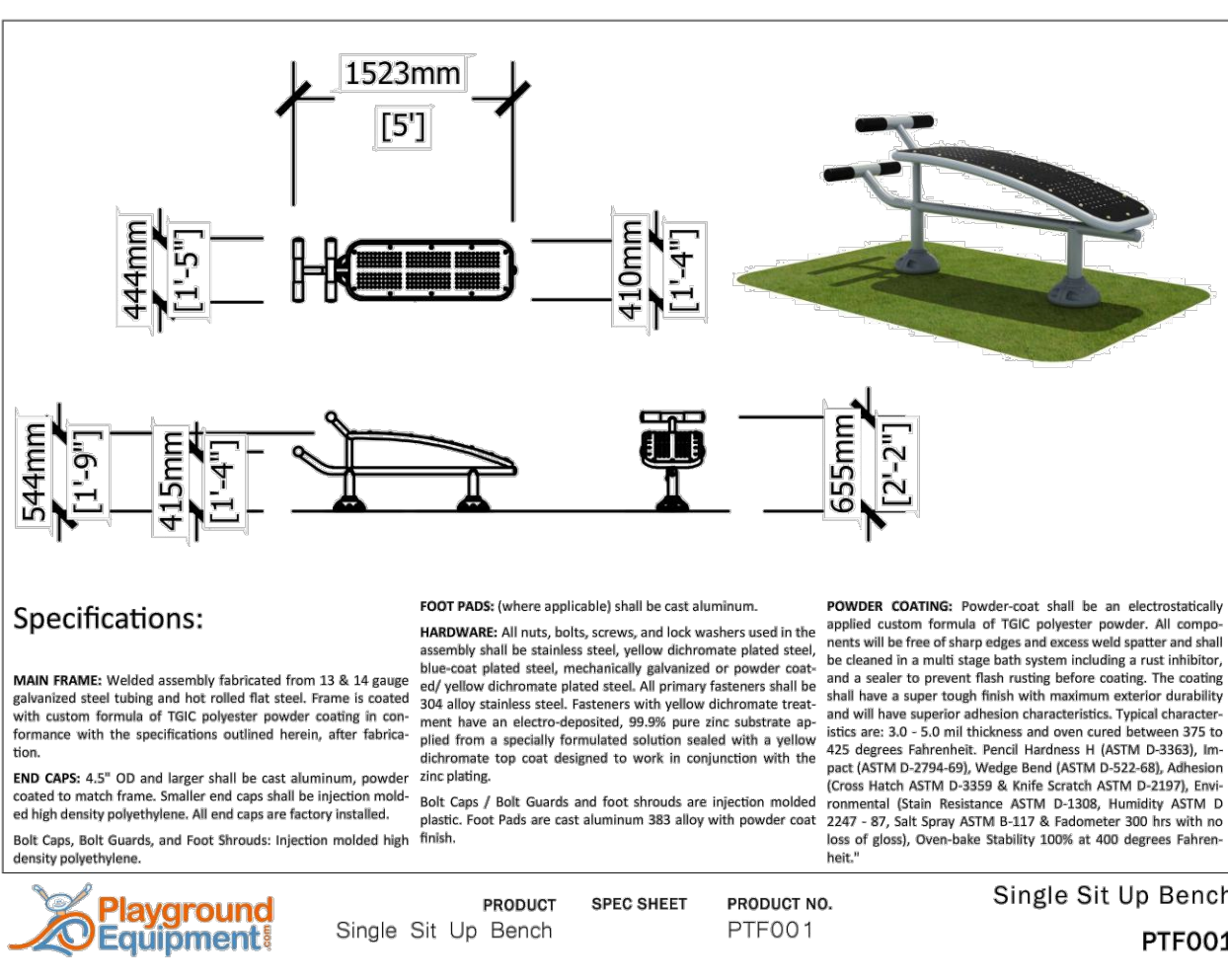
Playground Equipment
PRODUCT SPEC SHEET PRODUCT NO. PTF059



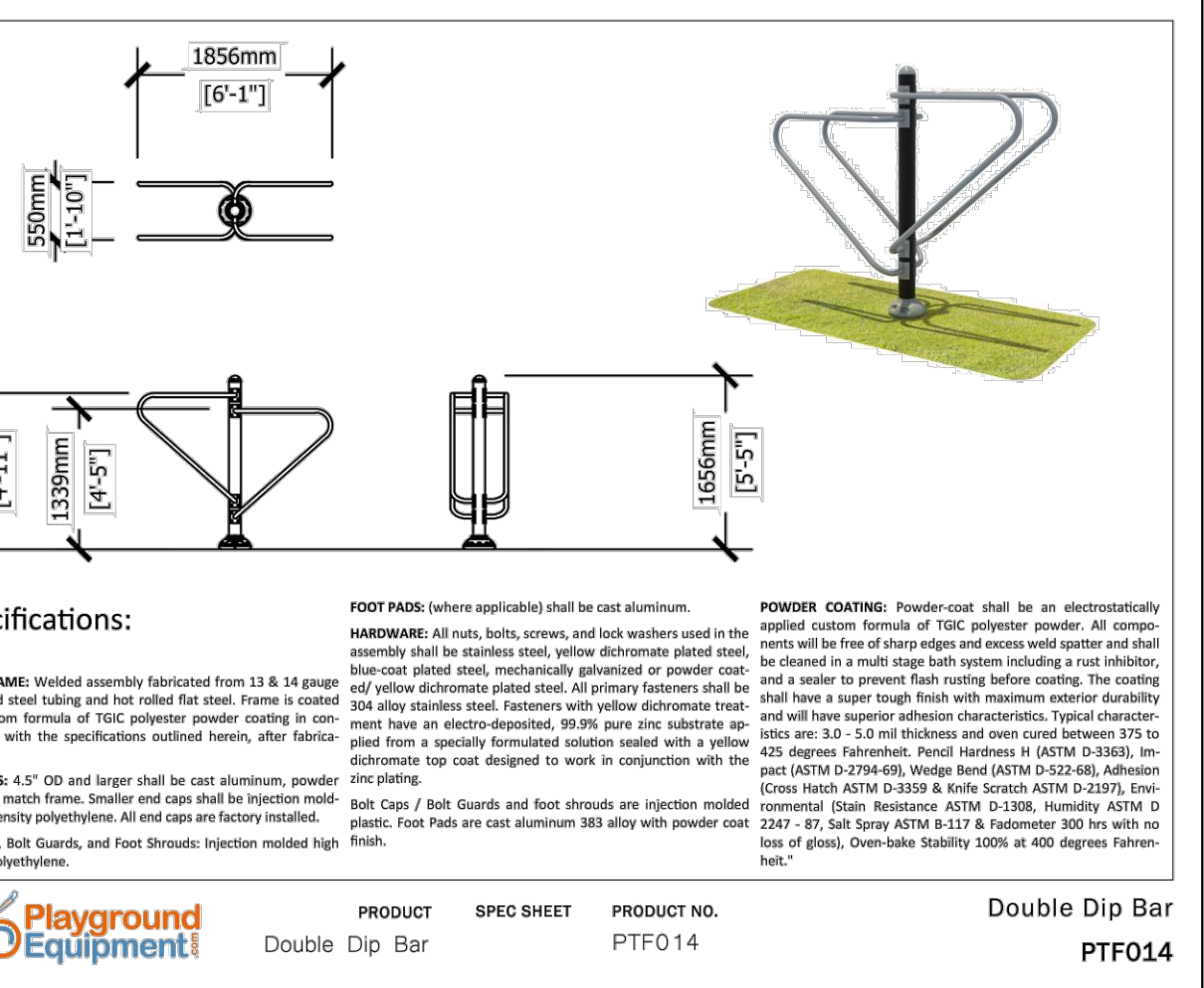
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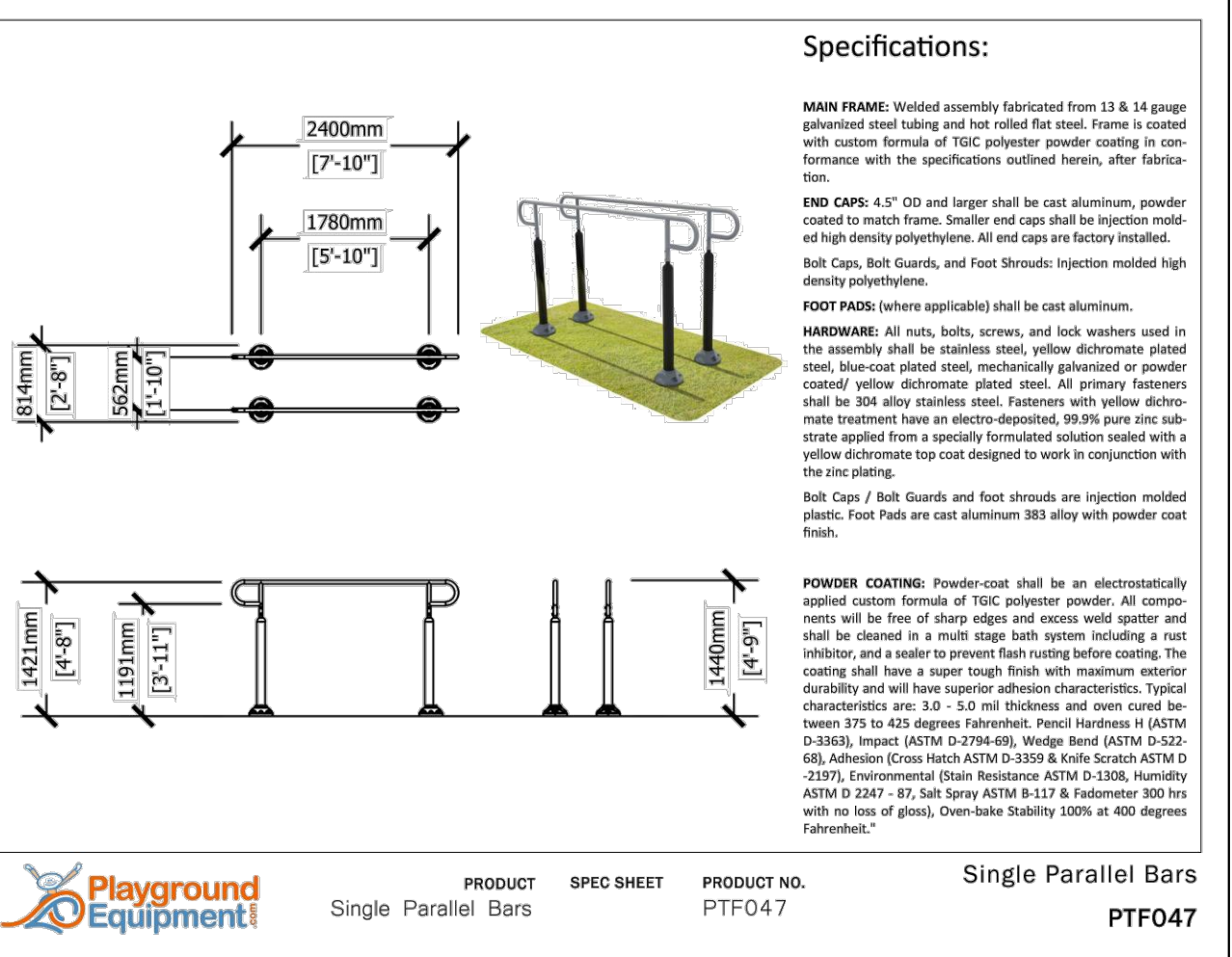
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Cornelius, NC 28031



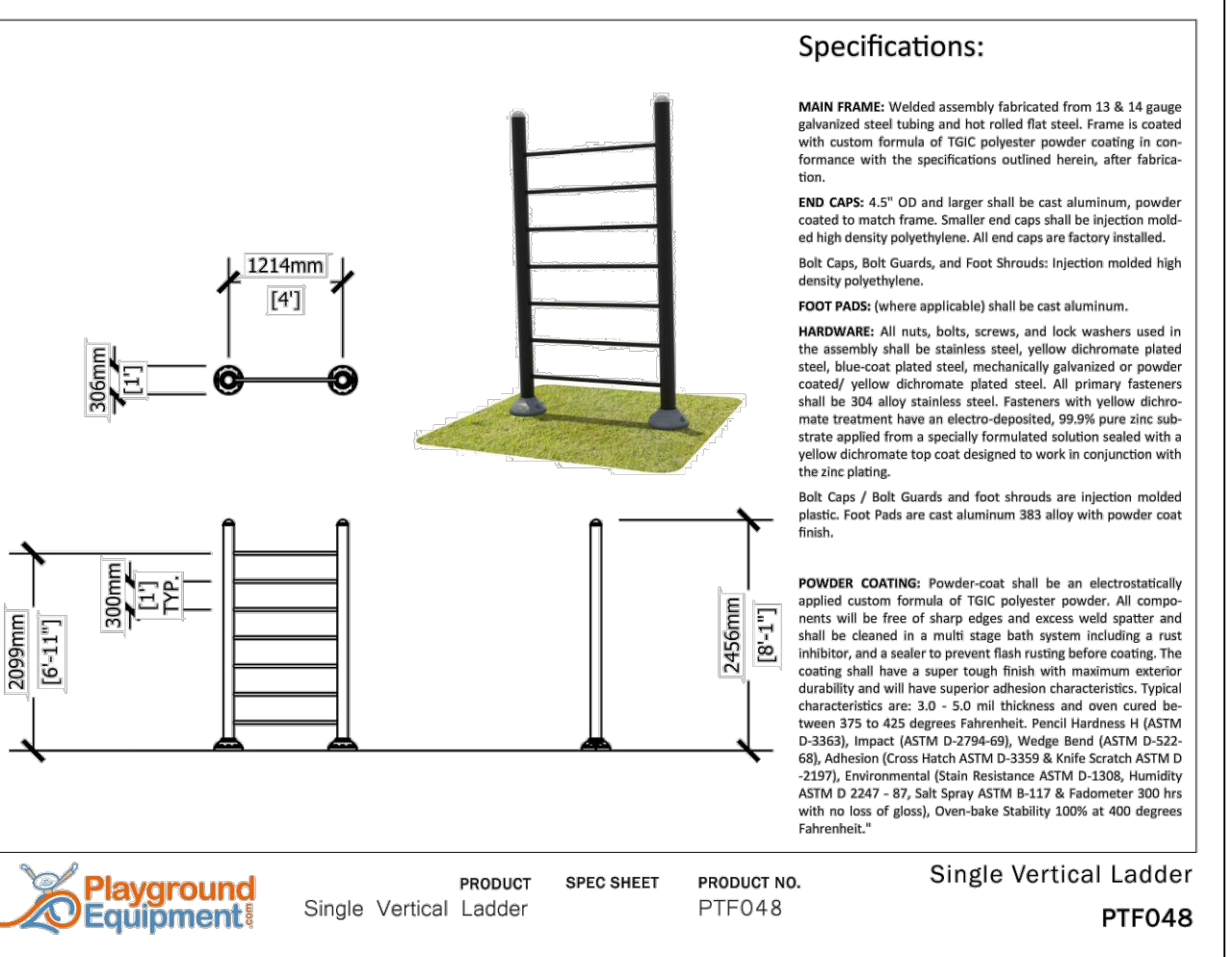
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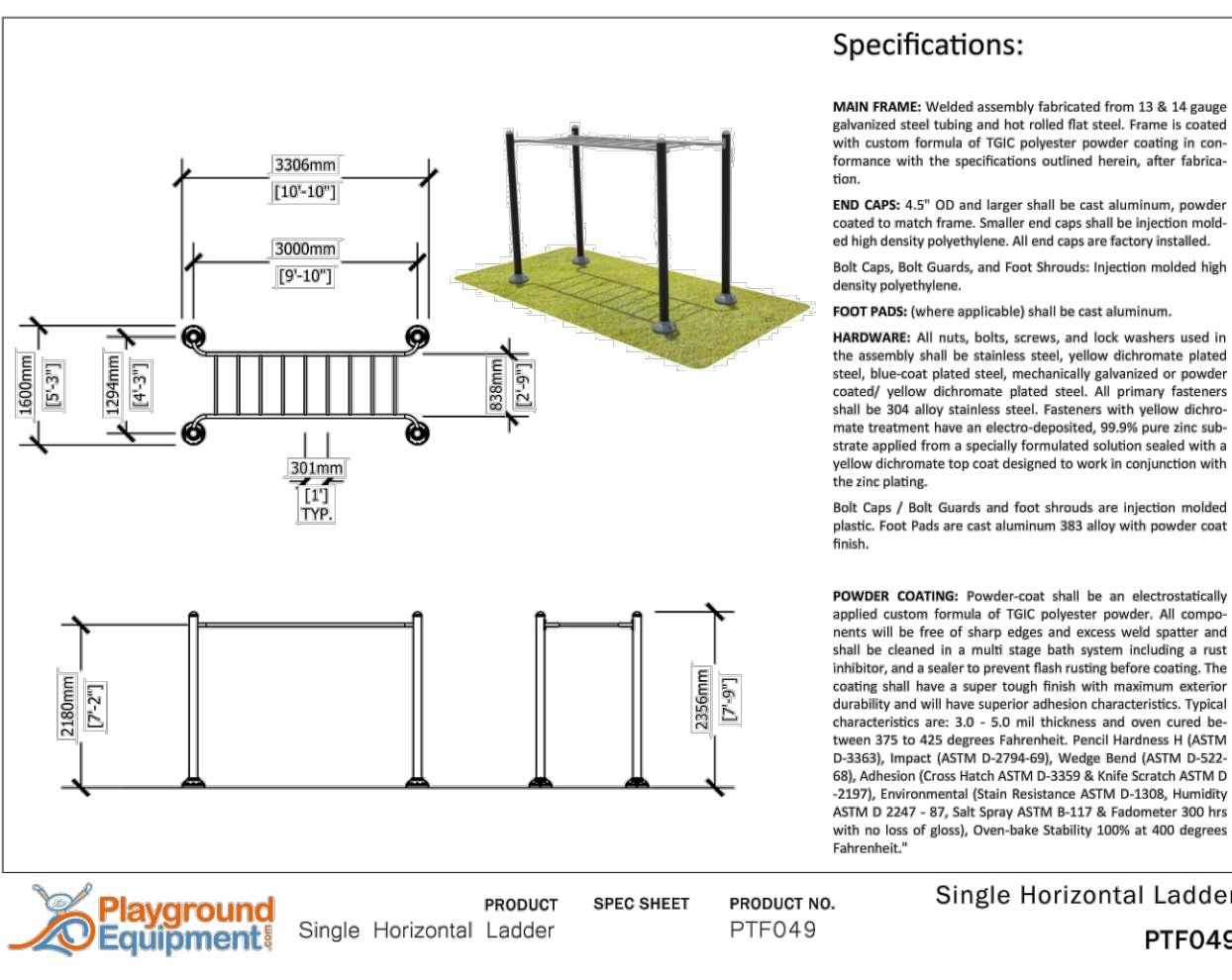
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PRODUCT SPEC SHEET PRODUCT NO. PTF014



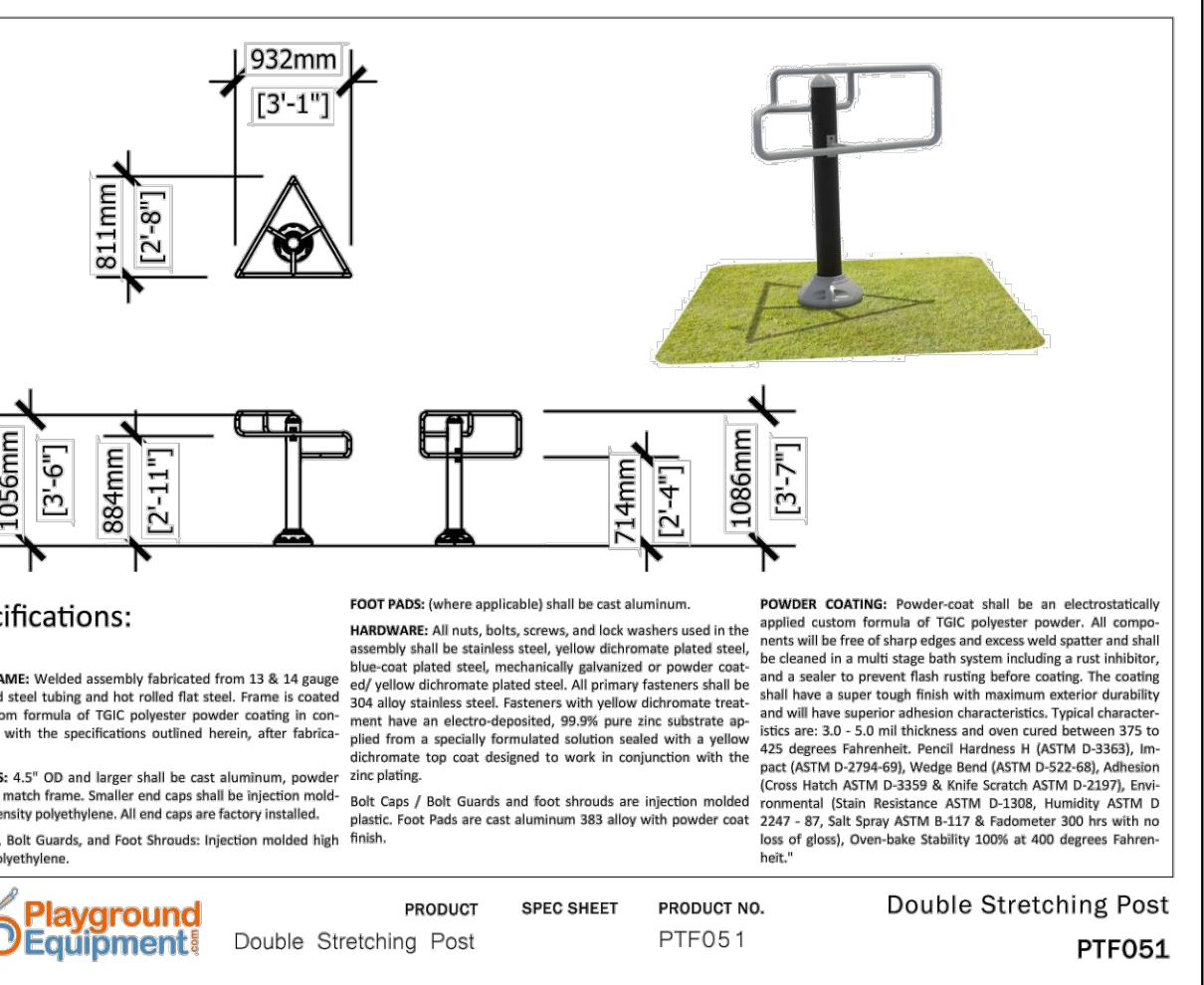
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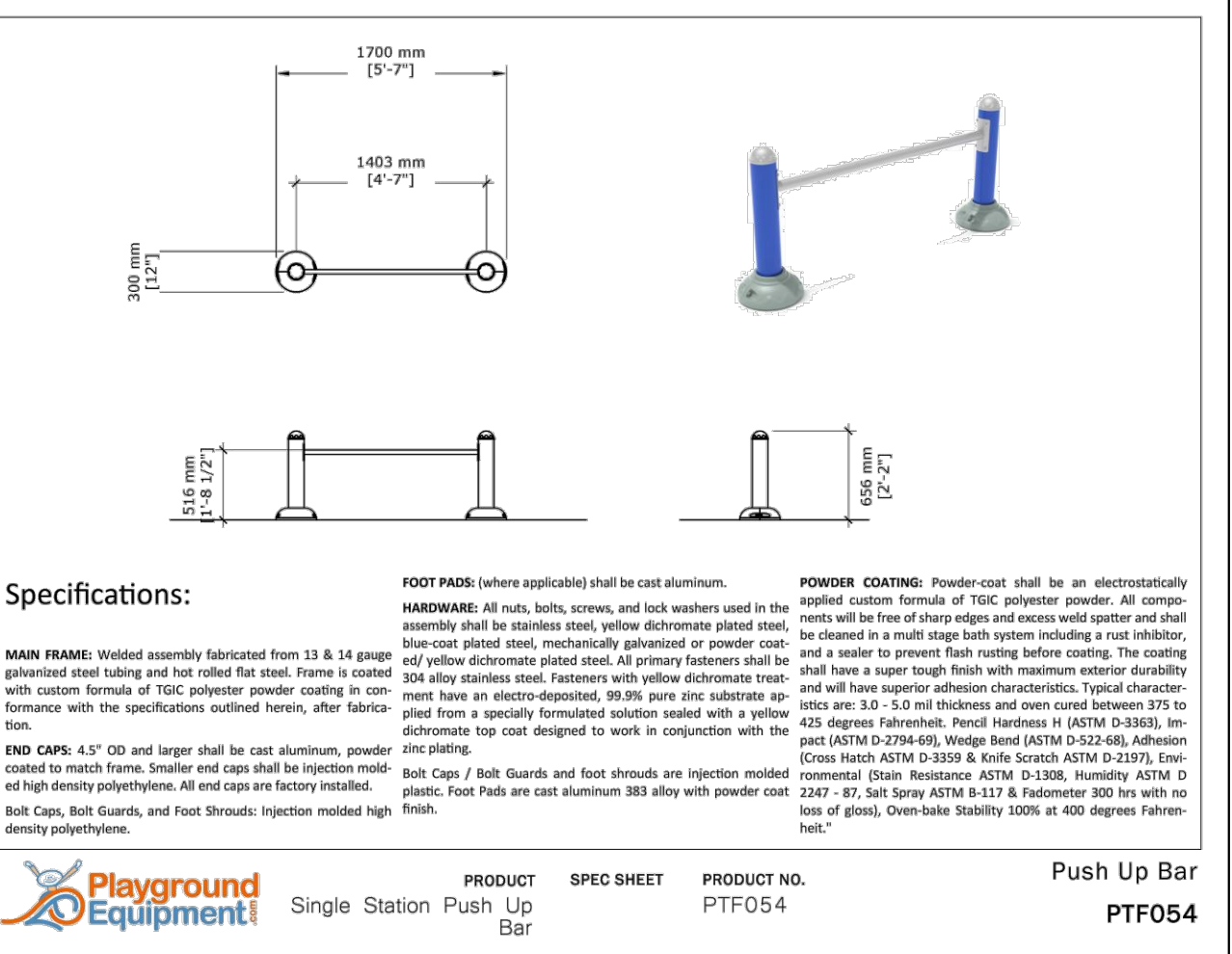
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PRODUCT SPEC SHEET PRODUCT NO. PTF048



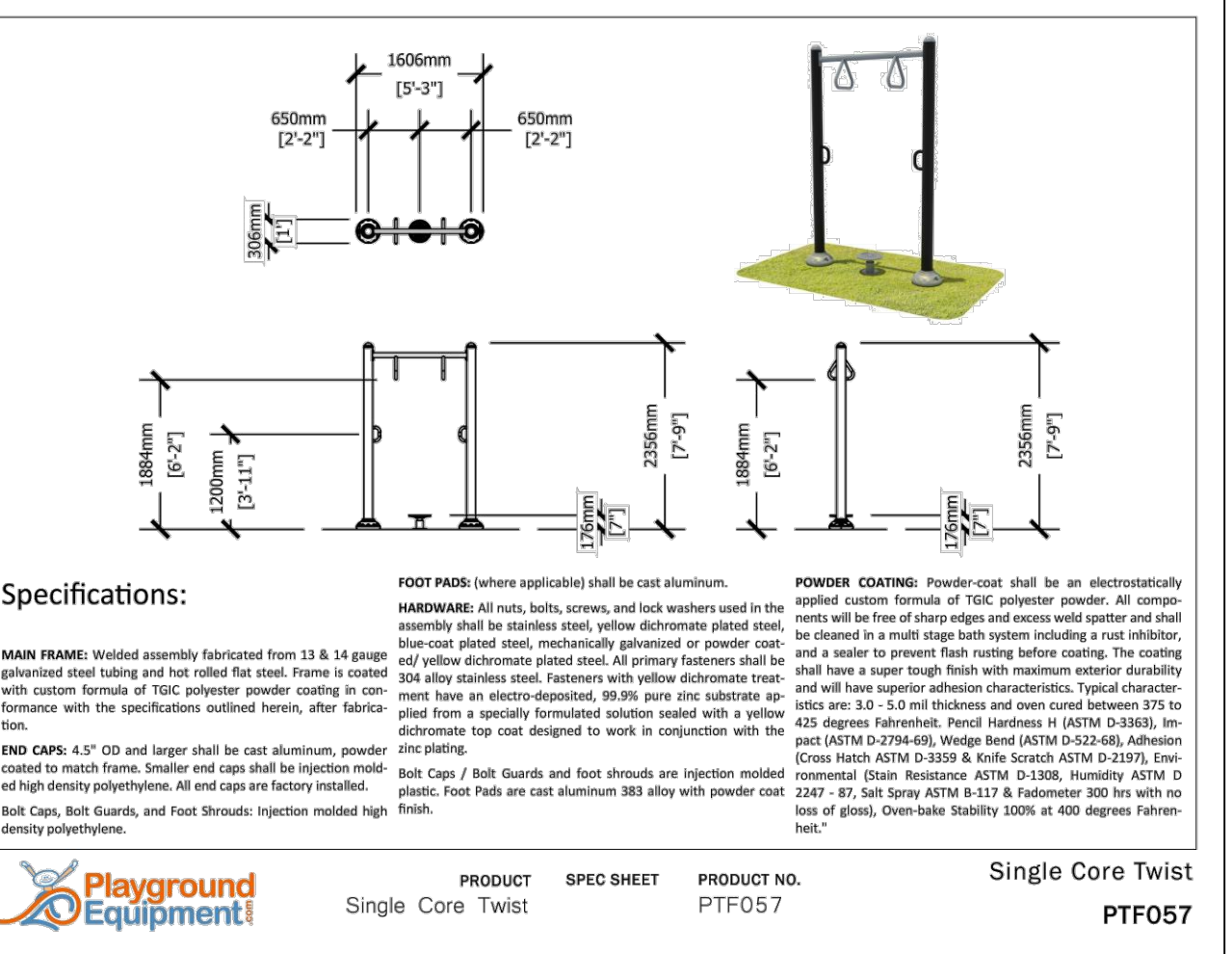
Playground Equipment
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Playground Equipment
PRODUCT SPEC SHEET PRODUCT NO. PTF051

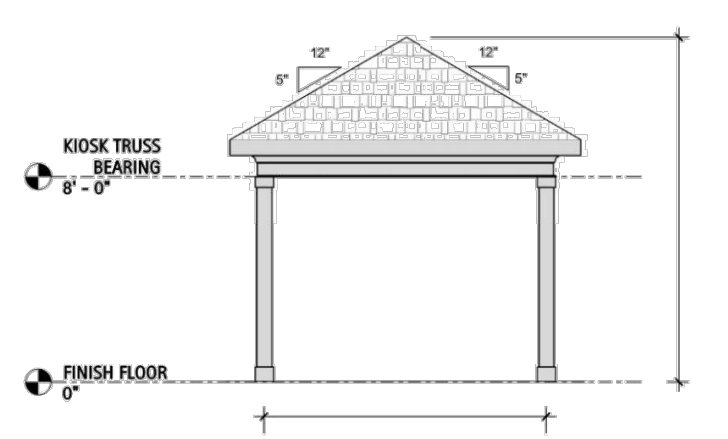


Playground Equipment
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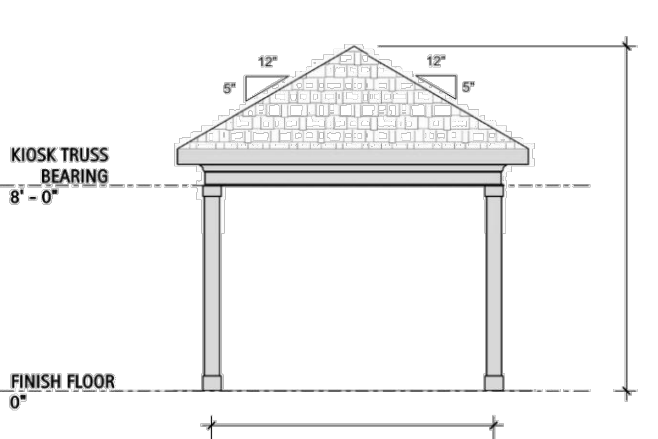


Playground Equipment
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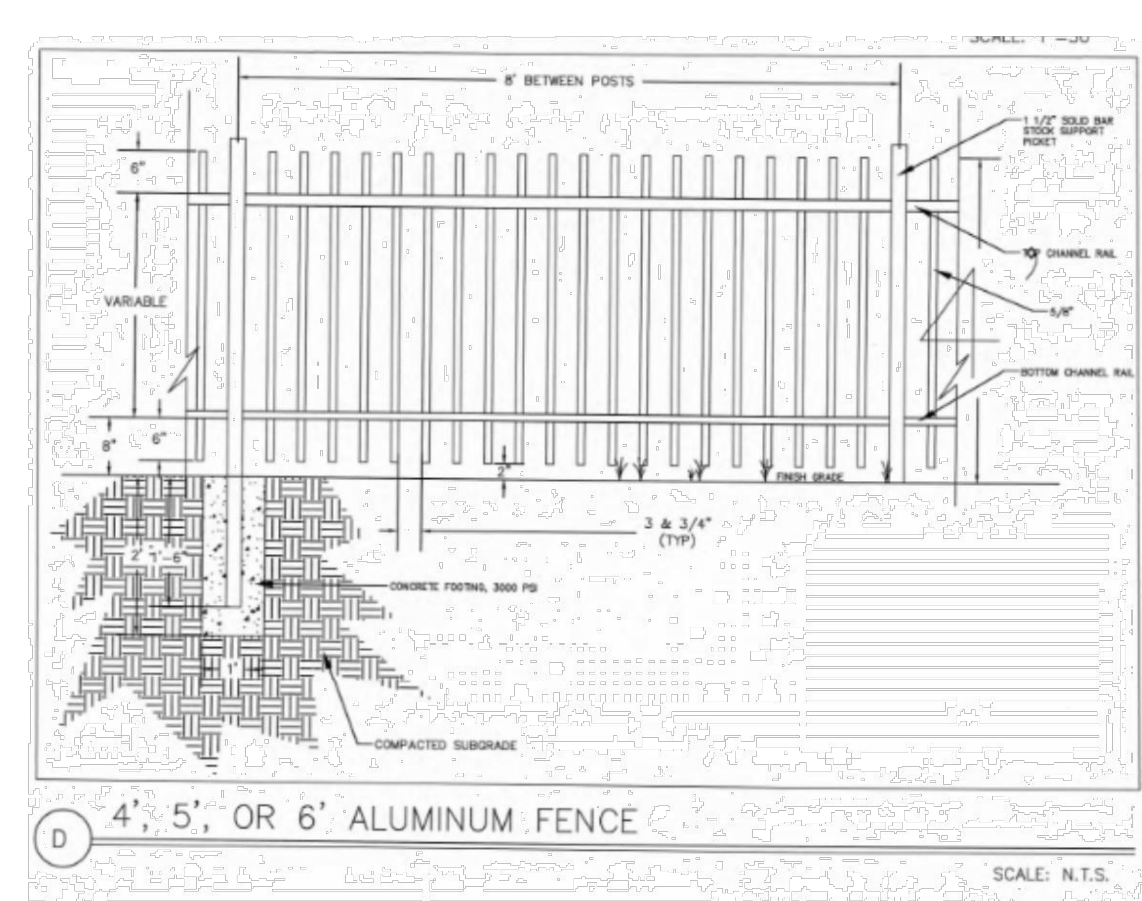
Proposed 18'x18' Pavilion at Central Park



Proposed 20'x20' Pavilion at Playground Area



Fence for Playground area



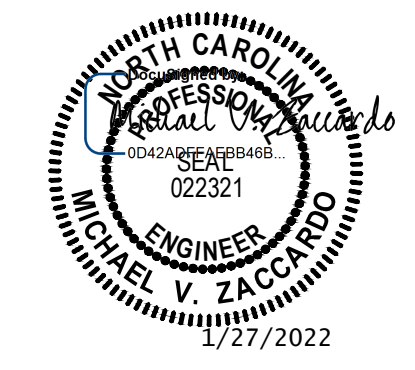
TOWN CERTIFICATION

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR



THIS DRAWING PREPARED AT THE
RALEIGH OFFICE
5410 Trinity Road, Suite 102 | Raleigh, NC 27607
TEL: 919.866.9511 FAX: 919.833.8124 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

DATE: 01/27/2022
DRAWN BY: JD, MACMILLAN
DESIGNED BY: E, ANGE
CHECKED BY: M, ZACCARO

SCALE: N/A

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652
HAYWOOD GLEN PHASE 3
OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA
SITE DETAILS

JOB NO. 43202
SHEET NO. C7.1

RELEASED FOR CONSTRUCTION

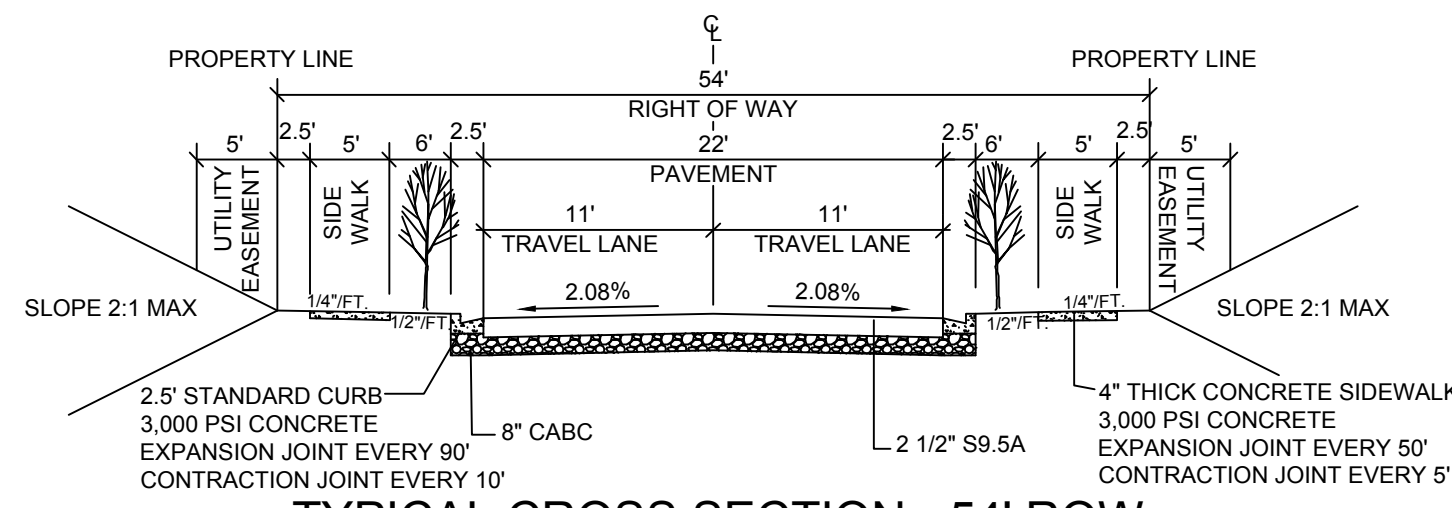
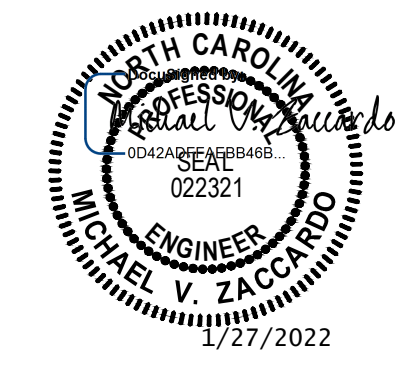
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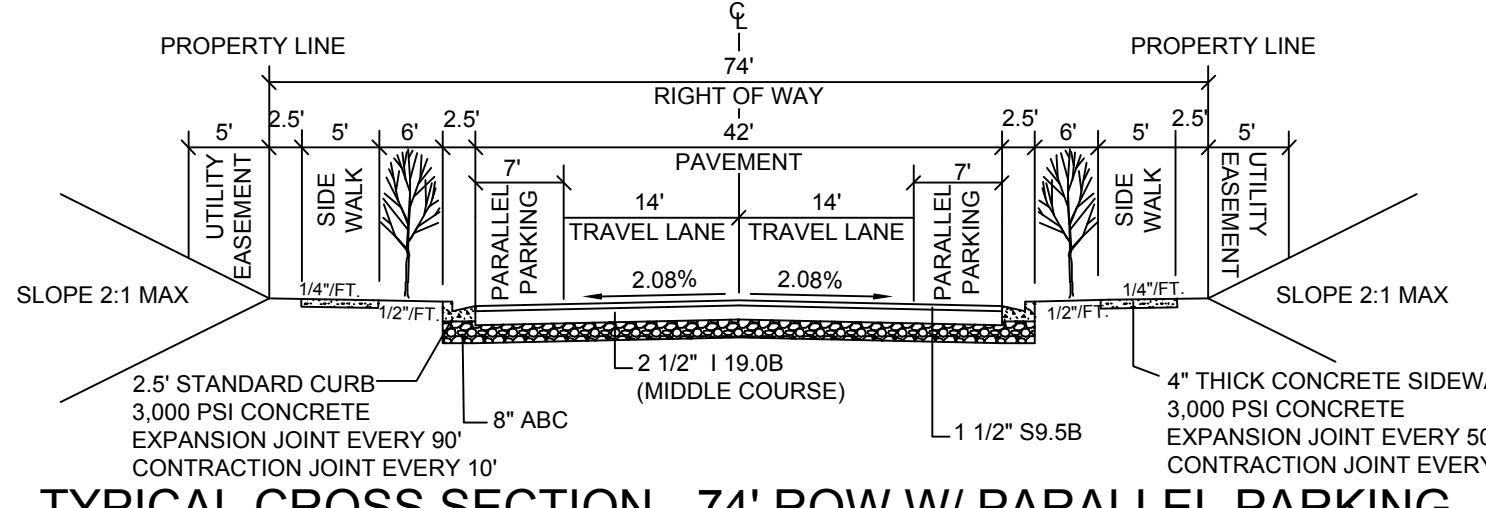
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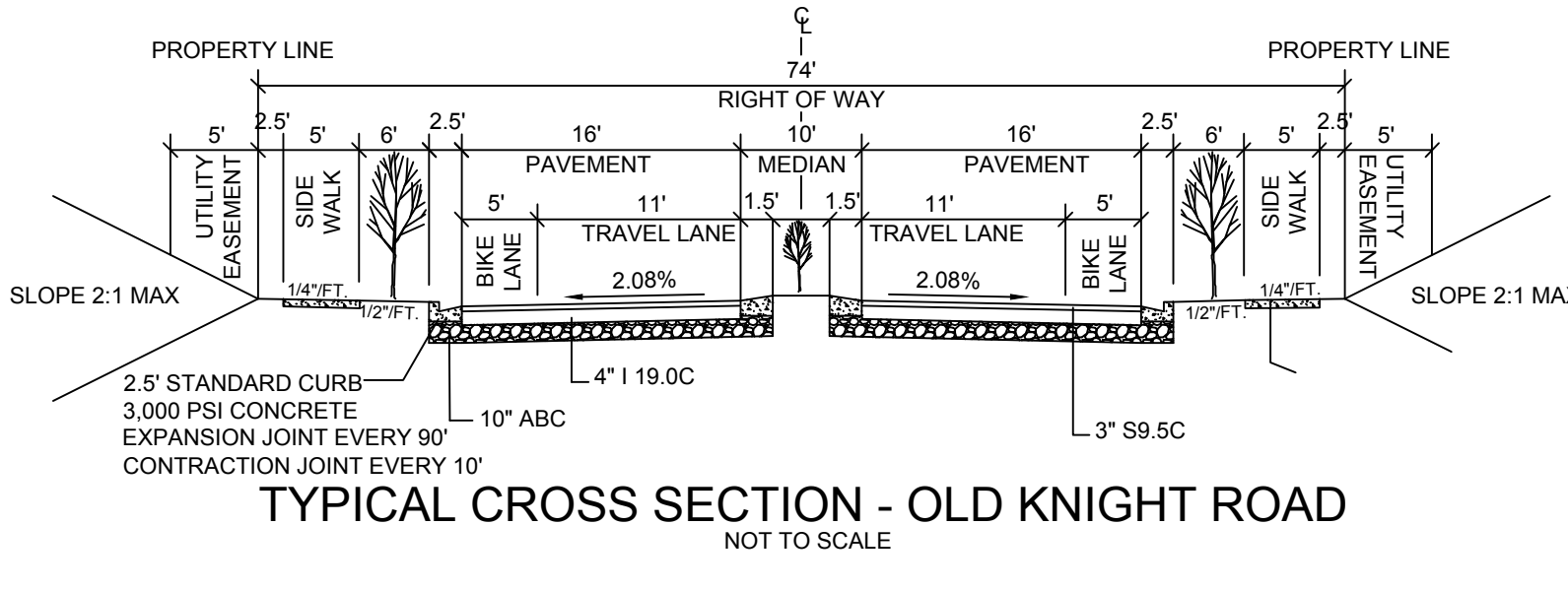
BY: _____ DATE: _____
ADMINISTRATOR



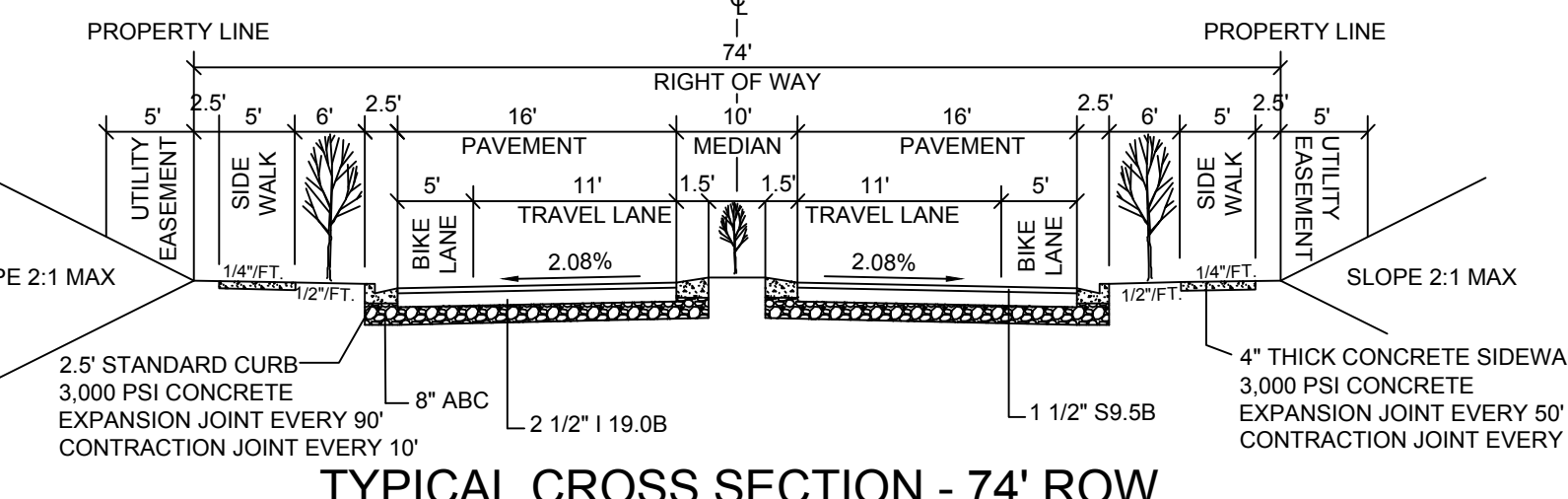
TYPICAL CROSS SECTION - 54' ROW
NOT TO SCALE



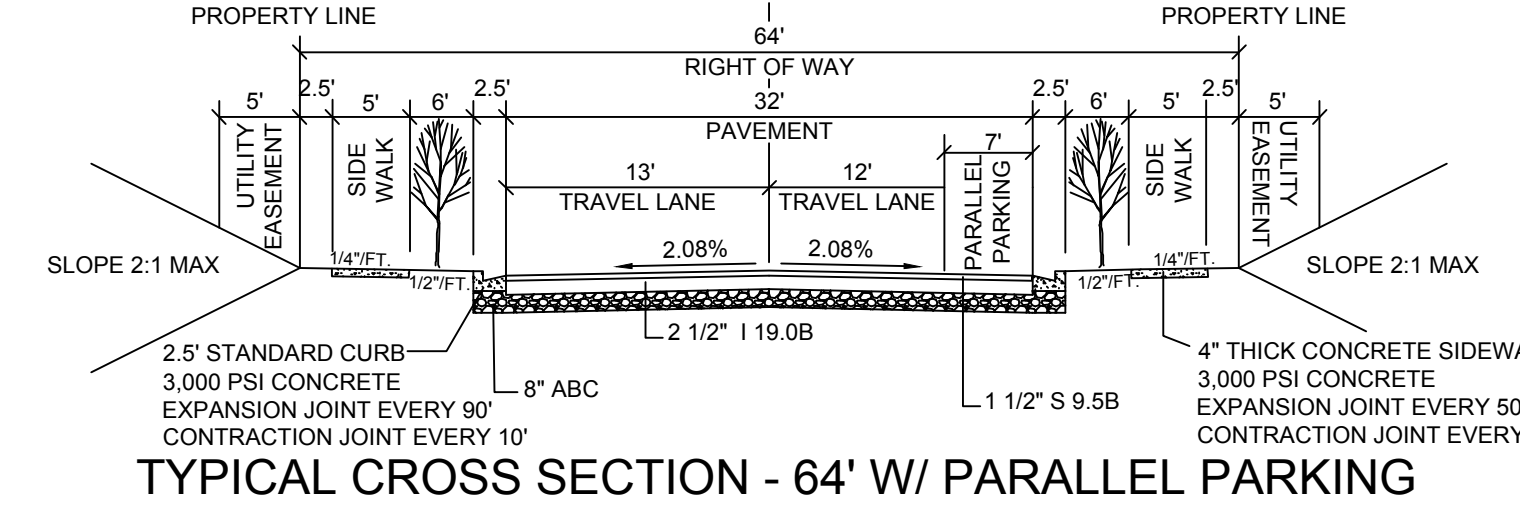
TYPICAL CROSS SECTION - 74' ROW W/ PARALLEL PARKING
NOT TO SCALE



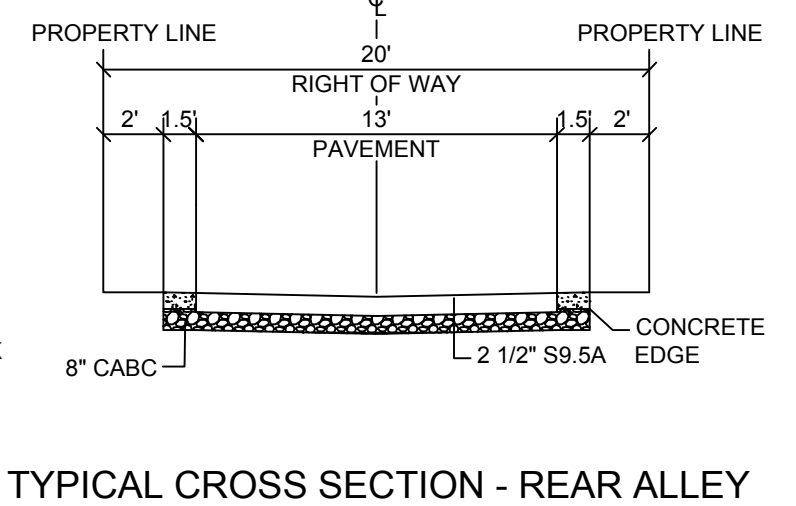
TYPICAL CROSS SECTION - OLD KNIGHT ROAD
NOT TO SCALE



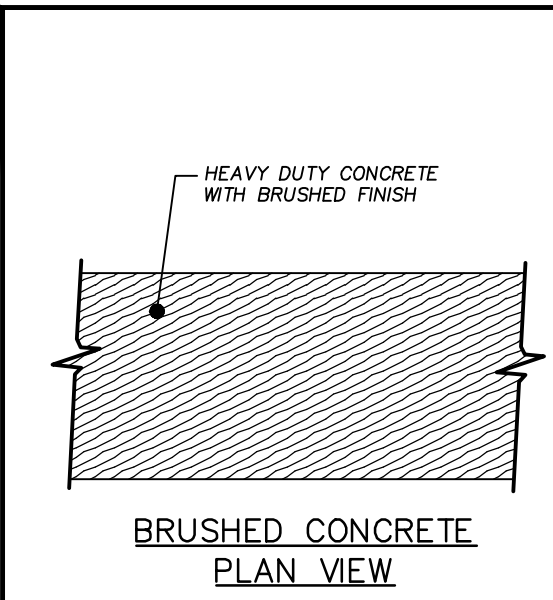
TYPICAL CROSS SECTION - 74' ROW
NOT TO SCALE



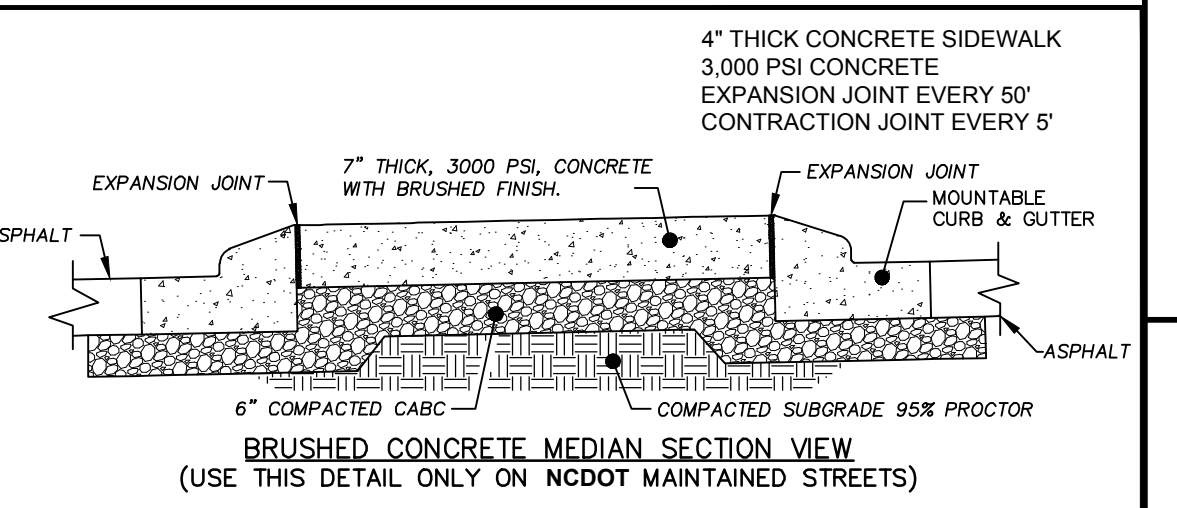
TYPICAL CROSS SECTION - 64' W/ PARALLEL PARKING
NOT TO SCALE



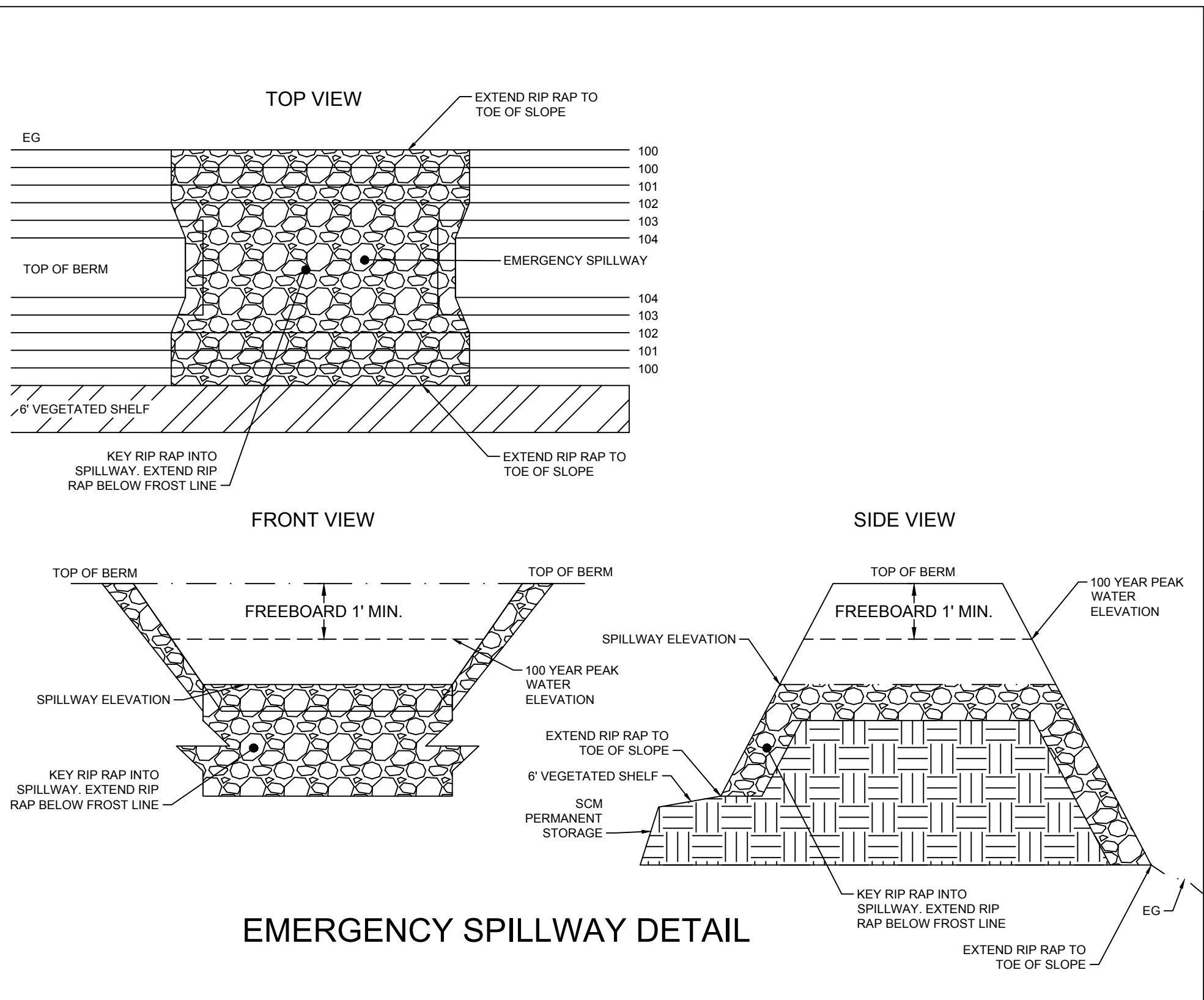
TYPICAL CROSS SECTION - REAR ALLEY
NOT TO SCALE



BRUSHED CONCRETE
PLAN VIEW

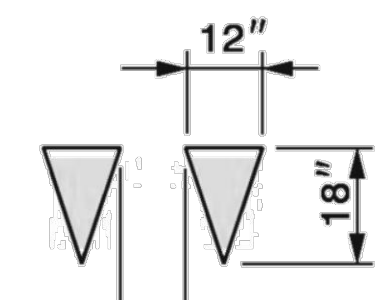


BRUSHED HEAVY DUTY CONCRETE ROUNDABOUT DETAIL



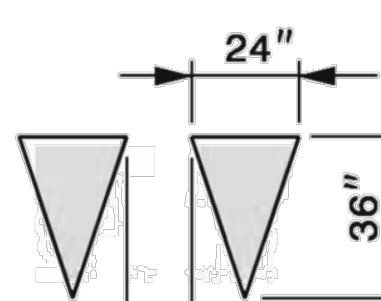
EMERGENCY SPILLWAY DETAIL

12" YIELD LINE SYMBOL



USE ON UNDER 12' LANES

24" YIELD LINE SYMBOL

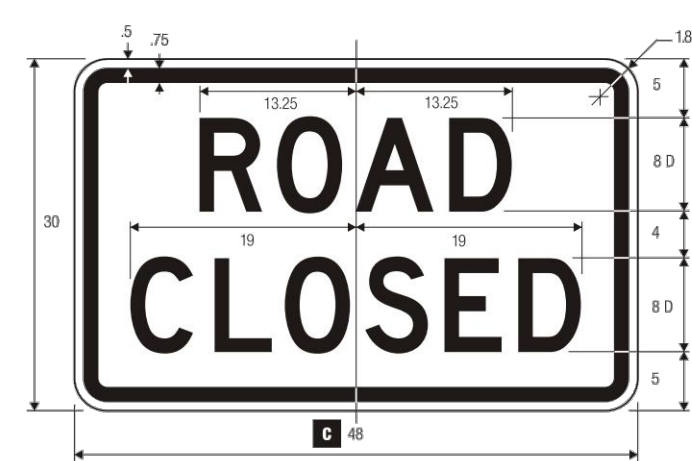


USE ON 12' AND ABOVE LANES

- NOTES:
- BARRICADE(S) TO BE ERECTED ACROSS ENTIRE ROADWAY INCLUDING CURB & SLOPE.
 - ADVANCE WARNING SIGN W-11 (DEAD END) SHALL BE PLACED JUST AFTER LAST INTERSECTING STREET.
 - WARNING SIGNS FOR BARRICADE SHALL BE REFLECTIVE AND ALTERNATE RED AND WHITE STRIPS.
 - "ROAD CLOSED" SIGN SHALL MEET SPECIFICATIONS OF MUTCD R11-2 AND BE REQUIRED ATOP EACH BARRICADE USED.

REVISIONS	DATE	DESCRIPTION	STD. NO.

TOWN OF KNIGHTDALE
TEMPORARY BARRICADE FOR DEAD END ROADS
3.18



R11-2
ROAD CLOSED

LEGEND - BLACK BACKGROUND - WHITE (RETROREFLECTIVE)

1-153

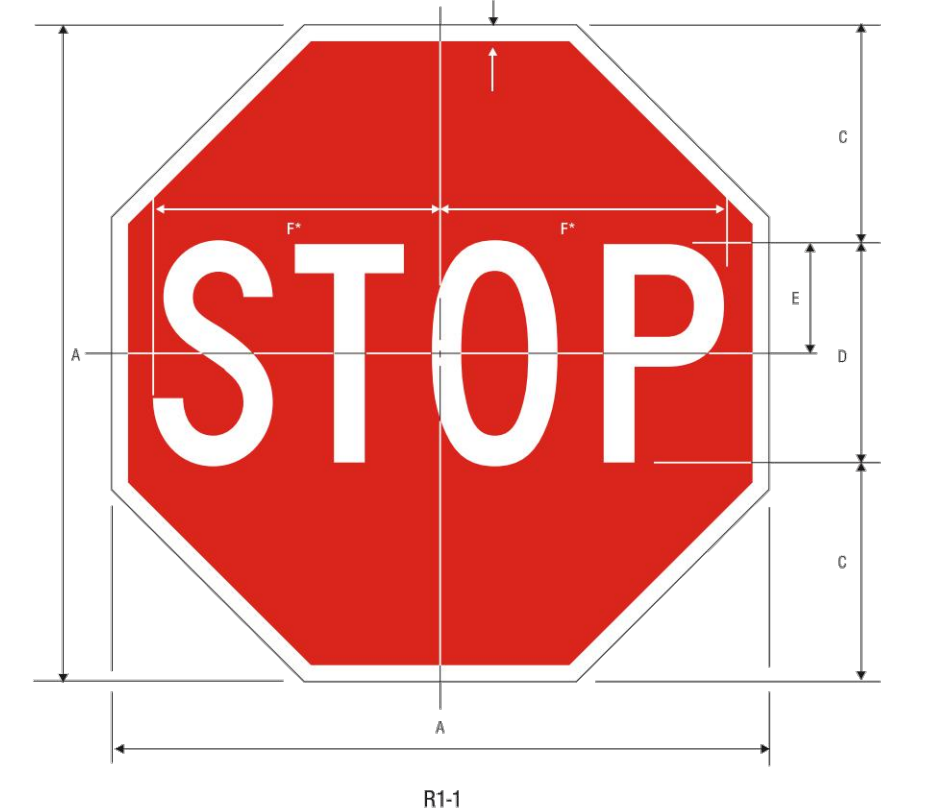


R2-1
SPEED LIMIT (REGULATORY)

LEGEND - BLACK BACKGROUND - WHITE (RETROREFLECTIVE)

1-10

A	B	C	D	E	F	G	H	J	K	L
18	24	375	625	3	3 E	2	8 E	2.98	5.5	1.5
24	30	375	625	4	4 E	2	10 E	0.563	7.313	1.5
36	48	625	875	6	6 E	5	14 E	14.375	11	2.25
48	60	75	1.25	8	8 E	8	18 E	19.25	14.625	3



R1-1
STOP

LEGEND - WHITE (RETROREFLECTIVE) BACKGROUND - RED (RETROREFLECTIVE)

1-1

A	B	C	D	E	F
18	375	6	8 C	3	7.75
24	625	8	8 C	4	10
30	75	10	10 C	6	12.5
36	875	12	12 C	8	15
48	1.25	16	16 C	8	20

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

HAYWOOD GLEN PHASE 3
OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA

SITE DETAILS

YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
01/27/2022 <td> </td>	

DATE: 01/27/2022
DRAWN BY: JD. MACMILLAN
DESIGNED BY: E. ANGE
CHECKED BY: M. ZACCARDO
SCALE: N/A

JOB NO. 43202
SHEET NO. C7.2

RELEASED FOR CONSTRUCTION

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Water and Sewer Permits (If applicable)

The City of Raleigh consents to the connection and extension of the City's **Public Sewer System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit # S-4902**

The City of Raleigh consents to the connection and extension of the City's **Public Water System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit # W-3836**

The City of Raleigh consents to the connection to its public sewer system and extension of the **private sewer collection system** as shown on this plan. The material and constructions methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh Public Utilities Department Permit #

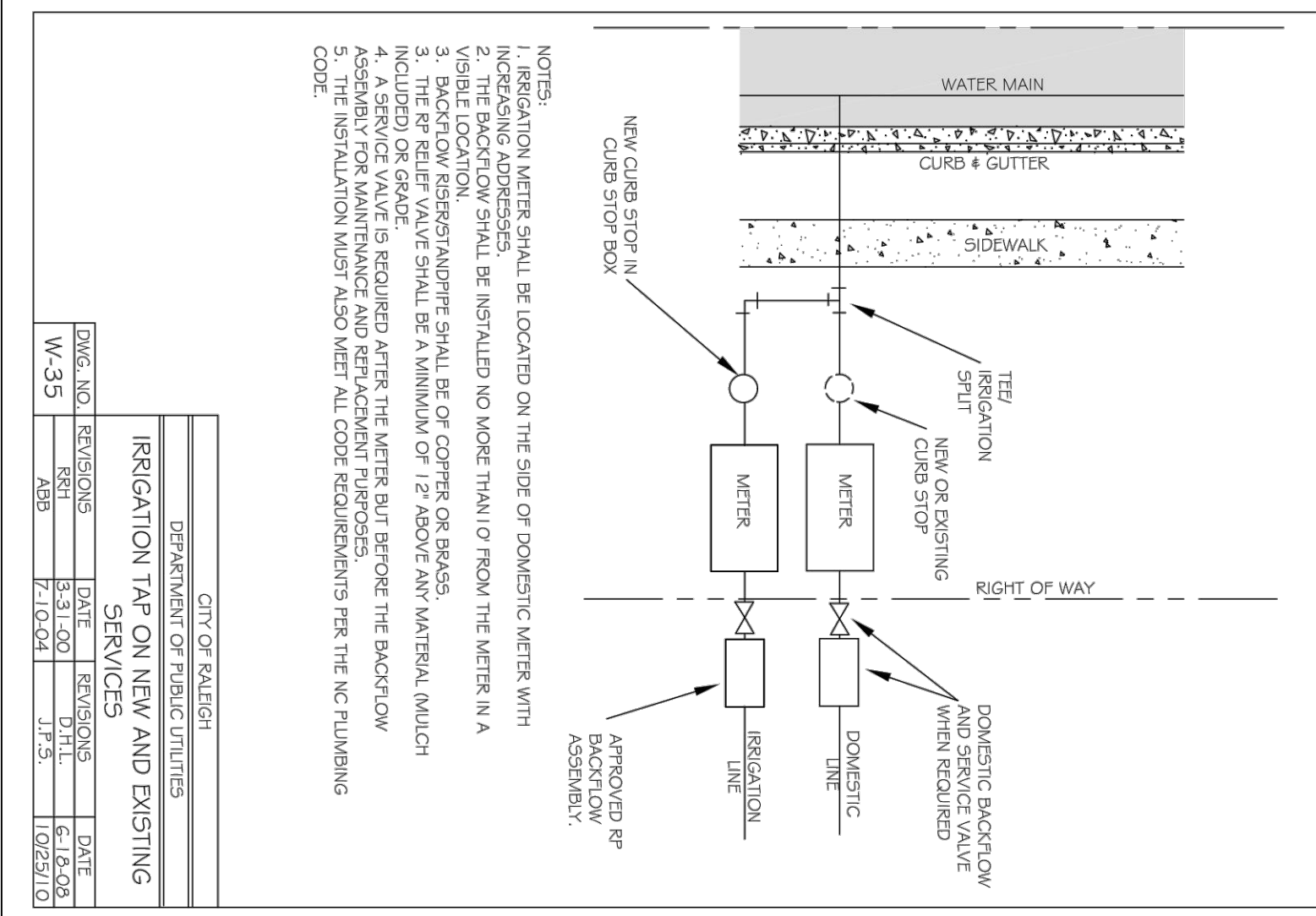


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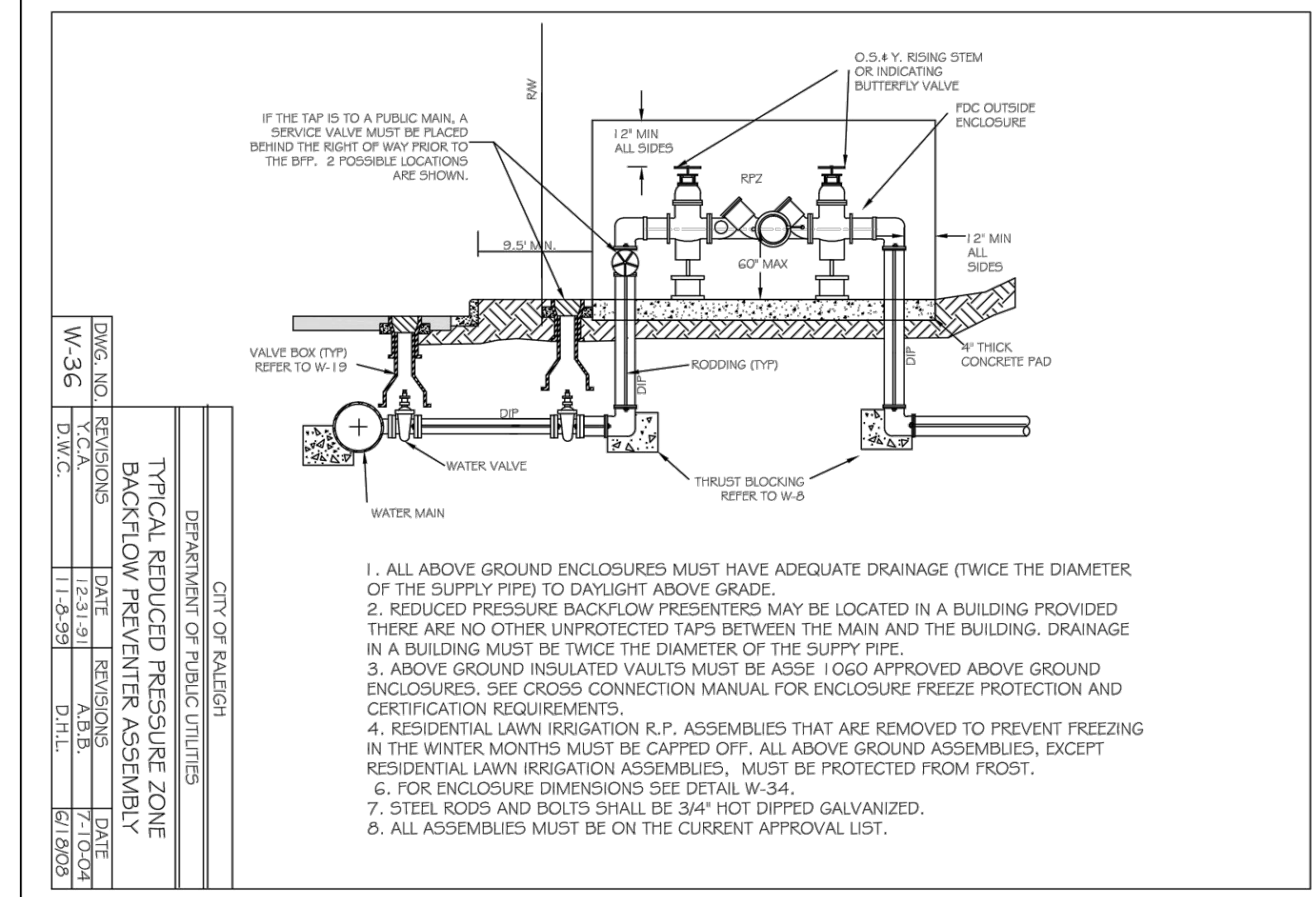


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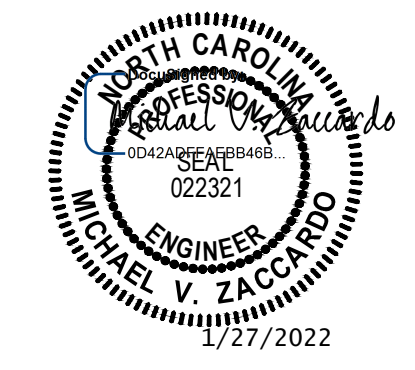
- 1. ALL ABOVE GROUND ENCLOSURES MUST HAVE ADEQUATE DRAINAGE (TWICE THE DIAMETER OF THE SUPPLY PIPE) TO DAYLIGHT ABOVE GRADE.
2. REDUCED PRESSURE BACKFLOW PREVENTERS MAY BE LOCATED IN A BUILDING PROVIDED THERE ARE NO OTHER UNPROTECTED TAPS BETWEEN THE MAIN AND THE BUILDING. DRAINAGE IN A BUILDING MUST BE TWICE THE DIAMETER OF THE SUPPLY PIPE.
3. ABOVE GROUND INSULATED VALVES MUST BE ASSESS 100% APPROVED ABOVE GROUND ENCLOSURES. SEE CROSS CONNECTION MANUAL FOR ENCLOSURE FREEZE PROTECTION AND CERTIFICATION REQUIREMENTS.
4. RESIDENTIAL LAWN IRRIGATION R.P. ASSEMBLIES THAT ARE REMOVED TO PREVENT FREEZING IN THE WINTER MONTHS MUST BE CAPPED OFF. ALL ABOVE GROUND ASSEMBLIES, EXCEPT RESIDENTIAL LAWN IRRIGATION ASSEMBLIES, MUST BE PROTECTED FROM FROST.
5. FOR ENCLOSURE DIMENSIONS SEE DETAIL W-34.
6. STEEL RODS AND BOLTS SHALL BE 3/4" HOT DIPPED GALVANIZED.
7. ALL ASSEMBLIES MUST BE ON THE CURRENT APPROVAL LIST.

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER
THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.
BY: _____ DATE: _____
ADMINISTRATOR

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION
Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.
City of Raleigh Development Approval _____
Raleigh Water Review Officer



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TEL 919.866.4951 FAX 919.833.8124 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

Table with columns: DATE, DRAWN BY, DESIGNED BY, CHECKED BY, SCALE. Includes entries for 01/27/2022, JD.MACMILLAN, E.ANGE, M.ZACCARDO, N/A.

TIMMONS GROUP logo and project information: HAYWOOD GLEN PHASE 3, NORTH CAROLINA LICENSE NO. C-1652, OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA, WATER & SEWER DETAILS. Includes Job No. 43202 and Sheet No. C7.3.

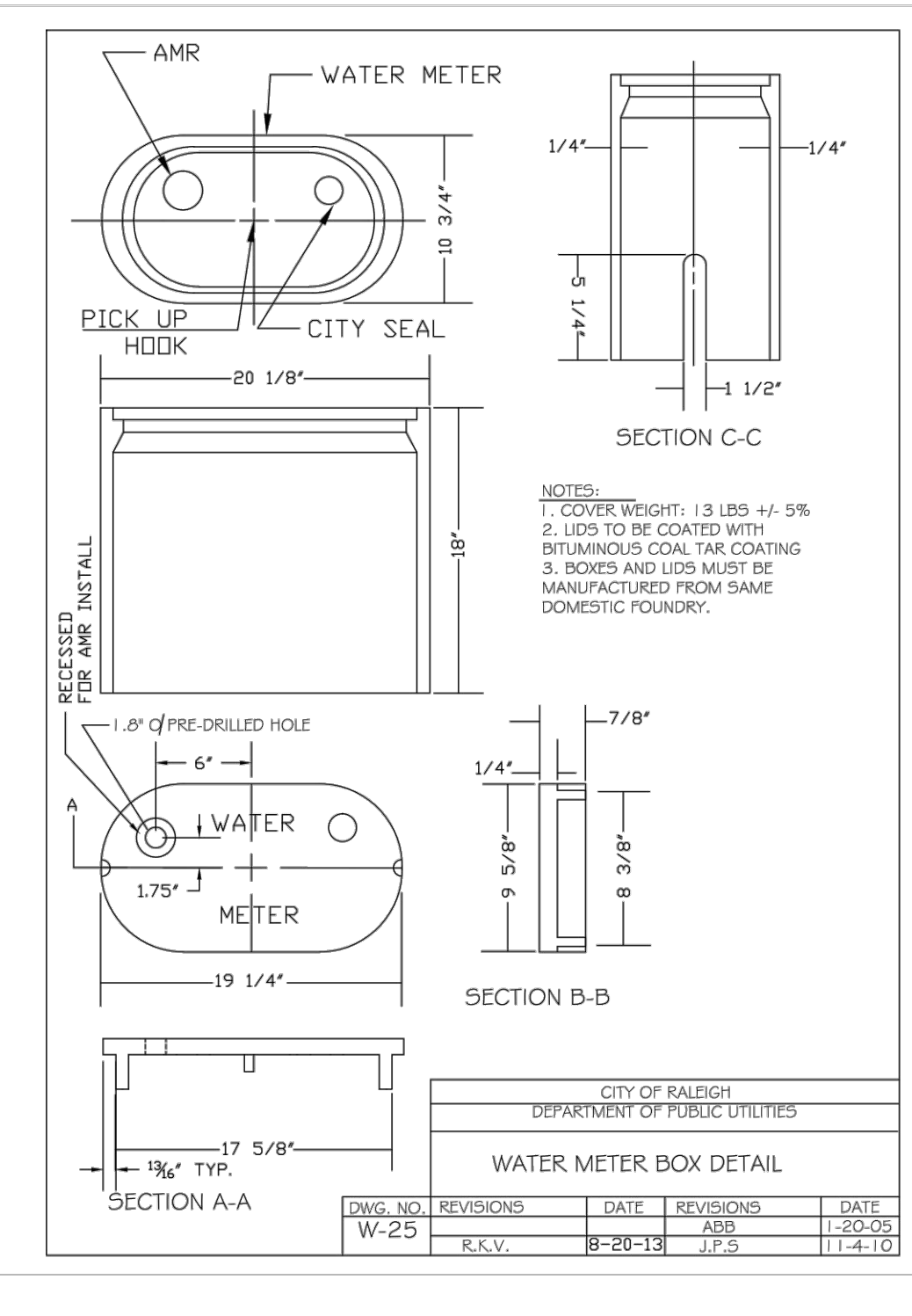


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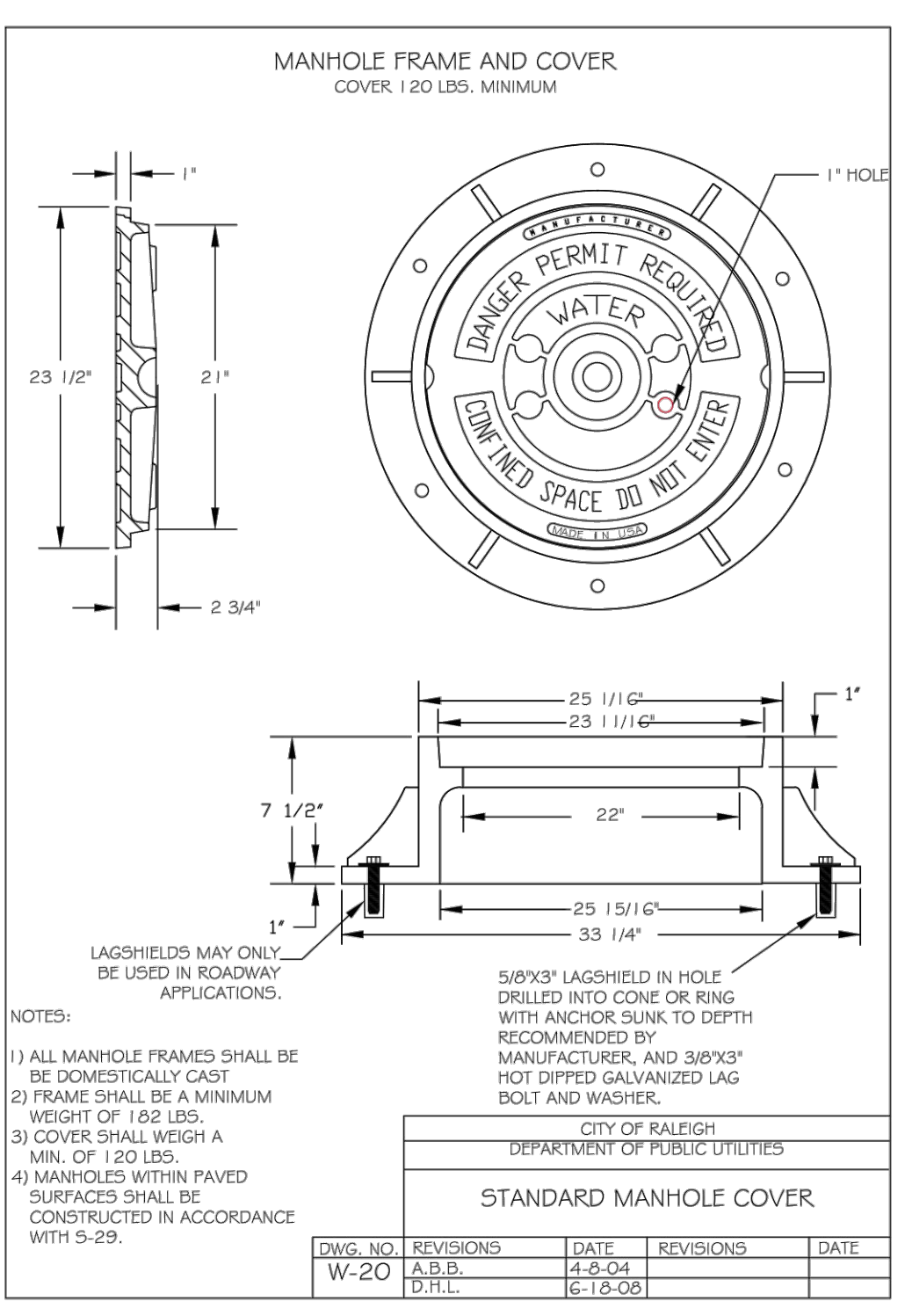


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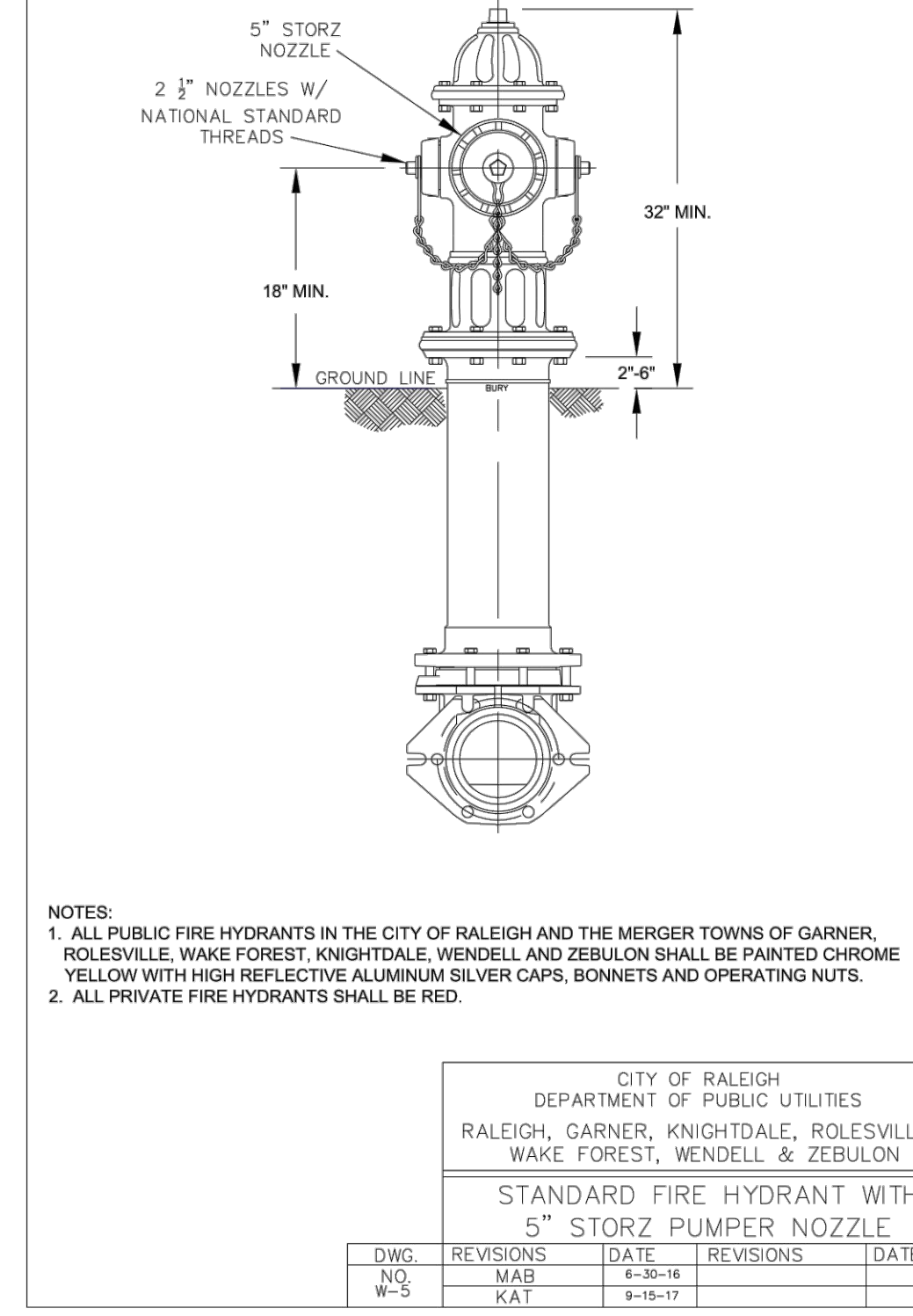


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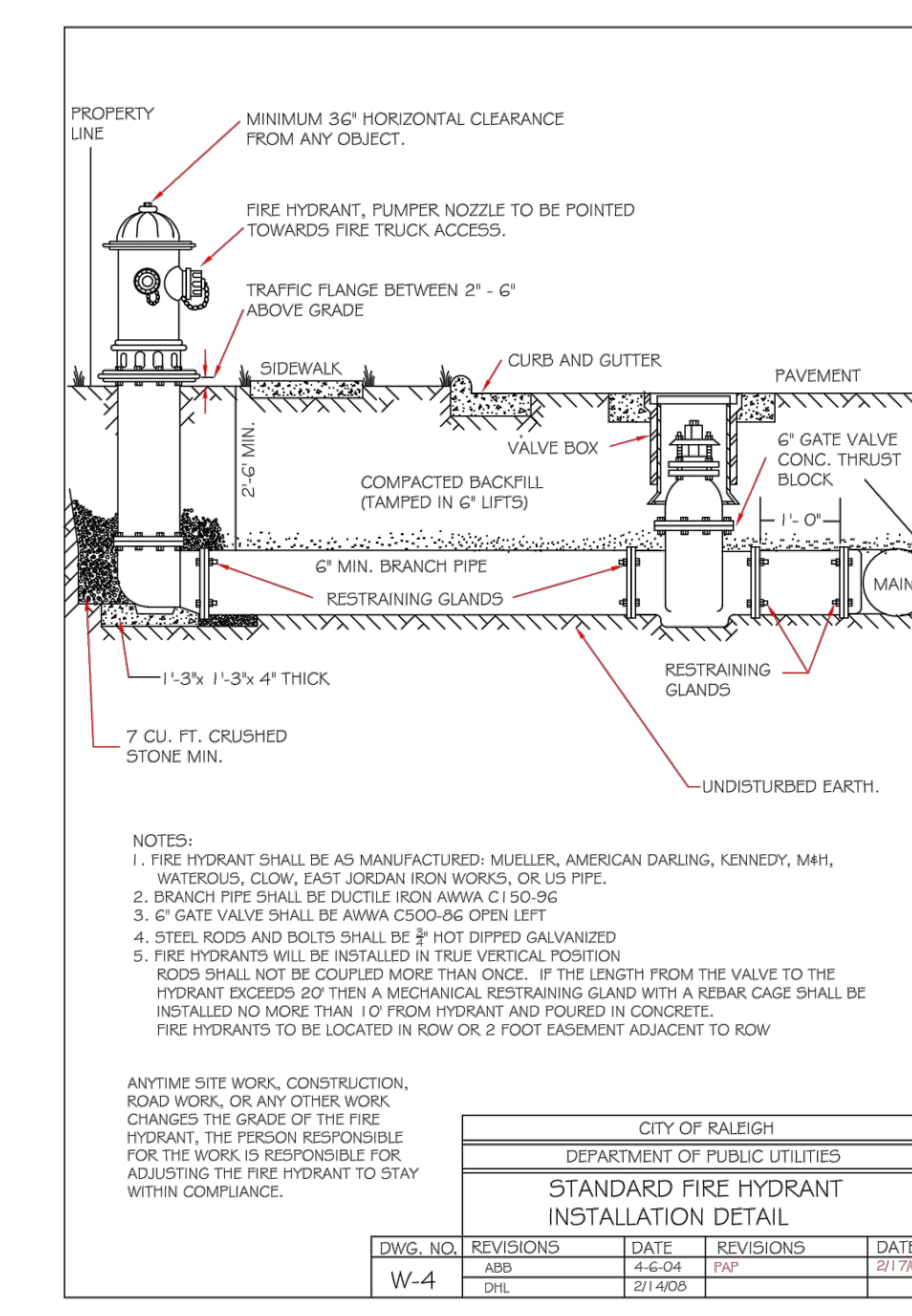


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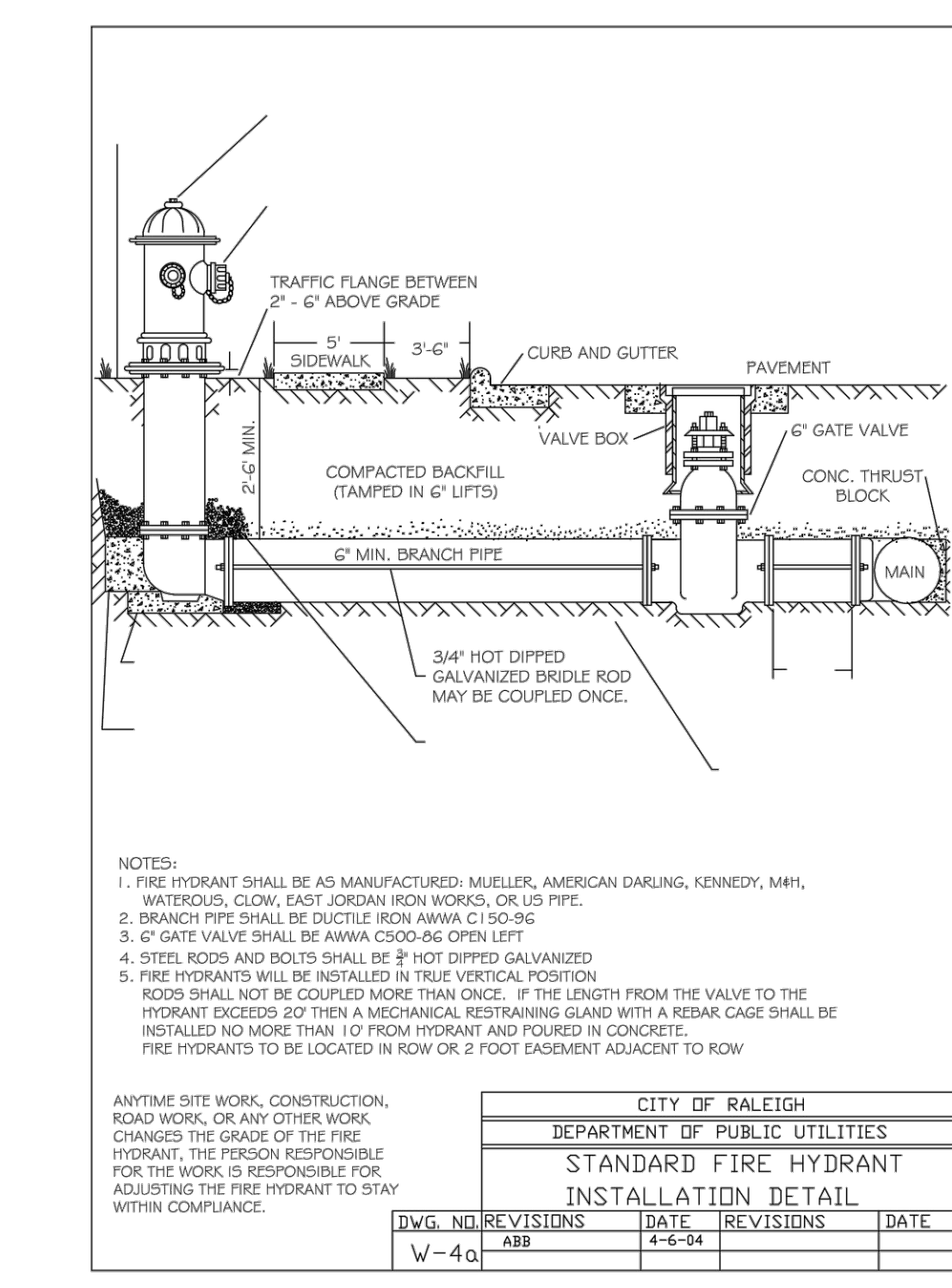


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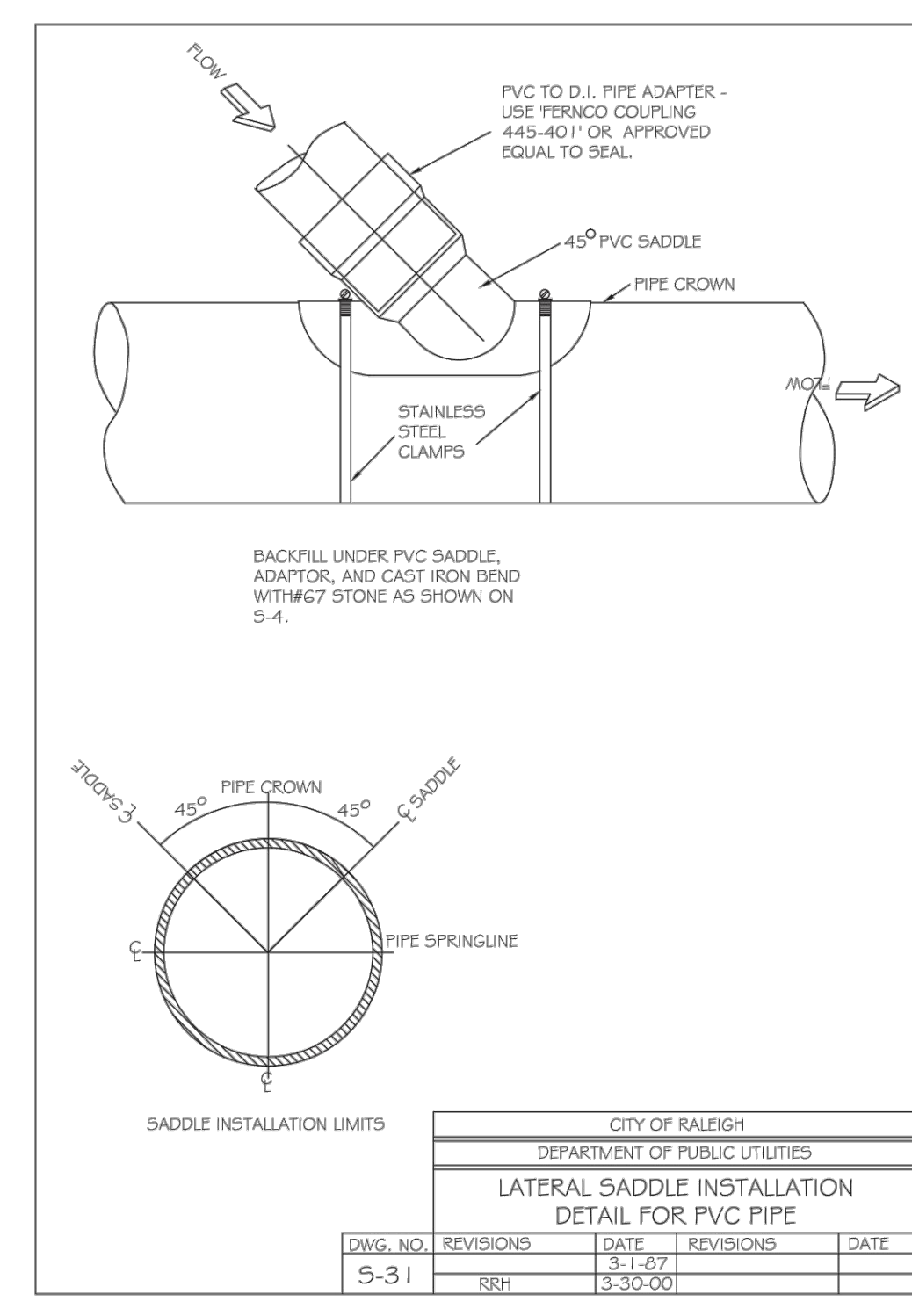


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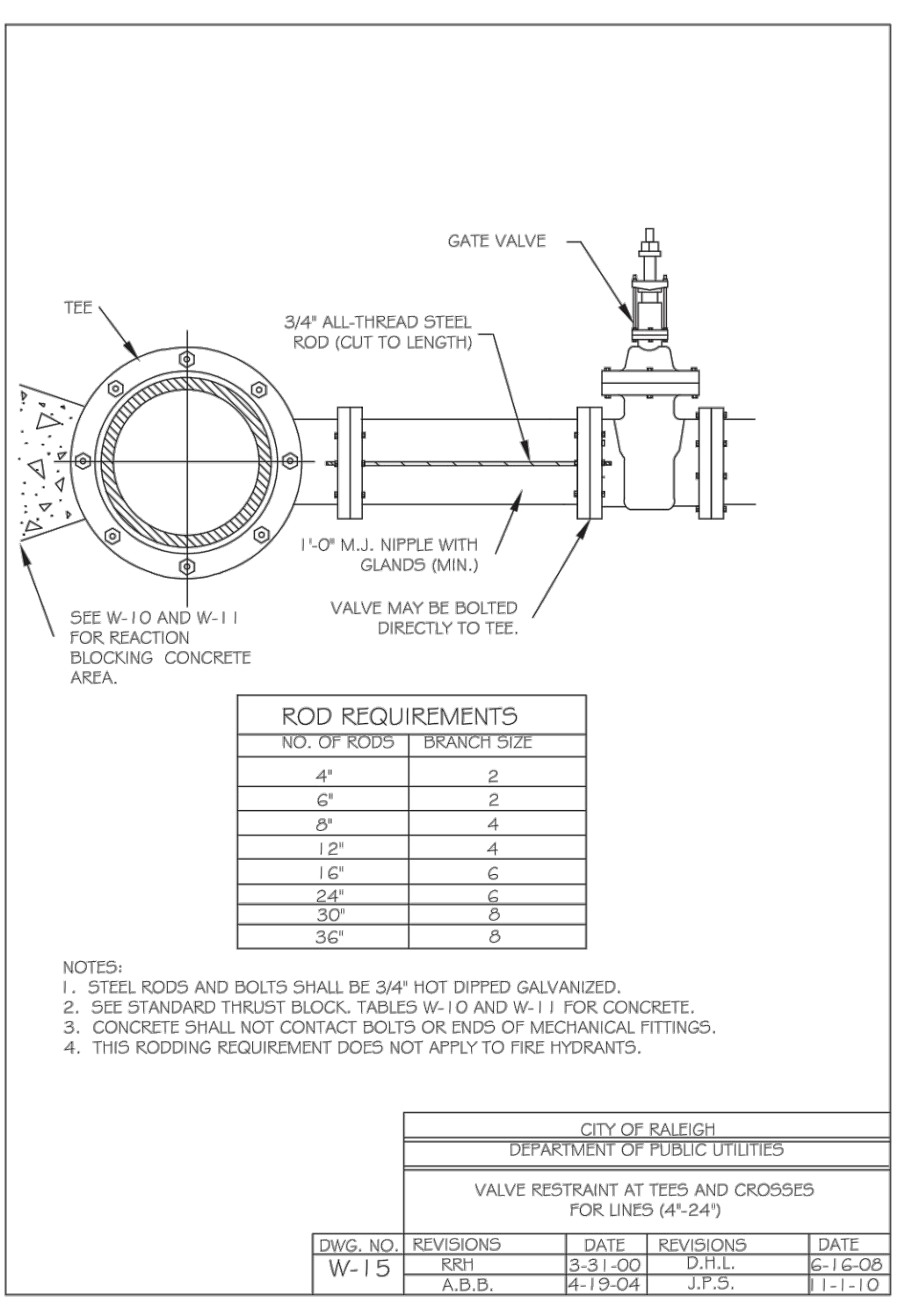


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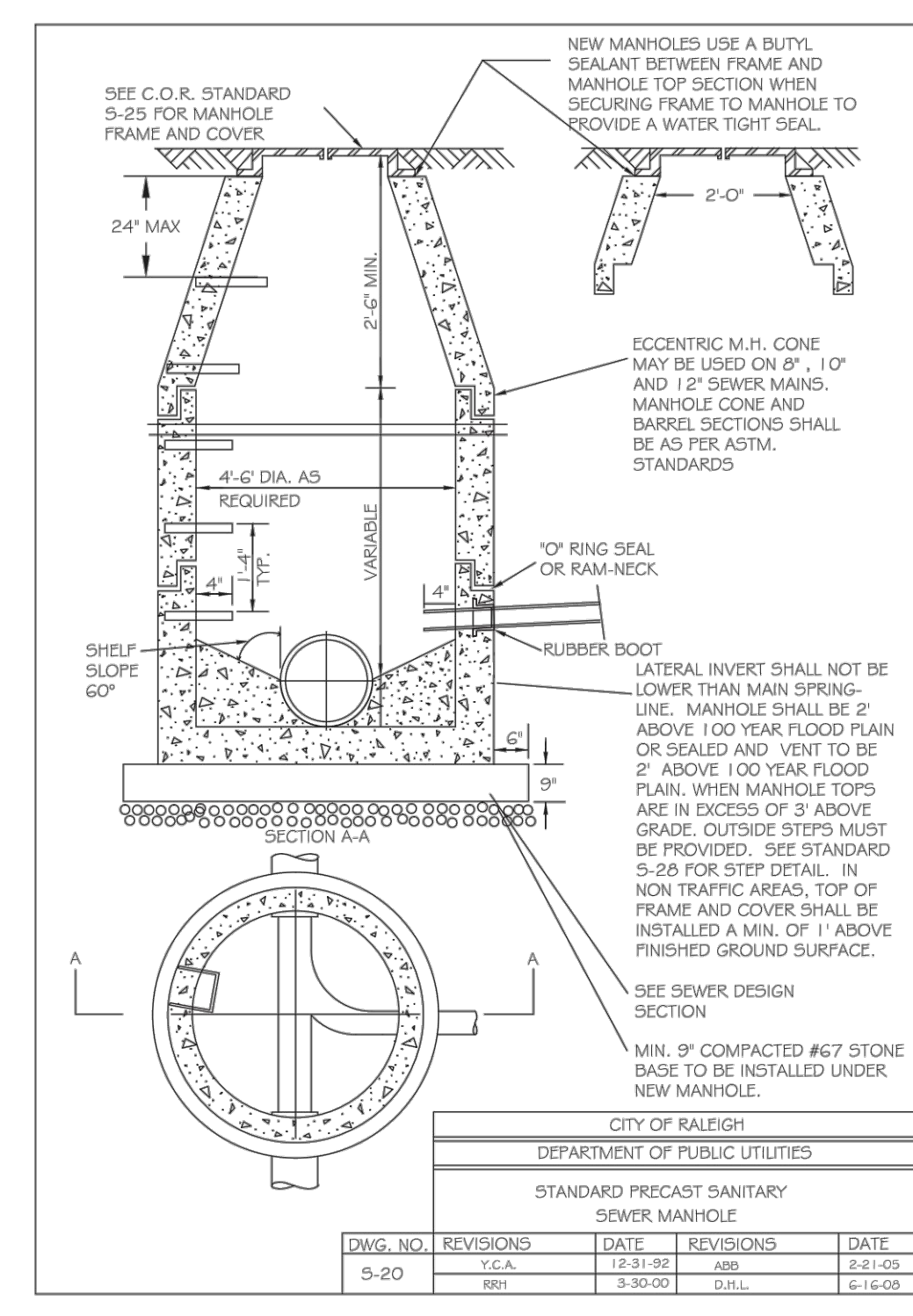


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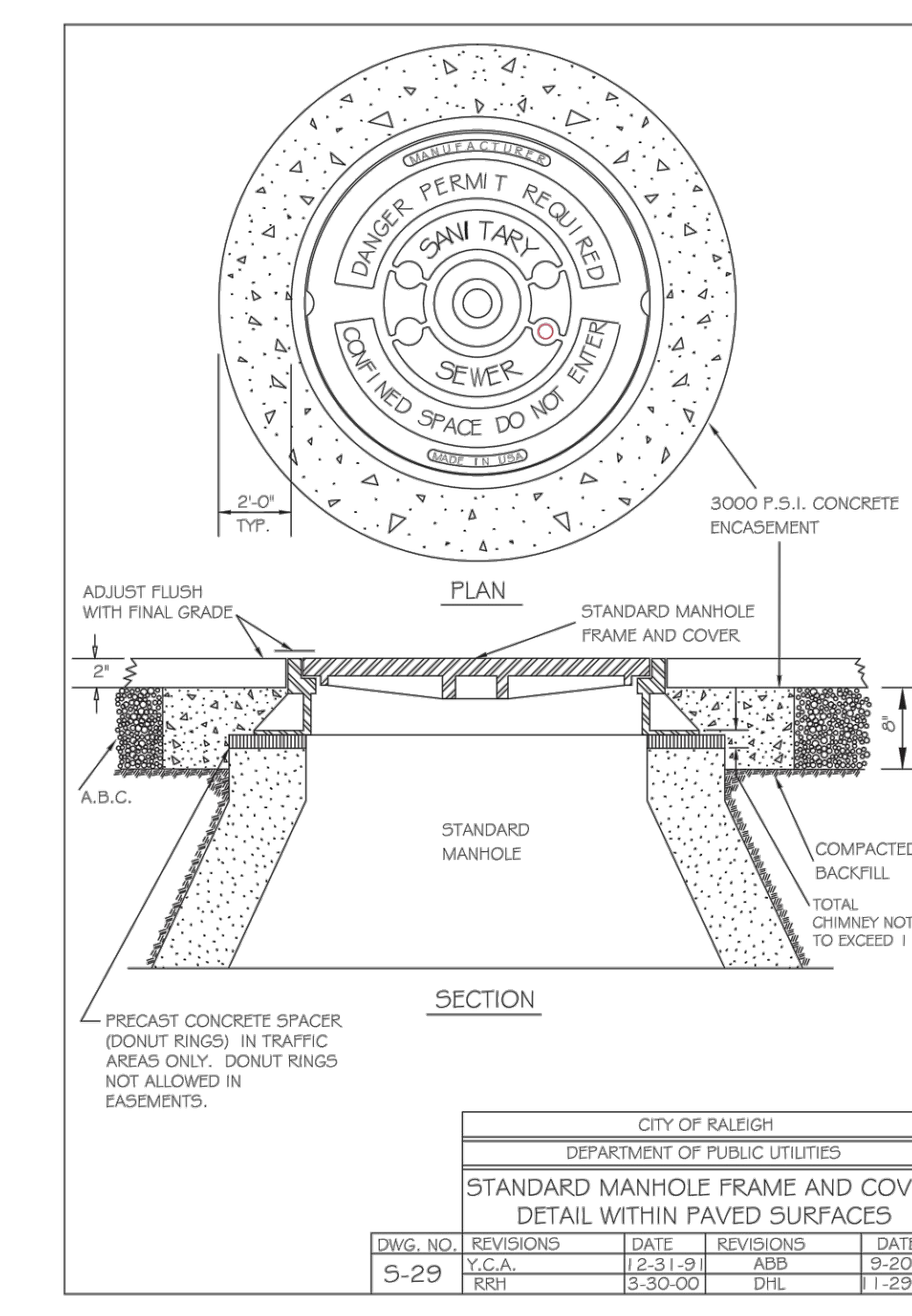


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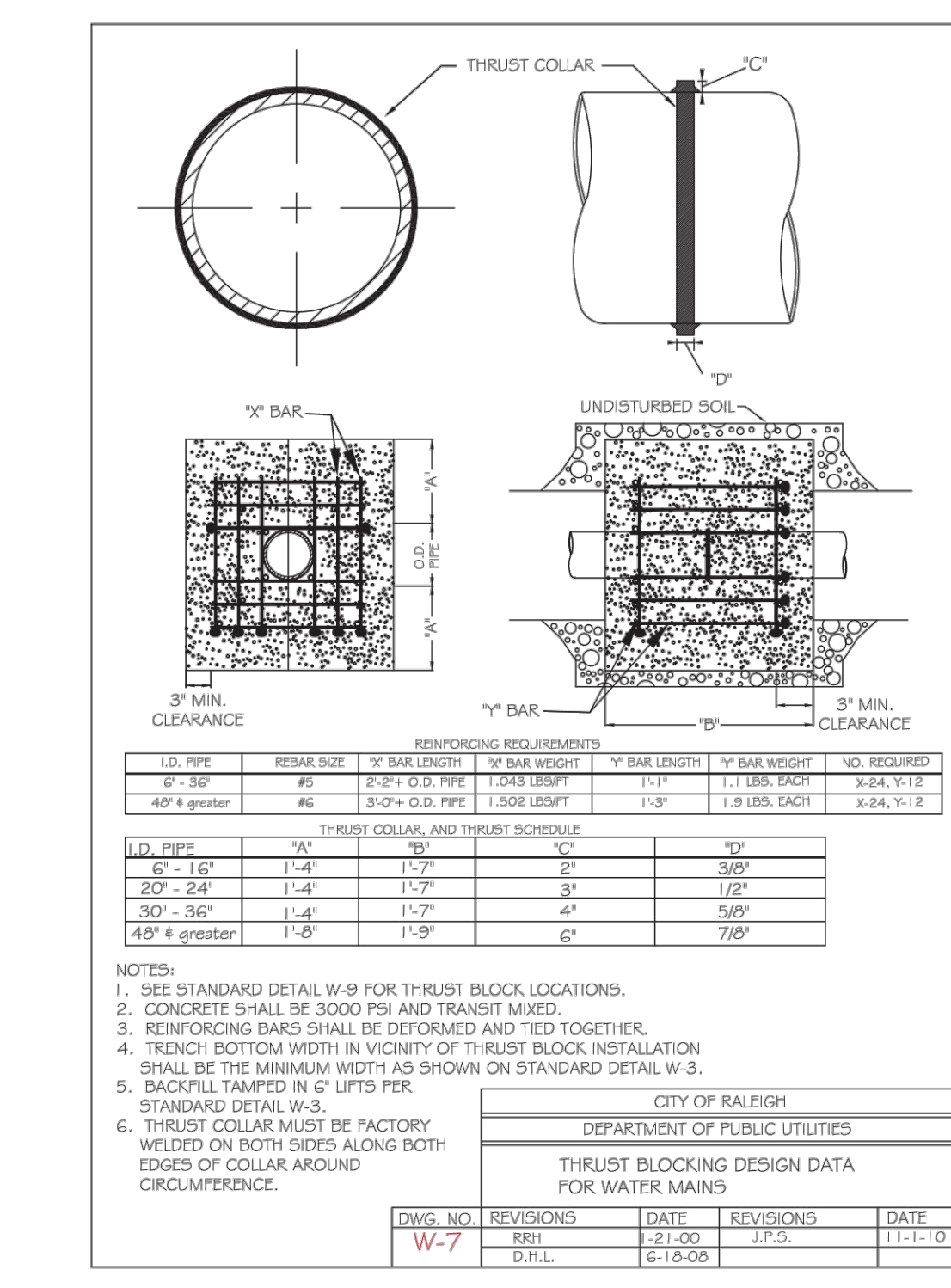


Table with 4 columns: DWG. NO., REVISIONS, DATE, REVISIONS, DATE. Includes rows for W-7 and W-8.

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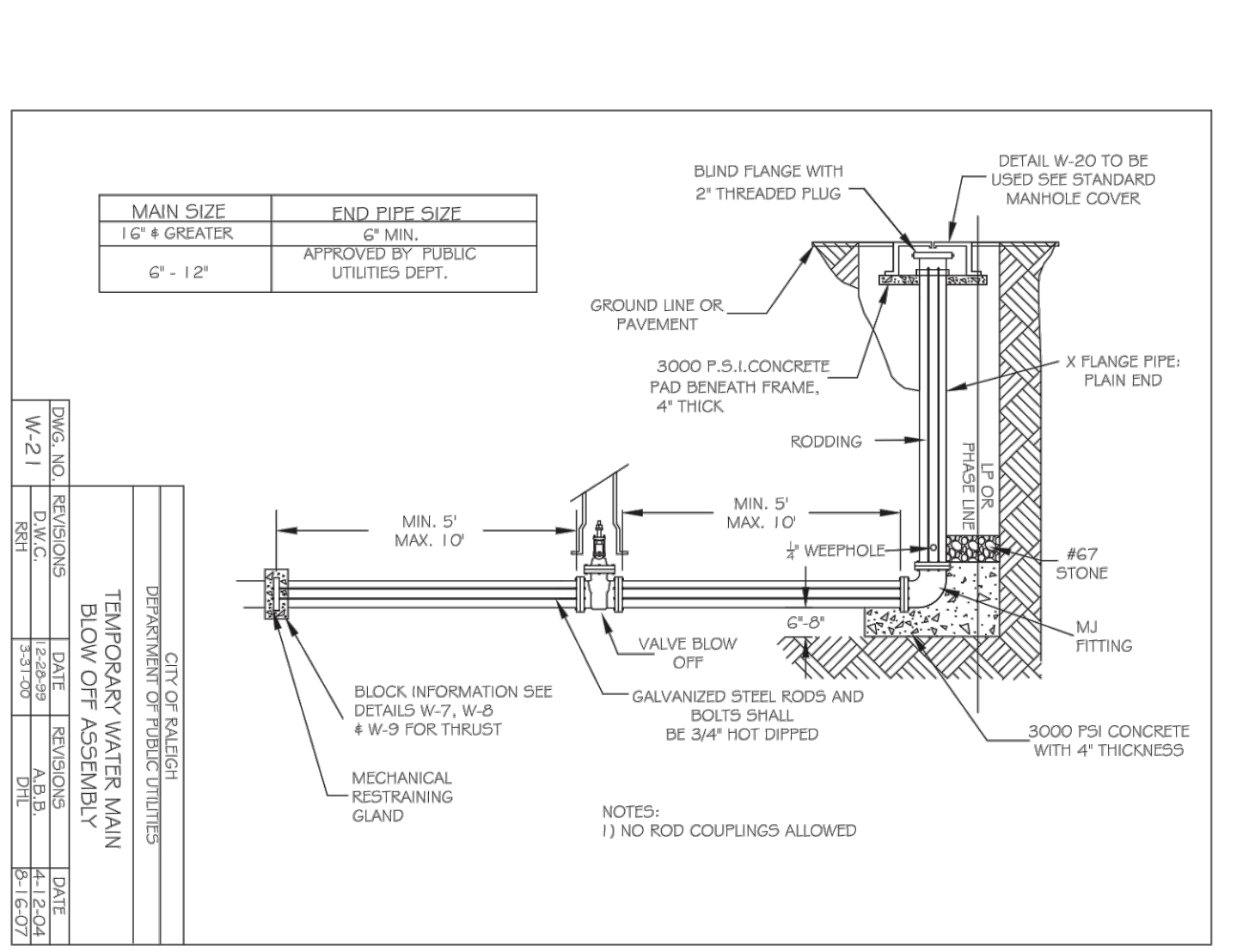
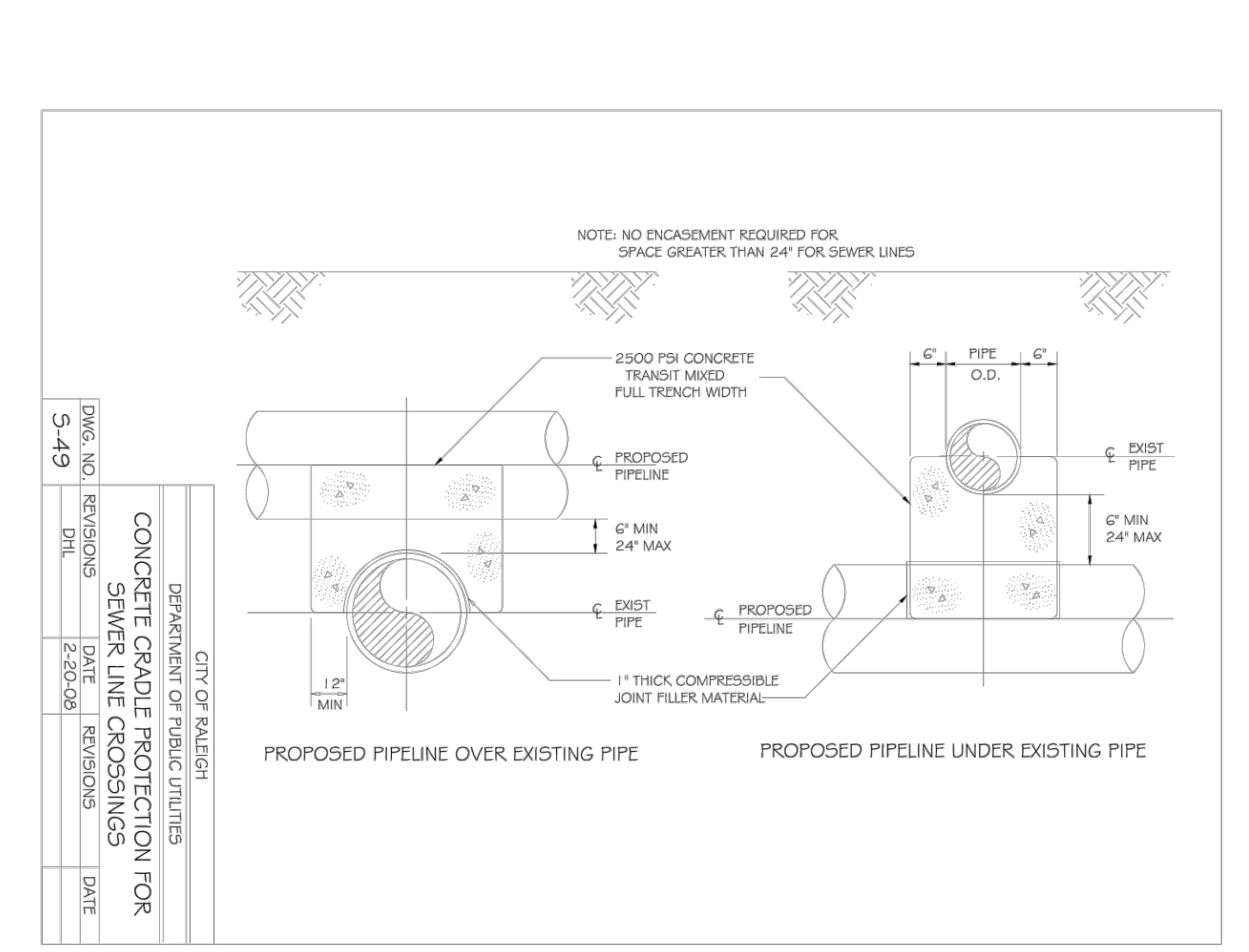
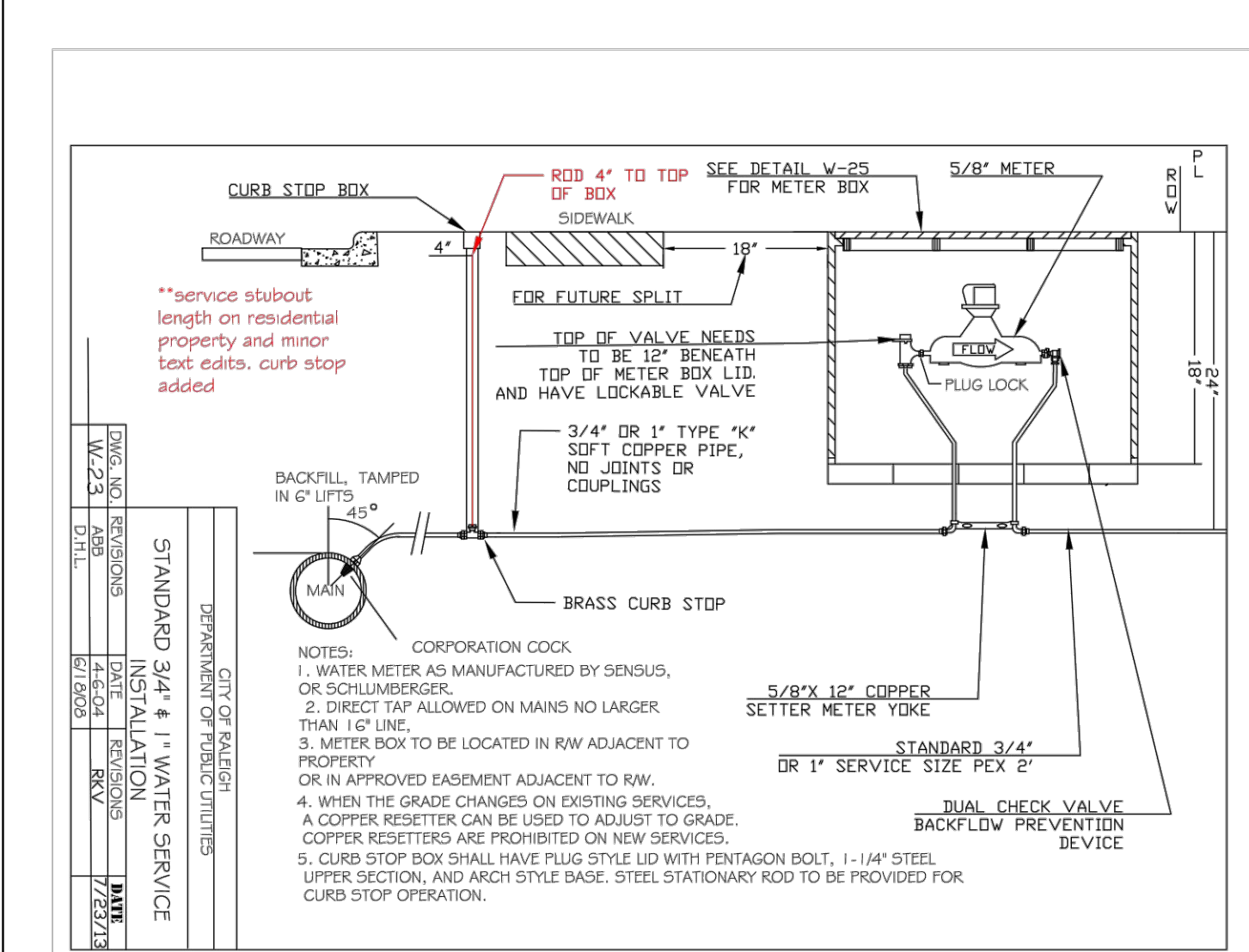
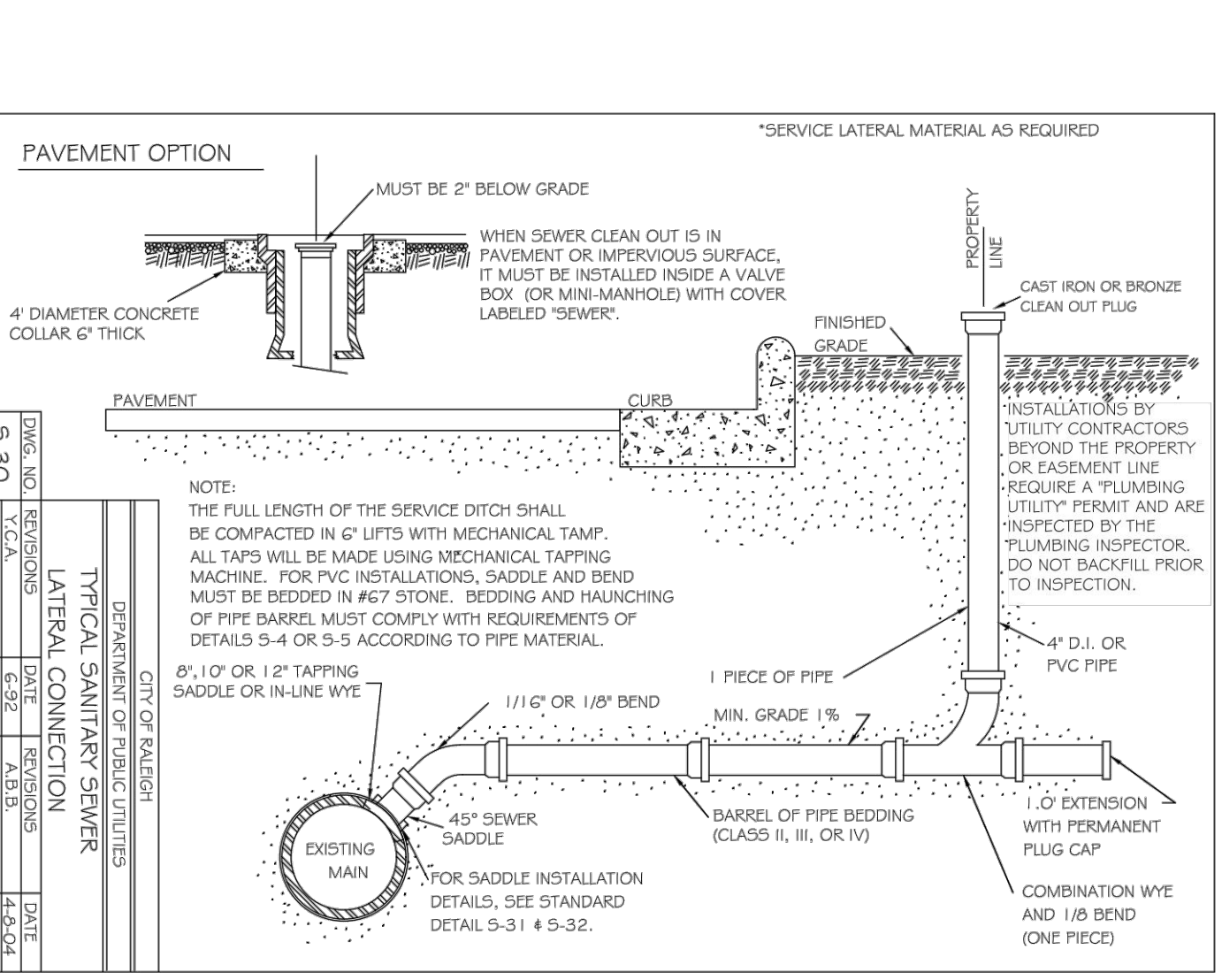
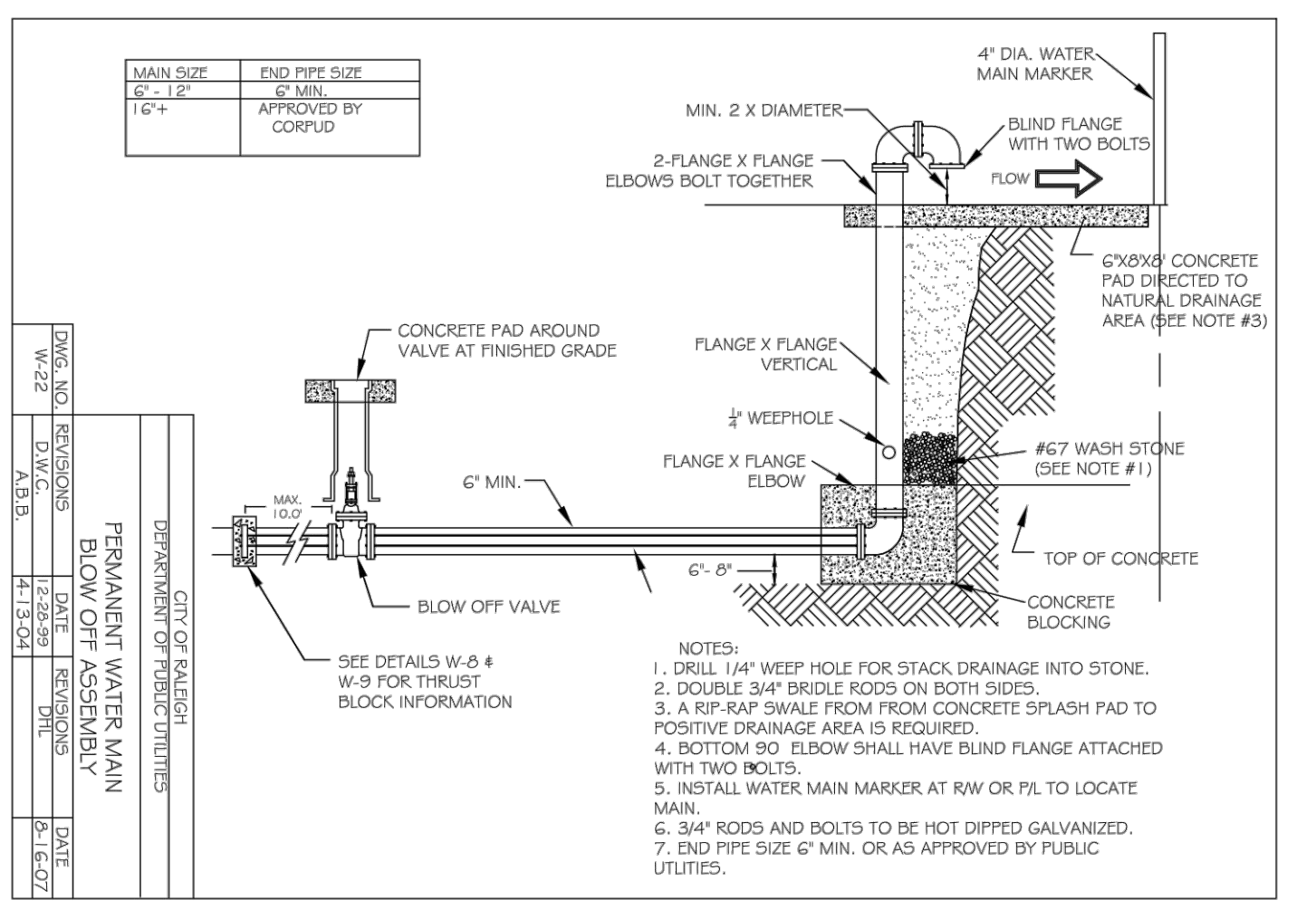
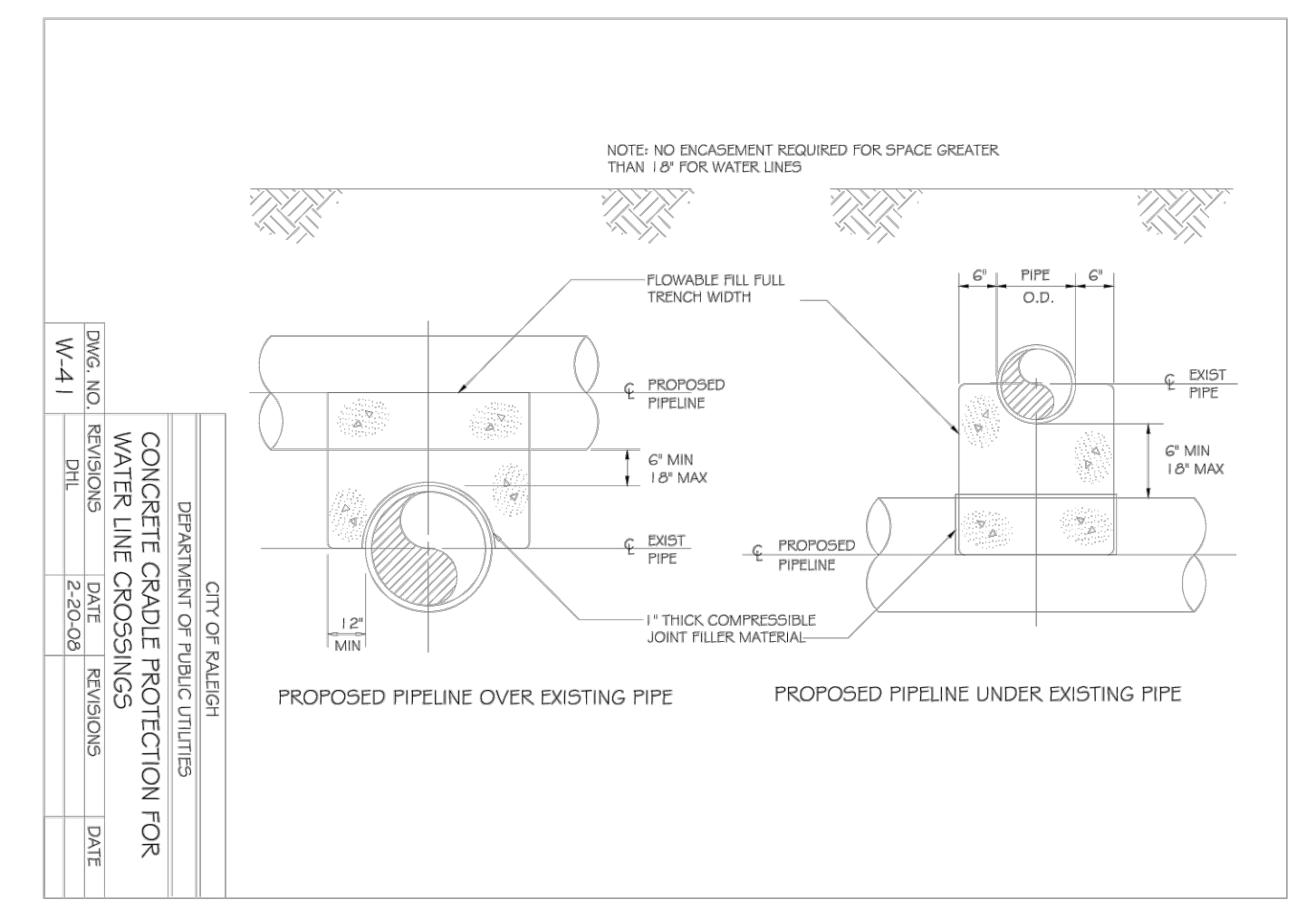
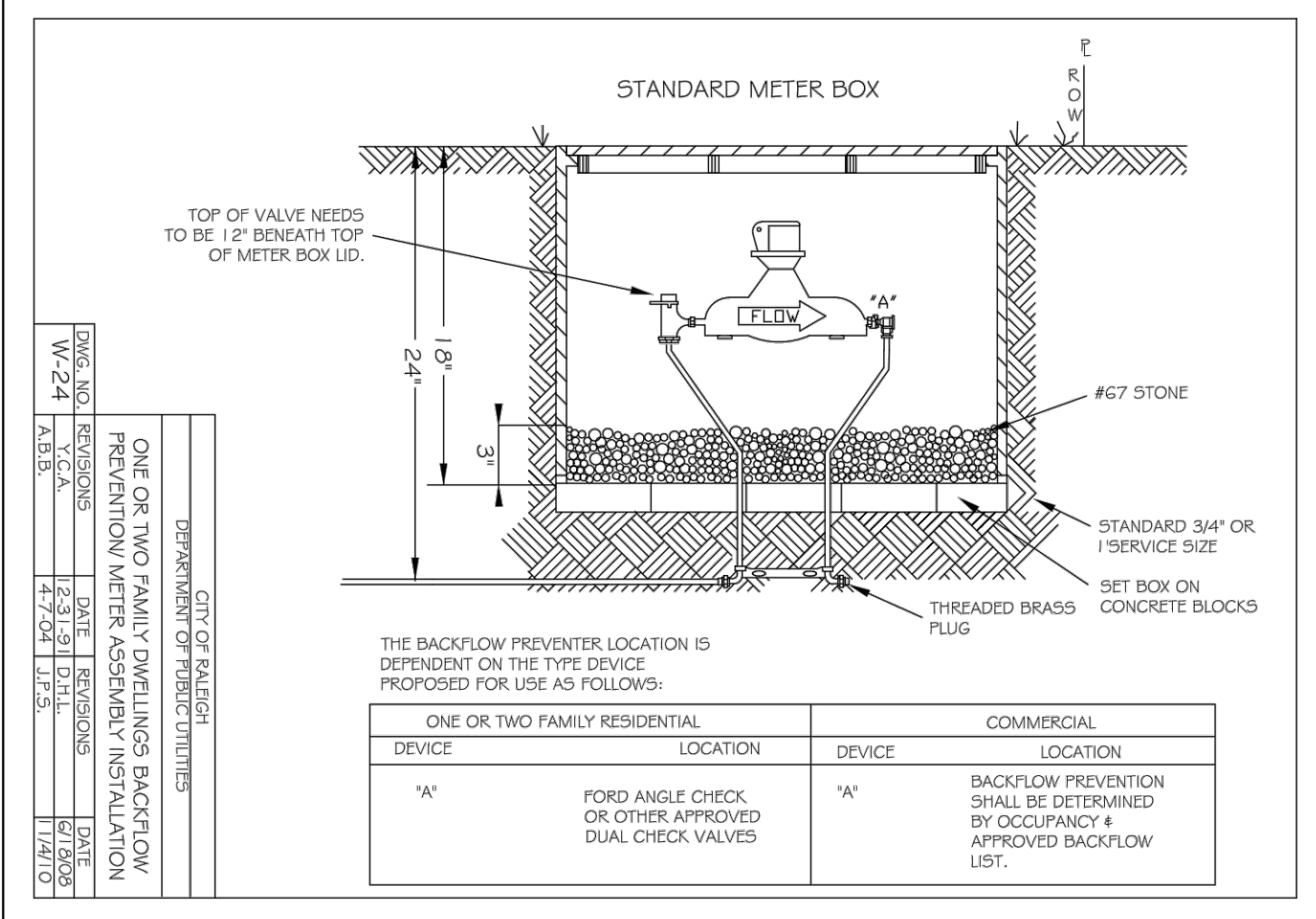
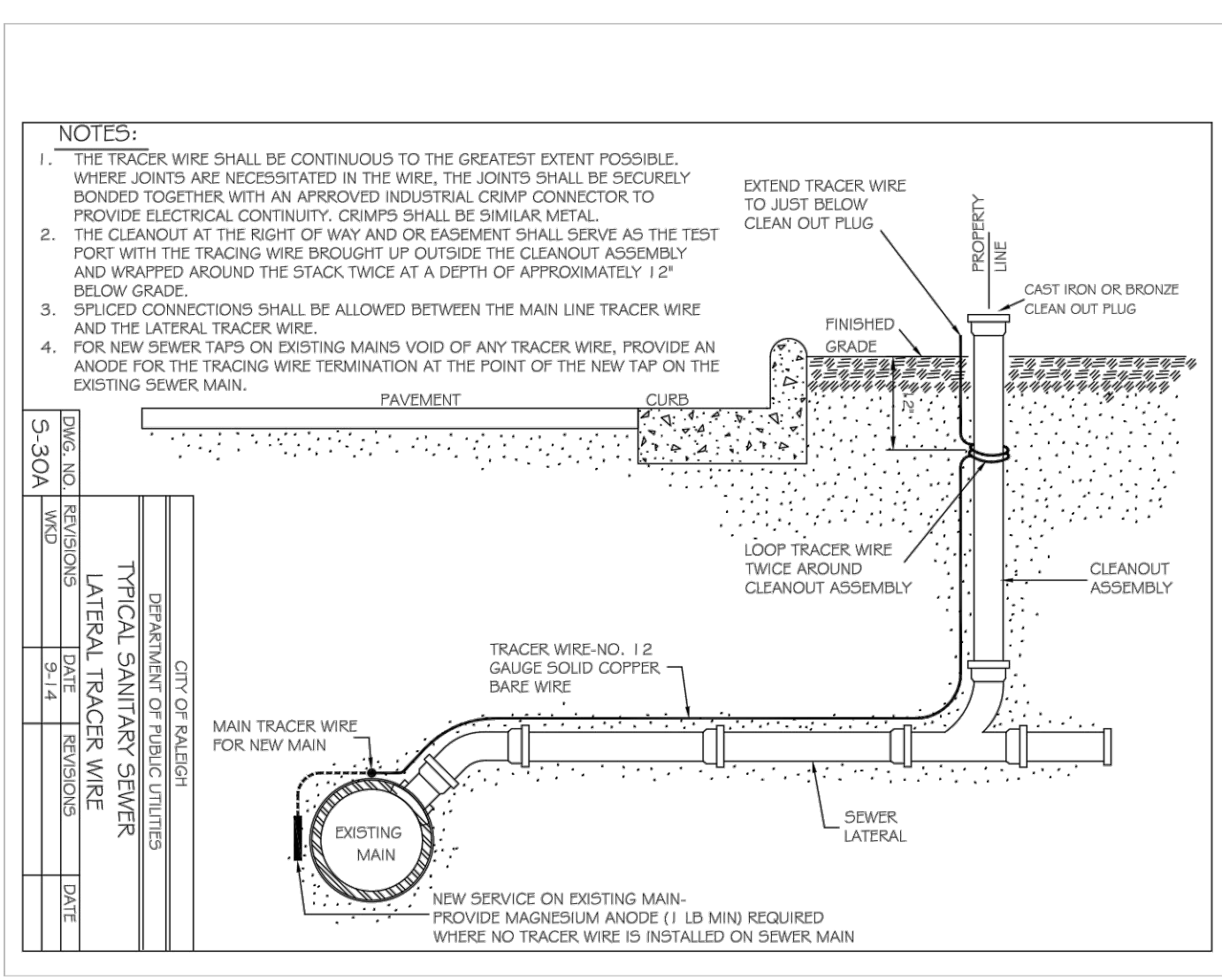
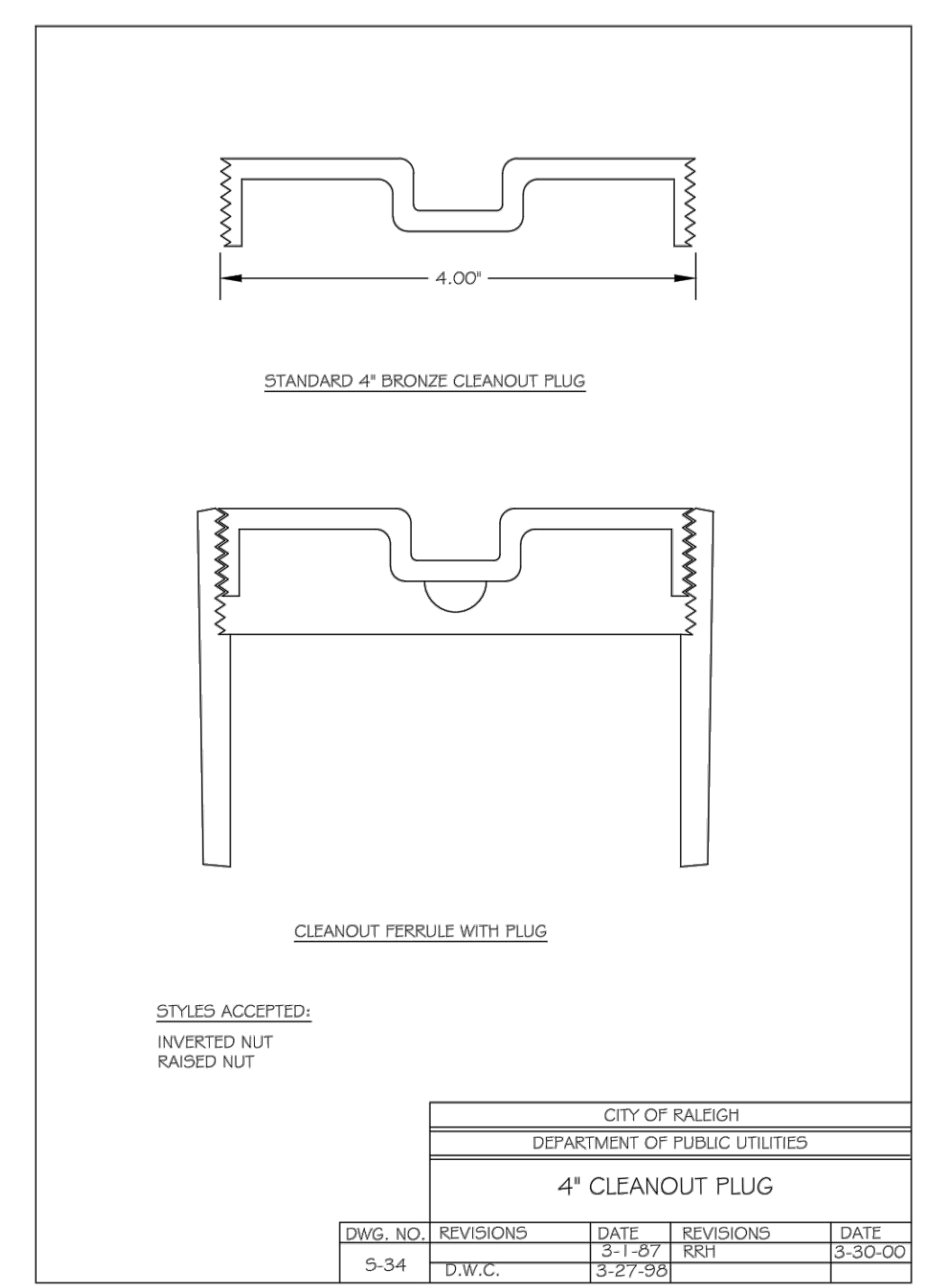
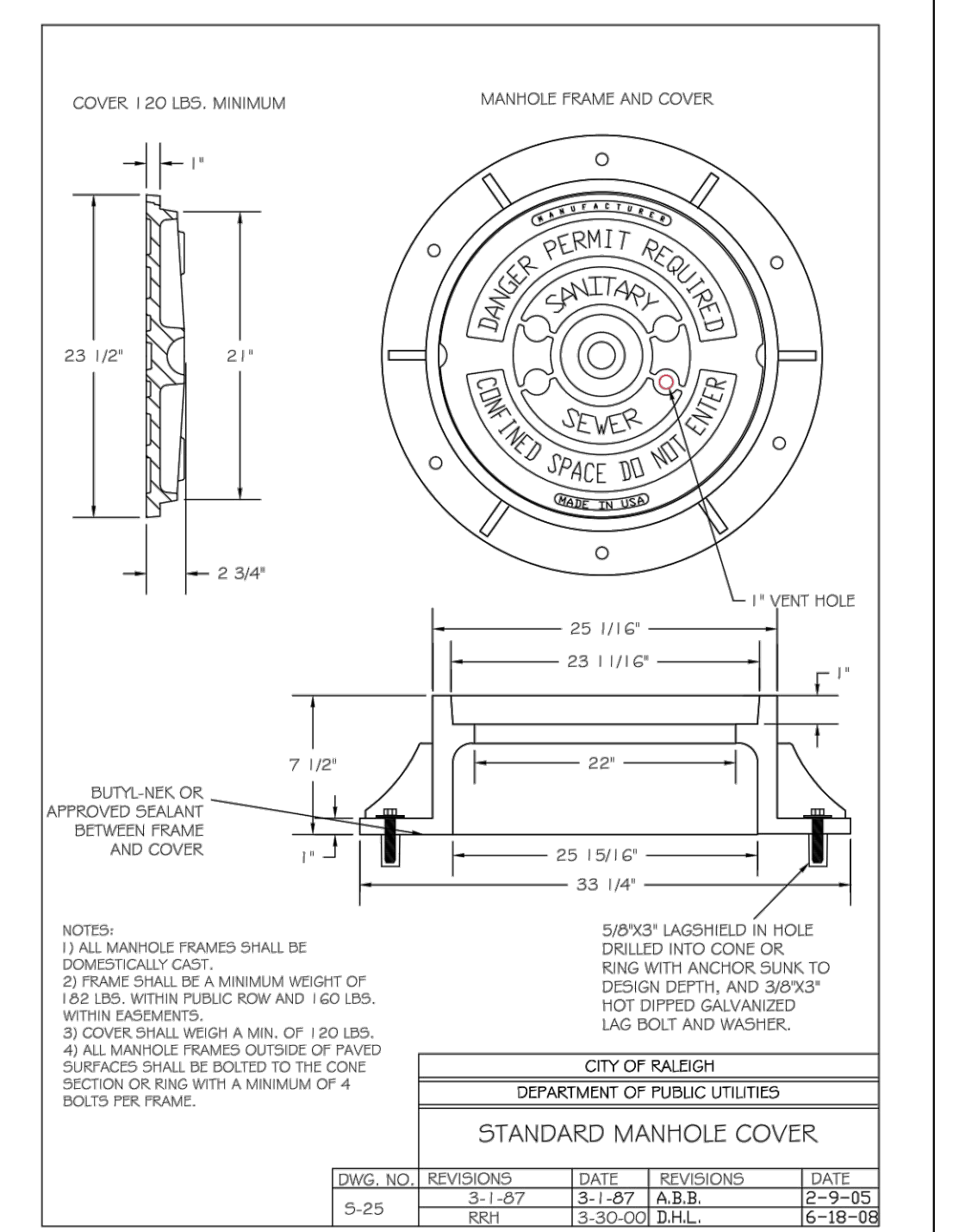
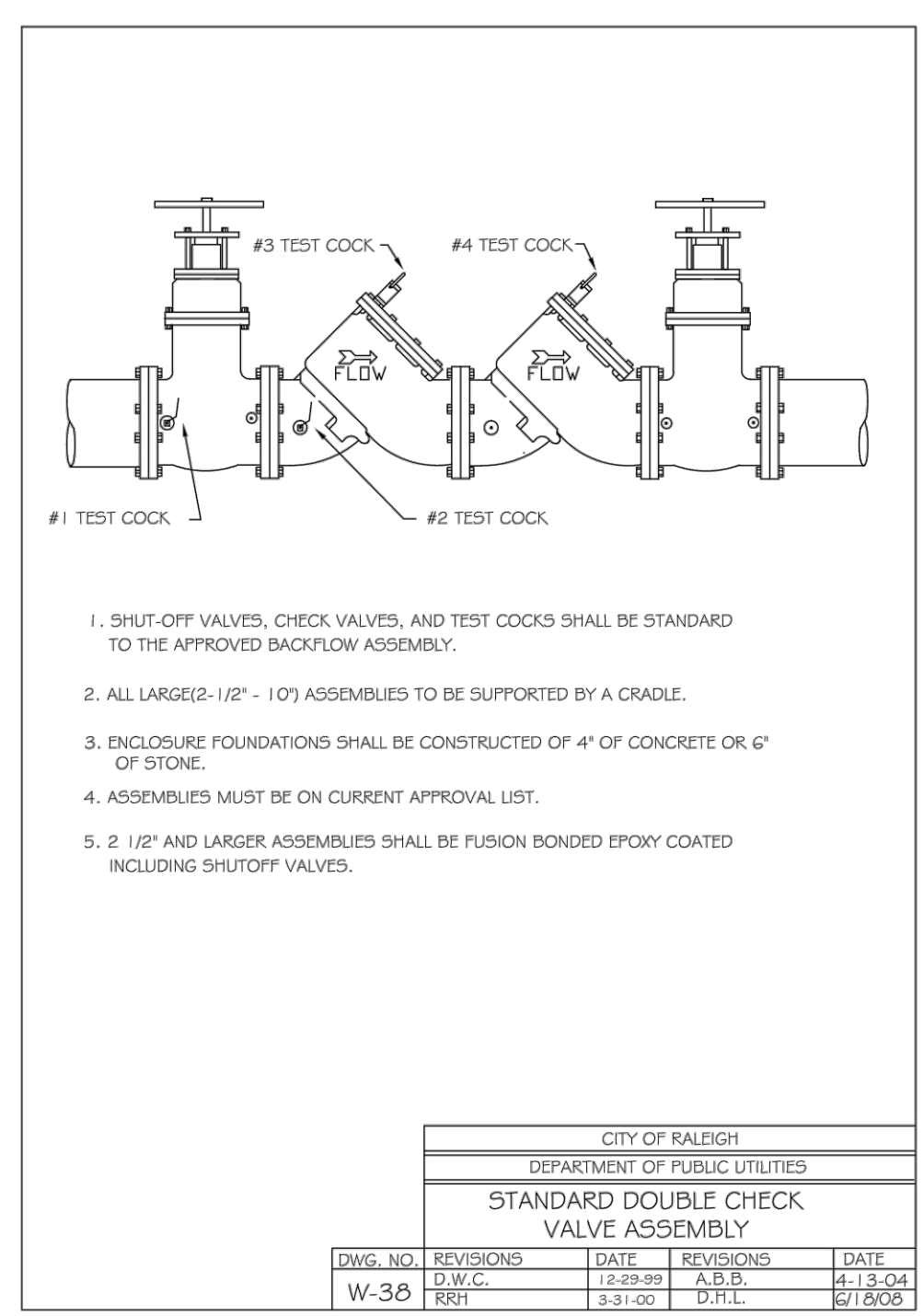
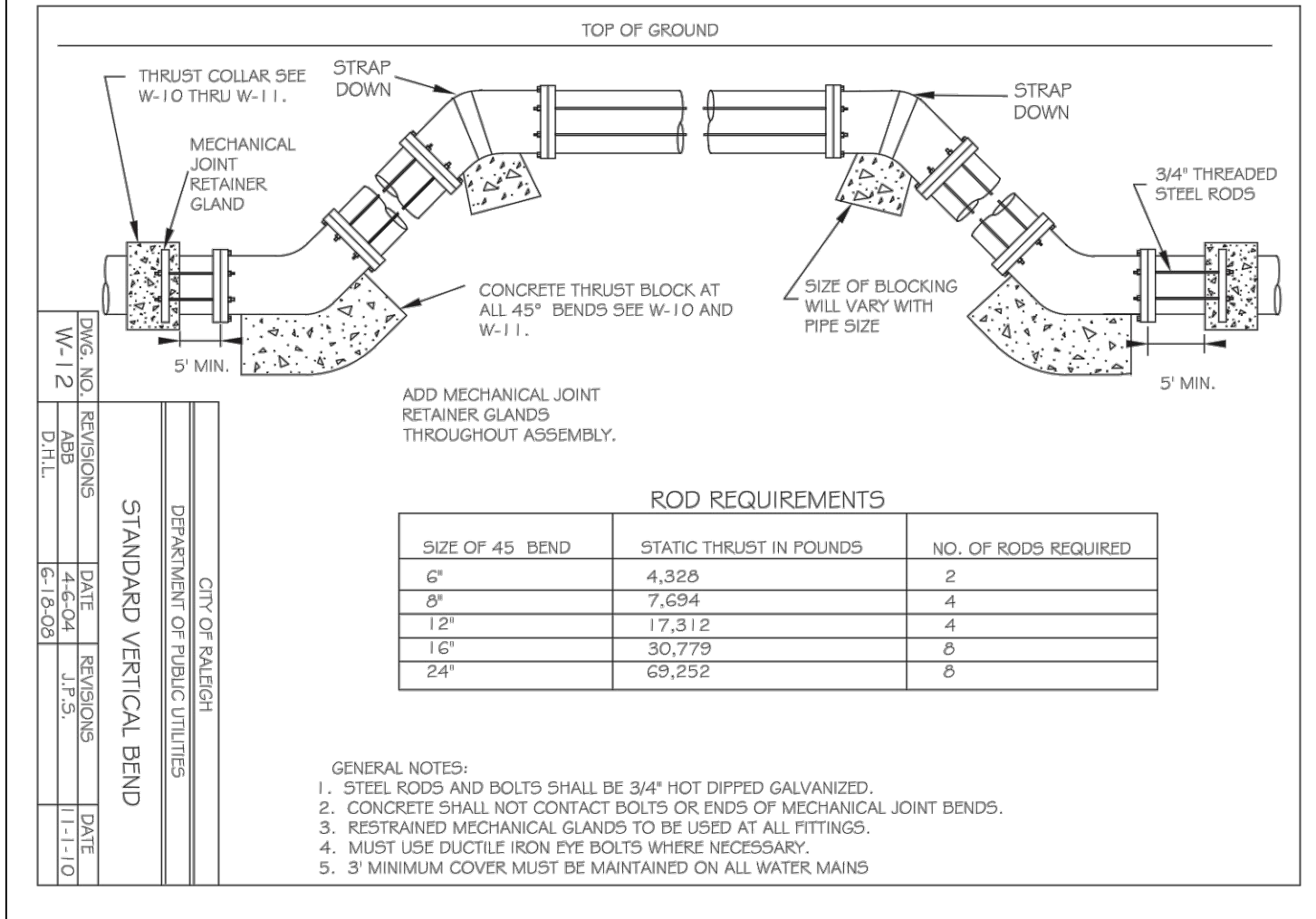
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City of Raleigh Public Utilities Department Permit #



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BY: DEVELOPMENT SERVICES ENGINEER DATE:

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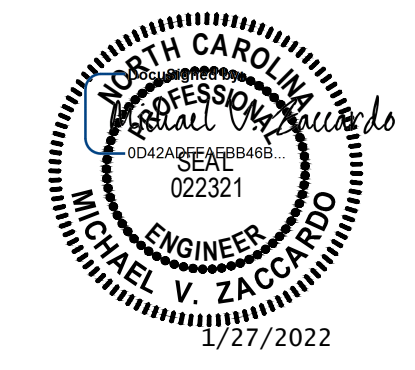
BY: ADMINISTRATOR DATE:

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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City of Raleigh Development Approval

Raleigh Water Review Officer



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YOUR VISION ACHIEVED THROUGH OURS.

DATE 01/27/2022 DRAWN BY JD.MACMILLAN DESIGNED BY E.ANGE CHECKED BY M.ZACCARO

SCALE N/A

TIMMONS GROUP logo and address: NORTH CAROLINA LICENSE NO. C-1652 HAYWOOD GLEN PHASE 3 OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA WATER & SEWER DETAILS

JOB NO. 43202 SHEET NO. C7.4

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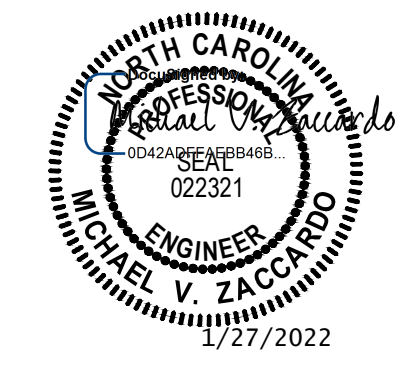
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BY: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

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ADMINISTRATOR



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DATE	REVISION DESCRIPTION
01/27/2022	

SCALE: N/A

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652
HAYWOOD GLEN PHASE 3
OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA

STORM DETAILS

JOB NO. 43202
SHEET NO. C7.5

RELEASED FOR CONSTRUCTION

TOWN OF KNIGHTDALE STANDARD DETAILS

2 of 2

STANDARD DETAILS
DIMENSIONS FOR HEADWALL WITH WINGWALLS
STD. NO. 5.09

NOTES:

1. DIMENSIONS FOR SINGLE PIPE HEADWALLS AS SHOWN FOR SINGLE PIPE.
2. DIMENSIONS FOR DOUBLE PIPE HEADWALLS AS SHOWN FOR DOUBLE PIPE.
3. DIMENSIONS FOR HEADWALLS WITH WINGWALLS AS SHOWN FOR HEADWALLS WITH WINGWALLS.

TOWN OF KNIGHTDALE STANDARD DETAILS

2 of 2

STANDARD DETAILS
STANDARD REINFORCED CONCRETE HEADWALL WITH WINGWALLS
STD. NO. 5.06

NOTES:

1. SEE STANDARD DETAIL 5.09 FOR DIMENSIONS.
2. PLACE 1 CUBIC FOOT OF WASHED STONE BEHIND EACH WEDG HOLE.

TOWN OF KNIGHTDALE STANDARD DETAILS

2 of 2

STANDARD DETAILS
ROADWAY STANDARD DRAWING FOR PARALLEL PIPE END SECTION PRECAST CONCRETE SECTION FOR 15" TO 24" PIPE
STD. NO. 5.10

NOTES:

1. SEE STANDARD DETAIL 5.09 FOR DIMENSIONS.
2. PLACE 1 CUBIC FOOT OF WASHED STONE BEHIND EACH WEDG HOLE.

TOWN OF KNIGHTDALE STANDARD DETAILS

5.04

STANDARD DETAILS
TRENCH FOR STORM DRAIN PIPES
STD. NO. 5.02

NOTES:

1. A MINIMUM OF 24" FROM OUTSIDE DIAMETER OF PIPE TO SIDE OF TRENCH MUST BE ALLOWED FOR COMPACTION OF FILL MATERIAL. BACKFILLING OF TRENCHES SHALL BE ACCOMPLISHED IMMEDIATELY AFTER THE PIPE IS LAID. THE FILL AROUND THE PIPE SHALL BE PLACED IN LAYERS NOT TO EXCEED 6" UNDER NO CIRCUMSTANCES SHALL WATER BE PERMITTED TO BE UNBACKFILLED TRENCHES AFTER THE PIPE HAS BEEN PLACED. COMPACTION REQUIREMENTS SHALL BE ATTENDED BY THE USE OF MECHANICAL TAMPS ONLY. EACH AND EVERY LAYER OF BACKFILL SHALL BE PLACED LOOSE AND THOROUGHLY COMPACTED INTO PLACE.
2. ALL BACKFILL MATERIAL SHALL HAVE AN IN PLACE COMPACTED DENSITY OF AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DENSITY.
3. THE FINAL 24" OF BACKFILL MATERIAL SHALL BE COMPACTED TO 100% OF THE STANDARD PROCTOR MAXIMUM DENSITY.
4. ALL TRENCHING OPERATIONS SHALL MEET OSHA STANDARDS.
5. BACKFILL MATERIAL BENEATH ROADWAY SHALL BE SELECT BACKFILL MATERIAL.

TOWN OF KNIGHTDALE STANDARD DETAILS

5.04

STANDARD DETAILS
STANDARD DROP INLET WITH GRATE AND FRAME
STD. NO. 5.04

NOTES:

1. EITHER SOLID BLOCK, SOLID BLOCK OR PRECAST CONCRETE MAY BE USED.
2. PRECAST CONCRETE WALLS SHALL BE 6" THICK MINIMUM.
3. ALL CONCRETE SHALL BE 3000 P.S.I. PLUS 1/2" X 1/4" INCH DIMENSIONS.
4. FOR 24" PIPE AND LARGER USE PIPE DIA. PLUS 1/2" AS INCH DIMENSIONS.

TOWN OF KNIGHTDALE STANDARD DETAILS

5.05

STANDARD DETAILS
STANDARD CURB INLET
STD. NO. 5.05

NOTES:

1. MORTAR JOINTS SHALL BE 1/2" THICK.
2. ALL CONCRETE SHALL BE 3000 P.S.I.
3. BASE SLABS SHALL BE FORMED PRIOR TO PLACING OF CONCRETE.
4. USE PIPE 1/4" GREATER AT EACH POINT, OTHERWISE USE TYPE 1P OR 1P-1.
5. MASONRY UNITS MAY BE JAMBO BRICK, CONCRETE BRICK OR SOLID CONCRETE BLOCK.
6. ALL WALLS GREATER THAN 6" IN DEPTH SHALL BE CONSTRUCTED 12" THICK.

TOWN OF KNIGHTDALE STANDARD DETAILS

5.05

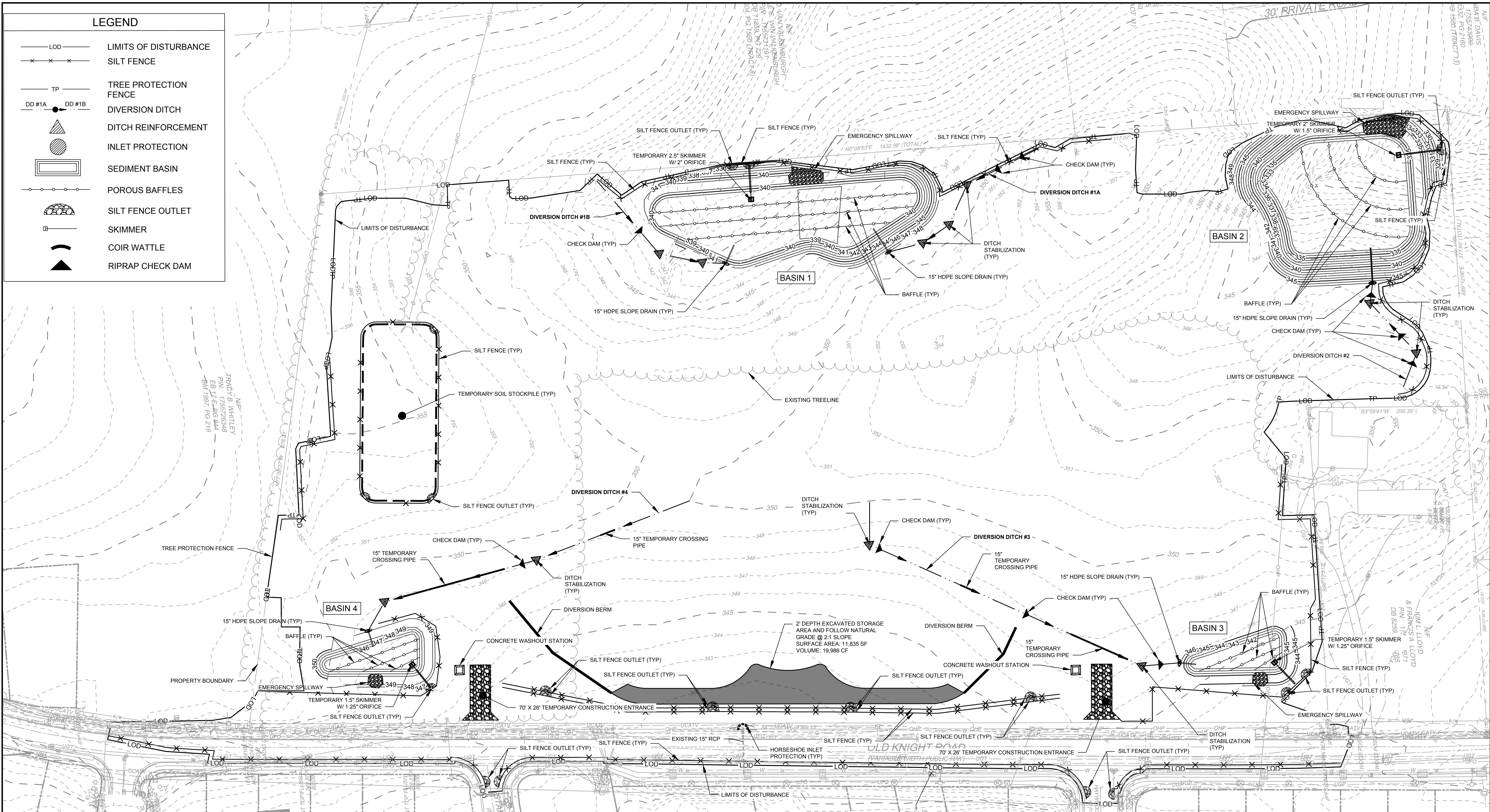
STANDARD DETAILS
STANDARD CURB INLET
STD. NO. 5.05

NOTES:

1. MORTAR JOINTS SHALL BE 1/2" THICK.
2. ALL CONCRETE SHALL BE 3000 P.S.I.
3. BASE SLABS SHALL BE FORMED PRIOR TO PLACING OF CONCRETE.
4. USE PIPE 1/4" GREATER AT EACH POINT, OTHERWISE USE TYPE 1P OR 1P-1.
5. MASONRY UNITS MAY BE JAMBO BRICK, CONCRETE BRICK OR SOLID CONCRETE BLOCK.
6. ALL WALLS GREATER THAN 6" IN DEPTH SHALL BE CONSTRUCTED 12" THICK.

LEGEND

- LOD — LIMITS OF DISTURBANCE
- × × × SILT FENCE
- TP — TREE PROTECTION FENCE
- DD #1A ● DD #1B DIVERSION DITCH
- ▲ DITCH REINFORCEMENT
- ◐ INLET PROTECTION
- ▭ SEDIMENT BASIN
- POROUS BAFFLES
- ◌ SILT FENCE OUTLET
- ▭ SKIMMER
- ▲ COIR WATTLE
- ▲ RIPRAP CHECK DAM



SEDIMENT TRAPS AND BARRIERS

(Wake County Minimum Requirements for Sizing Sediment Basins)

BASIN ID	BASIN TYPE	DRAINAGE AREA PRE (AC)	DRAINAGE AREA POST (AC)	DISTURBED AREA (AC)	i(10)	C	Q10 (TOTAL DA) (CFS)	REQUIRED VOLUME (CF)	PROVIDED VOLUME (CF)	BASIN LENGTH (FT)	BASIN WIDTH (FT)	BASIN DEPTH (FT)	SURFACE AREA REQ' (SF)	BOTTOM ELEV (FT)	WEIR ELEV (FT)	WEIR LENGTH (FT)	Q10 FLOW (CFS)	DEWATER DEVICE	SKIMMER SIZE (IN)	SKIMMER ORIFICE DIA (IN)	DEWATER TIME (DAYS)		
BASIN #1	SEDIMENT BASIN	1.82	9.28	1.82	7.28	0.50	33.78	16,704	44,357	250	100	2.0	14,694	24,428	338.00	340.00	35	33.78	0.47	SKIMMER	2.5	2	3.96
BASIN #2	SEDIMENT BASIN	4.74	11.58	1.01	7.28	0.50	42.15	20,844	46,751	250	100	2.0	18,336	25,111	333.00	335.00	40	42.15	0.50	SKIMMER	2.5	2	4.95
BASIN #3	SEDIMENT BASIN	2.45	N/A	0.90	7.28	0.50	8.92	4,410	8,000	100	40	2.0	3,879	4,899	342.00	344.00	10	8.92	0.44	SKIMMER	1.5	1.25	3.46
BASIN #4	SEDIMENT BASIN	2.80	N/A	0.72	7.28	0.50	10.19	5,040	8,475	100	50	2.0	4,434	5,169	346.00	348.00	10	10.19	0.49	SKIMMER	1.5	1.25	3.95

TOTAL DISTURBED AREA = 23.52 ACRES

SEE SHEET C7.7 FOR STAGE I EROSION CONTROL SEQUENCE, SLOPE STABILIZATION REQUIREMENTS, SEDIMENT BASIN REMOVAL NOTES, & STOCKPILE NOTES

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR

STAGE 1 CHANNEL AND DIVERSION SCHEDULE (10 YEAR PERMANENT)

(Chapter 8.05 of the NCDEQ E&S Planning and Design Manual)

NAME	LENGTH (FT)	DA (AC)	ACCUM. DA (AC)	C	I ₁₀ (IN/HR)	Q ₁₀ (CFS)	SLOPE (FT/FT)	N VALUE	V (FT/S)	SHEAR (PSF)	FLOW DEPTH (FT)	FLOW AREA (FT ²)	Wp (FT)	R	SWALE DEPTH (IN)	SIDE SLOPE (H:V)	TEMPORARY LINING	PERMANENT LINING
DD #1A	243	0.84	0.84	0.50	7.28	3.06	1.80%	0.055	1.82	0.84	0.75	1.69	4.74	0.36	24	3:1	STRAW W/ TACK	N/A
DD #1B	207	4.44	4.44	0.50	7.28	16.16	1.20%	0.020	5.08	0.78	1.04	3.25	6.58	0.49	24	3:1	NAGC125	N/A
DD #2	158	0.15	0.15	0.50	7.28	0.55	4.40%	0.065	1.47	0.99	0.36	0.39	2.28	0.17	24	3:1	STRAW W/ TACK	N/A
DD #3	480	1.69	1.69	0.50	7.28	6.15	1.00%	0.044	2.05	0.62	1.00	3.00	6.32	0.47	24	3:1	STRAW W/ TACK	N/A
DD #4	450	1.83	1.83	0.50	7.28	6.66	1.00%	0.044	2.10	0.64	1.03	3.18	6.51	0.49	24	3:1	STRAW W/ TACK	N/A

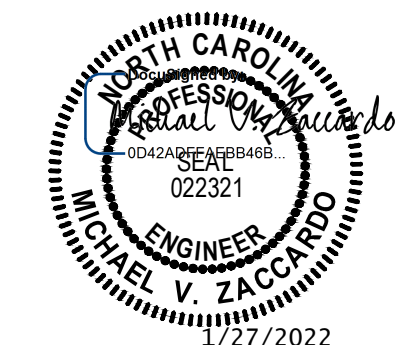
VELOCITY DISIPATORS

PIPE #	PIPE SIZE (IN)	PIPE SLOPE	Q10 (cfs)	VELOCITY (fps)	ZONE	PAD LENGTH (ft)	PAD WIDTH START (ft)	PAD WIDTH END (ft)	PAD DEPTH (in)	STONE SIZE (in)	STONE FILLING CLASS
BASIN #1	24	2.10%	19.72	10.85	2	12	6	14	22	6	B
BASIN #2	18	2.44%	4.11	9.31	2	9	5	11	22	6	B
BASIN #3	15	2.00%	8.92	8.47	2	8	4	9	22	6	B
BASIN #4	15	2.00%	10.19	8.47	2	8	4	9	22	6	B

STAGE 1 CHANNEL AND DIVERSION SCHEDULE (2 YEAR BARE EARTH)

(Chapter 8.05 of the NCDEQ E&S Planning and Design Manual)

NAME	LENGTH (FT)	DA (AC)	ACCUM. DA (AC)	C	I ₂ (IN/HR)	Q ₂ (CFS)	SLOPE (FT/FT)	N VALUE	V (FT/S)	SHEAR (PSF)	FLOW DEPTH (FT)	FLOW AREA (FT ²)	Wp (FT)	R	SWALE DEPTH (IN)	SIDE SLOPE (H:V)	TEMPORARY LINING	PERMANENT LINING
DD #1A	243	0.84	0.84	0.50	5.70	2.39	1.80%	0.022	3.42	0.55	0.49	0.72	3.10	0.23	24	3:1	N/A	N/A
DD #1B	207	4.44	4.44	0.50	5.70	12.65	1.20%	0.022	4.44	0.73	0.98	2.88	6.20	0.46	24	3:1	N/A	N/A
DD #2	158	0.15	0.15	0.50	5.70	0.43	4.40%	0.022	3.14	0.60	0.22	0.15	1.39	0.10	24	3:1	N/A	N/A
DD #3	480	1.69	1.69	0.50	5.70	4.82	1.00%	0.022	3.27	0.44	0.71	1.51	4.49	0.34	24	3:1	N/A	N/A
DD #4	450	1.83	1.83	0.50	5.70	5.22	1.00%	0.022	3.33	0.46	0.73	1.60	4.62	0.35	24	3:1	N/A	N/A



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5410 Trinity Road, Suite 102 | Raleigh, NC 27607
TEL 919.866.4951 FAX 919.833.8124 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

DATE: 01/27/2022
DRAWN BY: J.D. MACMILLAN
DESIGNED BY: J.D. MACMILLAN
CHECKED BY: M. ZACCARDO
SCALE: 1" = 60'

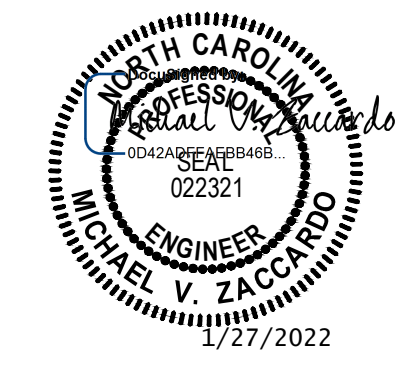
TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652
HAYWOOD GLEN PHASE 3
OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA
EROSION & SEDIMENT CONTROL - PHASE 1

JOB NO. 43202
SHEET NO. C8.0

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EROSION AND SEDIMENT CONTROL
APPROVED PLAN
DATE: _____
PERMIT NO. S- _____
Wake County Environmental Services
Sedimentation & Erosion Control
919-856-7400



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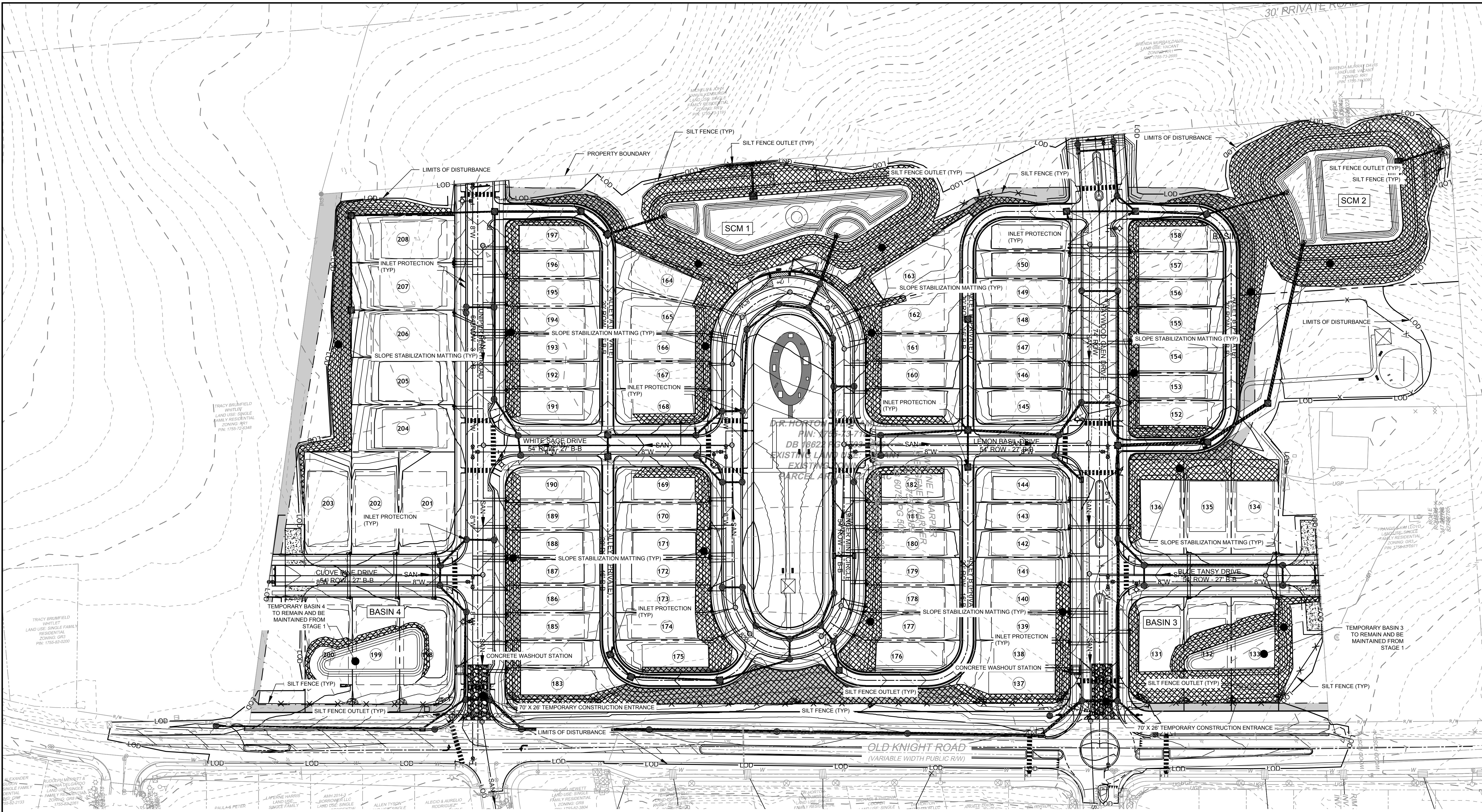
DATE: 01/27/2022
 DRAWN BY: J.D. MACMILLAN
 DESIGNED BY: E. ANGE
 CHECKED BY: M. ZACCARDO

SCALE: 1" = 60'

TIMMONS GROUP
 NORTH CAROLINA LICENSE NO. C-1652
HAYWOOD GLEN PHASE 3
 OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA
EROSION & SEDIMENT CONTROL - PHASE 2

REVISION DESCRIPTION
 DATE
 YOUR VISION ACHIEVED THROUGH OURS.
 DATE: 01/27/2022
 DRAWN BY: J.D. MACMILLAN
 DESIGNED BY: E. ANGE
 CHECKED BY: M. ZACCARDO
 SCALE: 1" = 60'

RELEASED FOR CONSTRUCTION



LEGEND

- LOD — LIMITS OF DISTURBANCE
- X — X — SILT FENCE
- TP — TREE PROTECTION FENCE
- DD #1A — DD #1B DIVERSION DITCH
- ▲ DITCH REINFORCEMENT
- INLET PROTECTION
- ▭ SEDIMENT BASIN
- P — POROUS BAFFLES
- S — SILT FENCE OUTLET
- SK — SKIMMER
- CO — COIR WATTLE
- ▲ RIPRAP CHECK DAM

Required Ground Stabilization Timeframes

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

VELOCITY DISSIPATORS

PIPE #	PIPE SIZE (in)	PIPE SLOPE (c/s)	Q10 (cfs)	VELOCITY (fps)	ZONE	PAD LENGTH (ft)	PAD WIDTH START (ft)	PAD WIDTH END (ft)	PAD DEPTH (in)	STONE SIZE (in)	STONE FILLING CLASS
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EROSION AND SEDIMENT CONTROL
APPROVED PLAN
 DATE: _____
 PERMIT NO. S- _____
 Wake County Environmental Services
 Sedimentation & Erosion Control
 919-856-7400

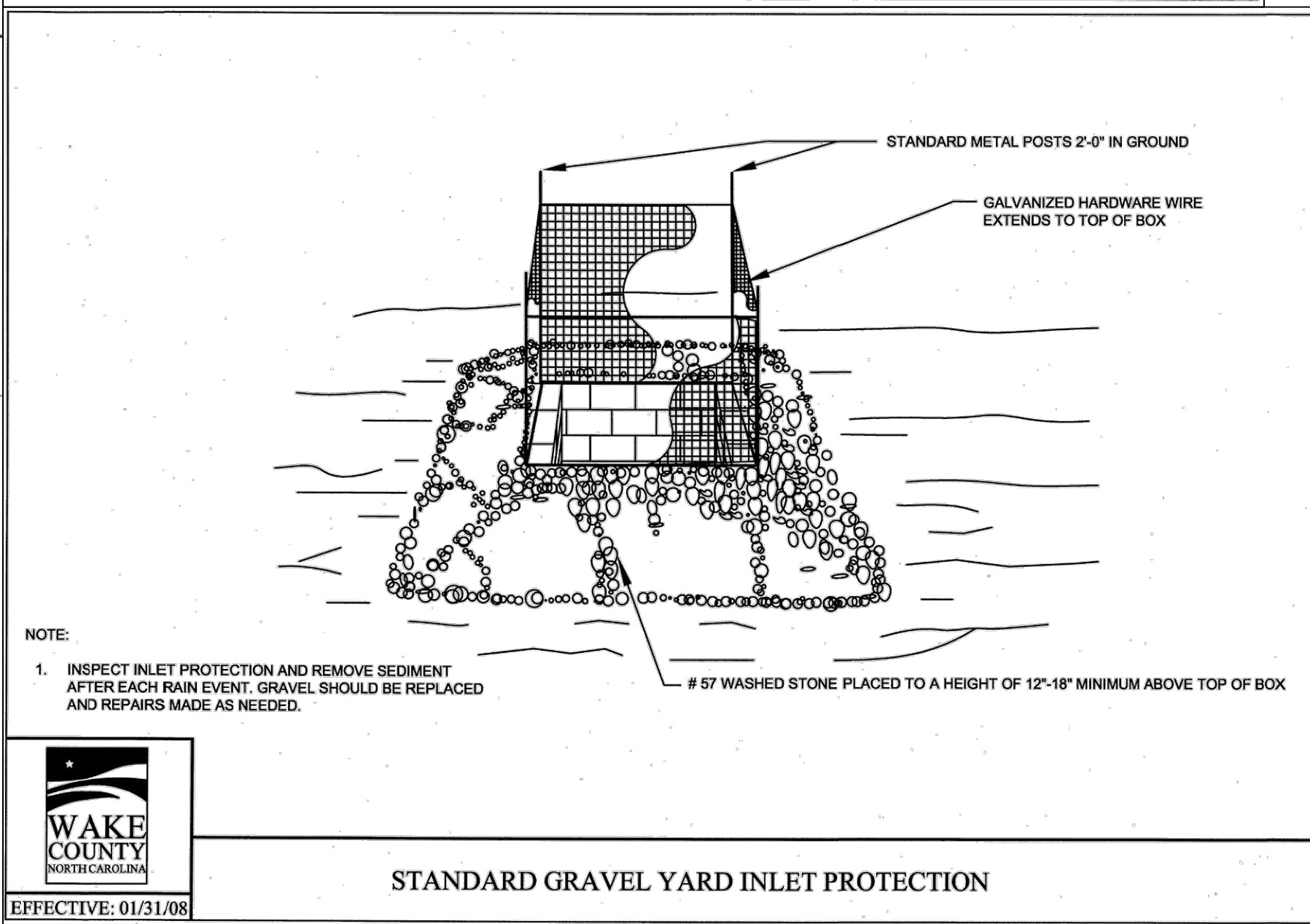
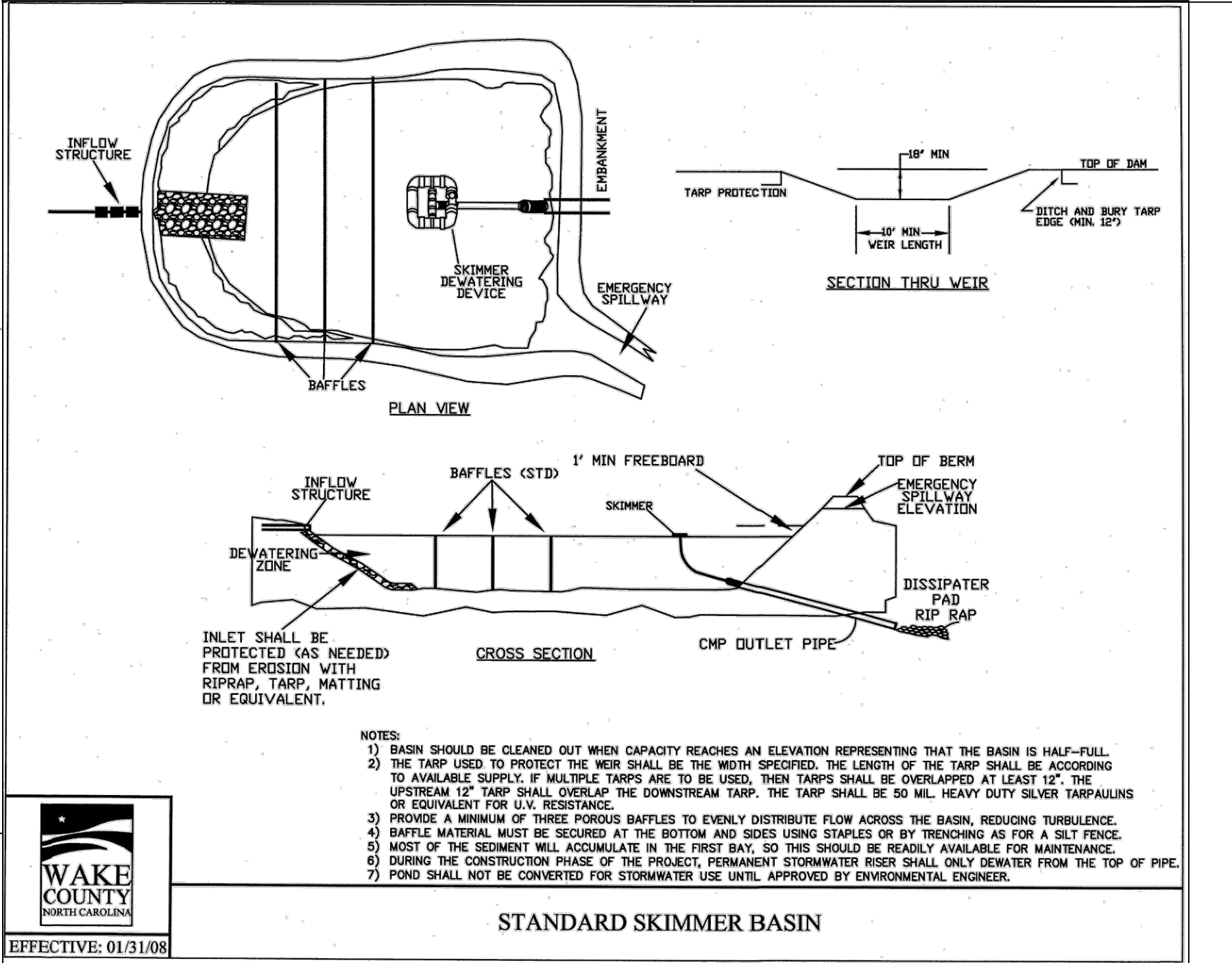
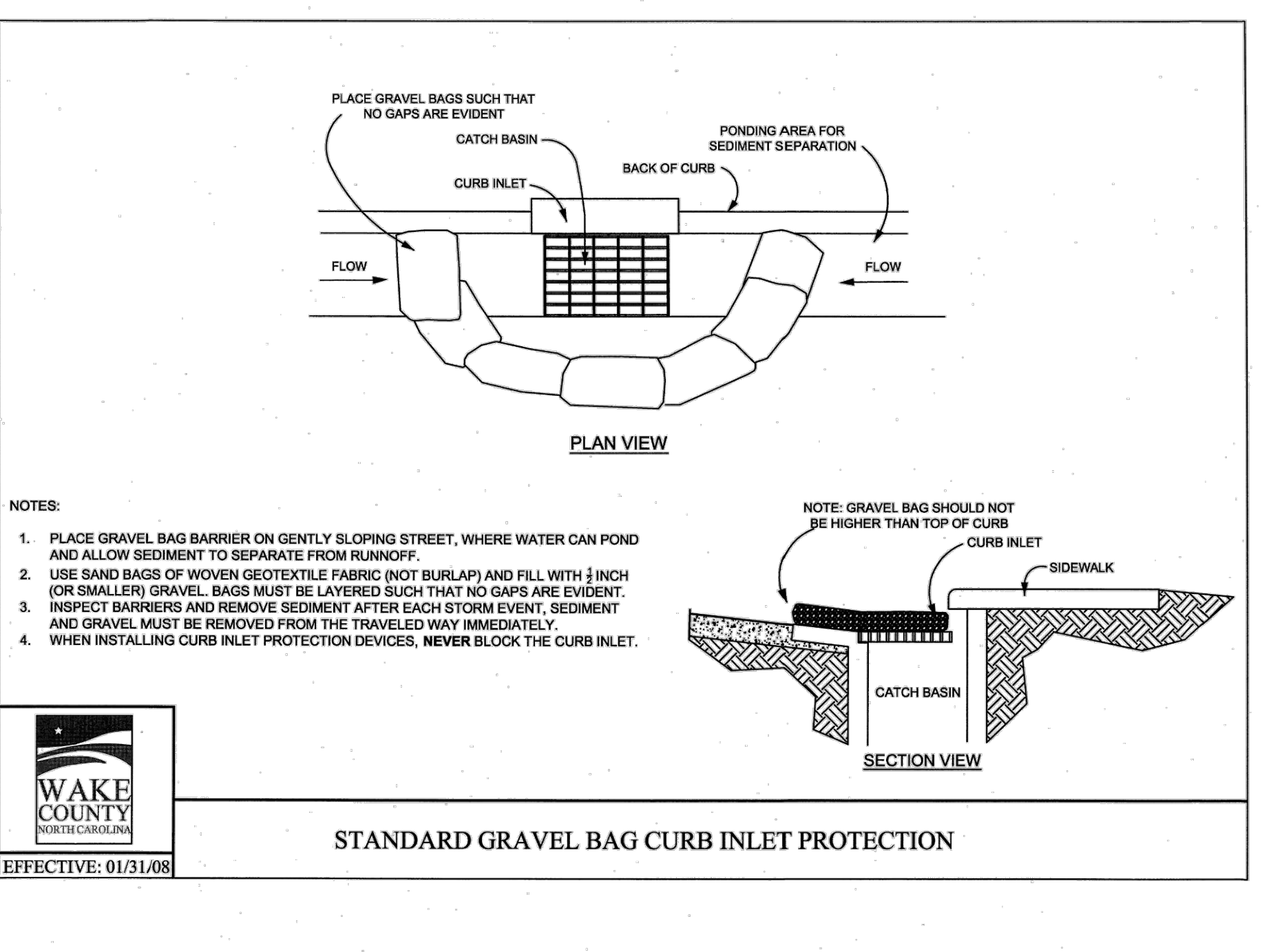
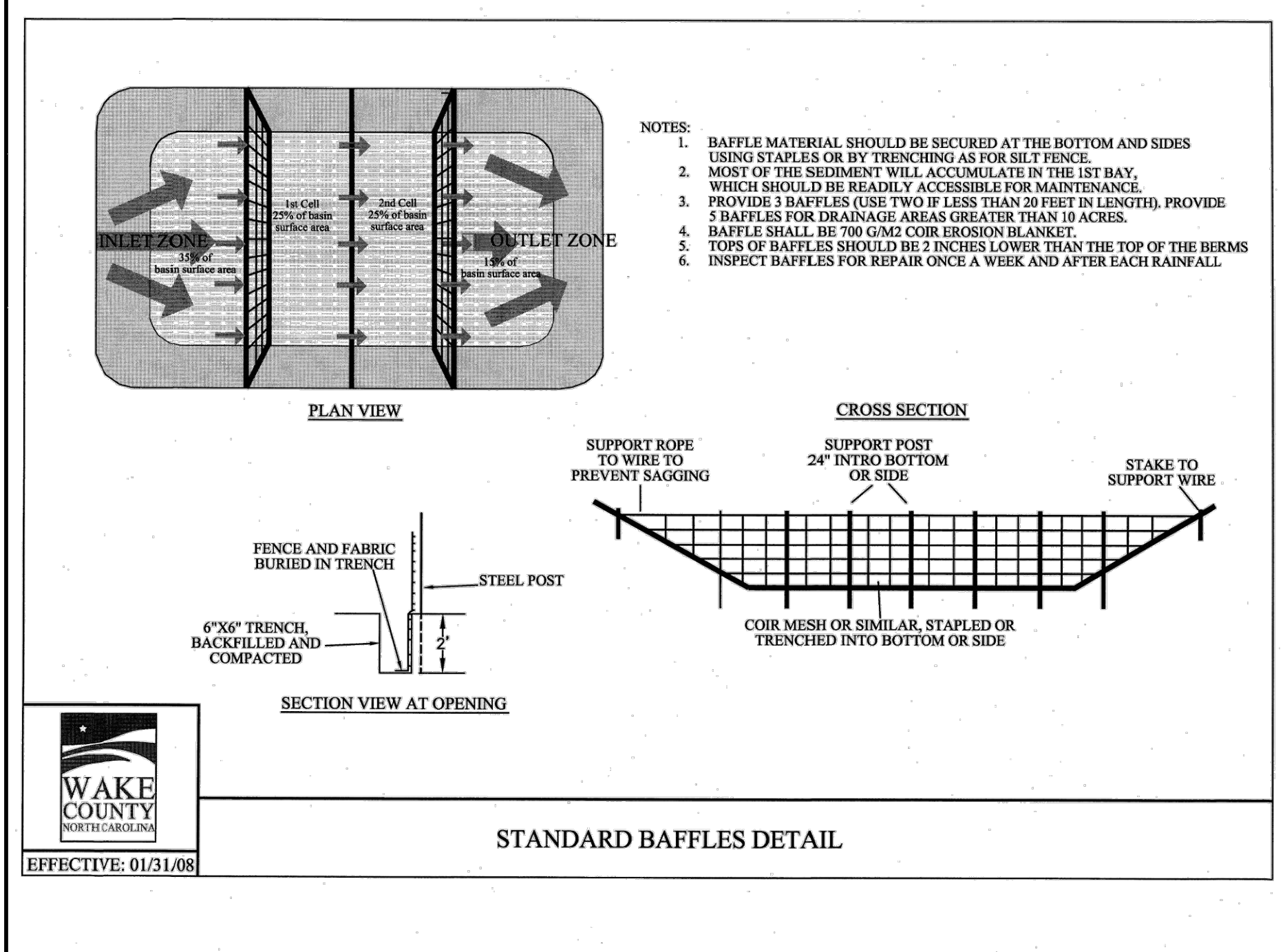
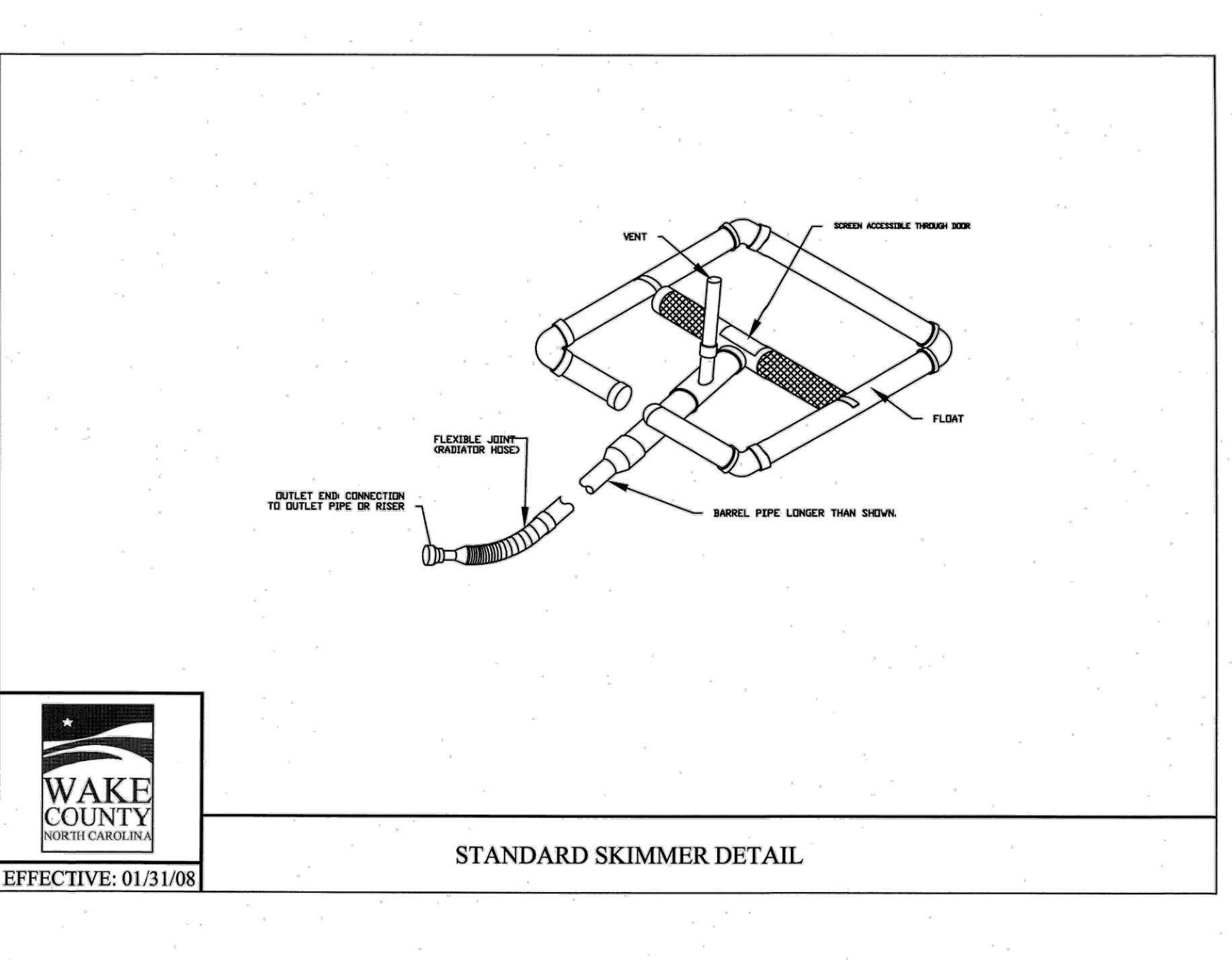
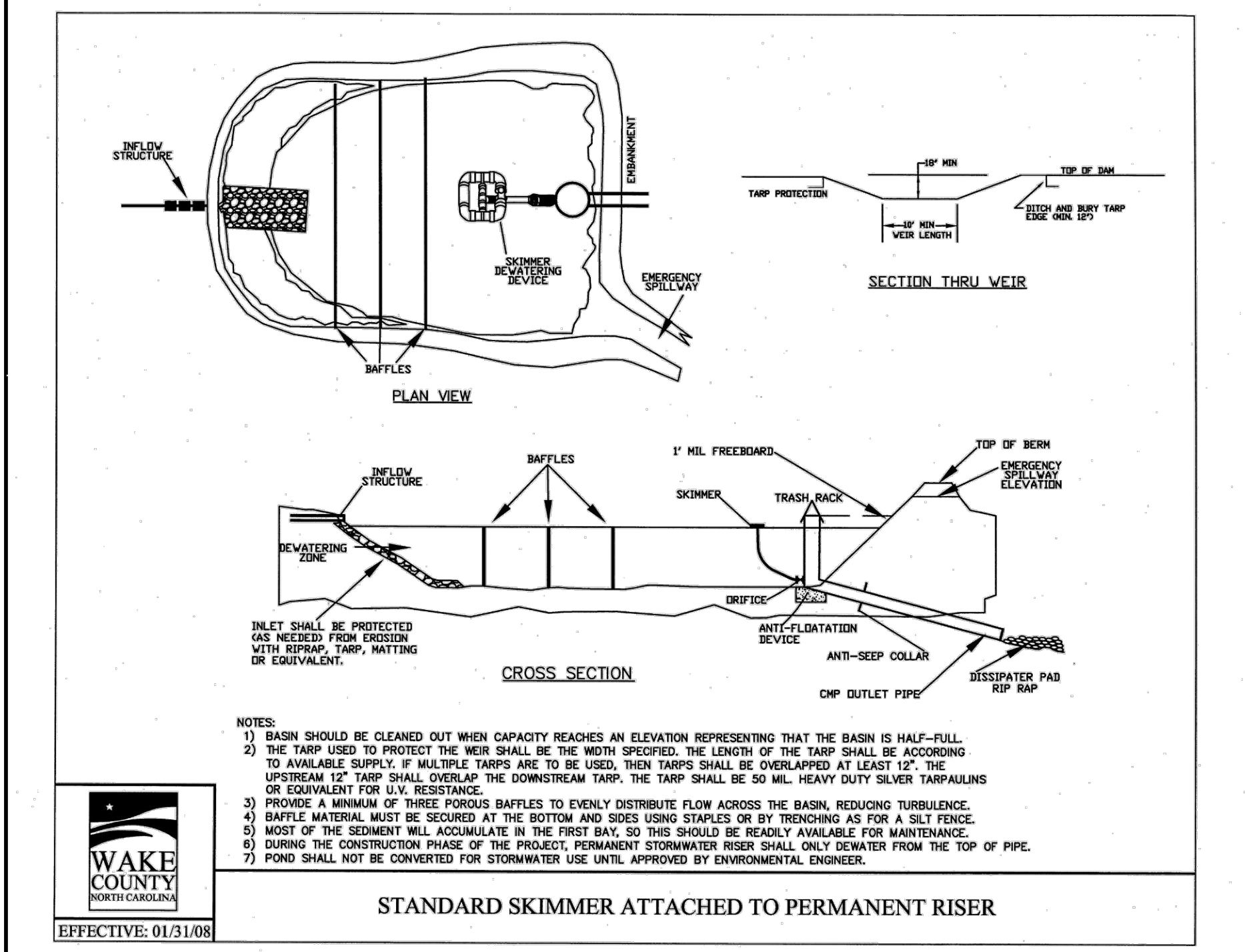
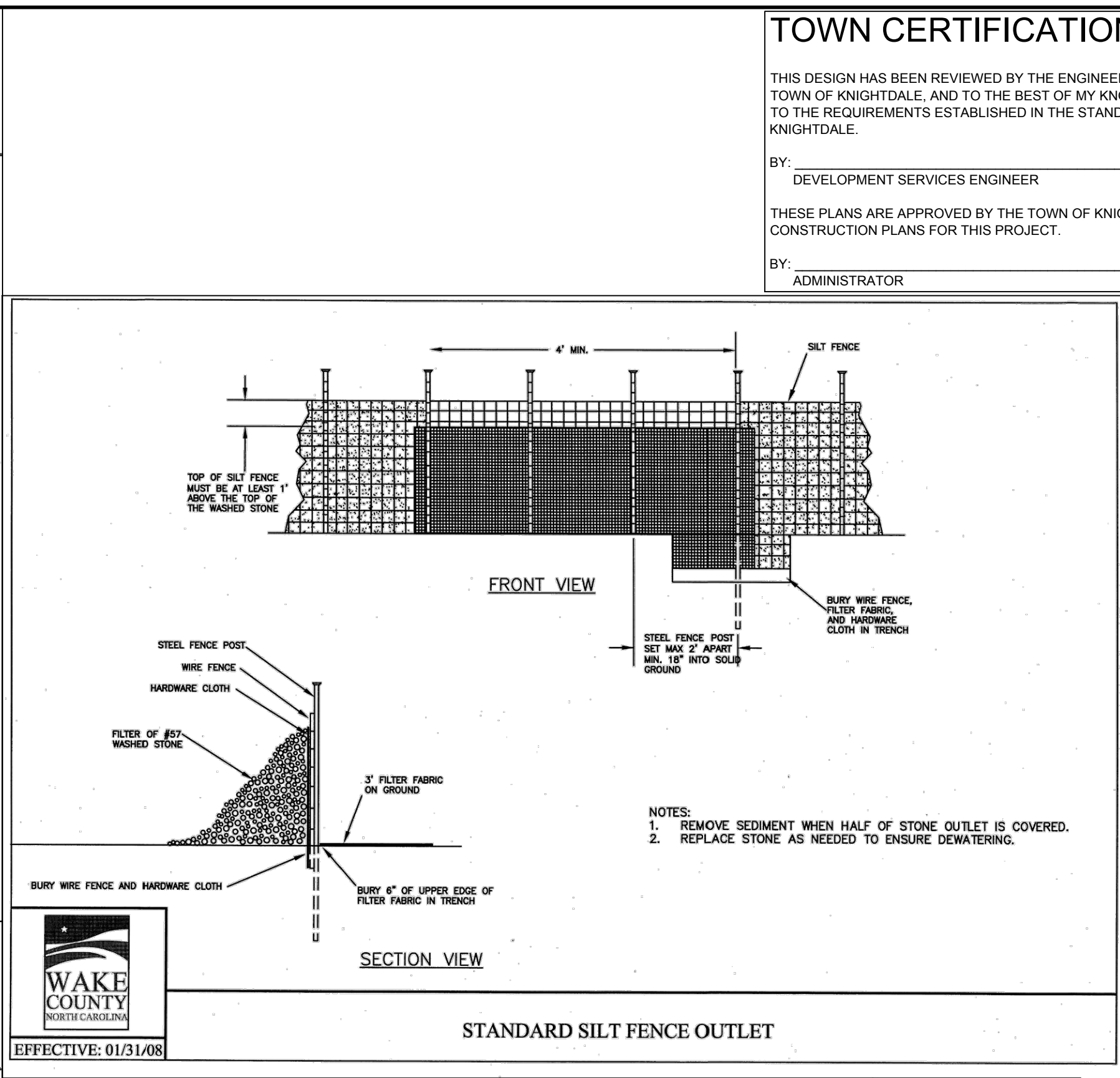
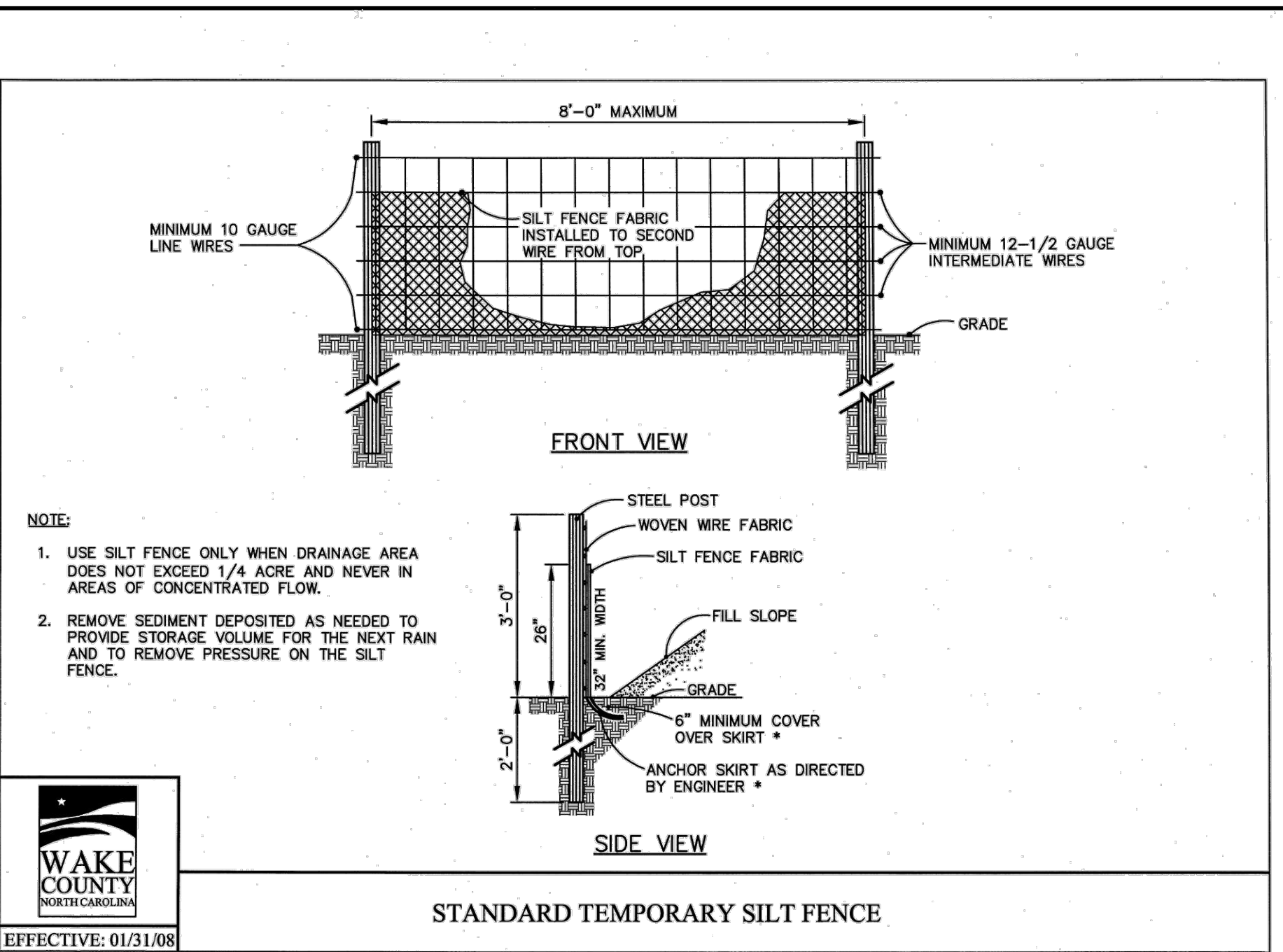
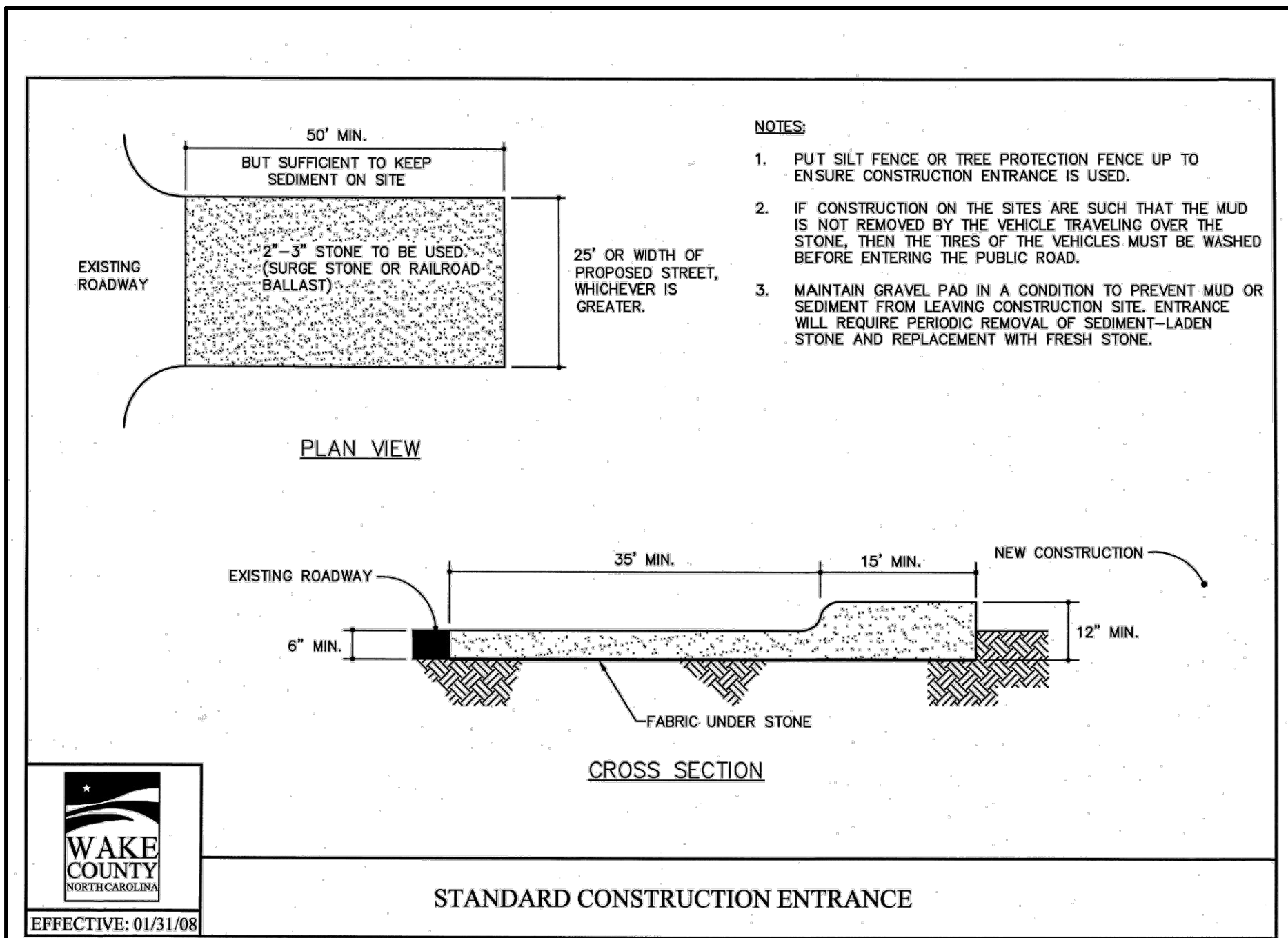
TOTAL DISTURBED AREA = 23.52 ACRES

SEE SHEET C7.7 FOR STAGE II EROSION CONTROL SEQUENCE, SLOPE STABILIZATION REQUIREMENTS, SEDIMENT BASIN REMOVAL NOTES, & STOCKPILE NOTES

TOWN CERTIFICATION
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 BY: _____ DATE: _____
 DEVELOPMENT SERVICES ENGINEER
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 BY: _____ DATE: _____
 ADMINISTRATOR



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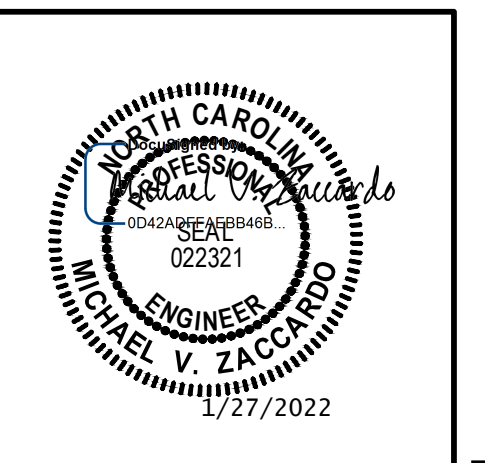
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REVISION DESCRIPTION

DATE

01/27/2022

DRAWN BY: J.D. MACMILLAN
DESIGNED BY: E. ANGE
CHECKED BY: M. ZACCARDO
SCALE: N/A

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

HAYWOOD GLEN PHASE 3
OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA

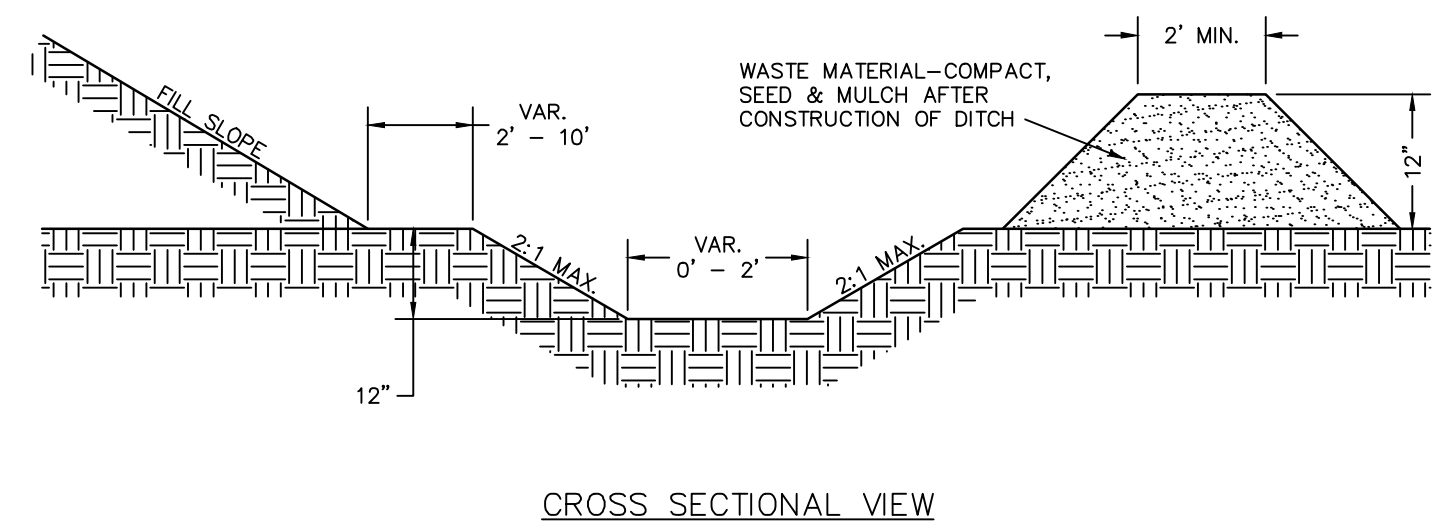
EROSION & SEDIMENT CONTROL DETAILS

JOB NO. 43202
SHEET NO. C8.2

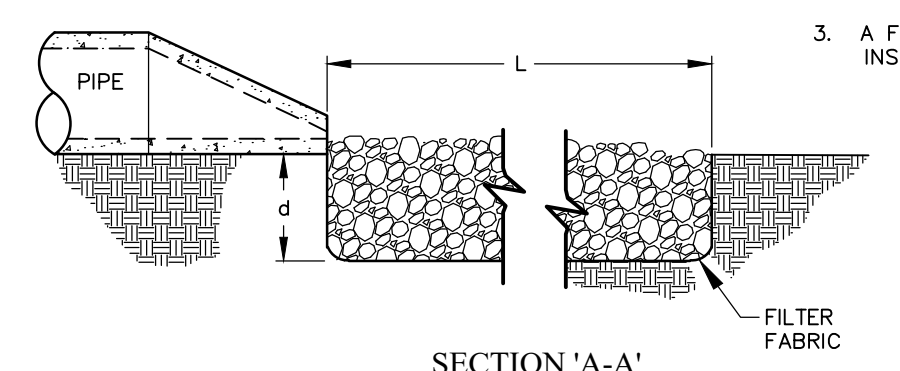
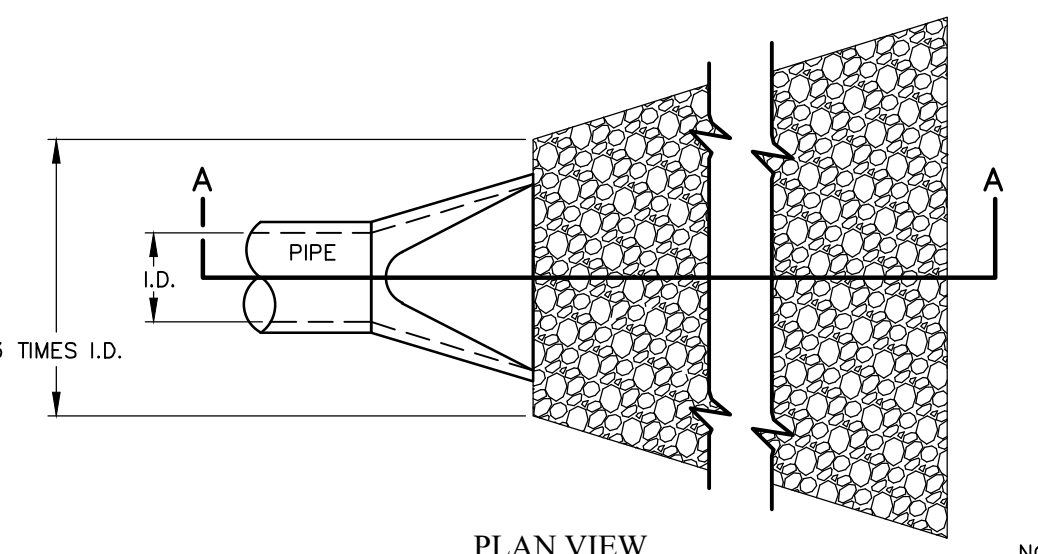
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- NOTES:**
- TEMPORARY DIVERSION DITCH TO BE USED TO INTERCEPT FLOW AND/OR DIVERT TO A SEDIMENT CONTROL MEASURE OR BMP.
 - SILT SHALL BE REMOVED WHEN DITCH IS ONE-HALF FULL.
 - DITCH SHALL BE RECONSTRUCTED WHEN DAMAGED BY EQUIPMENT OR COVERED BY FILL.
 - STABILIZE DIVERSION DITCH BERM WITH TEMPORARY SEEDING, MULCH WITH TAC, AND/OR EROSION CONTROL NETTING.

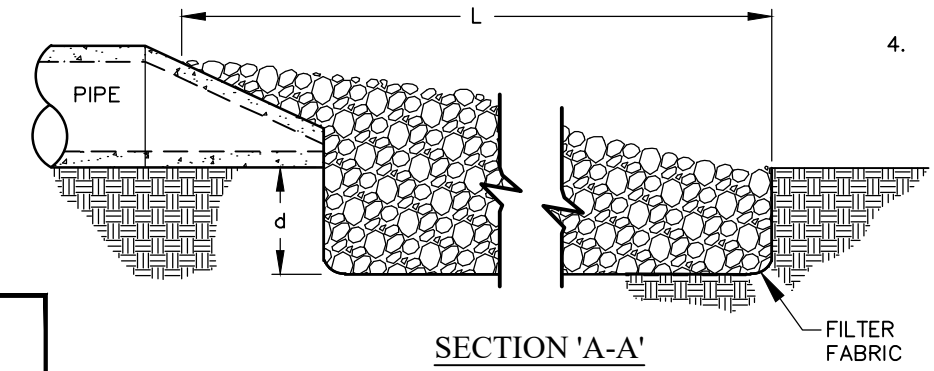
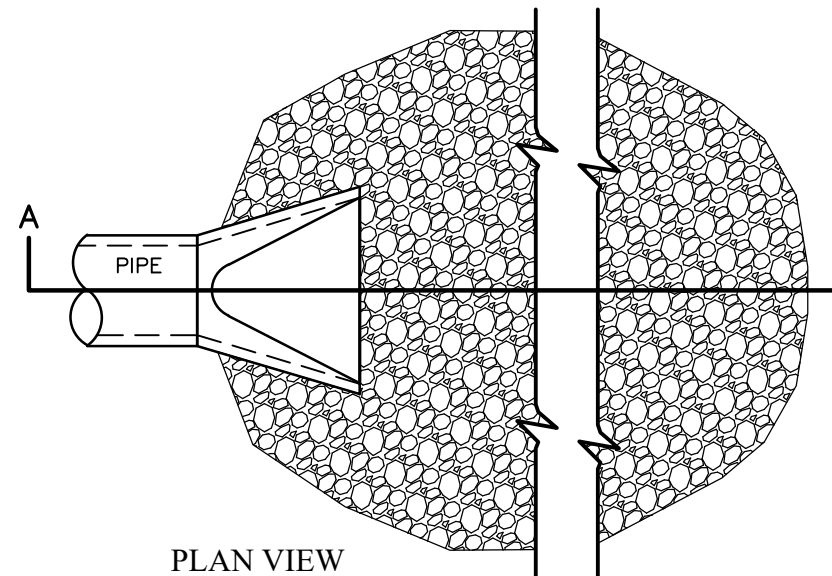


STANDARD TEMPORARY DIVERSION DITCH



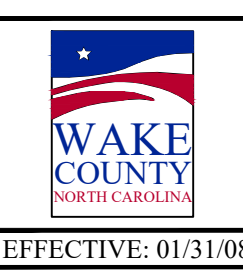
STANDARD PIPE OUTLET TO FLAT AREA
NO WELL-DEFINED CHANNEL

- NOTES:**
- L = THE LENGTH OF THE RIPRAP APRON.
 - d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6" (INCHES).
 - A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.



STANDARD PIPE OUTLET TO WELL-DEFINED CHANNEL

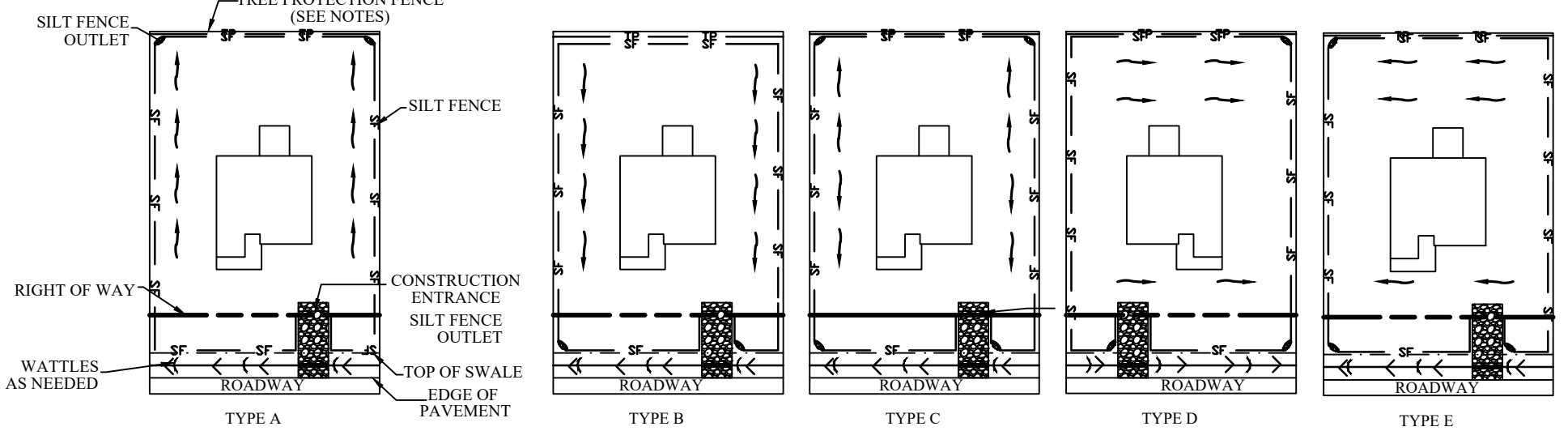
- NOTES:**
- L = THE LENGTH OF THE RIPRAP APRON.
 - d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6" (INCHES).
 - IN A WELL-DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" (INCHES) ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
 - A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.



EFFECTIVE: 01/31/08

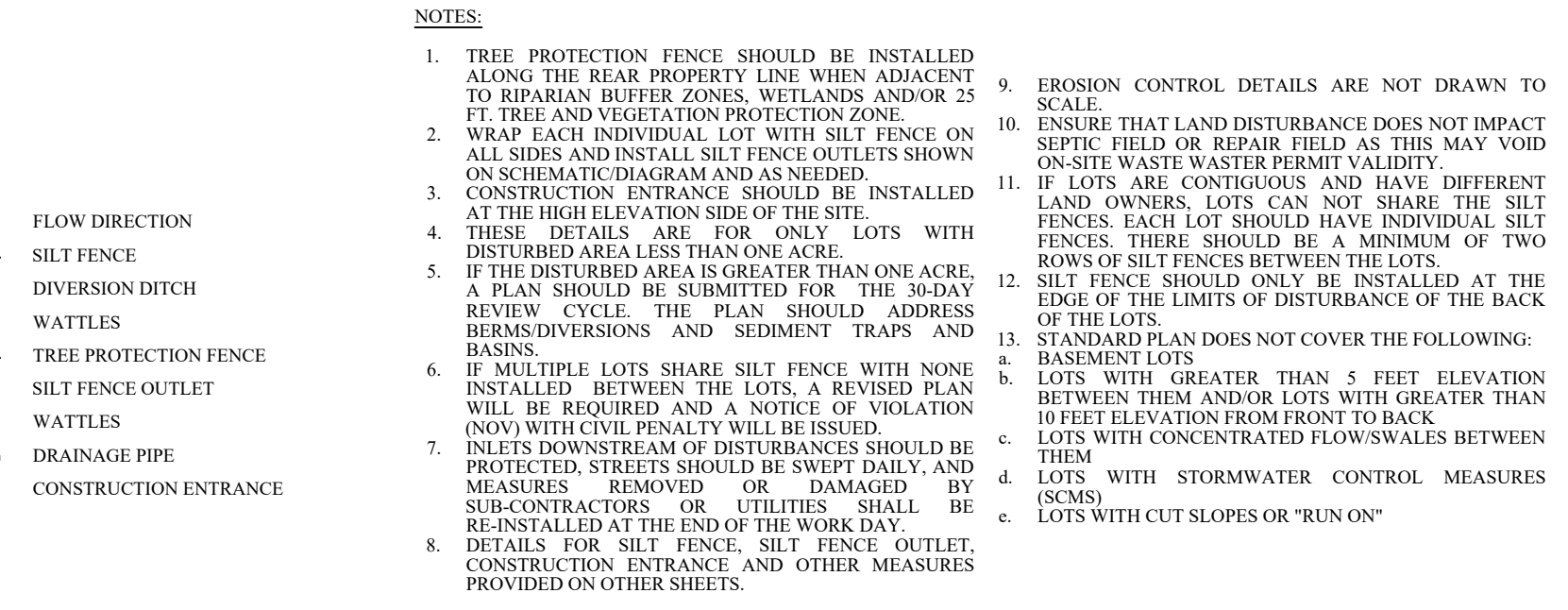
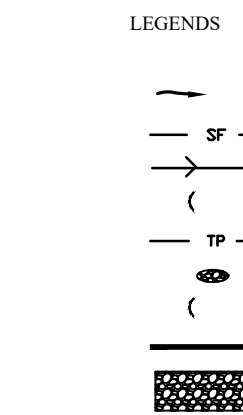


EFFECTIVE: 01/31/08

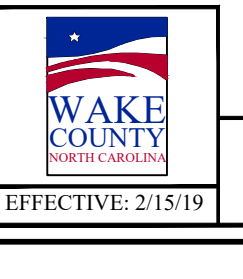


STANDARD CHECK DAM

NOTE: REMOVE SEDIMENT ACCUMULATION FROM BEHIND CHECK DAMS TO PREVENT DAMAGE TO CHANNEL VEGETATION. FLOW SHOULD BE MAINTAINED THROUGH THE DAM.



- NOTES:**
- TREE PROTECTION FENCE SHOULD BE INSTALLED ALONG THE REAR PROPERTY LINE WHEN ADJACENT TO RIPARIAN BUFFER ZONES, WETLANDS AND/OR 25 FT. TREE AND VEGETATION PROTECTION ZONE.
 - WRAP EACH INDIVIDUAL LOT WITH SILT FENCE ON ALL SIDES AND INSTALL SILT FENCE OUTLETS SHOWN ON SCHEMATIC DIAGRAM AND AS NEEDED.
 - CONSTRUCTION ENTRANCE SHOULD BE INSTALLED AT THE HIGH ELEVATION SIDE OF THE SITE.
 - IF THE DISTURBED AREA IS GREATER THAN ONE ACRE, A PLAN SHOULD BE SUBMITTED FOR THE 30-DAY REVIEW CYCLE. THE PLAN SHOULD ADDRESS BERM/DIVERSIONS AND SEDIMENT TRAPS AND BASINS.
 - IF MULTIPLE LOTS SHARE SILT FENCE WITH NONE INSTALLED BETWEEN THE LOTS, A REVISED PLAN WILL BE REQUIRED AND A NOTICE OF VIOLATION (NOV) WITH CIVIL PENALTY WILL BE ISSUED.
 - IF THE DISTURBED AREA IS GREATER THAN ONE ACRE, A PLAN SHOULD BE SUBMITTED FOR THE 30-DAY REVIEW CYCLE. THE PLAN SHOULD ADDRESS BERM/DIVERSIONS AND SEDIMENT TRAPS AND BASINS.
 - IF MULTIPLE LOTS SHARE SILT FENCE WITH NONE INSTALLED BETWEEN THE LOTS, A REVISED PLAN WILL BE REQUIRED AND A NOTICE OF VIOLATION (NOV) WITH CIVIL PENALTY WILL BE ISSUED.
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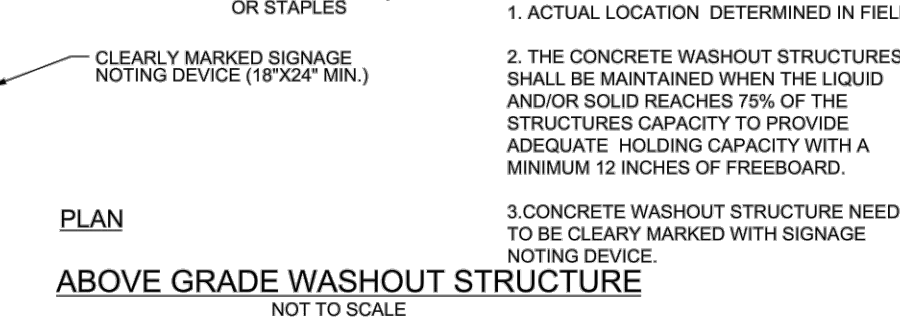
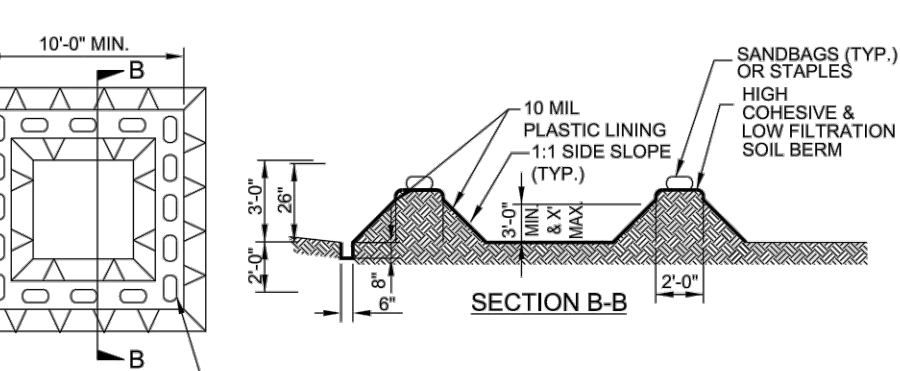
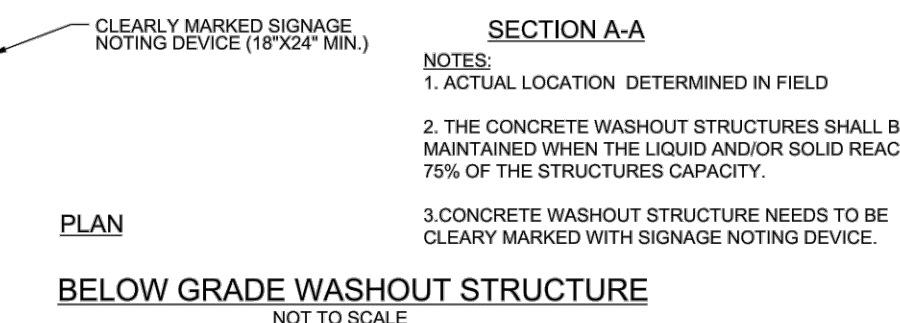
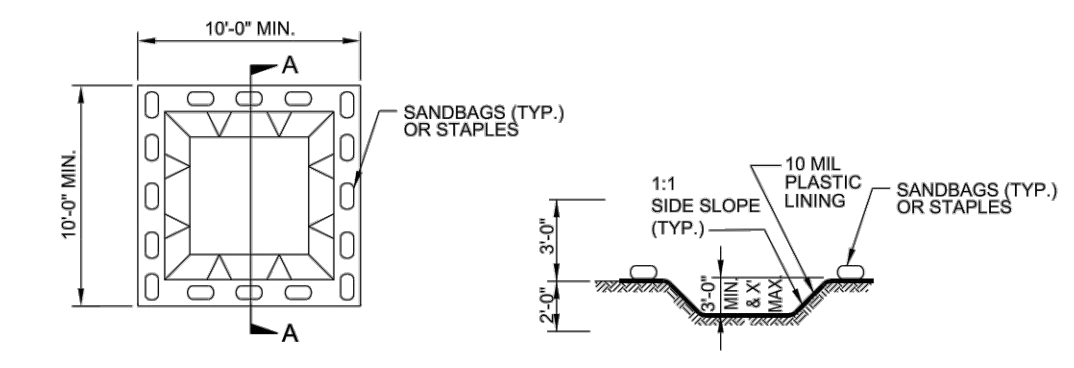


EFFECTIVE: 2/15/19

TYPICAL INDIVIDUAL LOT SEDIMENT & EROSION CONTROL MEASURES DETAIL

WITH LINER, NO GRAVEL APPROACH

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



PRELIMINARY DESIGN
NOT FOR CONSTRUCTION

SEEDBED PREPARATION

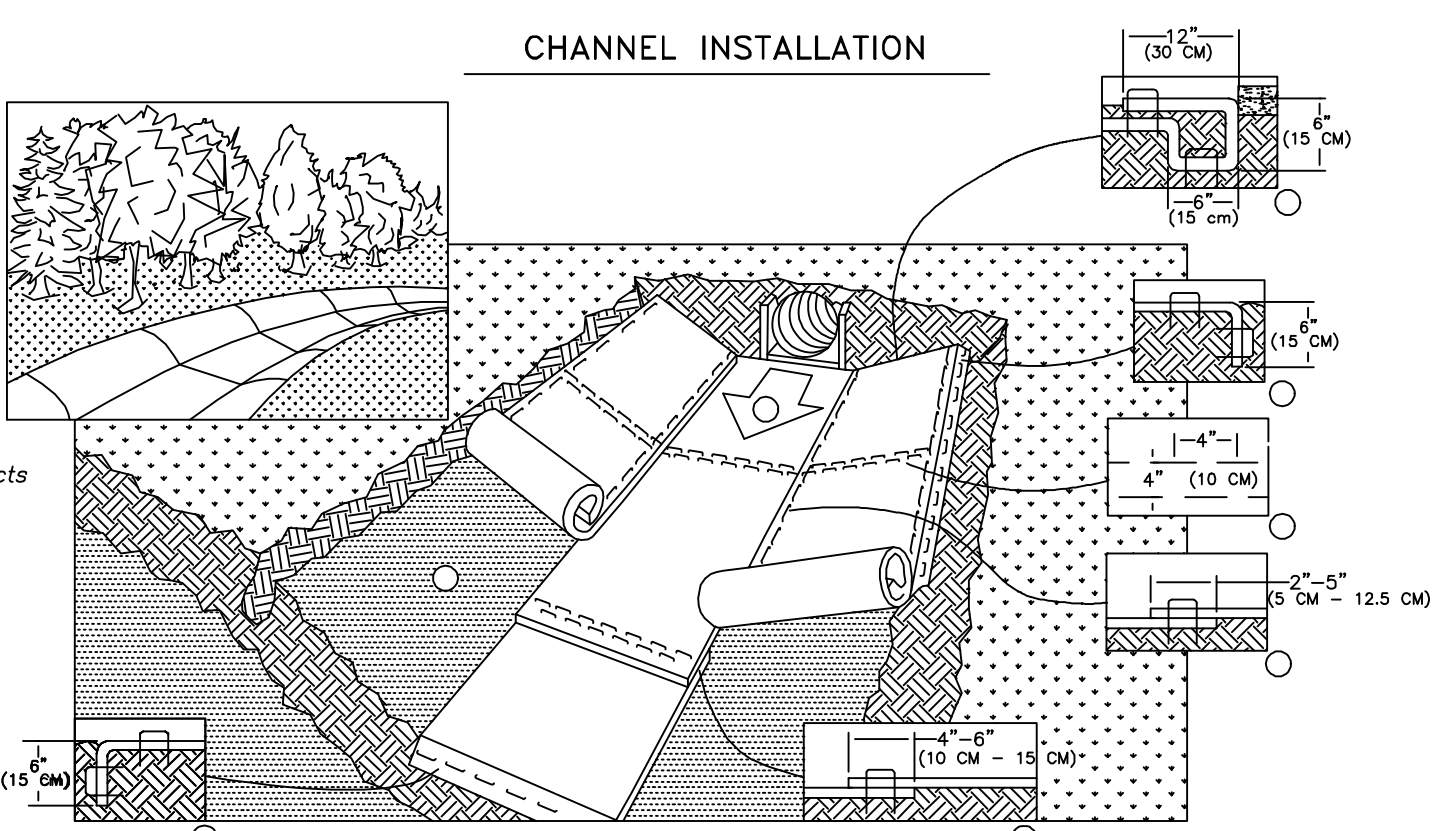
- CHISEL COMPACTED AREAS AND SPREAD TOPSOIL THREE INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
- RIP THE ENTIRE AREA TO SIX INCHES DEEP.
- REMOVE ALL LOOSE ROCK, ROOTS AND OTHER OBSTRUCTIONS, LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
- APPLY AGRICULTURAL LIME, FERTILIZER AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE MIXTURE BELOW).
- CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED FOUR TO SIX INCHES DEEP.
- SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
- MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
- INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON. IF POSSIBLE, IF STAND SHOULD BE MORE THAN 60% DAMAGED, RE-ESTABLISH FOLLOWING THE ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
- CONSULT S&EC ENVIRONMENTAL ENGINEERS ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

MIXTURE

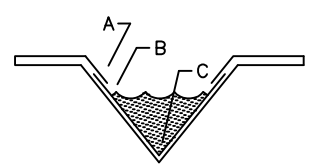
AGRICULTURAL LIME	2 TONS/ACRE - SMALL GRAIN STRAW
FERTILIZER	1,000 LBS/ACRE - 10-10-10
MULCH	2 TONS/ACRE - SMALL GRAIN STRAW
ANCHOR	2 TONS/ACRE - SMALL GRAIN STRAW

**TEMPORARY: RESEED ACCORDING TO OPTIMUM SEASON FOR DESIRED PERMANENT VEGETATION. DO NOT ALLOW TEMPORARY COVER TO GROW MORE THAN 12" IN HEIGHT BEFORE MOWING. OTHERWISE, FESCUE MAY BE SHADED OUT.

NORTH AMERICAN GREEN
EROSION CONTROL Products
Guaranteed SOLUTIONS
14649 HIGHWAY 41 NORTH
EVANSVILLE, IN 47725
800-772-2045
www.norgreen.com



- PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP'S), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
 - BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE RECP'S IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) ACROSS THE WIDTH OF THE RECP'S.
 - ROLL CENTER RECP'S IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. RECP'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
 - PLACE CONSECUTIVE RECP'S END OVER END (SHINGLE STYLE) WITH A 4" - 6" (10 CM - 15 CM) OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10 CM) APART AND 4" (10 CM) ON CENTER TO SECURE RECP'S.
 - FULL LENGTH EDGE OF RECP'S AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
 - ADJACENT RECP'S MUST BE OVERLAPPED APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) (DEPENDING ON RECP'S TYPE) AND STAPLED.
 - IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FEET (9 M - 12 M) INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10 CM) APART AND 4" (10 CM) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
 - THE TERMINAL END OF THE RECP'S MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
- NOTE:
* IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP'S.



CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROTECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

NOTE:
* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP'S.

SEEDING SCHEDULE

FOR SHOULDERS, SIDE DITCHES, SLOPES (MAX. 3:1):

DATE	TYPE	PLANTING RATE
AUG 15 - NOV 1	TALL FESCUE	300 LBS/ACRE
NOV 1 - MAR 1	TALL FESCUE & ABRUZZI RYE	300 LBS/ACRE
MAR 1 - APR 15	TALL FESCUE	300 LBS/ACRE
APR 15 - JUN 30	HULLED COMMON BERMU DAGRASS	25 LBS/ACRE
JUL 1 - AUG 15	TALL FESCUE AND BROWNTOP MILLET OR SORGHUM-SUDAN HYBRIDS**	125 LBS/ACRE (TALL FESCUE); 35 LBS/ACRE (BROWNTOP MILLET); 30 LBS/ACRE (SORGHUM-SUDAN HYBRIDS)

FOR SHOULDERS, SIDE DITCHES, SLOPES (3:1 TO 2:1):

DATE	TYPE	PLANTING RATE
MAR 1 - JUN 1	SERICEA LESPEDEZA (SCARIFIED) AND USE THE FOLLOWING COMBINATIONS:	50 LBS/ACRE (SERICEA LESPEDEZA)
MAR 1 - APR 15	ADD TALL FESCUE	120 LBS/ACRE
MAR 1 - JUN 30	OR ADD WEEPING LOVE GRASS	10 LBS/ACRE
MAR 1 - JUN 30	OR ADD HULLED COMMON BERMU DAGRASS	25 LBS/ACRE
JUN 1 - SEP 1	TALL FESCUE AND BROWNTOP MILLET OR SORGHUM-SUDAN HYBRIDS**	120 LBS/ACRE (TALL FESCUE); 35 LBS/ACRE (BROWNTOP MILLET); 30 LBS/ACRE (SORGHUM-SUDAN HYBRIDS)
SEP 1 - MAR 1	SERICEA LESPEDEZA (UNHULLED - UNSCARIFIED) AND TALL FESCUE	70 LBS/ACRE (SERICEA LESPEDEZA); 120 LBS/ACRE (TALL FESCUE)
NOV 1 - MAR 1	AND ABRUZZI RYE	25 LBS/ACRE



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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER
THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.
BY: _____ DATE: _____
ADMINISTRATOR

THIS DRAWING PREPARED AT THE
RALEIGH OFFICE
5410 Trinity Road, Suite 102 | Raleigh, NC 27607
TEL 919.866.9511 FAX 919.833.8124 www.timmons.com

DATE	REVISION DESCRIPTION
01/27/2022	

YOUR VISION ACHIEVED THROUGH OURS.
DRAWN BY: JD. MACMILLAN
DESIGNED BY: E. ANGE
CHECKED BY: M. ZACCARDO
SCALE: N/A

TIMMONS GROUP
NORTH CAROLINA LICENSE NO. C-1652

HAYWOOD GLEN PHASE 3
OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA
EROSION & SEDIMENT CONTROL DETAILS

JOB NO. 43202
SHEET NO. C8.3

RELEASED FOR CONSTRUCTION

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively).

Table with 3 columns: Site Area Description, Stabilize within this many calendar days after ceasing land disturbance, Timeframe variations.

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity.

GROUND STABILIZATION SPECIFICATION

Table with 2 columns: Temporary Stabilization, Permanent Stabilization. Lists various materials and methods for soil stabilization.

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

- 1. Select flocculants that are appropriate for the soils being exposed during construction...

EQUIPMENT AND VEHICLE MAINTENANCE

- 1. Maintain vehicles and equipment to prevent discharge of fluids.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

- 1. Never bury or burn waste. Place litter and debris in approved waste containers.

PAINT AND OTHER LIQUID WASTE

- 1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.

PORTABLE TOILETS

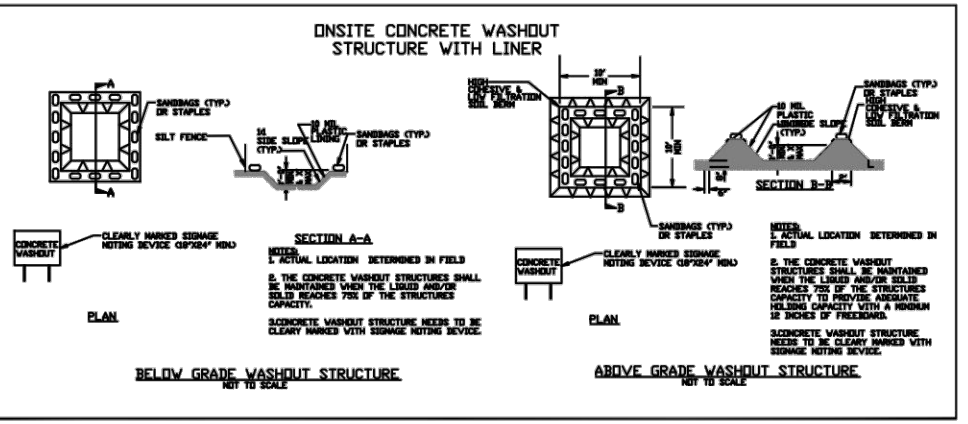
- 1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative.

EARTHEN STOCKPILE MANAGEMENT

- 1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.



NCG01 GROUND STABILIZATION AND MATERIALS HANDLING EFFECTIVE: 04/01/19



CONCRETE WASHOUTS

- 1. Do not discharge concrete or cement slurry from the site.

HERBICIDES, PESTICIDES AND RODENTICIDES

- 1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.

HAZARDOUS AND TOXIC WASTE

- 1. Create designated hazardous waste collection areas on-site.

STAGE I EROSION CONTROL CONSTRUCTION SEQUENCE:

- 1. CONTACT WAKE COUNTY E&S INSPECTOR, KARYN PAGEAU AT (919) 796-8769 TO SET UP A PRE-CONSTRUCTION MEETING AFTER RECEIVING THE CERTIFICATE OF COVERAGE.

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.

- NOTES:
1. AREAS WILL BE STABILIZED PER THE GROUND STABILIZATION CHART AFTER ANY GRADING.

SLOPE STABILIZATION REQUIREMENTS:

3:1 AND FLATTER - GRASS
3:1 TO 2:1 - SLOPE - ADAPTIVE PLANTS (SHRUBS AND VINES)
2:1 TO 1.5:1 - RIP RAP
STEEPER THAN 1.5 TO 1 - RETAINING WALL

WAKE COUNTY SEDIMENT BASIN REMOVAL SEQUENCE:

- 1. SCHEDULE A SITE MEETING WITH THE ENVIRONMENTAL CONSULTANT TO DETERMINE IF A BASIN CAN BE REMOVED. INSTALL SILT FENCING OR OTHER TEMPORARY EROSION CONTROL MEASURES AS NEEDED PRIOR TO REMOVAL OF THE BASIN.

STOCKPILE AREA NOTES:

- 1. MAXIMUM SIDE SLOPES: 2:1.
2. MAXIMUM HEIGHT SHALL NOT EXCEED 35 FEET.

STOCKPILE MAINTENANCE:

- 1. SEEDING OR COVERING OF PILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEYED IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDERNEATH THE PLASTIC.

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be jeopardized, the inspection may be delayed until the next business day on which it is safe to perform the inspection.

Table with 3 columns: Inspect, Frequency (during normal business hours), Inspection records must include.

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

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

The approved E&S plan as well as any approved deviation shall be kept on the site. The approved E&S plan must be kept up-to-date throughout the coverage under this permit.

Table with 2 columns: Item to Document, Documentation Requirements.

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

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported
Permittees shall report the following occurrences:

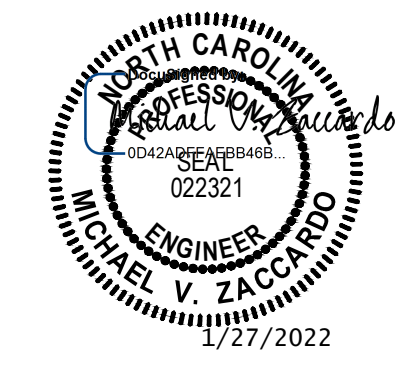
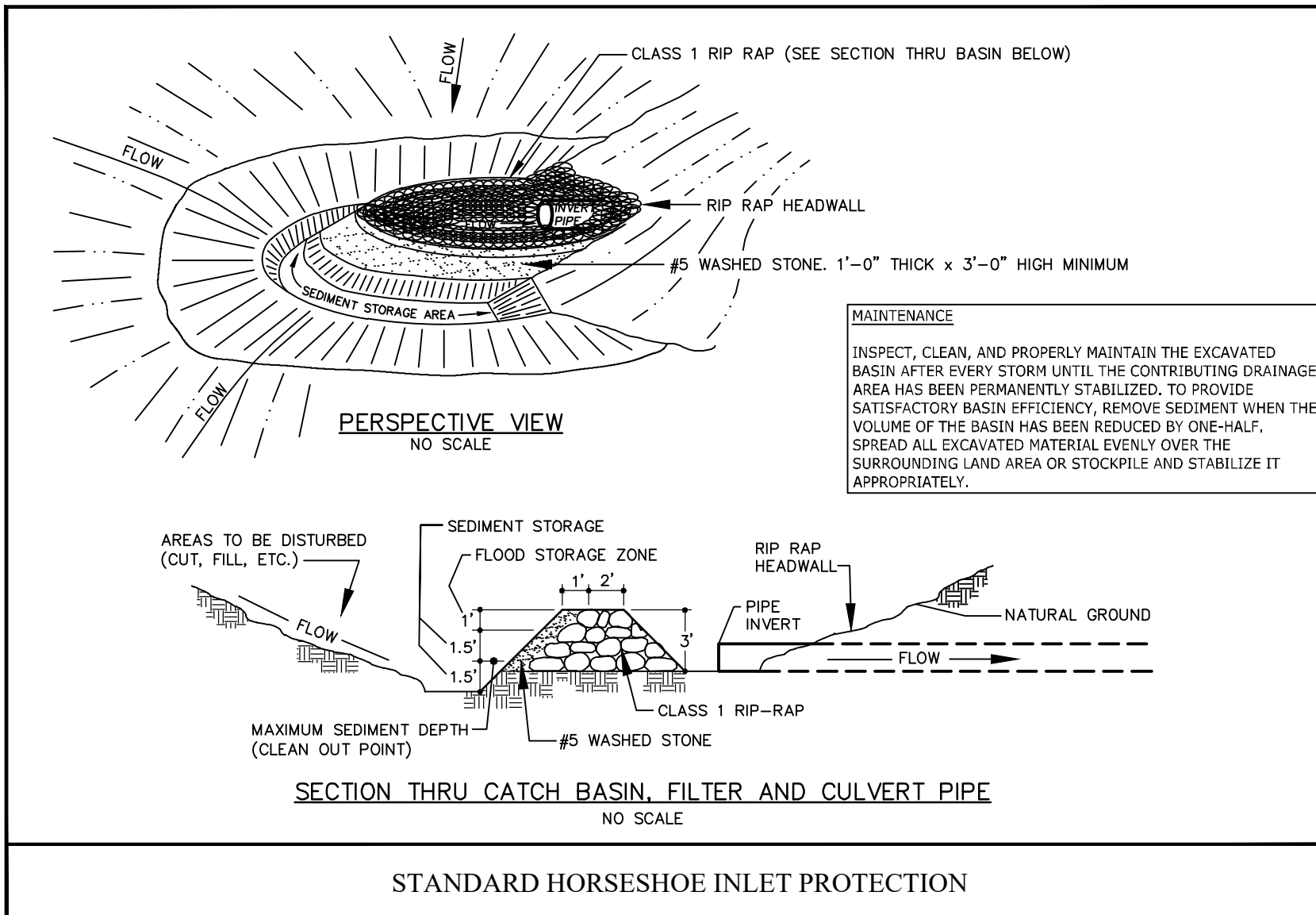
- (a) Visible sediment deposition in a stream or wetland.
(b) Oil spills if:
• They are 25 gallons or more,
• They are less than 25 gallons but cannot be cleaned up within 24 hours,

2. Reporting Timeframes and Other Requirements
After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below.

Table with 2 columns: Reporting Timeframes (After Discovery) and Other Requirements.



NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING EFFECTIVE: 04/01/19



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TEL 919-866-9511 FAX 919-833-9824 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.
DATE 01/27/2022

DRAWN BY JD.MACMILLAN

DESIGNED BY E.ANGE

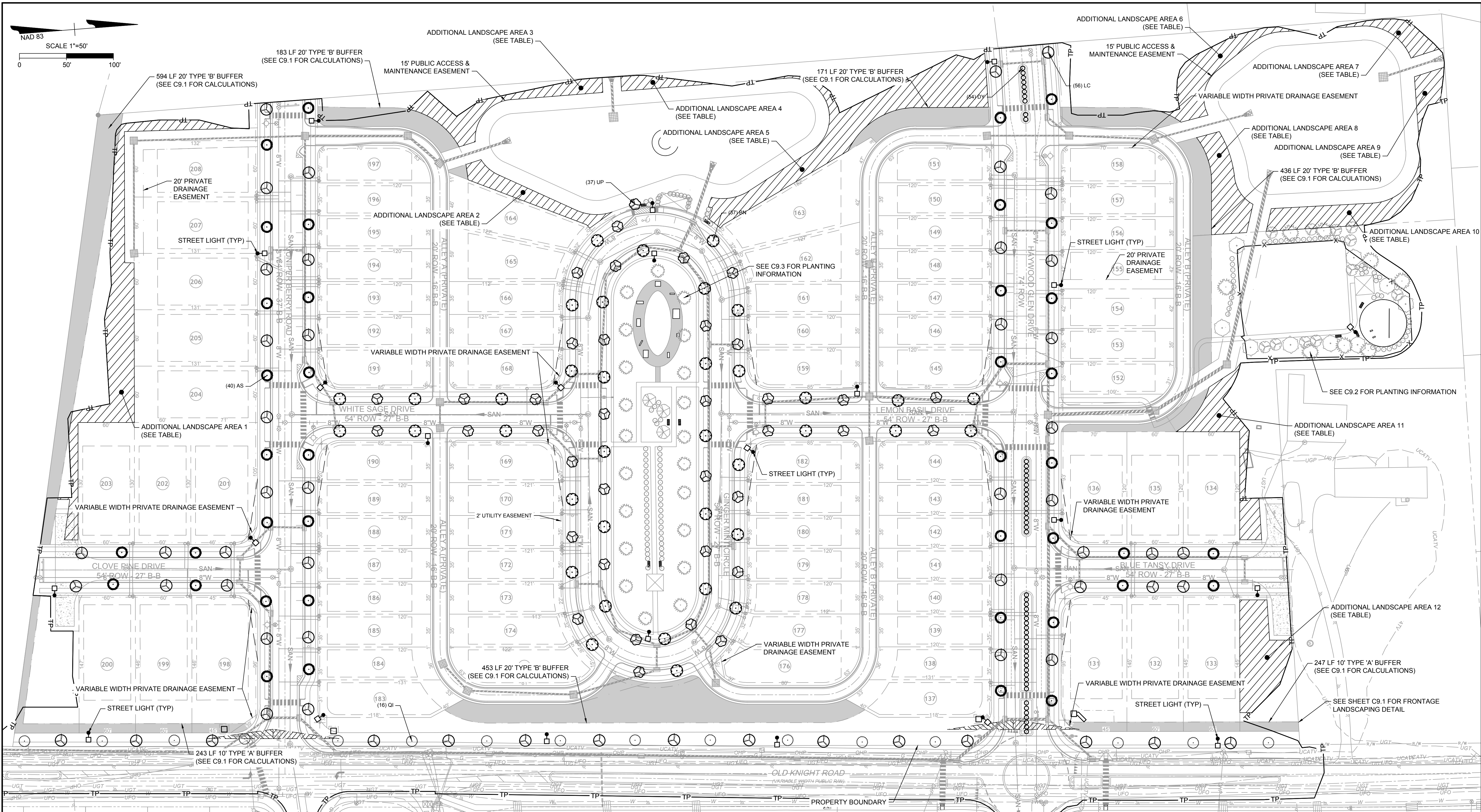
CHECKED BY M.ZACCARO

SCALE N/A

REVISION DESCRIPTION

TIMMONS GROUP logo and job information: NORTH CAROLINA LICENSE NO. C-1652, HAYWOOD GLEN PHASE 3, OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA. JOB NO. 43202, SHEET NO. C8.4

RELEASED FOR CONSTRUCTION



SCOPE OF WORK:
Furnish all labor, materials, and equipment required or indicated by the drawings and specifications to complete the work including installation of all trees, shrubs, groundcover, annuals, seed, sod and mulch.

MATERIALS AND WORK:
The selection of all materials and the execution of all work required under the contract shall be subject to approval by the owner. The owner shall have the right to reject and all materials and any and all work, which in his opinion, does not meet the requirements of the contract.

PLANT MATERIALS:
All plant materials shall be nursery grown, freshly dug in the field, naturally shaped, well branched, fully foliated when in leaf with fully developed root systems. Trees must be self supporting, with straight trunks and leaders in tact. All plants must be free of disease, insect infestation or their eggs and shall have been grown in climatic conditions similar to those of the project site.

PLANT SIZE:
Specified sizes indicates the minimum allowable size at planting. Where container and height spreads are indicated for a single species, both size requirements shall be met when only plant height or spread are indicated, container size shall be based on ANSI standards.

ORGANIC MATTER:
Aged manure, compost or pine bark fines, at the option of the contractor, material shall be air dried, finely shredded and suitable for horticultural purposes and shall contain no more than 35 moisture content by weight.

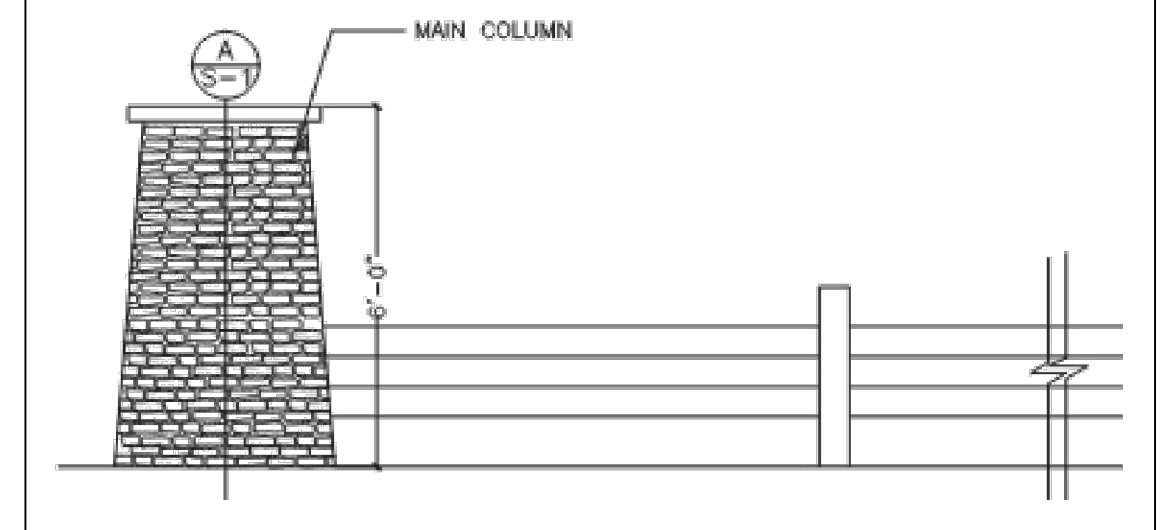
PINE BARK MULCH:
All pine bark mulch shall be clean, double ground, fine textured nugget mulch with minimal amounts of sapwood content.

TURF AREAS:
Prior to any seeding or sod application, verify that all trenching and land disturbing activities have been completed. Ensure all areas are free of stones, large soil clods and any other construction debris.

RESIDENTIAL LANDSCAPING AND PLANT NOTES:

- Each single-family or duplex lot shall contain a minimum of one (1) canopy tree for every 2,000 square feet of lot area or fraction thereof up to 20,000 square feet in lot area. Any portion of the residential lot occupied by a recorded utility easement shall not be included as part of the total lot area. The location of planting to account for physical conditions may be adjusted by the Administrator. (SEE SHEET C9.1 FOR TREE REQUIRED CALCULATIONS.)
- The use of existing trees meeting the following standards to satisfy this requirement is encouraged. Existing large shade trees measuring more than six (6) inches in DBH may be counted towards fulfilling this requirement.
- Required street trees (Section 8.10) may not be counted towards the fulfillment of the residential landscaping requirement. Apart from required street trees, all other trees required under this Chapter shall be planted within the private lot.
- Foundation plantings consisting of evergreen shrubs shall be installed along the entire foundation wall of the building. Plant installation shall be a minimum of two feet in height planted at four-foot intervals.

MONUMENT COLUMN



MONUMENT COLUMN AND FENCE TO MATCH HAYWOOD PHASE 1. MONUMENT COLUMNS TO BE DESIGNED AND PERMITTED SEPARATELY FROM CDS.

ADDITIONAL REPLACEMENT TREES

Location	# of Trees	Type	DBH
Additional Landscape Area #1	25	Sugar Maple	2.5"
Additional Landscape Area #2	24	Lacebark Elm	2.5"
Additional Landscape Area #3	5	Red Maple	2.5"
Additional Landscape Area #4	5	Dogwood	2.5"
Additional Landscape Area #5	4	Sugar Maple	2.5"
Additional Landscape Area #6	4	Lacebark Elm	2.5"
Additional Landscape Area #7	2	Red Maple	2.5"
Additional Landscape Area #8	3	Dogwood	2.5"
Additional Landscape Area #9	8	Sugar Maple	2.5"
Additional Landscape Area #10	9	Lacebark Elm	2.5"
Additional Landscape Area #11	7	Red Maple	2.5"
Additional Landscape Area #12	6	Dogwood	2.5"
Additional Landscape Area #13	7	Sugar Maple	2.5"
Additional Landscape Area #14	8	Lacebark Elm	2.5"
Additional Landscape Area #15	9	Red Maple	2.5"
Additional Landscape Area #16	9	Dogwood	2.5"
Total	178		

PLANTING SCHEDULE - STREET TREES

DECIDUOUS OVERSTORY TREES	QTY	BOTANICAL NAME	COMMON NAME	MIN. INSTALLED SIZE	ROOT	TYPE	REMARKS
AS	40	ACER SACCHARUM	SUGAR MAPLE	2.5" CAL. 12' MIN.	B&B	STREET TREES	SINGLE STRAIGHT LEADER. FULL & HEAVY.
SP	37	ULMUS PARVIFOLIUS	LACEBARK ELM	2.5" CAL. 12' MIN.	B&B	STREET TREES	SINGLE STRAIGHT LEADER. FULL & HEAVY.
SN	37	QUERCUS ACUTISSIMA	SAWTOOTH OAK	2.5" CAL. 12' MIN.	B&B	STREET TREES	SINGLE STRAIGHT LEADER. FULL & HEAVY.
SI	26	PISTACIA CHINENSIS	CHINESE PISTACHIO	2.5" CAL. 12' MIN.	B&B	STREET TREES	SINGLE STRAIGHT LEADER. FULL & HEAVY.
SO	16	ACER BUERGERIANUM	TRIDENT MAPLE	2.5" CAL. 12' MIN.	B&B	STREET TREES	SINGLE STRAIGHT LEADER. FULL & HEAVY.

PLANTING SCHEDULE - MEDIANS

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	MIN. INSTALLED SIZE	ROOT	MEDIAN	REMARKS
BY	24	ILEX VOMITORIA 'NANA'	DWARF YAUPOIN HOLLY	24" HT.	B GAL.	MEDIAN	

LEGEND

- EXISTING WETLANDS
- PROPOSED BUFFER LANDSCAPING
- DRAINAGE EASEMENT
- 50' NEUSE RIPARIAN BUFFER
- PROPERTY LINE
- LED STREET LIGHTS (9,500 LUMENS LED 75 ROADWAY LIGHT) ALUMINUM POLE - HEIGHT 30'
- STREET / SHADE TREE

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: _____ DATE: _____
DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
ADMINISTRATOR



THIS DRAWING PREPARED AT THE
RALEIGH OFFICE
5410 Trinity Road, Suite 102 | Raleigh, NC 27607
TEL 919.866.9511 FAX 919.833.8124 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
01/27/2022	

DRAWN BY: J.D. MACMILLAN
DESIGNED BY: J.D. MACMILLAN
CHECKED BY: M. ZACCARDO
SCALE: 1" = 50'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

HAYWOOD GLEN PHASE 3
OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA

LANDSCAPE AND LIGHTING PLAN

JOB NO. 43202
SHEET NO. C9.0

RELEASED FOR CONSTRUCTION

PLANTING SCHEDULE - STREET TREES. Table with columns: DECIDUOUS OVERSTORY TREES, QTY, BOTANICAL NAME, COMMON NAME, MIN. INSTALLED SIZE, ROOT, TYPE, REMARKS. Includes entries for AS, UP, BN, LC, and QI.

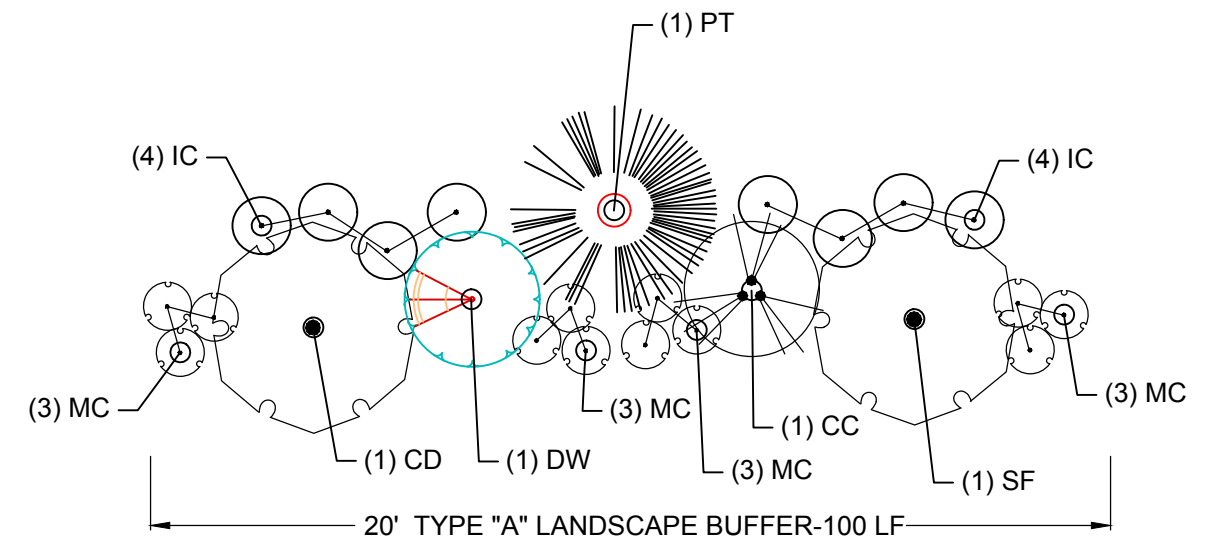
PLANTING SCHEDULE - MEDIANS. Table with columns: SHRUBS, QTY, BOTANICAL NAME, COMMON NAME, MIN. INSTALLED SIZE, ROOT, TYPE, REMARKS. Includes entry for O DY.

Duke Energy Outdoor Lighting Roadway LED. Includes product image, technical specifications, and a list of poles available with mounting heights and colors.

Duke Energy Outdoor Lighting Roadway LED. Includes light source specifications, features, and benefits.

FRONTAGE BUFFER AREA TREES CALC. 1,200 LF OF FRONTAGE (1,200/100) * 10 = 120 TREES

HAYWOOD GLEN SUBDIVISION - LUMINAIRE SCHEDULE. Table with columns: TYP, SYMBOL, DESCRIPTION, LAMP, LUMENS, MOUNTING /BALLAST, LLF. Includes entry for A.

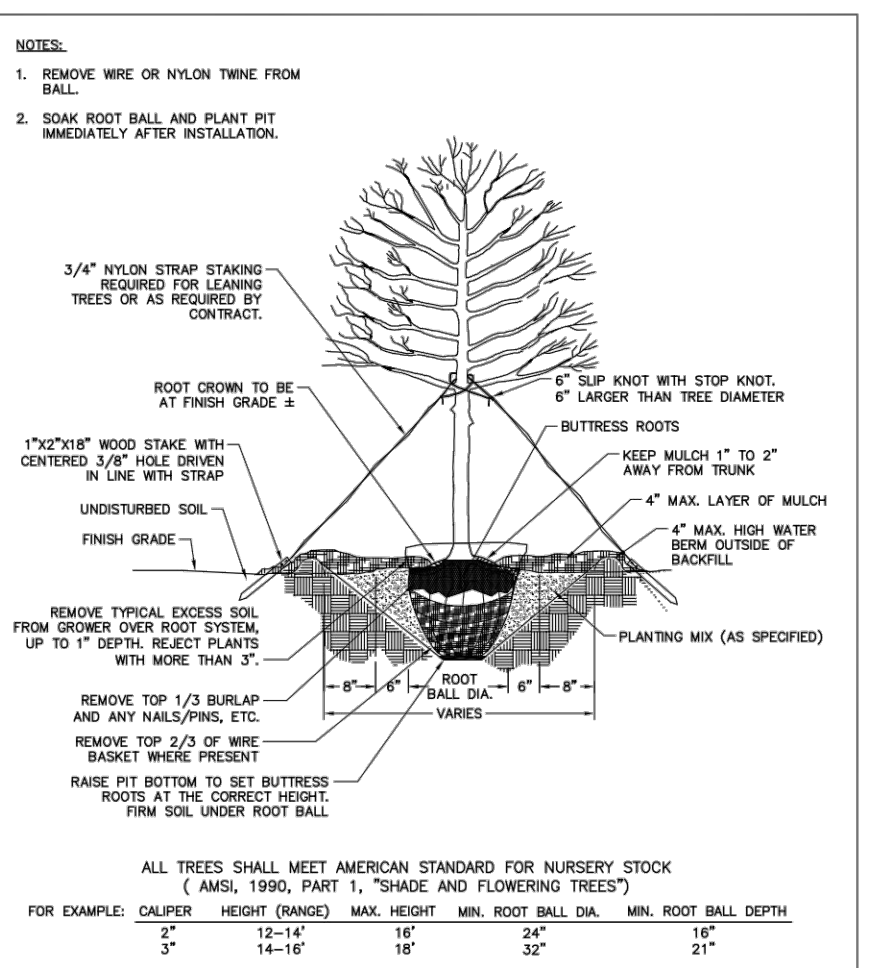


20' TYPE "A" LANDSCAPE BUFFER- 490 LF. Table with columns: TREES PER 100 LF, REQ., PROP. Includes canopy trees, understory trees, and shrub counts.

NOTE: 40%-60% OF BUFFER TREES AND AT LEAST 80% OF BUFFER SHRUBS MUST BE EVERGREENS

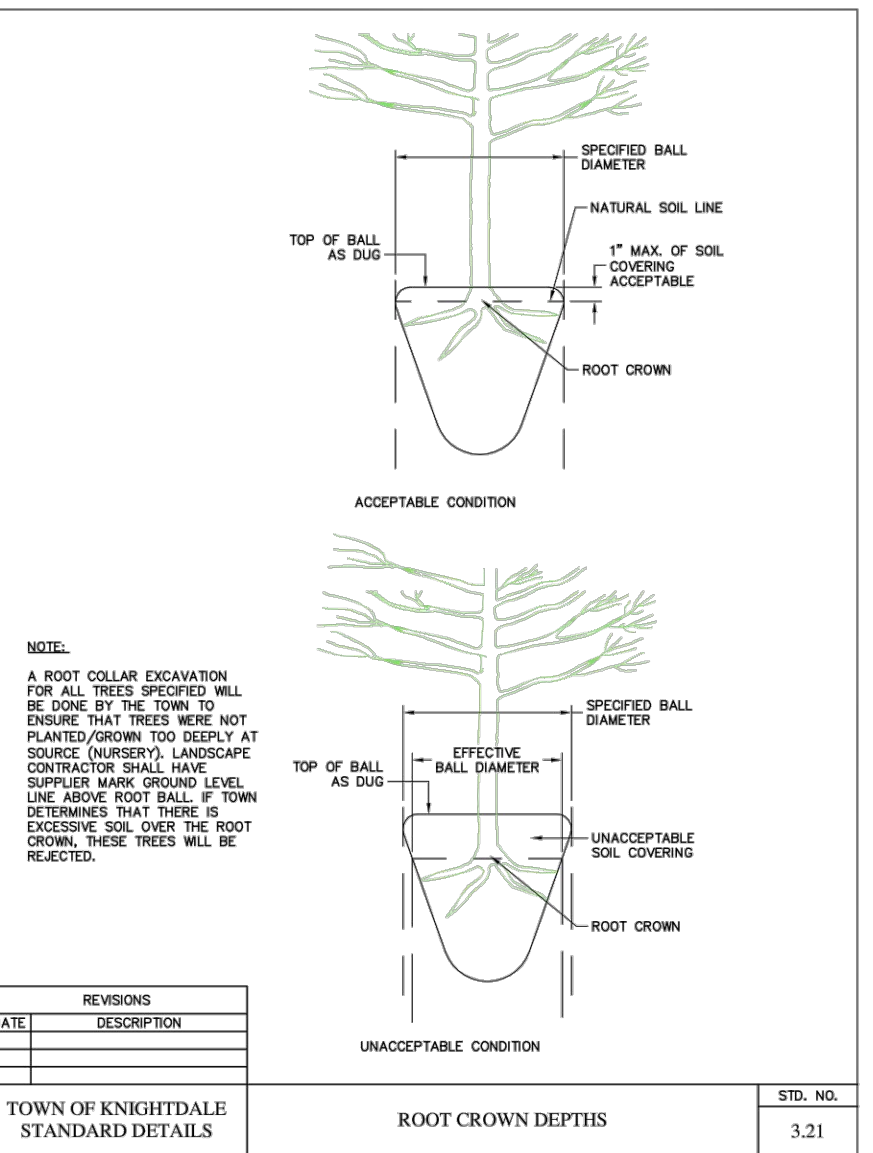
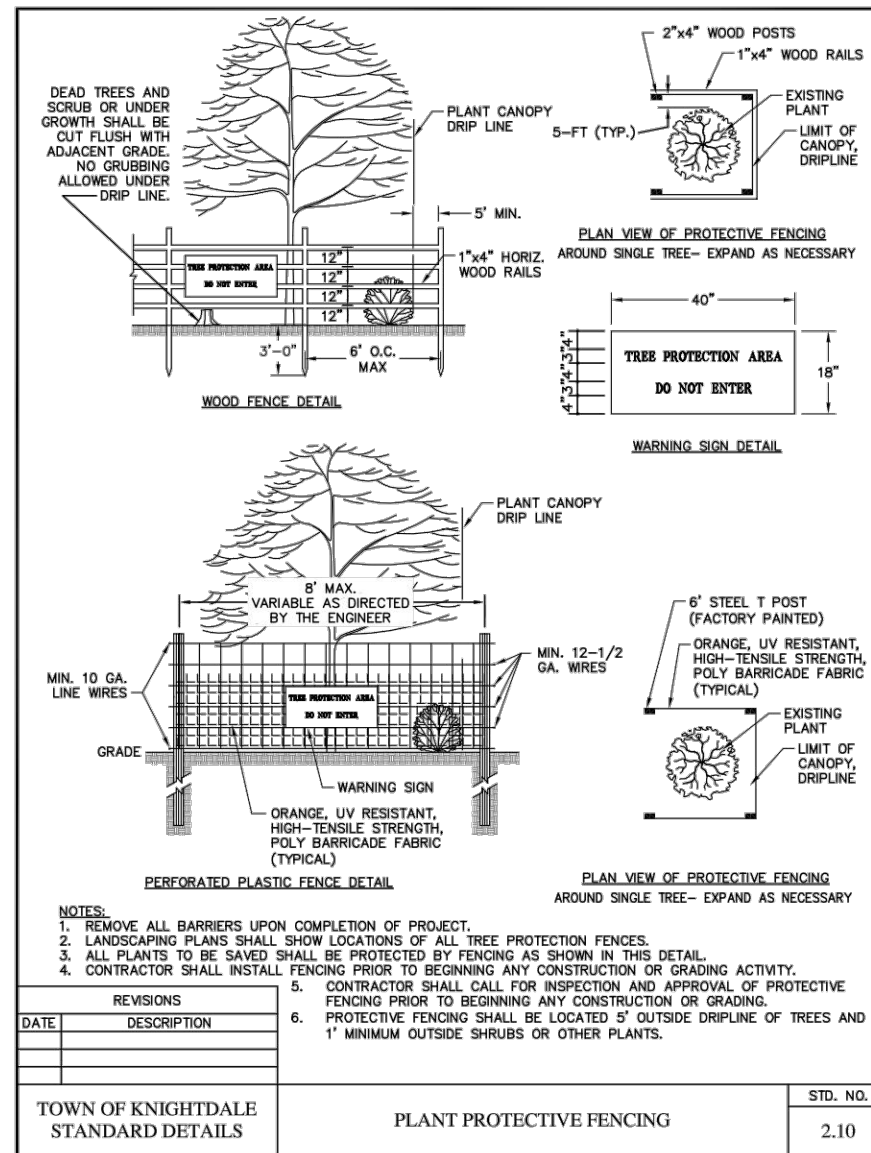
20' TYPE "B" LANDSCAPE BUFFER- 1,837 LF. Table with columns: TREES PER 100 LF, REQ., PROP. Includes canopy trees, understory trees, and shrub counts.

SEEDING SCHEDULE. Table with columns: SEEDING PERIOD, SEEDING TYPE, APPLICATION RATE (LBS/ACRE). Includes monthly seeding details.



REVISIONS table for Seeding Schedule. Includes columns for date, description, and STD. NO.

REVISIONS table for Tree Planting. Includes columns for date, description, and STD. NO.



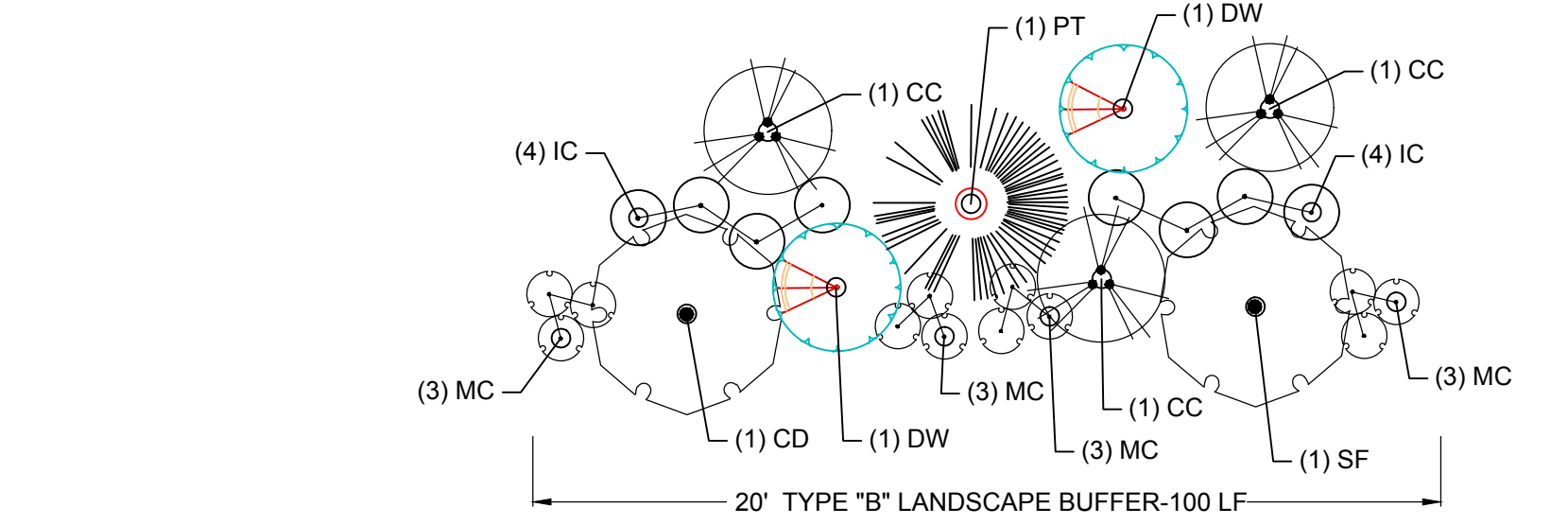
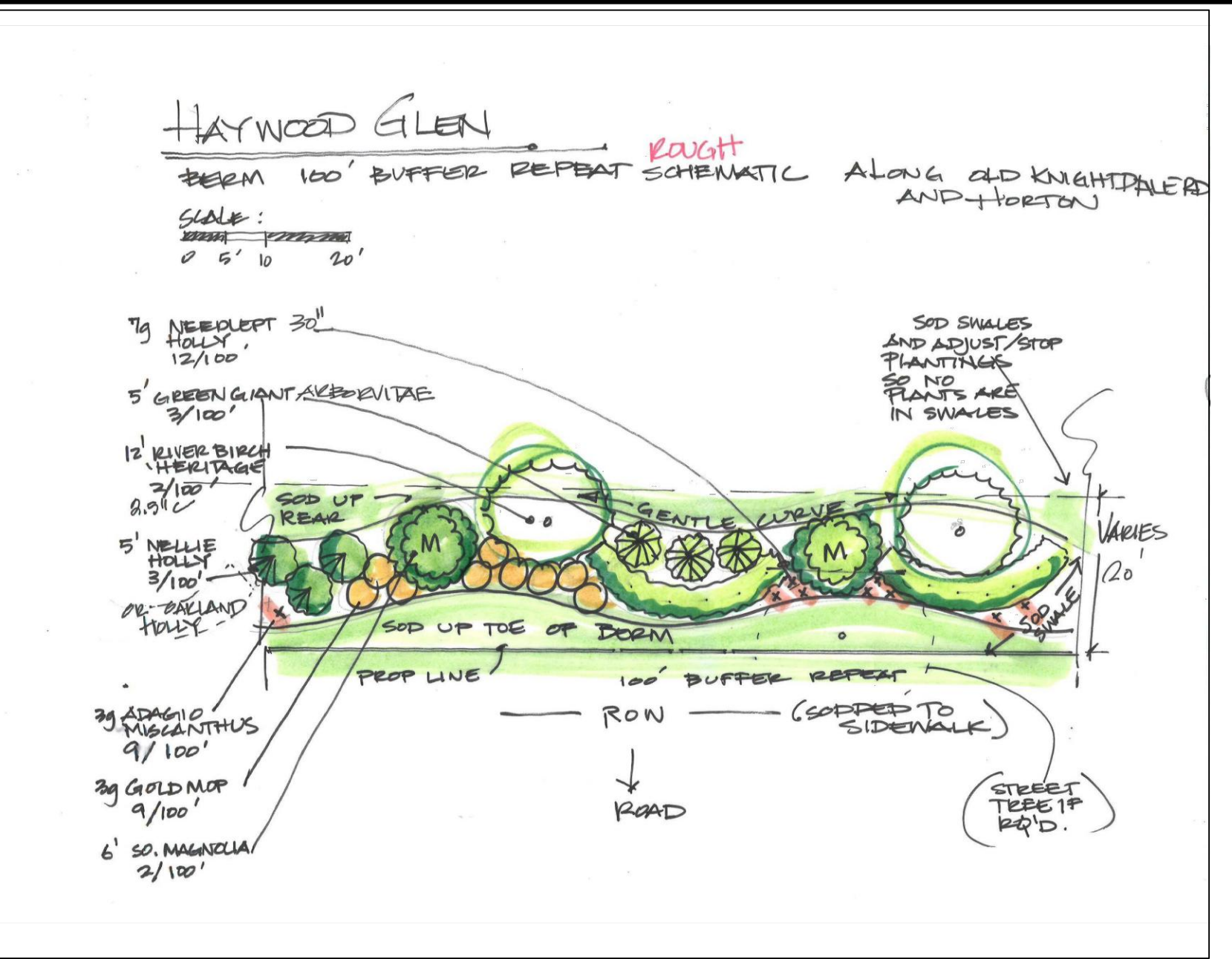
REVISIONS table for Plant Protective Fencing. Includes columns for date, description, and STD. NO.

REVISIONS table for Root Crown Depths. Includes columns for date, description, and STD. NO.

11.5 Additional Outdoor Lighting Standards for Specific Lighting Types. In addition to meeting the general lighting standards in Section 11.4, the following types of lighting shall also meet the additional specific standards listed below.

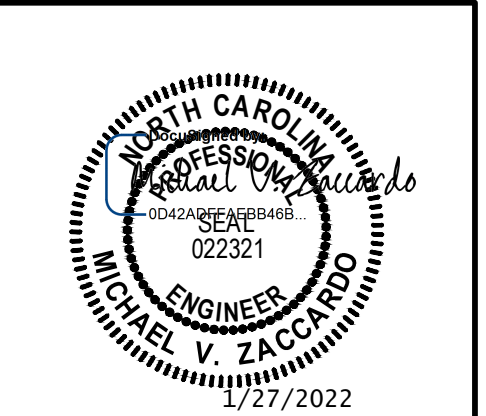
- A. Street Lighting: Street lighting shall be placed on all streets by the developer to allow for the safe use of streets by cars, cyclists and pedestrians.
1. Average Spacing Maximums: The following maximum average spacing requirements between street lights shall apply to all local, collector and arterial street classifications according to the use context of the adjacent land as listed below...
2. Minimum Initial Delivered Lumen Levels: a. Local Streets - 4,800 lumens, b. Collector Streets in Residential Areas - 12,500 lumens...
3. BUG Rating: All street lights shall be fully-shielded (no light at or above horizontal) and shall not exceed the following BUG ratings established for each type of street...
4. Placement: a. Although the primary purpose of street lighting is to provide adequate lighting for the roadway, street lighting should also promote pedestrian. Therefore, lighting should be placed in a manner to minimize the casting of shadows on sidewalks.

(Note: For additional information on the connectivity and circulation of streets, please refer to Chp. 9)



PLANT SCHEDULE TYPE "B" BUFFER. Table with columns: TREES, QTY, BOTANICAL NAME, COMMON NAME, MINIMUM INSTALLED SIZE, REMARKS. Includes entries for CD, SF, PT, CC, CF, OG, NS, MA.

TOWN CERTIFICATION. Includes a diagram of Fixture 'A' detail showing a 25' Duke Energy Pole and Fixture 'A' schedule. Text certifies that the design conforms to requirements and includes a signature line for the Administrator.



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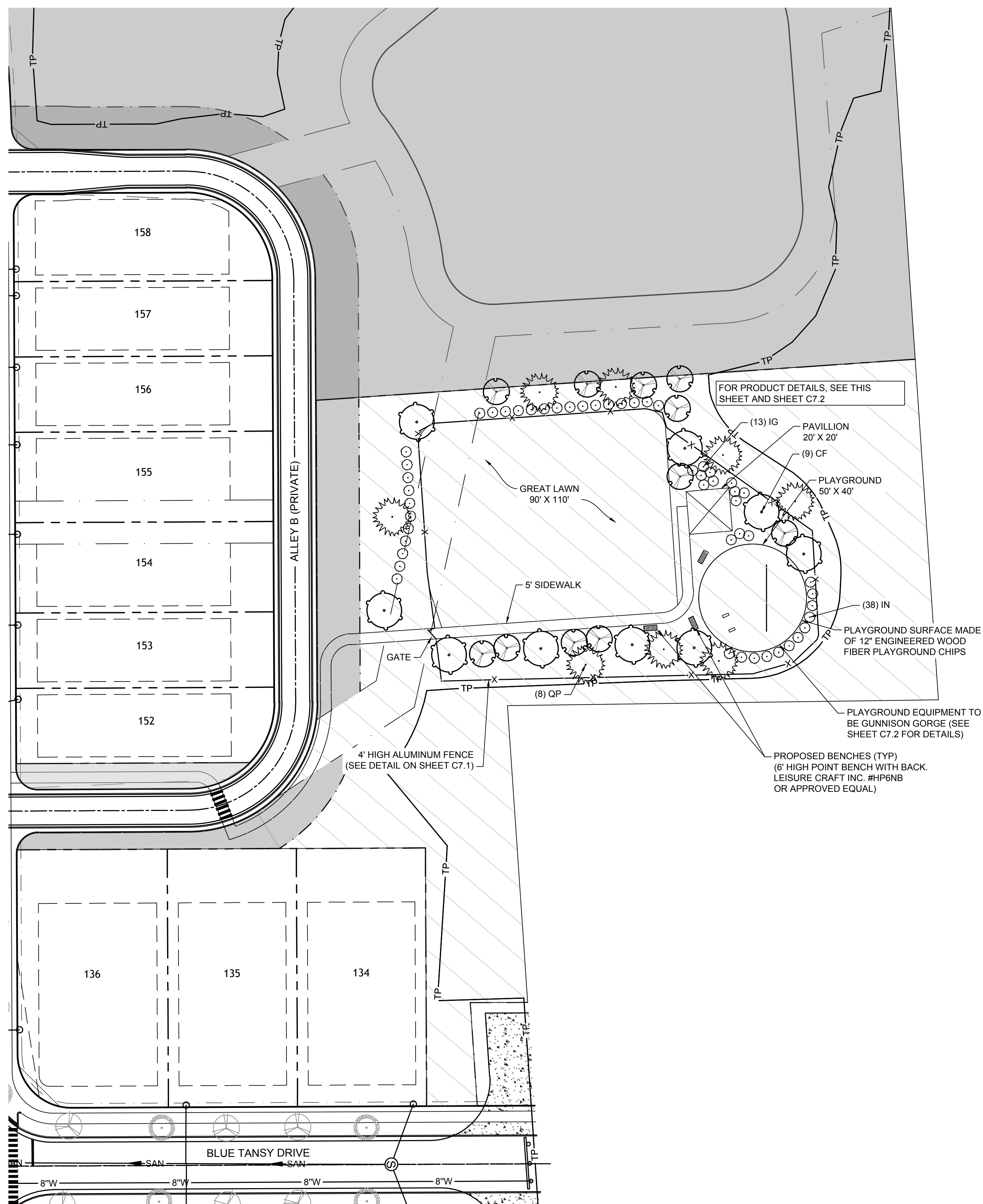
YOUR VISION ACHIEVED THROUGH OURS. DATE: 01/27/2022. DRAWN BY: J.D. MACMILLAN. DESIGNED BY: J.D. MACMILLAN. CHECKED BY: M. ZACCARDO.

TIMMONS GROUP logo and project information: HAYWOOD GLEN PHASE 3, OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA. LANDSCAPE AND LIGHTING DETAILS. JOB NO. 43202, SHEET NO. C9.1.

RELEASED FOR CONSTRUCTION

LEGEND

	PROPERTY LINE
	PROPOSED RIGHT OF WAY
	PROPOSED LOT LINE
	TREE SAVE AREA
	ACTIVE OPEN SPACE
	PASSIVE OPEN SPACE
	COMMON AREA



PLANTING SCHEDULE - ACTIVE OPEN SPACE #1							
DECIDUOUS OVERSTORY TREES	QTY	BOTANICAL NAME	COMMON NAME	MIN. INSTALLED SIZE	ROOT	TYPE	REMARKS
QP	8	QUERCUS PHellos	WILLOW OAK	2" CAL. 12' MIN.	B&B	OPEN SPACE	SINGLE STRAIGHT LEADER. FULL & HEAVY.
UNDERSTORY TREES							
CF	9	CERCIS CANADENSIS 'FOREST PANSY' TM	FOREST PANSY REDBLD	1.5" CAL., 8' HT MIN.	B&B	OPEN SPACE	SINGLE STRAIGHT LEADER. FULL & HEAVY.
SHRUBS							
IG	13	ILEX GLABRA	INKBERRY HOLLY	24" HT.	5 GAL.	OPEN SPACE	FULL & HEAVY. HEIGHT: 4' AFTER 2 YEARS.
IN	38	ILEX X 'NELLIE R STEVENS'	NELLIE STEVENS HOLLY	24" HT.	5 GAL.	OPEN SPACE	FULL & HEAVY. HEIGHT: 3' AFTER 2 YEARS.

Gunnison Gorge

Meets National Standards for: ✓ ASTM F1487-17 ✓ CPSC Guidelines #325

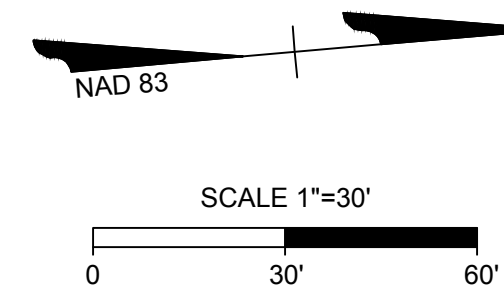
Product Description
Gunnison Gorge is another great way to get active from the Get Physical play series. The structure includes seven components, all of which offer activities which are so exciting that kids won't even realize how much exercise they are getting. They are arranged so that children can move from one activity to another with ease. The Circle Overhead Swinging Rung ladder has a round path of hand grips which kids can use to reach the patterned Leaf Ladder, the unpredictable Overhead Spinner, the tilting Overhead Parallel Bar Climber, the unusual Tower of Rings, or just go in circles around the rungs for as long as they can hold on. The Tower of Rings is a unique climbing structure with three suspended rings to climb over, through, and around. From the tower, they have access to the large Red Climber and tricky Twisted Rung Climber. Gunnison Gorge is great for large groups of children as it can accommodate 16 to 24 children at once.

Product Specifications
Price: \$13,408.00
Model Number: PGP018
Age Range: 5-12 years
Child Capacity: 16-24
Fall Height: 96"
Post Diameter: 4.5-inch
Product Type: Get Physical
Safety Zone: 35' 4" x 34' 10"

✓ **ADA Compliant**

- Elevated: 0 components
- Ground Level: 7 components

NVB Playgrounds, Inc. DBA PlaygroundEquipment.com 800-667-0097 | PLAYGROUND-EQUIPMENT.COM



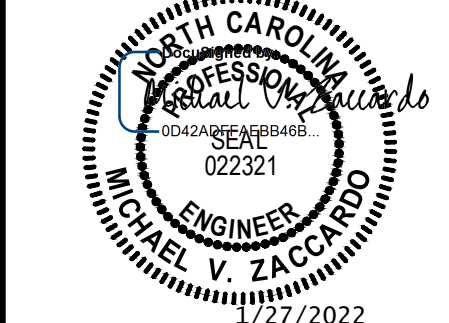
TOWN CERTIFICATION

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: _____ DATE: _____
 DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

BY: _____ DATE: _____
 ADMINISTRATOR



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YOUR VISION. ACHIEVED THROUGH OURS.

REVISION DESCRIPTION	DATE

DRAWN BY
JD. MACMILLAN

DESIGNED BY
E. ANGE

CHECKED BY
M. ZACCARDO

SCALE
1" = 30'

TIMMONS GROUP
 NORTH CAROLINA LICENSE NO. C-1652
HAYWOOD GLEN PHASE 3
 OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA
ACTIVE OPEN SPACE #1

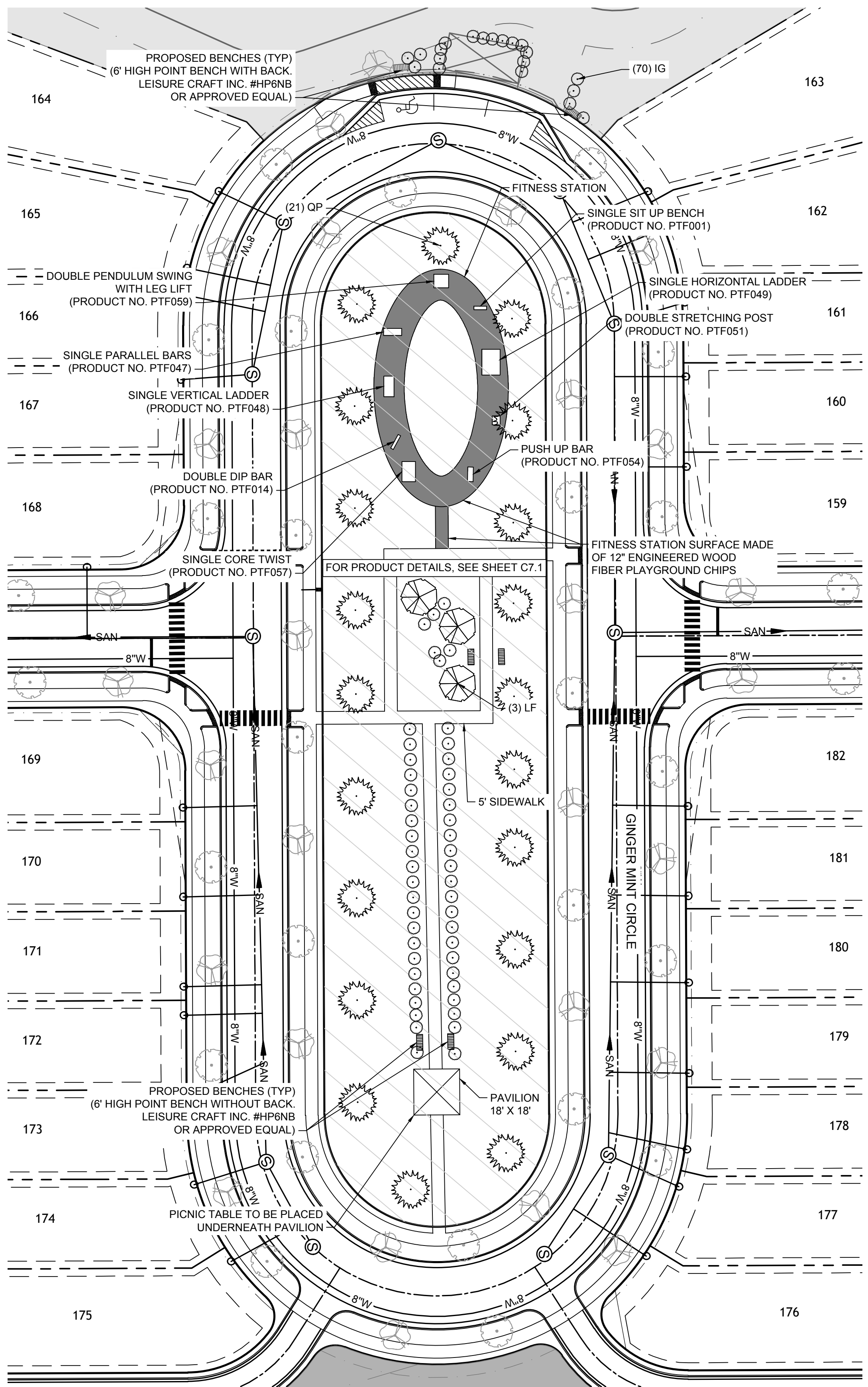
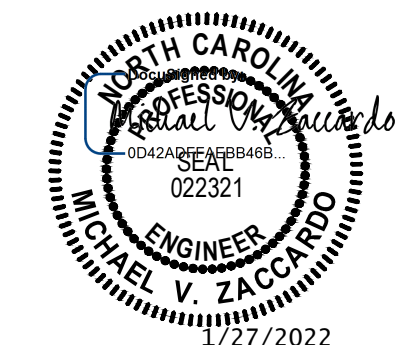
JOB NO.	43202
SHEET NO.	C9.2

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RELEASED FOR CONSTRUCTION

LEGEND

- PROPERTY LINE
- - - PROPOSED RIGHT OF WAY
- - - PROPOSED LOT LINE
- TREE SAVE AREA
- ▨ ACTIVE OPEN SPACE
- ▨ PASSIVE OPEN SPACE
- ▨ COMMON AREA



PLANTING SCHEDULE - ACTIVE OPEN SPACE #2

DECIDUOUS OVERSTORY TREES	QTY	BOTANICAL NAME	COMMON NAME	MIN. INSTALLED SIZE	ROOT	TYPE	REMARKS
ZS	11	ZELKOVA SERRATA	JAPANESE ZELKOVA	2.5" CAL. 12' MIN.	B&B	OPEN SPACE	SINGLE STRAIGHT LEADER, FULL & HEAVY.
AS	10	ACER SACCHARUM	SUGAR MAPLE	2.5" CAL. 12' MIN.	B&B	STREET TREES	SINGLE STRAIGHT LEADER, FULL & HEAVY.
UF	3	LAGERSTROEMIA FAUREI	FANTASY CRAPE MYRTLE	1.5" CAL. 8' MIN.	B&B	OPEN SPACE	SINGLE STRAIGHT LEADER, FULL & HEAVY.
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	MIN. INSTALLED SIZE	ROOT	TYPE	REMARKS
IG	70	ILEX GLABRA	INKBERRY HOLLY	24" HT.	5 GAL.	OPEN SPACE	

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YOUR VISION ACHIEVED THROUGH OURS.

DATE
 01/27/2022

DRAWN BY
 J.D. MACMILLAN

DESIGNED BY
 E. ANGE

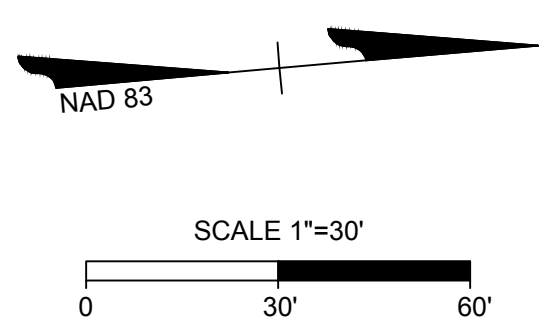
CHECKED BY
 M. ZACCARDO

SCALE
 1" = 30'

TIMMONS GROUP
 NORTH CAROLINA LICENSE NO. C-1652
HAYWOOD GLEN PHASE 3
 OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA
ACTIVE OPEN SPACE #2

JOB NO.
43202

SHEET NO.
C9.3



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.

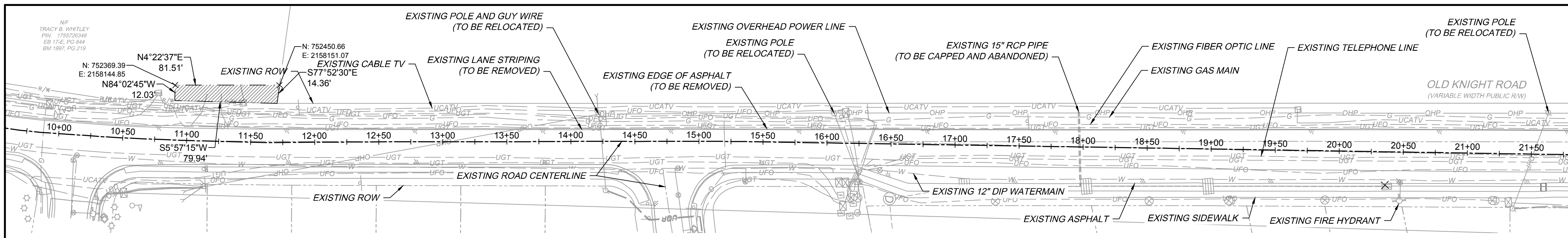
BY: _____ DATE: _____
 DEVELOPMENT SERVICES ENGINEER

THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.

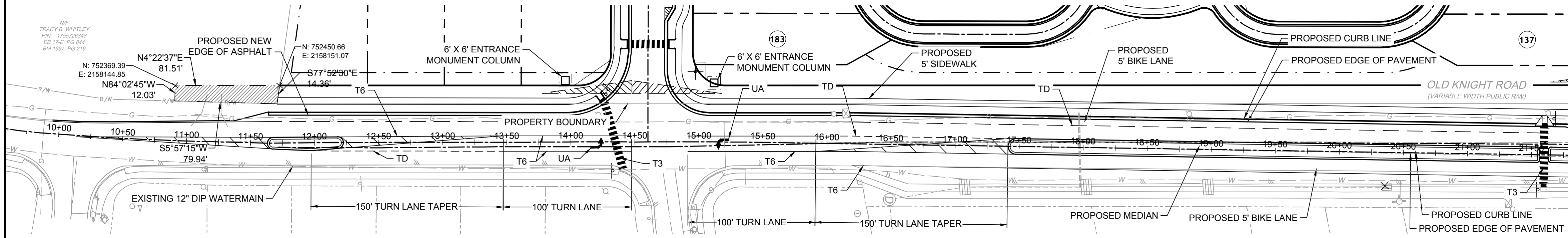
BY: _____ DATE: _____
 ADMINISTRATOR

RELEASED FOR CONSTRUCTION

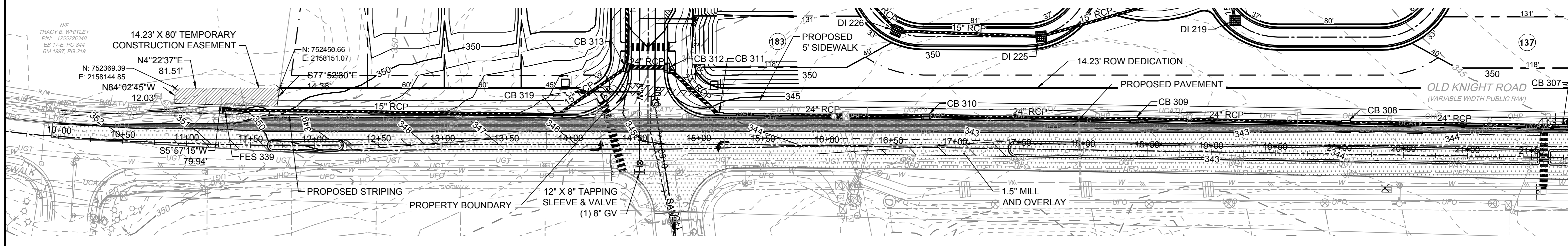
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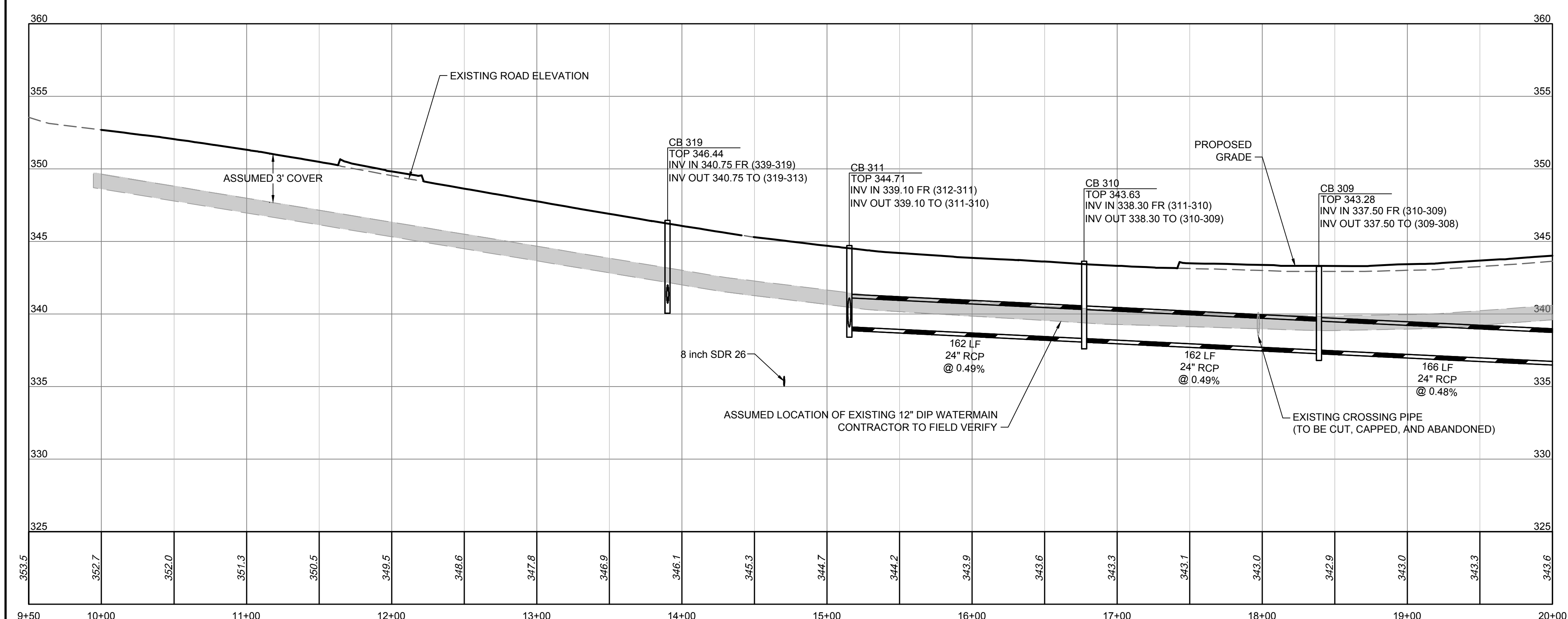
EXISTING CONDITIONS AND DEMOLITION PLAN



PROPOSED STRIPING PLAN

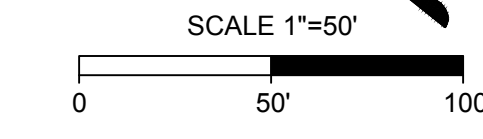
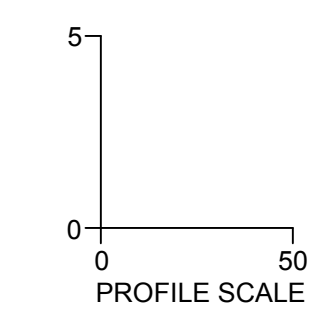


PROPOSED GRADING PLAN - PHASE 2



OLD KNIGHT ROAD WIDENING PROFILE STATION 9+50 TO 20+00
 HORIZ SCALE: 1"=50'
 VERT SCALE: 1"=5'

Symbol	Description	Material	Transport Pay Item No.	Linear Length Adjustment
T2	WHITE STOPBAR (24", 120 MIL)	Thermo	471000000-E	1
T3	WHITE CROSSWALK LINE (24", 120 MIL)	Thermo	471000000-E	1
T6	WHITE EDGELINE (6", 90 MIL)	Thermo	468500000-E	1
TA	WHITE EDGELINE (4", 90 MIL)	Thermo	468500000-E	1
TD	3 FT. - 9 FT. SP WHITE MINISKOP (4", 120 MIL)	Thermo	468500000-E	25
T17	3 FT. - 3 FT. SP WHITE MINISKOP (6", 120 MIL) (Roundabouts only)	Thermo	469700000-E	5
UA	LEFT TURN ARROW (80 MIL)	Thermo	472900000-E	1



**Know what's below.
Call before you dig.**

TOWN CERTIFICATION

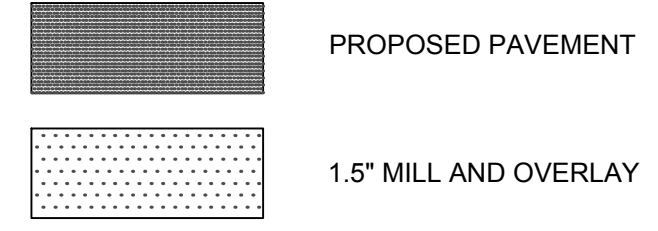
THIS DESIGN HAS BEEN REVIEWED BY THE ENGINEER FOR THE TOWN OF KNIGHTDALE, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT CONFORMS TO THE REQUIREMENTS ESTABLISHED IN THE STANDARD SPECIFICATIONS OF THE TOWN OF KNIGHTDALE.

BY: _____ DATE: _____
 DEVELOPMENT SERVICES ENGINEER
 THESE PLANS ARE APPROVED BY THE TOWN OF KNIGHTDALE AND SERVE AS CONSTRUCTION PLANS FOR THIS PROJECT.
 BY: ADMINISTRATOR DATE: _____

GENERAL NOTES

1. PREPARING, GRADING, SHAPING AND COMPACTION OF SUBGRADE SOILS SHOULD BE PERFORMED IN ACCORDANCE WITH DIVISION 5, SECTION 501 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (2006). PREPARING, GRADING, SHAPING AND COMPACTION OF AGGREGATE BASE COURSE (ABC) STONE SHOULD BE PERFORMED IN ACCORDANCE WITH DIVISION 5, SECTION 520 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (2006). PLACEMENT AND COMPACTION OF THE BITUMINOUS CONCRETE SHOULD BE PERFORMED IN ACCORDANCE WITH DIVISION 5, SECTION 600 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (2006). PROPER SUBGRADE COMPACTION, ADHERENCE TO THE NCDOT SPECIFICATIONS, AND COMPLIANCE WITH THE PROJECT PLANS AND SPECIFICATIONS ARE CRITICAL TO THE PERFORMANCE OF THE CONSTRUCTED PAVEMENT.
2. THE CONTRACTOR MAY CHOOSE TO INSTALL INTERMEDIATE COURSES OF PAVEMENT TO STABILIZE THE SITE DURING CONSTRUCTION AT NO ADDITIONAL COST. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE ADEQUATE THICKNESS REQUIRED FOR INTERMEDIATE PAVING. INCREASES IN THE DESIGN PAVEMENT SECTION TO FACILITATE INTERMEDIATE PAVING SHALL BE PROVIDED AT NO ADDITIONAL COST.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGES TO SUBGRADE, INSTALLED BASE COURSE AND/OR INTERMEDIATE PAVING PRIOR TO PLACING SUBSEQUENT PAVEMENT LIFTS AT NO ADDITIONAL COST.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING PAVEMENT DURING ALL PHASES OF WORK. THE FINAL SURFACE OF PAVEMENT SHALL BE FREE OF ALL DEFECTS AND DAMAGE.

HATCH LEGEND



DESIGN SPEED: 50 MPH

POSTED SPEED: 45 MPH



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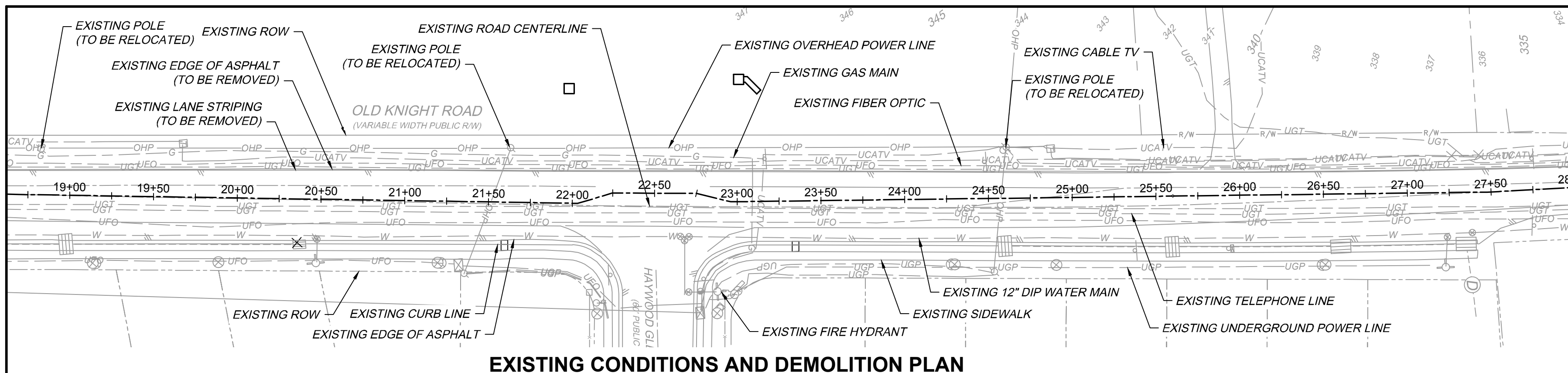
DATE: 01/27/2022
 DRAWN BY: JD.MACMILLAN
 DESIGNED BY: E.ANGE
 CHECKED BY: M.ZACCARDO
 SCALE: 1" = 50'

TIMMONS GROUP
 NORTH CAROLINA LICENSE NO. C-1652
HAYWOOD GLEN PHASE 3
 OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA
ROAD IMPROVEMENTS OLD KNIGHT ROAD (1 OF 2)

JOB NO. 43202
 SHEET NO. C10.1

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NOTE: ALL UTILITIES, OTHER THAN LINES USED ONLY TO TRANSMIT ELECTRICITY BETWEEN GENERATING STATIONS OR SUBSTATIONS AND THREE-PHASE ELECTRIC POWER DISTRIBUTION LINES, SHALL BE PLACED UNDERGROUND, PER UDO SEC 10.3.

TOWN CERTIFICATION

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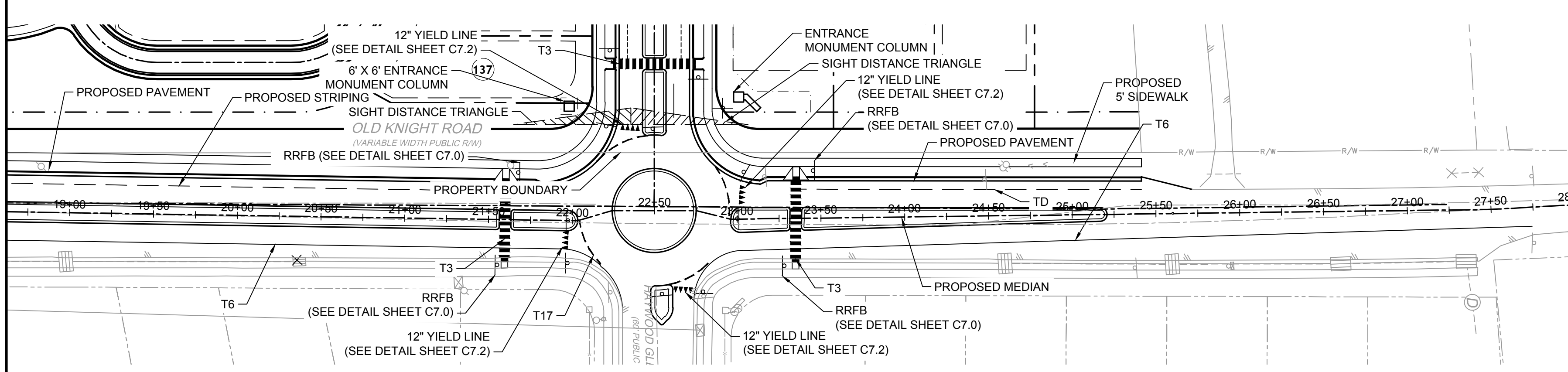
BY: _____ DATE: _____
 DEVELOPMENT SERVICES ENGINEER

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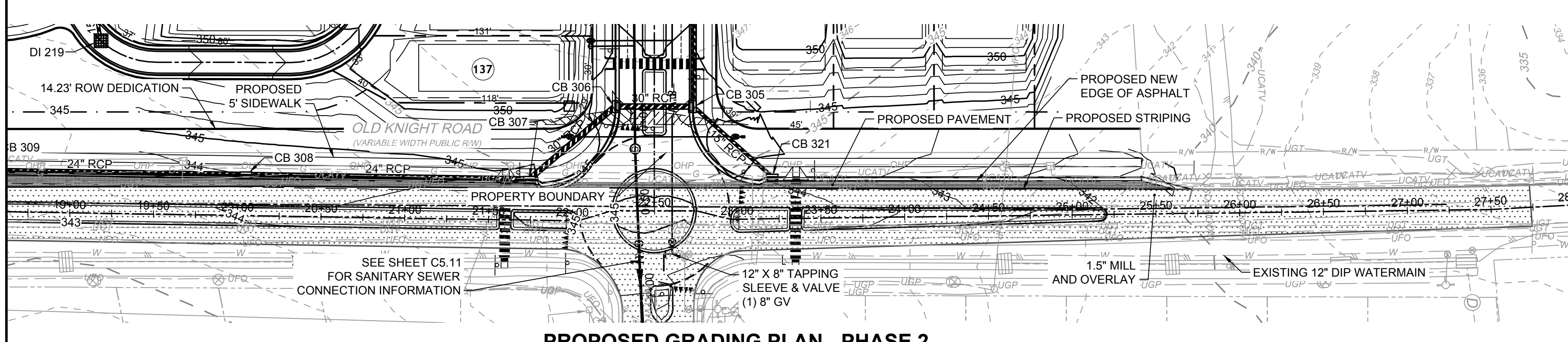
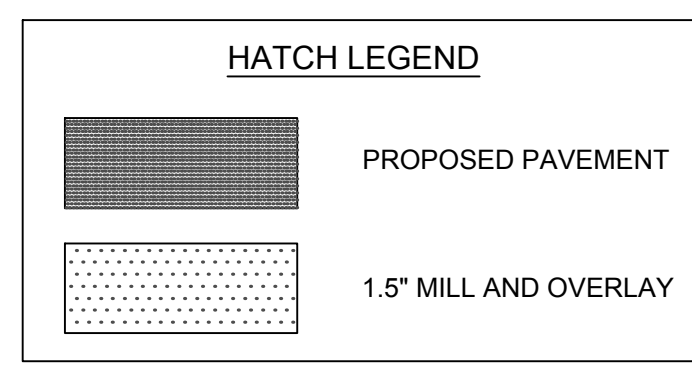
BY: _____ DATE: _____
 ADMINISTRATOR

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1. PREPARING, GRADING, SHAPING AND COMPACTION OF SUBGRADE SOILS SHOULD BE PERFORMED IN ACCORDANCE WITH DIVISION 5, SECTION 501 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (2006). PREPARING, GRADING, SHAPING AND COMPACTION OF AGGREGATE BASE COURSE (ABC) STONE SHOULD BE PERFORMED IN ACCORDANCE WITH DIVISION 5, SECTION 520 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (2006). PLACEMENT AND COMPACTION OF THE BITUMINOUS CONCRETE SHOULD BE PERFORMED IN ACCORDANCE WITH DIVISION 6, SECTION 600 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (2006). PROPER SUBGRADE COMPACTION, ADHERENCE TO THE NCDOT SPECIFICATIONS, AND COMPLIANCE WITH THE PROJECT PLANS AND SPECIFICATIONS ARE CRITICAL TO THE PERFORMANCE OF THE CONSTRUCTED PAVEMENT.
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3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGES TO SUBGRADE, INSTALLED BASE COURSE AND/OR INTERMEDIATE PAVING PRIOR TO PLACING SUBSEQUENT PAVEMENT LIFTS AT NO ADDITIONAL COST.
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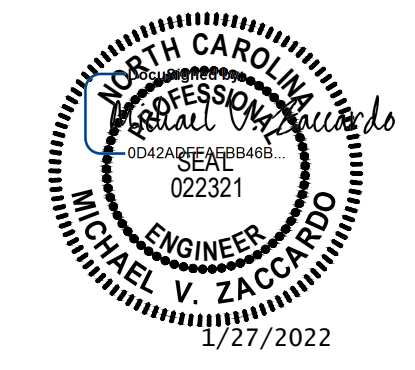
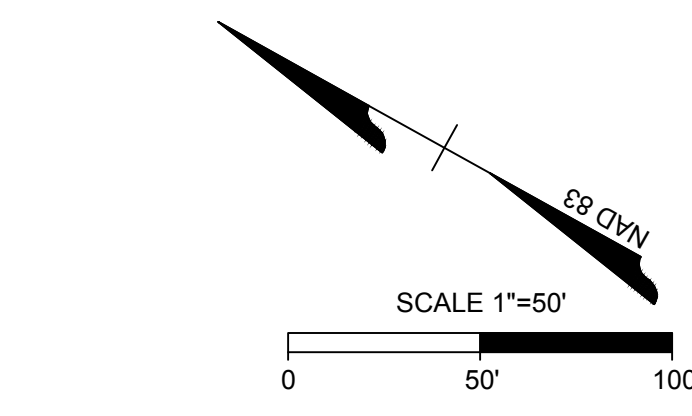
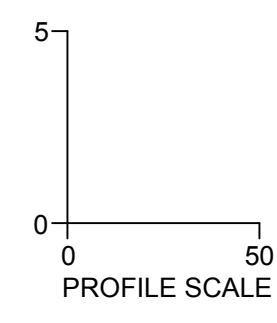
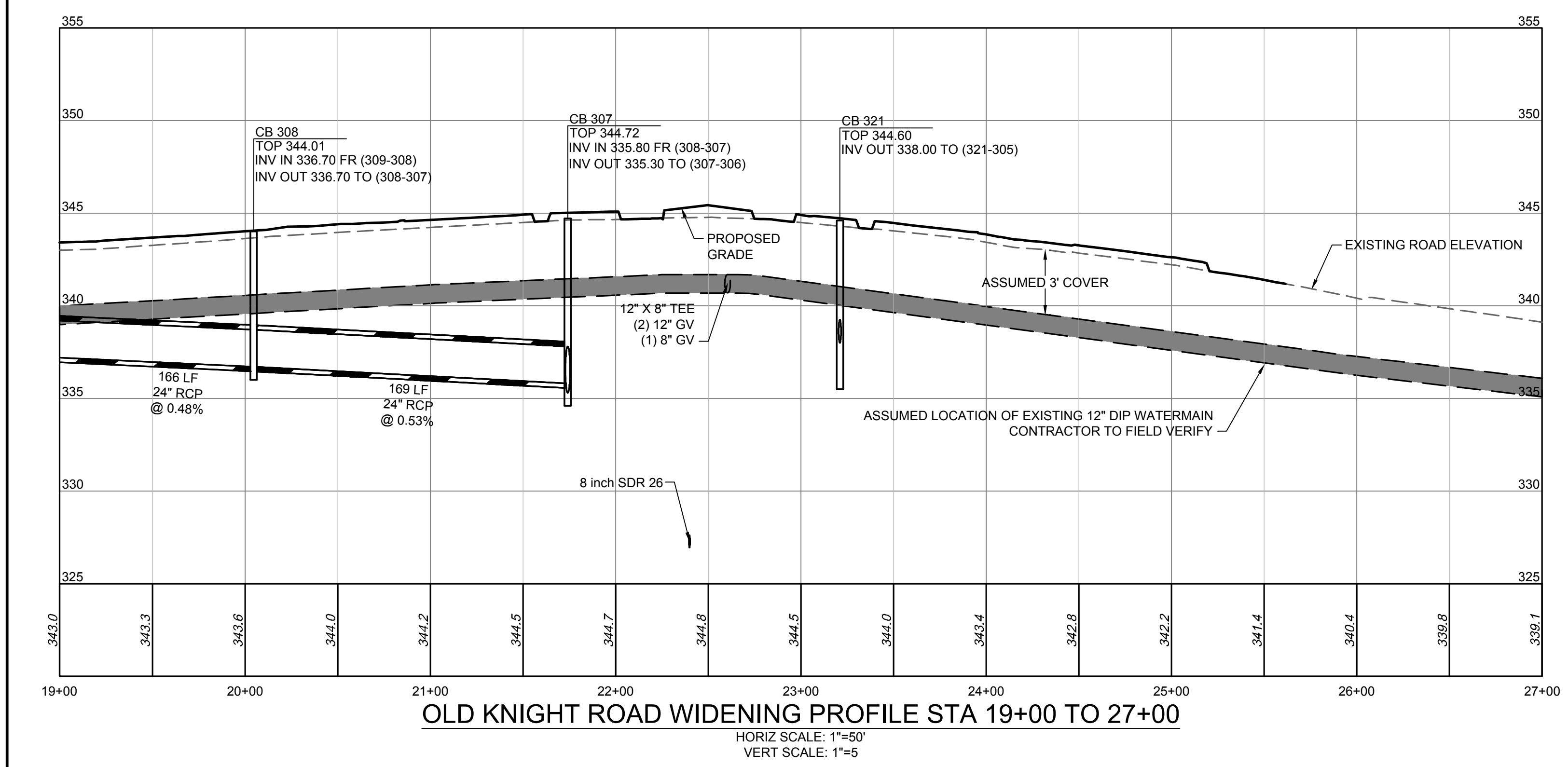


DESIGN SPEED: 50 MPH
 POSTED SPEED: 45 MPH



Pavement Marking Symbols - English

Symbol	Description	Material	Transport Pay Item No.	Linear Length Adjustment
T2	WHITE STOPBAR (24", 120 MIL)	Thermo	4710000000-E	1
T3	WHITE CROSSWALK LINE (24", 120 MIL)	Thermo	4710000000-E	1
T6	WHITE EDGELINE (8", 90 MIL)	Thermo	4688000000-E	1
TA	WHITE EDGELINE (4", 90 MIL)	Thermo	4685000000-E	1
TD	3 FT. - 3 FT. SP WHITE MINISTRIP (4", 120 MIL)	Thermo	4689000000-E	25
T17	3 FT. - 3 FT. SP WHITE MINISTRIP (8", 120 MIL) (Roundabouts only)	Thermo	4687000000-E	5
UA	LEFT TURN ARROW (90 MIL)	Thermo	4725000000-E	1



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DESIGNED BY
E. ANGE

CHECKED BY
M. ZACCARDO

SCALE
1" = 50'

TIMMONS GROUP

NORTH CAROLINA LICENSE NO. C-1652

HAYWOOD GLEN PHASE 3
 OLD KNIGHT ROAD, WAKE COUNTY, NORTH CAROLINA

ROAD IMPROVEMENTS OLD KNIGHT ROAD (2 OF 2)

JOB NO.
43202

SHEET NO.
C10.2

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