

EROSION AND SEDIMENT CONTROL, STORMWATER AND FLOODPLAIN MANAGEMENT APPROVED

EROSION CONTROL S-xxxx

STORMWATER MGMT. S-xxxx

FLOOD STUDY _____

DATE xx/xx/20



ENVIRONMENTAL CONSULTANT SIGNATURE

This is the V3 Submittal of Construction Drawing application CD 21-07 for Kalas Falls Phase 3. The 2nd Submittal was submitted and reviewed sometime during the period of September of 2021.

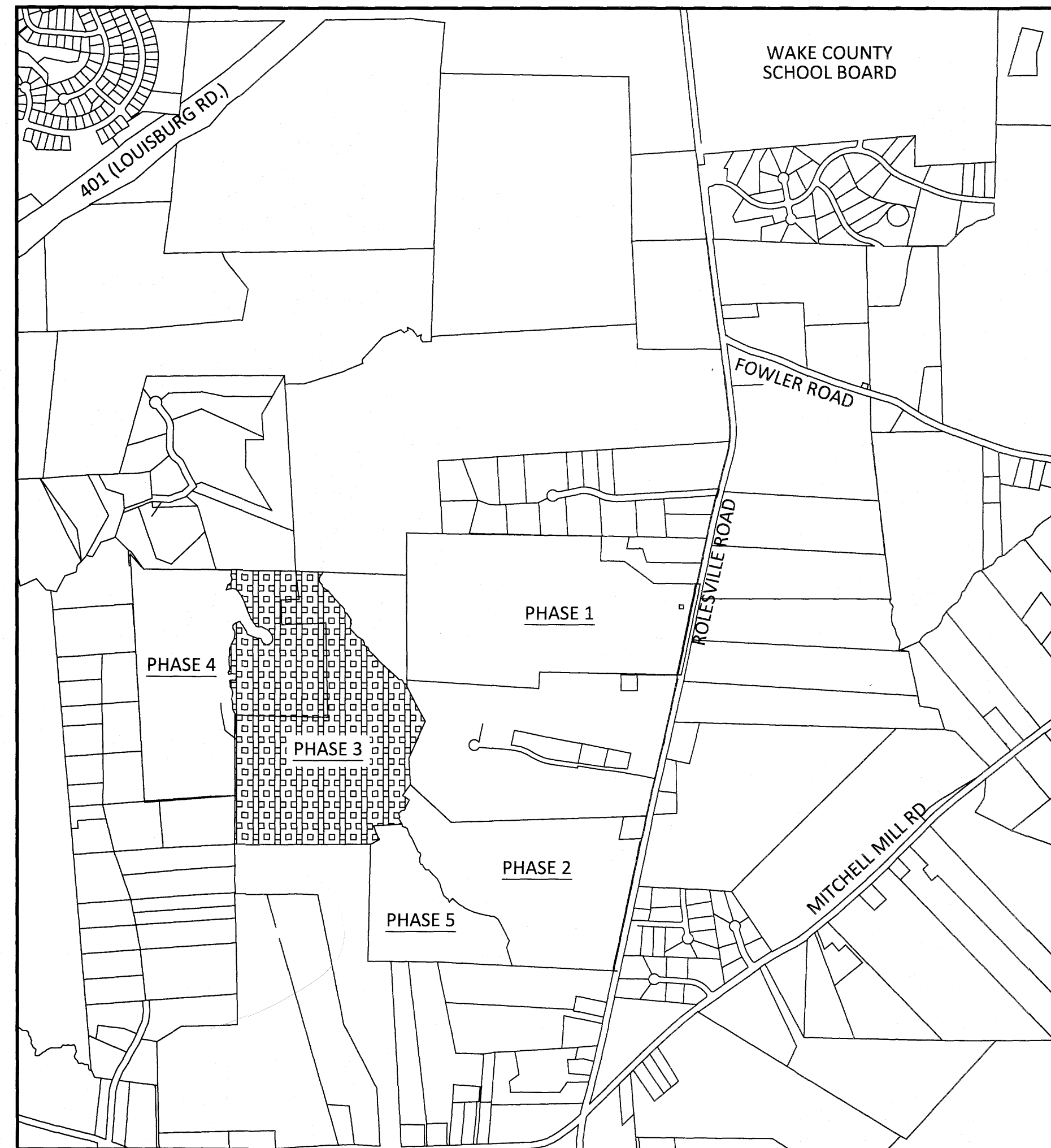
This Application and entire subdivision is subject to the UNified Development Ordinance (UDO).

This Plan set has no REvision date on it, still bearing teh date of February 18, 2021. The expectation is that these plans have been revised per TRC review circa late 2021, despite the lack of a revised date to this plan set.

CONSTRUCTION PHASE 3 FOR KALAS FALLS SITUATED AT

ROLESVILLE ROAD, ROLESVILLE

WAKE COUNTY, NORTH CAROLINA



VICINITY MAP SCALE: 1"=1000'

THESE IMPROVEMENTS SHALL BE IN ACCORDANCE WITH THE FOLLOWING DRAWINGS AND THE STANDARD SPECIFICATIONS OF THE CITY OF RALEIGH, WAKE COUNTY, AND NCDOT.

PROPERTY OWNER:	MITCHELL MILL ROAD INVESTORS LLC CONTACT: KARL BLACKLEY 105 WESTON ESTATES WAY CARY, NC 27513 919-481-3000
DEVELOPER:	MITCHELL MILL ROAD INVESTORS LLC CONTACT: KARL BLACKLEY 105 WESTON ESTATES WAY CARY, NC 27513 919-481-3000
SURVEYOR:	WITHERS RAVENEL CONTACT: MATT TIMLIN 115 MACKENAN DRIVE CARY, NC 27511 919-469-3340
BUFFER/WETLAND:	WITHERS RAVENEL CONTACT: TROY BEASLEY 115 MACKENAN DRIVE CARY, NC 27511 919-469-3340

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11.0	WOODLYN PARK DR PLAN AND PROFILE
12.0	HARVEST HILL WAY PLAN AND PROFILE
13.0	ELAM FIELD CT PLAN AND PROFILE
14.0	BROOKBANK DR PLAN AND PROFILE
15.0	STAFFORDSHIRE BLUFF ST PLAN AND PROFILE
16.0	GRAYMONT OAKS DRIVE PLAN AND PROFILE
17.0	OFF STREET STORMWATER PLAN AND PROFILE
18.0	GREEN WAY TRAIL "A" PLAN AND PROFILE
19.0	GREEN WAY TRAIL "B" PLAN AND PROFILE
CD1-CD19	CIVIL DETAILS

PUBLIC IMPROVEMENTS	
PUBLIC WATER (12")	4,230 LF
PUBLIC WATER (8")	5,803 LF
PUBLIC WATER (6")	251 LF
PUBLIC SEWER (8")	11,365 LF
PUBLIC STREETS	10,273 LF
TOTAL NO. OF LOTS	145
LIMITS OF DISTURBANCE	33.44 AC

#1 The quality of these plans is blurry on several sheets, as well as the sheet sizes jump all over. Please revise the plans for consistency and quality so they are legible.

PROJECT NARRATIVE

THIS PROJECT IS LOCATED IN ROLESVILLE, NORTH CAROLINA AT ROLESVILLE ROAD. IT INVOLVES THE COMBINING OF SEPARATELY PROPOSED PROJECTS KNOWN AS KALAS FALLS, ROGERS FARM AND ONE OTHER TRACT KNOWN AS THE WATKINS PROPERTY. IT DRAINS TO TRIBUTARIES OF HARRIS BRANCH WHICH IS PART OF THE NEUSE RIVER BASIN. IT IS ALSO BOUNDED ON ALL SIDES BY MOSTLY UNDEVELOPED LAND. IT IS APPROXIMATELY 0.5 MILES NORTHWEST OF THE INTERSECTION OF MITCHELL MILL ROAD AND ROLESVILLE ROAD IN WAKE COUNTY, NORTH CAROLINA. THE TOTAL AREA OF THE PROJECT IS 282.726 AC(EXCLUDES EXISTING ROW AND CEMETERY).THE CURRENT PHASE IS 79.96 ACRES.

ATTENTION CONTRACTORS:

THE CONTRACTOR RESPONSIBLE FOR THE EXTENSION OF WATER, SEWER, AND / OR REUSE, AS APPROVED IN THESE PLANS, IS RESPONSIBLE FOR CONTACTING 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 AND SEWER FACILITIES NOT INSPECTED AT THE TIME OF THE NOTIFICATION FAILURE.

FAILURE TO CALL FOR INSPECTION, INSTALL A DOWNSTREAM PLUG, HAVE PERMITTED PLANS ON THE JOB SITE, OR ANY OTHER VIOLATION OF THE CITY OF RALEIGH STANDARDS WILL RESULT IN A FINE AND POSSIBLE EXCLUSION FROM FUTURE WORK IN THE CITY OF RALEIGH.

GENERAL NOTES:

- ALL PUBLIC WATER AND SEWER MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF RALEIGH STANDARDS AND SPECIFICATIONS.
- CONTRACTOR SHALL CONTACT NORTH CAROLINA ONE CALL (1-800-632-4949) TO LOCATE ALL EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION.
- CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE EXISTING UTILITIES AND NOTIFY THE PROJECT ENGINEER (919-469-1101) OF ANY CONFLICTS.
- ALL BOUNDARY AND FIELD TOPOGRAPHY PROVIDED BY WITHERS & RAVENEL.

APPROVED FOR COMPLIANCE

Case # _____ Project: _____

By: _____ Date: _____

These plans have been approved for compliance with the Town Code of Ordinance, UDO, and Standard Specifications & Construction Details, subject to statements & conditions hereby incorporated by reference.

SITE PERMITTING APPROVAL

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 #** _____

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 #** _____

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 _____

*** 3 Days Before Digging ***
North Carolina 811
811 or 1-800-632-4949
Remote Ticket Entry
http://nc811.org/remoteticketentry.htm

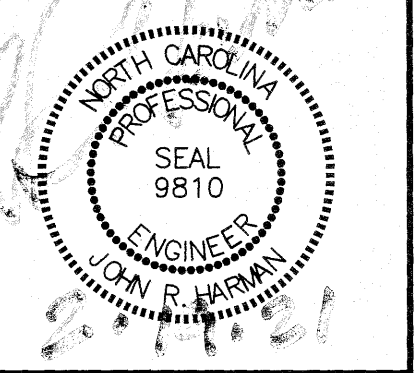
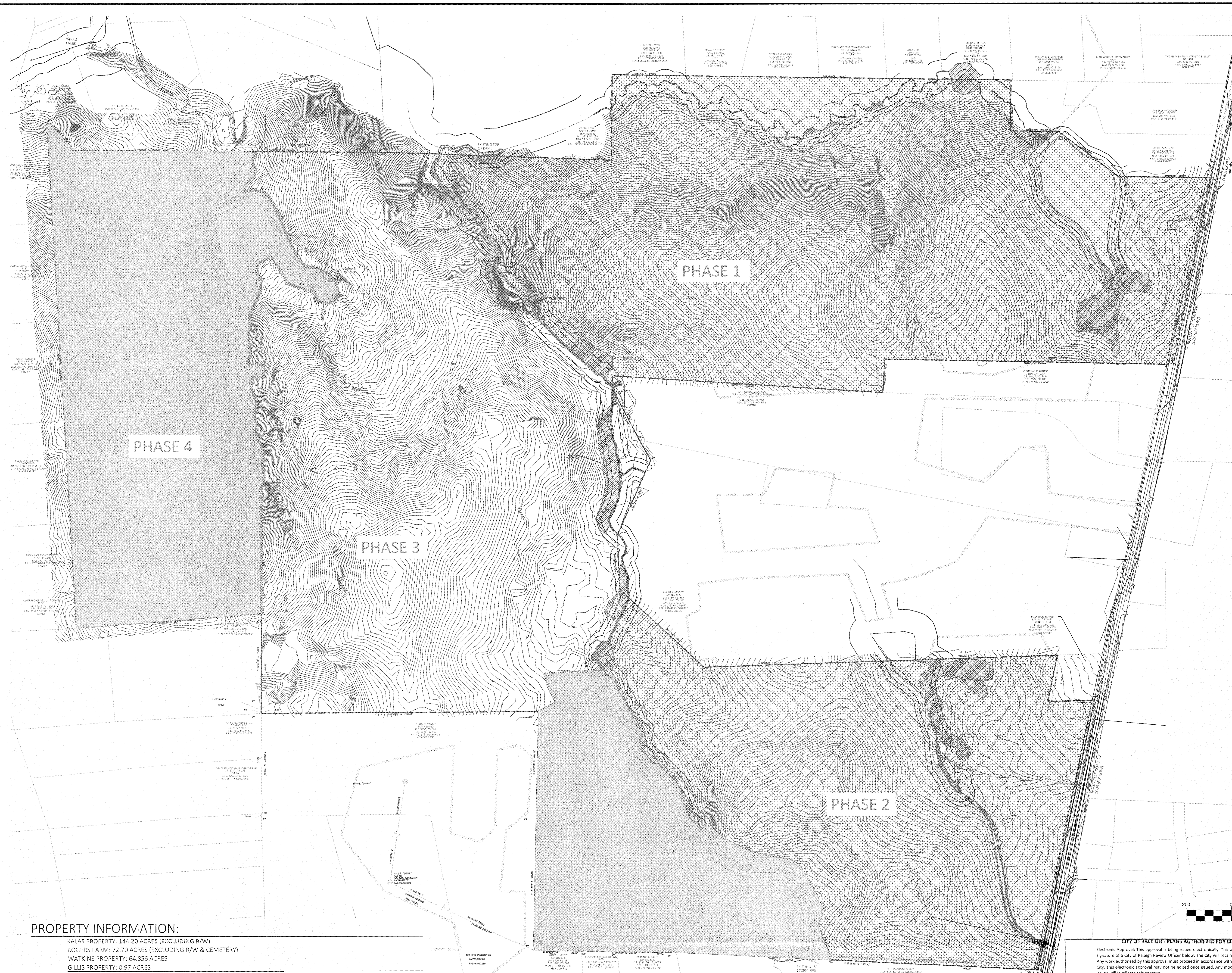
American Engineering Associates - Southeast, P.A.
1000 Southward, Suite 450
Raleigh, NC 27607

NO.	DATE	REVISION:

STIPULATION FOR REUSE
THIS DRAWING WAS PREPARED FOR USE ON THE SPECIFIC SITE, NAMED HEREON, CONTEMPORANEOUSLY WITH ITS ISSUE DATE AS LISTED, HEREON, AND IT IS NOT SUITABLE FOR USE ON A DIFFERENT PROJECT SITE OR AT A LATER TIME. USE OF THIS DRAWING FOR REFERENCE OR EXAMPLE ON ANOTHER PROJECT REQUIRES THE SERVICES OF PROPERLY LICENSED ARCHITECTS AND ENGINEERS. REPRODUCTION OF THIS DRAWING FOR REUSE ON ANOTHER PROJECT IS NOT AUTHORIZED AND MAY BE CONTRARY TO THE LAW.

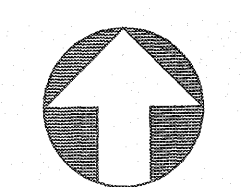
KALAS FALLS PHASE 3
1832 ROLESVILLE ROAD
WAKE COUNTY, NC

JOB NUMBER:	9900
CHECKED BY:	
DRAWN BY:	
DATE:	FEB 18, 2021
SHEET TITLE:	COVER SHEET
SHEET NO.:	CVR

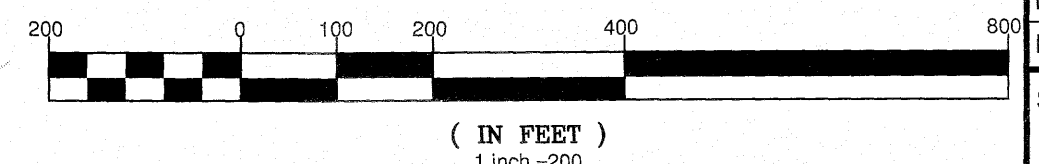


EXISTING LEGEND	
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[Symbol]	EXISTING TREE LINE
[Symbol]	EXISTING TOPOGRAPHY
[Symbol]	EXISTING BOUNDARY
[Symbol]	EXISTING WETLANDS
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[Symbol]	EXISTING GRAVEL PATHWAY
[Symbol]	EXISTING WATERLINE
[Symbol]	PHASE LINE

- GENERAL NOTES:
1. TOPO SHOWN ON THIS SHEET IS 1' CONTOURS AND IS FIELD TOPOGRAPHY.
 2. SURVEY DATA PROVIDED BY WITHERSRAVENEL WITH THE LATEST SURVEY DATA RECEIVED ON 9-28-18.
 3. ALL PROPERTIES WITHIN THE PROJECT BOUNDARY ARE OWNED BY MITCHELL MILL ROAD INVESTORS, LLC.



GRAPHIC SCALE

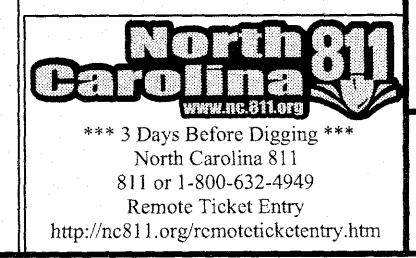


PROPERTY INFORMATION:

KALAS PROPERTY: 144.20 ACRES (EXCLUDING R/W)
 ROGERS FARM: 72.70 ACRES (EXCLUDING R/W & CEMETERY)
 WATKINS PROPERTY: 64.856 ACRES
 GILLIS PROPERTY: 0.97 ACRES
 TOTAL ACREAGE: 282.726 ACRES

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**KALAS FALLS
 PHASE 3
 1832 ROLESVILLE ROAD
 WAKE COUNTY, NC**

JOB NUMBER: 9900
 CHECKED BY:
 DRAWN BY:
 DATE: FEB 18, 2021

SHEET TITLE:
OVERALL EXISTING CONDITIONS

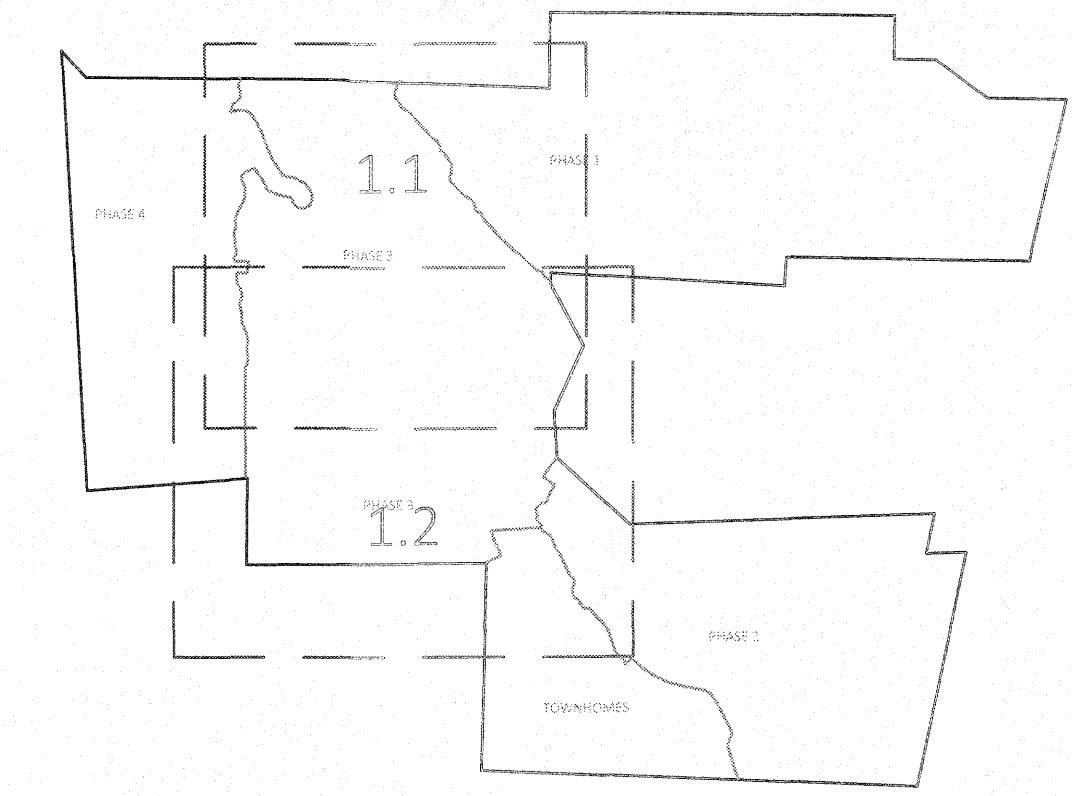
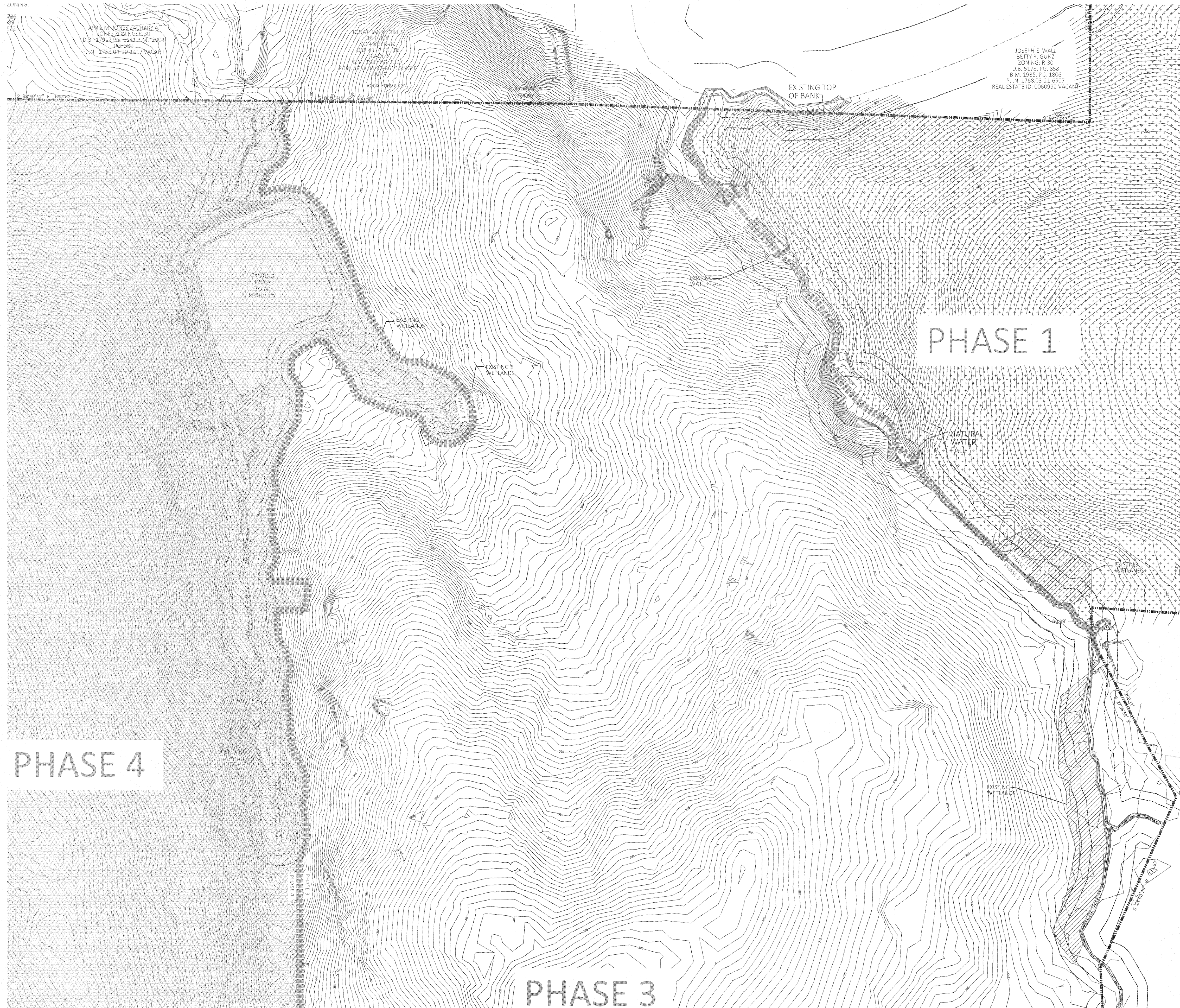
SHEET NO.:
1.0

ZONING:

APRIL M. JONES ZACHARY A.
JONES ZONING E-30
D.B. 17912 PG. #141 R.O. 2004
30-598
P.N. 1958-04-90-1417 VACANT

CONTRACTOR'S
D.B. 1917 PG. 75
R.O. 2007 PG. 250
P.N. 1758-03-06-0101 SINGLES
FAMILY

JOSEPH E. WALL
BETTY R. GUNZ
ZONING R-30
D.B. 5178 PG. 858
B.M. 1985 P. 1 1806
P.I.N. 1768-03-21-6907
REAL ESTATE ID: 0060992 VACANT



GRAPHIC SCALE 1"=1000'

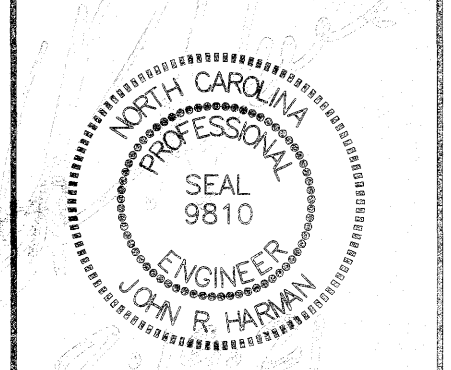
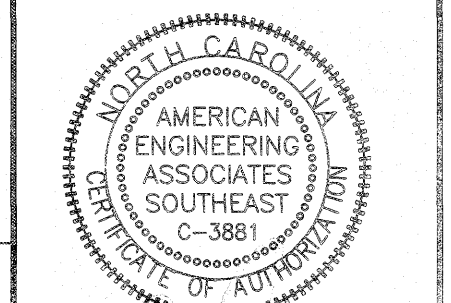
PHASE 1

PHASE 4

PHASE 3

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	EXISTING BOUNDARY
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	PHASE LINE

AMERICAN Engineering
American Engineering Associates - Southeast, P.A.
4020 Westchase Boulevard, Suite 450
Raleigh, NC 27607
919-465-1101

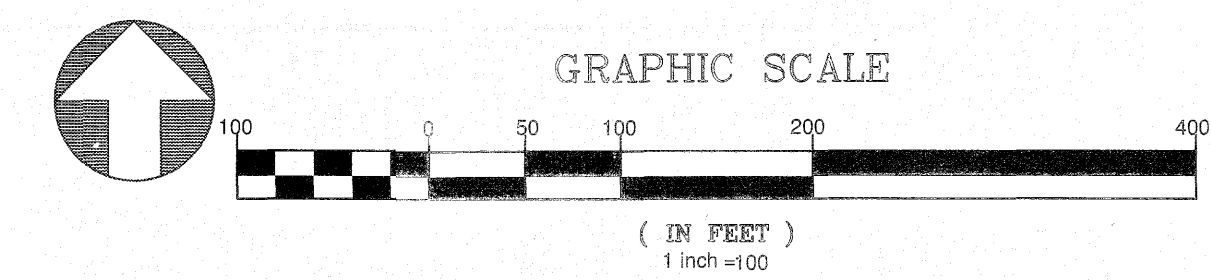


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KALAS FALLS
PHASE 3
1832 ROLESVILLE ROAD
WAKE COUNTY, NC

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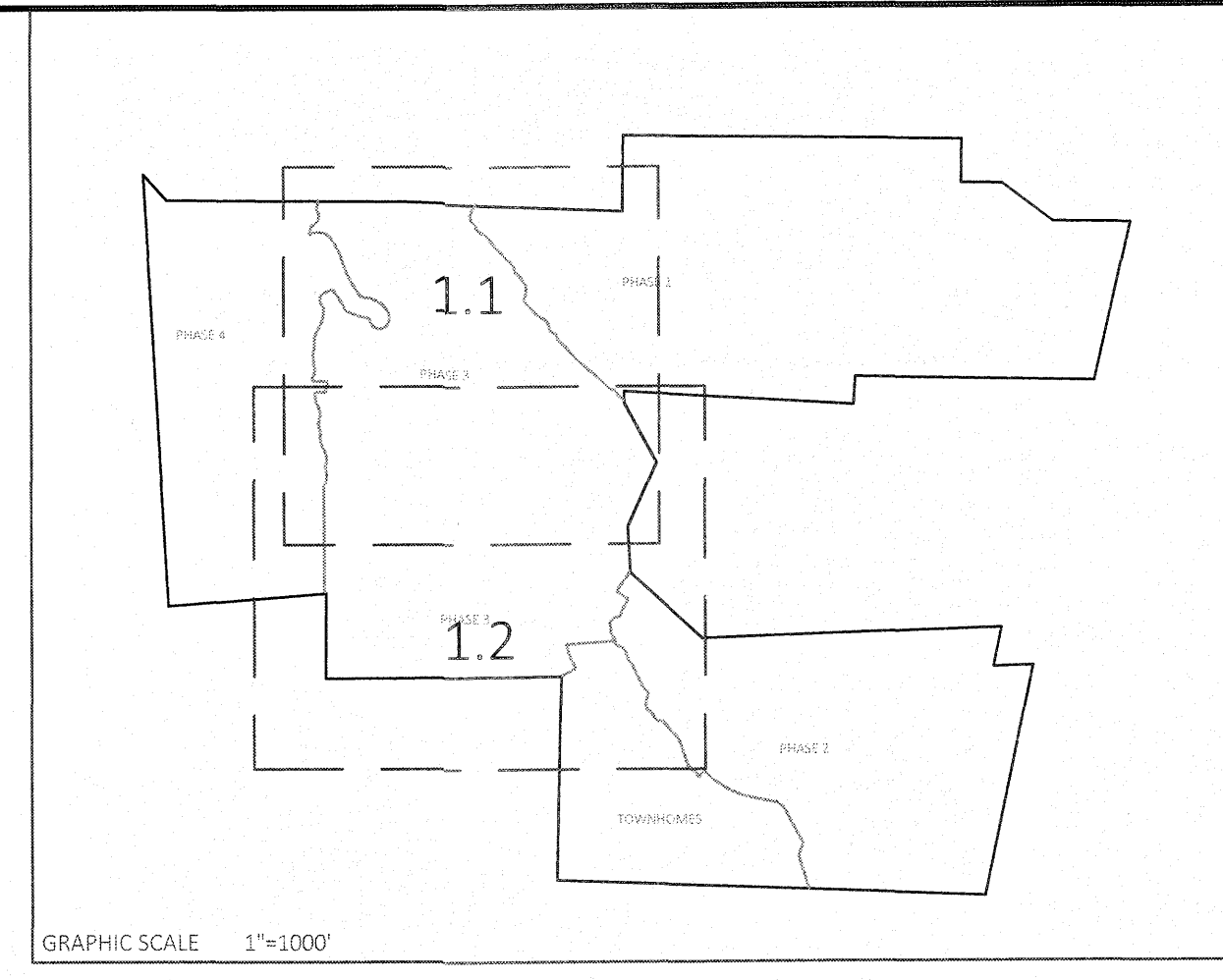
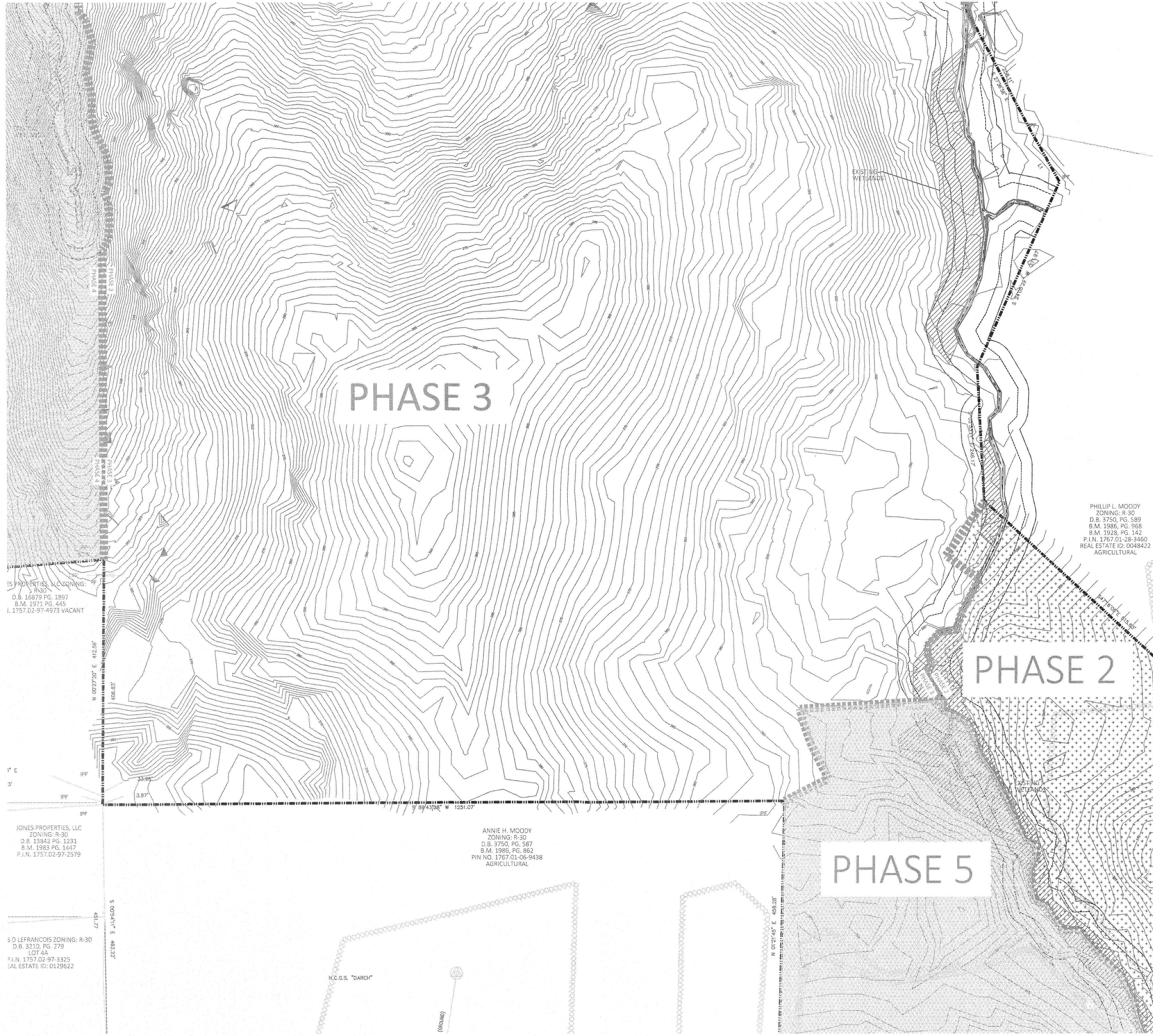


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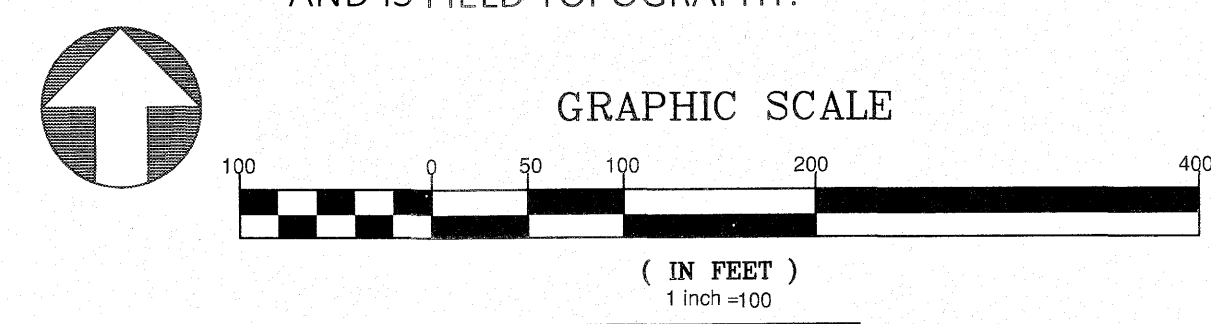
JOB NUMBER:	9900
CHECKED BY:	
DRAWN BY:	
DATE:	FEB 18, 2021
SHEET TITLE:	PHASE 3 EXISTING CONDITIONS
SHEET NO.:	1.1

Z:\Users\joneszachary\Documents\Projects\Phase 3\Sheet 1\Phase 3 Existing Conditions.dwg February 18, 2021



EXISTING LEGEND	
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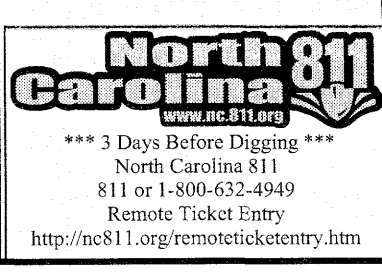
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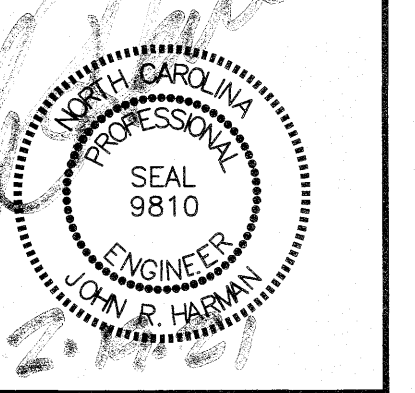
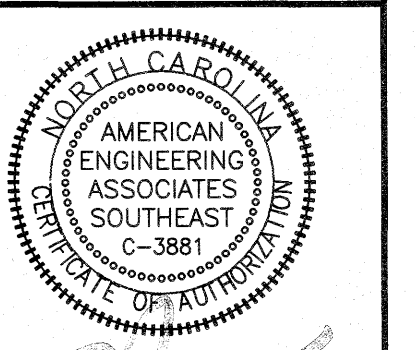
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American Engineering Associates - Southeast, P.A.
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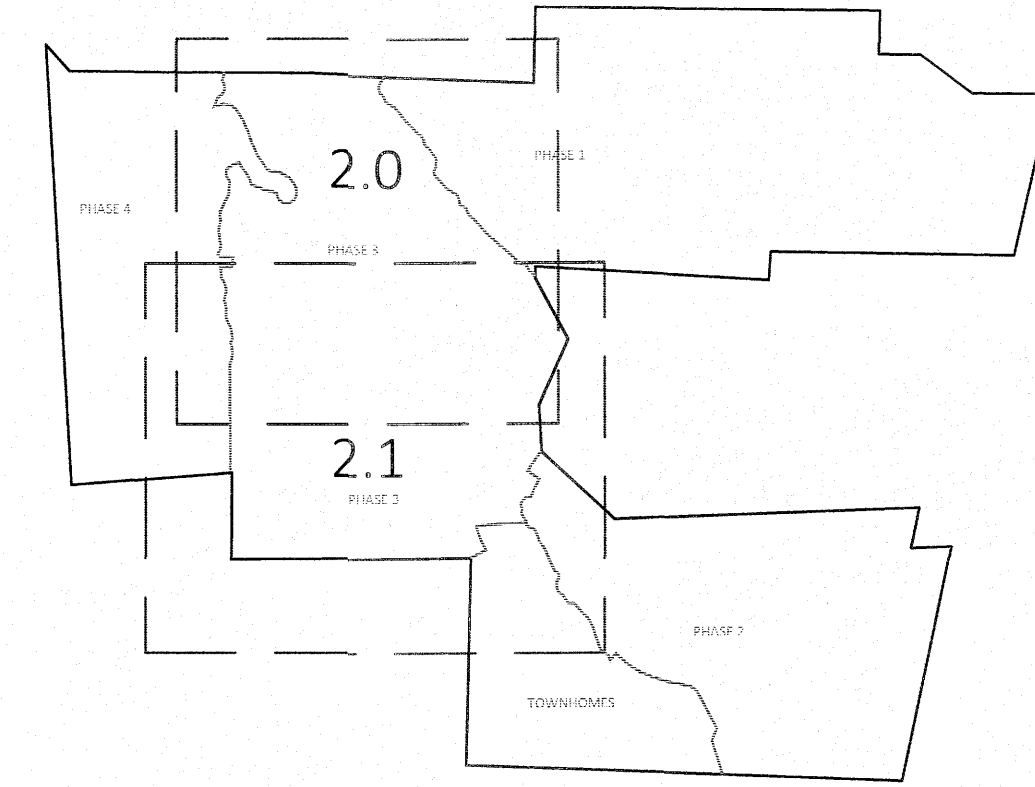
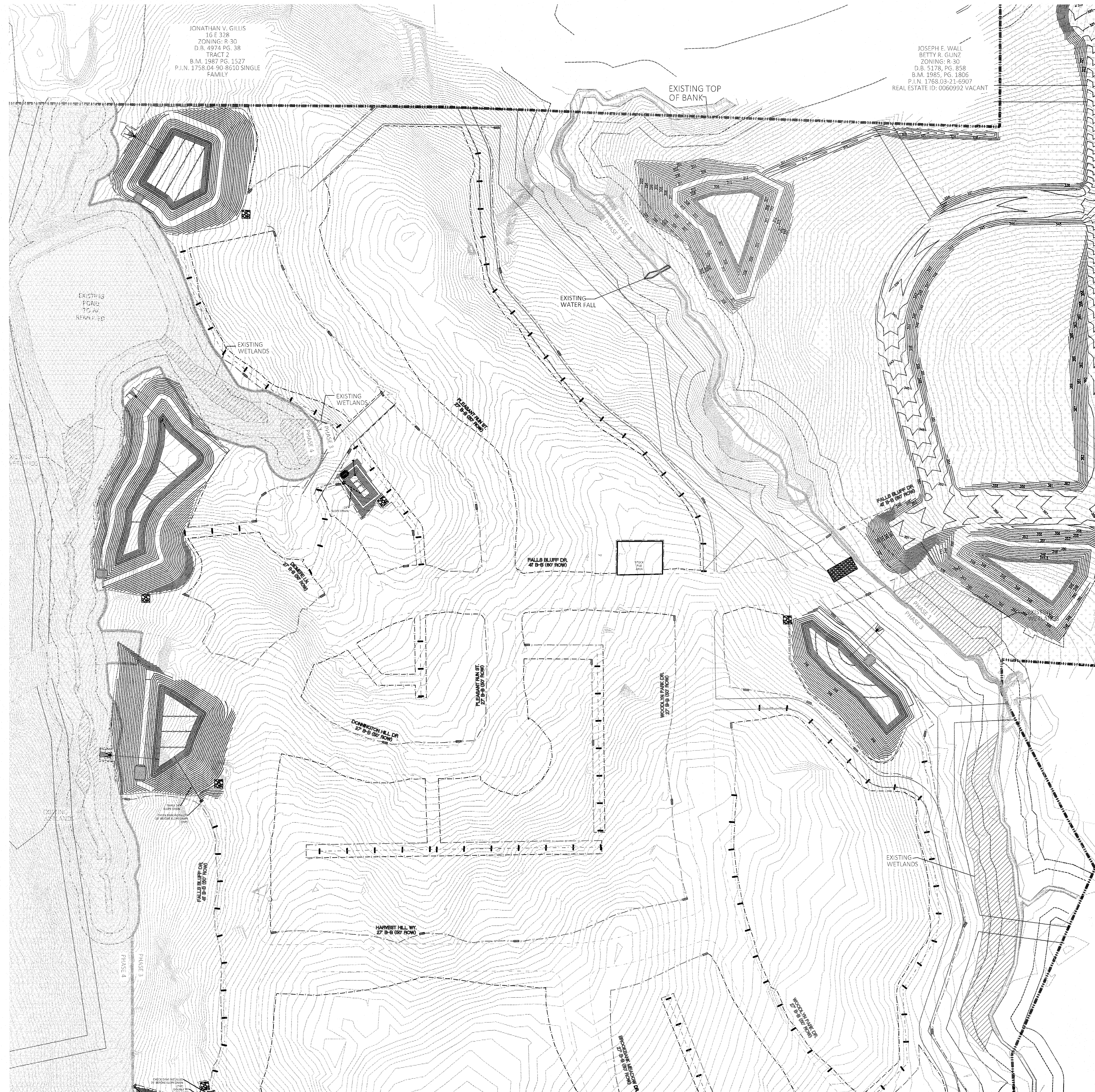


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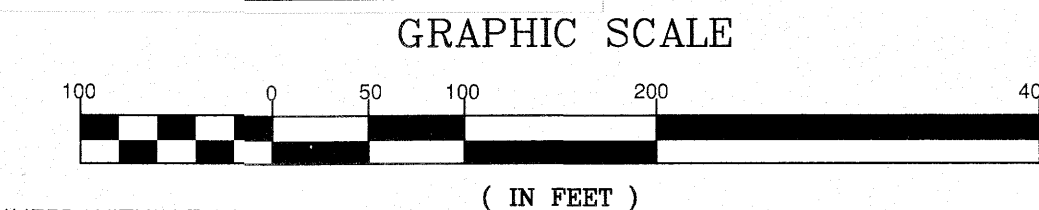
KALAS FALLS PHASE 3
1832 ROLESVILLE ROAD
WAKE COUNTY, NC

JOB NUMBER:	9900
CHECKED BY:	
DRAWN BY:	
DATE:	FEB 18, 2021
SHEET TITLE:	PHASE 3 EXISTING CONDITIONS
SHEET NO.:	1.2



GRAPHIC SCALE 1"=100'

EROSION CONTROL LEGEND	
0000000000000000	EXISTING TREE LINE
---	EXISTING TOPOGRAPHY
---	EXISTING BOUNDARY
---	EXISTING WETLANDS
[Hatched Box]	EXISTING WETLANDS AREA
---	EXISTING 50' NEUSE RIVERIAN BUFFER
---	EXISTING BUFFER ZONES
---	PROPOSED LOT LINE
---	FLOODLINE
---	BUILDING RESTRICTION LINE
---	PROPOSED ROW
---	PROPOSED SIDEWALK
---	PROPOSED BOC
---	PROPOSED EOP
---	PROPOSED CENTERLINE
---	PROPOSED GRADING
---	PROPOSED EASEMENT
(MK)	MAIL KIOSK LOCATION
[Stippled Box]	25 x 50 GRAVEL CONSTRUCTION ENTRANCE
[Triangle]	RIP RAP
[Circle with Weir]	SEDIMENT BASIN WEIR
[Rectangular Basin]	SEDIMENT BASIN
[Circle]	INLET PROTECTION
[Square]	CHECK DAM
[Square]	PROPOSED SF LOW POINT
[Square]	PROPOSED AREAS FOR 7 DAY STABILIZATION
---	TREE FENCE/LIMITS OF DISTURBANCE
---	SILT FENCE/LIMITS OF DISTURBANCE
---	DIVERSION DITCH
[Circle]	JUNCTION BOX
[Square]	PROPOSED CATCH BASIN
[Square]	PROPOSED YARD INLET
[Square]	PROPOSED DROP INLET
[Square]	PROPOSED STORM WATER



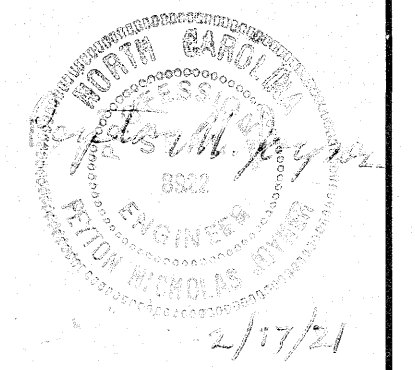
- GENERAL NOTES:
1. ALL SEDIMENT TRAPS/PONDS SHALL BE STABILIZED WITHIN 7 DAYS OF INSTALLATION.
 2. A SEWER OUTFALL IS TO BE CONSTRUCTED IN THE FUTURE PHASE 4 AREA TO SERVICE THIS PORTION OF THE PROJECT.
 3. WATTLE/CHECK DAM ARE TO BE PLACED EVERY 3 TO 4 FT VERTICALLY.
 4. WHERE SILT FENCE IS LOCATED OUTSIDE OF TEMPORARY SILT DITCHES THE SILT FENCE WILL BE THE LIMITS OF DISTURBANCE.
 5. SEE SHEET 3.1 FOR SEDIMENT BASIN CHART SHOWING THE SKIMMER/ORIFICE SIZES.

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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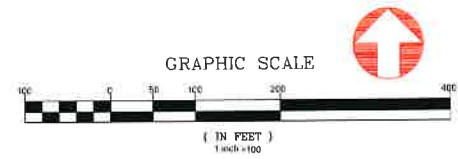
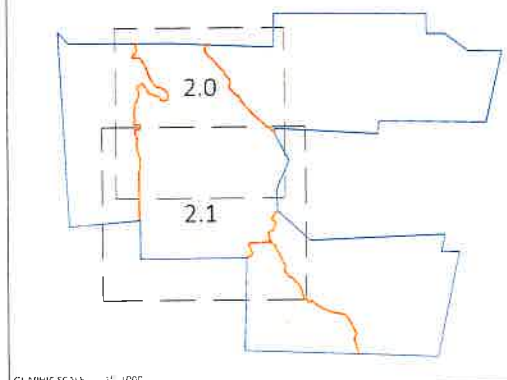
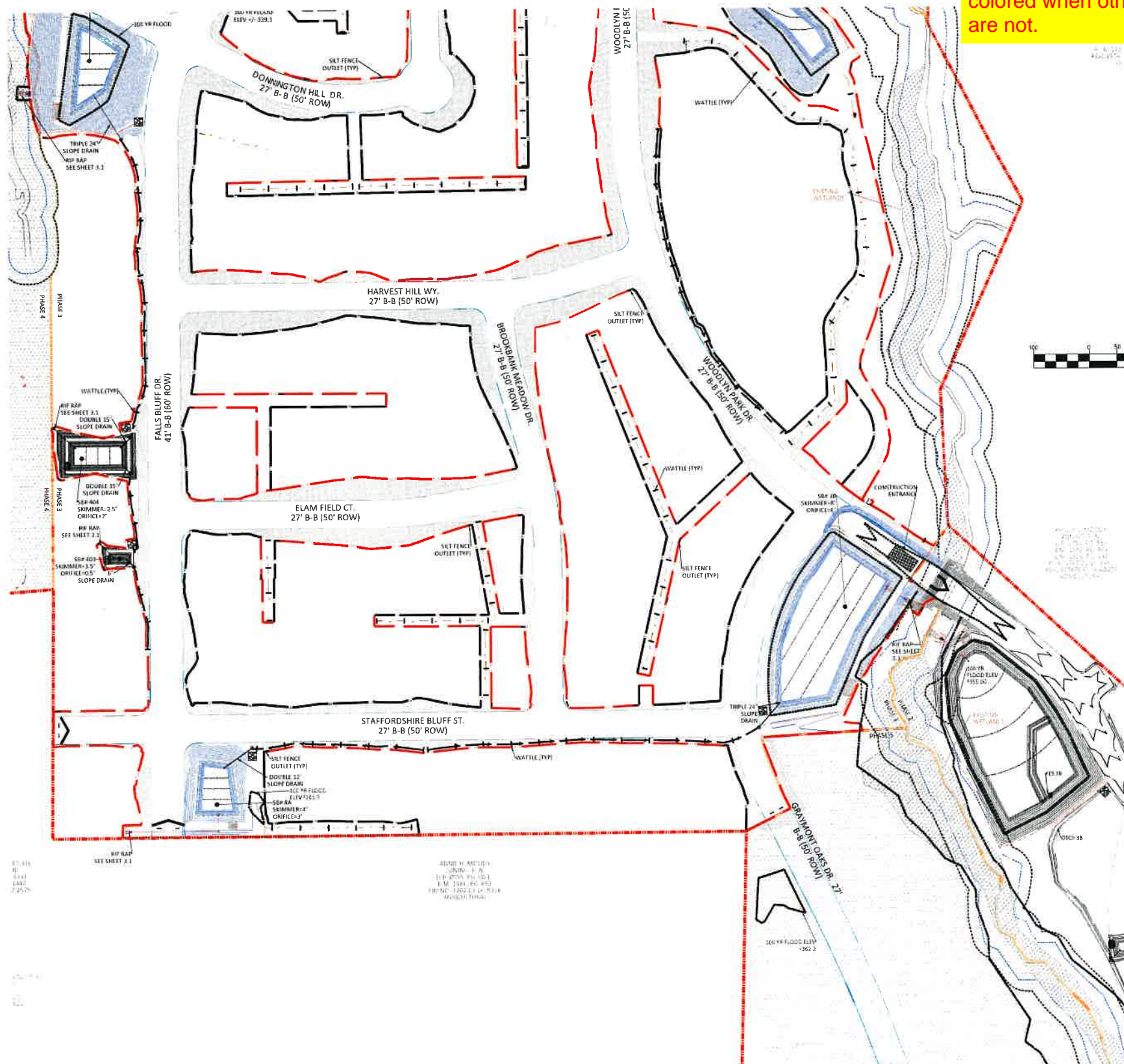
STIPULATION FOR REUSE

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**KALAS FALLS
 PHASE 3
 1832 ROLESVILLE ROAD
 WAKE COUNTY, NC**

JOB NUMBER: 9900
 CHECKED BY: _____
 DRAWN BY: _____
 DATE: FEB 15, 2021
 SHEET TITLE:
**PHASE 3
 EROSION
 CONTROL
 STAGE 1**
 SHEET NO.:
2.0

#2 Please confirm why this sheet is colored when others are not.



EROSION CONTROL LEGEND	
	100 YEAR FLOOD EASEMENT
	EXISTING TOPOGRAPHY
	EXISTING BOUNDARY
	EXISTING WETLANDS AREA
	EXISTING 50' NEUSE RIVERIAN BUFFER
	EXISTING BUFFER ZONES
	PROPOSED LOT LINE
	BUILDING RESTRICTION LINE
	PROPOSED ROW
	PROPOSED SIDEWALK
	PROPOSED BOC
	PROPOSED EOP
	PROPOSED CENTERLINE
	PROPOSED GRADING
	PROPOSED EASEMENT
	PROPOSED 25 x 50 GRAVEL CONSTRUCTION ENTRANCE
	PROPOSED RIP RAP
	BASIN WEIR
	PROPOSED SEDIMENT BASIN
	PROPOSED INLET PROTECTION
	PROPOSED CHECK DAM
	PROPOSED SF LOW POINT
	GREENWAY TRAIL HATCH
	PROPOSED AREAS FOR 7 DAY STABILIZATION
	PROPOSED EROSION CONTROL BLANKET
	PROPOSED BASIN MAINTENANCE PAD
	PROPOSED WATTLE
	PROPOSED SILT FENCE
	PROPOSED TREE PROTECTION FENCE/LIMITS OF DISTURBANCE
	PROPOSED SILT FENCE/LIMITS OF DISTURBANCE
	PROPOSED DIVERSION DITCH
	PROPOSED SWALE
	PROPOSED JUNCTION BOX
	PROPOSED CATCH BASIN
	PROPOSED YARD INLET
	PROPOSED DROP INLET
	PROPOSED STORM WATER



NO.	DATE	REVISION
1	7/17/2021	1ST REVIEW FROM TOWN OF ROLESVILLE CONSULTANT, WAKE COUNTY AND CITY OF FREDERICK
2	2/7/2022	2ND REVIEW FROM TOWN OF ROLESVILLE CONSULTANT, WAKE COUNTY AND CITY OF FREDERICK

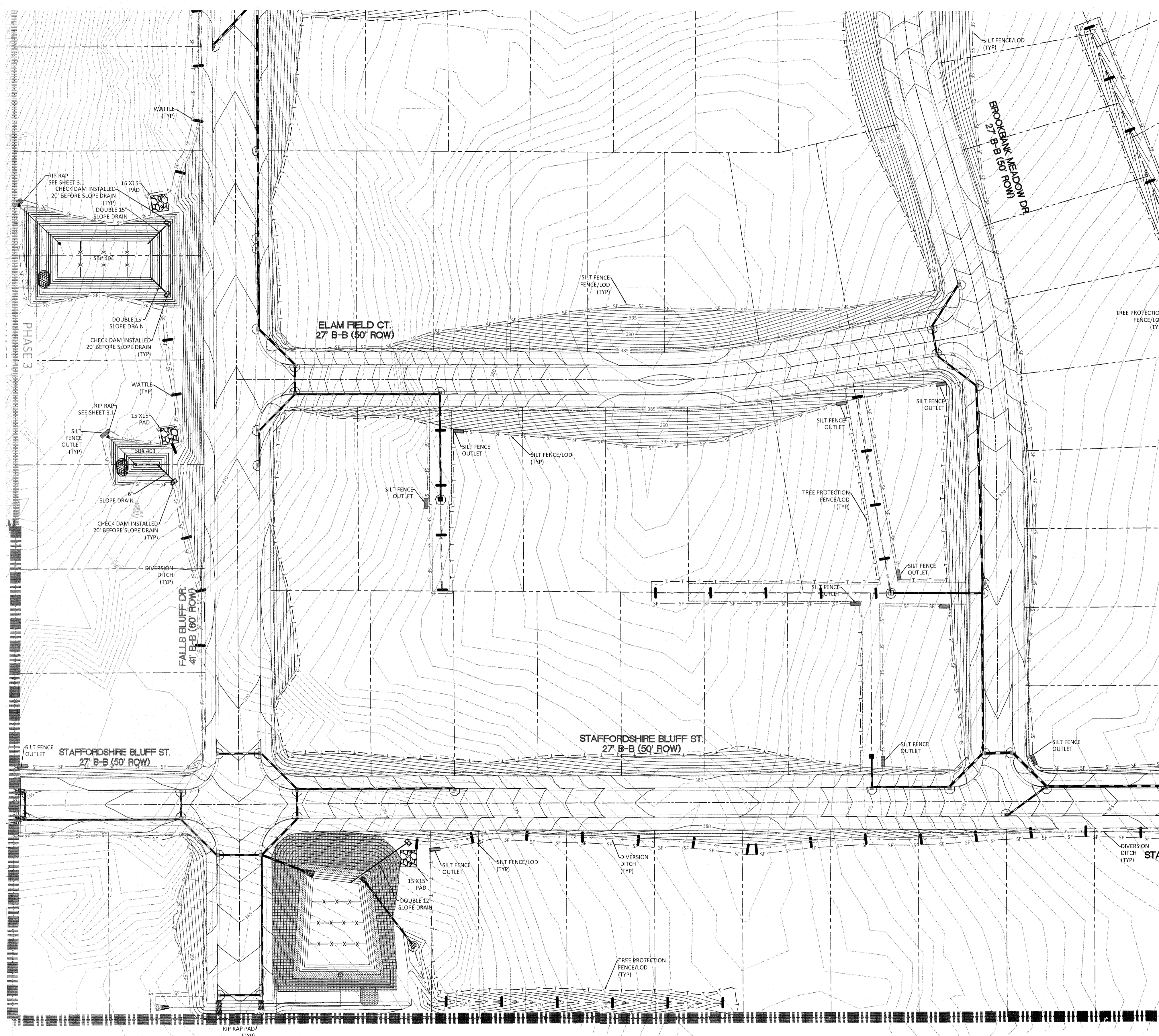
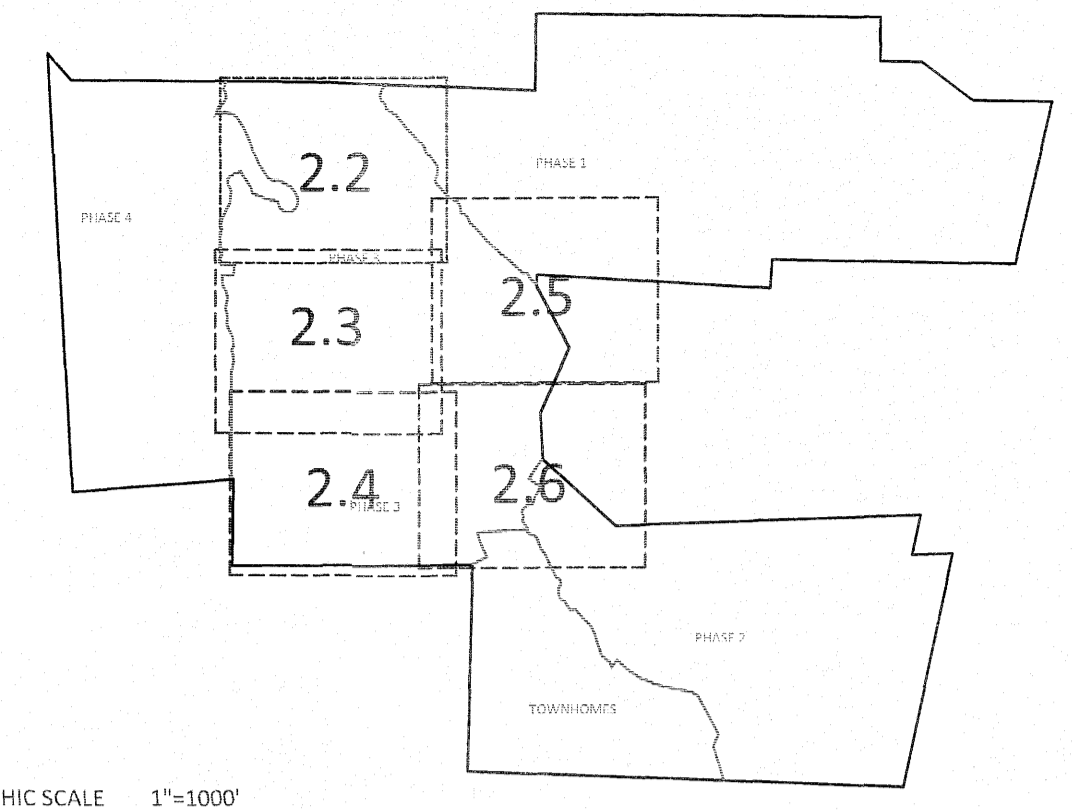
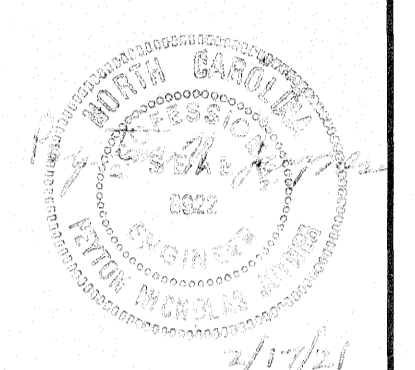
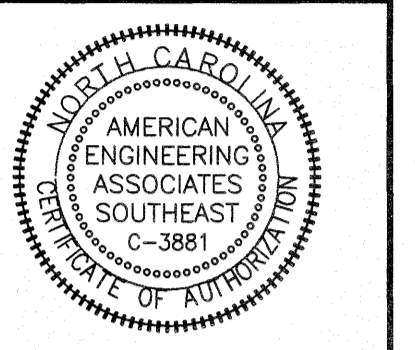
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**KALAS FALLS
 PHASE 3
 1832 ROLESVILLE ROAD
 WAKE COUNTY, NC**

JOB NUMBER	9900
CHECKED BY	
DRAWN BY	
DATE	FEB 18 2021
SHEET TITLE	PHASE 3 EROSION CONTROL STAGE 1
SHEET NO.	2.1

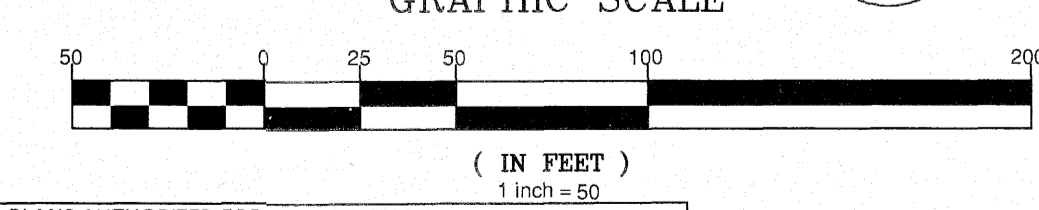
- GENERAL NOTES**
1. ALL SEDIMENT TRAPS/PONDS SHALL BE STABILIZED WITHIN 7 DAYS OF INSTALLATION.
 2. WATTLE/CHE-3 DAM ARE TO BE PLACED EVERY 3 TO 4 FT VERTICALLY.
 3. WHERE SILT FENCE IS LOCATED OUTSIDE OF TEMPORARY SILT DITCHES THE SILT FENCE WILL BE THE LIMITS OF DISTURBANCE.
 4. SEE SHEET 2.1 FOR SEDIMENT BASIN CHART SHOWING THE SHIMMER/ORIFICE SIZES.
 5. DIVERSION SWALE DESIGN SEE SHEET 2.1 FOR DETAILS AND REFERENCE TABLE.
 6. SEE SHEETS 2.1 TO 2.6 FOR SLOPE DRAIN PIPE SIZES.
 7. SEE SHEET 2.1 FOR RIP RAP PAD SIZES.



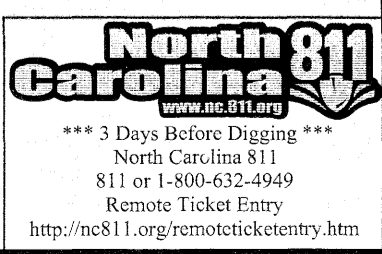


EROSION CONTROL LEGEND	
	EXISTING TREE LINE
	EXISTING TOPOGRAPHY
	EXISTING BOUNDARY
	EXISTING WETLANDS
	EXISTING WETLANDS AREA
	EXISTING 50' NEUSE RIPARIAN BUFFER
	EXISTING BUFFER ZONES
	PROPOSED LOT LINE
	FLOODLINE
	BUILDING RESTRICTION LINE
	PROPOSED ROW
	PROPOSED SIDEWALK
	PROPOSED BOC
	PROPOSED EOP
	PROPOSED CENTERLINE
	PROPOSED GRADING
	PROPOSED EASEMENT
	MAIL KIOSK LOCATION
	25 x 50 GRAVEL CONSTRUCTION ENTRANCE
	RIP RAP
	SEDIMENT BASIN WEIR
	SEDIMENT BASIN
	INLET PROTECTION
	CHECK DAM
	PROPOSED SF LOW POINT
	PROPOSED AREAS FOR 7 DAY STABILIZATION
	TREE FENCE/LIMITS OF DISTURBANCE
	SILT FENCE/LIMITS OF DISTURBANCE
	DIVERSION DITCH
	JUNCTION BOX
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 5. SEE SHEET 3.1 FOR SEDIMENT BASIN CHART SHOWING THE SKIMMER/ORIFICE SIZES.



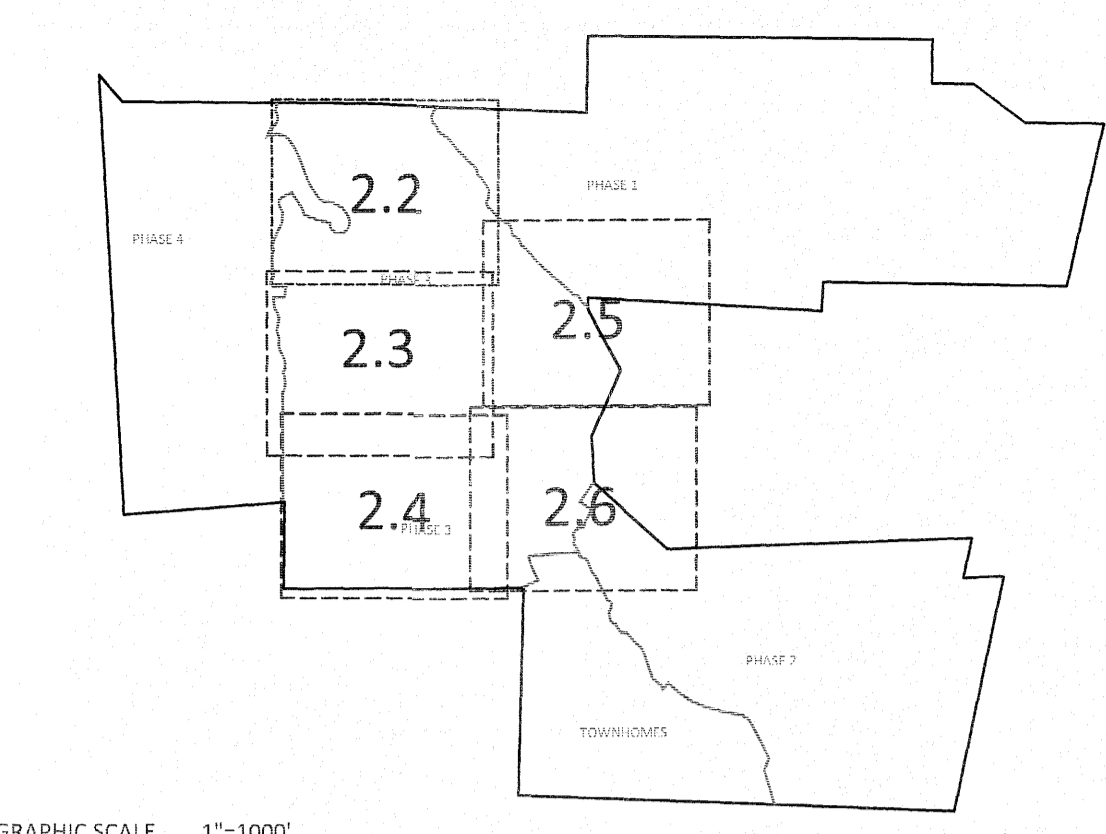
CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION
 Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must 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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KALAS FALLS PHASE 3
 1822 ROLESVILLE ROAD
 WAKE COUNTY, NC

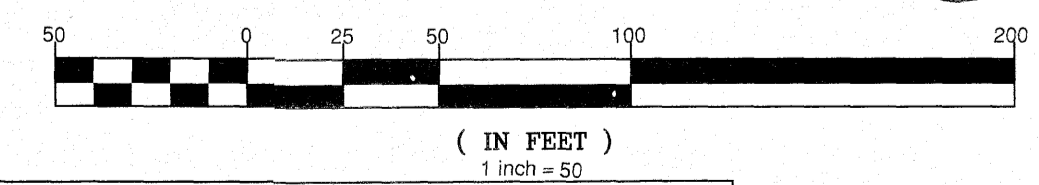
JOB NUMBER: 9900
 CHECKED BY:
 DRAWN BY:
 DATE: FEB 15, 2021
 SHEET TITLE: PHASE 3 EROSION CONTROL (50 SCALE)
 SHEET NO.: 2.4



GRAPHIC SCALE 1"=100'

EROSION CONTROL LEGEND	
	EXISTING TREE LINE
	EXISTING TOPOGRAPHY
	EXISTING BOUNDARY
	EXISTING WETLANDS
	EXISTING WETLANDS AREA
	EXISTING 50' NEUSE RIPARIAN BUFFER
	EXISTING BUFFER ZONES
	PROPOSED LOT LINE
	FLOODLINE
	BUILDING RESTRICTION LINE
	PROPOSED ROW
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	RIP RAP
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	SEDIMENT BASIN
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	CHECK DAM
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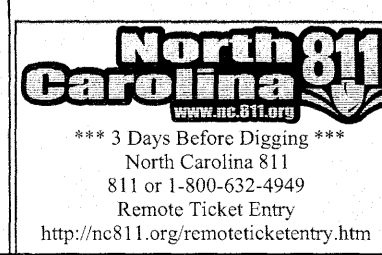


CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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City of Raleigh Development Approval _____

Raleigh Water Review Officer



AMERICAN Engineering
 American Engineering Associates - Southeast, P.A.
 4020 W. Boulevard, Suite 400
 Raleigh, NC 27607
 919-469-1101



NO.	DATE	REVISION

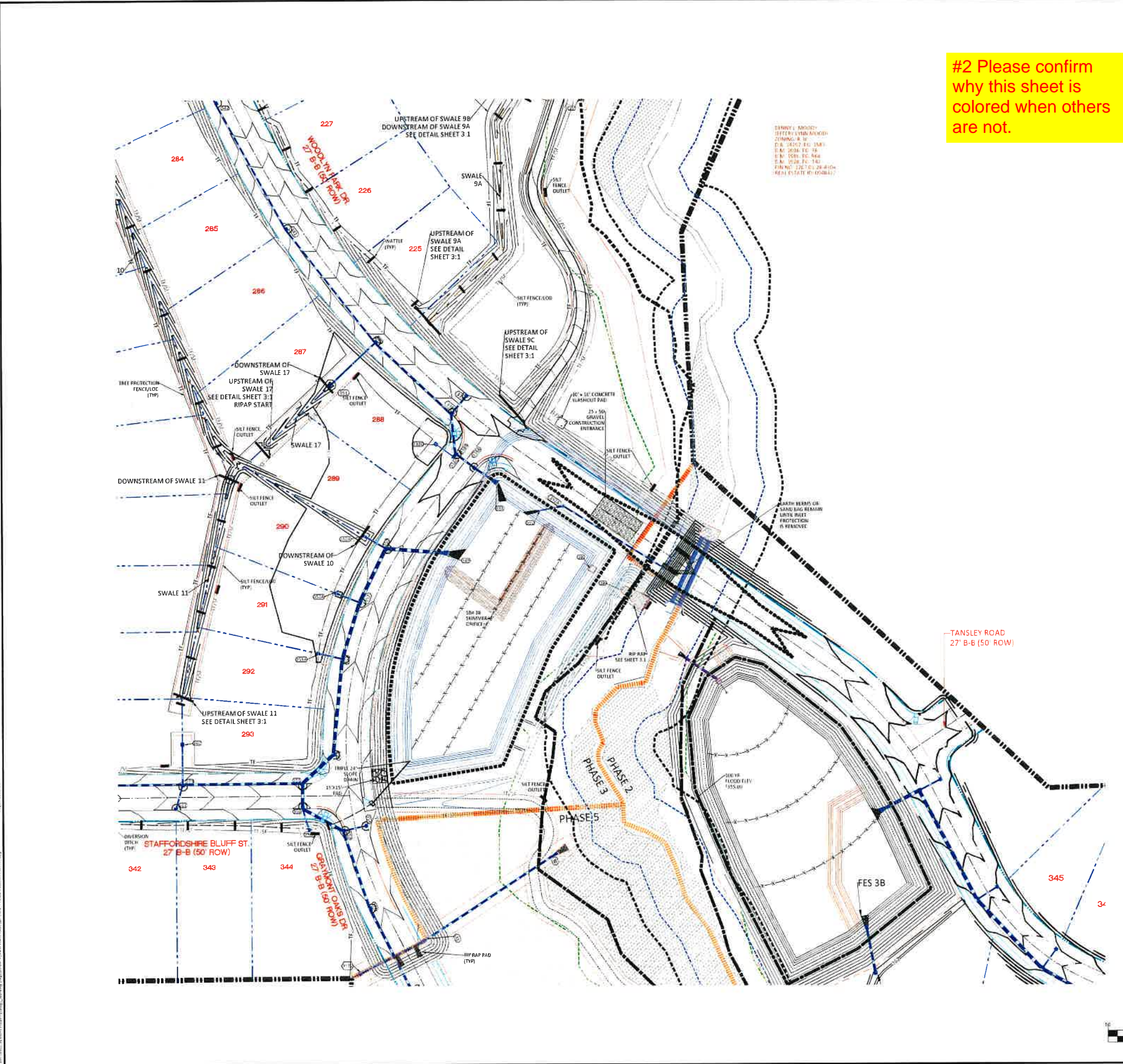
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**KALAS FALLS
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 WAKE COUNTY, NC**

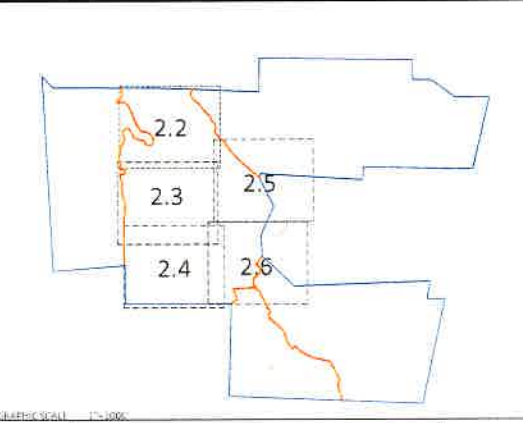
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 CHECKED BY:
 DRAWN BY:
 DATE: FEB 15, 2021
 SHEET TITLE:
**PHASE 3
 EROSION
 CONTROL
 (50 SCALE)**
 SHEET NO.:
2.5

February 12, 2021
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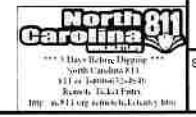
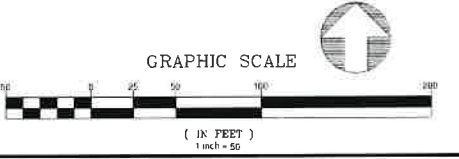
OWNER: MIDDLETOWN
 OFFICE: 1000 W. MAIN ST.
 DALLAS, TX 75201
 PHONE: (972) 440-1100
 FAX: (972) 440-1101
 WWW.AMERICANENGINEERING.COM

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EROSION CONTROL LEGEND	
	100 YEAR FLOOD EASEMENT
	EXISTING TOPOGRAPHY
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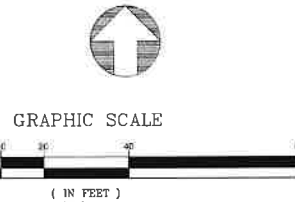
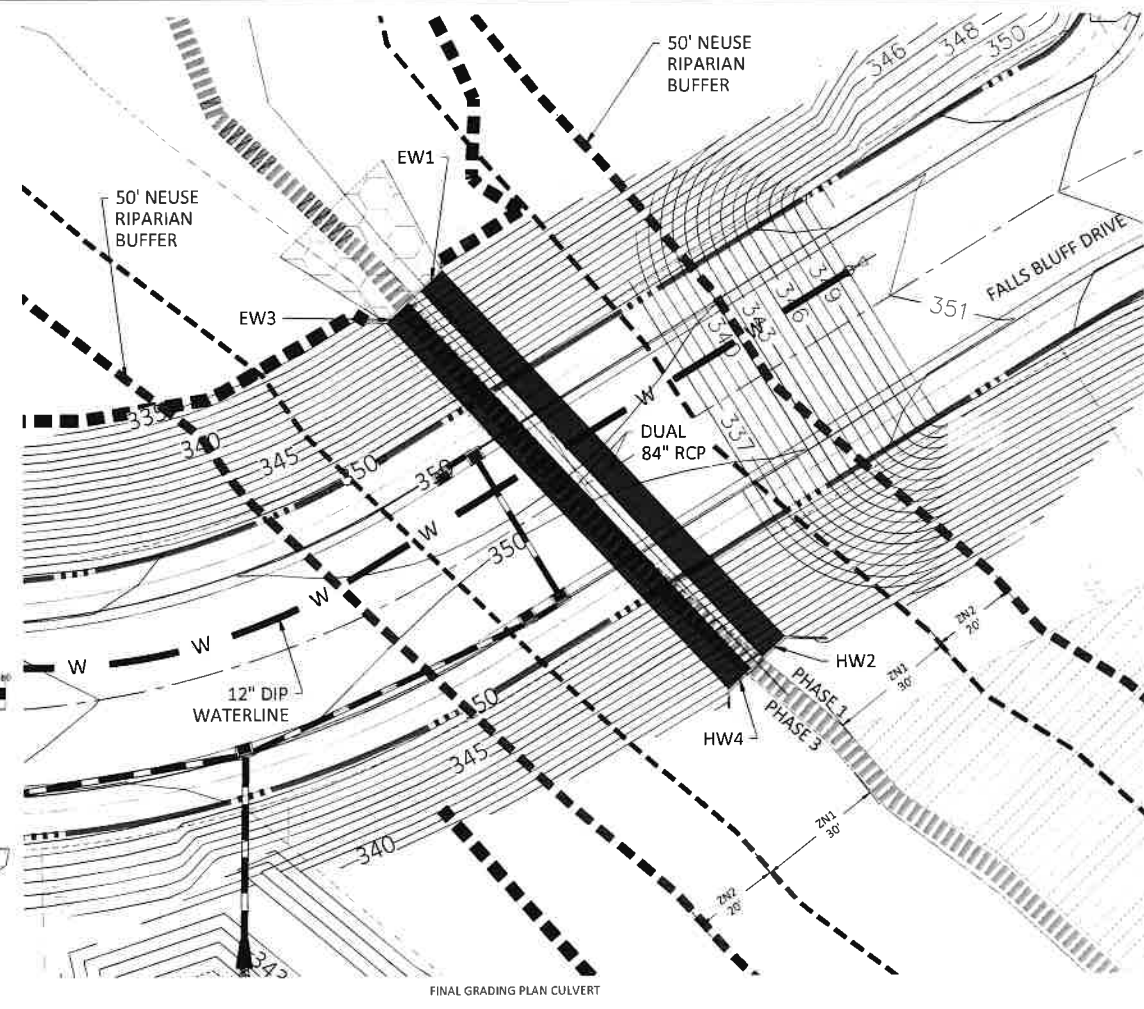
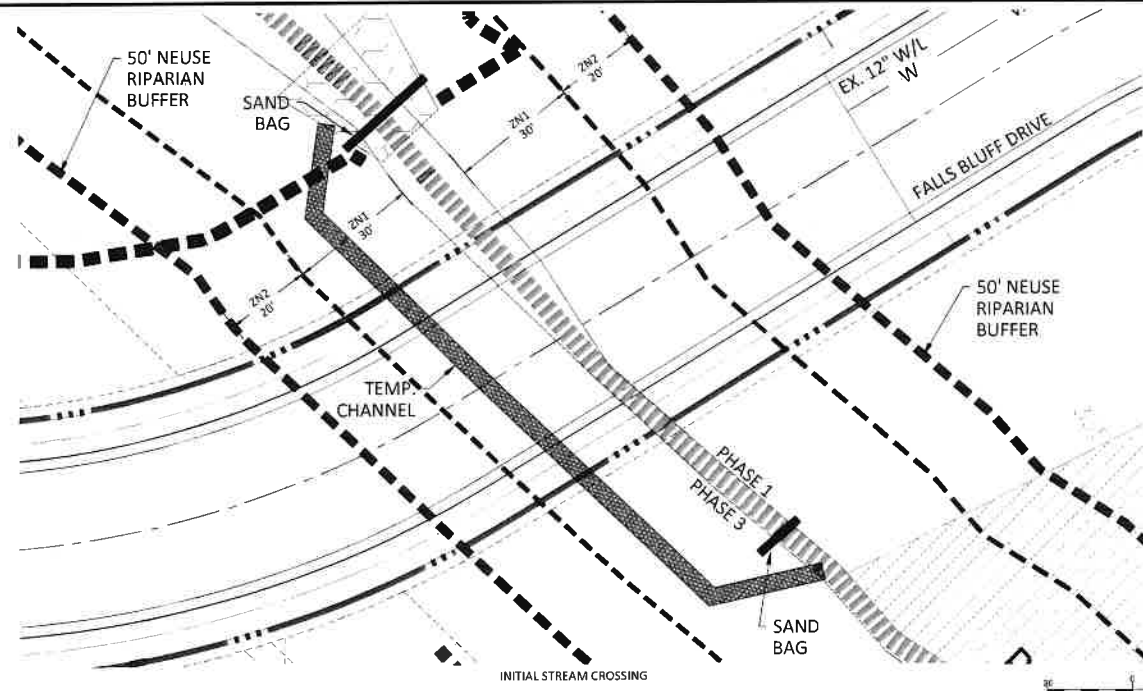


NO.	DATE	REVISION
1	11/11/2021	100% REVIEW FROM TOWN OF ROLESVILLE CONSULTANT, WAKE COUNTY AND CITY OF FALCON
2	11/11/2021	100% REVIEW FROM TOWN OF ROLESVILLE CONSULTANT, WAKE COUNTY AND CITY OF FALCON
3	11/11/2021	100% REVIEW FROM TOWN OF ROLESVILLE CONSULTANT, WAKE COUNTY AND CITY OF FALCON

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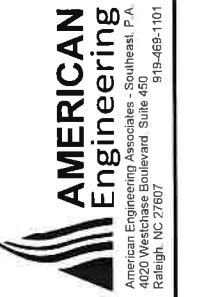
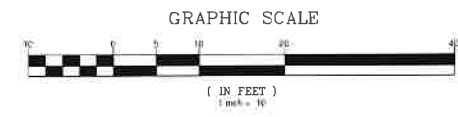
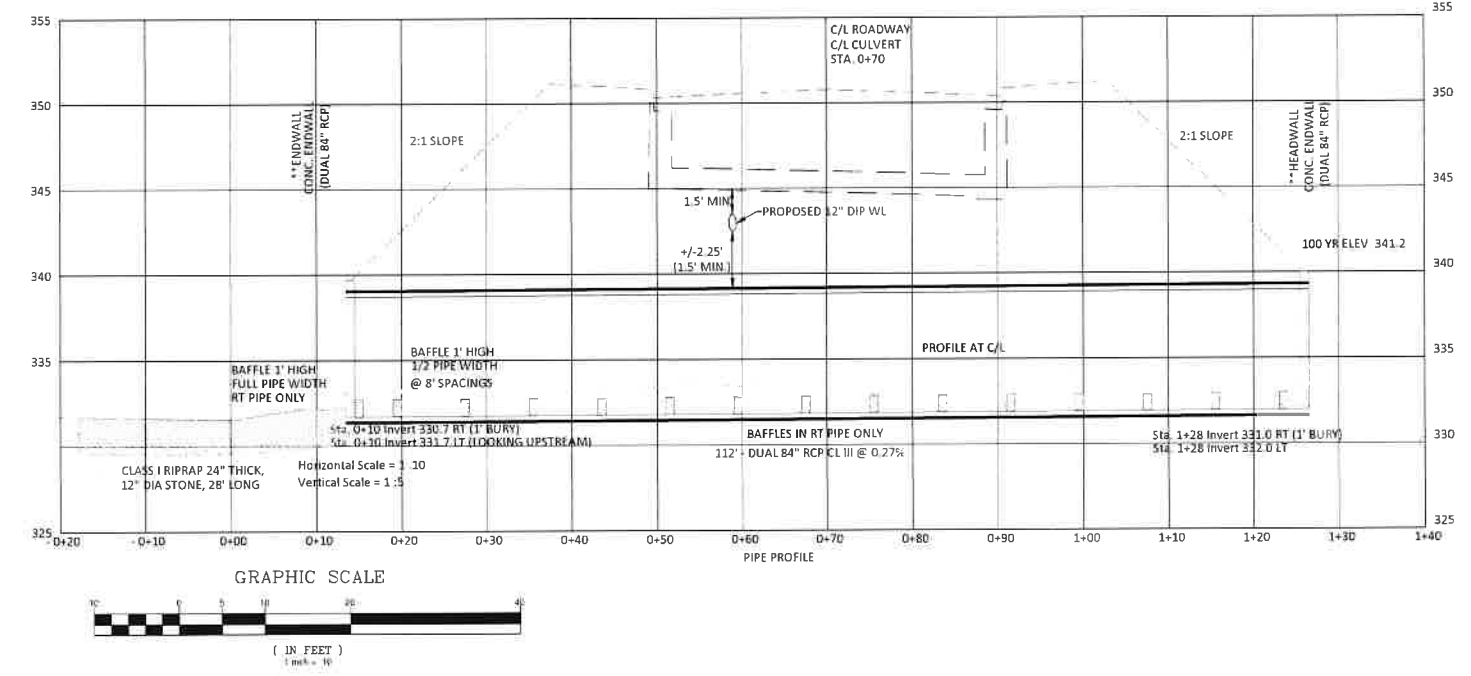
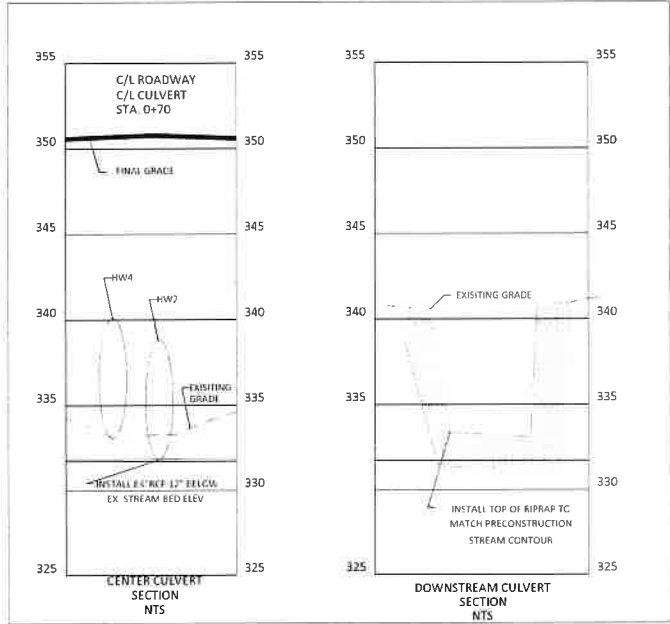
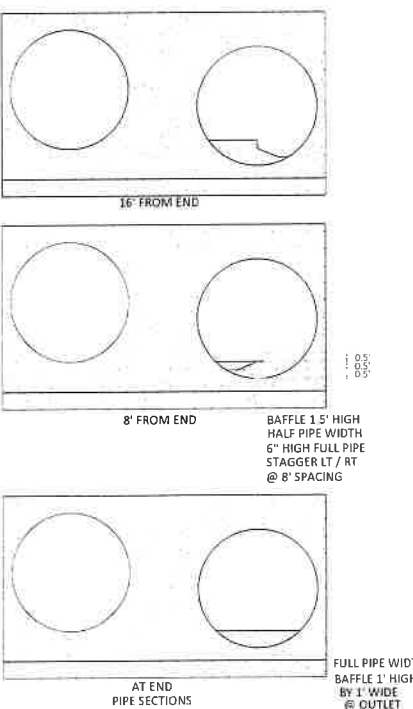
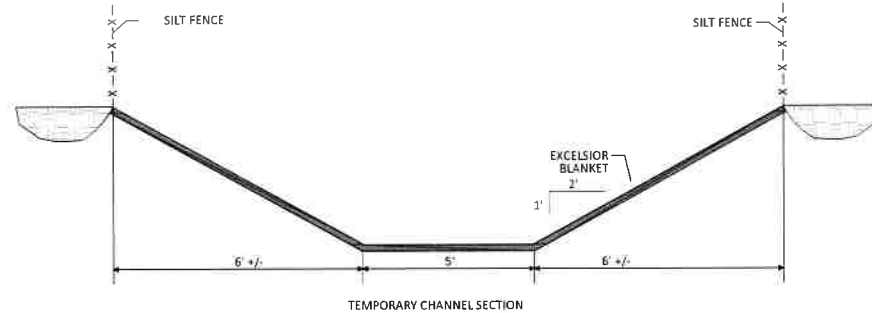
KALAS FALLS
 PHASE 3
 1832 ROLESVILLE ROAD
 WAKE COUNTY, NC

JOB NUMBER	9900
CHECKED BY	
DRAWN BY	
DATE	FEB 18 2021
SHEET TITLE	PHASE 3 EROSION CONTROL (50 SCALE)
SHEET NO.	2.6



SEQUENCE FOR 84" RCP CULVERT CROSSING

1. INSTALL TREE PROTECTION FENCING AND SILT FENCE AS SHOWN ON THE PLANS. WORK OUTSIDE THE FENCED AREA IS IN VIOLATION OF THE NCDEQ PERMIT.
2. INSTALL TEMPORARY CHANNEL CROSSING AND BYPASS CHANNEL. SEE DETAIL.
3. UNDERCUT THE PROPOSED CULVERT AREA TO FIRM MATERIAL AS DIRECTED BY GEOTECH. UNDERCUT AREA OF ROADWAY FILL WEST OF CULVERT CONCURRENTLY. INSTALL 84" PIPE AS PER PLAN.
4. INSTALL ENDWALLS AND BACKFILL THE PIPE AS PER NCDOT SPECIFICATIONS. ENDWALLS SHALL BE CAST IN PLACE OR PRECAST. CONTRACTOR TO SUPPLY SEALED DRAWINGS OF ENDWALL DESIGN.
5. REMOVE TEMPORARY STREAM CROSSING AND UNDERCUT ROADWAY FILL AREA EAST OF THE CULVERT CROSSING.
6. GRADE THE SLOPES AS SHOWN ON THE PLAN. SILT FENCE SHALL BE INSTALLED AT THE TOE OF THE SLOPE AND A SECOND ROW AT 8' VERTICAL HEIGHT. INSTALL MATTING BETWEEN SILT FENCE ROWS. PROVIDE SILT FENCE OUTLETS AT 150' MAXIMUM SPACING. STAGGER SILT FENCE OUTLETS 25' WHERE NECESSARY.
7. STABILIZE THE SLOPES AS PER THE PLANS WITHIN 7 DAYS AFTER CONSTRUCTION.



NO.	DATE	REVISION
1	7/21/2021	1ST REVIEW FROM TOWN OF ROLESVILLE CONSULTANT, WAKE COUNTY (A/N)
2	2/27/2022	2ND REVIEW FROM TOWN OF ROLESVILLE CONSULTANT, WAKE COUNTY AND CITY OF RALEIGH
3	3/20/2024	TOWN OF ROLESVILLE CONSULTANT COMMENTS

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KALAS FALLS PHASE 3
 1832 ROLESVILLE ROAD
 WAKE COUNTY, NC

JOB NUMBER	8900
CHECKED BY	
DRAWN BY	
DATE	FEB 18 2021
SHEET TITLE	CULVERT CROSSING ON FALLS BLUFF DR
SHEET NO.	2.7



CONSTRUCTION SEQUENCE FOR PHASE 3 SHALL BE AS FOLLOWS:

- 1. OWNER SHALL OBTAIN NCG01 PERMIT. THERE MAY BE A FEE FOR THIS.
2. SCHEDULE A PRE-CONSTRUCTION CONFERENCE WITH THE WATERSHED MANAGER. OBTAIN LAND DISTURBING PERMIT. CONTACT JEEVAN NEUPANE, P. E. (919-819-8907).
3. TREE PROTECTION FENCES, SILT FENCES AND CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SHOWN ON THE EROSION CONTROL SHEETS. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. SEED ALL RESULTING BARE AREAS IMMEDIATELY AFTER CONSTRUCTION. ALL MAINTENANCE PADS SHALL BE CLEARED BUT THE STONE REQUIRED SHOULD NOT BE INSTALLED UNTIL JUST BEFORE THE PAD IS NEEDED.
4. EACH SEDIMENT BASIN THAT IS TO BE CONVERTED TO A WET POND SHALL BE GRADED AS SHOWN ON THE SCM SHEETS. THE FOREBAY DIVIDER IS NOT TO BE CONSTRUCTED AT THIS TIME. THE RISER AND OUTLET PIPE IS TO BE PLACED AND THE DRAIN VALVE IS TO BE LEFT OPEN. THE SKIMMER SHALL BE ATTACHED TO THE DRAIN PIPE.
5. CONSTRUCT EROSION CONTROL MEASURES INCLUDING SILT DITCHES LEADING TO THEM AS SHOWN ON THE EROSION CONTROL SHEETS. CONSTRUCT DIVERSION DITCHES AS SHOWN. EACH DIVERSION DITCH SHALL HAVE THE LINING INSTALLED THE SAME DAY AS THE SECTION IS CONSTRUCTED. THE CONSTRUCTION ENTRANCE ON WOODLYN PARK DR. IS TO BE CONSTRUCTED WITH THE INITIAL EROSION CONTROL MEASURES.
6. OBTAIN CERTIFICATE OF COMPLIANCE THROUGH INSPECTION BY WATERSHED MANAGER.
7. GENERAL GRADING MAY BEGIN. SEE THE CROSSING SHEET FOR FALLS BLUFF DR. FOR INSTRUCTIONS ABOUT CONSTRUCTING THE CROSSING. THE CONSTRUCTION ENTRANCE FOR THIS CROSSING SHALL BE ADDED AS THE GRADING AT THE CROSSING IS COMPLETED.
8. CLEAN SEDIMENT BASINS WHEN ONE-HALF FULL.
9. SEED AND MULCH DENUDE AREA INCLUDING ANY CUT/FILL SLOPES WITHIN FOURTEEN (14) DAYS AFTER FINISHED GRADES ARE ESTABLISHED.
10. MAINTAIN SOIL EROSION CONTROL MEASURES UNTIL PERMANENT GROUND IS ESTABLISHED.
11. AS EACH CATCH BASIN OR YARD INLET IS INSTALLED, IT SHALL HAVE INLET PROTECTION INSTALLED. THIS IS TO REMAIN IN PLACE UNTIL ALL AREAS WHICH DRAIN TO IT ARE STABILIZED OR PAVED.
12. WHEN ALL CONTRIBUTORY AREAS ARE STABILIZED, OBTAIN APPROVAL FROM THE WATERSHED MANAGER TO CLOSE EACH SEDIMENT BASIN.
13. CLEAN SEDIMENT FROM SEDIMENT BASIN WHICH IS TO BE CONVERTED TO A WET POND AND REMOVE THE SKIMMER. INSTALL THE FOREBAY DIVIDER. INSTALL PLANTINGS AS REQUIRED. CLOSE THE DRAIN VALVE.
14. REQUEST FINAL APPROVAL BY WATERSHED MANAGER AFTER VEGETATION IS ESTABLISHED.
15. REMOVE SOIL EROSION CONTROL MEASURES AND STABILIZE THESE AREAS.
16. THE OWNER IS TO FINALIZE THE NCG01 PERMIT.

Y:\Jobs\9900\Watkins Property\Documents\Reports\CON SEQ. PH3.docx 1/29/21, Rev. 2/17/21

REQUIRED WAKE COUNTY 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.
2. REMOVE BASIN(S) AND ASSOCIATED TEMPORARY DIVERSION DITCHES. IF CULVERT PIPES NEED TO BE EXTENDED, PERFORM THIS OPERATION AT THIS TIME. FINE GRADE AREA IN PREPARATION FOR SEEDING.
3. PERFORM SEEDBED PREPARATION, SEED, MULCH AND ASPHALT TACK ANY RESULTING BARE AREAS IMMEDIATELY.
4. INSTALL VELOCITY DISSIPATORS AND/OR LEVEL SPREADERS AS REQUIRED ON THE EROSION CONTROL PLAN.
5. WHEN SITE IS FULLY STABILIZED, CALL ENVIRONMENTAL CONSULTANT FOR APPROVAL OF REMOVING REMAINING TEMPORARY EROSION CONTROL MEASURES AND ADVICE ON WHEN SITE CAN BE ISSUED A CERTIFICATE OF COMPLETION.

NOTE: A MEETING SHOULD ALSO BE SCHEDULED WITH THE ENVIRONMENTAL CONSULTANT TO DETERMINE WHEN A BASIN MAY BE CONVERTED FOR STORMWATER USE. SOME MUNICIPALITIES MAY ALSO REQUIRE THIS.

REQUIRED WAKE COUNTY CONSTRUCTION SEQUENCE*

- 1. SCHEDULE A PRECONSTRUCTION CONFERENCE WITH THE WATERSHED MANGER. JEEVAN NEUPANE, PE (919)819-8907. OBTAIN A LAND-DISTURBING PERMIT.
2. INSTALL GRAVEL CONSTRUCTION PAD, TEMPORARY DIVERSIONS, SILT FENCE, SEDIMENT BASINS OR OTHER MEASURES AS SHOWN ON THE APPROVED PLAN. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. SEED TEMPORARY DIVERSIONS, BERMS AND BASINS IMMEDIATELY AFTER CONSTRUCTION.
3. CALL JEEVAN NEUPANE, PE (919)819-8907 FOR AN ONSITE INSPECTION BY THE WATERSHED MANAGER TO OBTAIN A CERTIFICATE OF COMPLIANCE.
4. BEGIN CLEARING AND GRUBBING. MAINTAIN DEVICES AS NEEDED. ROUGH GRADE SITE. INSTALL STORM SEWER, IF SHOWN, AND PROTECT INLETS WITH BLOCK AND GRAVEL INLET CONTROLS, SEDIMENT TRAPS OR OTHER APPROVED MEASURES AS SHOWN ON THE PLAN. BEGIN CONSTRUCTION, BUILDING, ETC.
5. STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISH GRADE WITH VEGETATION, PAVING, DITCH LININGS, ETC. SEED AND MULCH DENUDE AREAS PER GROUND STABILIZATION TIME FRAMES.
6. WHEN CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED COMPLETELY, CALL JEEVAN NEUPANE, PE (919)819-8907 FOR AN INSPECTION BY THE WATERSHED MANAGER.
7. IF SITE IS APPROVED, REMOVE TEMPORARY DIVERSIONS, SILT FENCE, SEDIMENT BASINS, ETC., AND SEED OUT OR STABILIZE ANY RESULTING BARE AREAS. ALL REMAINING PERMANENT EROSION CONTROL DEVICES, SUCH AS VELOCITY DISSIPATORS, SHOULD NOW BE INSTALLED.
8. WHEN VEGETATION HAS BECOME ESTABLISHED, CALL FOR A FINAL SITE INSPECTION BY THE WATERSHED MANAGER. JEEVAN NEUPANE, PE (919)819-8907. OBTAIN A CERTIFICATE OF COMPLETION.

SCM CONVERSION SEQUENCE

- 1. WHEN ALL CONTRIBUTORY AREAS TO THE STORMWATER CONTROL MEASURE (SCM) HAVE BEEN STABILIZED CONTACT THE EROSION CONTROL OFFICER FOR PERMISSION TO CONVERT THE SEDIMENT BASIN TO A SCM.
2. REMOVE ALL SEDIMENT FROM THE BASIN AND RESTORE GRADES TO DESIGNED CONFIGURATION, IF NEEDED.
3. CONSTRUCT FOREBAY DIVIDERS AS SHOWN.
4. MAKE ANY REPAIRS, ETC. NECESSARY TO THE OUTLET STRUCTURE, OUTLET PIPE, EMERGENCY OVERFLOW, ETC. EXAMINE RIP-RAP TO SEE IF REFRESHING OR CLEANING OF ROCK IS NECESSARY.
5. REMOVE SKIMMER AND CLOSE OUTLET VALVE.
6. CONTACT EROSION CONTROL OFFICER FOR APPROVAL.
7. CONTACT A LICENSED SURVEYOR FOR SURVEY OF AS-BUILT CONDITIONS. NOTIFY ENGINEER-OF-RECORD FOR PREPARATION OF AS-BUILT DRAWINGS.

Y:\Jobs\9900\Watkins Property\Documents\Reports\SCM Conversion Sequence.docx 2/15/21

NOTES FOR CONSTRUCTION:

- 1. PLANS FOR INFRASTRUCTURE ONLY.
2. ALL CONSTRUCTION MUST BE PERFORMED IN ACCORDANCE WITH CURRENT CITY OF RALEIGH STANDARD SPECS AND DETAILS, WAKE COUNTY SPECIFICATIONS, NCDOT SPECIFICATIONS AND TOWN OF ROLESVILLE SPECIFICATIONS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF EXISTING CONDITIONS. CONTRACTOR SHALL NOTIFY ENGINEER OF DISCREPANCIES BETWEEN FIELD CONDITIONS AND THESE DRAWINGS.
4. CONTRACTOR WILL KEEP STREETS CLEAN AT ALL TIMES, OR A WASH STATION WILL BE REQUIRED.
5. ALL CATCH BASINS SHALL HAVE INLET PROTECTION.
6. ALL CUT AND FILL SLOPES MUST BE STABILIZED WITHIN 14 DAYS OF ANY PHASE OF GRADING, WITH SOME SLOPES TO BE STABILIZED WITHIN 7 DAYS AS SHOWN ON CHART TO THE LEFT AND ON THE EC SHEETS.
7. TREE PROTECTION FENCING ON THIS PROJECT WILL BE INSTALLED AND INSPECTED BEFORE THE GRADING PERMIT IS ISSUED.
8. A PRE-CONSTRUCTION CONFERENCE MAY BE REQUIRED BEFORE GRADING PERMIT IS ISSUED.
9. PERMANENT GROUND COVER WILL BE ESTABLISHED IN 15 WORKING DAYS OR 90 CALENDAR DAYS WHICHEVER IS SHORTER.
10. THE AREA DESIGNATED SHALL BE USED FOR TOPSOIL STOCKPILE.
11. THIS PROJECT IS IN THE NEUSE RIVER WATERSHED. PROJECT AREA = 283 ACRES.
12. WETLANDS ON THIS PROJECT ARE AS SHOWN.
13. MINIMUM CORNER CLEARANCE FROM THE CURB LINE OF INTERSECTING STREETS SHALL BE AT LEAST TWENTY (20) FEET FROM THE POINT OF TANGENCY.

GENERAL NOTES:

- A. ALL TREE PROTECTION FENCING SHALL BE MAINTAINED UNTIL ALL SITE WORK IS COMPLETED. THE FENCING SHALL BE REMOVED PRIOR TO THE FINAL SITE INSPECTION FOR THE CERTIFICATE OF OCCUPANCY (CO).
B. ALL TREE PROTECTION FENCING SHALL BE MAINTAINED UNTIL ALL SITE WORK IS COMPLETED. THE FENCING SHALL REMAIN UNTIL ISSUANCE OF CERTIFICATE OF OCCUPANCY (CO).
C. WITHIN THE SIGHT TRIANGLES SHOWN ON ALL SITE PLAN AND LANDSCAPE PLAN SHEETS, NO OBSTRUCTION BETWEEN 2 FEET AND 8 FEET IN HEIGHT ABOVE THE CURB LINE ELEVATION SHALL BE LOCATED IN WHOLE OR PART. OBSTRUCTIONS INCLUDE, BUT ARE NOT LIMITED TO, ANY BERM, FOLIAGE, FENCE, WALL SIGN, PARKED CAR, OR OTHER OBJECT. ALL STREET TREES FALLING WITHIN THE SIGHT TRIANGLES SHOWN ON THIS PLAN SHALL BE LIMBED UP BETWEEN 2 FEET AND 8 FEET IN HEIGHT ABOVE THE CURB LINE ELEVATION.
D. MINIMUM CORNER CLEARANCE FROM THE CURB LINE OF INTERSECTING STREETS SHALL BE AT LEAST 20 FEET FROM THE POINT OF TANGENCY OF THE CURB. NO DRIVEWAYS SHALL ENCROACH ON THIS MINIMUM CORNER CLEARANCE.
E. ALL STREETS SHOWN ON THESE PLANS HAVE FULL WIDTH OF RIGHT-OF-WAY CLEARED AND GRADED WITHIN 50 FEET OF ALL STREET INTERSECTIONS. THE FULL WIDTH OF RIGHT-OF-WAY SHALL BE CLEARED AND GRADED ALONG ALL MAJOR, MINOR AND SENSITIVE AREA THOROUGHFARES.
F. WHEEL CHAIR ACCESS RAMPS WILL BE PROVIDED IN ACCORDANCE WITH STANDARD DRAWING SHOWN ON SHEET CD19. WHERE SIDEWALK IS NOT REQUIRED ALONG THE PUBLIC RIGHT-OF-WAY, CURB IS TO BE DEPRESSED AT ALL RAMP LOCATIONS SHOWN ON THE STANDARD DETAIL.
G. ALL INDIVIDUAL LOTS SHALL HAVE AN EROSION CONTROL PLAN SUBMITTED PRIOR TO CONSTRUCTION OF HOUSES THERE UPON. IF MULTIPLE LOTS WITH A TOTAL DISTURBED AREA OF MOTRE THAN 12,000 SF ARE TO BE BUILT UPON AT ONE TIME, A COORDINATED EROSION CONTROL PLAN SHALL BE SUBMITTED.

MAINTENANCE OF EROSION CONTROL MEASURES

SILT FENCE MAINTENANCE - ANY DAMAGE IS TO BE REPAIRED AS SOON AS POSSIBLE AFTER IT IS DISCOVERED. FENCE POSTS ARE TO BE STRAIGHTENED OR REPLACED AS NECESSARY. WIRE FENCING SUPPORTING THE FILTER FABRIC SHALL BE REPLACED AS NECESSARY. ANY TORN FILTER FABRIC SHALL BE PATCHED OR REPLACED. WHEN STONE IS CONTAMINATED IT SHALL BE REMOVED AND REPLACED WITH CLEAN STONE.

SILT FENCE OUTLETS - SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EVERY SIGNIFICANT RAINFALL. IF DAMAGED, THEY SHALL HAVE FABRIC, POSTS OR WIRE BACKING REPLACED TO RESTORE TO ORIGINAL CONDITION.

TREE PROTECTION FENCE MAINTENANCE - ANY SEGMENTS THAT ARE DAMAGED ARE TO BE REPLACED AS SOON AS POSSIBLE FOLLOWING DISCOVERY.

CONSTRUCTION ENTRANCE - IF ANY OF THE STONE SHALL BE LOST, IT SHALL BE REPLACED. IF THE FILTER FABRIC UNDER THE STONE IS DAMAGED, THAT PORTION SHALL BE REPLACED. IF THE STONE BECOMES COMPLETELY CLOGGED WITH SOIL, IT SHALL BE REMOVED AND REPLACED.

SOIL STOCKPILE AREAS/OTHER GRASSED AREAS MAINTENANCE - GRASS AREAS SHALL BE RESEEDD AS NECESSARY. SOIL STOCKPILE AREAS SHALL BE SEEDD WHEN THEIR USE IS COMPLETE.

TEMPORARY SEDIMENT TRAP - THESE BASINS SHALL BE INSPECTED AT LEAST ONCE PER WEEK AND AFTER EVERY STORM OF 1" OR MORE OF RAIN. DEBRIS SHALL BE REMOVED IMMEDIATELY. ANY DAMAGE TO THE TRAP SHALL BE REPAIRED TO THE STANDARD FOR INITIAL CONSTRUCTION. SEDIMENT IS TO BE REMOVED WHEN IT REACHES 6" DEEP OR AT LEAST ONCE EVERY SIX MONTHS.

SEDIMENT BASINS - ALL REQUIREMENTS FOR SEDIMENT TRAPS SHALL APPLY.

CONCRETE WASHOUT - IT SHALL BE CLEANED PERIODICALLY AS NEEDED. IF THE PLASTIC LINER IS DAMAGED, IT SHALL BE REPLACED.

BAPFLES - SHALL BE INSPECTED AFTER EACH SIGNIFICANT RAINFALL AND AT LEAST ONCE A WEEK. IF NECESSARY, THEY SHALL BE REPAIRED TO THE ORIGINAL PERFORMANCE LEVEL USING MATERIALS SPECIFIED IN THE DETAIL.

DITCH LINER - SHALL BE INSPECTED AT LEAST ONCE A WEEK AND FOLLOWING SIGNIFICANT RAINFALL. IF NECESSARY, THE LINER SHALL BE REPLACED WITH THE ORIGINAL TYPE MATERIAL AND ANCHORED ACCORDING TO THE METHODS SHOWN ON SHEET CD3.

SKIMMERS - SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EVERY SIGNIFICANT RAINFALL. THEY SHALL BE CLEANED OF DEBRIS AND ANY REPAIRS MADE TO THE ORIGINAL QUALITY OR THE ITEM REPLACED.

RIP-RAP CHANNEL - SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EVERY SIGNIFICANT RAINFALL. IF STONE IS MISSING IT SHALL BE REPLACED TO THE ORIGINAL SPECIFICATIONS. DEBRIS AND SEDIMENT SHALL BE REMOVED AS NECESSARY.

RIP-RAP APRONS - SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EVERY SIGNIFICANT RAINFALL. IF STONE IS MISSING, IT SHALL BE REPLACED TO THE ORIGINAL SPECIFICATIONS. DEBRIS AND SEDIMENT SHALL BE REMOVED AS NECESSARY.

TEMPORARY SILT DITCH - SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EVERY SIGNIFICANT RAINFALL. IF SIGNIFICANT EROSION OF THE DITCH IS HAPPENING IT SHALL BE REGRADED. ANY BREACH OF THE DOWNHILL SIDE BERM SHALL BE FIXED IMMEDIATELY.

WATTLES - SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EVERY SIGNIFICANT RAINFALL. ACCUMULATED SEDIMENT SHALL BE REMOVED. IF THE WATTLE ANCHORS ARE DISPLACED OR DAMAGED THEY SHALL BE REINSTALLED OR REPLACED. IF THE WATTLE IS DAMAGED SUCH THAT IT NO LONGERS FUNCTIONS, IT SHALL BE REPLACED.

INLET PROTECTION - SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EVERY SIGNIFICANT RAINFALL. SEDIMENT SHALL BE REMOVED. IF STONE IS SIGNIFICANTLY CLOGGED, IT SHALL BE REMOVED AND REPLACED WITH CLEAN STONE. ANY DAMAGE TO SILT FENCE TYPE PROTECTION SHALL BE REPAIRED BY PATCHING OR REPLACEMENT.

Y:\Jobs\18-107 Powell Property\Documents\Reports\Erosion Control Maintenance.docx 12/26/19, rev. 1/9/20, rev. 2/5/20, rev. 1/8/21

SEEDBED PREPARATION

- 1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
2. RIP THE ENTIRE AREA TO 6-INCH DEPTH.
3. REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
4. APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELOW *).
5. CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
6. SEED ON FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
7. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
8. INSPECT ALL SEEDD AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STANO SHOULD BE OVER 60% DAMAGED, RE-ESTABLISHED FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
9. CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.
*APPLY: AGRICULTURAL LIMESTONE - 2 TONS/ACRE (3 TONS/ACRE IN CLAY SOILS)
FERTILIZER - 1,000 LB/ACRE - 10-10-10
SUPERPHOSPHATE - 500 LB/ACRE - 20% ANALYSIS
MULCH - 2 TONS/ACRE - SMALL GRAIN STRAW
ANCHOR - ASPHALT EMULSION @ 300 GALS/ACRE

SEEDING SCHEDULE

Table with columns: Date, Type*, Planting Rate. Rows include Tall Fescue or Hard Fescue, Fertilizer, Superphosphate, Mulch, and various grass types like Bahia grass and Sorghum-Sudan Hybrids.

Consult Erosion Control Officer or NRCS for additional alternatives for vegetating denuded areas. The above vegetation rates are those which do well under local conditions; other seeding rate combinations are possible.

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

Table with columns: Date, Type*, Planting Rate. Rows include Sericea Lespedeza (scarified) and Add Tall Fescue, Add Weeping Love Grass, Add Hulled Common Bermuda grass, and various hybrid grasses.

Consult Erosion Control Officer or NRCS for additional alternatives for vegetating denuded areas. The above vegetation rates are those which do well under local conditions; other seeding rate combinations are possible.

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

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)

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 WATERLINE 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 &/OR 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 WATERLINE SPECIFICATIONS.
D) 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN 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 24" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" 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. CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR ADVANCE NOTICE TO THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT.
5. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCEMAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.

- 6. 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 SERVICE FROM ROW OR EASEMENT PER CORPUD HANDBOOK PROCEDURE.
7. INSTALL 1/2" COPPER WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2'X2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW & PRESSURE.
8. INSTALL 4" PVC SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED EVERY 75 LINEAR FEET MAXIMUM.
9. PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI. BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0' ABOVE THE NEXT UPSTREAM MANHOLE.
10. ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USAEC &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION.
11. NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.
12. GREASE INTERCEPTOR / OIL WATER SEPARATOR SIZING CALCULATIONS & INSTALLATION SPECIFICATIONS SHALL BE APPROVED BY THE CORPUD FOG PROGRAM COORDINATOR PRIOR TO ISSUANCE OF A BUILDING PERMIT. CONTACT TIM BEASLEY AT (919) 996-2334 OR TIMOTHY.BEASLEY@RALEIGHNC.GOV FOR MORE INFORMATION.
13. 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 APPROVAL 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. CONTACT JOANIE HARTLEY AT (919) 996-5923 OR JOANIE.HARTLEY@RALEIGHNC.GOV FOR MORE INFORMATION.

GENERAL NOTES:

- 1. ALL PUBLIC WATER AND SEWER MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF RALEIGH STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR SHALL CONTACT NORTH CAROLINA ONE CALL (1-800-632-4949) TO LOCATE ALL EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION.
3. CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE EXISTING UTILITIES AND NOTIFY THE PROJECT ENGINEER (919-469-1101) OF ANY CONFLICTS.
4. ALL BOUNDARY AND FIELD TOPOGRAPHY PROVIDED BY WITHERS & RAVENEL.

Table titled 'STABILIZATION TIMEFRAMES (Minimum Aug. 3, 2011)'. Columns: SITE AREA DESCRIPTION, STABILIZATION, TIMEFRAME EXCEPTIONS. Rows include perimeter ditches, high quality water zones, slopes steeper than 3:1, slopes 3:1 or flatter, and all other areas with slopes flatter than 4:1.

MAINTENANCE REQUIREMENTS FOR STOCKPILE AREAS

- 1. SEEDING OR COVERING STOCKPILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEVED IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDERNEATH THE PLASTIC.
2. IF A STOCKPILE IS TO REMAIN FOR FUTURE USE AFTER THE PROJECT IS COMPLETE (BUILDERS, ETC.), THE FINANCIAL RESPONSIBLE PARTY MUST NOTIFY WAKE COUNTY OF A NEW RESPONSIBLE PARTY FOR THAT STOCKPILE.
3. THE APPROVED PLAN SHALL PROVIDE FOR THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUAL BASIS WHILE THE STOCKPILE IS IN USE.
4. ESTABLISH AND MAINTAIN A VEGETATIVE BUFFER AT THE TOE OF THE SLOPE (WHERE PRACTICAL).

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



3 Days Before Digging
North Carolina 811
811 or 1-800-632-4949
Remote Ticket Entry
http://nc811.org/remoteticketentry.htm

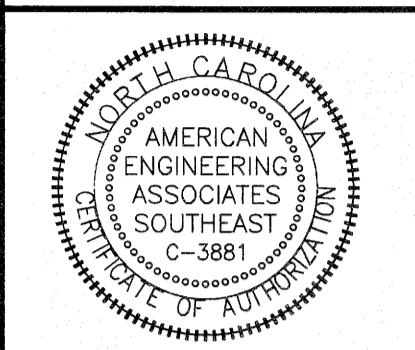


Table with columns: NO., DATE, REVISION. Multiple empty rows for revisions.

STIPULATION FOR REUSE

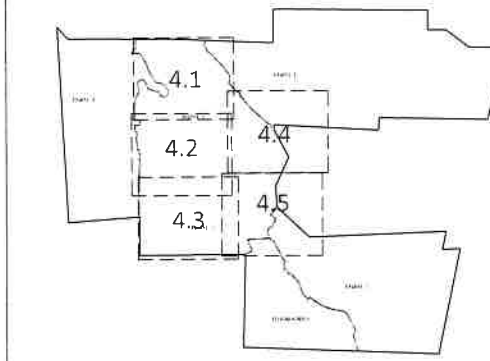
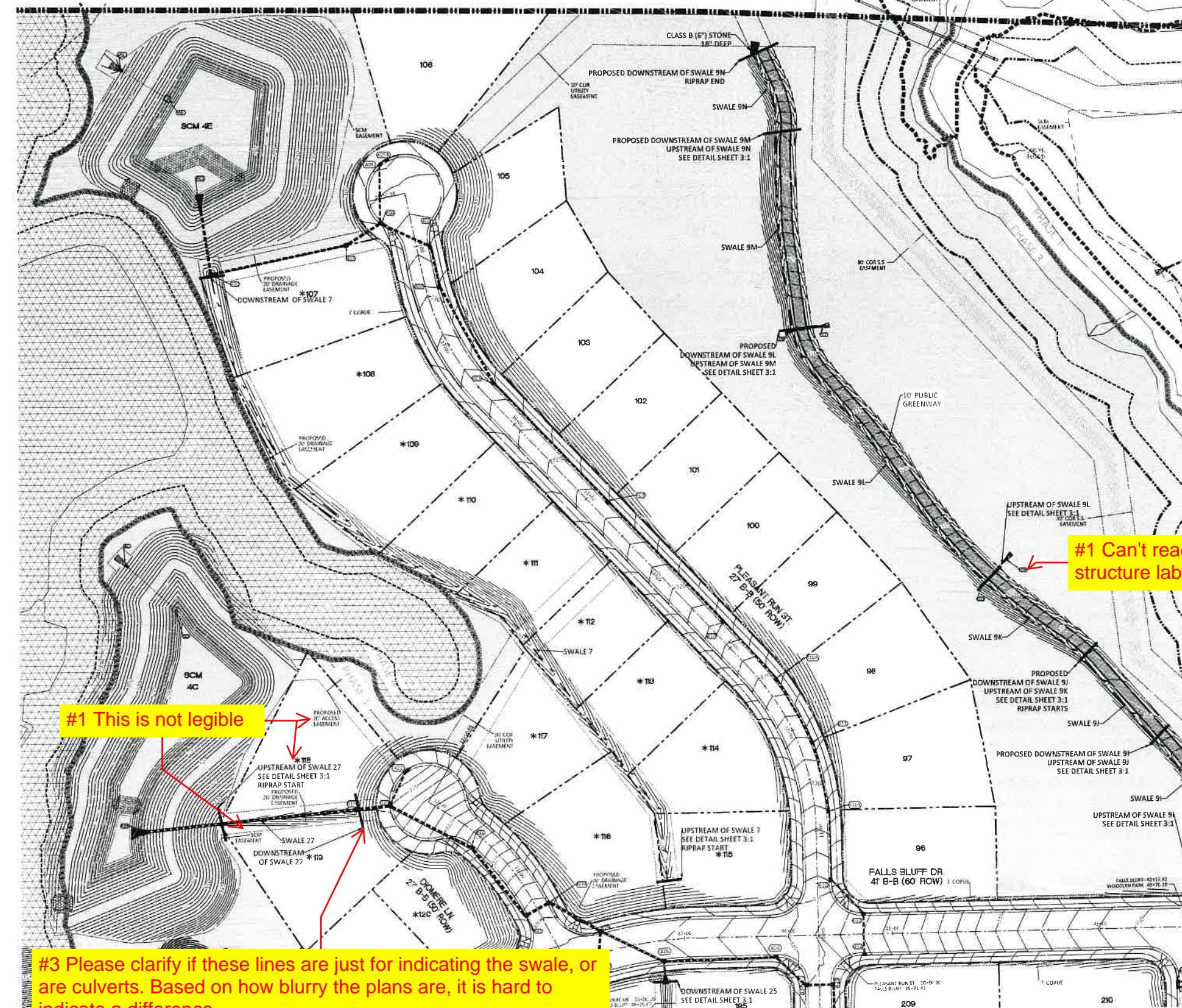
THIS DRAWING WAS PREPARED FOR USE ON THE SPECIFIC SITE, NAMED HEREIN, CONTEMPORANEOUSLY WITH ITS ISSUE DATE AS LISTED, HEREON, AND IT IS NOT SUITABLE FOR USE ON A DIFFERENT PROJECT SITE OR AT A LATER TIME. USE OF THIS DRAWING FOR REFERENCE OR EXAMPLE ON ANOTHER PROJECT REQUIRES THE SERVICES OF PROPERLY LICENSED ARCHITECTS AND ENGINEERS. REPRODUCTION OF THIS DRAWING FOR REUSE ON ANOTHER PROJECT IS NOT AUTHORIZED AND MAY BE CONTRARY TO THE LAW.

KALAS FALLS
PHASE 3
1832 ROLESVILLE ROAD
WAKE COUNTY, NC

JOB NUMBER: 9900
CHECKED BY:
DRAWN BY:
DATE: FEB 15, 2021

SHEET TITLE:
GENERAL
NOTES AND
LEGENDS

SHEET NO.: 3.0



GRAPHIC SCALE 1"=100'

NOTE: THE 100 YEAR FLOOD-LINE AS ON THESE PLANS WERE TAKEN FROM THE FLOOD STUDY PREPARED BY DONLAD A SEVER, PE (024627) OF HUGH J. GILLECE, III AND ASSOCIATES, P.A.

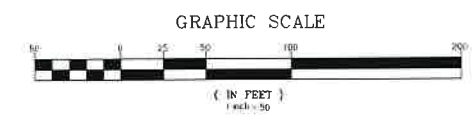
GRADING LEGEND	
	EXISTING TOPOGRAPHY
	EXISTING BOUNDARY
	EXISTING WETLANDS AREA
	EXISTING 50' RIPIERIAN BUFFER
	EXISTING BUFFER ZONES
	PROPOSED LOT LINE
	100 YEAR FLOOD EASEMENT
	BUILDING RESTRICTION LINE
	PROPOSED GREENWAY HATCHING
	PROPOSED ROW
	PROPOSED SIDEWALK
	PROPOSED BOC
	PROPOSED EOP
	PROPOSED CENTERLINE
	PROPOSED GRADING
	PROPOSED EASEMENT
	PHASILINE
	RIP RAP
	BASIN WEIR
	JUNCTION BOX
	PROPOSED CATCH BASIN
	PROPOSED YARD INLET
	PROPOSED DROP INLET
	PROPOSED FLARED END SECTION
	PROPOSED STORM WATER
	EXISTING PHASING
	FUTURE PHASING
	PROPOSED SWALE (AT TIME OF LOT GRADING)

* LOTS SHOWN WITH AN ASTERISK MUST BE GRADED TO DRAIN TO REAR AWAY FROM ROAD EXCEPT ANY PORTION ALREADY DRAINING TOWARD ROAD DUE TO GRADING SHOWN ON THESE PLANS MAY CONTINUE

#1 Can't read structure labels

#1 This is not legible

NOTE: REFER TO SHEET 3.1 FOR SWALE MATERIAL (RIPRAP/GRASS MAT)



#3 Please clarify if these lines are just for indicating the swale, or are culverts. Based on how blurry the plans are, it is hard to indicate a difference. If they are just indicating the swale start/end, are they necessary? Consider just having the leader point to the appropriate location.

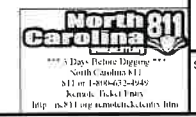


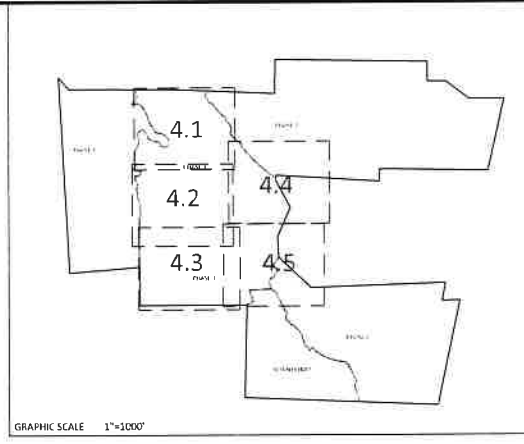
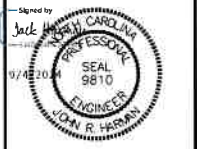
NO.	DATE	REVISION
1	7/21/2021	1ST REVIEW FROM TOWN OF ROLESVILLE CONSULTANT, WAKE COUNTY AND CITY OF DALEIGH

STIPULATION FOR REUSE
 THIS DRAWING WAS PREPARED FOR USE ON THE SPECIFIC SITE, NAMED HEREON, CONTEMPORANEOUSLY WITH ITS ISSUE DATE AS LISTED HEREON AND IT IS NOT SUITABLE FOR USE ON A DIFFERENT PROJECT SITE OR AT A LATER TIME. USE OF THIS DRAWING FOR REFERENCE OR EXAMPLE ON ANOTHER PROJECT REQUIRES THE SERVICES OF PROPERLY LICENSED ARCHITECTS AND ENGINEERS. REPRODUCTION OF THIS DRAWING FOR REUSE ON ANOTHER PROJECT IS NOT AUTHORIZED AND MAY BE CONTRARY TO THE LAW.

KALAS FALLS PHASE 3
 1832 ROLESVILLE ROAD
 WAKE COUNTY, NC

JOB NUMBER	9900
CHECKED BY	
DRAWN BY	
DATE	FEB 16 2021
SHEET TITLE	PHASE 3 GRADING & DRAINAGE
SHEET NO.	4.1





* LOTS SHOWN WITH AN ASTERISK MUST BE GRADED TO DRAIN TO REAR AWAY FROM ROAD EXCEPT ANY PORTION ALREADY DRAINING TOWARD ROAD DUE TO GRADING SHOWN ON THESE PLANS MAY CONTINUE

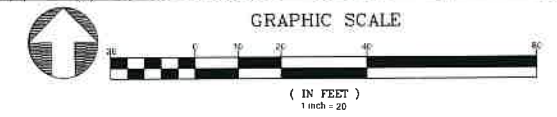
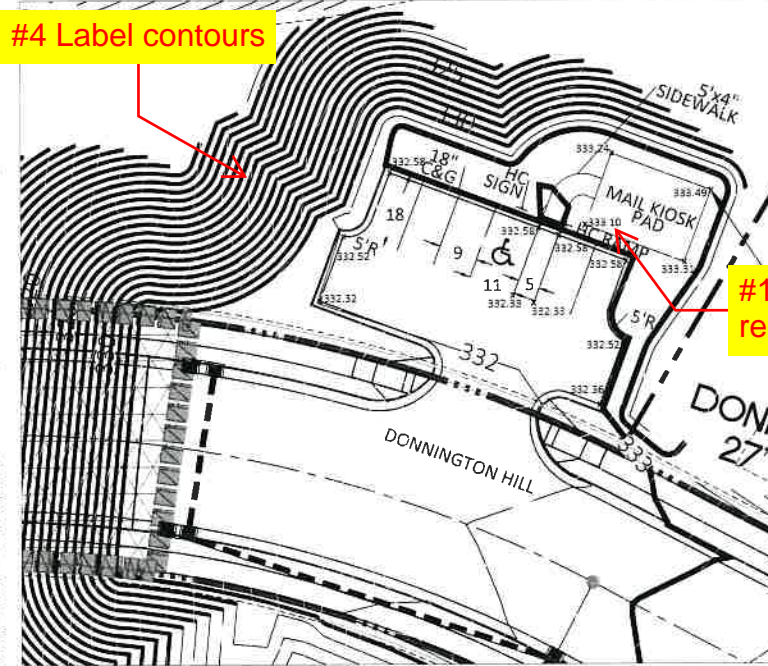
GRADING LEGEND	
	EXISTING TOPOGRAPHY
	EXISTING BOUNDARY
	EXISTING WETLANDS AREA
	EXISTING 50' RIPIAN BUFFER
	EXISTING BUFFER ZONES
	PROPOSED LOT LINE
	100 YEAR FLOOD EASEMENT
	BUILDING RESTRICTION LINE
	PROPOSED GREENWAY HATCHING
	PROPOSED ROW
	PROPOSED SIDEWALK
	PROPOSED BOC
	PROPOSED EOP
	PROPOSED CENTERLINE
	PROPOSED GRADING
	PROPOSED EASEMENT
	PHASELINE
	RIP RAP
	BASIN WEIR
	JUNCTION BOX
	PROPOSED CATCH BASIN
	PROPOSED YARD INLET
	PROPOSED DROP INLET
	PROPOSED FLARED END SECTION
	PROPOSED STORM WATER
	EXISTING PHASING
	FUTURE PHASING
	PROPOSED SWALE (AT TIME OF LOT GRADING)



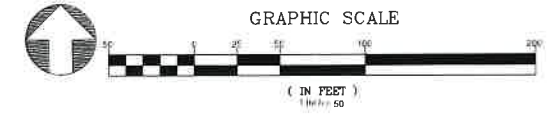
#1 Text is not legible

#4 Label contours

#1 Elevations are really hard to read



NOTE REFER TO SHEET 3.1 FOR SWALE MATERIAL (RIPRAP/GRASS MAT)

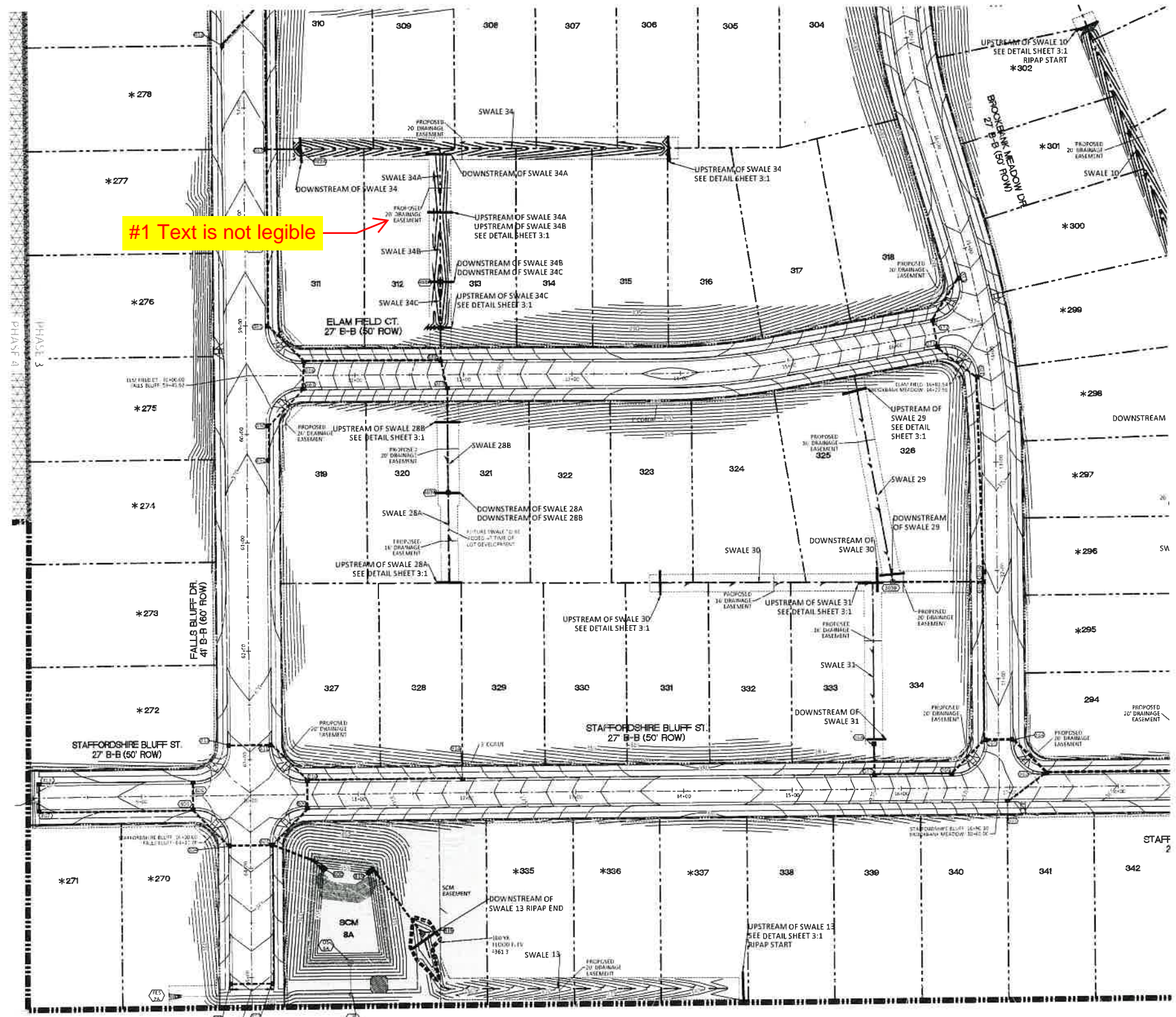


STIPULATION FOR REUSE
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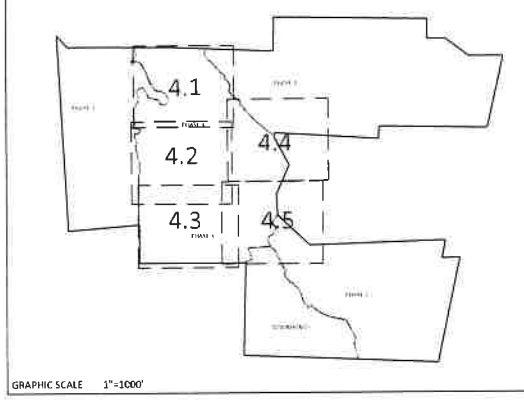
KALAS FALLS PHASE 3
 1832 ROLESVILLE ROAD
 WAKE COUNTY, NC

JOB NUMBER	9900
CHECKED BY	
DRAWN BY	
DATE	FEB 16 2021
SHEET TITLE	PHASE 3 GRADING & DRAINAGE
SHEET NO.	4.2





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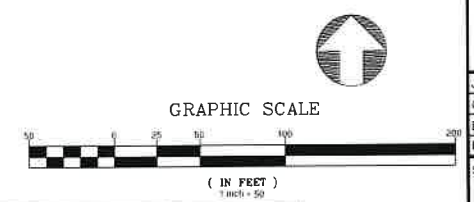


GRAPHIC SCALE 1"=100'

* LOTS SHOWN WITH AN ASTERISK MUST BE GRADED TO DRAIN TO REAR AWAY FROM ROAD EXCEPT ANY PORTION ALREADY DRAINING TOWARD ROAD DUE TO GRADING SHOWN ON THESE PLANS MAY CONTINUE

GRADING LEGEND	
	EXISTING TOPOGRAPHY
	EXISTING BOUNDARY
	EXISTING WETLANDS AREA
	EXISTING 50' RIPIAN BUFFER
	EXISTING BUFFER ZONES
	PROPOSED LOT LINE
	100 YEAR FLOOD EASEMENT
	BUILDING RESTRICTION LINE
	PROPOSED GREENWAY HATCHING
	PROPOSED ROW
	PROPOSED SIDEWALK
	PROPOSED BOC
	PROPOSED EOP
	PROPOSED CENTERLINE
	PROPOSED GRADING
	PROPOSED EASEMENT
	PHASELINE
	RIP RAP
	BASIN WEIR
	JUNCTION BOX
	PROPOSED CATCH BASIN
	PROPOSED YARD INLET
	PROPOSED DROP INLET
	PROPOSED FLARED END SECTION
	PROPOSED STORM WATER
	EXISTING PHASING
	FUTURE PHASING
	PROPOSED SWALE (AT TIME OF LOT GRADING)

NOTE: REFER TO SHEET 3.1 FOR SWALE MATERIAL (RIPRAP/GRASS MAT)



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 relied upon once issued. Any modification to this approval once issued will require the approval.
 City of Raleigh Development Approval _____
 Raleigh Water Review Officer



AMERICAN Engineering
 American Engineering Associates - Southeast, P.A.
 4020 Weddycree Boulevard, Suite 450
 Raleigh, NC 27607
 919.466.1101



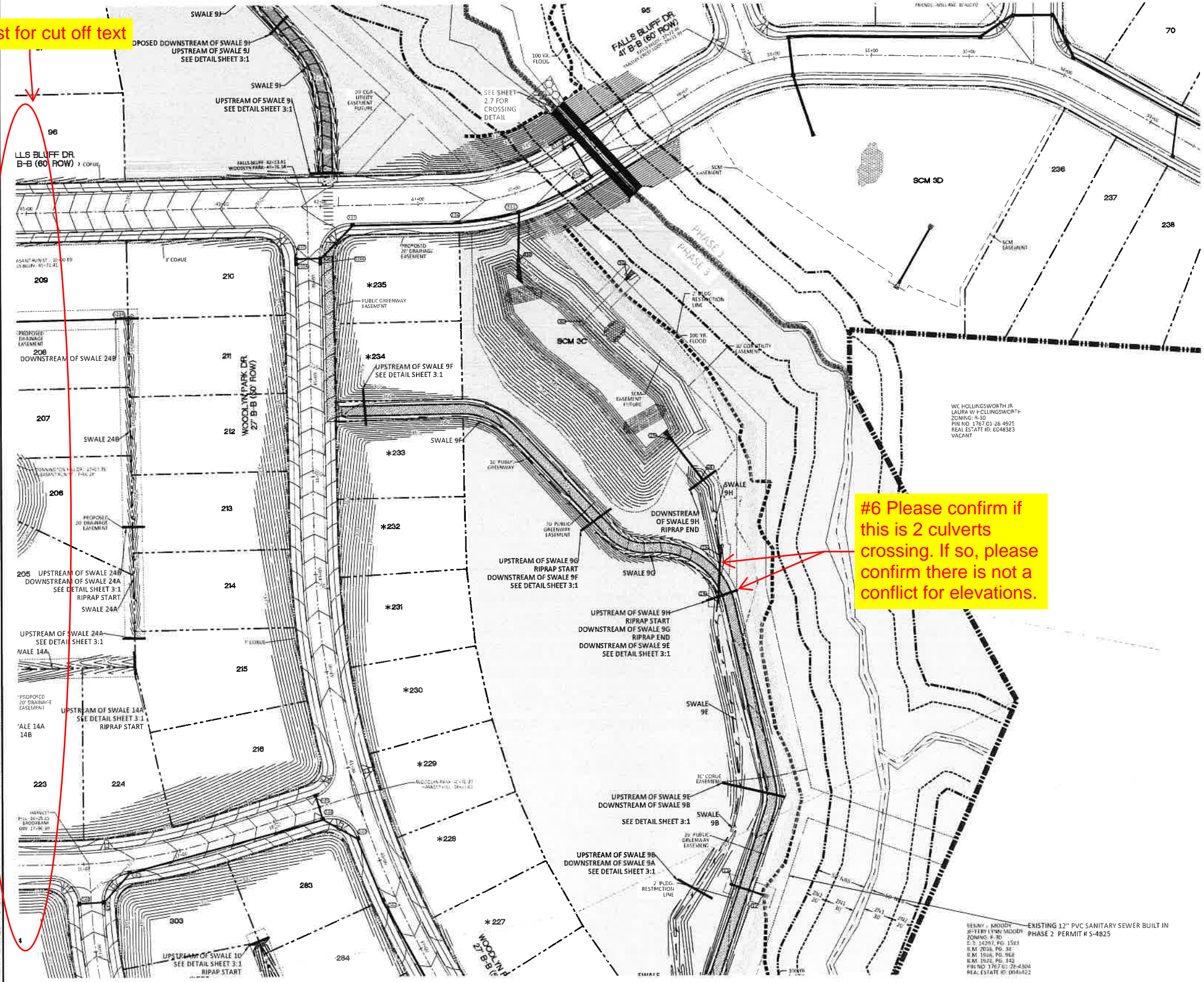
NO.	DATE	REVISION
1	7/27/2021	LIST REVIEW FROM TOWN OF ROSELVILLE CONSULTANT, WAKE COUNTY AND CITY OF RALEIGH

STIPULATION FOR REUSE
 THIS DRAWING WAS PREPARED FOR USE ON THE SPECIFIC SITE, NAMED HEREON, CONTEMPORANEOUSLY WITH ITS ISSUE DATE AS LISTED, HEREON AND IT IS NOT SUITABLE FOR USE ON A DIFFERENT PROJECT SITE OR AT A LATER TIME. USE OF THIS DRAWING FOR REFERENCES OR EXAMPLE ON ANOTHER PROJECT REQUIRES THE SERVICES OF PROPERLY LICENSED ARCHITECTS AND ENGINEERS. REPRODUCTION OF THIS DRAWING FOR REUSE ON ANOTHER PROJECT IS NOT AUTHORIZED AND MAY BE CONTRARY TO THE LAW.

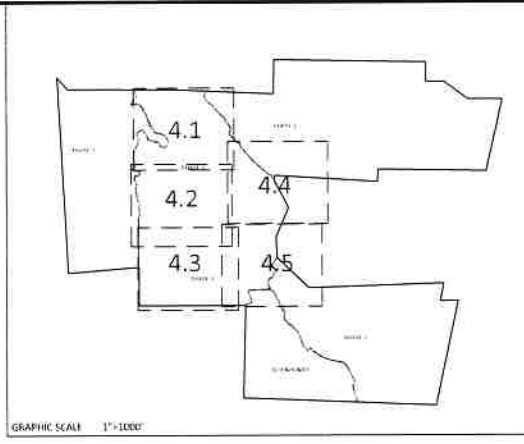
KALAS FALLS PHASE 3
 1832 ROLESVILLE ROAD
 WAKE COUNTY, NC

JOB NUMBER	9900
CHECKED BY	
DRAWN BY	
DATE	FEB 16 2021
SHEET TITLE	PHASE 3 GRADING & DRAINAGE
SHEET NO.	4.3

#5 Adjust for cut off text



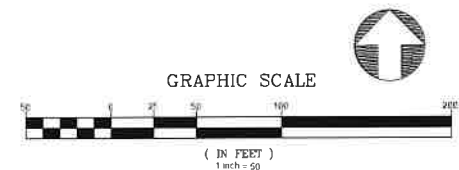
#6 Please confirm if this is 2 culverts crossing. If so, please confirm there is not a conflict for elevations.



NOTE: THE 100 YEAR FLOOD-LINE AS ON THESE PLANS WERE TAKEN FROM THE FLOOD STUDY PREPARED BY DONLAD A SEVER, PE (024627) OF HUGH J. GILLETTE, III AND ASSOCIATES, P.A.

GRADING LEGEND	
	EXISTING TOPOGRAPHY
	EXISTING BOUNDARY
	EXISTING WETLANDS AREA
	EXISTING 50' NEUSE RIFERIAN BUFFER
	EXISTING BUFFER ZONES
	PROPOSED LOT LINE
	100 YEAR FLOOD EASEMENT
	BUILDING RESTRICTION LINE
	PROPOSED GREENWAY HATCHING
	PROPOSED ROW
	PROPOSED SIDEWALK
	PROPOSED BOC
	PROPOSED EOP
	PROPOSED CENTERLINE
	PROPOSED GRADING
	PROPOSED EASEMENT
	PHASELINE
	RIP RAP
	BASIN WEIR
	JUNCTION BOX
	PROPOSED CATCH BASIN
	PROPOSED YARD INLET
	PROPOSED DROP INLET
	PROPOSED FLARED END SECTION
	PROPOSED STORM WATER
	EXISTING PHASING
	FUTURE PHASING
	PROPOSED SWALE (AT TIME OF LOT GRADING)

NOTE: REFER TO SHEET 3.1 FOR SWALE MATERIAL (RIPRAP/GRASS MAT)



NO.	DATE	REVISION
1	7/27/2021	1ST REVIEW FROM TOWN OF ROLESVILLE CONSULTANT, WAKE COUNTY AND CITY OF RALEIGH

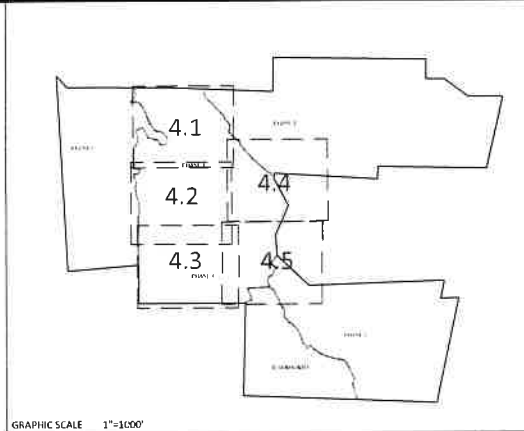
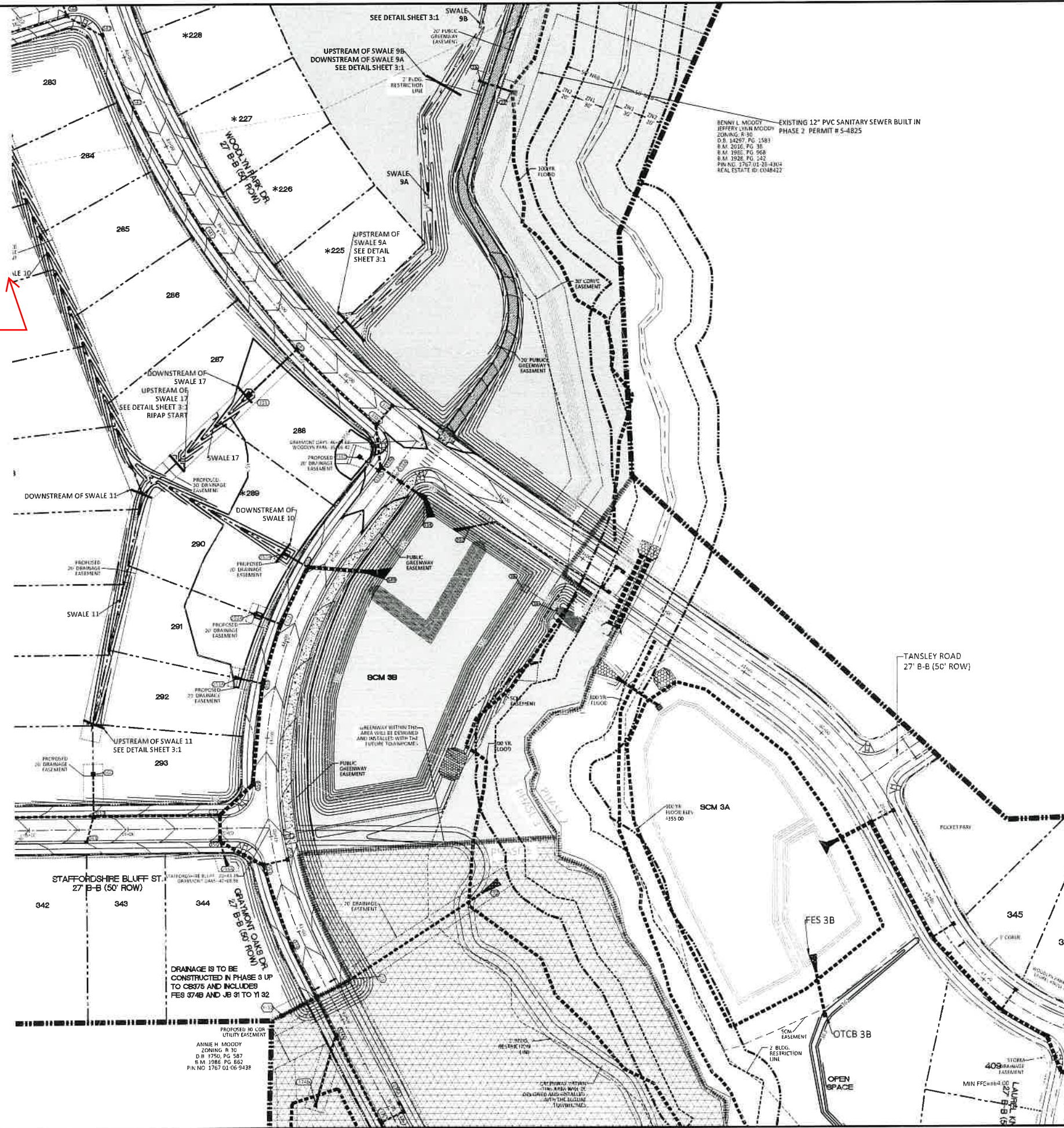
STIPULATION FOR REUSE
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KALAS FALLS PHASE 3
 1832 ROLESVILLE ROAD
 WAKE COUNTY, NC

JOB NUMBER	9900
CHECKED BY	
DRAWN BY	
DATE	FEB 18 2021
SHEET TITLE	PHASE 3 GRADING & DRAINAGE
SHEET NO.	4.4

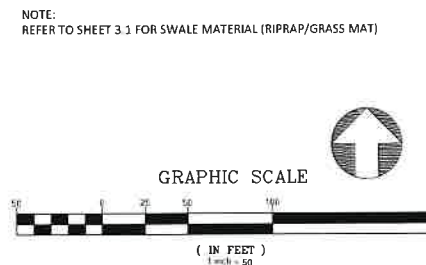


#5 Text cut off.
Adjust.



NOTE: THE 100 YEAR FLOOD-LINE AS ON THESE PLANS WERE TAKEN FROM THE FLOOD STUDY PREPARED BY DONLAD A SEVER, PE (024627) OF HUGH J. GILLECE, III AND ASSOCIATES, P.A.

GRADING LEGEND	
	EXISTING TOPOGRAPHY
	EXISTING BOUNDARY
	EXISTING WETLANDS AREA
	EXISTING 50' NEUSE RIVERIAN BUFFER
	EXISTING BUFFER ZONES
	PROPOSED LOT LINE
	100 YEAR FLOOD EASEMENT
	BUILDING RESTRICTION LINE
	PROPOSED GREENWAY HATCHING
	PROPOSED ROW
	PROPOSED SIDEWALK
	PROPOSED BOC
	PROPOSED EOP
	PROPOSED CENTERLINE
	PROPOSED GRADING
	PROPOSED EASEMENT
	PHASELINE
	RIP RAP
	BASIN WEIR
	JUNCTION BOX
	PROPOSED CATCH BASIN
	PROPOSED YARD INLET
	PROPOSED DROP INLET
	PROPOSED FLARED END SECTION
	PROPOSED STORM WATER
	EXISTING PHASING
	FUTURE PHASING
	PROPOSED SWALE (AT TIME OF LOT GRADING)



NOTE: REFER TO SHEET 3.3 FOR SWALE MATERIAL (RIPRAP/GRASS MAT)



NO.	DATE	REVISION
1	7/21/2021	1ST REVIEW FROM TOWN OF ROSELVILLE CONSULTANT, WAKE COUNTY AND CITY OF TRIEBURN

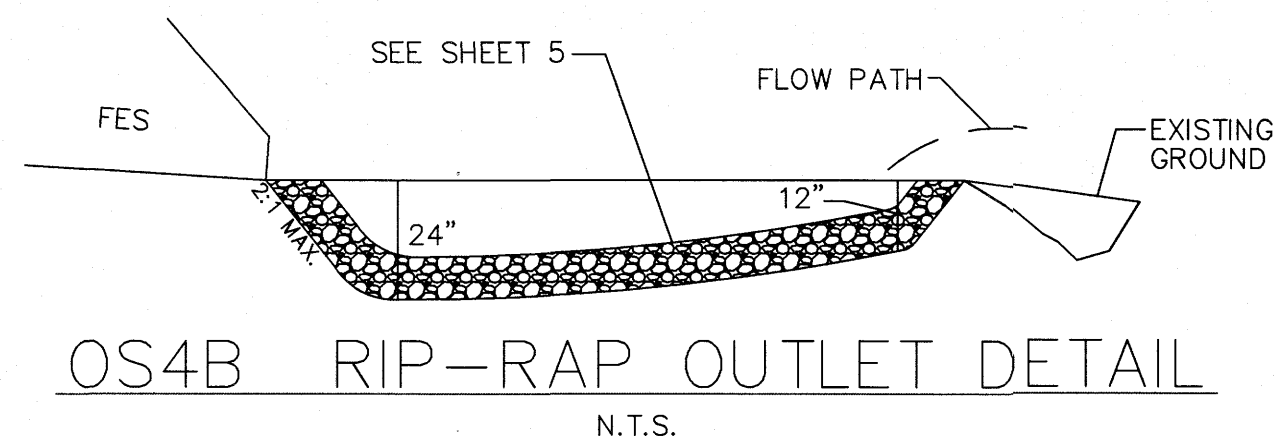
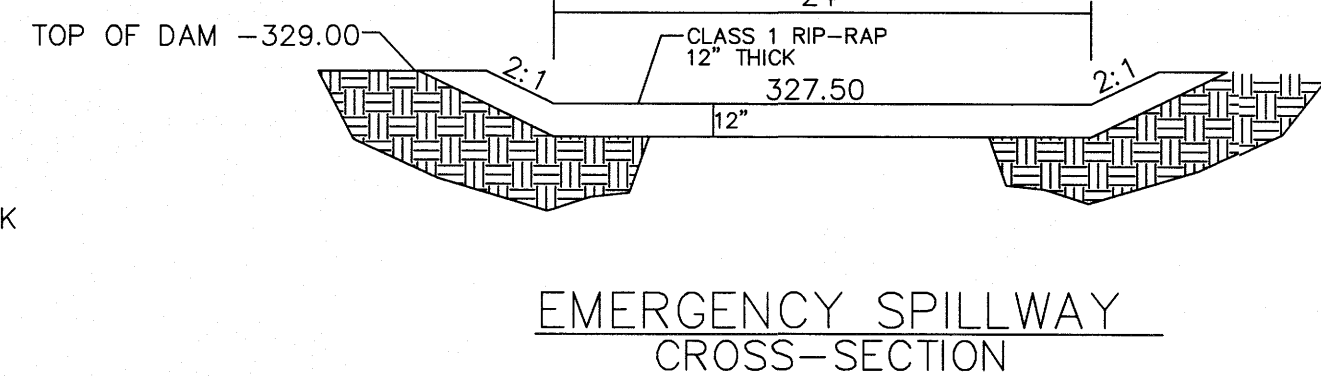
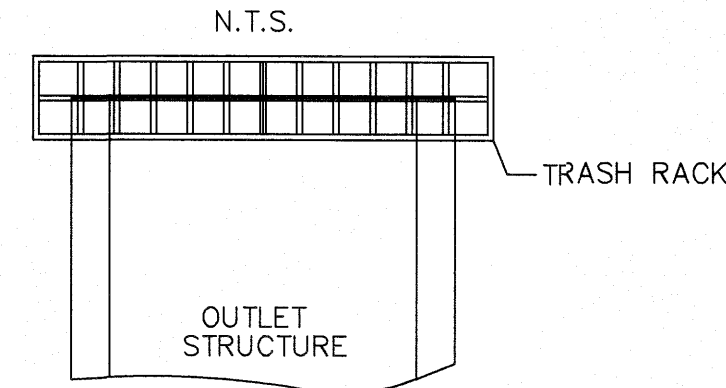
STIPULATION FOR REUSE
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KALAS FALLS
PHASE 3
1832 ROLESVILLE ROAD
WAKE COUNTY, NC

JOB NUMBER	8900
CHECKED BY	
DRAWN BY	
DATE	FEB 18 2021
SHEET TITLE	PHASE 3 GRADING & DRAINAGE
SHEET NO.	4.5



TRASH RACK DETAIL
N.T.S.



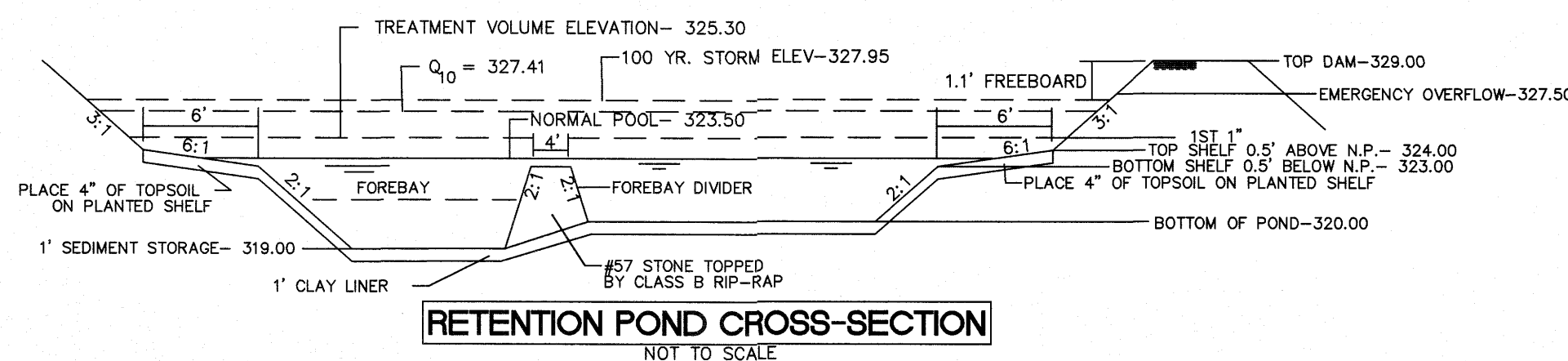
PLANT LIST LITTORAL SHELF PLANT SCHEDULE:

Symbol	Plant Name	Pot Size	Spacing
Stippled	SHALLOW LAND (HERB.)		
EF	EUPATORIUM FISTRULOSUM	4-6" POT	@ 3' SPACING
HC	HIBISCUS COCCINEA	4-6" POT	@ 3' SPACING
CG	CHELONE GLABRA	4-6" POT	@ 3' SPACING
LC	LOBELIA CARDINALIS	4-6" POT	@ 3' SPACING
Diagonal lines	SHALLOW WATER (HERB.)		
JF	JUNCUS EFFUSUS	4-6" POT	@ 3' SPACING
AS	ACORUS SPP	4-6" POT	@ 3' SPACING
IV	IRIS VERSICOLOR	4-6" POT	@ 3' SPACING
PC	PONTEDERIA CORDATA	4-6" POT	@ 3' SPACING
PV	PELTANDRA VIRGINICA	4-6" POT	@ 3' SPACING
	JOE PYE WEED	4-6" POT	@ 3' SPACING
	SCARLET ROSE MALLOW	4-6" POT	@ 3' SPACING
	WHITE TURTLEHEAD	4-6" POT	@ 3' SPACING
	CARDINAL FLOWER	4-6" POT	@ 3' SPACING
	SOFTRUSH	4-6" POT	@ 3' SPACING
	SWEET FLAG	4-6" POT	@ 3' SPACING
	BLUE FLAG IRIS	4-6" POT	@ 3' SPACING
	PECKEREL WEED	4-6" POT	@ 3' SPACING
	ARROW ARUM	4-6" POT	@ 3' SPACING

LANDSCAPE PLAN:
SHALLOW LAND= 1,281 sf (USE 320 PLANTS FROM LIST ABOVE)
SHALLOW WATER= 1,217 sf (USE 304 PLANTS FROM LIST ABOVE)
USE EQUAL NUMBER OF PLANTS FROM LIST ABOVE

TRASH RACK NOTES

- TRASH RACK SHALL BE 6" CLEAR OF STRUCTURE TOP AND SIDES. THE TRASH RACK NEED NOT COVER THE TREATMENT OUTLET PIPE.
- IF STRUCTURE FEATURES ANY WEIR NOTCHES THE TRASH RACK WILL EXTEND 5" BELOW THE NOTCHES. (SEE CROSS-SECTION OF THE OUTLET STRUCTURE.)
- TRASH RACK SHALL BE FASTENED TO EACH SIDE OF THE STRUCTURE AT AT LEAST 2 POINTS. IT SHALL BE EASILY REMOVED FOR MAINTENANCE OR ENTRY INTO THE STRUCTURE.
- TRASH RACK SHALL ACCOMMODATE VALVE SHAFT THOUGH AN OPENING.
- TRASH RACK SHALL BE MADE OF DURABLE MATERIAL WHICH WILL NOT RUST OR DETERIORATE IN SUNLIGHT.
- MAX. OPENING IN TRASH RACK SHALL BE 6"x6".
- TOP OF TRASH RACK SHALL HAVE A GRID OF BARS (MAX. 5"x5").

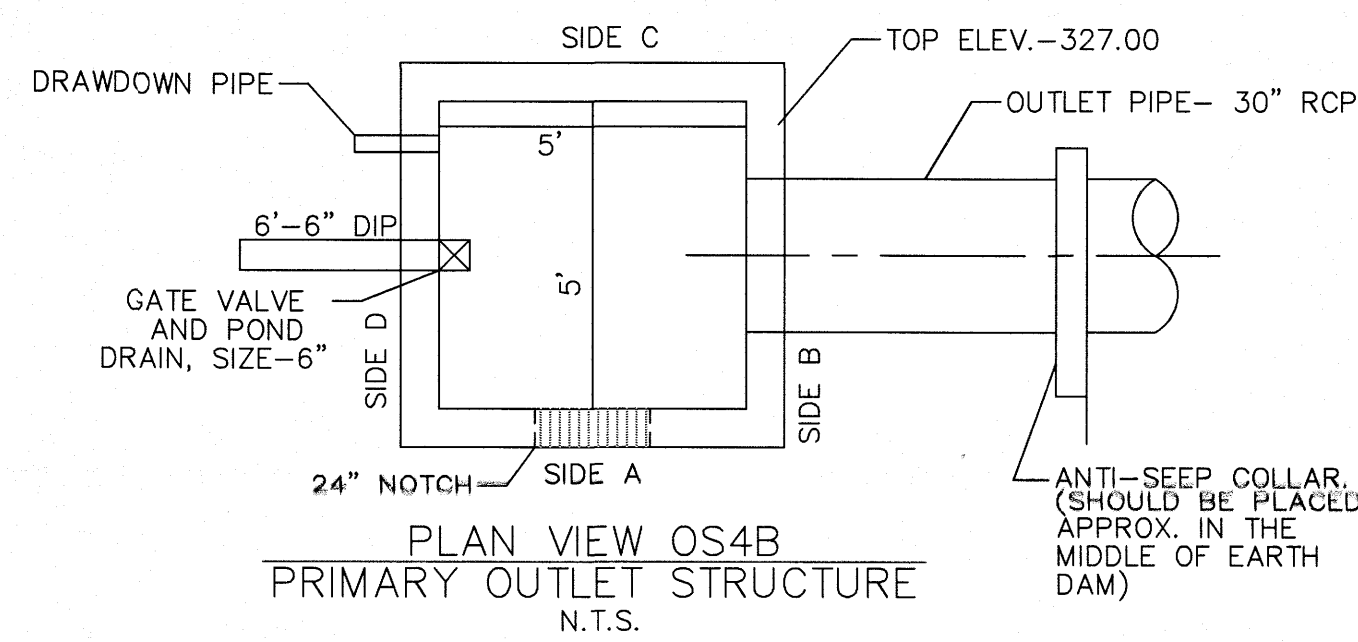
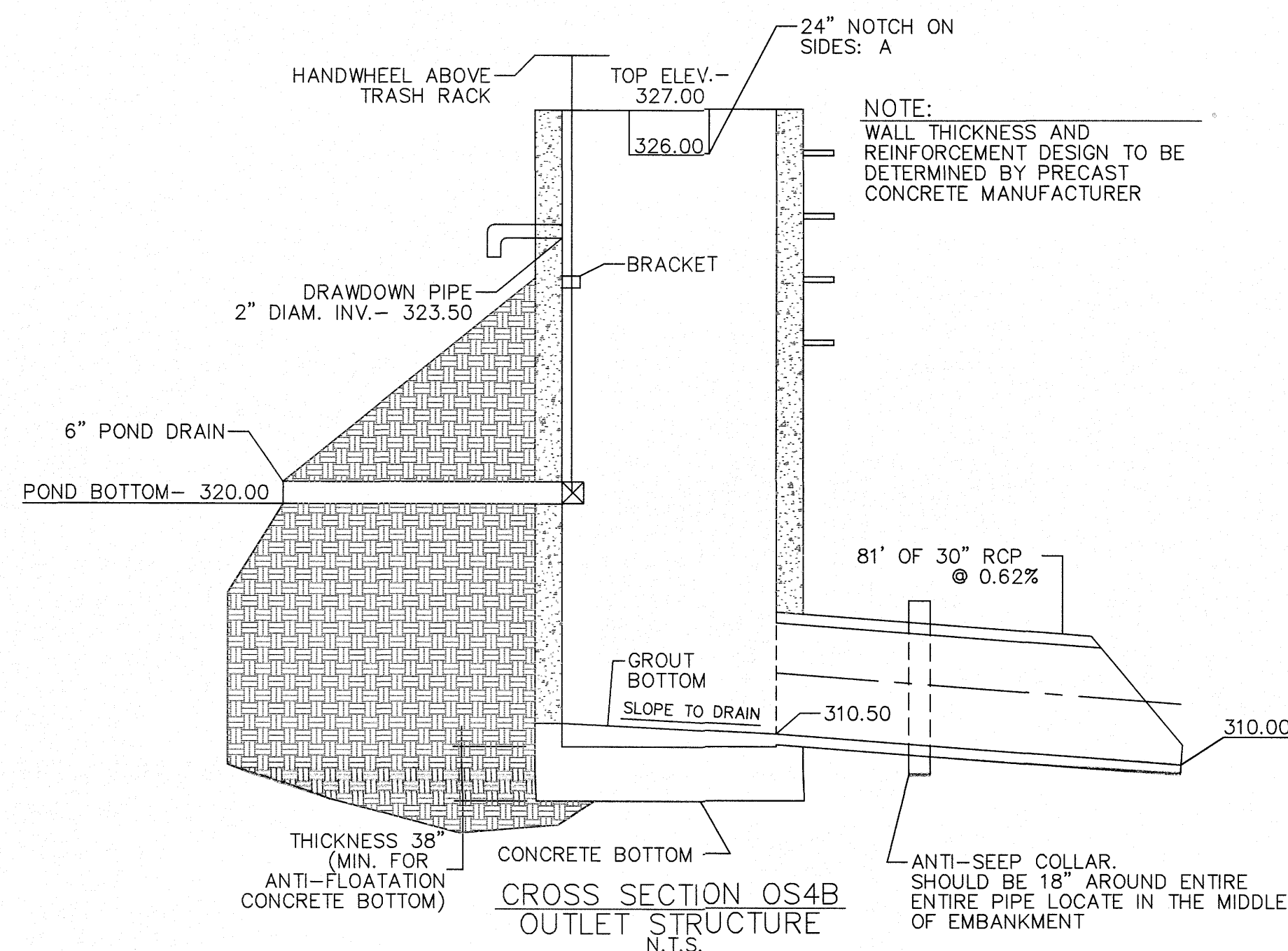


OUTLET STRUCTURE GENERAL NOTES

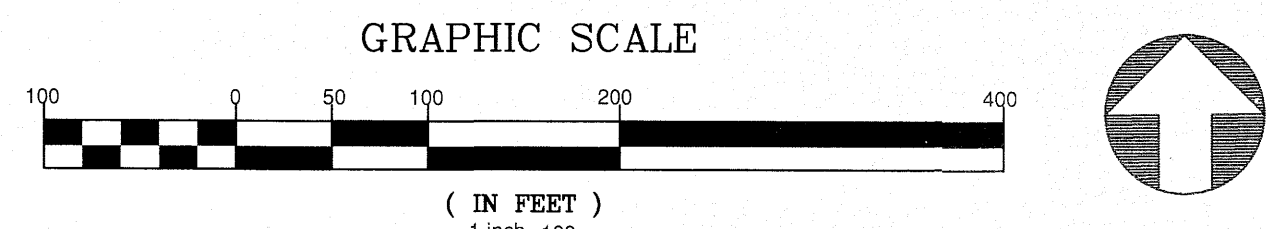
- OUTLET STRUCTURE ELEVATIONS SHOWN ON THE DETAILS ON THIS SHEET ARE CRITICAL AND MUST BE WITHIN 0.02' OF THAT SHOWN. IF OUTLET STRUCTURES ARE PRE-CAST OFF-SITE, THE HOLE FOR THE OUTLET PIPE SHALL BE ENLARGED TO ALLOW UP TO 0.3' OF VERTICAL MOVEMENT. WHEN INSTALLED, THE EXCESS OPENING SHALL BE FILLED WITH GROUT.
- THE OUTLET STRUCTURE SHALL HAVE A TRASH RACK COVERING THE OPENINGS. SUCH TRASH RACK SHALL BE 6" OUT FROM THE OPENING AND SHALL HAVE A MAXIMUM OPENING OF 6"x6". IT SHALL BE SECURELY FASTENED TO THE STRUCTURE BUT REMOVEABLE FOR MAINTENANCE.
- OUTLET PIPES SHALL HAVE AN ANTI-SEEP COLLAR OF CONCRETE LOCATED APPROXIMATELY UNDER THE MIDDLE OF THE DAM IN WHICH IT IS LOCATED. IT SHALL CONSIST OF CONCRETE POURED AROUND THE PIPE IN A VERTICAL DIRECTION. THE COLLAR SHALL BE A SQUARE 8" THICK AND SHALL EXTEND 18" BEYOND THE OUTSIDE OF THE PIPE IN EACH DIRECTION.
- TREATMENT OUTLET PIPE SHALL NOT BE PVC BUT OTHER MATERIAL SUCH AS GSP WHICH IS NOT SUBJECT TO DETERIORATION IN SUNLIGHT.

POND NOTES

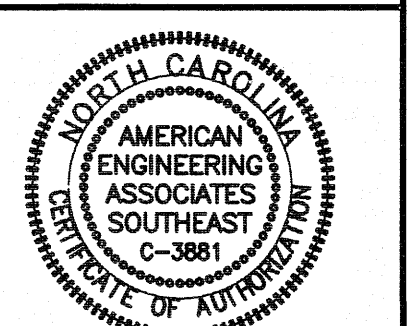
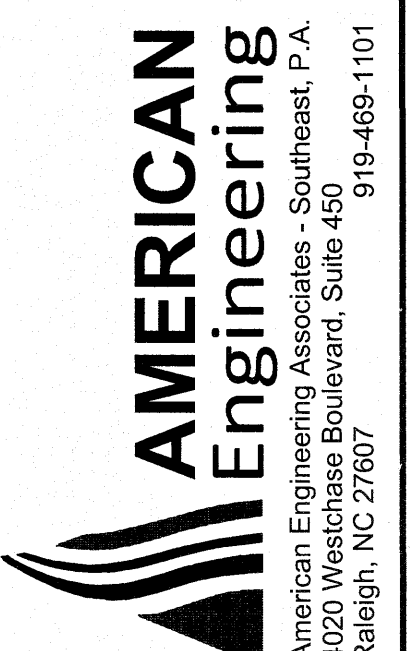
- SEE SHEET 3.0 FOR BMP CONVERSION SEQUENCE.
- FOREBAY DIVIDERS ARE TO BE INSTALLED WHILE CONVERTING FROM SEDIMENT BASIN TO WET POND.



CALCULATION: 50 PLANTS PER 200 SF



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



2.17.21
JUAN R. HARVEY
ENGINEER

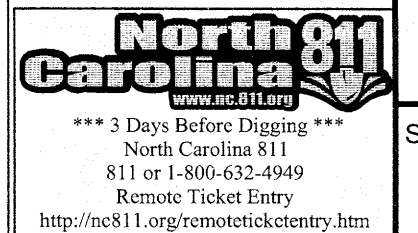
NO.	DATE	REVISION

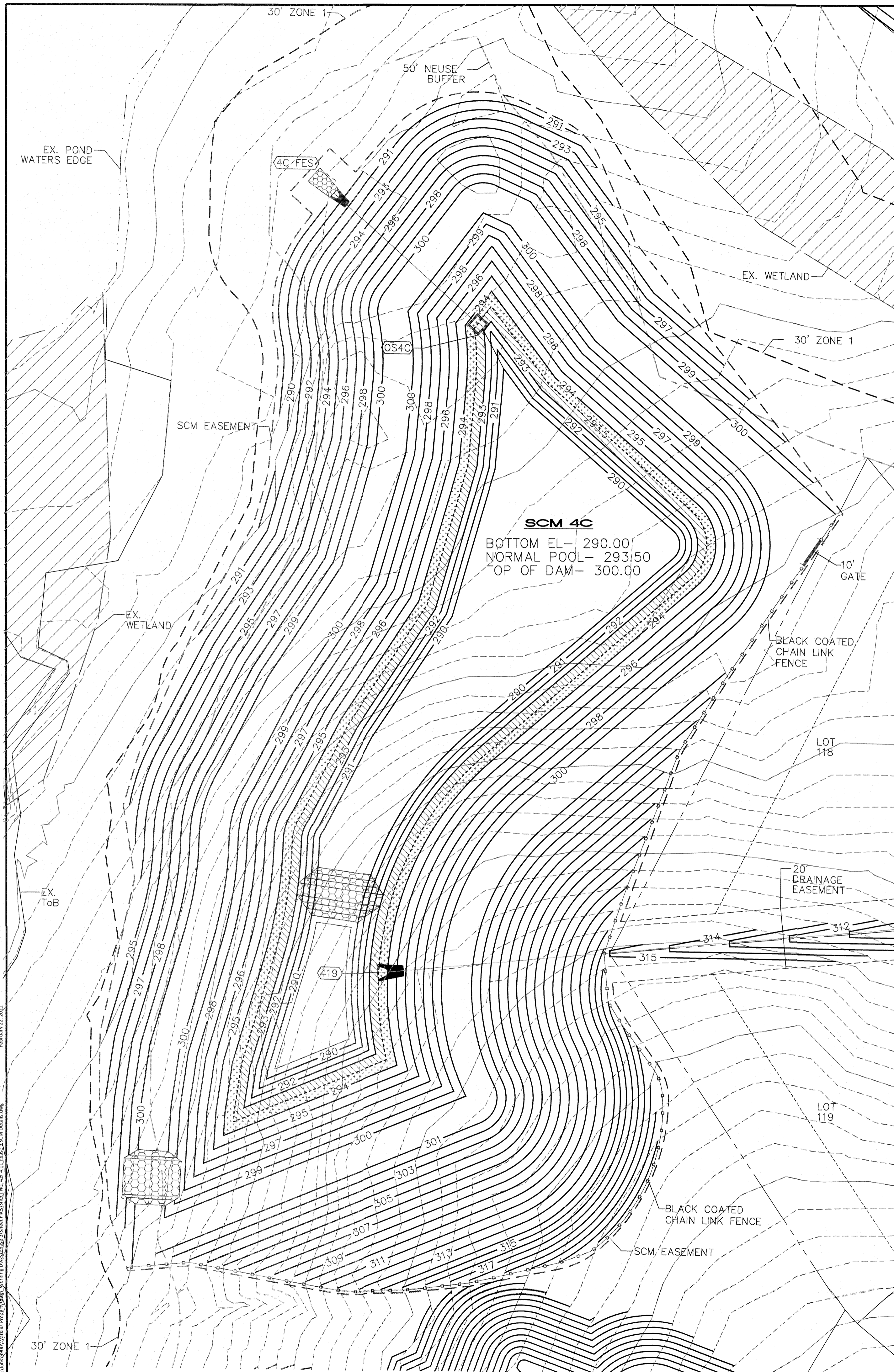
STIPULATION FOR REUSE
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KALAS FALLS PHASE 3
1832 ROLESVILLE ROAD
WAKE COUNTY, NC

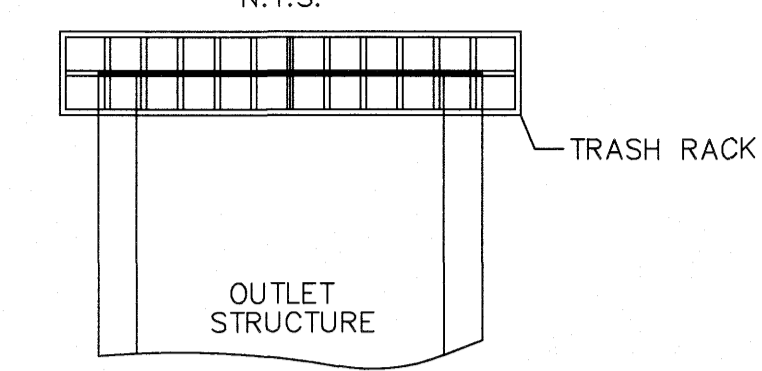
JOB NUMBER: 9900
CHECKED BY:
DRAWN BY:
DATE: FEB 18, 2021
SHEET TITLE:

SCM 4B DETAILS
SHEET NO.: 4.8





TRASH RACK DETAIL
N.T.S.



TRASH RACK NOTES

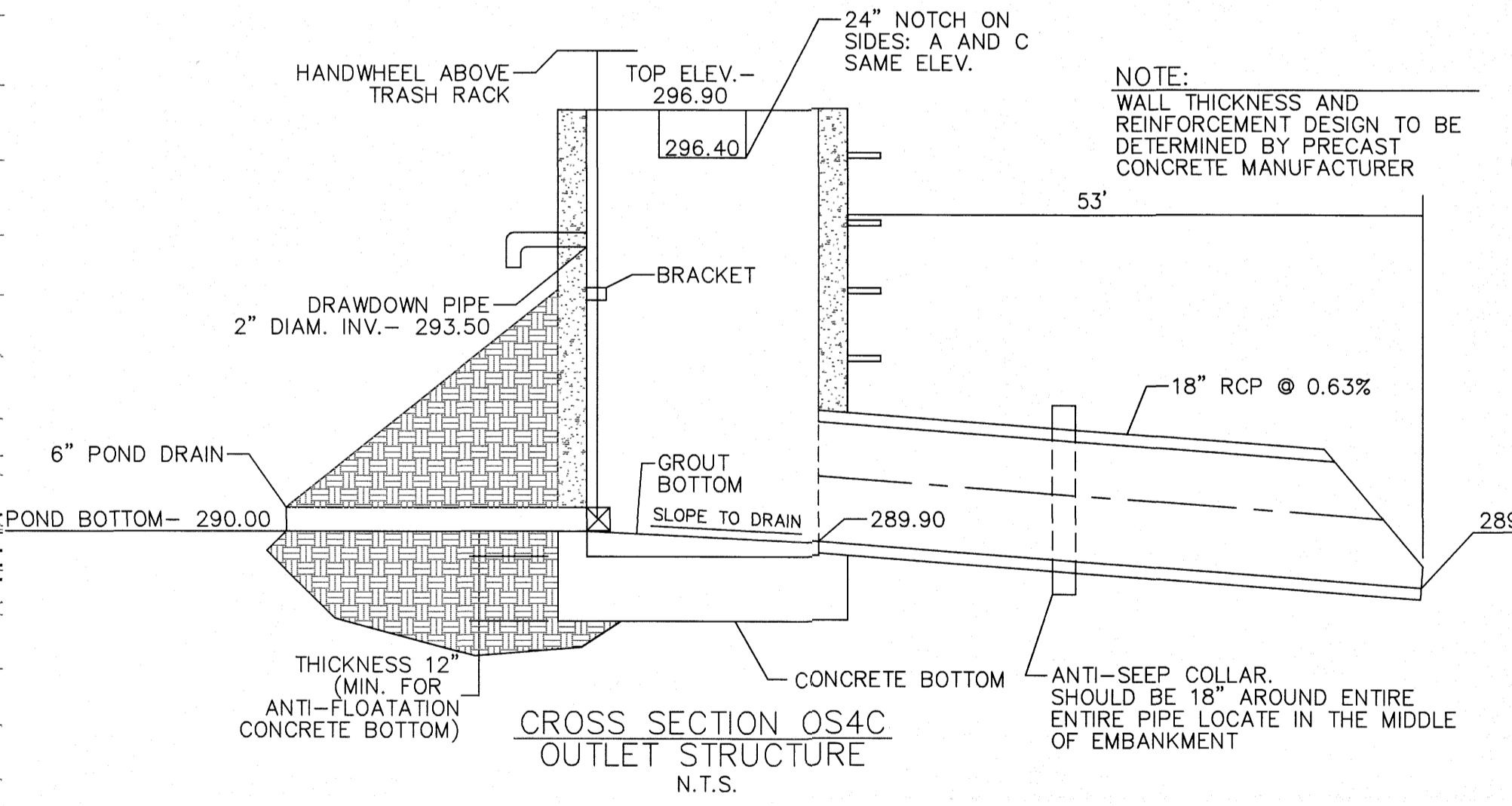
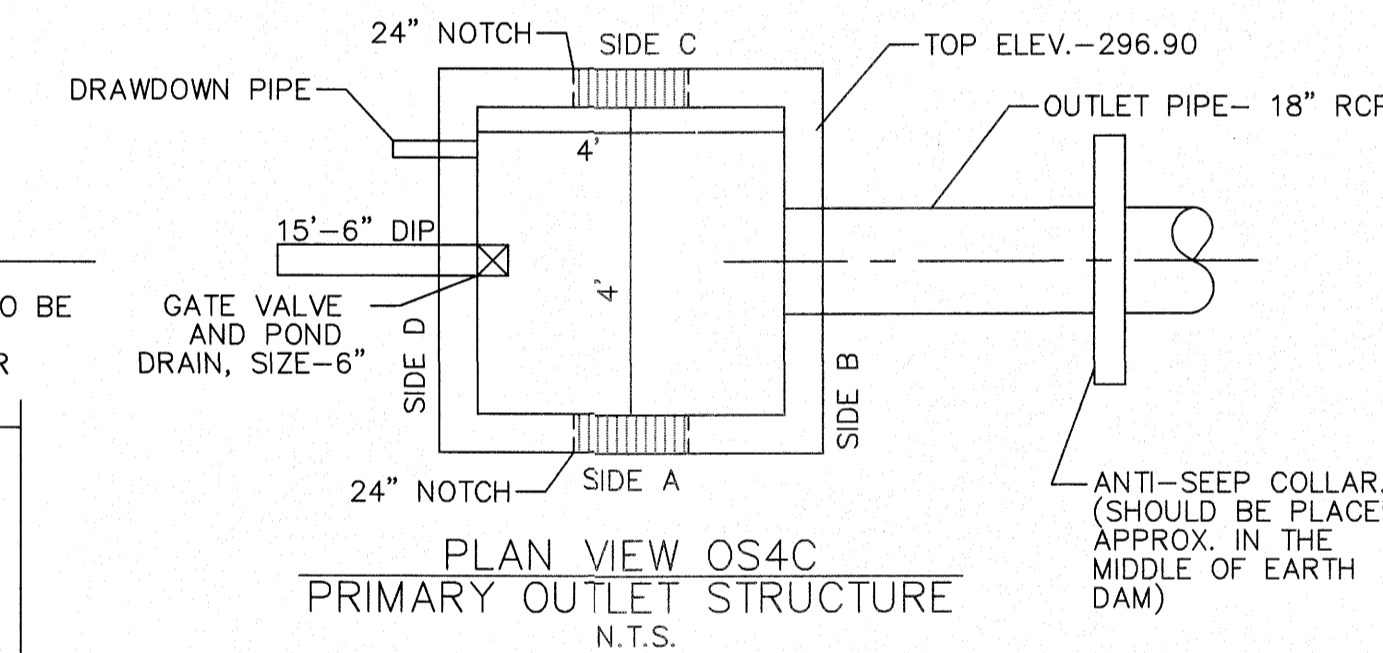
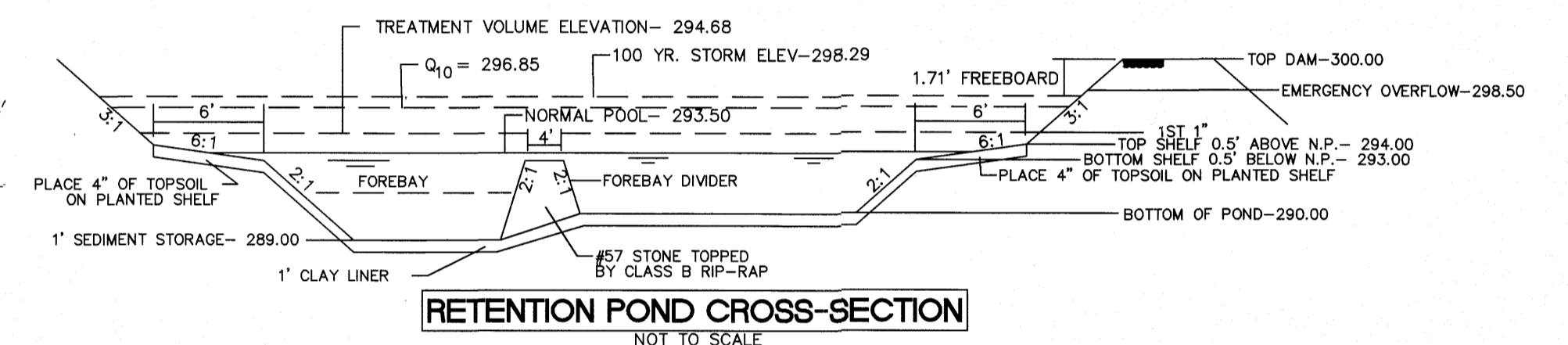
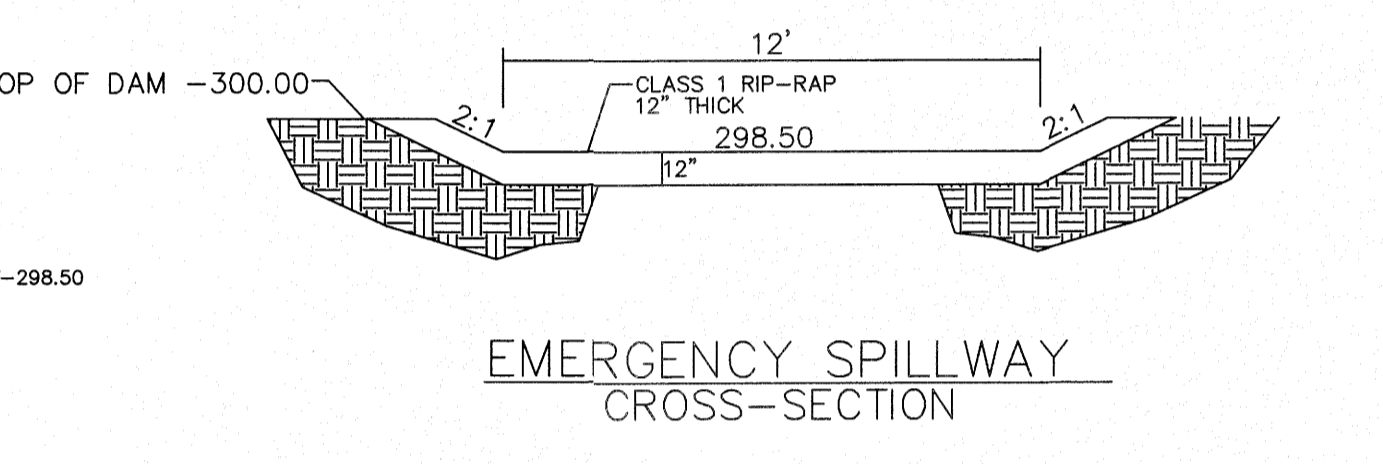
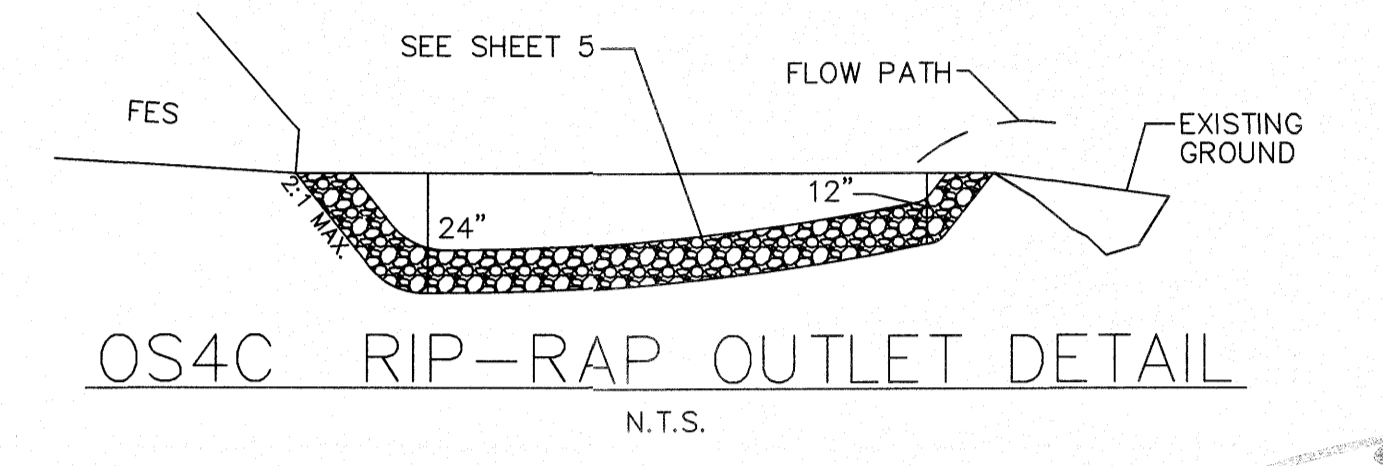
1. TRASH RACK SHALL BE 6" CLEAR OF STRUCTURE TOP AND SIDES. THE TRASH RACK NEED NOT COVER THE TREATMENT OUTLET PIPE.
2. IF STRUCTURE FEATURES ANY WEIR NOTCHES THE TRASH RACK WILL EXTEND 5" BELOW THE NOTCHES. (SEE CROSS-SECTION OF THE OUTLET STRUCTURE.)
3. TRASH RACK SHALL BE FASTENED TO EACH SIDE OF THE STRUCTURE AT AT LEAST 2 POINTS. IT SHALL BE EASILY REMOVED FOR MAINTENANCE OR ENTRY INTO THE STRUCTURE.
4. TRASH RACK SHALL ACCOMMODATE VALVE SHAFT THOUGH AN OPENING.
5. TRASH RACK SHALL BE MADE OF DURABLE MATERIAL WHICH WILL NOT RUST OR DETERIORATE IN SUNLIGHT.
6. MAX. OPENING IN TRASH RACK SHALL BE 6"x6".
7. TOP OF TRASH RACK SHALL HAVE A GRID OF BARS (MAX. 5"x5").

PLANT LIST LITTORAL SHELF PLANT SCHEDULE:

SHALLOW LAND (HERB.)	SHALLOW WATER (HERB.)	JOE PYE WEED	SCARLET ROSE MALLOW	WHITE TURTLEHEAD	CARDINAL FLOWER
EF EUPATORIUM FISTRULOSUM	JE JUNCUS EFFUSES	SOFTRUSH	4-6" POT @ 3' SPACING		
HC HIBISCUS COCCINEA	AS ACORUS SPP	SWEET FLAG	4-6" POT @ 3' SPACING		
CG CHELONE GLABRA	IV IRIS VERSICOLOR	BLUE FLAG IRIS	4-6" POT @ 3' SPACING		
LC LOBELIA CARDINALIS	PC PONTEDERIA CORDATA	BECKEL WEED	4-6" POT @ 3' SPACING		
	PV PELTANDRA VIRGINICA	ARROW ARUM	4-6" POT @ 3' SPACING		

LANDSCAPE PLAN:
SHALLOW LAND= 2,039 sf (USE 510 PLANTS FROM LIST ABOVE)
SHALLOW WATER= 1,961 sf (USE 490 PLANTS FROM LIST ABOVE)
USE EQUAL NUMBER OF PLANTS FROM LIST ABOVE

CALCULATION: 50 PLANTS PER 200 SF

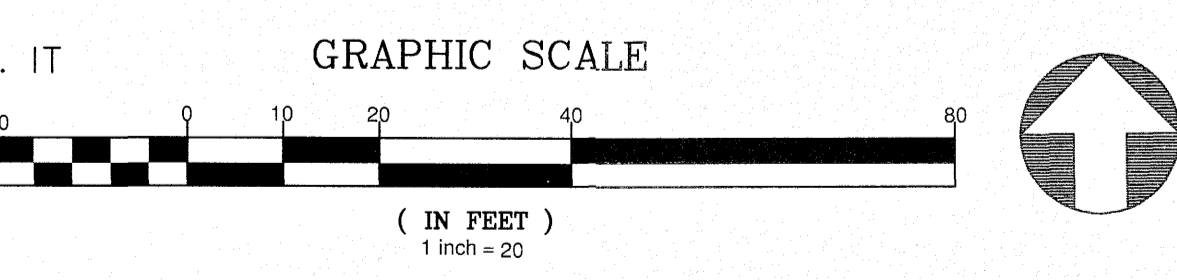


OUTLET STRUCTURE GENERAL NOTES

1. OUTLET STRUCTURE ELEVATIONS SHOWN ON THE DETAILS ON THIS SHEET ARE CRITICAL AND MUST BE WITHIN 0.02' OF THAT SHOWN. IF OUTLET STRUCTURES ARE PRE-CAST OFF-SITE, THE HOLE FOR THE OUTLET PIPE SHALL BE ENLARGED TO ALLOW UP TO 0.3' OF VERTICAL MOVEMENT. WHEN INSTALLED, THE EXCESS OPENING SHALL BE FILLED WITH GROUT.
2. THE OUTLET STRUCTURE SHALL HAVE A TRASH RACK COVERING THE OPENINGS. SUCH TRASH RACK SHALL BE 6" OUT FROM THE OPENING AND SHALL HAVE A MAXIMUM OPENING OF 6"x6". IT SHALL BE SECURELY FASTENED TO THE STRUCTURE BUT REMOVEABLE FOR MAINTENANCE.
3. OUTLET PIPES SHALL HAVE AN ANTI-SEEP COLLAR OF CONCRETE LOCATED APPROXIMATELY UNDER THE MIDDLE OF THE DAM IN WHICH IT IS LOCATED. IT SHALL CONSIST OF CONCRETE POURED AROUND THE PIPE IN A VERTICAL DIRECTION. THE COLLAR SHALL BE A SQUARE 8" THICK AND SHALL EXTEND 18" BEYOND THE OUTSIDE OF THE PIPE IN EACH DIRECTION.
4. TREATMENT OUTLET PIPE SHALL NOT BE PVC BUT OTHER MATERIAL SUCH AS GSP WHICH IS NOT SUBJECT TO DETERIORATION IN SUNLIGHT.

POND NOTES

1. SEE SHEET 3.0 FOR BMP CONVERSION SEQUENCE.
2. FOREBAY DIVIDERS ARE TO BE INSTALLED WHILE CONVERTING FROM SEDIMENT BASIN TO WET POND.



CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION
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City of Raleigh Development Approval
Raleigh Water Review Officer

North Carolina 811
3 Days Before Digging
811 or 1-800-632-4949
Remote Ticket Entry
http://nc811.org/remoteticketentry.htm

AMERICAN Engineering
American Engineering Associates - Southeast, P.A.
4120 Westchase Boulevard, Suite 450
Raleigh, NC 27607
919-469-1101

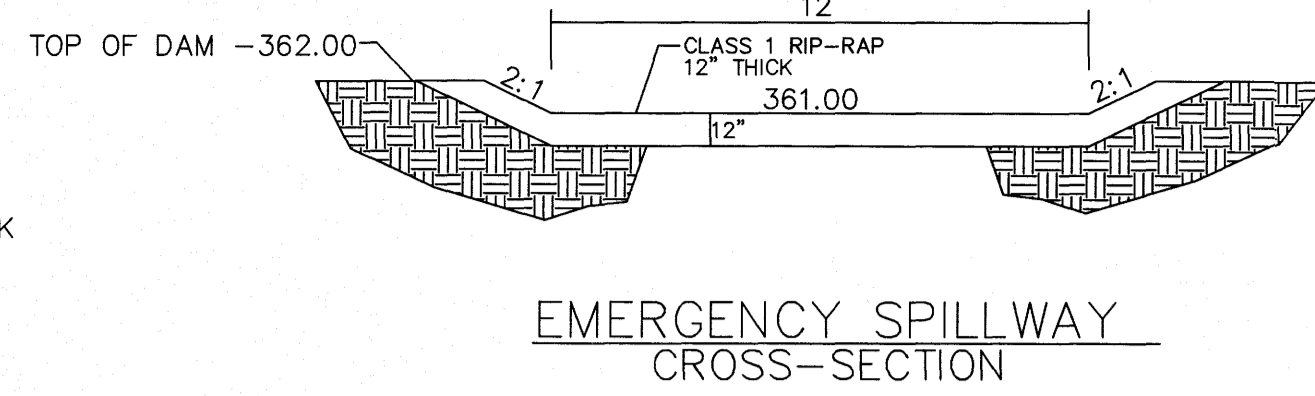
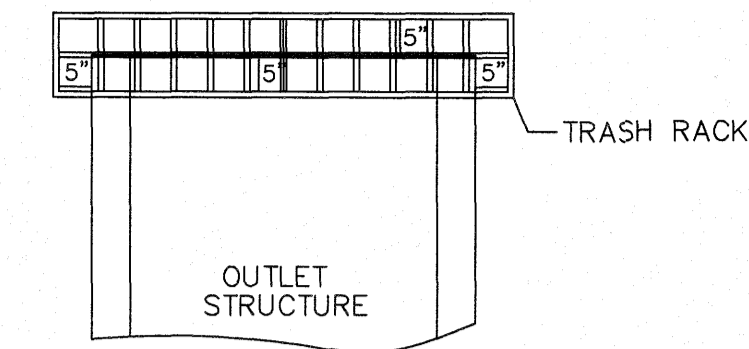
Professional Engineer
North Carolina
Professional Engineer
Seal 9810
YOUNG R. HARRIS

NO.	DATE	REVISION

KALAS FALLS PHASE 3
1832 ROLESVILLE ROAD
WAKE COUNTY, NC

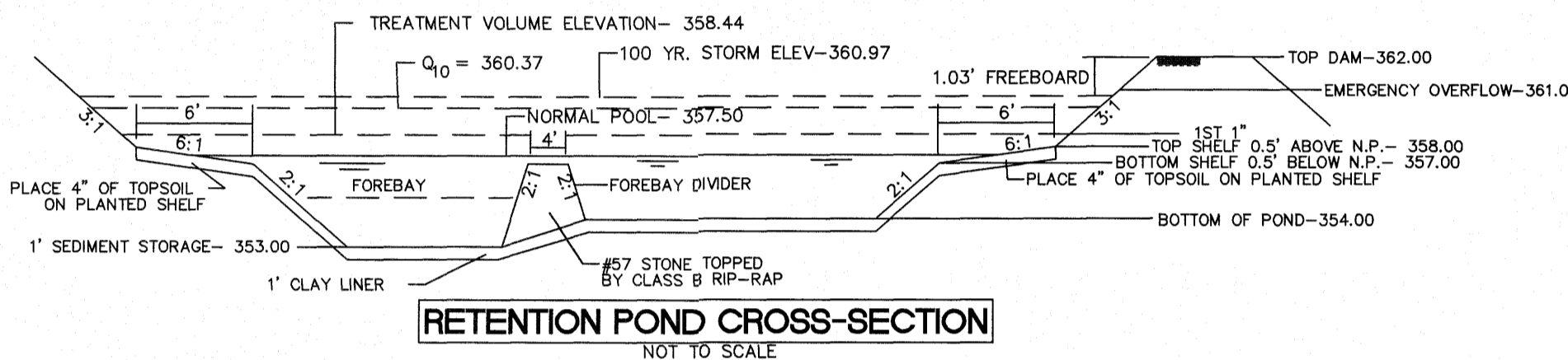
JOB NUMBER: 9900
CHECKED BY:
DRAWN BY:
DATE: FEB 18, 2021
SHEET TITLE:
SCM 4C DETAILS
SHEET NO.: 4.9

TRASH RACK DETAIL
N.T.S.



TRASH RACK NOTES

1. TRASH RACK SHALL BE 6" CLEAR OF STRUCTURE TOP AND SIDES. THE TRASH RACK NEED NOT COVER THE TREATMENT OUTLET PIPE.
2. TRASH RACK SHALL BE FASTENED TO EACH SIDE OF THE STRUCTURE AT AT LEAST 2 POINTS. IT SHALL BE EASILY REMOVED FOR MAINTENANCE OR ENTRY INTO THE STRUCTURE.
3. TRASH RACK SHALL ACCOMMODATE VALVE SHAFT THROUGH AN OPENING.
4. TRASH RACK SHALL BE MADE OF DURABLE MATERIAL WHICH WILL NOT RUST OR DETERIORATE IN SUNLIGHT.
5. MAX. OPENING IN TRASH RACK SHALL BE 5"x5".
6. TOP OF TRASH RACK SHALL HAVE A GRID OF BARS (MAX. 5"x5").



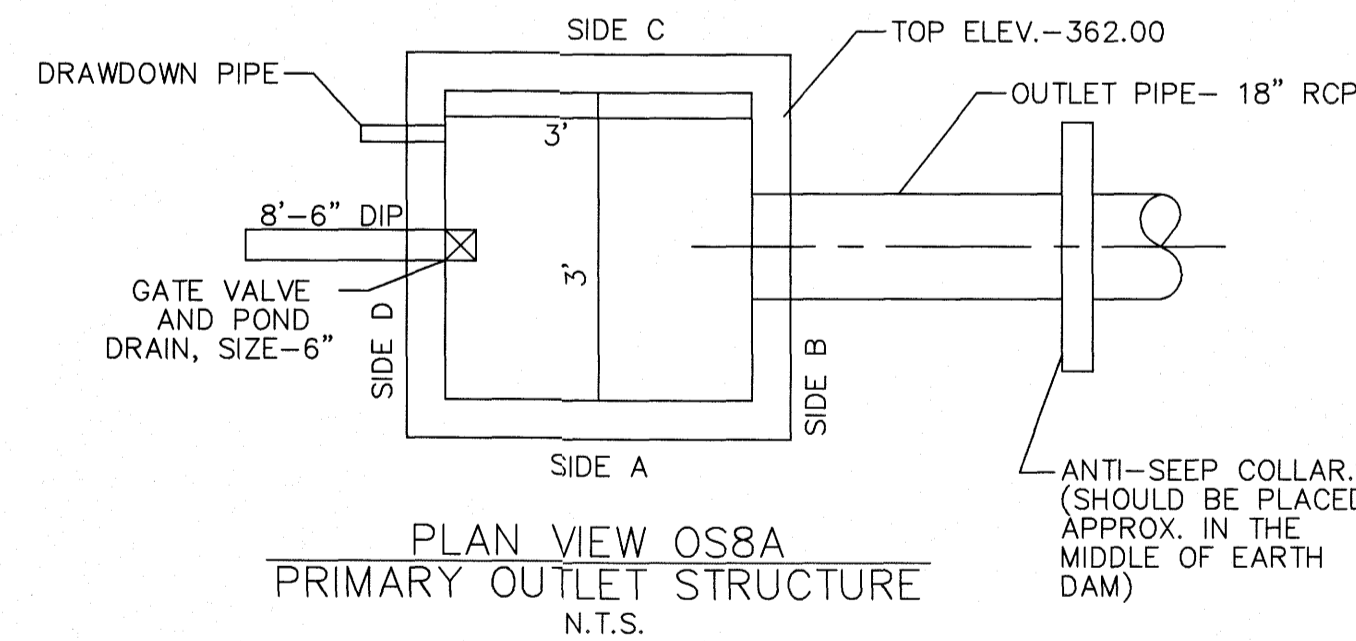
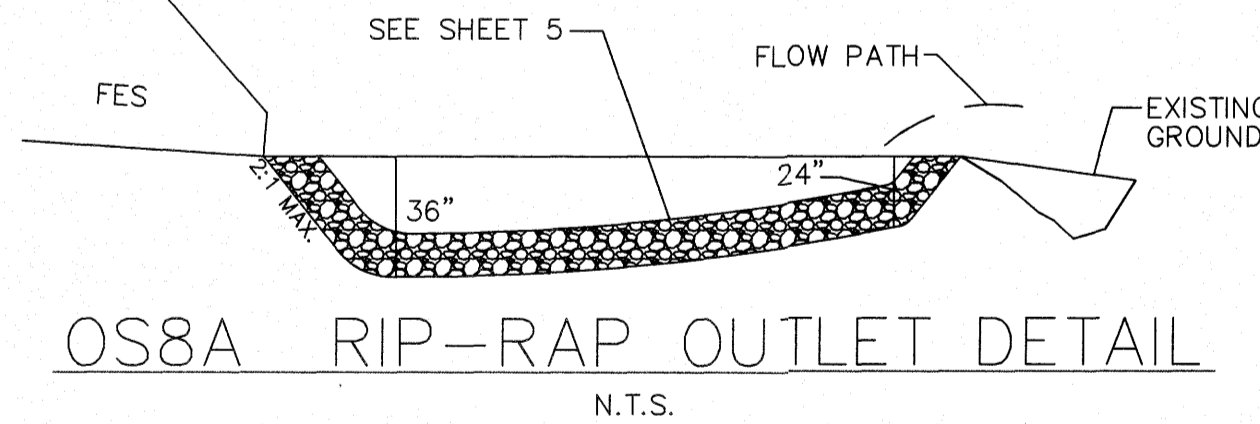
PLANT LIST LITTORAL SHELF PLANT SCHEDULE:

SHALLOW LAND (HERB.)			
EF	EUPATORIUM FISTRULOSUM	JOE PYE WEED	4-6" POT @ 3' SPACING
HC	HIBISCUS COCCINEA	SCARLET ROSE MALLOW	4-6" POT @ 3' SPACING
CG	CHELONE GLABRA	WHITE TURTLEHEAD	4-6" POT @ 3' SPACING
LC	LOBELIA CARDINALIS	CARDINAL FLOWER	4-6" POT @ 3' SPACING
SHALLOW WATER (HERB.)			
JE	JUNCUS EFFUSES	SOFRUSH	4-6" POT @ 3' SPACING
AS	ACORUS SPP	SWEET FLAG	4-6" POT @ 3' SPACING
IV	IRIS VERSICOLOR	BLUE FLAG IRIS	4-6" POT @ 3' SPACING
PC	PONTEDERIA CORDATA	PECKEREL WEED	4-6" POT @ 3' SPACING
PV	PELTANDRA VIRGINICA	ARROW ARUM	4-6" POT @ 3' SPACING

LANDSCAPE PLAN:

SHALLOW LAND= 1,008 sf (USE 252 PLANTS FROM LIST ABOVE)
SHALLOW WATER= 936 sf (USE 234 PLANTS FROM LIST ABOVE)
USE EQUAL NUMBER OF PLANTS FROM LIST ABOVE

CALCULATION: 50 PLANTS PER 200 SF



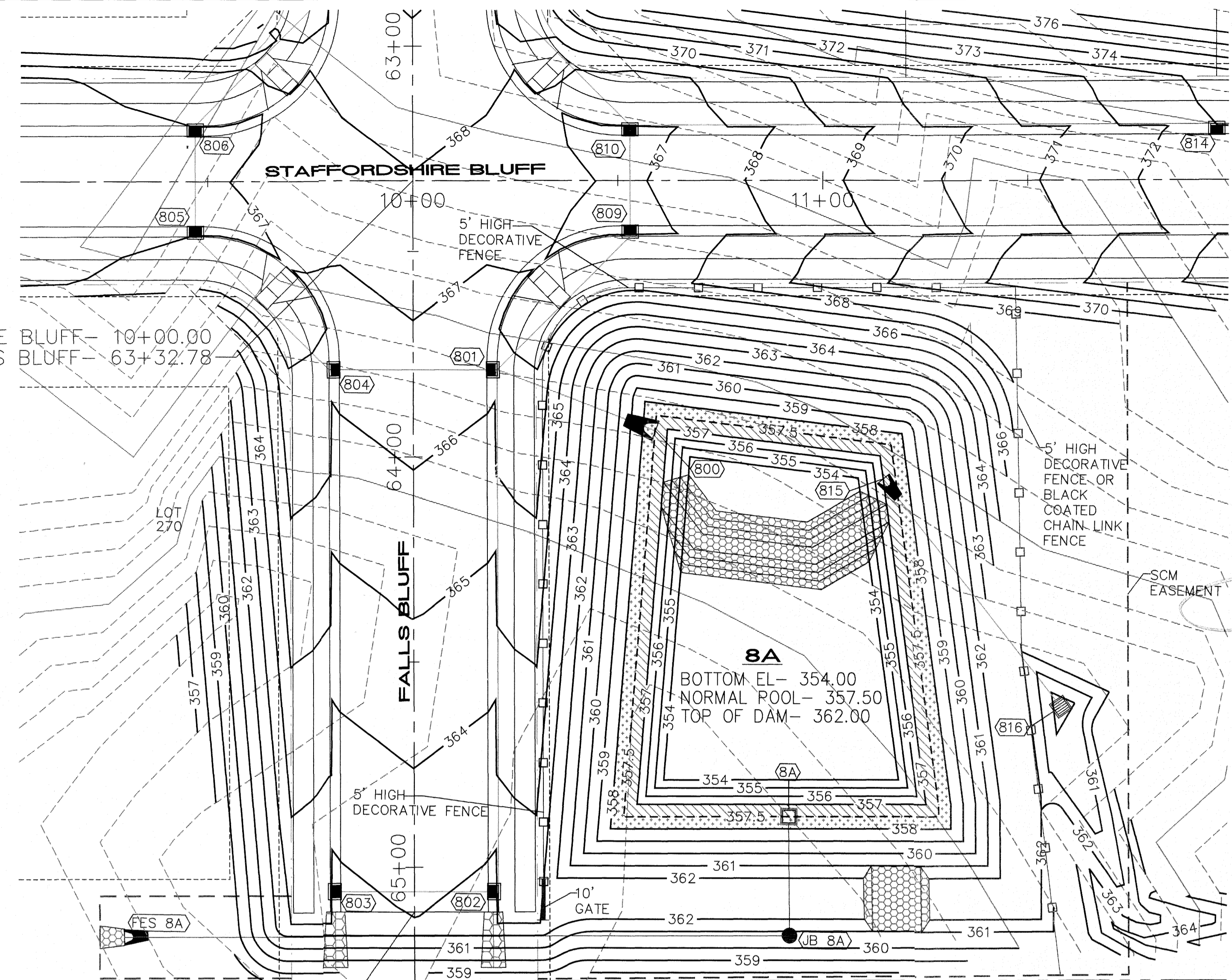
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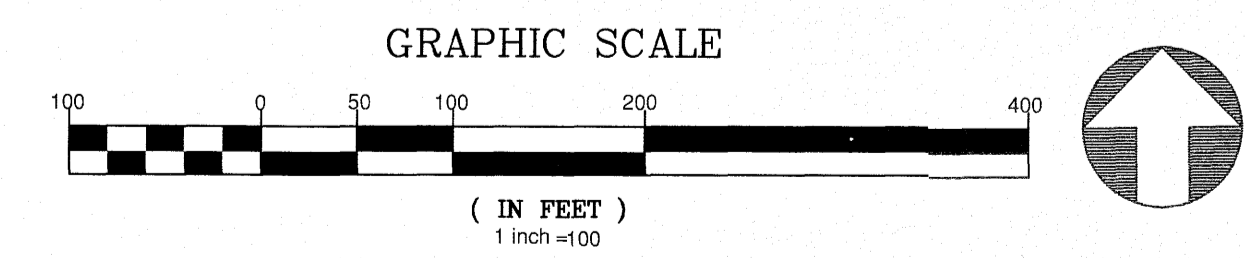
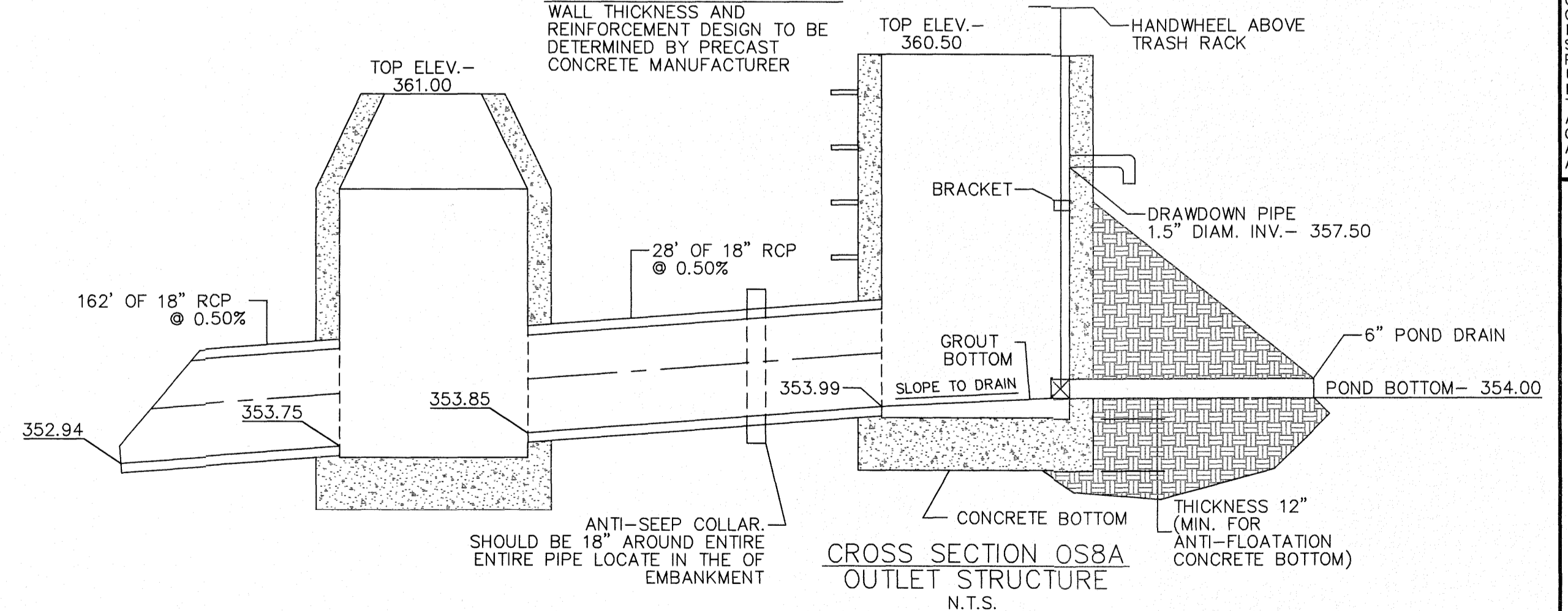
STAFFORDSHIRE BLUFF- 10+00.00
FALLS BLUFF- 63+32.78



END OF PAVEMENT STATION- 65+10.90

JONES PROPERTIES, LLC
ZONING: R-30
D.B. 13842, PG. 1231
LOT 4A
B.M. 1983, PG. 1477
PIN NO. 1757.02-97-2579
REAL ESTATE ID: 0037355

NOTE:
WALL THICKNESS AND REINFORCEMENT DESIGN TO BE DETERMINED BY PRECAST CONCRETE MANUFACTURER



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City of Raleigh Development Approval _____
Raleigh Water Review Officer

North Carolina 811
www.nc811.com
*** 3 Days Before Digging ***
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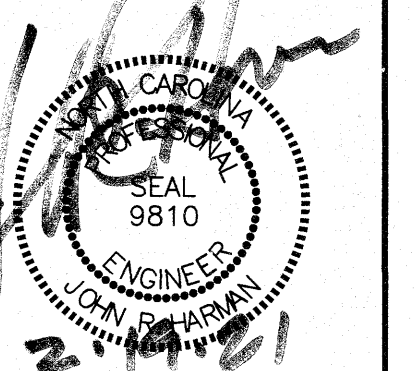
AMERICAN Engineering
American Engineering Associates - Southeast, P.A.
4020 Westchase Boulevard, Suite 450
Raleigh, NC 27607
919-488-1101

AMERICAN ENGINEERING ASSOCIATES SOUTHEAST
STATE OF NORTH CAROLINA
SEAL
9810
ENGINEER
JOHN R. HARMAN
2.17.21

STIPULATION FOR REUSE
THIS DRAWING WAS PREPARED FOR USE ON THE SPECIFIC SITE, NAMED HEREON, CONTEMPORANEOUSLY WITH ITS ISSUE DATE AS LISTED, HEREON, AND IT IS NOT SUITABLE FOR USE ON A DIFFERENT PROJECT SITE OR AT A LATER TIME. USE OF THIS DRAWING FOR REFERENCE OR EXAMPLE ON ANOTHER PROJECT REQUIRES THE SERVICES OF PROPERLY LICENSED ARCHITECTS AND ENGINEERS. REPRODUCTION OF THIS DRAWING FOR REUSE ON ANOTHER PROJECT IS NOT AUTHORIZED AND MAY BE CONTRARY TO THE LAW.

KALAS FALLS
PHASE 3
1832 ROLESVILLE ROAD
WAKE COUNTY, NC

JOB NUMBER: 9900
CHECKED BY:
DRAWN BY:
DATE: FEB 18, 2021
SHEET TITLE:
SCM 8A DETAILS
SHEET NO.: 4.11



SITE LEGEND	
	PROPOSED LOT LINE
	FLOODLINE
	BUILDING RESTRICTION LINE
	PROPOSED LOT SETBACK
	PROPOSED ROW
	PROPOSED SIDEWALK
	PROPOSED BOC
	PROPOSED EOP
	PROPOSED CENTERLINE
	PROPOSED GRADING
	PROPOSED EASEMENT
	PROPOSED HANDICAP RAMP
	PROPOSED SIGHT TRIANGLE
	TOT LOT
	POCKET PARK
	MAIL KIOSK LOCATION
	OPEN SPACE
	GREENWAY/ROADSIDE TRAIL
	FUTURE PHASING
	EXISTING PHASING
	EXISTING WETLANDS
	PROPOSED SWALE (AT TIME OF LOT GRADING)
	PROPOSED PHASELINE

SITE DATA

OWNER: MITCHELL MILL ROAD INVESTORS, LLC
105 WESTON ESTATES WAY
CARY, NC 27519

PARCEL ADDRESS: 1600 & 1832 ROLESVILLE ROAD
ROLESVILLE NC

PIN NUMBER: 1767-17-8299, 1767-08-3228, 1768-00-2153, 1767-29-5866, DB 011940 PG 01155, DB 012007 PG 02228

DEED BOOK: DB 011940 PG 01155, DB 012007 PG 02228

DEEDED ACREAGE: 284.44 AC

TOTAL PROJECT AREA: 282.73 AC (MINUS ROW AREA TO RD CL)

GOVERNMENTAL USE: 1.91 AC

TOTAL AREA IN FUTURE TOWNHOMES: 17.01 AC

AREA IN ROW: 38.57 AC

AREA IN OPEN SPACE PROVIDED: 96.75 AC

AREA IN LOTS: 128.47 AC

EXISTING ZONING: R & P.U.D

MAX # OF LOTS: 550 LOTS

SINGLE FAMILY LOTS PROPOSED: 454 LOTS

MAX. # OF TOWNHOMES: 95 UNITS

MIN. LOT WIDTH: 50'

MIN. LOT SIZE PROVIDED: 6,024 SF

LF OF PUBLIC STREETS: 35,964 LF

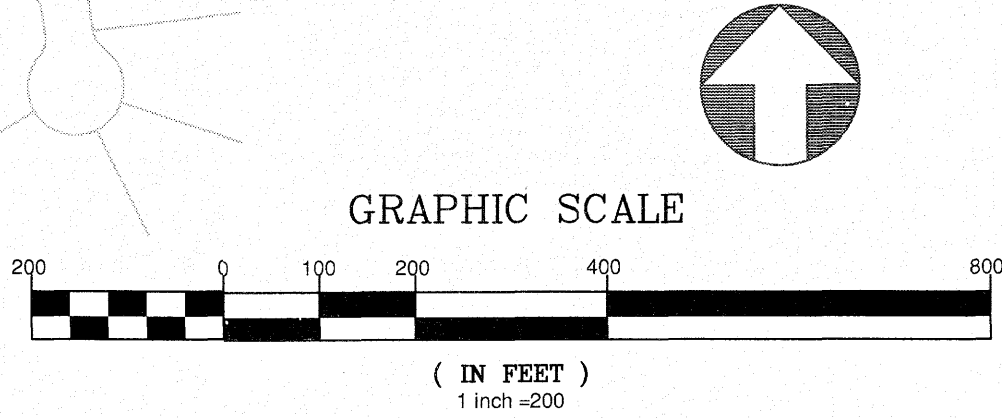
IMPERVIOUS AREA: 84.71 AC

PERCENT IMPERVIOUS: 30%

SETBACK TABLE SINGLE FAMILY

	50'	50' W ALLEY	50'-59'	60'-69'	70'-79'	80'-100'	101' +
FRONT	20'	15'	20'	25'	25'	25'	25'
REAR	20'	15'	20'	25'	25'	25'	30'
SIDE	**	**	**	*	*	10'	12'
CORNER SIDE	10'	10'	10'	10'	10'	15'	18'
MIN. LOT SIZE	6,000	6,000	6,000	6,600	8,400	10,400	14,000

* AGGREGATE 12', MIN. 5'
** MIN. 3' AGGREGATE 10'

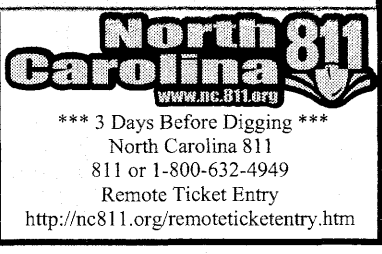


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City of Raleigh Development Approval _____

Raleigh Water Review Officer _____

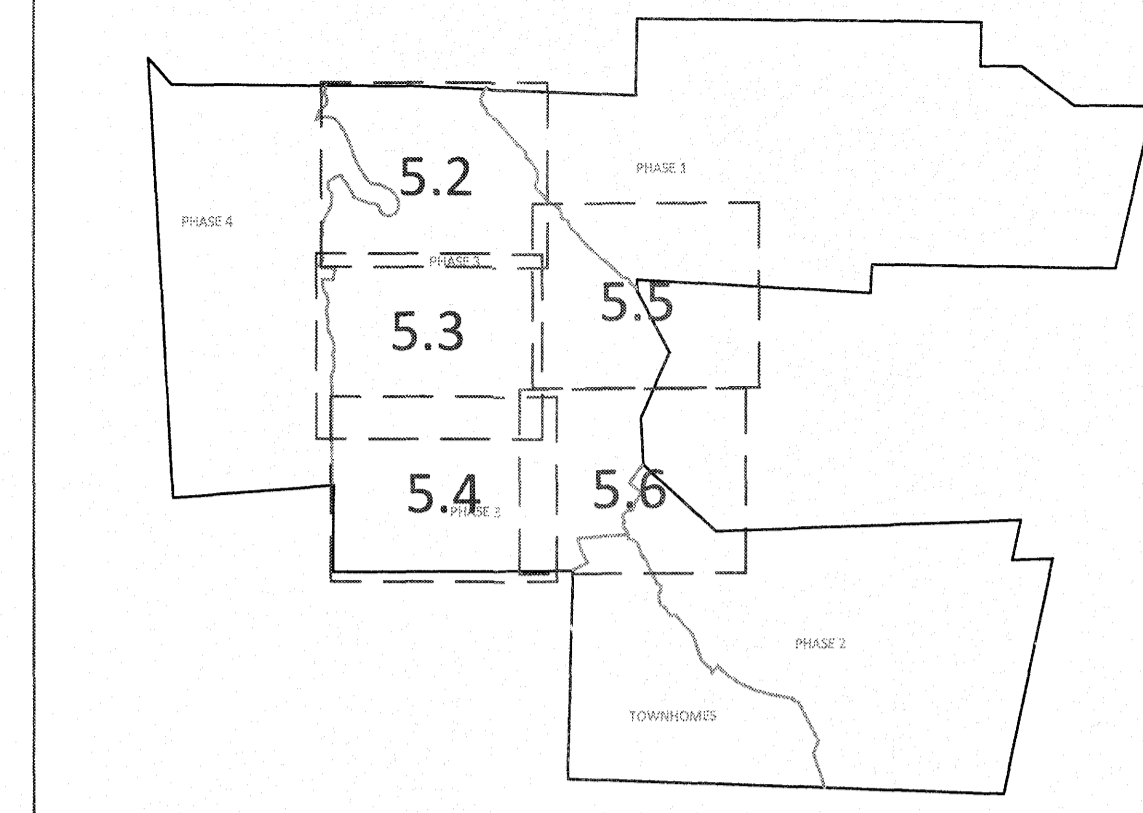
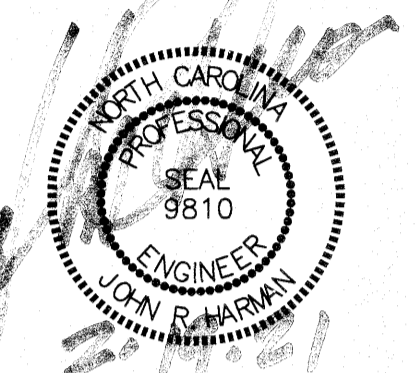
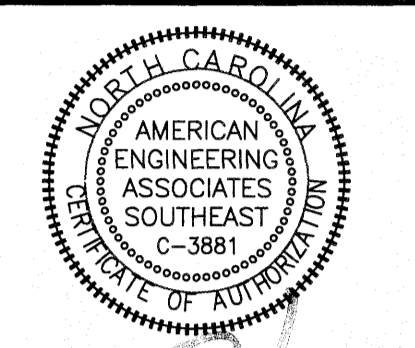


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**KALAS FALLS
PHASE 3
1832 ROLESVILLE ROAD
WAKE COUNTY, NC**

JOB NUMBER: 9900
CHECKED BY: _____
DRAWN BY: _____
DATE: FEB 18, 2021
SHEET TITLE: **OVERALL SITE PLAN**
SHEET NO.: **5.0**



GRAPHIC SCALE 1"=1000'

SETBACK TABLE SINGLE FAMILY

	50'	50' W ALLEY	50'-59'	60'-69'	70'-79'	80'-100'	101'+
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REAR	20'	15'	20'	25'	25'	25'	30'
SIDE	**	**	**	*	*	10'	12'
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MIN. LOT SIZE	6,000	6,000	6,000	6,600	8,400	10,400	14,000

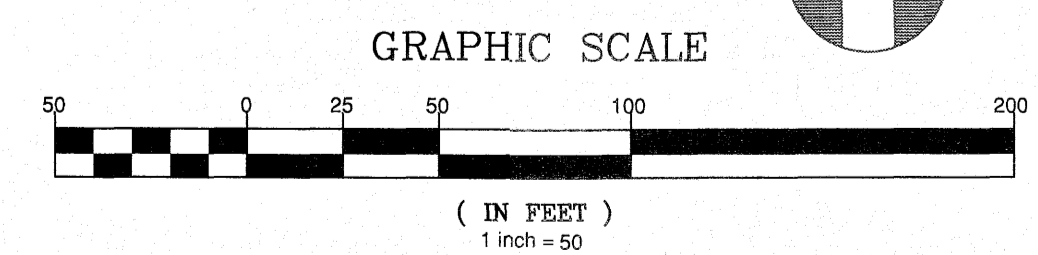
* AGGREGATE 12', MIN. 5'

** MIN. 3' AGGREGATE 10'

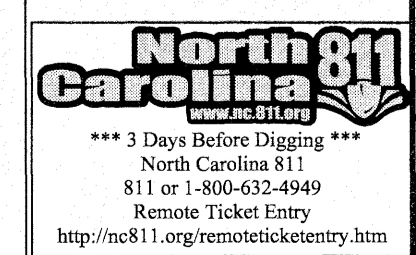
GENERAL NOTE:

1. SIGHT DISTANCE TRIANGLES ARE 10'x70', WHERE SIGHT LINES ENCR OACH ONTO A PRIVATE LOT A SIGHT EASEMENT IS REQUIRED.
2. BACK OF CURB RADIUS AT INTERSECTIONS:
 RESIDENTIAL-RESIDENTIAL- 28'
 RESIDENTIAL-COLLECTOR- 30'
 COLLECTOR-COLLECTOR- 30'
 ENTRANCE AT CUL-DE-SAC- 32.5
 ENTRY ROADS-ROLESVILLE RD.- 35'

SITE LEGEND	
	PROPOSED LOT LINE
	FLOODLINE
	BUILDING RESTRICTION LINE
	PROPOSED LOT SETBACK
	PROPOSED ROW
	PROPOSED SIDEWALK
	PROPOSED BOC
	PROPOSED EOP
	PROPOSED CENTERLINE
	PROPOSED GRADING
	PROPOSED EASEMENT
	PROPOSED HANDICAP RAMPS
	PROPOSED SIGHT TRIANGLE
	TOT LOT
	POCKET PARK
	MAIL KIOSK LOCATION
	OPEN SPACE
	GREENWAY/ROADSIDE TRAIL
	FUTURE PHASING
	EXISTING PHASING
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	PROPOSED SWALE (AT TIME OF LOT GRADING)
	PROPOSED PHASELINE



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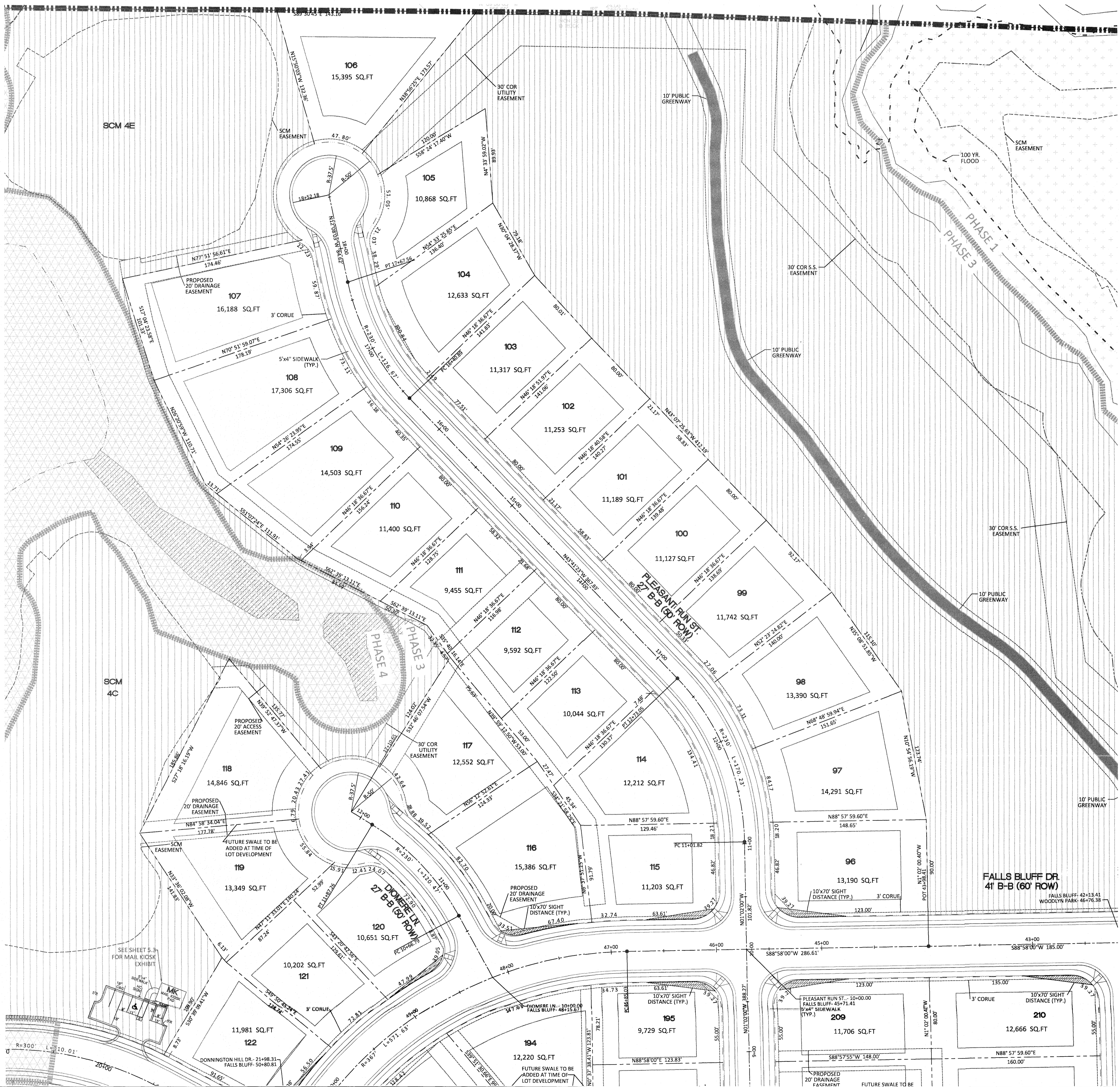


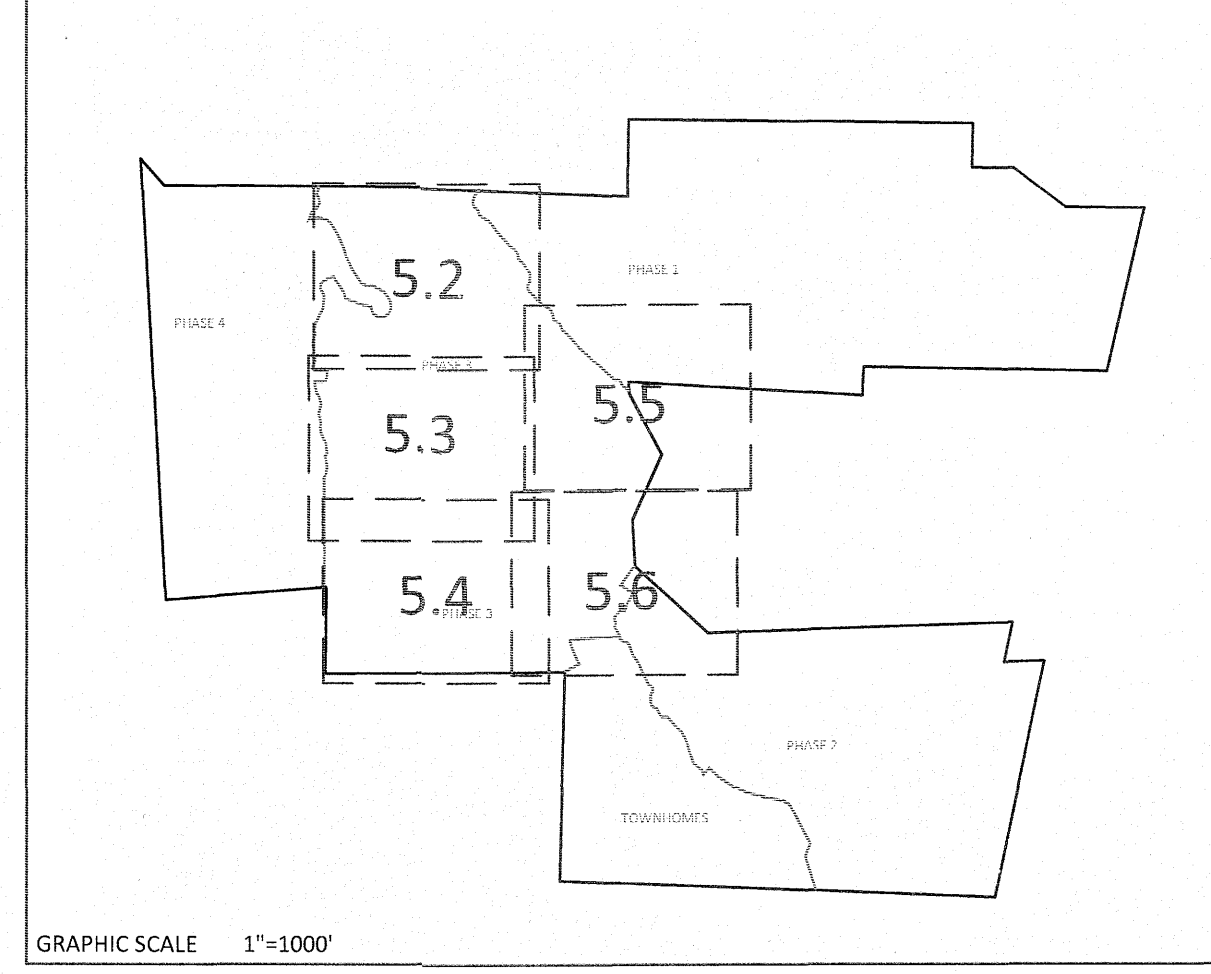
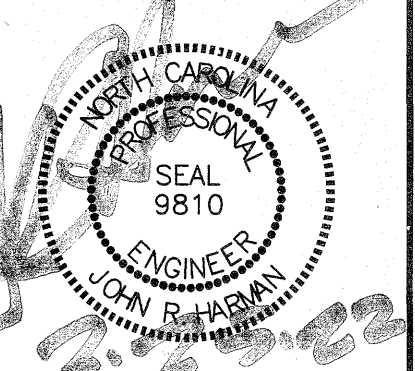
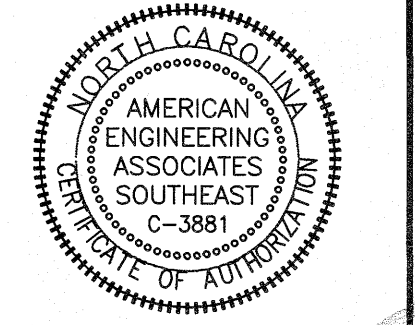
NO.	DATE	REVISION:

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KALAS FALLS PHASE 3
 1832 ROLESVILLE ROAD
 WAKE COUNTY, NC

JOB NUMBER: 9900
 CHECKED BY:
 DRAWN BY:
 DATE: FEB 18, 2021
 SHEET TITLE:
PHASE 3 SITE PLAN
 SHEET NO.: 5.2





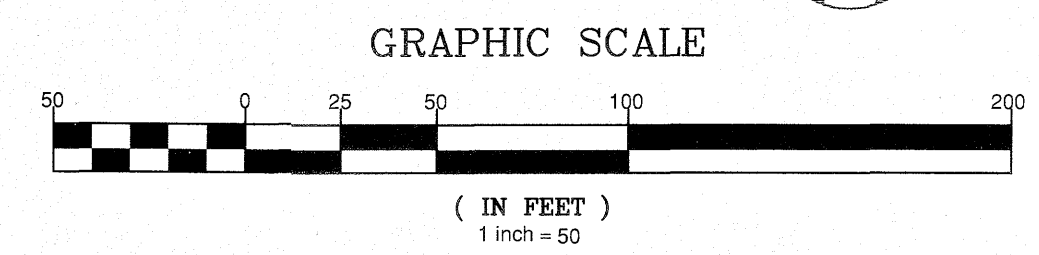
SETBACK TABLE SINGLE FAMILY

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MIN. LOT SIZE	6,000	6,000	6,000	6,600	8,400	10,400	14,000
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 ENTRANCE AT CUL-DE-SAC- 32.5'
 ENTRY ROADS-ROLESVILLE RD.- 35'

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	PROPOSED ROW
	PROPOSED SIDEWALK
	PROPOSED BOC
	PROPOSED EOP
	PROPOSED CENTERLINE
	PROPOSED GRADING
	PROPOSED DRAINAGE/EASEMENT
	PROPOSED UTILITY EASEMENT
	PROPOSED HANDICAP RAMPS
	PROPOSED SIGHT TRIANGLE
	TOT LOT
	POCKET PARK
	MAIL KIOSK LOCATION
	OPEN SPACE
	GREENWAY TRAIL HATCH
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	FUTURE PHASING
	EXISTING PHASING
	EXISTING WETLANDS
	PROPOSED SWALE (AT TIME OF LOT GRADING)
	PROPOSED PHASELINE



RODGE, WILLIAM
 FRANK H. MILES,
 GWENDOLYN H.
 ZONING: R-30
 B. 15305, PG. 2406
 TRACT 5,
 M. 15371, PG. 445
 NO. 1757-02-97-4973
 ESTATE ID: 0087115

ROAD BARRICADE
 SEE DETAIL 1145.01
 ON SHEET CD19

JONES PROPERTIES, LLC
 ZONING: R-30
 D.B. 13842, PG. 1231
 LOT 4A

NO.	DATE	REVISION:
1	7/23/2021	1ST REVIEW FROM TOWN OF ROLESVILLE CONSULTANT, WAKE COUNTY AND CITY OF RALEIGH
2	2/25/2022	2ND REVIEW FROM TOWN OF ROLESVILLE CONSULTANT, WAKE COUNTY AND CITY OF RALEIGH

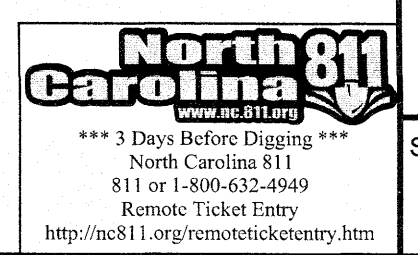
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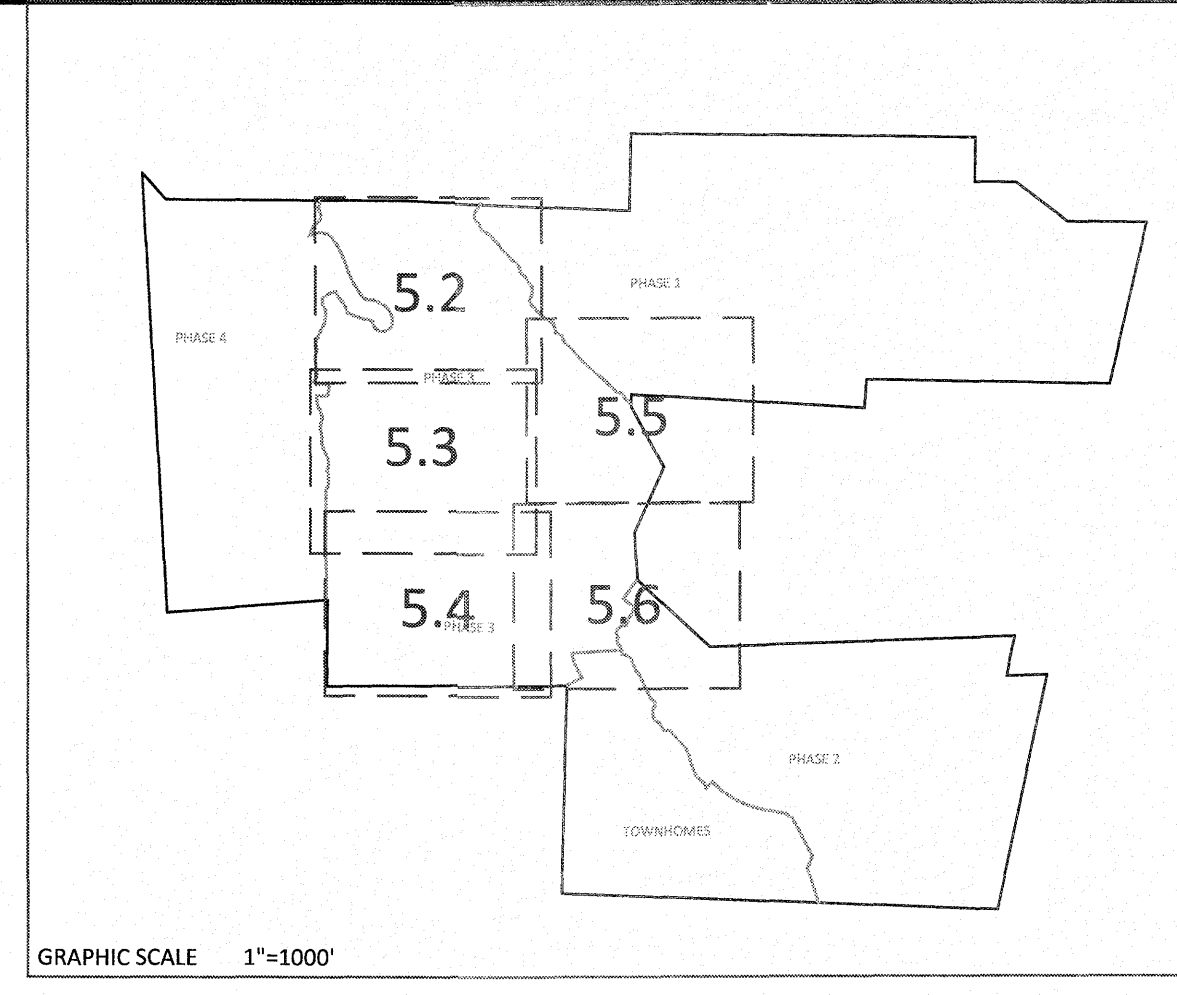
**KALAS FALLS
 PHASE 3
 1832 ROLESVILLE ROAD
 WAKE COUNTY, NC**

JOB NUMBER: 9900
 CHECKED BY:
 DRAWN BY:
 DATE: FEB 18, 2021
 SHEET TITLE:

**PHASE 3
 SITE PLAN**

SHEET NO.: 5.4



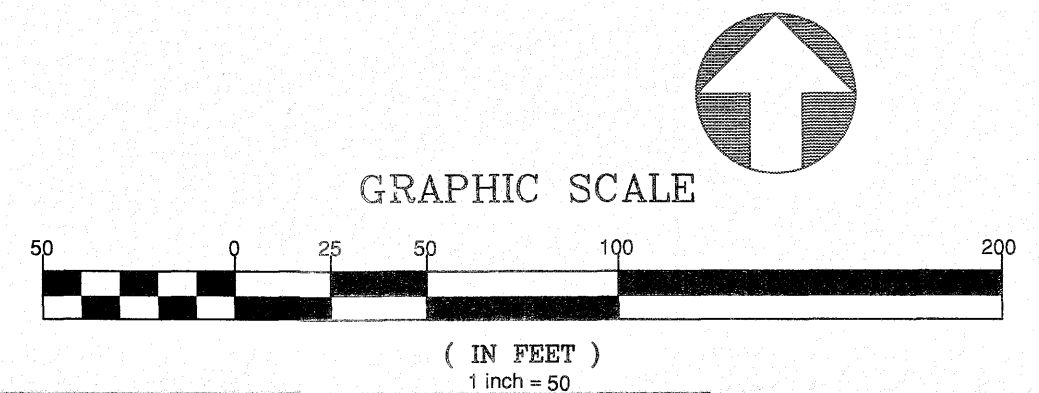
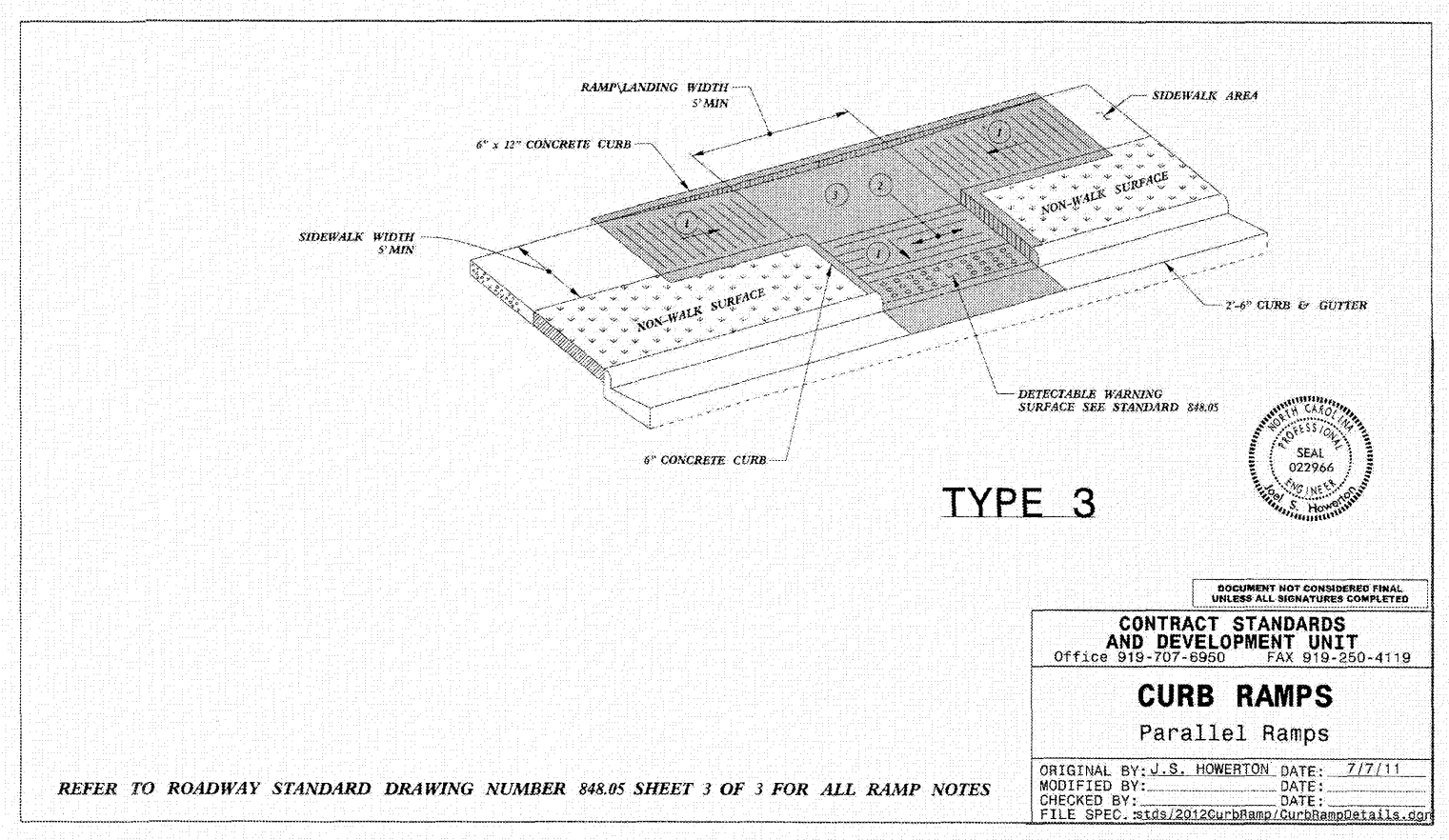


SETBACK TABLE SINGLE FAMILY

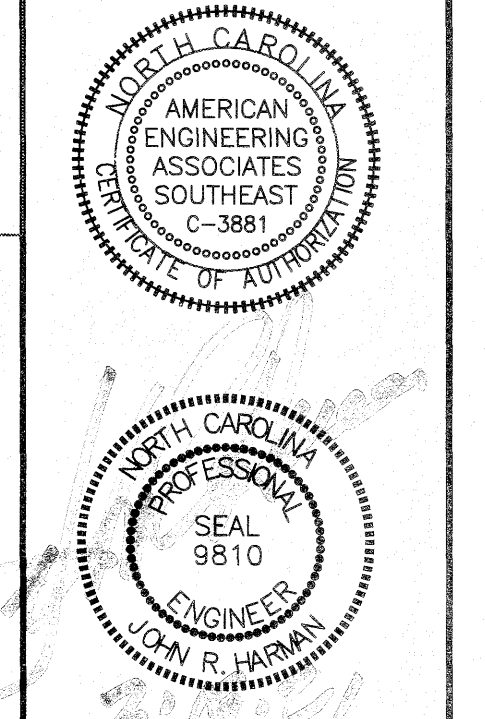
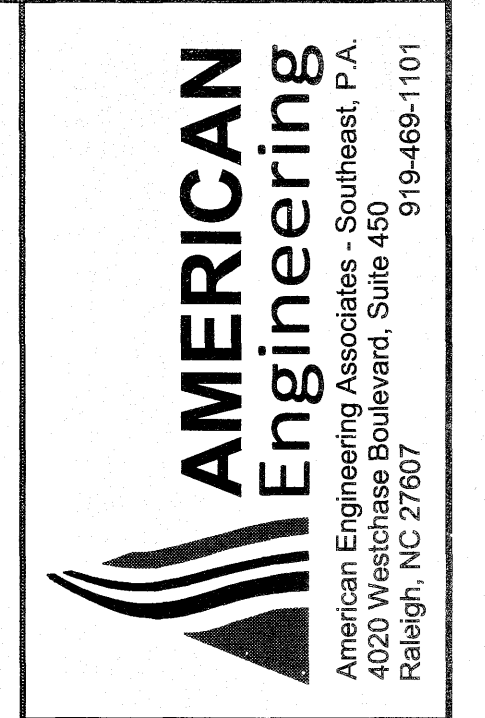
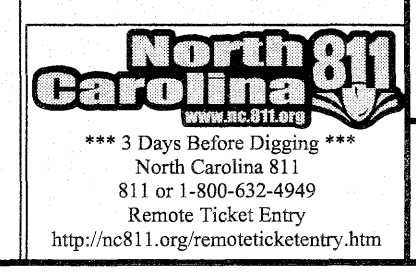
	50'	50'	60'-69'	70'-79'	80'-100'	101'+
FRONT	20'	15'	20'	25'	25'	25'
REAR	20'	15'	20'	25'	25'	30'
SIDE	**	**	**	*	10'	12'
CORNER SIDE	10'	10'	10'	10'	15'	18'
MIN. LOT SIZE	6,000	6,000	6,000	6,600	8,400	14,000

* AGGREGATE 12', MIN. 5'
** MIN. 3' AGGREGATE 10'

GENERAL NOTE:
 1. SIGHT DISTANCE TRIANGLES ARE 10'x70'. WHERE SIGHT LINES ENCLOSE ONTO A PRIVATE LOT A SIGHT EASEMENT IS REQUIRED.
 2. BACK OF CURB RADIUS AT INTERSECTIONS:
 RESIDENTIAL-RESIDENTIAL - 28'
 RESIDENTIAL-COLLECTOR - 30'
 COLLECTOR-COLLECTOR - 30'
 ENTRANCE AT CUL-DE-SAC - 32.5'
 ENTRY ROADS-ROLESVILLE RD. - 35'



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 _____

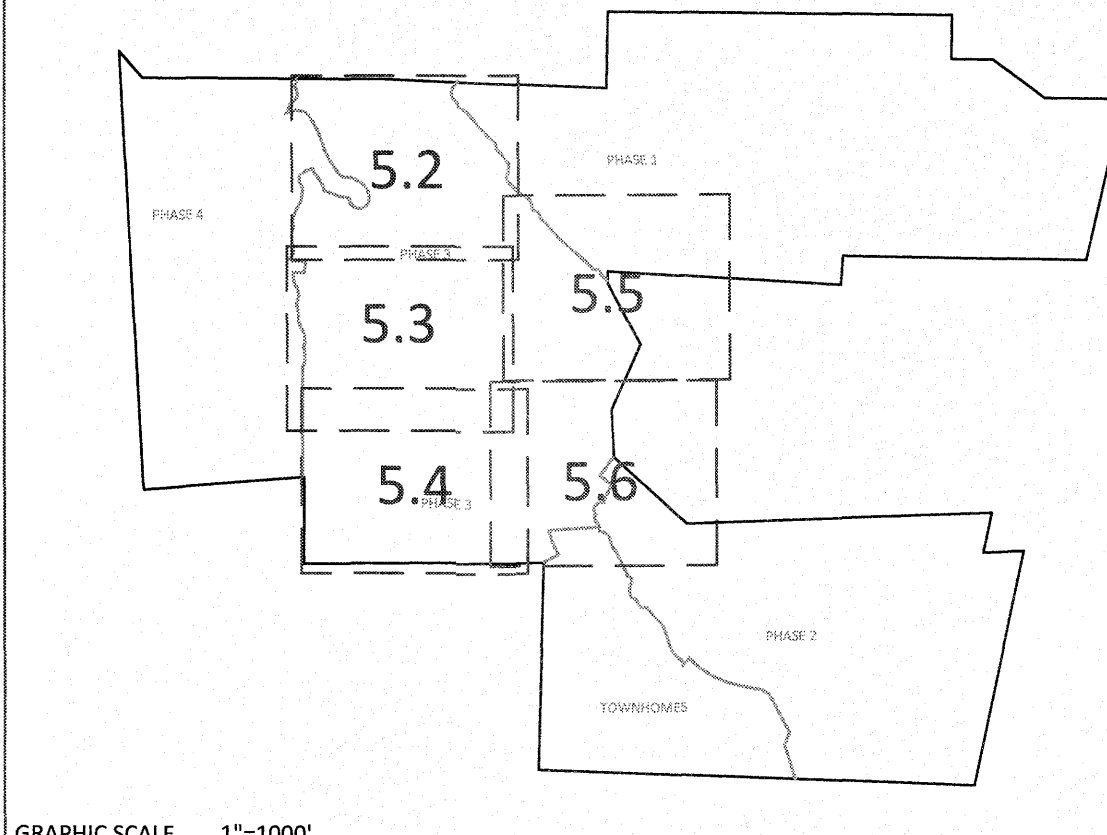
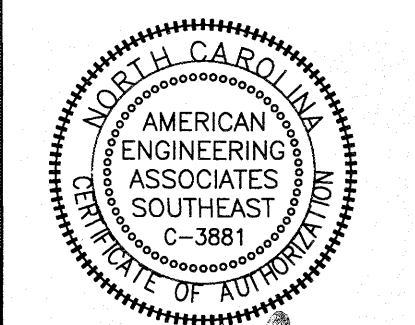


NO.	DATE	REVISION

STIPULATION FOR REUSE
 THIS DRAWING WAS PREPARED FOR USE ON THE SPECIFIC SITE, NAMED HEREON, CONTEMPORANEOUSLY WITH ITS ISSUE DATE AS LISTED, HEREON, AND IT IS NOT SUITABLE FOR USE ON A DIFFERENT PROJECT SITE OR AT A LATER TIME. USE OF THIS DRAWING FOR REFERENCE OR EXAMPLE ON ANOTHER PROJECT REQUIRES THE SERVICES OF PROPERLY LICENSED ARCHITECTS AND ENGINEERS. REPRODUCTION OF THIS DRAWING FOR REUSE ON ANOTHER PROJECT IS NOT AUTHORIZED AND MAY BE CONTRARY TO THE LAW.

KALAS FALLS
 PHASE 3
 1832 ROLESVILLE ROAD
 WAKE COUNTY, NC

JOB NUMBER: 9900
 CHECKED BY:
 DRAWN BY:
 DATE: FEB 18, 2021
 SHEET TITLE:
 PHASE 3
 SITE PLAN
 SHEET NO.:
 5.5



SETBACK TABLE SINGLE FAMILY

	50'	50' W ALLEY	50'-59'	60'-69'	70'-79'	80'-100'	101' +
FRONT	20'	15'	20'	25'	25'	25'	25'
REAR	20'	15'	20'	25'	25'	25'	30'
SIDE	**	**	**	*	*	10'	12'
CORNER SIDE	10'	10'	10'	10'	10'	15'	18'
MIN. LOT SIZE	6,000	6,000	6,000	6,600	8,400	10,400	14,000

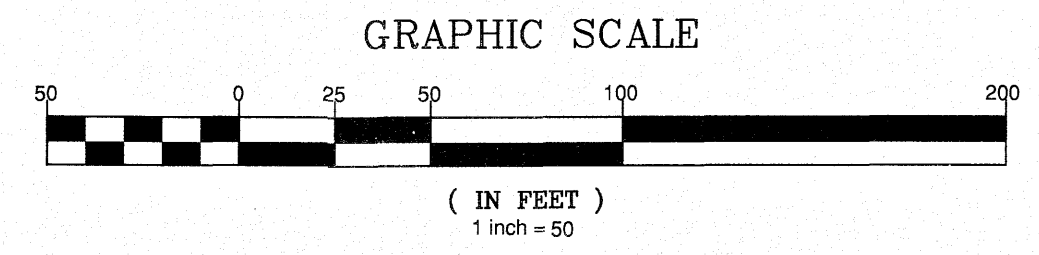
* AGGREGATE 12', MIN. 5'
 ** MIN. 3' AGGREGATE 10'

GENERAL NOTE:

- SIGHT DISTANCE TRIANGLES ARE 10'x70'. WHERE SIGHT LINES ENCRUCH ONTO A PRIVATE LOT A SIGHT EASEMENT IS REQUIRED.
- BACK OF CURB RADIUS AT INTERSECTIONS-
 RESIDENTIAL-RESIDENTIAL- 28'
 RESIDENTIAL-COLLECTOR- 30'
 COLLECTOR-COLLECTOR- 30'
 ENTRANCE AT CUL-DE-SAC- 32.5'
 ENTRY ROADS-ROLESVILLE RD.- 35'

SITE LEGEND

---	PROPOSED LOT LINE
---	FLOODLINE
---	BUILDING RESTRICTION LINE
---	PROPOSED LOT SETBACK
---	PROPOSED ROW
---	PROPOSED SIDEWALK
---	PROPOSED BOC
---	PROPOSED EOP
---	PROPOSED CENTERLINE
---	PROPOSED GRADING
---	PROPOSED EASEMENT
---	PROPOSED HANDICAP RAMPS
---	PROPOSED SIGHT TRIANGLE
●	TOT LOT
●	POCKET PARK
Ⓜ	MAIL KIOSK LOCATION
□	OPEN SPACE
▨	GREENWAY/ROADSIDE TRAIL
▨	FUTURE PHASING
▨	EXISTING PHASING
▨	EXISTING WETLANDS
---	PROPOSED SWALE (AT TIME OF LOT GRADING)
---	PROPOSED PHASELINE

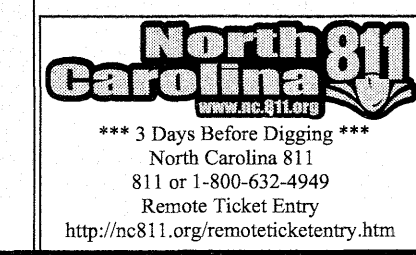


CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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City of Raleigh Development Approval _____

Raleigh Water Review Officer _____

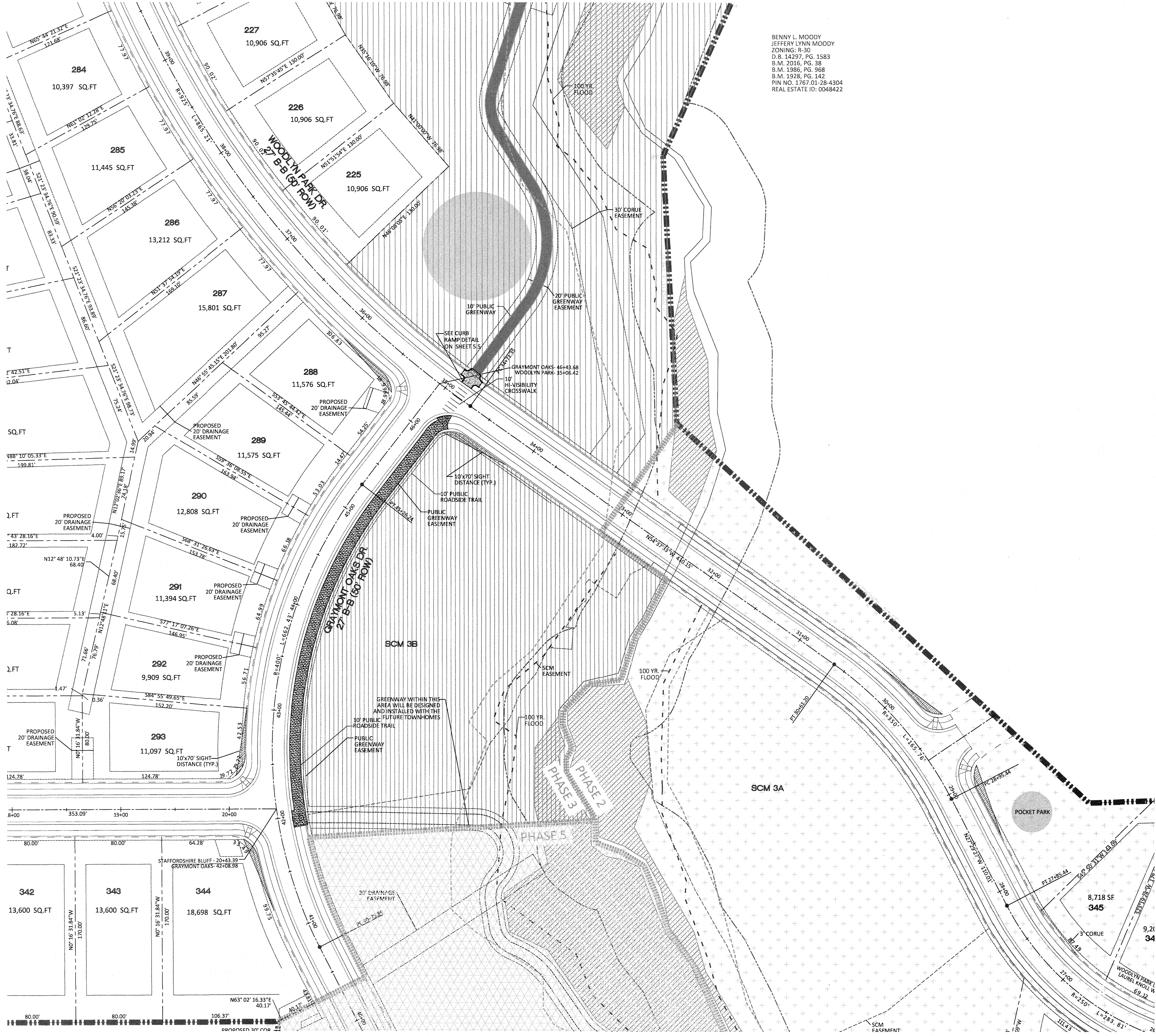


STIPULATION FOR REUSE

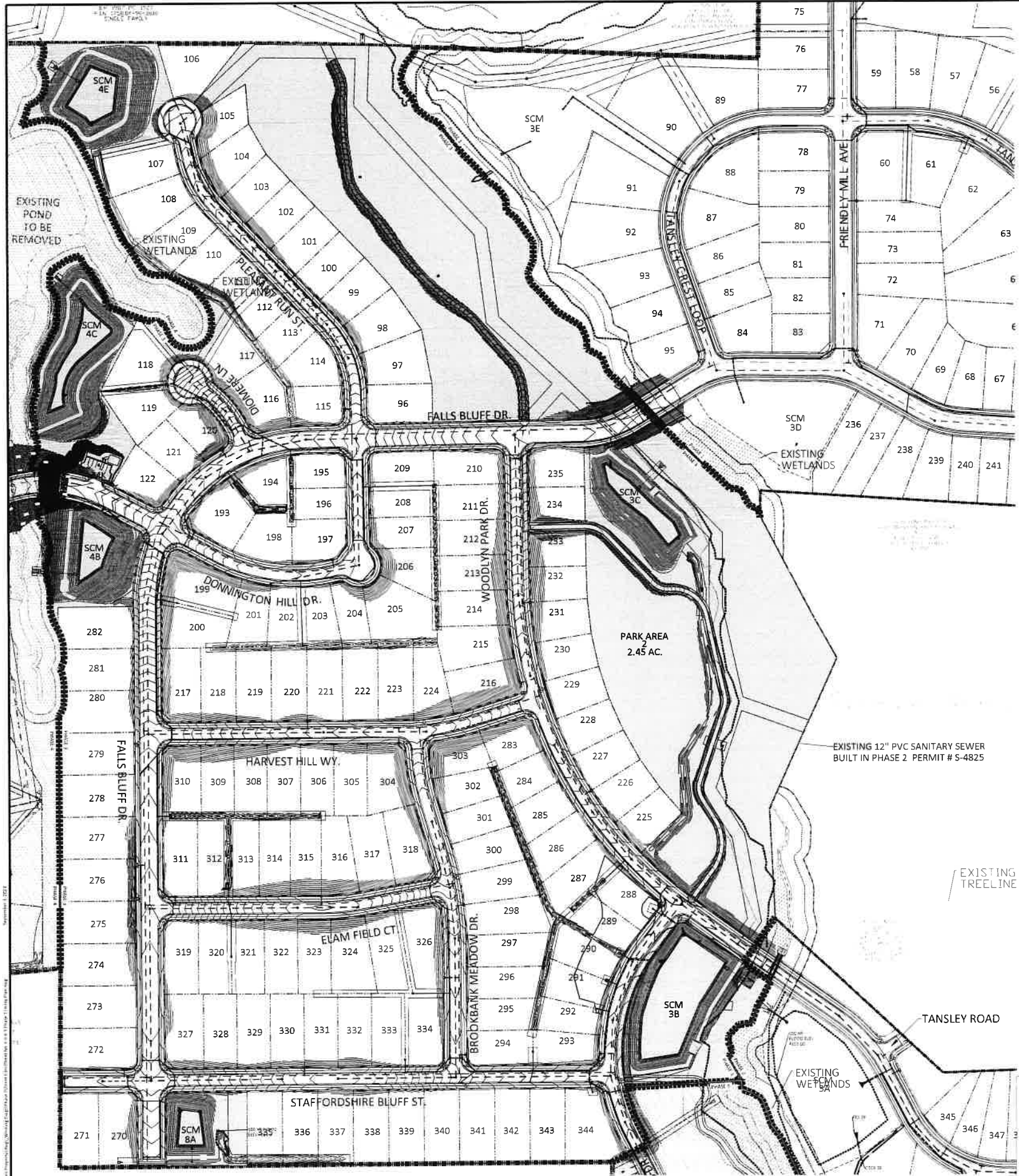
THIS DRAWING WAS PREPARED FOR USE ON THE SPECIFIC SITE, NAMED HEREON, CONTEMPORANEOUSLY WITH ITS ISSUE DATE AS LISTED, HEREON, AND IT IS NOT SUITABLE FOR USE ON A DIFFERENT PROJECT SITE OR AT A LATER TIME. USE OF THIS DRAWING FOR REFERENCE OR EXAMPLE ON ANOTHER PROJECT REQUIRES THE SERVICES OF PROPERLY LICENSED ARCHITECTS AND ENGINEERS. REPRODUCTION OF THIS DRAWING FOR REUSE ON ANOTHER PROJECT IS NOT AUTHORIZED AND MAY BE CONTRARY TO THE LAW.

KALAS FALLS PHASE 3
 1832 ROLESVILLE ROAD
 WAKE COUNTY, NC

JOB NUMBER: 9900
 CHECKED BY:
 DRAWN BY:
 DATE: FEB 18, 2021
 SHEET TITLE:
PHASE 3 SITE PLAN
 SHEET NO.: 5.6



BENNY L. MOODY
 JEFFERY LYNN MOODY
 ZONING: R-30
 D.B. 14297, PG. 1583
 S.M. 2016, PG. 38
 S.M. 1986, PG. 968
 S.M. 1928, PG. 142
 PIN NO. 1757-01-28-4304
 REAL ESTATE ID: 0048422



NOTE: THE 100 YEAR FLOOD-LINE AS ON THESE PLANS WERE TAKEN FROM THE FLOOD STUDY PREPARED BY DONLAD A SEVER, PE (024627) OF HUGH J. GILLECE, III AND ASSOCIATES, P.A.

UTILITIES LEGEND	
	EXISTING BOUNDARY
	EXISTING 50' RIPIAN BUFFER
	EXISTING BUFFER ZONES
	PROPOSED LOT LINE
	PROPOSED ROW
	PROPOSED SIDEWALK
	PROPOSED BOC
	PROPOSED EOP
	PROPOSED CENTERLINE
	PROPOSED EASEMENT
	PHASELINE
	RIP RAP
	BASIN WEIR
	JUNCTION BOX
	PROPOSED CATCH BASIN
	PROPOSED YARD INLET
	PROPOSED DROP INLET
	PROPOSED FLARED END SECTION
	PROPOSED WATER METER
	PROPOSED SEWER SERVICE
	PROPOSED MANHOLE
	PROPOSED FIRE HYDRANT
	PROPOSED WATER VALVE
	PROPOSED WATER REDUCER
	PROPOSED SEWER LINE
	PROPOSED WATER LINE
	PROPOSED STORM WATER
	OPEN SPACE
	FUTURE PHASING
	EXISTING PHASING
	100 YEAR FLOOD EASEMENT



NO.	DATE	REVISION
1	7/21/2021	1ST REVIEW FROM TOWN OF ROLESVILLE CONSULTANT, WAKE COUNTY AND CITY OF RALEIGH
2	9/4/2024	TOWN OF ROLESVILLE CONSULTANT COMMENTS

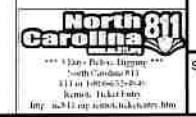
STIPULATION FOR REUSE
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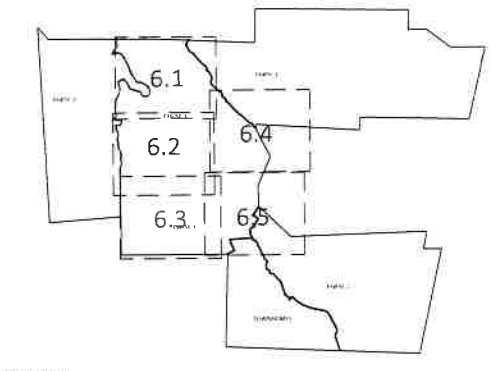
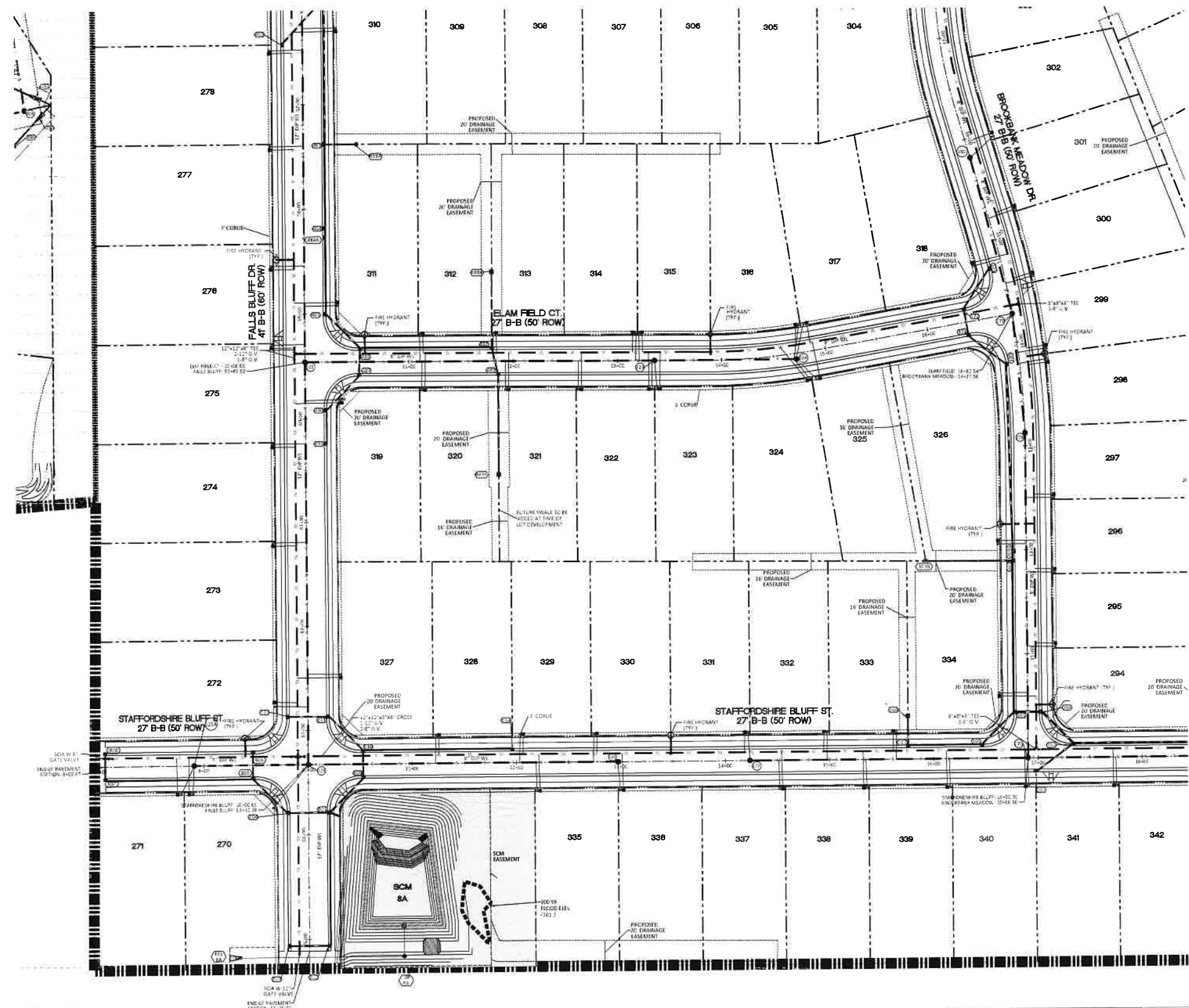
KALAS FALLS PHASE 3
 1832 ROLESVILLE ROAD
 WAKE COUNTY, NC

JOB NUMBER	9800
CHECKED BY	
DRAWN BY	
DATE	FEB 18 2021
SHEET TITLE	PHASE 3 OVERALL UTILITY PLAN
SHEET NO.	6.0



CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION
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 City of Raleigh Development Approval: _____
 Raleigh Water Review Officer





GRAPHIC SCALE 1"=100'

UTILITIES LEGEND	
	EXISTING BOUNDARY
	EXISTING 50' NEUSE RIVERIAN BUFFER
	EXISTING BUFFER ZONES
	PROPOSED LOT LINE
	PROPOSED ROW
	PROPOSED SIDEWALK
	PROPOSED BOC
	PROPOSED EOP
	PROPOSED CENTERLINE
	PROPOSED EASEMENT
	PHASELINE
	RIP RAP
	BASIN WEIR
	JUNCTION BOX
	PROPOSED CATCH BASIN
	PROPOSED YARD INLET
	PROPOSED DROP INLET
	PROPOSED FLARED END SECTION
	PROPOSED WATER METER
	PROPOSED SEWER SERVICE
	PROPOSED MANHOLE
	PROPOSED FIRE HYDRANT
	PROPOSED WATER VALVE
	PROPOSED WATER REDUCER
	PROPOSED SEWER LINE
	PROPOSED WATER LINE
	PROPOSED STORM WATER
	OPEN SPACE
	FUTURE PHASING
	EXISTING PHASING
	100 YEAR FLOOD EASEMENT

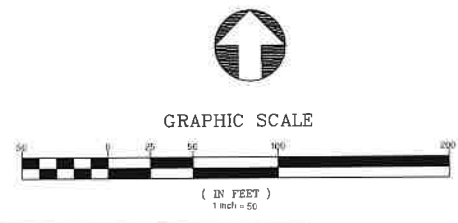


NO.	DATE	REVISION
1	7/21/2021	1ST REVIEW FROM TOWN OF ROLESVILLE CONSULTANT, WAKE COUNTY AND CITY OF RALEIGH
2	9/4/2024	TOWN OF ROLESVILLE CONSULTANT COMMENTS

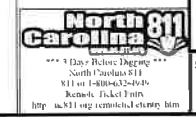
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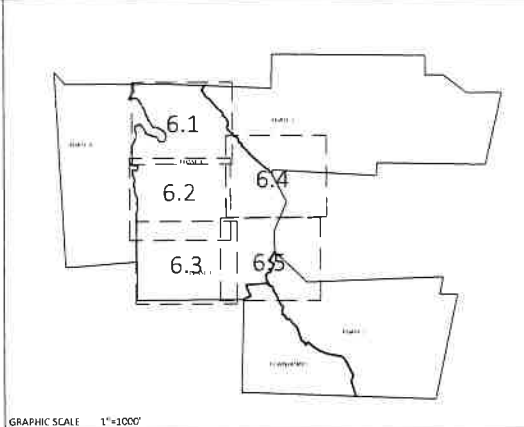
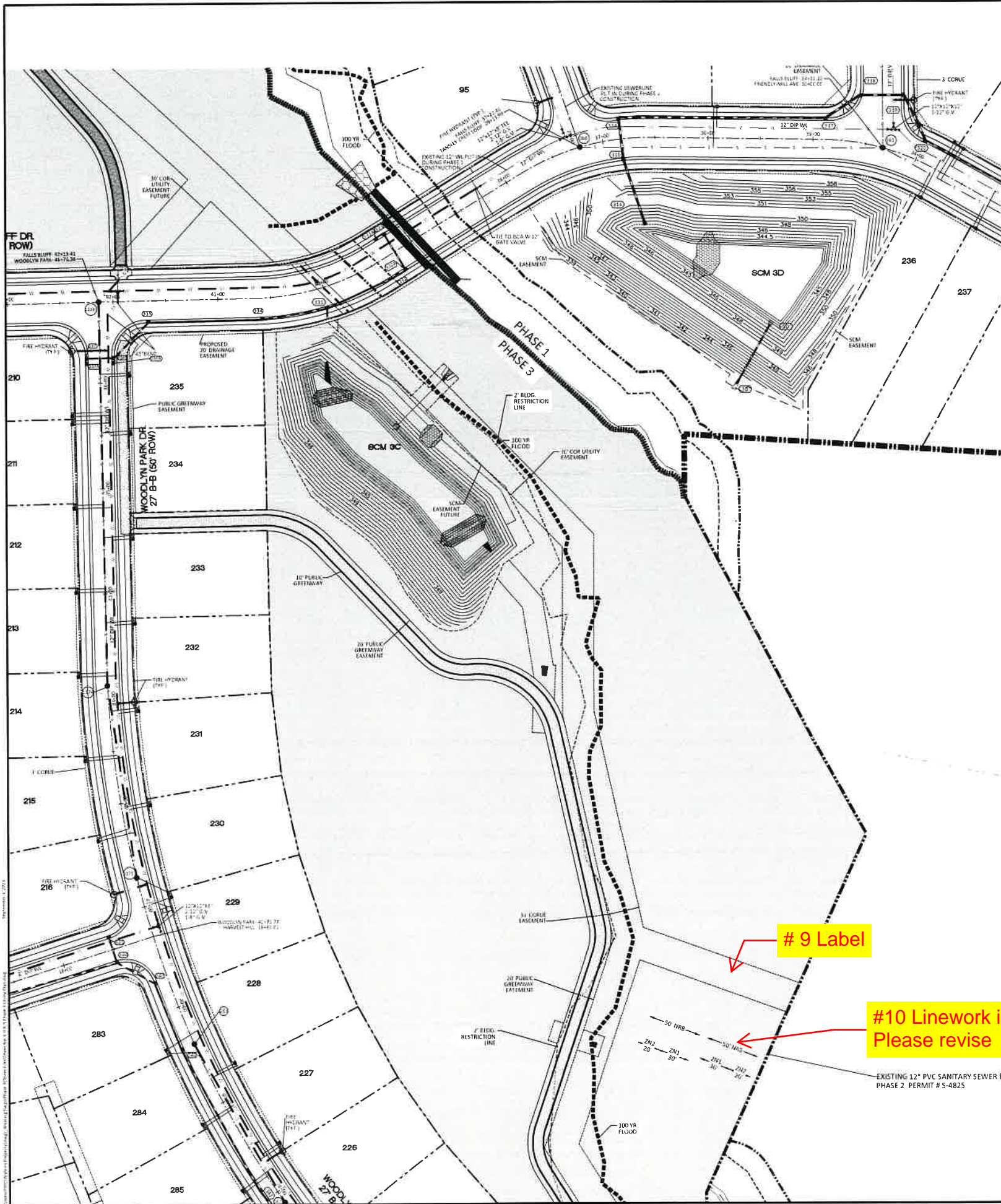
KALAS FALLS PHASE 3
 1832 ROLESVILLE ROAD
 WAKE COUNTY, NC

JOB NUMBER	9900
CHECKED BY	
DRAWN BY	
DATE	FEB 16, 2021
SHEET TITLE	PHASE 3 UTILITY PLAN (50 SCALE)
SHEET NO.	6.3



CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION
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 City of Raleigh Development Approval _____
 Raleigh Water Review Officer





GRAPHIC SCALE 1"=100'

UTILITIES LEGEND	
	EXISTING BOUNDARY
	EXISTING 50' NEUSE RIPARIAN BUFFER
	EXISTING BUFFER ZONES
	PROPOSED LOT LINE
	PROPOSED ROW
	PROPOSED SIDEWALK
	PROPOSED BOC
	PROPOSED EOP
	PROPOSED CENTERLINE
	PROPOSED EASEMENT
	PHASELINE
	RIP RAP
	BASIN WEIR
	JUNCTION BOX
	PROPOSED CATCH BASIN
	PROPOSED YARD INLET
	PROPOSED DROP INLET
	PROPOSED FLARED END SECTION
	PROPOSED WATER METER
	PROPOSED SEWER SERVICE
	PROPOSED MANHOLE
	PROPOSED FIRE HYDRANT
	PROPOSED WATER VALVE
	PROPOSED WATER REDUCER
	PROPOSED SEWER LINE
	PROPOSED WATER LINE
	PROPOSED STORM WATER
	OPEN SPACE
	FUTURE PHASING
	EXISTING PHASING
	100 YEAR FLOOD EASEMENT



NO.	DATE	REVISION
1	7/21/2021	1ST REVIEW
2	3/4/2024	TOWN OF ROLESVILLE CONSULTANT COMMENTS

STIPULATION FOR REUSE
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KALAS FALLS PHASE 3 UTILITY PLAN (50 SCALE)
 1832 ROLESVILLE ROAD
 WAKE COUNTY, NC

JOB NUMBER	9900
CHECKED BY	
DRAWN BY	
DATE	FEB 18, 2021
SHEET TITLE	PHASE 3 UTILITY PLAN (50 SCALE)
SHEET NO.	6.4

9 Label

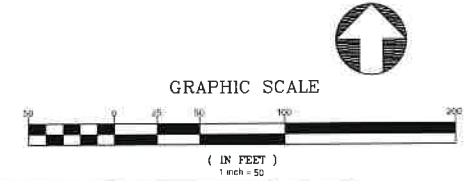
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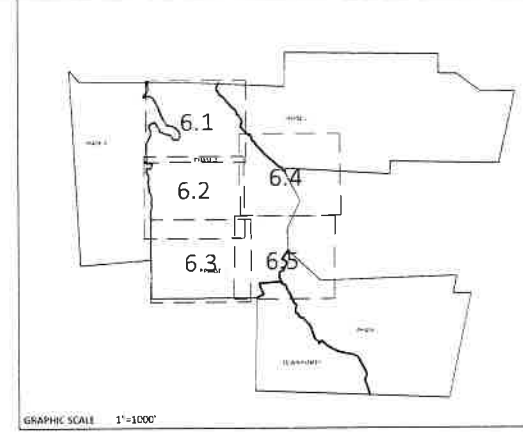
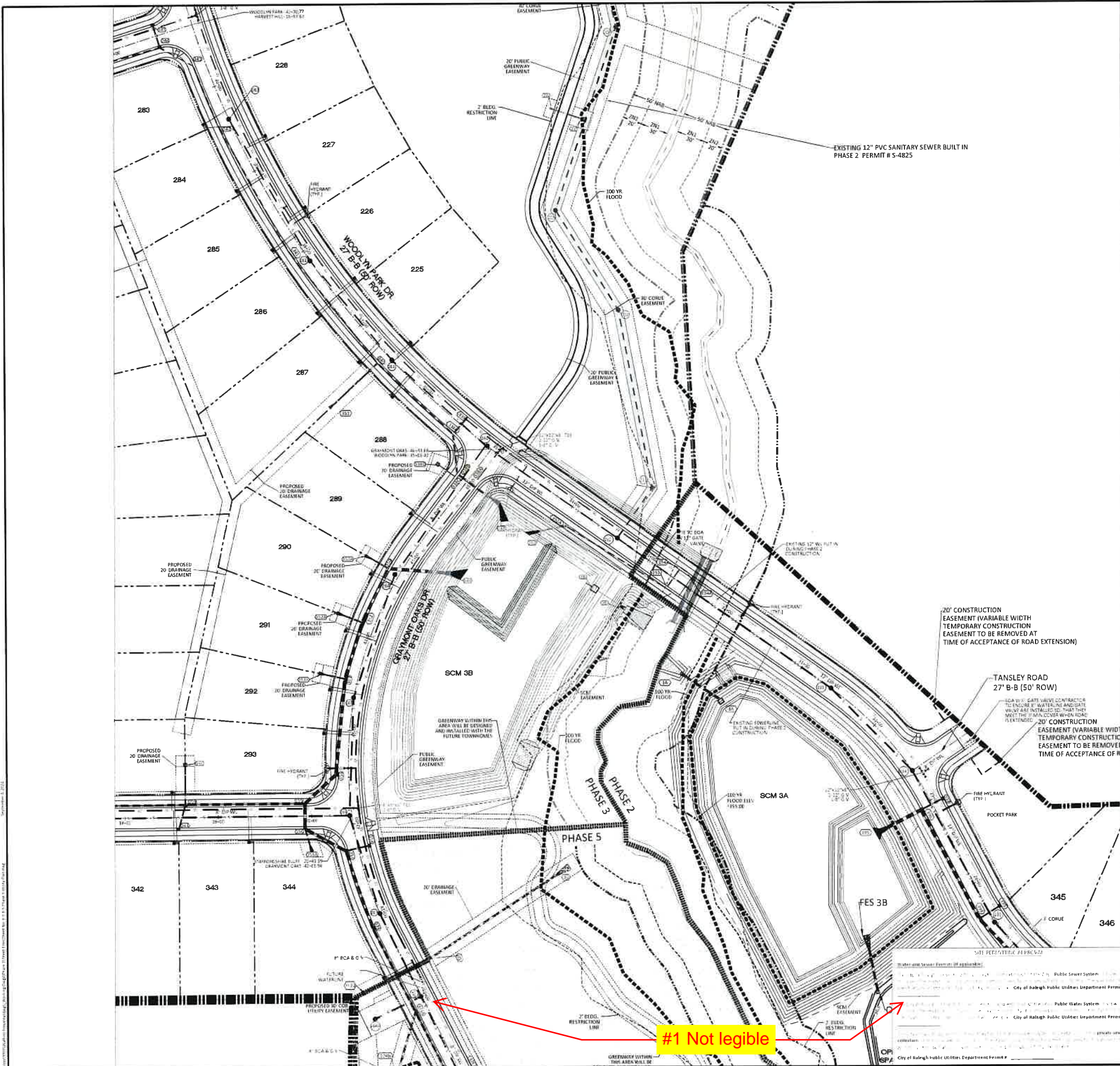
NOTE: THE 100 YEAR FLOOD-LINE AS ON THESE PLANS WERE TAKEN FROM THE FLOOD STUDY PREPARED BY DONLAD A SEVER, PE (024627) OF HUGH J. GILLECE, III AND ASSOCIATES, P.A.

CITY OF RALEIGH PLANS AUTHORIZED FOR CONSTRUCTION

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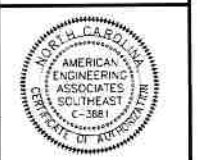
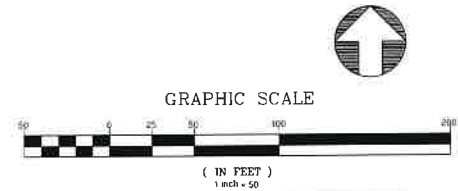
City of Raleigh Development Approval: _____
 Raleigh Water Review Officer





UTILITIES LEGEND	
	EXISTING BOUNDARY
	EXISTING 50' NEUSE RIPARIAN BUFFER
	EXISTING BUFFER ZONES
	PROPOSED LOT LINE
	PROPOSED ROW
	PROPOSED SIDEWALK
	PROPOSED BOC
	PROPOSED EOP
	PROPOSED CENTERLINE
	PROPOSED EASEMENT
	PHASELINE
	RIP RAP
	BASIN WEIR
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	OPEN SPACE
	FUTURE PHASING
	EXISTING PHASING
	100 YEAR FLOOD EASEMENT

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NO.	DATE	DESCRIPTION
1	7/21/2021	ISSUED FOR REVIEW TOWN OF ROLESVILLE CONSULTANT, WAKE COUNTY AND CITY OF RALEIGH
2	9/4/2024	TOWN OF ROLESVILLE CONSULTANT COMMENTS

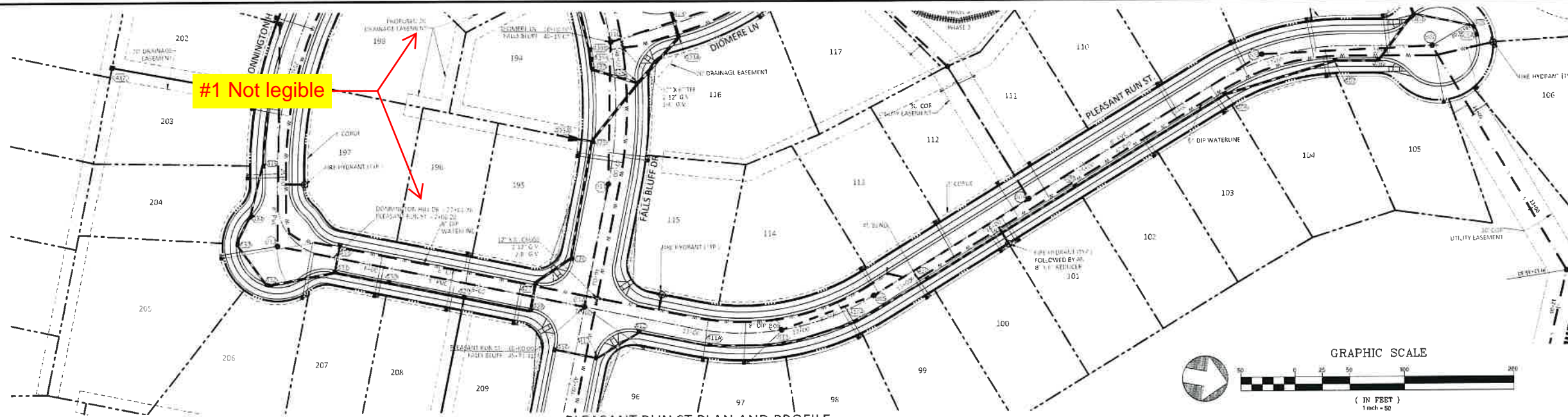
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KALAS FALLS
PHASE 3
1832 ROLESVILLE ROAD
WAKE COUNTY, NC

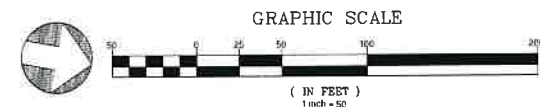
JOB NUMBER	9900
CHECKED BY	
DRAWN BY	
DATE	FEB 16 2021
SHEET TITLE	PHASE 3 UTILITY PLAN (50 SCALE)
SHEET NO.	6.5



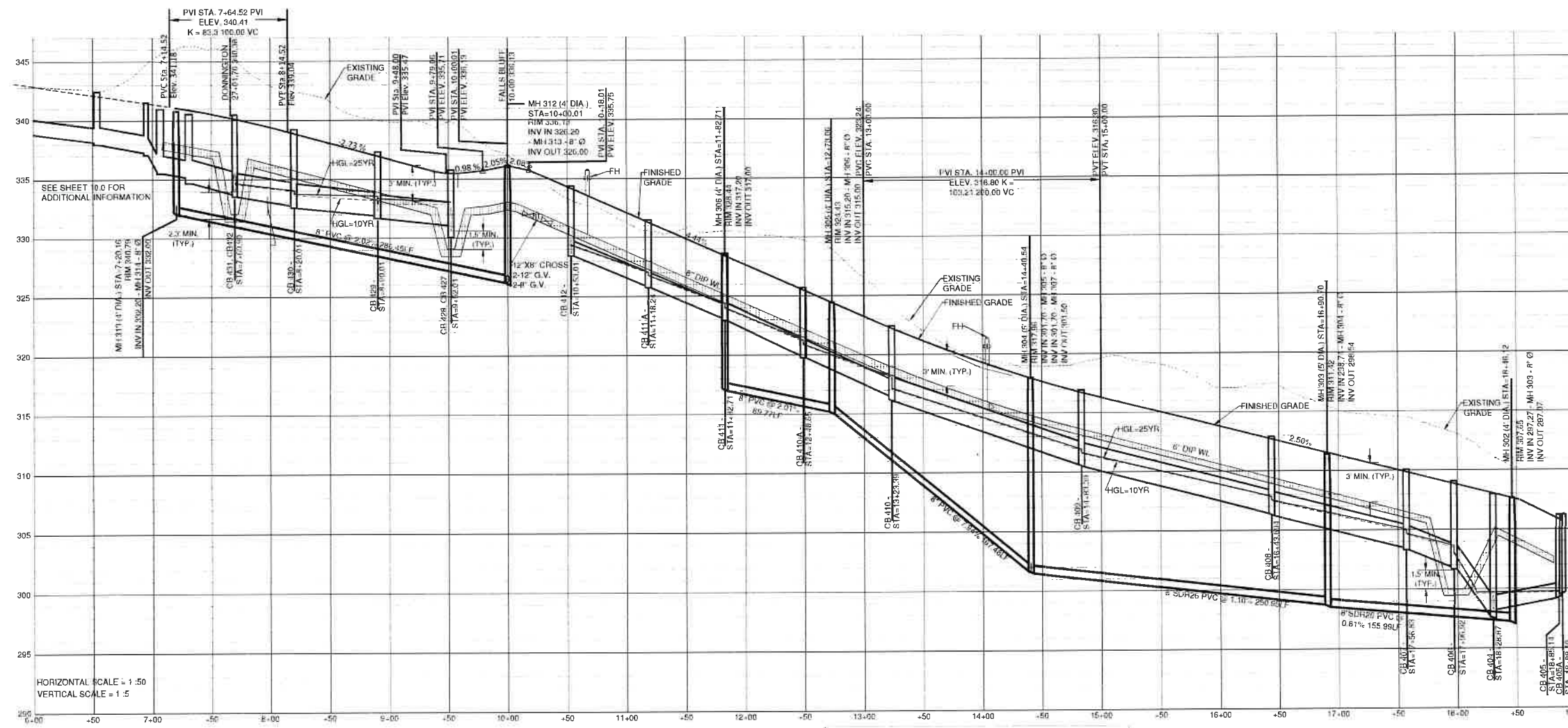
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City of Raleigh Development Approval
Raleigh Water Review Officer



PLEASANT RUN ST PLAN AND PROFILE



UTILITIES LEGEND	
	EXISTING BOUNDARY
	EXISTING 50' NEUSE RIVERIAL BUFFER
	EXISTING BUFFER ZONES
	PROPOSED LOT LINE
	PROPOSED ROW
	PROPOSED SIDEWALK
	PROPOSED BOC
	PROPOSED FOP
	PROPOSED CENTERLINE
	PROPOSED EASEMENT
	PHASILINE
	RIP RAP
	BASIN WEIR
	JUNCTION BOX
	PROPOSED CATCH BASIN
	PROPOSED YARD INLET
	PROPOSED DROP INLET
	PROPOSED FLARED END SECTION
	PROPOSED WATER METER
	PROPOSED SEWER SERVICE
	PROPOSED MANHOLE
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	PROPOSED WATER REDUCER
	PROPOSED SEWER LINE
	PROPOSED WATER LINE
	PROPOSED STORM WATER
	OPEN SPACE
	FUTURE PHASING
	EXISTING PHASING
	100 YEAR FLOOD EASEMENT



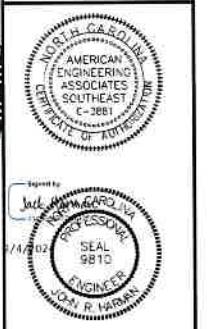
HORIZONTAL SCALE = 1" = 50'
VERTICAL SCALE = 1" = 5'

- GENERAL NOTE
- ALL WATERLINE AND STORM CROSSINGS SHALL HAVE A MINIMUM OF 1' VERTICAL CLEARANCE IF THIS CANNOT BE ACHIEVED THEN A CRADLE IS TO BE USED SEE DETAIL S-49 ON SHEET CD10
 - TOWN OF ROLESVILLE INSPECTOR WILL HAVE AUTHORITY FOR FINAL APPROVAL ON ROAD PROFILES THAT ARE DESIGNED WITH A CHANGE IN GRADE THAT IS 6% OR GREATER. THE INSPECTOR WILL NEED TO NOTIFY THE DESIGN ENGINEER ON ANY ROAD CONSTRUCTION THAT ARE NOT ACCEPTABLE IN THE FIELD (INCLUDING ALL INTERSECTION GRADES/CURBS RETURNS GRADES)
 - PROPOSED CB (SAG S) NEED TO BE COORDINATED WITH PVI (LOW POINTS) FOR GRADE

Water Use Permits (Regulation)
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 _____

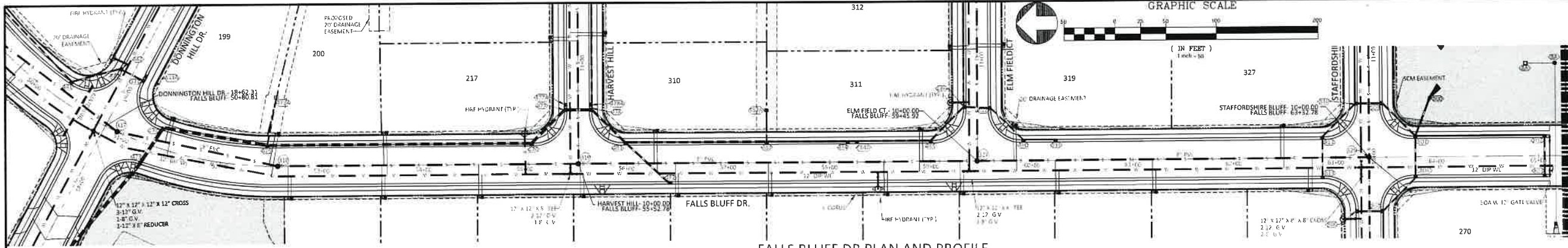


NO.	DATE	REVISION
1	7/27/2021	LIST REVIEW FROM TOWN OF ROLESVILLE CONSULTANT, WAKE COUNTY AND CITY OF RALEIGH
2	9/16/2021	TOWN OF ROLESVILLE CONSULTANT COMMENTS

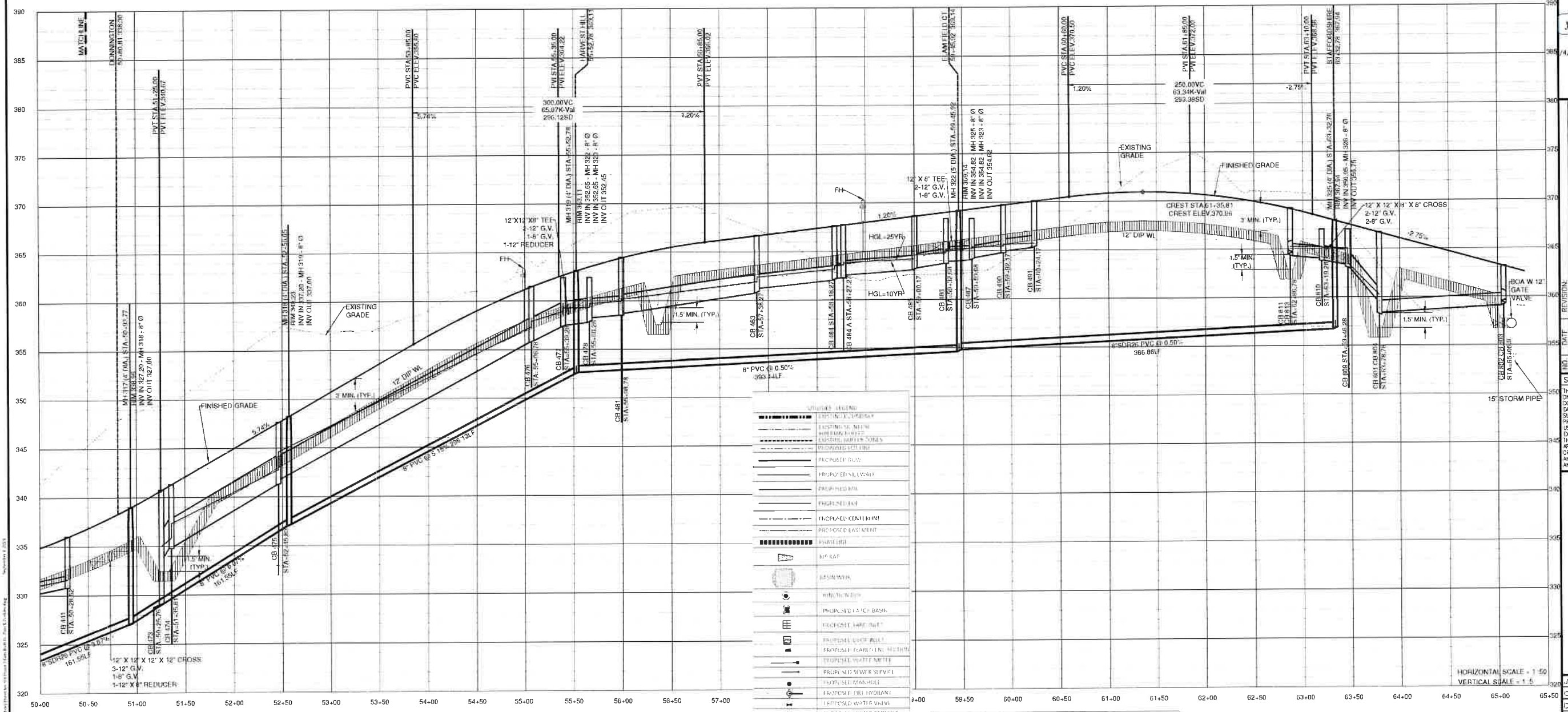
STIPULATION FOR REUSE
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KALAS FALLS PHASE 3
1832 ROLESVILLE ROAD
WAKE COUNTY, NC

JOB NUMBER 9900
CHECKED BY
DRAWN BY
DATE FEB 16 2021
SHEET TITLE
PLEASANT RUN STREET PLAN & PROFILE
SHEET NO. 7.0



FALLS BLUFF DR PLAN AND PROFILE



SYMBOL	DESCRIPTION
(Symbol)	EXISTING GRADE
(Symbol)	FINISHED GRADE
(Symbol)	PROPOSED GRADE
(Symbol)	PROPOSED 12\"/>

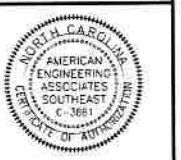
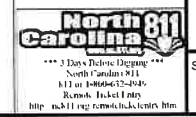
GENERAL NOTE

- 1 ALL WATERLINE AND STORM CROSSINGS SHALL HAVE A MINIMUM OF 1.5' VERTICAL CLEARANCE. IF THIS CANNOT BE ACHIEVED THEN A CURETTE IS TO BE USED SEE DETAIL S-49 ON SHEET CD10.
- 2 TOWN OF ROLESVILLE INSPECTOR WILL HAVE AUTHORITY FOR FINAL APPROVAL ON ROAD PROFILES THAT ARE DESIGNED WITH A CHANGE IN GRADE THAT IS 6" OR GREATER. THE INSPECTOR WILL NEED TO NOTIFY THE DESIGN ENGINEER ON ANY ROAD CONSTRUCTION THAT IS NOT ACCEPTABLE IN THE FIELD (INCLUDING ALL INTERSECTION GRADES/CURB RETURNS GRADES). PROPOSED CB IS 4-G 5' NEED TO BE COORDINATED WITH PVI (LOW POINTS) FOR GRADE.

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 before. 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 used as evidence in any court of law.

City of Raleigh Development Approval
Raleigh Water Review Officer



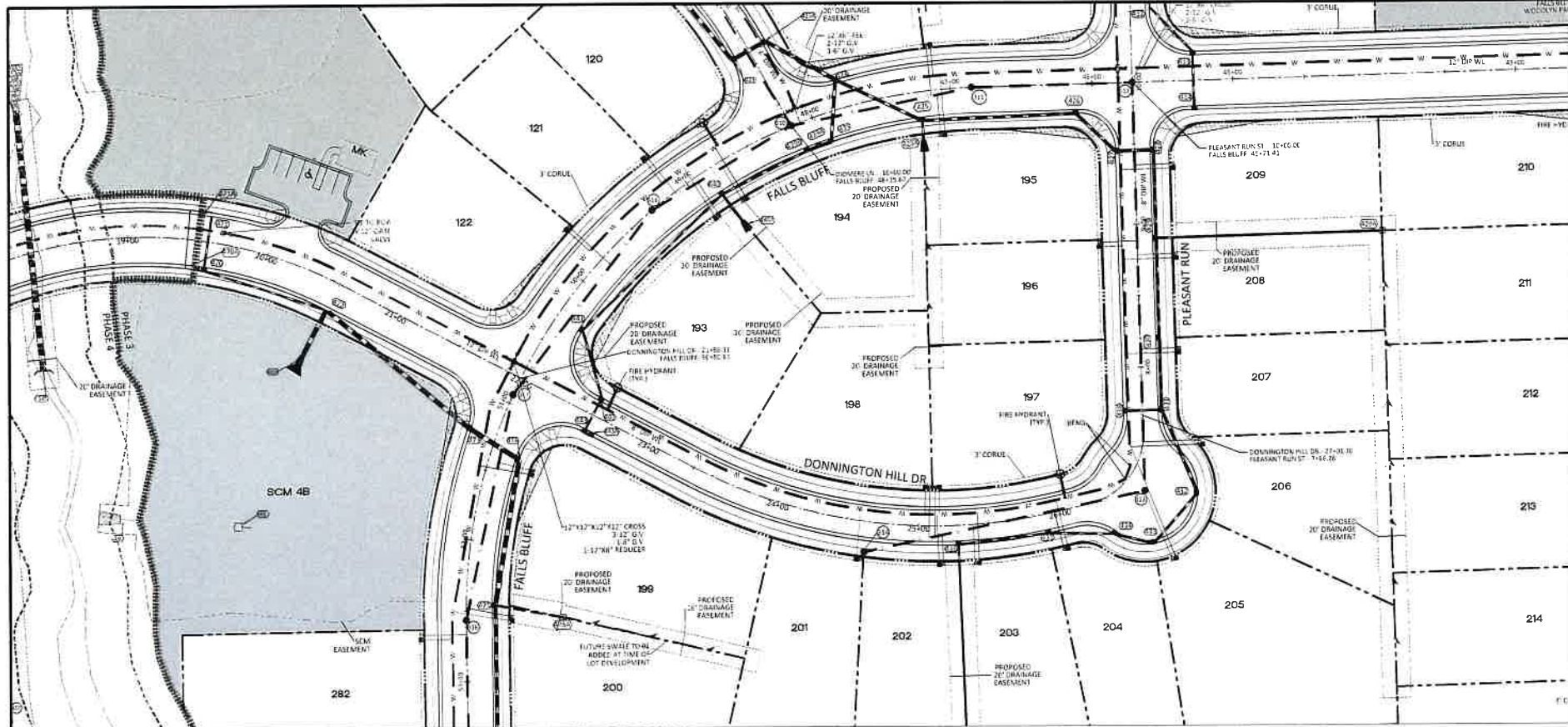
NO.	DATE	REVISION
1	7/27/2021	1ST REVIEW FROM TOWN OF ROLESVILLE CONSULTANT AND TOWN OF ROLESVILLE CONSULTANT COMMENTS
2	9/4/2024	

STIPULATION FOR REUSE

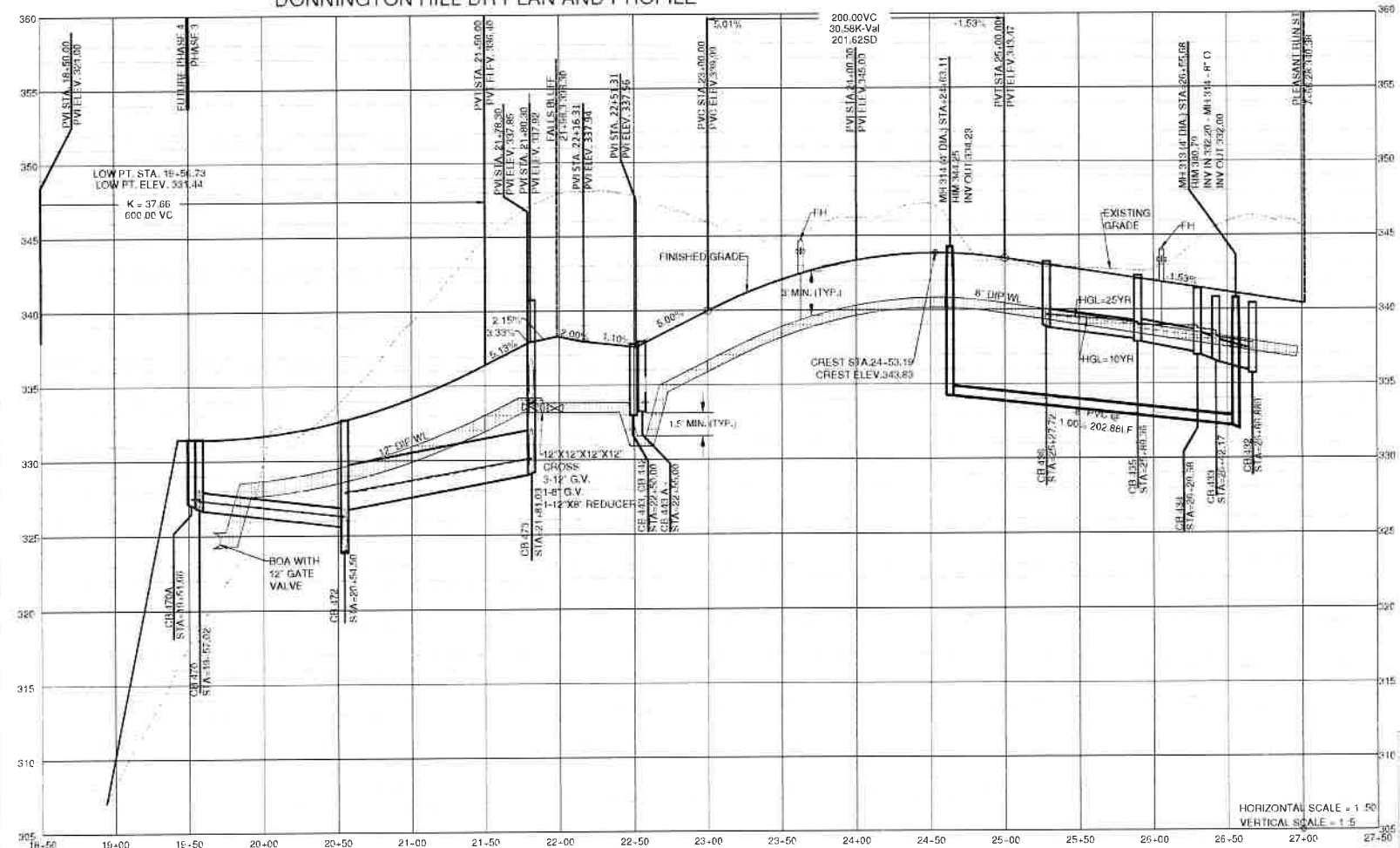
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**KALAS FALLS
PHASE 3
1832 ROLESVILLE ROAD
WAKE COUNTY, NC**

JOB NUMBER	9900
CHECKED BY	
DRAWN BY	
DATE	FEB 18 2021
SHEET TITLE	FALLS BLUFF DRIVE PLAN & PROFILE
SHEET NO.	9.1

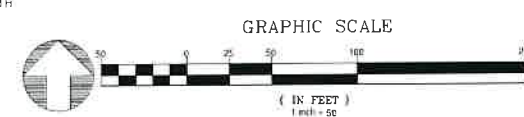


DONNINGTON HILL DR PLAN AND PROFILE



- GENERAL NOTE
1. ALL WATERLINE AND STORM CROSSINGS SHALL HAVE A MINIMUM OF 1.5 VERTICAL CLEARANCE. IF THIS CANNOT BE ACHIEVED, THEN A CRADLE IS TO BE USED. SEE DETAIL S-49 ON SHEET C102.
 2. TOWN OF ROLESVILLE INSPECTOR WILL HAVE AUTHORITY FOR FINAL APPROVAL ON ROAD PROFILES THAT ARE DESIGNED WITH A CHANGE IN GRADE THAT IS 6% OR GREATER. THE INSPECTOR WILL NEED TO NOTIFY THE DESIGN ENGINEER ON ANY ROAD CONSTRUCTION THAT ARE NOT ACCEPTABLE IN THE FIELD (INCLUDING ALL INTERSECTION GRADES, CURB RETURNS GRADES).
 3. PROPOSED C/S (SAG'S) NEED TO BE COORDINATED WITH PVI (LOW POINTS) FOR GRADE.

UTILITIES LEGEND	
	EXISTING BOUNDARY
	EXISTING 50' NEUSE RIPARIAN BUFFER
	EXISTING BUFFER ZONES
	PROPOSED LCT LINE
	PROPOSED ROW
	PROPOSED SIDEWALK
	PROPOSED BOC
	PROPOSED EOP
	PROPOSED CENTERLINE
	PROPOSED EASEMENT
	PHASILINE
	RIP RAP
	BASIN WEIR
	JUNCTION BOX
	PROPOSED CATCH BASIN
	PROPOSED YARD INLET
	PROPOSED DROP INLET
	PROPOSED FLARED END SECTION
	PROPOSED WATER METER
	PROPOSED SEWER SERVICE
	PROPOSED MANHOLE
	PROPOSED FIRE HYDRANT
	PROPOSED WATER VALVE
	PROPOSED WATER REDUCER
	PROPOSED SEWER LINE
	PROPOSED WATER LINE
	PROPOSED STORM WATER
	OPEN SPACE
	FUTURE PHASING
	EXISTING PHASING
	100 YEAR FLOOD EASEMENT



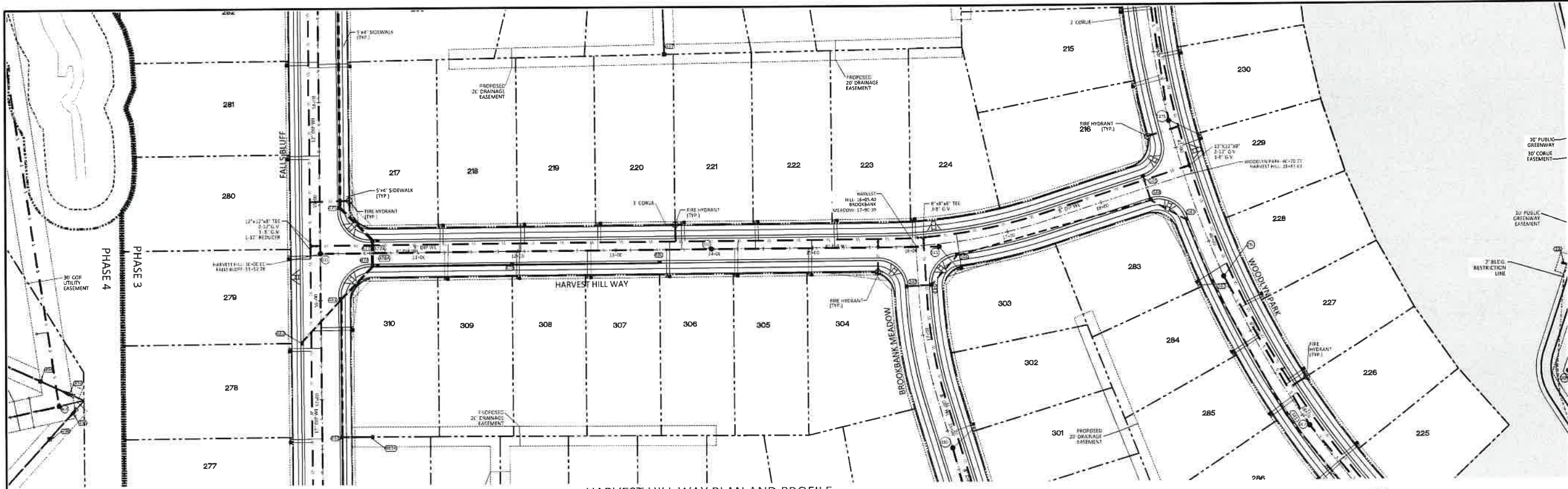
NO.	DATE	REVISION
1	7/27/2021	1ST REVIEW FROM TOWN OF ROLESVILLE CONSULTANT, WAKE COUNTY (A/E)
2	8/11/2024	REVISED FOR ROLESVILLE CONSULTANT COMMENTS

STIPULATION FOR REUSE
 THIS DRAWING WAS PREPARED FOR USE ON THE SPECIFIC SITE NAMED HEREON. CONTEMPORANEOUSLY WITH ITS ISSUE, DATE AS NOTED HEREON, AND IT IS NOT SUITABLE FOR USE ON A DIFFERENT PROJECT SITE OR AT A LATER TIME. USE OF THIS DRAWING FOR RETENTION OR CHANGE ON ANOTHER PROJECT REQUIRES THE SERVICES OF PROPERLY LICENSED ARCHITECTS AND ENGINEERS. REPRESENTATION OF THIS DRAWING FOR REUSE ON ANOTHER PROJECT IS NOT AUTHORIZED AND MAY BE CONTRARY TO THE LAW.

KALAS FALLS
 PHASE 3
 1832 ROLESVILLE ROAD
 WAKE COUNTY, NC

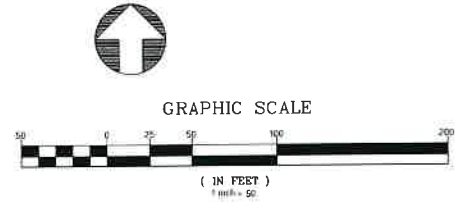
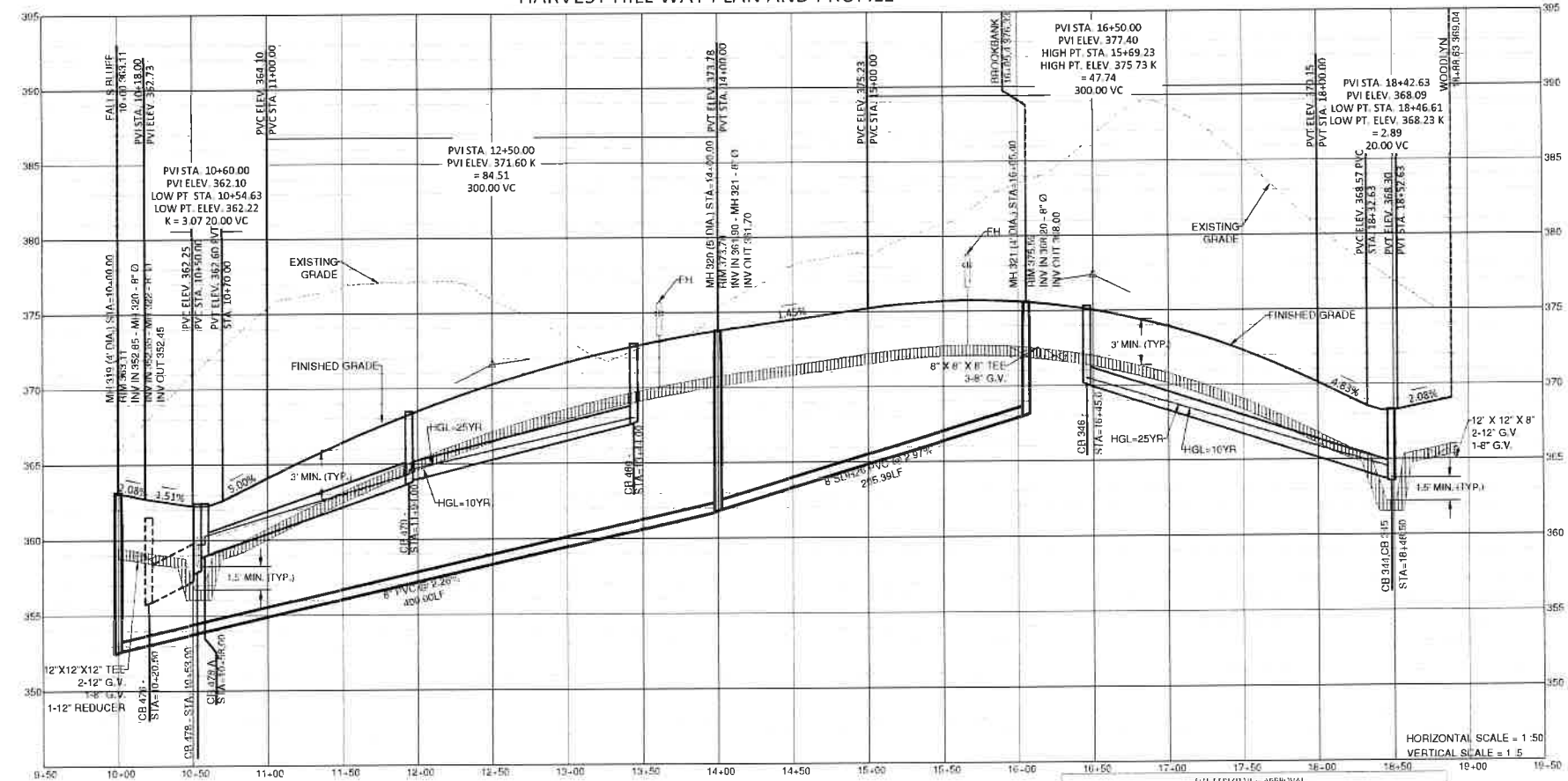
JOB NUMBER	9900
CHECKED BY	
DRAWN BY	
DATE	FEB 18 2021
SHEET TITLE	DONNINGTON HILL DRIVE PLAN & PROFILE
SHEET NO.	10.0

11/20/2024 10:58 AM C:\Users\jgibson\OneDrive\Documents\Projects\1832 Rolesville Road\1832 Rolesville Road.dwg - 10.000 - 10.000



HARVEST HILL WAY PLAN AND PROFILE

UTILITIES LEGEND	
	EXISTING BOUNDARY
	EXISTING 50' NEUSE SUPERIOR BUFFER
	EXISTING BUFFER ZONES
	PROPOSED LOT LINE
	PROPOSED ROW
	PROPOSED SIDEWALK
	PROPOSED BOC
	PROPOSED EOP
	PROPOSED CENTERLINE
	PROPOSED EASEMENT
	PHASELINE
	RIP RAP
	BASIN WEIR
	JUNCTION BOX
	PROPOSED CATCH BASIN
	PROPOSED YARD INLET
	PROPOSED DNOP INLET
	PROPOSED FLARED END SECTION
	PROPOSED WATER METER
	PROPOSED SEWER SERVICE
	PROPOSED 1/4" HOLE
	PROPOSED FIRE HYDRANT
	PROPOSED WATER VALVE
	PROPOSED WATER REDUCER
	PROPOSED SEWER LINE
	PROPOSED WATER LINE
	PROPOSED STORM WATER
	OPEN SPACE
	FUTURE PHASING
	EXISTING PHASING
	100 YEAR FLOOD EASEMENT



GENERAL NOTE

- ALL WATERLINE AND STORM CROSSINGS SHALL HAVE A MINIMUM OF 3' VERTICAL CLEARANCE. IF THIS CANNOT BE ACHIEVED THEN A CRADLE IS TO BE USED SEE DETAIL S-49 ON SHEET CD10
- TOWN OF ROLESVILLE INSPECTOR WILL HAVE AUTHORITY FOR FINAL APPROVAL ON ROAD PROFILES THAT ARE DESIGNED WITH A CHANGE IN GRADE THAT IS 6% OR GREATER. THE INSPECTOR WILL NEED TO NOTIFY THE DESIGN ENGINEER ON ANY ROAD CONSTRUCTION THAT ARE NOT ACCEPTABLE IN THE FIELD (INCLUDING ALL INTERSECTION GRADES/CURB RETURNS GRADES)
- PROPOSED CB (SAG'S) NEED TO BE COORDINATED WITH PVI LOW POINTS FOR GRADE

SITE ERECTION APPROVAL

Water and Sewer Permits (if applicable)

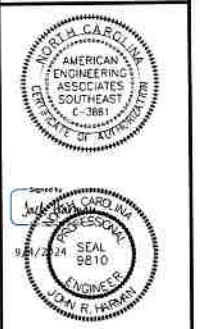
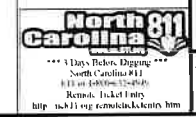
City of Raleigh Public Utilities Department Permit #

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 plan. Any work authorized by this approval must proceed in accordance with the plan, left on file with the City. This electronic approval may not be edited once issued. Any modification to the approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

Raleigh Water Review Officer _____



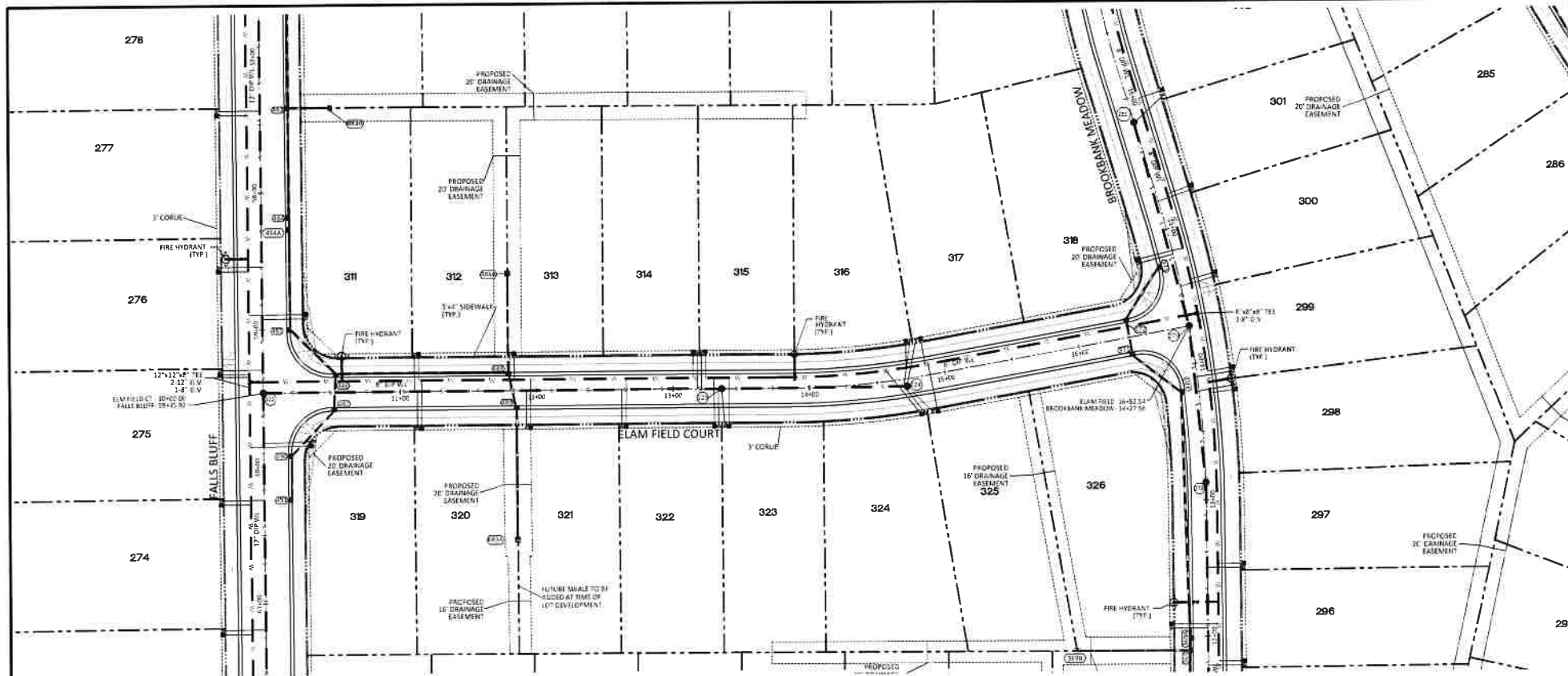
NO.	DATE	DESCRIPTION
1	7/21/2023	SET REVIEW FROM TOWN OF ROLESVILLE CONSULTANT, WAKE COUNTY AREA
2	9/4/2024	TOWN OF ROLESVILLE CONSULTANT COMMENTS

STIPULATION FOR REUSE

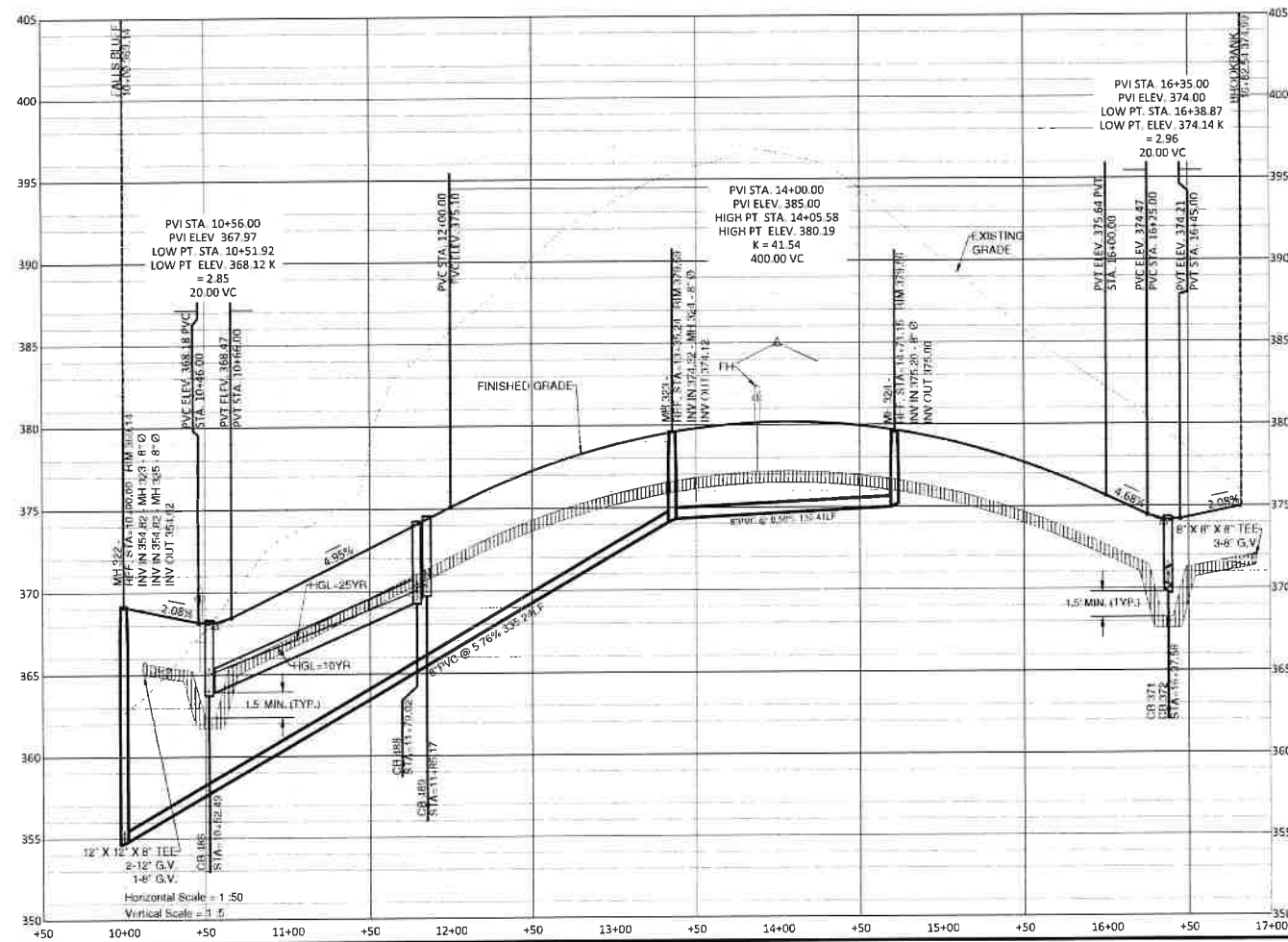
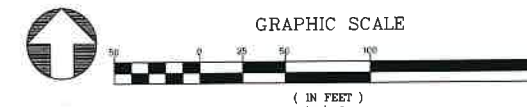
THIS DRAWING WAS PREPARED FOR USE ON THE SPECIFIC SITE, MAJOR REVISIONS CONTEMPORANEOUSLY WITH THE AS-BUILT DATE AS LISTED HEREON AND IS NOT SUITABLE FOR USE ON A DIFFERENT PROJECT SITE OR AT A LATER TIME. USE OF THIS DRAWING FOR REFERENCE OR FOR ANY OTHER PROJECT REQUIRES THE SERVICES OF PROPERLY LICENSED ARCHITECTS AND ENGINEERS. REPRODUCTION OF THIS DRAWING FOR REUSE ON ANOTHER PROJECT IS NOT AUTHORIZED AND MAY BE CONTRARY TO THE LAW.

KALAS FALLS PHASE 3
1832 ROLESVILLE ROAD
WAKE COUNTY, NC

JOB NUMBER	9900
CHECKED BY	
DRAWN BY	
DATE	FEB 16 2021
SHEET TITLE	HARVEST HILL WAY PLAN & PROFILE
SHEET NO.	12.0



ELAM FIELD CT PLAN AND PROFILE



GENERAL NOTE

- 1 ALL WATERLINE AND STORM CROSSINGS SHALL HAVE A MINIMUM OF 1.5' VERTICAL CLEARANCE IF THIS CANNOT BE ACHIEVED THEN A CRADLE IS TO BE USED SEE DETAIL S-49 ON SHEET CD10
- 2 TOWN OF ROLESVILLE INSPECTOR WILL HAVE AUTHORITY FOR FINAL APPROVAL ON ROAD PROFILES THAT ARE DESIGNED WITH A CHANGE IN GRADE THAT IS 6% OR GREATER. THE INSPECTOR WILL NEED TO NOTIFY THE DESIGN ENGINEER ON ANY ROAD CONSTRUCTION THAT ARE NOT ACCEPTABLE IN THE FIELD (INCLUDING ALL INTERSECTION GRADES, CURB RETURNS GRADES)
- 3 PROPOSED CB (SAG'S) NEED TO BE COORDINATED WITH PVI (LOW POINTS) FOR GRADE

UTILITIES LEGEND	
	EXISTING BOUNDARY
	EXISTING 50' RIPEUSE RIPARIAN BUFFER
	EXISTING BUFFER ZONES
	PROPOSED LOT LINE
	PROPOSED ROW
	PROPOSED SIDEWALK
	PROPOSED BOC
	PROPOSED EOP
	PROPOSED CENTERLINE
	PROPOSED EASEMENT
	PHASILINE
	RIP-RAI
	BASIN WEIR
	JUNCTION BOX
	PROPOSED CATCH BASIN
	PROPOSED YARD INLET
	PROPOSED DROP INLET
	PROPOSED FLARED END SECTION
	PROPOSED WATER METER
	PROPOSED SEWER SERVICE
	PROPOSED MANHOLE
	PROPOSED FIRE HYDRANT
	PROPOSED WATER VALVE
	PROPOSED WATER REDUCER
	PROPOSED SEWER LINE
	PROPOSED WATER LINE
	PROPOSED STORM WATER
	OPEN SPACE
	FUTURE PHASING
	EXISTING PHASING
	100 YEAR FLOOD EASEMENT

SITE PERMITTING APPROVAL

Water and Sewer Utility Department Approval

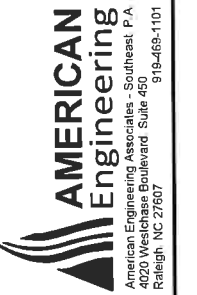
City of Raleigh Public Utilities Department Permit #

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

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City of Raleigh Development Approval _____

Raleigh Water Review Officer _____



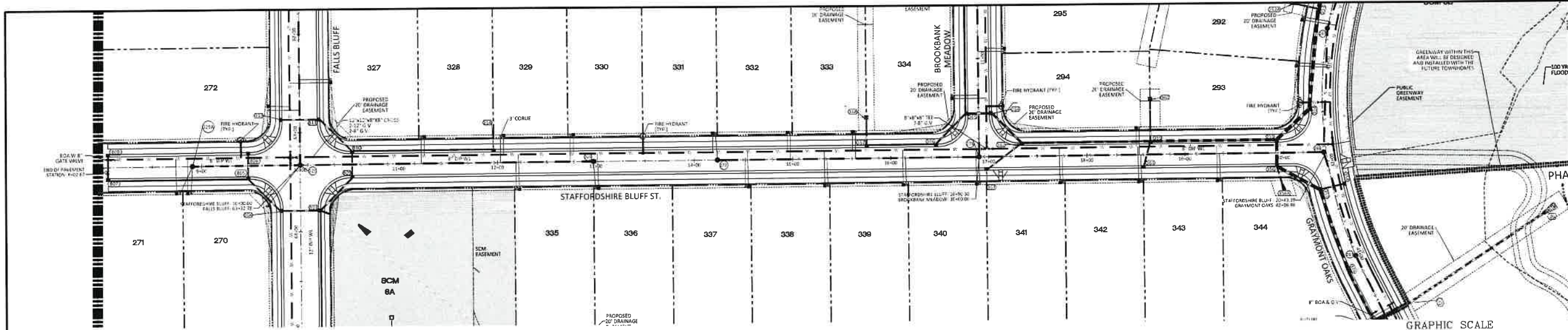
NO.	DATE	REVISION
1	7/22/2021	CITY OF RALEIGH TOWN OF ROLESVILLE CONSULTANT, WAKE COUNTY, AND TOWN OF ROLESVILLE CONSULTANT COMMENTS
2	9/4/2024	

STIPULATION FOR REUSE

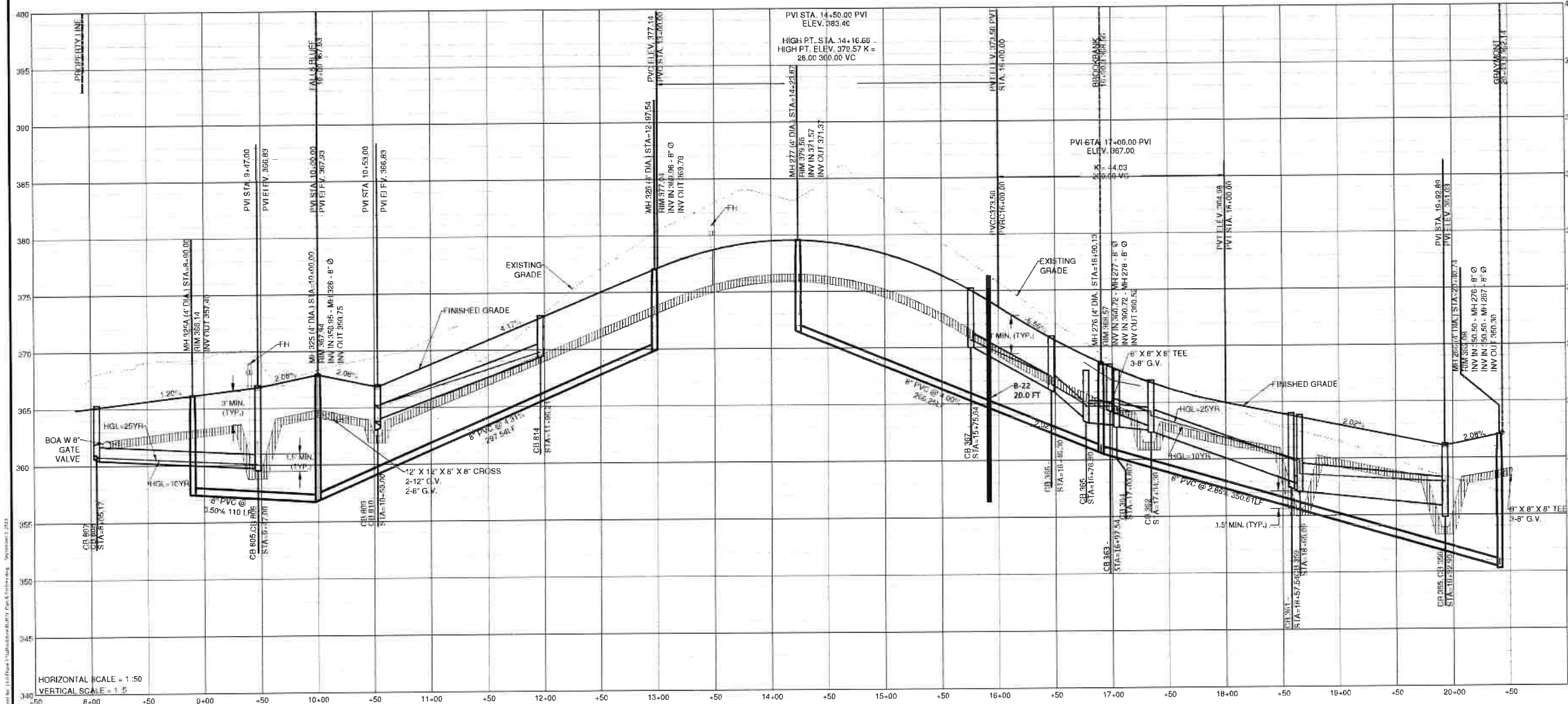
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KALAS FALLS PHASE 3
1832 ROLESVILLE ROAD
WAKE COUNTY, NC

JOB NUMBER	9900
CHECKED BY	
DRAWN BY	
DATE	FEB 16 2021
SHEET TITLE	ELAM FIELD CT. PLAN & PROFILE
SHEET NO.	13.0

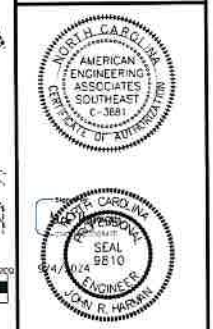


STAFFORDSHIRE BLUFF ST PLAN AND PROFILE



UTILITIES LEGEND	
[Symbol]	EXISTING BOUNDARY
[Symbol]	EXISTING 50' NEUSE RIVERIAN BUFFER
[Symbol]	EXISTING BUFFER ZONES
[Symbol]	PROPOSED LOT LINE
[Symbol]	PROPOSED ROW
[Symbol]	PROPOSED SIDEWALK
[Symbol]	PROPOSED BOC
[Symbol]	PROPOSED EOP
[Symbol]	PROPOSED CENTERLINE
[Symbol]	PROPOSED EASEMENT
[Symbol]	PHASELINE
[Symbol]	RIP RAP
[Symbol]	BASIN WEIR
[Symbol]	JUNCTION BOX
[Symbol]	PROPOSED CATCH BASIN
[Symbol]	PROPOSED YARD INLET
[Symbol]	PROPOSED DROP INLET
[Symbol]	PROPOSED FLARED END SECTION
[Symbol]	PROPOSED WATER METER
[Symbol]	PROPOSED SEWER SERVICE
[Symbol]	PROPOSED MANHOLE
[Symbol]	PROPOSED FIRE HYDRANT
[Symbol]	PROPOSED WATER VALVE
[Symbol]	PROPOSED WATER REDUCER
[Symbol]	PROPOSED SEWER LINE
[Symbol]	PROPOSED WATER LINE
[Symbol]	PROPOSED STORM WATER
[Symbol]	OPEN SPACE
[Symbol]	FUTURE PHASING
[Symbol]	EXISTING PHASING
[Symbol]	100 YEAR FLOOD EASEMENT

AMERICAN Engineering
 American Engineering Associates, Southeast, P.A.
 100 W. Holladay, Suite 450
 Raleigh, NC 27607



NO.	DATE	REVISION
1	7/21/2021	SET REVIEW FROM TOWN OF ROLESVILLE CONSULTANT, WAKE COUNTY ANNO
2	9/4/2024	CITY OF ROLESVILLE CONSULTANT COMMENTS

STIPULATION FOR REUSE
 THIS DRAWING WAS PREPARED FOR USE ON THE SPECIFIC SITE, NAMED HEREON, CONTINGENT UPON THE CITY OF ROLESVILLE, DATE AS SHOWN HEREON, AND IT IS NOT SUITABLE FOR USE ON A DIFFERENT PROJECT SITE OR AT A LATER TIME. USE OF THIS DRAWING FOR RETELEDGE OR EXAMPLE ON ANOTHER PROJECT REQUIRES THE SERVICES OF PROPERLY LICENSED ARCHITECTS AND ENGINEERS. REPRODUCTION OF THIS DRAWING FOR REUSE ON ANOTHER PROJECT IS NOT AUTHORIZED AND MAY BE CONTRARY TO THE LAW.

KALAS FALLS PHASE 3
 1832 ROLESVILLE ROAD
 WAKE COUNTY, NC

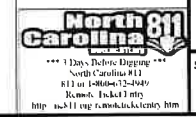
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DRAWN BY	
DATE	FEB 18 2021
SHEET TITLE	STAFFORDSHIRE BLUFF STREET PLAN & PROFILE
SHEET NO.	15.0

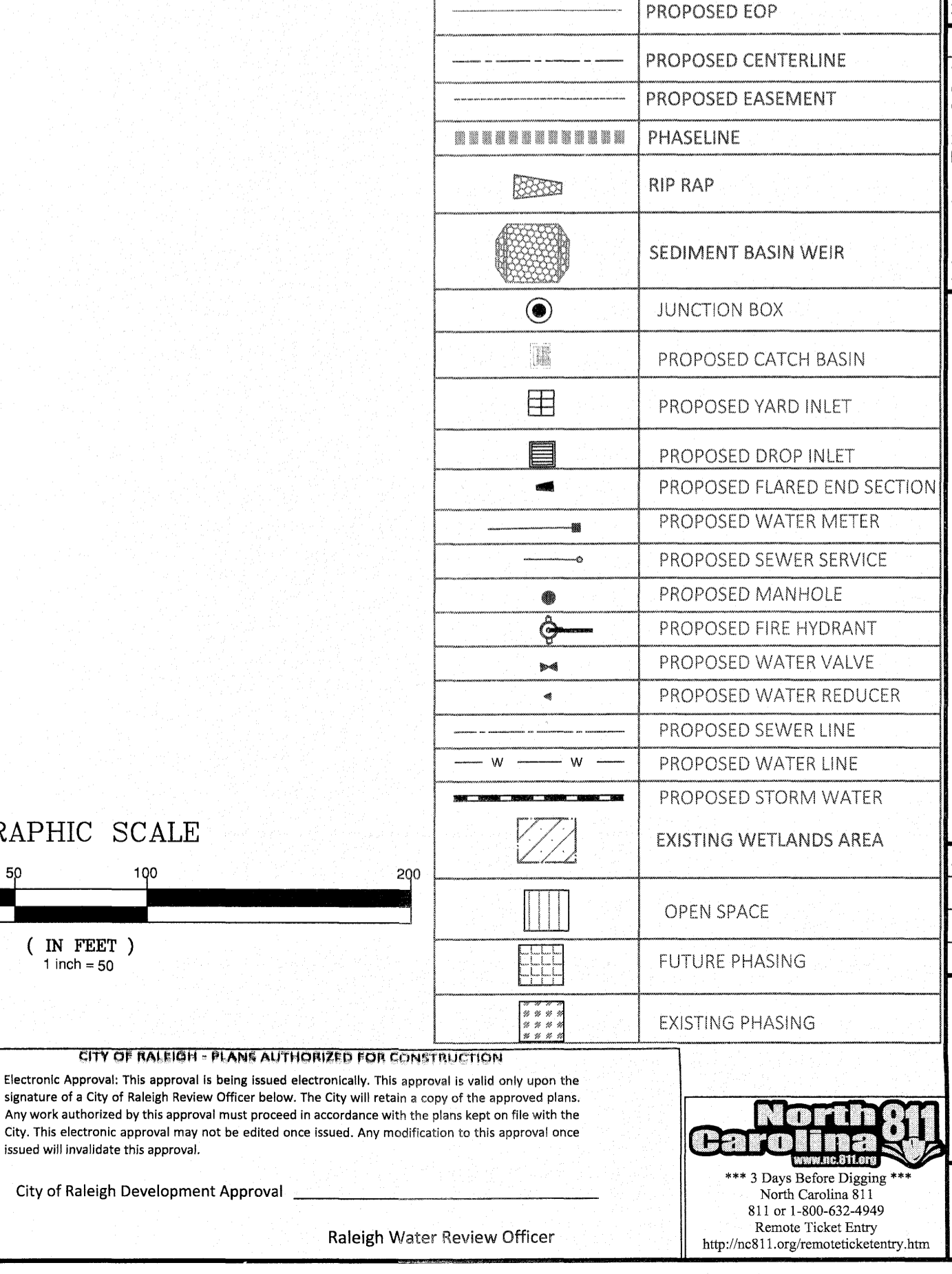
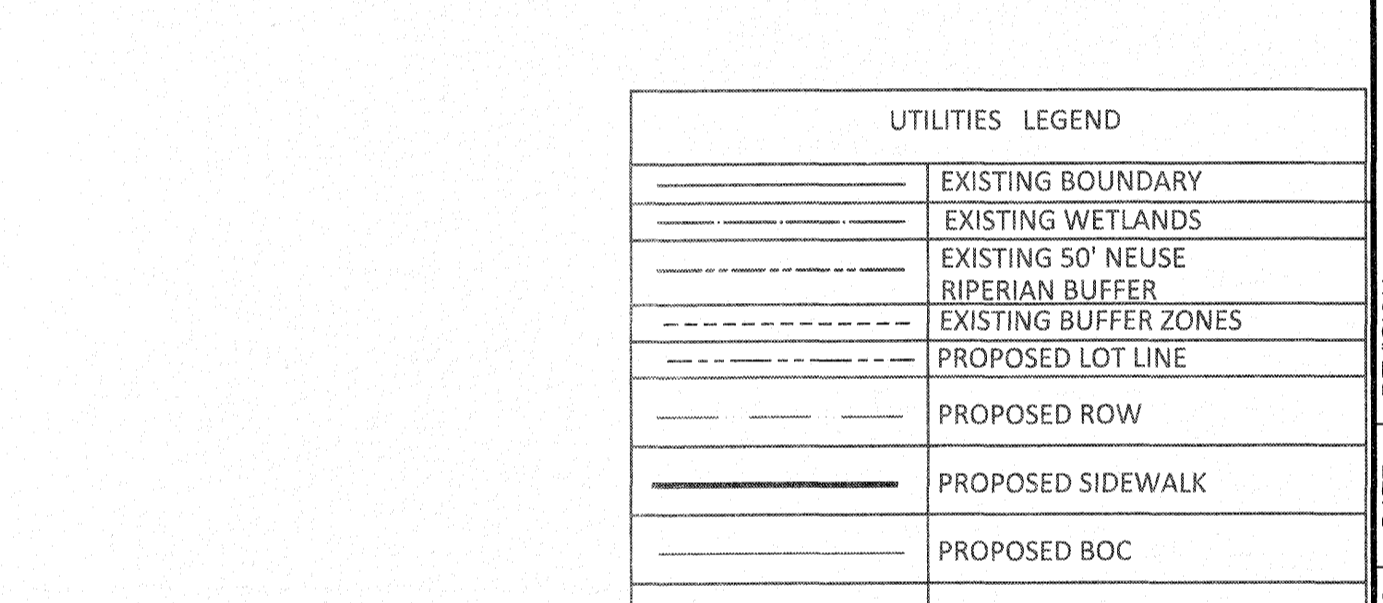
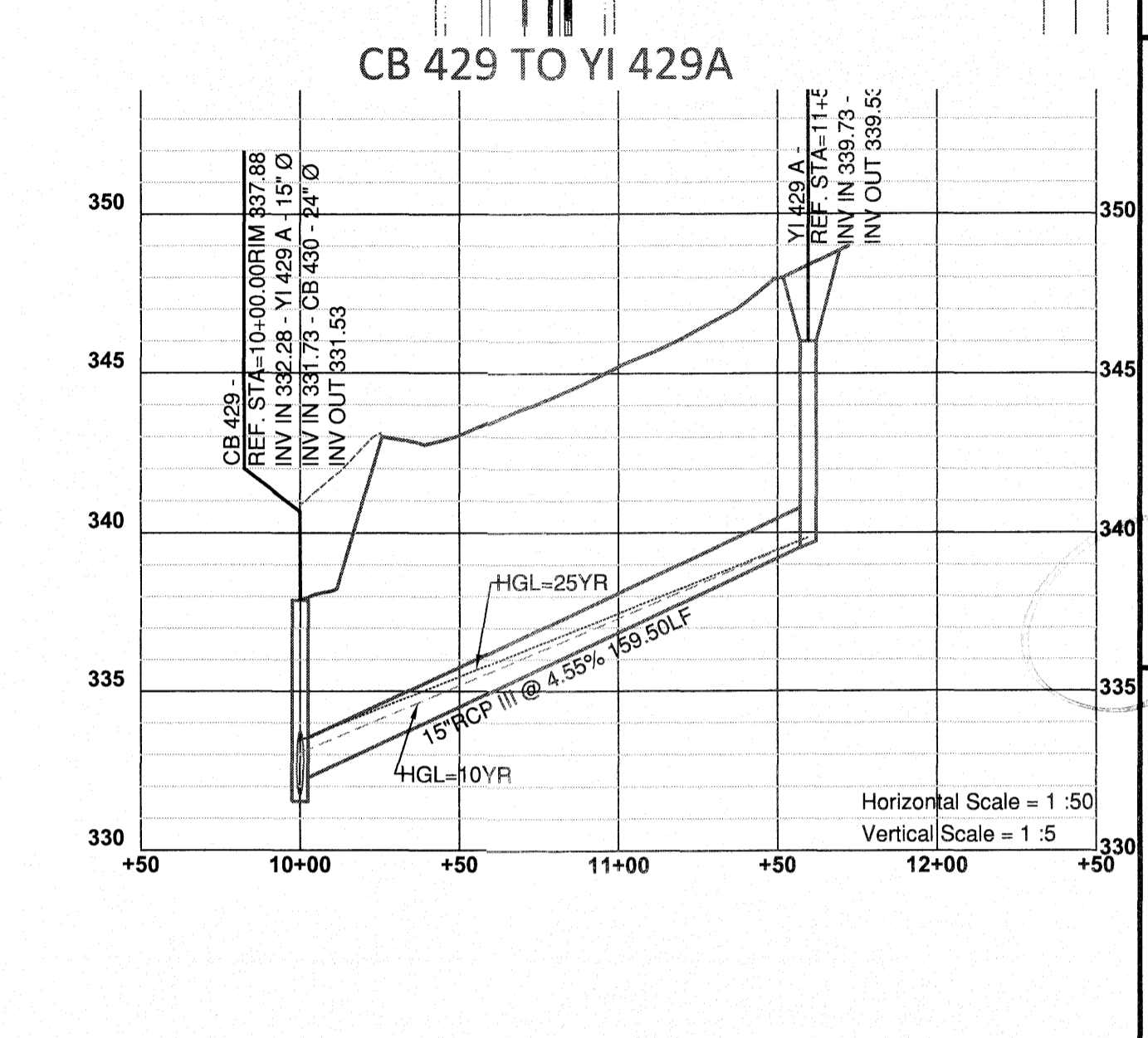
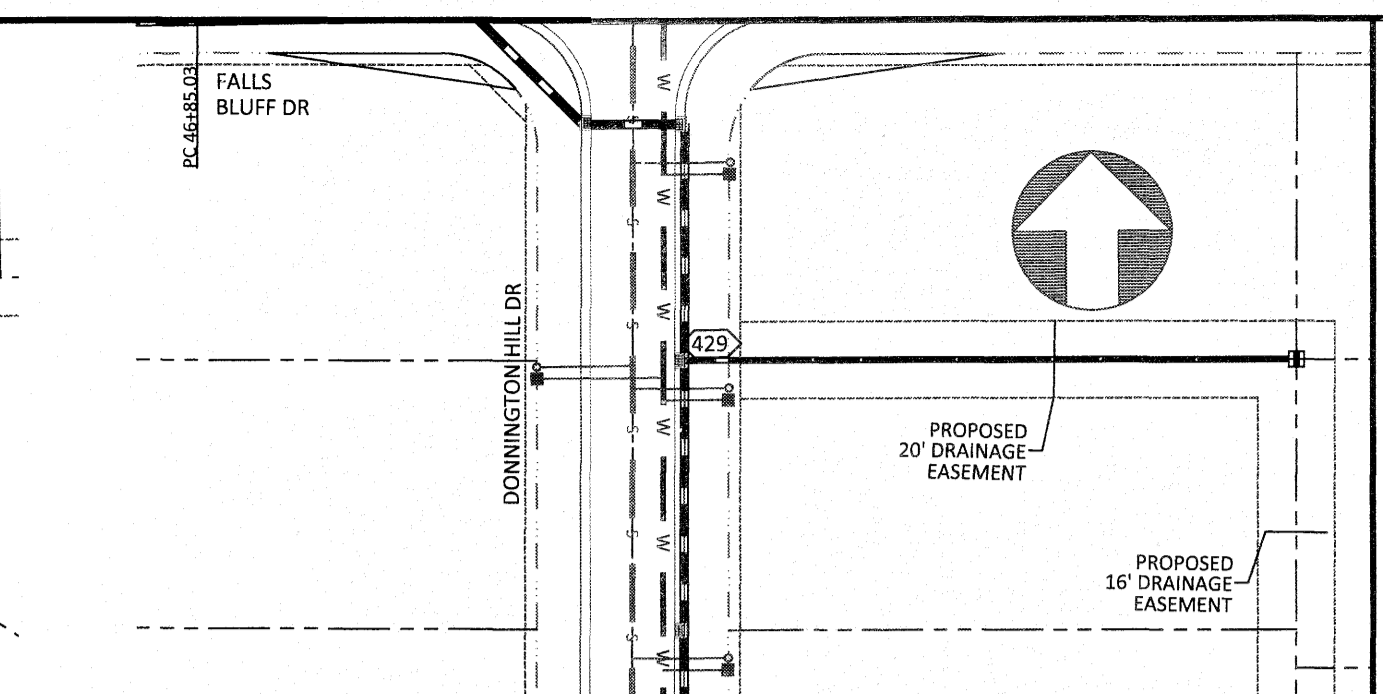
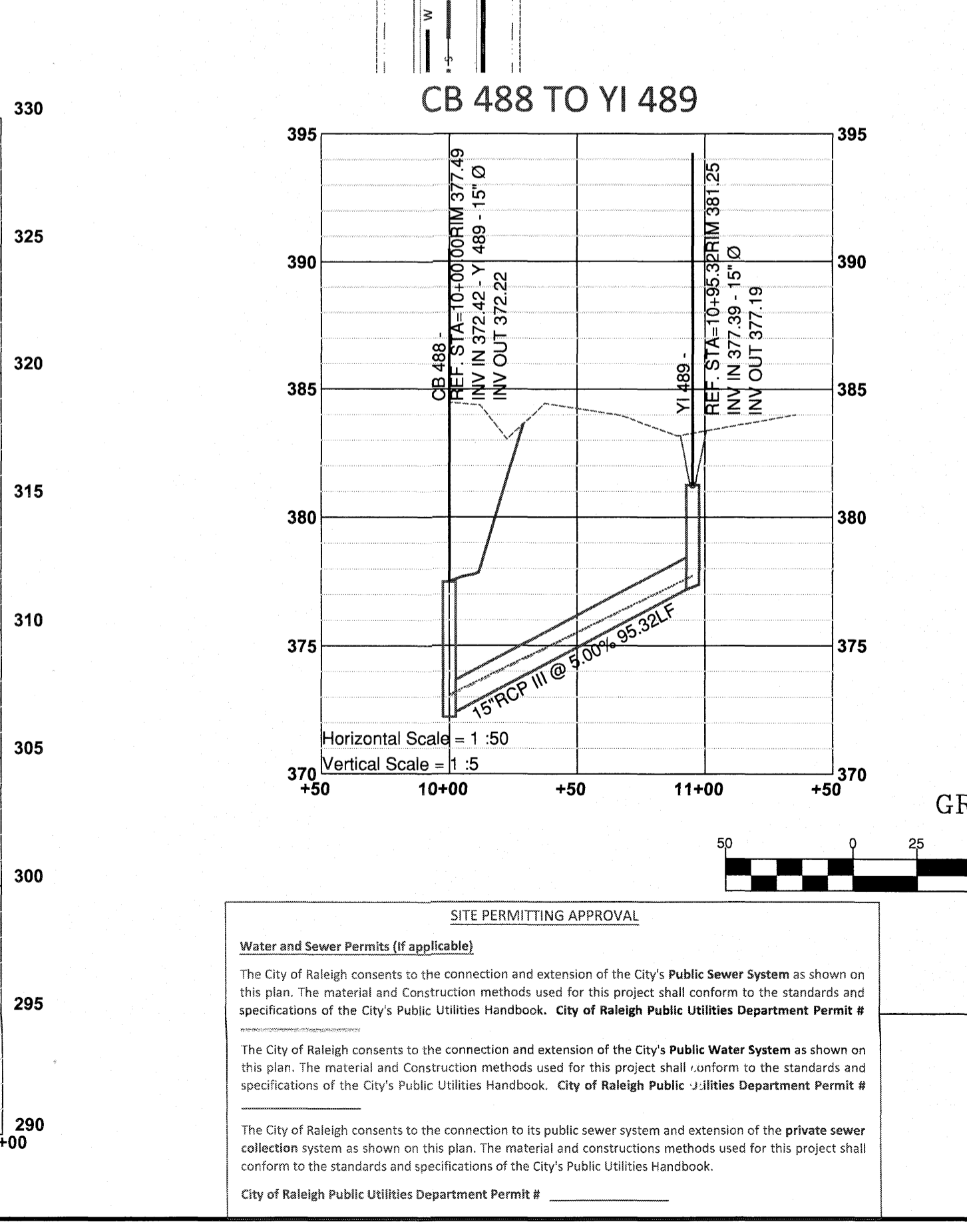
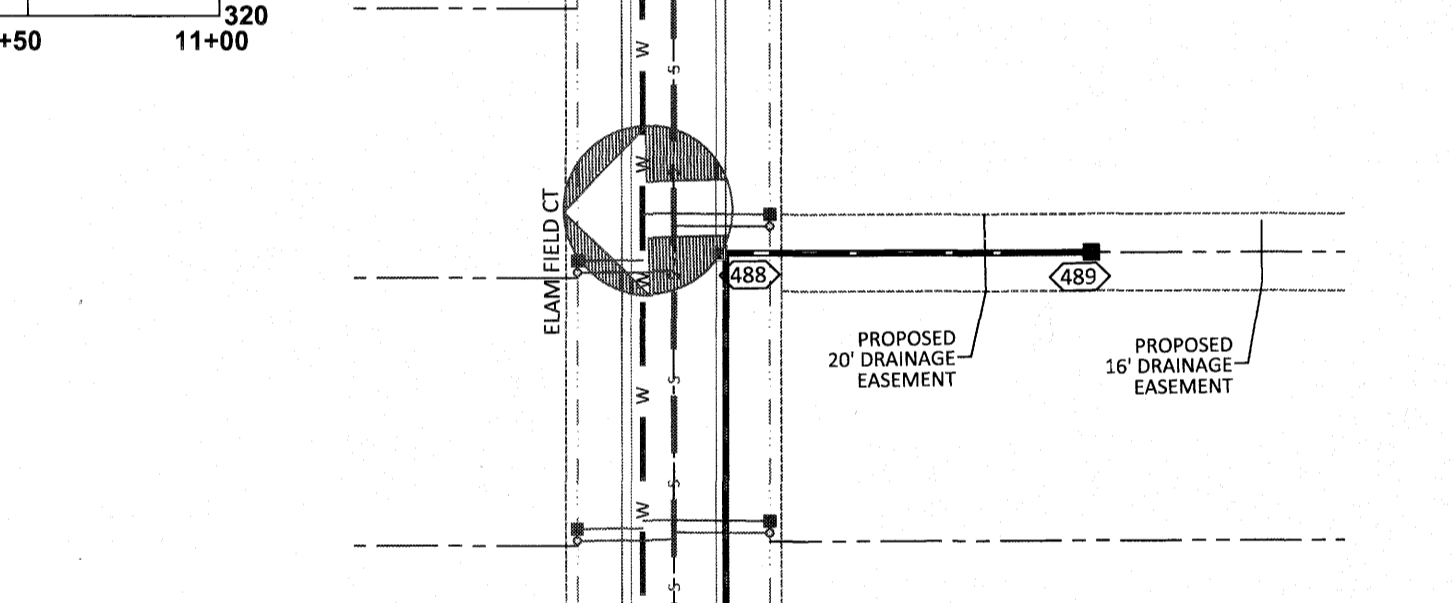
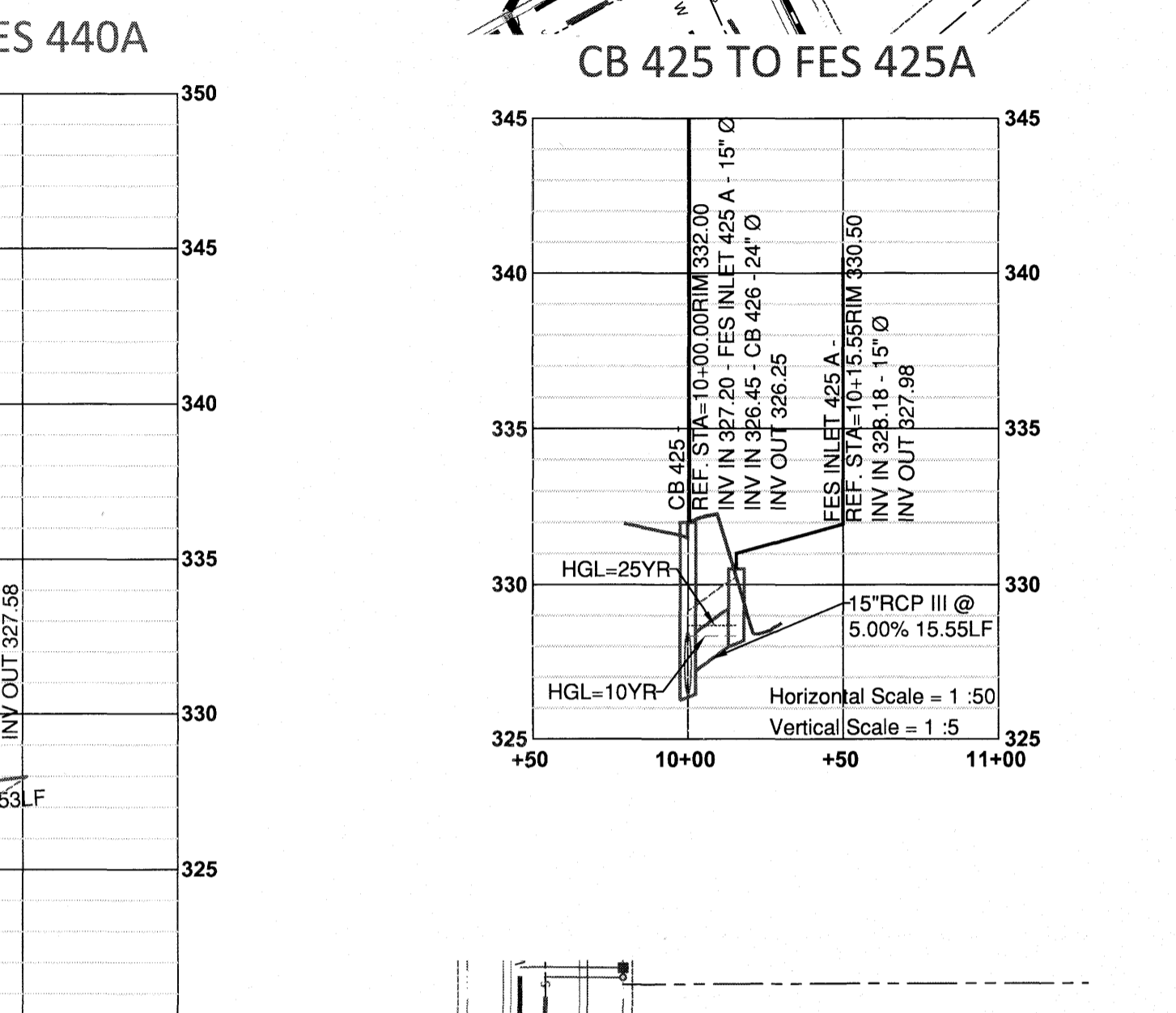
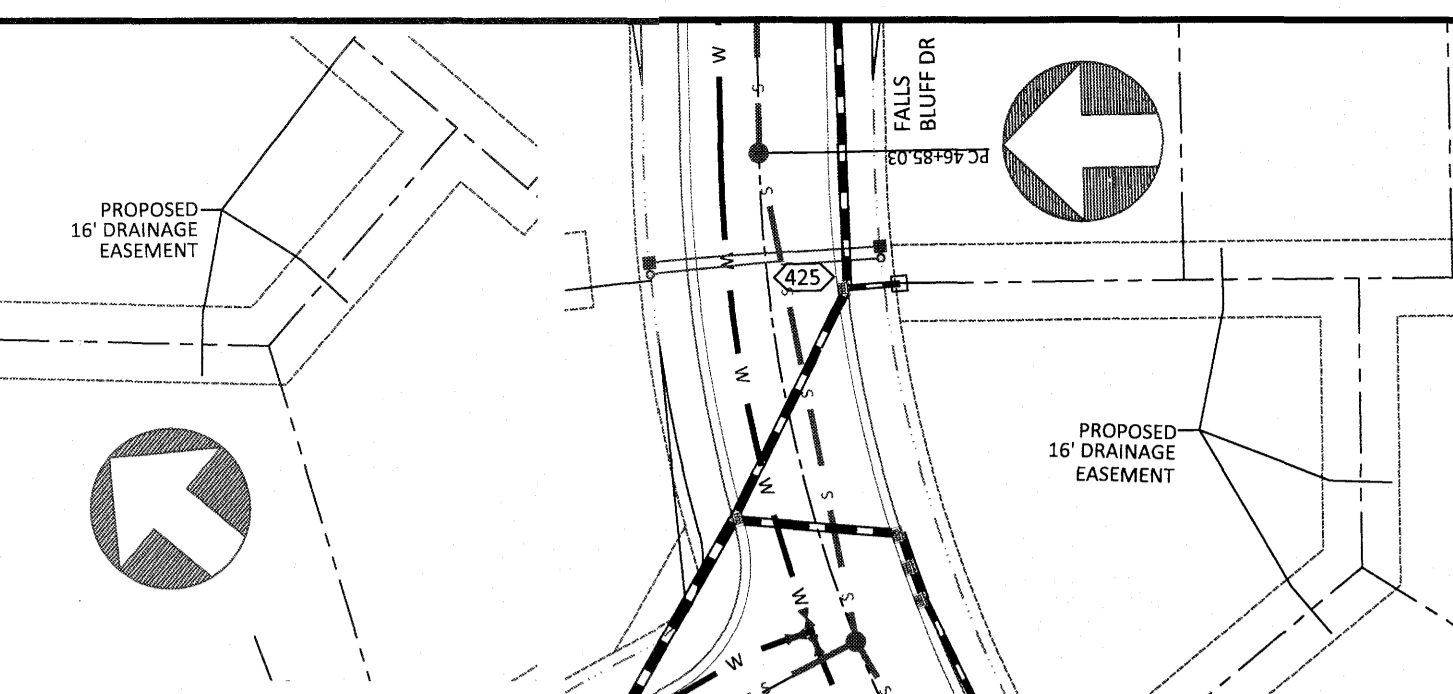
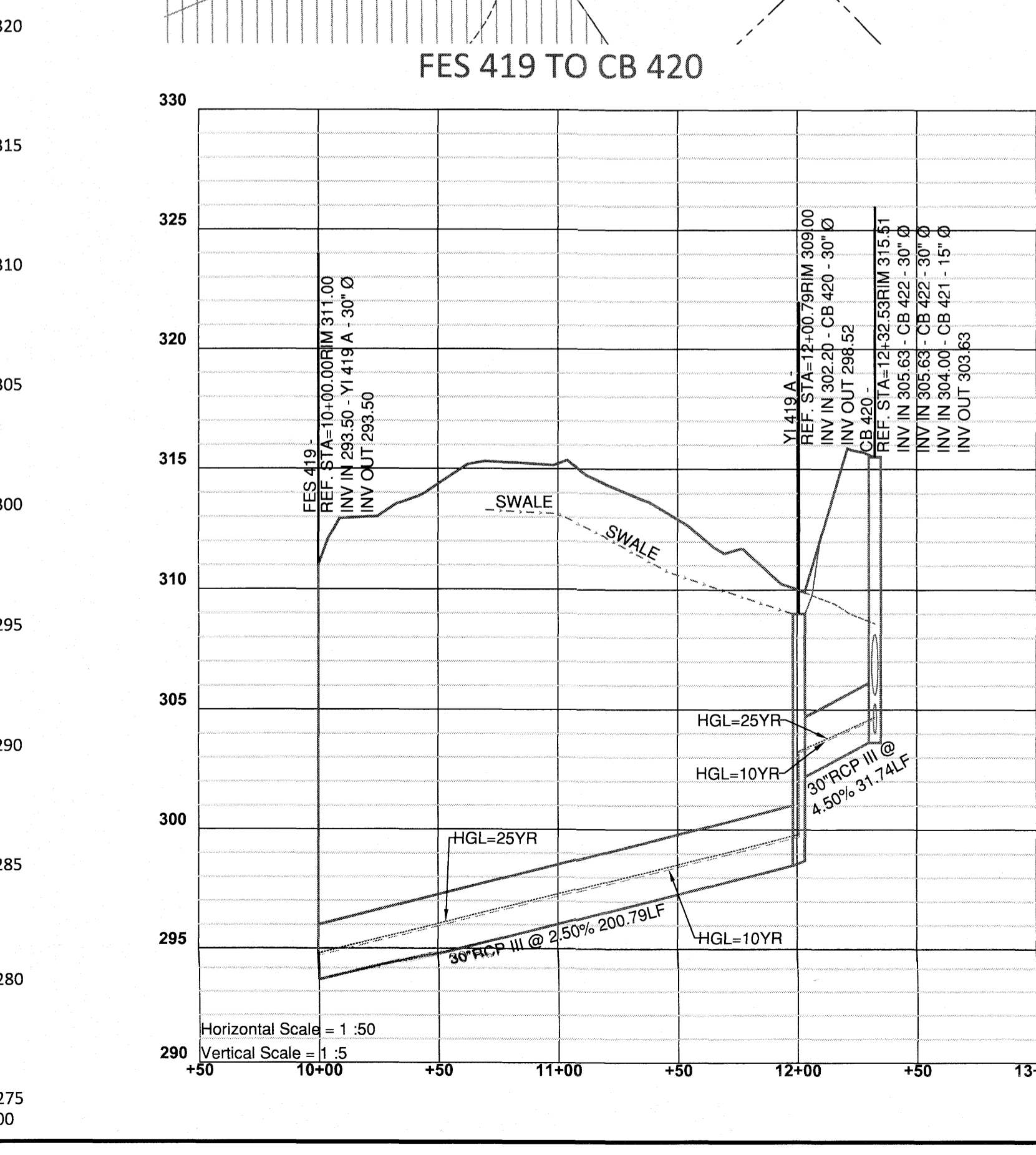
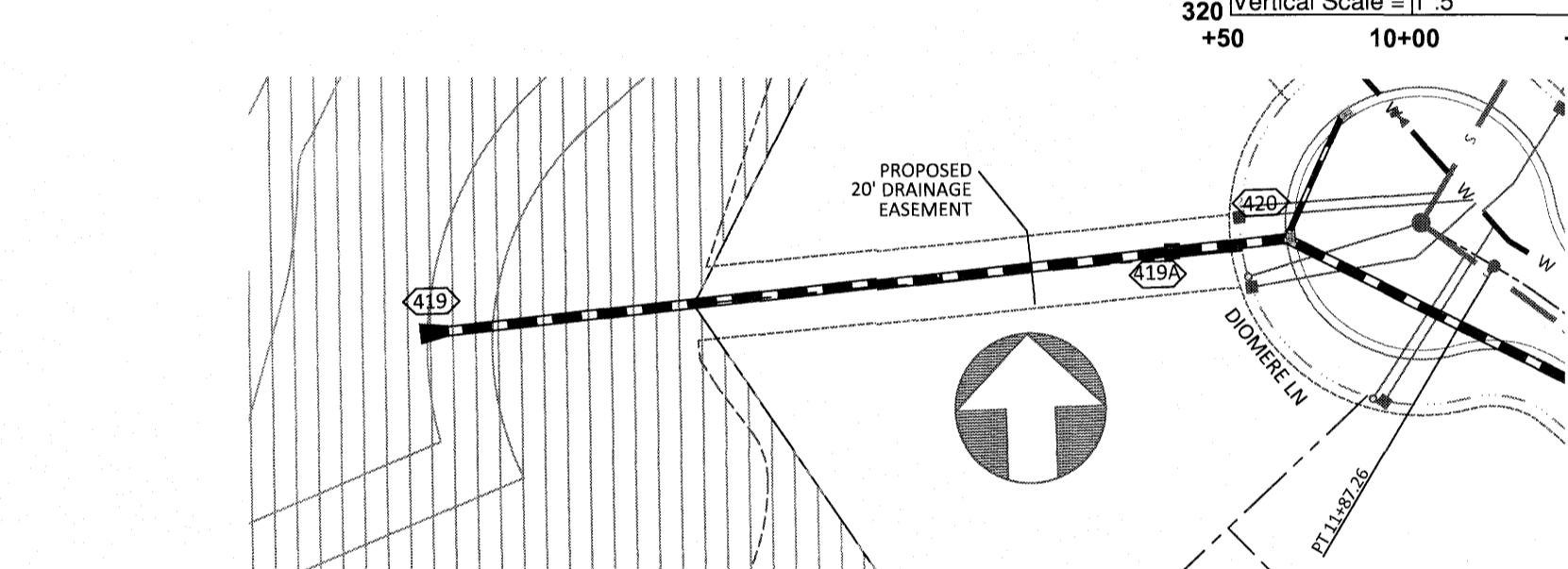
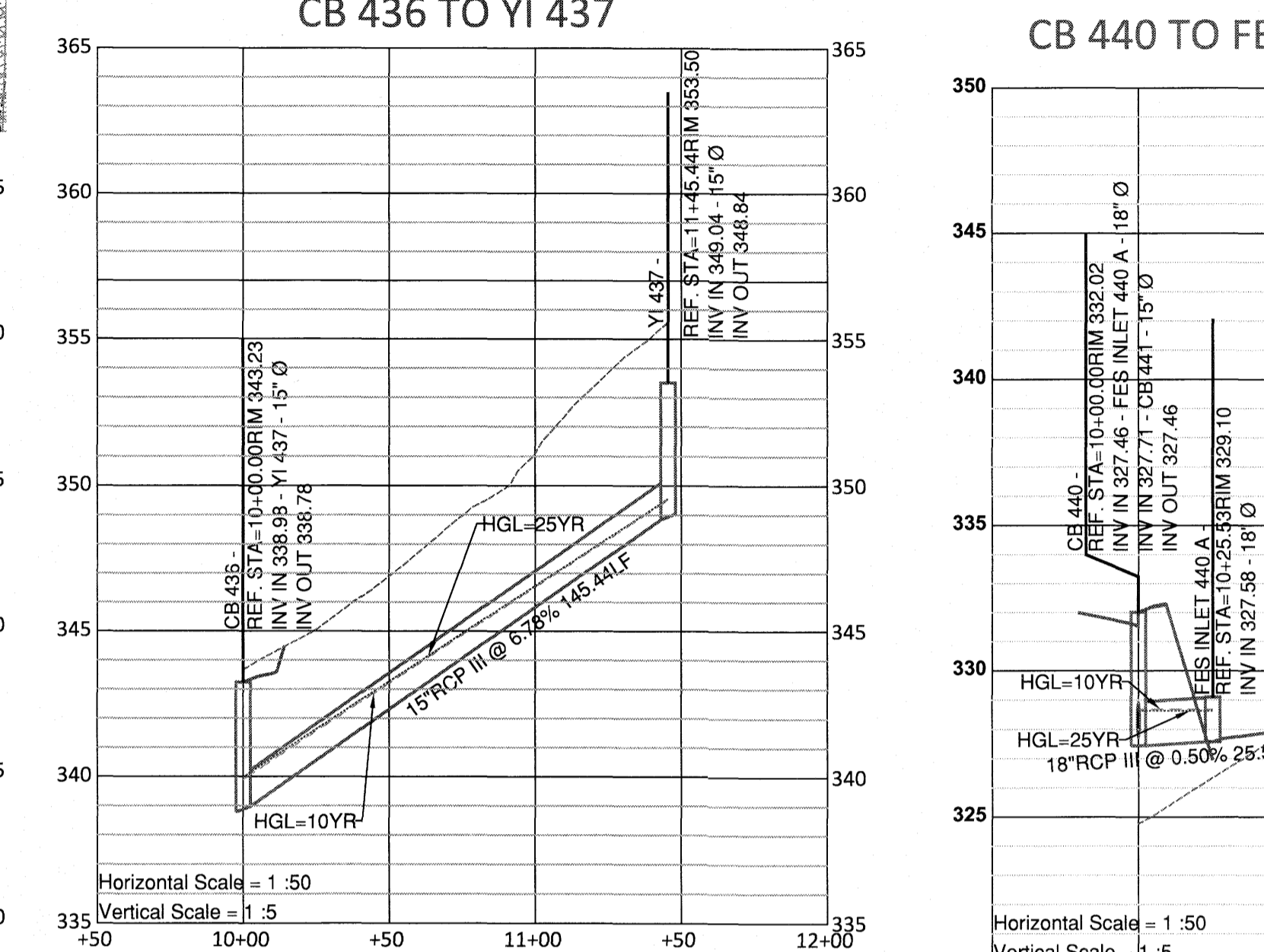
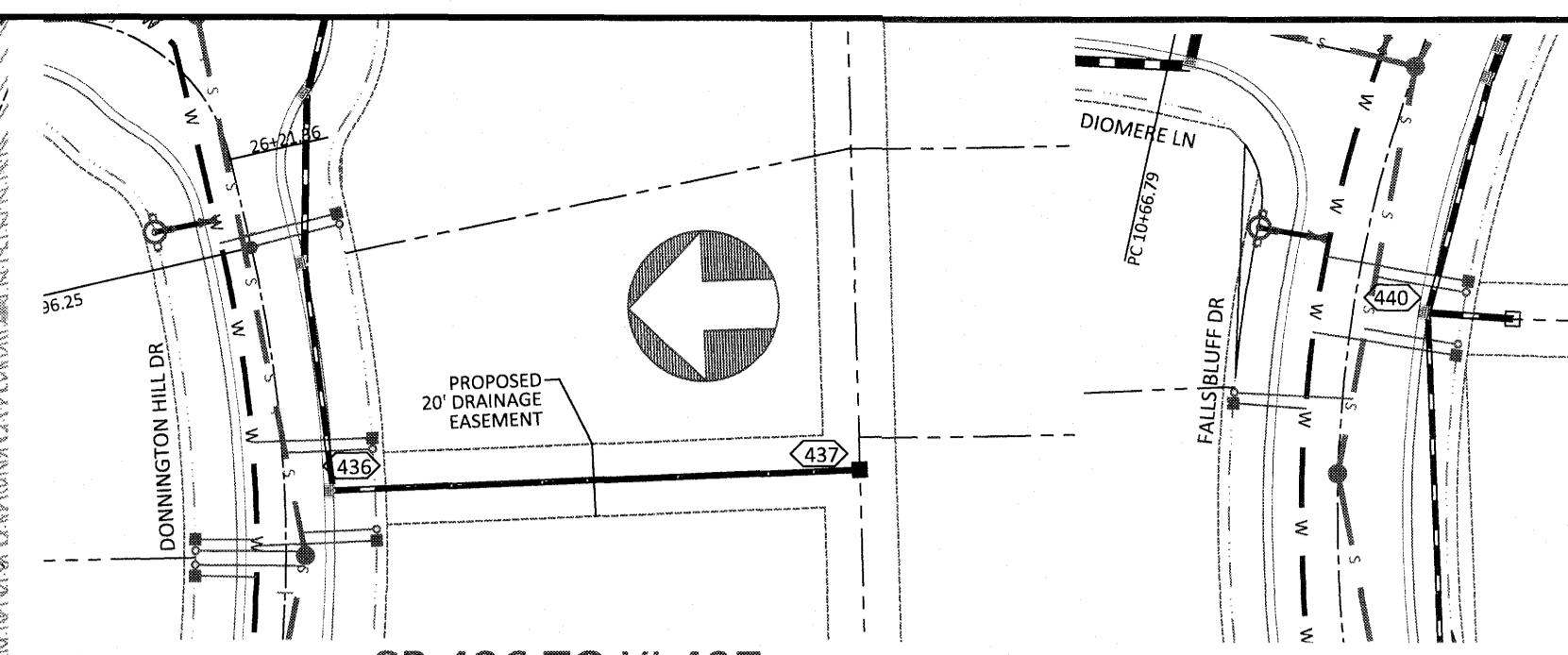
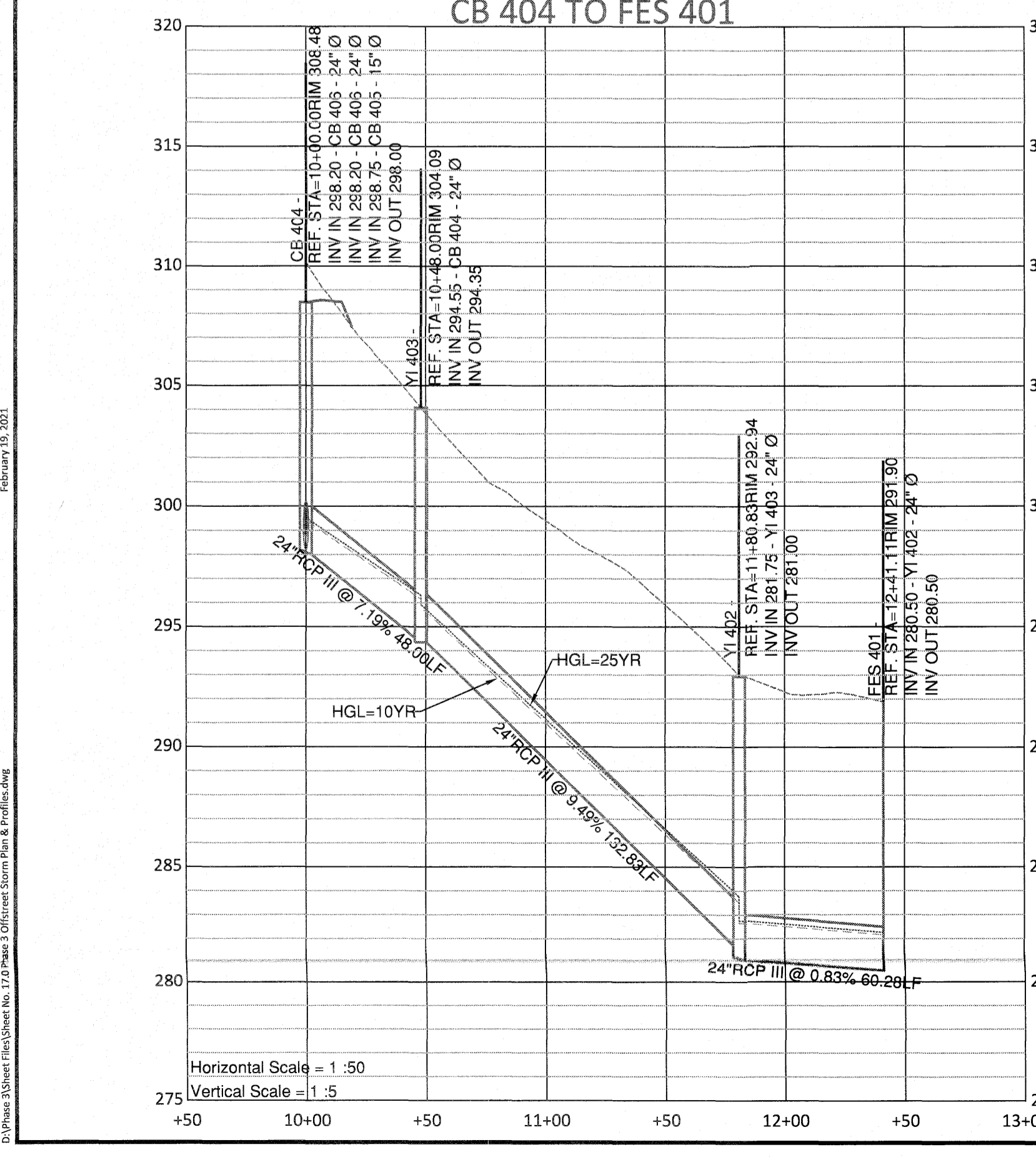
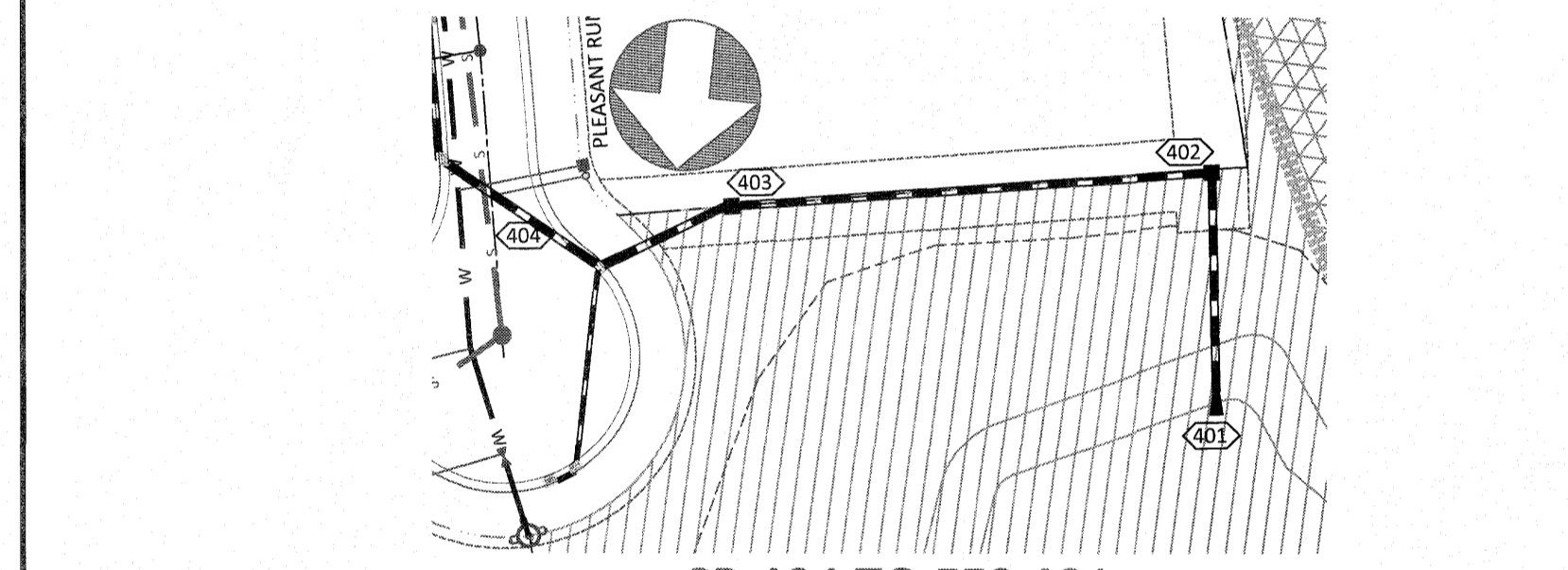
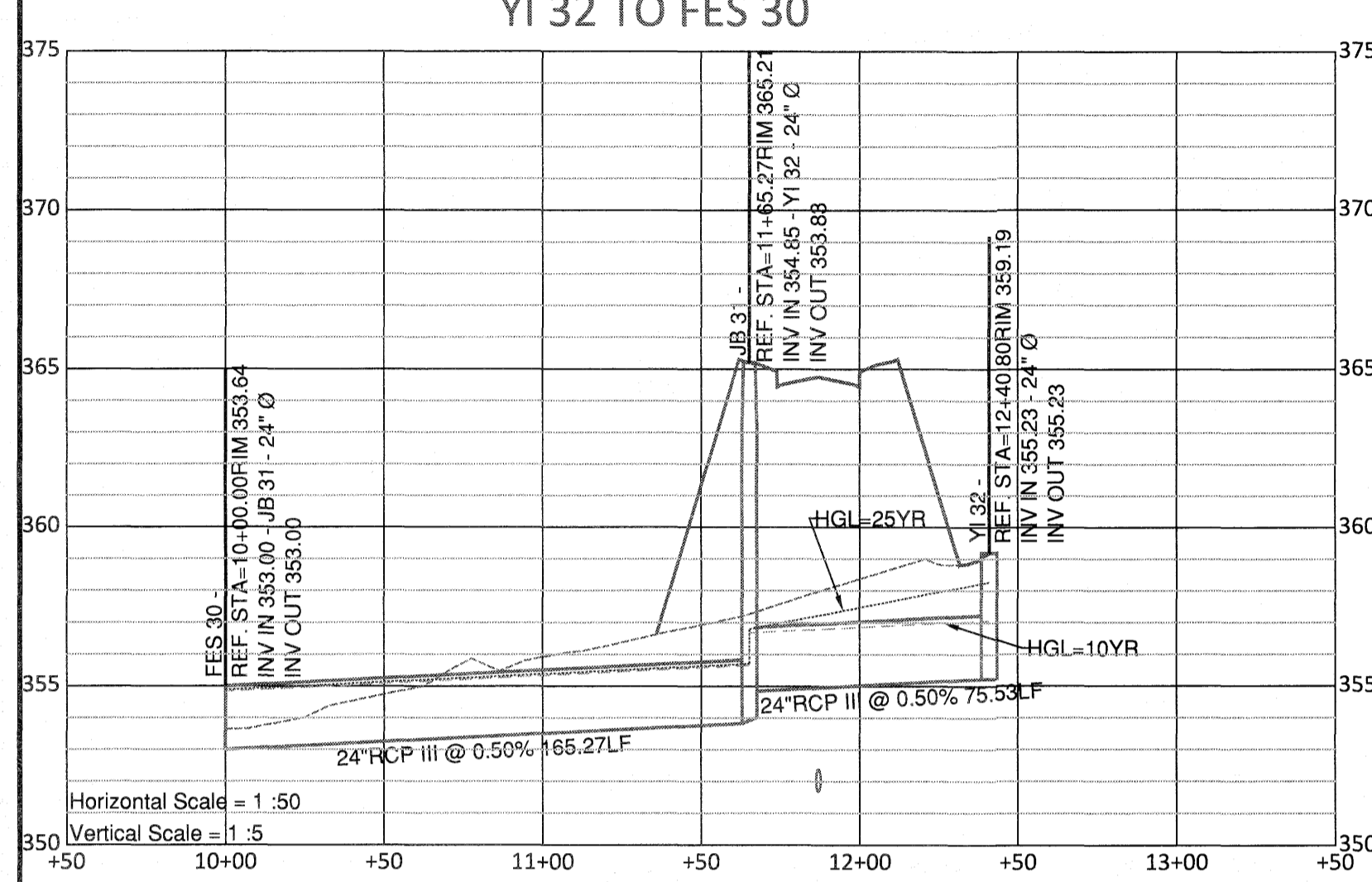
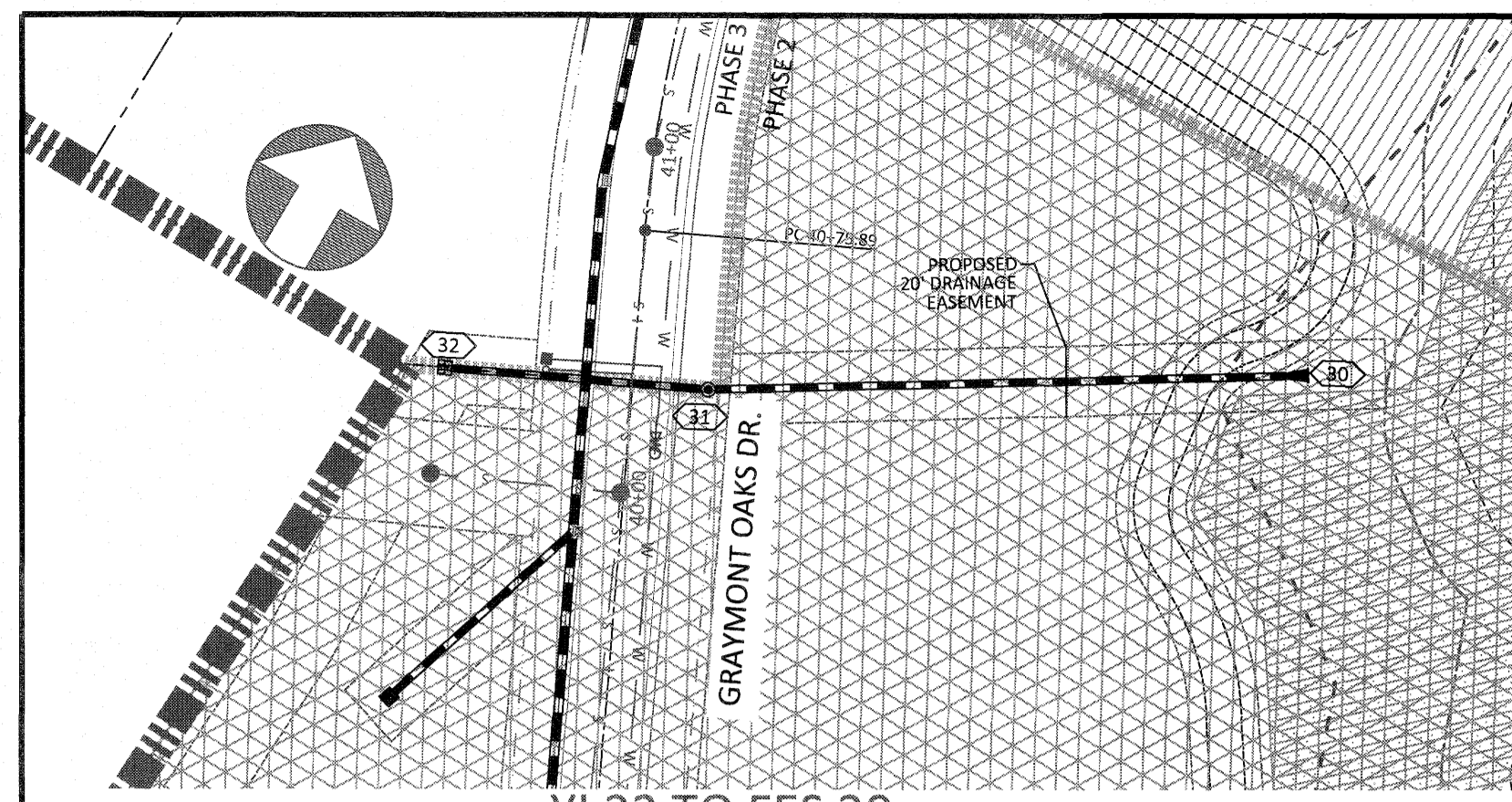
- GENERAL NOTE**
- ALL WATERLINE AND STORM CROSSINGS SHALL HAVE A MINIMUM OF 1.5' VERTICAL CLEARANCE. IF THIS CANNOT BE ACHIEVED, THEN A CRADLE IS TO BE USED. SEE DETAIL S-49 ON SHEET C.D.10
 - TOWN OF ROLESVILLE INSPECTOR WILL HAVE AUTHORITY FOR FINAL APPROVAL ON ROAD PROFILES THAT ARE DESIGNED WITH A CHANGE IN GRADE THAT IS 6" OR GREATER. THE INSPECTOR WILL NEED TO NOTIFY THE DESIGN ENGINEER ON ANY ROAD CONSTRUCTION THAT ARE NOT ACCEPTABLE IN THE FIELD (INCLUDING ALL INTERSECTION GRADES/CURB RETURNS GRADES)
 - PROPOSED CB (SAG'S) NEED TO BE COORDINATED WITH PVI (LOW POINTS) FOR GRADE

NOTE: THE 100 YEAR FLOOD-LINE AS ON THESE PLANS WERE TAKEN FROM THE FLOOD STUDY PREPARED BY DONLAD A SEVER, PE (024627) OF HUGH J. GILLECE, III AND ASSOCIATES, P.A.

CITY OF ROLESVILLE PLANS AUTHORIZED FOR CONSTRUCTION
 Electronic Approval: This approval is being issued electronically. The 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 left on file with the City. This electronic approval may not be edited once issued. Any modification to the approval once issued must be made through the approval process.

City of Raleigh Development Approval
 Raleigh Water Review Officer





UTILITIES LEGEND	
	EXISTING BOUNDARY
	EXISTING WETLANDS
	EXISTING 50' NEUSE RIPARIAN BUFFER
	EXISTING BUFFER ZONES
	PROPOSED LOT LINE
	PROPOSED ROW
	PROPOSED SIDEWALK
	PROPOSED BOC
	PROPOSED EOP
	PROPOSED CENTERLINE
	PROPOSED EASEMENT
	PHASELINE
	RIP RAP
	SEDIMENT BASIN WEIR
	JUNCTION BOX
	PROPOSED CATCH BASIN
	PROPOSED YARD INLET
	PROPOSED DROP INLET
	PROPOSED FLARED END SECTION
	PROPOSED WATER METER
	PROPOSED MANHOLE
	PROPOSED FIRE HYDRANT
	PROPOSED WATER VALVE
	PROPOSED WATER REDUCER
	PROPOSED SEWER LINE
	PROPOSED WATER LINE
	PROPOSED STORM WATER
	EXISTING WETLANDS AREA
	OPEN SPACE
	FUTURE PHASING
	EXISTING PHASING

AMERICAN Engineering
American Engineering Associates - Southeast, P.A.
4020 Westchase Boulevard, Suite 450
Raleigh, NC 27607

PROFESSIONAL ENGINEER
SEAL 9810
JOHN R. HARRAN

NO.	DATE	REVISION:

STIPULATION FOR REUSE
THIS DRAWING WAS PREPARED FOR USE ON THE SPECIFIC SITE, NAMED HEREON, CONTEMPORANEOUSLY WITH ITS ISSUE DATE AS LISTED, HEREON, AND IT IS NOT SUITABLE FOR USE ON A DIFFERENT PROJECT SITE OR AT A LATER TIME. USE OF THIS DRAWING FOR REFERENCE OR EXAMPLE ON ANOTHER PROJECT REQUIRES THE SERVICES OF PROPERLY LICENSED ARCHITECTS AND ENGINEERS. REPRODUCTION OF THIS DRAWING FOR REUSE ON ANOTHER PROJECT IS NOT AUTHORIZED AND MAY BE CONTRARY TO THE LAW.

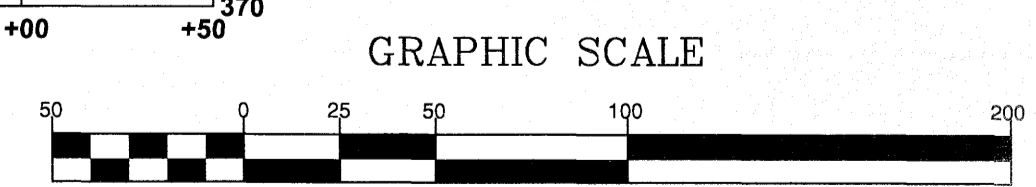
KALAS FALLS PHASE 3
1832 ROLESVILLE ROAD
WAKE COUNTY, NC

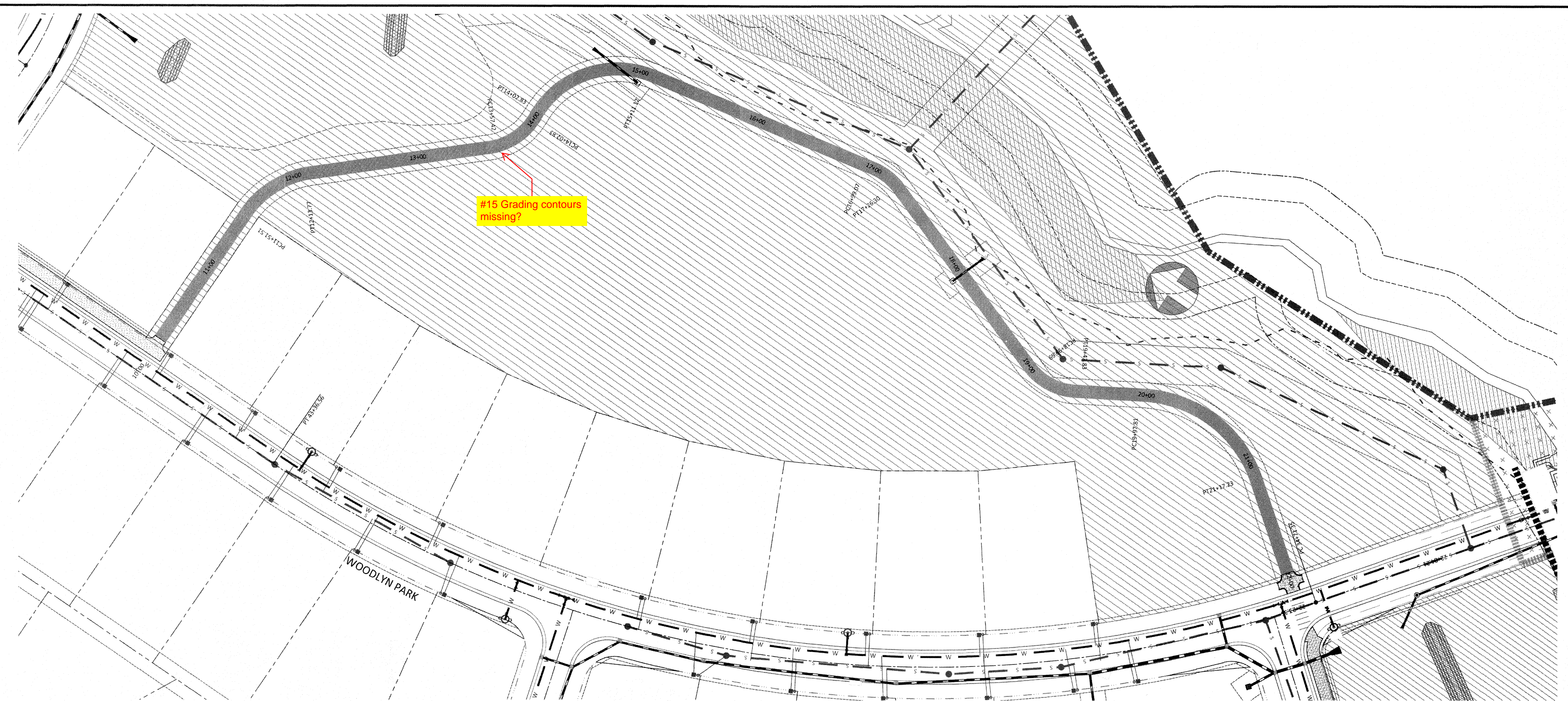
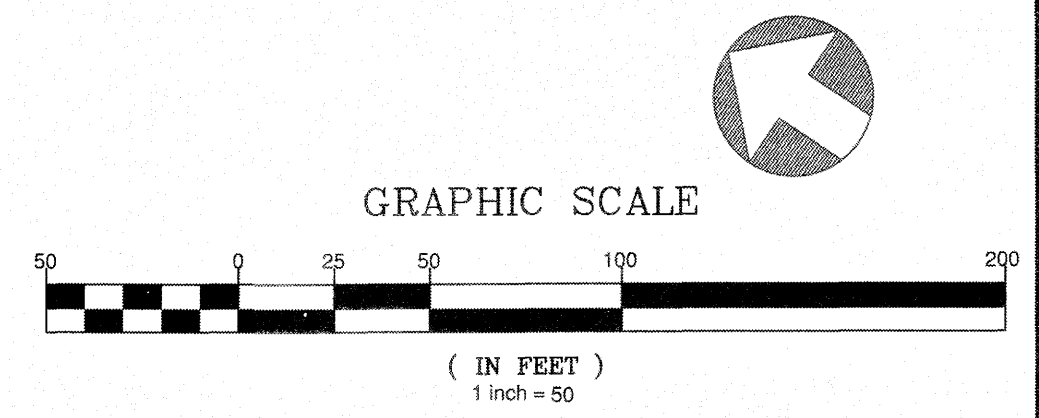
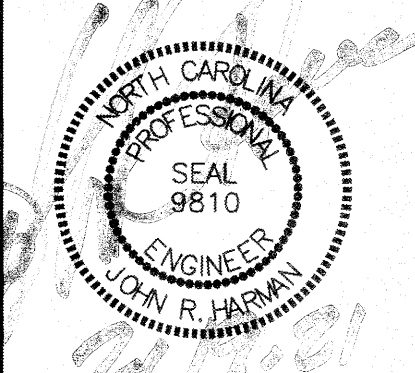
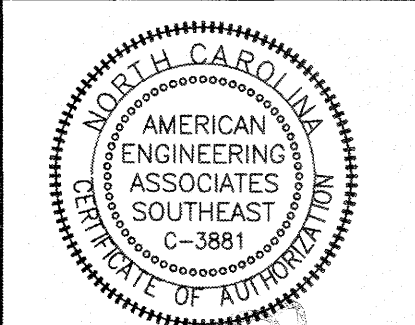
JOB NUMBER: 9900
CHECKED BY:
DRAWN BY:
DATE: FEB 18, 2021
SHEET TITLE:
OFF STREET STORM PLAN & PROFILE
SHEET NO.: 17.0

SITE PERMITTING APPROVAL
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 # _____

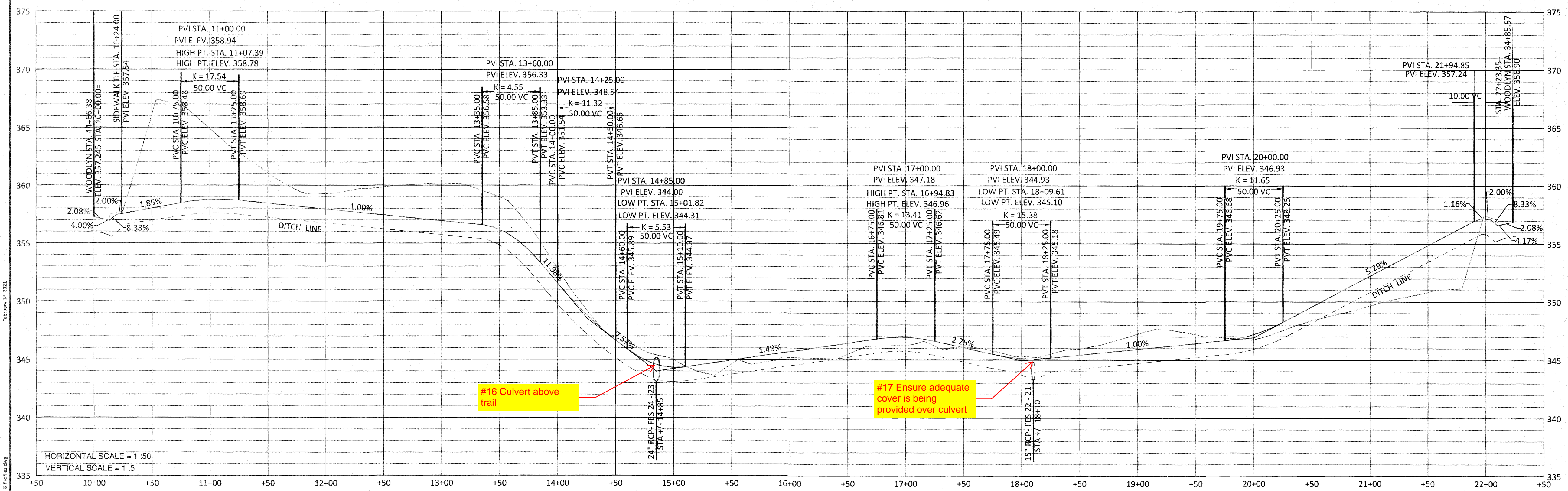
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City of Raleigh Development Approval
Raleigh Water Review Officer

North Carolina
*** 3 Days Before Digging ***
North Carolina 811
811 or 1-800-632-4949
Remove Ticket Easy
http://nc811.org/removeticketentry.htm





GREENWAY TRAIL "B"



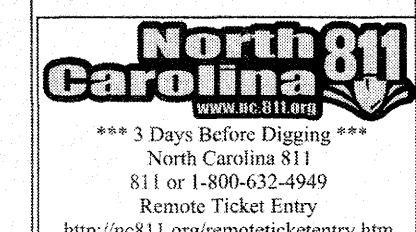
UTILITIES LEGEND	
	EXISTING BOUNDARY
	EXISTING WETLANDS
	EXISTING 50' NEUSE RIPARIAN BUFFER
	EXISTING BUFFER ZONES
	PROPOSED LOT LINE
	PROPOSED ROW
	PROPOSED SIDEWALK
	PROPOSED BOC
	PROPOSED EOP
	PROPOSED CENTERLINE
	PROPOSED EASEMENT
	PHASELINE
	RIP RAP
	SEDIMENT BASIN WEIR
	JUNCTION BOX
	PROPOSED CATCH BASIN
	PROPOSED YARD INLET
	PROPOSED DROP INLET
	PROPOSED FLARED END SECTION
	PROPOSED WATER METER
	PROPOSED SEWER SERVICE
	PROPOSED MANHOLE
	PROPOSED FIRE HYDRANT
	PROPOSED WATER VALVE
	PROPOSED WATER REDUCER
	PROPOSED SEWER LINE
	PROPOSED WATER LINE
	PROPOSED STORM WATER
	EXISTING WETLANDS AREA
	OPEN SPACE
	FUTURE PHASING
	EXISTING PHASING

STIPULATION FOR REUSE
 THIS DRAWING WAS PREPARED FOR USE ON THE SPECIFIC SITE, NAMED HEREON, CONTAINED THEREON. IT IS NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF THE ENGINEER. ANY REUSE OF THIS DRAWING FOR ANY OTHER PROJECT WITHOUT THE WRITTEN CONSENT OF THE ENGINEER IS NOT AUTHORIZED AND MAY BE CONTRARY TO THE LAW.

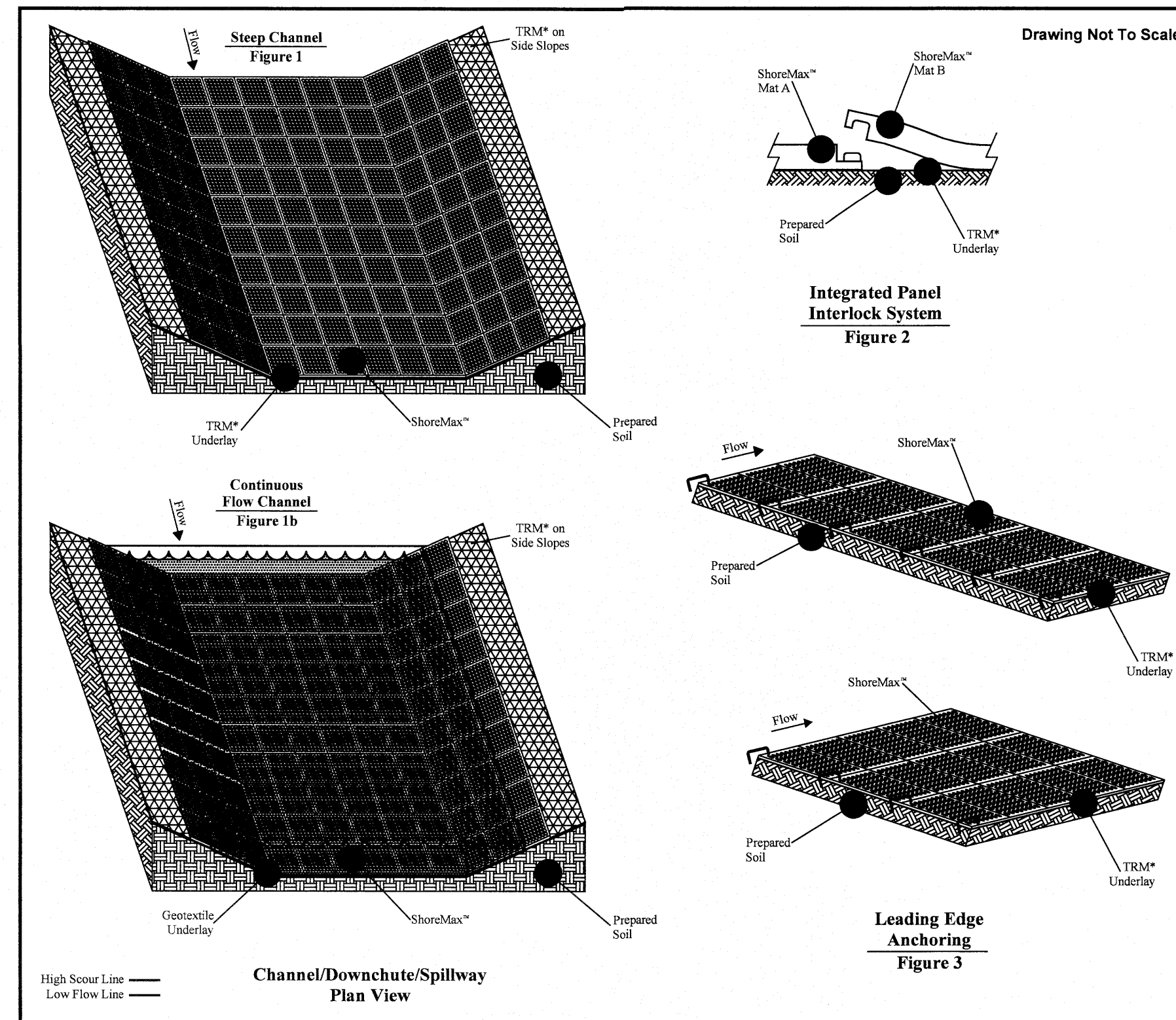
**KALAS FALLS
 PHASE 3
 1832 ROLESVILLE ROAD
 WAKE COUNTY, NC**

JOB NUMBER: 9900
 CHECKED BY:
 DRAWN BY:
 DATE: FEB 18, 2021
 SHEET TITLE:
GREENWAY TRAIL "B" PLAN & PROFILE
 SHEET NO.: 19.0

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION
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 City of Raleigh Development Approval _____
 Raleigh Water Review Officer



February 18, 2021
 C:\Users\jdoyle\OneDrive\Documents\1832 Rolesville Road\Phase 3\Utilities.dwg



ShoreMax

STEEP CHANNEL/CHUTE/SPILLWAY DETAIL

* ShoreMax mats can be installed over a variety of underlayment including: sod, turf reinforcement mats (TRMs), geotextiles, and in some cases erosion control blankets (ECBs).

- Prepare soil before installing erosion control products, including any necessary application of lime, fertilizer, and seed (when installing TRM or ECB underlayment).
- Install turf reinforcement mat (TRM) over prepared soils according to manufacturer's recommendations.
- Place ShoreMax mat in the bottom of the channel over the installed TRM (Figure 1). The ShoreMax mat should be installed up to the appropriate elevation on the side slope as determined by the engineer. When using multiple panels, connect the panels using the Integrated Panel Interlock System (Figure 2). ShoreMax mat can be laid in either direction.
- For channels carrying continuous water flows, an appropriate geotextile should be placed under the ShoreMax mat for submerged applications (Figure 1b).
- Place staples/anchors in the appropriate pattern. Perimeter staples can be shared between two adjacent panels in soft or highly erodible soils, percussion earth anchors may be required. View ShoreMax Anchoring Guide, for additional details.
- At beginning of channel and areas where significant concentrated flows are directed onto the ShoreMax mat, place 1 staple/clip per linear foot along the leading edge of the ShoreMax system, resulting in 1 staple/clip on each corner and gridline (Figure 3).

High Scour Line
Low Flow Line

Channel/Downchute/Spillway Plan View

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Disclaimer:
The information presented herein is general design information only. For specific applications, consult an independent professional for further design guidance.

Drawn on: 5-4-17

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 in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the inspection record.

Inspect	Frequency (during normal business hours)	Inspection Records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (and this will determine if a site inspection is warranted). Days in which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&S Measures	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	1. Date and time of the inspection. 2. Name of the person performing the inspection. 3. Description, evidence, and date of corrective actions taken. 4. Identification of maintenance needs for the measure. 5. Description of maintenance needs for the measure. 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected. 2. Date and time of the inspection. 3. Name of the person performing the inspection. 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration. 5. Indication of visible sediment leaving the site. 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	1. If visible sedimentation is found outside site limits, then a record of the following shall be made: a. Actions taken to clean up or stabilize the sediment that has left the site limits. 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands on-site (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	1. If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: a. Description, evidence and date of corrective actions taken, and b. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading/ installation of perimeter E&S measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that will be provided as soon as possible.

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

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&S Plan Documentation

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. The following items pertaining to the E&S plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&S measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&S plan.	Initial and date each E&S measure on a copy of the approved E&S plan or complete, date and sign an inspection report that lists each E&S measure shown on the approved E&S plan. This documentation is required upon the initial installation of the E&S measures or if the E&S measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&S plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&S plan.	Initial and date a copy of the approved E&S plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&S measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&S measures.	Initial and date a copy of the approved E&S plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation to be Kept on Site

In addition to the E&S plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

- This General Permit as well as the Certificate of Coverage, after it is received.
- Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

- Visible sediment deposition in a stream or wetland.
- Oil spills if:
 - They are 25 gallons or more,
 - They are less than 25 gallons but cannot be cleaned up within 24 hours,
 - They cause sheen on surface waters (regardless of volume), or
 - They are within 100 feet of surface waters (regardless of volume).
- Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.
- Anticipated bypasses and unanticipated bypasses.
- Noncompliance with the conditions of this permit that may endanger health or the environment.

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. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	Within 24 hours , an oral or electronic notification. Within 7 calendar days , a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. Within 24 hours , an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(b) Oil spills and release of hazardous substances per item 1(b)-(c) above	Within 24 hours , an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Unanticipated bypasses (40 CFR 122.41(m)(3))	Report at least ten days before the date of the bypass, if possible. The report shall include an evaluation of the anticipated quality and effect of the bypass. Within 24 hours , an oral or electronic notification. Within 7 calendar days , a report that includes an evaluation of the quality and effect of the bypass.
(d) Noncompliance with the conditions of this permit that may endanger health or the environment (40 CFR 122.41(n)(7))	Within 24 hours , an oral or electronic notification. Within 7 calendar days , a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. [40 CFR 122.41(i)(6)]. Division staff may waive the requirement for a written report on a case-by-case basis.

AMERICAN ENGINEERING ASSOCIATES - SOUTHEAST, P.A.
American Engineering Associates - Southeast, P.A.
1400 W. Boulevard, Suite 450
Raleigh, NC 27607
919-469-1101

AMERICAN ENGINEERING ASSOCIATES - SOUTHEAST, P.A.
Professional Engineer
No. 9810
LION HARMON

DETAIL SELECTION ONLY

PART II, SECTION G, ITEM (4)

DRAW DOWN OF SEDIMENT BASIN FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

- The E&S plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&S plan authority has approved these items.
- The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit.
- Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems.
- Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in item (c) above.
- Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices.
- Sediment removed from the dewatering treatment devices described in item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

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). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

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 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones
(d) Slopes 3:1 to 4:1	14	-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

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. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
<ul style="list-style-type: none"> Temporary grass seed covered with straw or other mulches and tackifiers Hydroseeding Roll-on erosion control products with or without temporary grass seed Appropriately applied straw or other mulch Plastic sheeting 	<ul style="list-style-type: none"> Permanent grass seed covered with straw or other mulches and tackifiers Geotextile fabrics such as permanent soil reinforcement matting Hydroseeding Shrubs or other permanent plantings covered with mulch Uniform and evenly distributed ground cover sufficient to restrain erosion Structural methods such as concrete, asphalt or retaining walls Roll-on erosion control products with grass seed

- #### POLYACRYLAMIDES (PAMS) AND FLOCCULANTS
- Select flocculants that are appropriate for the soils being exposed during construction, selecting from the NC DWR List of Approved PAMS/Flocculants.
 - Apply flocculants at or before the lists to Erosion and Sediment Control Measures.
 - Apply flocculants at the concentrations specified in the NC DWR List of Approved PAMS/Flocculants and in accordance with the manufacturer's instructions.
 - Provide ponding area for containment of treated stormwater before discharging offsite.
 - Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

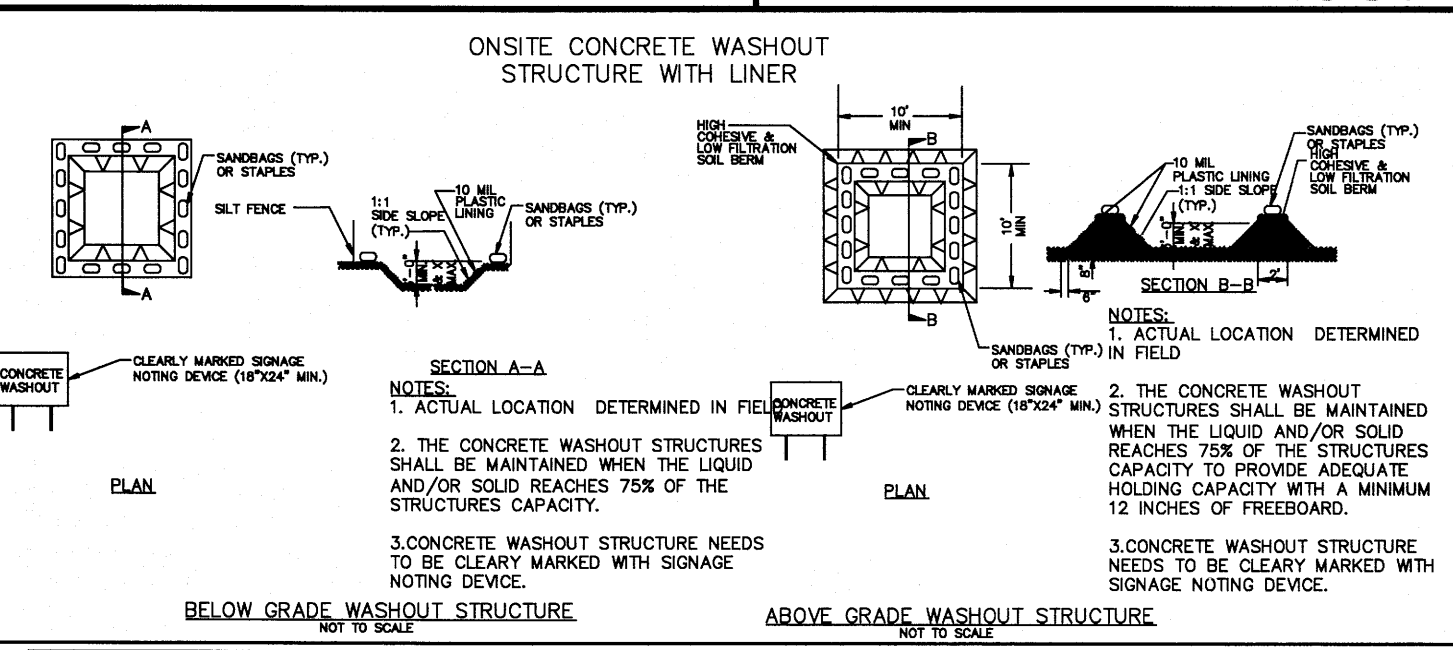
- #### EQUIPMENT AND VEHICLE MAINTENANCE
- Maintain vehicles and equipment to prevent discharge of fluids.
 - Provide drip pans under any stored equipment.
 - Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
 - Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
 - Remove leaking vehicles and construction equipment from service until the problem has been corrected.
 - Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

- #### LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE
- Never bury or burn waste. Place litter and debris in approved waste containers.
 - Provide a sufficient number and size of waste containers (e.g. dumpster, trash receptacle) on site to contain construction and domestic wastes.
 - Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
 - Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
 - Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
 - Anchor all lightweight items in waste containers during times of high winds.
 - Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
 - Dispose waste off-site at an approved disposal facility.
 - On business days, clean up and dispose of waste in designated waste containers.

- #### PAINT AND OTHER LIQUID WASTE
- Do not dump paint and other liquid waste into storm drains, streams or wetlands.
 - Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
 - Contain liquid wastes in a controlled area.
 - Containment must be labeled, sized and placed appropriately for the needs of site.
 - Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

- #### PORTABLE TOILETS
- Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
 - Provide stacking or anchoring of portable toilets during periods of high winds or in high traffic areas.
 - Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

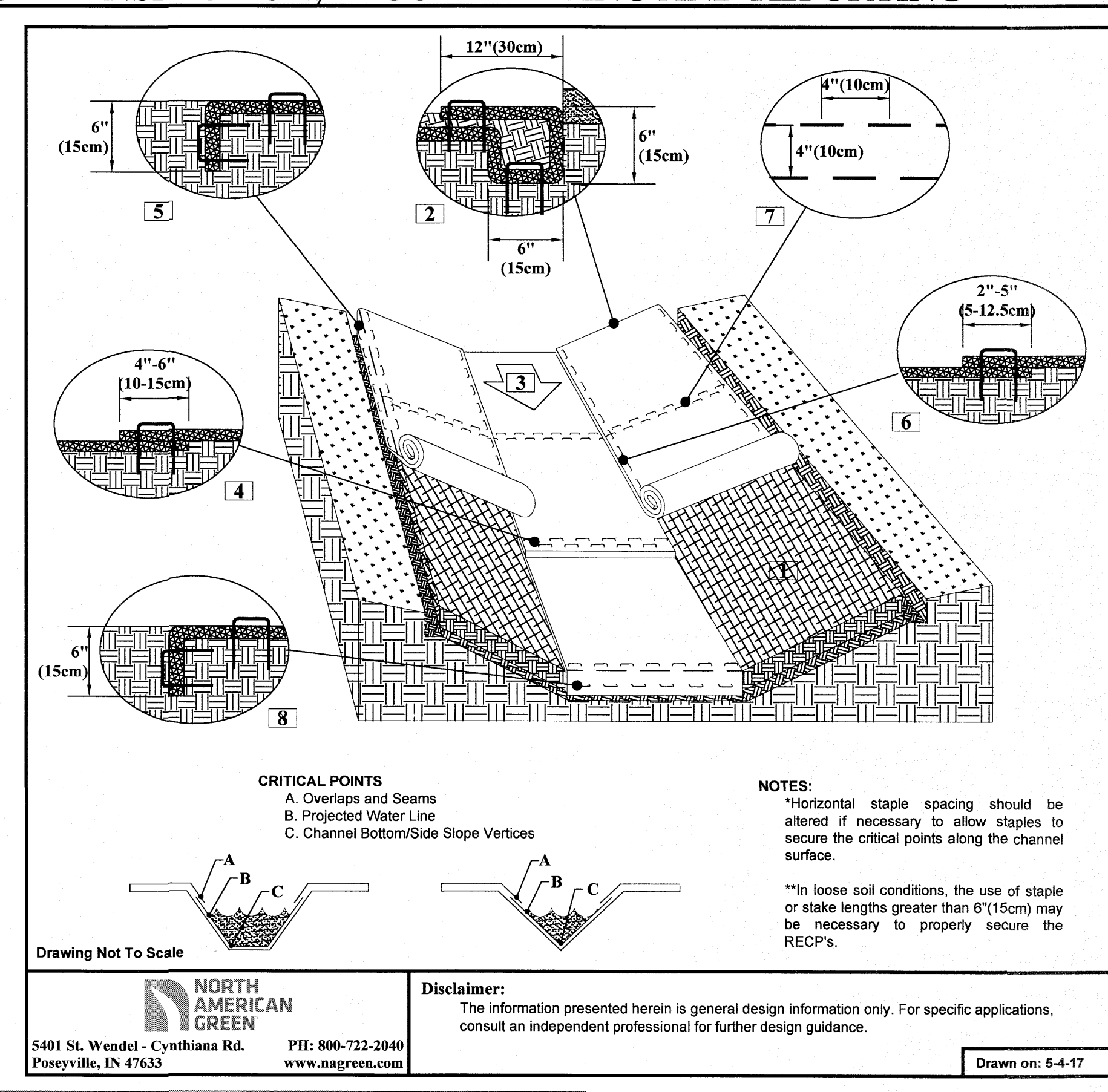
- #### EARTHEN STOCKPILE MANAGEMENT
- Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
 - Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
 - Provide stable stone access point when feasible.
 - Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



- #### CONCRETE WASHOUTS
- Do not discharge concrete or cement slurry from the site.
 - Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
 - Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
 - Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standards details are not available, use one of the two types of temporary concrete washouts provided on this detail.
 - Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped and removed from project.
 - Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
 - Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
 - Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
 - Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
 - At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

- #### HERBICIDES, PESTICIDES AND RODENTICIDES
- Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
 - Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
 - Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
 - Do not stockpile these materials onsite.

- #### HAZARDOUS AND TOXIC WASTE
- Create designated hazardous waste collection areas on-site.
 - Place hazardous waste containers under cover or in secondary containment.
 - Do not store hazardous chemicals, drums or bagged materials directly on the ground.



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Poseyville, IN 47633 www.nagreen.com

Disclaimers:
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SITE PERMITTING APPROVAL
Water and Sewer Permits (if applicable)
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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 # _____

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 # _____

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Raleigh Water Review Officer _____

Drawn on: 5-4-17

CHANNEL INSTALLATION DETAIL

- Prepare soil before installing rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed.
- Begin at the top of the channel by anchoring the RECPs in a 6"(15cm) deep X 6"(15cm) wide trench with approximately 12"(30cm) of RECPs extended beyond the up-slope portion of the trench. Use ShoreMax mat at the channel/cutout outlet as supplemental scour protection as indicated. Anchor the RECPs with a row of staples/stakes approximately 12"(30cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to the compacted soil and fold the remaining 12"(30cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes spaced approximately 12" apart across the width of the RECPs.
- Roll center RECPs in direction of water flow in bottom of channel. RECPs will unroll with appropriate side against the soil surface. All RECPs must be securely fastened to soil surface by placing staples/stakes in appropriate locations as shown in the staple pattern guide.
- Place consecutive RECPs end-over-end (Shingle style) with a 4"-6" overlap. Use a double row of staples staggered 4" apart and 4" on center to secure RECPs.
- Full length edge of RECPs at top of side slopes must be anchored with a row of staples/stakes approximately 12"(30cm) apart in a 6"(15cm) deep X 6"(15cm) wide trench. Backfill and compact the trench after stapling.
- Adjacent RECPs must be overlapped approximately 2"-5" (5-12.5cm) (Depending on RECPs type) and stapled.
- In high flow channel applications a staple check slot is recommended at 30 to 40 foot (9-12m) intervals. Use a double row of staples staggered 4" apart and 4" on center to secure RECPs.
- The terminal end of the RECPs must be anchored with a row of staples/stakes approximately 12" (30cm) apart in a 6"(15cm) deep X 6"(15cm) wide trench. Backfill and compact the trench after stapling.

Notes:
*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"(15cm) may be necessary to properly secure the RECPs.

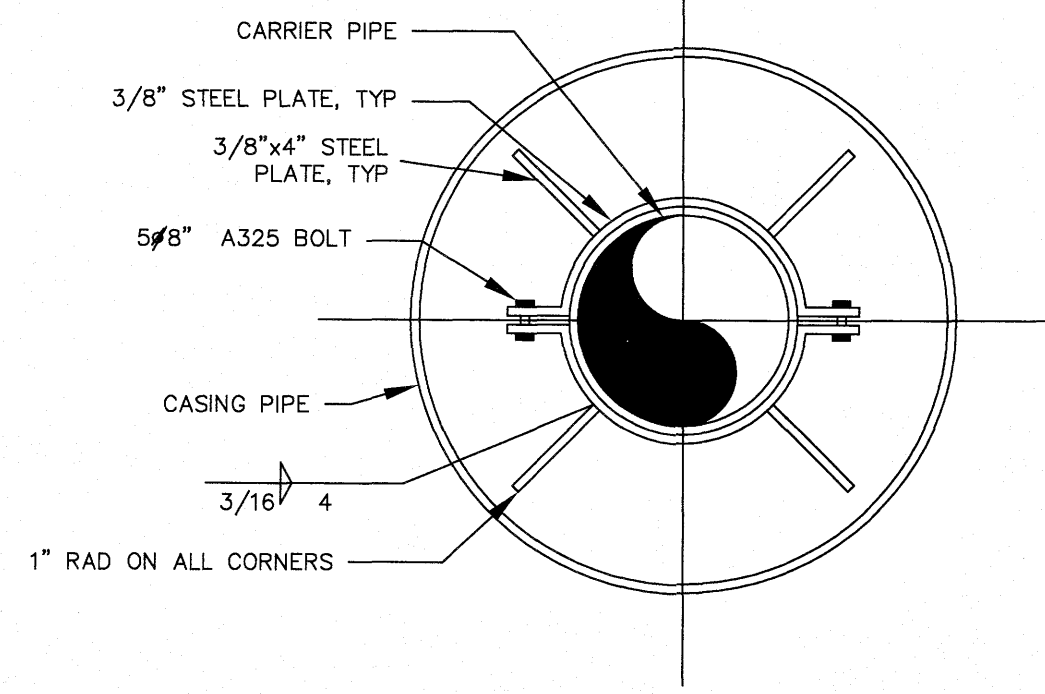
KALAS FALLS PHASE 3
1832 ROLESVILLE ROAD
WAKE COUNTY, NC

STIPULATION FOR REUSE
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NO. DATE REVISION

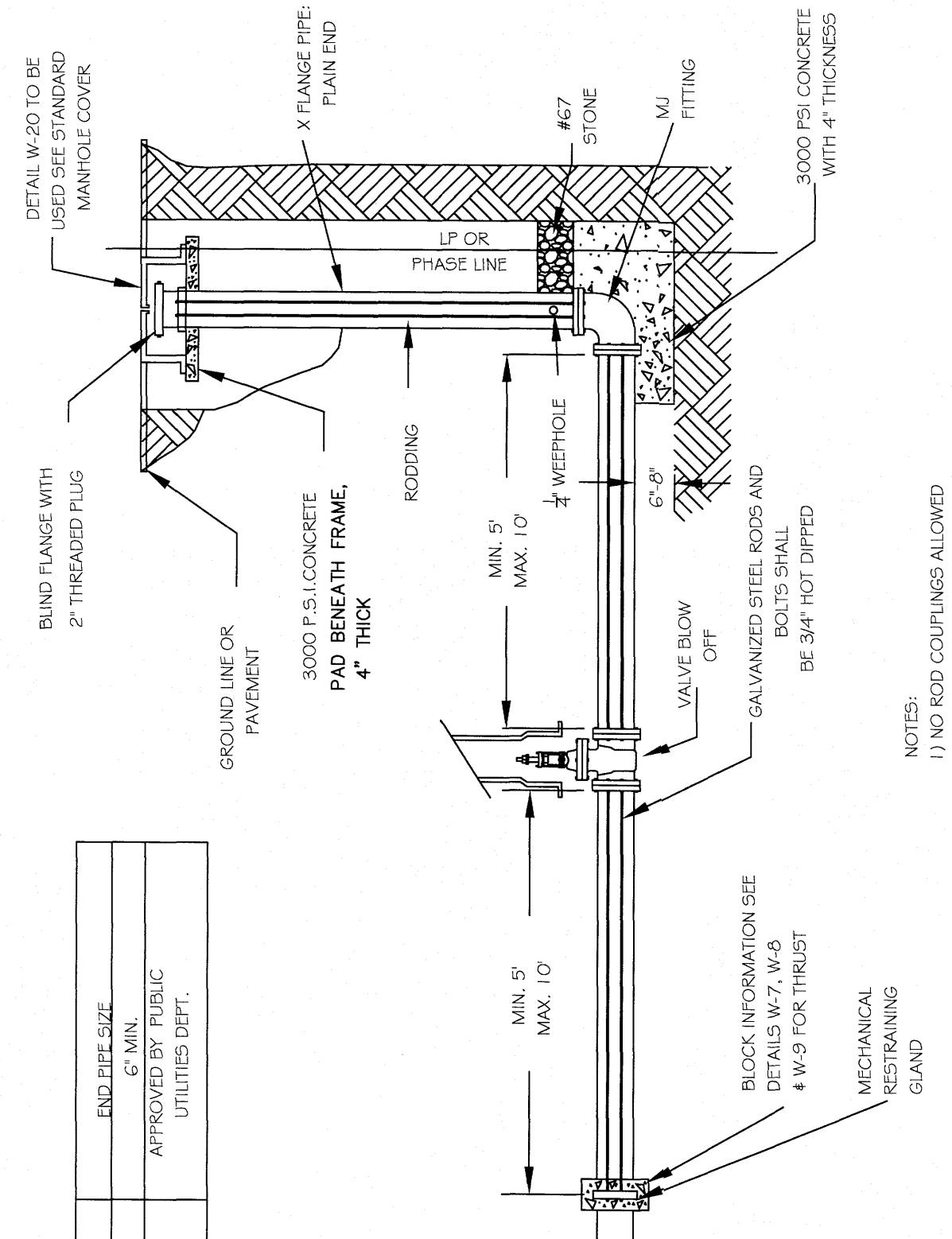
JOB NUMBER: 9900
CHECKED BY: _____
DRAWN BY: _____
DATE: FEB 18, 2021
SHEET TITLE: _____

KALAS FALLS CIVIL DETAILS
SHEET NO.: CD5



NOTE:
1) USE A MINIMUM OF TWO SPIDERS PER PIPE JOINT ONE FOURTH OF THE PIPE JOINT LENGTH IN FROM BOTH THE BELL AND SPIGOT ENDS.

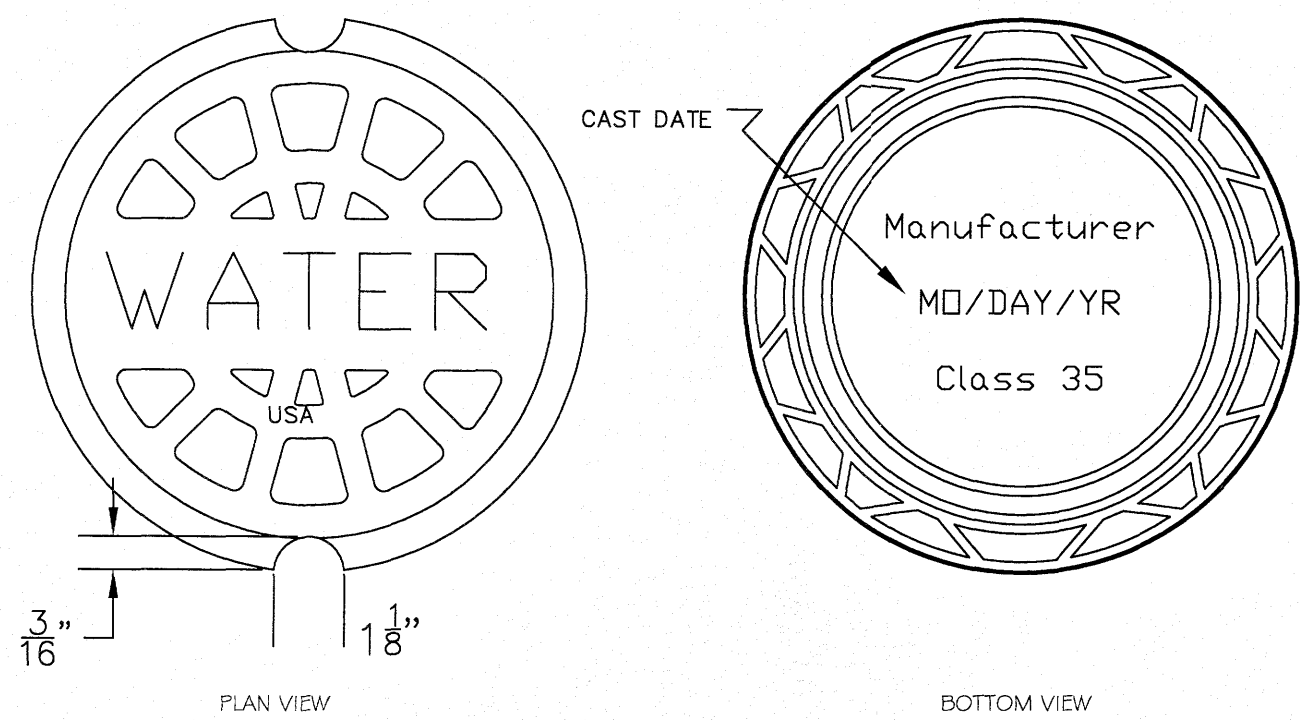
CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES					
PIPE ALIGNMENT GUIDE					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
W-40	RRH	3-31-00			
	A.B.B.	4-16-04			



END PIPE SIZE	MIN.	MAX.
1/2" & GREATER	6"	12"

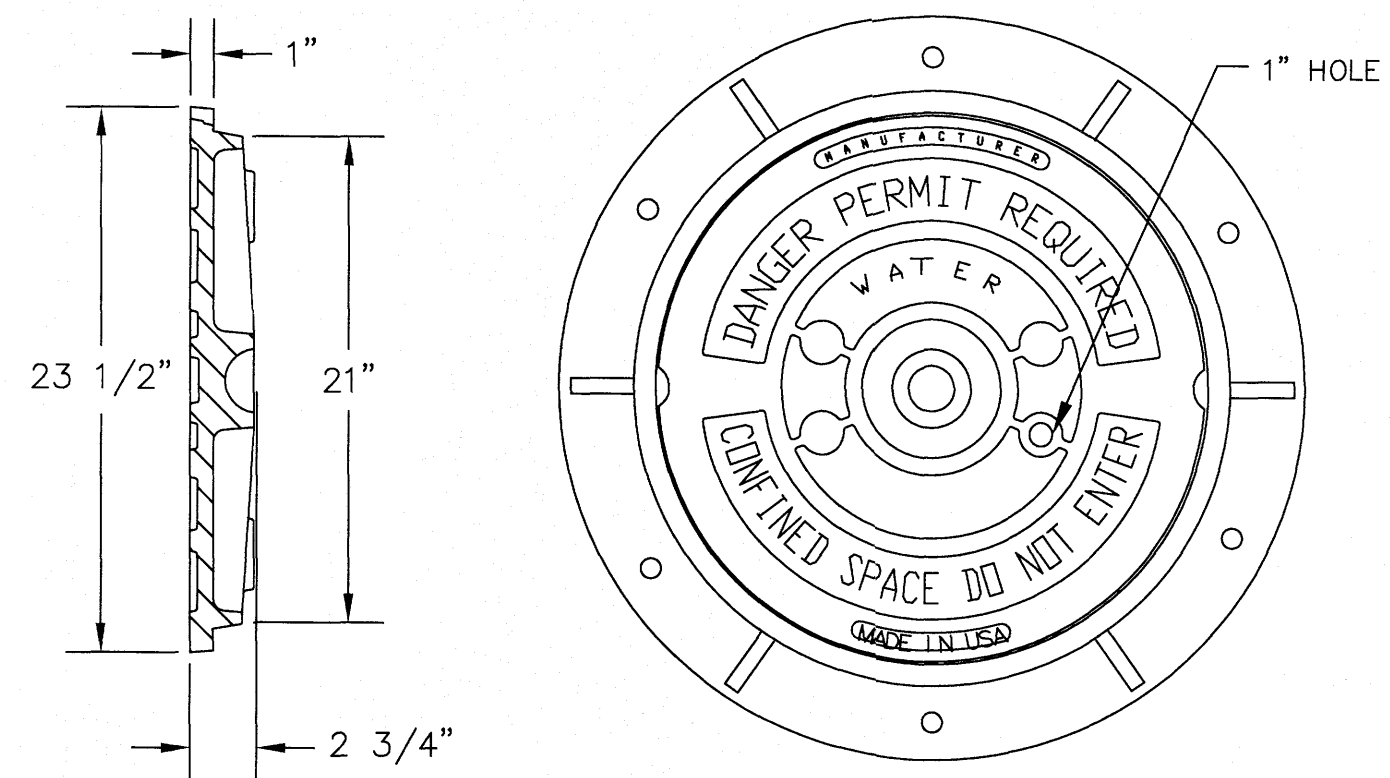
CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES					
TEMPORARY WATER MAIN BLOW OFF ASSEMBLY					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
W-21	D.W.C.	1-2-28-99	A.B.B.	4-1-2-04	
	RRH	3-31-00	D.H.L.	8-16-07	

MANHOLE FRAME AND COVER
COVER 120 LBS. MINIMUM

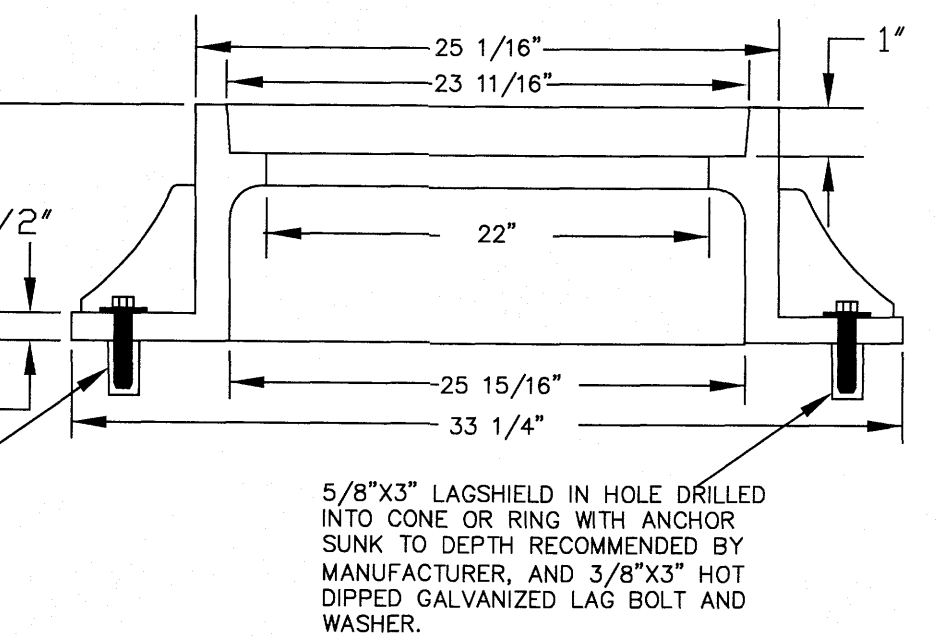


NOTE 1 - 'WATER' LETTERING MUST BE 1" RAISED (RECESSED FLUSH)
NOTE 2 - VALVE COVER SHALL BE DOMESTICALLY CAST
NOTE 3 - COVER MUST HAVE A MINIMUM WEIGHT OF 25 POUNDS.
NOTE 4 - COVER MUST BE CLASS 35 OR GREATER.
NOTE 5 - COVER MUST MEET OR EXCEED AASHTO H-20 LOAD REQUIREMENTS.

CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES					
5 1/4" VALVE BOX DROP LID WITH 4" SKIRT					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
W-18					

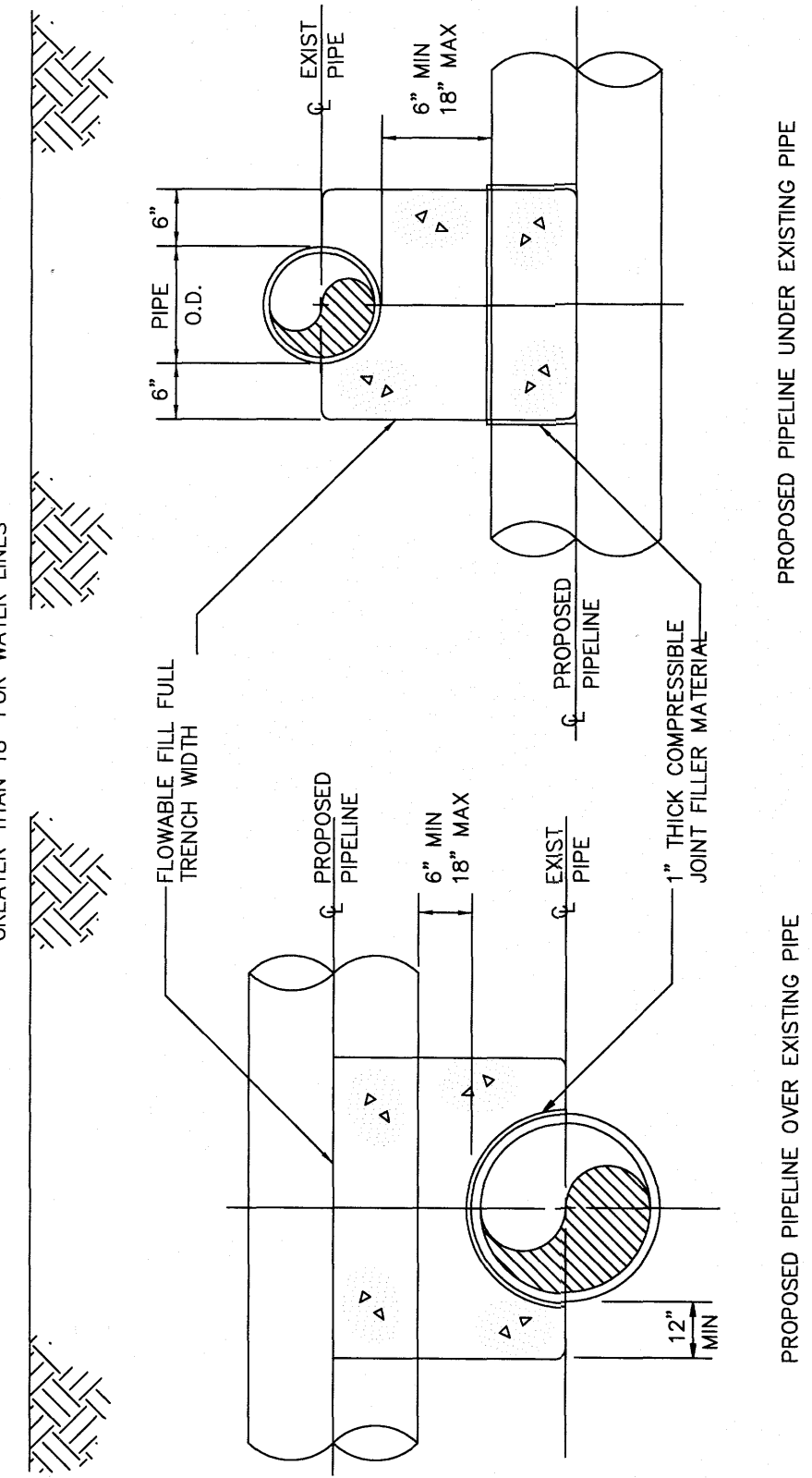


NOTES:
1) ALL MANHOLE FRAMES SHALL BE DOMESTICALLY CAST
2) FRAME SHALL BE A MINIMUM WEIGHT OF 122 LBS.
3) COVER SHALL WEIGH A MIN. OF 120 LBS.
4) MANHOLES WITHIN PAVED SURFACES SHALL BE CONSTRUCTED IN ACCORDANCE WITH 5-29.

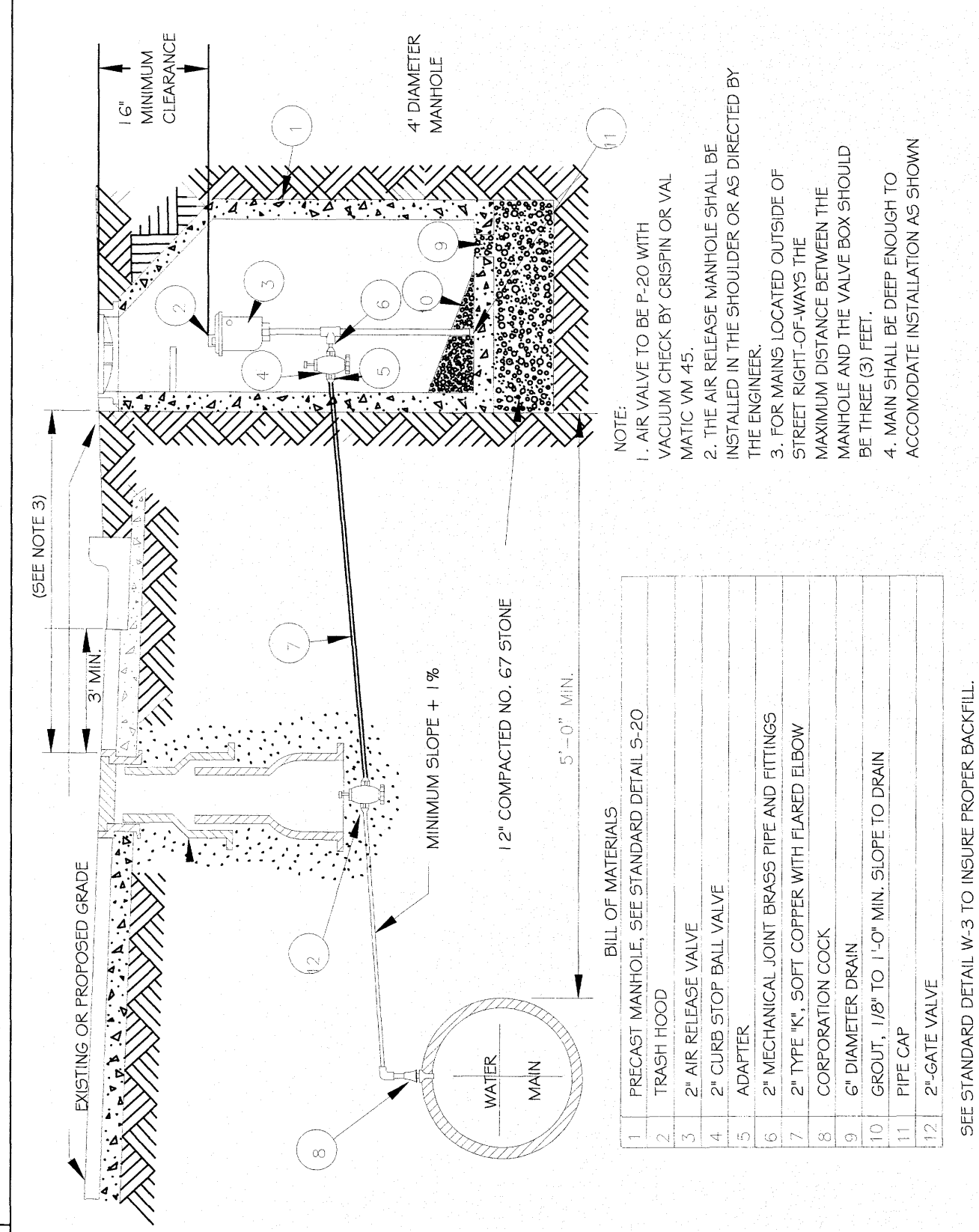


CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES					
STANDARD MANHOLE COVER					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
W-20	A.B.B.	4-8-04			
	D.H.L.	6-12-08			

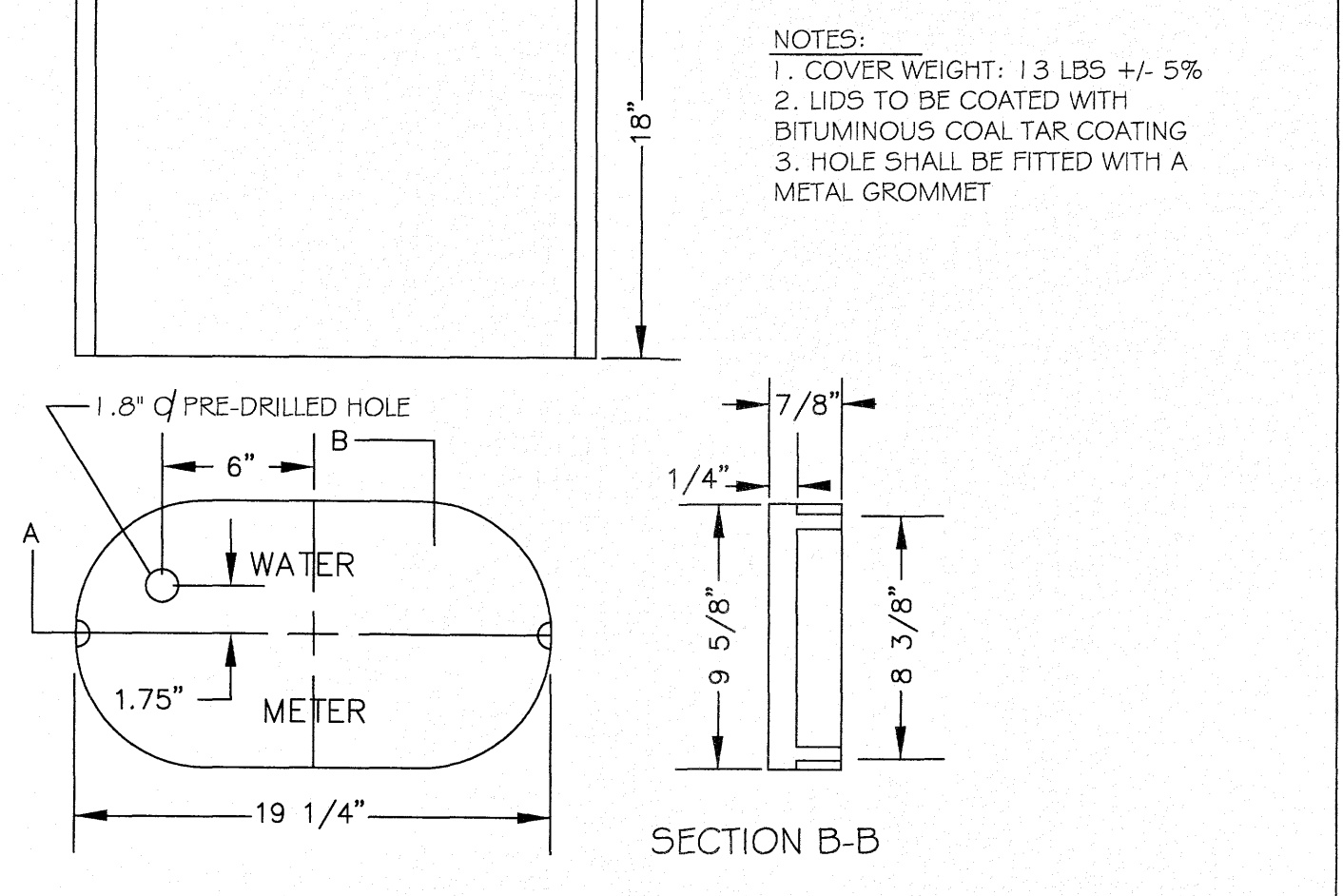
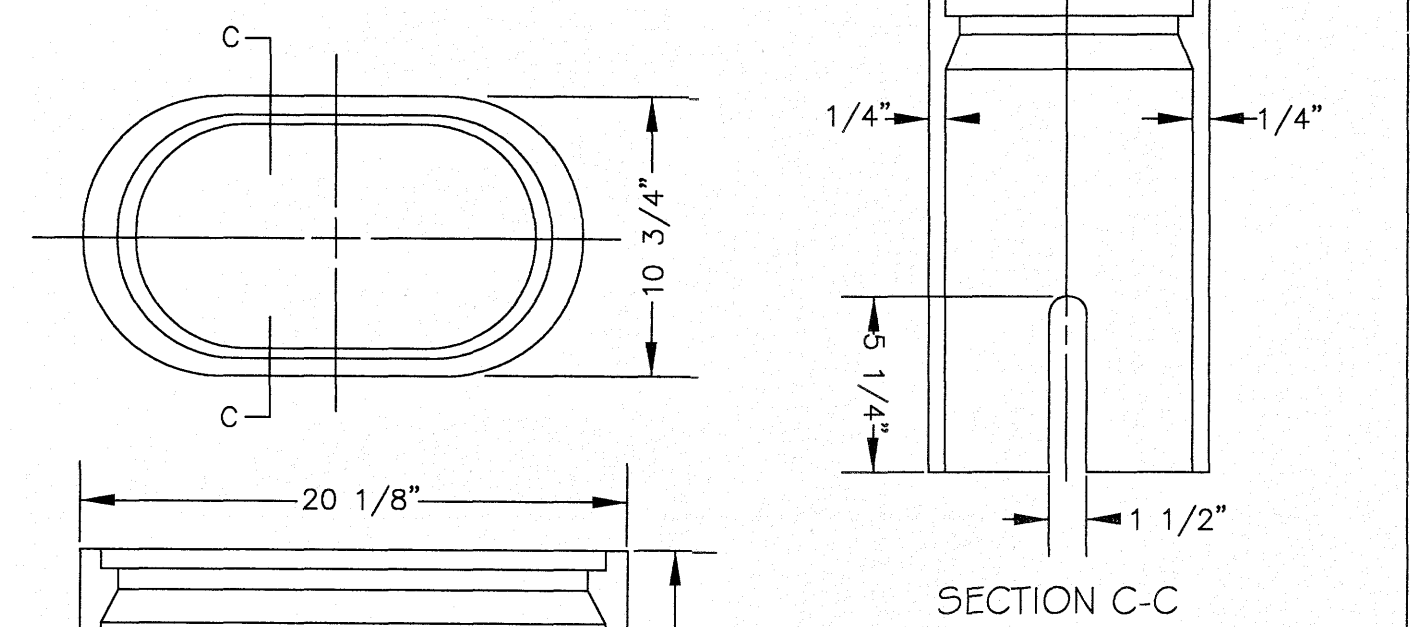
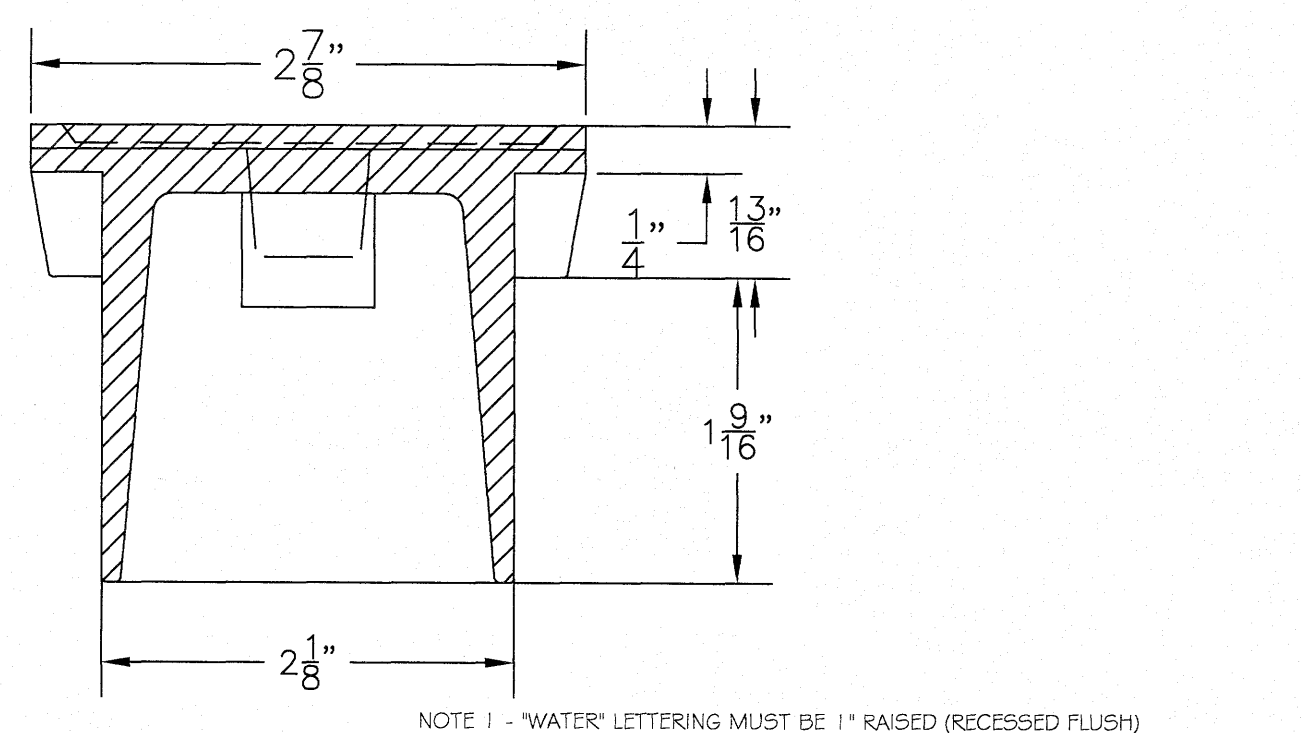
NOTE: NO ENGAGEMENT REQUIRED FOR SPACE GREATER THAN 18" FOR WATER LINES



CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES					
CONCRETE CRADLE PROTECTION FOR WATER LINE CROSSINGS					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
W-41	D.H.L.	2-20-08			



CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES					
STANDARD WATER AIR RELEASE VALVE					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
W-19	ABB	10-4-04			
	J.P.S.	11-1-10	RRH	2-31-01	6-7-00



CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES					
WATER METER BOX DETAIL					
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE	
W-25	D.W.C.	11-3-99	ABB	1-20-05	
	RRH	3-31-00	J.P.S.	11-4-10	

SITE PERMITTING APPROVAL
Water and Sewer Permits (if applicable)
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City of Raleigh Public Utilities Department Permit # _____

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City of Raleigh Development Approval _____
Raleigh Water Review Officer _____

North 811
www.nc811.org
*** 3 Days Before Digging ***
North Carolina 811
811 or 1-800-632-4949
Remote Ticket Entry
http://nc811.org/remoteticketentry.htm

AMERICAN Engineering
American Engineering Associates - Southeast, P.A.
4020 Westchase Boulevard, Suite 450
Raleigh, NC 27607
919-488-1101

AMERICAN ENGINEERING ASSOCIATES SOUTHEAST
STATE OF NORTH CAROLINA
C-3881

AMERICAN ENGINEERING ASSOCIATES SOUTHEAST
STATE OF NORTH CAROLINA
SEAL
9810
JAN R. HARMAN
ENGINEER

DETAIL SELECTION ONLY

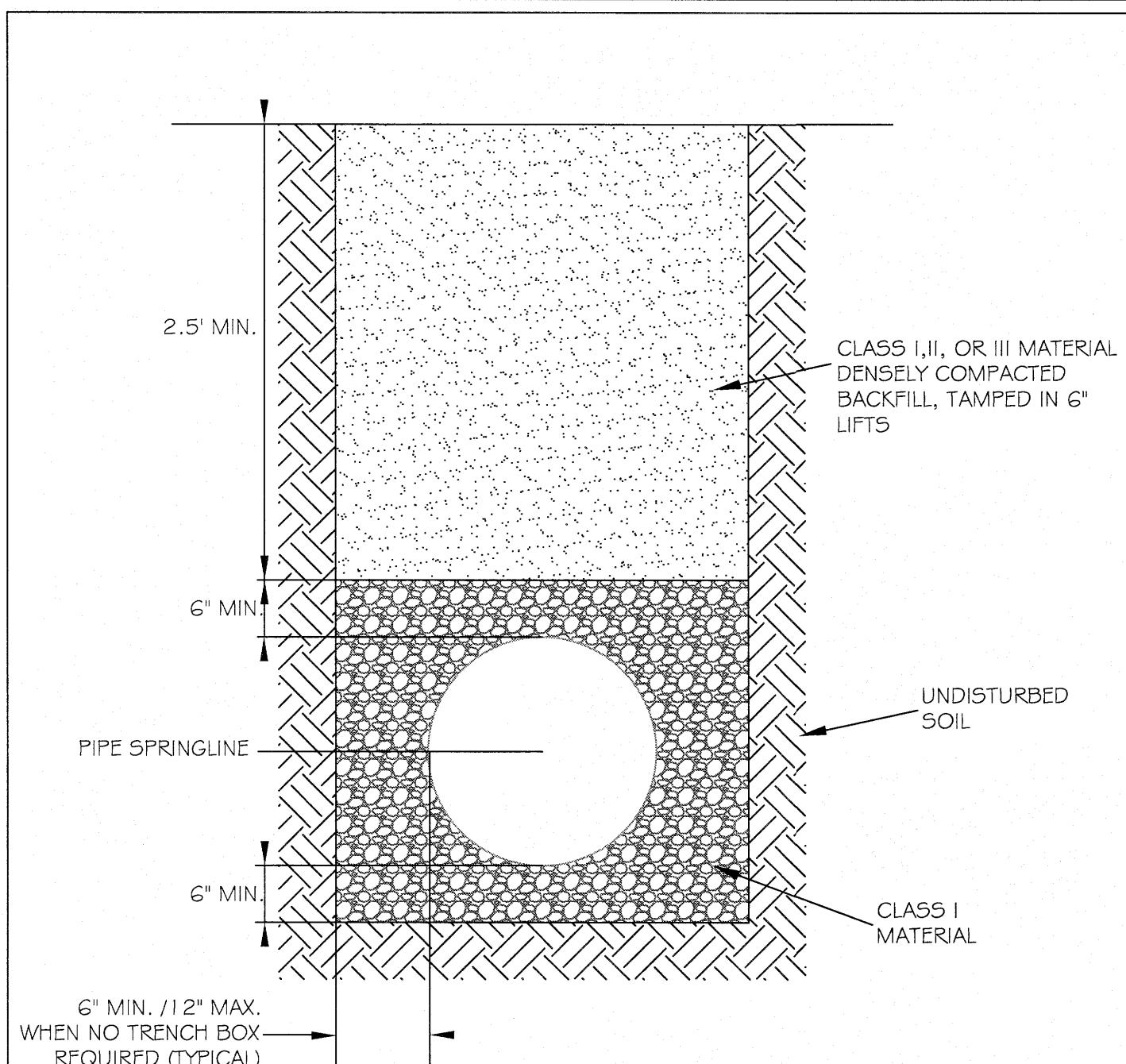
STIPULATION FOR REUSE
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KALAS FALLS PHASE 3
1832 ROLESVILLE ROAD
WAKE COUNTY, NC

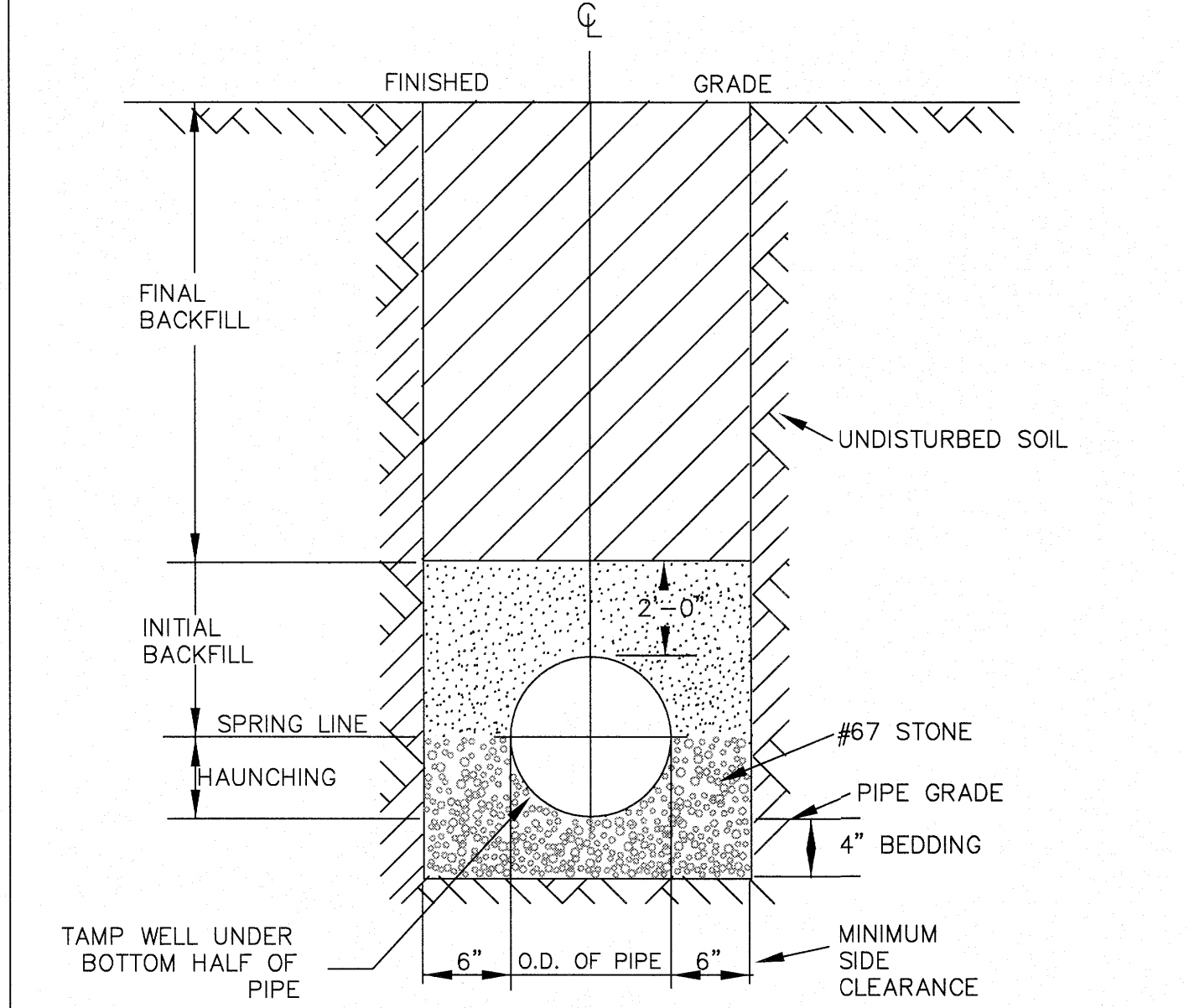
JOB NUMBER: 9900
CHECKED BY:
DRAWN BY:
DATE: FEB 18, 2021

SHEET TITLE:
KALAS FALLS CIVIL DETAILS

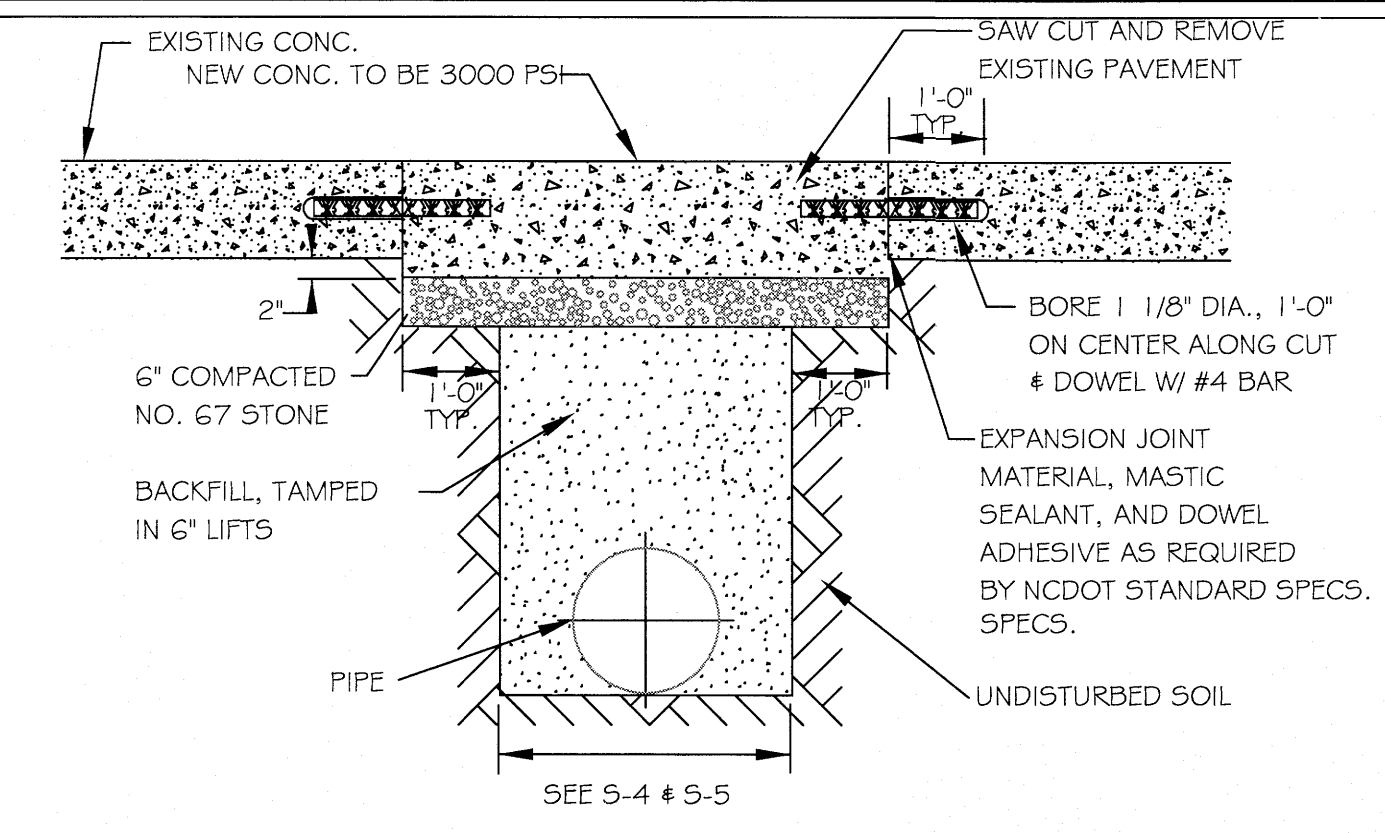
SHEET NO.:
CD8



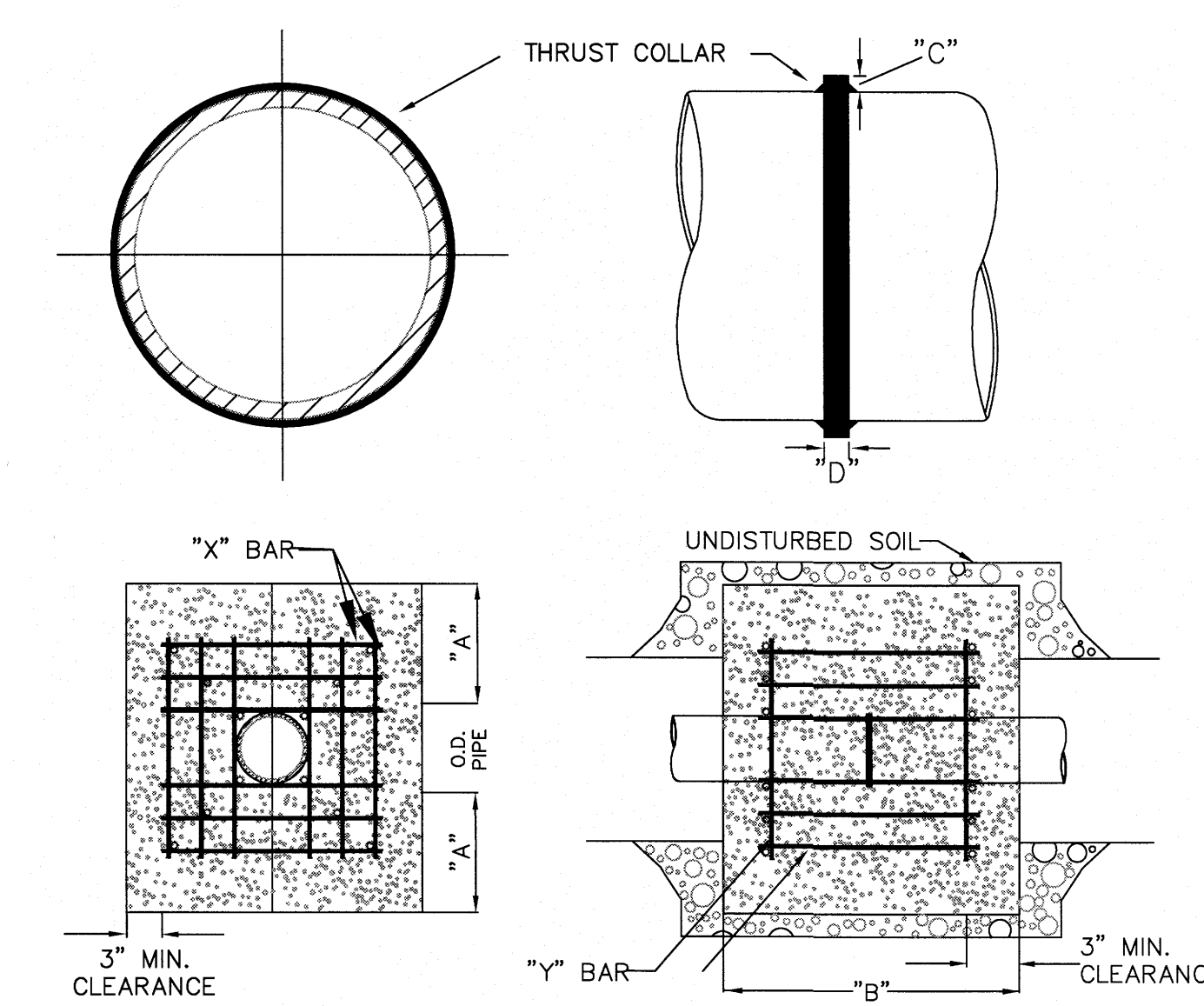
CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES STANDARD BEDDING DETAILS FOR CCFRPM PIPES				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-1	J.P.S.	10-2-10		



CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES TRENCH BOTTOM DIMENSIONS AND BACKFILLING REQUIREMENTS FOR PVC GRAVITY SEWER MAIN				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-5	TO NOTES	3-1-87	D.W.C.	9-3-99
		7-2-82	RRH	3-30-00

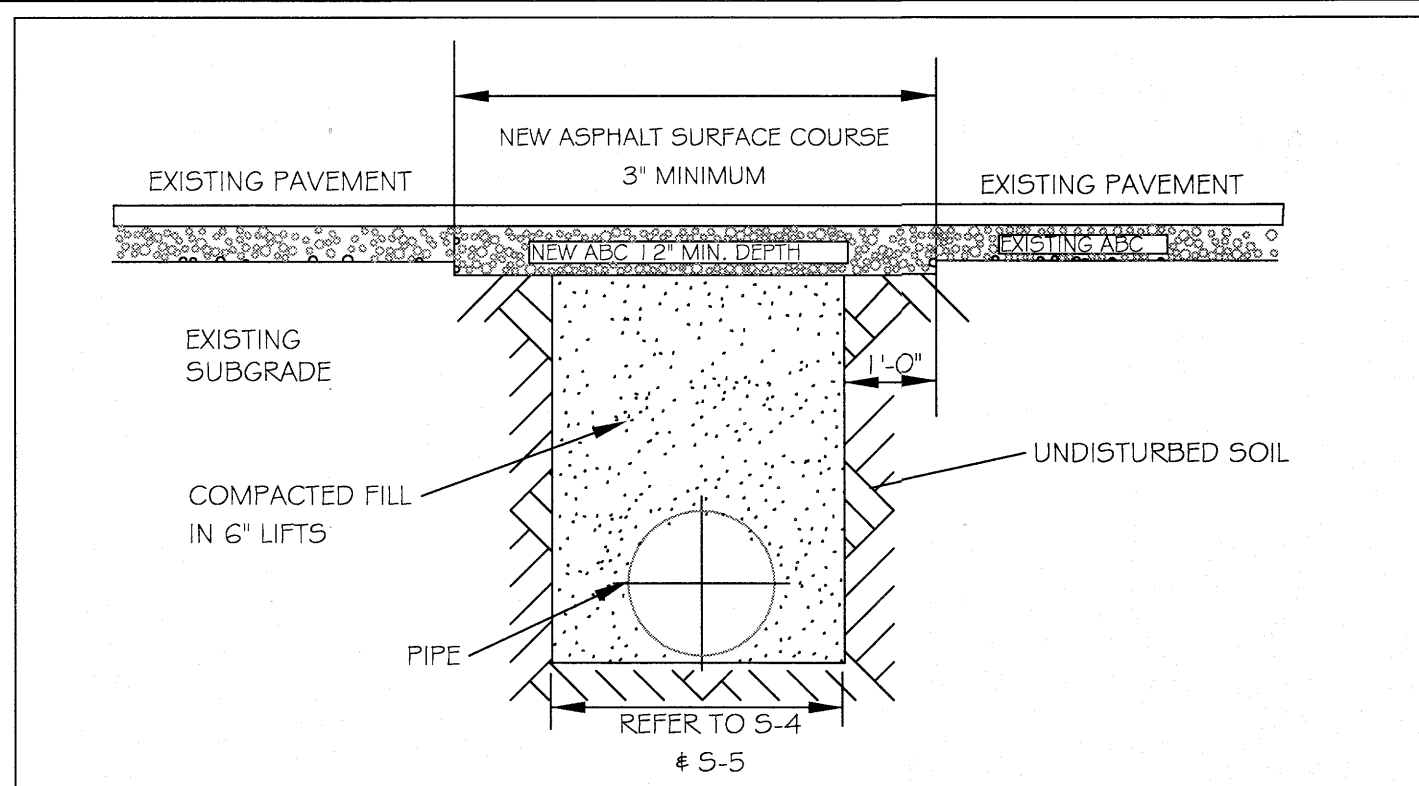


CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES STANDARD CONCRETE PAVEMENT PATCH DETAIL				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-2	D.W.C.	6-23-99	A.B.B.	4-19-04
	RRH	3-30-00	J.P.S.	10-8-10

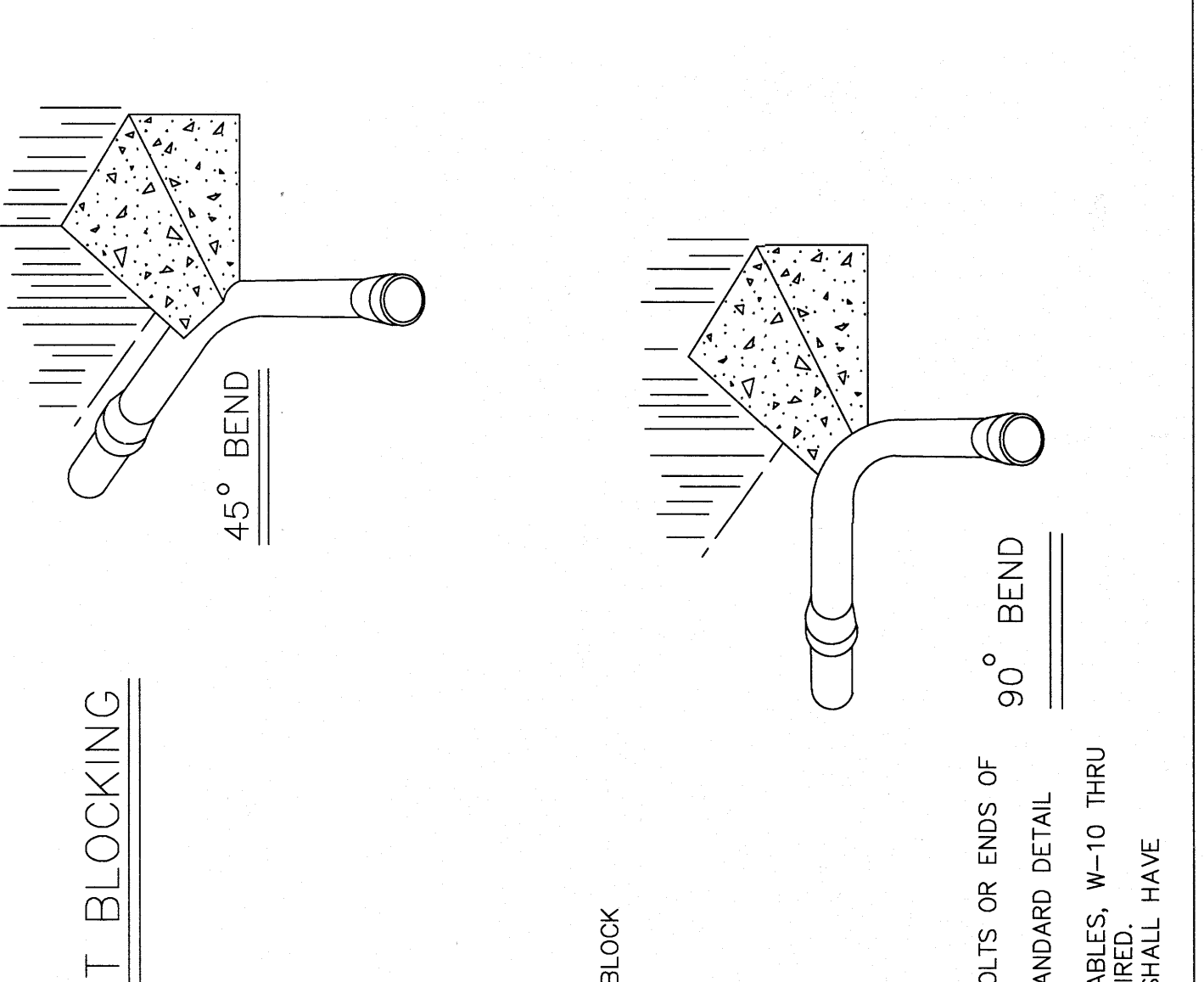


REINFORCING REQUIREMENTS				
I.D. PIPE	REBAR SIZE	"X" BAR LENGTH*	"Y" BAR LENGTH	"Y" BAR WEIGHT NO. REQUIRED
6" - 36"	#5	2'-2" O.D.	HP#1.043 LBS/FT	1'-1" 1.1 LBS. EACH X-24, Y-12
48" & greater	#6	3'-0" O.D.	HP#1.502 LBS/FT	1'-3" 1.9 LBS. EACH X-24, Y-12

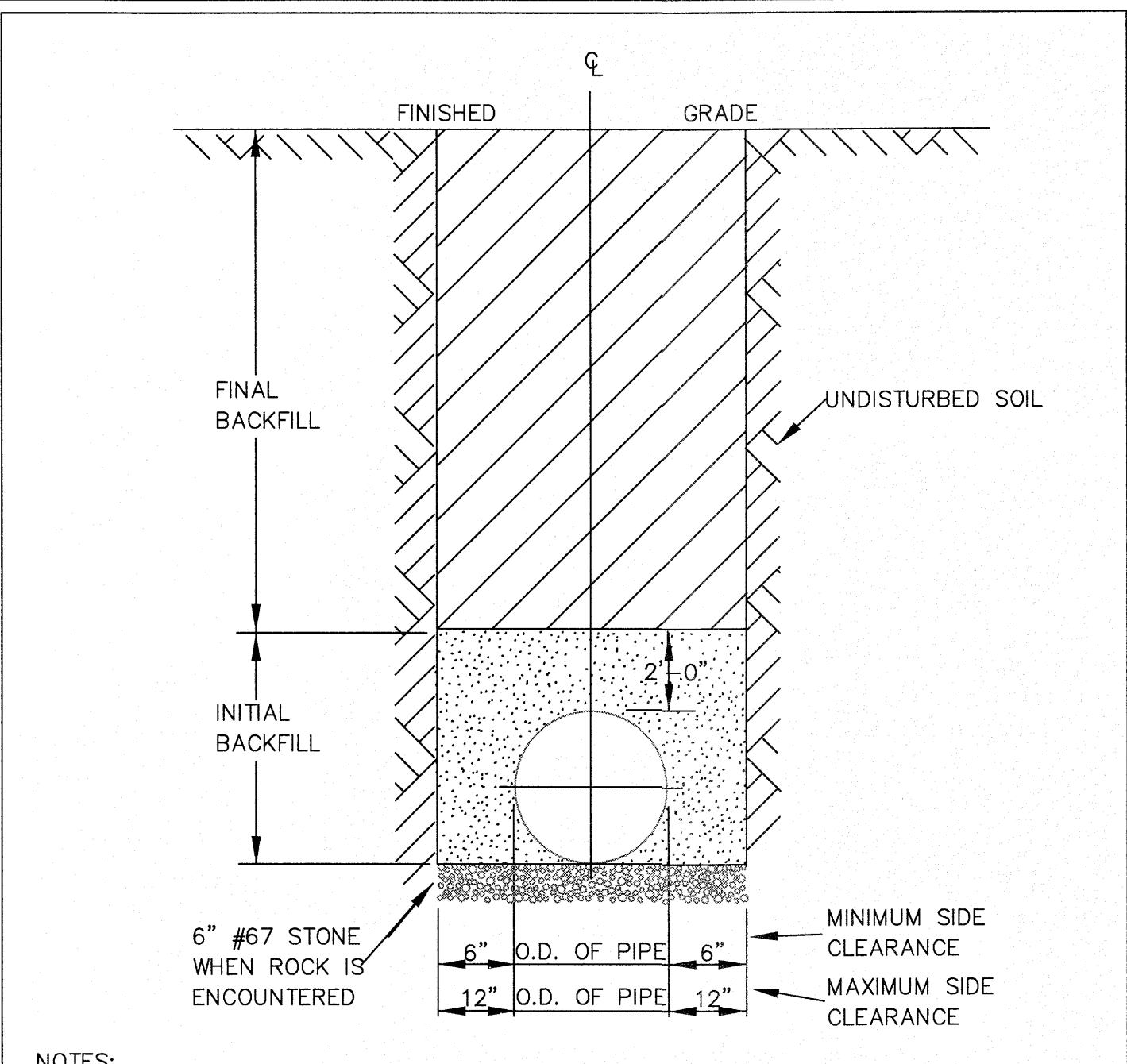
CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES RESTRAINING COLLAR DESIGN DATA FOR SEWER FORCE MAIN				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-6	RRH	1-21-00		
	D.H.L.	6-18-08		



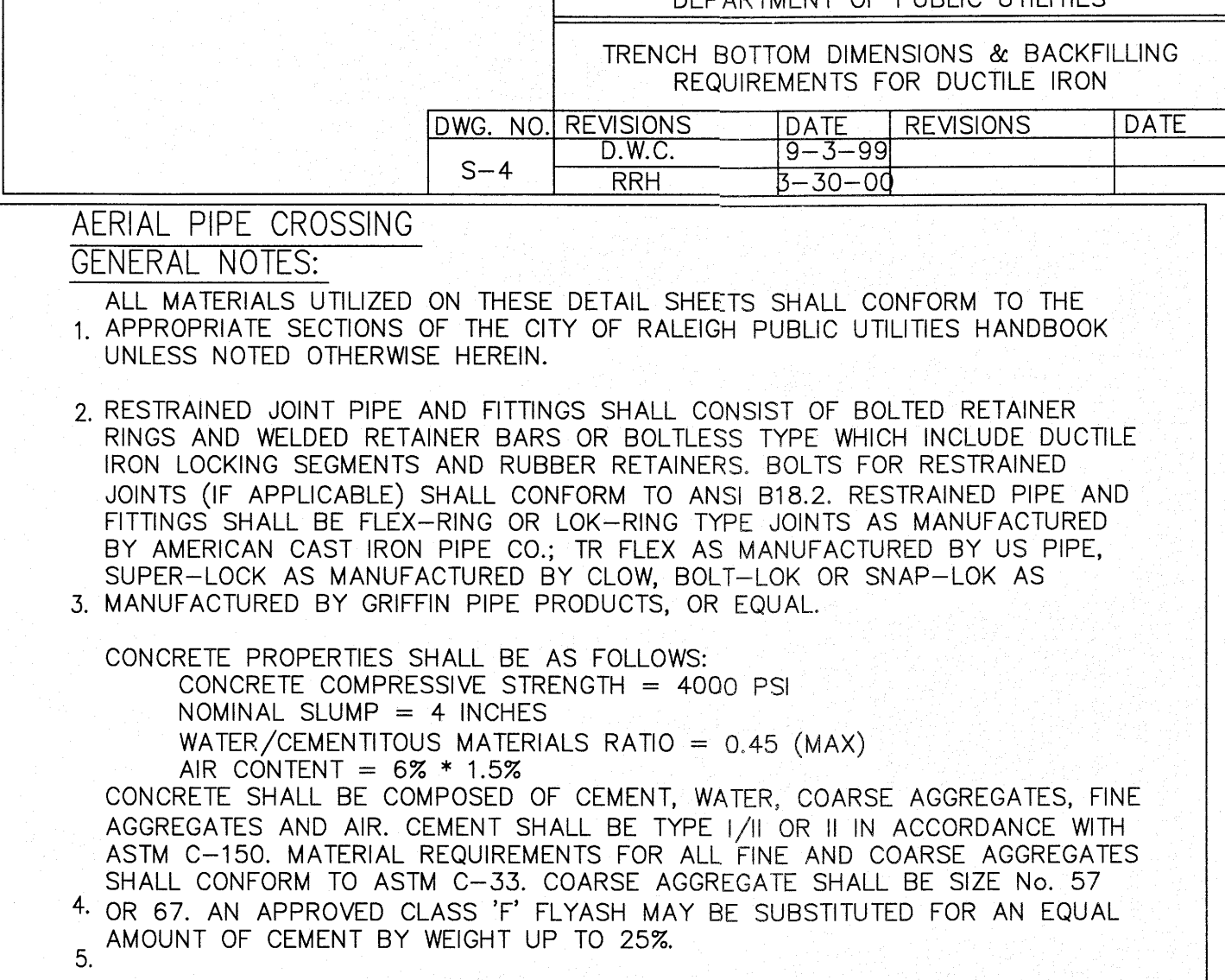
CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES STANDARD ASPHALT PAVEMENT PATCH DETAIL				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-3	D.W.C.	1-1-99	A.B.B.	4-19-04
	RRH	3-30-00	J.P.S.	10-8-10



CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES STANDARD THRUST BLOCKING VIEWS				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-7	D.W.C.	3-1-87	RRH	3-31-00
		9-7-99	D.H.L.	6-18-08



CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES TRENCH BOTTOM DIMENSIONS & BACKFILLING REQUIREMENTS FOR DUCTILE IRON				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-4	D.W.C.	9-3-99		
	RRH	8-30-00		



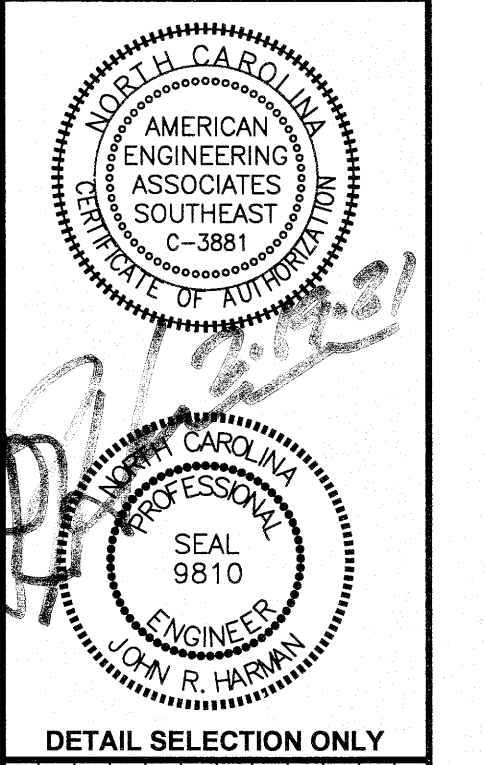
CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES AERIAL PIPE CROSSING GENERAL NOTES				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-10	D.W.C.	6/16/08		

NOTES:
1. FOR TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
2. NO ROCKS OR BOULDERS 4" OR LARGER TO BE USED IN INITIAL BACKFILL.
3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
4. BACKFILL SHALL BE TAMPED IN 6" LIFTS IN TRAFFIC AREAS, 12" IN NON-TRAFFIC AREAS.

NOTES:
1. CONCRETE SHALL BE 3000 PSI AND TRANSIT MIXED.
2. REINFORCING BARS SHALL BE DEFORMED AND TIED TOGETHER.
3. TRENCH BOTTOM WIDTH IN VICINITY OF THRUST BLOCK INSTALLATION SHALL BE THE MINIMUM WIDTH AS SHOWN ON STANDARD DETAIL W-3.
4. BACKFILL TAMPED IN 6" LIFTS PER STANDARD DETAIL W-3.
5. THRUST COLLAR MUST BE FACTORY WELDED ON BOTH SIDES ALONG BOTH EDGES OF COLLAR AROUND CIRCUMFERENCE.

NOTES:
1. CONCRETE SHALL BE 3000 PSI AND TRANSIT MIXED.
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
3. TRENCHES SHALL CONFORM TO STANDARD DETAIL W-1.
4. SEE STANDARD THRUST BLOCK TABLES, W-10 THRU W-11, FOR AREA OF CONCRETE REQUIRED.
5. ALL BENDS AND INTERSECTIONS SHALL HAVE CONCRETE THRUST BLOCKING.

GENERAL NOTES:
1. APPROPRIATE SECTIONS OF THE CITY OF RALEIGH PUBLIC UTILITIES HANDBOOK UNLESS NOTED OTHERWISE HEREIN.
2. RESTRAINED JOINT PIPE AND FITTINGS SHALL CONSIST OF BOLTED RETAINER RINGS AND WELDED RETAINER BARS OR BOLTLESS TYPE WHICH INCLUDE DUCTILE IRON LOCKING SEGMENTS AND RUBBER RETAINERS. BOLTS FOR RESTRAINED JOINTS (IF APPLICABLE) SHALL CONFORM TO ANSI B18.2. RESTRAINED PIPE AND FITTINGS SHALL BE FLEX-RING OR LOK-RING TYPE JOINTS AS MANUFACTURED BY AMERICAN CAST IRON PIPE CO.; TR FLEX AS MANUFACTURED BY US PIPE, SUPER-LOCK AS MANUFACTURED BY CLOW, BOLT-LOK OR SNAP-LOK AS MANUFACTURED BY GRIFFIN PIPE PRODUCTS, OR EQUAL.
3. ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4".
4. CONVENTIONAL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60 AND SHALL BE PLACED IN ACCORDANCE WITH "RECOMMENDED PRACTICE FOR PLACING REINFORCING BARS" (LATEST EDITION) AS PUBLISHED BY THE CONCRETE REINFORCING INSTITUTE. SPLICES SHALL BE CLASS "B" CONFORMING TO THE PROVISIONS OF ACI 318 - "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".
5. NEOPRENE BEARING PADS SHALL BE FORMED FROM PREVIOUSLY UNVULCANIZED, 100% VIRGIN NEOPRENE, WITH DUROMETER HARDNESS = 50.
6. PILES SHALL BE STRUCTURAL STEEL HP12x53 PILES AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36. PILES SHALL BE DRIVEN TO DEPTHS REQUIRED TO OBTAIN AN ULTIMATE BEARING CAPACITY OF NOT LESS THAN TWO TIMES THE DESIGN LOADING OF 30 TONS. PILES SHALL PENETRATE A MINIMUM OF FIFTEEN FEET INTO UNDISTURBED SOIL. IN DRIVING PILES, A METHOD APPROVED BY THE ENGINEER SHALL BE USED WHEREBY THE HEAD OF THE PILE IS NOT DAMAGED. IF REQUESTED BY THE ENGINEER, PILES SHALL BE TESTED TO DETERMINE THE ULTIMATE CAPACITY OF THE PILES. THE METHOD OF LOAD TESTING SHALL CONFORM TO ASTM D1143 AND THE NORTH CAROLINA STATE BUILDING CODE. WHERE PILES ARE EXPOSED, PILES SHALL BE PAINTED AND/OR COATED IN ACCORDANCE WITH THE CITY SPECIFICATIONS.



CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES TRENCH BOTTOM DIMENSIONS & BACKFILLING REQUIREMENTS FOR DUCTILE IRON				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-4	D.W.C.	9-3-99		
	RRH	8-30-00		

CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES TRENCH BOTTOM DIMENSIONS & BACKFILLING REQUIREMENTS FOR DUCTILE IRON				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
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	RRH	8-30-00		

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**KALAS FALLS
PHASE 3
1832 ROLESVILLE ROAD
WAKE COUNTY, NC**

CITY OF RALEIGH DEPARTMENT OF PUBLIC UTILITIES AERIAL PIPE CROSSING GENERAL NOTES				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-10	D.W.C.	6/16/08		

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Raleigh Water Review Officer _____

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
REINFORCED CONCRETE ENDWALL
FOR SINGLE 60" PIPE - 90° SKEW

SECTION - AA

SECTION - BB

PLAN

ELEVATION

WING ELEVATION

TAPER DETAIL

"N" BARS

"Z" BARS

"H" BARS

GENERAL NOTES:

USE CLASS "A" CONCRETE.

CHAMFER ALL EXPOSED CORNERS 1".

ALL DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING STEEL ARE TO CENTERS OF BARS.

PLACE A STONE DRAIN CONSISTING OF ONE (1) CUBIC FOOT OF NUMBER 75M STONE CONTAINED IN A POROUS FABRIC AT EACH WEEP HOLE. PLACE SUBDRAIN FINE AGGREGATE BENEATH, AROUND AND OVER THE STONE DRAIN SO THE STONE DRAIN IS COMPLETELY COVERED BY A LAYER OF SUBDRAIN FINE AGGREGATE AT LEAST ONE (1) FOOT THICK WHERE THERE IS MORE THAN ONE WEEP HOLE. SQUARE IN CROSS SECTION TO CONNECT ALL STONE DRAINS. PLACE A VERTICAL DRAIN OF SUBDRAIN FINE AGGREGATE AT LEAST ONE (1) FOOT SQUARE IN CROSS SECTION AT EACH WEEP HOLE TO AN ELEVATION OF TWO (2) FEET BELOW THE SURFACE OF THE EMBANKMENT.

BILL OF MATERIAL FOR ENDWALL

REF. NO.	REIN. STEEL	2 PIPES 3 PIPES	NO. REIN.	WT. (LBS.)
B1	#4	4	4	12.4
B2	#4	4	4	12.4
B3	#4	4	4	12.4
B4	#4	4	4	12.4
B5	#4	4	4	12.4
B6	#4	4	4	12.4
B7	#4	4	4	12.4
B8	#4	4	4	12.4
B9	#4	4	4	12.4
B10	#4	4	4	12.4
B11	#4	4	4	12.4
B12	#4	4	4	12.4
B13	#4	4	4	12.4
B14	#4	4	4	12.4
B15	#4	4	4	12.4
B16	#4	4	4	12.4
B17	#4	4	4	12.4
B18	#4	4	4	12.4
B19	#4	4	4	12.4
B20	#4	4	4	12.4
B21	#4	4	4	12.4
B22	#4	4	4	12.4
B23	#4	4	4	12.4
B24	#4	4	4	12.4
B25	#4	4	4	12.4
B26	#4	4	4	12.4
B27	#4	4	4	12.4
B28	#4	4	4	12.4
B29	#4	4	4	12.4
B30	#4	4	4	12.4
B31	#4	4	4	12.4
B32	#4	4	4	12.4
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B38	#4	4	4	12.4
B39	#4	4	4	12.4
B40	#4	4	4	12.4
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B84	#4	4	4	12.4
B85	#4	4	4	12.4
B86	#4	4	4	12.4
B87	#4	4	4	12.4
B88	#4	4	4	12.4
B89	#4	4	4	12.4
B90	#4	4	4	12.4
B91	#4	4	4	12.4
B92	#4	4	4	12.4
B93	#4	4	4	12.4
B94	#4	4	4	12.4
B95	#4	4	4	12.4
B96	#4	4	4	12.4
B97	#4	4	4	12.4
B98	#4	4	4	12.4
B99	#4	4	4	12.4
B100	#4	4	4	12.4

CONC. (C.I. VOL. YDS) 5.3

REF. STEEL (LBS.) 409

838-27

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
REINFORCED CONCRETE ENDWALL
FOR DOUBLE & TRIPLE 60" PIPE - 90° SKEW

SECTION - AA

SECTION - BB

PLAN

ELEVATION

WING ELEVATION

"N" BARS

"Z" BARS

"H" BARS

GENERAL NOTES:

USE CLASS "A" CONCRETE.

CHAMFER ALL EXPOSED CORNERS 1".

ALL DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING STEEL ARE TO CENTERS OF BARS.

PLACE A STONE DRAIN CONSISTING OF ONE (1) CUBIC FOOT OF NUMBER 75M STONE CONTAINED IN A POROUS FABRIC AT EACH WEEP HOLE. PLACE SUBDRAIN FINE AGGREGATE BENEATH, AROUND AND OVER THE STONE DRAIN SO THE STONE DRAIN IS COMPLETELY COVERED BY A LAYER OF SUBDRAIN FINE AGGREGATE AT LEAST ONE (1) FOOT THICK WHERE THERE IS MORE THAN ONE WEEP HOLE. SQUARE IN CROSS SECTION TO CONNECT ALL STONE DRAINS. PLACE A VERTICAL DRAIN OF SUBDRAIN FINE AGGREGATE AT LEAST ONE (1) FOOT SQUARE IN CROSS SECTION AT EACH WEEP HOLE TO AN ELEVATION OF TWO (2) FEET BELOW THE SURFACE OF THE EMBANKMENT.

BILL OF MATERIAL FOR ENDWALL

REF. NO.	REIN. STEEL	2 PIPES 3 PIPES	NO. REIN.	WT. (LBS.)
B1	#4	4	4	12.4
B2	#4	4	4	12.4
B3	#4	4	4	12.4
B4	#4	4	4	12.4
B5	#4	4	4	12.4
B6	#4	4	4	12.4
B7	#4	4	4	12.4
B8	#4	4	4	12.4
B9	#4	4	4	12.4
B10	#4	4	4	12.4
B11	#4	4	4	12.4
B12	#4	4	4	12.4
B13	#4	4	4	12.4
B14	#4	4	4	12.4
B15	#4	4	4	12.4
B16	#4	4	4	12.4
B17	#4	4	4	12.4
B18	#4	4	4	12.4
B19	#4	4	4	12.4
B20	#4	4	4	12.4
B21	#4	4	4	12.4
B22	#4	4	4	12.4
B23	#4	4	4	12.4
B24	#4	4	4	12.4
B25	#4	4	4	12.4
B26	#4	4	4	12.4
B27	#4	4	4	12.4
B28	#4	4	4	12.4
B29	#4	4	4	12.4
B30	#4	4	4	12.4
B31	#4	4	4	12.4
B32	#4	4	4	12.4
B33	#4	4	4	12.4
B34	#4	4	4	12.4
B35	#4	4	4	12.4
B36	#4	4	4	12.4
B37	#4	4	4	12.4
B38	#4	4	4	12.4
B39	#4	4	4	12.4
B40	#4	4	4	12.4
B41	#4	4	4	12.4
B42	#4	4	4	12.4
B43	#4	4	4	12.4
B44	#4	4	4	12.4
B45	#4	4	4	12.4
B46	#4	4	4	12.4
B47	#4	4	4	12.4
B48	#4	4	4	12.4
B49	#4	4	4	12.4
B50	#4	4	4	12.4
B51	#4	4	4	12.4
B52	#4	4	4	12.4
B53	#4	4	4	12.4
B54	#4	4	4	12.4
B55	#4	4	4	12.4
B56	#4	4	4	12.4
B57	#4	4	4	12.4
B58	#4	4	4	12.4
B59	#4	4	4	12.4
B60	#4	4	4	12.4
B61	#4	4	4	12.4
B62	#4	4	4	12.4
B63	#4	4	4	12.4
B64	#4	4	4	12.4
B65	#4	4	4	12.4
B66	#4	4	4	12.4
B67	#4	4	4	12.4
B68	#4	4	4	12.4
B69	#4	4	4	12.4
B70	#4	4	4	12.4
B71	#4	4	4	12.4
B72	#4	4	4	12.4
B73	#4	4	4	12.4
B74	#4	4	4	12.4
B75	#4	4	4	12.4
B76	#4	4	4	12.4
B77	#4	4	4	12.4
B78	#4	4	4	12.4
B79	#4	4	4	12.4
B80	#4	4	4	12.4
B81	#4	4	4	12.4
B82	#4	4	4	12.4
B83	#4	4	4	12.4
B84	#4	4	4	12.4
B85	#4	4	4	12.4
B86	#4	4	4	12.4
B87	#4	4	4	12.4
B88	#4	4	4	12.4
B89	#4	4	4	12.4
B90	#4	4	4	12.4
B91	#4	4	4	12.4
B92	#4	4	4	12.4
B93	#4	4	4	12.4
B94	#4	4	4	12.4
B95	#4	4	4	12.4
B96	#4	4	4	12.4
B97	#4	4	4	12.4
B98	#4	4	4	12.4
B99	#4	4	4	12.4
B100	#4	4	4	12.4

CONC. (C.I. VOL. YDS) 5.3

REF. STEEL (LBS.) 409

838-28

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
REINFORCED CONCRETE ENDWALL
FOR DOUBLE & TRIPLE 60" PIPE - 90° SKEW

SECTION - AA

SECTION - BB

PLAN

ELEVATION

WING ELEVATION

"N" BARS

"Z" BARS

"H" BARS

GENERAL NOTES:

USE CLASS "A" CONCRETE.

CHAMFER ALL EXPOSED CORNERS 1".

ALL DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING STEEL ARE TO CENTERS OF BARS.

PLACE A STONE DRAIN CONSISTING OF ONE (1) CUBIC FOOT OF NUMBER 75M STONE CONTAINED IN A POROUS FABRIC AT EACH WEEP HOLE. PLACE SUBDRAIN FINE AGGREGATE BENEATH, AROUND AND OVER THE STONE DRAIN SO THE STONE DRAIN IS COMPLETELY COVERED BY A LAYER OF SUBDRAIN FINE AGGREGATE AT LEAST ONE (1) FOOT THICK WHERE THERE IS MORE THAN ONE WEEP HOLE. SQUARE IN CROSS SECTION TO CONNECT ALL STONE DRAINS. PLACE A VERTICAL DRAIN OF SUBDRAIN FINE AGGREGATE AT LEAST ONE (1) FOOT SQUARE IN CROSS SECTION AT EACH WEEP HOLE TO AN ELEVATION OF TWO (2) FEET BELOW THE SURFACE OF THE EMBANKMENT.

BILL OF MATERIAL FOR ENDWALL

REF. NO.	REIN. STEEL	2 PIPES 3 PIPES	NO. REIN.	WT. (LBS.)
B1	#4	4	4	12.4
B2	#4	4	4	12.4
B3	#4	4	4	12.4
B4	#4	4	4	12.4
B5	#4	4	4	12.4
B6	#4	4	4	12.4
B7	#4	4	4	12.4
B8	#4	4	4	12.4
B9	#4	4	4	12.4
B10	#4	4	4	12.4
B11	#4	4	4	12.4
B12	#4	4	4	12.4
B13	#4	4	4	12.4
B14	#4	4	4	12.4
B15	#4	4	4	12.4
B16	#4	4	4	12.4
B17	#4	4	4	12.4
B18	#4	4	4	12.4
B19	#4	4	4	12.4
B20	#4	4	4	12.4
B21	#4	4	4	12.4
B22	#4	4	4	12.4
B23	#4	4	4	12.4
B24	#4	4	4	12.4
B25	#4	4	4	12.4
B26	#4	4	4	12.4
B27	#4	4	4	12.4
B28	#4	4	4	12.4
B29	#4	4	4	12.4
B30	#4	4	4	12.4
B31	#4	4	4	12.4
B32	#4	4	4	12.4
B33	#4	4	4	12.4
B34	#4	4	4	12.4
B35	#4	4	4	12.4
B36	#4	4	4	12.4
B37	#4	4	4	12.4
B38	#4	4	4	12.4
B39	#4	4	4	12.4
B40	#4	4	4	12.4
B41	#4	4	4	12.4
B42	#4	4	4	12.4
B43	#4	4	4	12.4
B44	#4	4	4	12.4
B45	#4	4	4	12.4
B46	#4	4	4	12.4
B47	#4	4	4	12.4
B48	#4	4	4	12.4
B49	#4	4	4	12.4
B50	#4	4	4	12.4
B51	#4	4	4	12.4
B52	#4	4	4	12.4
B53	#4	4	4	12.4
B54	#4	4	4	12.4
B55	#4	4	4	12.4
B56	#4	4	4	12.4
B57	#4	4	4	12.4
B58	#4	4	4	12.4
B59	#4	4	4	12.4
B60	#4	4	4	12.4
B61	#4	4	4	12.4
B62	#4	4	4	12.4
B63	#4	4	4	12.4
B64	#4	4	4	12.4
B65	#4	4	4	12.4
B66	#4	4	4	12.4
B67	#4	4	4	12.4
B68	#4	4	4	12.4
B69	#4	4	4	12.4
B70	#4	4	4	12.4
B71	#4	4	4	12.4
B72	#4	4	4	12.4
B73	#4	4	4	12.4
B				

