

# CAROLINA LEGACY VOLLEYBALL CONSTRUCTION DOCUMENTS

640, 641, 671 GRANITE VISTA DRIVE  
ROLESVILLE, NC 27571

DECEMBER 10, 2020  
MARCH 18, 2021  
APRIL 27, 2021  
JUNE 01, 2021  
JULY 08, 2021  
SEPTEMBER 14, 2021  
OCTOBER 26, 2021  
NOVEMBER 02, 2021  
**LAST REVISED: NOVEMBER 16, 2021**

## OWNER/DEVELOPER:

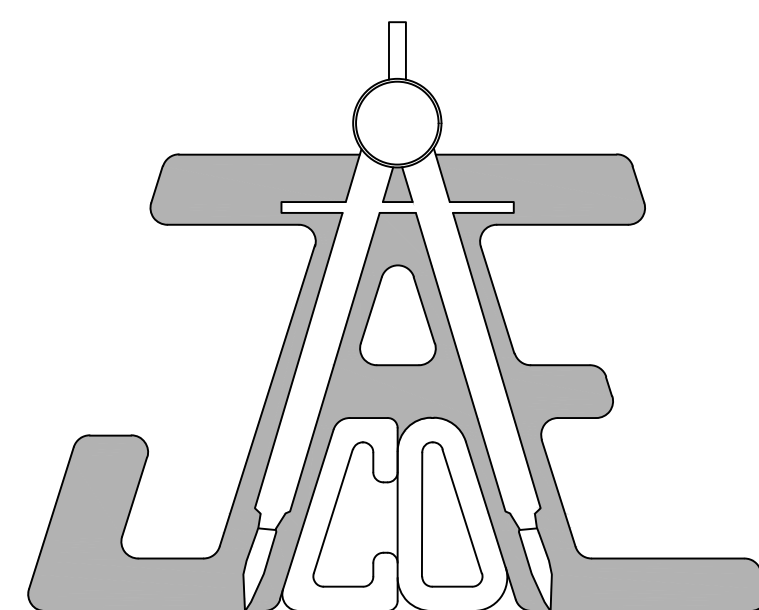
ALL PURPOSE DRIVEN, LLC  
6027 CLAPTON DRIVE  
WAKE FOREST, NC 27587  
Phone: (917) 692-9942  
E-mail: bigmenace69@aol.com

## ARCHITECT:

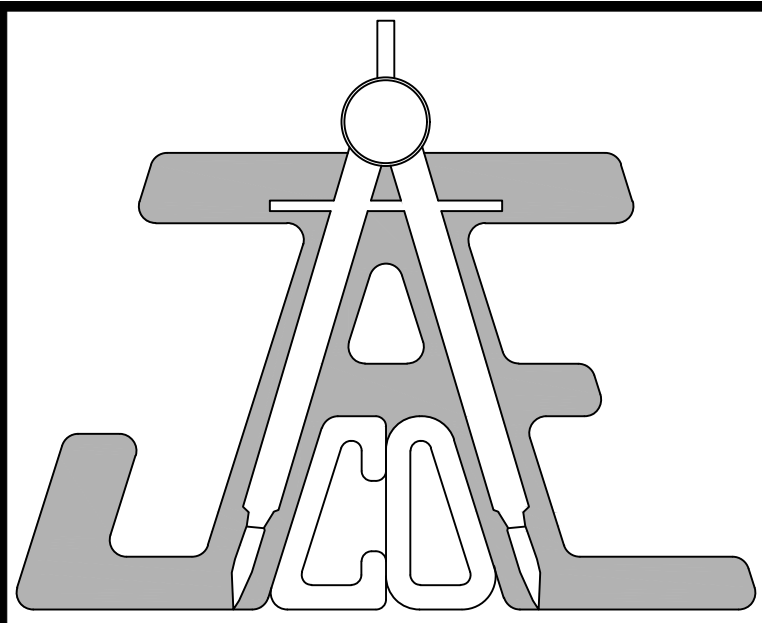
SUMMIT DESIGN AND ENGINEERING  
1110 NAVAHO DRIVE; SUITE 600  
RALEIGH, NC 27609  
Phone: (919) 322-0115  
E-mail: ssf@ashevillearchitect.com

## CIVIL ENGINEER:

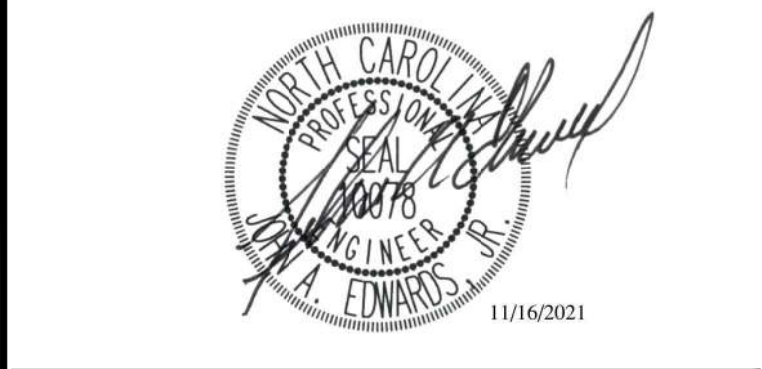
JAECO  
Consulting Engineers  
NC License F-0289  
333 Wade Ave., Raleigh, N.C. 27605  
Phone: (919) 828-4428  
Fax: (919) 828-4711  
E-mail: info@jaeco.com



**EROSION CONTROL, STORMWATER AND FLOODPLAIN MANAGEMENT**  
**APPROVED**  
EROSION CONTROL  SEC-050421-2020  
STORMWATER MGMT.  SWF-50422-2020  
FLOOD STUDY  S-  
DATE **9-21-2021**  
*Barney Blackburn*  
ENVIRONMENTAL CONSULTANT SIGNATURE



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640, 641, & 671 Granite Vista Drive  
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All Purpose Driven, LLC  
6027 Clapton Drive  
Wake Forest, NC 27587

**Call 811 before you dig.**

### LEGEND

PLANS NOT APPROVED FOR CONSTRUCTION UNLESS SIGNED BY CITY OF RALEIGH

**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.

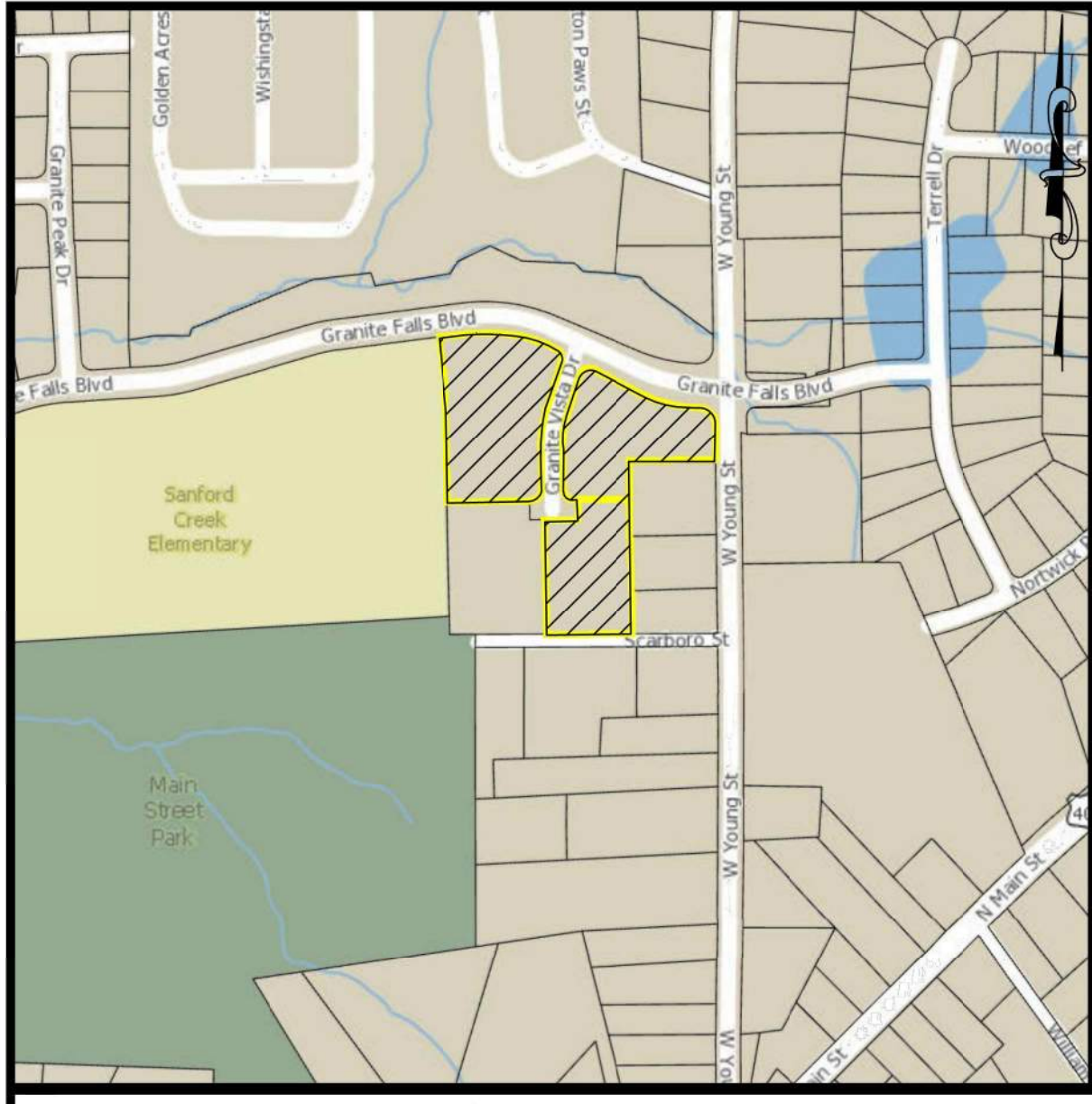
City of Raleigh Development Approval *Trinity Keating*  
Raleigh Water Review Officer

### COVER

Number	Description	Date
4	PERMIT SET	07/08/21
5	PER TRC COMMENTS	09/14/21
6	LAYOUT REVISION & POST-APPROVAL COMMENTS	10/28/21
7	ADDITIONAL POST-APPROVAL COMMENTS	11/02/21
8	POST-APPROVAL COMMENTS	11/16/21

JAECO #: 087-01  
DRAWING SCALE: N/A  
DRAWN BY: TT  
CHECKED BY: JAE, JR  
DATE ISSUED: 12/10/2020

**C-0**



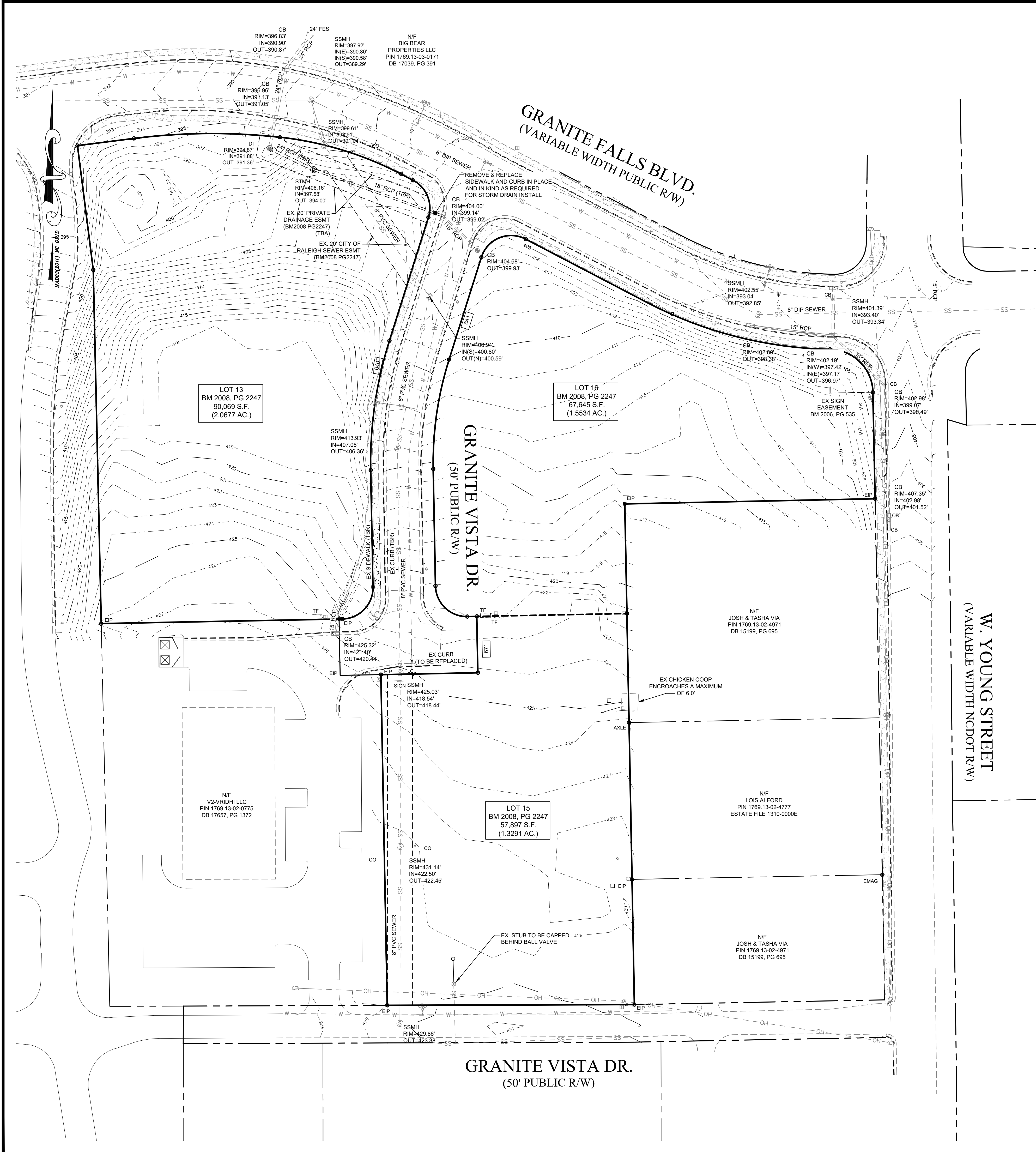
VICINITY MAP  
NOT TO SCALE

ABBREVIATIONS		UNK	UNKNOWN
<b>APPLICABLE TO ENTIRE PLAN SET</b>			
AC	ACRE	VCP	VITRIFIED CLAY PIPE
APPROX	APPROXIMATE	WV	WATER VALVE
B-B	BACK-TO-BACK	WLE	WATER LINE ESMT
BM	BOOK OF MAPS	WM	WATER METER
CB	CATCH BASIN	YI	YARD INLET
CIP	CAST IRON PIPE	<b>SPOT KEY</b>	
CL	CENTERLINE	BC	BOTTOM OF CURB
CO	CLEANOUT	BR	BOTTOM OF RISER
CONC	CONCRETE	BW	BOTTOM OF WALL
COR	CITY OF RALEIGH	FFE	FINISHED FLOOR ELEVATION
CP	COMPUTED POINT	G	GRADE
DB	DEED BOOK	HP	HIGH POINT
DI	DROP INLET	LP	LOW POINT
DIP	DUCTILE IRON PIPE	TC	TOP OF CURB
DTL	DETAIL	TR	TOP OF RISER
ECM	EX CONC MONUMENT	TW	TOP OF WALL
EIP	EX IRON PIPE		
EIR	EX IRON ROD		
ELEC	ELECTRIC		
ELEV	ELEVATION		
EMAG	EX MAG NAIL		
EOP	EDGE OF PAVEMENT		
ESMT	EASEMENT		
EX	EXISTING		
FDC	FIRE DEPARTMENT CONNECTION		
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY		
FH	FIRE HYDRANT		
FM	FORCE MAIN		
FP	FLOODPLAIN		
GIS	GEOGRAPHIC INFORMATION SYSTEM		
GM	GAS METER		
GP	GALVANIZED PIPE		
GW	GUY ANCHOR		
HB	HOT BOX		
HDPE	HIGH DENSITY POLYETHYLENE		
IPS	IRON PIPE SET		
LF	LINEAR FEET		
LP	LIGHT POLE		
LOC	LOCATION		
MAGS	MAG NAIL SET		
MH	MANHOLE		
MW	MONITORING WELL		
NF	NOW OR FORMERLY		
NCDDOT	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		
PG	PAGE		
PP	POWER POLE		
PROP	PROPOSED		
PVC	POLYVINYL CHLORIDE		
RCP	REINFORCED CONC PIPE		
ROW	RIGHT-OF-WAY		
R/W			
RSDM	RALEIGH STREET DESIGN MANUAL		
SF	SQUARE FEET		
SS	SANITARY SEWER		
STD	STANDARD		
SWM	STORMWATER MANAGEMENT		
TBD	TO BE DETERMINED		
TBR	TO BE REMOVED		
TBRL	TO BE RELOCATED		
TF	ELECTRIC TRANSFORMER		
TP	TELEPHONE PEDESTAL		
TYP	TYPICAL		
UDO	UNIFIED DEVELOPMENT ORDINANCE		

SITE DATA TABLE			
ADDRESS	640, 641, & 671 GRANITE VISTA DRIVE ROLESVILLE, NC 27571		
WAKE COUNTY PIN	1769030171, 1769033076, 1769022785		
ZONING	OP-CZ		
TOTAL TRACT AREA	LOT 13 (640):	20,069 SF (2.07 AC)	
	LOT 15 (671):	57,897 SF (1.33 AC)	
	LOT 16 (641):	67,645 SF (1.55 AC)	
PROPOSED BUILDING AREA	21,120 SF		
IMPERVIOUS AREA	EXISTING	0.10 AC	
	ON SITE	2.06 AC	
	W/IN EFFECTIVE AREA	2.20 AC	
PARKING CALCULATIONS			
			SPACES
REQUIRED	ASSEMBLY AREA (90'x198' GYMNASIUM)	1 SPACE/100 SF * 17,820 SF	178
	INCLUDES 8 (6 STANDARD + 2 "VAN") ADA COMPLIANT SPACES		
	<b>TOTAL</b>		<b>178</b>
	<b>PROPOSED</b>		<b>178</b>
BASE DIMENSIONAL STANDARDS			
FRONT YARD SETBACK	30 FT		
SIDE YARD SETBACK	15 FT		
CORNER YARD SETBACK	25 FT		
REAR YARD SETBACK	35 FT		
UTILITIES			
WATER	STUBS	2	
SEWER	STUBS	1 (ABANDON ONE(1))	

SHEET INDEX	
SHEET NUMBER	SHEET TITLE
C-0	COVER
C-1	EXISTING CONDITIONS- DEMOLITION PLAN
C-2	SITE PLAN
C-3	EROSION CONTROL PLAN - PHASE I
C-4	EROSION CONTROL PLAN - PHASE II
C-5	GRADING & SWM PLAN
C-6	STORMDRAIN PROFILES
C-7	UTILITY & FIRE DEPT ACCESS PLAN
C-8	SITE DETAILS
C-9	STORM DETAILS
C-10	INLINE DRAIN DETAILS
C-11	UTILITY DETAILS
C-12	EROSION CONTROL DETAILS
C-13	EROSION CONTROL DETAILS
C-14	NCG01 NOTES & DETAILS
C-15	NCG01 NOTES & DETAILS
L-1	LANDSCAPE PLAN
L-2	PLANT LIST, DETAILS, AND WET POND LANDSCAPING
A1.00	FLOOR PLAN
A1.10	ENLARGED FLOOR PLAN
A1.20	REFLECTED CEILING PLAN
A6.00	WINDOW, DOOR, FINISH SCHEDULES / WINDOW & DOOR TYPES
E1	ELECTRICAL NOTES & SCHEDULES
E2	LIGHTING PLAN





**SURVEYOR'S NOTES:**

ALL DISTANCES ARE HORIZONTAL GROUND.  
 ALL DIMENSIONS ARE IN FEET.  
 AREA COMPUTED USING COORDINATE METHOD FROM MEASURED FIELD DATA.  
 BASIS OF BEARINGS IS NORTH CAROLINA GRID NORTH, NAD83(2011). THE SITE WAS LOCALIZED UTILIZING REAL-TIME KINEMATIC (RTK) GLOBAL POSITIONING SYSTEM (GPS) SOLUTIONS REFERENCING THE CONTINUOUSLY OPERATING REFERENCE STATION (CORS) NETWORK BASE STATION NCRD, RALEIGH, NC.  
 THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND MAY BE SUBJECT TO ANY MATTERS THAT A FULL TITLE SEARCH WOULD DISCLOSE.  
 ALL REFERENCE ARE MADE TO THE WAKE COUNTY REGISTRY.  
 HORIZONTAL DATUM IS NAD 83(2011) AND VERTICAL DATUM IS NAVD 88.

**SITE DATA**

**LOT 13**  
 OWNER: ALL PURPOSE DRIVEN LLC  
 PIN: 0769.13-03-0171  
 REFERENCES: DB 18318, PG 346; BM 2008, PG 2247  
 ZONING: OP-SUD  
 AREA: 90,069 S.F. (2.0677 AC.)

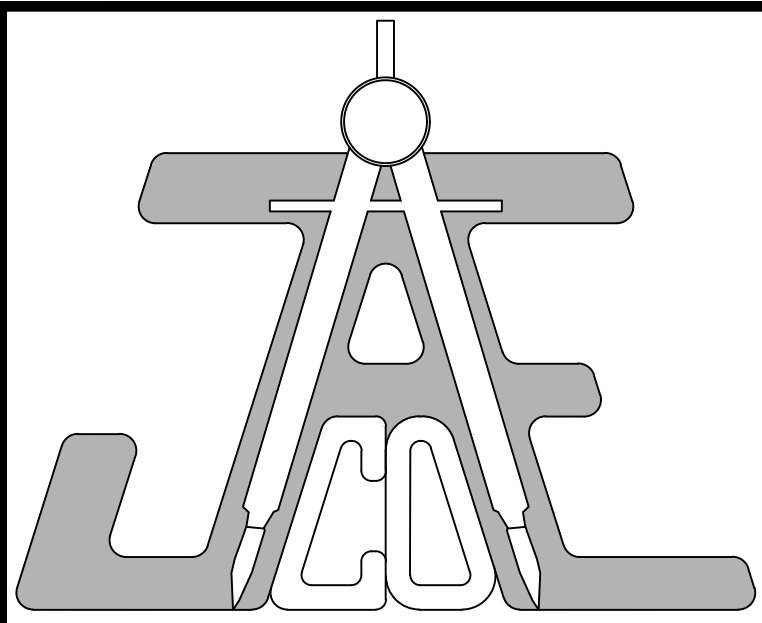
**LOT 15**  
 OWNER: ALL PURPOSE DRIVEN LLC  
 PIN: 0769.13-02-2785  
 REFERENCES: DB 18318, PG 346; BM 2008, PG 2247  
 ZONING: OP-SUD  
 AREA: 57,897 S.F. (1.3291 AC.)

**LOT 16**  
 OWNER: ALL PURPOSE DRIVEN LLC  
 PIN: 0769.13-03-3076  
 REFERENCES: DB 18318, PG 346; BM 2008, PG 2247  
 ZONING: OP-SUD  
 AREA: 67,645 S.F. (1.5534 AC.)

CURVE TABLE				
CURVE	LENGTH	RADIUS	CHORD	CHORD BEARING
C1	53.53'	35.00'	48.46'	N45° 01' 27"W
C2	151.95'	330.00'	150.61'	S75° 38' 40"E
C3	43.65'	25.00'	38.32'	S67° 35' 27"W
C4	88.67'	272.50'	88.28'	S08° 13' 31"W
C5	39.30'	25.00'	35.38'	S46° 05' 48"E
C6	39.30'	25.00'	35.38'	S43° 54' 14"W
C7	104.93'	322.50'	104.47'	S08° 13' 31"W
C8	34.89'	25.00'	32.13'	S22° 28' 25"E
C9	101.90'	275.00'	101.32'	S73° 04' 06"E
C10	116.96'	494.12'	116.69'	N89° 32' 07"E

**GENERAL NOTES:**

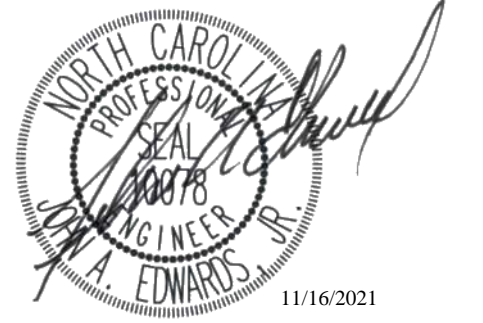
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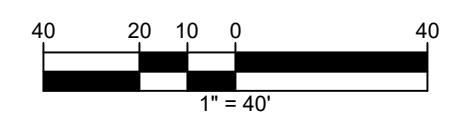
**LEGEND**



**EXISTING CONDITIONS-DEMOLITION PLAN**

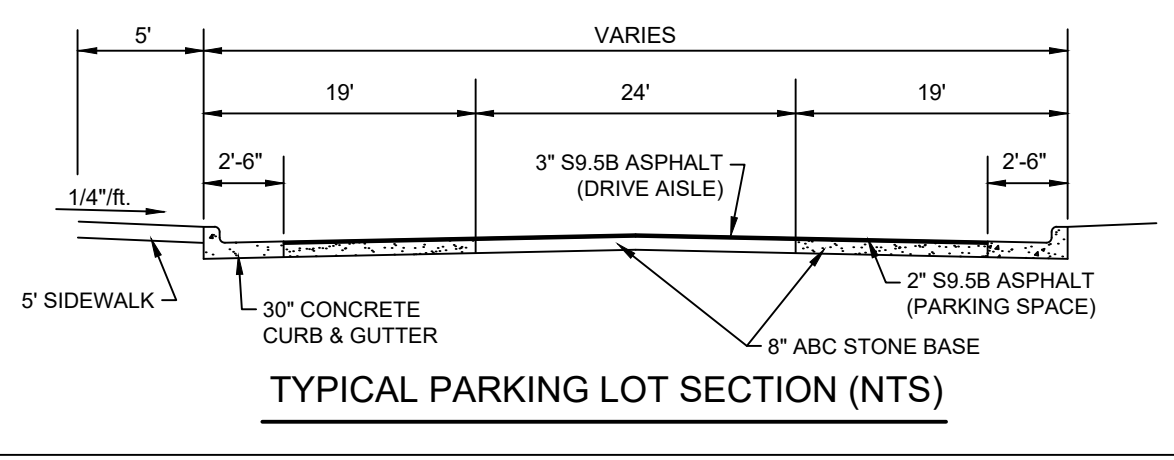
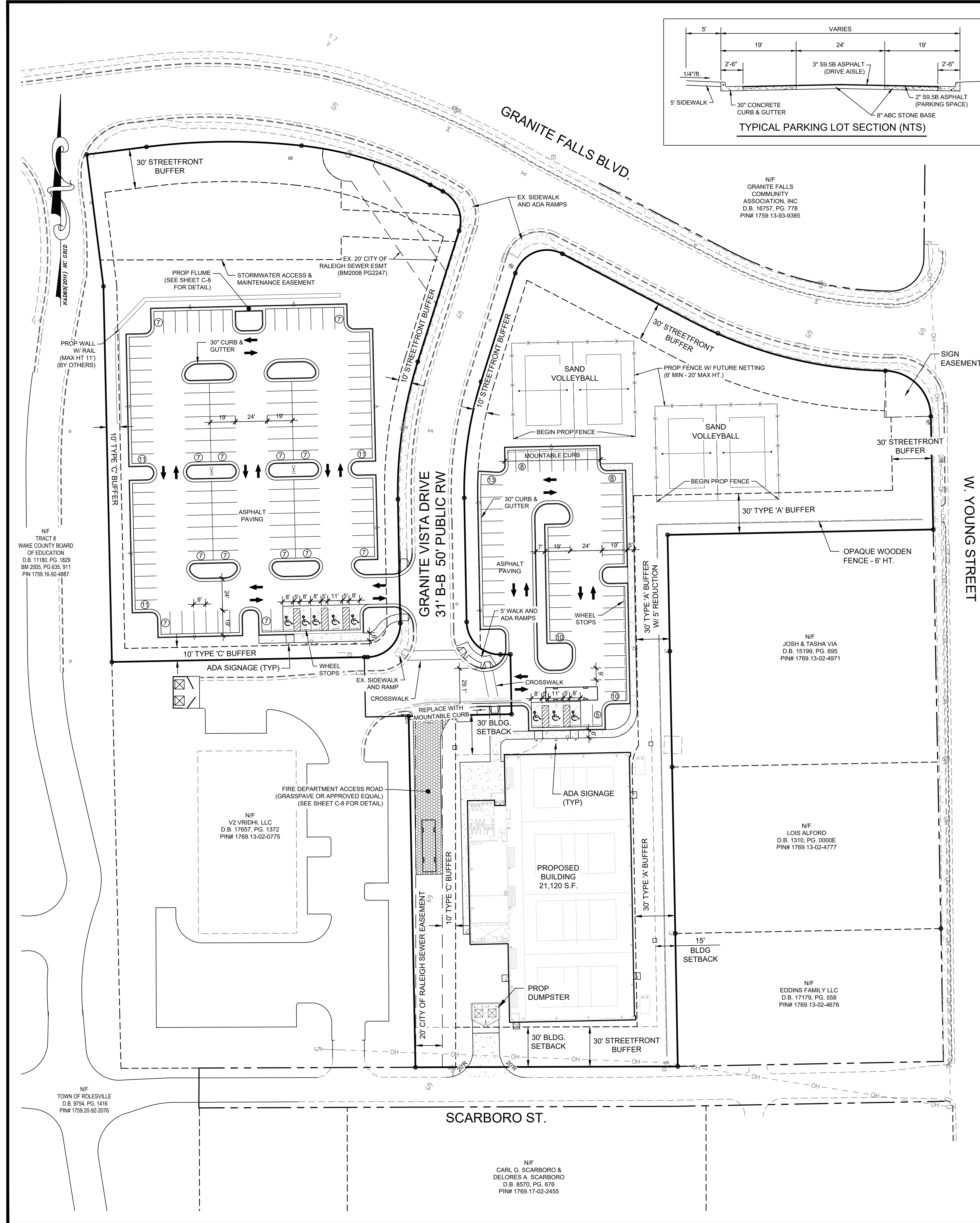
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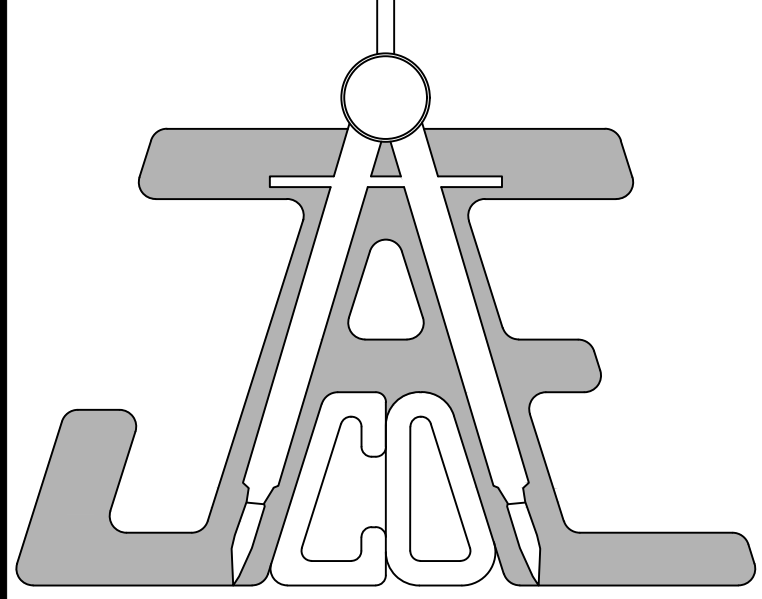
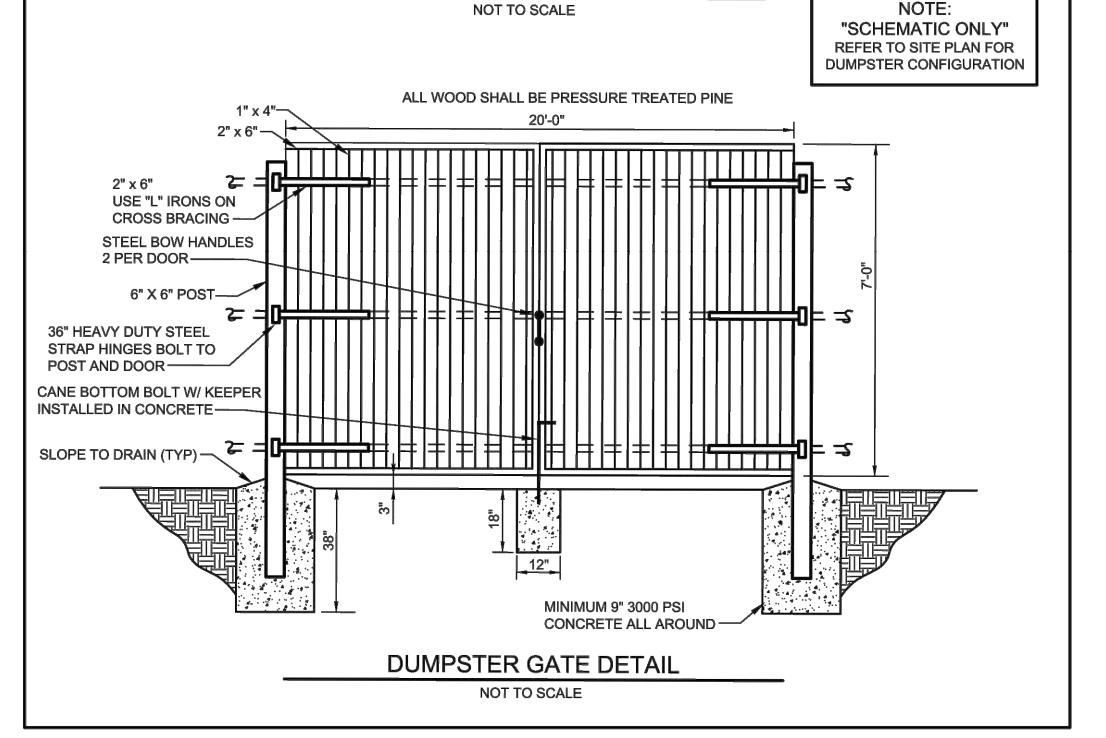
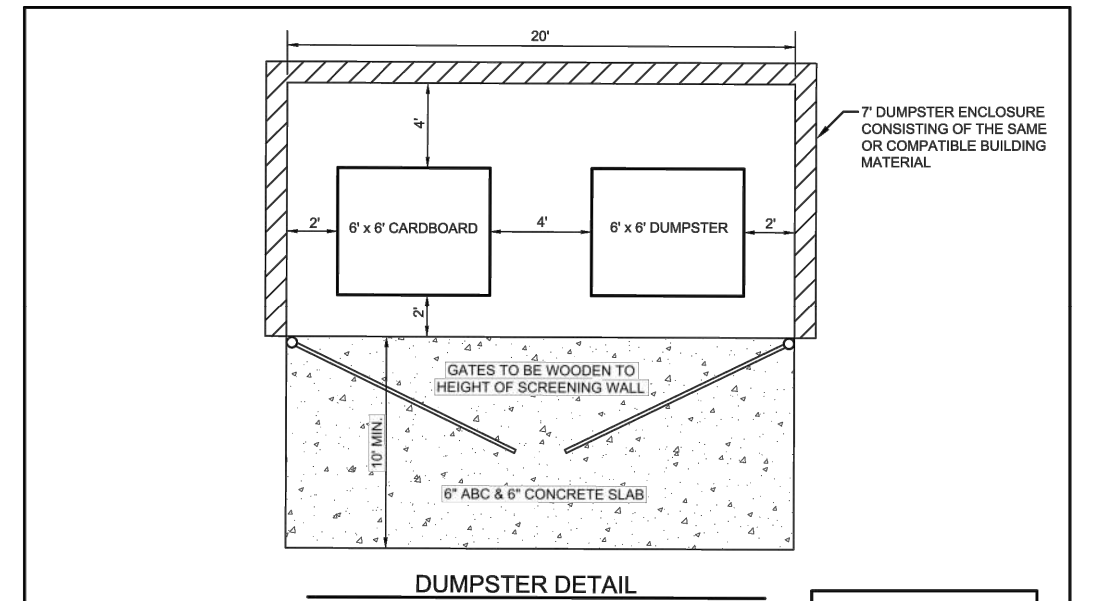
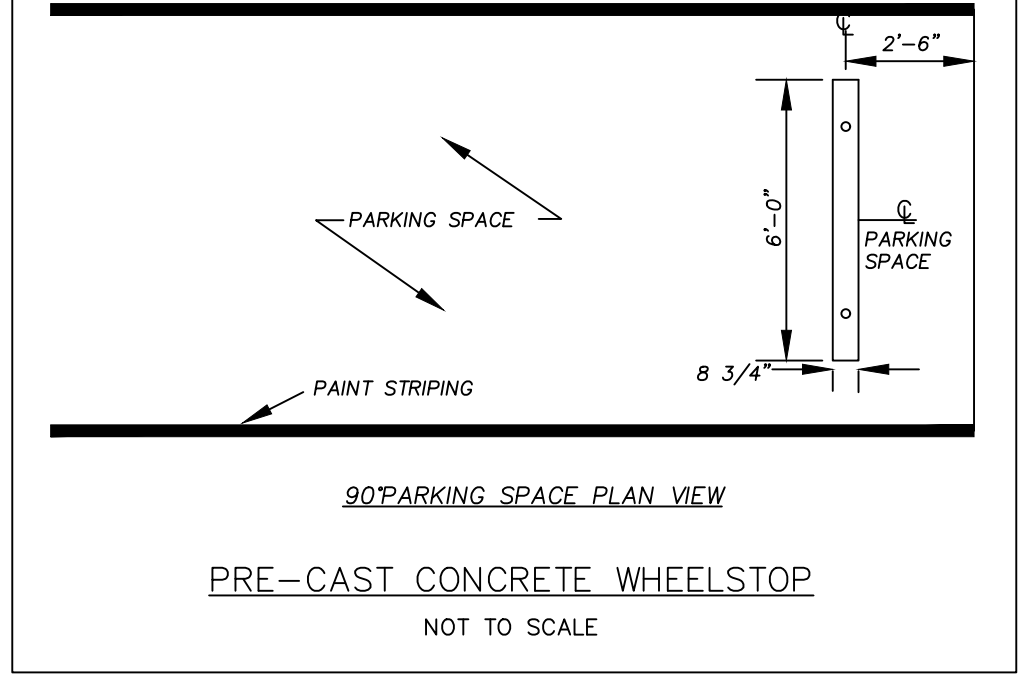
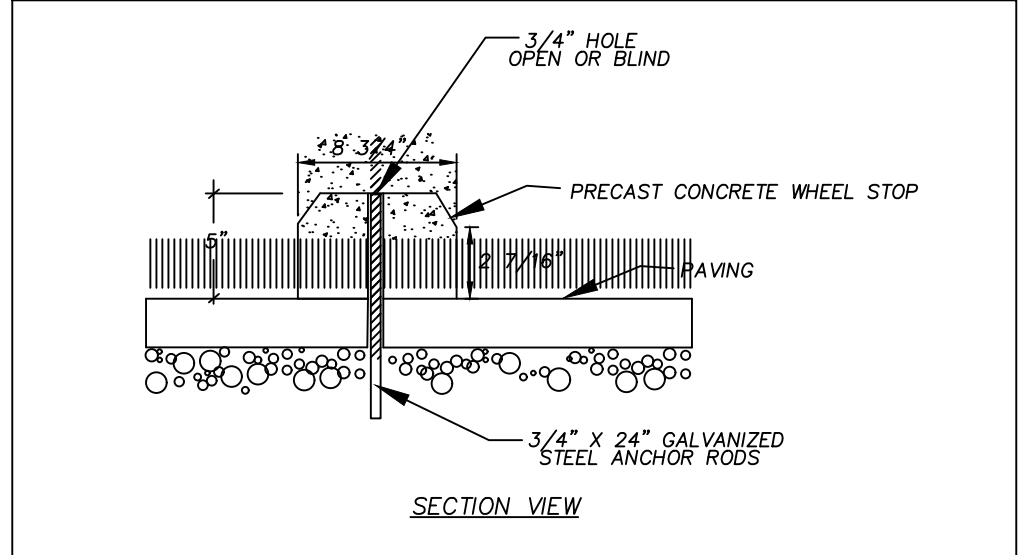
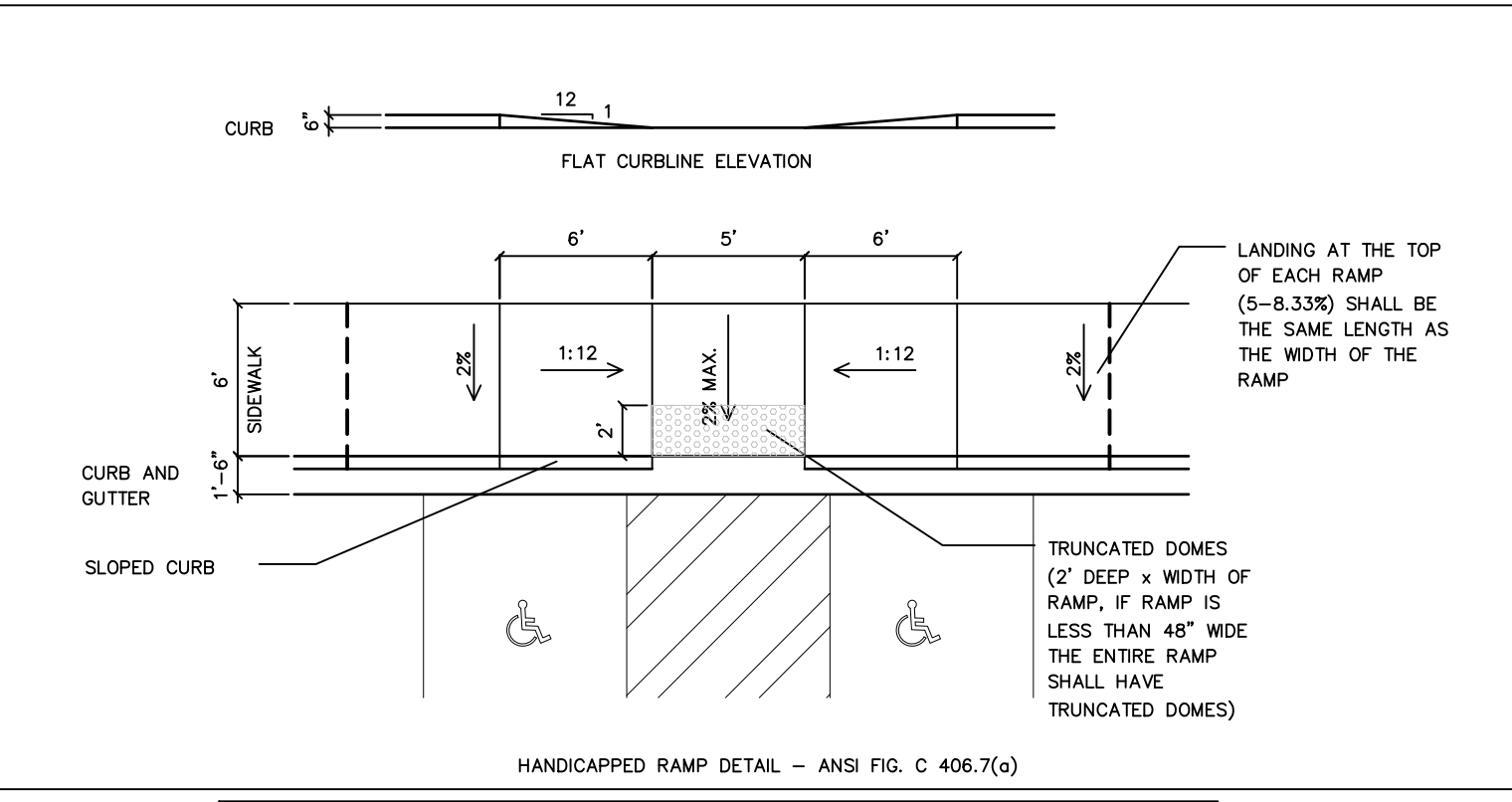
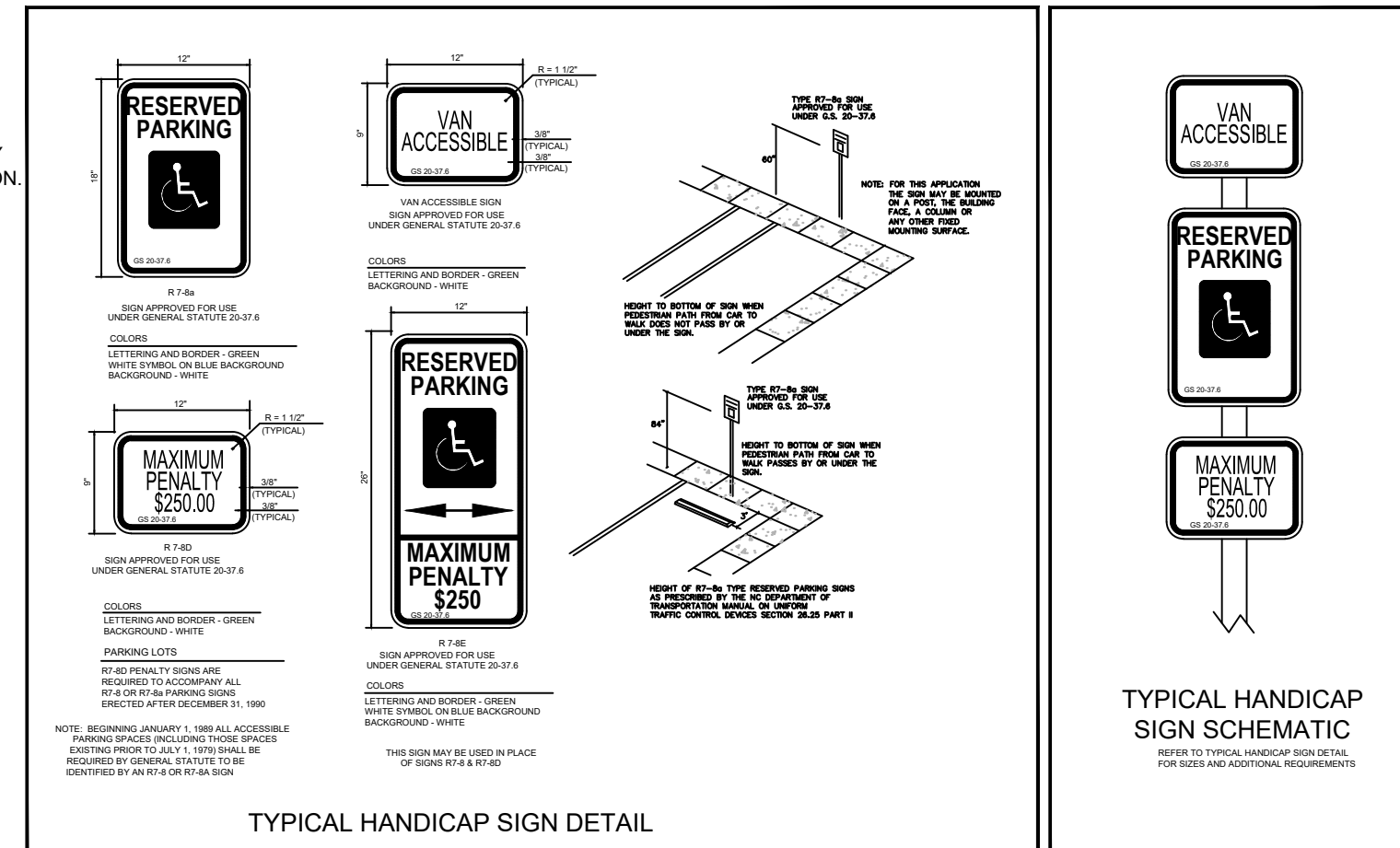
**C-1**





**GENERAL NOTES:**

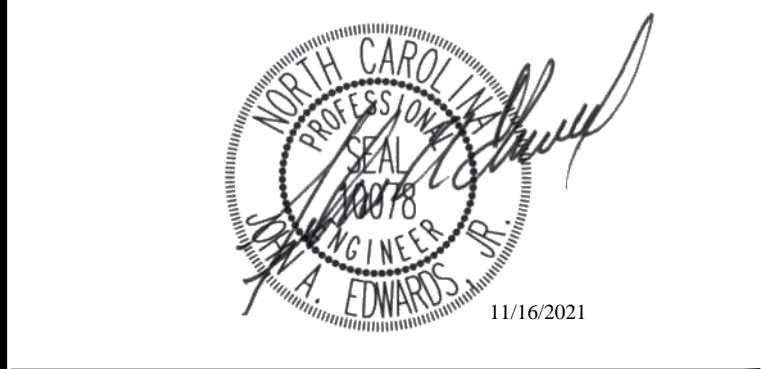
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- CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH, TOWN OF ROLESVILLE, AND/OR NCDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.



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**LEGEND**

Fire Department Access Road (Grasspave or Approved Equal) (See Sheet C-8 for Detail)

**SITE PLAN**

Number	Description	Date
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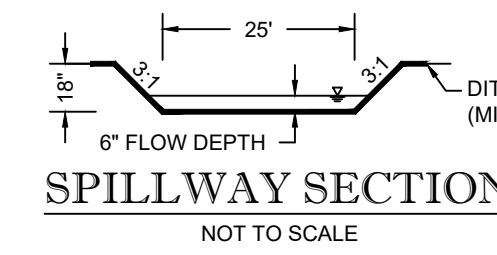
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**C-2**

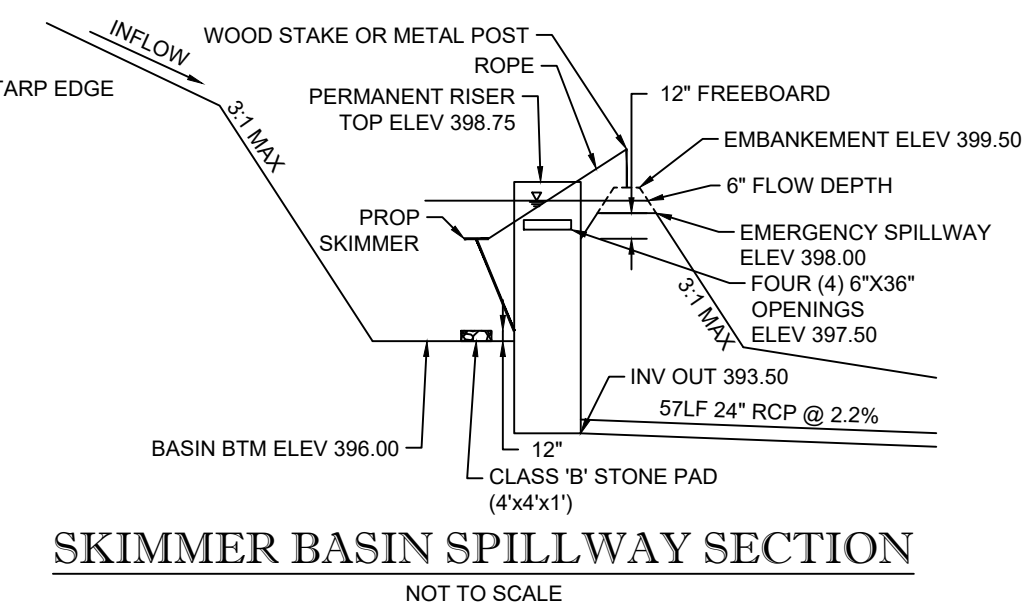


**GENERAL NOTES:**

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PARAMETER	VALUE	UNIT
SURFACE AREA REQUIRED	3,402	SF
SURFACE AREA PROVIDED	5,355	SF
VOLUME REQUIRED	3,865	CF
VOLUME PROVIDED	6,926.3	CF
STORAGE DEPTH	1.5	FT
TOP OF BERM	0	SF
BODY SPILLWAY LENGTH	25	FT
BOTTOM OF BASIN	3,865	SF
SKIMMER SIZE	2.5	IN
SKIMMER ORIFICE DIAMETER	1	IN



**TARP NOTES**

1. THE TARP SHALL BE 50 MIL. HEAVY DUTY SILVER TARPULONS OR APPROVED EQUIVALENT FOR U.V. RESISTANCE.
2. BURY AND SEAL THE BOTTOM AND SIDES OF THE TARP ON THE INSIDE OF THE EMBANKMENT SUCH THAT WATER FLOWS OVER THE TARP.
3. THE WIDTH OF THE TARP SHALL MUST COVER THE BOTTOM AND SIDES AND LAP ONTO THE TOP OF THE DAM IN ONE CONTINUOUS PIECE WITHOUT SPLICES.
4. THE LENGTH OF THE TARP SHALL BE ACCORDING TO AVAILABLE SUPPLY. THE LENGTH MUST EXTEND TO UNDISTURBED GROUND BELOW THE DAM.
5. IF MULTIPLE TARPS ARE TO BE USED, THEN TARPS SHALL BE OVERLAPPED AT LEAST 18\"/>

**STABILIZATION NOTE**

ANY PORTION OF A SITE UPON WHICH FURTHER LAND-DISTURBING ACTIVITY IS NOT BEING UNDERTAKEN SHALL BE PROVIDED WITH PERMANENT GROUND COVER SUFFICIENT TO RESTRAIN EROSION WILL BE APPLIED WITHIN 14 CALENDAR DAYS FROM LAST LAND DISTURBING ACTIVITY. FOR STEEP SLOPES, THAT AREA MUST BE STABILIZED WITHIN 1 CALENDAR DAYS OF TEMPORARILY OR PERMANENTLY SUSPENDING THE LAND DISTURBING ACTIVITY.

**STOCKPILE NOTES**

DESIGN CRITERIA:

- A 25-FOOT TEMPORARY MAINTENANCE AND ACCESS EASEMENT SHALL BE SHOWN AROUND ALL PROPOSED STOCKPILES (EROSION CONTROL MEASURES SURROUNDING THE STOCKPILE SHALL BE SHOWN AT THE OUTER LIMIT OF THIS EASEMENT).
- STOCKPILE FOOTPRINTS SHALL BE SETBACK A MINIMUM OF 25' FROM ADJACENT PROPERTY LINES.
- A NOTE SHALL BE PROVIDED ON THE APPROVED PLAN THAT STOCKPILE HEIGHT SHALL NOT EXCEED 35 FEET.
- STOCKPILE SLOPES SHALL BE 2:1 OR FLATTER.
- APPROVED BMP'S SHALL BE SHOWN ON A PLAN TO CONTROL ANY POTENTIAL SEDIMENT LOSS FROM A STOCKPILE.
- STOCKPILING MATERIALS ADJACENT TO WATERCOURSE, WETLAND, STREAM BUFFER, OR OTHER BODY OF WATER SHALL BE AVOIDED UNLESS AN ALTERNATIVE LOCATION IS DEMONSTRATED TO BE UNAVAILABLE.
- ANY CONCENTRATED FLOW LIKELY TO AFFECT THE STOCKPILE SHALL BE DIVERTED TO AN APPROVED BMP.
- OFF-SITE SPOIL OR BORROW AREAS MUST BE IN COMPLIANCE WITH WAKE COUNTY LDO AND STATE REGULATIONS. ALL SPOIL AREAS OVER AN ACRE ARE REQUIRED TO HAVE AN APPROVED SEDIMENT CONTROL PLAN. DEVELOPER/CONTRACTOR SHALL NOTIFY WAKE COUNTY OF ANY OFFSITE DISPOSAL OF SOIL. PRIOR TO DISPOSAL, FILL OF FEMA FLOODWAYS AND NON-ENCROACHMENT AREAS ARE PROHIBITED EXCEPT AS OTHERWISE PROVIDED BY SUBSECTION 14-19-2 OF THE WAKE COUNTY UNIFIED DEVELOPMENT ORDINANCE (CERTIFICATIONS AND PERMITS REQUIRED).

MAINTENANCE REQUIREMENTS:

- SEEDING OR COVERING STOCKPILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEYS IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDERNEATH THE PLASTIC.
- 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.
- THE APPROVED PLAN SHALL PROVIDE FOR THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUAL BASIS WHILE THE STOCKPILE IS IN USE.
- ESTABLISH AND MAINTAIN A VEGETATIVE BUFFER AT THE TOE OF THE SLOPE (WHERE PRACTICAL).

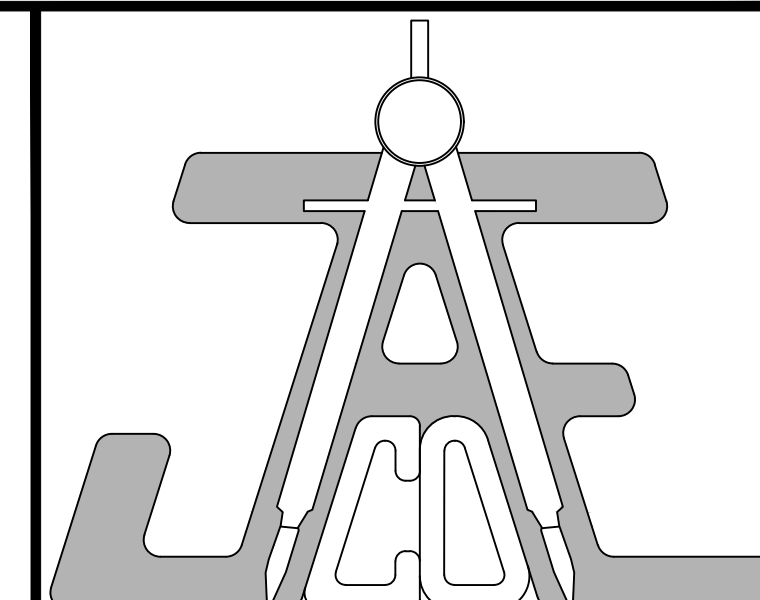
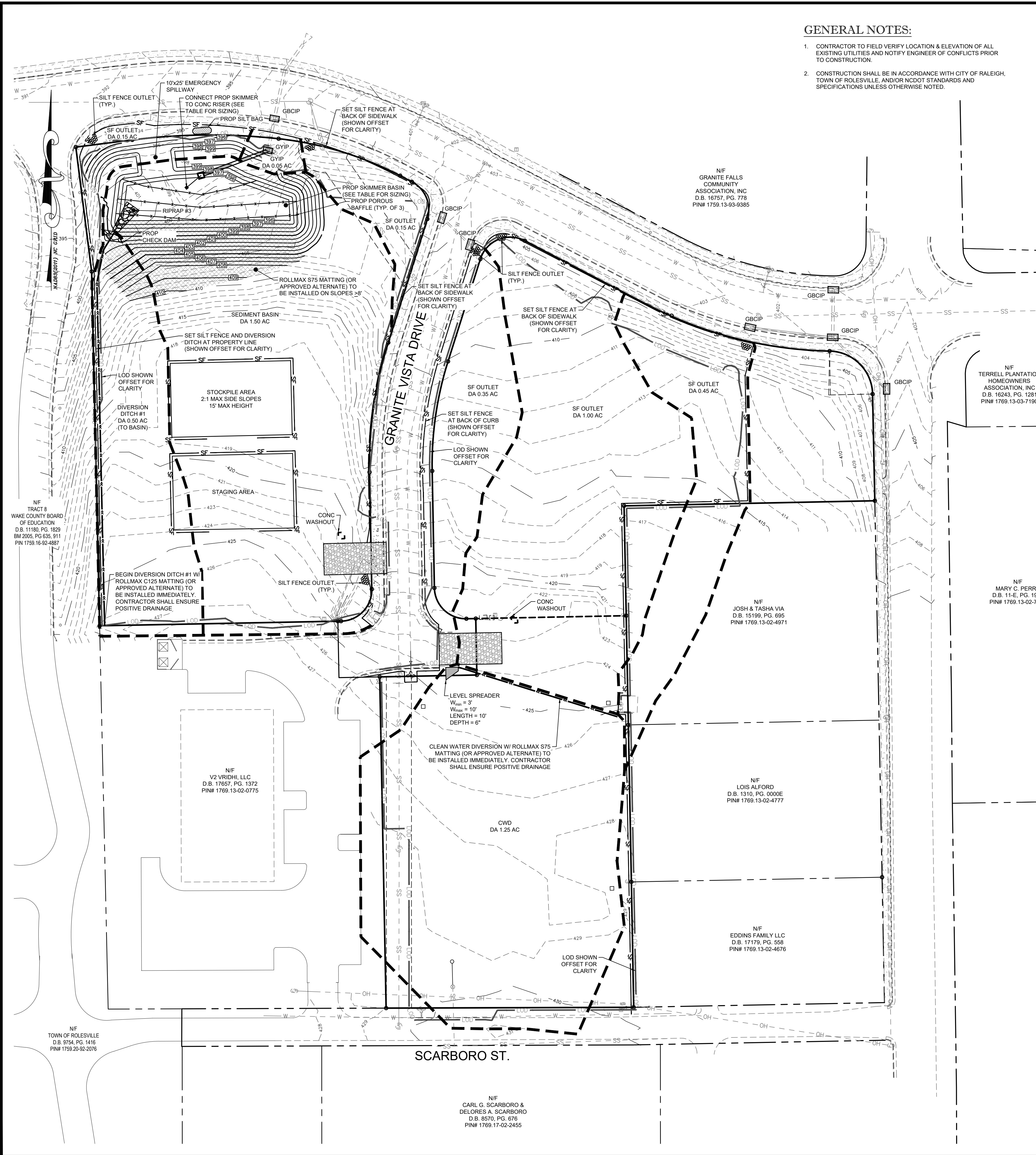
**PHASE I CONSTRUCTION SEQUENCE:**

1. ONCE THE EROSION AND SEDIMENT CONTROL PLAN APPROVAL AND NCG01 CERTIFICATE OF COVERAGE ARE OBTAINED, SCHEDULE A PRECONSTRUCTION CONFERENCE WITH THE ENVIRONMENTAL CONSULTANT. OBTAIN A LAND-DISTURBING PERMIT.
  2. INSTALL CONSTRUCTION ENTRANCES, CONCRETE WASHOUT STRUCTURES, SILT FENCE, SILT FENCE OUTLETS, CLEAN WATER DIVERSION DITCH AND LEVEL SPREADER, DIVERSION DITCH AND INLET PROTECTIONS AS SHOWN ON THE APPROVED PLAN. CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES. SEED BERMS AND BASINS IMMEDIATELY AFTER CONSTRUCTION.
  3. INSTALL STORM DRAIN COLLECTION SYSTEM FROM THE EXISTING DROP INLET TO A-10 WORKING DOWNSTREAM TO UPSTREAM. ALL PARTIALLY COMPLETED STORM DRAINS SHALL BE PROTECTED AT THE END OF EACH DAY IN ACCORDANCE WITH THE PIPE INLET PROTECTION DETAIL.
  4. INSTALL SKIMMER BASIN. SEED IMMEDIATELY AFTER CONSTRUCTION. INSTALL OUTLET SKIMMER FOR BASIN AND TIE TO PERMANENT RISER. PROVIDE STONE PAD BELOW THE SKIMMER AND ATTACH A TETHER TO THE SKIMMER ITSELF.
  5. CALL ENVIRONMENTAL CONSULTANT FOR AN ONSITE INSPECTION BY THE ENVIRONMENTAL CONSULTANT TO OBTAIN A CERTIFICATE OF COMPLIANCE.
  6. BEGIN CLEARING AND GRUBBING WITHIN THE LIMITS OF DISTURBANCE. MAINTAIN DEVICES AS NEEDED. ROUGH GRADE SITE. MAINTAIN POSITIVE DRAINAGE TO SKIMMER BASIN.
- DO NOT DISTURB AREA UPSTREAM OF CLEAN WATER DIVERSION**
7. INSTALL RIP RAP PAD AT A-12 AND THEN STORM DRAIN COLLECTION SYSTEM FROM A-12 TO A-14 WORKING DOWNSTREAM TO UPSTREAM. ALL PARTIALLY COMPLETED STORM DRAINS SHALL BE PROTECTED AT THE END OF EACH DAY IN ACCORDANCE WITH THE PIPE INLET PROTECTION DETAIL.
  8. ONCE OUTLET PIPE IS CONNECTED TO A-14 CONVERT EXISTING MANHOLE TO PROPOSED FLOW SPLITTER AND TEMPORARILY BLOCK PIPE OUT OF A-14 TO A-12 FOR THE DURATION OF CONSTRUCTION ACTIVITY.
  9. MAINTAIN SEDIMENT AND EROSION CONTROL DEVICES AFTER EVERY RAIN EVENT GREATER THAN ONE (1) INCH AND ONCE PER WEEK. REMOVE ANY SILT BUILDUP ON ANY SILT FENCING AS NEEDED TO PREVENT BREACH. SEED OR MULCH (OR STABILIZE WITH STONE/PAVEMENT) ANY DENUDED AREAS WITHIN 14 CALENDAR DAYS OF TEMPORARILY OR PERMANENTLY SUSPENDING LAND DISTURBING ACTIVITY.
  10. AS SITE IS BROUGHT TO ROUGH GRADE, TRANSITION TO EROSION CONTROL PHASE II.

**RIPRAP SCHEDULE**

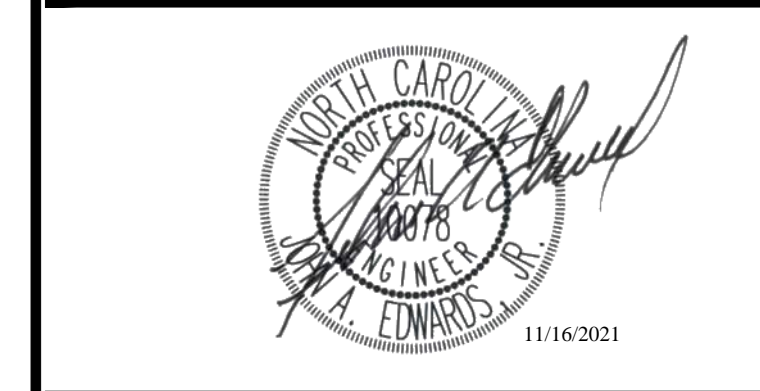
ENTRY #	WIDTH (FT)	LENGTH (FT)	d <sub>50</sub> (IN)	d <sub>max</sub> (IN)	THICKNESS (IN)
#3	4.5	12	MIN: 9 USE: 25"	6	9

\*START RIP-RAP AT END OF ASSOCIATED DIVERSION DITCH AND TERMINATE NO LESS THAN 5' EXTENDED INTO BOTTOM OF BASIN



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**Call 811 before you dig.**

LEGEND	
---	LOD LIMIT OF DISTURBANCE
---	EX MINOR CONTOUR
---	EX MAJOR CONTOUR
---	PROP MINOR CONTOUR
---	PROP MAJOR CONTOUR
---	EX WATER
---	EX SANITARY SEWER
---	EX FORCEMAIN
---	EX STORM DRAIN
---	DRAINAGE DIVIDE
---	SILT FENCE
---	DIVERSION DITCH
---	CONSTRUCTION ENTRANCE
---	SLOPE MATTING
---	SILT FENCE OUTLET
---	CONCRETE WASHOUT
---	CHECK DAM
---	SILT BAG
---	INLET PROTECTION (AS NOTED)
---	RISER AND SKIMMER

**EROSION CONTROL PLAN - PHASE I**

Number	Description	Date
4	PERMIT SET	07/08/21
5	PER TRC COMMENTS	09/14/21
6	LAYOUT REVISION & POST-APPROVAL COMMENTS	10/28/21
7	ADDITIONAL POST-APPROVAL COMMENTS	11/02/21
8	POST-APPROVAL COMMENTS	11/16/21

JAECO #: 087-01  
DRAWING SCALE: 1" = 40'  
DRAWN BY: TT  
CHECKED BY: JAE, JR  
DATE ISSUED: 12/10/2020

**C-3**



**GENERAL NOTES:**

1. CONTRACTOR TO FIELD VERIFY LOCATION & ELEVATION OF ALL EXISTING UTILITIES AND NOTIFY ENGINEER OF CONFLICTS PRIOR TO CONSTRUCTION.
2. CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH, TOWN OF ROLESVILLE, AND/OR NCDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.

**STOCKPILE NOTES**

DESIGN CRITERIA:

- A 25-FOOT TEMPORARY MAINTENANCE AND ACCESS EASEMENT SHALL BE SHOWN AROUND ALL PROPOSED STOCKPILES (EROSION CONTROL MEASURES SURROUNDING THE STOCKPILE SHALL BE SHOWN AT THE OUTER LIMIT OF THIS EASEMENT).
  - STOCKPILE FOOTPRINTS SHALL BE SETBACK A MINIMUM OF 25' FROM ADJACENT PROPERTY LINES.
  - A NOTE SHALL BE PROVIDED ON THE APPROVED PLAN THAT STOCKPILE HEIGHT SHALL NOT EXCEED 35 FEET.
  - STOCKPILE SLOPES SHALL BE 2:1 OR FLATTER.
  - APPROVED BMPs SHALL BE SHOWN ON A PLAN TO CONTROL ANY POTENTIAL SEDIMENT LOSS FROM A STOCKPILE.
  - STOCKPILING MATERIALS ADJACENT TO A DITCH, DRAINAGEWAY, WATERCOURSE, WETLAND, STREAM BUFFER, OR OTHER BODY OF WATER SHALL BE AVOIDED UNLESS AN ALTERNATIVE LOCATION IS DEMONSTRATED TO BE UNAVAILABLE.
  - ANY CONCENTRATED FLOW LIKELY TO AFFECT THE STOCKPILE SHALL BE DIVERTED TO AN APPROVED BMP.
  - OFF-SITE SPOIL OR BORROW AREAS MUST BE IN COMPLIANCE WITH WAKE COUNTY UDO AND STATE REGULATIONS. ALL SPOIL AREAS OVER AN ACRE ARE REQUIRED TO HAVE AN APPROVED SEDIMENT CONTROL PLAN. DEVELOPER/CONTRACTOR SHALL NOTIFY WAKE COUNTY OF ANY OFFSITE DISPOSAL OF SOIL, PRIOR TO DISPOSAL. FILL OF FEMA FLOODWAYS AND NON-ENCROACHMENT AREAS ARE PROHIBITED EXCEPT AS OTHERWISE PROVIDED BY SUBSECTION 14-19.2 OF THE WAKE COUNTY UNIFIED DEVELOPMENT ORDINANCE (CERTIFICATIONS AND PERMITS REQUIRED).
- MAINTENANCE REQUIREMENTS:
- SEEDING OR COVERING STOCKPILES WITH TARPS OR MULCH IS REQUIRED AND WILL REDUCE EROSION PROBLEMS. TARPS SHOULD BE KEPT IN AT THE TOP OF THE SLOPE TO KEEP WATER FROM RUNNING UNDERNEATH THE PLASTIC.
  - 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.
  - THE APPROVED PLAN SHALL PROVIDE FOR THE USE OF STAGED SEEDING AND MULCHING ON A CONTINUAL BASIS WHILE THE STOCKPILE IS IN USE.
  - ESTABLISH AND MAINTAIN A VEGETATIVE BUFFER AT THE TOE OF THE SLOPE (WHERE PRACTICAL).

**STABILIZATION NOTE**

ANY PORTION OF A SITE UPON WHICH FURTHER LAND-DISTURBING ACTIVITY IS NOT BEING UNDERTAKEN SHALL BE PROVIDED WITH PERMANENT GROUND COVER SUFFICIENT TO RESTRAIN EROSION WILL BE APPLIED WITHIN 14 CALENDAR DAYS FROM LAST LAND DISTURBING ACTIVITY. FOR STEEP SLOPES, THAT AREA MUST BE STABILIZED WITHIN 7 CALENDAR DAYS OF TEMPORARILY OR PERMANENTLY SUSPENDING THE LAND DISTURBING ACTIVITY.

**PHASE II CONSTRUCTION SEQUENCE:**

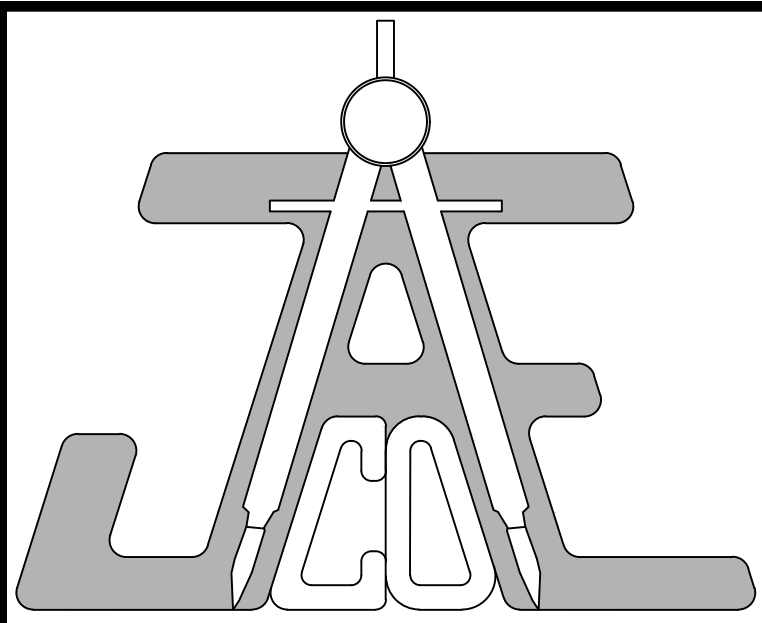
1. CONTINUE ROUGH GRADING, MAINTAIN AND ADJUST GRADES TO ENSURE PROVIDE POSITIVE DRAINAGE TO SKIMMER BASIN.  
**DO NOT DISTURB AREA UPSTREAM OF CLEAN WATER DIVERSION UNTIL STEP #8.**
2. CONSTRUCT RETAINING WALL ON SITE AS NEEDED TO BRING SITE TO GRADE.
3. INSTALL REMAINING STORMDRAIN, WORKING FROM DOWNSTREAM TO UPSTREAM INSTALLING INLET PROTECTION IMMEDIATELY AFTER EACH INLET IS INSTALLED AS SHOWN ON THE PLAN. DIVERT RUN-OFF TO INLETS AS ROUGH GRADES ARE COMPLETED.
4. INSTALL RIP-RAP AT A-16.
5. HAUL AWAY ANY EXTRA TOPSOIL AND MATERIAL AS NEEDED TO STABILIZE SITE. IF ANY TOPSOIL IS TO REMAIN STOCKPILE PROTECT WITH SILT FENCING AROUND PERIMETER AND REFER TO STOCKPILE NOTES.
6. SUBMIT DOCUMENTATION REQUIRED UNDER THE SITE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY TO STORMWATER CONTROL INSPECTIONS THROUGHOUT THE PROJECT.
7. ONCE INLET PROTECTIONS FOR A-30, A-32, AND A-34 ARE INSTALLED, REMOVE CLEAN WATER DIVERSION AND LEVEL SPREADER.
8. INSTALL WATER AND SEWER LINES FROM DOWNSTREAM TO UPSTREAM AS NECESSARY DURING ROUGH GRADING TO AVOID CONFLICTS WITH STORM DRAIN SYSTEM.
9. STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISH GRADE WITH VEGETATION, PAVING, DITCH LININGS, ETC. SEED AND MULCH DENUDED AREAS PER GROUND STABILIZATION TIME FRAMES.
10. MAINTAIN SEDIMENT AND EROSION CONTROL DEVICES AFTER EVERY RAIN EVENT GREATER THAN ONE (1) INCH AND ONCE PER WEEK. REMOVE ANY SILT BUILDUP ON ANY SILT FENCING TO PREVENT BREACH. SEED ANY AREAS OF THE SIT WITHIN 14 DAYS OF COMPLETION OF ANY PHASE OF GRADING IN THAT AREA.
11. WHEN CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED COMPLETELY, CALL ENVIRONMENTAL CONSULTANT FOR AN INSPECTION.
12. SCHEDULE A SITE MEETING WITH THE ENVIRONMENTAL CONSULTANT TO DETERMINE IF A BASIN CAN BE CONVERTED, INSTALL SILT FENCING OR OTHER TEMPORARY EROSION CONTROL MEASURES AS NEEDED PRIOR TO REMOVAL OF THE BASIN.
13. CONTACT NCDEQ - RALEIGH REGIONAL OFFICE (919) 791-4200 TO DETERMINE THE DIVISION OF ENERGY, MINERAL AND LAND RESOURCES CONTACT PERSON TO RECEIVE DEWATERING NOTIFICATIONS. AT LEAST 10 DAYS PRIOR TO BEGINNING DEWATERING ACTIVITY, SEND EMAIL TO NCDEQ-DEMLR CONTACT PERSON AND COPY ENVIRONMENTAL CONSULTANT THAT MET YOU ONSITE. THE EMAIL SHOULD INCLUDE:  
  
E&S JURISDICTION: WAKE COUNTY  
WAKE COUNTY PROJECT: NAME, NUMBER, AND LOCATION (CITY/TOWN)  
ENVIRONMENTAL CONSULTANT NAME  
ADDRESS THE FOLLOWING:  
A) REASON FOR CONVERSION  
B) BASIN #  
C) DEWATERING METHOD, AND  
D) ALL OTHER NECESSARY INFO FROM PART II, SECTION G, ITEM 4 OF THE NCG01.  
  
**(KEEP EMAIL FOR YOUR NPDES MONITORING DOCUMENTATION)**

14. AFTER RECEIVING POSITIVE CONFIRMATION FROM NCDEQ-DEMLR THAT YOU MAY REMOVE THE BASIN OR ON > DAY 11, WHICHEVER IS SOONER, REMOVE BASIN(S) AND ASSOCIATED TEMPORARY DIVERSION DITCHES. IF PIPES NEED TO BE EXTENDED, PERFORM THIS OPERATION AT THIS TIME. FINE GRADE AREA IN PREPARATION FOR SEEDING.
15. PERFORM SEEDING PREPARATION, SEED, MULCH AND ANCHOR ANY RESULTING BARE AREAS IMMEDIATELY.
16. INSTALL VELOCITY DISSIPATORS AND/OR LEVEL SPREADERS AS REQUIRED ON THE EROSION CONTROL PLAN.
17. 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.
18. 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. REMOVE TEMPORARY BLOCKING AT A-14.
19. WHEN VEGETATION HAS BECOME ESTABLISHED, CALL FOR A FINAL SITE INSPECTION BY THE ENVIRONMENTAL CONSULTANT. OBTAIN A CERTIFICATE OF COMPLETION.

**RIPRAP SCHEDULE**

	ENTRY WIDTH [FT]	WIDTH [FT]	LENGTH [FT]	d <sub>50</sub> [IN]	d <sub>max</sub> [IN]	THICKNESS [IN]
A-12	4.5	12	9	6	9	18
A-16	4.5	15.5	12	13	20	24
#4	4.5	12	MIN: 9 USE: 45'	6	9	18

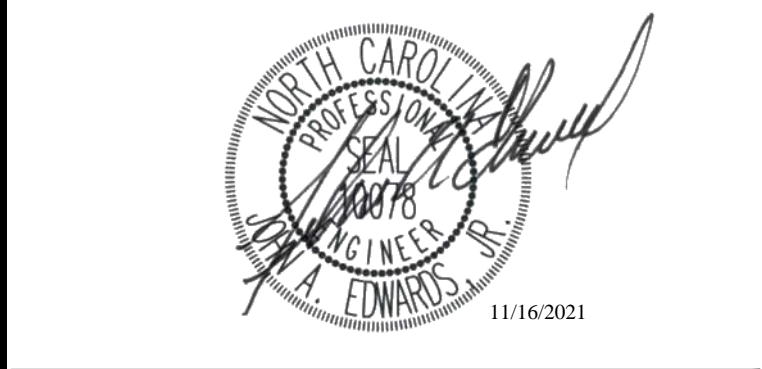
\*START RIP-RAP AT END OF ASSOCIATED DIVERSION DITCH AND TERMINATE NO LESS THAN 5' EXTENDED INTO BOTTOM OF BASIN



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**Call 811 before you dig.**

**LEGEND**

---	LOD	---	LIMIT OF DISTURBANCE
---		---	EX MINOR CONTOUR
---		---	EX MAJOR CONTOUR
---		---	PROP MINOR CONTOUR
---		---	PROP MAJOR CONTOUR
---	-W	---	EX WATER
---	-SS	---	EX SANITARY SEWER
---	-FM	---	EX FORCEMAIN
---		---	EX STORM DRAIN
---	W	---	PROP WATER
---	SS	---	PROP SANITARY SEWER
---		---	PROP STORM DRAIN
---		---	DRAINAGE DIVIDE
---	SF	---	SILT FENCE
---		---	DIVERSION DITCH
---		---	CONSTRUCTION ENTRANCE
---		---	SLOPE MATTING
---		---	SILT FENCE OUTLET
---		---	CONCRETE WASHOUT
---		---	CHECK DAM
---		---	SILT BAG
---	xxx	---	INLET PROTECTION (AS NOTED)
---		---	RISER AND SKIMMER

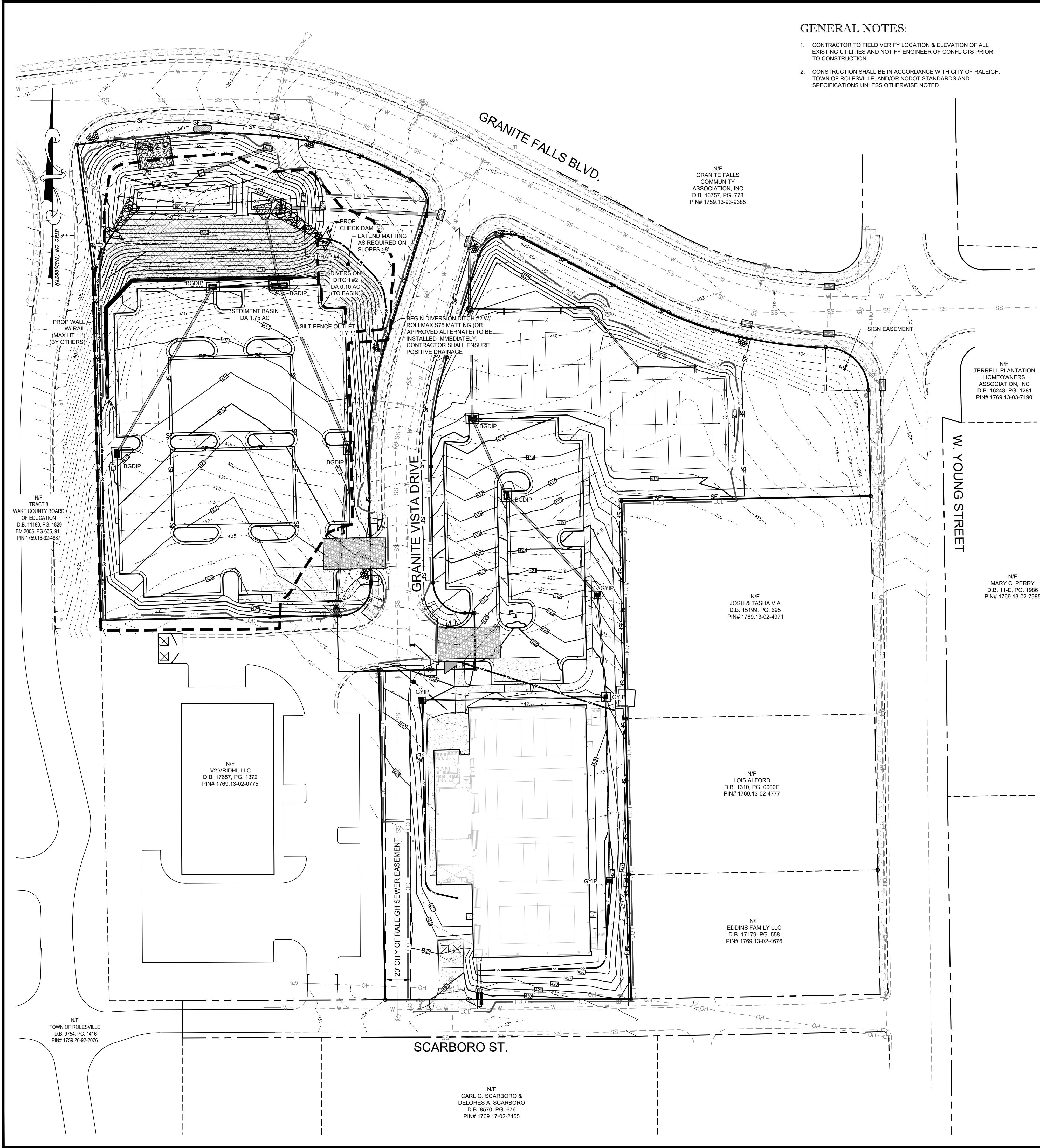
**EROSION CONTROL PLAN - PHASE II**

Revisions

Number	Description	Date
4	PERMIT SET	07/08/21
5	PER TRC COMMENTS	09/14/21
6	LAYOUT REVISION & POST-APPROVAL COMMENTS	10/28/21
7	ADDITIONAL POST-APPROVAL COMMENTS	11/02/21
8	POST-APPROVAL COMMENTS	11/16/21

JAECO #: 087-01  
DRAWING SCALE: 1" = 40'  
DRAWN BY: TT  
CHECKED BY: JAE, JR  
DATE ISSUED: 12/10/2020

**C-4**



N/F TRACT 8  
WAKE COUNTY BOARD  
OF EDUCATION  
D.B. 11180, PG. 1629  
BM 2005, PG. 635, 911  
PIN# 1759-16-92-4887

N/F TOWN OF ROLESVILLE  
D.B. 8754, PG. 1416  
PIN# 1759-20-92-2076

N/F GRANITE FALLS  
COMMUNITY  
ASSOCIATION, INC  
D.B. 16757, PG. 778  
PIN# 1759-13-93-9385

N/F TERRELL PLANTATION  
HOMEOWNERS  
ASSOCIATION, INC  
D.B. 16243, PG. 1281  
PIN# 1759-13-03-7190

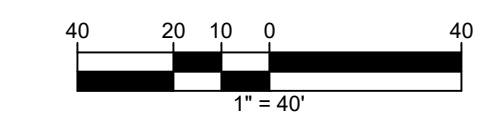
N/F JOSH & TASHA VIA  
D.B. 15199, PG. 695  
PIN# 1769-13-02-4971

N/F MARY C. FERRY  
D.B. 11-1-E, PG. 1986  
PIN# 1769-13-02-7985

N/F LOIS ALFORD  
D.B. 1310, PG. 0000E  
PIN# 1769-13-02-4777

N/F EDDINS FAMILY LLC  
D.B. 17179, PG. 558  
PIN# 1769-13-02-4676

N/F CARL G. SCARBORO &  
DELORES A. SCARBORO  
D.B. 8570, PG. 676  
PIN# 1769-17-02-2455



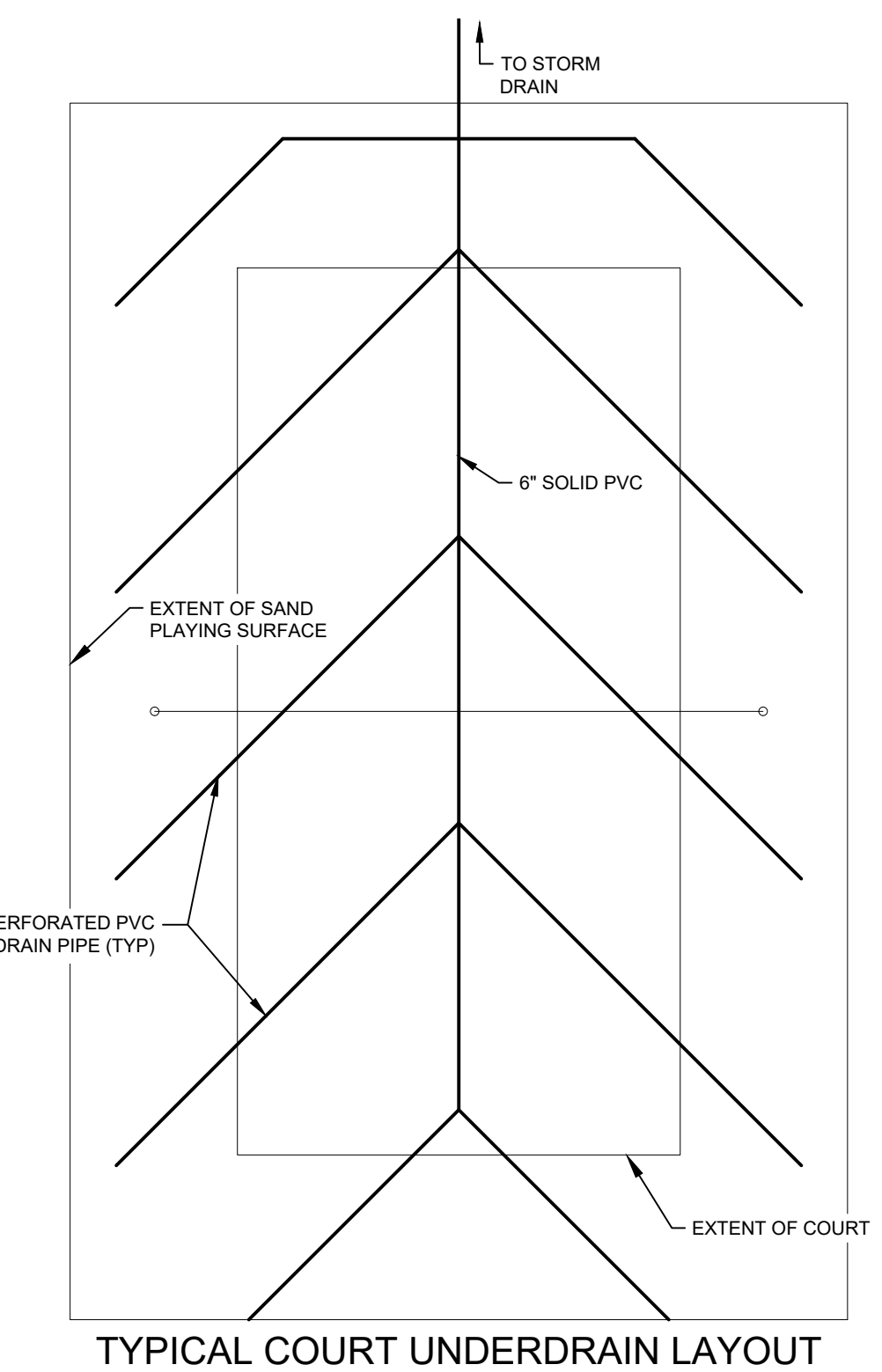


**GENERAL NOTES:**

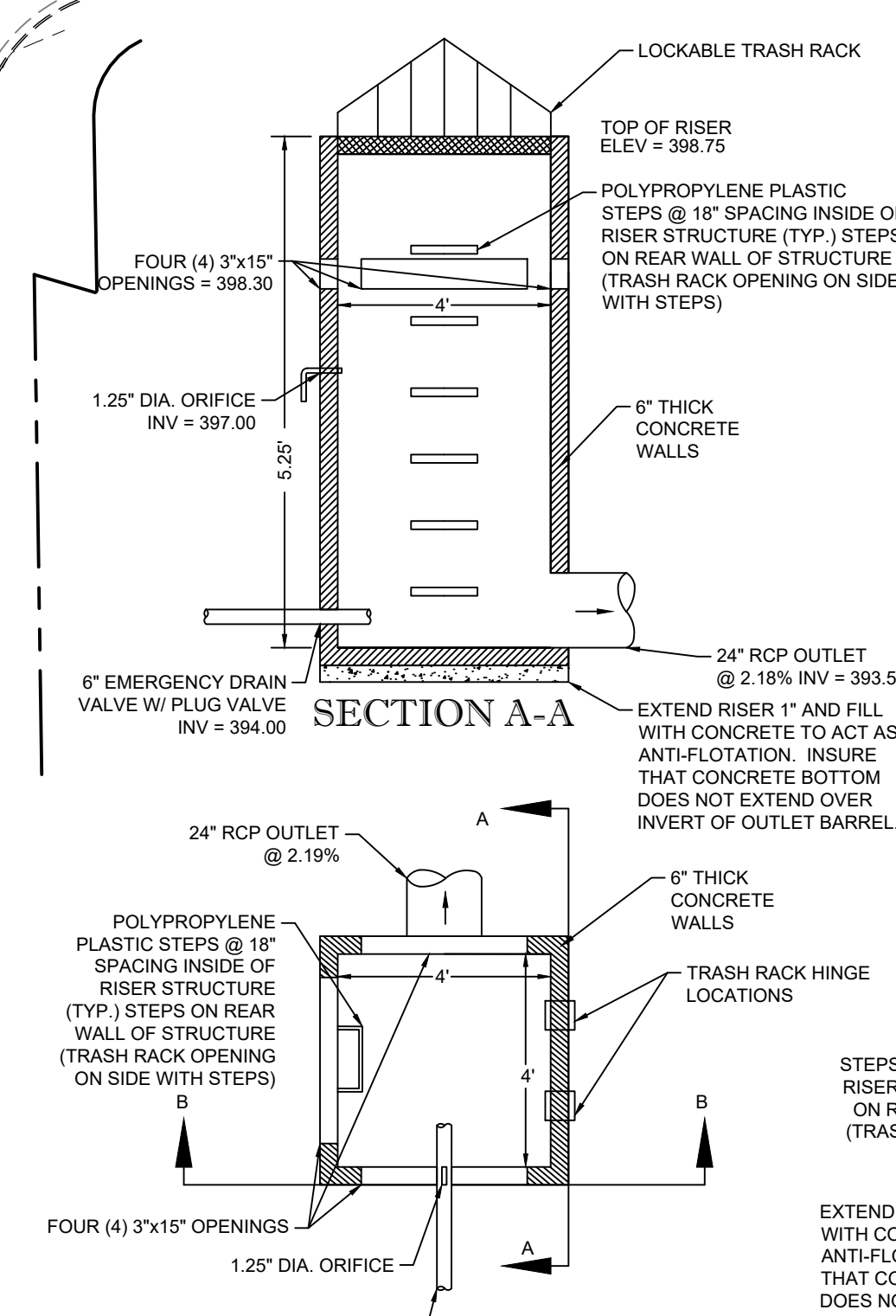
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**GENERAL NOTES AND SPECIFICATIONS**

- BMP CONSTRUCTION SHALL BE IN ACCORDANCE WITH AMERICAN SOCIETY OF TESTING AND MATERIALS (ASTM) AS FOLLOWS:
  - SOILS SUITABLE FOR BERM CONSTRUCTION - ASTM D-2487
  - ENGINEERED SOIL MATERIALS - ASTM D-2940
  - SOIL COMPACTION - ASTM D-698
  - PRECAST CONCRETE RISERS - ASTM C-478, ASTM C-913
  - CEMENT - ASTM C-150, ASTM C-33
  - JOINT SEALANT - ASTM C-990
  - REINFORCED CONCRETE PIPING - ASTM C-76 CLASS III
- FILL MATERIALS SHALL BE MOISTURE CONDITIONED TO THE REQUIREMENTS OF THE GEOTECHNICAL ENGINEER, PLACED AND COMPACTED IN A MAXIMUM OF 6" LIFTS. MATERIAL SHALL BE FREE OF ORGANIC DEBRIS, AND HAVE A MAXIMUM ORGANIC CONTENT OF 5%. FILL MATERIAL SHALL BE FREE OF ROCK MATERIAL GREATER THAN 3" IN ANY DIRECTION.
- TESTING OF SOIL COMPACTION - SHALL BE PERFORMED BY A CERTIFIED TESTING AGENCY IN ACCORDANCE WITH ASTM E-309 AND ASTM D-3740.
- ALL FILL AND EARTH MOVING OPERATIONS SHALL BE CLOSELY MONITORED AND DOCUMENTED BY THE GEOTECHNICAL ENGINEER DURING CONSTRUCTION.
- FILL MATERIAL PLACED AT DENSITIES LOWER THAN SPECIFIED MINIMUM DENSITIES OR AT MOISTURE CONTENTS OUTSIDE THE SPECIFIED RANGES OR OTHERWISE NOT CONFORMING TO THE SPECIFIED REQUIREMENTS SHALL BE REMOVED AND REWORKED OR REMOVED AND REPLACED WITH ACCEPTABLY PLACED MATERIALS.
- FILL PLACED ADJACENT TO THE RISER AND PRINCIPAL SPILLWAY PIPE SHALL BE PLACED IN A MANNER WHERE LIFTS ARE AT THE SAME LEVEL ON BOTH SIDES OF THE STRUCTURES.
- TO REESTABLISH VEGETATION AFTER CONSTRUCTION, A TWO- TO THREE-INCH LAYER OF TOPSOIL SHALL BE PLACED AND THE AREA SEEDED AND MULCHED OR HYDROSEEDED. IF GRASS STABILIZATION IS ATTEMPTED DURING THE SUMMER MONTHS, THE PLACEMENT OF SOD AND THE IMPLEMENTATION OF AN AGGRESSIVE WATERING PROGRAM MAY BE NECESSARY TO ACHIEVE THE 85% STABILIZATION REQUIREMENT OF THE BIC CERTIFICATION PROGRAM. WHEN WATERING RESTRICTIONS ARE IN PLACE DURING DROUGHT CONDITIONS, OTHER AVENUES FOR WATERING (SUCH AS USING RECLAIMED WATER, ETC.) SHALL BE IMPLEMENTED.



TYPICAL COURT UNDERDRAIN LAYOUT



SECTION A-A

SECTION B-B

**RISER DETAIL**

N.T.S.

**GEOTEXTILE SPECIFICATIONS**

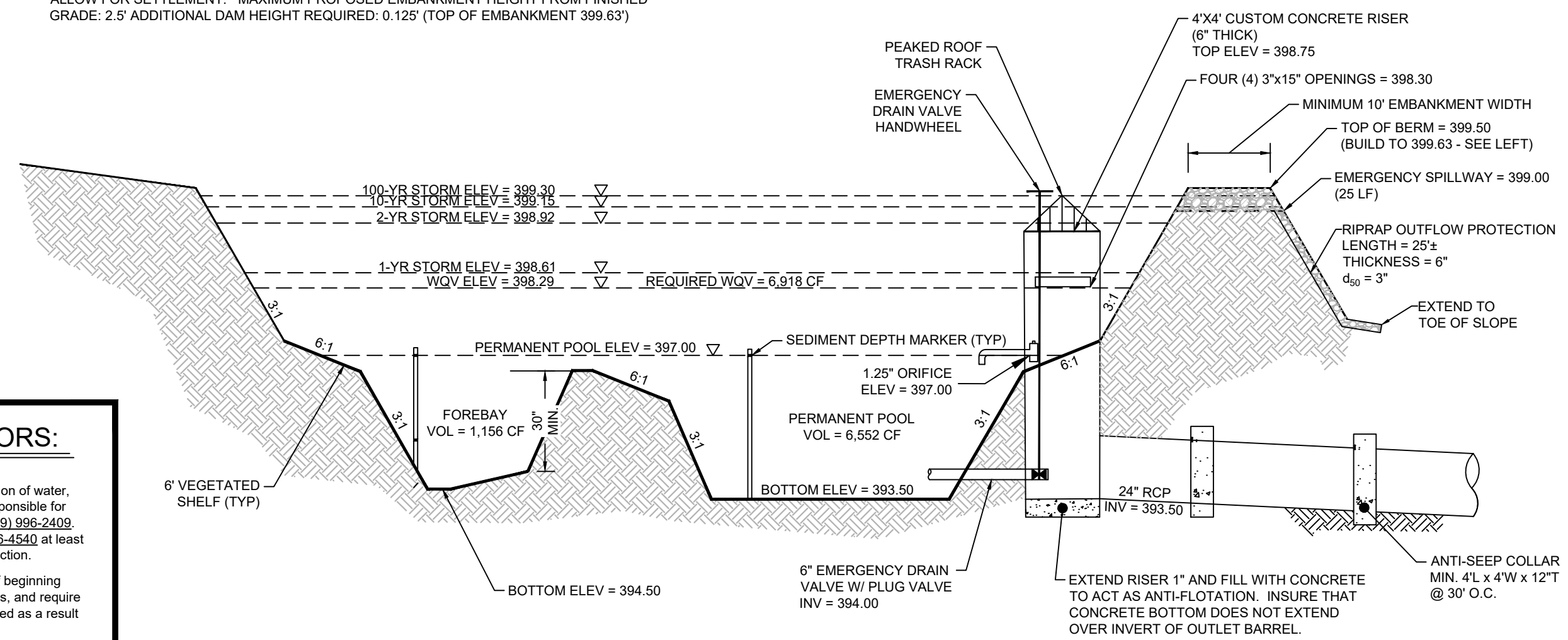
GEOTEXTILE FABRIC TO BE NONWOVEN.

**CONTROL STRUCTURE NOTE**

ALL ORIFICES TO HAVE SCREEN INSTALLED OVER OPENINGS TO PREVENT BLOCKAGE.

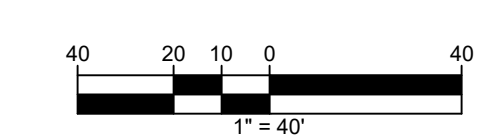
**SETTLEMENT CALCULATION**

EMBANKMENT SHALL BE CONSTRUCTED TO WITH AN ADDITIONAL 5% OF HEIGHT TO ALLOW FOR SETTLEMENT. MAXIMUM PROPOSED EMBANKMENT HEIGHT FROM FINISHED GRADE: 2.5' ADDITIONAL DAM HEIGHT REQUIRED: 0.125' (TOP OF EMBANKMENT 399.63)



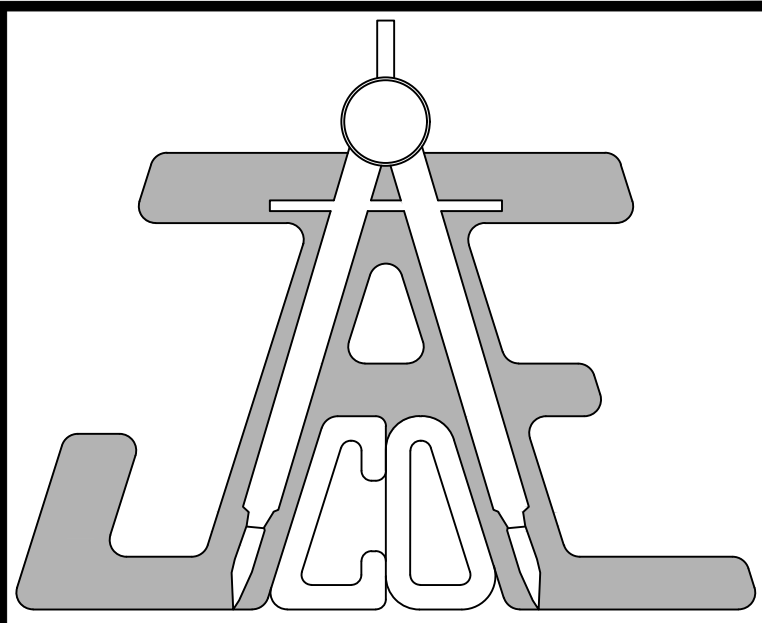
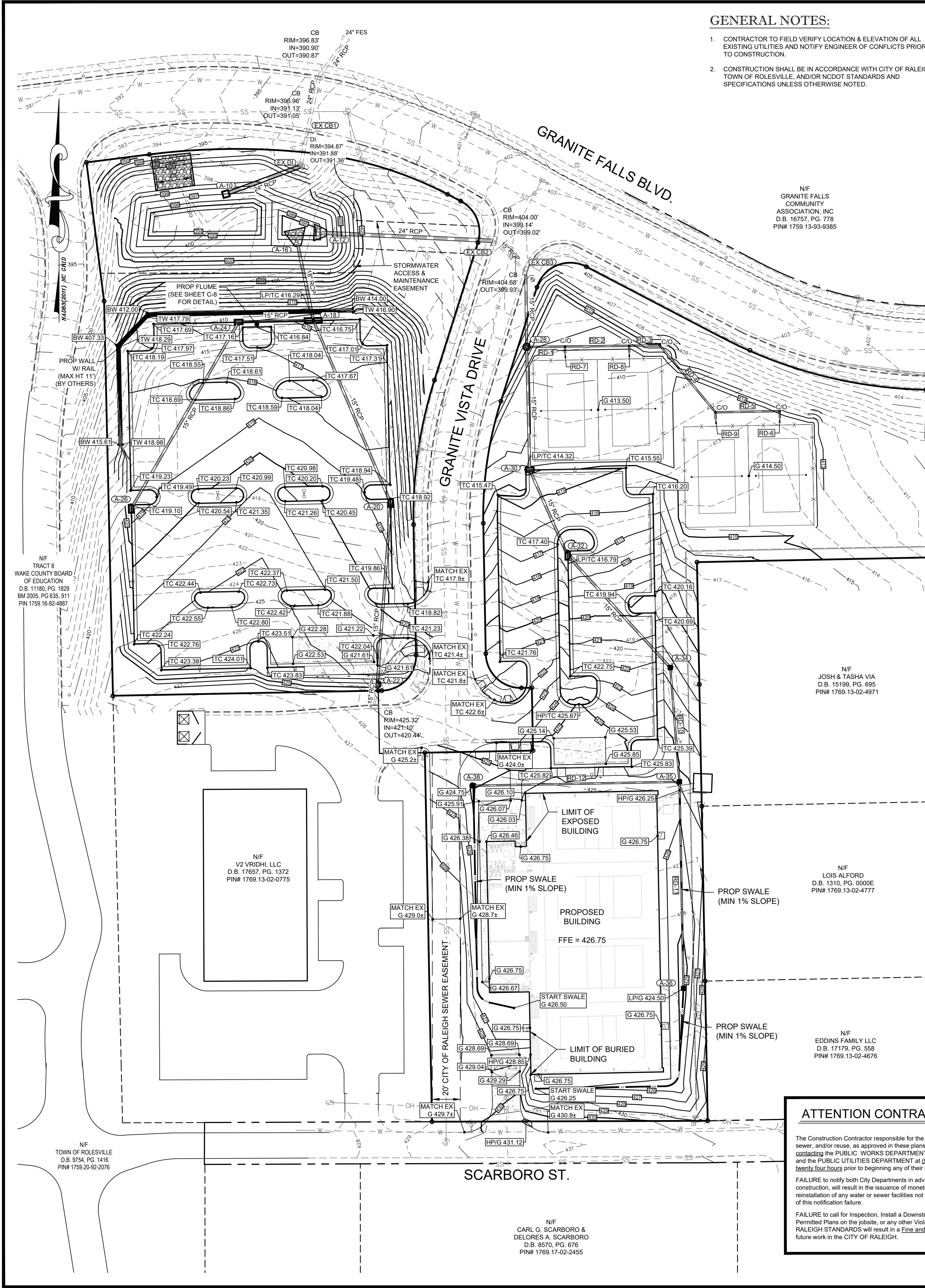
WET DETENTION POND #2

N.T.S.

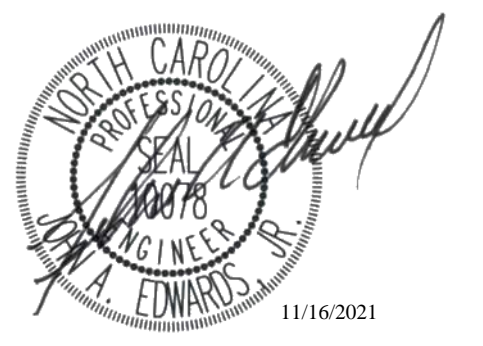


**ATTENTION CONTRACTORS:**

The Construction Contractor responsible for the extension of water, sewer, and/or reuse, as approved in these plans, is responsible for contacting the PUBLIC WORKS DEPARTMENT at (919) 996-2409 and the PUBLIC UTILITIES DEPARTMENT at (919) 998-4540 at least four hours prior to beginning any of their construction. FAILURE to notify both City Departments in advance of beginning construction, will result in the issuance of monetary fines, and require reinstallation of any water or sewer facilities not inspected as a result of this notification failure. FAILURE to call for inspection, install a Downstream Plug, have Permitted Plans on the jobsite, or any other Violation of CITY OF RALEIGH STANDARDS will result in a Fine and Possible Exclusion from future work in the CITY OF RALEIGH.



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All Purpose Driven, LLC  
6027 Clapton Drive  
Wake Forest, NC 27587

**Call 811 before you dig.**

**LEGEND**

**GRADING & SWM PLAN**

Number	Description	Date
4	PERMIT SET	07/08/21
5	PER TRC COMMENTS	09/14/21
6	LAYOUT REVISION & POST-APPROVAL COMMENTS	10/26/21
7	ADDITIONAL POST-APPROVAL COMMENTS	11/02/21
8	POST-APPROVAL COMMENTS	11/16/21

JAEKO #: 087-01  
DRAWING SCALE: 1" = 40'  
DRAWN BY: TT  
CHECKED BY: JAE, JR  
DATE ISSUED: 12/10/2020

**C-5**



**GENERAL NOTES:**

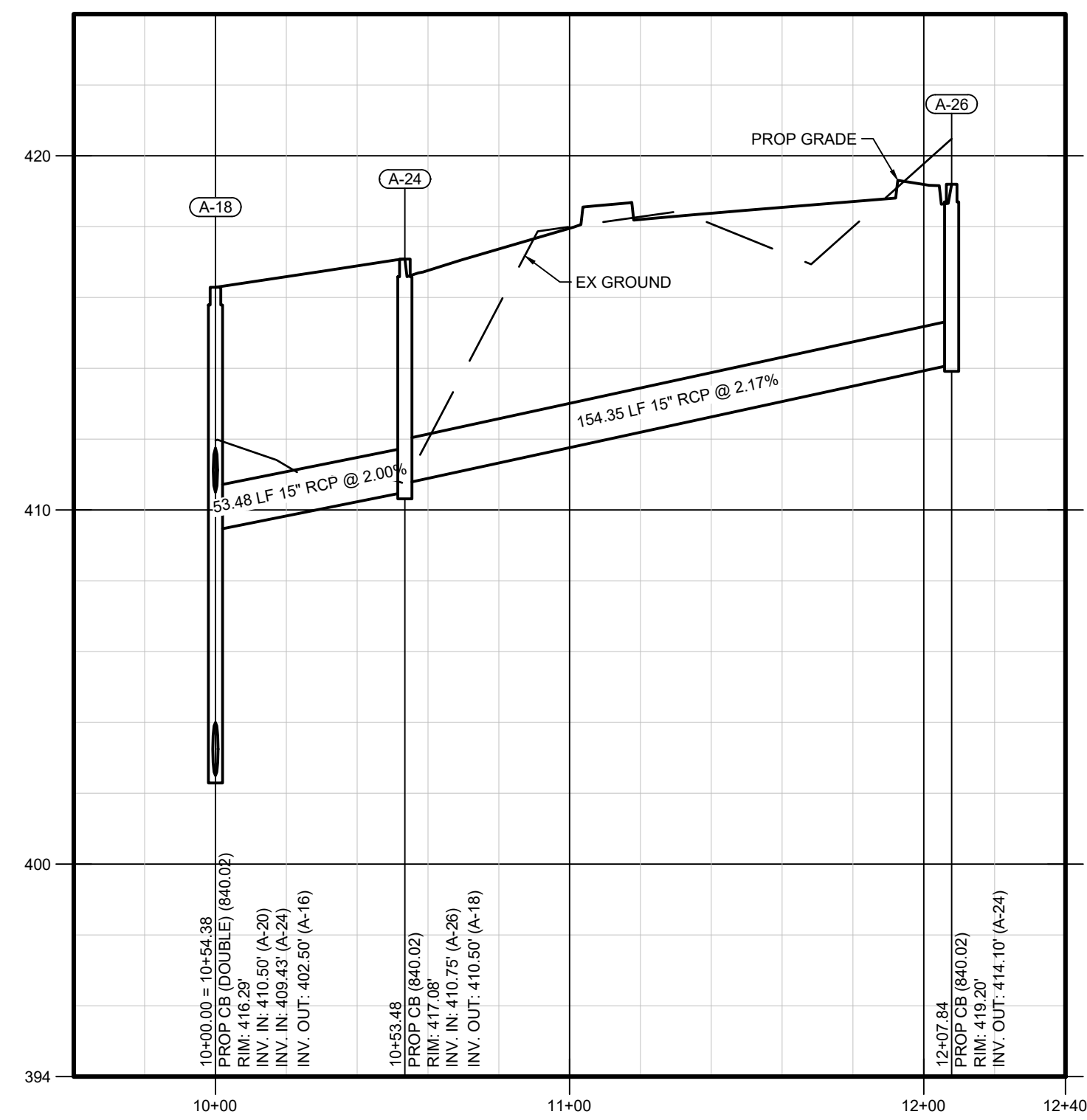
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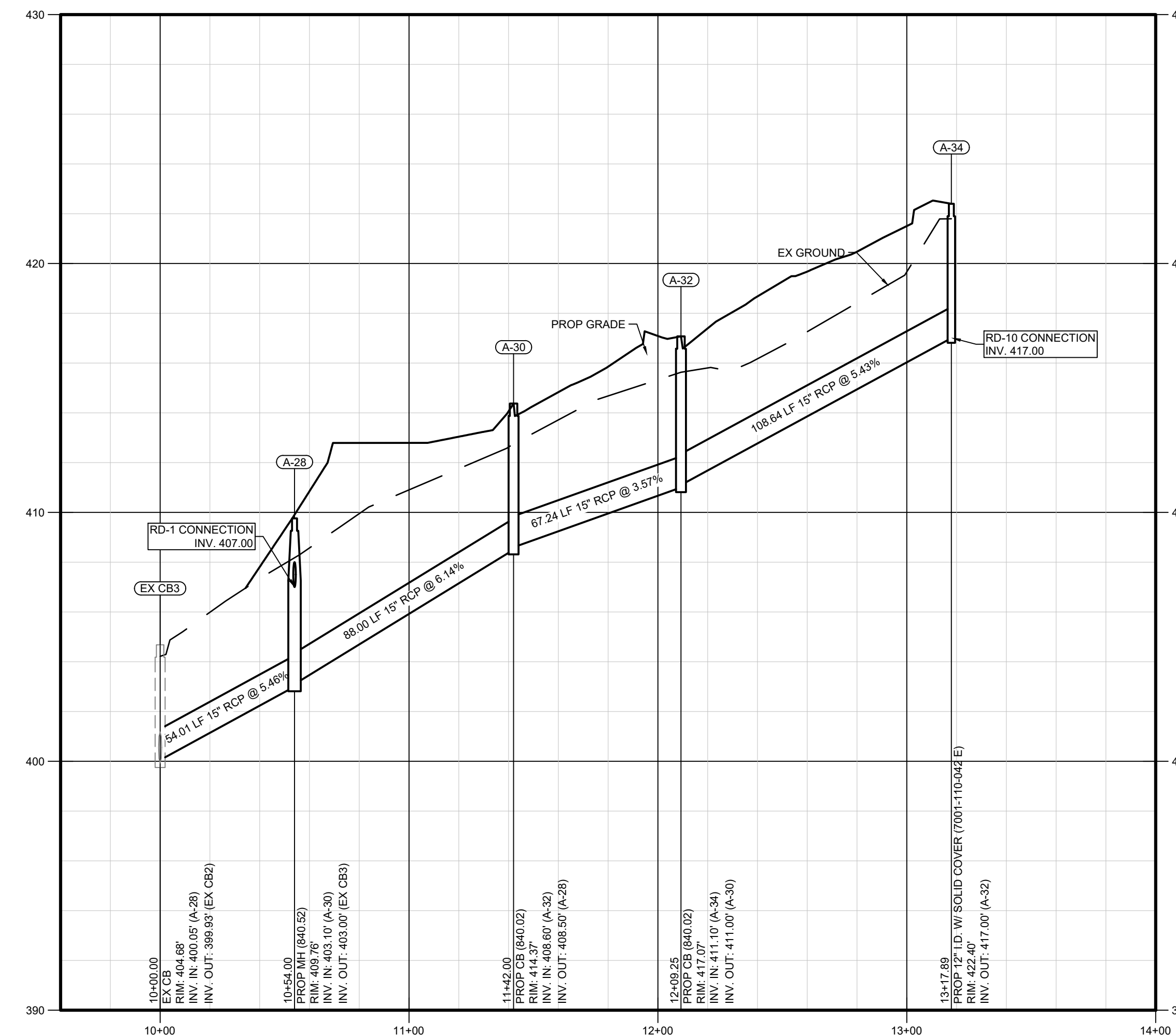
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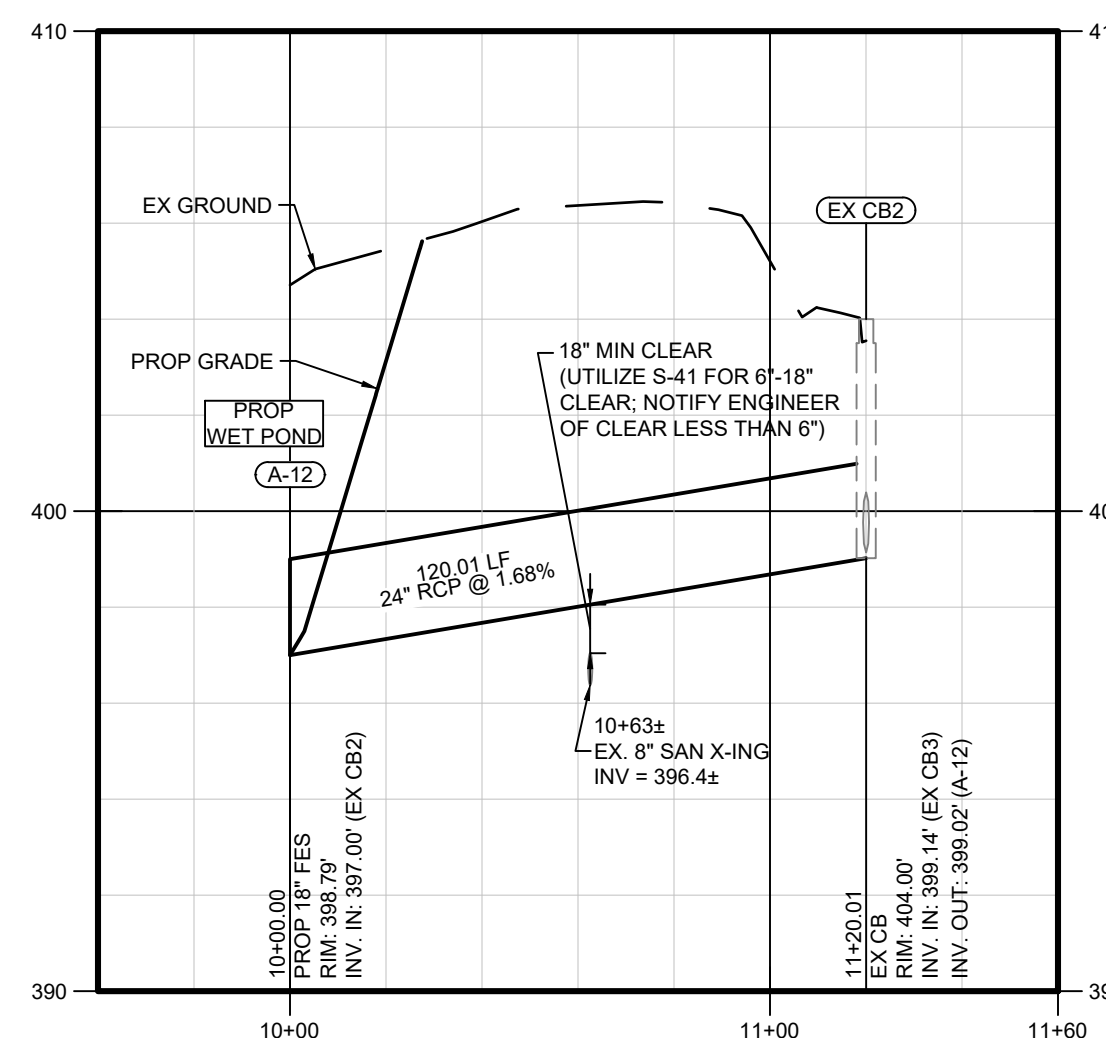
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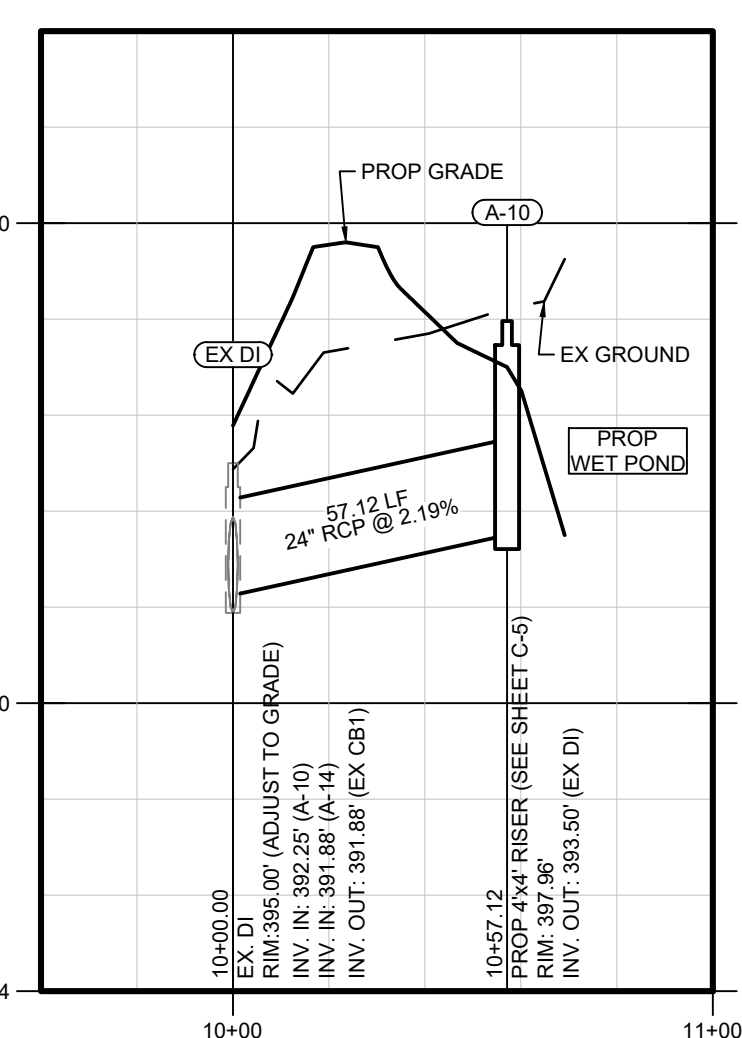
**A-18 to A-26 Profile**  
HORIZONTAL SCALE: 1" = 40'  
VERTICAL SCALE: 1" = 4'



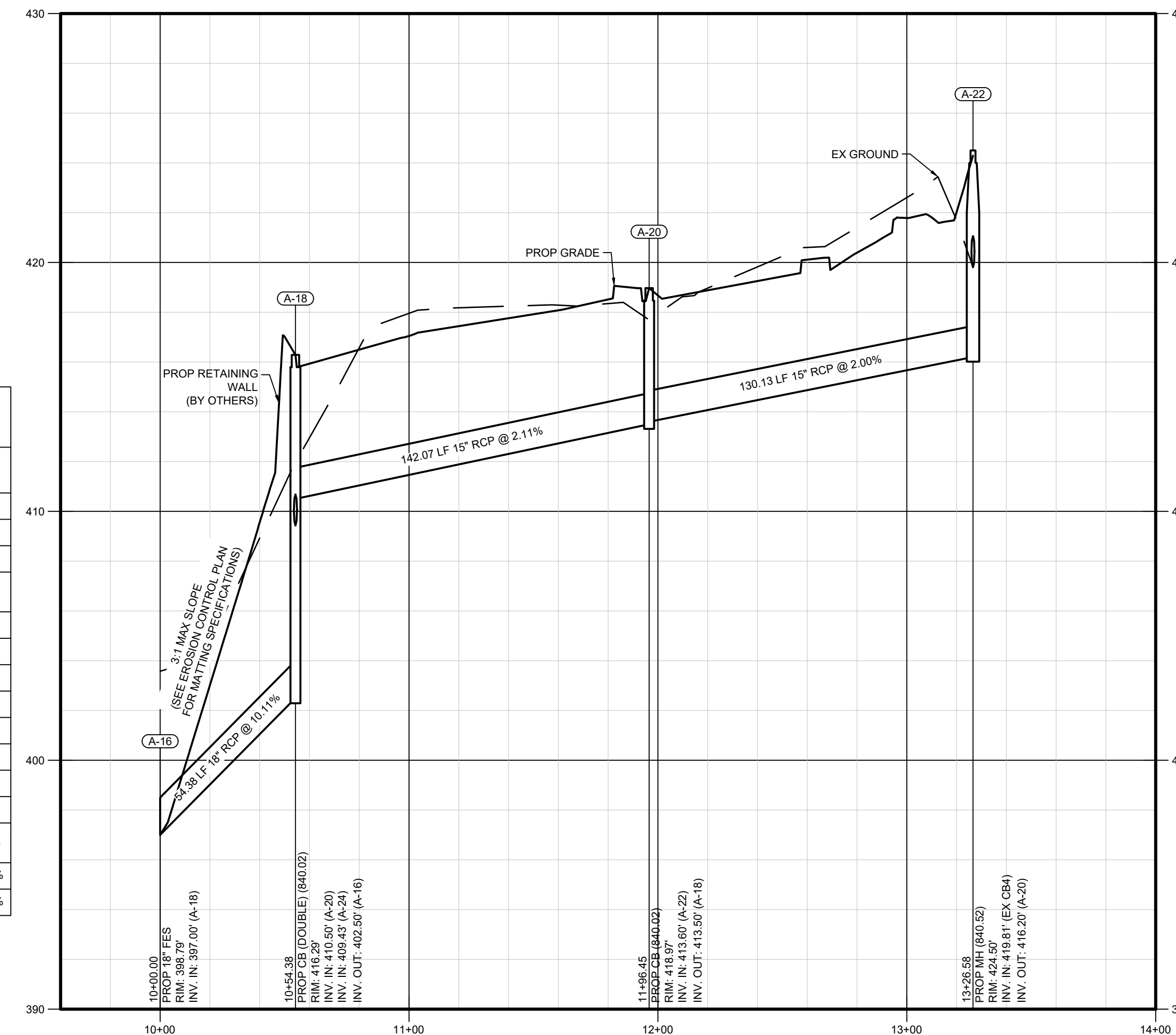
**EX CB to A-34 Profile**  
HORIZONTAL SCALE: 1" = 40'  
VERTICAL SCALE: 1" = 4'



**A-12 to EX CB2 Profile**  
HORIZONTAL SCALE: 1" = 40'  
VERTICAL SCALE: 1" = 4'



**EX DI to A-10 Profile**  
HORIZONTAL SCALE: 1" = 40'  
VERTICAL SCALE: 1" = 4'



**A-16 to A-22 Profile**  
HORIZONTAL SCALE: 1" = 40'  
VERTICAL SCALE: 1" = 4'

**ROOFDRAIN TABLE**

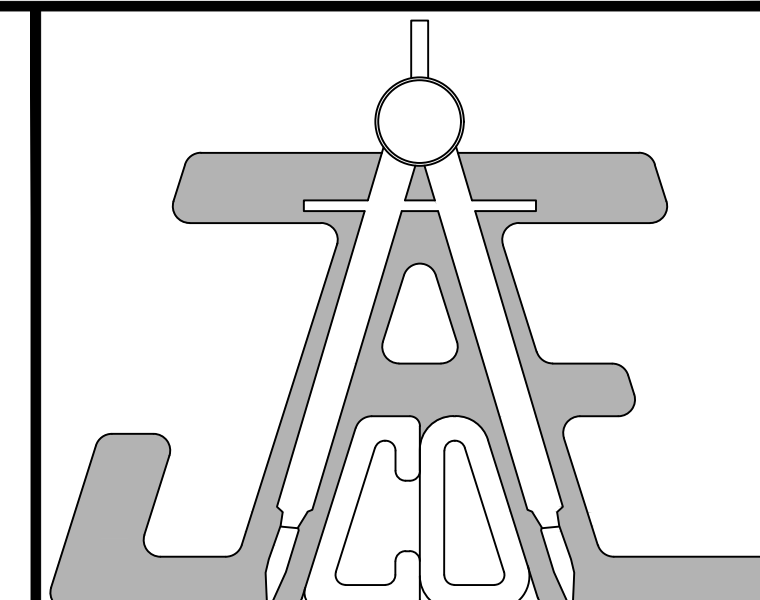
PIPE	LENGTH	SIZE	MATERIAL	SLOPE	START INVERT	END INVERT
RD-1	28'	12"	HDPE	0.50%	407.00	407.14
RD-2	46'	12"	HDPE	0.50%	407.14	407.37
RD-3	22'	12"	HDPE	0.50%	407.37	407.48
RD-4	63'	12"	HDPE	4.05%	407.48	410.00
RD-5	46'	12"	HDPE	0.50%	410.00	410.23
RD-6	6'	12"	HDPE	0.50%	410.23	410.26
RD-7	5'	12"	HDPE	0.50%	407.14	407.16
RD-8	5'	12"	HDPE	0.50%	407.37	407.39
RD-9	5'	12"	HDPE	0.50%	410.00	410.02
RD-12	148'	12"	HDPE	1.52%	418.50	420.75
RD-10	83'	12"	HDPE	1.83%	417.00	418.50
RD-11	148'	12"	HDPE	1.69%	418.50	421.00

WHERE THE HDPE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE GEOTECHNICAL ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE GEOTECHNICAL ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

HDPE BEDDING SHALL BE CLASS I, II OR III OR PER MANUFACTURER SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO GEOTECHNICAL ENGINEER, UNLESS OTHERWISE NOTED BY THE GEOTECHNICAL ENGINEER. MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm).

**STRUCTURE TABLE**

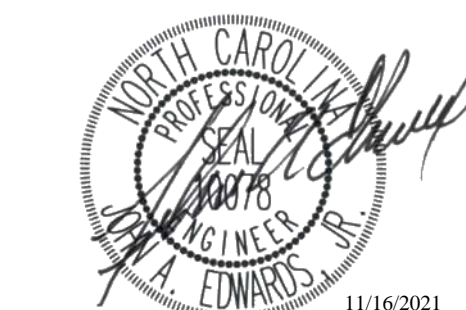
STRUCTURE ID	TYPE	STD. DETAIL	RIM	INVERT IN (U/S STR.)	INVERT OUT (D/S STR.)	PIPE OUT
A-10	4x4' RISER	SEE SHEET C-5	397.96		393.50 (EX DI)	57.12LF 24" RCP @ 2.19%
A-12	FES	18" FES		397.00 (EX CB2)		
A-16	FES	18" FES		397.00 (A-18)		
A-18	CB (DOUBLE)	840.02	416.29	410.50 (A-20) 409.43 (A-24)	402.50 (A-16)	54.38LF 18" RCP @ 10.11%
A-20	CB	840.02	418.97	413.60 (A-22)	413.50 (A-18)	142.07LF 15" RCP @ 2.11%
A-22	MH	840.52	424.50	419.81 (EX CB4)	416.20 (A-20)	130.13LF 15" RCP @ 2.00%
A-24	CB	840.02	417.08	410.75 (A-26)	410.50 (A-18)	53.48LF 15" RCP @ 2.00%
A-26	CB	840.02	419.20	414.10	414.10 (A-24)	154.35LF 15" RCP @ 2.17%
A-28	MH	840.52	409.76	403.10 (A-30)	403.00 (EX CB3)	54.01LF 15" RCP @ 6.02%
A-30	CB	840.02	414.37	408.60 (A-32)	408.50 (A-28)	88.00LF 15" RCP @ 6.14%
A-32	CB	840.02	417.07	411.10 (A-34)	411.00 (A-30)	67.24LF 15" RCP @ 3.57%
A-34	12" I.D. W/ SOLID COVER	7001-110-042 E	422.40	417.00	417.00 (A-32)	108.64LF 15" RCP @ 5.43%
A-35	12" I.D. W/ SOLID COVER	7001-110-042 E	425.73	418.50 (A-36) 418.50 (A-38)	418.50 (A-34)	82.07LF 12" HDPE @ 1.83%
A-36	12" I.D. W/ 15" DOME	7001-110-042 E	424.50		421.00 (A-35)	147.88LF 12" HDPE @ 1.69%
A-38	12" I.D. W/ 18" DOME	7001-110-042 E	424.75		420.75 (A-35)	147.67LF 12" HDPE @ 1.52%



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**Call 811 before you dig.**

**LEGEND**

**STORMDRAIN PROFILES**

Number	Description	Date
4	PERMIT SET	07/08/21
5	PER TRC COMMENTS	09/14/21
6	LAYOUT REVISION & POST-APPROVAL COMMENTS	10/26/21
7	ADDITIONAL POST-APPROVAL COMMENTS	11/02/21
8	POST-APPROVAL COMMENTS	11/16/21

JAECO #: 087-01

DRAWING SCALE: N/A

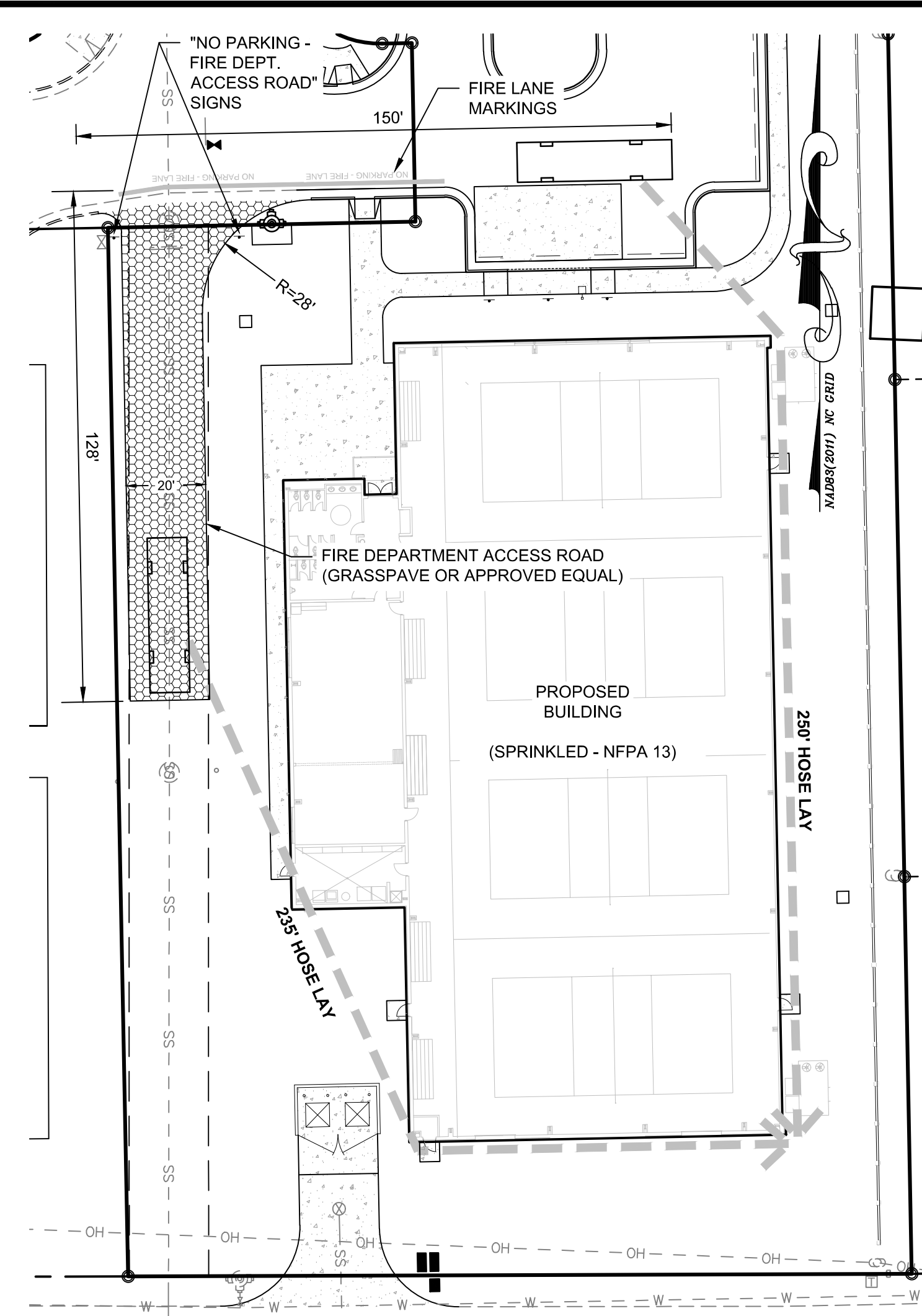
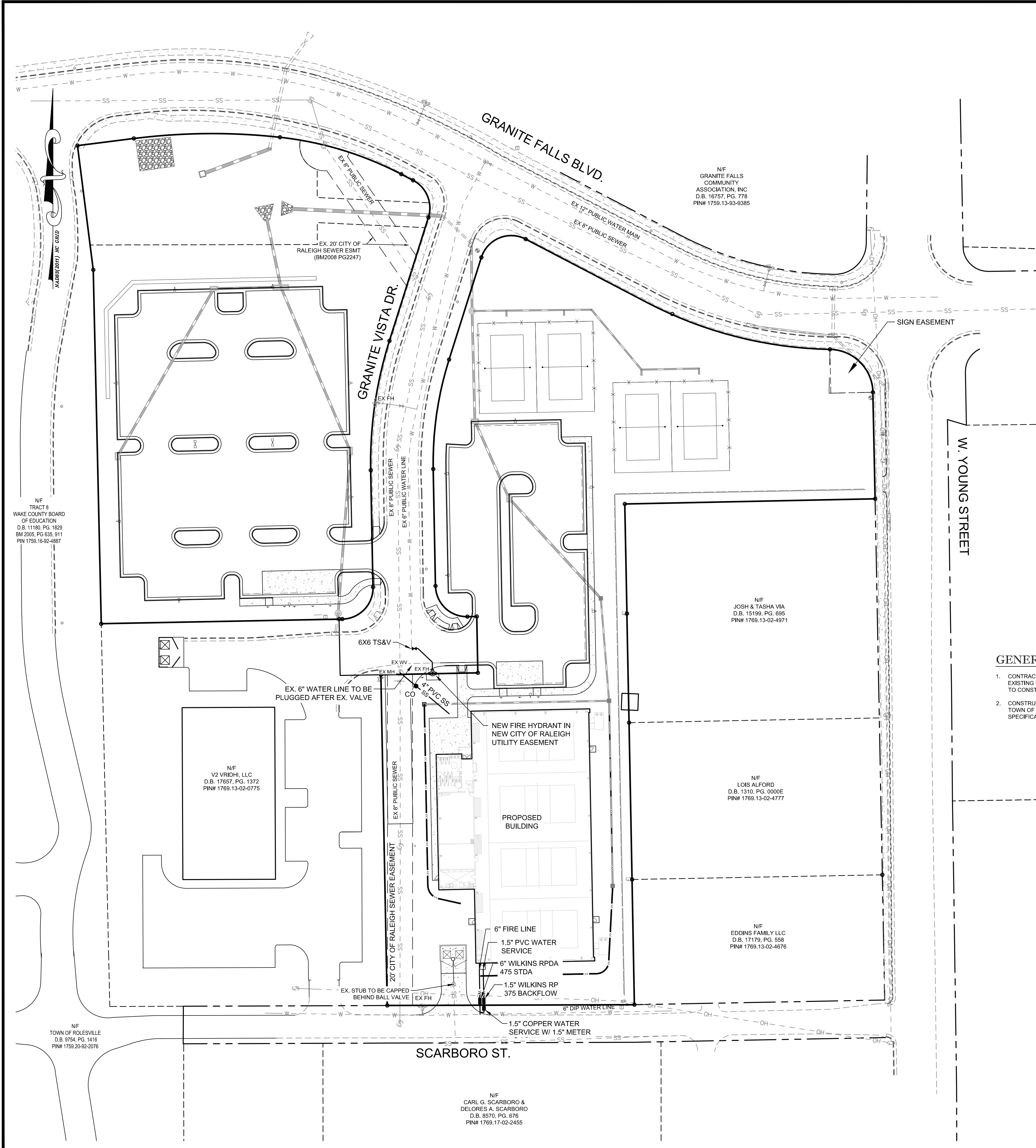
DRAWN BY: TT

CHECKED BY: JAE, JR

DATE ISSUED: 12/10/2020

**C-6**





**FIRE DEPT. ACCESS AND HOSE LAY PLAN**  
SCALE: 1"=30'

**GENERAL NOTES:**

- CONTRACTOR TO FIELD VERIFY LOCATION & ELEVATION OF ALL EXISTING UTILITIES AND NOTIFY ENGINEER OF CONFLICTS PRIOR TO CONSTRUCTION.
- CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH, TOWN OF ROLESVILLE, AND/OR NCDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.

**STANDARD UTILITY NOTES (as applicable):**

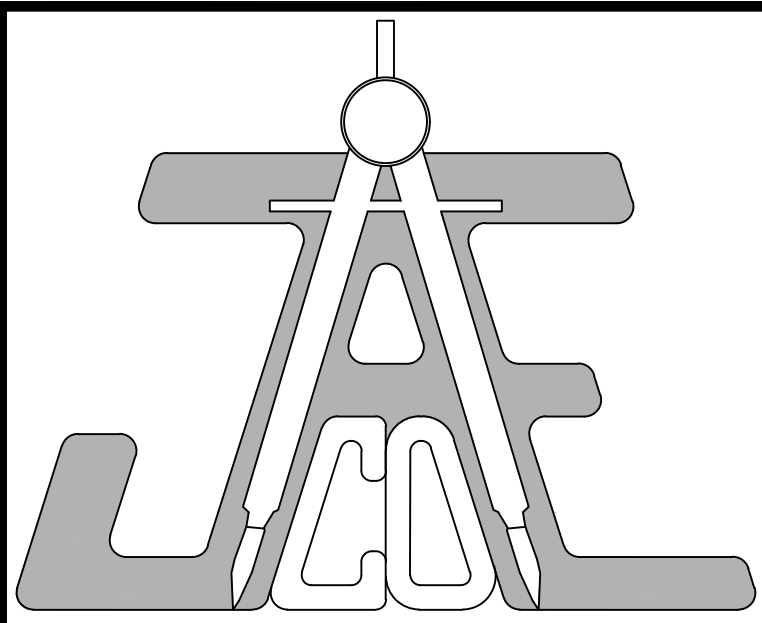
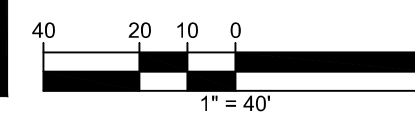
- All materials & construction methods shall be in accordance with City of Raleigh design standards, details & specifications (reference: CORPUD Handbook, current edition)
- Utility separation requirements:
  - A distance of 100' shall be maintained between sanitary sewer & any private or public water 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 watertight specifications. However, the minimum separation shall not be less than 25' from a private well or 50' from a public well
  - 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
  - Whenever 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 watertight specifications
  - 5.0' minimum horizontal separation is required between all sanitary sewer & storm sewer facilities, unless DIP material is specified for sanitary sewer
  - Maintain 18" min. vertical separation at all watermain & RCP storm drain crossings; maintain 18" min. vertical separation at all sanitary sewer & RCP storm drain crossings. Where adequate separations cannot be achieved, specify DIP materials & a concrete cradle having 6" min. clearance (per CORPUD details W-41 & S-49)
  - All other underground utilities shall cross water & sewer facilities with 18" min. vertical separation required
- 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
- Developer shall provide 15 days advance notice to owner for any work required within an existing City of Raleigh Utility Easement traversing private property
- 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
- 3.0' minimum cover is required on all water mains & sewer force mains. 4.0' minimum cover is required on all reuse mains
- 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
- Install 1" copper water service with 1" meter located within public ROW. NOTE: It is the applicant's responsibility to properly size the water service for each connection to provide adequate flow & pressure
- Install 4" PVC sewer service @ 1.0% minimum grade with cleanouts located at ROW or easement line & spaced every 75 linear feet maximum
- 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
- All environmental permits applicable to the project must be obtained from NCDWQ, USACE &/or FEMA for any riparian buffer, wetland &/or floodplain impacts (respectively) prior to construction.
- NCDOT / Railroad Encroachment Agreements are required for any utility work (including main extensions & service taps) within state or railroad ROW prior to construction
- 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 Stephen Calverley at (919) 996-2334 or Stephen.calverley@raleighnc.gov for more information
- 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

**ATTENTION CONTRACTORS:**

The Construction Contractor responsible for the extension of water, sewer, and/or reuse, as approved in these plans, is responsible for contacting the PUBLIC WORKS DEPARTMENT at (919) 996-2499 and the PUBLIC UTILITIES DEPARTMENT at (919) 996-4540 at least **twenty four hours** prior to beginning any of their construction.

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

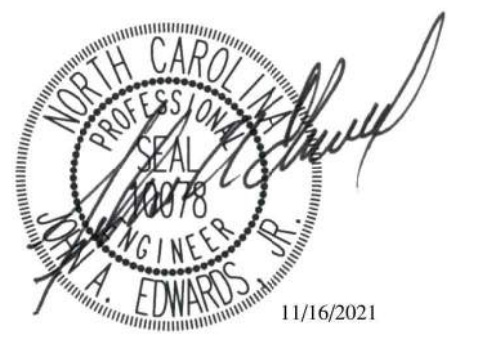
FAILURE to call for Inspection, Install a Downstream Plug, have Permitted Plans on the jobsite, or any other Violation of CITY OF RALEIGH STANDARDS will result in a Fine and Possible Exclusion from future work in the CITY OF RALEIGH.



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**LEGEND**

**PLANS NOT APPROVED FOR CONSTRUCTION UNLESS SIGNED BY CITY OF RALEIGH**  
CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Plans for the proposed use have been reviewed for general compliance with applicable codes. This limited review, and authorization for construction is not to be considered to represent total compliance with all legal requirements for development and construction. The property owner, design consultants, and contractors are each responsible for compliance with all applicable City, State and Federal laws. This specific authorization below is not a permit, nor shall it be construed to permit any violation of City, State or Federal Law. All Construction must be in accordance with all Local, State, and Federal Rules and Regulations. This approval of this electronic document is only valid if the document has not been modified and the digital signature below is valid.

City of Raleigh Development Approval Timothy Beatty  
City of Raleigh Review Officer

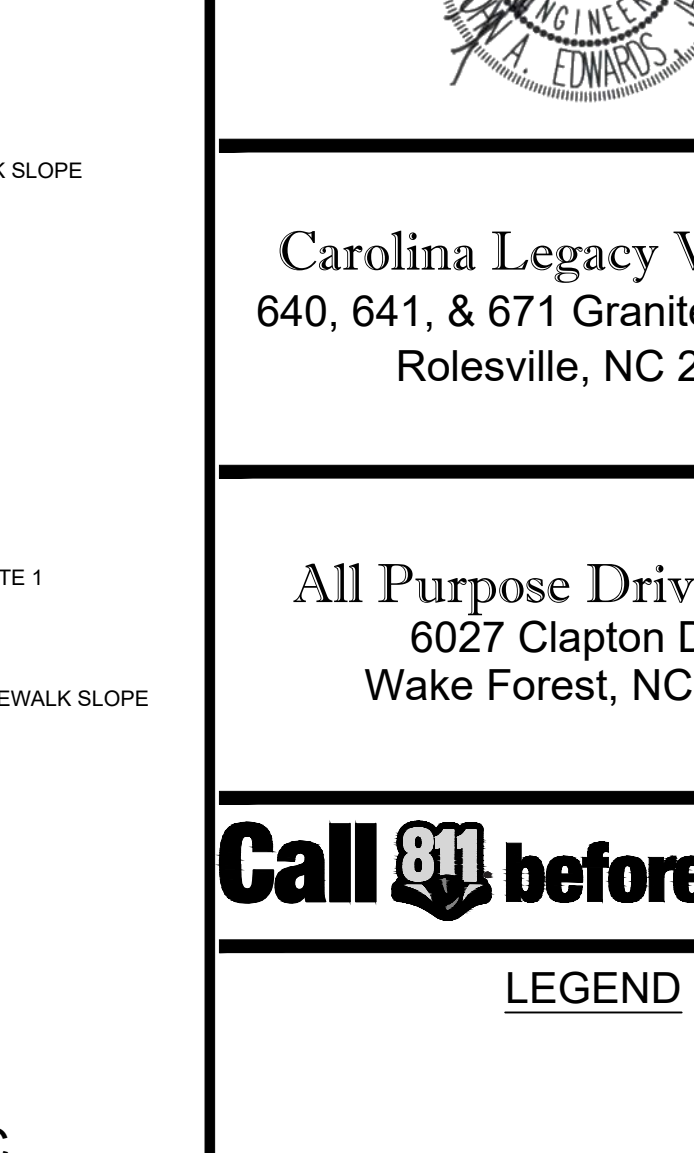
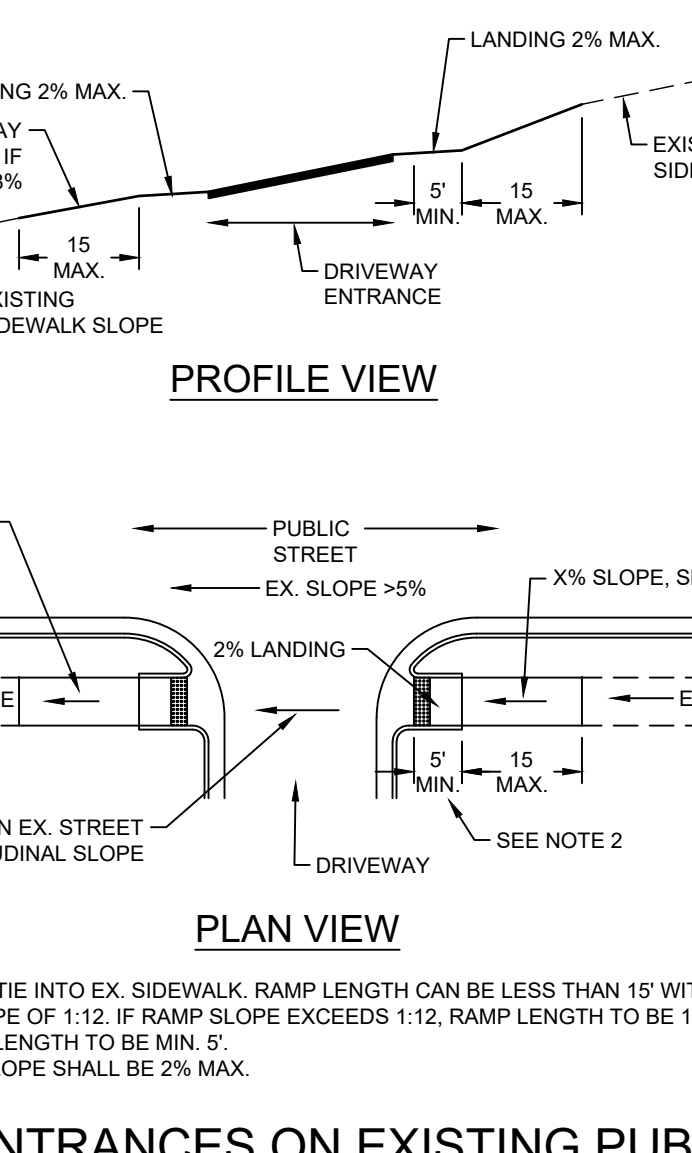
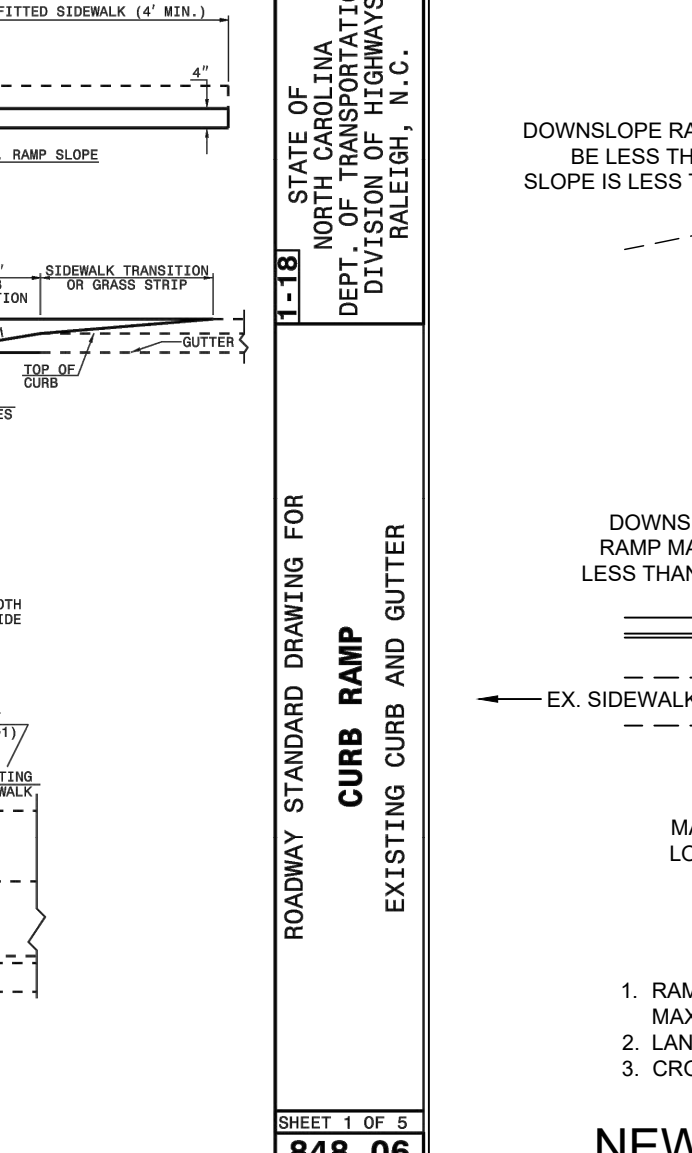
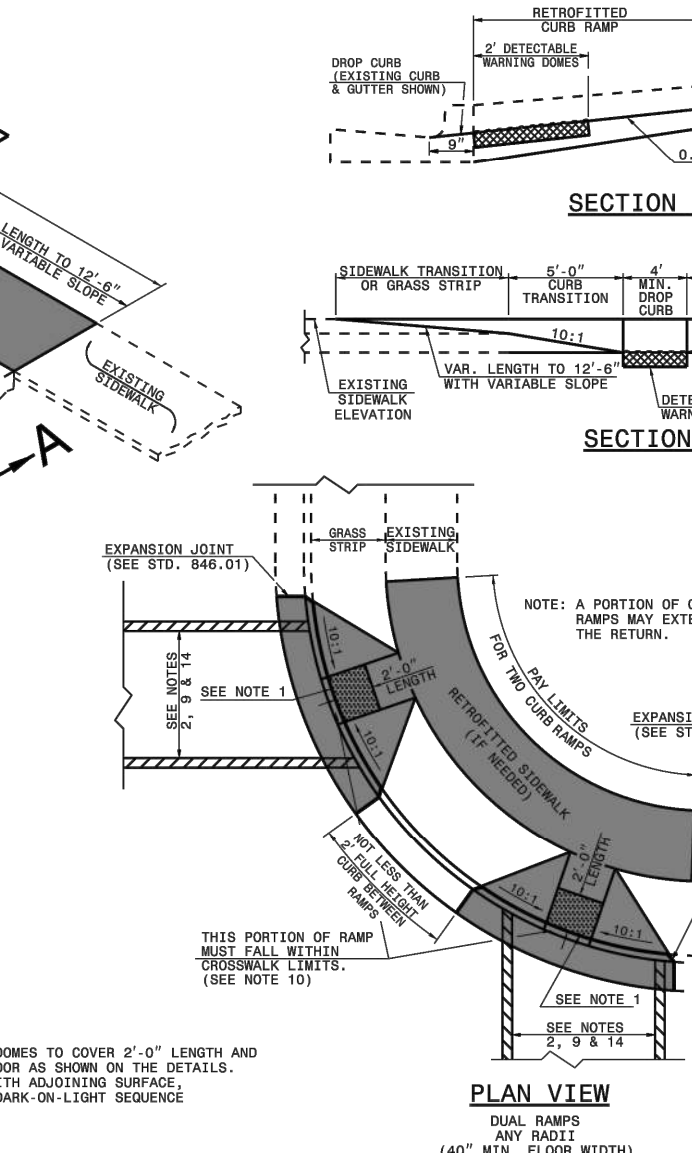
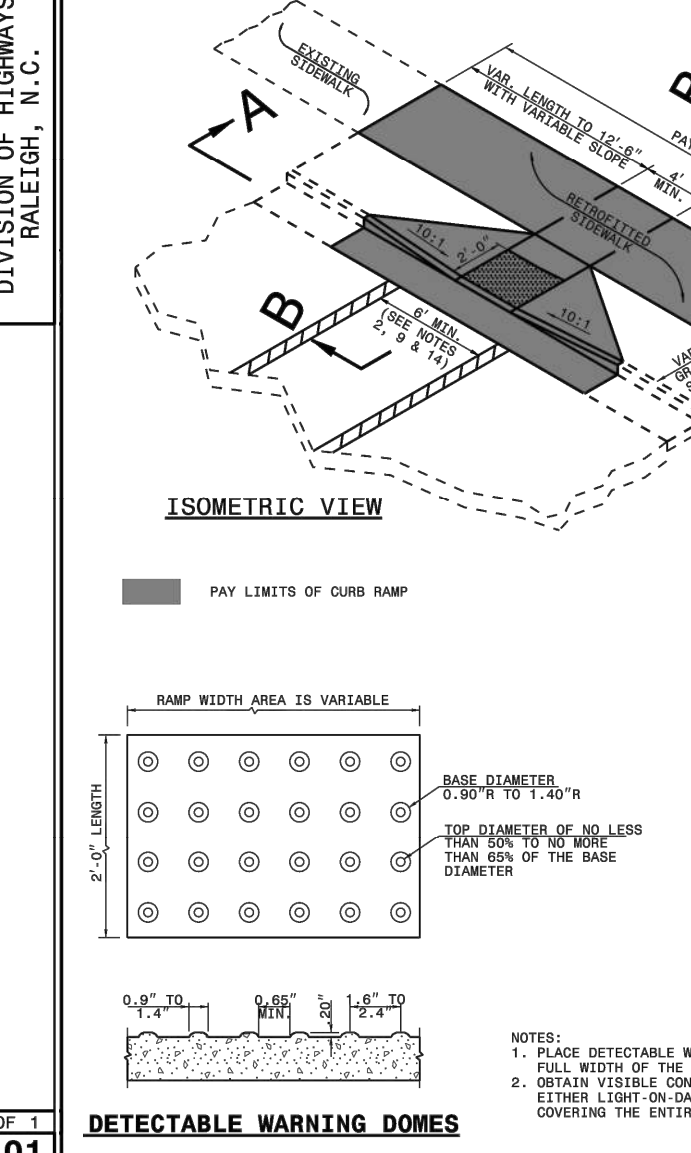
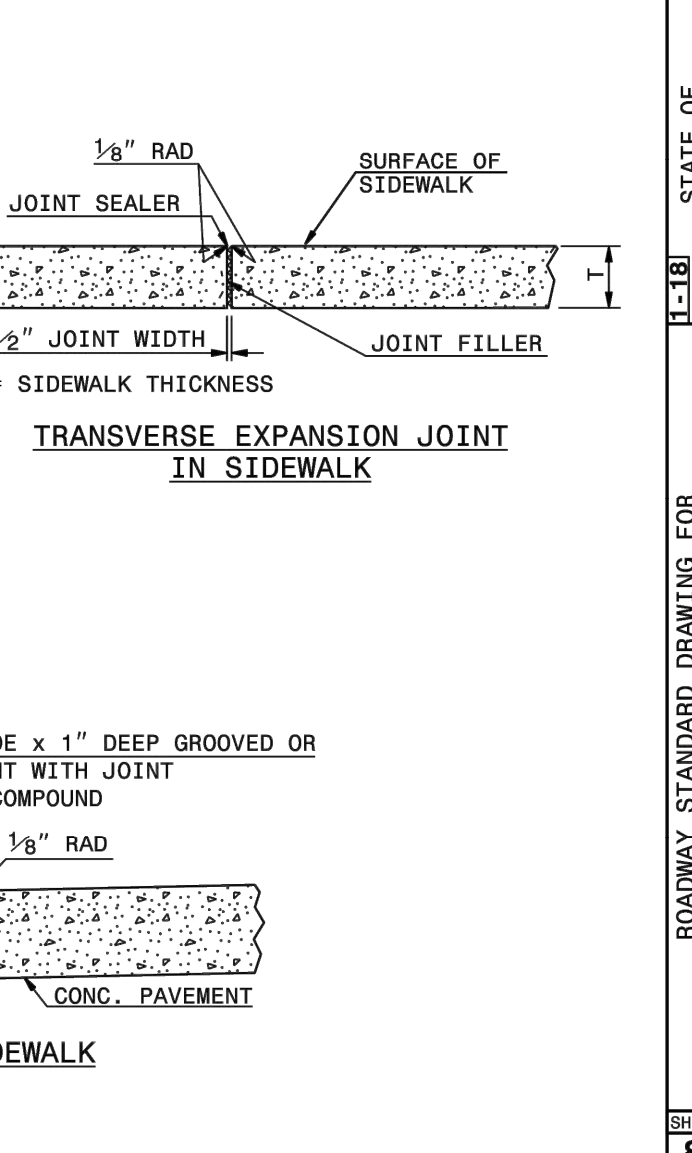
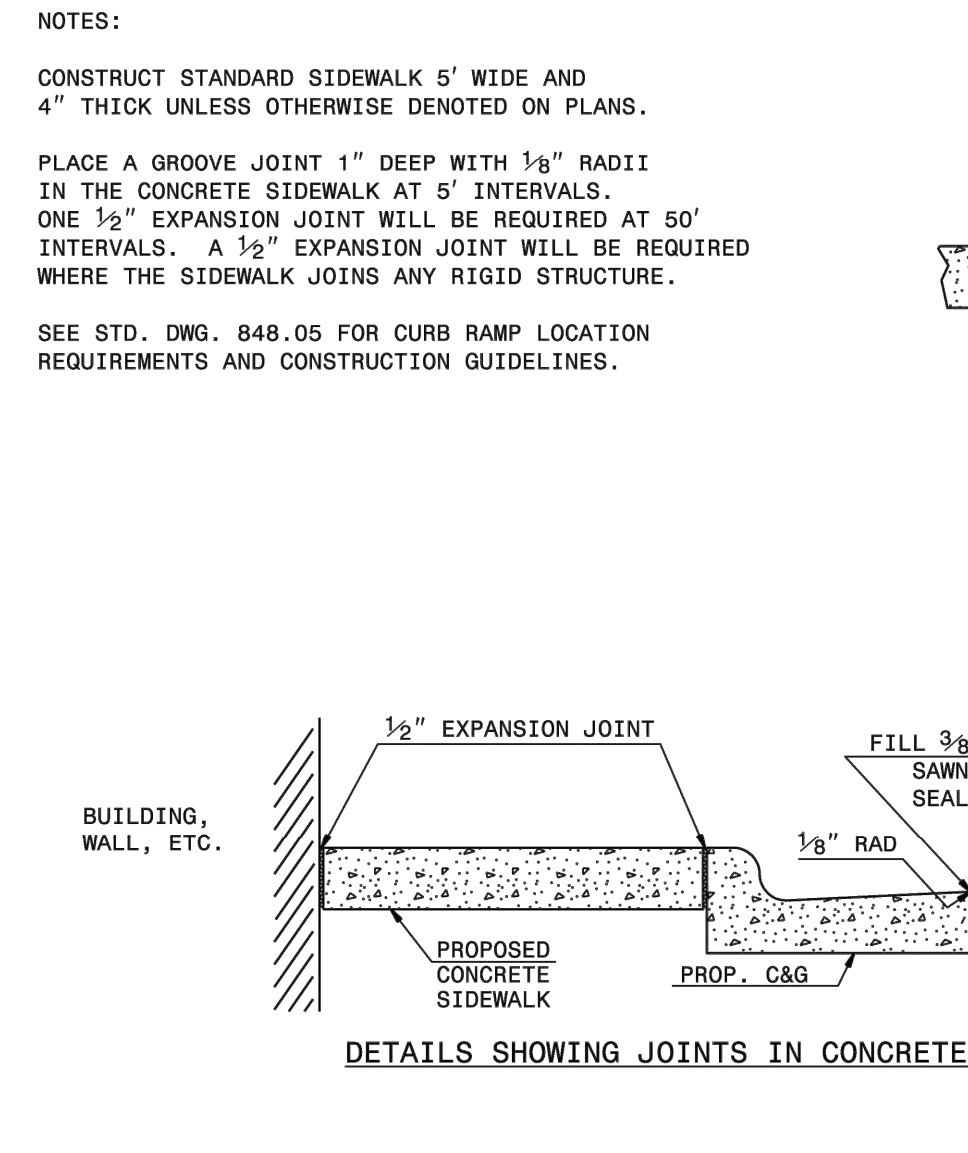
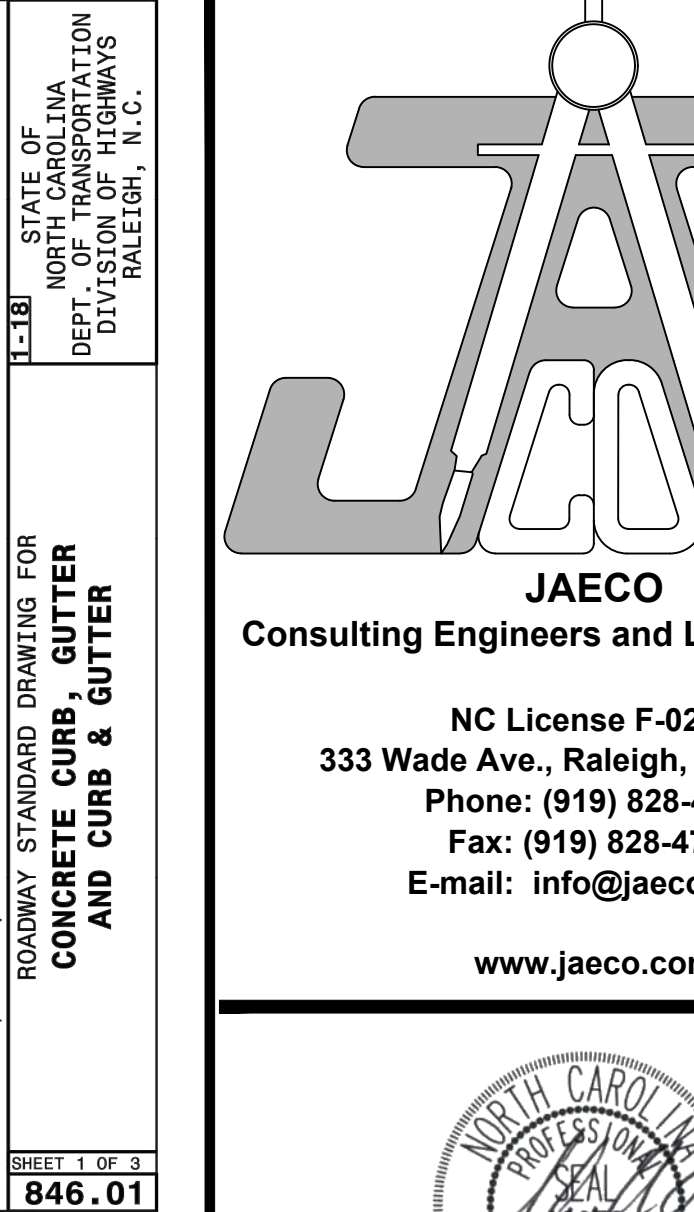
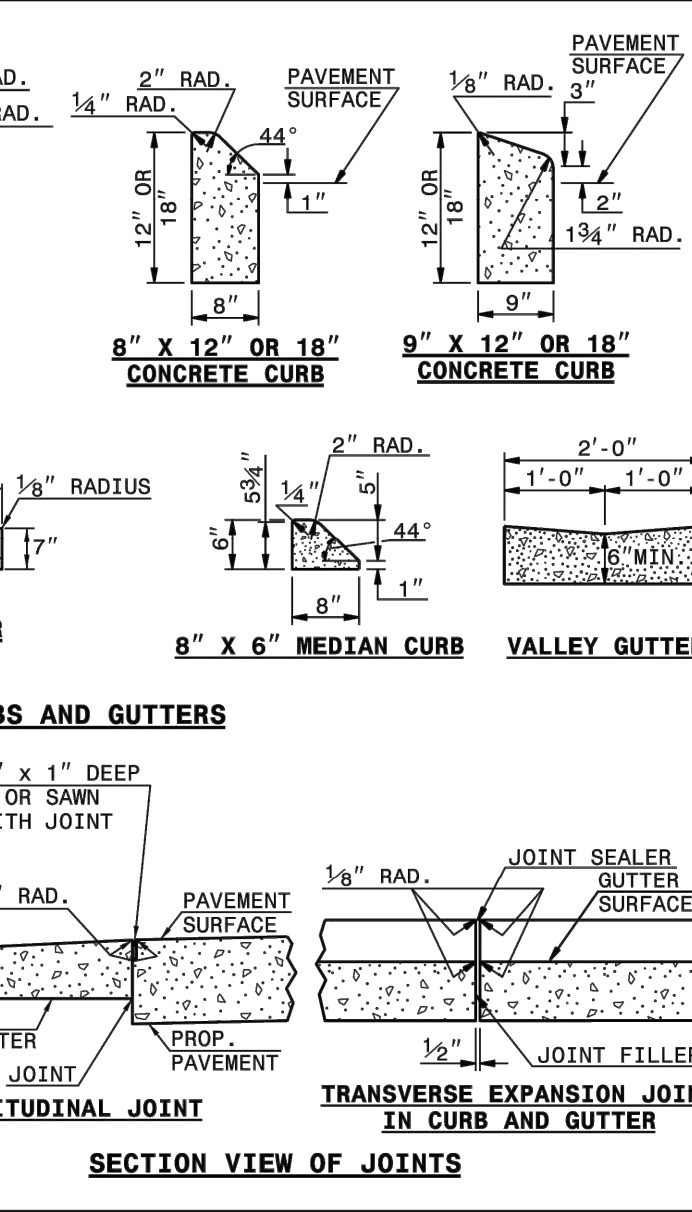
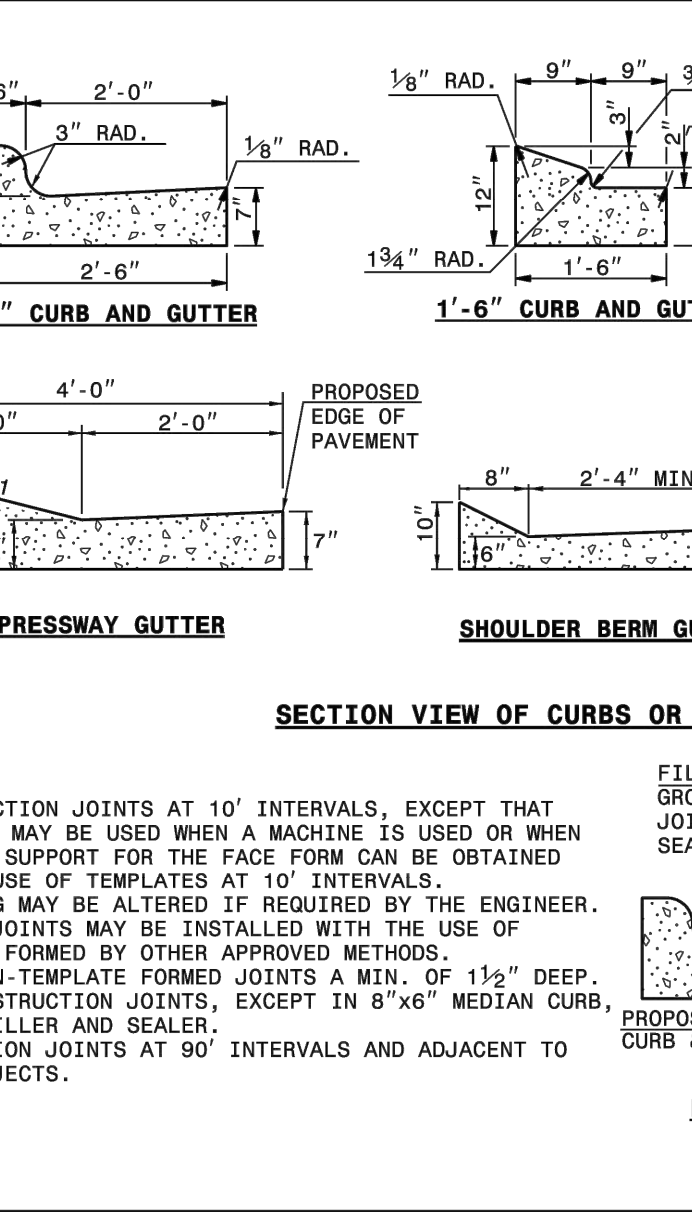
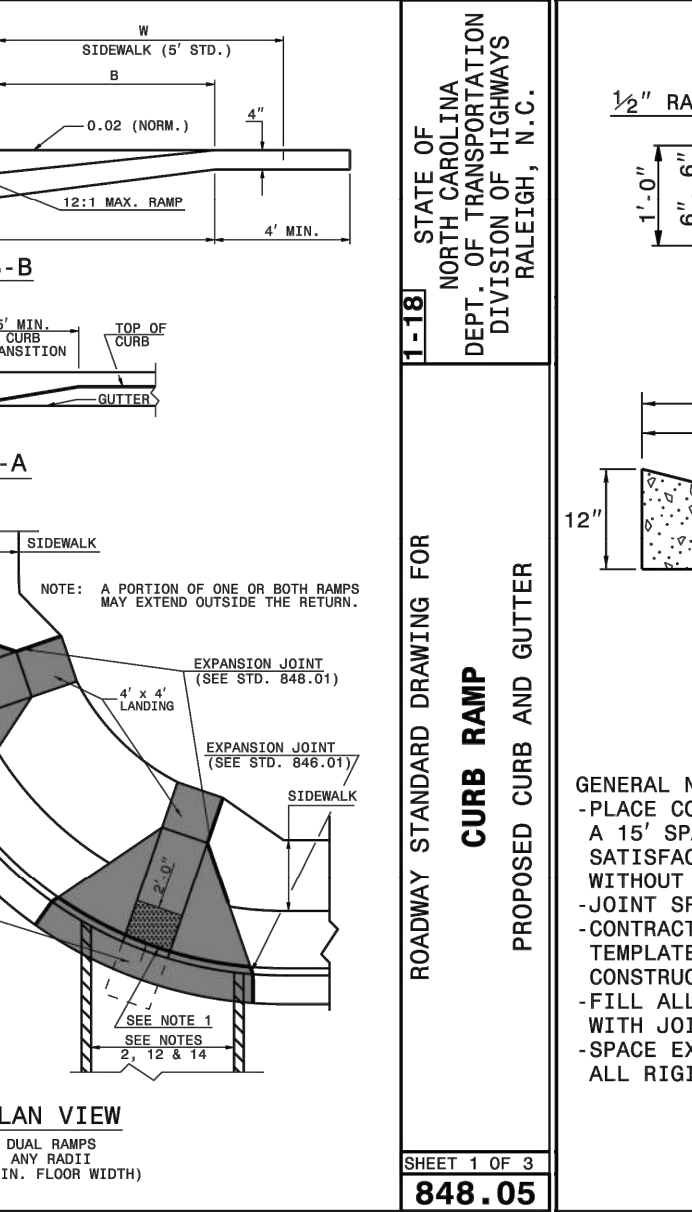
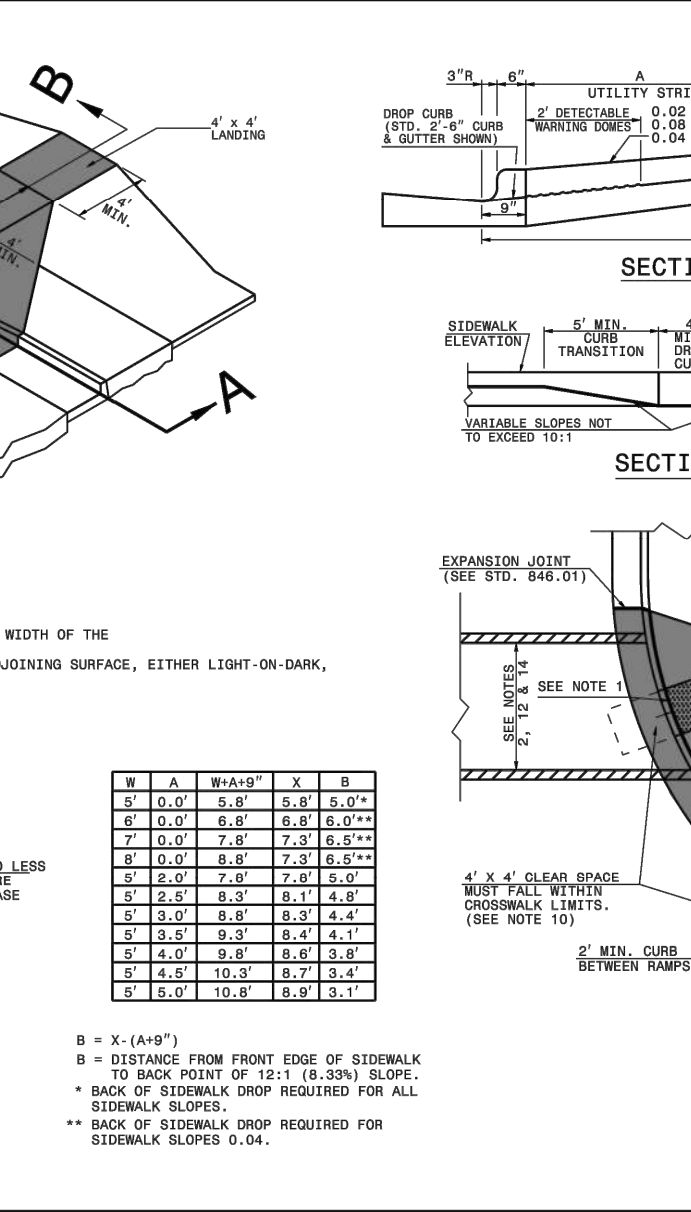
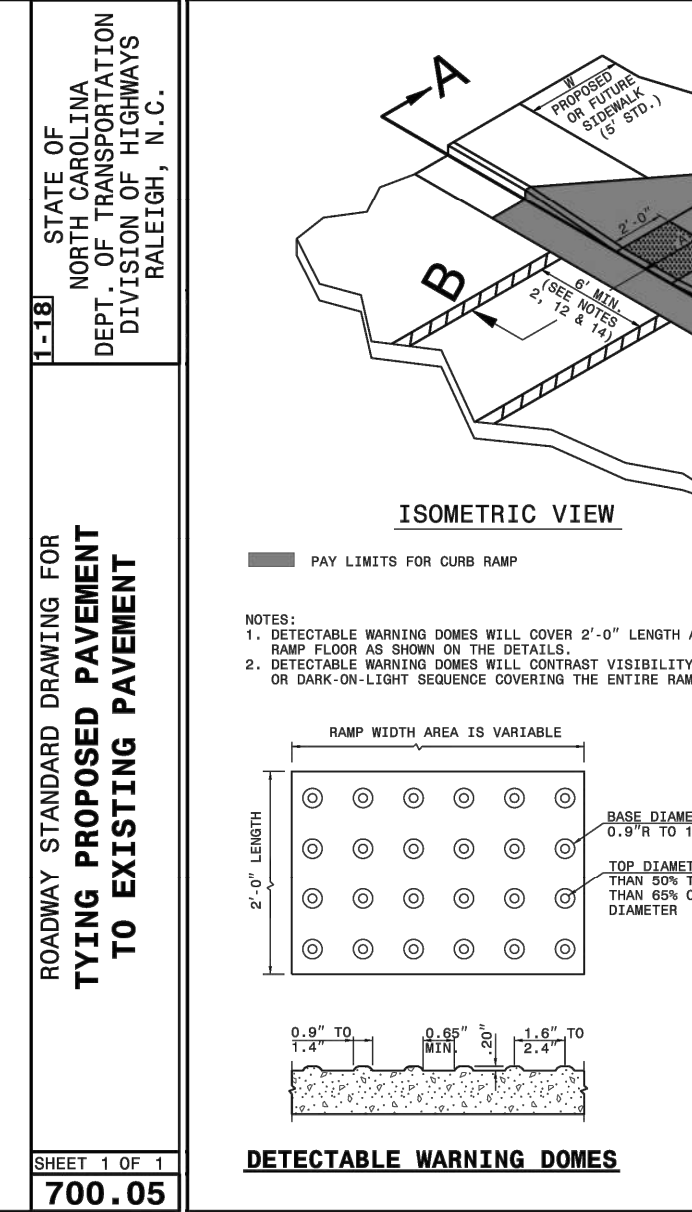
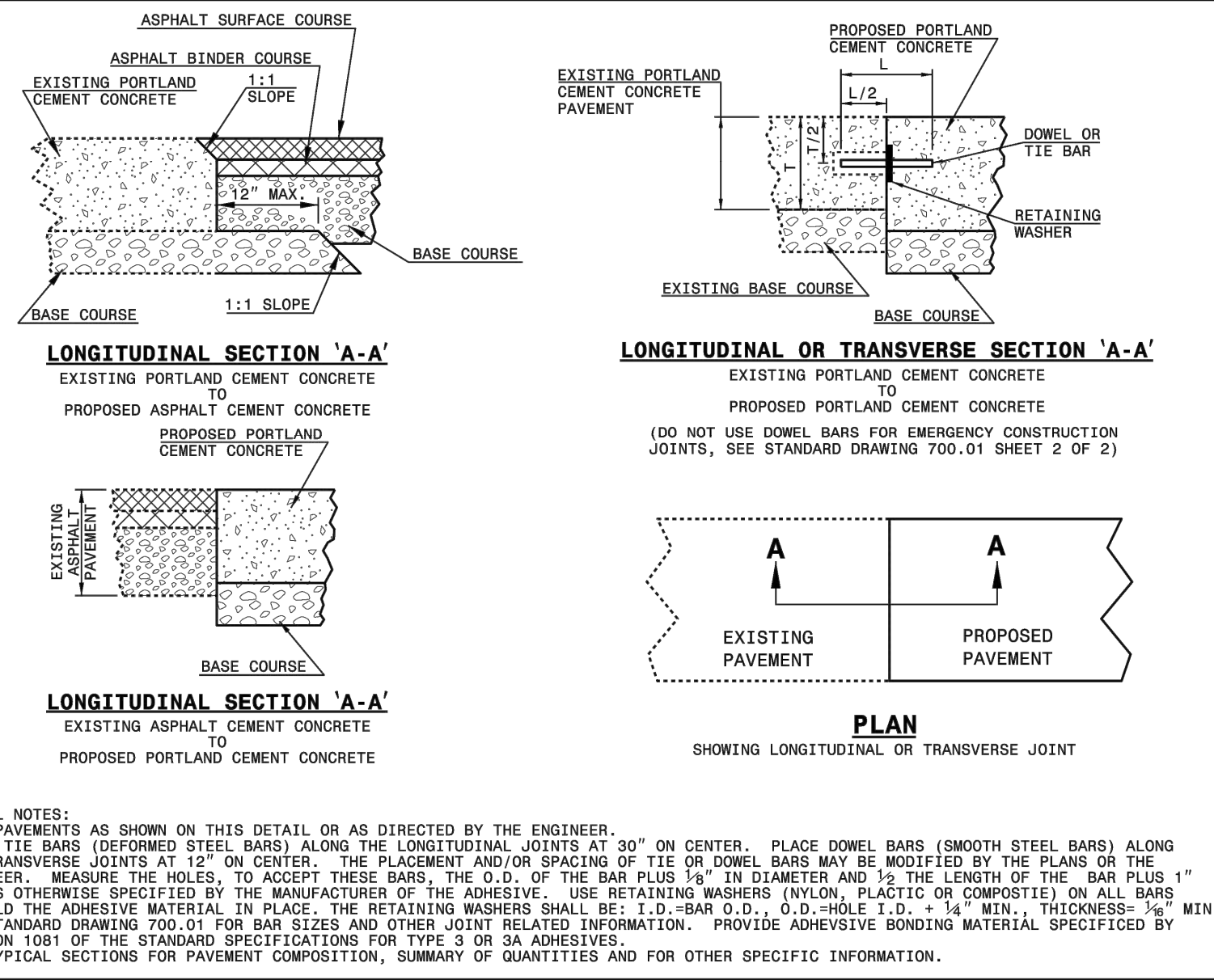
**UTILITY & FIRE DEPT ACCESS PLAN**

Number	Description	Date
4	PERMIT SET	07/08/21
5	PER TRC COMMENTS	09/14/21
6	LAYOUT REVISION & POST-APPROVAL COMMENTS	10/28/21
7	ADDITIONAL POST-APPROVAL COMMENTS	11/02/21
8	POST-APPROVAL COMMENTS	11/16/21

JAECO #: 087-01  
DRAWING SCALE: AS SHOWN  
DRAWN BY: TT  
CHECKED BY: JAE, JR  
DATE ISSUED: 12/10/2020

**C-7**





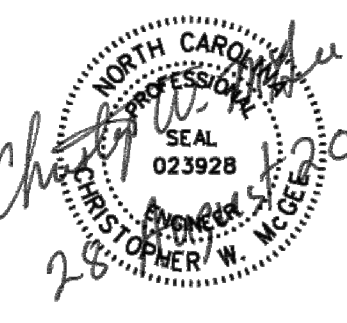
# CITY OF RALEIGH STANDARD DETAILS



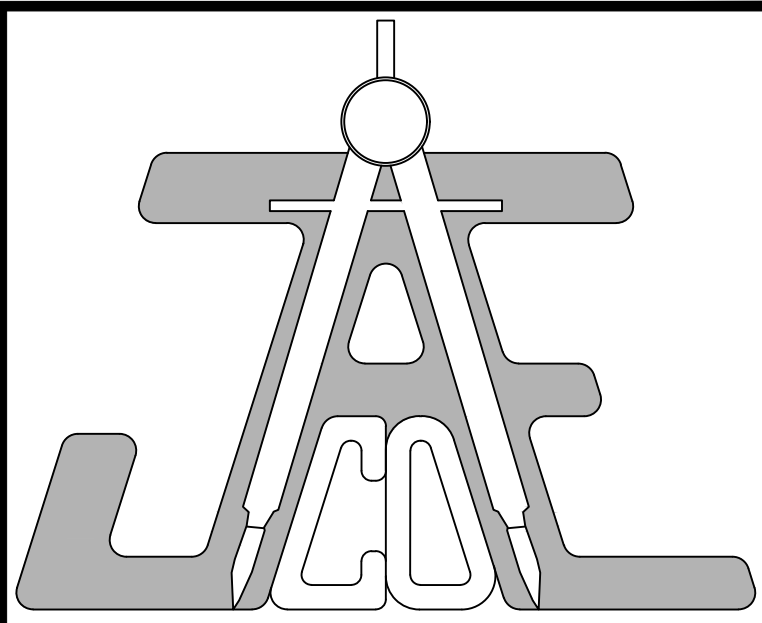
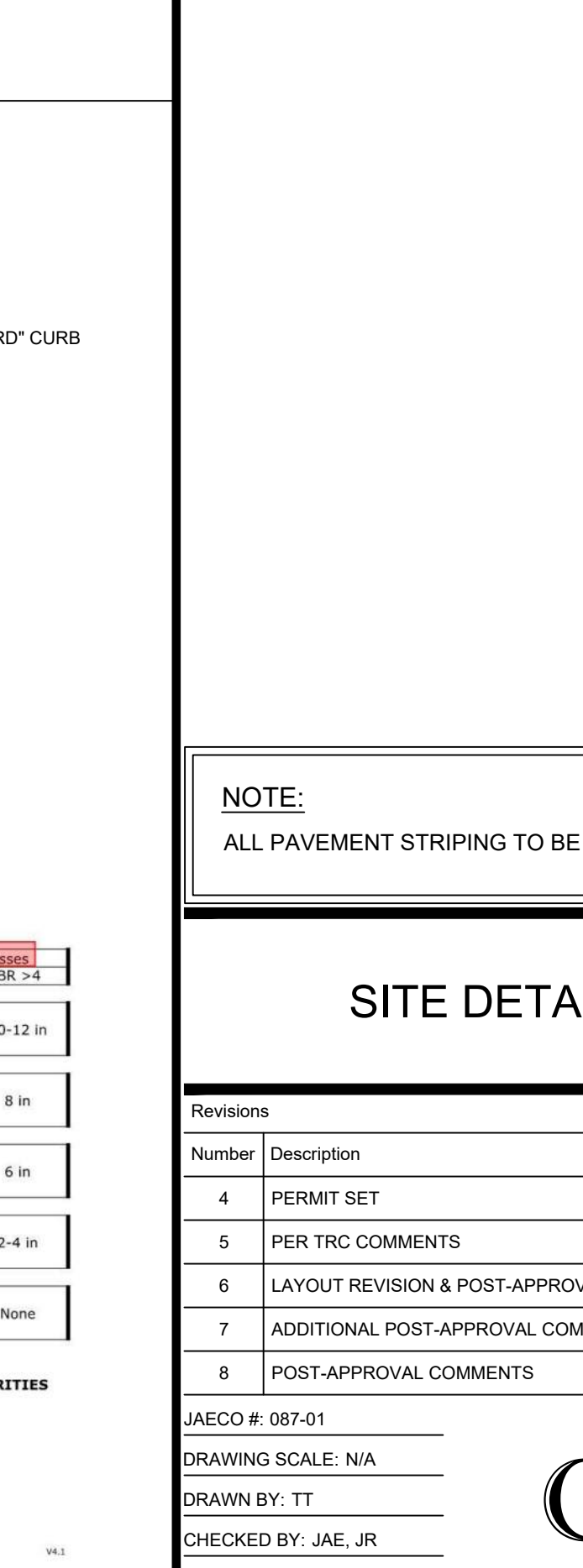
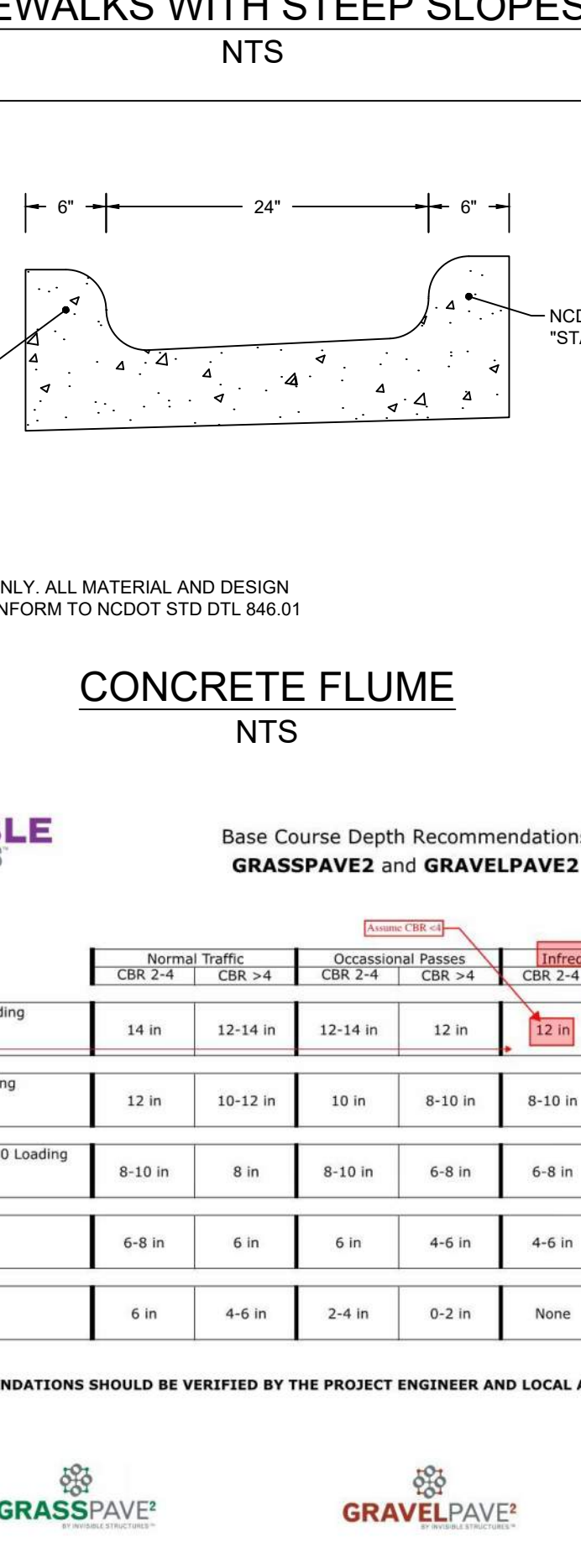
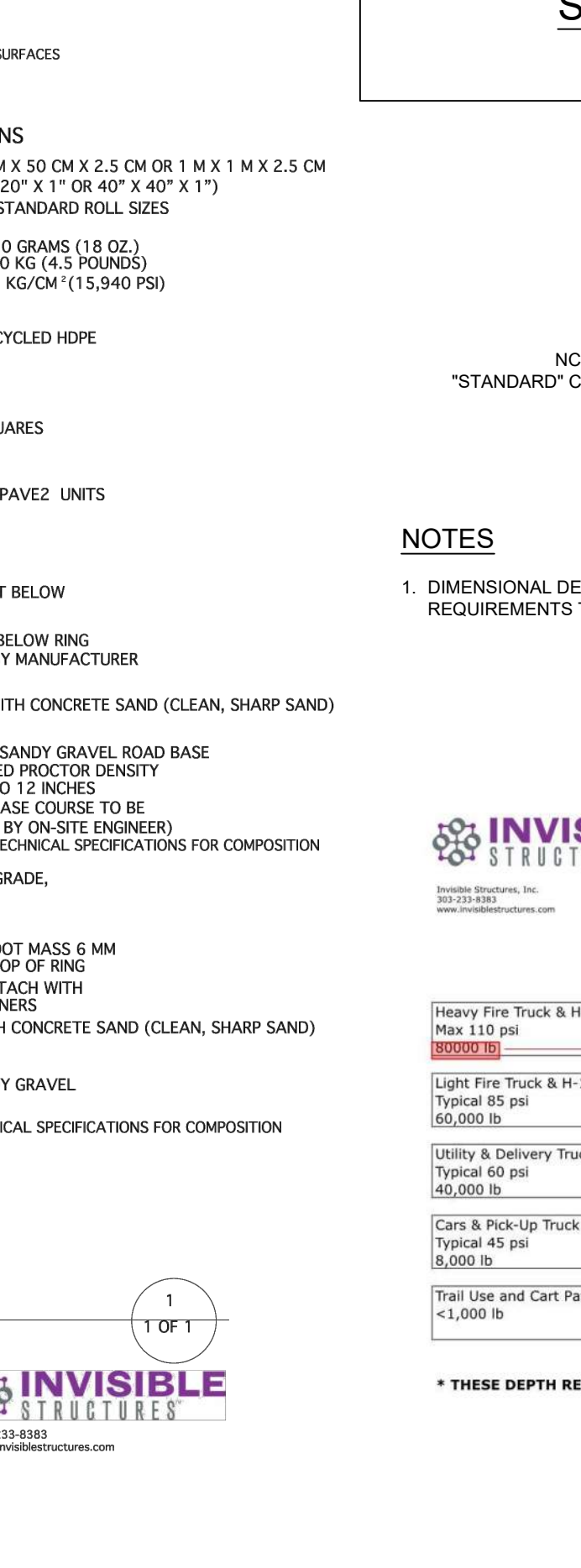
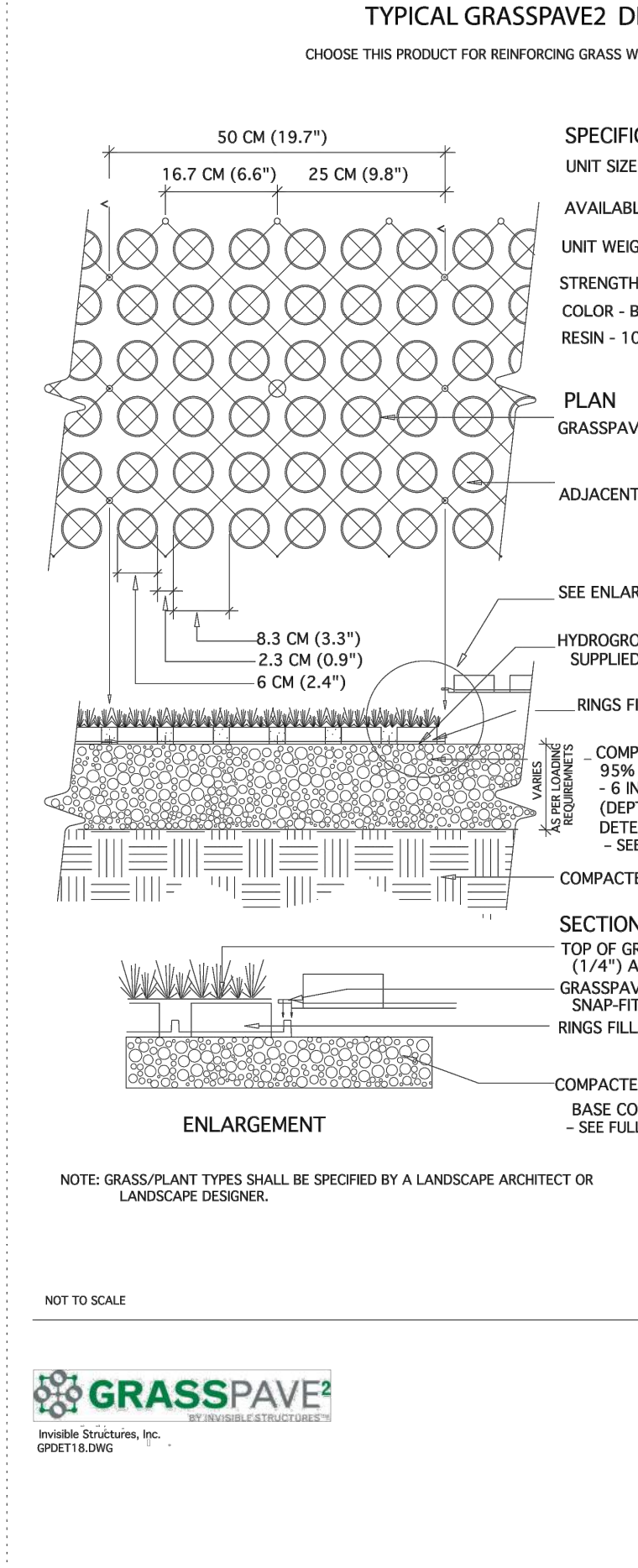
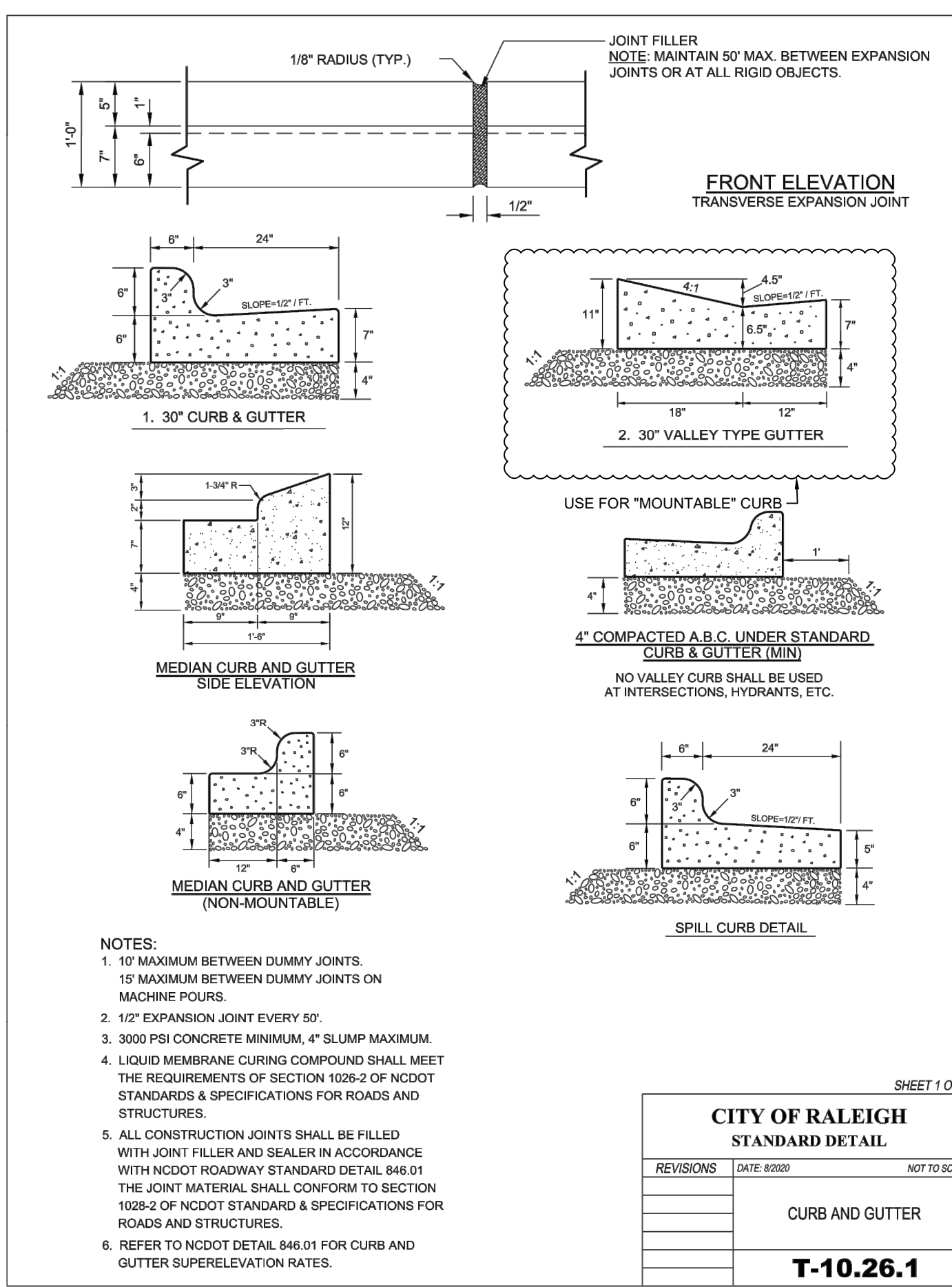
NOT A CERTIFIED DOCUMENT AS TO THE ORIGINAL DOCUMENT BUT ONLY AS TO THE REVISIONS

11/16/2021  
THIS DOCUMENT ORIGINALLY DRAWN AND SEALED BY CHRISTOPHER W. MCGEE, LICENSE NUMBER 02928, ON 8/25/08. THIS DOCUMENT IS ONLY CERTIFIED AS TO THE REVISIONS.

Professional Engineer  
Christopher W. McGee  
02928



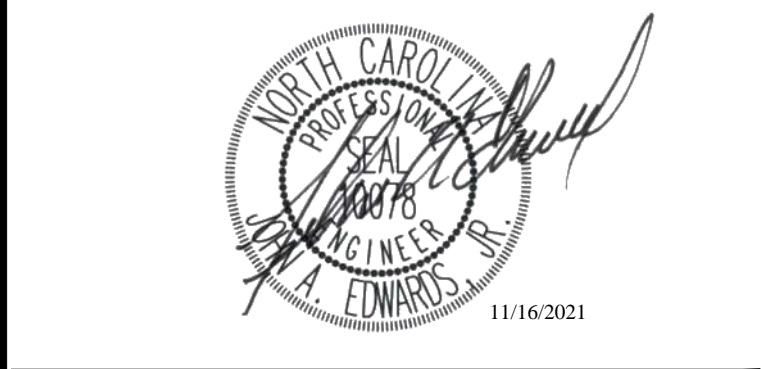
# TRANSPORTATION



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LEGEND

**NEW ENTRANCES ON EXISTING PUBLIC SIDEWALKS WITH STEEP SLOPES**  
NTS

**NOTES:**  
1. RAMP TO TIE INTO EX. SIDEWALK. RAMP LENGTH CAN BE LESS THAN 15' WITH MAX. SLOPE OF 1:12 IF RAMP SLOPE EXCEEDS 1:12. RAMP LENGTH TO BE 15'.  
2. LANDING LENGTH TO BE MIN. 5'.  
3. CROSS-SLOPE SHALL BE 2% MAX.

**CONCRETE FLUME**  
NTS

**Base Course Depth Recommendations**  
GRASSPAVE2 and GRAVELPAVE2

	Normal Traffic		Occasional Passes		Infrequent Passes	
	CBR 2-4	CBR >4	CBR 2-4	CBR >4	CBR 2-4	CBR >4
Heavy Fire Truck & H-20 Loading Max 110 psi Typical 60 psi 60,000 lb	14 in	12-14 in	12-14 in	12 in	12 in	10-12 in
Light Fire Truck & H-15 Loading Typical 85 psi 60,000 lb	12 in	10-12 in	10 in	8-10 in	8-10 in	8 in
Utility & Delivery Truck & H-10 Loading Typical 60 psi 40,000 lb	8-10 in	8 in	8-10 in	6-8 in	6-8 in	6 in
Cars & Pick-up Truck Access Typical 45 psi 10,000 lb	6-8 in	6 in	6 in	4-6 in	4-6 in	2-4 in
Trail Use and Cart Paths <1,000 lb	6 in	4-6 in	2-4 in	0-2 in	None	None

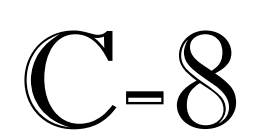
\* THESE DEPTH RECOMMENDATIONS SHOULD BE VERIFIED BY THE PROJECT ENGINEER AND LOCAL AUTHORITIES

**NOTE:**  
ALL PAVEMENT STRIPING TO BE THERMOPLASTIC.

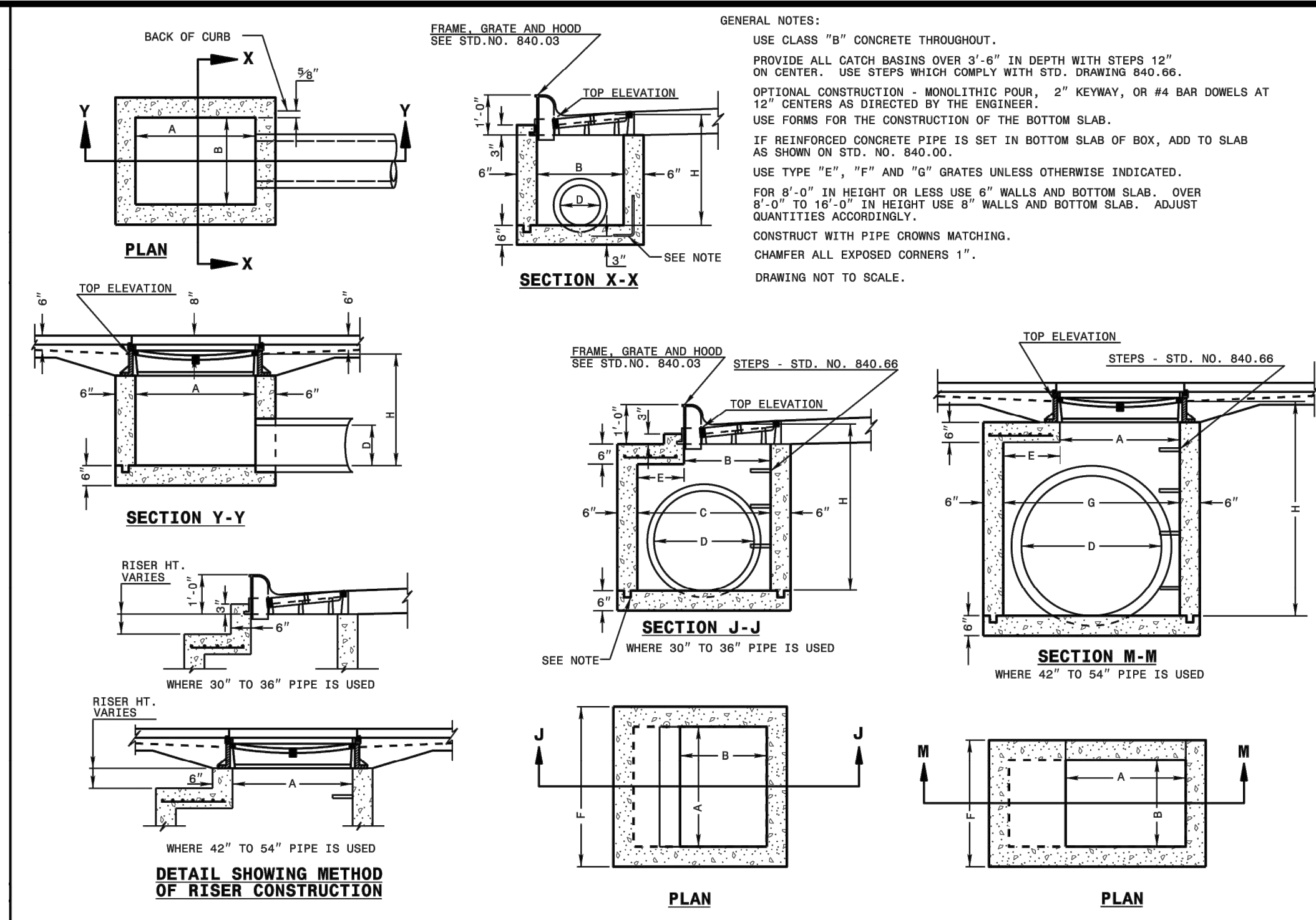
**SITE DETAILS**

Revisions	Number	Description	Date
	4	PERMIT SET	07/08/21
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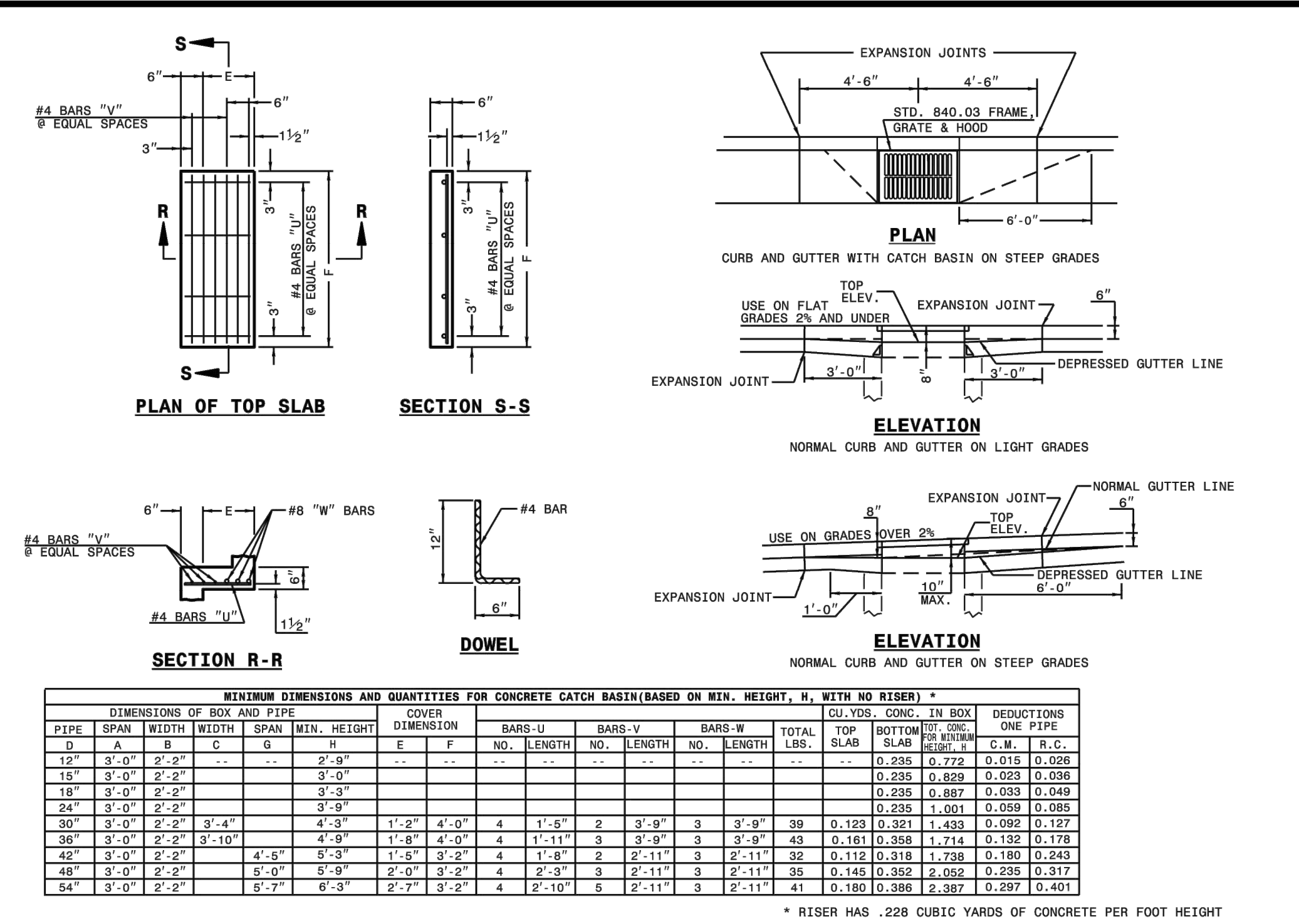
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DRAWING SCALE: N/A  
DRAWN BY: TT  
CHECKED BY: JAE, JR  
DATE ISSUED: 12/10/2020



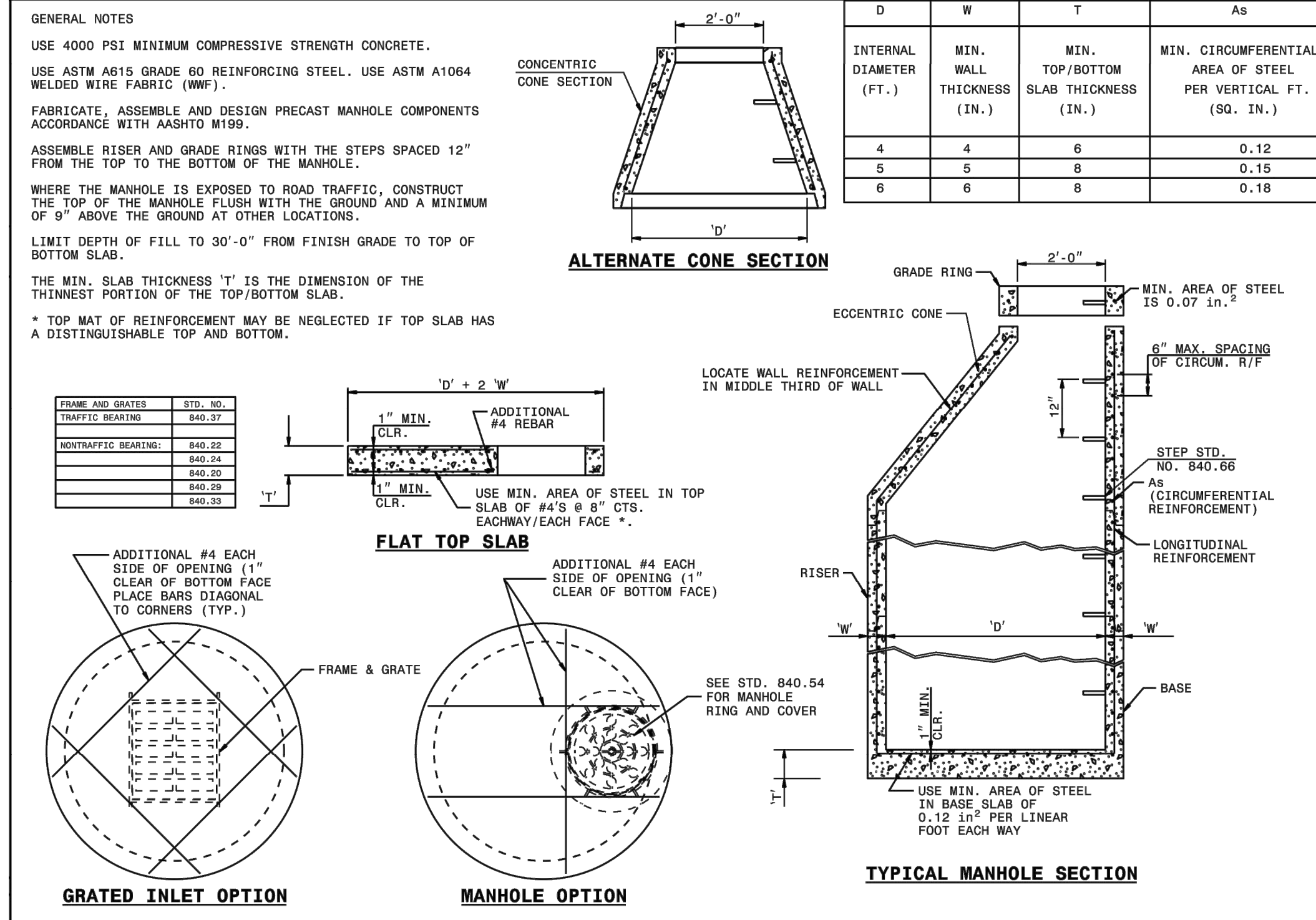




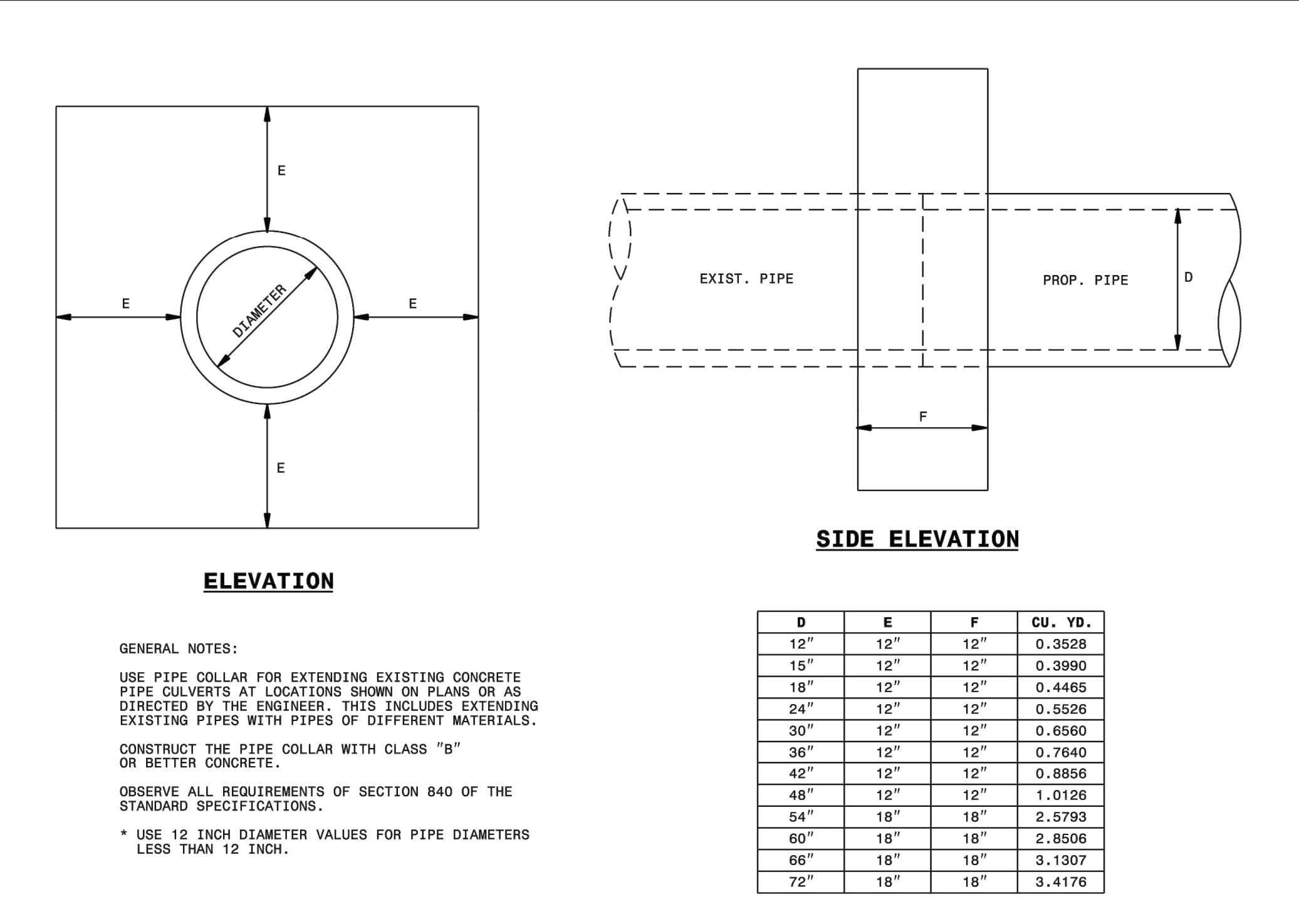
1-1-B STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.  
 ROADWAY STANDARD DRAWING FOR CONCRETE CATCH BASIN 12" THRU 54" PIPE  
 SHEET 1 OF 2  
 840.02



1-1-B STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.  
 ROADWAY STANDARD DRAWING FOR CONCRETE CATCH BASIN 12" THRU 54" PIPE  
 SHEET 2 OF 2  
 840.02



1-1-B STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.  
 ROADWAY STANDARD DRAWING FOR PRECAST MANHOLE 4', 5' AND 6' DIAMETER 12" THRU 48" PIPE  
 SHEET 1 OF 1  
 840.52



1-1-B STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.  
 ROADWAY STANDARD DRAWING FOR PIPE COLLAR  
 SHEET 1 OF 1  
 840.72

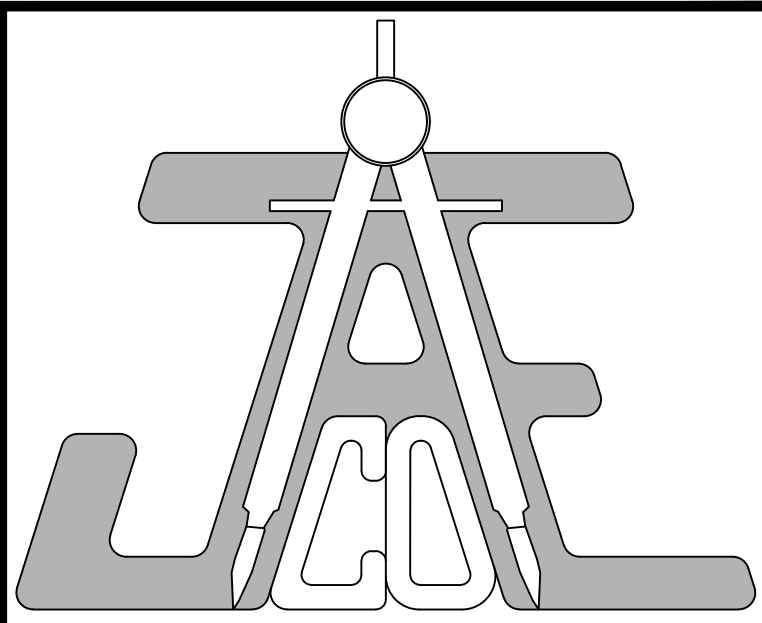


1-1-B STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.  
 ROADWAY STANDARD DRAWING FOR PIPE COLLAR  
 SHEET 1 OF 1  
 840.72

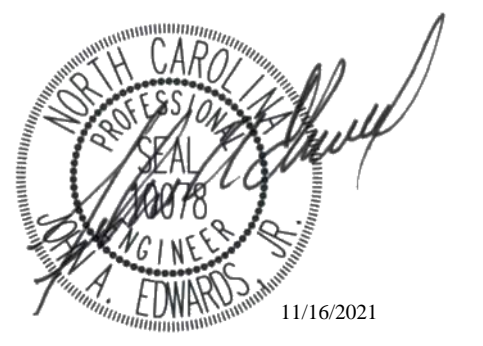
**LEGEND**

Number	Description	Date
4	PERMIT SET	07/08/21
5	PER TRC COMMENTS	09/14/21
6	LAYOUT REVISION & POST-APPROVAL COMMENTS	10/28/21
7	ADDITIONAL POST-APPROVAL COMMENTS	11/02/21
8	POST-APPROVAL COMMENTS	11/16/21

JAECO # 087-01  
 DRAWING SCALE: N/A  
 DRAWN BY: TT  
 CHECKED BY: JAE, JR  
 DATE ISSUED: 12/10/2020



**JAECO**  
 Consulting Engineers and Land Surveyors  
 NC License F-0289  
 333 Wade Ave., Raleigh, N.C. 27605  
 Phone: (919) 828-4428  
 Fax: (919) 828-4711  
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 www.jaeco.com

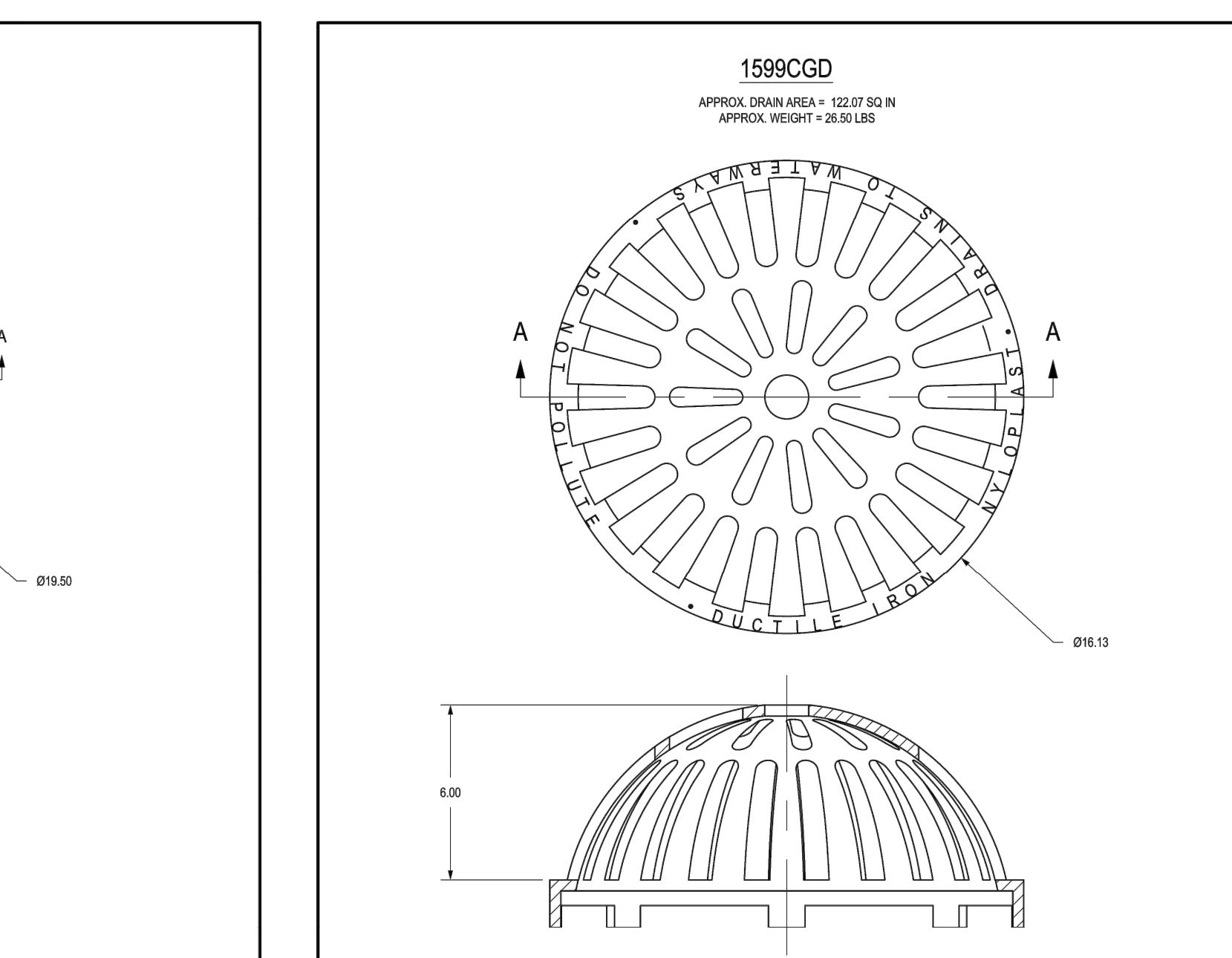
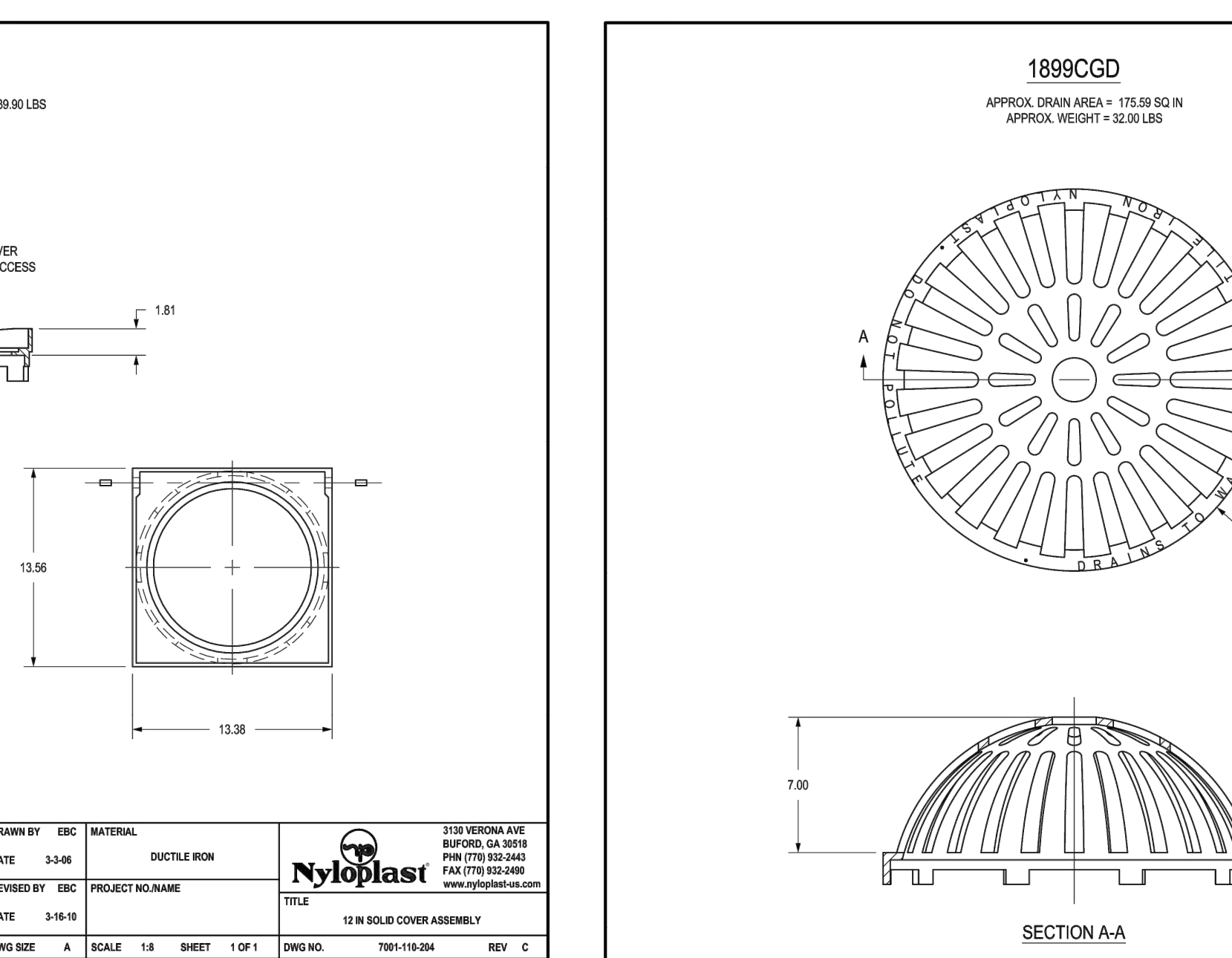
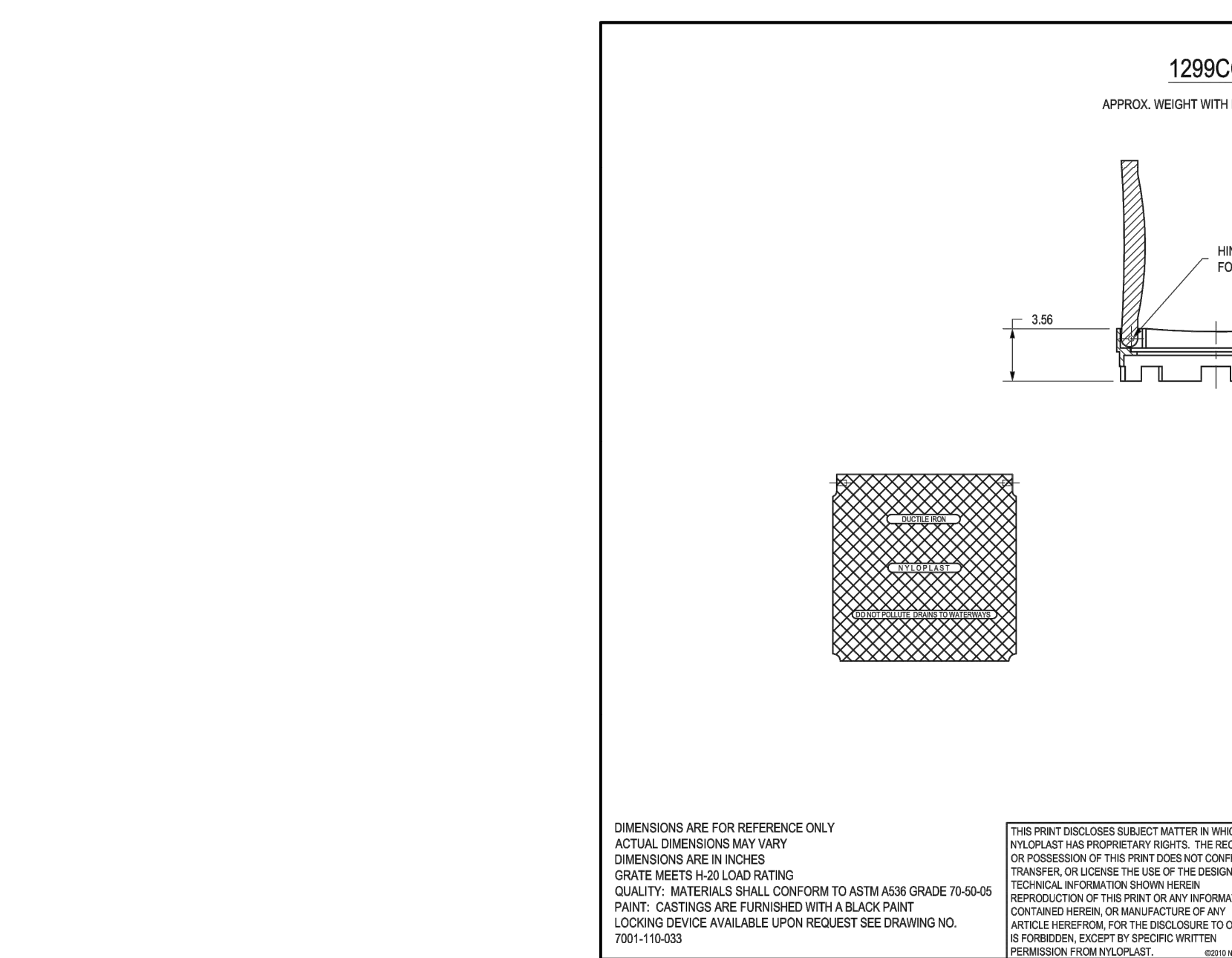
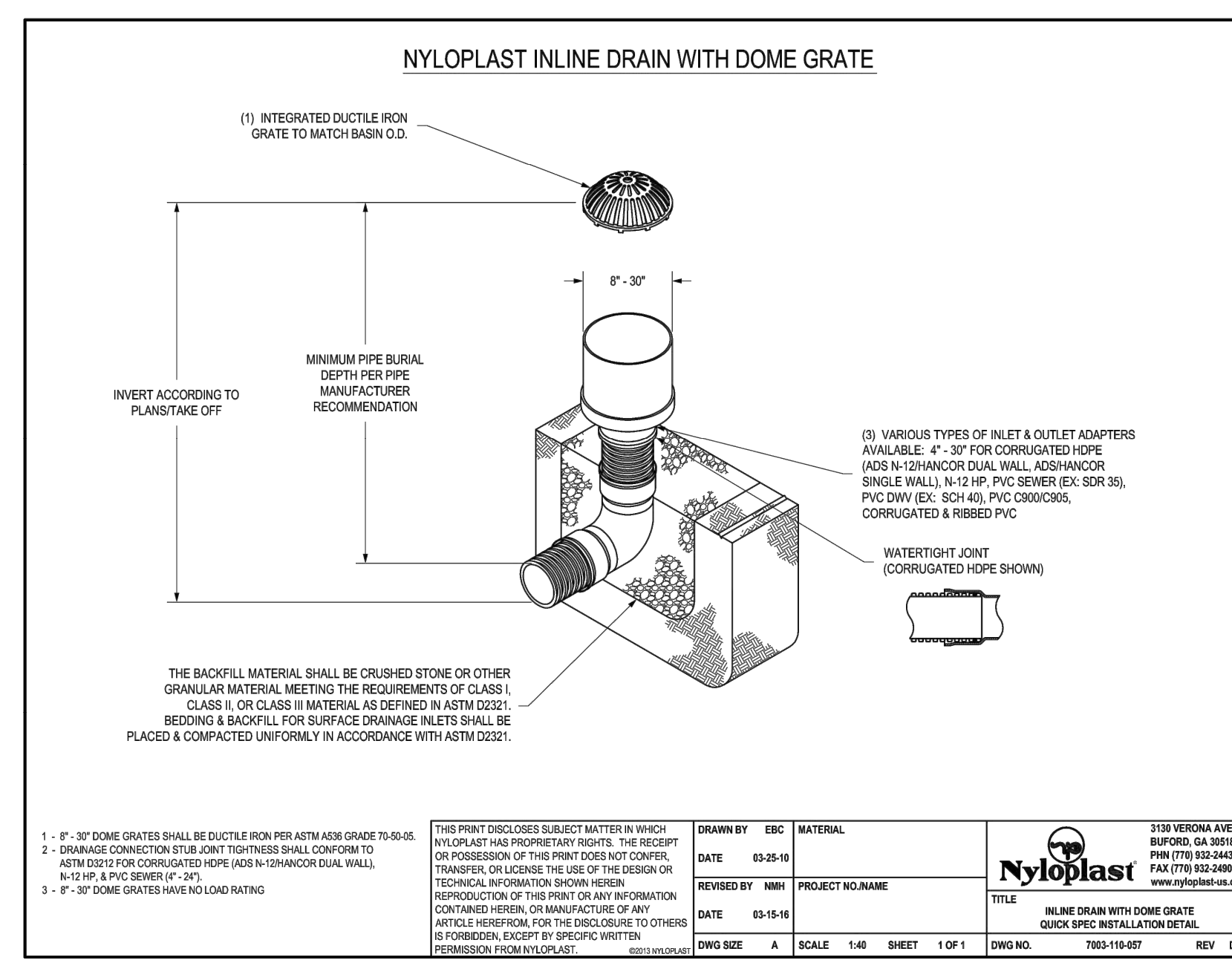
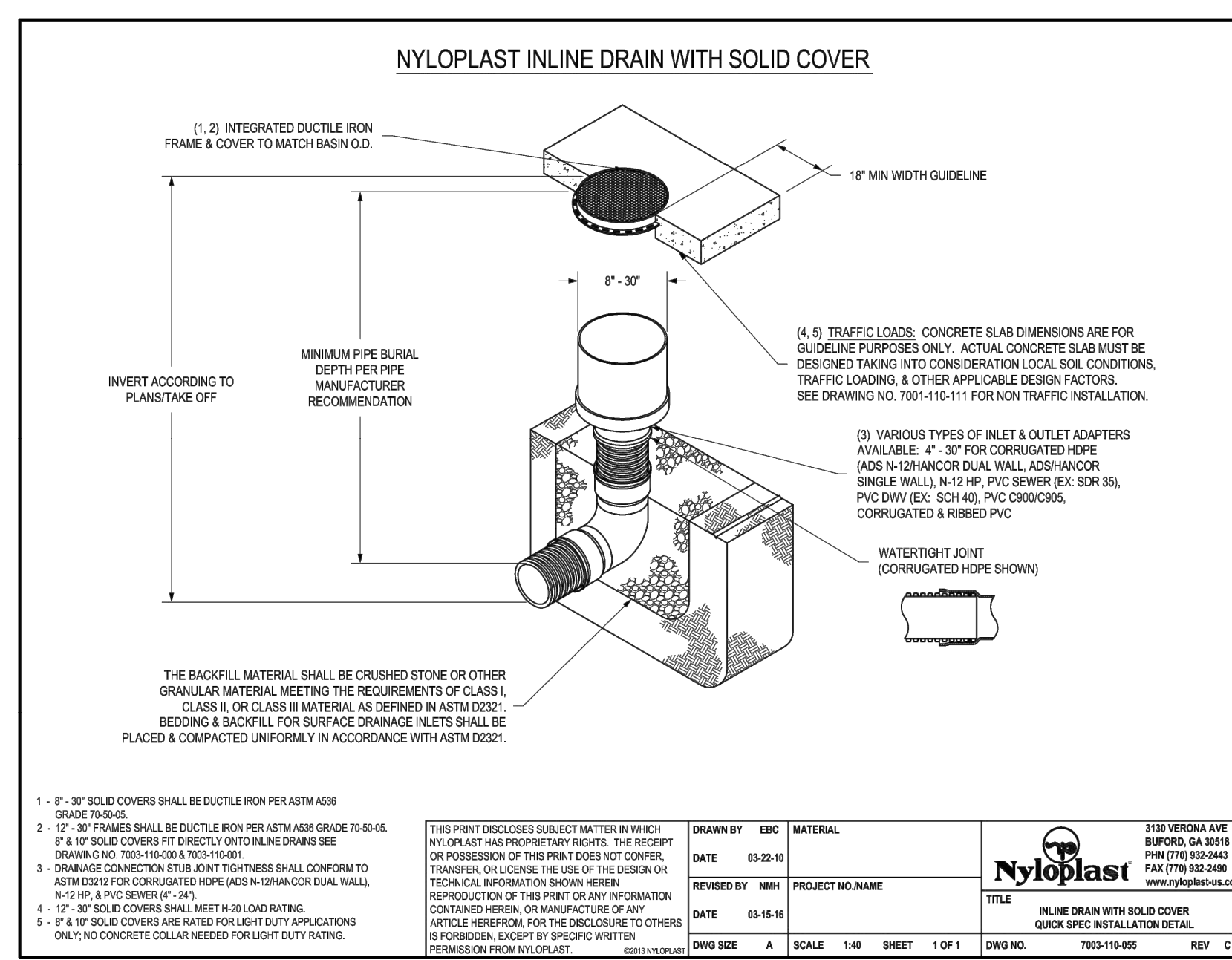
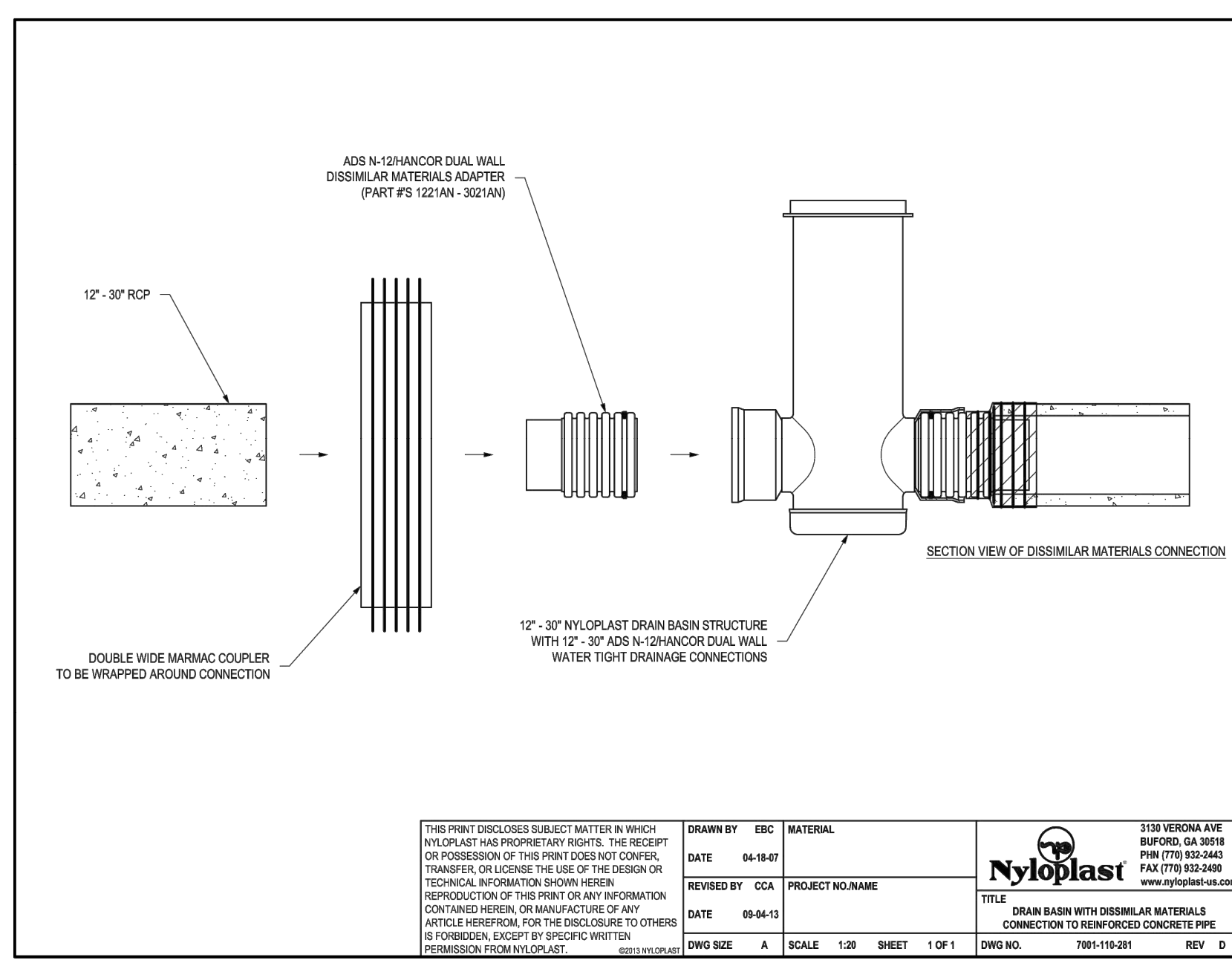
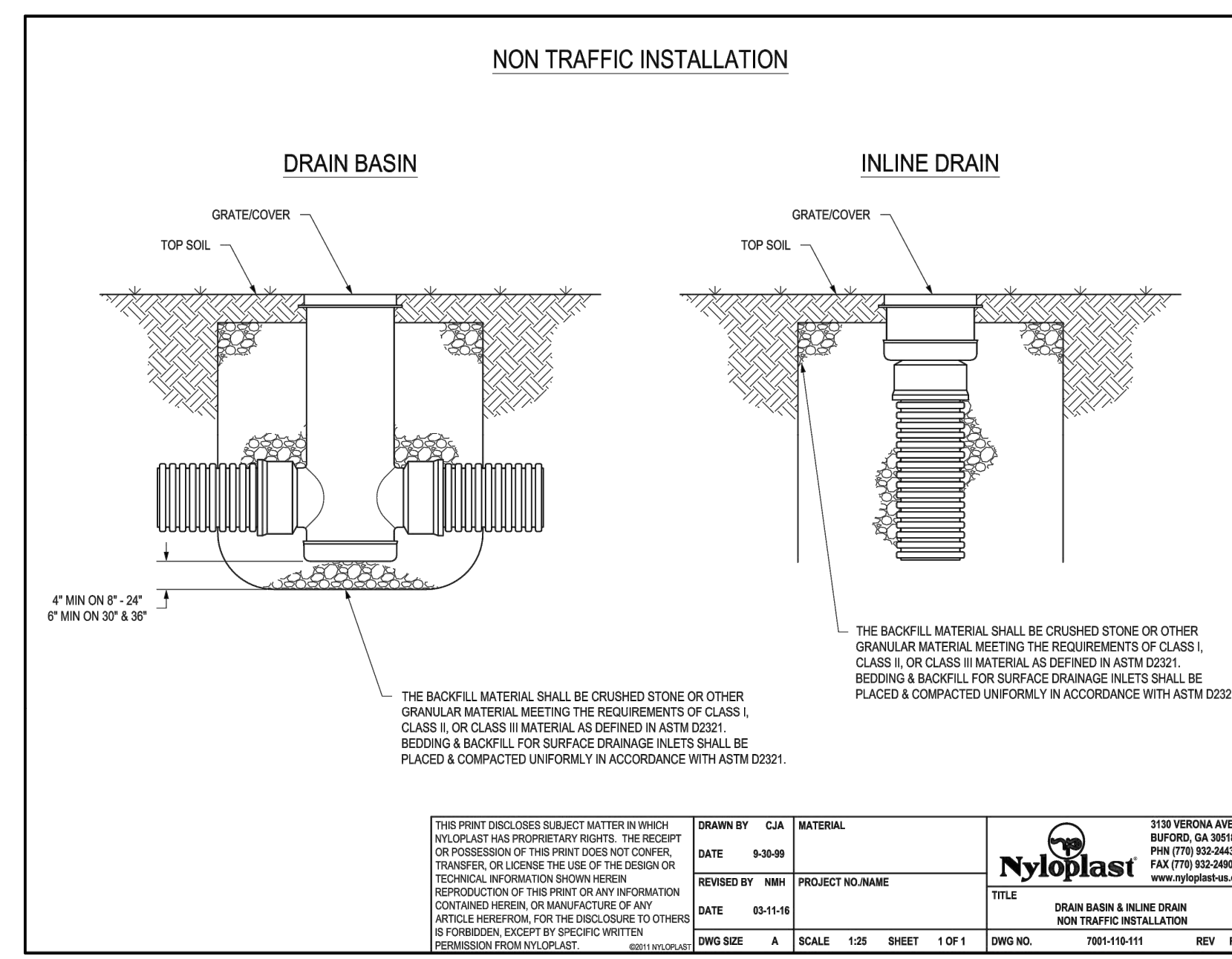
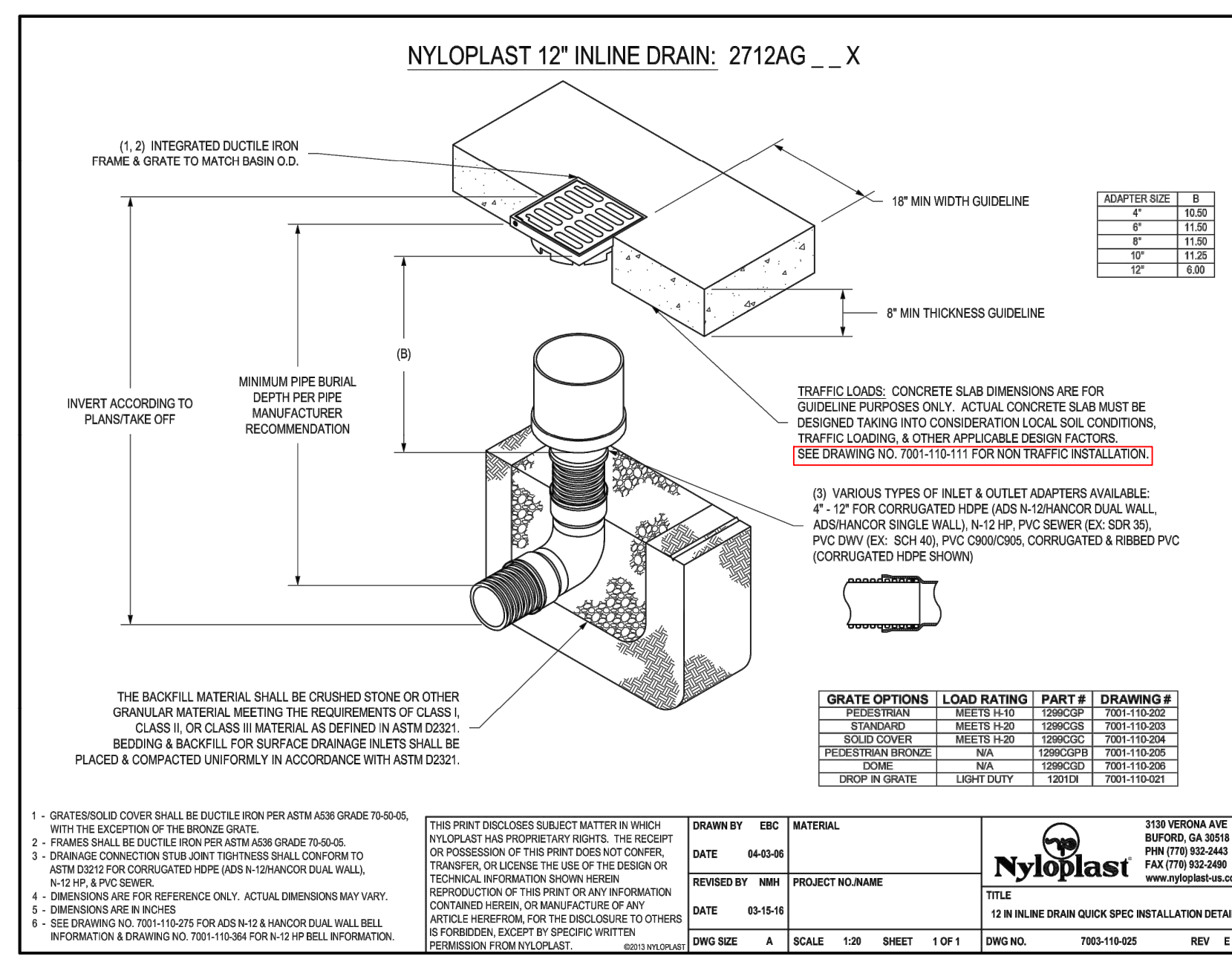
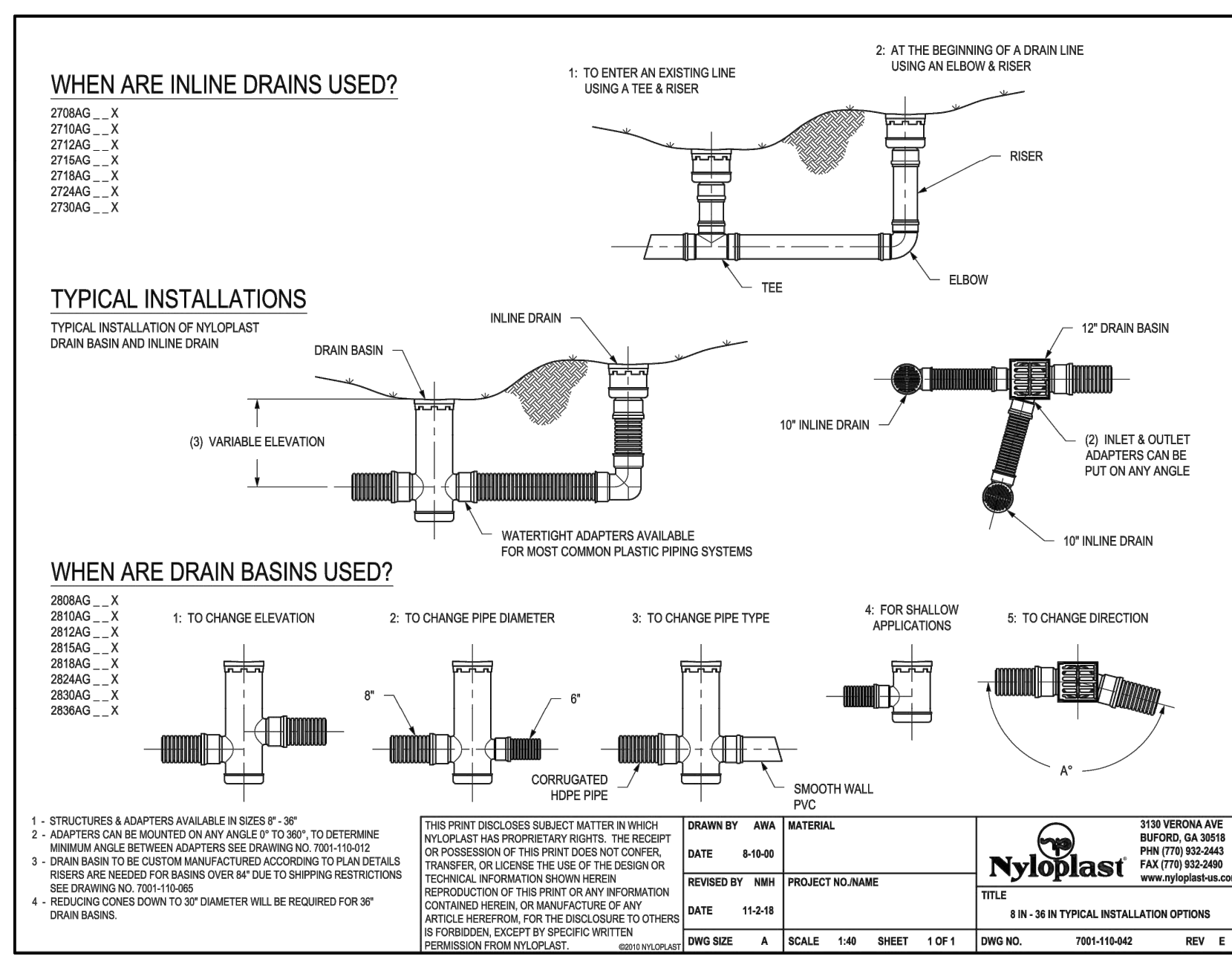


Carolina Legacy Volleyball  
 640, 641, & 671 Granite Vista Drive  
 Rolesville, NC 27571

All Purpose Driven, LLC  
 6027 Clapton Drive  
 Wake Forest, NC 27587

**Call 811 before you dig.**





Number	Description	Date
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11/16/2021

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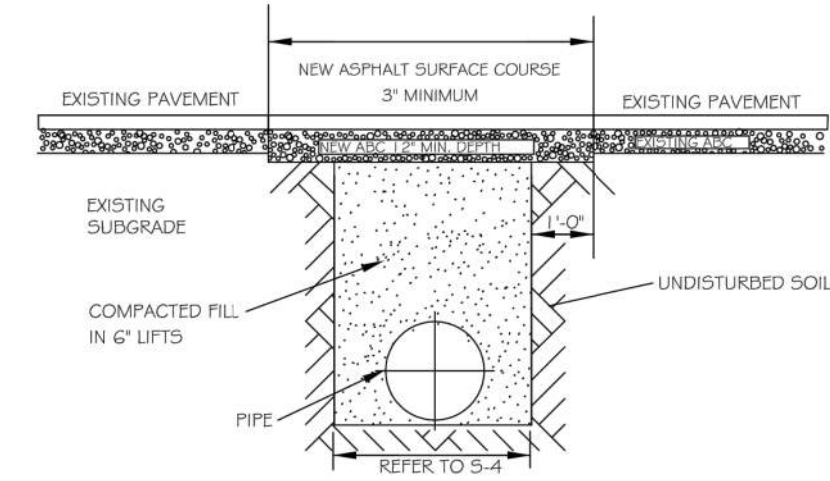
LEGEND

### INLINE DRAIN DETAILS

Number	Description	Date
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5	PER TRC COMMENTS	09/14/21
6	LAYOUT REVISION & POST-APPROVAL COMMENTS	10/28/21
7	ADDITIONAL POST-APPROVAL COMMENTS	11/02/21
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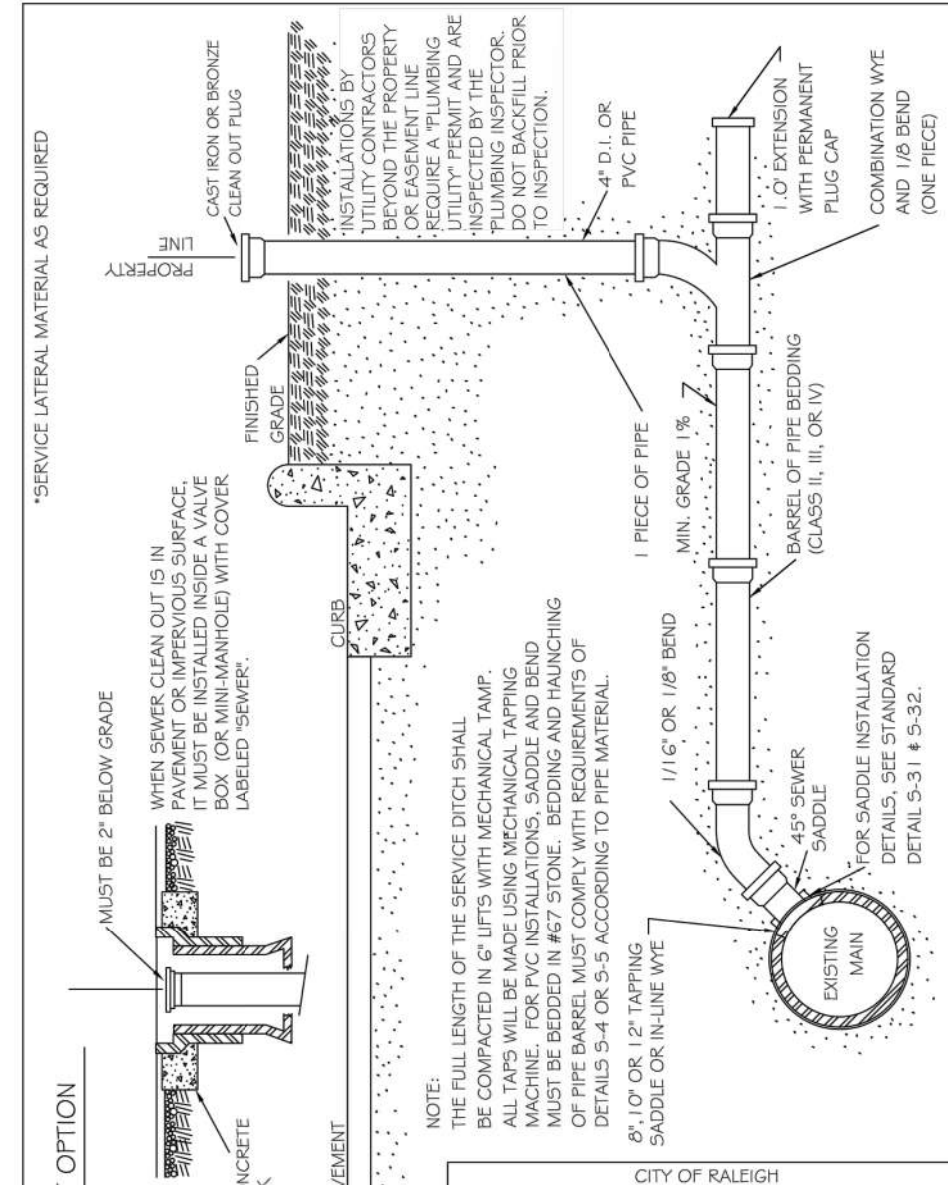
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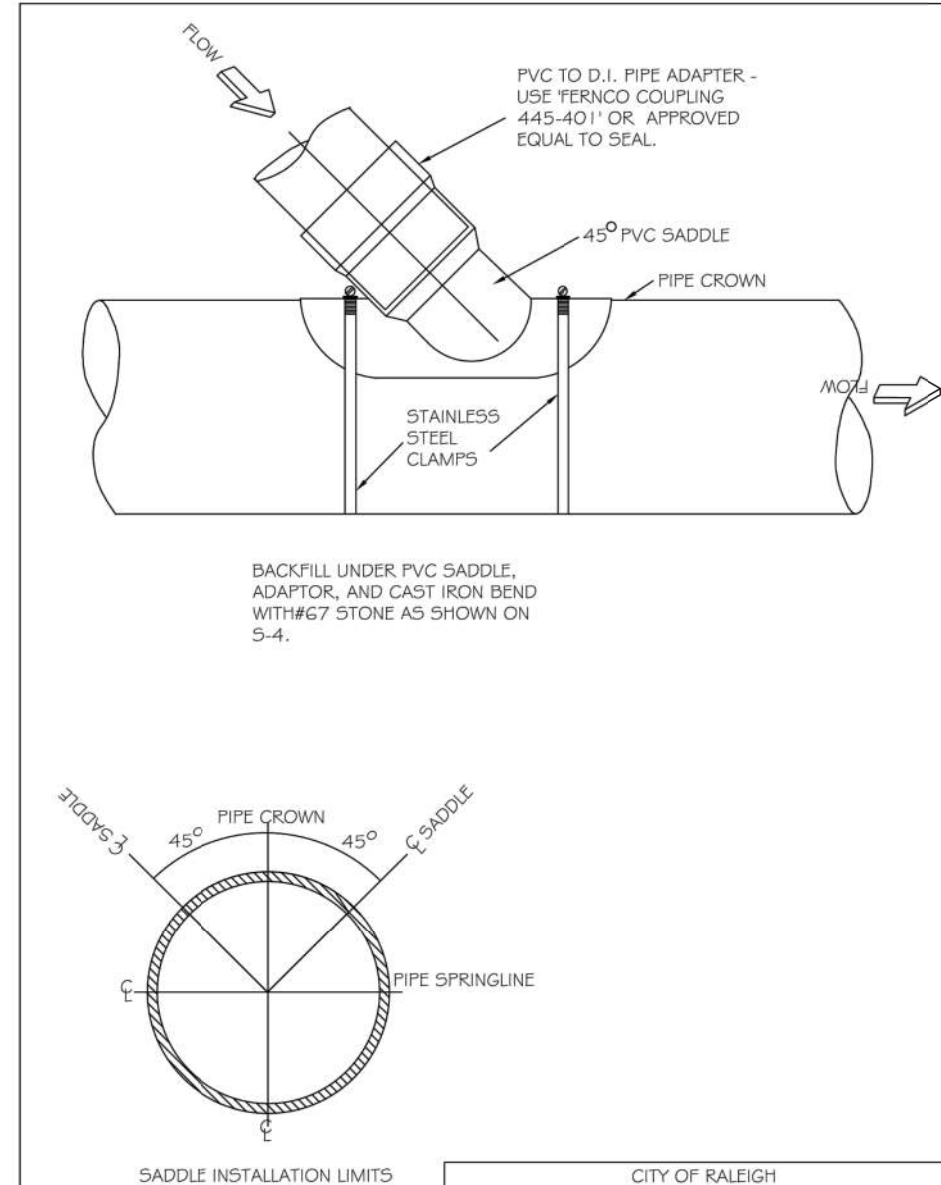


- NOTES:
1. IN NCDOT MAINTAINED ROADWAYS ENCROACHMENT PAVEMENT PATCH REQUIREMENTS SHALL TAKE PRECEDENCE.
  2. THE PAVEMENT CUT SHALL BE DEFINED BY A STRAIGHT EDGE AND CUT WITH AN APPROPRIATE SAWCUT MACHINE.
  3. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO A DENSITY OF AT LEAST 98% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NCDOT.
  4. THE FINAL 1" OF FILL SHALL CONSIST OF ABC MATERIAL COMPACTED TO A DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NCDOT.
  5. THE ENTIRE THICKNESS AND VERTICAL EDGE OF CUT SHALL BE TACKED.
  6. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN 3" THICK.
  7. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY WITH A SMOOTH DRUM ROLLER TO ACHIEVE A SMOOTH LEVEL PATCH.
  8. REFER TO CITY OF RALEIGH STANDARDS FOR TRENCHES AND PIPE BEDDING (S-4 & S-5) FOR ADDITIONAL DETAILS.
  9. NO HAND PATCHING ALLOWED.
  10. PAVEMENT CUTS WITHIN NCDOT ROW SHALL CONFORM TO THE APPROVED ON SITE ENCROACHMENT PERMIT.

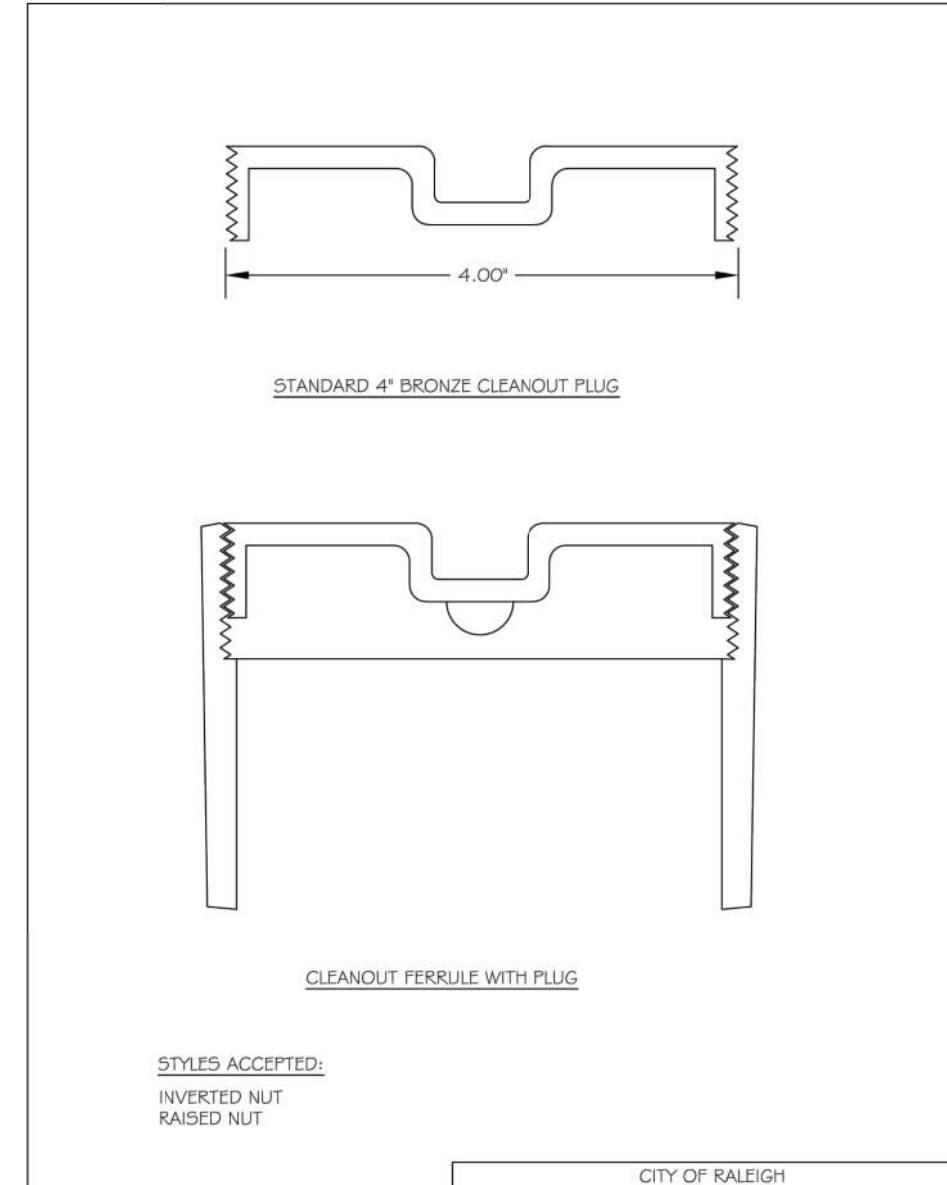
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DEPARTMENT OF PUBLIC UTILITIES			
STANDARD ASPHALT PAVEMENT PATCH DETAIL			
DWG. NO.	REVISIONS	DATE	DATE
5-3	RRH	1-11-99	A.B.B.
		3-30-00	J.P.S.
			1-18-04
			1-2-10



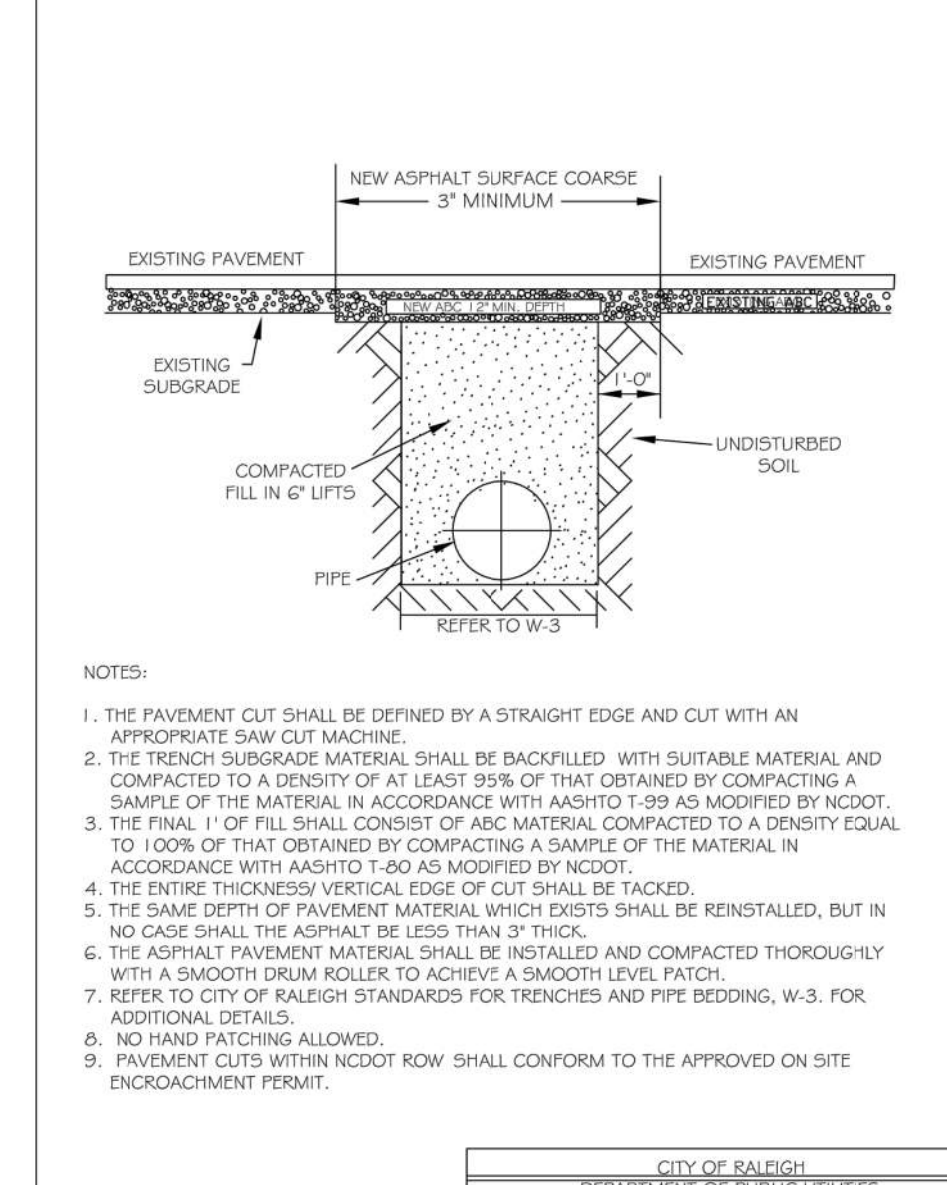
CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
TYPICAL SANITARY SEWER LATERAL CONNECTION			
DWG. NO.	REVISIONS	DATE	DATE
5-30	RRH	6-29-99	A.B.B.
		3-30-00	D.J.L.
			4-8-04
			6-16-08



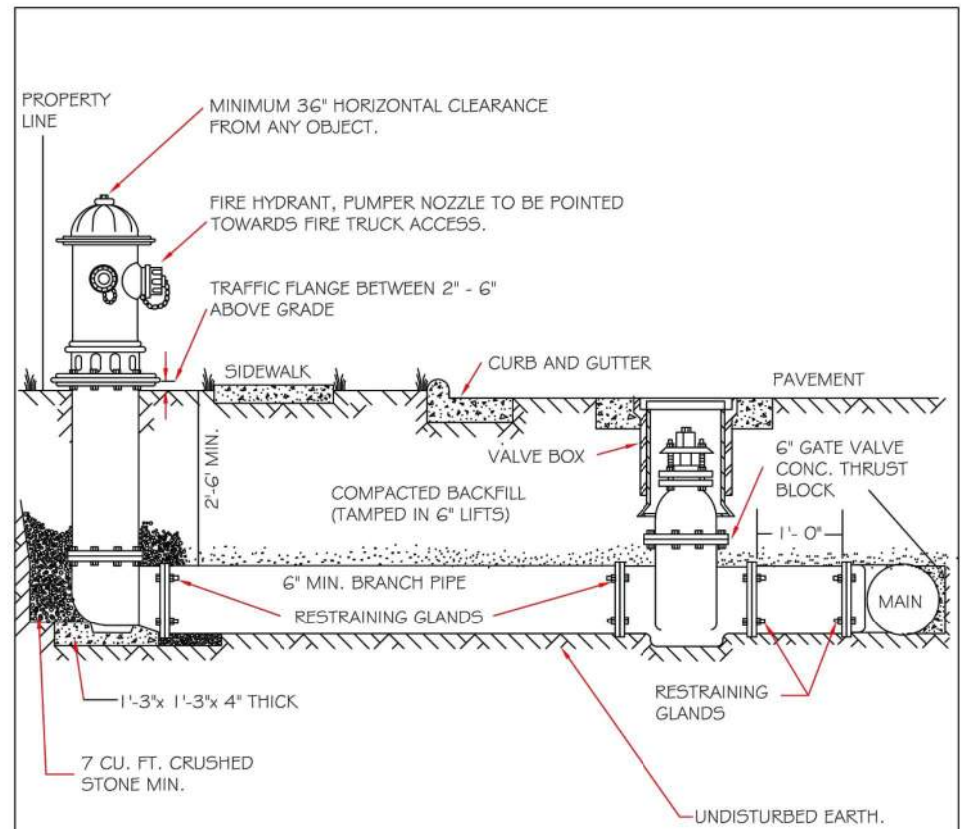
CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
LATERAL SADDLE INSTALLATION DETAIL FOR PVC PIPE			
DWG. NO.	REVISIONS	DATE	DATE
5-31	RRH	3-1-97	A.B.B.
		3-30-00	J.P.S.
			1-18-04
			1-2-10



CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
4" CLEANOUT PLUG			
DWG. NO.	REVISIONS	DATE	DATE
5-34	D.W.C.	3-27-98	J.P.S.
			3-30-00

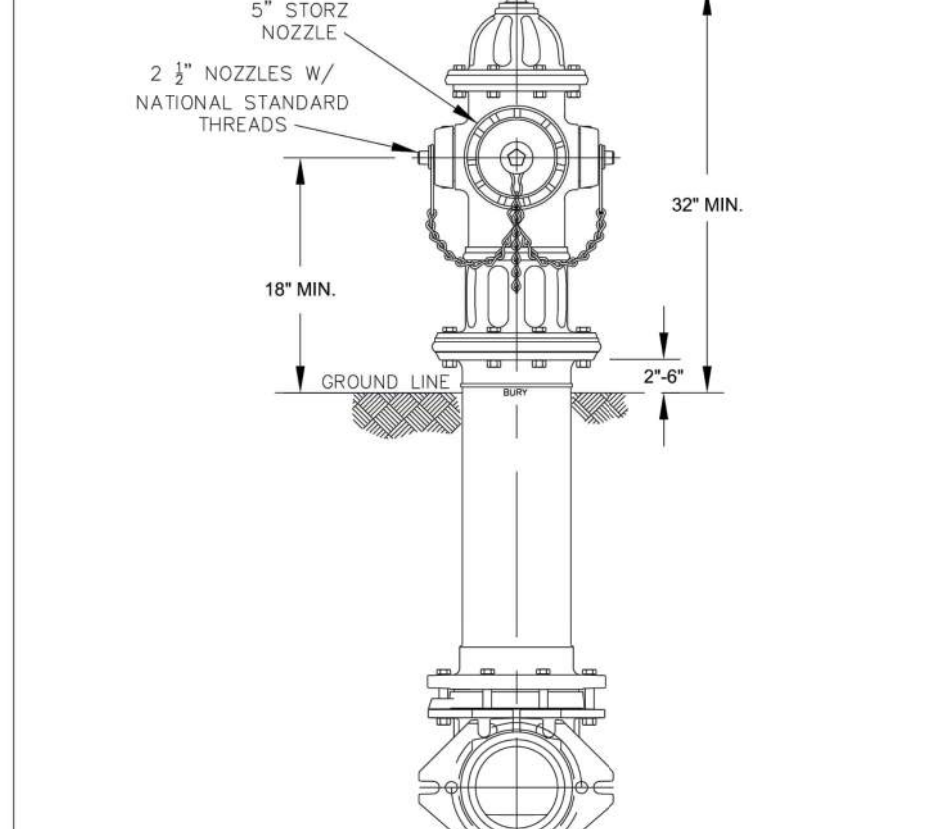


CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
STANDARD ASPHALT PAVEMENT PATCH DETAIL			
DWG. NO.	REVISIONS	DATE	DATE
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		1-1-99	J.P.S.
			4-16-04
			10-29-10



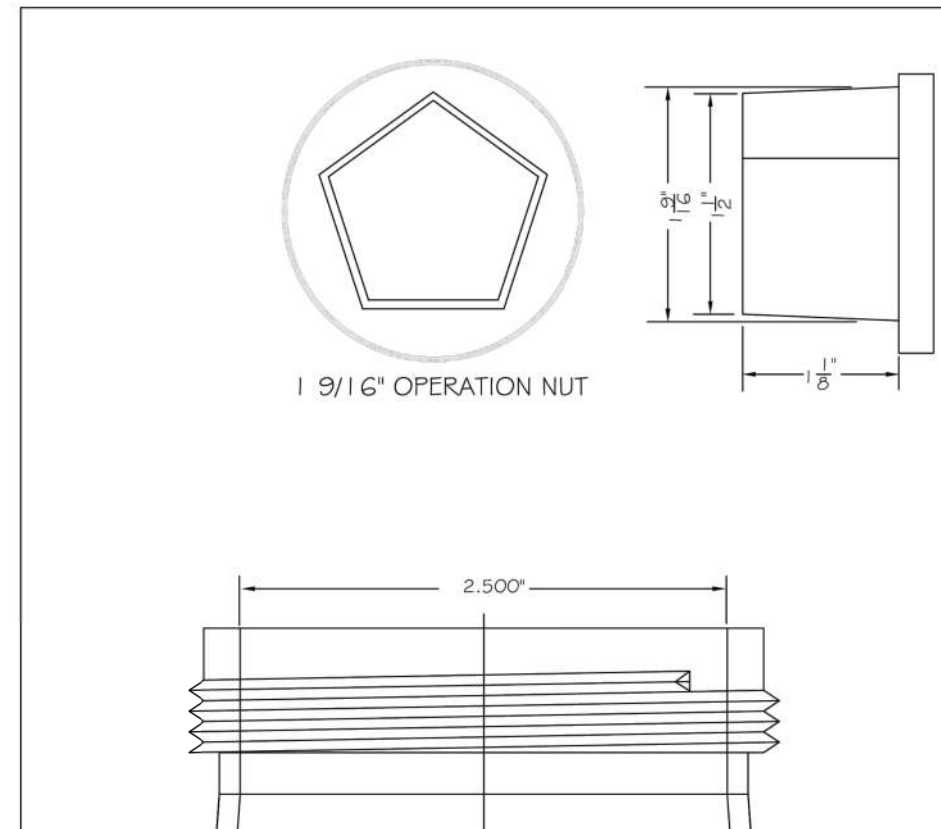
- NOTES:
1. FIRE HYDRANT SHALL BE AS MANUFACTURED: MUELLER, AMERICAN DARLING, KENNEDY, MHI, WATERLOO, CLOW, EAST JORDAN IRON WORKS, OR US PIPE.
  2. BRANCH PIPE SHALL BE DUCTILE IRON ANWIA C150-S9.
  3. 6" GATE VALVE SHALL BE ANWIA C500-S6 OPEN LEFT.
  4. STEEL BOLTS AND NUTS SHALL BE 3" HOT DIP GALVANIZED.
  5. FIRE HYDRANTS WILL BE INSTALLED IN TRUE VERTICAL POSITION.
  6. ROSS SHALL NOT BE MORE THAN 10" FROM VALVE TO THE HYDRANT EXCEPTS 20" THEN A MECHANICAL RESTRAINING GLAND WITH A REBAR CAGE SHALL BE INSTALLED NO MORE THAN 10" FROM HYDRANT AND POURED IN CONCRETE.
  7. FIRE HYDRANTS TO BE LOCATED IN ROW OR 2 FOOT EASEMENT ADJACENT TO ROW.

CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
STANDARD FIRE HYDRANT INSTALLATION DETAIL			
DWG. NO.	REVISIONS	DATE	DATE
W-4	RRH	4-4-04	A.B.B.
		9-14-08	J.P.S.
			3-7-10

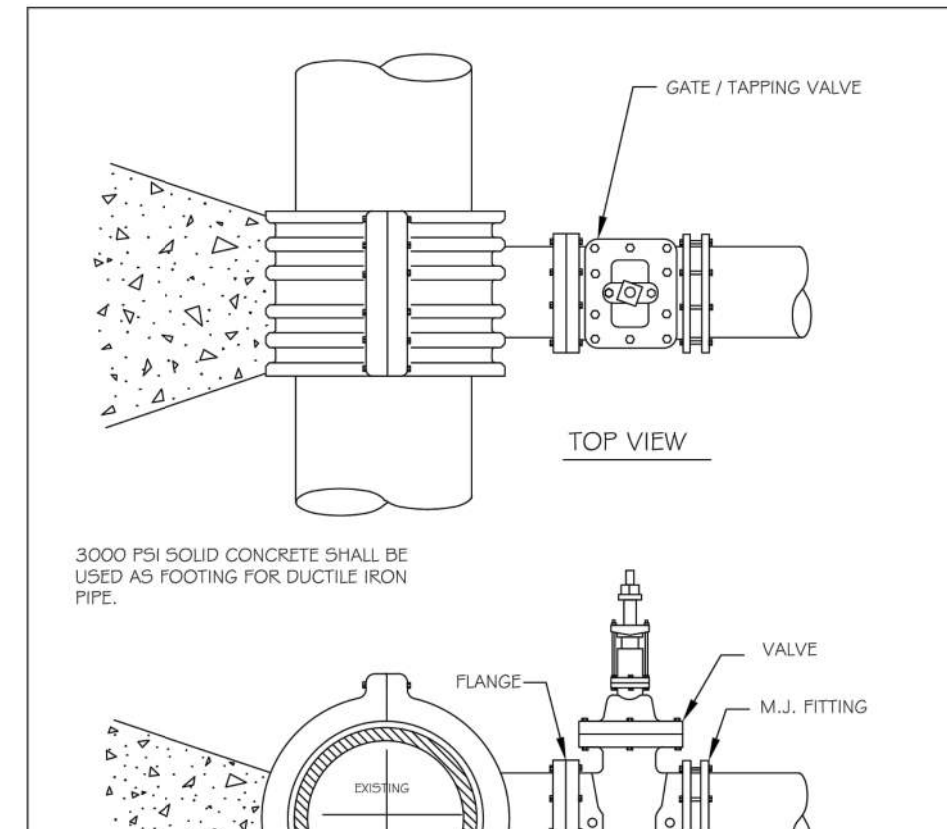


- NOTES:
1. ALL PUBLIC FIRE HYDRANTS IN THE CITY OF RALEIGH AND THE MERGER TOWNS OF GARNER, ROLESVILLE, WAKE FOREST, KNIGHTDALE, WENDELL AND ZEBULON SHALL BE PAINTED CHROME YELLOW WITH HIGH REFLECTIVE ALUMINUM SILVER CAPS, BONNETS AND OPERATING NUTS.
  2. ALL PRIVATE FIRE HYDRANTS SHALL BE RED.

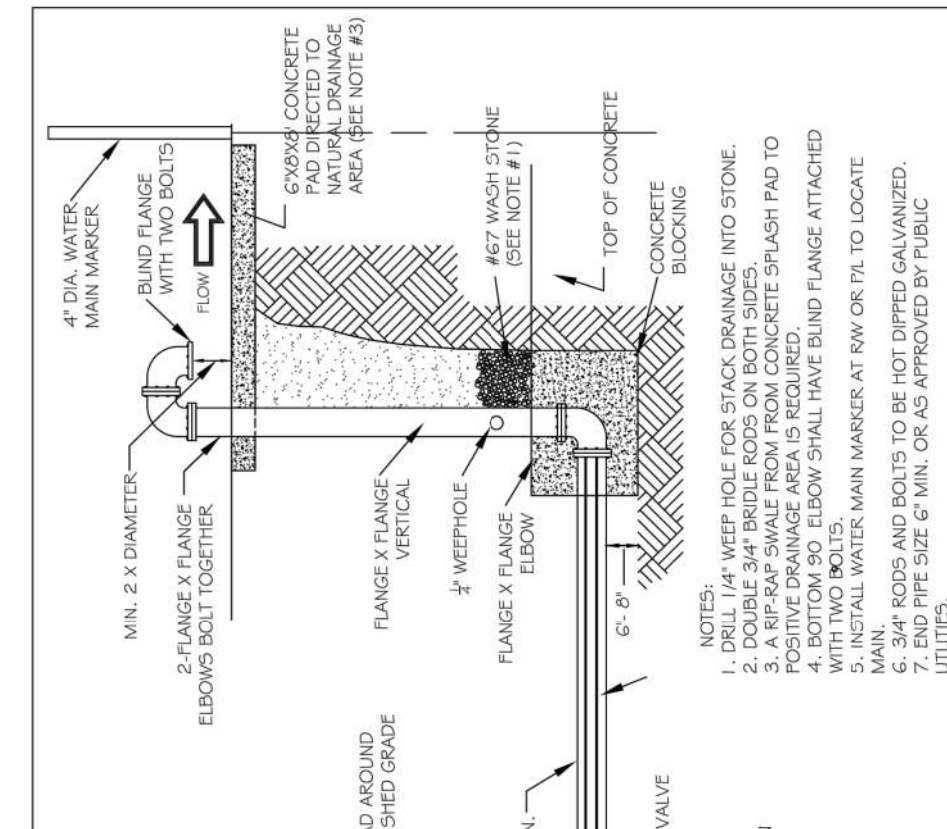
CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
STANDARD FIRE HYDRANT WITH 5" STORZ PUMP NOZZLE			
DWG. NO.	REVISIONS	DATE	DATE
W-5	M.A.S.	8-30-16	A.B.B.
		9-15-17	J.P.S.



CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
HYDRANT OPERATING NUT AND 2 1/2" OUTLET THREADS			
DWG. NO.	REVISIONS	DATE	DATE
W-6	A.B.B.	3-31-00	A.B.B.
		4-13-04	J.P.S.
			11-1-10



CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
4" x 24" STANDARD TAPPING SLEEVE AND VALVE ASSEMBLY			
DWG. NO.	REVISIONS	DATE	DATE
W-14	Y.C.A.	2-21-97	RRH
		9-7-99	J.P.S.
			11-1-10



CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
PERMANENT WATER MAIN BLOW OFF ASSEMBLY			
DWG. NO.	REVISIONS	DATE	DATE
W-22	D.W.C.	1-22-99	RRH
		4-13-04	J.P.S.
			8-16-07



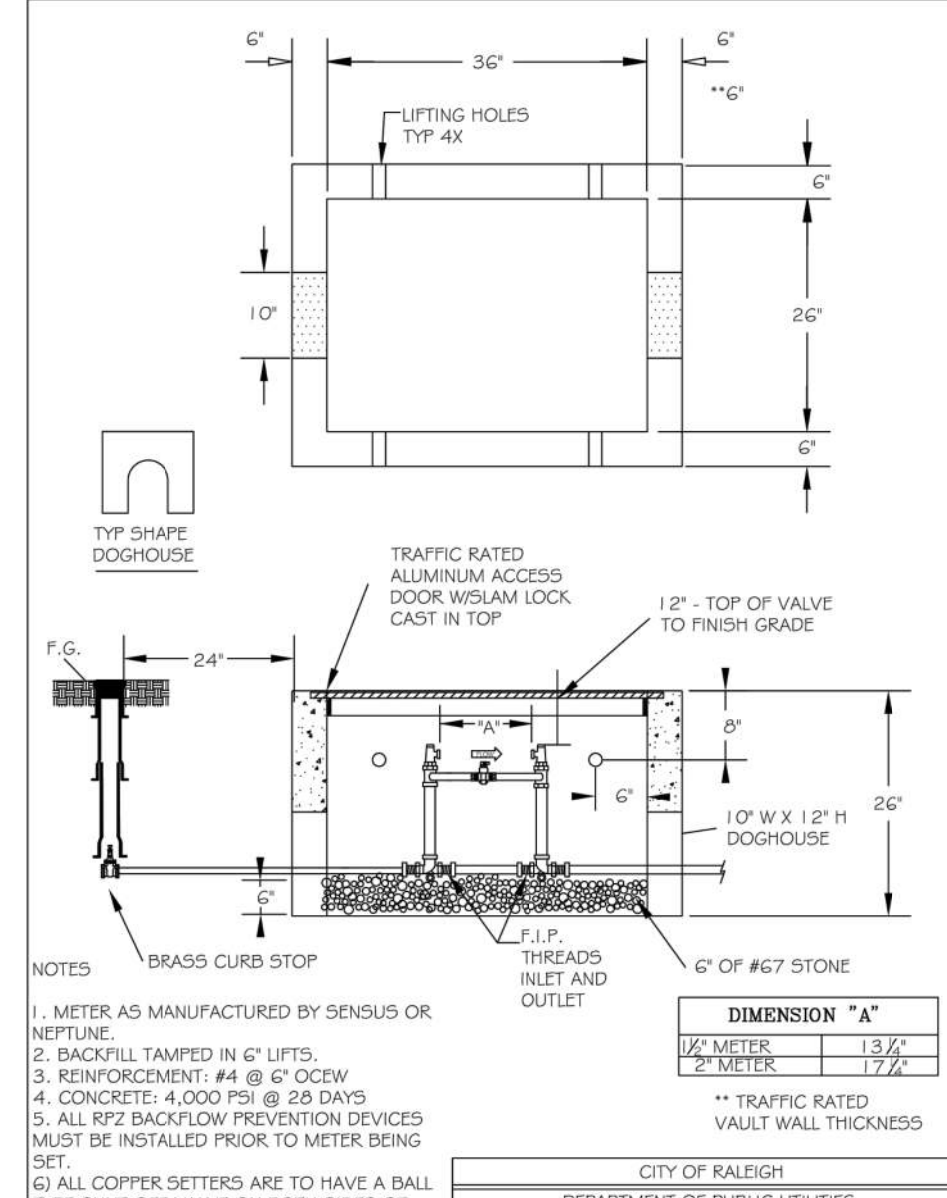
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DEPARTMENT OF PUBLIC UTILITIES			
TYPICAL 1 1/2" x 2" WATER METER BOX INSTALLATION			
DWG. NO.	REVISIONS	DATE	DATE
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		6-16-08	D.J.L.
			11-4-10



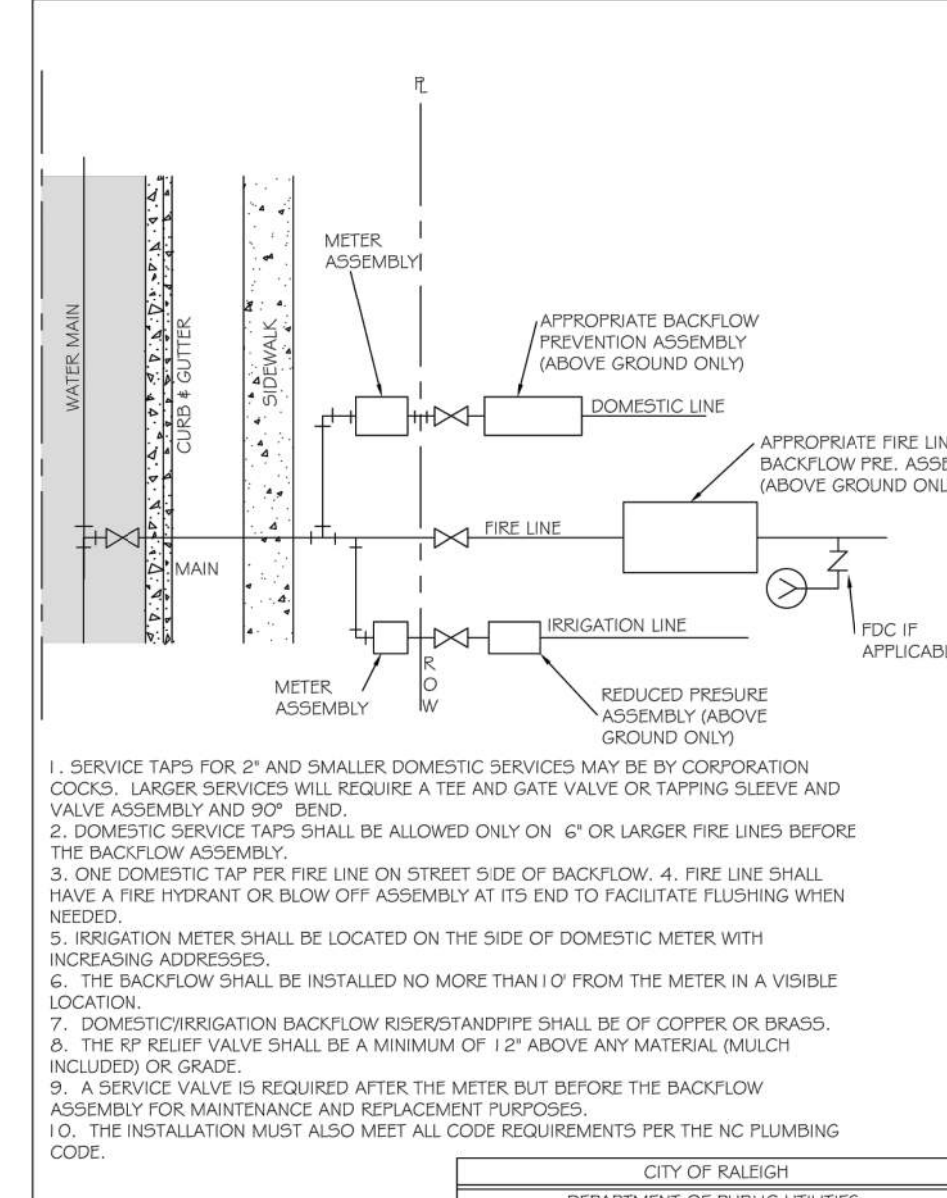
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DEPARTMENT OF PUBLIC UTILITIES			
FIRE LINE BACKFLOW PREVENTION ASSEMBLY			
DWG. NO.	REVISIONS	DATE	DATE
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		3-31-00	D.J.L.
			6-16-08



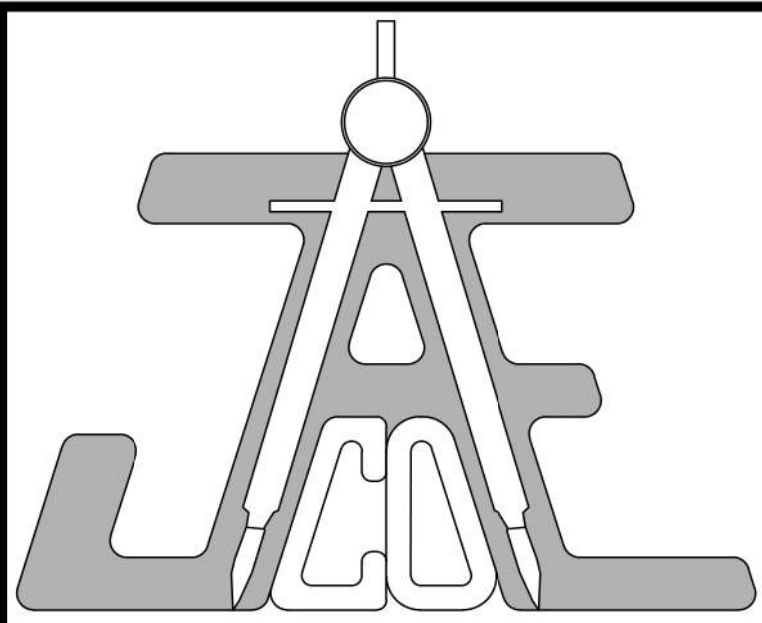
CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
TYPICAL 1 1/2" x 2" WATER METER BOX INSTALLATION			
DWG. NO.	REVISIONS	DATE	DATE
W-31	A.B.B.	8-17-04	J.P.S.
		6-16-08	D.J.L.
			11-4-10



CITY OF RALEIGH			
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FIRE LINE BACKFLOW PREVENTION ASSEMBLY			
DWG. NO.	REVISIONS	DATE	DATE
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		3-31-00	D.J.L.
			6-16-08



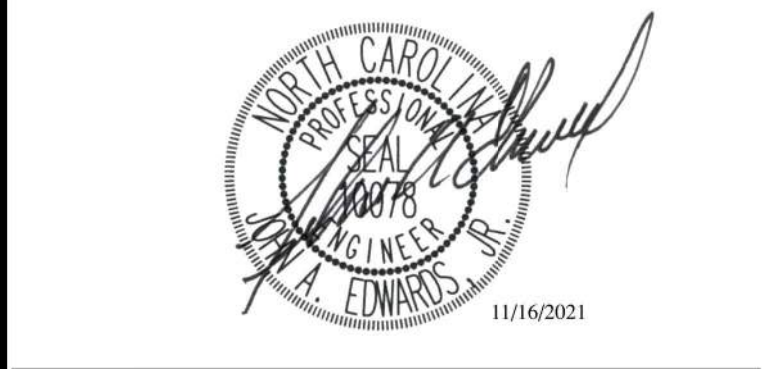
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DEPARTMENT OF PUBLIC UTILITIES			
FIRE LINE BACKFLOW PREVENTION ASSEMBLY			
DWG. NO.	REVISIONS	DATE	DATE
W-34	D.W.C.	1-18-99	A.B.B.
		3-31-00	D.J.L.
			6-16-08



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LEGEND

PLANS NOT APPROVED FOR CONSTRUCTION UNLESS SIGNED BY CITY OF RALEIGH  
CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Plans for the proposed use have been reviewed for general compliance with applicable codes. This limited review, and authorization for construction is not to be considered to represent total compliance with all legal requirements for development and construction. The property owner, design consultants, and contractors are each responsible for compliance with all applicable City, State and Federal laws. This specific authorization below is not a permit, nor shall it be construed to permit any violation of City, State or Federal Law. All Construction must be in accordance with all Local, State, and Federal Rules and Regulations. This approval of this electronic document is only valid if the document has not been modified and the digital signature below is valid.

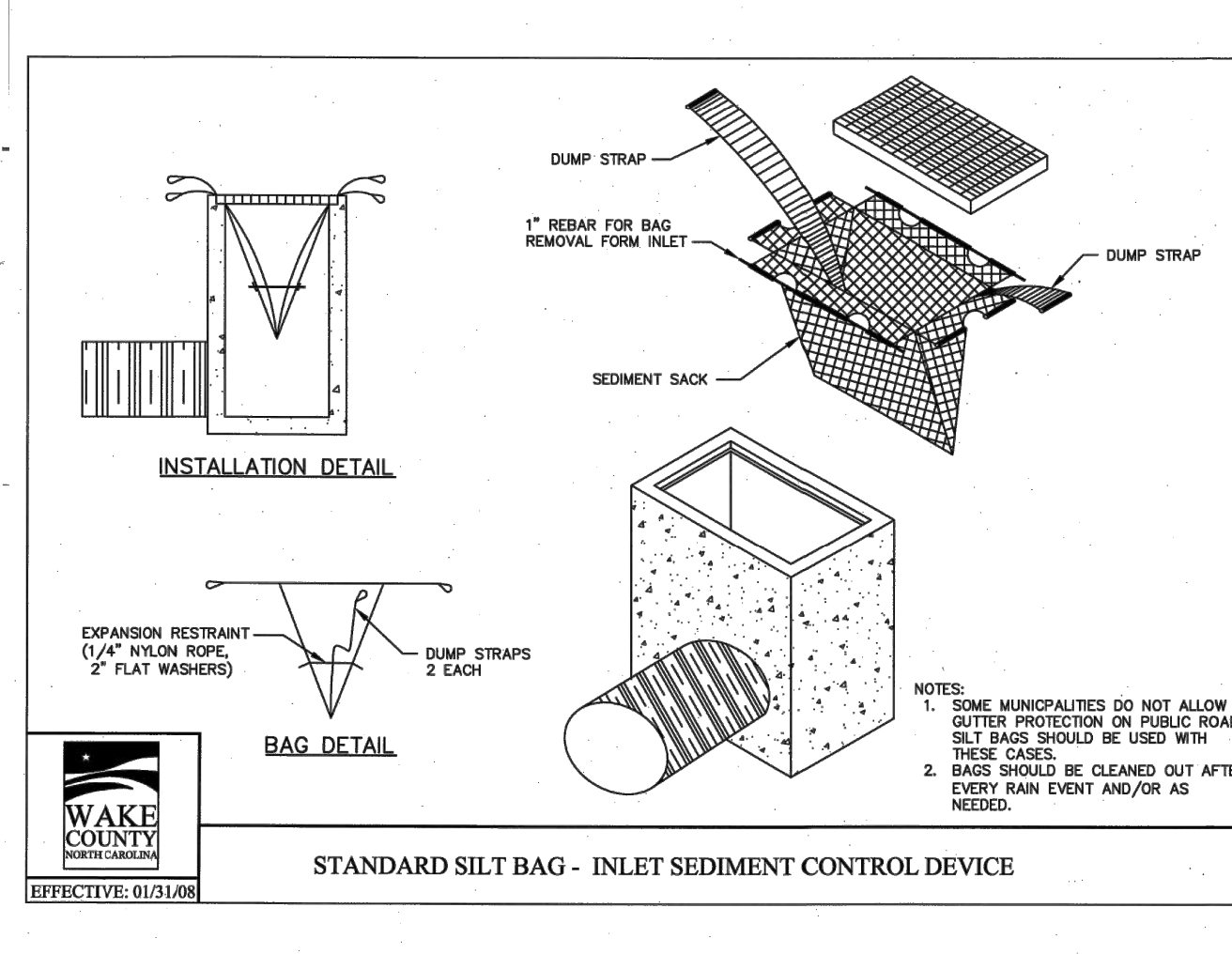
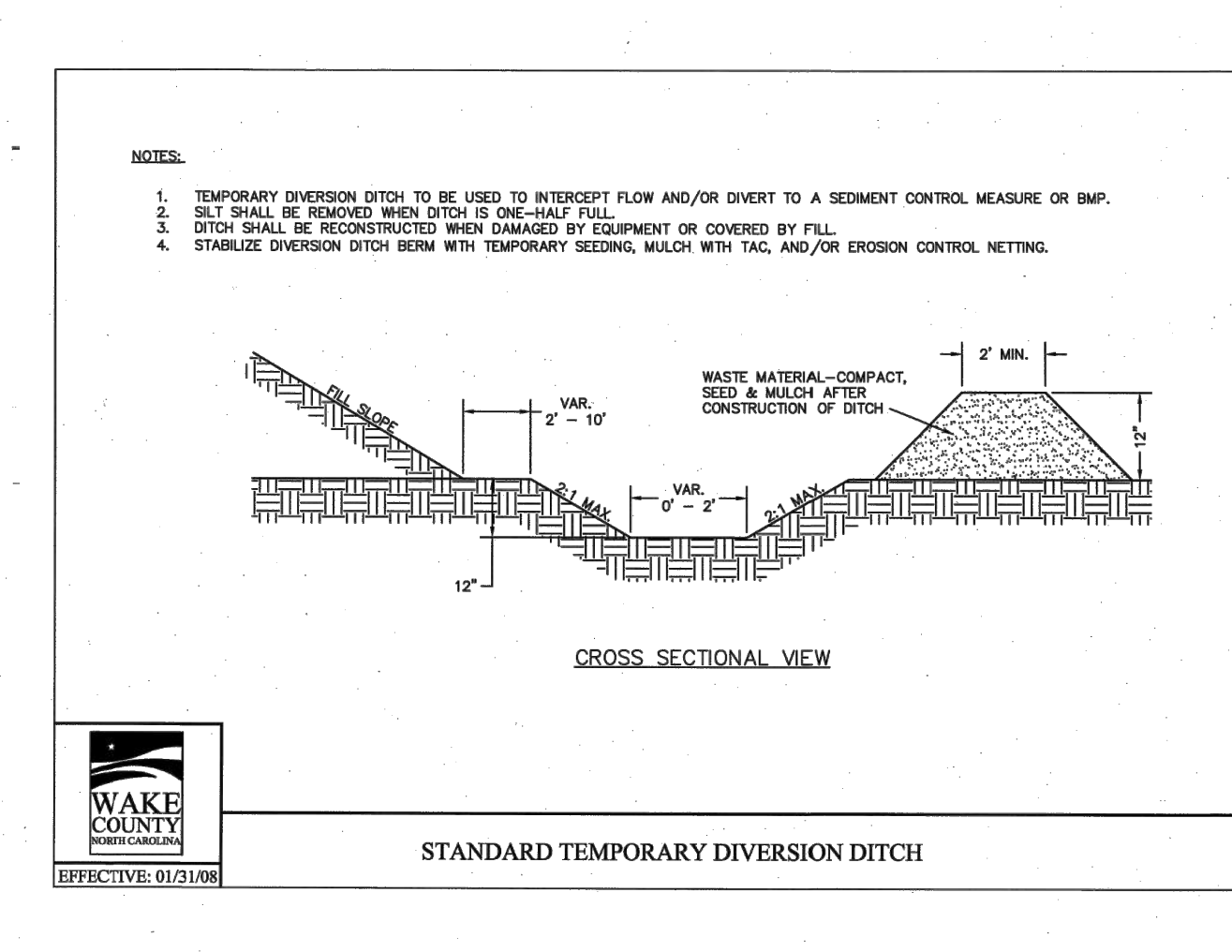
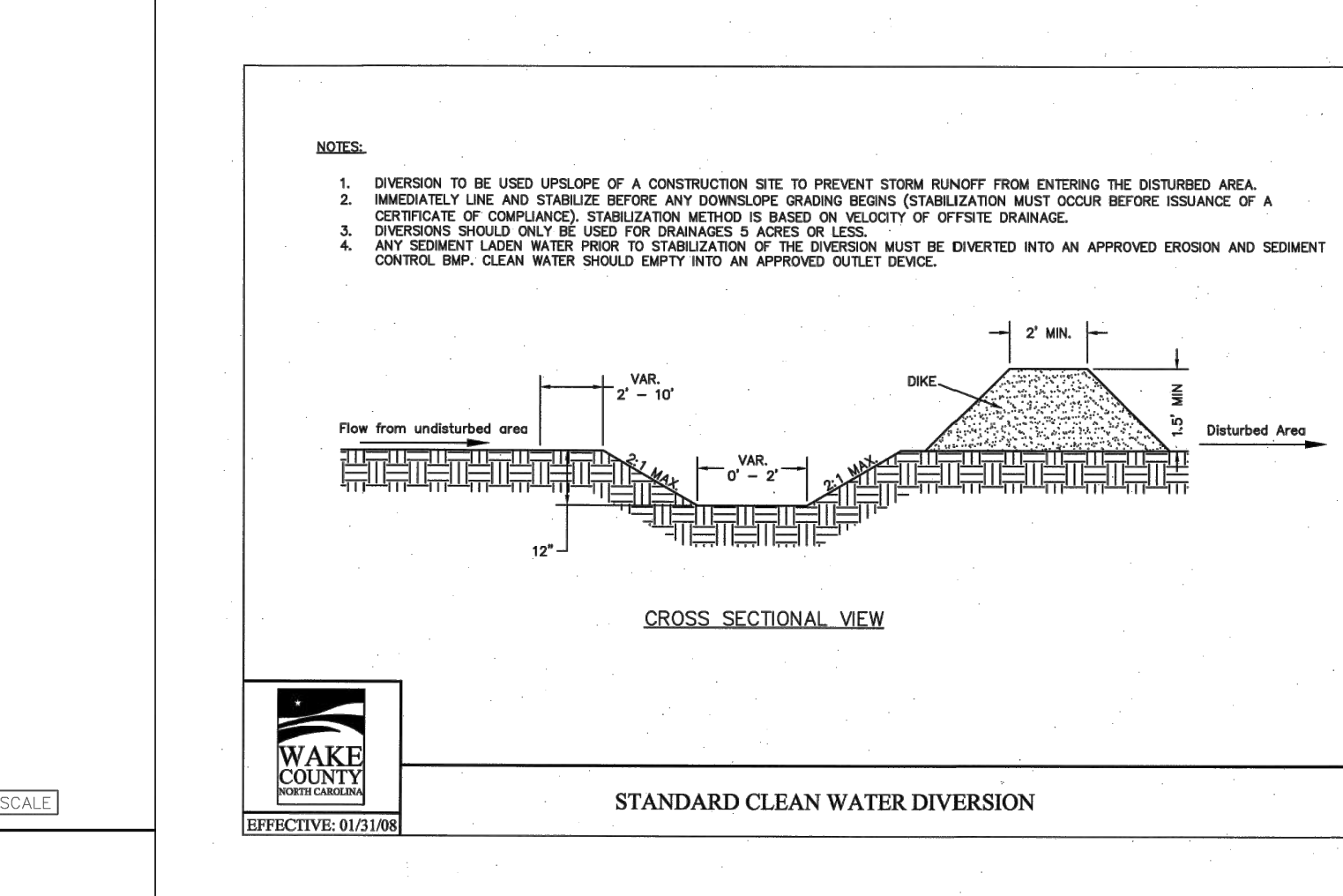
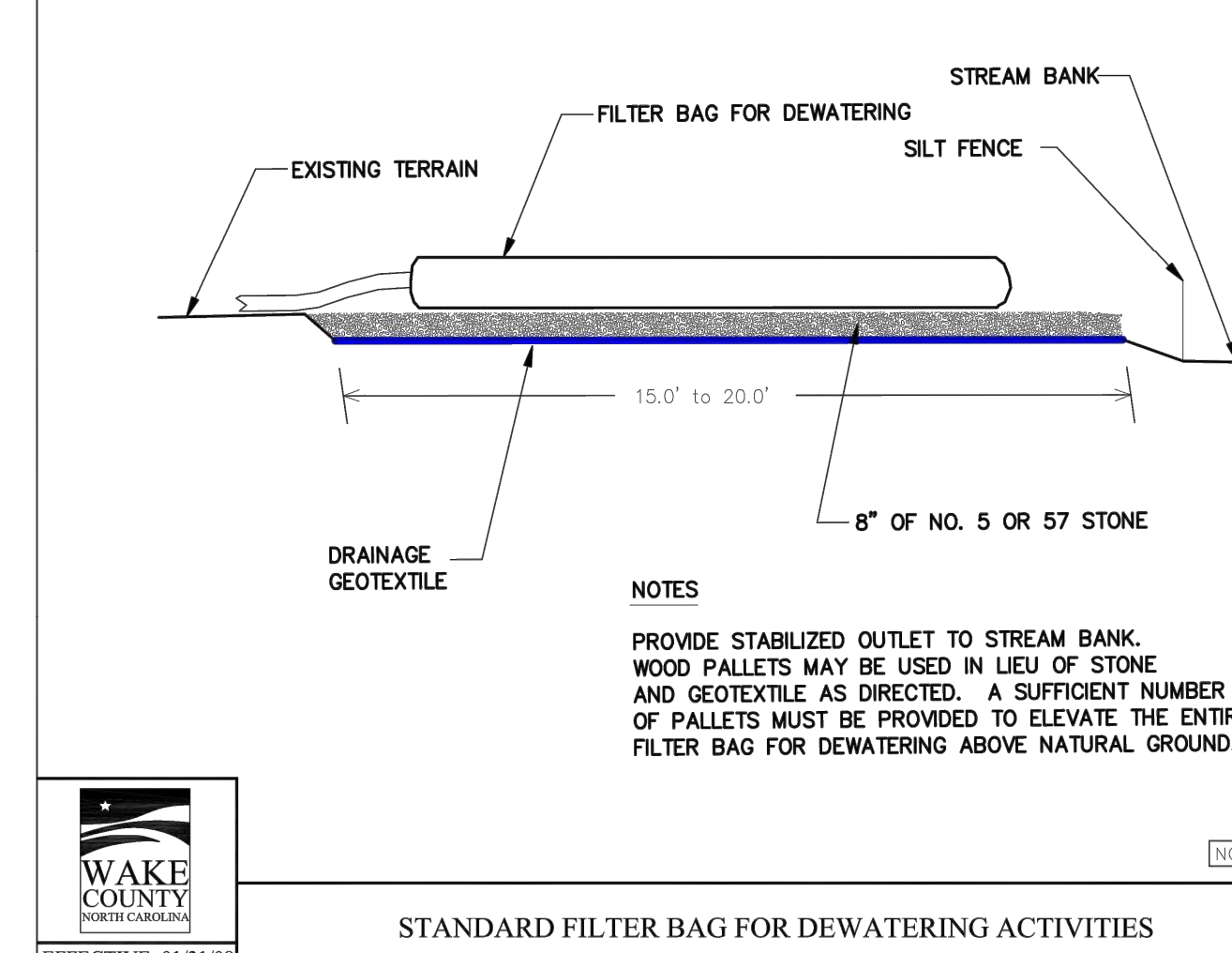
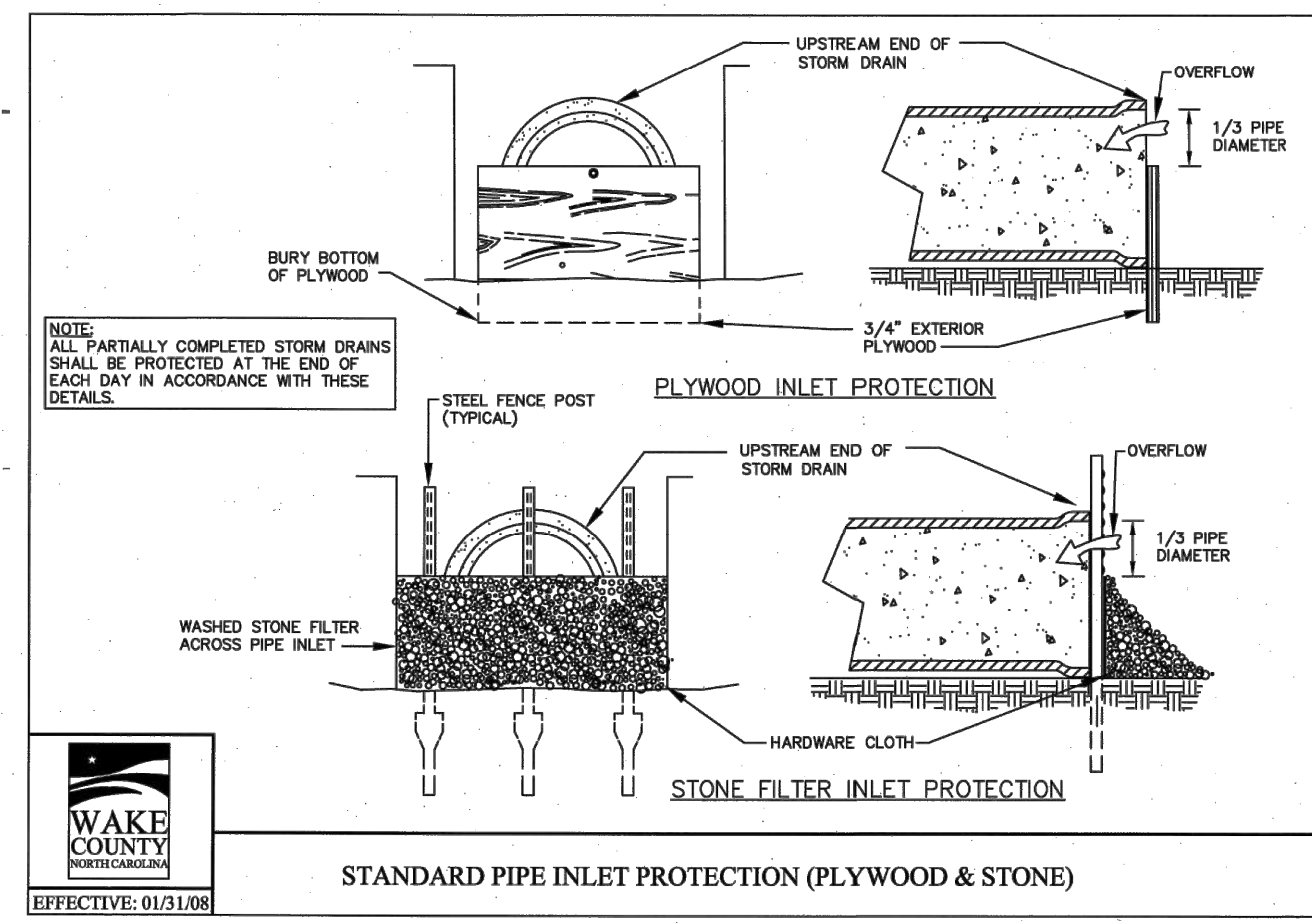
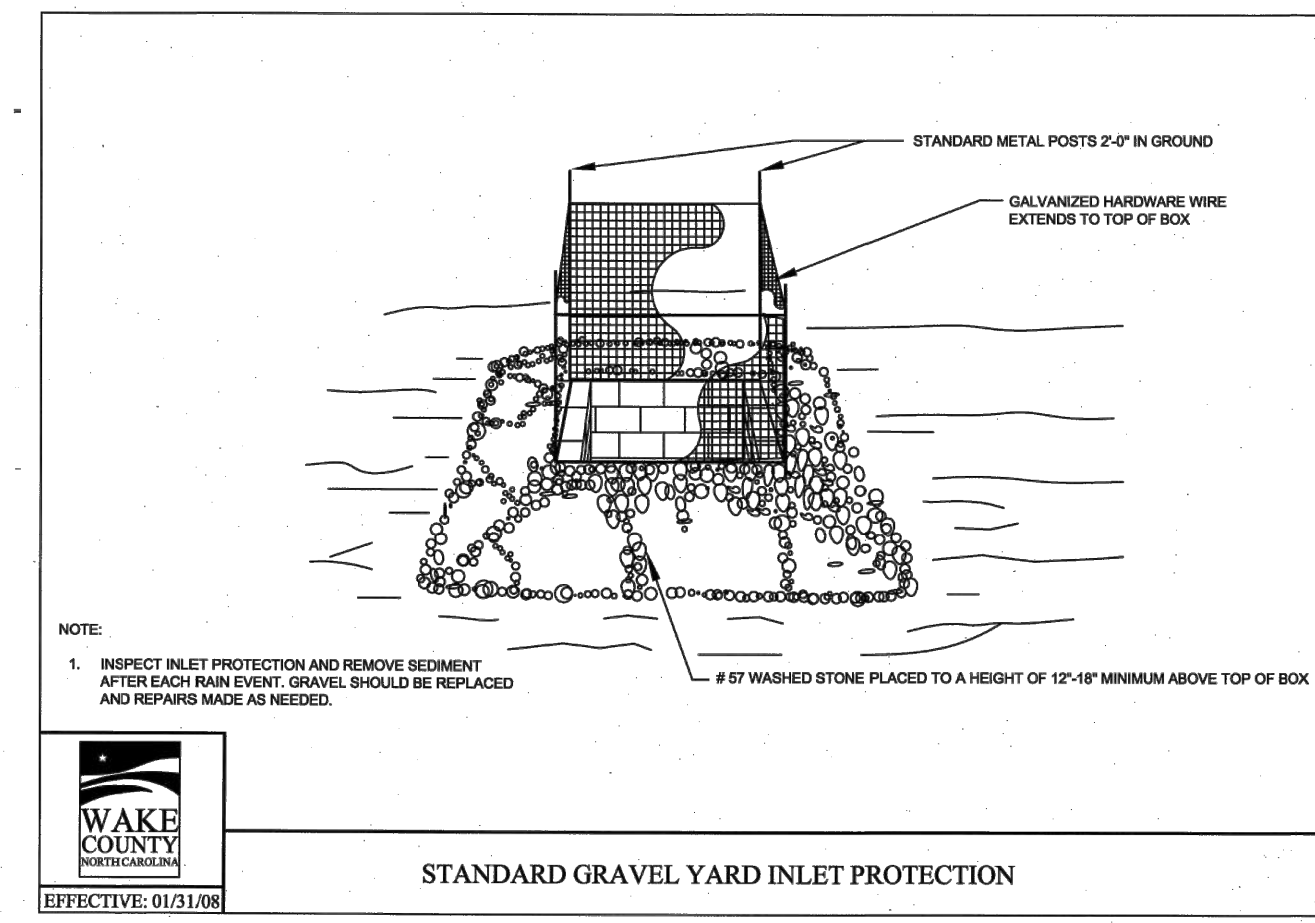
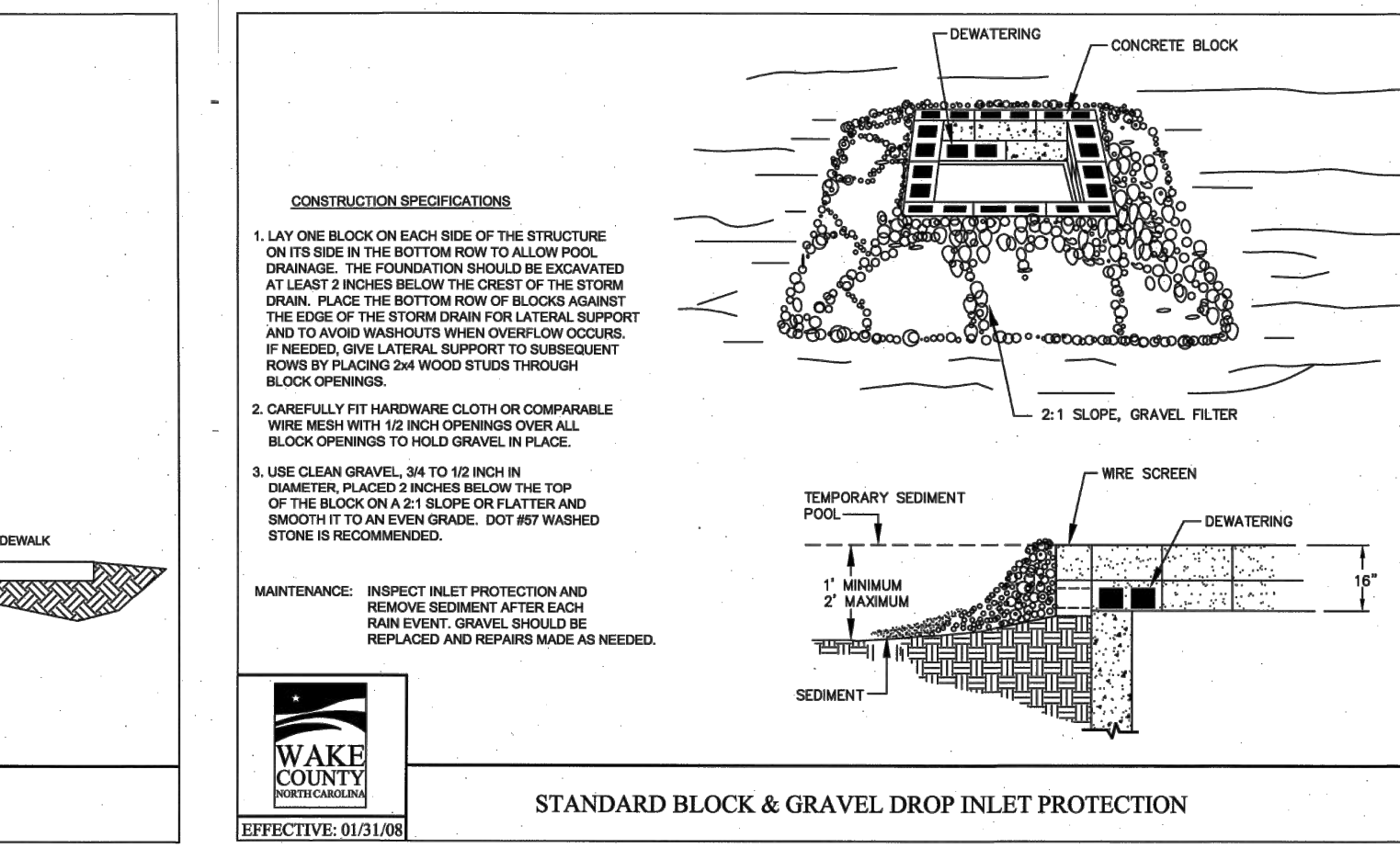
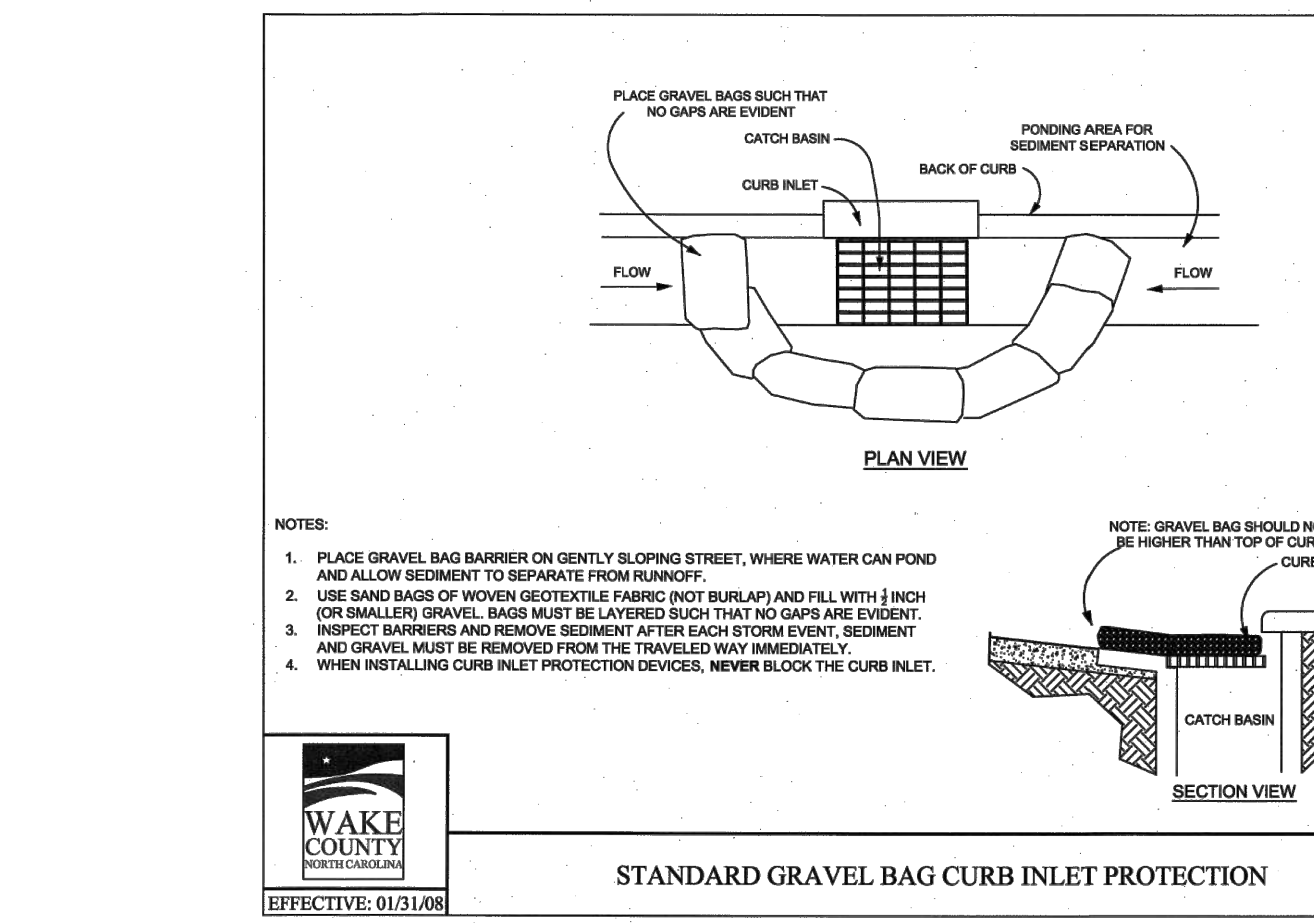
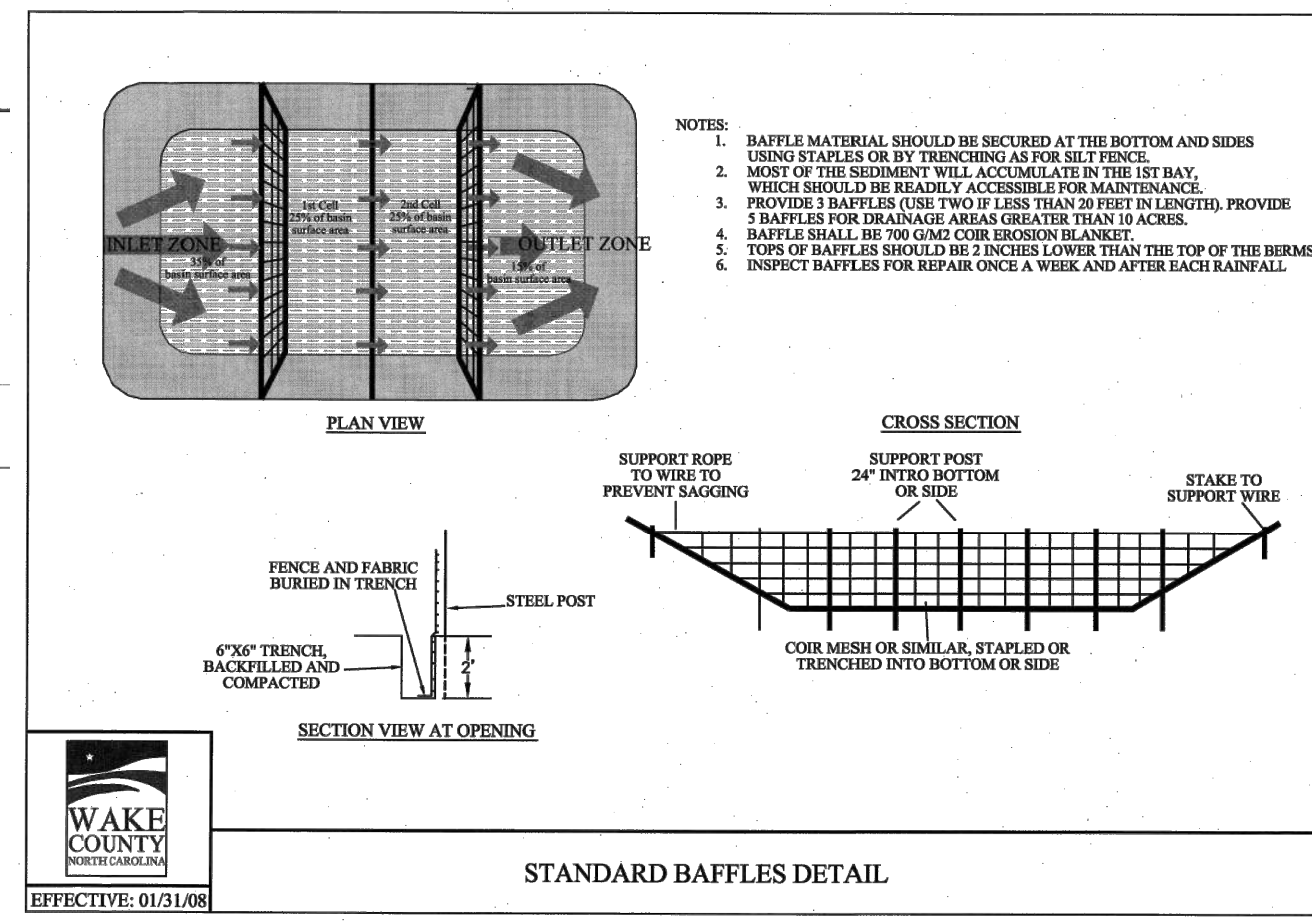
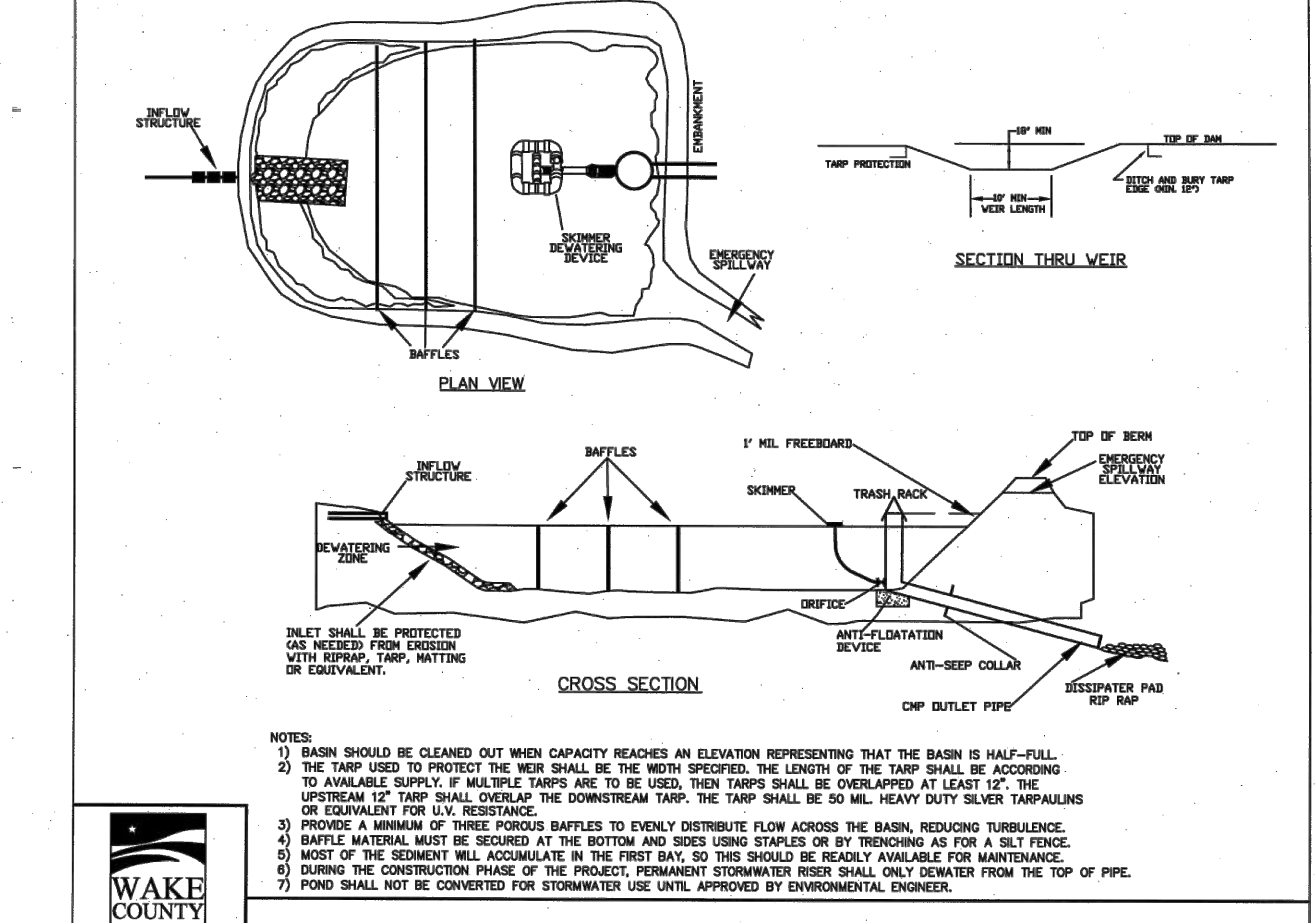
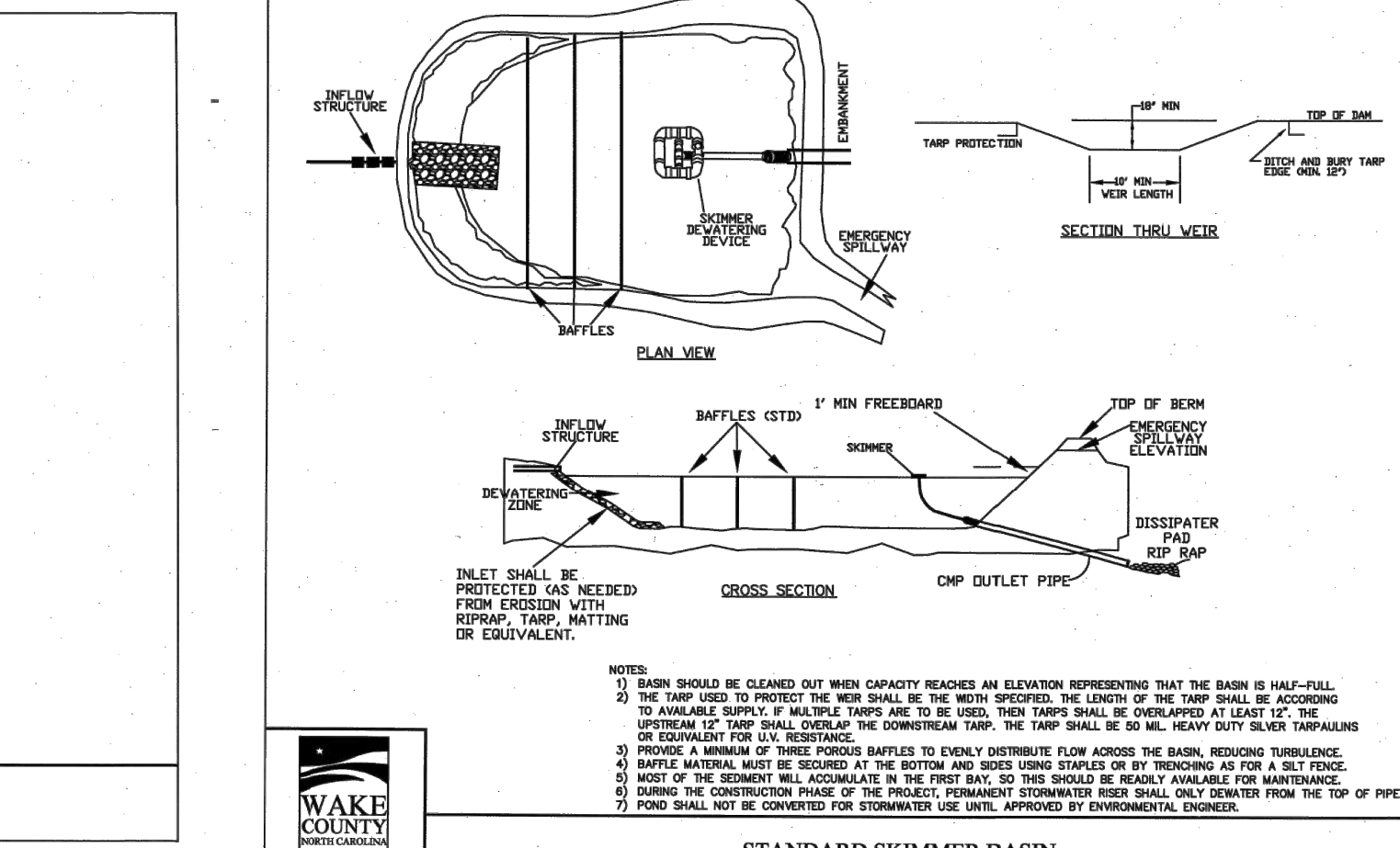
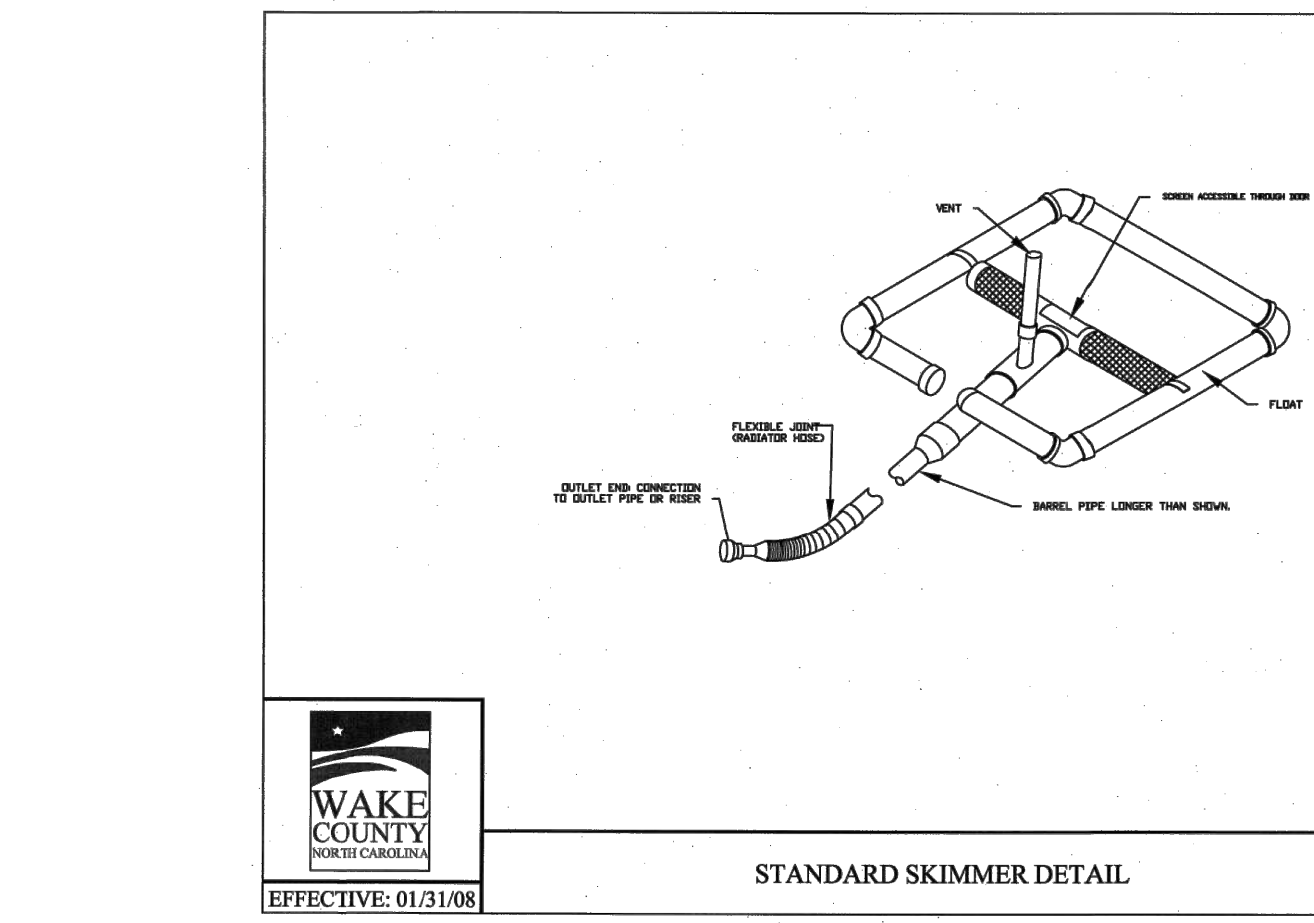
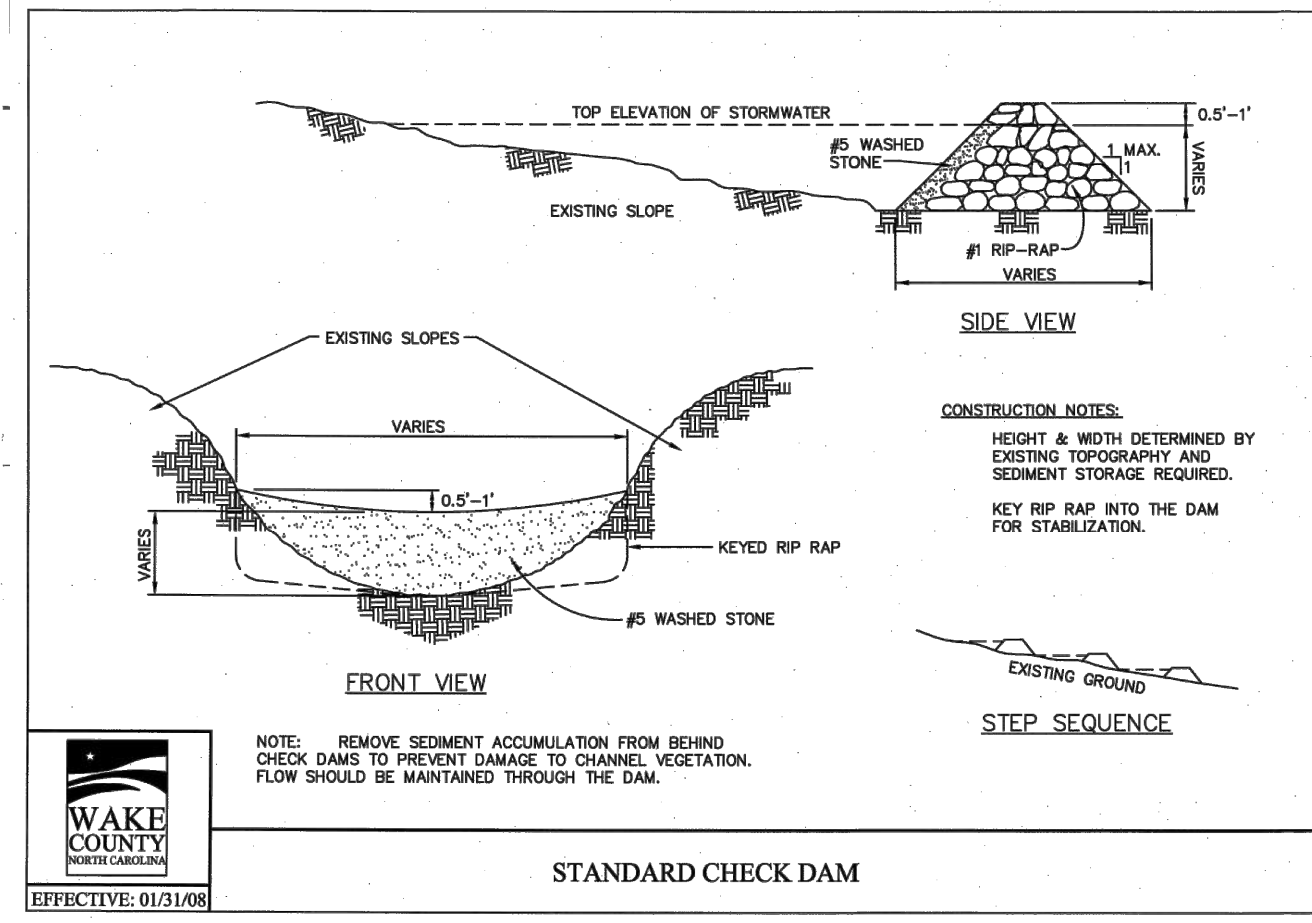
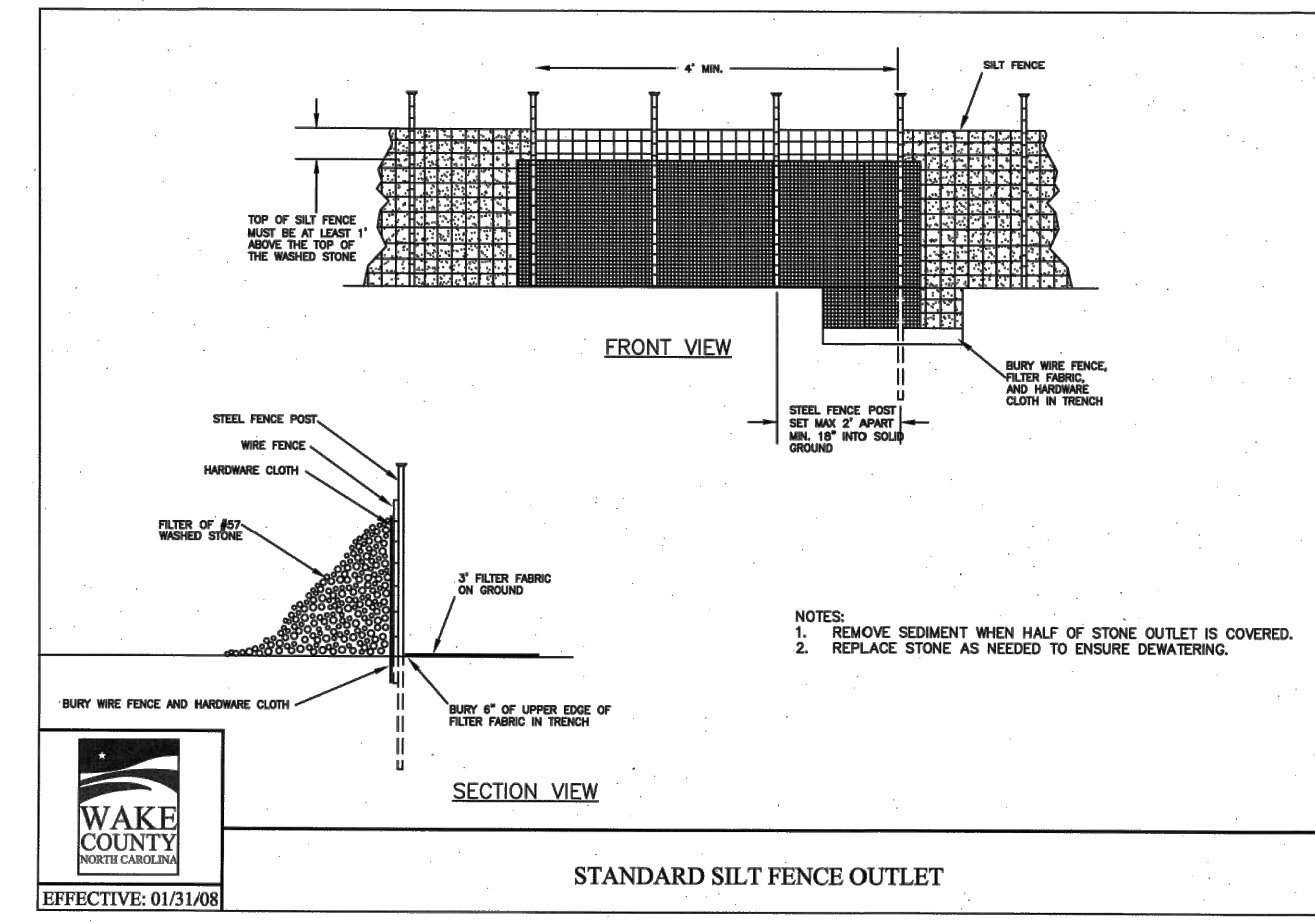
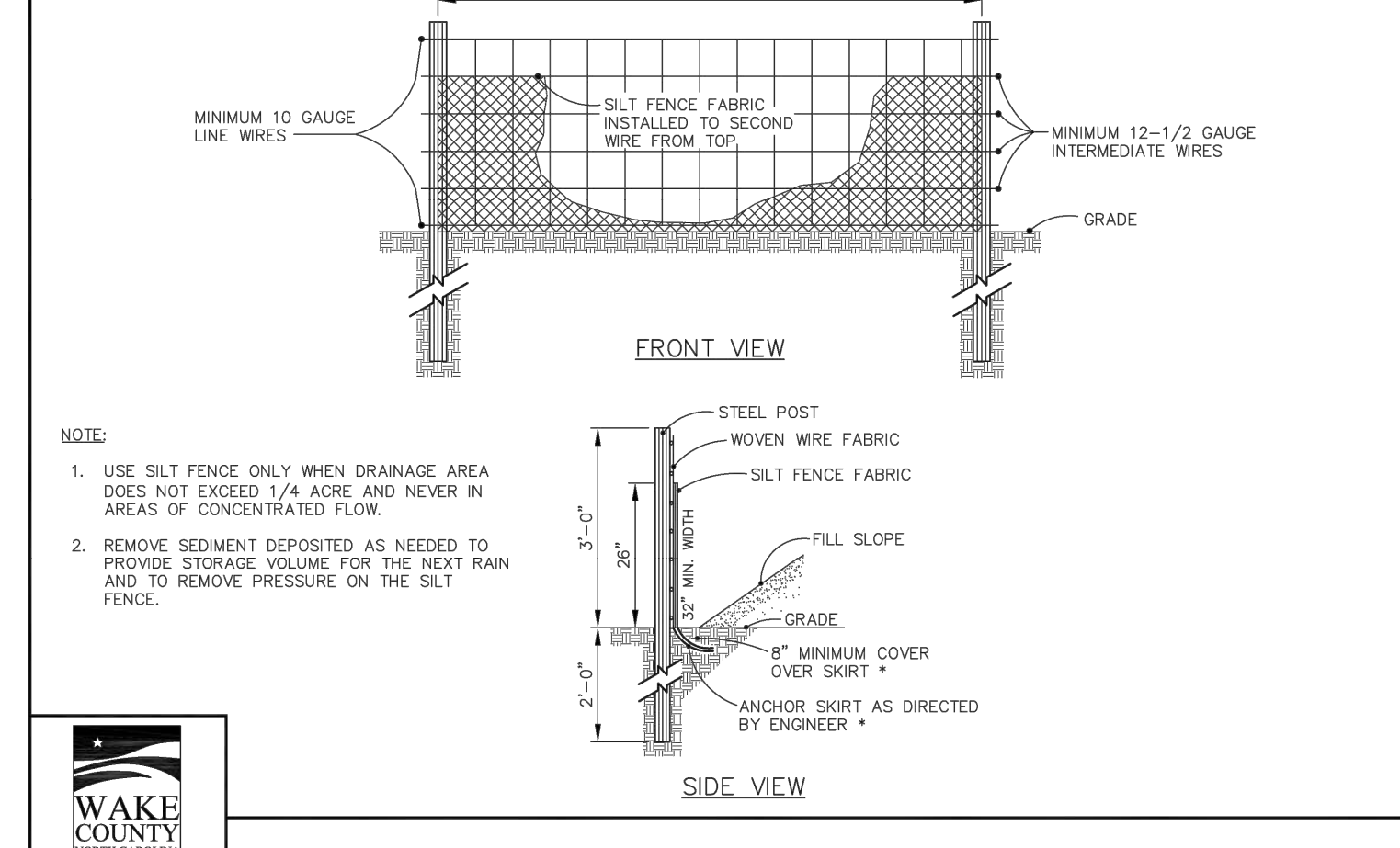
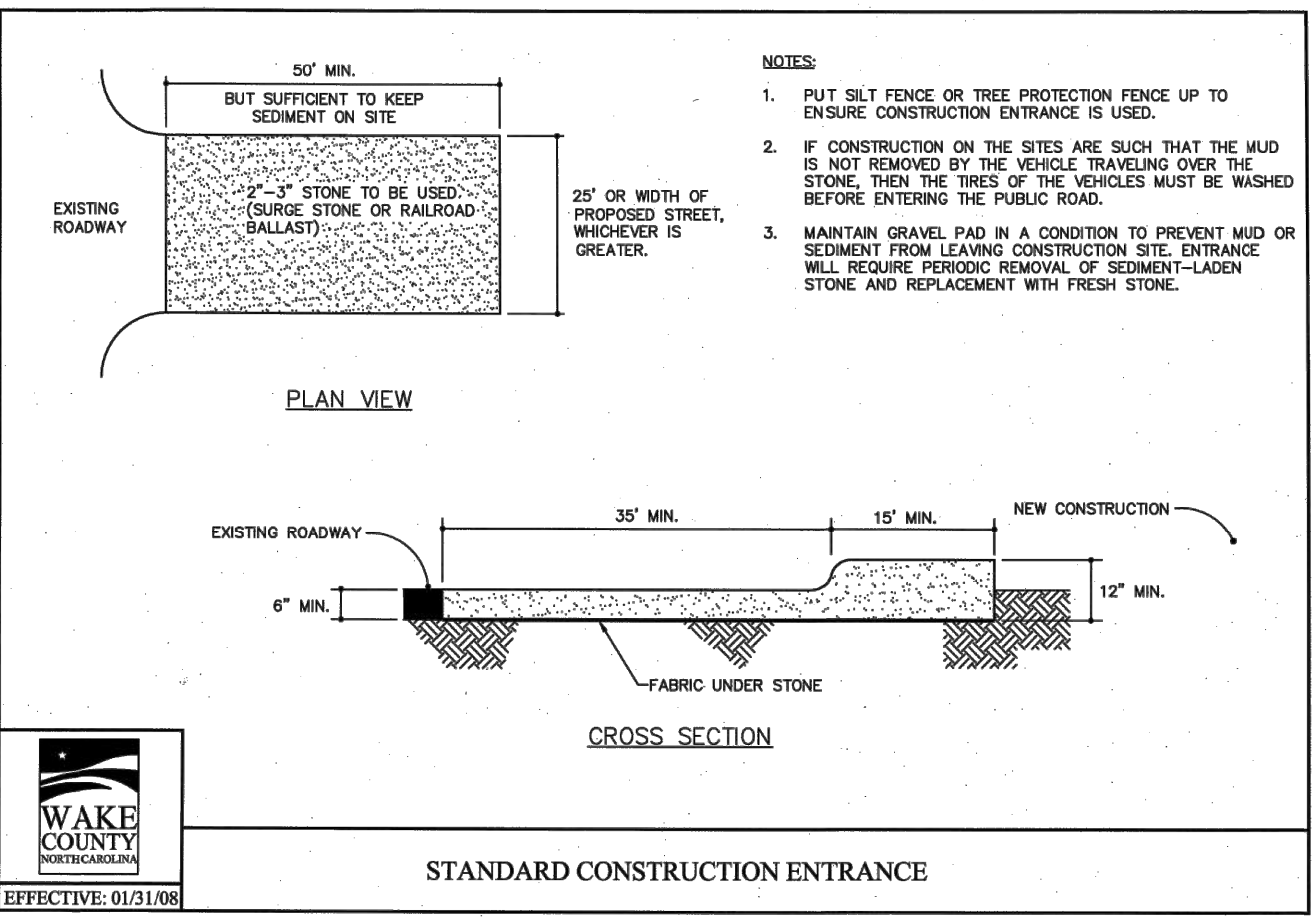
City of Raleigh Development Approval  
Trinity Reed  
City of Raleigh Review Officer

UTILITY DETAILS

Revisions		
Number	Description	Date
4	PERMIT SET	07/08/21
5	PER TRC COMMENTS	09/14/21
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**LEGEND**

**EROSION CONTROL DETAILS**

Number	Description	Date
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DATE ISSUED: 12/10/2020

**C-12**



**ROLLMAX™**  
ROLLED EROSION CONTROL

### Specification Sheet – EroNet™ S75® Erosion Control Blanket

**DESCRIPTION**  
The short-term single net erosion control blanket shall be a machine-produced mat of 100% agricultural straw with a functional longevity of up to 12 months. (NOTE: functional longevity may vary depending upon climatic conditions, soil, geographical location, and elevation). The blanket shall be of consistent thickness with the straw evenly distributed over the entire area of the mat. The blanket shall be covered on the top side with a lightweight photodegradable polypropylene netting having an approximate 0.50 x 0.50 in. (1.27 x 1.27 cm) mesh. The blanket shall be sewn together on 1.50 inch (3.81 cm) centers with degradable thread. The blanket shall be manufactured with a colored thread stitched along both outer edges (approximately 2-3 inches [5-12.5 cm] from the edge) as an overlap guide for adjacent mats.

The S75 shall meet Type 2.C specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.17.

Index Property	Test Method	Typical
Thickness	ASTM D6525	0.50 in. (12.7 mm)
Resiliency	ECTC Guidelines	75.8%
Water Absorbency	ASTM D1177	300%
Mass/Unit Area	ASTM D6475	9.76 oz/sy (332 g/sqm)
Swell	ECTC Guidelines	15%
Smolder Resistance	ECTC Guidelines	Yes
Stiffness	ASTM D1388	6.31 oz-in
Light Penetration	ASTM D6567	6.0%
Tensile Strength - MD	ASTM D6818	122.4 lbs/ft (1.81 kN/m)
Elongation - MD	ASTM D6818	36.7%
Tensile Strength - TD	ASTM D6818	79.2 lbs/ft (1.17 kN/m)
Elongation - TD	ASTM D6818	26.8%
Biomass Improvement	ASTM D7322	307%

Material Content	
Matrix	100% Straw Fiber 0.5 lbs/sq yd (0.27 kg/sqm)
Netting	Top side only, lightweight photodegradable 1.5 lb/1000 sq ft (0.73 kg/100 sq m)
Thread	Degradable

Design Permissible Shear Stress	
Unvegetated Shear Stress	1.55 psf (74 Pa)
Unvegetated Velocity	5.00 fps (1.52 m/s)

Slope Design Data: C Factors	
Slope Length (L)	≤ 31 31 - 21 ≥ 21
≥ 30 ft (9.14 m)	0.029 N/A N/A
20-50 ft	0.11 N/A N/A
≥ 50 ft (15.2 m)	0.19 N/A N/A

**Standard Roll Sizes**

Width	Length	Weight ± 10%	Area
6.67 ft (2.03 m)	8.0 ft (2.44 m)	16 ft (4.87 m)	108 ft (32.92 m)
10.8 ft (3.29 m)	11.2 ft (3.41 m)	98 ft (32.92 m)	40 lbs (18.14 kg) 50 lbs (22.68 kg) 96 lbs (43.54 kg)
80 sq yd (66.3 sq m)	100 sq yd (80.3 sq m)	192 sq yd (165.5 sq m)	

**Material Content**

Matrix	100% Coconut Fiber	0.8 lbs/sq yd (0.37 kg/sqm)
Netting	Heavyweight photodegradable with UV additives	3 lbs/1000 sq ft (1.47 g/sqm)
Thread	Black polypropylene	

**Design Permissible Shear Stress**

Unvegetated Shear Stress	2.25 psf (109 Pa)
Unvegetated Velocity	10.0 fps (3.05 m/s)

**Slope Design Data: C Factors**

Slope Gradients (S)	
Slope Length (L)	≤ 31 31 - 21 ≥ 21
≤ 20 ft (6.1 m)	0.001 0.029 0.082
20-50 ft	0.036 0.060 0.096
≥ 50 ft (15.2 m)	0.070 0.090 0.110

**Standard Roll Sizes**

Width	Length	Weight ± 10%	Area
6.67 ft (2.03 m)	8 ft (2.44 m)	112 ft (34.14 m)	44 lbs (19.95 kg) 56 lbs (25.4 kg)
10.8 ft (3.29 m)	11.2 ft (3.41 m)	80 sq yd (66.3 sq m) 100 sq yd (80.3 sq m)	

**Roughness Coefficients - Unveg.**

Flow Depth	Manning's n
≤ 0.50 ft (0.15 m)	0.055
0.50 - 2.0 ft	0.055-0.021
≥ 2.0 ft (0.60 m)	0.021

**NTPEP Large-Scale Slope Testing**  
ASTM D6459 - C-factor = 0.012

**Roughness Coefficients - Unveg.**

Flow Depth	Manning's n
≤ 0.50 ft (0.15 m)	0.055
0.50 - 2.0 ft	0.022-0.014
≥ 2.0 ft (0.60 m)	0.014

Tensar International Corporation warrants that at the time of delivery the product furnished hereunder shall conform to the specification stated herein. Any other warranty including merchantability and fitness for a particular purpose, are hereby reserved. If the product does not meet specifications on this page and is verified by independent testing, Tensar will replace the product at its cost in the customer's possession. This product specification supersedes all other specifications for the product described above and is not applicable to any products shipped prior to January 1, 2015.

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**ROLLMAX™**  
ROLLED EROSION CONTROL

### Specification Sheet – EroNet™ C125® Erosion Control Blanket

**DESCRIPTION**  
The long-term double net erosion control blanket shall be a machine-produced mat of 100% coconut fiber with a functional longevity of up to 36 months. (NOTE: functional longevity may vary depending upon climatic conditions, soil, geographical location, and elevation). The blanket shall be of consistent thickness with the coconut evenly distributed over the entire area of the mat. The blanket shall be covered on the top and bottom sides with a heavy-weight photodegradable polypropylene netting having ultraviolet additives to delay breakdown and an approximate 0.63 x 0.63 in. (1.59 x 1.59 cm) mesh. The blanket shall be sewn together on 1.50 inch (3.81 cm) centers with degradable thread. The blanket shall be manufactured with a colored thread stitched along both outer edges (approximately 2-3 inches [5-12.5 cm] from the edge) as an overlap guide for adjacent mats.

The C125 shall meet Type 4 specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.17.

Index Property	Test Method	Typical
Thickness	ASTM D6525	0.22 in. (5.59 mm)
Resiliency	ECTC Guidelines	82%
Water Absorbency	ASTM D1177	167%
Mass/Unit Area	ASTM D6475	2.73 oz/sy (94.2 g/sqm)
Swell	ECTC Guidelines	13%
Smolder Resistance	ECTC Guidelines	Yes
Stiffness	ASTM D1388	0.75 oz-in
Light Penetration	ASTM D6567	16.6%
Tensile Strength - MD	ASTM D6818	472.8 lbs/ft (7.01 kN/m)
Elongation - MD	ASTM D6818	26.4%
Tensile Strength - TD	ASTM D6818	225.6 lbs/ft (3.35 kN/m)
Elongation - TD	ASTM D6818	33.9%
Biomass Improvement	ASTM 7322	257%

Material Content	
Matrix	100% Coconut Fiber 0.8 lbs/sq yd (0.37 kg/sqm)
Netting	Heavyweight photodegradable with UV additives
Thread	Black polypropylene

**Design Permissible Shear Stress**

Unvegetated Shear Stress	2.25 psf (109 Pa)
Unvegetated Velocity	10.0 fps (3.05 m/s)

**Slope Design Data: C Factors**

Slope Gradients (S)	
Slope Length (L)	≤ 31 31 - 21 ≥ 21
≤ 20 ft (6.1 m)	0.001 0.029 0.082
20-50 ft	0.036 0.060 0.096
≥ 50 ft (15.2 m)	0.070 0.090 0.110

**Standard Roll Sizes**

Width	Length	Weight ± 10%	Area
6.67 ft (2.03 m)	8 ft (2.44 m)	112 ft (34.14 m)	44 lbs (19.95 kg) 56 lbs (25.4 kg)
10.8 ft (3.29 m)	11.2 ft (3.41 m)	80 sq yd (66.3 sq m) 100 sq yd (80.3 sq m)	

**Roughness Coefficients - Unveg.**

Flow Depth	Manning's n
≤ 0.50 ft (0.15 m)	0.022
0.50 - 2.0 ft	0.022-0.014
≥ 2.0 ft (0.60 m)	0.014

Tensar International Corporation warrants that at the time of delivery the product furnished hereunder shall conform to the specification stated herein. Any other warranty including merchantability and fitness for a particular purpose, are hereby reserved. If the product does not meet specifications on this page and is verified by independent testing, Tensar will replace the product at its cost in the customer's possession. This product specification supersedes all other specifications for the product described above and is not applicable to any products shipped prior to January 1, 2015.

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

DATE	TYPE	PANTING RATE
MAR 1 - JUN 1	SERICA LESEPDEZA (SCARIFIED) AND USE THE FOLLOWING COMBINATIONS:	50 LBS/ACRE (SERICEA LESEPDEZA)
MAR 1 - APR 15	ADD TALL FESCUE	10 LBS/ACRE
MAR 1 - JUNE 30	OR ADD WEEPIE LOVE GRASS	10 LBS/ACRE
MAR 1 - JUNE 30	OR ADD HULLED COMMON BERMUDAGRASS	25 LBS/ACRE
JUN 1 - SEPT 1	TALL FESCUE AND BROWNTOP MILLET OR SORGHUM-SUDAN HYBRIDS ***	120 LBS/ACRE (TALL FESCUE); 35 LBS/ACRE (BROWNTOP MILLET); 30 LBS/ACRE (SORGHUM-SUDAN HYBRIDS)
SEPT 1 - MAR 1	SERICA LESEPDEZA (UNHULLED - UNSCARIFIED) AND TALL FESCUE	70 LBS/ACRE (SERICEA LESEPDEZA); 120 LBS/ACRE (TALL FESCUE)
NOV 1 - MAR 1	AND ABRUZZI RYE	25 LBS/ACRE

CONSULT S&E ENVIRONMENTAL ENGINEERS FOR ADDITIONAL INFORMATION CONCERNING OTHER ALTERNATIVES FOR VEGETATION OF DENUDEED AREAS. THE ABOVE VEGETATION RATES ARE THOSE THAT DO WELL UNDER LOCATION CONDITIONS. OTHER SEEDING RATE COMBINATIONS ARE POSSIBLE.  
\*\*\*TEMPORARY. RESEED ACCORDING TO OPTIMUM SEASON FOR DESIRED PERMANENT VEGETATION. DO NOT ALLOW TEMPORARY COVER TO GROW MORE THAN 12" IN HEIGHT BEFORE MOWING. OTHERWISE, FESCUE MAY BE SHADED OUT.

### SEEDING MIXTURE

AGRICULTURAL LIMESTONE	2 TONS/ACRE (3 TONS/ACRE IN CLAY SOILS)
FERTILIZER	1,000 LBS/ACRE - 10-10-10
SUPERPHOSPHATE	500 LBS/ACRE - 20% ANALYSIS
MULCH	2 TONS/ACRE - SMALL GRAIN STRAW
ANCHOR	ASPHALT EMULSION AT 300 GALS/ACRE

### Channel Installation

The following channel guide outlines our general recommendations for installing Tensar's RollMax™ temporary and/or permanent RECPs in concentrated flow applications. Consult the staple pattern guide (Figure 1) for fastener spacing recommendations based on the channel severity.

**CRITICAL POINTS**  
A: Overlaps and Seams  
B: Projected Water Line  
C: Channel Bottom/Side Slope Vertices

*Drawings Not To Scale*

Horizontal staple/stake spacing should be altered if necessary to allow staples to secure the critical points along the channel surface.

#### CHANNEL INSTALLATION STEPS

- Prepare soil before installing RECPs, including any necessary application of lime, fertilizer and seed. See page 7 for special requirements when soil filling a woven TBM.
- Begin at the top of the channel by anchoring the RECPs in a 6 in. (15 cm) deep x 6 in. (15 cm) wide trench with approximately 12 in. (30 cm) of RECPs extended beyond the upslope portion of the trench. Use ShoreMax® mat at the channel/culvert outlet as supplemental scour protection as needed. Anchor the RECPs with a row of staples/stakes approximately 12 in. (30 cm) 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 in. (30 cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes spaced approximately 12 in. (30 cm) 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 in. 6 in. (10-15 cm) overlap. Use a double row of staples staggered 4 in. (10 cm) apart and 4 in. (10 cm) 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 in. (30 cm) apart in a 6 in. (15 cm) deep x 6 in. (15 cm) wide trench. Backfill and compact the trench after stapling.
- Adjacent RECPs must be overlapped approximately 2 in. - 5 in. (5-12.5 cm) (depending on RECP type) and stapled approximately 12 in. (30 cm) apart in the bottom of the trench. Backfill and compact the trench after stapling.
- In high flow channel applications a staple check slot is recommended at 30 to 40 ft (9-12 m) intervals. Use a double row of staples staggered 4 in. (10 cm) apart and 4 in. (10 cm) on center over entire width of the channel.
- The terminal end of the RECPs must be anchored with a row of staples/stakes approximately 12 in. (30 cm) apart in a 6 in. (15 cm) deep x 6 in. (15 cm) wide trench. Backfill and compact the trench after stapling.

*\*NOTE: In adverse soil conditions longer staples/stakes or earth anchors may be necessary to properly secure the RECPs.*

### NEW STABILIZATION TIMEFRAMES (EFFECTIVE AUG 3, 2011)

SITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES, SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HOW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE LESS THAN 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HOW ZONES

### Installation Made Easy

When under the pressure of severe conditions, even the best erosion control products can't function to their full potential without proper installation and anchoring. Tensar supplies a wide variety of fastener options for nearly every application and soil type.

For use in cohesive soils, wire staples are a cost-effective means to fasten RECPs. Available in 6 in., 8 in., 10 in., and 12 in. lengths, our U-shaped staples can reach to various depths to ensure adequate pull-out resistance. For installation using our Handy Pin Pounder installation tool, 6 in. V-top staples or 6 in. circle top pins are available.

Our biodegradable BioStakes™ are available in 4 in. and 6 in. lengths and provide an environmentally friendly alternative to metal staples. For an even more durable, deeper reaching yet all-natural anchoring option, our wood EcoStakes™ are available in 6 in., 12 in., 18 in., and 24 in. lengths.

For severe applications needing the ultimate, long-lasting hold, try our 12 in. and 18 in. rebar staples, our 12 in. plastic ShoreMax® stakes, or our complete line of percussion earth anchors. The Tensar earth anchors reach deep into the soil strata to offer enhanced anchoring in the worst conditions. Our variety of earth anchors are designed for durability and holding power under extreme hydraulic stresses and adverse soil conditions.

**STAPLE PATTERNS**  
Proper staple patterns must be used to achieve optimal results in RECP installation. Tensar recommends the following general stapling patterns as guidance for use with our RECPs as seen in (Figure 1). Site-specific staple pattern recommendations based on soil type and severity of application may be acquired through our Erosion Control Materials Design Software (ECMSD™), [www.ecmsd.com](http://www.ecmsd.com).

**Slope Installation**  
The following slope guide outlines our general recommendations for installing Tensar's RollMax™ temporary and/or permanent RECPs on sloping applications. Consult the staple pattern guide (Figure 1) for fastener spacing recommendations based on the slope severity.

*Drawings Not To Scale*

#### SLOPE INSTALLATION STEPS

- Prepare soil before installing RECPs, including any necessary application of lime, fertilizer and seed. See page 7 for special requirements when soil filling a woven TBM.
- Begin at the top of the slope by anchoring the RECPs in a 6 in. (15 cm) deep x 6 in. (15 cm) wide trench with approximately 12 in. (30 cm) of RECPs extended beyond the upslope portion of the trench. Anchor the RECPs with a row of staples/stakes approximately 12 in. (30 cm) 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 in. (30 cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes spaced approximately 12 in. (30 cm) apart across the width of the RECPs.
- Roll the RECPs (BA) down or (BB) horizontally across the slope. 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.
- The edges of parallel RECPs must be stapled with approximately 2 in. 5 in. (5-12.5 cm) overlap depending on the RECP type.
- Consecutive RECPs spliced down the slope must be end-over-end (shingle style) with an approximate 3 in. (7.5 cm) overlap. Staple through overlapped area, approximately 12 in. (30 cm) apart across entire RECPs width.\*

*\*NOTE: In adverse soil conditions longer staples/stakes or earth anchors may be necessary to properly secure the RECPs.*

### Shoreline Installation

The following guide outlines our general recommendations for installing Tensar's RollMax™ temporary and/or permanent RECPs along shoreline and stream bank applications. Consult the staple pattern guide (Figure 1) for fastener spacing recommendations based on the bank severity.

*Drawings Not To Scale*

#### SHORELINE/STREAMBANK INSTALLATION STEPS

- For easier installation, lower water level from Level A to Level B before installation.
- Prepare soil before installing RECPs, including any necessary application of lime, fertilizer and seed. See page 7 for special requirements when soil filling a woven TBM.
- Begin at the top of the shoreline by anchoring the RECPs in a 6 in. (15 cm) deep x 6 in. (15 cm) wide trench with approximately 12 in. (30 cm) of RECPs extended beyond the upslope portion of the trench. Anchor the RECPs with a row of staples/stakes approximately 12 in. (30 cm) 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 in. (30 cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes spaced approximately 12 in. (30 cm) apart across the width of the RECPs. Bottom anchor trench can be eliminated when using ShoreMax mat over RECP along the bottom edge.
- Roll RECPs either (A) down the shoreline for long banks (top to bottom) or (B) horizontally across the shoreline slope. 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.
- The edges of all horizontal and vertical seams must be stapled with approximately 2 in. 5 in. (5-12.5 cm) overlap in the predominant flow direction.
- The edges of the RECPs at or below normal water level must be anchored by placing the RECPs in a 12 in. (30 cm) deep x 6 in. (15 cm) wide anchor trench. Anchor the RECPs with a row of staples/stakes spaced approximately 12 in. (30 cm) apart in the trench. Backfill and compact the trench after stapling. Apply seed to the compacted soil and fold the remaining 12 in. (30 cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes spaced approximately 12 in. (30 cm) apart across the width of the RECPs.
- Bottom anchor trench can be eliminated when using ShoreMax mat over RECP along the bottom edge.

*\*NOTE: In adverse soil conditions longer staples/stakes or earth anchors may be necessary to properly secure the RECPs.*

### SEEDBED PREPARATION

- CHISEL COMPACTED AREAS AND SPREAD TOPSOIL THREE INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
- RIP THE ENTIRE AREA TO SIX INCHES DEEP.
- REMOVE ALL LOOSE ROCK, ROOTS AND OTHER OBSTRUCTIONS, LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
- APPLY AGRICULTURAL LIME, FERTILIZER AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL, (SEE MIXTURE BELOW).
- CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED FOR TO SIX INCHES DEEP.
- SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
- MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
- INSPECT ALL SEEDBED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE MORE THAN 80% DAMAGED, RE-ESTABLISH FOLLOWING THE ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
- CONSULT S&E ENVIRONMENTAL ENGINEERS ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

## ROLLMAX SPECIFICATIONS AND INSTALLATION INSTRUCTIONS

### SEEDING SCHEDULE FOR SHOULDERS, SIDE DITCHES, SLOPES (MAX 3:1)

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

### EROSION CONTROL DETAILS

Number	Description	Date
4	PERMIT SET	09/08/21
5	PER TRC COMMENTS	09/14/21
6	LAYOUT REVISION & POST-APPROVAL COMMENTS	10/28/21
7	ADDITIONAL POST-APPROVAL COMMENTS	11/02/21
8	POST-APPROVAL COMMENTS	11/16/21

JAECO # 08-01

DRAWING SCALE: N/A

DRAWN BY: TT

CHECKED BY: JA, JR

DATE ISSUED: 12/10/2020

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**Call 811 before you dig.**

**LEGEND**

EROSION CONTROL DETAILS



**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**

Required Ground Stabilization Timeframes		
Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-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 -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"> <li>Temporary grass seed covered with straw or other mulches and tackifiers</li> <li>Hydroseeding</li> <li>Rolled erosion control products with or without temporary grass seed</li> <li>Appropriately applied straw or other mulch</li> <li>Plastic sheeting</li> </ul>	<ul style="list-style-type: none"> <li>Permanent grass seed covered with straw or other mulches and tackifiers</li> <li>Geotextile fabrics such as permanent soil reinforcement matting</li> <li>Hydroseeding</li> <li>Shrubs or other permanent plantings covered with mulch</li> <li>Uniform and evenly distributed ground cover sufficient to restrain erosion</li> <li>Structural methods such as concrete, asphalt or retaining walls</li> <li>Rolled erosion control products with grass seed</li> </ul>

**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 inlets 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**

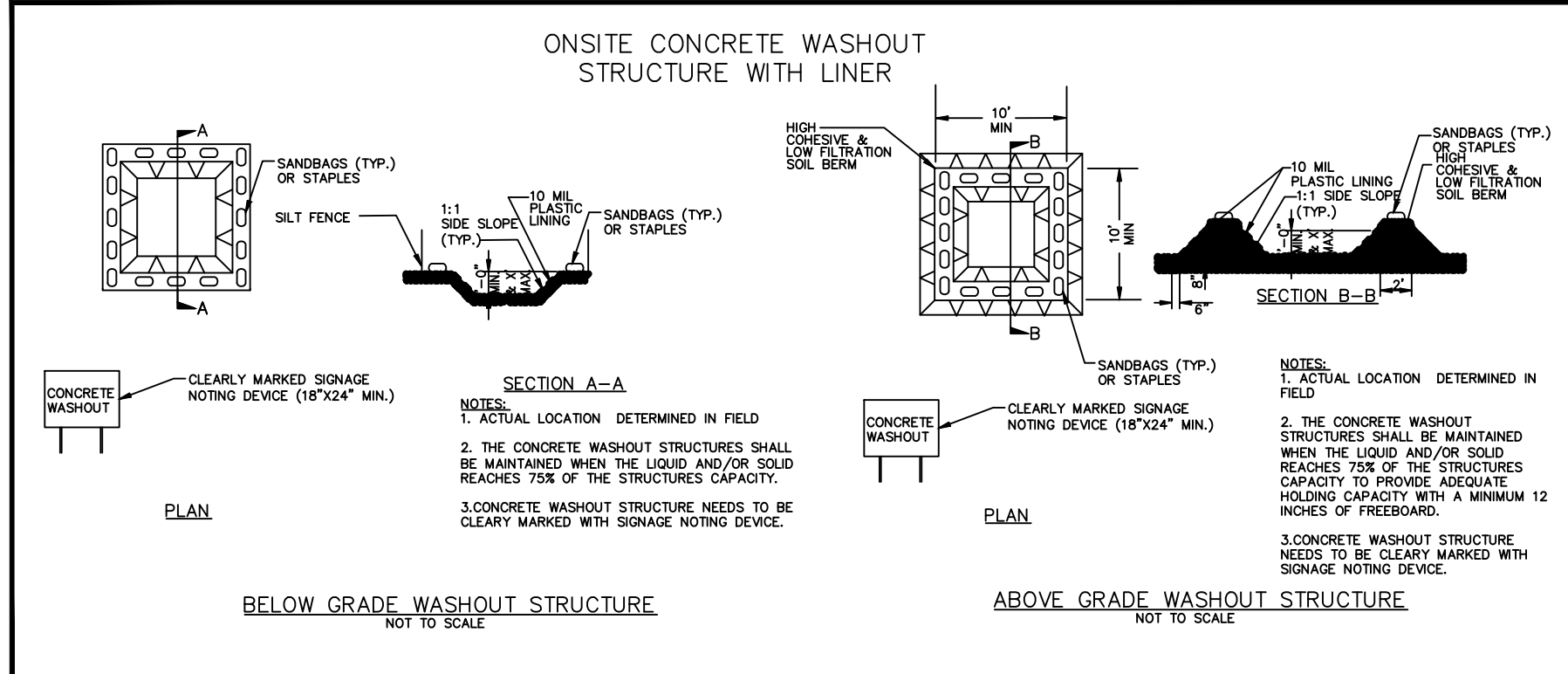
- Do not dump paint and other liquid waste into storm drains, streams or wetlands.
- Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Contain liquid wastes in a controlled area.
- Containment must be labeled, 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 staking or anchoring of portable toilets during periods of high winds or in high foot 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**

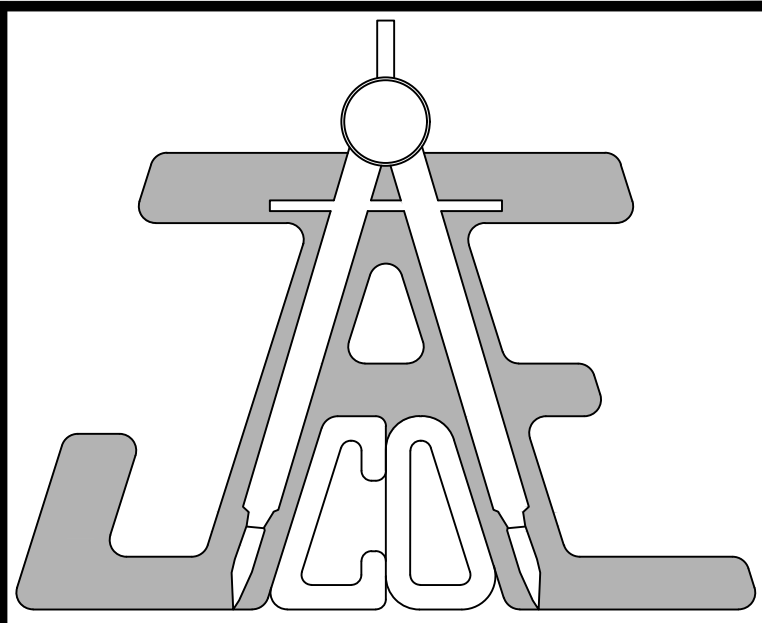
- Do not discharge concrete or cement slurry from the site.
- Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
- Manage washout from mortar mixers in accordance with the above item and in addition place the 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 standard 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 out 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**

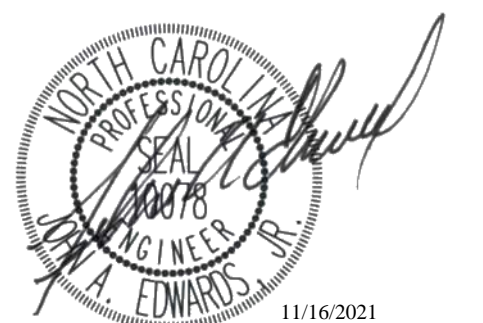
- Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
- Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
- Do not store 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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**Call 811 before you dig.**

**LEGEND**

**NCG01 GROUND STABILIZATION AND MATERIALS HANDLING**

**EFFECTIVE: 04/01/19**

**NCG01 NOTES & DETAILS**

Number	Description	Date
4	PERMIT SET	07/08/21
5	PER TRC COMMENTS	09/14/21
6	LAYOUT REVISION & POST-APPROVAL COMMENTS	10/28/21
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JAECO #: 087-01  
DRAWING SCALE: N/A  
DRAWN BY: TT  
CHECKED BY: JAE, JR  
DATE ISSUED: 12/10/2020



**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 needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	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 measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 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	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. 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 onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	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: 1. Description, evidence and date of corrective actions taken, and 2. 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&SC 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 they 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&SC Plan Documentation**

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC 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&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC 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&SC plan.	Initial and date a copy of the approved E&SC 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&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC 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&SC 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:

- (a) This General Permit as well as the Certificate of Coverage, after it is received.
- (b) 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:

- (a) Visible sediment deposition in a stream or wetland.
- (b) Oil spills if:
  - They are 25 gallons or more,
  - They are less than 25 gallons but cannot be cleaned up within 24 hours,
  - They cause sheen on surface waters (regardless of volume), or
  - They are within 100 feet of surface waters (regardless of volume).
- (c) 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.
- (d) Anticipated bypasses and unanticipated bypasses.
- (e) 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	<ul style="list-style-type: none"> <li>• <b>Within 24 hours</b>, an oral or electronic notification.</li> <li>• <b>Within 7 calendar days</b>, 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.</li> <li>• If the stream is named on the <a href="#">NC 303(d) list</a> as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.</li> </ul>
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	<ul style="list-style-type: none"> <li>• <b>Within 24 hours</b>, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.</li> </ul>
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	<ul style="list-style-type: none"> <li>• <b>A report at least ten days before the date of the bypass, if possible.</b> The report shall include an evaluation of the anticipated quality and effect of the bypass.</li> </ul>
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	<ul style="list-style-type: none"> <li>• <b>Within 24 hours</b>, an oral or electronic notification.</li> <li>• <b>Within 7 calendar days</b>, a report that includes an evaluation of the quality and effect of the bypass.</li> </ul>
(e) Noncompliance with the conditions of this permit that may endanger health or the environment [40 CFR 122.41(l)(7)]	<ul style="list-style-type: none"> <li>• <b>Within 24 hours</b>, an oral or electronic notification.</li> <li>• <b>Within 7 calendar days</b>, 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 reoccurrence of the noncompliance. [40 CFR 122.41(l)(6).</li> <li>• Division staff may waive the requirement for a written report on a case-by-case basis.</li> </ul>

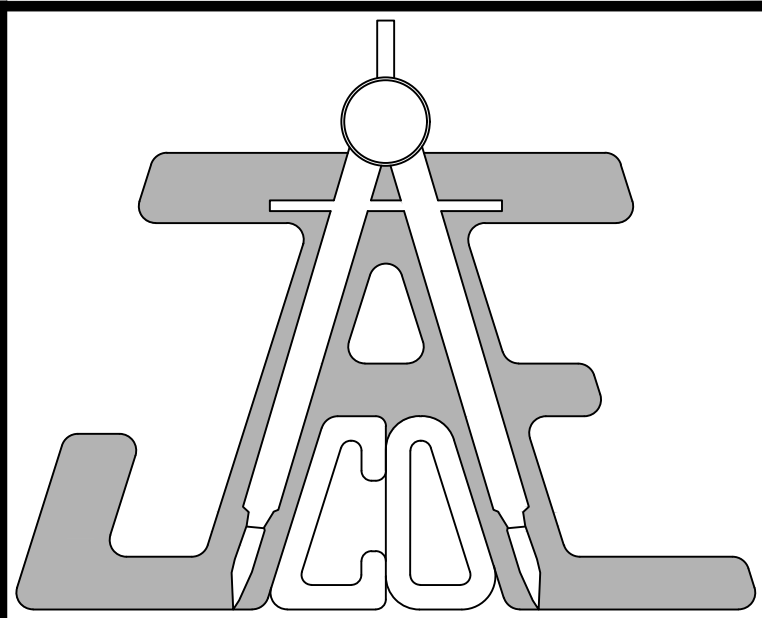
**PART II, SECTION G, ITEM (4)  
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT**

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:

- (a) The E&SC 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&SC plan authority has approved these items,
- (b) 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,
- (c) 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,
- (d) 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,
- (e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
- (f) 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**

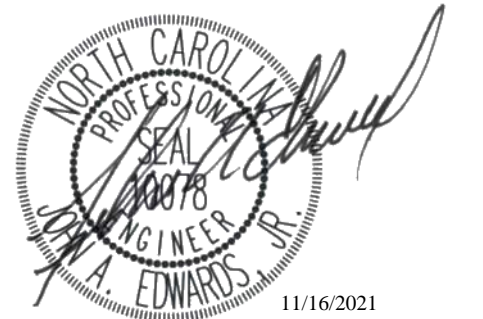
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LEGEND

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JAECO #: 087-01

DRAWING SCALE: N/A

DRAWN BY: TT

CHECKED BY: JAE, JR

DATE ISSUED: 12/10/2020

**C-15**



LANDSCAPE NOTES:

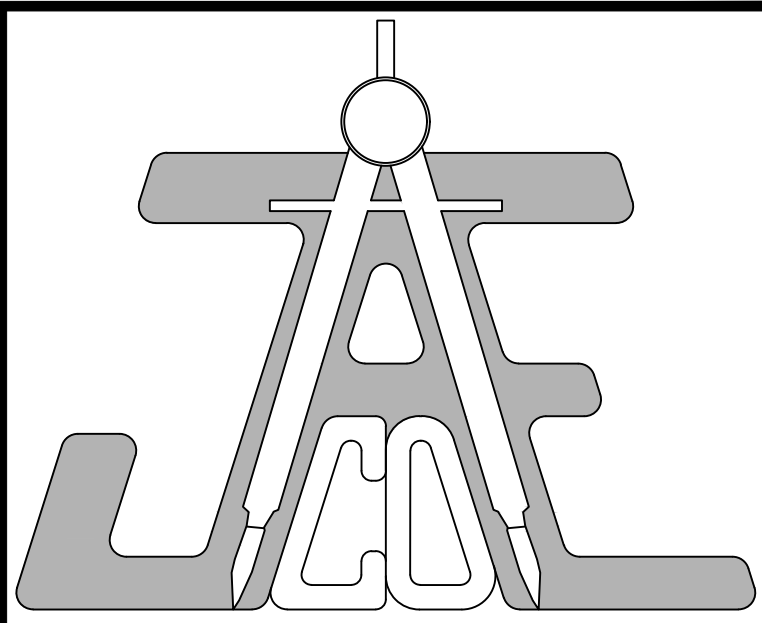
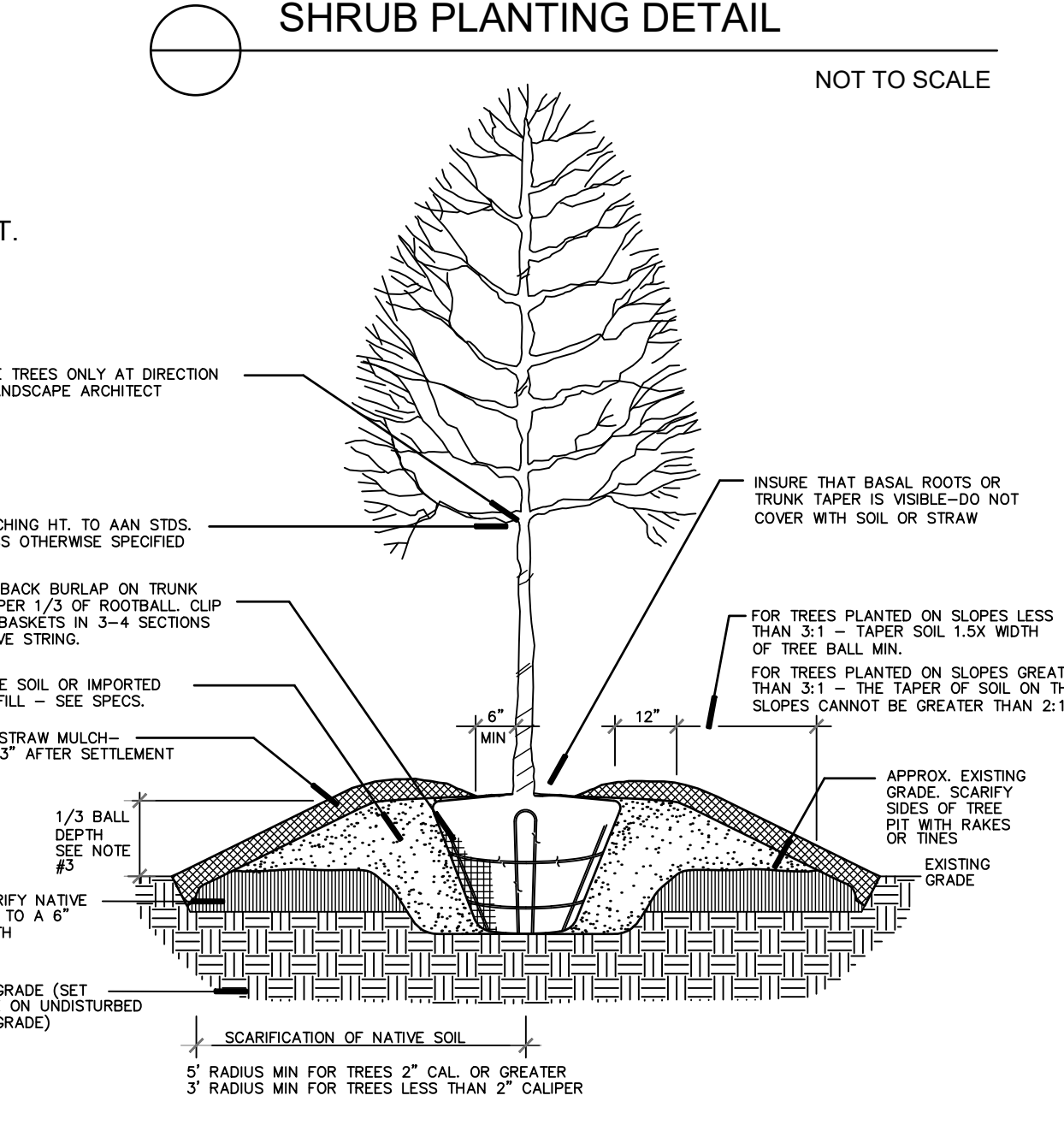
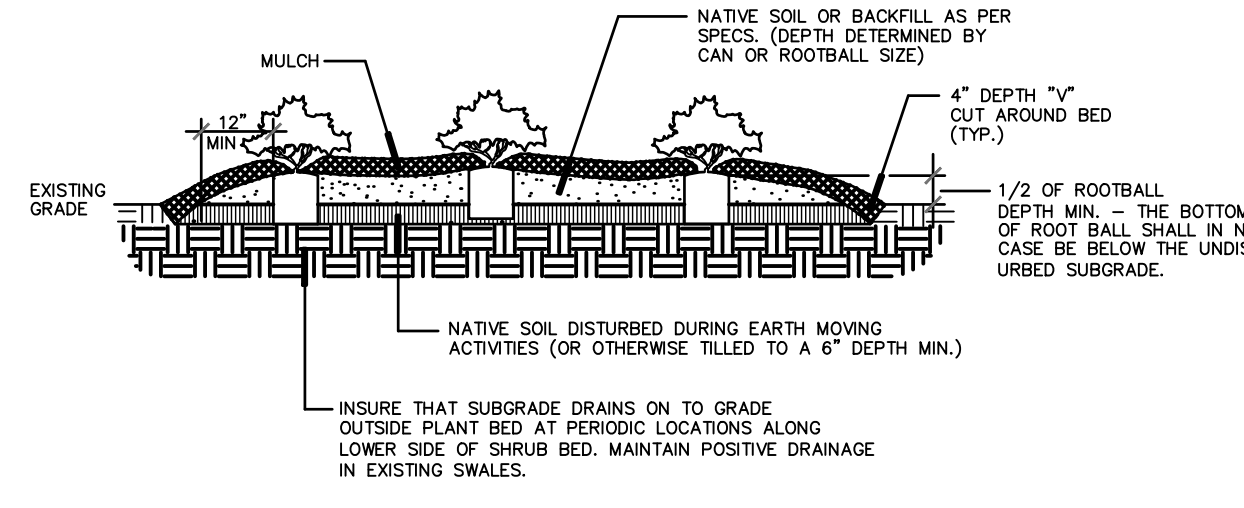
1. B&B AS LISTED UNDER "ROOT" IN THE PLANT LIST INDICATES BALLED AND BURLAPPED.
2. VERIFICATION OF TOTAL QUANTITIES AS SHOWN IN THE PLANT LIST SHALL BE THE RESPONSIBILITY OF THE PLANTING CONTRACTOR AND THE TOTAL QUANTITIES SHALL BE AS REQUIRED ON THE PLANTING PLAN.
3. ALL TREES, SHRUBS, AND PLANTS SHALL CONFORM TO ACCEPTED STANDARDS ESTABLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
4. ALL SAUCERS SHALL BE SOAKED WITH WATER AND MULCHED IMMEDIATELY FOLLOWING INSTALLATION.
5. PRUNING - THIN BRANCHES AND FOLIAGE (NOT ALL END TIPS) RETAINING NORMAL PLANT SHAPE. NEVER CUT EVERGREEN LEADER.
6. VERIFICATION OF LOCATIONS OF UNDERGROUND UTILITIES IS RECOMMENDED PRIOR TO PLANTING.
7. ALL ROOT BALLS REMOVED FROM CONTAINERS SHALL BE SCARIFIED PRIOR TO BACKFILLING.
8. VERIFICATION OF LOCATIONS OF UNDERGROUND UTILITIES IS RECOMMENDED PRIOR TO PLANTING.
9. MULCH TO BE 4" HARDWOOD BARK MULCH.

PLANT LIST

Key	Botanical Name	Common Name	Qty	Cal	Height	Spread	Root	Remarks
<b>SHADE TREES</b>								
ArO	Acer rubrum 'October Glory'	October Glory Red Maple	7	2.5"	8' min.		BB	
ArR	Acer rubrum 'Redpointe'	Redpointe Red Maple	10	2.5"	8' min.		BB	
As	Acer saccharum 'Legacy'	Legacy Sugar Maple	8	2.5"	8' min.		BB	
Lt	Liriodendron tulipifera	Tulip Poplar	7	2.5"	8' min.		BB	
Pc	Platanus chinensis	Chinese Platanus	8	2.5"	8' min.		BB	
Qc	Quercus coccinea	Scarlet Oak	3	2.5"	8' min.		BB	
Tc	Tilia cordata 'Greenspire'	Greenspire Linden	15	2.5"	8' min.		BB	
<b>EVERGREEN TREES</b>								
Cj	Cryptomeria japonica 'Yoshino'	Yoshino Cryptomeria	8		8' min.		BB	
Cl	Callitropsis leylandii	Leyland Cypress	15		8' min.		BB	
Io	Ilex opaca 'Tingo'	Tingo American Holly	2		8' min.		BB	
MgBB	Magnolia grandiflora 'Brackens Brown Beauty'	Brackens Brown Beauty Magnolia	10		8' min.		BB	
MgCC	Magnolia grandiflora 'Carolina Compacta'	Carolina Compacta Magnolia	1		8' min.		BB	
MgKP	Magnolia grandiflora 'Kay Parris'	Kay Parris Magnolia	3		8' min.		BB	
<b>ORNAMENTAL TREES</b>								
Ag	Amelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Serviceberry	5	1.5"	8' min.		BB	
Cc	Cercis canadensis	Eastern Red Bud	8	1.5"	8' min.		BB	
Cf	Cornus florida 'Cherokee Chief'	Cherokee Chief Dogwood	2	1.5"	8' min.		BB	Pink
Li	Lagerstroemia 'Whit II Dynamite'	Dynamite Crape Myrtle	7	1.5"	8' min.		BB	Multistem, Red
Py	Prunus yedoensis 'Yoshino'	Yoshino Cherry	2	1.5"	8' min.		BB	
<b>SHRUBS</b>								
Az	Azalea x Indica 'Formosa'	Formosa Azalea	40		24"		Cont.	Lavender
Ca	Callicarpa americana 'Atrorubra'	Purple Beautyberry	6		24"		Cont.	
Caf	Calycanthus floridus	Sweet Shrub	2		24"		Cont.	
Cs	Cornus sericea 'Bailey'	Bailey Red Twig Dogwood	10		24"		Cont.	
CsAR	Camellia sasanqua 'Autumn Rocket'	Autumn Rocket Camellia	7		24"		Cont.	
Fl	Forsythia x Intermedia 'Lynwood Gold'	Lynwood Gold Forsythia	18		24"		Cont.	
Hp	Hydrangea paniculata 'Limelight'	Limelight Hydrangea	4		24"		Cont.	
IcB	Ilex cornuta 'Burfordii Nana'	Dwf. Burford Holly	56		24"		Cont.	
ICH	Ilex crenata 'Helleri'	Helleri Holly	32		18"		Cont.	
Ig	Ilex glabra 'Shamrock'	Shamrock Inkberry Holly	117		24"		Cont.	3.5' oc
Jc	Juniperus chinensis 'Sea Green'	Sea Green Juniper	56		24"		Cont.	
Lc1	Laropetalum chinense 'Ruby'	Ruby Laropetalum	25		24"		Cont.	
Lc2	Laropetalum chinense 'Emerald Snow'	Emerald Snow Laropetalum	31		24"		Cont.	
Mc	Myrica cerifera	Wax Myrtle	37		24"		Cont.	
POL	Prunus laurocerasus 'Oita Luiken'	Oita Luiken Cherry Laurel	65		24"		Cont.	
TaE	Thuja occidentalis 'Emerald'	Emerald Arborvitae	3		4"		Cont.	
Tp	Thuja plicata 'Green Splendor'	Green Splendor Arborvitae	5		6"		BB	
Vd	Viburnum davidii	David Viburnum	31		24"		Cont.	
<b>GROUND COVER</b>								
JcBP	Juniperus conferta 'Blue Pacific'	Blue Pacific Juniper	20		1 gal. min.		Cont.	
Lm	Liriodendron muscari 'Big Blue'	Big Blue Lilyturf	479		1 gal. min.		Cont.	15' oc

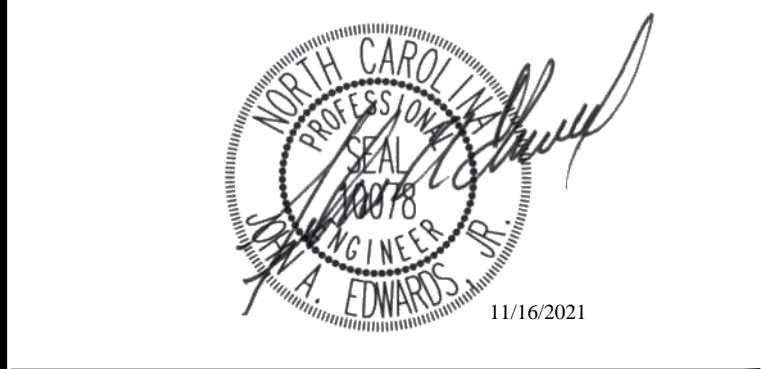
LANDSCAPE REQUIREMENTS

- 30' STREET FRONT TYPE 'D' BUFFER (1 TREE PER 40')
- GRANITE FALLS BLVD (EAST) - 300' REQUIRED TREES - 7.5 PROPOSED TREES - 8
- GRANITE FALLS BLVD (WEST) - 290' REQUIRED TREES - 7.25 PROPOSED TREES - 7
- W. YOUNG STREET - 55' REQUIRED TREES - 1.4 PROPOSED TREES - 2
- SCARBORO STREET - 147' REQUIRED TREES - 3.6 PROPOSED TREES - 4
- 10' STREET FRONT TYPE 'D' BUFFER (1 TREE PER 40', SEMI-OPAQUE TO 3' HT. ALONG PARKING AREA)
- GRANITE VISTA DRIVE (EAST) - 282' REQUIRED TREES - 7.05 PROPOSED TREES - 7 PROPOSED SHRUBS - 44
- GRANITE VISTA DRIVE (WEST) - 335' REQUIRED TREES - 8.4 PROPOSED TREES - 8 PROPOSED SHRUBS - 58
- 30' TYPE 'A' BUFFER OPAQUE TO 6' HT.
- PLANTS PROPOSED:  
14 SHADE TREES  
29 EVERGREEN TREES  
12 ORNAMENTAL TREES  
167 EVERGREEN SHRUBS  
18 DECIDUOUS SHRUBS
- 10' TYPE 'C' BUFFER (SPATIAL DEFINITION)
- REFER TO PLAN TO VERIFY COMPLIANCE WITH BUFFER REQUIREMENTS



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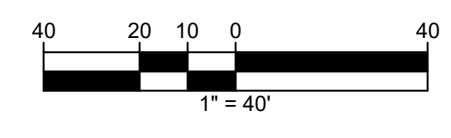
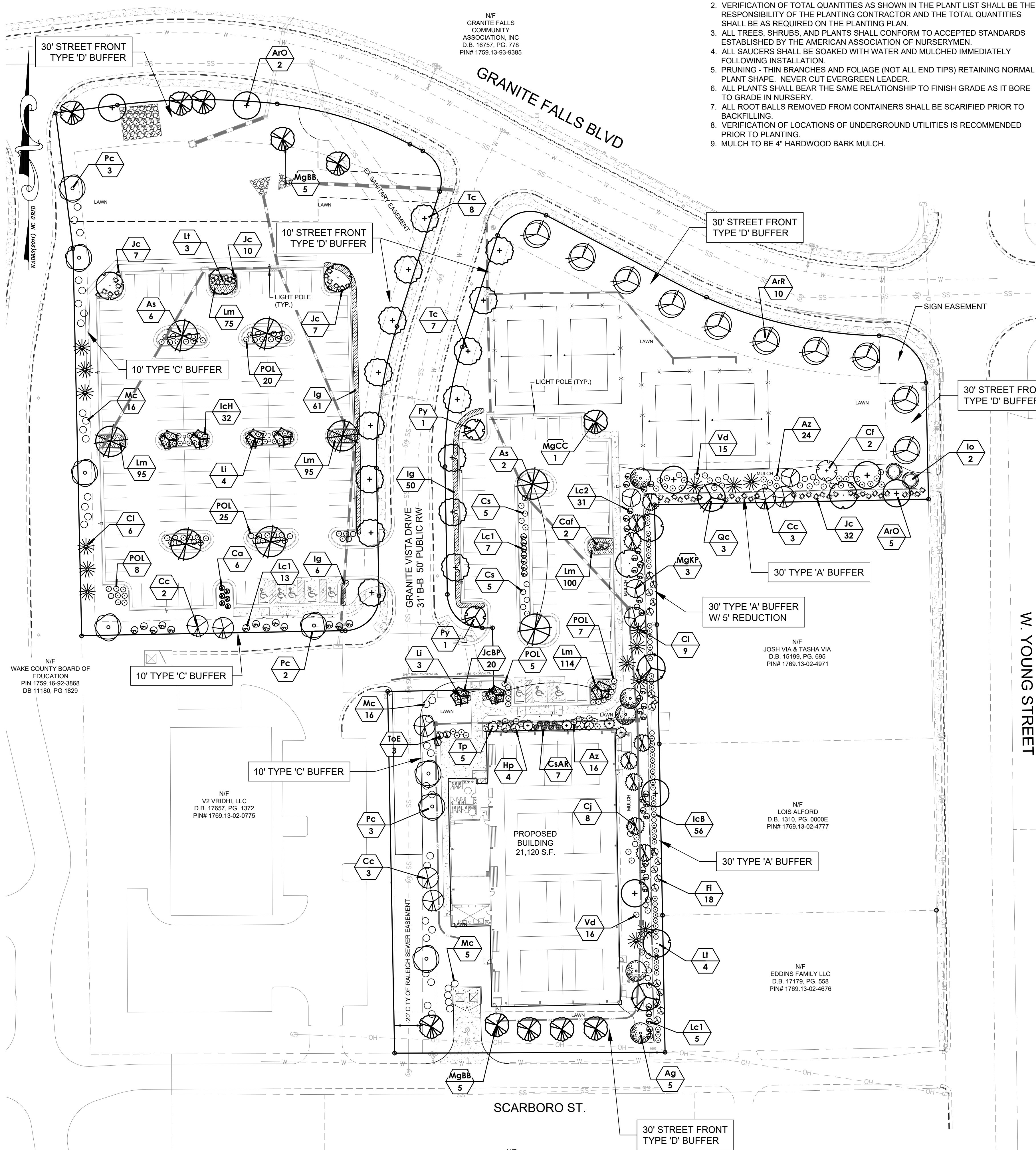
PLANT TAG (SEE PLANT LIST)  
Ar 2 - PLANT ABBREVIATION (KEY)  
2 - QUANTITY

LANDSCAPE PLAN

Number	Description	Date
4	PERMIT SET	07/08/21
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JAECO #: 087-01  
DRAWING SCALE: 1" = 40'  
DRAWN BY: TT  
CHECKED BY: JAE, JR  
DATE ISSUED: 12/10/2020

L-1





### VEGETATED SHELF LANDSCAPING

#### SHALLOW LAND PLANTING - 708 S.F.

USE AT LEAST 3 VARIETIES AND PLANT A MINIMUM OF 6 CELLS OF AT LEAST 30 PLANTS EACH FOR A TOTAL OF 180 SHALLOW LAND PLANTS (SEE SCHEDULE FOR APPROVED PLANTS)

#### SHALLOW WATER PLANTING - XX S.F.

USE AT LEAST 3 VARIETIES AND PLANT A MINIMUM OF 6 CELLS OF AT LEAST 28 PLANTS EACH FOR A TOTAL OF 168 SHALLOW WATER PLANTS (SEE SCHEDULE FOR APPROVED PLANTS)

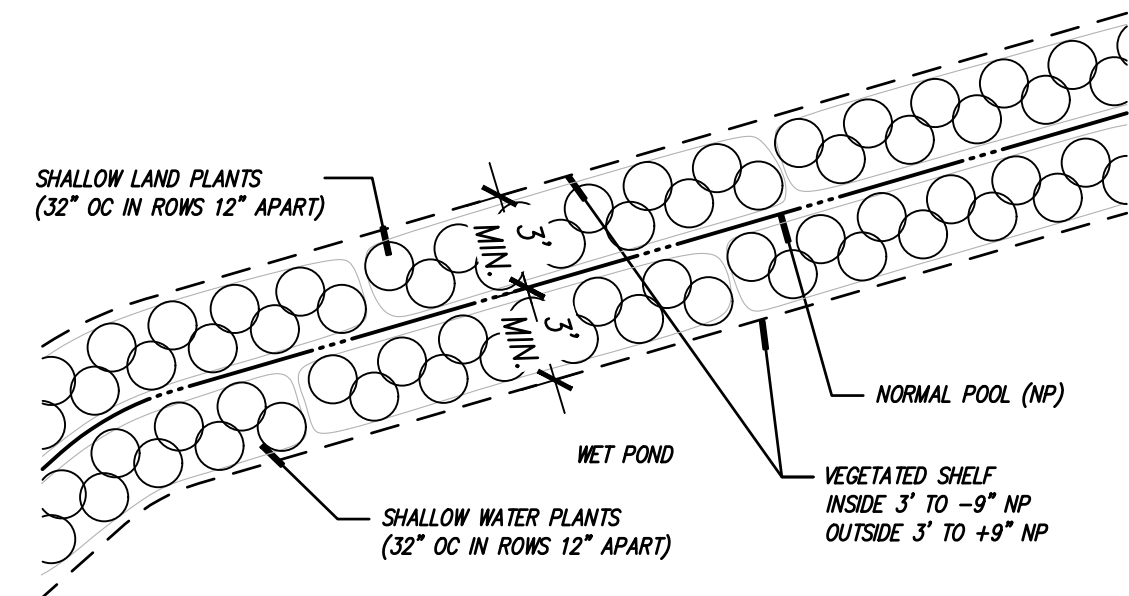
### VEGETATED SHELF PLANT SCHEDULE

#### SHALLOW LAND

(Herb.)	Dichromena latifolia	White star grass	4-6" pot
Di	Eupatorium fistulosum	Joe Pye weed	4-6" pot
EF	Hibiscus grandiflorus	Velvet Mallow	4-6" pot
Hg	Hibiscus coccinea	Scarlet Rose Mallow	4-6" pot
He	Chelone glabra	White turtlehead	4-6" pot
Cg	LOBELIA cardinalis	Cardinal flower	4-6" pot
Lc			

#### SHALLOW WATER

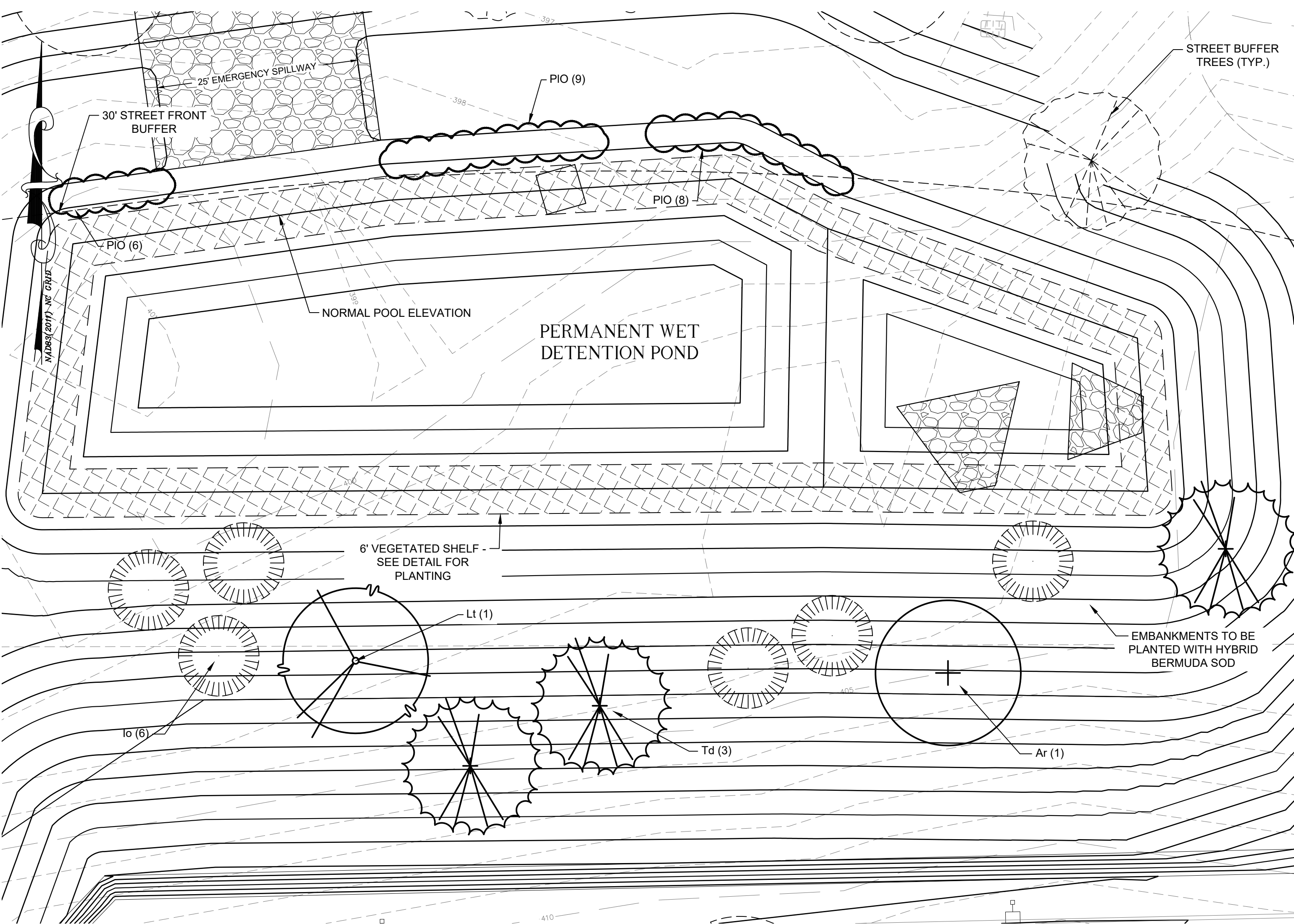
(Herb.)	Acorus Spp	Sweet flag	4-6" pot
As	Iris versicolor	Blue flag Iris	4-6" pot
Iv	Pontederia cordata	Peckerel weed	4-6" pot
Pc	Peltandra virginica	Arrow arum	4-6" pot
Pv	Sagittaria longiloba	Arrowhead	4-6" pot
Sl	Juncus effusus	Softrush	4-6" pot
Je			



### WET POND VEGETATED SHELF PLANTING DETAIL NTS

### WET POND AREA PLANT LIST

KEY	QUAN.	BOTANICAL NAME	COMMON NAME	MIN. CAL.	HT.	REMARKS
<b>TREES</b>						
Ar	1	Acer rubrum 'Red Sunset'	Red Maple	2"	12-14'	
Io	6	Ilex opaca	Savannah Holly	2"	8-10'	
Lt	1	Liriodendron tulipifera	Tulip Poplar	2"	12-14'	
Td	3	Taxodium distichum	Bald Cypress	2"	12-14'	
<b>SHRUBS</b>						
PIO	23	Prunus l. 'Otto Luyken'	Otto Luyken Laurel	24"	3.5' o.c.	



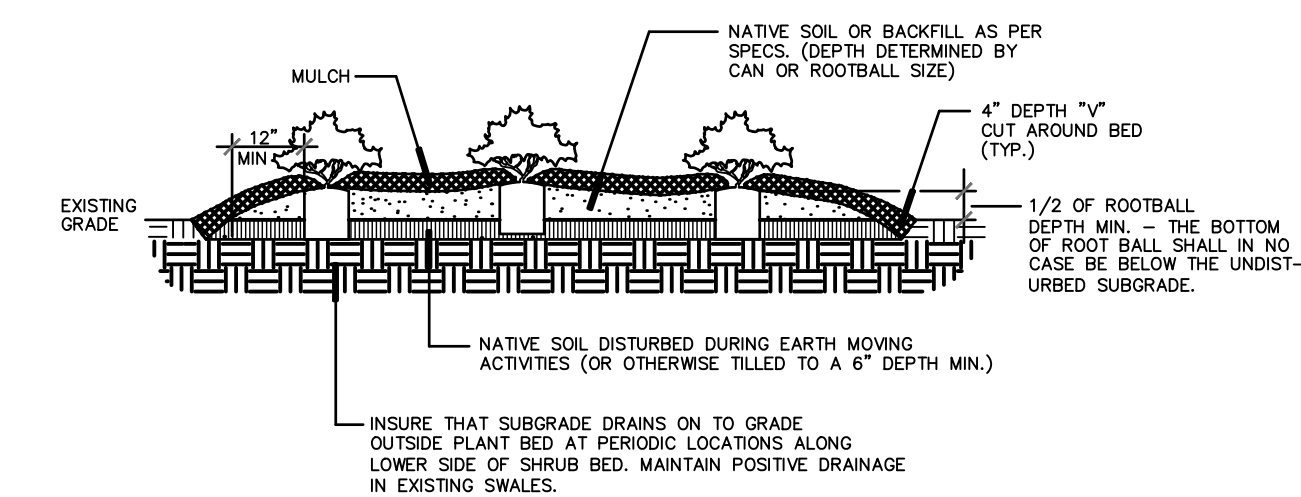
### WET POND LANDSCAPING

SCALE: 1"=10'

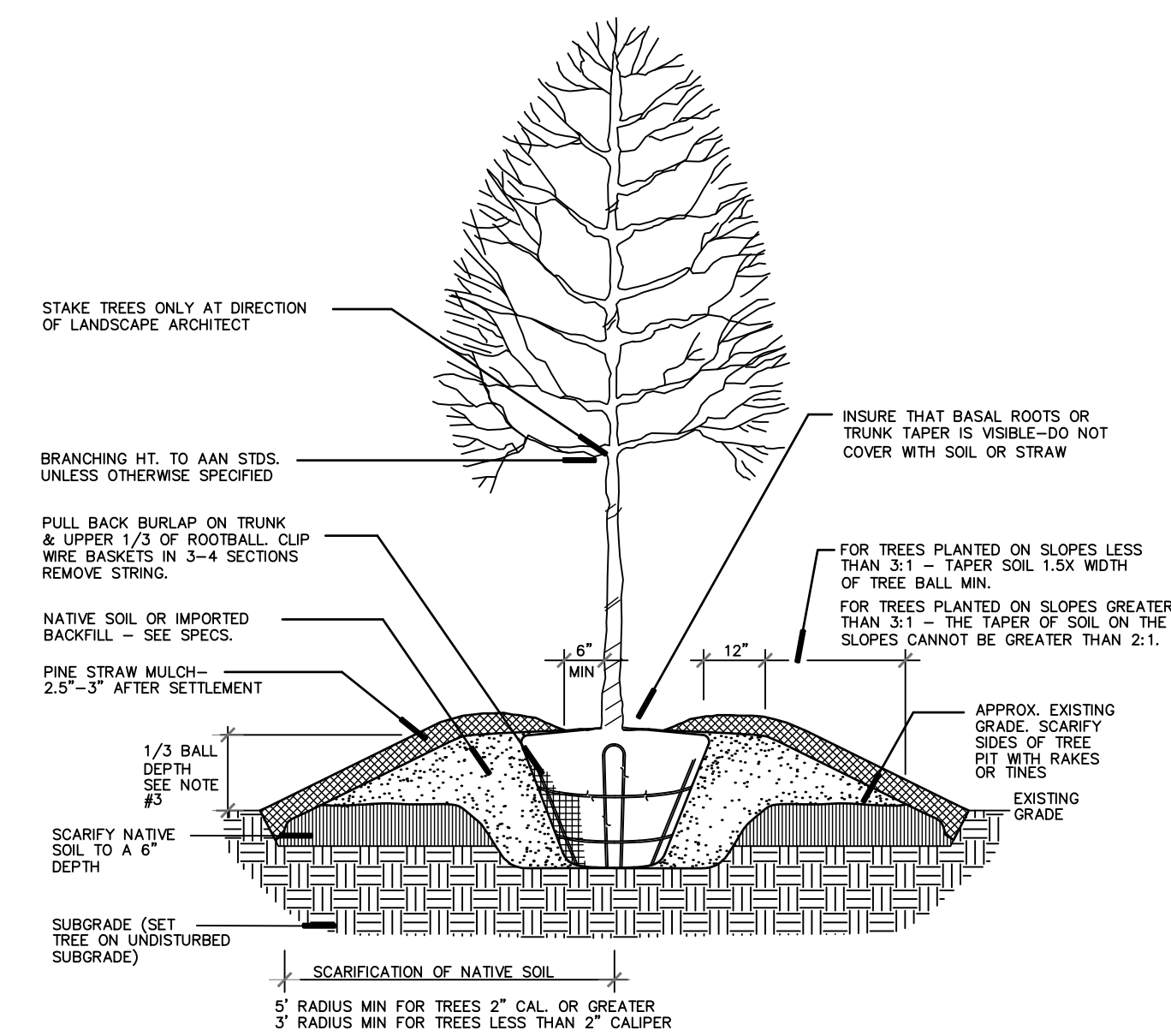
### PLANT LIST

Key	Botanical Name	Common Name	Qty	Cal	Height	Spread	Root	Remarks
<b>SHADE TREES</b>								
ArO	Acer rubrum 'October Glory'	October Glory Red Maple	7	2.5"	8' min.		BB	
AR	Acer rubrum 'Redpointe'	Redpointe Red Maple	10	2.5"	8' min.		BB	
As	Acer saccharum 'Legacy'	Legacy Sugar Maple	8	2.5"	8' min.		BB	
Lt	Liriodendron tulipifera	Tulip Poplar	7	2.5"	8' min.		BB	
Pc	Pistachia chinensis	Chinese Pistache	8	2.5"	8' min.		BB	
Qc	Quercus coccinea	Scarlet Oak	3	2.5"	8' min.		BB	
Tc	Tilia cordata 'Greenspire'	Greenspire Linden	15	2.5"	8' min.		BB	
<b>EVERGREEN TREES</b>								
Cj	Cryptomeria japonica 'Yoshino'	Yoshino Cryptomeria	8		8' min.		BB	
Cl	Callitris leylandii	Leyland Cypress	15		8' min.		BB	
Io	Ilex opaca 'Tinga'	Tinga American Holly	2		8' min.		BB	
MgBB	Magnolia grandiflora 'Brackens Brown Beauty'	Brackens Brown Beauty Magnolia	10		8' min.		BB	
MgCC	Magnolia grandiflora 'Carolina Compacta'	Carolina Compacta Magnolia	1		8' min.		BB	
MgKP	Magnolia grandiflora 'Kay Paris'	Kay Paris Magnolia	3		8' min.		BB	
<b>ORNAMENTAL TREES</b>								
Ag	Amelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Serviceberry	5	1.5"	8' min.		BB	
Cc	Cercis canadensis	Eastern Red Bud	8	1.5"	8' min.		BB	
Cf	Cornus florida 'Cherokee Chief'	Cherokee Chief Dogwood	2	1.5"	8' min.		BB	Pink
Li	Lagerstroemia Whit II 'Dynamite'	Dynamite Crape Myrtle	3	1.5"	8' min.		BB	Multistem, Red
Py	Prunus yedoensis 'Yoshino'	Yoshino Cherry	2	1.5"	8' min.		BB	
<b>SHRUBS</b>								
Az	Azalea x indica 'Formosa'	Formosa Azalea	40		24"		Cont.	Lavender
Caf	Calycanthus floridus	Sweet Shrub	2		24"		Cont.	
Cs	Cornus sericea 'Bailey'	Bailey Red Twig Dogwood	10		24"		Cont.	
CsAR	Cornus sasanqua 'Autumn Rocket'	Autumn Rocket Cornelia	7		24"		Cont.	
Fi	Forsythia x intermedia 'Lynwood Gold'	Lynwood Gold Forsythia	18		24"		Cont.	
Hp	Hydrangea paniculata 'Limelight'	Limelight Hydrangea	4		24"		Cont.	
IcB	Ilex comuta 'Burfordii 'Nana'	Dwf. Burford Holly	56		24"		Cont.	
Ig	Ilex glabra 'Shamrock'	Shamrock Inkberry Holly	117		24"		Cont.	3.5' oc
Jc	Juniperus chinensis 'Sea Green'	Sea Green Juniper	32		24"		Cont.	
Lc1	Loropetalum chinense 'Ruby'	Ruby Loropetalum	25		24"		Cont.	
Lc2	Loropetalum chinense 'Emerald Snow'	Emerald Snow Loropetalum	31		24"		Cont.	
Mz	Myrica cerifera	Wax Myrtle	37		24"		Cont.	
POL	Prunus laurocerasus 'Otto Luyken'	Otto Luyken Cherry Laurel	12		24"		Cont.	
ToE	Thuja occidentalis 'Emerald'	Emerald Arborvitae	3		4'		Cont.	
Tp	Thuja plicata 'Green Splendor'	Green Splendor Arborvitae	5		6'		BB	
Vd	Viburnum davidii	David Viburnum	31		24"		Cont.	
<b>GROUND COVER</b>								
JcBP	Juniperus conferta 'Blue Pacific'	Blue Pacific Juniper	20		1 gal. min.		Cont.	
Lm	Liriope muscari 'Big Blue'	Big Blue Lilyturf	214		1 gal. min.		Cont.	15' oc

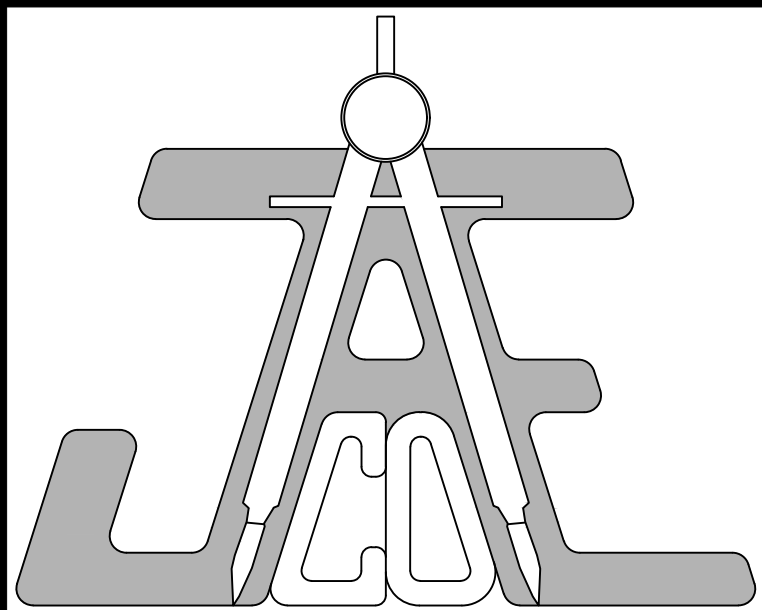
NOTE: THIS PLANT LIST DOES NOT INCLUDE PLANTS FOR THE WET POND. SEE WET POND PLANT LIST FOR PLANT MATERIAL IN THAT AREA.



### SHRUB PLANTING DETAIL NOT TO SCALE



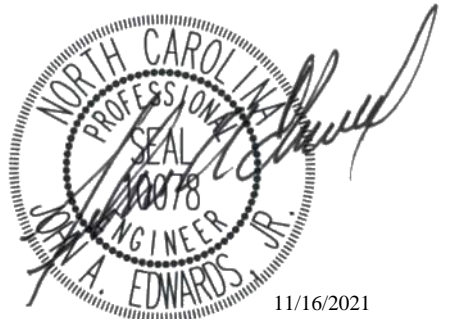
### TREE PLANTING DETAIL NOT TO SCALE



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Call 811 before you dig.

### LEGEND

PLANT TAG (SEE PLANT LIST)

Ar 2  
PLANT ABBREVIATION (KEY)  
QUANTITY

### PLANT LIST, DETAILS, AND WET POND LANDSCAPING

Number	Description	Date
4	PERMIT SET	07/08/21
5	PER TRC COMMENTS	09/14/21
6	LAYOUT REVISION & POST-APPROVAL COMMENTS	10/28/21
7	ADDITIONAL POST-APPROVAL COMMENTS	11/02/21
8	POST-APPROVAL COMMENTS	11/16/21

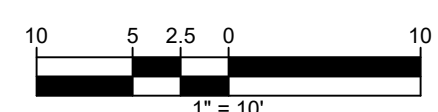
JAECO #: 087-01

DRAWING SCALE: AS SHOWN

DRAWN BY: TT

CHECKED BY: JAE, JR

DATE ISSUED: 12/10/2020



L-2