

RELATION OF WATER MAINS TO SEWERS (TAKEN FROM 15A NCAC 18C SECTION .0906 AND 15A NCAC 2T.1)

LATERAL SEPARATION OF SEWERS AND WATER MAINS

- SEWER AND WATER MAINS SHALL HAVE AT LEAST A 10 FEET HORIZONTAL SEPARATION MEASURED FROM OUTSIDE EDGE TO OUTSIDE EDGE OF PIPE.
- IF IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS DESCRIBED ABOVE OR ANYTIME THE SEWER IS OVER THE WATER MAIN, BOTH THE WATER MAIN AND SEWER MUST BE CONSTRUCTED OF FERROUS PIPE COMPLYING WITH PUBLIC WATER SUPPLY DESIGN STANDARDS AND BE PRESSURE TESTED TO 150 PSI TO ASSURE WATERTIGHTNESS BEFORE BACKFILLING.
- A 24 INCH VERTICAL SEPARATION SHALL BE PROVIDED BETWEEN STORM SEWER AND SANITARY SEWER LINES OR FERROUS PIPE SPECIFIED.

CROSSING A WATER MAIN OVER A SEWER

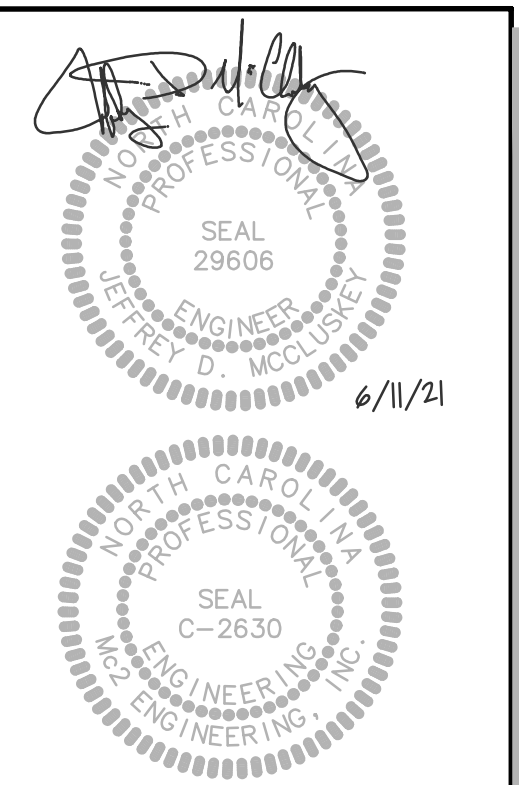
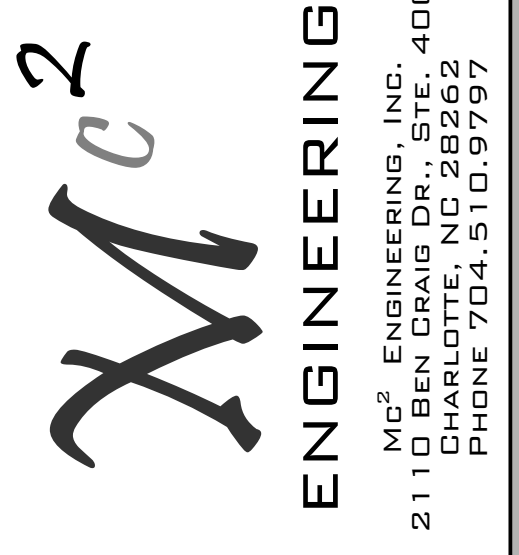
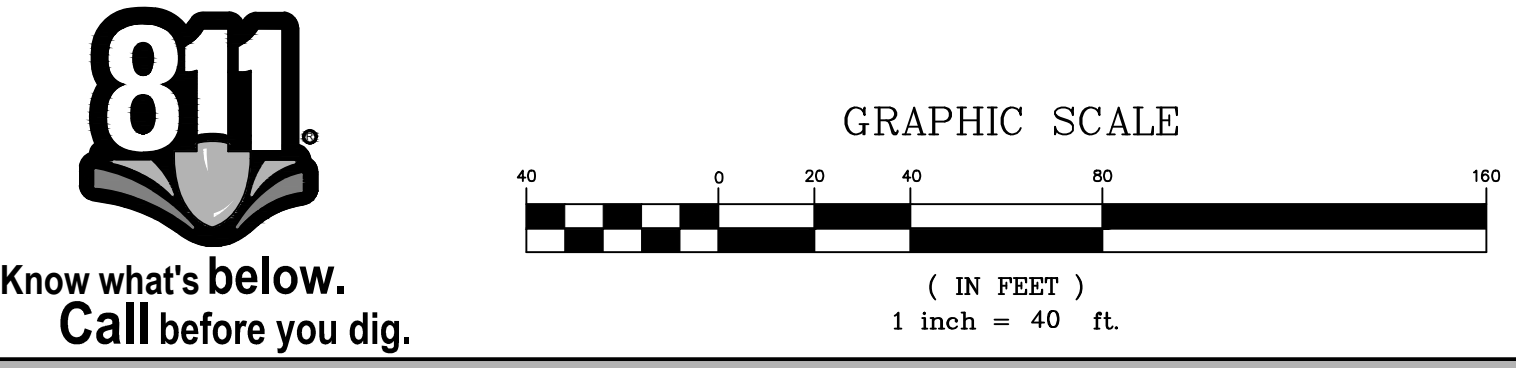
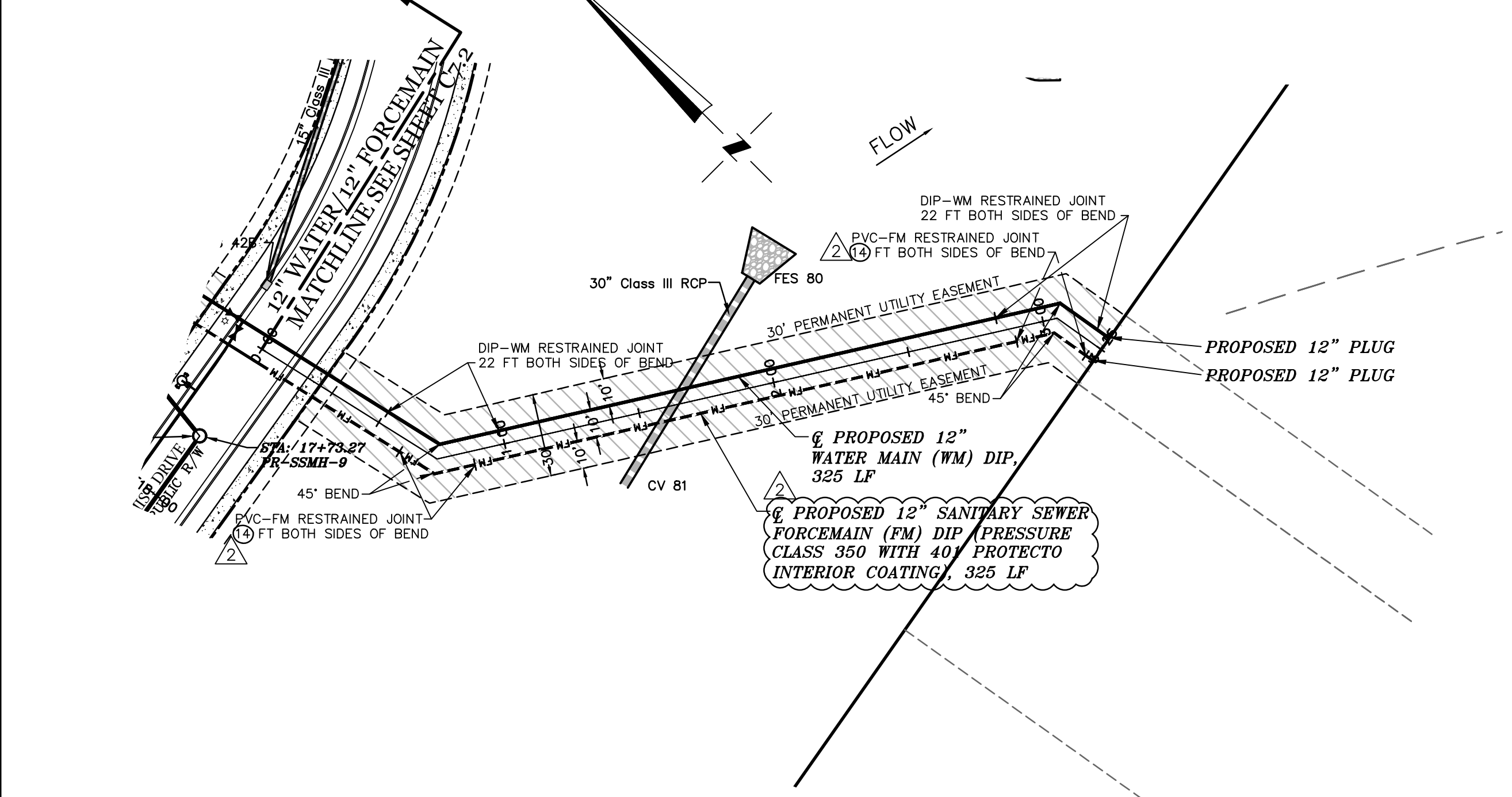
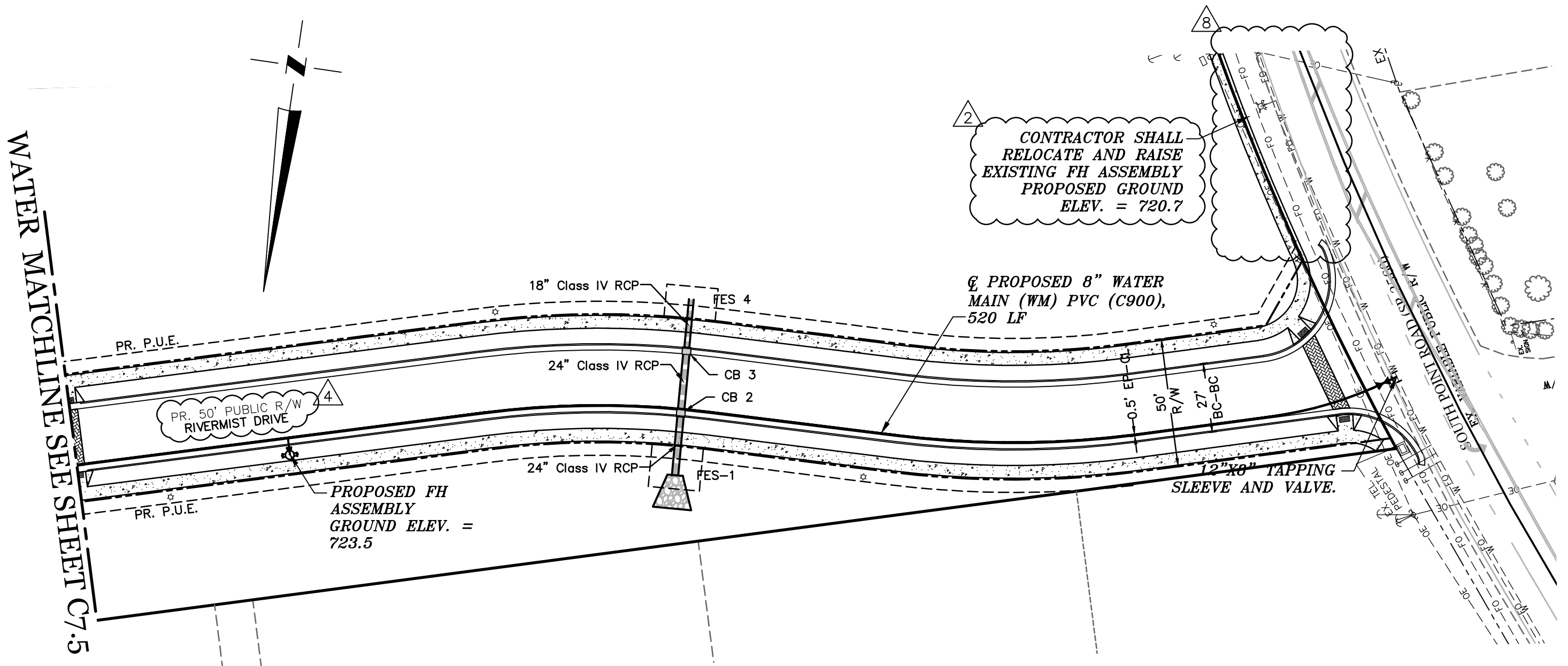
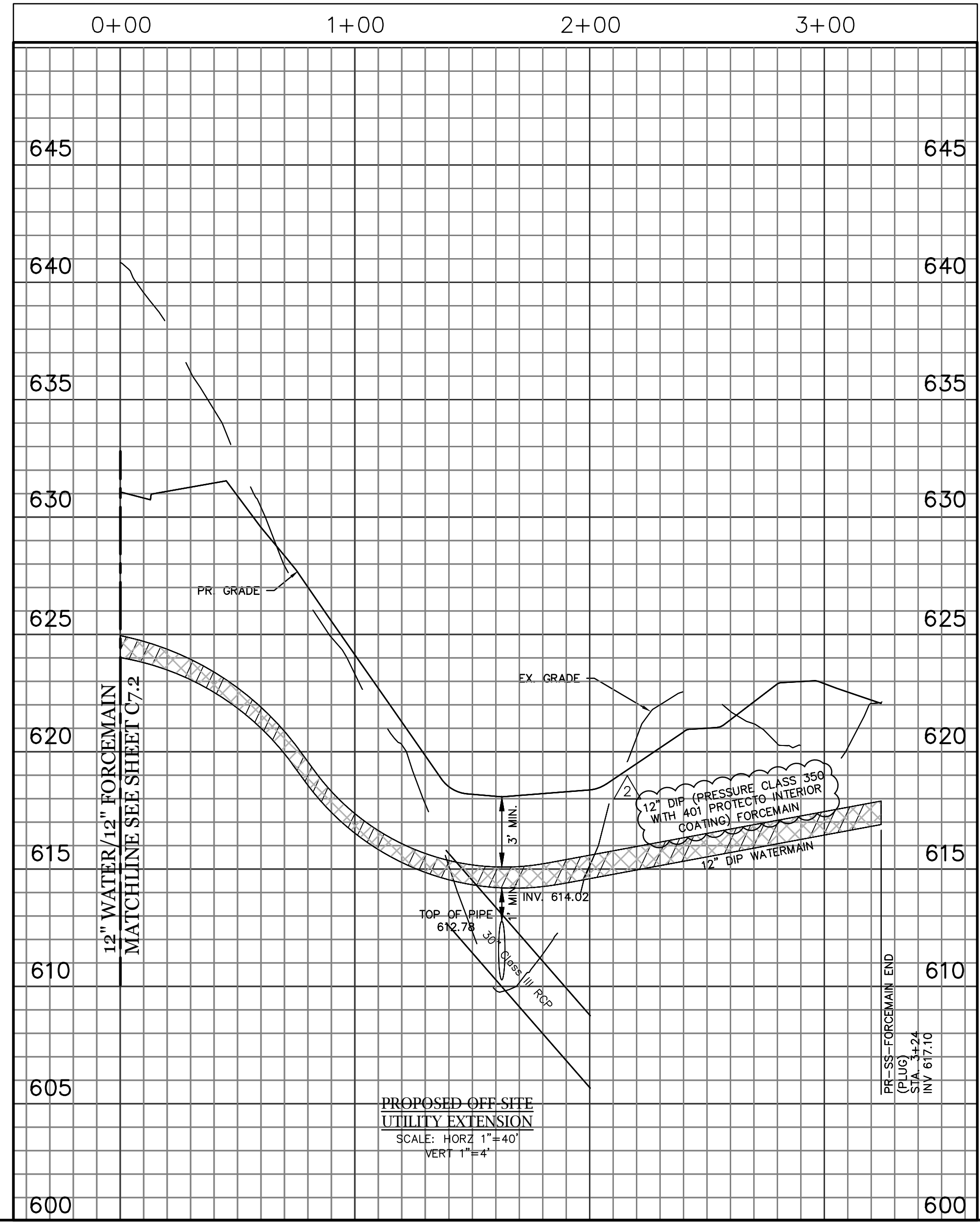
- WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS OVER A SEWER, THE WATER MAIN SHALL BE LAID AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 24 INCHES ABOVE THE TOP OF THE SEWER, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT AN 24 INCH VERTICAL SEPARATION IN WHICH CASE BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.

CROSSING A WATER MAIN UNDER A SEWER

- WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER, BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.

IF 18" SEPARATION BETWEEN WATER AND STORM SEWER CONTRACTOR SHALL INSTALL PVC WATERMAIN WITH FULL LENGTH PIPE SEGMENT SO THAT THE CROSSING OCCURS AT THE MIDPOINT OF THE PIPE SEGMENT.

(R) RESTRAINED JOINT PIPE CALCULATIONS											
BEND	FITTING TYPE	PIPE MATERIAL	SOIL TYPE	SAFETY FACTOR	TRENCH TYPE	DEPTH OF BURY	TEST PRESSURE	NOMINAL SIZE	BRANCH SIZE	LENGTH ALONG RUN	RESTRAINED LENGTH
SEWER	90°	HORIZONTAL	DIP	ML	1.5	3	4'	150 PSI	12"		32 FT
	45°	HORIZONTAL	DIP	ML	1.5	3	4'	150 PSI	12"		14 FT
	22.5°	HORIZONTAL	DIP	ML	1.5	3	4'	150 PSI	12"		7 FT
	45°	VERTICAL	DIP	ML	1.5	3	4'	150 PSI	12"	HIGH SIDE 24' / LOW SIDE 14'	
	90°	HORIZONTAL	DIP	ML	1.5	3	4'	200 PSI	12"		53 FT
WATER	45°	HORIZONTAL	DIP	ML	1.5	3	4'	200 PSI	12"		22 FT
	22.5°	HORIZONTAL	DIP	ML	1.5	3	4'	200 PSI	12"		9 FT
	45°	VERTICAL	DIP	ML	1.5	3	4'	200 PSI	12"	HIGH SIDE 32' / LOW SIDE 18'	
	90°	HORIZONTAL	PVC	ML	1.5	3	3'	200 PSI	8"		53 FT
	45°	HORIZONTAL	PVC	ML	1.5	3	3'	200 PSI	8"		22 FT
	45°	TEE	PVC	ML	1.5	3	3'	200 PSI	12"	8" 9"	68 FT
		REDUCER	PVC	ML	1.5	3	3'	200 PSI	8" 2"		104 FT



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SOUTH POINT ROAD
BELMONT, NC

SHINNVILLE RIDGE PARTNERS, LLC
20607 BETHEL CHURCH ROAD
CORNELIUS, NC 28031

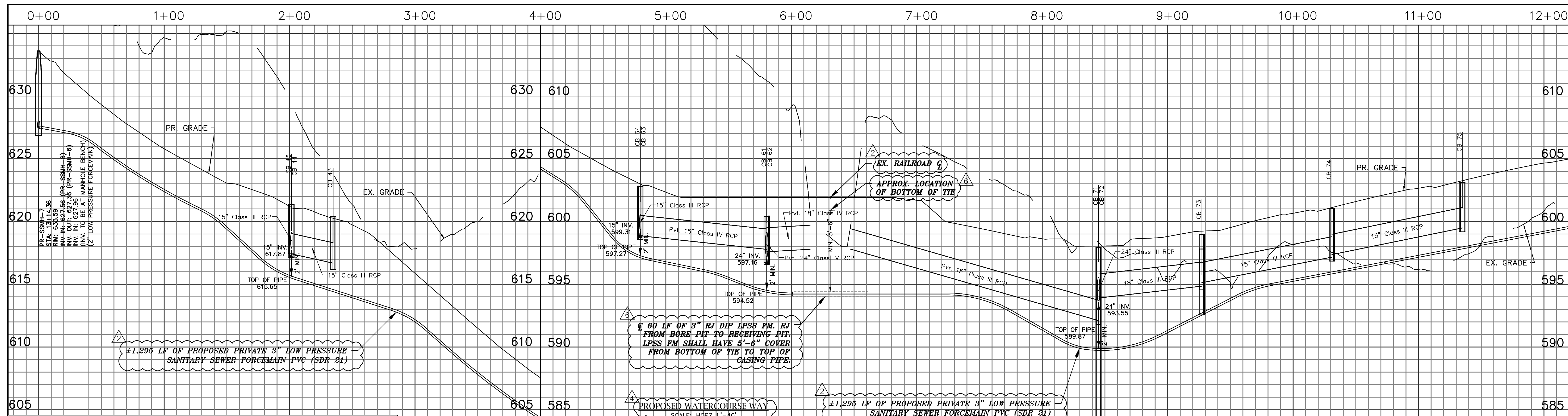
WATER & SANITARY SEWER DISTRIBUTION PLAN

REVISIONS	
2	11/27/18 BELMONT COMMENTS
4	9/24/19 BELMONT COMMENTS
8	6/11/21 NCDOT/BELMONT CMTS

FINAL DRAWING FOR REVIEW PURPOSES ONLY

CAD FILE: 18-017 BASE.DWG
PROJECT NO.: 18-017
DESIGNED BY: TAP
REVIEWED BY: JDM
DATE: OCTOBER 8, 2018

C7.6



(R) RESTRAINED JOINT PIPE CALCULATIONS

BEND	FITTING TYPE	PIPE MATERIAL	SOIL TYPE	SAFETY FACTOR	TRENCH TYPE	DEPTH OF BURY	TEST PRESSURE	NOMINAL SIZE	BRANCH SIZE	LENGTH ALONG RUN	RESTRAINED LENGTH
90°	HORIZONTAL	DIP	ML	1.5	3	4'	150 PSI	12"			32 FT
45°	HORIZONTAL	DIP	ML	1.5	3	4'	150 PSI	12"			14 FT
22.5°	HORIZONTAL	DIP	ML	1.5	3	4'	150 PSI	12"			7 FT
45°	VERTICAL	DIP	ML	1.5	3	4'	150 PSI	12"	HIGH SIDE 24' / LOW SIDE 14'		53 FT
90°	HORIZONTAL	DIP	ML	1.5	3	4'	200 PSI	12"			22 FT
45°	HORIZONTAL	DIP	ML	1.5	3	4'	200 PSI	12"			9 FT
45°	VERTICAL	DIP	ML	1.5	3	4'	200 PSI	12"	HIGH SIDE 32' / LOW SIDE 18'		53 FT
90°	HORIZONTAL	PVC	ML	1.5	3	3'	200 PSI	8"			22 FT
45°	HORIZONTAL	PVC	ML	1.5	3	3'	200 PSI	8"			68 FT
	TEE	PVC	ML	1.5	3	3'	200 PSI	12"	8" 8"	9'	104 FT
	REDUCER	PVC	ML	1.5	3	3'	200 PSI	8"	2"		

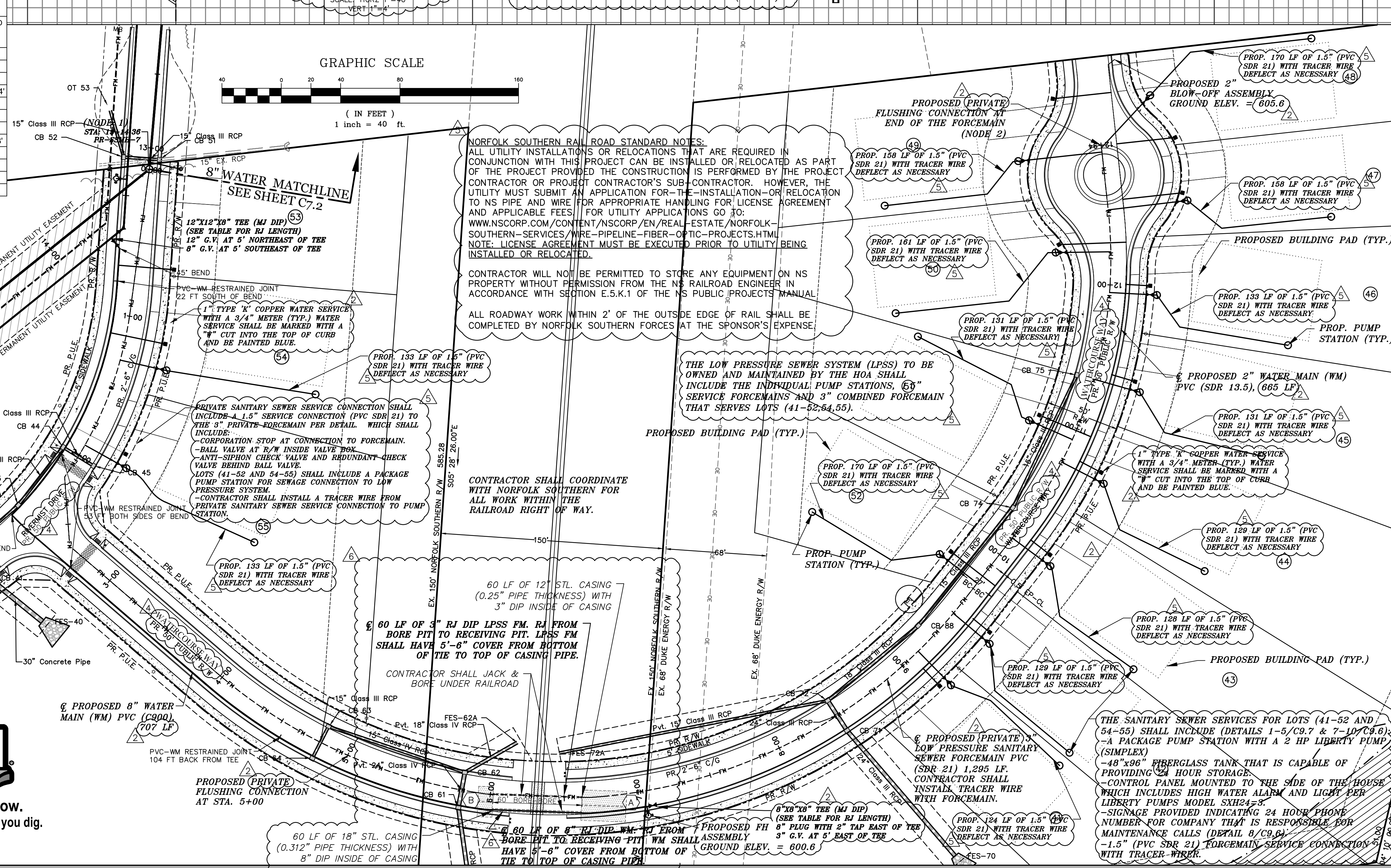
RELATION OF WATER MAINS TO SEWERS (TAKEN FROM 15A NCAC 18C SECTION .0906 AND 15A NCAC 2T: LATERAL SEPARATION OF SEWERS AND WATER MAINS)

- SEWER AND WATER MAINS SHALL HAVE AT LEAST A 10 FEET HORIZONTAL SEPARATION MEASURED FROM OUTSIDE EDGE TO OUTSIDE EDGE OF PIPE.
- IF IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS DESCRIBED ABOVE OR ANYTIME THE SEWER IS OVER THE WATER MAIN, BOTH THE WATER MAIN AND SEWER MUST BE CONSTRUCTED OF FERROUS PIPE COMPLYING WITH PUBLIC WATER SUPPLY DESIGN STANDARDS AND BE PRESSURE TESTED TO 150 PSI TO ASSURE WATERTIGHTNESS BEFORE BACKFILLING.
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WATER SERVICE NOTE:
ALL WATER SERVICES SHALL BE 1" TYPE "K" COPPER PIPE. SERVICES INSTALLED UNDER THIS PROJECT SHALL INCLUDE THE WATER SERVICE SADDLE WITH STAINLESS STEEL STRAPS, CORPORATION STOP, COPPER PIPE, AND 1" X 3/4" REDUCING CURB STOP. THE CURB STOP SHALL BE LOCATED WITHIN THE 5 FOOT UTILITY EASEMENT LOCATED ACROSS THE FRONT OF THE PROPOSED LOTS. THE CURB STOP SHALL BE PROTECTED WITH A PLASTIC VALVE BOX AND ORANGE FENCING. WATER SERVICE LINES SHALL NOT BE LOCATED UNDER PROPOSED DRIVEWAY PAVEMENTS. IF UPON PERMITTING OF PROPOSED HOUSES IT IS DETERMINED THAT THE SERVICE WILL BE UNDER DRIVEWAY PAVEMENT, THE DEVELOPER WILL BE RESPONSIBLE FOR ABANDONING THE WATER SERVICE IN ACCORDANCE WITH CITY REQUIREMENTS AND INSTALL A NEW WATER SERVICE IN THE CORRECT LOCATION. ON A FEE BASIS, THE CITY OF BELMONT WILL INSTALLING THE METER YOKE, METER, AND METER BOX WHEN THE INDIVIDUAL LOT WATER SERVICE ACCOUNT IS ESTABLISHED. THE HOUSE BUILDER/PLUMBER SHALL DIG UP AND EXPOSE THE CURB STOP AND MAKE SURE THAT THE CURB STOP IS AT THE PROPER ELEVATION PRIOR TO THE CITY INSTALLATION OF A METER.

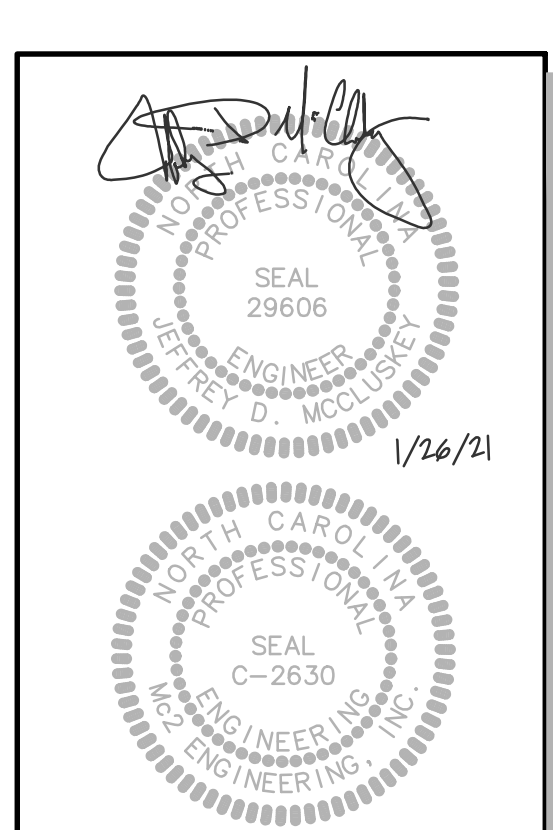
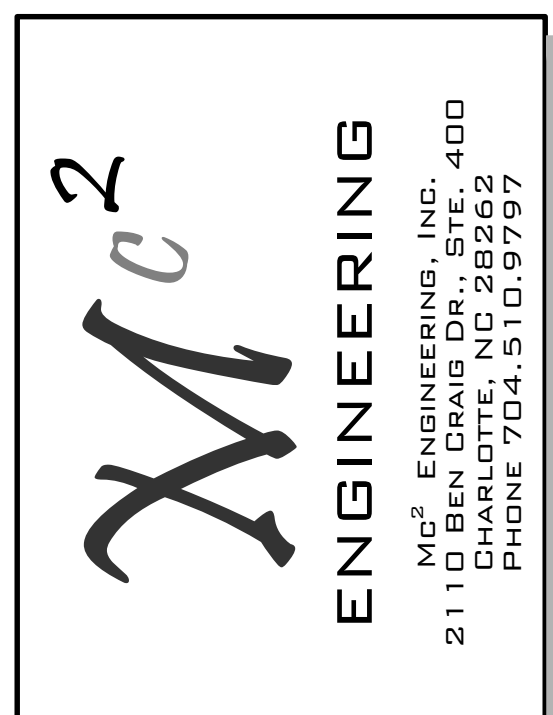
HOME BUILDER SHALL PROVIDE PRESSURE REDUCING VALVES ON LOTS 41-52 BASED ON THE ANTICIPATED HIGH WATER PRESSURE DUE TO THE PROPOSED LOW GRADE.

IF 18" SEPARATION BETWEEN WATER AND STORM SEWER, CONTRACTOR SHALL INSTALL PVC WATERMAIN WITH FULL LENGTH PIPE SEGMENT SO THAT THE CROSSING OCCURS AT THE MIDPOINT OF THE PIPE SEGMENT.



UTILITY INSTALL WITHIN RAILROAD ROW KEY NOTES:
 (A) 10'x30'x6" BORE PIT, 30' FROM RAILROAD ROW CL
 (B) 10'x10'x6" RECEIVING & TAPPING PIT 30' FROM RAILROAD ROW CL

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



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WATER & SANITARY OVERALL PLAN

REVISIONS

2	11/27/18	BELMONT COMMENTS
4	9/24/19	BELMONT COMMENTS
5	10/30/20	NS/LPSS COMMENTS
6	1/26/21	NS COMMENTS

FINAL DRAWING FOR REVIEW PURPOSES ONLY

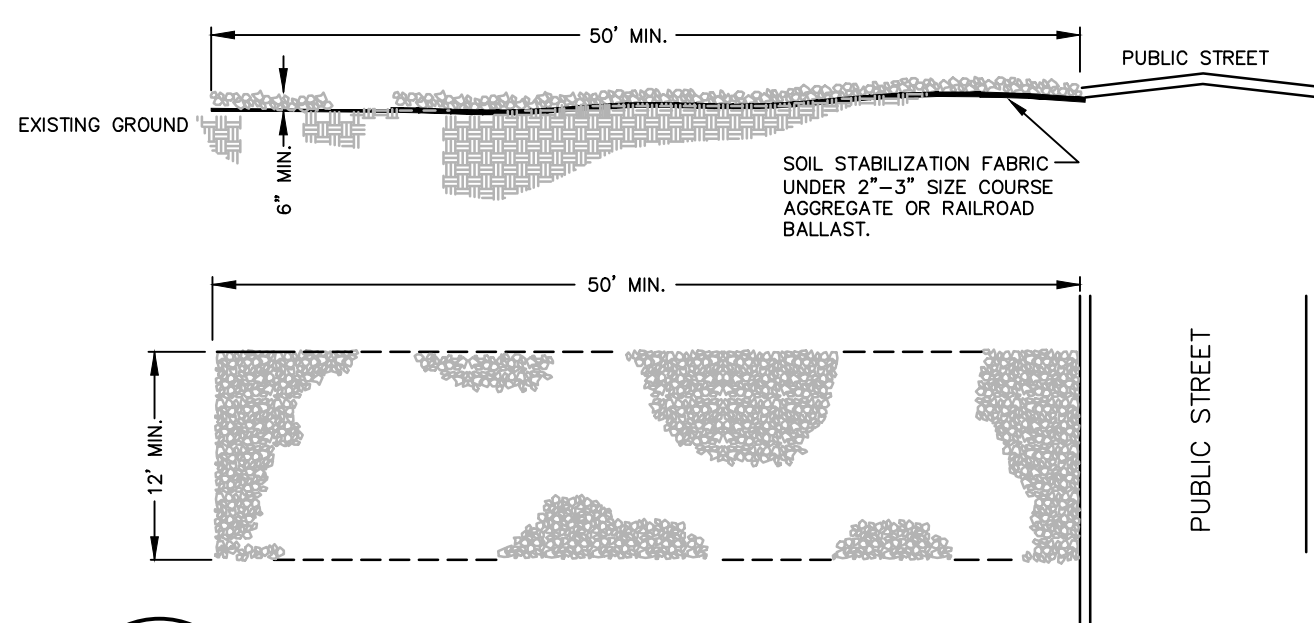
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 PROJECT NO.: 18-017
 DESIGNED BY: TAP
 REVIEWED BY: JDM
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- NOTES:**
- A STABILIZED ENTRANCE PAD OF 2'-3" SIZE COURSE AGGREGATE OR RAIL ROAD BALLAST SHALL BE LOCATED WHERE TRAFFIC WILL ENTER OR LEAVE THE CONSTRUCTION SITE ONTO A PUBLIC STREET.
 - FILTER FABRIC OR COMPACTED CRUSHER RUN STONE SHALL BE USED AS A BASE FOR THE CONSTRUCTION ENTRANCE.
 - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS OR EXISTING PAVEMENT. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS WARRANT AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
 - ANY SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC STREETS MUST BE REMOVED IMMEDIATELY.
 - WHEN APPROPRIATE, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING A PUBLIC STREET. WHEN WASHING IS REQUIRED, IT SHALL BE DONE IN AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN SEE STD. NO. 30.118.

MAINTENANCE:

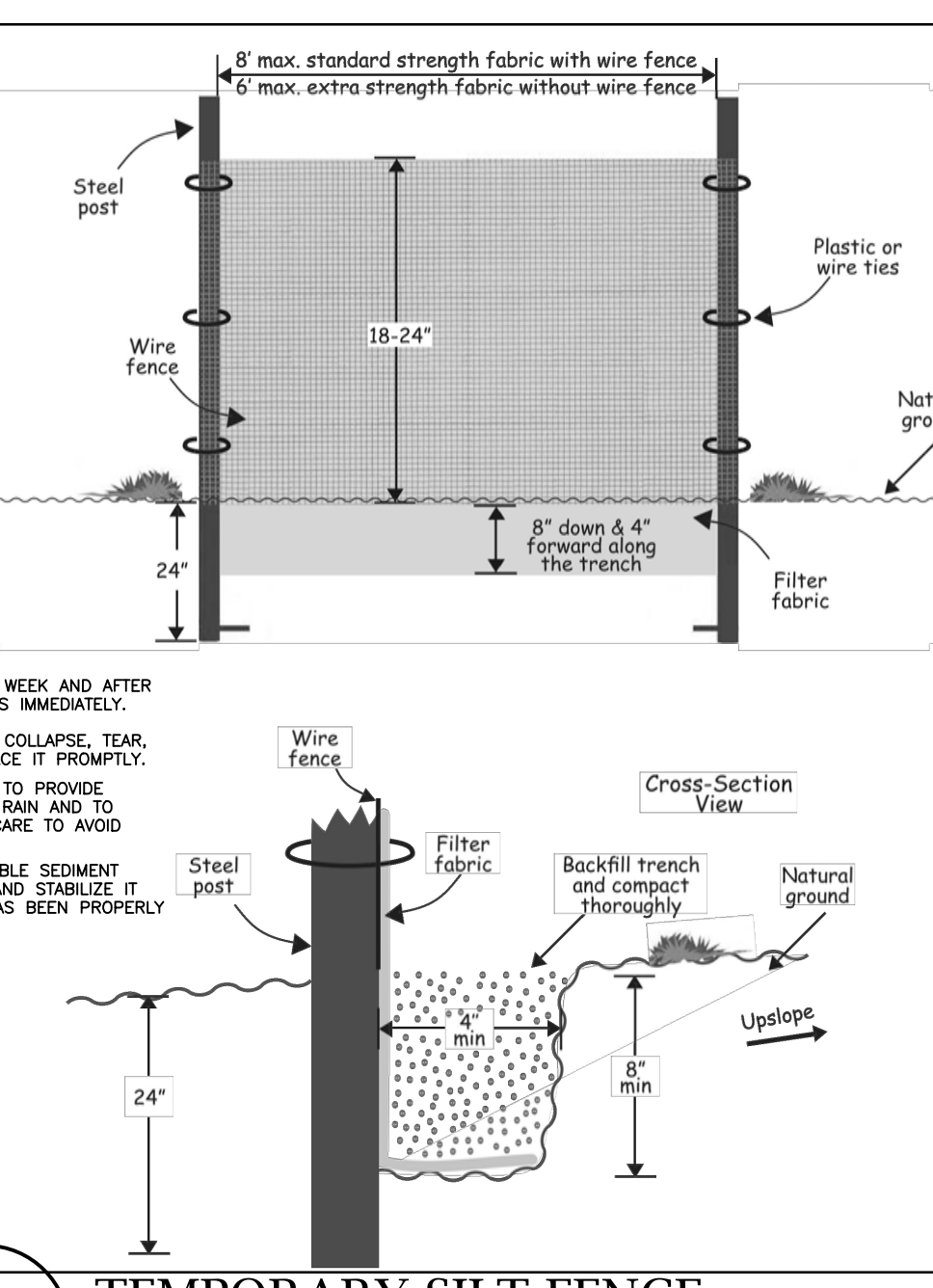
INSPECT CONSTRUCTION ROADS AND PARKING AREAS PERIODICALLY FOR CONDITION OF SURFACE. TOPDRESS WITH NEW GRAVEL AS NEEDED. CHECK ROAD DITCHES AND OTHER SEEDED AREAS FOR EROSION AND SEDIMENTATION AFTER RUNOFF-PRODUCING RAINS. MAINTAIN ALL VEGETATION IN A HEALTHY, VIGOROUS CONDITION. SEDIMENT-PRODUCING AREAS SHOULD BE TREATED IMMEDIATELY.



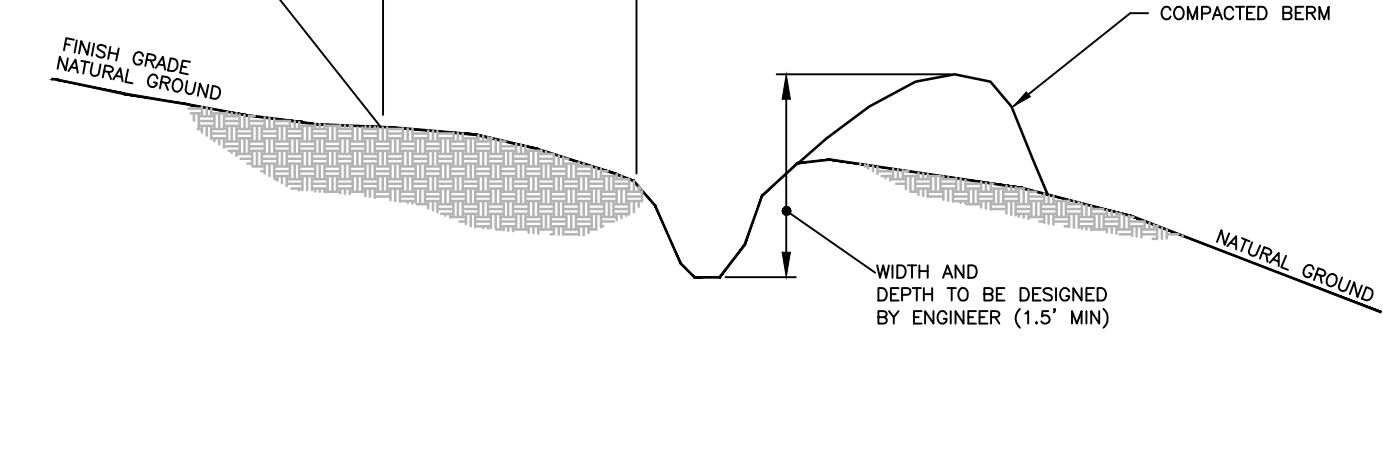
1
C9.0 STABILIZED CONSTRUCTION ENTRANCE
-NTS-

MAINTENANCE NOTES:

- INSPECT SEDIMENT FENCES AT LEAST ONE WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
- SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
- REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
- REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.



2
C9.0 TEMPORARY SILT FENCE
-NTS-



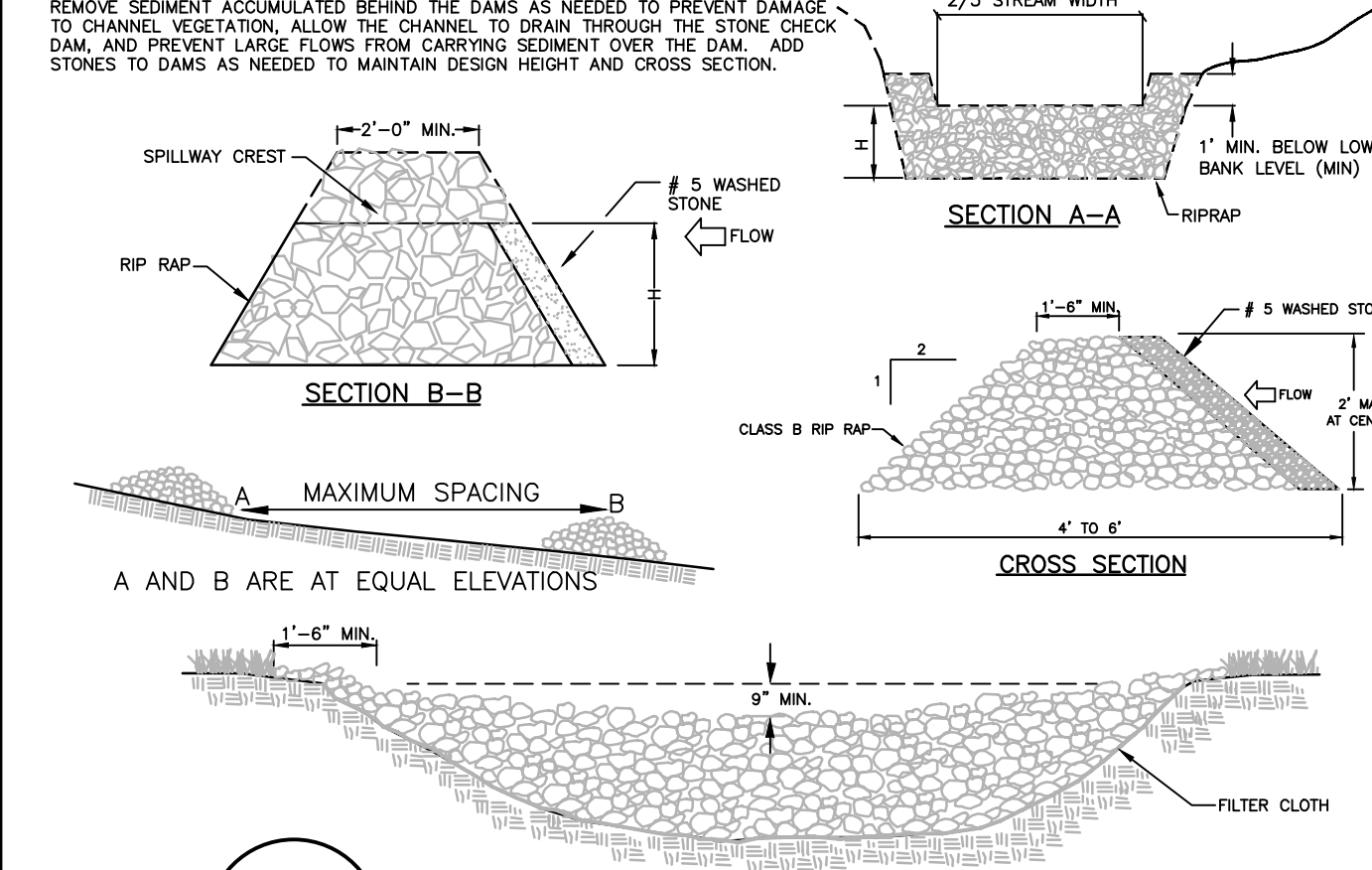
3
C9.0 TEMPORARY SILT DITCH
-NTS-

GENERAL NOTES:

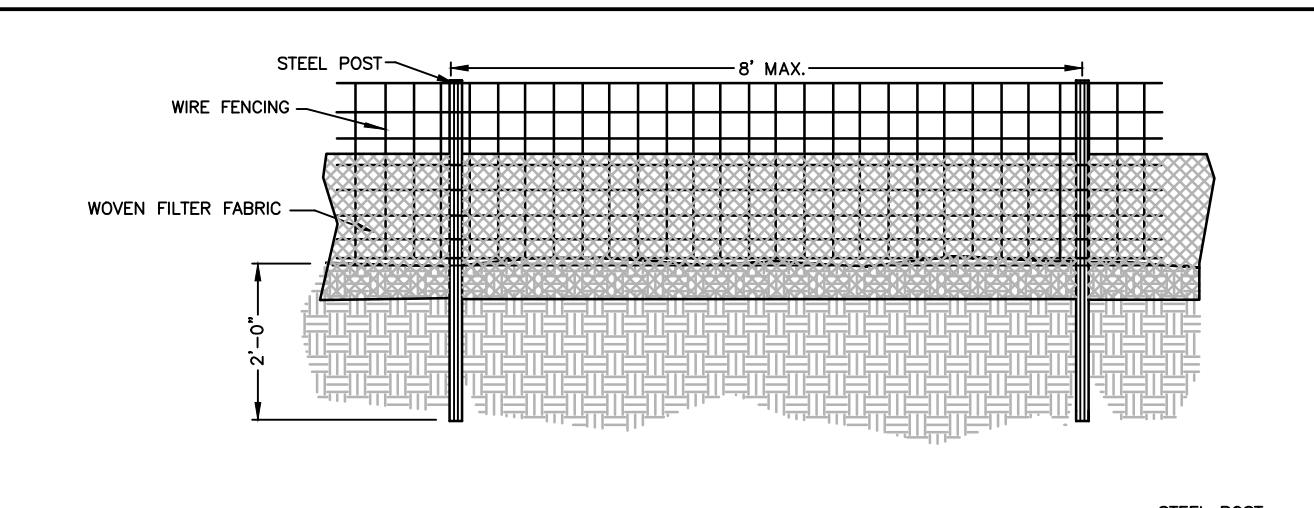
- RIPRAP SIZE TO BE DESIGNED BY ENGINEER.
- CHECK DAMS MAY BE USED IN SLOPING DITCHES OR CHANNELS TO SLOW VELOCITY OR TO CREATE SEDIMENT TRAPS.
- ENSURE THAT MAXIMUM SPACING BETWEEN DAMS PLACES THE TOE OF THE UPSTREAM DAM AT THE SAME ELEVATION AS THE DOWNSTREAM DAM (SEE DIAGRAM BELOW).

MAINTENANCE:

INSPECT CHECK DAMS AND CHANNELS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. CLEAN OUT SEDIMENT, STRAW, LIMBS, OR OTHER DEBRIS THAT COULD CLOG THE CHANNEL WHEN NEEDED.



4
C9.0 TEMPORARY ROCK CHECK DAM
-NTS-



GENERAL NOTES:

- WIRE FENCING SHALL BE A MINIMUM OF 32" IN WIDTH AND SHALL HAVE A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.
- WOVEN FILTER FABRIC BE USED WHERE SILT FENCE IS TO REMAIN FOR A PERIOD OF MORE THAN 30 DAYS.
- STEEL POSTS SHALL BE 5"-6" IN HEIGHT AND BE OF THE SELF-FASTENER ANGLE STEEL TYPE.
- WIRE FENCING SHALL BE AT LEAST #10 GAGE WITH A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.
- TURN SILT FENCE UPWARD AT ENDS.
- WIRE MESH SHALL BE MIN. 1.3 GAGE WITH MAXIMUM 12" OPENINGS.
- WIRE AND WASHED STONE IS REQUIRED TO BE SHOWN ON PLANS AT THE TOE OF SLOPES GREATER THAN 10 FEET VERTICAL (2:1 SLOPE).
- ORANGE SAFETY FENCE IS REQUIRED AT BACK OF SILT FENCE WHEN GRADING IS ADJACENT TO STREAM BUFFERS, STREAMS OR WETLANDS. THE COLOR ORANGE IS RESERVED FOR VISUAL IDENTIFICATION OF ENVIRONMENTALLY SENSITIVE AREAS.
- DRAINAGE AREA CAN NOT BE GREATER THAN 1/4 ACRE PER 100 FT OF FENCE.
- SLOPE LENGTHS CAN NOT EXCEED CRITERIA SHOWN IN TABLE 6.8.2 NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.
- DO NOT INSTALL SEDIMENT FENCE ACROSS STREAMS, DITCHES, WATERWAYS OR OTHER AREAS OF CONCENTRATED FLOW.

MAINTENANCE NOTES:

- FILTER BARRIERS SHALL BE INSPECTED BY THE FINANCIALLY RESPONSIBLE PARTY OR HIS AGENT IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS NEEDED SHALL BE MADE IMMEDIATELY.
- SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USEABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
- SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH APPROX. HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS REMOVED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

5
C9.0 HIGH HAZARD TEMPORARY SILT FENCE
-NTS-

FOR LATE WINTER AND EARLY SPRING:

SOIL AMENDMENTS:
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER

SEEDING MIXTURE:
RYE (GRAIN) = 120 LB/ACRE
ANNUAL LESPEDEZA (KOBÉ) = 50 LB/ACRE
CONT. ANNUAL LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXCEED BEYOND JUNE

MAINTENANCE:
REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE

SEEDING DATES:
MAY 1 - MAY 1

FOR SUMMER:

SOIL AMENDMENTS:
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER

SEEDING MIXTURE:
GERMAN MILLET = 40 LB/ACRE
A SMALL-STEMMED SUDANGRASS MAY BE SUBSTITUTED AT A RATE OF 50 LB/ACRE

MAINTENANCE:
REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE

SEEDING DATES:
MAY 1 - AUG. 15

FOR FALL:

SOIL AMENDMENTS:
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 1,000 LB/ACRE 10-10-10 FERTILIZER

SEEDING MIXTURE:
RYE (GRAIN) = 120 LB/ACRE

MAINTENANCE:
REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE

SEEDING DATES:
AUG. 15 - DEC. 30

FOR ADDITIONAL INFORMATION, REFER TO NCCDR EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL (ESCDPM), SECTION 6.10, FOR PERMANENT SEEDING SPECIFICATIONS, INCLUDING SEED BED PREP, SEASONAL LIMITATIONS FOR SEEDING OPERATIONS, THE KINDS OF GRADES OF FERTILIZERS, THE KINDS OF SEED, AND THE RATES OF APPLICATION OF LIMESTONE, FERTILIZER, AND SEED. REFER TO NCCDR EROSION CONTROL SECTION 6.11 AND THE CHARLOTTE LANDSCAPE CONSTRUCTION STANDARDS SECTION 04200 SEEDING AND SOODING OF TURFGRASS.

6
C9.0 TEMPORARY SEEDING SCHEDULE
-NTS-

SEEDING:

SEEDING MIXTURE:
GRASS SEED FOR URBAN LANDSCAPE PLANTINGS SHALL BE A BLEND OF TWO OR MORE VARIETIES OF TURF-TYPE TALL FESCUE AS SPECIFIED ON PLANS OR APPROVED BY ENGINEER. SEED SLECTION SHALL BE APPROVED BY THE CITY.

ALL SEED SHALL HAVE A 98% MIN. PURITY, 85% MIN. GERMINATION, AND BE FREE OF NOXIOUS WEED SEEDS AS CERTIFIED BY THE NORTH CAROLINA CO-OP IMPROVEMENT ASSOCIATION OR ITS APPROVED EQUIVALENT BY THE ENGINEER. SEED SHALL BE DELIVERED TO THE SITE IN SEALED STANDARD SIZED CONTAINERS, SHOWING WEIGHT, ANALYSIS NAME OF VENDOR AND GERMINATION TEST. SEED WHICH HAS BECOME WET, MOLLY, OVER ONE YEAR OLD, OR OTHERWISE DAMAGED, WILL NOT BE ACCEPTED.

PROTECTIVE ORGANIC MULCH:
MULCH SHALL BE CLEAN THRESHED WHEAT OR OAT STRAW FROM THE LATEST AVAILABLE HARVEST CROP AND SHALL BE FREE OF NOXIOUS WEED SEEDS AND FOREIGN MATERIAL. ANY SUBSTITUTIONS SHALL BE APPROVED BY THE ENGINEER.

SOIL TESTING:
TESTING RESULTS SHALL BE PROVIDED BY CONTRACTOR PRIOR TO INSTALLATION OF CROP. BASED ON SOIL TESTS RESULTS AND DIRECTION OF ENGINEER, DEFICIENCIES SHALL BE CORRECTED BY THE CONTRACTOR. ANY SAMPLE FOR APPROVAL WILL BE THE CONTRACTOR'S OR VENDOR'S RESPONSIBILITY AND MUST BE TESTED BY A REPUTABLE SOIL TESTING LAB.

DISPOSITION OF SEED BED:
UNLESS OTHERWISE APPROVED BY THE CITY, ALL OTHER SITE WORK REQUIRED BY THIS CONTRACT SHALL BE COMPLETE AND IN PLACE BEFORE GRASSING OPERATIONS ARE BEGUN. WORK MAY BE COMPLETED IN PARTS IF SO REQUESTED BY THE CONTRACTOR AND APPROVED BY THE CITY PRIOR TO SEEDING OPERATIONS. ALL PROPOSED LAWN AREAS SHALL BE SCARIFIED/TILLED TO 6" DEPTH AND PREPARED UNTIL THE SURFACE IS SMOOTH, FINABLE AND OF A UNIFORM FINE TEXTURE. REMOVE STONES AND FOREIGN MATERIAL OVER ONE INCH IN DIAMETER AND GRADE FOR POSITIVE DRAINAGE AS REQUIRED TO PREVENT PONDING OF WATER. ENSURE 90% COVERAGE IS OBTAINED WITH NO BARE AREAS. OVER-SEEDING IS CONSIDERED INCIDENTAL AND THERE SHALL BE NO SEPARATE MEASUREMENT OR PAYMENT FOR OVER-SEEDING AND SHALL BE DONE IN CONJUNCTION WITH CORE SEASON.

LIME, SOIL ADDITIVES AND STARTER FERTILIZER SHALL BE BROADCASTED AND WORKED INTO THE SOIL UNIFORMLY DURING TILLAGE AT ALL AREAS AT THE RATE DICTATED BY THE SOIL TEST THAT WILL PROVIDE A PH LEVEL OF 6.5 TO 7.0.

MAINTENANCE:
SEEDING AREAS SHALL CONSIST OF FERTILIZATION, EROSION REPAIR, RESEEDING AND INCIDENTAL OPERATIONS AS NECESSARY TO ESTABLISH A VIGOROUS, HEALTHY AND UNIFORM STAND OF SEEDING GRASS. ALL AREAS THAT FAIL TO SHOW A UNIFORM STAND OF GRASS FOR ANY REASON SHALL BE TREATED PROPERLY UNTIL A UNIFORM STAND OF AT LEAST 90% COVERAGE IS ATTAINED WITH NO BARE AREAS.

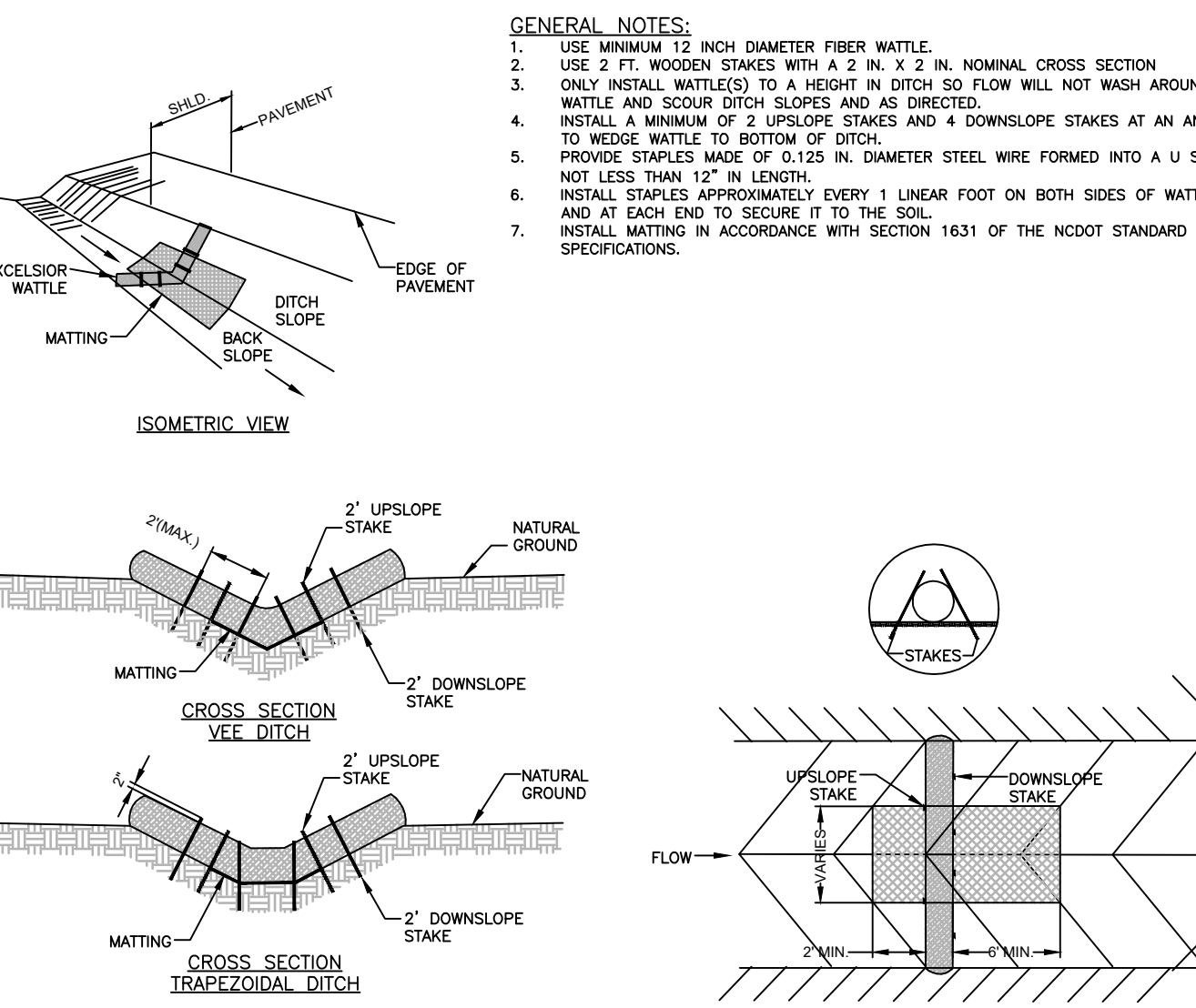
GRASS MOWING OPERATIONS SHALL BE PERFORMED BY THE CONTRACTOR UNTIL FINAL ACCEPTANCE OF THE TURF TRASH AND DEBRIS SHALL BE REMOVED PRIOR TO MOWING. MOWING SHALL BE PERFORMED ONLY WHEN THE GRASS IS DRY, NO MORE THAN 1/3 LEAF BLADE SHALL BE REMOVED AT EACH MOWING. TURF TYPE TALL FESCUE SHALL BE MAINTAINED AT A 3.5 TO 4 INCH HEIGHT. BERMUDA SHALL BE MAINTAINED AT A HEIGHT OF 1.5 TO 2 INCHES. ALL MAINTENANCE PERFORMED PRIOR TO ACCEPTANCE SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO SEPARATE PAYMENT SHALL BE MADE.

WATERING SEEDING AREAS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MANAGE A WATERING PROGRAM THAT RESULTS IN A STAND OF TURF THAT MEETS THE GUARANTEE REQUIREMENT OF THESE STANDARDS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DECIDE THE IRRIGATION DURATION AND FREQUENCY, BASED ON WEATHER AND SOIL CONDITIONS THAT PRODUCE THE REQUIRED RESULTS.

FERTILIZER TOP DRESSING SHALL BE DONE AS PER MANUFACTURER'S RECOMMENDED DATES.

FOR ADDITIONAL INFORMATION, REFER TO NCCDR EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL (ESCDPM), SECTION 6.10, FOR PERMANENT SEEDING SPECIFICATIONS, INCLUDING SEED BED PREP, SEASONAL LIMITATIONS FOR SEEDING OPERATIONS, THE KINDS OF GRADES OF FERTILIZERS, THE KINDS OF SEED, AND THE RATES OF APPLICATION OF LIMESTONE, FERTILIZER, AND SEED. REFER TO NCCDR EROSION CONTROL SECTION 6.11 AND THE CHARLOTTE LANDSCAPE CONSTRUCTION STANDARDS SECTION 04200 SEEDING AND SOODING OF TURFGRASS.

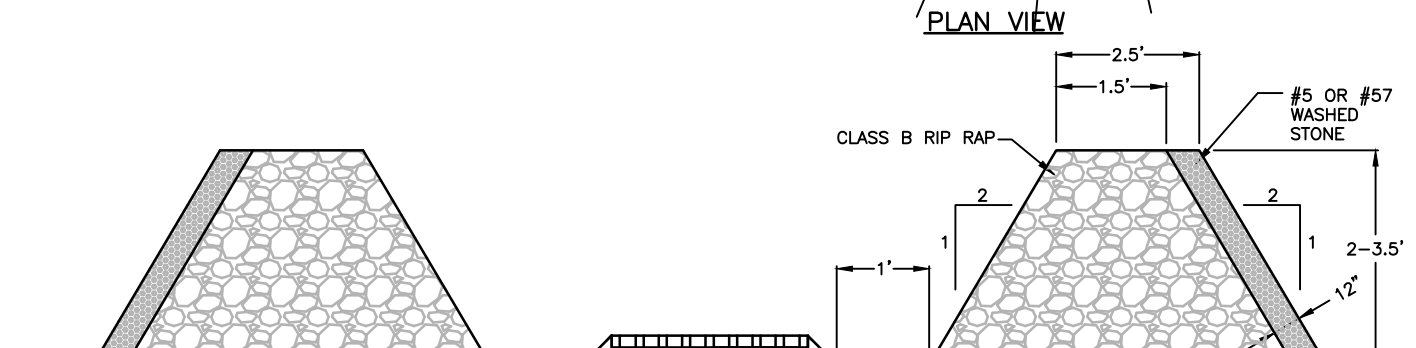
7
C9.0 PERMANENT SEEDING SCHEDULE
-NTS-



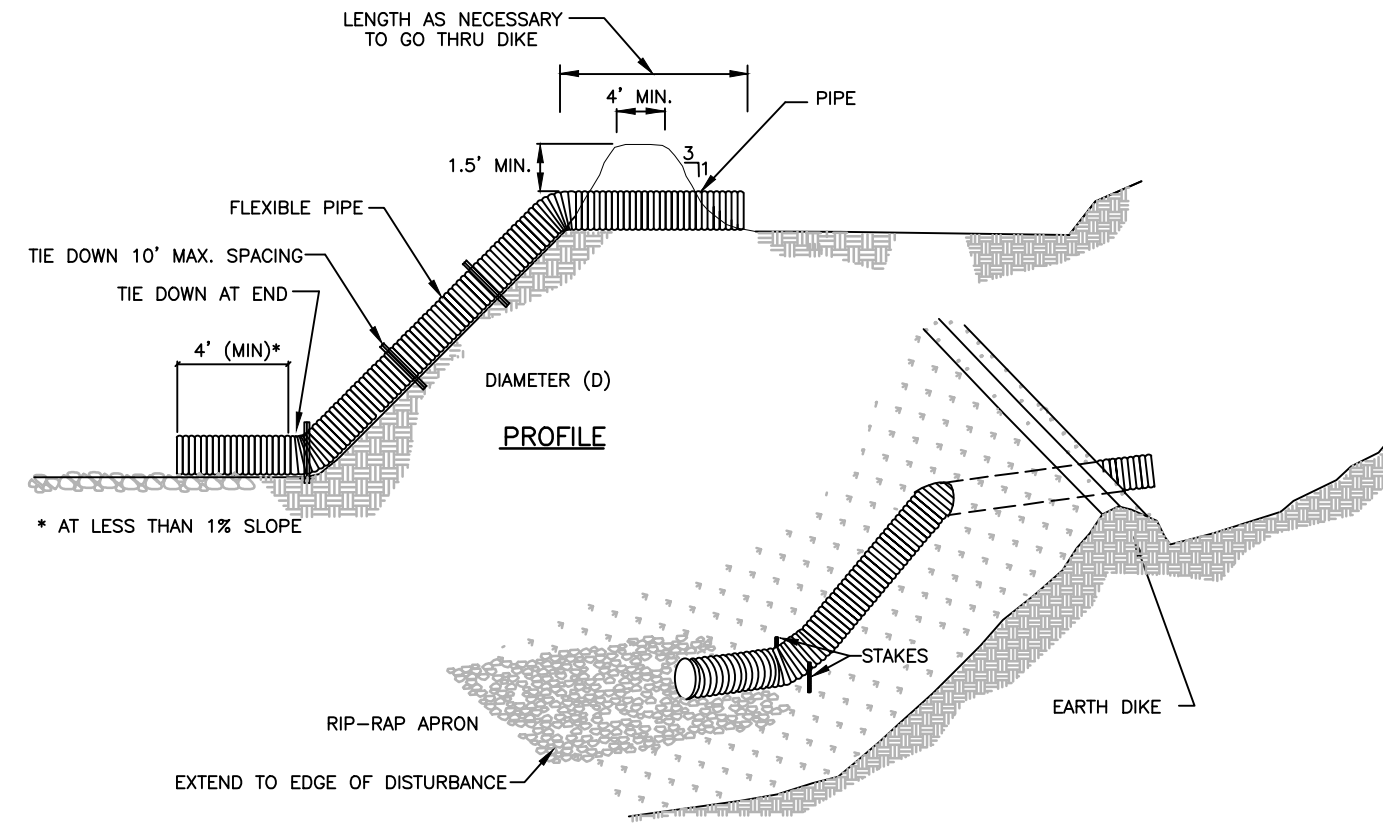
9
C9.0 TEMPORARY WATTLE CHECK DAM
-NTS-

GENERAL NOTES:

- CLEAR AREA OF ALL DEBRIS THAT MIGHT HINDER EXCAVATION AND DISPOSAL OF SPOIL.
- GRADE SHALLOW DEPRESSION UNIFORMLY TOWARDS THE INLET WITH SIDE SLOPES NO GREATER THAN 2:1. GRADE A 1'-FOOT WIDE LEVEL AREA SET 4 INCHES BELOW THE AREA ADJACENT TO THE INLET.
- INSTALL THE CLASS B OR CLASS 1 RIPRAP IN A CIRCLE AROUND THE INLET. THE MINIMUM CREST WIDTH OF THE RIPRAP SHOULD BE 18 INCHES, WITH A MINIMUM BOTTOM WIDTH OF 7.5 FEET. THE MINIMUM HEIGHT OF THE STONE IS 2 FEET.
- THE OUTSIDE FACE OF THE RIPRAP IS THEN LINED WITH 12 INCHES OF NCOT #5 OR #57 WASHED STONE.
- INSPECT AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY.
- SEDIMENT SHALL BE REMOVED FROM THE SEDIMENT POOL AREA WHEN THE VOLUME IS DECREASED BY HALF.
- CARE SHOULD BE TAKEN WHEN REMOVING SEDIMENT SO AS NOT TO UNDERMINE THE STRUCTURE. DOES NOT OCCUR. REMOVE DEBRIS FROM THE INLET AND REPLACE STONE AS NEEDED. IF THE INLET WAS COVERED WITH WIRE MESH, THE MESH SHOULD BE CLEANED OF DEBRIS.
- ONCE THE CONTRIBUTING AREA HAS BEEN ADEQUATELY STABILIZED, REMOVE ALL MATERIALS AND DISPOSE OF SEDIMENT PROPERLY. BRING THE DISTURBED AREA TO THE GRADE OF THE DROP INLET. SMOOTH AND COMPACT AS NEEDED.
- APPROPRIATELY STABILIZE ALL BARE AREAS AROUND THE INLET WITH GROUND COVER.



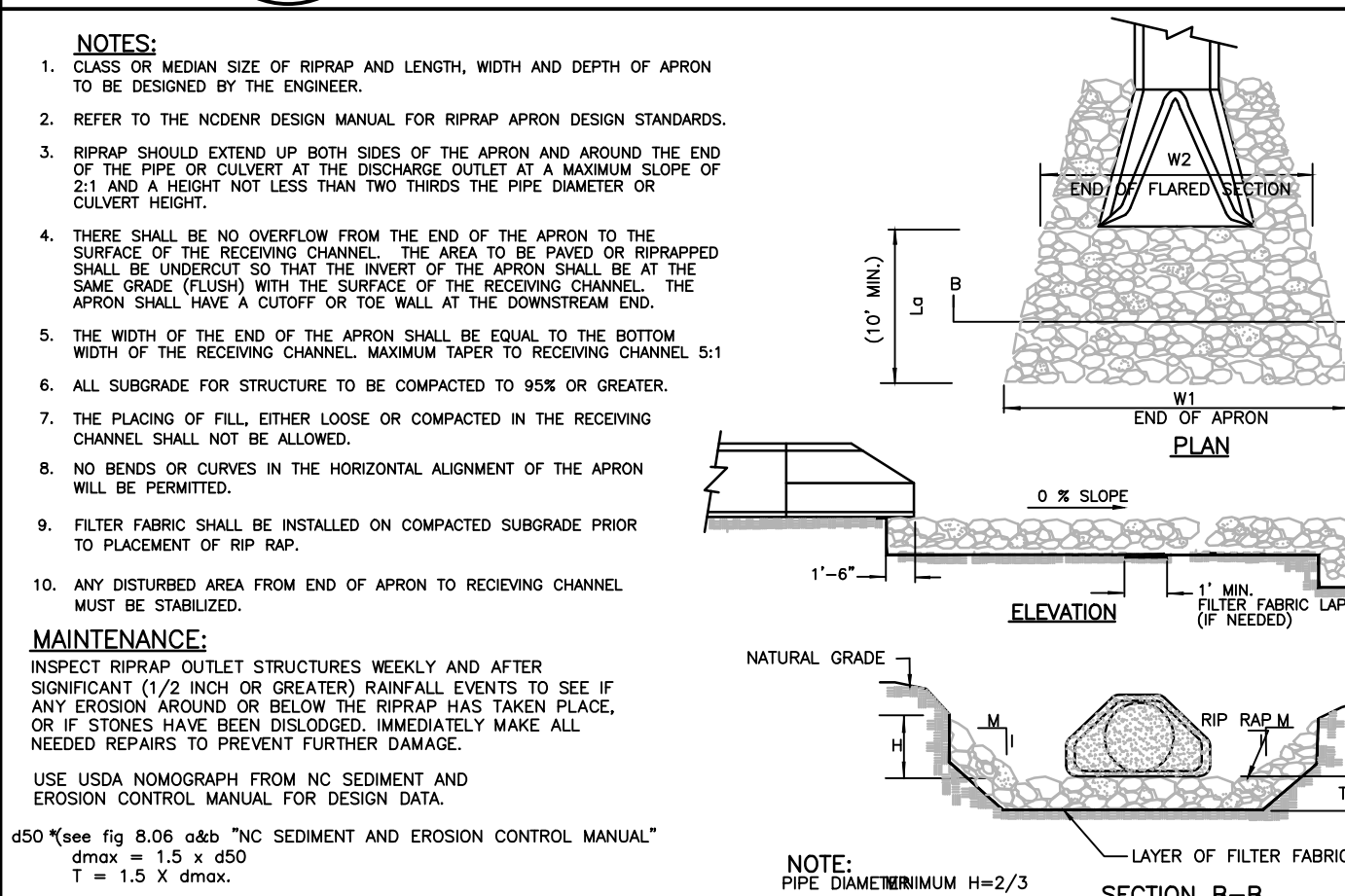
10
C9.0 ROCK DOUGHNUT INLET PROTECTION
-NTS-



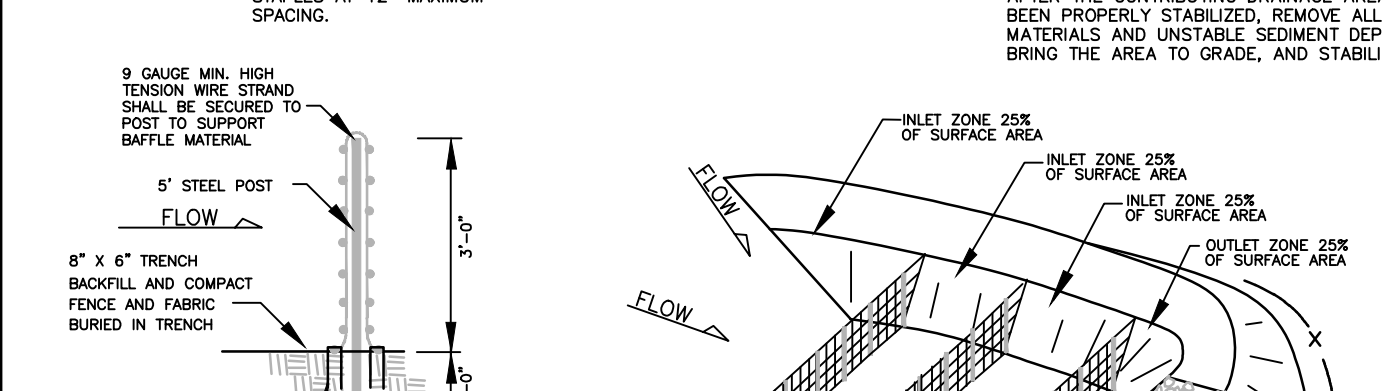
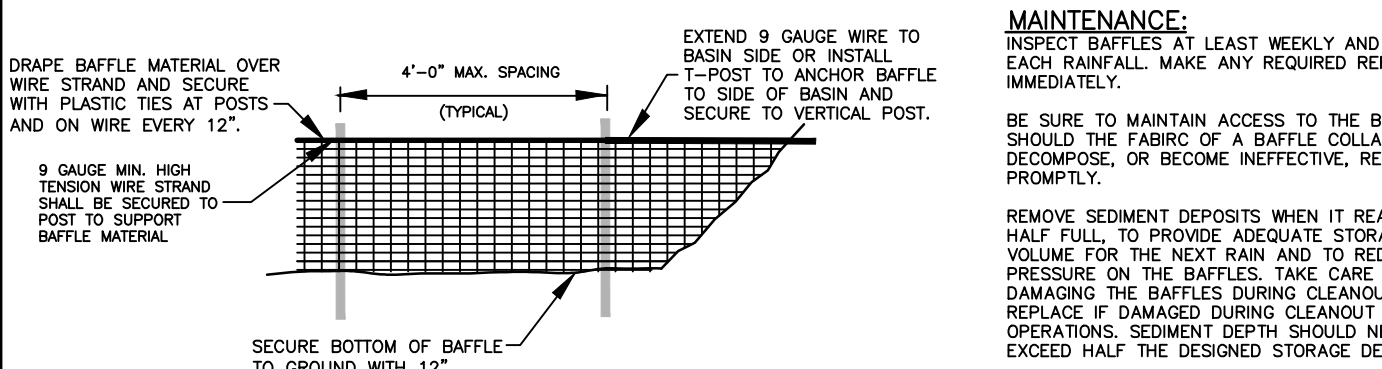
CONSTRUCTION SPECIFICATIONS:

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

11
C9.0 TEMPORARY SLOPE DRAIN
-NTS-



Structure	Total Discharge (cfs)	Outlet Velocity (fps)	Pipe Size (in)	Length of Rip Rap Apron (ft)	Width of Apron (ft)		d50 (in)	T (in)	Height (in)
					(W1)	(W2)			
FES 1	11.24	5.82	24	13	15.00	6.00	6.00	13.50	16.00
FES 10	33.35	8.37	30	16	18.50	7.50	9.00	20.25	20.00
FES 30	21.35	8.47	24	14	16.00	6.00	8.00	18.00	16.00
FES 40	17.60	6.51	30	16	18.50	7.50	9.00	20.25	20.00
FES 60	11.80	5.89	24	13	15.00	6.00	8.00	18.00	16.00
FES 70	16.60	7.46	24	13	15.00	6.00	9.00	20.25	16.00
FES 80	32.14	6.95	30	16	18.50	7.50	15.00	33.75	20.00
FES 90	5.81	2.43	24	13	15.00	6.00	6.00	13.50	16.00

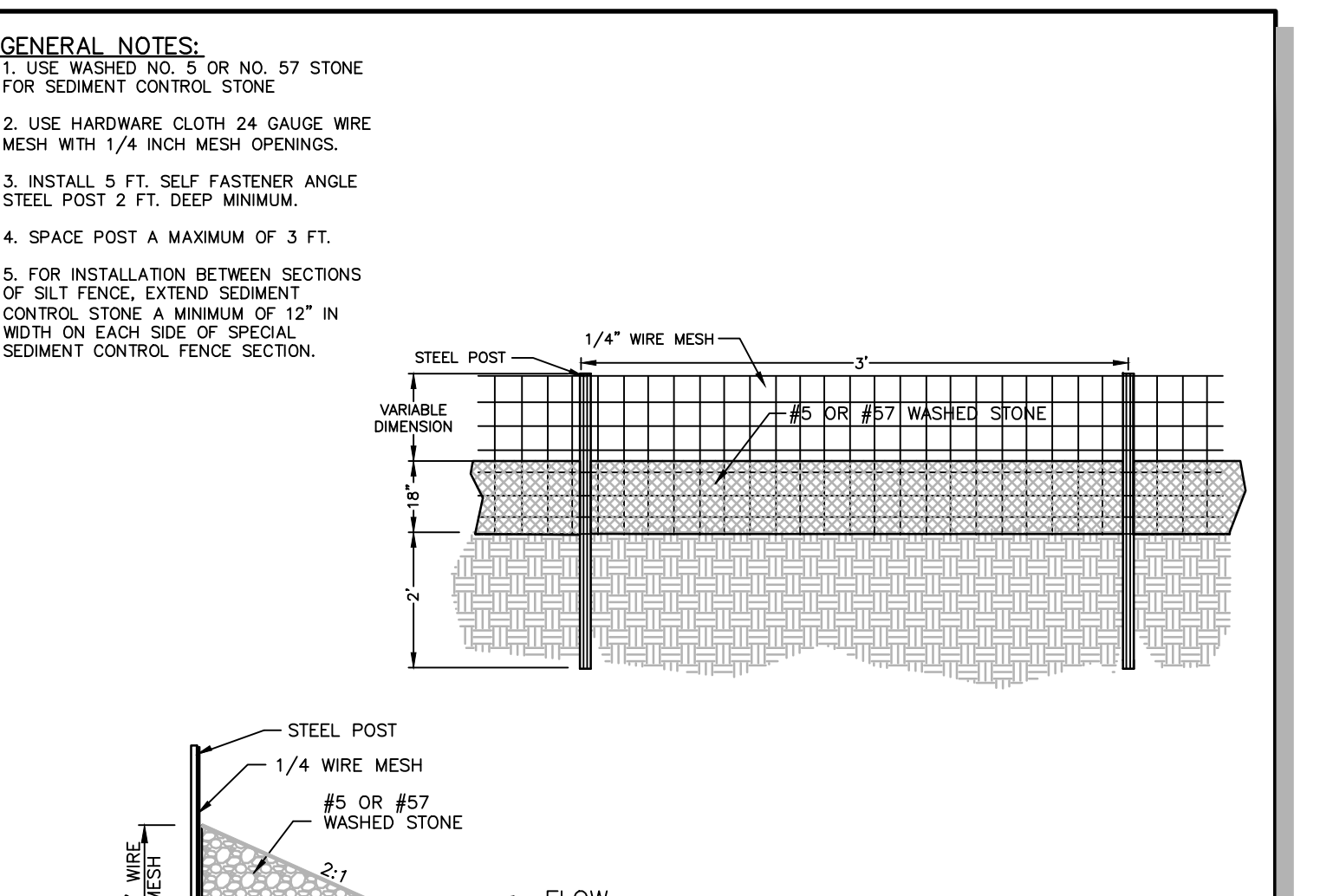
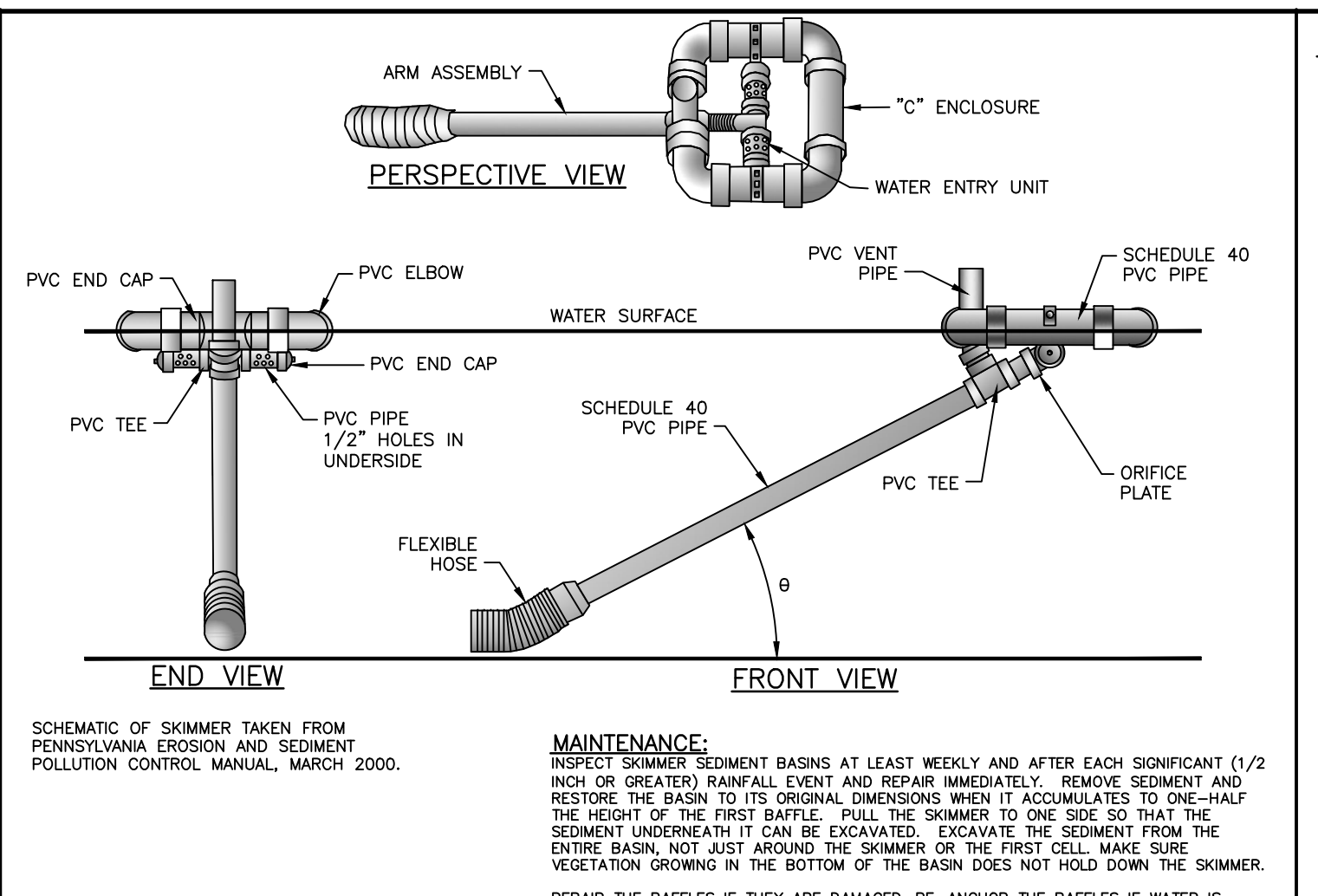
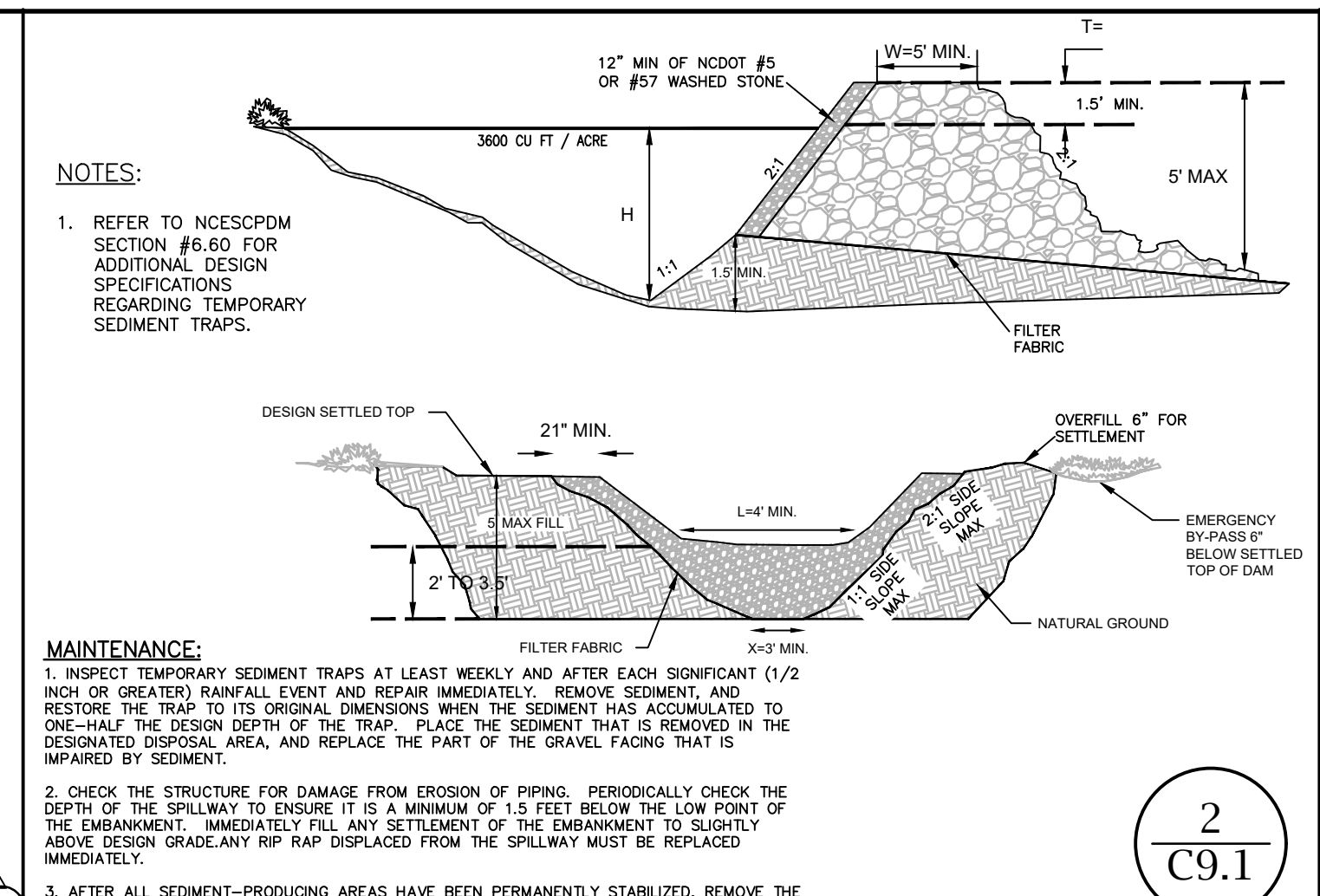
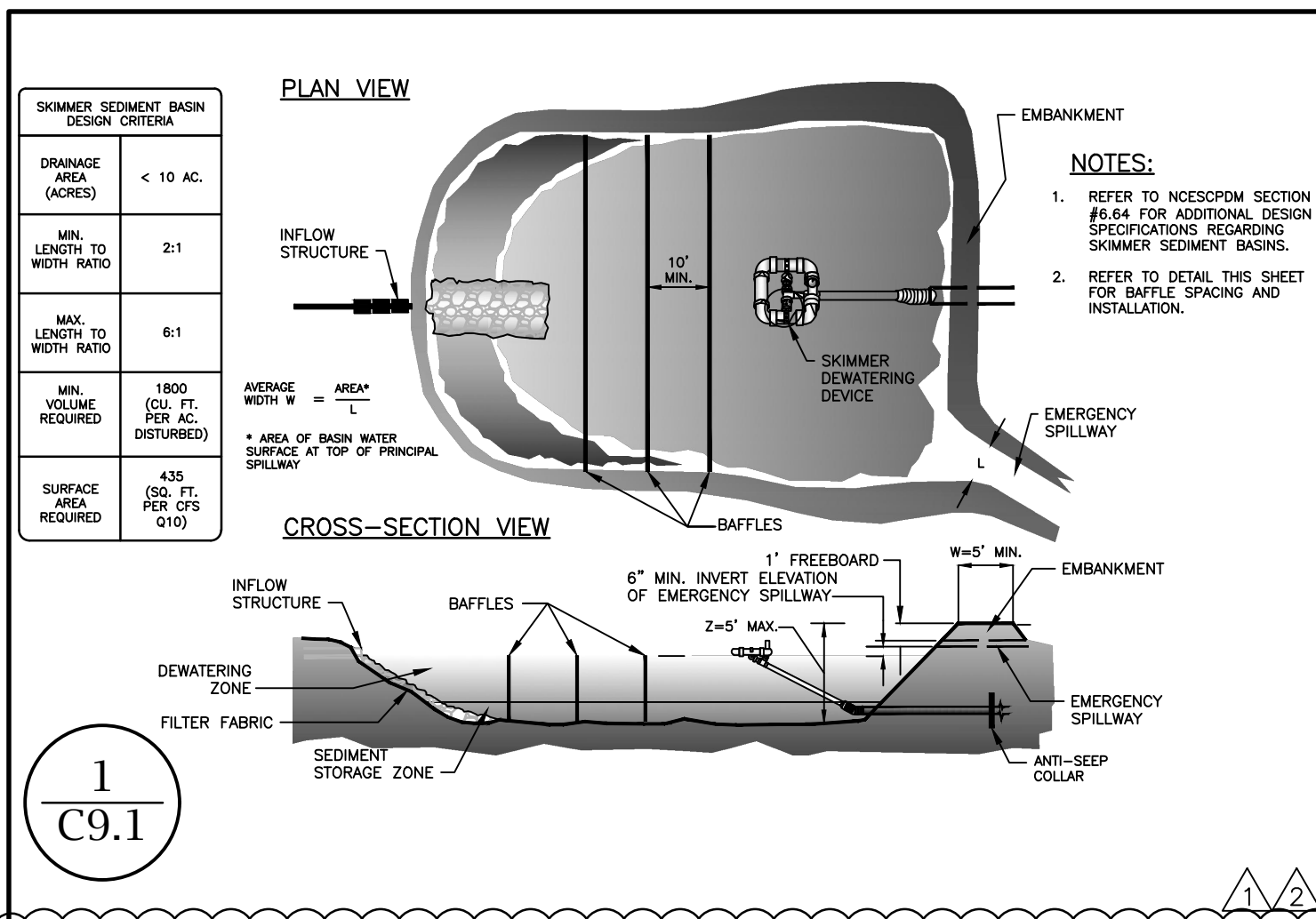


GENERAL NOTES:

- DRIVE 5" STEEL POST AT LEAST 24" INTO SOLID GROUND.
- USE STAPLES 1" APART HORIZONTALLY AND VERTICALLY TO ATTACH THE COIR MESH FABRIC TO THE WIRE FENCE.
- SPACE THE BAFFLES ACCORDING TO THE APPROVED PLAN.
- THE FLOOR OF THE BASIN IN THE OUTLET ZONE AND BERMS SHALL BE SEED IMMEDIATELY AFTER THE BASIN IS CONSTRUCTED.

12
C9.0 TEMPORARY SEDIMENT BASIN POROUS BAFFLE
-DETAIL NTS-

REVISIONS		
2	11/27/18	BELMONT COMMENTS
7	4/27/21	BELMONT COMMENTS



1 C9.1

Basin Label	Total Area (Acres)	Discharge (10 Year Cfs)	Top of Dam		Bottom		Spillway		Channel Depth (ft)	Top of Storage (ft)	Storage (Cu Ft)	Surf. Area (Acres)	Skimmer Pipe Diameter	Skimmer Office Diameter					
			Length (ft)	Width (ft)	Elevation (ft)	Elevation (ft)	Length (ft)	Height (ft)							Depth (ft)	Depth (ft)			
TSSB (1)	3.50	4.85	15.00	114.00	51.00	5.00	676.00	671.00	674.00	6.00	3.00	1.50	5.00	8730	12500	5089	5194	2	1.5

2 C9.1

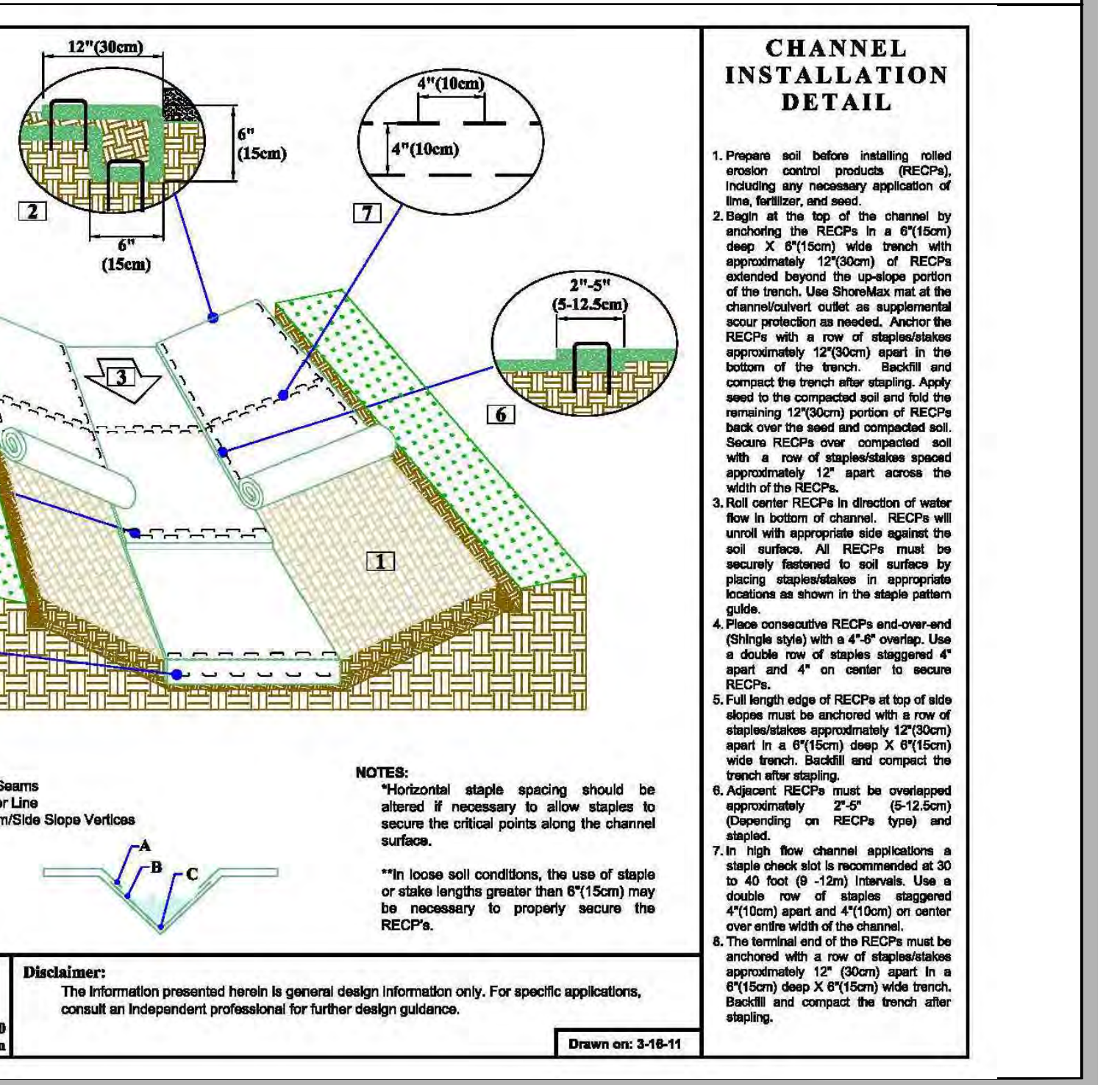
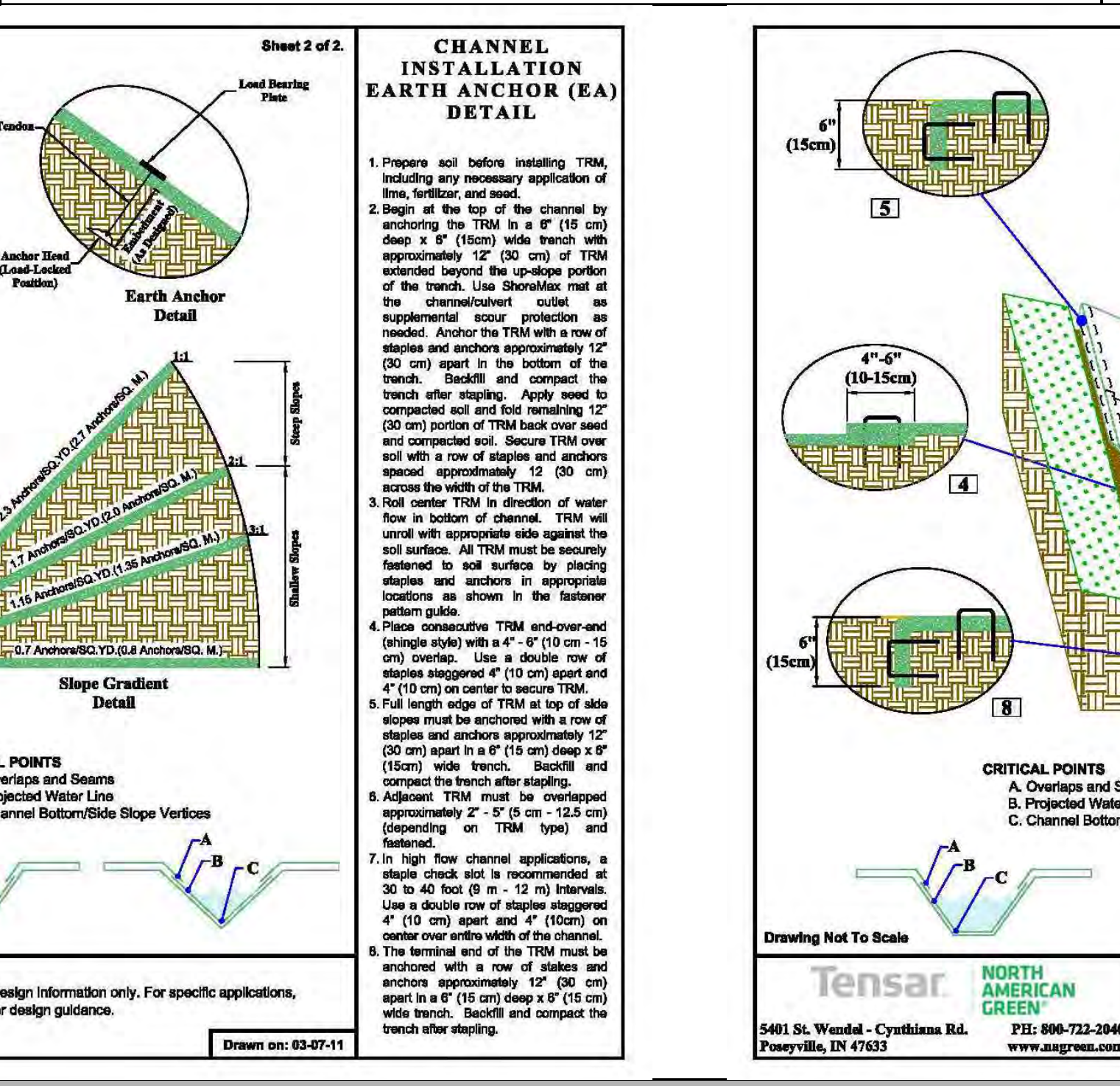
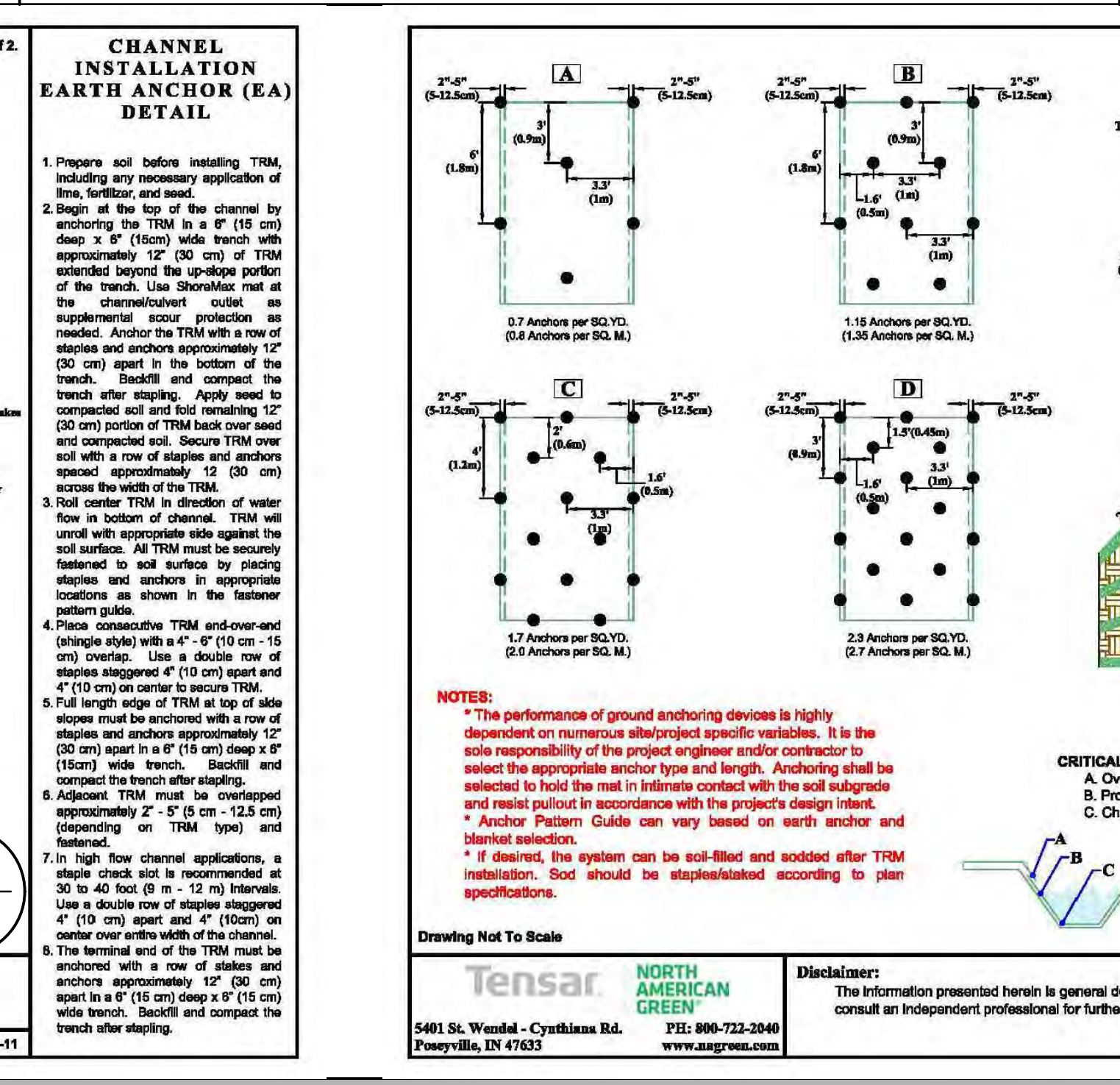
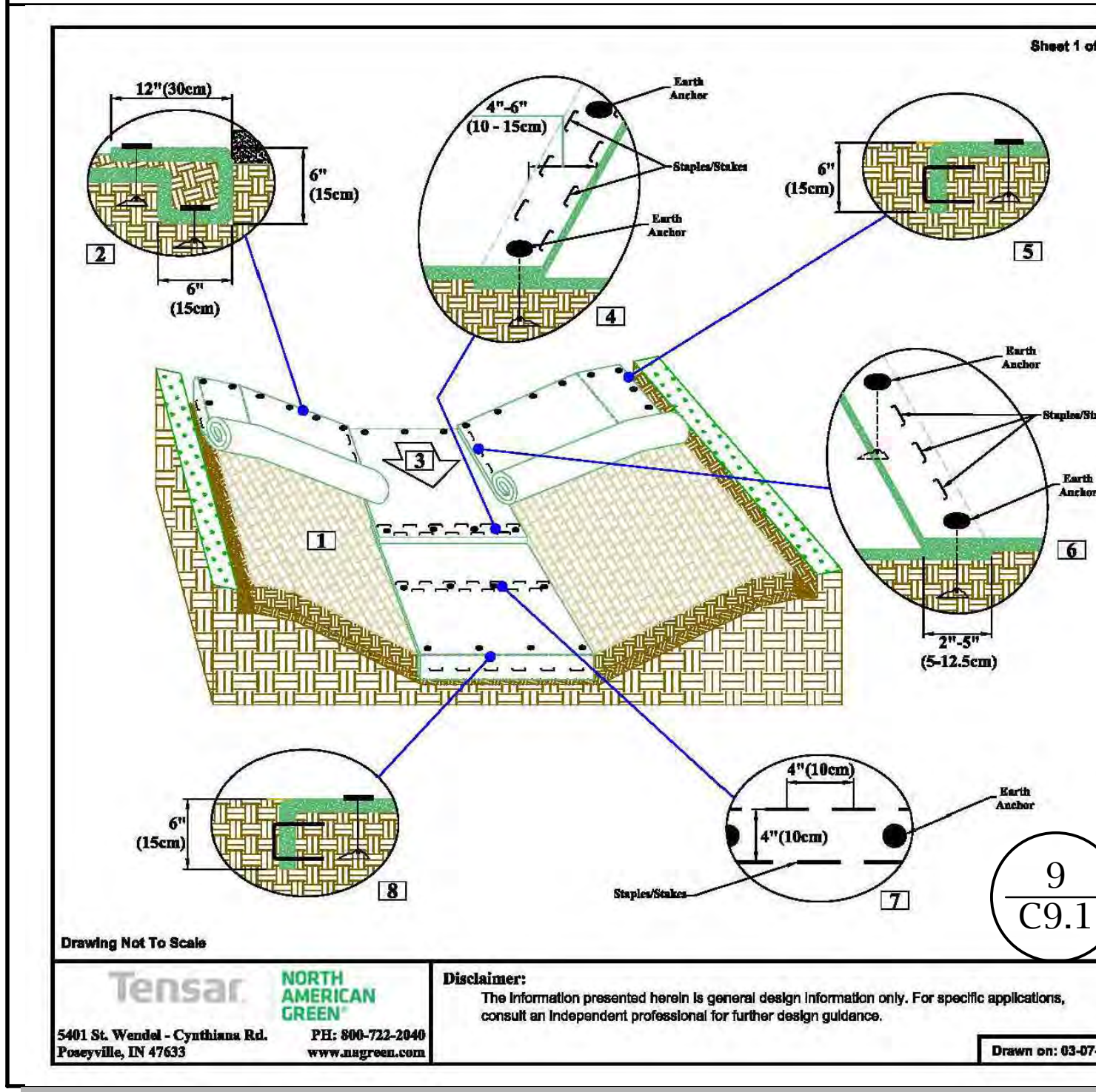
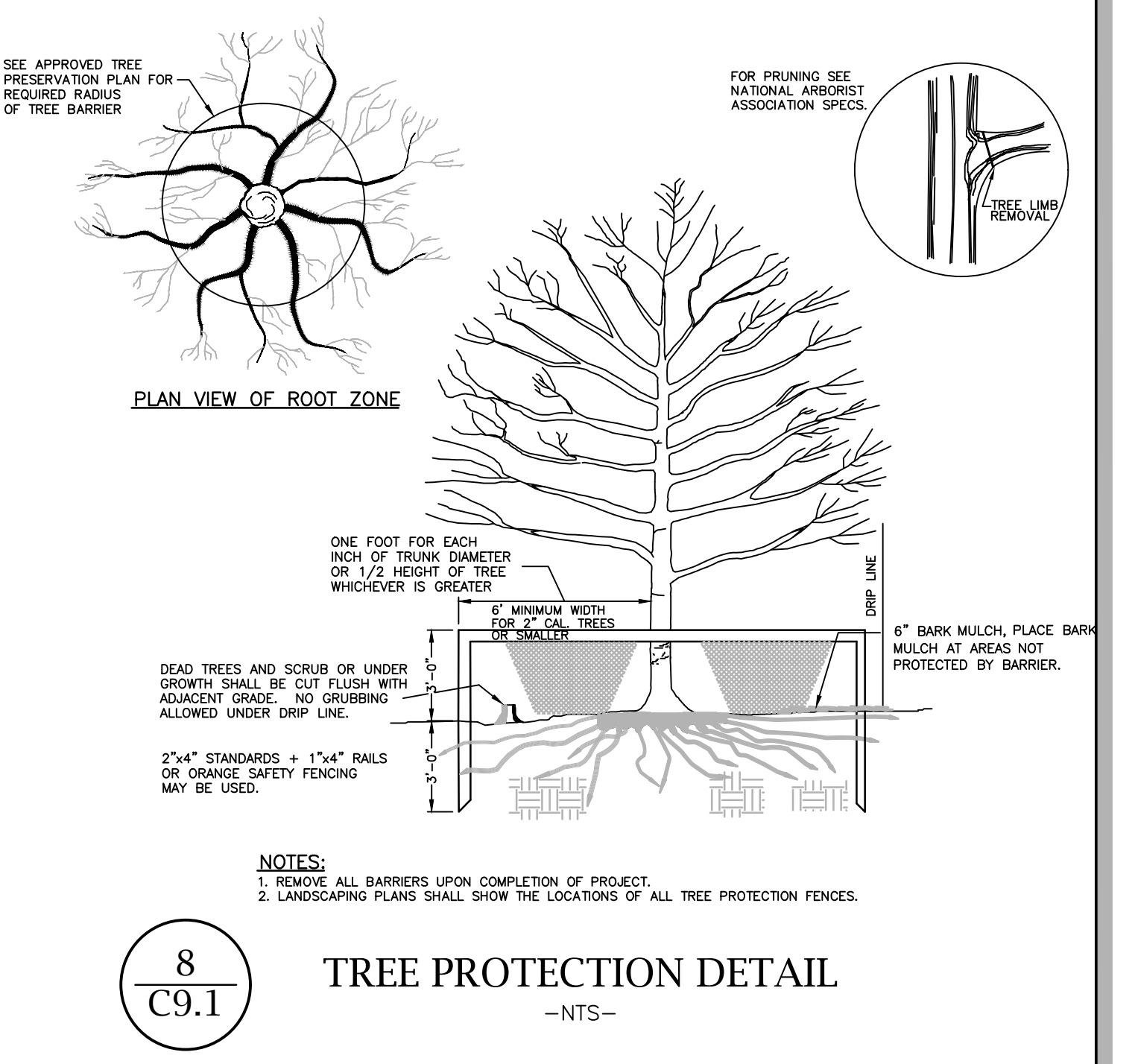
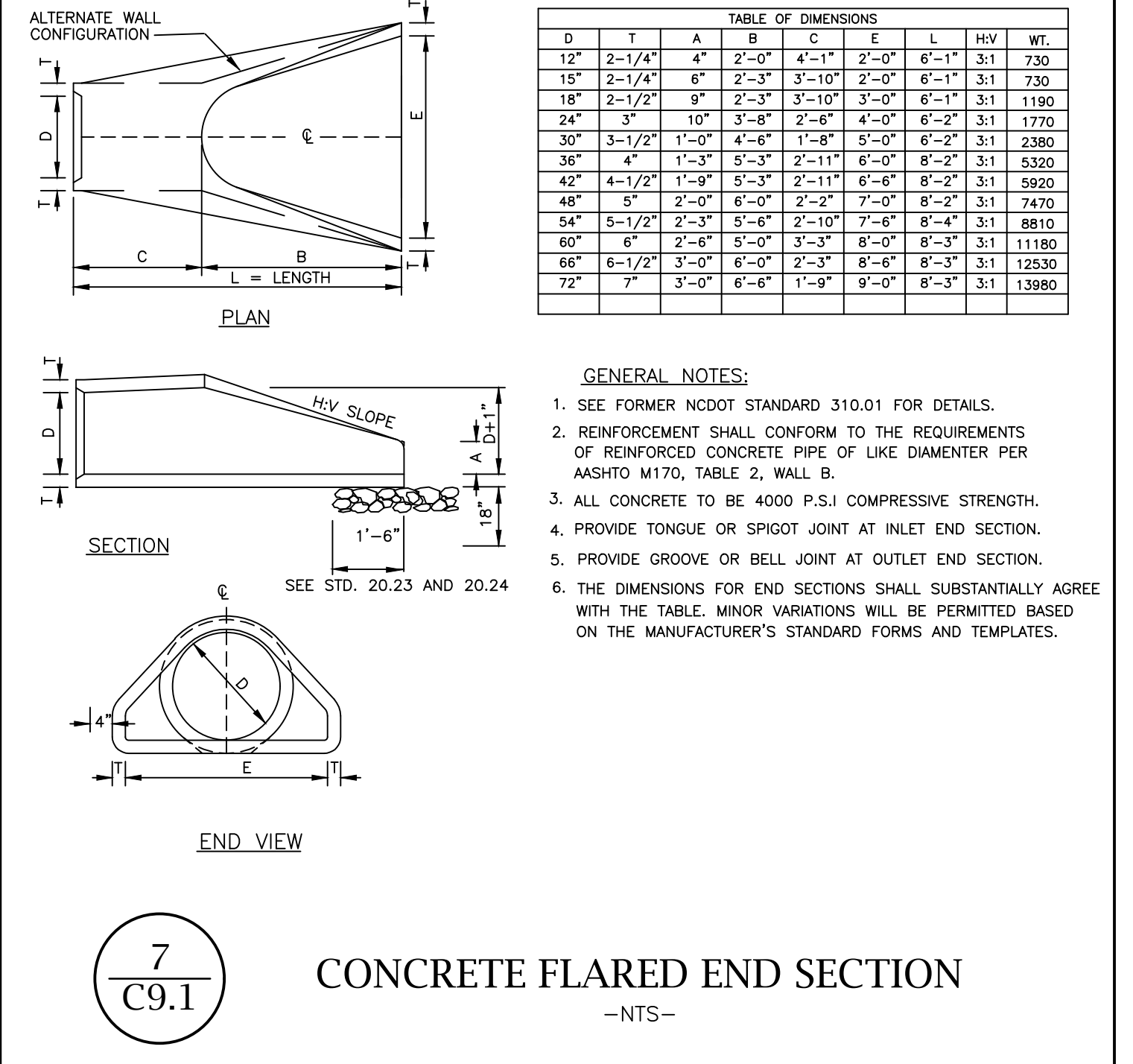
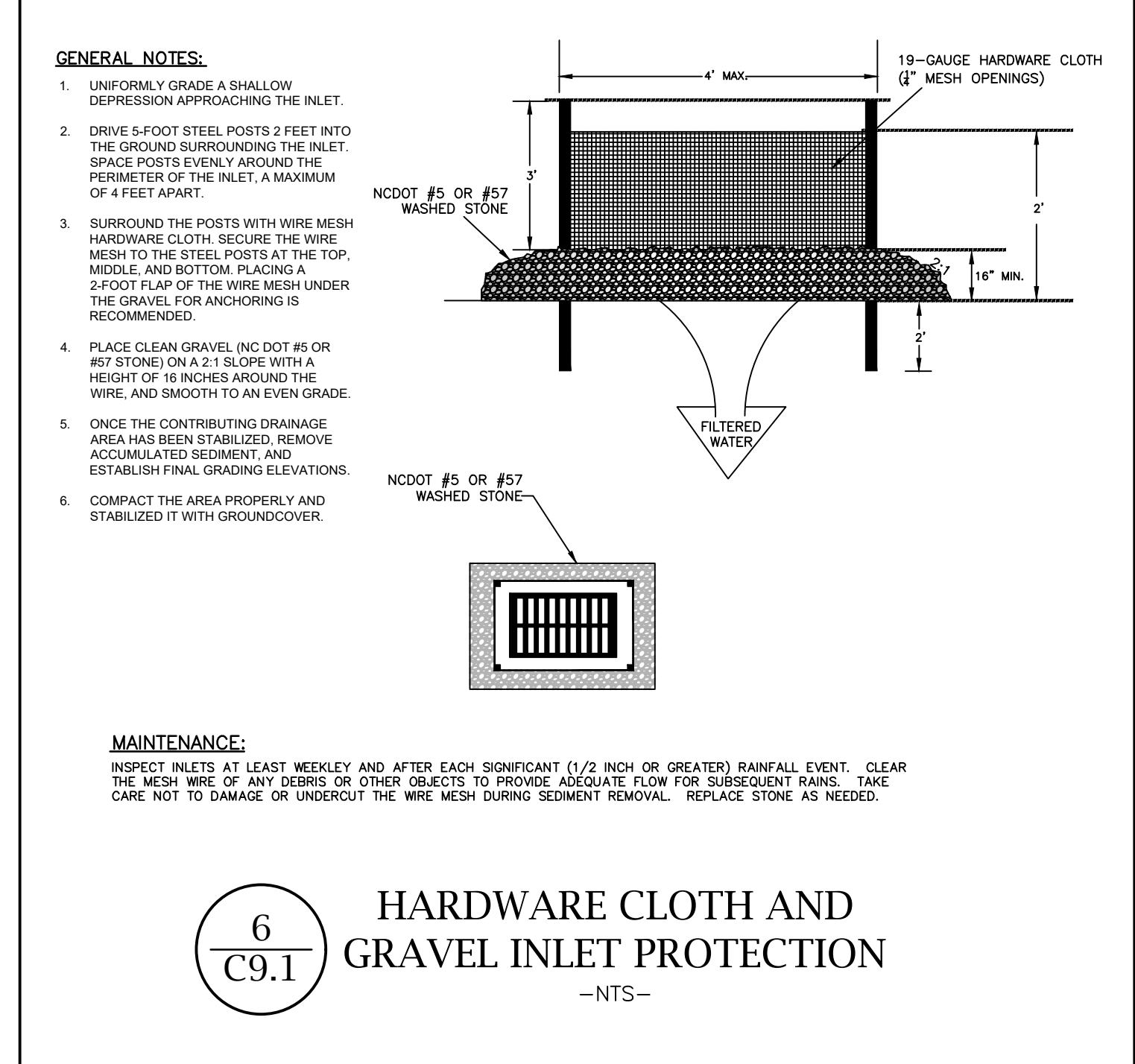
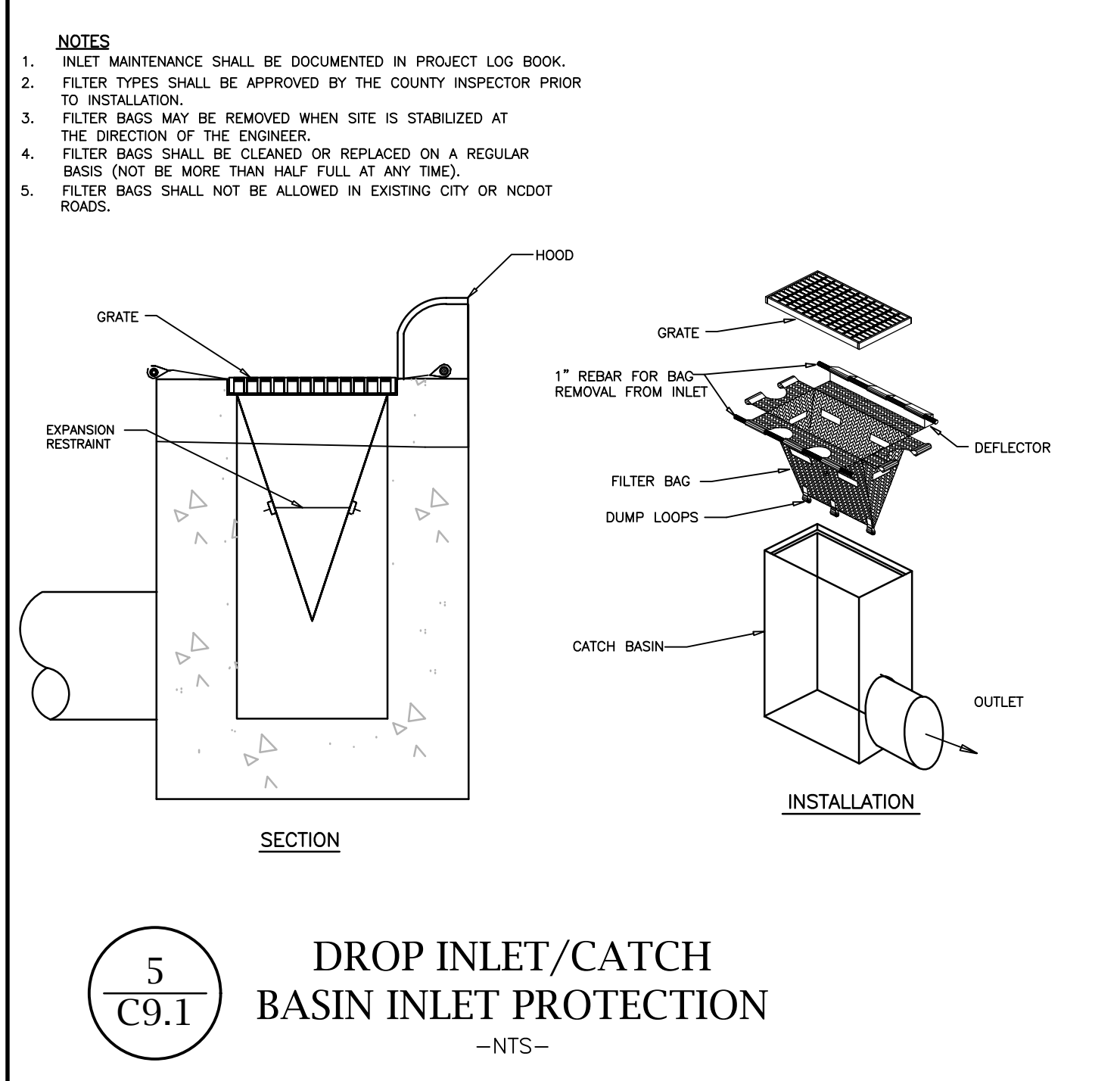
Basin Label	Total Area (Acres)	Discharge (10 Year Cfs)	Top of Dam		Bottom		Spillway		Channel Depth (ft)	Top of Storage (ft)	Storage (Cu Ft)	Surf. Area (Acres)	Skimmer Pipe Diameter	Skimmer Office Diameter					
			Length (ft)	Width (ft)	Elevation (ft)	Elevation (ft)	Length (ft)	Height (ft)							Depth (ft)	Depth (ft)			
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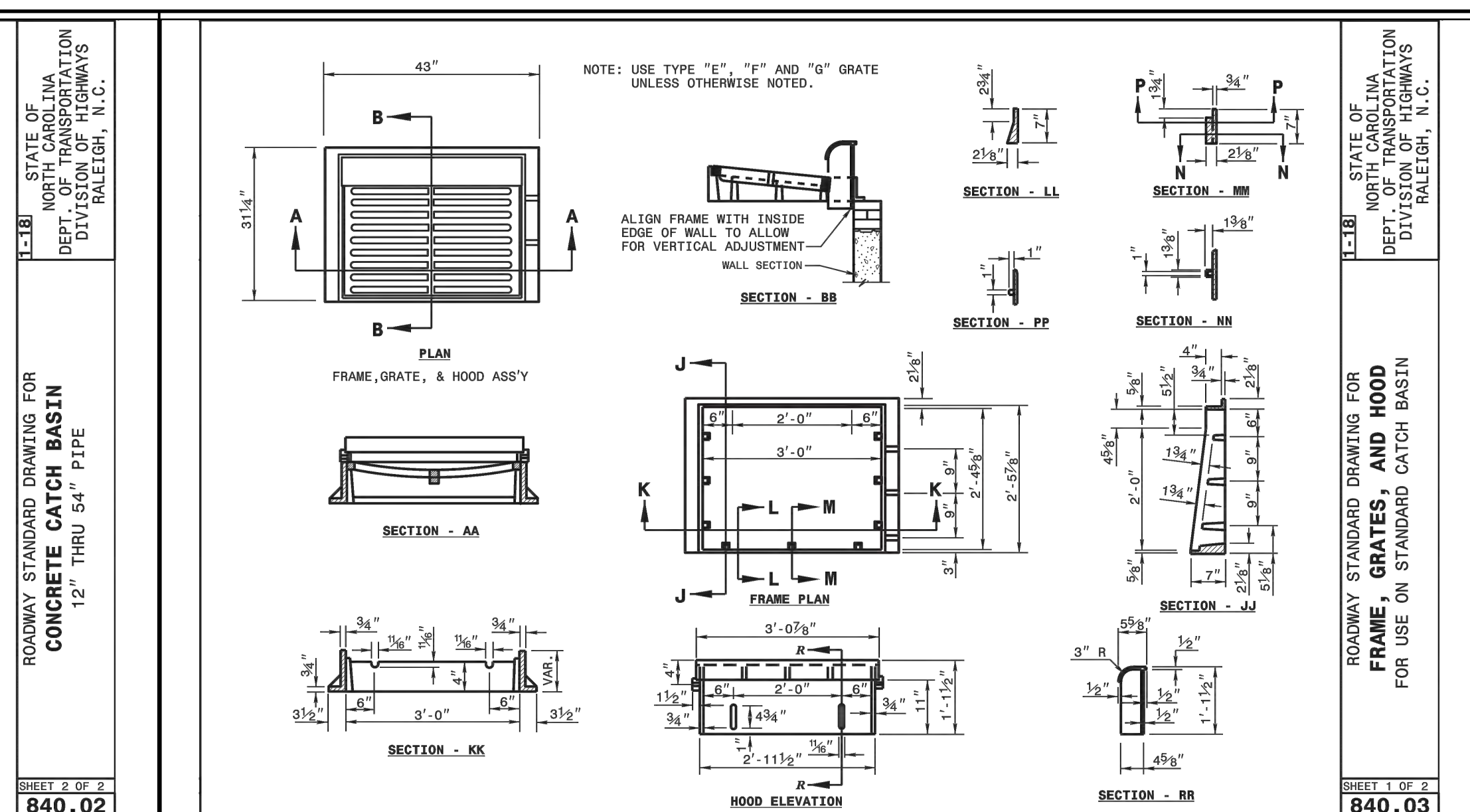
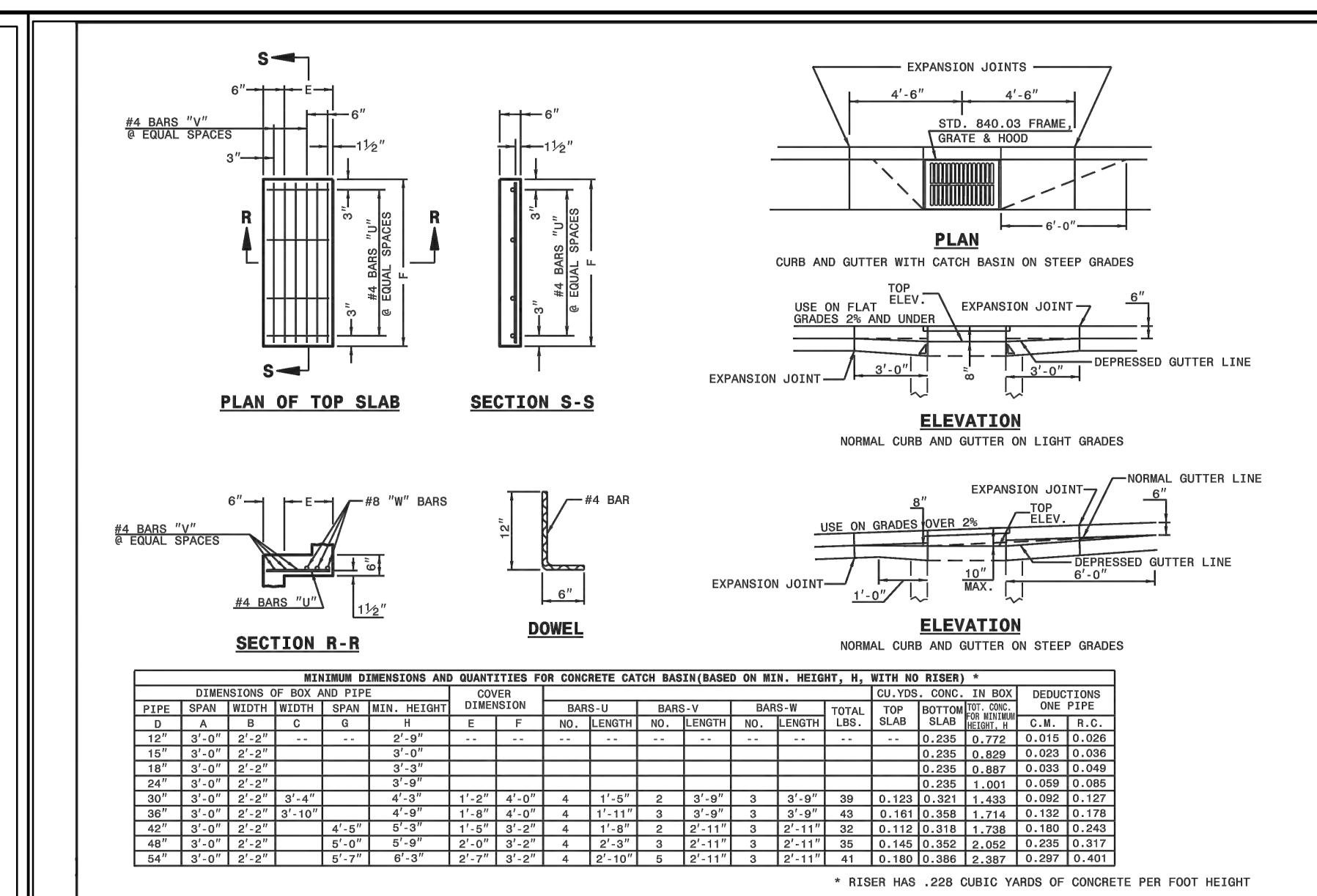
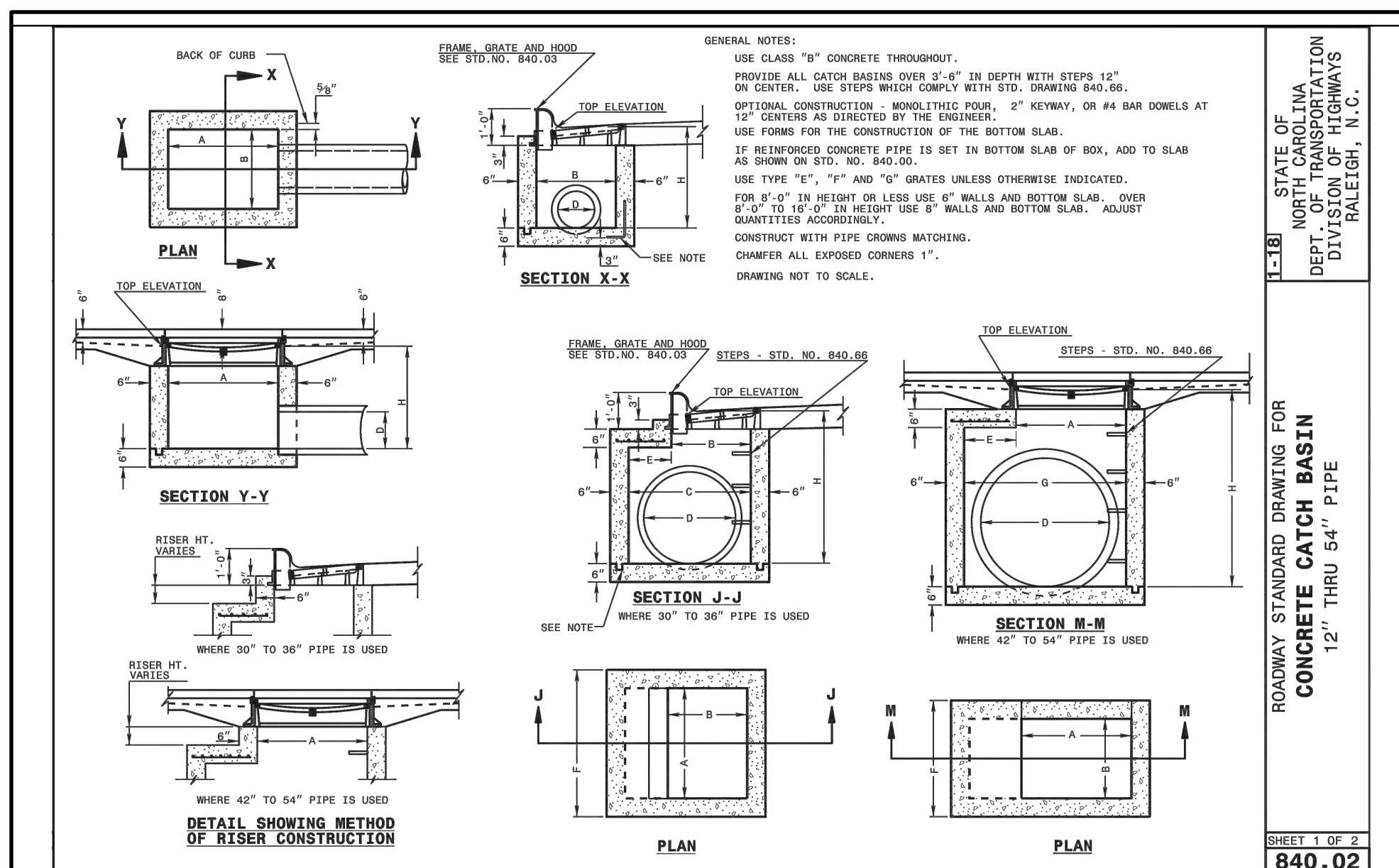
3 C9.1

Basin Label	Total Area (Acres)	Discharge (10 Year Cfs)	Top of Dam		Bottom		Spillway		Channel Depth (ft)	Top of Storage (ft)	Storage (Cu Ft)	Surf. Area (Acres)	Skimmer Pipe Diameter	Skimmer Office Diameter					
			Length (ft)	Width (ft)	Elevation (ft)	Elevation (ft)	Length (ft)	Height (ft)							Depth (ft)	Depth (ft)			
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4 C9.1

Basin Label	Total Area (Acres)	Discharge (10 Year Cfs)	Top of Dam		Bottom		Spillway		Channel Depth (ft)	Top of Storage (ft)	Storage (Cu Ft)	Surf. Area (Acres)	Skimmer Pipe Diameter	Skimmer Office Diameter					
			Length (ft)	Width (ft)	Elevation (ft)	Elevation (ft)	Length (ft)	Height (ft)							Depth (ft)	Depth (ft)			
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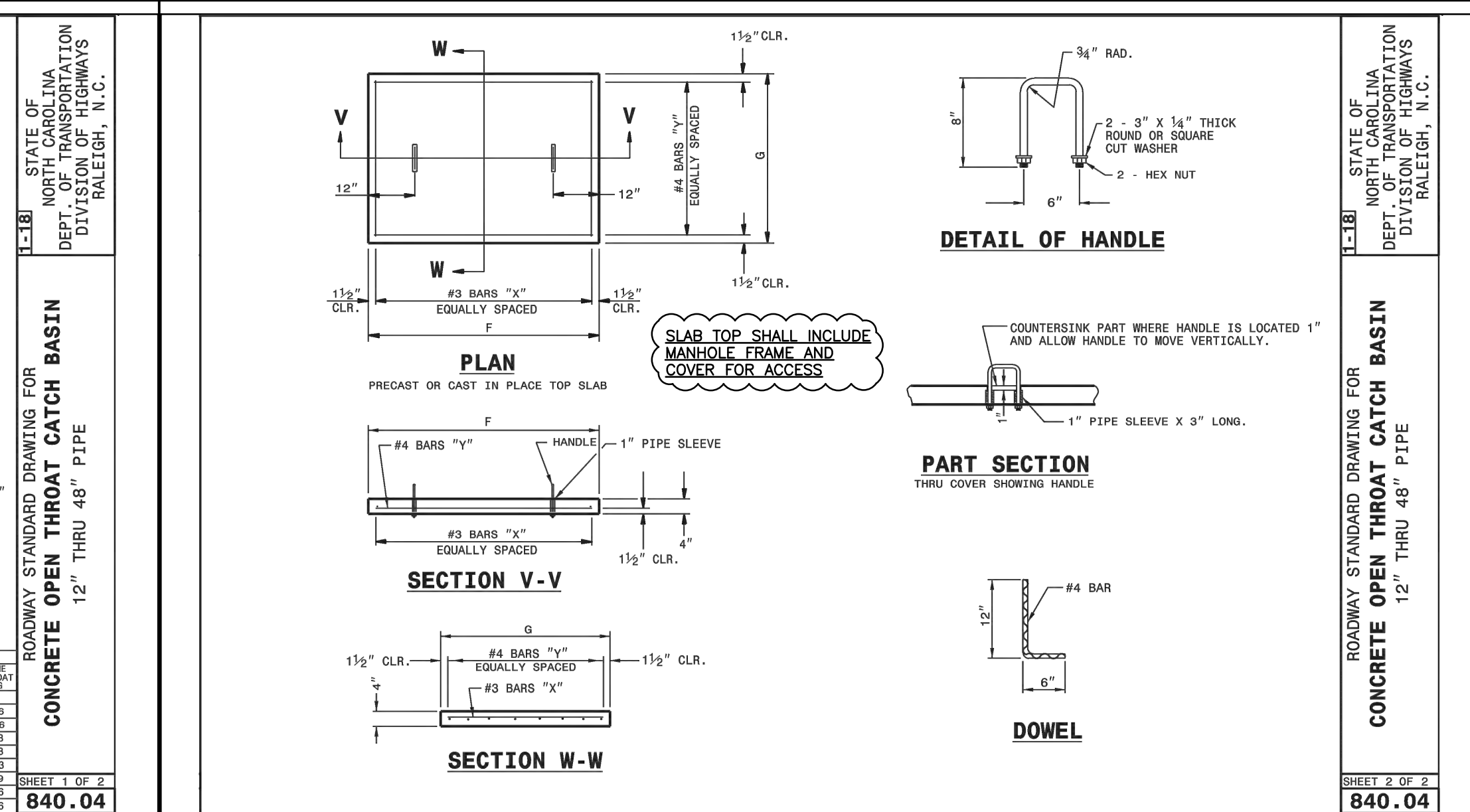
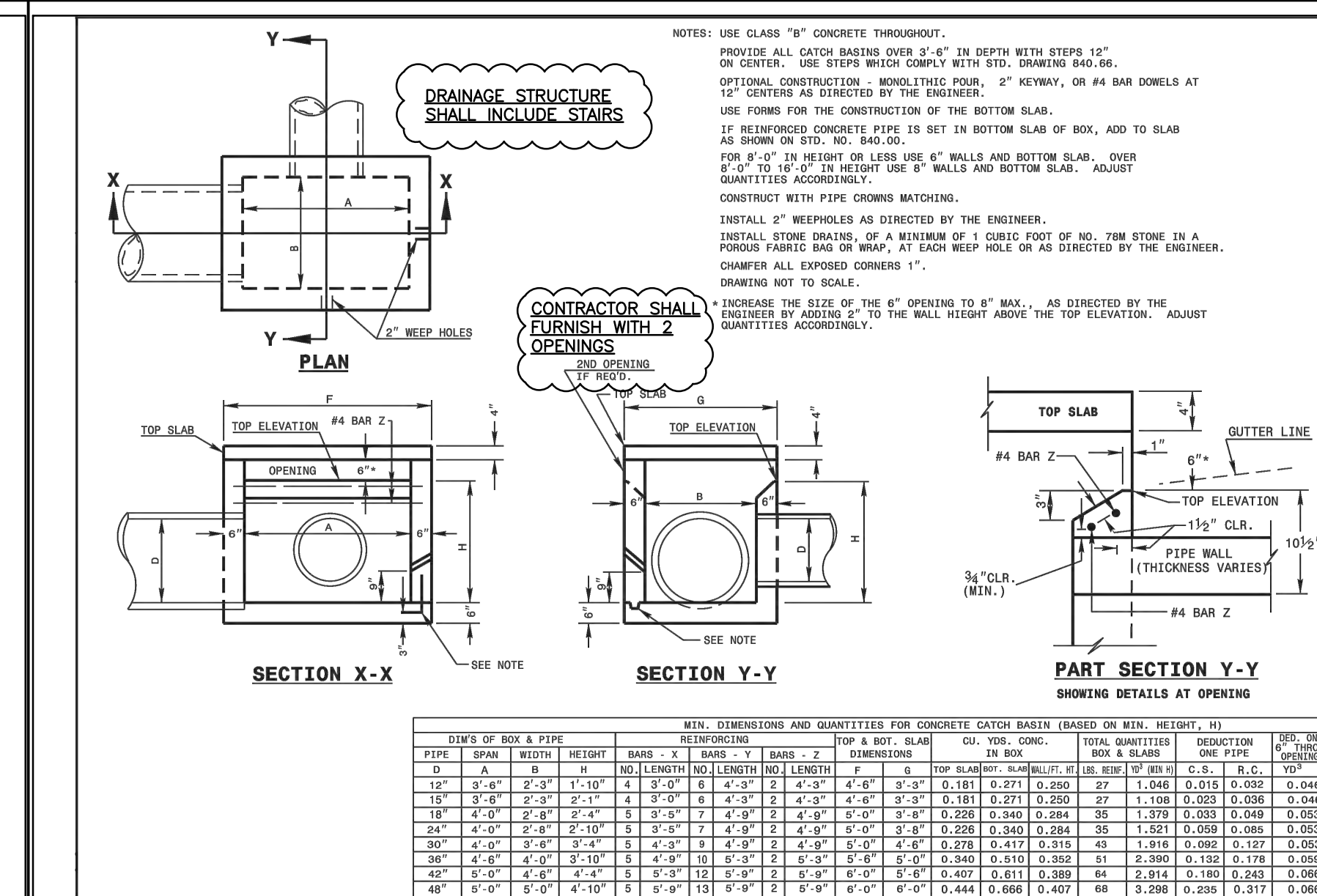
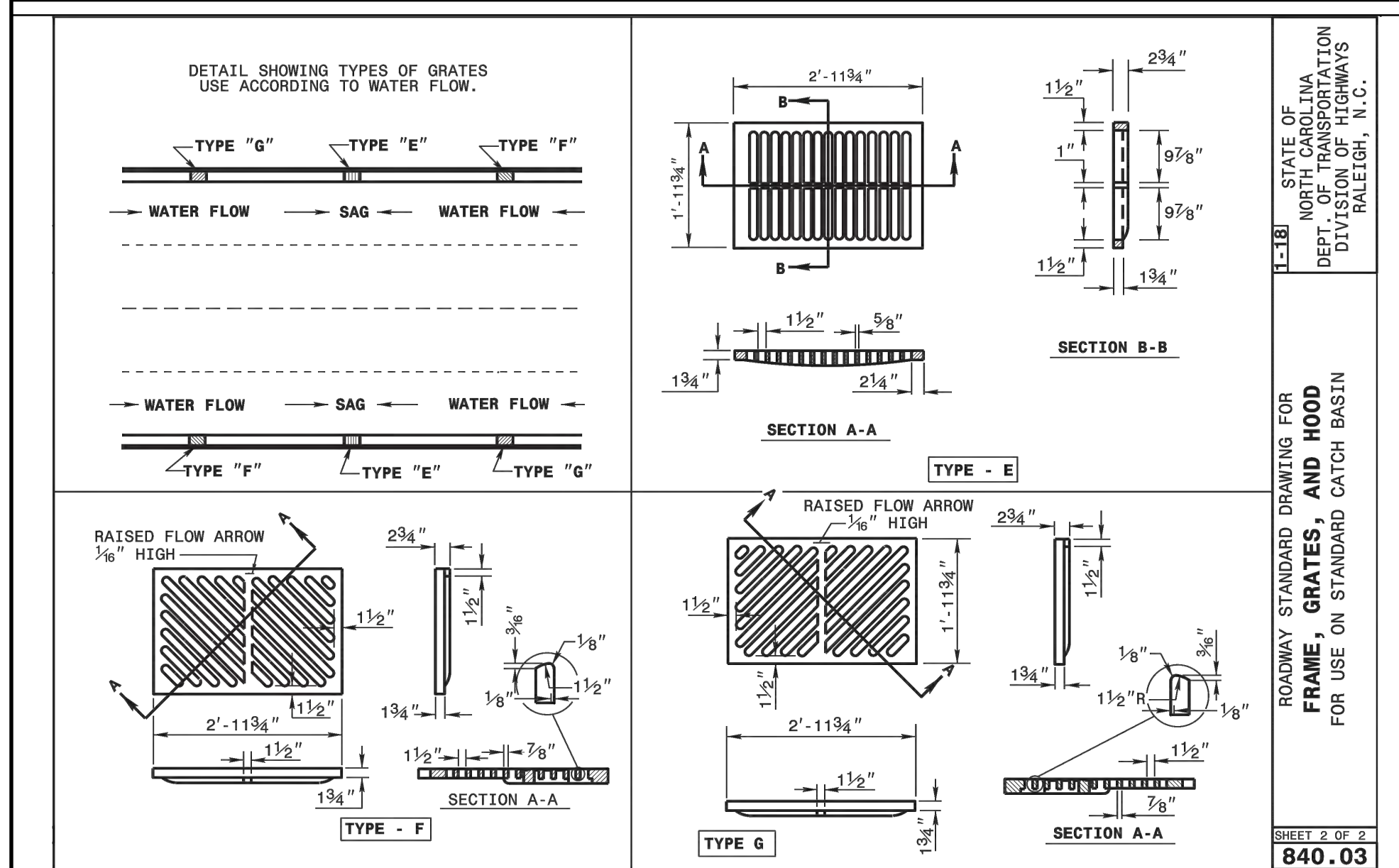




1 C9.2 CONCRETE CATCH BASIN 12" THROUGH 54" PIPE
 NCDOT 840.02 SHT 1 OF 2
 -NTS- ALL DRAINAGE STRUCTURES SHALL BE PRECAST CONCRETE ONLY.

2 C9.2 CONCRETE CATCH BASIN 12" THROUGH 54" PIPE
 NCDOT 840.02 SHT 2 OF 2
 -NTS- ALL DRAINAGE STRUCTURES SHALL BE PRECAST CONCRETE ONLY.

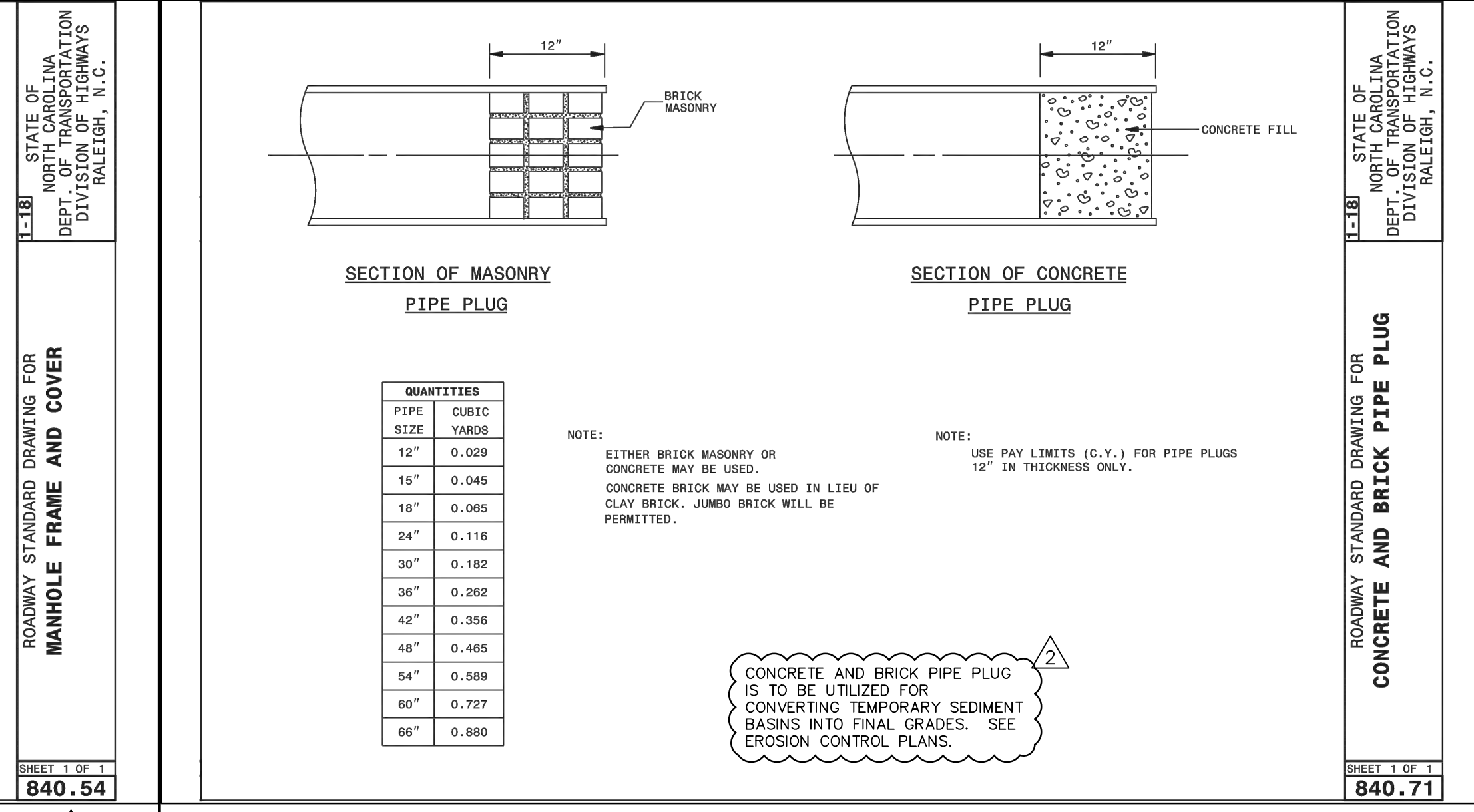
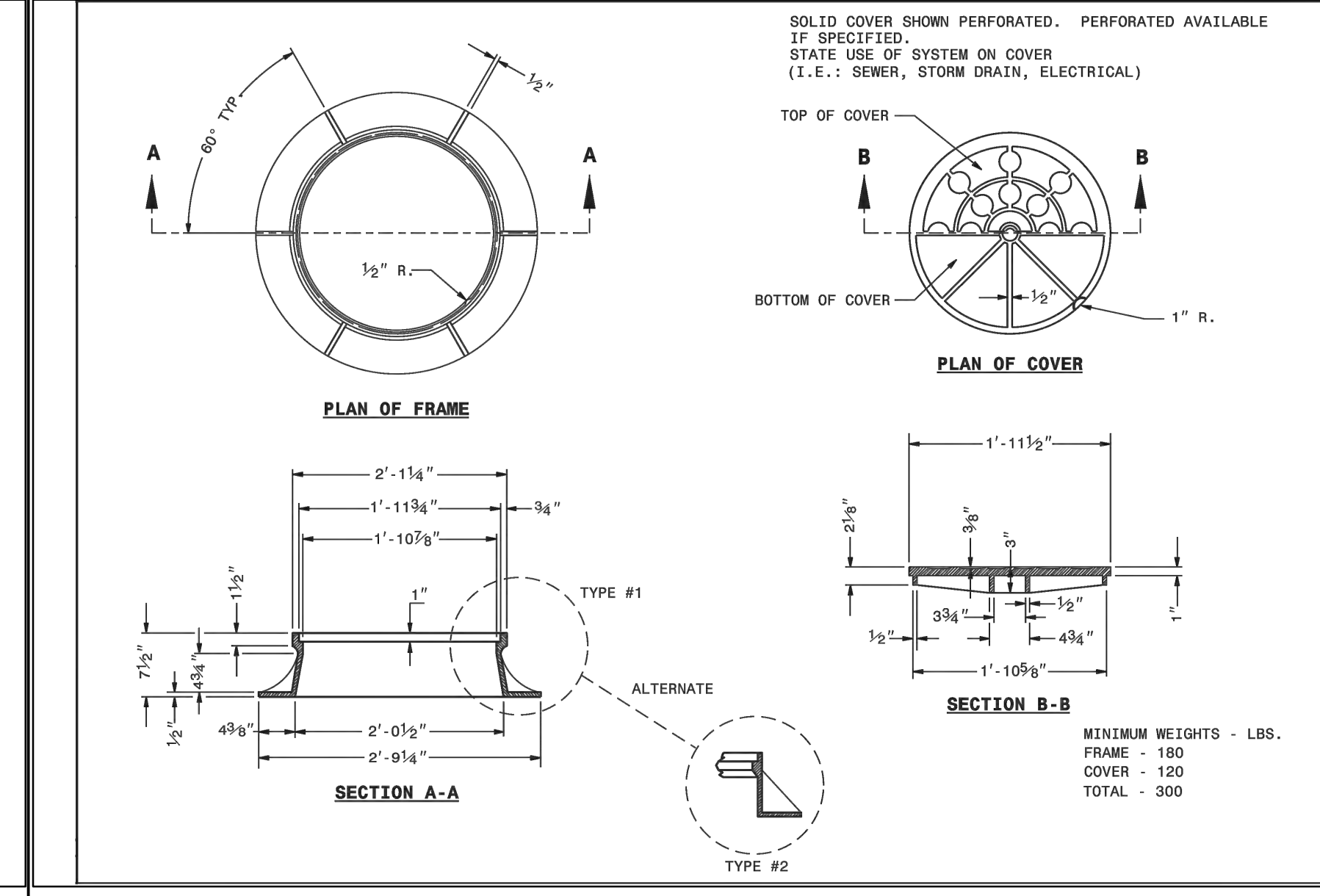
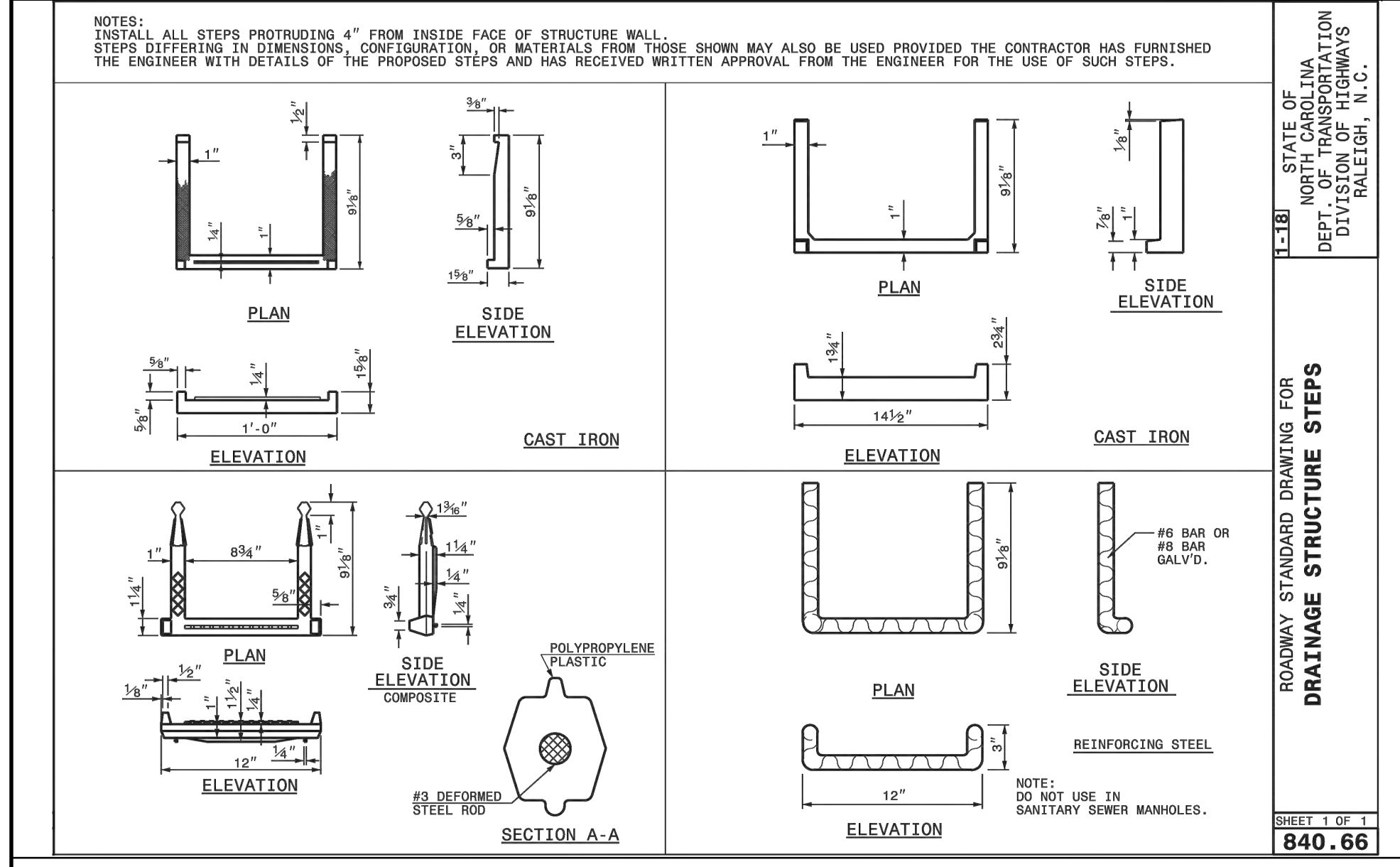
3 C9.2 FRAME, GRATES, AND HOOD - STANDARD CATCH BASIN
 NCDOT 840.03 SHT 1 OF 2
 -NTS-



4 C9.2 FRAME, GRATES, AND HOOD - STANDARD CATCH BASIN
 NCDOT 840.03 SHT 2 OF 2
 -NTS-

5 C9.2 CONCRETE OPEN THROAT CATCH BASIN 12" THROUGH 48" PIPE
 NCDOT 840.04 SHT 1 OF 2
 -NTS- ALL DRAINAGE STRUCTURES SHALL BE PRECAST CONCRETE ONLY.

6 C9.2 CONCRETE OPEN THROAT CATCH BASIN 12" THROUGH 48" PIPE
 NCDOT 840.04 SHT 2 OF 2
 -NTS- ALL DRAINAGE STRUCTURES SHALL BE PRECAST CONCRETE ONLY.



7 C9.2 DRAINAGE STRUCTURE STEPS
 NCDOT 840.66 SHT 1 OF 1
 -NTS-

8 C9.2 MANHOLE FRAME AND COVER
 NCDOT 840.54 SHT 1 OF 1
 -NTS- DETAIL IS ONLY FOR USE WITH STORM SEWER DRAINAGE STRUCTURES.

9 C9.2 CONCRETE AND BRICK PIPE PLUG
 NCDOT 840.71 SHT 1 OF 1
 -NTS-

MC² ENGINEERING
 MC² ENGINEERING, INC.
 2110 BEN CRAIG DR., STE. 400
 CHARLOTTE, NC 28262
 PHONE 704.510.9797

Professional Engineer Seal
 State of North Carolina
 License No. 29606
 Date: 9/24/19

RIVERMIST SUBDIVISION
 SOUTH POINT ROAD
 BELMONT, NC
SHINVILLE RIDGE PARTNERS, LLC
 20607 BETHEL CHURCH ROAD
 CORNELIUS, NC 28031

DETAIL SHEET

REVISIONS	
2	11/27/18 BELMONT COMMENTS

FINAL DRAWING FOR REVIEW PURPOSES ONLY
 CAD FILE: 18-017 BASE.DWG
 PROJECT NO.: 18-017
 DESIGNED BY: TAP
 REVIEWED BY: JDM
 DATE: OCTOBER 8, 2018

C9.2