

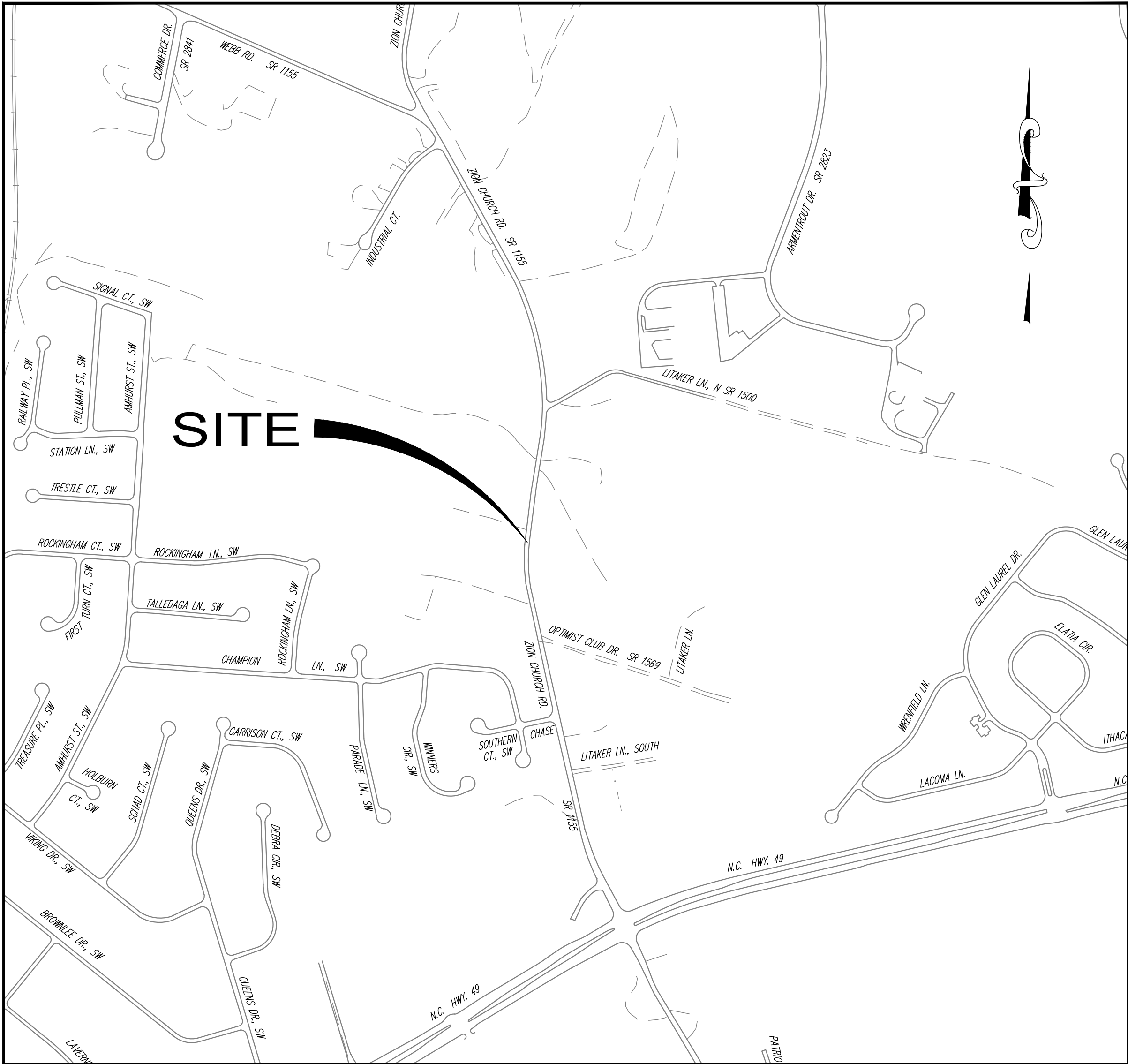
1. CONTRACTOR SHALL ENSURE THAT ALL NECESSARY PERMITS HAVE BEEN RECEIVED AND THAT THOSE REQUIRED TO BE DISPLAYED ON-SITE ARE AVAILABLE.
2. CONTRACTOR SHALL HOLD PRE-CONSTRUCTION MEETING AT LEAST 48 HOURS BEFORE THE ACTUAL START OF CONSTRUCTION.
3. CONTRACTOR SHALL CONTACT CAROLINA ONE CALL AND ALL ENTITIES HAVING BURIED UTILITIES AT LEAST 72 HOURS PRIOR TO DIGGING OR AS DIRECTED AT THE PRE-CONSTRUCTION MEETING.
4. CONTRACTOR SHALL MAINTAIN TRAFFIC AND SAFETY CONTROL MEASURES AT ALL TIMES ON THE PROJECT. (SEE TRAFFIC CONTROL.)
5. CONTRACTOR SHALL INSTALL TEMPORARY CONSTRUCTION ENTRANCES (IF ANY) AT EACH POINT OF ACCESS TO STORAGE AND CONSTRUCTION AREAS.
6. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH PLANS AND BEFORE STARTING WORK.
7. CONTRACTOR SHALL CLEAR RIGHT-OF-WAY IF NECESSARY.
8. STOCKPILE RIP-RAP ON SITE AND INSTALL ALL OTHER EROSION CONTROL MEASURES WHERE THE WORK IS OCCURRING. CONTRACTOR SHALL NOT INSTALL EROSION CONTROL MEASURES IN AREAS WHERE THE WORK WILL NOT OCCUR FOR SOME TIME. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY THE CITY/PROJECT ENGINEER OR UPON RECOMMENDATION OF NC DENR PERSONNEL AS CONDITIONS WARRANT.
9. STABILIZATION FOR THIS PROJECT SHALL COMPLY WITH THE TIME FRAME GUIDELINES AS SPECIFIED BY THE NCG-101000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.
10. CONTRACTOR SHALL COORDINATE ALL BLOW-OFFS AND TESTING WITH THE CITY ENGINEERING DEPARTMENT'S CONSTRUCTION ADMINISTRATOR AT LEAST 24 HOURS IN ADVANCE OF SUCH WORK. NOTIFY THE RESPONSE AREA FIRE DEPARTMENT IF EXISTING SYSTEM VALVES NEED TO BE SHUT OFF IN THE COURSE OF THE WORK.
11. UPON COMPLETION OF THE INSTALLATION AND WITH APPROVAL OF NC DEQ-DLR, ALL EROSION CONTROL DEVICES EXCEPT FOR CREEK/STREAM BANK STABILIZATION SHALL BE REMOVED AND DISPOSED OF IN AN ACCEPTABLE MANNER. EACH SECTION SHALL BE SEEDED AT EARLIEST POSSIBLE DATE AFTER INSTALLATION OF PIPE, STRUCTURE, OR ACCESS.
12. ONCE GROUND COVER IS FIRMLY ESTABLISHED, ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED WITH THE APPROVAL OF NC DEQ-DLR.
13. CONTRACTOR SHALL REFERENCE SPECIAL CONDITIONS FOR JOB SEQUENCE AND OTHER DIRECTIONS, IF ANY. CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITY WITH THE CITY ENGINEERING DEPARTMENT.

1. ALL MATERIALS, EQUIPMENT, LABOR, AND WORKMANSHIP IS TO BE IN ACCORDANCE WITH AND SUBJECT TO THE WATER AND SEWER AUTHORITY OF CABARRUS COUNTY'S STANDARD SPECIFICATIONS; THE CITY OF CONCORD'S STANDARD SPECIFICATIONS, POLICIES, AND STANDARD SPECIFICATIONS, AND NC DOT STANDARD SPECIFICATIONS, AND THE NORTH CAROLINA ADMINISTRATIVE CODE FOR WASTEWATER COLLECTION AND WATER DISTRIBUTION SYSTEMS. IN THE EVENT OF CONFLICT BETWEEN THE WATER AND SEWER AUTHORITY OF CABARRUS COUNTY'S STANDARD SPECIFICATION; THE CITY OF CONCORD'S ORDINANCE, POLICIES AND STANDARD SPECIFICATIONS, AND NC DOT STANDARD SPECIFICATIONS OR THE NORTH CAROLINA ADMINISTRATIVE CODE, THE MORE RESTRICTIVE REQUIREMENTS SHALL APPLY.
2. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL CONFORM TO THE LATEST STANDARDS OF THE N.C. SEDIMENTATION POLLUTION CONTROL ACT AND APPLICABLE LOCAL AND FEDERAL REGULATIONS.
3. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION ADMINISTRATOR OF THE CITY OF CONCORD ENGINEERING DEPARTMENT AT LEAST 48 HOURS IN ADVANCE OF BEGINNING WORK.
4. INDIVIDUAL WATER, GAS, SEWER, TELEPHONE, AND CABLE SERVICES MAY OR MAY NOT BE SHOWN ON THE PLANS. CONTRACTOR TO CONTACT APPROPRIATE AGENCY FOR FIELD LOCATIONS.
5. CITY OF CONCORD ELECTRIC, WATER, AND SEWER DEPARTMENT PERSONNEL WILL ASSIST THE CONTRACTOR IN LOCATING ALL CITY OF CONCORD UTILITY SERVICES AND LINES.
6. IF MAILBOX PULL-OUT AREAS ARE DISTURBED, CRUSHED STONE STABILIZER SHALL BE PLACED WITH SUFFICIENT LENGTH TO ACCOMMODATE VEHICULAR TRAFFIC. THESE AREAS SHALL BE MAINTAINED FOR THE ONE YEAR WARRANTY PERIOD. THE COST OF THESE ITEMS SHALL BE INCLUDED IN THE COST OF LAYING PIPE AND/OR REPLACING CURBULTS.
7. THIS PROJECT IS NOT SUBJECT TO 100 YEAR FLOOD PER FIRM MAP 3710552900K, NOVEMBER 16, 2018.
8. FIRE HYDRANT EXTENSIONS, IF NEEDED, SHALL BE INCLUDED IN THE COST OF THE HYDRANT INSTALLATION.
9. GATE OR BUTTERFLY VALVES, BLOW-OFFS, AND FIRE HYDRANTS MAY BE FIELD ADJUSTED 50 FEET IN EITHER DIRECTION WITH THE PERMISSION OF THE ENGINEERING AND WATER RESOURCES DEPARTMENTS.

1. RIGHT-OF-WAY LINES AND PROPERTY LINES ARE SHOWN ON THE DESIGN DRAWINGS AND ARE FOR REFERENCE ONLY. FOR EXACT LOCATIONS REFER TO THE SURVEY PLATS BY THE CITY OF CONCORD'S CONSULTING REGISTERED LAND SURVEYOR OR BY THE CITY SURVEYOR.
2. REFER TO STANDARDS AND SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION FOR FURTHER DETAILS CONCERNING THE RIGHT-OF-WAY.

1. THE CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES FOR WORK ZONE TRAFFIC SAFETY AND CONTROL.
2. ALL WORK ZONE TRAFFIC CONTROL DEVICES AND OPERATIONS USED ON STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE, UTILITY OR INCIDENT MANAGEMENT SHALL CONFORM TO THE APPLICABLE SPECIFICATIONS IN THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (MUTCD).
3. ALL TRAFFIC/SAFETY CONTROL DEVICES SHALL BE IN GOOD REPAIR AND SHALL BE POSITIONED AT ALL TIMES IN THE APPROPRIATE LOCATIONS FOR THE WORK OPERATION. THE CONTRACTOR SHALL CAREFULLY MONITOR SITE CONDITIONS SUCH AS LIGHT, WEATHER, TRAFFIC VOLUME, ETC. TO ENSURE THAT ALL TRAFFIC/SAFETY CONTROL MEASURES ARE OPERATING EFFECTIVELY.

ZION CHURCH RD. (SR 1155)  
12" WATERLINE  
PROJECT # : 2020-077



SCALE: N.T.S.

THIS PROJECT CONSISTS OF THE INSTALLATION OF APPROXIMATELY 3,183± LINEAR FEET OF 12" WATER MAIN EXTENSION FOR THE PURPOSE OF PROVIDING PUBLIC POTABLE WATER AND FIRE PROTECTION AND A LOOP SYSTEM ON ZION CHURCH RD.

THE EFFECTIVE AREA OF GROUND DISTURBANCE IS 2.50± ACRES. THE WORK IS TO PROCEED IN SUCH A MANNER AS TO LIMIT THE AMOUNT OF GROUND DISTURBANCE BY HAVING ONLY ONE SECTION OF THE DITCH OPEN AT A TIME THEREBY REDUCING THE POTENTIAL FOR LARGE QUANTITIES OF SEDIMENT TO BE TRANSPORTED OFF SITE. SEEDING OF DENuded AREAS SHALL BE DONE AS SOON AS POSSIBLE, BUT IN NO CASE LONGER THAN 10 DAYS AND IN ACCORDANCE WITH THE APPROVALS GIVEN IN THE PLANS. REMOVAL OF ALL SEDIMENTATION AND EROSION CONTROL DEVICES SHALL ONLY BE DONE AFTER APPROVAL HAS BEEN COORDINATED WITH NCDCE - DIVISION OF ENERGY, MINERAL AND RESOURCES AND THE CITY OF CONCORD.

LOCATION AND PROTECTION OF ALL UTILITIES IN THE WORK AREA SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. IN THE EVENT OF AN UNFORESEEN CONFLICT, THE CONTRACTOR SHALL NOTIFY THE CITY OF CONCORD ENGINEERING DEPARTMENT IMMEDIATELY.

ALL TRAFFIC CONTROL AND SAFETY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE CONDUCTED IN STRICT ACCORDANCE WITH THE LATEST REVISION OF PART IV OF THE M.U.T.C.D., NCDOT, AND ALL OTHER STATE AND FEDERAL REGULATIONS. COMPLETION AND ACCEPTANCE OF THE WORK IS ANTICIPATED TO BE SPRING OF 2024.

SHEET	1	PROJECT NARRATIVE, NOTES, LEGEND, SITE MAP
SHEET	2	DESIGN – PLAN/PROFILE
SHEET	3	DESIGN – PLAN/PROFILE
SHEET	4	DESIGN – PLAN/PROFILE
SHEET	5	DESIGN – PLAN/PROFILE
SHEET	6	DESIGN – PLAN/PROFILE
SHEET	7	DESIGN – PLAN/PROFILE
SHEET	8	DESIGN – PLAN/PROFILE
SHEET	9	WATER DETAILS
SHEET	10	WATER DETAILS
SHEET	11	STREAM STANDARD DETAILS
SHEET	12	TRAFFIC STANDARD AND PAVEMENT / MISC. DET
SHEET	13	EROSION CONTROL DETAILS
SHEET	14	EROSION CONTROL DETAILS
SHEET	15	EROSION CONTROL DETAILS

**Concord**  
NORTH CAROLINA  
*High Performance Living*

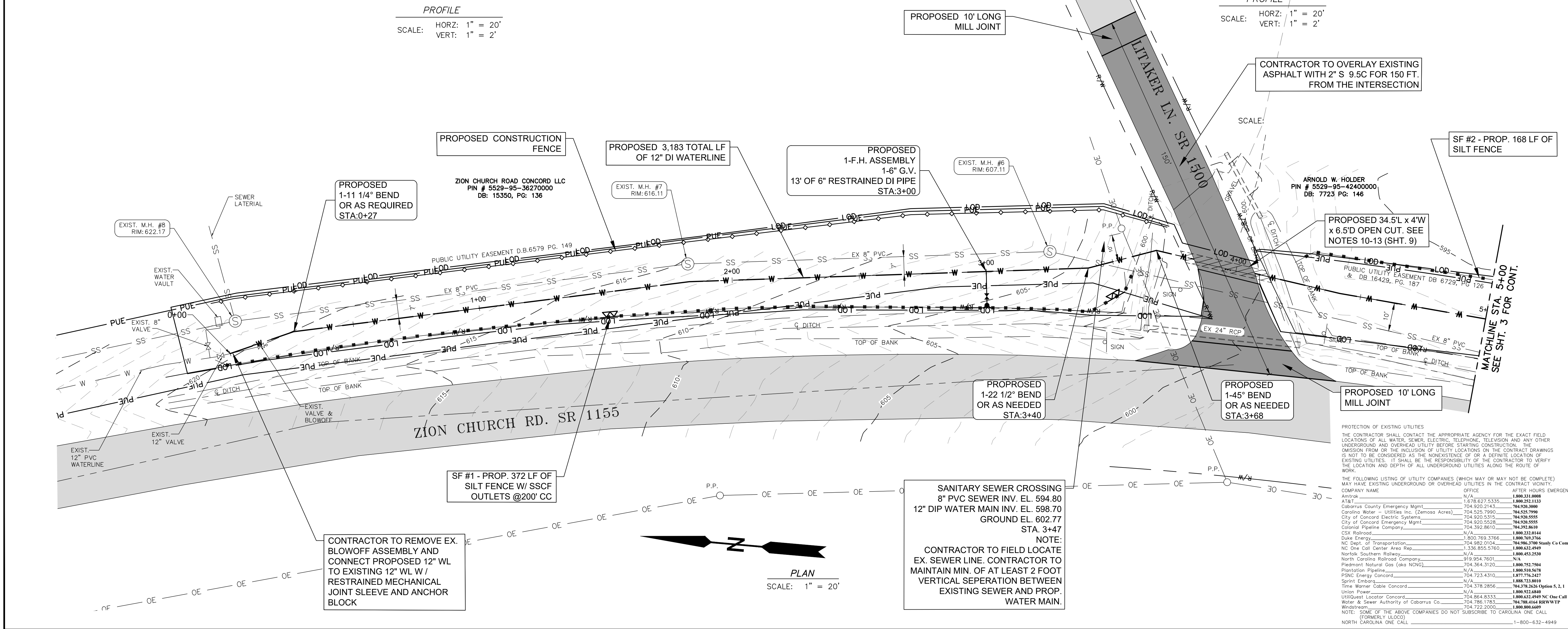
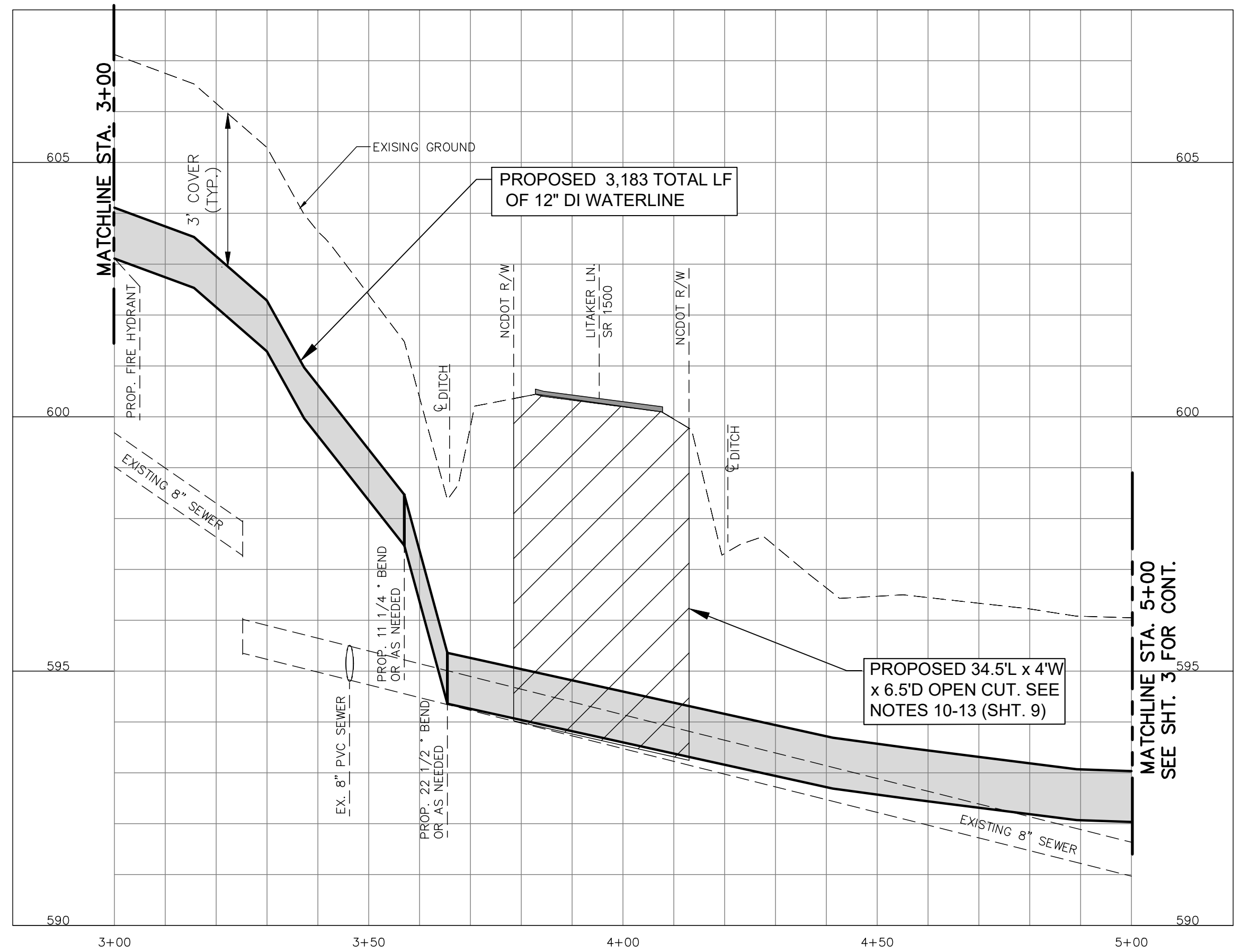
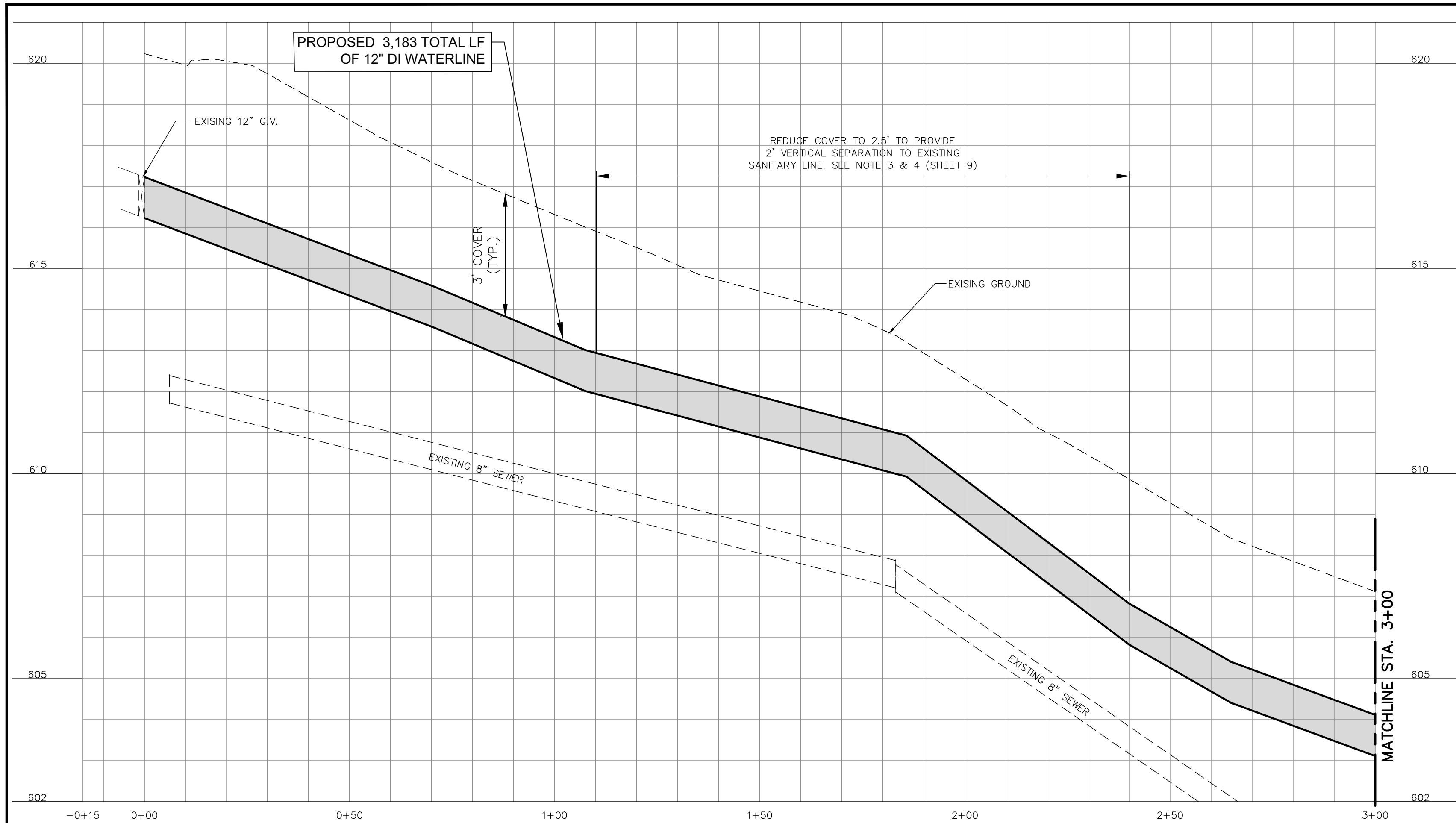
PREPARED BY  
ENGINEERING DEPARTMENT  
CITY OF CONCORD  
P.O. BOX 308  
CONCORD N.C. 28026  
(704) 920-5425


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ENGINEER  
GARCIA ZARACATA  
VILLA  
6/20/23  
Engineer's Seal

Surveyor's Seal


REV. #	DATE	DESCRIPTION	BY
0	4/25/23	FOR CONSTRUCTION	EES
1	6/19/23	ADDRESSING ENCROACHMENT AGREEMENT COMMENTS	EES







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6/20/23  
Engineer's Seal

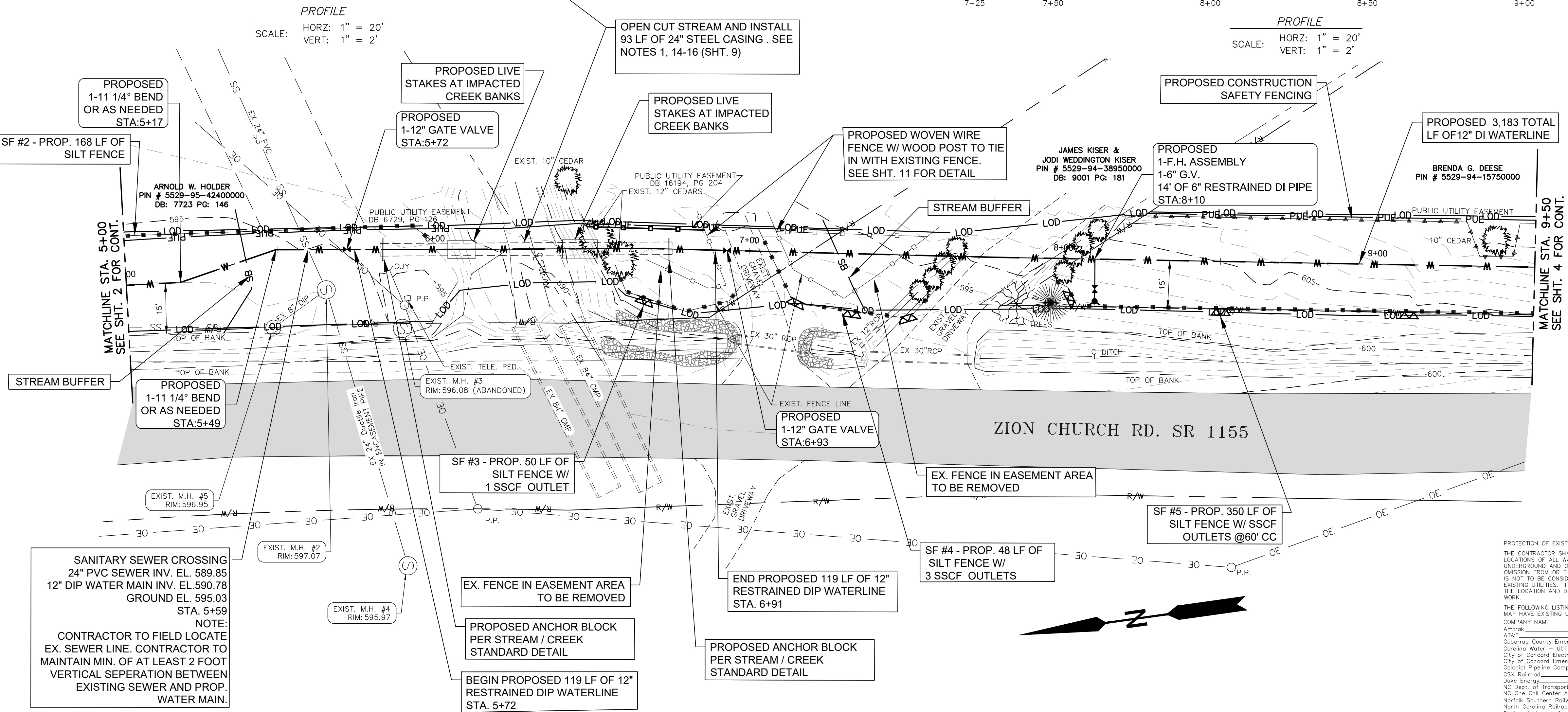
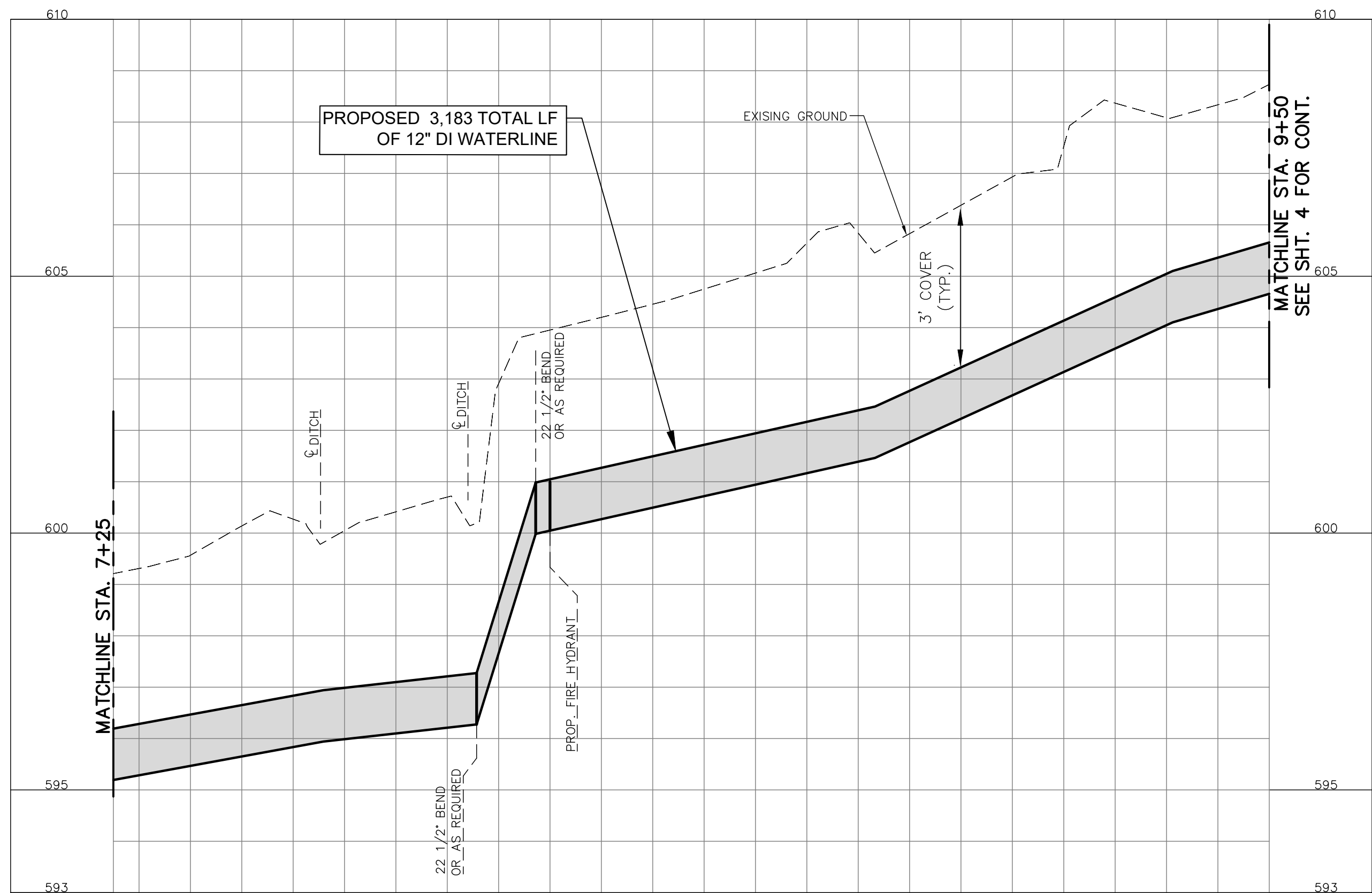
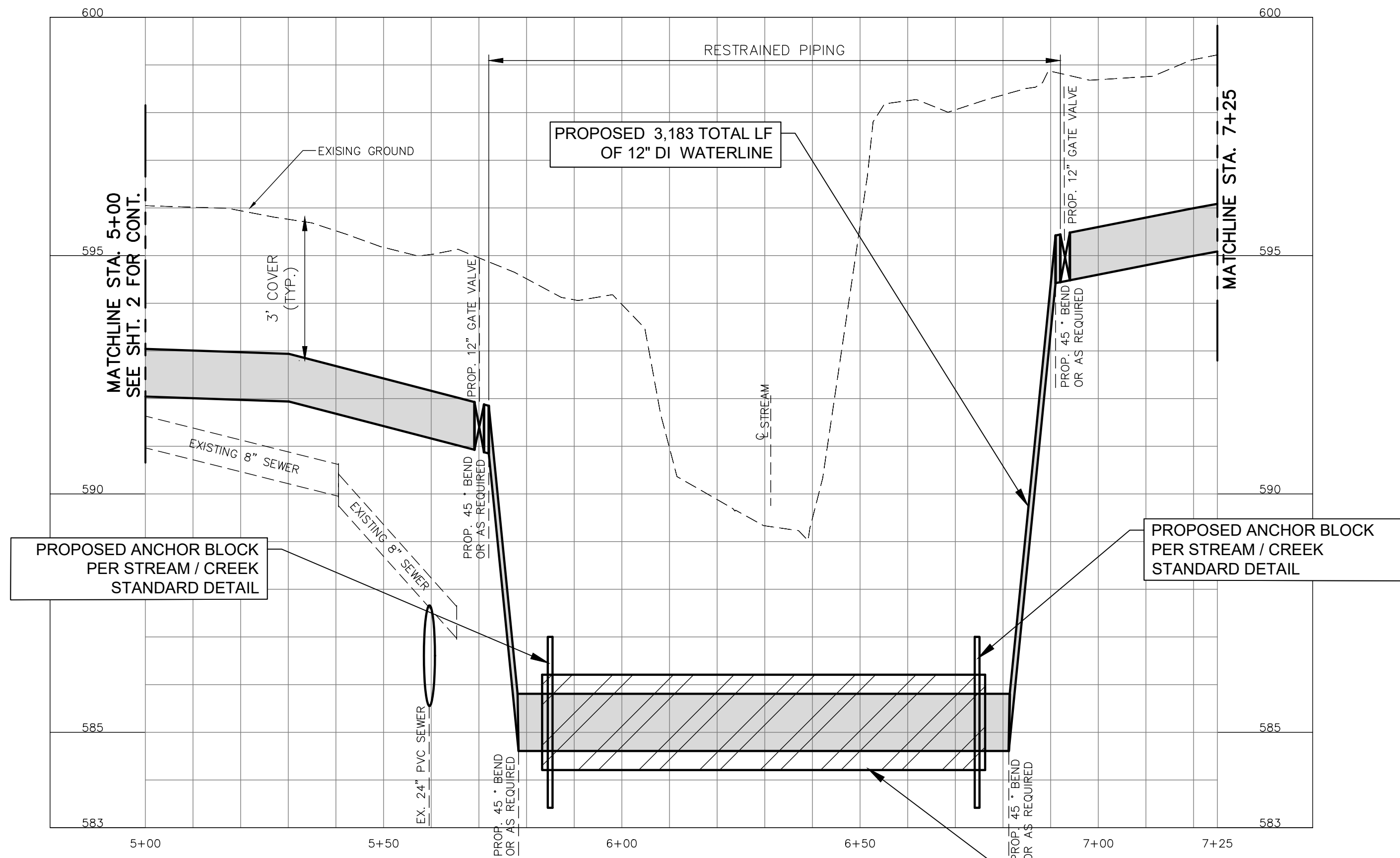
Surveyor's Seal

**ZION CHURCH RD. (SR 1155)  
12" WATERLINE  
PROJECT # : 2020-077**

REV.	DATE	DESCRIPTION	BY
0	4/25/23	FOR CONSTRUCTION	EES
1	6/19/23	ADDRESSING ENCROACHMENT AGREEMENT COMMENTS	EES

DESIGNED BY: CGZV  
DRAWN BY: EES  
CHECKED BY: EAB  
SCALE: AS SHOWN  
DATE: 09/08/2020  
PROJECT NUMBER: 2020-077  
SHEET: 2 OF 15





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CITY OF CONCORD  
P.O. BOX 308  
CONCORD N.C. 28026  
(704) 920-5425



Engineer's Seal

Surveyor's Seal

ZION CHURCH RD. (SR 1155)  
12" WATERLINE  
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SCALE: AS SHOWN			
DATE: 09/08/2020			
PROJECT NUMBER: 2020-077			
SHEET: 3 OF: 15			

PROTECTION OF EXISTING UTILITIES  
THE CONTRACTOR SHALL CONTACT THE APPROPRIATE AGENCY FOR THE EXACT FIELD LOCATIONS OF ALL WATER, SEWER, ELECTRIC, TELEPHONE, TELEVISION AND ANY OTHER UNDERGROUND AND OVERHEAD UTILITY LOCATIONS BEFORE STARTING CONSTRUCTION. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE CONTRACT DRAWINGS IS NOT TO BE CONSIDERED AS THE NONEXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF WORK.

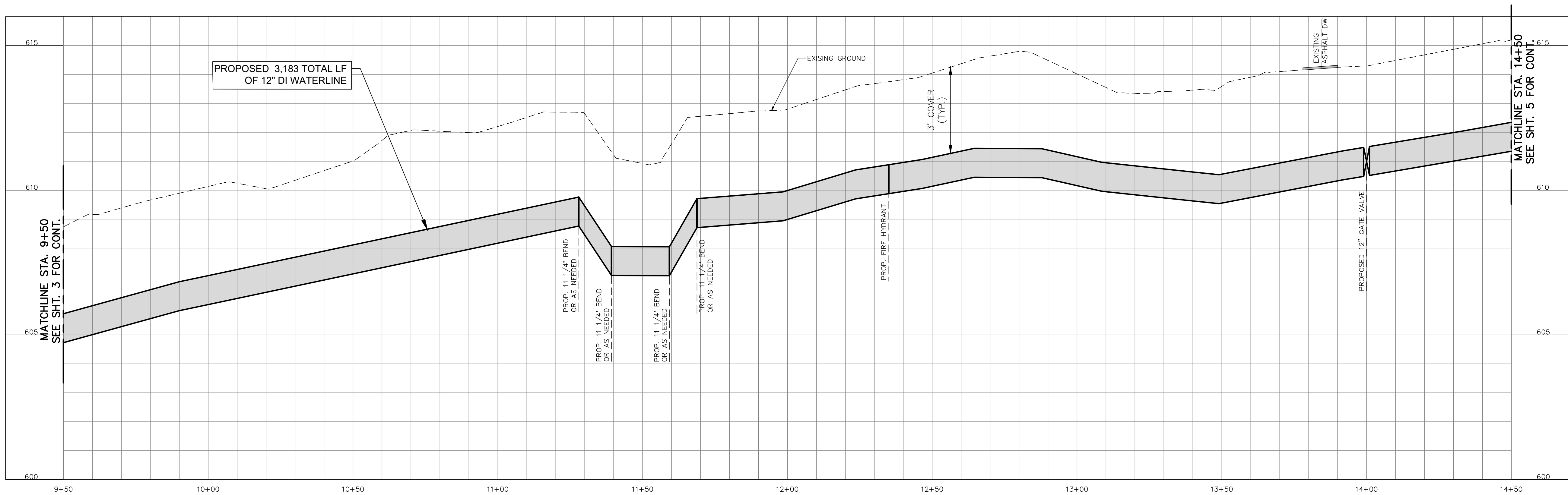
THE FOLLOWING LISTING OF UTILITY COMPANIES (WHICH MAY OR MAY NOT BE COMPLETE) MAY HAVE EXISTING UNDERGROUND OR OVERHEAD UTILITIES IN THE CONTRACT VICINITY.

COMPANY NAME	OFFICE	AFTER HOURS EMERGENCY
Amtrak	N/A	1.800.331.0000
AT&T	1.878.627.5335	1.800.252.1133
Cabarrus County Emergency Mgmt.	704.920.2143	704.920.3000
Carolina Water - Utilities Inc. (Zemosa Acres)	704.925.7995	704.925.7990
City of Concord Electric Systems	704.920.5315	704.920.5555
City of Concord Emergency Mgmt.	704.920.5528	704.920.5555
Colonial Pipeline Company	704.392.8610	704.392.8610
CSX Railroad	N/A	1.800.332.6164
Duke Energy	1.800.769.3766	1.800.769.3766
NC Dept. of Transportation	704.982.0104	704.982.7999
NC One Call Center Area Rep.	1.336.855.5760	1.800.632.4949
Norfolk Southern Railway	N/A	1.800.453.2530
North Carolina Railroad Company	919.954.7601	N/A
Piedmont Natural Gas (aka NCG)	704.364.3120	1.800.752.7804
Puritan Pipeline	N/A	1.800.510.8678
PSNC Energy Concord	704.723.4310	1.877.776.3427
Sprint	1.800.732.3010	N/A
Time Warner Cable Concord	704.378.2856	704.378.3626
Union Power	N/A	1.800.922.6640
UtilQuest Locator Concord	704.864.8333	1.800.432.5949
Water & Sewer Authority of Cabarrus Co.	704.786.1783	704.786.4164
Weststream	704.722.2000	1.800.800.6699

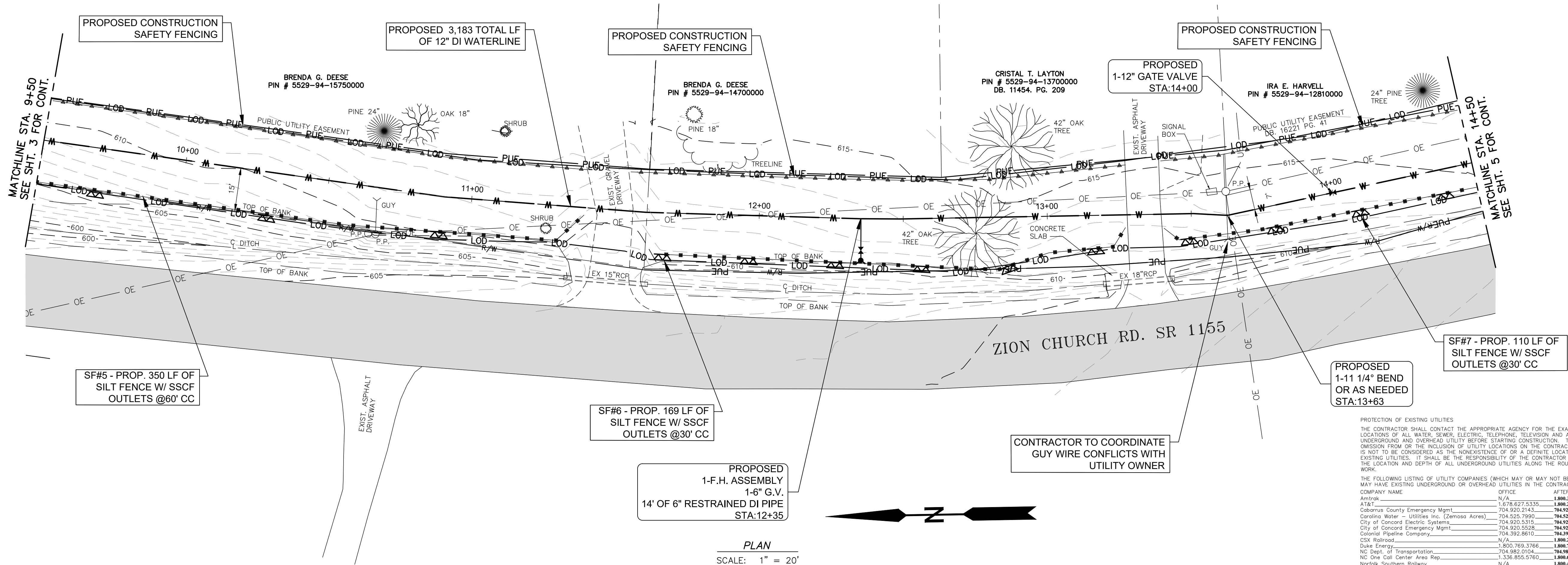
NOTE: SOME OF THE ABOVE COMPANIES DO NOT SUBSCRIBE TO CAROLINA ONE CALL (FORMERLY 11000)

NORTH CAROLINA ONE CALL 1-800-632-4949





PROFILE  
SCALE: HORIZ: 1" = 20'  
VERT: 1" = 2'



PLAN  
SCALE: 1" = 20'



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CONCORD N.C. 28026  
(704) 920-5425



Surveyor's Seal

ZION CHURCH RD. (SR 1155)  
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PROJECT # : 2020-077

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PROTECTION OF EXISTING UTILITIES  
THE CONTRACTOR SHALL CONTACT THE APPROPRIATE AGENCY FOR THE EXACT FIELD LOCATIONS OF ALL WATER, SEWER, ELECTRIC, TELEPHONE, TELEVISION AND ANY OTHER UNDERGROUND AND OVERHEAD UTILITY BEFORE STARTING CONSTRUCTION. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE CONTRACT DRAWINGS IS NOT TO BE CONSIDERED AS THE NONEXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF WORK.

THE FOLLOWING LISTING OF UTILITY COMPANIES (WHICH MAY OR MAY NOT BE COMPLETE) MAY HAVE EXISTING UNDERGROUND OR OVERHEAD UTILITIES IN THE CONTRACT VICINITY.

COMPANY NAME	OFFICE	AFTER HOURS EMERGENCY
Amtrak	N/A	1.800.331.0000
AT&T	1.878.627.5335	1.800.252.1133
Cabarrus County Emergency Mgmt.	704.920.2143	704.920.3000
Carolina Water - Utilities Inc. (Zemosa Acres)	704.525.7990	704.525.7990
City of Concord Electric Systems	704.920.5315	704.920.4555
City of Concord Emergency Mgmt.	704.920.5528	704.920.5555
Colonial Pipeline Company	704.392.8610	704.992.8610
CSX Railroad	1.800.333.8144	1.800.333.8144
Duke Energy	1.800.769.3766	1.800.769.3766
NC Dept. of Transportation	704.982.0104	704.986.3700 Stantec Co Comm
NC One Call Center Area Rep.	1.336.855.5760	1.800.632.4940
Norfolk Southern Railway	N/A	1.800.453.2530
North Carolina Railroad Company	919.954.7601	N/A
Piedmont Natural Gas (aka NONG)	704.364.3120	1.800.752.7504
Plantation Pipeline	N/A	1.800.538.5678
PSNC Energy Concord	704.723.4310	1.877.776.2427
Sprint	N/A	1.800.723.9010
Time Warner Cable Concord	704.378.2856	704.378.2626 Option 5, 2, 1
Union Power	N/A	1.800.922.6440
USQuest Locator Concord	704.864.8333	1.800.632.4940 NC One Call
Water & Sewer Authority of Cabarrus Co.	704.786.1783	704.788.4164 RRWTP
Weststream	704.722.2000	1.800.800.6669

NOTE: SOME OF THE ABOVE COMPANIES DO NOT SUBSCRIBE TO CAROLINA ONE CALL (FORMERLY ILLICO)

NORTH CAROLINA ONE CALL 1-800-632-4949





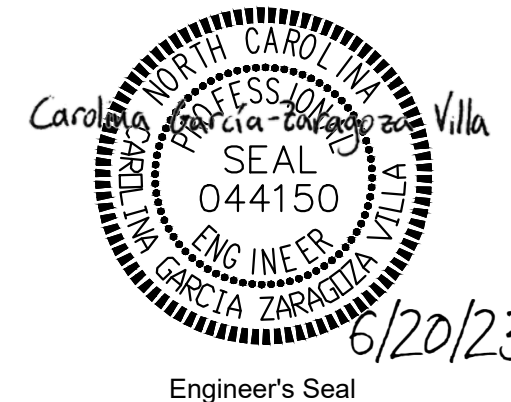
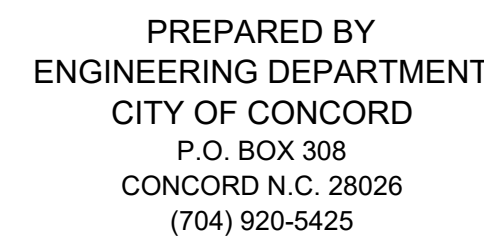
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THE FOLLOWING LISTINGS OF UTILITY COMPANIES (WHICH MAY OR MAY NOT BE COMPLETE) MAY HAVE EXISTING UNDERGROUND OR OVERHEAD UTILITIES IN THE CONTRACT VIGNETTE.

COMPANY NAME	PHONE	ADDRESS
Amcor	N/A	1800-331-8008
Carroll	704-672-7535	1800-331-8008
Coburn County Emergency Mgmt.	704-920-2143	704-920-3000
Concord Electric (includes all areas)	704-920-2143	704-920-3000
City of Concord Electric Systems	704-920-5315	704-920-5555
Concord Electric Systems	704-920-5315	704-920-5555
Concord Electric Systems	704-920-5315	704-920-5555
Colonia Pipeline Company	704-392-8610	704-392-8610
Duke Energy	1-800-768-3766	1-800-307-7676
Duke Energy Transportation	1-800-292-0010	1-800-307-7676
NC One Call Central Area Rep.	1-336-855-5760	1-800-432-4049
Norfolk Southern Railway	N/A	800-453-2330
North Carolina Railroad Company	919-854-7601	704-920-3000
Piedmont Natural Gas (aka NNG)	704-364-3120	704-920-7504
Piedmont Natural Gas	704-364-3120	704-920-7504
PSNY Energy Central	704-723-4310	1-877-762-2471
PSNY Energy Central	704-723-4310	1-877-762-2471
Time Warner Cable Concord	704-378-2856	704-378-2856
Time Warner Cable Concord	704-378-2856	704-378-2856
Union Telephone Local Concord	704-864-8533	704-862-6740 (N/C)
Union Telephone Authority of Concord	704-864-8533	704-862-6740 (N/C)
Western Piedmont Electric Co. (Concord)	704-722-2000	704-722-2000
Western Piedmont Electric Co. (Concord)	704-722-2000	704-722-2000

THE ABOVE COMPANIES DO NOT SUBSCRIBE TO CAROLINA ONE CALL (FORMERLY USCE).

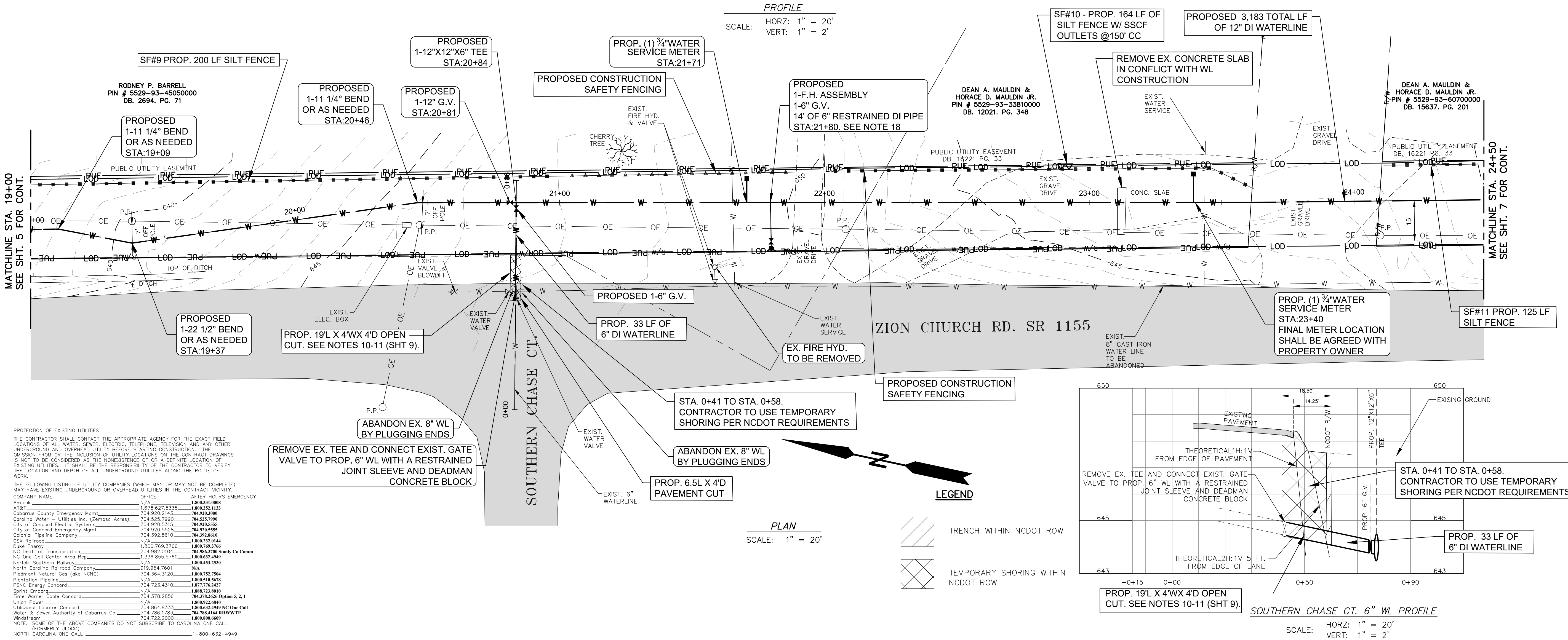
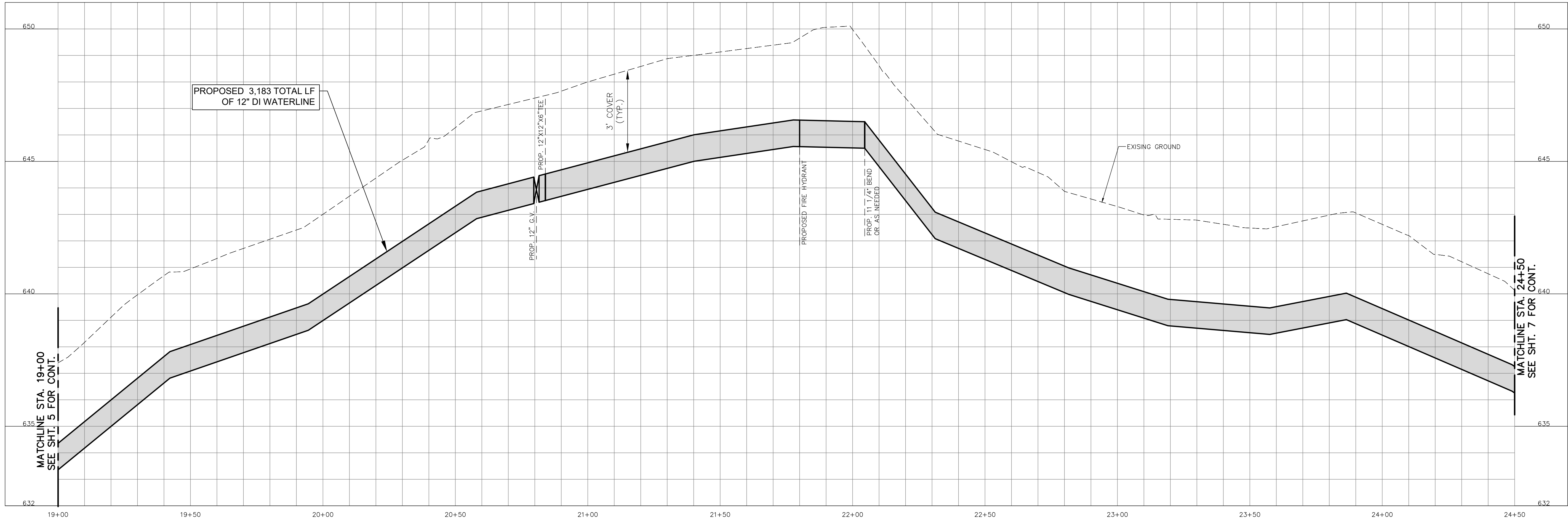
NORTH CAROLINA ONE CALL 1-800-632-6344



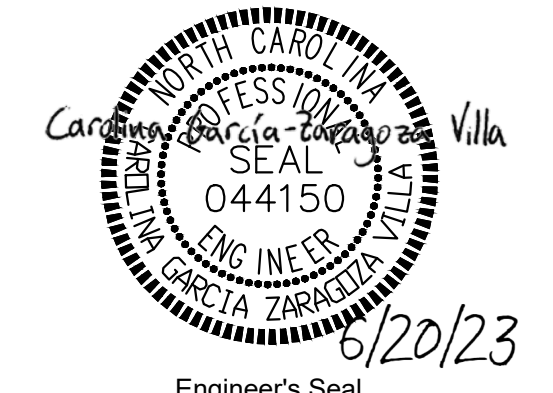
ZION CHURCH RD. (SR 1155)  
12" WATERLINE  
PROJECT # : 2020-077

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ZION CHURCH RD. (SR 1155)  
12" WATERLINE  
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SHEET: 6 OF: 15				



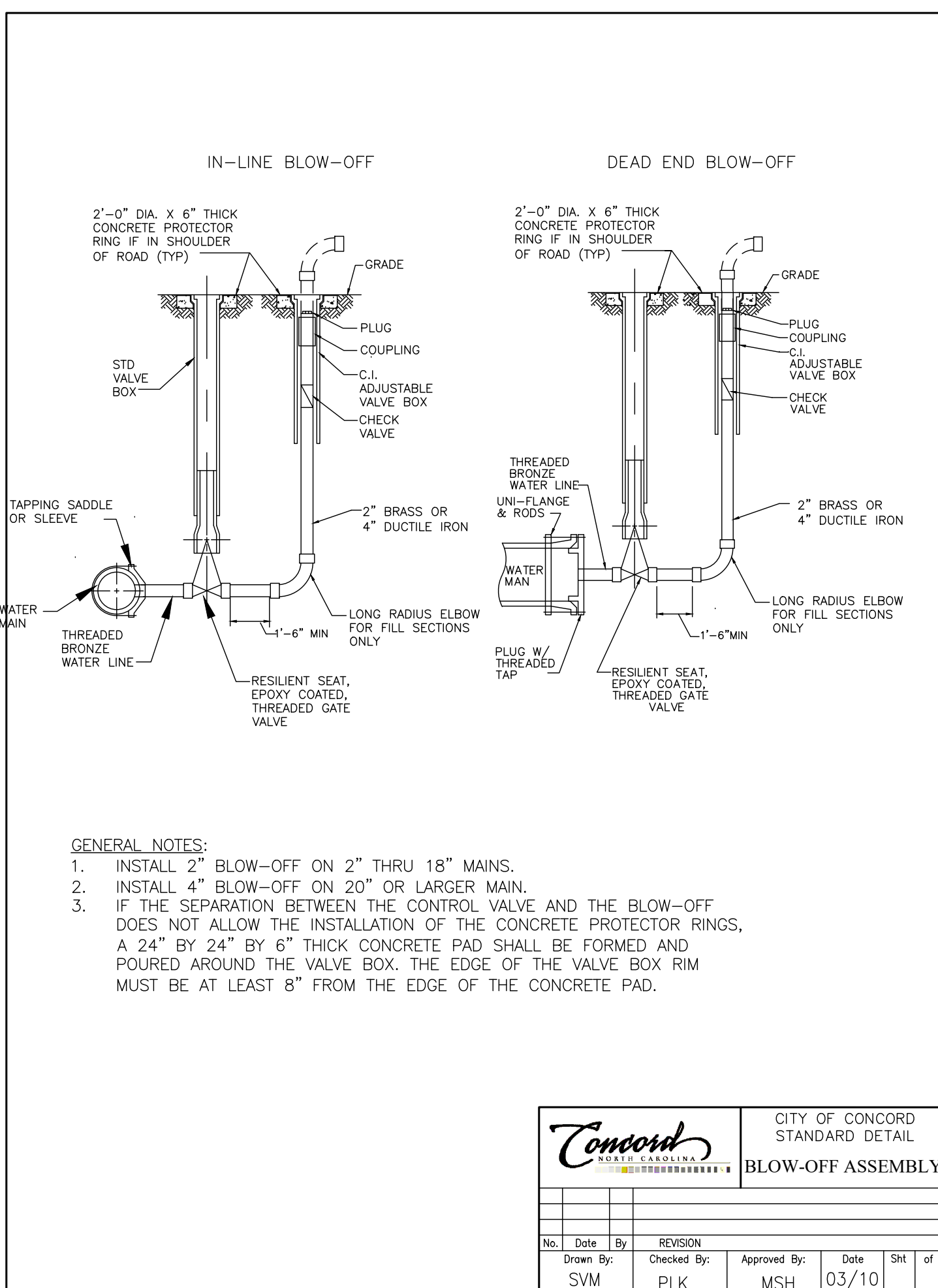
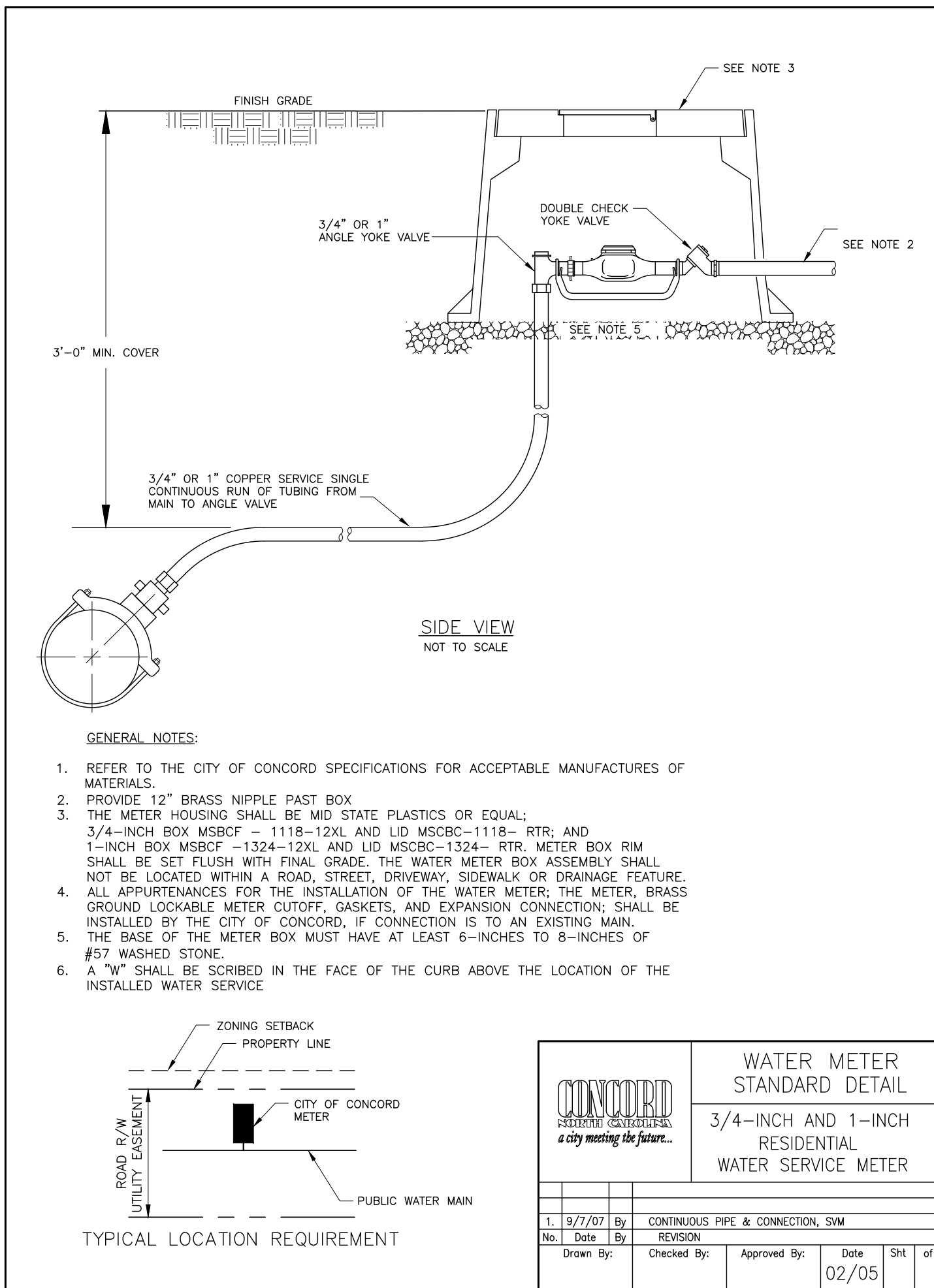
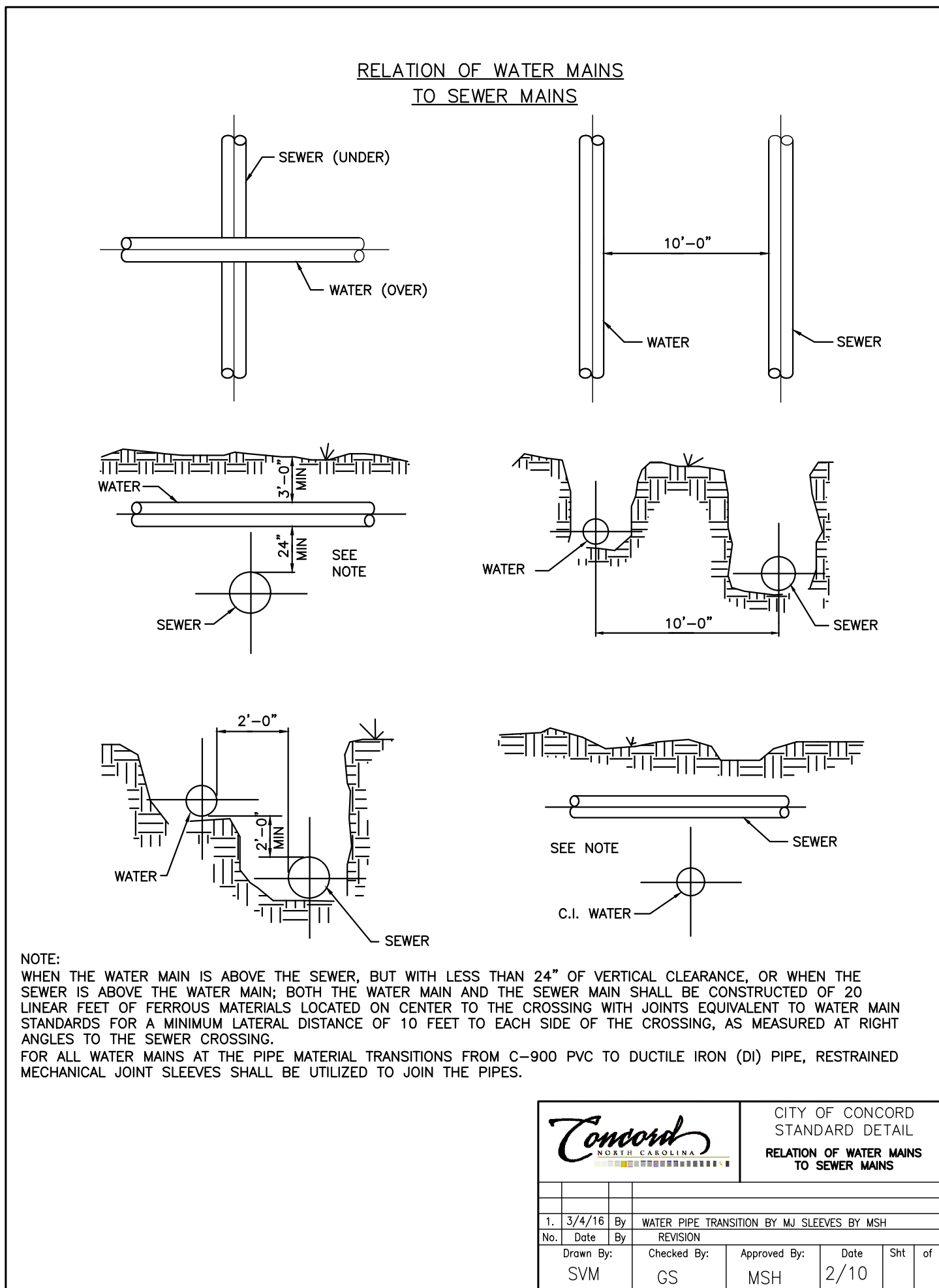
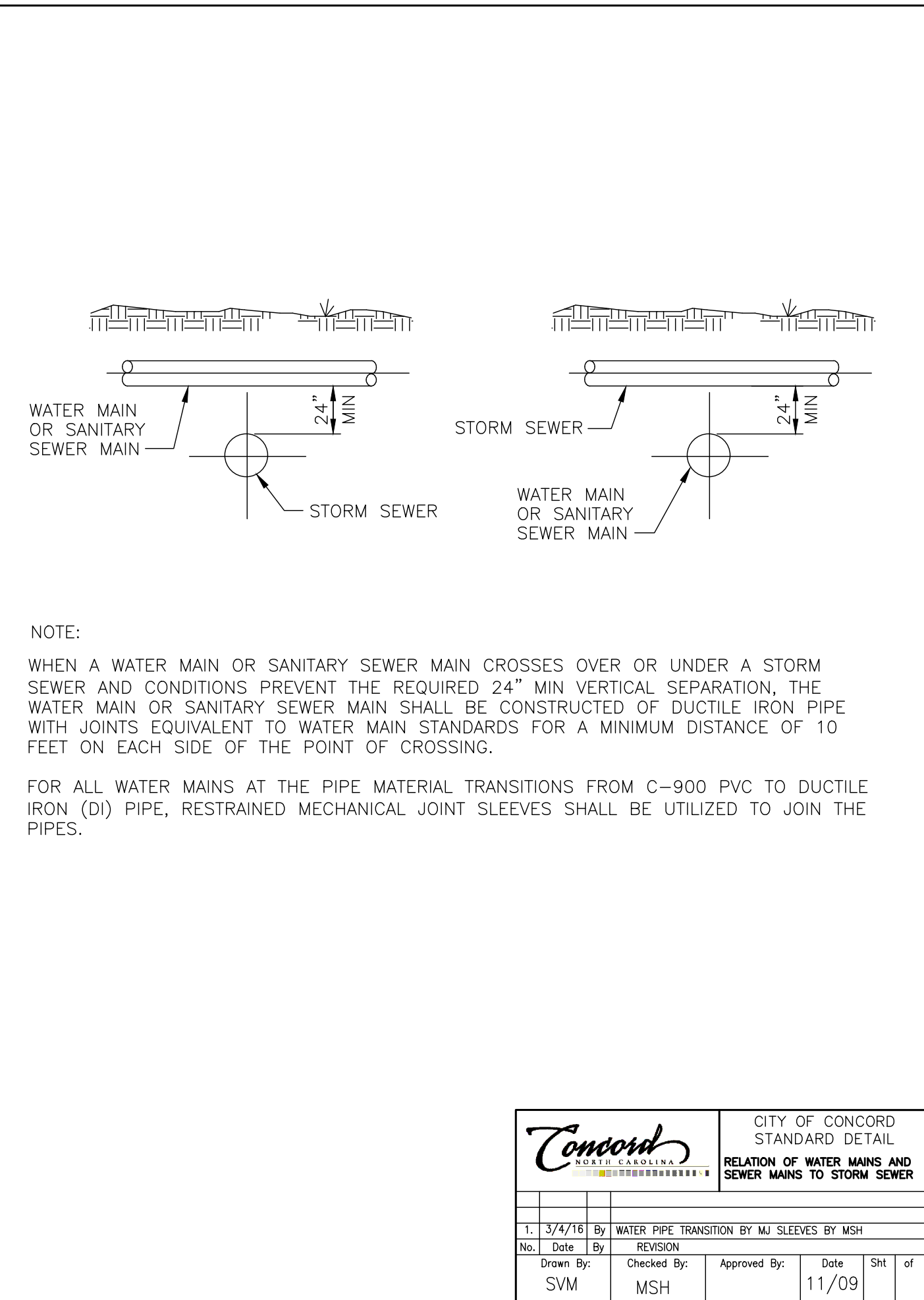
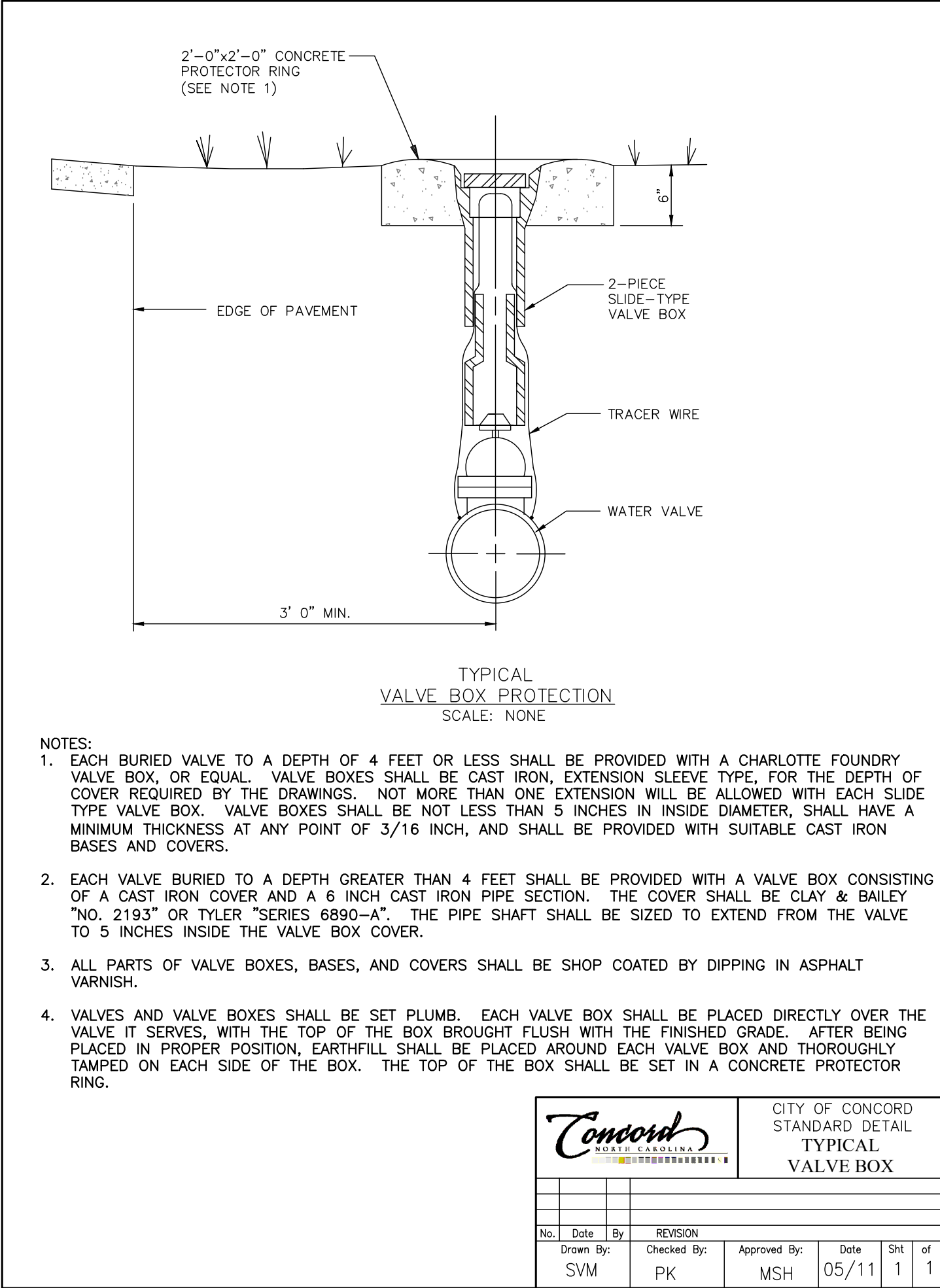
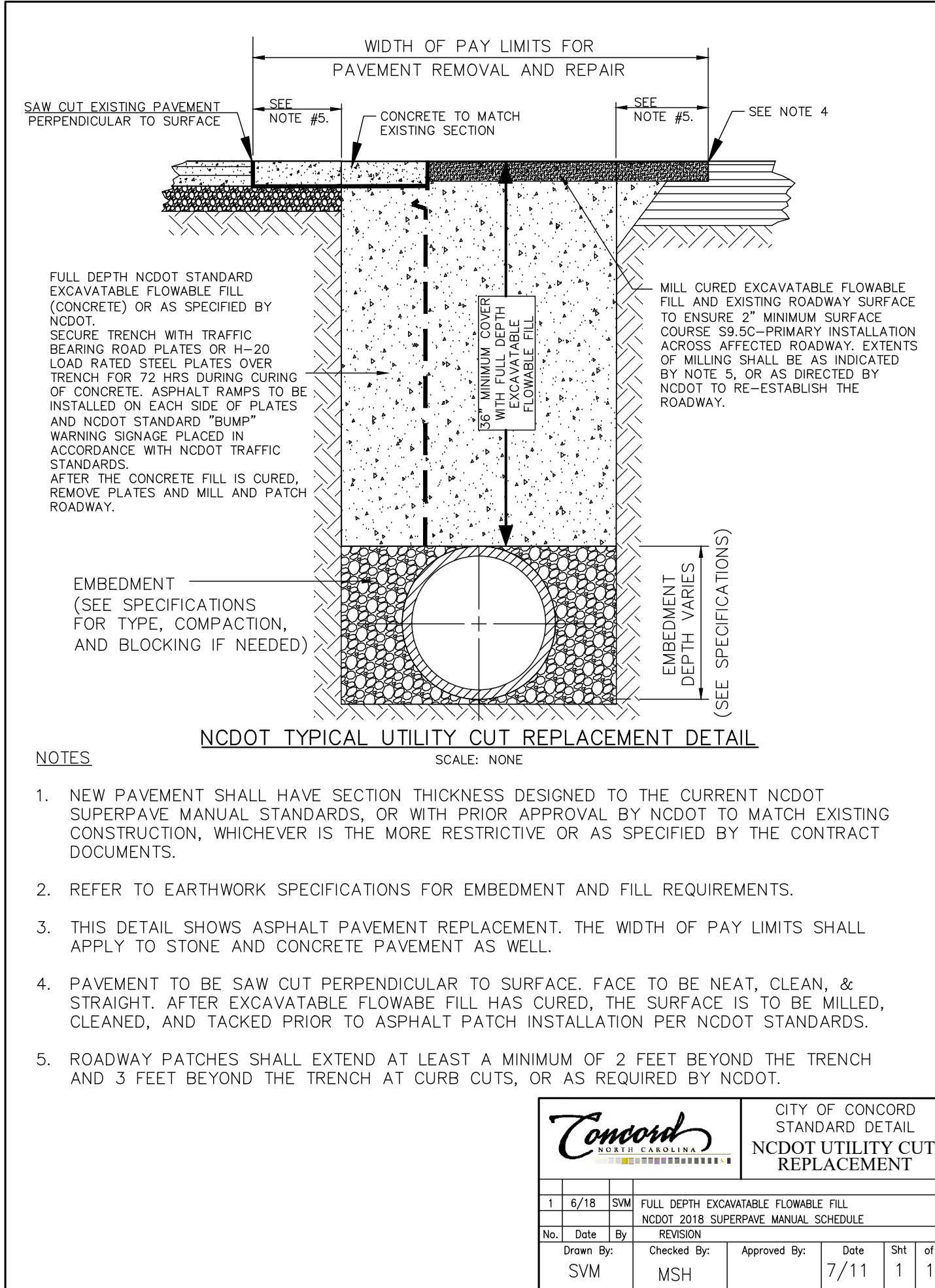
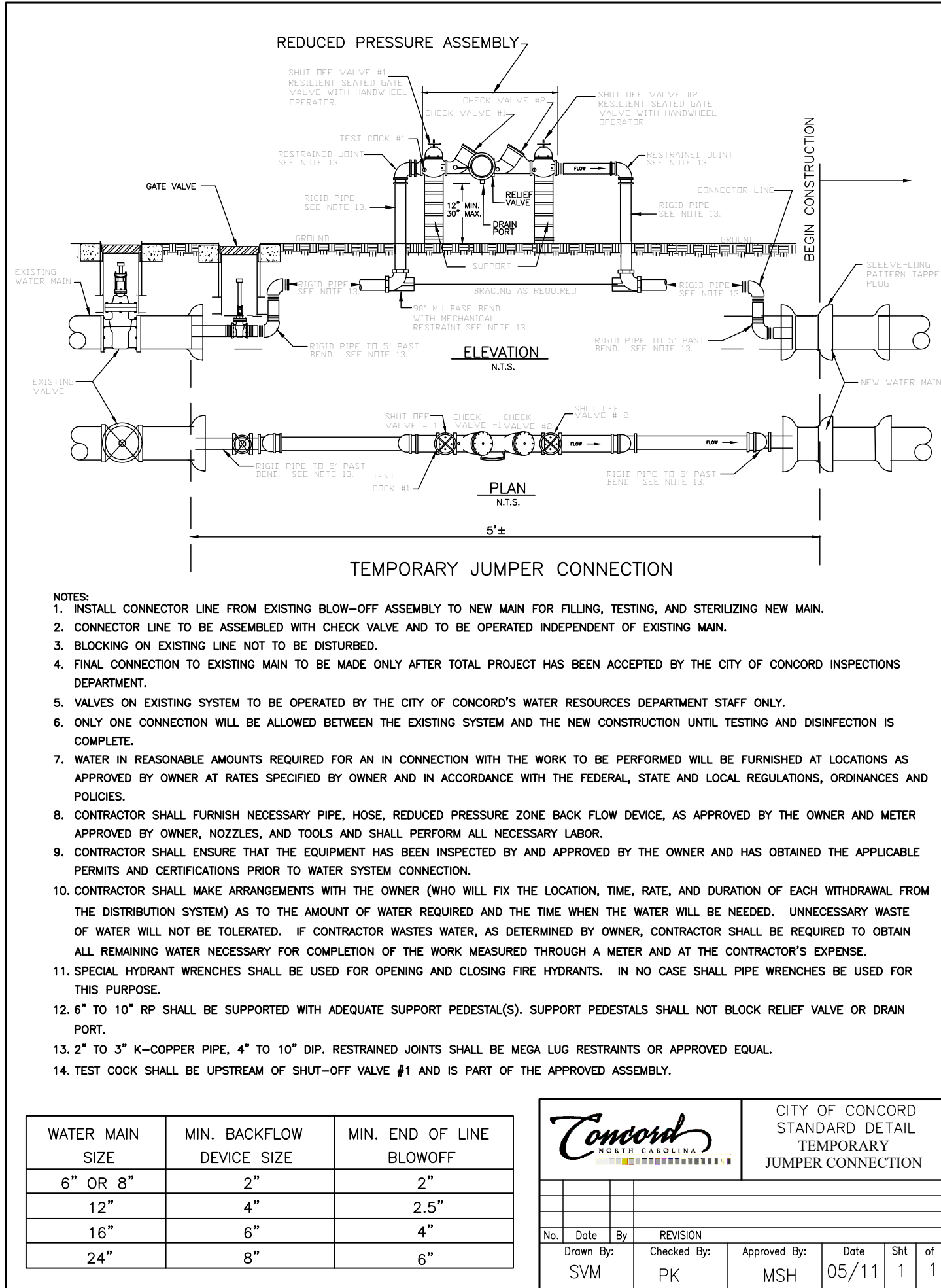








- NOTES:
1. RESTRAINING MEASURES SHALL BE PROVIDED WHEN REQUIRED BY WSACC TECHNICAL STANDARDS AND CITY DETAILS. ENCASED DUCTILE IRON WATERLINE SHOULD BE RESTRAINED.
  2. ALL EXISTING UTILITIES LOCATIONS TO BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION.
  3. CONTRACTOR IS TO MAINTAIN A MINIMUM COVER OF 3'-0" OVER THE PROPOSED WATERLINE. COVER CAN BE REDUCED TO 2.5' AT THE LOCATIONS NOTED IN THE PLANS.
  4. CONTRACTOR IS TO MAINTAIN A 2'-0" SEPARATION AND A 5'-0" HORIZONTAL SEPARATION FROM THE EXISTING SEWER LINE, WITH THE WATER LINE ABOVE THE SEWER LINE.
  5. CONTRACTOR SHALL INSTALL NEW LINE AS TO MINIMIZE SERVICE INTERRUPTION, CONTRACTOR TO CONFIRM EXISTING WATER SERVICE SIZE AND INSTALL EQUIVALENT WATER SERVICE. AMI METER BOXES AND LIDS WILL BE PROVIDED BY THE CITY OF CONCORD.
  6. CONTRACTOR TO ACQUIRE PLUMBING PERMIT FOR EACH WATER METER RECONNECTION AND INSTALL A SHUT-OFF VALVE AND PRV IN A SEPARATE WATER SERVICE BOX THAT IS LOCATED DIRECTLY BEHIND EACH RENEWED WATER SERVICE IN ACCORDANCE WITH NC PLUMBING CODE ON THE BUILDING SERVICE LINE.
  7. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO MINIMIZE THE DURATION OF ANY WATER SUPPLY DISRUPTION AND/OR LOSS TO THE EXISTING CITY OF CONCORD CUSTOMERS. THE CONTRACTOR MUST NOTIFY THE ASSIGNED CITY OF CONCORD CONSTRUCTION INSPECTOR AT LEAST 48 HOURS IN ADVANCE OF ANY SCHEDULE WATER SERVICE LOSS OR DISRUPTION, AND PROVIDE WRITTEN NOTIFICATION ON A CITY APPROVED FORM TO EACH CITY OF CONCORD CUSTOMERS THAT SPECIFIES THE DATE AND DURATION OF ANY SCHEDULE WATER SERVICE LOSS OR DISRUPTION AND INCLUDE THE APPROPRIATE CITY CONTACT NUMBERS.
  8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY POTABLE WATER SUPPLIES TO ANY CUSTOMER UPON REQUEST BY THE CITY AND/OR WHEN THE DURATION OF THE WATER SERVICE LOSS OR DISRUPTION EXCEEDS 4 HOURS.
  9. EXISTING WATERMAIN TO BE ABANDONED IN PLACE BY PLUGGING ENDS. EXISTING VALVE BOXES AND FIRE HYDRANTS ARE TO BE DECOMMISSIONED, REMOVED AND DISPOSED OF IN ACCORDANCE WITH CITY STANDARDS AND ALL VOIDS ARE TO BE BACKFILLED WITH THE APPROPRIATE MATERIALS AND STABILIZED.
  10. ALL WORK IN THE NCDOT ROW IS SUBJECT TO THE PROVISIONS OF THE APPROVED NCDOT ENCROACHMENT AGREEMENT. THE CONTRACTOR MUST HAVE A COPY OF THE APPROVED NCDOT ENCROACHMENT AGREEMENT ON THE JOB SITE PRIOR TO BEGINNING ANY WORK WITHIN NCDOT ROW.
  11. OPEN CUTS IN NCDOT ROW SHALL FOLLOW THE REQUIREMENTS IN "NCDOT TYPICAL UTILITY CUT REPLACEMENT". EXCAVATABLE FLOWABLE FILL MUST BE USED.
  12. WHEN CROSSING SR-1500 LITAKER LN. AND SR-1569 OPTIMIST DR. ONE LANE MUST REMAIN OPEN DURING OPEN CUT WORK ACROSS NCDOT ROW. BOTH LANES MUST BE OPEN OVERNIGHT.
  13. WHEN CROSSING SR-1500 LITAKER LN. AND SR-1569 OPTIMIST CLUB DR. CONTRACTOR SHALL TEMPORARILY BACKFILL WITH STONE THE COMPLETED HALF WHILE WORK IS BEING PERFORMED ON THE SECOND HALF. THIS WOULD ALLOW THE ENTIRE AREA TO BE DUG OUT AT ONE TIME AT THE END AND FLOWABLE FILL PLACED ACROSS THE FULL WIDTH AT ONE TIME.
  14. STREAM BANKS SHALL BE REGRADED TO ITS PRE-CONSTRUCTION CONTOURS AND REVEGETATED WITH NATIVE SPECIES, SUCH AS "ELDERBERRY" (SAMBUCUS CANADENSIS), "SILKY DOGWOOD" (CORNUS AMOMUM), "SILKY WILLOW" (SALIX SERICEA), "BLUE FLAG IRIS", "SOFT RUSH", AND "LIZARD'S TAIL".
  15. TOPSOIL EXCAVATED FROM UTILITY TRENCHES WITHIN THE STREAM BANKS WILL BE PILED SEPARATELY FROM SUBSOILS AND WILL BE BACKFILLED INTO THE TRENCH ONLY AFTER THE SUBSOILS HAVE BEEN PLACED AND COMPACTED.
  16. EROSION CONTROL MATTING SHALL HAVE BIODEGRADABLE NETTING.
  17. ALL TREES PROTECTED BY EITHER SILT FENCE OR CONSTRUCTION FENCE HAVE BEEN DETERMINED TO STAY AND SHALL BE PROTECTED DURING CONSTRUCTION. ALL OTHER TREES WITHIN THE EASEMENT SHALL BE CLEARED.
  18. CONTRACTOR TO ADJUST HYDRANT LOCATION SUCH THAT THE HYDRANT IS LOCATED AT THE HIGHEST ELEVATION ALONG THE PORTION OF WATERLINE TO FACILIATUE AIR-RELEASE.



Concord NORTH CAROLINA High Performance Living

PREPARED BY  
ENGINEERING DEPARTMENT  
CITY OF CONCORD  
P.O. BOX 308  
CONCORD N.C. 28026  
(704) 920-5425

Seal: Carolina North Carolina Seal of the City of Concord, North Carolina. Seal No. 044150. Date: 6/20/23. Engineer's Seal.

Surveyor's Seal

ZION CHURCH RD. (SR 1155)  
12" WATERLINE  
PROPOSED WATER DETAILS  
PROJECT # : 2020-077

REV. #	DATE	DESCRIPTION	BY	EES
0	4/25/23	FOR CONSTRUCTION	EES	
1	6/19/23	ADDRESSING ENCROACHMENT AGREEMENT COMMENTS	EES	

DESIGNED BY: CGZV

DRAWN BY: EES

CHECKED BY: EAB

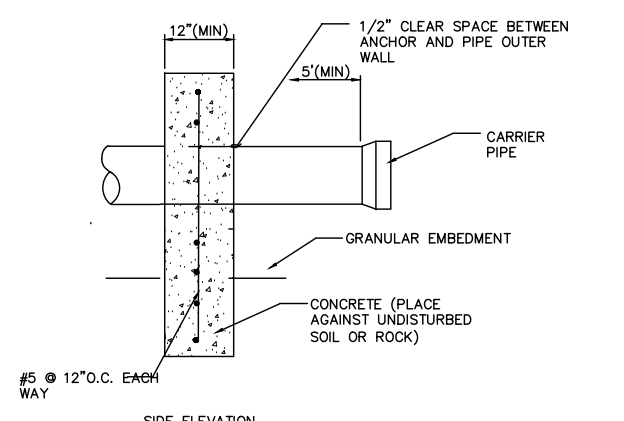
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DATE: 09/08/2020

PROJECT NUMBER: 2020-077

SHEET: 9 OF: 15

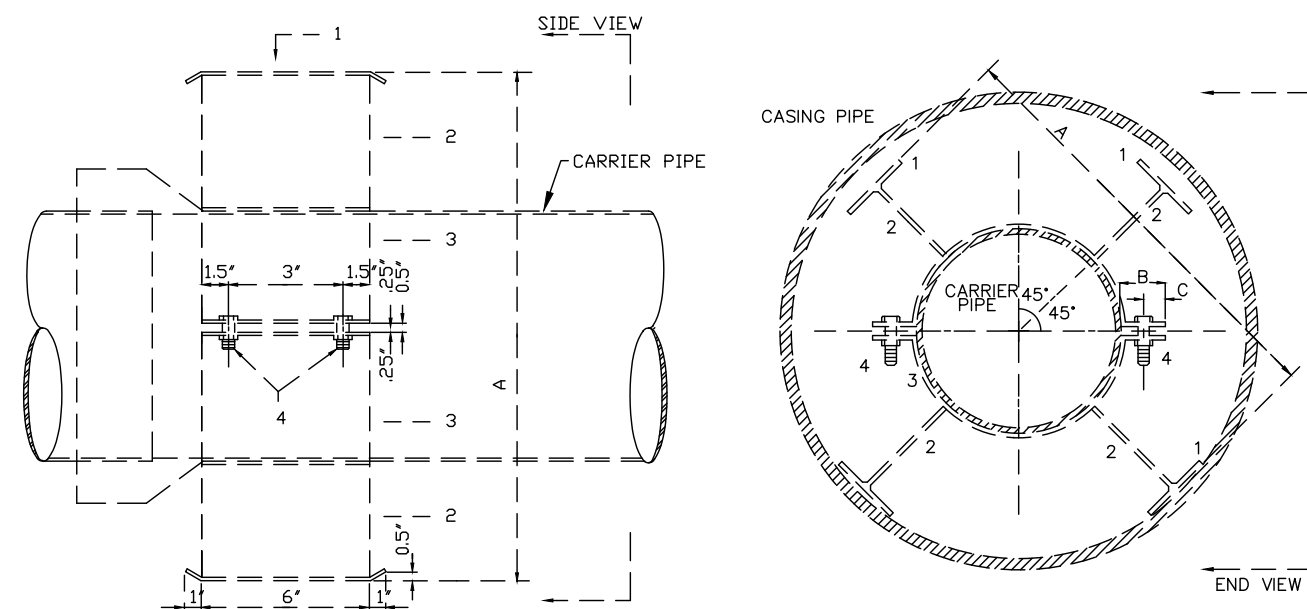




CONCRETE ANCHOR BLOCK  
NOT TO SCALE

**NOTES:**

1. CONCRETE AND REINFORCING STEEL BARS FOR BURIED BLOCKING AND ENCASEMENT OF PIPE SHALL CONFORM TO THE LIMITING REQUIREMENTS SPECIFIED IN WSAC TECHNICAL SPECIFICATION SECTION 03301, EXCEPT THAT THE CEMENT FACTOR AND TOTAL WATER CONTENT MAY BE ADJUSTED TO PROVIDE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS. CONCRETE SHALL HAVE A SLUMP OF NOT LESS THAN 3 INCHES NOR MORE THAN 5 INCHES WHEN PLACED.
2. KEEP ALL PIPING JOINTS CLEAR OF CONCRETE ANCHOR BLOCKS



LEGS ROTATED OUT OF POSITION FOR CLARITY

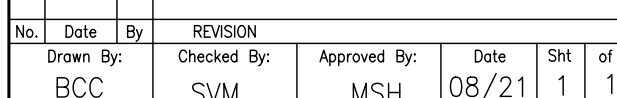
CARRIER PIPE		CASING PIPE				SPIDER/SPACER DIMENSIONS		
		HIGHWAY		RAILROAD				
NOMINAL DIA.	O. D.	O. D.	WALL	O. D.	WALL	A	B	C
6"	6.90"	12.75"	0.188"	12.75"	0.250"	11"	1 1/4"	5/8"
8"	9.05"	18"	0.250"	18"	0.312"	16 1/2"	2 1/4"	1"
12"	13.20"	24"	0.250"	24"	0.406"	22 1/2"	3"	1 1/4"
16"	17.40"	30"	0.312"	30"	0.500"	28 1/2"	3 1/2"	1 1/2"
24"	25.80"	36"	0.375"	36"	0.5625"	34 1/2"	4"	2"

PIPE SUPPORT ASSEMBLY MARK NUMBER												
NOMINAL DIA	1			2			3		4			
6"	8" X 2" X 1/4"			PL	6" X 1 1/2" X 1/4"			PL	6" X 1/4"		PL	3/8" NUT & BOLT
8"	8" X 3" X 1/4"			PL	6" X 3 1/4" X 1/4"			PL	6" X 1/4"		PL	1/2" NUT & BOLT
12"	8" X 4" X 1/4"			PL	6" X 3 5/8" X 3/8"			PL	6" X 3/8"		PL	1/2" NUT & BOLT
16"	8" X 4" X 3/8"			PL	6" X 4 3/4" X 3/8"			PL	6" X 3/8"		PL	1/2" NUT & BOLT
24"	8" X 4" X 3/8"			PL	6" X 5 1/2" X 3/8"			PL	6" X 3/8"		PL	1/2" NUT & BOLT

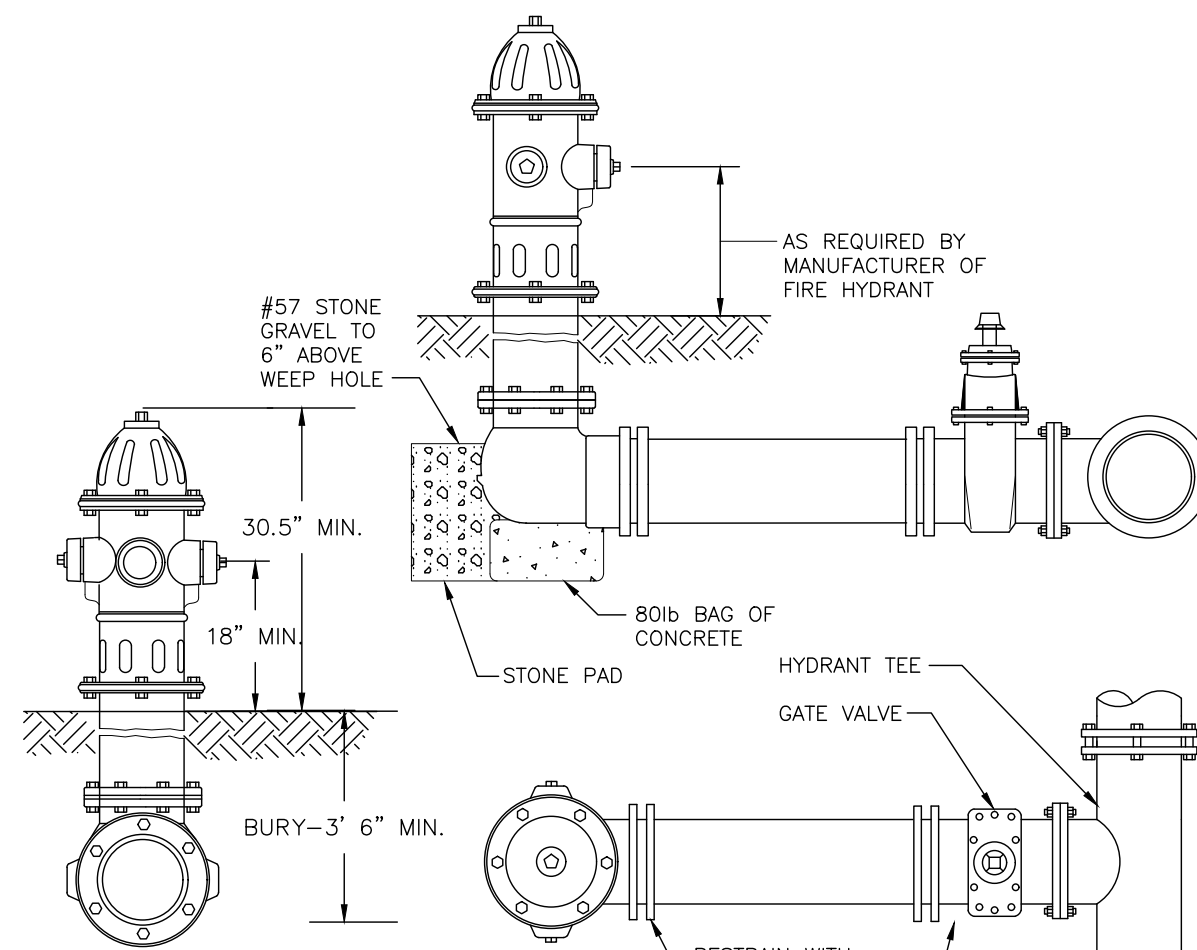
## NOTES

1. CARRIER PIPE SHALL BE RESTRAINED PUSH-ON JOINT DUCTILE IRON JOINT PIPE.
2. A MINIMUM OF 2 SPIDERS/SPACERS PER CARRIER PIPE. ADJUSTABLE SPIDERS/SPACERS MAY BE REQUIRED PER MANUFACTURER'S RECOMMENDATIONS AND/OR AS DIRECTED BY THE CITY.
3. SPACERS SHALL BE ADVANCE PRODUCTS & SYSTEMS, INC STAINLESS STEEL BANDED SPACERS, MODEL SSI OR EQUAL WITH STAINLESS STEEL BOLTS, NUTS AND WASHERS.
4. FOR SEWER - CASING PIPE SLOPE TO MATCH SEWER SLOPE & FOR WATER - SPIDER/SPACER HEIGHT CAN BE ADJUSTED.
5. CASING PIPE MATERIAL IS UNCOATED STEEL
6. FOR 24-INCH OR LARGER DIAMETER CASING PIPES LOCATED WITHIN A CDDOT'S RIGHT OF WAY, ALL JOINTS SHALL BE FILLED WITH FLOWABLE FILL IN ACCORDANCE WITH NCDOT STANDARDS



CITY OF CONCORD  
STANDARD DETAIL  
CASING PIPE  
SPIDERS/SPACERS

No.	Date	By	REVISION			
Drawn By:	Checked By:	Approved By:	Date	Sht	of	
BCC	SVM	MSH	08/21	1	1	



GENERAL NOTES

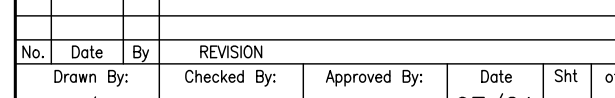
1. HYDRANTS SHALL BE MUELLER COMPANY - MODEL: SUPER CENTURION 250; AMERICAN FLOW CONTROL - MODEL "5K" - B-84-B; MEDALLION; OR EQUAL WITH BLACK PRIMER FINISH.
2. HYDRANT SHALL HAVE INTERIOR HYDRANT STYLE CONNECTION WITH "X" VALVE OPENING, OPEN LEFT SIDE OF HYDRANT. HYDRANT SHALL BE 12" NIPPLE CONNECTION, ONE-5" STORZ CONNECTION, DRAIN HOLES OPEN, AND 6" MJ SHOE. 1 1/2" PENTAGON NUTS, TWO-2 1/2" NUT CONNECTIONS, ONE-5" STORZ CONNECTION, DRAIN HOLES OPEN, AND 6" MJ SHOE.
3. MINIMUM BURIED DEPTH OF 3'-6"
4. HYDRANT SHALL BE 12" HYDRANT LUMBS WITH PUMPER NOZZLES SHALL HAVE HOSE NOZZLES PARALLEL WITH, AND THE PUMPER NOZZLE PERPENDICULAR TO, THE CURB LINE. ALL HYDRANTS SHALL BE ORIENTED SO THAT THE PUMPER NOZZLE IS POINTED TOWARD THE STREET.
5. HYDRANT SHALL BE LOCATED AT LEAST 10' BEHIND THE CURB AND LESS THAN 10' FROM THE EDGE OF THE ROAD PAVEMENT OR AS DIRECTED BY THE CITY.
6. ALL OTHER MATERIALS AND INSTALLATION MUST CONFORM WITH THE TECHNICAL STANDARDS OF WSACC AND CITY OF CONCORD.

## FIRE HYDRANT PAINT COLOR CODE REQUIREMENTS

ALL NEW FIRE HYDRANTS INSTALLED IN THE CITY OF CONCORD SHALL BE PAINTED IN ACCORDANCE WITH THE FOLLOWING COLORS:  
1. HYDRANTS ON PUBLIC WATER MAINS SHALL BE PAINTED SAFETY YELLOW, SHERWIN WILLIAMS STEEL MASTER 9500 B56-300

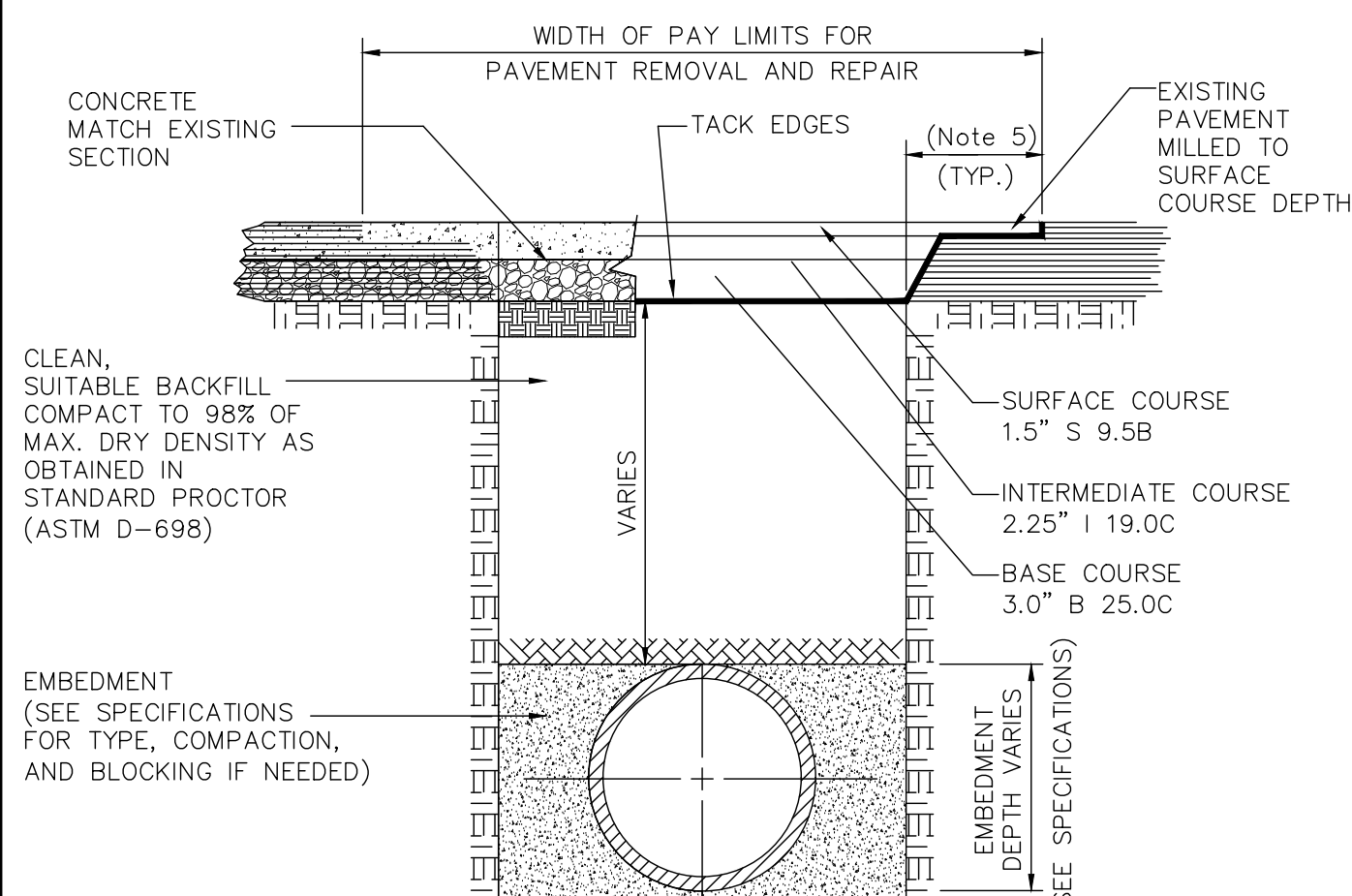
2. PRIVATE HYDRANTS ON PRIVATE WATER MAINS SHALL BE PAINTED SAFETY RED, SHERWIN WILLIAMS SW4081 LVR 11% OR EQUAL.

FOR ALL FIELD PAINTING, ALL SURFACES SHALL BE SANDBLASTED AND PROPERLY PREPARED ACCORDING TO THE PAINT MANUFACTURER'S RECOMMENDATION PRIOR TO PAINTING. ALL FIRE HYDRANTS AND ANY PORTIONS OF THE HYDRANT ASSEMBLY EXPOSED TO VIEW (ABOVE ADJACENT GROUND ELEVATION) SHALL BE PAINTED WITH TWO (2) OR MORE EVENLY APPLIED COATS OF HYDRANT ENAMEL PAINT. HYDRANTS WILL BE RETOUCHE / REPAINTED AS NECESSARY AFTER INSTALLATION AND PRIOR TO ACCEPTANCE.



CITY OF CONCORD  
STANDARD DETAIL  
FIRE HYDRANT

No.	Date	By	REVISION			
Drawn By:	Checked By:	Approved By:	Date	Sht	o	

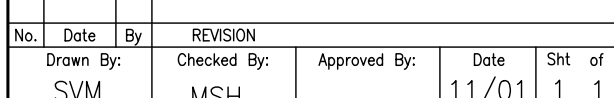


## NOTES

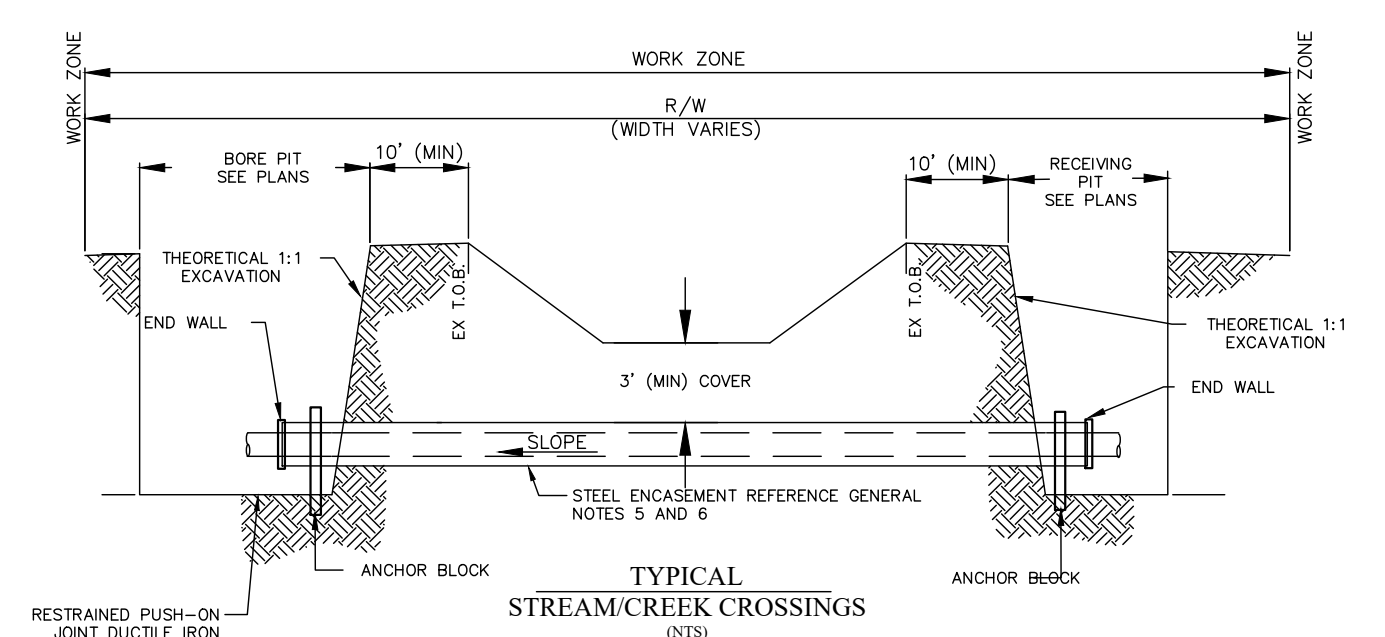
1. NEW PAVEMENT SHALL HAVE SECTION THICKNESS DESIGNED TO NCDOT SUPERPAVE STANDARDS AS PROVIDED BY ENGINEER OR MATCH EXISTING CONSTRUCTION, WHICH EVER IS GREATER OR AS SPECIFIED BY THE CONTRACT DOCUMENTS.
2. TRENCH IS TO BE BACKFILLED IN COMPACTED 6" LAYERS BEFORE PAVEMENT REPAIRS ARE MADE.
3. REFER TO EARTHWORK SPECIFICATIONS FOR EMBEDEDMENT AND FILL REQUIREMENTS.
4. THIS DETAIL SHOWS ASPHALT PAVEMENT REPLACEMENT. THE WIDTH OF PAY LIMITS SHALL APPLY TO STONE AND CONCRETE PAVEMENT AS WELL.
5. 18" MIN. AROUND PATCHES AND 36" MIN. AT CURB CUTS.

UTILITY CUT REPLACEMENT DETAIL

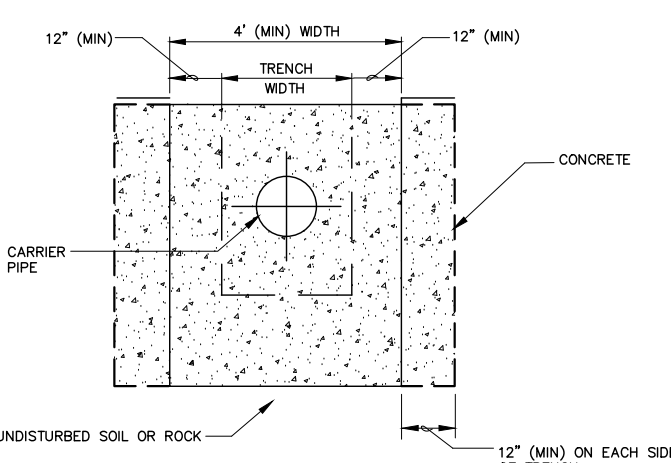
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CITY OF CONCORD  
STANDARD DETAIL  
UTILITY CUT  
REPLACEMENT

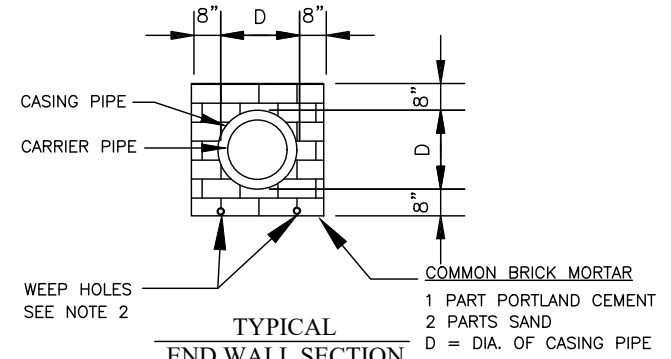
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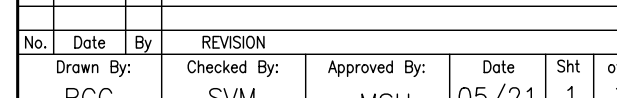
## CROSSINGS



CONC. ANCHOR BLOCK  
(NTS)



END WALL 5

CITY OF CONCORD  
STANDARD DETAIL  
STREAM/CREEK  
CROSSING

No.	Date	By	REVISION		
Drawn By:	Checked By:	Approved By:	Date	Sht	o
BCC	SVM	MCU	05/21	1	

PREPARED BY  
ENGINEERING DEPARTMENT  
CITY OF CONCORD  
P.O. BOX 308  
CONCORD N.C. 28026  
(704) 920-5425



## Engineer's Sea

## Survivor's Sea

ZION CHURCH RD. (SR 1155)  
12" WATERLINE  
PROPOSED WATER DETAILS  
PROJECT # : 2020-077

PROJECT #: 2020-077

REV.#	DATE	DESCRIPTION	BY EES
0	4/25/23	FOR CONSTRUCTION	EES
1	6/19/23	ADDRESSING ENCROACHMENT AGREEMENT COMMENTS	

DESIGNED BY: CGZV

DRAWN BY: EES

CHECKED BY: EAB

SCALE: AS SHOWN

DATE: 09/08/2020

PROJECT NUMBER: 2020-077

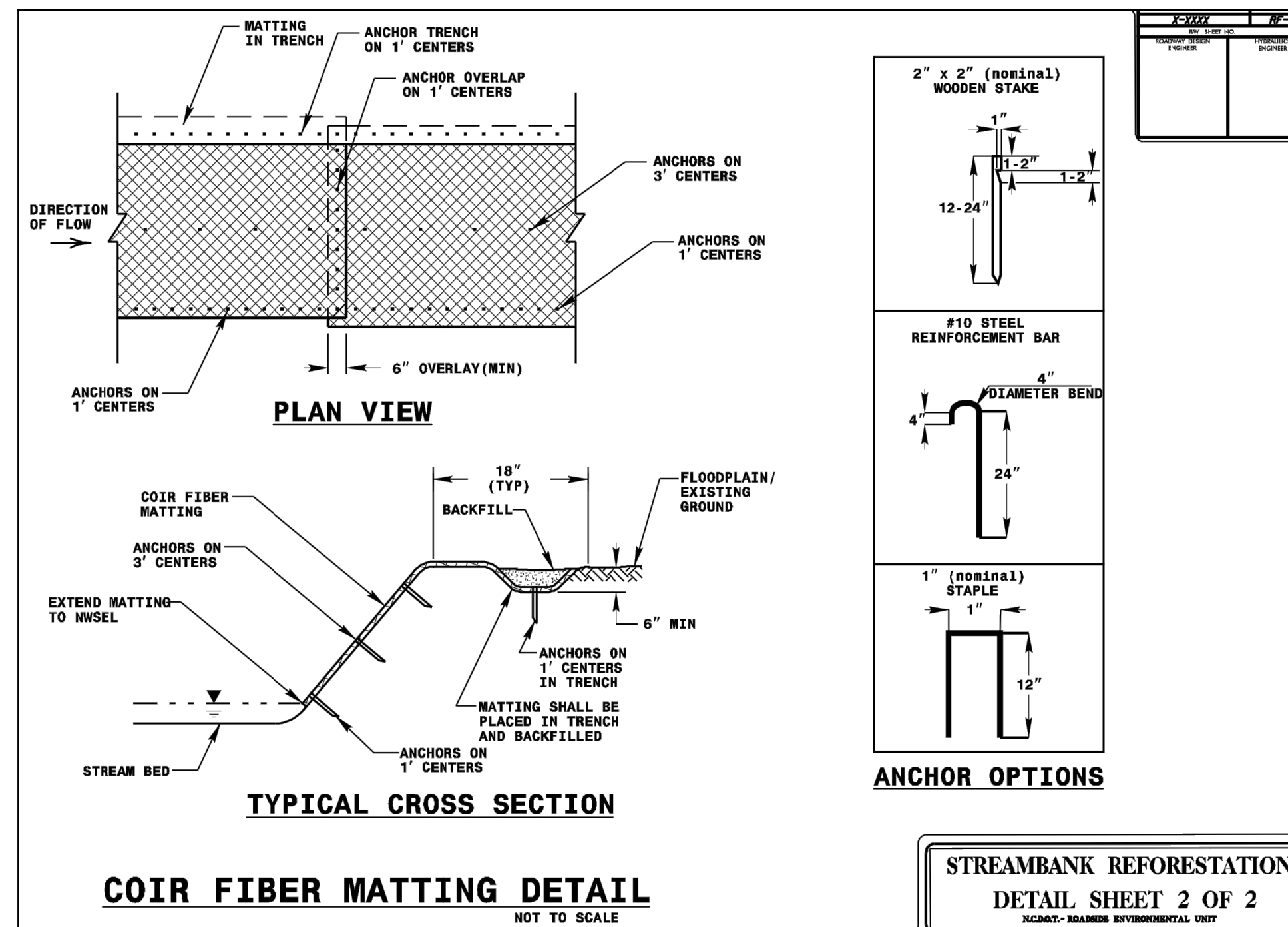
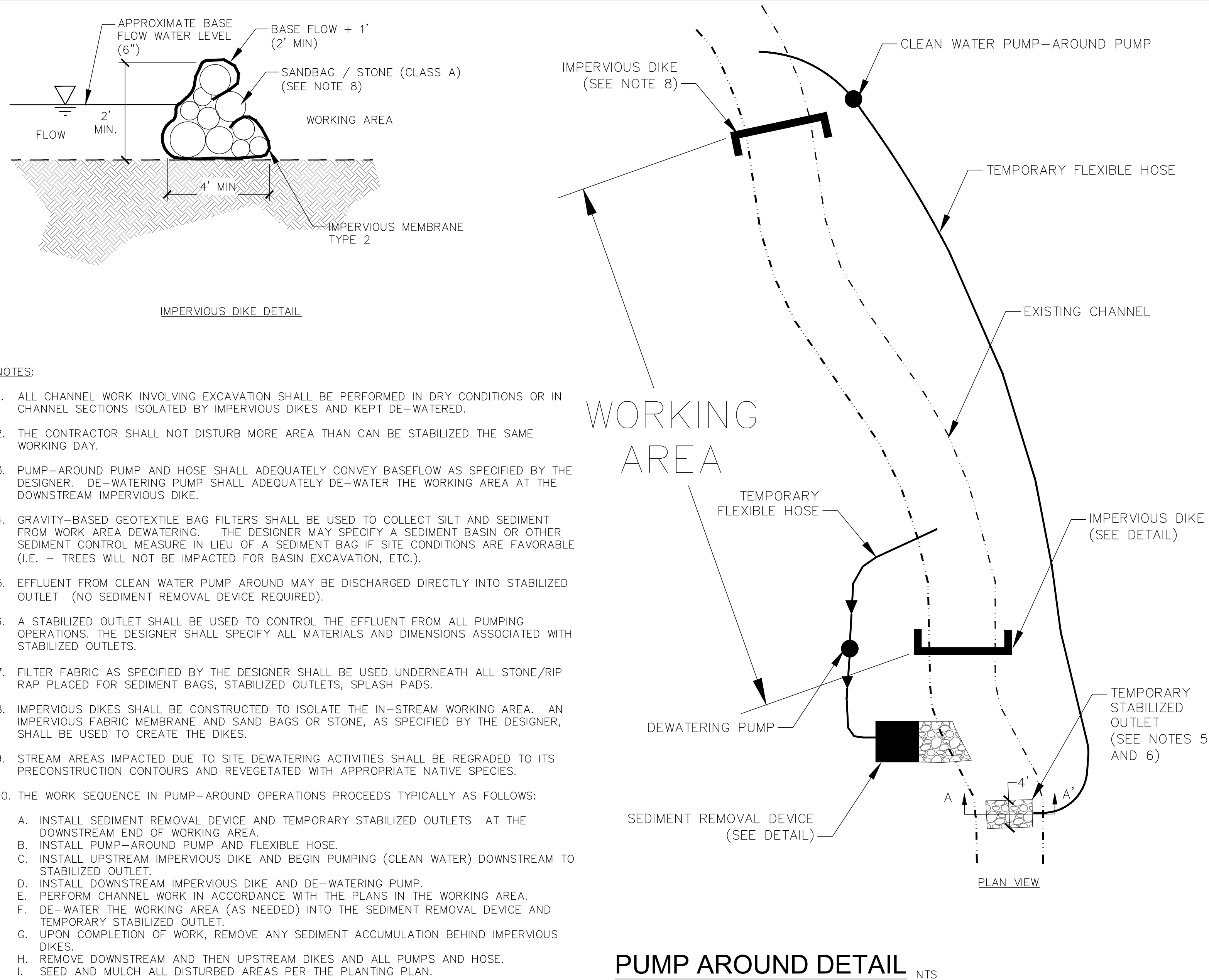
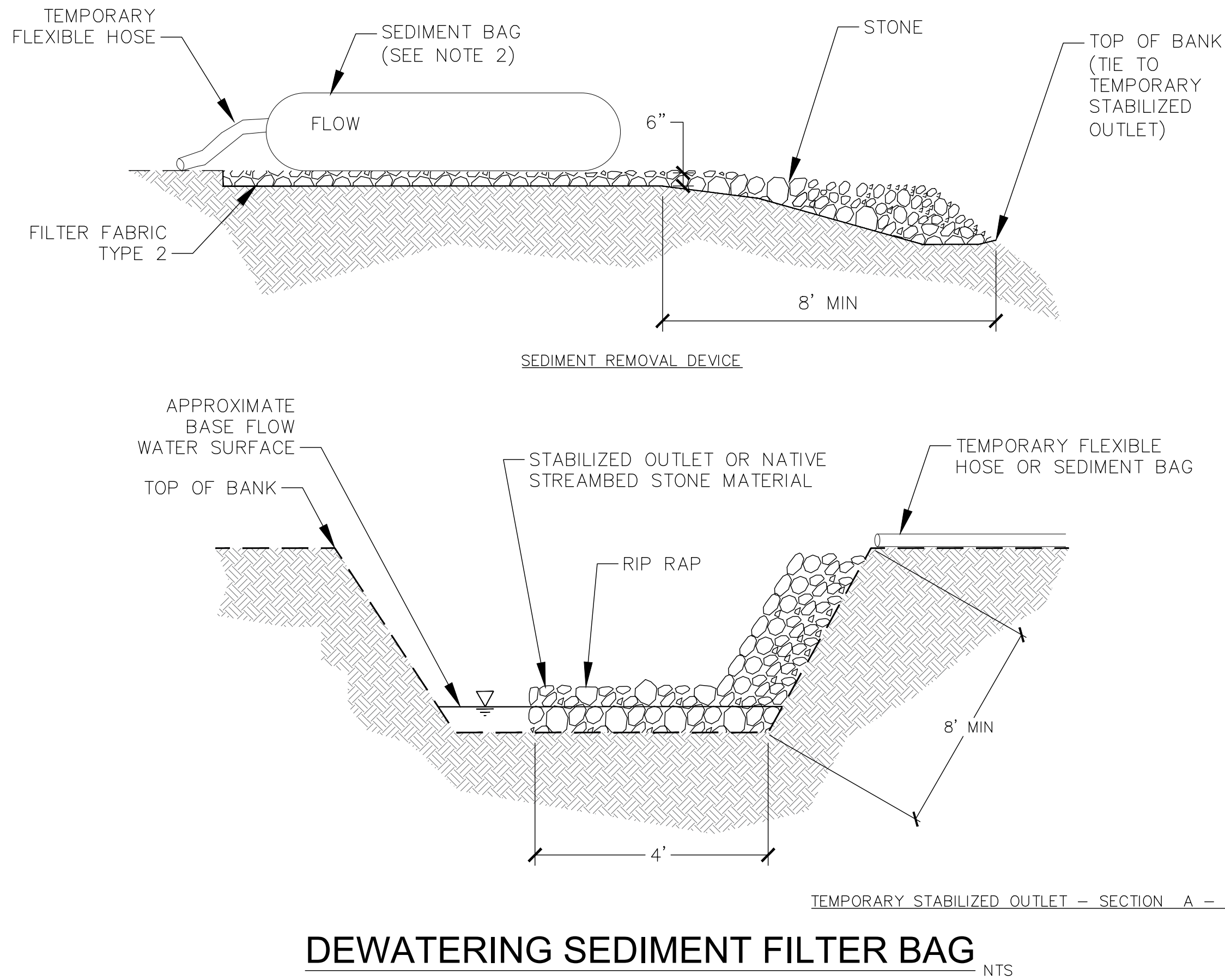
SHEET: 10 OF: 15



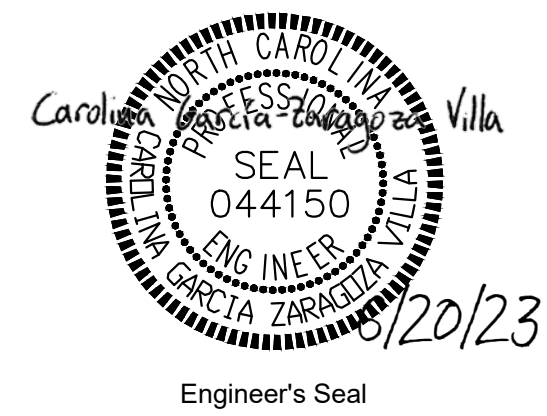
1. SEDIMENT FILTER BAG FABRIC SHALL BE GEOTEXTILE MANUFACTURED FROM WOVEN POLYPROPYLENE OR POLYMER MATERIAL. SEDIMENT FILTER BAG FABRIC MAY BE MADE FROM RECYCLED POLYMER MATERIALS. POLYMER MATERIALS SHALL NOT CONTAIN BIODEGRADABLE FILLER MATERIALS AND SHALL CONFORM TO THE REQUIREMENTS IN ASTM DESIGNATION: E 204
2. SEDIMENT FILLER FABRIC SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

SPECIFICATION	REQUIREMENTS
GRAB TENSILE STRENGTH (ONE INCH GRIP), POUNDS, MINIMUM IN EACH DIRECTION ASTM DESIGNATION: D 4632 OR APPROPRIATE TEST METHOD FOR SPECIFIC POLYMER	255
ELONGATION, PERCENT, MINIMUM IN EACH DIRECTION ASTM DESIGNATION: D 4632 OR APPROPRIATE TEST METHOD FOR SPECIFIC POLYMER	15
PERMITTIVITY, 1/SEC., MINIMUM ASTM DESIGNATION: D 4491	1.5
FLOW RATE, GALLONS PER MINUTE PER SQUARE FOOT MINIMUM ASTM DESIGNATION: D 4491	200
ULTRAVIOLET STABILITY, PERCENT TENSILE STRENGTH RETAINED AFTER 500 HOURS, MINIMUM ASTM DESIGNATION: D 4355 (XENON-ARC LAMP AND WATER SPRAY WEATHERING METHOD)	80

3. THE SEDIMENT FILTER BAG SHALL BE 10"x12"x1.5" (MIN) AND SHALL BE COMPLETE WITH LIFTING LOOPS AND DUMP STRAPS ATTACHED AT THE BOTTOM TO FACILITATE REMOVAL AFTER USE.
4. LIFTING STRAPS, SHOULD BE PLACED UNDER THE DEWATERING SEDIMENT FILTER BAG TO FACILITATE REMOVAL AFTER USE.
5. PLACING THE SEDIMENT FILTER BAG ON A LEVEL STABILIZED AREA TO PREVENT OVER DENSE VEGETATION/STRAW, OR GRAVEL (IF INCREASED DRAINAGE SURFACE AREA IS NEEDED).
6. INSERT DISCHARGE HOSE FROM PUMP INTO THE DEWATERING SEDIMENT FILTER BAG TO A MINIMUM OF SIX INCHES (6") AND TIGHTLY SECURE WITH ATTACHED STRAP TO PREVENT WATER FROM FLOWING OUT OF THE UNIT WITHOUT BEING FILTERED.
7. REPLACE THE UNIT WHEN ONE HALF (1/2) FULL OF SEDIMENT OR WHEN SEDIMENT HAS REDUCED THE FLOW RATE OF THE PUMP DISCHARGE TO AN IMPRACTICAL FLOW RATE.
8. REMOVE THE UNIT AND SEDIMENT FROM ENVIRONMENTALLY SENSITIVE AREA AND WATERWAYS AT THE APPROVED DISPOSAL SITE. OPEN OR SUIT THE UNIT, REMOVE SEDIMENT AND GRADE SMOOTHLY INTO EXISTING TOPOGRAPHY, DISPOSE OF THE DEWATERING SEDIMENT FILTER BAG, AT AN APPROPRIATE RECYCLING OR SOLID WASTE FACILITY.



PREPARED BY  
ENGINEERING DEPARTMENT  
CITY OF CONCORD  
P.O. BOX 308  
CONCORD N.C. 28026  
(704) 920-5425



ZION CHURCH RD. (SR 1155)  
12" WATERLINE  
STREAM STANDARD DETAILS

REV.#	DATE	DESCRIPTION	BY EES
0	4/25/23	FOR CONSTRUCTION	EES
1	6/19/23	ADDRESSING ENGROACHMENT AGREEMENT COMMENTS	

DESIGNED BY: CGZV

DRAWN BY: EES

CHECKED BY: EAB

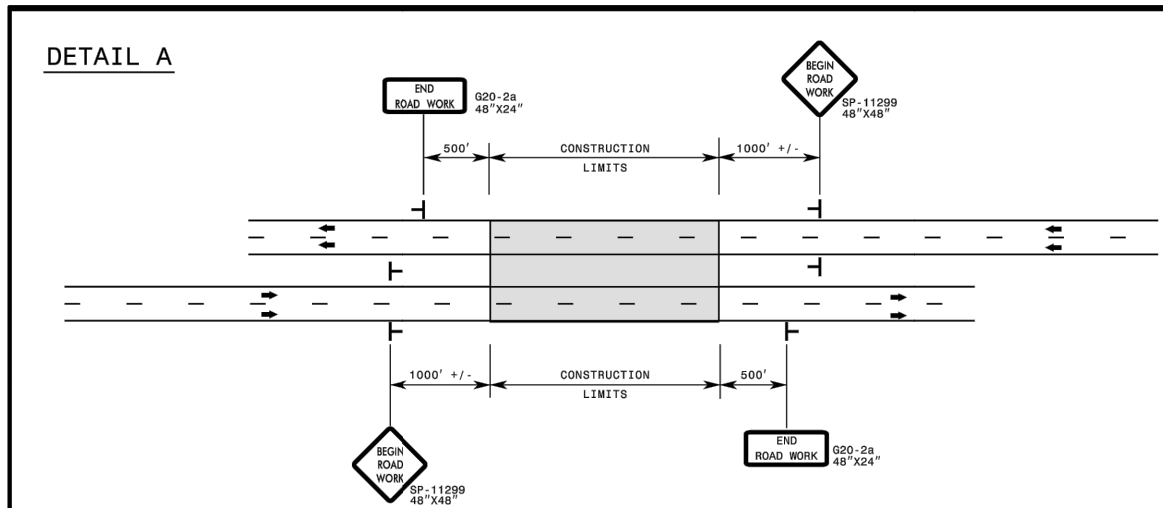
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DATE: 09/08/2020

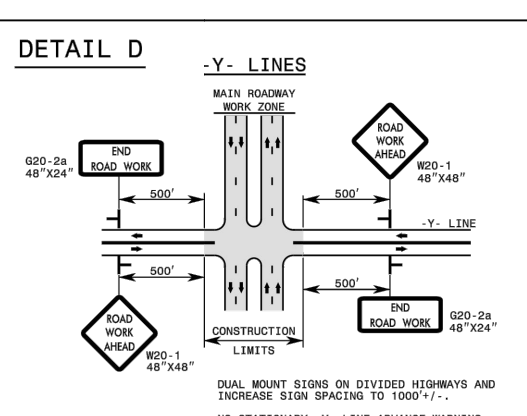
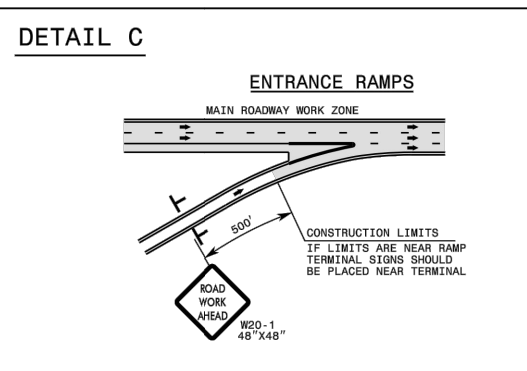
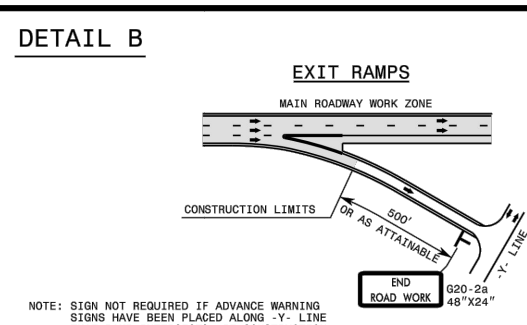
PROJECT NUMBER: 2020-077

SHEET: 11 OF: 15





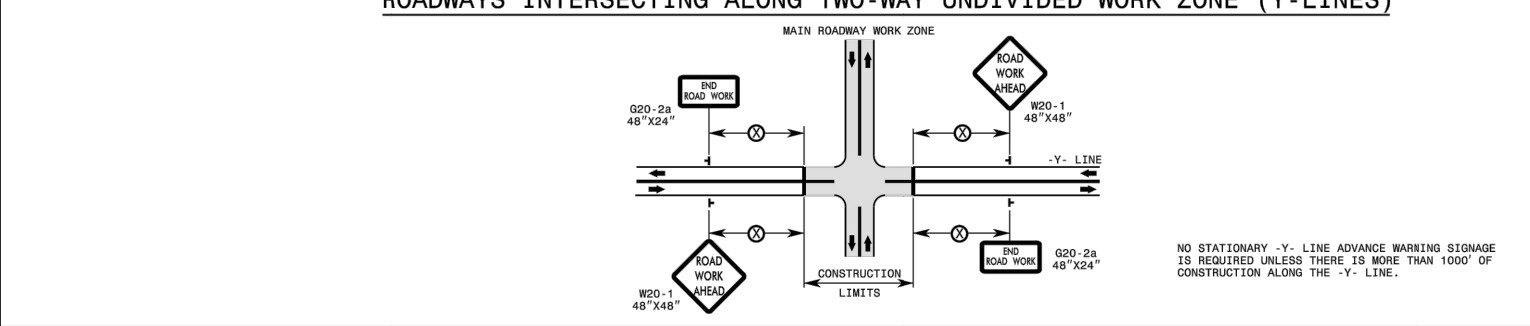
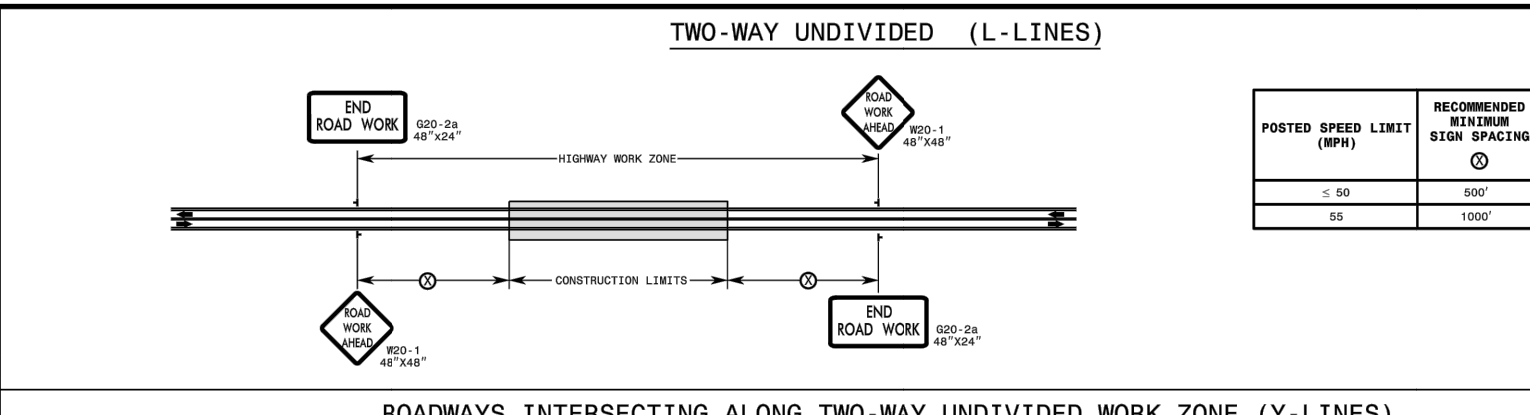
- GENERAL NOTES**
- 1- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK UNLESS COVERED.
  - 2- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT LONGER THAN 3 CONSECUTIVE DAYS.
  - 3- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
  - 4- ERECT SIGNS PER RSD, 1110.01. PAYMENT FOR WOOD POSTS, 3/8" STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATIONS FOR WORK ZONE SIGNS.
  - 5- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH RSD, 1110.01.
  - 6- DO NOT BACK BRACE SIGN SUPPORTS.
  - 7- TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.



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

ROADWAY STANDARD DRAWING FOR  
**WORK ZONE ADVANCE WARNING SIGNS FOR  
FACILITIES < 55 MPH**

SHEET 2 OF 3  
**1101.01**



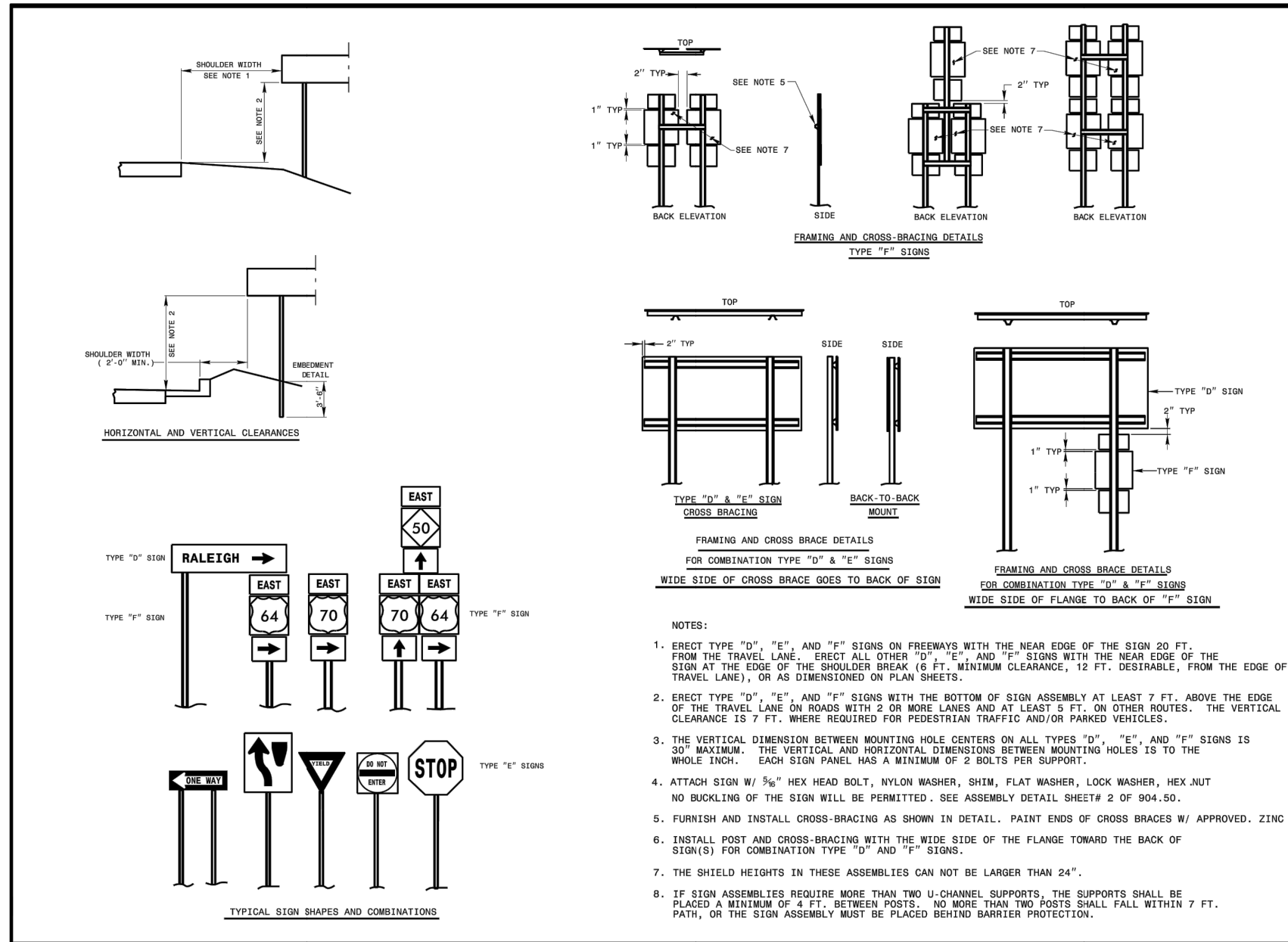
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  - 6- DO NOT BACK BRACE SIGN SUPPORTS.

LEGEND  
- STATIONARY SIGN  
- DIRECTION OF TRAFFIC FLOW

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

ROADWAY STANDARD DRAWING FOR  
**WORK ZONE ADVANCE WARNING SIGNS FOR  
TWO-WAY UNDIVIDED FACILITIES**

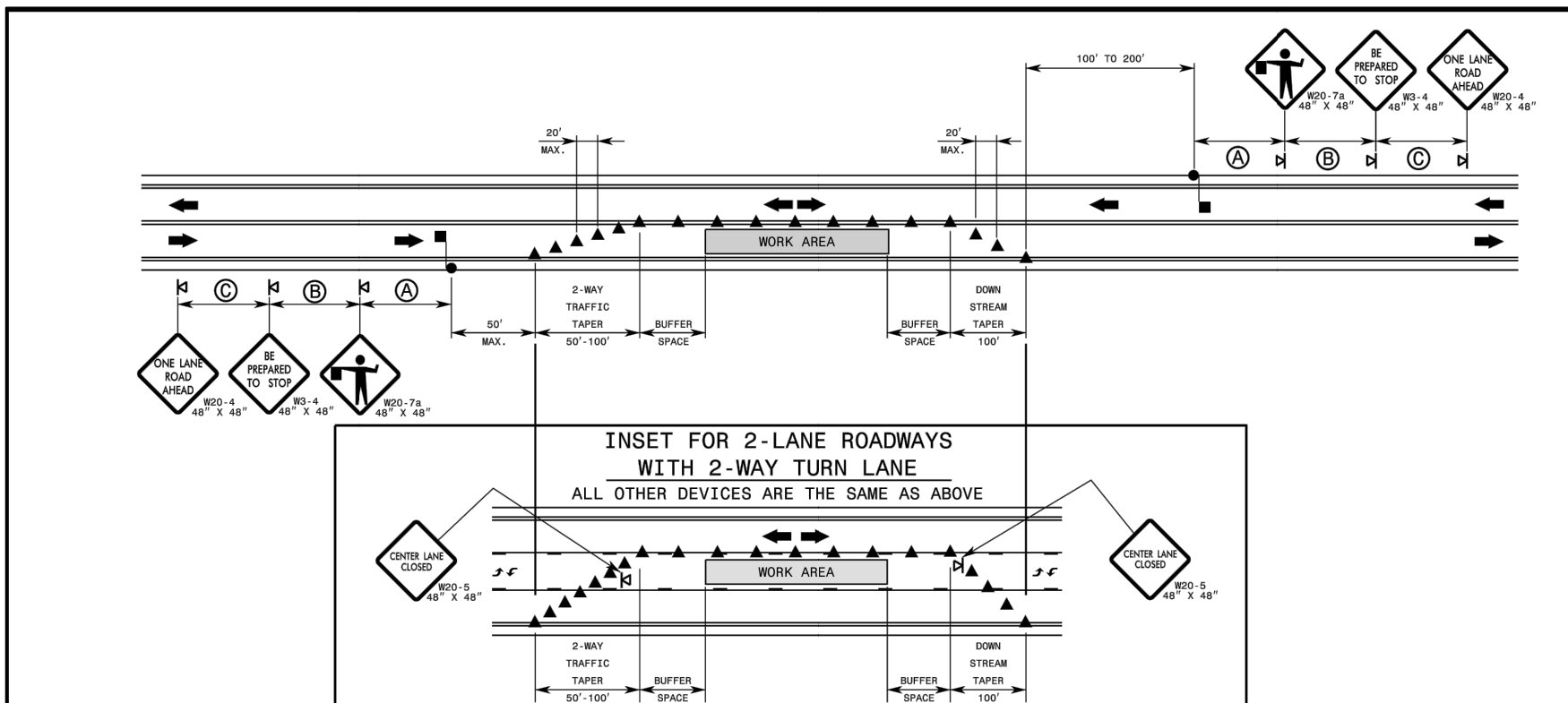
SHEET 3 OF 3  
**1101.01**



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

ENGLISH STANDARD DRAWING FOR  
**MOUNTING OF  
TYPE 'D', 'E' AND 'F' SIGNS  
ON 'U' CHANNEL POSTS**

SHEET 1 OF 2  
**904.50**

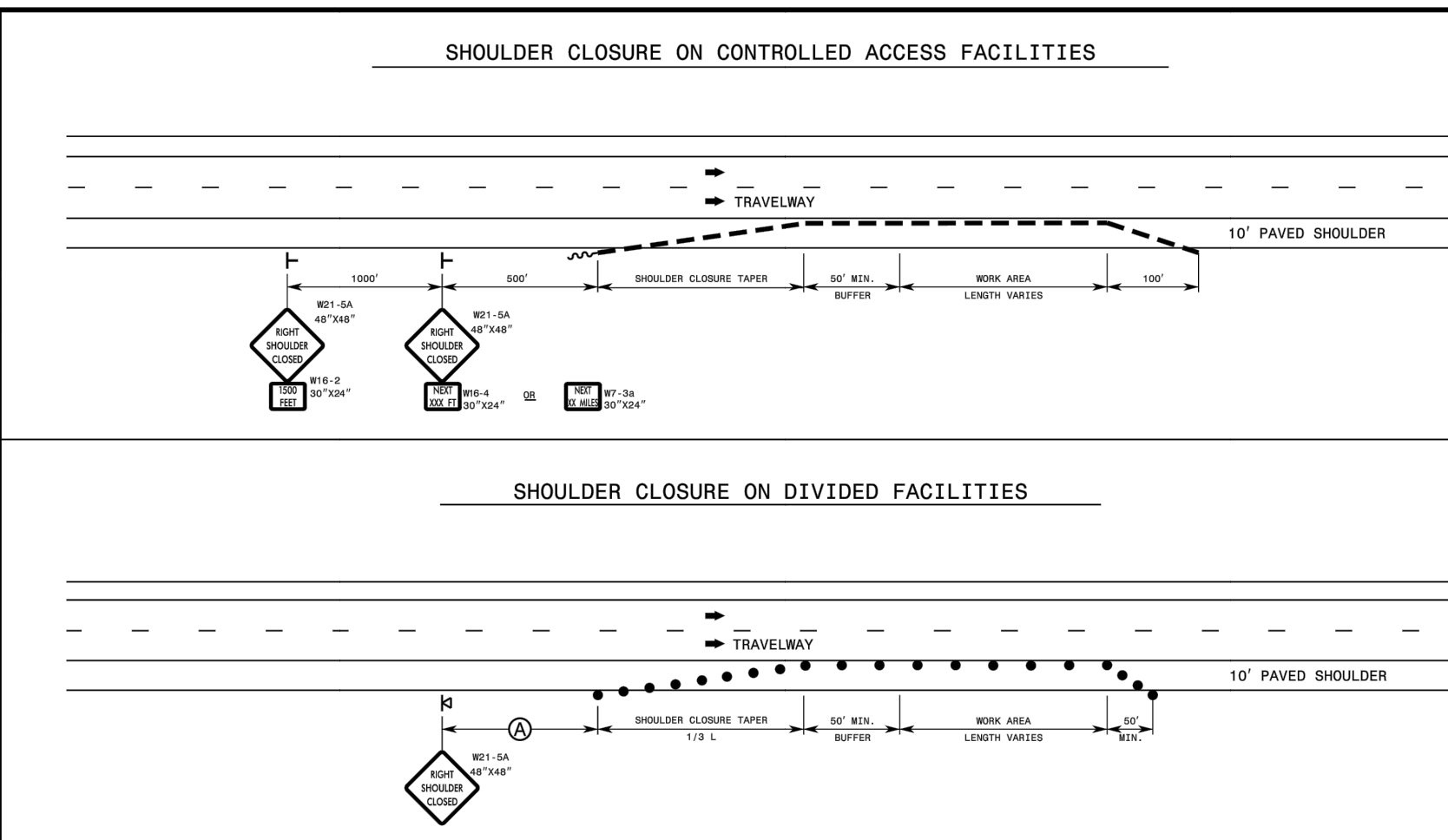


- GENERAL NOTES FOR FLAGGING OPERATIONS**
- 1- REFER TO RSD, 1101.11, SHEETS 1 & 4, FOR "L" DISTANCE AND SIGN SPACING.
  - 2- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
  - 3- REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
  - 4- PLACE CONES INTO THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
  - 5- EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER (REFER TO RSD, 1101.11, SHEET 21).
  - 6- DO NOT STOP TRAFFIC IN ANY ONE DIRECTION FOR MORE THAN 5 MINUTES AT A TIME.
  - 7- DRUMS OR SKINNY DRUMS MAY BE USED IN LIEU OF CONES. REFER TO RSD, 1100.01 FOR SKINNY DRUM REQUIREMENTS.
  - 8- USE FLAGGERS TO CONTROL TRAFFIC AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE. SUPPLEMENT FLAGGERS LOCATED AT INTERSECTIONS WITH FLAGGER AHEAD SIGNS (RSD 75) PLACED APPROXIMATELY 200 FT. AHEAD OF THE FLAGGER. FOR SIGNALIZED INTERSECTIONS PLACE SIGNALS IN THE FLAG PLAN AND USE LAW ENFORCEMENT.
  - 9- REFER TO THE CURRENT MUTCD FOR FLAGGER CONTROL, REQUIREMENTS, AND PROCEDURES.
  - 10- DO NOT EXCEED A 1 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.
- GENERAL NOTES FOR PILOT CAR OPERATIONS**
- 1- USE PILOT CARS WHEN DIRECTED BY THE ENGINEER.
  - 2- IF ROADWAY WIDTH IS LESS THAN 22 FEET (EOP TO EOP), CONES MAY NOT BE REQUIRED ALONG THE WORK AREA IF USING A PILOT CAR.
  - 3- CONES ARE ALWAYS REQUIRED IN THE UPSTREAM AND DOWNSTREAM TAPERS.
  - 4- WORK SIGN RSD 4 "PILOT CAR FOLLOW ME" AT A CONSPICUOUS POSITION ON THE REAR OF THE PILOT VEHICLE.
  - 5- DO NOT INSTALL MORE THAN ONE (1) MILE OF LANE CLOSURE. ADVISE RESIDENTS AND BUSINESSES WITHIN THE LANE CLOSURE AREA ABOUT THE LANE CLOSURE AND IMPROVE DRIVEWAYS DURING FLAGGING AND PILOT CAR OPERATIONS.

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

ROADWAY STANDARD DRAWING FOR  
**TEMPORARY LANE CLOSURES  
2-LANE, 2-WAY ROADWAY-1 LANE CLOSED**

SHEET 1 OF 14  
**1101.02**



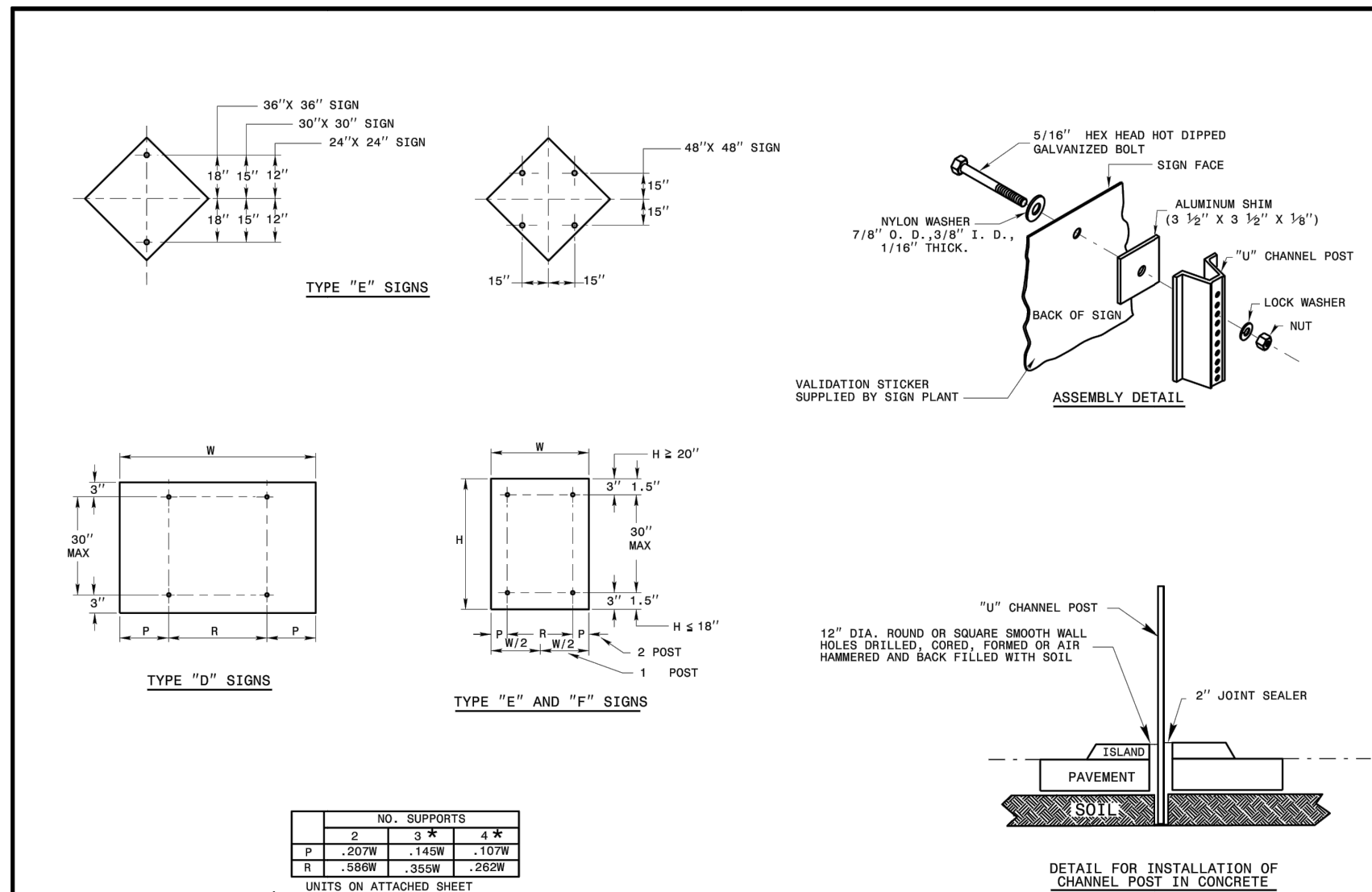
- GENERAL NOTES**
- 1- PLACE SHOULDER CLOSURE SIGNS ON THE SAME SIDE AS THE SHOULDER THAT IS CLOSED.
  - 2- PLACE DRUMS IN THE SHOULDER TAPER AT THE MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT. THE MAXIMUM SPACING OF DRUMS ALONG THE WORK AREA IS EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
  - 3- USE STATIONARY SIGNS FOR OPERATIONS IN EFFECT LONGER THAN 3 DAYS.
  - 4- REFER TO RSD, 1101.11, SHEETS 1, 3 & 4, FOR "L" DISTANCE, BARRIER PLANE RATES, AND SIGN SPACING.

LEGEND  
- DRUM  
- STATIONARY SIGN  
- PORTABLE CONCRETE BARRIER  
- DIRECTION OF TRAFFIC FLOW  
- TEMPORARY CRASH CUSHION

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

ROADWAY STANDARD DRAWING FOR  
**TEMPORARY SHOULDER CLOSURES**

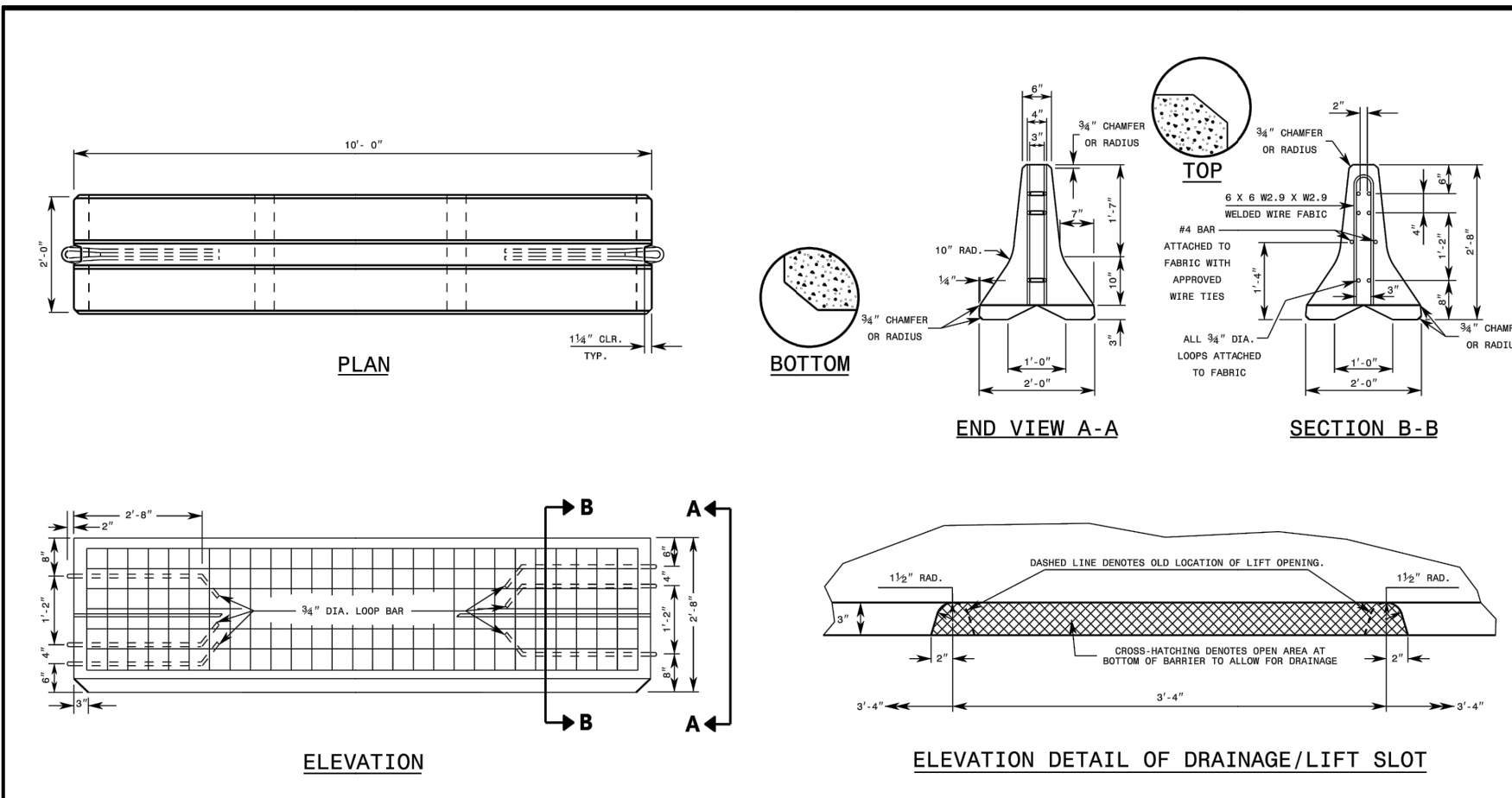
SHEET 1 OF 1  
**1101.04**



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

ENGLISH STANDARD DRAWING FOR  
**MOUNTING OF  
TYPE 'D', 'E' AND 'F' SIGNS  
ON 'U' CHANNEL POSTS**

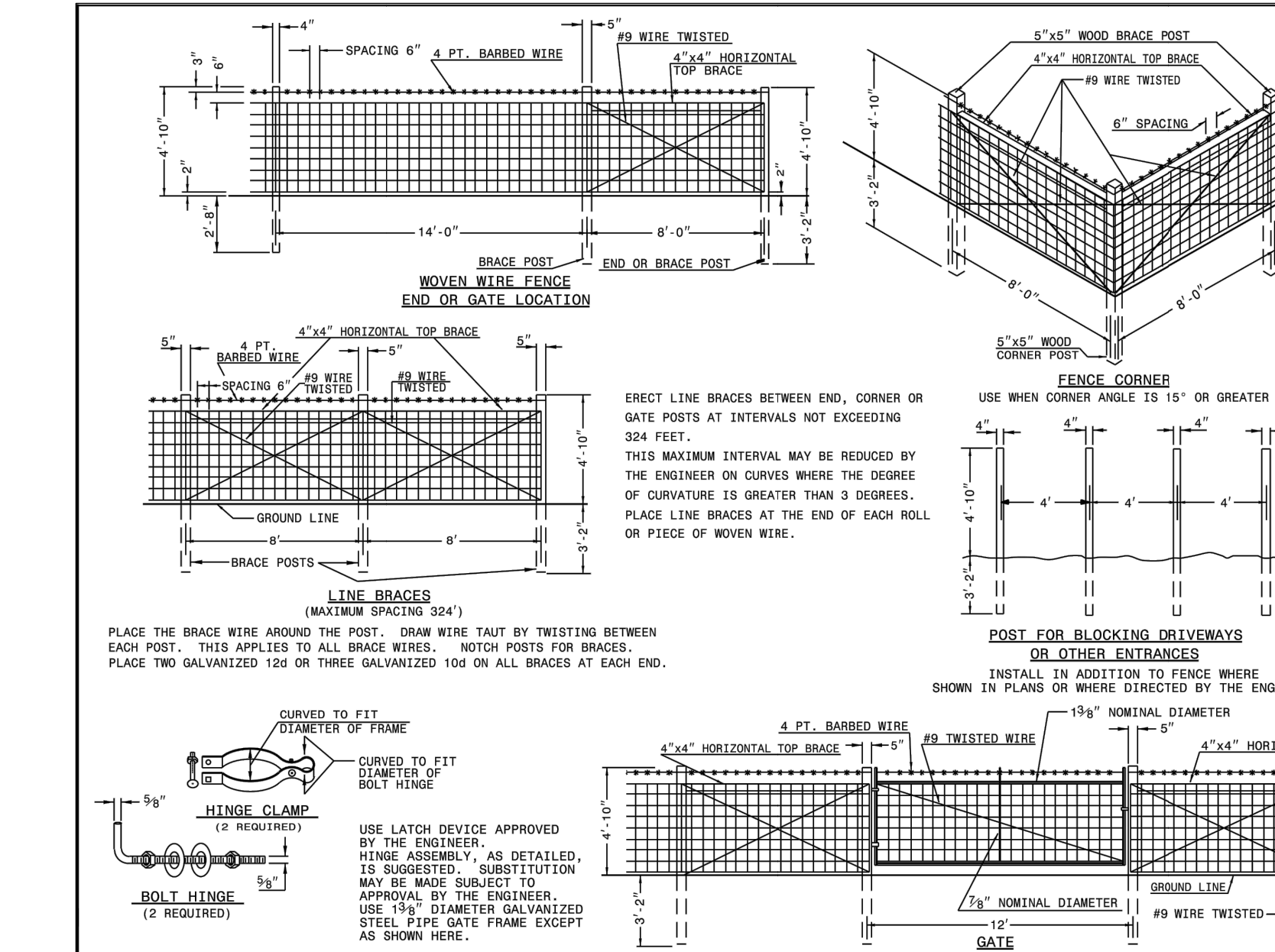
SHEET 2 OF 2  
**904.50**



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

ROADWAY STANDARD DRAWING FOR  
**PORTABLE CONCRETE BARRIER**

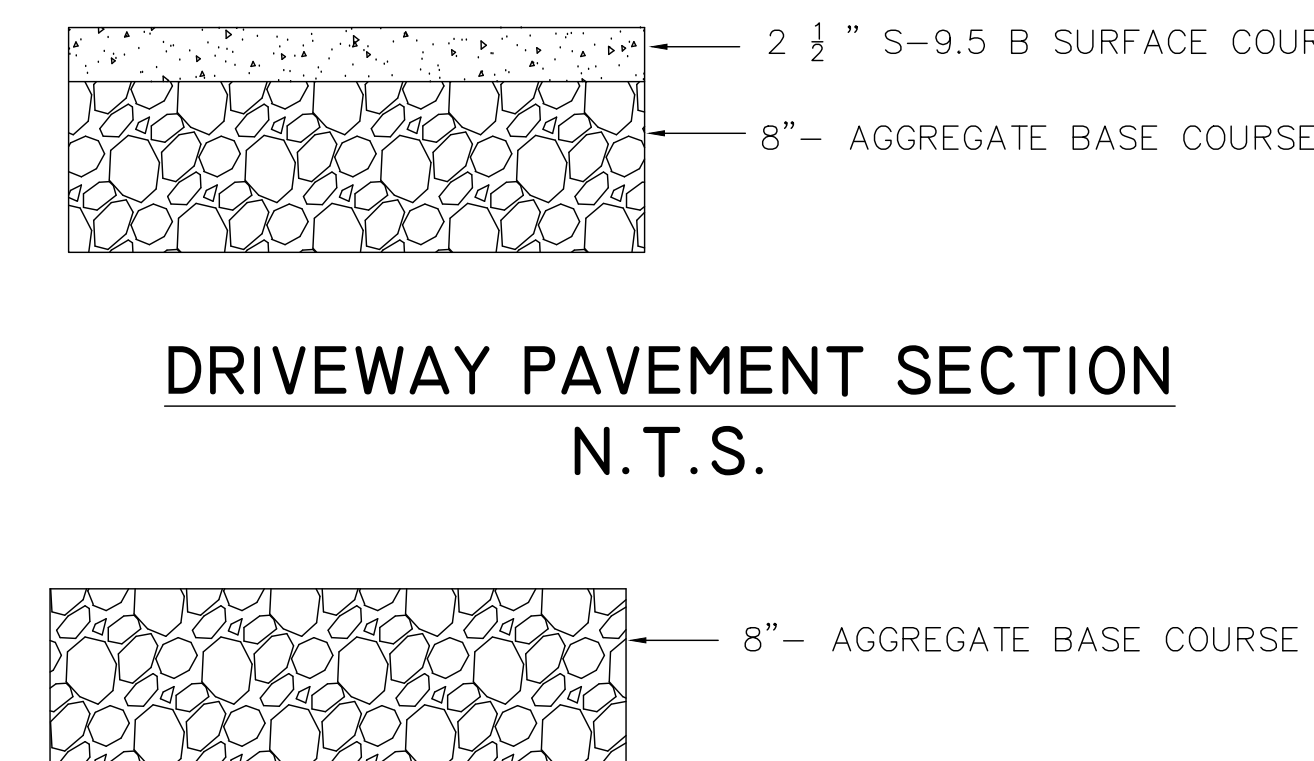
SHEET 1 OF 4  
**1170.01**



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

ROADWAY STANDARD DRAWING FOR  
**WOVEN WIRE FENCE  
WITH WOOD POST**

SHEET 1 OF 3  
**866.02**



PREPARED BY  
ENGINEERING DEPARTMENT  
CITY OF CONCORD  
P.O. BOX 308  
CONCORD N.C. 28026  
(704) 920-5425

Engineer's Seal

Surveyor's Seal

ZION CHURCH RD. (SR 1155)  
12" WATERLINE  
TRAFFIC & PAVEMENT / MISC.  
STANDARD DETAILS  
PROJECT # : 2020-077

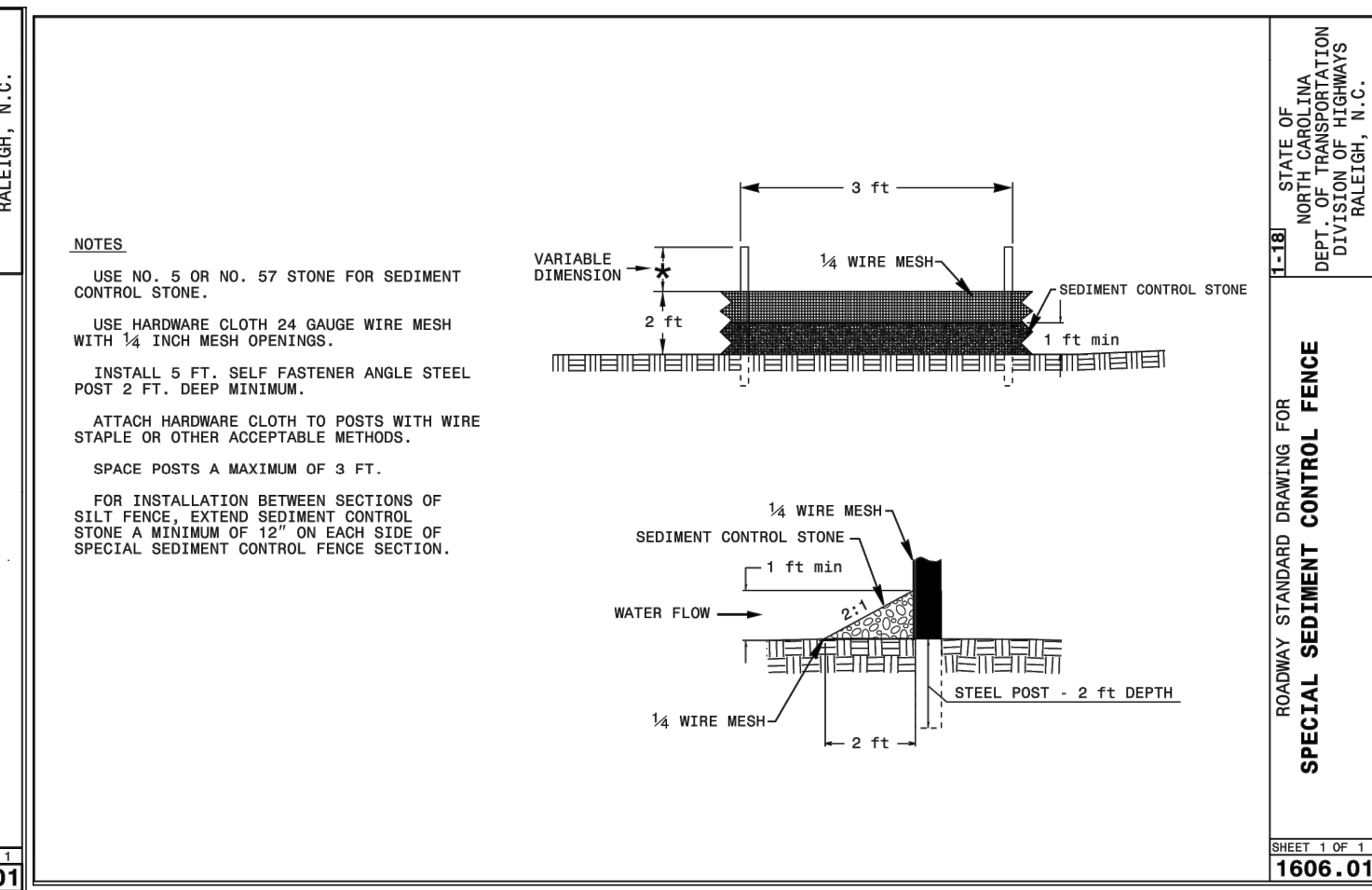
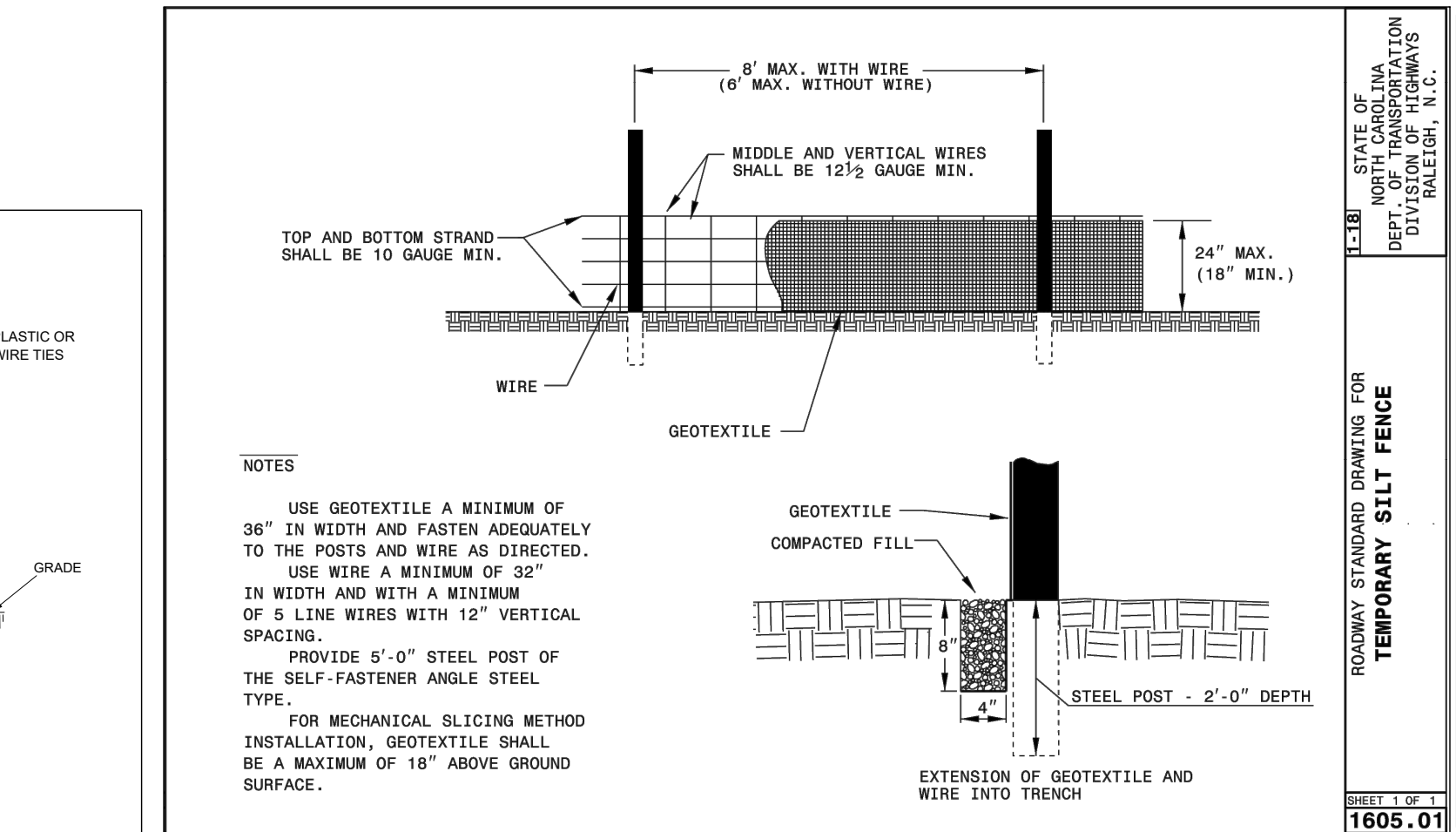
REV. #	DATE	DESCRIPTION	BY
0	4/25/23	FOR CONSTRUCTION	EES
1	6/19/23	ADDRESSING ENCROACHMENT AGREEMENT COMMENTS	EES

DESIGNED BY: CGZV  
DRAWN BY: EES  
CHECKED BY: EAB  
SCALE: AS SHOWN  
DATE: 09/08/2020  
PROJECT NUMBER: 2020-077  
SHEET: 12 OF 15



1. THE CONTRACTOR SHALL INSTALL AND MAINTAIN THROUGHOUT THE PROJECT CONSTRUCTION ALL EROSION CONTROL MEASURES SHOWN WITH THESE PLANS IN ACCORDANCE WITH APPLICABLE NCEQ EROSION AND SEDIMENT CONTROL AND NCDOT REGULATIONS.
2. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL REGULATIONS, NCDOT, U.S. DEPARTMENT OF AGRICULTURE, AND U.S. SOIL CONSERVATION SERVICE REGULATIONS.
3. ALL CONSTRUCTION WORK SHALL BE IN COMPLIANCE WITH REGULATIONS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER GENERAL PERMIT.
4. THE CONTRACTOR SHALL DILIGENTLY AND CONTINUOUSLY MAINTAIN ALL EROSION CONTROL DEVICES AND STRUCTURES TO MINIMIZE EROSION. THE CONTRACTOR SHALL MAINTAIN CLOSE CONTACT WITH THE NCEQ EROSION CONTROL INSPECTOR SO THAT PERIODIC INSPECTIONS CAN BE PERFORMED AT APPROPRIATE STAGES OF CONSTRUCTION.
5. APPROVAL OF THIS PLAN IS NOT AN AUTHORIZATION TO GRADE ADJACENT PROPERTIES. WHEN FIELD CONDITIONS WARRANT OFF-SITE GRADING, PERMISSION MUST BE OBTAINED FROM THE AFFECTED PROPERTY OWNERS. CONTACT PROJECT ENGINEER AND PROJECT EROSION CONTROL INSPECTOR TO ENSURE ADDITIONAL EROSION CONTROL MEASURES ARE INSTALLED PRIOR TO OFF-SITE GRADING.
6. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED CONTINUOUSLY, RELOCATED WHEN AND AS NECESSARY AND SHALL BE CHECKED AFTER EVERY RAINFALL. SEEDED AREAS SHALL BE CHECKED REGULARLY AND SHALL BE WATERED, FERTILIZED, RESEEDED AND MULCHED AS NECESSARY TO OBTAIN A DENSE STAND OF GRASS.
7. STABILIZATION IS THE BEST FORM OF EROSION CONTROL. ALL DISTURBED AREAS WHICH ARE NOT OTHERWISE STABILIZED SHALL BE TOP SOILED AND SEEDED, TEMPORARILY OR PERMANENTLY IN ACCORDANCE WITH THE NORTH CAROLINA SEDIMENT CONTROL REGULATIONS. PERMANENT SEEDING AND GRASS ESTABLISHMENT IS REQUIRED PRIOR TO PROJECT COMPLETION AND ACCEPTANCE.
8. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
9. WHEN A CRUSHED STONE CONSTRUCTION ENTRANCE HAS BEEN COVERED WITH SOIL OR HAS BEEN PUSHED INTO THE SOIL BY CONSTRUCTION TRAFFIC, IT SHALL BE REPLACED WITH A DEPTH OF STONE EQUAL TO THAT OF THE ORIGINAL APPLICATION.
10. ALL DRAINAGE INLETS SHALL BE PROTECTED FROM SILTATION. INEFFECTIVE PROTECTION DEVICES SHALL BE IMMEDIATELY REPLACED AND THE INLET CLEANED. FLUSHING IS NOT AN ACCEPTABLE METHOD OF CLEANING.
11. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE, AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AN EROSION AND

1. ALL EROSION AND SEDIMENTATION CONTROL DEVICES WILL BE CHECKED BY THE CONTRACTOR FOR STABILITY AND OPERATION WITHIN 24 HOURS AFTER EVERY RUNOFF PRODUCING RAINFALL. INCLUDING ANY STORM EVENT GREATER THAN 0.5" OF PRECIPITATION DURING ANY 24 HOUR PERIOD, BUT IN NO CASE LESS THAN ONCE EVERY WEEK, ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY. ALL CONTROL DEVICES NOT DESIGNED, DAMAGED OR INEFFECTIVE DEVICES SHALL BE REPAIRED OR REPLACED AS NECESSARY.
2. MAINTAIN EROSION CONTROL DEVICES AS FOLLOW:
  - TEMPORARY SILT FENCE - REMOVE SEDIMENT DEPOSITS WHEN IT BECOMES 0.5 FT DEEP AT THE FENCE AND AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE, AVOID UNDERMINING THE FENCE.
  - TEMPORARY CHECK DAM - REMOVE SEDIMENT ACCUMULATION BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION. ADD STORE TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.
  - STORM DRAIN INLET PROTECTION - REMOVE SEDIMENT AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAINFALL.
  - TEMPORARY DIVERSION DITCH - INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED. WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND.
  - SEDIMENT DAMS - REMOVE SEDIMENT AND RESTORE BASIN TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF THE DESIGN DEPTH OF THE TRAP. CHECK THE STRUCTURE FOR DAMAGE FROM EROSION TO ENSURE IT IS A MINIMUM 1.5 FEET BELOW THE LOW POINT OF THE EMBANKMENT.
  - TEMPORARY SLOPE DAM - INSPECT THE SLOPE DRAIN AND SUPPORTING DIVERSION AFTER EVERY RAINFALL AND PROMPTLY MAKE NECESSARY REPAIRS. WHEN THE PROTECTED AREA HAS BEEN PERMANENTLY STABILIZED, TEMPORARY MEASURES MAY BE REMOVED. MATERIALS DISPOSED OF PROPERLY AND ALL DISTURBED AREAS STABILIZED APPROPRIATELY.
  - SEDIMENT TUBE - CHECK SEDIMENT TUBE AFTER EACH RAINFALL. REMOVE SEDIMENT AND RESTORE ORIGINAL VOLUME WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE DESIGN VOLUME.
3. ALL GRADED AREAS WILL BE SEED, FERTILIZED AND MULCHED ACCORDING TO SPECIFICATIONS, SPECIAL PROVISIONS AND THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL TO MAINTAIN A VIGOROUS, DENSE, VEGETATIVE COVER WITHIN REQUIRED SOIL STABILIZATION TIMEFRAMES. IF WORK ON THE PROJECT CEASES FOR MORE THAN THE AFOREMENTIONED LENGTH OF TIME, ALL DISTURBED AREAS SHALL HAVE TEMPORARY VEGETATIVE GROUND COVER ESTABLISHED AND EROSION CONTROL DEVICES MAINTAINED.
4. PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES AS MAY BE REQUIRED TO CONTROL SOIL EROSION DURING UTILITY CONSTRUCTION. ALL DISTURBED AREAS SHALL BE CLEANED, GRADED, AND STABILIZED WITH GRASSING IMMEDIATELY AFTER THE UTILITY INSTALLATION.
5. ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE UTILITY AND ALL CONSTRUCTION ACTIVITIES AND DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
6. THE CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO THE PAVED ROADWAY CONSTRUCTION AREAS. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT AS MAY BE REQUIRED.
7. TEMPORARY DIVERSION BERMS AND/OR DITCHES WILL BE PROVIDED AS NEEDED DURING CONSTRUCTION TO PROTECT WORK AREAS FROM UPSLOPE RUNOFF AND/OR DIVERT SEDIMENT LADEN WATER TO APPROPRIATE TRAPS OR STABLE OUTLETS. TEMPORARY SEDIMENT BASIN MUST BE MAINTAINED PRIOR TO TRANSITIONING TO PERMANENT DRY OR WET BASINS.



SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 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 HQW ZONES.

The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone, shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined. All rates are in pounds per acre.

August 1 – June 1	May 1 – September 1
20# Kentucky Bluegrass	20# Kentucky Bluegrass
75# Hard Fescue	75# Hard Fescue
25# Rye Grain	10# German or Browntop Millet
500# Fertilizer	500# Fertilizer
4000# Limestone	4000# Limestone

August 1 – June 1	May 1 – September 1
100# Tall Fescue	100# Tall Fescue
15# Kentucky Bluegrass	15# Kentucky Bluegrass
30# Hard Fescue	30# Hard Fescue
25# Rye Grain	10# German or Browntop Millet
500# Fertilizer	500# Fertilizer
4000# Limestone	4000# Limestone

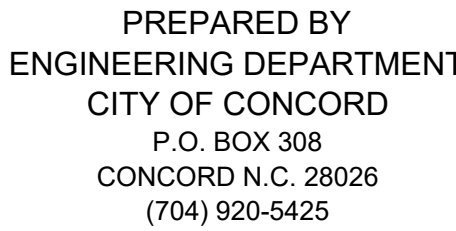
06 Dust	Escalade	Justice	Serengeti
2nd Millennium	Essential	Kalahari	Shelby
3rd Millennium	Evergreen 2	Kitty Hawk 2000	Sheridan
Apache III	Falcon IV	Legitimate	Signia
Avenger	Falcon NG	Lexington	Silver Hawk
Barlexas	Falcon V	LSD	Silverstar
Barlexas II	Faith	Magellan	Shenandoah Elite
Bar Fo	Fat Cat	Matador	Sidewinder
Barrera	Festnova	Millennium	SRP Skyline
Barrington	Fidelity	Monet	Salara
Barrobusto	Finelawn Elite	Mustang 4	Southern Choice
Barvado	Finelawn Xpress	Ninja 2	Speedway
Biltmore	Finesse II	O' Glory	Spyder LS
Bingo	Firebird	Olympic Gold	Sunset Gold
Bizem	Firecracker LS	PadreTacca	Blackwatch
Bizzen	Patagonia	Tanzania	Blade Runner II
Blue Pine	Pedigree	Trio	Bonsai
Focus	Picasso	Tahoe II	
Braveheart	Forte	Piedmont	Talladega
Bravo	Garrison	Plantation	Techeel
Bullseye	Gazelle II	Proseeds 5301	Terrano
Cannavaro	Gold Medallion	Prospect	Titan Itd
Catalyst	Grande 3	Pure Gold	Titanium LS
Cayenne	Greenbrooks	Quest	Tracer
Cessane RZ	Greeneeper	Rebel I	Traverse SRP
Chinook	Grimlin	Rebel Exeda	Tulsi Time
Cochise IV	Greystone	Raptor Sentry	Turbo
Constitution	Guardian 21	Rebel IV	Turbo RZ
Corgi	Guardian 41	Regiment II	Tuxedo RZ
Corona	Hemi	Regenerate	Ultimate
Coyote	Honky Tonk	Rendition	Venture
Darlington	Hot Rod	Rhambler 2 SRP	Umbrella
Davinci	Hunter	Rembrandt	
Dave Gogh	Inferno	Desire	
Reunion	Watchdog	Domino	Innovator
Riverside	Wolfpack II	DynamicIntegrity	RNPXtremegreen
DynastyJaguar 3	Rocket	Endeavor	Jamboree
Scorpion			

4-Season	Blue Velvet	Gladstone	Quantum
Leap	Alexa II	Blueberry	Granite
Rambo	America	Boomerang	Hampton
Rhapsody	Apollo	Brilliant	Harmonie
Rhythm	Archie	Cabernet	Impact
Rita	Aries	Champagne	Jefferson
Royce	Armada	Champion	Juliet
Rubicon	Arrow	Chicago II	Jump Start
Rugby II	Arrowhead	Corsair	Keeneland
Shiraz	Aura	Courtyard	Langara
Shuttle	Avid	Liberator	Skye Award
Diva	Madison	Solar Eclipse	Awesome
Dynamo	Mercury	Sonoma	Bandera
Eagleton	Midnight	Sorbonne	Barduke
Emblem	Midnight II	Starburst	Barnique
Empire	Moon Shadow	Sudden Impact	Baroness
Enviro	Mountain SLT	Total Eclipse	Bonanza
Everest	Mystere	Touche	Barvette HGT
Everglade	Nu Destiny	Tsunami	Baddozed
Excursion	Nu	Chicago	Unique
Belissimo	Freedom II	Nu Glade	Valor
Bewitched	Freedom III	Odyssey	Voyager II
Beyond	Freedom Page	Perfection	Washington
Blackburg II	Futurity	Pinot	Zinfandel
Blackstone	Gaelic	Princeton 105	Blue Note
Prosperity			Guinney I

Aurora II	Eureka II	Oxford	Scaldis II
Aurora Gold	Firefly	Reliant II	Spartan II
Berkshire	Granite	Reliant IV	Stonehenge
Bighorn GT	Chariot	Heron	Nordic
Rescue 911	Rhino		

On cut and fill slopes 2:1 or steeper add 20# Sericea Lespedeza January 1 - December 31.

Fertilizer shall be 10-20-20 analysis. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis and as directed.



Surveyor's Sea

ZION CHURCH RD. (SR 1155)  
12" WATERLINE  
EROSION CONTROL DETAILS  
PROJECT #: 2020-077

REV. #	DATE	DESCRIPTION	BY
0	4/25/23	FOR CONSTRUCTION	EES
1	6/19/23	ADDRESSING ENCROACHMENT AGREEMENT COMMENTS	EES

DESIGNED BY: CGZV

DRAWN BY: EES

CHECKED BY: EAB

SCALE: AS SHOWN

DATE: 09/08/2020

PROJECT NUMBER: 2020-077

SHEET: 13 OF: 15



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.

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

## GROUND STABILIZATION SPECIFICATION

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>

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

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

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. 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.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

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

1. 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.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. 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.

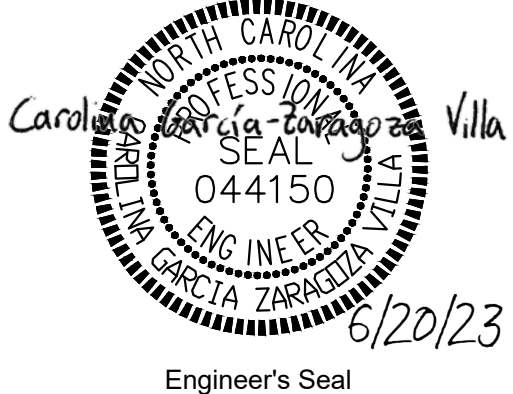
1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. 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.



1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. 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.
3. 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.
4. Do not stockpile these materials onsite.

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.



Surveyor's Sea

ZION CHURCH RD. (SR 1155)  
12" WATERLINE  
EROSION CONTROL DETAILS  
PROJECT # : 2020-077

[illegible]



## 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 $\geq 1.0$ inch in 24 hours	<ol style="list-style-type: none"> <li>1. Identification of the measures inspected,</li> <li>2. Date and time of the inspection,</li> <li>3. Name of the person performing the inspection,</li> <li>4. Indication of whether the measures were operating properly,</li> <li>5. Description of maintenance needs for the measure,</li> <li>6. Description, evidence, and date of corrective actions taken.</li> </ol>
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event $\geq 1.0$ inch in 24 hours	<ol style="list-style-type: none"> <li>1. Identification of the discharge outfalls inspected,</li> <li>2. Date and time of the inspection,</li> <li>3. Name of the person performing the inspection,</li> <li>4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration,</li> <li>5. Indication of visible sediment leaving the site,</li> <li>6. Description, evidence, and date of corrective actions taken.</li> </ol>
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event $\geq 1.0$ inch in 24 hours	<p>If visible sedimentation is found outside site limits, then a record of the following shall be made:</p> <ol style="list-style-type: none"> <li>1. Actions taken to clean up or stabilize the sediment that has left the site limits,</li> <li>2. Description, evidence, and date of corrective actions taken, and</li> <li>3. An explanation as to the actions taken to control future releases.</li> </ol>
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event $\geq 1.0$ inch in 24 hours	<p>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:</p> <ol style="list-style-type: none"> <li>1. Description, evidence and date of corrective actions taken, and</li> <li>2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.</li> </ol>
(6) Ground stabilization measures	After each phase of grading	<ol style="list-style-type: none"> <li>1. The phase of grading (installation of perimeter E&amp;SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover).</li> <li>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.</li> </ol>

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

**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.

### 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]

<b>PART III</b> <b>SELF-INSPECTION, RECORDKEEPING AND REPORTING</b>
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## 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.

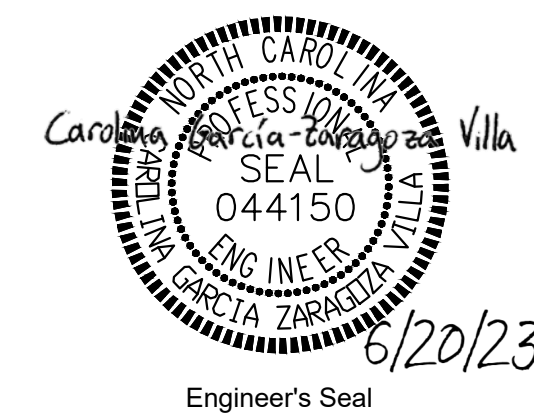
## 2. Reporting Timeframes and Other Requirements

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>



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ENGINEERING DEPARTMENT  
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Surveyor's Seal

ZION CHURCH RD. (SR 1155)  
12" WATERLINE  
EROSION CONTROL DETAILS  
PROJECT # : 2020-077

[illegible]

DESIGNED BY: CGZV

DRAWN BY: EES

CHECKED BY: EAB

SCALE: AS SHOWN

DATE: 09/08/2020

PROJECT NUMBER: 2020-077

SHEET: 15 OF: 15

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## NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19