

CITY OF WILSON HOMINY SWAMP CANAL SEWER LINE AND PIER REPLACEMENT WILSON COUNTY, NORTH CAROLINA MARCH 2024

CITY OF WILSON

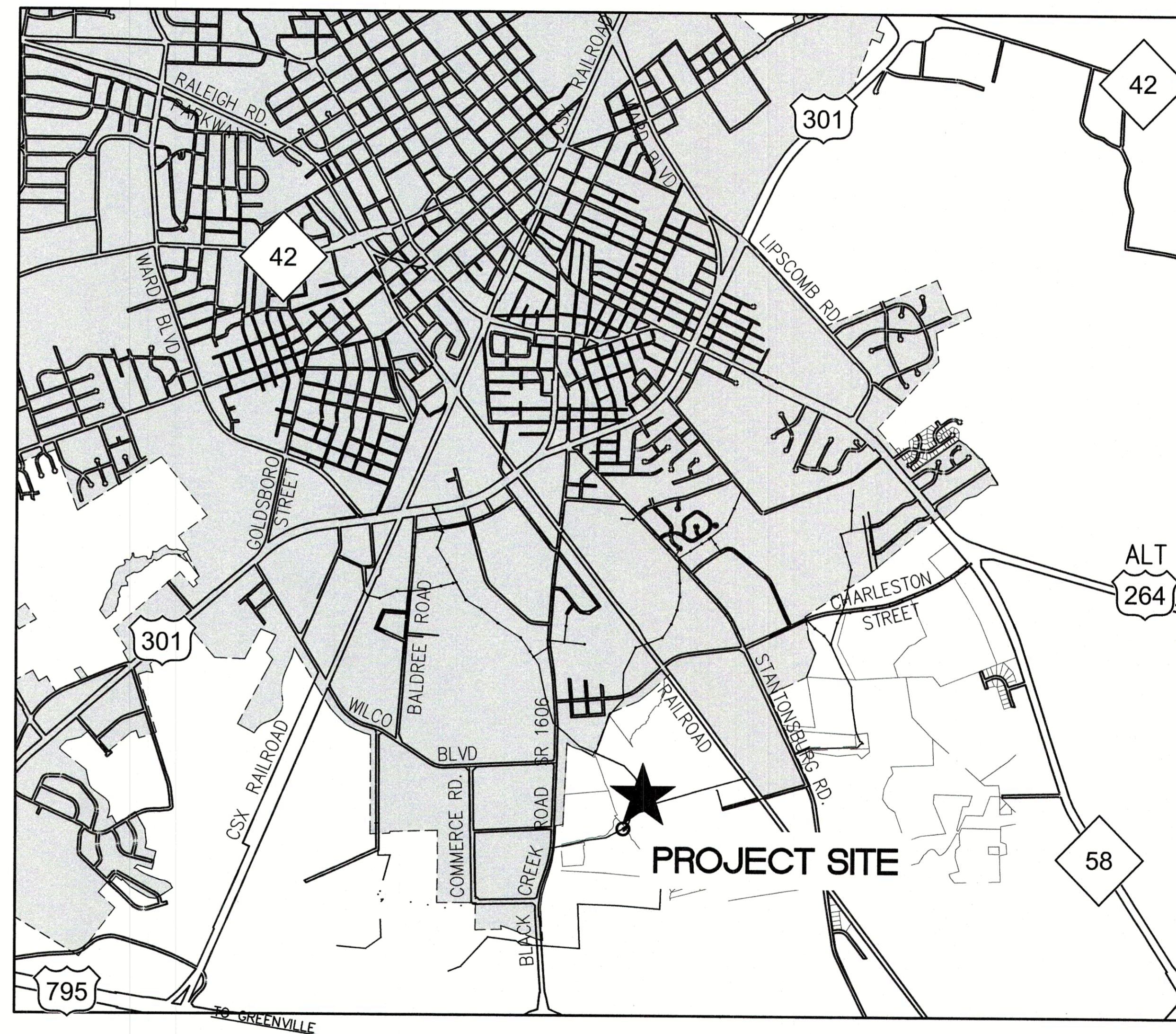
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JAMES M. JOHNSON, III
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DIRECTOR OF PUBLIC WORKS: WILLIAM T. BASS, IV, P.E.

ASSISTANT DIRECTOR OF PUBLIC WORKS: KYLE F. MANNING, P.E.

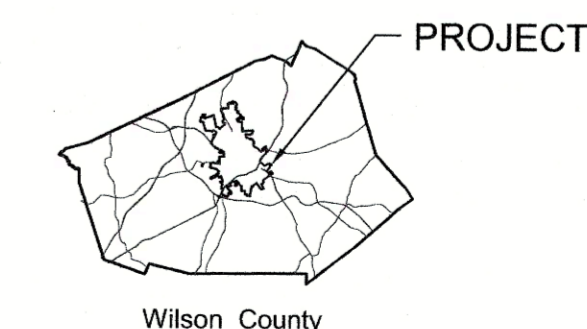


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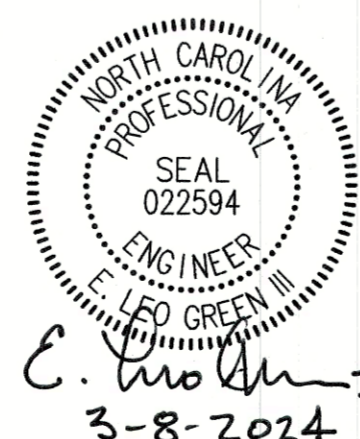
LOCATION MAP

SCALE 1" = 1000

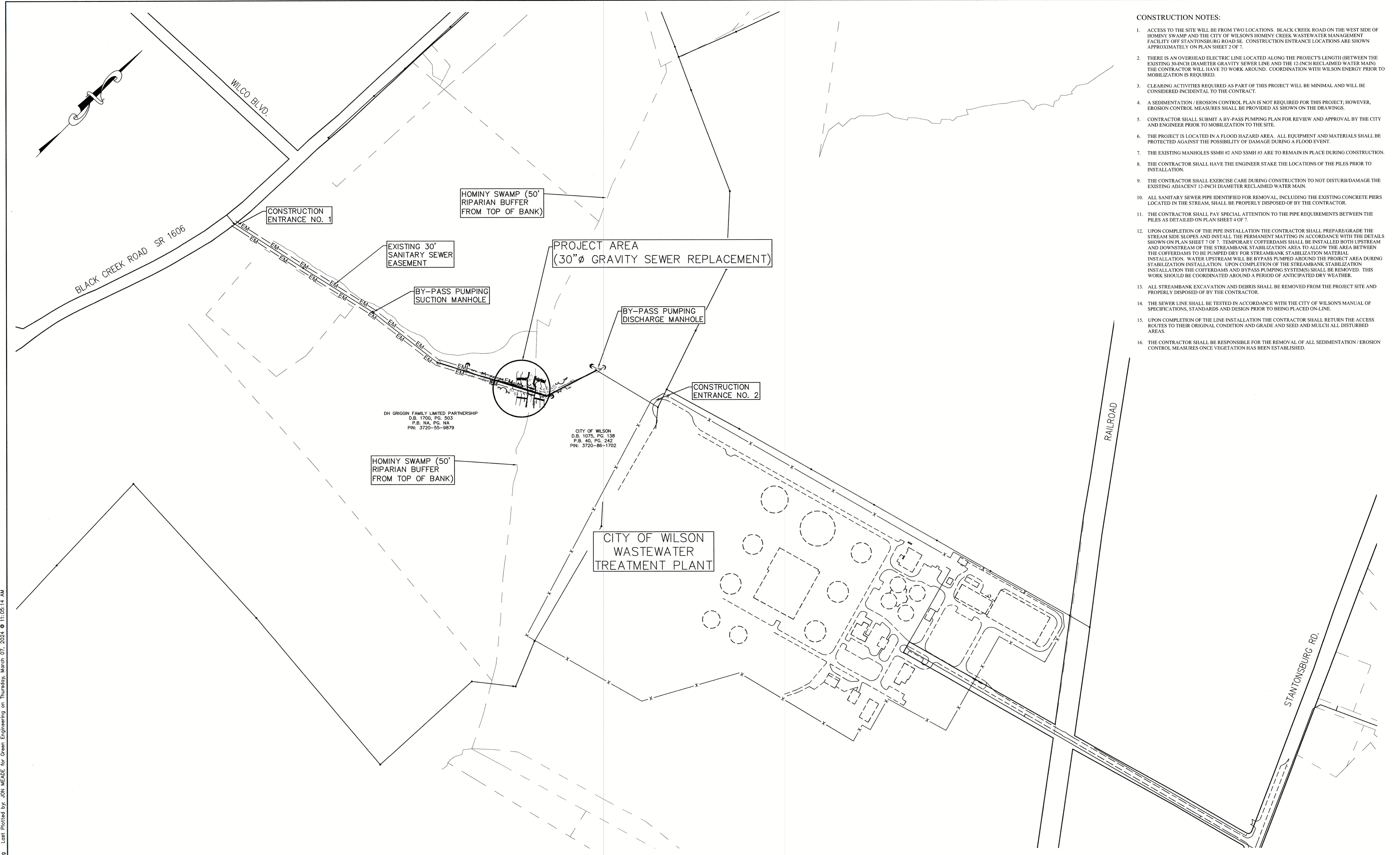


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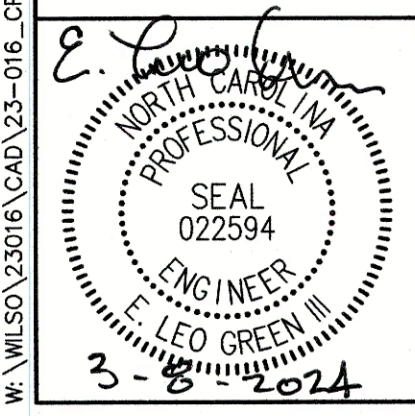
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- CONSTRUCTION NOTES:**
- ACCESS TO THE SITE WILL BE FROM TWO LOCATIONS. BLACK CREEK ROAD ON THE WEST SIDE OF HOMINY SWAMP AND THE CITY OF WILSON'S HOMINY CREEK WASTEWATER MANAGEMENT FACILITY OFF STANTONSBURG ROAD SE. CONSTRUCTION ENTRANCE LOCATIONS ARE SHOWN APPROXIMATELY ON PLAN SHEET 2 OF 7.
 - THERE IS AN OVERHEAD ELECTRIC LINE LOCATED ALONG THE PROJECT'S LENGTH (BETWEEN THE EXISTING 30-INCH DIAMETER GRAVITY SEWER LINE AND THE 12-INCH RECLAIMED WATER MAIN) THE CONTRACTOR WILL HAVE TO WORK AROUND. COORDINATION WITH WILSON ENERGY PRIOR TO MOBILIZATION IS REQUIRED.
 - CLEARING ACTIVITIES REQUIRED AS PART OF THIS PROJECT WILL BE MINIMAL AND WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
 - A SEDIMENTATION / EROSION CONTROL PLAN IS NOT REQUIRED FOR THIS PROJECT; HOWEVER, EROSION CONTROL MEASURES SHALL BE PROVIDED AS SHOWN ON THE DRAWINGS.
 - CONTRACTOR SHALL SUBMIT A BY-PASS PUMPING PLAN FOR REVIEW AND APPROVAL BY THE CITY AND ENGINEER PRIOR TO MOBILIZATION TO THE SITE.
 - THE PROJECT IS LOCATED IN A FLOOD HAZARD AREA. ALL EQUIPMENT AND MATERIALS SHALL BE PROTECTED AGAINST THE POSSIBILITY OF DAMAGE DURING A FLOOD EVENT.
 - THE EXISTING MANHOLES SSMH #2 AND SSMH #3 ARE TO REMAIN IN PLACE DURING CONSTRUCTION.
 - THE CONTRACTOR SHALL HAVE THE ENGINEER STAKE THE LOCATIONS OF THE PILES PRIOR TO INSTALLATION.
 - THE CONTRACTOR SHALL EXERCISE CARE DURING CONSTRUCTION TO NOT DISTURB/DAMAGE THE EXISTING ADJACENT 12-INCH DIAMETER RECLAIMED WATER MAIN.
 - ALL SANITARY SEWER PIPE IDENTIFIED FOR REMOVAL, INCLUDING THE EXISTING CONCRETE PIERS LOCATED IN THE STREAM, SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR.
 - THE CONTRACTOR SHALL PAY SPECIAL ATTENTION TO THE PIPE REQUIREMENTS BETWEEN THE PILES AS DETAILED ON PLAN SHEET 4 OF 7.
 - UPON COMPLETION OF THE PIPE INSTALLATION THE CONTRACTOR SHALL PREPARE/GRADE THE STREAM SIDE SLOPES AND INSTALL THE PERMANENT MATTING IN ACCORDANCE WITH THE DETAILS SHOWN ON PLAN SHEET 7 OF 7. TEMPORARY COFFERDAMS SHALL BE INSTALLED BOTH UPSTREAM AND DOWNSTREAM OF THE STREAMBANK STABILIZATION AREA TO ALLOW THE AREA BETWEEN THE COFFERDAMS TO BE PUMPED DRY FOR STREAMBANK STABILIZATION MATERIAL INSTALLATION. WATER UPSTREAM WILL BE BY-PASS PUMPED AROUND THE PROJECT AREA DURING STABILIZATION INSTALLATION. UPON COMPLETION OF THE STREAMBANK STABILIZATION INSTALLATION THE COFFERDAMS AND BY-PASS PUMPING SYSTEM(S) SHALL BE REMOVED. THIS WORK SHOULD BE COORDINATED AROUND A PERIOD OF ANTICIPATED DRY WEATHER.
 - ALL STREAMBANK EXCAVATION AND DEBRIS SHALL BE REMOVED FROM THE PROJECT SITE AND PROPERLY DISPOSED OF BY THE CONTRACTOR.
 - THE SEWER LINE SHALL BE TESTED IN ACCORDANCE WITH THE CITY OF WILSON'S MANUAL OF SPECIFICATIONS, STANDARDS AND DESIGN PRIOR TO BEING PLACED ON-LINE.
 - UPON COMPLETION OF THE LINE INSTALLATION THE CONTRACTOR SHALL RETURN THE ACCESS ROUTES TO THEIR ORIGINAL CONDITION AND GRADE AND SEED AND MULCH ALL DISTURBED AREAS.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL SEDIMENTATION / EROSION CONTROL MEASURES ONCE VEGETATION HAS BEEN ESTABLISHED.



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HOMINY SWAMP CANAL SEWER LINE REPLACEMENT

CITY OF WILSON WILSON COUNTY, NORTH CAROLINA

PROJECT LOCATION

REVISION	DATE	BY	DATE: March 7, 2024	
STREAM CROSSING AND STABILIZATION METHOD	5/31/23	JM		GRAPHIC SCALE SCALE IN FEET
CITY OF WILSON COMMENTS	3/7/24	JM		

CLIENT CODE: WILSO
 JOB NUMBER: 23-016
 FIELD BOOK: XXX
 CADFILE: 23-016_CP.dwg
 ASCII FILE:
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 MODIFIED BY: JLM

SHEET NO. 2 OF 7

SEWER NOTES

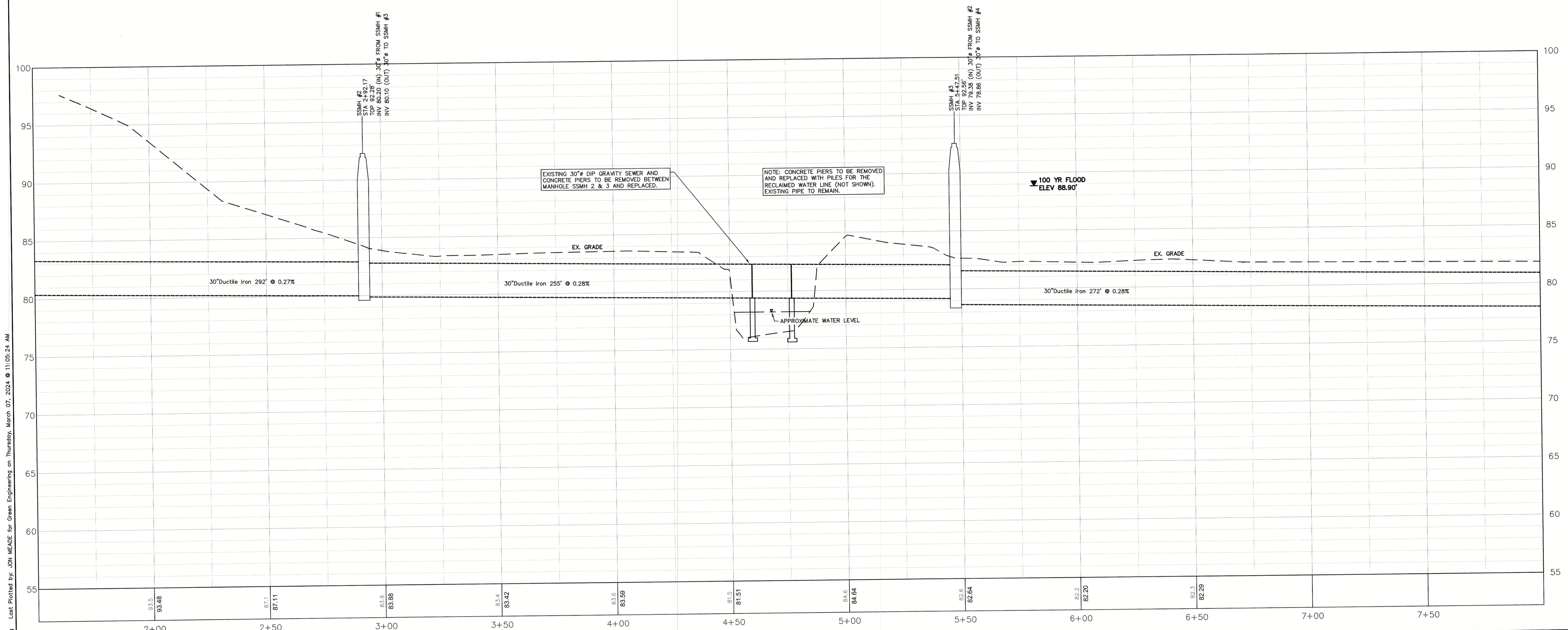
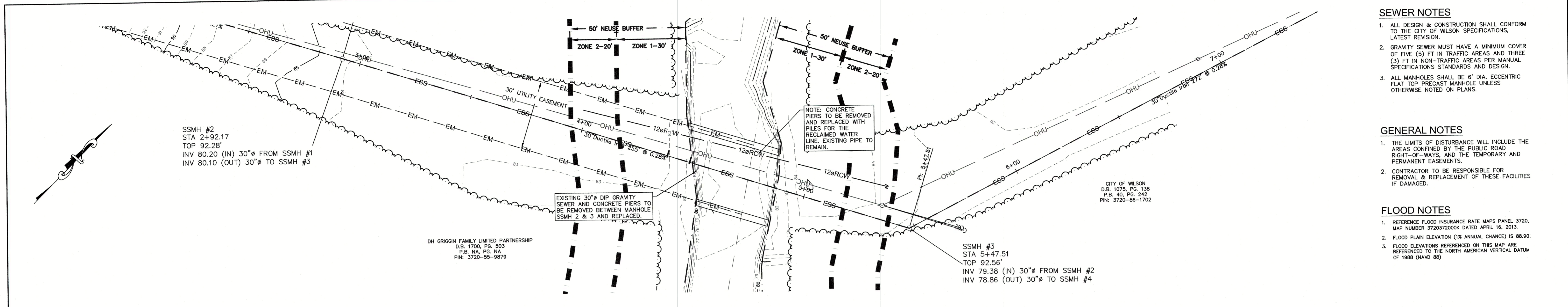
1. ALL DESIGN & CONSTRUCTION SHALL CONFORM TO THE CITY OF WILSON SPECIFICATIONS, LATEST REVISION.
2. GRAVITY SEWER MUST HAVE A MINIMUM COVER OF FIVE (5) FT IN TRAFFIC AREAS AND THREE (3) FT IN NON-TRAFFIC AREAS PER MANUAL SPECIFICATIONS STANDARDS AND DESIGN.
3. ALL MANHOLES SHALL BE 6' DIA. ECCENTRIC FLAT TOP PRECAST MANHOLE UNLESS OTHERWISE NOTED ON PLANS.

GENERAL NOTES

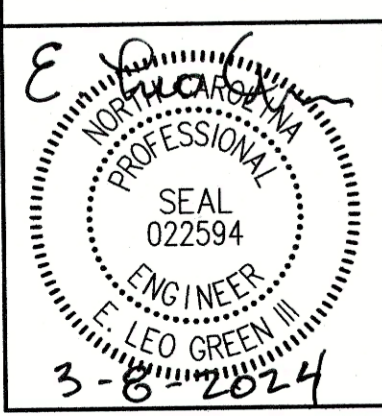
1. THE LIMITS OF DISTURBANCE WILL INCLUDE THE AREAS CONFINED BY THE PUBLIC ROAD RIGHT-OF-WAYS, AND THE TEMPORARY AND PERMANENT EASEMENTS.
2. CONTRACTOR TO BE RESPONSIBLE FOR REMOVAL & REPLACEMENT OF THESE FACILITIES IF DAMAGED.

FLOOD NOTES

1. REFERENCE FLOOD INSURANCE RATE MAPS PANEL 3720, MAP NUMBER 3720372000K DATED APRIL 16, 2013.
2. FLOOD PLAIN ELEVATION (1% ANNUAL CHANCE) IS 88.90'.
3. FLOOD ELEVATIONS REFERENCED ON THIS MAP ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)



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**HOMINY SWAMP CANAL
SEWER LINE REPLACEMENT**

CITY OF WILSON WILSON COUNTY, NORTH CAROLINA

EXISTING CONDITIONS

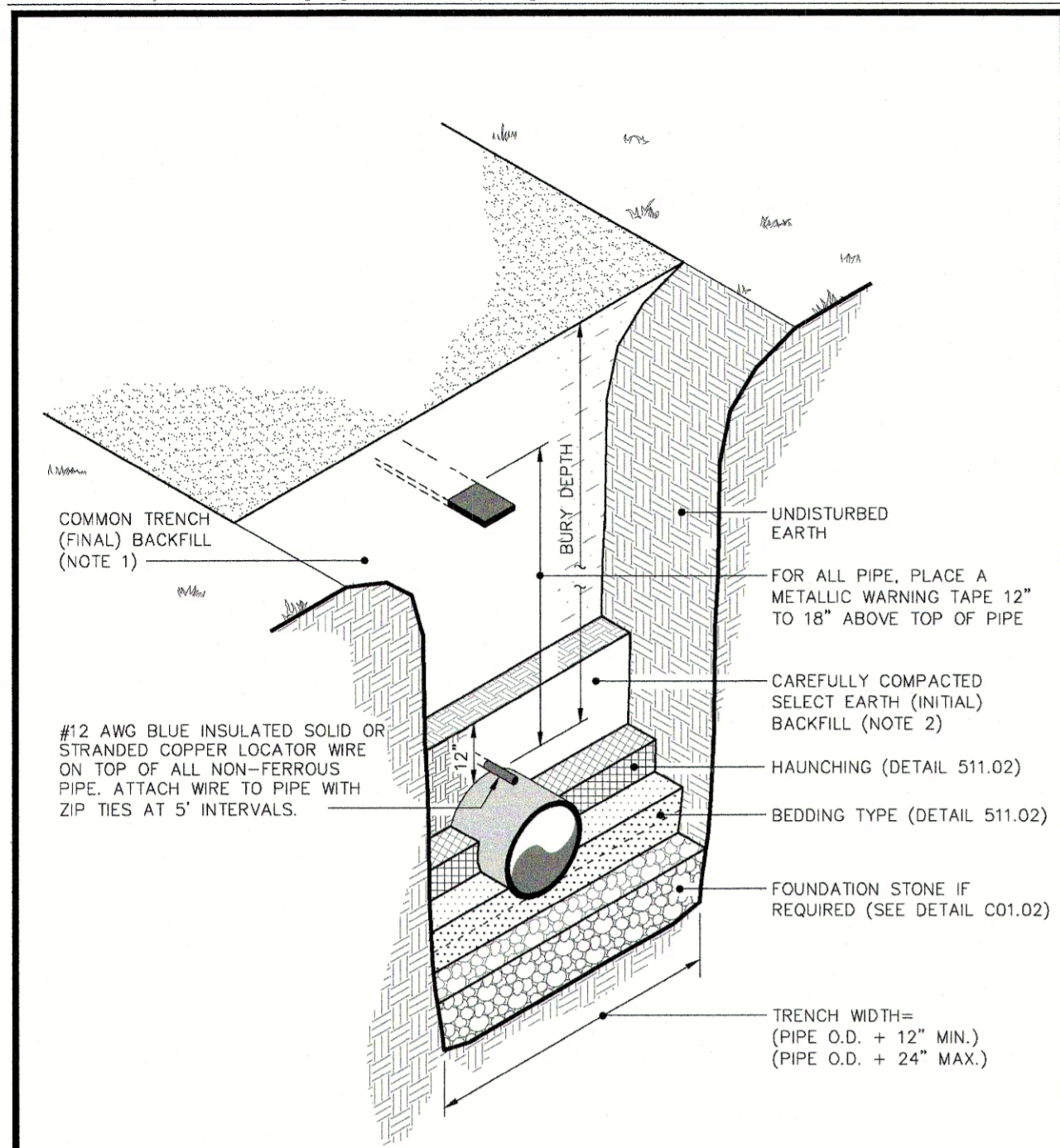
REVISION	DATE	BY	DATE: March 7, 2024
STREAM CROSSING AND STABILIZATION METHOD	5/31/23	JM	
CITY OF WILSON COMMENTS	3/7/24	JM	

GRAPHIC SCALE

0 10 20 40
 PLAN & PROFILE (HORIZONTAL)
 0 4 8
 PROFILE (VERTICAL)

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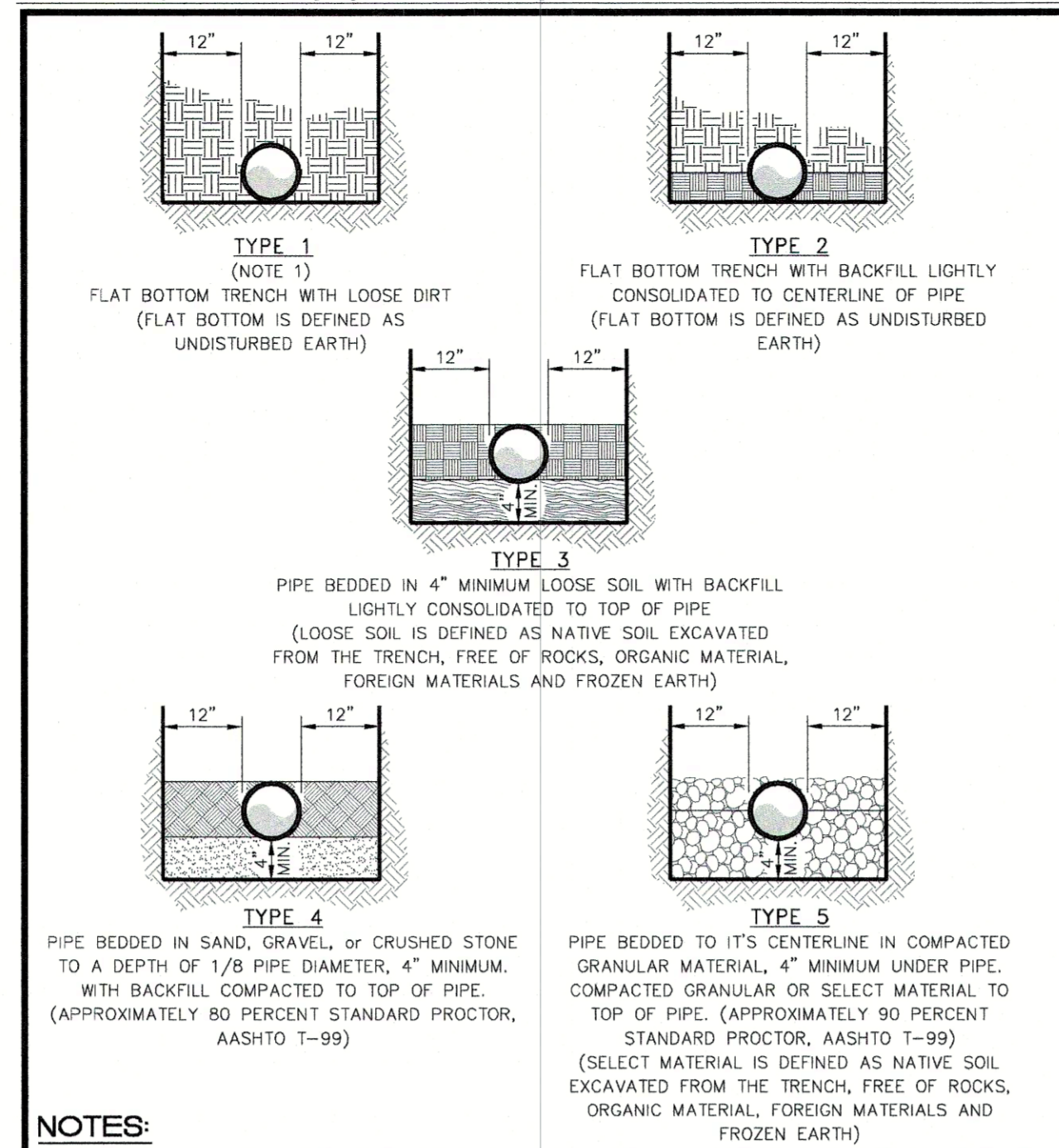
SHEET NO. 3 OF 7



NOTES:
 1. See specifications Section 02275, Part 2 - PRODUCTS for composition of Select Earth Backfill and Common Trench Backfill.
 2. See detail C01.03 for pipe laid within an existing paved street.

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FORCE MAIN & WATER MAIN PIPE LAYING CONDITIONS
 SCALE: Not To Scale
 REVISION DATE: June, 2010
 SHEET # 1 of 1



NOTES:
 1. For normal water pipe sizes 14 inch and larger, consideration should be given to the use of laying conditions other than Type 1.
 2. Consideration of the pipe-zone embedment conditions included in this figure may be influenced by factors other than pipe strength. For additional information on pipe bedding and backfill, see ANSI/AWWA C600.

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WATER & SANITARY SEWER PIPE EMBEDMENT DETAILS
 SCALE: Not To Scale
 REVISION DATE: June, 2010
 SHEET # 1 of 3

TABLE 107 - DESCRIPTION OF MATERIAL CLASSIFICATION (As Defined in ASTM D2922)

Class	Type	Soil Symbol	Description	Moisture Content (%)	Plasticity Index (PI)	Classification
IA	Manufactured sand or crushed stone	None	Angular crushed stone or crushed stone with a maximum size of 1/2\"/>			

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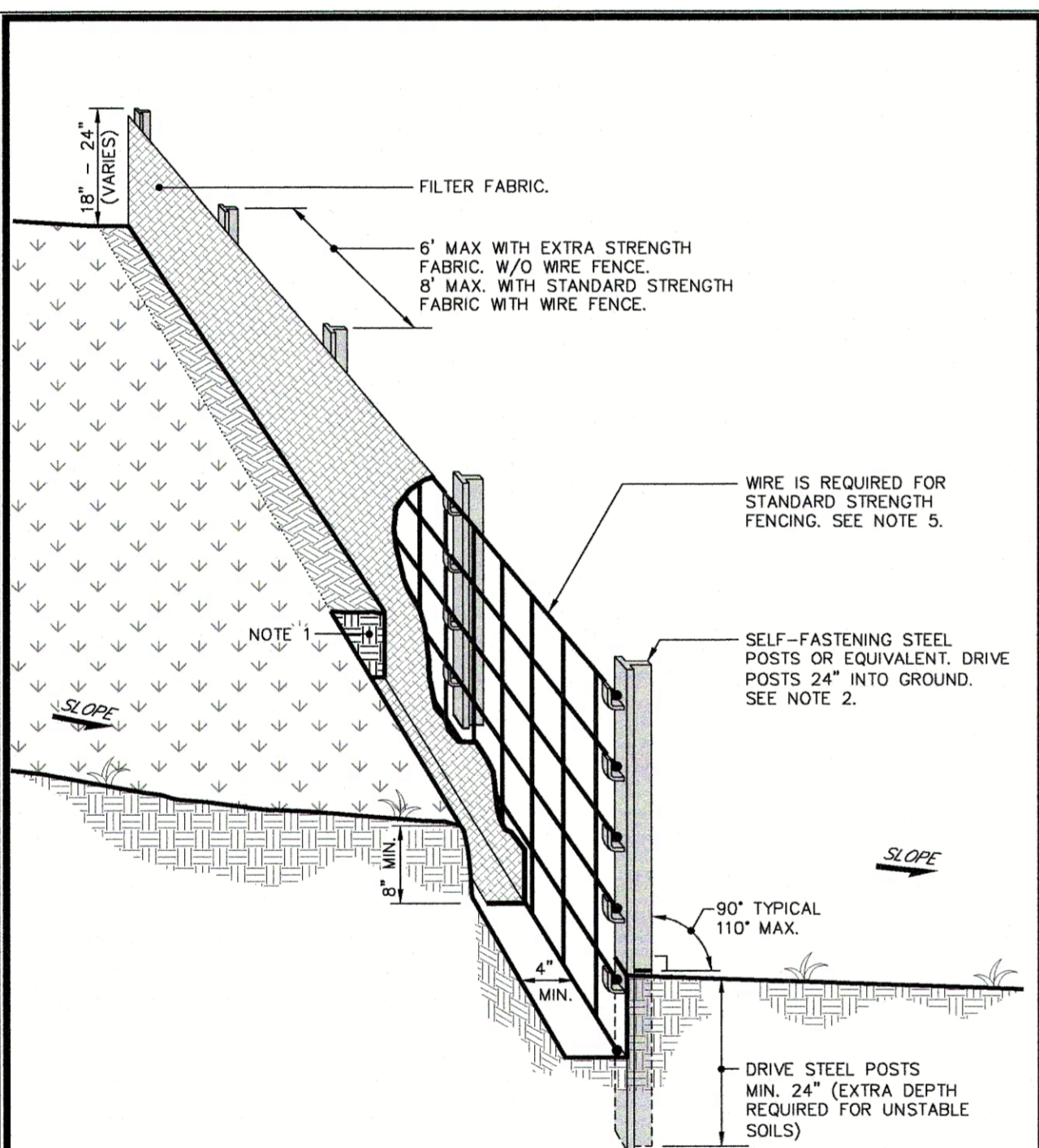
WATER & SANITARY SEWER PIPE EMBEDMENT DETAILS
 SCALE: Not To Scale
 REVISION DATE: June, 2010
 SHEET # 2 of 3

TABLE 108 - RECOMMENDATIONS FOR INSTALLATION AND USE OF SOIL CLASSIFICATION AND BACKFILL

Class	Soil Class (see Table 107)	General	Foundation	Bedding	Haunching	Inside Backfill	Final Backfill
CLASS IA	Do not use where conditions are such that the soil will be subjected to vibration or other adverse conditions. Use as a drainage blanket or as a filter layer. Do not use where water table is above the level of the structure.	Use as a drainage blanket or as a filter layer. Do not use where water table is above the level of the structure.	Use as a drainage blanket or as a filter layer. Do not use where water table is above the level of the structure.	Use as a drainage blanket or as a filter layer. Do not use where water table is above the level of the structure.	Use as a drainage blanket or as a filter layer. Do not use where water table is above the level of the structure.	Use as a drainage blanket or as a filter layer. Do not use where water table is above the level of the structure.	Use as a drainage blanket or as a filter layer. Do not use where water table is above the level of the structure.

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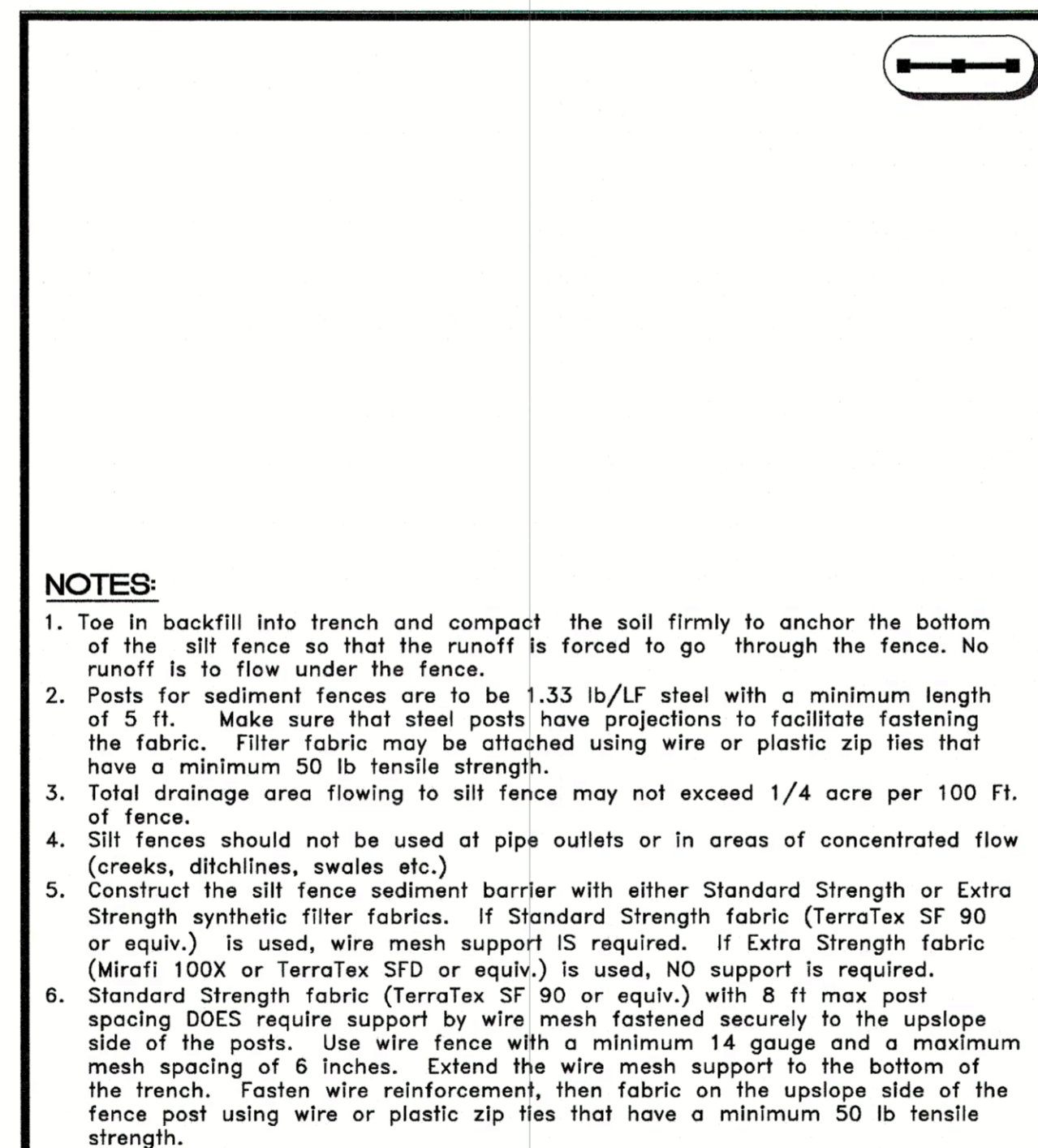
WATER & SANITARY SEWER PIPE EMBEDMENT DETAILS
 SCALE: Not To Scale
 REVISION DATE: June, 2010
 SHEET # 3 of 3



NOTES:
 1. Toe in backfill into trench and compact the soil firmly to anchor the bottom of the silt fence so that the runoff is forced to go through the fence. No runoff is to flow under the fence.
 2. Posts for sediment fences are to be 1.33 lb/LF steel with a minimum length of 5 ft. Make sure that steel posts have projections to facilitate fastening the fabric. Filter fabric may be attached using wire or plastic zip ties that have a minimum 50 lb tensile strength.
 3. Total drainage area flowing to silt fence may not exceed 1/4 acre per 100 LF of fence.
 4. Silt fences should not be used at pipe outlets or in areas of concentrated flow (creeks, ditches, swales etc.)
 5. Construct the silt fence sediment barrier with either Standard Strength or Extra Strength synthetic filter fabrics. If Standard Strength fabric (TerraTex SF 90 or equiv.) is used, wire mesh support IS required. If Extra Strength fabric (Mirafi 100X or TerraTex SFD or equiv.) is used, NO support is required.
 6. Standard Strength fabric (TerraTex SF 90 or equiv.) with 8 ft max post spacing DOES require support by wire mesh fastened securely to the upslope side of the posts. Use wire fence with a minimum 14 gauge and a maximum mesh spacing of 6 inches. Extend the wire mesh support to the bottom of the trench. Fasten wire reinforcement, then fabric on the upslope side of the fence post using wire or plastic zip ties that have a minimum 50 lb tensile strength.
 7. Extra Strength Filter Fabric (Mirafi 100X or TerraTex SFD or equiv.) with 6 ft max. post spacing DOES NOT require wire mesh support. Securely fasten filter fabric directly to posts. Wire or plastic zip ties that have a minimum 50 lb tensile strength.

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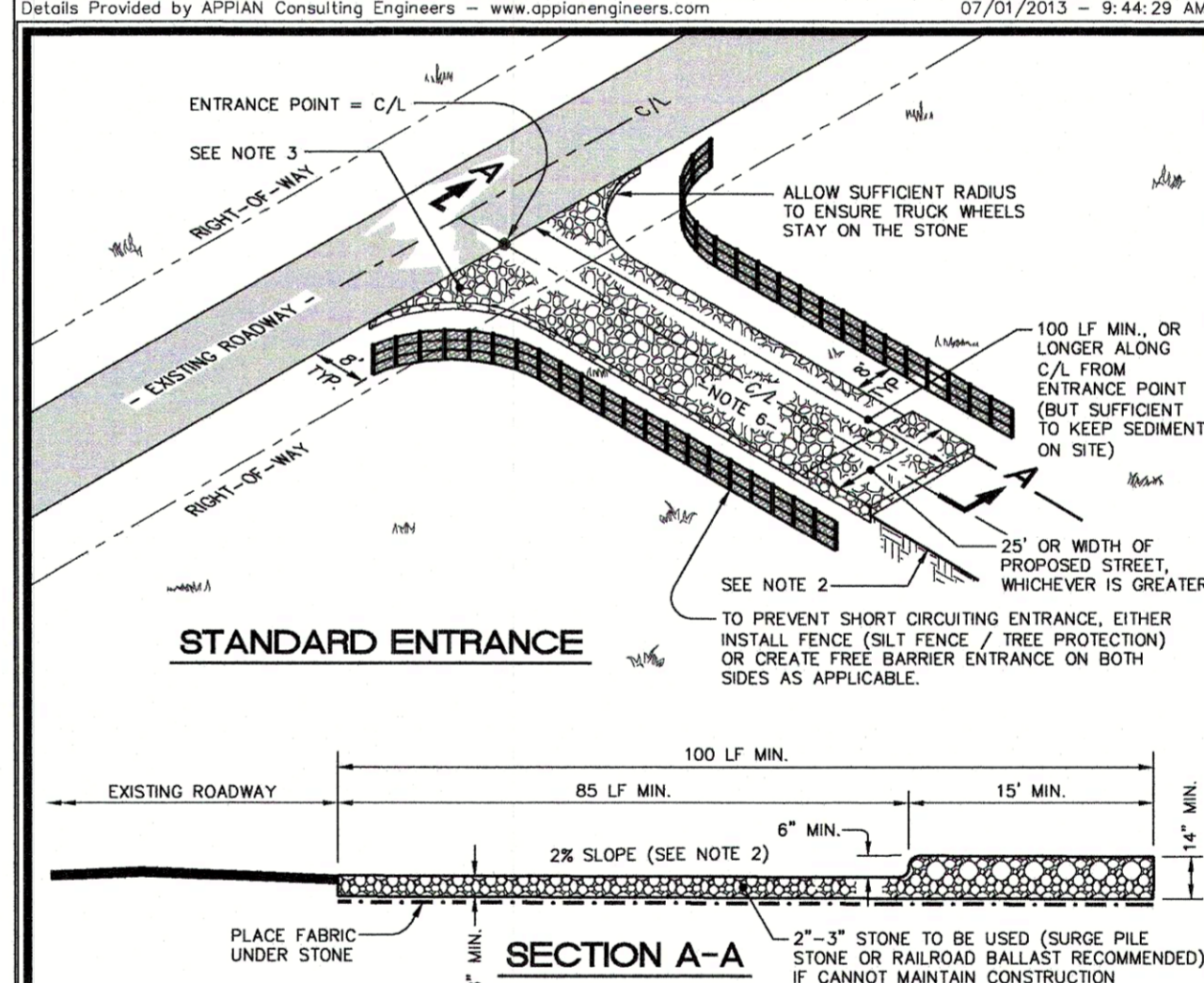
TYPICAL SILT FENCE
 SCALE: Not To Scale
 REVISION DATE: June, 2010
 SHEET # 1 of 1



NOTES:
 1. Toe in backfill into trench and compact the soil firmly to anchor the bottom of the silt fence so that the runoff is forced to go through the fence. No runoff is to flow under the fence.
 2. Posts for sediment fences are to be 1.33 lb/LF steel with a minimum length of 5 ft. Make sure that steel posts have projections to facilitate fastening the fabric. Filter fabric may be attached using wire or plastic zip ties that have a minimum 50 lb tensile strength.
 3. Total drainage area flowing to silt fence may not exceed 1/4 acre per 100 LF of fence.
 4. Silt fences should not be used at pipe outlets or in areas of concentrated flow (creeks, ditches, swales etc.)
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TYPICAL SILT FENCE
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 SHEET # 2 of 2

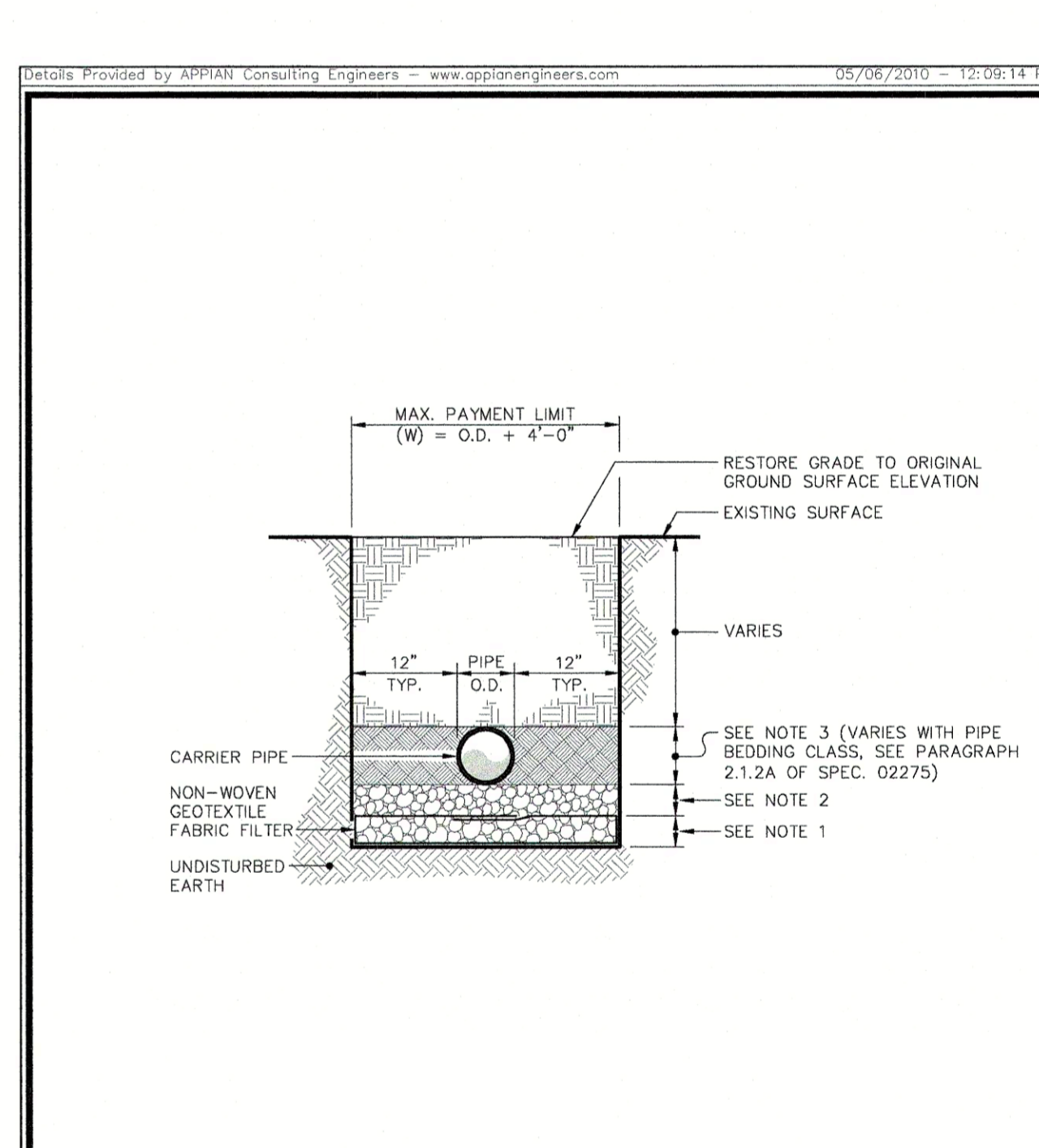


CONSTRUCTION SPECIFICATIONS:
 1. Clear the entrance/exit area of all vegetation, roots, and other objectionable material.
 2. Grade the road foundation so that the entrance/exit will have a cross slope.
 3. Stone size - Use 2\"/>

CONSTRUCTION ENTRANCE Maintenance
 • The gravel construction entrance must be maintained in a condition to prevent tracking or direct flow of mud onto adjacent roadways.
 • Replacement of stone may be necessary to ensure the gravel entrance functions properly.
 • Replenishment of stone may be necessary.
 • Frequent checks of the device and timely maintenance should be completed.
 • Any material tracked onto the roadway shall be cleaned up immediately

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STABILIZED CONSTRUCTION ENTRANCE DETAIL
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 REVISION DATE: June, 2010
 SHEET # 1 of 2



NOTES:
 1. 8\"/>

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SUITABLE SUBGRADE TRENCH DETAIL TYPE A (SEWER & STORM DRAINAGE)
 SCALE: Not To Scale
 REVISION DATE: June, 2010
 SHEET # 1 of 1

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HOMINY SWAMP CANAL SEWER LINE REPLACEMENT

CITY OF WILSON WILSON COUNTY, NORTH CAROLINA

REVISION	DATE	BY	DATE: March 7, 2024
STREAM CROSSING AND STABILIZATION METHOD	5/31/23	JM	
CITY OF WILSON COMMENTS	3/7/24	JM	

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SHEET NO. 5 OF 7

**Table 6.14a
Mulching Materials and Application Rates**

Material	Rate Per Acre	Quality	Notes
Organic Mulches			
Straw (ANCHOR STRAW BY TACKING WITH ASPHALT OR NETTING)	1-2 tons	Dry, unchopped, unweathered, avoid weeds.	Should come from wheat or oats; spread by hand or machine; must be tacked down.
Wood chips	5-6 tons	Air dry	Treat with 12 lbs nitrogen/ton. Apply with mulch blower, chip handler, or by hand. Not for use in fine turf.
Wood fiber	0.5-1 tons		Also referred to as wood cellulose. May be hydroseeded. Do not use in hot, dry weather.
Bark	35 cubic yards	Air dry, shredded or hammer-milled, or chips.	Apply with mulch blower, chip handler, or by hand. Do not use asphalt tack.
Corn stalks	4-6 tons	Cut or shredded in 4-6 in. lengths.	Apply with mulch blower or by hand. Not for use in fine turf.
Sericea lespedeza seed-bearing stems	1-3 tons	Green or dry; should contain mature seed.	
Nets and Mats¹			
Jute net	Cover area	Heavy, uniform; woven of single jute yarn.	Withstands waterflow. Best when used with organic mulch.
Fiberglass net	Cover area		Withstands waterflow. Best when used with organic mulch.
Excelsior (wood fiber) mat	Cover area		Withstands waterflow.
Fiberglass roving	0.5-1 tons	Continuous fibers of drawn glass bound together with a non-toxic agent.	Apply with a compressed air ejector. Tack with emulsified asphalt at a rate of 25-35 gal/1,000 sq ft.
Chemical Stabilizers²			
Aquatain	follow manufacturer's specifications		Not beneficial to plant growth.
Aerospray			
Curasol AK			
Petroset SB			
Terra Tack			
Crust 500			
Genaqua 743			
M-145			

Maintenance Inspect all mulches periodically, and after rainstorms to check for rill erosion, dislocation or failure. Where erosion is observed, apply additional mulch. If washout occurs, repair the slope grade, reseed and reinstall mulch. Continue inspections until vegetation is firmly established.

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

PERMANENT SEEDING

Summer - March 1 - August 31

Lime	4,000 lbs/ac
Fertilizer	500 lbs/ac
Bermudagrass (hulled)	35 lbs/ac
Centipede	10 lbs/ac
German/Browntop Millet Grain	10 lbs/ac
★Straw Mulch	2 tons/ac

Winter - September 1 - February 28

Lime	4,000 lbs/ac
Fertilizer	500 lbs/ac
Bermudagrass (unhulled)	35 lbs/ac
Tall Fescue	50 lbs/ac
Annual Rye	10 lbs/ac
★Straw Mulch	2 tons/ac

TEMPORARY SEEDING

Summer - March 1 - August 31

Lime	2 tons/ac
10-10-10 Fertilizer	700 lbs/ac
Browntop Millet	40 lbs/ac
★Straw Mulch	2 tons/ac

Winter - September 1 - February 28

Lime	2 tons/ac
10-10-10 Fertilizer	700 lbs/ac
Oats	50 lbs/ac
Rye Grain	20 lbs/ac
★Straw Mulch	2 tons/ac

NOTES:
1. ★ Mulch will be doubled if crimping is the method used.
2. Any variation from these specs must have approval of the Stormwater Program Manager or his/her duly authorized agent.

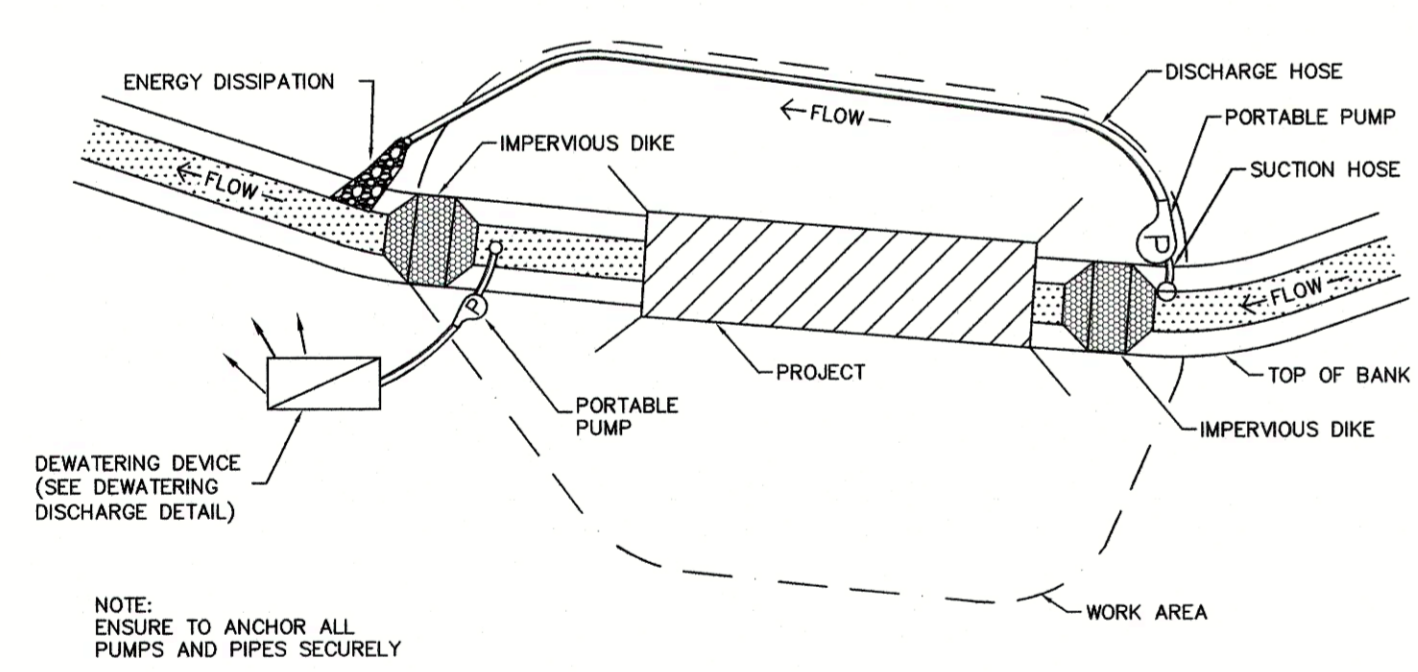
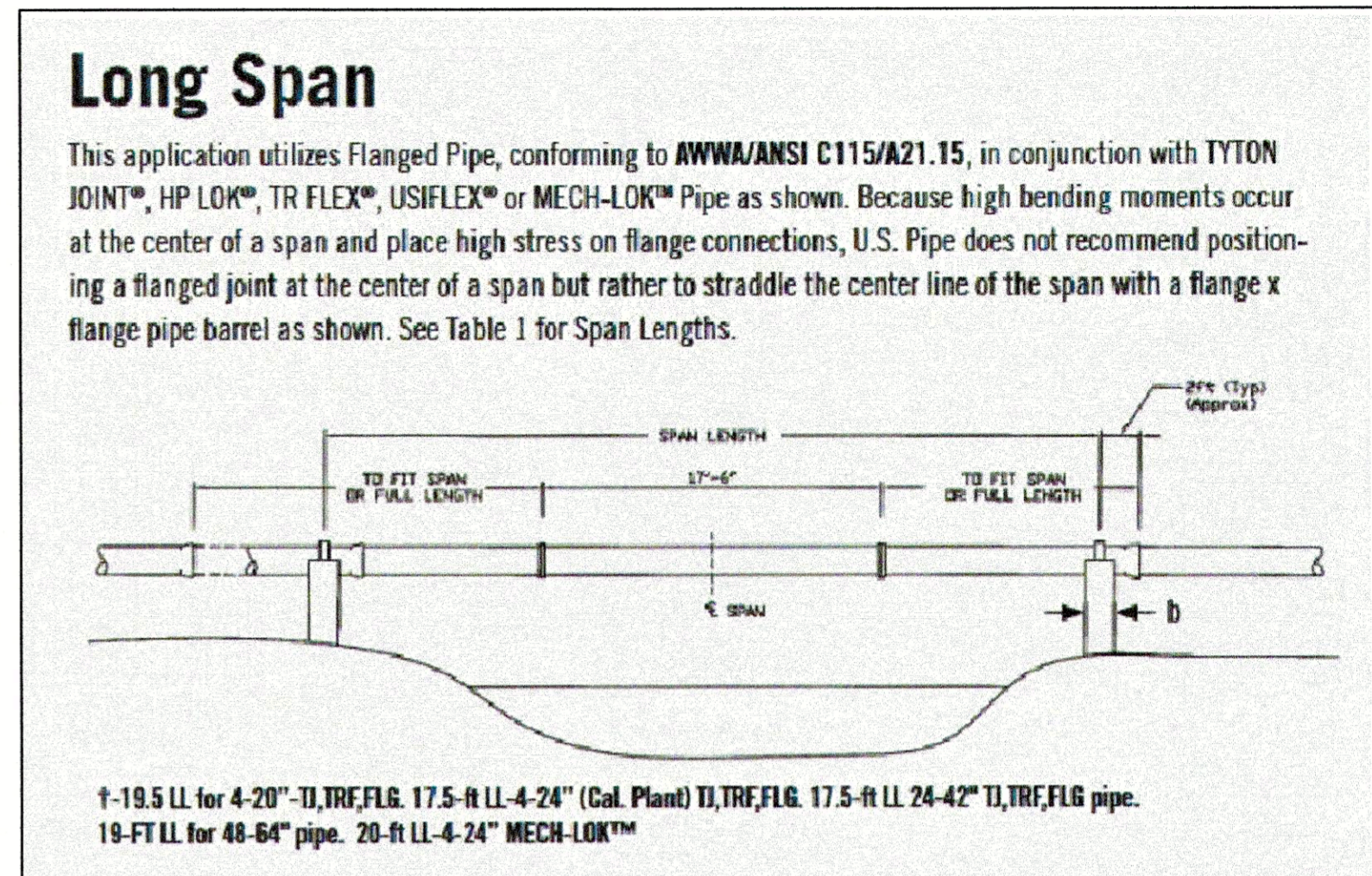
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SEEDING SPECIFICATIONS
SCALE: Not To Scale
REVISION DATE: June, 2015
DETAIL # 350.01
SHEET # 1 of 1

SEEDBED PREPARATION:
CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3" DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
RIP ENTIRE AREA 6" DEEP.
REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
APPLY AGRICULTURAL LIME AND FERTILIZER UNIFORMLY AND MIX WITH SOIL.
CONTINUE TILLAGE UNTIL A WELL PULVERIZED, REASONABLY UNIFORM SEEDBED IS PREPARED 4" TO 6" DEEP.
SPREAD SEED ON FRESHLY PREPARED SEEDBED AND COVER LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACKER AFTER SEEDING.
MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.

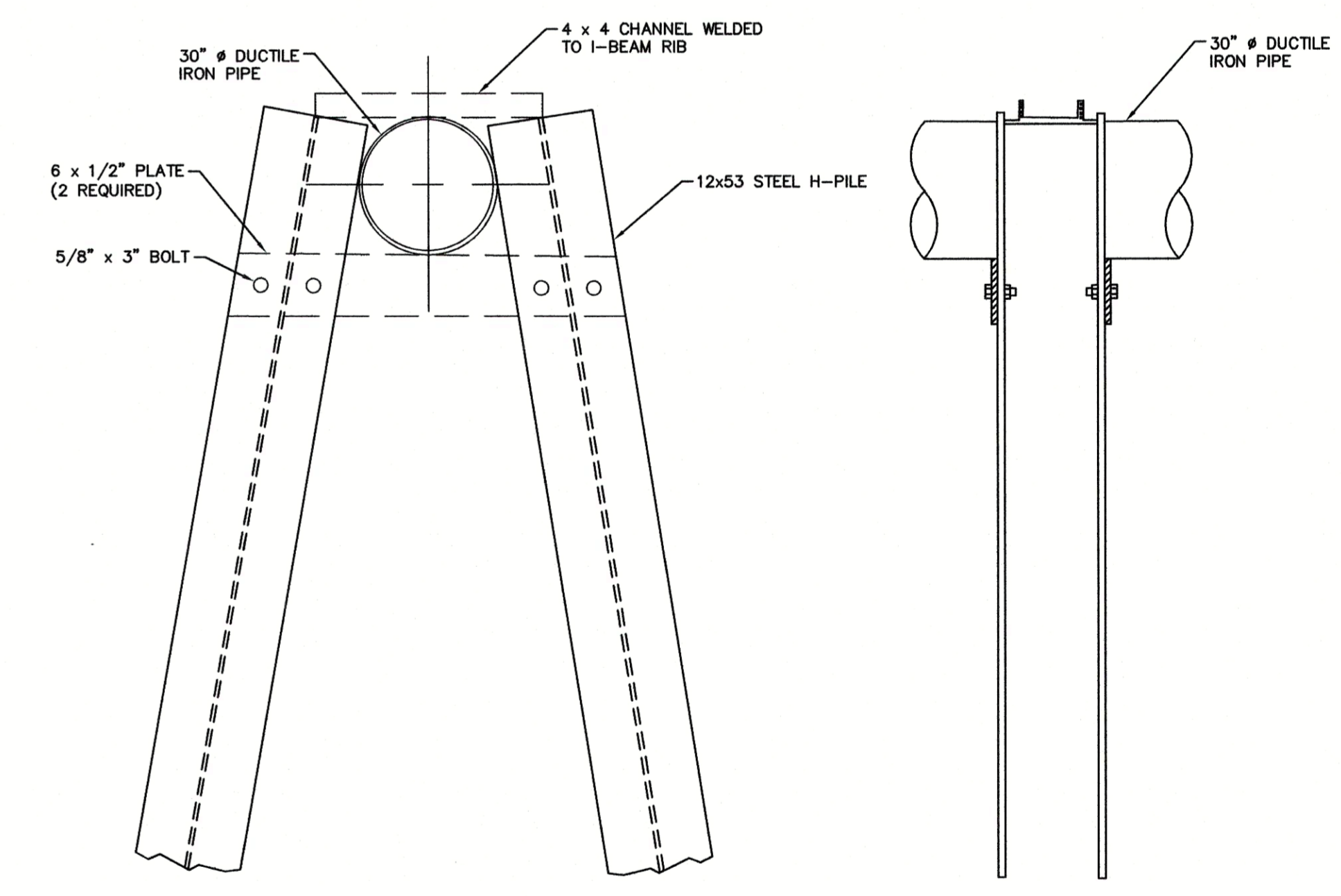
HYDROSEEDING
SURFACE ROUGHENING IS PARTICULARLY IMPORTANT WHEN HYDROSEEDING, AS A ROUGHENED SLOPE WILL PROVIDE SOME NATURAL COVERAGE FOR LIME, FERTILIZER, AND SEED. THE SURFACE SHOULD NOT BE COMPACTED OR SMOOTH. FINE SEEDBED PREPARATION IS NOT NECESSARY FOR HYDROSEEDING OPERATIONS: LARGE CLOUDS, STONES, AND IRREGULARITIES PROVIDE CAVITIES IN WHICH SEEDS CAN LODGE.
RATE OF WOOD FIBER (CELLULOSE) APPLICATION SHOULD BE AT LEAST 2,000 LB/ACRE.
APPLY LEGUME INOCULANTS AT FOUR TIMES THE RECOMMENDED RATE WHEN ADDING INOCULANT TO A HYDROSEEDER SLURRY.
IF A MACHINERY BREAKDOWN OF 1/2 TO 2 HOURS OCCURS, ADD 50% MORE SEED TO THE TASK, BASED ON THE PROPORTION OF THE SLURRY REMAINING. THIS SHOULD COMPENSATE FOR DAMAGE TO SEED. BEYOND 2 HOURS, FULL RATE OF NEW SEED MAY BE NECESSARY.
LIME IS NOT NORMALLY APPLIED WITH A HYDRAULIC SEEDER BECAUSE IT IS ABRASIVE. IT CAN BE BLOWN ONTO STEEP SLOPES IN DRY FORM.

CRIMPING STRAW MULCH
IF CRIMPING IS TO BE USED, APPLY 1/2 THE MULCH, THEN CRIMP, AND INSTALL THE OTHER HALF. CRIMPING CAN BE APPLIED TO AREAS ADJACENT TO ANY SECTION OF THE ROADWAY WHERE TRAFFIC IS TO BE MAINTAINED OR ALLOWED DURING CONSTRUCTION. IN AREAS WITHIN SIX FEET OF THE EDGE OF PAVEMENT, STRAW IS TO BE APPLIED AND THEN CRIMPED. AFTER THE CRIMPING OPERATION IS COMPLETE, AN ADDITIONAL APPLICATION OF STRAW SHALL BE APPLIED AND IMMEDIATELY TACKED WITH A SUFFICIENT AMOUNT OF UNDILUTED EMULSIFIED ASPHALT.
STRAW MULCH SHALL BE OF SUFFICIENT LENGTH AND QUALITY TO WITHSTAND THE CRIMPING OPERATION.
CRIMPING EQUIPMENT INCLUDING POWER SOURCE SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER PROVIDING THAT MAXIMUM SPACING OF CRIMPER BLADES SHALL NOT EXCEED 8".



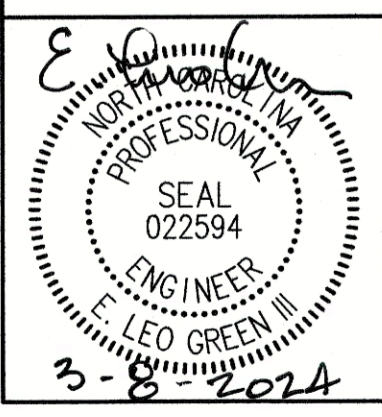
- CONSTRUCTION SEQUENCE:**
- SET UP BYPASS PUMP AND TEMPORARY PIPING. PLACE OUTLET OF TEMPORARY PIPE TO MINIMIZE EROSION AT DISCHARGE SITE OR PROVIDE TEMPORARY ENERGY DISSIPATION MEASURES. FIRMLY ANCHOR PUMP AND PIPING.
 - CONSTRUCT OUTLET PROTECTION IF NEEDED.
 - CONSTRUCT IMPERVIOUS DIKE UPSTREAM OF WORK AREA TO IMPOUND WATER FOR BYPASS PUMP INTAKE. USE A FLOATING INTAKE FOR PUMPS WHERE POSSIBLE.
 - CONSTRUCT AN IMPERVIOUS DIKE DOWNSTREAM, IF NECESSARY, TO ISOLATE WORK AREA.
 - CHECK OPERATION OF PUMP AND PIPING SYSTEM.
 - UPON COMPLETION OF CONSTRUCTION, REMOVE IMPERVIOUS DIKE, BYPASS PUMP, AND TEMPORARY PIPE.
- MAINTENANCE:**
- ROUTINELY INSPECT BYPASS PUMP AND TEMPORARY PIPING TO ENSURE PROPER OPERATION.
 - INSPECT IMPERVIOUS DIKE FOR LEAKS AND REPAIR ANY DAMAGE.
 - INSPECT DISCHARGE POINT FOR EROSION.
 - ENSURE FLOW IS ADEQUATELY DIVERTED THROUGH PIPE.

BYPASS PUMPING DETAIL
NO SCALE



STEEL PILE PIER DETAIL
NO SCALE

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**HOMINY SWAMP CANAL
SEWER LINE REPLACEMENT**

CITY OF WILSON WILSON COUNTY, NORTH CAROLINA

DETAILS

REVISION	DATE	BY	DATE: March 7, 2024
STREAM CROSSING AND STABILIZATION METHOD	5/31/23	JM	
CITY OF WILSON COMMENTS	3/7/24	JM	

CLIENT CODE: WILSO
JOB NUMBER: 23-016
FIELD BOOK: XXX
CADFILE: 23-016_CP.dwg
ASCII FILE:
LAST MODIFIED: 7-Mar-24
MODIFIED BY: JLM

SHEET NO. 6 OF 7

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ECMDS v7.0
ECMDS 7.0

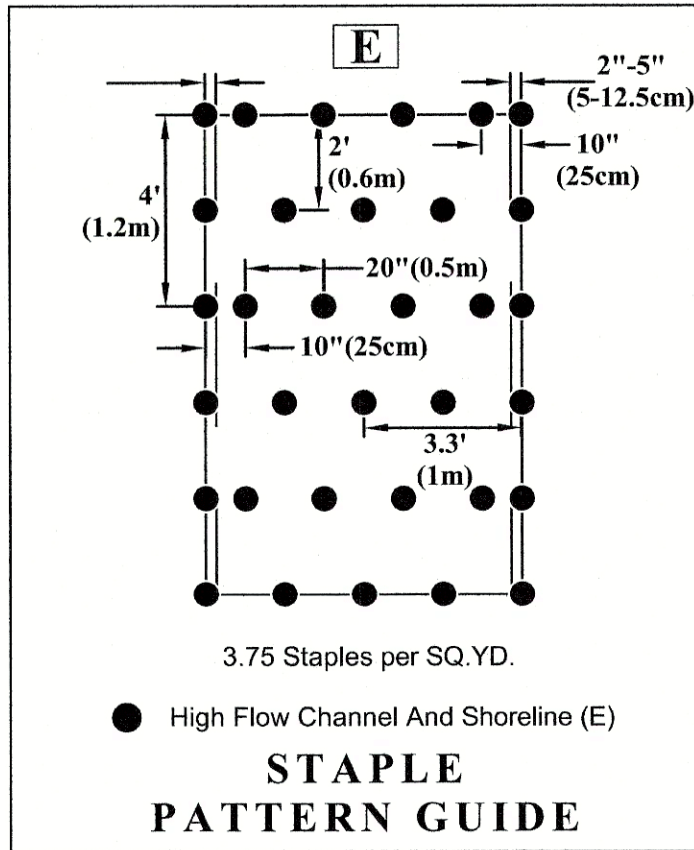


CHANNEL ANALYSIS
-> Hominy Swamp TMax P550

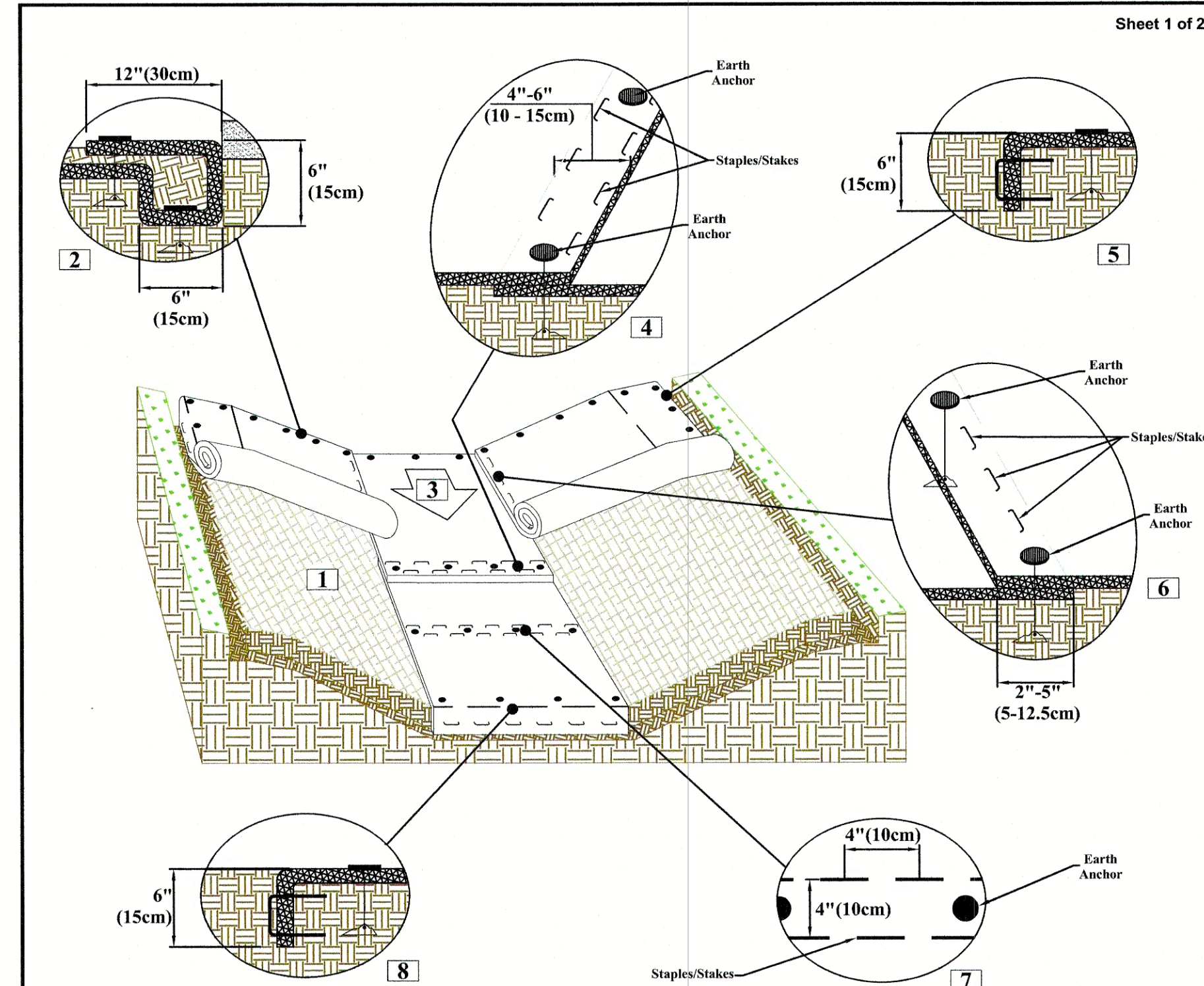
Name	Hominy Swamp TMax P550
Discharge	639 cfs
Channel Slope	0.003
Channel Bottom Width	25
Left Side Slope	1
Right Side Slope	1
Existing Bank Radius	60
Low Flow Line	
Retardance Class	C 6-12 in
Vegetation Type	None
Vegetation Density	None
Soil Type	Silt Loam (SM)

Phase	Reach	Discharge	Velocity	Normal Depth	Manning's N	Permissible Shear Stress	Calculated Shear Stress	Safety Factor	Remarks	Staple Pattern
TMax Unvegetated	Straight	639 cfs	5.05 ft/s	4.31 ft	0.036	2.3 lbf/ft ²	0.64 lbf/ft ²	2.85	STABLE	E
Underlying Substrate	Straight	639 cfs	5.05 ft/s	4.31 ft	0.036	1.68 lbf/ft ²	1.61 lbf/ft ²	1.43	STABLE	E
TMax Reinforced	Straight	639 cfs	3.94 ft/s	5.34 ft	0.052	16 lbf/ft ²	1.27 lbf/ft ²	1.32	STABLE	E
Underlying Substrate	Straight	639 cfs	3.94 ft/s	5.34 ft	0.052	2.3 lbf/ft ²	0.76 lbf/ft ²	3.04	STABLE	E
TMax Unvegetated	Bend	639 cfs	5.05 ft/s	4.31 ft	0.036	2.3 lbf/ft ²	1.61 lbf/ft ²	1.43	STABLE	E
Underlying Substrate	Bend	639 cfs	5.05 ft/s	4.31 ft	0.036	1.68 lbf/ft ²	1.27 lbf/ft ²	1.32	STABLE	E
TMax Reinforced	Bend	639 cfs	3.94 ft/s	5.34 ft	0.052	16 lbf/ft ²	2 lbf/ft ²	8	STABLE	E
Underlying Substrate	Bend	639 cfs	3.94 ft/s	5.34 ft	0.052	2.3 lbf/ft ²	1.51 lbf/ft ²	1.52	STABLE	E

Phase	Reach	Discharge	Velocity	Normal Depth	Manning's N	Permissible Shear Stress	Calculated Shear Stress	Safety Factor	Remarks	Staple Pattern
P550 Unvegetated	Straight	639 cfs	4.98 ft/s	4.37 ft	0.037	3.3 lbf/ft ²	0.82 lbf/ft ²	4.04	STABLE	E
Underlying Substrate	Straight	639 cfs	4.98 ft/s	4.37 ft	0.037	2.42 lbf/ft ²	0.64 lbf/ft ²	3.76	STABLE	E
P550 Reinforced	Straight	639 cfs	3.94 ft/s	5.34 ft	0.052	14 lbf/ft ²	1 lbf/ft ²	14	STABLE	E
Underlying Substrate	Straight	639 cfs	3.94 ft/s	5.34 ft	0.052	3.3 lbf/ft ²	0.76 lbf/ft ²	4.36	STABLE	E
P550 Unvegetated	Bend	639 cfs	4.98 ft/s	4.37 ft	0.037	3.3 lbf/ft ²	1.64 lbf/ft ²	2.02	STABLE	E
Underlying Substrate	Bend	639 cfs	4.98 ft/s	4.37 ft	0.037	2.42 lbf/ft ²	1.29 lbf/ft ²	1.88	STABLE	E
P550 Reinforced	Bend	639 cfs	3.94 ft/s	5.34 ft	0.052	14 lbf/ft ²	2 lbf/ft ²	7	STABLE	E
Underlying Substrate	Bend	639 cfs	3.94 ft/s	5.34 ft	0.052	3.3 lbf/ft ²	1.51 lbf/ft ²	2.18	STABLE	E



3.75 Staples per SQ.YD.
● High Flow Channel And Shoreline (E)
STAPLE PATTERN GUIDE



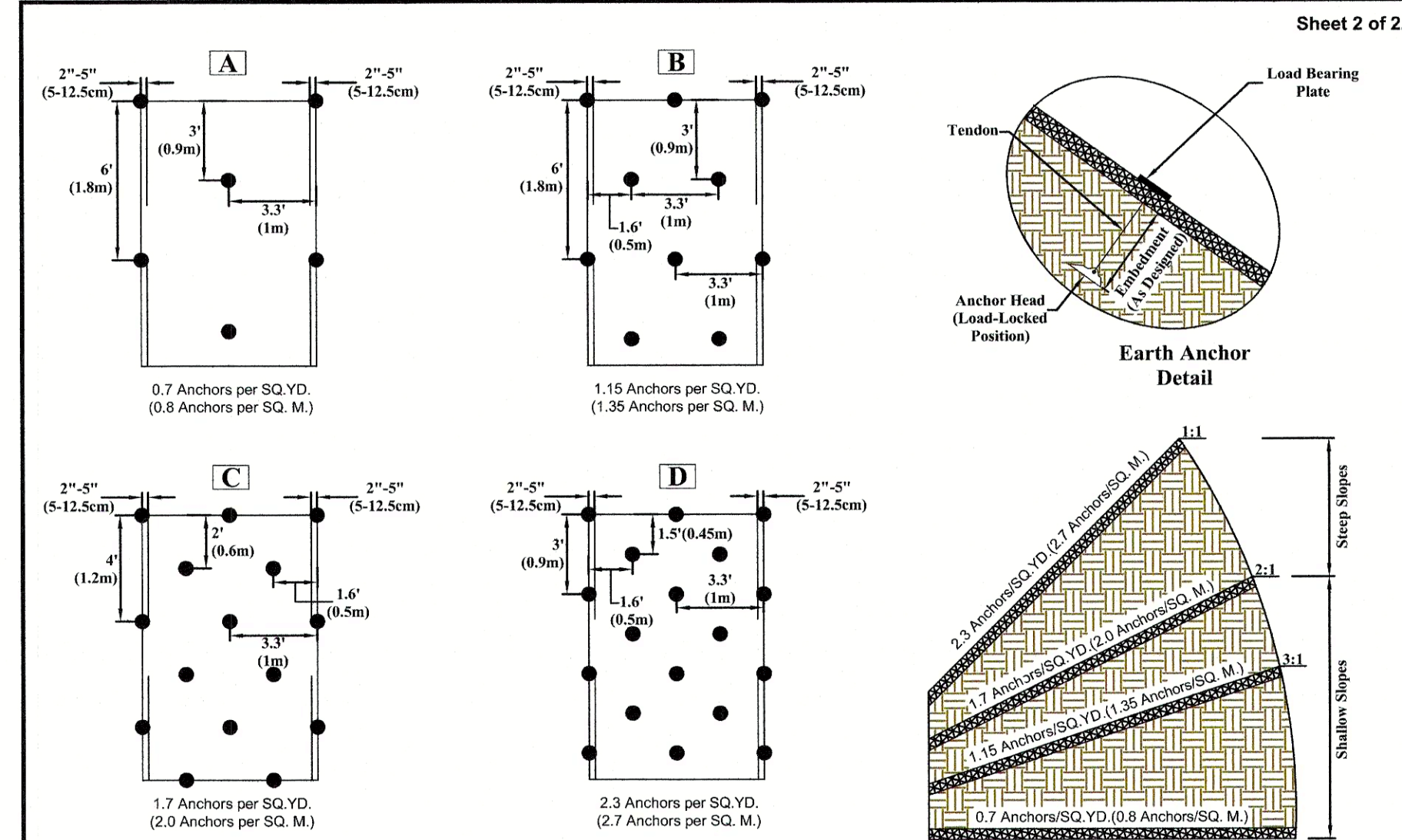
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Disclaimer:
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Drawn on: 03-07-11

CHANNEL INSTALLATION EARTH ANCHOR (EA) DETAIL

1. Prepare soil before installing TRM, including any necessary application of lime, fertilizer, and seed.
2. Begin at the top of the channel by anchoring the TRM in a 6" (15 cm) deep x 6" (15cm) wide trench with approximately 12" (30 cm) of TRM extended beyond the up-slope portion of the trench. Use ShoreMax mat at the channel/culvert outlet as supplemental scour protection as needed. Anchor the TRM with a row of staples and anchors approximately 12" (30 cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to compacted soil and fold remaining 12" (30 cm) portion of TRM back over seed and compacted soil. Secure TRM over soil with a row of staples and anchors spaced approximately 12" (30 cm) across the width of the TRM.
3. Roll center TRM in direction of water flow in bottom of channel. TRM will unroll with appropriate side against the soil surface. All TRM must be securely fastened to soil surface by placing staples and anchors in appropriate locations as shown in the fastener pattern guide.
4. Place consecutive TRM end-over-end (single style) with a 4" - 6" (10 cm - 15 cm) overlap. Use a double row of staples staggered 4" (10 cm) apart and 4" (10 cm) on center to secure TRM.
5. Full length edge of TRM at top of side slopes must be anchored with a row of staples and anchors approximately 12" (30 cm) apart in a 6" (15 cm) deep x 6" (15cm) wide trench. Backfill and compact the trench after stapling.
6. Adjacent TRM must be overlapped approximately 2" - 5" (5 cm - 12.5 cm) (depending on TRM type) and fastened.
7. In high flow channel applications, a staple check slot is recommended at 30 to 40 foot (9 - 12 m) intervals. Use a double row of staples staggered 4" (10 cm) apart and 4" (10cm) on center over entire width of the channel.
8. The terminal end of the TRM must be anchored with a row of stakes and anchors approximately 12" (30 cm) apart in a 6" (15 cm) deep x 6" (15 cm) wide trench. Backfill and compact the trench after stapling.



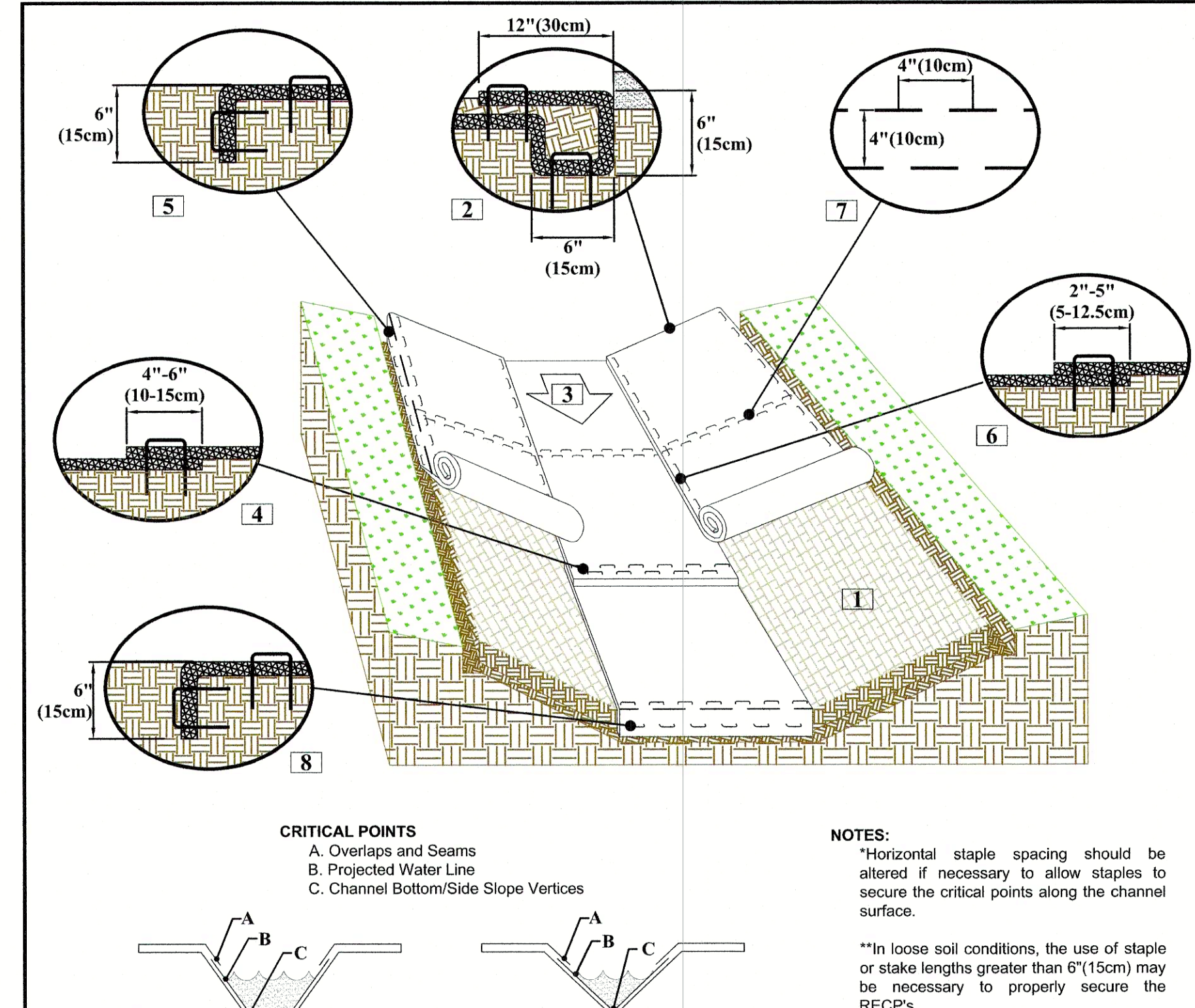
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NOTES:
* The performance of ground anchoring devices is highly dependent on numerous site/project specific variables. It is the sole responsibility of the project engineer and/or contractor to select the appropriate anchor type and length. Anchoring shall be selected to hold the mat in intimate contact with the soil subgrade and resist pullout in accordance with the project's design intent.
* Anchor Pattern Guide can vary based on earth anchor and blanket selection.
* If desired, the system can be soil-filled and sodded after TRM installation. Sod should be staples/staked according to plan specifications.

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

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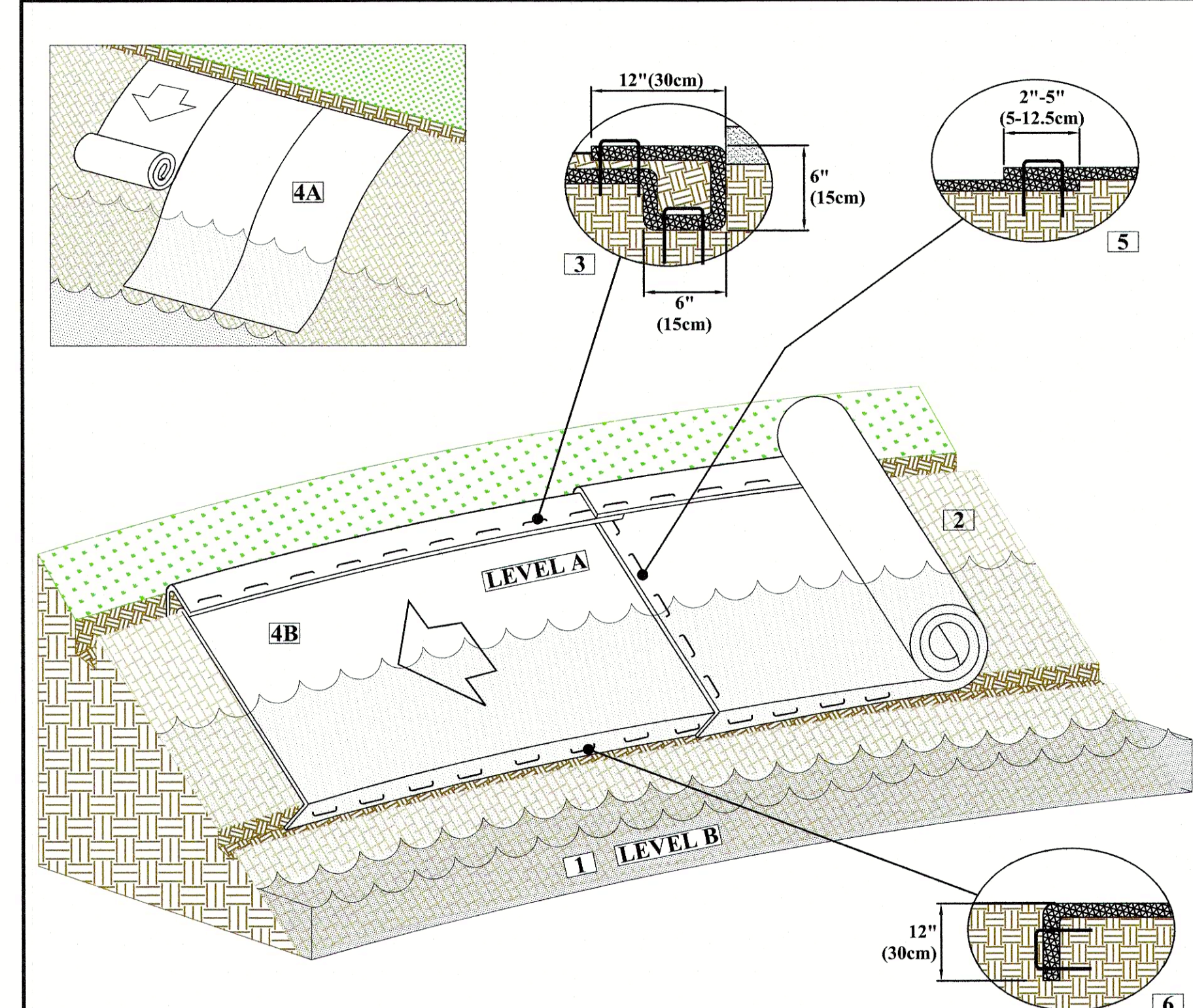
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Drawn on: 3-16-11

CHANNEL INSTALLATION DETAIL

1. Prepare soil before installing rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed.
2. Begin at the top of the channel by anchoring the RECPs in a 6" (15cm) deep x 6" (15cm) wide trench with approximately 12" (30cm) of RECPs extended beyond the up-slope portion of the trench. Use ShoreMax mat at the channel/culvert outlet as supplemental scour protection as needed. Anchor the RECPs with a row of staples/stakes approximately 12" (30cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to compacted soil and fold the remaining 12" (30cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes spaced approximately 12" (30cm) across the width of the RECPs.
3. Roll center RECPs in direction of water flow in bottom of channel. RECPs will unroll with appropriate side against the soil surface. All RECPs must be securely fastened to soil surface by placing staples/stakes in appropriate locations as shown in the staple pattern guide.
4. Place consecutive RECPs end-over-end (Single style) with a 4"-6" overlap. Use a double row of staples staggered 4" apart and 4" on center to secure RECPs.
5. Full length edge of RECPs at top of side slopes must be anchored with a row of staples/stakes approximately 12" (30cm) apart in a 6" (15 cm) deep x 6" (15cm) wide trench. Backfill and compact the trench after stapling.
6. Adjacent RECPs must be overlapped approximately 2" - 5" (5-12.5cm) (Depending on RECPs type) and stapled.
7. In high flow channel applications a staple check slot is recommended at 30 to 40 foot (9 - 12m) intervals. Use a double row of staples staggered 4" (10cm) apart and 4" (10cm) on center over entire width of the channel.
8. The terminal end of the RECPs must be anchored with a row of staples/stakes approximately 12" (30cm) apart in a 6" (15cm) deep x 6" (15cm) wide trench. Backfill and compact the trench after stapling.



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Drawn on: 3-16-11

SHORELINE/STREAMBANK INSTALLATION DETAIL

1. For easier installation, lower water level from Level A to Level B before installation.
2. Prepare soil before installing rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed.
3. Begin at the top of the shoreline by anchoring the RECPs in a 6" (15cm) deep x 6" (15cm) wide trench with approximately 12" (30cm) of RECPs extended beyond the up-slope portion of the trench. Use ShoreMax mat at the channel/culvert outlet as supplemental scour protection as needed. Anchor the RECPs with a row of staples/stakes approximately 12" (30cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to compacted soil and fold the remaining 12" (30cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes spaced approximately 12" (30cm) across the width of the RECPs.
4. Roll RECPs either (A) down the shoreline for long banks (top to bottom) or (B) horizontally across the shoreline slope. RECPs will unroll with appropriate side against the soil surface. All RECPs must be securely fastened to soil surface by placing staples/stakes in appropriate locations as shown in the staple pattern guide.
5. The edges of all horizontal and vertical seams must be stapled with approximately 2" - 5" (5-12.5cm) overlap. Note: In streambank applications seam overlaps should be shingled in the predominant flow direction.
6. The edges of the RECPs at or below normal water level must be anchored by placing the RECPs in a 12" (30cm) deep x 6" (15cm) wide anchor trench. Anchor the RECPs with a row of staples/stakes spaced approximately 12" (30cm) apart in the trench. Backfill and compact the trench after stapling (stone or soil may be used as backfill). For installation at or below normal water level, use of ShoreMax mat on top of the RECP or geotextile may be recommended.

NOTES:
* In loose soil conditions, the use of staple or stake lengths greater than 6" may be necessary to properly secure the RECPs.
** Bottom anchor trench can be eliminated when using ShoreMax mat over RECP along the bottom edge.

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HOMINY SWAMP CANAL SEWER LINE REPLACEMENT

CITY OF WILSON WILSON COUNTY, NORTH CAROLINA

DETAILS

REVISION	DATE	BY	DATE: March 7, 2024
STREAM CROSSING AND STABILIZATION METHOD	5/31/23	JM	
CITY OF WILSON COMMENTS	3/7/24	JM	

CLIENT CODE: WILSO
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LAST MODIFIED: 7-Mar-24
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SHEET NO. 7 OF 7