

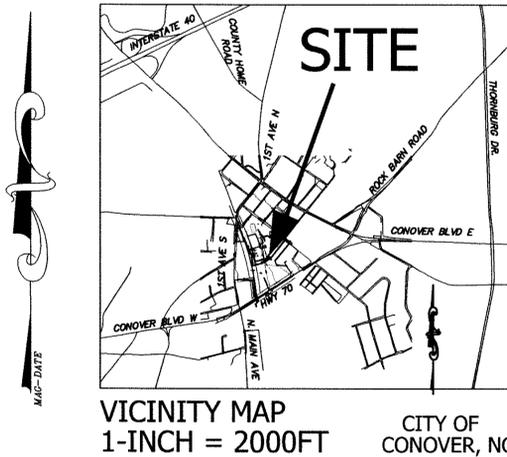
CONOVER STATION WETLANDS & RIPARIAN BUFFER

LOCATION: BETWEEN US-70 & FIFTH AVE. SE (403 CONOVER STATION, SE), CITY OF CONOVER, NORTH CAROLINA - CATAWBA COUNTY

OWNER: CITY OF CONOVER

GENERAL NOTES:

1. CONTRACTOR SHALL VISIT THE SITE, BECOME FAMILIAR WITH ACTUAL CONDITIONS, AND SHALL VERIFY EXISTING FIELD CONDITIONS.
2. CONTRACTOR SHALL PROMPTLY REPORT IN WRITING TO THE ENGINEER, DISCREPANCIES AND CONDITIONS THAT VARY FROM INFORMATION SHOWN AND SPECIFIED THAT COULD ADVERSELY AFFECT THE PERFORMANCE OR INCREASE THE COST OF THE WORK REQUIRED.
3. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER AND CITY OF ANY DISCREPANCIES WITH WHAT IS SHOWN ON THESE DRAWINGS.
4. CONTRACTOR IS RESPONSIBLE FOR TEMPORARILY INTERRUPTING AND/OR DIVERTING ANY UTILITIES DURING CONSTRUCTION. CONTRACTOR SHALL NOTIFY UTILITY PROVIDERS PRIOR TO EXCAVATION OR RELOCATION OF ANY UTILITY ENCOUNTERED (SUCH AS GAS, CABLE AND PHONE) AND SHALL COORDINATE WITH ALL UTILITIES IN ORDER TO MAINTAIN SERVICE. INTERRUPTIONS SHALL BE KEPT TO A MINIMUM.
5. CONTRACTOR SHALL USE RUBBER Tired EQUIPMENT ONLY IN THE AREA OF THE STREAM DIVERSION PORTION OF THE PROJECT DOWNSTREAM TO THE PROPOSED STREAM TIE-IN TO EXISTING STREAM CHANNEL.
6. ALL EROSION CONTROL MEASURES SHALL MEET THE LATEST VERSION OF STANDARD EROSION CONTROL DETAILS AND/OR SPECIFICATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES (NCDENR).
7. PERMITS HAVE BEEN/WILL BE OBTAINED FROM NC DENR AND U.S. ARMY CORPS OF ENGINEERS FOR THE PROJECT. CONTRACTOR SHALL COMPLY WITH ALL PERMIT CONDITIONS.



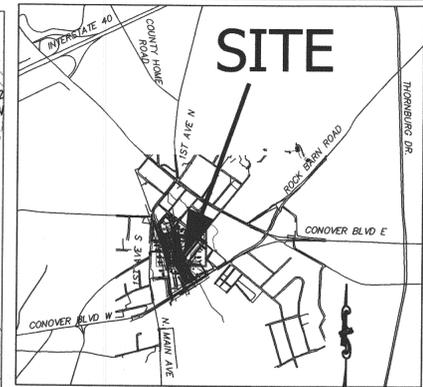
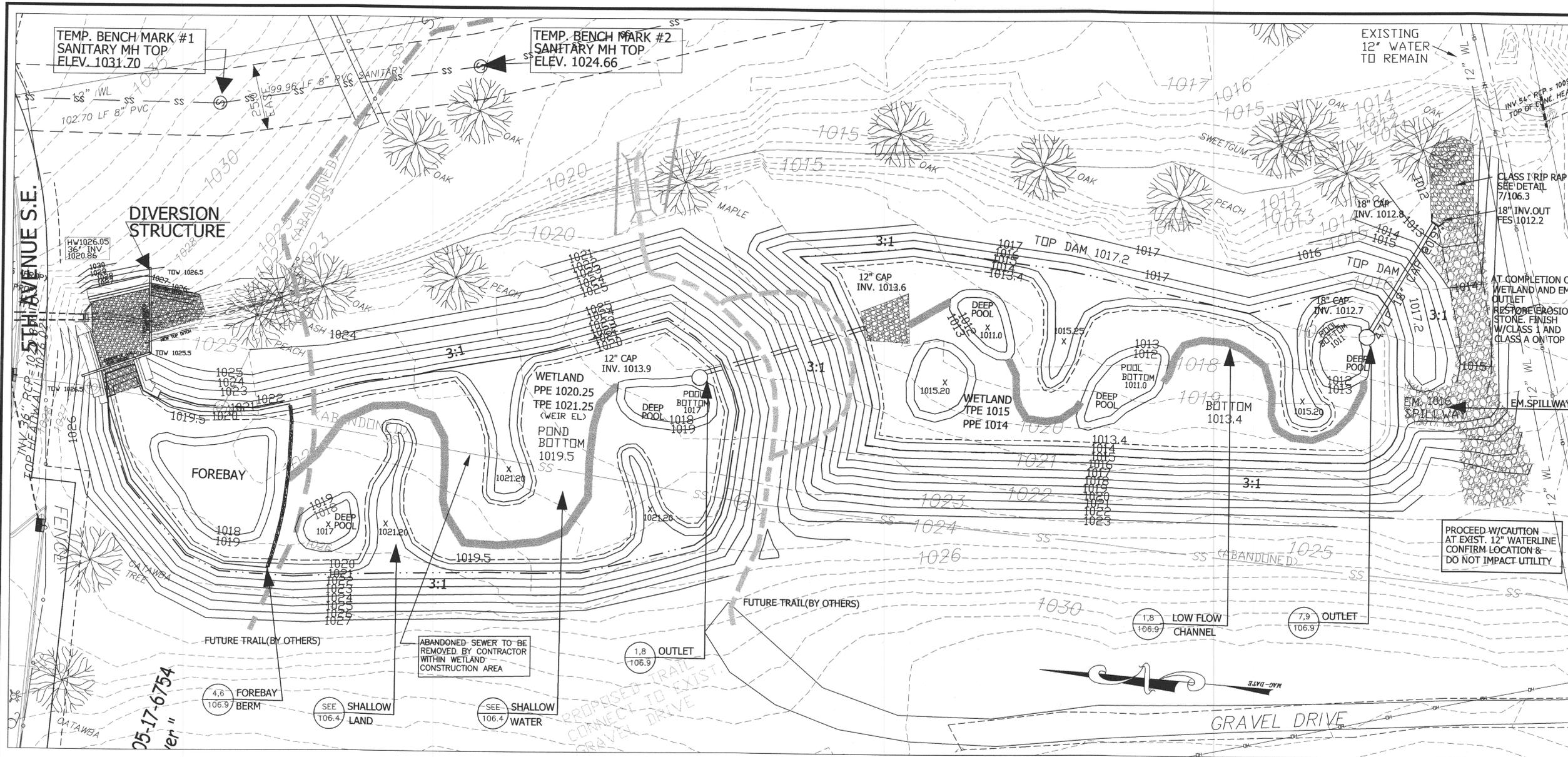
INDEX OF SHEETS

GENERAL

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JEWELL
ENGINEERING CONSULTANTS
POST OFFICE BOX 2294 (336) 996-9974
KERNERSVILLE, NORTH CAROLINA 27285 FAX: (336) 996-9976
NC LICENSE C-1842





VICINITY MAP
1-INCH = 2000FT
CITY OF CONOVER, NC

LEGEND

SILT FENCE	— SF
CENTERLINE	—
CREEK	—
CHAIN LINK FENCE	— X
EASEMENT BOUNDARY	—
ELECTRIC SERVICE N/L	— OH
FILTER FABRIC	— FF
GABION BASKET	—
GIS BLDG	—
GIS LOT LINE	—
GIS R/W	—
INDEX CONTOUR	— 150
INTERMEDIATE CONTOUR	— 150
LOT NUMBER	— (6)
OVERHEAD POWER LINE	— OH
POWER POLE	—
ROLL CONCRETE CURB	—
SANITARY SEWER LINE	— SS
SANITARY SEWER MANHOLE	—
STORM DRAIN HEADWALL	—
STORM DRAIN MANHOLE	— (D)
STORM DRAIN DROP INLET	—
STORM DRAIN CATCH BASIN	—
STORM DRAIN PIPE	—
TREE OR VEGETATION	—
WATER MAIN GATE VALVE	—
WATER MAIN FIRE HYDRANT	—
WATER MAIN*	— 12" WATER
WATER METER	—

* UTILITIES SHOWN AS APPROXIMATE LOCATIONS ONLY

PROCEED W/CAUTION AT EXIST. 12" WATERLINE. CONFIRM LOCATION & DO NOT IMPACT UTILITY.

WETLAND AND FOREBAY NOTES (SAVE FOR MAINTENANCE)

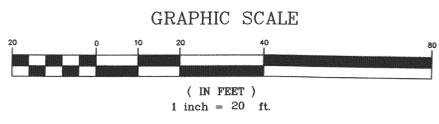
WETLANDS	POTENTIAL PROBLEM	HOW TO REMEDIATE THE PROBLEM
PROJECT AND WETLAND AREAS	TRASH/DEBRIS IS PRESENT.	REMOVE THE TRASH/DEBRIS.
PERIMETER OF WETLAND	AREAS OF BARE SOIL AND/OR EROSION GULLIES HAVE FORMED.	REGRADE THE SOIL IF NECESSARY TO REMOVE THE GULLY, AND THEN PLANT A GROUND COVER AND WATER UNTIL IT IS ESTABLISHED. PROVIDE LIME AND A ONE-TIME FERTILIZER APPLICATION.
	VEGETATION IS TOO SHORT OR TOO LONG.	MAINTAIN VEGETATION AT AN APPROPRIATE HEIGHT.
INLET DEVICE: PIPE OR SWALE	THE PIPE IS CLOGGED (IF APPLICABLE).	UNCLOG THE PIPE. DISPOSE OF THE SEDIMENT OFFSITE.
	THE PIPE IS CRACKED OR OTHERWISE DAMAGED (IF APPLICABLE).	REPLACE THE PIPE.
	EROSION IS OCCURRING IN THE SWALE (IF APPLICABLE).	REGRADE THE SWALE IF NECESSARY TO SMOOTH IT OVER AND PROVIDE EROSION CONTROL DEVICES SUCH AS REINFORCED TURF MATTING OR RIPRAP TO AVOID FUTURE PROBLEMS WITH EROSION.
FOREBAY	SEDIMENT HAS ACCUMULATED IN THE FOREBAY TO A DEPTH THAT INHIBITS THE FOREBAY FROM FUNCTIONING WELL.	SEARCH FOR THE SOURCE OF THE SEDIMENT AND REMEDY THE PROBLEM IF POSSIBLE. REMOVE THE SEDIMENT AND DISPOSE OF IT IN A LOCATION WHERE IT WILL NOT CAUSE IMPACTS TO STREAMS OR THE BMP.
	EROSION HAS OCCURRED.	PROVIDE ADDITIONAL EROSION PROTECTION SUCH AS REINFORCED TURF MATTING OR RIPRAP IF NEEDED TO PREVENT FUTURE EROSION PROBLEMS.
	WEEDS ARE PRESENT.	REMOVE THE WEEDS, PREFERABLY BY HAND. IF A PESTICIDE IS USED, WIPE IT ON THE PLANTS RATHER THAN SPRAYING.
DEEP POOL, SHALLOW WATER AND SHALLOW LAND AREAS	ALGAL GROWTH COVERS OVER 50% OF THE DEEP POOL AND SHALLOW WATER AREAS.	CONSULT A PROFESSIONAL TO REMOVE AND CONTROL THE ALGAL GROWTH.
	CATTAILS, PHRAGMITES OR OTHER INVASIVE PLANTS COVER 50% OF THE DEEP POOL AND SHALLOW WATER AREAS.	REMOVE THE INVASIVES BY PHYSICAL REMOVAL OR BY WIPING THEM WITH PESTICIDE (DO NOT SPRAY) - CONSULT A PROFESSIONAL.
	SHALLOW LAND REMAINS FLOODED MORE THAN 5 DAYS AFTER A STORM EVENT.	UNCLOG THE OUTLET DEVICE IMMEDIATELY.
	PLANTS ARE DEAD, DISEASED OR DYING.	DETERMINE THE SOURCE OF THE PROBLEM: SOILS, HYDROLOGY, DISEASE, ETC. REMEDY THE PROBLEM AND REPLACE PLANTS. PROVIDE A ONE-TIME FERTILIZER APPLICATION TO ESTABLISH THE GROUND COVER IF NECESSARY.

SEE SHEET 106.4 FOR WETLAND PLANTS MAINTENANCE.

NOTES:

- FIELD SURVEY DATA PROVIDED BY ROY TURNER, PLS JUNE 15, 2009, WRIGHT & ASSOCIATES ENGINEERS & SURVEYORS AND ADDITIONAL ELEVATION DATA BY DARRIN REID SURVEYING, DECEMBER, 2011.
- UTILITIES SHOWN PER AS-BUILT DRAWINGS BY DAVIS & FLOYD ENGINEERING, ARCHITECTURE, ENVIRONMENTAL & LABORATORY SERVICES, DATED 8/5/2010. UTILITY LOCATIONS ARE APPROXIMATE. BENCH MARKS #1 AND #2 AT MANHOLE TOP (RM) AS LOCATED BY REID SURVEYING, DECEMBER, 2012.
- RIVER BASIN: CATAWBA
- BUFFER REQUIREMENTS APPLY TO CATAWBA MAINSTEM RIVER AND LAKES ONLY (CATAWBA BUFFER REQUIREMENTS NOT APPLICABLE TO THIS PROJECT).
- LESS THAN 150 LF STREAM DISTURBANCE
- DISTURBED AREA: 3.16ACRES (DOES NOT INCLUDE STOCKPILE LOCATION)
- STOCKPILE LOCATION PREVIOUSLY PERMITTED BY NCDENR, DIV OF LAND QUALITY.
- SURVEY ELEVATIONS FREQUENTLY.
- ALL EROSION CONTROL DEVICES SHALL BE INSTALLED PER SHEET 106.7
- DEMOLITION SHALL INCLUDE MINIMAL TREES (REMOVAL REQUIRES ENGINEER APPROVAL) STUMPS, BRUSH, VEGETATION, TRASH, DEBRIS, WASTE CONCRETE & MASONRY, WASTE STONE, WASTE P PIPING AND ANY OTHER UNSUITABLE MATERIAL FROM WITHIN THE PROJECT AREA BOUNDARY AND/OR DISTURBED LIMITS.
- CONTRACTOR SHALL TAKE GREAT CARE NOT TO DISTURB OR CROSS/ENTER THE EXISTING STREAM.

VERIFICATION OF CRITICAL ELEVATIONS AND WETLAND MICRO-TOPOGRAPHY
Prior to planting and upon completion of wetland construction including completion of the berms, rough and fine grading, placement of rip rap and gabions, and installation of outlet structures, Contractor shall impound water in both wetlands up to the permanent pool elevations shown on the plans. In preparation for this event, Contractor shall notify the City and Engineer so that an inspection can be made of the wetlands to ensure grades and critical elevations have been achieved according to the plans. If necessary, Contractor will coordinate with the fire and utility departments to fill the wetlands from the City's municipal water supply.



WETLAND SITE/GRADING PLAN

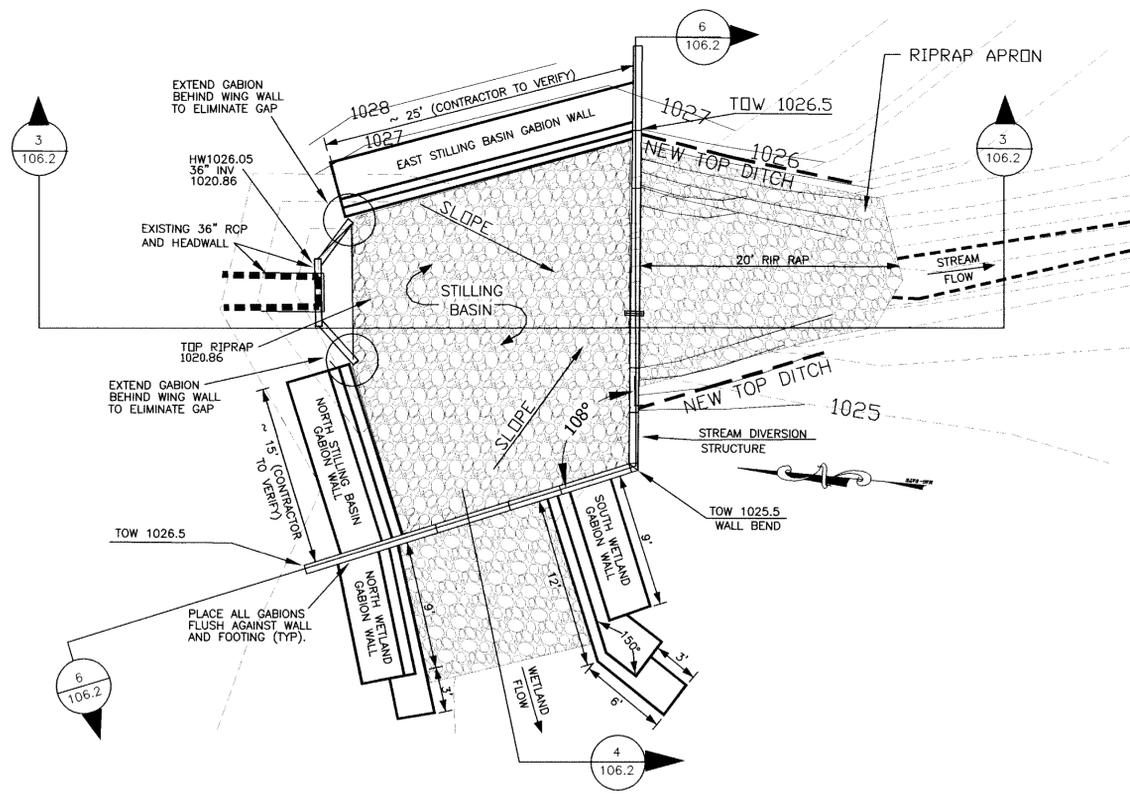
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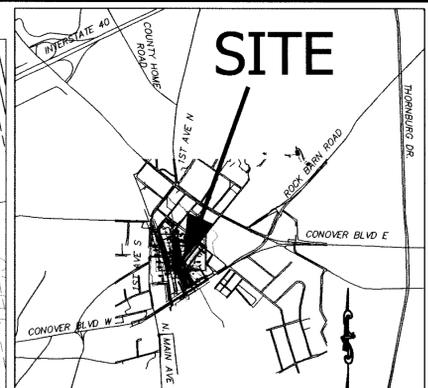
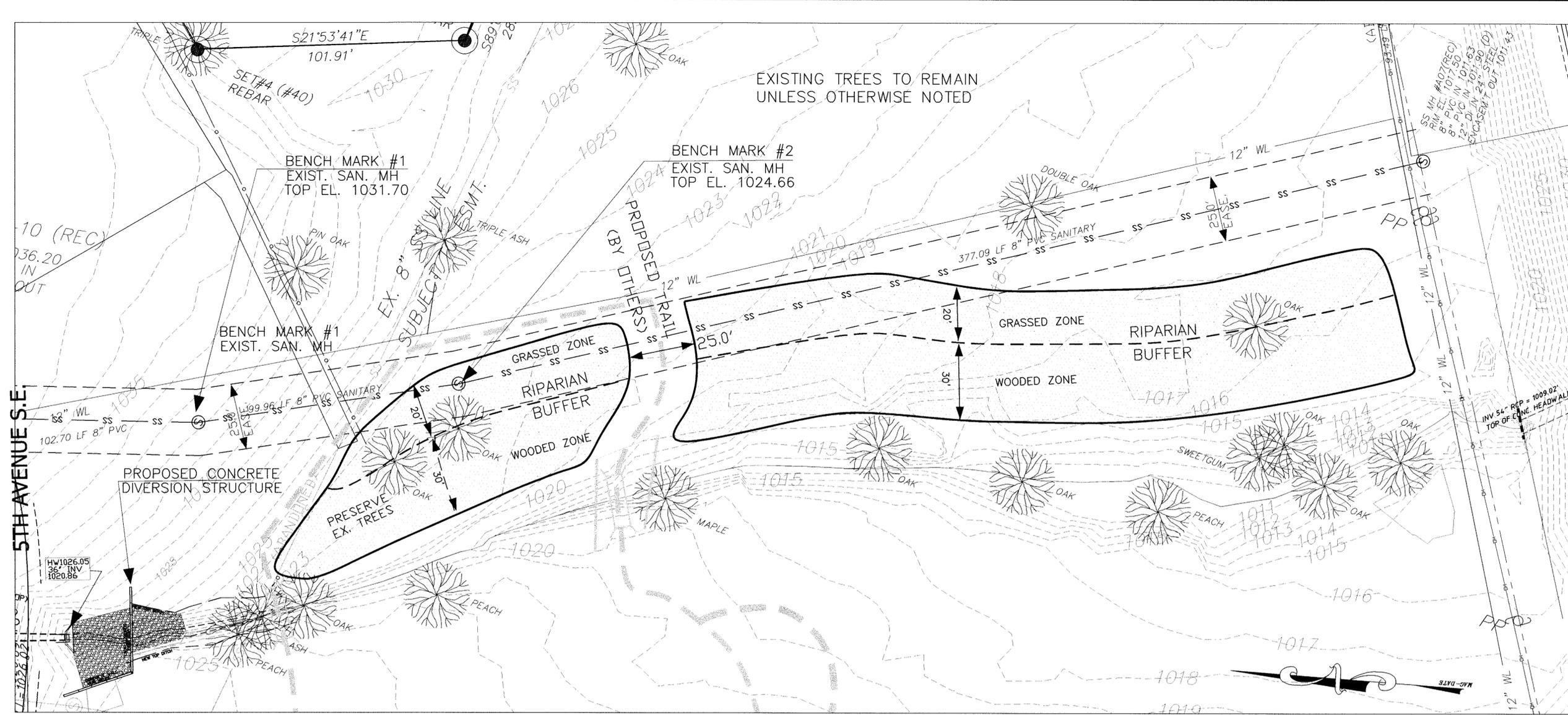
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CONST. SURVEY BY	
CHECKED BY CDJ	
SCALE: AS NOTED	

CONOVER STATION
WETLAND & RIPARIAN BUFFER PROJECT
CITY OF CONOVER,
NORTH CAROLINA

"C"
SHEET NO.
106.1







VICINITY MAP
1-INCH = 2000 FT
CITY OF CONOVER, NC

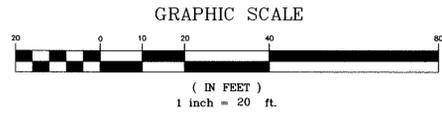
LEGEND

- SILT FENCE
- CENTERLINE
- CREEK
- CHAIN LINK FENCE
- EASEMENT BOUNDARY
- ELECTRIC SERVICE N/L
- FILTER FABRIC
- GABION BASKET
- GIS BLDG
- GIS LOT LINE
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- INDEX CONTOUR
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- WATER MAIN*
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* UTILITIES SHOWN AS APPROXIMATE LOCATIONS ONLY

- NOTES:
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 - RIVER BASIN: CATAWBA
 - CATAWBA COUNTY, CONOVER TOWNSHIP.
 - BUFFER REQUIREMENTS APPLY TO CATAWBA MAINSTEM RIVER AND LAKES ONLY (CATAWBA BUFFER REQUIREMENTS NOT APPLICABLE TO THIS PROJECT).
 - LESS THAN 150 LF STREAM DISTURBANCE
 - DISTURBED AREA: 3.16 ACRES (DOES NOT INCLUDE STOCKPILE LOCATION)
 - STOCKPILE LOCATION PREVIOUSLY PERMITTED.
 - RESTORED RIPARIAN BUFFER IS 50' WIDE AND INCLUDES TWO PLANTING ZONES. ZONE 1 STARTS AT THE TOP OF THE STREAM BANK AND EXTENDS LANDWARD A DISTANCE OF 30 FEET PERPENDICULAR TO THE STREAM. ZONE 1 CONSISTS PRIMARILY OF WOODED VEGETATION THAT MAY NOT BE DISTURBED EXCEPT FOR REMOVAL OF NUISANCE VEGETATION. ZONE 2 IS INTENDED TO DIFFUSE AND INFILTRATE RUNOFF AND FILTERING OF POLLUTANTS. IT MAY BE GRASSED, AND OTHER VEGETATION AND PERIODIC MAINTENANCE ARE ALLOWED.
 - NEW IMPERVIOUS SURFACE IN THE IMMEDIATE AREA ABOVE THE RIPARIAN BUFFER WILL REQUIRE THE USE OF A LEVEL SPREADER TO MAINTAIN DIFFUSE FLOW DRAINING INTO THE RIPARIAN BUFFER. NO NEW DEVELOPMENT IS PROPOSED WITH THIS PROJECT.
 - WATERING MAY BE NECESSARY IN THE INITIAL YEAR OR DURING PERIODS OF DROUGHT, ESPECIALLY IF BARE ROOT MATERIAL IS INSTALLED.
 - ORGANIC MULCH SUCH AS WOOD CHIPS, LEAF LITTER, TREE BARK AND PINE NEEDLES SHOULD BE ADDED OR MAINTAINED AT A MINIMUM DEPTH OF 2-INCHES OVER NEWLY PLANTED TREE ROOTS WITHIN THE BUFFER. REMOVAL OF NATURAL LEAF LITTER FROM THE BUFFER IS STRONGLY DISCOURAGED.
 - INSPECTION QUARTERLY AND WITHIN 24 HOURS AFTER EVERY STORM EVENT GREATER THAN 1-INCH SHOULD BE PERFORMED AND ANY PROBLEMS FOUND SHOULD BE REPAIRED IMMEDIATELY.

- SEED BED PREPARATION
- MOW AND/OR BRUSH-HOG ENTIRE BUFFER AREA AT 6-INCH MAX HEIGHT. (PRESERVE EXISTING TREES (3) SHOWN ON PLAN.)
- WOODED_ZONE_1
- INSTALL PLANTS PER PLANTING DETAILS ON SHEET 106.5
- GRASSED_ZONE_2
- RIP_ZONE 2 AREA TO 6" DEPTH.
 - REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
 - OBTAIN SOIL TEST FOR pH AND LIME. APPLY AGRICULTURAL LIME AND FERTILIZER UNIFORMLY (IN ACCORDANCE WITH SOIL AMENDMENTS SPECIFICATIONS LISTED FOR THE RESPECTIVE SEEDING SCHEDULE) AND SOIL TEST RESULTS AND MIX WITH SOIL.
 - USE CONTACT HERBICIDE SUCH AS GLYPHOSATE TO REMOVE UNWANTED VEGETATION AND WEEDS IN PREPARATION FOR SEEDING.
 - SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT AFTER SEEDING AND SEED ACCORDING TO SCHEDULE.
 - MULCH IN ACCORDANCE WITH MULCH SPECIFICATIONS LISTED FOR THE RESPECTIVE SEEDING SCHEDULE IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
 - INSPECT ALL SEEDED AREAS FOR COMPLIANCE WITH THE REQUIREMENTS OF THE SEEDING SCHEDULE AND OTHER REQUIREMENTS LISTED ON THIS SHEET. IF STAND SHOULD BE OVER 60% DAMAGED, RE-ESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.



RIPARIAN BUFFER PLAN

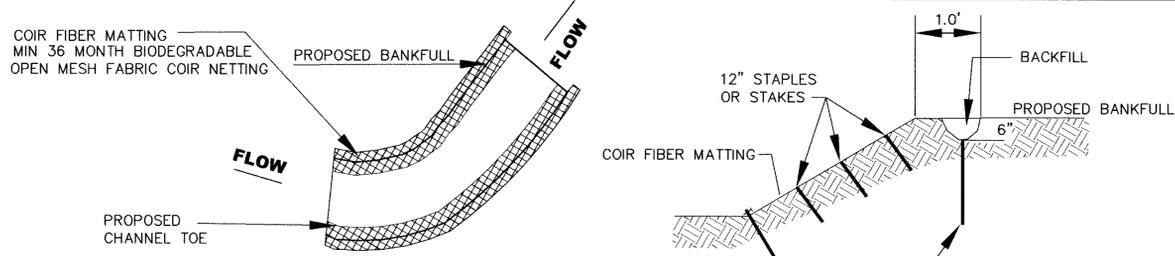
JEWELL
ENGINEERING CONSULTANTS, PC
POST OFFICE BOX 2294
KERNERSVILLE, NORTH CAROLINA 27285
(336) 996-9874
FAX: (336) 996-9876

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WETLAND & RIPARIAN BUFFER PROJECT
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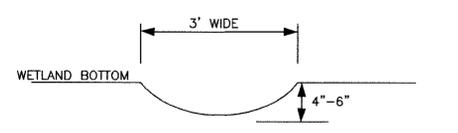
"C"
SHEET NO.
106.3





- NOTES:**
- COIR FIBER MATTING SHALL BE PLACED ON CHANNEL BANKS OF THE STREAM IF ANY OF THE BANK IS DAMAGED DURING CONSTRUCTION. SEED AND ANCHOR COIR WITH STAKES IN STREAM BANK REPAIR LOCATIONS.
 - FIBER MATTING FROM TOE OF CHANNEL TO 5 FT BEYOND BANKFULL.
 - USE WOOD STAKES (NOT METAL) FOR MATTING INSTALLED IN PUMP AROUNDS OR IN THE WET
 - USE OF METAL STAPLES IS ACCEPTABLE WHEN CONSTRUCTING IN THE DRY AND VEGETATION IS ESTABLISHED PRIOR TO DIVERTING WATER.
 - NO PLASTIC MATTING THAT CAN ENTRAP SMALL ANIMALS SHALL BE USED FOR STREAMBANK STABILIZATION OR OTHER DISTURBED AREAS REQUIRING MATTING STABILIZATION.

1 STREAM BANK REPAIR WITH COIR
106.4 NOT TO SCALE



3 LOW FLOW SECTION
106.4 NOT TO SCALE



4 SHALLOW LAND SECTION
106.4 NOT TO SCALE

- WETLAND CONSTRUCTION**
- EXCAVATE TOP SOIL FROM SITE & STORE SEPARATELY TO USE FOR WETLAND LINER/PLANTING MEDIA.
 - PERFORM SOIL ANALYSIS ON STORED TOP SOIL TO DETERMINE THE FOLLOWING: SOIL PH, SOIL CONTENT (%clay, organic material, etc) AND NUTRIENT CONTENT. PROVIDE SOIL ANALYSIS RESULTS TO ENGINEER AND CITY OF CONOVER.
 - IF NATIVE TOP SOIL IS FOUND UNSUITABLE, SOIL AMENDMENTS WILL BE NEEDED TO MIX WITH NATIVE SOIL PRIOR TO PLANTING (SEE SHEET 106.6, PLANTING NOTES).
 - USE TRACKED EXCAVATORS IN WETLAND EXCAVATION (NOT RUBBER TIRE VEHICLES) TO REDUCE POTENTIAL COMPACTION OF WETLAND SOIL.
 - USE TOOTHED, SWIVELING BUCKETS.
 - AVOID SMEARING OF SOIL IN WETLAND FEATURES AND ON BANKS. OPERATE WITH TEETH DOWN WHEN REMOVING SOILS OR GRADING BANKS OR INTERNAL FEATURES.
 - SURVEY ELEVATIONS FREQUENTLY.
 - EXCAVATE DEEPER THAN DESIGN GRADE TO ALLOW FOR TOP SOIL REPLACEMENT.
 - BEGIN IN UPPER WETLAND EXCAVATION AT OUTLET END AND WORK UPSTREAM. GABIONS SHALL BE INSTALLED WHEN THE CONCRETE DIVERSION STRUCTURE IS FINISHED.
 - REPLACE TOPSOIL AS WORK TOWARD INLET (FOREBAY) TO AVOID PUTTING EQUIPMENT BACK IN THE WETLAND.
 - PLACE RESERVED (AMENDED IF NECESSARY) TOPSOIL AT A DEPTH OF 4" TO 6". LOOSE TOP SOIL AT 0.1 FT. TO 0.2 FT. ABOVE DESIGN GRADE IS ACCEPTABLE.
 - BANKS SHOULD BE STABILIZED AT END OF EACH DAY.

- EARLY ESTABLISHMENT TIPS:**
- EXCESSIVE RAIN - FLOODING - ADJUST OUTLET TO LOWER WATER LEVEL IN WETLAND.
 - BANK EROSION - RESHAPE BANKS AND RESEED
 - DROUGHT - HAVE A PLAN TO HAVE IRRIGATION OR WATER DELIVERED
 - GEESE AND BURROWING ANIMALS CAN DAMAGE PLANTS AND BERMS. DISCOURAGING THESE ANIMALS FROM ENTERING THE AREA MAY BE NECESSARY TO PROTECT THE WETLAND.

- PLANT SURVIVAL**
- PLANTING STOCK ARRIVAL: PLANTS SHALL BE FREQUENTLY WATERED AND SHADED UNTIL PLANTING.
 - EIGHTY FIVE (85) PERCENT (%) SURVIVAL SHALL BE GUARANTEED (2-YEAR SURVIVAL RATE).
 - AT END OF YEAR AND AGAIN AT THE END OF THE TWO-YEAR WARRANTY PERIOD, ALL PLANTS THAT DO NOT SURVIVE MUST BE REPLACED.
 - THE WETLAND DRAIN SHOULD BE FULLY OPENED FOR NO MORE THAN 3 DAYS PRIOR TO PLANTING TO PRESERVE SOIL MOISTURE AND WORKABILITY.
 - OPTIMAL PLANTING SEASON: EARLY APRIL TO MID-JUNE.
 - PLANT IN WETLAND WHEN THE AREA IS WET. IT IS NOT NECESSARY TO HAVE 3" TO 5" WATER DEPTH AT TIME OF PLANTING.
 - TREES SHALL NOT BE PLANTED ON EMBANKMENT BERMS.
 - WETLAND SHOULD BE STAKED PRIOR TO PLANTING.
 - MEASURE WATER DEPTHS IN WETLAND PRIOR TO PLANTING TO CONFIRM PLANTING ZONES.
 - WATER LEVEL DEPTH: INCREASE WATER LEVEL DEPTH FROM 4" TO 6" TO TARGET DEPTH (9") AS PLANTS MATURE.
 - CONTROL OF INVASIVE WEEDS, ANIMAL AND VANDAL DAMAGE, WATERING SHALL BE IMPLEMENTED TO THE EXTENT NEEDED TO ENSURE PLANT SURVIVAL.
 - SEED AND PLACE COIR ON WETLAND EMBANKMENT WHERE THE STREAM BANK INTERSECTS AND WHERE STREAM BANK IS ERODED OR UNSTABLE (SEE STREAM BANK REPAIR WITH COIR-THIS SHEET).

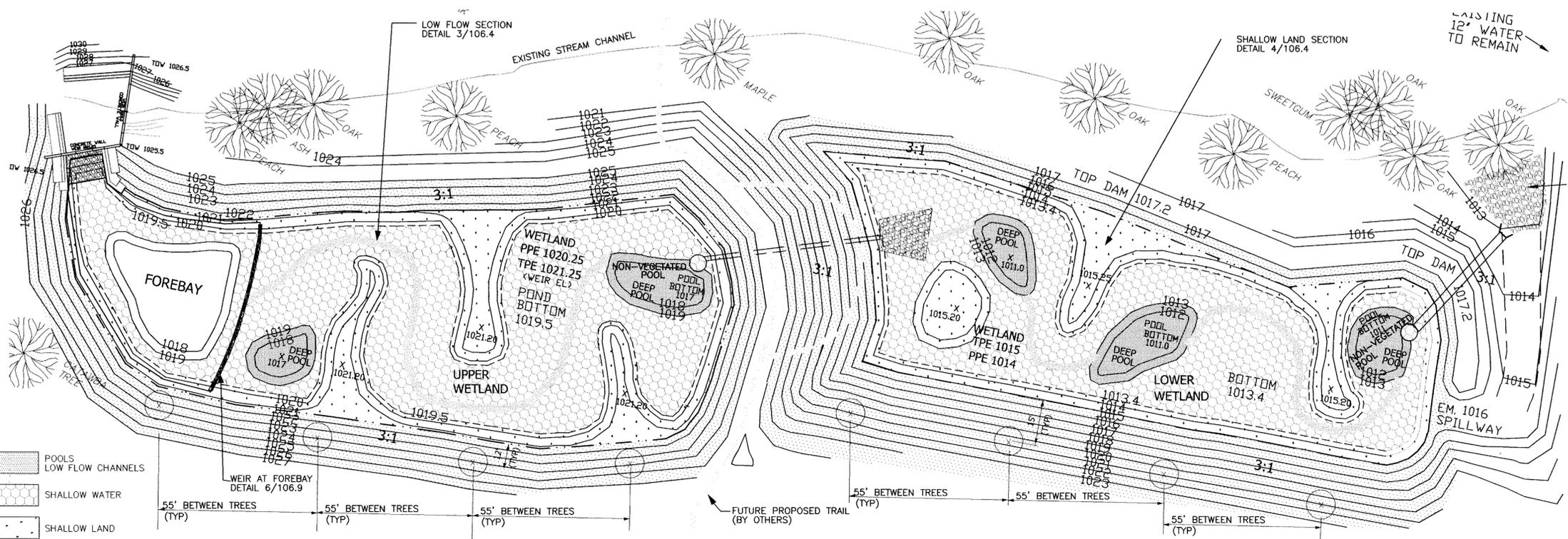
PLANTING LIST

	QTY	BOTANICAL	COMMON NAME	SIZE	NOTES
LOW FLOW POOLS	18	NELUMBO LUTEA	AMERICAN LOTUS	#32 PLUG	SPACE RANDOMLY
	50	ELODEA NUTTALLII	WESTERN WATERWEED	#32 PLUG	
SHALLOW WATER	75	ELEOCHARIS QUADRANGULATA	SQUARESTEM SPIKERUSH	#32 PLUG	PLANT SPACING APPROX. 2 X 2 UP TO 3 X 3 RANDOMLY SPACED WITHIN THE SHALLOW WATER ZONES
	75	PONTEDERIA CORDATA	PICKERELWEED	#32 PLUG	
	650	PONTEDERIA CORDATA	PICKERELWEED	#32 PLUG	
	200	HYDROLEA QUADRIVALVIS	WATERPOD	#32 PLUG	
	550	IRIS VIRGINICA	BLUE FLAG IRIS	#32 PLUG	
	500	PELTANDRA VIRGINICA	ARROW ARUM	#32 PLUG	
	300	SAGITTARIA LANCIFOLIA	BULLTONGUE	#32 PLUG	
	400	ZIZANIOPSIS MILIACEA	GIANT CUTGRASS	#32 PLUG	
	600	SAGITTARIA LATIFOLIA	DUCK POTATO	#32 PLUG	
	400	SAURURUS CERNUUS	LIZARD'S TAIL	#32 PLUG	
SHALLOW LAND	300	NUPHAR LUTEA	SPATTERDOCK	#32 PLUG	PLANT RANDOMLY ON BANK TO APPROX 4FT ABOVE THE WATER'S EDGE (EL. 1021.25 (TPE))
	250	CHELONE GLABRA	WHITE TURTLEHEAD	#38 PLUG	
	75	HIBISCUS COCCINEUS	SCARLET ROSE MALLOW	#38 PLUG	
	150	HIBISCUS LAEVIS	HALBERDLEAF ROSEMALLOW	#38 PLUG	
	300	LOBELIA CARDINALIS	CARDINAL FLOWER	#38 PLUG	
	225	LOBELIA SIPHILITICA	GREAT BLUE LOBELIA	#38 PLUG	
	250	RHYNCHOSPORA COLORATA	STARRUSH WHITETOP	#38 PLUG	
	200	ASCLEPIAS INCARNATA	SWAMP MILKWEED	#38 PLUG	
	15	VIBURNUM NUDUM "WINTERHUR"	SMOOTH ROD VIBURNUM	#18 PLUG	
	30	ROSA PALUSTRIS	SWAMP ROSE (FRAGRANT)	1-GAL	
WETLAND SLOPES	20	VIBURNUM NUDUM (SHRUB)	POSSUMHAW VIBURNUM	1-GAL	FOLLOW SPACING ON PLAN
	20	CORNUS AMONUM (SHRUB)	SILKY DOGWOOD	1-GAL	
	100	HYPERICUM DENSIFLORUM	BUSHY ST. JOHN'SWORT 'CREELS GOLD'	4" POT	
	8	BETULA NIGRA (TREE)	RIVER BIRCH	3-GAL	
		FESCUE BLEND TO STABILIZE WETLAND BANKS (NOT WITHIN STREAM BANKS)			HYDROSEED TO STABILIZE BANKS

WETLAND PLANTS MAINTENANCE

BMP ELEMENT	POTENTIAL PROBLEM	HOW TO REMEDIATE THE PROBLEM
DEEP POOL, SHALLOW WATER AND SHALLOW LAND AREAS	BEST PROFESSIONAL PRACTICES SHOW THAT PRUNING IS NEEDED TO MAINTAIN OPTIMAL PLANT HEALTH. SEDIMENT HAS ACCUMULATED AND REDUCED THE DEPTH TO 75% OF THE ORIGINAL DESIGN DEPTH OF THE DEEP POOLS.	PRUNE ACCORDING TO BEST PROFESSIONAL PRACTICES. SEARCH FOR THE SOURCE OF THE SEDIMENT AND REMEDY THE PROBLEM IF POSSIBLE. REMOVE THE SEDIMENT AND DISPOSE OF IT IN A LOCATION WHERE IT WILL NOT CAUSE IMPACTS TO STREAMS OR THE BMP.
EMBANKMENT	A TREE HAS STARTED TO GROW ON THE EMBANKMENT. AN ANNUAL INSPECTION BY APPROPRIATE PROFESSIONAL SHOWS THAT THE EMBANKMENT NEEDS REPAIR.	CONSULT A DAM SAFETY SPECIALIST TO REMOVE THE TREE. MAKE ALL NEEDED REPAIRS.
MICROPOOL	EVIDENCE OF MUSKRAT OR BEAVER ACTIVITY IS PRESENT. SEDIMENT HAS ACCUMULATED AND REDUCED THE DEPTH TO 75% OF THE ORIGINAL DESIGN DEPTH.	CONSULT A PROFESSIONAL TO REMOVE MUSKRATS OR BEAVERS. SEARCH FOR THE SOURCE OF THE SEDIMENT AND REMEDY THE PROBLEM IF POSSIBLE. REMOVE THE SEDIMENT AND DISPOSE OF IT IN A LOCATION WHERE IT WILL NOT CAUSE IMPACTS TO STREAMS OR THE BMP.
OUTLET STRUCTURE	CLOGGING HAS OCCURRED. THE OUTLET DEVICE IS DAMAGED.	CLEAN OUT THE OUTLET DEVICE. DISPOSE OF THE SEDIMENT OFF-SITE. REPAIR OR REPLACE THE OUTLET DEVICE.
RECEIVING WATER	EROSION OR OTHER SIGNS OF DAMAGE HAVE OCCURRED AT THE OUTLET.	CONTACT THE NC DIVISION OF WATER QUALITY 401 OVERSIGHT UNIT AT 919-733-1786.

- SEEDING/PLANTING NOTES:**
- WATER ALL PLANTS THOROUGHLY AT ARRIVAL AND KEEP MOIST UNTIL PLANTED.
 - IF A MINIMUM COVERAGE OF 70 PERCENT IS NOT ACHIEVED IN THE WETLAND PLANTING ZONES AFTER THE SECOND GROWING SEASON, SUPPLEMENTAL PLANTING SHOULD BE COMPLETED. 90 TO 95 PERCENT IS DESIRABLE
 - TREES SHALL BE WARRANTED AT END OF FIRST GROWING SEASON. ANY TREES FOUND DEAD AFTER FIRST GROWING SEASON, REPLACEMENTS SHALL BE USED OF THE SAME TYPE AND SIZE PLANTED PER SPECIFICATIONS ON SHEET 106.6



- POOLS LOW FLOW CHANNELS
- SHALLOW WATER
- SHALLOW LAND
- WETLAND SLOPES

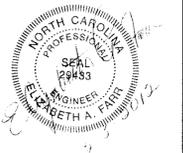
1,2,7 TREE PLANTING DET.
106.6
2 WETLAND PLANTING PLAN
106.4 NOT TO SCALE

WETLAND DESIGN PLANTING DETAILS

JEWELL
ENGINEERING CONSULTANTS, P.C.
POST OFFICE BOX 2294 (336) 996-9974
KERNERSVILLE, NORTH CAROLINA 27285 FAX: (336) 996-9974
NC LICENSE #: C-1842

REVISIONS	JOB NO.
	DESIGNED 1-31-12 BY BAF
	CONST. SURVEY BY
	CHECKED BY CDJ
	SCALE: AS NOTED

CONOVER STATION
WETLAND NORTH SWALE
CITY OF CONOVER,
NORTH CAROLINA
"C"
SHEET NO.
106.4



NOTES:

1. INSTALL EROSION CONTROL DEVICES AT RIPARIAN BUFFER AREA INCLUDING TREE PROTECTION.
2. TREES TO BE NO LESS THAN 36" TALL AT PLANTING.
3. PREPARE ZONES 1 AND 2 BY REMOVING ANY BRIARS, BRUSH, OR UNSUITABLE MATERIAL. MOW OR BUSH HOG.
4. APPLY HERBICIDE SUCH AS GLYPHOSATE PRIOR TO SEEDING AND PLANTING IN ZONES 1 AND 2.
5. EXISTING TREES ALONG THE STREAM AND WITHIN PORTIONS OF THE CONSTRUCTION LIMITS THAT DO NOT CONFLICT WITH CONSTRUCTION OF THE PROPOSED STREAM LOCATION SHALL REMAIN AND BE PROTECTED FROM DAMAGE, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
6. PLANT FESCUE SEED BETWEEN TREE MOUNDS. DO NOT SEED MULCHED AREA AROUND TREES.
7. TREES SHALL NOT BE PLANTED WITHIN STREAM BANKS.
8. PREPARE TREE PLANTING PITS, SOIL AMENDMENTS, AND FERTILIZER PER SHEET 106.6.
9. TREE SHELTERS SHOULD BE USED. SEE DETAIL 1/106.6.
10. DO NOT PLANT UNDER MUDDY CONDITIONS.
11. IDEAL TREE PLANTING TIME IS NOVEMBER TO EARLY APRIL.
12. WATER CONTAINER AND BARE ROOT PLANTS THOROUGHLY AT PLANTING AND WEEKLY DURING THE FIRST GROWING SEASON.
13. PLANTS SHALL BE WARRANTED. SEE SHEET 106.6.
14. TREE LOCATIONS TO BE FLAGGED PRIOR TO PLANTING FOR INSPECTION AND/OR NEEDED REVISION. CONTACT CITY WITH AT LEAST 24 HOURS NOTICE.

MAINTENANCE

1. FESCUE BETWEEN TREES SHOULD BE MOWED PERIODICALLY THROUGH THE GROWING SEASON TO 6" HEIGHT. (SEE SHEET 106.6)
2. WEED WACKER SHALL NOT BE USED AROUND THE BASE OF THE TREE OR WITHIN 2' DIAMETER OF THE TREE TRUNK.
3. LARGE WEEDY VEGETATION AROUND THE TREES SHOULD BE REMOVED DURING THE GROWING SEASON.

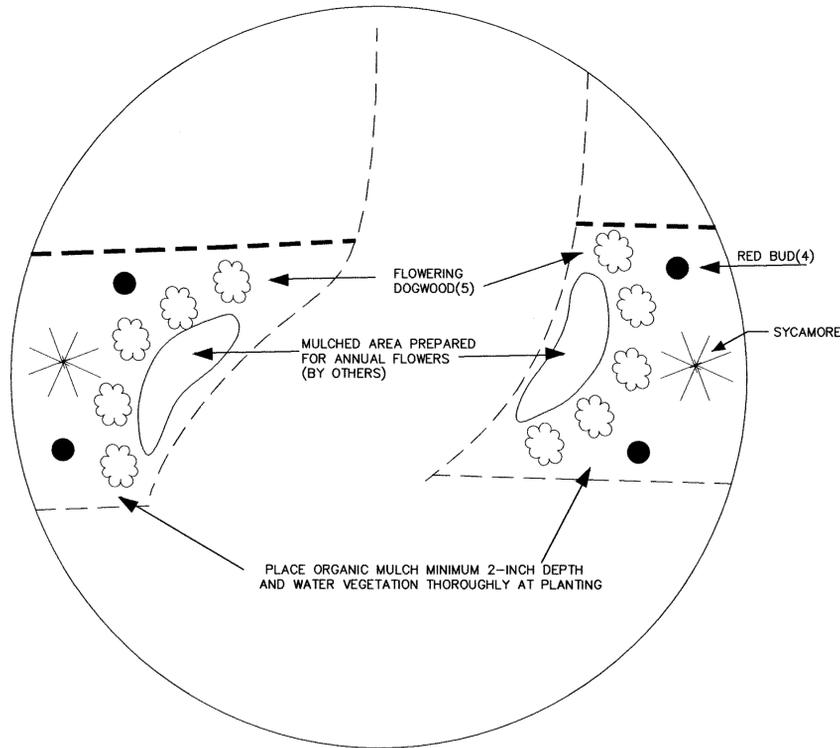
ZONE 1

4. PRE-EMERGENT HERBICIDE IS RECOMMENDED AT THE BEGINNING OF THE SECOND AND THIRD GROWING SEASONS IN ZONE 1 BETWEEN AND AROUND NEWLY PLANTED TREES.

ZONE 2

5. MOWING IN ZONE 2 (NATIVE GRASSES) SHALL BE PERFORMED ONLY AT MID-SEASON AND END OF SEASON TO 6"-12".

TREE PROTECTION — TP —

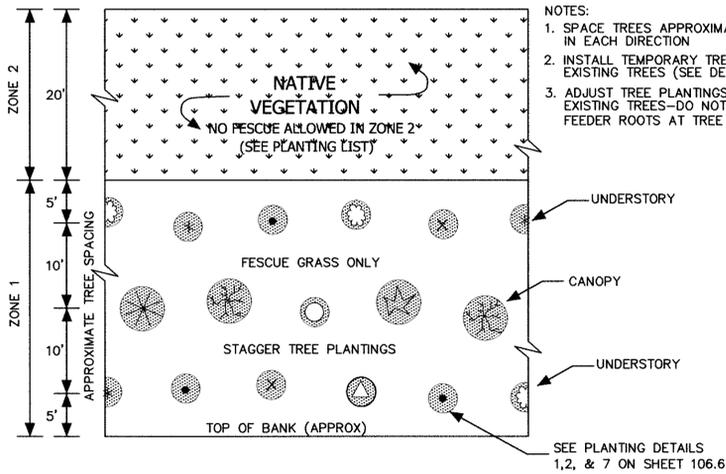


2 RIPARIAN BUFFER PLANTING DETAIL AT PATH
106.5 NOT TO SCALE

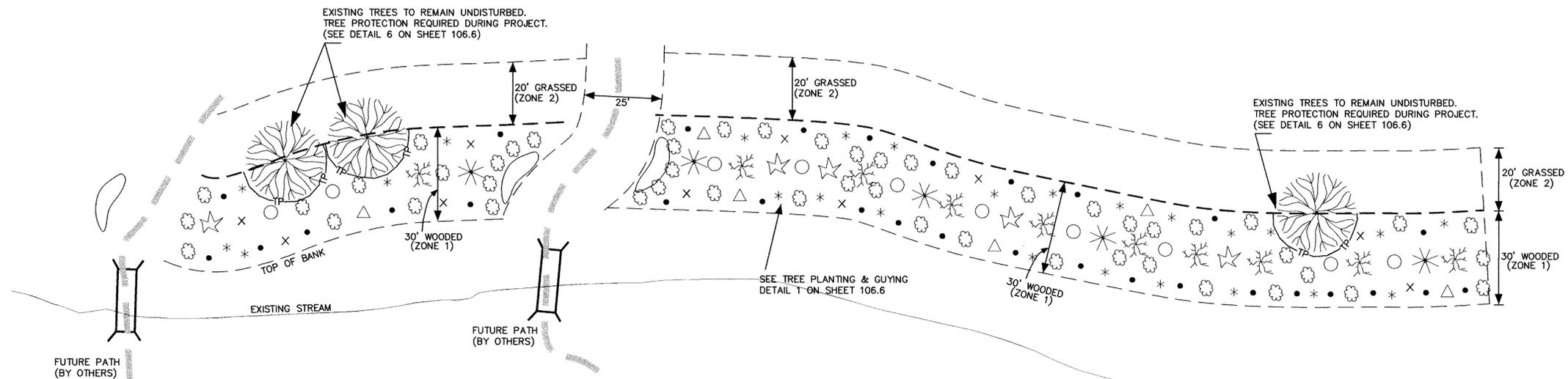
PLANTING LIST

ZONE 2 PLANTING NATIVE VEGETATION	RIPARIAN BUFFER MIX		%	lb
	SYMBOL	QTY		
	SWITCHGRASS 'SHELTER' (PANICUM VIRGATUM)	20	20	5
	INDIAN GRASS (SORGHASTRUM NUTANS)	15	15	3
	BROOMSEDGE (ANDROPOGON VIRGINICUS)	20	20	10
	DEERTONGUE (PANICUM CLANDESTINUM)	15	15	2
	ORCHARD GRASS (DACTYLIS GLOMERATA)	20	20	5
	PURPLE LOVEGRASS (ERAGROSTIS SPECTABILIS)	10	10	2
	TOTAL	100%	100%	27 LBS

ZONE 1 PLANTING UNDERSTORY & CANOPY	SYMBOL	QTY	CONT.	SIZE	
	FLOWERING DOGWOOD (CORNUS FLORIDA)	50	BARE ROOT	3'-4'	
	RED BUD (CERCIS CANADENSIS)	30	BARE ROOT	3'-4'	
	SHAGBARK HICKORY (CARYA OVATE)	25	1 GAL.	3'-4'	
	AMERICAN HOLLY (ILEX OPACA)	10	BARE ROOT	3'-4'	
	IRONWOOD (CARPINUS CAROLINIANA)	6	BARE ROOT	3'-4'	
	SOURWOOD (OXYDENDRUM ARBOREUM)	10	BARE ROOT	3'-4'	
	BLACK GUM (NYSSA SYLVATICA)	10	BARE ROOT	4'	
	SYCAMORE (PLATANUS OCCIDENTALIS)	5	BARE ROOT	4'	
	NORTHERN RED OAK (QUERCUS RUBRA)	5	BARE ROOT	3'-4'	



1 RIPARIAN BUFFER PLANTING ZONES
106.5 NOT TO SCALE



3 RIPARIAN BUFFER PLANTING PLAN
106.5 NOT TO SCALE



RIPARIAN BUFFER PLANTING DETAILS

JEWELL
ENGINEERING CONSULTANTS, PC
POST OFFICE BOX 2294
KERNERSVILLE, NORTH CAROLINA 27285
PHONE: (336) 996-9974
FAX: (336) 996-9976

NC LICENSE #: C-1842

REVISIONS	JOB NO.
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CONOVER STATION
WETLAND & RIPARIAN BUFFER PROJECT
CITY OF CONOVER,
NORTH CAROLINA

"C"
SHEET NO.
106.5

LANDSCAPE CONSTRUCTION SPECIFICATIONS

- ALL PLANT MATERIAL TO BE NURSERY GROWN AND TO COMPLY WITH AMERICAN STANDARD FOR NURSERY STOCK ANSI-Z60-1-2004.
- THE CONTRACTOR SHALL INSTALL ALL TEMPORARY EROSION CONTROL DEVICES WITHIN THE PROJECT AREA BOUNDARY AS INDICATED ON PLANS PRIOR TO COMMENCING EARTHWORK. CONTRACTOR SHALL ENSURE THAT DRAINAGE IS DIRECTED INTO TEMPORARY SEDIMENT PITS THROUGHOUT THE CONSTRUCTION PERIOD.
- TREES ALONG THE STREAM AND WITHIN PORTIONS OF THE CONSTRUCTION LIMITS THAT DO NOT CONFLICT WITH CONSTRUCTION OF THE PROPOSED STREAM LOCATION SHALL REMAIN AND BE PROTECTED FROM DAMAGE WITH TREE PROTECTION STRUCTURES, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- PLANTING SEASON: OCTOBER 15 TO APRIL 15. DURING DROUGHT, ADDITIONAL MONITORING AND WATERING WILL BE REQUIRED FOR PLANT SURVIVAL.
- CONTAINER GROWN PLANTS SHOULD HAVE GROWN IN THE CONTAINER FOR A MINIMUM OF 6 MONTHS BUT SHOULD NOT BE ROOT BOUND WHEN DELIVERED. THERE SHOULD BE SUFFICIENT ROOT GROWTH TO HOLD EARTH INTACT WHEN REMOVED FROM CONTAINER.
- MAINTAIN WORK AREA IN ORDERLY CONDITION AND MAINTAIN PROTECTION DURING INSTALLATION. REPAIR OR REPLACE ANY DAMAGED LANDSCAPE WORK AS DIRECTED.
- TRANSPORT ALL PLANTS TO SITE COVERED. DAMAGED PLANTS DURING OR PRIOR TO SHIPPING WILL NOT BE ACCEPTED.
- TOPSOIL TO BE FRIBBLE, NATURAL SOIL WITHOUT ADMIXTURE OF SUBSOIL. SHOULD BE CLEANED AND REASONABLY FREE OF STONES, ROOTS AND CLAY LUMPS.
- SEED GRASS AREAS PER PERMANENT SEEDING SPECIFICATIONS ON SHEET 106.7, WHERE INDICATED. DO NOT OVERSEED MULCHED LANDSCAPE AREAS OR TREES WITH GRASS SEED.

PRE-PLANTING:

- DEMOLITION SHALL INCLUDE STUMPS, BRUSH, VEGETATION, TRASH, DEBRIS, WASTE STONE, WASTE PIPING, AND ANY OTHER UNSUITABLE MATERIAL FROM WITHIN THE PROJECT AREA BOUNDARY AND CLEARING LIMITS, UNLESS INDICATED OTHERWISE ON THESE PLANS OR DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL TAKE GREAT CARE TO NOT DISTURB THE EXISTING STREAM AND STREAM BANKS.
- PROPOSED TREE LOCATIONS SHALL BE STAKED BY THE CONTRACTOR AND APPROVED BY THE OWNER OR OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
- PLANTING BEDS SHALL BE CLEARED OF WEEDS, BRIARS, AND BRUSH AND UNIFORMLY MOWED PRIOR TO INSTALLATION OF PLANTS FOR A MORE AESTHETICALLY PLEASING LANDSCAPE AND IMPROVED PLANT/TREE SURVIVAL. REMOVAL OF NATURAL LEAF LITTER IS STRONGLY DISCOURAGED.

PLANTING:

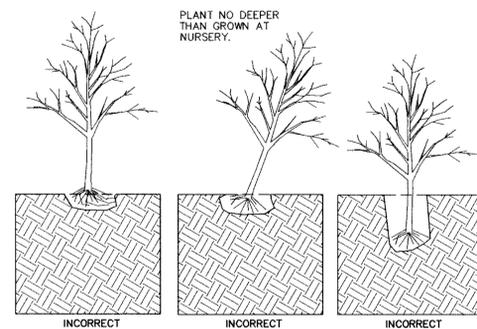
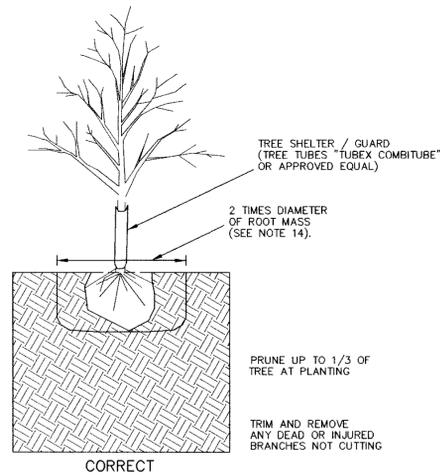
- LOCATION FOR PLANTING AREAS TO BE PLANTED ARE SHOWN ON THE PLAN. IF UTILITIES ARE ENCOUNTERED, PLANTS MAY BE REPOSITIONED SLIGHTLY TO AVOID IMPACT.
- EACH PLANTING HOLE SHALL BE EXCAVATED AND PREPARED BY MIXING THE EXCAVATED MATERIAL INTO A PLANTING SOIL MIXTURE OF 2 PARTS PINE BARK SOIL CONDITIONER, 2 PARTS TOP SOIL AND 1 PART SAND, THOROUGHLY MIXED.
- ALL TREES SHOULD BE PLANTED AND FERTILIZED ACCORDING TO DETAILS AND FERTILIZER CHART GUIDE SHOWN ON THIS SHEET. WHEN HOLE IS ALMOST BACKFILLED, ADD WATER AND ALLOW TO SOAK IN. FILL HOLE TO FINISH GRADE AND FORM A SHALLOW SAUCER AROUND THE TREE AS SHOWN ON DETAIL. WATER ENTIRE PLANTING AREA THOROUGHLY.
- IMMEDIATELY AFTER A TREE IS PLANTED, IT SHOULD BE SUPPORTED WITH STAKES AND GUY WIRES TO FIRMLY HOLD IT IN PLACE. (SEE DETAIL - THIS SHEET)
- BEFORE PLACING MULCH, USE WEED CONTROL FABRIC AROUND EACH TREE TO A MINIMAL DIAMETER OF 24"-30" AND FINISH WITH 4"-6" OF WELL AGED HARDWOOD MULCH.
- SPRAY TREES AND SHRUBS WITH AN ANTI-DESICCANT IF FOLIAGE IS PRESENT.

CLEANUP:

- MAINTAIN WORK AREA IN ORDERLY CONDITION. REPAIR OR REPLACE ANY DAMAGED LANDSCAPE WORK AS DIRECTED. REMOVE ANY REJECTED OR UNACCEPTABLE PLANTS AND OTHER MATERIALS UPON COMPLETION.
- ALL MATERIALS INSPECTED AT THE SITE AND FOUND NOT TO BE ACCEPTABLE SHALL BE REMOVED FROM THE SITE ON THE DAY OF REJECTION.

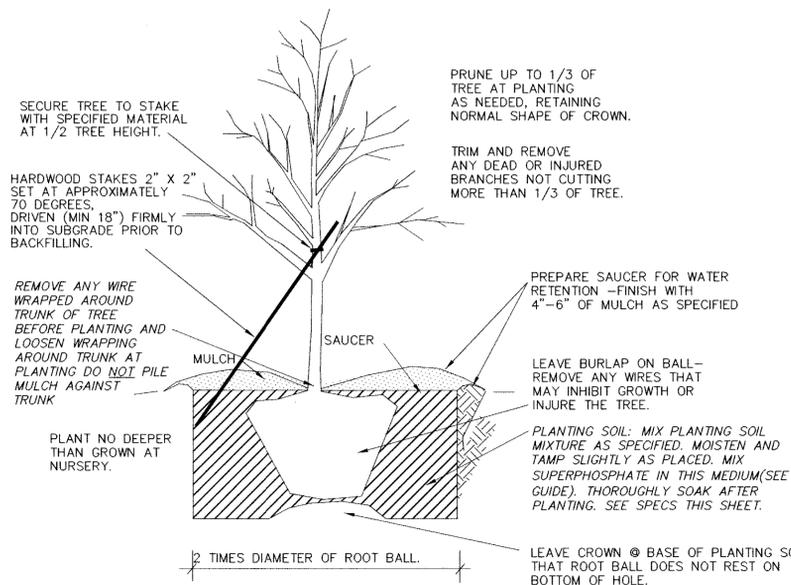
MAINTENANCE:

- ADJUST STAKES AND TIES AFTER ONE YEAR, OR AS NEEDED TO PROVIDE PROPER SUPPORT.
- PRIOR TO SECOND YEAR GROWING SEASON, APPLY PRE-EMERGENT HERBICIDE AT MULCHED AREA AROUND EACH TREE.
- REMOVE STAKES AND TIES AFTER THIRD YEAR.
- ADD FERTILIZER PER FERTILIZER GUIDE AT THE BEGINNING OF THE SECOND AND THIRD GROWING SEASONS.
- MOW AT LEAST TWO TIMES PER SEASON BETWEEN TREES AND CHECK FOR ANY EROSION OR GULLIES IN THE BUFFER AREA. IF FOUND, REPAIR BY FILLING WITH SOIL, TAMPING, SEEDING AND STRAW MULCH AT REPAIR AREA.
- AT THE END OF THE FIRST AND SECOND GROWING SEASONS, MAKE AN INSPECTION FOR LIVING TREES. REPLACE ANY DEAD OR DYING TREES DURING THE MONTHS OF NOVEMBER AND DECEMBER, FOLLOWING THE PLANTING GUIDELINES ON THIS SHEET.
- REPLACE MULCH TO SPECIFICATIONS AROUND EACH TREE AS NEEDED DURING ANNUAL INSPECTION.

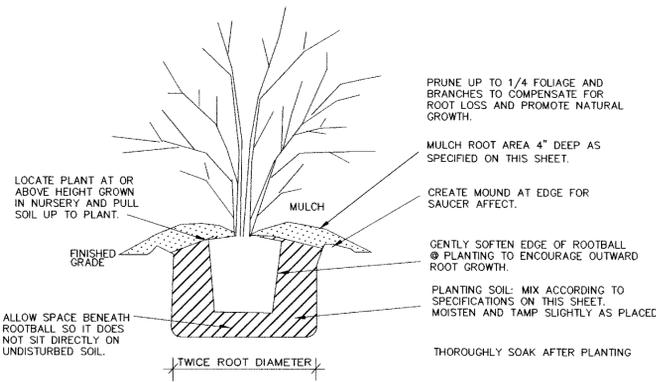


- NOTES:**
- ROOTS SHOULD BE "STRAIGHT" IN THE PLANTING HOLE. THEY SHOULD NOT BE "J" OR "U" SHAPED
 - PLANT SEEDLINGS SO THAT ROOT COLLAR IS AT THE GROUND SURFACE.
 - MAKE SURE TREES ARE NOT PLANTED TOO DEEP OR TOO SHALLOW.
 - FINISH PLANTING AND MULCHING AS SHOWN BELOW AND PER SPECIFICATIONS.

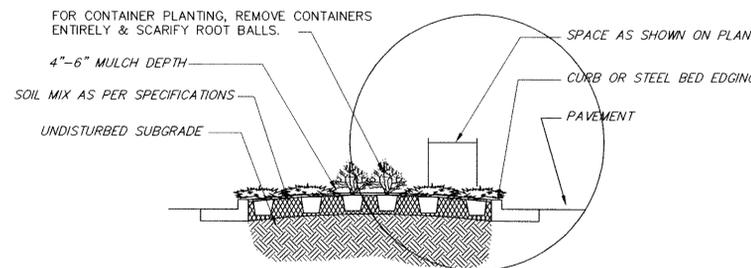
1 BARE ROOT PLANTS
106.6 NOT TO SCALE



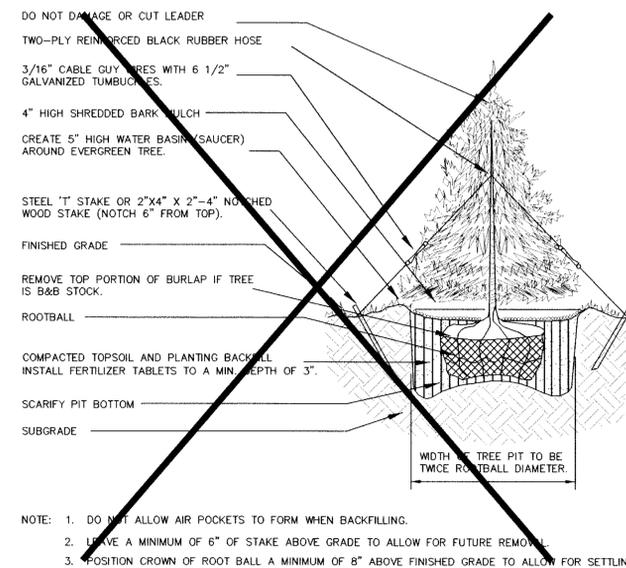
2 TREE PLANTING AND GUYING
106.6 NOT TO SCALE



3 SHRUB PLANTING DETAIL
106.6 NOT TO SCALE



4 TYPICAL SECTION - SHRUB PLANTING
106.6 NOT TO SCALE

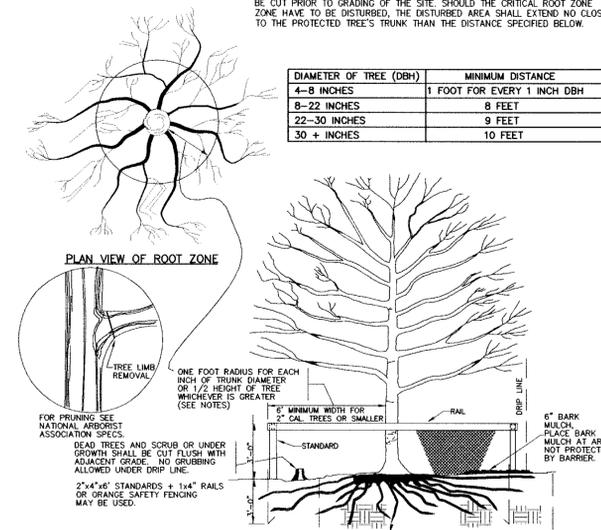


5 (NOT USED) EVERGREEN TREE PLANTING DETAIL
106.6 NOT TO SCALE

TREE PROTECTION NOTES:

- REMOVE ALL BARRIERS UPON COMPLETION OF PROJECT.
- SEE PLANS FOR LOCATION OF ALL TREE PROTECTION FENCES.
- IF THE ENTIRE CRITICAL ROOT ZONE CANNOT BE PRESERVED, TREE ROOTS MUST BE CUT PRIOR TO GRADING OF THE SITE. SHOULD THE CRITICAL ROOT ZONE HAVE TO BE DISTURBED, THE DISTURBED AREA SHALL EXTEND NO CLOSER TO THE PROTECTED TREE'S TRUNK THAN THE DISTANCE SPECIFIED BELOW.

DIAMETER OF TREE (DBH)	MINIMUM DISTANCE
4-8 INCHES	1 FOOT FOR EVERY 1 INCH DBH
8-22 INCHES	8 FEET
22-30 INCHES	9 FEET
30+ INCHES	10 FEET



6 TEMPORARY TREE PROTECTION
106.6 NOT TO SCALE

FERTILIZER CHART GUIDE

AT PLANTING TIME, FERTILIZE EACH PLANT WITH SUGGESTED TRIPLE SUPER PHOSPHATE(0-42-0) RECOMMENDATIONS.

AMOUNT	CONTAINER-SIZE
2 TABLESPOONS	1 GAL
3 TABLESPOONS	2 GAL
4 TABLESPOONS (1/4 CUP)	3 GAL
5 TABLESPOONS	4 GAL
6 TABLESPOONS	5 GAL
8 TABLESPOONS (1/2 CUP)	7 GAL/MED B&B
10 TABLESPOONS	10 GAL/MED B&B
1 CUP	15-20GAL/LG B&B

THE FOLLOWING SPRING, FOLLOW UP WITH A BALANCED FERTILIZER (SUCH AS 10-10-10) JUST BEFORE NEW GROWTH APPEARS.

7 FERTILIZER GUIDE
106.6

GENERAL PLANTING DETAILS

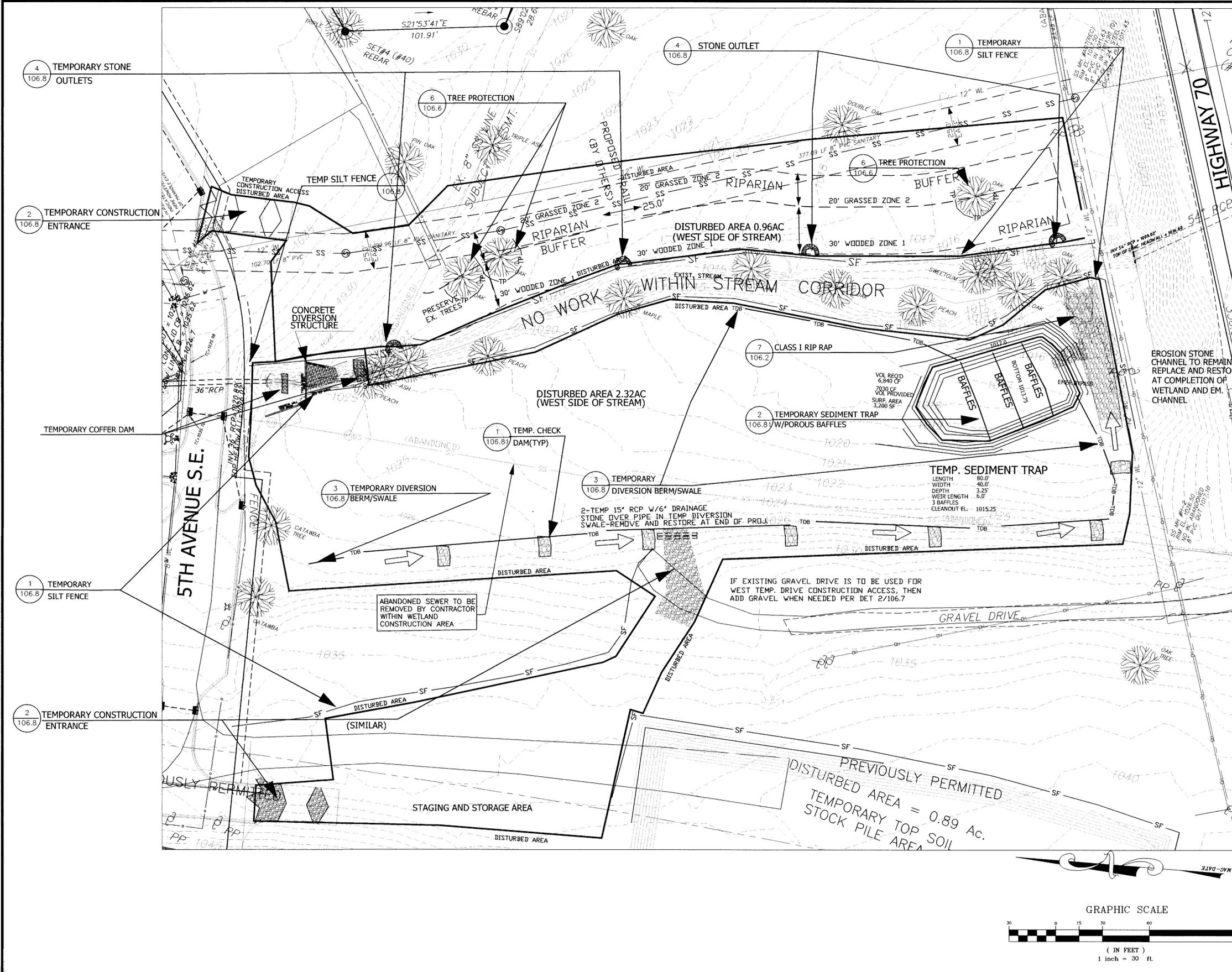
JEWELL
ENGINEERING CONSULTANTS, PC
POST OFFICE BOX 2284
KERNERSVILLE, NORTH CAROLINA 27285 FAX: (336) 996-9974
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NOTES

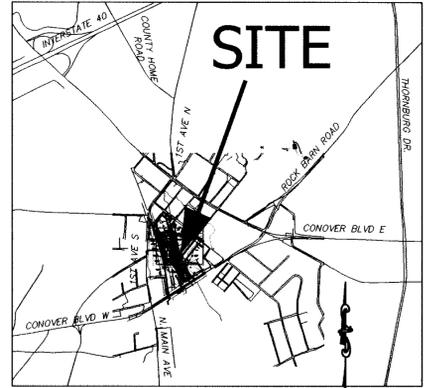
- AREA OF DISTURBANCE INCLUDING TEMP. DRIVES, 3.16 ACRES. THE PROJECT IS LOCATED IN THE CATAWBA RIVER BASIN.
- SOILS TO BE STORED IN STAGING AND STORAGE AREA ALREADY PERMITTED ON SITE.
- EXISTING TOPOGRAPHIC CONTOURS SHOWN ARE FROM FIELD SURVEY DATA PROVIDED BY ROY TURNER, PLS, JUNE 15, 2009, WRIGHT & ASSOCIATES ENGINEERS & SURVEYORS.
- CONTRACTOR SHALL INSTALL ALL TEMPORARY EROSION CONTROL DEVICES WITHIN THE PROJECT AREA BOUNDARY AS INDICATED ON THIS SHEET PRIOR TO COMMENCING EARTHWORK. CONTRACTOR SHALL ENSURE THAT DRAINAGE IS DIRECTED INTO TEMPORARY SEDIMENT DEVICES THROUGHOUT THE CONSTRUCTION PERIOD.
- DEMOLITION SHALL INCLUDE THE REMOVAL FROM THE SITE ANY UNSUITABLE MATERIAL, SUCH AS DEBRIS, CONCRETE, ETC FROM WITHIN THE PROJECT AREA BOUNDARY AND CLEARING LIMITS, UNLESS INDICATED OTHERWISE ON THESE PLANS OR DIRECTED BY THE ENGINEER. THE REMOVAL OF DEBRIS SHALL BE MAINTAINED BY THE CONTRACTOR TO ALLOW CONSTANT DRAINING OF THE DEVICES DURING CONSTRUCTION.
- TREES ALONG THE STREAM AND WITHIN PORTIONS OF THE CONSTRUCTION LIMITS THAT DO NOT CONFLICT WITH CONSTRUCTION OF THE PROPOSED OFFSITE WETLAND BERM SHALL REMAIN AND BE PROTECTED FROM DAMAGE. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, ALL WORK PERFORMED IN THE STREAM CHANNEL IS TO BE DONE IN THE DRY.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE CONSTRUCTION LIMITS OF THE STREAM AND STORM FLOWS IN ALL AREAS OF THE PROJECT SITE THROUGHOUT THE CONSTRUCTION PERIOD.
- DE-WATERING OF STRUCTURES WITH SEDIMENT-LADEN WATER DIRECTLY TO STREAMS IS PROHIBITED. THE CONTRACTOR SHALL TAKE APPROPRIATE ACTION TO ENSURE THAT SUCH PROHIBITED ACTIVITIES DO NOT OCCUR. FOLLOW MAINTENANCE OF EROSION CONTROL STRUCTURES PER DETAILS.
- PROPOSED STREAM BANK DISTURBANCE WORK TO CONSTRUCT DIVERSION STRUCTURE AND INTO EXISTING STREAM BANKS SHALL BE CONDUCTED IN A DRY CHANNEL AS INDICATED. THE CONTRACTOR SHALL TAKE APPROPRIATE ACTION TO ENSURE THAT SUCH REQUIREMENTS ARE MET.
- CONTRACTOR SHALL USE PUMPS CAPABLE OF CARRYING BASE FLOW OF THE STREAM AS NEEDED DURING CONSTRUCTION OF THE DIVERSION STRUCTURE IN THE STREAM CHANNEL. IF PUMPS ON THE JOB SITE CANNOT KEEP UP WITH BASE FLOW, CONTRACTOR SHALL STOP WORK AND OBTAIN PUMPS CAPABLE OF HANDLING THE FLOW.
- CONTRACTOR SHALL UTILIZE 2 PUMPS (ONE FOR BACKUP) A MINIMUM 2 INCH DIAMETER TO HANDLE THE BASE STREAM FLOW (40 GPM MIN) THROUGH THE CONSTRUCTION SITE. THE PUMP AROUND PROCESS SHALL EXTEND DOWNSTREAM OF CONSTRUCTION ACTIVITIES AREA ABOVE COFFER DAM DOWNSTREAM OF OUTLET SHOULD BE MONITORED FOR COLLECTION OF SEDIMENT AND CLEANED OF SEDIMENT AS NEEDED.
- AS EACH PORTION OF CONSTRUCTION IS COMPLETE, INSTALL STABILIZATION MAT AT END OF PROJECT, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES, INSTALL PERMANENT STABILIZATION, AND RESTORE THE SITE AS CLOSELY AS POSSIBLE TO ORIGINAL CONDITIONS.
- CONTRACTOR TO PREVENT SEDIMENT FROM LEAVING SITE. EQUIPMENT & TRUCKS EXITING SITE SHALL BE CLEANED/WASHED AS NEEDED TO REMOVE SEDIMENT/MUD PRIOR TO EXITING PROJECT SITE.
- DEWATERING SHALL BE PERFORMED WITH APPROVED EROSION CONTROL PRACTICES SUCH THAT NO SEDIMENT LEAVES THE SITE OR ENTERS THE STREAM.

STREAM DATA

WATERSHED AREA	27.1 AC (AT 36" RCP OUTLET) = 0.04 SQMI
MEAN ANNUAL FLOW	1.0 CFS/50GPM X 0.04SQMI=40.0CFS +/-
	20 GPM +/-
* USGS WATER RESOURCES INVESTIGATIONS 46-74, FEB 1975	

CONSTRUCTION SEQUENCE

- CALL NODEN, RYAN KORMANIC TO ADVISE START DATE.
- INSTALL CONSTRUCTION ENTRANCES, SILT FENCES, TREE PROTECTION AND STONE OUTLETS ON THE EAST SIDE OF THE DRAINAGE CHANNEL. CONFIRM TREE PROTECTION FOR ANY TREES FOUND ON SITE WITHIN PROJECT AREA NOT INCLUDED IN THIS PLAN. CONTACT ENGINEER FOR ANY DISCREPANCY FOUND.
- PREPARE SITE AND INSTALL THE RIPARIAN BUFFER TREES IN ZONE 1, EXCLUDING THE FUTURE WALKWAY TRAIL AREA.
- PERFORM NO-TILL PREPARATION FOR ZONE 2 BUFFER AREA, SEED AND STABILIZE ZONE 2 BUFFER WITH APPROVED ZONE 2 SEEDING SCHEDULE.
- STABILIZE RIPARIAN BUFFER AREA BY REPAIRING ANY EXISTING GULLIES OR EVIDENCE OF EROSION AT ZONES 1 AND 2 IN THE RIPARIAN BUFFER AND FINISH AROUND TREES WITH HARDWOOD MULCH PER PLANTING PLAN.
- INSTALL SILT FENCE AND TEMP. ACCESS ROAD TO THE PREVIOUSLY PERMITTED AND FENCED STOCKPILE AREA ON THE WEST SIDE OF THE STREAM.
- ADD TEMP. DIVERSION BERM AND CHECK DAMS BERM CROSSING.
- GRADE AND CONSTRUCT WETLAND BERMS. PROCEEDING FROM UPPER WETLAND TO LOWER WETLAND.
- REMOVE SEDIMENT TRAP, ADJUST SILT FENCE AND STONE OUTLET AS NEEDED AND FINISH LOWER WETLAND WITH OUTLET STRUCTURE AND STABILIZE EMBANKMENTS.
- INSTALL PUMP AROUND AND CONSTRUCT IN-STREAM CONCRETE DIVERSION STRUCTURE.
- INSTALL RIPRAP AT AREAS AROUND CONCRETE DIVERSION STRUCTURE AND WEIR DISCHARGE AREAS.
- FINISH GRADING, REMOVE TEMP. DIVERSION BERM AND STABILIZE SITE.
- STABILIZE WETLAND BERMS. IF STEAMKING AT EDGE OF BERM NEEDS STABILIZING, USE STREAM BANK SEEDING UNDER COIR FABRIC. SECURE COIR WITH STAKES (SEE DET 1/106.4).
- INSTALL WETLAND PLANTS AND PERMANENTLY STABILIZE BERM EMBANKMENTS, AND OTHER AREAS.
- FINISH GRADING, REMOVE TEMP. DIVERSION BERM AND STABILIZE SITE.
- WHEN ENTIRE SITE IS STABILIZED, REMOVE ANY REMAINING EROSION AND SEDIMENT CONTROL STRUCTURES.



VICINITY MAP
1-INCH = 2000FT
LEGEND

- TEMPORARY DIV BERM
- SILT FENCE
- CREEK
- CHAIN LINK FENCE
- EASEMENT BOUNDARY
- ELECTRIC SERVICE N/L
- FILTER FABRIC
- GIS BLDG
- GIS LOT LINE
- GIS R/W
- INDEX CONTOUR
- INTERMEDIATE CONTOUR
- LOT NUMBER
- OVERHEAD POWER LINE
- POWER POLE
- ROLL CONCRETE CURB
- SANITARY SEWER LINE
- SANITARY SEWER MANHOLE
- STORM DRAIN HEADWALL
- STORM DRAIN MANHOLE
- STORM DRAIN DROP INLET
- STORM DRAIN CATCH BASIN
- STORM DRAIN PIPE
- TREE OR VEGETATION
- WATER MAIN GATE VALVE
- WATER MAIN FIRE HYDRANT
- WATER MAIN*
- WATER METER

- DISTURBED AREA LIMITS
- INLET PROTECTION
- TEMP. CONSTRUCTION ENTRANCE
- STONE OUTLET
- TEMP. DIVERSION BERM
- TEMPORARY DIVERSION BERM/SWALE
- TEMPORARY TREE PROTECTION
- TEMP. CHECK DAM

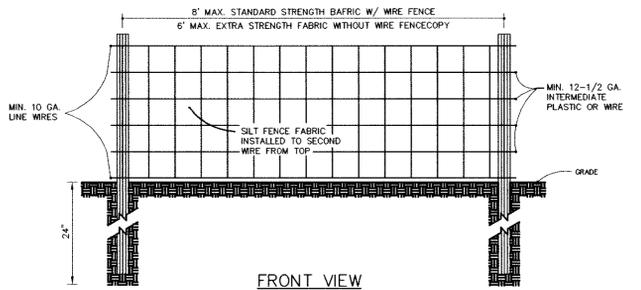


EROSION & SEDIMENT CONTROL PLAN

JEWELL
ENGINEERING CONSULTANTS, PC
POST OFFICE BOX 2294 (336) 996-9974
KERNERSVILLE, NORTH CAROLINA 27285 FAX: (336) 996-9976

REVISIONS	JOB NO.
	DESIGNED 1-31-12 BY BAF
	CONST. SURVEY BY
	CHECKED BY CDJ
	SCALE: AS NOTED

CONOVER STATION
WETLAND & RIPARIAN BUFFER PROJECT
CITY OF CONOVER,
NORTH CAROLINA
"C"
SHEET NO.
106.7



FRONT VIEW



SIDE VIEW

NOTES:
- ENDS OF SILT FENCE SHALL BE TURNED UPHILL.
- PLACE STONE OUTLET AS DIRECTED BY ENGINEER.

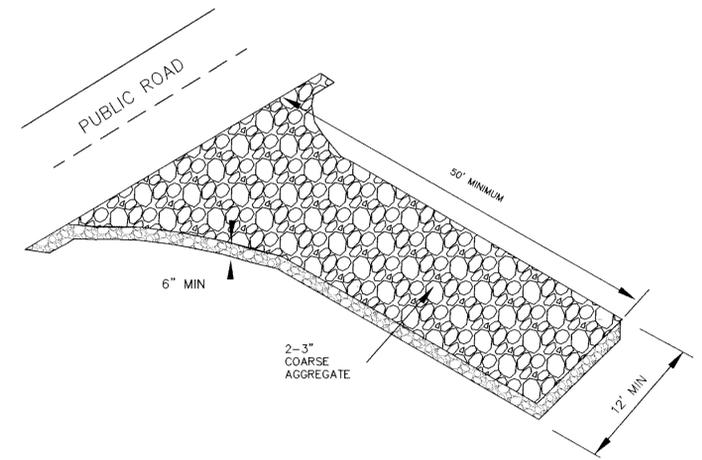
CONSTRUCTION:

- CONSTRUCT THE SEDIMENT BARRIER OF STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS.
- ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24" ABOVE THE GROUND SURFACE. (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.)
- CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL OUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITH 4 FEET MINIMUM OVERLAP TO THE NEXT POST.
- SUPPORT STANDARD STRENGTH FILTER FABRIC BY WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS. EXTEND THE WIRE MESH SUPPORT TO THE BOTTOM OF THE TRENCH, FASTEN THE WIRE REINFORCEMENT, THEN FABRIC ON THE UPSLOPE SIDE OF THE FENCE POST. WIRE OR PLASTIC ZIP TIES SHOULD HAVE A MINIMUM 50 POUND TENSILE STRENGTH.
- WHEN A WIRE MESH SUPPORT FENCE IS USED, SPACE POSTS A MAXIMUM OF 8 FEET APART. SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
- EXTRA STRENGTH FILTER FABRIC WITH 6 FEET POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. SECURELY FASTEN THE FILTER FABRIC DIRECTLY TO POSTS.
- EXCAVATE A TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
- PLACE 12 INCHES OF THE FABRIC ALONG THE BOTTOM AND SIDE OF THE TRENCH.
- BACKFILL THE TRENCH WITH SOIL PLACED OVER THE FILTER FABRIC AND COMPACT. THOROUGH COMPACTION OF BACKFILL IS CRITICAL TO SILT FENCE PERFORMANCE.
- DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.

MAINTENANCE:

- INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY. REPLACE FABRIC OR FENCE IF FENCE COLLAPSES, TEARS, DECOMPOSES OR BECOMES INEFFECTIVE.
- REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
- REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREAS HAVE BEEN PROPERLY STABILIZED.

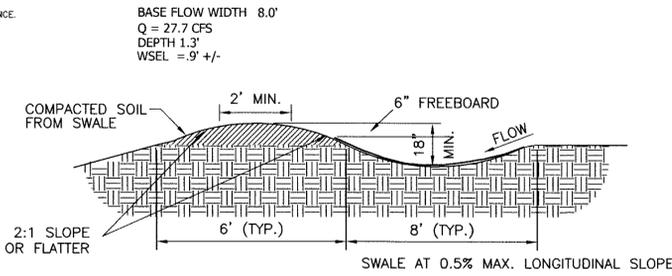
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NOT TO SCALE



MAINTENANCE:

MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH 2-INCH STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

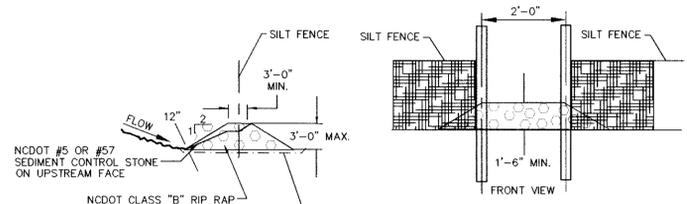
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NOT TO SCALE



MAINTENANCE:

INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL DURING CONSTRUCTION OPERATION. IMMEDIATELY REMOVE ANY SEDIMENT AND OBSTRUCTIONS FROM THE FLOW AREA, AND REPAIR THE DIVERSION RIDGE. CHECK OUTLETS, AND MAKE TIMELY REPAIRS AS NEEDED. MAINTAIN THE VEGETATION IN A VIGOROUS, HEALTHY CONDITION AT ALL TIMES. WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE BERM AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND LEVEL AND APPROPRIATELY STABILIZE IT.

3
106.8
NOT TO SCALE



MAINTENANCE:

INSPECT TEMPORARY STONE OUTLETS WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. CLEAN OUT SEDIMENT, STRAW, LIMBS, OR OTHER DEBRIS THAT COULD CLOG THE CHANNEL. WHEN NEEDED, ANTICIPATE SUBMERGENCE AND DEPOSITION ABOVE AND AROUND THE STONE. CORRECT ALL DAMAGE IMMEDIATELY.

REMOVE THE SEDIMENT ACCUMULATED BEHIND THE OUTLET AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION. ALLOW THE CHANNEL OR RUNOFF TO DRAIN THROUGH THE STONE OUTLET AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE STONE OUTLET. ADD STONES TO THE STRUCTURE AS NEEDED TO MAINTAIN ADEQUATE HEIGHT AND SIZE TO PREVENT SEDIMENT FROM PASSING OVER.

4
106.8
NOT TO SCALE

TEMPORARY SEEDING SCHEDULE

LATE WINTER AND EARLY SPRING (PIEDMONT, JAN. 1- MAY 1)		
TEMPORARY SEEDING MIXTURE		
DATES	SPECIES	RATE (LBS./ACRE)
JANUARY 1 - MAY 1	RYE (GRAIN)	120
JANUARY 1 - MAY 1	ANNUAL LESPEDEZA (KOBE)	50

NOTE: OMIT ANNUAL LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND JUNE.

SOIL AMENDMENTS
APPLY LIME ACCORDING TO SOIL TEST RECOMMENDATIONS. SOILS WITH pH HIGHER THAN 6 NEED NOT BE LIMED. IF THE pH OF THE SOIL IS UNKNOWN, AN APPLICATION OF GROUND LIME AT THE RATE OF 1 TO 1 1/2 TONS/ACRE ON COARSE-TEXTURED SOILS AND 2 TO 3 TONS/ACRE ON FINE-TEXTURED SOILS MAY BE APPLIED. APPLY LIME AND INCORPORATE INTO TOP 4" TO 6" OF SOIL.
APPLY FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. WHEN THE SOIL TEST IS UNAVAILABLE, APPLY A 10-10-10 GRADE FERTILIZER AT 700-1000 LB/ACRE INCORPORATED INTO THE TOP 4" TO 6" OF SOIL.

MULCH
* APPLY 4,000 LBS./ACRE GRAIN STRAW OR ENGINEER APPROVED EQUIVALENT COVER.
* ANCHOR MULCH WITH A MULCH ANCHORING TOOL, NETTING, OR BY TACKING WITH ASPHALT EMULSION AT A RATE OF 200 GAL./ACRE. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

WATER
MINIMUM OF 1" OF RAINFALL PER WEEK (IF NOT SUPPLIED NATURALLY, CONTRACTOR SHALL SUPPLY THE REMAINING AMOUNT UNTIL GROUND COVER HAS BEEN ESTABLISHED).

MAINTENANCE
RE-FERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RE-SEED, FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

SUMMER (PIEDMONT, MAY 1 - AUG 15)		
TEMPORARY SEEDING MIXTURE		
DATES	SPECIES	RATE (LBS./ACRE)
MAY 1 - AUGUST 15	GERMAN MILLET	40

NOTE: A SMALL-STEMMED SUDANGRASS MAY BE SUBSTITUTED AT A RATE OF 50 LBS./ACRE

SOIL AMENDMENTS
APPLY LIME ACCORDING TO SOIL TEST RECOMMENDATIONS. SOILS WITH pH HIGHER THAN 6 NEED NOT BE LIMED. IF THE pH OF THE SOIL IS UNKNOWN, AN APPLICATION OF GROUND LIME AT THE RATE OF 1 TO 1 1/2 TONS/ACRE ON COARSE-TEXTURED SOILS AND 2 TO 3 TONS/ACRE ON FINE-TEXTURED SOILS MAY BE APPLIED. APPLY LIME AND INCORPORATE INTO TOP 4" TO 6" OF SOIL.
APPLY FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. WHEN THE SOIL TEST IS UNAVAILABLE, APPLY A 10-10-10 GRADE FERTILIZER AT 700-1000 LB/ACRE INCORPORATED INTO THE TOP 4" TO 6" OF SOIL.

MULCH
* APPLY 4,000 LBS./ACRE GRAIN STRAW OR ENGINEER APPROVED EQUIVALENT COVER.
* ANCHOR MULCH WITH A MULCH ANCHORING TOOL, NETTING, OR BY TACKING WITH ASPHALT EMULSION AT A RATE OF 200 GAL./ACRE. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

WATER
MINIMUM OF 1" OF RAINFALL PER WEEK (IF NOT SUPPLIED NATURALLY, CONTRACTOR SHALL SUPPLY THE REMAINING AMOUNT UNTIL GROUND COVER HAS BEEN ESTABLISHED).

MAINTENANCE
RE-FERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RE-SEED, FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

FALL (PIEDMONT, AUG 15 - DEC 30)		
TEMPORARY SEEDING MIXTURE		
DATES	SPECIES	RATE (LBS./ACRE)
AUGUST 15 - DECEMBER 30	RYE (GRAIN)	120

SOIL AMENDMENTS
APPLY LIME ACCORDING TO SOIL TEST RECOMMENDATIONS. SOILS WITH pH HIGHER THAN 6 NEED NOT BE LIMED. IF THE pH OF THE SOIL IS UNKNOWN, AN APPLICATION OF GROUND LIME AT THE RATE OF 1 TO 1 1/2 TONS/ACRE ON COARSE-TEXTURED SOILS AND 2 TO 3 TONS/ACRE ON FINE-TEXTURED SOILS MAY BE APPLIED. APPLY LIME AND INCORPORATE INTO TOP 4" TO 6" OF SOIL.
APPLY FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. WHEN THE SOIL TEST IS UNAVAILABLE, APPLY A 10-10-10 GRADE FERTILIZER AT 700-1000 LB/ACRE INCORPORATED INTO THE TOP 4" TO 6" OF SOIL.

MULCH
* APPLY 4,000 LBS./ACRE GRAIN STRAW OR ENGINEER APPROVED EQUIVALENT COVER.
* ANCHOR MULCH WITH A MULCH ANCHORING TOOL, NETTING, OR BY TACKING WITH ASPHALT EMULSION AT A RATE OF 200 GAL./ACRE. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

WATER
MINIMUM OF 1" OF RAINFALL PER WEEK (IF NOT SUPPLIED NATURALLY, CONTRACTOR SHALL SUPPLY THE REMAINING AMOUNT UNTIL GROUND COVER HAS BEEN ESTABLISHED).

MAINTENANCE
REPAIR AND RE-FERTILIZE DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 LBS./ACRE OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 LBS./ACRE KOBE LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

EROSION CONTROL CONSTRUCTION NOTES

- INSPECT SITE AFTER EACH RUNOFF PRODUCING RAINFALL AND REPAIR VISIBLE EROSION. CLEAN OUT DEPOSITED SEDIMENT WHEN TRAPS HAVE REACHED 1/2 THEIR ORIGINAL DEPTH.
- CONTRACTOR SHALL PROVIDE TEMPORARY STONE OUTLETS IN LOW LYING AREAS OF TEMPORARY SILT FENCE. ENGINEER WILL DIRECT PLACEMENT OF TEMPORARY STONE OUTLETS.
- CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 21 WORKING DAYS FOLLOWING COMPLETION OF ANY PHASE OF GRADING AND PERMANENT GROUND COVER FOR ALL DISTURBED AREAS WITHIN 15 DAYS OR 90 CALENDAR DAYS FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT, WHICHEVER PERIOD IS SHORTER.
- ANNUAL RYE GRASS SHALL NOT BE PLANTED IN THE FIELD.
- REMOVE TEMPORARY EROSION CONTROL MEASURES AND SEED, OR RIPRAP RESULTING DISTURBED AREAS. CLEAR ALL SWALES AND PIPES OF ANY DEBRIS OR SEDIMENT ACCUMULATION. ESTABLISH PERMANENT VEGETATION CONSISTENT WITH THE TIME OF YEAR.
- WHEN VEGETATION IS ESTABLISHED, CALL FOR FINAL SITE INSPECTION BY THE CITY OF CONOVER INSPECTOR AND THE ENGINEER.
- JUDGEMENT BY THE ENGINEER OF SATISFACTORY TURF ESTABLISHMENT SHALL BE MADE ON THE BASIS THAT A VEGETATIVE COVER IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATIONS SHALL BE ESTABLISHED ON ALL DISTURBED AREAS SUFFICIENT TO RESTRAIN ACCELERATED EROSION.

PERMANENT SEEDING SCHEDULE (NOT FOR STREAM BANKS)

LATE WINTER AND EARLY SPRING		
PERMANENT SEEDING MIXTURE (STEEP SLOPES OR POOR SOILS; LOW MAINTENANCE)		
DATES	SPECIES	RATE (LBS./ACRE)
FEBRUARY 15 - APRIL 15	TALL FESCUE	100
FEBRUARY 15 - APRIL 15	SERICEA LESPEDEZA	30
FEBRUARY 15 - APRIL 15	KOBE LESPEDEZA	10

NOTE: FALL IS BEST FOR TALL FESCUE AND LATE WINTER FOR LEPEDEZAS.

FALL		
PERMANENT SEEDING MIXTURE (STEEP SLOPES OR POOR SOILS; LOW MAINTENANCE)		
DATES	SPECIES	RATE (LBS./ACRE)
AUGUST 20 - OCTOBER 25	TALL FESCUE	100
AUGUST 20 - OCTOBER 25	SERICEA LESPEDEZA	30
AUGUST 20 - OCTOBER 25	KOBE LESPEDEZA	10

SEEDING NOTES:

- AFTER AUGUST 15 USE UNSCARIFIED SERICEA SEED.
- WHERE NEAT APPEARANCE IS DESIRED, OMIT SERICEA AND SUBSTITUTE 40 LBS./ACRE BAHIA GRASS OR 15 LBS./ACRE BERMUDAGRASS.

NURSE PLANTS

BETWEEN MAY 1 AND AUGUST 15, ADD 10 LBS./ACRE GERMAN MILLET OR 15 LBS./ACRE SUDANGRASS. PRIOR TO MAY 1 OR AFTER AUGUST 15, ADD 40 LBS./ACRE RYE (GRAIN).

SOIL AMENDMENTS

APPLY LIME ACCORDING TO SOIL TEST RECOMMENDATIONS. SOILS WITH pH HIGHER THAN 6 NEED NOT BE LIMED. APPLY LIME AND INCORPORATE INTO TOP 4" TO 6" OF SOIL.
APPLY FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS ONLY.

MULCH

* APPLY 4,000 - 5,000 LBS./ACRE GRAIN STRAW OR ENGINEER APPROVED EQUIVALENT COVER.
* ANCHOR MULCH WITH BY ROVING, NETTING, OR BY TACKING WITH ASPHALT EMULSION AT A RATE OF 200 GAL./ACRE. NETTING IS PREFERRED ANCHORING METHOD ON STEEP SLOPES.

WATER

MINIMUM OF 1" OF RAINFALL PER WEEK (IF NOT SUPPLIED NATURALLY, CONTRACTOR SHALL SUPPLY THE REMAINING AMOUNT UNTIL GROUND COVER HAS BEEN ESTABLISHED).

MAINTENANCE

RE-FERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RE-SEED, FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE. GENERALLY, A STAND OF VEGETATION CANNOT BE DETERMINED TO BE FULLY ESTABLISHED UNTIL SOIL COVER HAS BEEN MAINTAINED FOR ONE FULL YEAR FROM PLANTING. INSPECT SEEDED AREAS FOR FAILURE AND MAKE NECESSARY REPAIRS AND RESEEDING WITHIN THE SAME SEASON, IF POSSIBLE.

SEED BED PREPARATION

- RIP THE ENTIRE AREA TO 6" DEPTH.
- REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
- APPLY AGRICULTURAL LIME AND FERTILIZER UNIFORMLY (IN ACCORDANCE WITH SOIL AMENDMENTS SPECIFICATIONS LISTED FOR THE RESPECTIVE SEEDING SCHEDULE) AND MIX WITH SOIL.
- CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4" TO 8" DEPTH.
- SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING AND SEED ACCORDING TO SCHEDULE.
- MULCH IN ACCORDANCE WITH MULCH SPECIFICATIONS LISTED FOR THE RESPECTIVE SEEDING SCHEDULE IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
- INSPECT ALL SEEDED AREAS FOR COMPLIANCE WITH THE REQUIREMENTS OF THE SEEDING SCHEDULE AND OTHER REQUIREMENTS LISTED ON THIS SHEET. IF STAND SHOULD BE OVERT 60% DAMAGED, RE-ESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.

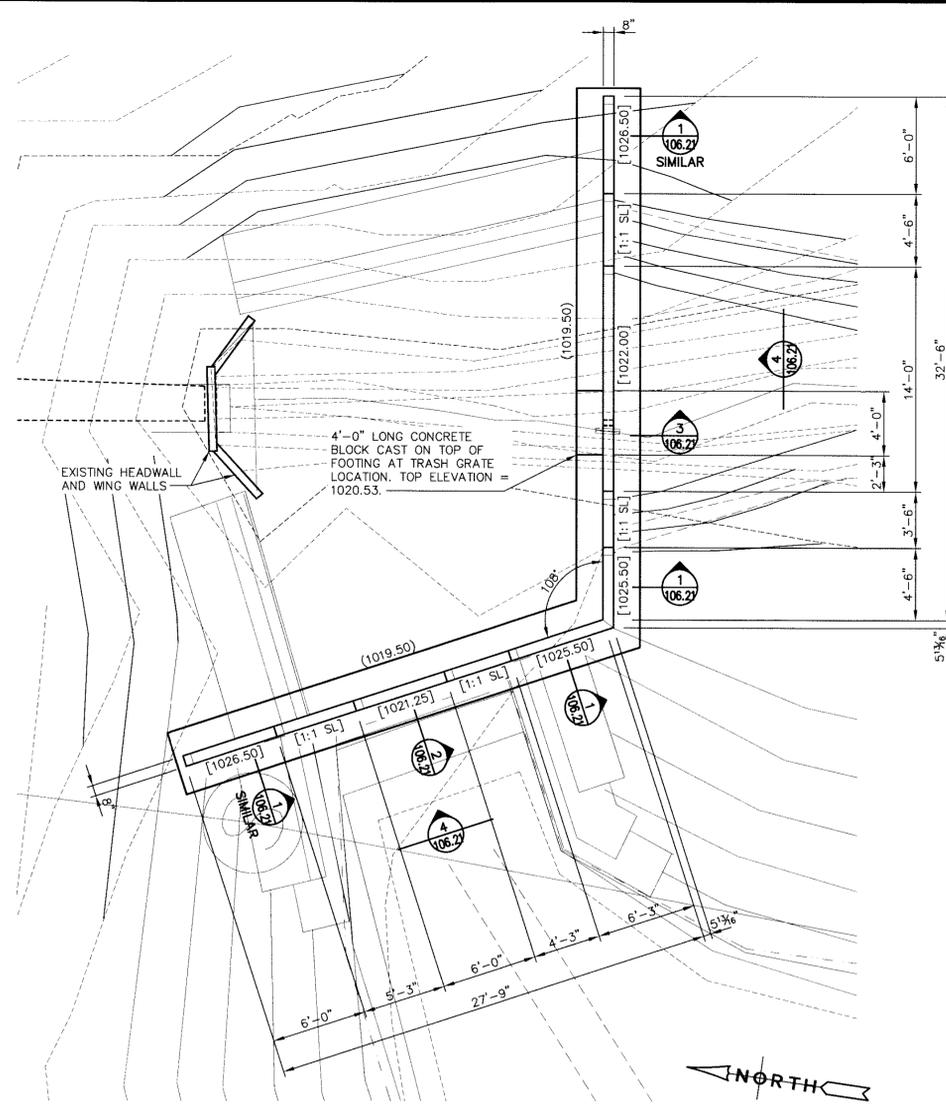
EROSION CONTROL DETAILS-1

JEWELL
ENGINEERING CONSULTANTS, PC
POST OFFICE BOX 2294
KERNERSVILLE, NORTH CAROLINA 27285
(336) 996-8974
FAX: (336) 996-8976
NC LICENSE #: C-1842

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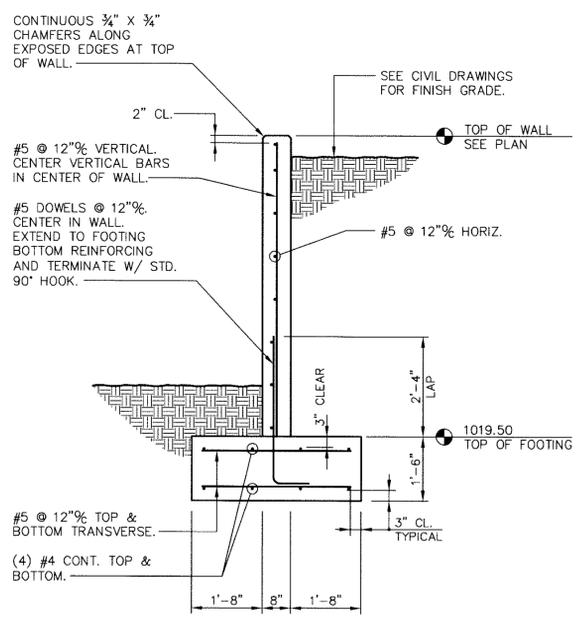
CONOVER STATION
WETLAND & RIPARIAN BUFFER PROJECT
CITY OF CONOVER,
NORTH CAROLINA
"C"
SHEET NO.
106.8



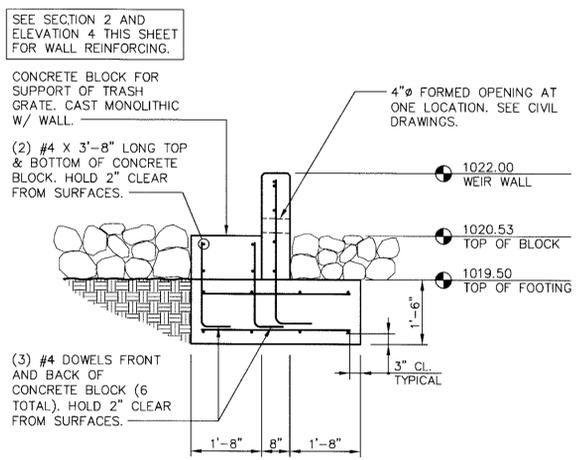


PARTIAL PLAN
STREAM DIVERSION STRUCTURE WALLS AND FOUNDATION
 3/16" = 1'-0"
 Dwg # 11130-PL01

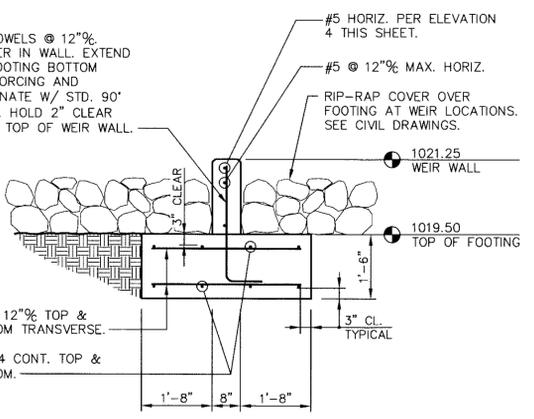
- PLAN NOTES:**
- THE FOLLOWING SYMBOLS ARE USED TO INDICATE ELEVATIONS ON PLAN:
 (---) TOP OF FOOTING
 (---) TOP OF CONCRETE WALL
 - SEE CIVIL SHEET C-106.2 FOR EXTENT OF PROPOSED RIPRAP (NOT SHOWN ON THIS PLAN).
 - SEE CIVIL SHEET C-106.2 FOR GABIONS.



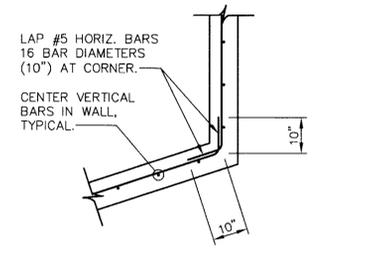
SECTION 1
 106.21
 1/2" = 1'-0"
 Dwg # 11130-S001



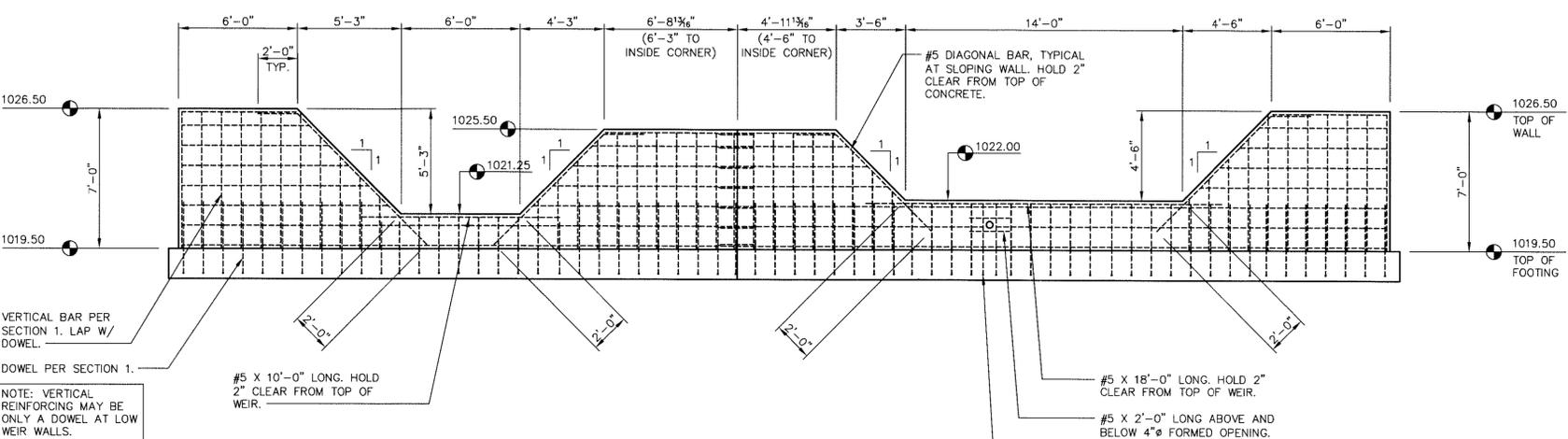
SECTION 2
 106.21
 1/2" = 1'-0"
 Dwg # 11130-S001



SECTION 2
 106.21
 1/2" = 1'-0"
 Dwg # 11130-S001



CONCRETE WALL CORNER REINFORCING DETAIL
 1/2" = 1'-0"
 Dwg # 11130-S001



ELEVATION 4
 106.21
 1/4" = 1'-0"
 Dwg # DWG_NAME

STREAM DIVERSION STRUCTURE NOTES:
 DESIGN OF THE STREAM DIVERSION STRUCTURE SHOWN HEREIN IS BASED SPECIFICALLY ON THE WETLAND SITE PLAN AND SOUTH WETLAND DIVERSION DETAIL DRAWINGS FURNISHED TO THIS OFFICE BY JEWELL ENGINEERING CONSULTANTS, P.C. THE CONTRACTOR SHALL FULLY COORDINATE ALL DIMENSIONS PRIOR TO FABRICATION OF STEEL REINFORCEMENT.

- A. FOUNDATIONS**
- EXCAVATION SHALL BE MAINTAINED IN A DRY CONDITION UNTIL CONCRETE IS PLACED. WHENEVER POSSIBLE, THE EXCAVATION SHALL BE MADE, THE BEARING SURFACE INSPECTED, AND THE CONCRETE PLACED THE SAME DAY. IF EXCAVATIONS MUST REMAIN OPEN OVERNIGHT, OR IF RAINFALL OR GROUNDWATER INTRUSION IS IMMINENT BEFORE PLACEMENT OF THE CONCRETE, A 2-INCH THICK "MUD-MAT" OF LEAN CONCRETE SHALL BE PLACED IN THE EXCAVATION AFTER OVER-EXCAVATING 2-INCHES IN DEPTH. ANY SOIL WHICH IS SOFTENED DUE TO MOISTURE EXPOSURE SHALL BE UNDERCUT TO FIRM SOIL AND THE DEPTH OF THE FOOTING INCREASED TO ACCOMMODATE THE SOFT SOIL THAT WAS REMOVED.
 - ALL FOUNDATIONS SHALL BE FOUNDED ON UNDISTURBED SOIL OR ENGINEERED FILL HAVING A BEARING CAPACITY OF 1300 PSF AT THE ELEVATIONS SHOWN ON THIS DRAWING.
 - IN CONJUNCTION WITH THE REQUIREMENTS OF THE GEOTECHNICAL ENGINEER OF RECORD, THE CONTRACTOR SHALL HAVE AN INDEPENDENT TESTING LAB VERIFY THE BEARING CAPACITY OF THE BEARING SOILS IN THE FOOTING EXCAVATION PRIOR TO CASTING ANY FOOTINGS. WRITTEN VERIFICATION SHALL BE SUBMITTED TO THE ENGINEER.
 - ALL BACKFILL SHALL BE PLACED IN 8-INCH LIFTS, MAXIMUM. PROPER EQUIPMENT SHALL BE SELECTED/USED ACCORDING TO THE TYPE OF BACKFILL MATERIAL FOR THE COMPACTION OPERATIONS. SEE ALSO REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING ANALYSIS FOR THE PREPARATION REQUIREMENTS.

- B. CAST-IN-PLACE CONCRETE**
- CAST-IN-PLACE CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI.
 - CONCRETE SHALL BE MADE IN ACCORDANCE WITH DESIGN MIXES WHICH ARE TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO CASTING ANY CONCRETE. MIX DESIGNS SHALL BE PREPARED AND REPORTED BY A TESTING LABORATORY ENGAGED BY, AND AT THE EXPENSE OF THE CONTRACTOR. MIX DESIGNS SHALL INCLUDE A LETTER PREPARED BY AN INDEPENDENT TESTING LABORATORY CERTIFYING COMPLIANCE OF DESIGN MIX WITH APPROPRIATE ACI STANDARDS AND PROCEDURES, AND LIST ALL MATERIALS AND EXACT PROPORTIONS OF EACH DESIGN MIX. A RECENT SIEVE ANALYSIS OF BOTH THE FINE AND COURSE AGGREGATES SHALL BE SUBMITTED WITH THE DESIGN MIX. CONCRETE MIX DESIGN PROPORTIONS SHALL RESULT IN A 4" MAXIMUM SLUMP AT THE POINT OF PLACEMENT. THE MINIMUM CEMENT CONTENT OF ALL CONCRETE SHALL BE 520 LBS. OF CEMENT PER CUBIC YARD. NO CALCIUM CHLORIDE MAY BE ADDED TO THE MIX AT ANY TIME. ADMIXTURES WHICH RETARD OR ACCELERATE THE SET OF CONCRETE IS NOT PERMITTED. CONCRETE SHALL HAVE A UNIT WEIGHT OF 145 PCF. CONCRETE SHALL HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.45. ALL CONCRETE WHICH IS SUBJECT TO CONDITIONS OF FREEZING OR DE-ICING SALTS SHALL CONTAIN ENTRAINED AIR (±6%). DO NOT USE HIGH-RANGE WATER REDUCING ADMIXTURES IN AIR-ENTRAINED CONCRETE. ALL DESIGN MIXES SHALL BE PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318, CHAPTER 5.
 - SELECTION OF CONCRETE MATERIALS, MIX ADMIXTURES, QUALITY CONTROL, TESTING, FORMWORK DESIGN AND CONSTRUCTION, CURING FINISHING, CLEANING AND PATCHING SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF THE AMERICAN CONCRETE INSTITUTE (ACI).
 - THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL CONCRETE ISOLATION MATERIAL TO SEPARATE CONCRETE POURS AS REQUIRED WHETHER SHOWN IN SECTIONS OR NOT.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ANCHOR BOLTS, CLIPS, INSERTS, CONNECTION PLATES, SLEEVES, SLOTS, AND OTHER REQUIRED ITEMS IN ACCORDANCE WITH THE CONTRACT DRAWINGS AND IN COORDINATION WITH OTHER TRADES PRIOR TO PLACING CONCRETE.
 - CONCRETE MATERIALS SHALL CONFORM TO THE FOLLOWING STANDARDS:
 CEMENT: ASTM C150, TYPE I - NORMAL PORTLAND TYPE
 FINE/COURSE AGGREGATES: ASTM C33
 AGGREGATES SHALL BE CLEAN, NATURAL, AND FREE FROM LOAM, CLAY, OR OTHER DELETERIOUS SUBSTANCES. WATER SHALL BE CLEAN AND NOT DETRIMENTAL TO CONCRETE.
 - ADDITION OF WATER TO THE CONCRETE AT THE JOB SITE FOR THE PURPOSE OF INCREASING THE SLUMP OR FOR RETEMPERING CONCRETE WHICH HAS BEGUN TO SET IS STRICTLY PROHIBITED.

- C. REINFORCING STEEL**
- REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. LAP 42 X BAR DIAMETERS AT SPLICES UNLESS OTHERWISE NOTED ON THE DRAWING.
 - ALL REINFORCING STEEL SHALL BE SECURELY TIED TO PREVENT DISLOCATION DURING THE PLACING OPERATION. CHAIRS/BOLSTERS SHALL BE OF NON-CORROSIVE MATERIAL.
 - REINFORCING STEEL SHALL BE CLEAN OF MUD, DEBRIS, LOOSE RUST, CEMENT GROUT, OR ANY OTHER MATERIAL WHICH MAY INHIBIT BOND BETWEEN THE STEEL AND CONCRETE.
- D. MISCELLANEOUS ITEMS**
- "PROVIDE" SHALL BE INTERPRETED TO MEAN FURNISH AND INSTALL UNLESS OTHERWISE NOTED.
 - COORDINATE THIS DRAWING WITH CIVIL DRAWINGS FOR WALL LOCATION, PIPE OPENING SIZE AND LOCATION, TRASH GRATE (NOT SHOWN), GABIONS (NOT SHOWN), ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEEING THAT WORK OF ALL TRADES IS COORDINATED WITH THE STRUCTURAL WORK.
 - ALL SAFETY REGULATIONS SHALL BE STRICTLY FOLLOWED. THE ENGINEER SHALL NOT HAVE CONTROL OR CHARGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
 - THE CONTRACTOR SHALL PROTECT FROM DAMAGES EXISTING ROADS, UTILITIES, AND OWNER'S EQUIPMENT. HE SHALL MAINTAIN THEM DURING THE COURSE OF THE WORK, AND SHALL REPAIR ALL DAMAGES AT NO ADDITIONAL EXPENSE TO THE OWNER.
 - THE ENGINEER SHALL BE NOTIFIED AT THE PROPER TIME WHEN ALL ITEMS ARE READY FOR OBSERVATION. SUFFICIENT NOTICE SHALL BE GIVEN BY THE CONTRACTOR TO ALLOW FOR SCHEDULING OF THE OBSERVATION.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN, FURNISHING, ERECTING AND REMOVING ANY TEMPORARY SHORING AND BRACING DURING CONSTRUCTION. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR FURNISHING AND OPERATING ALL EQUIPMENT FOR DE-WATERING OF ALL EXCAVATIONS IN ACCORDANCE WITH THE REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING ANALYSIS.

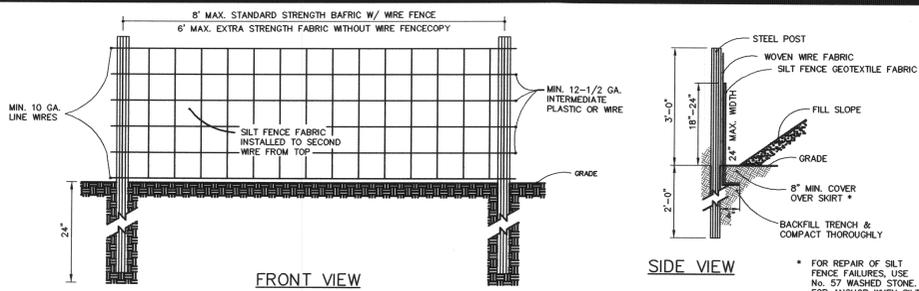
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	2	4
	1	5

POST OFFICE BOX 35286
 GREENSBORO, NC 27425-5286
 PHONE 336.605.8000
 FAX 336.605.9392
 WWW.ENGINEERINGCONCEPTS.COM

ENGINEERED CONCEPTS
 CIVIL & STRUCTURAL ENGINEERS
 PROFESSIONAL SEAL

STREAM DIVERSION STRUCTURE
CONOVER STATION WETLAND & RIPARIAN BUFFER PROJECT
 CITY OF CONOVER, NORTH CAROLINA
STREAM DIVERSION STRUCTURE STRUCTURAL DRAWING

JOB NO. 11130
 DESIGNED BY: NEA
 DRAWN BY: JDL
 APPROVED BY: NEA
 DATE: 1/31/2012
 SHEET NO. C-106.21
 OF



NOTES:
- ENDS OF SILT FENCE SHALL BE TURNED UPHILL.
- PLACE STONE OUTLET AS DIRECTED BY ENGINEER.

CONSTRUCTION:

1. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS.
2. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24" ABOVE THE GROUND SURFACE. (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.)
3. CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL OUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITH 4 FEET MINIMUM OVERLAP TO THE NEXT POST.
4. SUPPORT STANDARD STRENGTH FILTER FABRIC BY WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS. EXTEND THE WIRE MESH SUPPORT TO THE BOTTOM OF THE TRENCH. FASTEN THE WIRE REINFORCEMENT, THEN FABRIC ON THE UPSLOPE SIDE OF THE FENCE POST. WIRE OR PLASTIC ZIP TIES SHOULD HAVE A MINIMUM 50 POUND TENSILE STRENGTH.
5. WHEN A WIRE MESH SUPPORT FENCE IS USED, SPACE POSTS A MAXIMUM OF 8 FEET APART. SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
6. EXTRA STRENGTH FILTER FABRIC WITH 6 FEET POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. SECURELY FASTEN THE FILTER FABRIC DIRECTLY TO POSTS.
7. EXCAVATE A TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
8. PLACE 12 INCHES OF THE FABRIC ALONG THE BOTTOM AND SIDE OF THE TRENCH.
9. BACKFILL THE TRENCH WITH SOIL PLACED OVER THE FILTER FABRIC AND COMPACT. THOROUGH COMPACTION OF BACKFILL IS CRITICAL TO SILT FENCE PERFORMANCE.
10. DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.

MAINTENANCE:

11. INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY. REPLACE FABRIC OR FENCE IF FENCE COLLAPSES, TEARS, DECOMPOSES OR BECOMES INEFFECTIVE. (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.)
12. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
13. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREAS HAVE BEEN PROPERLY STABILIZED.

1
106.8
TEMPORARY SILT FENCE DETAIL
NOT TO SCALE

LATE WINTER AND EARLY SPRING (PIEDMONT, JAN. 1 - MAY 1)

TEMPORARY SEEDING MIXTURE		
DATES	SPECIES	RATE (LBS./ACRE)
JANUARY 1 - MAY 1	RYE (GRAIN)	120
JANUARY 1 - MAY 1	ANNUAL LESPEDEZA (KOBE)	50

NOTE: OMIT ANNUAL LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND JUNE.

SOIL AMENDMENTS
APPLY LIME ACCORDING TO SOIL TEST RECOMMENDATIONS. SOILS WITH pH HIGHER THAN 6 NEED NOT BE LIMED. IF THE pH OF THE SOIL IS UNKNOWN, AN APPLICATION OF GROUND LIME AT THE RATE OF 1 TO 1 1/2 TONS/ACRE ON COARSE-TEXTURED SOILS AND 2 TO 3 TONS/ACRE ON FINE-TEXTURED SOILS MAY BE APPLIED. APPLY LIMESTONE AND INCORPORATE INTO TOP 4" TO 6" OF SOIL.
APPLY FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. WHEN THE SOIL TEST IS UNAVAILABLE, APPLY A 10-10-10 GRADE FERTILIZER AT 700-1000 LB/ACRE INCORPORATED INTO THE TOP 4" TO 6" OF SOIL.

MULCH
* APPLY 4,000 LBS./ACRE GRAIN STRAW OR ENGINEER APPROVED EQUIVALENT COVER.
* ANCHOR MULCH WITH A MULCH ANCHORING TOOL, NETTING, OR BY TACKING WITH ASPHALT EMULSION AT A RATE OF 200 GAL./ACRE. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

WATER
MINIMUM OF 1" OF RAINFALL PER WEEK (IF NOT SUPPLIED NATURALLY, CONTRACTOR SHALL SUPPLY THE REMAINING AMOUNT UNTIL GROUND COVER HAS BEEN ESTABLISHED).

MAINTENANCE
RE-FERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RE-SEED, FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

SUMMER (PIEDMONT, MAY 1 - AUG 15)

TEMPORARY SEEDING MIXTURE		
DATES	SPECIES	RATE (LBS./ACRE)
MAY 1 - AUGUST 15	GERMAN MILLET	40

NOTE: A SMALL-STEMMED SUDANGRASS MAY BE SUBSTITUTED AT A RATE OF 50 LBS./ACRE.

SOIL AMENDMENTS
APPLY LIME ACCORDING TO SOIL TEST RECOMMENDATIONS. SOILS WITH pH HIGHER THAN 6 NEED NOT BE LIMED. IF THE pH OF THE SOIL IS UNKNOWN, AN APPLICATION OF GROUND LIME AT THE RATE OF 1 TO 1 1/2 TONS/ACRE ON COARSE-TEXTURED SOILS AND 2 TO 3 TONS/ACRE ON FINE-TEXTURED SOILS MAY BE APPLIED. APPLY LIMESTONE AND INCORPORATE INTO TOP 4" TO 6" OF SOIL.
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MULCH
* APPLY 4,000 LBS./ACRE GRAIN STRAW OR ENGINEER APPROVED EQUIVALENT COVER.
* ANCHOR MULCH WITH A MULCH ANCHORING TOOL, NETTING, OR BY TACKING WITH ASPHALT EMULSION AT A RATE OF 200 GAL./ACRE. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

WATER
MINIMUM OF 1" OF RAINFALL PER WEEK (IF NOT SUPPLIED NATURALLY, CONTRACTOR SHALL SUPPLY THE REMAINING AMOUNT UNTIL GROUND COVER HAS BEEN ESTABLISHED).

MAINTENANCE
RE-FERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RE-SEED, FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

FALL (PIEDMONT, AUG 15 - DEC 30)

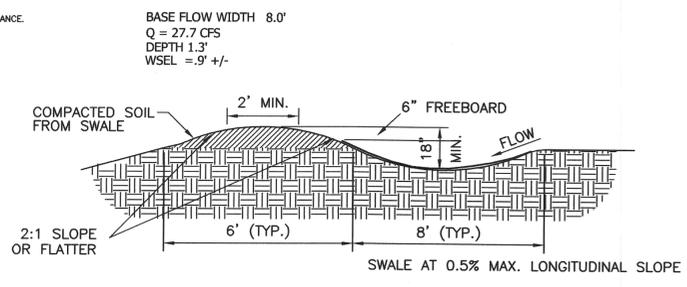
TEMPORARY SEEDING MIXTURE		
DATES	SPECIES	RATE (LBS./ACRE)
AUGUST 15 - DECEMBER 30	RYE (GRAIN)	120

SOIL AMENDMENTS
APPLY LIME ACCORDING TO SOIL TEST RECOMMENDATIONS. SOILS WITH pH HIGHER THAN 6 NEED NOT BE LIMED. IF THE pH OF THE SOIL IS UNKNOWN, AN APPLICATION OF GROUND LIME AT THE RATE OF 1 TO 1 1/2 TONS/ACRE ON COARSE-TEXTURED SOILS AND 2 TO 3 TONS/ACRE ON FINE-TEXTURED SOILS MAY BE APPLIED. APPLY LIMESTONE AND INCORPORATE INTO TOP 4" TO 6" OF SOIL.
APPLY FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. WHEN THE SOIL TEST IS UNAVAILABLE, APPLY A 10-10-10 GRADE FERTILIZER AT 700-1000 LB/ACRE INCORPORATED INTO THE TOP 4" TO 6" OF SOIL.

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* ANCHOR MULCH WITH A MULCH ANCHORING TOOL, NETTING, OR BY TACKING WITH ASPHALT EMULSION AT A RATE OF 200 GAL./ACRE. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

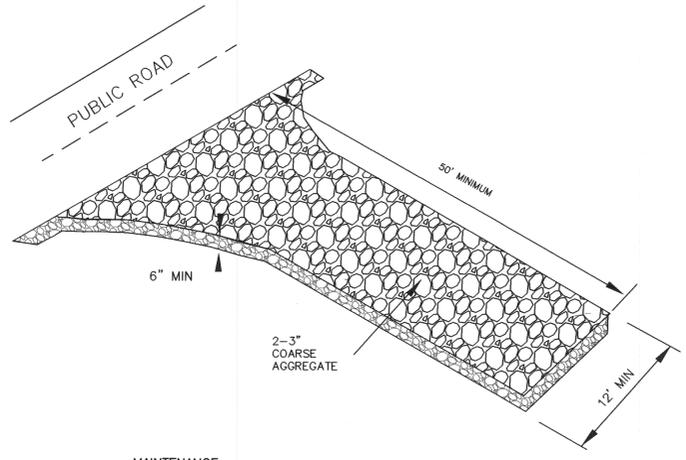
WATER
MINIMUM OF 1" OF RAINFALL PER WEEK (IF NOT SUPPLIED NATURALLY, CONTRACTOR SHALL SUPPLY THE REMAINING AMOUNT UNTIL GROUND COVER HAS BEEN ESTABLISHED).

MAINTENANCE
REPAIR AND RE-FERTILIZE DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 LBS./ACRE OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 LBS./ACRE KOBE LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.



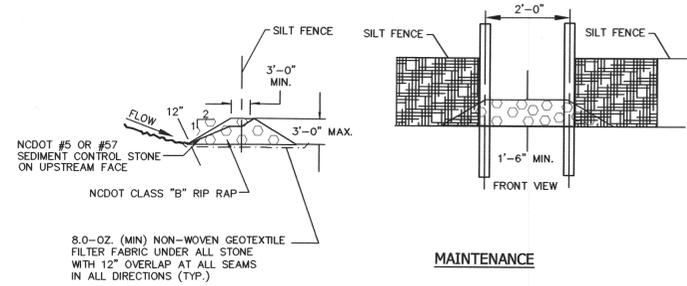
MAINTENANCE:
INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL DURING CONSTRUCTION OPERATION. IMMEDIATELY REMOVE ANY SEDIMENT AND OBSTRUCTIONS FROM THE FLOW AREA, AND REPAIR THE DIVERSION RIDGE. CHECK OUTLETS, AND MAKE TIMELY REPAIRS AS NEEDED. MAINTAIN THE VEGETATION IN A VIGOROUS, HEALTHY CONDITION AT ALL TIMES. WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE BERM AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND LEVEL AND APPROPRIATELY STABILIZE IT.

3
106.8
TEMPORARY DIVERSION BERM/SWALE DETAIL
NOT TO SCALE



MAINTENANCE:
MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH 2-INCH STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

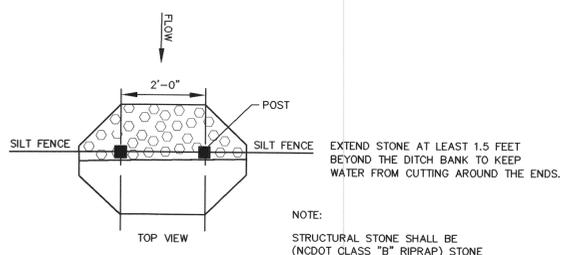
2
106.8
TEMPORARY CONSTRUCTION ENTRANCE
NOT TO SCALE



MAINTENANCE:
INSPECT TEMPORARY STONE OUTLETS WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. CLEAN OUT SEDIMENT, STRAW, LIMBS, OR OTHER DEBRIS THAT COULD CLOG THE CHANNEL WHEN NEEDED. ANTICIPATE SUBMERGENCE AND DEPOSITION ABOVE AND AROUND THE STONE. CORRECT ALL DAMAGE IMMEDIATELY.
REMOVE THE SEDIMENT ACCUMULATED BEHIND THE OUTLET AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION, ALLOW THE CHANNEL OR RUNOFF TO DRAIN THROUGH THE STONE OUTLET AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE STONE OUTLET. ADD STONES TO THE STRUCTURE AS NEEDED TO MAINTAIN ADEQUATE HEIGHT AND SIZE TO PREVENT SEDIMENT FROM PASSING OVER.

4
106.8
TEMPORARY STONE OUTLET DETAIL
NOT TO SCALE

- EROSION CONTROL CONSTRUCTION NOTES**
1. INSPECT SITE AFTER EACH RUNOFF PRODUCING RAINFALL AND REPAIR VISIBLE EROSION. CLEAN OUT DEPOSITED SEDIMENT WHEN TRAPS HAVE REACHED 1/2 THEIR ORIGINAL DEPTH.
 2. CONTRACTOR SHALL PROVIDE TEMPORARY STONE OUTLETS IN LOW LYING AREAS OF TEMPORARY SILT FENCE. ENGINEER WILL DIRECT PLACEMENT OF TEMPORARY STONE OUTLETS.
 3. CONTRACTOR SHALL PROVIDE SOIL STABILIZATION ON ANY AREA OF THE SITE WHERE LAND DISTURBING ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED ACCORDING TO THE FOLLOWING:
i) ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER WITHIN 7 DAYS FROM THE LAST LAND DISTURBING ACTIVITY.
ii) ALL OTHER DISTURBED AREAS (SLOPES FLATTER THAN 3:1) SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER WITHIN 14 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.
 4. ANNUAL RYE GRASS SHALL NOT BE PLANTED IN THE FIELD.
 5. REMOVE TEMPORARY EROSION CONTROL MEASURES AND SEED, OR RIPRAP DISTURBED AREAS. CLEAR ALL SWALES AND PIPES OF ANY DEBRIS OR SEDIMENT ACCUMULATION. ESTABLISH PERMANENT VEGETATION CONSISTENT WITH THE TIME OF YEAR.
 6. WHEN VEGETATION IS ESTABLISHED, CALL FOR FINAL SITE INSPECTION BY THE CITY OF CONOVER INSPECTOR AND THE ENGINEER.
 7. JUDGEMENT OF SATISFACTORY TURF ESTABLISHMENT SHALL BE MADE ON THE BASIS THAT A VEGETATIVE COVER IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATIONS SHALL BE ESTABLISHED ON ALL DISTURBED AREAS SUFFICIENT TO RESTRAIN ACCELERATED EROSION.



NOTE:
STRUCTURAL STONE SHALL BE (NCDOT CLASS "B" RIPRAP) STONE FOR EROSION CONTROL PURPOSES
SEDIMENT CONTROL STONE SHALL BE NCDOT #5 OR #57 STONE.

PERMANENT SEEDING SCHEDULE (NOT FOR STREAM BANKS)

LATE WINTER AND EARLY SPRING

PERMANENT SEEDING MIXTURE (STEEP SLOPES OR POOR SOILS; LOW MAINTENANCE)		
DATES	SPECIES	RATE (LBS./ACRE)
FEBRUARY 15 - APRIL 15	TALL FESCUE	100
FEBRUARY 15 - APRIL 15	SERICA LESPEDEZA	30
FEBRUARY 15 - APRIL 15	KOBE LESPEDEZA	10

NOTE: FALL IS BEST FOR TALL FESCUE AND LATE WINTER FOR LESPEDEZAS.

FALL

PERMANENT SEEDING MIXTURE (STEEP SLOPES OR POOR SOILS; LOW MAINTENANCE)		
DATES	SPECIES	RATE (LBS./ACRE)
AUGUST 20 - OCTOBER 25	TALL FESCUE	100
AUGUST 20 - OCTOBER 25	SERICA LESPEDEZA	30
AUGUST 20 - OCTOBER 25	KOBE LESPEDEZA	10

SEEDING NOTES
1. AFTER AUGUST 15 USE UNSCARIFIED SERICEA SEED.
2. WHERE NEAT APPEARANCE IS DESIRED, OMIT SERICEA AND SUBSTITUTE 40 LBS./ACRE BAHIA GRASS OR 15 LBS./ACRE BERMUDAGRASS.

NURSE PLANTS
BETWEEN MAY 1 AND AUGUST 15, ADD 10 LBS./ACRE GERMAN MILLET OR 15 LBS./ACRE SUDANGRASS. PRIOR TO MAY 1 OR AFTER AUGUST 15, ADD 40 LBS./ACRE RYE (GRAIN).

SOIL AMENDMENTS
APPLY LIME ACCORDING TO SOIL TEST RECOMMENDATIONS. SOILS WITH pH HIGHER THAN 6 NEED NOT BE LIMED. APPLY LIMESTONE AND INCORPORATE INTO TOP 4" TO 6" OF SOIL.
APPLY FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS ONLY.

MULCH
* APPLY 4,000 - 5,000 LBS./ACRE GRAIN STRAW OR ENGINEER APPROVED EQUIVALENT COVER.
* ANCHOR MULCH WITH BY RIVING, NETTING, OR BY TACKING WITH ASPHALT EMULSION AT A RATE OF 200 GAL./ACRE. NETTING IS PREFERRED ANCHORING METHOD ON STEEP SLOPES.

WATER
MINIMUM OF 1" OF RAINFALL PER WEEK (IF NOT SUPPLIED NATURALLY, CONTRACTOR SHALL SUPPLY THE REMAINING AMOUNT UNTIL GROUND COVER HAS BEEN ESTABLISHED).

MAINTENANCE
RE-FERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RE-SEED, FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE. GENERALLY, A STAND OF VEGETATION CANNOT BE DETERMINED TO BE FULLY ESTABLISHED UNTIL SOIL COVER HAS BEEN MAINTAINED FOR ONE FULL YEAR FROM PLANTING. INSPECT SEEDED AREAS FOR FAILURE AND MAKE NECESSARY REPAIRS AND RESEEDINGS WITHIN THE SAME SEASON, IF POSSIBLE.

SEED BED PREPARATION

1. RIP THE ENTIRE AREA TO 6" DEPTH.
2. REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
3. APPLY AGRICULTURAL LIME AND FERTILIZER UNIFORMLY (IN ACCORDANCE WITH SOIL AMENDMENTS SPECIFICATIONS LISTED FOR THE RESPECTIVE SEEDING SCHEDULE) AND MIX WITH SOIL.
4. CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4" TO 8" DEPTH.
5. SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING AND SEED ACCORDING TO SCHEDULE.
6. MULCH IN ACCORDANCE WITH MULCH SPECIFICATIONS LISTED FOR THE RESPECTIVE SEEDING SCHEDULE IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
7. INSPECT ALL SEEDED AREAS FOR COMPLIANCE WITH THE REQUIREMENTS OF THE SEEDING SCHEDULE AND OTHER REQUIREMENTS LISTED ON THIS SHEET. IF STAFF SHOULD BE OVERT 60% DAMAGED, RE-ESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.

EROSION CONTROL DETAILS-1

JEWELL
ENGINEERING CONSULTANTS, PC
POST OFFICE BOX 2294 (336) 996-9974 NC LICENSE #: C-1842
KODINGERSVILLE, NORTH CAROLINA 27285 FAX: (336) 996-9976

REVISIONS	JOB NO. 11-157-001
Δ NCDENR DLQ 02-13-12	DESIGNED 01-31-12 BY BAF
	CONST. SURVEY BY
	CHECKED BY CDJ
	SCALE: AS NOTED

CONOVER STATION
WETLAND & RIPARIAN BUFFER PROJECT

CITY OF CONOVER,
NORTH CAROLINA

"C"
SHEET NO.
106.8

