# CITY OF CONCORD
## CONCORD, NORTH CAROLINA

# SALT STORAGE BUILDING SITE PLAN

## PROJECT # :2015-023

### CONSTRUCTION SEQUENCE

1. CONTRACTOR SHALL ENSURE THAT ALL NECESSARY PERMITS HAVE BEEN RECEIVED AND THAT THOSE REQUIRED TO BE DISPLAYED ON-SITE ARE AVAILABLE.

2. CONTRACTOR SHALL HOLD PRE-CONSTRUCTION MEETING AT LEAST 48 HOURS BEFORE THE ACTUAL START OF CONSTRUCTION.

3. CONTRACTOR SHALL CONTACT CAROLINA ONE CALL AND ALL ENTITIES HAVING BURIED UTILITIES AT LEAST 72 HOURS PRIOR TO DIGGING OR AS DIRECTED AT THE PRE-CONSTRUCTION MEETING.

4. CONTRACTOR SHALL MAINTAIN TRAFFIC AND SAFETY CONTROL MEASURES AT ALL TIMES ON THE PROJECT.

5. CONTRACTOR SHALL INSTALL TEMPORARY CONSTRUCTION ENTRANCES (IF ANY) AT EACH POINT OF ACCESS TO STORAGE AND CONSTRUCTION AREAS.

6. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH PLANS AND BEFORE STARTING WORK.

7. CONTRACTOR SHALL CLEAR RIGHT-OF-WAY IF NECESSARY.

8. STOCKPILE RIP-RAP ON SITE AND INSTALL ALL OTHER EROSION CONTROL MEASURES WHERE THE WORK IS OCCURRING. THE CONTRACTOR SHALL NOT INSTALL EROSION CONTROL MEASURES IN AREAS WHERE THE WORK WILL NOT OCCUR FOR SOME TIME. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY THE CITY/PROJECT ENGINEER OR UPON RECOMMENDATION OF NC DENR PERSONNEL AS CONDITIONS WARRANT.

9. STABILIZATION FOR THIS PROJECT SHALL COMPLY WITH THE TIME FRAME GUIDELINES AS SPECIFIED BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

10. CONTRACTOR SHALL COORDINATE ALL BLOW-OFFS AND TESTING WITH THE CITY ENGINEERING DEPARTMENT'S CONSTRUCTION ADMINISTRATOR AT LEAST 24 HOURS IN ADVANCE OF SUCH WORK. NOTIFY THE RESPONSE AREA FIRE DEPARTMENT IF EXISTING SYSTEM VALVES NEED TO BE SHUT OFF IN THE COURSE OF THE WORK.

11. UPON COMPLETION OF THE INSTALLATION AND WITH APPROVAL OF NC DENR-DLR, ALL EROSION CONTROL DEVICES EXCEPT FOR CREEK/STREAM BANK STABILIZATION SHALL BE REMOVED AND DISPOSED OF IN AN ACCEPTABLE MANNER. EACH SECTION SHALL BE SEEDED AT EARLIEST POSSIBLE DATE AFTER INSTALLATION OF PIPE, STRUCTURE, OR ACCESS.

12. ONCE GROUND COVER IS FIRMLY ESTABLISHED, ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED WITH THE APPROVAL OF NC DENR-DLR.

13. CONTRACTOR SHALL REFERENCE SPECIAL CONDITIONS FOR JOB SEQUENCE AND OTHER DIRECTIONS, IF ANY. CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITY WITH THE CITY ENGINEERING DEPARTMENT.

### GENERAL NOTES

1. ALL MATERIALS, EQUIPMENT, LABOR, AND WORKMANSHIP IS TO BE IN ACCORDANCE WITH AND SUBJECT TO THE WATER AND SEWER AUTHORITY OF CABARRUS COUNTY'S STANDARD SPECIFICATIONS; THE CITY OF CONCORD'S ORDINANCES, POLICIES, AND STANDARD SPECIFICATIONS, AND NCDOT STANDARD SPECIFICATIONS, AND THE NORTH CAROLINA ADMINISTRATIVE CODE FOR WASTEWATER COLLECTION AND WATER DISTRIBUTION SYSTEMS. IN THE EVENT OF CONFLICT BETWEEN THE WATER AND SEWER AUTHORITY OF CABARRUS COUNTY'S STANDARD SPECIFICATION; THE CITY OF CONCORD'S ORDINANCES, POLICIES, AND STANDARD SPECIFICATIONS,AND NCDOT STANDARD SPECIFICATIONS, OR THE NORTH CAROLINA ADMINISTRATIVE CODE, THE MORE RESTRICTIVE REQUIREMENTS SHALL APPLY.

2. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL CONFORM TO THE LATEST STANDARDS OF THE N.C. SEDIMENTATION POLLUTION CONTROL ACT AND APPLICABLE LOCAL AND FEDERAL REQUIREMENTS.

3. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION ADMINISTRATOR OF THE CITY OF CONCORD ENGINEERING DEPARTMENT AT LEAST 48 HOURS IN ADVANCE OF BEGINNING WORK.

4. INDIVIDUAL WATER, GAS, SEWER, TELEPHONE, AND CABLE SERVICES MAY OR MAY NOT BE SHOWN ON THE PLANS. CONTRACTOR TO CONTACT APPROPRIATE AGENCY FOR FIELD LOCATIONS.

5. CITY OF CONCORD ELECTRIC, WATER, AND SEWER DEPARTMENT PERSONNEL WILL ASSIST THE CONTRACTOR IN LOCATING ALL CITY OF CONCORD UTILITY SERVICES AND LINES.

6. IF MAILBOX PULL-OFF AREAS ARE DISTURBED, CRUSHED STONE STABILIZER SHALL BE PLACED WITH SUFFICIENT LENGTH TO ACCOMMODATE VEHICULAR TRAFFIC. THESE AREAS SHALL BE MAINTAINED FOR THE ONE-YEAR WARRANTY PERIOD. THE COST OF THESE ITEMS SHALL BE INCLUDED IN THE COST OF LAYING PIPE AND/OR CULVERT REPLACEMENT.

7. THIS PROJECT IS SUBJECT TO 100 YEAR FLOOD PER FIRM MAP 3710553900J, NOVEMBER 5, 2008.

8. FIRE HYDRANT EXTENSIONS, IF NEEDED, SHALL BE INCLUDED IN THE COST OF THE HYDRANT INSTALLATION.

9. GATE OR BUTTERFLY VALVES, BLOW-OFFS, AND FIRE HYDRANTS MAY BE FIELD ADJUSTED 50 FEET IN EITHER DIRECTION WITH THE PERMISSION OF THE ENGINEERING AND WATER RESOURCES DEPARTMENTS.

### RIGHT-OF-WAY NOTES

1. RIGHT-OF-WAY LINES AND PROPERTY LINES ARE SHOWN ON THE DESIGN DRAWINGS AND ARE FOR REFERENCE ONLY. FOR EXACT LOCATIONS REFER TO THE SURVEY PLATS BY THE CITY OF CONCORD'S CONSULTING REGISTERED LAND SURVEYOR OR BY THE CITY SURVEYOR.

2. REFER TO STANDARDS AND SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION FOR FURTHER DETAILS CONCERNING THE RIGHT-OF-WAY.

### TRAFFIC CONTROL

1. THE CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES FOR WORK ZONE TRAFFIC SAFETY AND CONTROL.

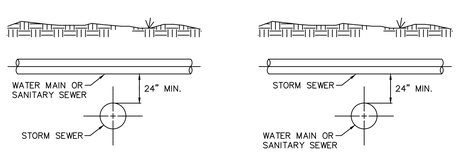
2. ALL WORK ZONE TRAFFIC CONTROL DEVICES AND OPERATIONS USED ON STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE, UTILITY OR INCIDENT MANAGEMENT SHALL CONFORM TO THE APPLICABLE SPECIFICATIONS IN THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (MUTCD).

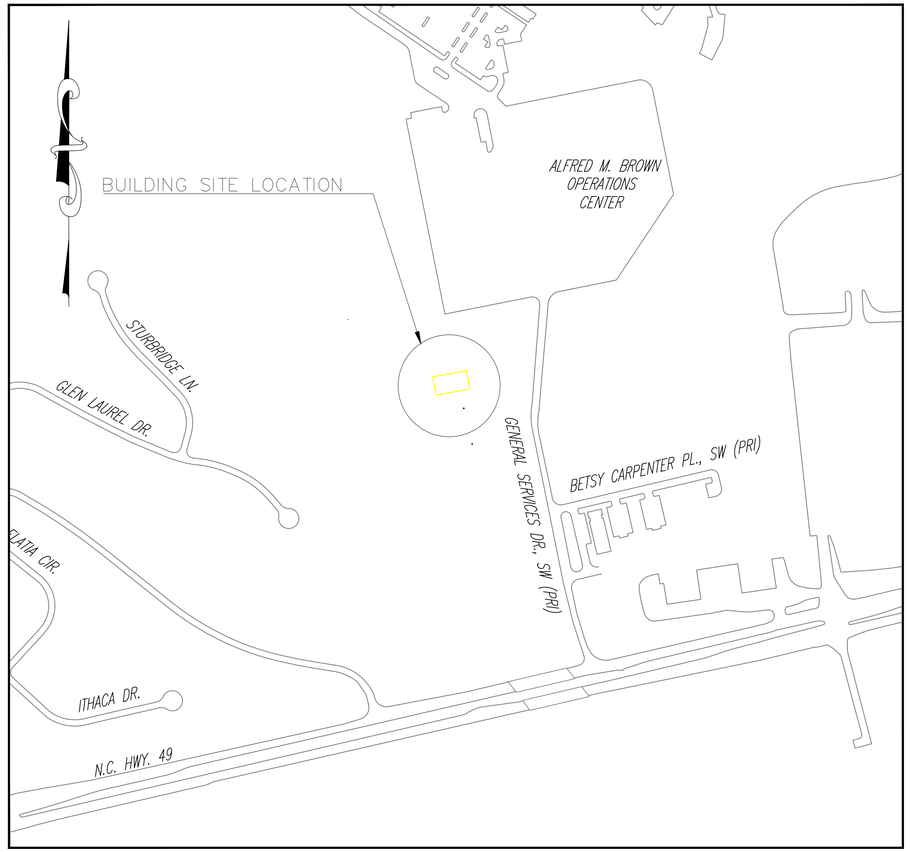
3. ALL TRAFFIC/SAFETY CONTROL DEVICES SHALL BE IN GOOD REPAIR AND SHALL BE POSITIONED AT ALL TIMES IN THE APPROPRIATE LOCATIONS FOR THE WORK OPERATION. THE CONTRACTOR SHALL CAREFULLY MONITOR SITE CONDITIONS SUCH AS LIGHT, WEATHER, TRAFFIC VOLUME, ETC. TO ENSURE THAT ALL TRAFFIC/SAFETY CONTROL MEASURES ARE OPERATING EFFECTIVELY.

4. THE CONTRACTOR SHALL PREPARE A PROPOSAL ON THE TRAFFIC CONTROL OPERATIONS AND PRESENT THEM TO THE CITY OF CONCORD'S ENGINEERING DEPARTMENT CONSTRUCTION ADMINISTRATOR (PHILLIP KINGSLAND) @ 704-920-5404 AT LEAST 48 HOURS BEFORE BEGINNING WORK.

### UTILITY NOTE

THERE WILL BE A MINIMUM 10-FOOT HORIZONTAL SEPARATION BETWEEN THE SEWER LINE AND THE WATER MAIN. WHEN THE 10-FOOT MINIMUM HORIZONTAL SEPARATION CANNOT BE MAINTAINED, AND WHEN THE WATER MAIN IS ABOVE THE SEWER, BUT WITH LESS THAN 24 INCHES OF CLEARANCE, OR WHEN THE SEWER IS ABOVE THE WATER MAIN, BOTH THE WATER MAIN AND THE SEWER LINE SHALL BE CONSTRUCTED OF FERROUS MATERIALS WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A MINIMUM LATERAL DISTANCE, MEASURED AT RIGHT ANGLES TO THE SEWER, OF 10 FEET ON EACH SIDE OF THE CROSSING. (SEE DETAIL BELOW)




VICINITY MAP

SCALE: N.T.S.

### NARRATIVE DESCRIPTION

THIS PROJECT INCLUDES THE SITE PREPARATION, GRADING, FOUNDATIONS, SLAB, FOUNDATION WALLS, AND THE INSTALLATION OF A 120FT LONG BY 65FT WIDE TRUSS BUILDING COVERED WITH A FLAME RETARDANT FABRIC CLADDING.

THE EFFECTIVE AREA OF GROUND DISTURBANCE IS 0.35± ACRES. THE WORK IS TO PROCEED IN SUCH A MANNER AS TO LIMIT THE AMOUNT OF GROUND DISTURBANCE BY HAVING ONLY ONE SECTION OF THE DITCH OPEN AT A TIME THEREBY REDUCING THE POTENTIAL FOR LARGE QUANTITIES OF SEDIMENT TO BE TRANSPORTED OFF SITE. SEEDING OF DENUDED AREAS SHALL BE DONE AS SOON AS POSSIBLE, BUT IN NO CASE LONGER THAN 10 DAYS AND IN ACCORDANCE WITH THE SPECIFICATIONS GIVEN IN THE PLANS. REMOVAL OF ALL SEDIMENTATION AND EROSION CONTROL DEVICES SHALL ONLY BE DONE AFTER APPROVAL HAS BEEN COORDINATED WITH NCDEHNR – DIVISION OF LAND RESOURCES AND THE CITY OF CONCORD.

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

ALL TRAFFIC CONTROL AND SAFETY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE CONDUCTED IN STRICT ACCORDANCE WITH THE LATEST REVISION OF PART IV OF THE M.U.T.C.D., NCDOT, AND ALL OTHER STATE AND FEDERAL REGULATIONS. COMPLETION AND ACCEPTANCE OF THE WORK IS ANTICIPATED TO BE DECEMBER OF 2015.

### LEGEND

| | |
|---|---|
| SS — Ⓢ — SS, CO | PROPOSED SEWER LINE, MANHOLE & CLEAN-OUT |
| W — W | PROPOSED WATER LINE |
| | PROPOSED FIRE HYDRANT |
| | PROPOSED WATER VALVE |
| | PROPOSED BLOW-OFF |
| | SEDIMENT FENCING |
| | DA-GLO ORANGE PERSONNEL FENCING |
| | PROPOSED ENCASEMENT |
| SS — Ⓢ — SS | EXISTING SEWER AND MANHOLE |
| FM — FM | EXISTING SEWER FORCE MAIN |
| W — W | EXISTING WATER LINE |
| G — G — G | EXISTING GAS LINE |
| UT — OT | EXISTING TELEPHONE (OVERHEAD OR UNDERGROUND) |
| UE — OE | EXISTING ELECTRIC (OVERHEAD OR UNDERGROUND) |
| EIP | PROPERTY LINE AND IRON PIN |
| | TEMPORARY CONSTRUCTION EASEMENT |
| R/W | RIGHT OF WAY/PERMANENT EASEMENT |
| | WATERWAY/DITCH LINE |
| X — X — X | EXISTING BARBED WIRE FENCE |
| | EXISTING WOVEN WIRE FENCE |
| | EXISTING CHAIN LINK FENCE |
| | TREE/WOODS LINE |
| | EXISTING FIRE HYDRANT |
| WV | EXISTING WATER VALVE |
| WM | EXISTING WATER METER |
| | EXISTING WELL |
| | EXISTING TELEPHONE/POWER RISER |
| LP | EXISTING LIGHT POLE |
| PP | EXISTING POWER POLE/GUY WIRE |
| | EXISTING STREET OR LOCATION SIGN |
| CONC. MON. | EXISTING CONCRETE R/W MONUMENT |
| | BENCHMARK/TEMPORARY BENCHMARK |
| | EXISTING RCP OR CMP |
| MB | EXISTING MAILBOX |

### DRAWING INDEX


| | |
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| SHEET 1 | PROJECT NARRATIVE, NOTES, LEGEND, SITE MAP |
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Concord NORTH CAROLINA High Performance Living

PREPARED BY
ENGINEERING DEPARTMENT
CITY OF CONCORD
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(704) 920-5425


Engineer's Seal

Surveyor's Seal

| REV. # | DATE | DESCRIPTION | BY |
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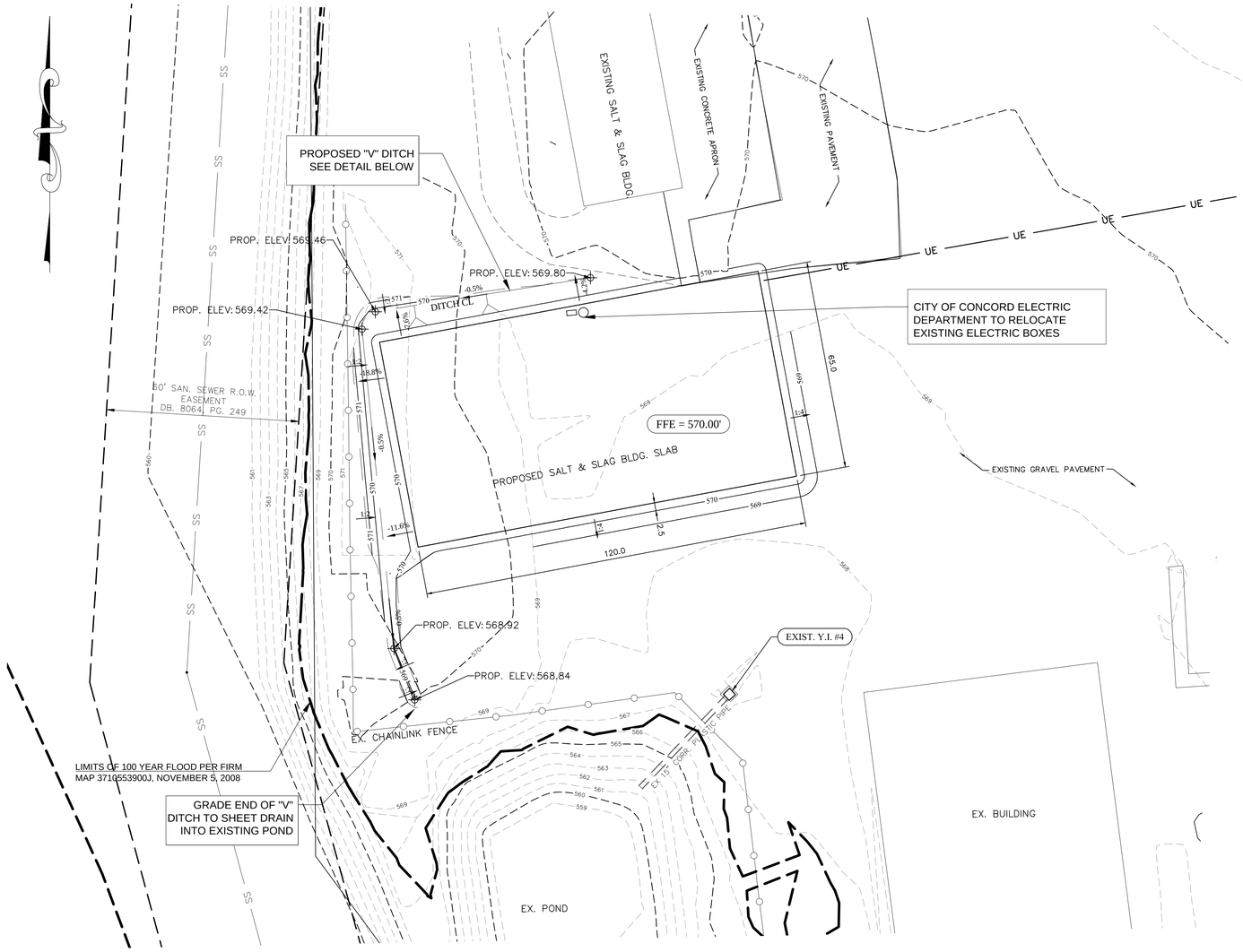
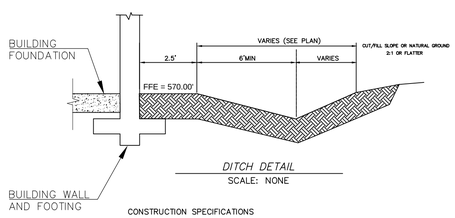
| | | | |




*PLAN*

SCALE: 1" = 20'




*DITCH DETAIL*

SCALE: NONE

CONSTRUCTION SPECIFICATIONS

1. REMOVE ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA AND DISPOSE OF PROPERLY.

2. SHAPE THE EXCAVATED CHANNEL TO NEAT LINES AND TO THE DIMENSIONS SHOWN ON THE PLANS. UNDERCUT CHANNEL AND INSTALL LINER FABRIC AND RIPRAP WITHIN EXCAVATED CHANNEL, IN ACCORDANCE WITH RIPRAP SLOPE PLACEMENT DETAIL.

PROTECTION OF EXISTING UTILITIES

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

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

| COMPANY NAME | OFFICE | AFTER HOURS EMERGENCY |
|---|---|---|
| Amtrak | N/A | **1.800.331.0008** |
| AT&T | 1.678.627.5335 | **1.800.252.1133** |
| Cabarrus County Emergency Mgmt | 704.920.2143 | **704.920.3000** |
| Carolina Water – Utilities Inc. (Zemosa Acres) | 704.525.7990 | **704.525.7990** |
| City of Concord Electric Systems | 704.920.5315 | **704.920.5555** |
| City of Concord Emergency Mgmt | 704.920.5528 | **704.920.5555** |
| Colonial Pipeline Company | 704.392.8610 | **704.392.8610** |
| CSX Railroad | N/A | **1.800.232.0144** |
| Duke Energy | 1.800.769.3766 | **1.800.769.3766** |
| NC Dept. of Transportation | 704.982.0104 | **704.986.3700 Stanly Co Comm** |
| NC One Call Center Area Rep. | 1.336.855.5760 | **1.800.632.4949** |
| Norfolk Southern Railway | N/A | **1.800.453.2530** |
| North Carolina Railroad Company | 919.954.7601 | **N/A** |
| Piedmont Natural Gas (aka NCNG) | 704.364.3120 | **1.800.752.7504** |
| Plantation Pipeline | N/A | **1.800.510.5678** |
| PSNC Energy Concord | 704.723.4310 | **1.877.776.2427** |
| Sprint Embarq | N/A | **1.888.723.8010** |
| Time Warner Cable Concord | 704.378.2856 | **704.378.2626 Option 5, 2, 1** |
| Union Power | N/A | **1.800.922.6840** |
| UtiliQuest Locator Concord | 704.864.8333 | **1.800.632.4949 NC One Call** |
| Water & Sewer Authority of Cabarrus Co. | 704.786.1783 | **704.788.4164 RRWWTP** |
| Windstream | 704.722.2000 | **1.800.800.6609** |

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

NORTH CAROLINA ONE CALL 1–800–632–4949

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(704) 920-5425


Engineer's Seal

Surveyor's Seal

# SALT STORAGE BUILDING SITE PLAN
## SITE GRADING PLAN AND PROFILE
PROJECT # : 2015-023

| REV. # | DATE | DESCRIPTION | BY |
|---|---|---|---|

DESIGNED BY: CMS

DRAWN BY: BCC

CHECKED BY: CMS

SCALE: AS SHOWN

DATE: 10/05/15

PROJECT NUMBER: 2015–023

SHEET: 2 OF: 4

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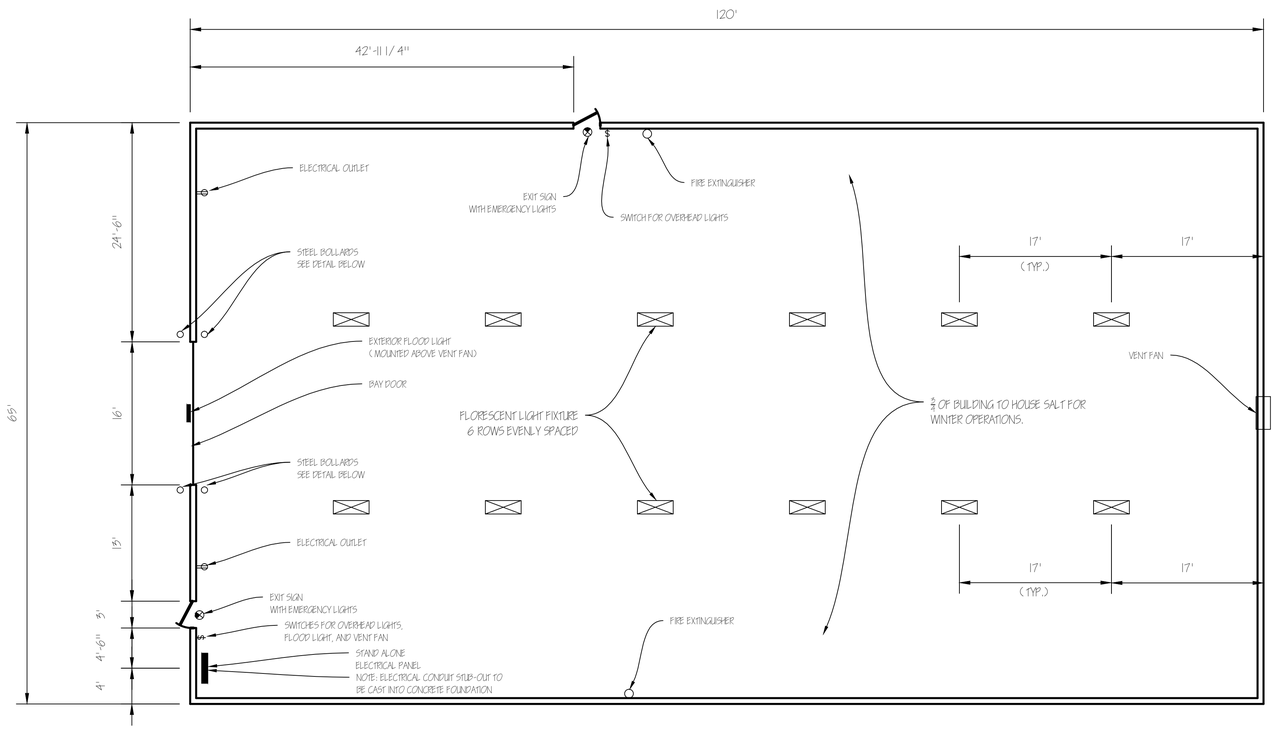
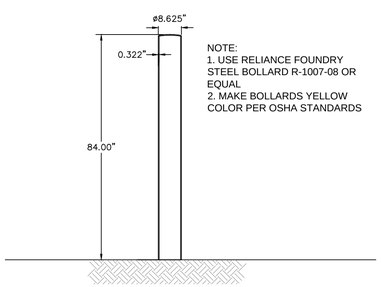



PLAN

SCALE: 1" = 1/8"




NOTE:
1. USE RELIANCE FOUNDRY STEEL BOLLARD R-1007-08 OR EQUAL
2. MAKE BOLLARDS YELLOW COLOR PER OSHA STANDARDS

BOLLARD DETAIL

SCALE: NTS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SALT STORAGE BUILDING
SITE PLAN
ELECTRICAL DESIGN
PROJECT # : 2015-023

| REV. # | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 1 | 07/10/13 | REVISED ELECTRICAL NOTES AND SWITCHES | BCC |

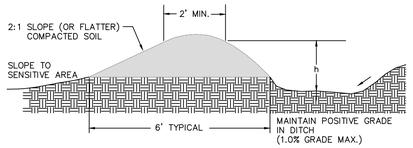
DESIGNED BY: EAB
DRAWN BY: EES
CHECKED BY: EAB
SCALE: AS SHOWN
DATE: 10/05/15
PROJECT NUMBER: 2015-023
SHEET: 3 OF: 4

G:\Engr\Engineering Projects\Projects\2015\2015 Salt Building\Technical\Electrical Foundation Plan Wed Oct 12 , 2015 - 3:30pm

## TEMPORARY DIVERSION DITCH
### CONSTRUCTION AND MAINTENANCE

1. REMOVE AND PROPERLY DISPOSE OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL.
2. ENSURE THAT THE MINIMUM CROSS SECTION MEETS ALL DESIGN REQUIREMENTS.
3. ENSURE THAT THE TOP OF THE DIKE IS NOT LOWER AT ANY POINT THAN THE DESIGN ELEVATION PLUS THE SPECIFIED SETTLEMENT.
4. PROVIDE SUFFICIENT ROOM AROUND DIVERSIONS TO PERMIT MACHINE REGRADING AND CLEANOUT.
5. VEGETATE THE RIDGE IMMEDIATELY AFTER CONSTRUCTION, UNLESS IT WILL REMAIN IN PLACE LESS THAN 30 WORKING DAYS.
6. INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR ANY DAMAGE. WHEN CONSTRUCTION AREA IS PERMANENTLY STABILIZED, REMOVE RIDGE AND CHANNEL AND BLEND TO NATURAL GROUND LEVEL AND APPROPRIATELY STABILIZE.

REFERENCE DETAIL BELOW



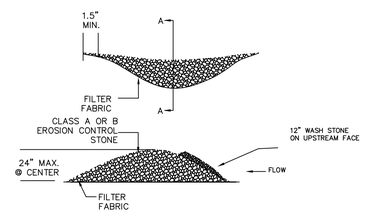

TEMPORARY EARTHEN DIVERSION DIKE WITH TRAPEZOIDAL DITCH

GRADES OF TEMPORARY DIVERSION DITCHES TO FOLLOW NATURAL SLOPE OF GROUND.

* PLANTED VEGETATIVE COVER SHALL BE WET AREAS SPECIES.

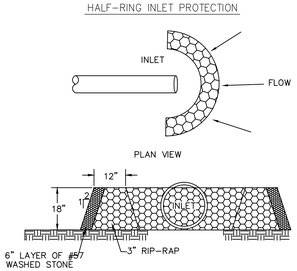
## CHECK DAM (TEMPORARY)
### CONSTRUCTION AND MAINTENANCE

1. PLACE STONES (2" TO 15") ON FILTER FABRIC WHERE SPECIFIED ON THE CONTRACT DRAWINGS.
2. CONSTRUCT TEMPORARY CHECK DAM AS SHOWN IN THE DETAIL.
3. SET SPACING BETWEEN DAMS TO ASSURE THAT THE ELEVATION AT THE TOP OF THE LOWER DAM IS THE SAME AS THE TOE ELEVATION OF THE UPPER DAM.
4. ENSURE PROTECTION OF THE CHANNEL BELOW THE LOWEST DAM FROM OVERFLOW.
5. ENSURE CHANNEL REACH ABOVE THE MOST UPSTREAM DAM IS STABLE.
6. CHECK FOR STONE BLOCKAGE AFTER EVENTS OF RAIN AT CULVERTS AND STORM DRAIN ENTRANCES.
7. INSPECT CHANNELS AND DAMS AFTER EACH RUNOFF EVENT. CLEANOUT AND SPREAD SEDIMENT IF DIRECTED BY INSPECTOR.




SECTION "A – A"

## HALF-RING INLET PROTECTION

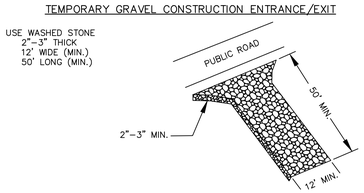



TEMPORARY STONE INLET PROTECTION CONSTRUCTED FROM 3" RIP-RAP WITH 2:1 SIDE SLOPES AT A DEPTH OF 1.5' WITH A 6" LAYER OF #57 WASHED STONE ON THE SIDE AWAY FROM THE INLET.

## DUST CONTROL

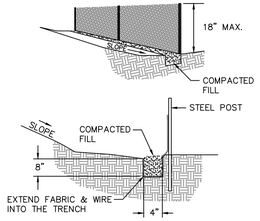
1. CONTRACTOR SHALL CONTROL DUST FROM EQUIPMENT USE OF UNPAVED ROADS BY SPRINKLING WITH WATER UNTIL THE SURFACE IS WET.
2. DUST CONTROL MEASURE(S) SHALL BE USED THROUGH DRY WEATHER UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED.

## TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT

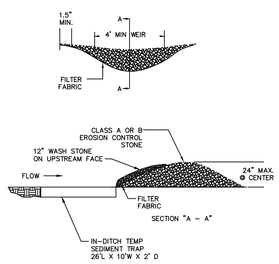



## SEDIMENT FENCE
### CONSTRUCTION AND MAINTENANCE

1. CONSTRUCT THE SEDIMENT BARRIER USING A SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461. SYNTHETIC FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120 F.
2. ENSURE THAT POSTS FOR SEDIMENT FENCES ARE 1.33 LB/LF STEEL WITH MINIMUM LENGTH OF 5 FEET. MAKE SURE THAT STEEL POSTS HAVE PROJECTIONS TO FACILITATE FASTENING THE FABRIC.
3. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24 INCHES ABOVE THE GROUND SURFACE. [HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.]
4. CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL CUT 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.
5. 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.
6. WHEN A WIRE MESH SUPPORT POST IS USED, SPACE POSTS AT A MAXIMUM OF 8 FEET APART. SUPPORT POST SHOULD BE DRIVEN SECURELY INTO THE GROUND TO A MINIMUM OF 24 INCHES.
7. EXTRA-STRENGTH FILTER FABRIC WITH 6-FOOT POST SPACING DOES NOT REQUIRE A WIRE MESH SUPPORT FENCE. WIRE THE FILTER FABRIC DIRECTLY TO THE POSTS.
8. 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 THE BACKFILL IS CRITICAL TO SILT FENCE PERFORMANCE.
9. STEEL POSTS TO BE USED ONLY. WOODEN POSTS NOT ALLOWED.
10. DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.
11. INSPECT STRUCTURE EACH WEEK AND AFTER SIGNIFICANT RAINFALL. MAKE REPAIRS IMMEDIATELY. REPLACE BURLAP EVERY 60 DAYS. SEDIMENT IS TO BE DISPOSED OF PROPERLY. WHEN CONSTRUCTION AREA HAS BEEN PERMANENTLY STABILIZED, REMOVE STRUCTURE AND UNSTABLE SEDIMENT. SMOOTH, BLEND, AND STABILIZE AREA.




## CHECK DAM (TEMPORARY)
### W/ TEMPORARY IN-DITCH SEDIMENT TRAP DETAIL




SECTION "A – A"

1. PLACE STONES (2" TO 15") ON FILTER FABRIC WHERE SPECIFIED ON THE CONTRACT DRAWINGS.
2. CONSTRUCTION CHECK DAM W/ TEMPORARY IN-DITCH SEDIMENT TRAP AS SHOWN IN THE DETAIL. EXCAVATE THE BASIN PER SPECIFIED DIMENSIONS WITHIN THE EXISTING DITCH.
3. FORM AT LEAST A 2' WEIR WITHIN CENTER OF CHECK DAM SUCH THAT THE STORM WATER FLOW PASSES OVER THE WEIR.
4. PROVIDE AT LEAST 12" OF WASHED STONE ON THE UPSTREAM FACE OF THE STONE CHECK DAM.
5. ENSURE PROTECTION OF THE CHANNEL BELOW THE LOWEST DAM FROM OVERFLOW.
6. ENSURE CHANNEL REACH ABOVE THE MOST UPSTREAM DAM IS STABLE.
7. CHECK FOR STONE BLOCKAGE AFTER EVENTS OF RAIN AT CULVERTS AND STORM DRAIN ENTRANCES.
8. INSPECT CHANNELS AND BASINS AFTER EACH RUNOFF EVENT. CLEANOUT AND DISPOSE OF THE SEDIMENT AND DEBRIS PROPERLY.

NOTE:

1.STRUCTURAL STONE SHALL BE CLASS "B" STONE
FOR EROSION CONTROL PURPOSES.

2.SEDIMENT CONTROL STONE SHALL BE NO. 57 OR NO. 57 STONE.

3. HARDWARE CLOTH SHALL BE ANCHORED TO THE STEEL POSTS SECURELY USING APPROPRIATE ANCHORS. HARDWARE CLOTH SHALL BE KEYED IN A MINIMUM OF 12 INCHES IN LENGTH AND BACKFILLED PROPERLY AS SHOWN IN DETAIL. HARDWARE CLOTH TO BE SAME AS STD. #30.09 (19 GAUGE, ¼" SPACING).

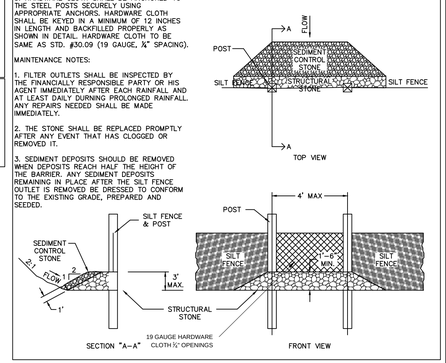
MAINTENANCE NOTES:

1. FILTER OUTLETS SHALL BE INSPECTED BY THE FINANCIALLY RESPONSIBLE PARTY OR HIS AGENT IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS NEEDED SHALL BE MADE IMMEDIATELY.

2. THE STONE SHALL BE REPLACED PROMPTLY AFTER ANY EVENT THAT HAS CLOGGED OR REMOVED IT.

3. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OUTLET IS REMOVED BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

## STONE OUTLET WITH HARDCLOTH AT SEDIMENT FENCE




## ENVIRONMENTAL PROTECTION

SEDIMENTATION AND EROSION CONTROL

ALL EXISTING SENSITIVE LAND FEATURES AND STRUCTURES SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION. ITEMS TO BE PROTECTED SHALL INCLUDE, BUT ARE NOT LIMITED TO, ALL DOWNSTREAM PROPERTY, NATURAL WATERWAYS, STREAMS, WETLANDS, YARDS, LAKES AND PONDS, CATCH BASINS, DRAINAGE DITCHES, ROADS, GUTTERS, AND NATURAL AREAS.

SOIL EROSION AND SEDIMENTATION CONTROL SHALL BE PROVIDED AND MAINTAINED BY THE CONTRACTOR, AT HIS EXPENSE, THROUGHOUT THE LIFE OF THE CONTRACT AND DURING THE CONTRACT WARRANTY PERIOD, FOR ALL AREAS THAT ARE GRADED OR DISTURBED AS A RESULT OF THE CONTRACTOR'S WORK ACTIVITY. CONTROL MEASURES SHALL CONSIST OF APPROVED PRACTICES FOUND IN THE EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL AND AS SHOWN ON THE CONSTRUCTION DRAWINGS AS APPROVED BY THE N.C. DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF LAND RESOURCES AND INSTALLED AS SUCH.

IN THE EVENT THAT LOCAL CONDITIONS CHANGE TO RENDER DESIGNED SEDIMENTATION AND EROSION CONTROL INEFFECTIVE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DIRECTOR OF ENGINEERING FOR A FIELD CHANGE DISPOSITION.

AFTER DISTURBED AREAS ARE STABILIZED AND ALL TEMPORARY MEASURES REMOVED, THE SEDIMENT SHALL BE SPREAD IN A MANNER NOT TO ADVERSELY AFFECT PROTECTION PROCEDURES AND THEN THE AREA SHALL BE SEEDED AND MULCHED. OTHERWISE, SEDIMENT IS TO BE DISPOSED OF BY HAULING AND SPREADING AS DETAILED ON THE DIVISION OF LAND RESOURCES' APPROVED SEDIMENTATION AND EROSION CONTROL DRAWINGS.

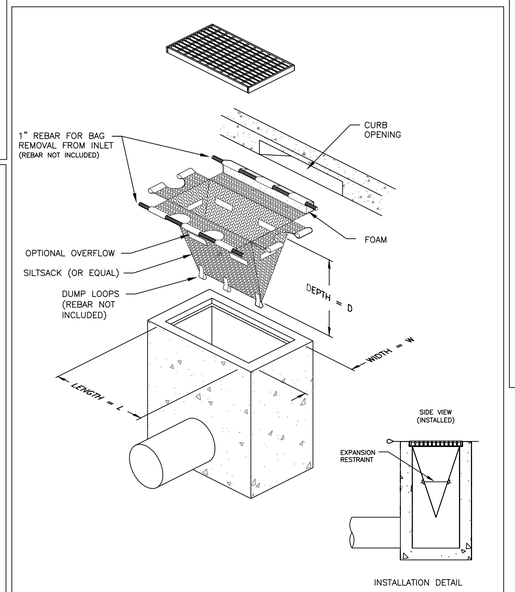
PROTECTION OF WETLANDS

ALL AREAS SHOWN AS WETLANDS ON THE CONSTRUCTION DRAWINGS SHALL BE PROTECTED BY DIRECTIONS GIVEN ON THE PLANS AND ALL WORK WITHIN THESE AREAS SHALL BE IN ACCORDANCE WITH PROVISIONS AS SET FORTH IN THE ARMY CORPS OF ENGINEERS 404 PERMIT, THE N.C. DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES 401 PERMIT/CERTIFICATION, AND THE DIVISION OF LAND RESOURCES' LETTER OF APPROVAL.

SEEDING, GROUND COVERS, AND MULCHING

AREAS DAMAGED BY CONSTRUCTION WORK SHALL BE RESTORED TO A CONDITION APPROVED BY THE DIRECTOR OF ENGINEERING BY WORKING, FERTILIZING, SEEDING, AND MULCHING.

SEEDING SHALL BE DONE WITHIN FIVE (5) DAYS AFTER THE INITIAL GROUND DISTURBANCE. THE BED SHALL BE PREPARED BY PULVERIZING THE SOIL TO A DEPTH OF THREE INCHES. TILLAGE SHALL CONTINUE UNTIL A WEATHER-PULVERIZED, FIRM, AND UNIFORM SITE IS PREPARED CONFORMING TO ADJACENT PROPERTY. THE SOIL MUST BE LOOSE ENOUGH FOR WATER INFILTRATION AND ROOT PENETRATION. GOOD DRAINAGE MUST BE PROVIDED AND VISIBLE PONDING WILL NOT BE ALLOWED. ALL STONES, ROCKS, STICKS, RUBBISH, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED PRIOR TO FERTILIZATION. THE pH OF THE SOIL SHALL BE NON-TOXIC TO THE SEED MIXTURE. PLANT SMALL GRAINS NO DEEPER THAN 1 INCH AND GRASSES/LEGUMES NO DEEPER THAN 1/2 INCH. PLANTING IS TO BE UNIFORM IN SCATTER PATTERN.




DETAIL OF INLET SEDIMENT CONTROL DEVICE WITH CURB DEFLECTOR

## SILTSACK®
SPECIFICATIONS

NOTE: THE SILTSACK WILL BE MANUFACTURED FROM A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS.

### REGULAR FLOW SILTSACK®

(FOR AREAS OF LOW TO MODERATE PRECIPITATION AND RUN-OFF)

| PROPERTIES | TEST METHOD | UNITS |
|---|---|---|
| GRAB TENSILE STRENGTH | ASTM D-4632 | 300 LBS |
| GRAB TENSILE ELONGATION | ASTM D-4632 | 20 % |
| PUNCTURE | ASTM D-4833 | 120 LBS |
| MULLEN BURST | ASTM D-3786 | 800 PSI |
| TRAPEZOID TEAR | ASTM D-4533 | 120 LBS |
| UV RESISTANCE | ASTM D-4355 | 80 % |
| APPARENT OPENING SIZE | ASTM D-4751 | 40 US SIEVE |
| FLOW RATE | ASTM D-4491 | 40 GAL/MIN/SQ FT |
| PERMITTIVITY | ASTM D-4491 | 0.55 SEC -1 |

### HI-FLOW SILTSACK®

(FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN-OFF)

| | | |
|---|---|---|
| GRAB TENSILE STRENGTH | ASTM D-4632 | 265 LBS |
| GRAB TENSILE ELONGATION | ASTM D-4632 | 20 % |
| PUNCTURE | ASTM D-4833 | 135 LBS |
| MULLEN BURST | ASTM D-3786 | 420 PSI |
| TRAPEZOID TEAR | ASTM D-4533 | 45 LBS |
| UV RESISTANCE | ASTM D-4355 | 90 % |
| APPARENT OPENING SIZE | ASTM D-4751 | 20 US SIEVE |
| FLOW RATE | ASTM D-4491 | 200 GAL/MIN/SQ FT |
| PERMITTIVITY | ASTM D-4491 | 1.5 SEC -1 |

(FOR AREAS WHERE THERE IS A CONCERN FOR OIL RUN-OFF OR SPILLS) DEPENDING ON YOUR PARTICULAR APPLICATION, THE SILTSACK CAN BE MADE FROM EITHER ONE OF THE ABOVE FABRICS WITH AN OIL-ABSORBANT PILLOW INSERT OR, MADE COMPLETELY FROM AN OIL-ABSORBANT SILTSACK , WITH A WOVEN PILLOW INSERT.

## STABILIZATION REQUIREMENTS

Stabilization Requirements:
(11-4-11)S-3
Stabilization for this project shall comply with the time frame guidelines as specified by the NCG-010000 general construction permit effective August 3, 2011 issued by the North Carolina Department of Environment and Natural Resources Division of Water Quality. Temporary or permanent ground cover stabilization shall occur within 7 calendar days from the last land-disturbing activity, with the following exceptions in which temporary or permanent ground cover shall be provided in 14 calendar days from the last land-disturbing activity:

- Slopes between 2:1 and 3:1, with a slope length of 10 ft. or less
- Slopes 3:1 or flatter, with a slope of length of 50 ft. or less
- Slopes 4:1 or flatter

The stabilization timeframe for High Quality Water (HQW) Zones shall be 7 calendar days with no exceptions for slope grades or lengths. High Quality Water Zones (HQW) Zones are defined by North Carolina Administrative Code 15A NCAC 04A.0105 (25). Temporary and permanent ground cover stabilization shall be achieved in accordance with the provisions in this contract and as directed.

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

Shoulder and Median Areas

| August 1 – June 1 | | May 1 – September 1 | |
|---|---|---|---|
| 20# | Kentucky Bluegrass | 20# | Kentucky Bluegrass |
| 75# | Hard Fescue | 75# | Hard Fescue |
| 25# | Rye Grain | 30# | German or Browntop Millet |
| 500# | Fertilizer | 500# | Fertilizer |
| 4000# | Limestone | 4000# | Limestone |

Areas Beyond the Mowing Pattern, Waste and Borrow Areas

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

Approved Tall Fescue Cultivars

| | | | |
|---|---|---|---|
| 2nd Millennium | Duster | Magellan | Rendition |
| Avenger | Endeavor | Masterpiece | Scorpion |
| Barlexas | Escalade | Matador | Shelby |
| Barlexas II | Falcon II, III, IV & V | Matador GT | Signia |
| Barrera | Fidelity | Millennium | Silverstar |
| Barrington | Finesse II | Montauk | Southern Choice II |
| Biltmore | Firebird | Mustang 3 | Stetson |
| Bingo | Focus | Olympic Gold | Tarheel |
| Bravo | Grande II | Padre | Titan Ltd |
| Cayenne | Greenkeeper | Paraiso | Titanium |
| Chapel Hill | Greystone | Picasso | Tomahawk |
| Chesapeake | Inferno | Piedmont | Tacer |
| Constitution | Justice | Pure Gold | Trooper |
| Chipper | Jaguar 3 | Prospect | Turbo |
| Coronado | Kalahari | Quest | Ultimate |
| Coyote | Kentucky 31 | Rebel Exeda | Watchdog |
| Davinci | Kitty Hawk | Rebel Sentry | Wolfpack |
| Dynasty | Kitty Hawk 2000 | Regiment II | |
| Dominion | Lexington | Rembrandt | |

Approved Kentucky Bluegrass Cultivars

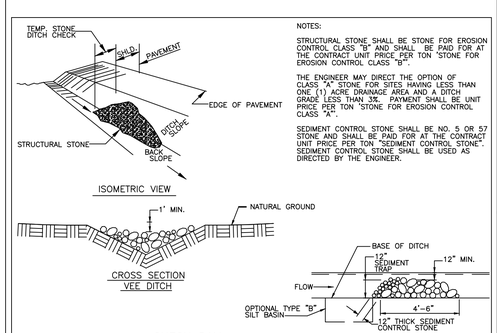
| | | | |
|---|---|---|---|
| Alpine | Bariris | Envicta | Rugby |
| Apollo | Bedazzled | Impact | Rugby II |
| Arcadia | Bordeaux | Kenblue | Showcase |
| Arrow | Champagne | Midnight | Sonoma |
| Award | Chicago II | Midnight II | |

Approved Hard Fescue Cultivars

| | | | |
|---|---|---|---|
| Chariot | Nordic | Rhino | Warwick |
| Firefly | Oxford | Scaldis II | |
| Heron | Reliant II | Spartan II | |
| Minotaur | Reliant IV | Stonehenge | |

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

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




CHECK DAM

NOTES:

STRUCTURAL STONE SHALL BE STONE FOR EROSION CONTROL CLASS "B" AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER TON "STONE FOR EROSION CONTROL CLASS "B".

THE ENGINEER MAY DIRECT THE OPTION OF CLASS "A" STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%. PAYMENT SHALL BE UNIT PRICE PER TON "STONE FOR EROSION CONTROL CLASS "A".

SEDIMENT CONTROL STONE SHALL BE NO. 5 OR 57 STONE AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER TON "SEDIMENT CONTROL STONE". SEDIMENT CONTROL STONE SHALL BE USED AS DIRECTED BY THE ENGINEER.

## SEDIMENTATION AND EROSION CONTROL LEGEND

- CHANNEL, GRASS-LINED
- CHANNEL, RIP-RAP & PAVED
- CHECK DAM
- TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT
- CONSTRUCTION ROAD STABILIZATION
- DIVERSION (PERMANENT)
- DIVERSION (TEMPORARY)
- DROP INLET PROTECTION, FABRIC
- DUST CONTROL
- FILTER DAM
- GROUND COVERS
- INLET PROTECTION, BLOCK & GRAVEL
- OUTLET STABILIZATION STRUCTURE
- RIP-RAP
- ROCK DAM
- SEDIMENT BASIN
- SEDIMENT FENCE (SILT FENCE)
- SEDIMENT TRAP (TEMPORARY)
- SEEDING (PERMANENT)
- SEEDING (TEMPORARY)
- MULCHING
- STREAM CROSSING (PERMANENT)
- STREAM CROSSING (TEMPORARY)
- STREAM BANK STABILIZATION (VEGETATION)
- STREAM BANK STABILIZATION (STRUCTURE)
- TREE PROTECTION
- WATER BARS (ROW DIVERSION)
- TRACKING

DEFINITION

A sediment control barrier formed around a storm drain inlet by the use of standard concrete block & gravel.

PURPOSE

To help prevent sediment from entering storm drains before stabilizing the contributing watershed. This practice allows early use of the storm drain system.

CONSTRUCTION SPECIFICATIONS

1 Lay one block on each side of the structure on its side in the bottom row to allow pool drainage. The foundation should be excavated at least 2 inches below the crest of the storm drain. Place the bottom row of blocks against the edge of the storm drain for lateral support and to avoid washouts when overflow occurs. If needed, give lateral support to subsequent rows by placing 2X4 wood studs through block openings.

2 Carefully fit hardware cloth or comparable wire mesh with 1/2 inch openings over all block openings to hold gravel in place.

3 Use clean gravel, 3/4 to 1/2 inch in diameter, placed 2 inches below the top of the block on a 2:1 slope or flatter and smooth it to an even grade. dot #57 washed stone is recommended.

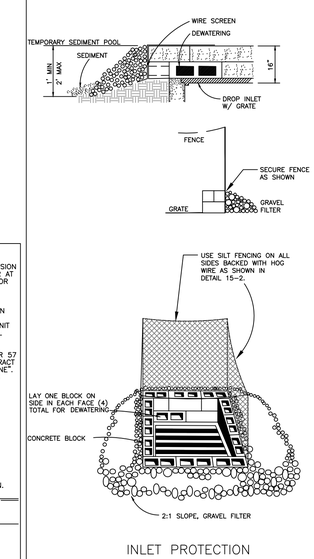
4 If only stone and gravel are used, keep the slope toward the inlet no steeper than 3:1. Leave a minimum 1 ft. wide level stone area between the structure and around the inlet to prevent gravel from entering inlet. On the slope toward the inlet, use stone 3 inches in diameter or larger. On the slope away from the inlet use 1/2 – 3/4 inch gravel (ncdot #57 washed stone) at a minimum thickness of 1 ft.

MAINTENANCE

Inspect the barrier after each rain and make repairs as needed.

Remove sediment as necessary to provide adequate storage volume for subsequent rains.

When the contributing drainage area has been adequately stabilized, remove all materials and any unstable soil, and either salvage or dispose of it properly. Bring disturbed area to proper grade, then smooth and compact it. Appropriately stabilize all bare areas around the inlet.




INLET PROTECTION BLOCK & GRAVEL


Concord NORTH CAROLINA High Performance Living

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


Engineer's Seal

Surveyor's Seal

# SALT STORAGE BUILDING
# SITE PLAN
# EROSION CONTROL DETAILS
PROJECT #: 2015-023

| REV. # | DATE | DESCRIPTION | BY |
|---|---|---|---|

DESIGNED BY: CMS
DRAWN BY: BCC
CHECKED BY: CMS
SCALE: AS SHOWN
DATE: 10/05/15
PROJECT NUMBER: 2015-023
SHEET: 4 OF: 4

G:\Eng\Engineering Projects\Projects\2015\023 Salt Building\Technical\2015-023 (R-1) SALT BLDG (Brandy).dwg Oct 05, 2015 - 4:17pm