

CITY OF MORGANTON BOST RD SEWER IMPROVEMENTS PROJECT

BURKE COUNTY, NORTH CAROLINA

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ELECTRICAL SERVICES
DUKE ENERGY

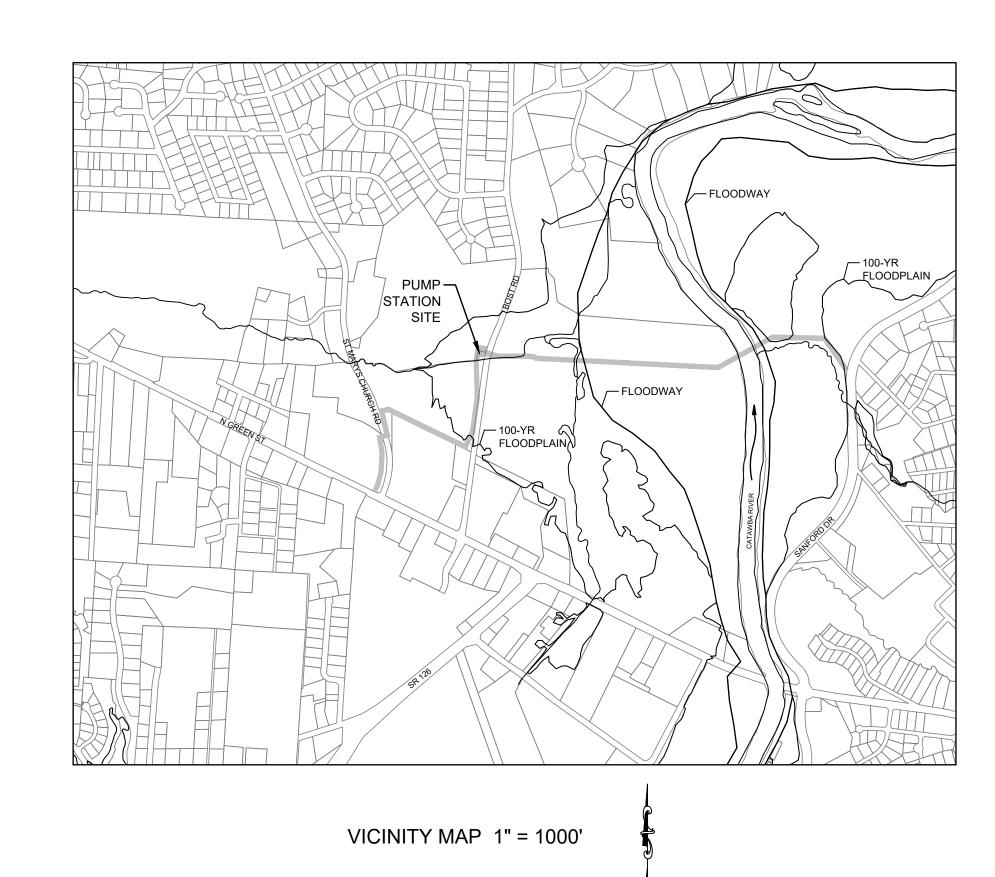
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CONTACT: CHRIS ABRIL

BENCHMARK

GROUND CONTROL FOR SURVEY PROVIDED BY MERRICK & CO, INC.

SUMMARY OF SEWER MAINS & MANHOLES

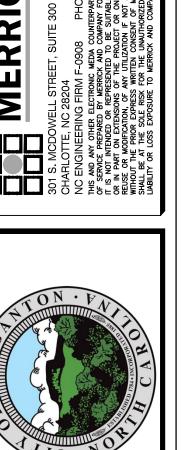
Gravity	Sewer
Size	Quantity
8" PVC	2822 LF
8" DIP	137 LF
48" Manholes	16
Force	emain
Size	Quantity
8" PVC	1975 LF
8" HDPE	599 LF (plan)
8" DIP	1531 LF
Air Valves	4



SHEET INDEX

Sheet Number	Sheet Title
⚠ 🖄 G1.1	Cover Sheet
⚠ G1.2	General Notes
△ CD1.1	Pump Station Demolition Plan
⚠ ② C1.1	Pump Station Site Plan
1 C1.2	Pump Station Paving and Grading Plan
<u>^</u> <u>^</u> <u>^</u> C1.3	Pump Station Piping and Utilities Plan
A C2.1	Gravity Sewer Plan & Profile STA 0+00 - 11+00
⚠ C2.2	Gravity Sewer Plan & Profile STA 11+00 - 20+50
C2.3	Gravity Sewer Plan & Profile STA 20+50 - 29+23 (END)
⚠ 🖄 C2.4	Force Main Plan & Profile STA 0+00 - 11+00
⚠ 🖄 C2.5	Force Main Plan & Profile STA 11+00 - 23+00
<u>↑</u> C2.6	Force Main Plan & Profile STA 23+00 - 33+74
<u>^</u>	Force Main Plan & Profile STA 33+74 - 41+28 (END)
⚠ CE2.1	Erosion Control Site
⚠ CE2.2	Erosion Control Gravity Sewer
<u>^</u>	Erosion Control Force main
<u>↑</u>	Erosion Control Force main
⚠	Erosion Control Pump Station and Access Dr
△ C3.1	Civil Details
A C3.2	Civil Details
⚠ C3.3	Civil Details
<u>↑</u> CE3.1	Erosion Control Details
⚠ CE3.2	Erosion Control Details
⚠ CE3.3	Erosion Control Details
△ CE3.4	Erosion Control Details
⚠ CE3.5	Erosion Control Details
<u>⚠</u> L1.1	Pump Station Planting Plan
△ M1.1	Pump Station Plan Views
<u>∧</u> M1.2	Pump Station Section
<u>∧</u> M1.3	Pump Station Details
△ M1.4	Pump Station Details
S1.1	Abbreviations, Drawings, Legends & Sheet Index
S1.2	General Notes
S2.1	Foundation Plan
S3.1	Framing Plan
S4.1	Section
S5.1	Typical Details & Schedules
S5.2	Typical Details
S5.3	Typical Details
E1.1	Symbol Legend and Abbreviations
ED2.1	Electrical Demolition Site Plan, Enlarged Electrical Plan & Elevation
E2.1	Electrical Equipment, Lighting Site Plans & Elevations
E4.1	Electrical Riser Diagram and Schedules
I1.1	Instrumentation P&ID Symbols and Abbreviations
I2.1	Instrumentation P&ID Pump Station and Valve Vault
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HEET INDEX



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Bost Rd Sewer Improvemer
Morganton, NC
Cover Sheet

FINAL DESIGN - 100%

RELEASED FOR

CONSTRUCTION

JOB NO: 65421093

DATE: 05/04/23

SHEET **G1.1**

- 2. ALL CONSTRUCTION SHALL CONFORM TO THE APPROPRIATE EDITION OF THE GOVERNING JURISDICTION STANDARDS AND
- 3. THE ENGINEER MAKES NO REPRESENTATION OR GUARANTEE REGARDING EARTHWORK QUANTITIES OR THAT THE EARTHWORK FOR THIS PROJECT WILL BALANCE DUE TO VARIOUS FIELD CONDITIONS, CHANGING SOIL TYPES, ALLOWABLE CONSTRUCTION TOLERANCES, AND CONSTRUCTION METHODS THAT ARE BEYOND THE CONTROL OF THE ENGINEER.
- 4. MERRICK & COMPANY IS NOT RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, SAFETY PRECAUTIONS, OR PROGRAMS UTILIZED IN CONNECTION WITH THE WORK. MERRICK WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- 5. THE CONTRACTOR SHALL CALL THE NATIONWIDE UTILITY CONTACT NUMBER (811) OR LOCAL UTILITY LOCATE SERVICE, TO REQUEST LOCATES OF ALL UNDERGROUND UTILITIES AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF ANY LAND DISTURBING ACTIVITY.
- 6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES. EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS WERE TAKEN FROM THE BEST AVAILABLE INFORMATION AT THE TIME OF DESIGN. HOWEVER, THEY ARE APPROXIMATE AND ARE NOT RELIABLE FOR CONSTRUCTION PURPOSES AND MAY NOT INCLUDE ALL THE UTILITIES THAT EXIST ON THE PROJECT SITE. THEREFORE, THE CONTRACTOR IS ENCOURAGED TO CONDUCT THEIR OWN UTILITY INVESTIGATION AS THEY WILL BE ASKED TO PARTICIPATE IN RESOLVING CONFLICTS PRIOR TO BEGINNING WORK.
- 7. THE CONTRACTOR SHALL VERIFY SITE CONDITIONS, EXISTING TOPOGRAPHIC DATA, AND LOCATIONS OF ALL UTILITIES PRIOR TO INITIATING CONSTRUCTION. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES ON THE PROJECT SITE. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN OR NOT ON THE PROJECT PLANS, SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE AND NO ADDITIONAL COST TO THE OWNER. NOTIFY ENGINEER AND OWNER OF ANY DISCREPANCIES FOUND PRIOR TO
- 8. THE CONTRACTOR SHALL OBTAIN ALL PERMITS NECESSARY TO COMPLETE THE WORK AND SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS. A COPY OF ALL PERMITS SHALL BE MAINTAINED ON-SITE AT ALL TIMES.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.
- 10. THE CONTRACTOR IS RESPONSIBLE FOR SAFETY OF ALL PERSONNEL AND EQUIPMENT ON THE PROJECT SITE AT ALL TIMES, AND IS NOT LIMITED TO NORMAL WORKING HOURS. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH REGULATIONS.
- 11. TRAFFIC CONTROL SHALL BE PROVIDED TO THE EXTENT NECESSARY TO COMPLETE THE WORK. IF NECESSARY, CONTRACTOR SHALL PREPARE, SUBMIT, AND OBTAIN APPROVAL OF A TRAFFIC CONTROL PLAN AND PERMIT FROM THE ENTITY HAVING JURISDICTION OVER THE ROADS AND PUBLIC RIGHTS-OF-WAY. TRAFFIC CONTROL STANDARDS SHALL COMPLY WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION. TRAFFIC CONTROL AND ASSOCIATED PLAN SUBMITTAL AND PERMITTING COSTS SHALL BE INCLUDED IN THE COST OF THE PROJECT.
- 12. ALL WASTE MATERIALS SHALL BE PROPERLY DISPOSED OF IN AN APPROVED LANDFILL PERMITTED TO ACCEPT THAT PARTICULAR TYPE OF WASTE.
- 13. DEVIATIONS FROM THESE PLANS AND SPECIFICATIONS WITHOUT PRIOR WRITTEN APPROVAL OF THE OWNER OR HIS DESIGNATED REPRESENTATIVE MAY CAUSE THE WORK TO BE DEEMED UNACCEPTABLE.
- 14. TO THE EXTENT NECESSARY FOR THIS PROJECT, CONTRACTOR SHALL INSTALL INITIAL SEDIMENTATION AND EROSION CONTROL MEASURES PRIOR TO INITIATING ANY WORK ON THE PROJECT SITE. MAINTAIN ALL EROSION CONTROL MEASURES UNTIL FINAL STABILIZATION AND REVEGETATION IS APPROVED BY THE COUNTY AND/OR CITY.
- 15. THE PROJECT PLANS AND SPECIFICATIONS ARE INTENDED TO PROVIDE THE COMPLETED PROJECT IN A COMPLETE AND OPERABLE CONDITION. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS AND PROVIDE ALL LABOR NECESSARY TO COMPLETE THE PROJECT IN A NEAT AND PROFESSIONAL MANNER, INCLUDING ALL INCIDENTALS NECESSARY TO COMPLETE THE WORK, WITHOUT ADDITIONAL COST TO THE OWNER.
- NOTIFY INSPECTORS OF ALL WORK ACTIVITY AT LEAST 48 HOURS IN ADVANCE.
- 17. ANY INSPECTION BY THE GOVERNING AGENCY OR THE ENGINEER, SHALL NOT, IN ANY WAY, RELIEVE THE CONTRACTOR FROM ANY OBLIGATION TO PERFORM THE WORK IN STRICT COMPLIANCE WITH THE APPLICABLE CODES AND AGENCY REQUIREMENTS.
- 18. ANY DISRUPTION IN UTILITIES SHALL BE COORDINATED AT LEAST 24 HOURS IN ADVANCE WITH THE UTILITY OWNER, PROJECT OWNER, EMERGENCY PROVIDERS, ALL IMPACTED LOCAL RESIDENTS, AND IMPACTED BUSINESS OWNERS. METHOD OF NOTIFICATION SHALL BE SUBJECT TO APPROVAL OF THE PROJECT OWNER AND AFFECTED UTILITY OWNER.
- 19. MAINTAIN EMERGENCY VEHICLE ACCESS TO AND THROUGH THE PROJECT SITE AT ALL TIMES.
- 20. THE CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF EXISTING UTILITIES AND SURFACE CONDITIONS DISTURBED BY CONSTRUCTION ACTIVITIES TO THE SATISFACTION OF THE OWNER, PROPERTY OWNER, AFFECTED UTILITY, OR LOCAL JURISDICTION ALL SURFACE AND UTILITY RESTORATION SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER. ALL SURFACE RESTORATION SHALL BE REPLACED WITH LIKE KIND, SIZE, AND TYPE OF IMPROVEMENT THAT EXISTED PRIOR TO INITIATING CONSTRUCTION.
- 21. THE PROJECT PLANS AND SPECIFICATIONS AS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER, FOR AND ON BEHALF OF MERRICK AND COMPANY, REPRESENT THE FINAL CONSTRUCTION DOCUMENTS FOR THIS PROJECT. THE USE OF ANY ELECTRONIC OR OTHER MEDIA PURPORTING TO REPRESENT THE FINAL CONSTRUCTION DOCUMENTS FOR THIS PROJECT SHALL NOT BE RELIED UPON AS FINAL CONSTRUCTION DOCUMENTS. SHOULD THERE BE A CONFLICT BETWEEN SEALED DRAWINGS AND ELECTRONIC OR OTHER MEDIA FILES, THE SEALED DRAWINGS SHALL GOVERN. EACH USER OF ANY ELECTRONIC OR OTHER MEDIA WAIVES AND RELEASES MERRICK FROM ALL ACTIONS, CLAIMS, DAMAGES, ACTIONS, OBLIGATIONS, AND LIABILITIES OF ANY KIND OR NATURE WITH RESPECT TO THE ELECTRONIC OR OTHER MEDIA FILES.
- 22. NOTHING CONTAINED IN THE CONTRACT DOCUMENTS SHALL CREATE, NOR SHALL BE CONSTRUED TO CREATE, ANY CONTRACTUAL RELATIONSHIP BETWEEN THE ENGINEER AND THE CONTRACTOR OR ANY SUBCONTRACTOR.
- 23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROMPTLY NOTIFYING THE ENGINEER OF ANY PROBLEMS OR POTENTIAL PROBLEMS IN CONFORMANCE TO THE DESIGN LINE AND GRADE FOR ANY ELEMENT OF THE CONSTRUCTION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROMPTLY NOTIFYING THE ENGINEER OF SITE CONDITIONS THAT DIFFER FROM THOSE SHOWN ON THE APPROVED PLANS.
- 24. IN THE EVENT THE CONTRACTOR ALLOWS, AUTHORIZES, APPROVES OR CONSTRUCTS ITEMS THAT DIFFER FROM THE APPROVED PLAN, SPECIFICATIONS, OR OTHER CONTRACT DOCUMENTS, WITHOUT WRITTEN APPROVAL BY THE ENGINEER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY LIABILITY ARISING FROM SUCH CHANGES.
- 25. DISTURBANCE SHALL BE LIMITED TO THE TEMPORARY CONSTRUCTION EASEMENT AREAS FOR WHICH ENCROACHMENT AGREEMENTS HAVE BEEN OBTAINED, AND STAGING AREAS PROCURED BY THE CONTRACTOR. LIMITS OF DISTURBANCE ARE THE PERMANENT RIGHT OF WAY IF NO TEMPORARY CONSTRUCTION EASEMENT EXISTS. CONTRACTOR SHALL REMOVE ALL TREES WITHIN THE LIMITS OF THE TEMPORARY CONSTRUCTION EASEMENT, EXCEPT WHERE TREE PROTECTION IS SHOWN ON THE DRAWINGS.
- 26. THE SEDIMENTATION FENCE SHALL BE LOCATED AN ADEQUATE DISTANCE FROM THE LIMITS OF DISTURBANCE TO ALLOW FOR INSTALLATION, STORAGE, MAINTENANCE AND DECOMMISSIONING OPERATIONS. ADDITIONALLY, LOCATING THE SEDIMENT FENCE AWAY FROM THE LIMITS OF DISTURBANCE MAY HELP PREVENT OFFSITE SEDIMENTATION.
- 27. IF ADDITIONAL AREAS OUTSIDE THE EXISTING LIMITS OF DISTURBANCE ARE REQUIRED BY THE CONTRACTOR, A PLAN SHOWING THE REVISED LIMITS OF DISTURBANCE MUST BE SUBMITTED TO NC DEQ REGIONAL OFFICE FOR REVIEW AND APPROVAL. CONTRACTOR SHALL BE RESPONSIBLE FOR REHABILITATING ANY ADDITIONAL AREAS UTILIZED DURING CONSTRUCTION TO EQUAL OR BETTER THAN EXISTING CONDITION. CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL DEVICES IN ALL AREAS UTILIZED BY THE CONTRACTOR TO CONSTRUCT THE PROJECT INCLUDING STAGING, STORAGE, ONSITE STOCKPILING AND OFFSITE STOCKPILING AND OFFSITE DISPOSAL AREAS. CONTRACTOR SHALL FOLLOW ALL LOCAL REGULATIONS REGARDING THE WORK, INCLUDING KEEPING MUD AND DIRT OFF OF PUBLIC ROADS AND PRIVATE ENTRANCES, AND REHABILITATING STAGING, STORAGE, OR STOCKPILING AREAS TO EQUAL OR BETTER THAN EXISTING CONDITION. CONTRACTOR SHALL TAKE ALL REASONABLE MEASURES TO PREVENT TRACKING MUD/SOIL ONTO ADJACENT ROADWAYS. ANY MUD/SOIL TRACKED ON ROADWAYS SHALL BE CLEANED DAILY. FOLLOWING COMPLETION OF CONSTRUCTION, RESTORE ALL CONSTRUCTION SITE ACCESS AREAS TO A CONDITION EQUAL TO OR BETTER THAN ORIGINAL.
- 28. AS PER NCDEQ CONSTRUCTION GENERAL PERMIT NCG01, PERIMETER DIKES, SWALES, DITCHES AND SLOPES, DISTURBED AREAS WITHIN HIGH WATER QUALITY (HWQ) ZONES, AND SLOPES STEEPER THAN 3H: 1 V FOLLOWING COMPLETION OF ANY PHASE OF GRADING, SHALL BE PLANTED OR OTHERWISE PROVIDED WITH TEMPORARY OR PERMANENT GROUND COVER, DEVICES, OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION WITHIN 7 CALENDAR DAYS. ALL OTHER SLOPES OF 3H:1V OR FLATTER, EXCEPT

THOSE WITH SLOPES GREATER THAN 50 FEET IN LENGTH OR WITHIN HWQ ZONES, FOLLOWING COMPLETION OF ANY PHASE OF GRADING, SHALL BE PLANTED OR OTHERWISE PROVIDED WITH TEMPORARY OR PERMANENT GROUND COVER, DEVICES, OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION WITHIN 14 CALENDAR DAYS. CONTRACT DOCUMENTS SUPERCEDE CW DESIGN

- 29. SOIL EXPLORATION WORK (IF APPLICABLE) MAY BE PROVIDED FOR INFORMATION ONLY AND IS SOLELY TO ASSIST BIDDERS IN ASSESSING THE NATURE AND EXTENT OF TESTING PROCEDURES REQUIRED TO MAKE THEIR OWN DETERMINATION OF ACTUAL SUBSURFACE CONDITIONS THAT WILL BE ENCOUNTERED DURING THE COURSE OF THE WORK. NO REPRESENTATION IS MADE OR WILL BE GIVEN BY THE CONTRACTOR CONCERNING ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED. CONTRACTOR SHALL CONDUCT ALL INVESTIGATIONS AND TESTING THEY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSIONS REGARDING SUCH CONDITIONS PRIOR TO CONSTRUCTION. SOIL BORING PROFILE ELEVATIONS ARE APPROXIMATE.
- 30. ALL AREAS WITH OPEN EXCAVATIONS, OPEN VAULTS OR MANHOLES, OR EQUIPMENT SHALL BE FENCED WITH TEMPORARY SAFETY FENCING AT LEAST 4 FEET HIGH AT END OF EACH WORK DAY.
- 31. ANY LAND CORNER, PROPERTY MONUMENTATION, OR BENCHMARK WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED, THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY. ANY CORNER MONUMENT DISTURBED OR DESTROYED SHALL BE RESET BY A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF NC AT THE CONTRACTOR'S EXPENSE. CONTRACTOR TO PROTECT OR REPLACE NCDOT RIGHT-OF-WAY MARKERS OR MONUMENTS PER
- 32. CONTACT PROJECT INSPECTOR IMMEDIATELY REGARDING ANY CONFLICTS THAT ARISE DURING CONSTRUCTION OF WORK SHOWN ON
- 33. FOR ALL TIE-IN PIPING OR CROSSINGS, CONTRACTOR SHALL VERIFY ALL EXISTING PIPELINE ELEVATIONS, LOCATIONS, DIAMETERS, AND MATERIALS PRIOR TO SHOP DRAWING SUBMITTALS, NOTIFYING THE OWNER AND ENGINEER OF ANY CONFLICTS.
- 34. ALL DRIVEWAYS, DRAIN PIPES, HEADWALLS, AND OTHER PHYSICAL FEATURES SHALL BE RESTORED TO EQUAL OR BETTER THAN EXISTING CONDITION, IN BOTH NEW AND EXISTING RIGHTS-OF-WAY AND WITHIN ANY TEMPORARY EASEMENT AREAS. ANY STRUCTURES OR DRIVEWAYS DISTURBED OUTSIDE THE RIGHT-OF-WAY OR EASEMENT SHALL ALSO BE FULLY RESTORED TO THE OWNER'S SATISFACTION AT NO ADDITIONAL COST TO THE OWNER.
- 35. WHEN DEWATERING TRENCHES. TURBID WATER SHALL BE PUMPED THROUGH A FILTER BAG.
- 36. ADDITIONAL SILT FENCE AND SILT FENCE STONE OUTLETS MAY BE REQUIRED BASED ON FIELD CONDITIONS AS DIRECTED BY
- 37. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY WASTEWATER SPILLS ASSOCIATED WITH THE MAIN ALIGNMENT OR ASSOCIATED BRANCH ALIGNMENTS THAT OCCUR AS A RESULT OF CONSTRUCTION ACTIVITIES AND ASSOCIATED FINES FROM STATE REGULATORY
- 38. PROTECT ALL DRAIN CULVERTS DURING CONSTRUCTION. MAINTAIN PROTECTION UNTIL DISTURBED AREAS ARE STABILIZED WITH GROUND COVER SUFFICIENT TO RESTRAIN EROSION.
- 39. PROVIDE TEMPORARY DITCH LINING FOR DISTURBED DITCH LINES OR OTHER AREAS OF CONCENTRATED FLOW WHERE SLOPE IS GREATER THAN 2%.
- 40. CONTRACTOR TO DIG TEST PITS AND DETERMINE ELEVATION OF ALL KNOWN CONFLICTS AT LEAST 1000 FEET AHEAD OF PIPE OR CASING INSTALLATION.
- 41. ELEVATIONS AND GRADES SHOWN WITHIN THESE CONTRACT DRAWINGS ARE CRITICAL TO THIS SEWER INSTALLATION. CONTRACTOR'S REGISTERED LAND SURVEYOR SHALL VERIFY LINES AND GRADES THROUGHOUT THE INSTALLATION PROCESS AND DOCUMENT ON CONSTRUCTION RECORD DRAWINGS.
- 42. EXCESS EXCAVATED MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED AND PROPERLY PERMITTED OFFSITE LOCATION. CONTRACTOR SHALL PROVIDE TO ENGINEER PROOF OF PERMIT.
- 43. REPLACE ALL EXISTING FENCES IMMEDIATELY AFTER CONSTRUCTION HAS CLEARED THE FENCE LINE. TEMPORARY FENCES THAT PROVIDE EQUAL SECURITY SHALL BE ERECTED UNTIL THE EXISTING FENCE CAN BE RESET.
- 44. INLET PROTECTION IS REQUIRED FOR ALL INLETS LOCATED IN THE WORKING AREA AND ADJACENT AREAS AND REQUIRED UNTIL THE SITE IS FULLY STABILIZED.
- 45. CONTRACTOR TO SUBMIT TRAFFIC CONTROL & SAFETY PLAN FOR APPROVAL PRIOR TO SHUTTING DOWN ANY PORTION OF ANY ROADWAY. CONTACT AUTHORITY HAVING JURISDICTION TWO WEEKS PRIOR TO ANY CONSTRUCTION. ONE LANE MUST BE OPEN AT ALL TIMES ON QUAIL PARK DR.
- 46. THE CONTRACTOR SHALL ADHERE TO ALL CONDITIONS AND REQUIREMENTS OF ALL PERMITS THAT HAVE BEEN OBTAINED AND ALL AVAILABLE LOCAL, STATE AND FEDERAL REGULATIONS. SEE SPECIAL PROVISIONS.
- 47. EXCAVATED MATERIALS SHALL NOT BE PLACED ON ROADWAY OR SIDEWALK.
- 48. CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING SITE AND ADJACENT PROPERTIES ACCESSIBLE FOR EMERGENCY VEHICLES AT
- 49. CONTRACTOR SHALL AVOID EXISTING SEPTIC TANKS AND WELLS, INCLUDING ANY REQUIRED SETBACKS OR BUFFERS.
- 50. ALL LANDSCAPE AREAS DISTURBED WITHIN STREET RIGHT-OF-WAY WILL BE REPAIRED PER STANDARD SPECIFICATIONS OF NCDOT WITH POSITIVE DRAINAGE.
- 51. CONTRACTOR ENTRY/EXIT TO PROJECT IS LIMITED TO FOUR DIFFERENT ACCESS POINTS. 1) TEMPORARY ACCESS OFF BOST RD THROUGH AN EXISTING PRIVATE DRIVE ONTO PARCEL 1794328709, 2) PERMANENT ACCESS OFF OF BOST RD AT PROPOSED ACCESS EASEMENT ONTO PARCEL1794518195, 3) TEMPORARY ACCESS OFF CATAWBA MEADOWS DR. ONTO PARCEL 1794737408 (CATAWBA MEADOWS PARK), AND 4) TEMPORARY ACCESS FROM AN EXISTING PRIVATE DRIVE ONTO PARCEL 1794218321. PERMISSION MUST BE OBTAINED FROM ALL IMPACTED PROPERTY OWNERS BY THE CONTRACTOR. CONTRACTOR MAY, AT THEIR OPTION, OBTAIN ADDITIONAL ACCESS AND WORK AREAS FROM PRIVATE PROPERTY OWNERS AT NO ADDITIONAL COST TO THE OWNER AND WHILE ADHERING TO ALL CONTRACT REQUIREMENTS. ADDITIONAL AREAS OUTSIDE THE EXISTING ACCESS ROADS MUST BE SUBMITTED TO NC DEQ REGIONAL OFFICE FOR REVIEW AND APPROVAL.
- 52. CONTRACTOR SHALL ENSURE THE SITE IS STABILIZED DAILY AND NO MORE THAN 25 LF MAY BE LEFT OPEN.

CONSTRUCTION SEQUENCE - EROSION & SEDIMENT CONTROL

- 1. OBTAIN EROSION CONTROL PLAN APPROVAL FROM NCDEQ AND FILE FOR AN NPDES NCG010000 ELECTRONIC NOTICE OF INTENT (E-NOI) TO OBTAIN A CERTIFICATE OF COVERAGE (COC) UNDER THE GENERAL STORM WATER PERMIT NCG01000.
- 2. SET UP AN ON-SITE PRE-CONSTRUCTION CONFERENCE WITH EROSION CONTROL INSPECTOR FROM NCDEQ TO DISCUSS EROSION CONTROL MEASURES. CONTRACTOR SHALL CONTACT THE NCDEQ DIVISION OF LAND QUALITY AT LEAST TWO (2) WEEKS BEFORE CONSTRUCTION ACTIVITIES BEGIN AT (828) 296-4621.
- 3. INSTALL PERIMETER SILT FENCE, SILT FENCE OUTLETS, TEMPORARY CONSTRUCTION ENTRANCES, AND TREE PROTECTION FENCE AS SHOWN ON EROSION CONTROL PLAN.
- 4. CALL FOR ON-SITE INSPECTION BY INSPECTOR. WHEN APPROVED, CLEARING AND GRUBBING MAY BEGIN. THE SEDIMENTATION FENCE SHALL BE LOCATED AN ADEQUATE DISTANCE FROM THE LIMITS OF DISTURBANCE TO ALLOW FOR INSTALLATION, STORAGE, MAINTENANCE AND DECOMMISSIONING OPERATIONS. ADDITIONALLY, LOCATING THE SEDIMENT FENCE AWAY FROM THE LIMITS OF DISTURBANCE MAY HELP PREVENT OFFSITE SEDIMENTATION.
- 5. THE CONTRACTOR SHALL DILIGENTLY AND CONTINUOUSLY MAINTAIN ALL EROSION CONTROL DEVICES AND STRUCTURES. CONTRACTOR SHALL STABILIZE ANY DISTURBED AREAS PER NCDEQ CONSTRUCTION GENERAL PERMIT NCG01. SEE GENERAL NOTE 28 OF 51. (THIS SHEET)
- 6. COORDINATE WITH EROSION CONTROL INSPECTOR PRIOR TO REMOVAL OF EROSION CONTROL MEASURES.
- 7. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE N.C. EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.
- 8. ALL EROSION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE, PERMANENT VEGETATION IS ESTABLISHED ON ALL DISTURBED AREAS, AND APPROVAL BY NCDEQ AND THE ENGINEER IS GIVEN FOR REMOVAL.
- 9. NO MAJOR GRADING ACTIVITIES TO TAKE PLACE DURING WET WEATHER OR PERIODS OF PREDICTED WET WEATHER
- 12. NOTIFY THE NCDEQ LAND QUALITY SPECIALIST WHEN THE PROJECT IS READY FOR A CLOSE OUT INSPECTION AFTER THE SITE IS PERMANENTLY STABILIZED AND ALL EROSION AND SEDIMENTATION CONTROLS REMOVED.

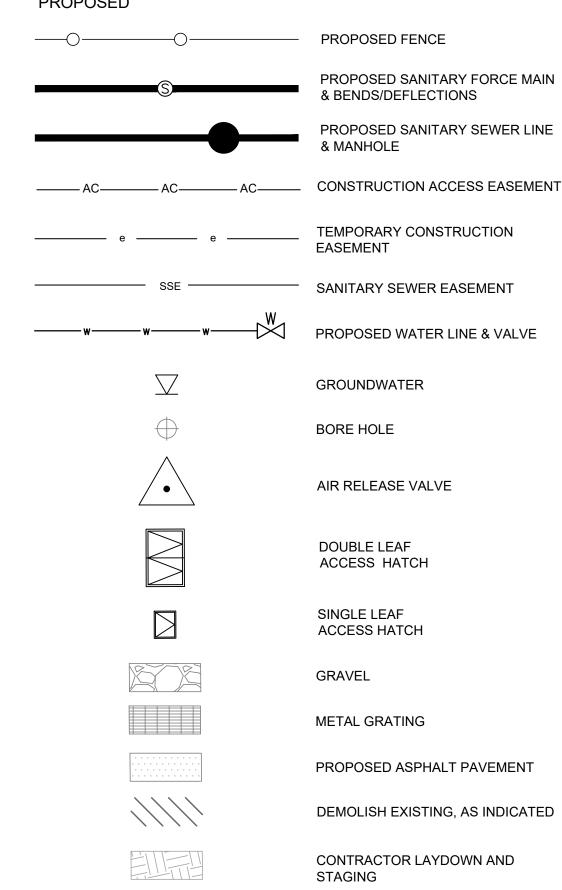
THE SITE MUST BE STORM READY BEFORE ANY EXTENDED BREAKS IN CONSTRUCTION ACTIVITIES INCLUDING WEEKENDS.

13. FILE FOR AN NPDES NCG010000 ELECTRONIC NOTICE OF TERMINATION (E-NOT) AFTER FINAL CLOSE OUT INSPECTION REPORT IS RECEIVED FROM NCDEQ LAND QUALITY SECTION.

LEGEND

EXISTING WATER LINE & VALVE EXISTING SANITARY SEWER LINE AND MANHOLE EXISTING STORM SEWER, YARD INLET & CATCH BASIN EXISTING OVERHEAD POWER LINE & POLES EXISTING UNDERGROUND TELEPHONE LINE G Control of the second control of the secon — — — — EXISTING RIGHT OF WAY — — — EXISTING PROPERTY LINE 100 YEAR FLOODPLAIN TOP OF BANK/TOE OF BANK EXISTING VEGETATION/HEDGES - XX ----- XX ----- XX ----- XX ----- EXISTING FENCE —— · · · · — EXISTING NCDOT DRAINAGE EASEMENT EXISTING GUY WIRE **EXISTING ELECTRIC BOX EXISTING SEWER MANHOLE EXISTING WATER VALVE EMERGENT WETLANDS**

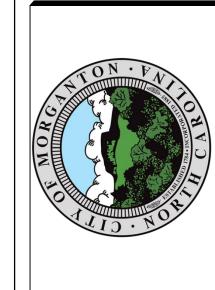
PROPOSED



CITY OF MORGANTON STANDARD NOTES

- 1. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE CITY OF MORGANTON ENGINEER. THE CITY RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO ITS STANDARDS AND SPECIFICATIONS.
- 2. THE CONTRACTOR SHALL NOTIFY THE DEVELOPMENT AND DESIGN SERVICES DEPARTMENT/ENGINEERING DIVISION AT 828-438-5260 AND THE WATER RESOURCES DEPARTMENT AT 828-438-5276 A MINIMUM OF 48 HOURS PRIOR TO STARTING CONSTRUCTION, AND EACH MORNING BY 9:00 A.M. THE LOCATION AND WORK TO BE PERFORMED. THE CONTRACTOR SHALL NOTIFY THE CITY AT LEAST 48 HOURS PRIOR TO AN INSPECTION.
- 3. LOCATION OF EXISTING UTILITIES AND SEWER TIE-INS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ACTUAL CONSTRUCTION. FOR INFORMATION, CONTACT: 811.
- 4. A PLAN FOR TRAFFIC CONTROL DURING CONSTRUCTION SHALL BE SUBMITTED TO THE CITY OF MORGANTON ENGINEER FOR ACCEPTANCE WITH THE PERMIT APPLICATION. AN EXCAVATION OR PUBLIC IMPROVEMENTS CONSTRUCTION PERMIT WILL NOT BE ISSUED WITHOUT AN APPROVED TRAFFIC CONTROL PLAN FOR TRAFFIC CONTROL DURING CONSTRUCTION.
- 5. THE CONSTRUCTION PLANS SHALL BE CONSIDERED VALID FOR TWO (2) YEARS FROM THE DATE OF ACCEPTANCE/APPROVAL. IF APPLICABLE CONSTRUCTION PERMITS HAVE NOT BEEN OBTAINED, AND CONSTRUCTION STARTED WITHIN THAT TIME, THESE PLANS SHALL BE VOID AND WILL BE SUBJECT TO RE-REVIEW AND RE-ACCEPTANCE BY CITY OF MORGANTON.
- 6. THE CONTRACTOR SHALL RETAIN AN APPROVED SET OF PERMITTED CONSTRUCTION PLANS ON SITE AT ALL TIMES.
- 7. IN THE EVENT THE CONTRACTOR PROCEEDS WITH CONSTRUCTION PRIOR TO PERMIT ISSUANCE, THE CITY REQUIRES THE WORK TO BE REINSTALLED AND THE CONTRACTOR SHALL BE FULLY LIABLE FOR ALL ACTIONS AND COSTS, INCLUDING PROSECUTION BY THE CITY OR THE STATE FOR PROCEEDING WITH INSTALLATION PRIOR TO ISSUANCE OF APPROPRIATE PERMIT(S).

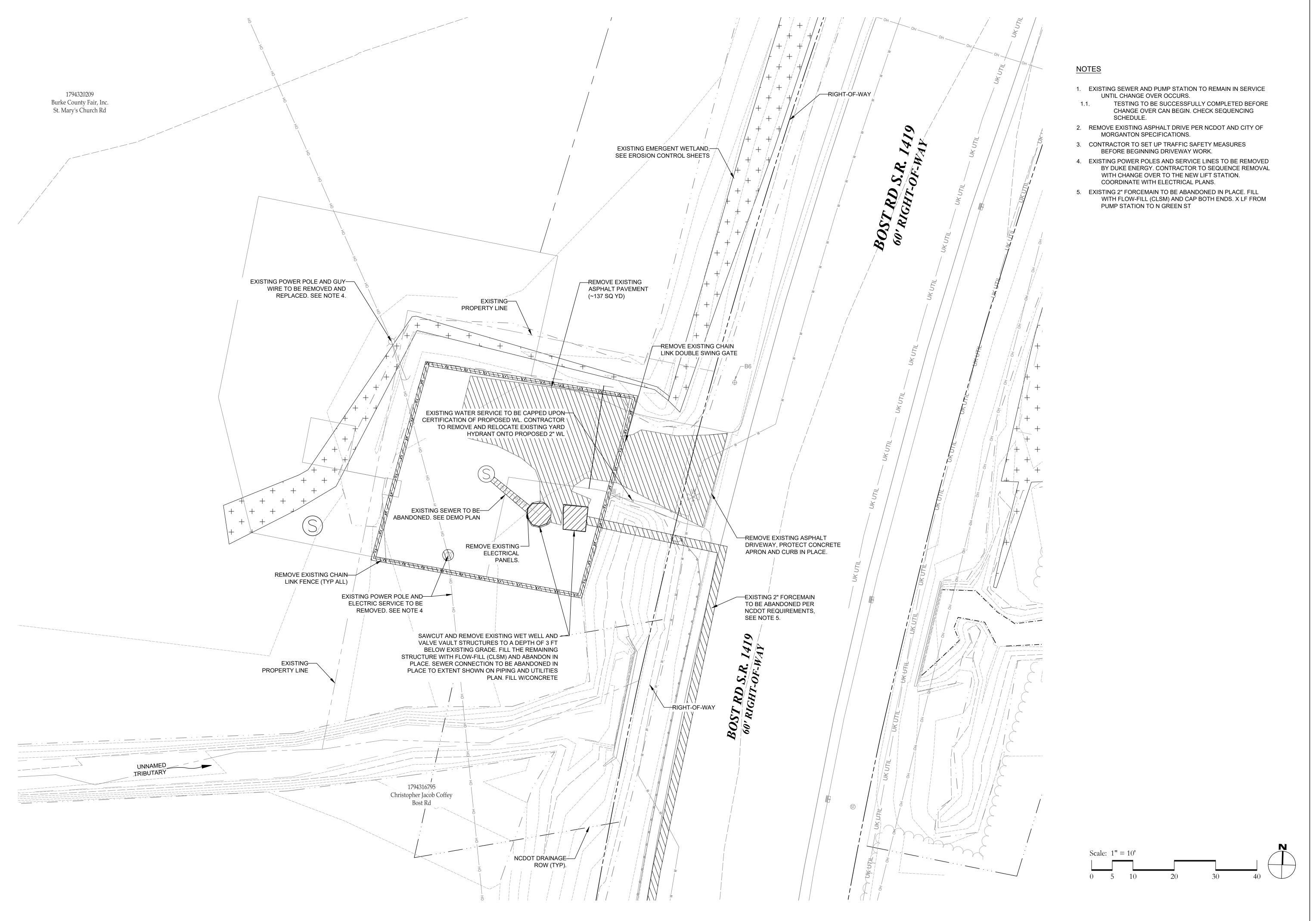




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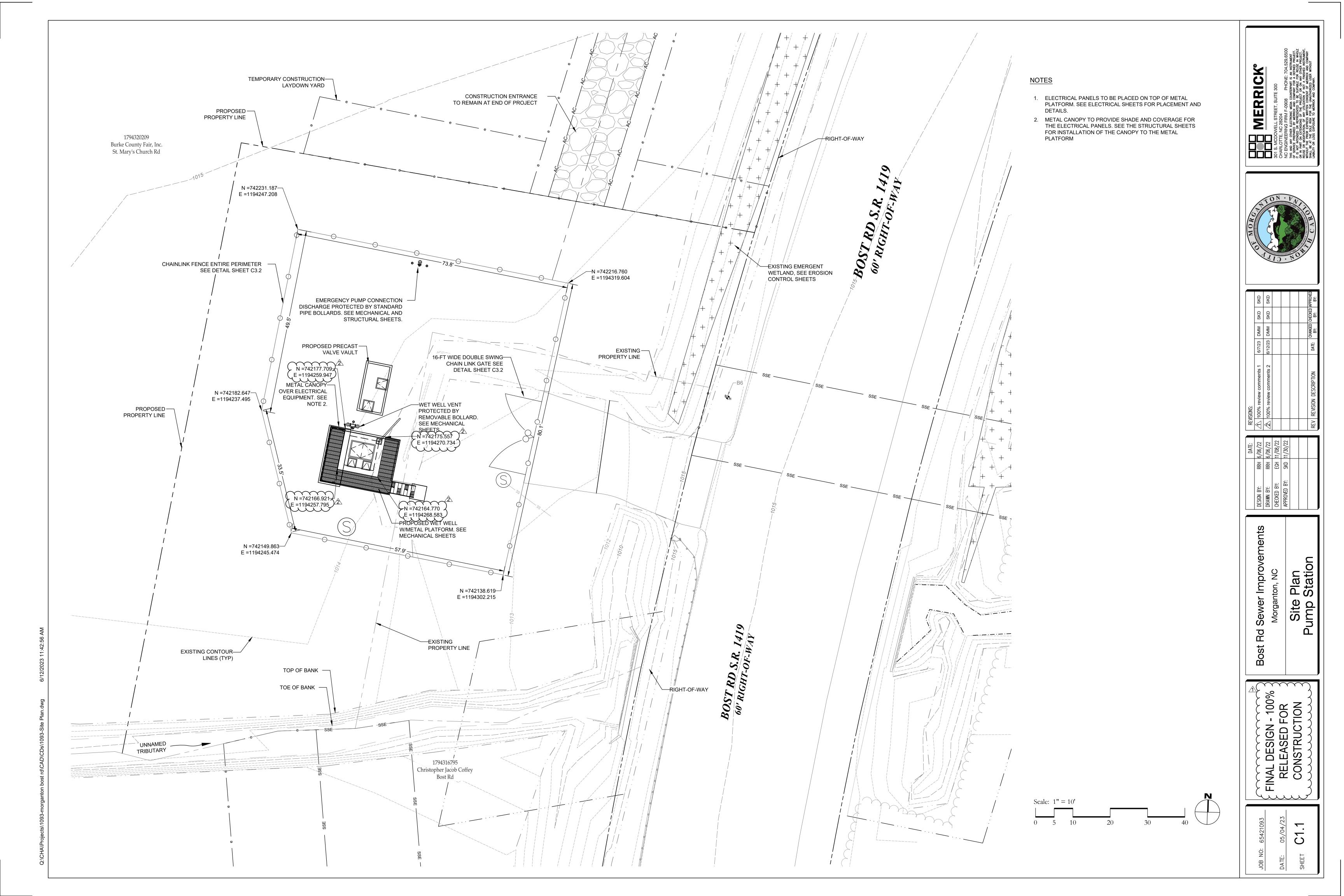
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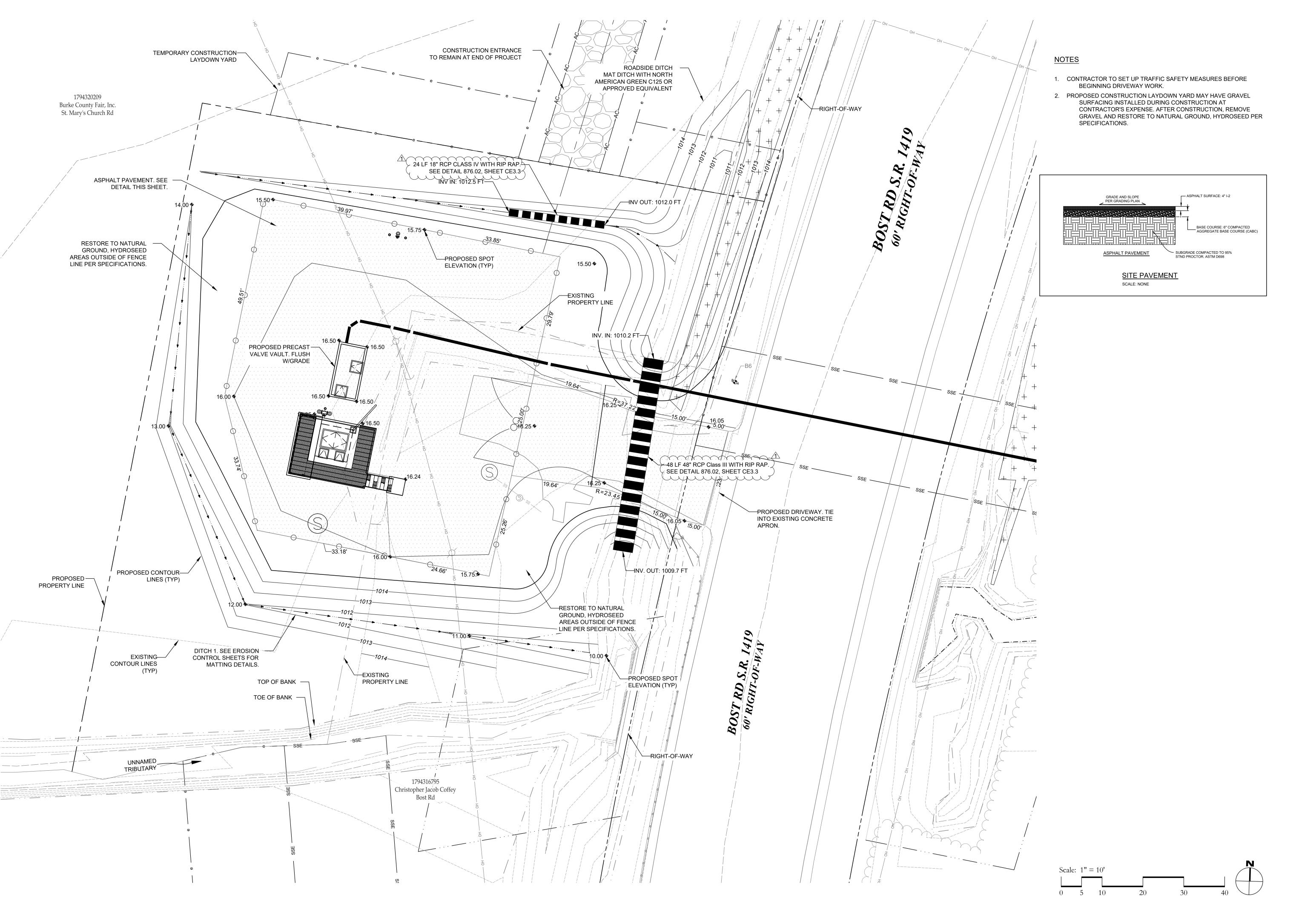
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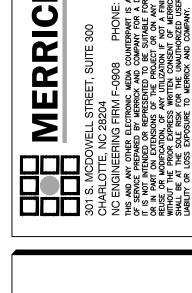
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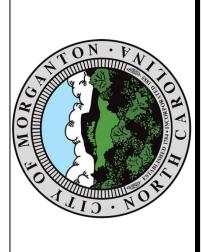
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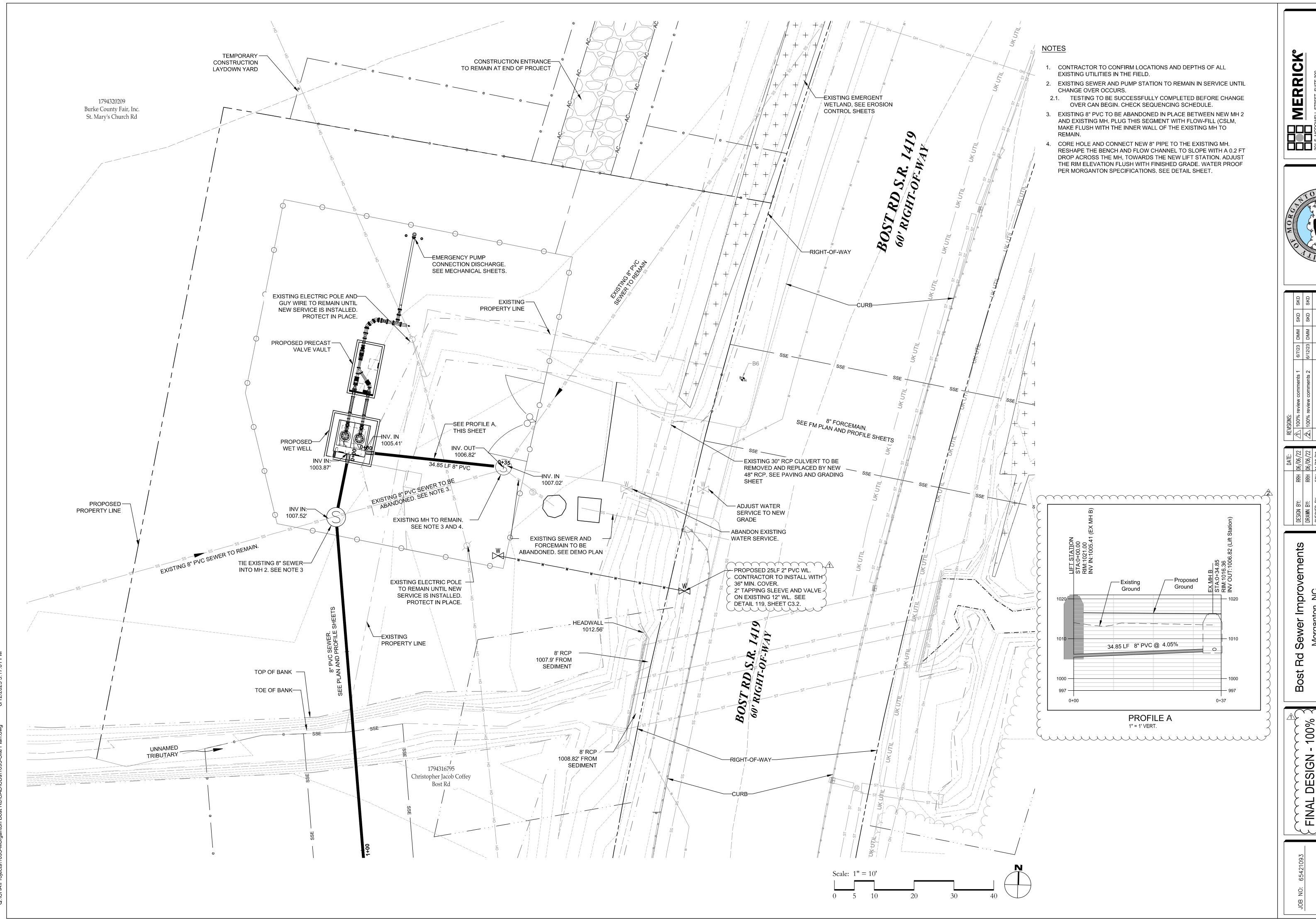
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Fump Station	

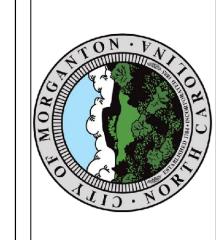
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MERRICE (STREET, SUITE 300
CHARLOTTE, NC 28204
NC ENGINEERING FIRM F-0908 PHONE: 704.529.6500
NC ENGINEERING FIRM F-0908 PHONE: 704.529.6500
NC ENGINEERING FIRM F-0908 PHONE: 704.529.6500
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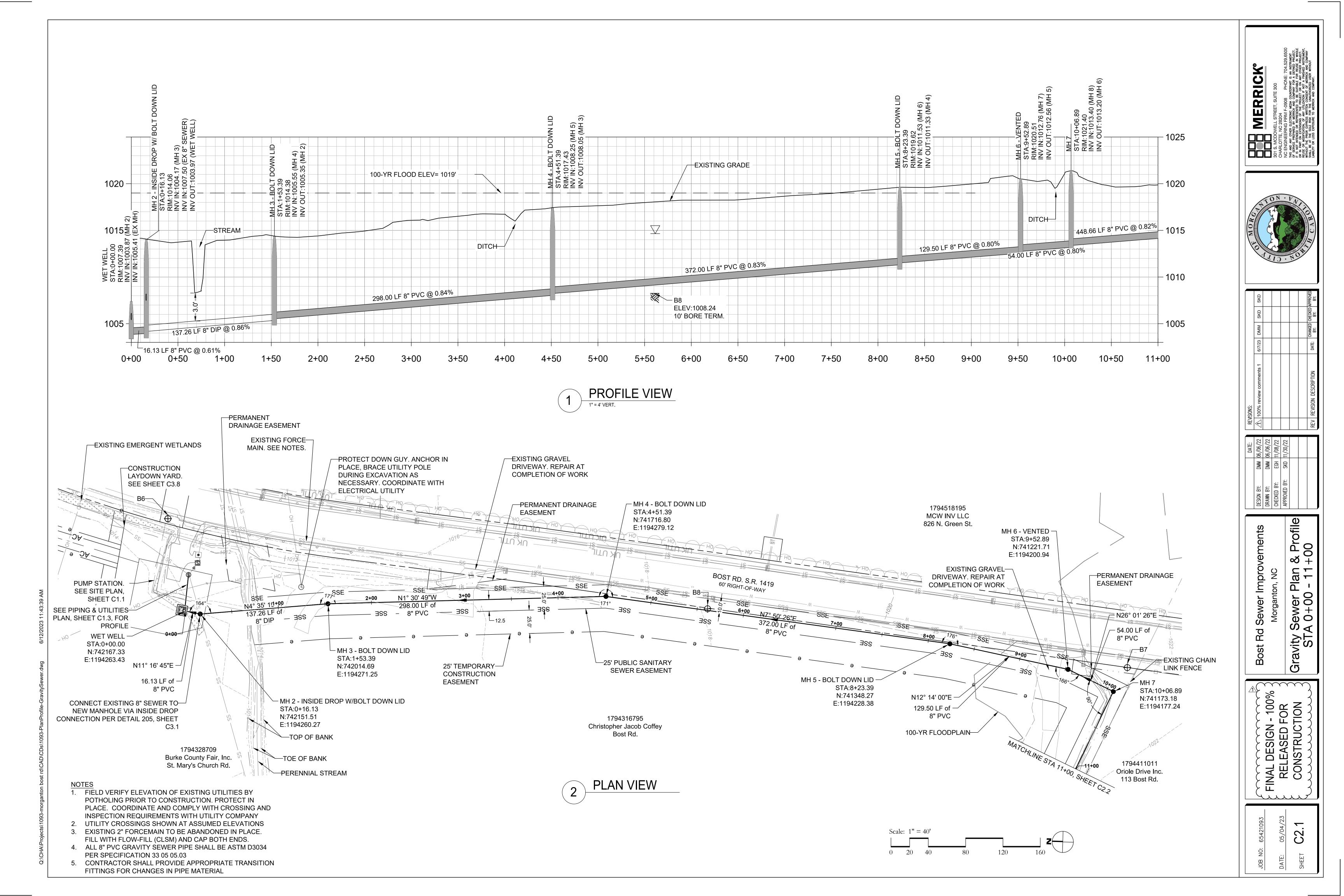
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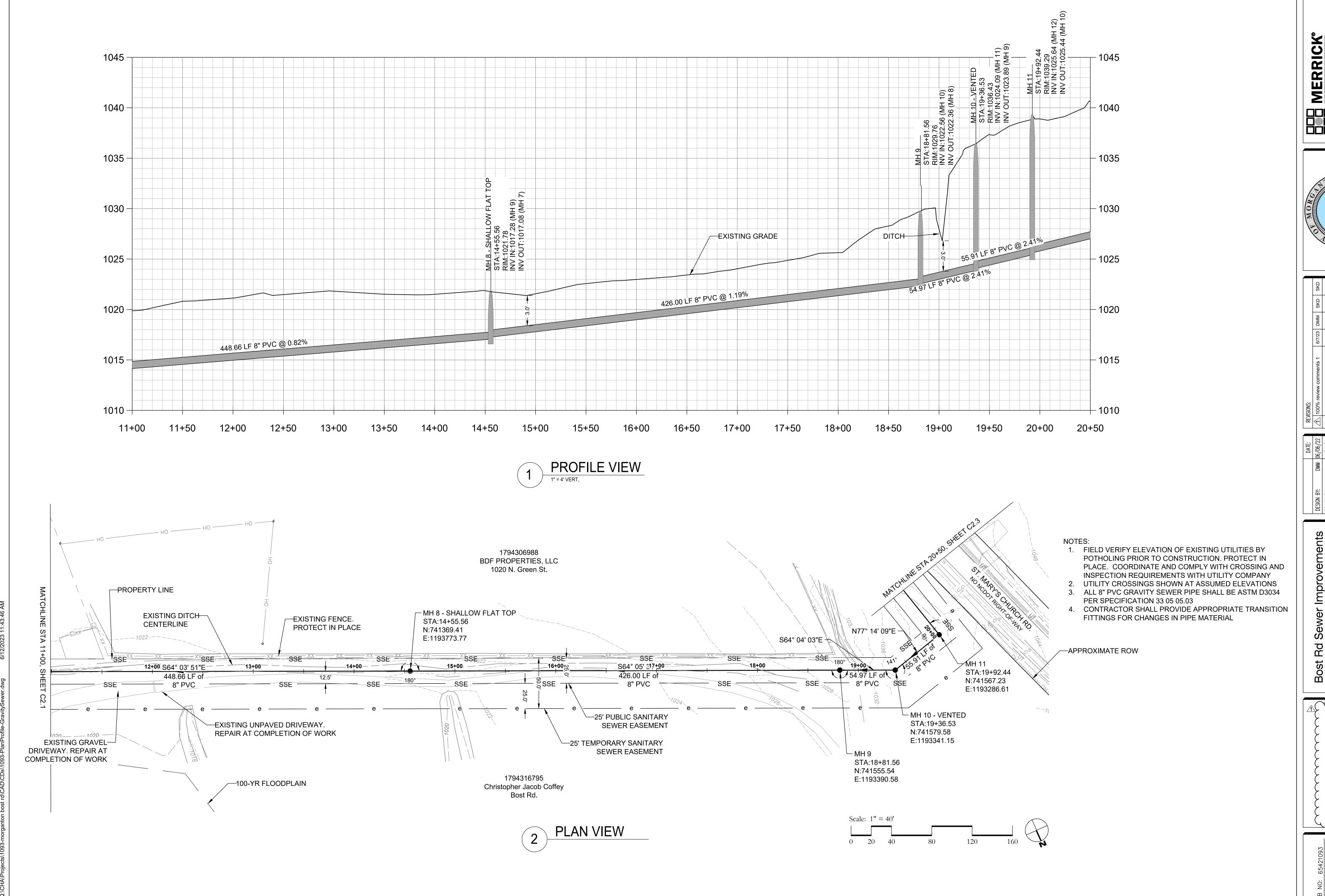
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Morganton, NC
Piping and Utilities Plan
Pump Station

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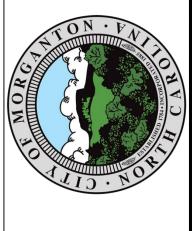
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Improvements

Iton, NC

Plan & Profile

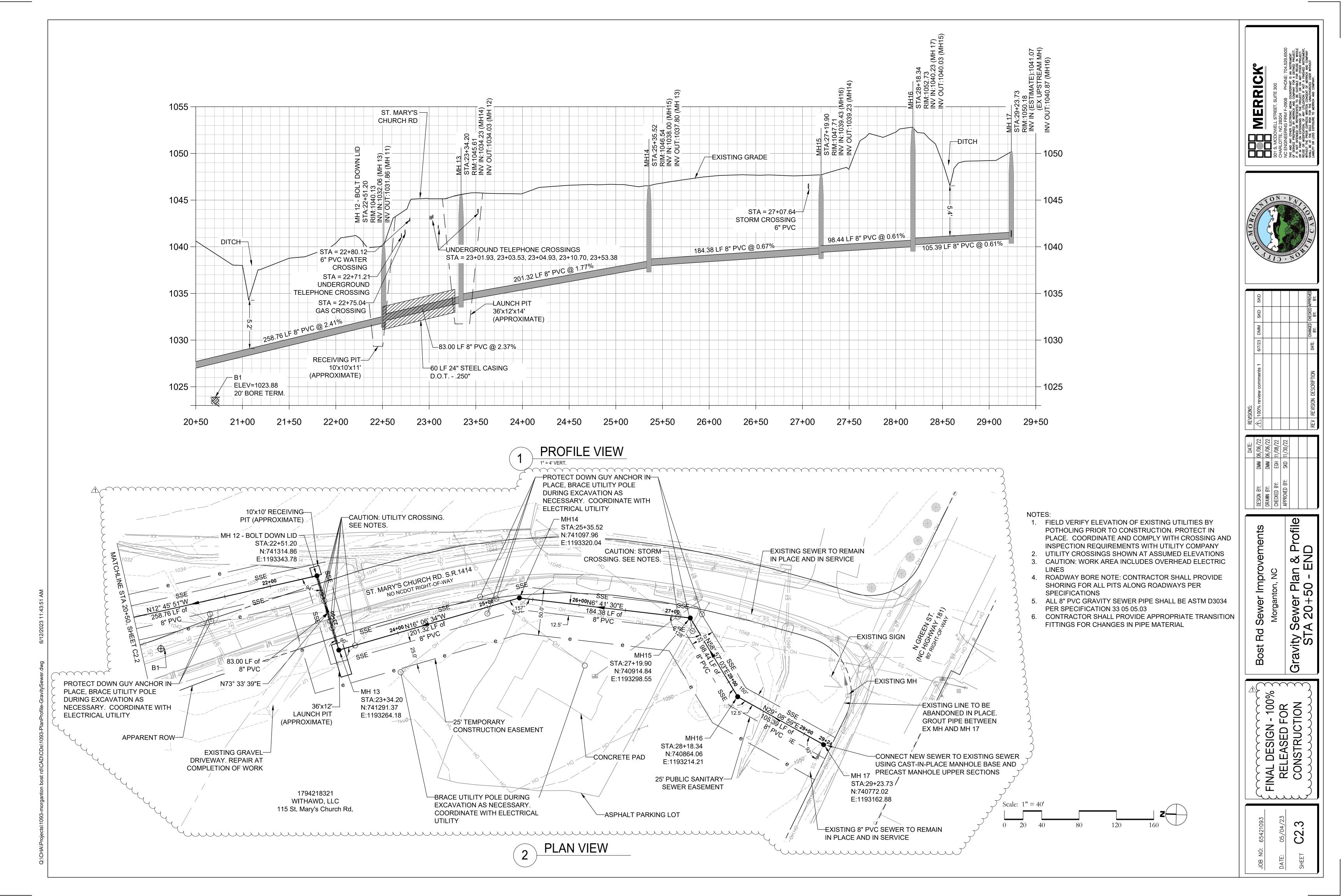
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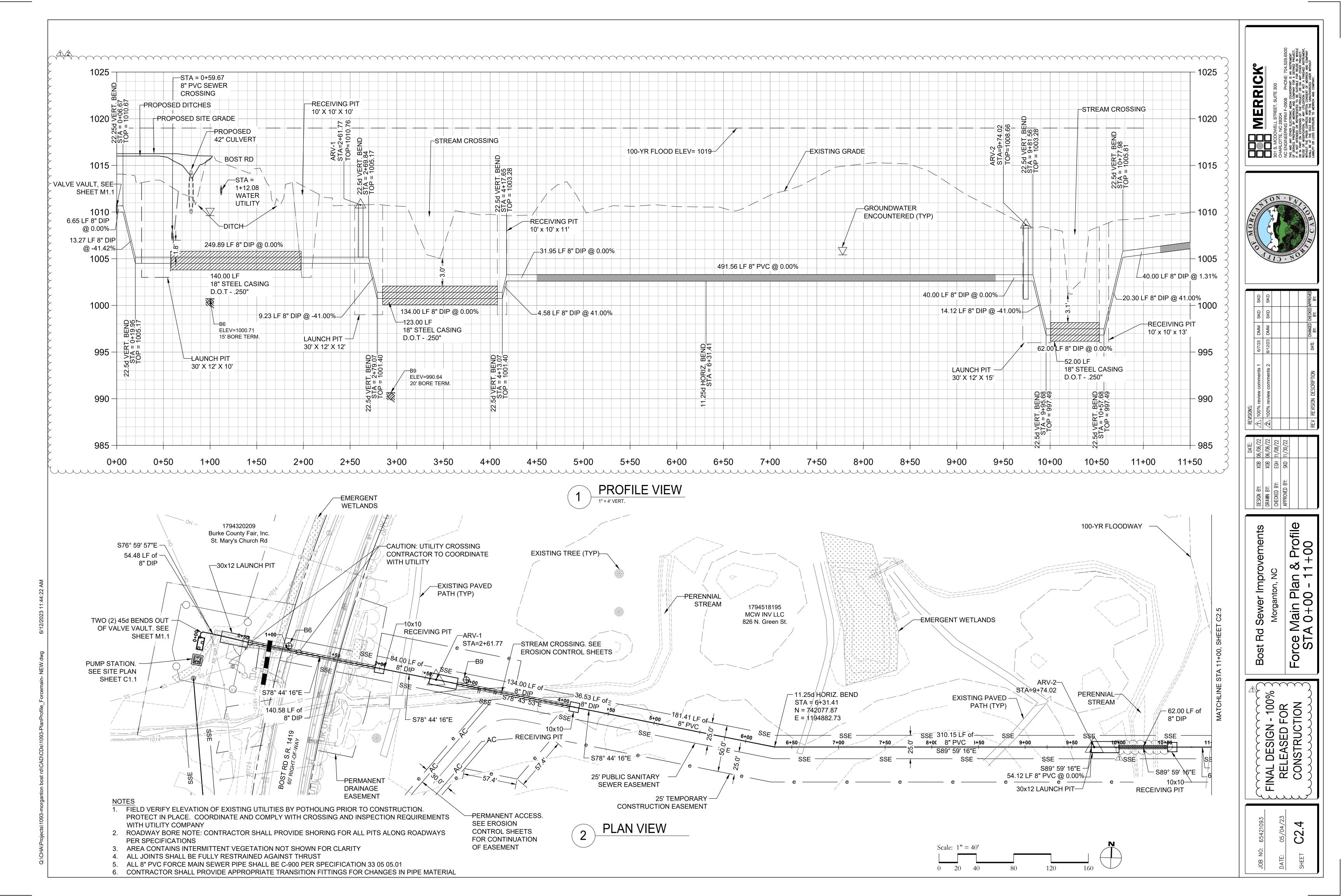
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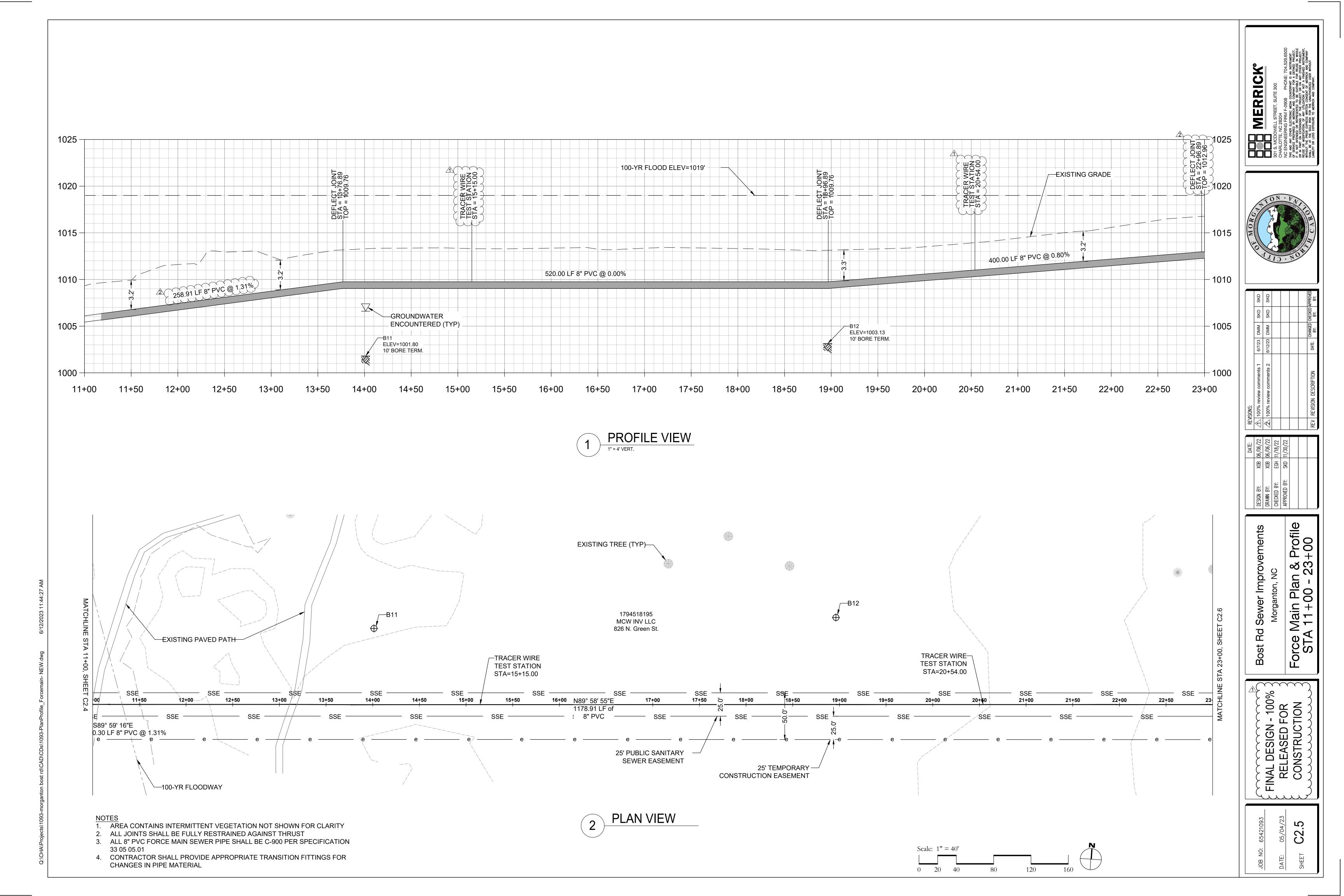
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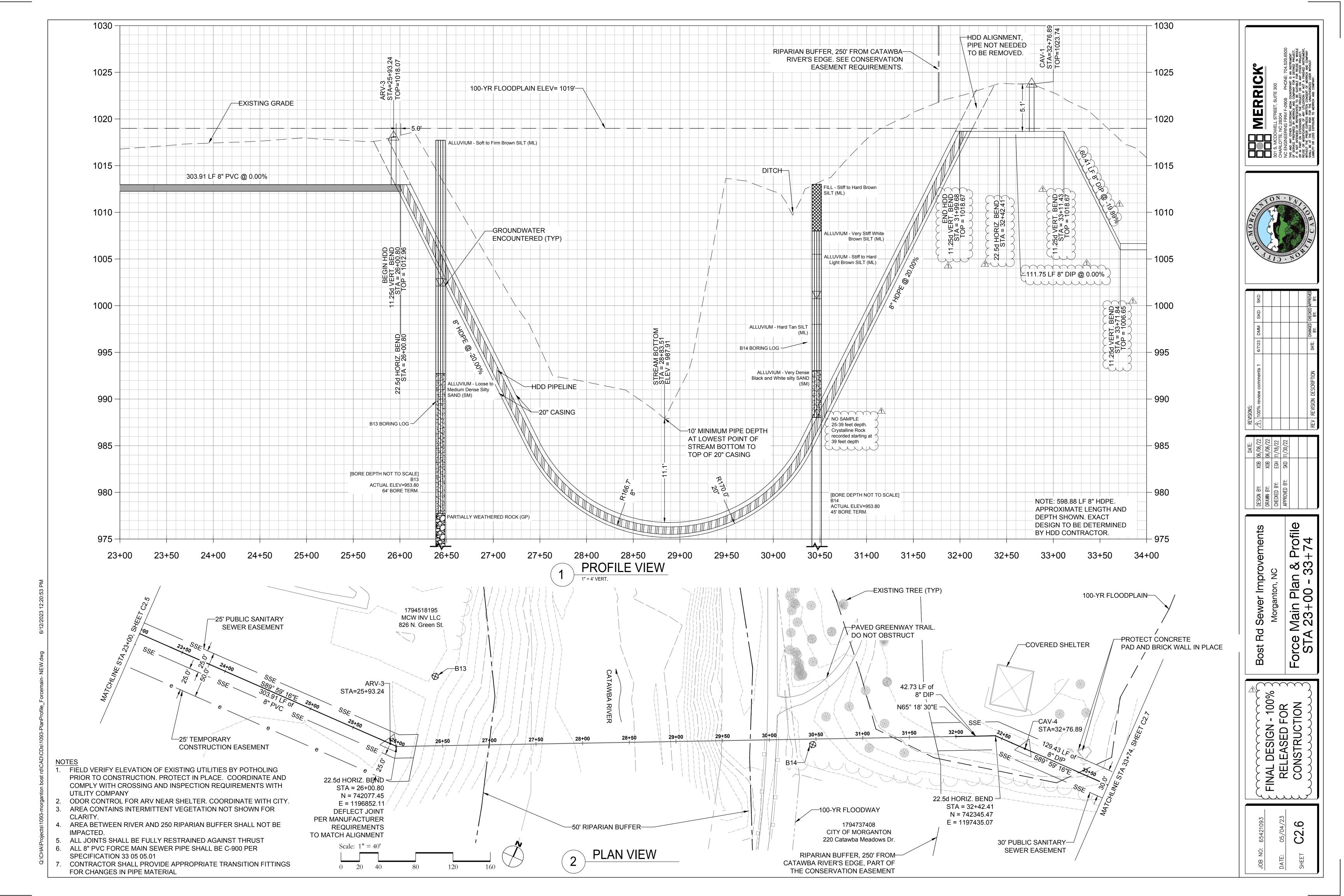
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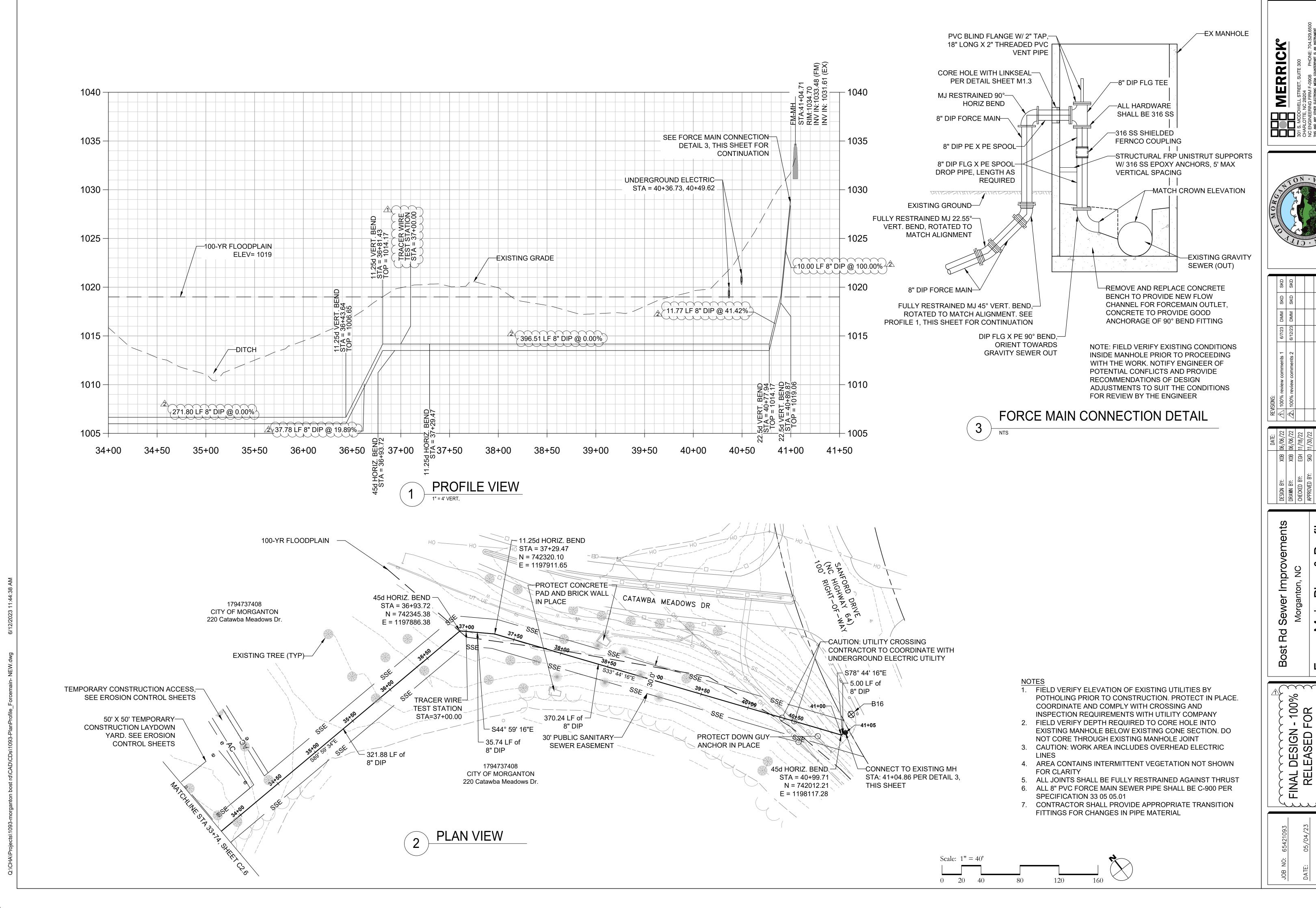
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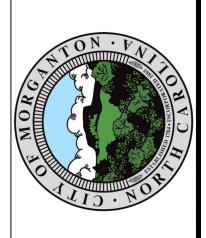












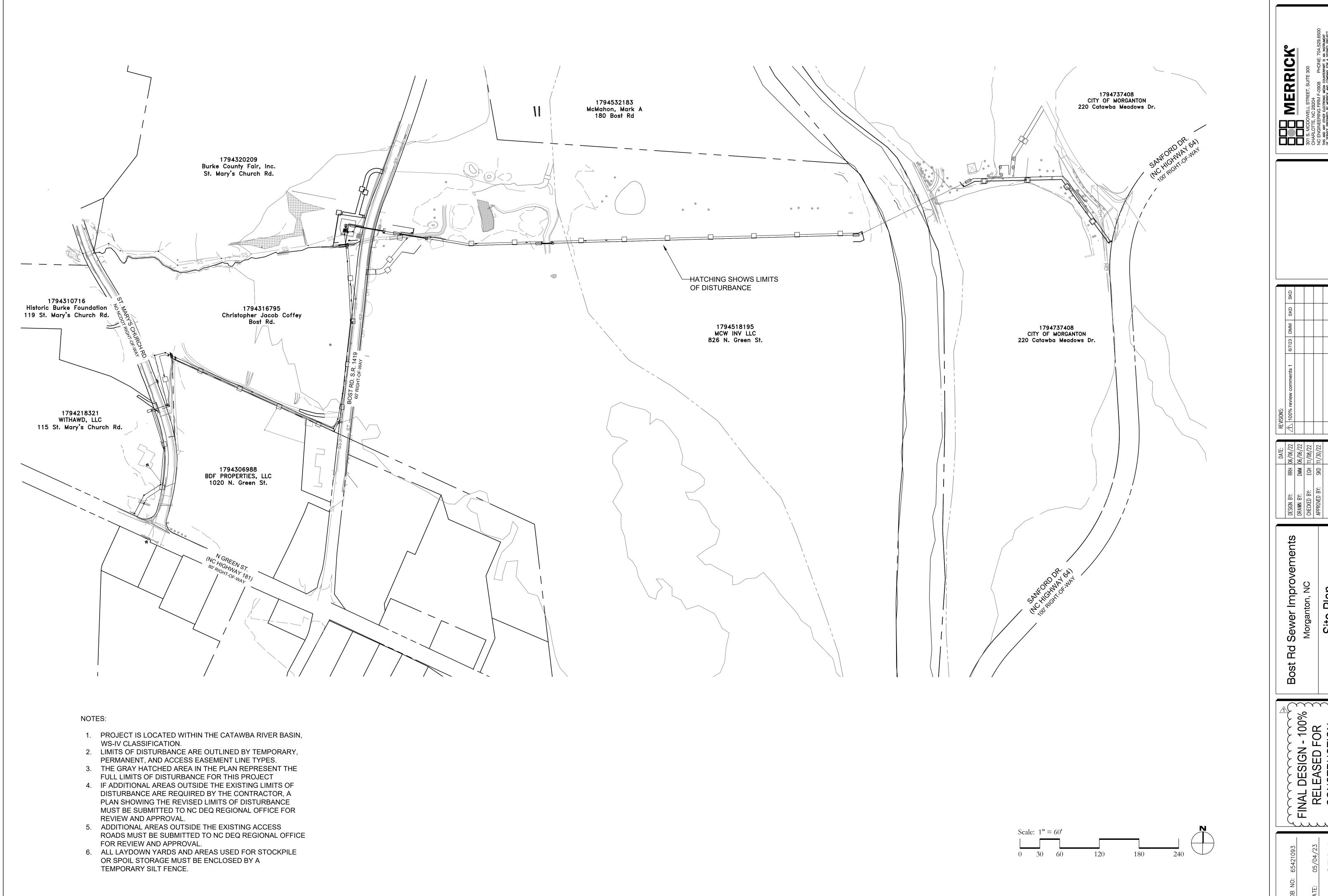
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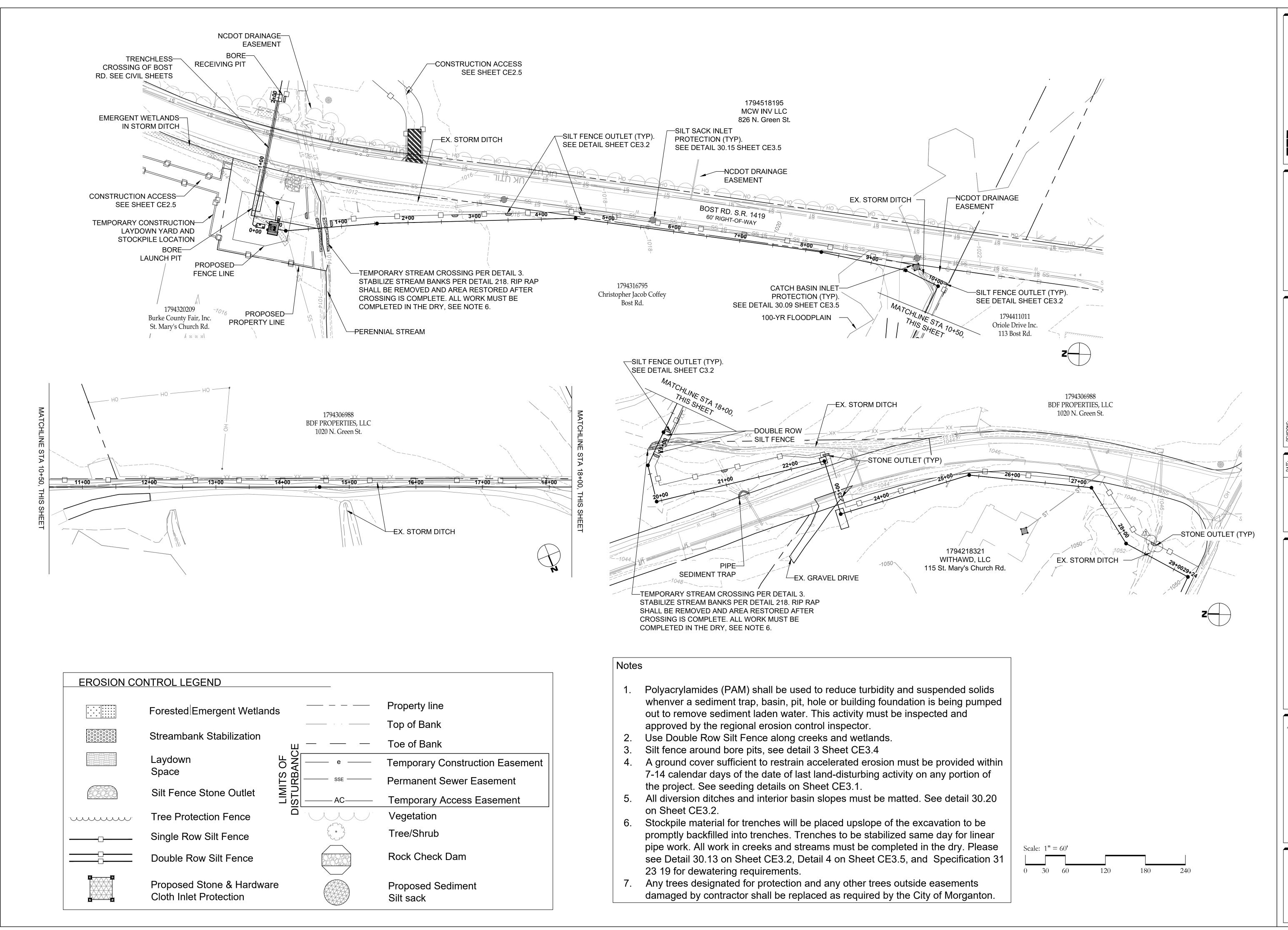
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Site Plan Erosion Control

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Bost Rd Sewer Improvements

Morganton, NC

Gravity Sewer

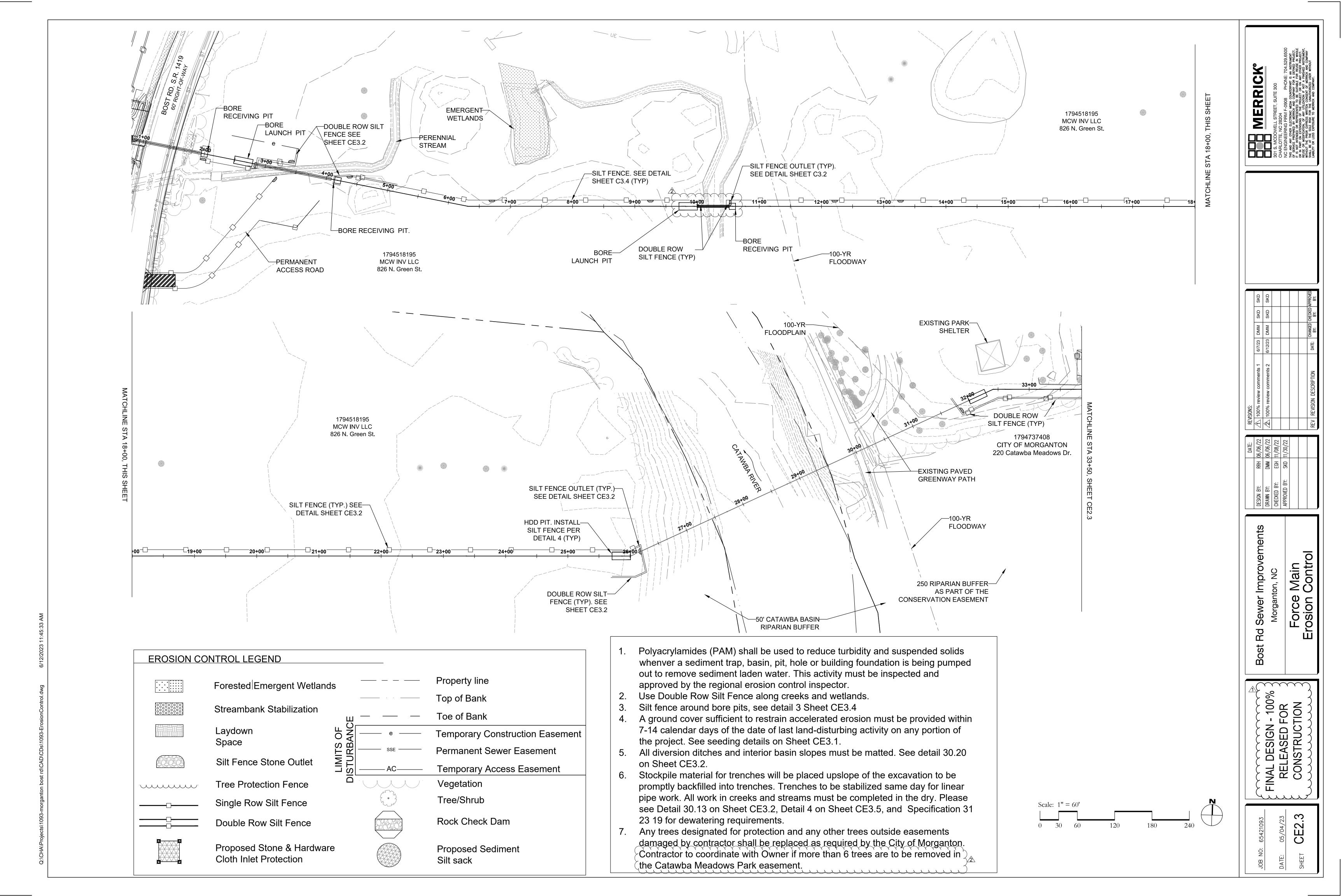
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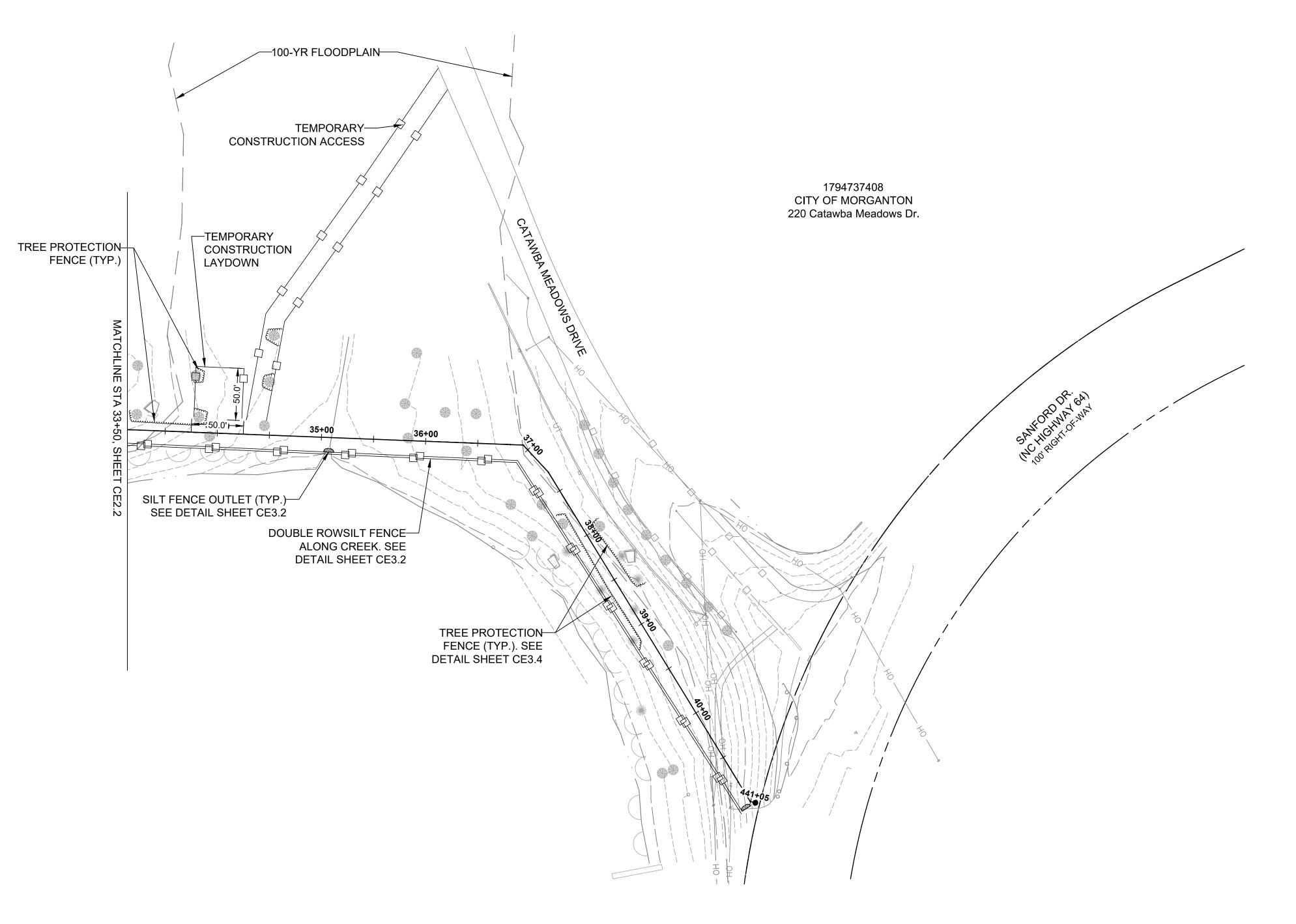
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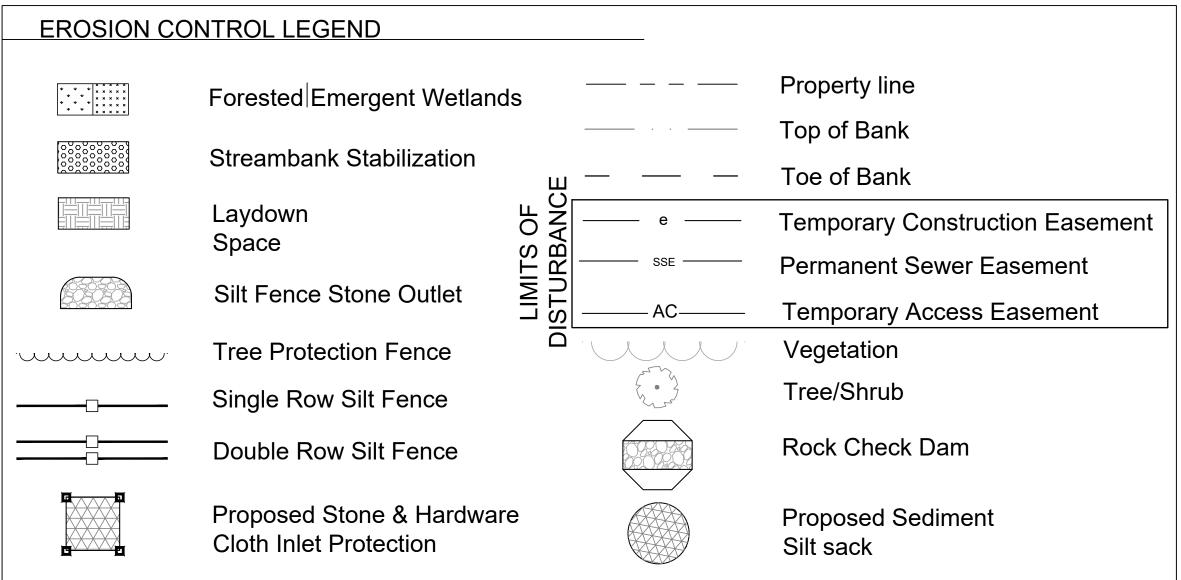
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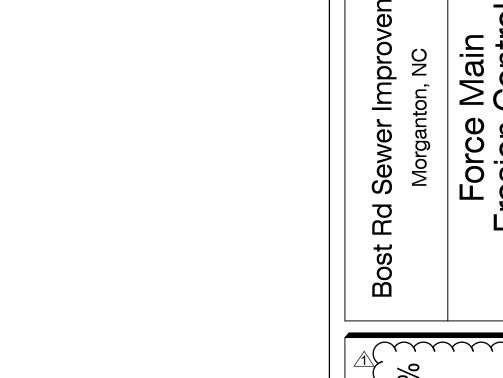






Notes

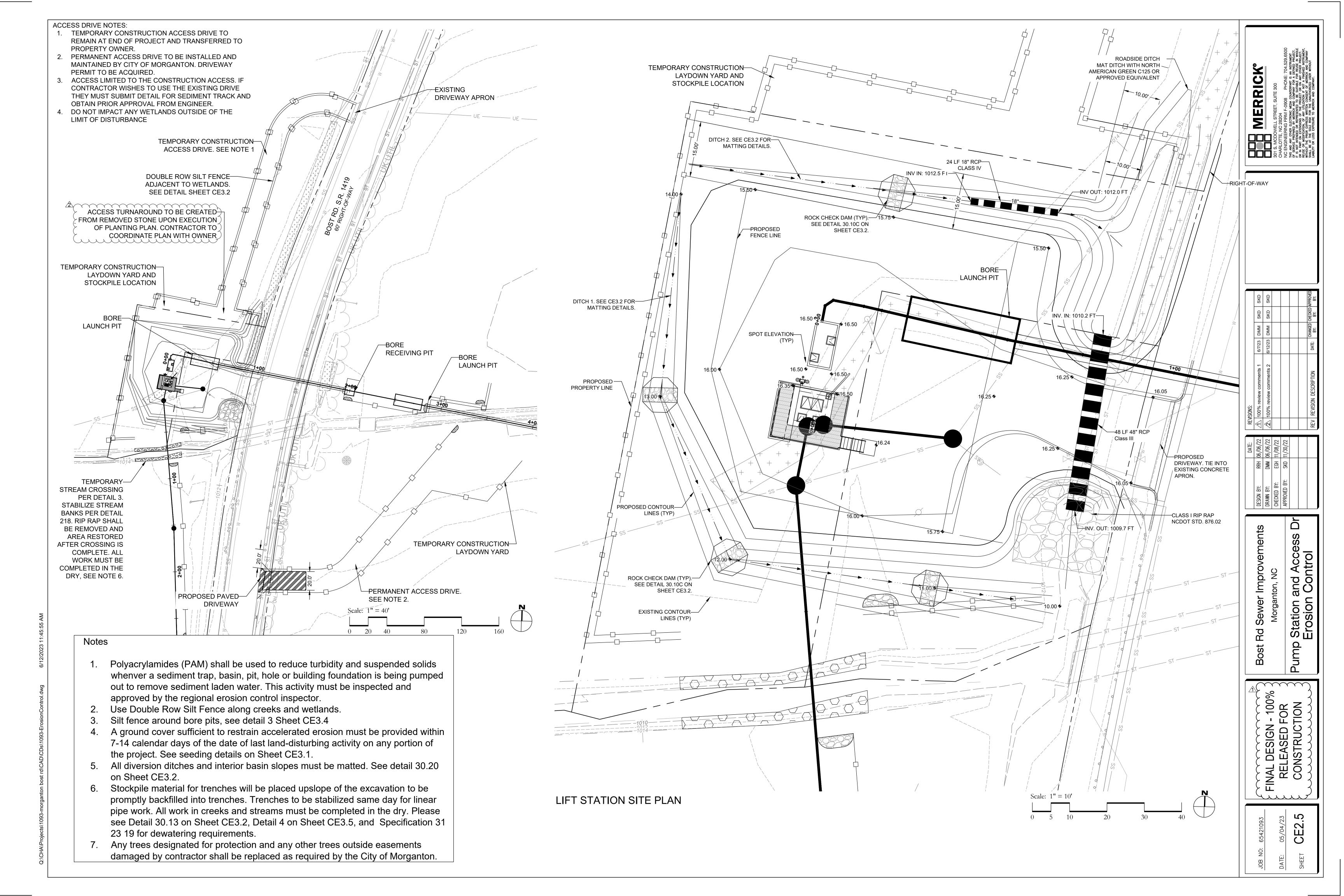
- 1. Polyacrylamides (PAM) shall be used to reduce turbidity and suspended solids whenver a sediment trap, basin, pit, hole or building foundation is being pumped out to remove sediment laden water. This activity must be inspected and approved by the regional erosion control inspector.
- 2. Use Double Row Silt Fence along creeks and wetlands.
 - Silt fence around bore pits, see detail 3 Sheet CE3.4
- 4. A ground cover sufficient to restrain accelerated erosion must be provided within 7-14 calendar days of the date of last land-disturbing activity on any portion of the project. See seeding details on Sheet CE3.1.
- 5. All diversion ditches and interior basin slopes must be matted. See detail 30.20 on Sheet CE3.2.
- 6. Stockpile material for trenches will be placed upslope of the excavation to be promptly backfilled into trenches. Trenches to be stabilized same day for linear pipe work. All work in creeks and streams must be completed in the dry. Please see Detail 30.13 on Sheet CE3.2, Detail 4 on Sheet CE3.5, and Specification 31 23 19 for dewatering requirements.
- 7. Any trees designated for protection and any other trees outside easements damaged by contractor shall be replaced as required by the City of Morganton. Contractor to coordinate with Owner if more than 6 trees are to be removed in the Catawba Meadows Park easement.

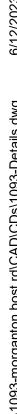


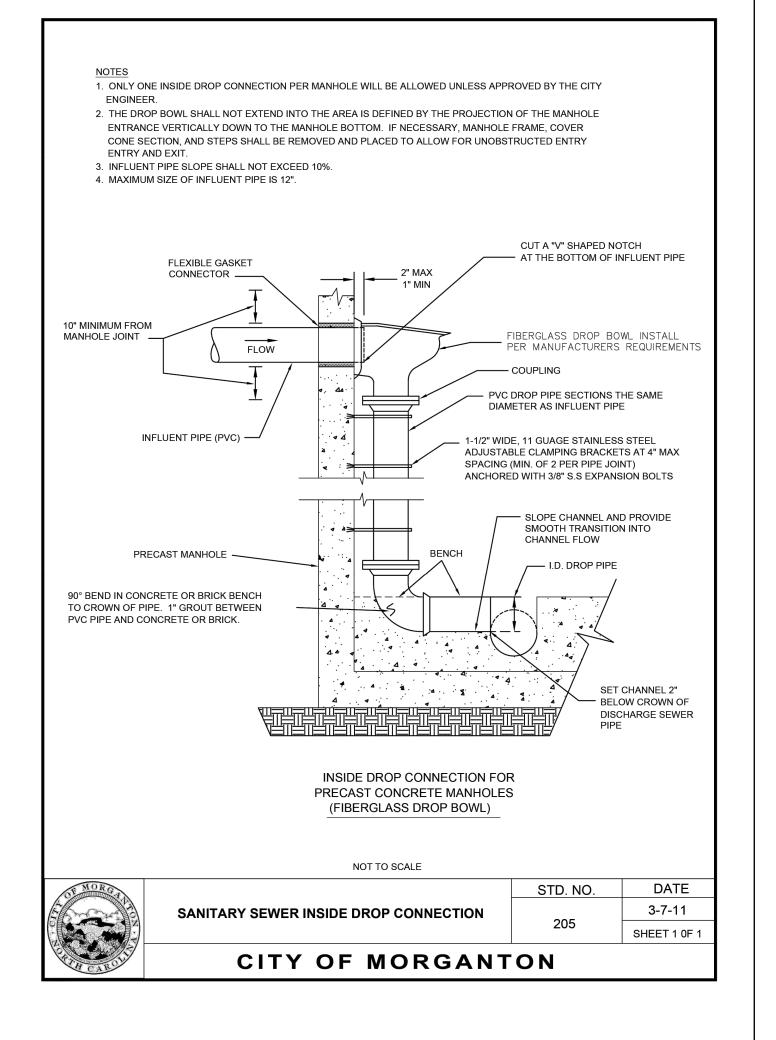
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Force Erosion (

MERRICK







2" ASPHALT SURFACE COURSE

REFER TO THE MOST CURRENT NCDOT PAVING SPECIFICATIONS

AFTER PLACEMENT AND COMPACTION OF

BALANCE OF BACFILL MATERIALS MAY BE

MACHINE PLACED IN UNIFORM LOOSE LIFTS OF SIX TO 8 INCH (6"-8") LAYERS AND

COMPACTED TO THE APPROPRIATE DENSITY.

PIPE AND EMBEDMENT MATERIALS, THE

ROADWAY 98% - ALL OTHER AREAS 90%

ALL PROPOSED SEWER PIPE INSTALLED IS

HDPE INSULATION.

REQUIRED TO HAVE AWG NO. 12 GUAGE

SOLID COPPER TRACER WIRE 30 MIL GREEN

NOT TO SCALE

UTILITY ROADWAY PATCH

AND REPAIR

CITY OF MORGANTON

11" BASE COURSE REFER TO THE MOST

CURRENT NCDOT PAVING SPECIFICATIONS

FILL EVENLY ON BOTH SIDES OF PIPE

TO CENTERLINE AND COMPACT USING

HAND SHOVEL OR MECHANICAL TAMP.

REVISED DATE

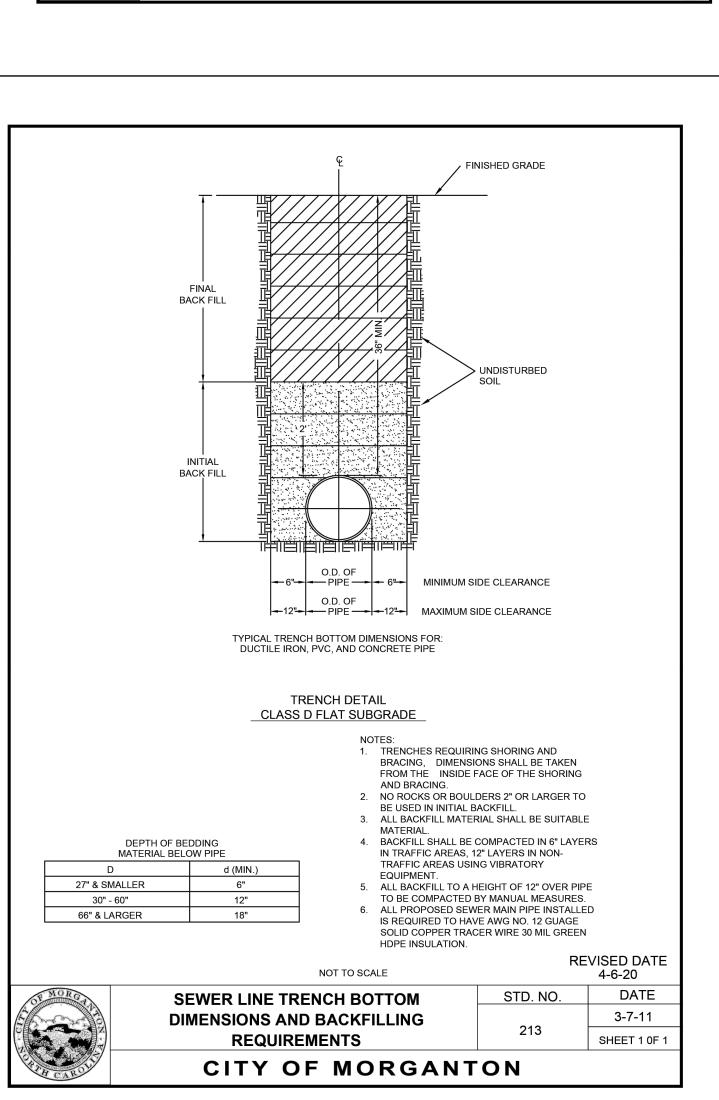
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STD. NO.

DATE

3-7-11

SHEET 1 0F 1



BOOTED CONNECTION REQUIRED

* A 4 A *

PLAN VIEW

1. ON NEW INSTALLATION, A MAXIMUM OF 2 GRADE RINGS SHALL BE USED. 2. CONCRETE SHALL BE 4000 PSI AS

3. STEEL REINFORCING SHALL MEET ASTM A-305, A-15, A-160 OR LATEST STANDARD

4. MANHOLES OVER 3'-6" IN DEPTH SHALL BE PROVIDED WITH STEPS 1'-3"

ON CENTER, STEPS SHALL BE IN

5. INVERT SHALL HAVE 0.20' OF FALL UNLESS OTHERWISE SPECIFIED.

ACCORDANCE WITH STANDARD NO. 203

MANHOLE DIAMETER VS. PIPE DIAMETER

4'-0" = 27" PIPE MAXIMUM 5'-0" = 36" PIPE MAXIMUM 6'-0" = ABOVE 36" PIPE

'O' RING JOINT ASTM C443-98

OR LATEST

STANDARD

PER ASTM C-478.

SECTION B-B

STD. NO. 203

— 5'-0" I.D. ———.

6'-0" I.D.

SECTION A-A

NOT TO SCALE

CITY OF MORGANTON

SANITARY SEWER MANHOLE DETAIL

M.H. STEP c

RING & COVER

2.67' RISERS

BASE WITH

DATE

3-7-11

SHEET 1 0F 1

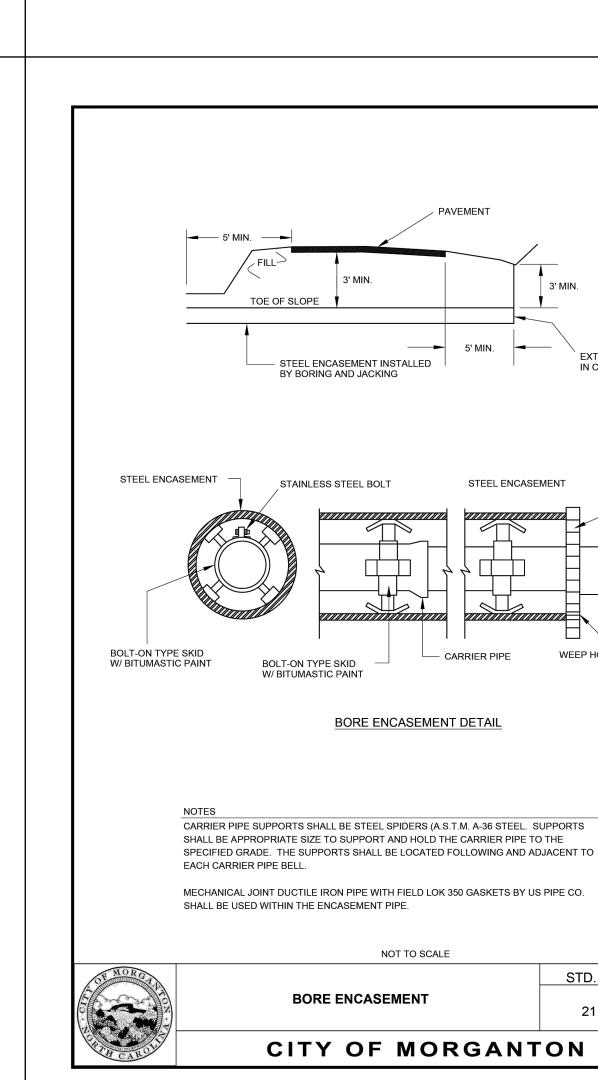
PRECAST INVERTS

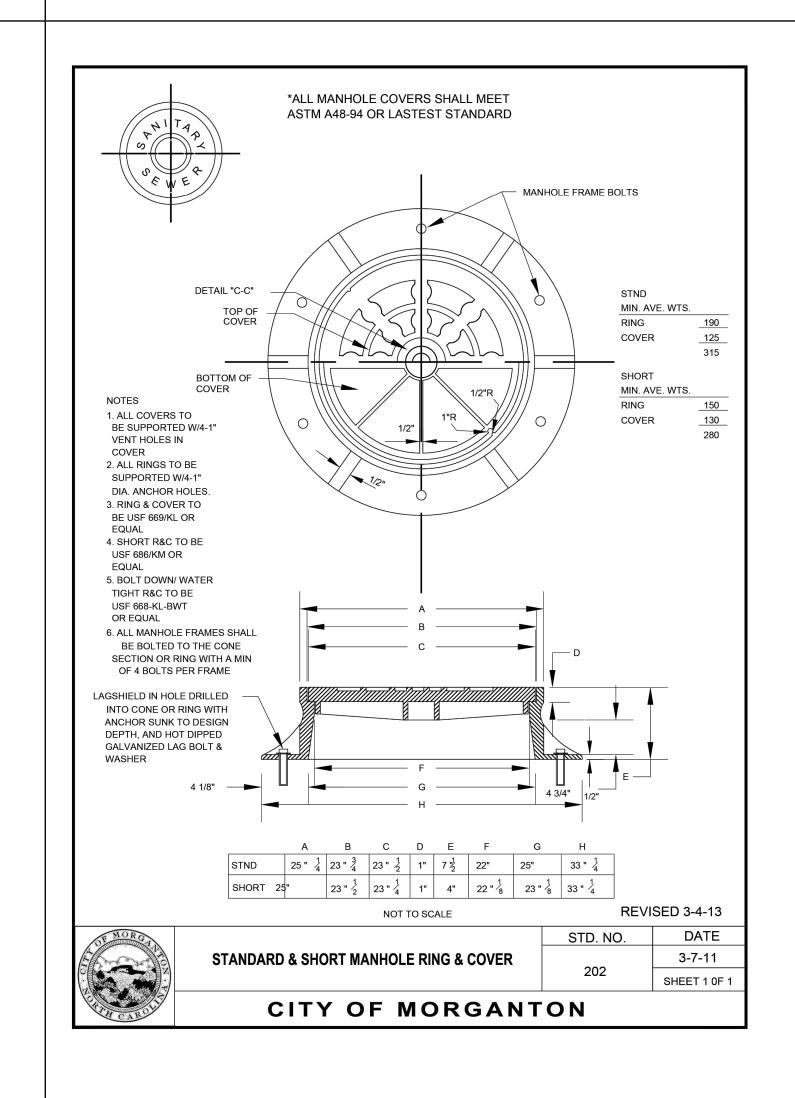
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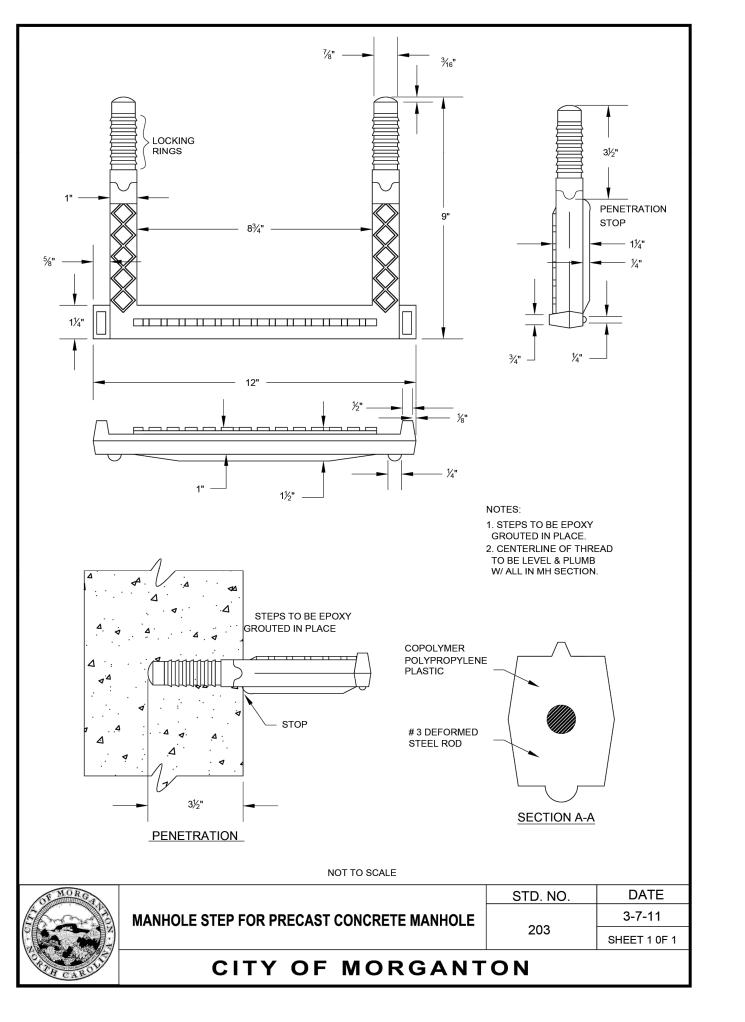
STONE TO 12"

STD. NO.

UNDER MANHOLE







EXTEND CASING TO DITCHLINE IN CUT SECTION

AT END OF PIPE

REVISED 3-4-13

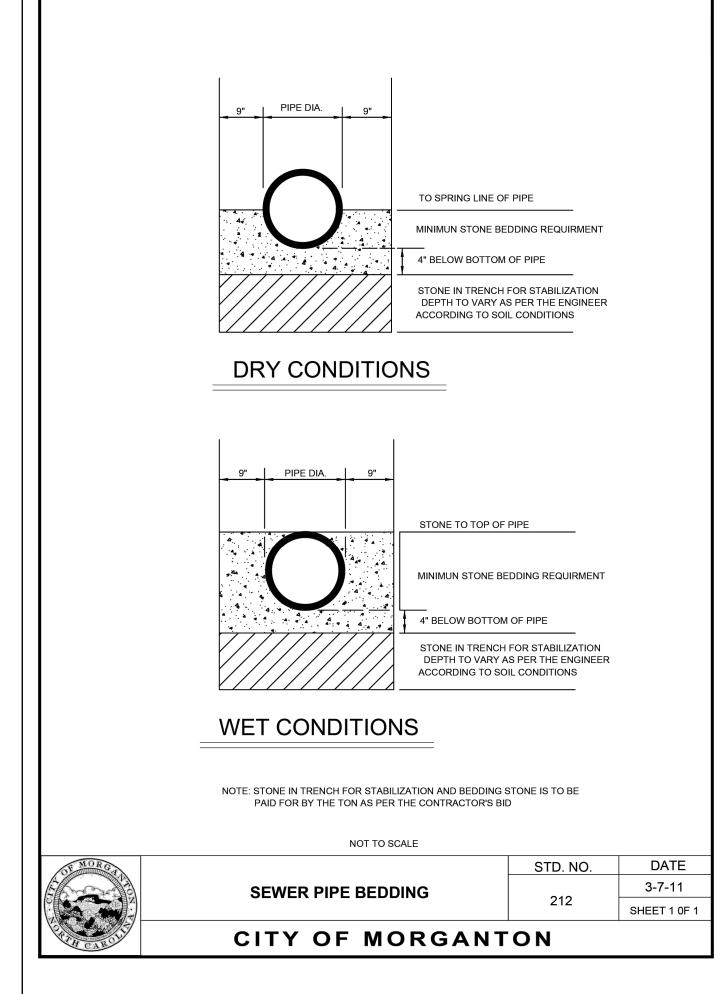
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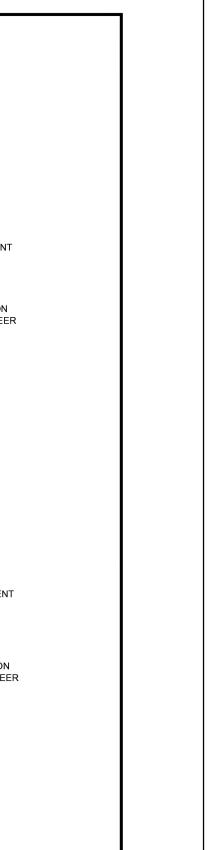
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SHEET 1 0F 1

WEEP HOLES AT BOTTOM







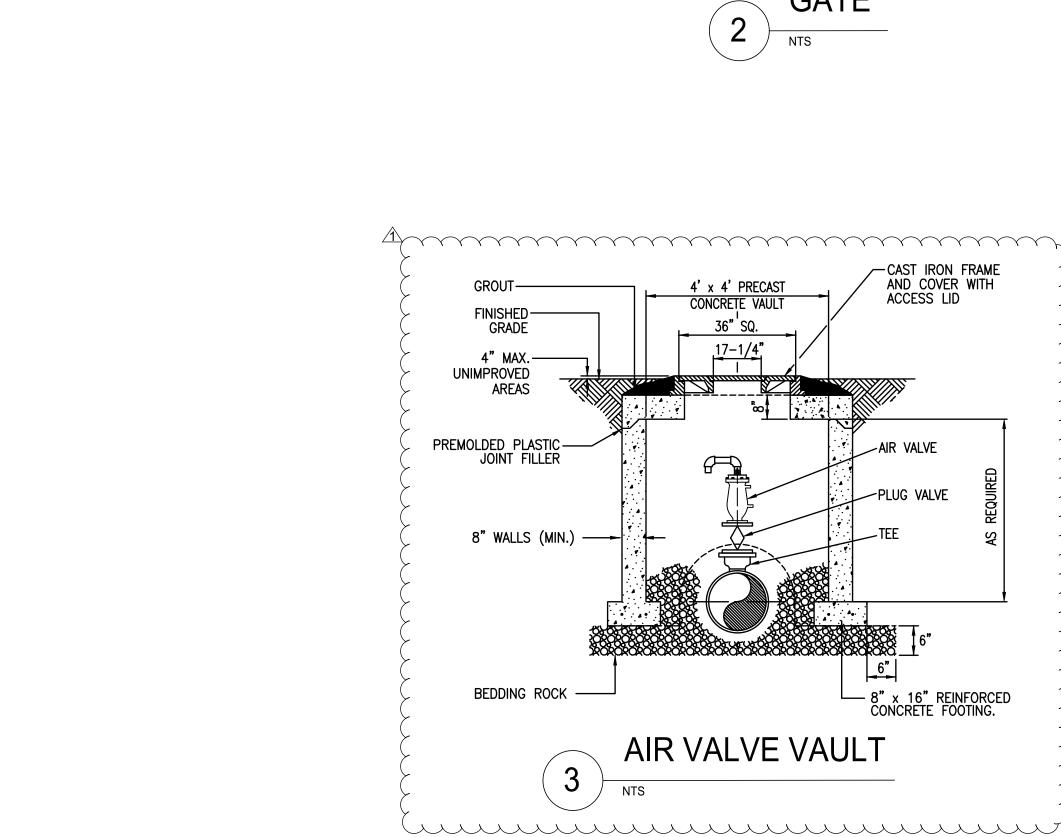
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etails



CHAIN-LINK FABRIC

- BRACE POST

MULTIPLES OF 10'-0"

(MAX)

WIRE TIES

BRACE POST

MULTIPLES OF 10'-0"

(MAX)

BLACK VINYL COATED CHAIN LINK FENCE

CORNER

└ 1 1 %" BOTTOM RAIL

– END BAY 10'-0" —

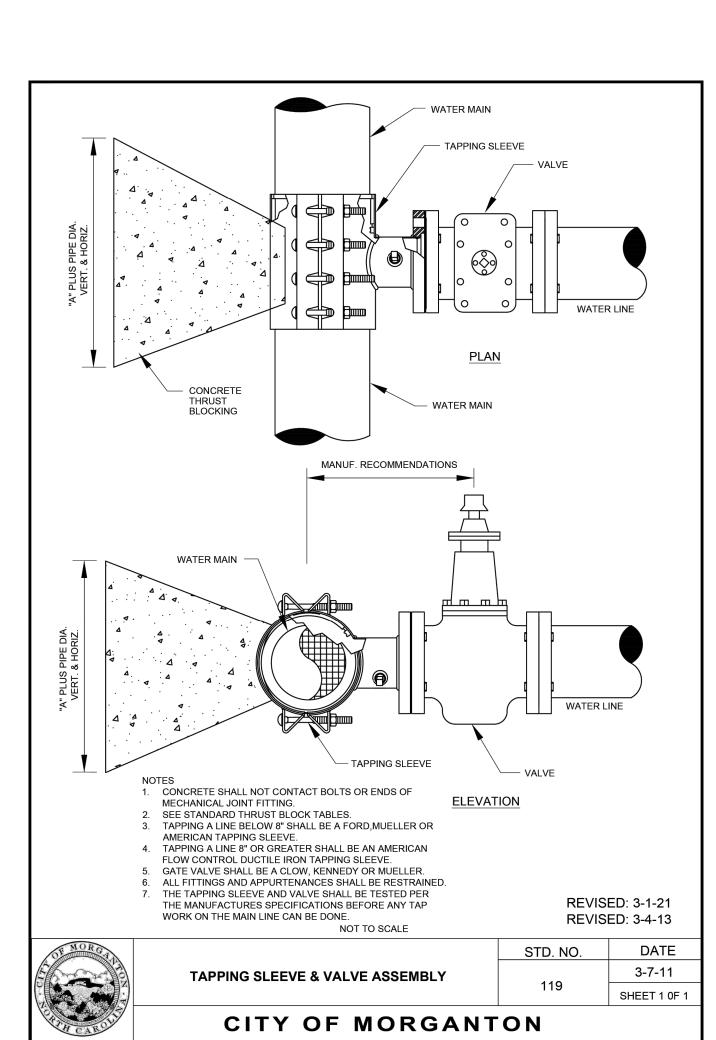
TRUSS ROD

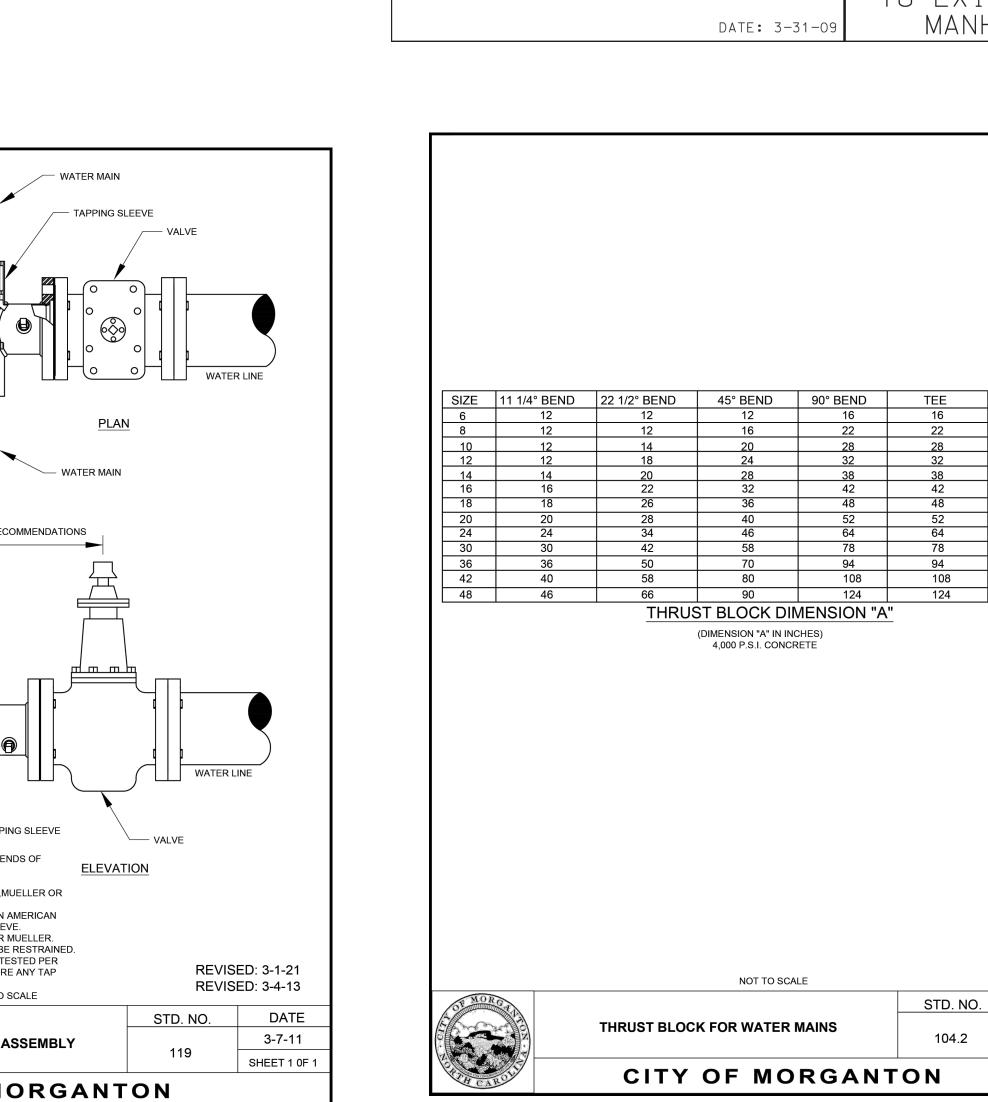
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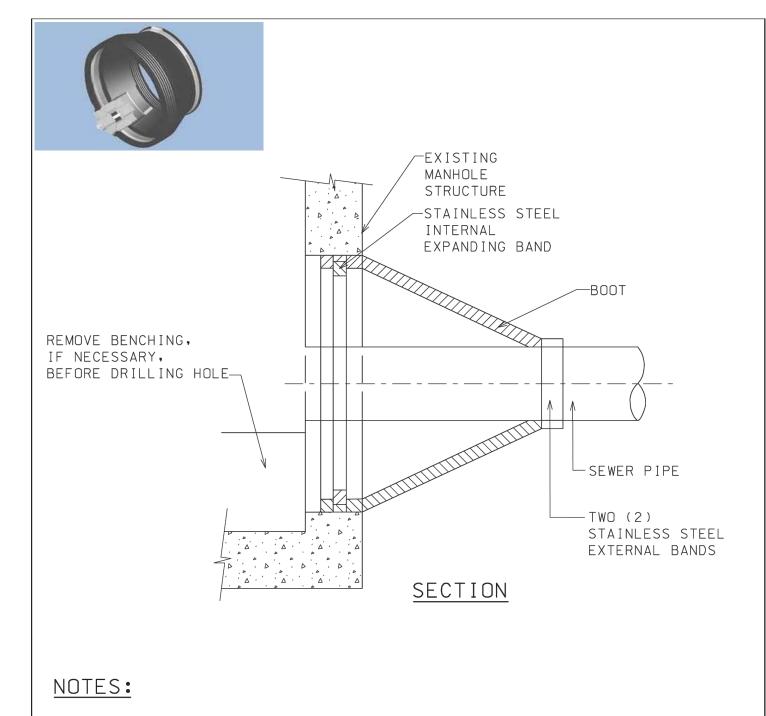
- WIRE TIES

LINE POST

2'-6"







- 1. CORE-DRILL CIRCULAR OPENING IN MANHOLE WALL OF DIAMETER TO FIT THE REQUIRED BOOT SIZE.
- 2. KOR-N SEAL FLEXIBLE RUBBER BOOT (MANUFACTURED BY NATIONAL POLLUTION CONTROL SYSTEMS, INC. OR AS APPROVED BY THE ENGINEERING DEPARTMENT) SHALL BE USED FOR
- WATERTIGHT CONNECTION. 3. CUT, SHAPE AND SLOPE NEW INVERT CHANNEL IN THE EXISTING CONCRETE BENCH FOR SMOOTH FLOW FROM NEW SANITARY SEWER
- 4. CLEAN EXISTING MANHOLE OF ANY DIRT, CONCRETE OR DEBRIS

WHICH MAY ACCUMULATE DURING THE CONSTRUCTION PROCESS. NOT TO SCALE

90

3-7-11

SHEET 2 0F 2

SANITARY SEWER

MANHOLE

301

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)	DRAWN BY:	DrawnXXX	DrawnXXX MM/DD/YR
	CHECKED BY: CheckXXX MM/DD/YR	CheckXXX	MM/DD/YR
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st Rd Sewer Improvements	Morganton, NC	DETAILS
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BRACES

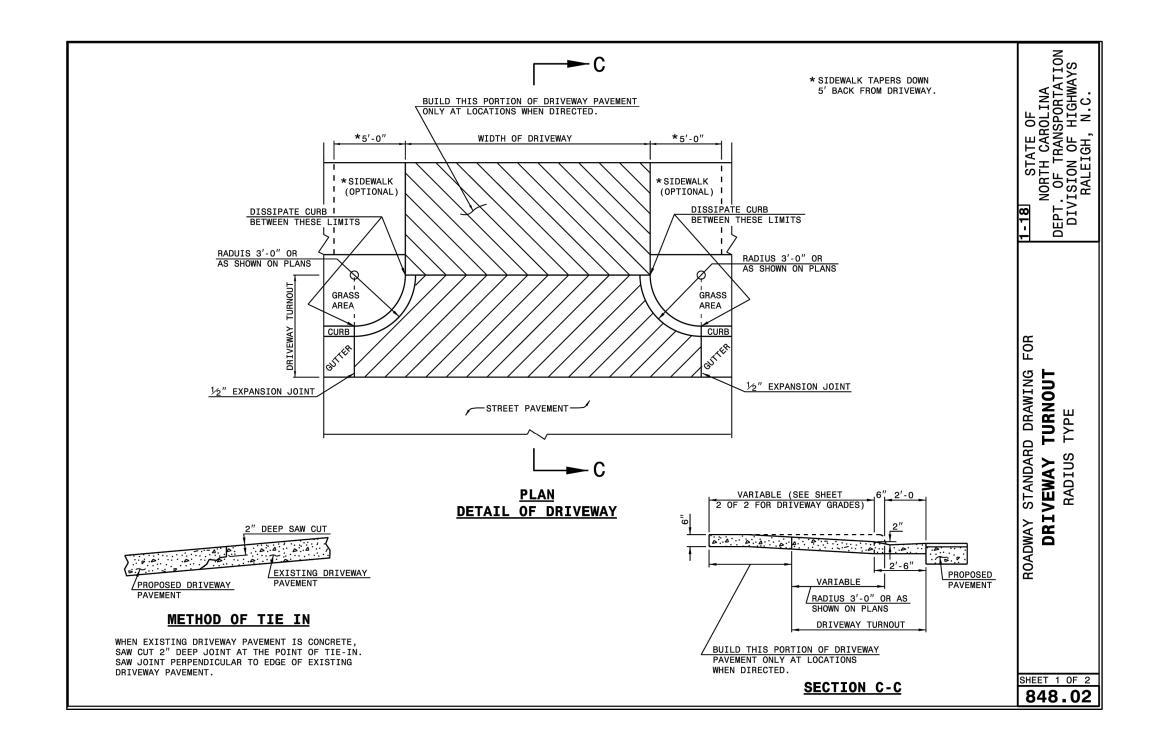
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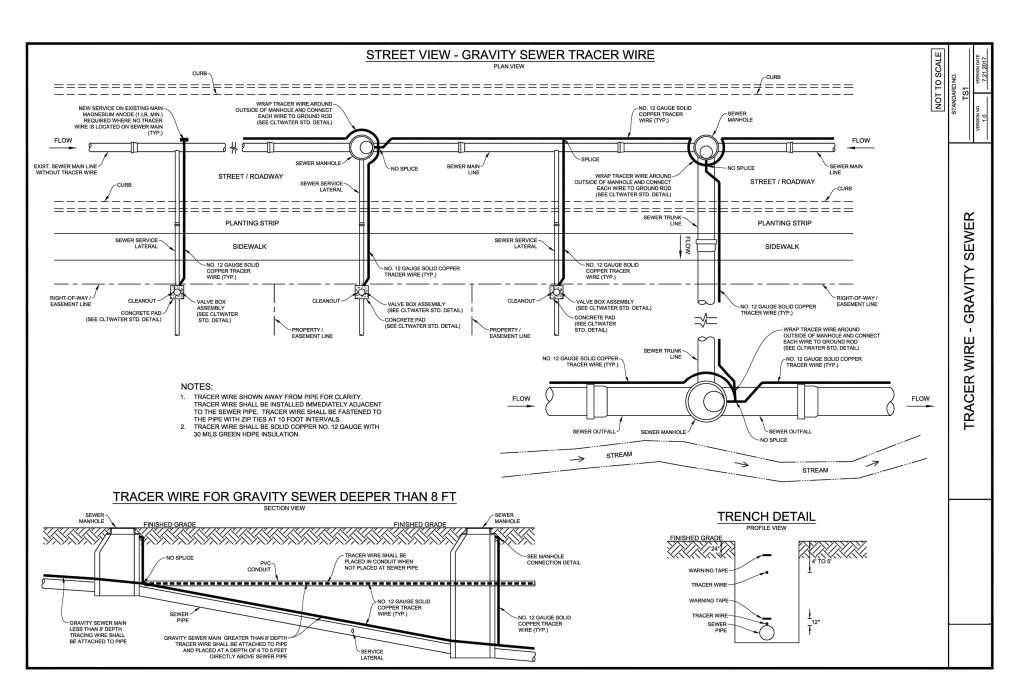
BAR GATE

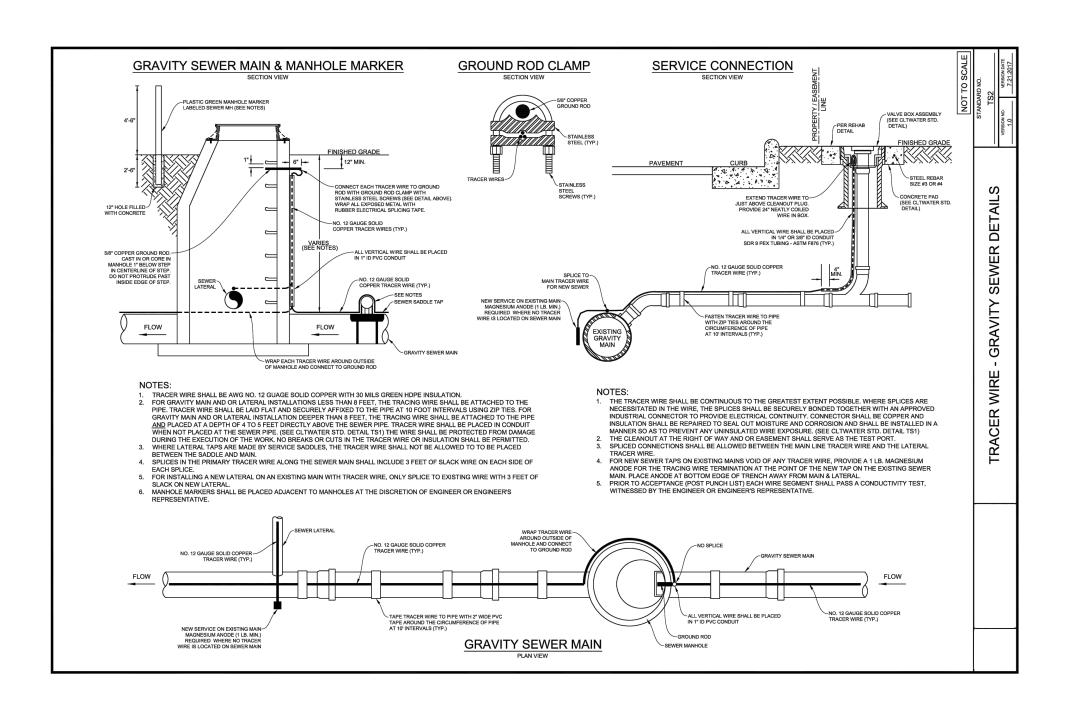
TIES

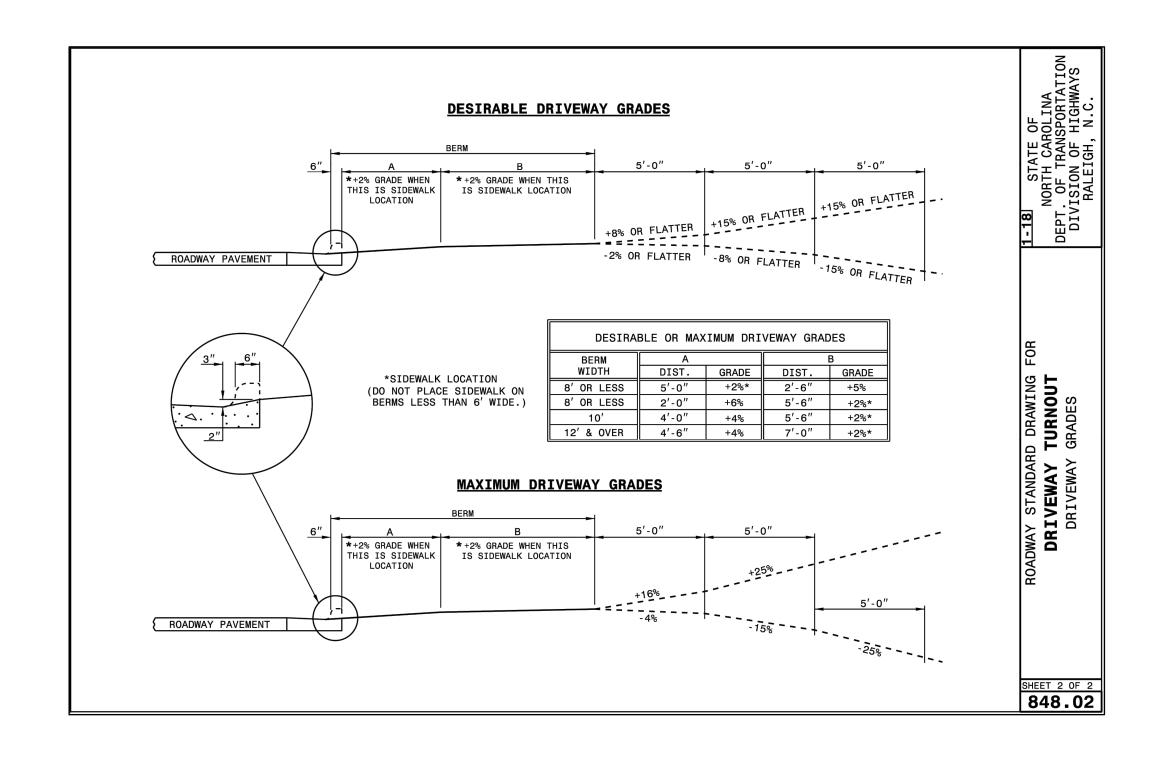
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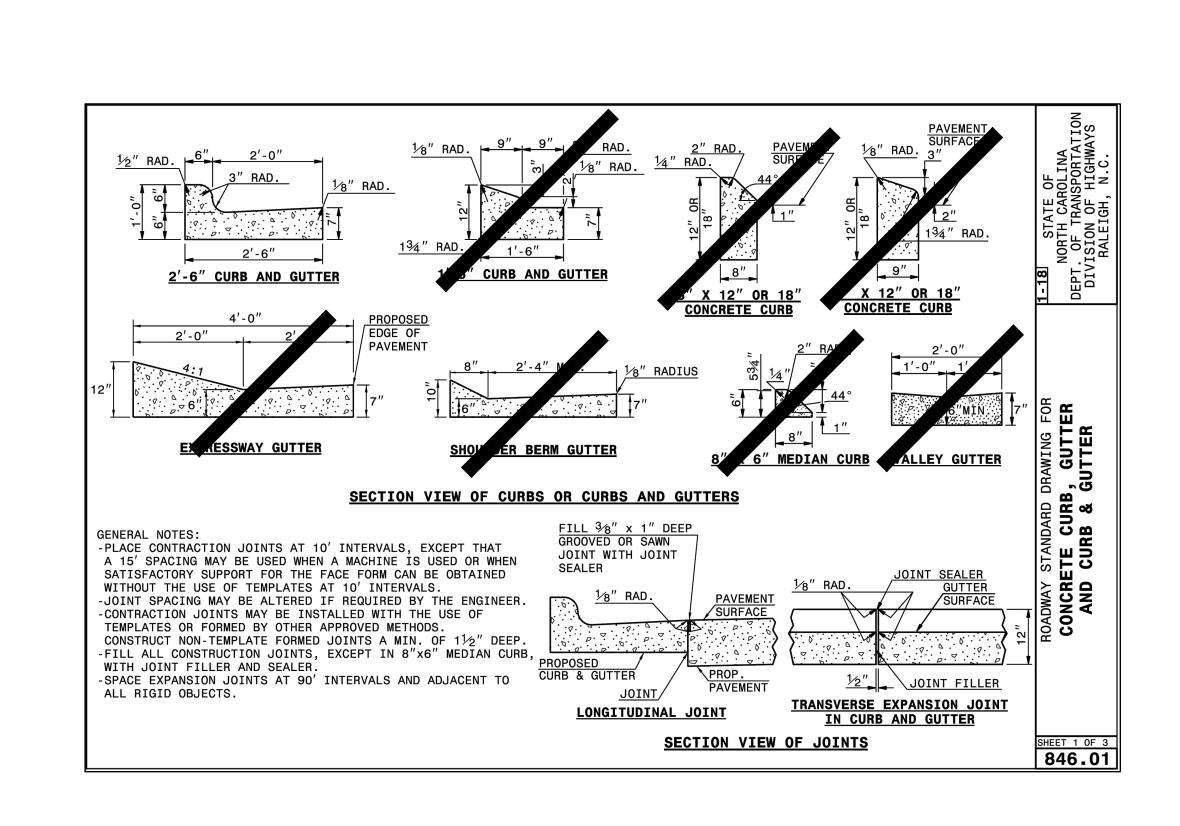
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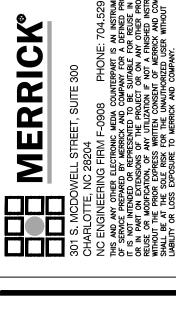


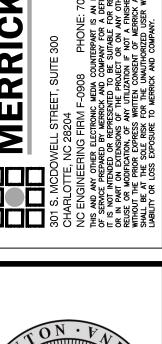


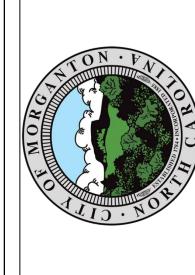












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	FINAL DESIGN - 100%
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	CONSTRUCTION

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Sewer Improve

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SLOPE SEEDING

Seeding Mixture

Species Rate (lbs/acre) 20 lbs 8 lbs 25 lbs 25 lbs 1.5 lbs

Seeding Dates

Mountains March 15 - May 15 August 15 - October 15

Soil Amendments

Follow recommendations of soil test or apply 2,000 lbs/acre ground agricultural limestone and 400 lbs/acre 18-46-50 fertilizer.

Mulch

Apply 4,000 lbs/acre straw, anchor straw by netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance

Re-fertilize if growth is not fully adequate. Re-seed, re-fertilize and mulch immediately following erosion or other damage.

- Refer to the most current version of the NC DENR "Erosion and Sediment Control Planning and Design Manual" for reference and changes.
- 2. Fescues and Kentucky bluegrass should be avoided in riparian and wetland\ areas. Replace with quick growing seed such as wheat, rye grain, or oats, and mixed with perennial native grasses and wildflowers to provide a more permanent herbaceous cover



CITY OF MORGANTON					
SPECIFICATIONS	1000	SHEET 1 0F			
SLOPE SEEDING	1006	3-4-19			
	STD. NO.	DATE			

CITT OF MORGANION

TEMPORARY SEEDING FOR SUMMER

Seeding Mixture

Species Rate (lbs/acre) 40 lbs German millet

Seeding Dates

May 15 - August 15 Mountains May 1 - August 15 Piedmont April 15 - August 15 Coastal Plain

Soil Amendments

Follow recommendations of soil test or apply 2,000 lbs/acre ground agricultural limestone and 750 lbs/acre 10-10-10 fertilizer

Mulch

Apply 4,000 lbs/acre straw, anchor straw by netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance

Re-fertilize if growth is not fully adequate. Re-seed, re-fertilize and mulch immediately following erosion or other damage.

Refer to the most current version of the NC DENR "Erosion and Sediment Control Planning and Design Manual" for reference and changes

	H CAROLIS	CITY OF MORGANT	ON	
		FOR SUMMER	1002	SHEET 1 0F 1
		SPECIFICATIONS	1002	3-4-19
6	MORGA	TEMPORARY SEEDING	STD. NO.	DATE

CITY OF MORGANTON UTILITY CONSTRUCTION EROSION CONTROL SPECIFICATIONS

Erosion control measures shall be performed by the contractor, conforming to the requirements of, and in accordance with plans approved by the State of North Carolina Department of Environment and Natural Resources, and the City of Morganton Development and Design Department Services Department/Engineering Division, and as per the erosion control plan portion of the construction drawings and these specifications. The Contractor shall be familiar with the "Sedimentation Pollution Control Act of 1973" and abide by these laws and guidelines during the construction. The sedimentation and erosion control plan and permit shall remain on site at all times. The contractor shall not allow mud and debris to accumulate in the streets. Should the contractor pump water from trenches during construction, appropriate siltation preventative measures shall be taken prior to the entry into any storm drain or stream. All measures must be taken so that stormwater runoff does not go to the pipes or manholes of the utility system. All materials used for erosion control shall be approved by the Engineer prior to installation by the contractor.

- a. Temporary and permanent erosion control measures shall be shown on the plans. Temporary and permanent erosion control work shall be coordinated throughout the project to provide effective and continuous erosion control throughout construction and post construction, which minimizes siltation of streams, lakes, reservoirs, other water impoundments, ground surface, or other property. Seeding and mulching shall be carried out immediately behind construction.
- b. Temporary erosion control measures shall include but not be limited to swaled easements, silt fences, straw wattle check dam devices, crushed stone check dam devices, silt basins (sedimentation traps), mulching, earth berms, and rip-rap.
- c. Permanent erosion control measures shall include but not be limited to swaled easements, rip rap and seeding of disturbed areas.
- d. Erosion and siltation shall be controlled on projects by using swales to control run-off and convey run-off to controlled discharge points, by silt fences, rip-rap, crushed stone, and earth berms to contain silt, with pipe culverts where major access or haul roads cross drainage ditches or streams, silt basins where pipe lines cross drainage ditches or streams, and with seeding and mulching performed as soon after pipe installation as possible. When temporary measures are removed after completion of the project the disturbed area must be stabilized, if necessary.

CITY OF MORGANTON UTILITY CONSTRUCTION EROSION CONTROL SPECIFICATIONS Approved: April 5th, 2021

TEMPORARY SEEDING FOR WINTER & EARLY SPRING

Seeding Mixture

Species Rate (lbs/acre) Rye (grain) 120 lbs 50 lbs Alternative native species: Switchgrass (Panicum Virgatum),

Splitbeard Bluestem (Andropogon Ternarius), Beggarlice (Desmodium spp.), and Partridge Pea (Chamaecrista Fasciculata).

Seeding Dates

February 15 - May 15 Mountains (above 2,500ft.) Mountains (below 2,500ft.) February 15 - May 1 January 1 - May 1 Piedmont Coastal Plain December 1 - April 15

Soil Amendments

Follow recommendations of soil test or apply 2,000 lbs/acre ground agricultural limestone and 750 lbs/acre 10-10-10 fertilizer.

Mulch

Apply 4,000 lbs/acre straw, anchor straw by netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance

Re-fertilize if growth is not fully adequate. Re-seed, re-fertilize and mulch immediately following erosion or other damage.

Refer to the most current version of the NC DENR "Erosion and Sediment Control Planning and Design Manual" for reference and changes.

OF MORGA	TEMPORARY SEEDING	STD. NO.	DATE
	SPECIFICATIONS FOR WINTER &	1003	3-4-19
	EARLY SPRING	1003	SHEET 1 0F 1
RAPOLE	CITY OF MORGANT	ON	

Site area description	Stabilization time frame	Stabilization time frame exceptions
Perimeter dikes, swales, ditches and slopes	7 Days	None
High quality water zones (HQW)	7 Days	None
Slopes steeper than 3:1	7 Days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
Slopes 3:1 or flatter	14 Days	7 Days for slopes that are not greater than 50'
All other areas with slopes flatter than 4:1	14 Days	None (except for perimeters and HQW zones)

"Extensions of time may be approved by the permitting authority based on weather or other site-specific conditions that make compliance impracticable." (Section 11.B(2)(B))

- Refer to the most current version of the NC DENR "Erosion and Sediment Control Planning and Design Manual" for reference and changes.
- Refer to the most current standards and regulations with NC DENR Division of Water Quality.

1000	SHEET 1 0F 1
1000	3-4-19
STD. NO.	DATE
	STD. NO. 1000

TEMPORARY SEEDING FOR FALL

Seeding Mixture

Rate (lbs/acre) 280 lbs

Seeding Dates

Species

Rye (grain)

August 15 - December 15 Mountains August 15 - December 15 Piedmont Coastal Plain August 15 - December 30

Soil Amendments

Follow recommendations of soil test or apply 2,000 lbs/acre ground agricultural limestone and 1,000 lbs/acre 10-10-10 fertilizer.

Mulch

Apply 4,000 lbs/acre straw, anchor straw by netting ,or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance

Repair and re-fertilize damaged areas immediately. Topdress with 50 lbs/acre nitrogen in March. If it is necessay to extend temporary cover beyond June 15, overseed with 50 lbs/acre kobe (piedmont and coastal plain) or korean (mountains) lespedeza in late February or early March.

Refer to the most current version of the NC DENR "Erosion and Sediment Control Planning and Design Manual" for reference and changes

OF MORGA		STD. NO.	DATE
	TEMPORARY SEEDING	1004	3-4-19
	SPECIFICATIONS FOR FALL	1004	SHEET 1 0F 1
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SEEDBED PREPARATION

- 1. Chisel compacted areas and spread topsoil 3 inches deep over adverse soil conditions if available.
- 2. Rip the entire area 6 inches in depth.
- 3. Remove all loose rock, and other obstructions leaving the surface reasonably smooth and uniform.
- 4. Apply agricultural lime, fertilizer, and superphosphate uniformly and mix with soil (see below*).
- 5. Continue tillage until a well pulverized, firm reasonably uniform seedbed is prepared 4 to 6 inches deep.
- 6. Seed on a freshly prepared seedbed and cover seed lightly with seeding equipment or cultipack after seeding.
- 7. Mulch immediately after seeding and anchor mulch.
- 8. Inspect all seeded areas and make necessary repairs or re-seed within the planting season, if possible. If stand should be over 60% damaged, re-establish the following original lime, fertilizer and seeding rates.
- 9. Consult conservation inspector on maintenance, treatment and fertilization after permanent cover is established.
- Apply: Agricultural limestone 2 tons/acre and 3 tons/acre in clay soils.
- Fertilizer 1000 lbs/acre of 10-10-10
- Superphosphate 500 lbs/acre 20% analysis Mulch - 2 tons/acre of small grain straw

Refer to the most current version of the NC DENR "Erosion and Sediment Control Planning and Design Manual" for reference and changes.

THE CASE OF THE CA	CITY OF MORGANT	ON	
		1001	SHEET 1 0F 1
	SEEDBED SPECIFICATIONS	1001	3-4-19
OF MORGA		STD. NO.	DATE

PERMANENT SEEDING

Seeding Mixture

Species
Perennial native grasses and wildflowers Rate (lbs/acre) 260 lbs Perennial rye, oat or wheat

Seeding Dates

March 15 - May 15 Mountains August 15 - October 15

Soil Amendments

Follow recommendations of soil test or apply 2,000 lbs/acre ground agricultural limestone and 750 lbs/acre 10-10-10 fertilizer.

Apply 4,000 lbs/acre straw, anchor straw by netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance

Re-fertilize if growth is not fully adequate. Re-seed, re-fertilize and mulch immediately following erosion or other damage.

- Refer to the most current version of the NC DENR "Erosion and Sediment Control Planning and Design Manual" for reference and changes.
- Fescues and Kentucky bluegrass should be avoided in riparian and wetland\ areas. Replace with quick growing seed such as wheat, rye grain, or oats, and mixed with perennial native grasses and wildflowers to provide a more permanent herbaceous cover



	STD. NO.	DATE
PERMANENT SEEDING	1005	3-4-19
SPECIFICATIONS	1005	SHEET 1 0F 1
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CITY OF MORGANTON

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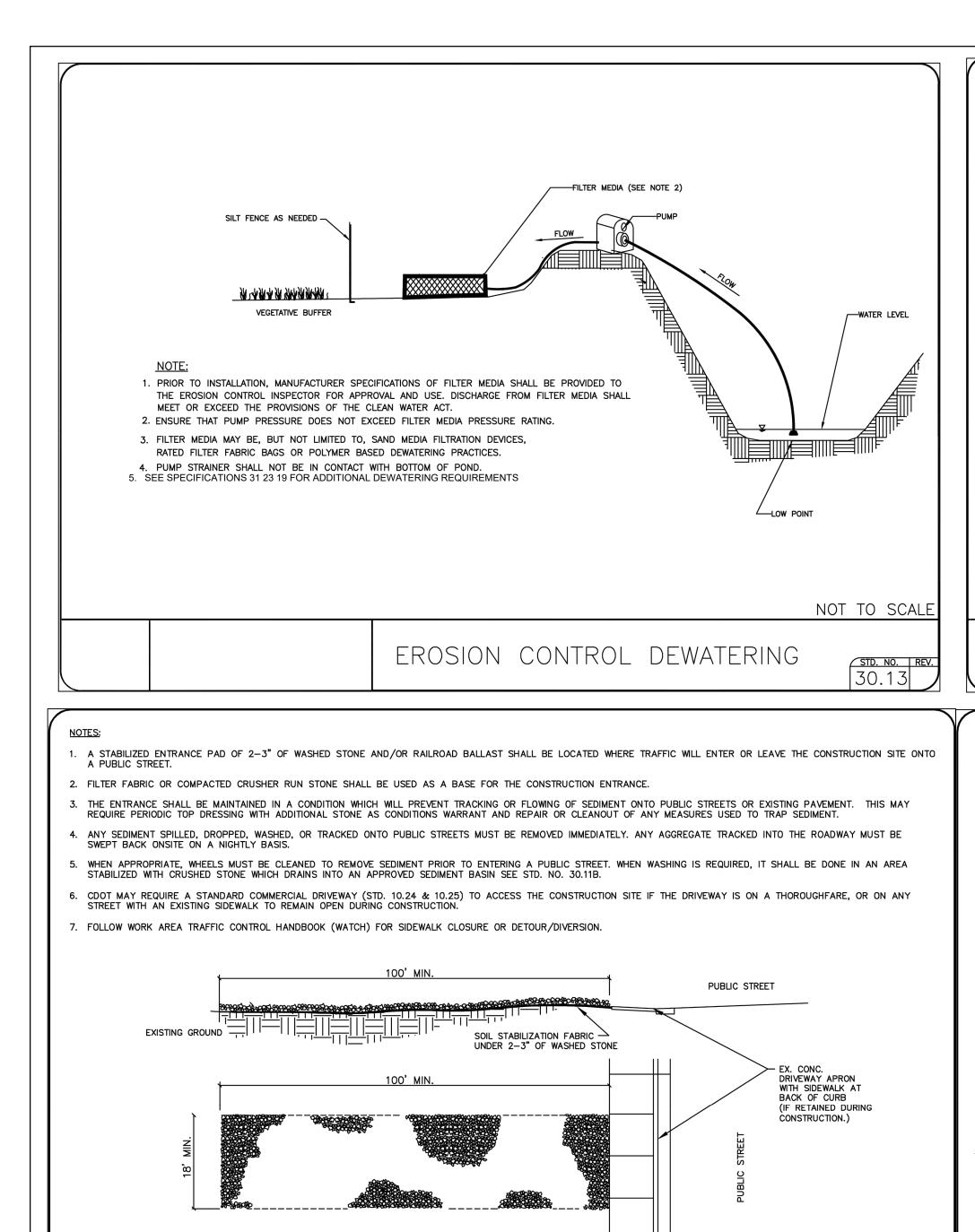
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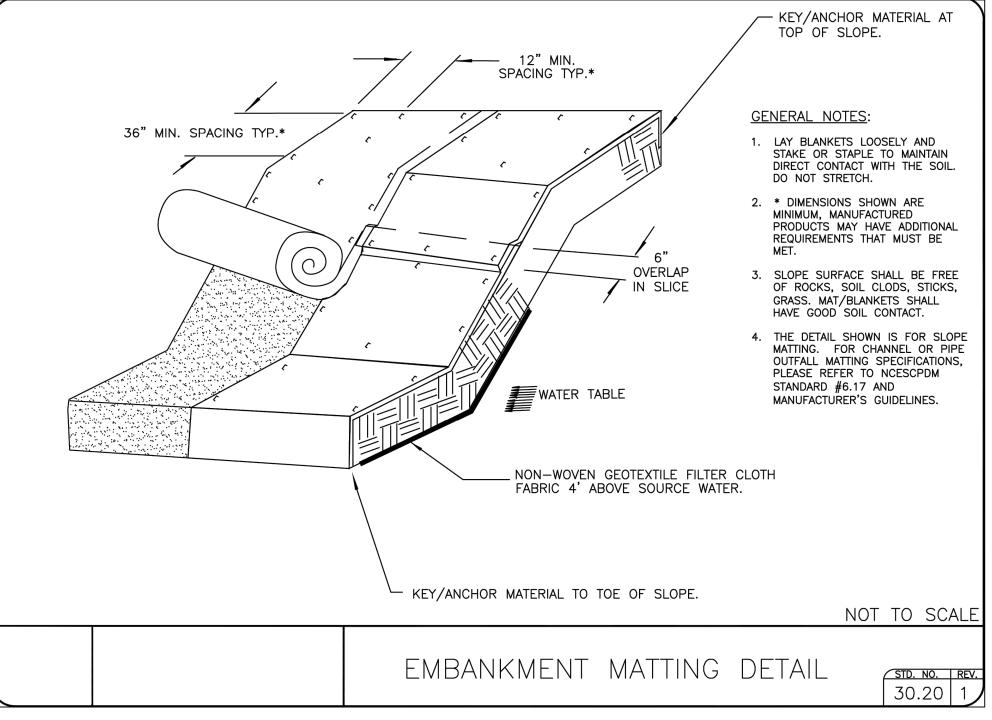
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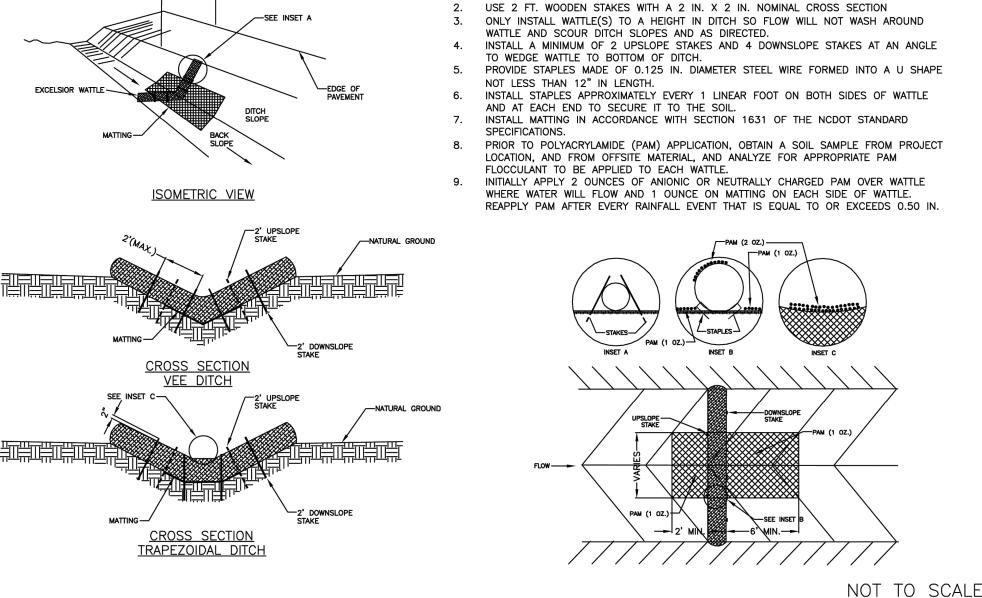
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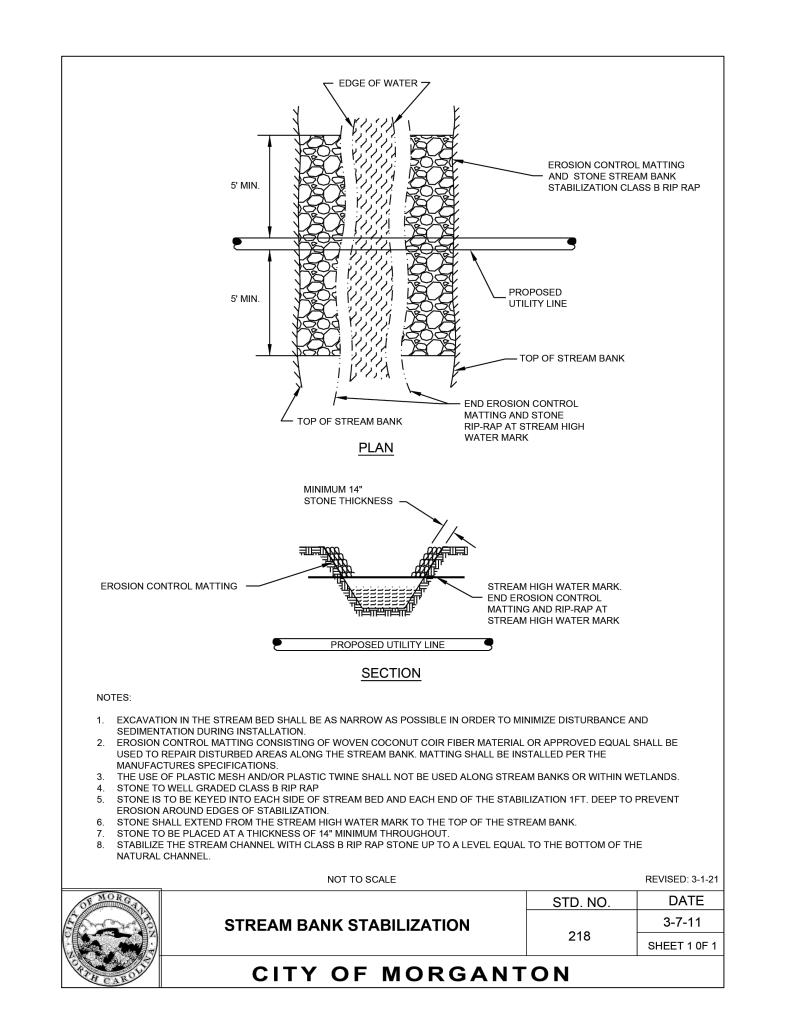


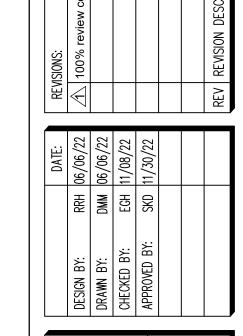




GENERAL NOTES:

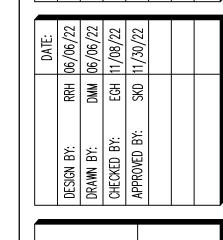
1. USE MINIMUM 12 INCH DIAMETER FIBER WATTLE.





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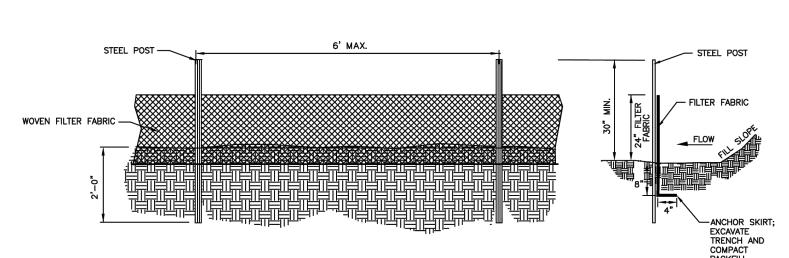


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GENERAL NOTES:

- . WOVEN FILTER FABRIC BE USED WHERE SILT FENCE IS TO REMAIN FOR A PERIOD OF MORE THAN 30 DAYS.
- 2. STEEL POSTS SHALL BE 5'-0" IN HEIGHT AND BE OF THE SELF-FASTENER ANGLE STEEL
- 3. TURN SILT FENCE UP SLOPE AT ENDS.
- 4. ORANGE SAFETY FENCE IS REQUIRED AT BACK OF SILT FENCE WHEN GRADING IS ADJACENT TO SWIM BUFFERS, STREAMS OR WETLANDS (REFER TO SWIM BUFFER GUIDELINES). THE COLOR ORANGE IS RESERVED FOR VISUAL IDENTIFICATION OF ENVIRONMENTALLY SENSITIVE AREAS.
- 5. DRAINAGE AREA CAN NOT BE GREATER THAN 1/4 ACRE PER 100 FT OF FENCE.
- 6. SLOPE LENGTHS CAN NOT EXCEED CRITERIA SHOWN IN TABLE 6.62A NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL.
- 7. DO NOT INSTALL SEDIMENT FENCE ACROSS STREAMS, DITCHES, WATERWAYS OR OTHER AREAS OF CONCENTRATED FLOW.

MAINTENANCE NOTES:

TEMPORARY SILT FENCE

STABILIZED CONSTRUCTION ENTRANCE

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

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- 2. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE
- 3. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH APPROX. HALF
- THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS REMOVED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

- . SEDIMENT FILTER OUTLET AND HARDWARE CLOTH SHALL BE 16 INCHES HIGH BUT NO TALLER THAN 18 INCHES.
- 2. 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 ABOVE DETAIL. HARDWARE CLOTH TO BE SAME AS STD. #30.09 (19 GAUGE, 1/4" SPACING).
- 3. POSTS SHALL BE NO MORE THAN 4 FEET APART. 4. SITE OUTLETS AT ANY POINT SMALL CONCENTRATED FLOWS ARE ANTICIPATED AND AT THE DIRECTION OF THE INSPECTOR.

MAINTENANCE NOTES:

TEMPORARY WATTLE CHECK DAM

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.

STD. NO. REV.

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- 2. THE STONE SHALL BE REPLACED PROMPTLY AFTER ANY EVENT THAT HAS CLOGGED OR REMOVED IT.
- 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 SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

OTHER AREAS OF CONCENTRATED FLOW.

PERIOD OF MORE THAN 30 DAYS.

WIRES WITH 6" STAY SPACING.

5. TURN SILT FENCE UP SLOPE AT ENDS.

OF SLOPES GREATER THAN 10 FEET VERTICAL (2:1 SLOPE) ORANGE SAFETY FENCE IS REQUIRED AT BACK OF SILT FENCE WHEN GRADING IS ADJACENT TO SWIM BUFFERS, STREAMS OR WETLANDS (REFER TO SWIM BUFFER GUIDELINES). THE COLOR ORANGE IS RESERVED FOR VISUAL IDENTIFICATION OF ENVIRONMENTALLY SENSITIVE AREAS.

DRAINAGE AREA CAN NOT BE GREATER THAN 1/4 ACRE PER 100 FT OF FENCE

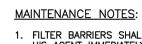
9. SLOPE LENGTHS CAN NOT EXCEED CRITERIA SHOWN IN TABLE 6.62A NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL. 10. DO NOT INSTALL SEDIMENT FENCE ACROSS STREAMS, DITCHES, WATERWAYS OR

2. WOVEN FILTER FABRIC BE USED WHERE SILT FENCE IS TO REMAIN FOR A

3. STEEL POSTS SHALL BE 5'-O" IN HEIGHT AND BE OF THE SELF-FASTENER ANGLE STEEL TYPE.

4. WIRE FENCING SHALL BE AT LEAST #10 GAGE WITH A MINIMUM OF 6 LINE

6. WIRE AND WASHED STONE IS REQUIRED TO BE SHOWN ON PLANS AT THE TOE



- 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 IS REMOVED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE,

HIGH HAZARD

TEMPORARY SILT FENCE

NOT TO SCALE

SILT FENCE OUTLET

STD. NO. REV. 30.11A 15 WITH MATTING AND OPTIONAL PAM 30.10C 15 HARDWARE CLOTH BETWEEN POSTS -STEEL POST -HARDWARE CLOTH WASHED STONE (NCDOT #5 OR #57) **GENERAL NOTES:** 1. WIRE FENCING SHALL BE A MINIMUM OF 32" IN WIDTH AND SHALL HAVE A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.

─ WIRE FENCING

1. FILTER BARRIERS SHALL BE INSPECTED BY THE FINANCIALLY RESPONSIBLE PARTY OR HIS AGENT IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING

SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.

PREPARED AND SEEDED.

NOT TO SCAL

STD. NO. REV. 30.06B | 15

SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections are delayed shall be noted in the Inspection Record

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend of holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those ur attended days (and this will determine if a site inspection in needed). Days on which no rainfall occurred shall be recorded a "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	Identification of the measures inspected, Date and time of the inspection, Name of the person performing the inspection, Indication of whether the measures were operating properly, Description of maintenance needs for the measure, Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDCs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	Identification of the discharge outfalls inspected, Date and time of the inspection, Name of the person performing the inspection, Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, Indication of visible sediment leaving the site, Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and an explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

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

SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

.. E&SC Plan Documentation The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

mspection at an times daring normal basi	11035 1104131
Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair	Complete, date and sign an inspection report.

2. Additional Documentation to be Kept on Site

requirements for all E&SC measures

(e) Corrective actions have been taken

have been performed.

to E&SC measures.

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make

orrective action

Initial and date a copy of the approved E&SC

report to indicate the completion of the

plan or complete, date and sign an inspection

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

Documentation to be Retained for Three Years

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART II, SECTION G, ITEM (4)

DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,

(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,

(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,

(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,

(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and

(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING 1. Occurrences that Must be Reported

Permittees shall report the following occurrences: (a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:

They are 25 gallons or more,

They are less than 25 gallons but cannot be cleaned up within 24 hours,

 They cause sheen on surface waters (regardless of volume), or • They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800)

Reporting Timeframes (After Discovery) and Other Requirements (a) Visible sediment Within 7 calendar days, a report that contains a description of the

stream or wetland sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. If the stream is named on the <u>NC 303(d) list</u> as impaired for sedimentrelated causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff

determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions. (b) Oil spills and Within 24 hours, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and release of hazardous location of the spill or release. substances per Item

1(b)-(c) above A report at least ten days before the date of the bypass, if possible (c) Anticipated bypasses [40 CFR The report shall include an evaluation of the anticipated quality and 122.41(m)(3)] effect of the bypass. (d) Unanticipated Within 24 hours, an oral or electronic notification

bypasses [40 CFR Within 7 calendar days, a report that includes an evaluation of the 122.41(m)(3)] quality and effect of the bypass (e) Noncompliance Within 24 hours, an oral or electronic notification with the conditions Within 7 calendar days, a report that contains a description of the of this permit that noncompliance, and its causes; the period of noncompliance, may endanger including exact dates and times, and if the noncompliance has not health or the been corrected, the anticipated time noncompliance is expected to

continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(I)(6). Division staff may waive the requirement for a written report on a case-by-case basis.



NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

ECTION	E:	GROUND	STA	\BIL	IZAT	IOI

	Re	equired Ground Stabil	ization Timeframes
Si	te Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a)	Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b)	High Quality Water (HQW) Zones	7	None
(c)	Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d)	Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e)	Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Rolled erosion control products with or

Plastic sheeting

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

- Temporary grass seed covered with straw or | Permanent grass seed covered with straw or other mulches and tackifiers other mulches and tackifiers Geotextile fabrics such as permanent soil Hydroseeding
- without temporary grass seed Hydroseeding Appropriately applied straw or other mulch Shrubs or other permanent plantings covered with mulch Uniform and evenly distributed ground cover

reinforcement matting

- sufficient to restrain erosion Structural methods such as concrete, asphalt or retaining walls Rolled erosion control products with grass seed
- POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

Select flocculants that are appropriate for the soils being exposed during construction, selecting from the NC DWR List of Approved PAMS/Flocculants.

- Apply flocculants at or before the inlets to Erosion and Sediment Control Measures. Apply flocculants at the concentrations specified in the NC DWR List of Approved
- PAMS/Flocculants and in accordance with the manufacturer's instructions. Provide ponding area for containment of treated Stormwater before discharging
- Store flocculants in leak-proof containers that are kept under storm-resistant cover

or surrounded by secondary containment structures.

QUIPMENT AND VEHICLE MAINTENANCE

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

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

- Never bury or burn waste. Place litter and debris in approved waste containers. Provide a sufficient number and size of waste containers (e.g dumpster, trash
- receptacle) on site to contain construction and domestic wastes.
- Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available. Locate waste containers on areas that do not receive substantial amounts of runoff
- from upland areas and does not drain directly to a storm drain, stream or wetland. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
- Anchor all lightweight items in waste containers during times of high winds. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
- Dispose waste off-site at an approved disposal facility. 9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

Contain liquid wastes in a controlled area.

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

PORTABLE TOILETS

- Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
- Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas Monitor portable toilets for leaking and properly dispose of any leaked material.
- Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

- Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
- Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile Provide stable stone access point when feasible.
- Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

NORTH CAROLINA

💰 Environmental Quality

NOTES: L ACTUAL LOCATION DETERMINED IN FIELD 2. THE CONCRETE VASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES 3.CONCRETE VASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED VITH SIGNAGE NOTING DEVICE. SCINCRETE VASHBUT STRUCTURE NEEDS TO BE CLEARY MARKED VITH SIGNAGE NOTING DEVICE. ABOVE GRADE WASHOUT STRUCTURE

CONCRETE WASHOUTS

environment[40

CFR 122.41(I)(7)]

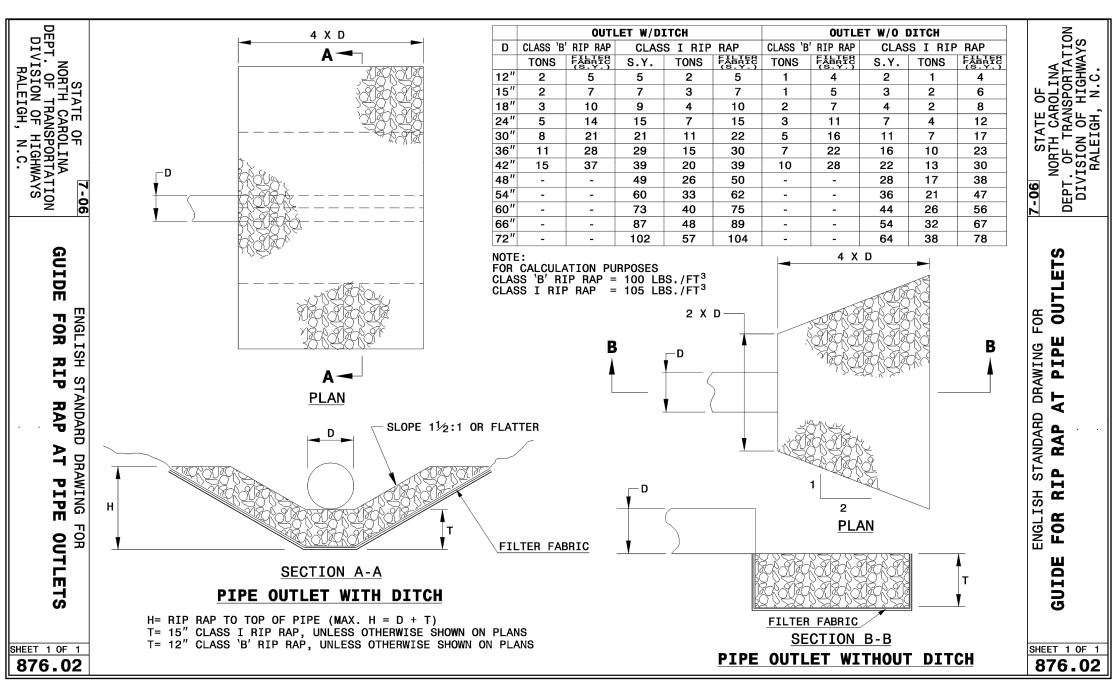
- Do not discharge concrete or cement slurry from the site. Dispose of, or recycle settled, hardened concrete residue in accordance with local
- and state solid waste regulations and at an approved facility.
- Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence. Install temporary concrete washouts per local requirements, where applicable. If a
- alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail. Do not use concrete washouts for dewatering or storing defective curb or sidewalk
- sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it
- can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow. Locate washouts in an easily accessible area, on level ground and install a stone
- entrance pad in front of the washout. Additional controls may be required by the approving authority. Install at least one sign directing concrete trucks to the washout within the project
- limits. Post signage on the washout itself to identify this location. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary
- products, follow manufacturer's instructions. .0. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout

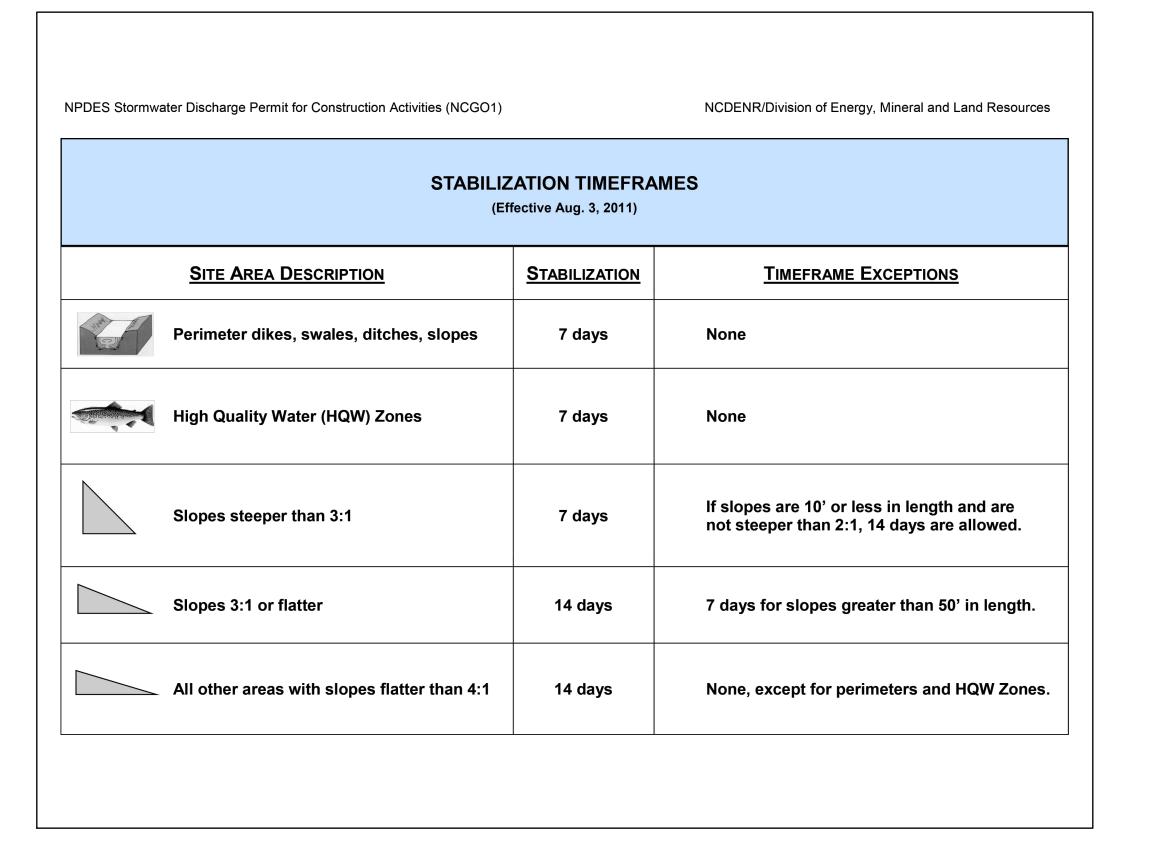
HERBICIDES, PESTICIDES AND RODENTICIDES

- Store and apply herbicides, pesticides and rodenticides in accordance with label
- Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.

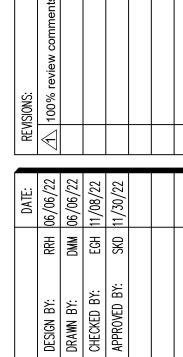
Do not store herbicides, pesticides and rodenticides in areas where flooding is

- possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately. Do not stockpile these materials onsite.
- HAZARDOUS AND TOXIC WASTE Create designated hazardous waste collection areas on-site.
- 2. Place hazardous waste containers under cover or in secondary containment. 3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.









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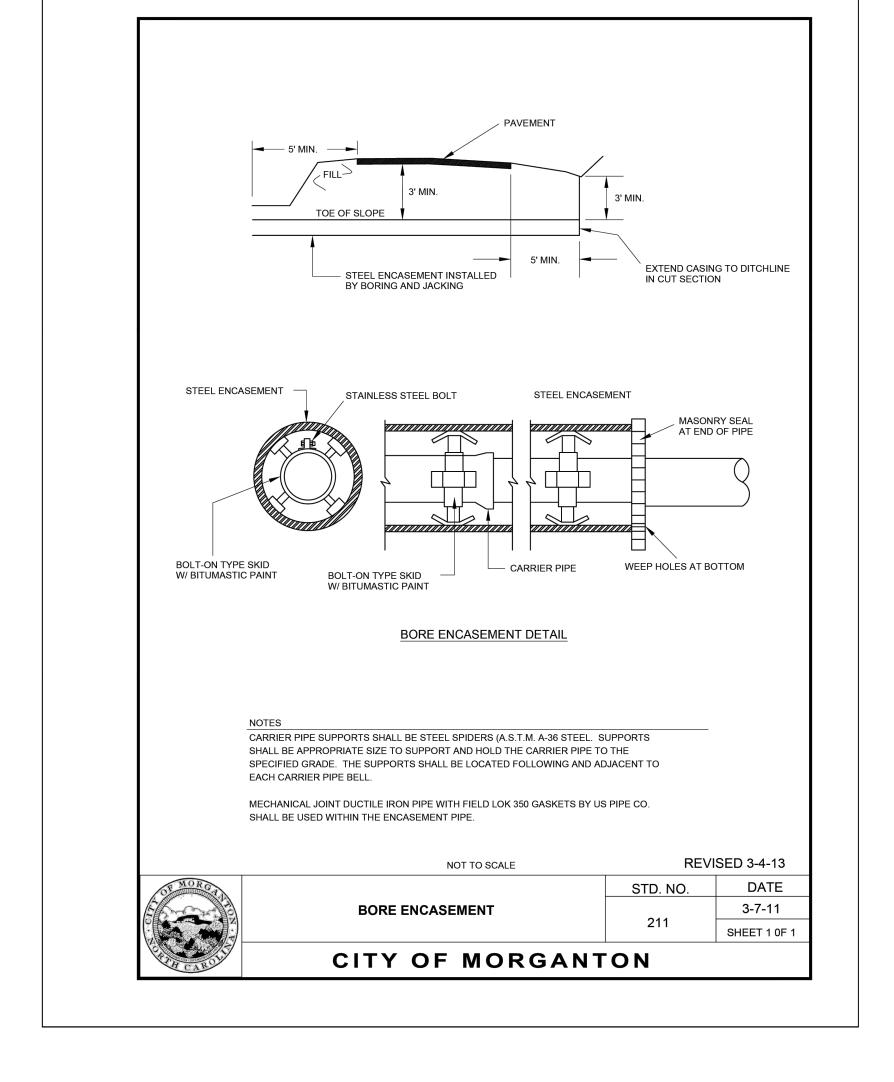
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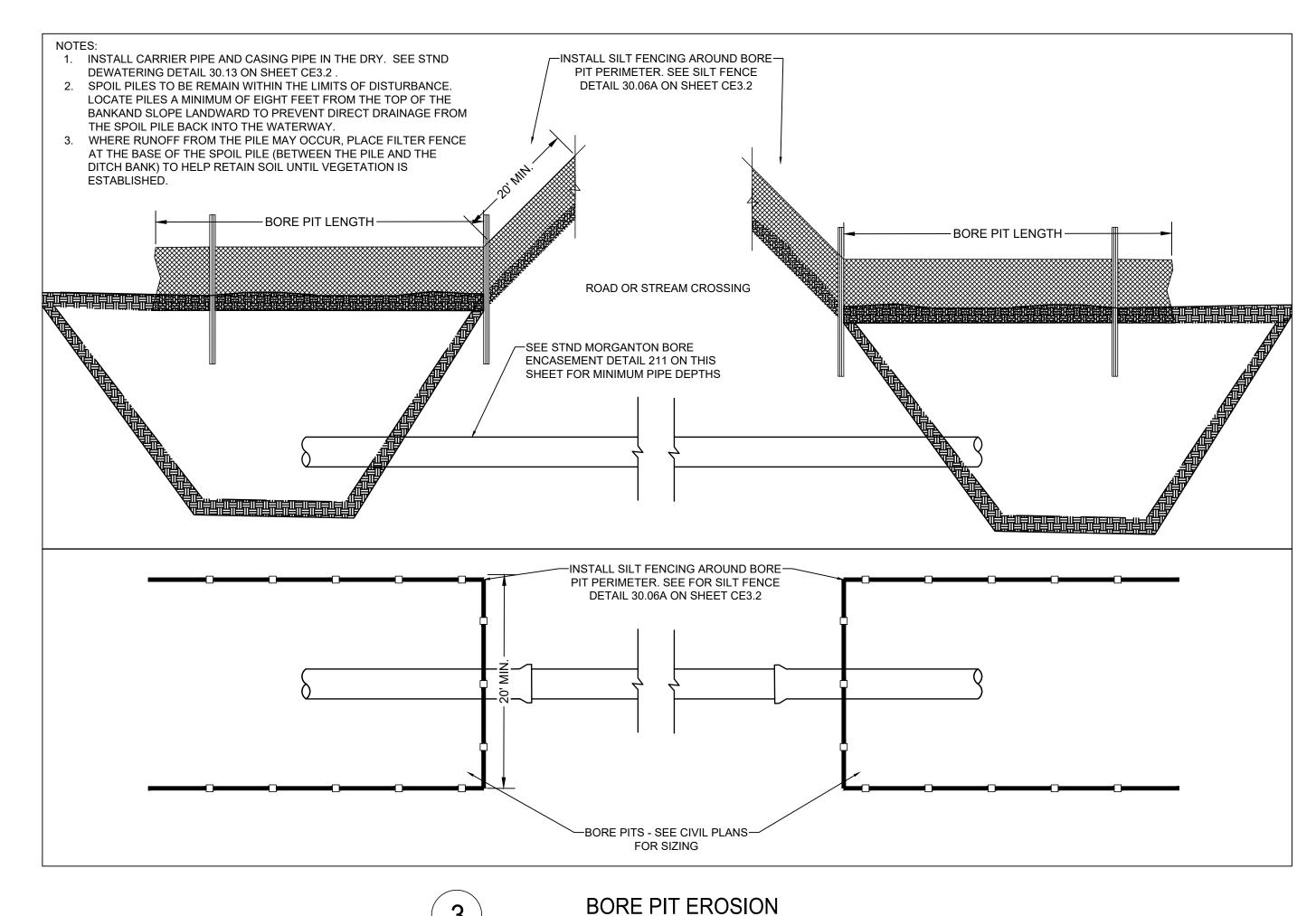
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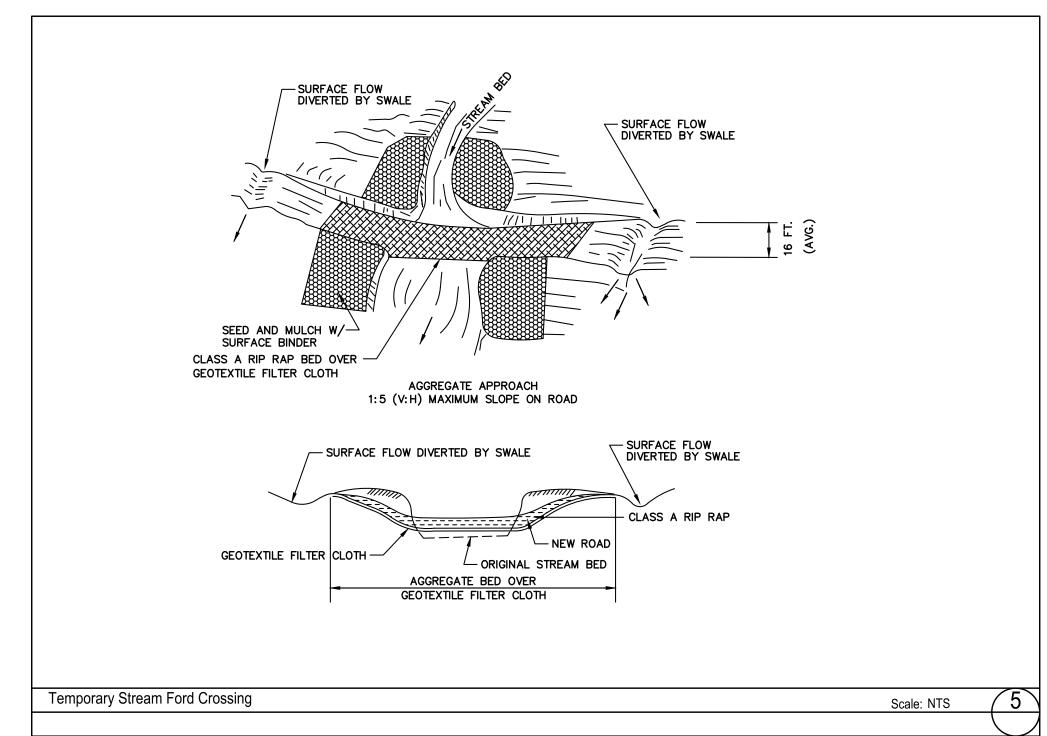
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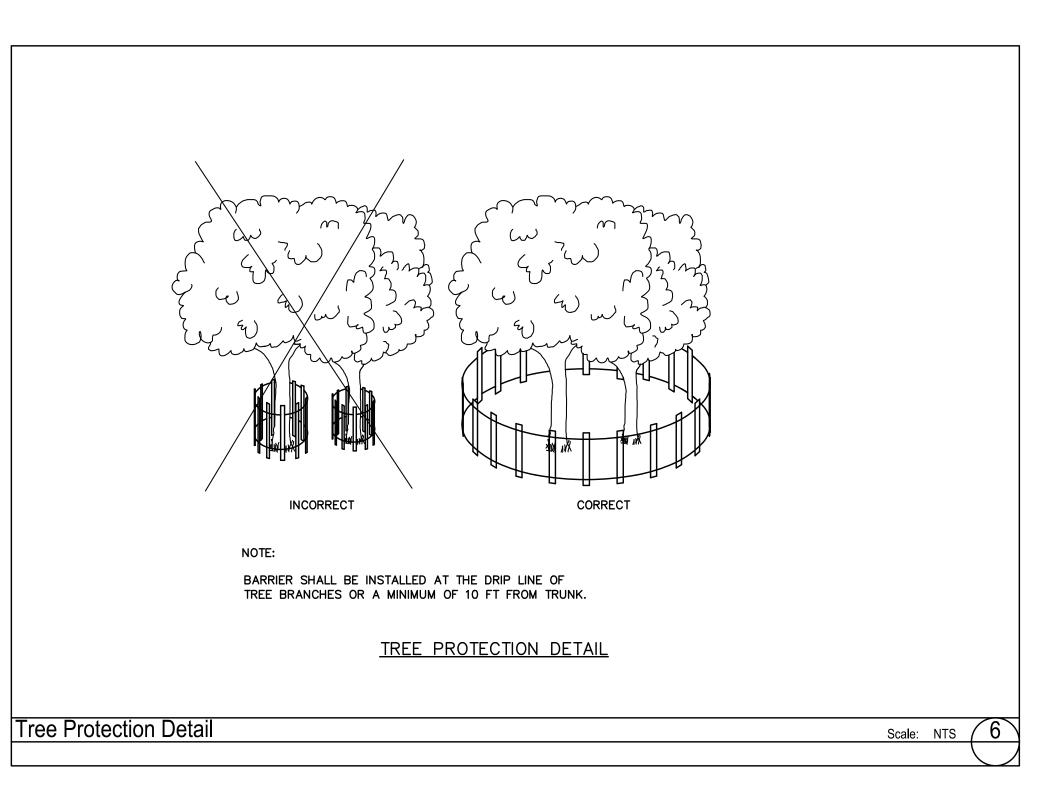
NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

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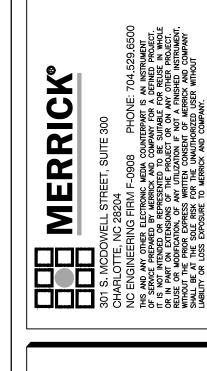


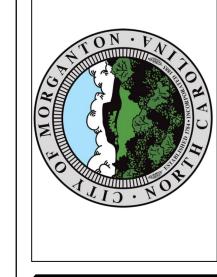




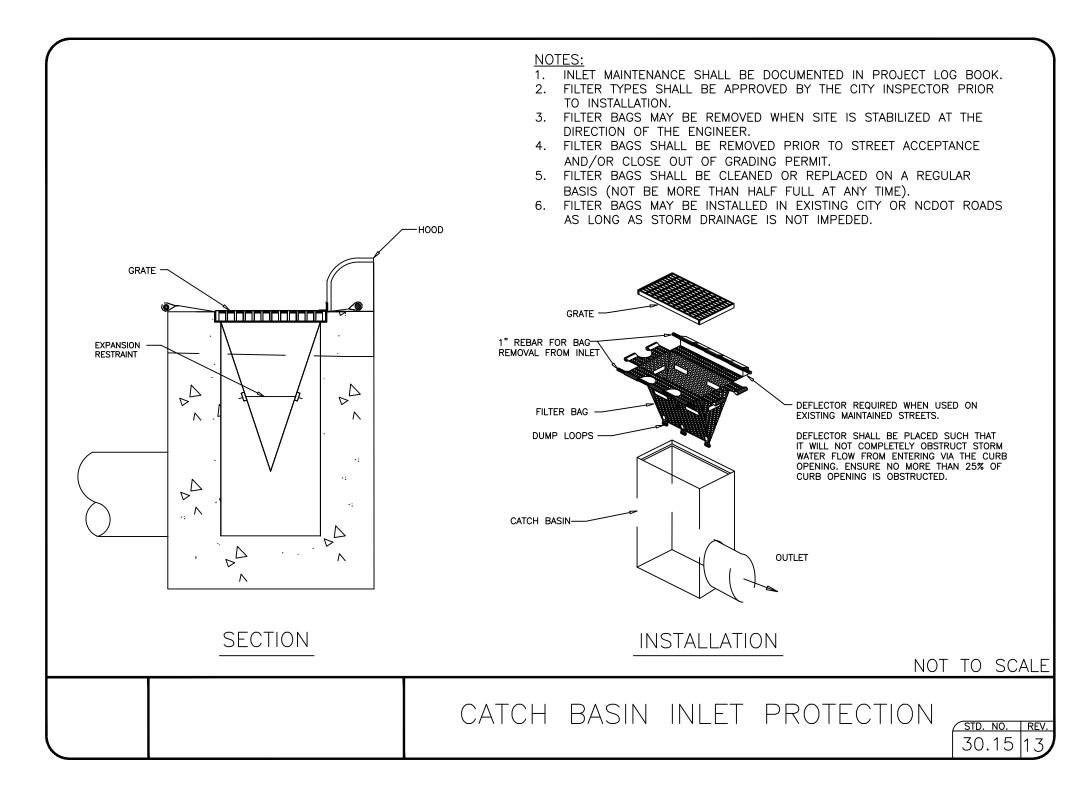
CONTROL MEASURES

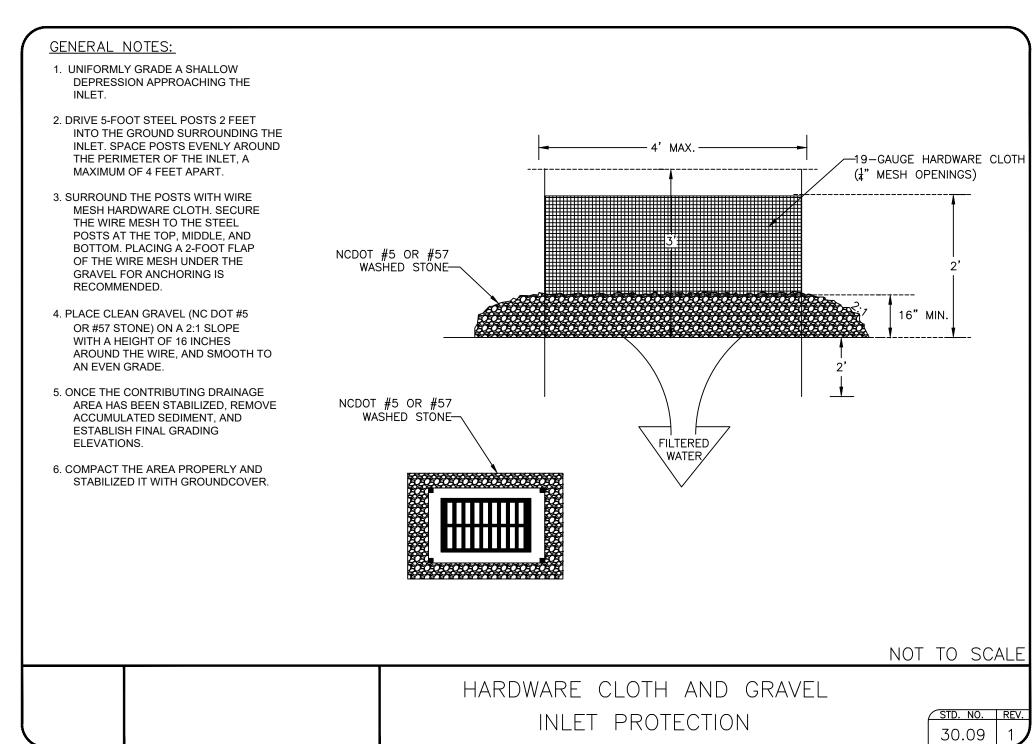
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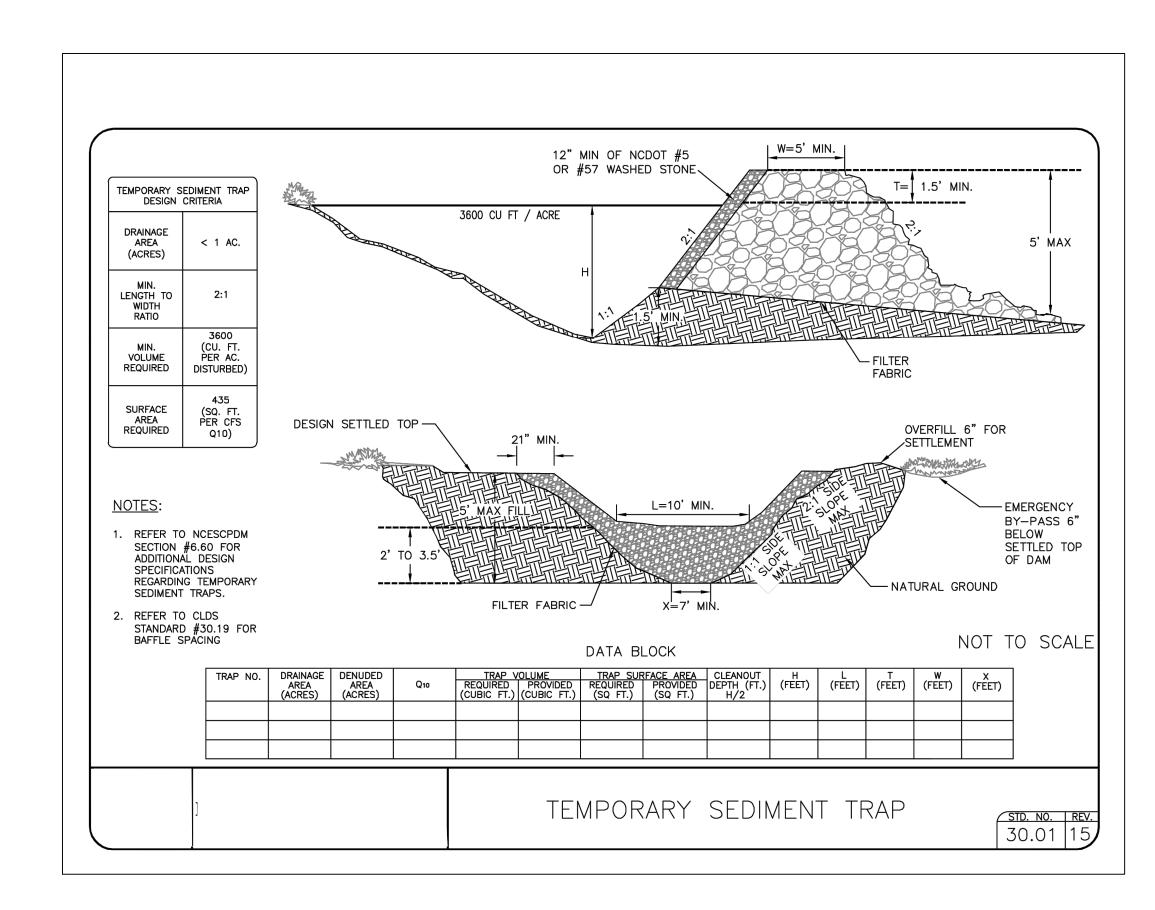


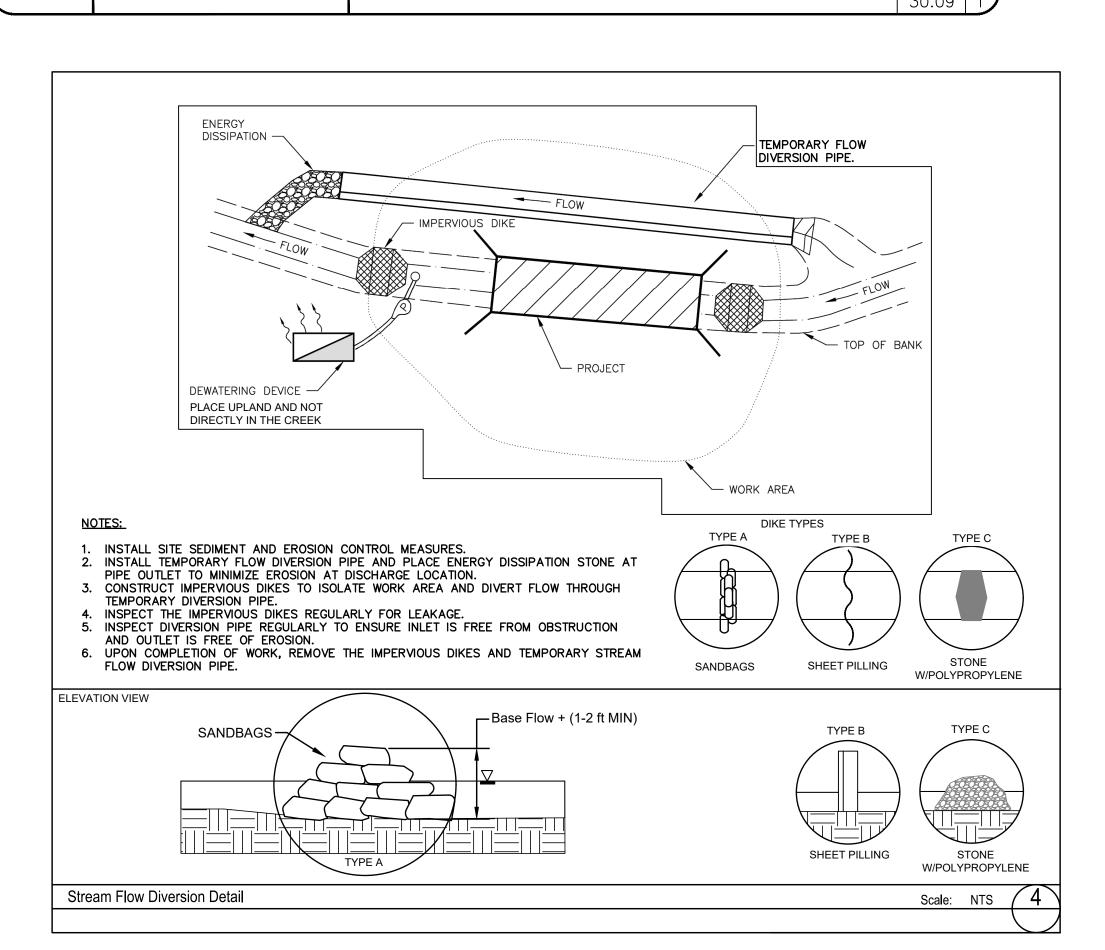


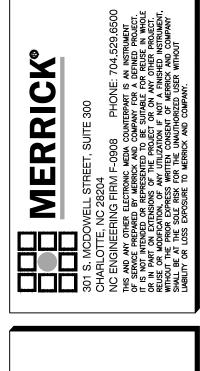


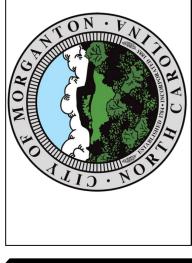






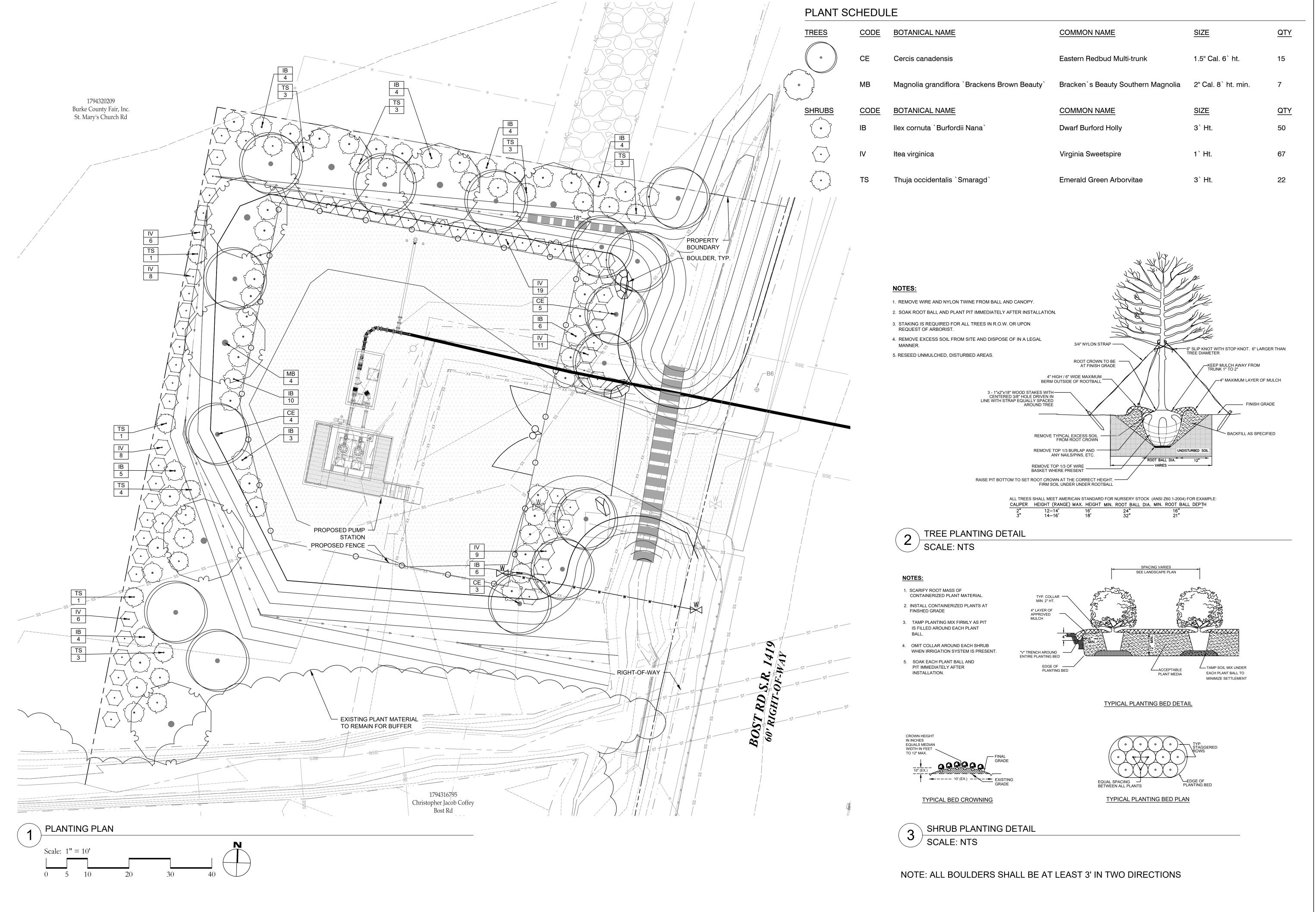






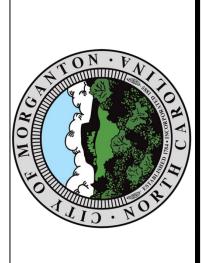
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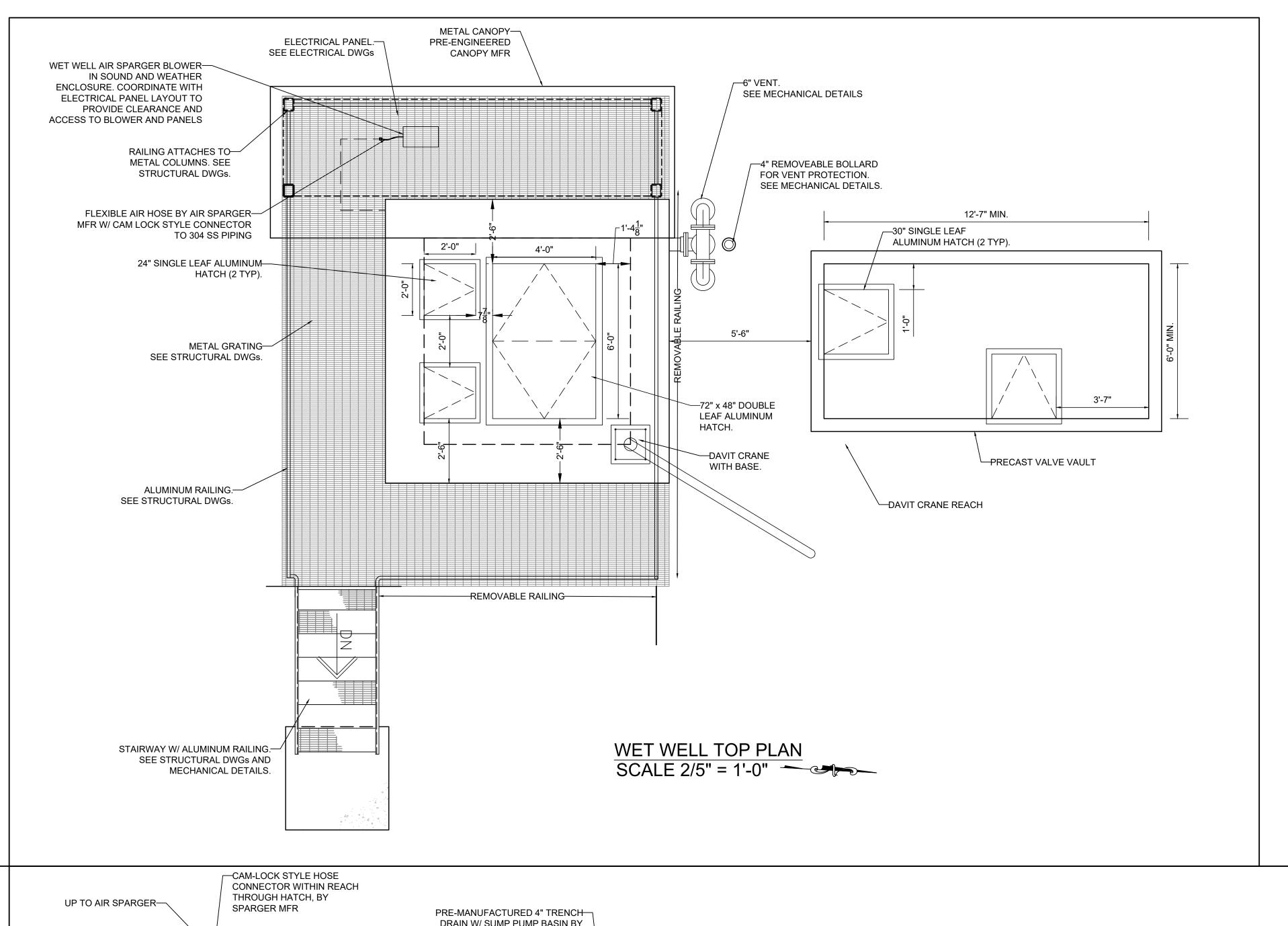




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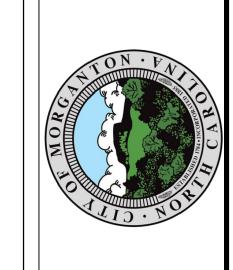
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NOTE

- SUMP PUMP BASIN SUPPLIED BY TRENCH DRAIN MANUFACTURER. FIELD ROUTE SUMP PUMP DISCHARGE TO WET WELL W/ 1.5" SCH 40 PVC. SEE SPECIFICATIONS FOR SUMP PUMP REQUIREMENTS.
- SEE STRUCTURAL DRAWINGS FOR METAL CANOPY STRUCTURE, DAVIT CRANE INSTALLATION, AND METAL GRATING DESIGN.
- CONTRACTOR TO COORDINATE PUMP GUIDE RAIL AND PUMP LOCATIONS BASED ON GIVEN HATCH LOCATION.

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Morganton, NC	PUMP STATION PLAN VIEWS
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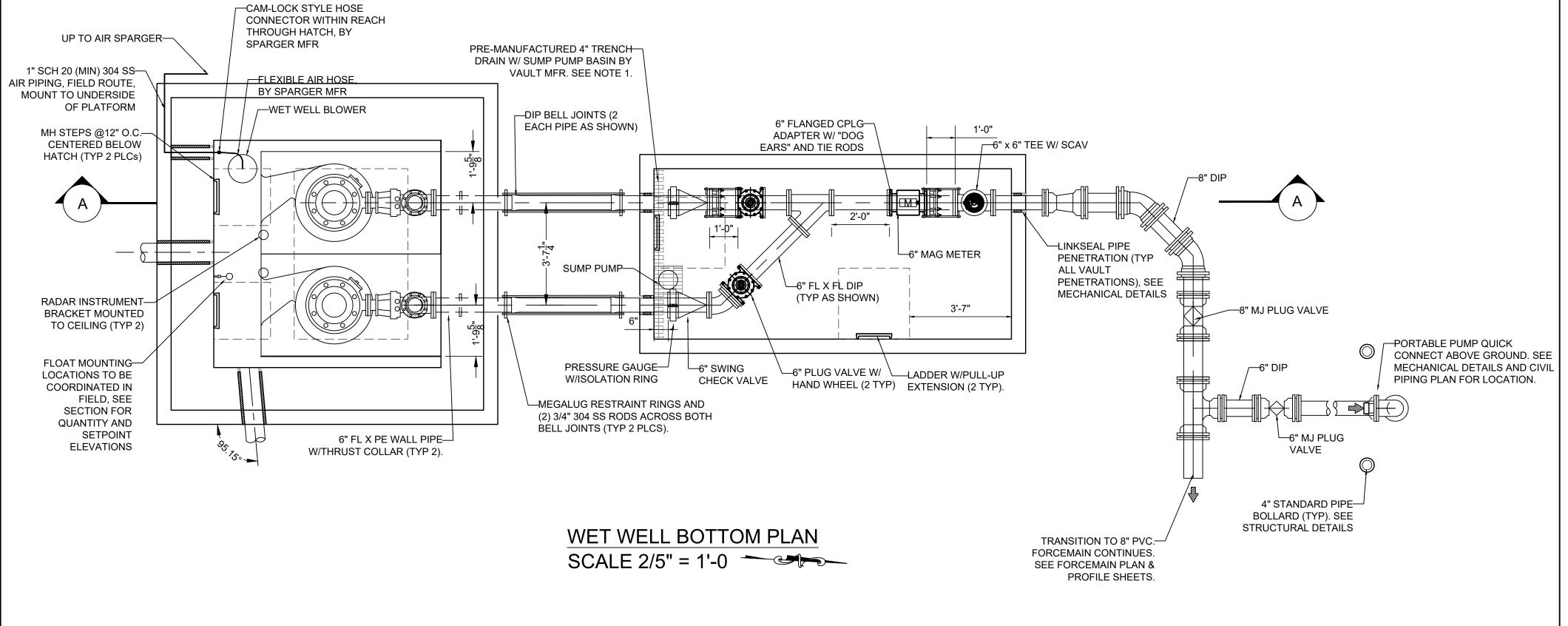
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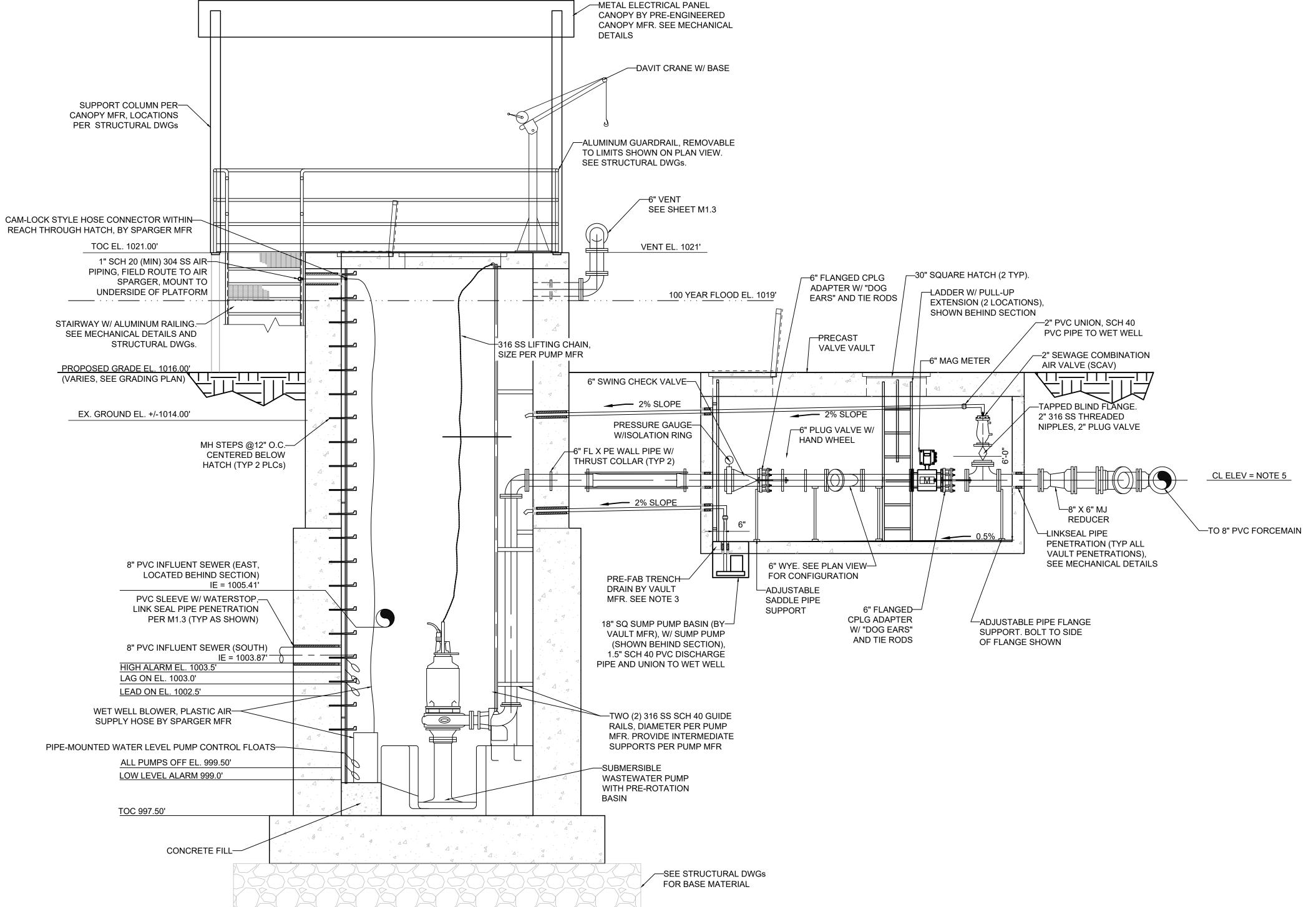
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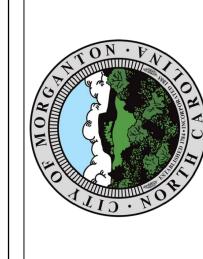


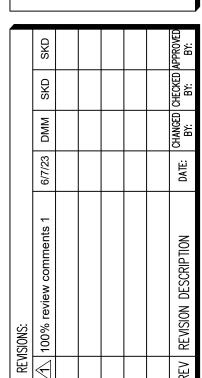


SECTION A SCALE 2/5" = 1'-0"

- 1. SEE STRUCTURAL DRAWINGS FOR METAL CANOPY STRUCTURE, DAVIT CRANE INSTALLATION, AND METAL GRATING DESIGN.
- 2. CONTRACTOR TO COORDINATE PUMP GUIDE RAIL AND PUMP LOCATIONS.
- 3. PRE-FABRICATED TRENCH DRAIN IS CONTINUOUS ALONG THE SOUTH WALL. ENTIRE VAULT FLOOR TO SLOPE 0.5% TOWARDS
- 4. SEE SPECIFICATIONS FOR SEQUENCE OF WORK AND PUMP STATION SHUTDOWNS. COORDINATE WITH ENGINEER AND OWNER BEFORE ANY SHUTDOWNS.
- 5. COORDINATE PUMP DISCHARGE PIPELINE ELEVATION THROUGH WET WELL WALL AND VAULT WITH VAULT MANUFACTURER BASED ON VAULT STRUCTURAL DESIGN. TOP OF VAULT LID ELEVATION SHALL BE PER CIVIL GRADING PLAN. VAULT INTERIOR CEILING HEIGHT SHALL BE 6'-0". PUMP DISCHARGE PIPELINE CENTERLINE ELEVATION ELEVATION SHALL BE 2'-6" ABOVE VAULT FLOOR.



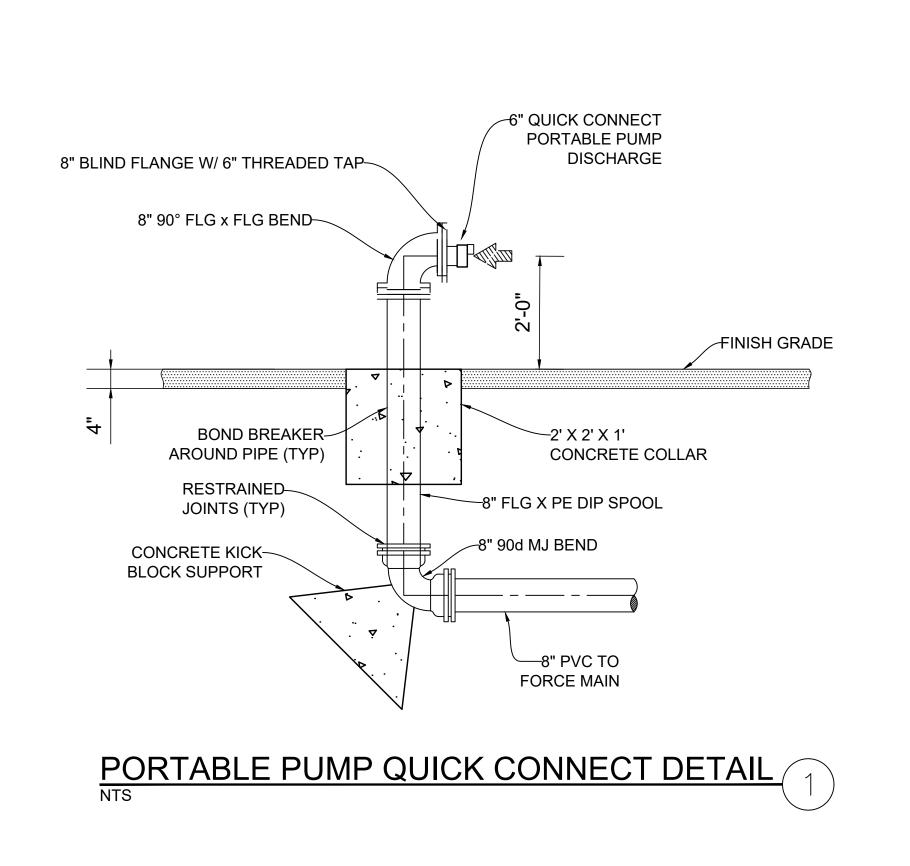


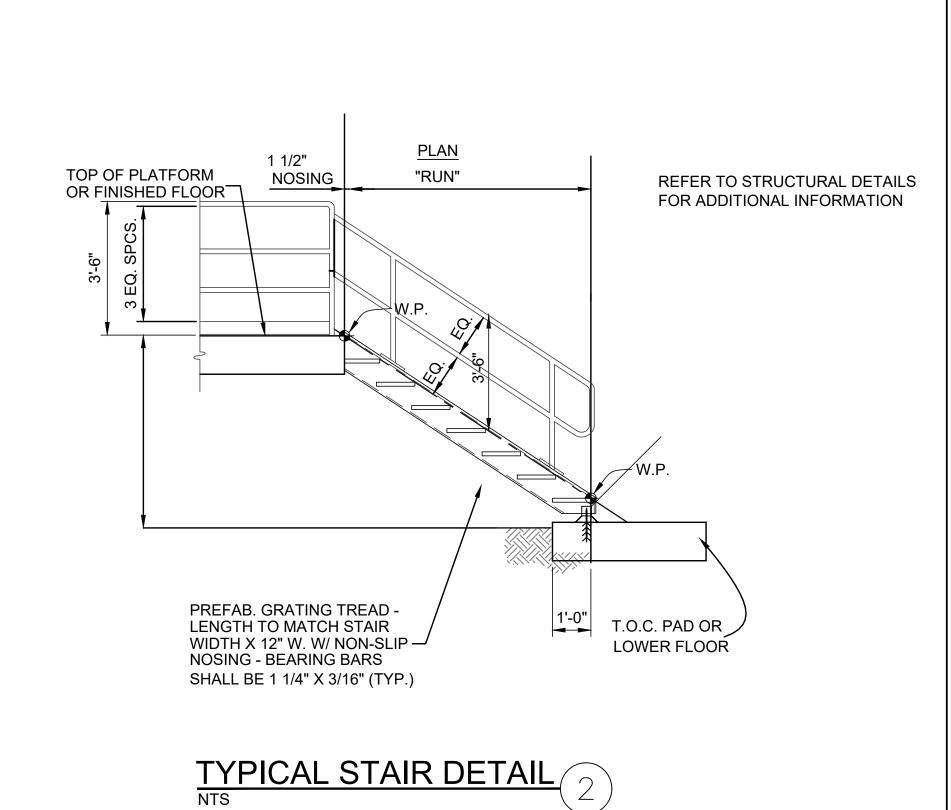


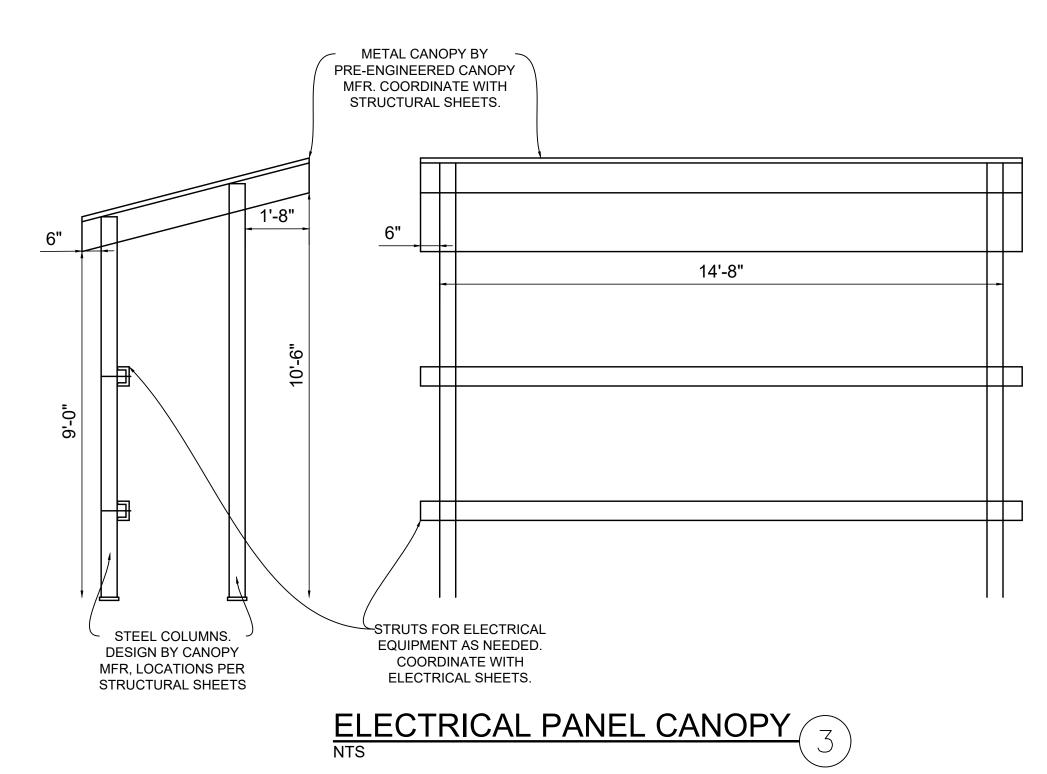
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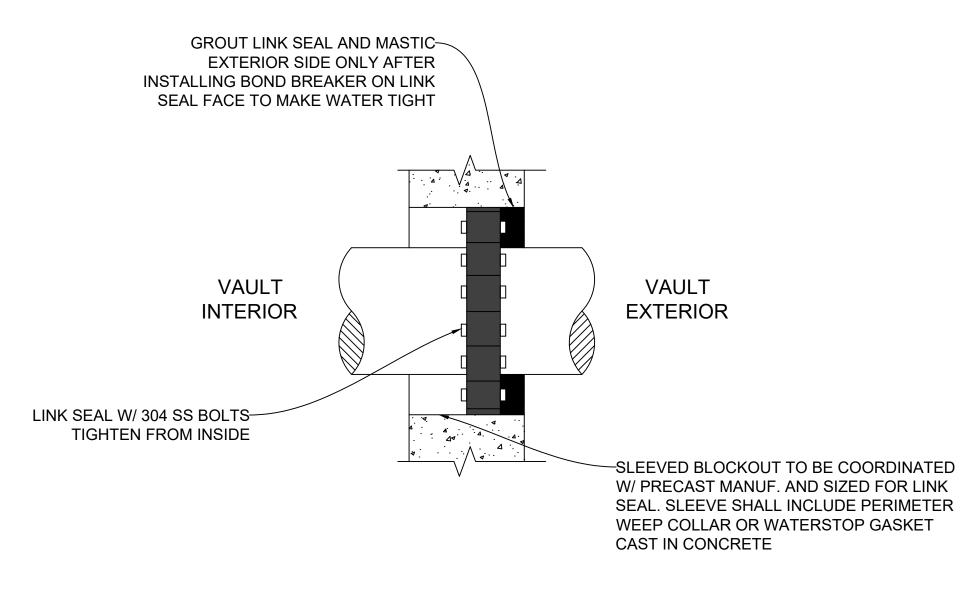
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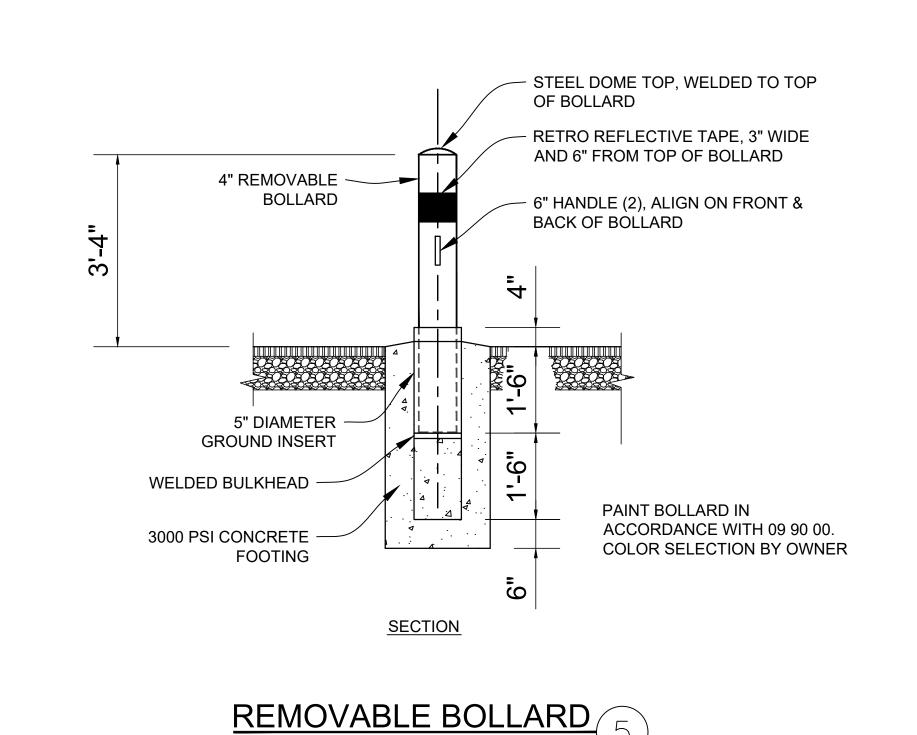
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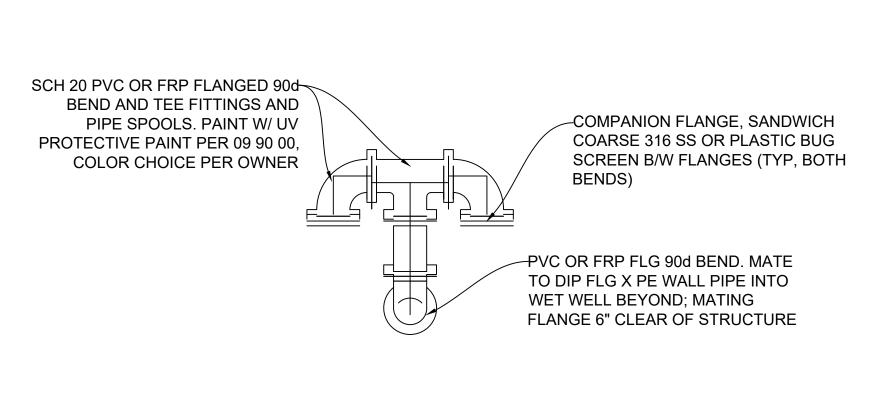














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PUMP STATION CHANICAL DETAIL & Gravity Rd PS Bost

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CONCRETE - THRUST BLOCK

PLAN TEES

- 3/4" GALV. RODS & EYE BOLTS

STD. NO.

DATE

3-7-11

SHEET 1 0F 2

ELEVATION

CONCRETE

CONCRETE — THRUST BLOCK

THRUST BLOCK FOR TEES

THRUST BLOCK FOR BENDS

THRUST BLOCK FOR PIPE CAP

THRUST BLOCK FOR WATER MAINS

(150 PSI WORKING PRESSURE)

NOT TO SCALE

CITY OF MORGANTON

CONCRETE THRUST BLOCK

SIZE | 11 1/4° BEND | 22 1/2° BEND |

40

42

20 22

58

45° BEND 90° BEND

42

108

124

42

108

124

STD. NO.

104.2

<u>28</u> 32

THRUST BLOCK DIMENSION "A"

NOT TO SCALE

CITY OF MORGANTON

THRUST BLOCK FOR WATER MAINS

(DIMENSION "A" IN INCHES) 4,000 P.S.I. CONCRETE

CAP

32 36

44

90

104

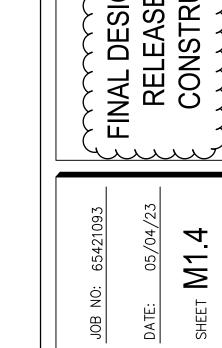
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3-7-11

SHEET 2 0F 2

ELEVATION

1. DEAD MAN RESTRAINED W/ 2-3/4" ALL THREAD RODS 3" TO 8" AND 4-3/4" ALL THREAD RODS 12" TO 16"



FINAL DESIGN - 100%
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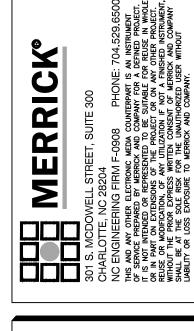
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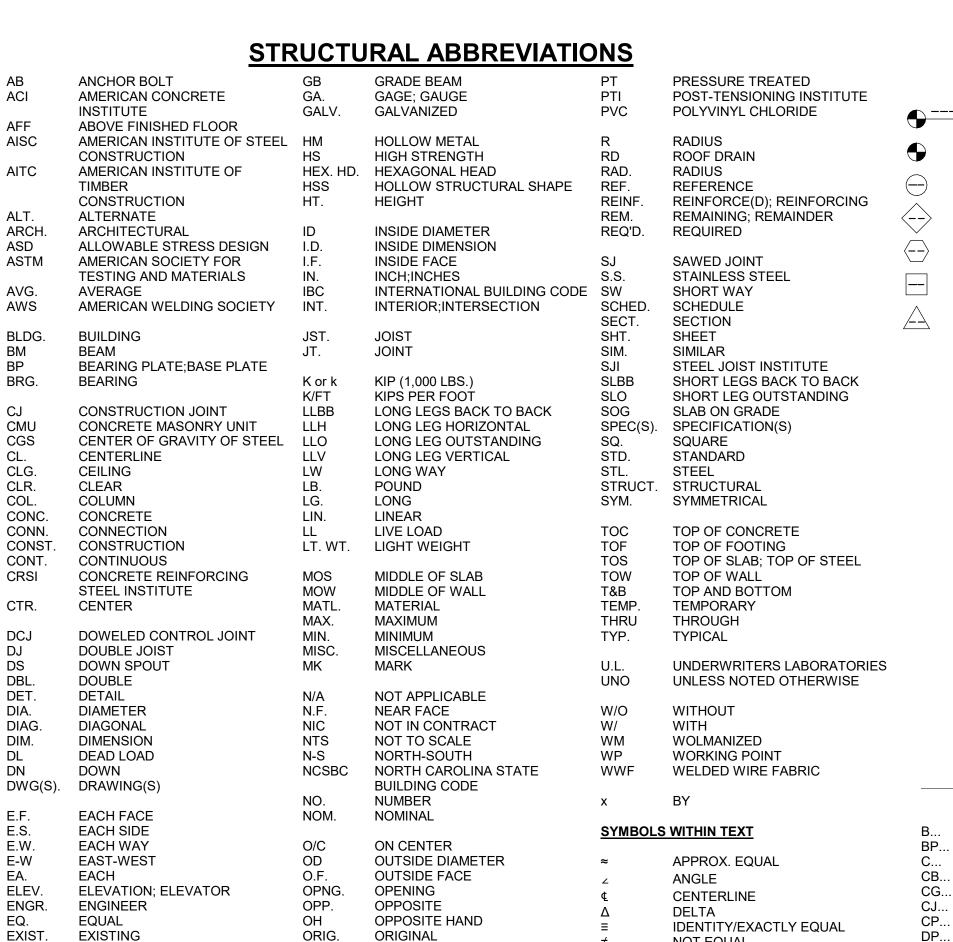
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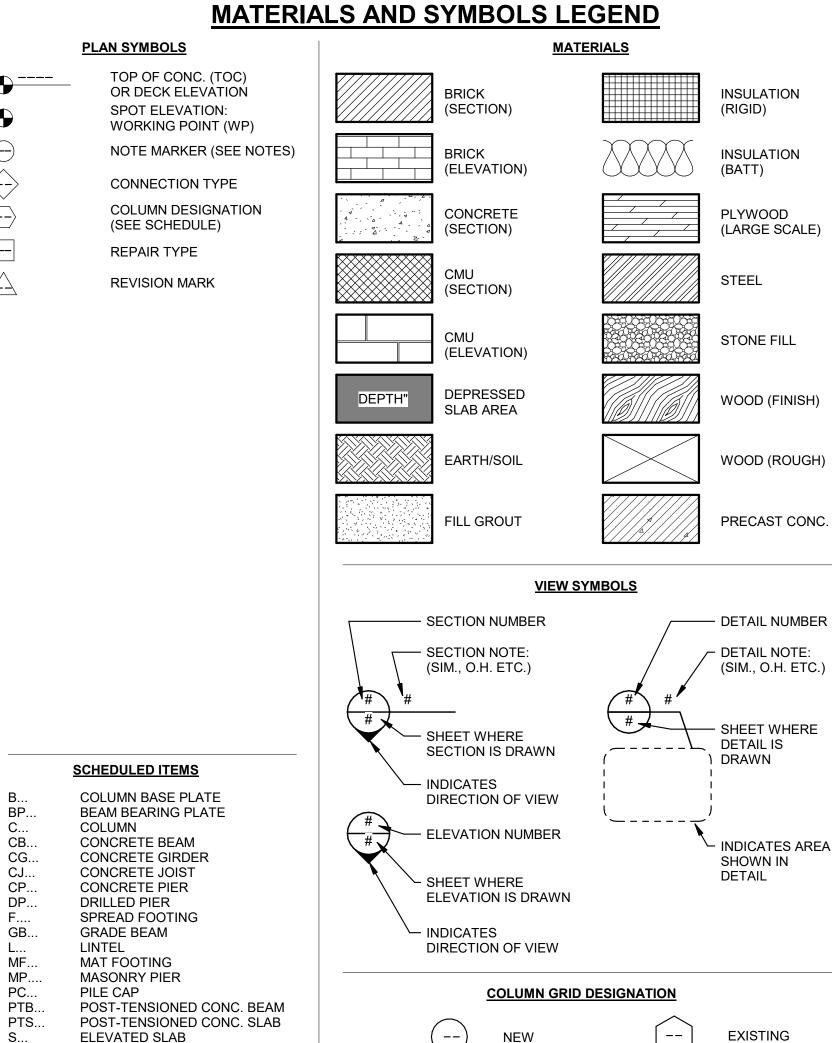
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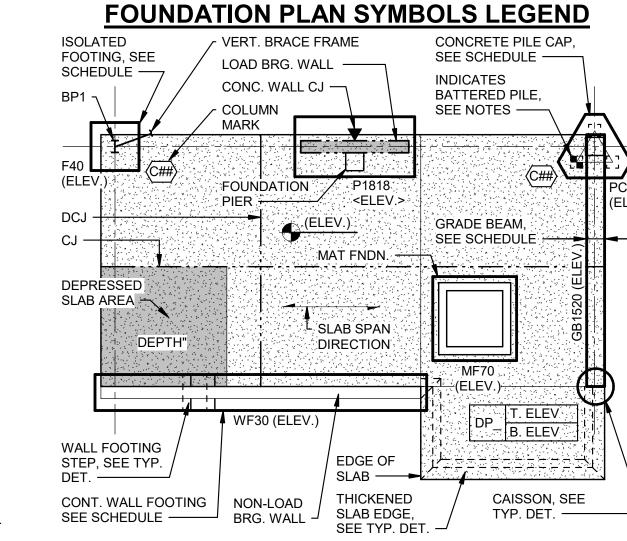
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CONCRETE FRAMING SYMBOLS LEGEND

DEPRESSED

SLAB AREA ---

CJxxx

CJxxx DEPTH

CJxxx

CBxxx

OPEN

- SLAB SPAN

DIRECTION

PROPERTY OF THE PROPERTY OF TH

EDGE OF

SLAB —

<u>૽ૼ</u>CJxxx <u>૽૽ૼૺ</u>

<u>CJxxx</u>

LE CBxxx

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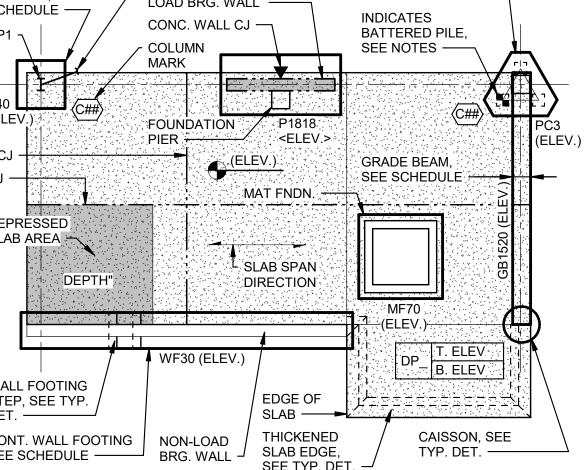
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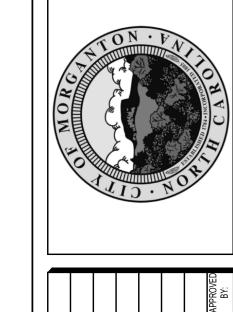
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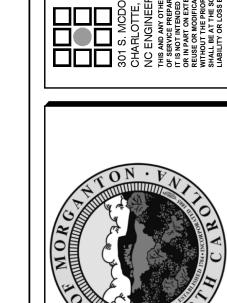
SEES SCHED -

COLUMN

MARK —







ERRICK®

64 Peachtree Road, Suite 30 Asheville, NC 28803-3153

t: 828 274 4440

NC License No. F-0508

SKA Project Number: 210605.0

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DRAWING INDEX

NOT EQUAL

OHM / OMEGA

NUMBER

SYMBOLS WITHIN NUMBERS

CUBED

DEGREE(S)

DIAMETER

SQUARED

PLUS/MINUS

SG...

SLAB-ON-GRADE

RETAINING WALL FOOTING

WALL FOOTING

ABBREVIATIONS, DRAWING LEGENDS AND SHEET INDEX S1.1

S1.2 **GENERAL NOTES** FOUNDATION PLAN

S2.1 S3.1 FRAMING PLAN

EXPANSION JOINT

EXTERIOR

FAR FACE

FINISH

FLOOR

FLANGE

FOOT; FEET

FOOTING

FLOOR DRAIN

FOUNDATION

FACE OF BRICK

EXP. JT

EXT.

FDN.

FIN.

FLG.

FOB

FTG.

S4.1

S5.1 TYPICAL DETAILS & SCHEDULES

PRESTRESSED

INSTITUTE

PENETRATION

PERPENDICULAR

POST-TENSIONING

PRECAST CONCRETE

PRESTRESSED CONCRETE

POUNDS PER SQUARE FOOT

POUNDS PER SQUARE INCH

P/T

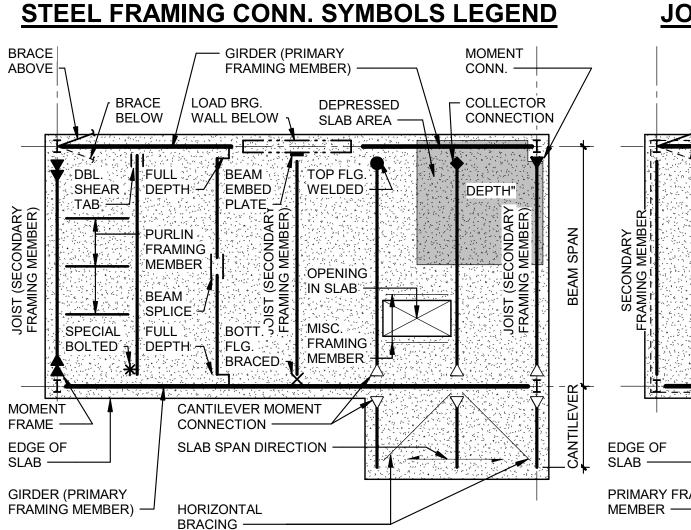
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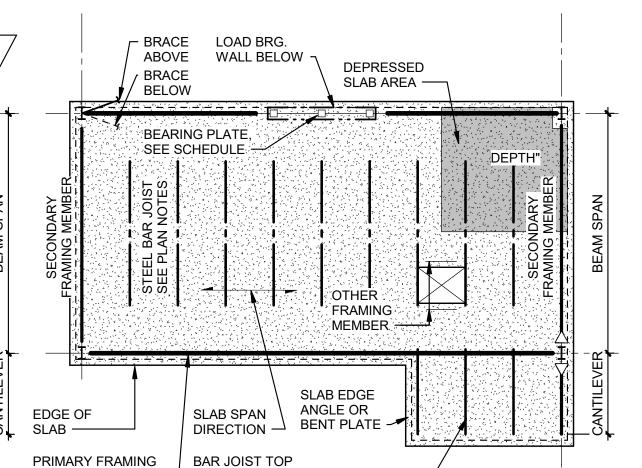
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PERP.

S5.2 S5.3

TYPICAL DETAILS TYPICAL DETAILS





CHORD EXTENSION -

JOISTS FRAMING SYMBOLS LEGEND

GENERAL NOTES

FOUNDATIONS

- THE CONTRACTOR IS TO REVIEW THE SUBSURFACE EXPLORATION REPORT PERFORMED FOR THIS PROJECT ('REPORT OF LIMITED SUBSURFACE INVESTIGATION', BOYLE CONSULTING ENGINEERS, PROJECT NO. 21-023, DATED MAY 9, 2022) BEFORE COMMENCEMENT OF SITE GRADING TO BECOME GENERALLY FAMILIAR WITH SUBSURFACE CONDITIONS WHICH MAY BE ENCOUNTERED DURING CONSTRUCTION. ALL SUBGRADE PREPARATION SHALL BE PERFORMED AS DEFINED IN THE PLANS AND SPECIFICATIONS AND IN COOPERATION WITH THE OWNER'S GEOTECHNICAL TESTING
- SPECIAL FOUNDATIONS FOR THE SUPPORT OF MECHANICAL, ELECTRICAL, OR OTHER EQUIPMENT INSIDE OR OUTSIDE OF THE BUILDING SHALL BE DESIGNED BY THE EQUIPMENT SUPPLIER(S) AND REVIEWED BY THE STRUCTURAL ENGINEER FOR COMPATIBILITY WITH THE BUILDING FOUNDATION SYSTEM. DRAWINGS OF THE FOUNDATIONS SHALL BE SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE WHERE THE BUILDING IS LOCATED.
- FOUNDATION DRAINAGE AND GROUNDWATER CONTROL SYSTEMS MAY BE INDICATED, IN PART, ON THE STRUCTURAL DRAWINGS TO SHOW APPROXIMATE LOCATIONS RELATIVE TO CERTAIN STRUCTURAL COMPONENTS. FOUNDATION DRAINAGE AND GROUNDWATER CONTROL SYSTEMS ARE NOT A PART OF THE STRUCTURAL DESIGN. SEE OTHER DRAWINGS FOR DESIGN REQUIREMENTS OF THESE SYSTEMS, IF APPLICABLE.
- ALL FOOTINGS ARE DESIGNED TO BEAR ON RESIDUAL SOIL OR COMPACTED ENGINEERED FILL AND TO HAVE A MINIMUM BEARING CAPACITY AS LISTED UNDER "STRUCTURAL DESIGN DATA" IN THE GENERAL NOTES. FOOTING EXCAVATIONS ARE TO BE INSPECTED BY AN INDEPENDENT TESTING LABORATORY FOR SUITABLE SOILS, BEARING PRESSURE, AND COMPACTION. COMPACTION OF SOIL UNDER FOOTINGS TO BE 100% OF THE MAXIMUM STANDARD PROCTOR DRY DENSITY.
- SEE FOUNDATION PLAN NOTES FOR FURTHER REQUIREMENTS

CONSTRUCTION

- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PROTECTION OF PERSONS AND PROPERTY EITHER ON OR ADJACENT TO THE PROJECT AND SHALL PROTECT SAME AGAINST INJURY, DAMAGE, OR LOSS.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL SAFETY REGULATIONS. PROGRAMS, AND PRECAUTIONS RELATED TO ALL WORK ON THIS PROJECT. SAFETY REGULATIONS SHALL BE STRICTLY FOLLOWED AT ALL TIMES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION AND ERECTION OF STRUCTURAL MATERIALS IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO ORDERING MATERIALS OR PROCEEDING WITH NEW WORK IN AREAS AFFECTED BY EXISTING CONDITIONS. THE DESIGNER SHALL BE INFORMED IN WRITING OF CONFLICTS BETWEEN EXISTING AND PROPOSED NEW CONSTRUCTION.
- THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION, AND ANY TEMPORARY BRACING OR SUPPORT REQUIRED TO ACCOMMODATE THE CONTRACTOR'S MEANS AND METHODS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED ON NEW AND/OR EXISTING STRUCTURES. SUCH LOADS SHALL NOT EXCEED THE CAPACITY OF THE STRUCTURE AT ANY TIME.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING, FURNISHING, ERECTING, AND REMOVING ANY SHORING AND BRACING REQUIRED DURING CONSTRUCTION, INCLUDING BRACING REQUIRED FOR SIDES OF EXCAVATIONS DURING FOUNDATION CONSTRUCTION AND TEMPORARY BRACING FOR WALLS.
- THE CONTRACTOR SHALL INFORM THE DESIGNER, IN WRITING, OF ANY DEVIATION FROM THE CONTRACT DOCUMENTS. CONTRACTOR SHALL NOT BE RELIEVED OF THE RESPONSIBILITY FOR SUCH DEVIATION BY VIRTUE OF THE DESIGNER'S REVIEW OF SHOP DRAWINGS, PRODUCT DATA, ETC. UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE DESIGNER OF SUCH DEVIATION AT TIME OF SUBMISSION, AND THE DESIGNER HAS GIVEN WRITTEN APPROVAL FOR THE SPECIFIC DEVIATION.
- NO OPENINGS NOR ANY CHANGES IN SIZE, DIMENSION OR LOCATION SHALL BE MADE IN ANY STRUCTURAL ELEMENTS WITHOUT WRITTEN APPROVAL OF THE DESIGNER.
- 10. WHERE CONSTRUCTION TOLERANCES ALLOW FOR VARIATIONS IN LOCATION, SIZE, ETC. OF STRUCTURAL ELEMENTS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL MATERIALS AND LABOR NECESSARY TO MODIFY CONNECTION ELEMENTS AS REQUIRED TO PROVIDE A FINISHED PRODUCT WHICH IS IN ACCORDANCE WITH THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. ANY SUCH MODIFICATIONS REQUIRED SHALL BE REVIEWED AND APPROVED BY THE DESIGNER PRIOR TO EXECUTION.
- 11. THE DESIGNER SHALL BE NOTIFIED AT THE PROPER TIME WHEN ITEMS ARE READY FOR FIELD REVIEW. SUFFICIENT NOTICE SHALL BE GIVEN TO ALLOW SCHEDULING OF THE FIELD REVIEW.

CONCRETE

- CONCRETE SHALL BE NORMAL WEIGHT CONCRETE UNLESS NOTED OTHERWISE. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,500 PSI, UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIFICATIONS.
- CONCRETE PERMANENTLY EXPOSED TO WEATHER OR WATER SHALL HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.40 AND SHALL CONTAIN APPROXIMATELY 6% ENTRAINED AIR. FLY ASH SHALL NOT BE USED FOR CONCRETE EXPOSED TO THE WEATHER OR THE EXTERIOR, OR CONCRETE MIXED WITH ENTRAINED AIR. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.
- CONCRETE SHALL BE BATCHED USING MATERIALS AND PROPORTIONS DESIGNATED IN THE APPROVED DESIGN MIXES. THE GENERAL CONTRACTOR SHALL PROVIDE QUALITY CONTROL OF THE CONCRETE MIX. MIXES SHALL BE PROPORTIONED PER ACI 301.
- CONCRETE SLUMP SHALL BE AS INDICATED IN THE SPECIFICATIONS.
- THE ADDITION OF WATER TO INCREASE SLUMPS ABOVE THE LEVEL SPECIFIED OR TO RETEMPER CONCRETE WHICH HAS EXPERIENCED SLUMP LOSS DUE TO EXCESSIVE MIXING OR HEAT BUILD-UP IS NOT PERMITTED.
- CONCRETE SHALL CONTAIN A MINIMUM OF 20%, CLASS-F FLY ASH BY WEIGHT OF CEMENT, EXCEPT WHEN CONRETE IS EXPOSED TO THE WEATHER OR THE EXTERIOR, OR CONCRETE MIXED WITH ENTRAINED AIR.
- CONCRETE AGGREGATES SHALL BE CERTIFIED BY TESTING TO BE NON-ASR REACTIVE.

CONCRETE (CONTINUED)

- CONCRETE SHALL BE HANDLED, PLACED, AND CONSOLIDATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS.
- SEE SPECIFICATIONS FOR CURING AND HOT AND COLD WEATHER REQUIREMENTS FOR CONCRETE.
- MASS CONCRETE (36" AND GREATER IN THICKNESS) SHALL BE SUBJECT TO THE FOLLOWING ADDITIONAL REQUIREMENTS:
- CEMENT SHALL BE LOW HEAT OF HYDRATION TYPE.
- A MINIMUM OF 25%, CLASS-F, FLY ASH CEMENT REPLACEMENT SHALL BE USED. CONCRETE TEMPERATURES SHALL BE MONITORED DURING CURING USING THERMOCOUPLE DEVICES SUFFICIENT TO REPRESENT THE CURING TEMPERATURE OF THE ENTIRE PLACEMENT. IN NO CASE SHALL THE THERMOCOUPLE DEVICES BE DISPERSED FURTHER THAN 30FT APART. AT EACH LOCATION, THE TEMPERATURE SHALL BE MEASURED IN THE CENTER OF THE SECTION AND ON THE EXPOSED SURFACE.
- THE MAXIMUM TEMPERATURE AT ANY MEASURED LOCATION SHALL NOT EXCEED 160 DEGREES FAHRENHEIT.
- THE MAXIMUM DIFFERENCE BETWEEN TWO TEMPERATURE MEASUREMENTS AT ONE LOCATION SHALL NOT EXCEED 35 DEGREES FAHRENHEIT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND MONITORING OF MASS CONCRETE CONSTRUCTION AND PLACEMENT, INCLUDING BUT NOT LIMITED TO THERMAL ANALYSIS AND MODELING, THERMAL CONTROL AND MONITORING, AND CORRECTIVE MEASURES. FOR EACH MASS CONCRETE SUBMITTAL, THE CONTRACTOR SHALL SUBMIT DRAWINGS AND CALCULATIONS PREPARED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NORTH CAROLINA, QUALIFIED IN THE DESIGN AND MONITORING OF MASS CONCRETE CONSTRUCTION AND PLACEMENT.
- FOLLOWING THE APPROVAL OF THE CONCRETE MIX DESIGN, A SECOND SET OF SUBMITTAL DATA PROVIDE THE FOLLOWING:
- THERMAL ANALYSIS AND MODEL
- THERMAL CONTROL PLAN THERMAL MONITORING PLAN
- CURING AND HEAT REMOVAL METHODS
- CONSTRUCTION JOINTS
- PROVIDE PRE-MOLDED EXPANSION-JOINT FILLER AT EDGES OF SLABS ON GRADE AGAINST VERTICAL SURFACES UNLESS NOTED OTHERWISE.
- 12. DOWELS FROM FOOTINGS SHALL BE ACCURATELY LOCATED AND SECURELY TIED IN PLACE PRIOR TO PLACEMENT OF THE CONCRETE. PLACEMENT OF DOWELS IN FRESH CONCRETE AFTER THE CONCRETE HAS BEEN PLACED WILL NOT BE PERMITTED. USE TEMPLATES FOR THE PLACEMENT OF DOWELS IN COLUMNS AND SHEAR WALLS.
- 13. THE CONTRACTOR SHALL USE INSTRUMENTS TO MAINTAIN A CONTINUOUS CHECK OF THE ELEVATIONS OF THE TOP SURFACES OF SLABS DURING THE PLACEMENT AND FINISHING OF THE CONCRETE. ADJUSTMENTS SHALL BE MADE TO MAINTAIN THE SURFACES WITHIN THE SPECIFIED TOLERANCES.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL ANCHOR BOLTS, CLIPS, INSERTS, SLEEVES AND OTHER REQUIRED ITEMS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND IN COOPERATION WITH OTHER TRADES PRIOR TO THE PLACING OF CONCRETE
- CONCRETE FORMWORK SHALL NOT BE REMOVED UNTIL CONCRETE HAS REACHED SUFFICIENT STRENGTH TO NOT BE DAMAGED BY FORMWORK REMOVAL. SEE ALSO SPECIFICATIONS.
- 16. UNLESS OTHERWISE DIRECTED, ALL CONCRETE SHALL BE MAINTAINED CONTINUOUSLY WET FOR A PERIOD OF 7 DAYS AFTER PLACEMENT.

REINFORCING STEEL

- DETAILING, FABRICATION, STORAGE, AND INSTALLATION OF REINFORCING, UNLESS OTHERWISE SHOWN ON THE PLANS, SHALL COMPLY WITH APPLICABLE REQUIREMENTS OF THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318) AND THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI 315), BOTH BY THE AMERICAN CONCRETE INSTITUTE.
- REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. DO NOT WELD REINFORCING BARS TO EACH OTHER.
- UNLESS NOTED OTHERWISE ON PLANS OR IN DETAILS, REINFORCING BARS MARKED ON THE PLANS AS BEING CONTINUOUS SHALL BE LAPPED AT SPLICE LOCATIONS AS SHOWN IN SCHEDULE. FOR SPLICES AT CORNERS OR INTERSECTIONS OF WALLS AND BEAMS,
- REINFORCING STEEL SHALL BE CLEAN OF MUD, DEBRIS, LOOSE RUST, CEMENT GROUT, OR ANY OTHER MATERIAL WHICH MAY INHIBIT BOND BETWEEN THE STEEL AND THE
- REINFORCING SHALL BE SECURELY TIED AND ANCHORED IN PLACE BEFORE CONCRETE PLACEMENT TO PREVENT DISLOCATION.
- BARS SHALL BE BENT ONLY USING APPROVED METHODS. BARS SHALL NOT BE BENT AFTER PARTIAL EMBEDMENT IN HARDENED CONCRETE.
- 7. UNLESS OTHERWISE NOTED, CONCRETE COVERAGE ON REINFORCING STEEL SHALL BE AS FOLLOWS:

FOOTINGS - ALL FACES FOUNDATION MAT-ON-GRADE - TOP FOUNDATION MAT-ON-GRADE - BOTTOM WALLS ELEVATED SLAB - TOP **ELEVATED SLAB - BOTTOM** SLAB-ON-GRADE - TOP SLAB-ON-GRADE - BOTTOM BEAMS

DRAWINGS & COORDINATION

- STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH MECHANICAL, ELECTRICAL, AND/OR DRAWINGS OF OTHER TRADES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEEING THAT THE WORK OF ALL TRADES IS COORDINATED WITH THE STRUCTURAL WORK.
- CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL DIMENSIONS SHOWN ON THE CONTRACT DOCUMENTS.
- ANYTHING WHICH, IN THE OPINION OF THE CONTRACTOR, APPEAR TO BE DEFICIENCIES, OMISSIONS, CONTRADICTIONS OR AMBIGUITIES IN THE PLANS OR SPECIFICATIONS, SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGNER. CORRECTIONS OR WRITTEN INTERPRETATIONS SHALL BE ISSUED BEFORE CONSTRUCTION OF THE AFFECTED WORK MAY PROCEED.
- DETAILS ARE MARKED AT THE SPECIFIC LOCATION WHERE THEY APPLY, BUT ALSO INDICATE GENERAL CONSTRUCTION REQUIREMENTS FOR OTHER LOCATIONS WITH SIMILAR CONDITIONS.
- DETAILS NOTED AS "TYPICAL" MAY NOT BE REFERENCED ON THE DRAWINGS. TYPICAL DETAILS APPLY AT ALL LOCATIONS WHERE THE TYPE OF CONSTRUCTION SHOWN IN THE TYPICAL DETAIL OCCURS.

STRUCTURAL STEEL

- ROLLED STEEL W-SHAPES SHALL CONFORM TO ASTM A992, GRADE 50, FY=50 KSI. STEEL PIPE SHALL CONFORM TO ASTM A53, TYPE-E, GRADE-B, FY=35 KSI. COLD FORMED STEEL TUBING SHALL CONFORM TO ASTM A500, GRADE-B, FY=46 KSI. ALL OTHER ROLLED STEEL SHAPES, PLATES, AND BARS, SHALL CONFORM TO ASTM A36, FY= 36 KSI. ANCHOR BOLTS SHALL CONFORM TO ASTM F1554, GRADE 36.
- 2. FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH AISC SPECIFICATIONS, COMMENTARY, AND CODE OF STANDARD OF PRACTICE.
- CONNECTIONS NOT DETAILED ON THE PLANS SHALL BE DESIGNED AND DETAILED BY THE FABRICATOR AND APPROVED BY THE DESIGNER. CONNECTION DESIGNS SHALL COMPLY WITH THE REQUIREMENTS OF THE GOVERNING BUILDING CODE AND "AISC SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS, AISC 341-10 & AISC 341S1-10". CONNECTION DESIGNS SHALL BE SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE WHERE THE BUILDING IS LOCATED.

- A. ALL WELDS SHALL BE MADE IN ACCORDANCE WITH AWS D1.1 STRUCTURAL WELDING CODE - STEEL BY THE AMERICAN WELDING SOCIETY FOR THE MATERIAL BEING WELDED. WELDS SHALL BE MADE USING E70XX LOW-HYDROGEN ELECTRODES UNLESS OTHERWISE NOTED.
- GALVANIZED STEEL SHALL BE WELDED IN ACCORDANCE WITH AWS D19 WELDING ZINC COATED STEEL BY THE AMERICAN WELDING SOCIETY. STEEL SURFACES SHALL BE FREE OF ZINC IN THE AREA TO BE WELDED. WELDS SHALL BE MADE BY WELDERS WHO HAVE BEEN QUALIFIED BY TESTS AS
- PRESCRIBED IN AWS D1.1 BY THE AMERICAN WELDING SOCIETY, TO PERFORM THE TYPE OF WORK REQUIRED. D. ALL SHOP WELDS SHALL BE A MINIMUM 3/16" AND ALL FIELD WELDS SHALL BE A MINIMUM 1/4", UNLESS NOTED OTHERWISE. INDICATED WELDING OF CONNECTED
- NOTED OTHERWISE. WELDS SHALL BE CLEANED AND TOUCHED UP WITH THE APPROPRIATE PAINT OR

PARTS SHALL BE "CONTINUOUS" OR "ALL AROUND" AS APPLICABLE, UNLESS

- ZINC COATING. PROVIDE SEAL WELDS ON ALL WELDED STEEL JOINTS EXPOSED TO VIEW MOISTURE, OR CORROSIVE CONDITIONS WHICH WOULD NOT OTHERWISE BE WELDED FOR STRENGTH.
- BOLTED CONNECTIONS SHALL BE MADE USING HIGH-STRENGTH BOLTS, 3/4" DIAMETER CONFORMING TO ASTM A325N, UNLESS OTHERWISE NOTED ON PLAN. SEE SPECIFICATIONS FOR BOLT TIGHTENING METHODS.
- SPLICES FOR ALL STEEL MEMBERS NOTED AS "CONTINUOUS" SHALL OCCUR OVER SUPPORTING MEMBERS.
- PROVIDE ADEQUATE SEPARATION BETWEEN STRUCTURAL STEEL AND ALUMINUM AND OTHER DISSIMILAR METALS TO PREVENT GALVANIC CORROSION. SEPARATION MATERIALS SHALL BE ADEQUATE TO TRANSFER LOADS.

- GALVANIZING OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING PUBLICATIONS:
- AMERICAN GALVANIZERS ASSOCIATION:
- SUGGESTED SPECIFICATION FOR HOT DIP GALVANIZING AMERICAN SOCIETY FOR TESTING AND MATERIALS:
- ASTM A 123 ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL
- PRODUCTS ASTM A 153 ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE
- 2. ALL STRUCTURAL STEEL MATERIALS AND ACCESSORIES WHICH ARE HOT-DIP GALVANIZED SHALL MEET SPECIFIED SPECIAL MATERIAL REQUIREMENTS.
- 3. THE FOLLOWING ITEMS SHALL BE GALVANIZED:
- A. ALL STEEL MATERIAL THAT EITHER SUPPORTS OR IS BUILT INTO EXTERIOR EXPOSED CONSTRUCTION, IS OUTSIDE THE BUILDING THERMAL AND MOISTURE
- BARRIERS, OR IS EXPOSED TO EXTERIOR WEATHER CONDITIONS. B. ALL CONNECTION MATERIALS FOR GALVANIZED MEMBERS AND FOR PRECAST CONCRETE. CONNECTION MATERIALS SHALL INCLUDE. BUT NOT BE LIMITED TO
- NUTS, BOLTS, WASHERS, ANCHOR BOLTS, AND ITEMS EMBEDDED IN CONCRETE. ITEMS NOTED ON DRAWINGS TO BE GALVANIZED. GALVANIZED STEEL SHALL BE WELDED IN ACCORDANCE WITH AWS D19 - WELDING ZINC

COATED STEEL BY THE AMERICAN WELDING SOCIETY. STEEL SURFACES SHALL BE

- OF ZINC IN THE AREA TO BE WELDED. AFTER GALVANIZED MATERIALS ARE INSTALLED, REPAIR DAMAGE AND EXTEND GALVANIZIED COATING WITH SPECIFIED ZINC TOUCH-UP MATERIAL TO PROVIDE THE
- FULL SPECIFIED EXTENT OF ZINC COATING COVERAGE. GALVANIZED COATING SHALL BE REPAIRED BY CLEANING SURFACE, POWER DISC SANDING TO BRIGHT METAL, AND APPLYING AN ORGANIC COLD GALVANIZING COMPOUND WITH A MINIMUM OF 94% ZINC DUST IN THE DRY FILM, 8 MILS MINIMUM DFT,

SUBMITTAL NOTES

THREE COATS MINIMUM.

- ALL SHOP DRAWINGS MUST BE REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTAL. SUBMITTAL WITHOUT CONTRACTOR REVIEW WILL RESULT IN DELAYS. THE CONTRACTOR SHALL CONFIRM THAT SHOP DRAWINGS HAVE BEEN COMPLETED AND CHECKED BY THE SUPPLIER PRIOR TO SUBMISSION.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS IN ELECTRONIC FORMAT.
- SHOP DRAWINGS SUBMITTALS REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE STRUCTURAL SPECIFICATIONS. CHANGES OR ADDITIONS MADE ON RESUBMITTED SHOP DRAWINGS SHALL BE CLEARLY INDICATED, AND THE PURPOSE OF THE RESUBMITTAL SHALL BE NOTED ON THE TRANSMITTAL. REVIEW OF THE RESUBMITTED SHOP DRAWINGS SHALL BE LIMITED SPECIFICALLY TO THE ITEMS NOTED FOR CORRECTION ON THE PREVIOUS
- THE GENERAL CONTRACTOR SHALL SUBMIT THE FOLLOW SHOP DRAWINGS FOR STRUCTURE ENGINEER AND ARCHITECT REVIEW:
 - CONCRETE MIX DESIGN REINFORCING STEEL
 - STRUCTURAL STEEL (a)
- STRUCTURAL STEEL CONNECTIONS (C) STEEL STAIRS/LADDERS (a)(c)
- COLD FORMED METAL FRAMING (a)(c)
- METAL GRATING CANOPY DESIGN (A) (C)
- THE NOTATIONS FOLLOWING SUBMITTAL ITEMS INDICATE THE FOLLOWING
- INCLUDE A CERTIFICATE OF COMPLIANCE WITH CONTRACT DOCUMENTS SIGNED AND SEALED BY THE PROFESSIONAL ENGINEER REGISTERED IN
- THE STATE OF NORTH CAROLINA RESPONSIBLE FOR THE DESIGN. SUBMIT ONE COPY FOR INFORMATION AND RECORD ONLY. CALCULATIONS AND SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER THAT IS REGISTERED IN THE STATE WHERE THE BUILDING IS LOCATED.

- MANUFACTURER'S LITERATURE: SUBMIT TWO COPIES OF MANUFACTURER'S LITERATURE FOR ALL MATERIALS AND PRODUCTS USED IN CONSTRUCTION OF
- THE ENGINEERS'S REVIEW OF SHOP DRAWINGS IF FOR GENERAL CONFORMANCE OF THE DESIGN CONCEPT. CONTRACTOR SHALL SUBMIT A SCHEDULE OF SHOP DRAWINGS SUBMITTALS THAT IS ACCEPTABLE TO BOTH CONTRACTOR AND ENGINEER. AFTER THE CONTRACTOR HAS REVIEW THE SHOP DRAWINGS, PROMPT REVIEW BY THE ENGINEER WILL BE MADE OF ALL SUBMITTALS FOR LARGE SUBMITTALS, REASONABLE REVIEW TIME SHALL BE ALLOW AND MAY EXCEED TWO WEEKS. THE CONCURRENT SUBMITTAL OF MULTIPLE SHOP DRAWINGS ("DUMPING") WILL FURTHER EXTEND THE REVIEW PROCESS AND TIME FRAME NECESSARY TO PROPERLY REVIEW EACH SUBMITTAL.
- THE CONTRACTOR IS RESPONSIBLE FOR PROPER CHECKING AND COORDINATION OF DETAILS, DIMENSIONS, SIZES AND QUANTITIES AS REQUIRED TO FACILITATE COMPLETE AND ACCURATE FABRICATION AND ERECTION.
- REPRODUCTION OF THESE CONTRACT DOCUMENTS FOR USE IN SHOP DRAWINGS IS NOT PERMITTED.

HEAVY DUTY STEEL GRATING

- PROVIDE STEEL GRATING WITH WELDED CONSTRUCTION OF ALL MEMBERS AND A HOT DIPPED GALVANIZED FINISH APPLIED AFTER ASSEMBLY IS COMPLETED.
- MAIN BARS ARE TO BE A MINIMUM OF 1 1/2" x 1/4" SPACED @ 1 3/16" CENTER TO CENTER. TOP-OF-STEEL ELEVATIONS SHOWN ON PLAN FOR STRUCTURAL STEEL MEMBERS THAT SUPPORT METAL GRATING ASSUMES TOTAL STEEL GRATING THICKNESS OF 1 1/2". ENGINEER TO BE NOTIFIED IF THICKER STEEL GRATING IS REQUIRED.
- CROSS BARS ARE TO BE RECTANGULAR CROSS SECTION, FLUSH WITH TOP OF MAIN BARS AND SPACED 4" CENTER TO CENTER MAXIMUM. CROSS BARS ARE TO HAVE A MINIMUM DEPTH OF 5/8" AND A MINIMUM THICKNESS OF 1/8".
- MAIN BARS AND CROSS BARS ARE TO BE SLOTTED AT THEIR INTERSECTIONS SO AS NOT TO REMOVE EXCESSIVE MATERIAL FROM THE LOAD SUSTAINING MEMBERS.
- PROVIDE A MINIMUM OF TWO "BANDING" CROSS BARS WELDED TO THE BOTTOM OF THE MAIN BARS, FOR STABILITY.
- 6. ALL ENDS OF BEARING BARS ARE TO BE BANDED WITH BARS EQUAL IN SIZE THE MAIN BEARING BARS.
- GRATING IS TO SAFELY SUSTAIN A UNIFORM DISTRIBUTED LOAD OF 150LB/SQ. FT. ON MAXIMUM SPAN AS INDICATED, AND DEFLECT LESS THAN L/360.
- 8. GRATING IS TO SAFELY SUSTAIN A CONCENTRATED LOAD OF 1,000 POUNDS ON MAXIMUM SPAN, AND DEFLECT LESS THAN L/360.
- ALL GRATING IS TO BE ATTACHED TO SUPPORTS BY STAINLESS STEEL PLATE FASTENERS, SIZE, NUMBER AND LOCATION TO BE COORDINATED BY THE CONTRACTOR WITH OTHER RELATED TRADES. OPTIONAL GALVANIZED FASTENERS ARE ACCEPTABLE. PROVIDE A MINIMUM OF TWO (2) FASTENERS PER PANEL AT EACH SUPPORT.
- 10. ALL GRATING PANELS TO BE ATTACHED AT MIDSPAN BY A BOLTED CONNECTION AND ACCESSIBLE FOR GRATE PANEL REMOVAL.
- 11. GRATING PANELS MAY BE ATTACHED TO SUPPORTS BY WELDED CONNECTIONS, TO BE COORDINATED BY THE CONTRACTOR WITH OTHER RELATED TRADES. COORDINATE WITH MECHANICAL DRAWINGS FOR GRATING THAT IS TO BE REMOVABLE.
- 12. LIMIT PANEL WIDTHS TO APPROXIMATELY 3'-0".
- 13. ALL GRATING IS TO BE DESIGNED AND THE SPECIFIED MINIMUM SIZES ARE TO BE VERIFIED FOR STRUCTURAL ADEQUACY UNDER THE GIVEN LIVE LOAD CONDITIONS BY THE GRATING MANUFACTURER.

STRUCTURAL DESIGN DATA

- CODES AND STANDARDS:
- 2018 N. C. REVISIONS TO THE 2015 INTERNATIONAL BUILDING CODE.
- MIN. DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, ASCE 7-10. BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ACI 318-14.
- BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES, ACI 530-13. E. SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, AISC 360-10.
 - FOUNDATIONS: A. WET WELL MAT FOUNDATION 2,750 PSF (SEE FOUNDATION PLAN NOTES)

2,000 PSF

62.4 PCF

80 PSF

+29/-32 PSF

+29/-39 PSF

 $S_{D1} = 0.230$

GRAVITY LOADS

B. ALL OTHER FOUNDATIONS

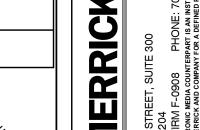
- FLOOR LIVE LOADS (UNREDUCIBLE) 150 PSF ROOF LIVE LOAD (MINIMUM) 20 PSF ROOF SNOW LOADS: 15 PSF a. GROUND SNOW LOAD OCCUPANCY CATEGORY IMPORTANCE FACTOR 1.20 d. Ce 0.9
- D. HYDROSTATIC LOAD ON MAT FOUNDATIONS (RELATIVE TO 100-YR FLOOD ELEVATION, OTHER DWGS.)

- WIND LOADS: 120 MPH BASIC WIND VELOCITY OCCUPANCY CATEGORY 1.00 IMPORTANCE FACTOR EXPOSURE CATEGORY
- E. INTERNAL PRESSURE COEFFICIENT: a. OPEN BUILDING COMPONENTS & CLADDING DESIGN PRESSURE (MIN. TRIBUTARY AREA, 10SF): ZONE 1 - ROOF 32 PSF ZONE 2 - ROOF EDGE 53 PSF
- d. ZONE 4 WALL e. ZONE 5 - WALL CORNER 5. EARTHQUAKE LOADS: MAPPED SPECTRAL RESPONSE ACCELERATION:

ZONE 3 - ROOF CORNER

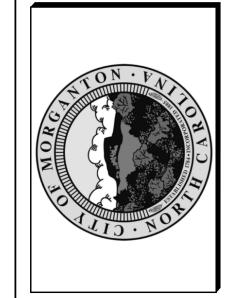
- $S_S = 0.248$ SHORT PERIOD 1 SECOND PERIOD $S_1 = 0.099$ DESIGN SPECTRAL RESPONSE ACCELERATION: SHORT PERIOD $S_{DS} = 0.414$
- 1 SECOND PERIOD C. SITE CLASS
- OCCUPANCY CATEGORY (SEISMIC USE GROUP) IMPORTANCE FACTOR SEISMIC DESIGN CATEGORY

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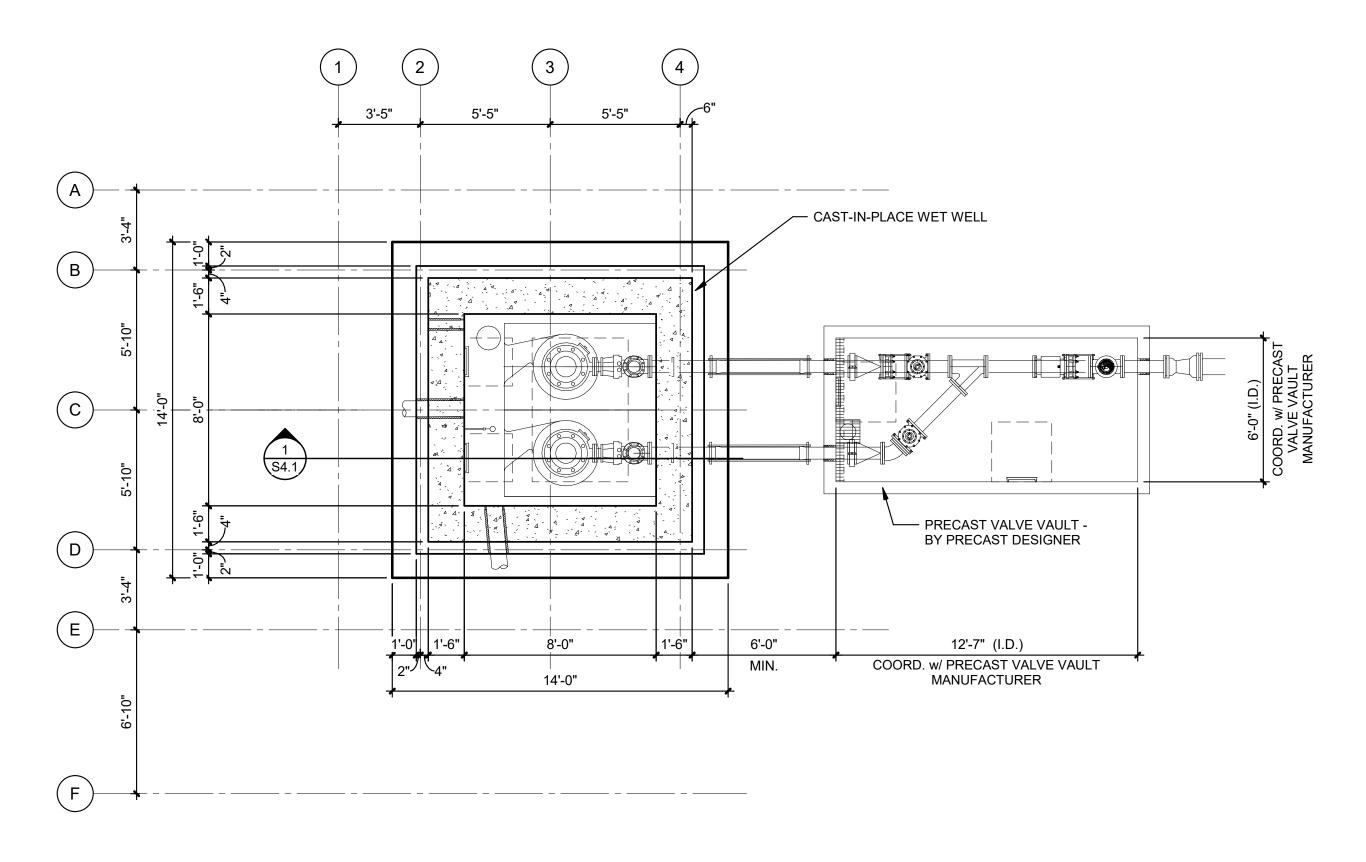






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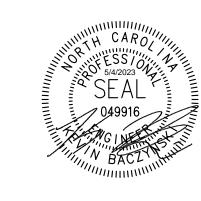
FOUNDATION PLAN

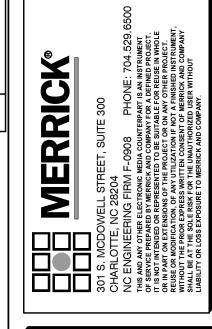
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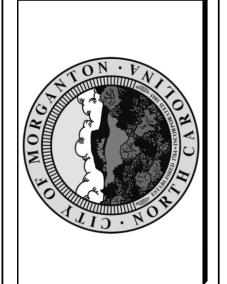
- BEARING PRESSURE STATED IN THE GENERAL NOTES. THE
- 3. UNLESS NOTED OTHERWISE, EXTERIOR SLABS ON GRADE SHALL BE EA. WAY, CENTERED IN THE SLAB. ALL SLABS SHALL BE PLACED ON 4" THICK COMPACTED STONE LAYER. REFER TO TYPICAL DETAILS AND GEOTECHNICAL REPORT RECOMMENDATIONS FOR ADDITIONAL
- FOLLOWING FINISHED GRADE REFERENCE ELEVATION (VERIFY WITH MECHANICAL DRAWINGS):
- 5. THE FOLLOWING SYMBOLS ARE USED ON THE FOUNDATION PLANS TO NOTE ELEVATIONS ABOVE (0'-0") OR BELOW (-0'-0") THE FINISHED GRADE REFERENCE ELEVATION DEFINED ABOVE. A. (TOF....) TOP OF FOUNDATION SLAB
- 6. SEE MECHANICAL DRAWINGS FOR EXTERIOR CONCRETE PADS, DRIVEWAYS, ASPHALT PAVEMENT, AND SIDEWALKS NOT SHOWN ON THIS DRAWING.
- SEE MECHANICAL DRAWINGS FOR THESE ITEMS.
- THE FOLLOWING STRUCTURES WITH MECHANICAL DRAWINGS: A. BOTTOM OF WET WELL STRUCTURE
- 10. PRECAST VALVE VAULT TO BE DESIGNED BY PRECAST DESIGNER. BUOYANCY CALCULATIONS SHALL BE PROVIDED BY PRECAST DESIGNER, AND SHALL BE DESIGNED WITH A FACTOR OF SAFETY EXCEEDING 1.5.



SKA Project Number: 210605.0







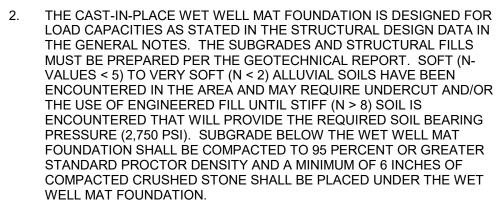
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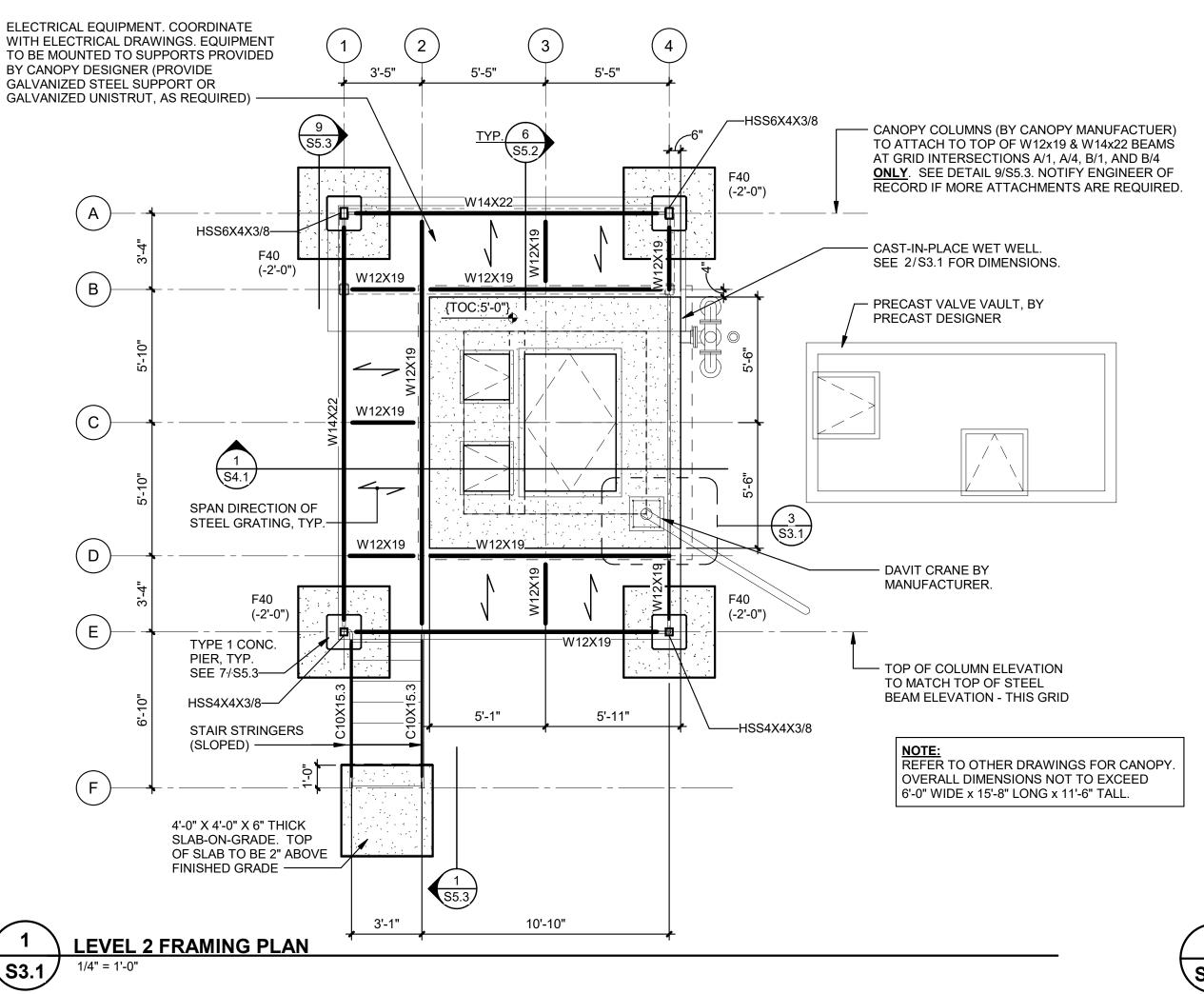
Sewer Improvements

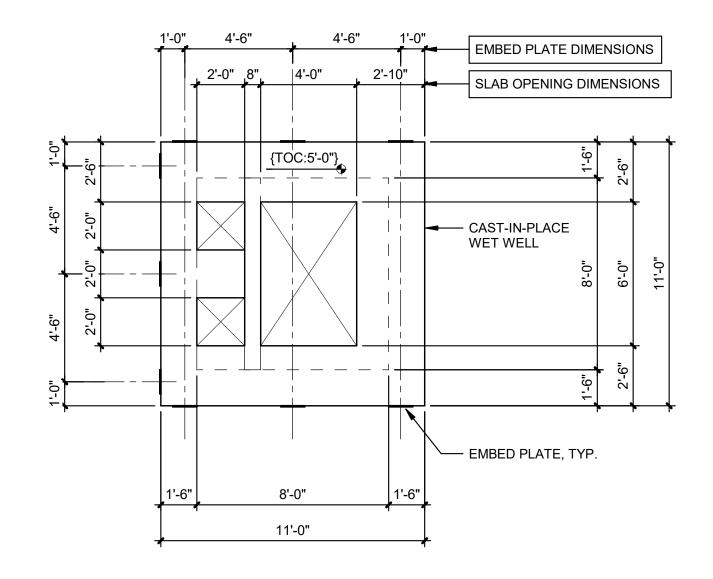
FINAL DESIGN - 100% RELEASED FOR CONSTRUCTION

FOUNDATIONS ARE DESIGNED FOR LOAD CAPACITIES AS STATED IN THE STRUCTURAL DESIGN DATA IN THE GENERAL NOTES. THE SUBGRADES AND STRUCTURAL FILLS MUST BE PREPARED PER THE GEOTECHNICAL REPORT IN ORDER TO ACHIEVE THE ALLOWABLE FOUNDATION DESIGN IS BASED UPON ALL NEW SLABS-ON-GRADE WILL BEAR ON A MINIMUM LAYER OF 4" THICK COMPACTED STONE. REFER TO TYPICAL DETAILS FOR ADDITIONAL REQUIREMENTS.



- 4" THICK NORMAL WEIGHT CONCRETE REINFORCED WITH #4@10" O/C REQUIREMENTS.
- 4. TOP OF FINISHED FLOOR ELEVATIONS SHALL REFER TO THE A. FINISHED GRADE = 0'-0" (1016'-0")
- B. (TOC....) TOP OF ELEVATED SLAB
- 7. ALL FOUNDATION WALL OR SLAB OPENINGS MAY NOT BE SHOWN.
- 8. CONTRACTOR TO COORDINATE SEQUENCE OF CONCRETE POURS OF
- 9. SEE TYPICAL DETAILS FOR ADDITIONAL INFORMATION.





DIMENSIONS SHOWN ARE MEASURED TO THE CENTER OF THE EMBED PLATE. CENTER OF EMBED PLATE ELEVATION = (+3'-6 3/8").

REFER TO DETAIL 5/S5.2 FOR EMBED PLATE.

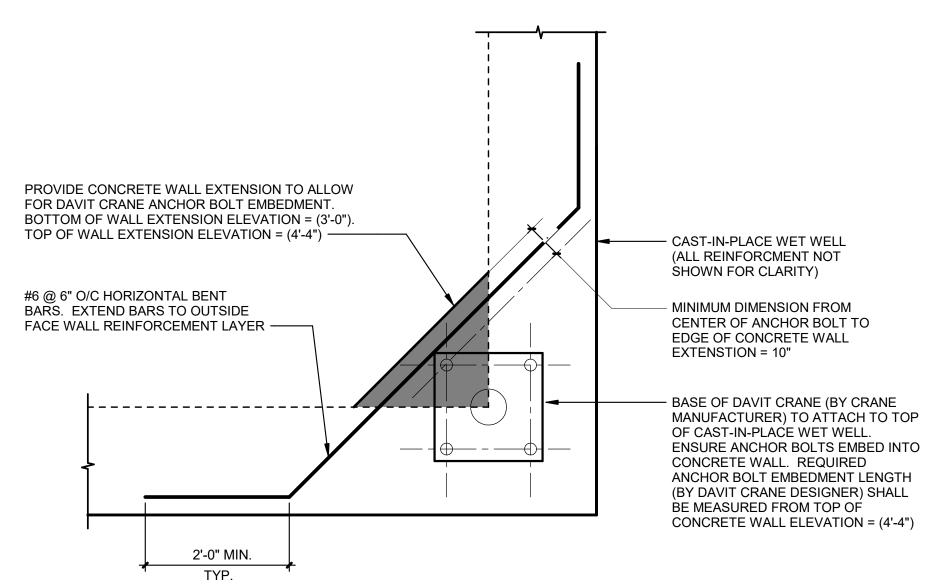
BEAM TO CONCRETE EMBED PLATE LOCATION PLAN

			F	OOTI	NG S	CHEDUI	.E			
MARK	MARK WIDTH	LENGTH	DEPTH	BOTT. REINFORCING				P REIN	REMARKS	
IVIARA	VVIDIA			QUA.	SIZE	SPACING	QUA.	SIZE	SPACING	REWARKS
F40	4'-0"	4'-0"	1'-4"	(5)	#5	EA. WAY	(5)	#5	EA. WAY	

FOOTING SCHEDULE NOTES

- General Notes:

 1. FOOTING MARKS "F__" DESIGNATE THE PLAN SIZE OF THE FOOTING IN TENTHS OF A FOOT. SEE TYPICAL DETAILS
- "COLUMN BASE PLATE" "COLUMN PIER"
- 3. UNLESS NOTED OTHERWISE, CENTER FOOTING BELOW COLUMN OR COLUMN PIER.



DAVIT CRANE CONNECTION CALLOUT

FOUNDATION PLAN NOTES:

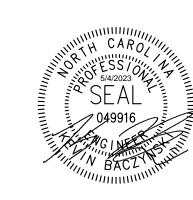
- FOUNDATIONS ARE DESIGNED FOR LOAD CAPACITIES AS STATED IN THE STRUCTURAL DESIGN DATA IN THE GENERAL NOTES. THE SUBGRADES AND STRUCTURAL FILLS MUST BE PREPARED PER THE GEOTECHNICAL REPORT IN ORDER TO ACHIEVE THE ALLOWABLE BEARING PRESSURE STATED IN THE GENERAL NOTES. THE FOUNDATION DESIGN IS BASED UPON ALL NEW SLABS-ON-GRADE WILL BEAR ON A MINIMUM LAYER OF 4" THICK COMPACTED STONE. REFER TO TYPICAL DETAILS FOR ADDITIONAL REQUIREMENTS.
- THE CAST-IN-PLACE WET WELL MAT FOUNDATION IS DESIGNED FOR LOAD CAPACITIES AS STATED IN THE STRUCTURAL DESIGN DATA IN THE GENERAL NOTES. THE SUBGRADES AND STRUCTURAL FILLS MUST BE PREPARED PER THE GEOTECHNICAL REPORT. SOFT (N-VALUES < 5) TO VERY SOFT (N < 2) ALLUVIAL SOILS HAVE BEEN ENCOUNTERED IN THE AREA AND MAY REQUIRE UNDERCUT AND/OR THE USE OF ENGINEERED FILL UNTIL STIFF (N > 8) SOIL IS ENCOUNTERED THAT WILL PROVIDE THE REQUIRED SOIL BEARING PRESSURE (2,500 PSI). SUBGRADE BELOW THE WET WELL MAT FOUNDATION SHALL BE COMPACTED TO 95 PERCENT OR GREATER STANDARD PROCTOR DENSITY AND A MINIMUM OF 6 INCHES OF COMPACTED CRUSHED STONE SHALL BE PLACED UNDER THE WET WELL MAT FOUNDATION.
- UNLESS NOTED OTHERWISE, EXTERIOR SLABS ON GRADE SHALL BE 4" THICK NORMAL WEIGHT CONCRETE REINFORCED WITH #4@10" O/C EA. WAY, CENTERED IN THE SLAB. ALL SLABS SHALL BE PLACED ON 4" THICK COMPACTED STONE LAYER. REFER TO TYPICAL DETAILS AND GEOTECHNICAL REPORT RECOMMENDATIONS FOR ADDITIONAL REQUIREMENTS.
- 4. TOP OF FINISHED FLOOR ELEVATIONS SHALL REFER TO THE FOLLOWING FINISHED GRADE REFERENCE ELEVATION (VERIFY WITH MECHANICAL DRAWINGS): A. FINISHED GRADE = 0'-0" (1016'-0")
- 5. THE FOLLOWING SYMBOLS ARE USED ON THE FOUNDATION PLANS TO NOTE ELEVATIONS ABOVE (0'-0") OR BELOW (-0'-0") THE FINISHED GRADE REFERENCE ELEVATION DEFINED ABOVE. A. (TOF....) TOP OF FOUNDATION SLAB B. (TOC....) TOP OF ELEVATED SLAB
- 6. SEE MECHANICAL DRAWINGS FOR EXTERIOR CONCRETE PADS, DRIVEWAYS, ASPHALT PAVEMENT, AND SIDEWALKS NOT SHOWN ON
- 7. ALL FOUNDATION WALL OR SLAB OPENINGS MAY NOT BE SHOWN. SEE MECHANICAL DRAWINGS FOR THESE ITEMS.
- CONTRACTOR TO COORDINATE SEQUENCE OF CONCRETE POURS OF THE FOLLOWING STRUCTURES WITH MECHANICAL DRAWINGS: A. BOTTOM OF WET WELL STRUCTURE
- 9. SEE TYPICAL DETAILS FOR ADDITIONAL INFORMATION.
- 10. PRECAST VALVE VAULT TO BE DESIGNED BY PRECAST DESIGNER. BUOYANCY CALCULATIONS SHALL BE PROVIDED BY PRECAST DESIGNER, AND SHALL BE DESIGNED WITH A FACTOR OF SAFETY EXCEEDING 1.5.

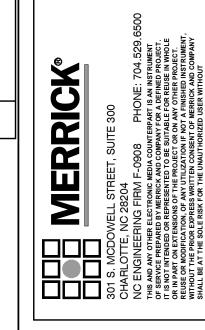
FLOOR FRAMING PLAN NOTES:

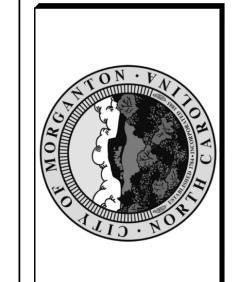
- 1. TOP OF FINISHED FLOOR, SLAB, OR STEEL ELEVATIONS SHALL REFER TO THE FOLLOWING FINISHED GRADE REFERENCE ELEVATION (VERIFY WITH MECHANICAL DRAWINGS): A. FINISHED GRADE = 0'-0" (1016'-0")
- THE FOLLOWING SYMBOL IS USED ON THE FLOOR FRAMING PLANS TO NOTE ELEVATIONS ABOVE (0'-0") OR BELOW (-0'-0") THE FINISHED
- GRADE REFERENCE ELEVATION DEFINED ABOVE. A. (TOF....) TOP OF FOUNDATION SLAB
- B. (TOC....) TOP OF ELEVATED SLAB
- C. (TOS....) TOP OF STEEL
- 3. TOP OF ALL STEEL BEAMS SHALL BE 1 1/2" BELOW THE TOP OF THE ELEVATED CONCRETE SLAB, U.N.O.
- 4. COORDINATE REQUIREMENTS AND DIMENSIONS FOR OPENINGS IN CONCRETE SLABS WITH MECHANICAL AND ELECTRICAL DRAWINGS. OPENING SIZES SHOWN ON PLAN ARE MAXIMUM ALLOWED. NOTIFY ENGINEER IF OPENING SIZES ARE INCREASED. SEE TYPICAL DETAILS.
- 5. STEEL GRATING ON ELEVATED PLATFORMS SHALL BE ATTACHED TO THE TOP OF STEEL FRAME SUPPORTS. SEE TYPICAL DETAILS.
- 6. TOP OF STEEL GRATING INSTALLED ADJACENT TO CONCRETE SLABS SHALL MATCH TOP OF CONCRETE SLAB ELEVATION. CONTRACTOR TO COORDINATE. SEE TYPICAL DETAILS.
- 7. TOP-OF-STEEL ELEVATIONS SHOWN ON PLAN FOR STRUCTURAL STEEL MEMBERS THAT SUPPORT METAL GRATING ASSUMES TOTAL STEEL GRATING THICKNESS OF 1 1/2". ENGINEER TO BE NOTIFIED IF THICKER STEEL GRATING IS REQUIRED. SEE STEEL GRATING GENERAL NOTES.
- 8. STEEL GRATING USED FOR STAIR TREADS, STAIR LANDINGS, AND ELEVATED PLATFORMS SHALL BE WELDED TO THE STEEL SUPPORT STRUCTURE, UNLESS NOTED OTHERWISE. VERIFY WITH MECHANICAL DRAWINGS.
- 9. SEE SPECIFICATIONS AND DETAILS FOR HANDRAIL DESIGN. FOR HANDRAIL LOCATIONS, SEE MECHANICAL DRAWINGS.
- 10. SEE TYPICAL DETAILS FOR ADDITIONAL INFORMATION.
- 11. REFER TO FOUNDATION PLAN NOTES FOR ADDITIONAL REQUIREMENTS.
- 12. UNLESS NOTED OTHERWISE ON OTHER DRAWINGS, ANCHOR HATCH OPENING FRAMES IN CAST-IN-PLACE CONCRETE WET WELL SLAB SIMILAR TO DETAIL 3/S5.1 (HATCH OPENING FRAME TO BE EMBEDDED INTO CONCRETE VIA HEADED STUDS, TYP.).

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SKA Project Number: 210605.0







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RAMING

DESIGN - 100% ELEASED FOR INSTRUCTION FINAL REL CON

3

1'-0" 2'-0" 1 WET WELL SECTION
3/8" = 1'-0"

CONTRACTOR TO COORDINATE ALL SLOPED CONCRETE

DEG.) EXTENDING OUT OF CONCRETE MAT FOUNDATION

AND INTO SLOPED CONCRETE FILL @ 16" O/C IN GRID

FOUNDATION. ACCEPTABLE TO POST-INSTALL DRILL & EPOXY DOWELS INTO MAT FOUNDATION FOR SLOPED

CONCRETE FILL. REFER TO ADEHESIVE ANCHOR DETAIL -

FILL AT BOTTOM OF NEW WET WELL WITH PUMP MANUFACTURER AND MECHANCIAL DRAWINGS. PROVIDE 12" LONG #4 HOOKED DOWEL BARS (STD. 90

PATTERN. PROVIDE 8" MIN. EMBED INTO MAT

Level 2 5'-0"

SEE FLOOR FRAMING NOTE #3

FOR TOP OF BEAM ELEVATION —

3'-5"

5'-5"

1'-6" 2'-0" 8"

5'-5"

- ALUMINUM HANDRAIL AROUND

PERIMETER OF WET WELL AND

ELEVATED PLATFORM. SEE SPECIFICATIONS FOR DESIGN

· 8" THICK CONCRETE SLAB

REINFORCED w/ #5 @ 10" O/C

TOP OF WALL

REQUIREMENTS.

EA. WAY, TOP & BOT.

- #7 @ 10" O/C VERTICAL

- #7 @ 10" O/C HORIZONTAL

-- #7 @ 10" O/C VERTICAL BARS, EA. FACE

FIRST 6'-0", TYP.

- #8 @ 5" O/C VERTICAL DOWELS x 12'-0" w/ 90 DEG.

- #7 @ 10" O/C VERTICAL

DOWELS x 12'-0" w/ 90 DEG.

- REFER TO 6/S5.3 FOR KEYWAY

AND WATERSTOP, TYP.

— #7 @ 10" O/C HAIRPINS CONTINUOUS AROUND PERIMETER, TYP/

2'-0"

STD. HOOK (O.F.)

STD. HOOK (I.F.)

- #7 @ 5" O/C HORIZONTAL BARS EA. FACE FOR FIRST 6'-0" OF WALL HEIGHT. PROVIDE #7 @ 10" O/C HOR. BARS EA. FACE BEYOND

BARS, EA. FACE

BARS, EA. FACE

(1021.00')

(1020.33')

(1016.00')

4'-0"

— REFER TO DETAIL 9/S5.1

FOR TOP OF WALL TO

SLAB REINFORCEMENT

∠ 8" WIDE x 12" DEEP CONCRETE

THROUGHOUT

- REFER TO 1/S5.2 FOR

#7 @ 10" O/C / EA. WAY,

TOP & BOT.

8'-0"

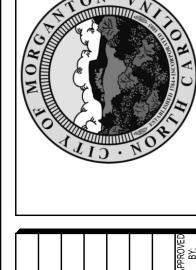
KEYWAY AND WATERSTOP —

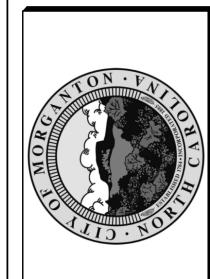
BEAM. REINFORCE W/ (2) #5 TOP & BOTT. HORIZ. AND #4 ĆLOSED TIE STIRRUPS SPACED @ 6" O/C

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FINAL DESIGN - 100% RELEASED FOR CONSTRUCTION

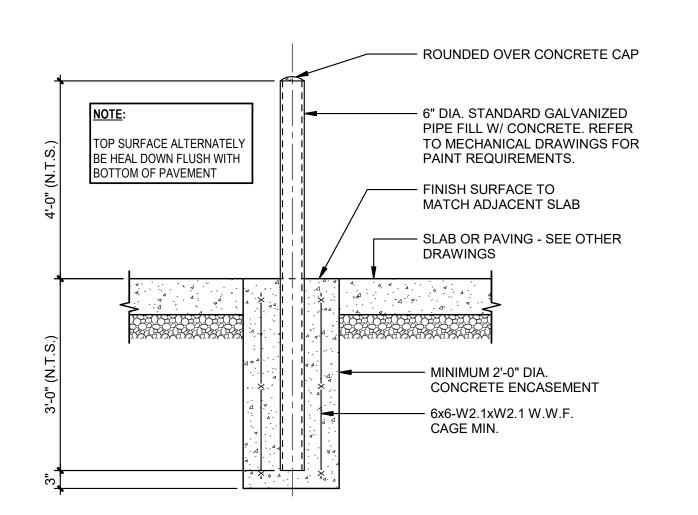
Sewer Improvements Morganton, NC





MERRICK

301 S. MCDO



STANDARD PIPE BOLLARD

SEE FOUNDATION PLAN NOTES FOR SUBGRADE PREPARATION OF CAST-IN-PLACE WET WELL MAT FOUNDATION. — SEE PLAN AND DETAILS 4" THICK LAYER OF COMPACTED STONE FOR SLAB ON GRADE PLACE IN UNIFORM THICKNESS AND COMPACT TO 95% STANDARD PROCTOR TOP OF SUBGRADE SOIL. DENSITY. GRADE SURFACE UNIFORM TO COMPACT AND GRADE MAINTAIN UNIFORM THICKNESS OF UNIFORMLY TO MAINTAIN CONCRETE SLAB. FOR THICKNESS OF UNIFORM THICKNESS OF STONE SEE PLAN AND PLAN NOTES — STONE BASE — PRIOR TO PLACEMENT OF STONE FILL, IDENTIFY SOFT GRADE SURFACE OF AND UNSUITABLE SOILS BY

PROOF-ROLLING THE

SOIL FILL

SUBGRADE. REMOVE AND

REPLACE WITH COMPACTED

SLAB-ON-GRADE SUBGRADE PREPARATION

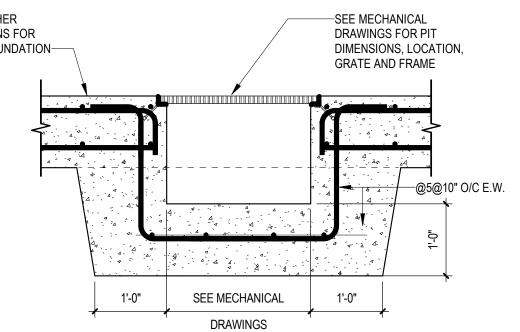
SUBGRADE SOIL TO SAME

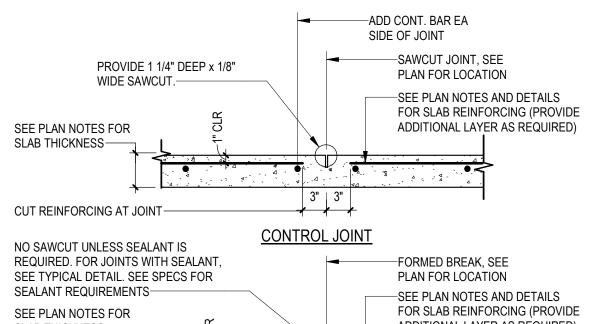
SLOPE AS REQUIRED FOR

CONCRETE SLAB

SEE OTHER -SEE MECHANICAL SECTIONS FOR DRAWINGS FOR PIT MAT FOUNDATION— DIMENSIONS, LOCATION, GRATE AND FRAME -@5@10" O/C E.W. · 4: 4 4. X 1'-0" SEE MECHANICAL DRAWINGS

CATCH BASIN & TRENCH DRAIN DETAIL





ADDITIONAL LAYER AS REQUIRED) SLAB THICKNESS----STEEL DOWEL, CENTERED IN SLAB AND CENTERED ON PLACED FIRST WITH CURING JOINT, SEE NOTE 2-1" 1/256" COMPOUND TO PREVENT BOND CUT REINFORCING AT JOINT-**CONSTRUCTION JOINT**

SLAB-ON-GRADE JOINTS

SLAB-ON-GRADE JOINT NOTES: 1. LOCATE JOINTS IN CONCRETE SLAB AS SHOWN ON FOUNDATION PLAN.

2. SLAB JOINT DOWELS: A. PROVIDE 3/4"x16" SMOOTH ROUND STEEL DOWELS IN SLAB JOINTS SPACED AT 12" O/C.

DOWELS SHALL BE SAWCUT TO LENGTH. B. DOWELS SHALL BE SECURELY SUPPORTED DURING CONCRETE PLACEMENT ON CONTINUOUS SLAB BOLSTERS ON EACH SIDE OF THE JOINT. POSITION AND ALIGN DOWELS TO BE PERPENDICULAR TO THE JOINT AND PARALLEL TO THE TOP SLAB SURFACE.

C. AT CONSTRUCTION JOINT, GREASE END OF DOWEL PLACED IN FIRST SECTION OF CONCRETE. AFTER CONCRETE IN FIRST SECTION HAS HARDENED, MOVE DOWEL BACK AND FORTH IN HOLE TO INSURE THAT BOND IS BROKEN. AT DOWELED CONTROL JOINT, GREASE ENTIRE LENGTH OF DOWEL.

D. DIAMOND PLATE JOINT KEYS MAY BE USED AS AN ALTERNATIVE TO DOWELS. SUBMIT PRODUCT DATA FOR APPROVAL.

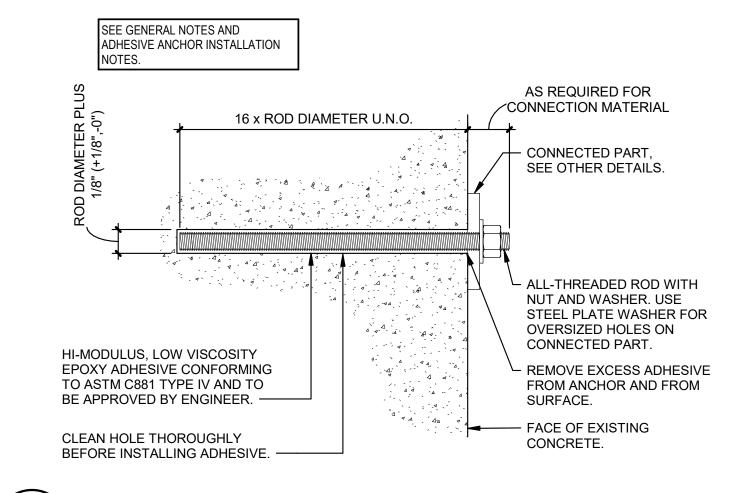
SAWCUTTING: A. SAWCUT CONTROL JOINTS IMMEDIATELY AFTER COMPLETING SLAB SURFACE FINISHING AT EACH JOINT LOCATION AND AFTER THE CONCRETE IS SUFFICIENTLY SET TO LEAVE NO TRACKS ON THE SURFACE. SAW SHALL BE CAPABLE OF CUTTING OF HARDENED, UNCURED CONCRETE WITHOUT DAMAGING THE CONCRETE. B. SAW CUTS AT CONSTRUCTION JOINTS MAY BE MADE WHEN CONTROL JOINTS ARE CUT OR

AT ANY TIME PRIOR TO THE TIME THAT JOINT SEALANTS OR FILLERS ARE TO BE C. IMMEDIATELY AFTER SAWCUTTING, CLEAN THE JOINTS AND SLAB SURFACE. CLEANING SHALL REMOVE ALL LAITANCE, SAW DUST, AND OTHER CONTAMINANTS FROM SLAB

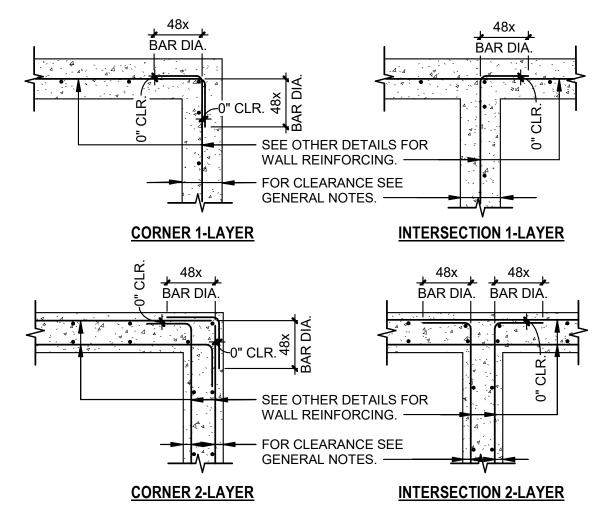
AFTER SAWING JOINTS AND CLEANING, COMMENCE CURING OF THE SLAB AND JOINTS AS

SPECIFIED.

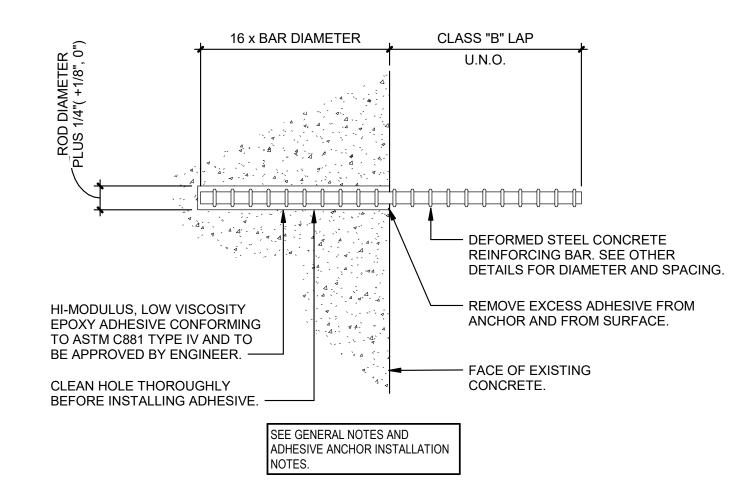
AT JOINTS NOTED ON PLANS AS DOWELED CONTROL JOINTS, HICKEN SLAB AND ADD DOWELS PER CONSTRUCTION JOINT DETAIL



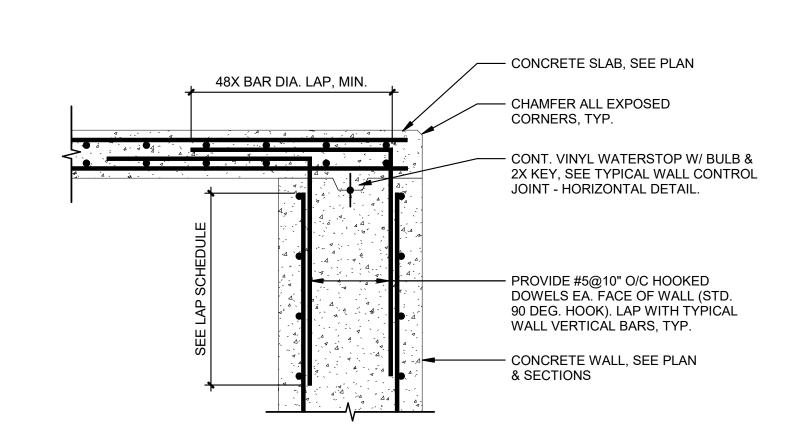
ADHESIVE ANCHOR THREADED ROD IN SOLID MATERIAL



CONTINUOUS WALL REINFORCING



ADHESIVE ANCH. CONCRETE REINFORCING BAR \S5.1_/



TYPICAL WALL-TO-SLAB REINFORCING DETAIL

CONCRETE REINFORCING BAR DEVELOPMENT & LAP LENGTH SCHEDULE

SIZE	DEVELOPMENT LENGTH	CLASS B LAP LENGTH
3	1'-2"	1'-6"
4	1'-6"	2'-0"
5	1'-11"	2'-6"
6	2'-3"	2'-11"
7	3'-4"	4'-3"
8	3'-9"	4'-11"
9	4'-3"	5'-6"
10	4'-8"	6'-1"

GENERAL NOTES: SPECIFIC DETAIL

. VALUES IN SCHEDULE SHALL BE USED UNLESS OTHERWISE NOTED IN A CONDITION-

TABULATED VALUES ARE BASED ON THE REQUIREMENTS OF ACI-318. TABULATED VALUES ARE APPLICABLE FOR THE FOLLOWING CRITERIA:

A. UNCOATED BARS B. NORMAL WEIGHT CONCRETE

C. MINIMUM CONCRETE STRENGTH = 4,500 PSI AT 28-DAYS

D. NOT TOP BARS (SEE TOP BAR NOTE BELOW) 4. FOR TOP BARS, MULTIPLY TABULATED VALUE BY 1.3. TOP BARS ARE HORIZONTAL BARS

THAT HAVE MORE THAN 12 INCHES OF FRESH CONCRETE CAST BELOW THE BARS. TABULATED VALUES SHALL APPLY ONLY IF BARS MEET ONE OF THE FOLLOWING CASES:

A. CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED IS NOT LESS THAN THE BAR DIAMETER, CLEAR COVER IS NOT LESS THAN THE BAR DIAMETER, AND STIRRUPS OR TIES PROVIDED ARE NOT LESS THAN THE CODE MINIMUM.

B. CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED IS NOT LESS THAN 2.0 6. CONTACT ENGINEER FOR BARS THAT DO NOT MEET THE CRITERIA STATED ABOVE.

TIMES THE BAR DIAMETER AND CLEAR COVER IS NOT LESS THAN THE BAR DIAMETER.

DEVELOPMENT & LAP LENGTH SCHEDULE

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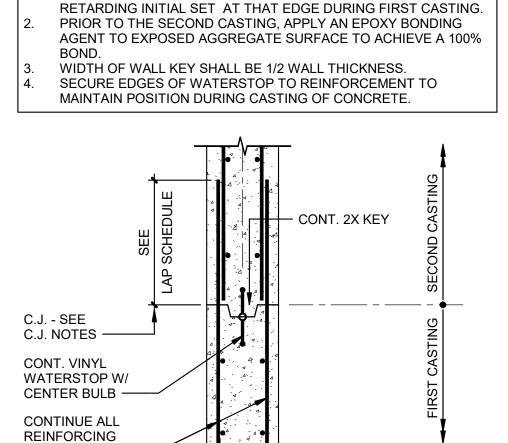
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FINAL DESIGN - 100% RELEASED FOR CONSTRUCTION



EXPOSE AGGREGATE OF FIRST CASTING BY SANDBLASTING OR

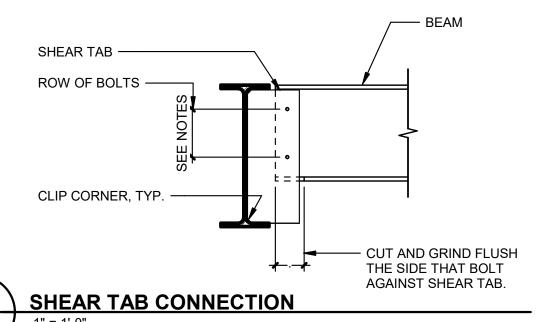
CONSTRUCTION JOINT NOTES:

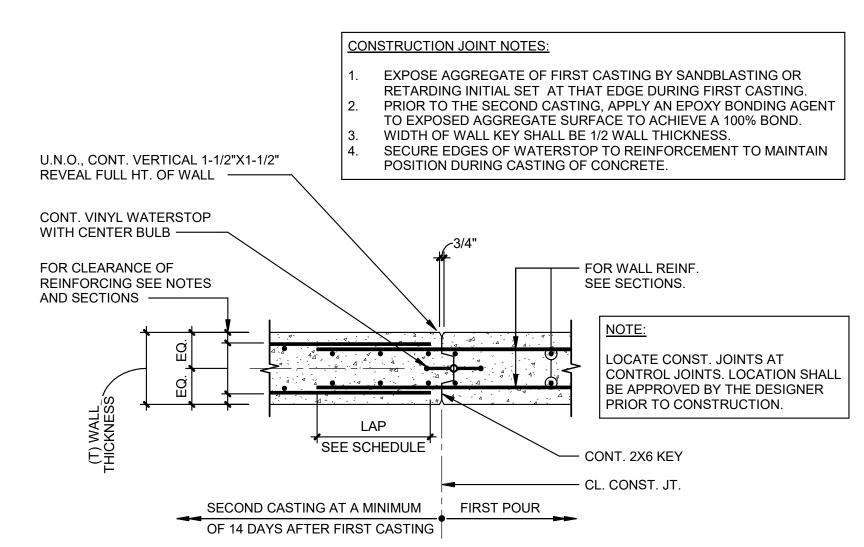
TYPICAL DETAIL - WALL CONSTRUCTION JOINT -HORIZONTAL

3/4" = 1'-0"

THRU JOINT -

- 1. CONNECTIONS SHALL BE DESIGNED AND DETAILED BY STEEL FABRICATOR ACCORD WITH ALL APPLICABLE PROVISIONS OF THE AISC MANUAL OF STEEL CONSTRUCTION AND APPROVED BY THE ARCHITECT/ENGINEER.
- 2. MINIMUM NUMBER OF BOLTS PER CONNECTION SHALL BE AS FOLLOWS: (2) ROWS FOR W8" AND W10"; (3) ROWS FOR W12" AND W14"; (4) ROWS FOR W16" AND W18"; (5) ROWS FOR W21" AND W24"; (6) ROWS FOR W27" AND W30"; AND (7) ROWS FOR W33" AND W36" BEAMS.
- 3. THE REACTION USED IN DESIGN OF THE SHEAR TAB CONNECTION SHALL BE AS FOLLOWS (ASD): A. DEAD LOAD (SHEAR) = 3.0 KIPS B. LIVE LOAD (SHEAR) = 5.0 KIPS





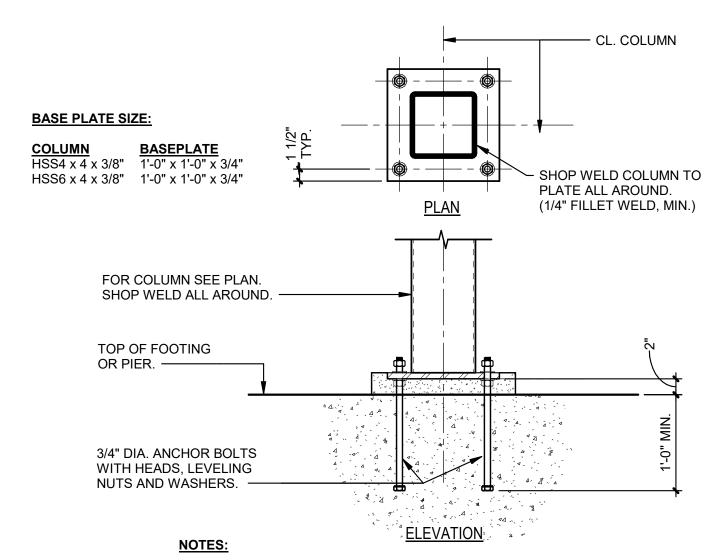
TYPICAL DETAIL - WALL CONSTRUCTION JOINT -VERTICAL

— PL - 1/2" x 12" x 1'-3" STEEL PLATE, SEE ELEVATED WALKWAY SEE 2/S3.1 PLAN FOR SUPPORT DETAIL FOR LOCATION. CENTERLINE LOCATION AND ELEVATION OF EMBED PLATE -— (4) 3/4" DIA. EPOXY ANCHOR BOLTS, SEE TYPICAL ADHESIVE ANCHOR THREADED ROD DETAIL FOR EMBEDMENT. MIN. WELD L8 x 8 x 1/2 ANGLE TO CENTER OF STEEL PLATE, TYP. -___1 1/2" 1 1/2"—

> MAINTAIN MIN. 5" EDGE DISTANCE FROM CL OF EPOXY ANCHOR BOLTS TO EDGE OF CONCRETE, ALL DIRECTIONS. ALL STEEL THIS DETAIL TO BE HOT-DIP GALVANIZED. VERIFY WITH MECHANICAL

NOTES:

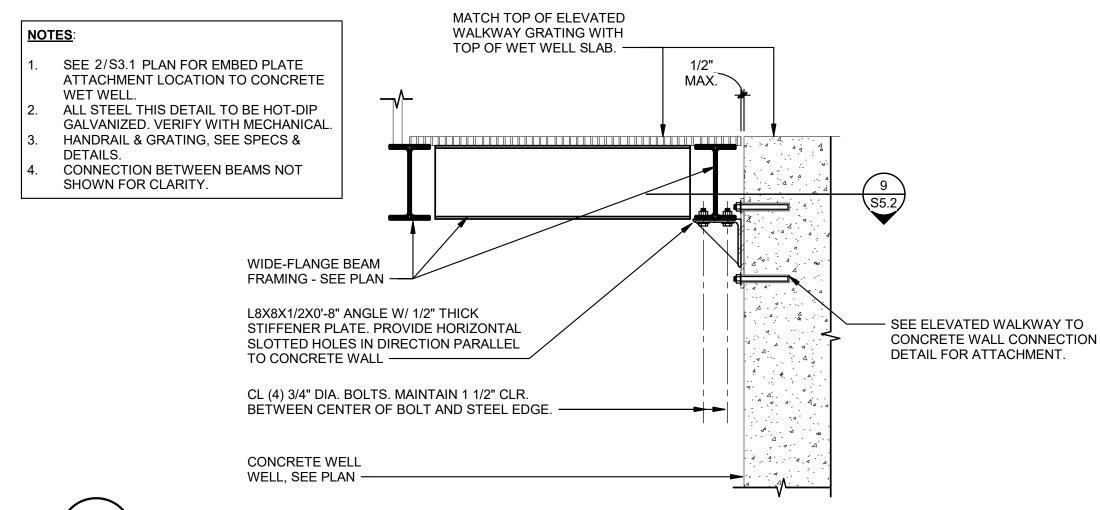
ELEVATED WALKWAY TO CONCRETE WALL CONNECTION



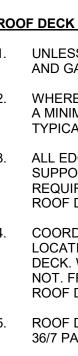
NON-SHRINK GROUT BENEATH PLATES TO BE AS SPECIFIED. PLACE BY POURING TO A WOOD FORM 2" CLEAR FROM EDGES OF BASE PLATE (ALL SIDES). POUR A FLOWABLE MIX TO THE FORM AND UP TO THE TOP OF THE BASE PLATE. TAP TOP OF PLATE TO ELIMINATE TRAPPED AIR IN THE GROUT. REFER TO PLANS, DETAILS, AND MECHANICAL DRAWINGS FOR STEEL

CORROSION PROTECTION (HOT-DIP GALVANIZED, PAINTED, ETC.).

RECTANGLE HSS COLUMN BASE PLATE 1" = 1'-0"

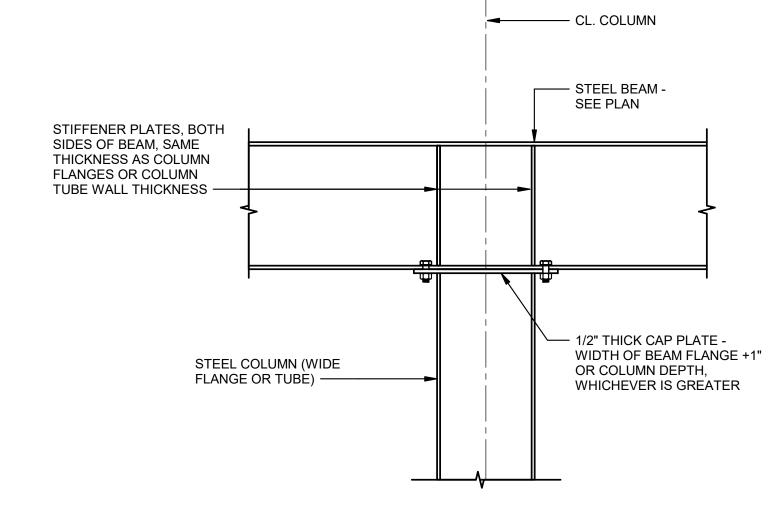


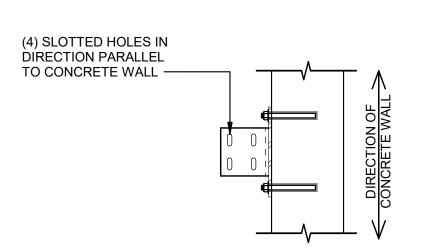
ELEVATED WALKWAY SUPPORT DETAIL

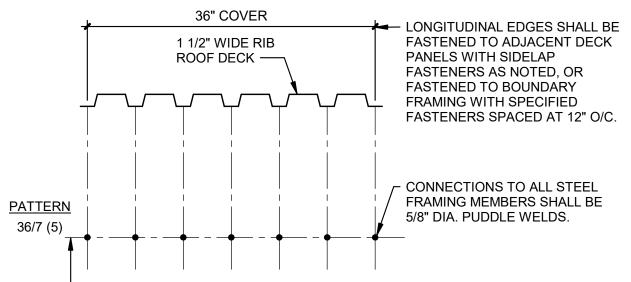


ROOF DECK PLAN NOTES:

- 1. UNLESS OTHERWISE NOTES, ROOF DECK SHALL BE DEPTH AND GAUGE AS NOTED IN THE ROOF PLAN NOTES.
- WHEREVER POSSIBLE, DECK SHALL BE CONTINUOUS OVER A MINIMUM OF 4 SPANS. SEE ROOF DECK PLAN AND TYPICAL DECK FASTENER LAYOUT FOR DECK ATTACHMENT.
- ALL EDGES OF ROOF DECK SHALL BE CONTINUOUSLY SUPPORTED, INSTALL MISCELLANEOUS STEEL AS REQUIRED. NO LOADS SHALL BE SUSPENDED FROM THE ROOF DECK.
- COORDINATE WITH RELATED DRAWINGS THE SIZE AND LOCATION OF ANY OPENINGS REQUIRED THROUGH ROOF DECK. WHETHER SHOWN ON THE STRUCTURAL PLANS OR NOT. FRAME ALL OPENING GREATER THAN 6", INCLUDING ROOF DRAINS, WITH ANGLE FRAME. SEE TYPICAL DETAIL.
- ROOF DECK SHALL BE ATTACHED TO ROOF FRAMING WITH 36/7 PATTERN UNLESS OTHERWISE NOTED.







ROOF DECK FASTENER LAYOUT

IN EACH DECK.

(*) INDICATES NUMBER OF 5/8" DIA.

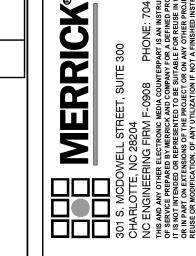
SÍDELAP PUDDLE WELDS REQUIRED

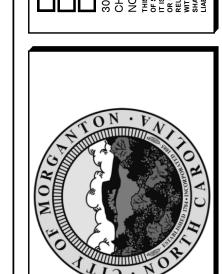
S5.2

TYPICAL DETAIL TOP OF COLUMN AT WIDE FLANGE BEAM

PLAN VIEW -TOP OF ANGLE

64 Peachtree Road, Suite 30 Asheville, NC 28803-3153 t: 828 274 4440 SKA Project Number: 210605.0

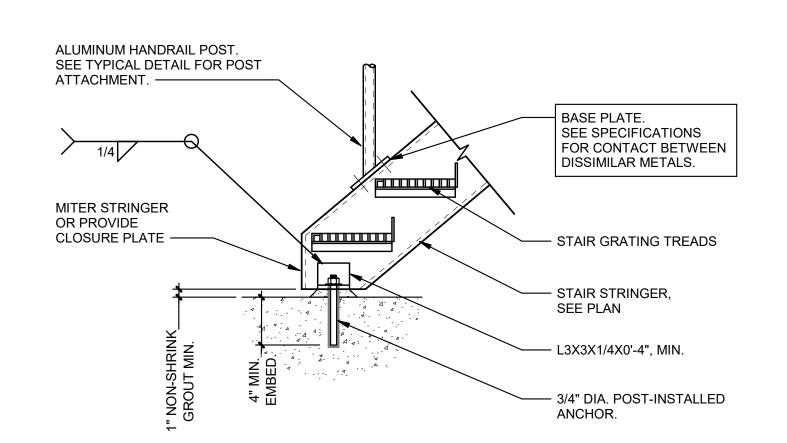




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FINAL DESIGN - 100% RELEASED FOR CONSTRUCTION



TYPICAL DETAIL STAIR BOTTOM CONNECTION

- NORMAL REINFORCEMENT -SEE OTHER DETAILS - CUT NORMAL BARS AS REQUIRED SLEEVED OPENING -COORD W/ MECHANICAL - ADD 4 BARS, EA. DIRECTION (EA. WALL/SLAB FACE, EA. SIDE OF SLEEVE), EXTEND BARS 36 x B.D. BEYOND FACE OF SLEEVE. MATCH NORMAL REINFORCEMENT SEE OTHER DETAILS THIS DETAIL APPLIES AT ALL OPENINGS WHERE NO MORE

TYPICAL DETAIL SMALL OPENING IN WALL OR SLAB

THAN ONE BAR IN EACH DIRECTION IS CUT FOR

CONSTRUCTION OF THE REQUIRED OPENING.

TERMINATE VERTICAL BARS OF PIER w/ 90 DEG. STD. HOOKS TURNED INWARD OR TERMINATION HEADS, TYP. REINFORCE w/ (8) #5 VERT. & #4 TIES @ 6" O/C – GRID @ CL. 2" CLR. TYP. COL. & PIER TYPE 1 TYPICAL ISOLATED PIER

NOTE: TYP. TOP OF PIER ELEVATION IS (+1'-0") FROM FINISHED GRADE ELEVATION.

STD8140

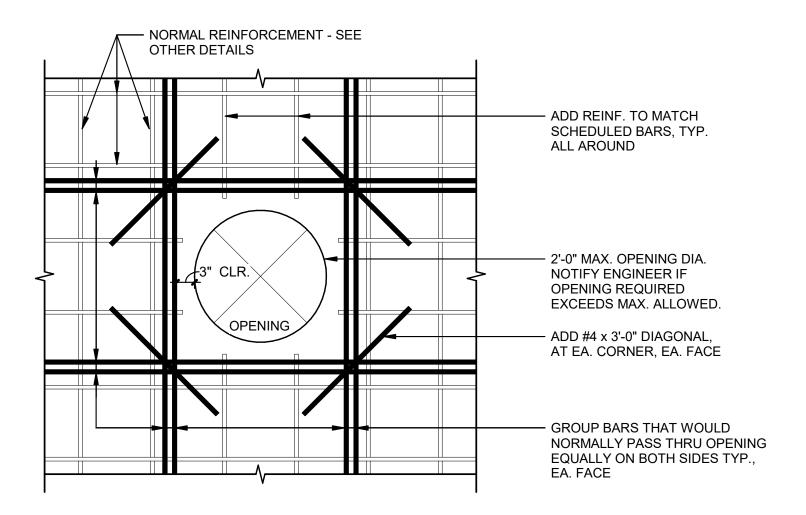
S5.3

TYPICAL CONCRETE PIER DETAIL S5.3

SEE SPECIFICATIONS FOR CONTACT BETWEEN DISSIMILAR METALS (ALUMINUM & STEEL, ETC.). CONTACT SURFACES BETWEEN DISSIMILAR METALS TO BE COATED PRIOR TO ASSEMBLY OR INSTALLATION. SEE SPECIFICATIONS FOR HANDRAIL DESIGN LOADS. - ALUMINUM HANDRAIL VERTICAL POST & CONNECTION TO BASE BASE PLATE, - ATTACH BASE PLATE TO SUPPORT 1/2" MIN. STEEL W/ BOLTS OR ATTACH TO CONCRETE W/ EMBED. BOLTS, TYP. THICKNESS -TYPICAL VERTICAL POST 1/2" THICK MIN. PLATE X 5" X 0'-5" HOLE FOR — HOLE FOR 3/4" DIA. 5/8" DIA. MIN. **FASTENERS** BOLTS

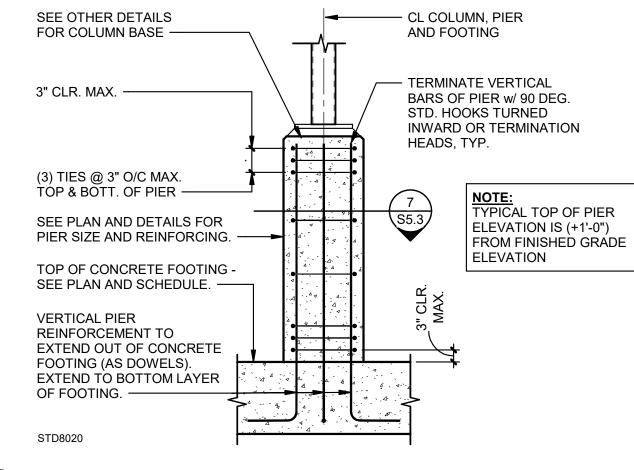
TYPICAL DETAIL HANDRAIL POST ATTACHMENT 1 1/2" = 1'-0"

BASE PLATE FOR MOUNTING TO STEEL SUPPORT STRUCTURE

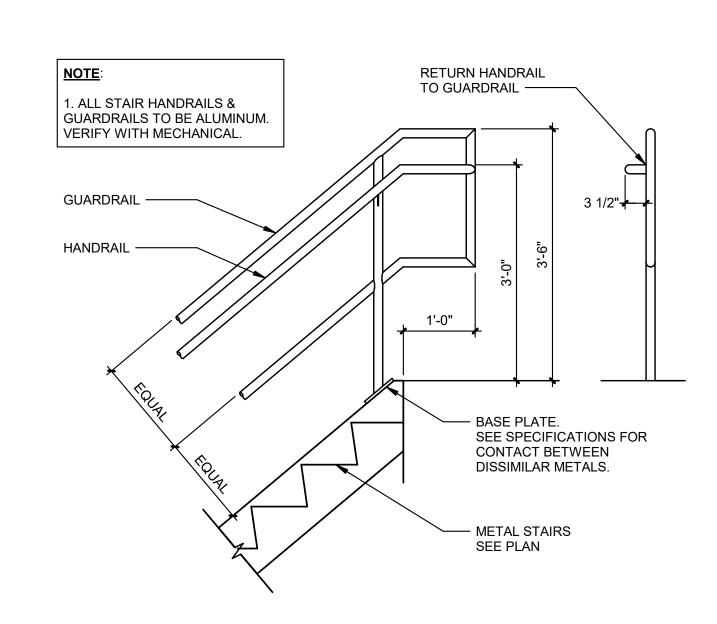


BASE PLATE FOR MOUNTING TO CONCRETE SUPPORT STRUCTURE

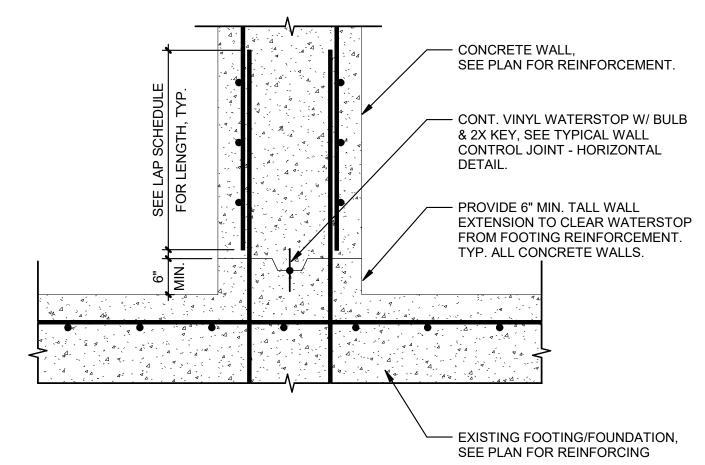
TYPICAL DETAIL LARGE OPENING IN WALL OR SLAB



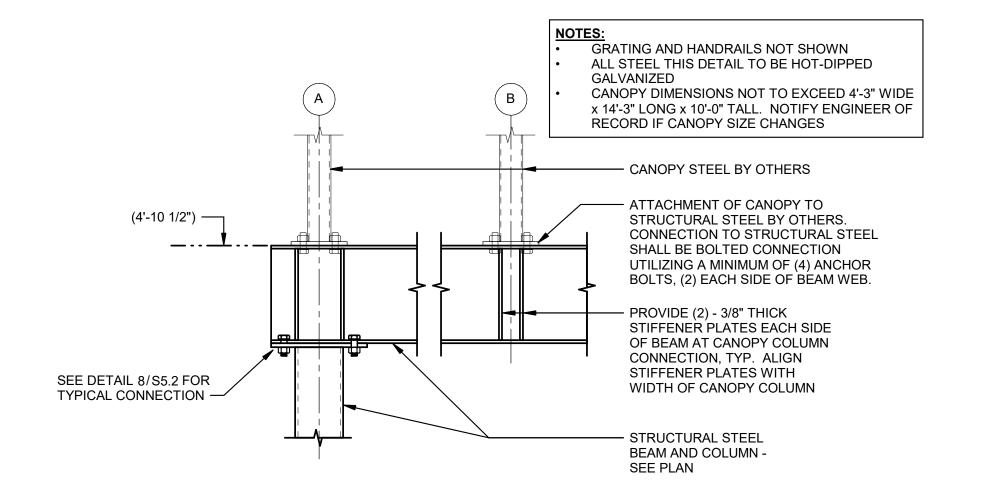
COLUMN PIER



TYPICAL DETAIL METAL STAIR RAIL



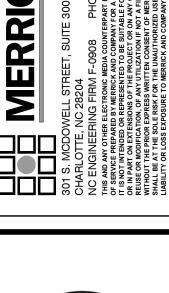
TYPICAL BOTTOM OF CONCRETE WALL REINFORCING 6 **S5.3**

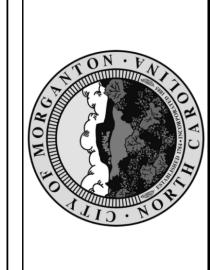


CANOPY TO STRUCTURAL STEEL CONNECTION

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KB (1,3,5)

PANEL NO.

SECTION NO.

CIRCUIT NO. —

BRANCH CIRCUIT CONDUIT INSTALLED CONCEALED IN WALLS AND LOW VOLTAGE CONNECTION BETWEEN nLIGHT DEVICES ON THE SAME CIRCUIT.

CONDUIT AND WIRE TURNING TOWARD OBSERVER.

CONDUIT AND WIRE TURNING AWAY FROM OBSERVER.

LIGHTING

FIXTURE OUTLET - LED - WHERE RECESSED WITH FLEXIBLE FIXTURE TYPE, SEE SCHEDULE. LOWER CASE LETTER IN PARENTHESIS INDICATES SWITCH LOCATION. FIXTURE OUTLET - LED - SEE SCHEDULE

FIXTURE OUTLET ON EMERGENCY CIRCUIT EXIT SIGN - SHADED AREA INDICATES FACE - ARROWS AS

> DIRECTED ON PLANS CEILING MOUNTED MOTION DETECTOR. PROVIDE nLIGHT DUAL TECHNOLOGY, STANDARD RANGE, 360° SENSOR.

CEILING MOUNTED MOTION DETECTOR. PROVIDE nLIGHT DUAL MexTECHNOLOGY, EXTENDED RANGE, 360° SENSOR. DIMMING WALL SWITCH. PROVIDE nLIGHT PUSH-BUTTON WALLPOD WITH ON/OFF, DIM UP, AND DIM DOWN BUTTONS.

PUSH BUTTON SWITCH, SINGLE ON - OFF WALLPOD

CONDUIT TO FIXTURE OUTLET. UPPER CASE LETTER INDICATES

HEAVY DUTY FUSIBLE DISCONNECT SWITCH FURNISHED, INSTALLED AND CONNECTED BY THE ELECTRICAL CONTRACTOR. FIRST NUMERALS INDICATE MAXIMUM AMPERE RATING, SECOND 30/3/25 NUMERAL INDICATES NUMBER OF POLES, THIRD NUMERALS INDICATE FUSE SIZE, OR PROVIDE FUSES TO SUIT EQUIPMENT

SERVED.

DRAWINGS

RED COVER PLATES.

WP

EWC⊖

TELEPHONE/DATA OUTLET - 4 5/16" SQUARE x 2 1/8" DEEP BOX. EXTEND 3/4" EMPTY CONDUIT UP ABOVE CEILING. PROVIDE INSULATED BUSHINGS ON CONDUIT ENDS. MOUNT 18" ABOVE FLOOR UNLESS NOTED OTHERWISE. () INDICATES NUMBER OF JACKS PER OUTLET.

POWER

FIT INTO SIMILAR STANDARD OUTLET BOX.

DUPLEX GROUNDING TYPE RECEPTACLE EQUAL TO HUBBELL

5362I, IVORY WITH MIDI SIZE STAINLESS STEEL COVER PLATE.

MOUNT VERTICALLY IN A SINGLE GANG GALVANIZED BOX, 16"

WITH WEATHERPROOF GASKETED CAST METAL TYPE PLATE.

"EWC" - INDICATES RECEPTACLE FOR ELECTRIC WATER

PLUMBING CONTRACTOR. "GFI" - INDICATES RECEPTACLE

ABOVE FLOOR, OR AS NOTED, OR DIRECTED. "WP" - INDICATES,

COOLER. INSTALL WITHIN CABINET ENCLOSURE. VERIFY WITH

WITH GROUND FAULT INTERRUPTER, HUBBELL NO. GF5362I, TO

DOUBLE DUPLEX RECEPTACLE IN TWO (2) GANG OUTLET BOX

JUNCTION BOX OUTLET FOR LIGHT AND RECEPTACLE CIRCUITS,

WITH TWO (2) GANG STAINLESS STEEL COVER PLATE.

INSTALLED ABOVE SUSPENDED CEILINGS. IN OTHER

SINGLE PURPOSE OUTLET - NEMA TYPE AS INDICATED ON

4" SQUARE BOX WITH BLANK COVER PLATE AND FLEXIBLE

METAL CONDUIT FOR CONNECTION TO LIGHTS. IN GENERAL,

LOCATIONS, MOUNT AS REQUIRED OR NOTED. INSTALL TO

CLEAR DUCTWORK, PIPING, ETC. TO MAKE BOXES ACCESSIBLE.

JUNCTION BOXES ON EMERGENCY CIRCUIT TO HAVE YELLOW

COVER PLATES. JUNCTION BOXES FOR FIRE ALARM TO HAVE

MOTOR CONNECTION - NUMERAL INDICATES HORSEPOWER

DATA & ANALOG PHONE LINE FOR FAX

WIRELESS ACCESS POINT

SINGLE POLE TOGGLE SWITCH 120/277V, 20A, HEAVY DUTY SPECIFICATION GRADE - SUBSCRIPTS "3" THREE WAY SWITCH, "4" FOUR WAY SWITCH, "K" KEY OPERATED SWITCH. EQUAL TO HUBBELL HBL1221I, HBL1223I, HBL1224I, HBL1209 WITH MIDI SIZE STAINLESS STEEL COVER PLATE. MOUNT IN A SINGLE GANG OR MULTI GANG GALVANIZED BOX WITH TOP OF PLATE 48" ABOVE FINISHED FLOOR. "WP" INDICATES WITH WEATHERPROOF GASKETED CAST METAL TYPE PLATE.

FIRE ALARM

FIRE ALARM CONTROL PANEL MANUAL FIRE ALARM PULL STATION

> VISUAL ONLY FIRE ALARM SIGNALING DEVICE. MOUNT 6'-8" ABOVE FINISHED FLOOR OR 6" BELOW CEILING HEIGHT, WHICHEVER IS LOWER.

AUDIBLE/VISUAL FIRE ALARM SIGNALING DEVICE. MOUNT 6'-8" ABOVE FINISHED FLOOR OR 6" BELOW CEILING HEIGHT, WHICHEVER IS

CEILING MOUNTED STROBE. WHITE IN COLOR. NUMERAL INDICATES CANDELA RATING. MOUNT FLUSH IN FINISHED SPACES AND SURFACE IN UNFINISHED SPACES.

PHOTO ELECTRIC TYPE AREA SMOKE DETECTOR

NOTIFICATION APPLIANCE CIRCUIT EXTENDER

EVACUATION SPEAKER **PUSH BUTTON**

NAC

FIREMAN'S PHONE

ELECTRICAL ABBREVIATIONS Dwg.# 210605-E1003.dwg

CONDUCTOR

GROUND FAULT

GALVANIZED RIGID STEEL

HIGH INTENSITY DISCHARGE

HAND-OFF-AUTOMATIC

INTERRUPTER

HORSEPOWER

GROUND

CONDUIT

HEIGHT

HEATER

A OR AMP AMPERES

AFF

AFG

ALT

ATS

AWG

BKR

BFG

CB

CLG

CT

CU

DIA

DN

EC

EF

EG

ELEC

EMT

ER

EWC

EWH

FACP

EX

FLA

FT

FVNR

FWE

GA

GC

GFI

GND

GRS

HOA

HID

HP

HT

HTR

GEC

GALV

EQUIP

DWG(S)

ICAL ABBREVIATIONS		
E1003.dwg		
AMPERES	IG	ISOLATED GROUND
ABOVE FINISHED FLOOR	IMC	INTERMEDIATE METALLIC
ABOVE FINISHED GRADE		CONDUIT
AMPERE INTERRUPTING	IN	INCH;INCHES
CAPACITY	JB	JUNCTION BOX
ALTERNATE	KCMIL	THOUSANDS OF CIRCULAR
AUTOMATIC TRANSFER		MILLS
SWITCH	KVA	KILO VOLT AMPERES
AMERICAN WIRE GAUGE	KW	KILOWATT
BREAKER	LTG	LIGHTS
BELOW FINISHED GRADE	MCB	MAIN CIRCUIT BREAKER
CONDUIT	MCC	MOTOR CONTROL CENTER
CIRCUIT BREAKER	MLO	MAIN LUG ONLY
CEILING	MTD	MOUNTED
CABLE TRAY	MTG	MOUNTING
COPPER	N	NEUTRAL
DIAMETER	NC	NORMALLY CLOSED
DOWN	NEC	NATIONAL ELECTRIC CODE
DRAWING(S)	NEMA	NATIONAL ELECTRICAL
EMPTY CONDUIT OR		MANUFACTURERS
ELECTRICAL CONTRACTOR		ASSOCIATION
EXHAUST FAN	NF	NON-FUSED
EQUIPMENT GROUND	NFPA	NATIONAL FIRE PROTECTION
ELECTRICAL		ASSOCIATION
ELECTRIC METALLIC TUBING	NIC	NOT IN CONTRACT
EQUIPMENT	NO	NORMALLY OPEN OR
EXISTING TO BE RELOCATED	~	NUMBER
ELECTRIC WATER COOLER	Ø	PHASE
ELECTRIC WATER HEATER	PNL	PANEL
EXISTING TO REMAIN	PVC REC	POLYVINYL CHLORIDE
FIRE ALARM CONTROL		RECEPTACLE
PANEL	SCHED SN	SCHEDULE SOLID NEUTRAL
FLOOR FULL LOAD AMPS	SPD	SURGE PROTECTIVE DEVICE
FOOT;FEET	SPECS	SPECIFICATIONS
FULL VOLTAGE	SWBD	SWITCHBOARD
NON-REVERSING	SWGR	SWITCHGEAR
FURNISHED WITH	TEL	TELEPHONE
EQUIPMENT	TTB	TELEPHONE TERMINAL
GAUGE	טוו	BACKBOARD
GALVANIZED	TYP	TYPICAL
GENERAL CONTRACTOR	TVSS	TRANSIENT VOLTAGE SURGI
GROUNDING ELECTRODE		SUPPRESSOR
001010700		

UNDERGROUND

UNDERWRITES

VOLTS

WIRE

UNO

WP

XFMR

LABORATORIES

WEATHERPROOF

TRANSFORMER

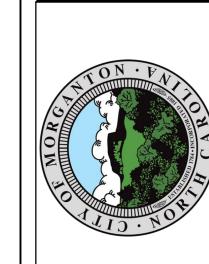
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SKA Consulting Engineers, Inc. t: 336 855 0993

7900 Triad Center Drive, Suite 200 Greensboro, NC 27409-9075 210605-E010 5/4/2023 2:32 PM







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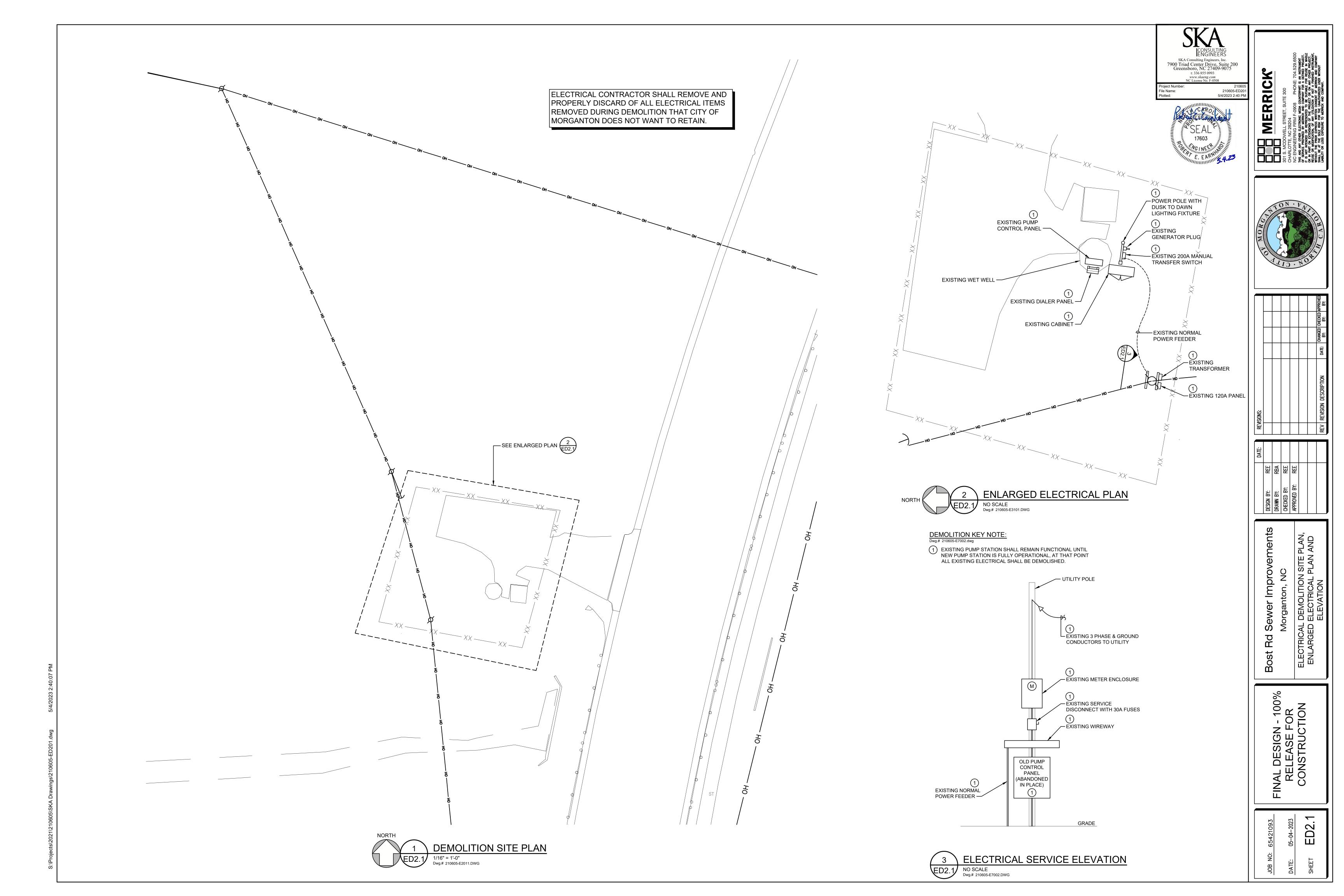
ELECTRICAL DRAWING INDEX

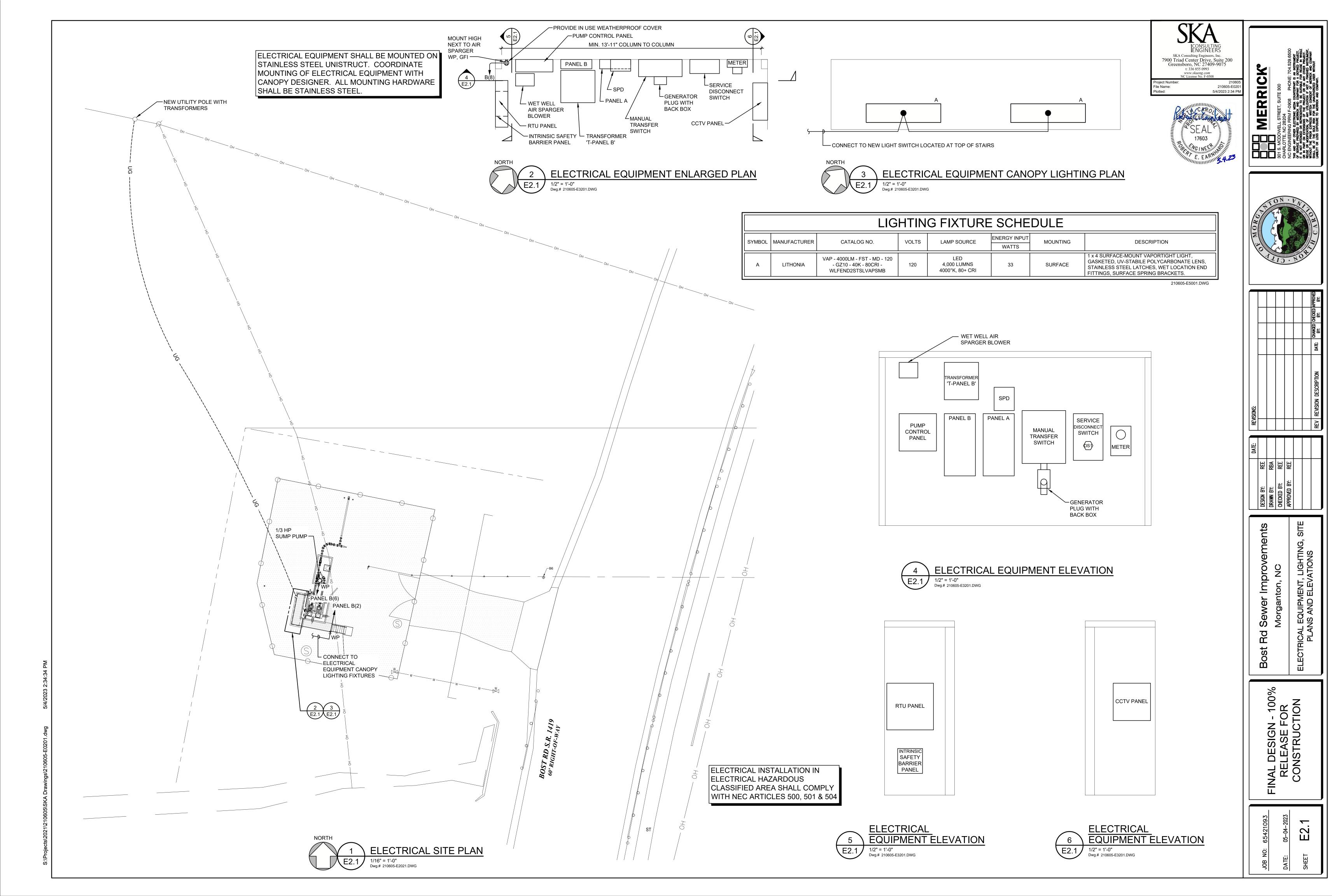
E1.1 SYMBOL LEGEND AND ABBREVIATIONS

ELECTRICAL DEMOLITION SITE PLAN, ENLARGED

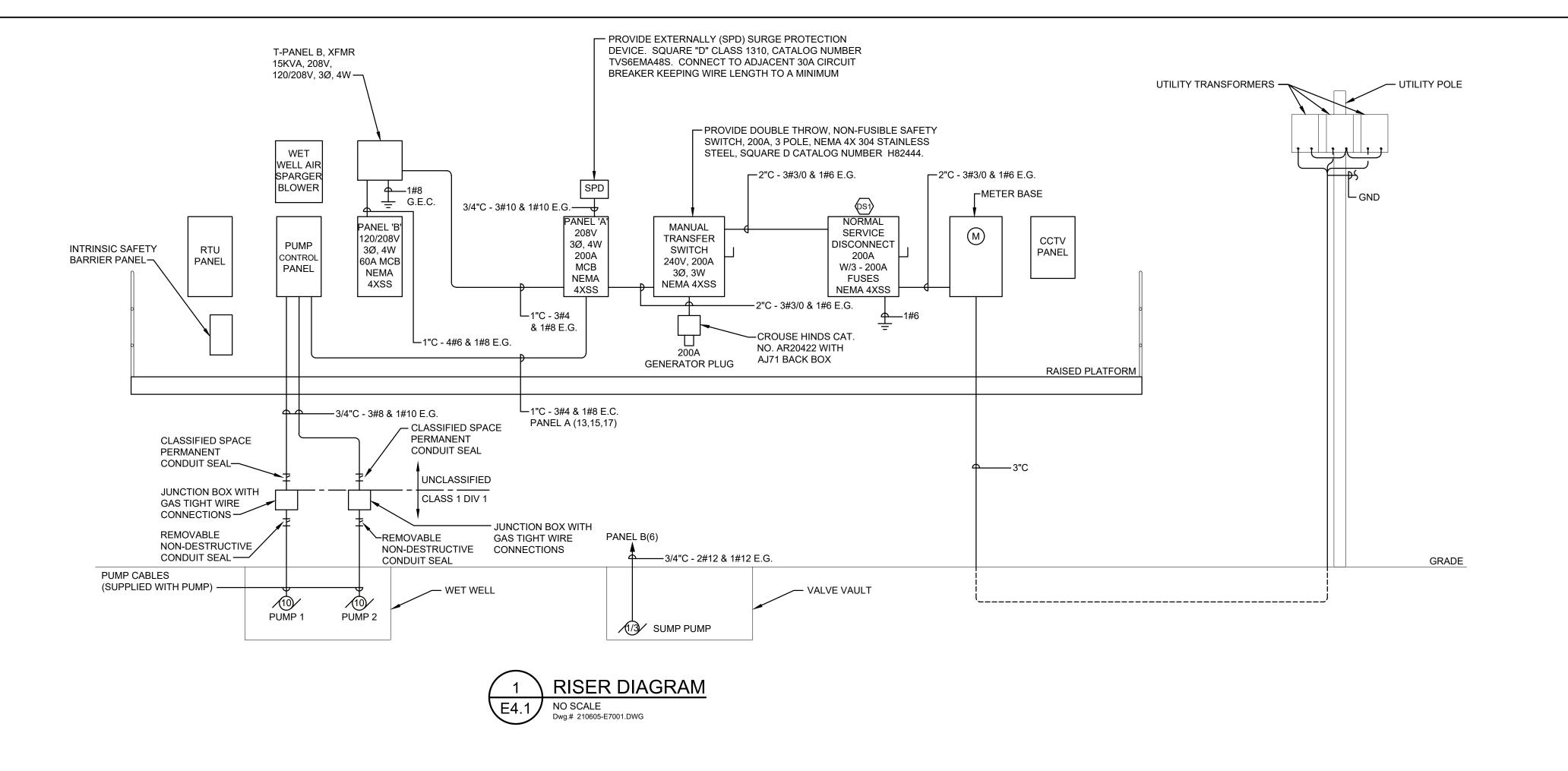
ELECTRICAL PLAN AND ELEVATION ELECTRICAL EQUIPMENT, LIGHTING, SITE PLANS AND

ELECTRICAL RISER DIAGRAM AND SCHEDULES









PANEL-A	MAKE: TYPE:	SQUAI			NG:2					MAIN CIRCUIT BREAKER EQUIPMENT GROUND BUS X YES NO					
LOAD	VA	PER PHA	SE		СКТ	CKT CKT NEUTRAL CKT			KT CKT VA PER PHASE				LOAD		
SERVED	AØ	ВØ	CØ		BRKR	NO.	Α	3 C	NO.	BRKR	AØ	ВØ	CØ	SERVED	
	-					1	-	-	2		-				
SPACE		-				3			4	30/3		-		SPD	
			-			5		→ <u></u>	6				-		
	5000					7		$+$ \wedge	8		_				
T-PANEL B		5000			70/3	9			10			-		SPACE	
			5000			11		<u> </u>	12				-		
	7728					13	<u></u>	+ $-$	14		-				
PUMP CONTROL PANEL		7728			80/3	15			16			-		SPACE	
			7728			17		+	18				-		
						19		+ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$	20						
SPACE						21			22			-		SPACE	
						23	-	\bullet	24				-		
	_					25			26		-			00.00	
SPACE						27 29			28			-		SPACE	
DEMARKS.	40700	10700	40766	OUE 7	L			<u> </u>	30	TOTAL "A"			-		
REMARKS	12728	12728	12728	SOR-	TOTAL "I	3"	<u>225A</u>	BUS	SUB	-TOTAL "A"	0	0	0	MIN. <u>10,000</u>	A.I.C.
COPPER BUS, LUGS & SC		RAL					<u>#1/0</u>	LUGS	SUB	-TOTAL "B"	12728	12728	12728	SYM. AMPERES	
BOLT-ON CIRCUIT BREAK		יבו באוכי	OCUDE				100%	S/N	GRA	ND TOTAL	12728	12728	12728	LUGS/PHASE	1#1/0
PROVIDE NEMA 4X STAIN	ILESS STE	EL ENCL	USUKE				9,11 0.13			S / PHASE	106		106	LUGS/NEUT.	1#1/0

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PANEL-B	MAKE: TYPE:	SQUAR			NG:1			4W			0A PMENT	MAIN CIR			ES NO
LOAD SERVED	VA AØ	PER PHA BØ	se CØ		CKT BRKR	CKT NO.	NEU ⁻	TRAL B C	CKT NO.	CKT BRKR		VA F AØ	PER PHA BØ	SE CØ	LOAD SERVED
REC - EQUIPMENT PLATFORM		52	- 02		20/1	1			2	20/1		66			LTG - EQUIPMENT PLATFORM
RTU PANEL		200			20/1	3			4	20/1			100		HIGH HIGH WATER LEVEL BEACON
CCTU PANEL			200		20/1	5			6	20/1				864	VALVE VAULT SUMP PUMP
SPARE	-				20/1	7			8	20/1		275			WET WELL AIR SPARGER BLOWER
SPARE		-			20/1	9		$ \qquad \qquad$	10	20/1			-		SPARE
SPARE			-		20/1	11		\leftarrow	12	20/1				-	SPARE
SPACE						13	$\overline{}$		14						SPACE
SPACE						15		$\hspace{1cm} \hspace{1cm} \hspace{1cm}\hspace{1cm}\hspace{1cm}\hspace{1cm}\hspace{1cm}\hspace{1cm}\hspace{1cm}\hspace{1cm}\hspace{1cm}\hspace{1cm}\hspace{1cm}1c$	16						SPACE
SPACE						17		\downarrow	18						SPACE
SPACE						19			20						SPACE
SPACE						21		\leftarrow	22						SPACE
SPACE						23		+	24						SPACE
SPACE						25	$\overline{}$		26						SPACE
SPACE						27		$ \qquad \qquad \bullet \qquad \qquad \\$	28						SPACE
SPACE						29		<u> </u>	30						SPACE
REMARKS	180	200	200	SUB-T	OTAL "E	3"	100A	BUS	SUB	-TOTAL	"A"	341	100	864	MIN. 10,000 A.I.C.
COPPER BUS, LUGS & SOL		RAL					_#6	LUGS	SUB	-TOTAL	"B"	180	200	200	SYM. AMPERES
BOLT-ON CIRCUIT BREAKE PROVIDE NEMA 4X STAINL		EL ENCL	OSURF				100%	. S/N	GRA	ND TOT	AL	521	300	1064	
* PROVIDE 120V, 20A, 6MA T				ER			BOT	LUCCALEUT 440						LUGS/NEUT. 1#6	

			DISC	ONNE	CT SWIT	CH SCH	EDULE	
SYMBOL	NAMEPLATE	VOLTS	AMPS	POLES	ENCLOSURE	FUSE SIZE	FUSE TYPE	REMARKS
(DS1)	SERVICE DISCONNECT SWITCH	240	200A	3	NEMA 4XSS	200A	FSR-R-200	HEAVY DUTY - FUSIBLE, SERVICE ENTRANCE RATED

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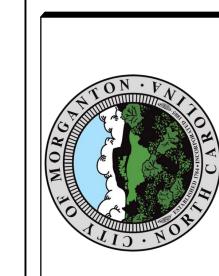
				TRANS	FORMER	SCHEDU	ILE		
XFMR DESIG.	SIZE (KVA)	TYPE (K-RATING)	VOLTAGE PRIMARY SECONDARY		SERVED FROM PANEL	SERVES PANEL	SQUARE D MODEL NO.	MOUNTING	LOCATION
T-PANEL B	15	N/A	208	208/120	PANEL A	PANEL B	EXN15T3156H W/ NEMA 3R WEATHER SHIELD	WALL / RAIL MOUNT	EQUIPMENT PLATFORM

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st Rd Sewer Improvements	Morganton, NC	LECTRICAL RISER DIAGRAM AND SCHEDULES

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INSTRUMENTATION SYMBOLS

P&ID HIERARCHY SYMBOLS HAND SWITCH/INDICATOR LIGHTS DISCRETE SHARED FUNCTION DESIGNATION **\I**STRUMENTS DISPLAY/ CONTROL XXX (SEE BELOW)
STATUS OR EVENT LIGHT NORMALLY ACCESSIBLE TO OPERATOR FIELD MOUNTED XXX ALARM LIGHT SINGLE INSTRUMENT HOUSING CONTAINING TWO INSTRUMENTATION SELECTOR OR PUSH BUTTON SWITCH (MOMENTARY OR MAINTAINED CONTACTS) **FUNCTIONS** AXXX HARDWARE INTERLOCK INTERLOCK NUMBER PLC INPUT / OUTPUT

> CONTROL STATION: LIGHT/SWITCH/PUSHBUTTON FUNCTION DESIGNATION

ABBREVIATIONS ACK ACKNOWLEDGE AUTO ANALOG INPUT ANALOG OUTPUT ACP AREA CONTROL PANEL AIT TURBIDITY TRANSMITTER CS MCC CONTROL SECTION OR CONTROL STATION CLOSE CHLORINE RESIDUAL DCS DS DISTRIBUTION CONTROL SYSTEM DRIVE SYSTEM DIGITAL INPUT DIGITAL OUTPUT DEW POINT EB RELAY OR CONTACTOR ES ELECTRIC SWITCH CONTACTOR / RELAY FE FLOW ELEMENT E-STOP EMERGENCY STOP FLOW INDICATOR FAIL FIRE FOR FLOW INDICATING TRANSMITTER FIRE ALARM HS FORWARD-OFF-REVERSE HAND (SELECTOR) SWITCH HAND-OFF-AUTO INTERVAL TIMER HIGH/LOW SPEED INTRINSIC SAFE LOCAL LOCAL AUTOMATIC INPUT/OUTPUT I/O LOCAL-REMOTE LEVEL ALARM HIGH HIGH LEAD-LAG LEAD-LAG-STANDBY LALL LEVEL ALARM LOW LOW LC LOCKED CLOSED LOW/HIGH SPEED/STOP LCP LOCAL CONTROL PANEL MANUAL-OFF-AUTO OPEN OPEN-CLOSE OVERLOAD LE LEVEL ELEMENT LEVEL INDICATOR LEVEL INDICATION HIGH OFF-ON LIL LEVEL INDICATION LOW OPEN-STOP-CLOSE LIT LEVEL INDICATING TRANSMITTER REMOTE LSH LEVEL SWITCH HIGH RAISE-STOP-LOWER RESET LSL LEVEL SWITCH LOW LSLL LEVEL SWITCH LOW LOW SPEED CONTROLLER / VFD SC SDS LO LOCKED OPEN SHUT-DOWN STATUS MOTOR SLO SLOS SMOKE STOP LOCKOUT STOP LOCKOUT START MCC MOTOR CONTROL CENTER SMOKE ALARM MOV MOTOR OPERATED VALVE START-STOP MS MOISTURE SWITCH NC NORMALLY CLOSED NCHD NORMALLY CLOSED, HELD OPEN

NO

OI

PB

PΙ

PLC

PNL

RI/O

RTD

RTU

TSH

VFD YΑ

PCP

NOHC

NORMALLY OPEN

PUSH BUTTON

OPERATOR INTERFACE

PRESSURE INDICATOR

REMOTE TERMINAL UNIT

INDICATING PANEL

SPEED INDICATOR

EVENT ALARM EVENT INDICATION

PROCESS CONTROL PANEL

NORMALLY OPEN, HELD CLOSED

REMOTE INPUT/OUTPUT DEVICE

TEMPERATURE SWITCH HIGH VARIABLE FREQUENCY DRIVE

PROGRAMMABLE LOGIC CONTROLLER

RESISTANCE TEMPERATURE DETECTOR

LINE SYMBOLS → COMMUNICATION LINK ------ PRIMARY PROCESS FLOW — — — ELECTRIC SIGNAL

LEVEL SENSOR - ULTRASONIC YY-N-XX PROCESS LINE CONTINUED FROM ANOTHER DWG

INSTRUMENTATION DRAWING INDEX

I1.1 INSTRUMENTATION P & I D SYMBOLS AND ABBREVIATIONS

INSTRUMENTATION P & I D PUMP STATION AND VALVE VAULT

RIC

Morganton, NC	INSTRUMENTATION P & I D SYMBOL AND ABBREVIATIONS
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