



CITY OF MORGANTON BOST RD SEWER IMPROVEMENTS PROJECT BURKE COUNTY, NORTH CAROLINA

CONTACT LIST

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CITY DEVELOPMENT AND DESIGN SERVICES DIRECTOR
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DEVELOPMENT AND DESIGN SERVICES
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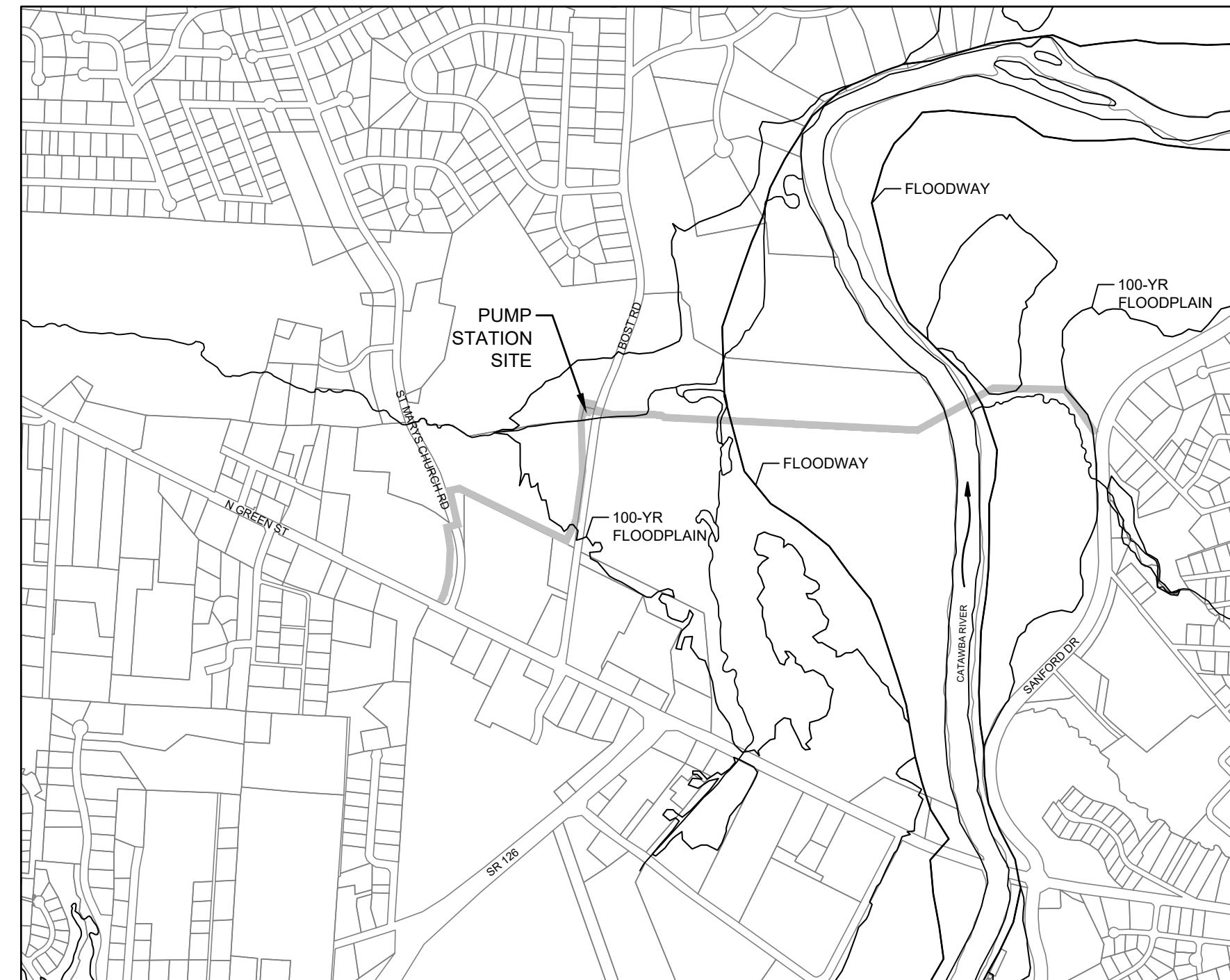
ELECTRICAL SERVICES
DUKE ENERGY
330 OAKLAND ROAD
SPINDALE, NC 28160
EMAIL: CHRISTOPHER.ABRIL@DUKE-ENERGY.COM
PHONE: 828-288-5386
CONTACT: CHRIS ABRIL

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
Forcemain	
Size	Quantity
8" PVC	1975 LF
8" HDPE	599 LF (plan)
8" DIP	1531 LF
Air Valves	4



VICINITY MAP 1" = 1000'

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S4.1	Section
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REVISIONS	DATE	BY	DESCRIPTION
△	05/04/23	BBORIS	100% review comments 1
△	05/04/23	BBORIS	100% review comments 2

DATE	BY	DESCRIPTION
05/05/22	RHM	DESIGN BY
05/05/22	DMM	DRAWN BY
11/06/22	ECH	CHECKED BY
11/05/22	SBO	APPROVED BY

Bost Rd Sewer Improvements
Morganton, NC
Cover Sheet

**FINAL DESIGN - 100%
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JOB NO: 65421093
DATE: 05/04/23
SHEET: **G1.1**

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GENERAL CONSTRUCTION NOTES

- 1. ALL CONTRACTORS AND SUBCONTRACTORS SHALL HAVE A SET OF APPROVED CONSTRUCTION DOCUMENTS...
2. ALL CONSTRUCTION SHALL CONFORM TO THE APPROPRIATE EDITION OF THE GOVERNING JURISDICTION STANDARDS AND SPECIFICATIONS.
3. THE ENGINEER MAKES NO REPRESENTATION OR GUARANTEE REGARDING EARTHWORK QUANTITIES OR THAT THE EARTHWORK FOR THIS PROJECT WILL BALANCE...

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.

- 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...
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.

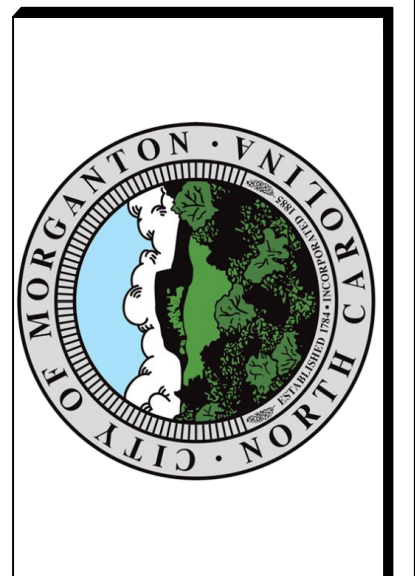
CONSTRUCTION SEQUENCE - EROSION & SEDIMENT CONTROL

- 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 NCG010000.
2. SET UP AN ON-SITE PRE-CONSTRUCTION CONFERENCE WITH EROSION CONTROL INSPECTOR FROM NCDEQ TO DISCUSS EROSION CONTROL MEASURES.

LEGEND

EXISTING
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
EXISTING GAS LINE
EXISTING RIGHT OF WAY
EXISTING PROPERTY LINE
100 YEAR FLOODPLAIN
TOP OF BANK/TOE OF BANK
EXISTING VEGETATION/HEDGES
EXISTING FENCE
EXISTING NCDOT DRAINAGE EASEMENT
EXISTING GUY WIRE
EXISTING ELECTRIC BOX
EXISTING SEWER MANHOLE
EXISTING WATER VALVE
EMERGENT WETLANDS
PROPOSED
PROPOSED FENCE
PROPOSED SANITARY FORCE MAIN & BENDS/DEFLECTIONS
PROPOSED SANITARY SEWER LINE & MANHOLE
CONSTRUCTION ACCESS EASEMENT
TEMPORARY CONSTRUCTION EASEMENT
SANITARY SEWER EASEMENT
PROPOSED WATER LINE & VALVE
GROUNDWATER
BORE HOLE
AIR RELEASE VALVE
DOUBLE LEAF ACCESS HATCH
SINGLE LEAF ACCESS HATCH
GRAVEL
METAL GRATING
PROPOSED ASPHALT PAVEMENT
DEMOLISH EXISTING, AS INDICATED
CONTRACTOR LAYDOWN AND STAGING

MERRICK
301 S. MCCOY STREET, SUITE 300
MORGANTON, NC 28651
PHONE: 704.520.8500
NC ENGINEERING FIRM F-0088



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DATE table with columns: DATE, DESIGNED BY, DRAWN BY, CHECKED BY, APPROVED BY

Bost Rd Sewer Improvements
Morganton, NC
General Notes

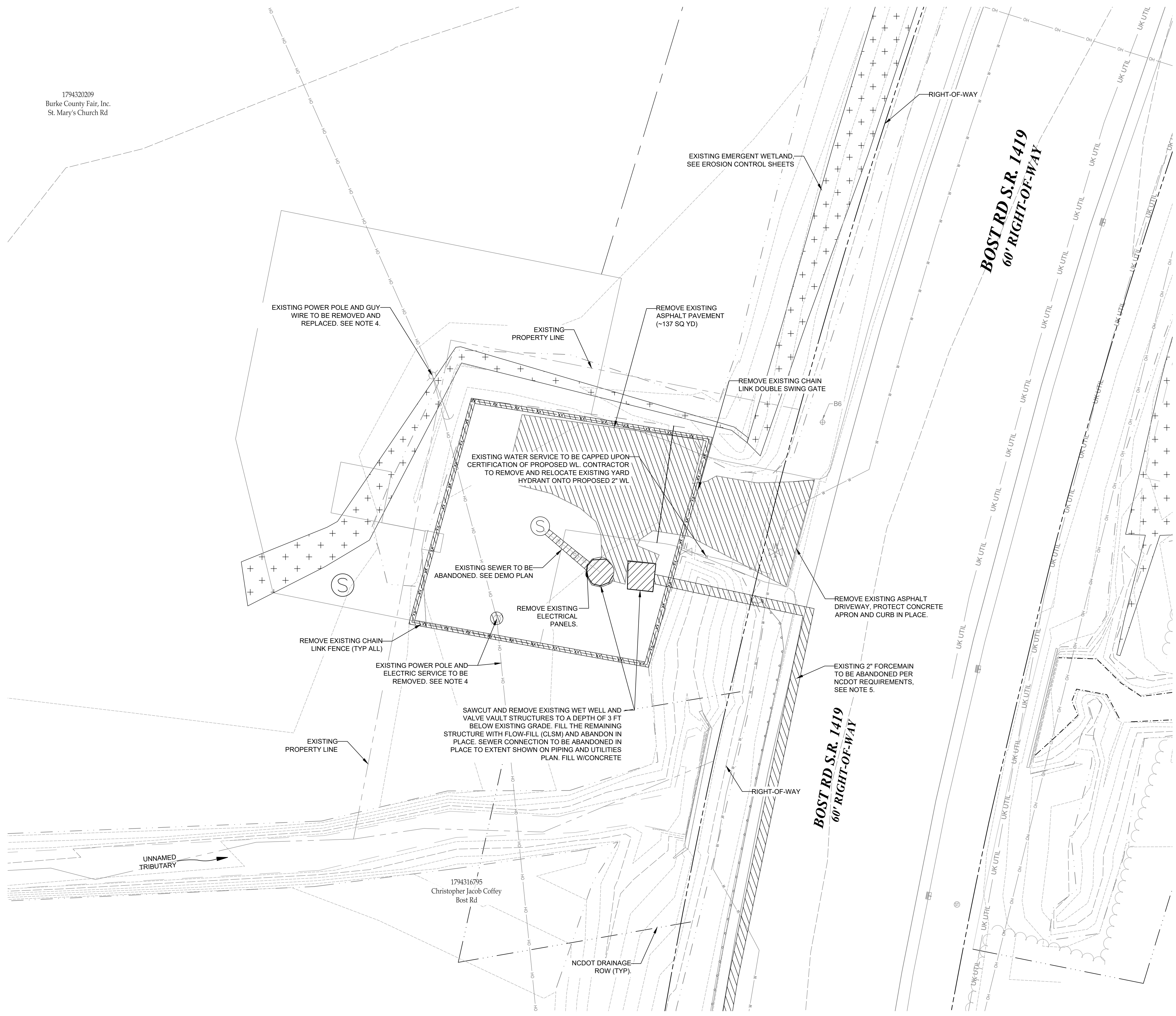
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JOB NO.: 65421093
DATE: 05/04/23
SHEET: G1.2

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 828-438-5276 AND THE WATER RESOURCES DEPARTMENT AT 828-438-5276 A MINIMUM OF 48 HOURS PRIOR TO STARTING CONSTRUCTION...

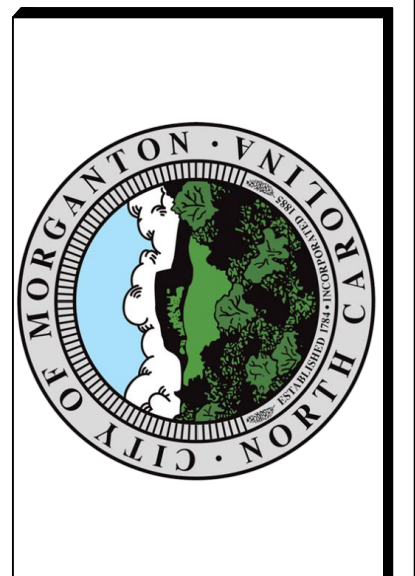
1794320209
 Burke County Fair, Inc.
 St. Mary's Church Rd



NOTES

1. EXISTING SEWER AND PUMP STATION TO REMAIN IN SERVICE UNTIL CHANGE OVER OCCURS.
 - 1.1. TESTING TO BE SUCCESSFULLY COMPLETED BEFORE CHANGE OVER CAN BEGIN. CHECK SEQUENCING SCHEDULE.
2. REMOVE EXISTING ASPHALT DRIVE PER NCDOT AND CITY OF MORGANTON SPECIFICATIONS.
3. CONTRACTOR TO SET UP TRAFFIC SAFETY MEASURES BEFORE BEGINNING DRIVEWAY WORK.
4. EXISTING POWER POLES AND SERVICE LINES TO BE REMOVED BY DUKE ENERGY. CONTRACTOR TO SEQUENCE REMOVAL WITH CHANGE OVER TO THE NEW LIFT STATION. COORDINATE WITH ELECTRICAL PLANS.
5. EXISTING 2" FORCEMAIN TO BE ABANDONED IN PLACE. FILL WITH FLOW-FILL (CLSM) AND CAP BOTH ENDS. X LF FROM PUMP STATION TO N GREEN ST

MERRICK
 301 S. MCCOWELL STREET, SUITE 300
 NC ENGINEERING FIRM # 2908 PHONE: 704.520.6500
 THE SEAL AND OTHER ELECTRONIC MARK CONSTITUTE AN INSTRUMENT OF PROFESSIONAL SERVICE. IT IS THE RESPONSIBILITY OF THE ENGINEER TO BE CURRENT AND IN FULL COMPLIANCE WITH ALL APPLICABLE REGULATIONS AND STANDARDS. THE ENGINEER'S LIABILITY IS LIMITED TO THE SCOPE OF THE CONTRACT AND SHALL NOT BE EXTENDED TO ANY OTHER WORK OR TO ANY OTHER PARTY WITHOUT THE WRITTEN CONSENT OF MERRICK ENGINEERING, P.C.



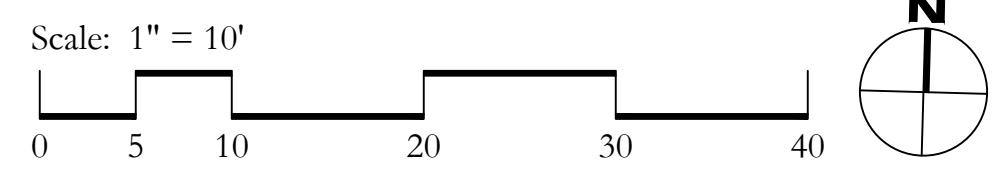
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RHM	05/05/22
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ECH	11/06/22
APPROVED BY:	DATE:
SHD	11/30/22

Bost Rd Sewer Improvements
 Morganton, NC
Demolition Plan
Pump Station

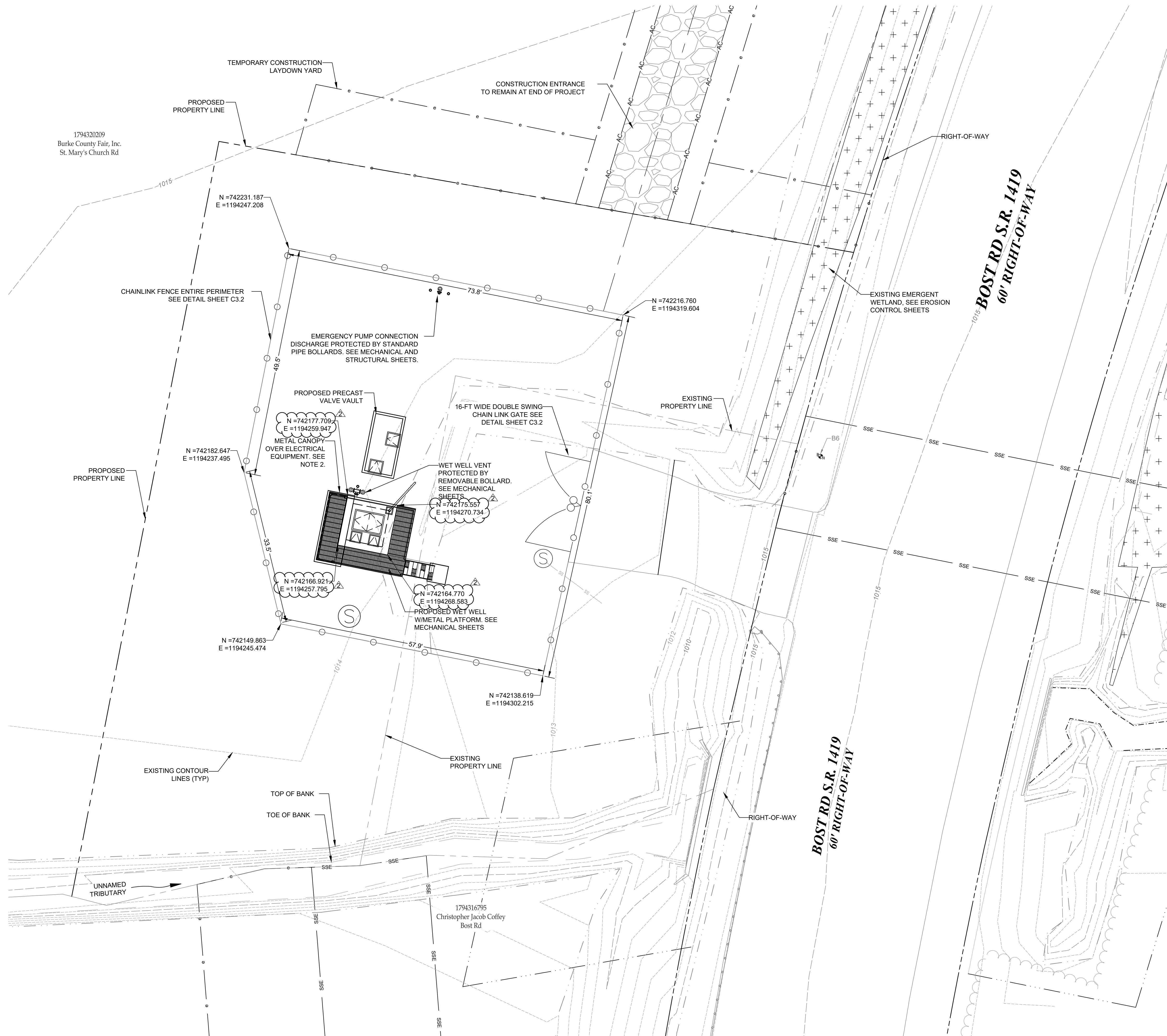
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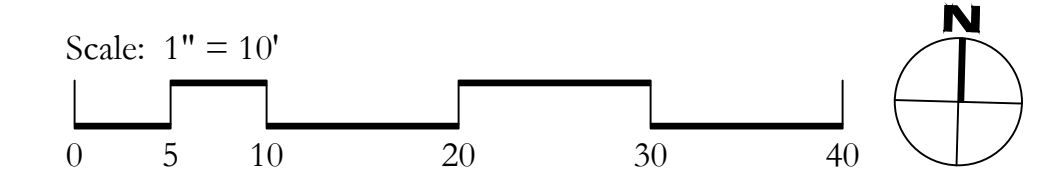
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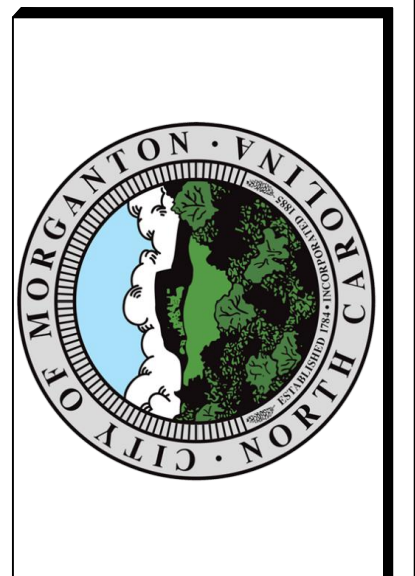


NOTES

- ELECTRICAL PANELS TO BE PLACED ON TOP OF METAL PLATFORM. SEE ELECTRICAL SHEETS FOR PLACEMENT AND DETAILS.
- METAL CANOPY TO PROVIDE SHADE AND COVERAGE FOR THE ELECTRICAL PANELS. SEE THE STRUCTURAL SHEETS FOR INSTALLATION OF THE CANOPY TO THE METAL PLATFORM.



MERRICK
 301 S. MCCOWELL STREET, SUITE 300
 NC ENGINEERING FIRM # 2008 PHONE: 704.520.6500
 THE SEAL AND OTHER ELECTRONIC MARK CONSTITUTE AN INSTRUMENT OF PROFESSIONAL SERVICE. IT IS THE RESPONSIBILITY OF THE ENGINEER TO BE CURRENT AND ACCURATE. THE ENGINEER SHALL BE RESPONSIBLE FOR THE QUALITY OF THE WORK AND SHALL NOT BE RESPONSIBLE FOR THE QUALITY OF THE WORK OF ANY OTHER PROFESSIONAL OR NON-PROFESSIONAL PERSONS WHOSE SERVICES ARE USED IN CONNECTION WITH THE PROJECT. THE ENGINEER SHALL BE RESPONSIBLE FOR THE QUALITY OF THE WORK AND SHALL NOT BE RESPONSIBLE FOR THE QUALITY OF THE WORK OF ANY OTHER PROFESSIONAL OR NON-PROFESSIONAL PERSONS WHOSE SERVICES ARE USED IN CONNECTION WITH THE PROJECT.



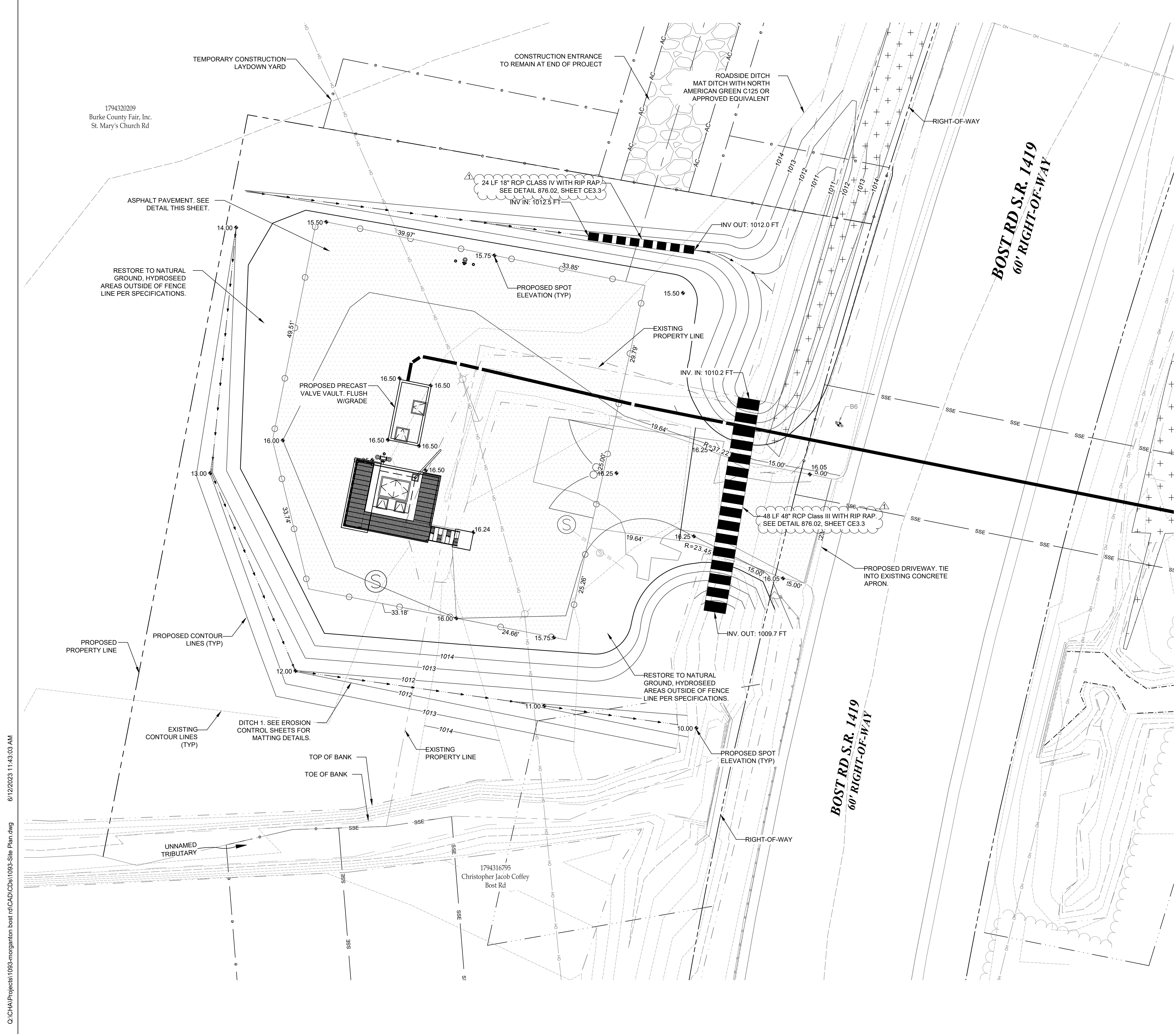
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SKD	11/30/22

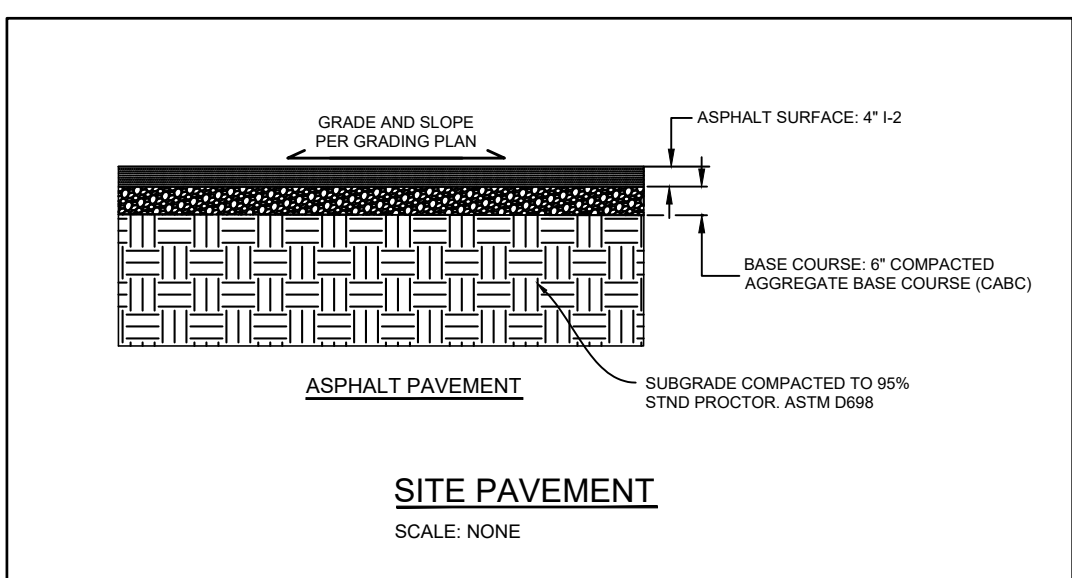
Bost Rd Sewer Improvements
 Morgantown, NC
Site Plan
Pump Station

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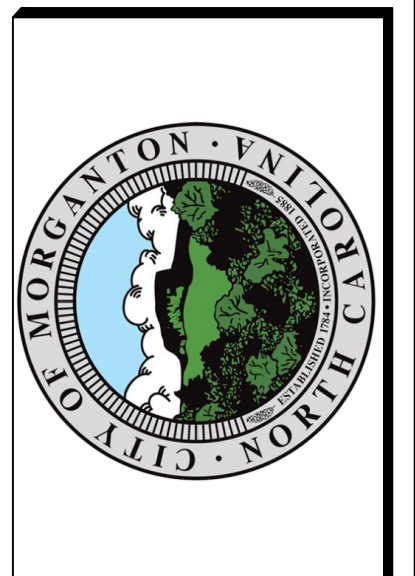
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- NOTES**
- CONTRACTOR TO SET UP TRAFFIC SAFETY MEASURES BEFORE BEGINNING DRIVEWAY WORK.
 - PROPOSED CONSTRUCTION LAYDOWN YARD MAY HAVE GRAVEL SURFACING INSTALLED DURING CONSTRUCTION AT CONTRACTOR'S EXPENSE. AFTER CONSTRUCTION, REMOVE GRAVEL AND RESTORE TO NATURAL GROUND, HYDROSEED PER SPECIFICATIONS.



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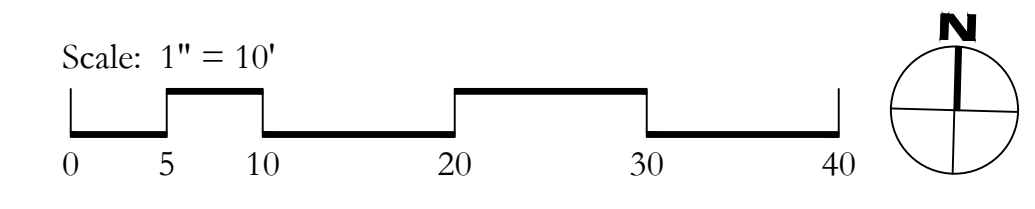
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Bost Rd Sewer Improvements
Morganton, NC

Paving and Grading Plan
Pump Station

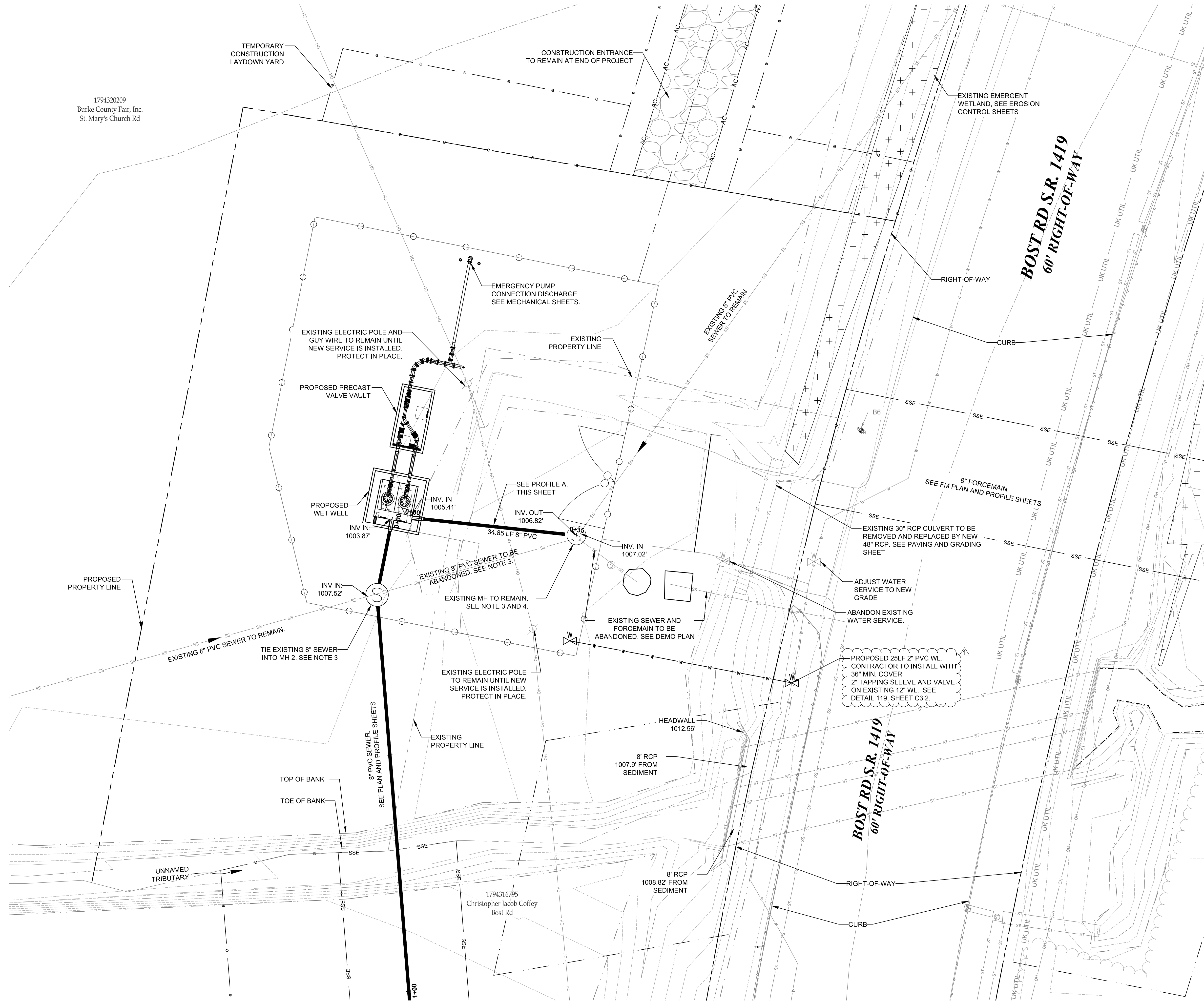
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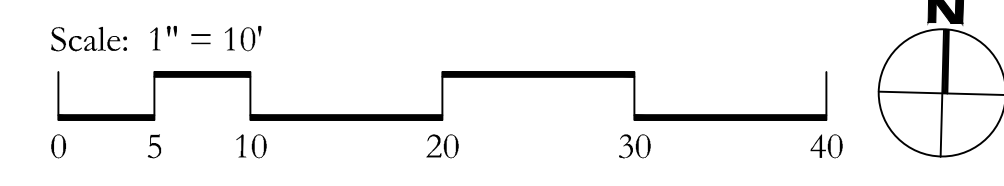
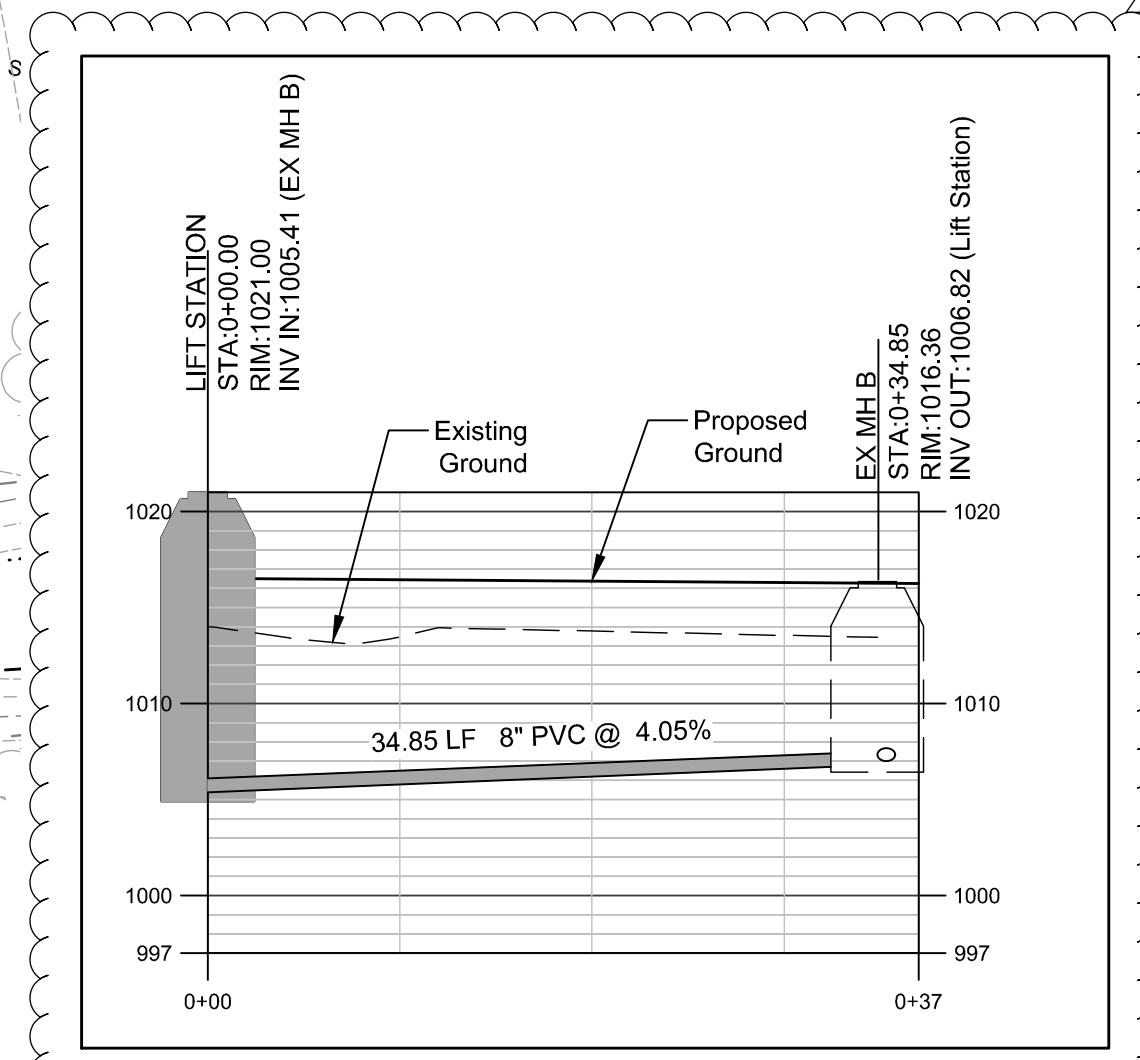
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Burke County Fair, Inc.
St. Mary's Church Rd

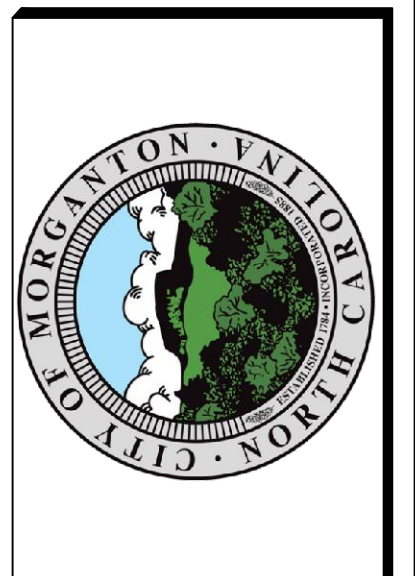


NOTES

- CONTRACTOR TO CONFIRM LOCATIONS AND DEPTHS OF ALL EXISTING UTILITIES IN THE FIELD.
- EXISTING SEWER AND PUMP STATION TO REMAIN IN SERVICE UNTIL CHANGE OVER OCCURS.
 - TESTING TO BE SUCCESSFULLY COMPLETED BEFORE CHANGE OVER CAN BEGIN. CHECK SEQUENCING SCHEDULE.
- EXISTING 8" PVC TO BE ABANDONED IN PLACE BETWEEN NEW MH 2 AND EXISTING MH. PLUG THIS SEGMENT WITH FLOW-FILL (CSLM, MAKE FLUSH WITH THE INNER WALL OF THE EXISTING MH TO REMAIN.
- CORE HOLE AND CONNECT NEW 8" PIPE TO THE EXISTING MH. RESHAPE THE BENCH AND FLOW CHANNEL TO SLOPE WITH A 0.2 FT DROP ACROSS THE MH, TOWARDS THE NEW LIFT STATION. ADJUST THE RIM ELEVATION FLUSH WITH FINISHED GRADE. WATER PROOF PER MORGANTON SPECIFICATIONS. SEE DETAIL SHEET.



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THIS AND ALL OTHER ELECTRONIC MEDIA CONVEYANCES ARE IN WITNESS WHEREOF, THE UNDERSIGNED HAS HEREBY CAUSED HIS SEAL AND SIGNATURE TO BE PLACED ON THIS PLAN AND SPECIFICATIONS. THE UNDERSIGNED HEREBY CERTIFIES THAT HE IS A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF NORTH CAROLINA AND IS NOT PROVIDING ENGINEERING SERVICES TO ANY OTHER PARTY WITHOUT THE WRITTEN CONSENT OF HIS EMPLOYER. THE UNDERSIGNED HAS NOT BEEN CONVICTED OF ANY CRIMINAL OFFENSES IN THE PAST TEN YEARS PRECEDING THE DATE OF THIS PLAN AND SPECIFICATIONS.



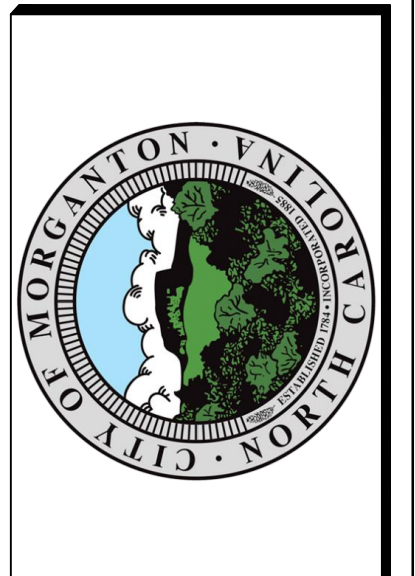
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RRH	05/05/22
DM	05/05/22
CHK	11/06/22
APPROVED BY:	SKD
	11/30/22

Bost Rd Sewer Improvements
Morganton, NC
Piping and Utilities Plan
Pump Station

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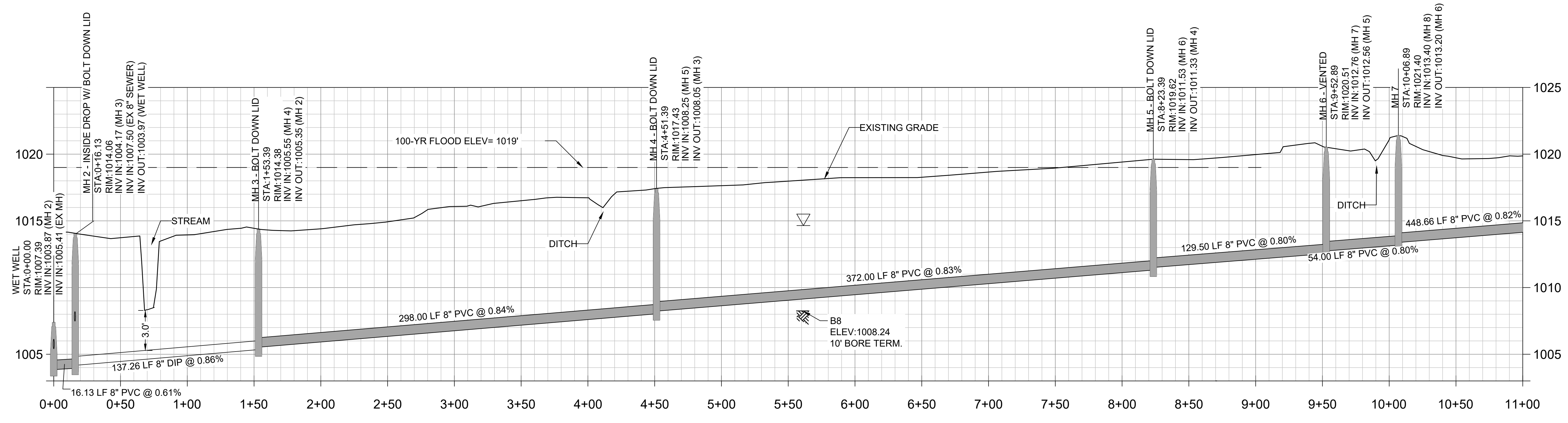
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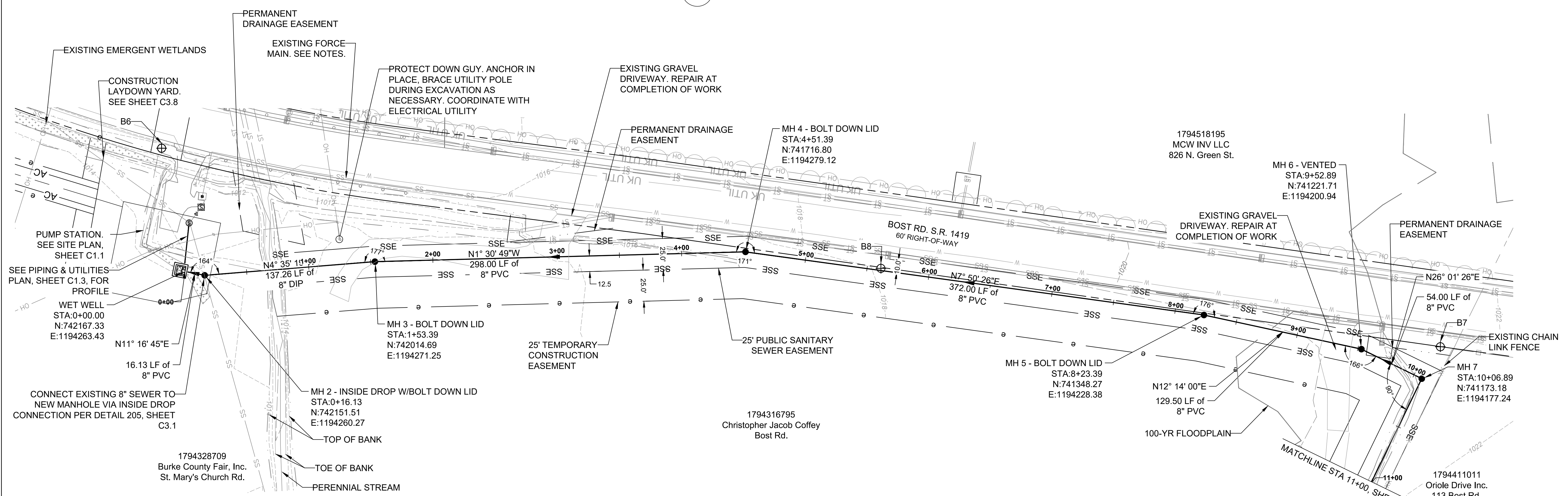
Bost Rd Sewer Improvements
 Morganton, NC
Gravity Sewer Plan & Profile
 STA 0+00 - 11+00

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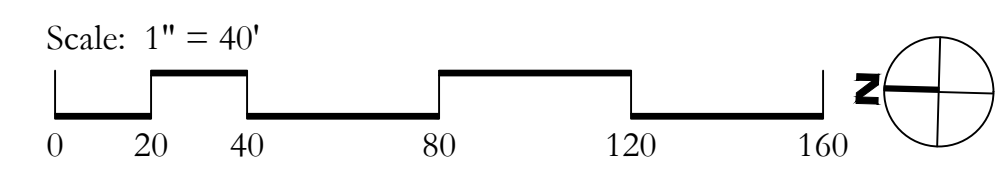
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1 PROFILE VIEW
 1" = 4' VERT.

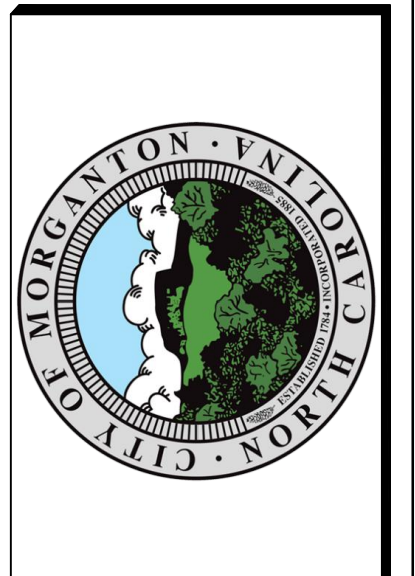


2 PLAN VIEW



- NOTES**
- FIELD VERIFY ELEVATION OF EXISTING UTILITIES BY POTHOLING PRIOR TO CONSTRUCTION. PROTECT IN PLACE. COORDINATE AND COMPLY WITH CROSSING AND INSPECTION REQUIREMENTS WITH UTILITY COMPANY
 - UTILITY CROSSINGS SHOWN AT ASSUMED ELEVATIONS
 - EXISTING 2" FORCEMAIN TO BE ABANDONED IN PLACE. FILL WITH FLOW-FILL (CLSM) AND CAP BOTH ENDS.
 - ALL 8" PVC GRAVITY SEWER PIPE SHALL BE ASTM D3034 PER SPECIFICATION 33 05 05.03
 - CONTRACTOR SHALL PROVIDE APPROPRIATE TRANSITION FITTINGS FOR CHANGES IN PIPE MATERIAL

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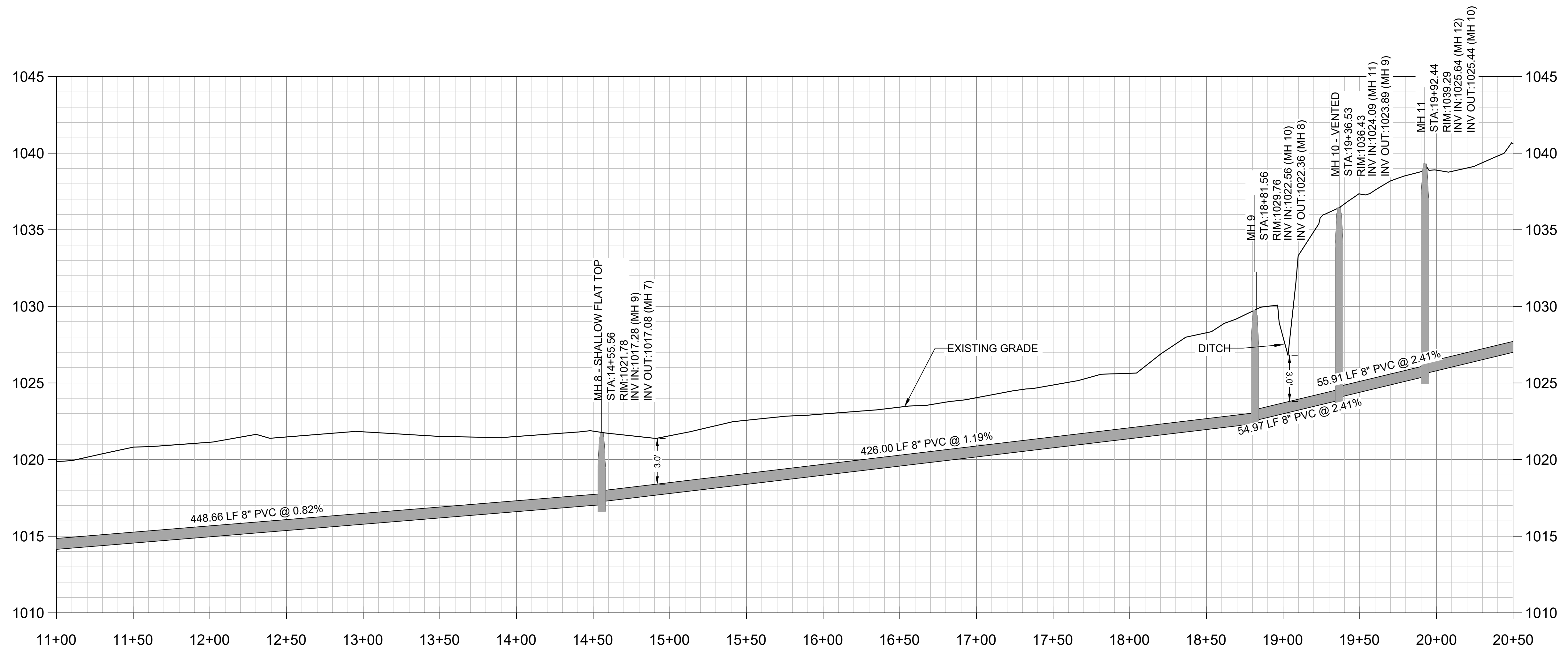
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Bost Rd Sewer Improvements
 Morganton, NC

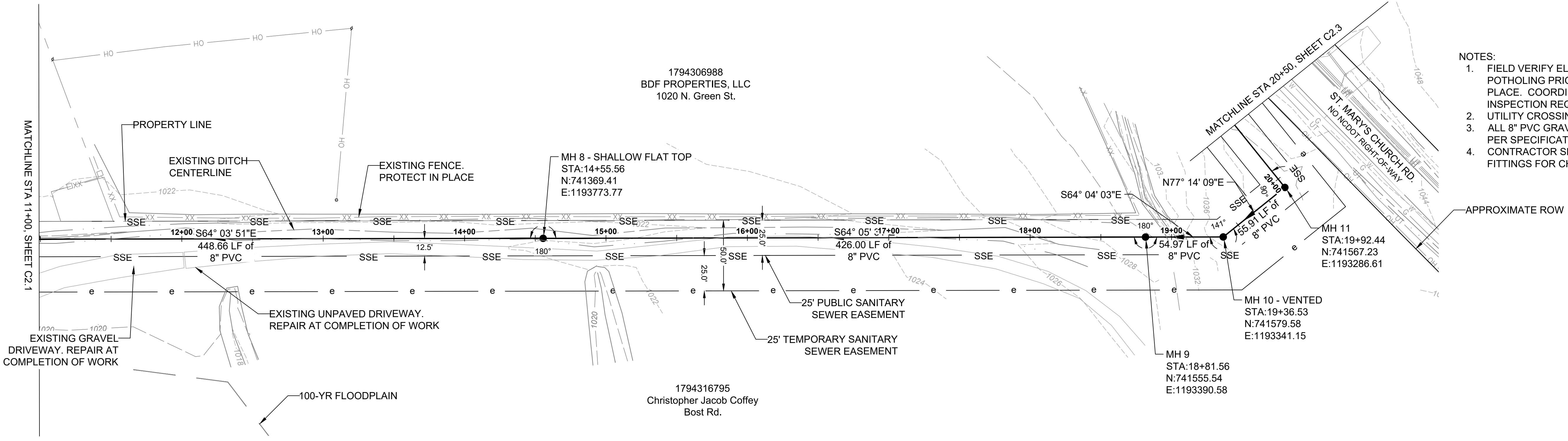
Gravity Sewer Plan & Profile
 STA 11+00 - 20+50

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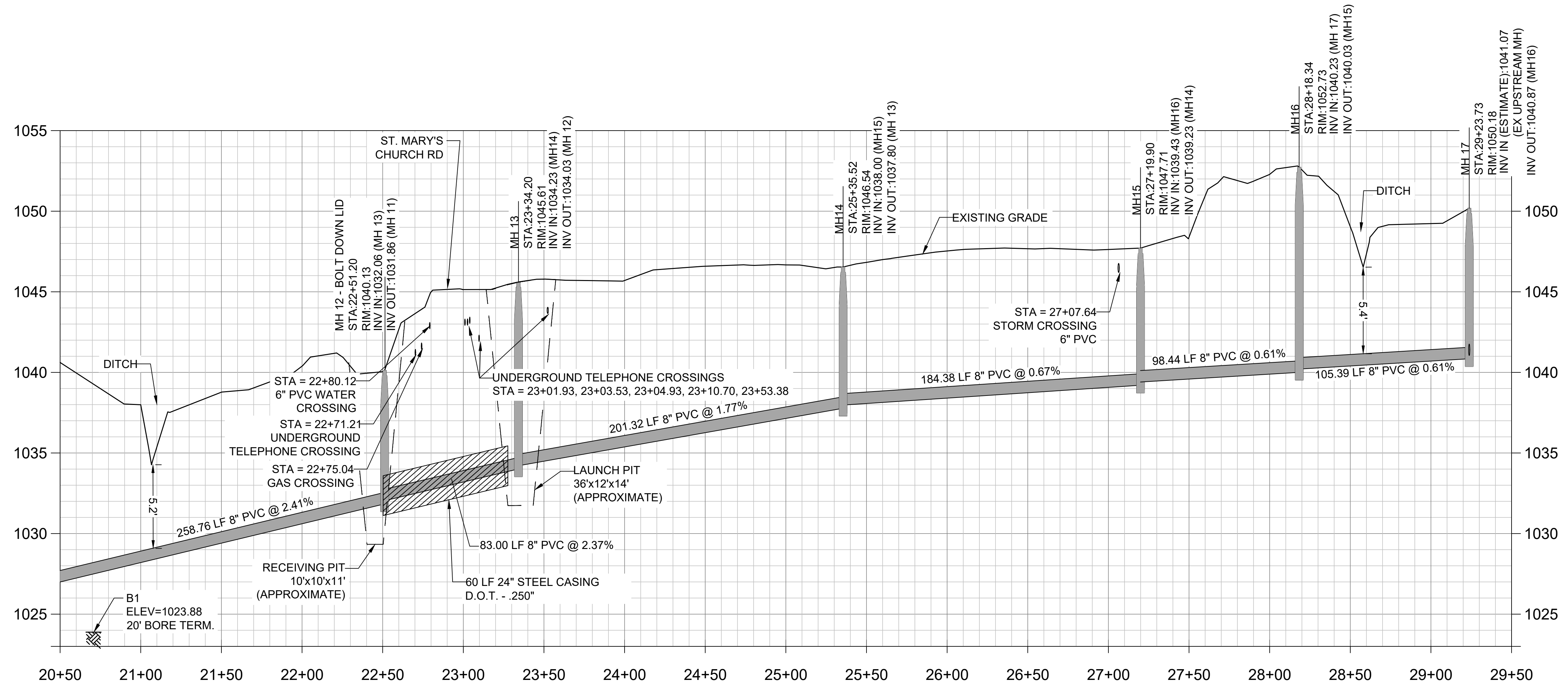
1 PROFILE VIEW
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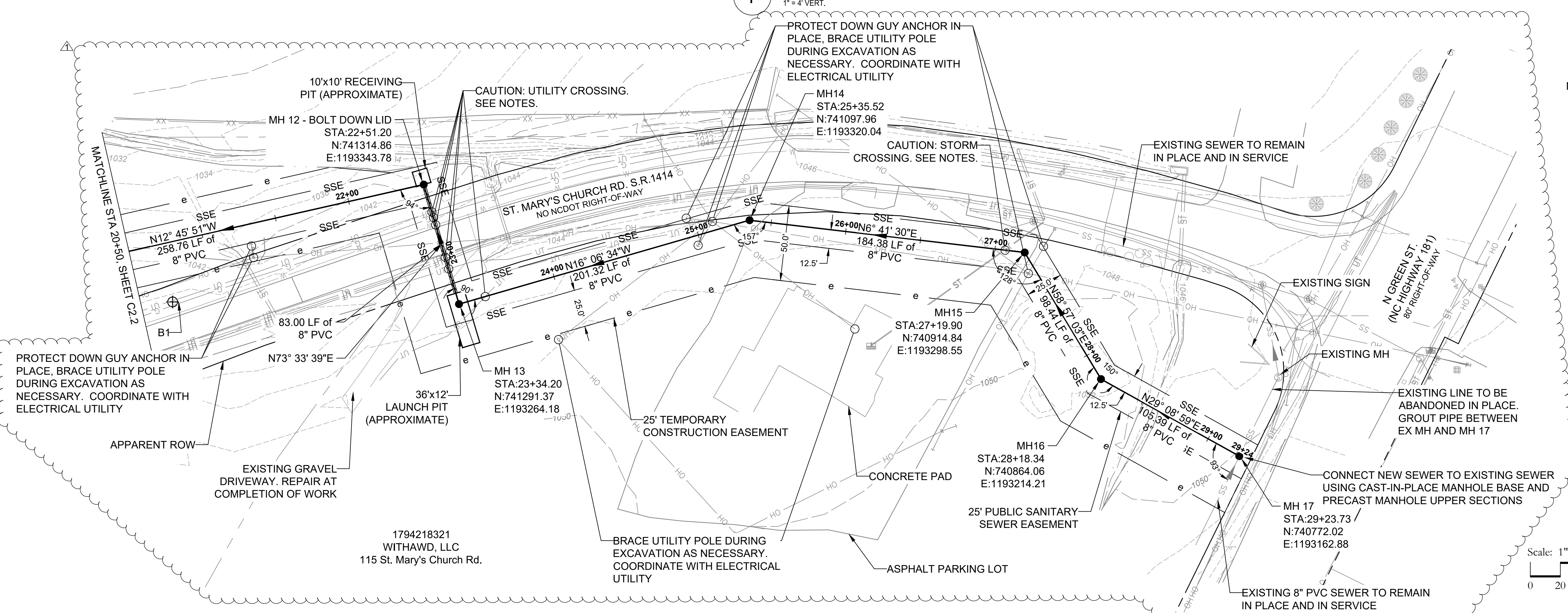
2 PLAN VIEW

- NOTES:**
1. FIELD VERIFY ELEVATION OF EXISTING UTILITIES BY POTHOLING PRIOR TO CONSTRUCTION. PROTECT IN PLACE. COORDINATE AND COMPLY WITH CROSSING AND INSPECTION REQUIREMENTS WITH UTILITY COMPANY
 2. UTILITY CROSSINGS SHOWN AT ASSUMED ELEVATIONS
 3. ALL 8" PVC GRAVITY SEWER PIPE SHALL BE ASTM D3034 PER SPECIFICATION 33 05 05.03
 4. CONTRACTOR SHALL PROVIDE APPROPRIATE TRANSITION FITTINGS FOR CHANGES IN PIPE MATERIAL

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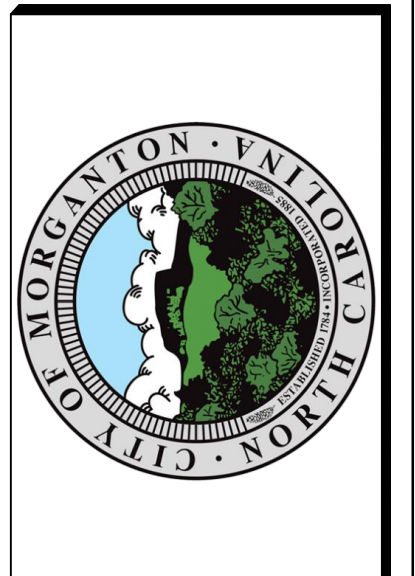
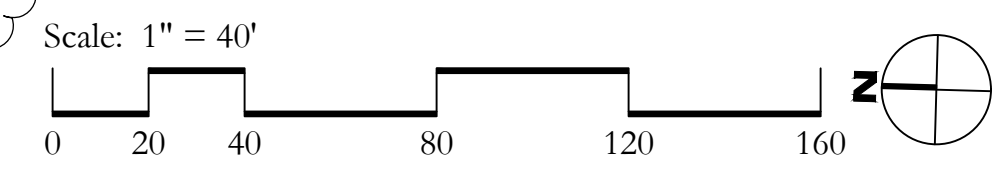


1 PROFILE VIEW
1" = 4' VERT.



2 PLAN VIEW

- NOTES:**
1. FIELD VERIFY ELEVATION OF EXISTING UTILITIES BY POTHOLING PRIOR TO CONSTRUCTION. PROTECT IN PLACE. COORDINATE AND COMPLY WITH CROSSING AND INSPECTION REQUIREMENTS WITH UTILITY COMPANY
 2. UTILITY CROSSINGS SHOWN AT ASSUMED ELEVATIONS
 3. CAUTION: WORK AREA INCLUDES OVERHEAD ELECTRIC LINES
 4. ROADWAY BORE NOTE: CONTRACTOR SHALL PROVIDE SHORING FOR ALL PITS ALONG ROADWAYS PER SPECIFICATIONS
 5. ALL 8" PVC GRAVITY SEWER PIPE SHALL BE ASTM D3034 PER SPECIFICATION 33 05 05.03
 6. CONTRACTOR SHALL PROVIDE APPROPRIATE TRANSITION FITTINGS FOR CHANGES IN PIPE MATERIAL



REV	REVISION DESCRIPTION	DATE	DESIGNED	CHECKED	APPROVED
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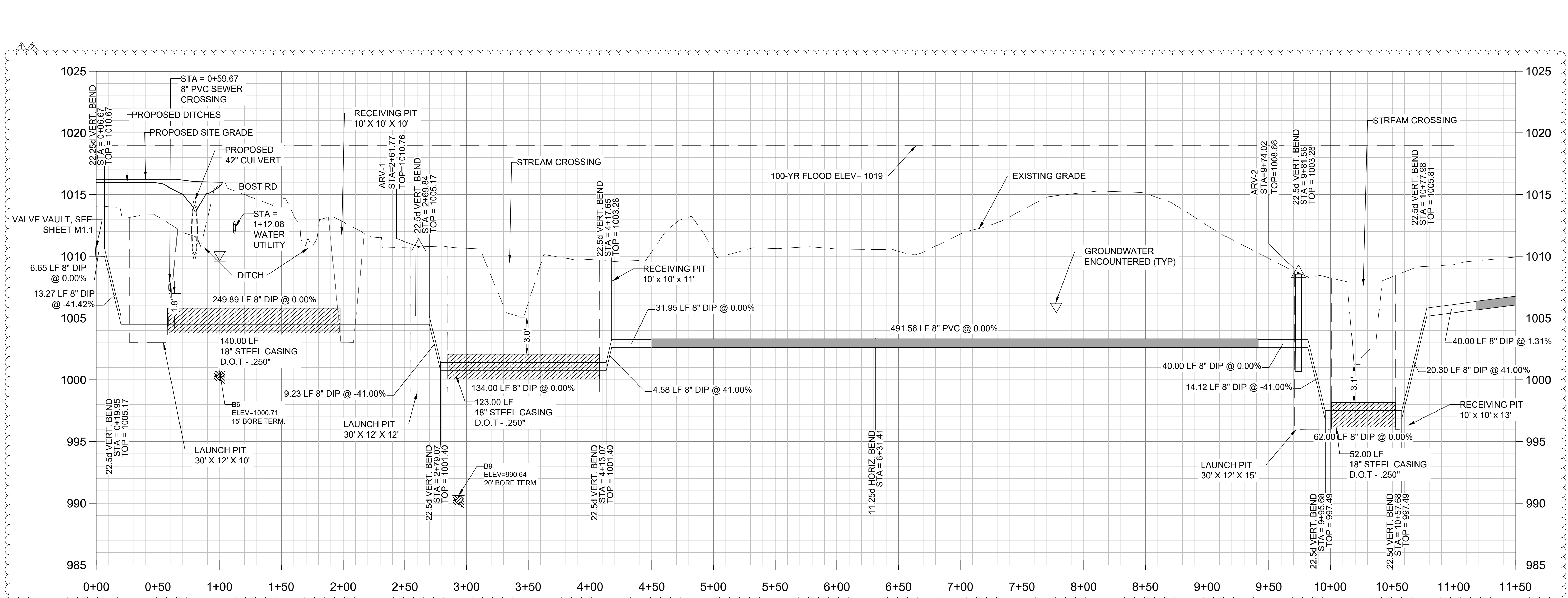
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Bost Rd Sewer Improvements
Morganton, NC
Gravity Sewer Plan & Profile
STA 20+50 - END

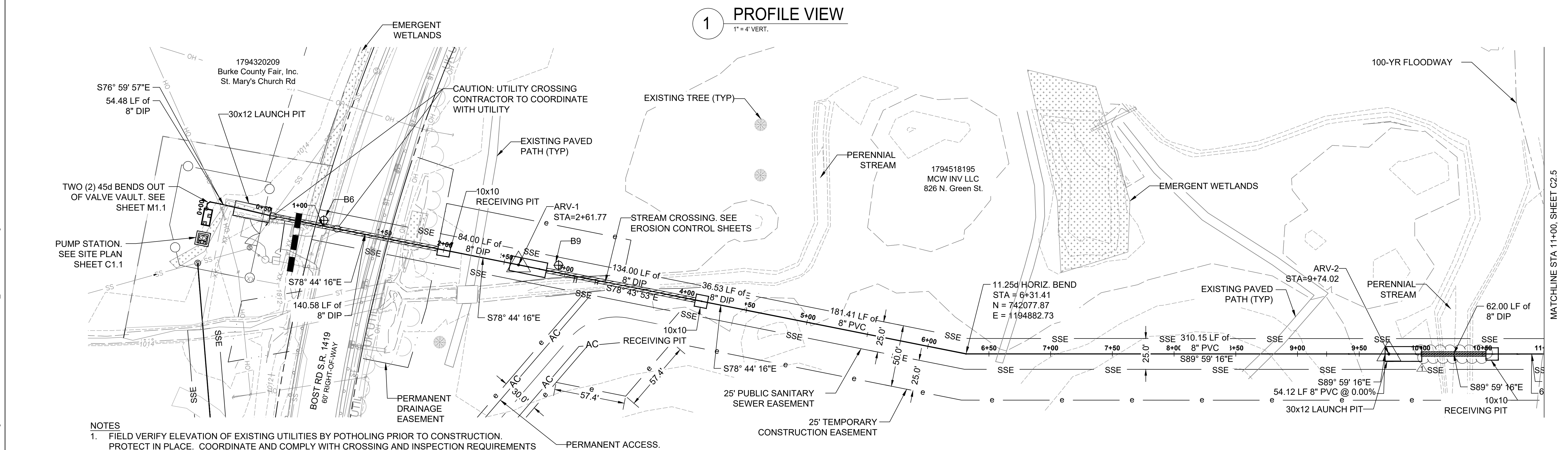
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CONSTRUCTION**

JOB NO: 65421093
DATE: 05/04/23
SHEET: C2.3

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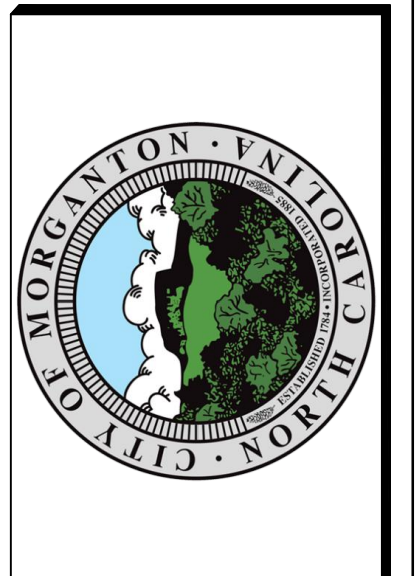
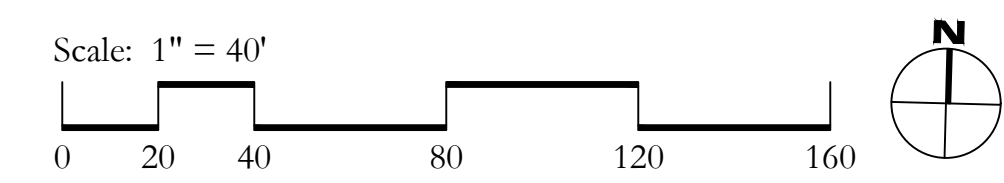


1 PROFILE VIEW
1" = 4' VERT.



2 PLAN VIEW

- NOTES**
1. FIELD VERIFY ELEVATION OF EXISTING UTILITIES BY POTHOLING PRIOR TO CONSTRUCTION. PROTECT IN PLACE. COORDINATE AND COMPLY WITH CROSSING AND INSPECTION REQUIREMENTS WITH UTILITY COMPANY
 2. ROADWAY BORE NOTE: CONTRACTOR SHALL PROVIDE SHORING FOR ALL PITS ALONG ROADWAYS PER SPECIFICATIONS
 3. AREA CONTAINS INTERMITTENT VEGETATION NOT SHOWN FOR CLARITY
 4. ALL JOINTS SHALL BE FULLY RESTRAINED AGAINST THRUST
 5. ALL 8" PVC FORCE MAIN SEWER PIPE SHALL BE C-900 PER SPECIFICATION 33 05 05.01
 6. CONTRACTOR SHALL PROVIDE APPROPRIATE TRANSITION FITTINGS FOR CHANGES IN PIPE MATERIAL



REVISIONS	DATE	BY	DESCRIPTION
1	06/06/22	MM	100% review comments 1
2	06/06/22	MM	100% review comments 2

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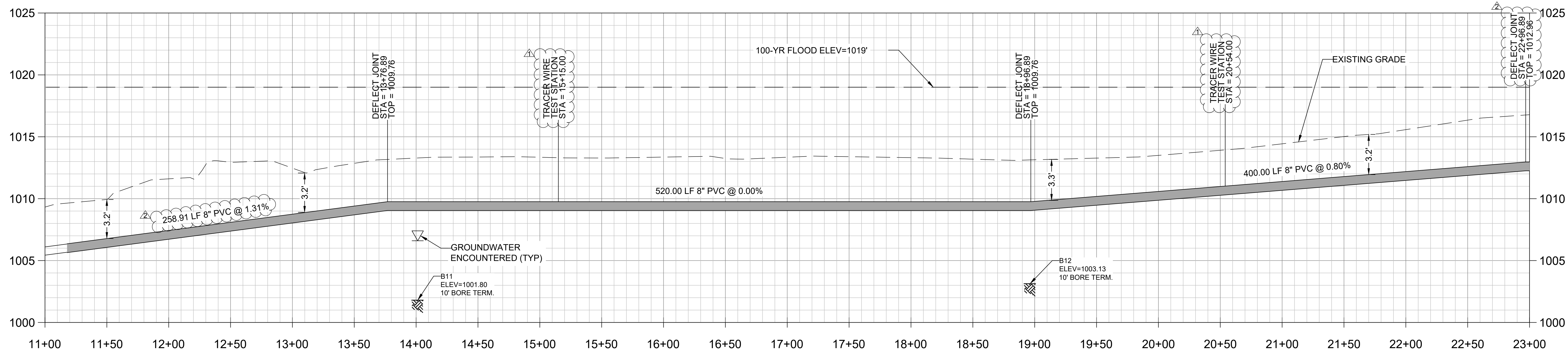
Bost Rd Sewer Improvements
Morganton, NC

Force Main Plan & Profile
STA 0+00 - 11+00

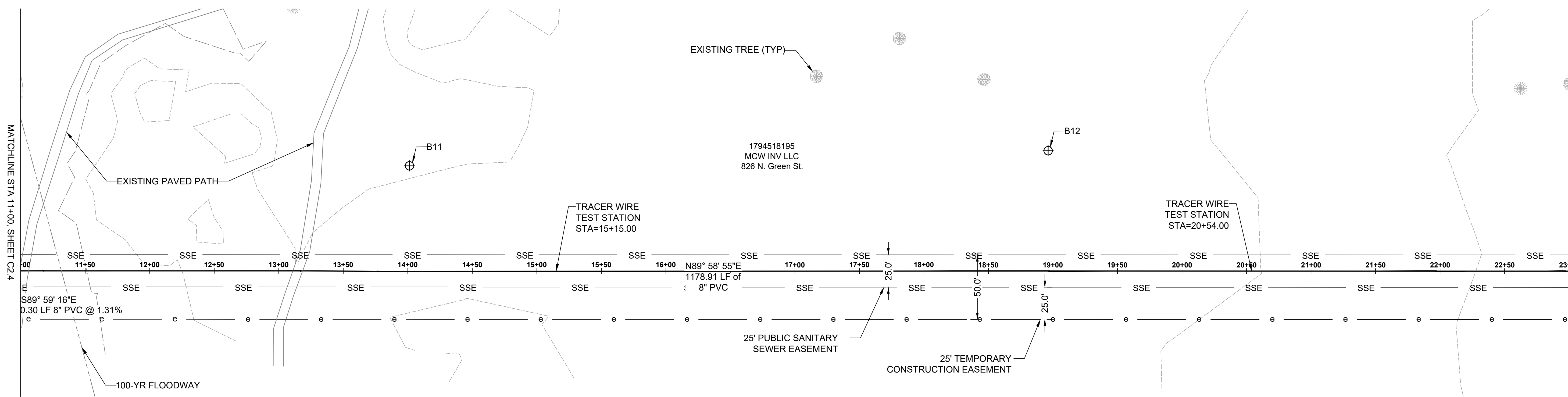
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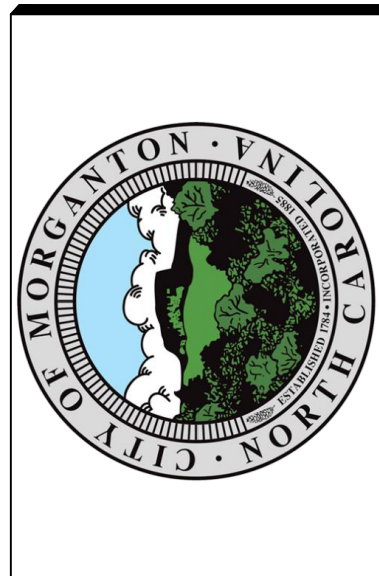
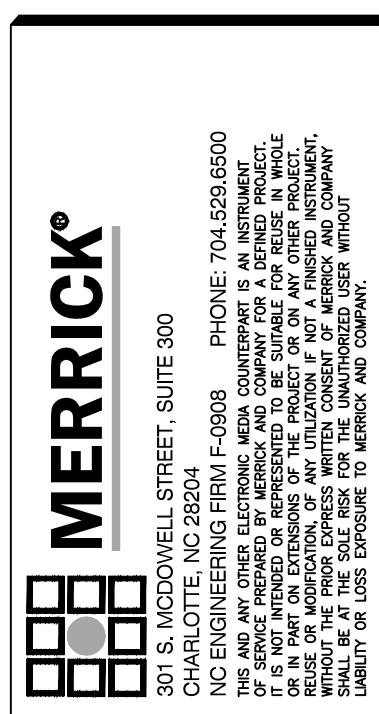
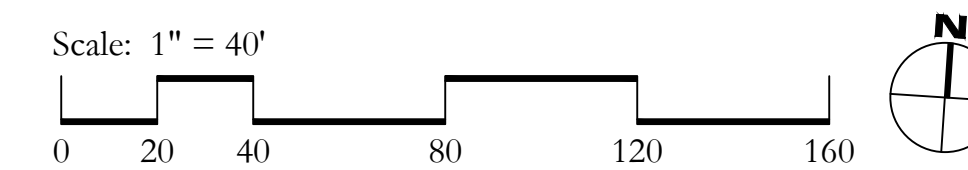


1 PROFILE VIEW
1" = 4' VERT.



2 PLAN VIEW

- NOTES**
1. AREA CONTAINS INTERMITTENT VEGETATION NOT SHOWN FOR CLARITY
 2. ALL JOINTS SHALL BE FULLY RESTRAINED AGAINST THRUST
 3. ALL 8" PVC FORCE MAIN SEWER PIPE SHALL BE C-900 PER SPECIFICATION 33 05 05.01
 4. CONTRACTOR SHALL PROVIDE APPROPRIATE TRANSITION FITTINGS FOR CHANGES IN PIPE MATERIAL



REV	REVISION DESCRIPTION	DATE	DESIGNED	CHECKED	APPROVED
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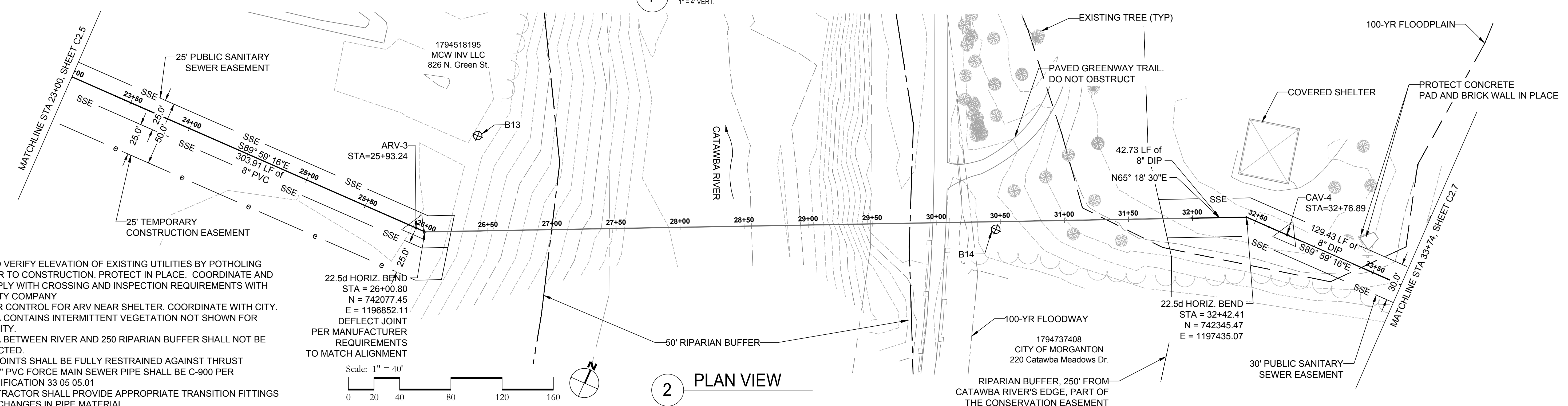
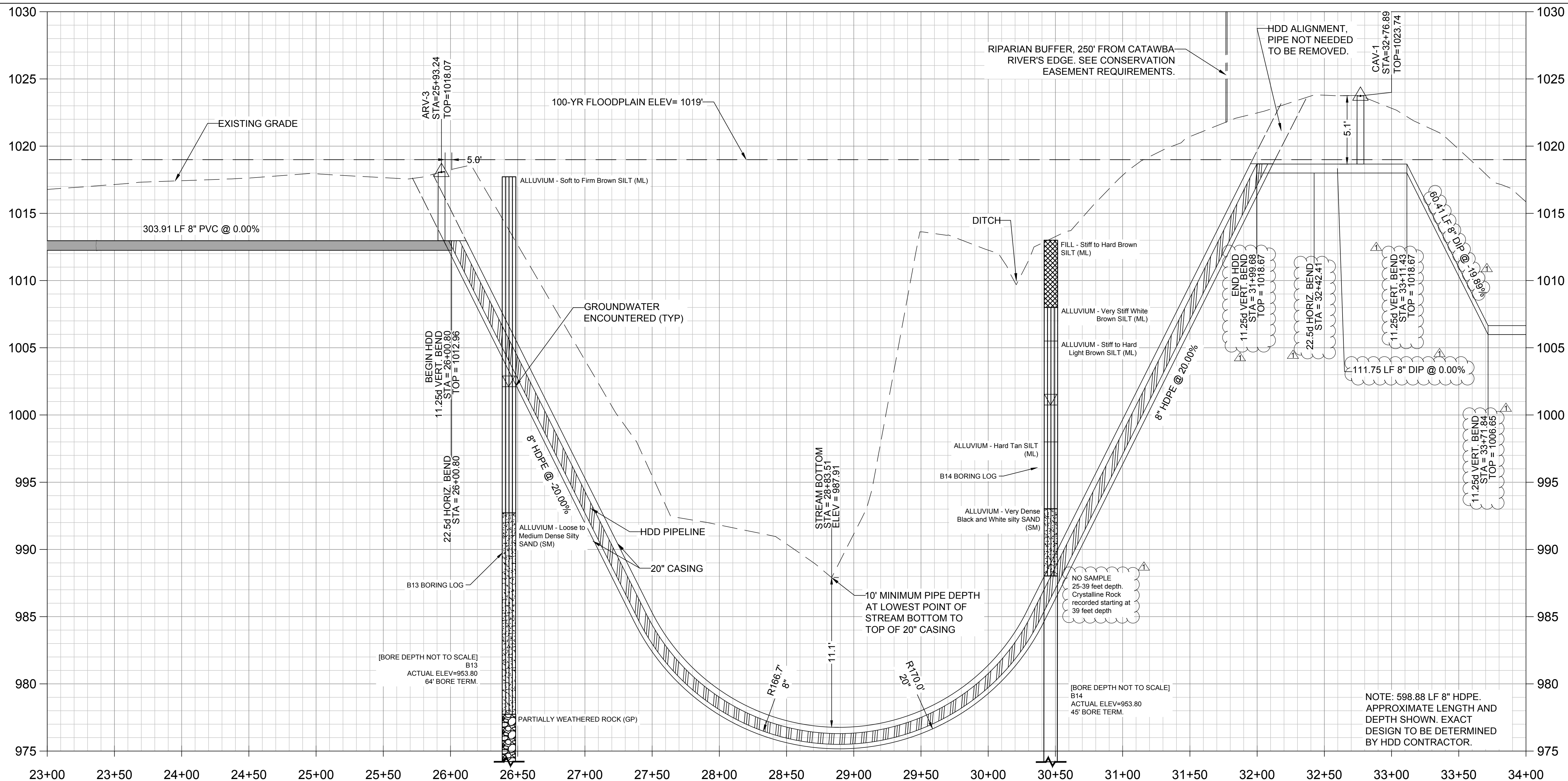
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APPROVED BY:	DATE:
SKD	11/30/22

Bost Rd Sewer Improvements
Morganton, NC
Force Main Plan & Profile
STA 11+00 - 23+00

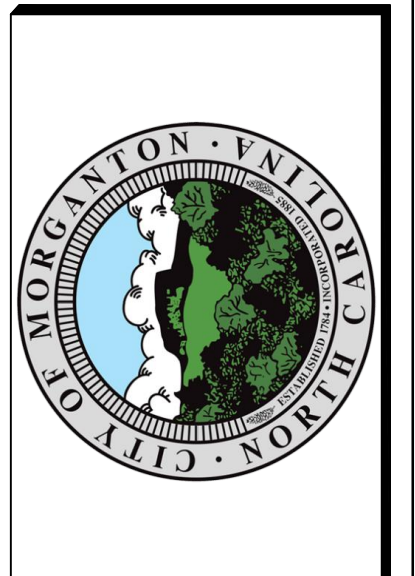
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CONSTRUCTION**

JOB NO: 65421093
DATE: 05/04/23
SHEET **C2.5**

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- NOTES**
1. FIELD VERIFY ELEVATION OF EXISTING UTILITIES BY POTHOLING PRIOR TO CONSTRUCTION. PROTECT IN PLACE. COORDINATE AND COMPLY WITH CROSSING AND INSPECTION REQUIREMENTS WITH UTILITY COMPANY
 2. ODOR CONTROL FOR ARV NEAR SHELTER. COORDINATE WITH CITY.
 3. AREA CONTAINS INTERMITTENT VEGETATION NOT SHOWN FOR CLARITY.
 4. AREA BETWEEN RIVER AND 250 RIPARIAN BUFFER SHALL NOT BE IMPACTED.
 5. ALL JOINTS SHALL BE FULLY RESTRAINED AGAINST THRUST
 6. ALL 8" PVC FORCE MAIN SEWER PIPE SHALL BE C-900 PER SPECIFICATION 33 05 05.01
 7. CONTRACTOR SHALL PROVIDE APPROPRIATE TRANSITION FITTINGS FOR CHANGES IN PIPE MATERIAL



REVISIONS	DATE	BY	DESCRIPTION
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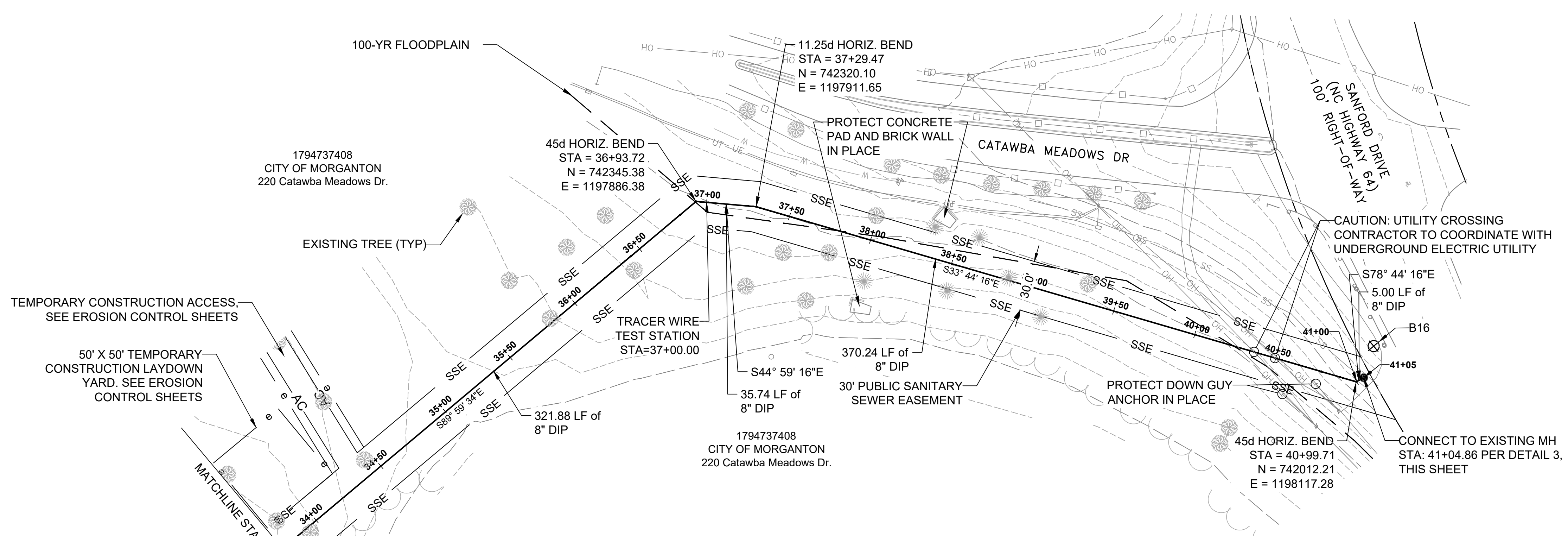
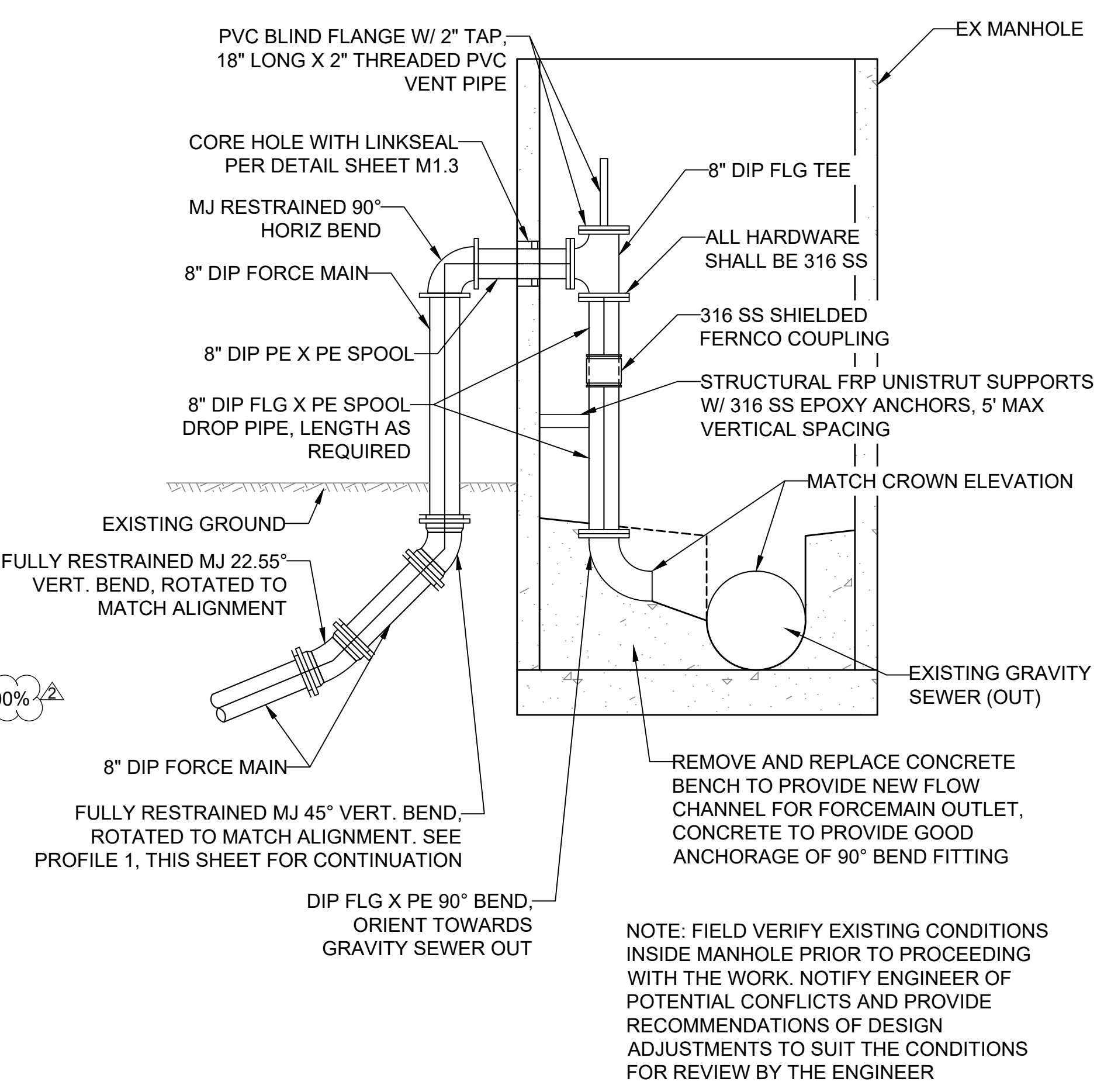
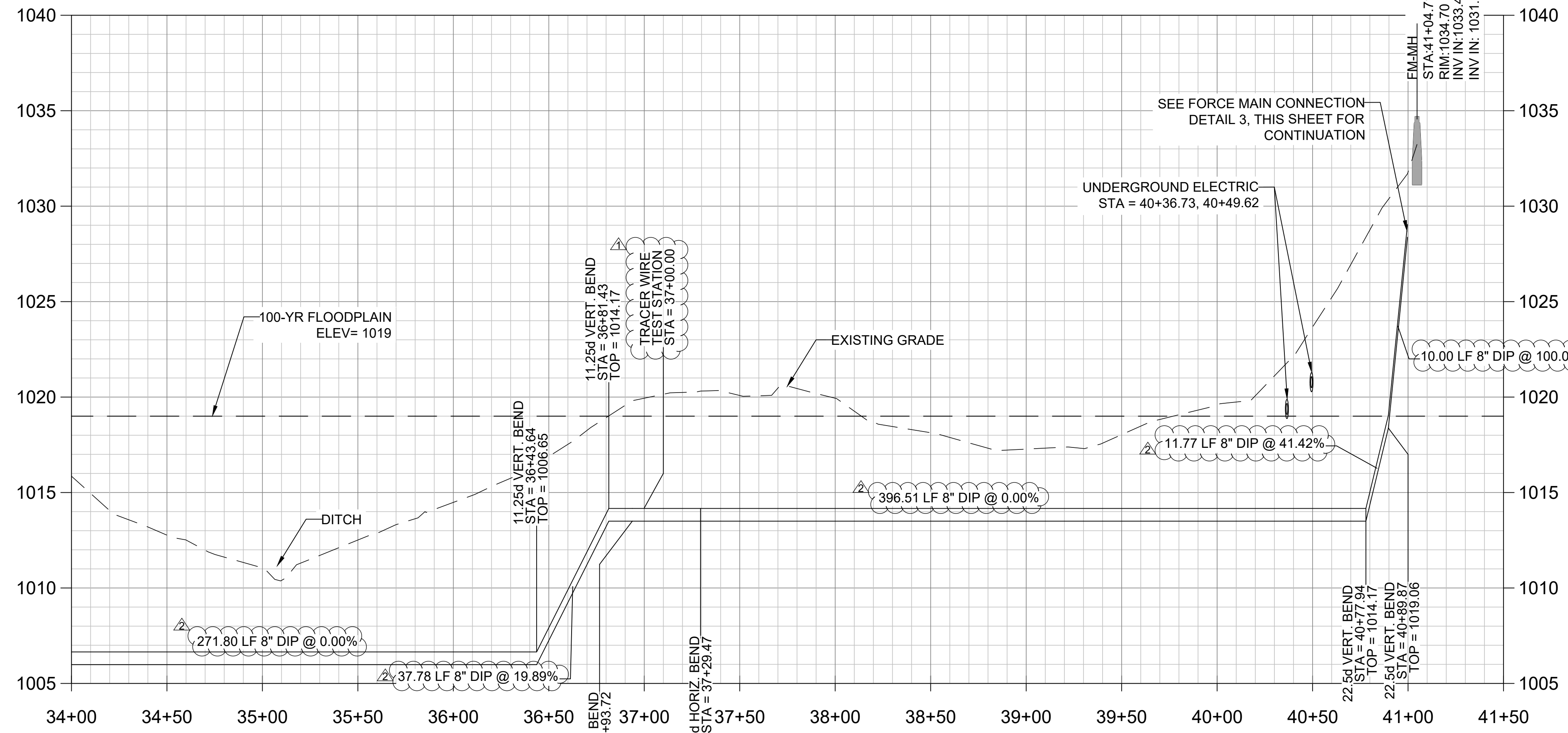
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Bost Rd Sewer Improvements
Morganton, NC

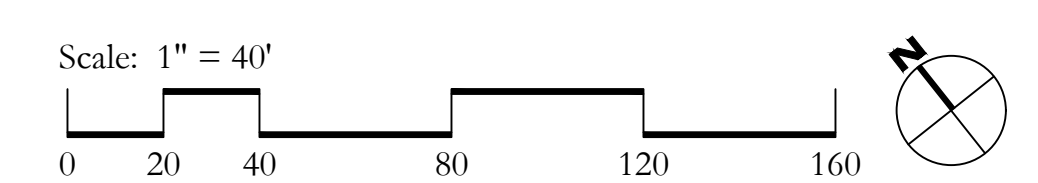
Force Main Plan & Profile
STA 23+00 - 33+74

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CONSTRUCTION**

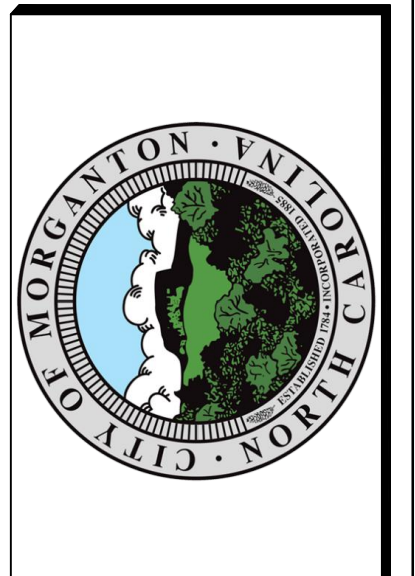
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DATE: 05/04/23
SHEET: C2.6



- NOTES**
1. FIELD VERIFY ELEVATION OF EXISTING UTILITIES BY POTHOLING PRIOR TO CONSTRUCTION. PROTECT IN PLACE. COORDINATE AND COMPLY WITH CROSSING AND INSPECTION REQUIREMENTS WITH UTILITY COMPANY
 2. FIELD VERIFY DEPTH REQUIRED TO CORE HOLE INTO EXISTING MANHOLE BELOW EXISTING CONE SECTION. DO NOT CORE THROUGH EXISTING MANHOLE JOINT LINES
 3. CAUTION: WORK AREA INCLUDES OVERHEAD ELECTRIC LINES
 4. AREA CONTAINS INTERMITTENT VEGETATION NOT SHOWN FOR CLARITY
 5. ALL JOINTS SHALL BE FULLY RESTRAINED AGAINST THRUST FOR CLARITY
 6. ALL 8" PVC FORCE MAIN SEWER PIPE SHALL BE C-900 PER SPECIFICATION 33 05 05.01
 7. CONTRACTOR SHALL PROVIDE APPROPRIATE TRANSITION FITTINGS FOR CHANGES IN PIPE MATERIAL



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REVISIONS:	DATE:	BY:	DESCRIPTION:
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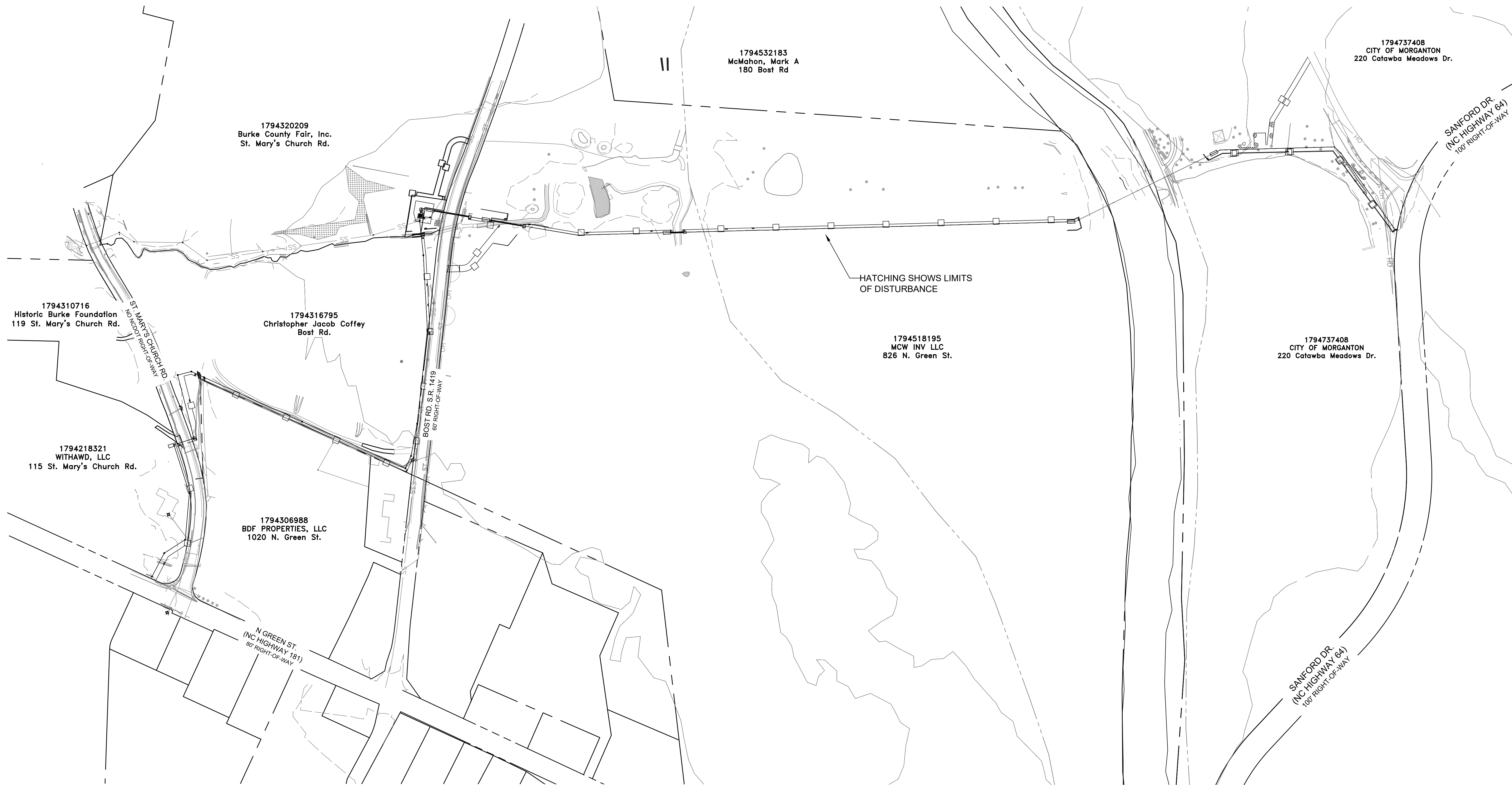
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DMH	11/16/23	DMH	SKD
DMH	11/16/23	DMH	SKD

Bost Rd Sewer Improvements
 Morganton, NC
Force Main Plan & Profile
STA 33+74 - END

**FINAL DESIGN - 100%
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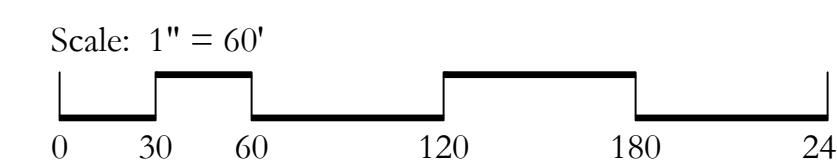
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 SHEET: C2.7

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NOTES:

1. PROJECT IS LOCATED WITHIN THE CATAWBA RIVER BASIN, WS-IV CLASSIFICATION.
2. LIMITS OF DISTURBANCE ARE OUTLINED BY TEMPORARY, PERMANENT, AND ACCESS EASEMENT LINE TYPES.
3. THE GRAY HATCHED AREA IN THE PLAN REPRESENT THE FULL LIMITS OF DISTURBANCE FOR THIS PROJECT
4. 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.
5. ADDITIONAL AREAS OUTSIDE THE EXISTING ACCESS ROADS MUST BE SUBMITTED TO NC DEQ REGIONAL OFFICE FOR REVIEW AND APPROVAL.
6. ALL LAYDOWN YARDS AND AREAS USED FOR STOCKPILE OR SPOIL STORAGE MUST BE ENCLOSED BY A TEMPORARY SILT FENCE.



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100% review comments	6/7/23	DMH	SHD

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DRAWN BY:	DMH	06/06/22	
CHECKED BY:	ECH	11/09/22	
APPROVED BY:	SHD	11/30/22	

Bost Rd Sewer Improvements
 Morganton, NC
Site Plan
Erosion Control

**FINAL DESIGN - 100%
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JOB NO: 65421093
 DATE: 05/04/23
 SHEET: CE.1

REVISIONS	DATE	BY	DESCRIPTION

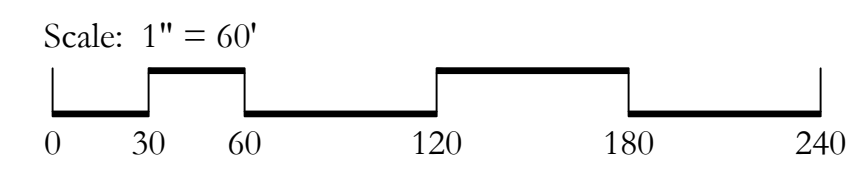
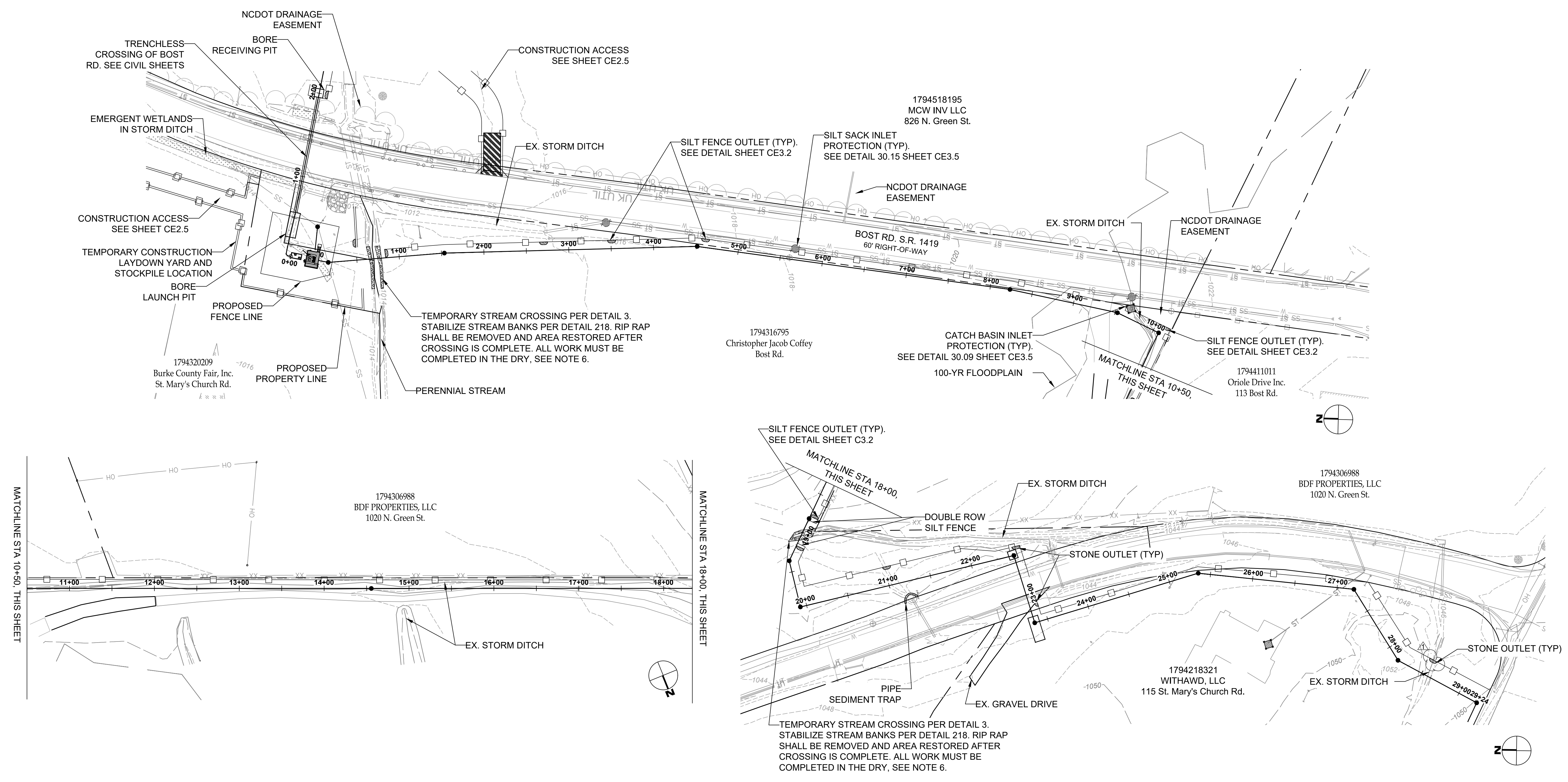
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REVISIONS	DATE	BY	DESCRIPTION

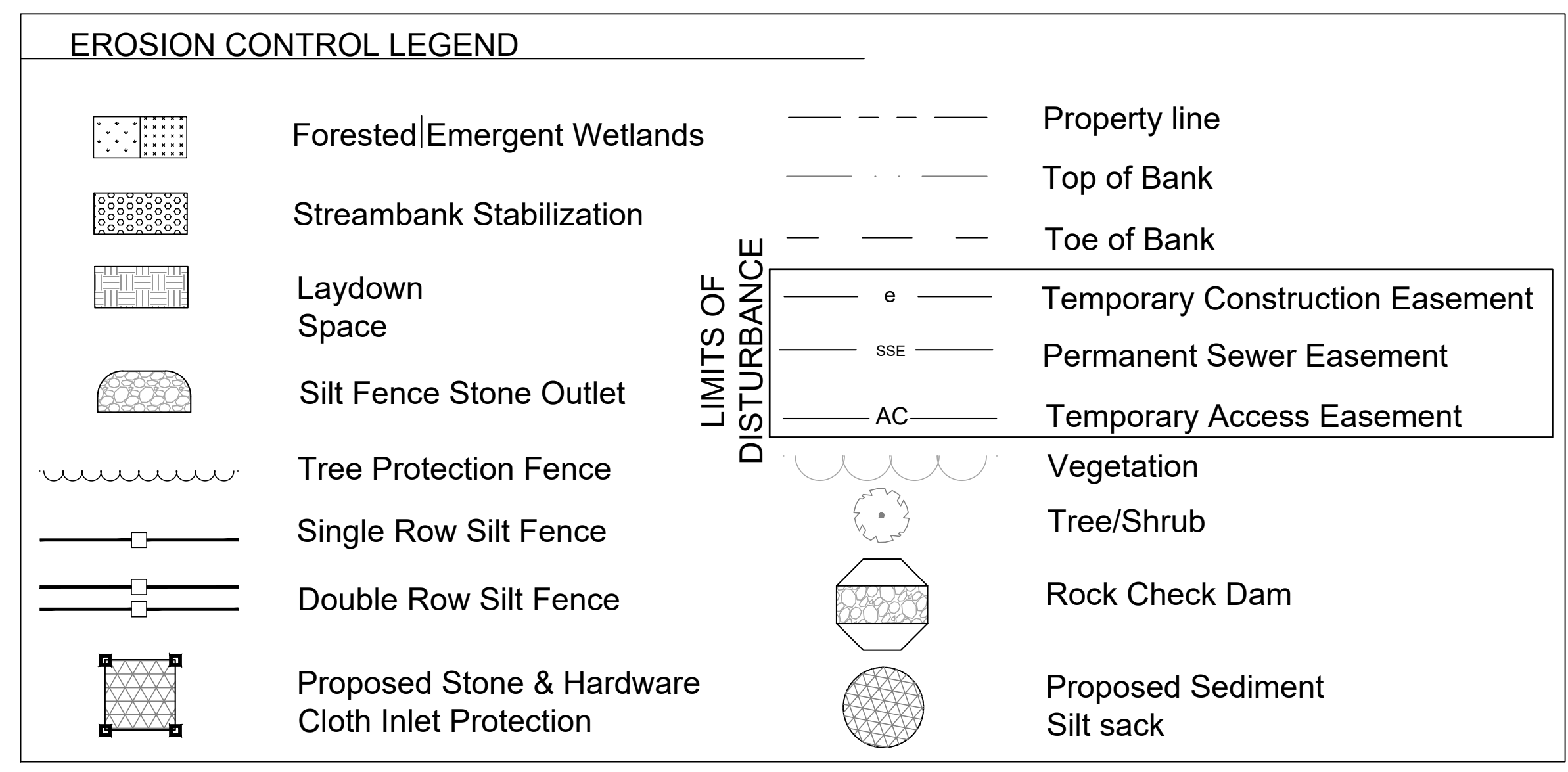
Bost Rd Sewer Improvements
 Morganton, NC
Gravity Sewer Erosion Control

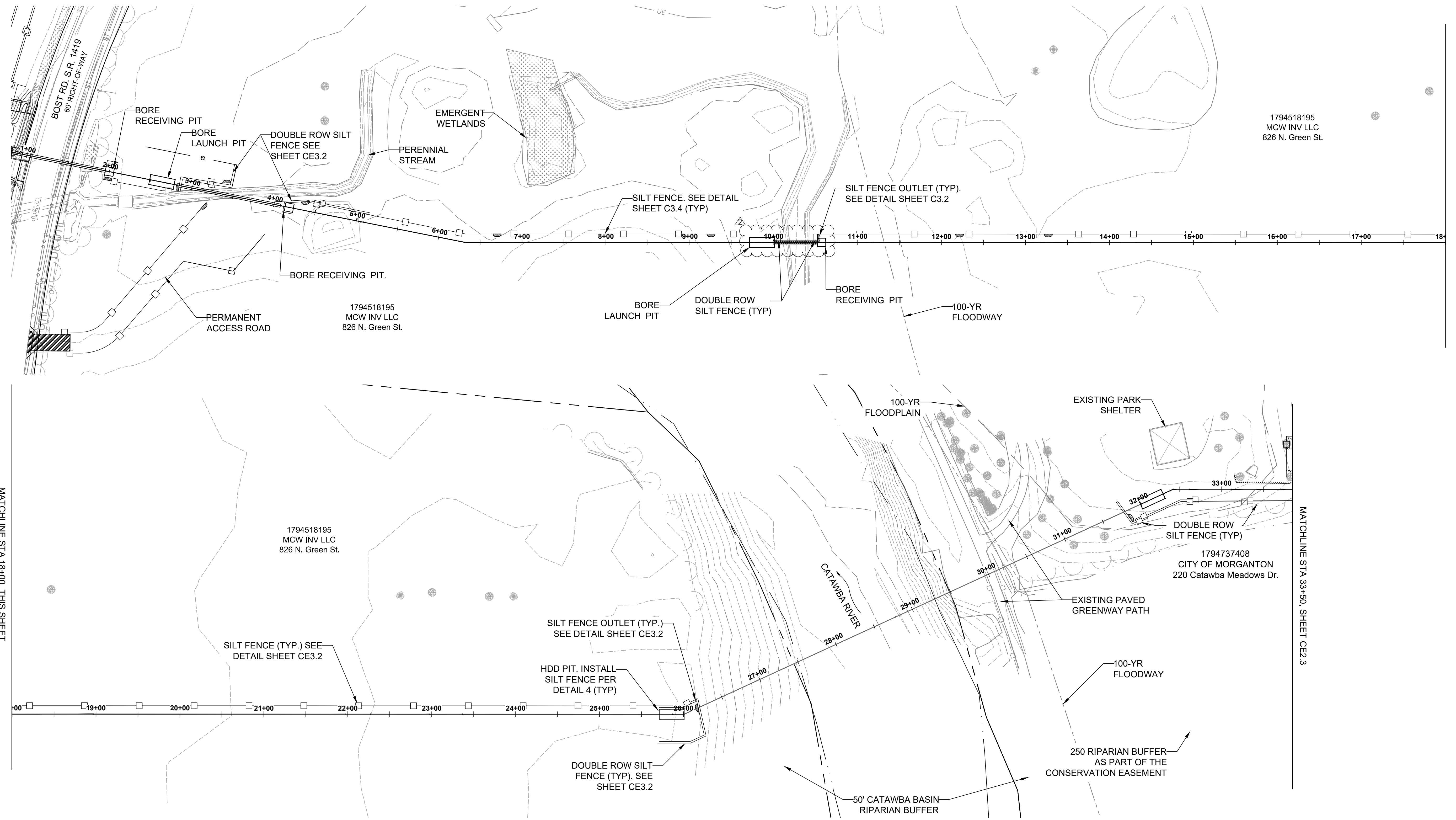
**FINAL DESIGN - 100%
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 CONSTRUCTION**

JOB NO: 65421093
 DATE: 05/04/23
 SHEET: CE2.2



- Notes**
1. Polyacrylamides (PAM) shall be used to reduce turbidity and suspended solids whenever 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.
 3. 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.





MATCHLINE STA 18+00, THIS SHEET

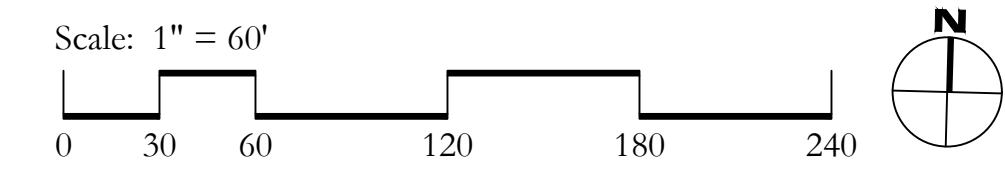
MATCHLINE STA 18+00, THIS SHEET

MATCHLINE STA 33+50, SHEET CE2.3

EROSION CONTROL LEGEND

	Forested Emergent Wetlands		Property line
	Streambank Stabilization		Top of Bank
	Laydown Space		Toe of Bank
	Silt Fence Stone Outlet		Temporary Construction Easement
	Tree Protection Fence		Permanent Sewer Easement
	Single Row Silt Fence		Temporary Access Easement
	Double Row Silt Fence		Vegetation
	Proposed Stone & Hardware Cloth Inlet Protection		Tree/Shrub
			Rock Check Dam
			Proposed Sediment Silt sack

1. Polyacrylamides (PAM) shall be used to reduce turbidity and suspended solids whenever 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.
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CHECKED BY:	ECR	11/06/22
APPROVED BY:	SKD	11/30/22

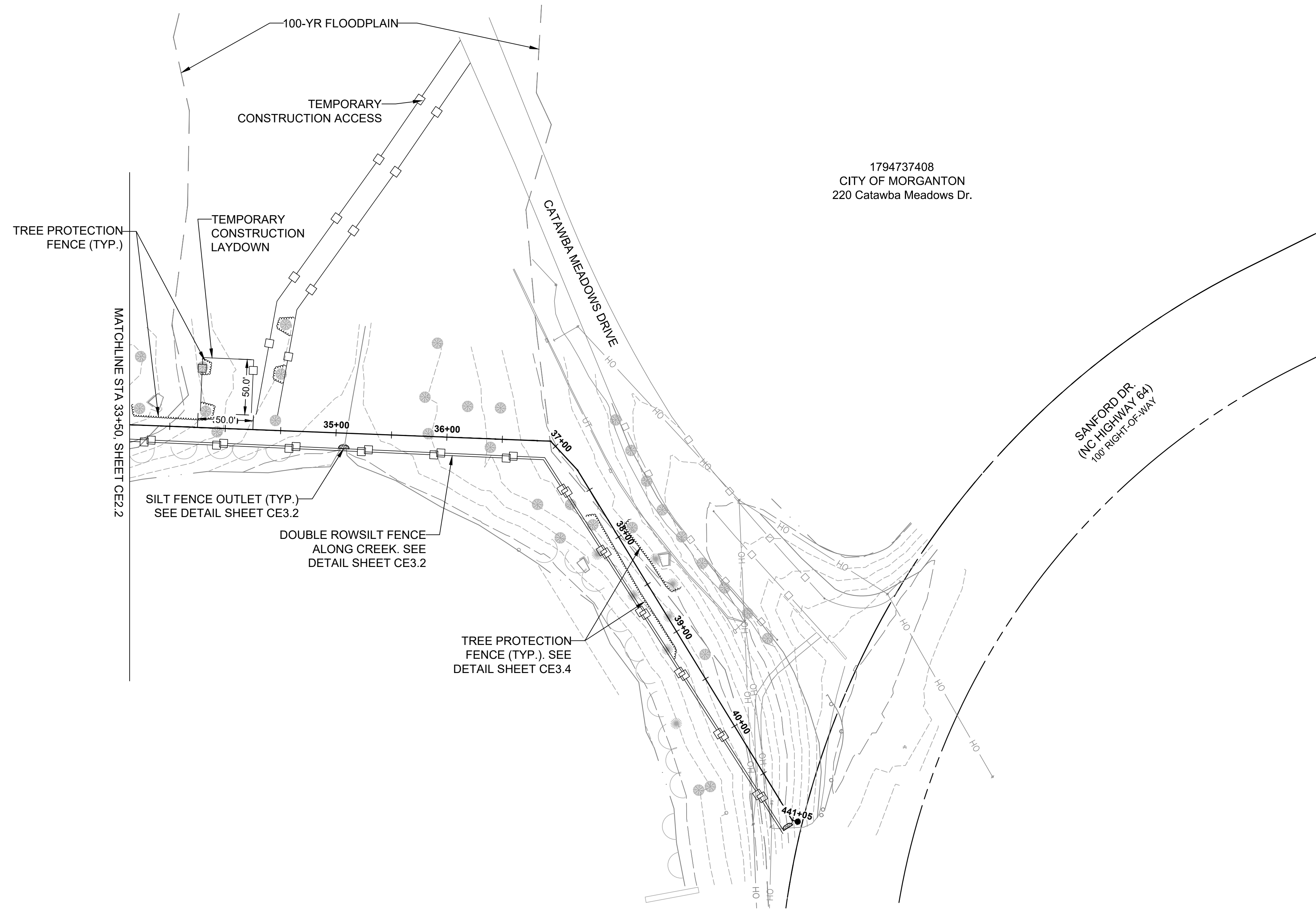
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100% review comments 2	6/12/23	DMW	SKD

DATE:	06/06/22
DESIGN BY:	BRH
DRAWN BY:	DMW
CHECKED BY:	ECR
APPROVED BY:	SKD

Bost Rd Sewer Improvements
 Morganton, NC
Force Main Erosion Control

**FINAL DESIGN - 100%
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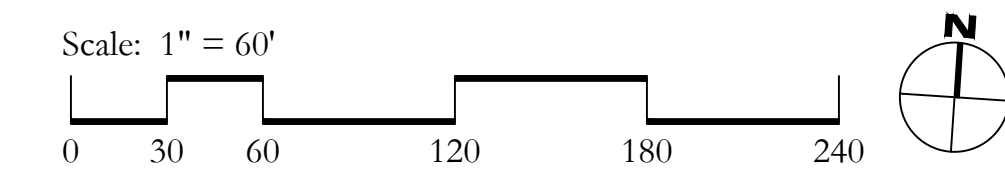
JOB NO:	65421093
DATE:	05/04/23
SHEET:	CE2.3



1794737408
CITY OF MORGANTON
220 Catawba Meadows Dr.

EROSION CONTROL LEGEND	
	Forested/Emergent Wetlands
	Streambank Stabilization
	Laydown Space
	Silt Fence Stone Outlet
	Tree Protection Fence
	Single Row Silt Fence
	Double Row Silt Fence
	Proposed Stone & Hardware Cloth Inlet Protection
	Property line
	Top of Bank
	Toe of Bank
	Temporary Construction Easement
	Permanent Sewer Easement
	Temporary Access Easement
	Vegetation
	Tree/Shrub
	Rock Check Dam
	Proposed Sediment Silt sack

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 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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100% review comments 1	6/7/23	DMM	SKD
100% review comments 2	6/12/23	DMM	SKD

DESIGN BY:	DATE:
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DRAWN BY:	DATE:
DMM	06/06/22
CHECKED BY:	DATE:
ECH	11/09/22
APPROVED BY:	DATE:
SKD	11/30/22

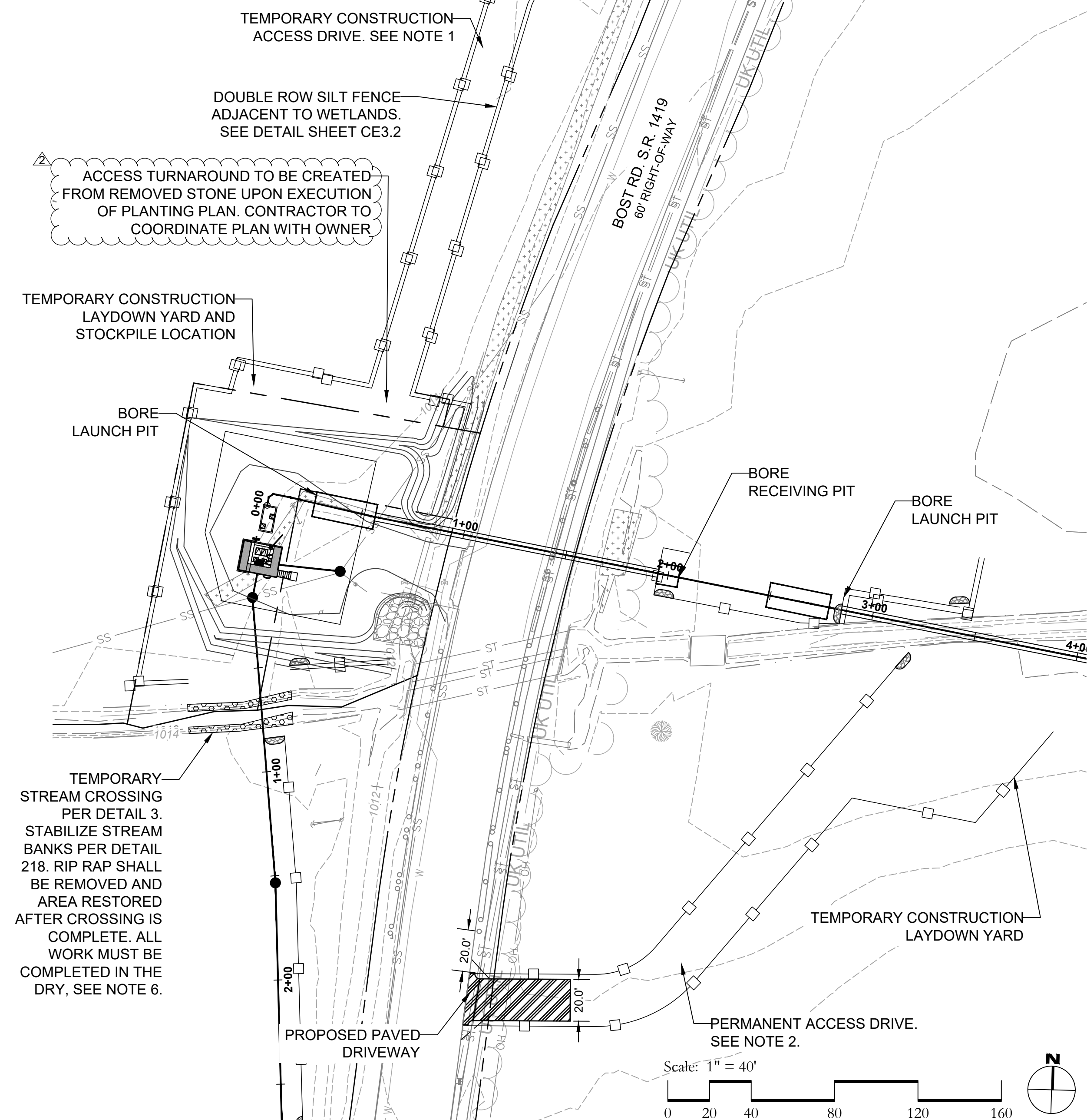
Bost Rd Sewer Improvements
Morganton, NC
Force Main Erosion Control

FINAL DESIGN - 100% RELEASED FOR CONSTRUCTION

JOB NO: 65421093
DATE: 05/04/23
SHEET: **CE.4**

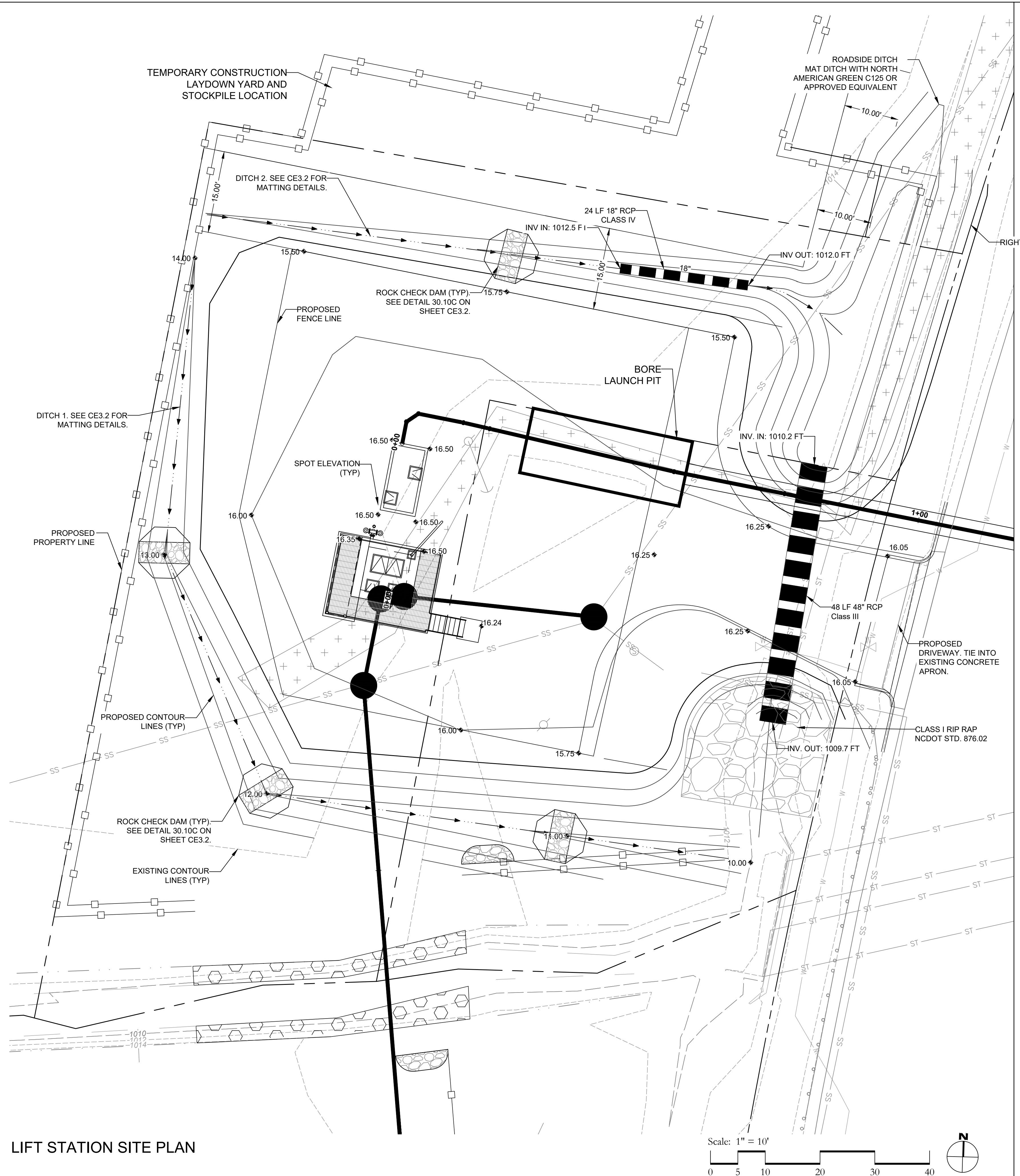
ACCESS DRIVE NOTES:

1. TEMPORARY CONSTRUCTION ACCESS DRIVE TO REMAIN AT END OF PROJECT AND TRANSFERRED TO PROPERTY OWNER.
2. PERMANENT ACCESS DRIVE TO BE INSTALLED AND MAINTAINED BY CITY OF MORGANTON. DRIVEWAY PERMIT TO BE ACQUIRED.
3. ACCESS LIMITED TO THE CONSTRUCTION ACCESS. IF CONTRACTOR WISHES TO USE THE EXISTING DRIVE THEY MUST SUBMIT DETAIL FOR SEDIMENT TRACK AND OBTAIN PRIOR APPROVAL FROM ENGINEER.
4. DO NOT IMPACT ANY WETLANDS OUTSIDE OF THE LIMIT OF DISTURBANCE



Notes

1. Polyacrylamides (PAM) shall be used to reduce turbidity and suspended solids whenever 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.
3. 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.



LIFT STATION SITE PLAN

MERRICK
 301 S. MCCOY STREET, SUITE 300
 MORGANTON, NC 28650
 PHONE: 704.529.8500
 FAX: 704.529.8501
 MERRICK AND OTHER REGISTERED PROFESSIONAL ENGINEERS ARE LICENSED IN THE STATE OF NORTH CAROLINA. MERRICK AND OTHER REGISTERED PROFESSIONAL ENGINEERS ARE LICENSED IN THE STATE OF NORTH CAROLINA. MERRICK AND OTHER REGISTERED PROFESSIONAL ENGINEERS ARE LICENSED IN THE STATE OF NORTH CAROLINA.

REVISIONS:	DATE:	BY:	DESCRIPTION:
100% review comments 1	06/06/22	BRH	
100% review comments 2	06/06/22	DMW	
	11/09/22	ECH	
	11/30/22	SKC	

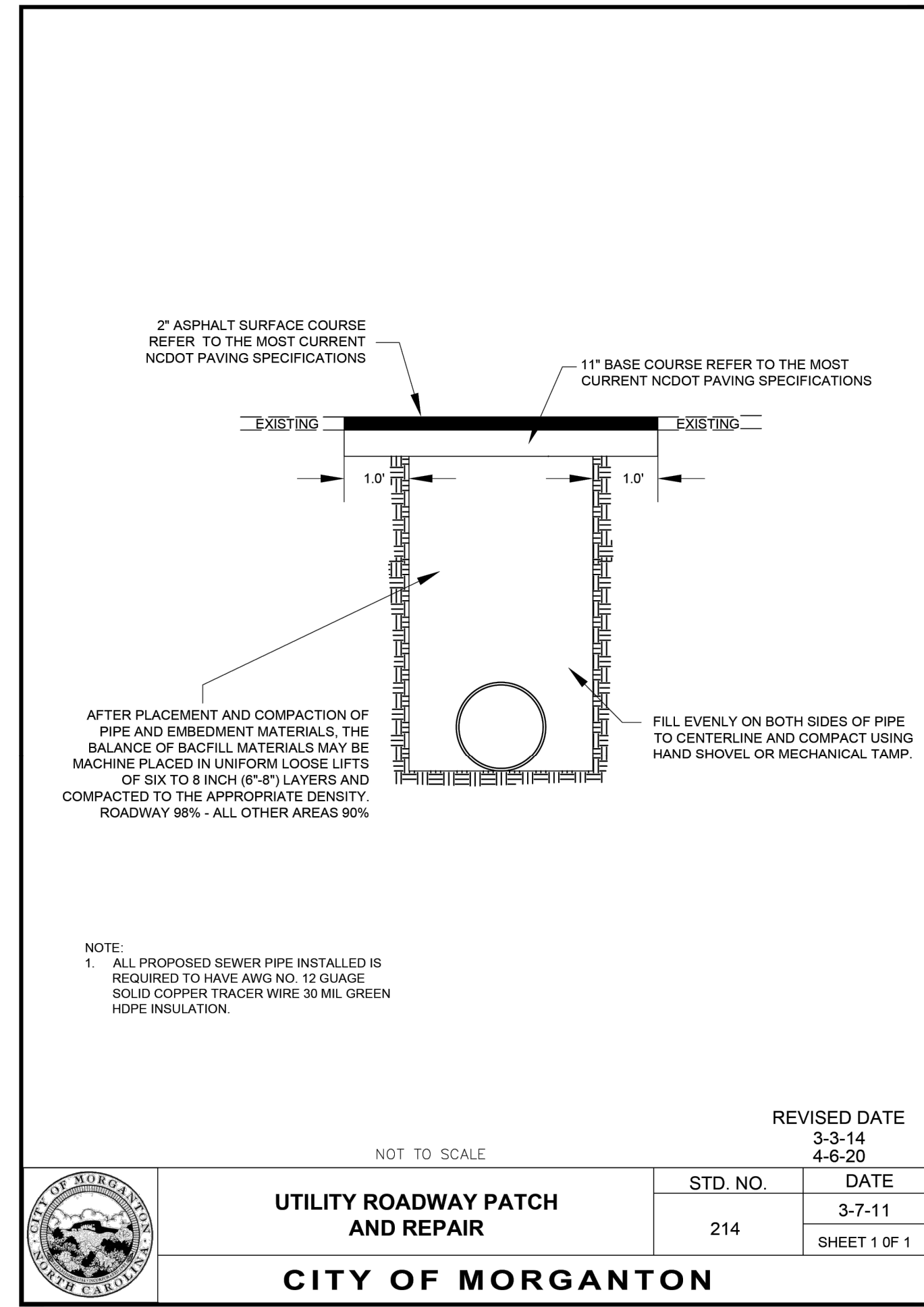
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DRAWN BY:	DMW <th>06/06/22 </th>	06/06/22	
CHECKED BY:	ECH <th>11/09/22 </th>	11/09/22	
APPROVED BY:	SKC <th>11/30/22 </th>	11/30/22	

DESIGN BY:	DATE:	BRH <th>06/06/22 </th>	06/06/22
DRAWN BY:	DMW <th>06/06/22 </th>	06/06/22	
CHECKED BY:	ECH <th>11/09/22 </th>	11/09/22	
APPROVED BY:	SKC <th>11/30/22 </th>	11/30/22	

Bost Rd Sewer Improvements
 Morganton, NC
Pump Station and Access Dr
Erosion Control

**FINAL DESIGN - 100%
 RELEASED FOR
 CONSTRUCTION**

JOB NO: 65421093
 DATE: 05/04/23
 SHEET: CE2.5

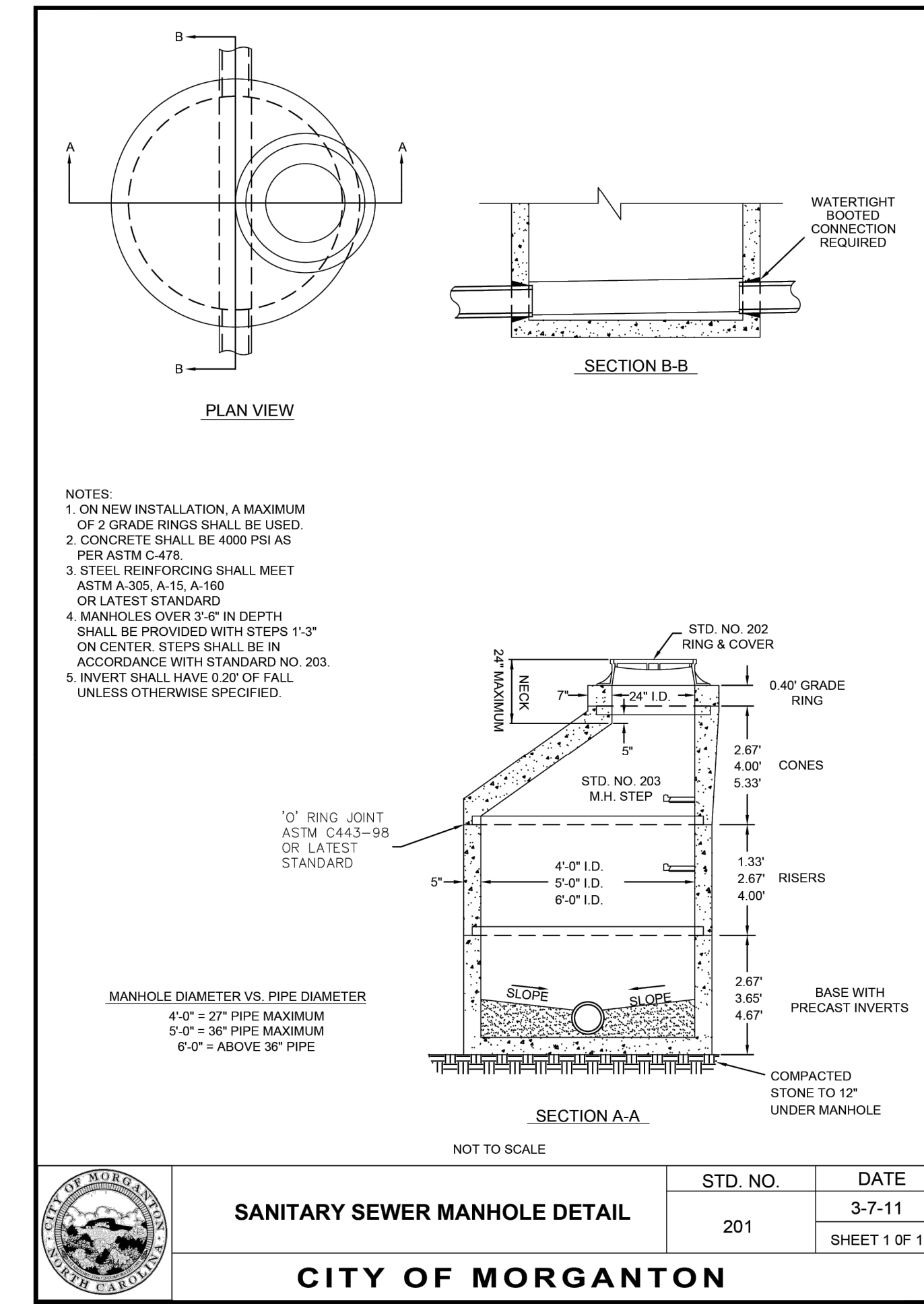


UTILITY ROADWAY PATCH AND REPAIR

CITY OF MORGANTON

STD. NO.	DATE
214	3-7-11

SHEET 1 OF 1

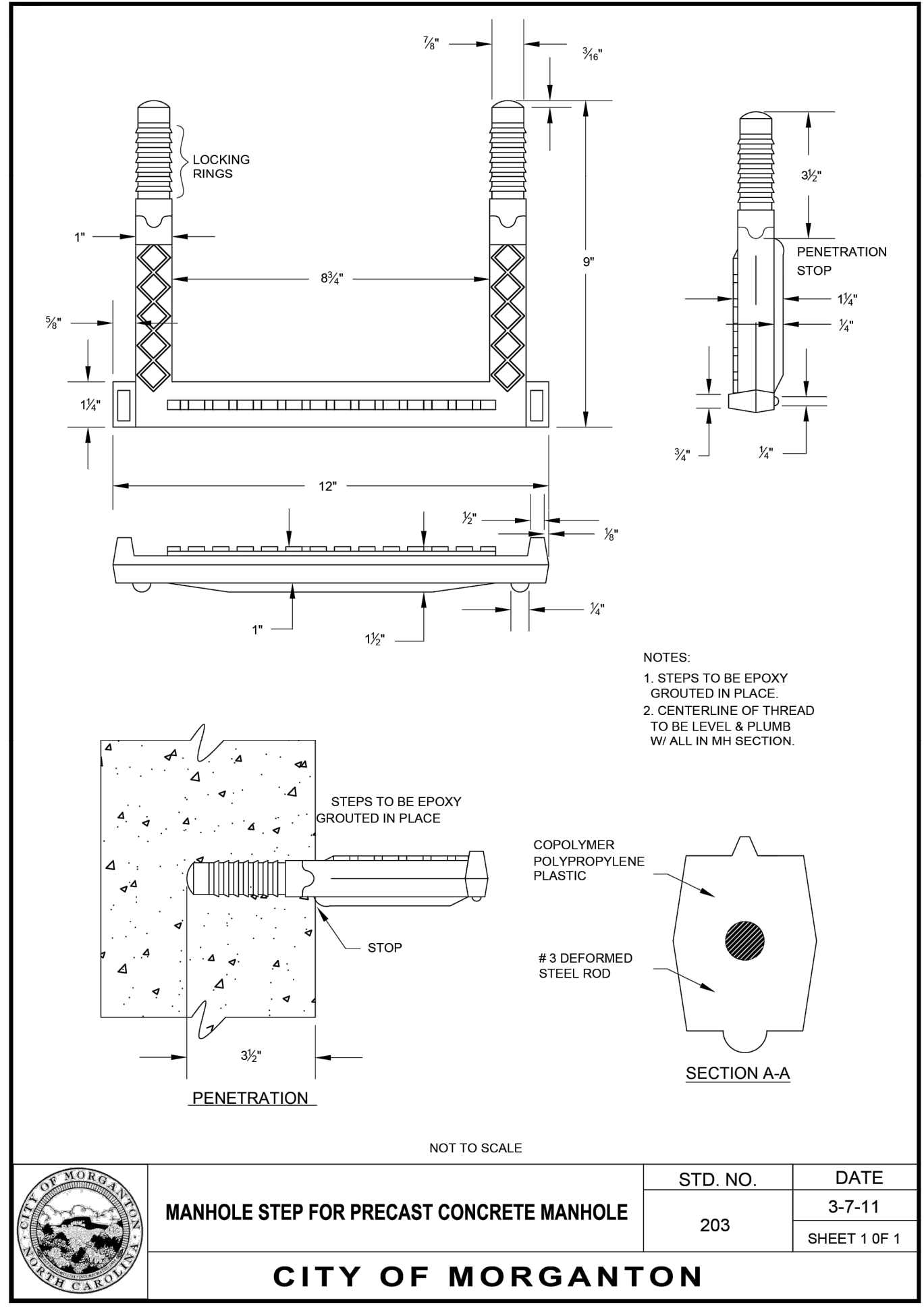


SANITARY SEWER MANHOLE DETAIL

CITY OF MORGANTON

STD. NO.	DATE
201	3-7-11

SHEET 1 OF 1

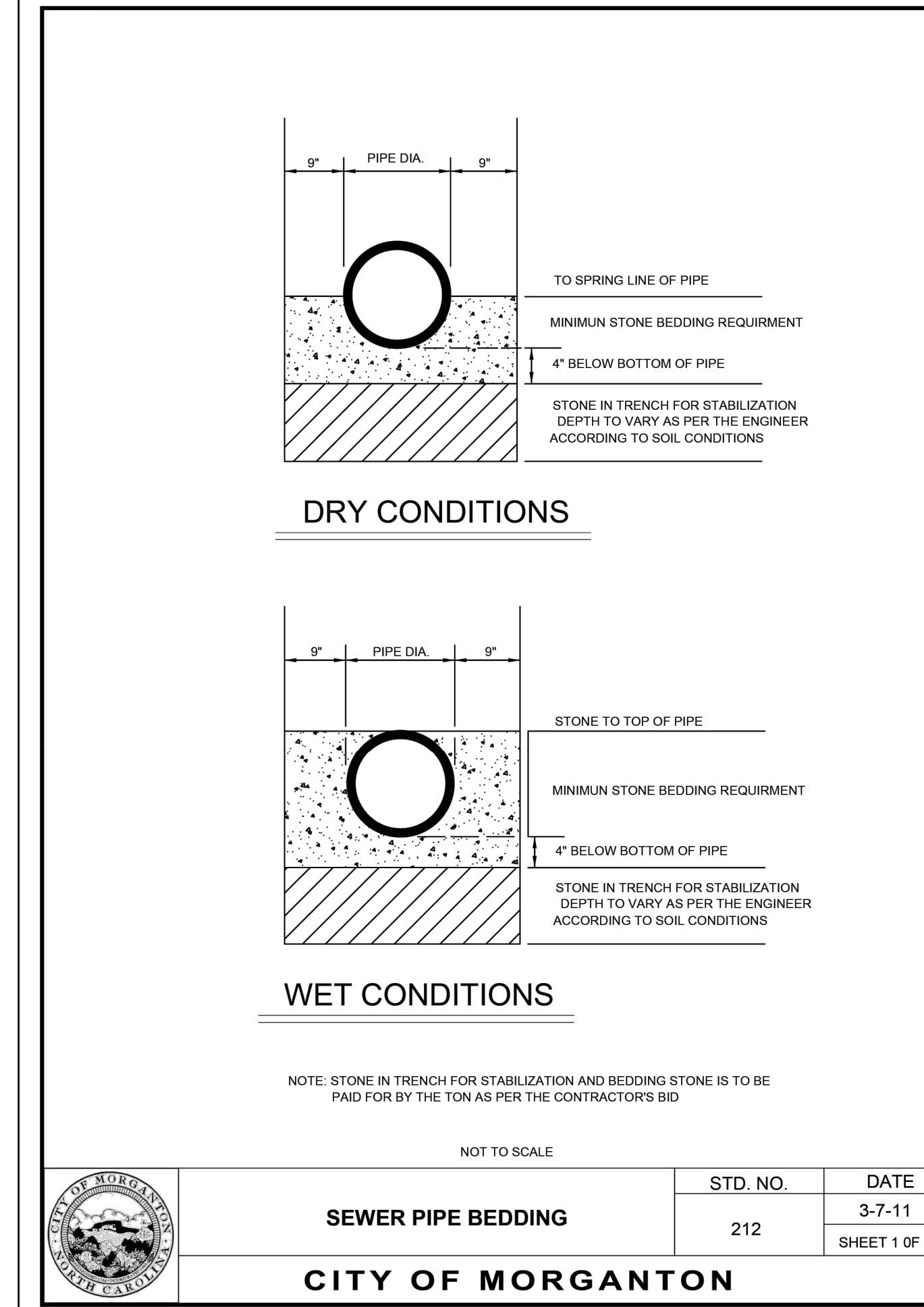


MANHOLE STEP FOR PRECAST CONCRETE MANHOLE

CITY OF MORGANTON

STD. NO.	DATE
203	3-7-11

SHEET 1 OF 1

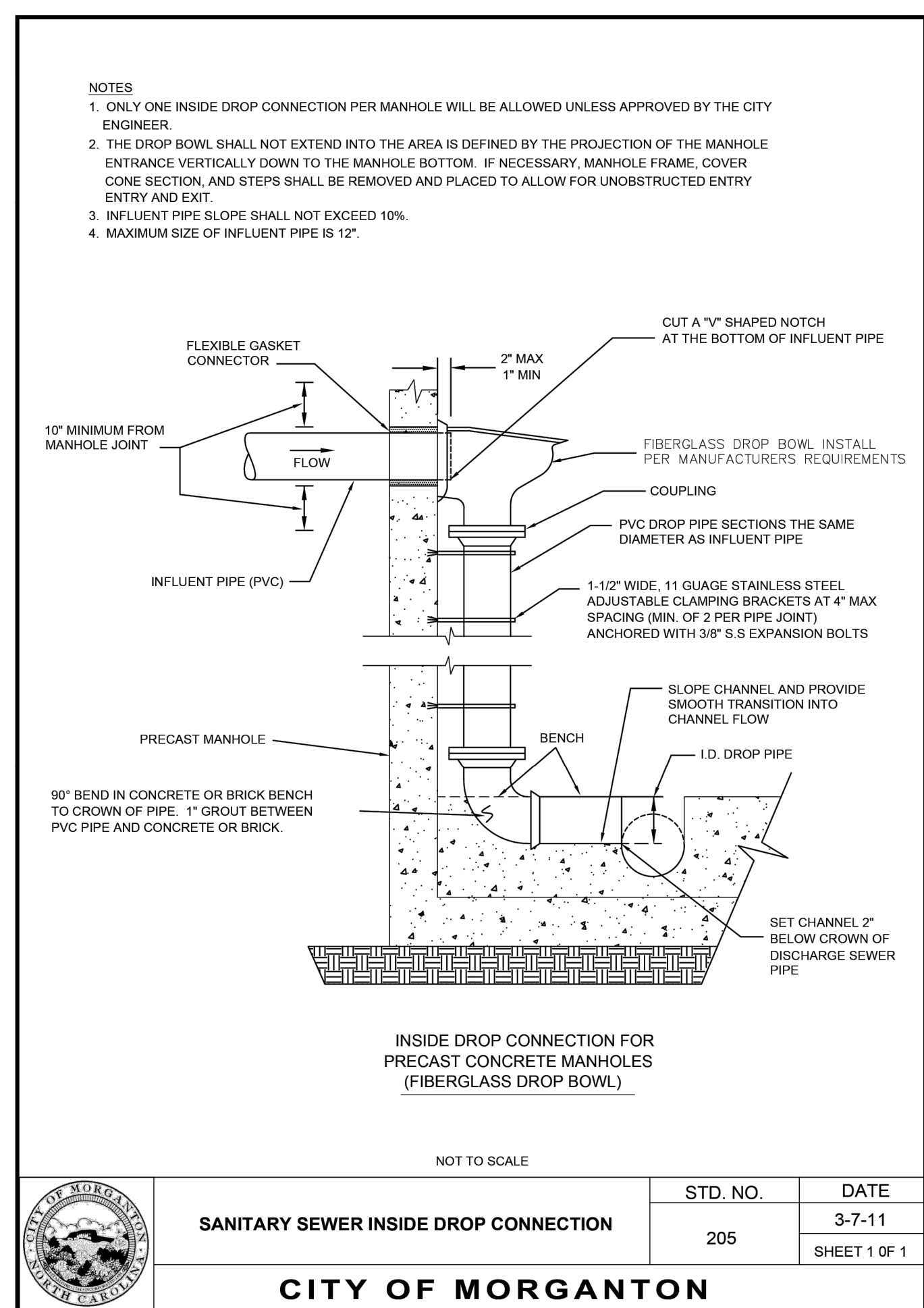


SEWER PIPE BEDDING

CITY OF MORGANTON

STD. NO.	DATE
212	3-7-11

SHEET 1 OF 1

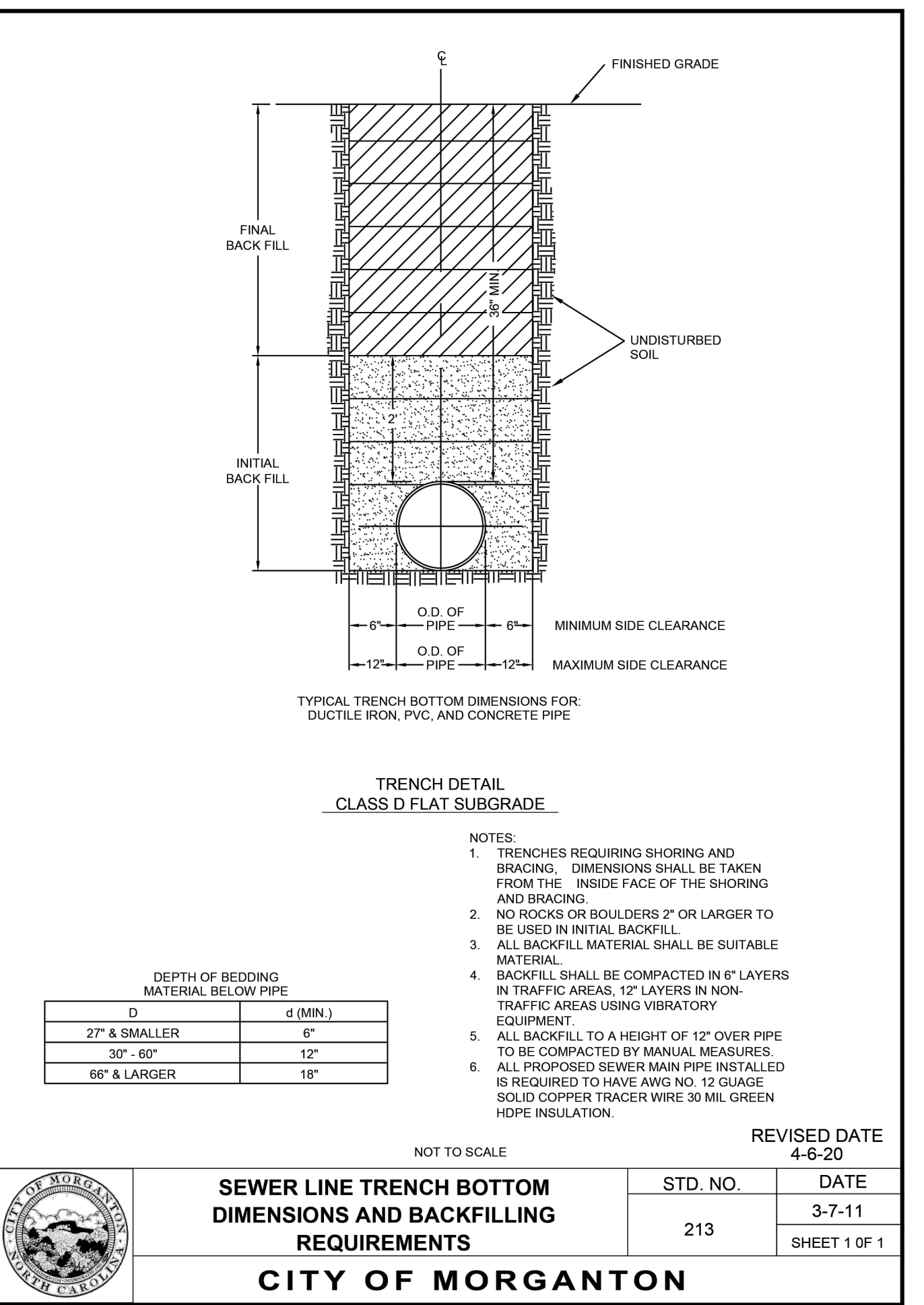


SANITARY SEWER INSIDE DROP CONNECTION

CITY OF MORGANTON

STD. NO.	DATE
205	3-7-11

SHEET 1 OF 1

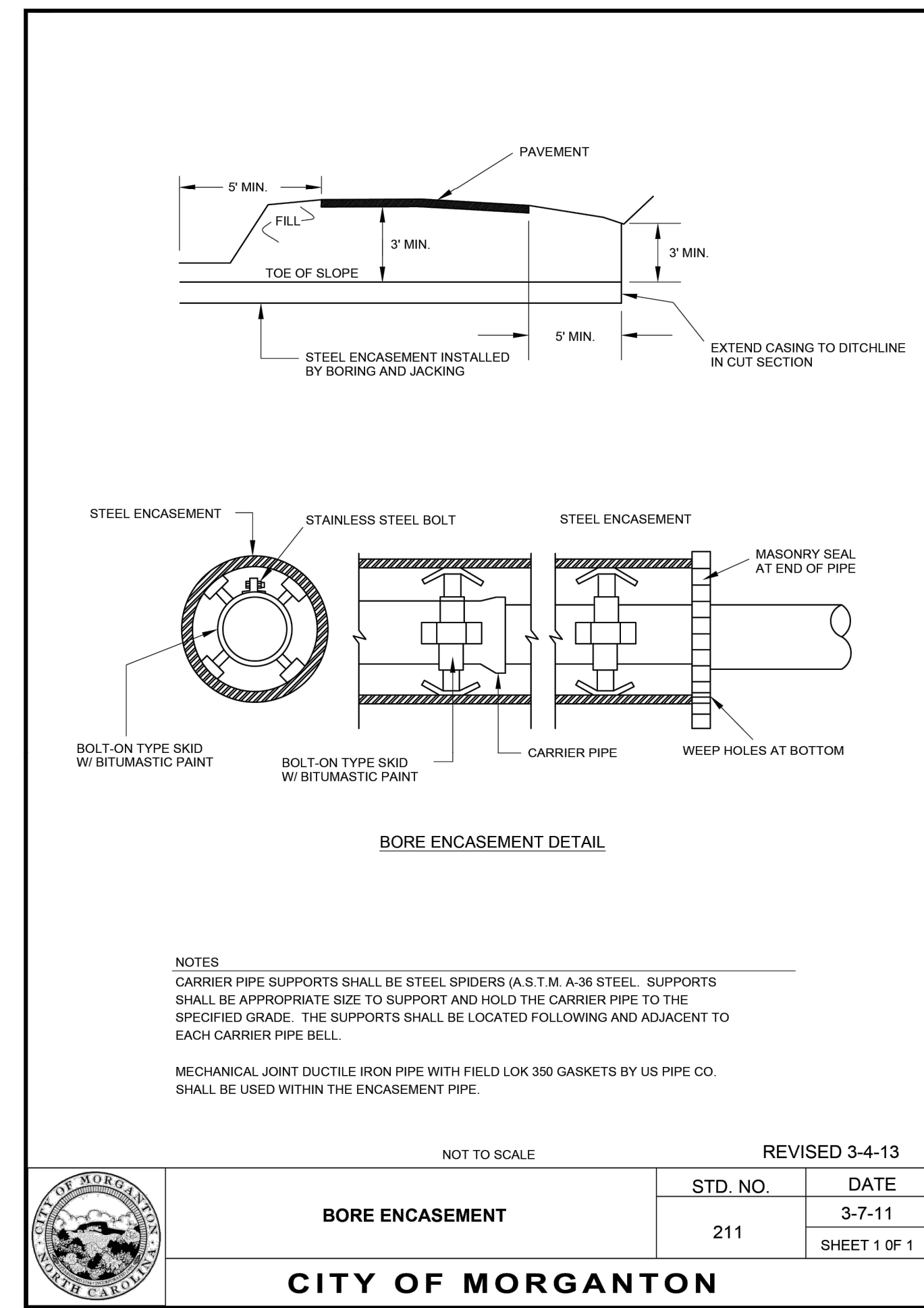


SEWER LINE TRENCH BOTTOM DIMENSIONS AND BACKFILLING REQUIREMENTS

CITY OF MORGANTON

STD. NO.	DATE
213	3-7-11

SHEET 1 OF 1

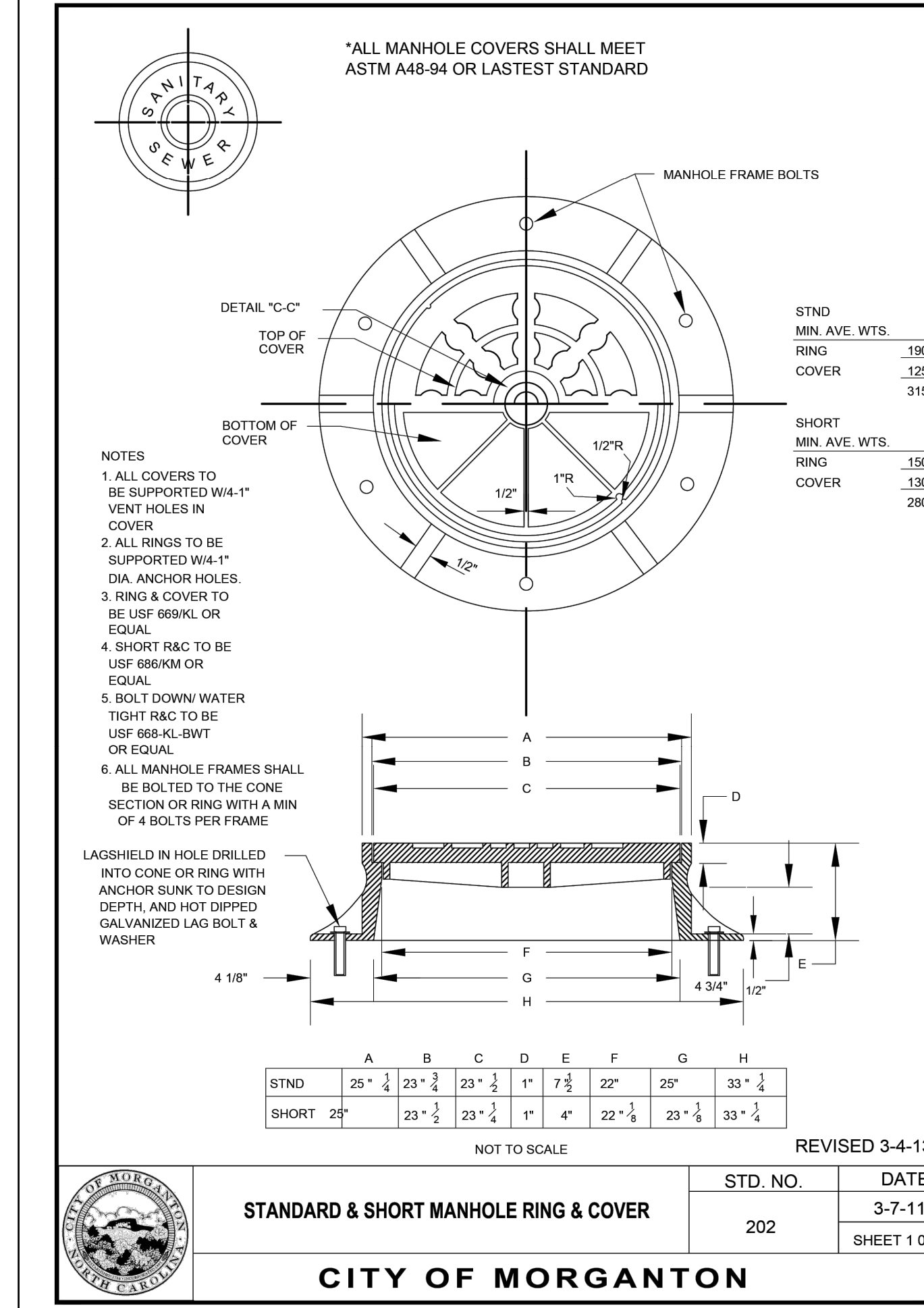


BORE ENCASEMENT

CITY OF MORGANTON

STD. NO.	DATE
211	3-7-11

SHEET 1 OF 1



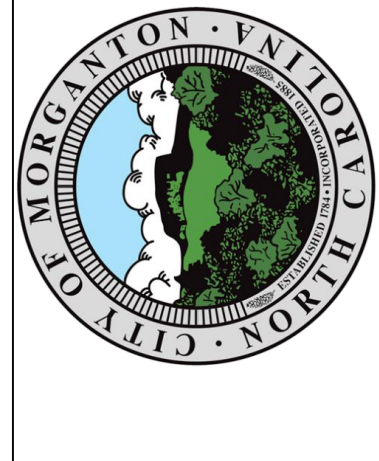
STANDARD & SHORT MANHOLE RING & COVER

CITY OF MORGANTON

STD. NO.	DATE
202	3-7-11

SHEET 1 OF 1

MERRICK
 301 S. MCCORMICK STREET, SUITE 300
 NC ENGINEERING FIRM # 2008
 PHONE: 704.520.8500



REVISED	DATE	DESCRIPTION

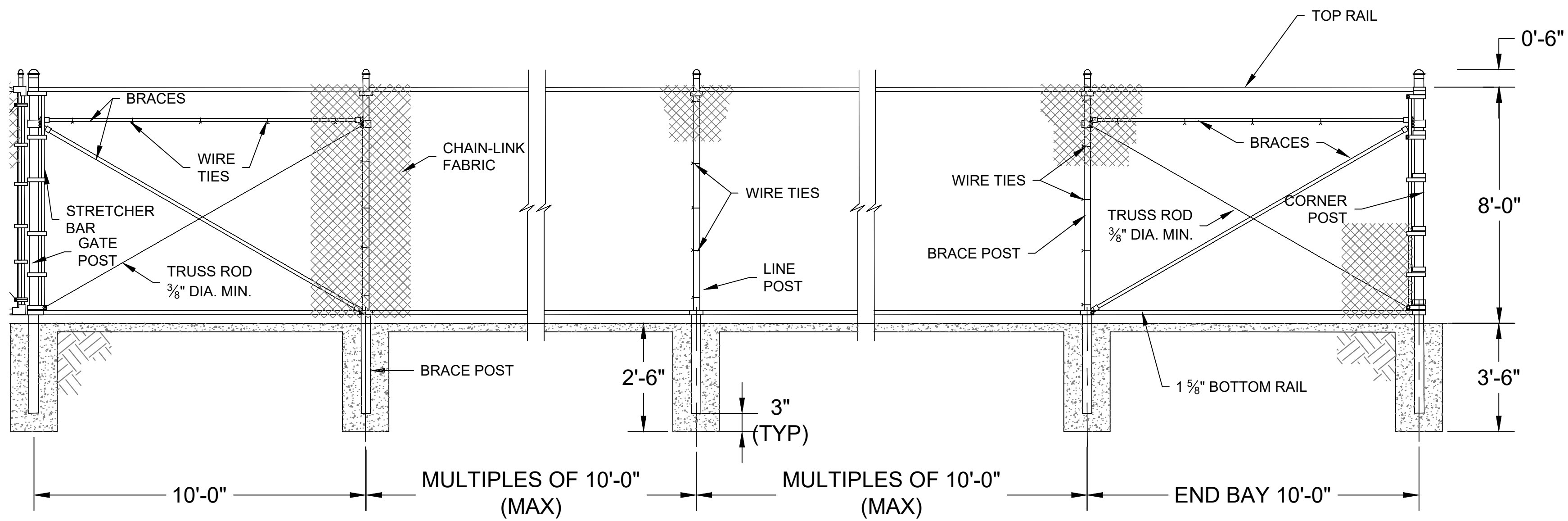
DESIGN BY:	DM/00/RR
DRAWN BY:	DR/00/RR
CHECKED BY:	CH/00/RR
APPROVED BY:	AP/00/RR

Bost Rd Sewer Improvements
 Morganton, NC

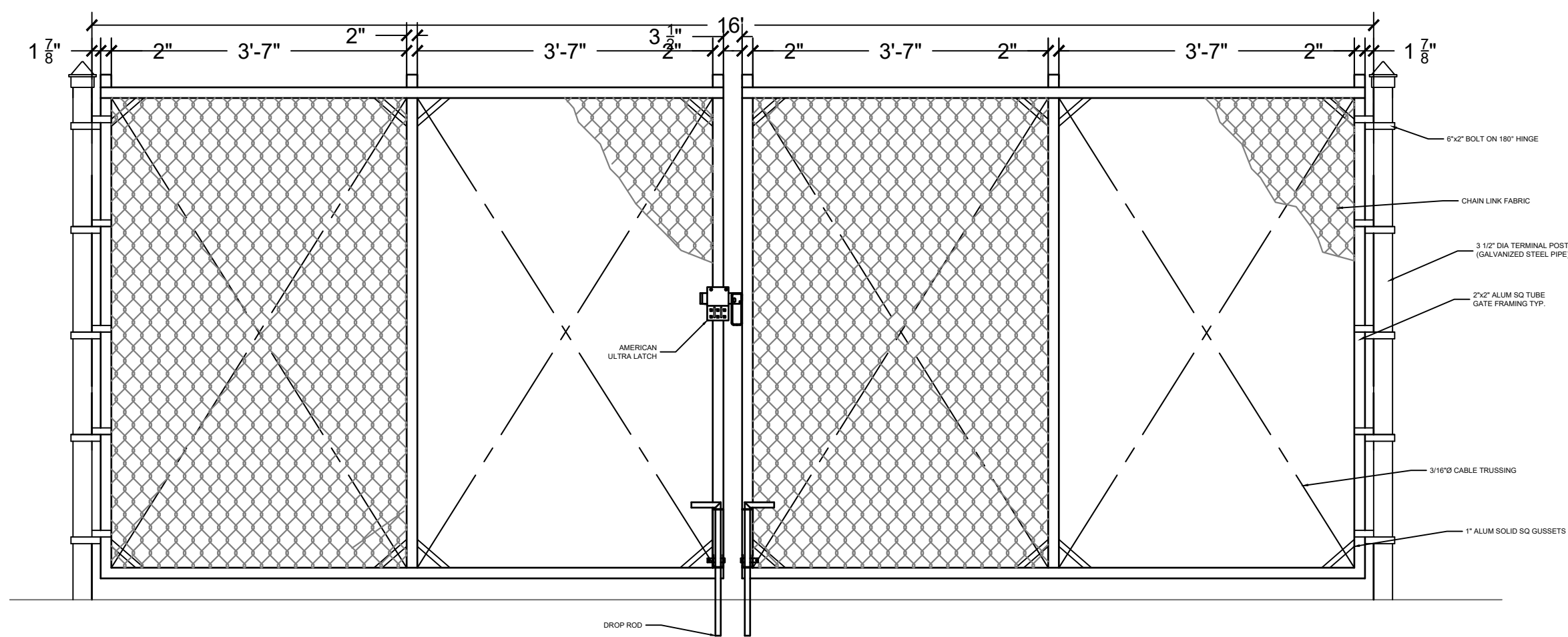
Details

**FINAL DESIGN - 100%
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 CONSTRUCTION**

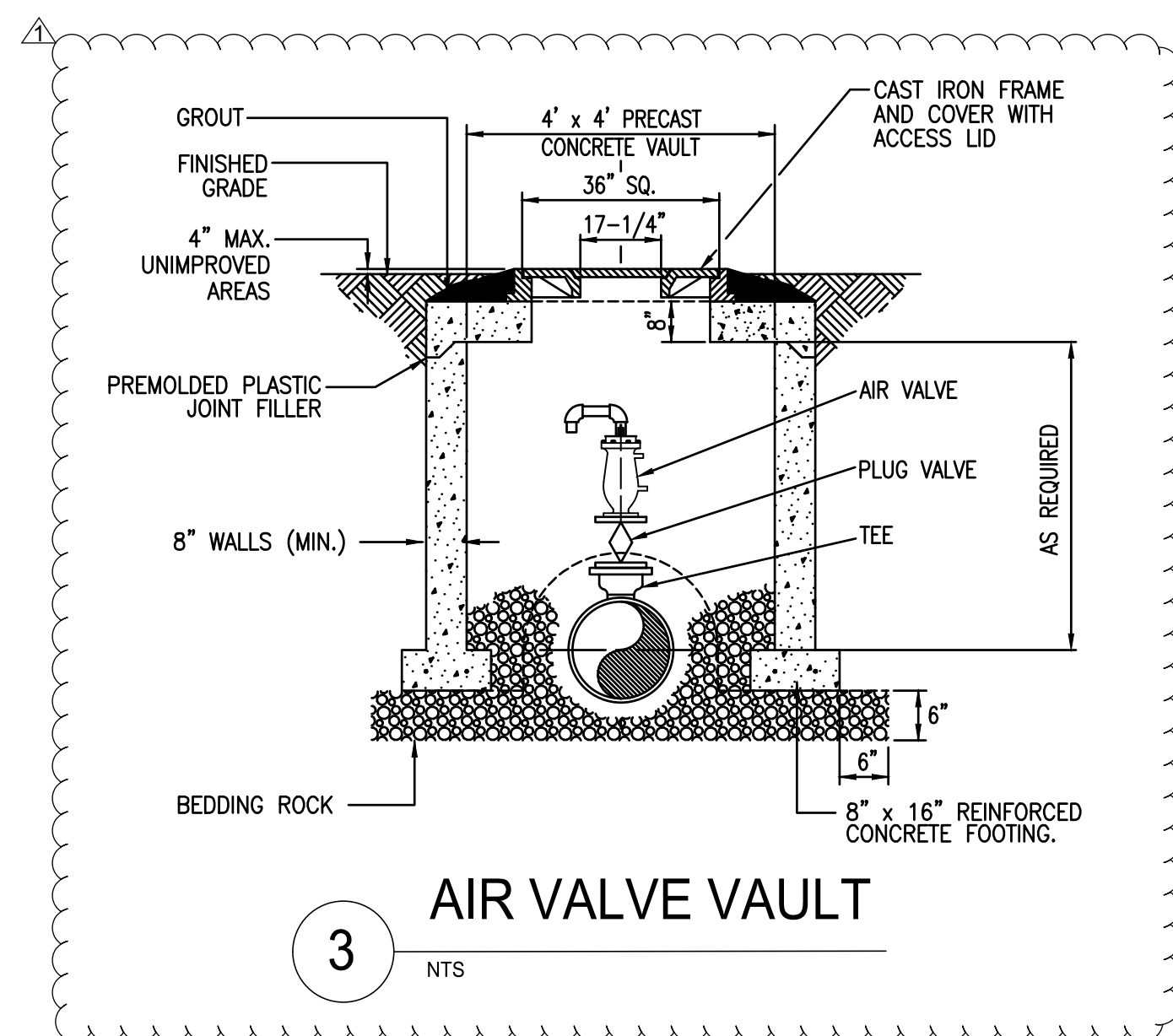
JOB NO: 65421093
 DATE: 05/04/23
 SHEET: C3.1



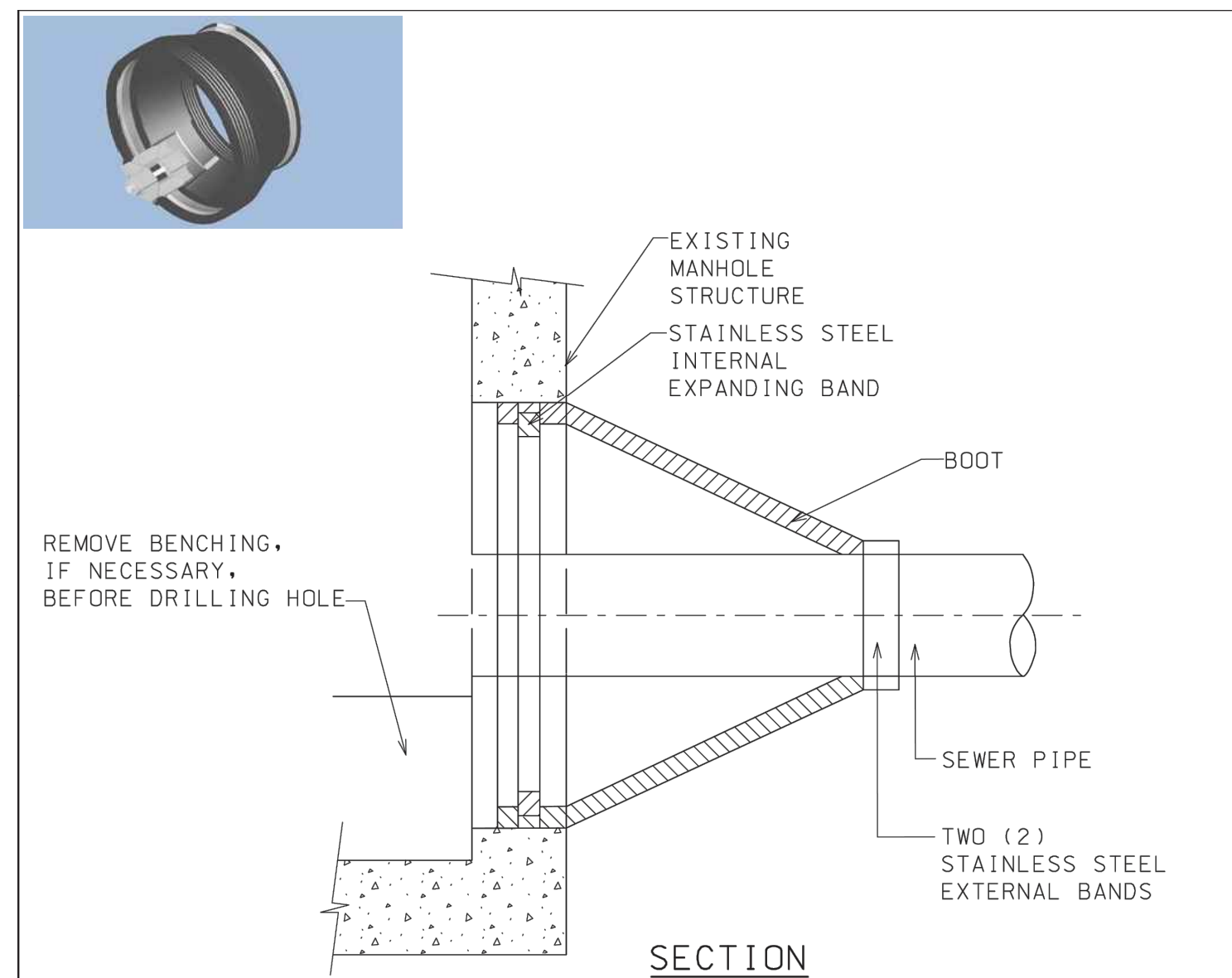
1 BLACK VINYL COATED CHAIN LINK FENCE



2 GATE



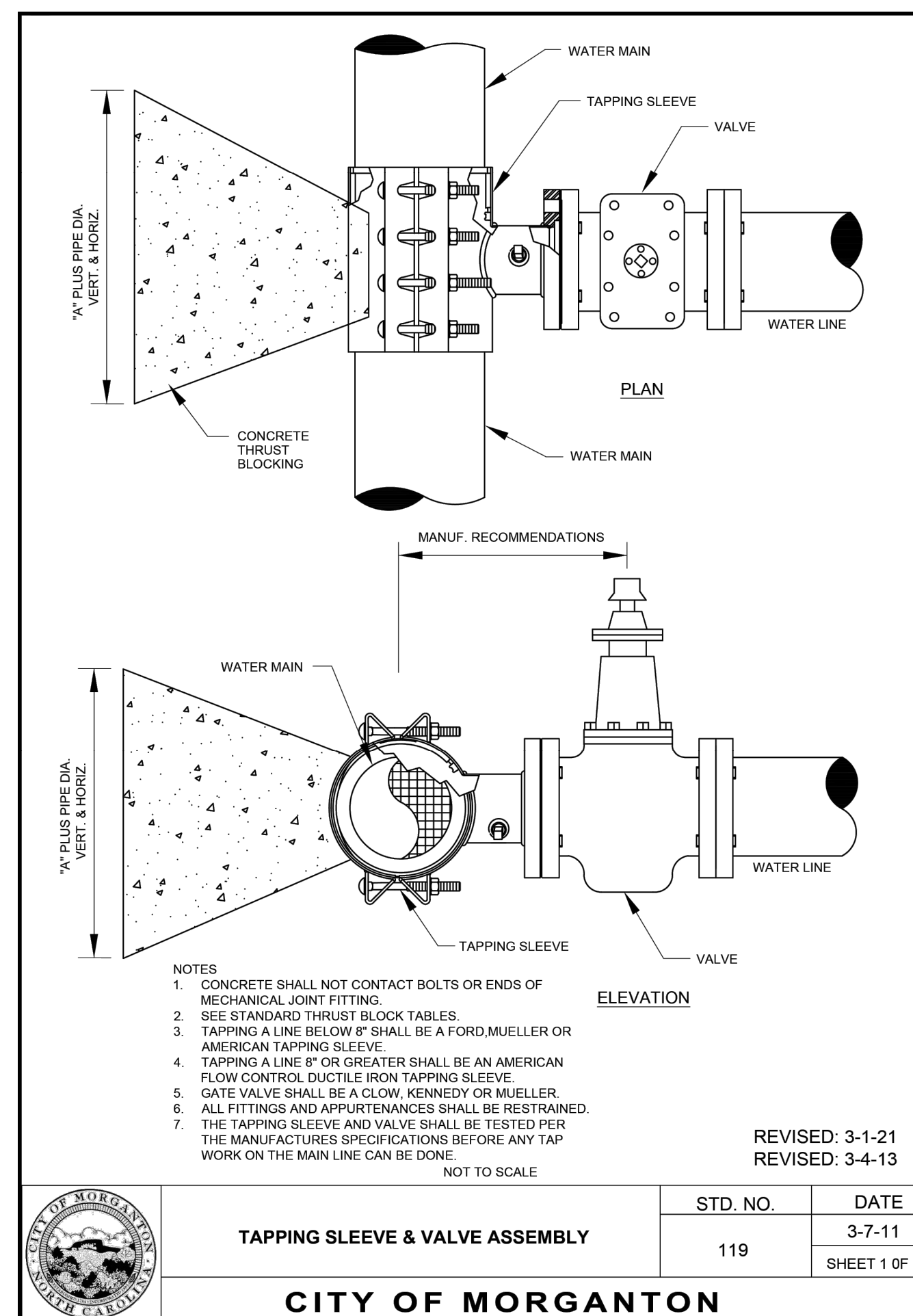
3 AIR VALVE VAULT



NOTES:

- CORE-DRILL CIRCULAR OPENING IN MANHOLE WALL OF DIAMETER TO FIT THE REQUIRED BOOT SIZE.
- 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.
- CUT, SHAPE AND SLOPE NEW INVERT CHANNEL IN THE EXISTING CONCRETE BENCH FOR SMOOTH FLOW FROM NEW SANITARY SEWER CONNECTION.
- CLEAN EXISTING MANHOLE OF ANY DIRT, CONCRETE OR DEBRIS WHICH MAY ACCUMULATE DURING THE CONSTRUCTION PROCESS.

DATE: 3-31-09
SANITARY SEWER CONNECTION TO EXISTING MANHOLE



STD. NO.	DATE
119	3-7-11
SHEET 1 OF 1	

CITY OF MORGANTON

SIZE	11 1/4" BEND	22 1/2" BEND	45° BEND	90° BEND	TEE	CAP
6	12	12	12	16	16	14
8	12	12	16	22	22	18
10	12	14	20	28	28	22
12	12	18	24	32	32	28
14	14	20	28	38	38	32
16	16	22	32	42	42	36
18	18	26	36	48	48	40
20	20	28	40	52	52	44
24	24	34	46	64	64	54
30	30	42	58	78	78	66
36	36	50	70	94	94	80
42	40	58	80	108	108	90
48	46	66	90	124	124	104

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

THRUST BLOCK FOR WATER MAINS	STD. NO.	DATE
	104.2	3-7-11
SHEET 2 OF 2		

CITY OF MORGANTON

MERRICK
301 S. McDOWELL STREET, SUITE 300
MORGANTON, NC 28650
PHONE: 704.520.6500
FAX: 704.520.6501
WWW.MERRICK-ENGINEERING.COM
MERRICK ENGINEERING FIRM # 0908

REVISIONS	DATE	BY	DESCRIPTION
1			

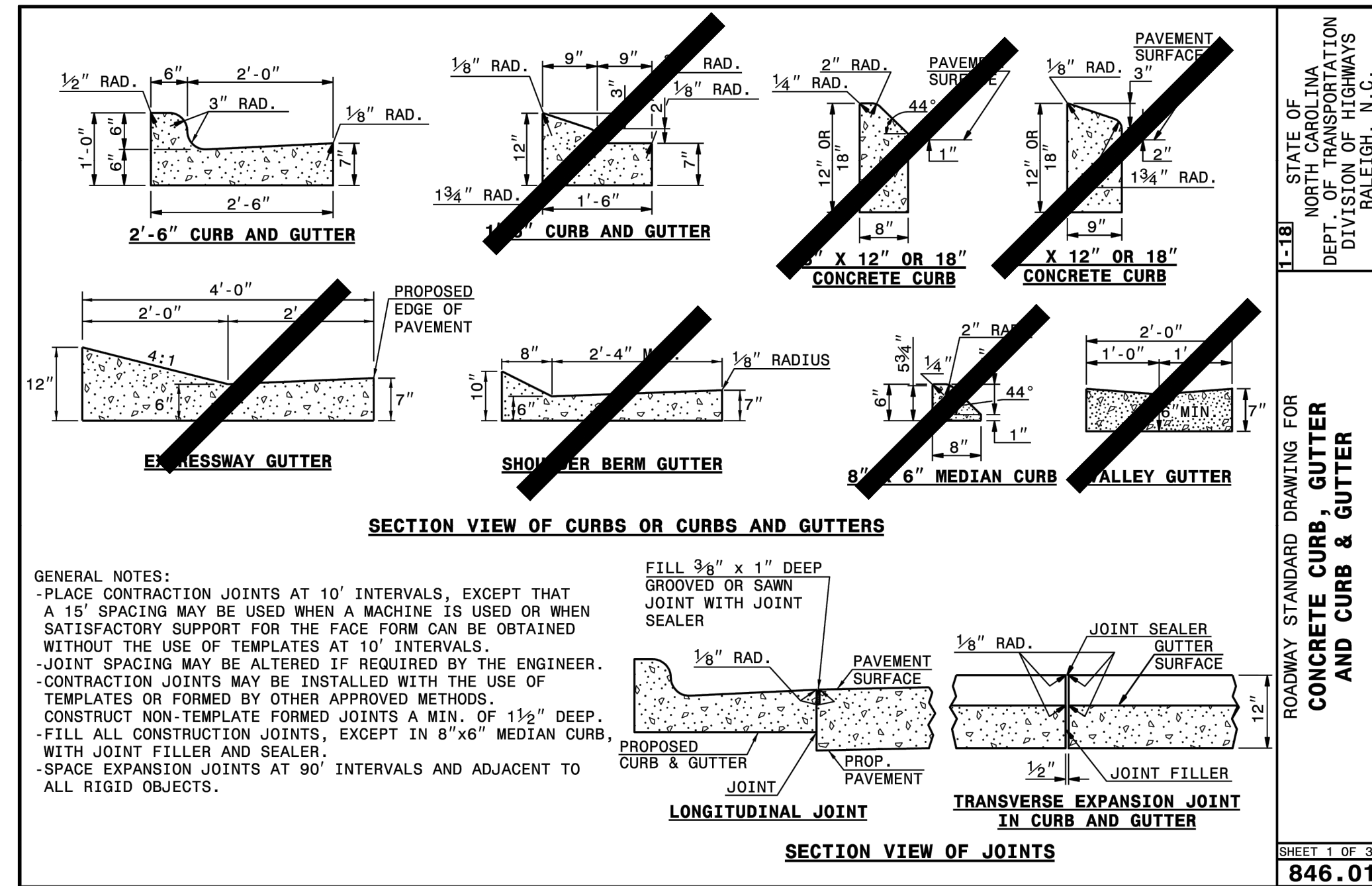
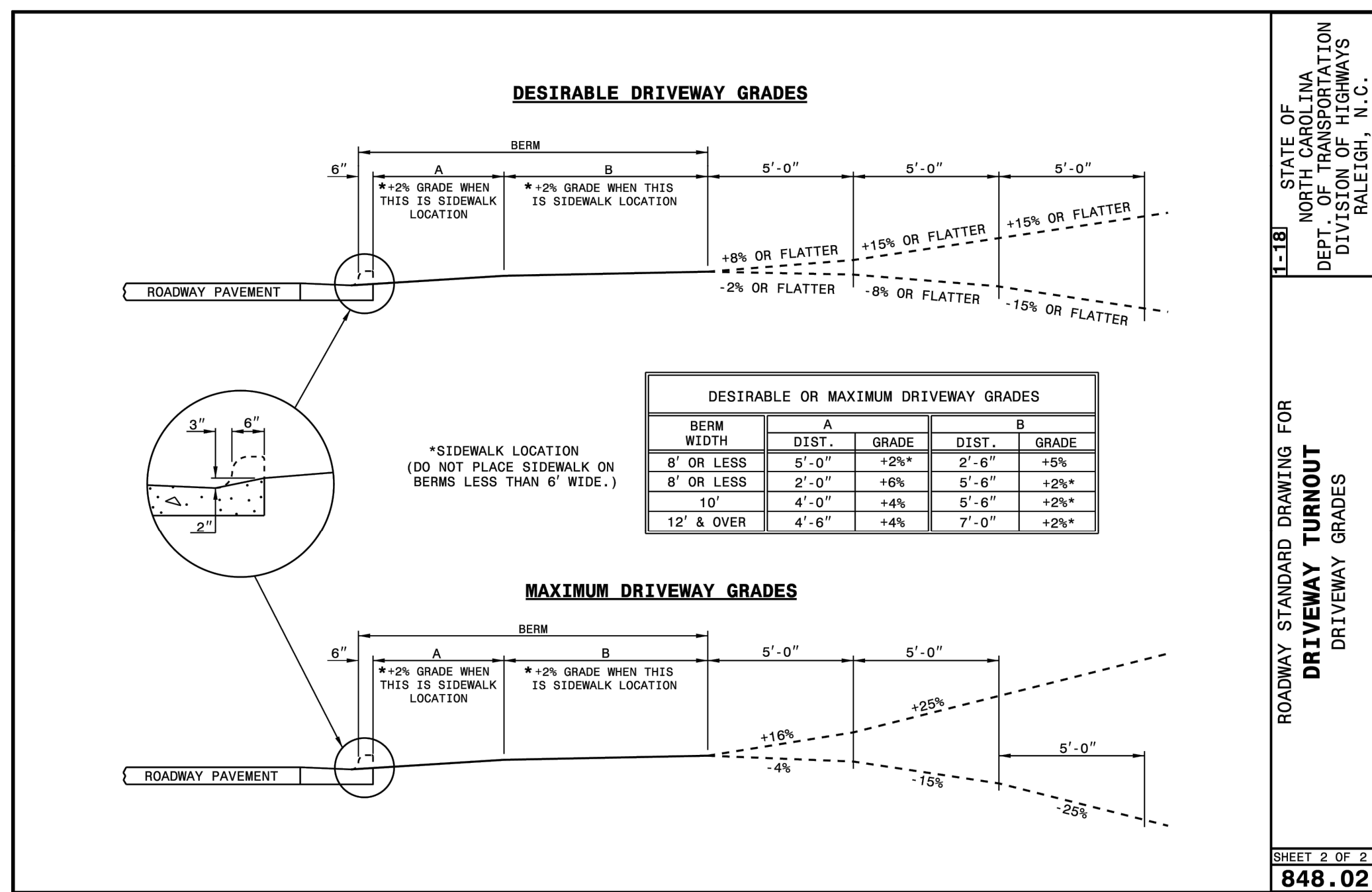
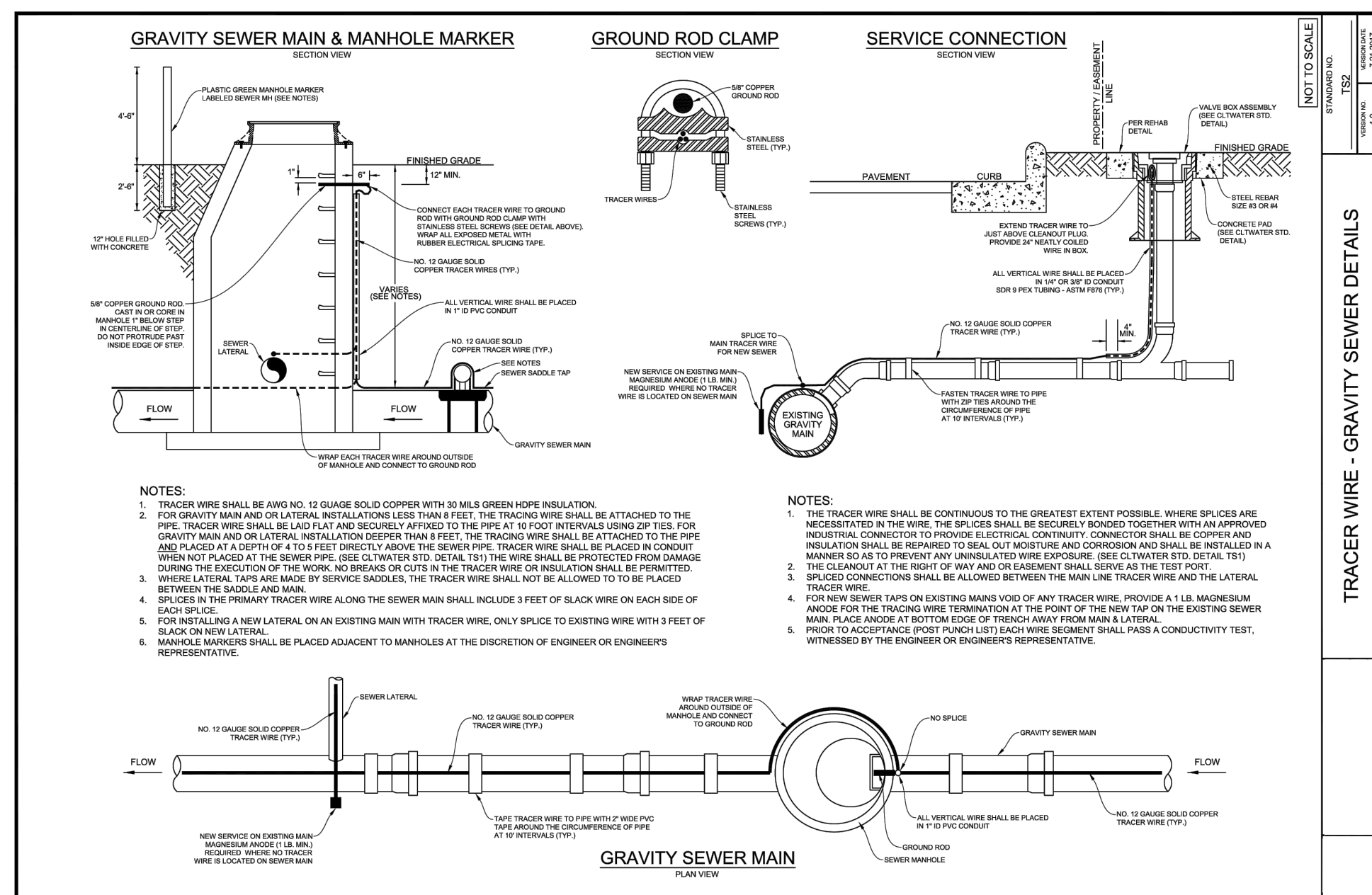
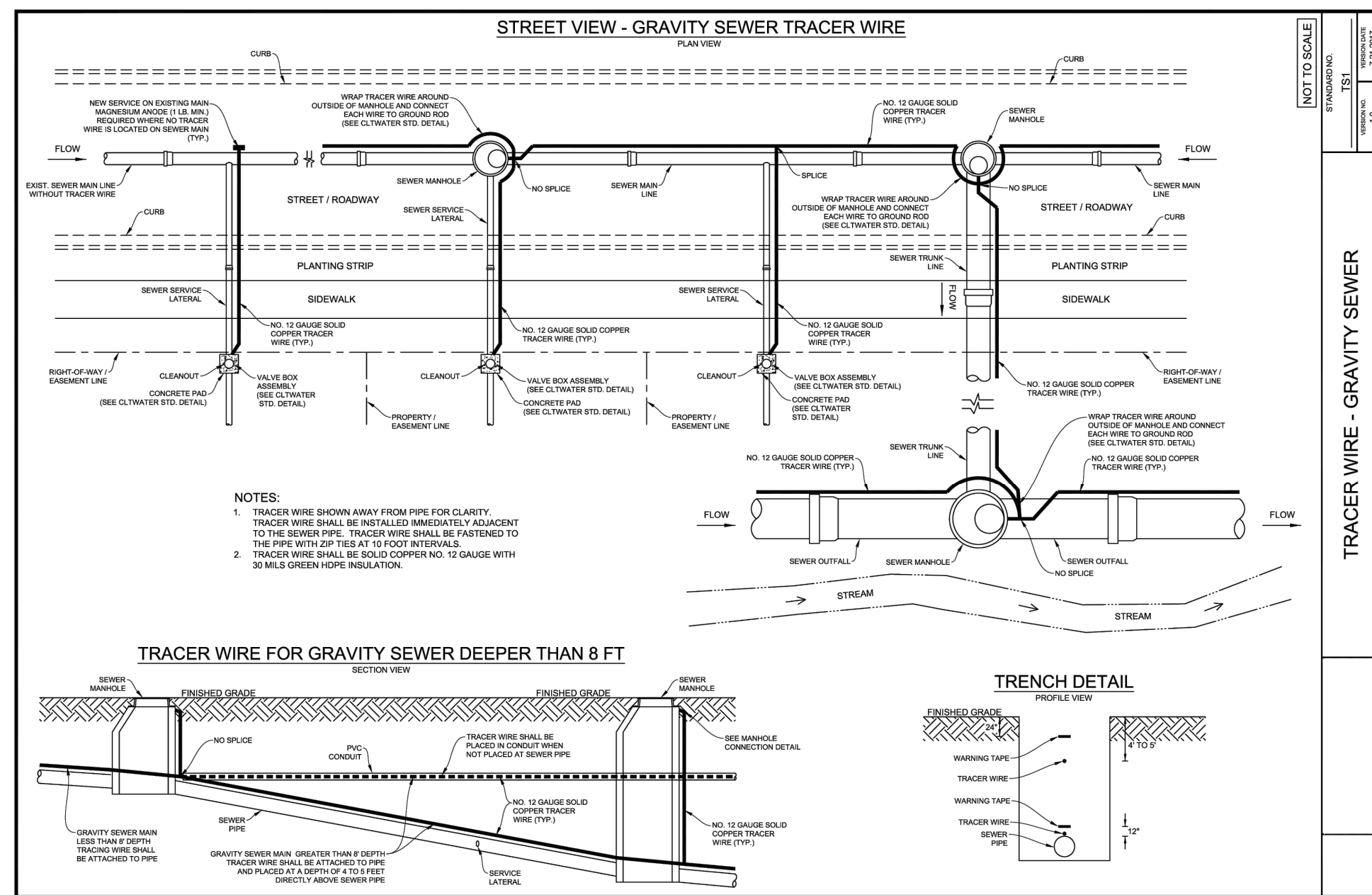
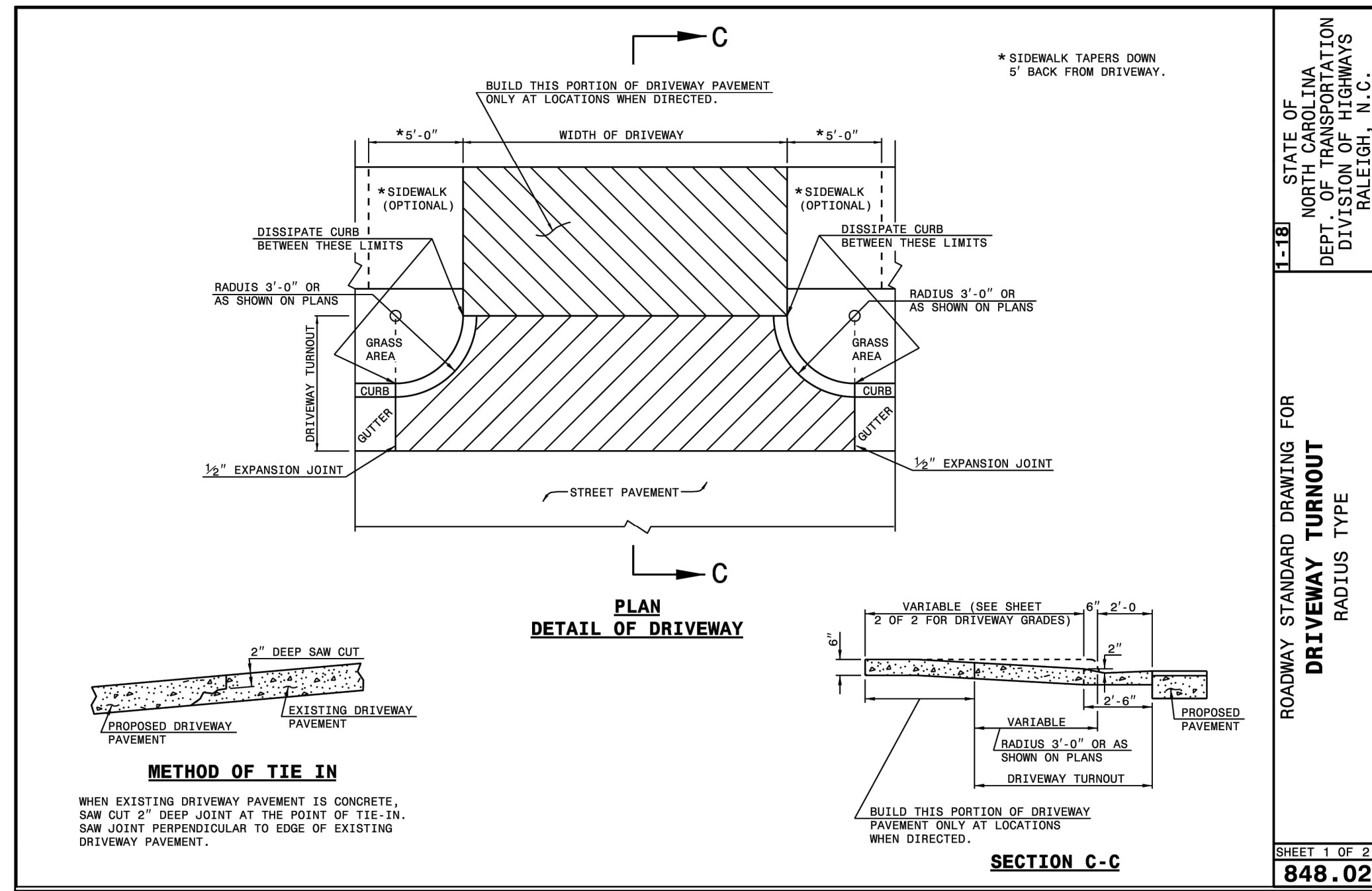
DATE: 3-31-09

Bost Rd Sewer Improvements
Morganton, NC

DETAILS

**FINAL DESIGN - 100%
RELEASED FOR
CONSTRUCTION**

JOB NO: 65421093
DATE: 05/04/23
SHEET: C3.2



REVISIONS

NO.	DATE	DESCRIPTION	BY	CHKD.	APP'D.
1	05/04/23	100% review comments			

DATE: 05/04/23

DESIGN BY: Dgm/XXX

DRAWN BY: Dgm/XXX

CHECKED BY: Ckm/XXX

APPROVED BY: App/XXX

Bost Rd Sewer Improvements

Morganton, NC

DETAILS

**FINAL DESIGN - 100%
RELEASED FOR
CONSTRUCTION**

SLOPE SEEDING

Seeding Mixture

Species	Rate (lbs/acre)
Velvet leaf fescue	20 lbs
Arrow tail fescue	8 lbs
Perennial rye	25 lbs
Perennial rye /oat or wheat	25 lbs
Kentucky bluegrass	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.

Note

1. 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

STD. NO.	DATE
1006	3-4-19

SHEET 1 OF 1

CITY OF MORGANTON

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.

- 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.
- 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.
- Permanent erosion control measures shall include but not be limited to swaled easements, rip rap and seeding of disturbed areas.
- 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.

STD. NO.	DATE
1000	3-4-19

SHEET 1 OF 1

CITY OF MORGANTON

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

Page | 2

TEMPORARY SEEDING FOR SUMMER

Seeding Mixture

Species	Rate (lbs/acre)
German millet	40 lbs

Seeding Dates

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

Note

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

STD. NO.	DATE
1002	3-4-19

SHEET 1 OF 1

CITY OF MORGANTON

TEMPORARY SEEDING FOR WINTER & EARLY SPRING

Seeding Mixture

Species	Rate (lbs/acre)
Rye (grain)	120 lbs
Annual Leopodeza	50 lbs

Alternative native species: Switchgrass (Panicum Virgatum), Splitbeard Bluestem (Andropogon Ternarius), Beggarlice (Desmodium spp.), and Partridge Pea (Chamaecrista Fasciculata).

Seeding Dates

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

Note

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

STD. NO.	DATE
1003	3-4-19

SHEET 1 OF 1

CITY OF MORGANTON

TEMPORARY SEEDING FOR FALL

Seeding Mixture

Species	Rate (lbs/acre)
Rye (grain)	280 lbs

Seeding Dates

Mountains	August 15 - December 15
Piedmont	August 15 - December 15
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 necessary to extend temporary cover beyond June 15, overseed with 50 lbs/acre kobe (pedmont and coastal plain) or korean (mountains) lespedeza in late February or early March.

Note

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

STD. NO.	DATE
1004	3-4-19

SHEET 1 OF 1

CITY OF MORGANTON

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

Note

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

STD. NO.	DATE
1001	3-4-19

SHEET 1 OF 1

CITY OF MORGANTON

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REVISIONS	DATE	BY	REVISION DESCRIPTION
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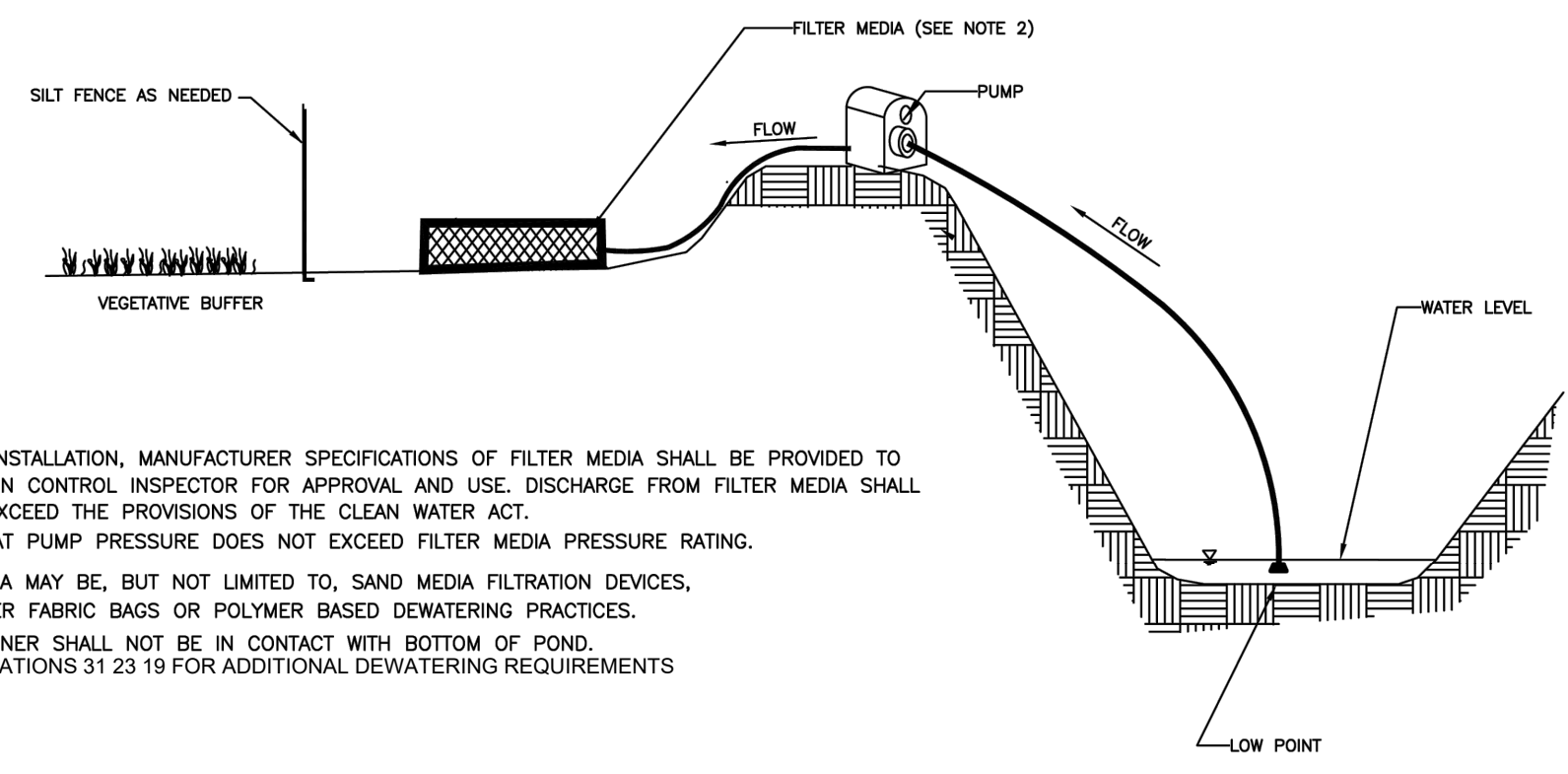
CHANGED CHECKED APPROVED
DATE: _____ BY: _____

DESIGN BY:	RHM	05/06/22
DRAWN BY:	DMH	05/06/22
CHECKED BY:	ECH	11/06/22
APPROVED BY:	SM	11/30/22

Bost Rd Sewer Improvements
Morganton, NC
**EROSION CONTROL
DETAILS**

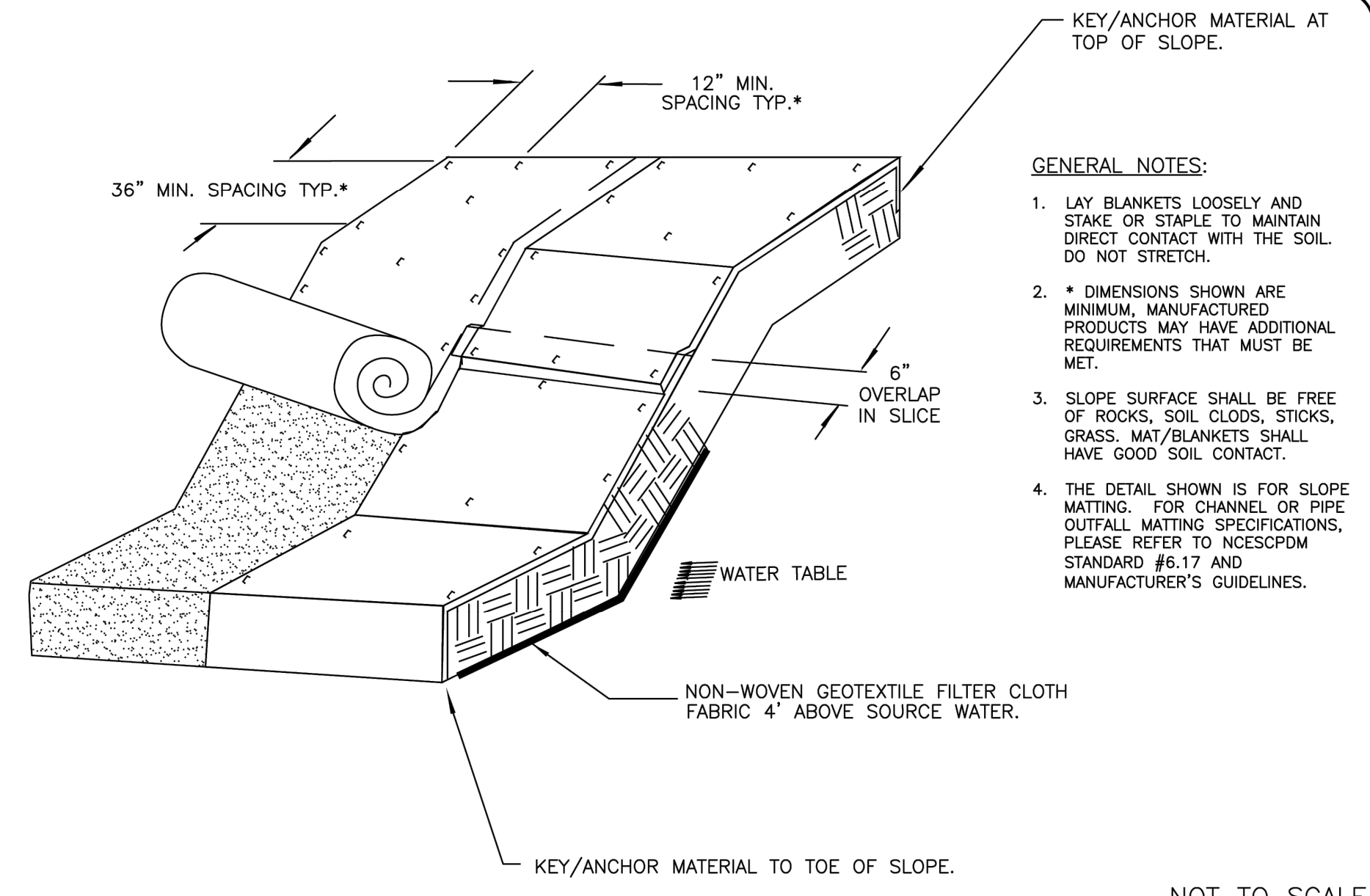
**FINAL DESIGN - 100%
RELEASED FOR
CONSTRUCTION**

JOB NO. 65421093
DATE: 05/04/23
SHEET CE3.1



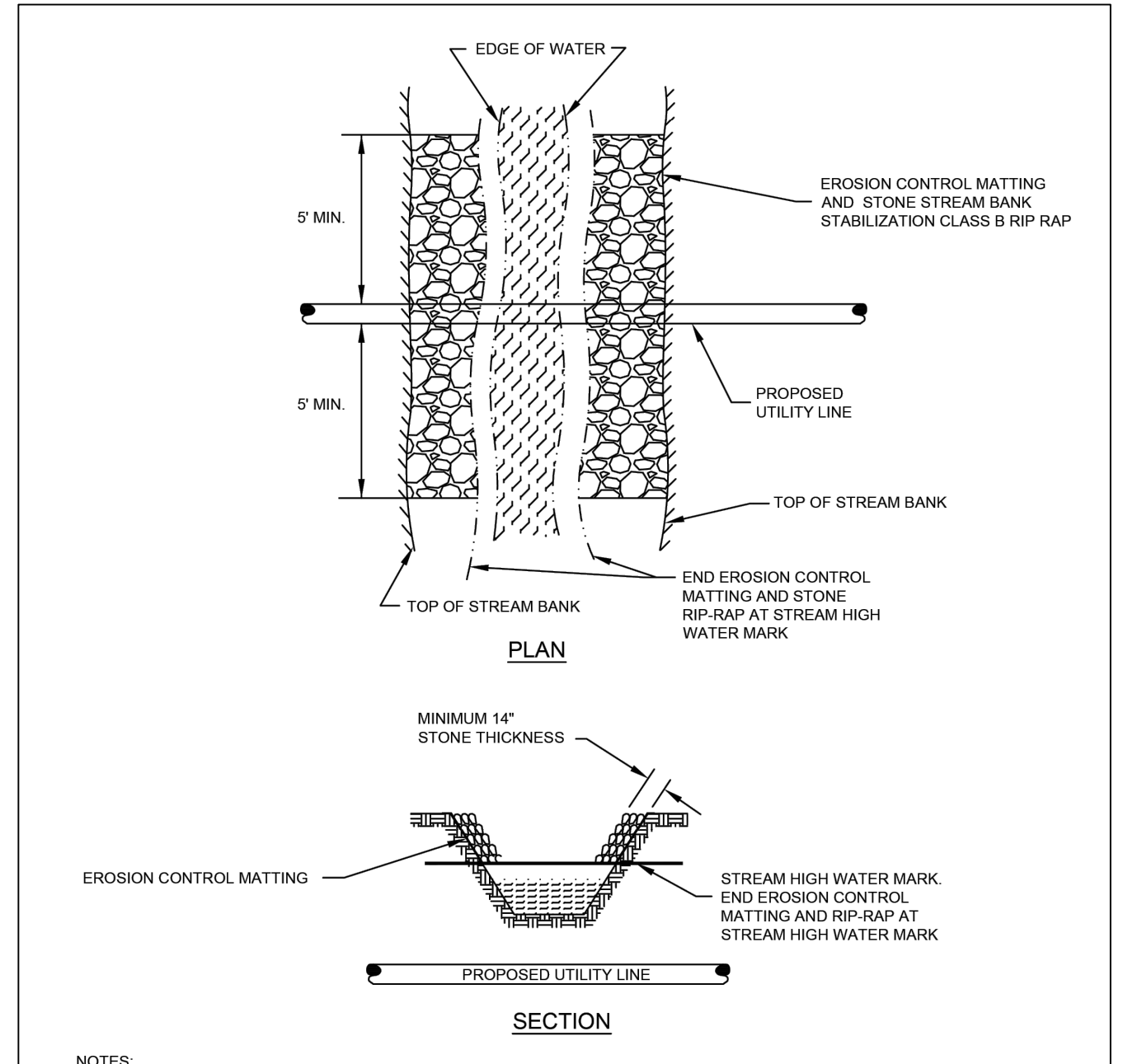
- NOTE:**
1. PRIOR TO INSTALLATION, MANUFACTURER SPECIFICATIONS OF FILTER MEDIA SHALL BE PROVIDED TO THE EROSION CONTROL INSPECTOR FOR APPROVAL AND USE. DISCHARGE FROM FILTER MEDIA SHALL MEET OR EXCEED THE PROVISIONS OF THE CLEAN WATER ACT.
 2. ENSURE THAT PUMP PRESSURE DOES NOT EXCEED FILTER MEDIA PRESSURE RATING.
 3. FILTER MEDIA MAY BE, BUT NOT LIMITED TO, SAND MEDIA FILTRATION DEVICES, RATED FILTER FABRIC BAGS OR POLYMER BASED DEWATERING PRACTICES.
 4. PUMP STRAINER SHALL NOT BE IN CONTACT WITH BOTTOM OF POND.
 5. SEE SPECIFICATIONS 31 23 19 FOR ADDITIONAL DEWATERING REQUIREMENTS

EROSION CONTROL DEWATERING
STD. NO. REV. 30.13 1



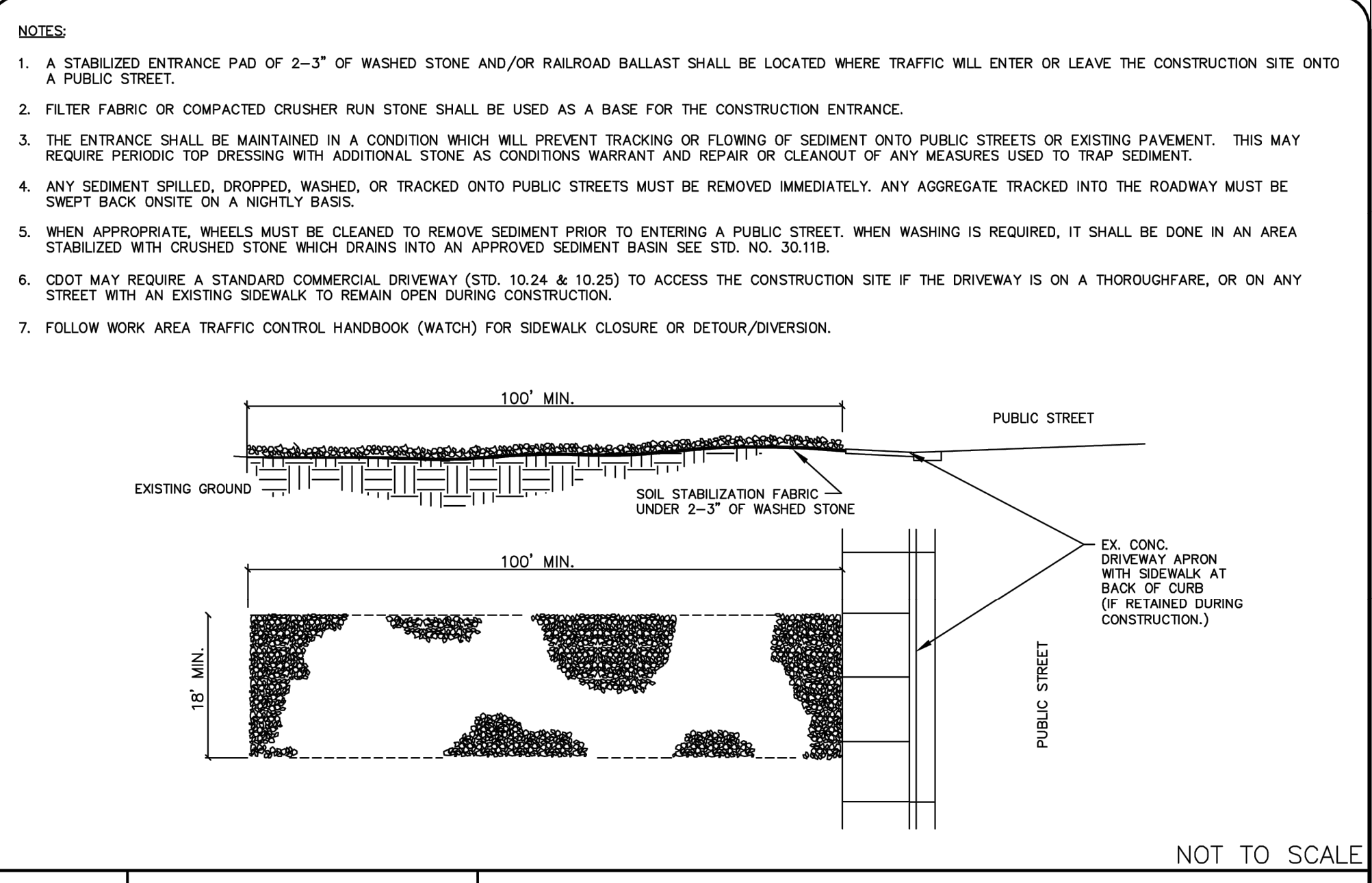
- GENERAL NOTES:**
1. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
 2. * DIMENSIONS SHOWN ARE MINIMUM. MANUFACTURED PRODUCTS MAY HAVE ADDITIONAL REQUIREMENTS THAT MUST BE MET.
 3. SLOPE SURFACE SHALL BE FREE OF ROCKS, SOIL CLOS, STICKS, GRASS, MAT/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
 4. THE DETAIL SHOWN IS FOR SLOPE MATTING. FOR CHANNEL OR PIPE OUTFALL MATTING SPECIFICATIONS, PLEASE REFER TO NCSCSDM STANDARD #6.17 AND MANUFACTURER'S GUIDELINES.

EMBANKMENT MATTING DETAIL
STD. NO. REV. 30.20 1



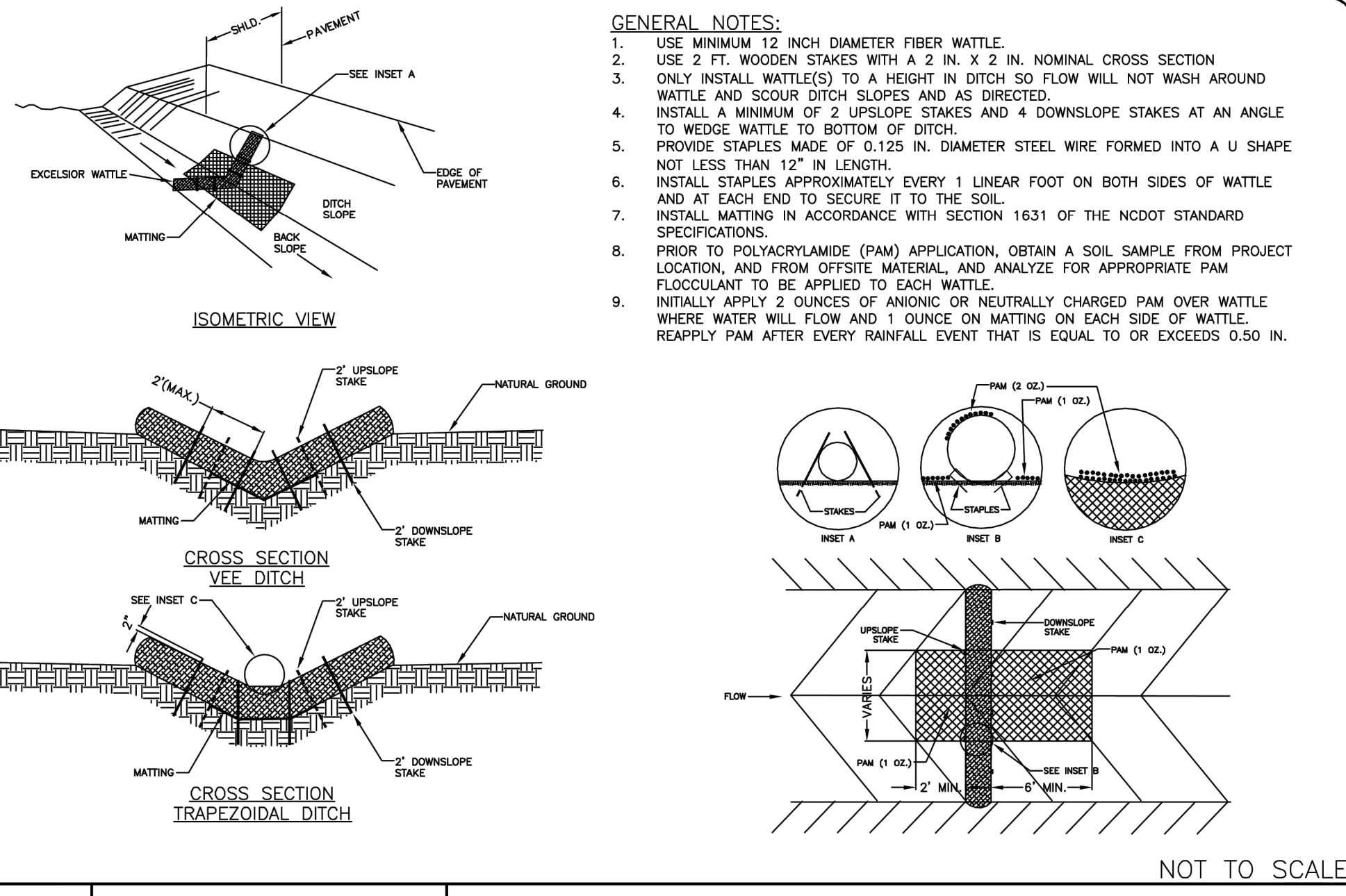
- NOTES:**
1. EXCAVATION IN THE STREAM BED SHALL BE AS NARROW AS POSSIBLE IN ORDER TO MINIMIZE DISTURBANCE AND SEDIMENTATION DURING INSTALLATION.
 2. EROSION CONTROL MATTING CONSISTING OF WOVEN COCONUT COIR FIBER MATERIAL OR APPROVED EQUAL SHALL BE USED TO REPAIR DISTURBED AREAS ALONG THE STREAM BANK. MATTING SHALL BE INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS.
 3. THE USE OF PLASTIC MESH AND/OR PLASTIC TWINE SHALL NOT BE USED ALONG STREAM BANKS OR WITHIN WETLANDS.
 4. STONE TO WELL GRADED CLASS B RIP RAP.
 5. STONE IS TO BE KEYED INTO EACH SIDE OF STREAM BED AND EACH END OF THE STABILIZATION 1FT. DEEP TO PREVENT EROSION AROUND EDGES OF STABILIZATION.
 6. STONE SHALL EXTEND FROM THE STREAM HIGH WATER MARK TO THE TOP OF THE STREAM BANK.
 7. STONE TO BE PLACED AT A THICKNESS OF 14\"/>

STREAM BANK STABILIZATION
CITY OF MORGANTON
STD. NO. REV. 218 3-7-11
SHEET 1 OF 1



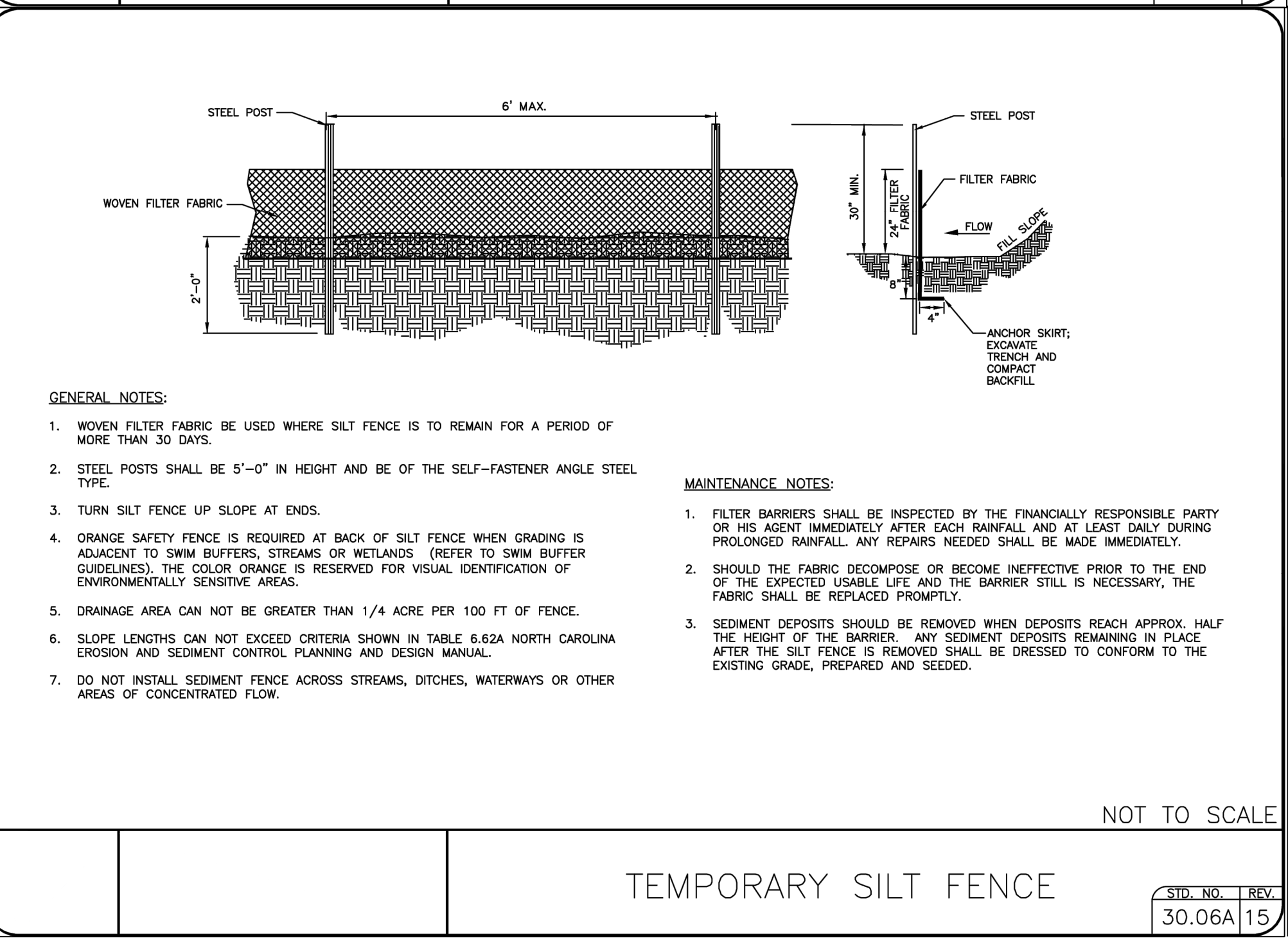
- NOTES:**
1. A STABILIZED ENTRANCE PAD OF 2-3\"/>

STABILIZED CONSTRUCTION ENTRANCE
STD. NO. REV. 30.11A 15



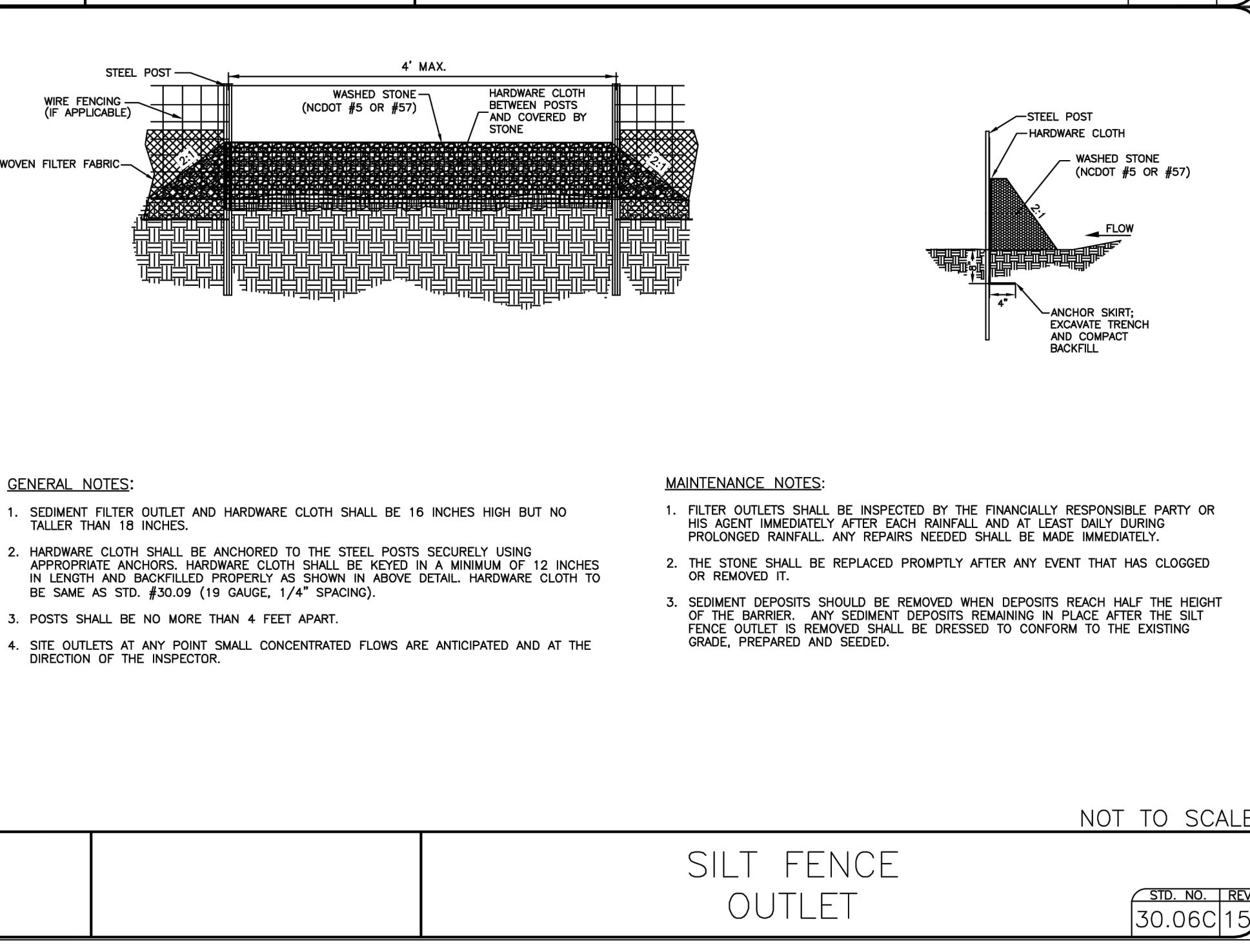
- GENERAL NOTES:**
1. USE MINIMUM 12 INCH DIAMETER FIBER WATTLE.
 2. USE 2 FT. WOODEN STAKES WITH A 2 IN. X 2 IN. NOMINAL CROSS SECTION.
 3. ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
 4. INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
 5. PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12\"/>

TEMPORARY WATTLE CHECK DAM WITH MATTING AND OPTIONAL PAM
STD. NO. REV. 30.10C 15



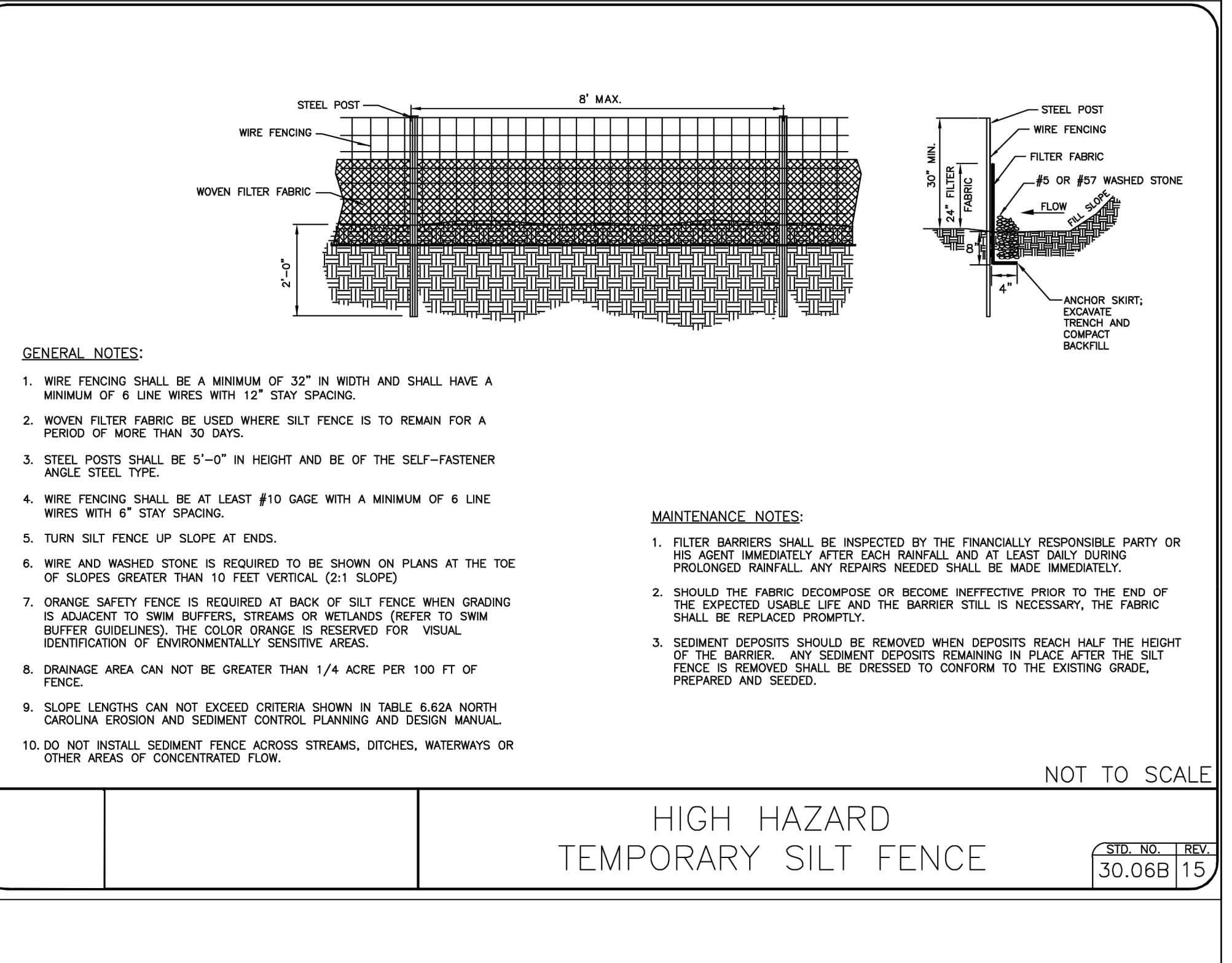
- GENERAL NOTES:**
1. WOVEN FILTER FABRIC BE USED WHERE SILT FENCE IS TO REMAIN FOR A PERIOD OF MORE THAN 30 DAYS.
 2. STEEL POSTS SHALL BE 5\"/>
- MAINTENANCE NOTES:**
1. FILTER BARRIERS SHALL BE INSPECTED BY THE FINANCIALLY RESPONSIBLE PARTY OR HIS AGENT IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS NEEDED SHALL BE MADE IMMEDIATELY.
 2. 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.
 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 SEED.

TEMPORARY SILT FENCE
STD. NO. REV. 30.06A 15



- GENERAL NOTES:**
1. 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\"/>
- MAINTENANCE NOTES:**
1. FILTER OUTLETS SHALL BE INSPECTED BY THE FINANCIALLY RESPONSIBLE PARTY OR HIS AGENT IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS NEEDED SHALL BE MADE IMMEDIATELY.
 2. THE STONE SHALL BE REPLACED PROMPTLY AFTER ANY EVENT THAT HAS CLOGGED OR REMOVED IT.
 3. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OUTLET IS REMOVED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEED.
 4. SITE OUTLETS AT ANY POINT SMALL CONCENTRATED FLOWS ARE ANTICIPATED AND AT THE DIRECTION OF THE INSPECTOR.

SILT FENCE OUTLET
STD. NO. REV. 30.06C 15



- GENERAL NOTES:**
1. WIRE FENCING SHALL BE A MINIMUM OF 32\"/>
- MAINTENANCE NOTES:**
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.
 2. 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.
 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, PREPARED AND SEED.

HIGH HAZARD TEMPORARY SILT FENCE
STD. NO. REV. 30.06B 15

MERRICK
301 S. McDOWELL STREET, SUITE 300
MORGANTON, NC 28650
PHONE: 704.520.6600
FAX: 704.520.6601
WWW.MERRICKCORP.COM
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CITY OF MORGANTON

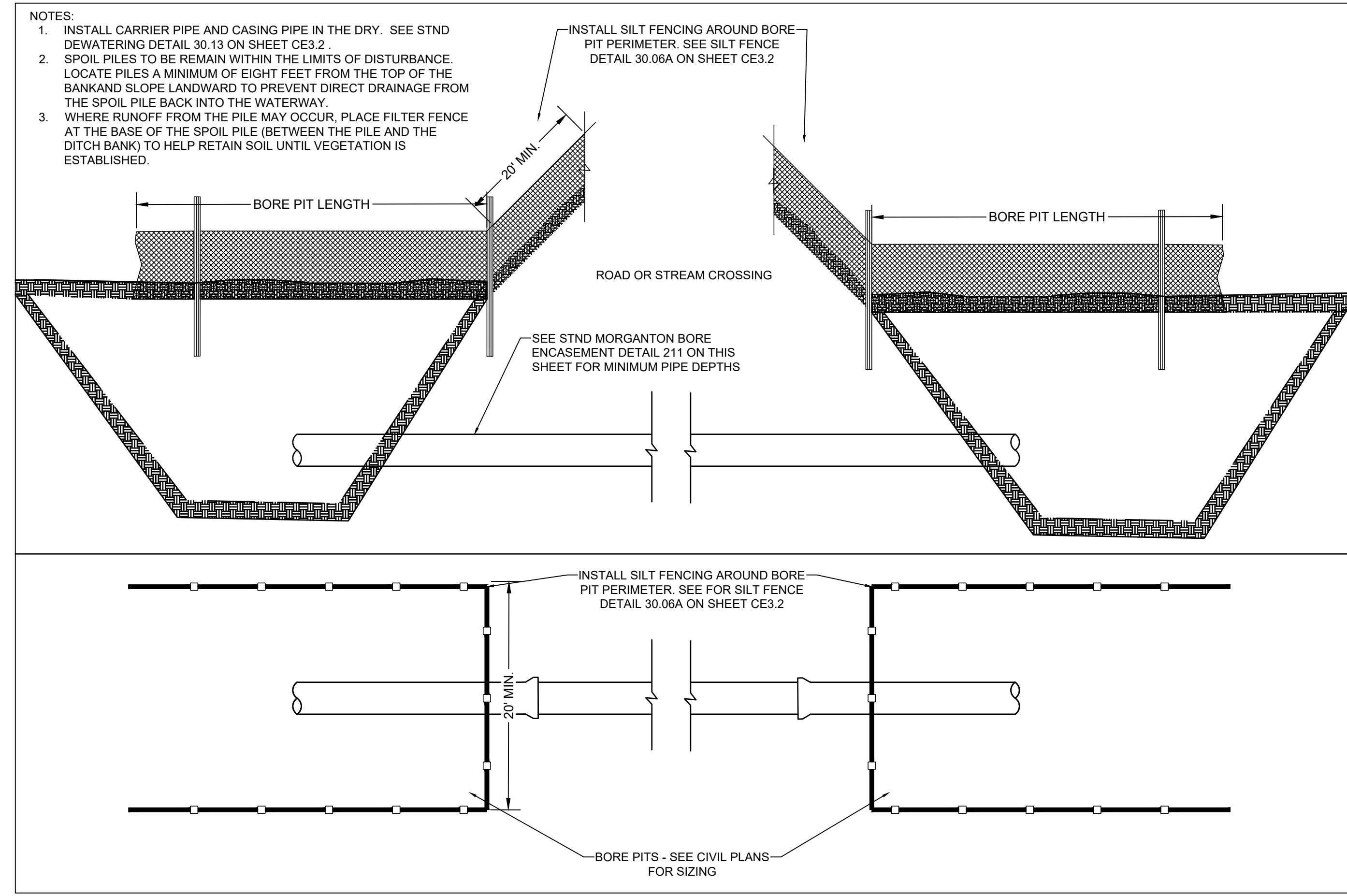
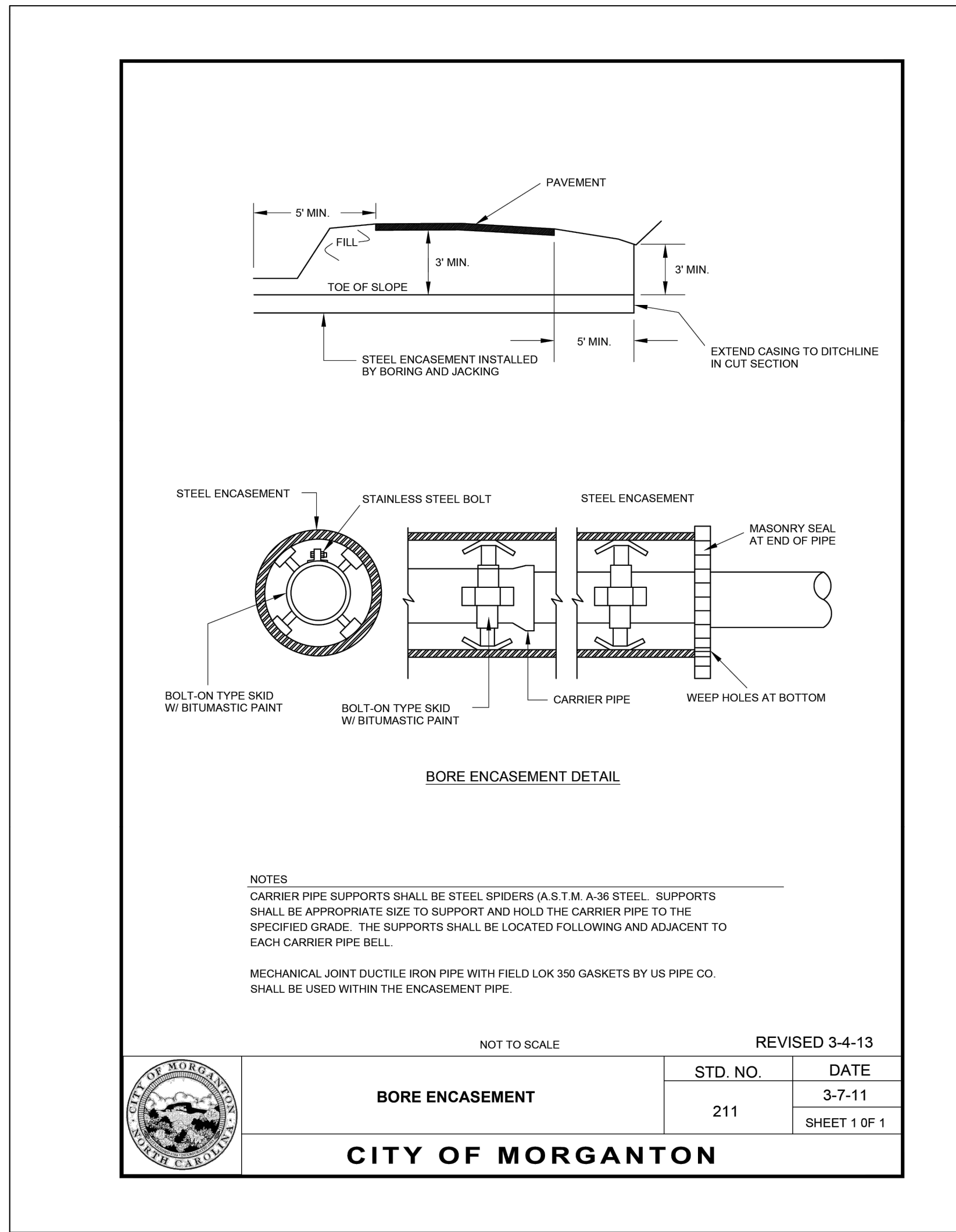
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2	06/06/22		
3	11/06/22		
4	11/06/22		

Bost Rd Sewer Improvements
Morganton, NC

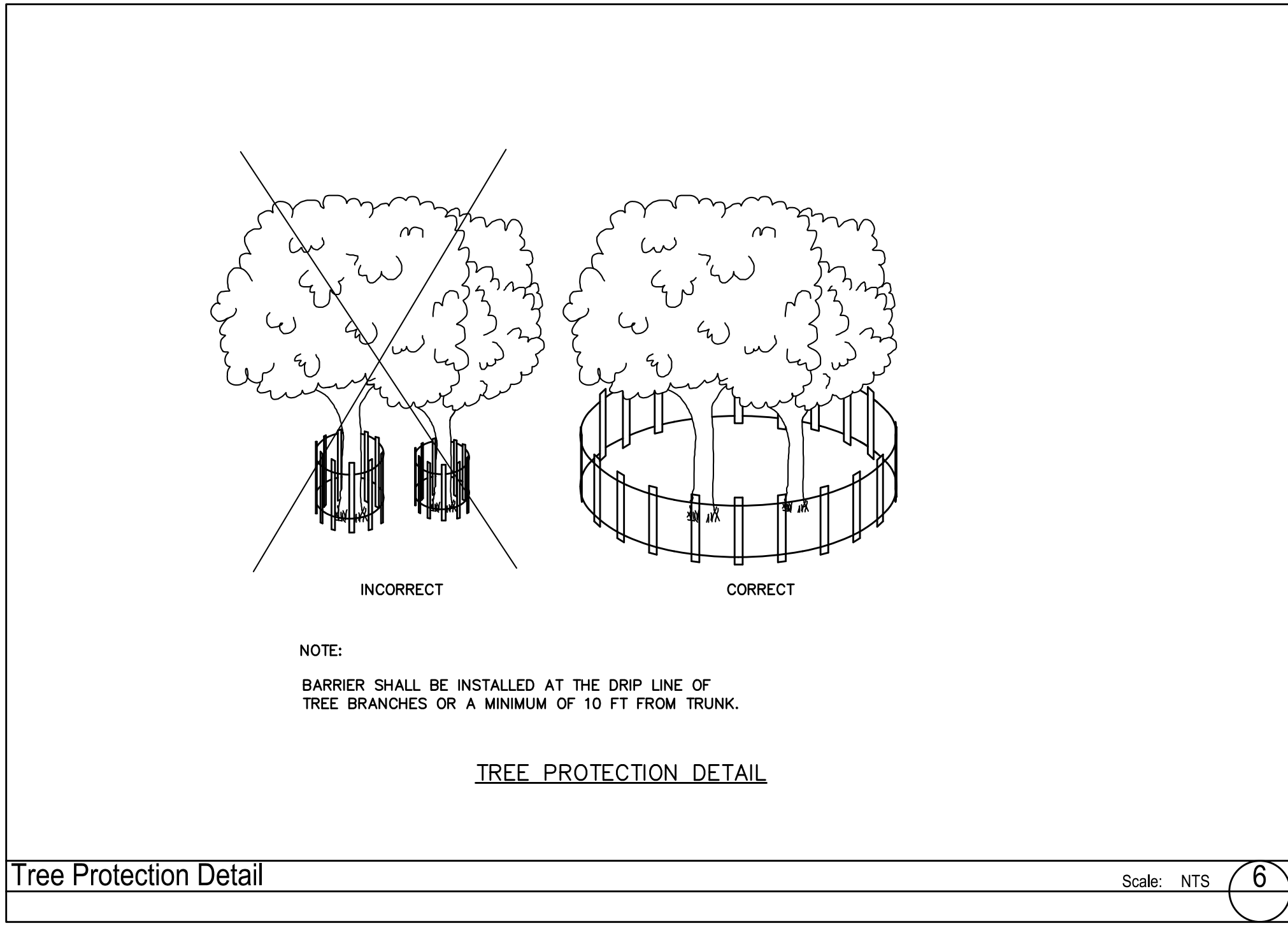
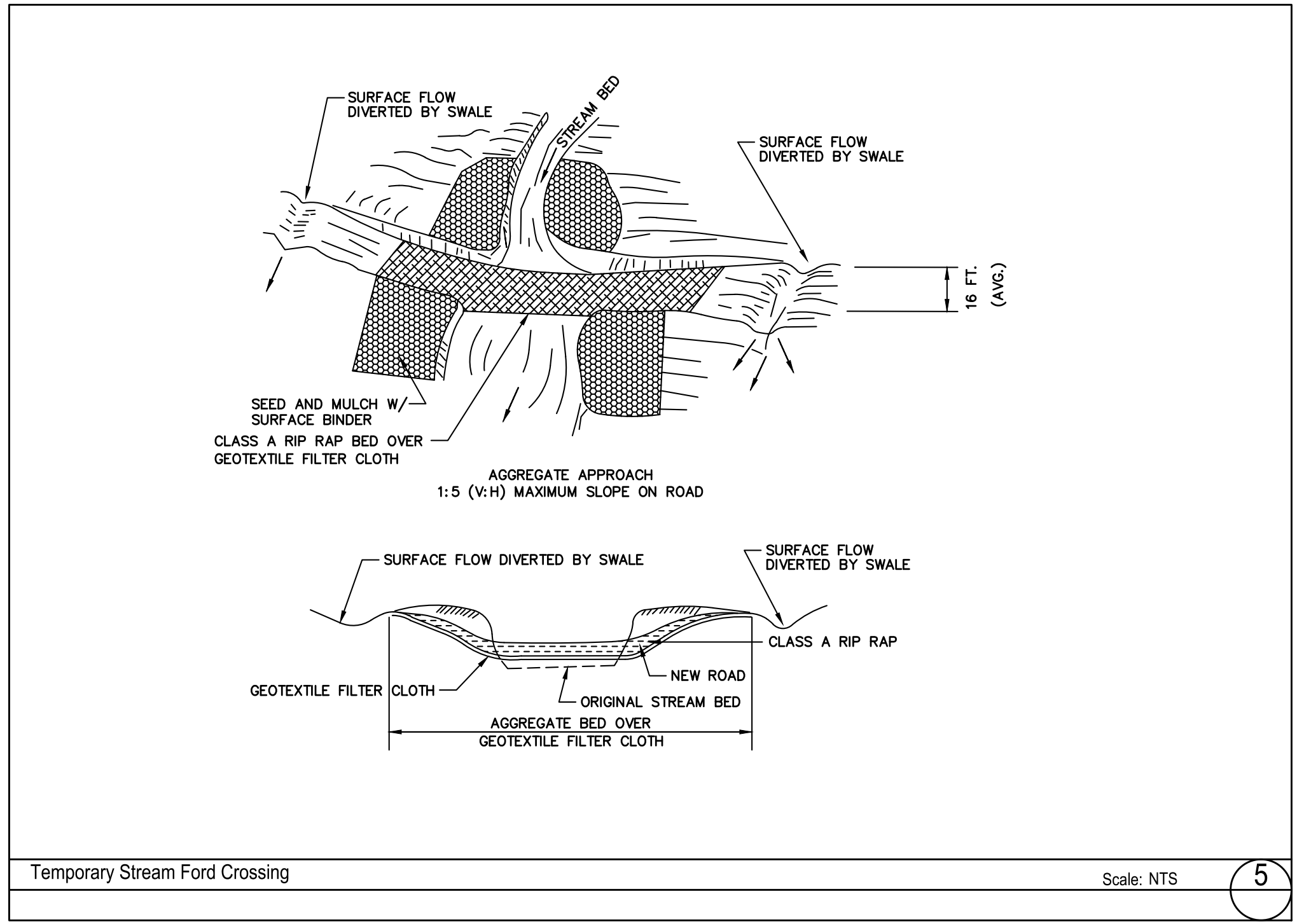
EROSION CONTROL DETAILS

FINAL DESIGN - 100% RELEASED FOR CONSTRUCTION

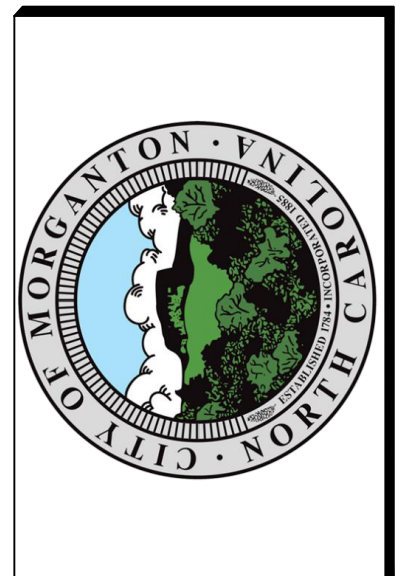
JOB NO: 65421093
DATE: 05/04/23
SHEET: CE3.2



3 BORE PIT EROSION CONTROL MEASURES NTS



MERRICK
 301 S. MCCOWELL STREET, SUITE 300
 MORGANTON, NC 28650
 PHONE: 704.529.6000



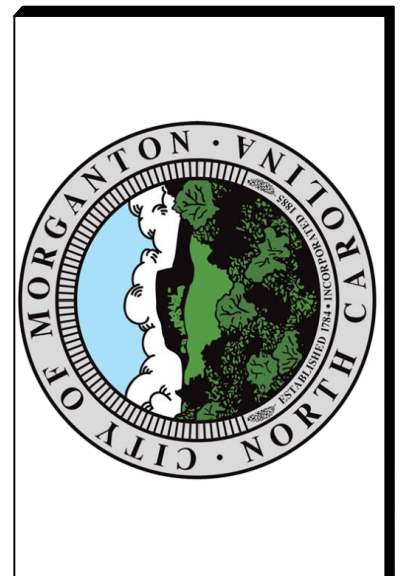
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3	11/06/22	EC		
4	11/09/22	SM		

Bost Rd Sewer Improvements
 Morganton, NC

EROSION CONTROL DETAILS

**FINAL DESIGN - 100%
 RELEASED FOR
 CONSTRUCTION**

JOB NO: 65421093
 DATE: 05/04/23
 SHEET: CE3.4

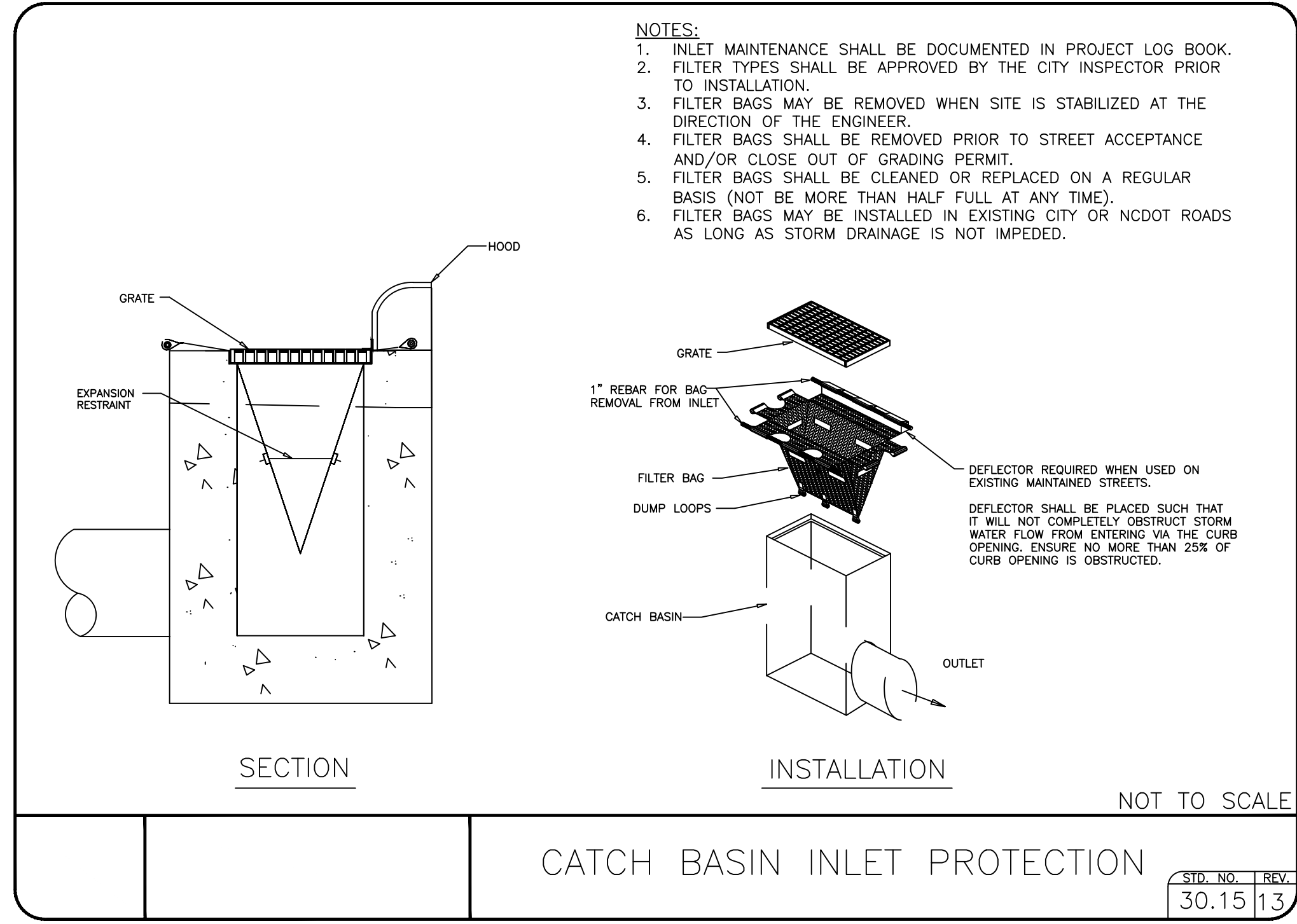


REVISIONS	DATE	BY	DESCRIPTION
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2			
3			
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DRAWN BY:	DMM	06/06/22
CHECKED BY:	ECM	11/06/22
APPROVED BY:	SJM	11/09/22

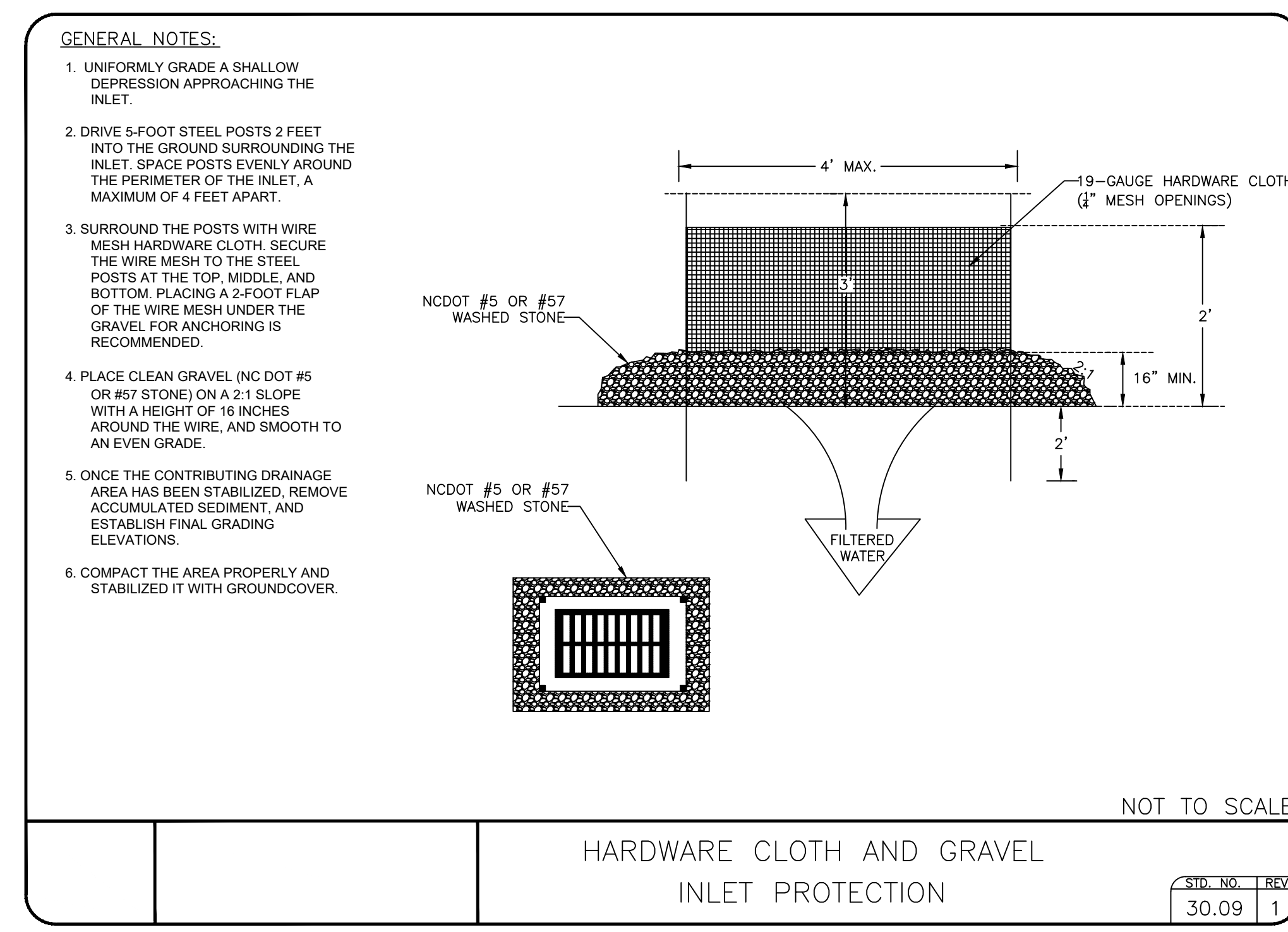
Bost Rd Sewer Improvements
 Morganton, NC
EROSION CONTROL DETAILS

**FINAL DESIGN - 100%
 RELEASED FOR
 CONSTRUCTION**



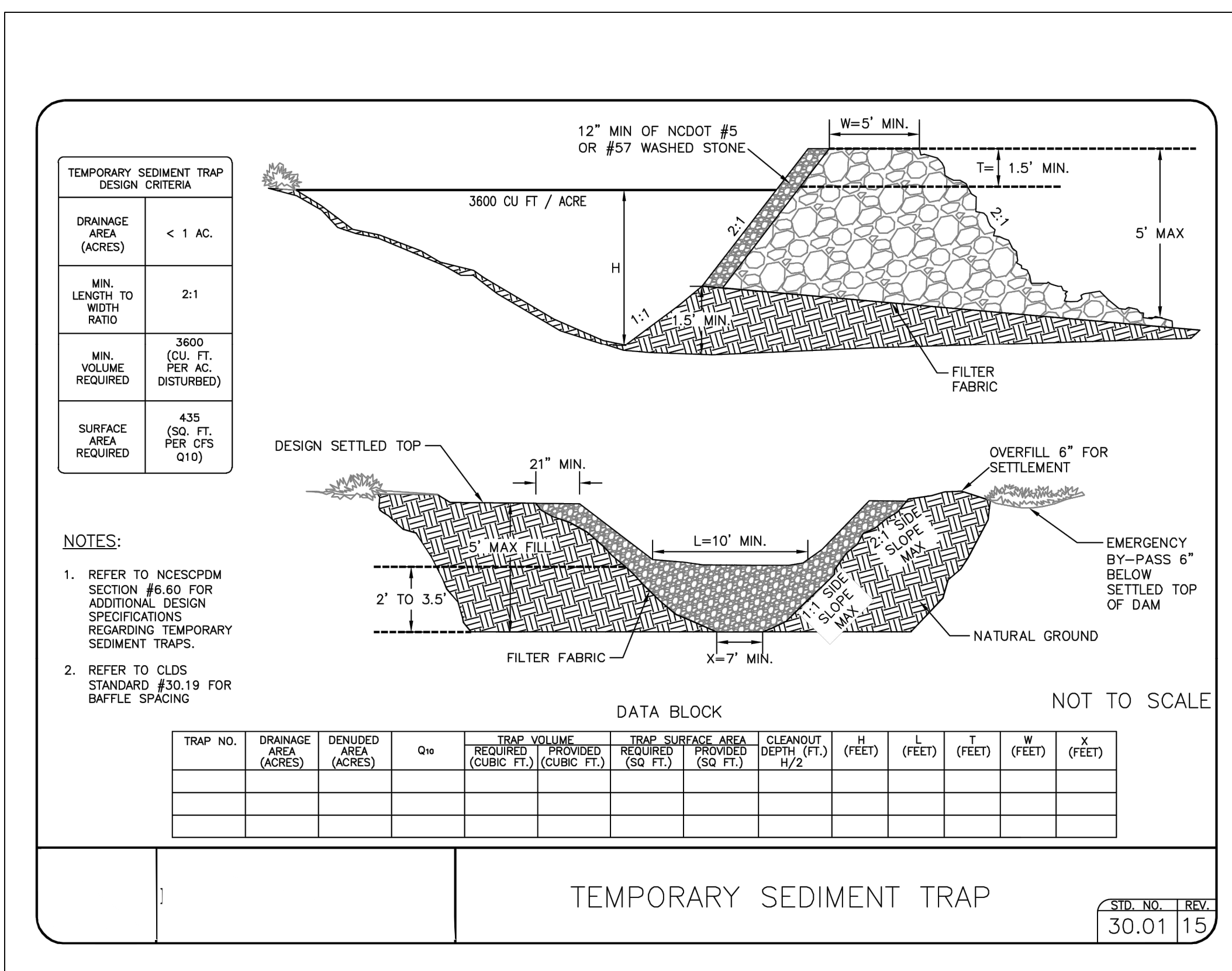
- NOTES:**
1. INLET MAINTENANCE SHALL BE DOCUMENTED IN PROJECT LOG BOOK.
 2. FILTER TYPES SHALL BE APPROVED BY THE CITY INSPECTOR PRIOR TO INSTALLATION.
 3. FILTER BAGS MAY BE REMOVED WHEN SITE IS STABILIZED AT THE DIRECTION OF THE ENGINEER.
 4. FILTER BAGS SHALL BE REMOVED PRIOR TO STREET ACCEPTANCE AND/OR CLOSE OUT OF GRADING PERMIT.
 5. FILTER BAGS SHALL BE CLEANED OR REPLACED ON A REGULAR BASIS (NOT BE MORE THAN HALF FULL AT ANY TIME).
 6. FILTER BAGS MAY BE INSTALLED IN EXISTING CITY OR NCDOT ROADS AS LONG AS STORM DRAINAGE IS NOT IMPEDED.

NOT TO SCALE
CATCH BASIN INLET PROTECTION
 STD. NO. REV. 30.15 13



- GENERAL NOTES:**
1. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
 2. DRIVE 5-FOOT STEEL POSTS 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4 FEET APART.
 3. SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM. PLACING A 2-FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
 4. PLACE CLEAN GRAVEL (NC DOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 18 INCHES AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.
 5. ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT, AND ESTABLISH FINAL GRADING ELEVATIONS.
 6. COMPACT THE AREA PROPERLY AND STABILIZED IT WITH GROUND COVER.

NOT TO SCALE
HARDWARE CLOTH AND GRAVEL INLET PROTECTION
 STD. NO. REV. 30.09 1



TEMPORARY SEDIMENT TRAP DESIGN CRITERIA

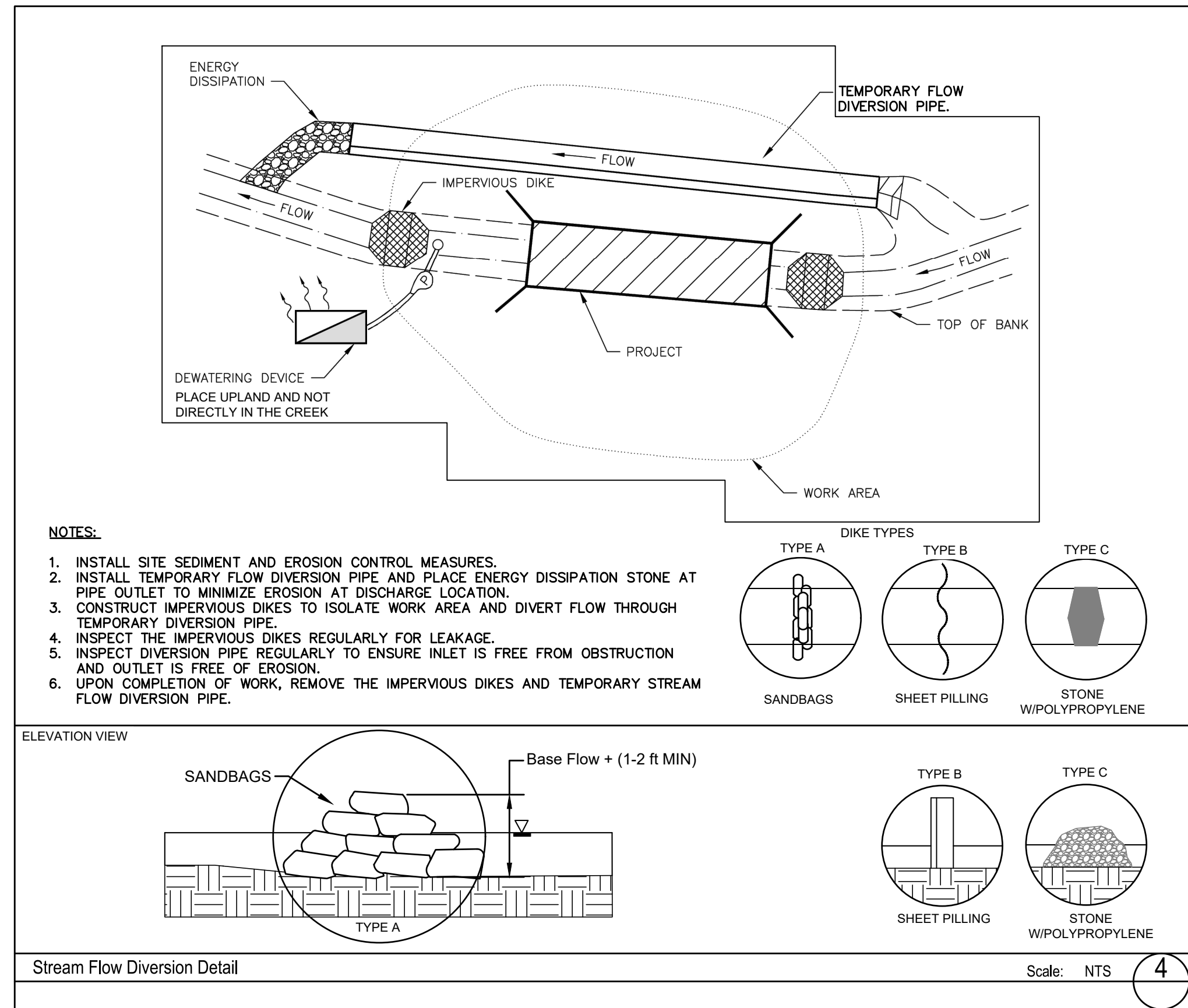
DRAINAGE AREA (ACRES)	< 1 AC.
MIN. LENGTH TO WIDTH RATIO	2:1
MIN. VOLUME REQUIRED (CU. FT. PER AC. DISTURBED)	3600
SURFACE AREA REQUIRED (SQ. FT. PER CFS Q10)	435

- NOTES:**
1. REFER TO NCSOPDM SECTION #6.60 FOR ADDITIONAL DESIGN SPECIFICATIONS REGARDING TEMPORARY SEDIMENT TRAPS.
 2. REFER TO CLDS STANDARD #30.19 FOR BAFFLE SPACING

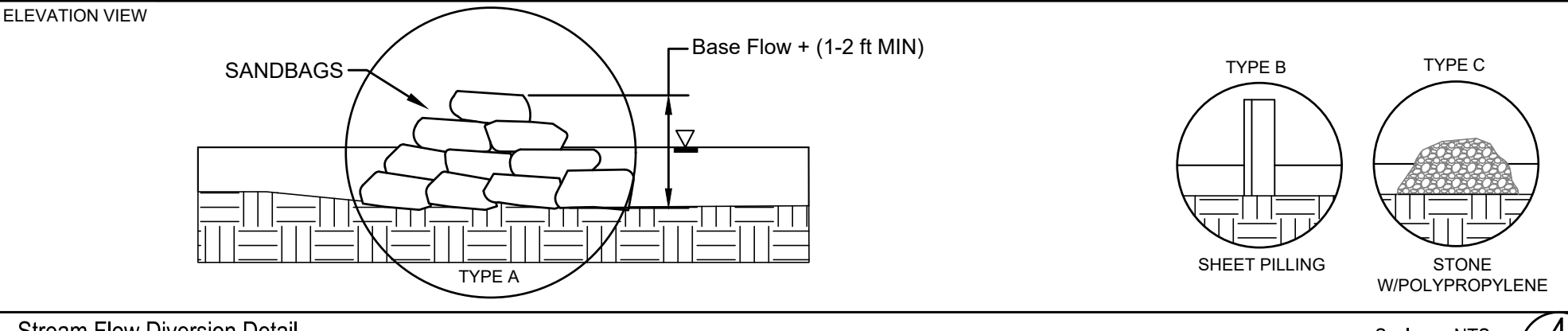
DATA BLOCK

TRAP NO.	DRAINAGE AREA (ACRES)	DENUDE AREA (ACRES)	Q ₁₀	TRAP VOLUME		TRAP SURFACE AREA		CLEANOUT DEPTH (FT.) 1/2	H (FEET)	L (FEET)	T (FEET)	W (FEET)	X (FEET)
				REQUIRED (CU. FT.)	PROVIDED (CU. FT.)	REQUIRED (SQ. FT.)	PROVIDED (SQ. FT.)						

NOT TO SCALE
TEMPORARY SEDIMENT TRAP
 STD. NO. REV. 30.01 15



- NOTES:**
1. INSTALL SITE SEDIMENT AND EROSION CONTROL MEASURES.
 2. INSTALL TEMPORARY FLOW DIVERSION PIPE AND PLACE ENERGY DISSIPATION STONE AT PIPE OUTLET TO MINIMIZE EROSION AT DISCHARGE LOCATION.
 3. CONSTRUCT IMPERVIOUS DIKES TO ISOLATE WORK AREA AND DIVERT FLOW THROUGH TEMPORARY DIVERSION PIPE.
 4. INSPECT THE IMPERVIOUS DIKES REGULARLY FOR LEAKAGE.
 5. INSPECT DIVERSION PIPE REGULARLY TO ENSURE INLET IS FREE FROM OBSTRUCTION AND OUTLET IS FREE OF EROSION.
 6. UPON COMPLETION OF WORK, REMOVE THE IMPERVIOUS DIKES AND TEMPORARY STREAM FLOW DIVERSION PIPE.

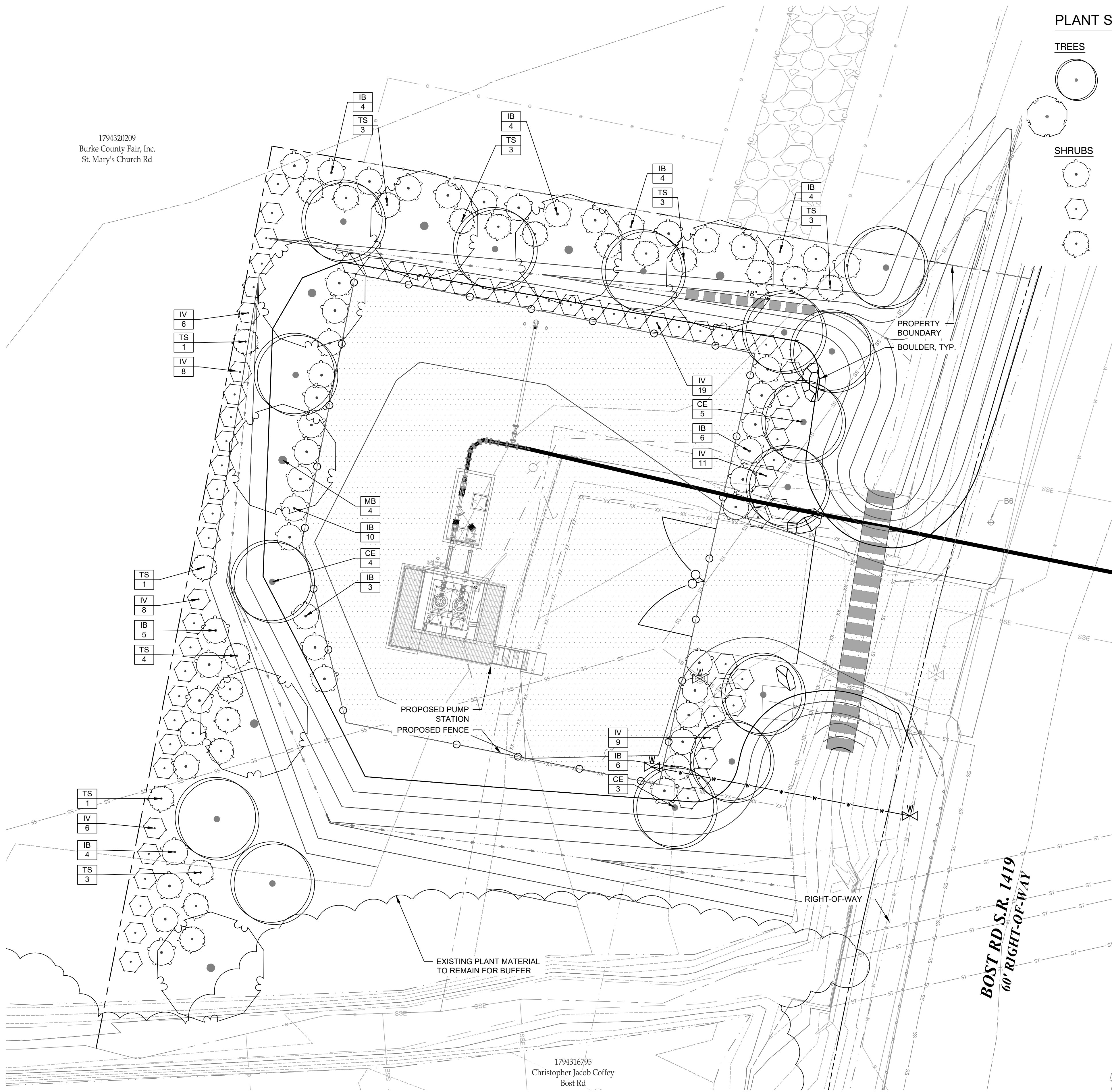


Stream Flow Diversion Detail Scale: NTS 4

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1794320209
Burke County Fair, Inc.
St. Mary's Church Rd

1794316795
Christopher Jacob Coffey
Bost Rd

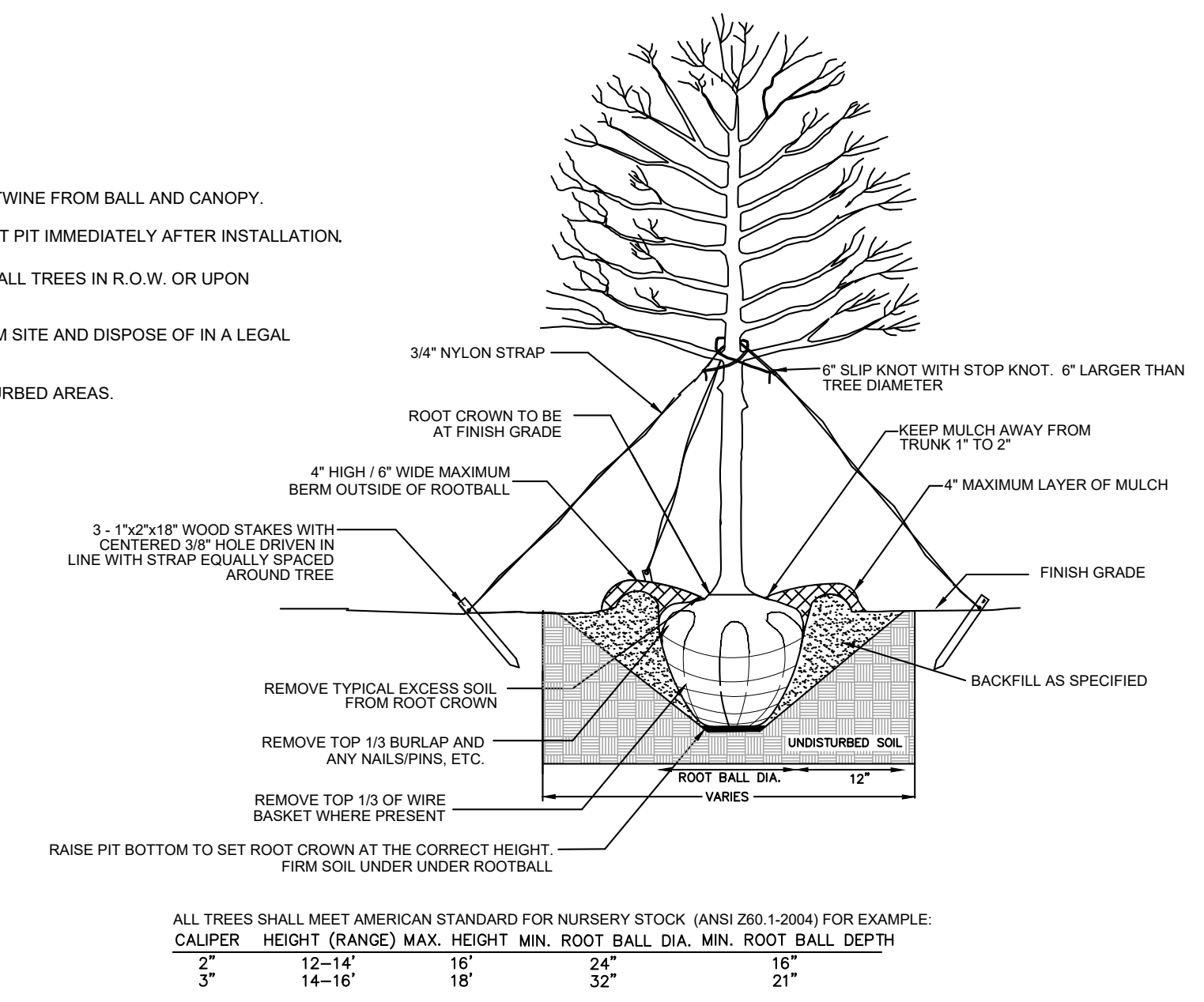


PLANT SCHEDULE

TREES	CODE	BOTANICAL NAME	COMMON NAME	SIZE	QTY
	CE	Cercis canadensis	Eastern Redbud Multi-trunk	1.5" Cal. 6' ht.	15
	MB	Magnolia grandiflora 'Brackens Brown Beauty'	Bracken's Beauty Southern Magnolia	2" Cal. 8' ht. min.	7
SHRUBS	CODE	BOTANICAL NAME	COMMON NAME	SIZE	QTY
	IB	Ilex cornuta 'Burfordii Nana'	Dwarf Burford Holly	3' Ht.	50
	IV	Itea virginica	Virginia Sweetspire	1' Ht.	67
	TS	Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	3' Ht.	22

NOTES:

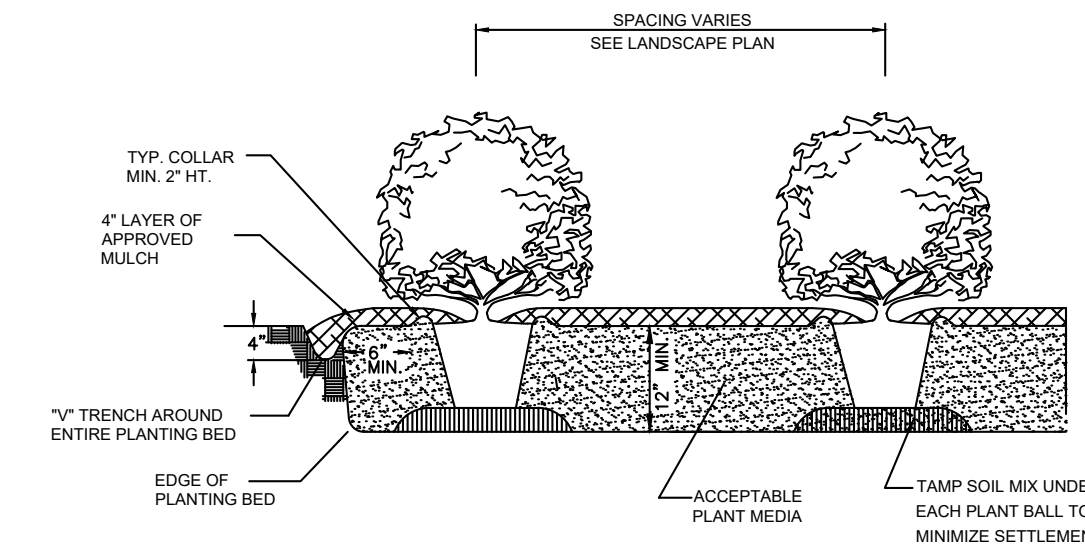
1. REMOVE WIRE AND NYLON TWINE FROM BALL AND CANOPY.
2. SOAK ROOT BALL AND PLANT PIT IMMEDIATELY AFTER INSTALLATION.
3. STAKING IS REQUIRED FOR ALL TREES IN R.O.W. OR UPON REQUEST OF ARBORIST.
4. REMOVE EXCESS SOIL FROM SITE AND DISPOSE OF IN A LEGAL MANNER.
5. RESEED UNMULCHED, DISTURBED AREAS.



2 TREE PLANTING DETAIL SCALE: NTS

NOTES:

1. SCARIFY ROOT MASS OF CONTAINERIZED PLANT MATERIAL.
2. INSTALL CONTAINERIZED PLANTS AT FINISHED GRADE.
3. TAMP PLANTING MIX FIRMLY AS PIT IS FILLED AROUND EACH PLANT BALL.
4. OMIT COLLAR AROUND EACH SHRUB WHEN IRRIGATION SYSTEM IS PRESENT.
5. SOAK EACH PLANT BALL AND PIT IMMEDIATELY AFTER INSTALLATION.



TYPICAL PLANTING BED DETAIL

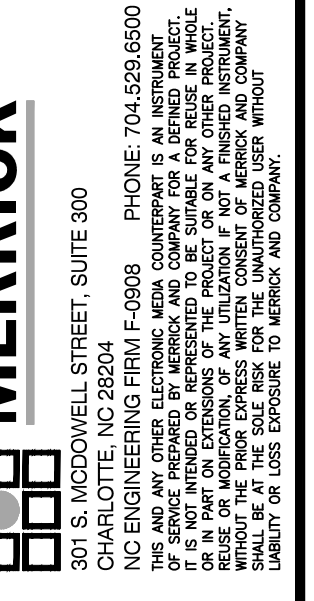


3 SHRUB PLANTING DETAIL SCALE: NTS

NOTE: ALL BOULDERS SHALL BE AT LEAST 3' IN TWO DIRECTIONS

1 PLANTING PLAN

Scale: 1" = 10'



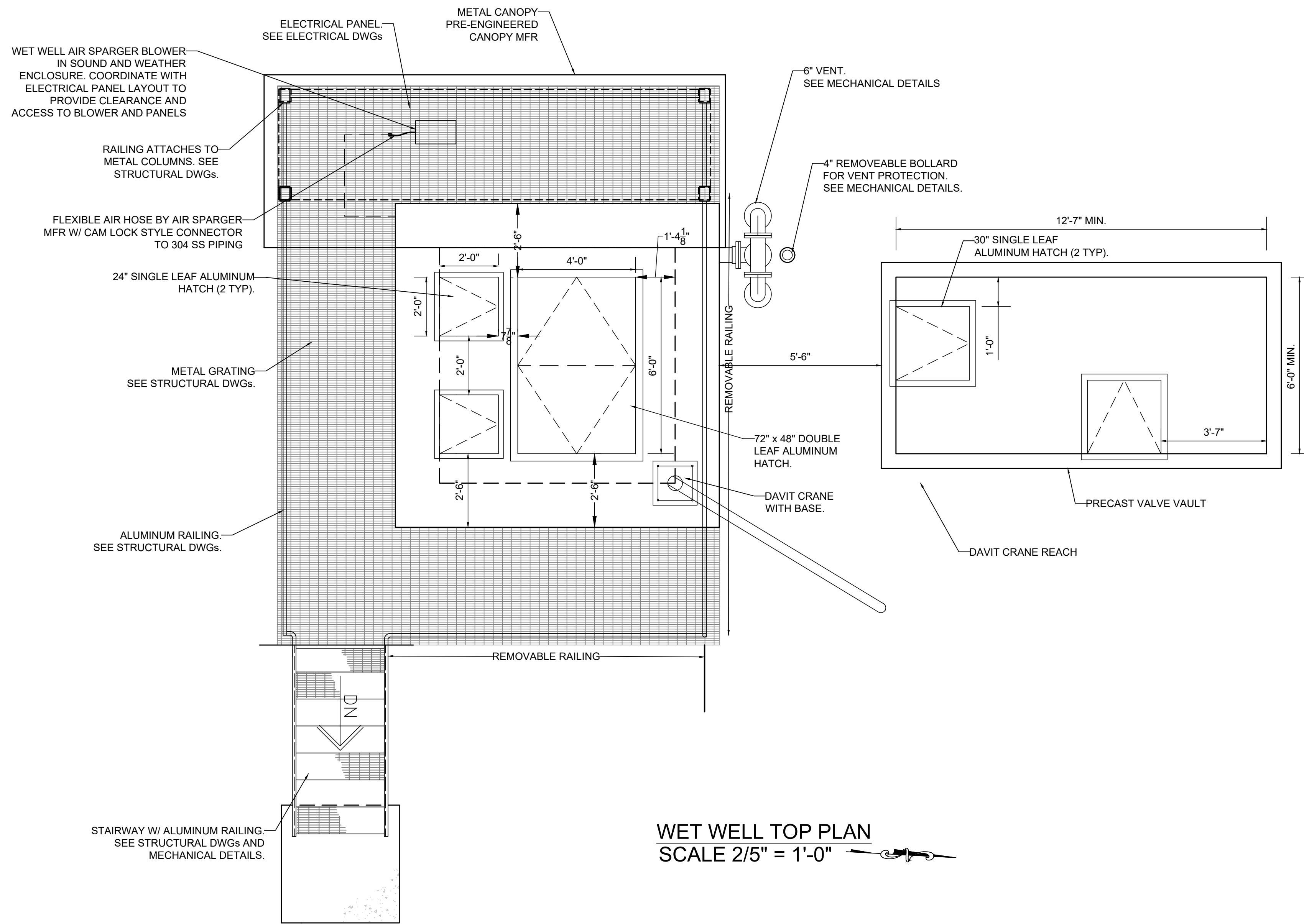
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RRH	6/06/22	RRH	6/06/22
DRN	6/06/22	ECH	11/06/22
APPROVED BY: <td>SKD</td> <td>SKD</td> <td>11/30/22</td>	SKD	SKD	11/30/22

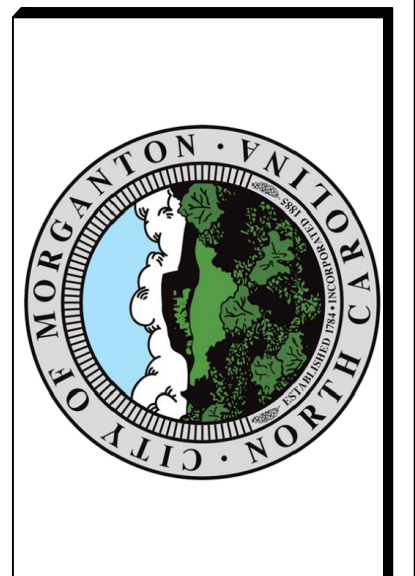
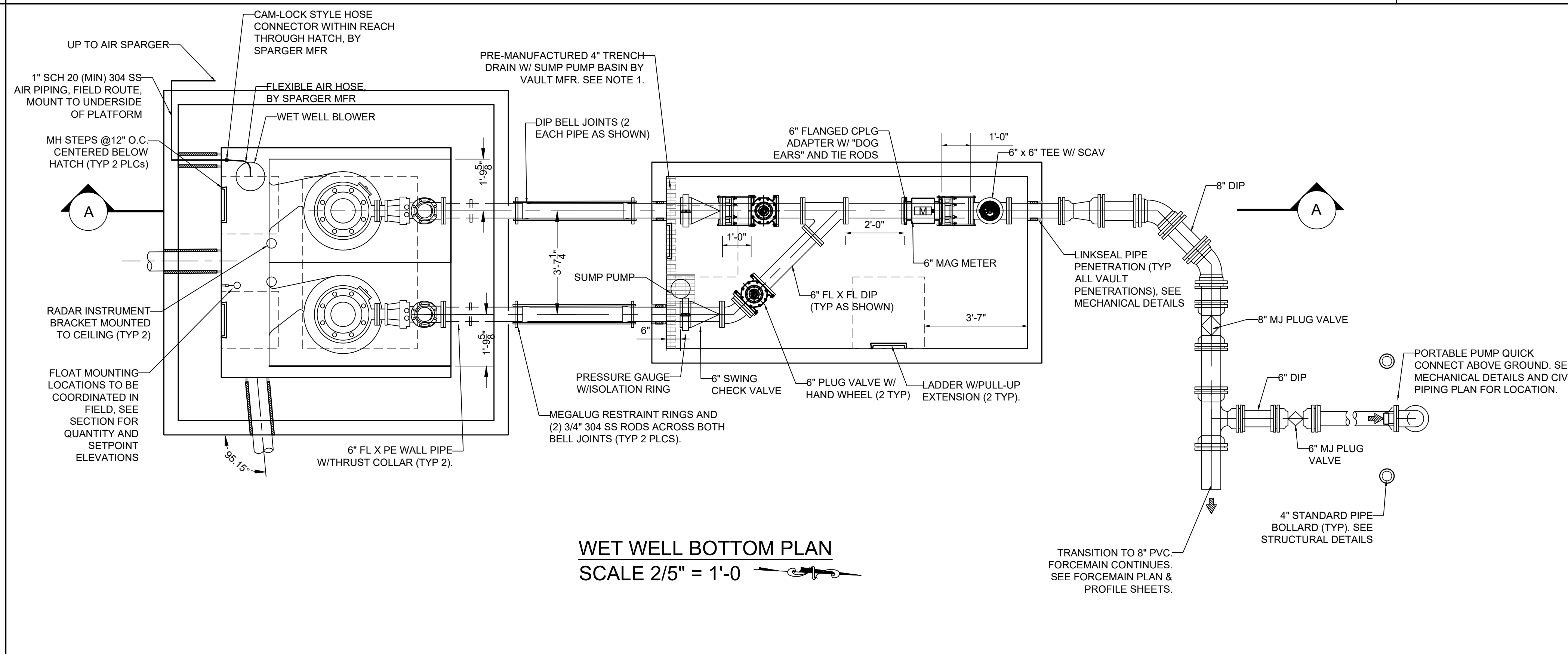
Bost Rd Sewer Improvements
Morganton, NC
Pump Station Planting Plan

**FINAL DESIGN - 100%
RELEASED FOR
CONSTRUCTION**

JOB NO: 65421093
DATE: 05/04/23
SHEET: L1.1



- NOTES
1. 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.
 2. SEE STRUCTURAL DRAWINGS FOR METAL CANOPY STRUCTURE, DAVIT CRANE INSTALLATION, AND METAL GRATING DESIGN.
 3. CONTRACTOR TO COORDINATE PUMP GUIDE RAIL AND PUMP LOCATIONS BASED ON GIVEN HATCH LOCATION.



REV	REVISION DESCRIPTION	DATE	CHANGED BY	DESIGNED BY
1	100% review comments 1	6/7/23	DM	SKD

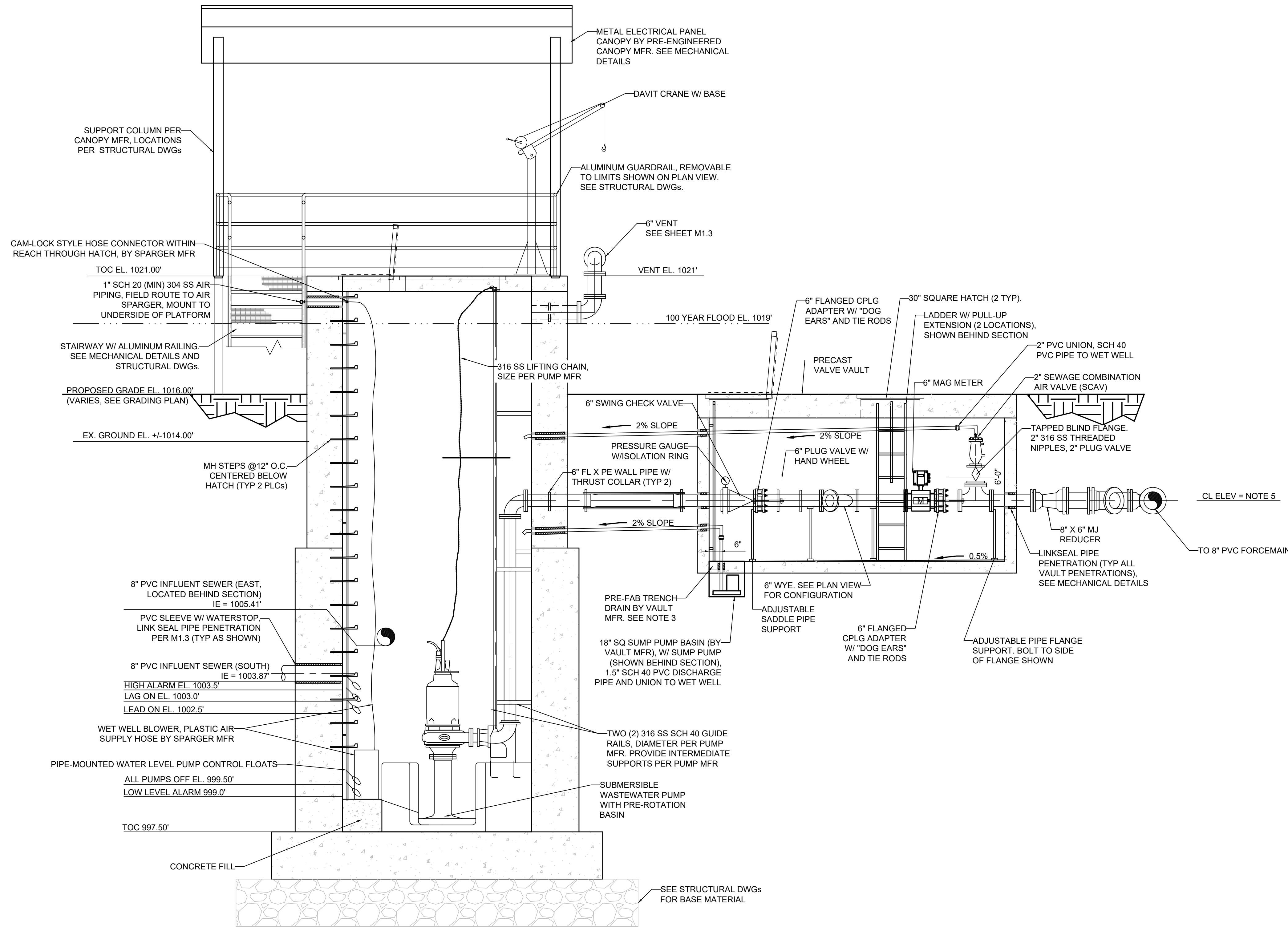
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APPROVED BY:	DATE:
DM/03/23	03/23/23

Bost Rd PS & Gravity Sewer Improvements
Morganton, NC
**PUMP STATION
PLAN VIEWS**

**FINAL DESIGN - 100%
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CONSTRUCTION**

JOB NO: 65421093
DATE: 05/04/23
SHEET: M1.1

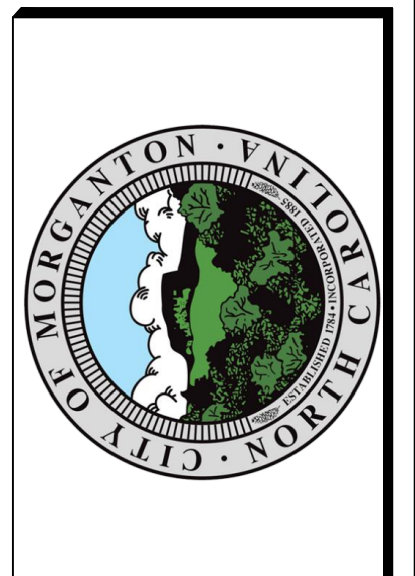
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SECTION A
SCALE 2/5" = 1'-0"

NOTES

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 TRENCH.
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 SHALL BE 2'-6" ABOVE VAULT FLOOR.



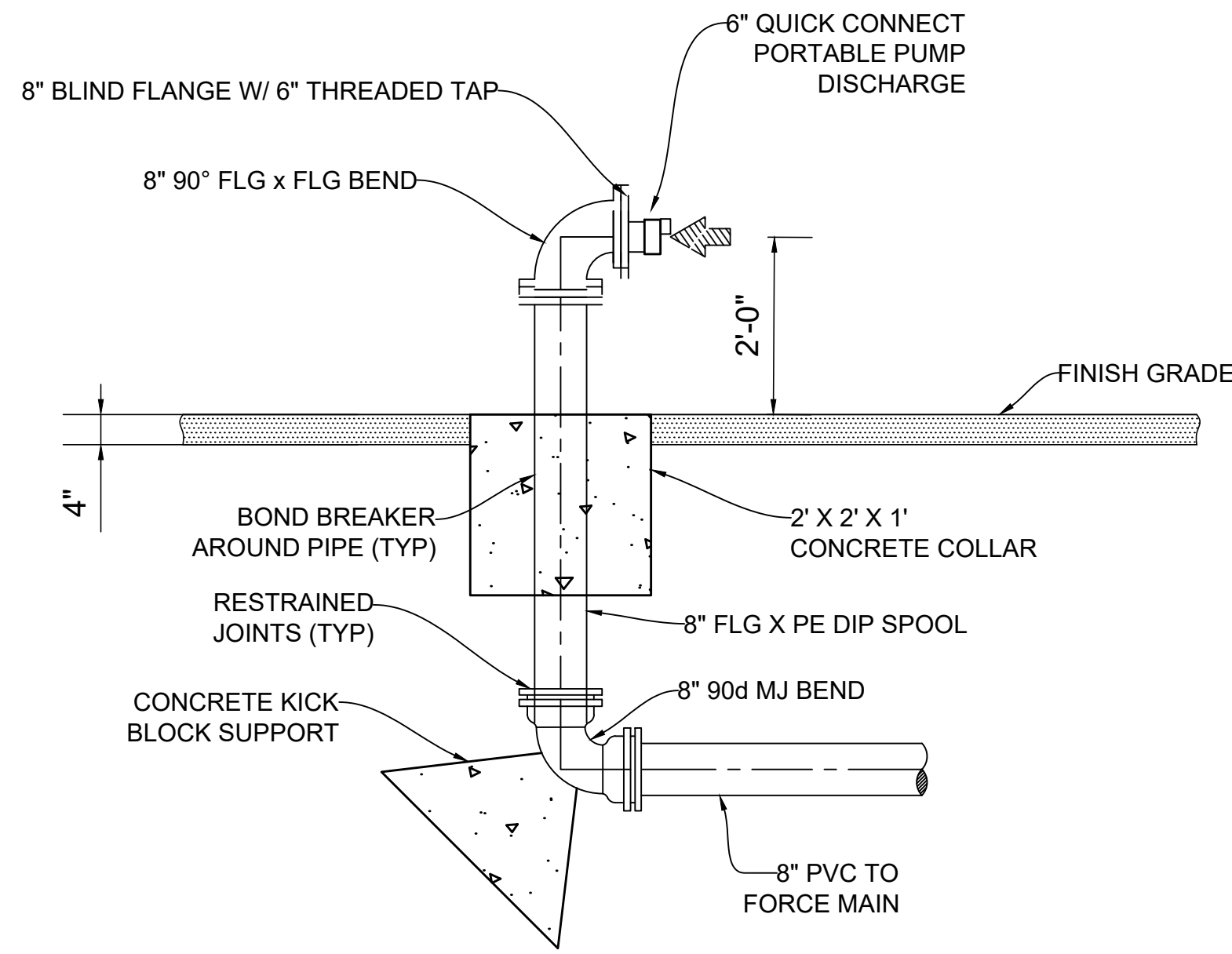
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DATE	DESIGN BY	CHECKED BY	APPROVED BY
MM/DD/YY	DesignXXX	DrawnXXX	ApprXXX

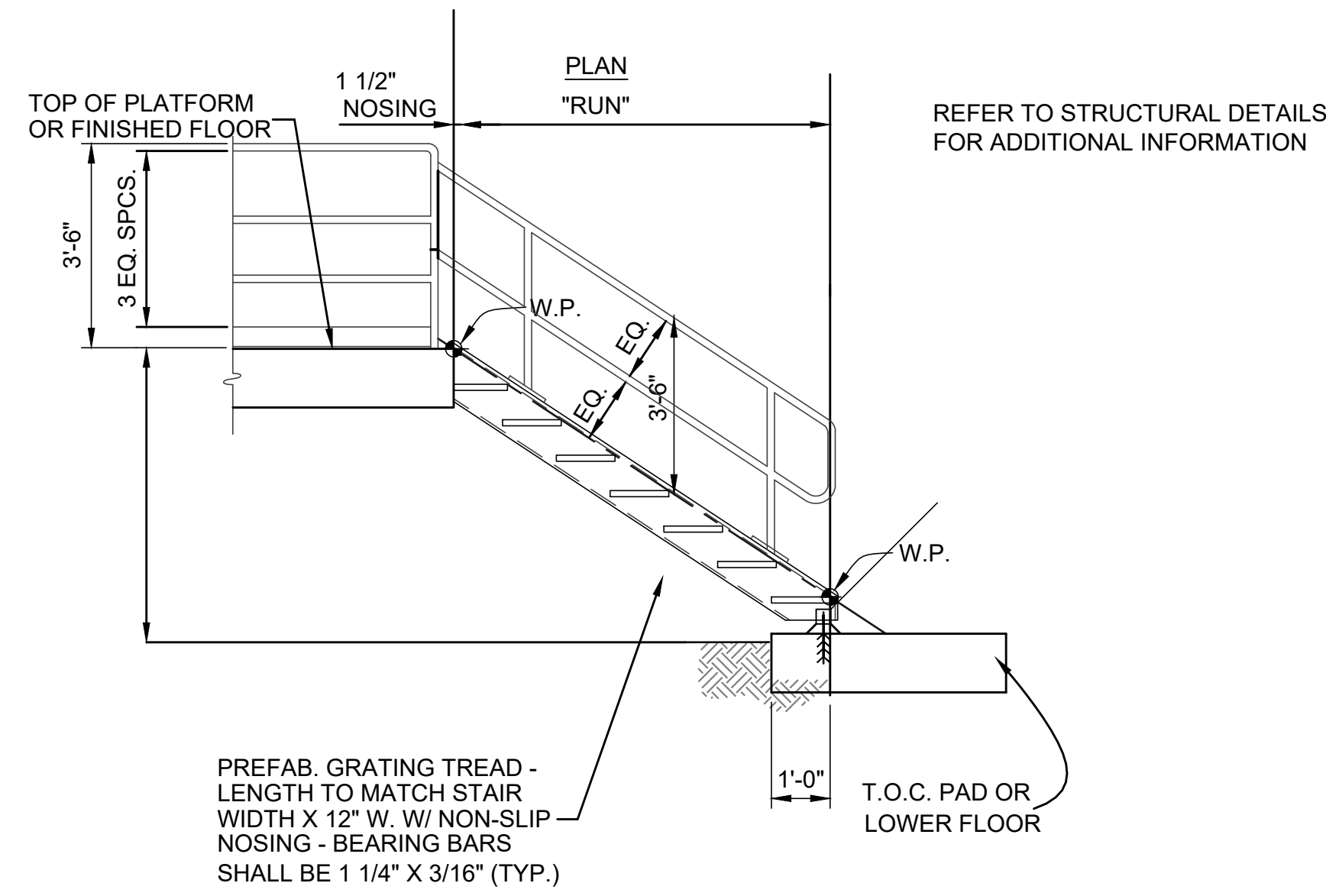
Bost Rd PS & Gravity Sewer Improvements
Morganton, NC
PUMP STATION
WET WELL SECTION A

**FINAL DESIGN - 100%
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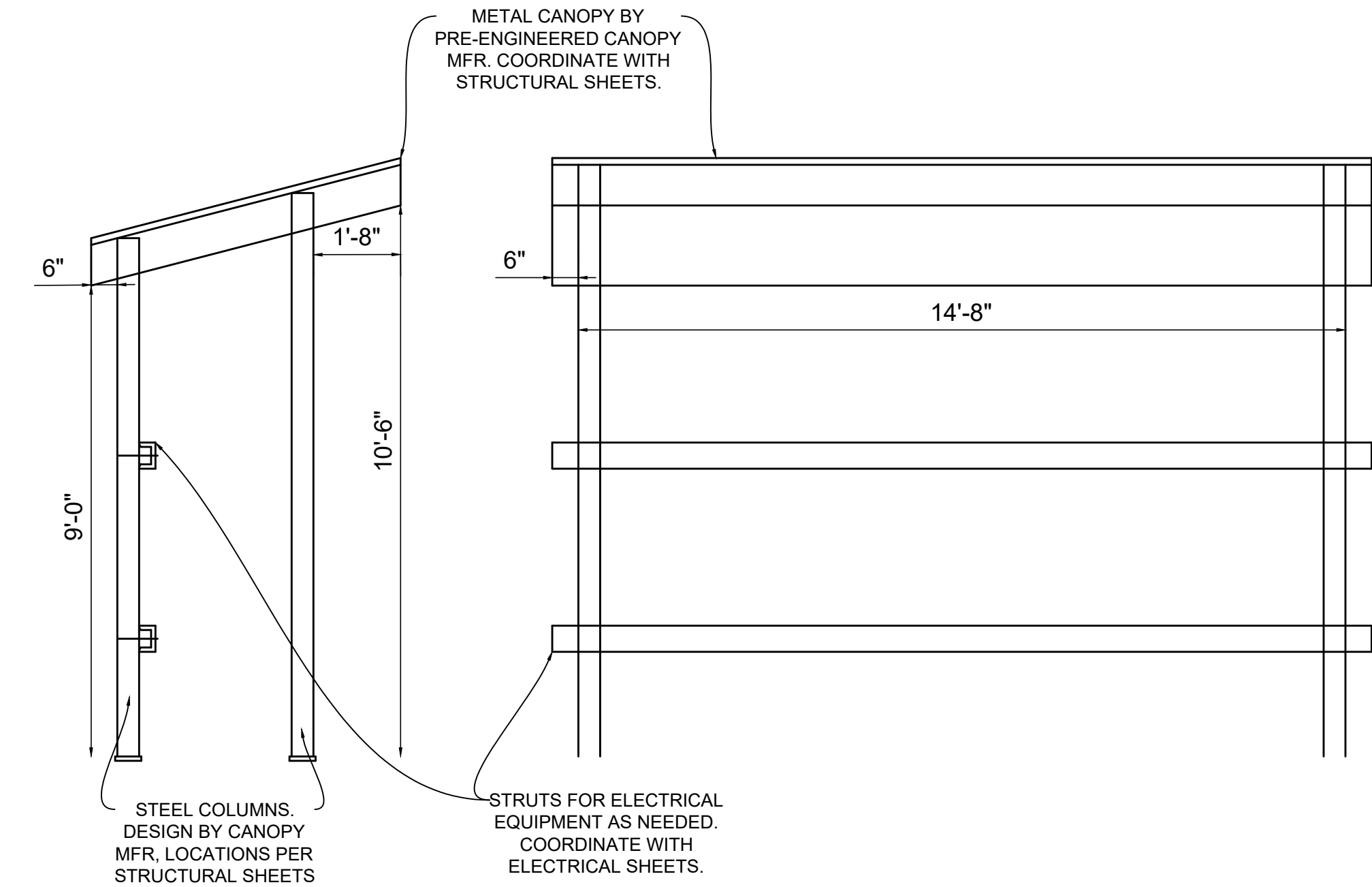
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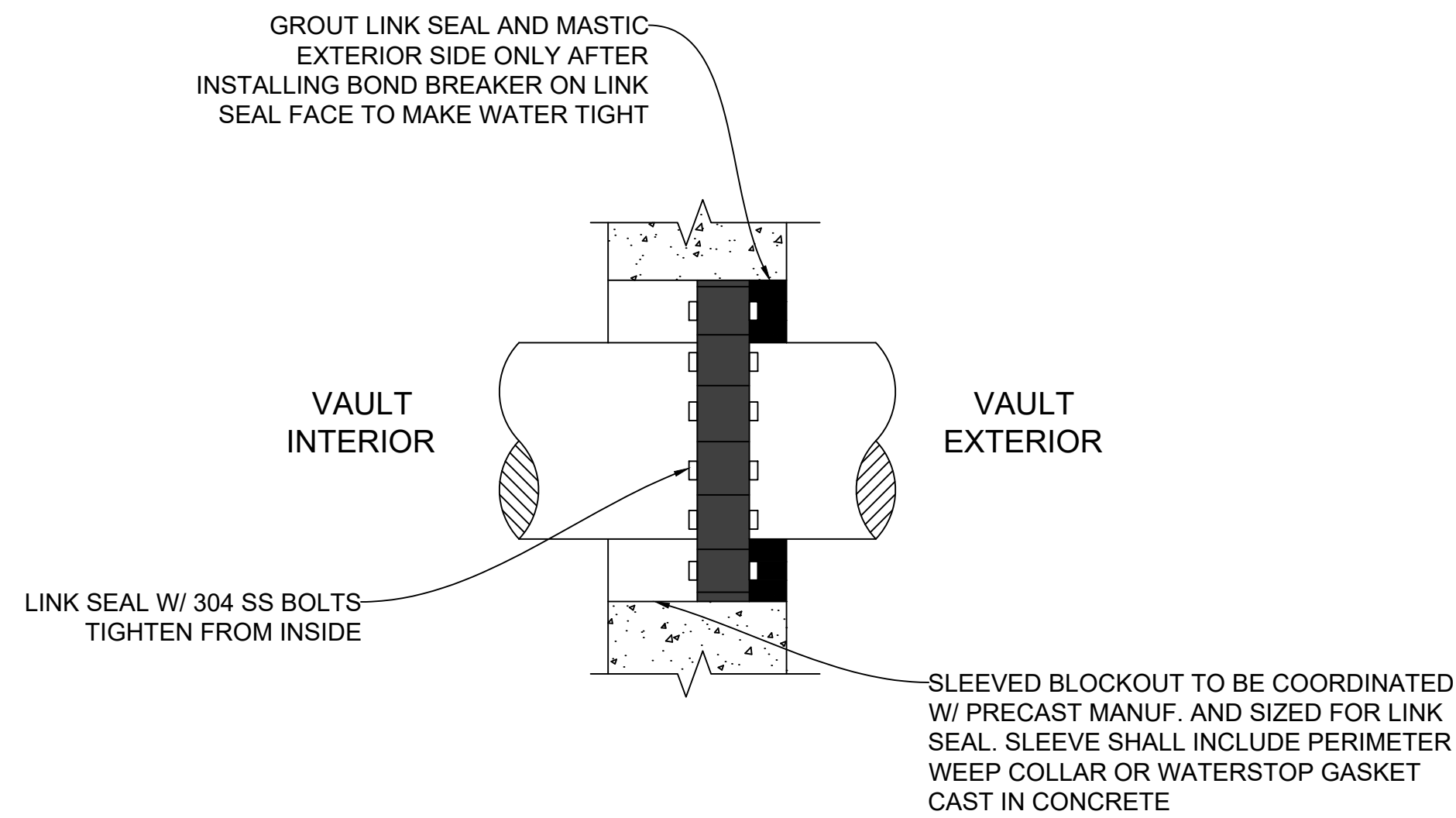
PORTABLE PUMP QUICK CONNECT DETAIL ①
NTS



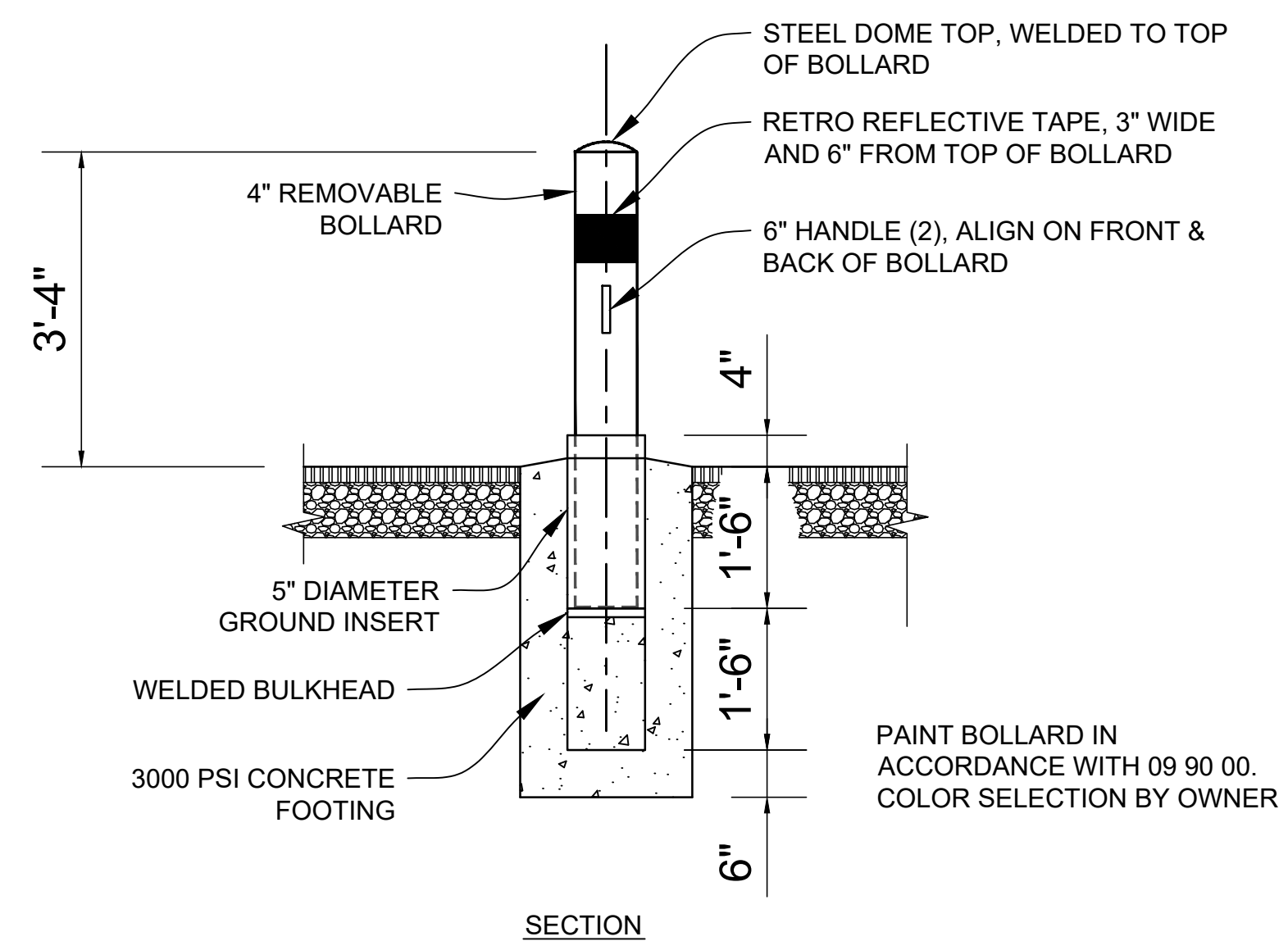
TYPICAL STAIR DETAIL ②
NTS



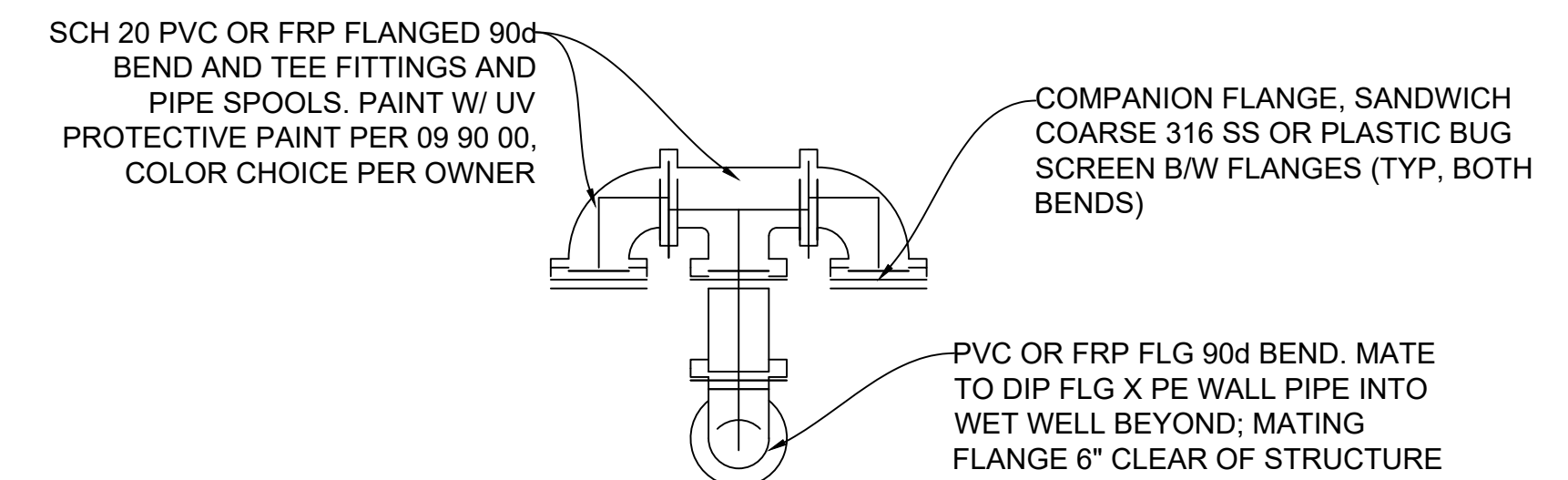
ELECTRICAL PANEL CANOPY ③
NTS



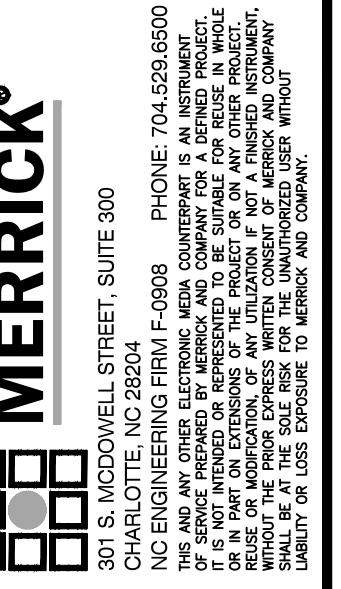
LINK SEAL DETAIL ④
NTS



REMOVABLE BOLLARD ⑤
NTS



VENT DETAIL ⑥
NTS



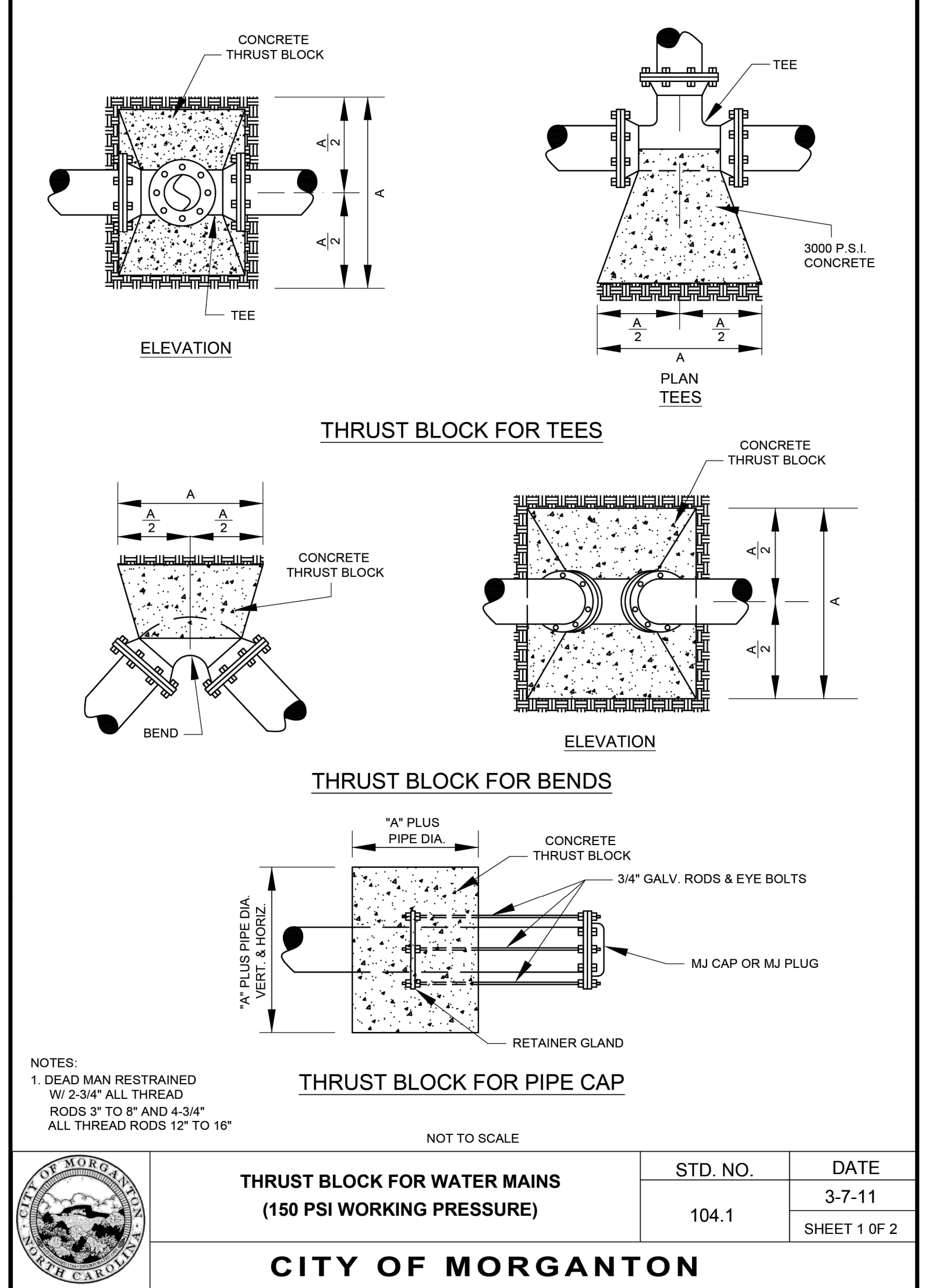
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100% review comments 1	6/7/23			

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Approved: [blank]	MM/DD/YY

Bost Rd PS & Gravity Sewer Improvements
Morganton, NC
PUMP STATION MECHANICAL DETAILS

**FINAL DESIGN - 100%
RELEASED FOR
CONSTRUCTION**

JOB NO: 65421093
DATE: 05/04/23
SHEET: M1.3



NOT TO SCALE

SIZE	11 1/4" BEND	22 1/2" BEND	45" BEND	90" BEND	TEE	CAP
6	12	12	12	16	16	14
8	12	12	16	22	22	18
10	12	14	20	28	28	22
12	12	18	24	32	32	28
14	14	20	28	38	38	32
16	16	22	32	42	42	36
18	18	26	36	48	48	40
20	20	28	40	52	52	44
24	24	34	46	64	64	54
30	30	42	58	78	78	66
36	36	50	70	94	94	80
42	40	58	80	108	108	90
48	46	66	90	124	124	104

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

NOT TO SCALE

	THRUST BLOCK FOR WATER MAINS	STD. NO.	DATE
		104.2	3-7-11

CITY OF MORGANTON

SHEET 2 OF 2

MERRICK
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REVISIONS

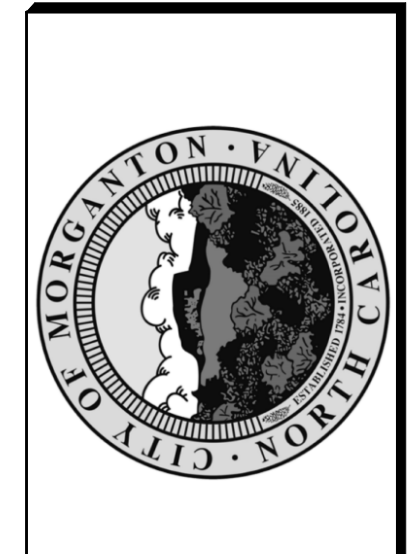
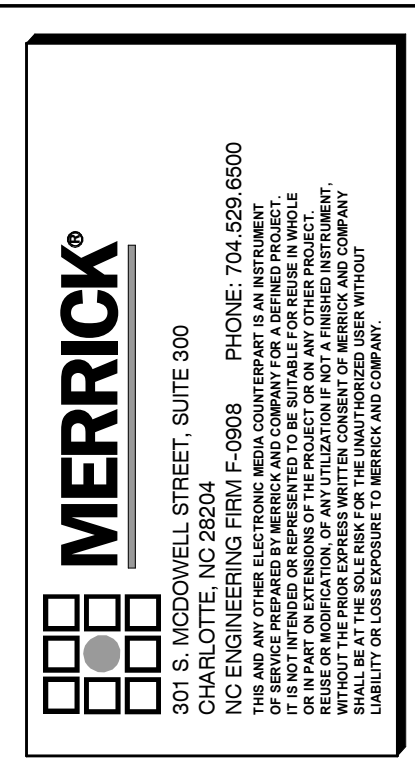
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DESIGN BY:	DATE:
DRAWN BY:	DATE:
CHECKED BY:	DATE:
APPROVED BY:	DATE:

Bost Rd PS & Gravity Sewer Improvements
 Morganton, NC
**PUMP STATION
 MECHANICAL DETAILS**

**FINAL DESIGN - 100%
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 CONSTRUCTION**

JOB NO: 65421093
 DATE: 05/04/23
 SHEET M1.4



REVISIONS:	DATE	BY	DESCRIPTION

DATE	DESIGN BY	DRAWN BY	CHECKED BY	APPROVED BY

Bost Rd. Sewer Improvements
Morganton, NC
ABBREVIATIONS, DRAWING LEGENDS AND SHEET INDEX

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JOB NO: 65421093
DATE: 05-04-2023
SHEET: S1.1

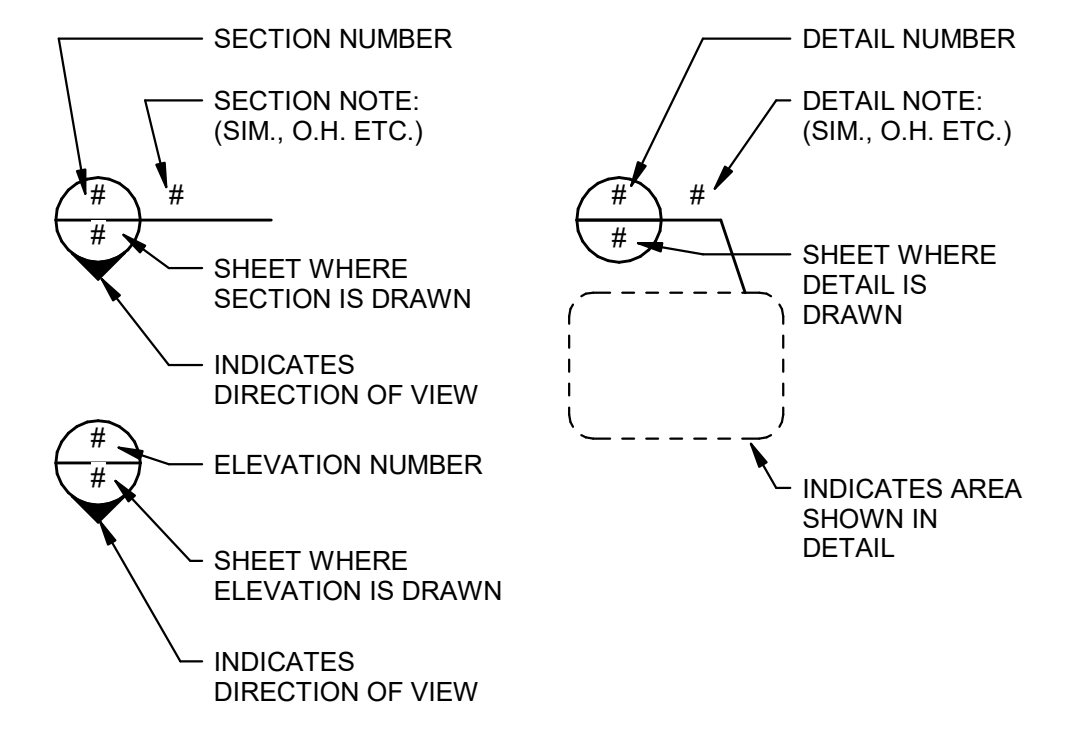
STRUCTURAL ABBREVIATIONS

AB ANCHOR BOLT	GB GRADE BEAM	PTI PRESSURE TREATED
ACI AMERICAN CONCRETE INSTITUTE	GA GAGE; GAUGE GALV.	PTF POST-TENSIONING INSTITUTE POLYVINYL CHLORIDE
AFF ABOVE FINISHED FLOOR CONSTRUCTION	HM HOLLOW METAL	R RADIUS
AISC AMERICAN INSTITUTE OF STEEL CONSTRUCTION	HS HIGH STRENGTH	RD ROOF DRAIN
AITC AMERICAN INSTITUTE OF TIMBER CONSTRUCTION	HEX. HD. HEXAGONAL HEAD	RAD. RADIUS
ALT. ALTERNATE	HSS HOLLOW STRUCTURAL SHAPE	REF. REFERENCE
ARCH. ARCHITECTURAL	HT. HEIGHT	REINF. REINFORCE(D); REINFORCING REMAINING; REMAINDER REQUIRED
ASD ALLOWABLE STRESS DESIGN	ID INSIDE DIAMETER	SJ SAWED JOINT
ASTM AMERICAN SOCIETY FOR TESTING AND MATERIALS	I.D. INSIDE DIMENSION	S.S. STAINLESS STEEL
AVG. AVERAGE	I.F. INSIDE FACE	SW SHORT WAY
AWS AMERICAN WELDING SOCIETY	IN. INCH/INCHES	SCHED. SCHEDULE
BLDG. BUILDING	INT. INTERIOR/INTERSECTION	SECT. SECTION
BM BEAM	JST. JOIST	SHT. SHEET
BP BEARING PLATE; BASE PLATE	JT. JOINT	SIM. SIMILAR
BRG. BEARING	K or k KIP (1,000 LBS.)	SJL STEEL JOIST INSTITUTE
CJ CONSTRUCTION JOINT	K/FT KIPS PER FOOT	SLBB SHORT LEGS BACK TO BACK
CMU CONCRETE MASONRY UNIT	LLBB LONG LEGS BACK TO BACK	SLO SHORT LEG OUTSTANDING
CGS CENTER OF GRAVITY OF STEEL CENTERLINE	LLH LONG LEG HORIZONTAL	SOG SLAB ON GRADE
CL. CENTERLINE	LLV LONG LEG VERTICAL	SPEC(S). SPECIFICATION(S)
CLG. CEILING	LVV LONG LEG VERTICAL	SO. SQUARE
CLR. CLEAR	LW LONG WAY	STD. STANDARD
COL. COLUMN	LB. POUND	STL. STEEL
CONC. CONCRETE	LG. LONG	STRUCT. STRUCTURAL
CONN. CONNECTION	LIN. LINEAR	SYM. SYMMETRICAL
CONST. CONSTRUCTION	LL LIVE LOAD	TOC TOP OF CONCRETE
CONT. CONTINUOUS	LT. WT. LIGHT WEIGHT	TOF TOP OF FOOTING
CRSI CONCRETE REINFORCING STEEL INSTITUTE	MOS MIDDLE OF SLAB	TOS TOP OF SLAB; TOP OF STEEL
CTR. CENTER	MOW MIDDLE OF WALL	TOW TOP OF WALL
DCJ DOWELED CONTROL JOINT	MATL. MATERIAL	T&B TOP AND BOTTOM
DJ DOUBLE JOIST	MAX. MAXIMUM	TEMP. TEMPORARY
DS DOWN SPOUT	MIN. MINIMUM	THRU THROUGH
DBL. DOUBLE	MISC. MISCELLANEOUS	TYP. TYPICAL
DET. DETAIL	MARK MARK	U.L. UNDERWRITERS LABORATORIES UNLESS NOTED OTHERWISE
DIA. DIAMETER	N/A NOT APPLICABLE	UNO UNLESS NOTED OTHERWISE
DIAG. DIAGONAL	N.F. NEAR FACE	W/O WITHOUT
DIM. DIMENSION	NIC NOT IN CONTRACT	W/ WITH
DL DEAD LOAD	NTS NOT TO SCALE	WM WOLMANIZED
DN DOWN	N-S NORTH-SOUTH	WP WORKING POINT
DWG(S). DRAWING(S)	NCSCB NORTH CAROLINA STATE BUILDING CODE	WWF WELDED WIRE FABRIC
E.F. EACH FACE	NO. NUMBER	X BY
E.S. EACH SIDE	NOM. NOMINAL	
E.W. EACH WAY	O/C ON CENTER	
E-W EAST-WEST	OD OUTSIDE DIAMETER	
EA. EACH	O.F. OUTSIDE FACE	
ELEV. ELEVATION; ELEVATOR	OPNG. OPENING	
ENGR. ENGINEER	OPP. OPPOSITE	
EQ. EQUAL	OH. OPPOSITE HAND	
EXIST. EXISTING	ORIG. ORIGINAL	
EXP. JT. EXPANSION JOINT	P/S PRESTRESSED	
EXT. EXTERIOR	PT POST-TENSIONING	
FD FLOOR DRAIN	PC PRECAST CONCRETE	
FF FAR FACE	PCI PRESTRESSED CONCRETE INSTITUTE	
FN. FOUNDATION	PEN. PENETRATION	
FIN. FINISH	PERP. PERPENDICULAR	
FL. FLOOR	PL PLATE	
FLG. FLANGE	PSF POUNDS PER SQUARE FOOT	
FOB FACE OF BRICK	PSI POUNDS PER SQUARE INCH	
FT. FOOT, FEET		
FTG. FOOTING		

MATERIALS AND SYMBOLS LEGEND

	TOP OF CONC. (TOC) OR DECK ELEVATION		BRICK (SECTION)		INSULATION (RIGID)
	SPOT ELEVATION: WORKING POINT (WP)		BRICK (ELEVATION)		INSULATION (BATT)
	NOTE MARKER (SEE NOTES)		CONCRETE (SECTION)		PLYWOOD (LARGE SCALE)
	CONNECTION TYPE		CMU (SECTION)		STEEL
	COLUMN DESIGNATION (SEE SCHEDULE)		CMU (ELEVATION)		STONE FILL
	REPAIR TYPE		DEPTH* DEPRESSED SLAB AREA		WOOD (FINISH)
	REVISION MARK		EARTH/SOIL		WOOD (ROUGH)
			FILL GROUT		PRECAST CONC.

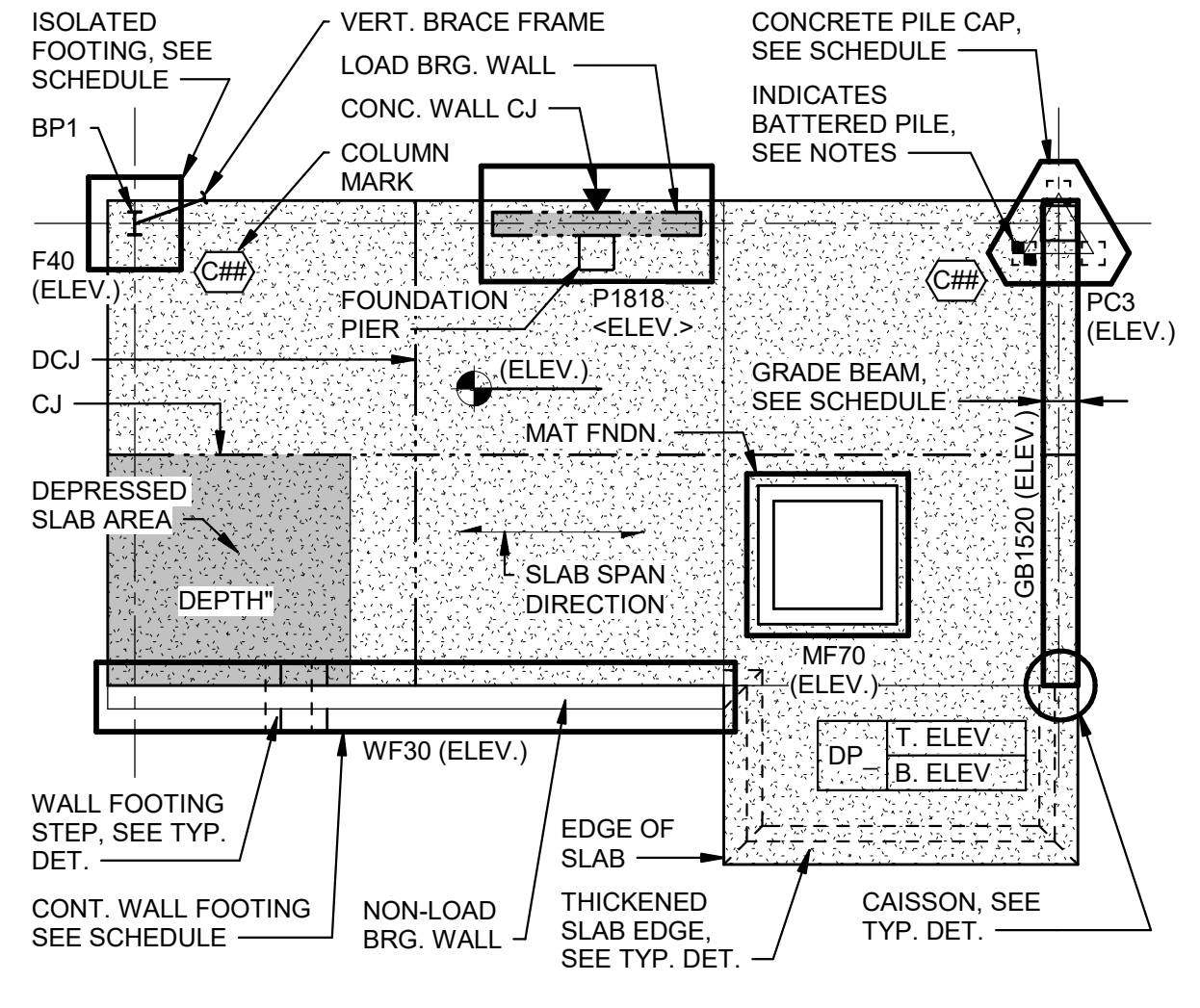
VIEW SYMBOLS



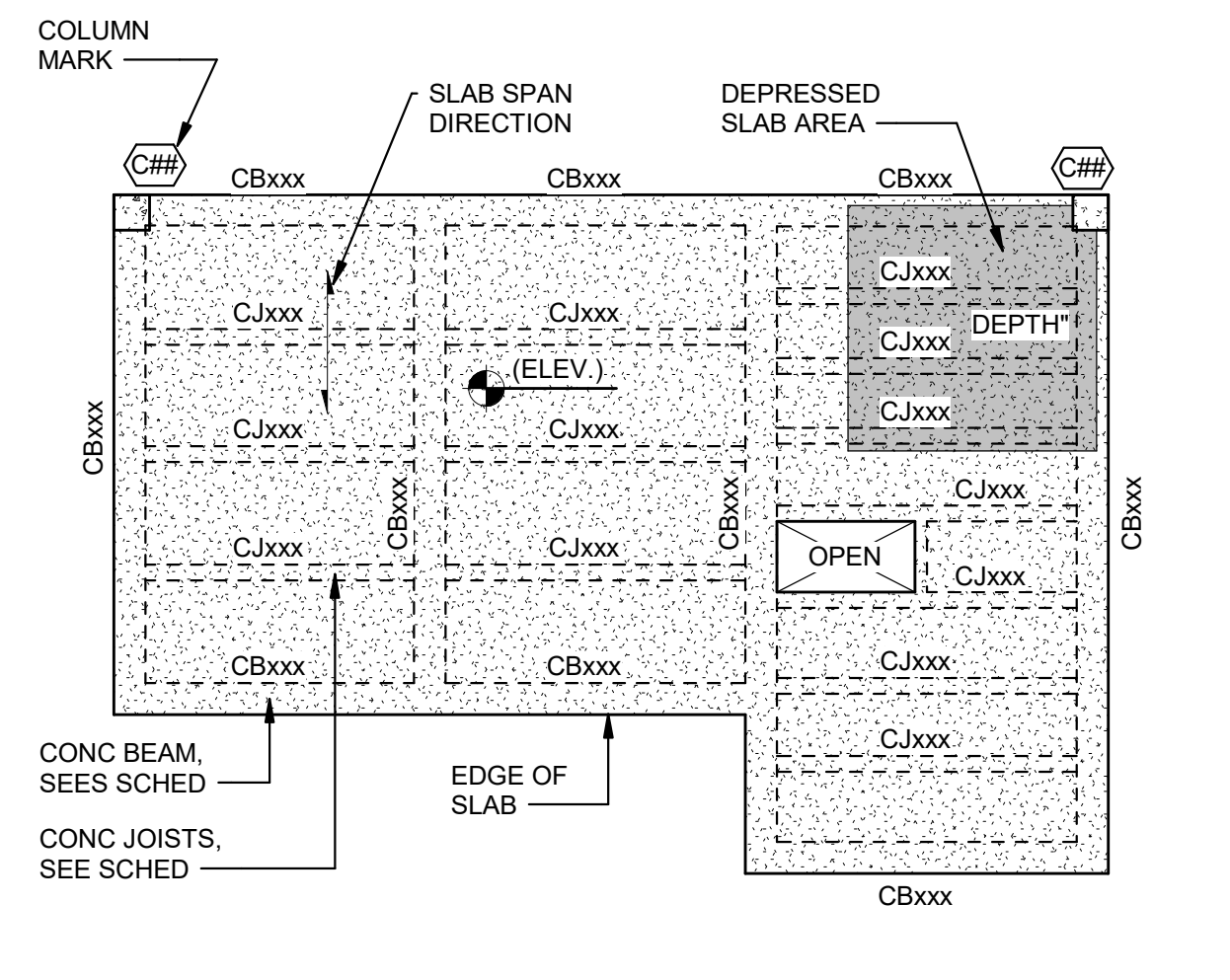
COLUMN GRID DESIGNATION



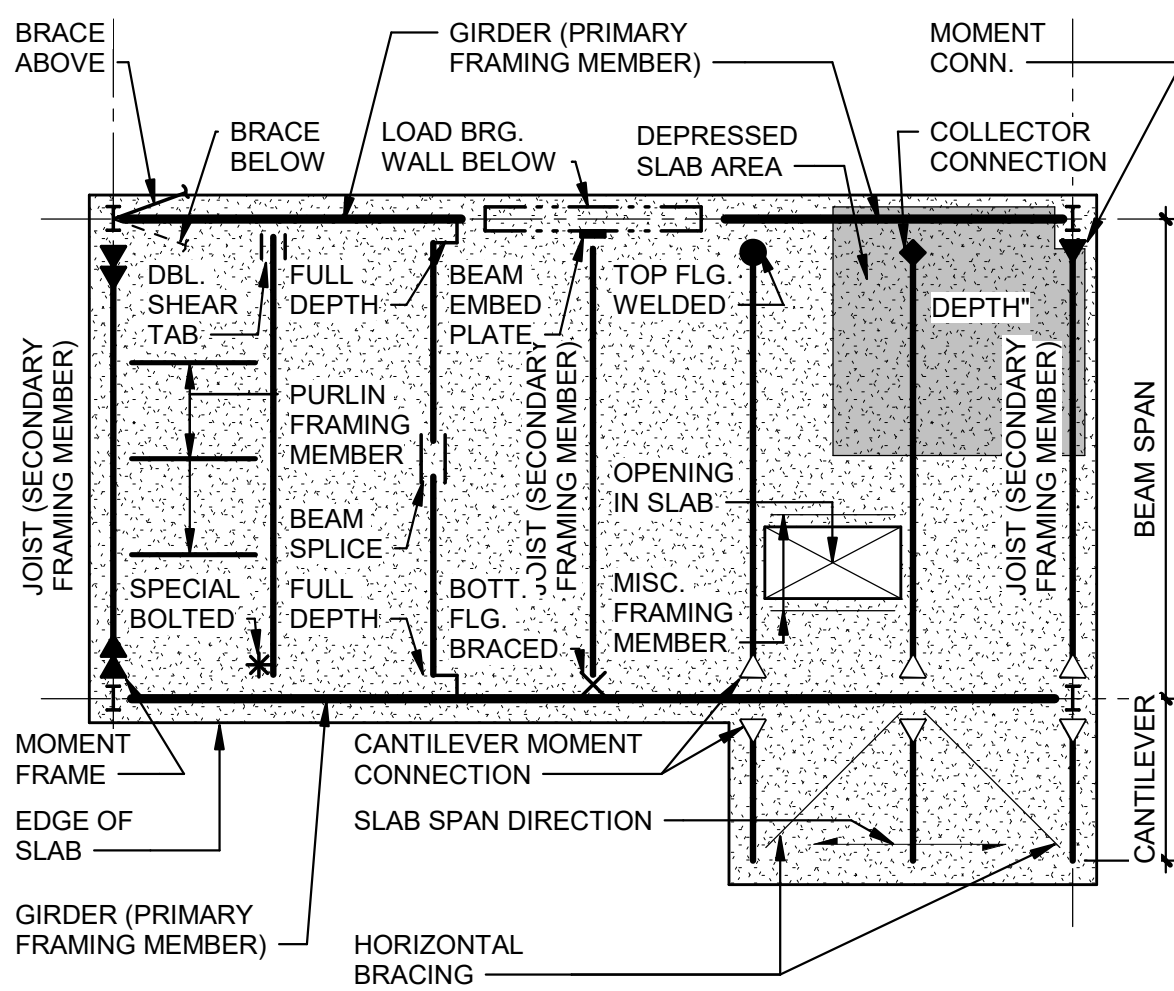
FOUNDATION PLAN SYMBOLS LEGEND



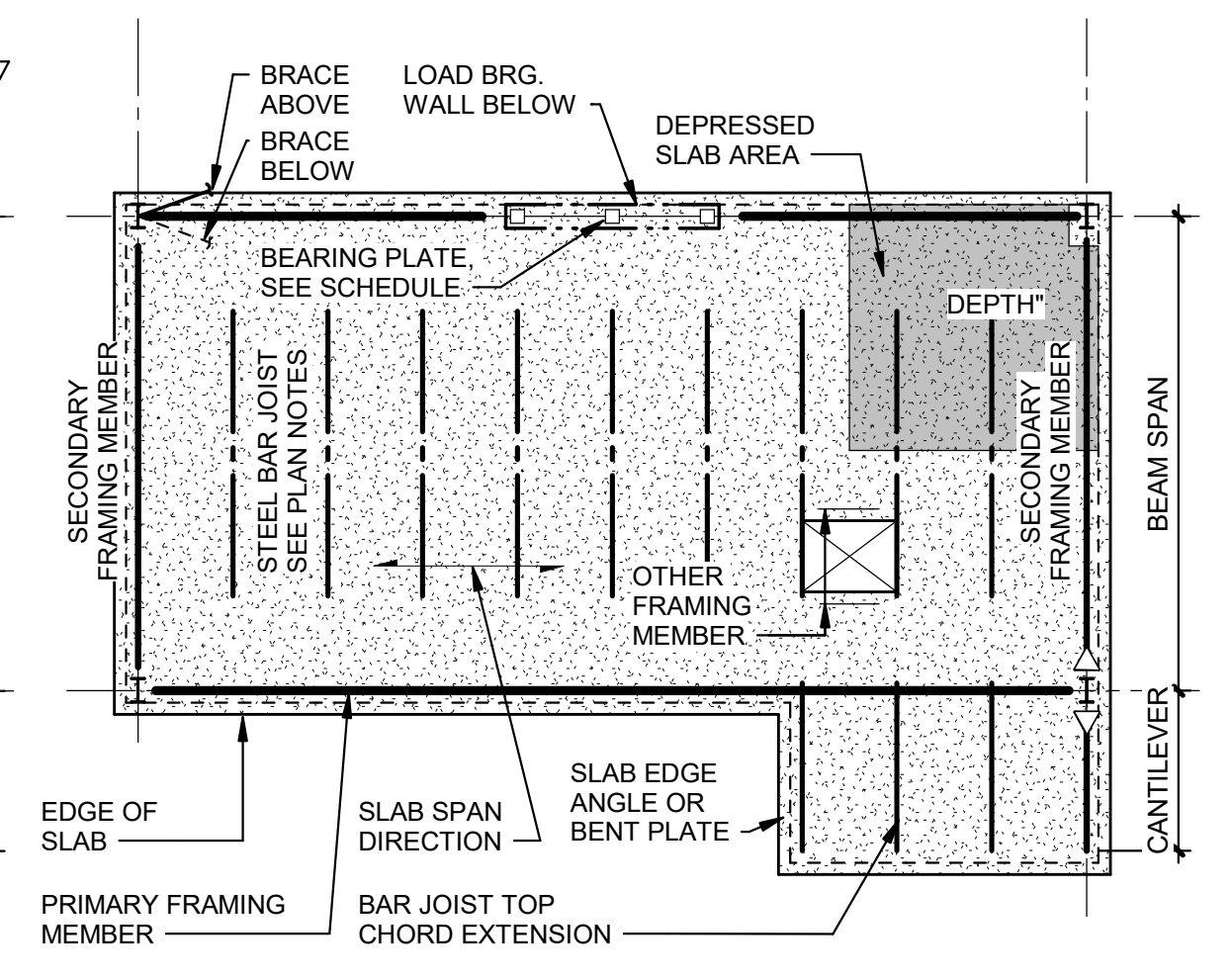
CONCRETE FRAMING SYMBOLS LEGEND



STEEL FRAMING CONN. SYMBOLS LEGEND



JOISTS FRAMING SYMBOLS LEGEND



DRAWING INDEX

S1.1	ABBREVIATIONS, DRAWING LEGENDS AND 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

GENERAL NOTES

FOUNDATIONS

- 1. 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 SERVICE.

CONSTRUCTION

- 1. 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.
- 2. 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.
- 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION AND ERECTION OF STRUCTURAL MATERIALS IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.

CONCRETE

- 1. 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.
- 2. 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 (CONTINUED)

- 8. CONCRETE SHALL BE HANDLED, PLACED, AND CONSOLIDATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS.
- 9. SEE SPECIFICATIONS FOR CURING AND HOT AND COLD WEATHER REQUIREMENTS FOR CONCRETE.
- 10. MASS CONCRETE (36" AND GREATER IN THICKNESS) SHALL BE SUBJECT TO THE FOLLOWING ADDITIONAL REQUIREMENTS:
 - A. CEMENT SHALL BE LOW HEAT OF HYDRATION TYPE.
 - B. A MINIMUM OF 25% CLASS-F, FLY ASH CEMENT REPLACEMENT SHALL BE USED.

REINFORCING STEEL

- 1. 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.
- 2. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. DO NOT WELD REINFORCING BARS TO EACH OTHER.

DRAWINGS & COORDINATION

- 1. 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.
- 2. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL DIMENSIONS SHOWN ON THE CONTRACT DOCUMENTS.

STRUCTURAL STEEL

- 1. 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.

GALVANIZING

- 1. GALVANIZING OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING PUBLICATIONS:
 - A. AMERICAN GALVANIZERS ASSOCIATION;
 - B. SUGGESTED SPECIFICATION FOR HOT DIP GALVANIZING
 - C. AMERICAN SOCIETY FOR TESTING AND MATERIALS;
 - D. ASTM A 123 ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS
 - E. 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.

SUBMITTAL NOTES

- 1. 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.
- 2. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS IN ELECTRONIC FORMAT.
- 3. 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 SUBMITTAL.

- 6. MANUFACTURER'S LITERATURE: SUBMIT TWO COPIES OF MANUFACTURER'S LITERATURE FOR ALL MATERIALS AND PRODUCTS USED IN CONSTRUCTION OF PROJECT.
- 7. THE ENGINEER'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.
- 8. 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.

HEAVY DUTY STEEL GRATING

- 1. PROVIDE STEEL GRATING WITH WELDED CONSTRUCTION OF ALL MEMBERS AND A HOT DIPPED GALVANIZED FINISH APPLIED AFTER ASSEMBLY IS COMPLETED.
- 2. 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.
- 3. 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".

STRUCTURAL DESIGN DATA

- 1. CODES AND STANDARDS:
 - A. 2018 IBC, C. REVISIONS TO THE 2015 INTERNATIONAL BUILDING CODE.
 - B. MIN. DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, ASCE 7-10.
 - C. BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ACI 318-14.
 - D. BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES, ACI 530-13.
 - E. SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, AISC 360-10.
- 2. FOUNDATIONS:
 - A. WET WELL MAT FOUNDATION 2,750 PSF
 - B. ALL OTHER FOUNDATIONS (SEE FOUNDATION PLAN NOTES) 2,000 PSF
- 3. GRAVITY LOADS:
 - A. FLOOR LIVE LOADS (UNREDUCIBLE) 150 PSF
 - B. ROOF LIVE LOAD (MINIMUM) 20 PSF
 - C. ROOF SNOW LOADS:
 - a. GROUND SNOW LOAD 15 PSF
 - b. OCCUPANCY CATEGORY IV
 - c. IMPORTANCE FACTOR 1.20
 - d. Ce 0.9
 - e. Ct 1.2
 - D. HYDROSTATIC LOAD ON MAT FOUNDATIONS (RELATIVE TO 100-YR FLOOD ELEVATION, OTHER DWGS.) 62.4 PCF
- 4. WIND LOADS:
 - A. BASIC WIND VELOCITY 120 MPH
 - B. OCCUPANCY CATEGORY IV
 - C. IMPORTANCE FACTOR 1.00
 - D. EXPOSURE CATEGORY C
 - E. INTERNAL PRESSURE COEFFICIENT:
 - a. OPEN BUILDING 0.00
 - F. COMPONENTS & CLADDING DESIGN PRESSURE (MIN. TRIBUTARY AREA, 10SF):
 - a. ZONE 1 - ROOF 32 PSF
 - b. ZONE 2 - ROOF EDGE 53 PSF
 - c. ZONE 3 - ROOF CORNER 80 PSF
 - d. ZONE 4 - WALL +29/-32 PSF
 - e. ZONE 5 - WALL CORNER +29/-39 PSF
- 5. EARTHQUAKE LOADS:
 - A. MAPPED SPECTRAL RESPONSE ACCELERATION:
 - SHORT PERIOD Ss = 0.248
 - 1 SECOND PERIOD S1 = 0.099
 - B. DESIGN SPECTRAL RESPONSE ACCELERATION:
 - SHORT PERIOD Sds = 0.414
 - 1 SECOND PERIOD Sd1 = 0.230
 - C. SITE CLASS E
 - D. OCCUPANCY CATEGORY (SEISMIC USE GROUP) IV
 - E. IMPORTANCE FACTOR 1.5
 - F. SEISMIC DESIGN CATEGORY D

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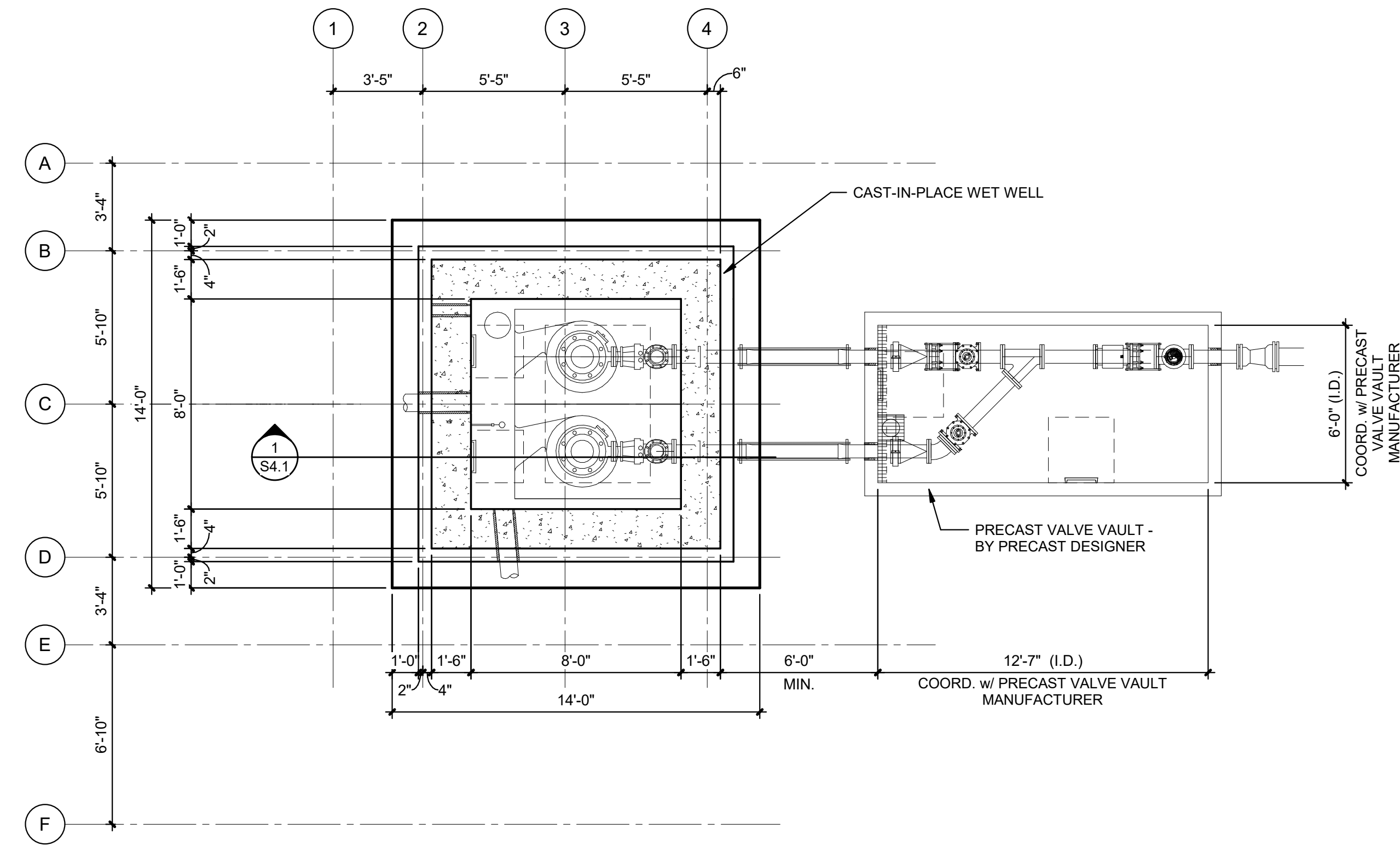
REVISION	DATE	BY	REASON

DESIGN BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:

Bost Rd. Sewer Improvements
Morganton, NC
GENERAL NOTES

FINAL DESIGN - 100%
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JOB NO: 65421093
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SHEET S1.2



1
S2.1 FOUNDATION PLAN
 1/4" = 1'-0"

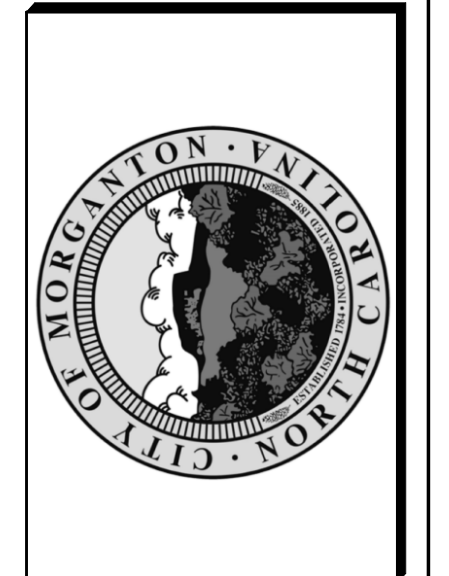
FOUNDATION PLAN NOTES:

- 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 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 (2,750 PSI). SUBGRADE BELOW THE WET WELL MAT FOUNDATION SHALL BE COMPACTED TO 95 PERCENT OR GREATER STANDARD PROCTOR DENSITY AND A MINIMUM OF 8 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.
- 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")
- 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
- SEE MECHANICAL DRAWINGS FOR EXTERIOR CONCRETE PADS, DRIVEWAYS, ASPHALT PAVEMENT, AND SIDEWALKS NOT SHOWN ON THIS DRAWING.
- 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
- SEE TYPICAL DETAILS FOR ADDITIONAL INFORMATION.
- 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.

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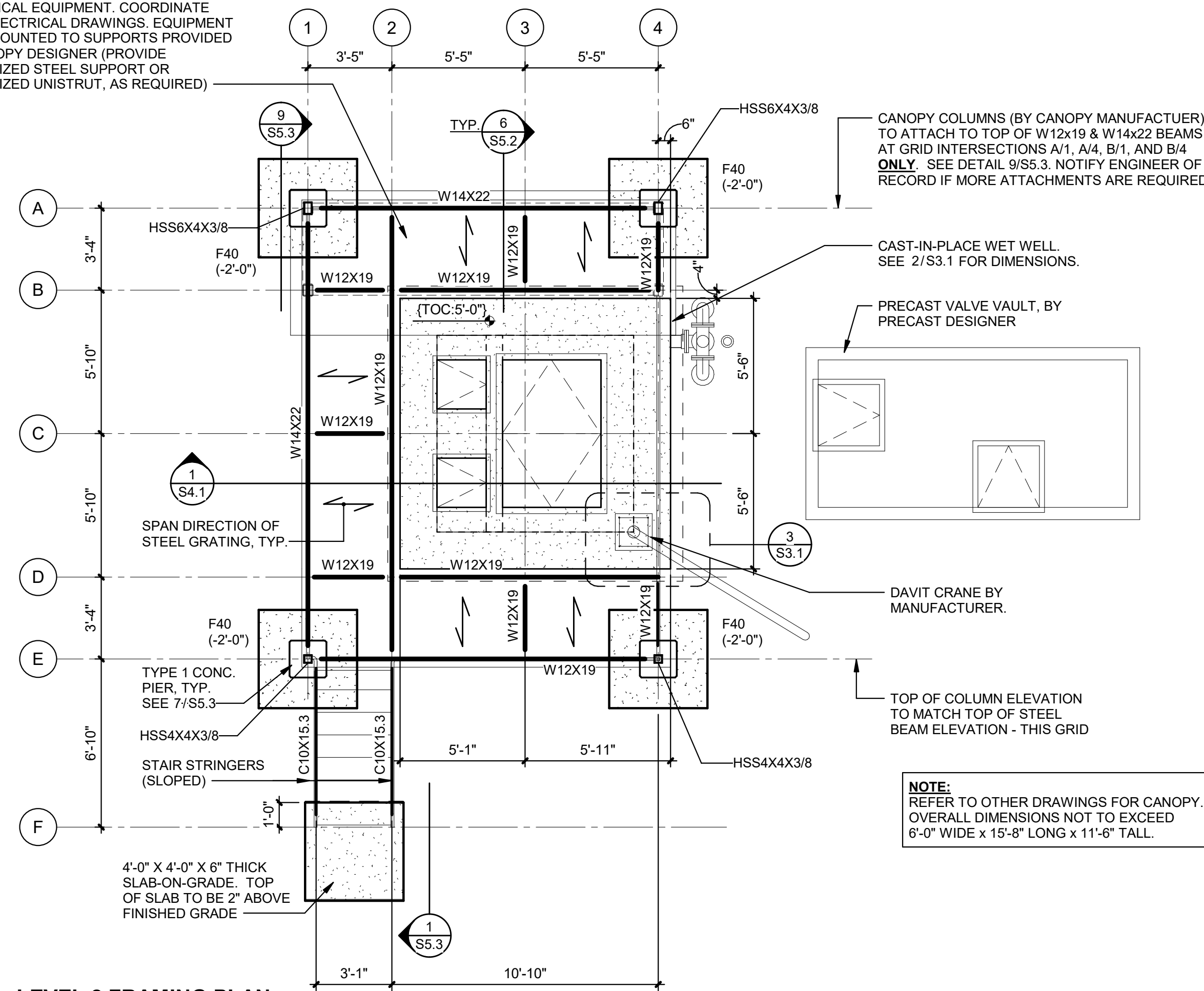
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Bost Rd. Sewer Improvements
 Morganton, NC
FOUNDATION PLAN

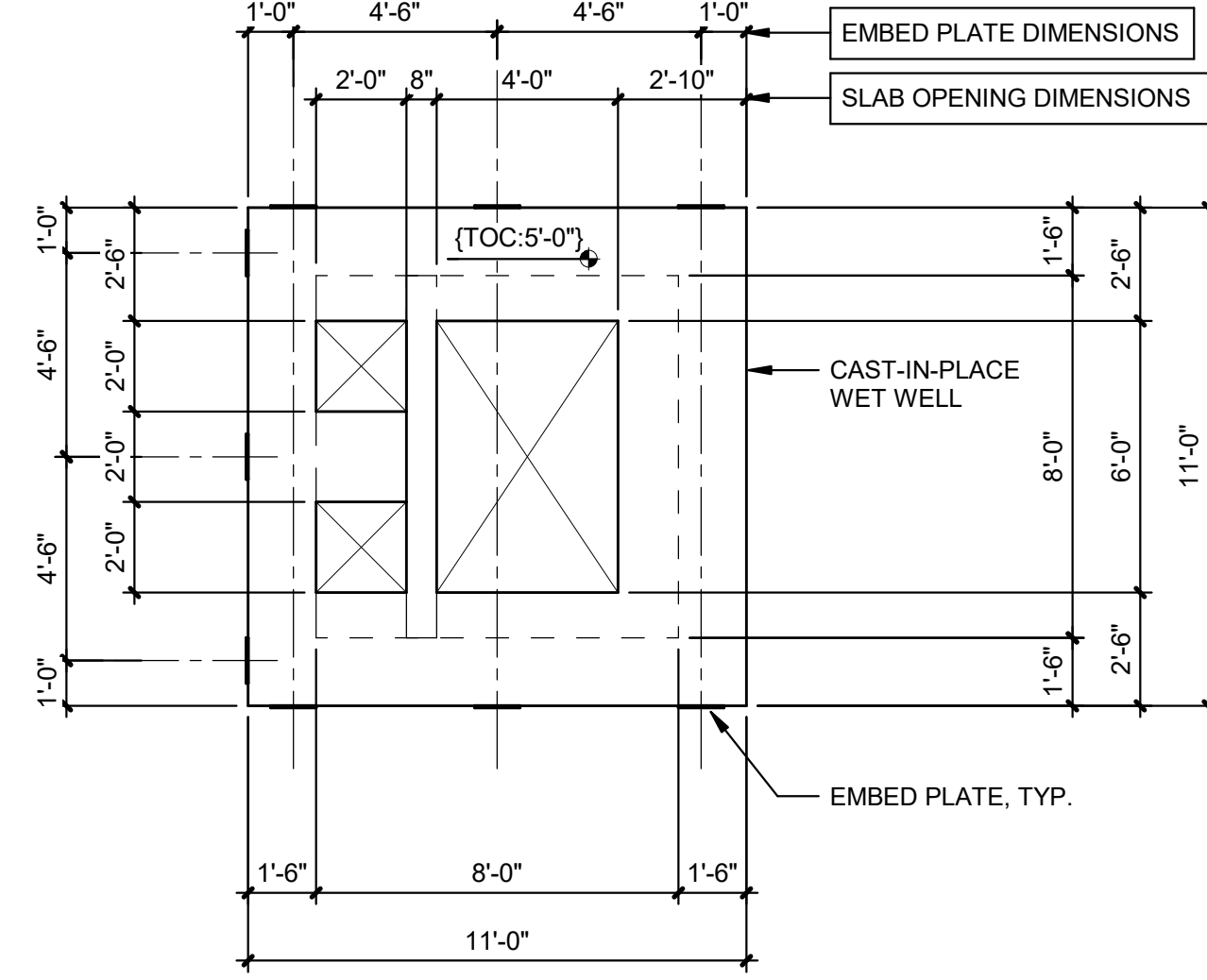
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 SHEET **S2.1**

ELECTRICAL EQUIPMENT COORDINATE WITH ELECTRICAL DRAWINGS. EQUIPMENT TO BE MOUNTED TO SUPPORTS PROVIDED BY CANOPY DESIGNER (PROVIDE GALVANIZED STEEL SUPPORT OR GALVANIZED UNISTRUT, AS REQUIRED)



1
S3.1
LEVEL 2 FRAMING PLAN
1/4" = 1'-0"



2
S3.1
BEAM TO CONCRETE EMBED PLATE LOCATION PLAN
1/4" = 1'-0"

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.
- 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")
- 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
- SEE MECHANICAL DRAWINGS FOR EXTERIOR CONCRETE PADS, DRIVEWAYS, ASPHALT PAVEMENT, AND SIDEWALKS NOT SHOWN ON THIS DRAWING.
- 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
- SEE TYPICAL DETAILS FOR ADDITIONAL INFORMATION.
- 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.

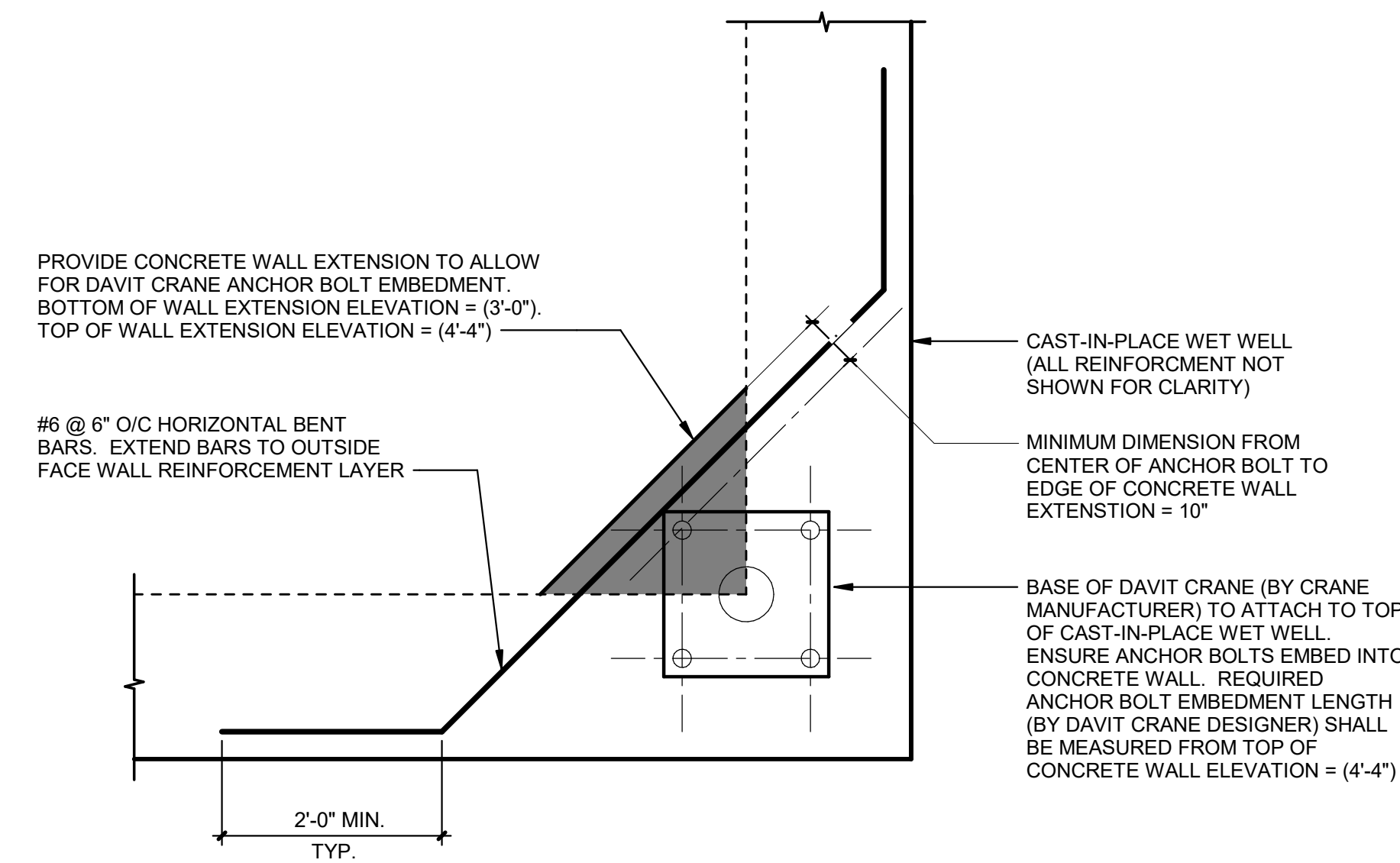
FLOOR FRAMING PLAN NOTES:

- 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
- TOP OF ALL STEEL BEAMS SHALL BE 1 1/2" BELOW THE TOP OF THE ELEVATED CONCRETE SLAB, U.N.O.
- 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.
- STEEL GRATING ON ELEVATED PLATFORMS SHALL BE ATTACHED TO THE TOP OF STEEL FRAME SUPPORTS. SEE TYPICAL DETAILS.
- 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.
- 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.
- SEE SPECIFICATIONS AND DETAILS FOR HANDRAIL DESIGN. FOR HANDRAIL LOCATIONS, SEE MECHANICAL DRAWINGS.
- SEE TYPICAL DETAILS FOR ADDITIONAL INFORMATION.
- REFER TO FOUNDATION PLAN NOTES FOR ADDITIONAL REQUIREMENTS.
- 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.).

FOOTING SCHEDULE										
MARK	WIDTH	LENGTH	DEPTH	BOTT. REINFORCING			TOP REINFORCING			REMARKS
				QUA.	SIZE	SPACING	QUA.	SIZE	SPACING	
F40	4'-0"	4'-0"	1'-4"	(5)	#5	EA. WAY	(5)	#5	EA. WAY	--

FOOTING SCHEDULE NOTES

- General Notes:**
- FOOTING MARKS "F_" DESIGNATE THE PLAN SIZE OF THE FOOTING IN TENTHS OF A FOOT.
 - SEE TYPICAL DETAILS
*COLUMN BASE PLATE
COLUMN PIER
 - UNLESS NOTED OTHERWISE, CENTER FOOTING BELOW COLUMN OR COLUMN PIER.



3
S3.1
DAVIT CRANE CONNECTION CALLOUT
3/4" = 1'-0"

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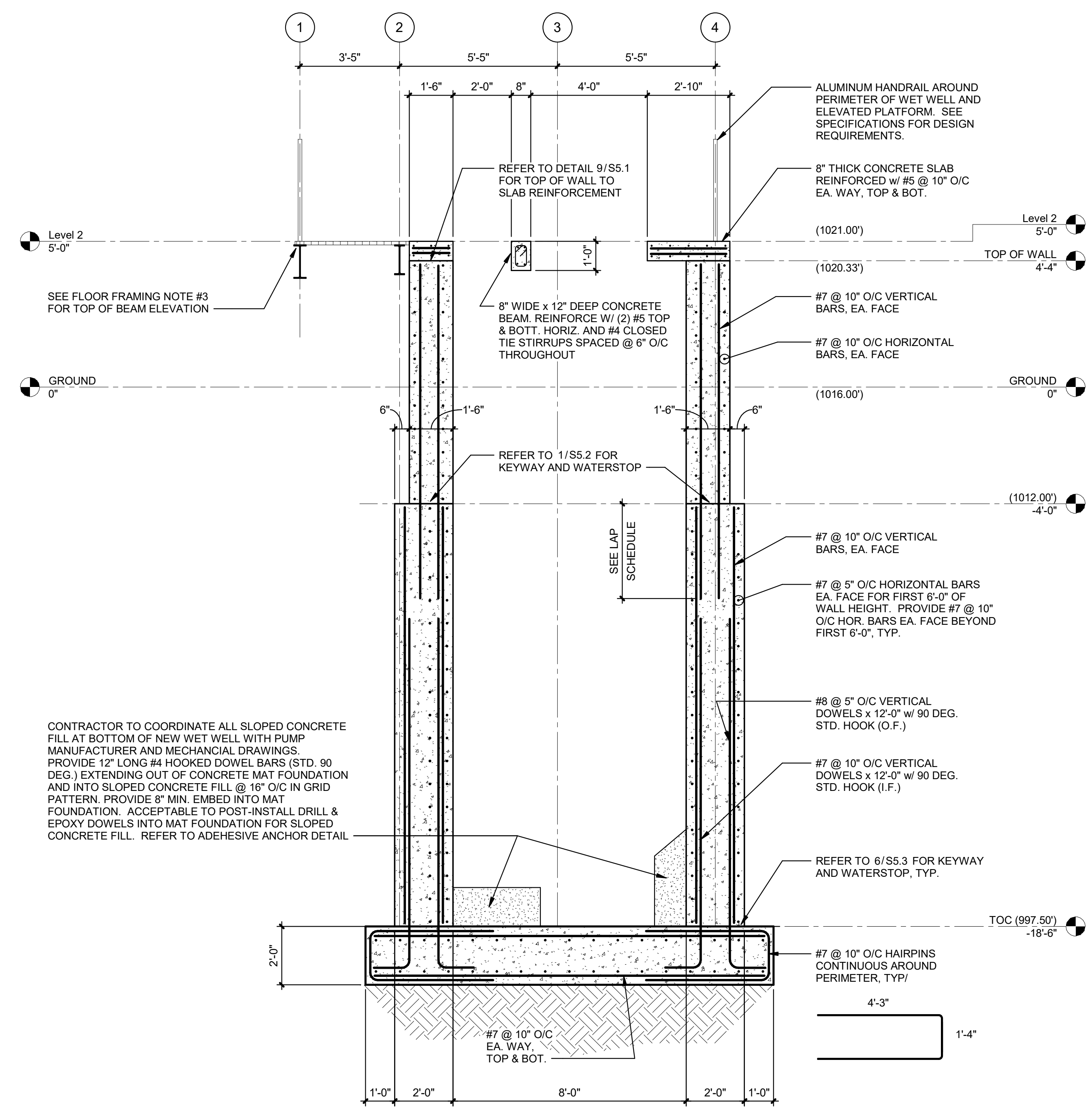
REVISIONS:	DATE	CHANGED BY:	CHECKED APPROVER:

DATE	DESIGN BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:

Bost Rd. Sewer Improvements
Morganton, NC
FRAMING PLAN

**FINAL DESIGN - 100%
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CONSTRUCTION**

JOB NO: 65421093
DATE: 05-04-2023
SHEET: **S3.1**



CONTRACTOR TO COORDINATE ALL SLOPED CONCRETE FILL AT BOTTOM OF NEW WET WELL WITH PUMP MANUFACTURER AND MECHANICAL DRAWINGS. PROVIDE 12" LONG #4 HOOKED DOWEL BARS (STD. 90 DEG.) EXTENDING OUT OF CONCRETE MAT FOUNDATION AND INTO SLOPED CONCRETE FILL @ 18" O/C IN GRID PATTERN. PROVIDE 8" MIN. EMBED INTO MAT FOUNDATION. ACCEPTABLE TO POST-INSTALL DRILL & EPOXY DOWELS INTO MAT FOUNDATION FOR SLOPED CONCRETE FILL. REFER TO ADHESIVE ANCHOR DETAIL

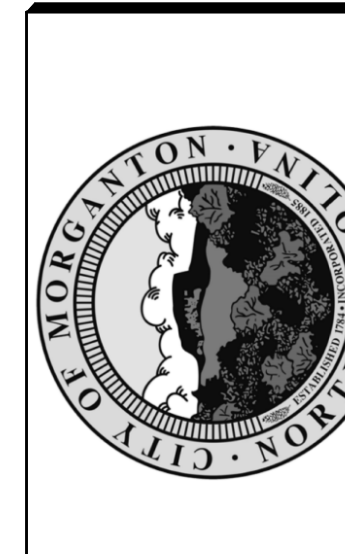
1
S4.1 WET WELL SECTION
 3/8" = 1'-0"

REVISIONS:	DATE	CHANGED BY	APPROVED BY

DESIGN BY:	DATE:

Bost Rd. Sewer Improvements
 Morganton, NC
SECTION

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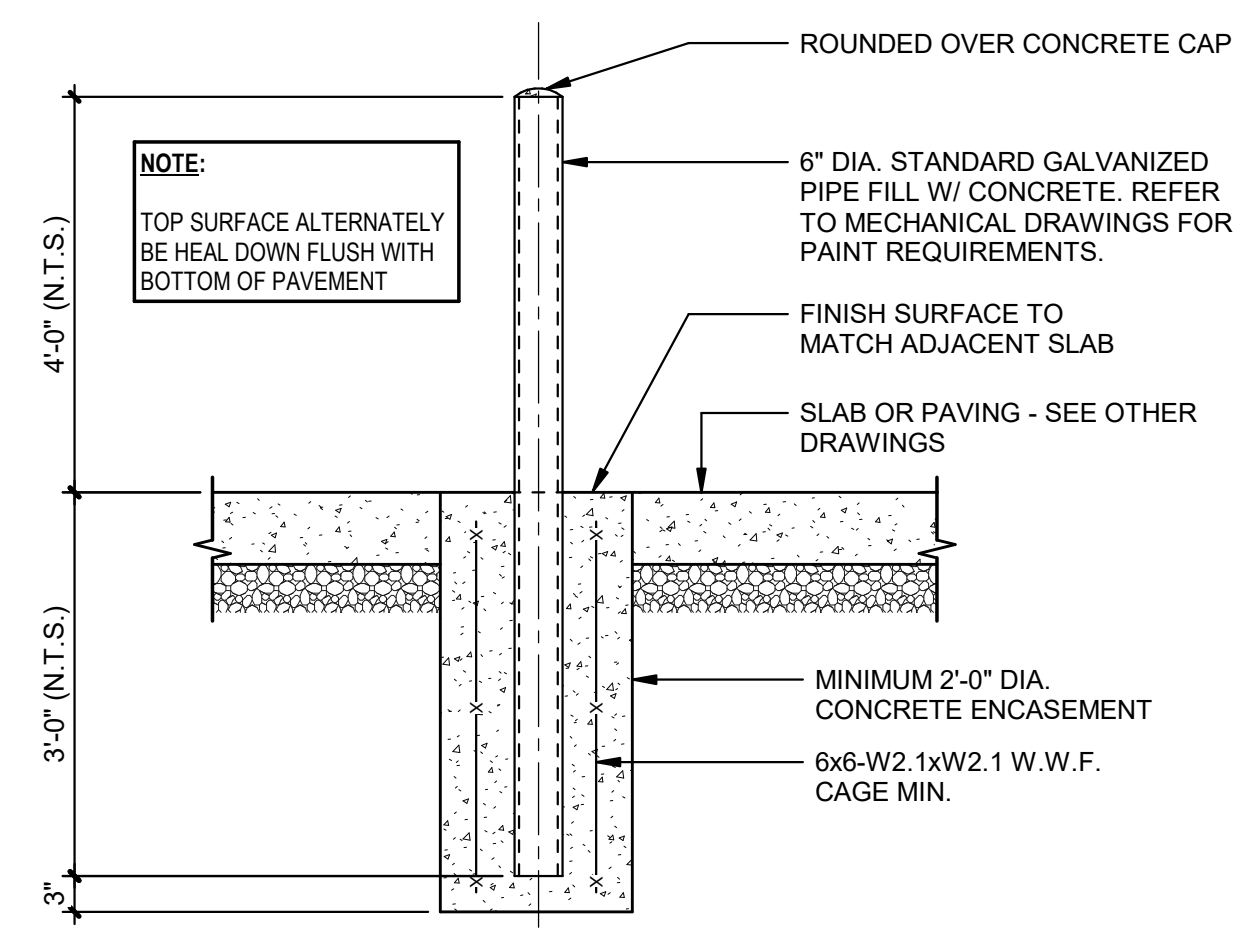
REVISIONS:	DATE	CHANGED BY:	DESIGNED BY:

DESIGN BY:	AUTHOR:	CHECKED BY:	APPROVED BY:

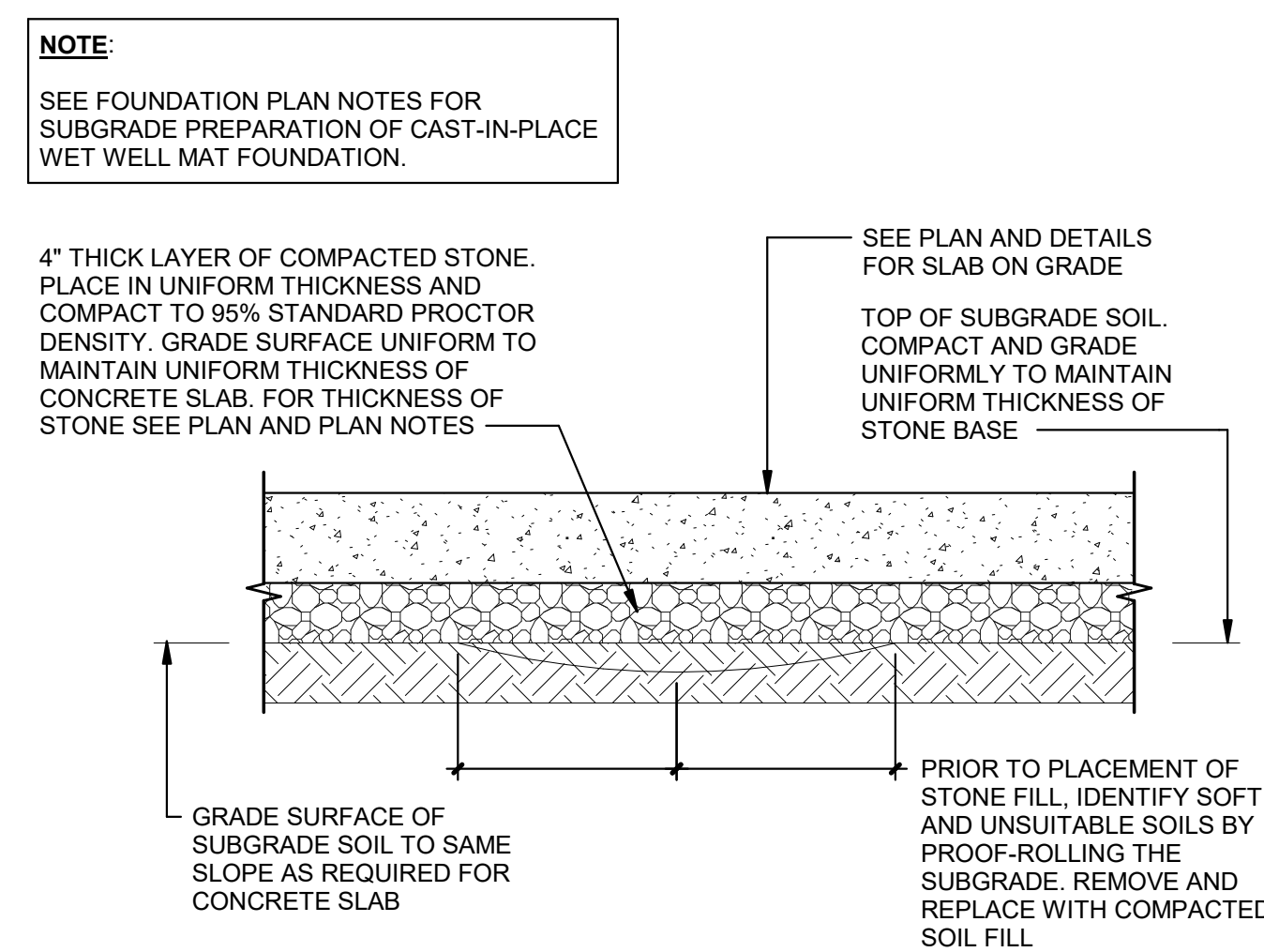
Bost Rd. Sewer Improvements
Morganton, NC
TYPICAL DETAILS & SCHEDULES

FINAL DESIGN - 100%
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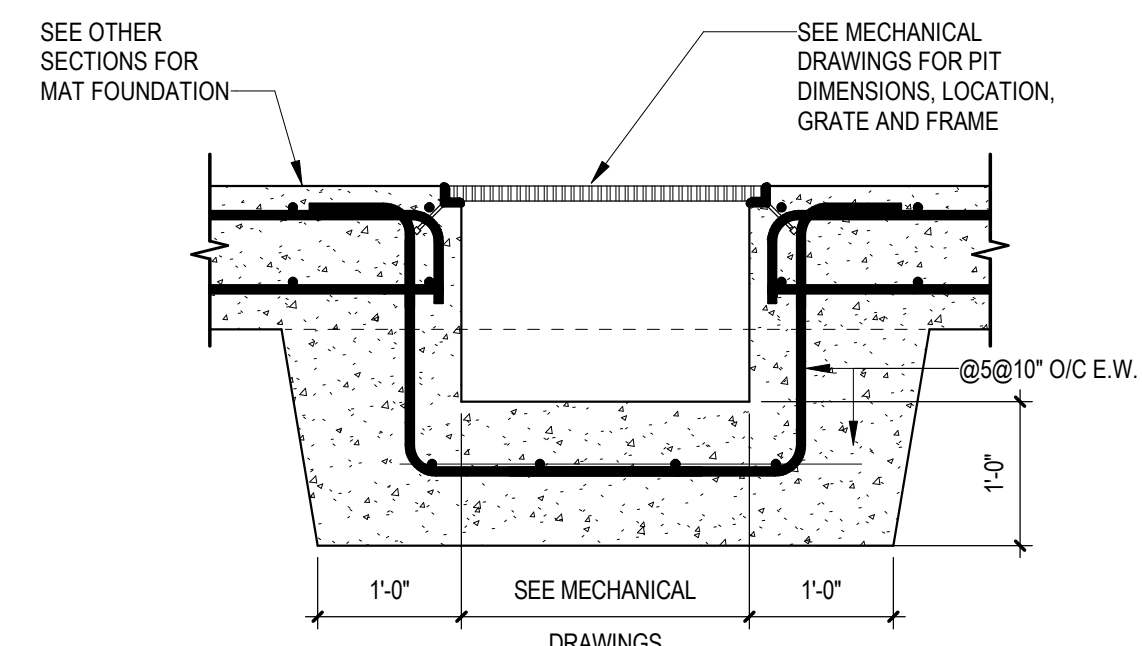
JOB NO: 65421093
DATE: 05-04-2023
SHEET: S5.1



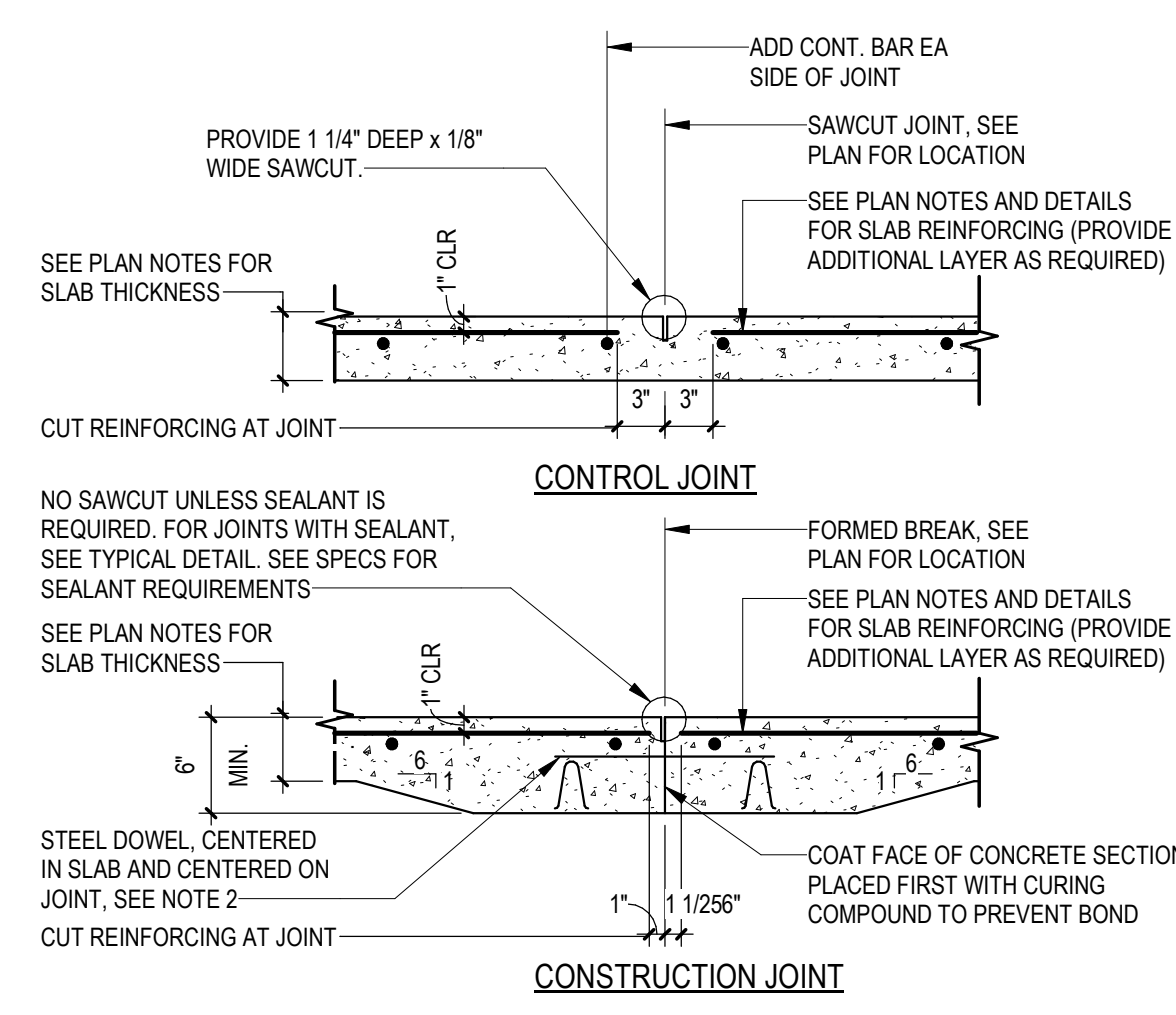
1 STANDARD PIPE BOLLARD
S5.1 3/4" = 1'-0"



2 SLAB-ON-GRADE SUBGRADE PREPARATION
S5.1 1" = 1'-0"

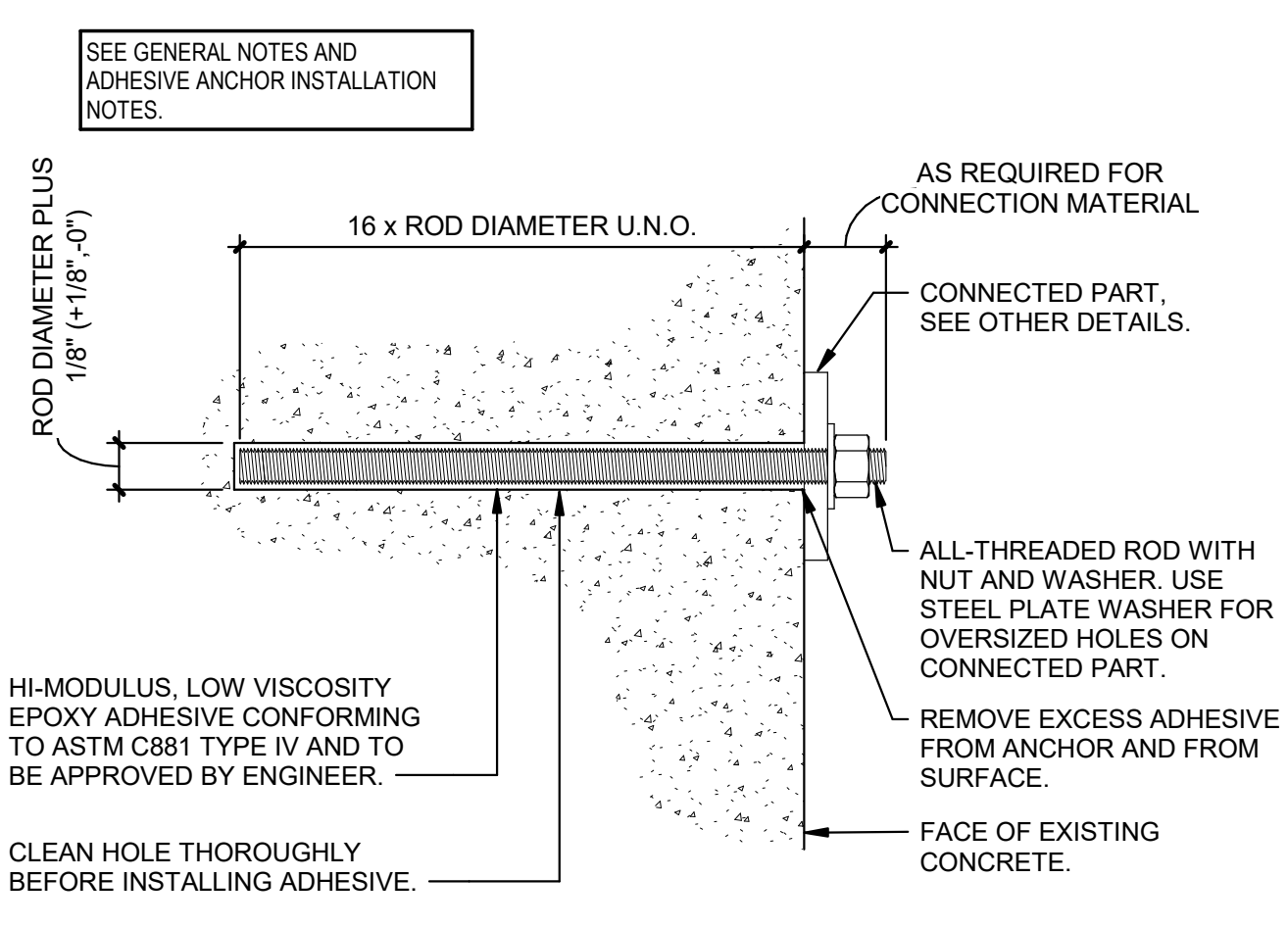


3 CATCH BASIN & TRENCH DRAIN DETAIL
S5.1 3/4" = 1'-0"

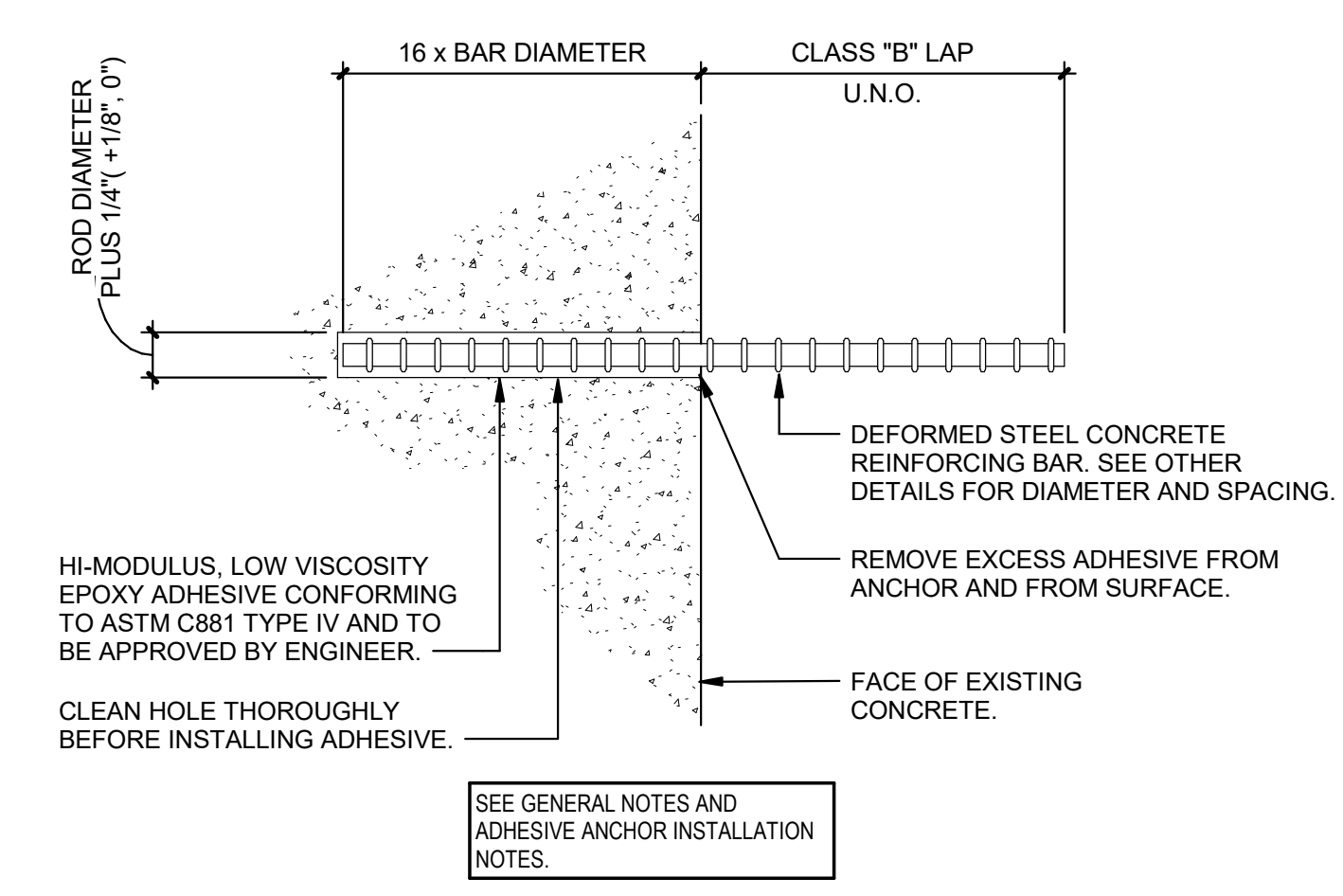


4 SLAB-ON-GRADE JOINTS
S5.1 1" = 1'-0"

- SLAB-ON-GRADE JOINT NOTES:**
- LOCATE JOINTS IN CONCRETE SLAB AS SHOWN ON FOUNDATION PLAN.
 - SLAB JOINT DOWELS:
 - PROVIDE 3/4"x16" SMOOTH ROUND STEEL DOWELS IN SLAB JOINTS SPACED AT 12" O.C. DOWELS SHALL BE SAWCUT TO LENGTH. 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.
 - 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.
 - DIAMOND PLATE JOINT KEYS MAY BE USED AS AN ALTERNATIVE TO DOWELS. SUBMIT PRODUCT DATA FOR APPROVAL.
 - SAWCUTTING:
 - 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.
 - 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 INSTALLED.
 - IMMEDIATELY AFTER SAWCUTTING, CLEAN THE JOINTS AND SLAB SURFACE. CLEANING SHALL REMOVE ALL LAITANCE, SAW DUST, AND OTHER CONTAMINANTS FROM SLAB SURFACE.
 - AFTER SAWING JOINTS AND CLEANING, COMMENCE CURING OF THE SLAB AND JOINTS AS SPECIFIED.
- AT JOINTS NOTED ON PLANS AS DOWELED CONTROL JOINTS, THICKEN SLAB AND ADD DOWELS PER CONSTRUCTION JOINT DETAIL.



5 ADHESIVE ANCHOR THREADED ROD IN SOLID MATERIAL
S5.1 3" = 1'-0"

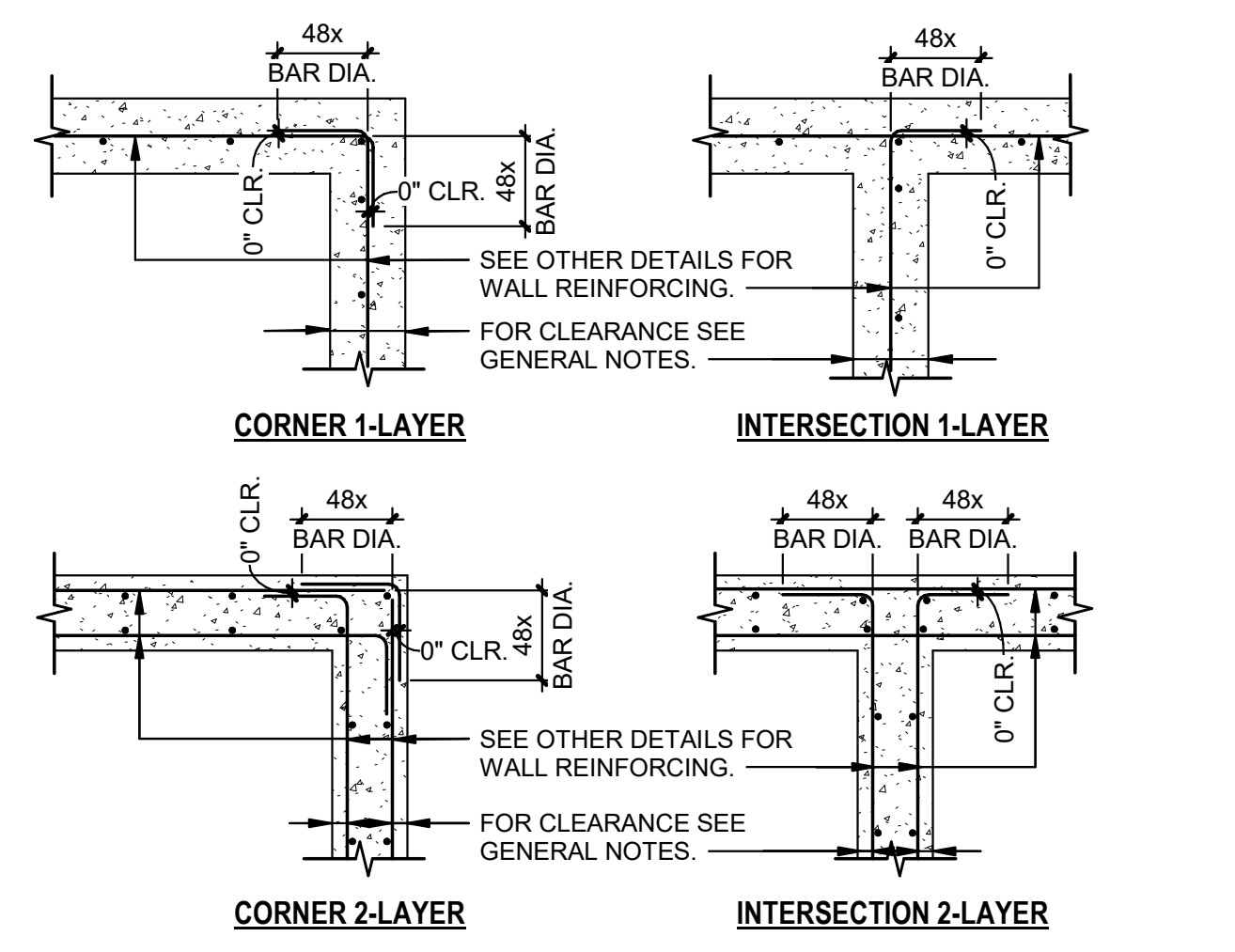


6 ADHESIVE ANCH. CONCRETE REINFORCING BAR
S5.1 3" = 1'-0"

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"

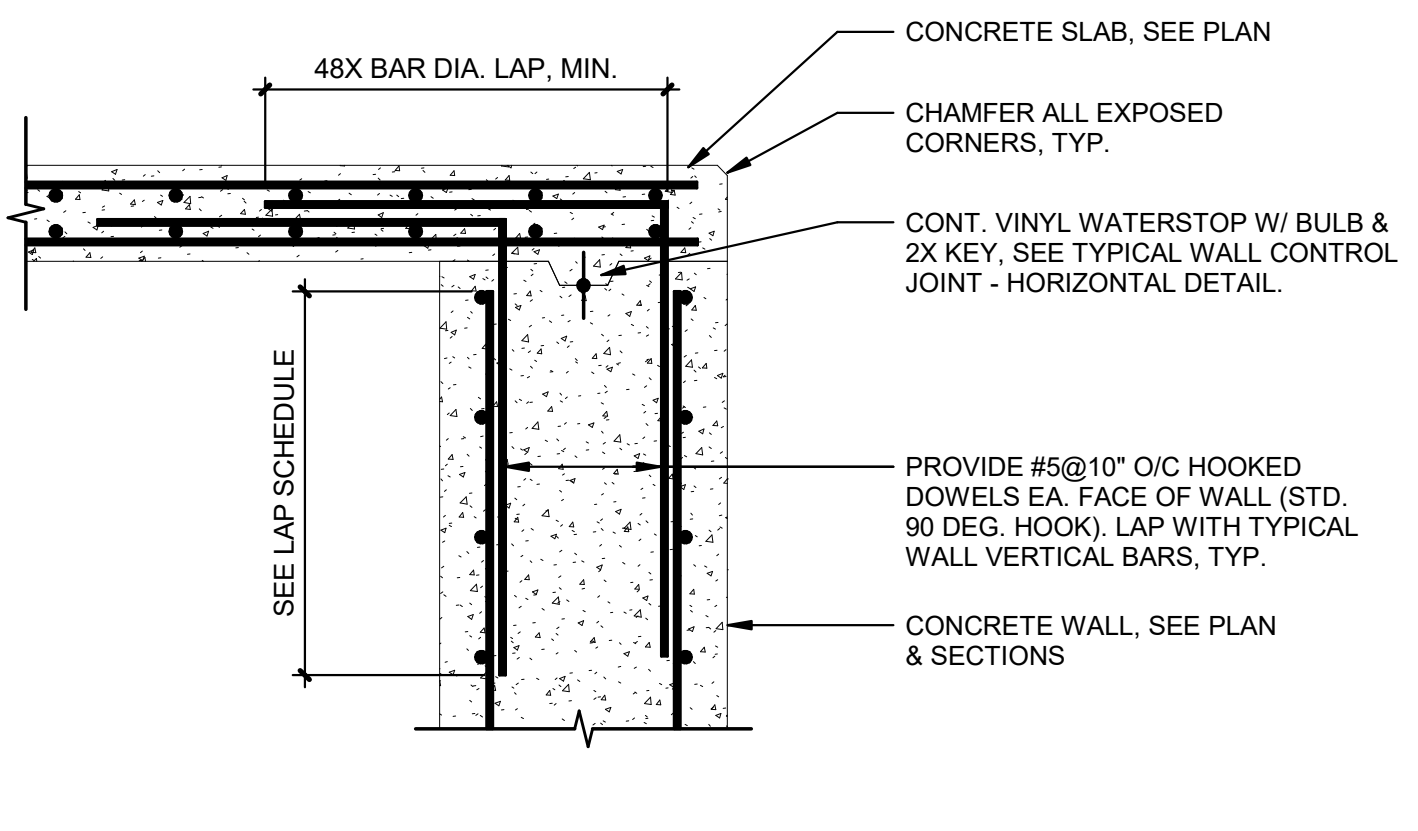
- GENERAL NOTES:**
- VALUES IN SCHEDULE SHALL BE USED UNLESS OTHERWISE NOTED IN A CONDITION-SPECIFIC DETAIL.
 - TABULATED VALUES ARE BASED ON THE REQUIREMENTS OF ACI-318.
 - TABULATED VALUES ARE APPLICABLE FOR THE FOLLOWING CRITERIA:
 - UNCOATED BARS
 - NORMAL WEIGHT CONCRETE
 - MINIMUM CONCRETE STRENGTH = 4,500 PSI AT 28-DAYS
 - NOT TOP BARS (SEE TOP BAR NOTE BELOW)
 - 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:
 - 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.
 - CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED IS NOT LESS THAN 2.0 TIMES THE BAR DIAMETER AND CLEAR COVER IS NOT LESS THAN THE BAR DIAMETER.
 - CONTACT ENGINEER FOR BARS THAT DO NOT MEET THE CRITERIA STATED ABOVE.



7 DEVELOPMENT & LAP LENGTH SCHEDULE
S5.1 3/4" = 1'-0"



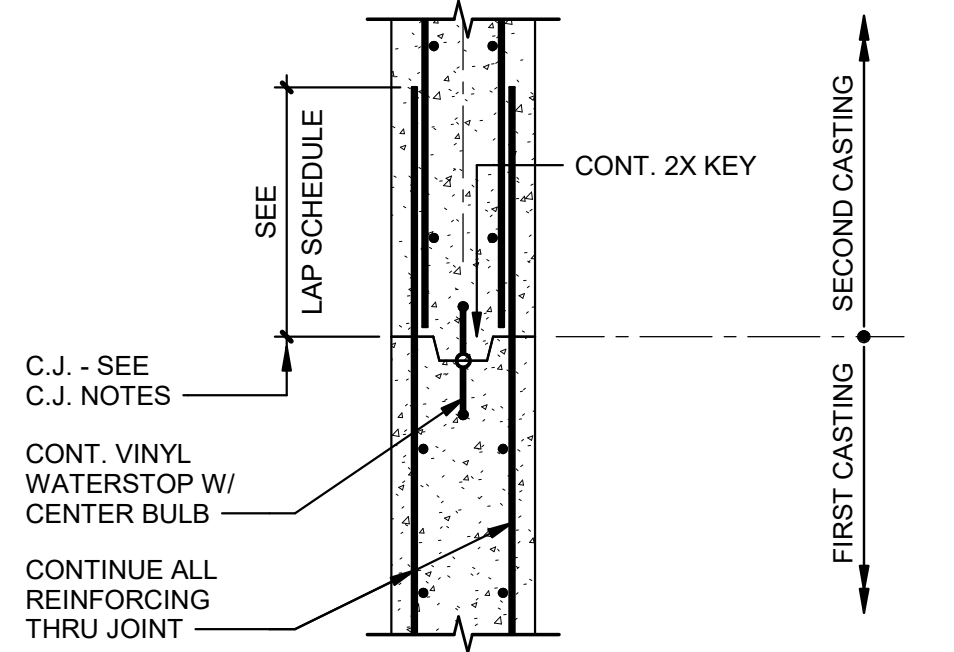
8 CONTINUOUS WALL REINFORCING
S5.1 1/2" = 1'-0"



9 TYPICAL WALL-TO-SLAB REINFORCING DETAIL
S5.1 3/4" = 1'-0"

CONSTRUCTION JOINT NOTES:

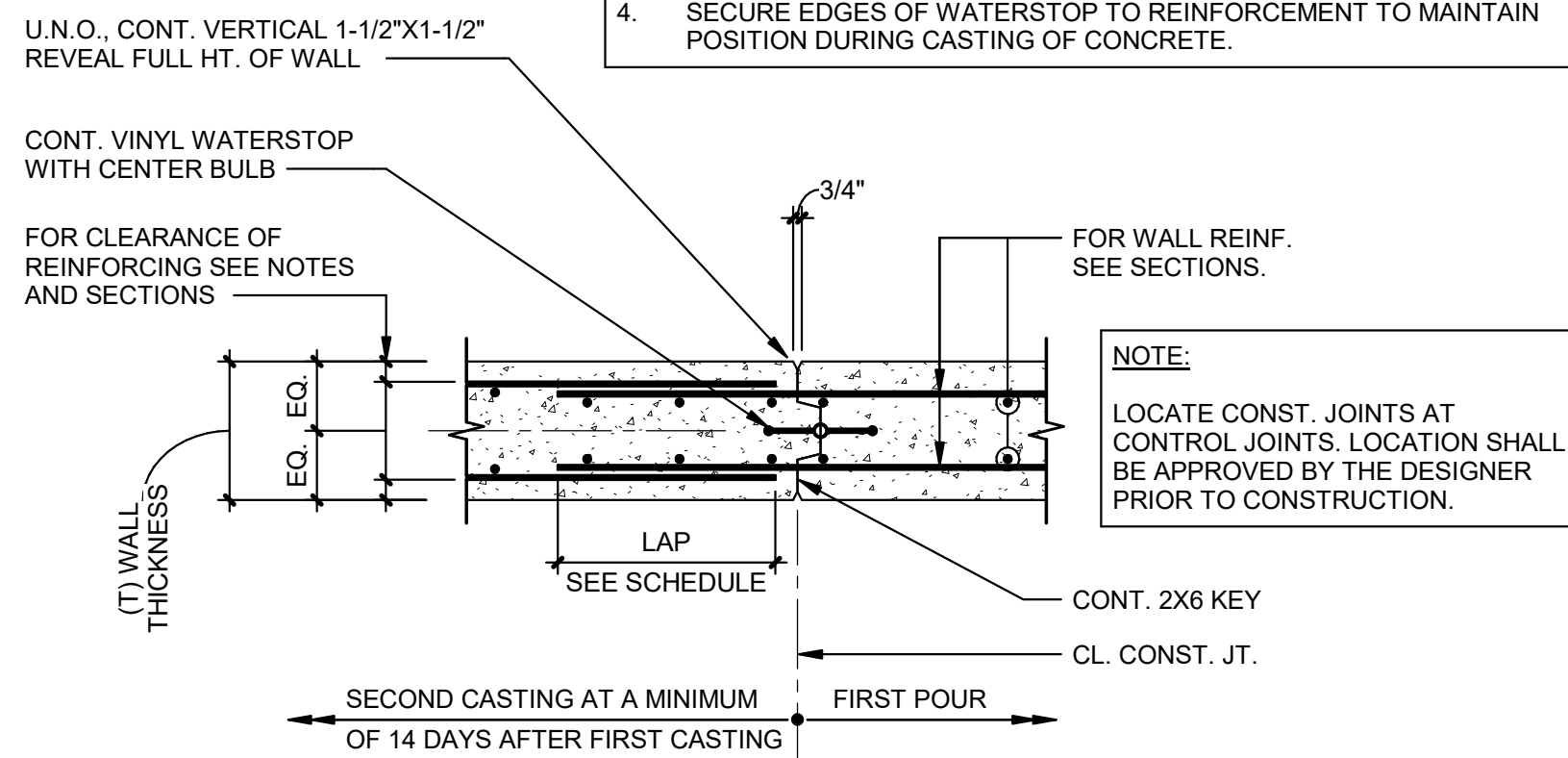
1. EXPOSE AGGREGATE OF FIRST CASTING BY SANDBLASTING OR RETARDING INITIAL SET AT THAT EDGE DURING FIRST CASTING.
2. PRIOR TO THE SECOND CASTING, APPLY AN EPOXY BONDING AGENT TO EXPOSED AGGREGATE SURFACE TO ACHIEVE A 100% BOND.
3. WIDTH OF WALL KEY SHALL BE 1/2 WALL THICKNESS.
4. SECURE EDGES OF WATERSTOP TO REINFORCEMENT TO MAINTAIN POSITION DURING CASTING OF CONCRETE.



1
S5.2 **TYPICAL DETAIL - WALL CONSTRUCTION JOINT - HORIZONTAL**
3/4" = 1'-0"

CONSTRUCTION JOINT NOTES:

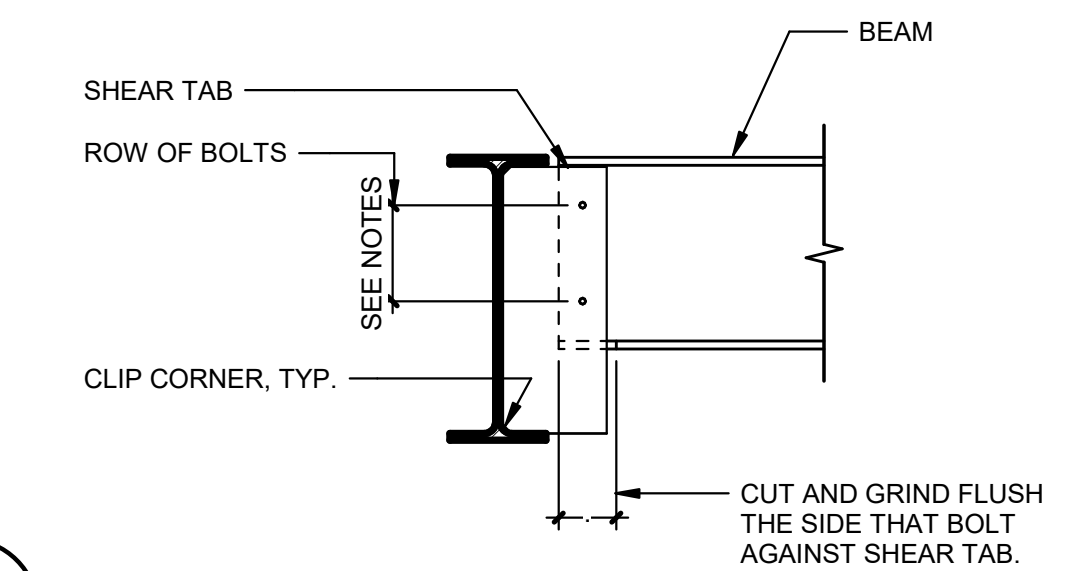
1. EXPOSE AGGREGATE OF FIRST CASTING BY SANDBLASTING OR RETARDING INITIAL SET AT THAT EDGE DURING FIRST CASTING.
2. PRIOR TO THE SECOND CASTING, APPLY AN EPOXY BONDING AGENT TO EXPOSED AGGREGATE SURFACE TO ACHIEVE A 100% BOND.
3. WIDTH OF WALL KEY SHALL BE 1/2 WALL THICKNESS.
4. SECURE EDGES OF WATERSTOP TO REINFORCEMENT TO MAINTAIN POSITION DURING CASTING OF CONCRETE.



2
S5.2 **TYPICAL DETAIL - WALL CONSTRUCTION JOINT - VERTICAL**
3/4" = 1'-0"

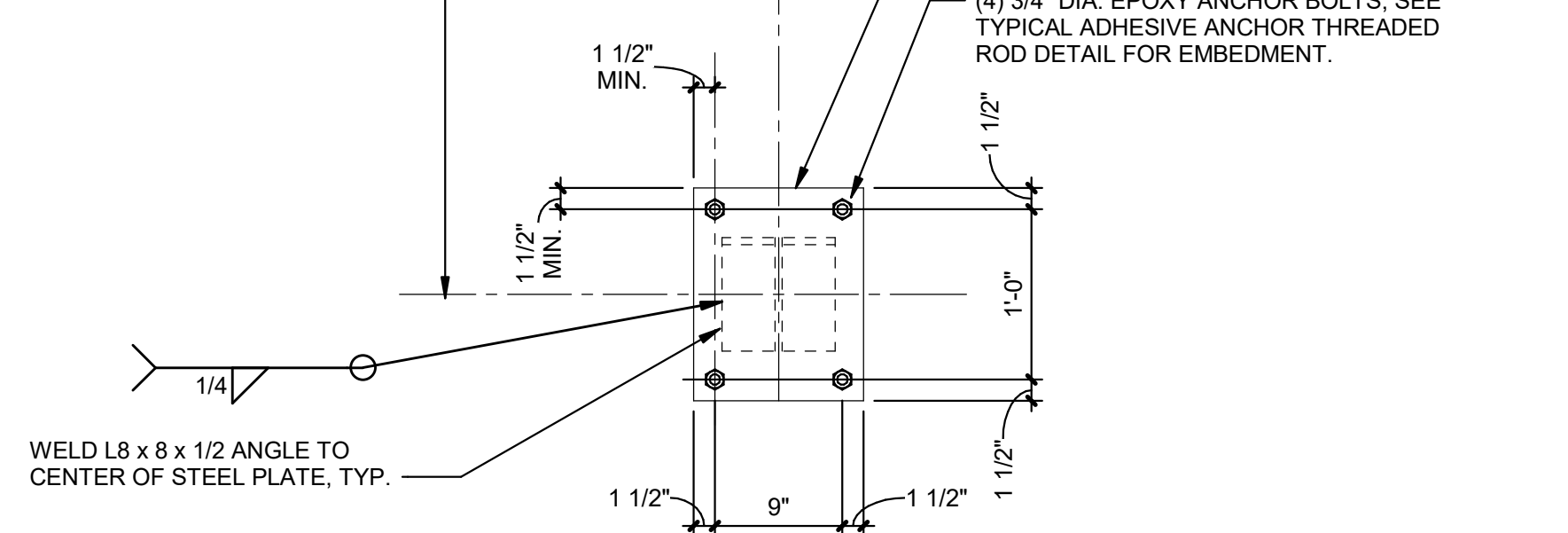
NOTES:

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 W18" 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



4
S5.2 **SHEAR TAB CONNECTION**
1" = 1'-0"

SEE 2/S3.1 PLAN FOR CENTERLINE LOCATION AND ELEVATION OF EMBED PLATE

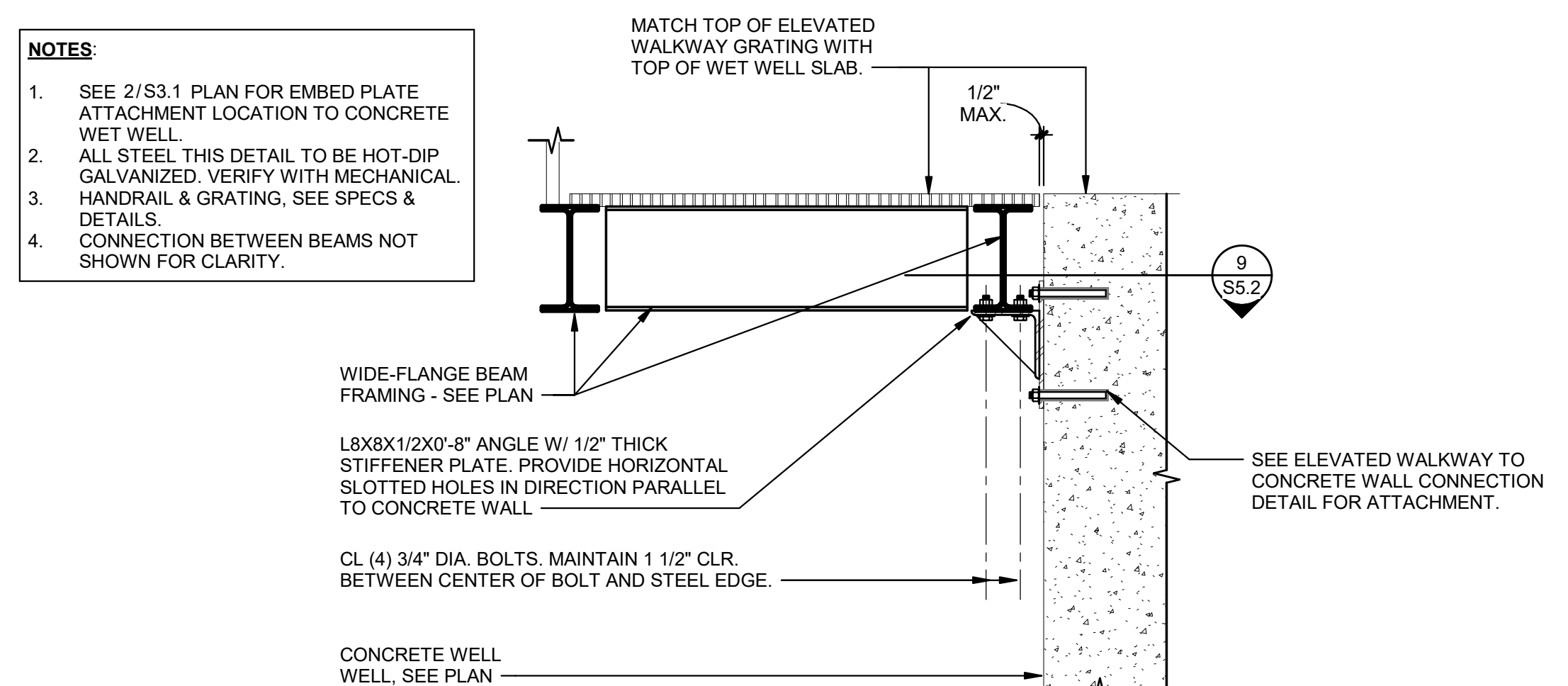


- NOTES:**
1. MAINTAIN MIN. 5" EDGE DISTANCE FROM CL OF EPOXY ANCHOR BOLTS TO EDGE OF CONCRETE, ALL DIRECTIONS.
 2. ALL STEEL THIS DETAIL TO BE HOT-DIP GALVANIZED. VERIFY WITH MECHANICAL.

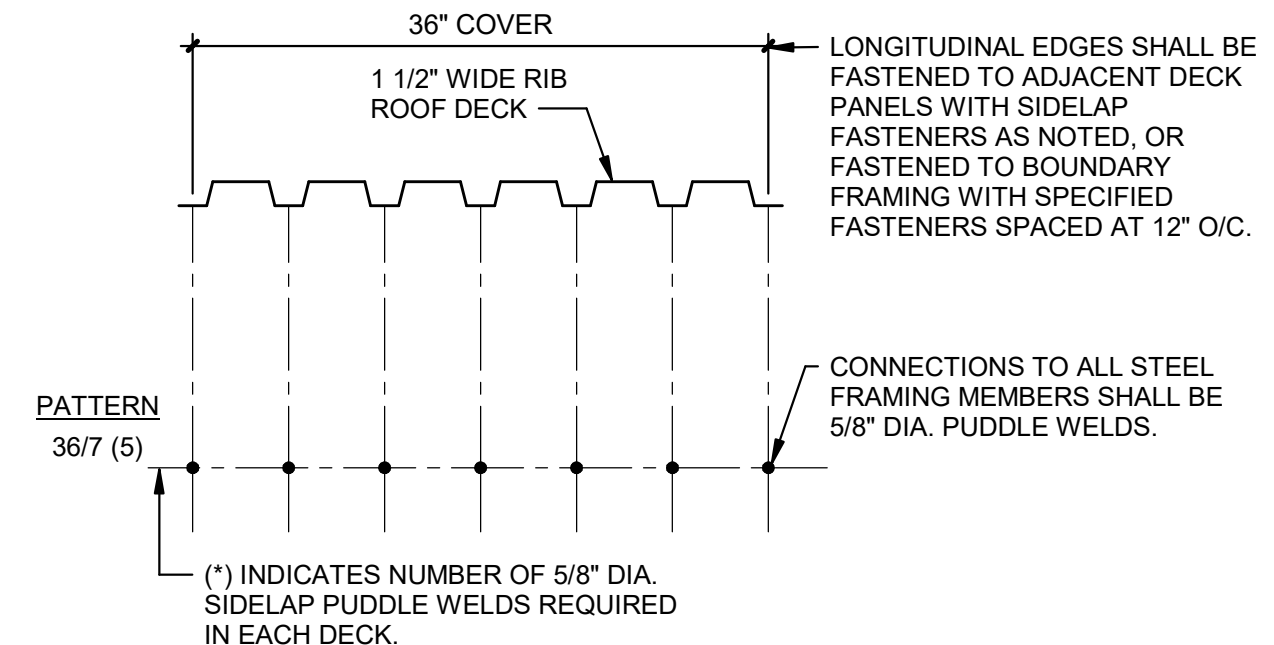
5
S5.2 **ELEVATED WALKWAY TO CONCRETE WALL CONNECTION**
1" = 1'-0"

NOTES:

1. SEE 2/S3.1 PLAN FOR EMBED PLATE ATTACHMENT LOCATION TO CONCRETE WET WELL.
2. ALL STEEL THIS DETAIL TO BE HOT-DIP GALVANIZED. VERIFY WITH MECHANICAL.
3. HANDRAIL & GRATING, SEE SPECS & DETAILS.
4. CONNECTION BETWEEN BEAMS NOT SHOWN FOR CLARITY.



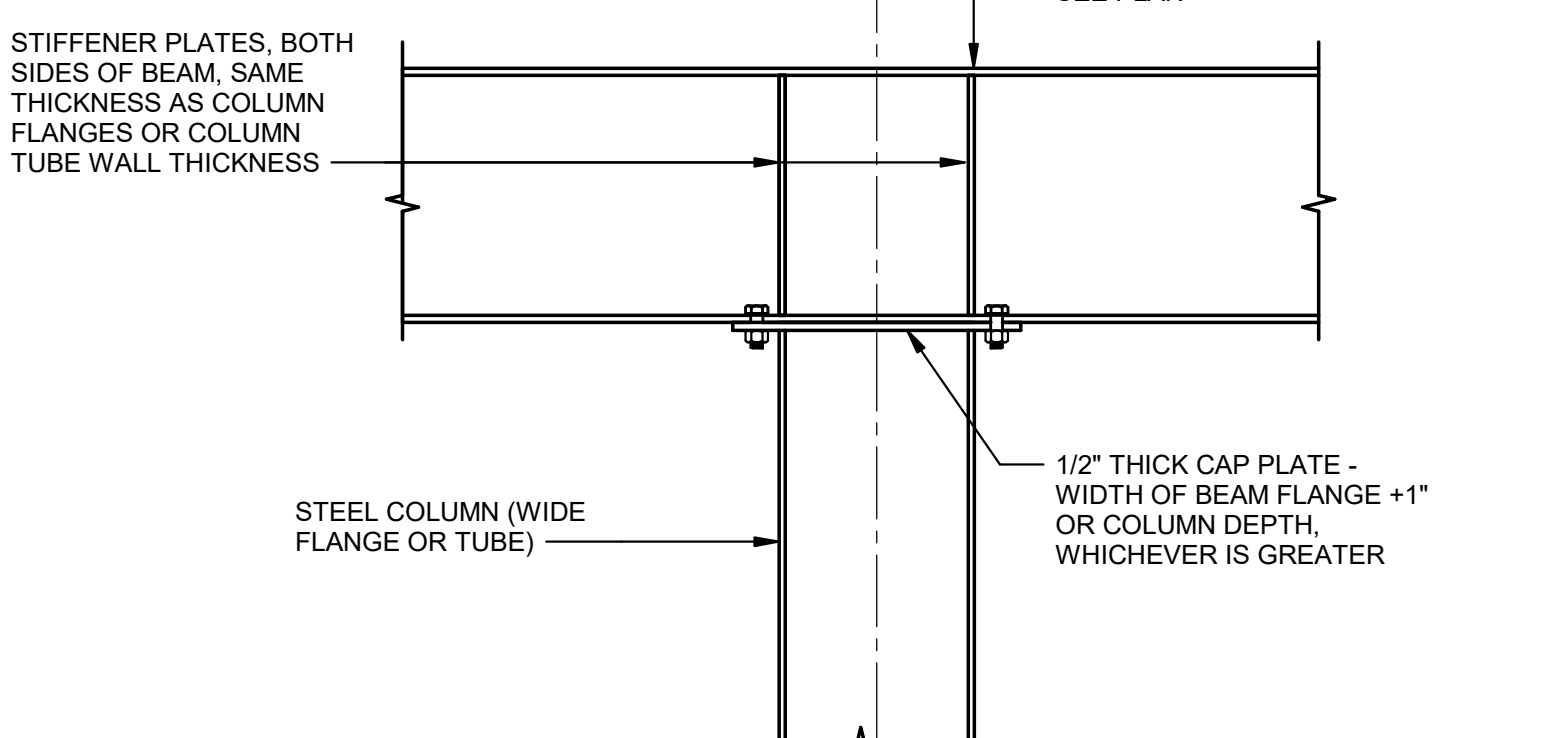
6
S5.2 **ELEVATED WALKWAY SUPPORT DETAIL**
3/4" = 1'-0"



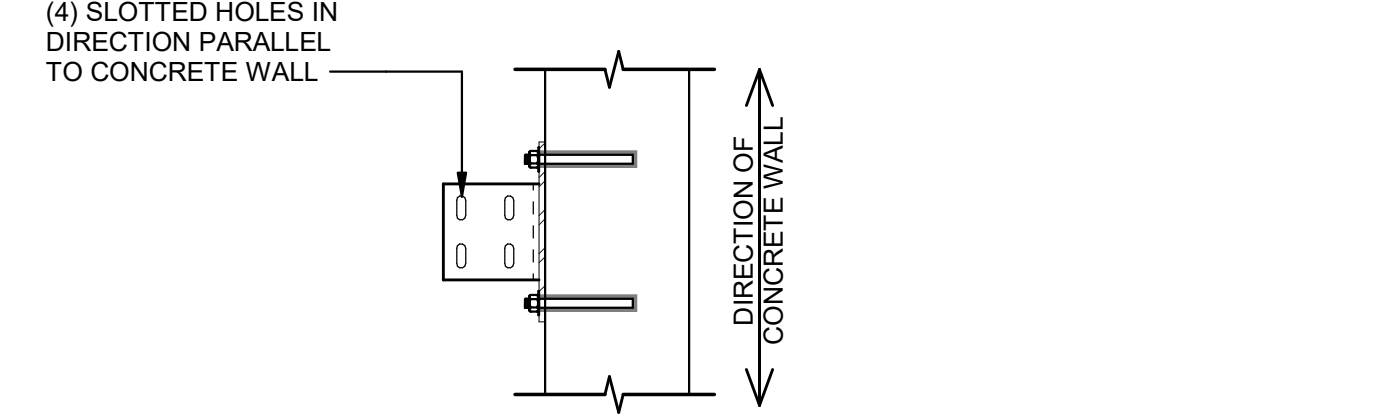
7
S5.2 **ROOF DECK FASTENER LAYOUT**
1" = 1'-0"

ROOF DECK PLAN NOTES:

1. UNLESS OTHERWISE NOTES, ROOF DECK SHALL BE DEPTH AND GAUGE AS NOTED IN THE ROOF PLAN NOTES.
2. WHEREVER POSSIBLE, DECK SHALL BE CONTINUOUS OVER A MINIMUM OF 4 SPANS. SEE ROOF DECK PLAN AND TYPICAL DECK FASTENER LAYOUT FOR DECK ATTACHMENT.
3. ALL EDGES OF ROOF DECK SHALL BE CONTINUOUSLY SUPPORTED, INSTALL MISCELLANEOUS STEEL AS REQUIRED, NO LOADS SHALL BE SUSPENDED FROM THE ROOF DECK.
4. 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.
5. ROOF DECK SHALL BE ATTACHED TO ROOF FRAMING WITH 36/7 PATTERN UNLESS OTHERWISE NOTED.



8
S5.2 **TYPICAL DETAIL TOP OF COLUMN AT WIDE FLANGE BEAM**
1" = 1'-0"



9
S5.2 **PLAN VIEW - TOP OF ANGLE**
3/4" = 1'-0"

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REVISIONS:	DATE	DESIGNED	CHECKED	APPROVED	DESCRIPTION

DESIGN BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:

Bost Rd. Sewer Improvements
Morganton, NC
TYPICAL DETAILS

FINAL DESIGN - 100%
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JOB NO: 65421033
DATE: 05-04-2023
SHEET: **S5.2**



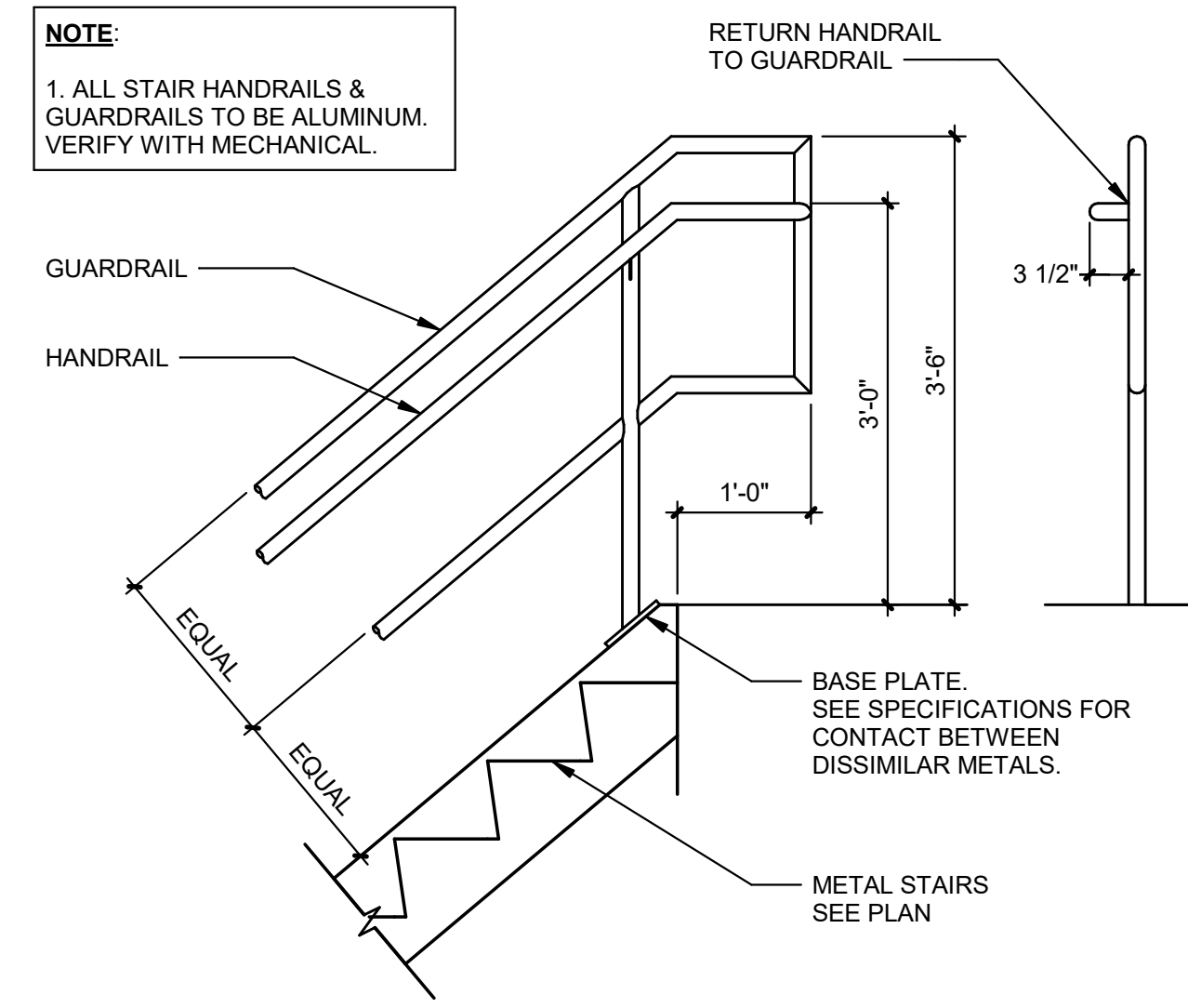
REVISIONS:	DATE:	DESIGNED:	CHECKED:	APPROVED:

DESIGN BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:

Bost Rd. Sewer Improvements
Morganton, NC
TYPICAL DETAILS

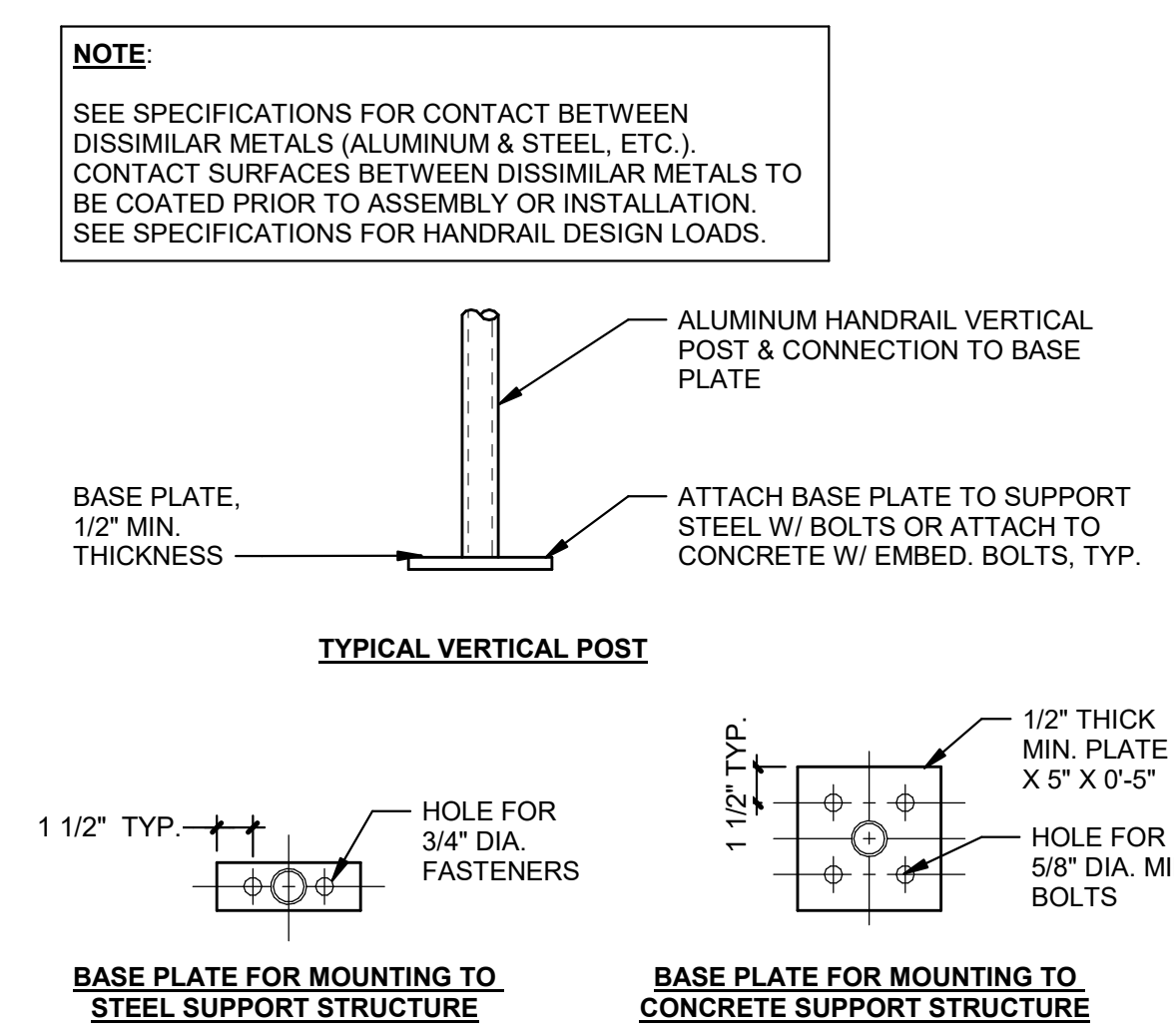
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CONSTRUCTION

JOB NO: 65421093
DATE: 05-04-2023
SHEET: S5.3

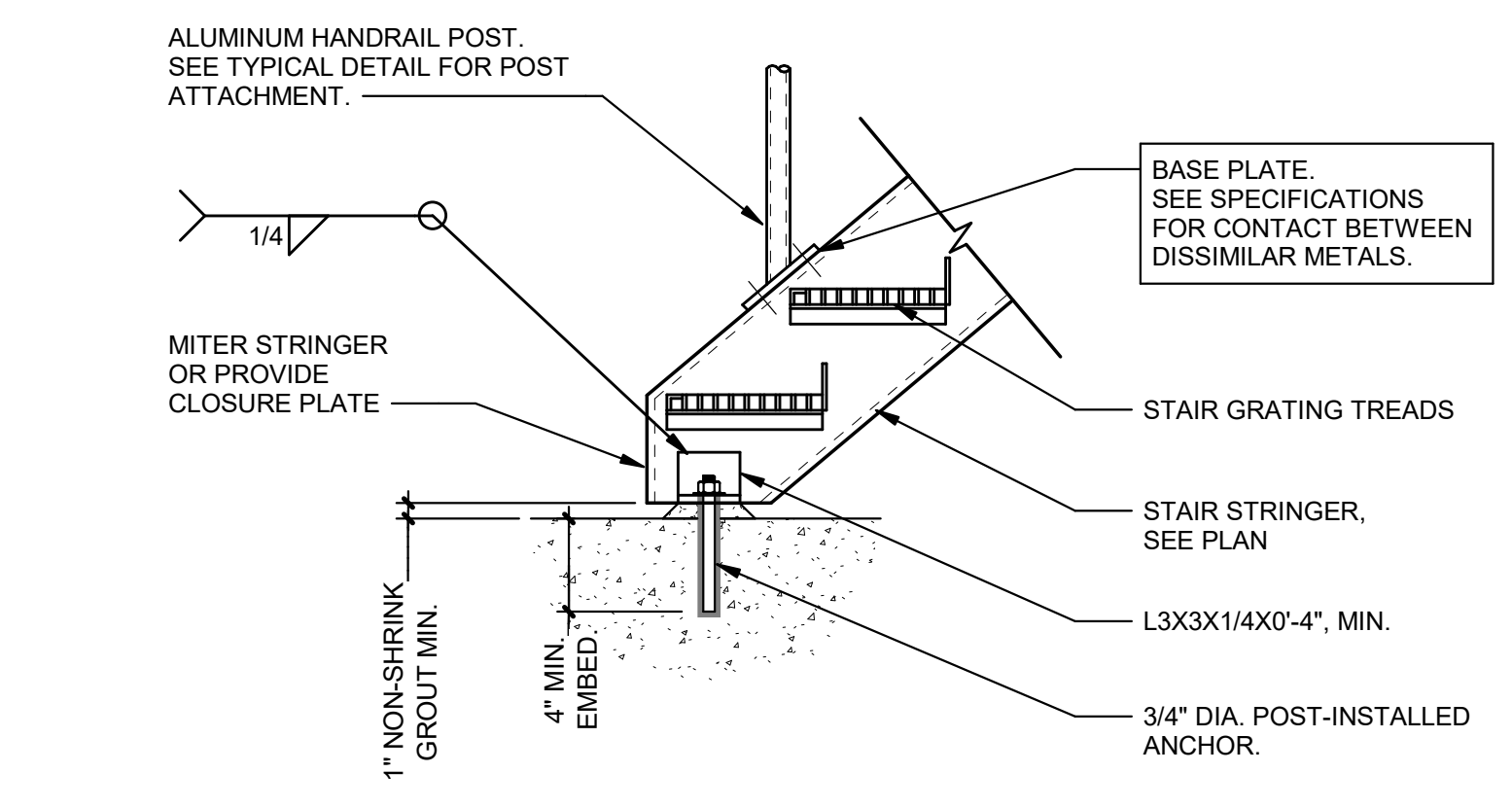


NOTE:
1. ALL STAIR HANDRAILS & GUARDRAILS TO BE ALUMINUM. VERIFY WITH MECHANICAL.

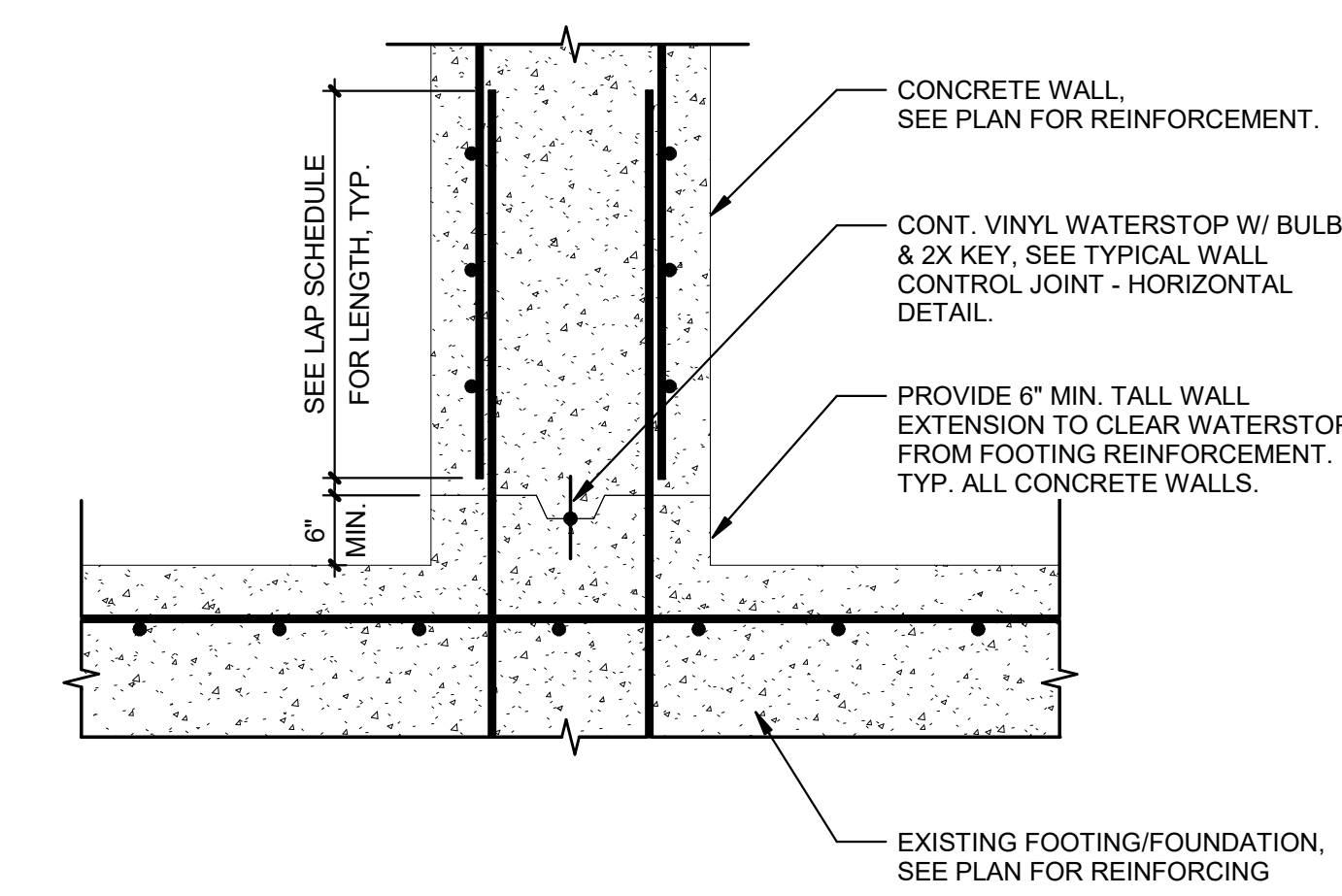
3 TYPICAL DETAIL METAL STAIR RAIL
S5.3 3/4" = 1'-0"



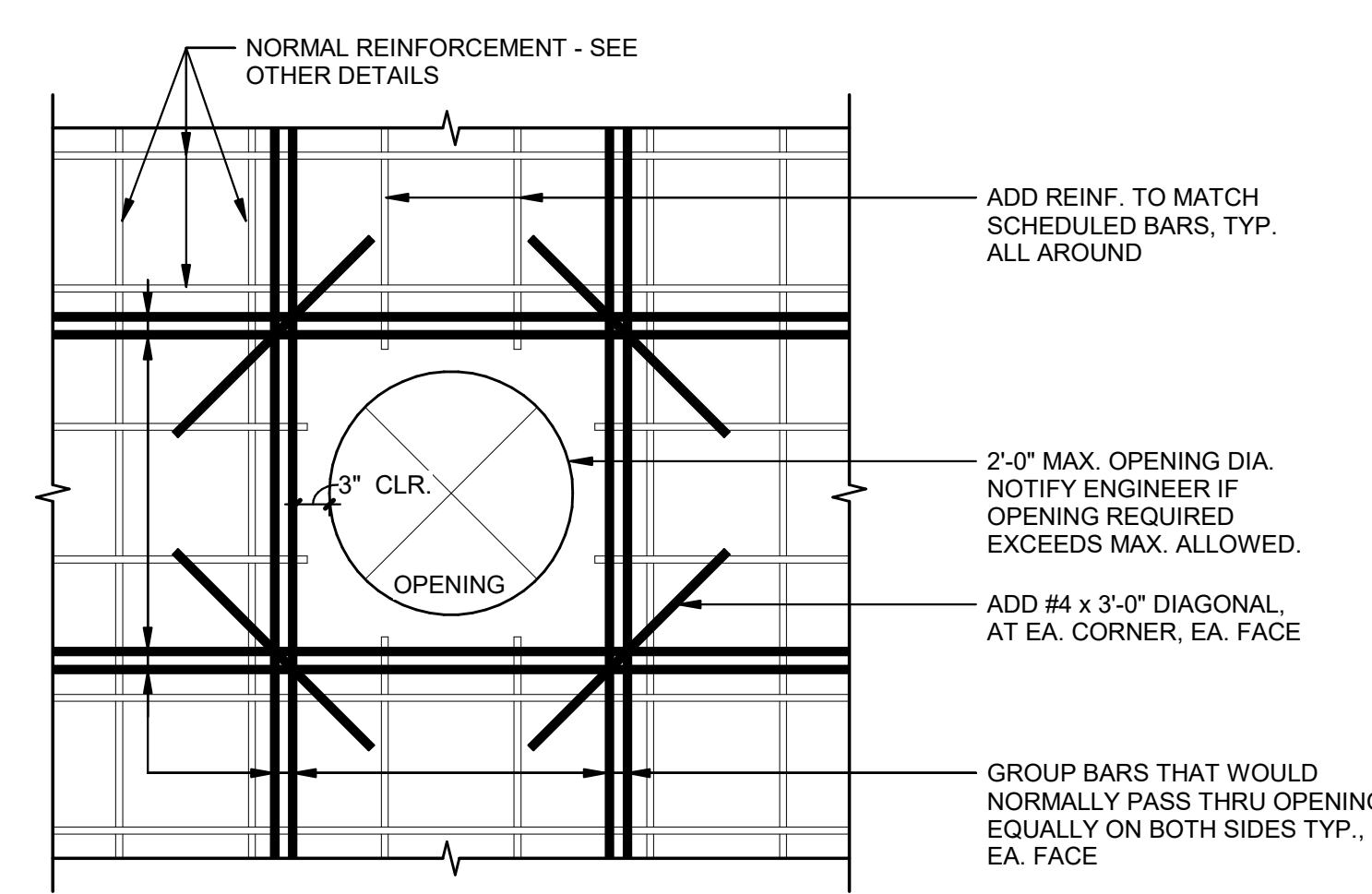
2 TYPICAL DETAIL HANDRAIL POST ATTACHMENT
S5.3 1 1/2" = 1'-0"



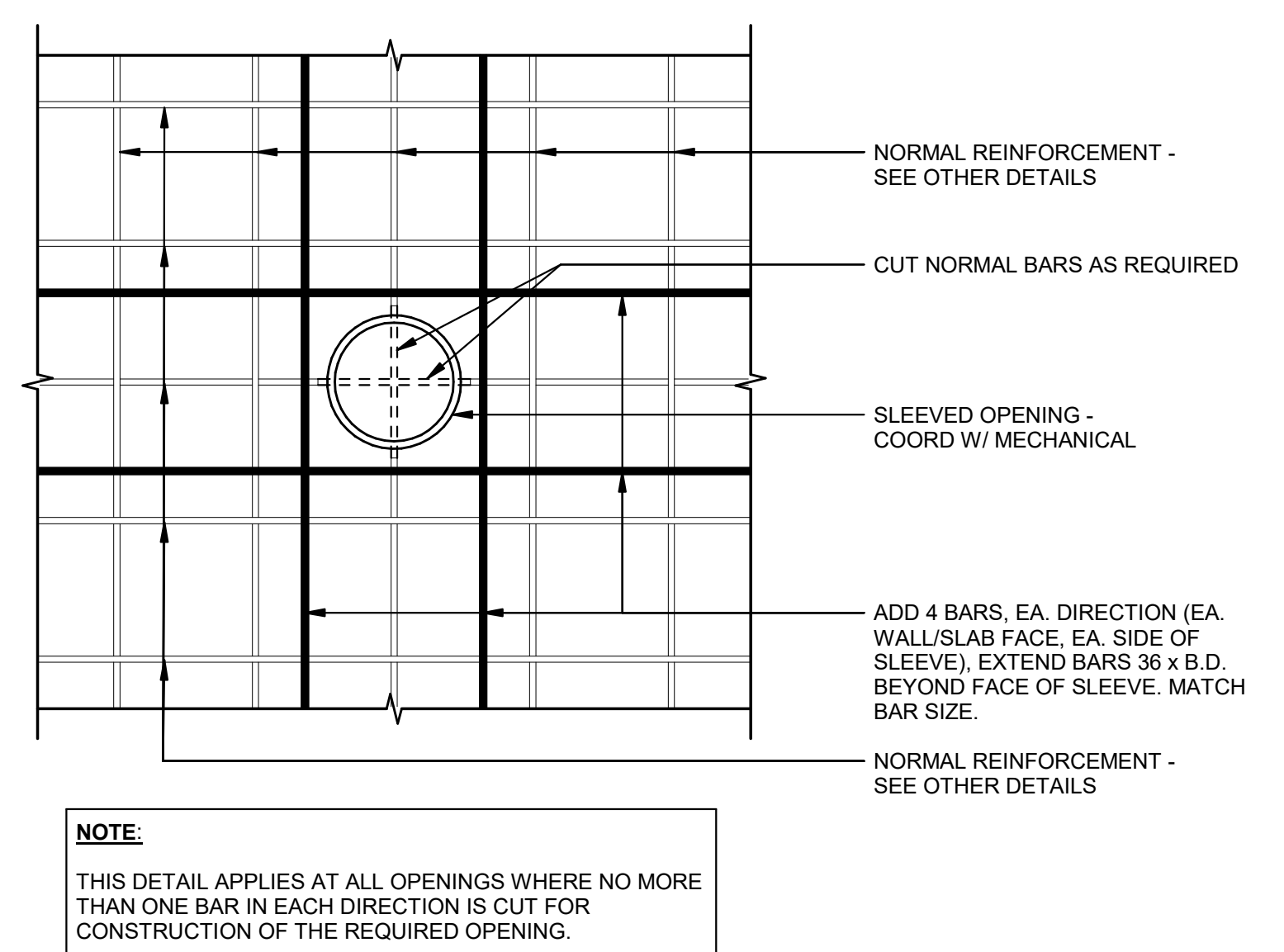
1 TYPICAL DETAIL STAIR BOTTOM CONNECTION
S5.3 1" = 1'-0"



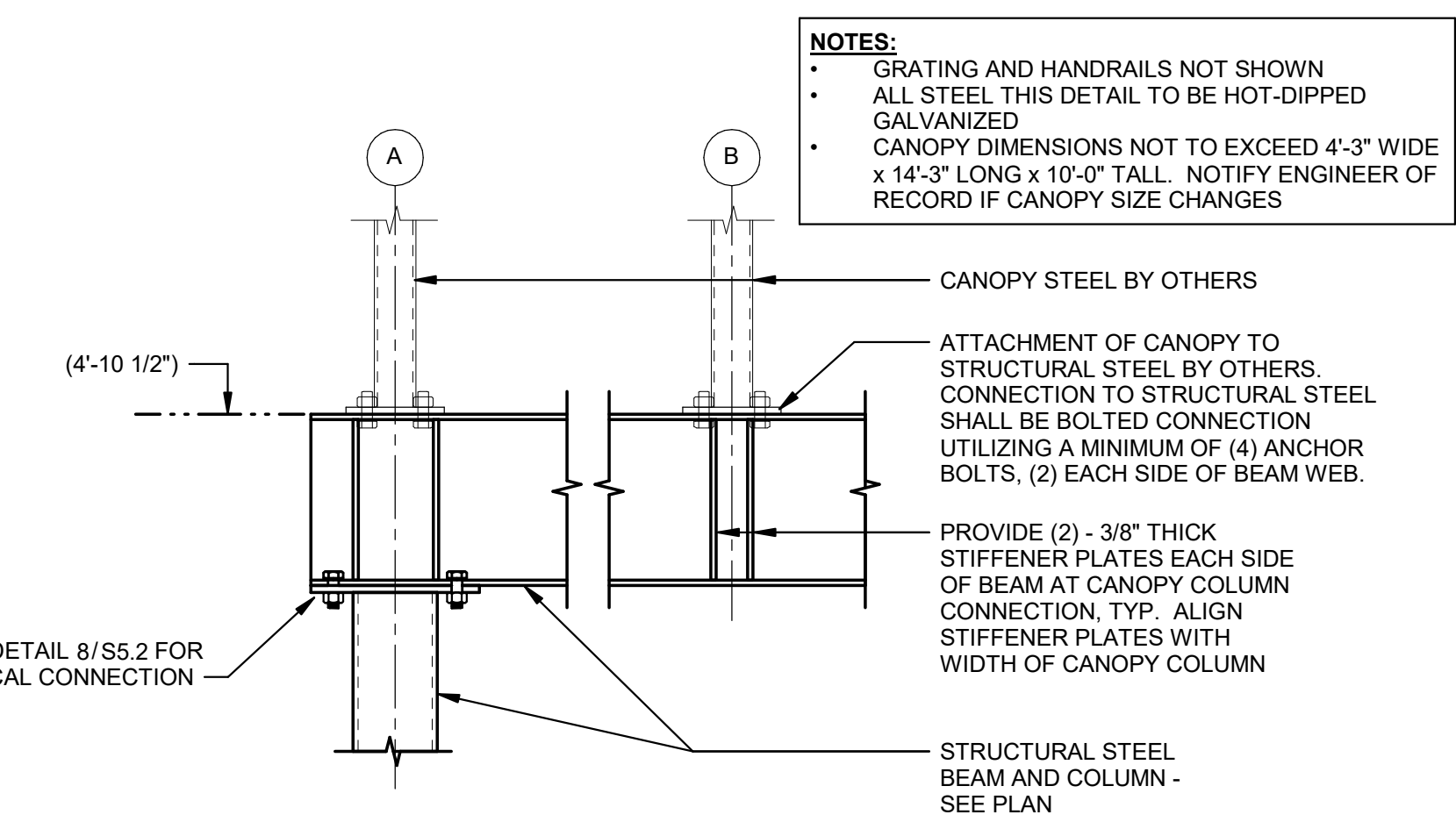
6 TYPICAL BOTTOM OF CONCRETE WALL REINFORCING DETAIL
S5.3 3/4" = 1'-0"



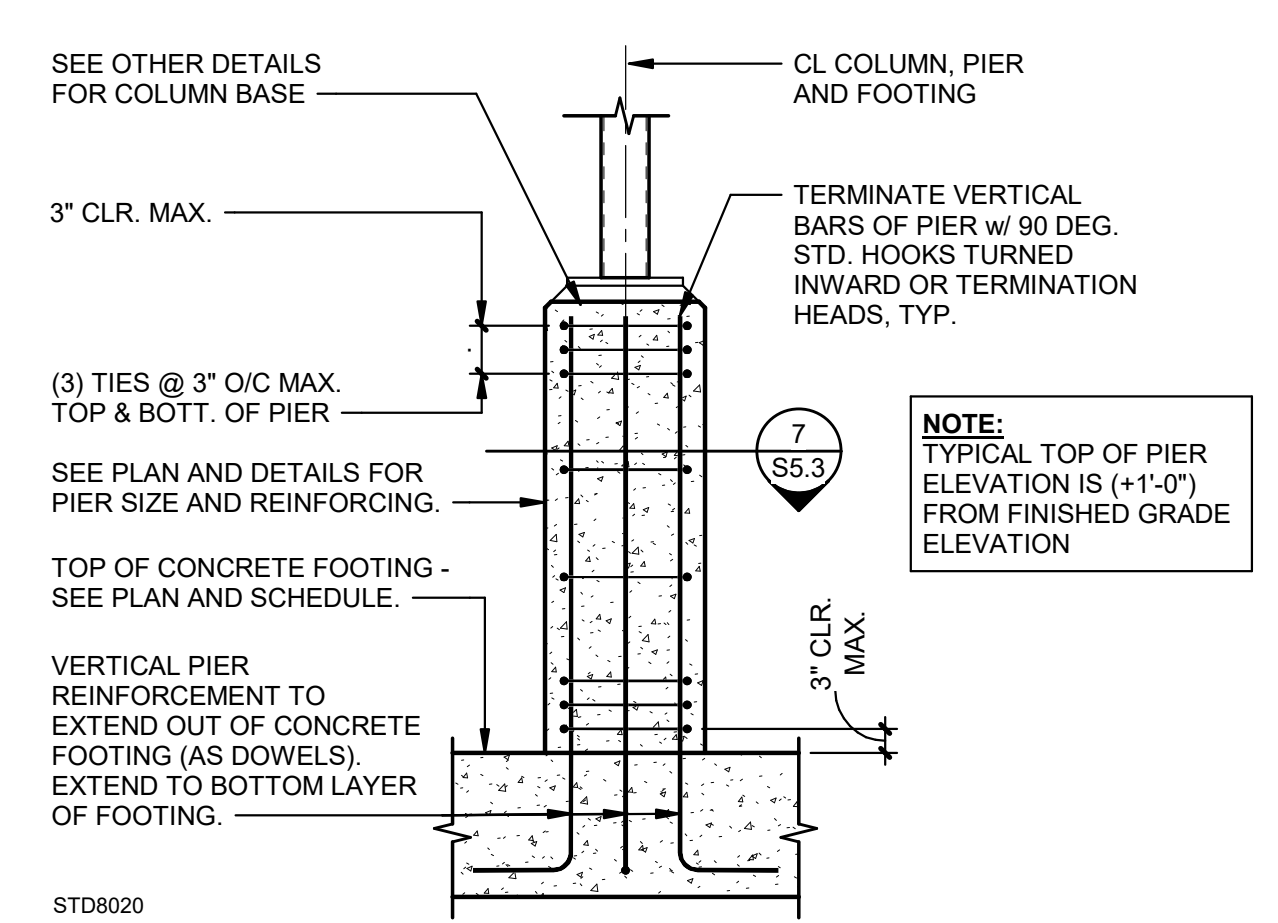
5 TYPICAL DETAIL LARGE OPENING IN WALL OR SLAB
S5.3 3/4" = 1'-0"



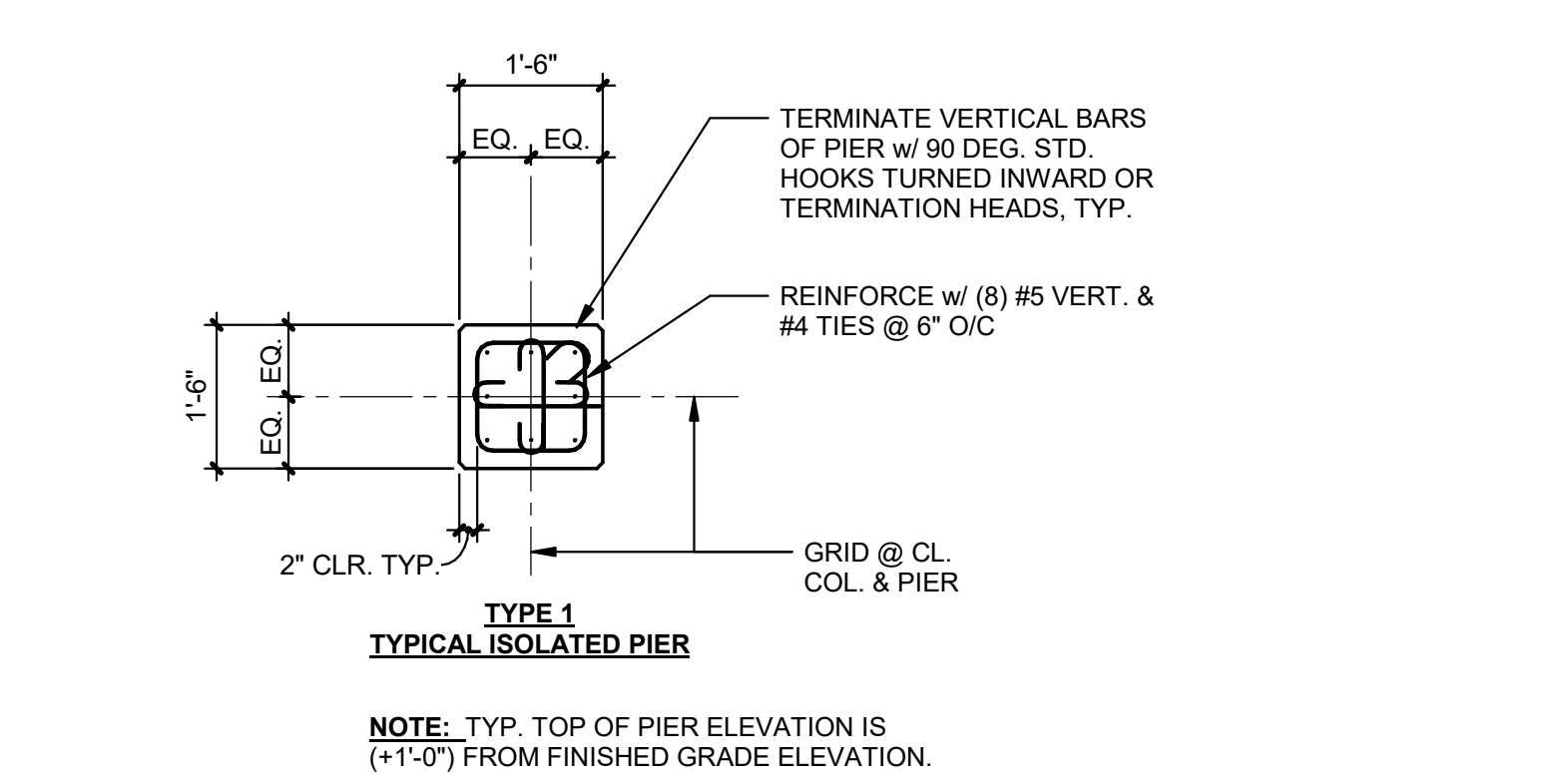
4 TYPICAL DETAIL SMALL OPENING IN WALL OR SLAB
S5.3 3/4" = 1'-0"



9 CANOPY TO STRUCTURAL STEEL CONNECTION
S5.3 1" = 1'-0"



8 COLUMN PIER
S5.3 1/2" = 1'-0"



7 TYPICAL CONCRETE PIER DETAIL
S5.3 1/2" = 1'-0"

STD8140

STD8020

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Project Number: 210605
File Name: 210605-E1011
Plotted: 6/4/2023 2:52 PM



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ELECTRICAL SYMBOL LEGEND
Dwg # 210605-E1002.dwg

GENERAL

- ELECTRICAL PANELBOARD 277/480V
- ELECTRICAL PANELBOARD 120/208V
- BRANCH CIRCUIT HOME RUN - LETTERS AND NUMERALS INDICATE PANEL DESIGNATION. NUMERALS IN PARENTHESIS INDICATE CIRCUIT NUMBER. ARROWS INDICATE NUMBER OF CIRCUITS. ALL WIRING NO. 12 AWG UNLESS OTHERWISE NOTED. EQUIPMENT GROUNDING CONDUCTORS TO BE INCLUDED IN ALL RUNS OF CONDUIT.
- BRANCH CIRCUIT CONDUIT INSTALLED CONCEALED IN WALLS AND ABOVE CEILINGS.
- 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 CONDUIT TO FIXTURE OUTLET. UPPER CASE LETTER INDICATES FIXTURE TYPE. SEE SCHEDULE. LOWER CASE LETTER IN PARENTHESIS INDICATES SWITCH LOCATION.
- FIXTURE OUTLET - LED - SEE SCHEDULE
- 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 TECHNOLOGY, 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

POWER

- WP DUPLICATION TYPE RECEPTACLE EQUAL TO HUBBELL 5362I. IVORY WITH MEDIUM SIZE STAINLESS STEEL COVER PLATE. MOUNT VERTICALLY IN A SINGLE GANG GALVANIZED BOX, 16" ABOVE FLOOR, OR AS NOTED, OR DIRECTED. "WP" - INDICATES WITH WEATHERPROOF GASKETED CAST METAL TYPE PLATE. "EWC" - INDICATES RECEPTACLE FOR ELECTRIC WATER COOLER. INSTALL WITHIN CABINET ENCLOSURE. VERIFY WITH PLUMBING CONTRACTOR. "GFI" - INDICATES RECEPTACLE WITH GROUND FAULT INTERRUPTER, HUBBELL NO. GF5362I, TO FIT INTO SIMILAR STANDARD OUTLET BOX.
- DOUBLE DUPLEX RECEPTACLE IN TWO (2) GANG OUTLET BOX WITH TWO (2) GANG STAINLESS STEEL COVER PLATE.
- SINGLE PURPOSE OUTLET - NEMA TYPE AS INDICATED ON DRAWINGS
- JUNCTION BOX OUTLET FOR LIGHT AND RECEPTACLE CIRCUITS, 4" SQUARE BOX WITH BLANK COVER PLATE AND FLEXIBLE METAL CONDUIT FOR CONNECTION TO LIGHTS. IN GENERAL, INSTALLED ABOVE SUSPENDED CEILINGS. IN OTHER 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 RED COVER PLATES.
- MOTOR CONNECTION - NUMERAL INDICATES HORSEPOWER
- HEAVY DUTY FUSIBLE DISCONNECT SWITCH FURNISHED. INSTALLED AND CONNECTED BY THE ELECTRICAL CONTRACTOR. FIRST NUMERALS INDICATE MAXIMUM AMPERE RATING, SECOND NUMERAL INDICATES NUMBER OF POLES, THIRD NUMERALS INDICATE FUSE SIZE, OR PROVIDE FUSES TO SUIT EQUIPMENT SERVED.
- 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.
- 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 HBL12211, HBL12231, HBL12241, HBL1209 WITH MEDIUM 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 LOWER.
- 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
- FIREMAN'S PHONE

ELECTRICAL ABBREVIATIONS
Dwg # 210605-E1003.dwg

- A OR AMP AMPERES
- AFF ABOVE FINISHED FLOOR
- AFG ABOVE FINISHED GRADE
- AIC AMPERE INTERRUPTING CAPACITY
- ALT ALTERNATE
- ATS AUTOMATIC TRANSFER SWITCH
- AWG AMERICAN WIRE GAUGE
- BKR BREAKER
- BFG BELOW FINISHED GRADE
- C CONDUIT
- CB CIRCUIT BREAKER
- CLG CEILING
- CT CABLE TRAY
- CU COPPER
- DIA DIAMETER
- DN DOWN
- DWG(S) DRAWING(S)
- EC EMPTY CONDUIT OR ELECTRICAL CONTRACTOR EXHAUST FAN
- EF EQUIPMENT GROUND
- EG ELECTRICAL
- EMT ELECTRIC METALLIC TUBING
- EQUIP EQUIPMENT
- ER EXISTING TO BE RELOCATED
- EWC ELECTRIC WATER COOLER
- EWK ELECTRIC WATER HEATER
- EX EXISTING TO REMAIN
- FACP FIRE ALARM CONTROL PANEL
- FL FLOOR
- FLA FULL LOAD AMPS
- FT FOOT-FEET
- FVNR FULL VOLTAGE NON-REVERSING
- FWE FURNISHED WITH EQUIPMENT
- GA GAUGE
- GALV GALVANIZED
- GC GENERAL CONTRACTOR
- GEC GROUNDING ELECTRODE CONDUCTOR
- GFI GROUND FAULT INTERRUPTER
- GND GROUND
- GRS GALVANIZED RIGID STEEL CONDUIT
- HOA HAND-OFF-AUTOMATIC
- HID HIGH INTENSITY DISCHARGE
- HP HORSEPOWER
- HT HEIGHT
- HTR HEATER
- IG ISOLATED GROUND
- IMC INTERMEDIATE METALLIC CONDUIT
- IN INCH/INCHES
- JB JUNCTION BOX
- KCMIL THOUSANDS OF CIRCULAR MILS
- KVA KILO VOLT AMPERES
- KW KILOWATT
- LTG LIGHTS
- MCB MAIN CIRCUIT BREAKER
- MCC MOTOR CONTROL CENTER
- MLO MAIN LUG ONLY
- MTD MOUNTED
- MTG MOUNTING
- N NEUTRAL
- NC NORMALLY CLOSED
- NEC NATIONAL ELECTRIC CODE
- NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
- NF NON-FUSED
- NFPA NATIONAL FIRE PROTECTION ASSOCIATION
- NIC NOT IN CONTRACT
- NO NORMALLY OPEN OR NUMBER
- Ø PHASE
- PNL PANEL
- PVC POLYVINYL CHLORIDE
- REC RECEPTACLE
- SCHED SCHEDULE
- SN SOLID NEUTRAL
- SPD SURGE PROTECTIVE DEVICE
- SPECS SPECIFICATIONS
- SWBD SWITCHBOARD
- SWGR SWITCHGEAR
- TEL TELEPHONE
- TTB TELEPHONE TERMINAL BACKBOARD
- TYP TYPICAL
- TVSS TRANSIENT VOLTAGE SURGE SUPPRESSOR
- UG UNDERGROUND
- UL UNDERWRITES LABORATORIES
- UNO UNLESS NOTED OTHERWISE
- V VOLTS
- W WIRE
- WP WEATHERPROOF
- XFMR TRANSFORMER

ELECTRICAL DRAWING INDEX

NO.	DESCRIPTION
E1.1	SYMBOL LEGEND AND ABBREVIATIONS
ED2.1	ELECTRICAL DEMOLITION SITE PLAN, ENLARGED ELECTRICAL PLAN AND ELEVATION
E2.1	ELECTRICAL EQUIPMENT, LIGHTING, SITE PLANS AND ELEVATIONS
E4.1	ELECTRICAL RISER DIAGRAM AND SCHEDULES

REVISIONS:

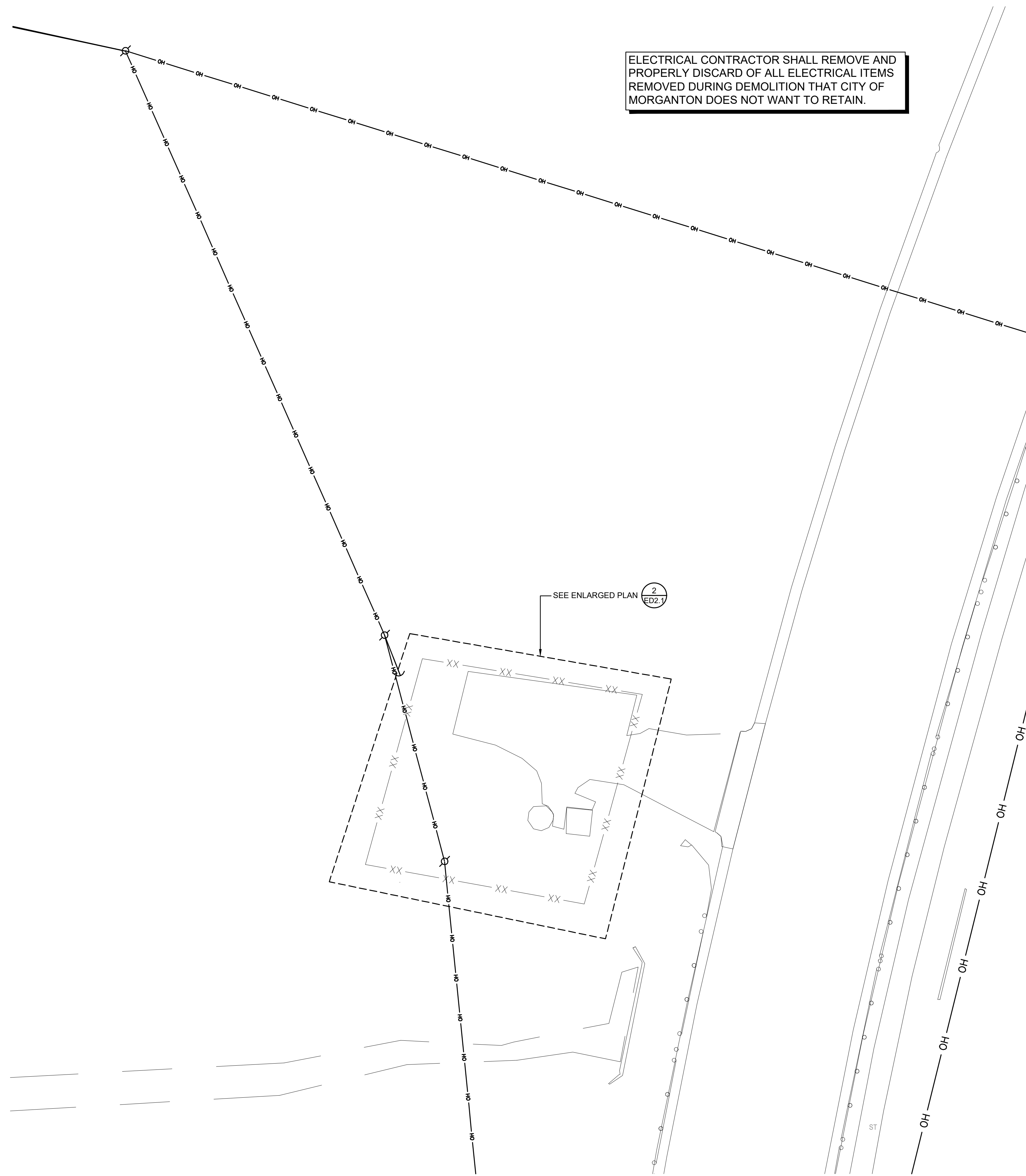
DATE	BY	REVISION

Bost Rd Sewer Improvements
Morganton, NC
SYMBOL LEGEND AND ABBREVIATIONS

**FINAL DESIGN - 100%
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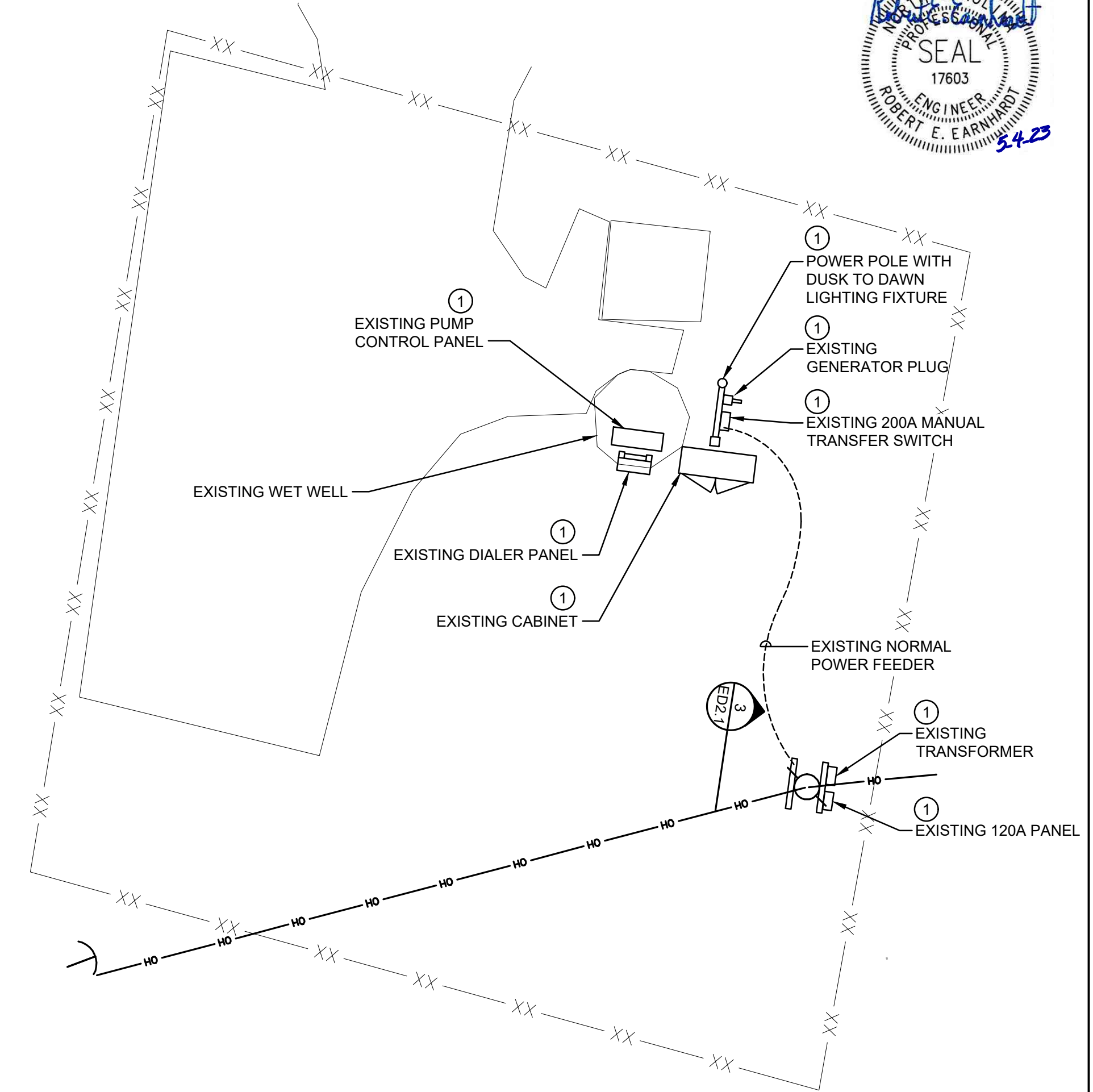
JOB NO: 65421093
DATE: 05-04-2023
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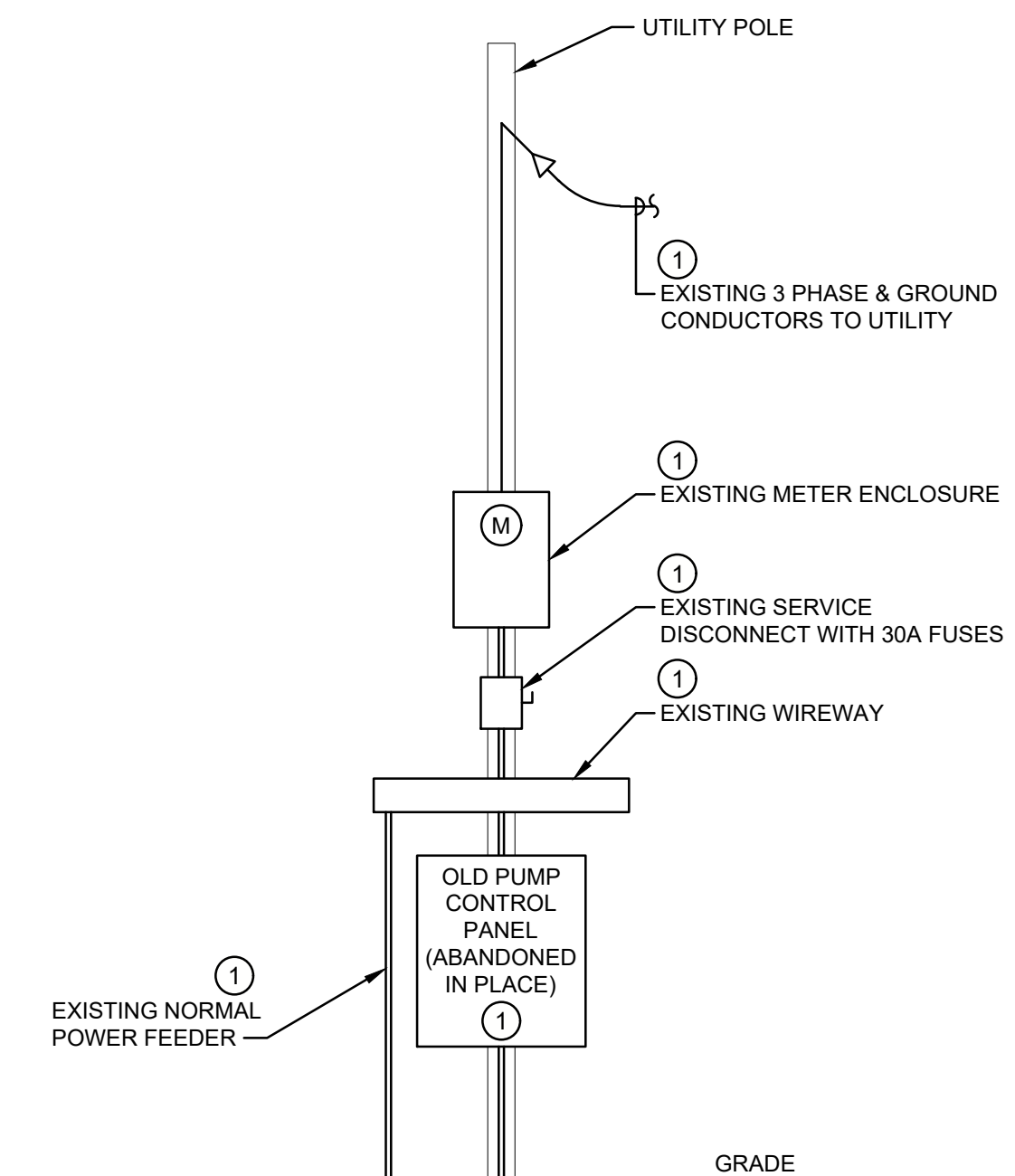
1 DEMOLITION SITE PLAN
 1/16" = 1'-0"
 Dwg # 210605-E2011.DWG

ELECTRICAL CONTRACTOR SHALL REMOVE AND PROPERLY DISCARD OF ALL ELECTRICAL ITEMS REMOVED DURING DEMOLITION THAT CITY OF MORGANTON DOES NOT WANT TO RETAIN.



2 ENLARGED ELECTRICAL PLAN
 NO SCALE
 Dwg # 210605-E3101.DWG

DEMOLITION KEY NOTE:
 Dwg # 210605-E7002.dwg
 ① EXISTING PUMP STATION SHALL REMAIN FUNCTIONAL UNTIL NEW PUMP STATION IS FULLY OPERATIONAL, AT THAT POINT ALL EXISTING ELECTRICAL SHALL BE DEMOLISHED.



3 ELECTRICAL SERVICE ELEVATION
 NO SCALE
 Dwg # 210605-E7002.DWG

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Project Number: 210605
 File Name: 210605-E3201.dwg
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DESIGN BY:	DATE:	REVISION DESCRIPTION	DATE:	DESIGNED/ APPROVED BY:

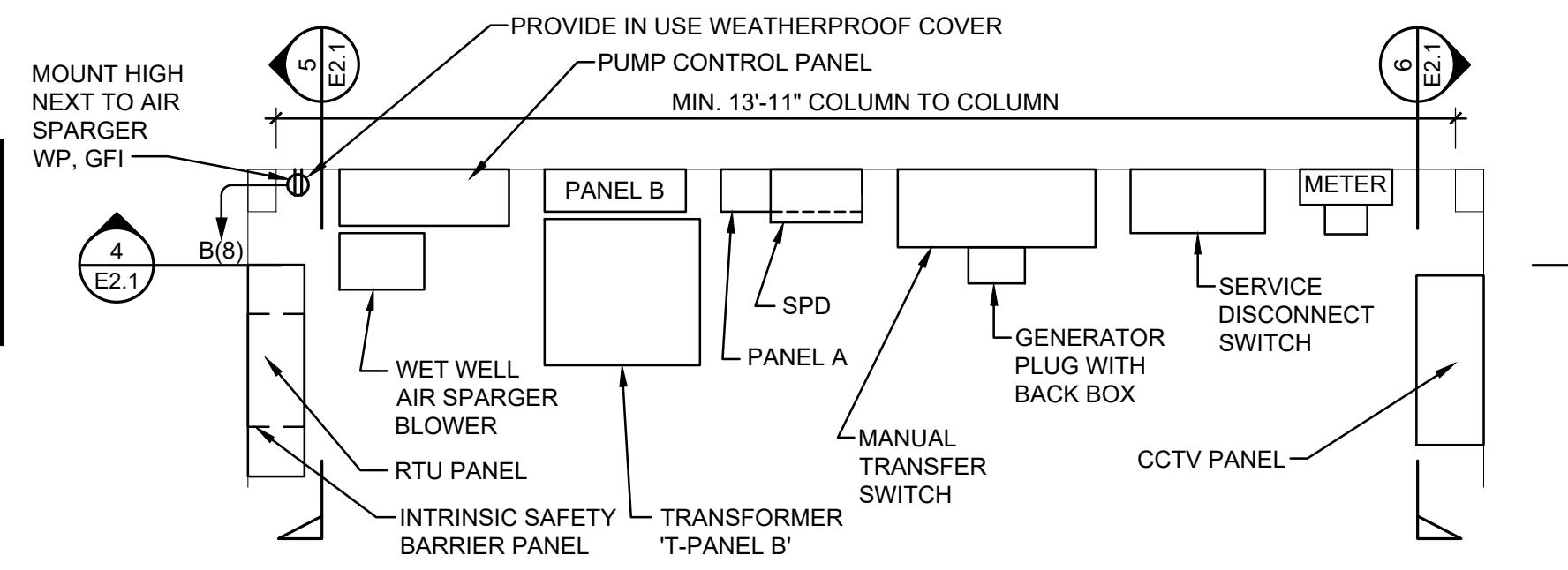
Bost Rd Sewer Improvements
 Morganton, NC
 ELECTRICAL DEMOLITION SITE PLAN,
 ENLARGED ELECTRICAL PLAN AND
 ELEVATION

**FINAL DESIGN - 100%
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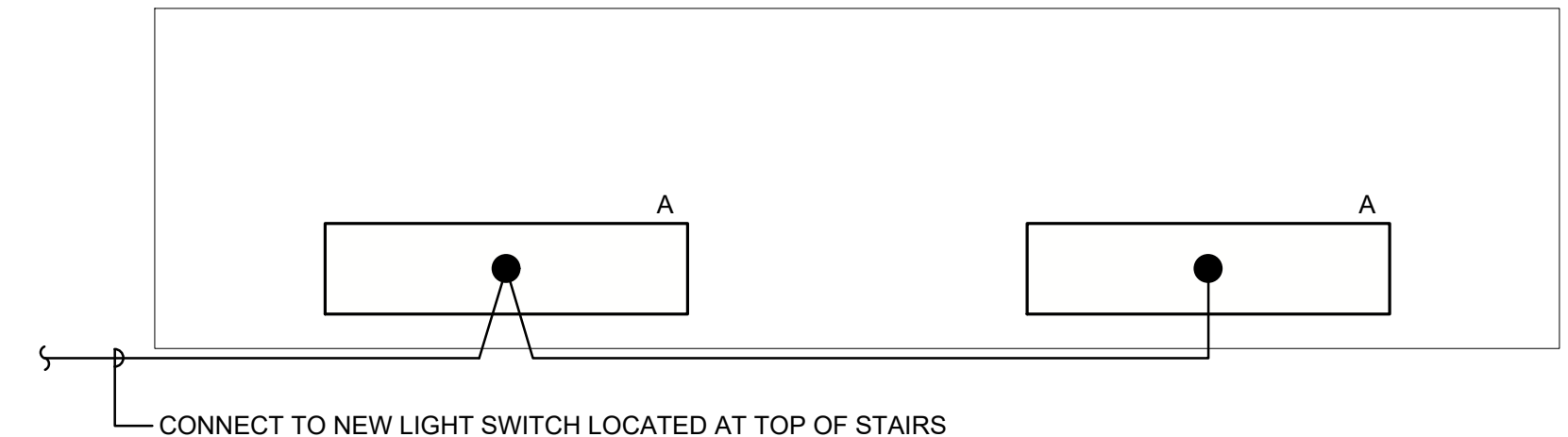
JOB NO: 65421083
 DATE: 05-04-2023
 SHEET: ED2.1



ELECTRICAL EQUIPMENT SHALL BE MOUNTED ON STAINLESS STEEL UNISTRUCT. COORDINATE MOUNTING OF ELECTRICAL EQUIPMENT WITH CANOPY DESIGNER. ALL MOUNTING HARDWARE SHALL BE STAINLESS STEEL.



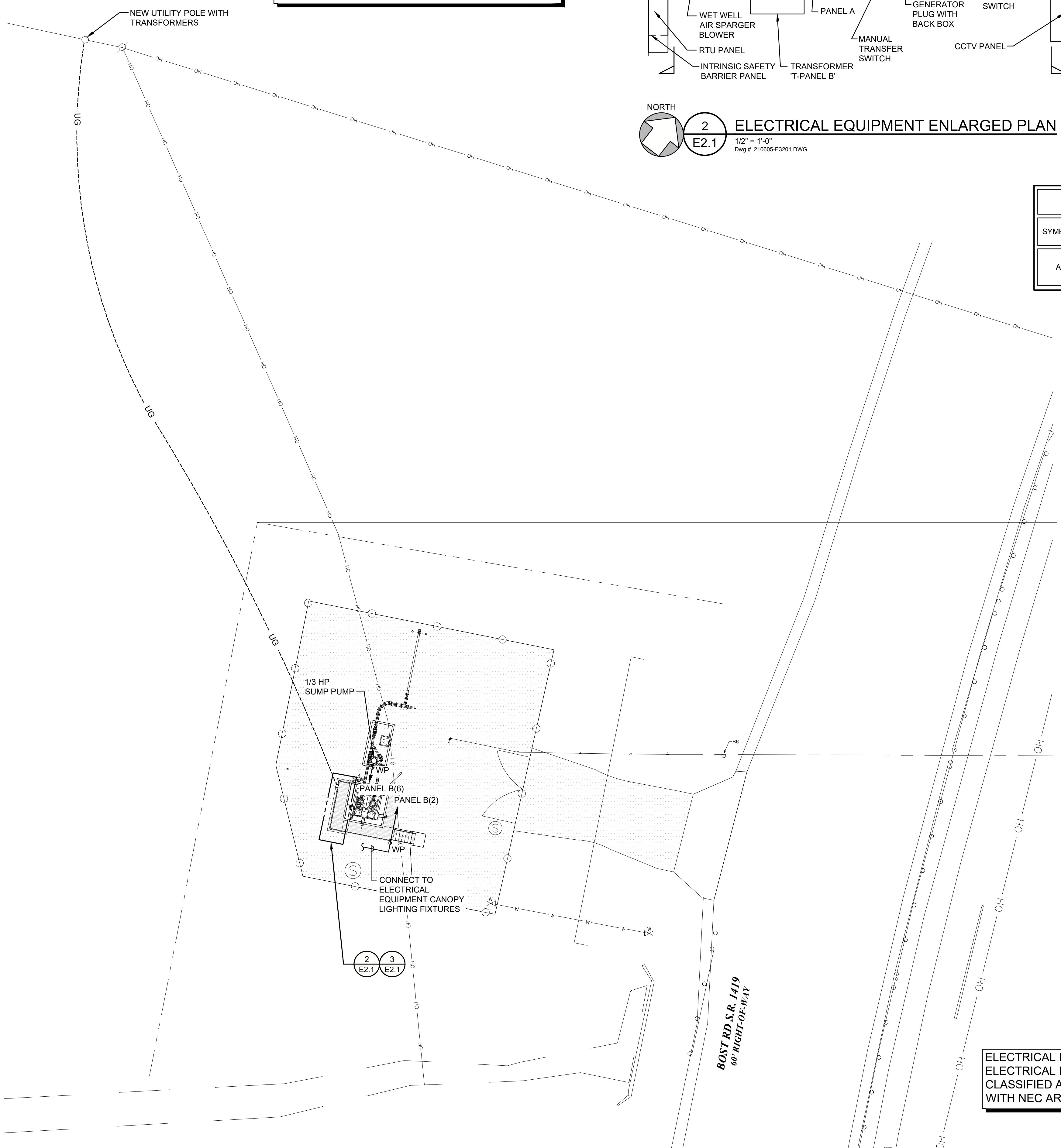
2 ELECTRICAL EQUIPMENT ENLARGED PLAN
E2.1 1/2" = 1'-0"
Dwg # 210605-E3201.DWG



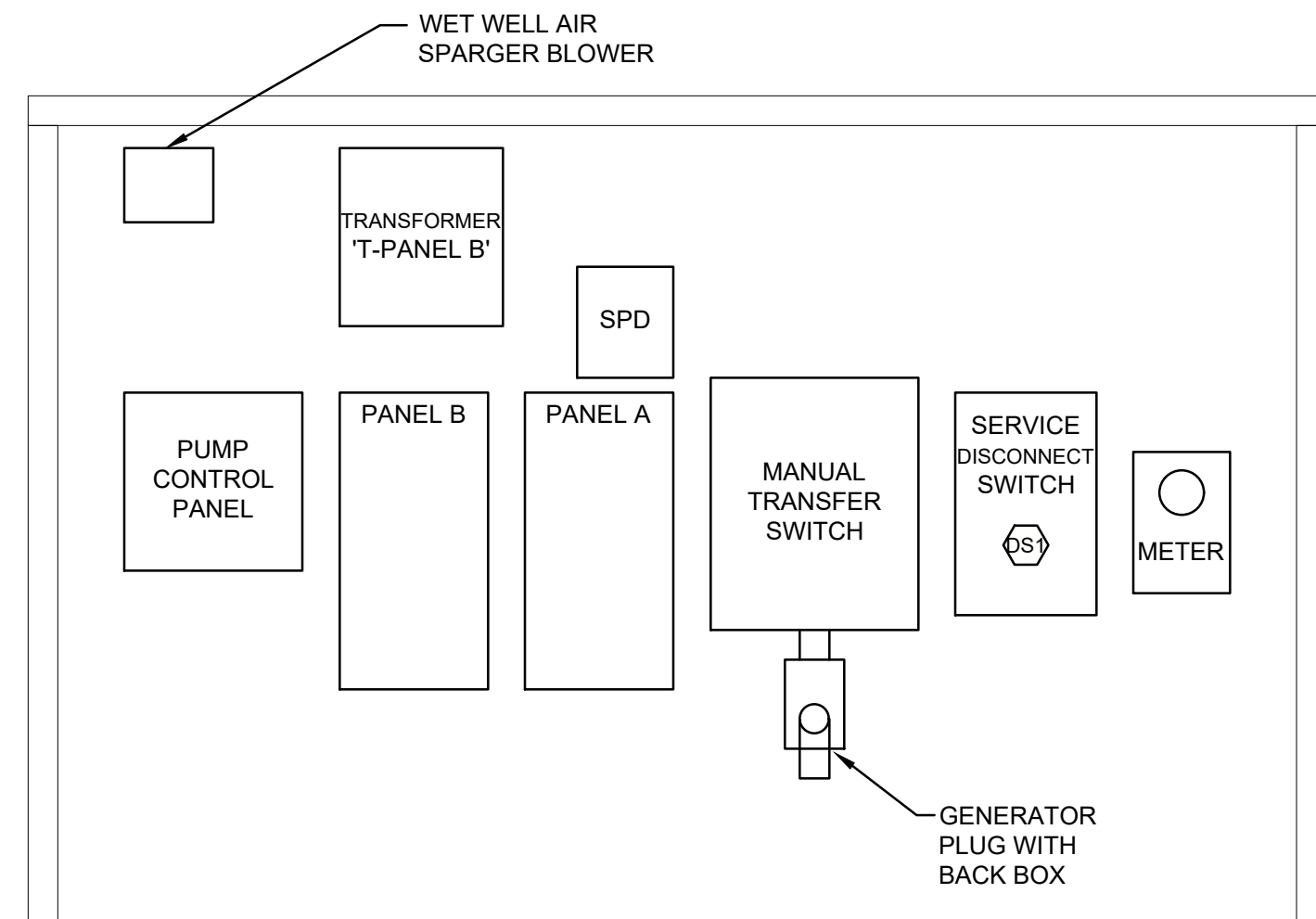
3 ELECTRICAL EQUIPMENT CANOPY LIGHTING PLAN
E2.1 1/2" = 1'-0"
Dwg # 210605-E3201.DWG

SYMBOL	MANUFACTURER	CATALOG NO.	VOLTS	LAMP SOURCE	ENERGY INPUT WATTS	MOUNTING	DESCRIPTION
A	LITHONIA	VAP-4000LM-FST-MD-120 -GZ10-40K-80CRI- WLFEND2STSLVAPSMB	120	LED 4,000 LUMENS 4000°K, 80+ CRI	33	SURFACE	1 x 4 SURFACE-MOUNT VAPORTIGHT LIGHT, GASKETED, UV-STABLE POLYCARBONATE LENS, STAINLESS STEEL LATCHES, WET LOCATION END FITTINGS, SURFACE SPRING BRACKETS.

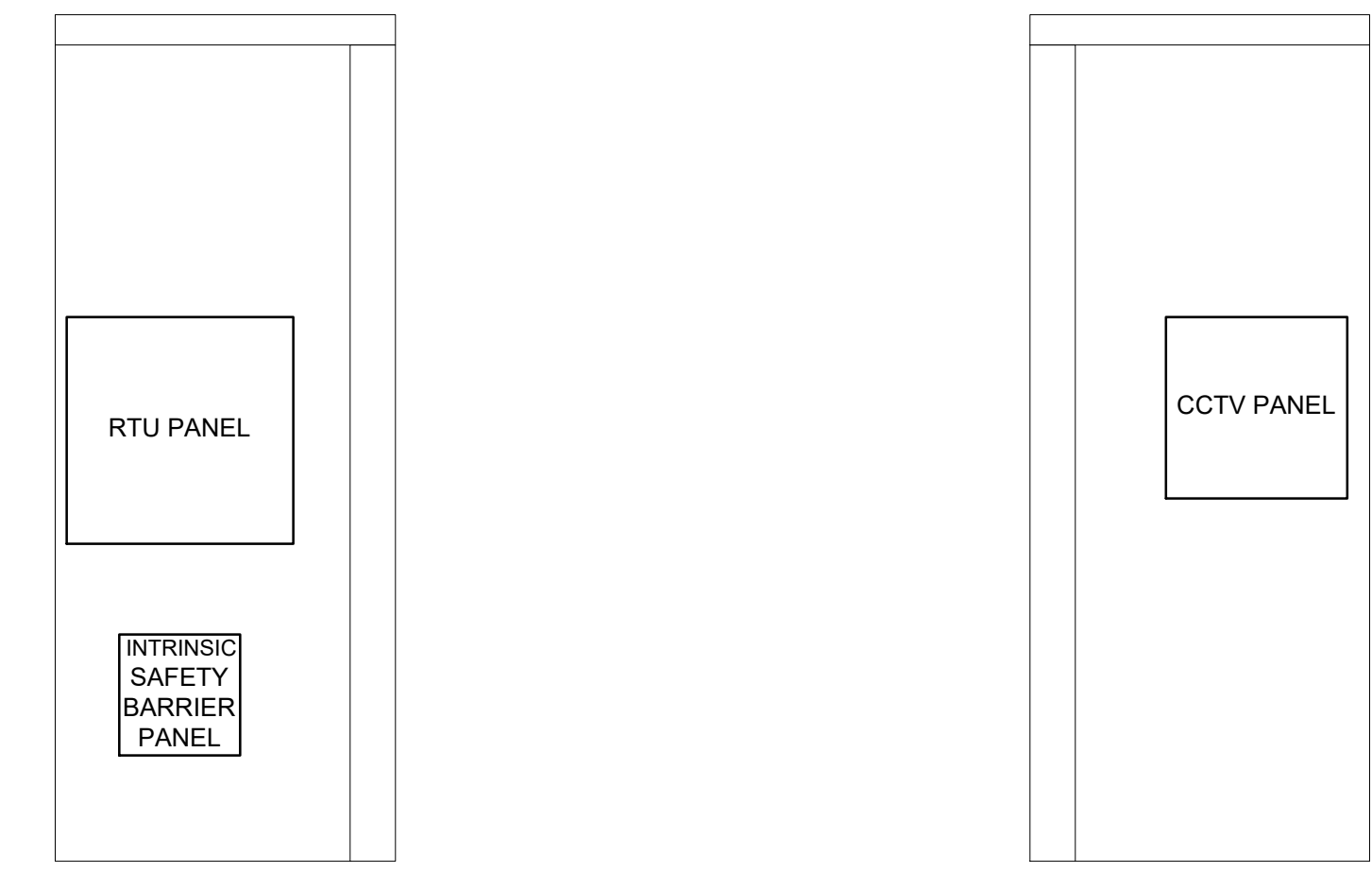
210605-E5001.DWG



1 ELECTRICAL SITE PLAN
E2.1 1/16" = 1'-0"
Dwg # 210605-E2021.DWG



4 ELECTRICAL EQUIPMENT ELEVATION
E2.1 1/2" = 1'-0"
Dwg # 210605-E3201.DWG



5 ELECTRICAL EQUIPMENT ELEVATION
E2.1 1/2" = 1'-0"
Dwg # 210605-E3201.DWG

6 ELECTRICAL EQUIPMENT ELEVATION
E2.1 1/2" = 1'-0"
Dwg # 210605-E3201.DWG

ELECTRICAL INSTALLATION IN ELECTRICAL HAZARDOUS CLASSIFIED AREA SHALL COMPLY WITH NEC ARTICLES 500, 501 & 504

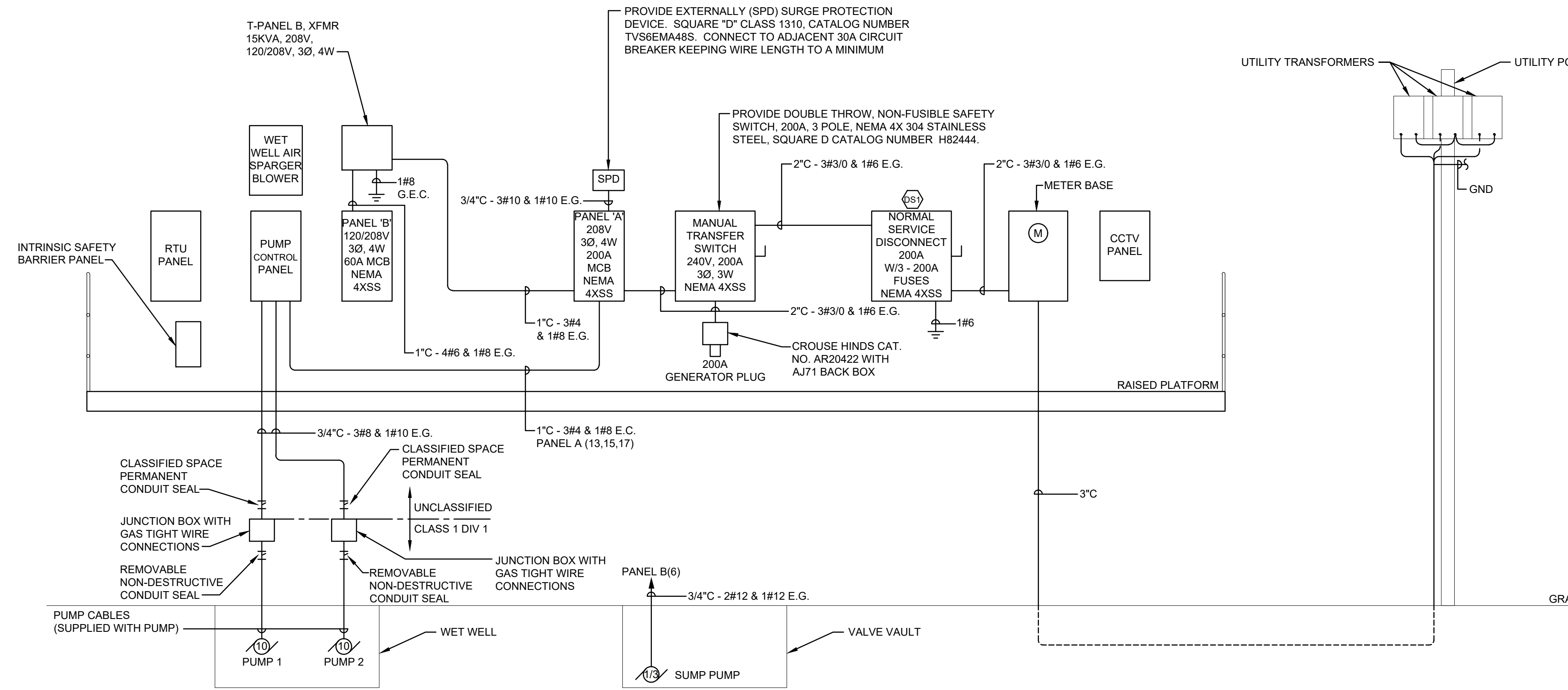
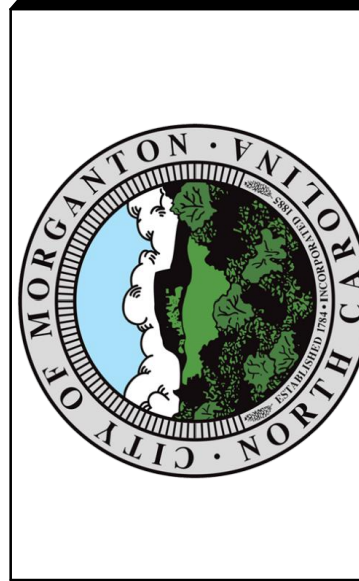
REVISIONS	DATE	BY	DESCRIPTION	DATE	BY

DATE	DESIGN BY	REVISION	DATE	BY

Bost Rd Sewer Improvements
Morganton, NC
ELECTRICAL EQUIPMENT, LIGHTING, SITE PLANS AND ELEVATIONS

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JOB NO: 65421093
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SHEET **E2.1**



1 RISER DIAGRAM
E4.1 NO SCALE
Dwg # 210605-E7001.DWG

PANEL-A													
MAKE: SQUARE D			RATING: 208V, 3Ø, 3W			200A MAIN CIRCUIT BREAKER							
TYPE: NO			MOUNTING: SURFACE			EQUIPMENT GROUND BUS <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO							
LOAD SERVED	VA PER PHASE			CKT BRKR	CKT NO.	NEUTRAL			CKT BRKR	VA PER PHASE	LOAD SERVED		
	AØ	BØ	CØ			A	B	C					
SPACE					1				2				
					3				4	30/3	SPD		
	5000				5				6				
T-PANEL B	5000				7				8				
		5000			9				10		SPACE		
	7728				11				12				
PUMP CONTROL PANEL		7728			13				14				
			7728		15				16		SPACE		
					17				18				
SPACE					19				20				
					21				22		SPACE		
					23				24				
SPACE					25				26				
					27				28		SPACE		
					29				30				
REMARKS			12728	12728	12728	SUB-TOTAL "B"			225A	BUS	SUB-TOTAL "A"	0 0 0	MIN. 10,000 A.I.C.
COPPER BUS, LUGS & SOLID NEUTRAL									#10	LUGS	SUB-TOTAL "B"	12728 12728 12728	SYM. AMPERES
BOLT-ON CIRCUIT BREAKERS									100%	S/N	GRAND TOTAL	12728 12728 12728	LUGS/PHASE 1#1/0
PROVIDE NEMA 4X STAINLESS STEEL ENCLOSURE									BOT.	FEED	AMPS / PHASE	106 106 106	LUGS/NEUT. 1#1/0

200390-E5004.DWG

DISCONNECT SWITCH SCHEDULE								
SYMBOL	NAMEPLATE	VOLTS	AMPS	POLES	ENCLOSURE	FUSE SIZE	FUSE TYPE	REMARKS
(NS)	SERVICE DISCONNECT SWITCH	240	200A	3	NEMA 4XSS	200A	FSR-R-200	HEAVY DUTY - FUSIBLE, SERVICE ENTRANCE RATED

210605-E5002.DWG

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

200390-E5003.DWG

PANEL-B													
MAKE: SQUARE D			RATING: 120/208V, 3Ø, 4W			60A MAIN CIRCUIT BREAKER							
TYPE: NO			MOUNTING: SURFACE			EQUIPMENT GROUND BUS <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO							
LOAD SERVED	VA PER PHASE			CKT BRKR	CKT NO.	NEUTRAL			CKT BRKR	VA PER PHASE	LOAD SERVED		
	AØ	BØ	CØ			A	B	C					
REC - EQUIPMENT PLATFORM	180				20/1	1			2	20/1	LTG - EQUIPMENT PLATFORM		
RTU PANEL		200			20/1	3			4	20/1	HIGH HIGH WATER LEVEL BEACON		
CCTU PANEL			200		20/1	5			6	20/1	VALVE VAULT SUMP PUMP		
SPARE					20/1	7			8	20/1	275		
SPARE					20/1	9			10	20/1	WET WELL AIR SPARGER BLOWER		
SPARE					20/1	11			12	20/1	SPACE		
SPACE					13				14		SPACE		
SPACE					15				16		SPACE		
SPACE					17				18		SPACE		
SPACE					19				20		SPACE		
SPACE					21				22		SPACE		
SPACE					23				24		SPACE		
SPACE					25				26		SPACE		
SPACE					27				28		SPACE		
SPACE					29				30		SPACE		
REMARKS			180	200	200	SUB-TOTAL "B"			100A	BUS	SUB-TOTAL "A"	341 100 864	MIN. 10,000 A.I.C.
COPPER BUS, LUGS & SOLID NEUTRAL									#6	LUGS	SUB-TOTAL "B"	180 200 200	SYM. AMPERES
BOLT-ON CIRCUIT BREAKERS									100%	S/N	GRAND TOTAL	521 300 1064	LUGS/PHASE 1#6
PROVIDE NEMA 4X STAINLESS STEEL ENCLOSURE									BOT.	FEED	AMPS / PHASE	4 3 9	LUGS/NEUT. 1#6

200390-E5004.DWG

REV	REVISION DESCRIPTION	DATE	BY

DATE	DESIGN BY	REEL	REVISION	DATE	BY

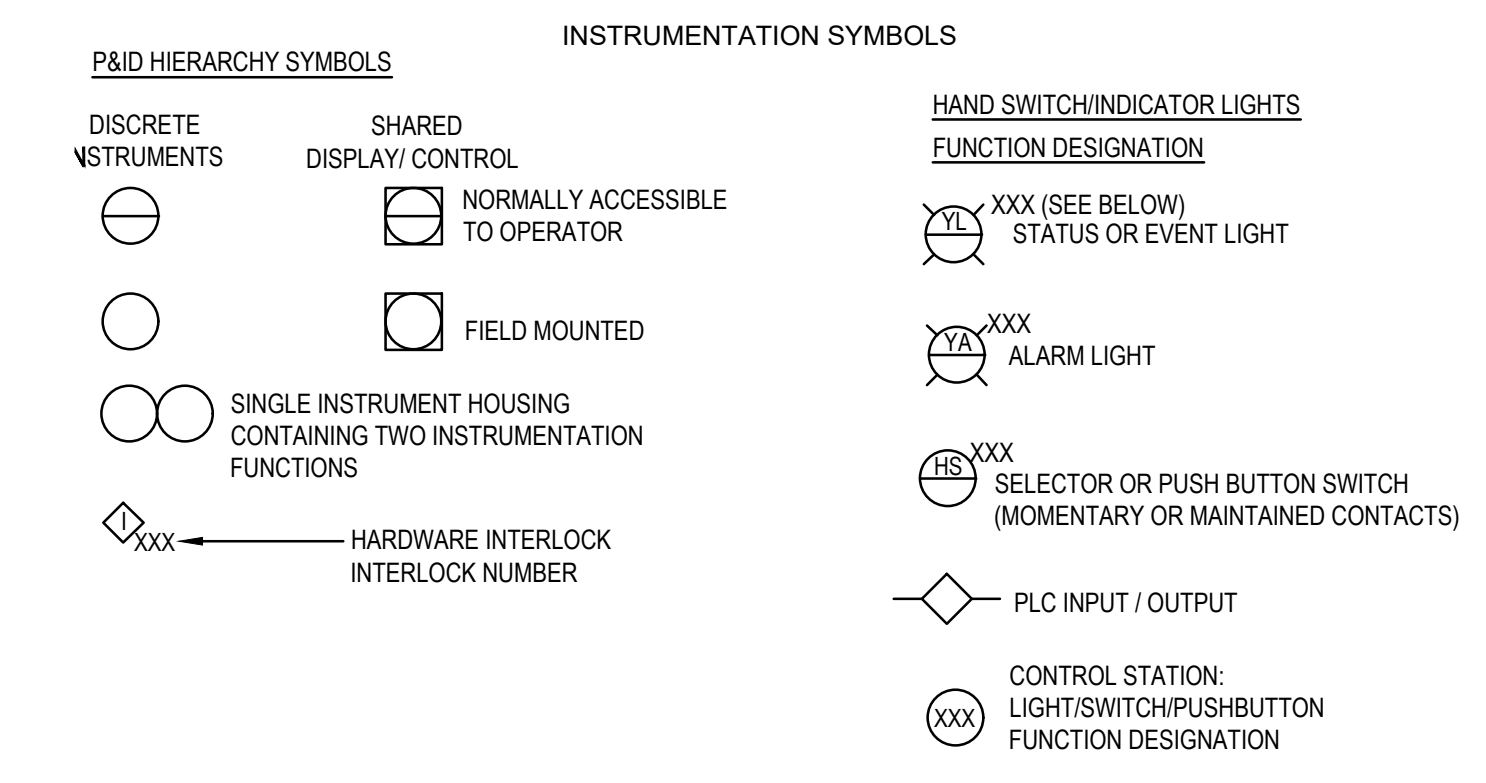
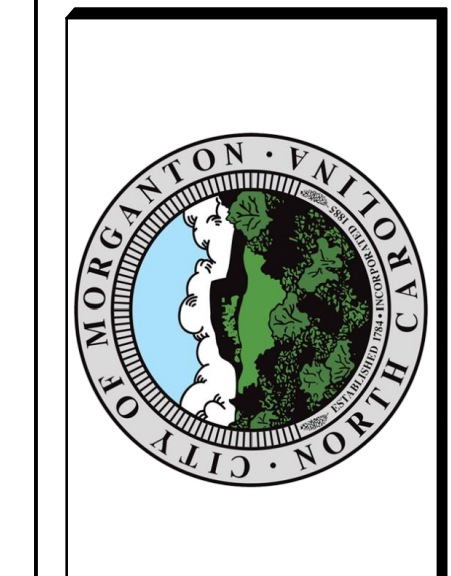
Bost Rd Sewer Improvements
Morganton, NC
ELECTRICAL RISER DIAGRAM AND SCHEDULES

FINAL DESIGN - 100%
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CONSTRUCTION

JOB NO: 65421093
DATE: 05-04-2023
SHEET E4.1

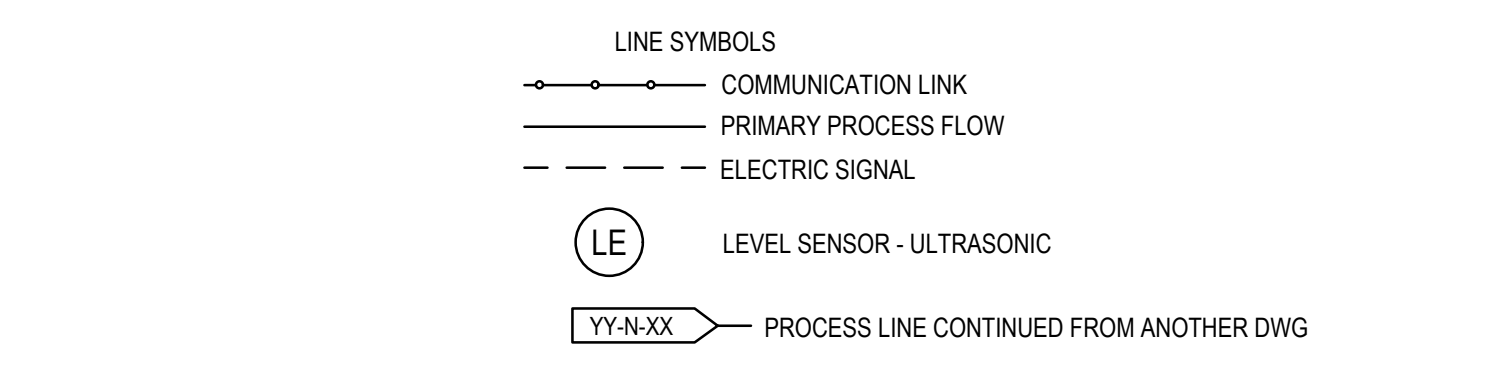


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ABBREVIATIONS

ACK	ACKNOWLEDGE	A	AUTO
ACP	AREA CONTROL PANEL	AI	ANALOG INPUT
AIT	TURBIDITY TRANSMITTER	AO	ANALOG OUTPUT
CS	MCC CONTROL SECTION OR CONTROL STATION	C	CLOSE
DCS	DISTRIBUTION CONTROL SYSTEM	CL2	CHLORINE RESIDUAL
DS	DRIVE SYSTEM	DI	DIGITAL INPUT
EB	RELAY OR CONTACTOR	DO	DIGITAL OUTPUT
ES	ELECTRIC SWITCH	DP	DEW POINT
FE	FLOW ELEMENT	EB	CONTACTOR / RELAY
FI	FLOW INDICATOR	E-STOP	EMERGENCY STOP
FIT	FLOW INDICATING TRANSMITTER	FAIL	FAILURE
HS	HAND (SELECTOR) SWITCH	FOR	FORWARD-OFF-REVERSE
I	INTERVAL TIMER	HOA	HAND-OFF-AUTO
IS	INTRINSIC SAFE	HIL	HIGH/LOW SPEED
I/O	INPUT/OUTPUT	L	LOCAL
LAHH	LEVEL ALARM HIGH HIGH	LA	LOCAL AUTOMATIC
LALL	LEVEL ALARM LOW LOW	LR	LOCAL-REMOTE
LC	LOCKED CLOSED	LL	LEAD-LAG
LCP	LOCAL CONTROL PANEL	LLS	LEAD-LAG-STANDBY
LE	LEVEL ELEMENT	LH/S	LOW/HIGH SPEED/STOP
LI	LEVEL INDICATOR	MOA	MANUAL-OFF-AUTO
LIH	LEVEL INDICATION HIGH	O	OPEN
LIL	LEVEL INDICATION LOW	OC	OPEN-CLOSE
LIT	LEVEL INDICATING TRANSMITTER	OL	OVERLOAD
LSH	LEVEL SWITCH HIGH	OO	OFF-ON
LSL	LEVEL SWITCH LOW	OSC	OPEN-STOP-CLOSE
LSL	LEVEL SWITCH LOW LOW	R	REMOTE
LO	LOCKED OPEN	RSL	RAISE-STOP-LOWER
M	MOTOR	RESET	RESET
MCC	MOTOR CONTROL CENTER	S	SPEED
MOV	MOTOR OPERATED VALVE	SC	SPEED CONTROLLER / VFD
MS	MOISTURE SWITCH	SDS	SHUT-DOWN STATUS
NC	NORMALLY CLOSED	SLO	STOP LOCKOUT
NCHD	NORMALLY CLOSED, HELD OPEN	SLOS	STOP LOCKOUT START
NO	NORMALLY OPEN	SMA	SMOKE ALARM
NOHC	NORMALLY OPEN, HELD CLOSED	SS	START-STOP
OI	OPERATOR INTERFACE		
PB	PUSH BUTTON		
PCP	PROCESS CONTROL PANEL		
PI	PRESSURE INDICATOR		
PLC	PROGRAMMABLE LOGIC CONTROLLER		
PNL	INDICATING PANEL		
R/I/O	REMOTE INPUT/OUTPUT DEVICE		
RTD	RESISTANCE TEMPERATURE DETECTOR		
RTU	REMOTE TERMINAL UNIT		
SI	SPEED INDICATOR		
TSH	TEMPERATURE SWITCH HIGH		
VFD	VARIABLE FREQUENCY DRIVE		
YA	EVENT ALARM		
YI	EVENT INDICATION		



INSTRUMENTATION DRAWING INDEX

Dwg # 210605-1001.DWG

11.1	INSTRUMENTATION P & I D SYMBOLS AND ABBREVIATIONS
12.1	INSTRUMENTATION P & I D PUMP STATION AND VALVE VAULT

REVISIONS

NO.	DATE	DESCRIPTION	CHANGED BY	CHECKED BY	APPROVED BY

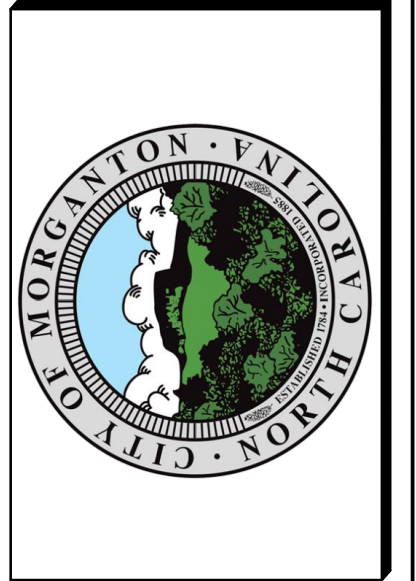
DATE

DESIGN BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:

Bost Rd Sewer Improvements
Morganton, NC
INSTRUMENTATION P & I D SYMBOLS AND ABBREVIATIONS

**FINAL DESIGN - 100%
RELEASE FOR
CONSTRUCTION**

JOB NO: 65421093	DATE: 05-04-2023	SHEET 11.1
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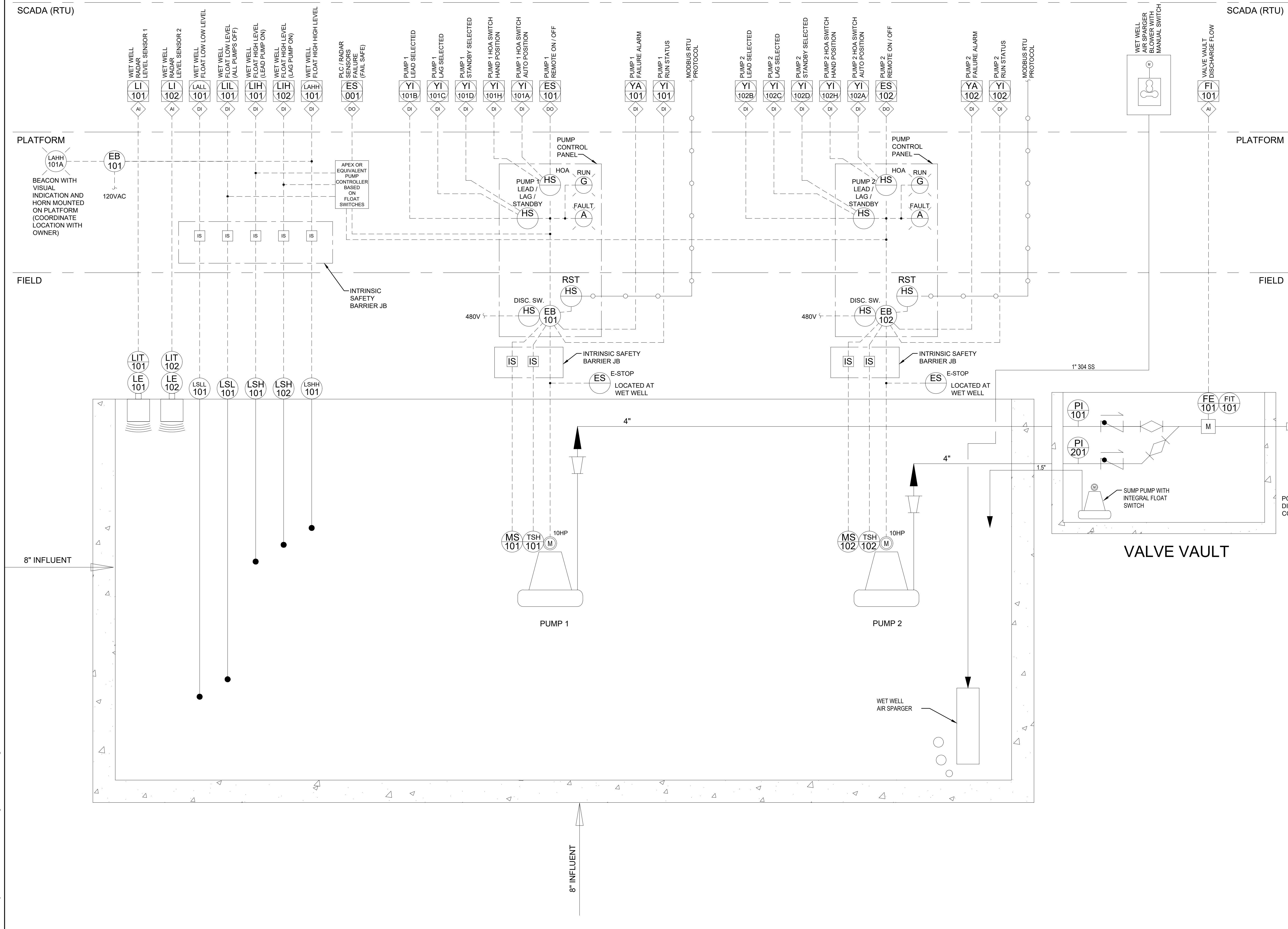
REV#	REVISION DESCRIPTION	DATE	BY

DATE	DESIGN BY	REEL	DATE	DESIGN BY	REEL

Bost Rd Sewer Improvements
 Morganton, NC
INSTRUMENTATION P & ID PUMP STATION AND VALVE VAULT

**FINAL DESIGN - 100%
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JOB NO: 65421093
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 SHEET: 12.1



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