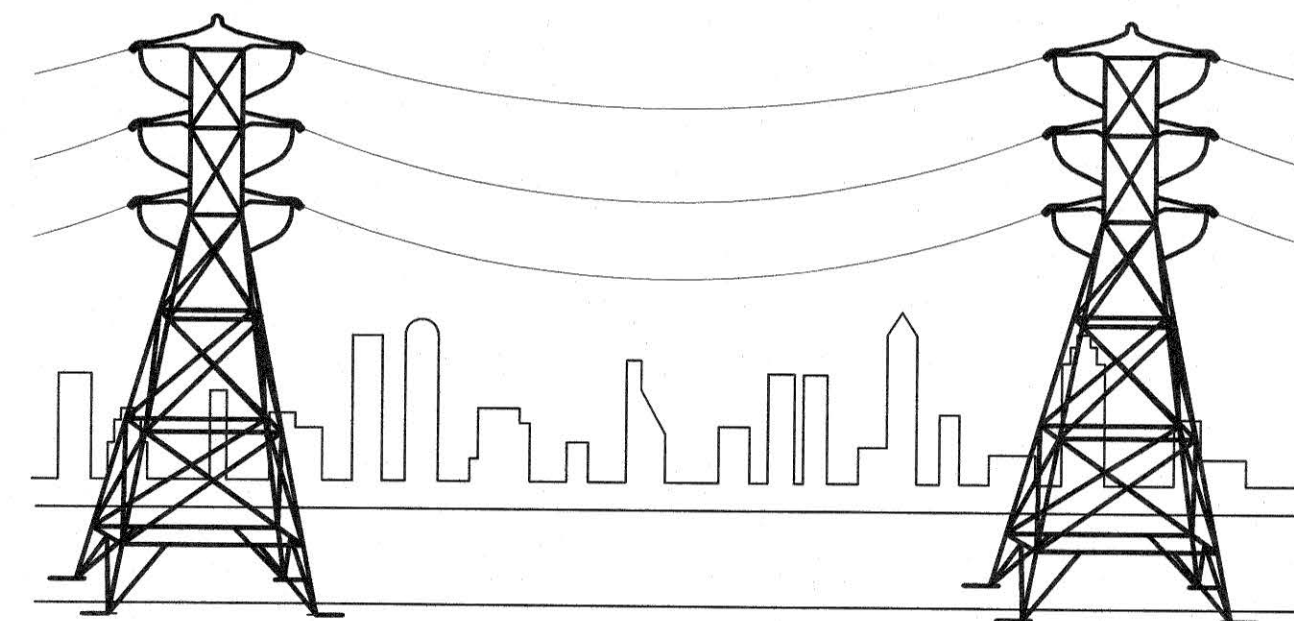


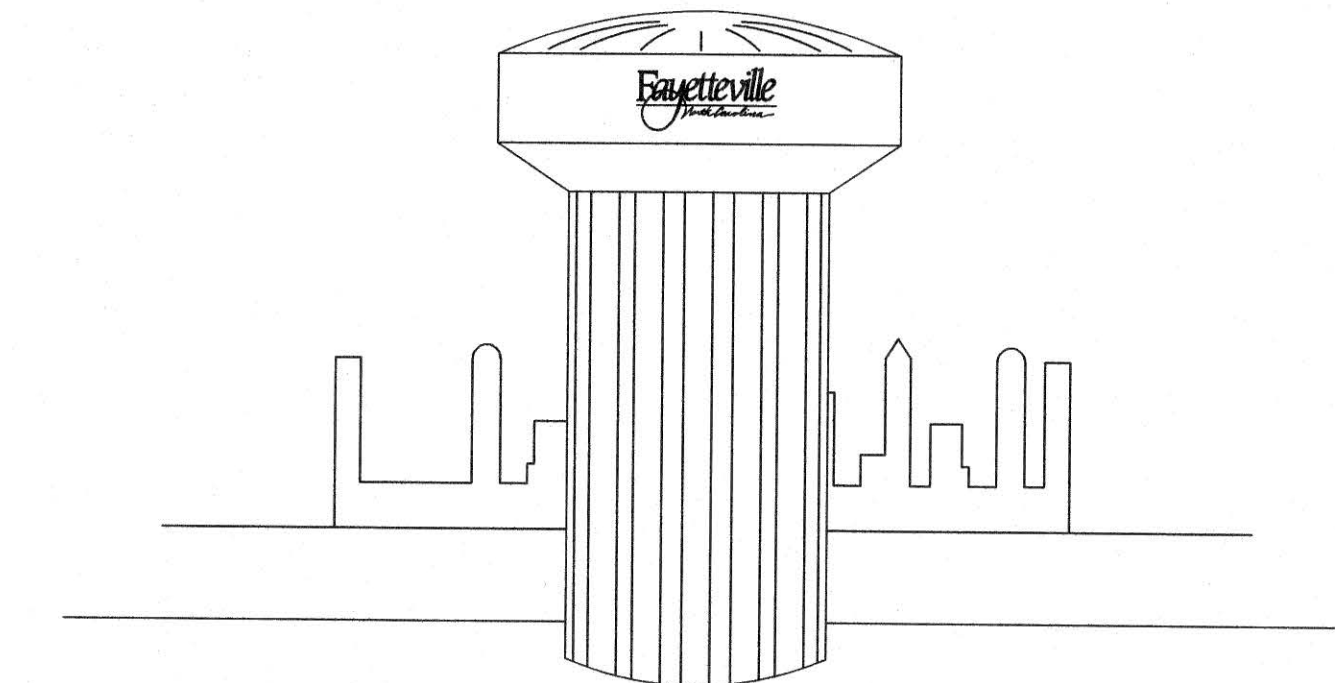
FAYETTEVILLE PUBLIC WORKS COMMISSION

FAYETTEVILLE, N.C.



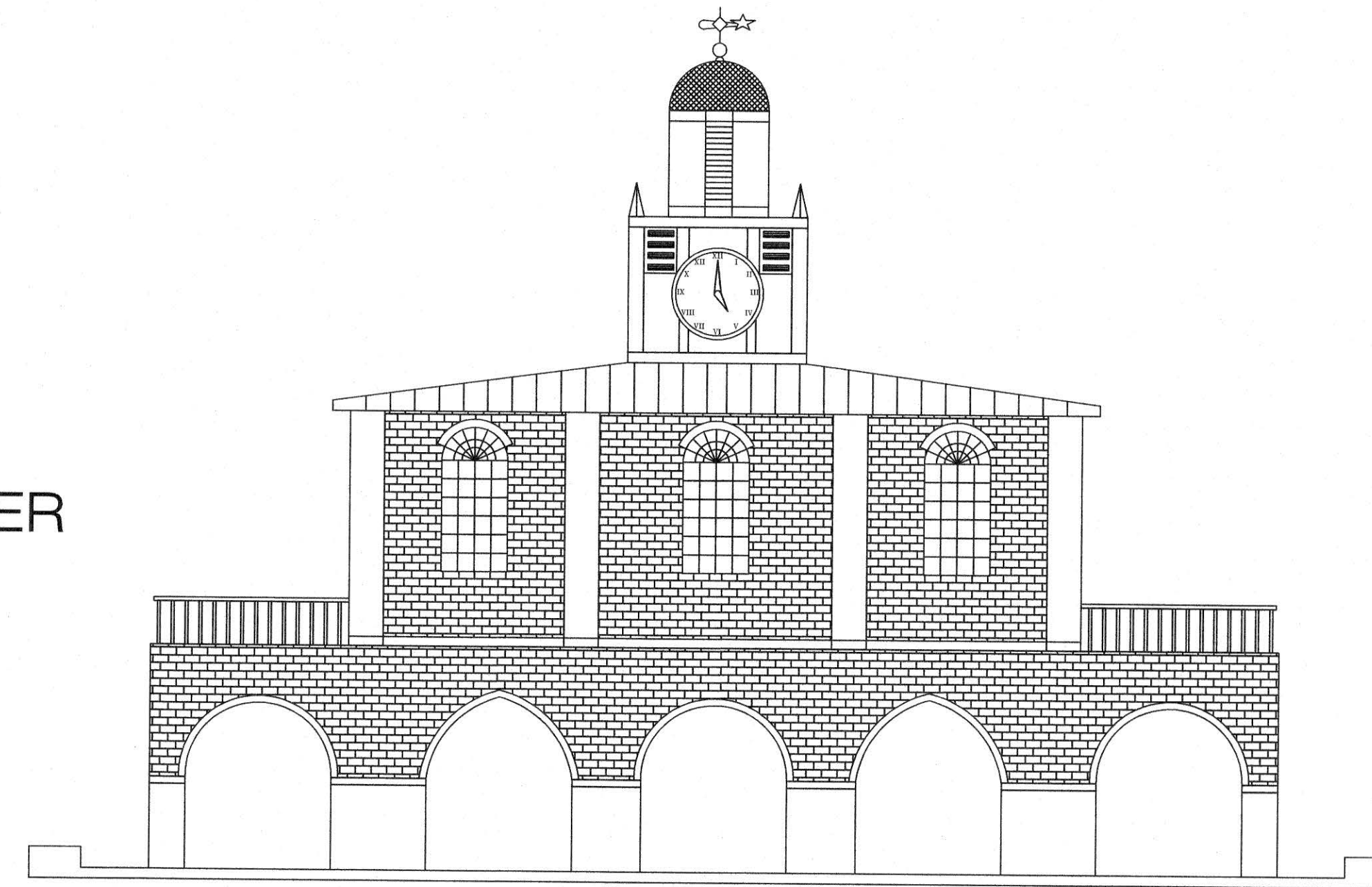
ELECTRICAL

JON RYNNE-ELEC. SYS. CHIEF OPER. OFFICER



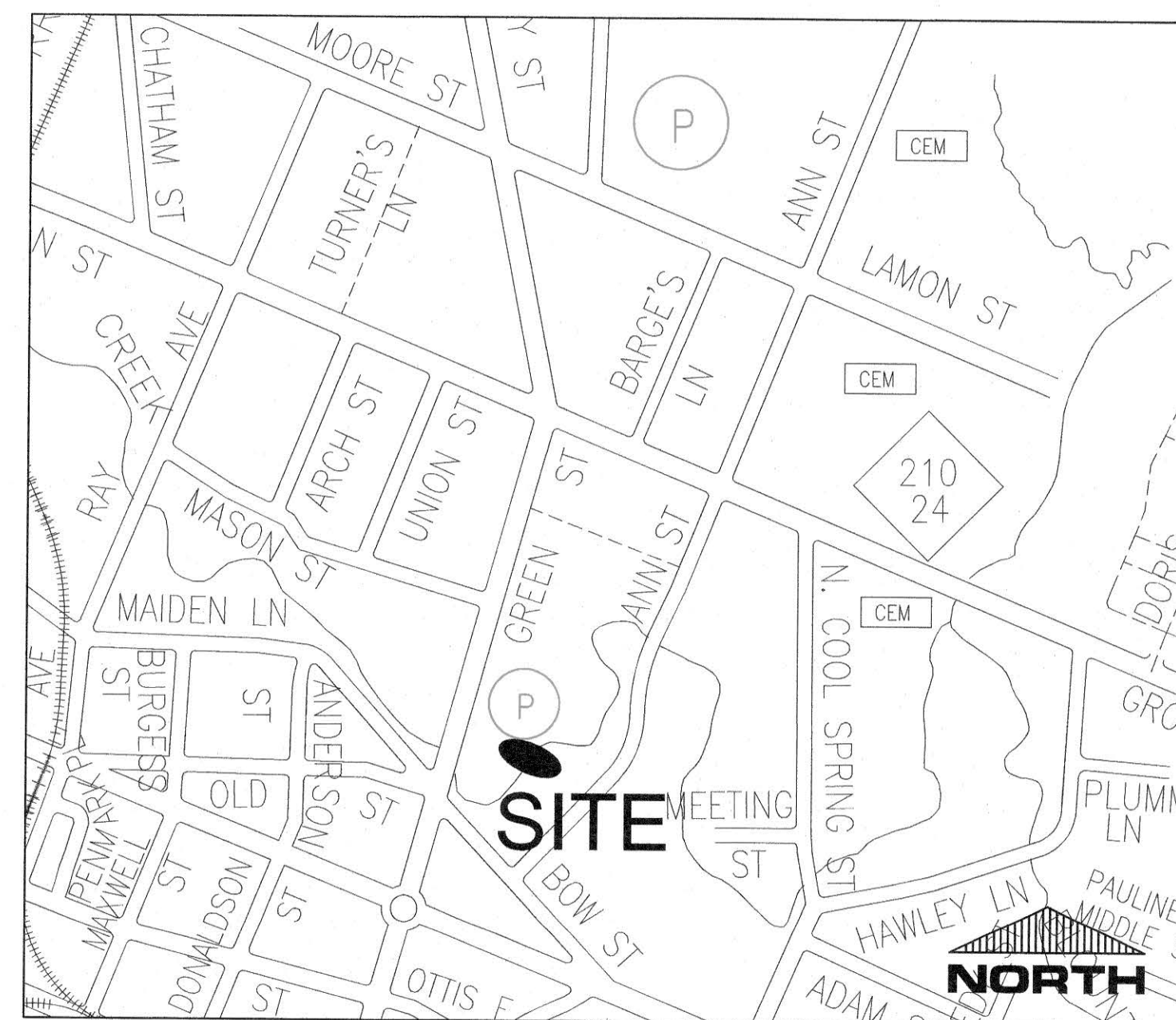
WATER RESOURCES

M.J. NOLAND-W/R CHIEF OPER. OFFICER
MISTY MANNING-W/R ENGR. MANAGER



FAYPWC COMMISSIONERS

Chairperson - **EVELYN SHAW**
 Vice Chairperson - **RONNA ROWE GARRETT**
 Secretary - **DONALD L. PORTER**
 Treasurer - **WADE R. FOWLER, JR.**
 General Manager - **ELAINA BALL**



VICINITY MAP
N.T.S.



Know what's below.
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ANN TO GREEN STREET 16" SANITARY SEWER AERIAL CROSSING REPLACEMENT

SHEET INDEX

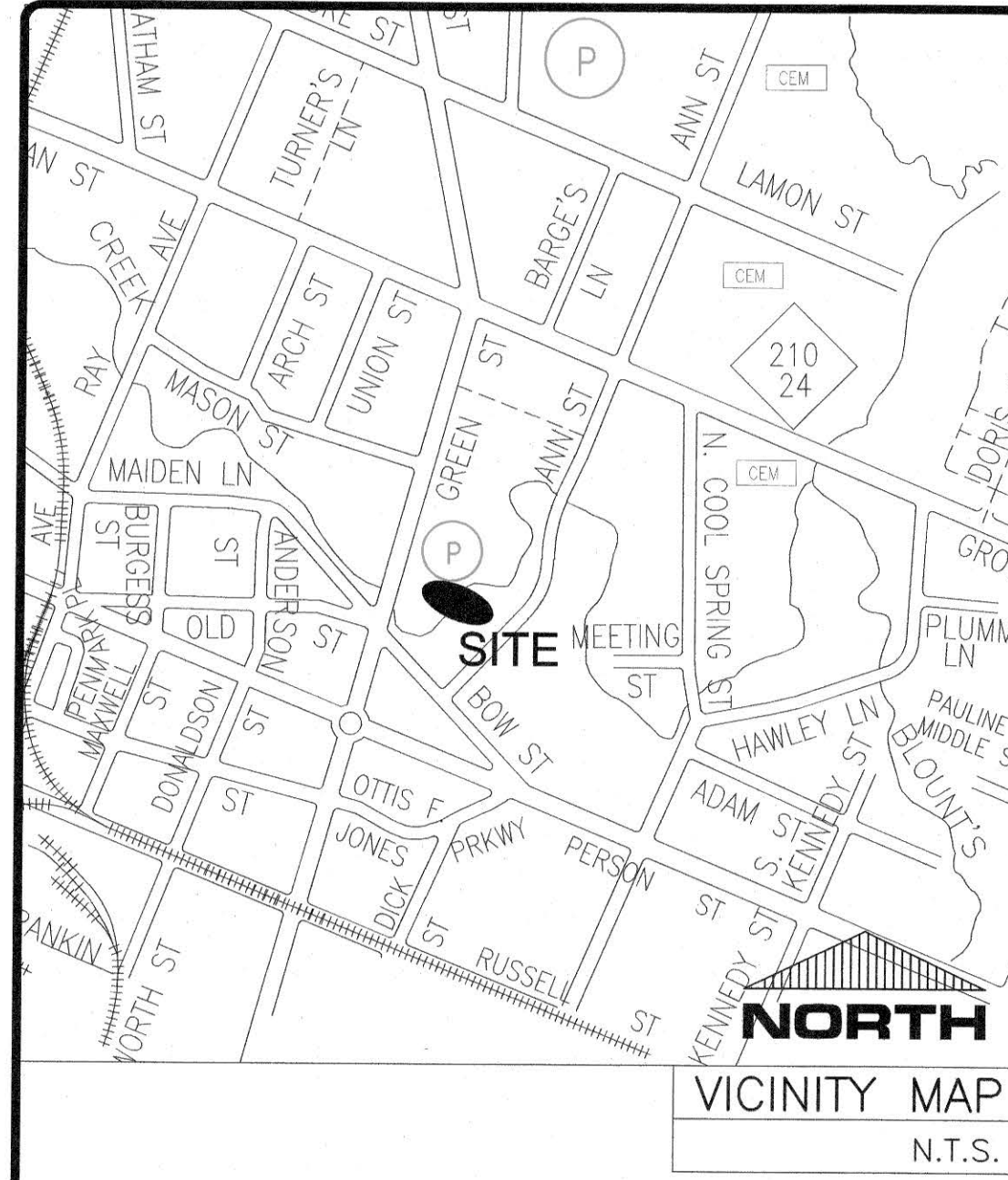
| | |
|---|---|
| 1 | G1 COVER SHEET |
| 2 | C1 OVERALL SITE PLAN & EROSION CONTROL |
| 3 | C2 EROSION CONTROL AND CONSTRUCTION NOTES |
| 4 | C3 UTILITY / AERIAL CROSSING PLAN |
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| 7 | D1 FAYPWC STANDARD DETAILS & NOTES |
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| 9 | D3 EROSION CONTROL STANDARD DETAILS |

DESIGNER

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 STRUCTURAL ENGINEERING • FORENSICS • ROOFING DESIGN
 1004 HAY STREET, FAYETTEVILLE, NC 28305
 OFFICE 910-433-2825
 FAX 910-433-2604
 www.flemingandassociates.com

SEAL

| | | |
|--|-------------------------|------------------------------|
| PROJECT TEAM DRAWN BY: SJD, SVW, JBR | SEAL | SHEET G1 1 OF 9 |
| CHECKED BY: SJD | DATE: MARCH 30, 2022 | |
| PROJECT NUMBER: 17-78 | | |



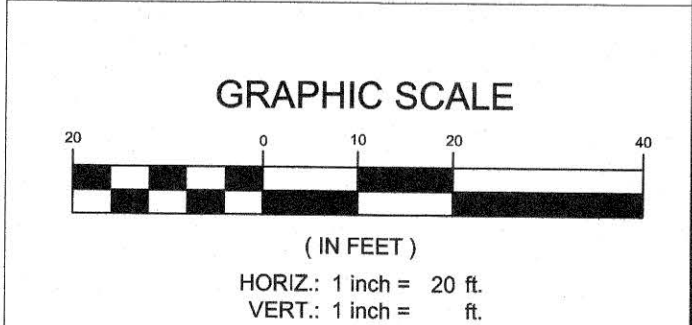
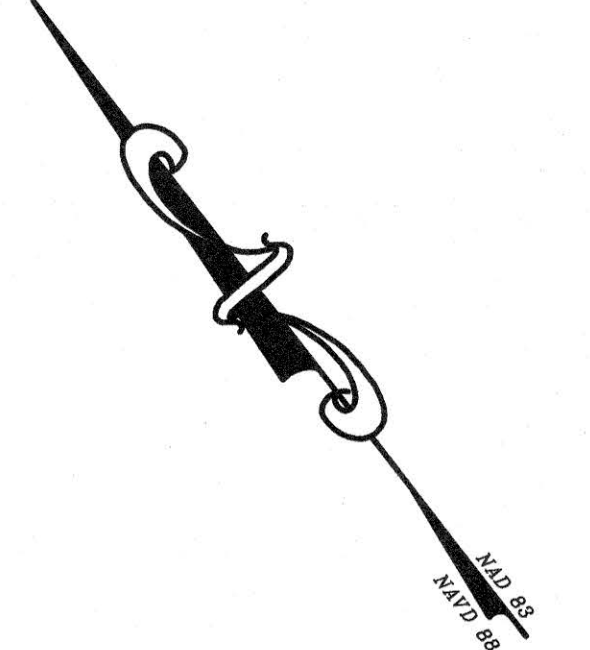
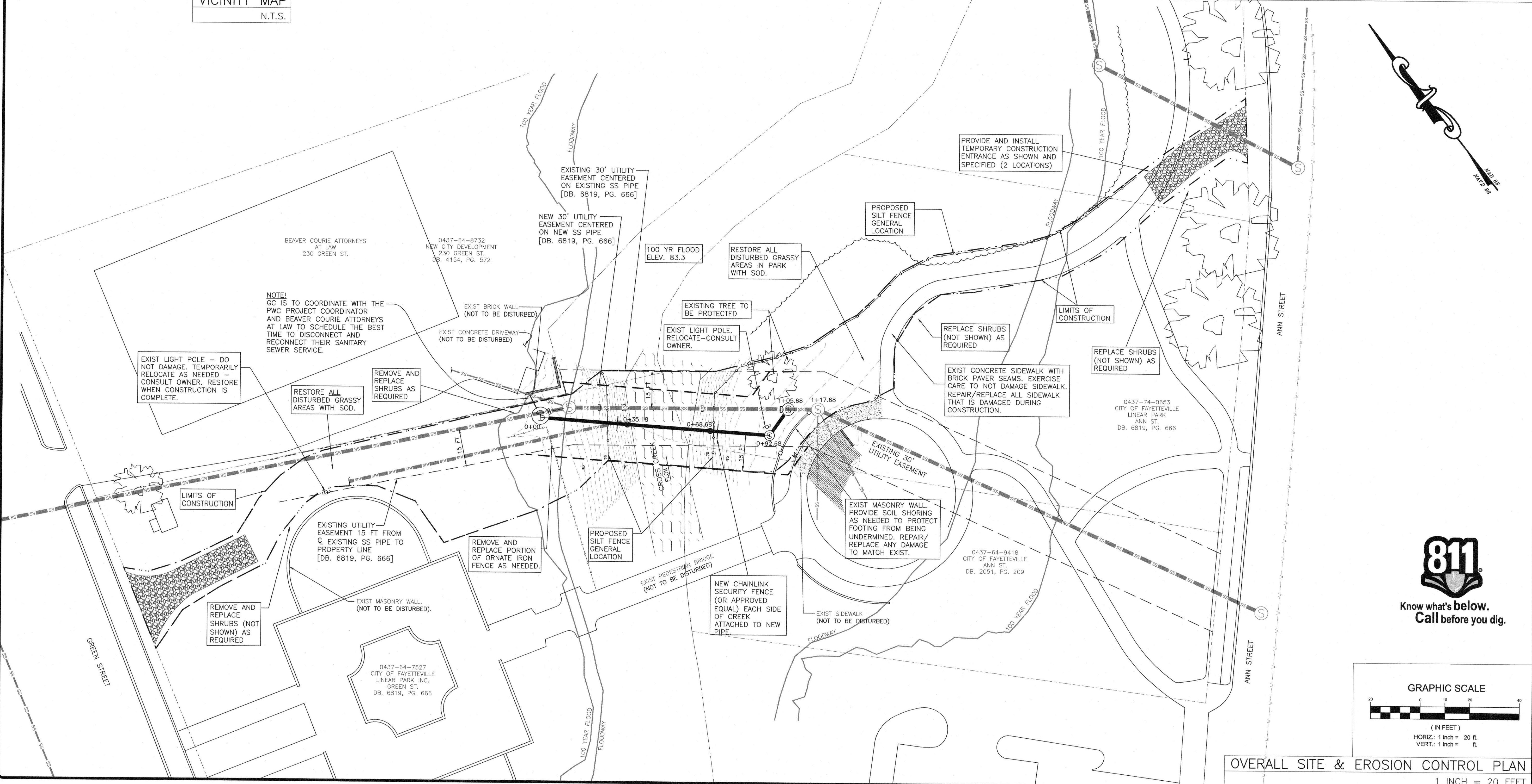
LEGEND

| | | |
|------------------|------------------------|-------------------------|
| PROPERTY LINE | DITCH | POWER & LIGHT POLE/WIRE |
| EDGE OF PAVEMENT | EX. PROP. GATE VALVE | EX. PROP. WATER METER |
| BACK OF CURB | AIR RELEASE VALVE | EX. PROP. FIRE HYDRANT |
| STORM PIPE | CATCH BASIN/DROP INLET | UTILITY PEDESTALS |
| EX. WATER MAIN | EX. PROP. SSMH | EX. PROP. CLEAN OUT |
| EX. SS MAIN | EX. PROP. STORM MH | SIGNAL TRAFFIC BOX |
| PROP. SS MAIN | EX. PROP. UTILITY MH | MAILBOX |
| PROP. WATER MAIN | GAS VALVE | TREE/SHRUB |
| EASEMENT | EX. PROP. PLUG | |
| FENCE | EX. PROP. BLOW-OFF | |
| WOOD FENCE | | |
| EX. UTIL. LINES | | |
| TREELINE | | |

LEGEND

| |
|------------------------------------|
| SILT FENCE |
| LIMITS OF CONSTRUCTION |
| PROP. GRAVEL CONSTRUCTION ENTRANCE |
| DISTURBED AREA |

- NOTES**
- SEE SHEET C2 FOR EROSION CONTROL AND GENERAL CONSTRUCTION NOTES.
 - SHRUBBERY, LANDSCAPE AREAS, TREELINES AND OTHER SITE APPURTENANCES ARE NOT SHOWN ON PLAN. CONTRACTORS ARE TO VISIT THE SITE TO EXAMINE EXISTING CONDITIONS AND FAMILIARIZE THEMSELVES WITH THE SITE PRIOR TO SUBMITTING A BID.
 - SEE SHEET C3 FOR UTILITY/AERIAL CROSSING PLAN AND SHEET C4 FOR SANITARY SEWER PLAN/PROFILE. SEE SHEET S1 FOR NEW AERIAL CROSSING ELEVATION AND DETAILS. SEE SHEETS D1 & D2 FOR FAYETTEVILLE PWC TYPICAL DETAILS AND NOTES. SEE SHEET D3 FOR EROSION CONTROL DETAILS.



OVERALL SITE & EROSION CONTROL PLAN
1 INCH = 20 FEET

FF FLEMING & ASSOCIATES, P.A.
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| | | |
|---------------------------|-----------|--------------|
| DATE | REVISIONS | SHEET SERIES |
| 03/30/22 | | |
| DRAWN BY: SJD/SW/ABR | | |
| CHECKED BY: SJD | | |
| SCALE: HORIZ: 1" = 20'-0" | | |
| VERT: 1" = 10'-0" | | |

C1
2 OF 9



ANN TO GREEN STREET
16" SANITARY SEWER
AERIAL CROSSING REPLACEMENT

FAYETTEVILLE PUBLIC WORKS COMMISSION
FAYETTEVILLE WATER RESOURCES ENGINEERING
P.O. Box 1089, Fayetteville, NC 28302
855 Old Wilmington Road, Fayetteville, NC 28301



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POLLUTION PREVENTION (TYPICAL FOR ALL SHEETS)

- EQUIPMENT UTILIZED DURING CONSTRUCTION ACTIVITY MUST BE OPERATED AND MAINTAINED IN A MANNER TO PREVENT THE POLLUTION OF SURFACE OR GROUND WATERS, FUELS, LUBRICANTS, COOLANTS, HYDRAULIC FLUIDS, OR ANY OTHER PETROLEUM PRODUCTS SHALL NOT BE DISCHARGED ON THE GROUND OR INTO SURFACE WATERS. SPENT FLUIDS SHALL NOT ENTER GROUND OR SURFACE WATERS. FLUIDS SHALL BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS. ANY SPILLED FLUIDS SHALL BE IMMEDIATELY CLEANED UP AND DISPOSED OF TO PREVENT ENTRY INTO SURFACE OR GROUND WATERS, STORM SEWERS, OR DRAINS ON PRIVATE OR PUBLIC PROPERTY. THE CONTRACTOR SHALL PROVIDE PRIMARY AND SECONDARY CONTAINMENT SYSTEMS FOR FLUID STORAGE, FUELING AND SERVICING EQUIPMENT.
- THE CONTRACTOR, HIS SUBCONTRACTORS, AND MATERIAL SUPPLIERS ARE PROHIBITED FROM DISCHARGING ANY WASTE PRODUCTS OR OTHER UNSUITABLE MATERIALS INTO THE STORM SEWER SYSTEM OR ONTO PRIVATE PROPERTY.
- THE CONTRACTOR SHALL CONTROL THE MANAGEMENT AND DISPOSAL OF LITTER AND SANITARY WASTE FROM THE SITE TO ENSURE THAT NO ADVERSE IMPACTS TO WATER QUALITY OCCUR.
- THE CONTRACTOR SHALL PAY ALL COSTS OF THE CLEAN UP AND REMOVAL OF ANY SUCH UNAUTHORIZED DISCHARGE AND PAY ANY AND ALL FINES, PENALTIES, AND/OR DAMAGES.

EROSION CONTROL NOTES:

- LIMITS OF CONSTRUCTION: 0.3 AC
- TOTAL DISTURBED AREA: 0.29 AC
- CONTRACTOR SHALL INSTALL AND MAINTAIN ALL NECESSARY EROSION CONTROL DEVICES IN ORDER TO PREVENT ANY SEDIMENT FROM ENTERING STORM DRAINS, DITCHES, CREEKS, ETC. ALL EROSION CONTROL DEVICES SHALL BE IN ACCORDANCE WITH N.C. DEPARTMENT OF ENVIRONMENTAL QUALITY REQUIREMENTS. NO SEPARATE PAYMENT SHALL BE RENDERED BY FAYPWC FOR THESE ITEMS.
- ALL DISTURBED AREAS(S) AND EXPOSED SLOPES SHALL BE SEEDED, FERTILIZED AND MULCHED (UN) TO ENSURE THAT GROUND COVER IS PROVIDED FOLLOWING COMPLETION OF ANY PHASE OF GRADING ACCORDING TO THE "NEW STABILIZATION TIMEFRAMES" TABLE THIS SHEET EXCEPT WHERE NOTED OTHERWISE IN NOTE 5. PERMANENT GROUND COVER SHALL BE PROVIDED FOR ALL DISTURBED AREAS(S) WITHIN 15 BUSINESS DAYS FOLLOWING COMPLETION OF CONSTRUCTION. USE OF EROSION CONTROL MATTING MAY BE REQUIRED TO ENSURE THAT THE DISTURBED SLOPES ARE STABILIZED UNTIL PERMANENT GROUND COVER IS ESTABLISHED. PROVIDE SOD AS A PERMANENT GROUND COVER AT ALL DISTURBED AREAS EXCEPT ALONG THE CREEK BANK WHERE SEEDING IS PERMITTED.
- GROUND STABILIZATION SHALL BE INSTALLED WITHIN 7 CALENDAR DAYS OF COMPLETION OF ANY PHASE OF GRADING ON ALL DISTURBED AREAS WITHIN 30 FEET OF THE LIMITS OF CONSTRUCTION. ON ALL SLOPES GREATER THAN 3:1; ALONG ANY NCDOT RIGHT-OF-WAYS.

TURFING SCHEDULE:

SEED SHALL BE CERTIFIED TO BE THE LATEST SEASON'S CROP AND SHALL BE DELIVERED IN ORIGINAL SEALED PACKAGES BEARING THE PRODUCER'S GUARANTEED ANALYSIS FOR PERCENTAGES OF MIXTURES AND PURE LIVE SEED. THE PRODUCER'S SEED LABEL SHALL INDICATE THE MINIMUM PERCENT OF PURE LIVE SEED (WHICH SHALL BE 92.45 FOR BERMUDA, 85 FOR RYE GRAIN), THE MINIMUM PERCENT OF GERMINATION IN HARD SEED, AND MAXIMUM PERCENT OF WEED SEED (NO MORE THAN 1 PERCENT FOR BERMUDA, 0.5 PERCENT FOR RYE GRAIN). SEED SHALL BE LABELED IN CONFORMANCE WITH U.S. DEPARTMENT OF AGRICULTURE RULES AND REGULATIONS UNDER THE FEDERAL SEED ACT AND APPLICABLE STATE SEED LAWS. SEED THAT HAS BECOME WET, MOLDDY, OR OTHERWISE DAMAGED SHALL NOT BE ACCEPTABLE.

THE FOLLOWING SEED MIXTURE SHALL BE USED:

TEMPORARY SEED MIXTURE

| DATE | TYPE | PLANTING RATE |
|--------------------|---------------|---------------|
| APRIL 15 - SEPT. 1 | GERMAN MILLET | 120 LBS/ACRE |
| AUG. 15 - NOV. 15 | GRAIN RYE | 120 LBS/ACRE |
| NOV. 1 - APRIL 1 | GRAIN RYE | 120 LBS/ACRE |

PERMANENT SEED MIXTURE

| DATE | TYPE | PLANTING RATE |
|--------------------|--------------------------|------------------------------------|
| APRIL 15 - SEPT. 1 | K-31 FESCUE | 70 LBS/ACRE |
| | COMMON BERMUDA CENTIPEDE | 60 (HULLED) LBS/ACRE 5 LBS/ACRE |
| AUG. 15 - NOV. 15 | K-31 FESCUE | 120 LBS/ACRE |
| | COMMON BERMUDA CENTIPEDE | 25 (HULLED) LBS/ACRE 5 LBS/ACRE |
| NOV. 1 - APRIL 1 | K-31 FESCUE | 120 LBS/ACRE |
| | COMMON BERMUDA CENTIPEDE | 25 (HULLED) LBS/ACRE 5 LBS/ACRE |

GENERAL NOTES SEDIMENT POLLUTION CONTROL ACT:

MINIMUM REQUIREMENTS FOR EROSION CONTROL ARE SHOWN ON THE DRAWINGS, BASED ON THE FAYPWC PROJECT ENGINEER'S ANTICIPATED CONSTRUCTION METHODS AND SEQUENCES. INDIVIDUAL CONTRACTORS SHALL SUPPLEMENT OR PROVIDE ADDITIONAL MEASURES TO COMPLEMENT THEIR TYPE OF CONSTRUCTION TO PREVENT TRANSMITTAL OF SILT. INDIVIDUAL CONTRACTORS ARE REQUIRED TO MAINTAIN MINIMUM STANDARDS FOR EROSION CONTROL AS REQUIRED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY. ALL FEES, PENALTIES, FINES, FOR NONCOMPLIANCE AND ALL CIVIL ACTIONS RESULTING THEREFROM SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND SHALL IN NO WAY INVOLVE THE FAYETTEVILLE PUBLIC WORKS COMMISSION. THE CONTRACTOR MAY BE REQUIRED TO MODIFY OR SUPPLEMENT MEASURES AT NO ADDITIONAL COST TO THE FAYETTEVILLE PUBLIC WORKS COMMISSION. ALL EROSION CONTROL MEASURES SHALL REMAIN SERVICEABLE UNTIL THE SITE IS RESTORED AND STABILIZED. UPON SUCH TIME THE MEASURES SHALL BE REMOVED BY THE CONTRACTOR. THE SITE MUST BE RESTORED AND STABILIZED PRIOR TO THE FAYETTEVILLE PUBLIC WORKS COMMISSION RELEASING FINAL PAYMENT.

1. MINIMUM MONITORING AND REPORTING REQUIREMENTS

- ALL SEDIMENTATION AND EROSION CONTROL FACILITIES SHALL BE INSPECTED BY THE CONTRACTOR AT LEAST ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT.
- STORM WATER RUNOFF DISCHARGES SHALL BE INSPECTED BY VISUAL OBSERVATION AT THE FREQUENCY OUTLINED ABOVE. IF ANY SEDIMENTATION IS LEAVING THE SITE, CORRECTIVE ACTION SHALL BE TAKEN TO ELIMINATE THE DISCHARGE OF SEDIMENTS.

2. MAINTENANCE AND INSPECTIONS

- THE CONTRACTOR SHALL KEEP ALL EROSION CONTROL DEVICES AND MATERIALS IN GOOD REPAIR AND OPERATING AT OPTIMUM EFFICIENCY. THE FAYETTEVILLE PUBLIC WORKS COMMISSION RESERVES THE RIGHT, WITH 24 HOURS PRIOR NOTICE, TO REPAIR ANY EROSION CONTROL MEASURES OR MATERIALS AS REQUIRED, AND DEDUCT THE COST OF THOSE REPAIRS FROM THE CONTRACTOR'S REQUEST FOR PAYMENT.
- THE FAYETTEVILLE PUBLIC WORKS COMMISSION AND/OR NCDOT REPRESENTATIVES MAY PERIODICALLY EVALUATE THE PROJECT FOR COMPLIANCE WITH THESE REQUIREMENTS.

THE CONTRACTOR SHALL ENSURE THAT THE STREETS WITHIN THE PROJECT ARE PROTECTED FROM MUD, SAND, STONE, LITTER OR DEBRIS IN ANY FORM. ALL MUD COLLECTED ON VEHICLE WHEELS SHALL BE REMOVED BEFORE LEAVING THE CONSTRUCTION SITE. SHOULD ANY MUD OR DEBRIS FROM THE PROJECT COLLECT ON THE STREETS, IT SHALL BE REMOVED IMMEDIATELY TO PREVENT ANY HAZARDS TO VEHICULAR OR PEDESTRIAN TRAFFIC. THE CONTRACTOR IS REQUIRED TO CLEAN THE STREETS DAILY OF CONSTRUCTION RELATED DEBRIS, DUST, AND MUD. THE CONTRACTOR SHALL CLEAN THE STORM DRAINAGE SYSTEM (AND DOWNSTREAM SYSTEMS) AFFECTED BY CONSTRUCTION RUNOFF PRIOR TO FINAL ACCEPTANCE AND PAYMENT. THE FAYETTEVILLE PUBLIC WORKS COMMISSION RESERVES THE RIGHT TO PROCEED WITH STREET CLEANING SHOULD THE CONTRACTOR FAIL TO COMPLY WITH THIS REQUIREMENT AND DEDUCT THE COSTS FROM THE CONTRACTOR'S REQUEST FOR PAYMENT.

NEW STABILIZATION TIMEFRAMES

| Site Area Description | Stabilization | Timeframe Exceptions |
|--|---------------|--|
| Perimeter dikes, swales, ditches and slopes | 7 days | None |
| High Quality Water (HOW) Zones | 7 days | None |
| Slopes steeper than 3:1 | 7 days | If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed. |
| Slopes 3:1 or flatter | 14 days | 7 days for slopes greater than 50' in length. |
| All other areas with slopes flatter than 4:1 | 14 days | None, except for perimeters and HOW Zones. |

TURFING NOTES:

- THE CONTRACTOR SHALL RE-SOD / RE-SEED DISTURBED AREAS WITH THE SAME TYPE OF GRASS AS FOUND ON THE SITE. ALL HIGHWAY RIGHTS-OF-WAY, AND PRIVATE YARDS DISTURBED SHALL BE RE-SODDED WITH THE SAME TYPE OF GRASS PREVIOUSLY FOUND. THE SEED MIXTURE SPECIFICATION SHALL BE USED AS A GUIDE AND THE CONTRACTOR IS CHARGED WITH THE RESPONSIBILITY OF SEEDING OR SODDING AREAS WITH THE PROPER TYPE OF GRASS THAT MATCHES THE EXISTING.
- THE CONTRACTOR SHALL CONSULT THE REGIONAL STATE EROSION CONTROL OFFICER FOR ADDITIONAL INFORMATION CONCERNING OTHER ALTERNATIVES FOR VEGETATION OF DENUDEED AREAS. THE LISTED VEGETATIVE RATES ARE THOSE WHICH DO WELL UNDER LOCAL CONDITIONS; OTHER SEEDING RATE COMBINATIONS ARE POSSIBLE.

SOIL AMENDMENTS:

- LIME SHALL BE APPLIED AT THE RATE OF 1,000 POUNDS PER ACRE. 10-20-20 COMMERCIAL FERTILIZER SHALL BE APPLIED AT THE RATE OF 1,000 POUNDS PER ACRE AND WORKED IN TO THE TOP FOUR INCHES (4") OF TOP SOIL. IF HYDRO-SEEDING, USE 500 POUNDS PER ACRE OF 10-10-10 FERTILIZER ON SLOPES STEEPER THAN 1/2 HORIZONTAL TO 1 VERTICAL, UNLESS A SOILS TEST STATES OTHERWISE.

MULCH:

- ALL SEEDED AREAS SHALL BE MULCHED WITH TWO (2) TONS PER ACRE OF SMALL GRAIN STRAW OR WOOD CELLULOSE FIBER SPREAD UNIFORMLY. APPROXIMATELY ONE-QUARTER (1/4) OF THE GROUND SHOULD BE VISIBLE TO AVOID SMOTHERING SEEDLINGS. ASPHALT EMULSION (IN ACCORDANCE WITH ASTM D-977 AND ASTM D-2028) SHALL BE USED TO ANCHOR THE STRAW APPLIED AT 150 GALLONS PER TON OF STRAW, OR CRIMPED TO STABILIZE. ASPHALT EMULSION SHALL BE REQUIRED FROM NOVEMBER 1ST TO MARCH 31ST. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT MULCH FROM ENTERING DRAINAGE STRUCTURES AND PROMPTLY REMOVE ANY BLOCKAGE WHICH MAY OCCUR.

MAINTENANCE:

- THE CONTRACTOR SHALL PROTECT AND MAINTAIN GRASSED AREAS AS NECESSARY TO ESTABLISH A UNIFORM TURF COMPRISED OF THE GRASSES SPECIFIED. THE CONTRACTOR SHALL PROMPTLY RE-SEED OR RE-SOD ANY BARE AREAS AND REPAIR ALL ERODED AREAS, AT NO ADDITIONAL COST TO FAYPWC.
- WATERING OF SEEDED AND SODDED AREAS WILL BE REQUIRED DURING PERIODS OF DRY WEATHER TO PROMOTE MAXIMUM GROWTH. THE CONTRACTOR SHALL SUPPLEMENT NATURAL RAINFALL TO ENSURE A MINIMUM OF ONE INCH OF WATER WEEKLY.
- MAINTENANCE OF LAWNS BEGINS IMMEDIATELY AFTER THE AREA IS PLANTED AND CONTINUES FOR THE PERIOD REQUIRED TO ESTABLISH ACCEPTABLE LAWNS, BUT NOT LESS THAN SIXTY (60) CALENDAR DAYS AFTER INITIAL SODDING / SEEDING, OR UNTIL FINAL ACCEPTANCE BY THE FAYETTEVILLE PUBLIC WORKS COMMISSION. THE CONTRACTOR SHALL MAINTAIN SODDED / SEEDED AREAS BY WATERING, FERTILIZING, MOWING, WEEDING AND OTHER OPERATIONS SUCH AS ROLLING, RE-GRAING, REPLANTING, AERATING, AND MULCHING AS REQUIRED TO ESTABLISH AN ACCEPTABLE LAWN FREE OF ERODED OR BARE AREAS.

GENERAL CONSTRUCTION NOTES:

- THE CONTRACTOR IS REQUIRED TO EXAMINE EXISTING CONDITIONS AND FAMILIARIZE THEMSELVES WITH THE SITE PRIOR TO SUBMITTING A BID.
- THE CONTRACTOR SHALL RECORD THE EXISTING SITE CONDITIONS BEFORE BEGINNING WORK, INCLUDING ANY EXISTING DAMAGE TO WALLS, SIDEWALKS, ETC.
- THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND INVERTS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. FIELD DETERMINE INFORMATION REGARDING THE LATERAL ON THE NORTH SIDE OF NEW MH-3. FIELD VERIFY NEW MANHOLE RIM ELEVATIONS WITH EXISTING GRADE.
- THE CONTRACTOR SHALL LIMIT THEIR OPERATIONS TO THE EXISTING EASEMENTS AND PUBLIC ROW.
- ACCESS POINTS TO THE EXISTING FAYPWC UTILITY EASEMENT ARE BASED ON THE PUBLIC WORKS COMMISSION'S BEST AVAILABLE INFORMATION. THE SUCCESSFUL CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THEIR ACCESS POINTS AND NEGOTIATING WITH THE INDIVIDUAL PROPERTY OWNERS.
- ALL ROADS ARE OWNED AND MAINTAINED BY THE CITY OF FAYETTEVILLE OR NCDOT, UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL COORDINATE AND COMPLY WITH ALL OF THE TRAFFIC CONTROL REQUIREMENTS OF THE CITY OF FAYETTEVILLE, NCDOT AND THESE CONTRACT DOCUMENTS.
- ALL CONSTRUCTION TO BE IN ACCORDANCE WITH FAYPWC STANDARDS.
- THE CONTRACTOR SHALL NOTIFY FAYETTEVILLE PWC A MINIMUM OF 48 HOURS IN ADVANCE FOR CONSTRUCTION STAKING. CONTRACTOR SHALL MAINTAIN A COPY OF THE CUT SHEET ON THE JOB SITE.
- CONTRACTOR SHALL PROVIDE BYPASS PUMPING AS NECESSARY TO ACCOMMODATE CONTRACTOR'S MEANS AND METHODS FOR INSTALLATION AND DEMOLITION OF SANITARY SEWER AND AERIAL CROSSING AS INDICATED, GROUTING SANITARY SEWER AS INDICATED, INSTALLING PLUGS, RECONFIGURING INVERTS TO NEW FLOW CONDITIONS, BUILDING NEW INVERTS IN MANHOLES AND TYING EXISTING SANITARY SEWER INTO NEW SANITARY SEWER AND MAKING OPERABLE.
- CONTRACTOR SHALL MAINTAIN CONTINUOUS UNINTERRUPTED SANITARY SEWER SERVICE AT ALL TIMES.
- CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS AND UTILITIES FROM DAMAGE DUE TO CONSTRUCTION AND SHALL BE RESPONSIBLE FOR THE REPAIR OF DAMAGE DUE TO CONSTRUCTION AT NO SEPARATE PAYMENT.
- REMOVE AND DISPOSE OF EXISTING SANITARY SEWAGE IN MANHOLES AND PIPES TO BE ABANDONED IN ACCORDANCE WITH APPLICABLE LAWS, REGULATIONS, CODES, AND STANDARDS, PRIOR TO BEGINNING DEMOLITION.
- BACKFILL ALL EXCAVATIONS WITH SUITABLE MATERIAL.
- ALL SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.
- ALL NEW MANHOLES ARE TO BE VACUUM-TESTED IN ACCORDANCE WITH FAYETTEVILLE PWC STANDARDS.
- CONTRACTOR SHALL COORDINATE TESTING AND INSPECTION WITH THE FAYETTEVILLE PWC PROJECT COORDINATOR. ALL SEWER AND APPURTENANCES SHALL BE INSPECTED AND TESTED PRIOR TO PLACING IN SERVICE.
- THE CONTRACTOR SHALL REPLACE ANY FENCING DISTURBED AS PART OF THEIR OPERATIONS FOR THE WORK DESCRIBED WITHIN THESE CONTRACT DOCUMENTS AND PLANS. THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY FENCING AS REQUIRED. FENCES SHALL BE REMOVED AND REPLACED WITH NEW MATERIALS AS NECESSARY TO RESTORE THE ITEM TO ITS ORIGINAL CONDITION OR BETTER. NO ADDITIONAL PAYMENT WILL BE MADE.
- CONTRACTOR SHALL REPAIR/REPLACE ALL CONSTRUCTION DAMAGE TO THE EXISTING SIDEWALKS, WALLS, SHRUBS, ETC. SAWCUT AND REPLACE ANY DAMAGED ASPHALT AND CONCRETE THAT IS DISTURBED BY CONSTRUCTION. REPLACE / RESTORE ANY DAMAGED OR DISPLACED BRICK PAVERS. RESTORE LANDSCAPED AREAS TO THEIR ORIGINAL CONDITION OR BETTER. NO ADDITIONAL PAYMENT WILL BE MADE FOR CONSTRUCTION DAMAGE TO EXISTING SITE APPURTENANCES.
- PERMANENT GROUND COVER SHALL BE PROVIDED FOR ALL DISTURBED AREA(S) WITHIN 15 BUSINESS DAYS FOLLOWING COMPLETION OF CONSTRUCTION. RESTORE ALL DISTURBED AREAS WITHIN CROSS CREEK LINEAR PARK WITH SOD. CREEK BANK CAN BE SEEDED. EROSION CONTROL MATTING MAY BE REQUIRED TO ENSURE THAT THE DISTURBED SLOPES ARE STABILIZED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
- ONCE CONSTRUCTION HAS BEEN COMPLETED, THE CONTRACTOR IS RESPONSIBLE FOR RESTORING THE SITE TO ITS ORIGINAL CONDITION OR BETTER.
- CONTRACTOR SHALL DISPOSE OF CONSTRUCTION DEBRIS IN AN APPROVED AND PROPERLY PERMITTED LOCATION OFFSITE.
- SEE ADDITIONAL NOTES ON SHEET S1. SEE SHEETS D1 AND D2 FOR FAYETTEVILLE PWC TYPICAL DETAILS AND NOTES. SEE SHEET D3 FOR EROSION CONTROL STANDARD DETAILS.

GENERAL CONSTRUCTION SEQUENCE:

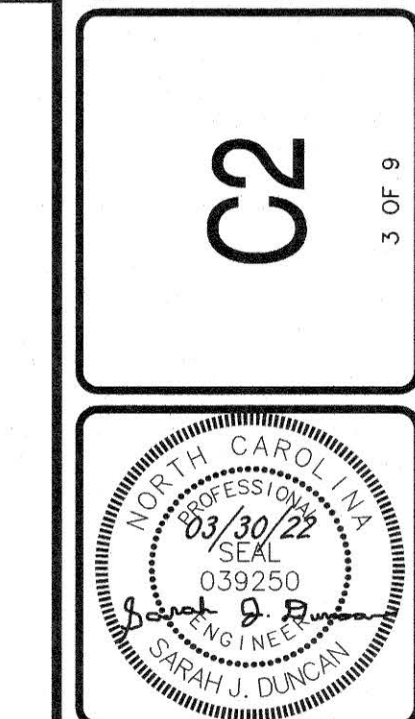
- OBTAIN PLAN APPROVAL AND ALL OTHER APPLICABLE PERMITS.
- FLAG LIMITS OF CONSTRUCTION AND RECORD EXISTING SITE CONDITIONS.
- HOLD PRE-CONSTRUCTION CONFERENCE AT LEAST ONE WEEK PRIOR TO BEGINNING CONSTRUCTION.
- INSTALL CONSTRUCTION ENTRANCES / EXITS AS INDICATED ON PLANS.
- INSTALL TEMPORARY SEDIMENT FENCING AS INDICATED ON PLANS.
- REMOVE PORTION OF EXISTING FENCING, LIGHTPOLES AND LANDSCAPE SHRUBS AS NEEDED FOR CONSTRUCTION AND STORE ON SITE FOR REPLACEMENT AT COMPLETION.
- CLEAR AND GRUB PORTIONS OF LIMITS OF CONSTRUCTION AS NEEDED FOR CONSTRUCTION.
- STRIP TOPSOIL 3" TO 4" THICKNESS IN AREAS TO BE DISTURBED, STOCKPILE ON SITE.
- INSTALL SOIL SHORING AS NEEDED TO PROTECT EXISTING WALL FOUNDATION.
- INSTALL DOG HOUSE MANHOLES AND TEMPORARY SANITARY SEWER BY-PASS IF NEEDED.
- INSTALL PIPE SUPPORTS AS INDICATED ON PLANS AND DETAILS.
- INSTALL NEW MANHOLES & 16" STEEL SANITARY SEWER PIPE AS INDICATED ON PLANS AND DETAILS. STRIP TOPSOIL DURING TRENCHING OPERATIONS AND SEPARATE FROM EXCAVATED MATERIAL AND STOCKPILE.
- PROVIDE GROUND STABILIZATION BY TEMPORARY SEEDING ALL CUT AND FILL SLOPES AS REQUIRED BY THE EROSION CONTROL NOTES THIS SHEET. USE EROSION CONTROL MATTING AS NEEDED.
- TEST AND INSPECT SEWER MAINS AND MANHOLES.
- PERFORM DEMOLITION AS INDICATED AND DISPOSE OF DEBRIS.
- RESTORE SITE TO ORIGINAL CONDITION OR BETTER. REPAIR/REPLACE ANY SITE APPURTENANCES THAT WERE DAMAGED FROM CONSTRUCTION.
- INSTALL CHAINLINK SECURITY FENCE (OR APPROVED EQUAL) ON AERIAL CROSSING AT EACH SIDE OF CREEK.
- ONCE ALL LAND DISTURBING ACTIVITIES HAVE BEEN COMPLETED, SPREAD TOPSOIL 4" TO 4" THICK OVER ALL DISTURBED AREAS AND PROVIDE PERMANENT SOD AND SEEDING AND ESTABLISH PERMANENT GROUND COVER.
- PRE-FINAL INSPECTION BY CONTRACTOR.
- RE-SEED AND/OR RE-SOD AND FERTILIZE AS NECESSARY TO ENSURE ADEQUATE COVERAGE OF PERMANENT GROUND COVER OF ALL DISTURBED AREAS.
- PRE-FINAL INSPECTION BY THE FAYETTEVILLE PUBLIC WORKS COMMISSION AND CONTRACTOR (PUNCH LIST GENERATED).
- FINAL INSPECTION (ALL PUNCH LIST ITEMS MUST BE COMPLETED PRIOR TO FINAL INSPECTION).
- REMOVE TEMPORARY SEDIMENT FENCE AND ANY OTHER EROSION CONTROL MEASURES ONCE THE SITE IS STABILIZED AND PERMANENT GROUND COVER IS WELL ESTABLISHED.

CREEK NOTES:

- THERE IS TO BE NO DISTURBANCE OF SEDIMENT IN THE CREEK.
- THERE IS TO BE NO MACHINERY/EQUIPMENT IN THE CREEK.
- ALL WORK IS TO BE DONE FROM THE CREEK BANK. ANY WORK TO BE COMPLETED IN THE CREEK WILL BE LIMITED TO FOOT TRAFFIC ONLY.
- THE CONTRACTOR IS REQUIRED TO EXAMINE THE CONDITIONS OF THE CREEK AND CREEK BANKS PRIOR TO SUBMITTING A BID.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE CREEK BANKS AND RESTORING THEM TO THE ORIGINAL CONDITION OR BETTER.

FAYETTEVILLE PUBLIC WORKS COMMISSION
FLEMING & ASSOCIATES, P.A.
 STRUCTURAL ENGINEERING • FORENSICS • ROOFING DESIGN
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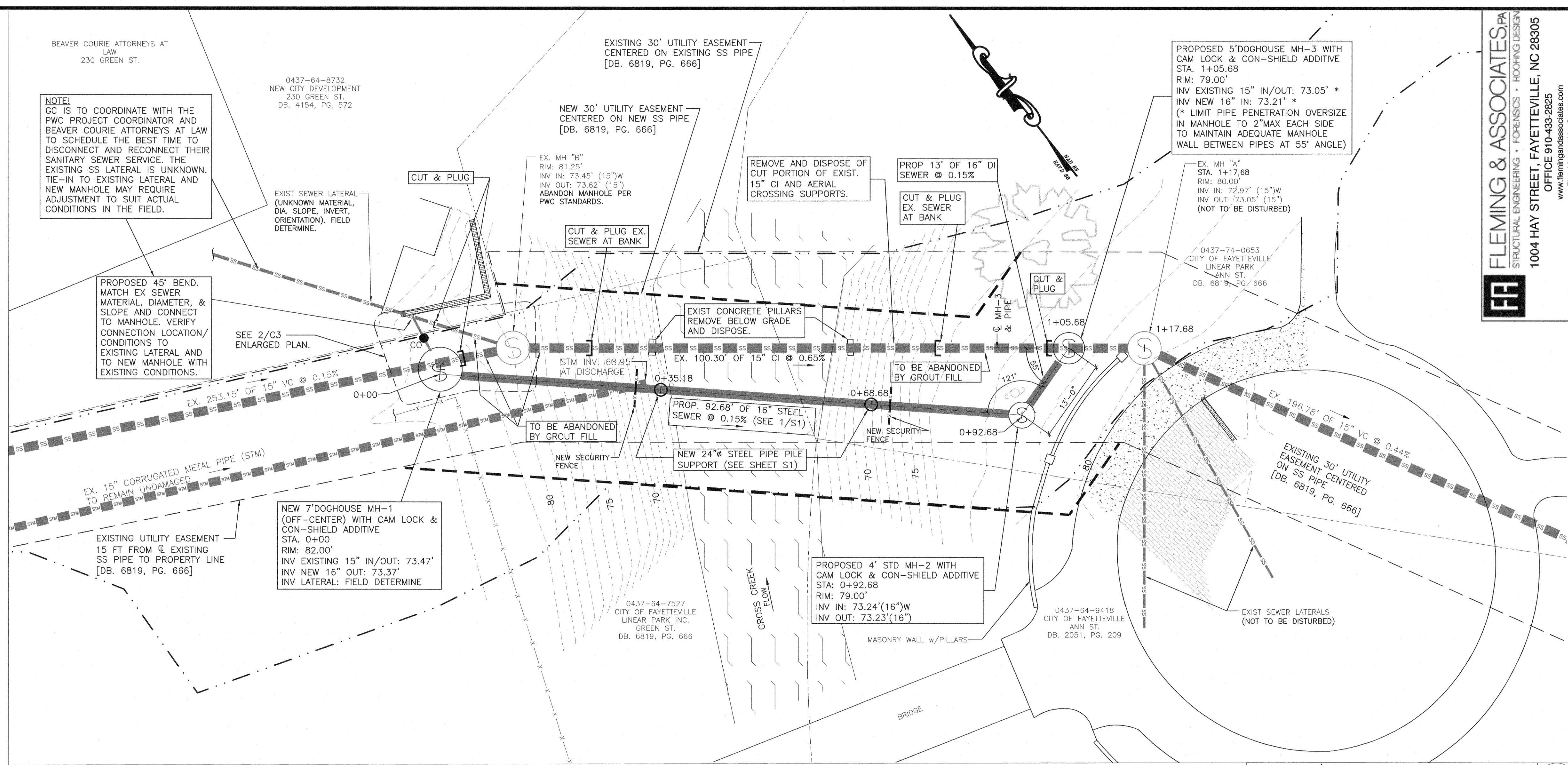
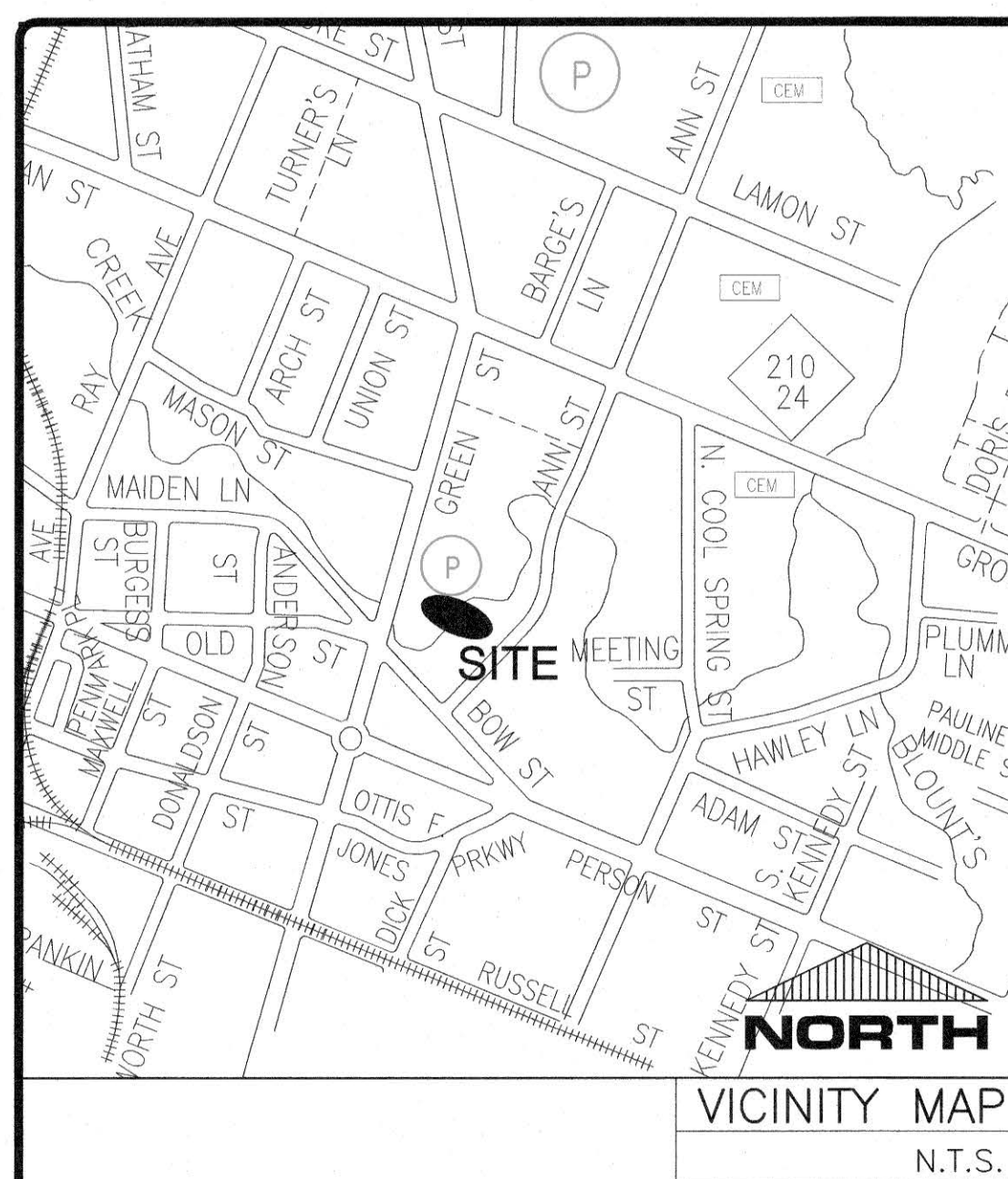
DATE: 03/30/22
 SURVEY/GPS BY: PWC
 DRAWN BY: SJD/SJM/JBR
 CHECKED BY: SJD
 HOB: 1"
 SCALE: VERT. 1" =



ANN TO GREEN STREET
 16" SANITARY SEWER
 AERIAL CROSSING REPLACEMENT

FAYETTEVILLE PUBLIC WORKS COMMISSION
FAYETTEVILLE WATER RESOURCES ENGINEERING
 P.O. Box 1089, Fayetteville, NC 28302
 956 Old Wilmington Road, Fayetteville, NC 28301

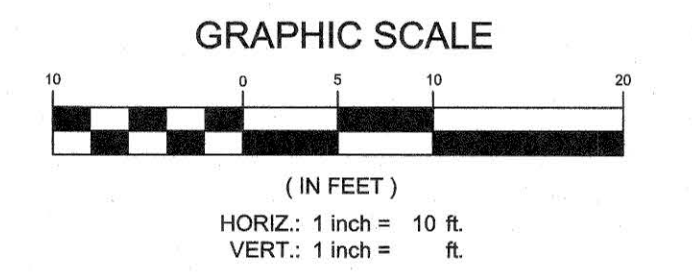




LEGEND

| | | |
|------------------|------------------------|-----------------------------|
| PROPERTY LINE | DITCH | POWER & LIGHT POLE/GUY WIRE |
| EDGE OF PAVEMENT | EX. PROP. GATE VALVE | EX. PROP. WATER METER |
| BACK OF CURB | AIR RELEASE VALVE | EX. PROP. FIRE HYDRANT |
| STORM PIPE | CATCH BASIN/DROP INLET | UTILITY PEDESTALS |
| EX. WATER MAIN | EX. PROP. SSMH | EX. PROP. CLEAN OUT |
| EX. SS MAIN | EX. PROP. STORM MH | SIGNAL TRAFFIC BOX |
| PROP. SS MAIN | EX. PROP. UTILITY MH | MAILBOX |
| PROP. WATER MAIN | GAS VALVE | TREE/SHRUB |
| EASEMENT | EX. PROP. PLUG | |
| FENCE | EX. PROP. BLOW-OFF | |
| WOOD FENCE | | |
| EX. UTIL. LINES | | |
| TREELINE | | |

UTILITY/AERIAL CROSSING PLAN 1
1 INCH = 10 FEET C3

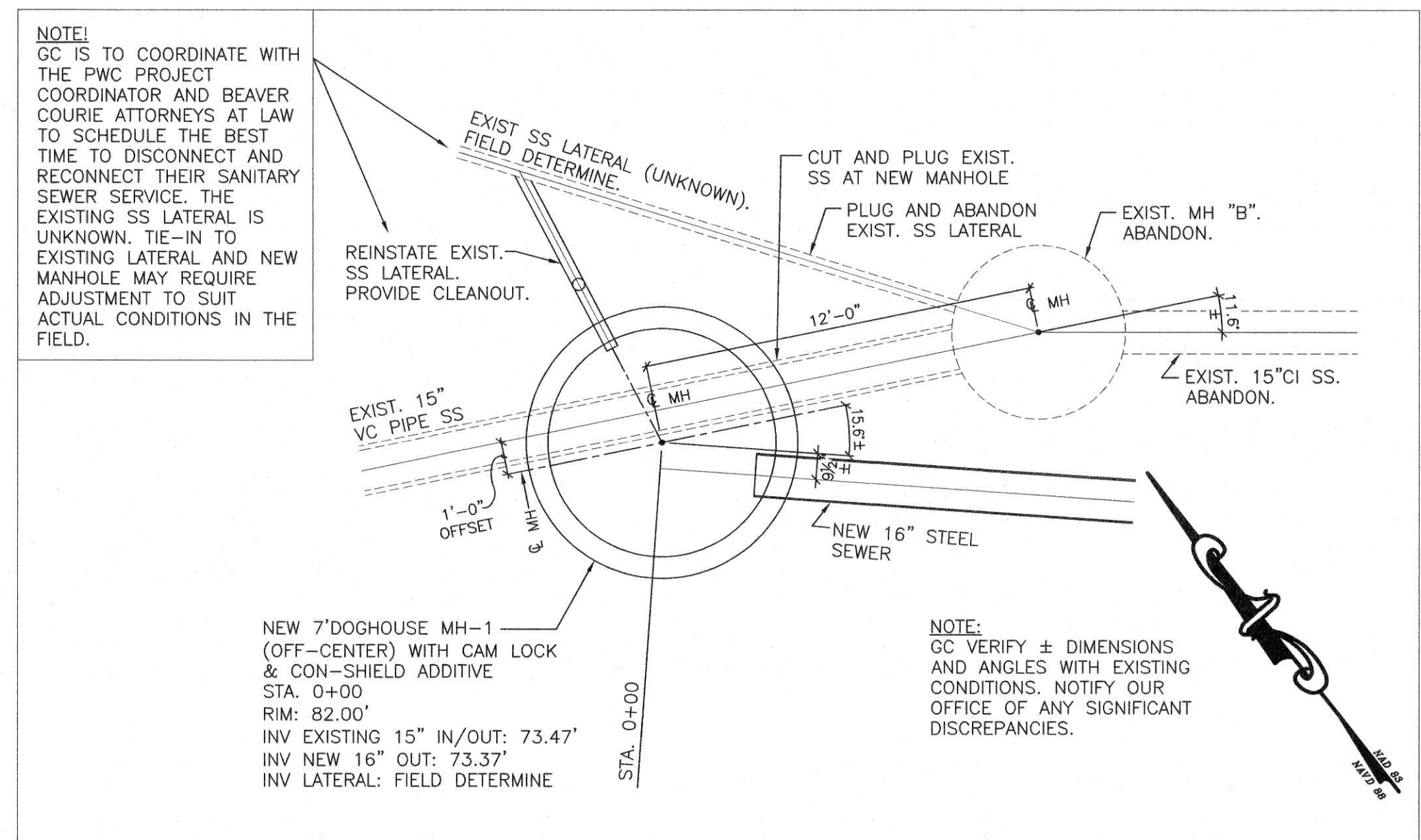


PWC FAYETTEVILLE PUBLIC WORKS COMMISSION

ANN TO GREEN STREET 16" SANITARY SEWER AERIAL CROSSING REPLACEMENT

ORIGINAL TAPS ONLY RECORD DRAWING MODIFICATION

| | |
|--------------------|-----------------|
| WO # WT: N/A | WO # ST: N/A |
| WO # WD: N/A | PERMIT #: N/A |
| ENG TECH: G. SMITH | PERMIT #: N/A |
| REVIEWED BY: TBE | DWG #: D2-15155 |
| DATE: 4/13/22 | # OF SHEETS: 9 |
| WRFP # 1100080106 | |



ENLARGED PLAN DETAIL AT NEW MH-1 AND EXIST MH "B" 2
1/4" = 1'-0" C3



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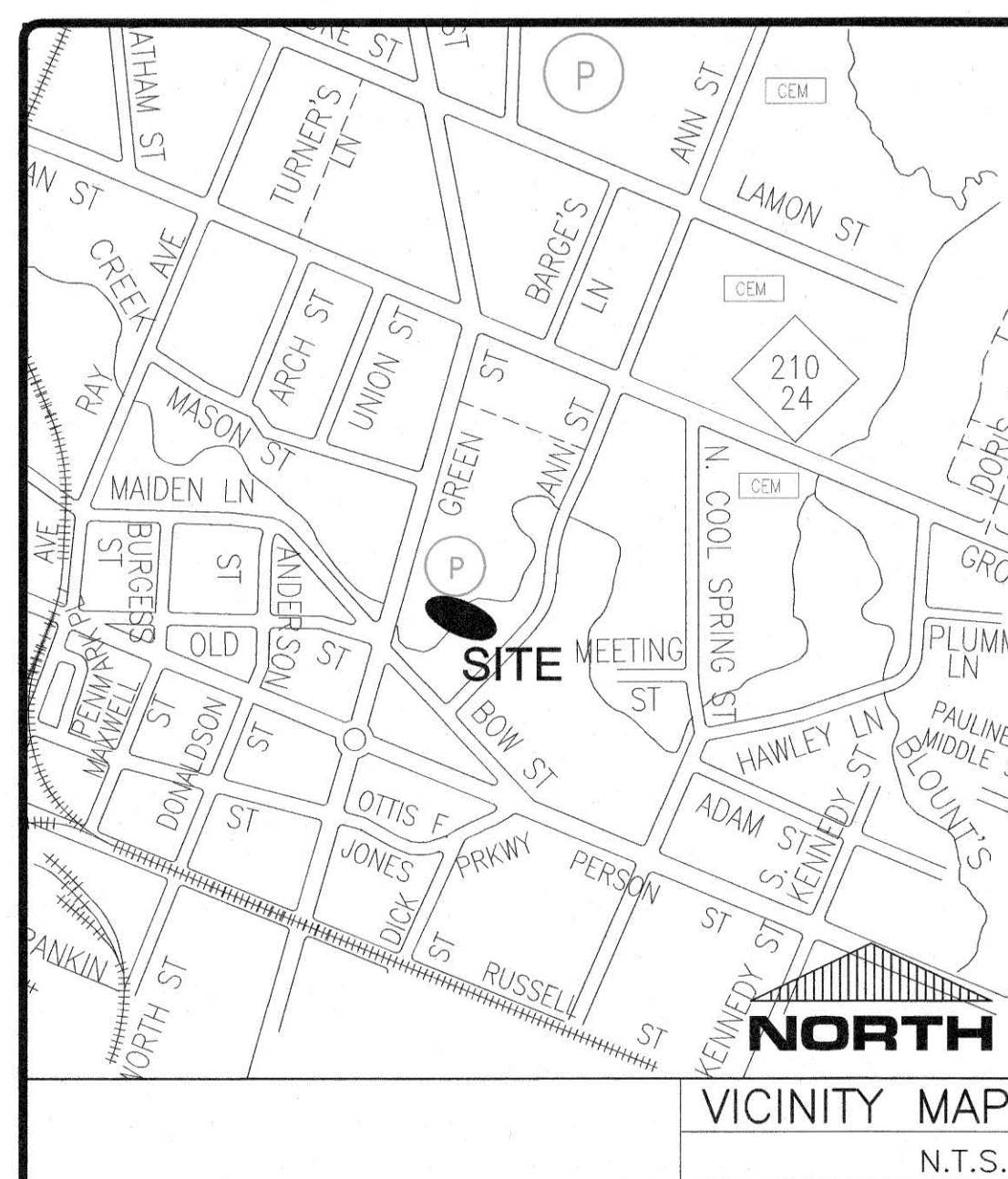
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|---------------|-------------|
| DATE | 03/30/22 |
| SURVEY/GPS BY | PWC |
| DRAWN BY | SJD/SJM/BBR |
| CHECKED BY | SJD |
| HOR. SCALE | 1" = 10' |
| VERT. SCALE | 1" = 1' |
| SHEET SERIES | |

C3
4 OF 9



ANN TO GREEN STREET
16" SANITARY SEWER
AERIAL CROSSING REPLACEMENT

FAYETTEVILLE PUBLIC WORKS COMMISSION
PWC WATER RESOURCES ENGINEERING
P.O. Box 1088, Fayetteville, NC 28302
950 Old Wilmington Road, Fayetteville, NC 28301
DS-15155



NOTE
GC IS TO COORDINATE WITH THE PWC PROJECT COORDINATOR AND BEAVER COURIE ATTORNEYS AT LAW TO SCHEDULE THE BEST TIME TO DISCONNECT AND RECONNECT THEIR SANITARY SEWER SERVICE. THE EXISTING SS LATERAL IS UNKNOWN. TIE-IN TO EXISTING LATERAL AND NEW MANHOLE MAY REQUIRE ADJUSTMENT TO SUIT ACTUAL CONDITIONS IN THE FIELD.

PROPOSED 45' BEND. MATCH EX SEWER MATERIAL, DIAMETER, & SLOPE AND CONNECT TO MANHOLE. VERIFY CONNECTION LOCATION/ CONDITIONS TO EXISTING LATERAL AND TO NEW MANHOLE WITH EXISTING CONDITIONS.

PROP. CLEANOUT PER PWC STANDARDS SEE 2/C3 ENLARGED PLAN.

EXISTING UTILITY EASEMENT 15 FT FROM EXISTING SS PIPE TO PROPERTY LINE [DB. 6819, PG. 666]

NEW 7'DOGHOUSE MH-1 (OFF-CENTER) WITH CAM LOCK & CON-SHIELD ADDITIVE STA: 0+00.00 INV EXISTING 15" IN/OUT: 73.47' INV NEW 16" OUT: 73.37' INV LATERAL: FIELD DETERMINE

PROP. 92.68' OF 16" STEEL SEWER @ 0.15% (SEE 1/S1)

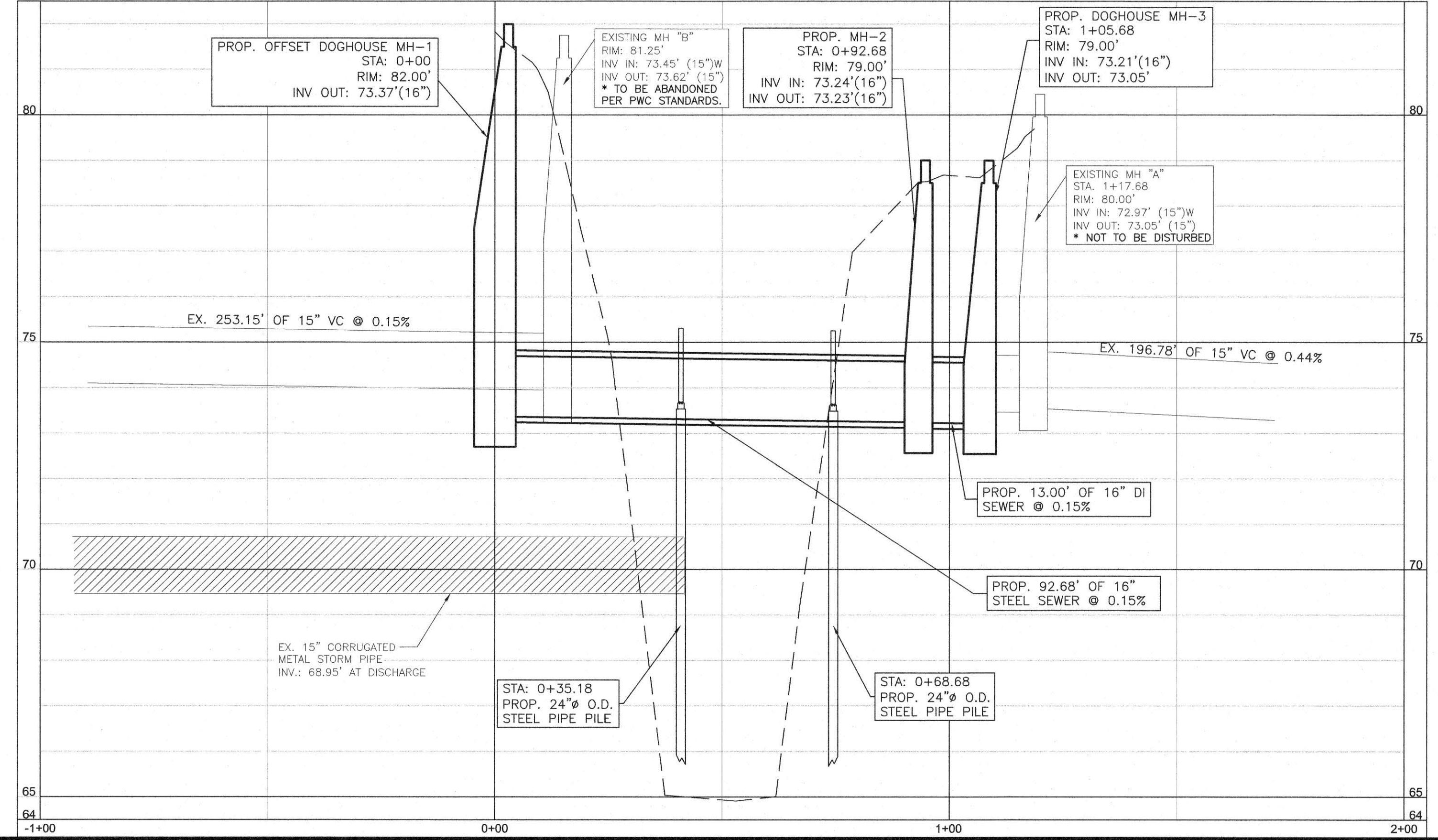
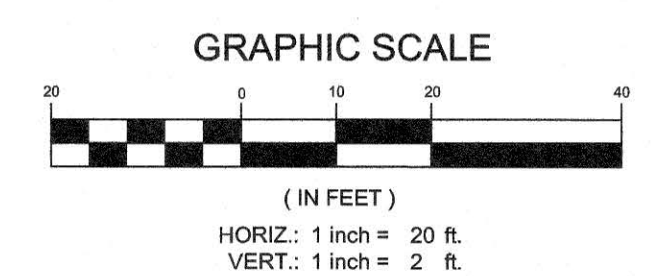
PROPOSED 4' STD MH-2 WITH CAM LOCK & CON-SHIELD ADDITIVE STA: 0+92.68 RIM: 79.00' INV IN: 73.24'(16")W INV OUT: 73.23'(16")

PROPOSED S'DOGHOUSE MH-3 WITH CAM LOCK & CON-SHIELD ADDITIVE STA: 1+05.68 RIM: 79.00' INV EXISTING 15" IN/OUT: 73.05' * INV NEW 16" IN: 73.21' * (* LIMIT PIPE PENETRATION OVERSIZE IN MANHOLE TO 2" MAX EACH SIDE TO MAINTAIN ADEQUATE MANHOLE WALL BETWEEN PIPES AT 55° ANGLE)

EX. MH "A" STA: 1+17.68 RIM: 80.00' INV IN: 72.97' (15")W INV OUT: 73.05' (15") (NOT TO BE DISTURBED)

| LEGEND | |
|------------------|------------------------|
| PROPERTY LINE | DITCH |
| EDGE OF PAVEMENT | EX./PROP. GATE VALVE |
| BACK OF CURB | EX./PROP. WATER METER |
| STORM PIPE | EX./PROP. FIRE HYDRANT |
| EX. WATER MAIN | UTILITY PEDESTALS |
| EX. SS MAIN | EX./PROP. CLEAN OUT |
| EX. SS MAIN | SIGNAL TRAFFIC BOX |
| PROP. WATER MAIN | MAILBOX |
| EASEMENT | TREE/SHRUB |
| FENCE | |
| WOOD FENCE | |
| EX. UTIL. LINES | |
| TREELINE | |
| | EX./PROP. BLOW-OFF |

UTILITY/AERIAL CROSSING PROFILE PLAN 1
1 INCH = 20 FEET C4

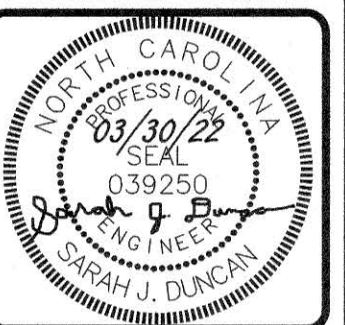


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| DATE | REVISIONS |
|----------|-----------|
| 03/30/22 | |

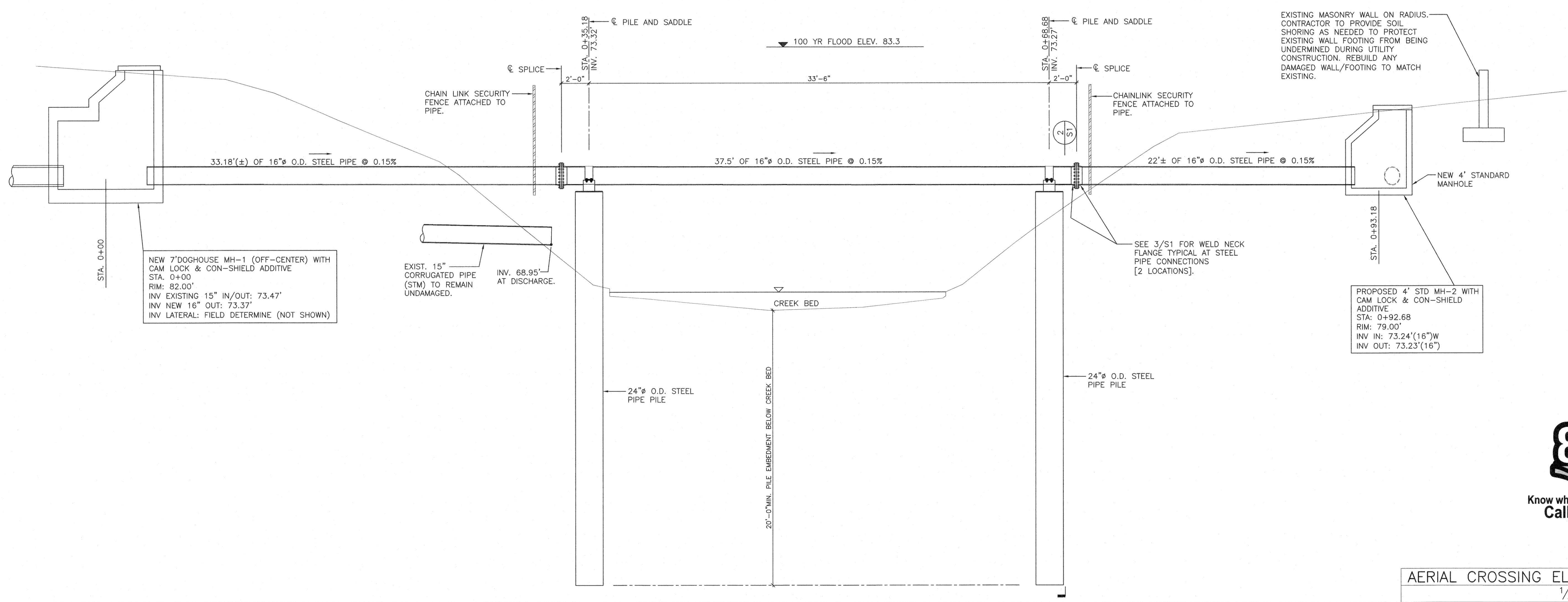
DATE: 03/30/22
SURVEY/GPS BY: PWC
DRAWN BY: SID/SW/ABR
CHECKED BY: SJLD
SCALE: VERT. 1" = 2'
HOR. 1" = VARIES

C4
4 OF 9



ANN TO GREEN STREET
16" SANITARY SEWER
AERIAL CROSSING REPLACEMENT

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PWC
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Electronic & Water Utilities



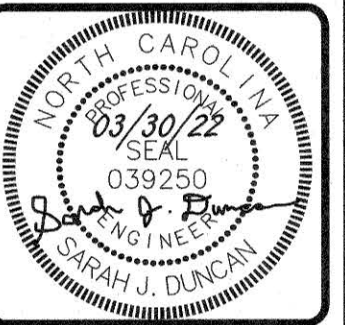
NEW 7'DOGHOUSE MH-1 (OFF-CENTER) WITH CAM LOCK & CON-SHIELD ADDITIVE
 STA. 0+00
 RIM: 82.00'
 INV EXISTING 15" IN/OUT: 73.47'
 INV NEW 16" OUT: 73.37'
 INV LATERAL: FIELD DETERMINE (NOT SHOWN)

PROPOSED 4' STD MH-2 WITH CAM LOCK & CON-SHIELD ADDITIVE
 STA: 0+92.68
 RIM: 79.00'
 INV IN: 73.24'(16")W
 INV OUT: 73.23'(16")

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| | |
|----------------|---------------------------------------|
| DATE: | 03/30/22 |
| SURVEY/GPS BY: | PMG |
| DESIGN BY: | SJD/SW/JBR |
| CHECKED BY: | SJD |
| SCALE: | HOR: 1" = VARIES VERT: 1" = VARIES |
| REVISIONS: | |
| DATE: | |
| BY: | |

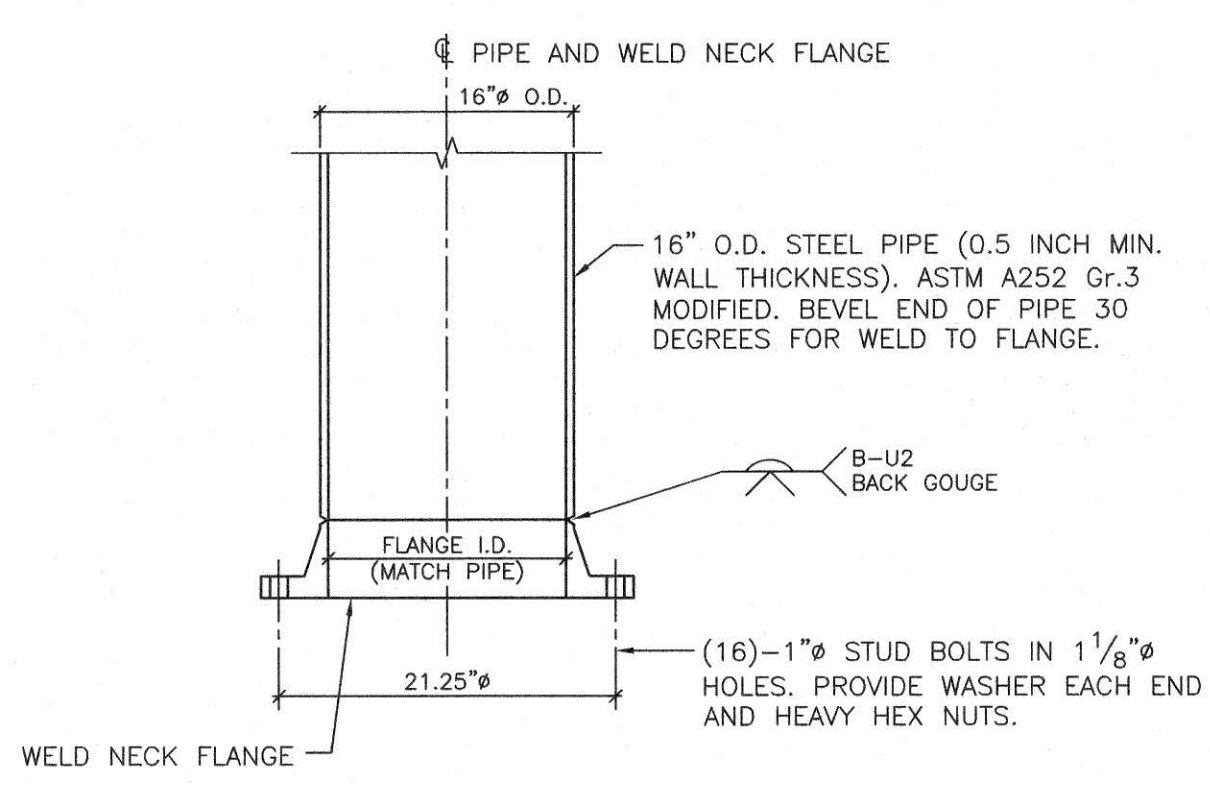
S1
6 OF 9



811
 Know what's below.
 Call before you dig.

AERIAL CROSSING ELEVATION 1
 1/4" = 1'-0" S1

- Design Loads
 - Wind Load:
Basic Wind Speed Vult = 121 mph (ASCE 7-10/2018 NC Building Code) Exposure Category C
 - Estimated stream flow at flood stage: 15 ft/sec.
- Materials
 - Concrete for pile infill
 $f_c = 3000$ psi Reg. wt.
Max water/cement ratio of 0.50.
Maximum slump at point of placement 5"±1".
 - Structural Steel
ASTM A-36 U.N.O.
ASTM A-992 Grade 50 at HP shapes
ASTM A-252 Grade 3 modified, 50 ksi for sanitary sewer pipes and aerial crossing piles.
See Foundations note "C" for additional information on piles to be used on this project.
 - Bolts
ASTM A-325N
 - Weld Electrodes
E70
- Foundations
 - Subsurface parameters are based on the Report of Subsurface Exploration and Geotechnical Engineering performed by ECS Carolinas, LLP (ECS Project No. 33-3067) dated April 8, 2015.
 - All concrete work shall conform to ACI 301 and ACI 318-08, unless otherwise noted on the drawings and specifications.
 - All steel pipe piles are to be 24" (outside diameter) with a minimum wall thickness of 1/2". Pipe is to be ERW, DSAW, or spiral welded with a beveled drive end. Hot dip galvanize piles per ASTM A123. Fabricator of steel pipe to be one of the following: American Steel Pipe, Northwest Pipe Company, Saginaw Pipe, JSW Steel, Dura-Bond Pipe, Skyline Steel, ESC Steel, or approved equal.
 - Pile driving hammer is to be sized to achieve the minimum embed length shown on the drawings but not less than 20,000 ft-pounds.
 - Tolerances: plumbness = 1" total, alignment = 2" maximum, elevation = ±0.01'.
- Superstructure
 - All structural bolts will have heavy hex nuts and two (2) washers.
 - All welders, shop and field, will be certified for the type of work involved. Field welders must be certified for overhead welding.
 - General Contractor to verify all existing dimensions and elevations before fabricating steel. Notify Engineer of any significant discrepancies.
 - All detailing, fabricating, and erection shall conform to the following specifications (latest editions), except as otherwise indicated:
 AISC - "Specification for Structural Steel Buildings."
 AISC - "Code of Standard Practice for Steel Buildings and Bridges."
 Paragraph 4.4.1 of the above code is hereby modified by deletion of the following sentences:
 a) "Confirmation that the Fabricator has correctly interpreted the Contract Documents in the preparation of those submittals";
 b) "Confirmation that the Owner's Designated Representative for Design has reviewed and approved the Connection details shown on the Shop and Erection Drawings and submitted in accordance with Section 3.1.2, if applicable";
 AWS - "Structural Welding Code - Steel."
 E. Painting - All steel piles, saddle, straps, fasteners, etc. are to be hot dip galvanized. Touch up all damage to galvanizing with a field applied cold galvanizing paint in conformance with ASTM A780 and applied according to the manufacturer's instructions. All field welds will be ground and coated with (2) coats of the cold applied galvanizing paint.
 F. Contractor shall have sole responsibility for site safety.
- Submittals
 - Steel pipe and pile information to include pipe manufacturer and grade of steel.
 - Pile driving hammer data.
 - Steel shop drawings for saddle beam, straps, and bolts.
 - Weld neck flange, gasket, and bolts.
 - Welder's certifications.
 - See specifications for additional submittal items.
- Miscellaneous
 - Unless shown otherwise all field welds will be 3/16 inch fillet welds.

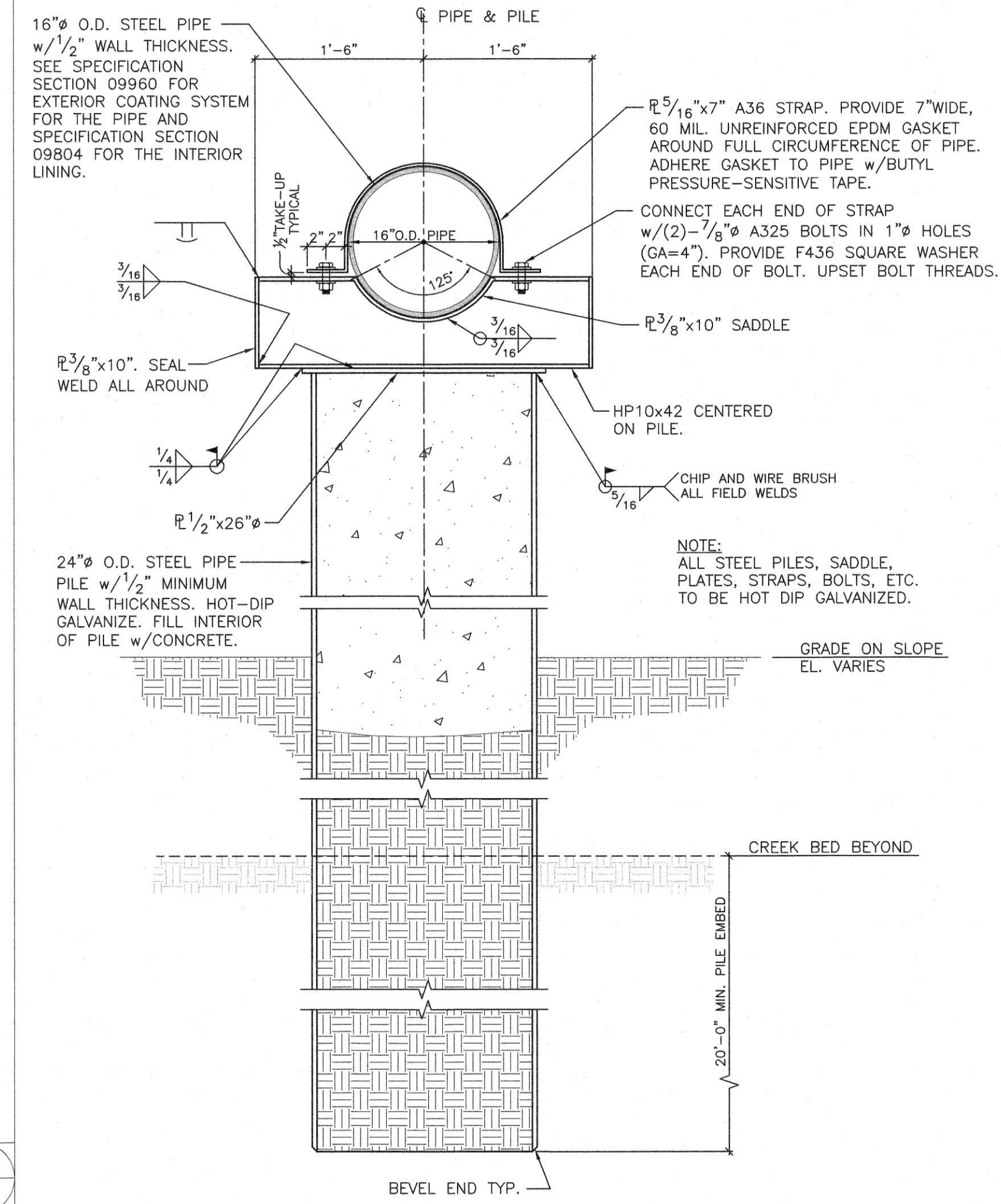


- WELD NECK FLANGE (ASME B16.5):**
- CLASS 150.
 - FLAT FACE (FF)
 - CARBON STEEL ASTM A105
 - DOMESTIC

- GASKET:**
- FULL FACE SBR RUBBER GASKET

- STUD BOLTS:**
- STUD BOLTS - ASTM A193 GR. B7 (ASME B18.2.1)
 - HEAVY HEX NUTS - ASTM A194 GR. 2H (ASME B18.2.2)
 - WASHERS - F436
 - FINISH - HOT DIP GALV.
 - TORQUE WELL LUBRICATED FASTENERS WITH A TORQUE WRENCH TO MANUFACTURER'S RECOMMENDED TORQUE IN 1/3RD INCREMENTS ACCORDING TO PROPER BOLTING PATTERNS. VERIFY RECOMMENDED TORQUE AND INSTALLATION PROCEDURES WITH GASKET MANUFACTURER AND ADJUST AS NEEDED TO INSURE ADEQUATE SEAL.

- OTHER:**
- SEE SPECIFICATIONS FOR ADDITIONAL INFO TO INCLUDE EXTERIOR COATING SYSTEM AND INTERIOR LINING FOR THE PIPE.



NOTE:
 ALL STEEL PILES, SADDLE, PLATES, STRAPS, BOLTS, ETC. TO BE HOT DIP GALVANIZED.

AERIAL CROSSING GENERAL NOTES 4
 NO SCALE S1

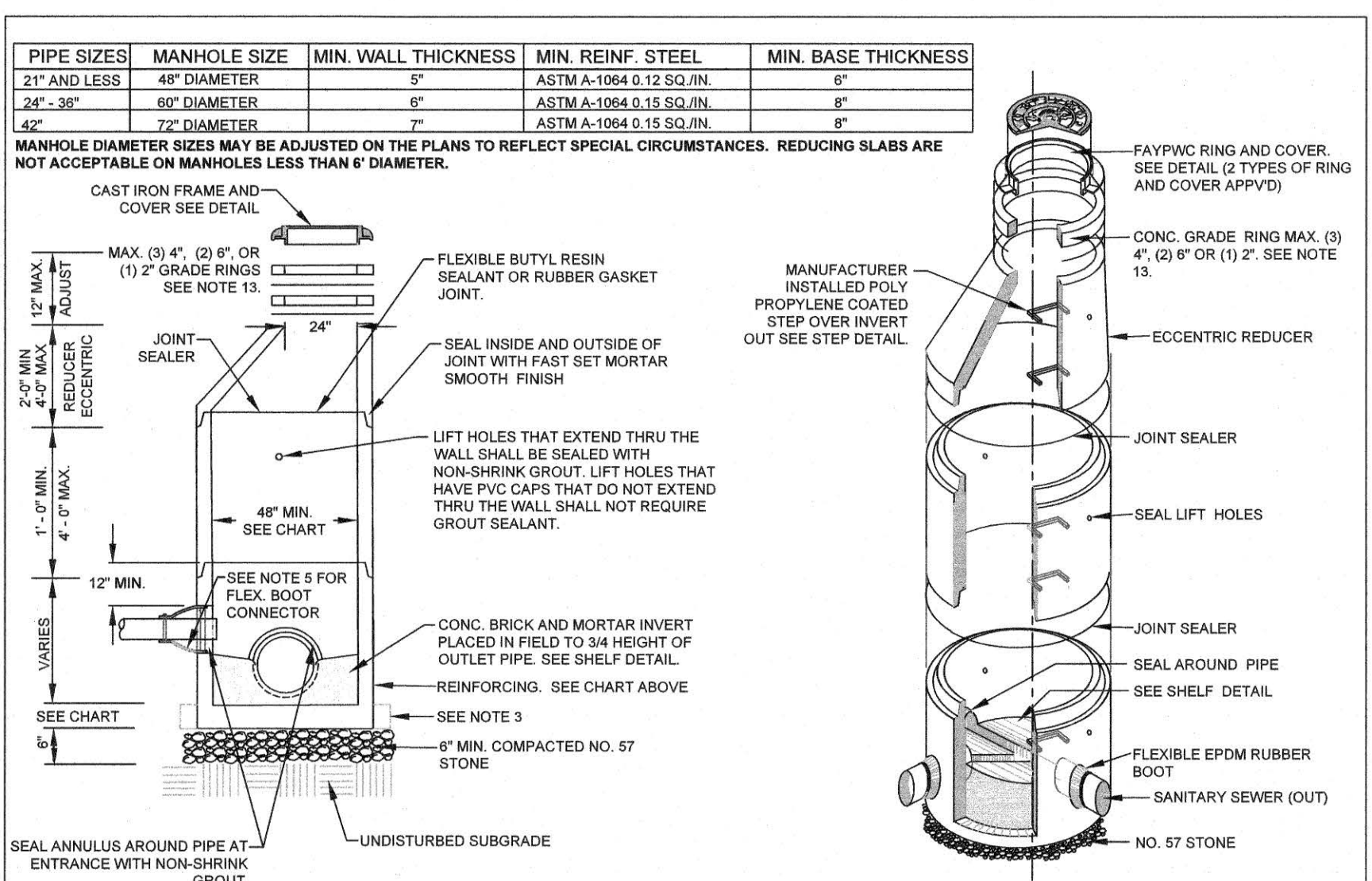
TYPICAL WELD NECK FLANGE FOR SANITARY SEWER STEEL PIPE (PLAN VIEW) 3
 1" = 1'-0" S1

SECTION 2
 1" = 1'-0" S1

ANN TO GREEN STREET
 16" SANITARY SEWER
 AERIAL CROSSING REPLACEMENT

FAYETTEVILLE
 PUBLIC WORKS COMMISSION
FWC
 WATER RESOURCES ENGINEERING
 800 Hwy 108A, Fayetteville, NC 28402
 955 Old Wilmington Road, Fayetteville, NC 28301

1. ALL SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH FAYETTEVILLE FAYPCV STANDARDS.
2. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. CONSTRUCTION STAGING IS REQUIRED FOR ALL FAYPCV WATER AND SEWER UTILITY INSTALLATIONS. CUT SHEETS, SIGNED AND SEALED BY A P.C. P.S., SHALL BE PROVIDED TO THE FAYETTEVILLE WATER RESOURCES ENGINEERING DEPARTMENT AND THE CONTRACTOR IN ADVANCE OF CONSTRUCTION FOR FAYPCV WATER AND SEWER UTILITIES.
4. CONTRACTOR SHALL MAINTAIN A COPY OF THE SIGNED AND SEALED CUT SHEET ON THE JOB SITE. CONSTRUCTION ON FAYPCV WATER AND SEWER UTILITIES CANNOT BEGIN UNTIL THE CONTRACTOR POSSESSES, ON SITE, A SIGNED AND SEALED CUT SHEET FROM THE PROFESSIONAL LAND SURVEYOR.
5. ALL NEW WATER AND SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE TESTED AND/OR DISINFECTED IN ACCORDANCE WITH FAYETTEVILLE FAYPCV STANDARDS PRIOR TO PLACING INTO SERVICE.
6. CONTRACTOR SHALL COORDINATE TESTING AND INSPECTION WITH THE FAYETTEVILLE FAYPCV PROJECT COORDINATOR.
7. ALL DUCTILE IRON PIPE IN SANITARY SEWER SERVICE SHALL HAVE AN INTERIOR LINING OF PROTECTO 401 OR APPROVED EQUAL.
8. ALL NEW MANHOLES ARE TO BE VACUUM-TESTED IN ACCORDANCE WITH FAYETTEVILLE FAYPCV STANDARDS.
9. CONTRACTOR SHALL REPAIR ALL SEWER LATERALS AND MAINS DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY REPORT ALL SEWER MAIN AND LATERAL BREAKS TO THE FAYPCV PROJECT COORDINATOR. THE CONTRACTOR SHALL INITIATE IMMEDIATE REPAIRS IN ACCORDANCE WITH FAYPCV STANDARDS.
10. TRANSFER OF SEWER SERVICES SHALL BE ACCOMPLISHED AS FOLLOWS:
 - A. INSTALL AND TEST NEW MAINS, MANHOLES, AND LATERALS. CLEANOUTS SHALL BE INSTALLED 1' INSIDE ROW UNLESS OTHERWISE DIRECTED BY FPC.
 - B. CONTACT EXISTING UTILITY OWNERS TO IDENTIFY AND LOCATE THE NECESSARY FITTINGS AS DIRECTED BY FAYPCV.
 - C. AFTER SERVICES HAVE BEEN TRANSFERRED TO THE NEW MAIN, THE EXISTING SEWER SYSTEM SHALL BE ABANDONED IN ACCORDANCE WITH FAYPCV REQUIREMENTS.
11. CONTRACTOR SHALL ABANDON (PULL-OUT) ANY EXISTING SEWER SERVICES THAT WILL NOT BE UTILIZED BY UNCOVERING THE EXISTING LATERAL AT THE MAN, CUT AND PLUG AT BOTH ENDS, REMOVE THE EXISTING CLEANOUT AND CONNECTION, AND PLACE THE TOP TIE AT THE MAN. FOR LATERALS THAT CONNECT TO A MANHOLE AND ARE TO BE ABANDONED (PULL-OUT), THE LATERAL SHALL BE REMOVED FROM THE MANHOLE AND THE REMAINING VOID IN THE MANHOLE SHALL BE FILLED WITH BLOCK AND MORTAR.
12. SEWER PLUGS SHALL BE INSTALLED TO ELIMINATE ANY DEBRIS OR OTHER MATERIAL FROM ENTERING THE ACTIVE SEWER SYSTEM. UPON ACCEPTANCE OF THE NEW SEWER SYSTEM, THE CONTRACTOR SHALL CLEAN THE NEW MAINS, REMOVE ALL TIES, AND TIE THEM TO THE PLUG.
13. ALL EXISTING UTILITIES IMPACTED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISHED GRADE, IN ACCORDANCE WITH FAYPCV REQUIREMENTS.
14. ALL WORK ON FAYPCV SEWER UTILITIES (MANS, LATERALS, ETC) SHALL BE PERFORMED BY A LICENSED UTILITY CONTRACTOR. THE FAYETTEVILLE PUBLIC WORKS COMMISSION SHALL OBSERVE AND APPROVE ALL WORK ON FAYPCV SEWER UTILITIES. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH FAYPCV REQUIREMENTS.
15. SEPARATION REQUIREMENTS:
 - A. LATERAL SEPARATION OF SEWER AND WATER MAINS: WATER MAIN SHALL BE Laid AT LEAST 12 FEET LATERALLY FROM EXISTING OR PROPOSED SEWER MAIN LATERAL, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 10-FOOT LATERAL SEPARATION, IN WHICH CASE:
 - I. THE WATER MAIN IS Laid IN A SEPARATE TRENCH WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18-INCHES ABOVE THE TOP OF THE SEWER MAIN LATERAL, OR
 - II. THE WATER MAIN IS Laid IN THE SAME TRENCH AS THE SEWER MAIN LATERAL WITH THE WATER MAIN LOCATED AT ONE SIDE ON A PATCH OF UNDISTURBED EARTH AND WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18-INCHES ABOVE THE TOP OF THE SEWER MAIN LATERAL.
 - B. CROSSING A WATER MAIN OVER A SEWER: WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS OVER A SEWER MAIN LATERAL, THE WATER MAIN SHALL BE Laid AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18-INCHES ABOVE THE TOP OF THE SEWER MAIN LATERAL, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT AN 18-INCH VERTICAL SEPARATION. IN WHICH CASE BOTH THE WATER MAIN AND SEWER MAIN SHALL BE CONSTRUCTED OF FERROUS MATERIAL AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.
 - C. CROSSING WATER MAIN UNDER A SEWER: WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER MAIN LATERAL, BOTH THE WATER MAIN AND THE SEWER MAIN LATERAL SHALL BE CONSTRUCTED OF DUCTILE IRON MATERIAL AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.
 - D. CROSSING STORM DRAINAGE LINES: A MINIMUM OF 24-INCHES OF VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN A WATER MAIN AND A STORM DRAINAGE LINE. UNLESS DUCTILE IRON PIPE IS USED, IF DUCTILE IRON PIPE IS USED, A MINIMUM OF SIX(6) INCHES OF SEPARATION SHALL BE MAINTAINED, UNLESS OTHERWISE APPROVED BY FAYPCV.



- NOTES:
1. PRECAST REINFORCED CONCRETE MANHOLES SHALL BE IN ACCORDANCE WITH ASTM C-478.
 2. MINIMUM CONCRETE COMPRESSIVE STRENGTH SHALL BE 4,000PSI.
 3. MANHOLES GREATER THAN 12" DEPTH SHALL HAVE MINIMUM 6" EXTENDED BASE.
 4. FLEXIBLE BUTYL RESIN JOINT SEALANT SHALL BE IN ACCORDANCE WITH ASTM C990. RUBBER GASKETS SHALL BE IN ACCORDANCE WITH ASTM C-461.
 5. FLEXIBLE EPDM RUBBER BOOT CONNECTORS SHALL BE IN ACCORDANCE WITH ASTM C923, INSTALLED BY MANUFACTURER WITH STAINLESS STEEL COMPRESSION RING AND TAKE-UP CLAMP. CONNECTION TO MAIN SHALL BE BY CONTRACTOR WITH STAINLESS STEEL PIPE CLAMP.
 6. CONNECTIONS TO EXISTING MANHOLES SHALL BE BY CORING MANHOLE AND FIELD INSTALLING A FLEXIBLE EPDM RUBBER BOOT CONNECTOR. DO NOT ALLOW DEBRIS TO ENTER SYSTEM.
 7. MORTAR SHALL BE QUICK SETTING, NON-SHRINK GROUT MIXED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 8. MANHOLE STEPS SHALL BE IN ACCORDANCE WITH ASTM C478 AND OSHA REGULATIONS. ALIGN STEPS WITH INVERT OUT.
 9. PRECAST INVERTS ARE NOT ALLOWED.
 10. VERTICAL DROPS BETWEEN THE INFLOW PIPES AND OUTFLOW PIPES SHALL REQUIRE THE FOLLOWING:
 - A. GREATER THAN 2' SEE DROP STRUCTURE DETAIL. MIN. 5" DIAMETER MIN REQUIRED.
 - B. LESS THAN 2' SEE PIPE SLIDE DETAIL.
 11. AN ECCENTRIC CONE SHALL BE UTILIZED ON ALL MANHOLES, UNLESS OTHERWISE APPROVED BY FAYPCV.
 12. INVERT ON PLANS IS TO MANHOLE CENTERLINE.
 13. CONCRETE GRADE RINGS SHALL NOT BE USED FOR ABOVE GRADE ADJUSTMENTS (IE: OUTFALL AREAS). USE OF GRADE RINGS ARE ALLOWABLE IN YARD AREAS AND PAVEMENT, WHERE THE RING AND COVER ARE AT GROUND LEVEL.
 14. THE MINIMUM SLOPE ACROSS THE INVERT OF THE MANHOLE SHALL BE 1%, UNLESS OTHERWISE APPROVED BY FAYPCV. STANDING WATER IN INVERT OF MANHOLE IS NOT ACCEPTABLE.
 15. THE EXTERIOR MANHOLE RISER JOINTS, INCLUDING THE JOINT AT THE CONE, SHALL BE SEALED ON THE OUTSIDE BY AN APPROVED JOINT WRAP. THE WRAP SHALL BE IN ACCORDANCE WITH FAYPCV SPECIFICATIONS.
 16. MANHOLE BOOT FOR 4-INCH LATERALS, SHOULD IT BE NECESSARY TO INSTALL A 4-INCH LATERAL INTO A MANHOLE, THE RUBBER BOOT THAT THE LATERAL IS INSERTED INTO SHALL BE SECURELY FASTENED TO THE CONCRETE HOOP BY UTILIZING A STAINLESS STEEL BAND THAT IS TIGHTENED USING A JACK OR A TORQUE WRENCH (DIRECT DRIVE). BOTH STANDARD SIZE AND STEP DOWN BOOTS ARE ALLOWED. THE TORQUE WRENCH SHALL BE SUPPLIED BY THE MANUFACTURER. NO OTHER TYPE BANDS OR METHOD OF SECURING THE BOOT TO THE MANHOLE SHALL BE ACCEPTED. FOR FOUR (4) INCH SDR 26 LATERALS, THE PIPE OUTSIDE DIAMETER RANGE OF THE BOOT SHALL BE 3.5-INCHES TO 4.25-INCHES. FOR FOUR (4) INCH DUCTILE IRON LATERALS, THE PIPE OUTSIDE DIAMETER RANGE OF THE BOOT SHALL EITHER BE AS FOR VC OR 4.25-INCHES TO 4.81-INCHES. IN ALL CASES, THE BOOT SHALL BE TIGHTENED ON THE LATERAL BY MEANS OF A SINGLE STAINLESS STEEL STRAP. THE LATERAL INVERT SHALL BE AT THE TOP OF THE SHELF.
 17. NO MORE THAN 4, FOUR-INCH LATERALS OR 3, SIX-INCH LATERALS SHALL ENTER A 4' DIAMETER TERMINAL MANHOLE. NO MORE THAN 2 LATERALS (REGARDLESS OF SIZE) SHALL ENTER ALL OTHER 4' DIAMETER MANHOLES. ALL LATERALS SHALL HAVE AN INDIVIDUAL TROUGH. 5" DIAMETER MANHOLES SHALL BE USED IF THE ABOVE CONDITIONS ARE NOT MET.
 18. NO MORE THAN 5 LATERALS SHALL ENTER A 5' DIAMETER MANHOLE.
 19. USE OF TEE-WYES ON LATERALS IS NOT ALLOWED.
 20. ALL MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH FAYPCV STANDARDS.
- STANDARD MANHOLE
N.T.S.
- | NO. | DATE | REVISION |
|-----|----------|---|
| 1 | 01/08 | CREATED DETAIL, ADDED NOTES 14-20 |
| 2 | 07/13 | REVISED NOTES 8, 10, 11, 15, 16, 17, 18, 19, 20 |
| 3 | 01/01/11 | REVISED NOTES 10, 18 |
- DATE: JAN. 01, 2022 APPROVED BY: M.M.M.

| GENERAL NOTES SANITARY SEWER UTILITY | | FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C. | |
|---|---------------------|---|--------------------------------|
| DWG. NO. S.1 | DWG. BY: FAYPCV | NO. DATE | REVISION |
| DATE: JAN. 01, 2022 | APPROVED BY: M.M.M. | 1 07/16 | ADDED NOTE 6 |
| | | 2 01/18 | ADDED NOTES 5, 8 |
| | | 3 06/21 | ADDED NOTES 1-8 AND RENUMBERED |

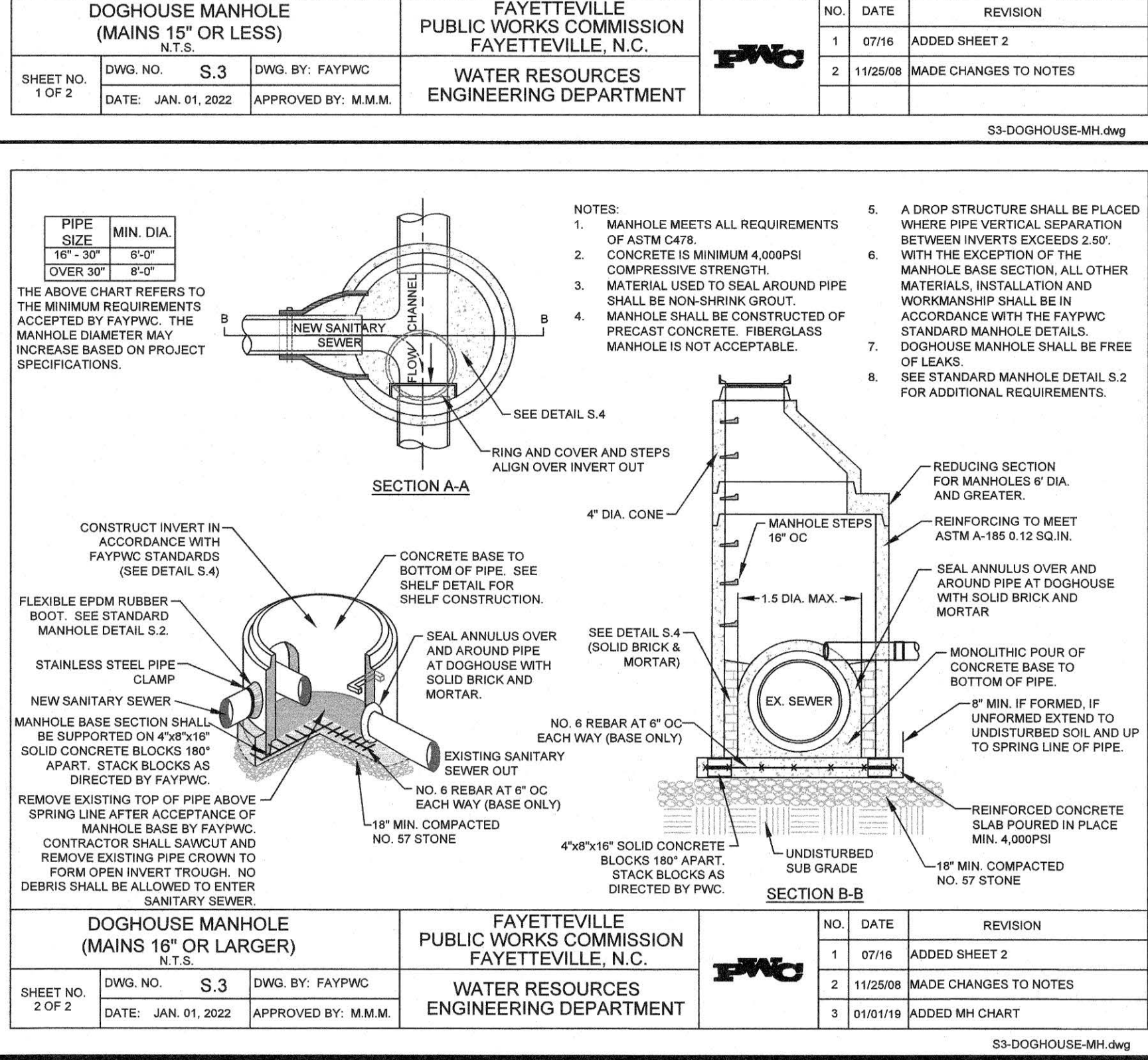
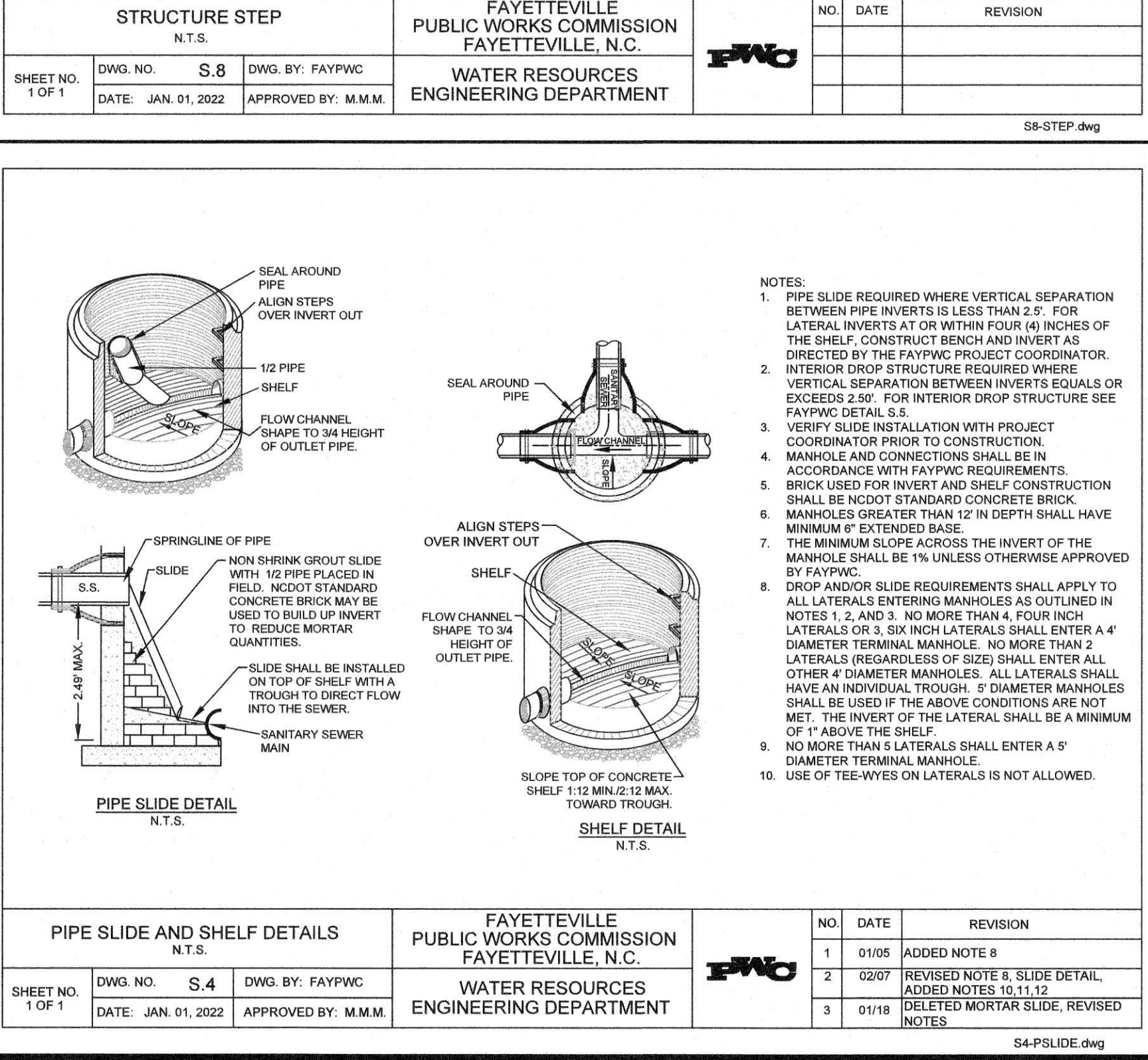
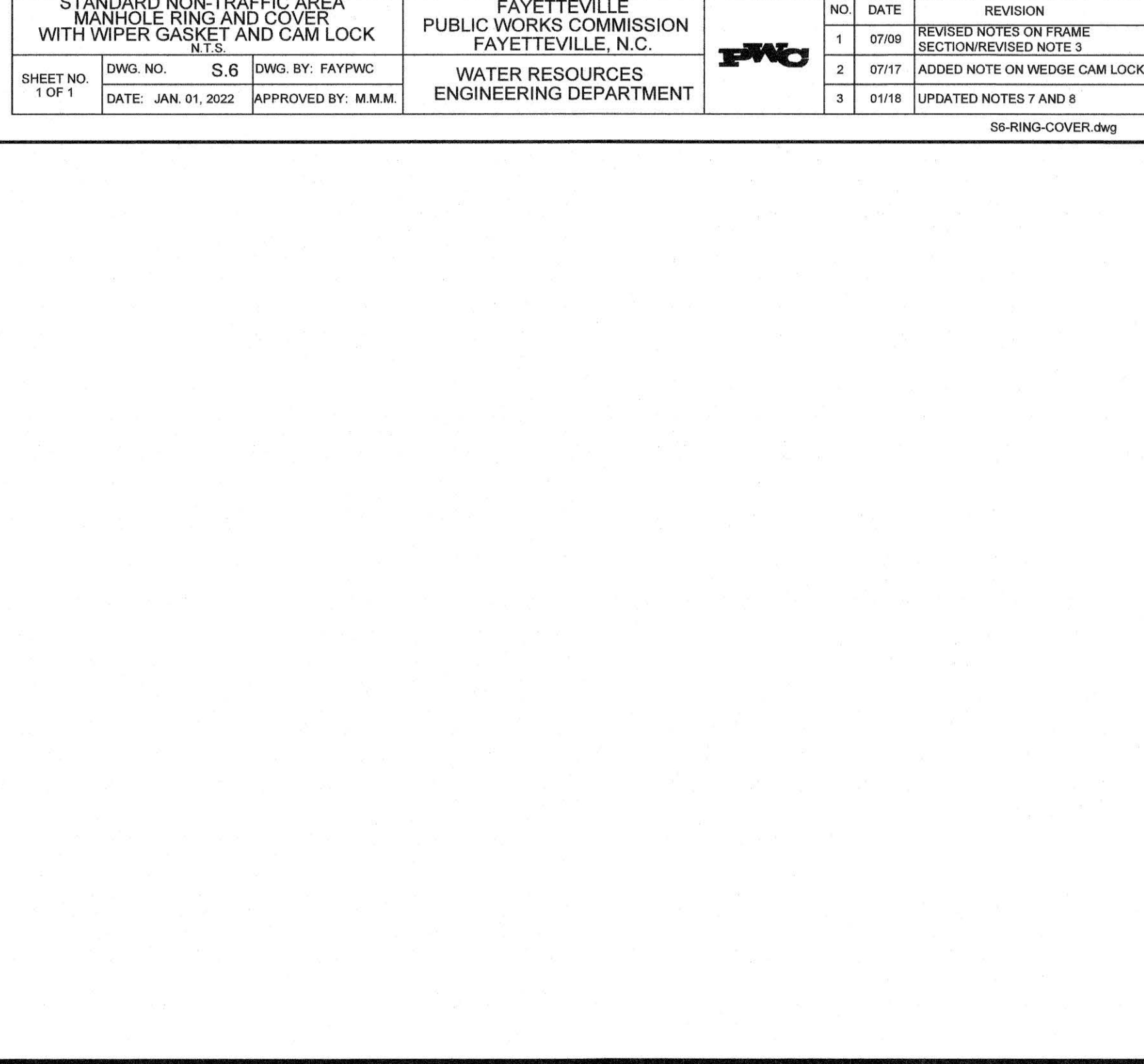
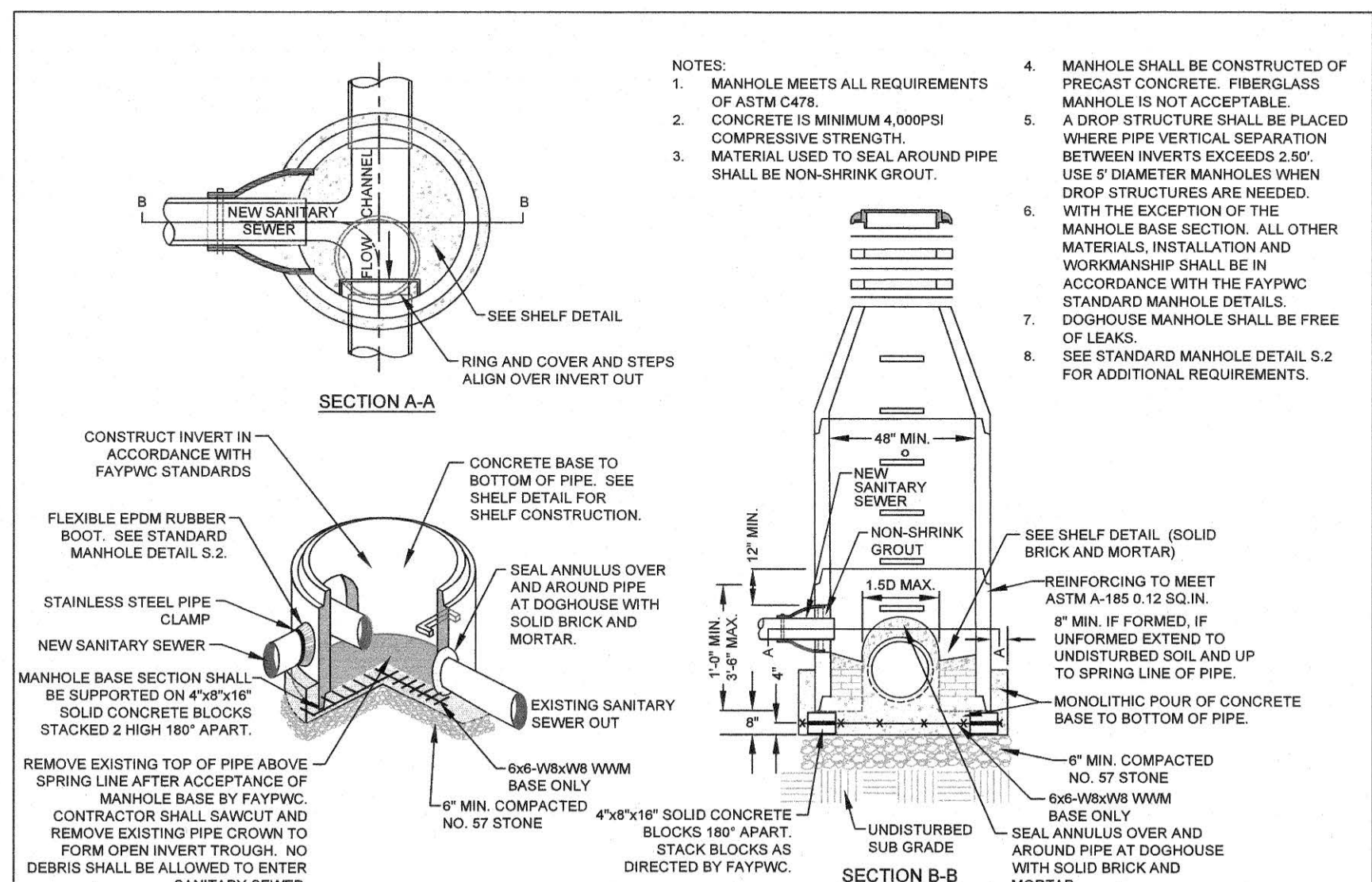
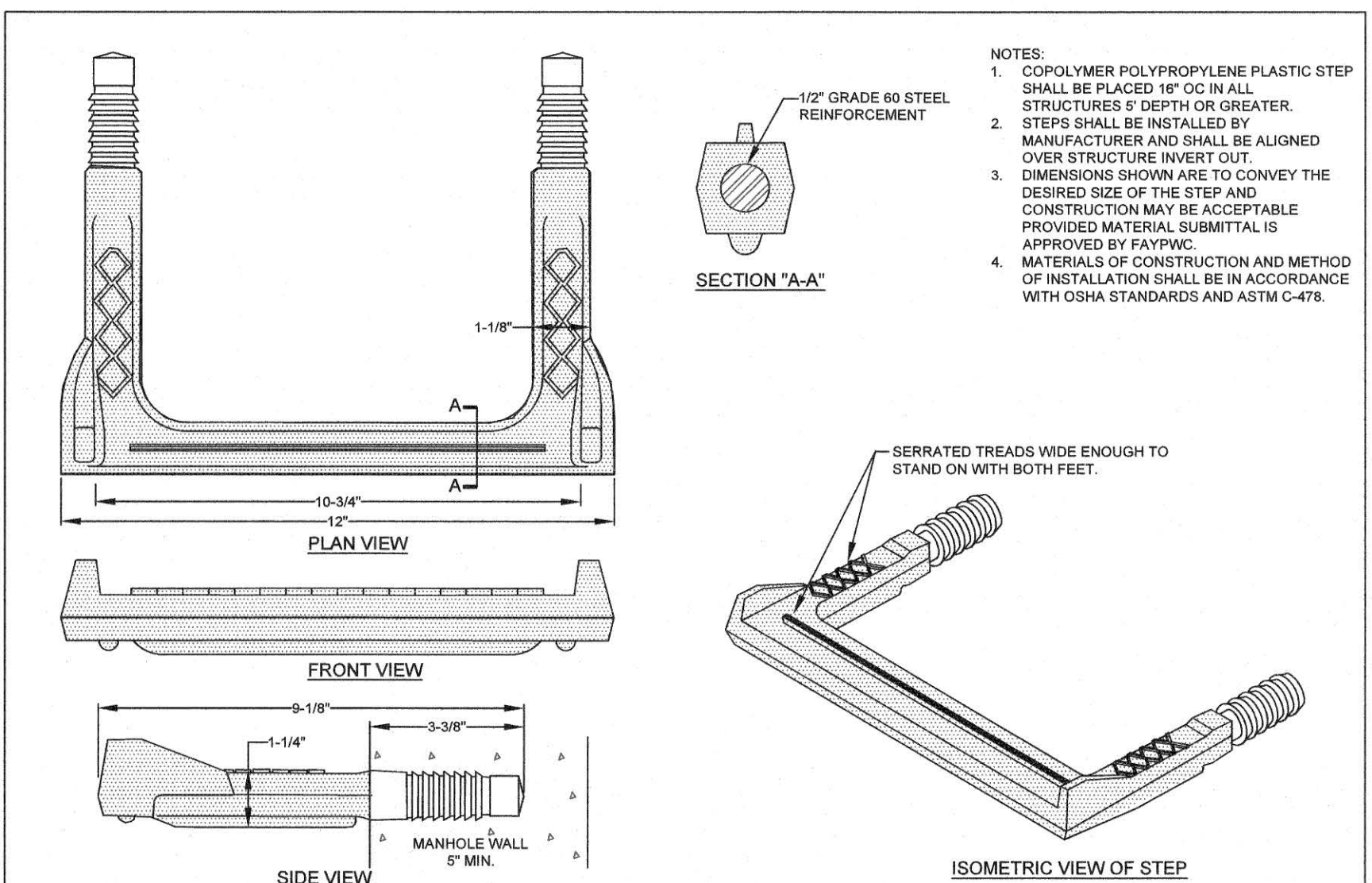
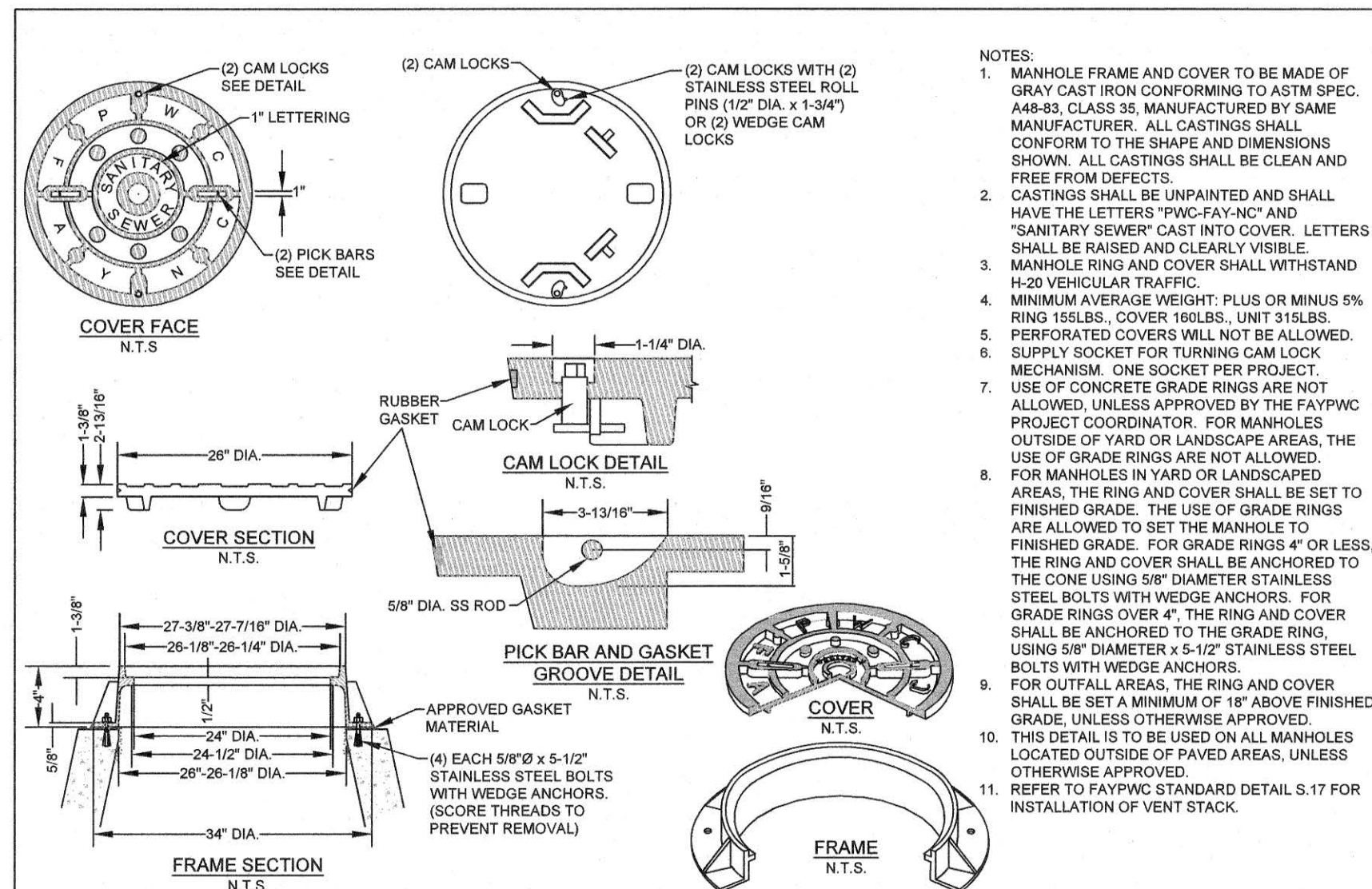
WATER RESOURCES
ENGINEERING DEPARTMENT

| STANDARD MANHOLE N.T.S. | | FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C. | |
|----------------------------|---------------------|---|--------------------------------|
| DWG. NO. S.2 | DWG. BY: FAYPCV | NO. DATE | REVISION |
| DATE: JAN. 01, 2022 | APPROVED BY: M.M.M. | 1 02/07 | CREATED S.2A ADDED NOTES 13-17 |
| | | 2 07/13 | ADDED SHEET 2 OF 2 |

WATER RESOURCES
ENGINEERING DEPARTMENT

| STANDARD MANHOLE N.T.S. | | FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C. | |
|----------------------------|---------------------|---|---|
| DWG. NO. S.2 | DWG. BY: FAYPCV | NO. DATE | REVISION |
| DATE: JAN. 01, 2022 | APPROVED BY: M.M.M. | 1 01/08 | CREATED DETAIL, ADDED NOTES 14-20 |
| | | 2 07/13 | REVISED NOTES 8, 10, 11, 15, 16, 17, 18, 19, 20 |
| | | 3 01/01/11 | REVISED NOTES 10, 18 |

WATER RESOURCES
ENGINEERING DEPARTMENT



FLEMING & ASSOCIATES, P.A.
STRUCTURAL ENGINEERING • FORENSICS • ROOFING DESIGN
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| DATE | DATE | DATE |
|----------|------|------|
| 03/30/22 | | |

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DRAWN BY: SJD/GSW/JBR
CHECKED BY: SJD
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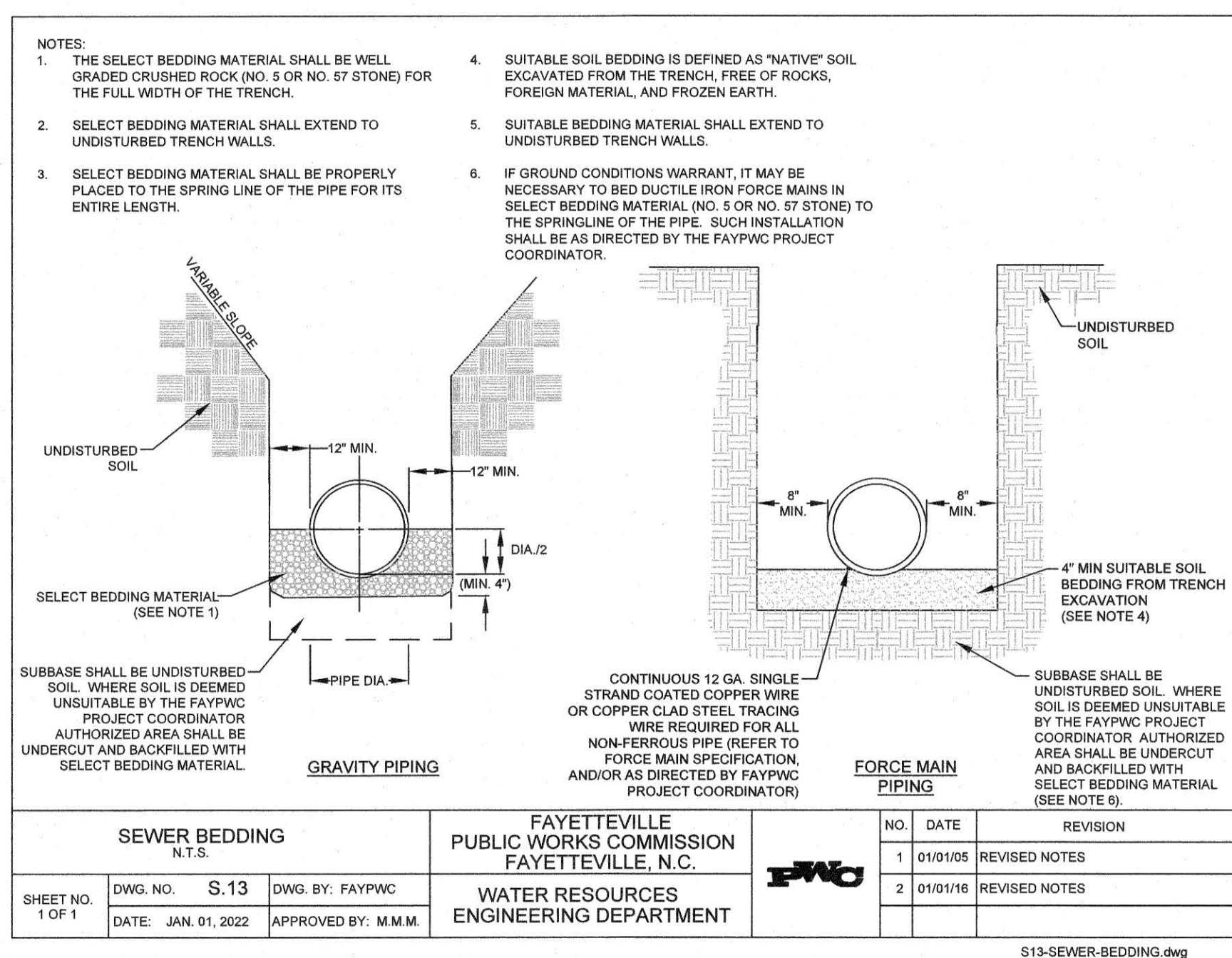
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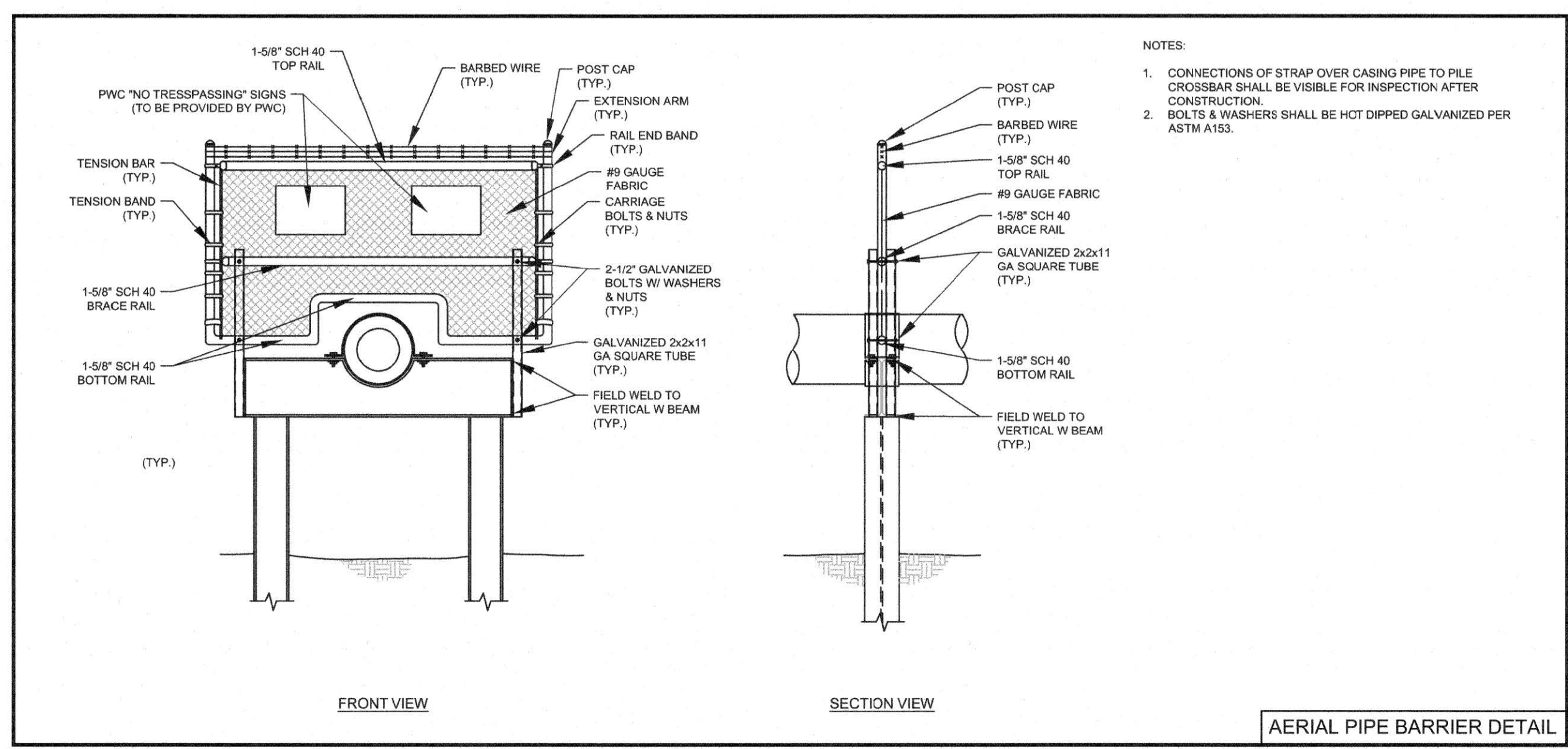


ANN TO GREEN STREET
16" SANITARY SEWER
AERIAL CROSSING REPLACEMENT

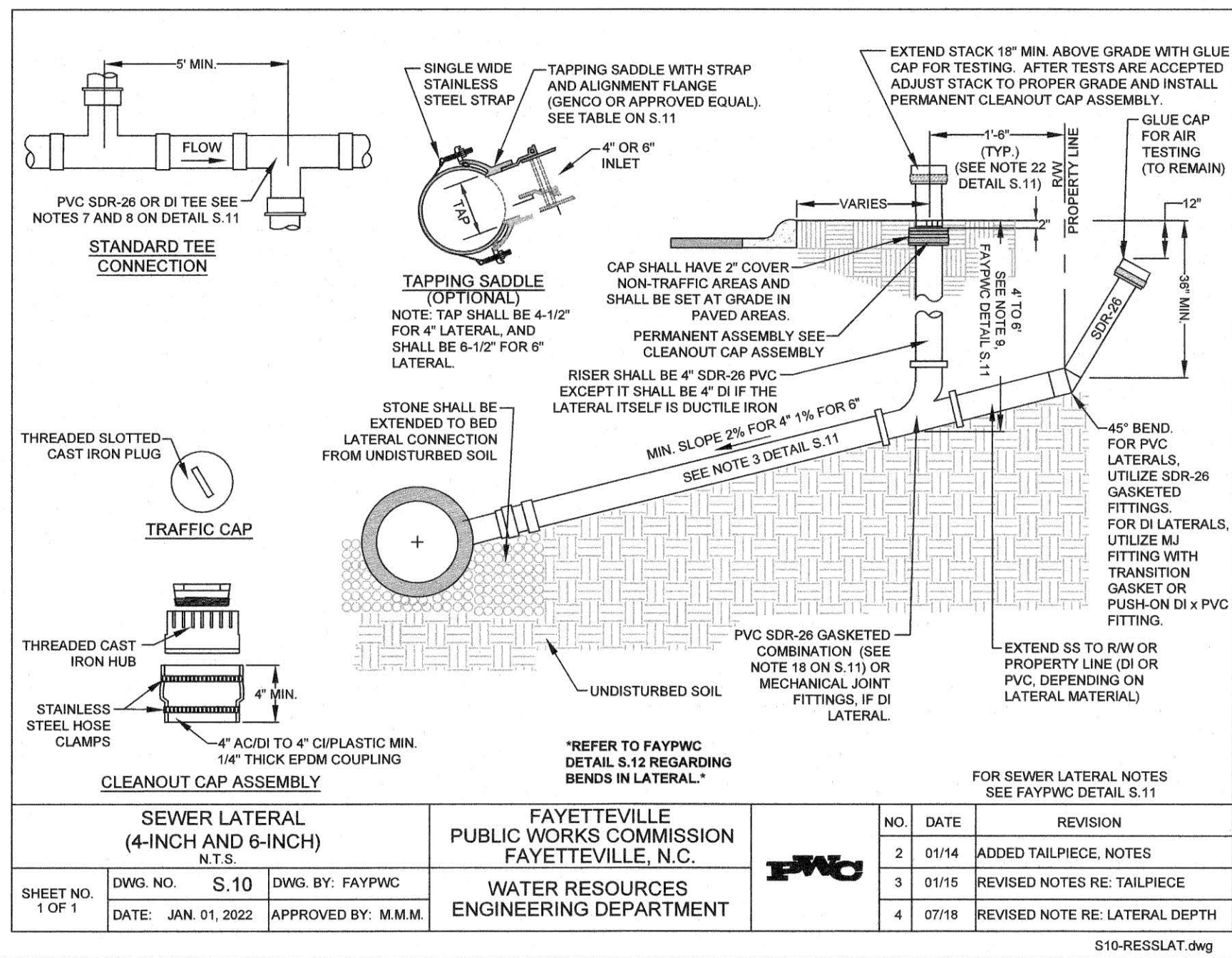
**FAYETTEVILLE
PUBLIC WORKS COMMISSION
WATER RESOURCES ENGINEERING**
P.O. Box 1089, Fayetteville, NC 28302
955 Old Wilmington Road, Fayetteville, NC 28301
Electricity & Water Utilities



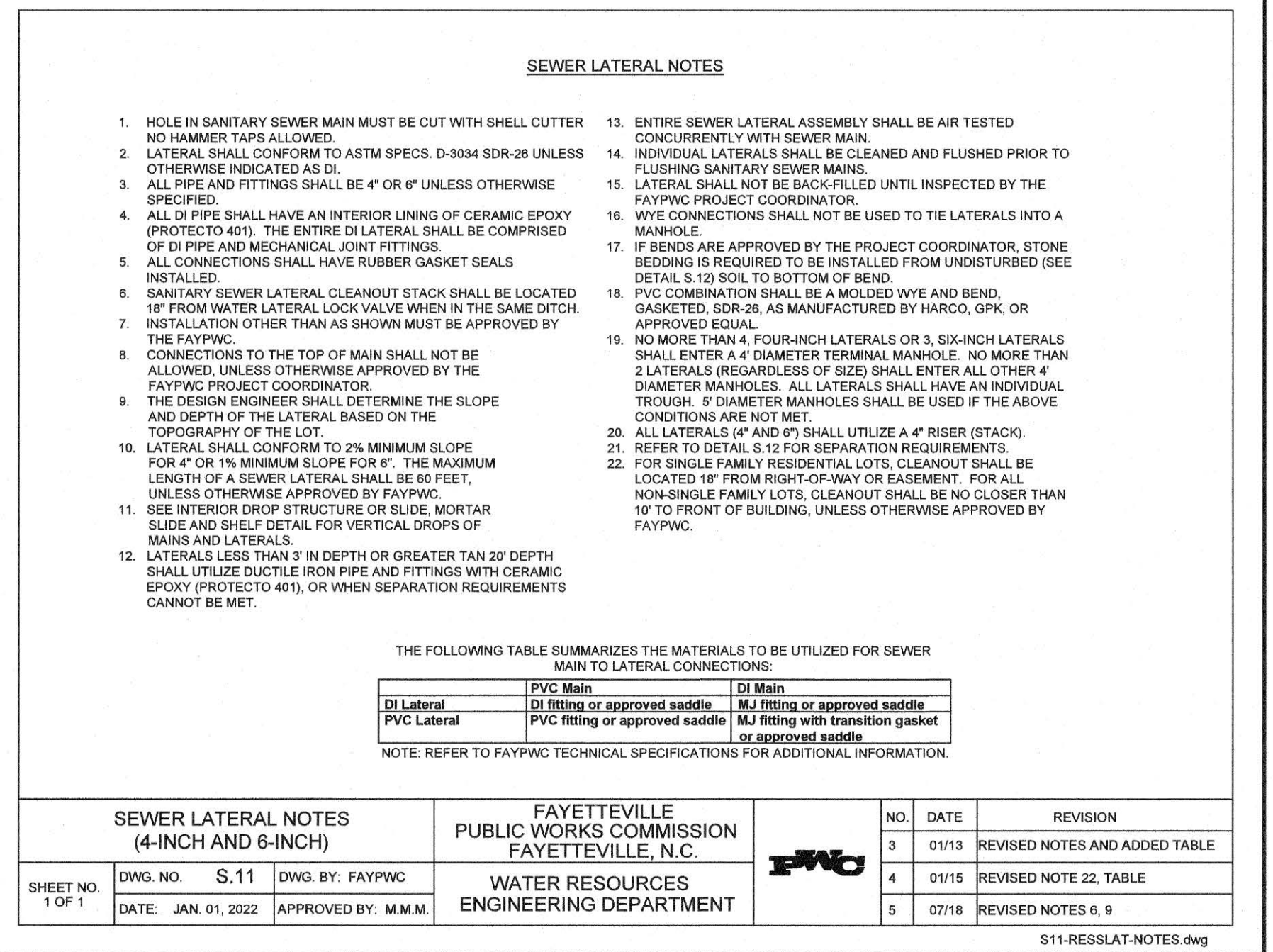
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| SEWER BEDDING N.T.S. | | FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C. | NO. | DATE | REVISION |
| SHEET NO. 1 OF 1 | DWG. NO. S.13 | DATE: JAN. 01, 2022 | 1 | 01/01/05 | REVISED NOTES |
| | DWG. BY: FAYPWC | APPROVED BY: M.M.M. | 2 | 01/01/16 | REVISED NOTES |
| | | | | | |



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|----------------------|-----------------|---|-----|----------|---------------|
| SEWER BEDDING N.T.S. | | FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C. | NO. | DATE | REVISION |
| SHEET NO. 1 OF 1 | DWG. NO. S.13 | DATE: JAN. 01, 2022 | 1 | 01/01/05 | REVISED NOTES |
| | DWG. BY: FAYPWC | APPROVED BY: M.M.M. | 2 | 01/01/16 | REVISED NOTES |
| | | | | | |



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|--|-----------------|---|-----|-------|--------------------------------|
| SEWER LATERAL (4-INCH AND 6-INCH) N.T.S. | | FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C. | NO. | DATE | REVISION |
| SHEET NO. 1 OF 1 | DWG. NO. S.10 | DATE: JAN. 01, 2022 | 2 | 01/14 | ADDED TAILPIECE, NOTES |
| | DWG. BY: FAYPWC | APPROVED BY: M.M.M. | 3 | 01/15 | REVISED NOTES RE: TAILPIECE |
| | | | 4 | 07/18 | REVISED NOTE RE: LATERAL DEPTH |
| | | | | | |



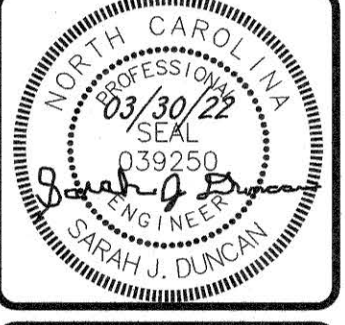
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|--|-----------------|---|--------------------------------------|------------------------|-------------------------------|
| SEWER LATERAL NOTES (4-INCH AND 6-INCH) N.T.S. | | FAYETTEVILLE PUBLIC WORKS COMMISSION FAYETTEVILLE, N.C. | NO. <td>DATE <td>REVISION</td> </td> | DATE <td>REVISION</td> | REVISION |
| SHEET NO. 1 OF 1 | DWG. NO. S.11 | DATE: JAN. 01, 2022 | 3 | 01/13 | REVISED NOTES AND ADDED TABLE |
| | DWG. BY: FAYPWC | APPROVED BY: M.M.M. | 4 | 01/15 | REVISED NOTE 22, TABLE |
| | | | 5 | 07/18 | REVISED NOTES 6, 9 |
| | | | | | |

FAYETTEVILLE PUBLIC WORKS COMMISSION WATER RESOURCES ENGINEERING DEPARTMENT

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| DATE: 03/30/22 | SURVEY/QPS BY: PWC | DRAWN BY: SJD/SJM/ABR | CHECKED BY: SJD | HOR. SCALE: 1"=10' | VERT. SCALE: 1"=4' |
| BY: | REVISIONS: | | | | |
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 8 OF 9



ANN TO GREEN STREET
 16" SANITARY SEWER
 AERIAL CROSSING REPLACEMENT

FAYETTEVILLE PUBLIC WORKS COMMISSION WATER RESOURCES ENGINEERING
 2010 Bldg 1008, Fayetteville, NC 28307
 950 Old Wilmington Road, Fayetteville, NC 28301

WETLAND CONSTRUCTION REQUIREMENTS

- CONSTRUCTION LIMITS/CORRIDOR (INCLUDING ROADS AND STOCKPILE AREA) TO A MAXIMUM 40 FOOT WIDTH.
- POST CONSTRUCTION GROUND CONTOURS AND ELEVATIONS MUST BE RESTORED TO THE ORIGINAL ELEVATIONS.
- THE TOP 6" TO 12" OF THE TRENCH SHALL BE BACKFILLED WITH THE TOPSOIL AND/OR SOIL EXISTING PRIOR TO CONSTRUCTION.
- EXCESS MATERIAL MUST BE REMOVED TO UPLAND AREAS AND DISPOSED OF OFF-SITE. TEMPORARY PLACEMENT/STOCKPILE FOR ABSOLUTE MINIMUM PERIOD OF TIME.
- DISTURBED SLOPES AND STREAM BANKS MUST BE STABILIZED IMMEDIATELY UPON COMPLETION OF THE UTILITY LINE OR IMMEDIATELY AT EACH STREAM CROSSING.
- NOTIFY COE DISTRICT ENGINEER AND RECEIVE WRITTEN APPROVAL PRIOR TO BEGINNING CONSTRUCTION.
- INSTALL ANTI-SEEP COLLARS EVERY 150 FEET OR AS SHOWN ON PLANS.
- NO FERTILIZER SHALL BE APPLIED WITHIN 10 FEET OF STREAM.
- NO FRESH CONCRETE SHALL BE IN CONTACT WITH STREAMS.
- SEEDING SHALL BE IN ACCORDANCE WITH THE SPECIFIED MIXTURE FOR WETLAND AREAS.

WETLAND CONSTRUCTION REQUIREMENTS

- ACCESS TO SITES SHALL BE BY PUBLIC RIGHT-OF-WAYS AND UTILITY EASEMENTS. OTHER ACCESS LOCATIONS REQUIRED SHALL BE SECURED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER. SUPPLEMENTAL EROSION CONTROL MEASURES SHALL BE REQUIRED TO INCLUDE CONSTRUCTION ENTRANCES, SILT FENCING, RESTORATION, ETC. ADDITIONAL MEASURES SHALL BE INCLUDED AS PART OF A SUPPLEMENTAL EROSION CONTROL PLAN PREPARED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE THE CONSTRUCTION STAGING AREA AT HIS EXPENSE.
- THE CONTRACTOR IS EXPECTED AND REQUIRED TO COOPERATE WITH THE PROPERTY OWNERS AFFECTED BY THE WORK. PRIVATE AGREEMENTS WITH PROPERTY OWNERS MUST BE IN WRITING ON A FORM APPROVED BY THE ENGINEER AND A COPY SHALL BE PROVIDED TO THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION ACTIVITIES AFFECTED BY SAID AGREEMENT. THE AGREEMENT MUST SPECIFY THAT PAYMENT, THE CITY AND THE ENGINEER SHALL BE HELD HARMLESS AGAINST ALL CLAIMS ARISING FROM THE AGREEMENT. THE OWNER DISCOURAGES PRIVATE AGREEMENTS BEFORE FINAL ACCEPTANCE. A RELEASE FROM EACH PROPERTY OWNER THAT THE CONTRACTOR HAS MADE AN AGREEMENT WITH SHALL BE REQUIRED. THE PROPERTY OWNER'S RELEASE IS A CONDITION OF FINAL ACCEPTANCE.
- CONTRACTOR SHALL MAINTAIN A NEAT AND CLEAN JOB-SITE TO INCLUDE STAGING/STORAGE AREAS AS FOLLOWS:
 - PERFORM DUST CONTROL BY WATERING DAILY OR AS DIRECTED BY THE ENGINEER.
 - SWEET STREETS A MINIMUM OF ONCE WEEKLY (FRIDAY) OR AS DIRECTED BY THE ENGINEER.
 - BLADE, LEVEL, AND RE-COMPACT ALL EXPOSED TRENCHES WEEKLY OR AS DIRECTED BY THE ENGINEER TO PROVIDE A SMOOTH "RIDE".
 - PERFORM DAILY CLEAN-UP OF ALL DIRT, DEBRIS, AND SCRAP MATERIALS.
 - REMOVE EXCESS EQUIPMENT, MATERIALS, TOOLS, ETC. NOT NEEDED.
- EXCESS SUITABLE SOIL EXCAVATED DURING CONSTRUCTION SHALL BE STOCKPILED FOR USE ON THE PROJECT OR DISPOSED OF OFF-SITE AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL NOT BE ALLOWED TO STOCKPILE MATERIALS OR EXCESS MATERIALS IN THE STREET RIGHT-OF-WAYS AT ANY TIME. THE CONTRACTOR SHALL PROVIDE A SUFFICIENT AND SUITABLE STOCKPILE AREA AND LOCATION AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL PROVIDE MEASURES DURING CONSTRUCTION TO SECURE THE SITE AND EXCAVATION FROM THE GENERAL PUBLIC AND COMPLY WITH ALL O.S.H.A. REGULATIONS. JOB SITE SAFETY IS THE EXCLUSIVE AND SOLE RESPONSIBILITY OF THE CONTRACTOR. OPEN EXCAVATION LEFT UNATTENDED OR OVER NIGHT IS NOT ACCEPTABLE AND SHALL BE FILLED IMMEDIATELY.
- CONTRACTOR SHALL REPAIR OR REPLACE DRIVES DISTURBED BY CONSTRUCTION TO EXISTING OR BETTER CONDITIONS. NO SEPARATE PAYMENT UNLESS OTHERWISE INDICATED.
- CONTRACTOR SHALL PROVIDE TEMPORARY FENCING WHERE FENCES ARE REMOVED FOR CONSTRUCTION. CONTRACTOR SHALL COORDINATE FENCE REMOVAL/REINSTALLATION WITH INDIVIDUAL PROPERTY OWNERS PRIOR TO REMOVAL. CONTRACTOR SHALL REINSTALL ALL SHEDS, FENCES, ETC. TO AS GOOD OR BETTER THAN EXISTING CONDITIONS UNLESS OTHERWISE INDICATED. (NO SEPARATE PAYMENT).
- CONTRACTOR SHALL REPLACE ALL DISTURBED MAILBOXES, SIGNS, ETC. DISTURBED DURING CONSTRUCTION WITHIN 24 HOURS OF COMPLETION. PERMANENT ROAD SIGNAGE DISTURBED SHALL BE REPLACED IMMEDIATELY AND IF NECESSARY ROADWAY SIGNS SHALL BE TEMPORARILY INSTALLED IN A LOCATION CONSISTENT WITH THE N.C.M.U.T.C.D. TO PROVIDE CONTINUOUS TRAFFIC AWARENESS OF ROADWAY CONDITIONS. (NO SEPARATE PAYMENT).
- CONTRACTOR SHALL PROVIDE SECURITY FENCING, SECURITY GUARD, AND ANY AND ALL OTHER MEASURES CONTRACTOR DEEMS NECESSARY TO PROTECT EQUIPMENT AND MATERIALS STORED ON THE PROJECT. (NO SEPARATE PAYMENT).
- WHERE CONTRACTOR CEASES WORK OPERATIONS FOR A 72 HOUR PERIOD OR LONGER, SUCH AS HOLIDAYS, ETC. THE FOLLOWING SHALL BE ACCOMPLISHED PRIOR TO THE WORK STOPPAGE:
 - CONTRACTOR SHALL STORE ALL EQUIPMENT IN THE CONTRACTOR STAGING AREA OR OFF SITE.
 - THE CONTRACTOR SHALL SWEEP ALL STREETS, PERFORM GENERAL CLEANUP AND SHALL PERFORM MAINTENANCE ON ALL EXPOSED PATCHES.
- CONTRACTOR SHALL SCHEDULE WORK AND MATERIAL DELIVERIES SO THAT STORED MATERIAL QUANTITIES ON THE JOB SITE SHALL BE MINIMIZED.

GENERAL NOTES
SHEET 1 OF 2

- CONTRACTOR SHALL STORE ALL MATERIALS IN THE CONTRACTOR STAGING AREA 72 HOURS PRIOR TO INCORPORATING INTO THE WORK TO REDUCE OBSTRUCTIONS TO TRAFFIC AND INCONVENIENCE TO RESIDENTS. WHERE UTILITIES ARE BEING CONSTRUCTED IN EASEMENTS OUT OF TRAFFIC AREAS CONTRACTOR MAY STORE MATERIALS AHEAD OF CONSTRUCTION FOR A DISTANCE NOT GREATER THAN 180 FEET UNLESS APPROVED OTHERWISE BY THE ENGINEER.
- AT THE PROPERTY OWNER'S REQUEST, THE CONTRACTOR SHALL DIG UP EXISTING SHRUBS AND BUSHES WITHIN UTILITY EASEMENT TO BE DISTURBED BY CONSTRUCTION AND SET OUTSIDE THE UTILITY EASEMENT AREA IN A LOCATION DETERMINED BY THE PROPERTY OWNER (NO SEPARATE PAYMENT). PROPERTY OWNER WILL BE RESPONSIBLE FOR REPLANTING SHRUBS AND BUSHES SO REMOVED, AND SHALL BE RESPONSIBLE FOR RE-ESTABLISHING GROWTH. IF NO REQUEST IS MADE BY THE PROPERTY OWNER, DISTURBED SHRUBS AND BUSHES SHALL BE REMOVED AND DISPOSED OF OFF-SITE UNLESS OTHERWISE INDICATED.
- CLEARING AND GRUBBING SHALL BE RESTRICTED TO PERMANENT EASEMENTS ONLY. CONTRACTOR SHALL LIMIT TREE/SHRUB REMOVAL TO THE TEMPORARY EASEMENTS, BETWEEN HOUSES, AND ALONG PROPERTY LINES TO ONLY ABSOLUTELY NECESSARY FOR CONSTRUCTION.

ORDER OF PRECEDENCE GENERAL NOTES/TECHNICAL SPECIFICATIONS/PHOTOS

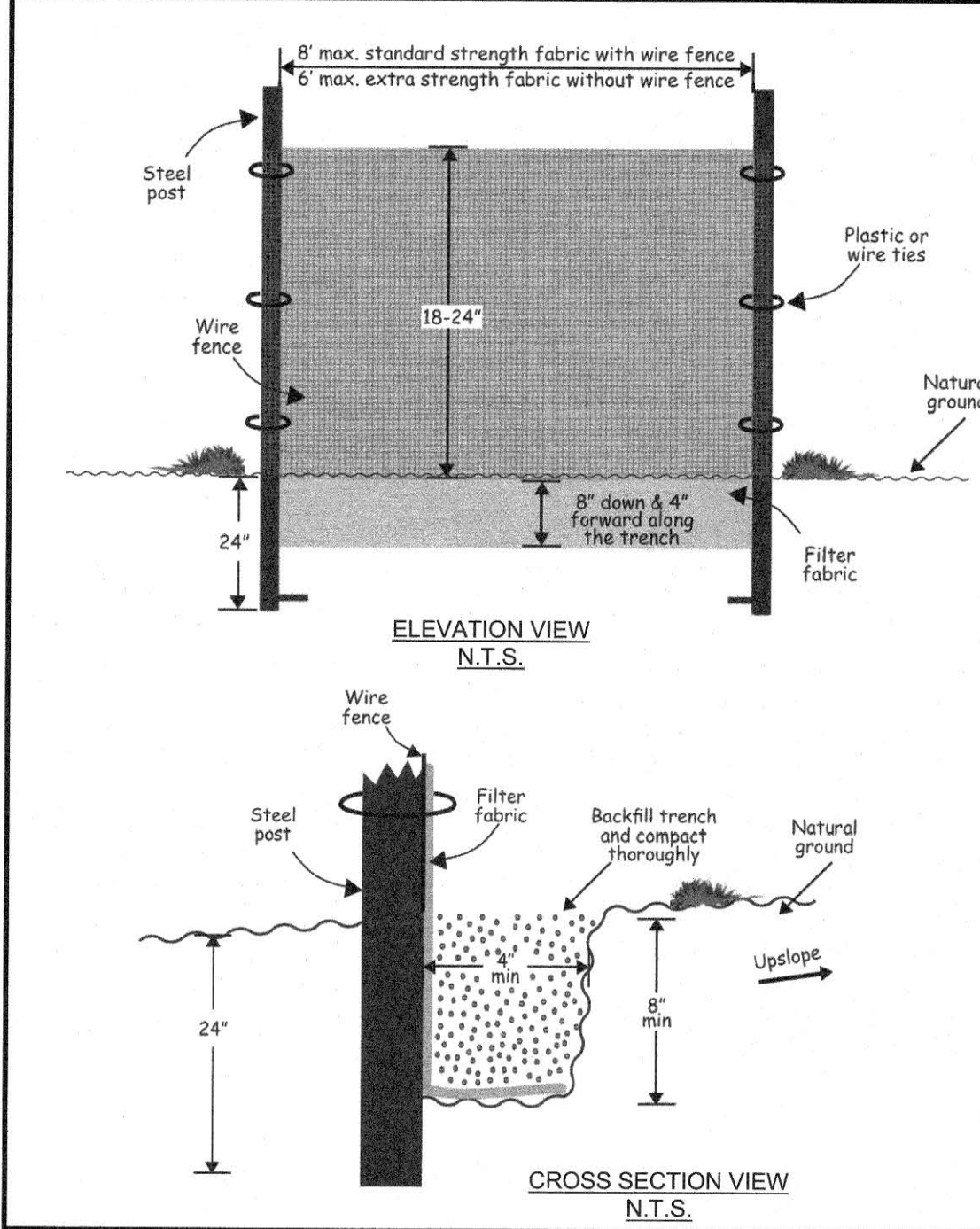
- THE NOTES CONTAINED HEREIN ARE INTENDED TO SUPPLEMENT THE TECHNICAL SPECIFICATIONS AND PROVIDE EASY REFERENCE FOR THE CONTRACTOR. IN NO CASE SHALL THESE NOTES VOID ANY PART, SECTION, OR REQUIREMENT OUTLINED IN THE TECHNICAL SPECIFICATIONS CONTAINED IN THE CONTRACT DOCUMENTS. IF CONFLICTS BETWEEN THE TECHNICAL SPECIFICATIONS AND THE NOTES CONTAINED HEREIN, THE TECHNICAL SPECIFICATIONS SHALL SUPERSEDE.
- PHOTOGRAPHS CONTAINED IN DRAWINGS ARE FOR INFORMATION PURPOSES ONLY AND THE CONTRACTOR SHALL NOT RELY ON THE LIMITED NUMBER OF PHOTOGRAPHS AS BEING REPRESENTATIVE OF ACTUAL SITE CONDITIONS. CONTRACTOR CHARGED WITH PERFORMING SITE INVESTIGATIONS TO ASCERTAIN EXISTING SITE CONDITIONS.

GENERAL NOTES
SHEET 2 OF 2

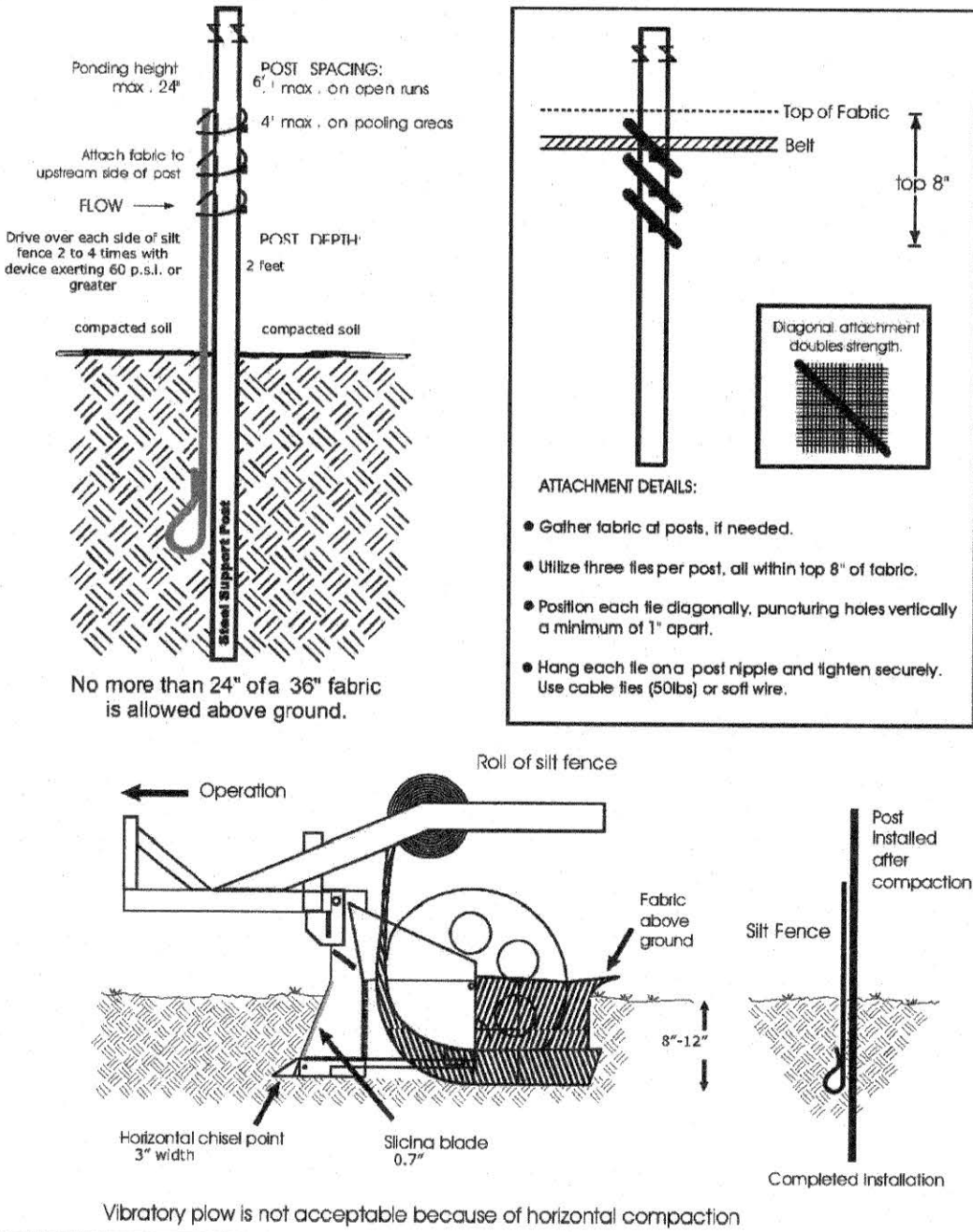
UTILITY GENERAL NOTES

- PRIOR TO COMMENCEMENT OF ANY WORK WITHIN EASEMENTS OR RIGHTS-OF-WAYS THE CONTRACTOR IS REQUIRED TO NOTIFY CONCERNED UTILITY COMPANIES IN ACCORDANCE WITH GS 87-102. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. NO SEPARATE PAYMENT. EXISTING UTILITIES SHOWN ARE TAKEN FROM MAPS FURNISHED BY VARIOUS UTILITY COMPANIES AND HAVE NOT BEEN PHYSICALLY LOCATED (IE, TELEPHONE, GAS, CABLE, ETC.).
- THE CONTRACTOR SHALL DIG UP EACH UTILITY WHICH MAY CONFLICT WITH CONSTRUCTION 14 DAYS IN ADVANCE TO VERIFY LOCATIONS (HORIZONTALLY AND VERTICALLY) TO ALLOW THE ENGINEER AN OPPORTUNITY TO ADJUST THE DESIGN TO AVOID CONFLICTS (NO SEPARATE PAYMENT).
- ALL SANITARY SEWER AND WATER CONSTRUCTION SHALL BE IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE FAYETTEVILLE PUBLIC WORKS COMMISSION. STORM DRAINAGE, STREET CONSTRUCTION AND PAVING SHALL BE IN ACCORDANCE WITH THE CITY OF FAYETTEVILLE.
- UTILITY SERVICES TO INDIVIDUAL PROPERTIES ARE NOT SHOWN IN THE PROFILES FOR SIMPLICITY OF THE DRAWINGS. SERVICES MAY INCLUDE WATER LATERALS, TELEPHONE, ELECTRIC, CABLE, GAS, ETC.
- CONTRACTOR SHALL COORDINATE WITH UTILITY OWNER AND BE RESPONSIBLE FOR TEMPORARY RELOCATION AND/OR SECURING EXISTING UTILITY POLES AND SIGNS AND/OR UTILITIES IN ACCORDANCE WITH UTILITY OWNER REQUIREMENTS DURING THE UTILITY MAIN INSTALLATION AND STREET CONSTRUCTION. (NO SEPARATE PAYMENT).
- CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORTS FOR UTILITY CROSSINGS AND REPAIR DAMAGES DUE TO CONSTRUCTION TO THE SATISFACTION OF THE UTILITY INVOLVED AT NO ADDITIONAL EXPENSE TO THE OWNER. UNDERGROUND ELECTRICAL CROSSINGS SHALL BE CROSSED IN ACCORDANCE WITH THE N.E.C. AND TECHNICAL SPECIFICATION SECTION UNDERGROUND ELECTRICAL CROSSING REQUIREMENTS.
- WHERE DEEMED NECESSARY BY THE ENGINEER THAT A SUBSURFACE DRAINAGE SYSTEM IS REQUIRED, THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, TOOLS, LABOR, EQUIPMENT, TIE-INS TO EXISTING DRAINAGE STRUCTURES AND ALL OTHER INCIDENTALS NECESSARY TO PROVIDE COMPLETE INSTALLATION IN ACCORDANCE WITH CITY OF FAYETTEVILLE STANDARDS. IMPROPERLY INSTALLED AND NON-FUNCTIONING DRAINAGE SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. EXISTING FRENCH DRAINAGE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AND/OR REPAIRED AT NO ADDITIONAL EXPENSE TO THE OWNER.
- STORM DRAINAGE REPAIRS BY CONTRACTOR DUE TO CONSTRUCTION DAMAGE AND JOINTS EXPOSED DURING CONSTRUCTION SHALL BE INSPECTED BY THE OWNER PRIOR TO BACKFILLING.

UTILITY GENERAL NOTES



The Slicing Method



Construction Specifications

- Use a synthetic filter fabric of at least 95% by weight of polyolefins or polyester, which is certified by the manufacturer or supplier as conforming to the requirements in ASTM D 6481 (shown in part in Table 6.62b of the Erosion and Sediment Control Planning and Design Manual, Chapter 6, Section 6.62). Synthetic filter fabric should contain ultraviolet ray inhibitors and stabilizers to provide a minimum of 6 months of expected usable construction life at a temperature range of 0 to 120 degrees Fahrenheit.
- Ensure that posts for sediment fences are 1.25 in/linear ft minimum steel with a minimum length of 5 feet. Make sure that steel posts have projections to facilitate fastening the fabric.
- For reinforcement of standard strength filter fabric, use wire fence with a minimum 14 gauge and a maximum mesh spacing of 6 inches.

Construction

- Construct the sediment barrier of standard strength or extra strength synthetic filter fabric.
- Ensure that the height of the sediment fence does not exceed 24 inches above the ground surface. (Higher fences may impound volumes of water sufficient to cause failure of the structure).
- Position each tie diagonally, puncturing holes vertically a minimum of 1' apart.
- Hang each tie over post nipple and tighten securely. Use cable ties (50lbs) or soft wire.
- Excavate a trench approximately 4 inches wide and 8 inches deep along the proposed line of posts and upslope from the barrier (See Cross-Section View).
- Place 12 inches of the fabric along the bottom and side of the trench.
- Backfill the trench with soil placed over the filter fabric and compact. Thorough compaction of the backfill is critical to silt fence performance.
- Do not attach filter fabric to existing trees.

Sediment Fence Installation Using the Slicing Method

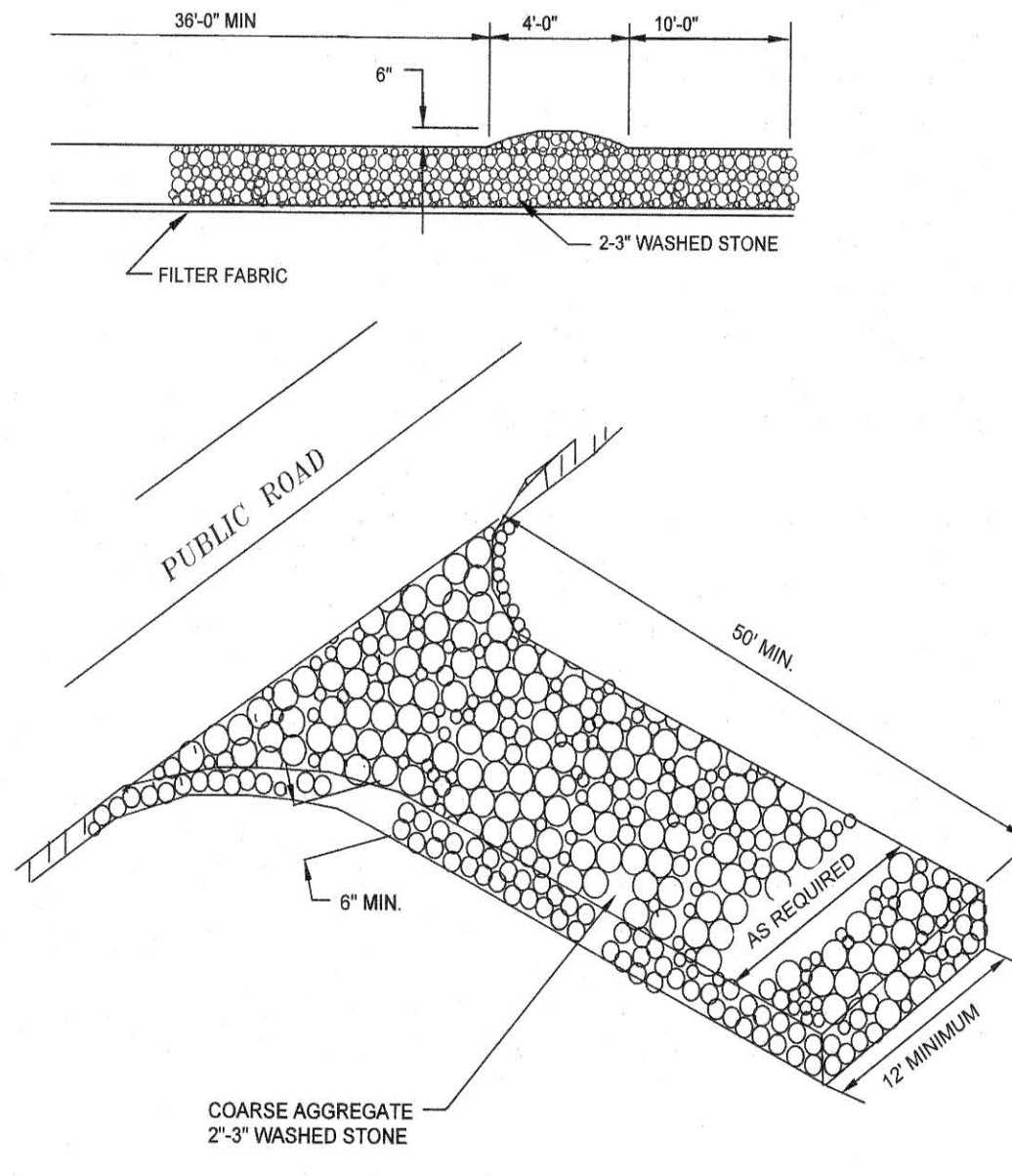
Instead of excavating a trench, placing fabric and then backfilling trench, sediment fence may be installed using specially designed equipment that inserts the fabric into a cut sliced in the ground with a disc.

Installation Specifications

- The base of both end posts should be at least one foot higher than the middle of the fence. Check with a level if necessary.
- Install posts 4 feet apart in critical areas and 6 feet apart on standard applications.
- Install posts 2 feet deep on the downstream side of the silt fence, and as close as possible to the fabric, enabling posts to support the fabric from upstream water pressure.
- Install posts with the nipples facing away from the silt fabric.
- Attach the fabric to each post with three ties, all spaced within the top 8 inches of the fabric. Attach each tie diagonally 45 degrees through the fabric, with each puncture at least 1 inch vertically apart. Also, each tie should be positioned to hang on a post nipple when tightened to prevent sagging.
- Wrap approximately 6 inches of fabric around the end posts and secure with 3 ties.
- No more than 24 inches of a 36 inch fabric is allowed above the ground level.
- The installation should be checked and corrected for any deviations before compaction.
- Compaction is vitally important for effective results. Compact the soil immediately next to the silt fence fabric with the front wheel of the tractor, skid steer, or roller exerting at least 60 pounds per square inch. Compact the upstream side first, and then each side twice for a total of 4 trips.

Maintenance

- Inspect sediment fences at least once a week and after each rainfall. Make any required repairs immediately.
- Should the fabric of a sediment fence collapse, tear, decompose or become ineffective, replace it promptly.
- Remove sediment deposits as necessary to provide adequate storage volume for the next rain and to reduce pressure on the fence. Take care to avoid undermining the fence during the cleanout.
- Remove all fencing materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.



- Construction Specifications**
- Clear the entrance and exit area of all vegetation, roots, and other objectionable material and properly grade it.
 - Place the gravel to the specific grade and dimensions shown on the plans and smooth it.
 - Provide drainage to carry water to a sediment trap or other suitable outlet.
 - Use geotextile fabrics because they improve stability of the foundation in locations subject to seepage or high water table.

Maintenance

Maintain the gravel pad in a condition to prevent mud or sediment from leaving the construction site. This may require periodic treading with 2-inch stone. After each rainfall, inspect any structure used to trap sediment and clean it out as necessary. Immediately remove all objectionable materials spilled, washed or tracked onto public roadways. Contractor shall supplement and maintain gravel construction entrances at his expense until final acceptance.

Design Criteria

Aggregate Size - Use 2"-3" washed stone.
Thickness: 6 inches minimum
Width: 12 feet minimum or full width at all point of the vehicular entrance and exit area, whichever is greater.
Length: 50 feet minimum

Location

Locate construction entrances and exits to limit sediment from leaving the site and to provide for maximum utility by all construction vehicles. Avoid steep grades and entrances at curves in public roads. Contractor shall install additional gravel construction entrances not indicated on the plans required for staging and/or borrow areas and maintain at no additional expense to the Owner.

Washing

If conditions of the site are such that most of the mud and sediment are not removed by vehicles traveling over the gravel, the tires should be washed. Washing should be done on an area stabilized with crushed stone that drains into a sediment trap or other suitable disposal area. A wash rack may also be used to make washing more convenient and effective.

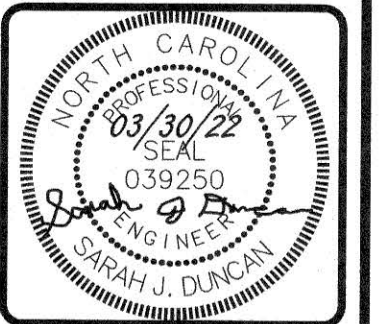
SILT FENCE EC.1

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE EC.2

FLEMING & ASSOCIATES, P.A.
STRUCTURAL ENGINEERING • FORENSICS • ROOFING DESIGN
1004 HAY STREET, FAYETTEVILLE, NC 28305
OFFICE 910-463-2825
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Firm License No. CE-2828
EA#17-78

| | |
|----------------|--------------|
| DATE: | 03/30/22 |
| SURVEY/SPS BY: | PVIC |
| DRAWN BY: | SDJ/SJW/ABR |
| CHECKED BY: | SDJ |
| SCALE: | HOR: 1" = 1' |
| VERT: | 1" = 1' |

D3
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ANN TO GREEN STREET
16" SANITARY SEWER
AERIAL CROSSING REPLACEMENT

FAYETTEVILLE PUBLIC WORKS COMMISSION
WATER RESOURCES ENGINEERING
801 East 10th Street, Fayetteville, NC 28301
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