

SCIOTO COUNTY REGIONAL WATER DISTRICT NO. 1

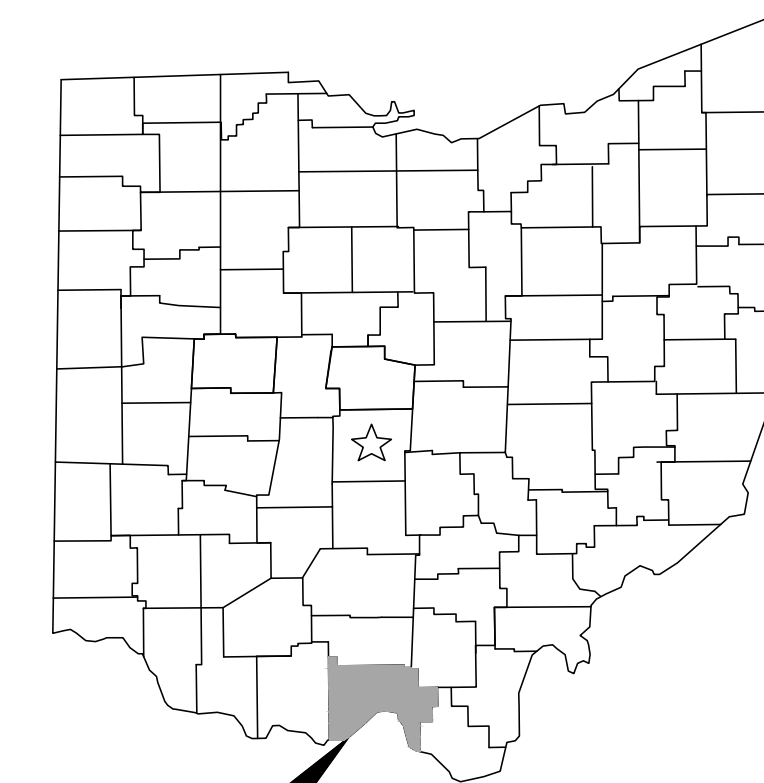
WOODS RIDGE WATER STORAGE TANK REPLACEMENT

SCIOTO COUNTY, OHIO

SEPTEMBER 2019



LOCATION MAP
NOT TO SCALE



SCIOTO COUNTY

ADMINISTRATION:

JONATHAN KING
JIM MEYERS
KATHIE EDWARDS
EDDIE HOLSINGER

GENERAL MANAGER
DISTRIBUTION SUPERINTENDENT
OFFICE MANAGER/TREASURER
PLANT SUPERINTENDENT

BOARD OF DIRECTORS:

KENNY CORIELL
JAMES SHOEMAKER

PRESIDENT
SECRETARY



ENGINEER'S PROJECT No. 190795

APPROVALS:

[Signature]
JONATHAN KING, GENERAL MANAGER

09/19/2019
DATE

OFFICE:

SCIOTO COUNTY REGIONAL WATER
DISTRICT NO. 1
181 STATE ROUTE 728
LUCASVILLE, OH 45648

(740) 259-2301 PHONE

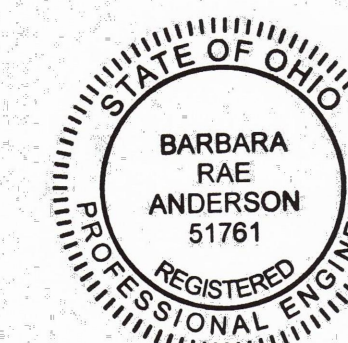
PROJECT SITE:

WATER STORAGE TANK
C.R. 169 / WOODS RIDGE RD.
PORTSMOUTH, OH 45662

ENGINEER:

CT CONSULTANTS, INC.
148 NORTH HIGH STREET
GAHANNA, OH 43230

(614) 471-7310 PHONE
(614) 471-7320 FAX

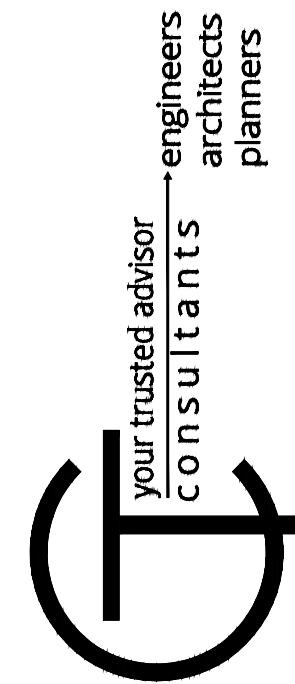


[Signature]
BARBARA R. ANDERSON

OHIO REG. No. E-51761

9/19/2019
DATE

- UNDERGROUND BUILDING SERVICE UTILITY LINES ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, MAINTAINING AND REPLACING AS NECESSARY TO ENSURE CONTINUAL SERVICE TO BUILDINGS.
- THE CONTRACTOR IS RESPONSIBLE TO CALL OHIO UTILITIES PROTECTION SERVICE @ 1-800-362-2764, THREE WORKING DAYS PRIOR TO CONSTRUCTION.



| ISSUED FOR: | EPA REVIEW | NO | REVISION | DATE |
|--------------|------------|----|----------|------|
| ISSUE DATE: | 09/23/19 | | | |
| SCALE: | AS SHOWN | | | |
| DESIGNED BY: | APS | | | |
| DRAWN BY: | AGD | | | |
| CHECKED BY: | BRA | | | |

**SCIOTO COUNTY REGIONAL
WATER DISTRICT NO. 1
WOODS RIDGE WATER STORAGE TANK REPLACEMENT
SCIOTO COUNTY, OHIO**

COVER SHEET

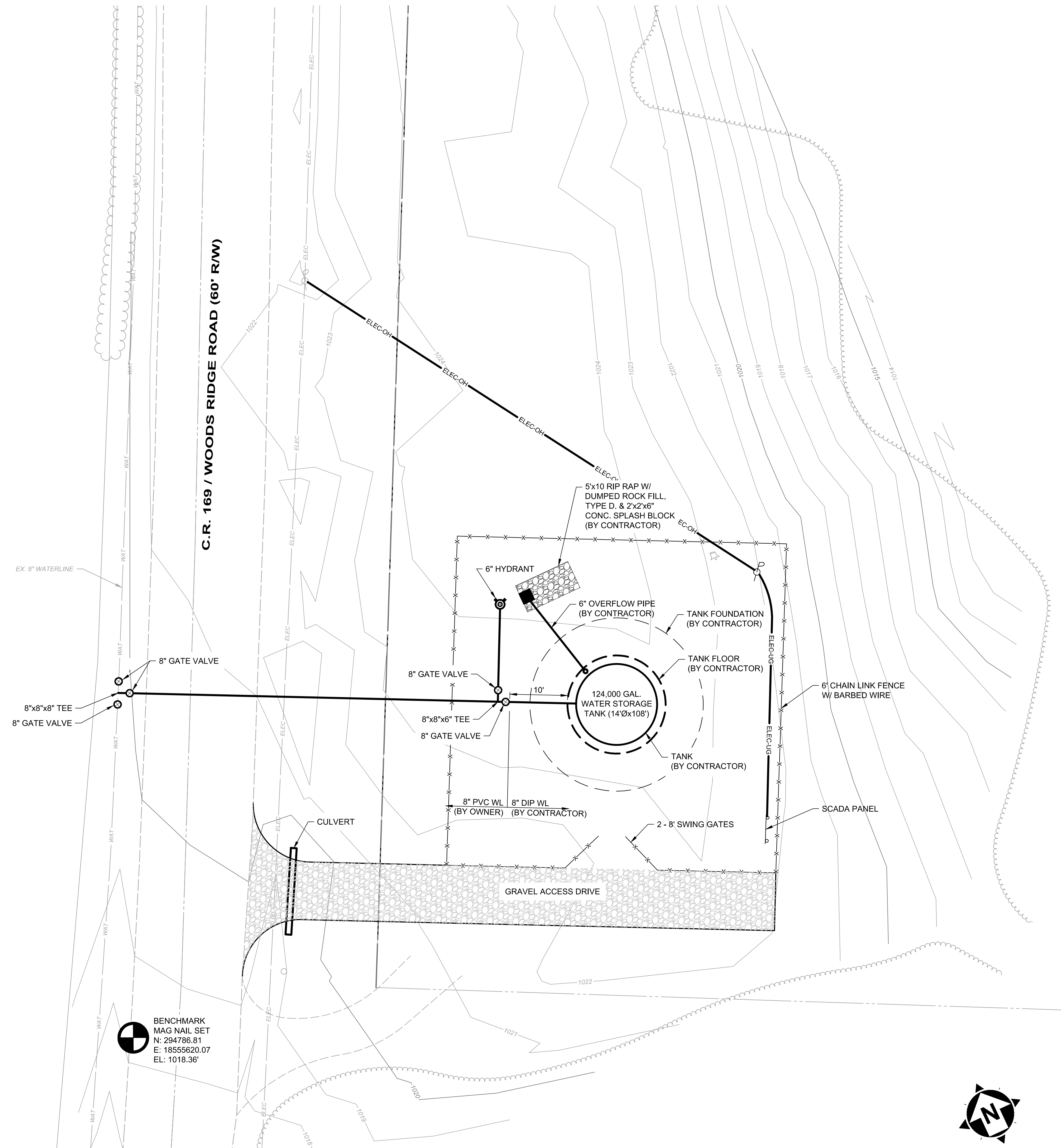
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|-------------|---------|
| PROJECT NO. | 190795 |
| DISCIPLINE | GENERAL |
| SHEET NAME | 00G-01 |
| SHEET | OF |
| 1 | 6 |



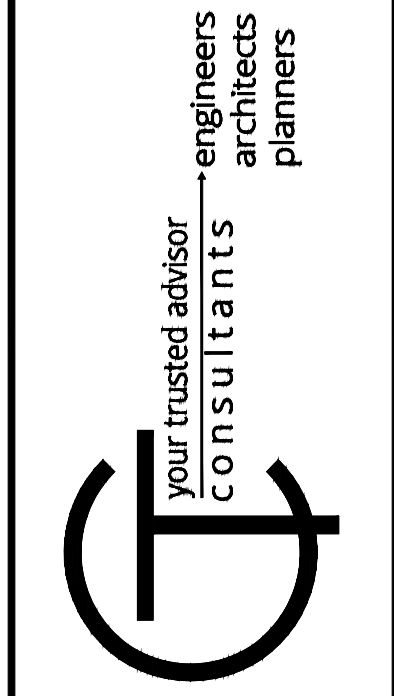
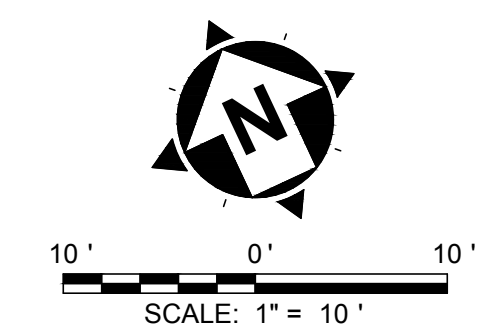
PROPERTY PLAN
SCALE: 1" = 50'

DRAWING PLAN WRITTEN NOTE:

1. ALL WORK TO BE PERFORMED BY OWNER, UNLESS OTHERWISE NOTED.
2. OWNER TO GRADE EXISTING SITE.
3. TANK LOCATION:
N = 294803.7167
E = 1855720.243



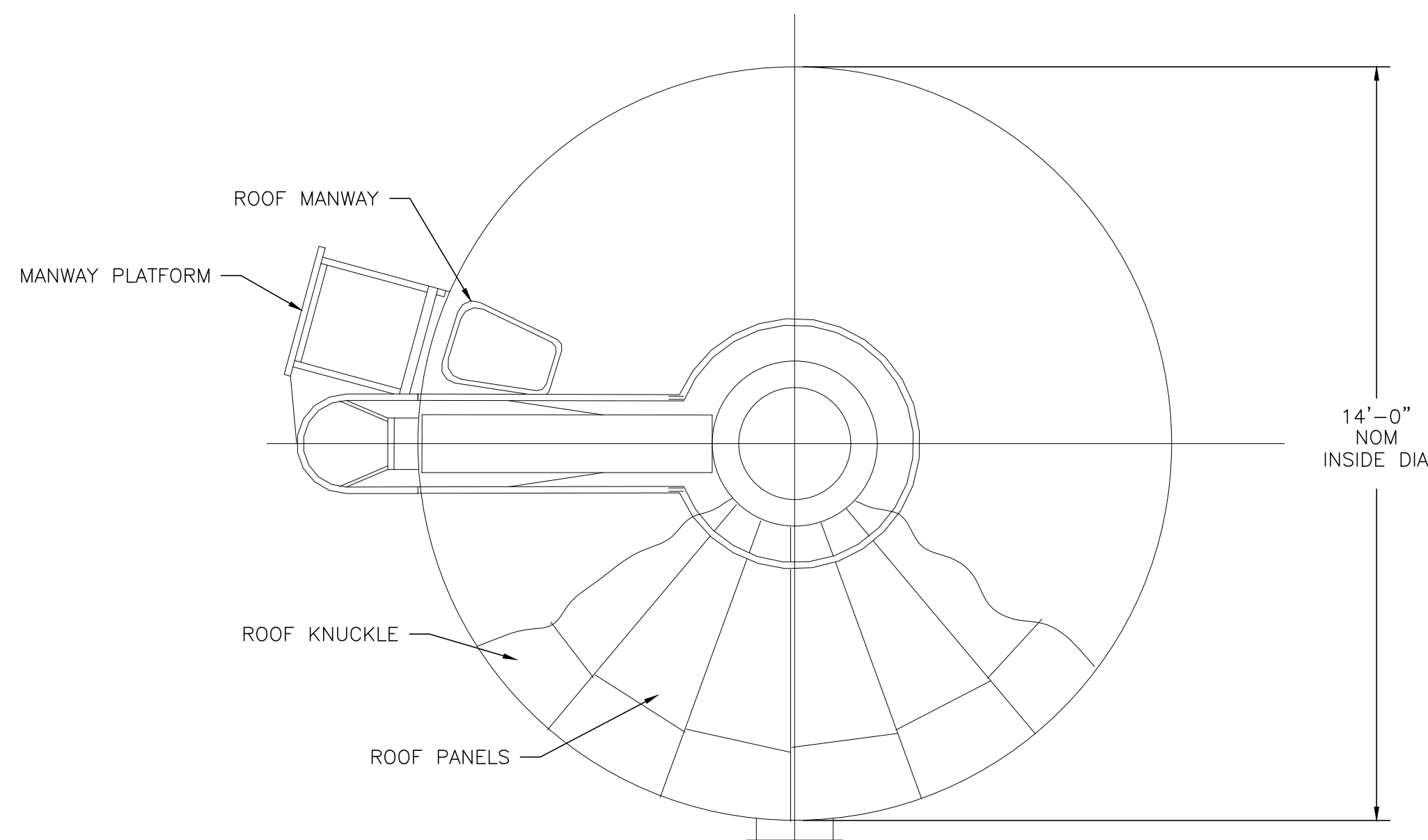
SITE PLAN
SCALE: 1" = 10'



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| DESIGNED BY: | APS | | | |
| DRAWN BY: | ACD | | | |
| CHECKED BY: | BRA | | | |

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SCIOTO COUNTY, OHIO**

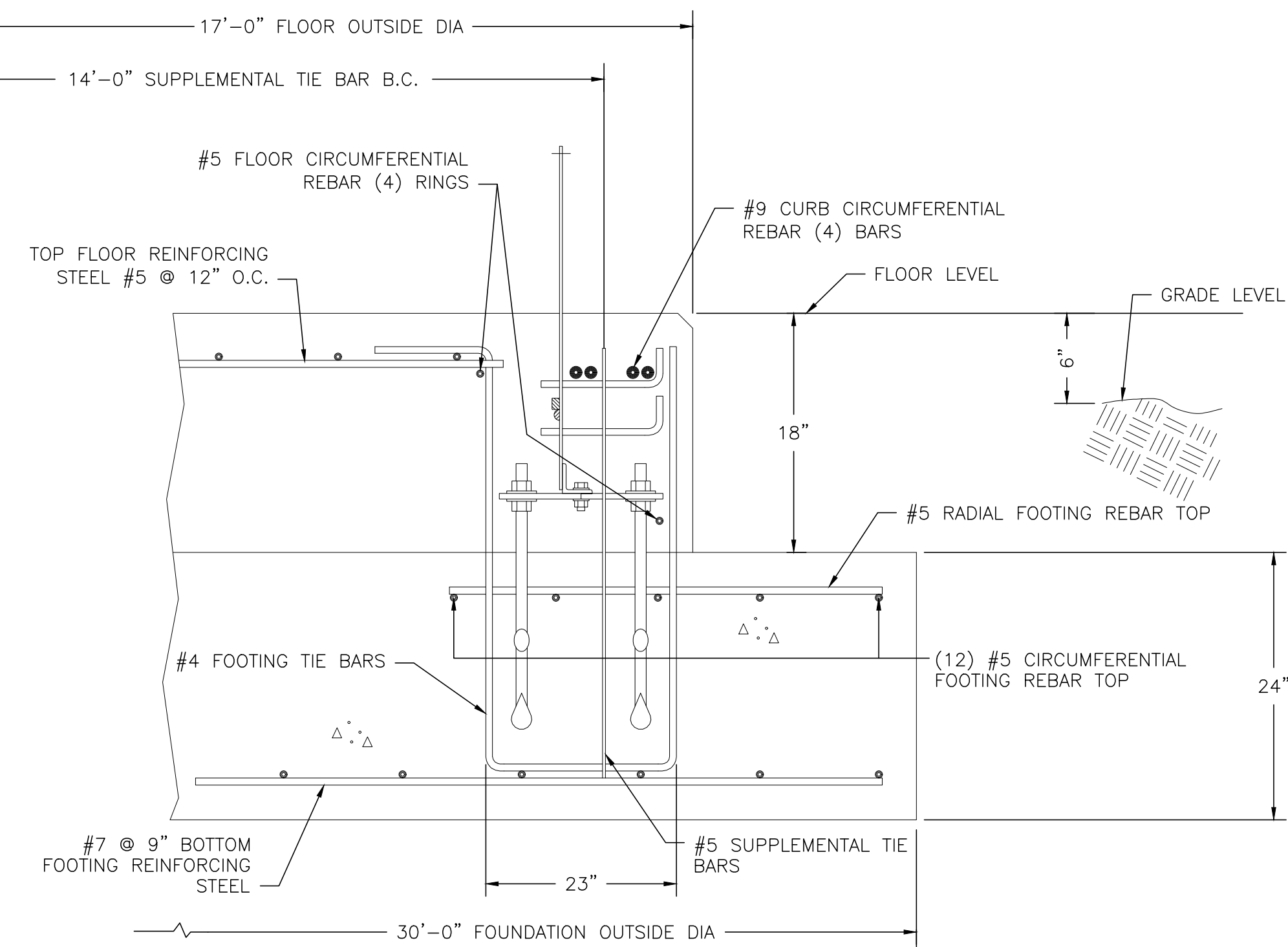
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|-------------|----------|---------------|
| PROJECT NO. | | 190795 |
| DISCIPLINE | | CIVIL |
| SHEET NAME | | 10C-01 |
| SHEET | OF | |
| 3 | 6 | |



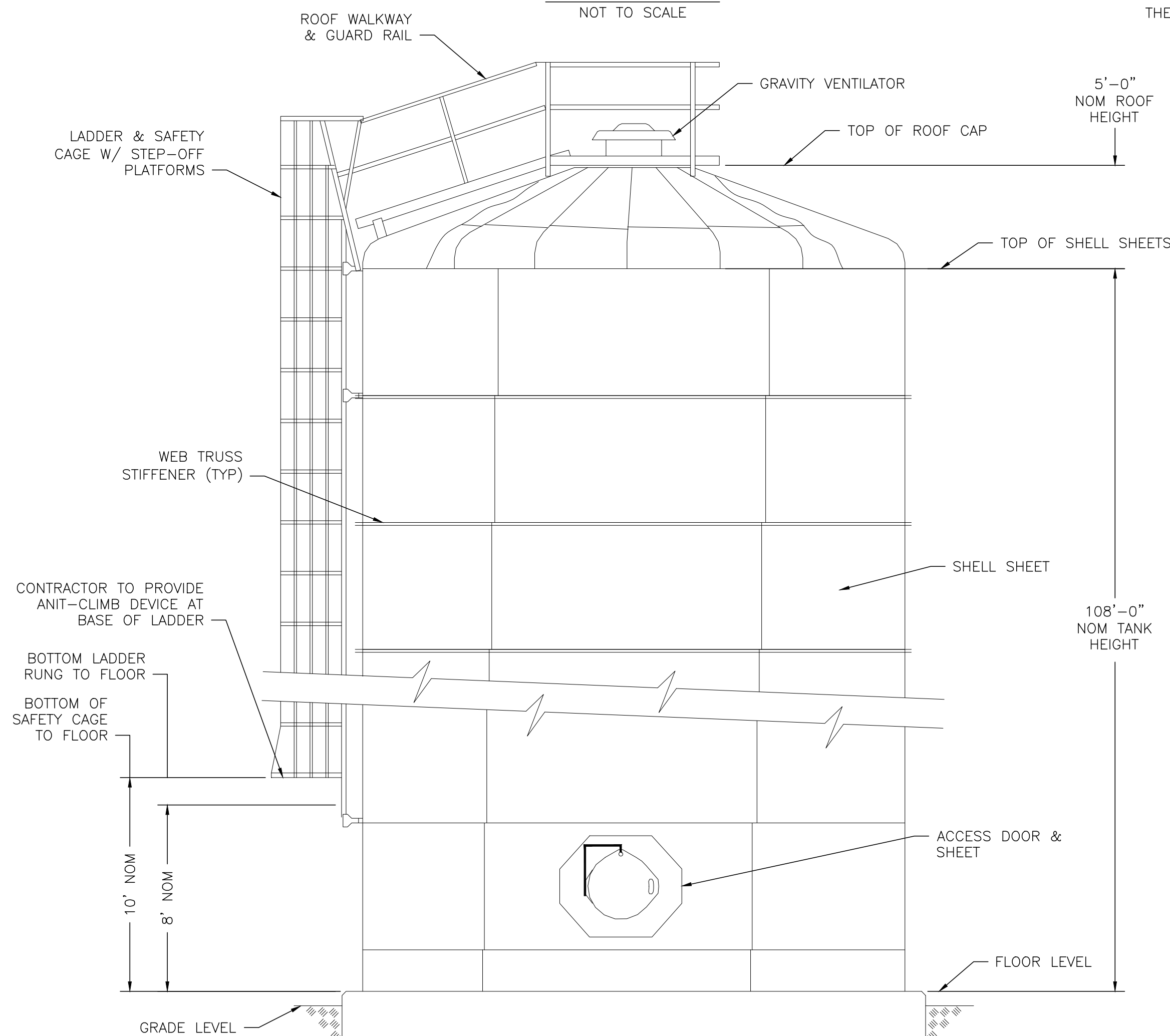
ROOF PLAN
NOT TO SCALE

NOTES:

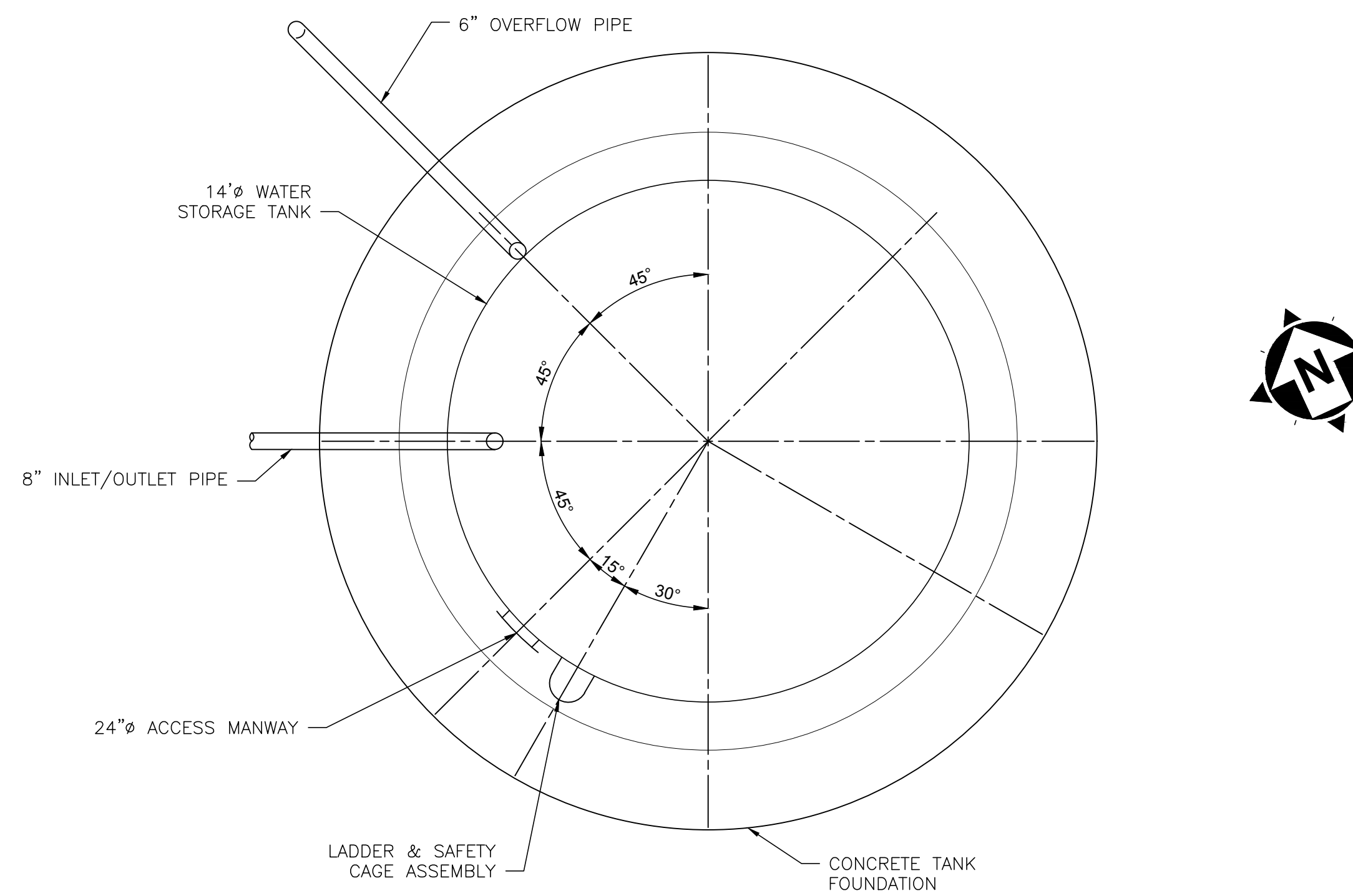
- FOUNDATION DESIGN:** FOUNDATION DESIGN SHOWN IS REPRESENTATIVE IN NATURE. ACTUAL FOUNDATION DESIGN SHALL BE THE RESPONSIBILITY OF THE TANK MANUFACTURER AND SHALL BE BASED UPON THE LOADINGS, SEISMIC CONDITIONS AND OTHER SAFETY FACTORS AS OUTLINED IN THE GEOTECHNICAL REPORT ASSOCIATED WITH THIS PROJECT. THE FOUNDATION DESIGN SHALL BE SUBMITTED BY THE TANK MANUFACTURER FOR REVIEW OF THE ENGINEER PRIOR TO THE START OF CONSTRUCTION AND SHALL BEAR THE STAMP AND SIGNATURE OF THE OHIO REGISTERED PROFESSIONAL ENGINEER RESPONSIBLE FOR THE DESIGN.
- SHOP DRAWINGS:** TANK MANUFACTURER SHALL PROVIDE SHOP DRAWINGS AND CALCULATIONS FOR THE PROPOSED STRUCTURE AND RELATED FOUNDATION. DRAWINGS SHALL BE ADEQUATELY DETAILED TO REPRESENT THE PROPOSED CONSTRUCTION AND TO PROVIDE FOR THE REVIEW OF THE RESPONSIBLE BUILDING OFFICIAL. ORIGINALLY CERTIFIED COPIES OF DRAWINGS AND CALCULATIONS SHALL BE PROVIDED IN SUFFICIENT NUMBER TO COORDINATE ACQUISITION OF A BUILDING PERMIT FOR THE PROPOSED STRUCTURE.
- FOUNDATION MATERIALS:** CONCRETE UTILIZED IN THE FOUNDATION SHALL HAVE A MINIMUM COMPRESSIVE STRESS OF 4,000 PSI AT 28 DAYS. REINFORCING STEEL SHALL CONFORM TO GRADE 60.
- TANK ORIENTATION:** CONTRACTOR SHALL REFER TO THE SITE PLAN AND FOUNDATION PLAN ASSOCIATED WITH THIS TANK FOR ACTUAL ORIENTATION OF THE TANK, PIPING AND APPURTENANCES. DETAILS INCLUDED WITHIN THE VARIOUS TANK SECTIONS AND DETAILS ARE IN SOME INSTANCES SCHEMATIC ONLY AND DO NOT NECESSARILY INDICATE ALL ITEMS IN THEIR CORRECT LOCATIONAL RELATIONSHIP.
- CONTINUITY:** ALL METALLIC PARTS OF THE TANK SHALL BE ELECTRICALLY CONTIGUOUS.
- FOUNDATION PREPARATION:** IT IS ANTICIPATED THAT THE PROPOSED WATER STORAGE TANK WILL BE SUPPORTED ON A MAT/SLAB FOUNDATION SYSTEM. THE AREAS ENCOMPASSED BY THIS FOUNDATION SYSTEM SHOULD BE PREPARED IN ACCORDANCE WITH THE RECOMMENDATIONS OUTLINED IN THE GEOTECHNICAL REPORT.



SECTION THROUGH FOOTING
NOT TO SCALE

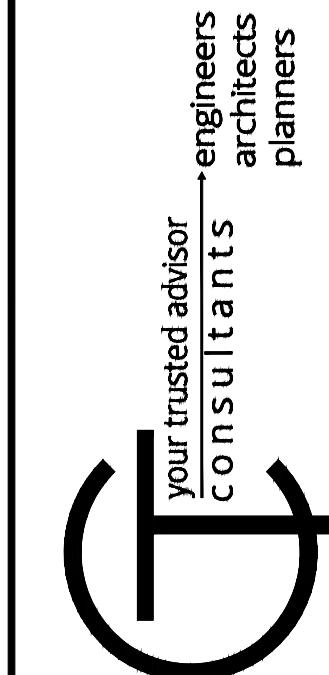


TANK ELEVATION
NOT TO SCALE



TANK FOUNDATION PLAN
NOT TO SCALE

| NOMINAL CAPACITY | NOMINAL HEIGHT | NOMINAL DIAMETER | INLET/OUTLET DIAMETER | OVERFLOW DIA | OVERFLOW ELEV | BASE ELEV | GRADE ELEV | MIN OVERFLOW RATE |
|------------------|----------------|------------------|-----------------------|--------------|---------------|-----------|------------|-------------------|
| 124,000 GAL | 108'-0" | 14'-0" | 8" | 6" | 1131.41 | 1024.50 | 1024.00 | 320 GPM |

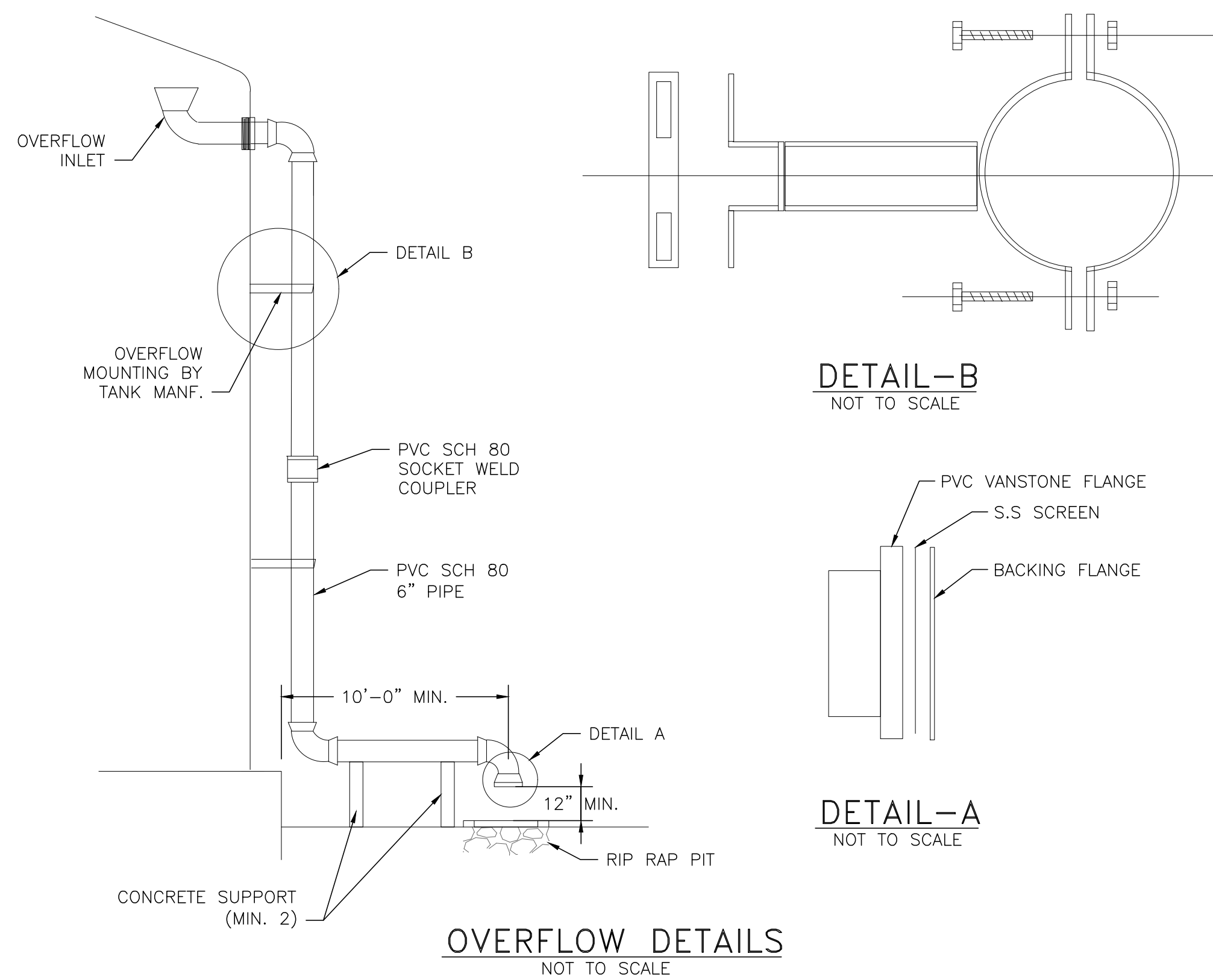


| DATE | REVISION | NO | ISSUED FOR: | EPA REVIEW | ISSUE DATE: | SCALE: | DESIGNED BY: | DRAWN BY: | CHECKED BY: |
|------|----------|----|-------------|------------|-------------|----------|--------------|-----------|-------------|
| | | | | | 09/23/19 | AS SHOWN | APS | AGD | BRA |

SCIOTO COUNTY REGIONAL WATER DISTRICT NO. 1
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SCIOTO COUNTY, OHIO

TANK DETAILS 1

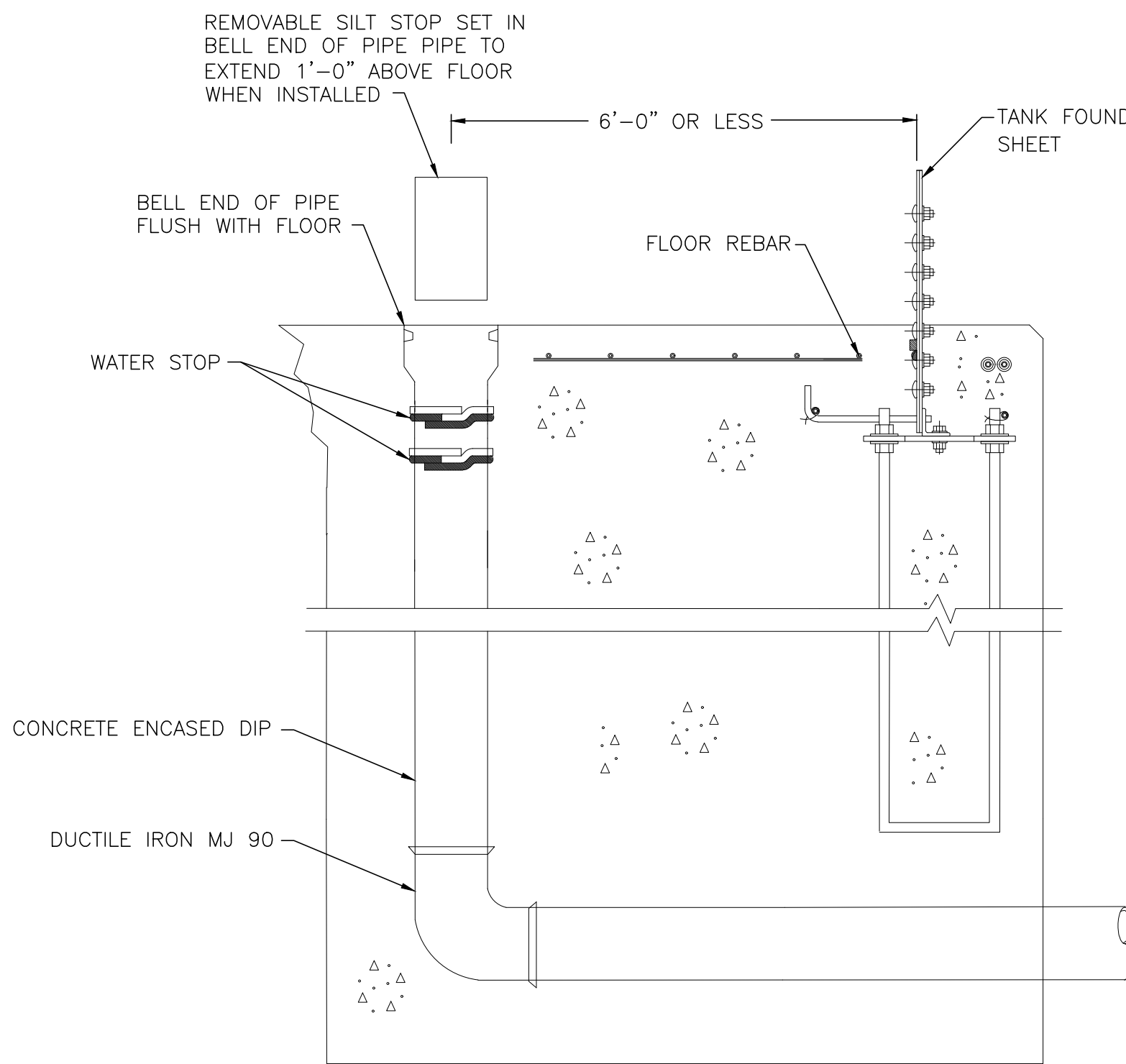
| | |
|-------------|---------------|
| PROJECT NO. | 190795 |
| DISCIPLINE | CIVIL |
| SHEET NAME | 10C-02 |
| SHEET | 4 |
| OF | 6 |



OVERFLOW DETAILS
NOT TO SCALE

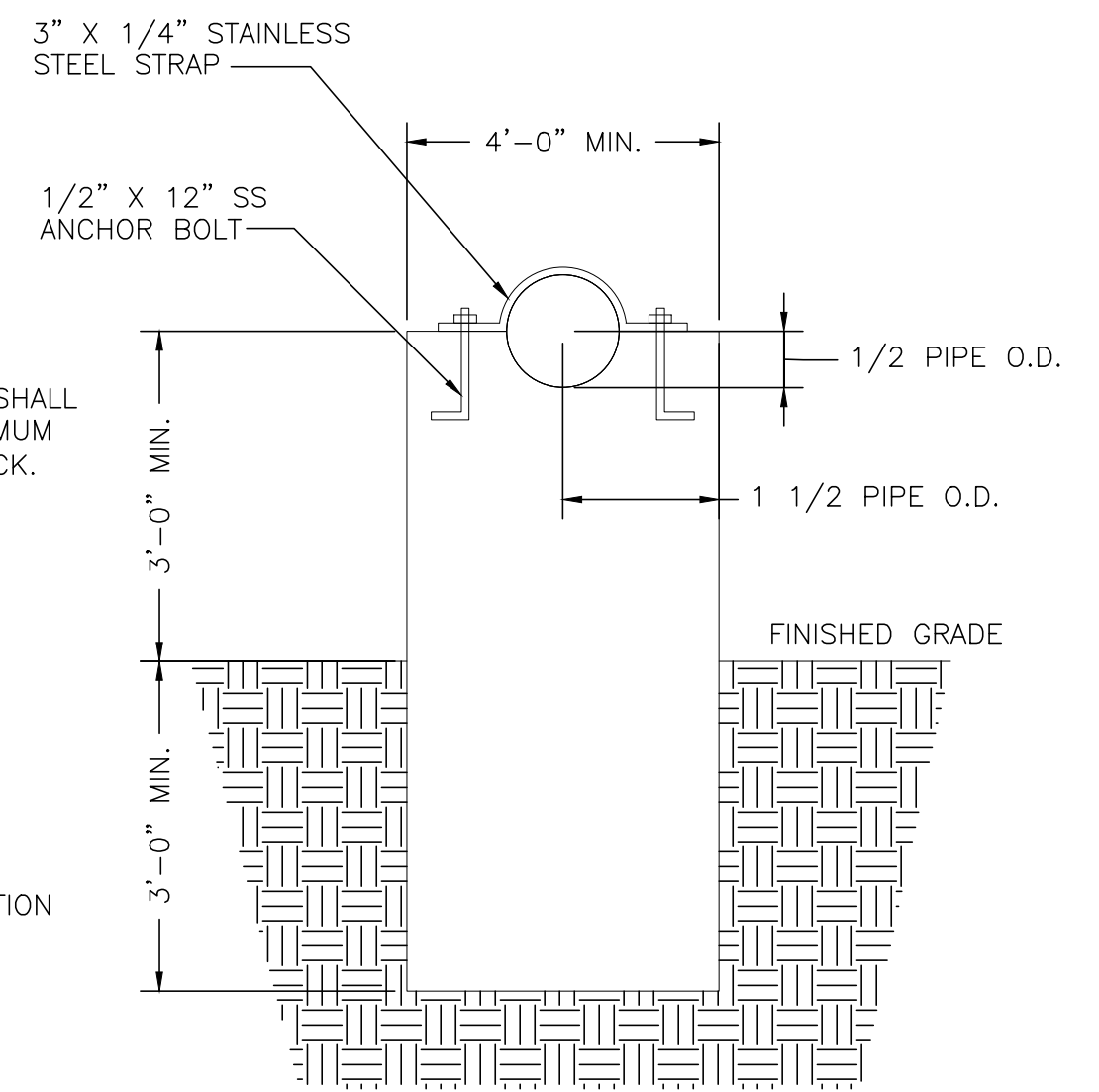
DETAIL-B
NOT TO SCALE

DETAIL-A
NOT TO SCALE



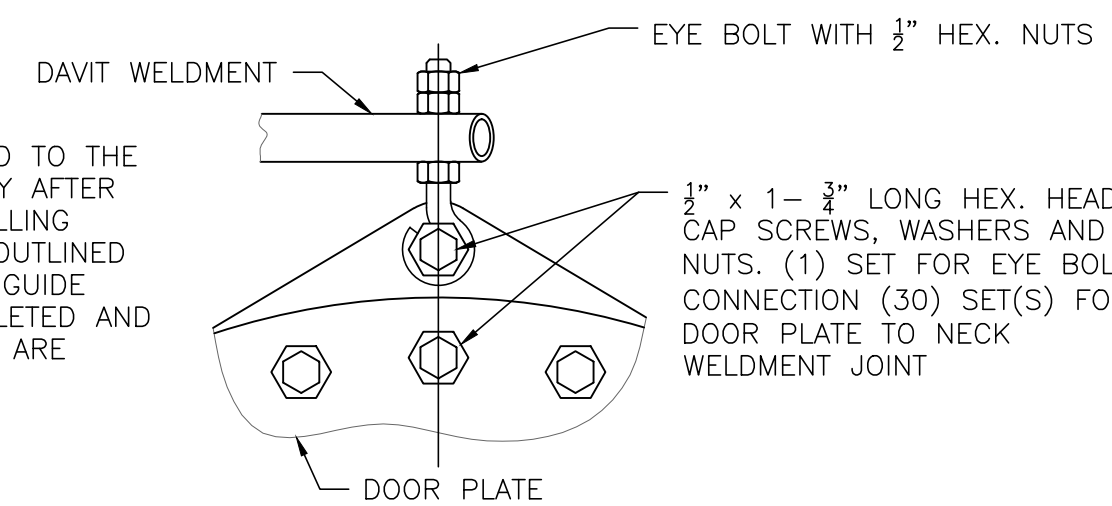
DRAIN PIPE WITH REMOVABLE SLIT STOP
NOT TO SCALE

NOTE:
CONCRETE SUPPORT SHALL BE A MINIMUM OF 8" THICK.



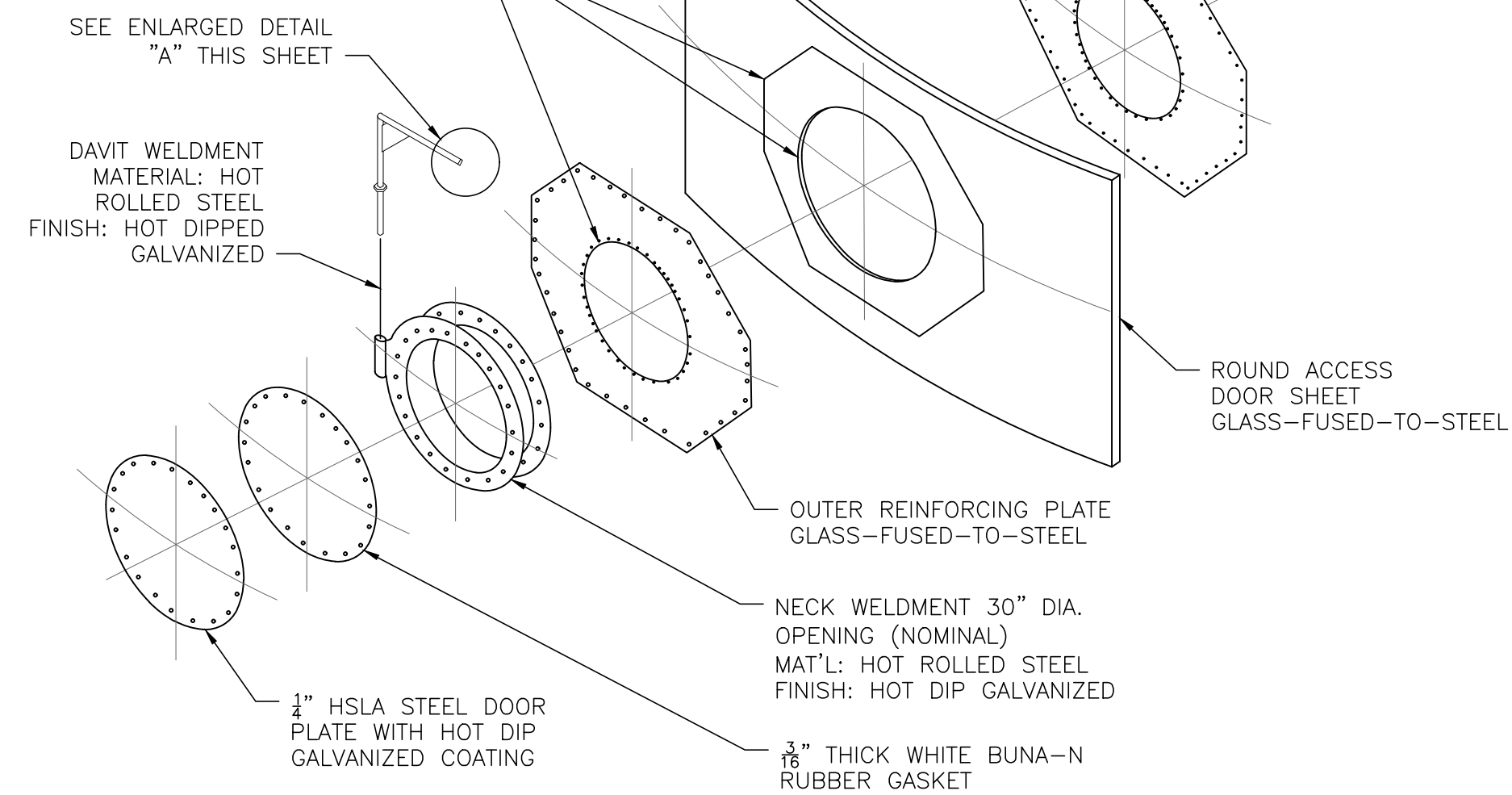
CONCRETE SUPPORT DETAIL

NOTE:
SEALER IS APPLIED TO THE COMPONENTS ONLY AFTER THE BUSHING DRILLING PROCEDURES AS OUTLINED IN THE BUILDERS GUIDE HAVE BEEN COMPLETED AND THE COMPONENTS ARE READY FOR FINAL ASSEMBLY.



ENLARGED DETAIL "A"
NOT TO SCALE

APPLY SEALER AS OUTLINED IN THE BUILDERS GUIDE. SEALER IS ALSO PLACED ON THE INNER SURFACE OF THE ACCESS DOOR SHEET WHEN THE INNER REINFORCING PLATE IS REQUIRED.

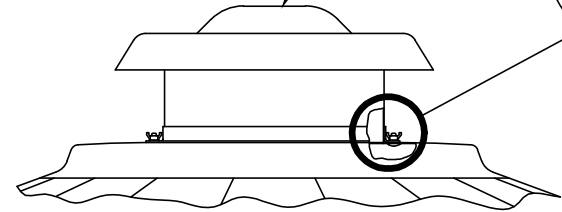


24" ACCESS DOOR DETAIL
NOT TO SCALE

| VENT CAPACITY CHART | | | | | | | |
|-----------------------|------------------|------|------|------|------|------|------|
| VENT THROAT DIAMETER | 3.14 SQUARE FEET | | | | | | |
| VELOCITY FPM | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
| EXHAUST PRESSURE DROP | .025 | .035 | .050 | .070 | .090 | .120 | .155 |
| SUPPLY PRESSURE DROP | .060 | .090 | .130 | .180 | .240 | .300 | .380 |
| CFM | 1258 | 1511 | 1885 | 2200 | 2515 | 2830 | 3140 |

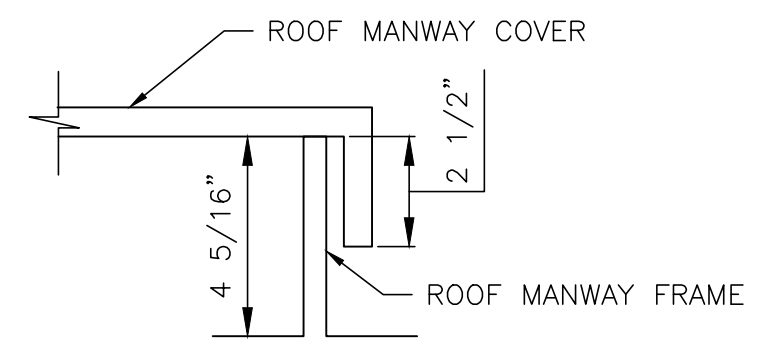
CONSTRUCTION DETAIL GRAVITY VENTILATOR INSTALLATION ONTO ROOF CAP 20' SLOPED ROOF

REMOVE THE (4) FASTENERS AND THE TOP COVER TO OBTAIN ACCESS TO THE TANK INTERIOR. RE-INSTALL AFTER MOUNTING THE VENTILATOR ONTO THE ROOF CAP.



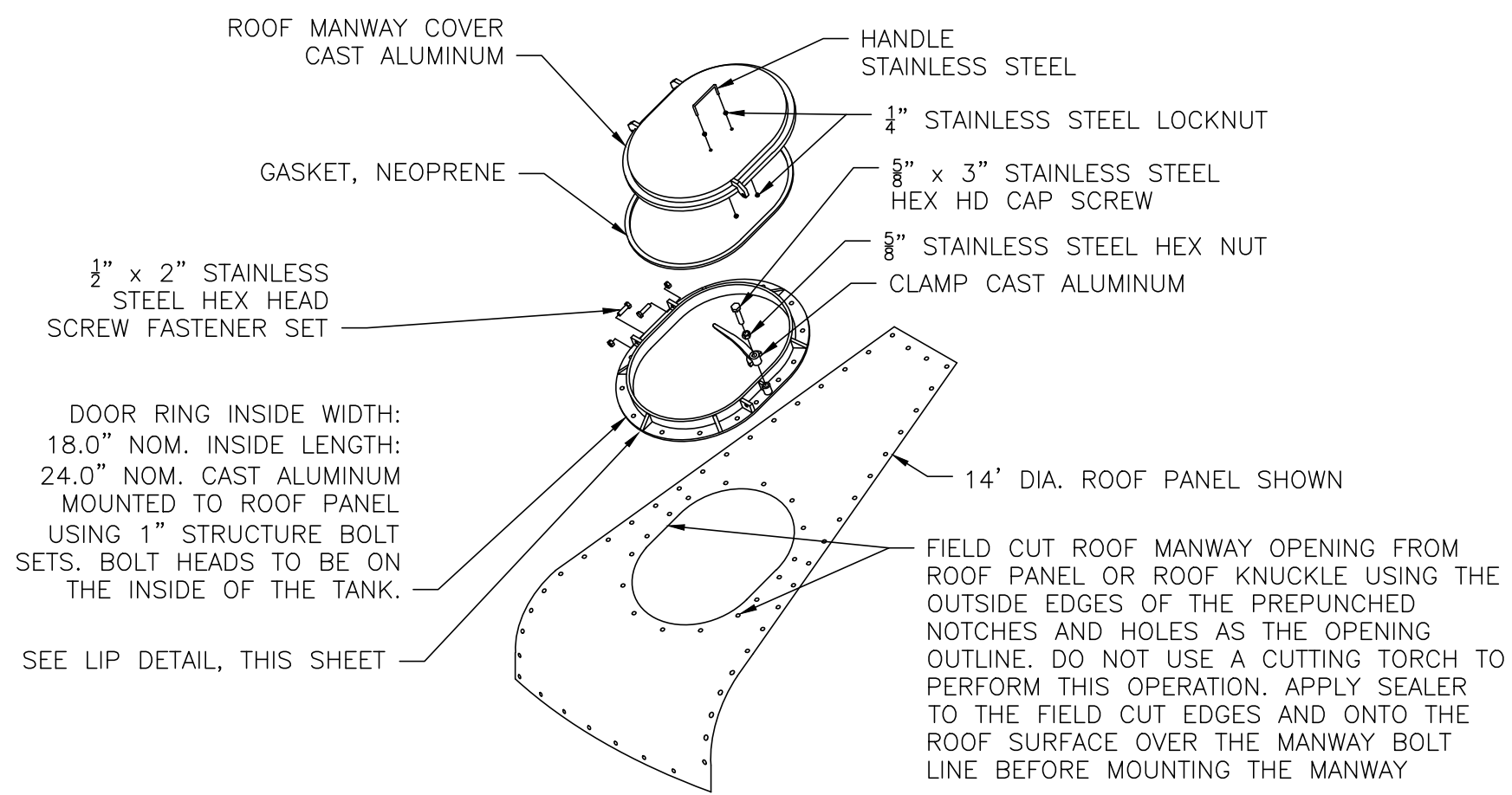
ROOF CAP DETAIL
NOT TO SCALE

NOTE: FOUNDATION MAY VARY FROM THAT SHOWN.



LIP DETAIL
NOT TO SCALE

1" LONG STRUCTURE BOLT SETS. BOLT HEADS TO BE ON THE INSIDE OF THE TANK W/ WING NUT FASTENERS FOR SECONDARY ACCESS



ROOF HATCH DETAIL
NOT TO SCALE

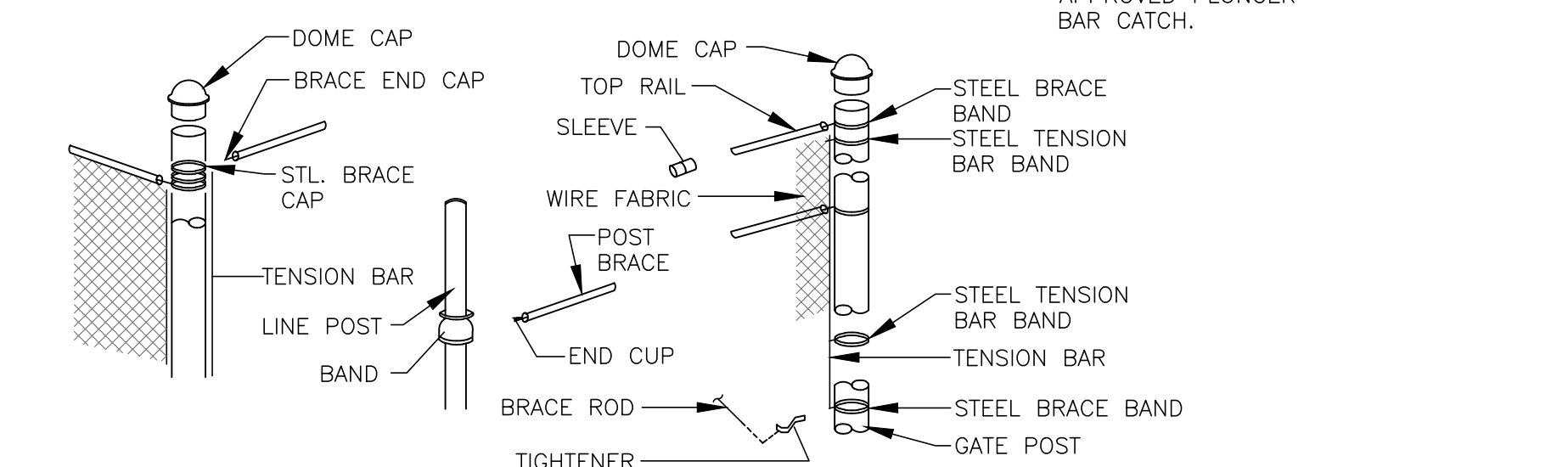
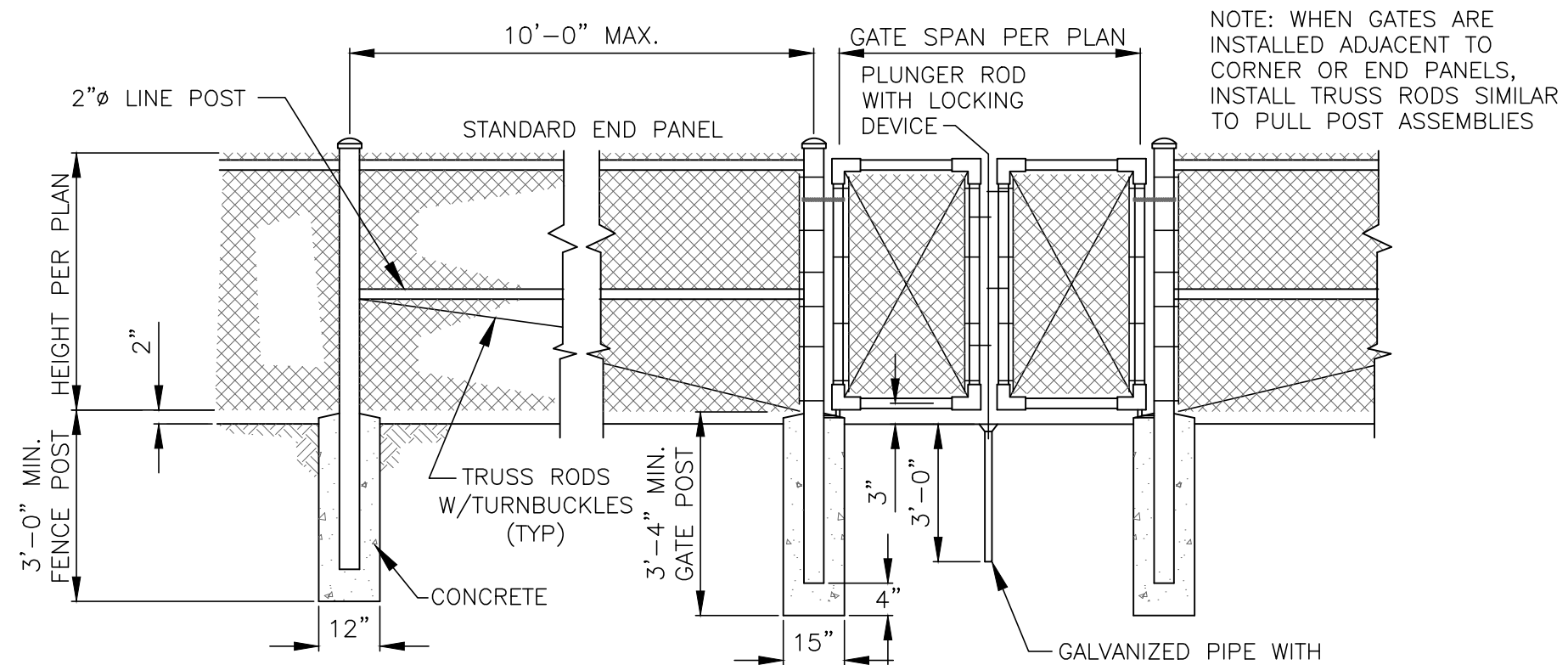
your trusted advisor
**engineers
architects
planners**
consultants

| DATE | REVISION | NO | EPA REVIEW | ISSUE DATE | SCALE | DESIGNED BY | DRAWN BY | CHECKED BY |
|------|----------|----|------------|------------|----------|-------------|----------|------------|
| | | | | 09/23/19 | AS SHOWN | APS | AGD | BRA |

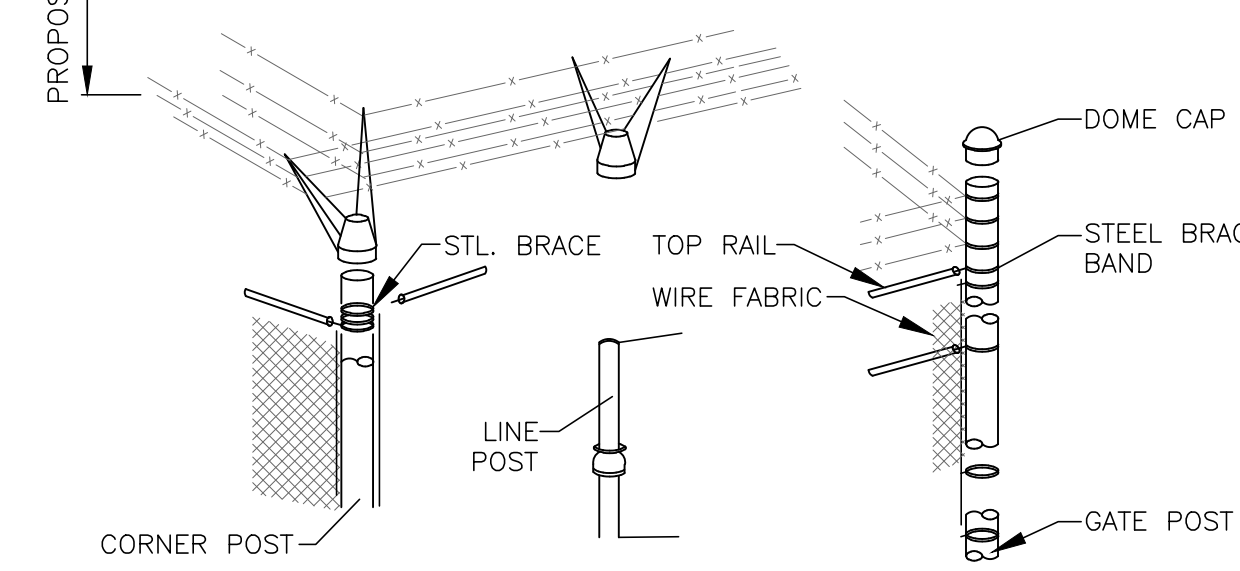
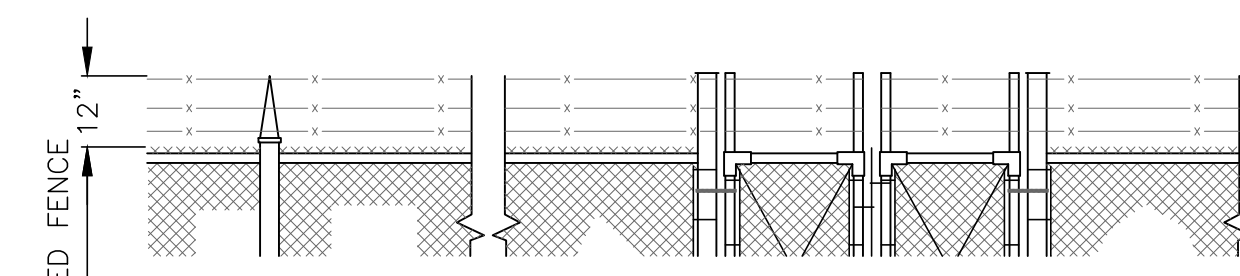
**SCIOTO COUNTY REGIONAL
WATER DISTRICT NO. 1
WOODS RIDGE WATER STORAGE TANK REPLACEMENT
SCIOTO COUNTY, OHIO**

| | |
|-------------|---------------|
| PROJECT NO. | 190795 |
| DISCIPLINE | CIVIL |
| SHEET NAME | 10C-02 |
| SHEET | 5 |
| OF | 6 |

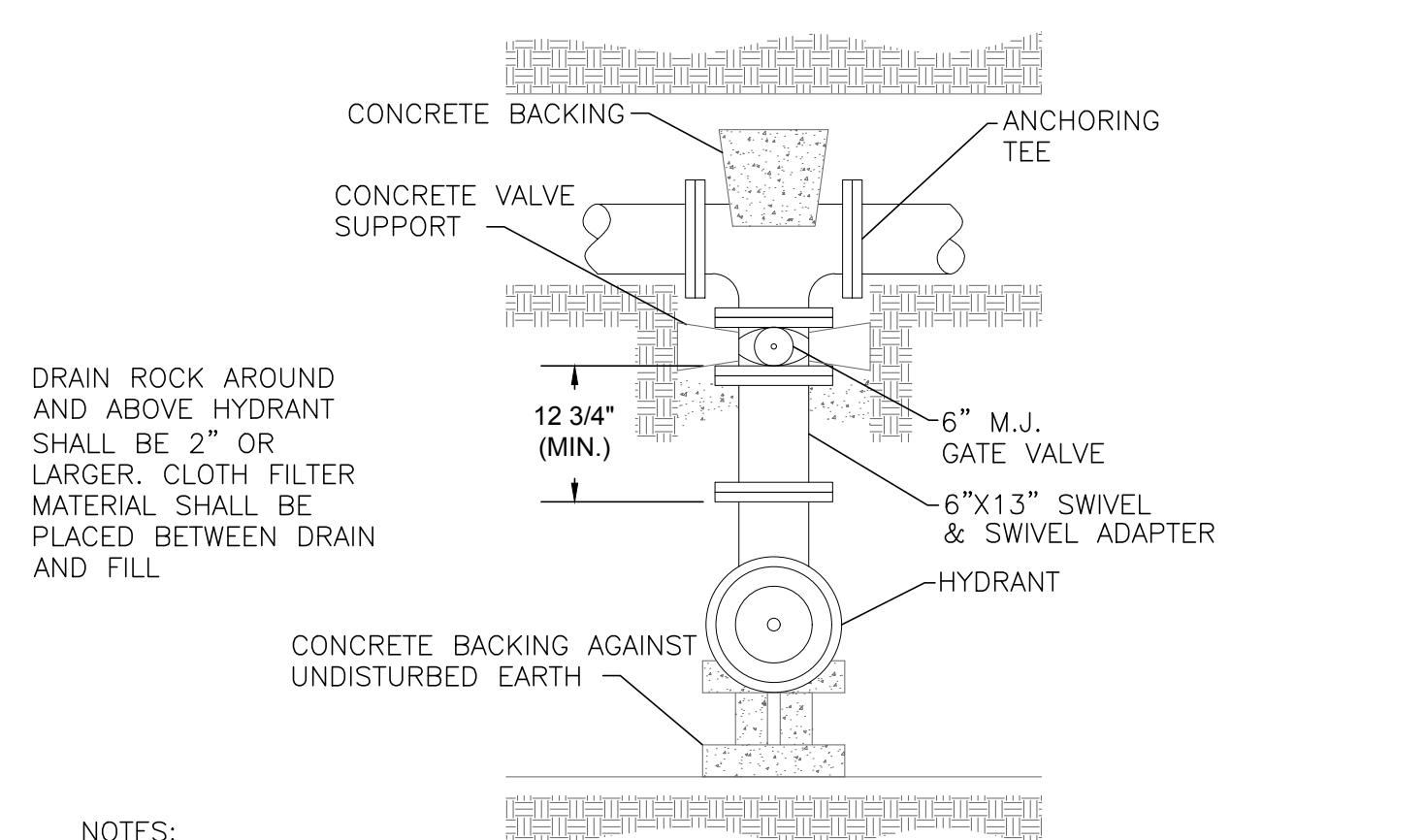
TANK DETAILS 1



TYPICAL FENCE ASSEMBLY
NOT TO SCALE



BARBED WIRE DETAIL
NOT TO SCALE

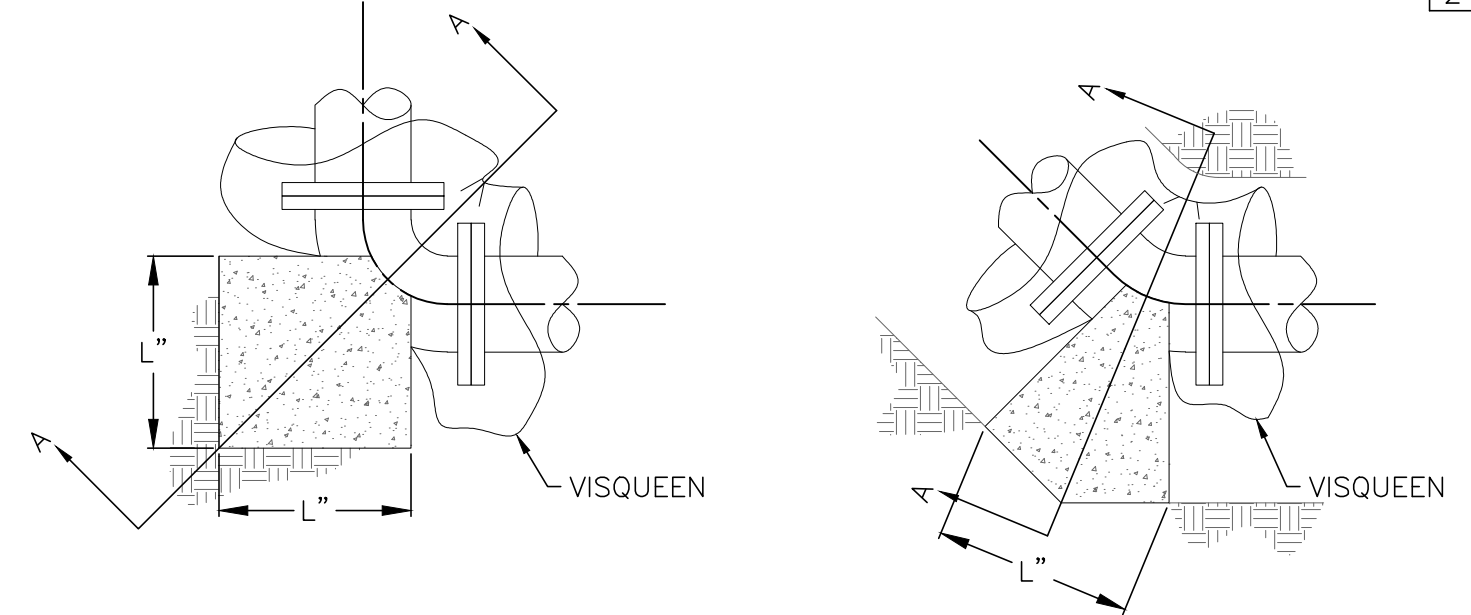


- NOTES:**
- BACKFILL SHALL BE GRANULAR MATERIAL CONFORMING TO (ODOTCMS), ITEM 703.11 TYPE 2, GRADE A, OR APPROVED SUITABLE EXCAVATED MATERIAL POWER TAMPED IN LAYERS NOT EXCEEDING 4" IN THICKNESS, LOOSE MEASUREMENT. BACKFILL SHALL EXTEND FROM THE BOTTOM OF THE PIT OR TRENCH TO 6" BELOW THE EXISTING OR PROPOSED SURFACE. COST OF FURNISHING AND PLACING BACKFILL SHALL BE INCLUDED IN THE PRICE BID FOR EACH HYDRANT.
 - ALL HYDRANTS SHALL BE INSTALLED WITH HARDWOOD OR CONCRETE BLOCKING AGAINST UNDISTURBED EARTH.

TYPICAL 6" HYDRANT SETTING
NOT TO SCALE

| PIPE SIZE | DEGREE OF BEND | | | | | | | | | | | |
|-----------|----------------|----|-----|---------|----|------|-----|----|------|-----|----|------|
| | 11 1/4" | | | 22 1/2" | | | 45° | | | 90° | | |
| | L | D | V | L | D | V | L | D | V | L | D | V |
| 3" | 4 | 3 | 0.1 | 6 | 4 | 0.2 | 10 | 4 | 0.3 | 10 | 4 | 0.3 |
| 4" | 5 | 4 | 0.2 | 9 | 5 | 0.4 | 14 | 5 | 0.6 | 14 | 5 | 0.6 |
| 6" | 8 | 6 | 0.5 | 12 | 7 | 0.7 | 20 | 8 | 1.4 | 18 | 9 | 1.7 |
| 8" | 9 | 8 | 0.7 | 16 | 9 | 1.4 | 24 | 12 | 2.7 | 25 | 11 | 4.0 |
| 12" | 14 | 12 | 1.8 | 24 | 14 | 3.6 | 36 | 18 | 6.8 | 32 | 18 | 10.7 |
| 16" | 18 | 16 | 3.4 | 32 | 18 | 6.7 | 36 | 32 | 13.4 | 41 | 26 | 25.4 |
| 20" | 25 | 20 | 6.4 | 30 | 30 | 11.5 | 49 | 36 | 20.5 | 50 | 32 | 46.5 |
| 24" | 27 | 24 | 9.0 | 39 | 34 | 18.4 | 60 | 42 | 35.0 | 58 | 40 | 77.7 |

V = VOLUME OF CONCRETE IN CUBIC FEET

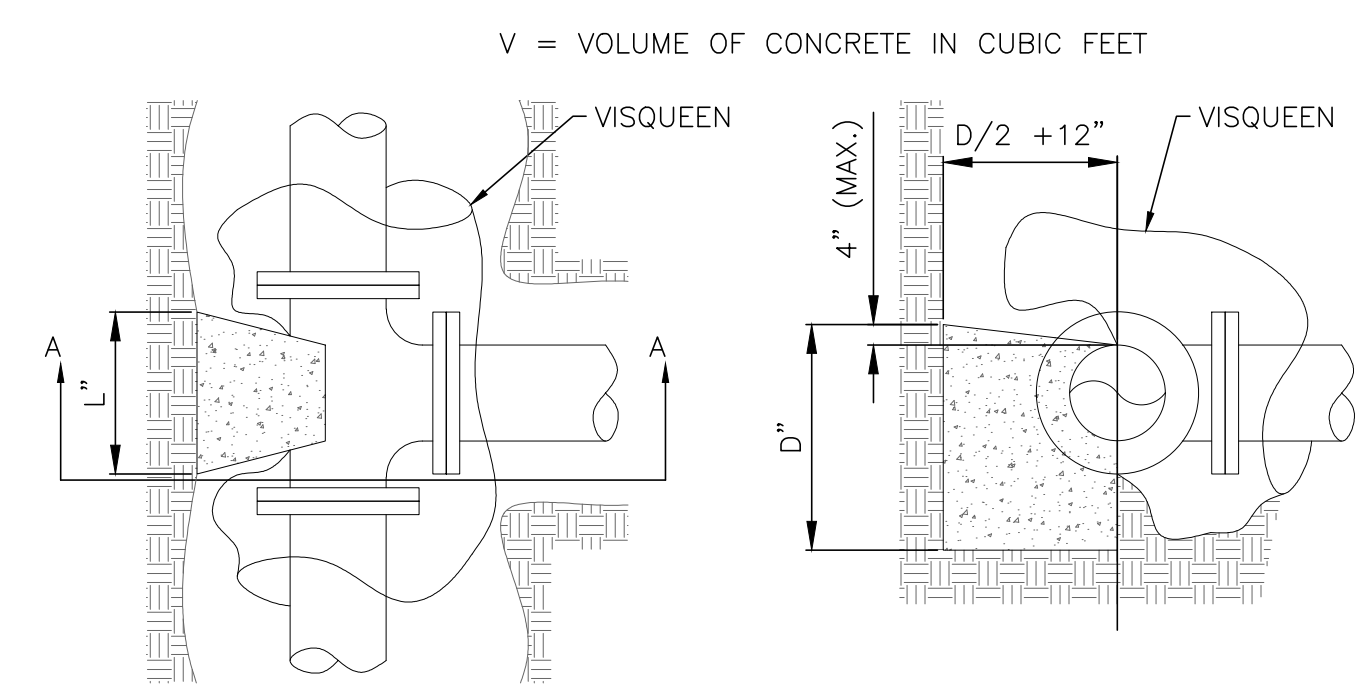


- NOTES:**
- CONCRETE FOR BACKING SHALL BE CLASS "C".
 - BACKING SHALL BE DESIGNED FOR 3000 PSF SOIL BEARING.
 - REINFORCING STEEL SHALL BE USED AS DIRECTED BY THE CONTRACT ADMINISTRATOR.
 - CONCRETE SHALL BE PLACED AGAINST UNDISTURBED EARTH.
 - PROVIDE CLEARANCE FOR REMOVAL OF BOLTS.
 - VISQUEEN SHALL BE PLACED IN A MANNER SUCH THAT CONCRETE BLOCKING DOES NOT HAVE DIRECT CONTACT WITH BEND.

BACKING FOR BENDS DETAIL
NOT TO SCALE

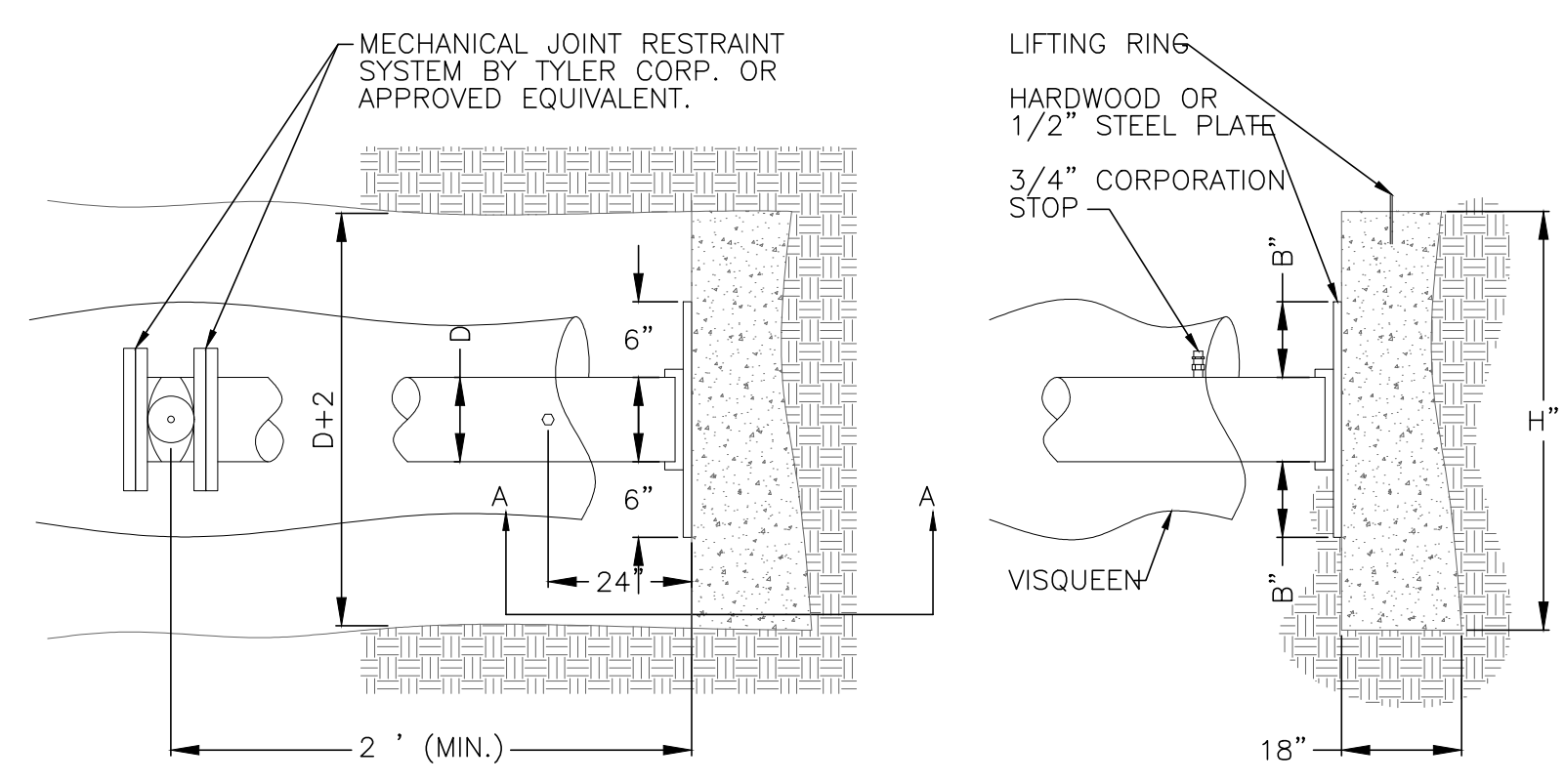
| RUN | BRANCH | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|--------|----|-----|----|----|-----|----|----|-----|----|----|-----|-----|----|-----|-----|----|------|-----|----|------|-----|----|------|--|
| | 3" | | | 4" | | | 6" | | | 8" | | | 12" | | | 16" | | | 20" | | | 24" | | | |
| | L | D | V | L | D | V | L | D | V | L | D | V | L | D | V | L | D | V | L | D | V | L | D | V | |
| 3" | 12 | 5 | 0.5 | | | | | | | | | | | | | | | | | | | | | | |
| 4" | 10 | 6 | 0.5 | 11 | 8 | 0.8 | | | | | | | | | | | | | | | | | | | |
| 6" | 9 | 7 | 0.5 | 11 | 8 | 0.8 | 18 | 12 | 1.9 | | | | | | | | | | | | | | | | |
| 8" | 8 | 8 | 0.5 | 10 | 9 | 0.7 | 18 | 12 | 1.9 | 23 | 16 | 3.5 | | | | | | | | | | | | | |
| 12" | 6 | 12 | 0.6 | 8 | 12 | 0.8 | 18 | 12 | 1.9 | 23 | 16 | 3.5 | 38 | 22 | 8.7 | | | | | | | | | | |
| 16" | 6 | 16 | 0.8 | 6 | 16 | 0.8 | 14 | 16 | 2.0 | 20 | 18 | 3.3 | 36 | 23 | 8.7 | 49 | 30 | 13.6 | | | | | | | |
| 20" | 6 | 20 | 1.0 | 6 | 20 | 1.0 | 11 | 20 | 1.9 | 18 | 20 | 3.3 | 35 | 24 | 8.7 | 46 | 32 | 13.6 | 60 | 38 | 26.5 | | | | |
| 24" | 6 | 24 | 1.2 | 6 | 24 | 1.2 | 9 | 24 | 1.9 | 15 | 24 | 3.3 | 30 | 28 | 8.7 | 42 | 36 | 14.0 | 54 | 42 | 26.3 | 68 | 48 | 45.4 | |

V = VOLUME OF CONCRETE IN CUBIC FEET



- NOTES:**
- CONCRETE FOR BACKING SHALL BE CLASS "C".
 - BACKING SHALL BE DESIGNED FOR 3000 PSF SOIL BEARING.
 - REINFORCING STEEL SHALL BE USED AS DIRECTED BY THE CONTRACT ADMINISTRATOR.
 - CONCRETE SHALL BE PLACED AGAINST UNDISTURBED EARTH.
 - PROVIDE CLEARANCE FOR REMOVAL OF BOLTS.
 - VISQUEEN SHALL BE PLACED IN A MANNER SUCH THAT CONCRETE BLOCKING DOES NOT HAVE DIRECT CONTACT WITH TEE AND/OR FITTINGS.

BACKING FOR TEES DETAIL
NOT TO SCALE



- NOTES:**
- CONCRETE FOR BACKING SHALL BE CLASS "C".
 - BACKING SHALL BE DESIGNED FOR 3000 PSF SOIL BEARING.
 - CONCRETE SHALL BE PLACED AGAINST UNDISTURBED EARTH.
 - PROVIDE CLEARANCE FOR REMOVAL OF BOLTS.
 - VISQUEEN SHALL BE PLACED IN A MANNER SUCH THAT CONCRETE BLOCKING DOES NOT HAVE DIRECT CONTACT WITH FITTINGS.
 - END OF PIPE SHALL BE CAPPED OR PLUGGED.
 - STEEL PLATE SHALL BE GREASED WHERE IN CONTACT WITH CONCRETE BACKING.
 - PLUG POLES SHALL BE INSTALLED AT ALL END-OF-LINE STUBS AT THE TRUST BLOCK.

LIFTING RING DETAIL

| SIZE OF PIPE | H | B | L (PVC) | L (DIP) | V |
|--------------|----|---|---------|---------|-------|
| 6" | 8 | 1 | 20 | 18 | 2.52 |
| 8" | 12 | 1 | 20 | 18 | 4.00 |
| 12" | 23 | 3 | 20 | 18 | 8.64 |
| 16" | 37 | 3 | 20 | 18 | 15.39 |

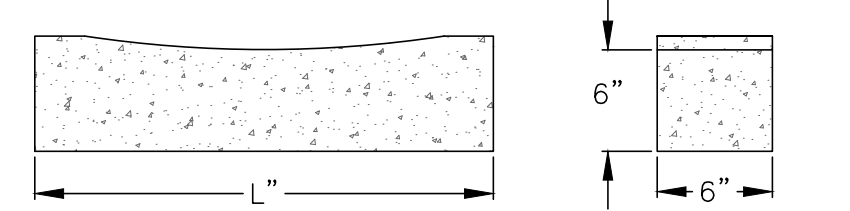
V = VOLUME OF CONCRETE IN CUBIC FEET.

THRUST BLOCK DETAIL
NOT TO SCALE

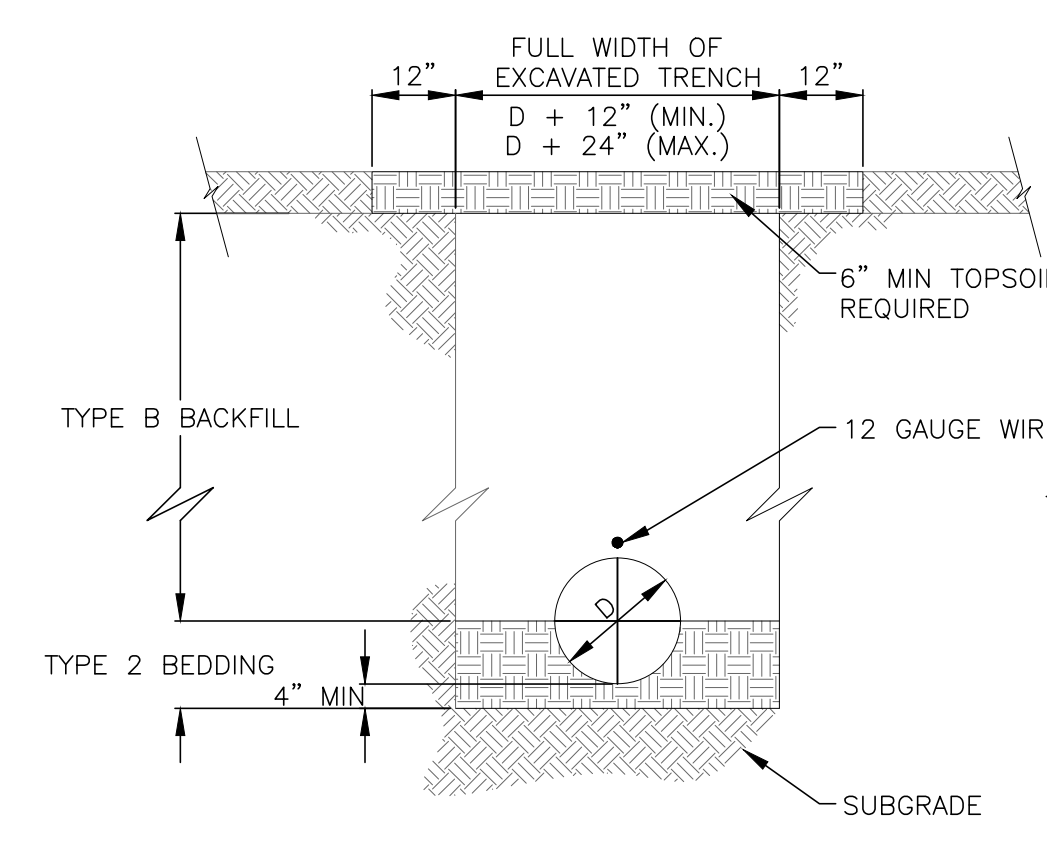
| | SIZE | L | V |
|------------------|------|----|------|
| GATE VALVES | 3" | 15 | 0.31 |
| | 4" | 16 | 0.33 |
| | 6" | 17 | 0.36 |
| | 8" | 20 | 0.42 |
| BUTTERFLY VALVES | 12" | 24 | 0.50 |
| | 14" | 28 | 0.58 |
| | 16" | 30 | 0.63 |
| | 20" | 36 | 0.75 |
| | 24" | 42 | 0.88 |
| | 30" | 48 | 1.00 |

V = VOLUME OF CONCRETE IN CUBIC FEET

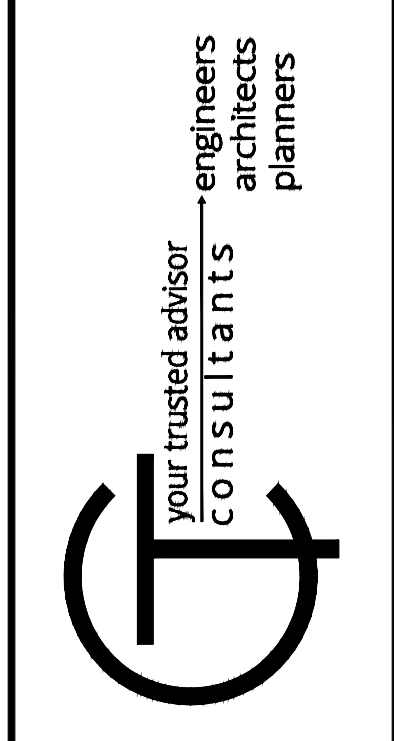
- NOTES:**
- CONCRETE FOR SUPPORTS SHALL BE CLASS C.
 - BACKING SHALL BE DESIGNED FOR 300 PSF SOIL BEARING.
 - CONCRETE SHALL BE PLACED AGAINST UNDISTURBED EARTH.
 - PROVIDE CLEARANCE FOR REMOVAL OF BOLTS.



CONCRETE VALVE SUPPORTS
NOT TO SCALE



TRENCH DETAIL FOR WATERLINE INSTALLED IN NON-PAVED AREAS
NOT TO SCALE



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|------|----------|----|------------|------------|------------|----------|-------------|----------|------------|
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SCIOTO COUNTY REGIONAL WATER DISTRICT NO. 1
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SCIOTO COUNTY, OHIO

STANDARD DETAILS

| | |
|-------------|--------|
| PROJECT NO. | 190795 |
| DISCIPLINE | CIVIL |
| SHEET NAME | 10C-05 |
| SHEET | 6 |
| OF | 6 |