

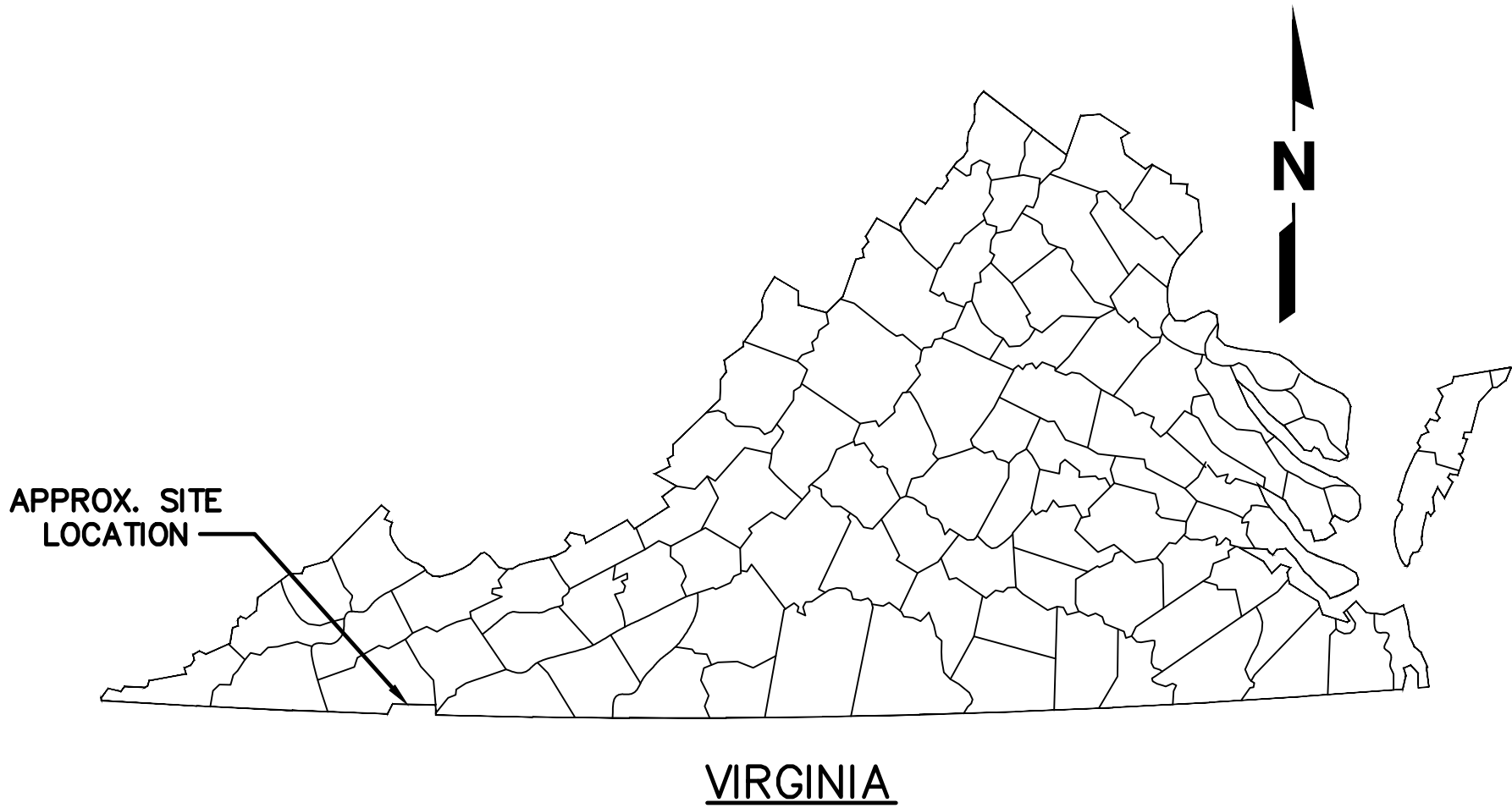
BRISTOL, VIRGINIA INTEGRATED SOLID WASTE MANAGEMENT FACILITY

STAGE II LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION

CONSTRUCTION PLANS

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E7	DETAILS PHASE 1



PREPARED FOR:

CITY OF BRISTOL, VIRGINIA
300 LEE STREET
BRISTOL, VIRGINIA 24201

INTEGRATED SOLID WASTE MANAGEMENT
FACILITY
2655 VALLEY DRIVE
BRISTOL, VIRGINIA 24201

SCS ENGINEERS

STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS, INC.
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SCS PROJECT NO. 02218208.14

FEBRUARY 18, 2025
ADDENDUM 1: APRIL 7, 2025



NO.	REVISION	DATE
1	ADDENDUM 1	4/7/25

SHEET TITLE	PROJECT TITLE
COVER	STAGE II LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION

CLIENT
CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY 2655 VALLEY DRIVE BRISTOL, VA 24201

SCS ENGINEERS	PROJ. NO.	DATE	BY	CHK	APP
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC. 15521 MIDLOTHIAN TURNPIKE, SUITE 305 MIDLOTHIAN, VA 23113 PH. (804) 378-7440 FAX. (804) 378-7433	02218208.14	02/18/2025	TRW	DBK	CJW

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LEGEND:

EW-89
HC-89

EXISTING WELLHEAD (HC FOR HORIZONTAL COLLECTOR WELLHEADS)

SW-89

EXISTING EXTRACTION WELL WITH REMOTE WELLHEAD

SP-89

EXISTING SETTLEMENT PLATE

TP-89

EXISTING TEMPERATURE PROBE

★ BM-#

EXISTING BENCHMARK

EXISTING LEACHATE CLEANOUT ACCESS SHAFT

VS-#

EXISTING ISOLATION VALVE STATION; LFG, AIR, AND FORCEMAIN ISOLATION VALVES

EXISTING FORCEMAIN ISOLATION VALVE

EXISTING AIRLINE ISOLATION VALVE

EXISTING LFG ISOLATION VALVE

EXISTING FORCEMAIN TOTALIZER

GP-5

EXISTING GAS PROBE

MW-#

EXISTING GROUND WATER MONITORING WELL

EXISTING MANHOLE

CS-#

EXISTING CONDENSATE SUMP

EXISTING ROAD CROSSING

EXISTING SIDEWALL ODOR MITIGATION SYSTEM (APPROX.)

EXISTING 2" AIRLINE

EXISTING 4" FORCEMAIN

EXISTING 4" LFG HEADER

EXISTING 8" LFG HEADER

EXISTING 12" LFG HEADER

EXISTING SIDEWALL SYSTEM UPPER HORIZONTAL COLLECTOR

EXISTING SIDEWALL SYSTEM LOWER HORIZONTAL COLLECTOR

EXISTING HORIZONTAL COLLECTOR

EXISTING BUILDING

EXISTING ROAD OUTLINE

EXISTING OVERHEAD POWER LINES

EXISTING STOCKPILE

CS-#

PROPOSED CONDENSATE SUMP

PROPOSED 4" LFG HEADER

PROPOSED 12" LFG HEADER

PROPOSED 18" LFG HEADER

PROPOSED 4" DRAIN LINE

PROPOSED LANDFILL GAS ISOLATION VALVE

ARV #

PROPOSED AIR RELEASE VALVE

PROPOSED FORCEMAIN BYPASS ISOLATION VALVE

VS-##

PROPOSED VALVE STATION; LFG, AIR, AND FORCEMAIN ISOLATION VALVES

PROPOSED ROAD CROSSING

PROPOSED FORCEMAIN CLEANOUT

WASTE MANAGEMENT UNIT BOUNDARIES

PROPOSED FENCE

SAF SAFETY FENCE

EXISTING CONDENSATE GRAVITY DRAIN LINE

EXISTING U-TRAP

PROPOSED U-TRAP

GENERAL NOTES:

- OWNER/DEVELOPER: CITY OF BRISTOL, VIRGINIA
- CONSULTING ENGINEER: SCS ENGINEERS, 15521 MIDLOTHIAN TURNPIKE #305, MIDLOTHIAN, VA 23113
- THE LOCATION OF EXISTING SEWER, WATER, OR GAS LINES, CONDUITS, OR OTHER STRUCTURES ACROSS, UNDERNEATH, OR OTHERWISE ALONG THE LINE OF PROPOSED WORK ARE NOT NECESSARILY SHOWN ON THE PLANS, AND IF SHOWN ARE ONLY APPROXIMATELY CORRECT. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF UNDERGROUND UTILITIES SHOWN ON THE PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT ENGINEER IMMEDIATELY IF LOCATION OF ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLANS, IF THERE APPEARS TO BE A CONFLICT, OR UPON DISCOVERY OF A UTILITY NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL OBTAIN FIELD UTILITY LOCATIONS BY CALLING "MISS UTILITY" FORTY EIGHT (48) HOURS PRIOR TO WORKING IN THE VICINITY OF EXISTING UTILITIES.
- BOUNDARY INFORMATION TAKEN FROM OTHERS.
- HORIZONTAL DATA IS BASED ON US STATE PLANE NAD 1983 VIRGINIA SOUTH ZONE. VERTICAL DATA BASED ON NAVD 88.
- THE LOCATIONS OF THE EXISTING GAS PROBES AND EXISTING MANHOLES SHOWN ARE APPROXIMATE BASED ON DATA PROVIDED BY OTHERS. THE EXACT LOCATIONS OF THESE EXISTING WELLFIELD COMPONENTS MAY NEED IN-FIELD VERIFICATION.
- THESE DRAWINGS MUST BE PLOTTED IN COLOR.
- THERE ARE EXISTING OVERHEAD ELECTRICAL LINES LOCATED ON AND NEAR THE SITE. THE EXISTING LOCATIONS OF ELECTRICAL LINES AND POLES SHOWN IN THE DRAWINGS ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION. CONTRACTOR TO EXERCISE CAUTION NEAR OVERHEAD ELECTRICAL LINES AND CONTACT THE BVU AUTHORITY IN ACCORDANCE WITH APPLICABLE REGULATIONS IF WORK IS REQUIRED NEAR THE OVERHEAD ELECTRICAL LINES.
- THE EXISTING QUARRY TOPOGRAPHY IS FROM AN SCS DRONE FLYOVER DATED JULY 17, 2024. THE REMAINING SITE EXISTING TOPOGRAPHY IS BASED UPON A 2022 SURVEY. THE EXISTING QUARRY TOPOGRAPHY MAY DEVIATE FROM THE GRADES SHOWN DUE TO ONGOING SETTLEMENT AND SITE ACTIVITIES. THE CONTRACTOR WILL COORDINATE WITH ENGINEER TO ACCOMMODATE GRADE CHANGES.
- REQUIRED ELECTRICAL WORK IS DESCRIBED BY THE ELECTRICAL DRAWINGS, DESIGNATED AS SHEETS E1 THROUGH E7.

LANDFILL GAS PROJECT DESCRIPTION:

THIS PROJECT INCLUDES THE INSTALLATION OF A LANDFILL GAS BLOWER/FLARE SYSTEM, NEW LANDFILL GAS HEADER, NEW CONDENSATE SUMPS, A NEW ACCESS ROAD, NEW ISOLATION VALVE, NEW CONNECTION TO LEACHATE CLEANOUTS, NEW FORCE MAIN CLEANOUTS, AND OTHER VARIOUS FEATURES.

LANDFILL GAS GENERAL NOTES

- THE WORK TO BE PERFORMED INVOLVES, BUT IS NOT LIMITED TO, THE CONSTRUCTION AND INSTALLATION OF THE LANDFILL GAS SYSTEM COMPONENTS DEPICTED ON THESE CONSTRUCTION DRAWINGS. WORK SHALL INCLUDE THE INSTALLATION OF THE NEW LANDFILL GAS BLOWER/FLARE SYSTEM, LANDFILL GAS HEADER, VALVES, CONDENSATE SUMPS, AND ANY OTHER ITEMS NEEDED TO MAKE THE PROPOSED LFG SYSTEM COMPONENTS CONNECT TO THE EXISTING LFG SYSTEM AND OPERATE PROPERLY.
- CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, TESTING, TOOLS, EQUIPMENT, SUPERVISION AND INSTALLATION SERVICES REQUIRED TO CONSTRUCT THE LFG COLLECTION SYSTEM DEPICTED ON THESE CONSTRUCTION DRAWINGS.
- CONTRACTOR SHALL RECOGNIZE THAT MULTIPLE PROJECTS ARE UNDERWAY AT THE SOLID WASTE MANAGEMENT FACILITY AND SHALL COORDINATE HIS ACTIVITIES WITH OWNER AND OTHER CONTRACTORS SO AS TO NOT HINDER OR OBSTRUCT WORKING ACTIVITIES ASSOCIATED WITH LANDFILL PROJECTS.
- CONTRACTOR SHALL MINIMIZE LAND DISTURBANCE RELATED TO CONSTRUCTION ACTIVITIES TO THE GREATEST EXTENT POSSIBLE. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS INSIDE AND OUTSIDE THE LANDFILL FOOTPRINT TO ITS ORIGINAL CONDITION OR SPECIFIED FINAL CONDITION.
- CONTRACTOR SHALL PROPERLY STORE ALL MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS IN AREAS DESIGNATED BY OWNER.
- IF LANDFILL WASTE IS FOUND DURING CONSTRUCTION OUTSIDE OF THE DESIGNATED LANDFILL LIMITS, IT SHALL BE HAULED BY THE CONTRACTOR TO AN ACTIVE SOLID WASTE DISPOSAL FACILITY. WASTE MUST BE COVERED AT THE END OF EACH WORKING DAY. NO EXPOSED REFUSE WILL REMAIN OVERNIGHT.
- THE CONTRACTOR WILL PREPARE A WRITTEN SITE-SPECIFIC HEALTH AND SAFETY PLAN THAT ADDRESSES THE POTENTIAL HAZARDS ASSOCIATED WITH LANDFILL GAS CONSTRUCTION ACTIVITIES AT SOLID WASTE MANAGEMENT FACILITIES AND IMPLEMENT THE PROCEDURES AND PROTOCOLS NECESSARY TO MAINTAIN A SAFE WORK ENVIRONMENT. CONTRACTOR WILL ALSO ADDRESS ENVIRONMENTAL CONCERNS IN A WRITTEN PLAN, INCLUDING ITEMS SUCH AS SPILL PREVENTION, WASTE HANDLING AND DISPOSAL, FUELING PROCEDURES, FUGITIVE EMISSIONS, STORMWATER CONTROL, CONCRETE WASTEWATER, AND OTHER RELEVANT ENVIRONMENTAL CONCERNS.
- THE CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION AND SEDIMENT CONTROLS DOWNSTREAM OF THE DISTURBED AREAS AS REQUIRED BY THE FACILITY'S EROSION AND SEDIMENT CONTROL PLAN, AND APPLICABLE STATE REGULATIONS.
- IF FIELD CONDITIONS DIFFER FROM NOTES AND DETAILS SHOWN ON THESE DRAWINGS, CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER AND OWNER FOR CLARIFICATION.

LANDFILL GAS PIPE REQUIREMENTS

- ALL LFG SYSTEM HEADER AND LATERAL PIPING SHALL BE HIGH DENSITY POLYETHYLENE (HDPE), SDR-17, PE 4710, UNLESS OTHERWISE NOTED.
- ALL PNEUMATIC SUPPLY PIPING SHALL BE HDPE SDR-9, PE4710.
- ALL LIQUID FORCEMAIN PIPING SHALL BE HDPE SDR-11, PE4710.
- FLANGES FOR THE HDPE SHALL BE CONVOLUTED DUCTILE IRON BACK-UP RINGS FINISHED WITH AN IRON OXIDE PRIMER. FLANGE NUTS AND BOLTS SHALL BE GALVANIZED STEEL AND COATED WITH ANTI-SIEZE COMPOUND. BURIED FLANGES SHALL BE WRAPPED IN 5-MIL POLYETHYLENE SHEETING PRIOR TO BACKFILLING TO HELP PREVENT CORROSION.
- PIPE INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF ASTM D-2321, PPI TR-31/9-79, AND THE MANUFACTURER'S RECOMMENDATIONS.
- ALL HEADER AND LATERAL PIPING SHALL BE SUBJECTED TO AN AIR TEST TO DETECT ANY LEAKS. TESTING SHALL BE CONDUCTED WITH THE PIPE IN THE TRENCHES. CONTRACTOR SHALL TEST THE PIPE AT 5 PSIG FOR A PERIOD OF NOT LESS THAN 1 HOUR. PRESSURE DROP DURING THE TEST SHALL NOT EXCEED ONE-PERCENT OF THE TESTING PRESSURE.
- ALL PNEUMATIC SUPPLY AND LIQUID FORCEMAIN PIPING SHALL BE SUBJECTED TO AN AIR TEST TO DETECT ANY LEAKS. TESTING SHALL BE CONDUCTED WITH THE PIPE IN THE TRENCHES. CONTRACTOR SHALL TEST THE PIPE AT 10 PSIG FOR A PERIOD OF NOT LESS THAN 1 HOUR. PRESSURE DROP DURING THE TEST SHALL NOT EXCEED TEN-PERCENT OF THE TESTING PRESSURE.
- MAINTAIN A MINIMUM 2% SLOPE FOR LANDFILL GAS HEADER INSTALLED OUTSIDE LINER LIMITS AND 4% MINIMUM SLOPE FOR LANDFILL GAS HEADER WITHIN THE LINER LIMITS.
- LFG SYSTEM HEADER, PNEUMATIC SUPPLY, AND LIQUID FORCE MAIN ISOLATION VALVES ARE CLUSTERED TOGETHER AT ALL PERTINENT INTERSECTIONS, UNLESS OTHERWISE SHOWN ON THE DRAWING.
- LFG SYSTEM HEADER ISOLATION VALVES SHALL BE BUTTERFLY ISOLATION VALVES WITH VITON SEAL AND STEM EXTENSION WITH GEAR BOX NO LESS THAN 3 FEET ABOVE FINAL GRADE. EITHER SIDE OF THE VALVE SHALL HAVE A STAINLESS STEEL BRAIDED SAMPLING PORT INSTALLED ON THE LFG HEADER.
- THE PNEUMATIC SUPPLY AND LIQUID FORCE MAIN ISOLATION VALVES SHALL BE HDPE TIMESAVER VALVES OR EQUIVALENT ABOVE GRADE OPERATING VALVES. THE AIR AND FORCE MAIN VALVES SHALL BE EQUIPPED WITH AIR BLEED OFF VALVES.

BLOWER FLARE STATION

- BLOWER FLARE STATION WILL RECEIVE POWER FROM BRISTOL VIRGINIA UTILITY (BVU) PER ELECTRICAL DRAWINGS. CITY TO COORDINATE EFFORTS WITH BVU FOR 3 PHASE 480 V SERVICE. CONTRACTOR MUST INSTALL ELECTRICAL RUNS AND ELECTRICAL EQUIPMENT, INCLUDING NEW BACKUP GENERATOR, FOR NEW BLOWER/FLARE STATION PER ELECTRICAL DRAWINGS.
- LOCATION OF THE BLOWER FLARE STATION IS SUBJECT TO CHANGE BASED ON FIELD CONDITIONS AND REQUIREMENTS.
- CHAIN LINK FENCE WILL SURROUND THE BLOWER FLARE STATION.
- THE BLOWER/FLARE STATION EQUIPMENT IS DRAWN TO AN APPROXIMATE SCALE IN THE DRAWINGS. MANUFACTURER TO PROVIDE FINAL DIMENSIONS SUBJECT TO APPROVAL BY ENGINEER.

COMMONWEALTH OF VIRGINIA

Charles Warren

CHARLES WARREN

#053809

04/07/25

PROFESSIONAL ENGINEER

DATE

4/7/25

REVISION

ADDENDUM 1

NO.

1

2

3

4

5

6

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8

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10

SHEET TITLE

NOTES AND LEGEND

PROJECT TITLE

STAGE II LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION

CLIENT

CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY

2655 VALLEY DRIVE
BRISTOL, VA 24201

SCS ENGINEERS

STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.

15521 MIDLOTHIAN TURNPIKE, MIDLOTHIAN, VA 23113

PH. (804) 378-7440 FAX. (804) 378-7433

PROJ. NO. 02218208.14

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APP. BY: C/JW

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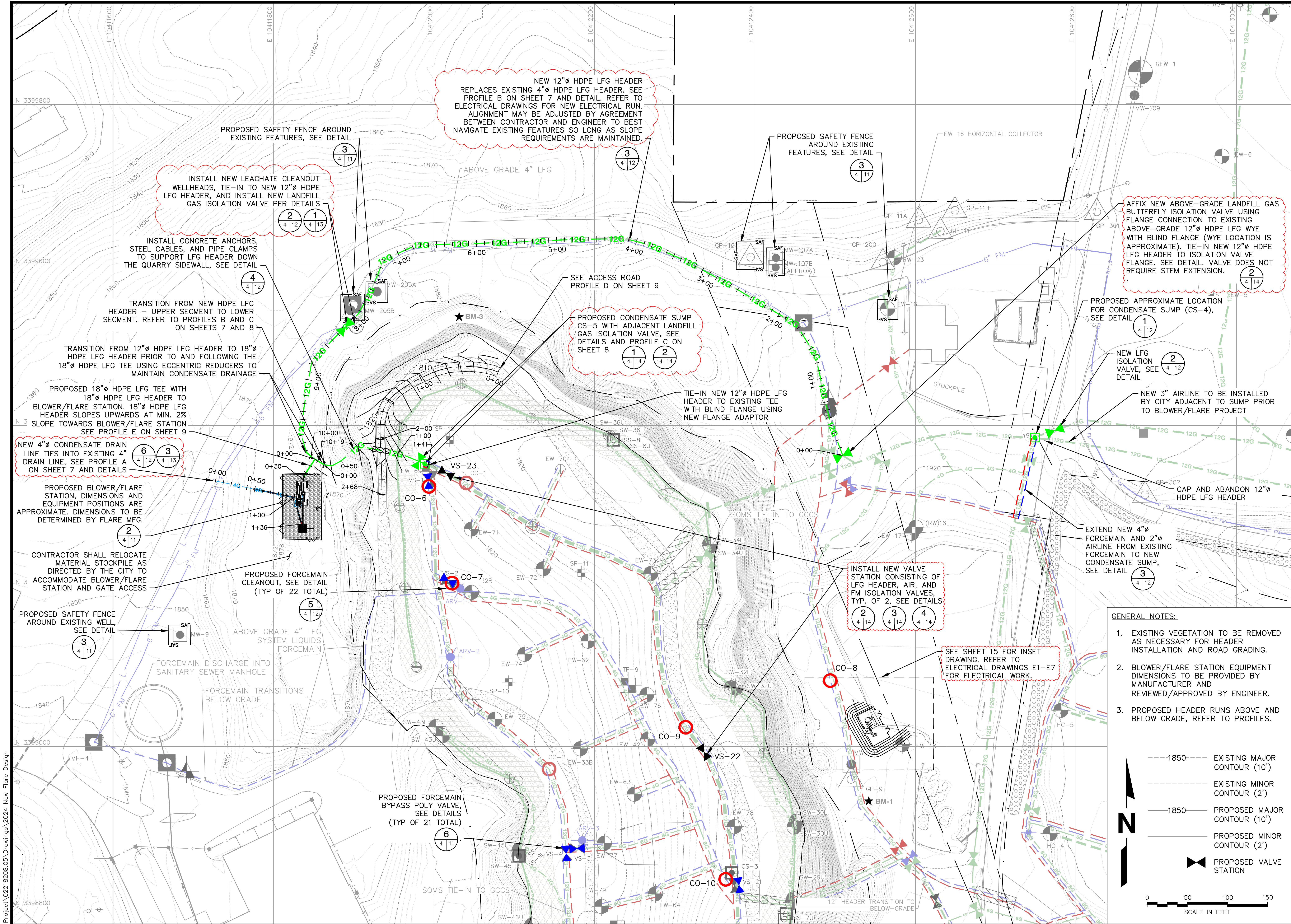
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COMMONWEALTH OF VIRGINIA

Charles Warren

#053809

04/07/25

PROFESSIONAL ENGINEER

DATE

4/7/25

REVISION

ADDITION 1

NO.

1

SHEET TITLE

PROPOSED LAYOUT - NORTH

PROJECT TITLE

STAGE II LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION

CIENT

CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY
2655 VALLEY DRIVE
BRISTOL, VA 24201

SCS ENGINEERS

STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.
15231 MIDLOTHIAN TPK., MIDLOTHIAN, VA 23113
PH. (804) 378-7440 FAX. (804) 378-7433

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GENERAL NOTES:

1. EXISTING VEGETATION TO BE REMOVED AS NECESSARY FOR HEADER INSTALLATION AND ROAD GRADING.

2. BLOWER/FLARE STATION EQUIPMENT DIMENSIONS TO BE PROVIDED BY MANUFACTURER AND REVIEWED/APPROVED BY ENGINEER.

3. PROPOSED HEADER RUNS ABOVE AND BELOW GRADE, REFER TO PROFILES.

---1850---

EXISTING MAJOR CONTOUR (10')

---1850---

EXISTING MINOR CONTOUR (2')

—1850—

PROPOSED MAJOR CONTOUR (10')

—1850—

PROPOSED MINOR CONTOUR (2')

▲

PROPOSED VALVE STATION

0

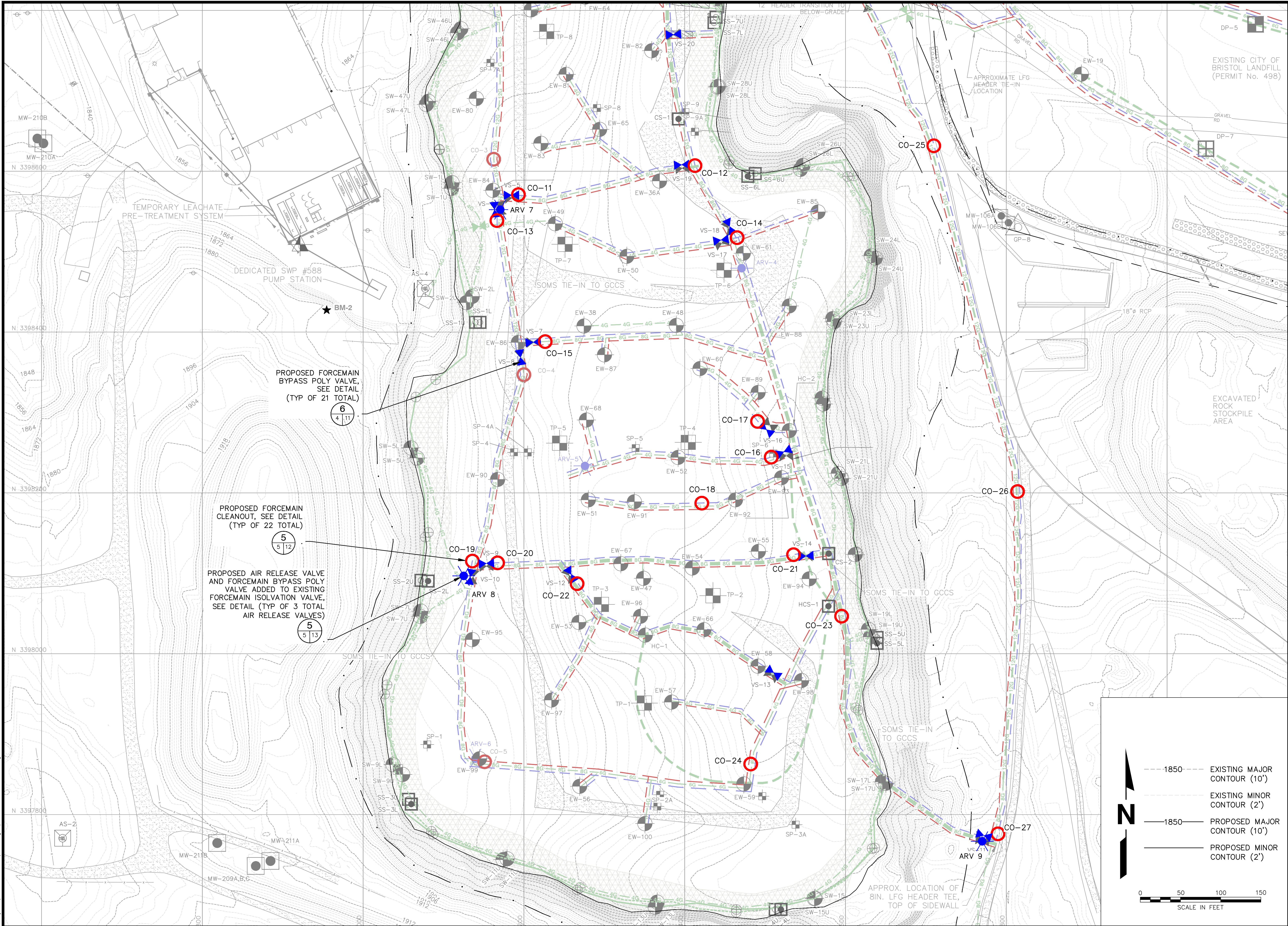
50

100

150

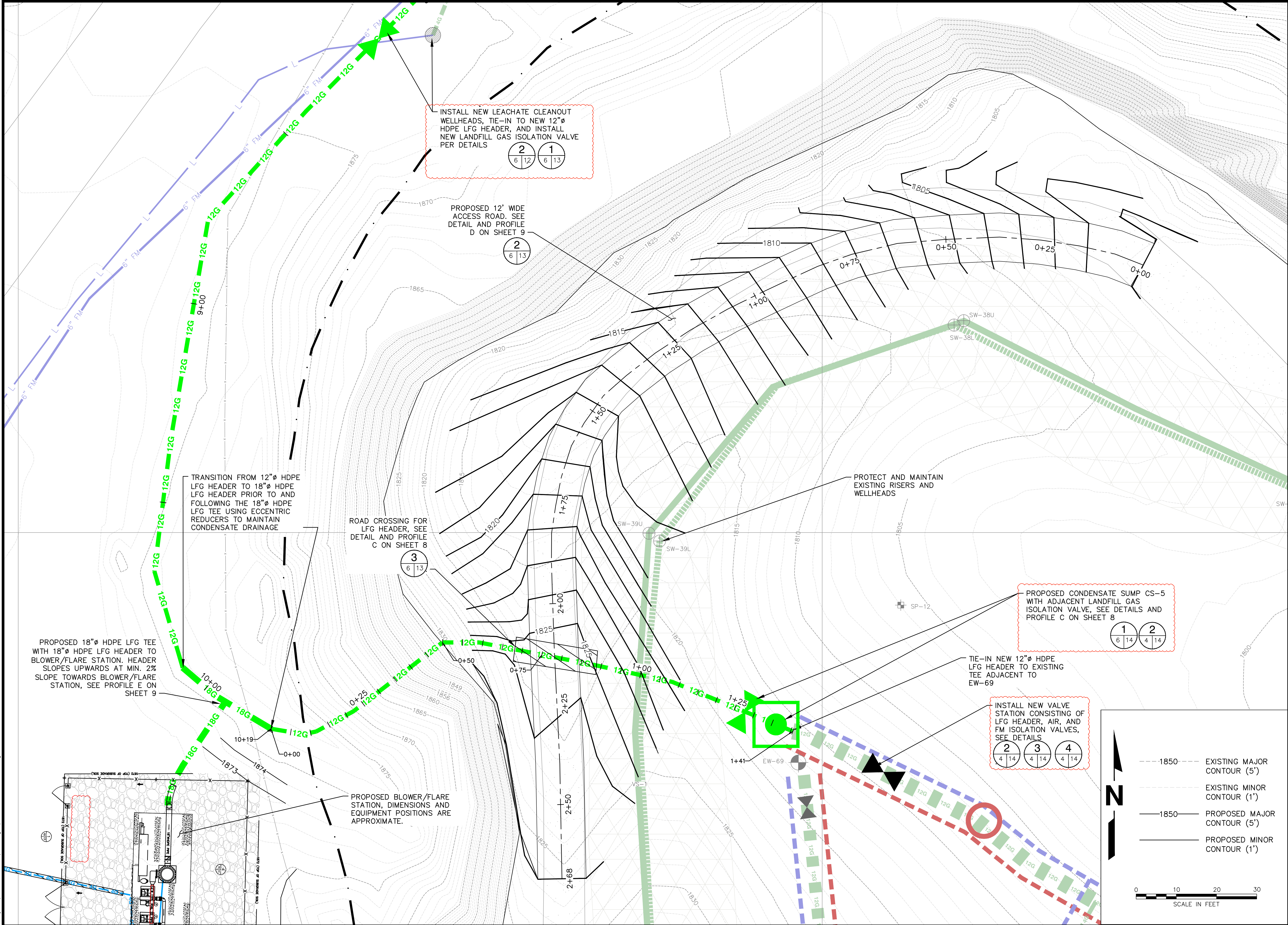
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SHEET TITLE PROPOSED LAYOUT - SOUTH	
PROJECT TITLE STAGE II LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION	
CLIENT CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY 2655 VALLEY DRIVE BRISTOL, VA 24201	
SCS ENGINEERS STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC. 15231 MIDLOTHIAN TPK., MIDLOTHIAN, VA 23113 PH. (804) 378-7440 FAX. (804) 378-7433	
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REVISION	ADDENDUM 1
NO.	1
SHEET TITLE ROAD GRADING	
PROJECT TITLE STAGE II LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION	
CLIENT	CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY 2655 VALLEY DRIVE BRISTOL, VA 24201
SCS ENGINEERS STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC. 15231 MIDLOTHIAN TPK., MIDLOTHIAN, VA 23113 PH. (804) 378-7440 FAX. (804) 378-7433	
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GENERAL NOTES:
1. THE WRITTEN SCALES INDICATED UNDERNEATH THE PROFILE VIEW TITLES WILL VARY DEPENDING UPON PLOT SIZE. DRAWINGS ARE INTENDED TO BE PLOTTED FULL SIZE ON 24" X 36" SHEETS.



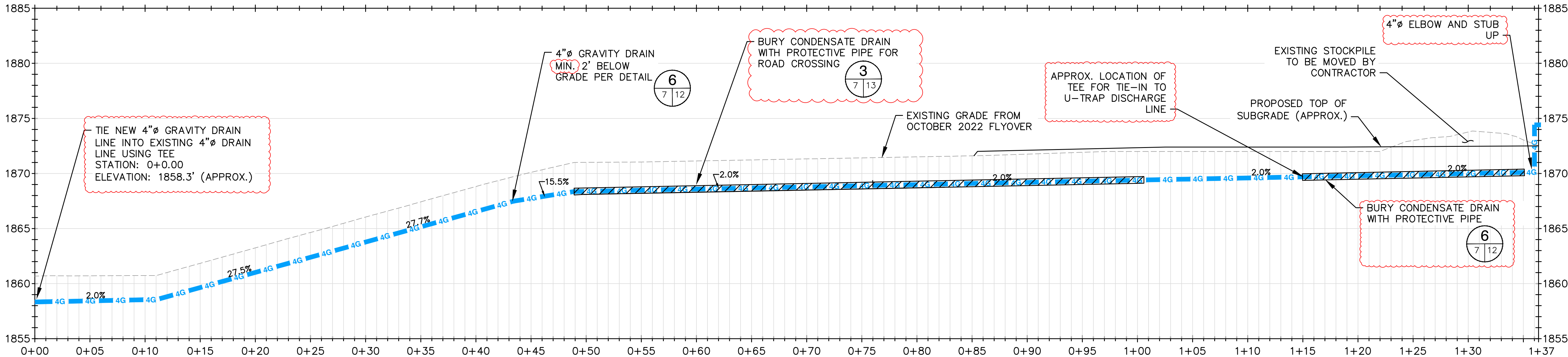
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PROJECT TITLE	STAGE II LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION

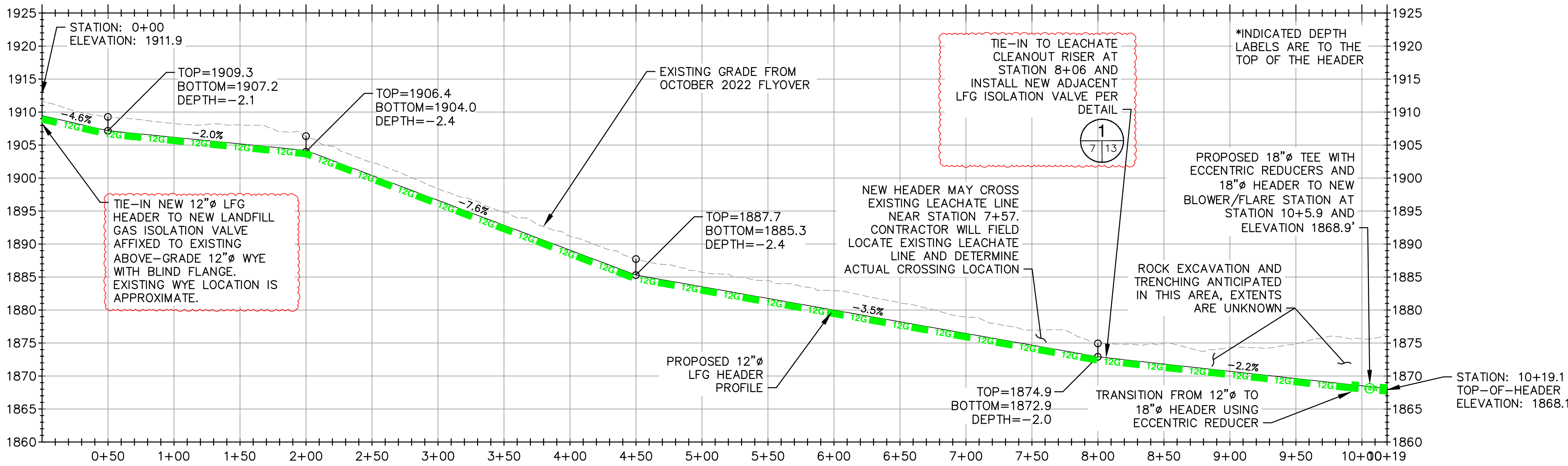
CLIENT	CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY 2655 VALLEY DRIVE BRISTOL, VA 24201
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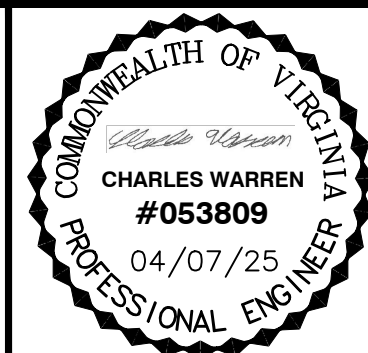
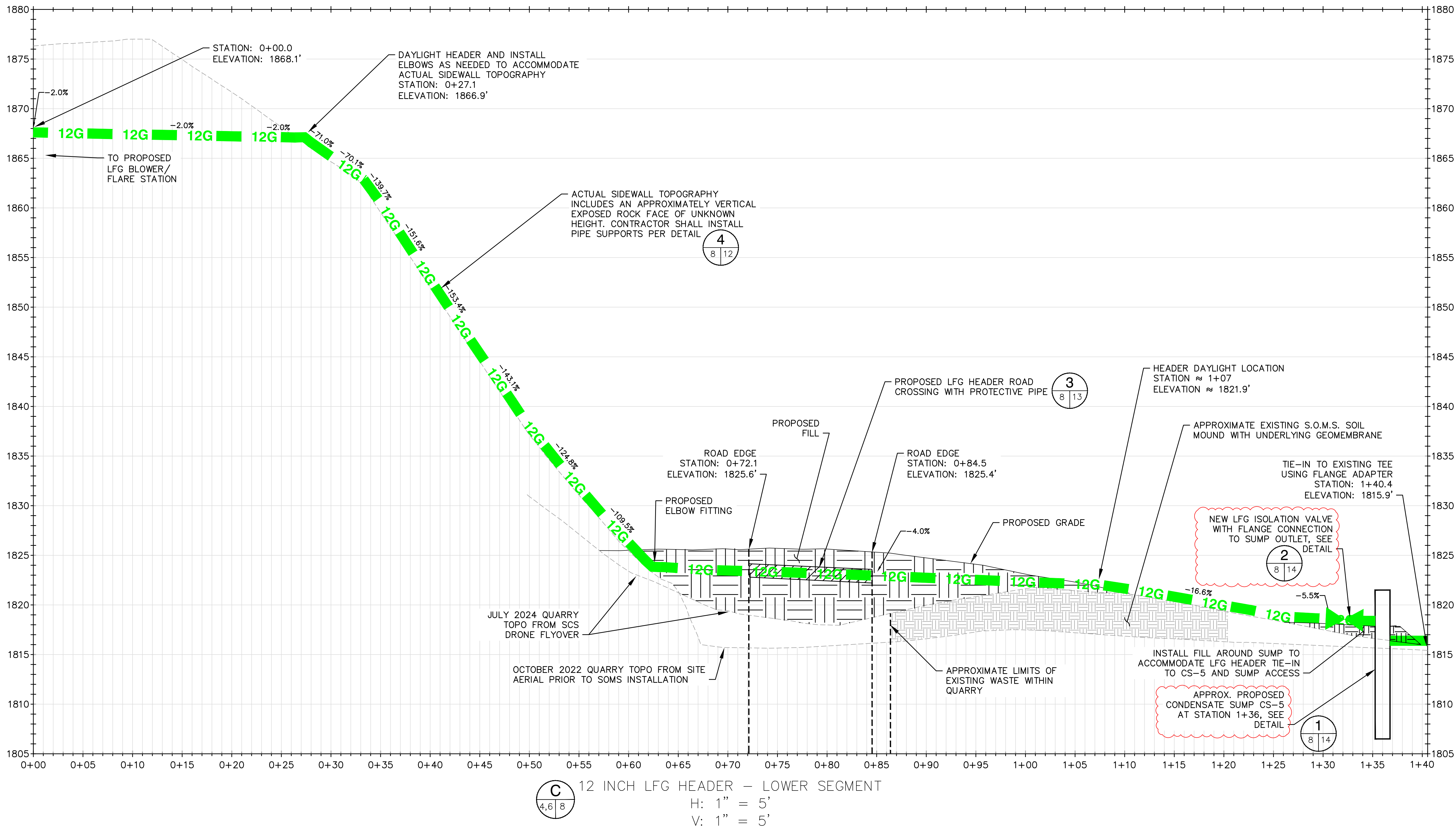
4 INCH CONDENSATE DRAIN PROFILE
H: 1" = 5'
V: 1" = 5'



12 INCH LFG HEADER NORTH QUARRY RIM
H: 1" = 50'
V: 1" = 10'

GENERAL NOTES:

1. THE WRITTEN SCALES INDICATED UNDERNEATH THE PROFILE VIEW TITLES WILL VARY DEPENDING UPON PLOT SIZE. DRAWINGS ARE INTENDED TO BE PLOTTED FULL SIZE ON 24" X 36" SHEETS.
2. EXISTING GRADES ARE APPROXIMATIONS BASED ON AERIAL FLYOVERS. CONTRACTOR SHALL MEASURE ACTUAL ELEVATIONS AT TOP AND BASE OF SIDEWALL ALONG THE HEADER ALIGNMENT AND COORDINATE WITH THE ENGINEER TO ESTABLISH CONSTRUCTION TARGET SLOPES AND ELEVATIONS.
3. INDICATED DESIGN LFG HEADER SLOPES ARE APPROXIMATE. ACTUAL INSTALLED HEADER SLOPES SUBJECT TO APPROVAL BY ENGINEER.



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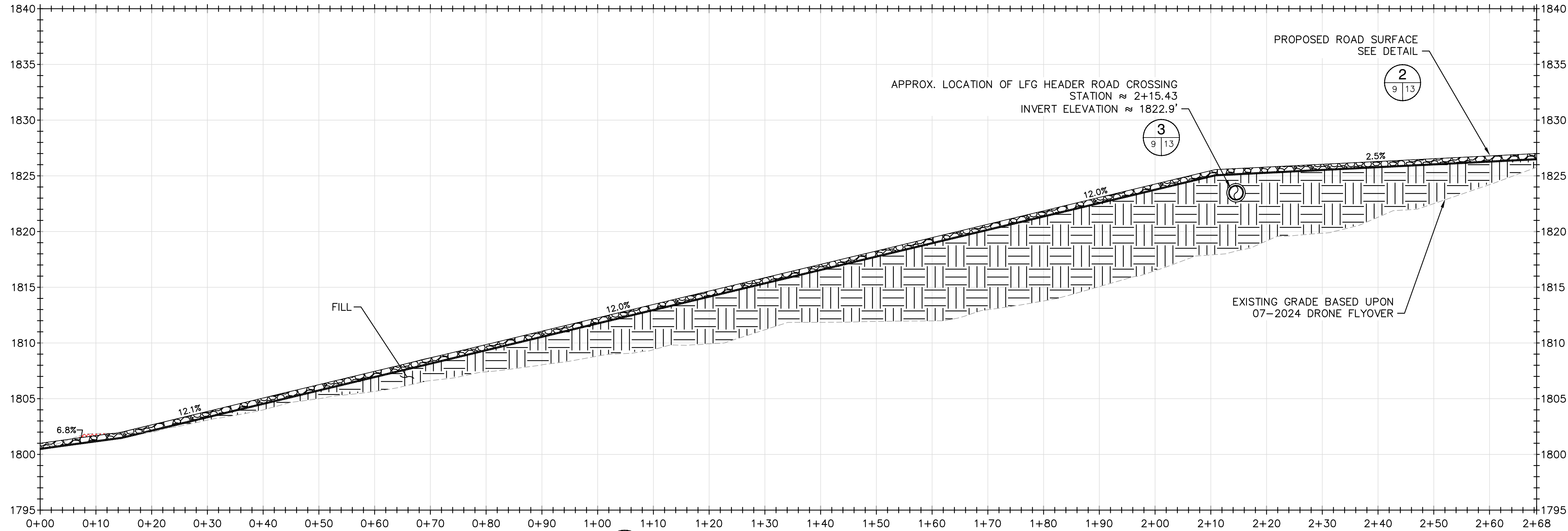
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PROJECT TITLE	STAGE II LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION

CLIENT	CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY 2655 VALLEY DRIVE BRISTOL, VA 24201
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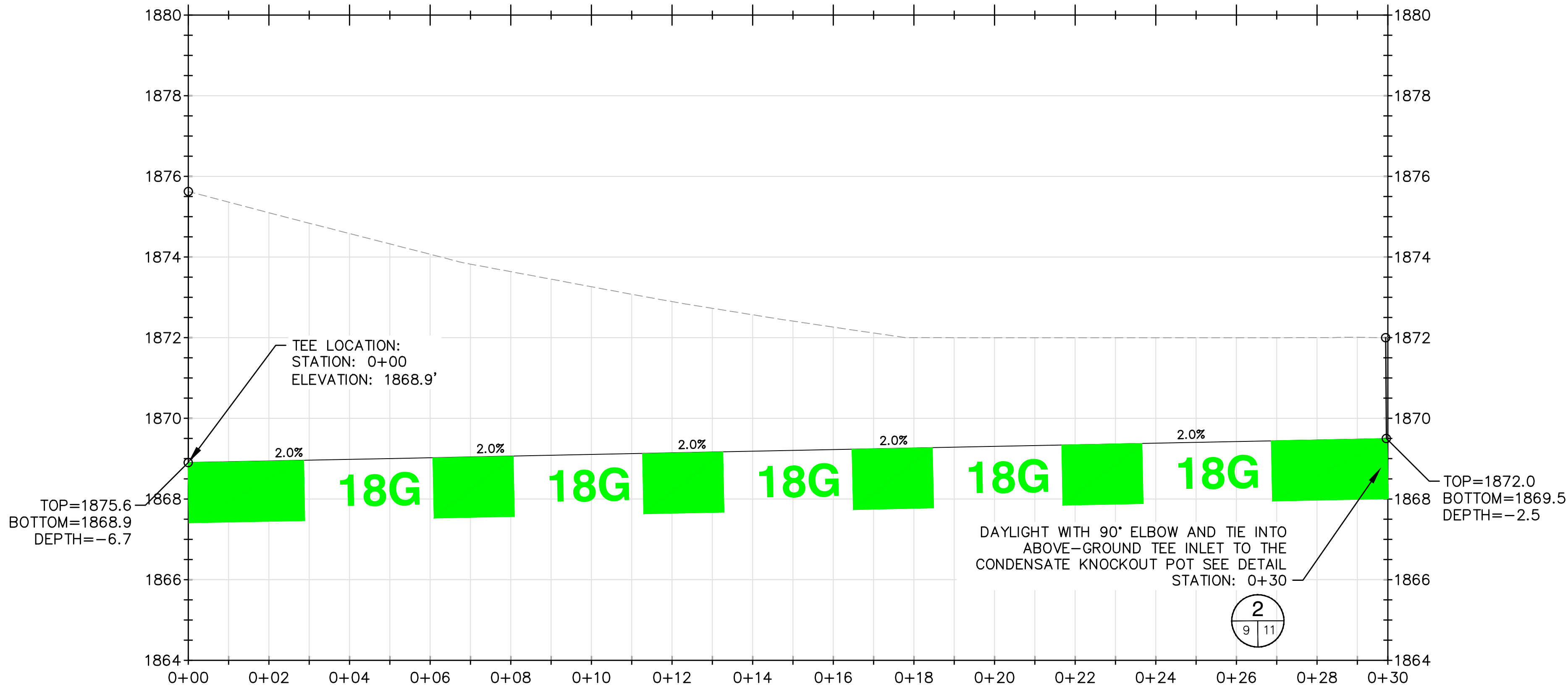
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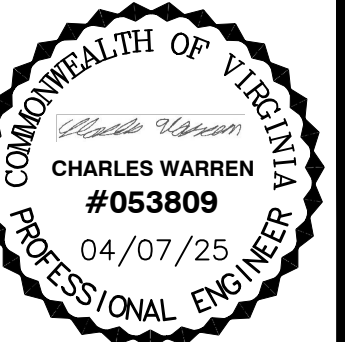
D
4,6 | 9
ACCESS ROAD PROFILE
SCALE: H: 1"=10', V: 1"=5'
NOTE: INDICATED SCALE MAY VARY DEPENDING ON PLOT SIZE



E
4,6,10 | 9
18 INCH HEADER TO FLARE PROFILE
SCALE: H: 1"=2', V: 1"=2'

GENERAL NOTES:

1. THE WRITTEN SCALES INDICATED UNDERNEATH THE PROFILE VIEW TITLES WILL VARY DEPENDING UPON PLOT SIZE. DRAWINGS ARE INTENDED TO BE PLOTTED FULL SIZE ON 24" X 36" SHEETS.



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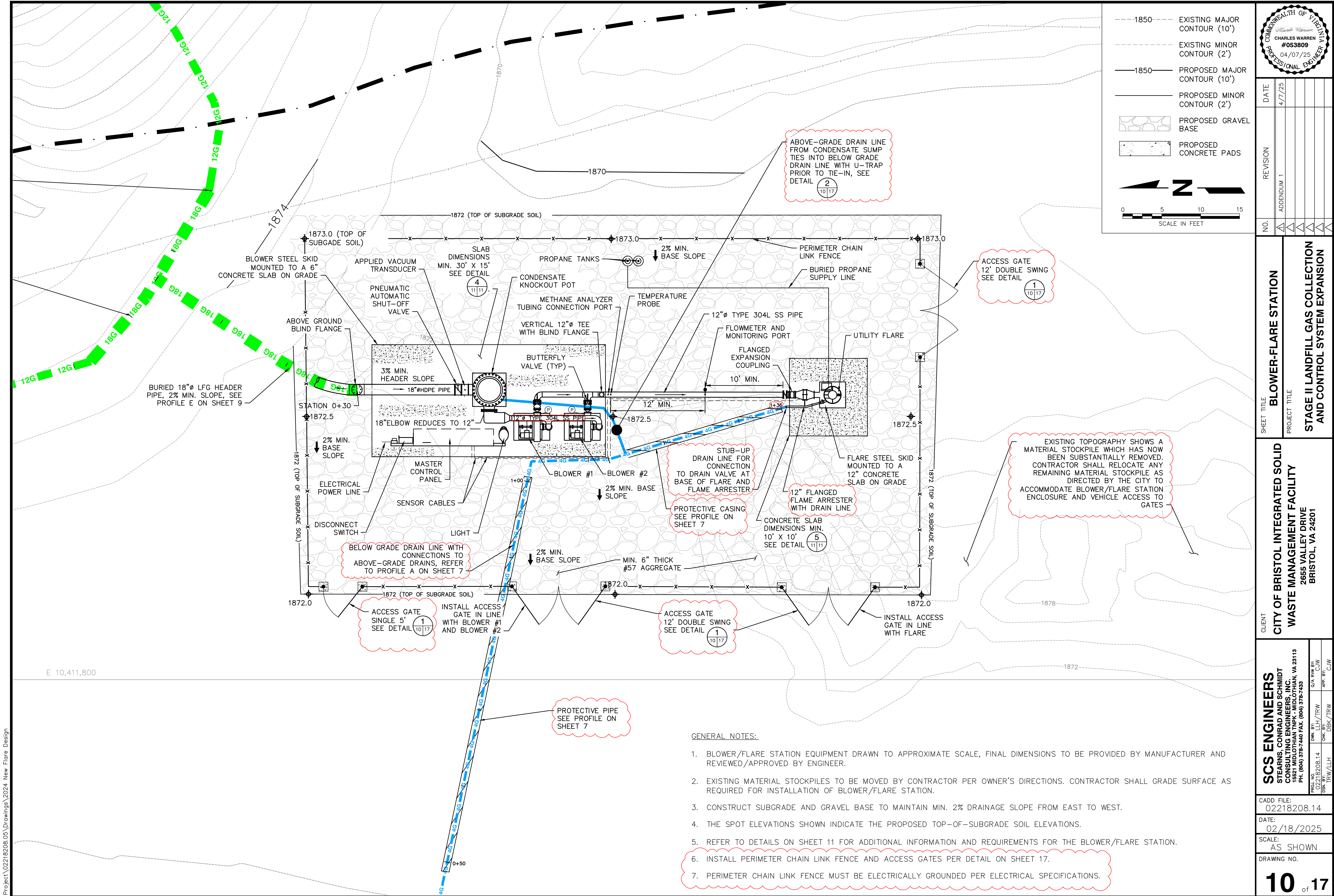
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PROJECT TITLE	STAGE II LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION

CLIENT	CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY 2655 VALLEY DRIVE BRISTOL, VA 24201
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SCS ENGINEERS	STEARN, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC. 1521 MIDLOTHIAN TPK. - MIDLOTHIAN, VA 23113 PH. (804) 378-7440 FAX. (804) 378-7433
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CADD FILE:	02218208.14
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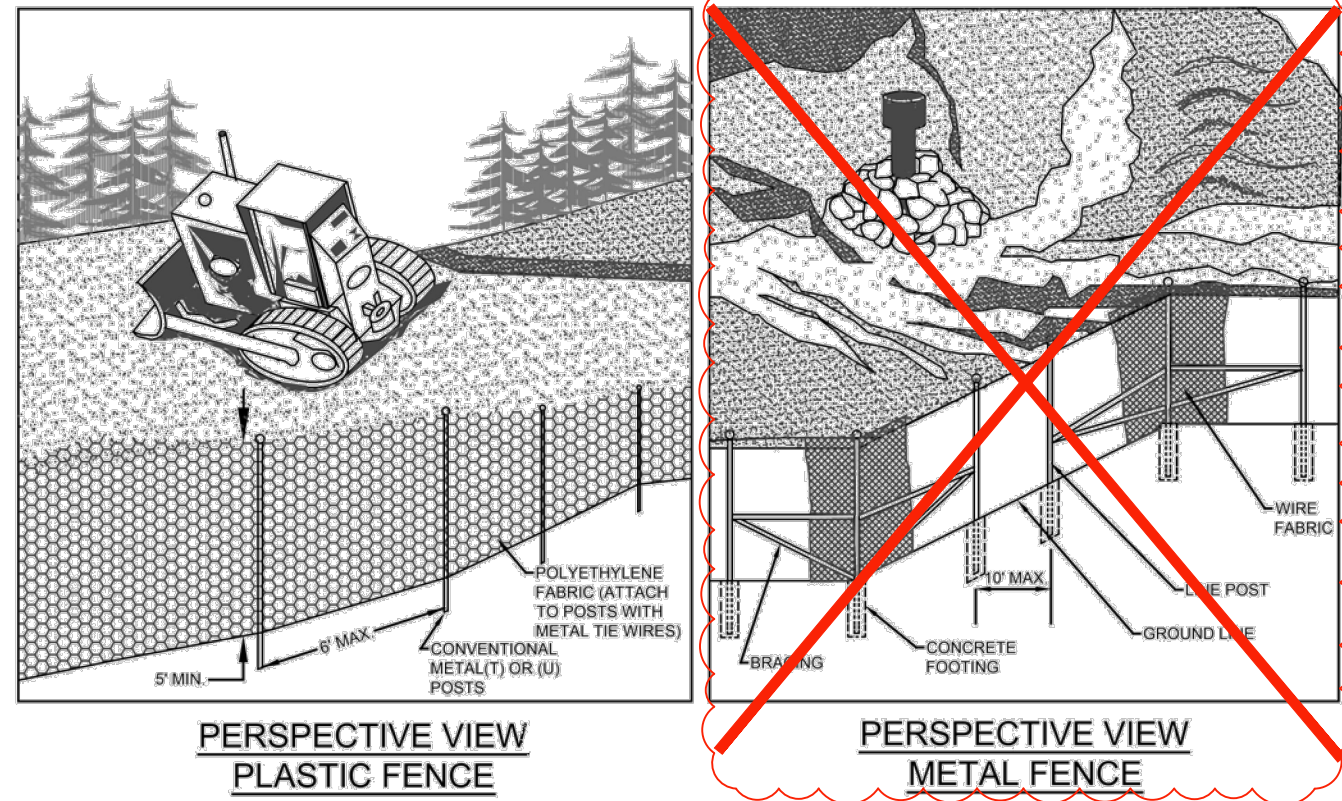
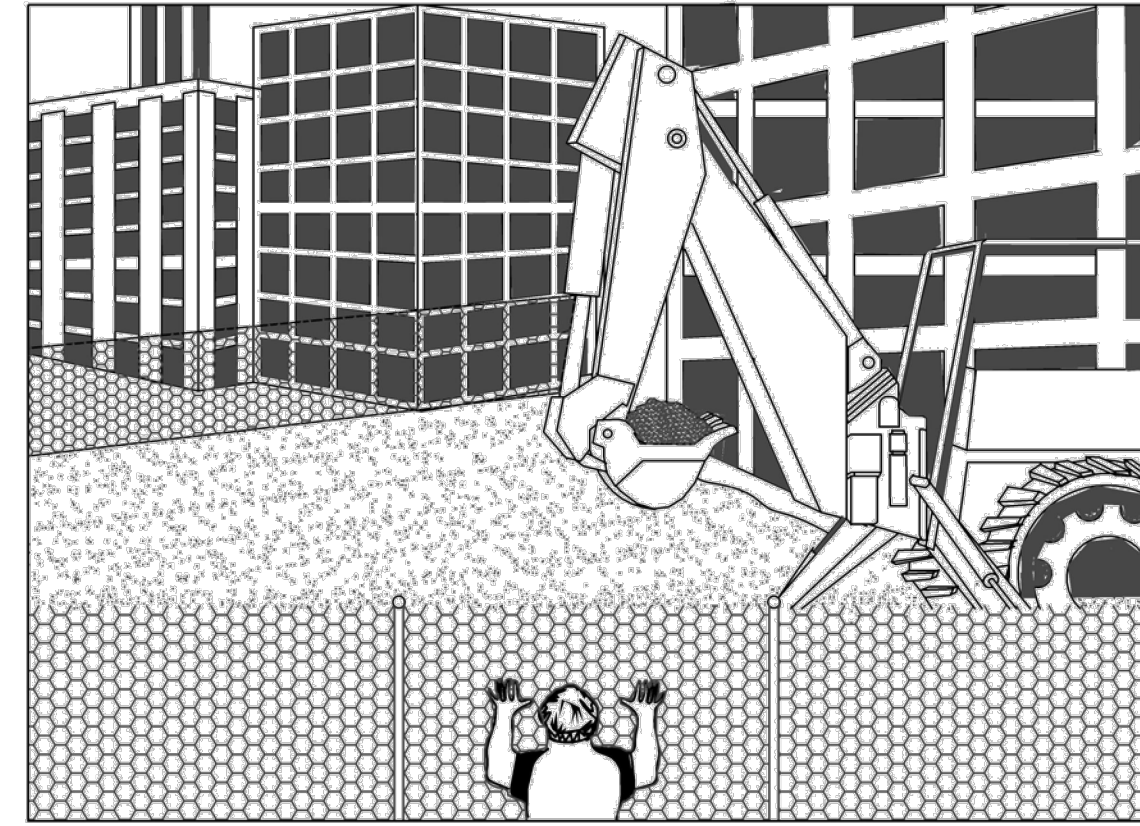
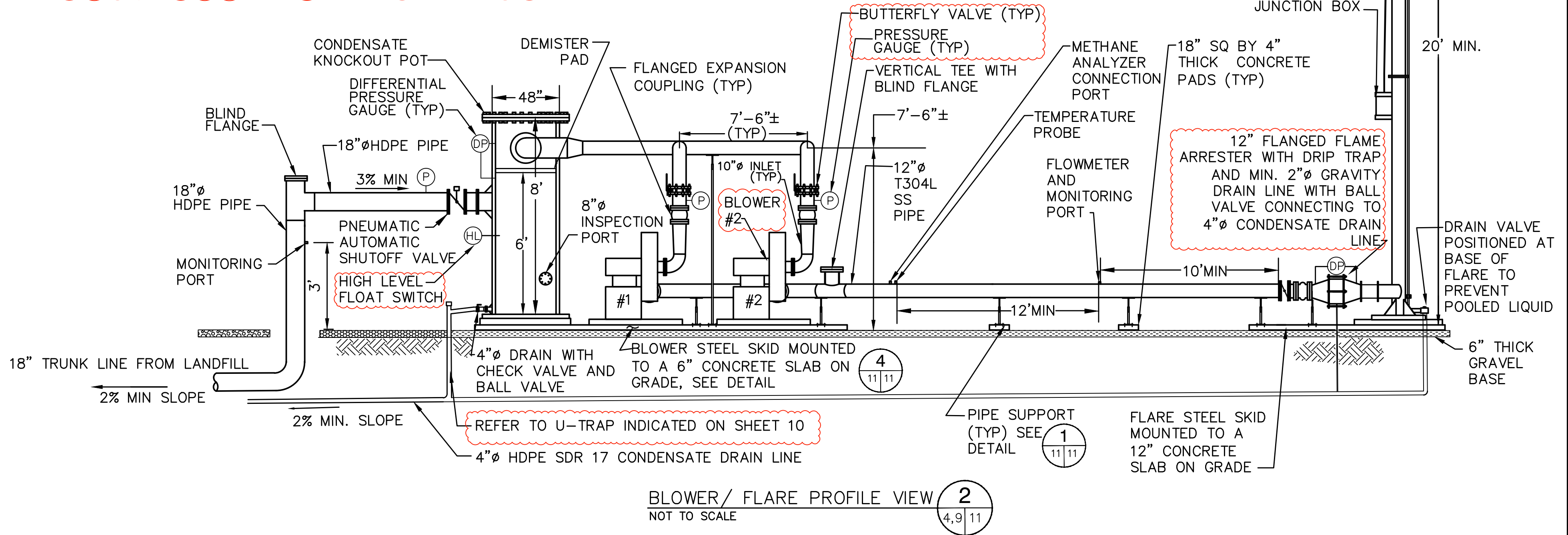
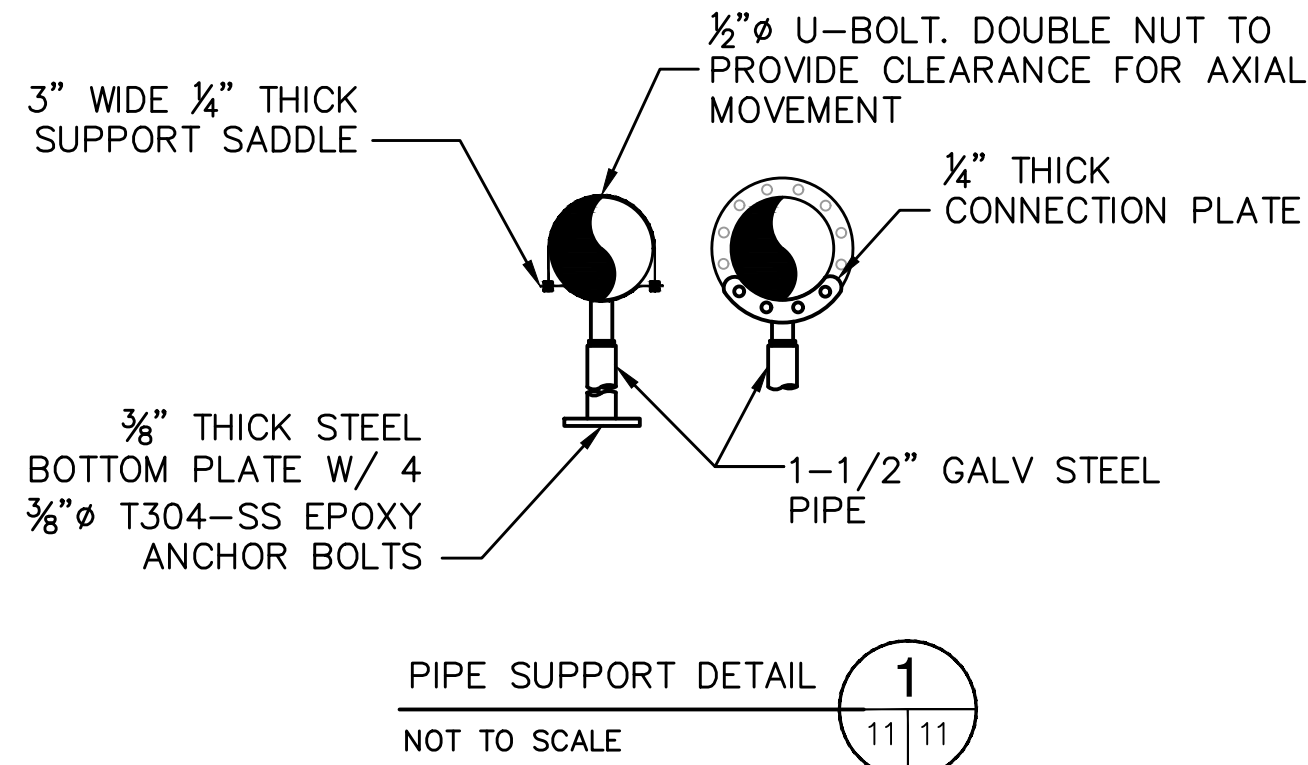
GENERAL NOTES:

- BLOWER/FLARE STATION EQUIPMENT DRAWN TO APPROXIMATE SCALE, FINAL DIMENSIONS TO BE PROVIDED BY MANUFACTURER AND REVIEWED/APPROVED BY ENGINEER.
- EXISTING MATERIAL STOCKPILES TO BE MOVED BY CONTRACTOR PER OWNER'S DIRECTIONS. CONTRACTOR SHALL GRADE SURFACE AS REQUIRED FOR INSTALLATION OF BLOWER/FLARE STATION.
- CONSTRUCT SUBGRADE AND GRAVEL BASE TO MAINTAIN MIN. 2% DRAINAGE SLOPE FROM EAST TO WEST.
- THE SPOT ELEVATIONS SHOWN INDICATE THE PROPOSED TOP-OF-SUBGRADE SOIL ELEVATIONS.
- REFER TO DETAILS ON SHEET 11 FOR ADDITIONAL INFORMATION AND REQUIREMENTS FOR THE BLOWER/FLARE STATION.
- INSTALL PERIMETER CHAIN LINK FENCE AND ACCESS GATES PER DETAIL ON SHEET 17.
- PERIMETER CHAIN LINK FENCE MUST BE ELECTRICALLY GROUNDED PER ELECTRICAL SPECIFICATIONS.

DATE	4/7/25
REVISION	ADDENDUM 1
NO.	
SHEET TITLE BLOWER-FLARE STATION	
PROJECT TITLE STAGE II LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION	
CLIENT CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY 2655 VALLEY DRIVE BRISTOL, VA 24201	
SCS ENGINEERS STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC. 15821 MIDLOTHIAN TPK. - MIDLOTHIAN, VA 23113 PH. (804) 378-7440 FAX. (804) 378-7433	
PROJ. NO. 02218208.14	DWG. BY: /TRW CHK. BY: /TRW APP. BY: C/JW
CADD FILE: 02218208.14	
DATE: 02/18/2025	
SCALE: AS SHOWN	
DRAWING NO. 10 of 17	

NOTES:

- GRADE THE BLOWER/FLARE STATION AREAS TO PROVIDE A LEVEL SURFACE FOR CONCRETE PADS AND EQUIPMENT INSTALLATION.
- MAINTAIN GRADES TO PROVIDE POSITIVE DRAINAGE AWAY FROM EQUIPMENT.
- CONTRACTOR SHALL CONDUCT DRIVE-CYLINDER TESTING (ASTM D2937, MINIMUM OF TWO SAMPLES) AND STANDARD PROCTOR TESTING (ASTM D698) OF IN-PLACE SOIL TO ASSESS THE EXISTING IN-PLACE DRY DENSITY AT THE NEW FLARE LOCATION AS A PERCENTAGE OF THE MAXIMUM DRY DENSITY. IF THE IN-PLACE PERCENT COMPACTION IS LESS THAN 95% OF THE MAXIMUM, CONTRACTOR SHALL UNDERCUT THE BLOWER-FLARE STATION FOOTPRINT BY 3' AND BACKFILL USING 6-IN COMPACTED LIFTS, COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY. BACKFILL SHALL BE INORGANIC SOIL THAT IS NOT EXCESSIVELY WET OR SATURATED, FREE OF STONE, ROCK, OR GRAVEL LARGER THAN (3) INCHES IN ANY DIMENSION, AND FREE OF DEBRIS, WASTE, FROZEN MATERIALS, VEGETATION, ORGANIC MATERIALS, ROOTS, AND OTHER DELETERIOUS MATTER. THE BACKFILL SHALL HAVE A CLASSIFICATION OF SC, ML, CL, MH, OR CH AS DEFINED IN THE UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D2487), OR OTHERWISE APPROVED BY THE ENGINEER.
- PROVIDE VEHICLE ACCESS TO BLOWER STATION VIA GRAVEL DRIVEWAY FROM EXISTING ACCESS ROAD.
- THE BLOWER CONTROL PANEL, FLARE CONTROL PANEL, DIGITAL DATA RECORDER, AND CONDENSATE SUMP CONTROL PANEL SHALL BE HOUSED IN ONE WEATHERPROOF MASTER CONTROL PANEL (MCP) ENCLOSURE SIZED FOR TWO BLOWERS. ADEQUATE SPACE SHALL BE PROVIDED FOR PLACEMENT OF A LAPTOP.
- BLOWERS, MCP, AND CONDENSATE KNOCKOUT POT TO BE MOUNTED ON A STEEL SKID. SLAB DIMENSIONS ARE APPROXIMATE, ADJUST FOR ACTUAL SKID SIZE. PROVIDE 1' CLEAR ALL AROUND.
- CONDENSATE KNOCKOUT POT SHALL BE LEAK-TESTED BY FABRICATOR PRIOR TO SHIPPING.
- INSULATE AND HEAT-TRACE THE ABOVE GRADE KNOCKOUT POT AND DRAIN PIPING.
- PROVIDE FENCED ENCLOSURE FOR BLOWER/FLARE STATION AND 6" GRAVEL BASE OVER SURFACE OF ENCLOSED AREA. PROVIDE 14' WIDE DOUBLE SWING GATE FOR ACCESS INTO ENCLOSED AREA.
- CONTRACTOR (MUST) INSTALL ROOF OVER THE MCP TO SHIELD FROM SUN.
- CONTRACTOR MAY MODIFY ORIENTATION OF PIPING AND BLOWER(S) SUBJECT TO ENGINEER'S APPROVAL. DIMENSIONS ARE APPROXIMATE AND MAY BE ADJUSTED AS NECESSARY TO INSTALL THE SPECIFIED EQUIPMENT.
- CONTRACTOR SHALL INSTALL CONDUIT SEALS ON ALL ELECTRICAL PANEL CONNECTIONS TO UNDERGROUND CONDUITS.
- THE FLARE STACK (MUST) INCLUDE CONTROL LOUVERS (DAMPERS) FOR ADJUSTING FLOW.
- FINAL CONCRETE PAD SIZE, THICKNESS, AND REINFORCEMENT REQUIREMENTS TO BE CONFIRMED BY ENGINEER FOLLOWING THE SELECTION OF THE BLOWER/FLARE MANUFACTURER. FINAL DIMENSIONS AND REINFORCEMENT REQUIREMENTS ARE SUBJECT TO CHANGE BY ENGINEER AT CONTRACTOR'S EXPENSE.

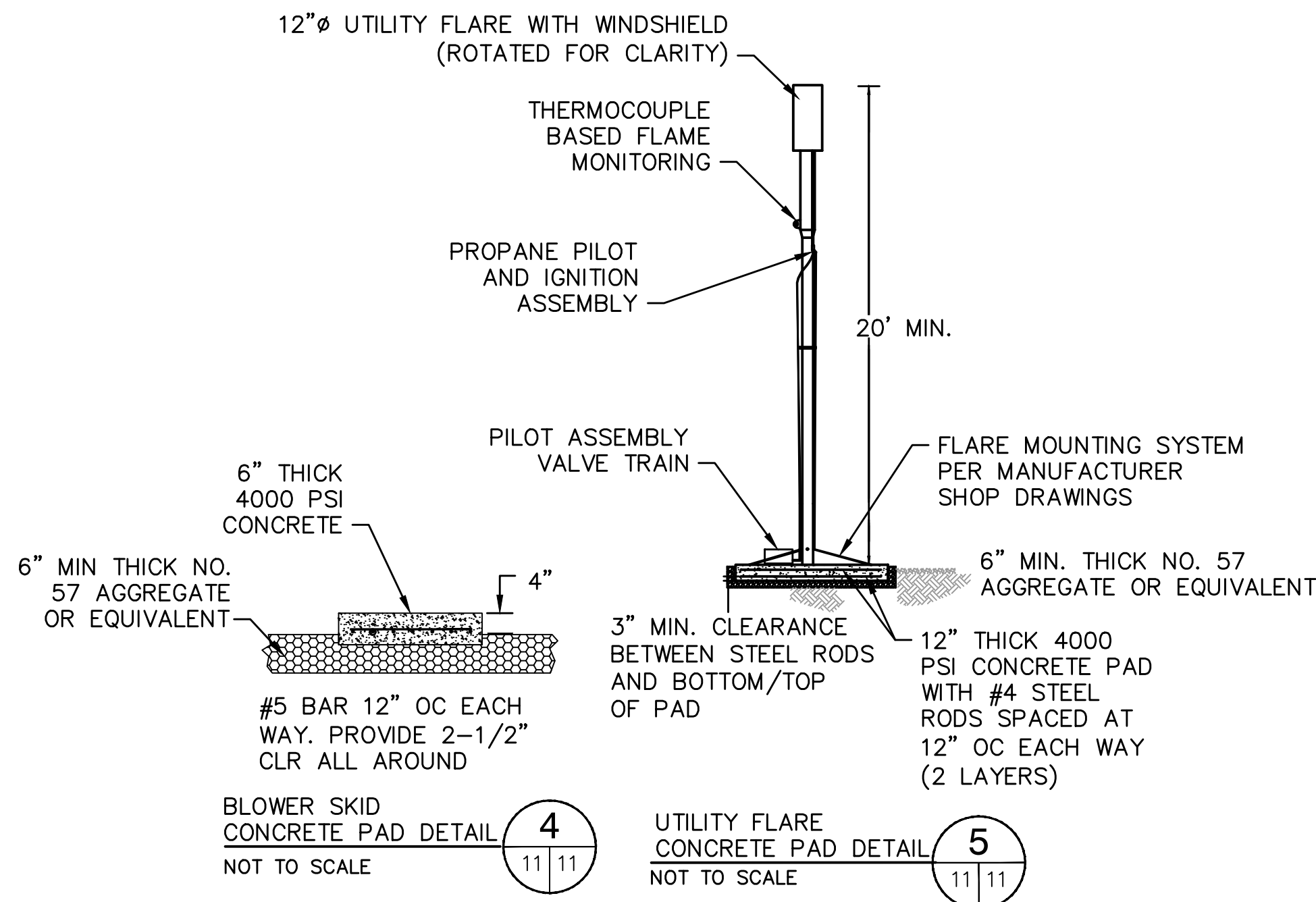


SAFETY FENCE

SOURCE: VDOT STDS., VA DSWC, CONVED PLASTICS C-PCM-01-1

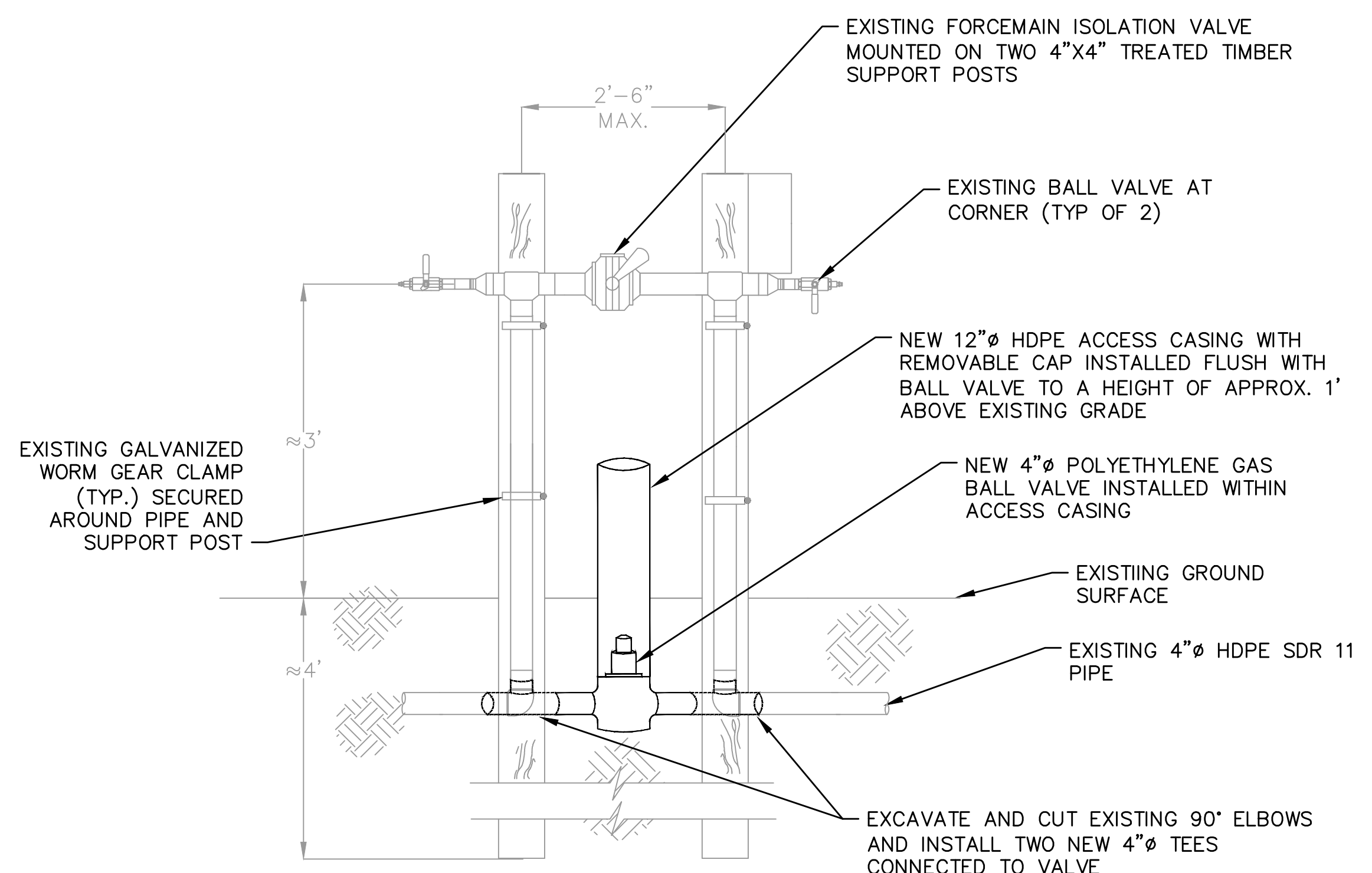
SAFETY FENCE DETAIL
NOT TO SCALE

3
4 11



NOTES:

- PER EPA METHOD 1, FLOW METER AND MONITORING PORTS SHALL BE LOCATED A MINIMUM OF 8 PIPE DIAMETERS DOWNSTREAM AND 2 PIPE DIAMETERS UPSTREAM FROM FLOW DISTURBANCES SUCH AS BENDS, EXPANSIONS, CONTRACTIONS, JOINTS, VALVES, ETC.
- PIPE SUPPORT SHALL BE LOCATED AT A MAXIMUM OF 8' O.C.
- FLARE WILL INCLUDE CONTROL LOUVERS (DAMPERS) TO CONTROL FLOW.
- FINAL CONCRETE PAD SIZE, THICKNESS, AND REINFORCEMENT REQUIREMENTS TO BE CONFIRMED BY ENGINEER FOLLOWING THE SELECTION OF THE BLOWER/FLARE MANUFACTURER. FINAL DIMENSIONS AND REINFORCEMENT REQUIREMENTS ARE SUBJECT TO CHANGE BY ENGINEER AT CONTRACTOR'S EXPENSE.

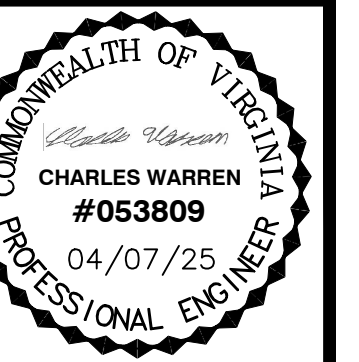


NOTES:

- CONTRACTOR SHALL EXCAVATE WITH CAUTION TO FIELD LOCATE EXISTING BURIED FORCEMAIN. EXISTING FEATURES SHALL BE PROTECTED AND REPLACED IF DAMAGED.

6
4,5 11

NOT TO SCALE



DATE	4/7/25
REVISION	ADDENDUM 1
NO.	

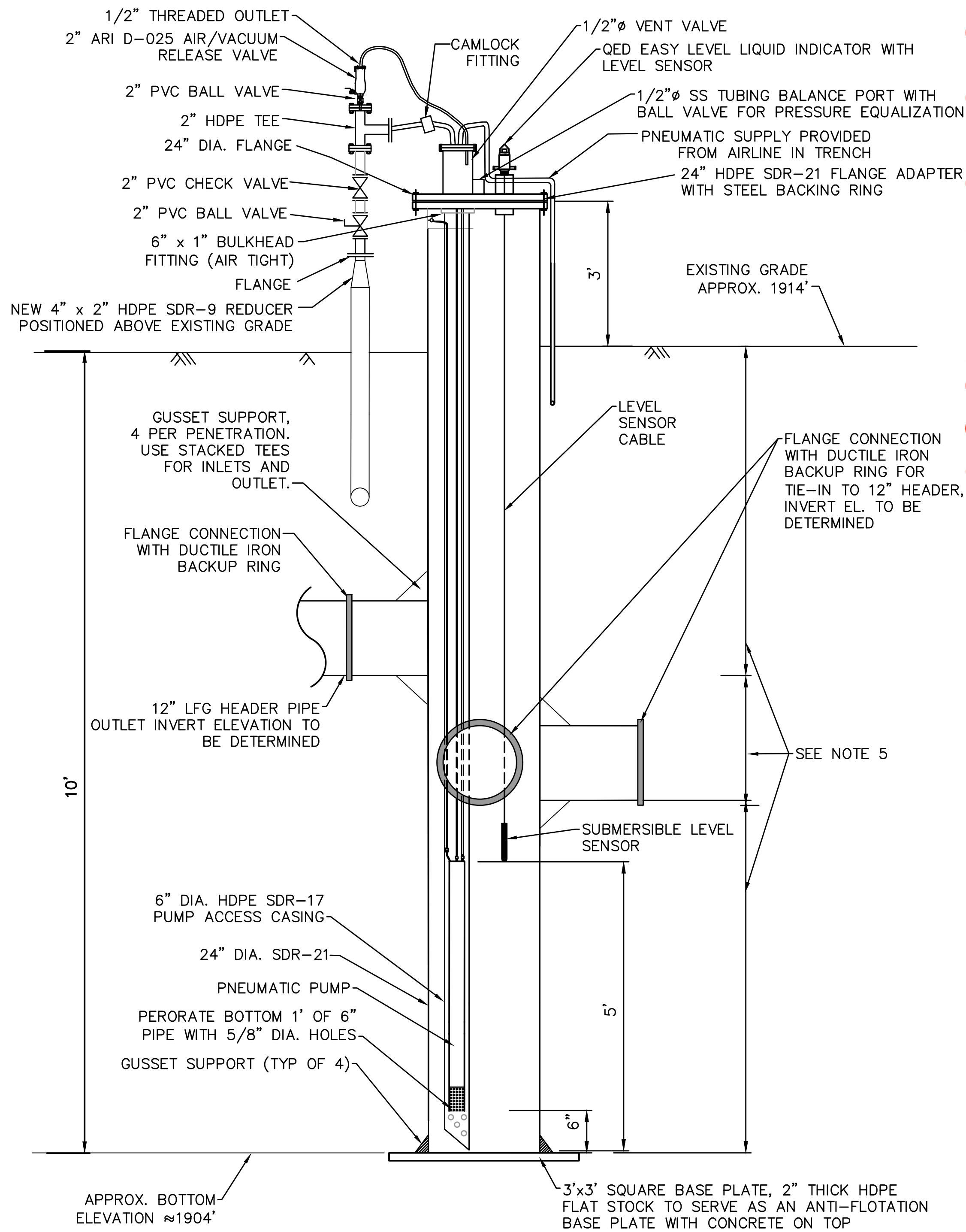
SHEET TITLE	DETAILS 1
PROJECT TITLE	STAGE II LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION

CLIENT	CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY 2655 VALLEY DRIVE BRISTOL, VA 24201
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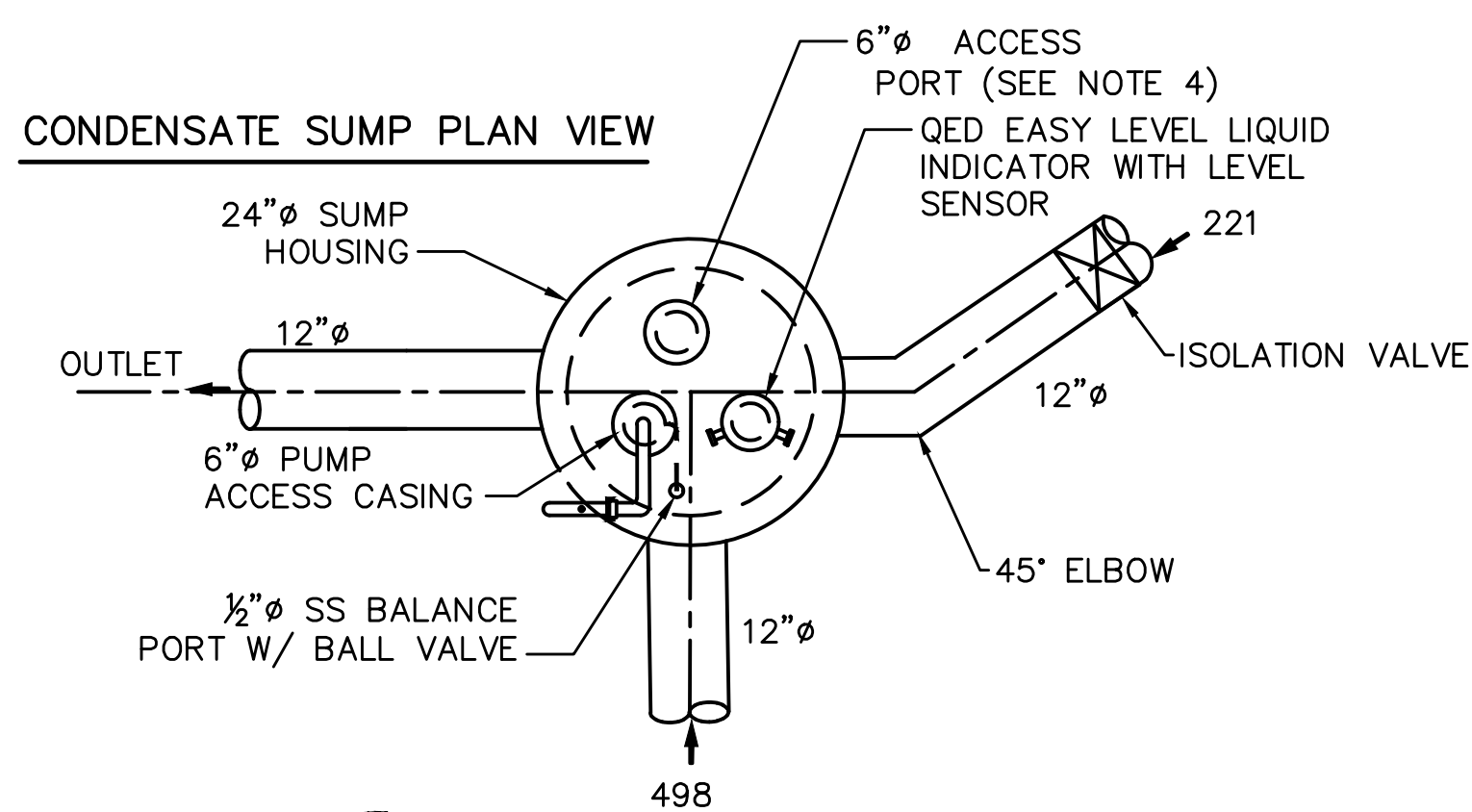
SCS ENGINEERS	STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC. 15521 MIDLOTHIAN TPK. - MIDLOTHIAN, VA 23113 PH. (804) 375-7440 FAX. (804) 375-7433
PROJ. NO.	18208.14
DWG. BY	TRW
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APP. BY	CJW

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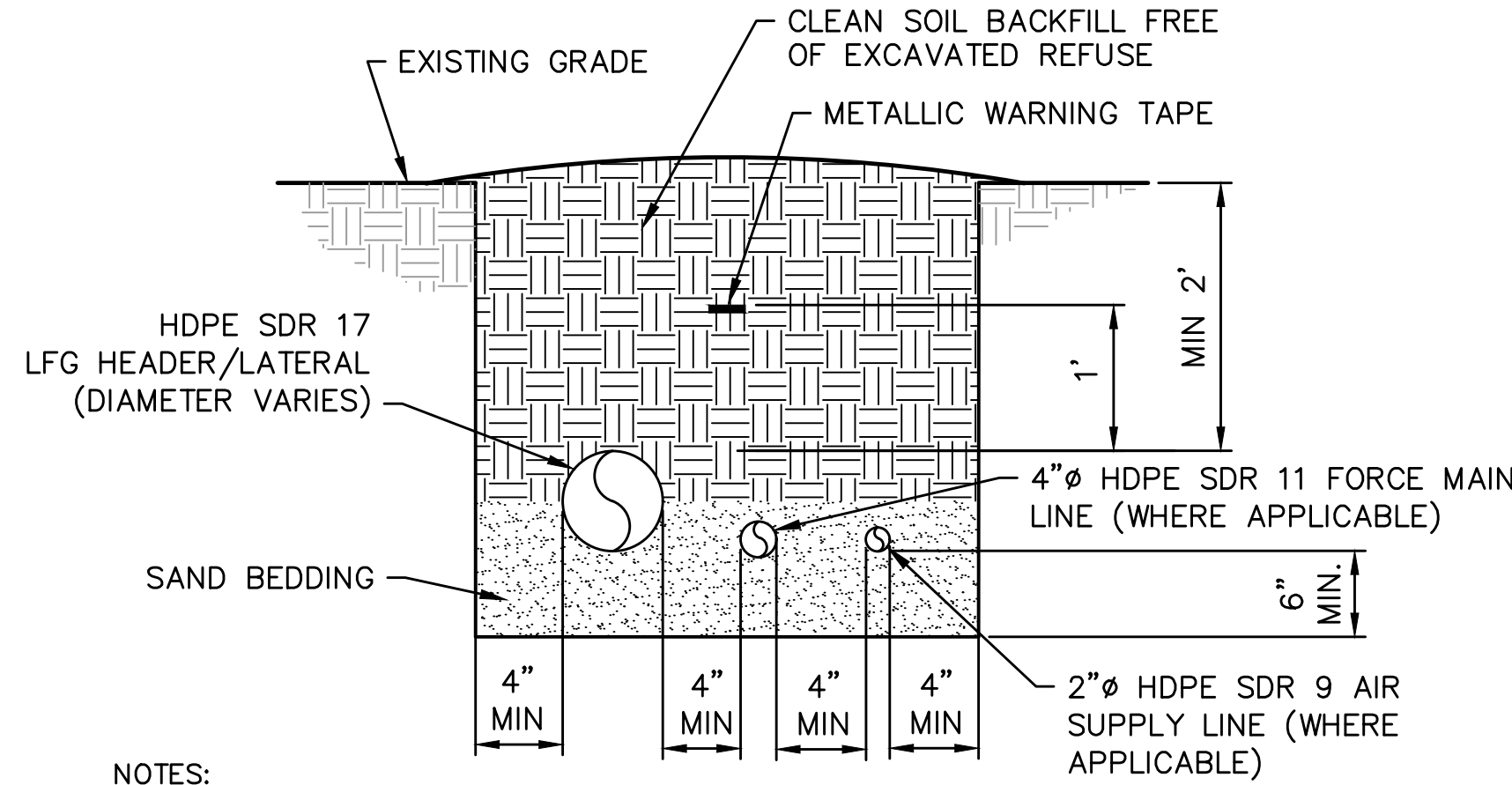
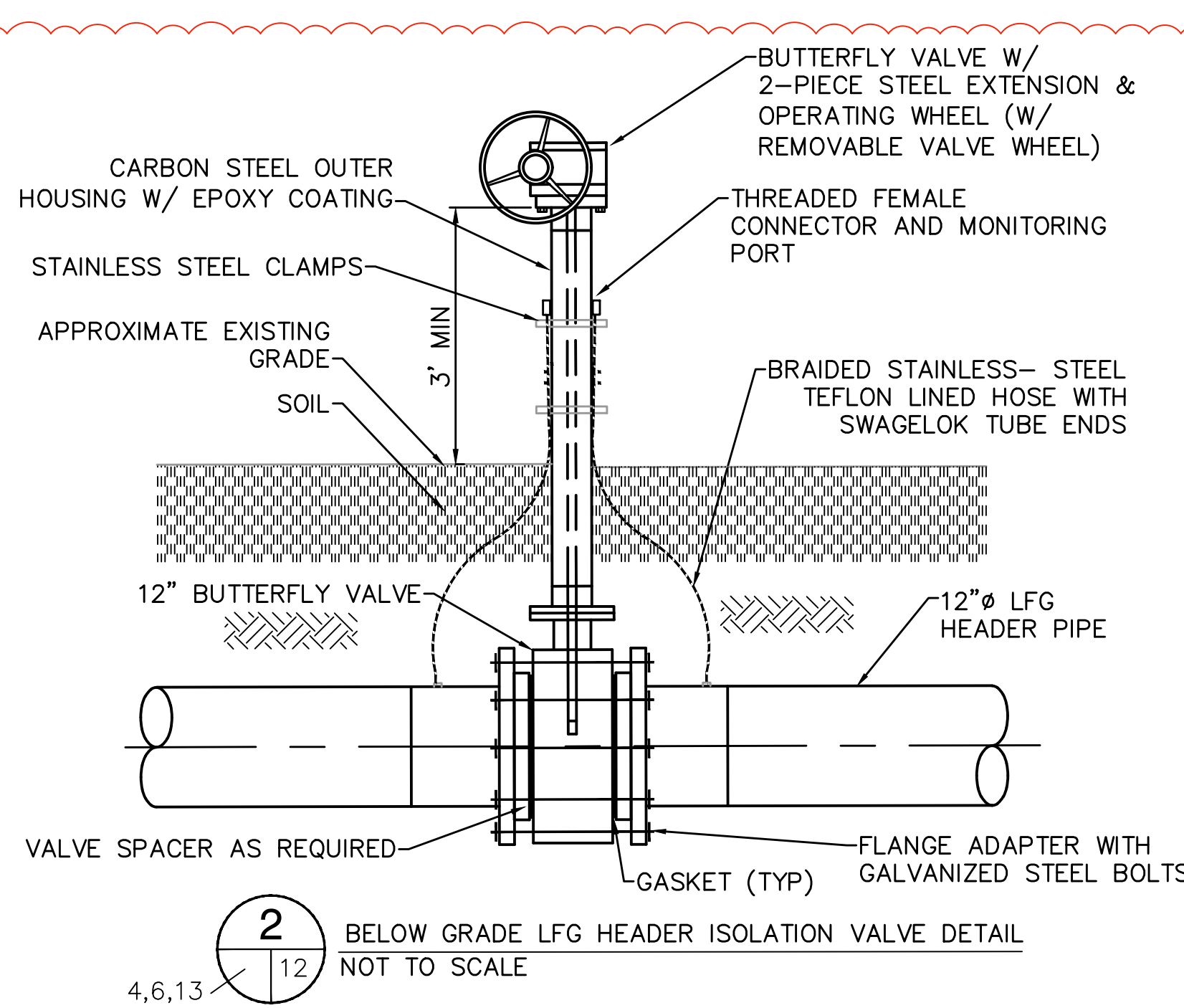
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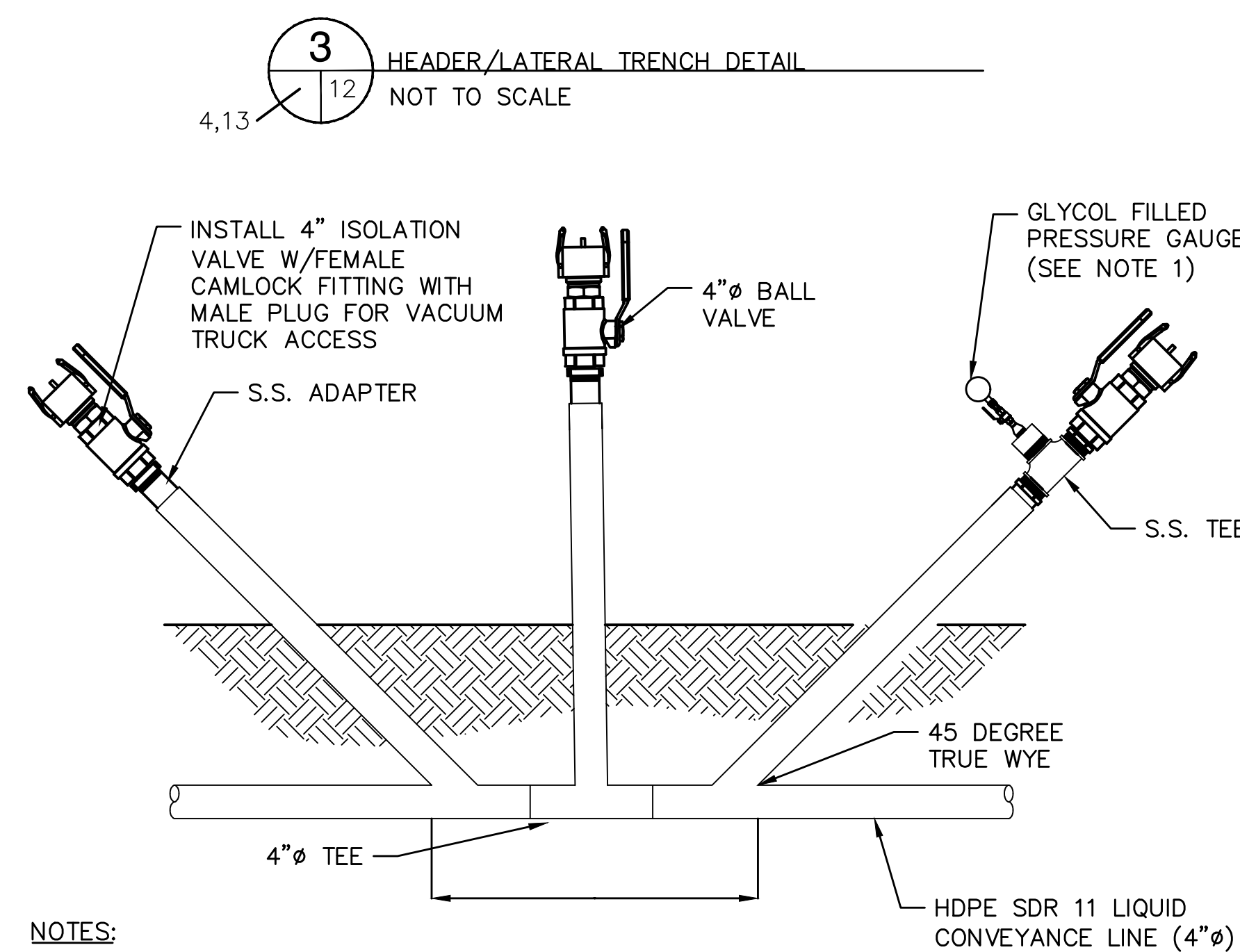
- NOTES:
1. LFG HEADER PIPE INLET (221) AND OUTLET ORIENTED AT APPROX. 135 DEGREES. FIELD INVESTIGATE EXISTING HEADER LOCATIONS TO CONFIRM ORIENTATION PRIOR TO SUMP MANUFACTURING.
 2. SUPPLY INSULATION ON ALL ABOVEGRADE PUMP DISCHARGE HOSE AND EXPOSED FORCEMAIN PIPING.
 3. CONTRACTOR SHALL PLACE 2-FOOT THICK LAYER OF CONCRETE ONTO TOP OF ANTI-FLOTATION BASE PLATE TO COUNTERACT BUOYANCY POTENTIAL.
 4. SUMP LID SHALL INCLUDE A SECOND 6" ACCESS PORT INTO SUMP VESSEL.
 5. FIELD INVESTIGATION MUST BE COMPLETED BY CONTRACTOR TO DETERMINE TEE ELEVATIONS AND INLET/OUTLET ORIENTATIONS.



1 CONDENSATE SUMP (CS-4) DETAIL
4,12 NOT TO SCALE

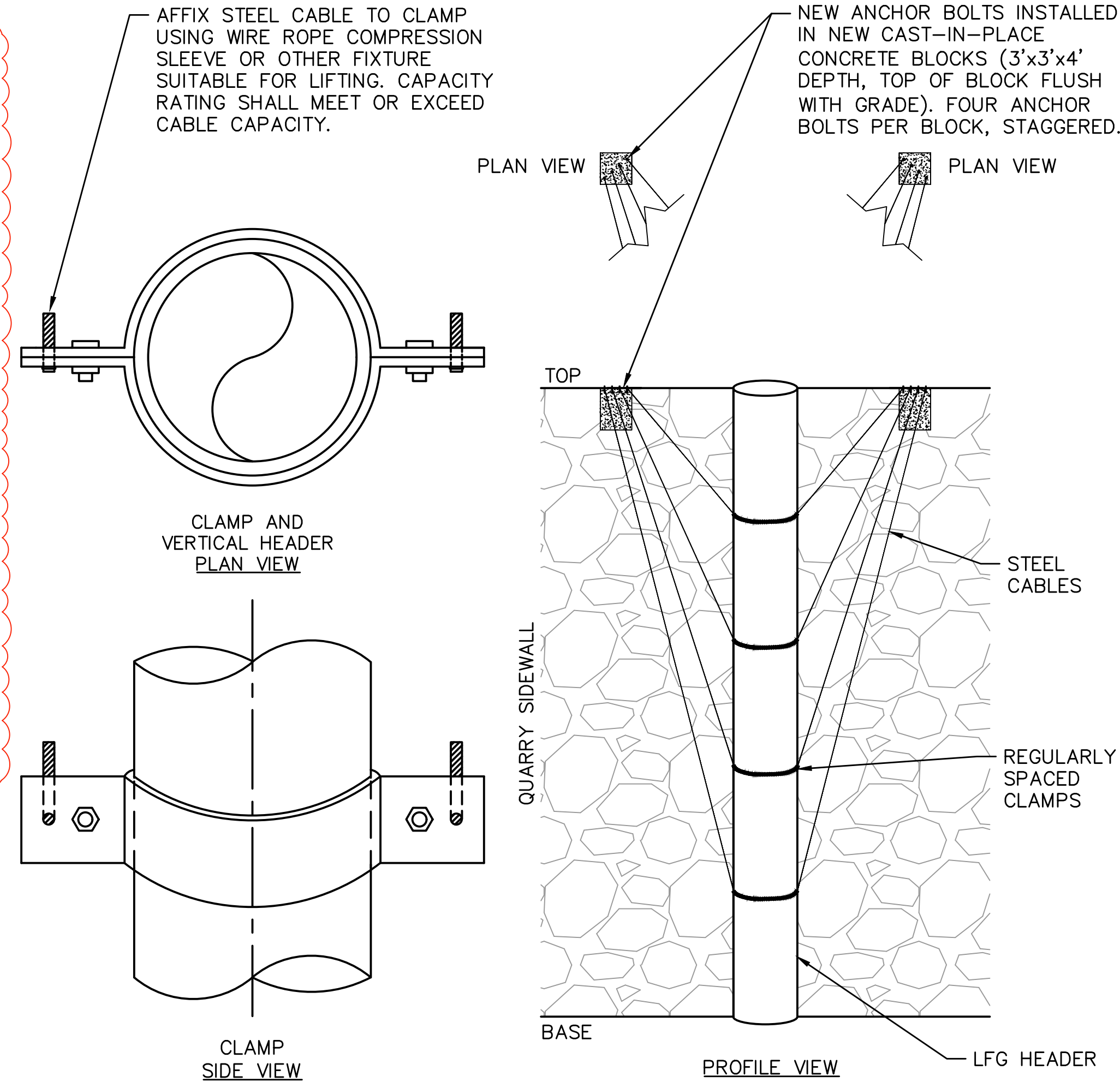


- NOTES:
1. WARNING TAPE SHALL BE MIN. 3" WIDE AND IMPRINTED WITH "GAS LINE BURIED BELOW".
 2. ALL HEADER AND LATERAL SHALL BE INSTALLED AT MIN. 3 FEET BURIAL DEPTH AND 5% SLOPE UNLESS APPROVED IN ADVANCE BY ENGINEER.
 3. THE NUMBER AND TYPES OF PIPES INSTALLED IN THE TRENCH MAY VARY. SEE PLAN DRAWINGS.



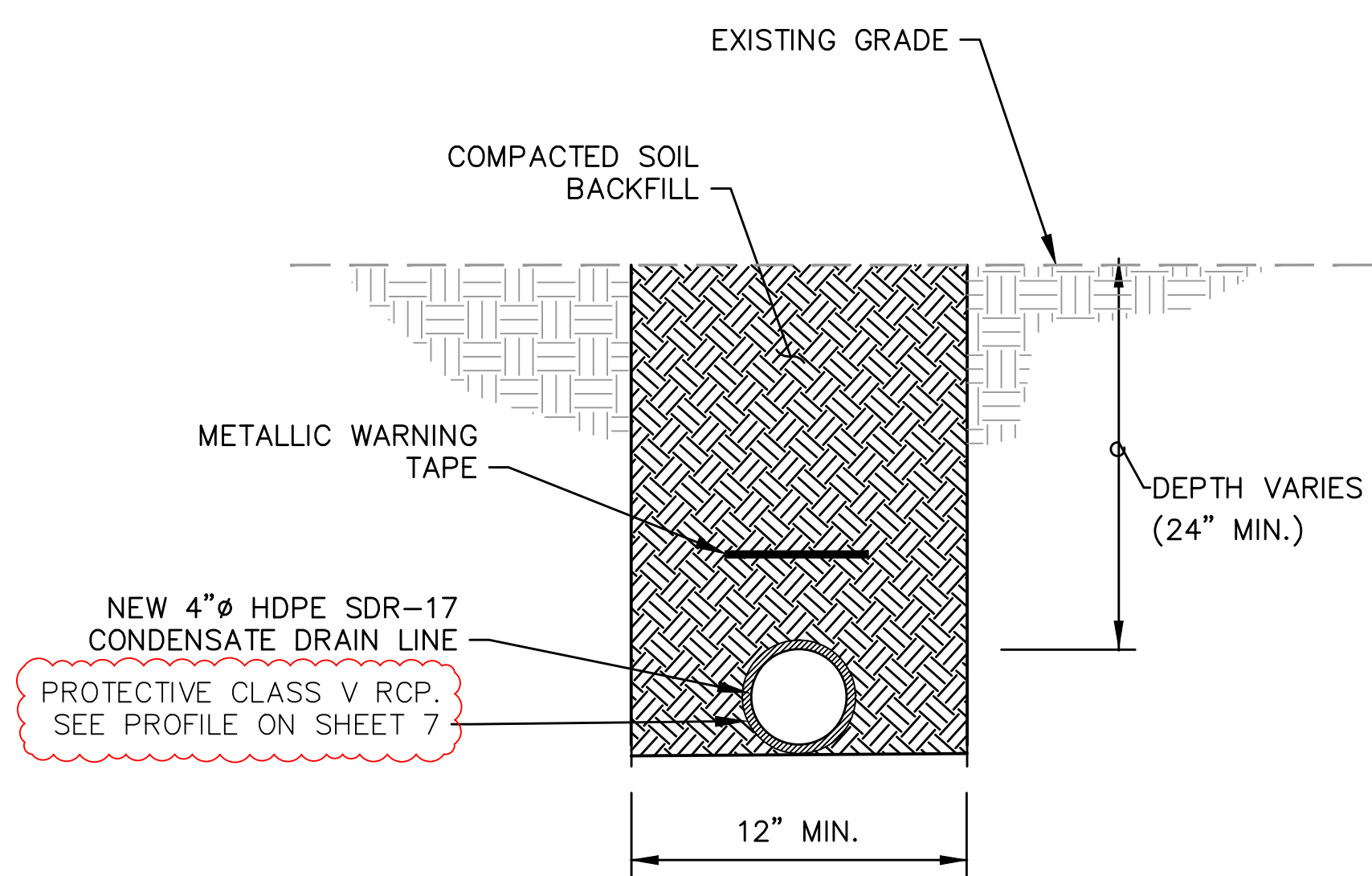
- NOTES:
1. 3/8" SS BALL VALVE AND GLYCOL FILLED PRESSURE GAUGE (0-200 PSI RANGE).
 2. NEW FORCEMAIN CLEANOUTS, WHERE POSSIBLE, SHALL BE INSTALLED ADJACENT TO VALVE STATIONS TO REDUCE REQUIRED EXCAVATION.

5 FORCEMAIN CLEANOUT DETAIL
4,5,12 NOT TO SCALE



- NOTES:
1. ALL PIPE SUPPORT COMPONENTS MUST BE CORROSION RESISTANT AND RATED FOR YEAR-ROUND OUTDOOR USAGE.
 2. EACH STEEL WIRE MUST HAVE A MINIMUM CAPACITY OF 2900 POUNDS, AND EACH ANCHOR BOLT MUST HAVE A MINIMUM PULL-OUT STRENGTH OF 2900 LB. RISER CLAMPS MUST HAVE A MINIMUM CAPACITY OF 2900 LBS. ANY OTHER COMPONENTS USED TO SUPPORT THE PIPE MUST ALSO HAVE A MINIMUM CAPACITY OF 2900 LBS.
 3. USE #4 REBAR PLACED IN A 12-INCH GRID PATTERN FOR THE CONCRETE BLOCKS. PLACE TWO LAYERS OF HORIZONTAL REINFORCEMENT IN EACH DIRECTION AT 12-INCH SPACING AND PLACE VERTICAL REBAR EVERY 12 INCHES, TIED TO THE HORIZONTAL BARS. MAINTAIN AT LEAST 2 INCHES OF CONCRETE COVER AROUND REINFORCEMENT.

4 PIPE SUPPORT DETAIL
4,8,12 NOT TO SCALE

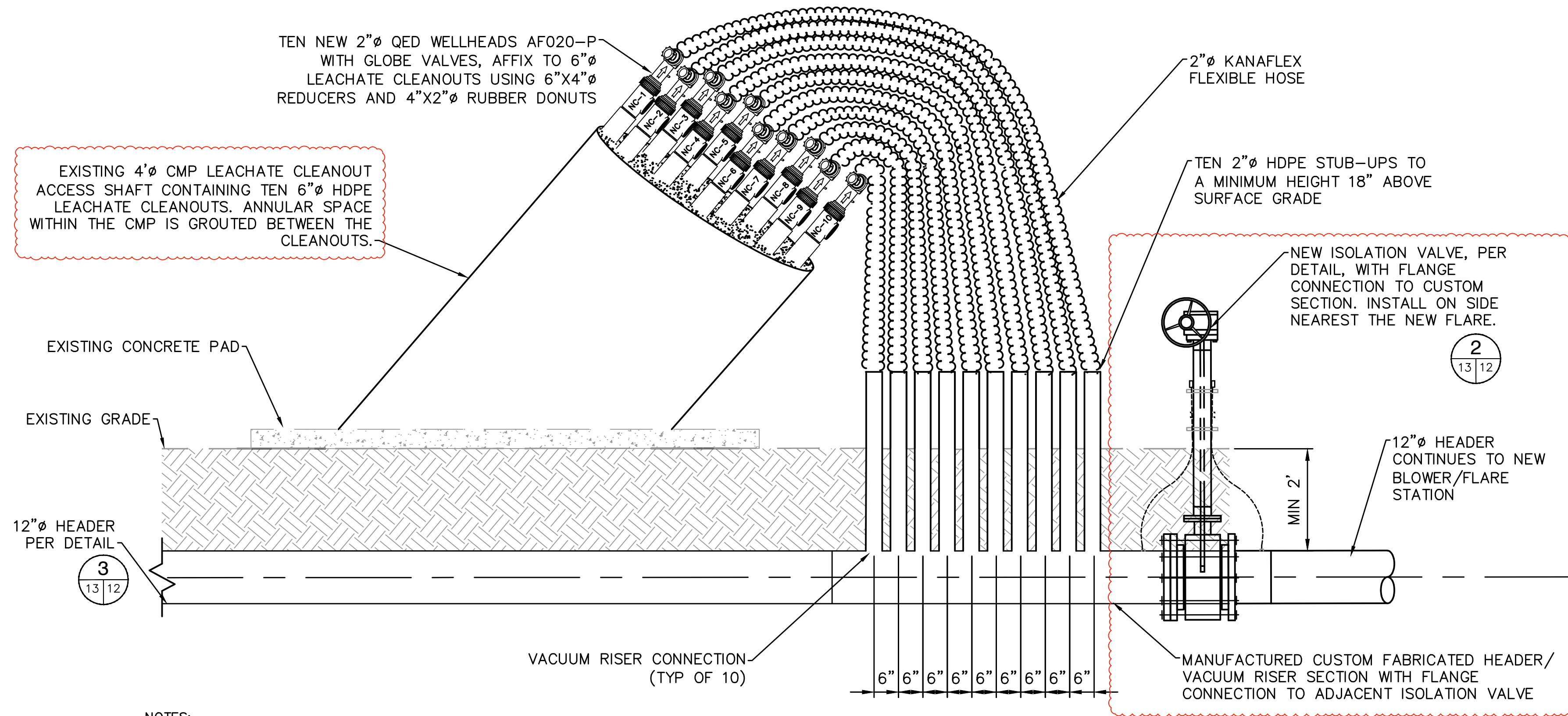


- NOTE:
1. REFER TO ROAD CROSSING DETAIL ON SHEET 13 FOR ROAD CROSSINGS

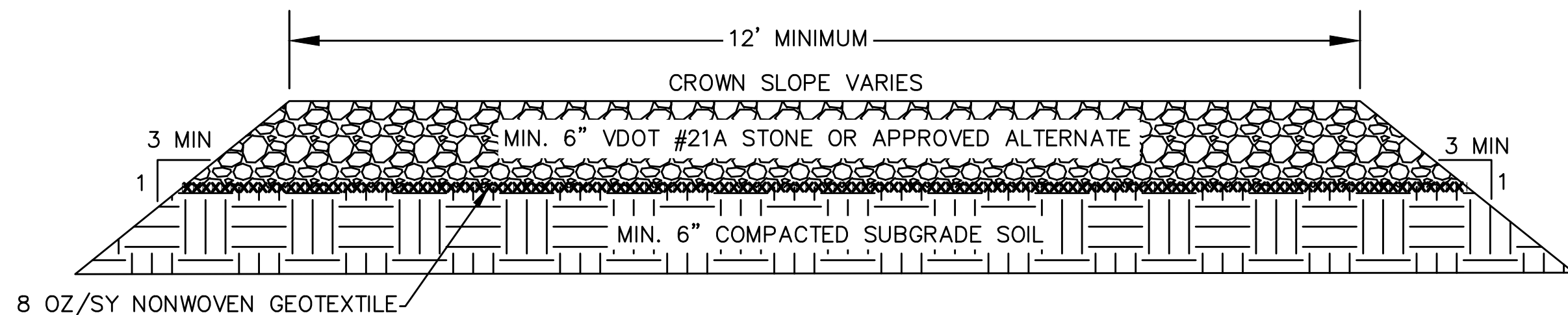
6 DRAIN PIPE TRENCH DETAIL
4,7,12 NOT TO SCALE

DATE	4/7/25
REVISION	ADDENDUM 1
NO.	1
SHEET TITLE DETAILS 2	
PROJECT TITLE STAGE II LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION	
CLIENT CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY 2655 VALLEY DRIVE BRISTOL, VA 24201	
SCS ENGINEERS STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC. 15231 MIDLOTHIAN TPK. - MIDLOTHIAN, VA 23113 PH. (804) 378-7440 FAX. (804) 378-7433	
PROJ. NO. 02218208.14	DWG. BY CJW
CHECK BY TRW/LLH	APP. BY CJW
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SCALE: AS SHOWN	
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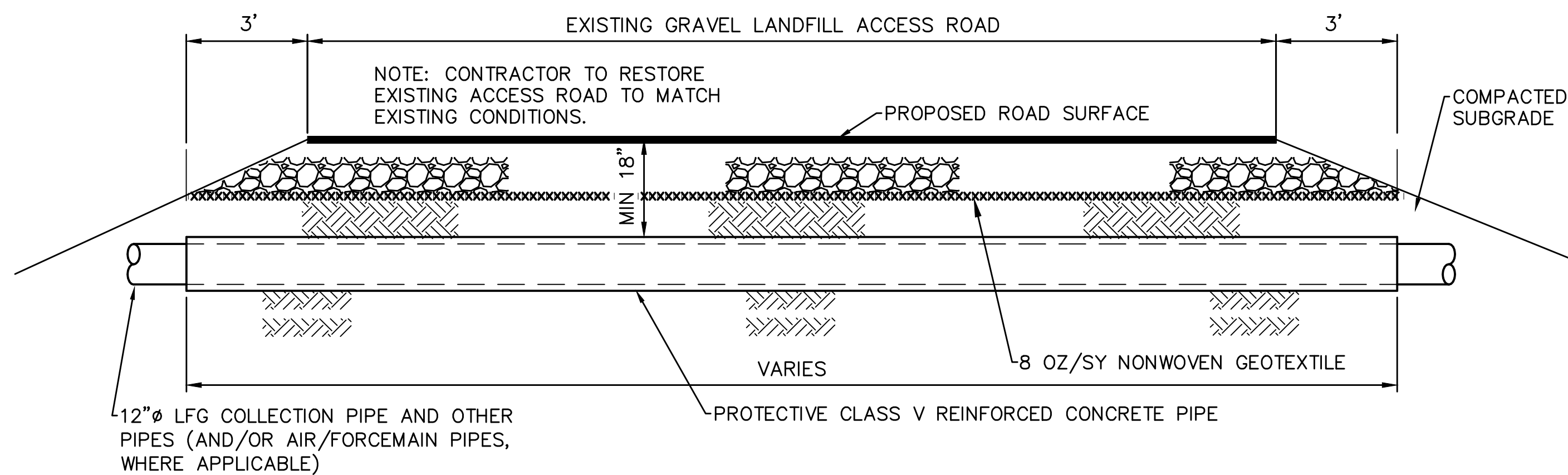
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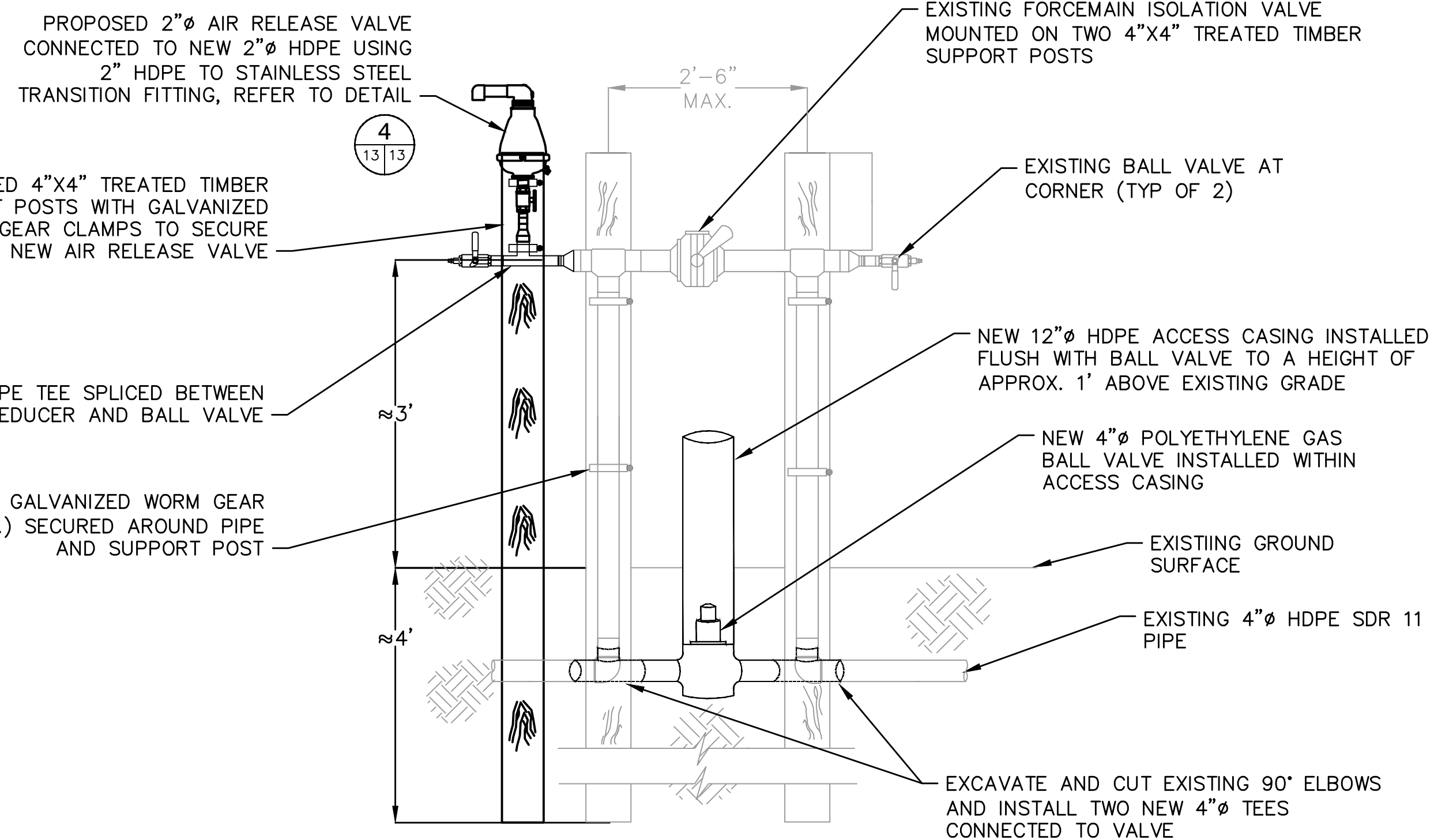
1 NORTHERN CLEANOUT MANIFOLD WITH CONNECTION TO 12" HEADER DETAIL
4,6,7 NOT TO SCALE



2 ACCESSES ROAD DETAIL
6,9 NOT TO SCALE



3 ROAD CROSSING DETAIL
6,7,8,9 NOT TO SCALE



NOTES:

- CONTRACTOR SHALL EXCAVATE WITH CAUTION TO FIELD LOCATE EXISTING BURIED FORCEMAIN. EXISTING FEATURES SHALL BE PROTECTED AND REPLACED IF DAMAGED.

5 NEW AIR RELEASE VALVES AND BYPASS POLYETHYLENE BALL VALVE ADDED TO EXISTING FORCEMAIN ISOLATION VALVES
5 NOT TO SCALE



DATE	4/7/25
REVISION	ADDENDUM 1
NO.	

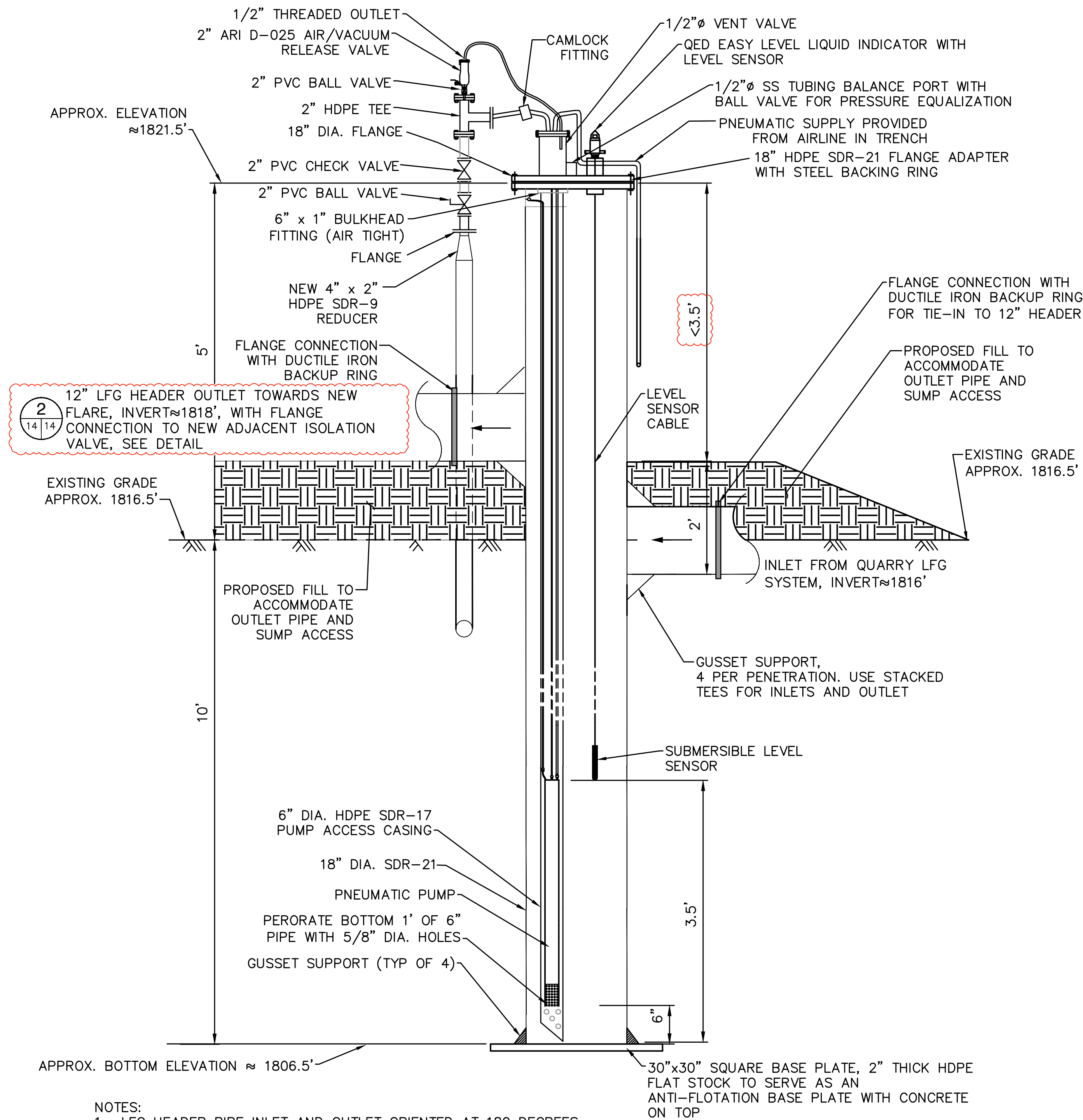
SHEET TITLE	DETAILS 3
PROJECT TITLE	STAGE II LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION

CLIENT	CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY 2655 VALLEY DRIVE BRISTOL, VA 24201
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SCS ENGINEERS	STEARN, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC. 15231 MIDLOTHIAN TPK., MIDLOTHIAN, VA 23113 PH. (804) 378-7440 FAX. (804) 378-7433
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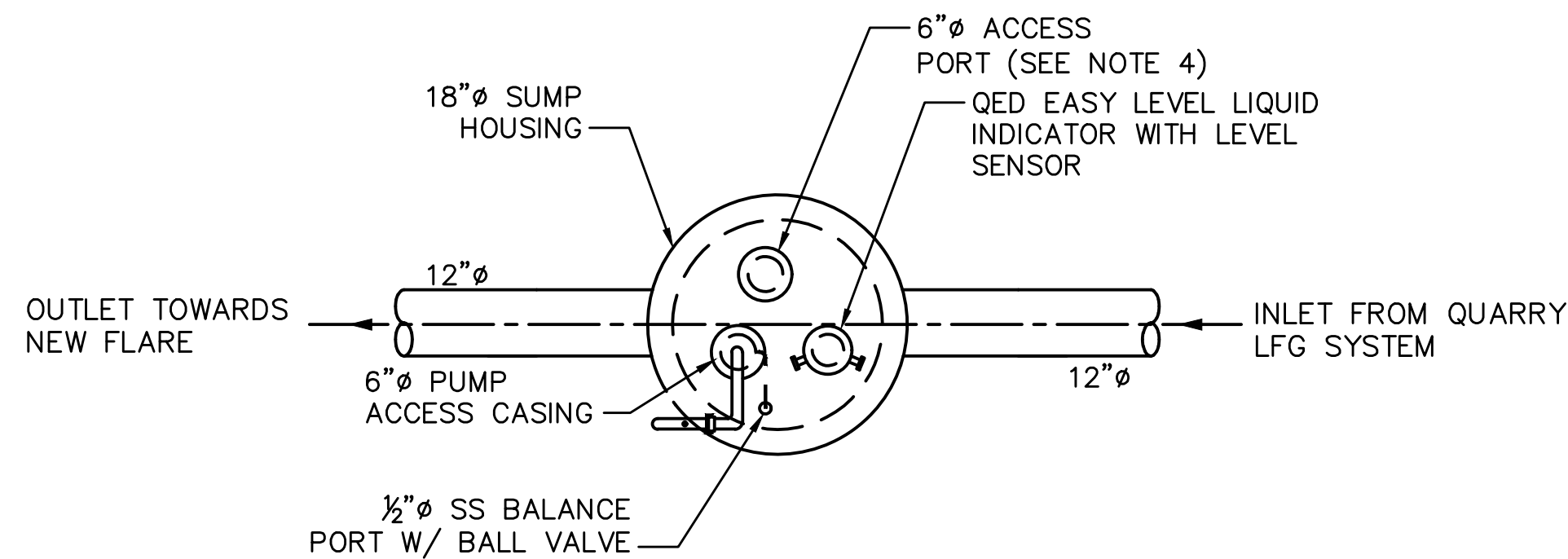
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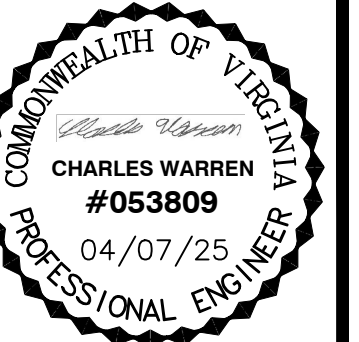
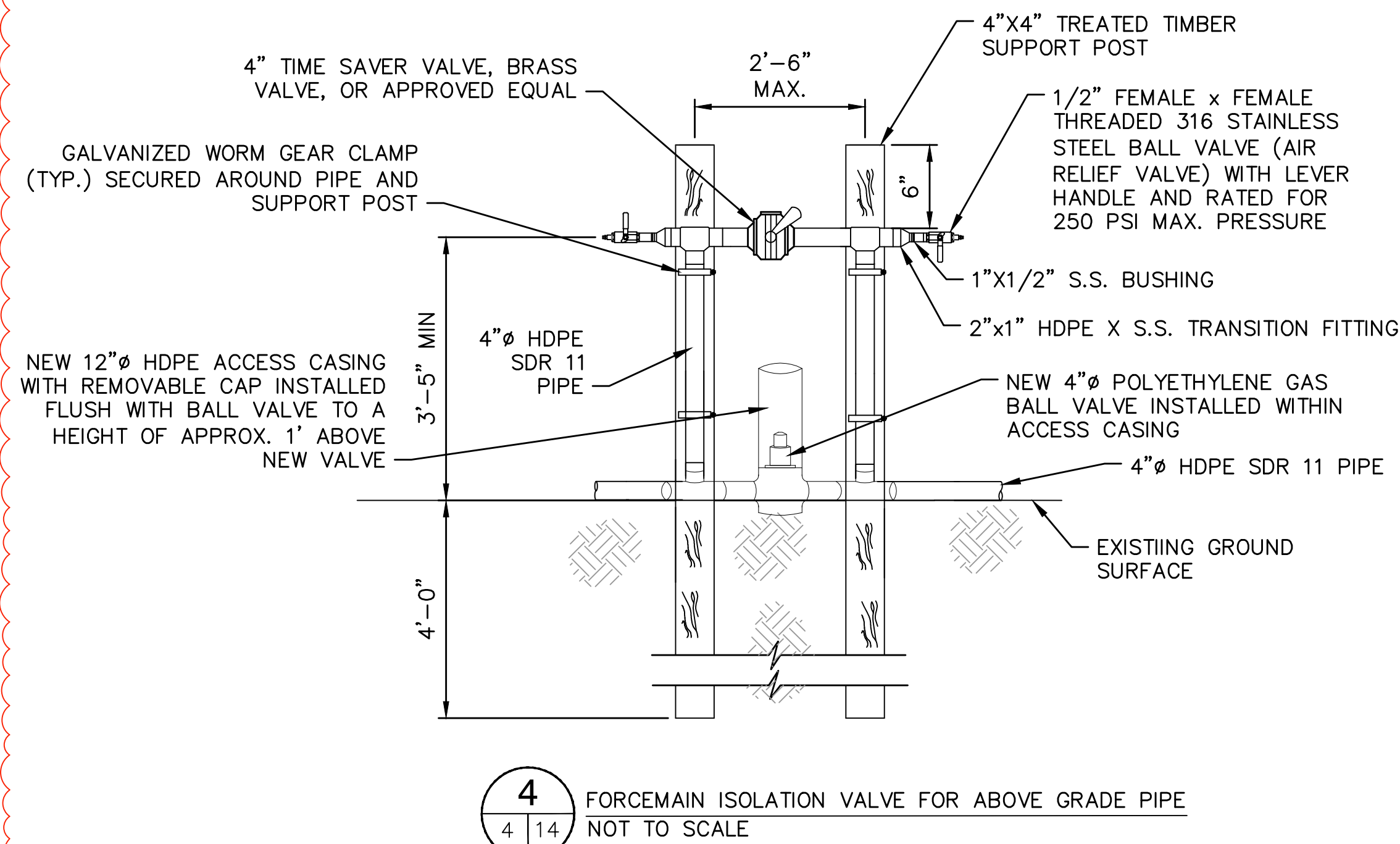
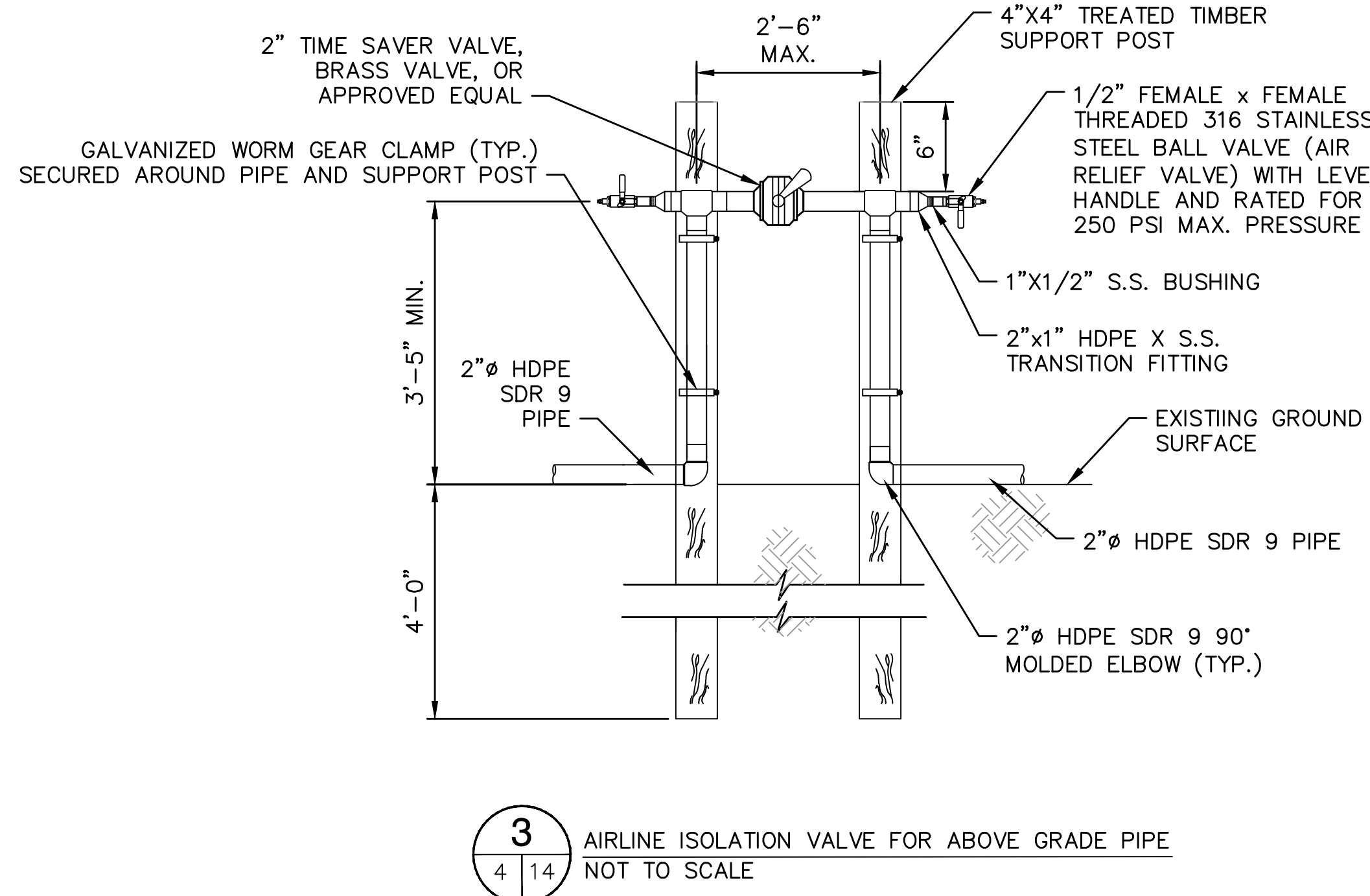
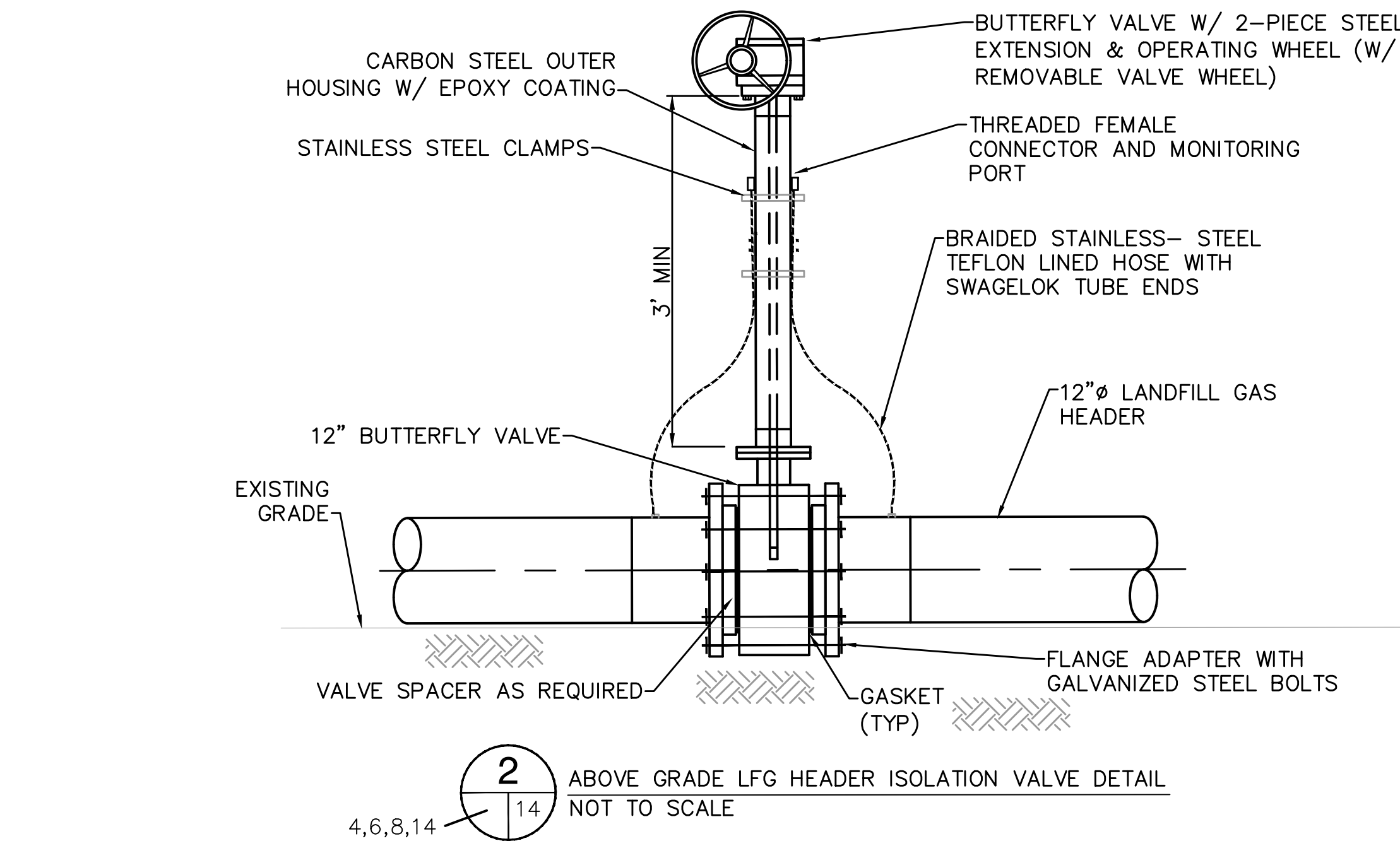
NOTES:

- LFG HEADER PIPE INLET AND OUTLET ORIENTED AT 180 DEGREES.
- SUPPLY INSULATION ON ALL ABOVEGRADE PUMP DISCHARGE HOSE AND EXPOSED FORCEMAIN PIPING.
- CONTRACTOR SHALL PLACE 2-FOOT THICK LAYER OF CONCRETE ONTO TOP OF ANTI-FLOTATION BASE PLATE TO COUNTERACT BUOYANCY POTENTIAL.
- SUMP LID SHALL INCLUDE A SECOND 6" ACCESS PORT INTO SUMP VESSEL.
- FIELD INVESTIGATION MUST BE COMPLETED BY CONTRACTOR TO DETERMINE TEE ELEVATIONS.
- CONTRACTOR WILL INSTALL SUPPORTS AS NECESSARY FOR SUMP VALVES.



CONDENSATE SUMP PLAN VIEW

1 CONDENSATE SUMP (CS-5) DETAIL
4,6,8 NOT TO SCALE



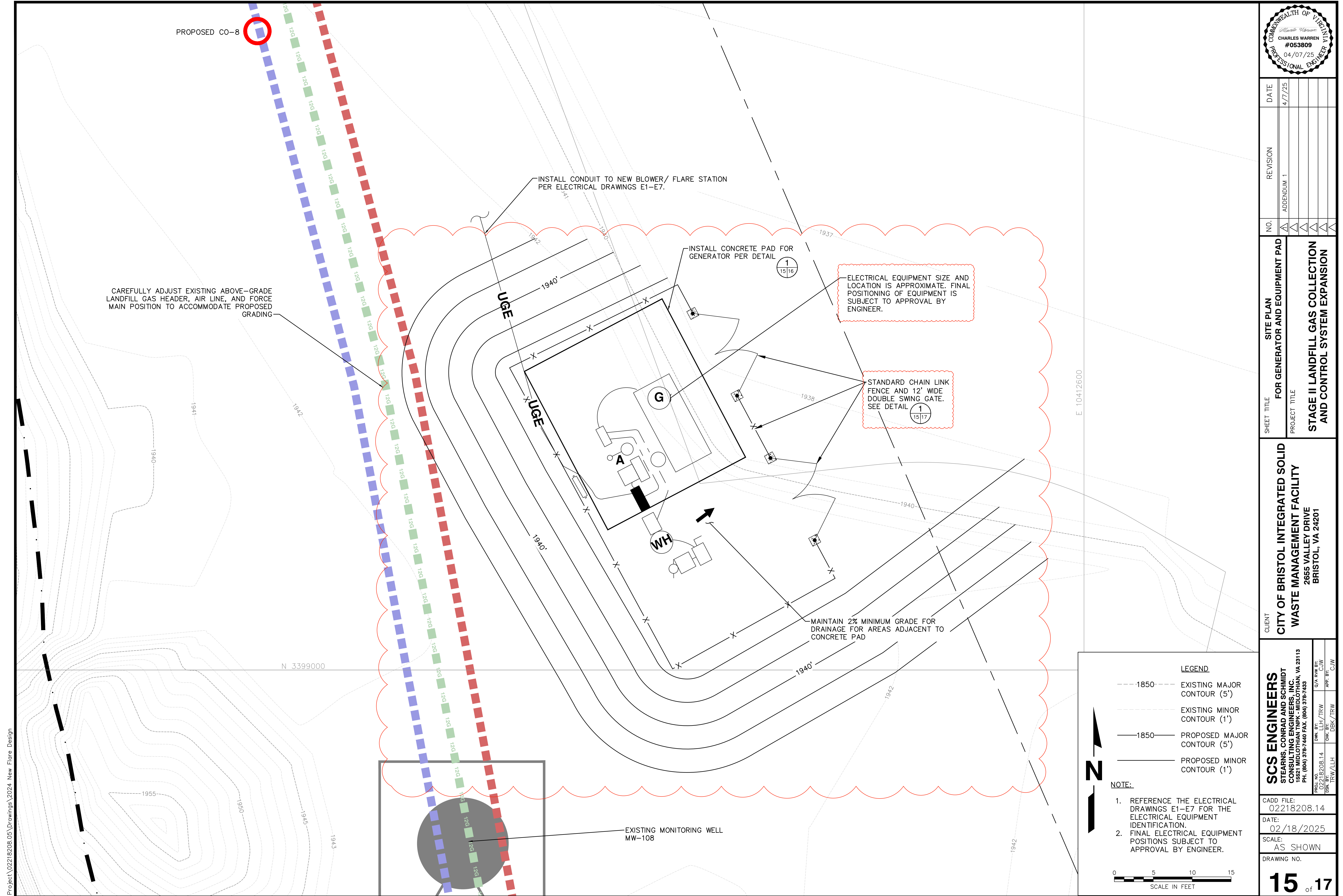
DATE	4/7/25
REVISION	ADDENDUM 1
NO.	

SHEET TITLE	DETAILS 4
PROJECT TITLE	STAGE II LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION

CLIENT	CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY 2655 VALLEY DRIVE BRISTOL, VA 24201
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SCS ENGINEERS	STEARN, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC. 15221 MIDLOTHIAN TPK. - MIDLOTHIAN, VA 23113 PH. (804) 378-7440 FAX. (804) 378-7433
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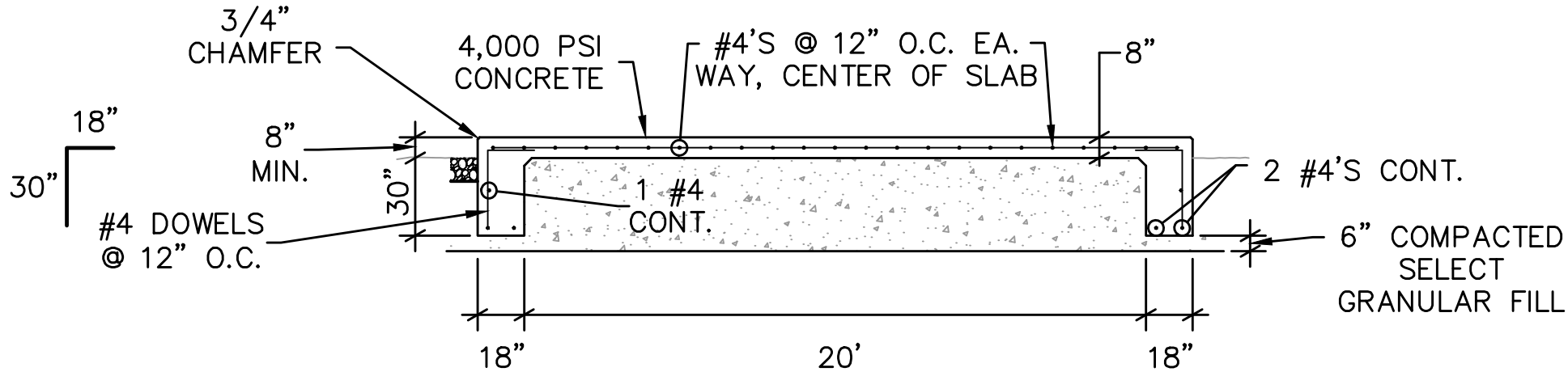
SHEET TITLE	SITE PLAN	FOR GENERATOR AND EQUIPMENT PAD
PROJECT TITLE		

**CITY OF BRISTOL INTEGRATED SOLID
WASTE MANAGEMENT FACILITY**
2655 VALLEY DRIVE
BRISTOL, VA 24201

PROJ. NO.	02218208.14	DWN. BY:	LLH / TRW	Q/A R/W BY:	CJW
DSN. BY:	TRW / LLH	CHK. BY:	DBK / TRW	APP. BY:	CJW

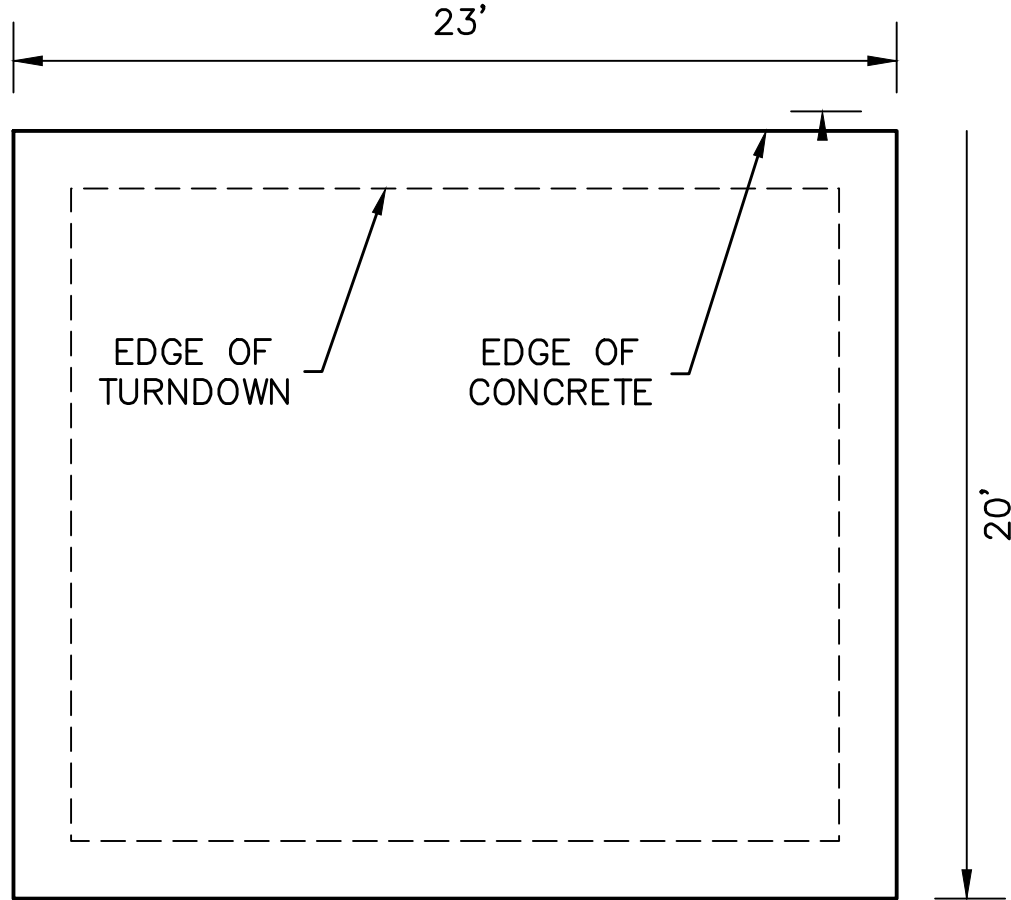
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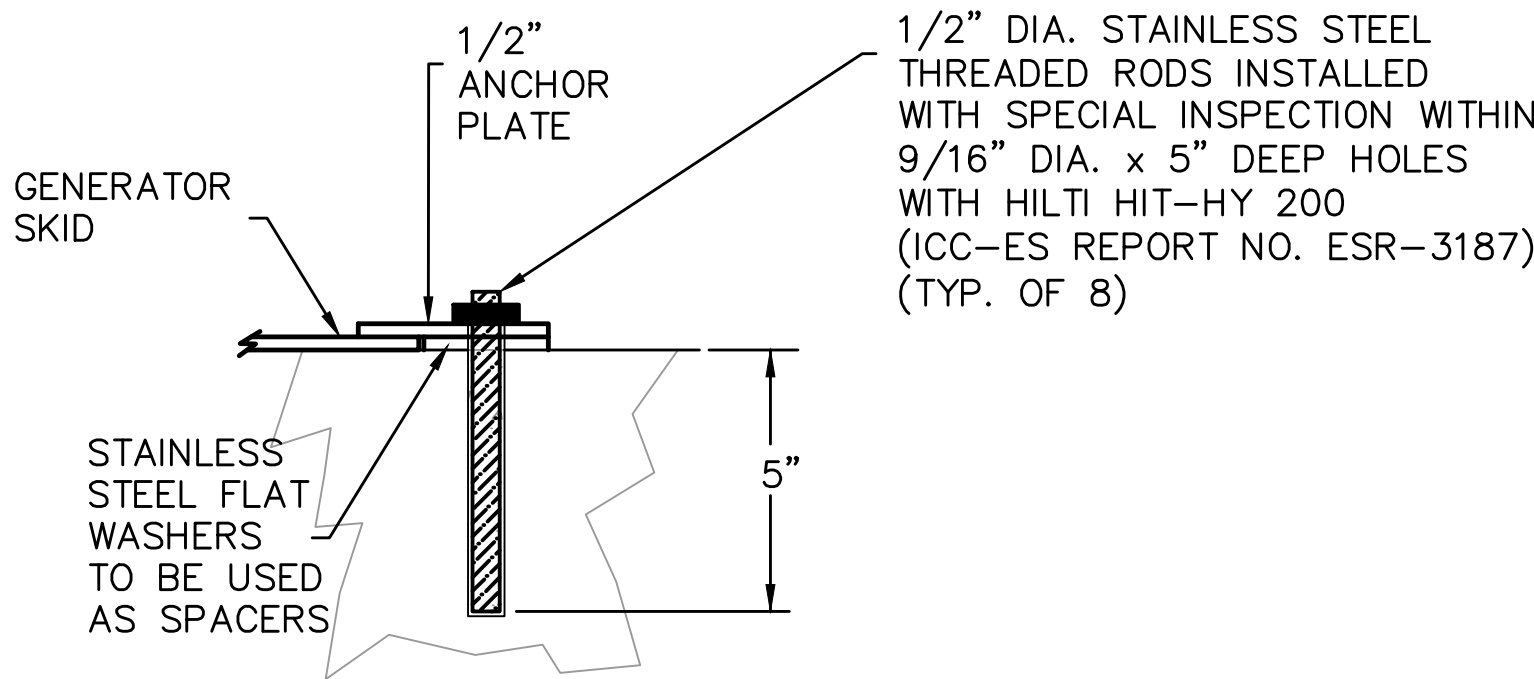
GENERATOR FOUNDATION SECTION

SCALE: 1" = 5' (FOR FULL-SIZE PLOT)



GENERATOR FOUNDATION PLAN

SCALE: 1" = 5' (FOR FULL SIZE PLOT)



GENERATOR SKID ANCHOR BOLT DETAIL

NOT TO SCALE

GENERAL :

- THE CONTRACTOR SHALL TAKE NO ADVANTAGE OF ANY ERROR OR OMISSION IN THE PLANS, ESTIMATED QUANTITIES OR SPECIFICATIONS. THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE JOB SITE PRIOR TO COMMENCING WITH THE WORK. SPECIAL CARE SHALL BE GIVEN TO SITE AND BUILDING LAYOUT THEREON. IN THE EVENT THE CONTRACTOR DISCOVERS AN ERROR, OMISSION, OR POSSIBLE DISCREPANCY BETWEEN FIELD CONDITIONS AND THE DRAWINGS, THEY SHALL IMMEDIATELY NOTIFY THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
- NOTES AND DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER THESE GENERAL NOTES.
- ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE 2018 EDITION AND THE LOCAL BUILDING OFFICIAL.
- THE DESIGN, ADEQUACY AND SAFETY OF ERECTION, BRACING, SHORING, TEMPORARY SUPPORTS, ETC. IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND HAS NOT BEEN CONSIDERED BY THE STRUCTURAL ENGINEER.
- NO PIPES, DUCTS, SLEEVES, CHASES, ETC. SHALL BE PLACED IN SLABS, BEAMS, OR WALLS UNLESS SPECIFICALLY SHOWN OR NOTED. NOR SHALL ANY STRUCTURAL MEMBER BE CUT FOR PIPES DUCTS, ETC., UNLESS OTHERWISE NOTED. CONTRACTOR SHALL OBTAIN PRIOR APPROVAL FOR INSTALLATION OF ANY ADDITIONAL PIPES, DUCTS ETC., REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATIONS.
- ALL DETAIL CALLOUTS AS SHOWN ON THE DRAWINGS, SECTIONS AND ELEVATIONS SHALL APPLY TO ALL SIMILAR CONDITIONS WHETHER REFERENCED OR NOT. TYPICAL DETAILS AND NOTES SHALL APPLY UNLESS SHOWN OTHERWISE IN DRAWINGS.

DESIGN LOADS:

- 7.1. WIND:
- | | |
|------------------|---------|
| BASIC WIND SPEED | 100 MPH |
| WIND IMPORTANCE | I = 1.0 |
| WIND EXPOSURE | C |

EARTHQUAKE:

SEISMIC IMPORTANCE FACTOR I = 1.0
SEISMIC ZONE 2A

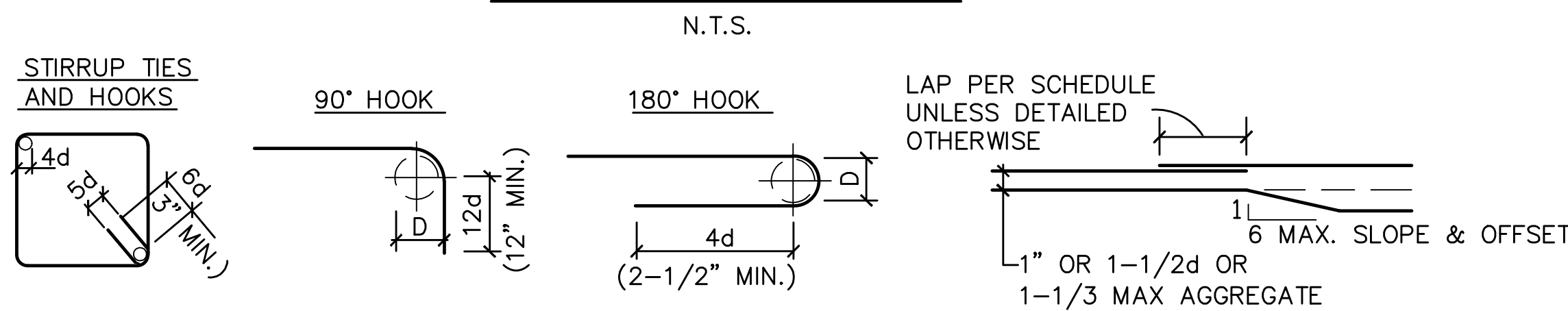
- NO CHANGES SHALL BE MADE TO THESE DRAWINGS WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE STRUCTURAL ENGINEER.
- WORK THESE DRAWINGS WITH CIVIL, MECHANICAL, PROCESS, GENERAL AND ELECTRICAL DRAWINGS.
- WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS SUCH STANDARDS SHALL BE THE LATEST EDITION, AND/OR ADDENDUM.
- AS A CONVENIENCE TO THE CONTRACTOR, THE ENGINEER SHALL REVIEW SHOP DRAWINGS AS TO THEIR GENERAL CONFORMANCE TO THE DESIGN CONCEPT. THE CONTRACTOR SHALL BE RESPONSIBLE NONETHELESS FOR COMPLIANCE AND DIMENSIONS. SHOP DRAWINGS ARE REQUIRED FOR THE FOLLOWING:
REINFORCING STEEL
HIGH STRENGTH BOLTING
STRUCTURAL FIELD WELDING
EPOXY ANCHORS

- FOR EXCAVATION IN NATIVE SOIL, SHORING SHALL BE PROVIDED TO SATISFY STATE OF PENNSYLVANIA SAFETY REQUIREMENTS.
- ALL FILLS MUST BE COMPACTED TO AT LEAST 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR PROCEDURES OUTLINED IN ASTM D698.
- BACKFILL MATERIAL AROUND THE FOUNDATION ELEMENTS SHOULD CONSIST OF SUITABLE ON-SITE MATERIAL OR CLEAN GRANULAR FILL FROM A BORROW SOURCE. THIS MATERIAL SHOULD BE PLACED IN 12-INCH MAXIMUM LOOSE LIFTS AND BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MATERIALS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.

FOUNDATION:

- SOIL DESIGN PRESSURE: 1,500 P.S.F.
- FOOTINGS SHALL EXTEND AT LEAST 30" BELOW FINISHED GRADE TO PROVIDE ADEQUATE FROST PROTECTION.
- SOIL ENGINEER SHALL VERIFY THAT CONSTRUCTION AT THE SITE IS IN ACCORDANCE WITH THE RECOMMENDATIONS AND CONCLUSIONS OF HIS REPORT.
- FINISHED EXCAVATIONS FOR FOUNDATION SHALL BE NEAT AND TRUE TO LINE WITH ALL LOOSE MATERIALS AND STANDING WATER REMOVED FROM EXCAVATION.
- BEFORE ANY CONCRETE IS PLACED, EXCAVATIONS SHALL BE CHECKED AND APPROVED BY A QUALIFIED SOILS ENGINEER TO INSURE COMPLIANCE WITH THE REQUIREMENTS.
- ALL FILL MATERIAL IS TO BE APPROVED BY THE SOILS ENGINEER AND IS TO BE COMPACTED TO 95% OF MAXIMUM DENSITY INSPECTION IS REQUIRED DURING FILL AND COMPACTION.
- NOTIFY THE STRUCTURAL ENGINEER OF ANY UNUSUAL SOIL CONDITIONS THAT ARE IN VARIANCE WITH THE DATA HEREIN CITED.
- TEMPORARY EXCAVATION SLOPES IN DRY, LOOSE DEPOSITS SHOULD BE MAINTAINED NOT STEEPER THAN 1.5 HORIZONTAL TO 1.0 VERTICAL (1.5 : 1). IN WET OF LOOSE SOILS, TEMPORARY EXCAVATION SLOPES SHOULD BE FLATTENED AS REQUIRED IN ACCORDANCE WITH OSHA REGULATIONS 29 CFR PART 1926.
- FOLLOWING EXCAVATION TO AT LEAST 12 INCHES BELOW BOTTOM OF FOOTING, THE SUBGRADE SHOULD THEN BE COMPACTED IN ORDER TO DENSIFY ANY NATURALLY OCCURRING LOOSE ZONES OR THOSE WHICH DEVELOP DURING THE EXCAVATION PROCESS.
- FOLLOWING COMPACTION OPERATIONS, BACKFILL AS REQUIRED, TO THE BOTTOM OF THE PROPOSED EQUIPMENT FOOTINGS AND MAT FOUNDATIONS WITH SELECT GRANULAR FILL MATERIAL. THIS MATERIAL SHOULD BE PLACED IN 12-INCH MAXIMUM LOOSE LIFTS AND BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MATERIALS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.
- EQUIPMENT FOUNDATIONS SHOULD BE DESIGNED AND SIZED TO ADEQUATELY DAMPEN DYNAMIC FORCES AND VIBRATIONS CAUSED BY THE OPERATION OF EQUIPMENT SUPPORTED ON THE FOUNDATION. THE NATURAL FREQUENCY OF VIBRATION SHOULD DIFFER FROM THE OPERATING FREQUENCY BY AT LEAST 50 PERCENT TO AVOID RESONANCE.

REINFORCEMENT DETAILS



REINFORCED CONCRETE:

- CEMENT FOR CONCRETE OR GROUT SHALL CONFORM TO A.S.T.M. C-150, TYPE II.
- AGGREGATES SHALL CONFORM TO A.S.T.M. C-33 FOR NORMAL WEIGHT CONCRETE AND A.S.T.M. C-330 FOR LIGHTWEIGHT CONCRETE.
- READY MIX CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH A.S.T.M. C-94.
- ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST A.C.I. CODE (A.C.I. 318) AND DETAILING MANUAL (A.C.I. 315) UNLESS OTHERWISE DETAILED OR NOTED IN DRAWINGS.
- CONCRETE SHALL HAVE A MINIMUM ULTIMATE STRENGTH AT 28 DAYS f'_c OF 4,000 PSI, WITH A WATER CEMENT RATIO NOT EXCEEDING 0.50. SUBMIT CONCRETE MIX DESIGNS TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL. CONCRETE DESIGN IS BASED ON $f'_c=2,500$ PSI AND, THEREFORE, SPECIAL INSPECTION OF CONCRETE IS NOT REQUIRED.
- ADMIXTURES MAY BE USED WITH APPROVAL OF THE ENGINEER. ADMIXTURES USED TO INCREASE THE WORKABILITY OF THE CONCRETE SHALL NOT BE CONSIDERED TO REDUCE THE SPECIFIED MINIMUM CEMENT CONTENT.
- PROJECTING CORNERS OF SLABS, SHALL BE FORMED WITH A 3/4" CHAMFER UNLESS OTHERWISE NOTED.
- RIGID, REINFORCED CONCRETE SPREAD FOOTINGS AND MAT FOUNDATIONS SUPPORTED UPON SELECT GRANULAR FILL CAN BE PROPORTIONED USING AN ALLOWABLE NET BEARING PRESSURE OF 1,500 POUNDS PER SQUARE FOOT (PSF). THIS BEARING PRESSURE ASSUMES THAT SPREAD FOOTINGS WILL HAVE A MINIMUM WIDTH OF 1.5 FEET. FOOTINGS DESIGNED USING THE RECOMMENDATIONS HEREIN SHOULD NOT EXPERIENCE TOTAL SETTLEMENT GREATER THAN 3.00 INCHES. DIFFERENTIAL SETTLEMENT ACROSS THE MAT FOUNDATIONS SHOULD NOT EXCEED 1.50 INCHES.

- CONCRETE FORM TOLERANCES SHALL BE WITHIN THE STANDARDS SET BY THE AMERICAN CONCRETE INSTITUTE.
- ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS AND OTHER INSERTS SHALL BE WELL SECURED IN PLACE IN THE FORMS PRIOR TO PLACING OF CONCRETE. TWO-WAY MATS OF STEEL MUST BE WIRED TOGETHER BOTH WAYS AT ALTERNATE INTERSECTIONS.
- LOCATION OF CONSTRUCTION JOINTS NOT SPECIFICALLY INDICATED ON DRAWINGS SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACING REINFORCING STEEL.
- CONCRETE SLABS VARIATION FROM LEVEL TO BE 1/16" IN TEN FEET MAXIMUM, UNLESS OTHERWISE NOTED ON DRAWINGS.
- PIPES MAY PASS THROUGH STRUCTURAL CONCRETE IN SLEEVES, BUT NOT BE EMBEDDED THEREIN.
- DRYPACK SHALL CONSIST OF ONE PART PORTLAND CEMENT, 4 PARTS SAND BASED ON DRY LOOSE VOLUMES AND NOT LESS THAN 1/4 PART NOR MORE THAN 1/2 PART LIME PUTTY OR HYDRATED LIME. DRYPACK SHALL OBTAIN A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS. SUBMIT MIX DESIGN TO THE STRUCTURAL ENGINEER FOR REVIEW.
- MINIMUM EMBEDMENT OF ANCHOR BOLTS (A.B.) UNLESS OTHERWISE NOTED ON THE PLANS, SHALL BE 7" IN FOOTINGS. ALL BOLTS SHALL HAVE A STANDARD BOLT HEAD OR A 1-1/4" 90° BEND AT EMBEDDED END. ANCHOR BOLTS SHALL BE SPACED A MINIMUM OF 12 DIAMETERS. IN LIEU OF BOLTS OR DOWELS IN CONCRETE, APPROVED CAST-IN-PLACE THREADED INSERTS MAY BE USED.
- EXPANSION ANCHORS SHALL BE HILTI KWIK BOLT TZ INSTALLED WITH SPECIAL INSPECTION IN ACCORDANCE WITH ICC/ES REPORT No. 1917, OR APPROVED EQUAL.
- EPOXY ANCHORS SHALL BE THREADED RODS INSTALLED WITH SPECIAL INSPECTION WITH HILTI HY-200 EPOXY ADHESIVE IN ACCORDANCE W/ ES REPORT No ER-3187, OR APPROVED EQUAL.

REINFORCING STEEL:

- ALL REINFORCING STEEL UNLESS OTHERWISE NOTED IN DRAWINGS SHALL CONFORM TO ASTM A-615, GRADE 60.
- REINFORCING DETAILING, BENDING AND PLACING SHALL BE IN ACCORDANCE WITH CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE" LATEST EDITION.
- REINFORCING SHALL BE SPLICED ONLY AS SHOWN OR NOTED. SPLICES AT OTHER LOCATIONS MAY BE ALLOWED ONLY IF APPROVED BY THE STRUCTURAL ENGINEER.
- PLACING OF REINFORCEMENT SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE'S BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, LATEST EDITION.
- DIMENSIONS FROM FACE OF CONCRETE TO STEEL (CLR.) ARE TO FACE OF BARS.
- THE TRANSVERSE REINFORCING STEEL SHALL TERMINATE ONE AND ONE-HALF INCHES FROM THE CONCRETE SURFACE.
- BARS NOTED "CONT" AND TYPICAL WALL REINFORCING SHALL HAVE A MINIMUM SPLICE EQUAL TO THE STANDARD LAP SPLICES UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
- REINFORCING BARS AND ACCESSORIES SHALL NOT BE IN CONTACT WITH ANY PIPE, PIPE FLANGE OR METAL PARTS EMBEDDED IN CONCRETE. A MINIMUM CLEARANCE OF 2" SHALL BE MAINTAINED BETWEEN REINFORCING STEEL AND ALL EMBEDDED METAL PARTS.
- PROVIDE THE MINIMUM PROTECTIVE COVERING OF CONCRETE UNLESS OTHERWISE NOTED:

BELOW GRADE OR EXPOSED TO WEATHER:
UNFORMED, CAST IN PLACE
FORMED, CAST IN PLACE

3" CLEAR
2" CLEAR

LAP SCHEDULE-CLASS "B"		
BAR SIZE	TOP BARS	OTHER BARS
#3	30"	23"
#4	41"	31"
#5	51"	39"
#6	61"	47"
#7	89"	68"
#8	101"	78"

BEND SCHEDULE		
BAR SIZES	D	
#3 THRU #8	6d	

D = DIAMETER OF REINF. BAR

NOTES:

- CONCRETE CLASS: 3,500 PSI. - NORMAL WEIGHT CLASS "B" LAP, TYPICAL
- CLASS "A" SPLICES ARE ALLOWED WHEN ONE HALF OF THE TOTAL BARS ARE SPLICED WITHIN THE REQUIRED LAP LENGTH OF THE BARS.
- CLASS "A" SPLICE = CLASS "B" SPLICE / 1.3



DATE	4/7/25
REVISION	ADDENDUM 1
NO.	

SHEET TITLE	DETAILS 5 - GENERATOR PAD
PROJECT TITLE	STAGE II LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION

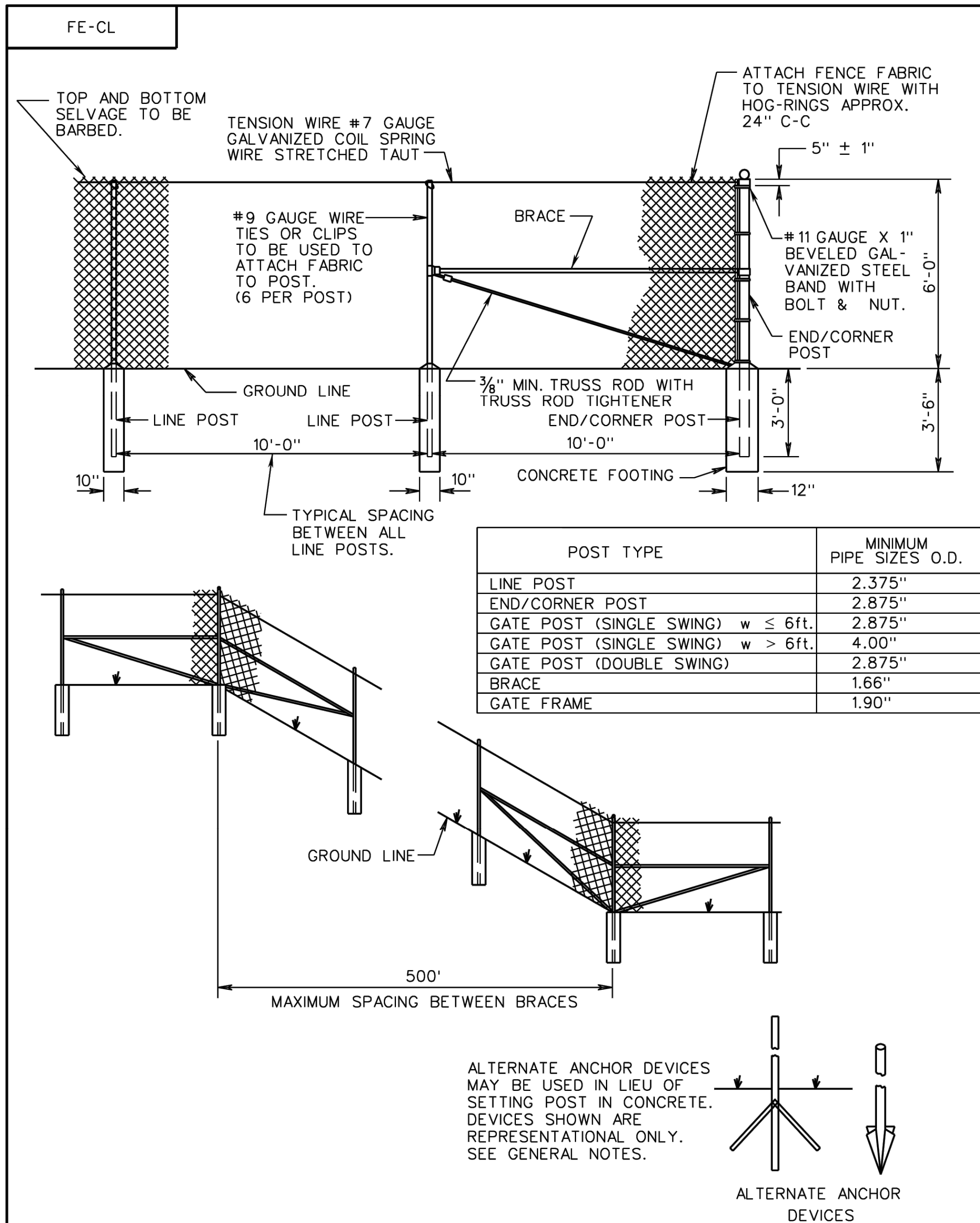
CIENT	CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY
	2655 VALLEY DRIVE BRISTOL, VA 24201

SCS ENGINEERS	STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.
	15221 MIDLOTHIAN TPK., MIDLOTHIAN, VA 23113 PH. (804) 378-7440 FAX. (804) 378-7433
PROJ. NO.	02218208.14
DATE	02/18/2025
DESIGNER	TRW/LLH
CHECKER	DBK/TRW
APPROVER	CJW

CADD FILE:	02218208.14
DATE:	02/18/2025
SCALE:	AS SHOWN
DRAWING NO.	

Project\02218208.05\Drawings\2024 New Fence Design

2016 ROAD & BRIDGE STANDARDS



NOTES:

SEE GENERAL NOTES-FENCING FOR ADDITIONAL DETAILS AND INSTRUCTIONS

A MOISTURE-EXCLUDING CAP IS REQUIRED ON TUBULAR POSTS.

MATERIAL FOR CAP SHALL CONFORM TO THE ALLOWABLE TYPES FOR OTHER LISTED FITTINGS.

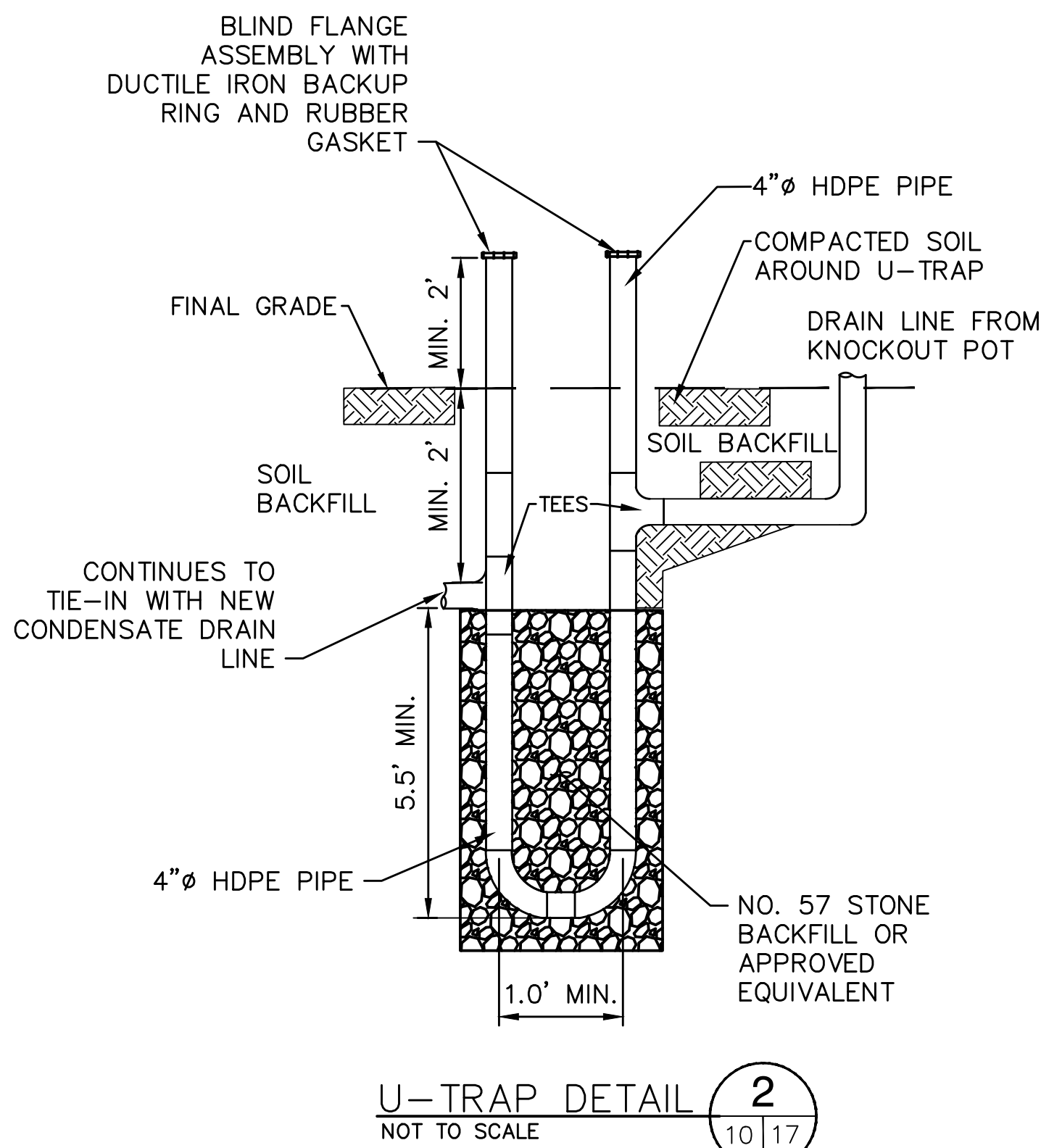
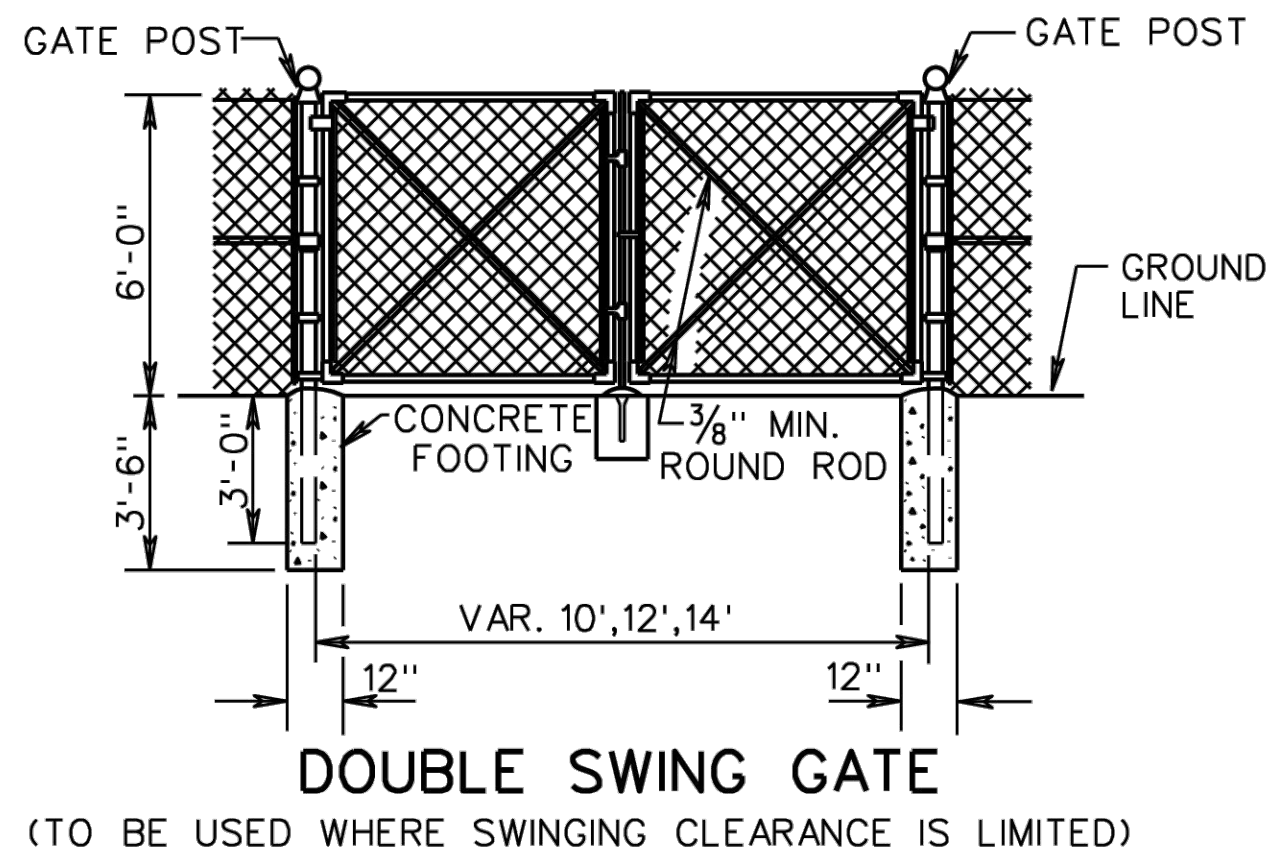
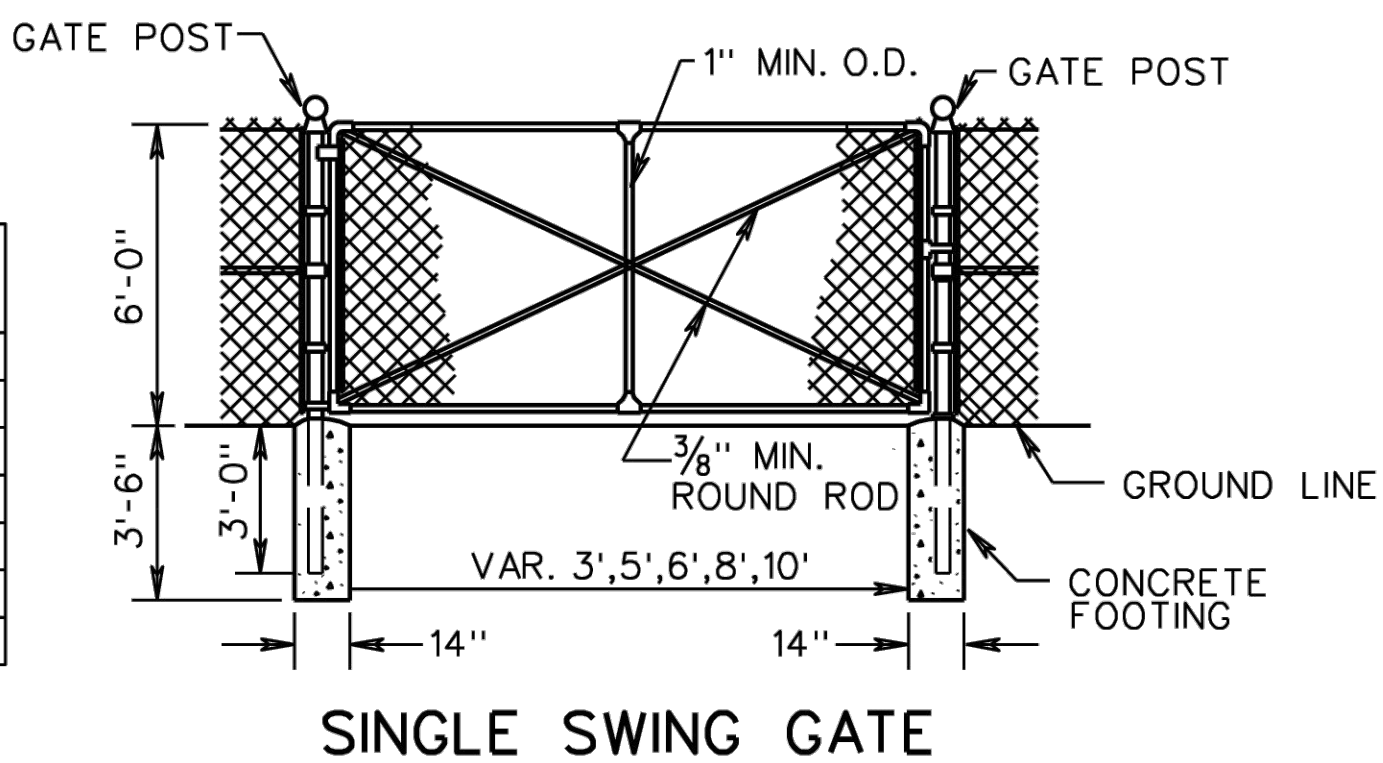
CORNER BRACE - TO BE USED WHEN HORIZONTAL ALIGNMENT CHANGES 15° OR MORE.

LINE BRACE - TO BE USED WHEN VERTICAL ALIGNMENT CHANGES 15° OR MORE

END/ CORNER POSTS SHALL BE USED WITH ALL LINE AND CORNER BRACES

BRACES SHALL BE INSTALLED HALF THE HEIGHT ABOVE THE GROUND LINE OF THE POST WHEN A TOP RAIL IS USED, OR TWO THIRDS THE HEIGHT ABOVE THE GROUND LINE WHEN A TENSION WIRE IS USED IN LIEU OF A TOP RAIL.

CHAIN LINK FENCE GREATER THAN 6 FEET IN HEIGHT SHALL BE SUBMITTED TO THE STANDARDS & SPECIAL DESIGN SECTION FOR APPROVAL.



DATE	4/7/25
REVISION	ADDENDUM 1
NO.	1

SHEET TITLE	DETAILS 6
PROJECT TITLE	STAGE II LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION

CLIENT	CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY 2655 VALLEY DRIVE BRISTOL, VA 24201
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SCS ENGINEERS	STEARNES, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC. 15521 MIDLOTHIAN TPK. - MIDLOTHIAN, VA 23113 PH. (804) 378-7440 FAX. (804) 378-7433
PROJ. NO.	02218208.14
DWG. BY:	TRW
CHECK BY:	DBK
APP. BY:	CJW

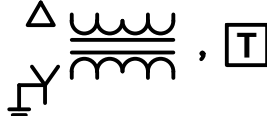
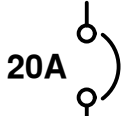
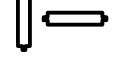
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DATE:	02/18/2025
SCALE:	AS SHOWN
DRAWING NO.	

ELECTRICAL GENERAL NOTES:

1. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC (2018) & APPLICABLE LOCAL CODES. THE MANUFACTURER'S RECOMMENDATIONS SHALL BE FOLLOWED AS REQUIRED. ALL MATERIALS, AS A MINIMUM, SHALL BE NEW AND UNDERWRITERS LABORATORY (U.L.) LISTED.
2. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, CERTIFICATES OF INSPECTION, ETC. REQUIRED BY THE AUTHORITIES HAVING JURISDICTION OVER THIS WORK.
3. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND/OR MANUFACTURER'S LITERATURE, FOR ALL EQUIPMENT AND MATERIAL PROPOSED FOR INSTALLATION TO THE OWNER'S REPRESENTATIVE FOR REVIEW AND APPROVAL PRIOR TO RELEASING AN ORDER FOR FABRICATION AND/OR SHIPMENT. EQUIPMENT AND MATERIAL INCLUDED SHALL BE ITEMS SUCH AS, BUT NOT LIMITED TO: SWITCHES, DISCONNECTS, PANELBOARDS, BREAKERS, WIRING AND CONDUIT, ETC. WIRING AND CONDUIT, ETC.
4. STATEMENT OF WORK: THE CONTRACTOR SHALL PROVIDE ALL NECESSARY ELECTRICAL EQUIPMENT AND LABOR TO ENSURE THE COMPLETE WORKING ORDER OF THE LANDFILL GAS BLOWER/FLARE SYSTEM. IN GENERAL THE WORD "PROVIDE" MEANS TO FURNISH AND INSTALL.
5. THE DRAWINGS ARE DIAGRAMMATIC AND DO NOT PURPORT TO SHOW ALL MATERIAL NECESSARY FOR A COMPLETE AND USABLE SYSTEM. PARENTHETIC DIMENSIONED ITEMS ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY FOR A COMPLETELY FINISHED, TESTED, AND OPERATIONAL ELECTRICAL SYSTEM AND SHALL BE RESPONSIBLE FOR APPROVAL OF WORK BY THE AUTHORITY HAVING JURISDICTION. ANY APPARATUS, APPLIANCE, MATERIAL, AND/OR INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE AND READY FOR OPERATION, NOT NORMALLY SHOWN, SHALL BE FURNISHED, DELIVERED AND INSTALLED BY THE CONTRACTOR WITHOUT ADDITIONAL EXPENSE TO THE OWNER.
6. THE CONTRACTOR SHALL PROVIDE AND INSTALL BRACES/SUPPORTS FOR HIS WORK. COORDINATE THE INSTALLATION OF REQUIRED SUPPORTING DEVICES AND CONDUIT TO BE SET IN POURED IN PLACE CONCRETE.
7. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR WITH ALL CIRCUITS IAW NFPA 70 ARTICLE 250 WHETHER SHOWN OR NOT ON THE PLANS. ADJUST FEEDER AND BRANCH CIRCUIT RACEWAY SIZE IF REQUIRED.
8. VERIFY EQUIPMENT LOCATIONS FOR ELECTRICAL ROUGH-INS WITH OWNER REPRESENTATIVE, FIELD MEASUREMENTS, AND WITH THE REQUIREMENTS OF THE ACTUAL EQUIPMENT TO BE CONNECTED. CONFLICTS WITH OTHER EQUIPMENT AND FEATURES SHALL BE RESOLVED PRIOR TO INSTALLATIONS.
9. WHERE MOUNTING HEIGHTS ARE NOT DETAILED OR DIMENSIONED, COORDINATE WITH OWNER'S REPRESENTATIVE.
10. INSTALL ELECTRICAL EQUIPMENT TO FACILITATE MAINTENANCE AND REPAIR OR REPLACEMENT OF EQUIPMENT COMPONENTS. AS MUCH AS PRACTICAL, CONNECT EQUIPMENT FOR EASE OF DISCONNECTING, WITH MINIMUM OF INTERFERENCE WITH OTHER INSTALLATIONS.
11. ALL CONDUCTORS SHALL BE COPPER AND HAVE 75 DEGREE C, INSULATION. ALL EQUIPMENT LUGS SHALL BE U. L. LISTED FOR 75 DEGREE C. WHERE EQUIPMENT IS NOT LISTED AS SUCH, ADJUST CONDUCTOR AMPACITY IAW NFPA 70 ARTICLE 310, TABLE 16.
12. THE DESIGN OF ALL BRANCH CIRCUITS IS BASED ON COPPER CONDUCTORS.
13. MINIMUM POWER CONDUCTOR SIZE IS #12 AWG, AND MINIMUM CONTROL CONDUCTOR SIZE IS #14 AWG.
14. CONTRACTOR SHALL PROVIDE CONDUCTORS/CABLE/CONDUIT I.A.W. N.E.C. AND PRECEDING 3 NOTES.
15. ANY BRANCH CIRCUIT REQUIRING A NEUTRAL SHALL BE PROVIDED WITH ITS OWN NEUTRAL. NO COMMON NEUTRAL SHALL BE PERMITTED.
16. THE CONTRACTOR SHALL PROVIDE CONNECTIONS FOR ALL ELECTRICAL EQUIPMENT INSTALLED ON THIS PROJECT. CONNECTIONS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND/OR CONSISTENT WITH INDUSTRY PRACTICE.
17. ALL CONDUIT SHALL BE RIGID GALVANIZED STEEL UNLESS OTHERWISE NOTED. CONDUIT ROUTED BELOW GRADE SHALL HAVE PVC COATING.
18. THE ELECTRICAL EQUIPMENT & DIAGRAMS SHOWN ON THE DRAWINGS MAY BE MODIFIED TO ACCOMMODATE FACTORY OR VENDOR SUPPLIED STANDARD EQUIPMENT WITH A PRE-FABRICATED, BLOWER/FLARE STATION AS APPROVED BY THE OWNERS REPRESENTATIVE.
19. CONTRACTOR SHALL OBTAIN ELECTRICAL PERMITS FROM THE CITY AS APPLICABLE.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE LOCAL UTILITY COMPANY SUCH THAT NEW ELECTRICAL SERVICE IS BROUGHT TO THE PROJECT, INCLUDING ANY REQUIRED TRANSFORMERS, CONCRETE PADS CONDUIT METERS, AND C/T'S.

ELECTRICAL ABBREVIATIONS	
ABBREVIATION	DESCRIPTION
A	AMPERE
AC	ALTERNATING CURRENT, ARMOR CLAD
AGE	ABOVE GROUND ELECTRICAL
AIC	ASYMMETRICAL INTERRUPT CURRENT
AWG	AMERICAN WIRE GAUGE
BRKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CTL	CABLE
CKT	CIRCUIT
CT	CURRENT TRANSFORMER
DWG	DRAWING
EQ	EQUAL
EXIST	EXISTING
FVNR	FULL VOLTAGE NON-REVERSING
G.GND	GROUND
HD	HEAVY DUTY
ID	IDENTIFICATION
K	THOUSAND
KVA	KILOVOLT AMP
KW	KILOWATT
MCB	MAIN CIRCUIT BREAKER
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
P	POLES
P/O	PART OF
PB	PULL BOX
PNL	PANEL
PVC	POLYVINYL CHLORIDE
RGS	RIGID GALVANIZED STEEL
SW	STORM WATER
T	TRANSFORMER
TYP	TYPICAL
UGE	UNDERGROUND ELECTRICAL
UON	UNLESS OTHERWISE NOTED
W	WATTS, WIRE
WH	WATTS/HOUR
WP	WEATHERPROOF
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
Ø	PHASE

SYMBOLS:

- AGE —NEW ABOVE GROUND ELECTRICAL RUN.
- G —NEW BURIED GROUNDING CONDUCTOR RUN.
- L —NEW EXPOSED COPPER LIGHTNING CONDUCTOR RUN.
- OH —EXISTING OVERHEAD ELECTRICAL DISTRIBUTION RUN.
- OHE —NEW OVERHEAD UTILITY MV ELECTRICAL DISTRIBUTION RUN (BY OTHERS).
- UGE —NEW UNDERGROUND ELECTRICAL RUN.
- EXISTING UTILITY POLE.
- NEW UTILITY POLE, PROVIDED BY OTHERS.
- NEW TRANSFORMER, SEE ONE-LINE DIAGRAM FOR RATINGS.
- NEW UTILITY WATT/HOUR METER, PROVIDED BY OTHERS.
- NEW PANELBOARD, SEE ONE-LINE DIAGRAM FOR RATINGS.
- NEW MOTOR, SEE ONE-LINE DIAGRAM FOR RATINGS.
- NEW FVNR COMBINATION STARTER AND DISCONNECT SWITCH, SEE ONE-LINE DIAGRAM FOR RATINGS.
- NEW VARIABLE FREQUENCY DRIVE, MANUFACTURER PROVIDED.
- NEW ABOVE GROUND SOOW CORD, LAY ON GROUND, SERPENTINE COIL CONFIGURATION.
- NEW CIRCUIT BREAKER.
- NEW SURFACE MOUNTED LIGHT FIXTURE, SEE LIGHTING FIXTURE SCHEDULE THIS SHEET.
- NEW GFCI, WEATHERPROOF RECEPTACLE, 20A, 125V NEMA 5-20R, SURFACE MOUNTED.
- NEW PULL BOX.
- NEW POLE MOUNTED LIGHT FIXTURE, 4" ROUND POLE, 11ga (0.120"), 20' HEIGHT, 90-DEGREE DRILL MOUNTING, BLACK FINISH.
- NEW LOAD BANK, MOUNTED ON GENERATOR ENCLOSURE.
- NEW HANDHOLE, SIZED PER NEC.
- NEW GROUND ROD.
- NEW GROUND TEST WELL.
- NEW AIR TERMINAL, CLASS 1, 24-INCHES.
- NEW GROUND CONDUIT SUPPORT.
- NEW EQUIPMENT NUMBER. SEE DRAWINGS E4 AND E10.
- NEW FEEDER NUMBER. SEE DRAWING E4, NEW FEEDER SCHEDULE.

LIGHTING FIXTURE SCHEDULE						
FIXT. TYPE	MANUFACTURER	CATALOG NUMBER	MOUNTING		REMARKS	VOLTAGE
			POLE	REC.		
A	LITHONIA	DSX0-LED-P7-40K-70CRI-T4M-XVOLT-R PA-PER-DBLXD	X	-	LED AREA LUMINAIRE, 40K, 70CRI, 171W, 20,000LM, PHOTOCCELL	480V



NO.	DATE	REVISION				
1						
2						
3						
4						
5						

SHEET TITLE	GENERAL NOTES, ABBREVIATIONS
SYMBOLS, LIGHTING FIXTURE SCHEDULE	
PROJECT TITLE	
STAGE II LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION	

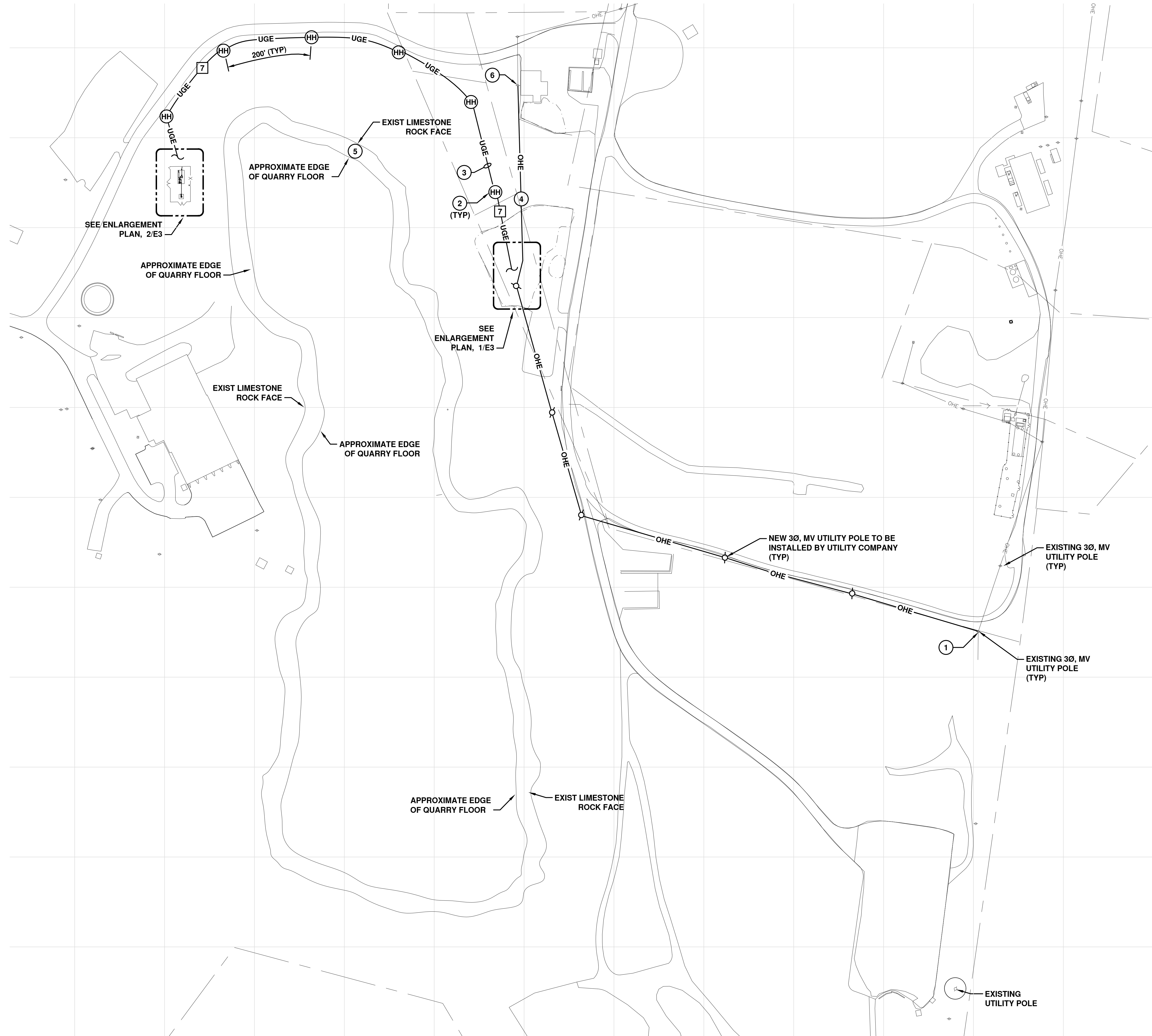
CLIENT	CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY
	2655 VALLEY DRIVE BRISTOL, VA 24201

SCS ENGINEERS STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC. 1821 LINDLOTHIAN AVENUE, SUITE 200 FALLS CHURCH, VA 22046 TEL: (703) 276-7400 FAX: (703) 276-7405	PROJ. NO. 202008.14		DATE: 12/20/2024
	DESIGNER: RZ	CHECKED: RZ	APPROVED: RZ

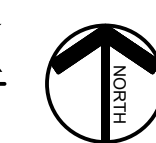
CADD FILE:	E1
DATE:	12/20/2024
SCALE:	AS SHOWN
DRAWING NO.	E1

1. ALL PVC SCHEDULE 40 CONDUITS SHALL NOT BE BURIED UNDER AREAS WHERE VEHICULAR TRAVEL IS ACCESSIBLE.
2. THE CONTRACTOR SHALL COORDINATE ALL ABOVE GROUND AND UNDERGROUND CABLE RUNS WITH CIVIL DRAWINGS PRIOR TO THE COMMENCEMENT OF WORK. ALL CABLE RUNS SHALL NOT BE WITHIN THE HIGH WATER LINE OF THE BASINS.
3. ALL ELECTRICAL RUNS SHALL BE ABOVE GROUND UON.
4. THE CONTRACTOR SHALL COORDINATE WITH CIVIL DRAWINGS FOR ALL FINAL LOCATIONS OF EQUIPMENT. ELECTRICAL DRAWINGS SHOWN ARE DIAGRAMMATIC UON.

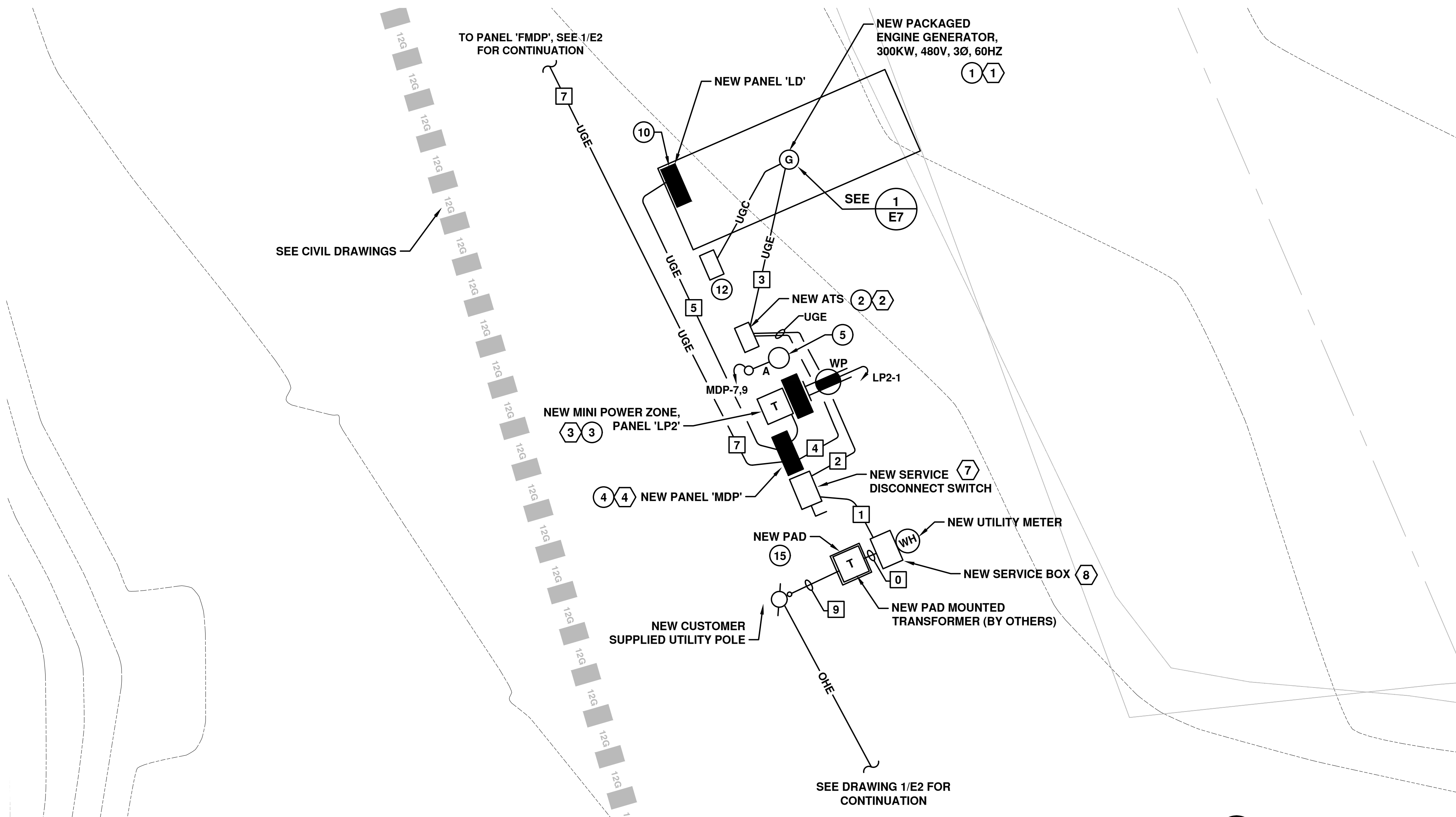
- ① UTILITY COMPANY TO EXTEND EXISTING 3-PHASE MV ELECTRICAL POWER TO THE NEW SERVICE DROP LOCATION.
- ② PROVIDE AND INSTALL NEW HANDHOLE. SEE DETAIL 6/E6.
- ③ FOLLOW NEW LFG HEADER LINES TO THE NEW FLARE STATION. REFER TO CIVIL DRAWINGS FOR LFG HEADER LINE RUN, AND DETAIL 3/E7 FOR BURIAL DEPTH.
- ④ NEW ALTERNATE ELECTRICAL SERVICE. COORDINATE THE NEW SERVICE WITH THE UTILITY COMPANY.
- ⑤ THE VERTICAL DISTANCE FROM THE TOP OF THE RIDGE TO THE QUARRY FLOOR CAN VARY FROM - 325'. REFER TO THE TOPO PLANS FOR THE EXACT ELEVATION CHANGES.
- ⑥ UTILITY COMPANY TO EXTEND EXISTING 3-PHASE MV ELECTRICAL POWER TO THE NEW SERVICE DROP LOCATION - ALTERNATE PATH.



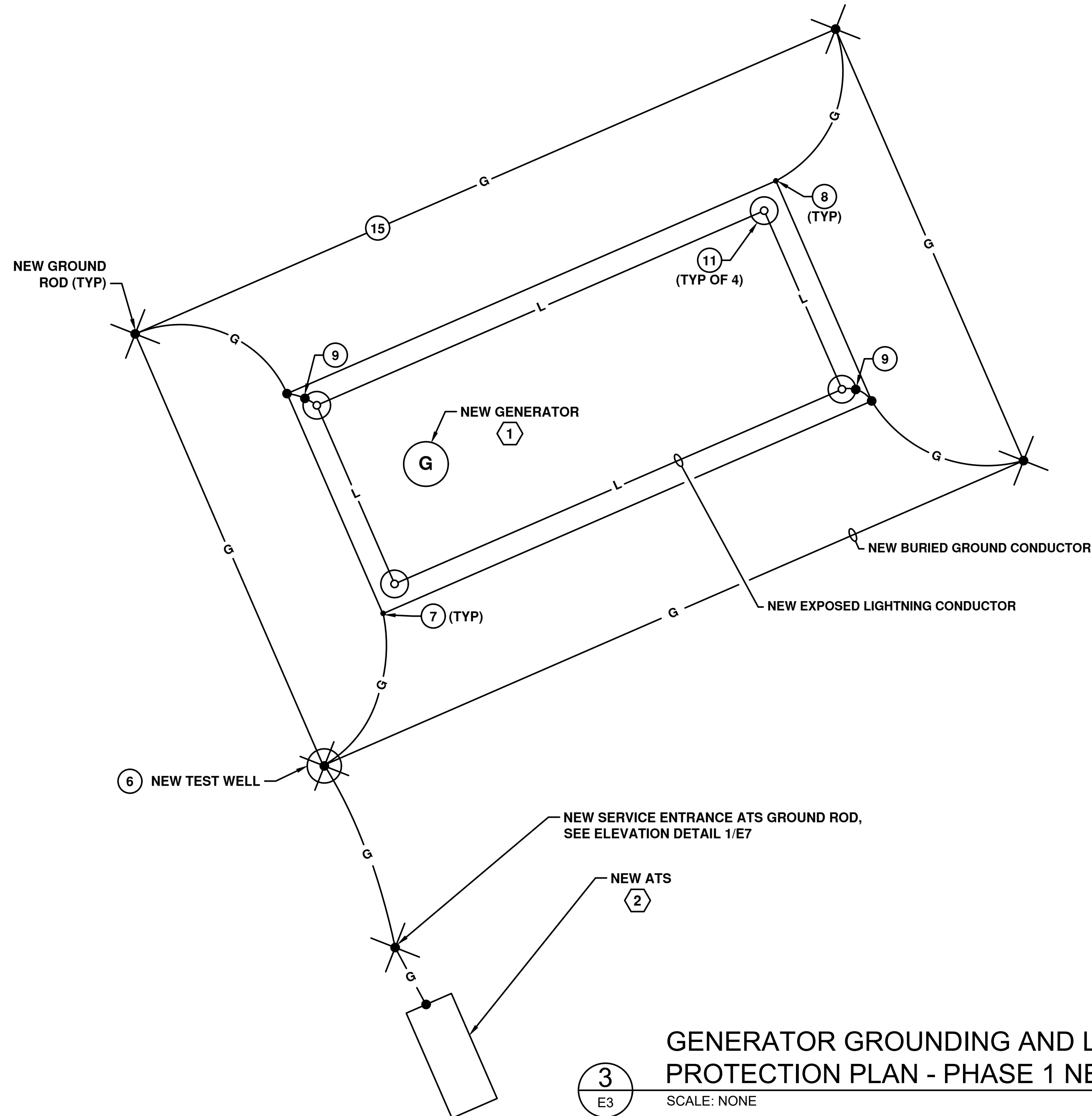
ELECTRICAL SITE PLAN - PHASE 1 NEW WORK
SCALE: 1"=100'



Project\02218208.05\Drawings\VOH_Cover_System_Design - SWP588 Construction Plans\WSEF



1
E3
ELECTRICAL SERVICE ENLARGEMENT PLAN - PHASE 1 NEW WORK
SCALE: 1"=5'



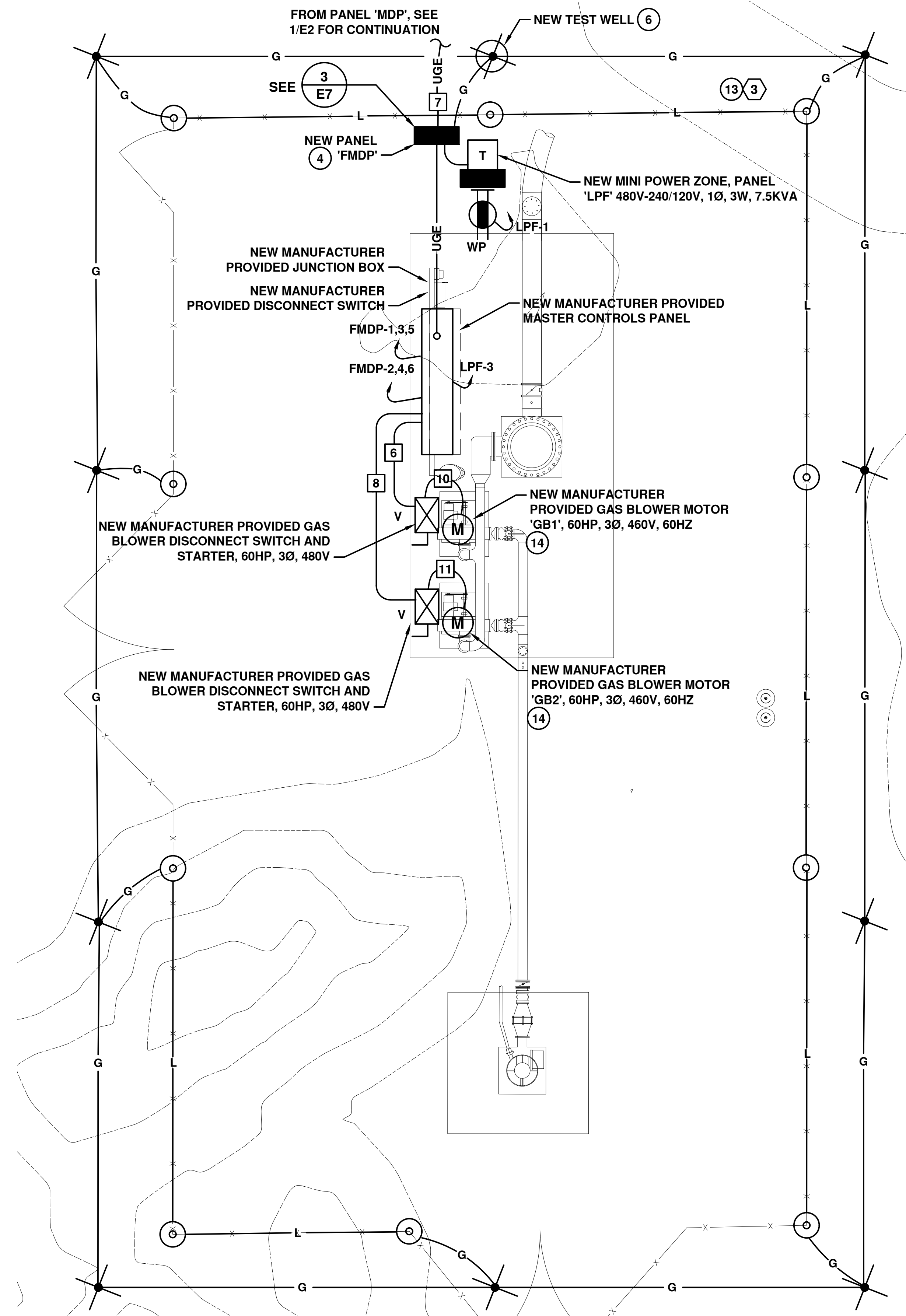
3
E3
GENERATOR GROUNDING AND LIGHTNING PROTECTION PLAN - PHASE 1 NEW WORK
SCALE: NONE

KEY NOTES:

- 1 PROVIDE AND INSTALL NEW STAND-BY GENERATOR. PROVIDE AND INSTALL GROUNDING COUNTERPOISE AROUND GENERATOR ENCLOSURE. SEE DETAIL 13/E6 AND SPECIFICATION 260526.
- 2 PROVIDE AND INSTALL NEW SERVICE ENTRANCE ATS.
- 3 PROVIDE AND INSTALL NEW MINI POWER ZONE 'LP2'. SEE DRAWING E5 FOR PANEL SCHEDULES.
- 4 PROVIDE AND INSTALL NEW PANEL. SEE DRAWING E5 FOR PANEL SCHEDULES.
- 5 PROVIDE AND INSTALL NEW POLE AND POLE MOUNTED LIGHT FIXTURE. SEE LIGHTING FIXTURE SCHEDULE ON DRAWING E1 AND DETAIL 2/E7.
- 6 PROVIDE AND INSTALL NEW GROUND TEST WELL AND CONNECT TO NEW SERVICE ENTRANCE ATS GROUND ROD. FOR CONNECTION DETAILS, SEE DRAWING E6 AND 12/E6 FOR COUNTERPOISE DETAILS.
- 7 PROVIDE AND INSTALL NEW GROUND BOND AT THE CORNER OF THE GENERATOR ENCLOSURE (TYP).
- 8 PROVIDE AND INSTALL NEW GROUNDING BOND ON THE CORNER OF THE NEW GENERATOR ENCLOSURE FROM NEW GROUNDING CONDUCTOR. FOR DETAILS, SEE 10/E6.
- 9 PROVIDE AND INSTALL NEW GROUNDING BOND FROM NEW AIR TERMINAL TO NEW GROUNDING CONDUCTOR. FOR DETAILS, SEE 9/E6 AND 10/E6.
- 10 NEW 30KVA TRANSFORMER INTEGRAL TO THE GENERATOR ENCLOSURE.
- 11 PROVIDE AND INSTALL NEW AIR TERMINALS ON TOP OF EACH CORNER OF THE GENERATOR ENCLOSURE. FOR DETAILS, SEE 9/E6.
- 12 PROVIDE AND INSTALL NEW MODBUS TO CELLULAR GATEWAY (SST AUTOMATION INDUSTRIAL COMMUNICATION MODEL #GT100-MQ-IE AND A WP, GFCI DUPLEX RECEPTACLE IN A CONTRACTOR PROVIDED NEMA 4X LOCKABLE ENCLOSURE) AND ASSOCIATED WP RS485 CABLE IN CONDUIT FROM THE GENERATOR TO THE ENCLOSURE. SEE PANEL SCHEDULE 'LD' FOR POWER CIRCUIT.
- 13 PROVIDE AND INSTALL NEW MINI POWER ZONE 'LPF'. SEE DRAWING E5 FOR PANEL SCHEDULES.
- 14 PROVIDE AND INSTALL NEW PACKAGED PUMP, DISCONNECT, AND STARTER.
- 15 PROVIDE NEW PAD/GROUNDING COUNTERPOISE. SEE SPECIFICATION 260525, AND DETAIL 5/E7.

GENERAL NOTES:

1. ALL PVC SCHEDULE 40 CONDUITS SHALL NOT BE BURIED UNDER AREAS WHERE VEHICULAR TRAVEL IS ACCESSIBLE.
2. THE CONTRACTOR SHALL COORDINATE ALL ABOVE GROUND AND UNDERGROUND CABLE RUNS WITH CIVIL DRAWINGS PRIOR TO THE COMMENCEMENT OF WORK. ALL CABLE RUNS SHALL NOT BE WITHIN THE HIGH WATER LINE OF THE BASINS.
3. ALL ELECTRICAL RUNS SHALL BE ABOVE GROUND UON.
4. THE CONTRACTOR SHALL COORDINATE WITH CIVIL DRAWINGS FOR ALL FINAL LOCATIONS OF EQUIPMENT. ELECTRICAL DRAWINGS SHOWN ARE DIAGRAMMATIC UON.
5. SEE GENERATOR SPECIFICATION 263213.13 FOR DATALINK COMMUNICATIONS AND MODBUS INTERFACE.
6. REFER TO DRAWING E4 FOR NEW EQUIPMENT NUMBERS.



2
E3
FLARE STATION ENLARGEMENT PLAN - PHASE 1 NEW WORK
SCALE: 1"=5'



NO.	REVISION	DATE

SHEET TITLE	GENERATOR AND FLARE STATION ELECTRICAL PLANS - PHASE 1 NEW WORK
PROJECT TITLE	STAGE II LANDFILL GAS COLLECTION AND CONTROL SYSTEM EXPANSION

CLIENT	CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY 2655 VALLEY DRIVE BRISTOL, VA 24201
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SCS ENGINEERS	STEARNIS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC. 1821 MILCOTTHAN PARK MILCOTTHAN, VA 23113 PH: (804) 576-7440 FAX: (804) 576-7443
PROJ. NO.	265208.14
DATE	12/20/2024
CHK. BY	GRZ
APP. BY	GRZ

CADD FILE:	E3
DATE:	12/20/2024
SCALE:	AS SHOWN
DRAWING NO.	E3

PROVIDE INTEGRAL LOAD BANK TO THE GENERATOR. SEE SPECIFICATION 263213.13.

PROVISION FOR PHASE 2 WORK. SEE ONE-LINE DIAGRAM DRAWING E11.

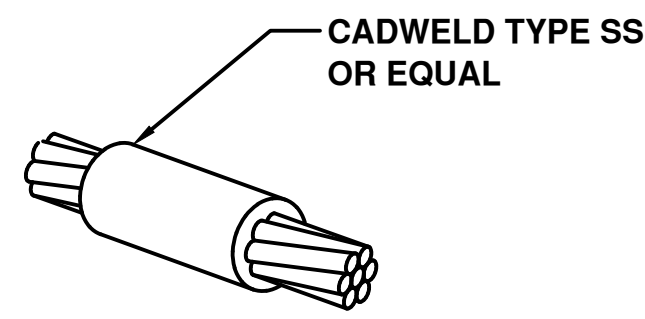
100% RATED CIRCUIT BREAKER (INTEGRAL TO UNIT), LSI TYPE.

REFER TO THE PANEL SCHEDULE FOR THE CIRCUIT CONDUCTORS AND CONDUIT SIZE.

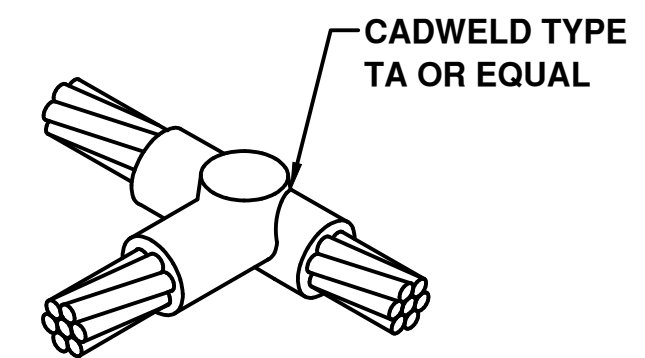
CONTROLLER INTEGRAL TO THE FLARE SKID.



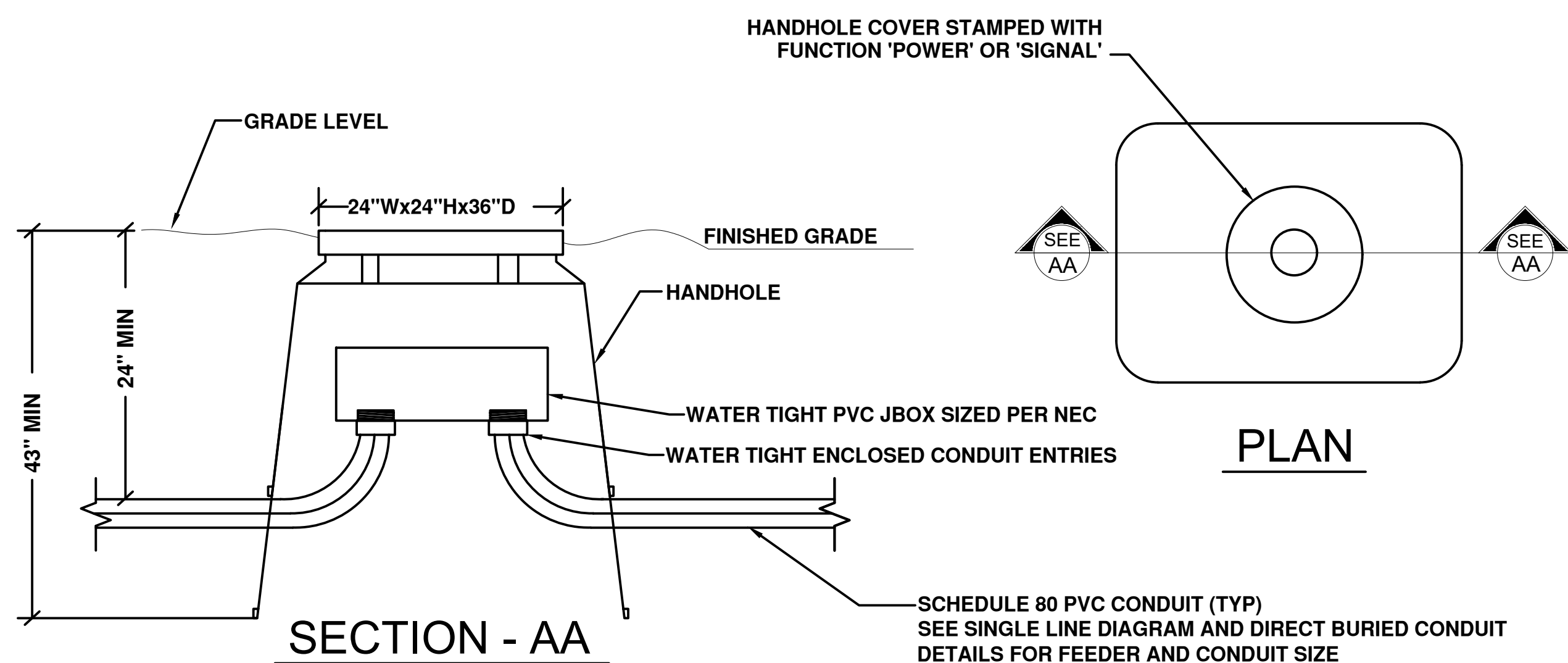
NEW EQUIPMENT SCHEDULE	
NUMBER	REMARKS
①	NEW STANDBY PACKAGED GENERATOR, 480/277V, 3Ø, 4W, 60HZ, 300/375 (KW/KVA), 0.8PF, INTEGRAL FUEL SUB-BASE, 24HR RUNTIME, LEVEL 2 SOUND ATTENUATED ENCLOSURE (STEEL) 74dBA @ 23", INTEGRAL LOAD BANK 225KW AND 100A LOAD CENTER AND GCCP PANEL, GFI RECEPTACLE, E-STOP, SPACE HEATER, BATTERY CHARGER, JACKET HEATER, STANDBY BATTERY 1000CCA, 90Ah AND GENERATOR TEST REPORT, SEE SPECIFICATION 263213.13.
②	NEW SERVICE ENTRANCE RATED ATS, 480/277V, 3Ø, 4W, 60HZ, 400A, ASCO SERIES 7000, NEMA 4X, WITH 100% RATED CIRCUIT BREAKERS, SEE SPECIFICATION 263600.
③	NEW MINI POWER ZONE, 480V-240/120V, 1Ø, 3W, 5.0KVA, (STEEL), NEMA 3R STAINLESS STEEL, SQUARE D MP2B7S40FSS, SEE SPECIFICATION 262213.
④	NEW PANEL 'MDP', 480/277V, 400A, 3Ø, 4W, 30KAIC, NEMA 4X, SQUARE D I-LINE. SEE SPECIFICATION 262416.
⑤	NEW PANEL 'FMDP', 480/277V, 300A, 3Ø, 4W, 22KAIC, NEMA 4X, SQUARE D I-LINE. SEE SPECIFICATION 262416.
⑥	NEW GAS BLOWER MASTER CONTROL PANEL, MANUFACTURER PROVIDED.
⑦	NEW UTILITY SERVICE RATED DISCONNECT SWITCH, 400A, 600V, HD, 400A CLASS L FUSED, SQ-D MODEL CH365DS, NEMA 4X.
⑧	NEW UTILITY SERVICE BOX, 400A, 480V, WITH CT'S AND METER SOCKET.



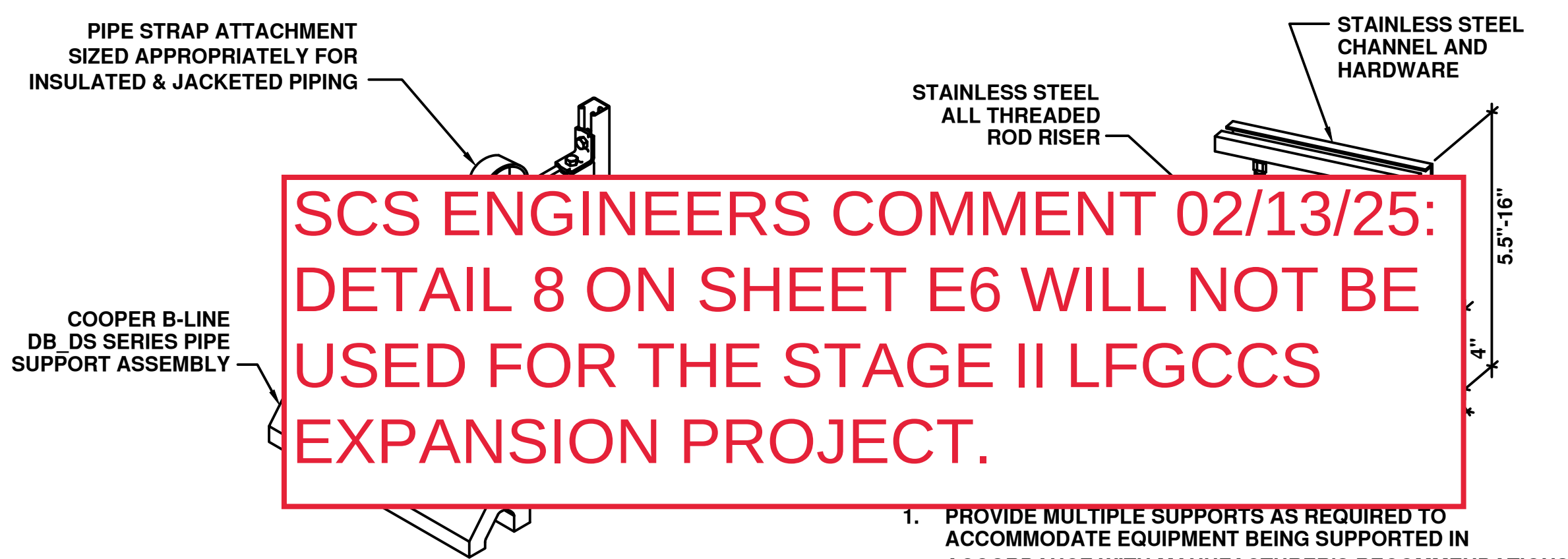
1 GROUNDING CONDUCTOR SPLICE DETAIL (TYP)
E6 NO SCALE



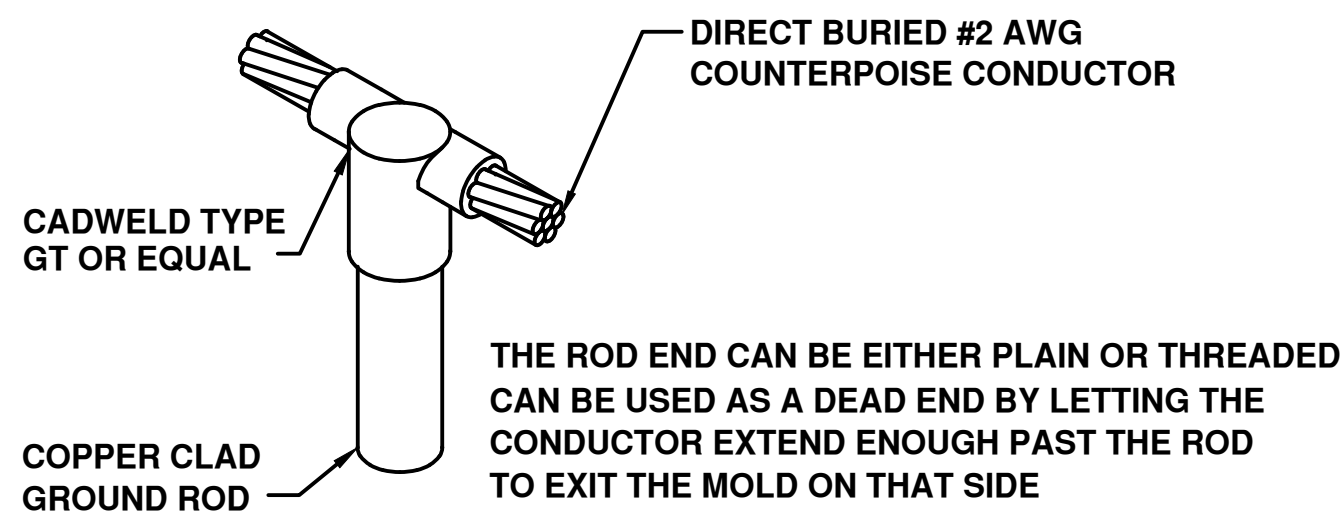
3 GROUND CONDUCTOR TAP DETAIL (TYP)
E6 NO SCALE



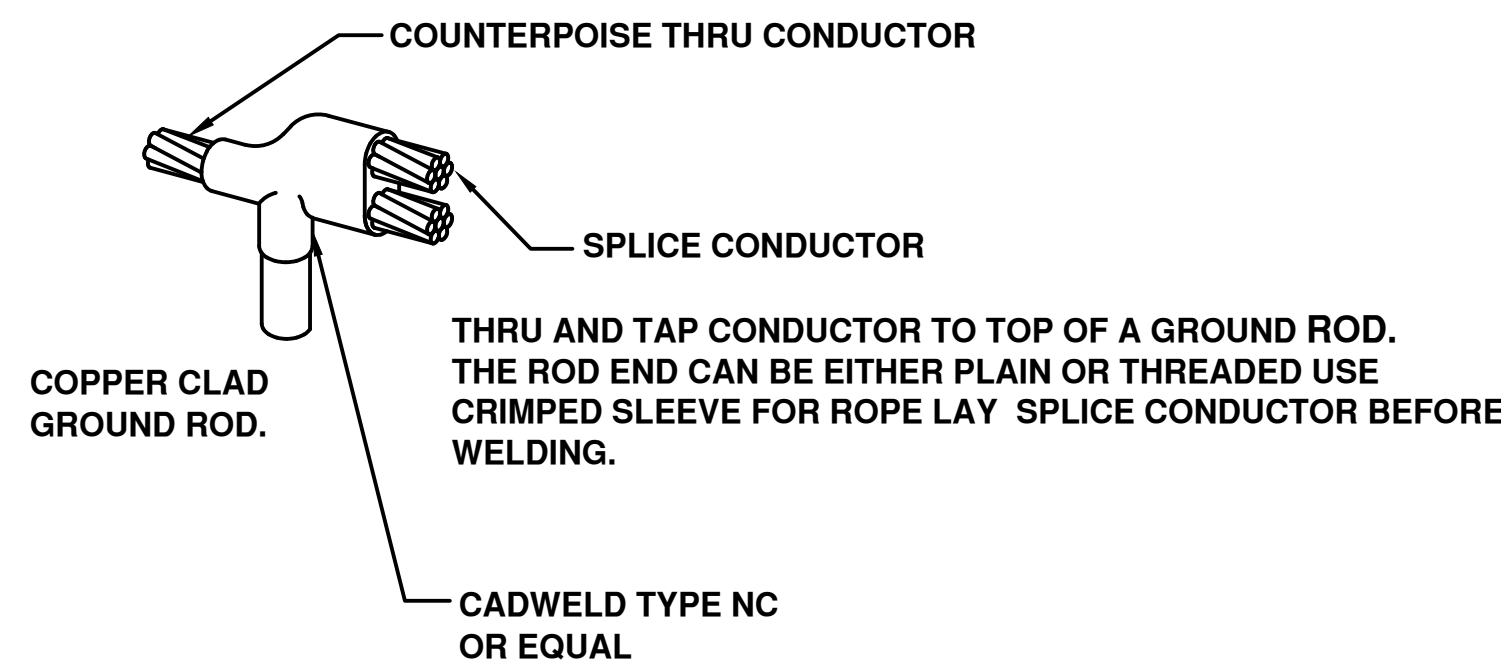
6 TYPICAL POWER HANDHOLE DETAIL
E6 NO SCALE



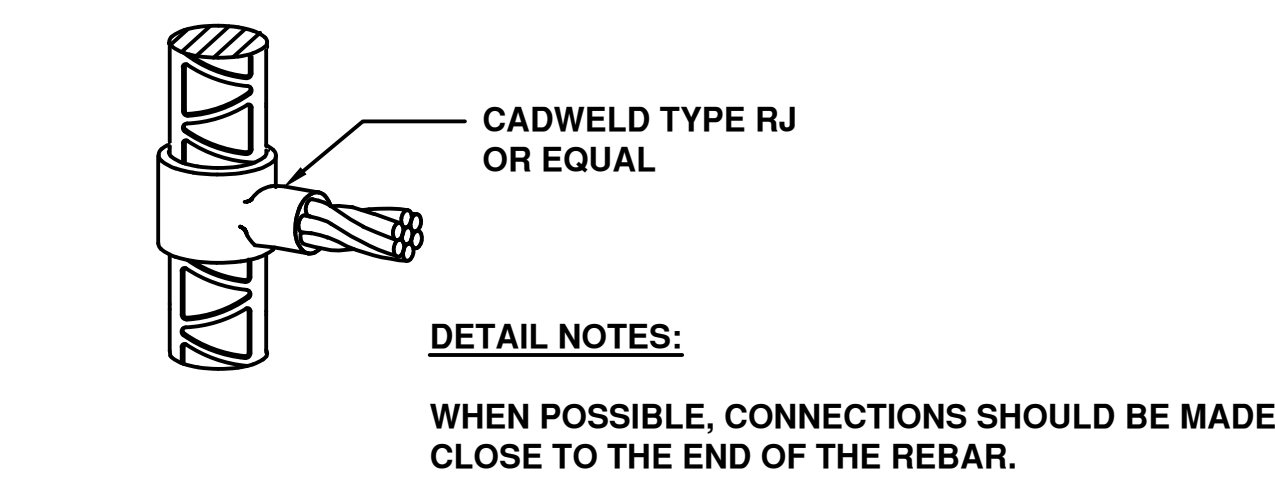
8 HORIZONTAL CONDUIT SUPPORT DETAIL
E6 NO SCALE



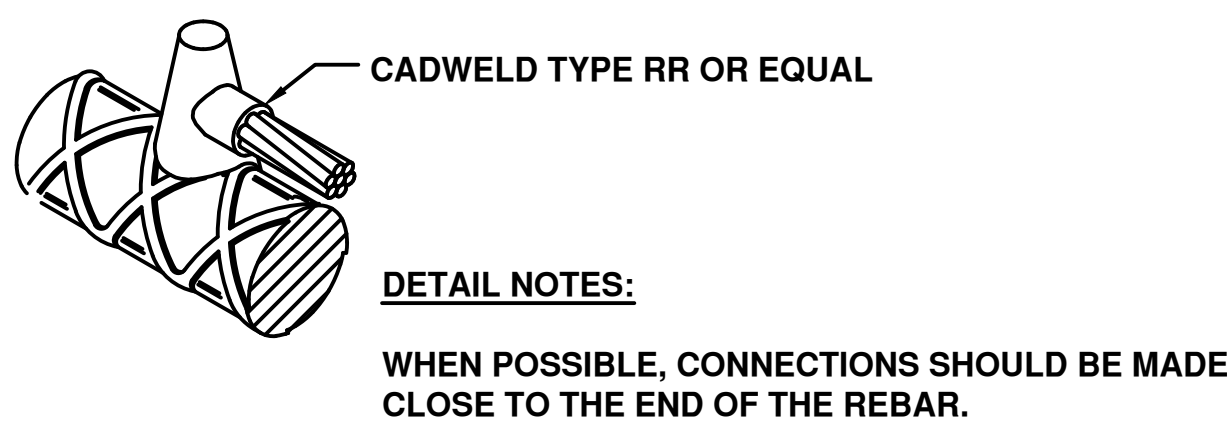
2 TWO CONDUCTOR TO ROD DETAIL (TYP)
E6 NO SCALE



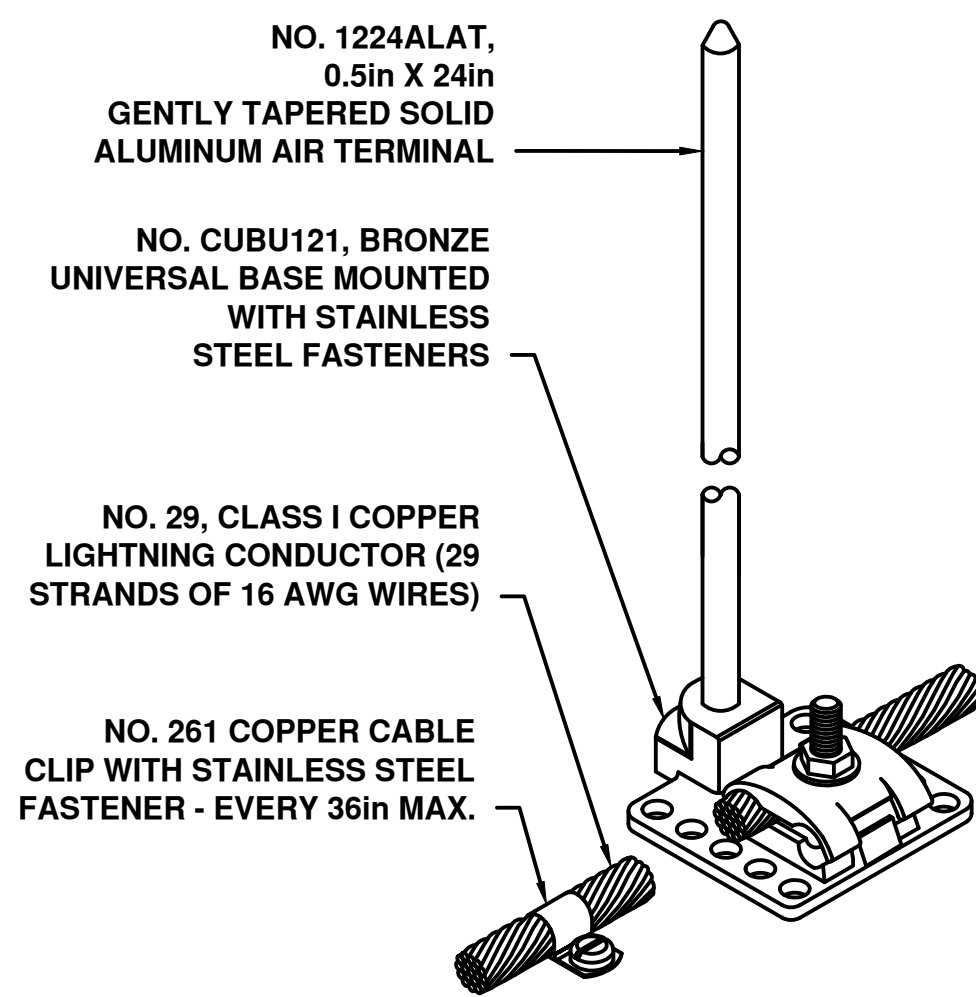
4 THREE CONDUCTOR TO ROD DETAIL (TYP)
E6 NO SCALE



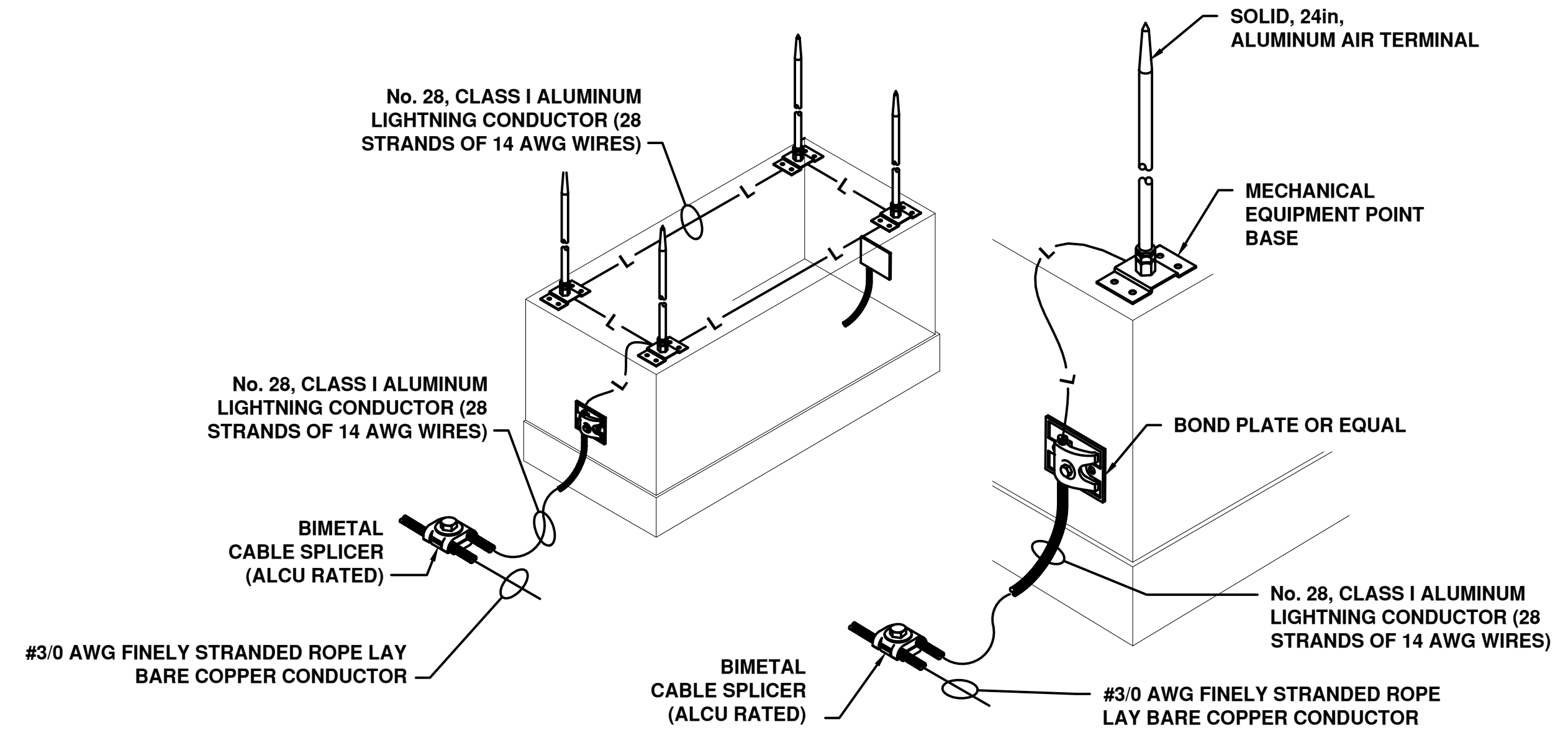
5 VERTICAL REBAR BOND CONNECTION
E6 NO SCALE



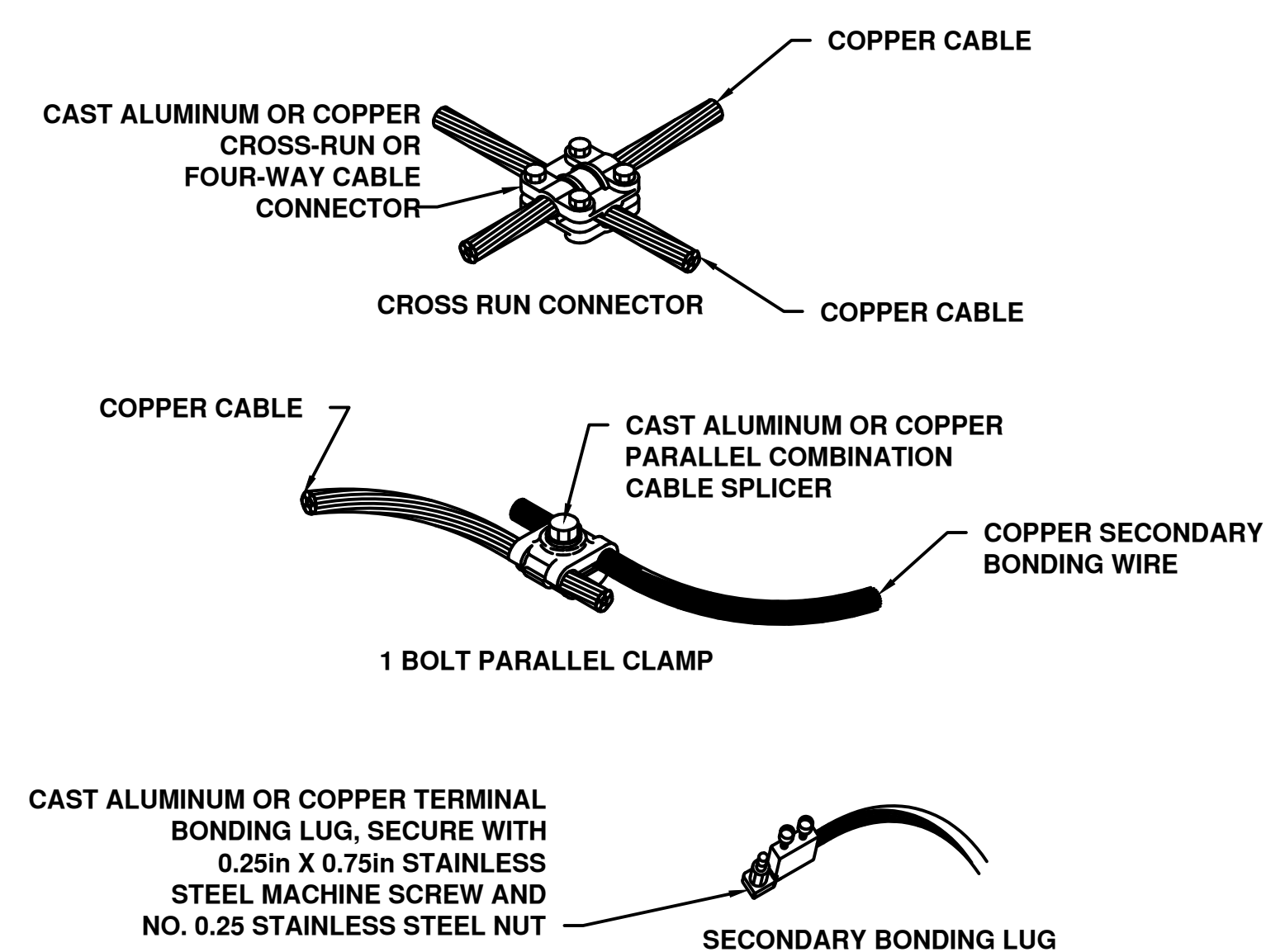
7 HORIZONTAL REBAR BOND CONNECTION
E6 NO SCALE



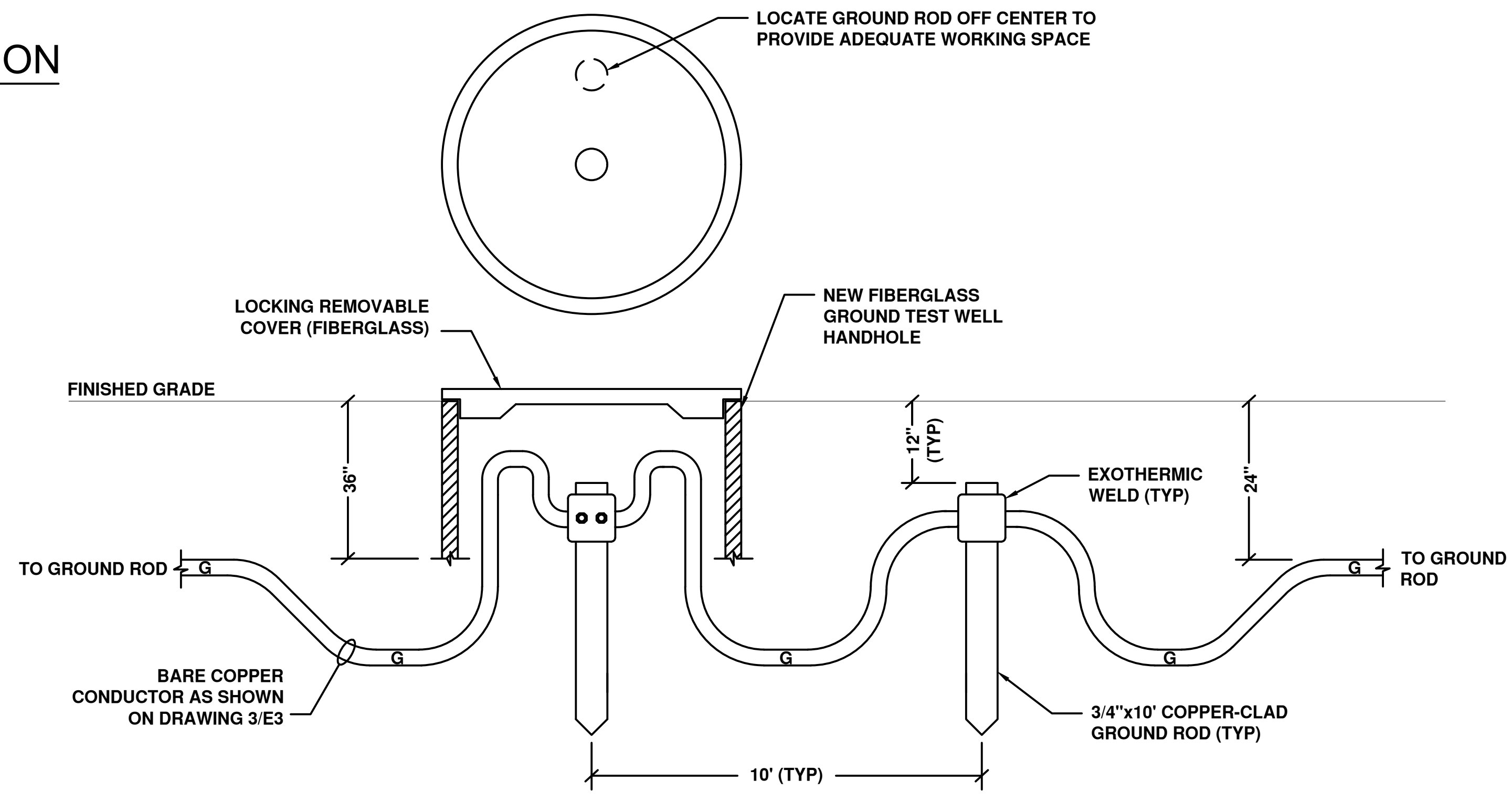
9 AIR TERMINAL DETAIL
E6 NO SCALE



10 LIGHTNING PROTECTION CONNECTION DETAIL
E6 NO SCALE



11 TYPICAL CABLE SPLICES DETAIL
E6 NO SCALE



12 COUNTERPOISE GROUND ROD SPACING DETAIL
E6 SCALE: NONE

1/29/2025

REGULATORY ROBERT ZEDICOR

Lic. No. 7000000000000000

PROFESSIONAL ENGINEER

DATE

REVISION

NO.

DETAILS PHASE 1

SHEET TITLE

PROJECT TITLE

CITY OF BRISTOL INTEGRATED SOLID WASTE MANAGEMENT FACILITY

2655 VALLEY DRIVE

BRISTOL, VA 24201

SCS ENGINEERS

STEARN, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.

1822 MILFORD ROAD, SUITE 100, BRISTOL, VA 24201

PH: (804) 378-7440 FAX: (804) 378-7443

PROJ. NO. 202408.14

DATE: 12/20/2024

SCALE: AS SHOWN

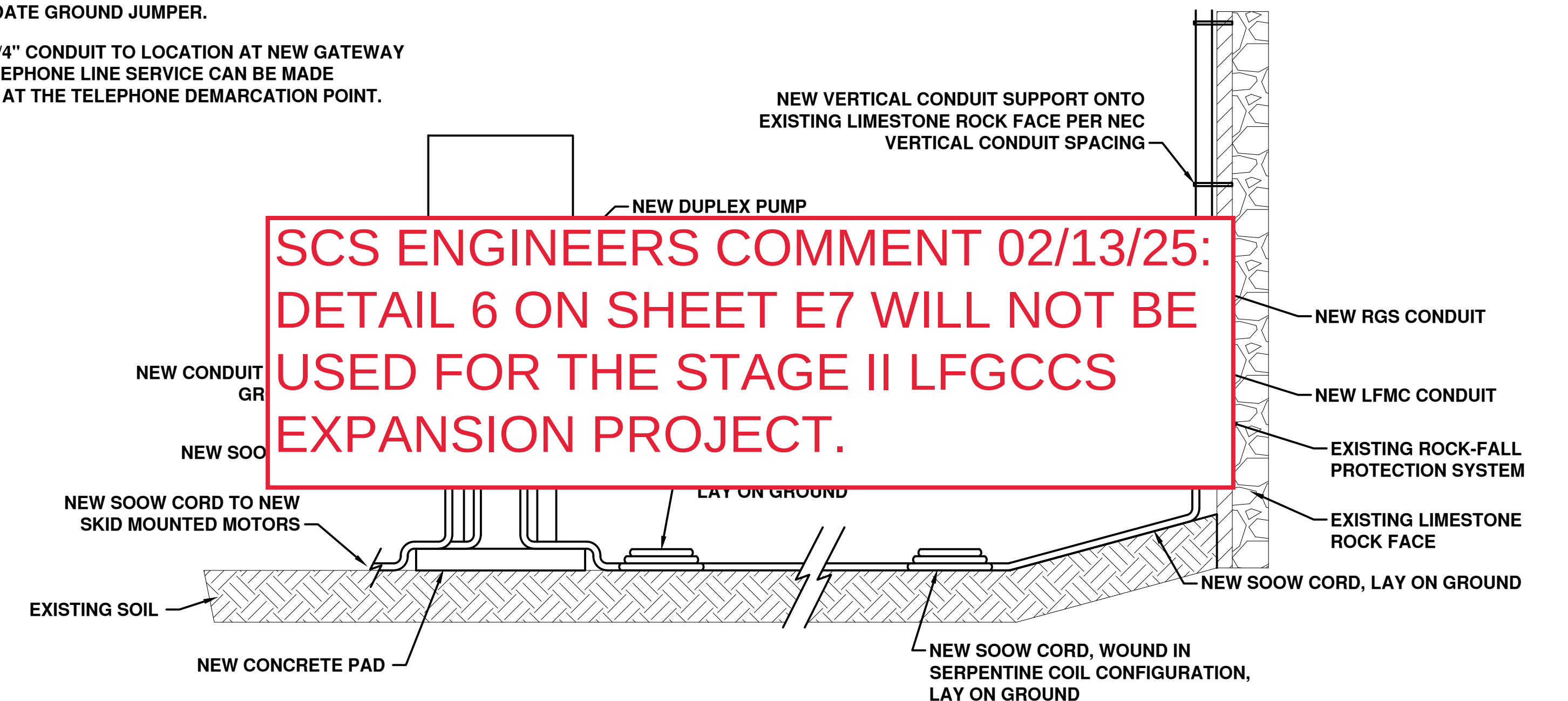
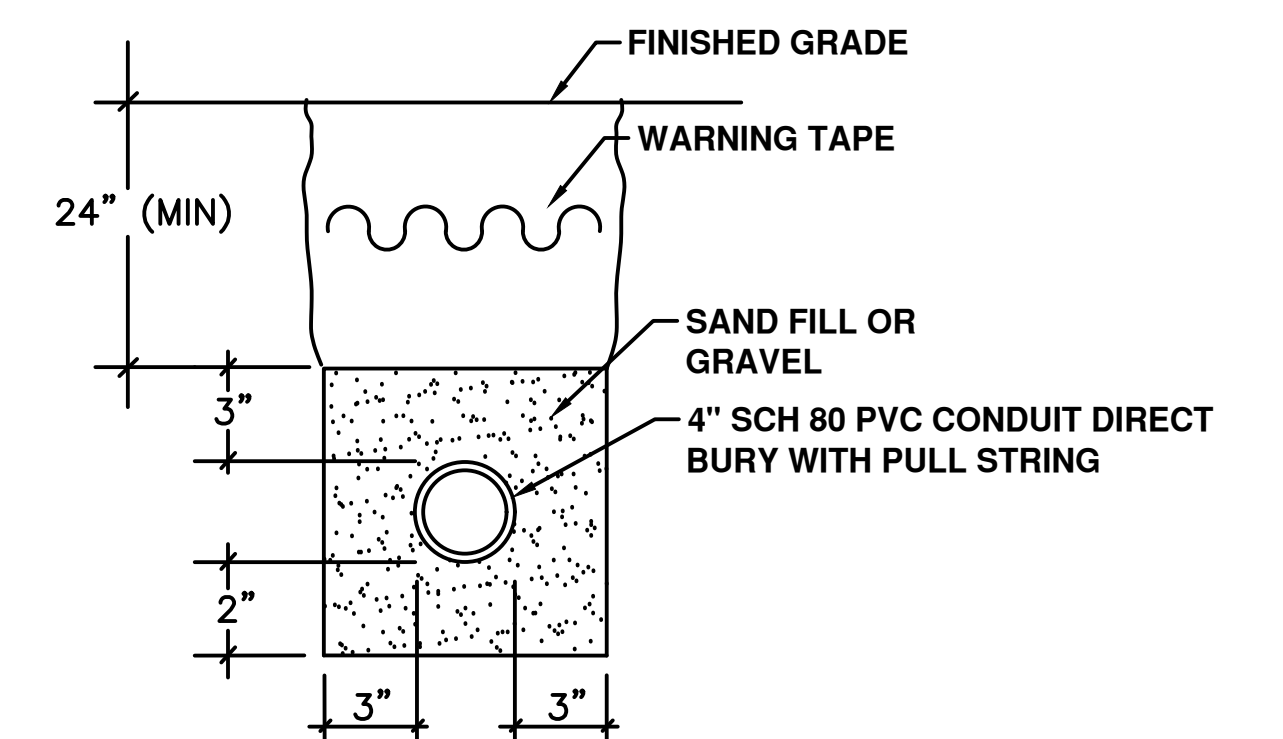
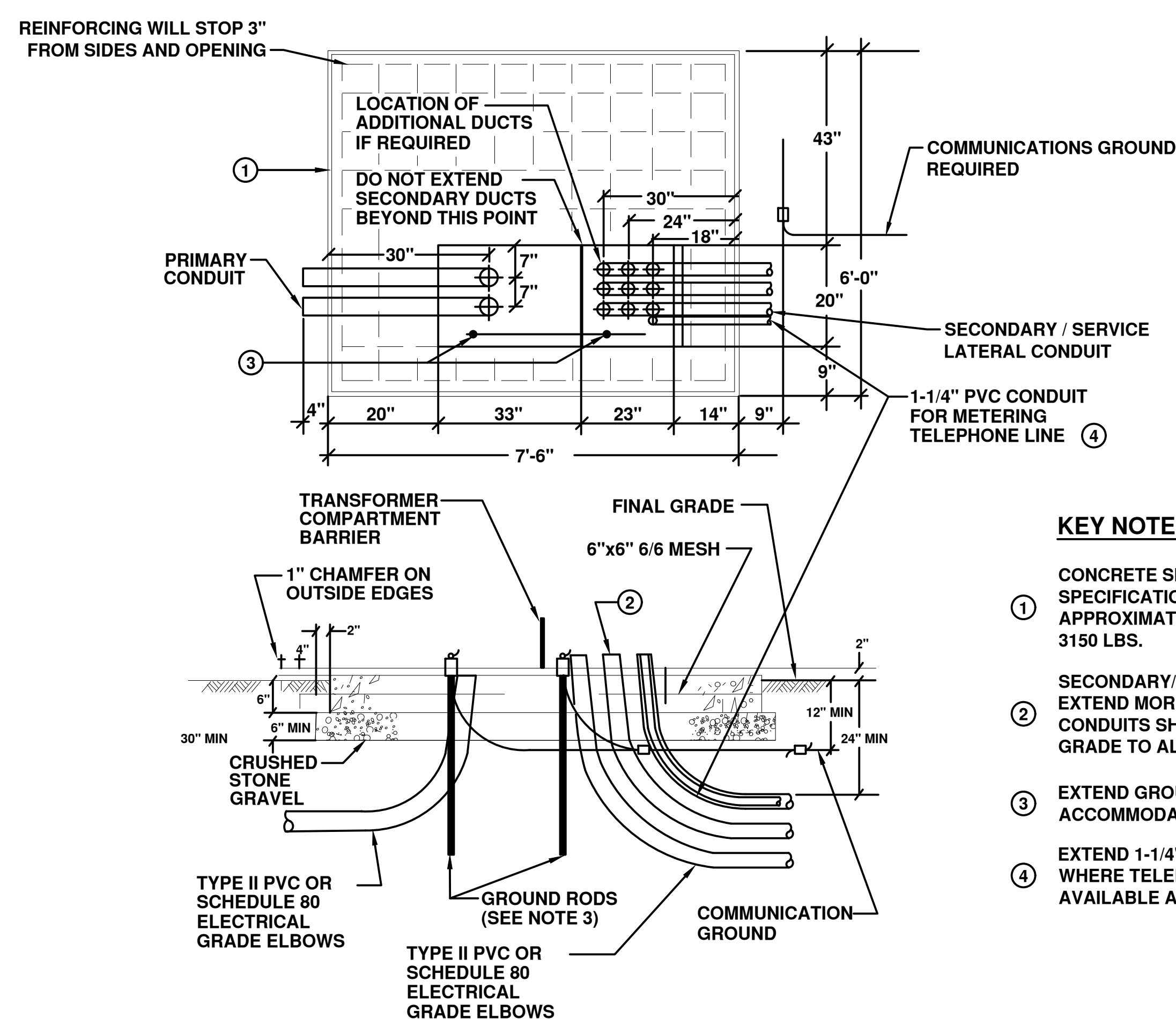
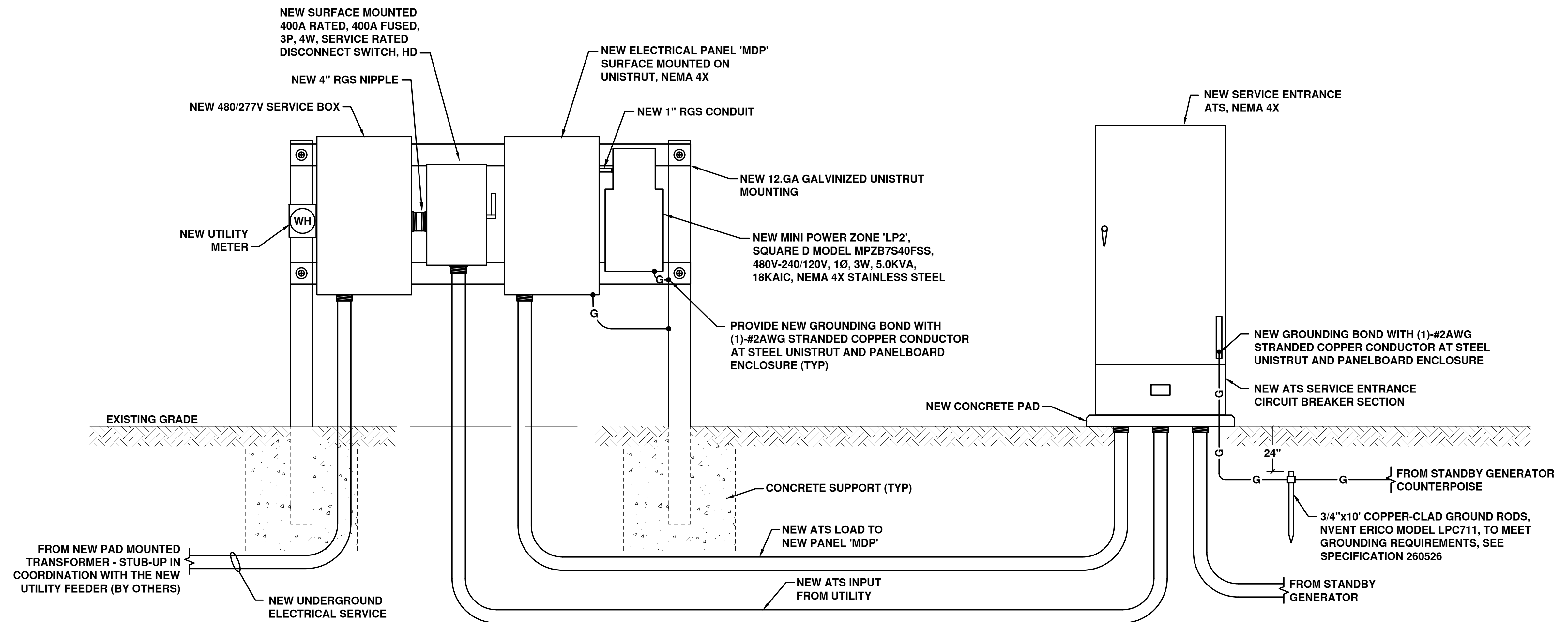
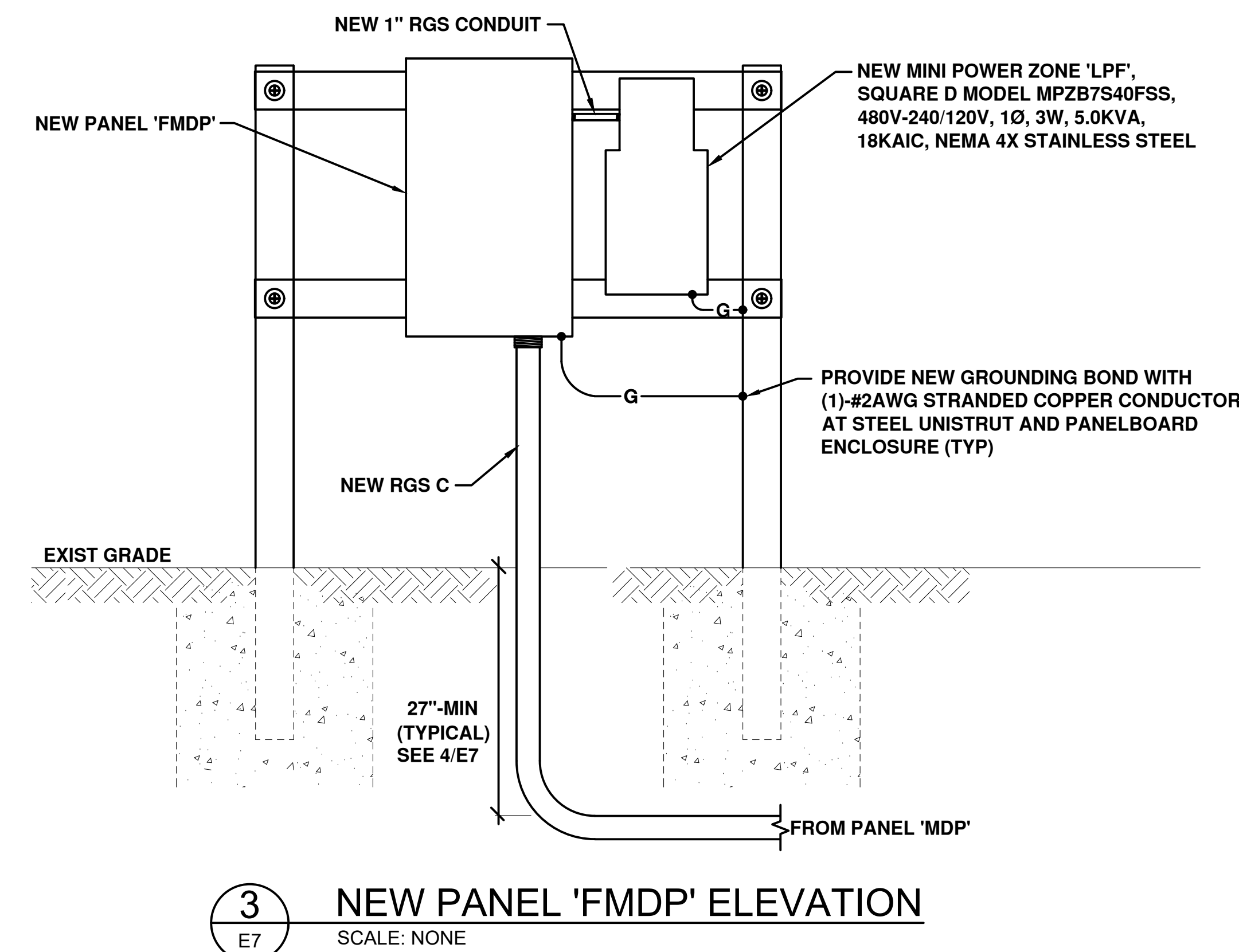
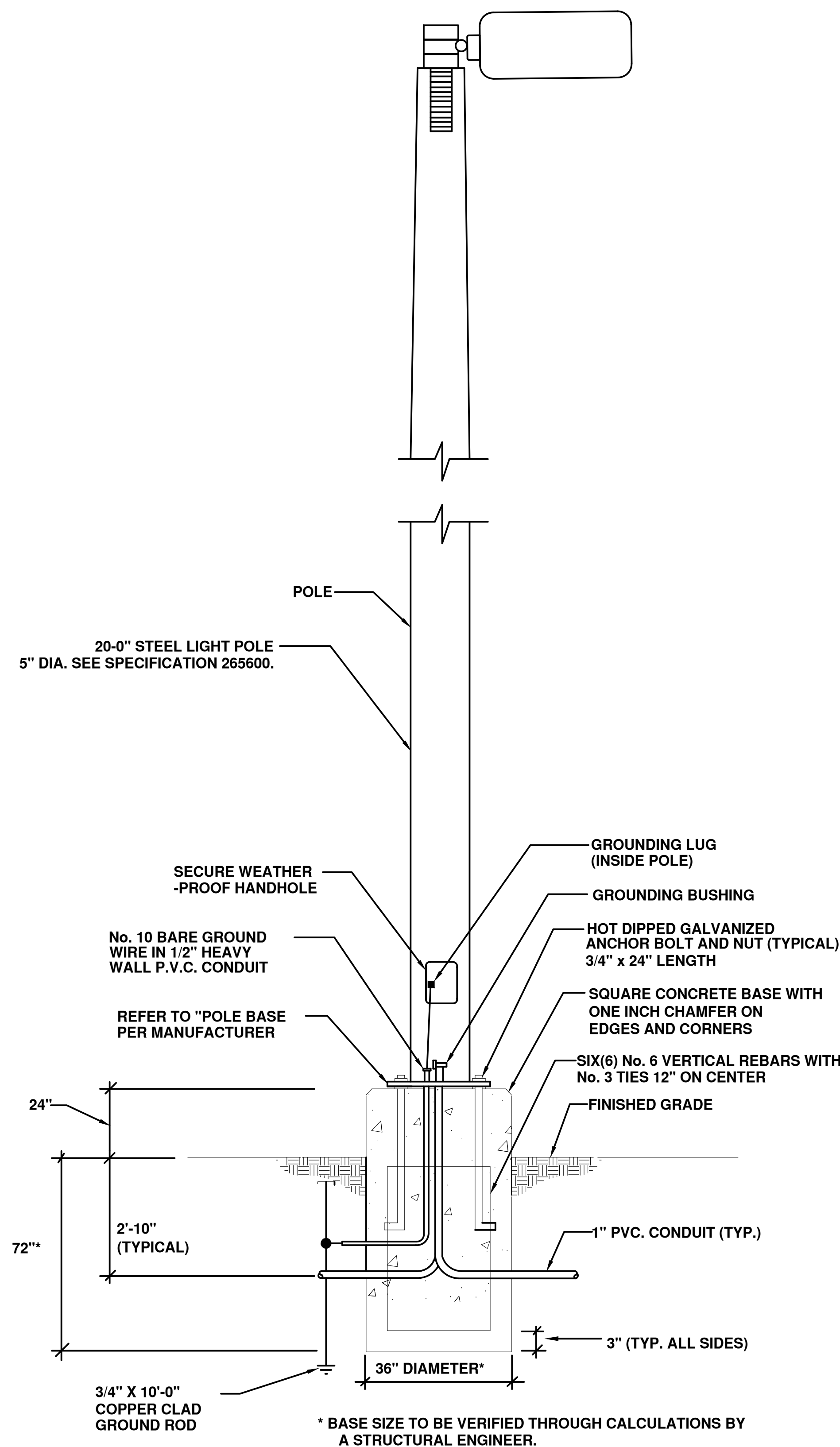
DRAWING NO. E6

CADD FILE: E6

DATE: 12/20/2024

SCALE: AS SHOWN

DRAWING NO. E6



SCS ENGINEERS COMMENT 02/13/25:
DETAIL 6 ON SHEET E7 WILL NOT BE
USED FOR THE STAGE II LFGCCS
EXPANSION PROJECT.