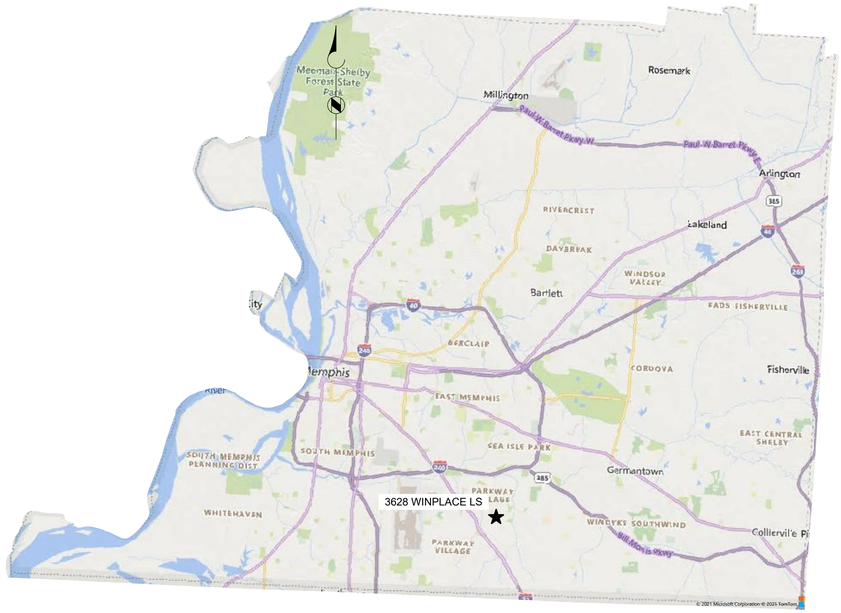
LIFT STATION DESIGN GROUP 3 C
3628 WINPLACE RD. LIFT STATION
SEWER ASSESSMENT & REHABILITATION PROGRAM (SARP10)
CITY OF MEMPHIS, TENNESSEE

SERVICE CONTRACT NO.
409278.61.0127

LOCATION MAP
MAP NOT TO SCALE

JUNE 2024
ISSUED FOR BID



VICINITY MAP
MAP NOT TO SCALE

PREPARED BY:

Brown AND Caldwell

Environmental Engineers and Consultants
1661 International Drive, Suite 400, Memphis, TN 38120
Phone: 901-708-4333

GENERAL NOTES:

1. AT ALL CROSSINGS OF EXISTING UTILITIES, THE CONTRACTOR SHALL FIELD LOCATE BY APPROPRIATE METHODS, THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES.
2. ALL SEWER TRENCHES SHALL BE PROPERLY BACKFILLED AT THE END OF EACH WORK DAY.
3. ALL DISTURBED AREAS SHALL BE SEEDED (WITH A SEASONAL MIX) AND COVERED WITH STRAW AT THE END OF EACH WEEK (AT A MINIMUM) OR MORE FREQUENTLY, AS CONDITIONS DICTATE, IN ADDITION TO EROSION CONTROLS REFERENCED ON PLANS.
4. ALL DISTURBED LAWN AREAS SHALL BE SODDED. MATCH EXISTING SOD TYPE.
5. CONTRACTOR IS FULLY RESPONSIBLE FOR DAMAGES OF EXISTING UTILITIES, AND PUBLIC/PRIVATE INFRASTRUCTURE AND PROPERTY. ANY DAMAGE TO EXISTING INFRASTRUCTURE (ABOVEGRADE OR BELOWGRADE) CAUSED BY THE CONTRACTOR'S OPERATIONS WILL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

SANITARY SEWER NOTES:

1. LOCATION OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND ARE NOT NECESSARILY ALL OF SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE APPROPRIATE UTILITY COMPANY TO DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND/OR UNDERGROUND STRUCTURES PRIOR TO THE INITIATION OF ANY CONSTRUCTION. CONTRACTOR SHALL ALSO ASSUME FULL RESPONSIBILITY FOR LOCATION OF EXISTING UTILITIES INVOLVING MLG&W, SOUTH CENTRAL BELL, AND/OR TEXAS GAS COMPANY, PLEASE CALL 1-800-351-1111. FOR SEWER SERVICE LOCATIONS, CALL 1-800-351-1111.
2. CONTRACTOR SHALL ENSURE UNINTERRUPTED SEWER SERVICE ON EXISTING SEWER AND SERVICE CONNECTIONS BY PROVIDING AMPLE TEMPORARY WASTEWATER PUMPING AND /OR BYPASSING.
3. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES.
4. ALL AREAS IN CUT OR FILL WHERE VEGETATION HAS BEEN REMOVED SHALL BE SEEDED, MULCHED, FERTILIZED, AND /OR SODDED AS REQUIRED TO PREVENT EROSION.
5. THE CONTRACTOR SHALL VERIFY EXISTING DATA AND REPORT ANY SIGNIFICANT DISCREPANCIES TO THE ENGINEER.
6. ALL SANITARY SEWER TO BE CONSTRUCTED AS PER CITY OF MEMPHIS STANDARDS CONSTRUCTION SPECIFICATIONS. SANITARY SEWER CONNECTIONS TO BE INSTALLED AS PER CITY OF MEMPHIS STANDARD SST-16.
7. ALL SEWER MANHOLE LIDS IN OPEN AREAS ARE TO BE CONSTRUCTED 1.5' ABOVE PROPOSED GRADE; IN BACKYARDS, MANHOLE LIDS ARE TO BE 1.5' ABOVE INITIAL GRADE, 0.5' ABOVE FINAL GRADE.
8. ALL SANITARY SEWER, INCLUDING SERVICE CONNECTIONS, WHICH HAS LESS THAN 1.5' CLEARANCE (OUTSIDE OF PIPES) WITH DRAINAGE OR IN FILLED AREAS SHALL BE CLASS 50 D.I.P. OR CONCRETE ENCASED, 10' BOTH SIDES OF CROSSING. ALL DUCTILE IRON PIPE SHALL BE POLYETHYLENE LINED OR SHALL BE TREATED WITH PROTECTO 401 OR APPROVED EQUIVALENT.
9. THE CITY OF MEMPHIS SHALL HAVE INGRESS/EGRESS RIGHTS TO USE PRIVATE YARDS FOR THE PURPOSE OF MAINTAINING ALL PUBLIC SEWER LINES AND SHALL BEAR NO RESPONSIBILITY FOR THE MAINTENANCE OF SAID PRIVATE DRIVES AND YARDS.
10. NO TREES, SHRUBS, PERMANENT STRUCTURES OR OTHER UTILITIES (EXCEPT FOR CROSSINGS) WILL BE ALLOWED WITHIN SANITARY SEWER EASEMENT. NO OTHER UTILITIES OR SERVICES MAY OCCUPY SANITARY SEWER EASEMENTS IN PRIVATE DRIVE AND YARDS EXCEPT FOR CROSSINGS.
11. ALL SANITARY SEWER MANHOLES IN REVERSE CROWN STREETS, ALLEYS OR DRIVES (PUBLIC OR PRIVATE) SHALL BE PROVIDED WITH GASKETS AND PLUGS FOR "PICK HOLES" TO PREVENT DRAINAGE INFLOW INTO SEWER SYSTEM.
12. THE CONTRACTOR SHALL PROVIDE ADEQUATE AND EFFECTIVE EROSION CONTROL AS NECESSARY TO PREVENT ANY SEDIMENT FROM ENTERING EXISTING DRAINAGE SYSTEM AND /OR ADJACENT PROPERTIES.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL REMOVE ALL UNDERGROUND UTILITIES AND ANY OTHER ITEMS IN ACCORDANCE WITH THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC) AND THE TECHNICAL SPECIFICATIONS. THE CONTRACTOR SHALL STRICTLY FOLLOW ALL CITY, STATE, AND FEDERAL GUIDELINES FOR REMOVAL AND DISPOSAL OF THESE FACILITIES.
2. ALL BUILDING, CONCRETE, ASPHALT PAVEMENT, AND GRANULAR SUBBASE IN AREAS OF DEMOLITION SHALL BE REMOVED FULL DEPTH PER THE DIRECTION OF THE GEOTECHNICAL ENGINEER. ALL SHALL BE DISPOSED IN ACCORDANCE WITH ALL CITY, STATE AND FEDERAL REGULATIONS.
3. CONTRACTOR SHALL REMOVE & REPAIR PAVEMENT AS REQUIRED FOR UTILITY CONSTRUCTION INCLUDING BUT NOT LIMITED TO : IRRIGATION SLEEVES, SITE LIGHTNING CONDUITS, WATER LINES, SANITARY SEWER LINES, STORM DRAINAGE LINES, ETC. CONTRACTOR HAS AN OPTION TO BORE CONDUITS.
4. PRIOR TO COMMENCING ANY UTILITY WORK, CONTRACTOR SHALL NOTIFY ANY SURROUNDING PROPERTY OWNERS WHO MAY EXPERIENCE A DISRUPTION IN SERVICE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MODIFYING ANY EXISTING IRRIGATION SYSTEM TO ACCOMMODATE PARTS OF THAT EXISTING SYSTEM THAT ARE REMOVED, ABANDONED OR DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL ALSO MODIFY ANY EXISTING IRRIGATION SYSTEM TO ACCOMMODATE NEW AREAS OF LANDSCAPING. ANY IRRIGATION SLEEVES SHALL BE INSTALLED PRIOR TO PAVING AND BACKFILLED PROPERLY BY THE SITE CONTRACTOR.
6. THE CONTRACTOR SHALL ENSURE ADEQUATE ACCESS IS PROVIDED DURING ALL PHASES OF CONSTRUCTION. COORDINATE WITH THE PROJECT MANAGER.
7. WHEN REMOVING UTILITIES, CONTRACTOR SHALL GROUT AND SEAL ANY STRUCTURES THAT ARE TO REMAIN PER LOCAL REGULATIONS.
8. UTILITIES SHOWN ARE LOCATED BY FIELD SURVEY AND RECORD DRAWINGS. ADDITIONAL UNDERGROUND UTILITIES WILL BE ENCOUNTERED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE ANY INACTIVE STRUCTURE & ALERT ENGINEER OF ANY ACTIVE, UNMAPPED STRUCTURES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION OF UTILITY DEMOLITION & RELOCATION.
10. CONTRACTOR SHALL NOT INTERRUPT DRAINAGE FROM ADJACENT PROPERTIES AND PUBLIC RIGHT-OF-WAYS.
11. ALL PUMPS, MOTORS, VALVES ETC REMOVED SHOULD BE RETURNED TO MEMPHIS WTCS DEPARTMENT. CONTACT JAMES GREENLEE FOR FURTHER DIRECTIONS, 901-636-0237.

EROSION CONTROL NOTES:

1. CONSTRUCTION ENTRANCES (TO THE OFFICE OR LAY DOWN AREA, AND TO WORK AREAS) TO BE A MINIMUM 6" DEPTH T.D.O.T. NO. 1 OR NO. 2 STONE.
2. INSTALL SEDIMENT TUBE, WATTLES OR SILT FENCE AS DICTATED ON THE EROSION CONTROL PLANS. SEE DETAILS FOR MORE INFORMATION.
3. ALL STOCK PILE AREAS TO BE PROTECTED BY A COMBINATION OF SEDIMENT TUBE OR WATTLES AND SILT FENCE.
4. INSTALL INLET PROTECTION DEVICES AT STORM INLETS PRIOR TO CONSTRUCTION. SEE PLANS FOR LOCATIONS.
5. ALL NEWLY CUT OR FILL AREAS LACKING ADEQUATE VEGETATION SHALL BE FERTILIZED, MULCHED, SEEDED, AND /OR SODDED TO EFFECTIVELY CONTROL EROSION.
6. A SPECIFIC INDIVIDUAL SHALL BE DESIGNATED TO BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS ON EACH PROJECT SITE.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SOIL EROSION CONTROL MEASURES AS NOTED ON THE PLANS AND AS REQUESTED BY THE OWNER DURING THE CONSTRUCTION, AND AS NECESSARY TO PREVENT THE SEDIMENT FROM LEAVING THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SATISFYING THE REQUIREMENTS OF THE STATE OF TENNESSEE EROSION & SEDIMENT CONTROL HANDBOOK. ALL SOIL EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE CONTRACT SO AS TO PREVENT ANY SEDIMENTATION FROM WASHING OFF THE SITE ONTO ADJACENT PROPERTY OR PUBLIC RIGHTS-OF-WAY. SEDIMENT FENCE SHALL BE INSTALLED AS DIRECTED. THE CONTRACTOR SHALL MAINTAIN A LOG OF ALL MAINTENANCE ACTIVITIES FOR THE EROSION ELEMENTS AS REQUIRED BY THE STATE OF TENNESSEE DEPARTMENT OF WATER POLLUTION CONTROL.
8. A COPY OF THE EROSION CONTROL PLAN MUST BE AVAILABLE ON SITE FOR THE DWPC INSPECTOR ON REQUEST.
9. EROSION AND SEDIMENT CONTROL MEASURES MUST BE IN PLACE AND FUNCTIONAL BEFORE EARTH MOVING OPERATIONS BEGIN, AND MUST BE CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. TEMPORARY MEASURES MAY BE REMOVED AT THE BEGINNING OF THE WORK DAY, BUT MUST BE REPLACED AT THE END OF THE WORK DAY OR PRIOR TO RAINFALL EVENTS.
10. ALL CONTROL MEASURES SHALL BE CHECKED AND STATE REQUIREMENTS FOR MAINTENANCE AND REPAIRS SHALL BE MADE AS NECESSARY. DURING PROLONGED RAINFALL, DAILY CHECKING AND REPAIRING IS NECESSARY. THE PERMITTEE SHALL MAINTAIN RECORDS OF INSPECTION CHECKS, MAINTENANCE, AND REPAIRS.
11. THIS PLAN HAS BEEN REVIEWED AND APPEARS TO BE ADEQUATE. IF SEWER PIPE INSTALLATION BY BORE DOES NOT PROVIDE FOR EFFECTIVE SEDIMENT CONTROL AND EROSION PROTECTION, ADDITIONAL MEASURES WILL BE REQUIRED.
12. IF PUMPING IS REQUIRED, SEDIMENT LADEN WATER IS NOT TO BE DISCHARGED INTO THE STORM DRAIN OR THE STREET.

DRAWING INDEX

REVISIONS

ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

CODY LAYNE MCGEE — REGISTERED ENGINEER — STATE OF TENNESSEE — COMMERCE — No. 119650 — 6-24-24

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. G-001

SEWER BASIN: NS-9

SHEET 1 OF 3

DIVISION OF ENGINEERING

GENERAL NOTES AND DRAWING INDEX

3628 WINPLACE RD.

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: CLM DATE: 06/24 SCALE: NONE

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPW\D2304698 FILENAME: G-001_3628 WINPLACE RD.DWG PLOT DATE: 6/24/2024

CROSS REFERENCING SYSTEM

VIEW TITLES

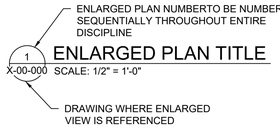
1. PLAN TITLES:

SINGLE PLAN VIEW ON SHEET

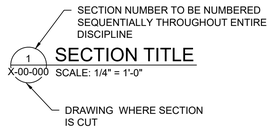
PLAN TITLE
SCALE: 1/4" = 1'-0"

MULTIPLE PLAN VIEWS ON SHEET

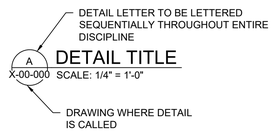
2. ENLARGED PLAN TITLES:



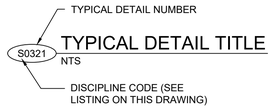
3. SECTION TITLES:



4. DETAIL AND PHOTO TITLES:

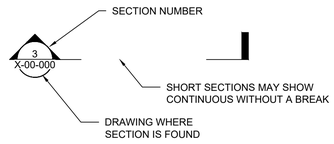


5. TYPICAL DETAIL TITLES:



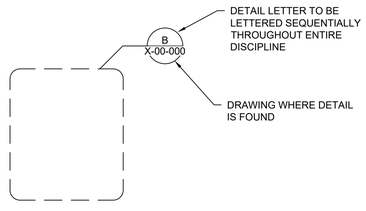
VIEW REFERENCE/CALLOUTS

1. SECTION CUTS:



2. DETAIL CALLOUT

A: BY CALLOUT:

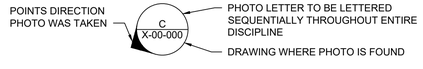


B: BY NOTE: "SEE DETAIL B/D-01-105"

B IS DETAIL REFERENCE LETTER

D-01-105 IS DRAWING WHERE DETAIL IS SHOWN

3. PHOTO INDICATORS



4. TYPICAL DETAIL REFERENCE

NOTATIONS

1. PROPOSED NOTES (with leaders)

ALL NOTES SHALL HAVE A HEIGHT OF 0.1". IF NOTE IS MORE THAN 2" WIDE AND 2 LINES THEN MAKE IT A KEYNOTE.

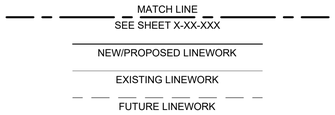
2. EXISTING NOTES (with leaders)

ALL EXISTING NOTES SHALL BE SCREENED.

3. KEYNOTES

KEYNOTES ARE NUMBERED SEQUENTIALLY ON PAGE. (ORDER IS NOT RELEVANT TO IMPORTANCE AND MAY BE RANDOM.)

MISCELLANEOUS

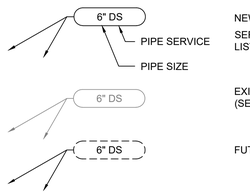


NORTH ARROW

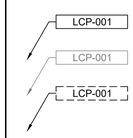
SCALE (CIVIL)

DIMENSIONS

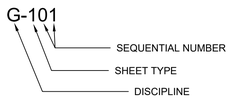
PIPING IDENTIFICATION SYSTEM



EQUIPMENT DESIGNATORS



DRAWING NUMBERING SYSTEM



DISCIPLINES

- G GENERAL
- XD DEMOLITION (X - DENOTES DISCIPLINE)
- C CIVIL
- S STRUCTURAL
- A ARCHITECTURAL
- D PROCESS/MECHANICAL
- M MECHANICAL/HVAC
- P PLUMBING
- E ELECTRICAL
- I INSTRUMENTATION

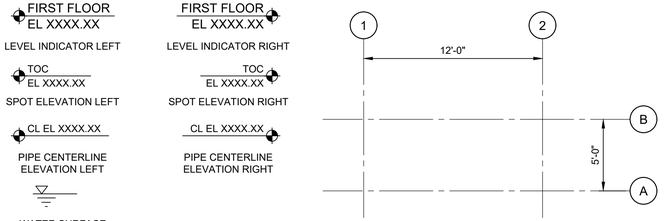
SHEET TYPE DESIGNATORS

- 0 GENERAL - COVER SHEET, ABBREVIATIONS, LEGENDS, SYMBOLS, SHEET INDEX, STANDARD DETAILS
- 1 PLANS OR (PLANS AND SECTIONS)
- 2 ELEVATIONS AND PROFILES
- 3 SECTIONS
- 4 ENLARGED PLANS
- 5 DETAILS (TYPICAL DETAILS)
- 6 DIAGRAMS
- 7 SCHEDULES
- 8 USER DEFINED
- 9 3D REPRESENTATIONS (ISOMETRICS, PERSPECTIVES, RENDERINGS)

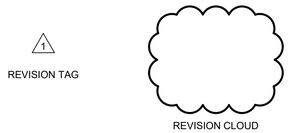
GENERAL NOTES

1. THE NOTE IN THE TITLEBLOCK OF THIS DRAWING WHICH READS "TWO INCHES AT FULL SCALE" APPEARS ON DRAWINGS FOR IDENTIFICATION OF SCALE DISTORTIONS ON HALF SIZE DRAWINGS AND DRAWING REPRODUCTIONS. IT SHALL MEAN THAT THE DRAWING IS FULL SIZE AND THE DRAWING SCALES ACCURATE WHEN THE LENGTH OF THIS LINE IS TWO INCHES. IF THE LENGTH IS OTHER THAN TWO INCHES, DRAWING SCALES MUST BE ADJUSTED ACCORDINGLY.
2. EXISTING PIPING IS DESIGNATED BY SERVICE RATHER THAN MATERIAL TYPE. MATERIAL TYPES, IF KNOWN, APPEAR OUTSIDE THE PIPING CALLOUT BUBBLE, AND MAY NOT BE THE SAME MATERIAL TYPES SPECIFIED FOR NEW PIPING.
3. ABBREVIATIONS USED IN THIS CONTRACT DOCUMENT CONFORM TO ANSI Y1.1, UNLESS NOTED OTHERWISE ON DRAWINGS. SEE SPEC. SECTION 01071 FOR ADDITIONAL ABBREVIATIONS.
4. ALL STANDARD DETAILS APPLY TO ALL THE CONTRACTORS WORK WHETHER SPECIFICALLY REFERENCED OR NOT.
5. SEE FRONT END SHEETS FOR EACH DISCIPLINES STANDARD SYMBOLS, ETC.
6. SEE ADDITIONAL GENERAL NOTES THROUGHOUT DRAWING SET.

LEVELS, GRIDS AND ELEVATION INDICATORS



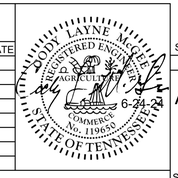
REVISIONS



ABBREVIATIONS

CAB	DIRECT BURIAL CABLE	IL	INDICATING LAMP	REL	RELAY
C-C	CENTER TO CENTER	INF	INFLUENT	RGS	RIGID GALVANIZED STEEL
CL	CENTERLINE	INV	INVERT	RS	RAW SEWAGE
CNTL	CONTROL				
		KV	KILOVOLT	SMH	SEWER MANHOLE
DB	DUCT BANK	KVA	KILOVOLT AMPERE	SS	SANITARY SEWER
		KW	KILOWATT	SST	STAINLES STEEL
EFF	EFFLUENT			STD	STANDARD
EJ	EXPANSION JOINT	LEL	LOWER EXPLOSIVE LIMIT	SWB	SWITCHBOARD
EL	ELEVATION	LLWL	LOW-LOW WATER LEVEL		
EMBD	EMBEDDED	LOS	LOCKOUT STOP	TB	TERMINAL BOX
EQ	EQUAL	LS	LIMIT SWITCH	TFR	TRANSFORMER
EQUIP	EQUIPMENT			TOC	TOP OF CONCRETE
ES	EXISTING SURFACE	MCC	MOTOR CONTROL CENTER	TRM	TRANSMITTER
EWEF	EACH WAY EACH FACE	MCU	MASTER CONTROL UNIT	TRN	TRANSDUCER
EXIST	EXISTING	MGD	MILLION GALLONS PER DAY	TRS	TRANSFER SWITCH
		MJ	MECHANICAL JOINT	TS	TEMPERATURE SWITCH
F	FAHRENHEIT, FACE, FUSE(D)	MME	MISCELLANEOUS MECHANICAL EQUIPMENT		
FC	FAIL CLOSED			UL	ULTIMATE LOAD
FE	FLOWMETER	N	NEUTRAL	UN	UNION
FH	FIRE HYDRANT, FLATHEAD	NPSH	NET POSITIVE SUCTION HEAD		
FIN	FINISHED			V	VALVE, VOLTS
FLR	FLOOR	OL	OVERLOAD	VAC	VOLTS ALTERNATING CURRENT
FM	FORCE MAIN			VAR	VARIES, VARIABLE
FO	FAIL OPEN	P	PUMP	VDC	VOLTS DIRECT CURRENT
		PL	PROPERTY LINE, PIPELINE, PLATE		
GFI	GROUND FAULT INTERRUPTOR	PNL	PANEL, PANELBOARD	WSTP	WATERSTOP
GPD	GALLONS PER DAY	PP	POWER POLE		
GRT	GROUT	PSIA	POUND PER SQUARE INCH ABSOLUTE	XP	EXPLOSIONPROOF
GSP	GALVANIZED STEEL PIPE	PSIG	POUNDS PER SQUARE INCH GAGE		
GV	GATE VALVE	PV	PLUG VALVE, PROCESS VARIABLE		
H/A	HAND AUTO	Q	RATE OF FLOW		
HHWL	HIGH-HIGH WATER LEVEL	QCPLG	QUICK COUPLING		
HOA	HAND-OFF-AUTO				
HP	HIGH PRESSURE, HIGH POINT, HORSEPOWER	R	RADIUS		
		RECP	RECEPTACLE		

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024



LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. G-002

SEWER BASIN: NS-9

SHEET 2 OF 3

DIVISION OF ENGINEERING

ABBREVIATIONS, LEGENDS, & SYMBOLS

3628 WINPLACE RD.

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: CLM DATE: 06/24 SCALE: NONE

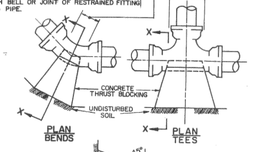
REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWD2304698 FILENAME: G-002_3628 WINPLACE RD.DWG PLOT DATE: 6/24/2024

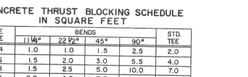
DEPARTMENT of ENGINEERING BUREAU of SEWER DESIGN, MUNICIPAL ENGINEER (ST) — DRAFTSMAN DBE DATE JUNE 2015 SCALE NTS

CONFINE LIMITS OF THRUST BLOCKING BETWEEN BELLS OF FITTING TO BE RESTRAINED. NO CONCRETE SHALL COME IN CONTACT WITH BELL OR JOINT OF RESTRAINED FITTING AND CONNECTING PIPE.



PLAN BENDS

PLAN TEES



SECTION X-X
BENDS & TEES

CONCRETE THRUST BLOCKING SCHEDULE IN SQUARE FEET

PIPE SIZE	BENDS 11¼°	22 ½°	45°	90°	STD. TEE
4	1.0	1.0	1.5	2.5	2.0
6	1.5	2.0	3.0	5.5	4.0
8	1.5	2.5	5.0	10.0	7.0
10	2.0	4.0	7.5	14.5	10.0
12	3.0	6.0	11.5	21.5	14.5
14	4.0	7.5	15.0	28.0	19.5
16	5.0	10.0	20.0	35.0	25.5
18	6.5	12.5	24.5	350★	32.0
20	8.5	16.5	32.6	350★	35.0★
24	10.0	200	35.0★	350★	350★
30	18.0	345	350★	350★	350★
36	250	350★	350★	350★	350★
42	32.5	350★	350★	350★	350★

BLOCKING SCHEDULE BASED ON 200 PSI WATER PRESSURE, 2,000 PSF SOIL BEARING PRESSURE & 1.25 SAFETY FACTOR.

★ INDICATES FITTINGS REQUIRING RESTRAINED JOINTS IN ADDITION TO CONC THRUST BLOCKING. SEE RESTRAINED JOINT SCHEDULE.

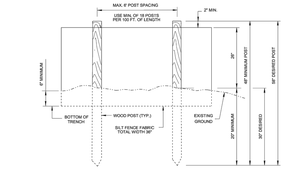
REVISIONS		
NO.	DATE	BY	REMARKS

CONVERSIONS	
ENGLISH	METRIC

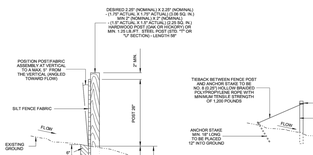
CITY OF MEMPHIS
DEPARTMENT of ENGINEERING

DESIGN STANDARD FOR CONCRETE THRUST BLOCK ING

Bryant Bandicoot Jr. 3/9/16
CITY ENGINEER — DATE



ELEVATION VIEW



SILT FENCE TIEBACK FOR STEEL POSTS OR WOOD POSTS

(WHEN REQUIRED BY THE ENGINEER OR NOTED IN THE PLANS. COST TO BE INCLUDED IN THE ITEMS FOR SILT FENCE)

SECTIONAL VIEW

NOT TO SCALE

EROSION CONTROL PLAN LEGEND: * SF * SF * SF * SILT FENCE

SILT FENCE FABRIC SPECIFICATIONS

FABRIC PROPERTY AND TEST METHODS	REQUIRED PHYSICAL PROPERTIES (MARV VALUES OF TEST DATA)
GEOTEXTILE FABRIC TYPE	WOVEN SLIT FILM (PER AASHTO M288)
APPARENT OPENING SIZE (ASTM D4751)	#30 TO #70 STANDARD SIEVE
WATER FLUX (ASTM D4491)	≥ 4 GAL/FT²/ FT
TENSILE STRENGTH (ASTM D4632)	≥ 120 LB. (MARP DIRECTION) X 100 LB. (FILL DIRECTION)
ULTRAVIOLET STABILITY (AFTER 500 HRS PER ASTM D4355)	≥ 70%
ELONGATION (ASTM D4632)	≤ 20% (MAX)
BURST STRENGTH (ASTM D3786)	≥ 250 PSI
PUNCTURE STRENGTH (ASTM D4833)	≥ 60 LB
TRAPEZOIDAL TEAR (ASTM D4533)	≥ 50 LB. (MARP DIRECTION) X 40 LB. (FILL DIRECTION)

SILT FENCE GENERAL NOTES

A. SILT FENCE IS USED TO INTERCEPT SMALL AMOUNTS OF SEDIMENT AND REDUCE VELOCITY FROM SHEET FLOW ONLY. DO NOT USE IT ADJACENT TO NATURAL WATER RESOURCES (WETLANDS OR STREAMS) OR ACROSS CONCENTRATED FLOW PATHS.

B. THE MAXIMUM DRAINAGE AREA SIZE FOR A CONTINUOUS BARRIER SHALL BE 1/4 ACRE PER 100 LINEAR FEET OF SILT FENCE. FOR SLOPE APPLICATIONS, THE MAXIMUM SLOPE LENGTH BEHIND THE SILT FENCE BARRIER SHALL BE 100 FEET. SLOPE SHALL BE 100 FEET AS MEASURED ALONG THE GROUND SURFACE(S).

C. WHEN INSTALLED AT THE TOE OF A SLOPE, SILT FENCE SHOULD BE PLACED 5 FEET TO 7 FEET AWAY FROM THE TOE TO ALLOW SPACE FOR PONDING OF WATER, COLLECTION OF SEDIMENT, AND EASE OF MAINTENANCE AND REMOVAL.

D. WHEN TWO SECTIONS OF SILT FENCE FABRIC ADJOIN EACH OTHER THEY SHALL BE JOINED ACCORDING TO THE DETAILS ON STANDARD DRAWING EC-STR-3E.

E. MAINTENANCE SHALL BE PERFORMED AS NEEDED. CAPTURED SOIL MATERIAL SHALL BE REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE AND/OR OTHER EVIDENCE OF FLOW OVERTOPPING OF FILTER CLOGGING IS OBSERVED.

F. STEEL POSTS SHALL BE ROLLED FROM HIGH CARBON STEEL AND SHALL HAVE A MINIMUM WEIGHT OF 1.25 LB/FT. POSTS SHALL BE EQUIPPED WITH AN ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702. WOOD POSTS SHALL BE EQUIPPED WITH AN ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702.

G. WHEN STEEL POSTS ARE USED THEY SHALL HAVE A PROJECTION FOR FASTENING WIRE TO THEM. THE WIRE FASTENERS SHOULD BE EVENLY SPACED WITH AT LEAST FIVE PER POST.

H. IF THE FILTER MATERIAL IS STAPLED TO THE WOODEN STAKES, HEAVY DUTY WIRE STAPLES WITH ONE-INCH (NOMINAL) CROWNS SHALL BE USED AND EVENLY SPACED WITH AT LEAST FOUR PER POST. SILT FENCE FABRIC SHALL NOT BE STAPLED TO TREES.

I. SILT FENCES SHOULD BE PLACED ALONG OR NEAR THE GROUND CONTOUR. THE BOTTOM OF FENCE AT GROUND LINE SHOULD BE ON A ZERO PERCENT (0%) GRADE, PLUS OR MINUS FIVE TENTHS OF ONE PERCENT (0.5%). THE ENDS OF A RUN OF SILT FENCE SHOULD BE TURNED UPSLOPE FORMING A J-HOOK TO ITS TRUE ANY CONCENTRATED FLOW BEHIND FENCE

J. A PREASSEMBLED SILT FENCE MEETING THE REQUIREMENTS OF THIS DRAWING IS ACCEPTABLE IN LIEU OF A FIELD ASSEMBLED SILT FENCE.

K. STATIC SLICING IS THE PREFERRED METHOD OF FENCE INSTALLATION. STATIC SLICING MAYS EITHER THE INSERTION OF A NARROW CUTTING BLADE, PLACED AT THE SPECIFIED ANCHOR DEPTH FOR THE GIVEN FABRIC AS SHOWN ON THIS DRAWING, INTO THE SOIL AND THE PULLING OF THE FABRIC INTO THE SLICED SLOT. NO SOIL IS REMOVED OR BEING EXCAVATED. ALTERNATE TRENCHING/BACKFILL METHODS ARE ALSO ACCEPTABLE. DO NOT USE EQUIPMENT THAT WILL DISTURB WIDER THAN 4" IN-SITU SOIL SUCH AS BACKHOE. FOR TRENCH-BASED INSTALLATIONS, SILT FENCING SHALL BE INSTALLED PER THE FOLLOWING STEPS AND IN THE FOLLOWING ORDER:

1. EXCAVATE TRENCH A MAXIMUM OF 4 INCHES WIDE AND 8 INCHES DEEP. THE TRENCH SHALL BE HAND-CLEARED OF VEGETATION AND ROCKS TO REMOVE BULKY DEBRIS SUCH AS ROCKS, STICKS, AND SOIL CLODS FROM THE TRENCH.
2. INSTALL FABRIC IN TRENCH.
3. BACKFILL TRENCH (OVERFILL) WITH SOIL PLACED AROUND FABRIC.
4. COMPACT SOIL BACKFILL WITH MECHANICAL EQUIPMENT. DO NOT DAMAGE THE FABRIC DURING COMPACTION (DAMAGED FABRIC SHALL BE REPLACED).
5. DRIVE AND SET SUPPORT POSTS PER SPACING REQUIREMENTS GIVEN ON THE APPLICABLE FENCE DETAIL. WHEN ASSEMBLED SILT FENCE, DRIVE SUPPORT IN TO GROUND FIRST, FOLLOWED BY FABRIC PLACEMENT IN TRENCH.
6. ATTACH FABRIC TO THE POSTS USING WIRE TIES OR STAPLES. SPACING AND DENSITY OF TIES OR STAPLES SHALL BE INSTALLED AS DESCRIBED IN NOTES (G) AND (H).

L. ONLY SILT FENCE FABRICS LISTED ON THE QUALIFIED PRODUCTS LIST MAY BE USED. ANY PRODUCTS LISTED ON THE QUALIFIED PRODUCTS LIST AS AN APPROVED ALTERNATE MAY ALSO BE USED.

M. SILT FENCE SHALL BE PAID FOR UNDER ITEM NUMBER 209-09. TEMPORARY SILT FENCE (WITHOUT BACKING) PER LINEAR FOOT. THE PRICE BID SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY FOR CONSTRUCTION, MAINTENANCE, AND REMOVAL OF THE SILT FENCE.

N. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE STRUCTURE AND PAID FOR UNDER ITEM NUMBER 209-05, SEDIMENT REMOVAL PER CUBIC YARD.

REV.: 12-18-03: MODIFIED TABLE ③ AND GENERAL NOTE ⑤

REV.: 7-29-04: CHANGED VALUES IN TABLE ③ AND GENERAL NOTE ⑤ VALUES.

REV.: 4-14-06: REMOVED FOR TESTS FROM TABLE ③, ADDED NOTE ⑦, REVISED NOTE ⑤, ADDED NOTE ⑧ TO GENERAL NOTES, REFORMATTED SHEET, REVISED NOTES, MISC. EDITS TO DRAWING.

REV.: 4-1-08: REMOVED TEMPORARY REFERENCE, REVISED NOTES, AND MISC. EDITS TO DRAWING.

REV.: 8-1-12: MINOR EDITS TO GENERAL NOTES.

REV.: 5-10-21: CHANGED SECOND NOTE ⑤ TO NOTE ⑥.

REV.: 09-01-21: ADDED AASHTO REFERENCE IN TABLE, UPDATED GENERAL NOTES ⑤ AND REORDER SHEET.

REV.: 06-15-21: ADDED ALTERNATE POST SPACING, REVISED POST EMBEDMENT LENGTH.

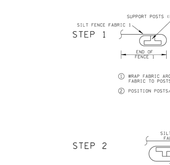
STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION STANDARD DRAWING

SILT FENCE

12-18-2002 — EC-STR-3B

REV.: 4-15-06: REFORMATTED SHEET, REVISED NOTES, MISC. EDITS TO DRAWING.

REV.: 4-1-08: MISC. EDITS TO DRAWING, CHANGED DRAWING NAME, REFORMATTED SHEET.



① WRAP FABRIC AROUND END SUPPORTS AS SHOWN AND ANCHOR FABRIC TO POSTS.
② POSITION POSTS/FABRIC AS SHOWN ABOVE.

PLAN VIEW
JOINING SILT FENCE
FABRIC SECTIONS (WOOD POSTS)

① WRAP FABRIC AROUND END SUPPORTS AS SHOWN AND ANCHOR FABRIC TO POSTS.
② POSITION POSTS/FABRIC AS SHOWN ABOVE.
③ POSITION THE SILT FENCE FABRIC 2 POST INSIDE OF THE SILT FENCE FABRIC 1 POST AS SHOWN ABOVE.
④ ROTATE BOTH POSTS WITH FABRIC CLOCKWISE AT LEAST 180°.
⑤ EMBED BOTH POSTS INTO GROUND PER APPLICABLE SILT FENCE STANDARD DRAWING, EC-STR-3A, EC-STR-3C, OR EC-STR-3D.

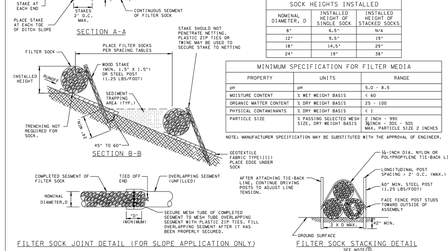
PLAN VIEW
JOINING SILT FENCE
FABRIC SECTIONS (STEEL POSTS)

MINOR REVISION — FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION

SILT FENCE FABRIC JOINING DETAILS

12-18-06 — EC-STR-3E



PLAN VIEW FOR DITCH APPLICATION

SECTION A-A

SECTION B-B

FILTER SOCK JOINT DETAIL (FOR SLOPE APPLICATION ONLY)

FILTER SOCK STACKING DETAIL
SEE NOTE ⑫

SOCK HEIGHTS INSTALLED		
NOMINAL DIAMETER, D	INSTALLED HEIGHT OF SINGLE SOCK	INSTALLED HEIGHT OF STACKED SOCKS
8"	6.5"	N/A
12"	9.5"	19"
18"	14.5"	29"
24"	19"	38"

MINIMUM SPECIFICATION FOR FILTER MEDIA		
PROPERTY	UNITS	RANGE
pH	pH	5.0 - 8.5
MOISTURE CONTENT	% WET WEIGHT BASIS	< 60
ORGANIC MATTER CONTENT	% DRY WEIGHT BASIS	25 - 100
PHYSICAL CONTAMINANTS	% DRY WEIGHT BASIS	< 1
PARTICLE SIZE	% PASSING SELECTED MESH SIZE, DRY WEIGHT BASIS	5 INCH - 95% MIN.; 3 INCH - 90% MIN.; PARTICLE SIZE 2 INCHES

NOTE: MANUFACTURER SPECIFICATION MAY BE SUBSTITUTED WITH THE APPROVAL OF ENGINEER.

EROSION CONTROL PLAN LEGEND: ••SOCK••SOCK••SOCK••SOCK•• FILTER SOCK

FILTER SOCK CHECK DAM ESTIMATED QUANTITIES					
	V-DITCH			TRAPEZOIDAL DITCH	
	24" FILTER SOCK STACKED (SINGLE) HEIGHT 19"	18" FILTER SOCK STACKED (DOUBLE) HEIGHT 29"	24" FILTER SOCK STACKED (DOUBLE) HEIGHT 38"	24" FILTER SOCK STACKED (SINGLE) HEIGHT 19"	24" FILTER SOCK STACKED (DOUBLE) HEIGHT 38"
LENGTH(FT)	20	40	48	24	72	60

1. ESTIMATED QUANTITIES BASED ON 4:1 SIDE SLOPES. QUANTITIES WILL VARY BASED ON ACTUAL DITCH CONFIGURATIONS.
2. ESTIMATED QUANTITIES BASED ON 4FT BOTTOM WIDTH, 4 FT DEPTH, AND 4:1 SIDE SLOPES. QUANTITIES WILL VARY BASED ON ACTUAL DITCH CONFIGURATION.

FILTER SOCK SPACING FOR SLOPE APPLICATION			
SLOPE	8"	12"	18"	24"
2%	70'	80'	N/A	N/A
5%	30'	60'	80'	N/A
10%	20'	30'	70'	80'
4:1	N/A	20'	50'	55'
4:1	N/A	20'	30'	50'
3:1	N/A	N/A	20'	25'
2:1	N/A	N/A	20'	20'

N/A = NOT RECOMMENDED
SPACING NOT TO EXCEED 80'

FILTER SOCK SPACING FOR DITCH APPLICATION	
DITCH SLOPE	MAXIMUM FILTER SOCK SPACING
LESS THAN 2%	80'
2%	80'
5%	50'
10%	50'
15%	50'
GREATER THAN 15%	25'

BASED ON AN INSTALLED HEIGHT OF 19 INCHES. SPACING NOT TO EXCEED 80'.

FILTER SOCK GENERAL NOTES

A. FILTER SOCKS CAN BE PLACED IN DITCHES OR AT THE TOP, ON THE FACE, OR AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES. THEY CAN ALSO SERVE TO REMOVE SEDIMENT FROM RUNOFF AND RELEASE IT AS SHEET FLOW.

B. FILTER SOCKS INSTALLED ON A SLOPE SHALL BE PLACED ALONG OR ON THE GROUND CONTOUR. WHEN INSTALLED ACROSS THE FACE OR AT THE TOE OF A SLOPE, A SOCK SHOULD BE PLACED AT EVEN ELEVATION ALONG ITS LENGTH TO PROVIDE SEDIMENT STORAGE. THE MAXIMUM DRAINAGE AREA SHALL BE ¼ ACRE PER 100 LF OF SOCK.

C. FOR DITCH APPLICATIONS, THE MAXIMUM DRAINAGE AREA SHALL BE 15 ACRES, AT SITES WHICH DRAIN TO EXCEPTIONAL TENNESSEE WATERS OR SEDIMENT-IMPAIRED STREAMS, THE MAXIMUM DRAINAGE AREA SHALL BE 3½ ACRES. FILTER SOCKS SHALL NOT BE USED IN STREAMS, WETLANDS, OTHER NATURAL WATER RESOURCES, OR IN DITCHES WITH CONTINUOUS FLOWS.

D. FOR DITCH APPLICATIONS, THE MINIMUM INSTALLED HEIGHT OF A SINGLE SOCK, OR OF AN INDIVIDUAL SOCK IN A STACKED SET, SHALL BE 8 INCHES. FILTER SOCKS SHALL NOT BE USED IN DITCHES WITH DRAINAGE AREA SHALL BE LARGER THAN 15 ACRES. FILTER SOCKS SHALL NOT BE USED IN STREAMS, WETLANDS, OTHER NATURAL WATER RESOURCES, OR IN DITCHES WITH CONTINUOUS FLOWS.

E. FILTER SOCKS SHALL CONSIST OF A TUBULAR MESH SOCK WITH OPENINGS NO GREATER THAN 3/8THS OF AN INCH IN SIZE. THE MESH SOCK IS NOT REQUIRED TO BE BIODEGRADABLE. FILL MATERIAL SHALL CONSIST OF EITHER WOOD CHIPS (MULCH) OR A 50/50 COMBINATION OF WOOD CHIPS AND MANUFACTURED COMPOST MATERIAL.

F. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED IN DIAMETERS OF 8, 12, 18, OR 24 INCHES. THE DIAMETER OF A SEDIMENT TUBE SHALL BE A MINIMUM OF 8 INCHES AND A MAXIMUM OF 24 INCHES. DIAMETER TOLERANCE IS 2 INCHES. FOR DITCH APPLICATIONS, SEDIMENT TUBES SHALL BE A MINIMUM OF 20 INCHES.

G. STEEL POSTS SHALL BE ROLLED FROM HIGH CARBON STEEL AND SHALL HAVE A MINIMUM WEIGHT OF 1.25 LB/FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH VISIBILITY PAINT. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702.

H. FILTER SOCKS ARE FILLED ON THE PROJECT SITE AND MAY BE UP TO 250 FEET LONG, WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINED AS SHOWN ON THIS DRAWING.

I. ANY PRODUCT LISTED ON THE QUALIFIED PRODUCTS LIST AS AN APPROVED ALTERNATE FOR SILT FENCE MAY BE USED FOR FILTER SOCK APPLICATIONS. SANDBAG OR GRAVEL BAG BERMS MAY ALSO BE USED AS ALTERNATE MATERIALS.

J. SEDIMENT SHALL BE REMOVED FROM BEHIND THE FILTER SOCK WHEN IT HAS ACCUMULATED TO ONE-HALF OF THE ORIGINAL HEIGHT OF THE STRUCTURE AND PAID FOR UNDER ITEM NUMBER 209-05, SEDIMENT REMOVAL PER CUBIC YARD.

K. FILTER SOCKS SHALL BE INSPECTED AFTER EACH RUNOFF EVENT AND SHALL BE REMOVED AND REPLACED IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

L. FILTER SOCKS SHOULD BE REMOVED FROM SLOPES AFTER STABILIZATION IS COMPLETE. THIS MAY BE ACCOMPLISHED BY CUTTING THE SOCK OPEN AND SPREADING THE FILL MATERIAL. THE MESH TUBE SHALL BE REMOVED. FILTER SOCKS SHALL BE REMOVED FROM DITCHES SHALL BE COMPLETELY REMOVED.

M. GEOTEXTILE FABRIC REQUIRED FOR SLOPE APPLICATION STEEPER THAN 4:1.

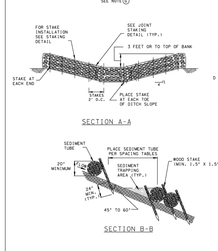
REV.: 8-1-12: MINOR EDITS TO GENERAL NOTES.

REV.: 5-10-21: MODIFIED SPACING TABLES. ADDED GEOTEXTILES ADDED NOTE ⑦.

STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION

FILTER SOCK

4-1-08 — EC-STR-8



PLAN VIEW FOR DITCH APPLICATION

SECTION A-A

SECTION B-B

STAKING DETAIL

SECTION C-C

JOINT STAKING DETAIL
(DITCH APPLICATION ONLY)

SEDIMENT TUBE SPACING FOR SLOPE APPLICATION				
SLOPE	8"	12"	18"	20"	24"
2%	70'	80'	N/A	N/A	N/A
5%	30'	60'	80'	N/A	N/A
10%	20'	30'	70'	80'	80'
4:1	N/A	20'	40'	50'	55'
4:1	N/A	20'	30'	50'	50'
3:1	N/A	N/A	N/A	20'	25'
2:1	N/A	N/A	N/A	20'	20'

N/A = NOT RECOMMENDED
SPACING NOT TO EXCEED 80'

SEDIMENT TUBE SPACING TABLE FOR DITCH APPLICATION	
SLOPE	MAXIMUM SEDIMENT TUBE SPACING
LESS THAN 2%	80'
2%	80'
5%	50'
10%	50'
15%	40'
45%	40'
55%	30'
65%	20'
GREATER THAN 65%	20'

BASED ON A 20" SEDIMENT TUBE
SEE TABLE ON EC-STR-6 FOR OTHER HEIGHTS.

SEDIMENT TUBE GENERAL NOTES

A. SEDIMENT TUBES CAN BE PLACED AT THE TOP, ON THE FACE, OR AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES. THEY CAN ALSO SERVE TO REMOVE SEDIMENT FROM RUNOFF AND PROVIDE REMOVAL OF SEDIMENT FROM THE RUNOFF AS SHEET FLOW.

B. SEDIMENT TUBES SHALL BE INSTALLED ALONG OR ON THE GROUND CONTOUR, AT THE TOE OF SLOPES, OR IN A 20 TON TO HELP REDUCE THE EFFECTS OF SOIL EROSION AND RETAIN SEDIMENT. SEDIMENT TUBES SHOULD NOT BE USED IN DITCHES OR STREAMS.

C. FOR DITCH APPLICATIONS, THE MAXIMUM DRAINAGE AREA SHALL BE 15 ACRES. AT SITES WHICH DRAIN TO EXCEPTIONAL TENNESSEE WATERS OR SEDIMENT-IMPAIRED STREAMS, THE MAXIMUM DRAINAGE AREA SHALL BE 3½ ACRES. FOR SLOPE APPLICATIONS, THE MAXIMUM DRAINAGE AREAS SHALL BE ¼ ACRE PER 100 LF OF TUBE.

D. SEDIMENT TUBES SHALL NOT BE USED ON PAVEMENT, ROCKY SOILS, OR AT ANY OTHER LOCATIONS WHERE THE STAKES CANNOT BE DRIVEN TO THE REQUIRED DEPTH.

E. SEDIMENT TUBES SHALL BE MANUFACTURED FROM WOOD EXCELSIOR, RICE OR WHEAT STRAW, AND BIODEGRADABLE NETTING MATERIAL. ALL MATERIALS INCLUDING THE NETTING SHALL BE BIODEGRADABLE.

F. PINE NEEDLE AND LEAF MULCH FILLED SEDIMENT TUBES AND STRAW BALES ARE NOT ACCEPTABLE MATERIALS.

G. THE DIAMETER OF A SEDIMENT TUBE SHALL BE A MINIMUM OF 8 INCHES AND A MAXIMUM OF 24 INCHES. DIAMETER TOLERANCE IS 2 INCHES. FOR DITCH APPLICATIONS, SEDIMENT TUBES SHALL BE A MINIMUM OF 20 INCHES.

H. SEDIMENT TUBES SHALL BE INSTALLED WITH WOODEN STAKES (MIN. 1.5" X 1.5" ACTUAL). THE STAKE SHALL BE EMBEDDED A MINIMUM OF 2 FEET.

I. SEDIMENT TUBES SHALL BE TRENCHED IN A MINIMUM OF 2 INCHES.

J. IF MORE THAN ONE SEDIMENT TUBE IS PLACED IN A ROW IN SLOPE APPLICATION, THE TUBES SHALL BE OVERLAPPED A MINIMUM OF 24 INCHES TO PREVENT FLOW AND SEDIMENT FROM PASSING THROUGH THE FIELD JOINT, WHEN USED IN DITCHES, TWO ROWS OF TUBE SHALL BE PLACED ON THE CHANNEL BOTTOM WITH STAGGERED JOINTS AS SHOWN.

K. FOR DITCH APPLICATIONS, SEDIMENT TUBES SHALL BE A MINIMUM OF 20 INCH DIAMETER FOR SLOPES UP TO 10%. FOR SLOPES GREATER THAN 10%, THE DIAMETER OF THE TUBE SHALL CONTINUE UP THE SIDE SLOPES A MINIMUM OF 1 FEET PLUS THE DIAMETER OF THE TUBE, OR TO THE TOP OF THE DITCH, WHICHEVER IS LESS.

L. SEDIMENT TUBES USED IN SLOPE APPLICATIONS MAY REMAIN IN PLACE TO BIODEGRADE. FOR DITCH APPLICATIONS SEDIMENT TUBES SHALL BE COMPLETELY REMOVED AFTER FULLY ESTABLISHED VEGETATION HAS COMPLETELY DEVELOPED.

M. SEDIMENT TUBES SHALL BE PAID FOR UNDER THE FOLLOWING ITEM NUMBERS:

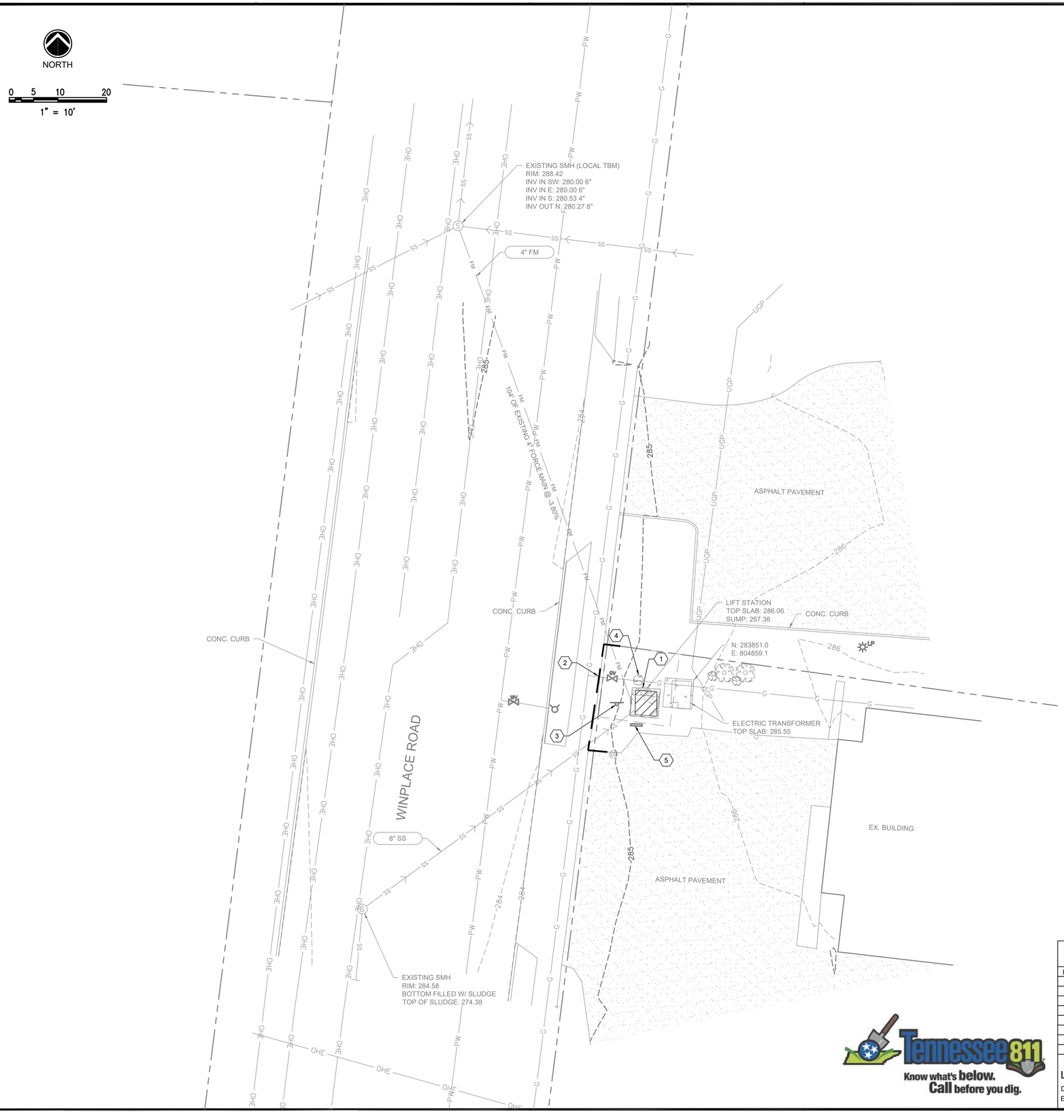
740-11.01 TEMPORARY SEDIMENT TUBE 18 INCH PER LINEAR FOOT
740-11.02 TEMPORARY SEDIMENT TUBE 112 INCH PER LINEAR FOOT
740-11.03 TEMPORARY SEDIMENT TUBE 120 INCH PER LINEAR FOOT
740-11.04 TEMPORARY SEDIMENT TUBE 120 INCH PER LINEAR FOOT
740-11.05 TEMPORARY SEDIMENT TUBE 124 INCH PER LINEAR FOOT

PAYMENT SHALL INCLUDE ALL MATERIALS (INCLUDING GEOTEXTILE FABRIC IF USED) AND LABOR NECESSARY FOR CONSTRUCTION, MAINTENANCE, AND REMOVAL OF SEDIMENT TUBE.

N. ONLY SEDIMENT TUBES LISTED ON THE QUALIFIED PRODUCTS LIST MAY BE USED.

O. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SEDIMENT TUBE WHEN IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE STRUCTURE AND PAID FOR UNDER ITEM NUMBER 209-05, SEDIMENT REMOVAL PER CUBIC YARD.

P. GEO



LEGEND	
LP	LIGHT POLE
WV	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
	EXISTING SIGN
S	SEWER MANHOLE
	EXISTING BUSH
	EXISTING TREE GROUP
GV	EXISTING GAS VALVE
CO	EXISTING CLEANOUT
	PROPERTY LINE
SS	EXISTING SANITARY SEWER
FM	EXISTING FORCE MAIN
OHE	EXISTING OVERHEAD ELECTRIC
100	EXISTING CONTOUR
	EXISTING EASEMENT
PW	EXISTING POTABLE WATER
G	EXISTING GAS LINE
	PERIMETER SEDIMENT CONTROL MEASURE
UGP	UNDERGROUND POWER
	EXISTING CONCRETE
	EXISTING ASPHALT
	PROPOSED DEMO

GENERAL NOTES:

1. BASE DRAWING DEVELOPED FROM "PARTIAL TOPOGRAPHIC SURVEY OF WINPLACE SEWER LIFT STATION" DATED 11/18/21, PREPARED BY ASHWORTH ENGINEERING, PLLC. BROWN AND CALDWELL ASSUMES NO RESPONSIBILITY FOR ACCURACY OF THE SAME. DIMENSIONS, FEATURES, AND DETAILS MAY VARY FROM FIELD CONDITIONS. CONTRACTOR MUST VERIFY ALL EXISTING CONDITIONS THAT MAY IMPACT THE WORK.
2. EXISTING PIPE LOCATIONS SHOWN BASED ON CITY OF MEMPHIS GIS DATA AND FIELD VERIFICATION WHERE POSSIBLE. NOT ALL UNDERGROUND UTILITIES WERE LOCATED. CONTRACTOR SHALL VERIFY UTILITY AND PIPE LOCATIONS WITHIN ALL WORK AREAS PRIOR TO COMMENCING WORK.
3. ALL EXISTING INFRASTRUCTURE AND SITE FEATURES THAT IS TO REMAIN IN PLACE (PIPING, ELECTRIC CONDUITS, STORM PIPES, ETC.) TO BE PROTECTED IN ACCORDANCE WITH THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT, TENNESSEE CODE 65-31-101.

KEY NOTES:

1. DEMOLISH EXISTING ABOVE GRADE LIFT STATION INCLUDING PUMPS, PIPING, VALVES, FITTINGS, AND ACCESSORIES AS NECESSARY. EXISTING WET WELL STRUCTURE TO REMAIN IN PLACE.
2. CONTRACTOR TO PLACE EROSION CONTROLS AROUND AREAS OF DISTURBANCE TO PREVENT SEDIMENT RUNOFF FROM LEAVING THE WORK AREA. SEE DETAILS ON DRAWING G-003. ANY SEDIMENT THAT LEAVES THE WORK AREA, INCLUDING THAT TRACKED ONTO THE PAVEMENT, SHALL BE CLEANED UP IMMEDIATELY.
3. CONTRACTOR TO PROTECT SIGN POLE OR TEMPORARILY REMOVE AND REPLACE.
4. CONTRACTOR TO REMOVE SHRUB IF NECESSARY TO COMPLETE WORK.
5. CONTRACTOR TO PROTECT AND REUSE EXISTING CONTROL PANEL. SEE ELECTRICAL DRAWINGS FOR DETAILS.

NOTE: BEFORE THE BEGINNING OF CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY THE SITE DATUM WITH ALL SITE TBMS AND IMMEDIATELY REPORT IN WRITING ANY DISCREPANCIES TO THE ENGINEER.

SPECIAL FLOOD HAZARD STATEMENT:

THIS IS TO CERTIFY THAT BY GRAPHIC DETERMINATION THE ABOVE PLATTED PROPERTY IS NOT IN A SPECIAL FLOOD HAZARD AREA (SFHA) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD. THE SUBJECT PROPERTY IS SHOWN IN A FEMA ZONE X (NO SHADING ON FEMA MAP): AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO THE FEMA/FIRM MAP NUMBER 47157C0445F WITH AN EFFECTIVE DATE OF SEPTEMBER 28, 2007.

TEMPORARY BENCHMARK (T.B.M.) - RIM OF SMH 150' NORTH OF LIFT STATION

ELEVATION = 285.23 (NAVD88)

BENCHMARK (B.M.) - NGS MONUMENT PID - FE0743 - ELEVATION = 359.05 (NAVD88)

Tennessee811 Know what's below. Call before you dig.

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

WILLIAM JAMES RAINES REGISTERED ENGINEER AGRICULTURE CIVIL POWERS NO. 0010945 STATE OF TENNESSEE 6/24/24

DWG NO. C-101

SEWER BASIN: NS-9

SHEET 1 OF 2

DIVISION OF ENGINEERING

EXISTING SITE PLAN

3628 WINPLACE RD.

MEMPHIS, TENNESSEE

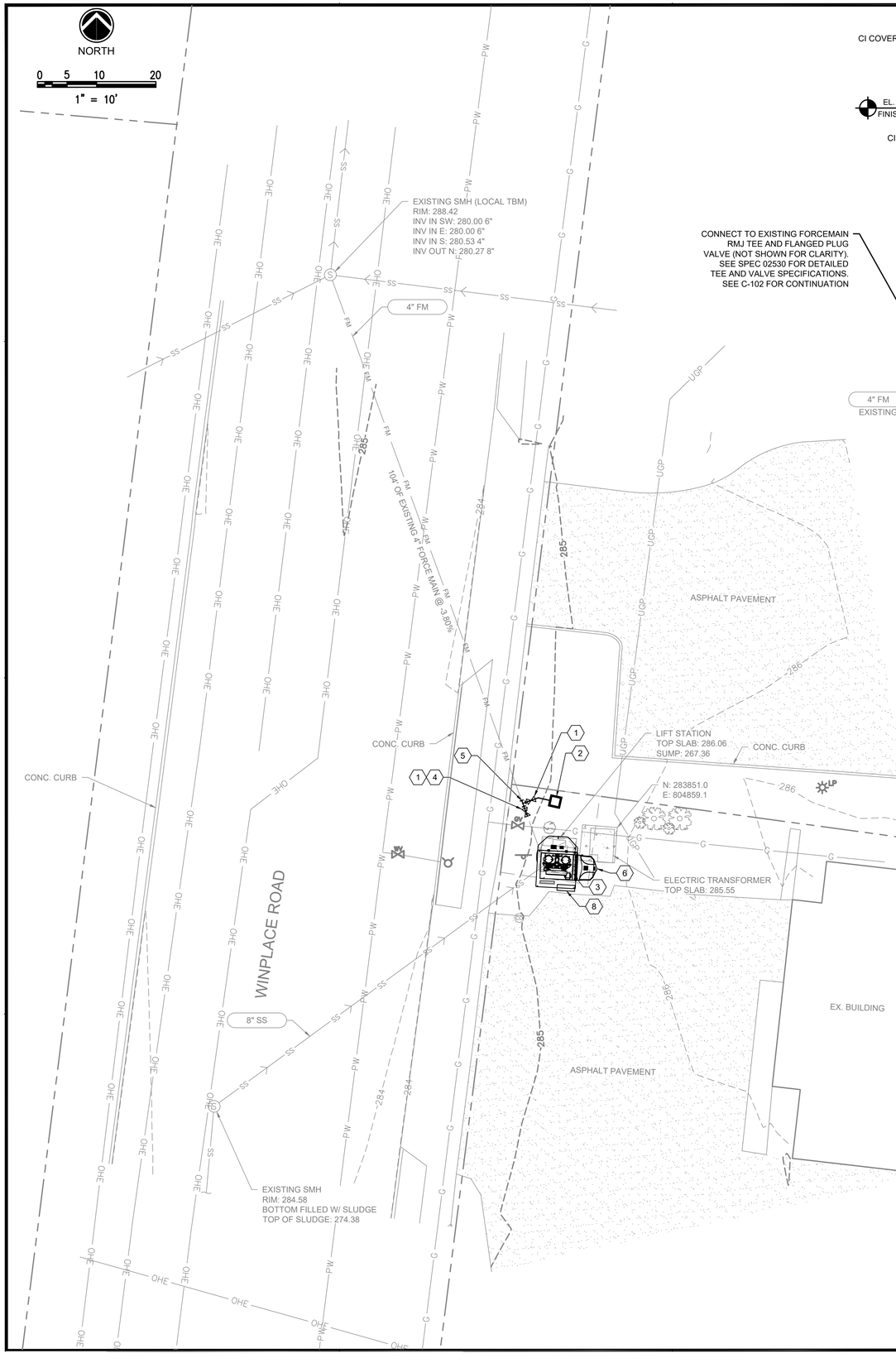
SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

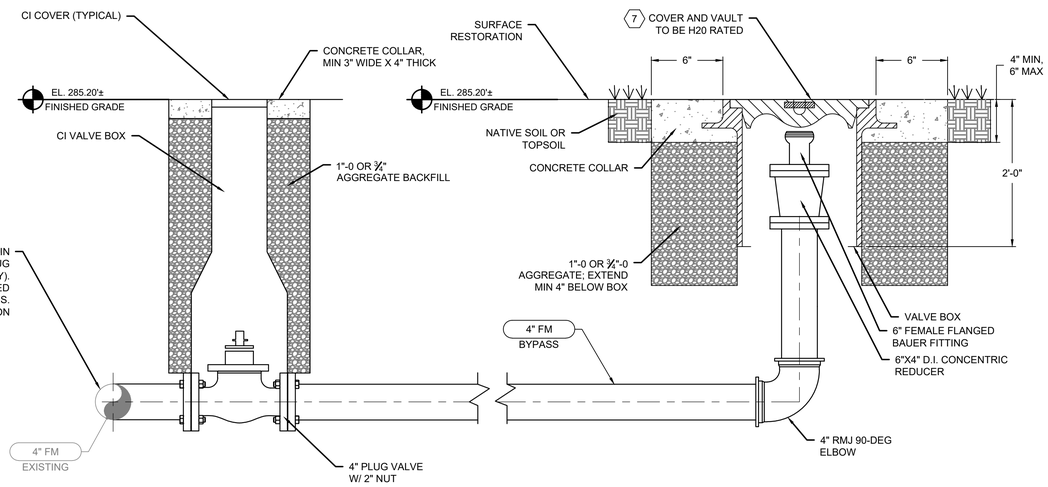
DESIGN BY: WJR DATE: 06/24 SCALE: SHOWN

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWD2304704 FILENAME: C-01-101.DWG PLOT DATE: 6/24/2024





A C-102 FORCEMAIN EMERGENCY BYPASS CONNECTION DETAIL
NTS

NOTES:

1. ALL NEW BURIED PIPING SHALL BE 4-INCH DUCTILE IRON WITH RESTRAINED MECHANICAL JOINTS, UNLESS OTHERWISE SPECIFIED.
2. INSTALL BAUER FITTING NEAR ACCESS COVER FOR EASE OF MAINTENANCE AND OPERATION FROM GRADE WITHOUT THE USE OF ANY SPECIAL TOOLS.
3. LOCATION OF VALVES AND BYPASS CONNECTION TO BE SHOWN ON CIVIL DRAWINGS. CONTRACTOR TO INSTALL PROPOSED BYPASS PIPE LENGTH AS REQUIRED PER DRAWINGS AND EXISTING CONDITIONS.

GENERAL NOTES:

1. BASE DRAWING DEVELOPED FROM "PARTIAL TOPOGRAPHIC SURVEY OF WINPLACE SEWER LIFT STATION" DATED 11/18/21, PREPARED BY ASHWORTH ENGINEERING, PLLC. BROWN AND CALDWELL ASSUMES NO RESPONSIBILITY FOR ACCURACY OF THE SAME. DIMENSIONS, FEATURES, AND DETAILS MAY VARY FROM FIELD CONDITIONS. CONTRACTOR MUST VERIFY ALL EXISTING CONDITIONS THAT MAY IMPACT THE WORK.
2. EXISTING PIPE LOCATIONS SHOWN BASED ON CITY OF MEMPHIS GIS DATA AND FIELD VERIFICATION WHERE POSSIBLE. NOT ALL UNDERGROUND UTILITIES WERE LOCATED. CONTRACTOR SHALL VERIFY UTILITY AND PIPE LOCATIONS WITHIN ALL WORK AREAS PRIOR TO COMMENCING WORK.
3. ALL EXISTING INFRASTRUCTURE AND SITE FEATURES THAT IS TO REMAIN IN PLACE (PIPING, ELECTRIC CONDUITS, STORM PIPES, ETC.) TO BE PROTECTED IN ACCORDANCE WITH THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT, TENNESSEE CODE 65-31-101.
4. CONTRACTOR TO FIELD VERIFY AND CONFIRM EXISTING CONDITIONS AND ELEVATIONS PRIOR TO COMMENCING WORK.
5. CONTRACTOR TO INSTALL PROPOSED EQUIPMENT AND APPURTENANCES AT ELEVATIONS, LOCATIONS, AND DIMENSIONS SAME AS EXISTING.
6. CONTRACTOR SHALL PROVIDE ALL FITTINGS, PIPING, JOINTS, AND APPURTENANCES AS NECESSARY FOR THE WORK SHOWN.
7. REFER TO ELECTRICAL DRAWINGS FOR ELECTRIC AND POWER DETAILS.
8. CONTRACTOR TO RESTORE ALL DISTURBED AREAS TO EXISTING CONDITIONS. DISTURBED GRASSED AREAS SHALL BE REVEGETATED. PAVEMENT AREAS THAT ARE CUT AND REMOVED AS PART OF THE WORK SHALL BE RESTORED TO MATCH EXISTING.

KEY NOTES:

1. PROPOSED 4" STANDARD PORT ECCENTRIC PLUG VALVE WITH VALVE BOX.
2. PROPOSED FORCEMAIN EMERGENCY BYPASS CONNECTION, SEE DETAIL A/C-102 ON THIS SHEET
3. INSTALL PROPOSED ABOVE GRADE PACKAGED LIFT STATION, PIPING, VALVES, FITTINGS, AND ACCESSORIES PER MANUFACTURER'S INSTRUCTIONS. SEE PROCESS DRAWINGS FOR FURTHER DETAILS.
4. INSTALL PLUG VALVE ON FORCEMAIN PIPE UPSTREAM OF THE BYPASS TIE-IN.
5. 4" RESTRAINED MECHANICAL JOINT TEE
6. PRIOR TO INSTALLATION, VERIFY THAT THE LIFT STATION COVER DOES NOT CONTACT OTHER EXISTING OBJECTS WHEN OPEN. ADJUST THE COVER ORIENTATION IF NECESSARY TO PREVENT HITTING OTHER OBJECTS.
7. COVER AND VAULT TO BE MANUFACTURED BY OLDCASTLE, QUAZITE, OR ENGINEER-APPROVED EQUAL. INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
8. GENERATOR PLUG AND MANUAL TRANSFER SWITCH TO BE INSTALLED ON ELECTRICAL SUPPORT RACK. SEE ELECTRICAL DRAWINGS.

LEGEND

LP	LIGHT POLE
WV	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
	EXISTING SIGN
S	SEWER MANHOLE
	EXISTING BUSH
	EXISTING TREE GROUP
GV	EXISTING GAS VALVE
CO	EXISTING CLEANOUT
	PROPERTY LINE
SS	EXISTING SANITARY SEWER
FM	EXISTING FORCE MAIN
OHE	EXISTING OVERHEAD ELECTRIC
100	EXISTING CONTOUR
	EXISTING EASEMENT
PW	EXISTING POTABLE WATER
G	EXISTING GAS LINE
UGP	UNDERGROUND POWER
	EXISTING CONCRETE
	EXISTING ASPHALT

APPROVED FOR CONSTRUCTION:

THE DOCUMENT BEARING THIS STAMP HAS BEEN RECEIVED AND REVIEWED BY THE CITY OF MEMPHIS DIVISION OF ENGINEERING UNDER AUTHORITY DELEGATED BY THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION DIVISION OF WATER RESOURCES. IT IS HEREBY APPROVED FOR CONSTRUCTION BY THE CITY ENGINEER AS EVIDENCE BY HIS SIGNATURE IN THE TITLE BLOCK BELOW.

SPECIAL FLOOD HAZARD STATEMENT:

THIS IS TO CERTIFY THAT BY GRAPHIC DETERMINATION THE ABOVE PLATTED PROPERTY IS NOT IN A SPECIAL FLOOD HAZARD AREA (SFHA) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD. THE SUBJECT PROPERTY IS SHOWN IN A FEMA ZONE X (NO SHADING ON FEMA MAP); AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO THE FEMA/FIRM MAP NUMBER 47157C0445F WITH AN EFFECTIVE DATE OF SEPTEMBER 28, 2007.

TEMPORARY BENCHMARK (T.B.M.) - RIM OF SMH 150' NORTH OF LIFT STATION

ELEVATION = 285.23 (NAVD88)

BENCHMARK (B.M.) - NGS MONUMENT PID - FE0743 - ELEVATION = 359.05 (NAVD88)

Tennessee811 Know what's below. Call before you dig.

REVISIONS

ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

WILLIAM JAMES RAINES REGISTERED ENGINEER AGRICULTURE POWERS NO. 0010945 STATE OF TENNESSEE 6/24/24

LIFT STATION DESIGN GROUP 3 C
DEVELOPER: SARP 10
ENGINEER: BROWN AND CALDWELL

DWG NO. C-102

SEWER BASIN: NS-9

SHEET 2 OF 2

DIVISION OF ENGINEERING

PROPOSED SITE PLAN

3628 WINPLACE RD.

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127
DESIGN BY: WJR DATE: 06/24 SCALE: SHOWN
REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWD2304704 FILENAME: C-01-102.DWG PLOT DATE: 6/24/2024

VALVES

SCHEMATIC OR 2D	VALVE TYPE
	THREE WAY VALVE
	GATE VALVE (FLANGED)
	GATE VALVE (THREADED)
	PLUG VALVE (GEAR OPERATOR)
	PLUG VALVE (LEVER HANDLE)
	BALL VALVE (THREADED)
	BALL VALVE (FLANGED)
	BUTTERFLY VALVE (LUGGED/WAFER)
	BUTTERFLY VALVE (AWWA W/ HANDWHEEL ACTUATOR
	GLOBE VALVE (FLANGED)
	GLOBE VALVE (THREADED)
	DIAPHRAGM VALVE (FLANGED)
	DIAPHRAGM VALVE (THREADED)
	CHECK VALVE
	PUMP DISCHARGE VALVE
	DOUBLE LEAF CHECK VALVE
	ANGLE VALVE
	FLOAT VALVE
	PINCH VALVE
	FUSIBLE LINK VALVE
	NEEDLE VALVE
	BALL CHECK VALVE

SCHEMATIC OR 2D	VALVE TYPE
	GAUGE OR ROOT VALVE
	KNIFE GATE VALVE
	FLAP GATE
	BALANCING COCK
	CIRCUIT SETTER
	THERMOSTATICALLY CONTROLLED VALVE
	PRESSURE AND VACUUM RELIEF VALVE
	VACUUM RELIEF VALVE
	PRESSURE RELIEF VALVE
	IN-LINE, SPRING LOADED RELIEF VALVE
	PRESSURE REGULATING VALVE
	BACK PRESSURE REGULATING VALVE
S	SOLENOID VALVE
	DIAPHRAGM OPERATED VALVE
M	PRESSURE BALANCE OPERATED VALVE
	MOTOR OPERATED VALVE
	PISTON OPERATED VALVE
	CHLORINE INSTITUTE CONTAINER VALVE
	MUD VALVE
	WALL HYDRANT
	TELESCOPING VALVE
	BACKFLOW PREVENTER

MECHANICAL PIPE AND FITTINGS

2D SINGLE LINE	2D DOUBLE LINE	3D DOUBLE LINE	
			FLANGED JOINT
		OR	PLAIN OR GROOVED END MECHANICAL COUPLING
			PUSH ON OR BALL AND SOCKET JOINT
			MECHANICAL JOINT
			WELDED JOINT
			GROOVED END ADAPTER FLANGE x FLANGE
			UNION
			SLEEVE TYPE MECHANICAL COUPLING
			RESTRAINED SLEEVE TYPE MECHANICAL COUPLING
			FLANGED COUPLING ADAPTER
			RESTRAINED FLANGED COUPLING ADAPTER
			ELASTOMER AND FABRIC EXPANSION JOINT
			EXPANSION JOINT (SEE SPECS FOR TYPE)
			FLEXIBLE METAL HOSE
			ELBOW (PLAN)
			ELBOW UP
			ELBOW DOWN
			TEE (PLAN)
			TEE UP
			TEE DOWN
			LATERAL (PLAN)
			LATERAL UP
			LATERAL DOWN
			CONCENTRIC REDUCER
			ECCENTRIC REDUCER
			EQUIPMENT CONNECTION FITTING
			BLIND FLANGE OR CAP

MISCELLANEOUS DEVICES

A	UTILITY STATION (LETTER, IF ANY, DESIGNATES TYPE)
	HOSE RACK
	FLOOR DRAIN
XCO	CLEANOUT; X=DESIGNATION IF ANY
XKIP	RECOMMENDED MAIN ANCHOR POINT WITH ALLOWABLE FORCE ON STRUCTURE
	PIPE ANCHOR
W	SEAL WATER CONTROL UNIT
	QUICK COUPLING
	IN LINE PRESSURE SENSOR

XX	INSTRUMENT
DE	DENSITY ELEMENT
FE	FLOW ELEMENT
LE	LEVEL ELEMENT
PE	PRESSURE ELEMENT
PI	PRESSURE INDICATOR (GAUGE)
TE	TEMPERATURE ELEMENT
TI	TEMPERATURE INDICATOR

	CALIBRATION TUBE
	PULSATION DAMPENER

DEMOLITION SYMBOLS

	ITEMS SHADED SHALL BE DEMOLISHED AND REMOVED FROM THE SITE

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

BODY LAYNE MCCLAIN REGISTERED ENGINEER AGRICULTURE COMMERCE No. 119650 STATE OF TENNESSEE 6-24-24

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. D-001

SEWER BASIN: NS-9

SHEET 1 OF 4

DIVISION OF ENGINEERING

LEGENDS AND SYMBOLS

3628 WINPLACE RD.

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: CLM DATE: 06/24 SCALE: NONE

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

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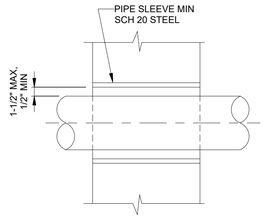
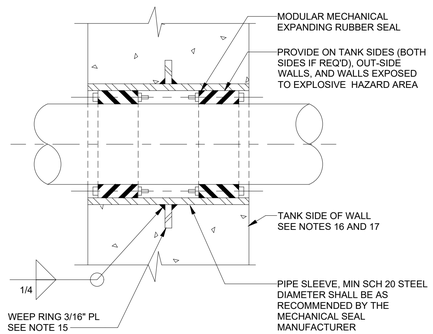


FOR WALLS

TYPE B PIPE PENETRATION

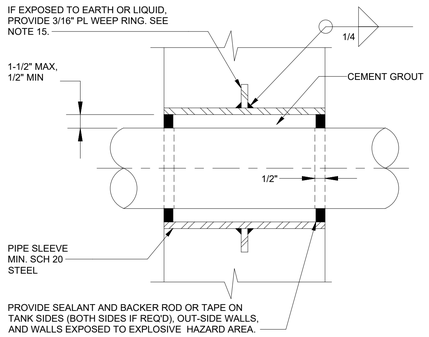
D1102 N.T.S.



FOR WALLS

TYPE D PIPE PENETRATION

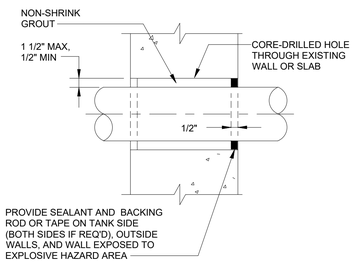
D1104 N.T.S.



FOR WALLS

TYPE E PIPE PENETRATION

D1105 N.T.S.



FOR PRECAST AND EXISTING
WALLS, FLOORS AND CEILINGS

TYPE X1 PIPE PENETRATION

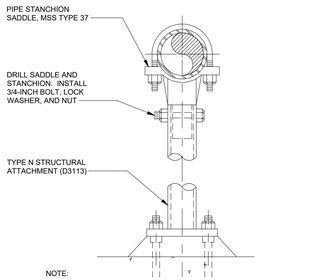
D1112 N.T.S.

GENERAL NOTES:

1. WHERE PIPES PASS THROUGH WALLS, FLOORS, OR CEILINGS, PENETRATIONS SHALL CONFORM TO TABLE, EXCEPT AS OTHERWISE SPECIFIED.
2. IN TABLE, "TANK" SHALL MEAN ANY PART OF A STRUCTURE CONTAINING LIQUID, OR IN CONTACT WITH THE EARTH.
3. IN TABLE, "PASSAGE" SHALL MEAN ANY ROOM, GALLERY, TUNNEL, OR SIMILAR ENCLOSURE.
4. IN TABLE, WATER SURFACE "WS" SHALL MEAN AN ELEVATION 9-INCHES ABOVE MAXIMUM WATER SURFACE SHOWN.
5. ALL STEEL SLEEVES SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
6. IN CONDITION 5, PENETRATION TYPE E,H,J, OR K SHALL BE USED WHERE ONE SIDE IS DESIGNATED AS HAZARDOUS (CLASSIFIED), WHERE FLOODING IS POSSIBLE, OR WHERE SPECIFIED.
7. SEAL FLANGES SHALL BE FACED AND DRILLED TO 150 POUND STANDARD. EACH JOINT SHALL BE FULL FACE GASKETED.
8. WHERE SPECIFIED, CAST IRON FLANGES MAY BE INSTALLED FLUSH WITH WALL AND TAPPED FOR STUDS.
9. PROVIDE CURB WHERE PENETRATING FLOOR, EXCEPT FOR PENETRATION TYPES A AND C. CURB SHALL BE 4" HIGH BY 3" WIDE.
10. PROVIDE A MINIMUM OF 3" CLEARANCE BETWEEN REINFORCING STEEL AND FERROUS METAL PENETRATIONS.
11. FLEXIBLE JOINTS SHALL BE PROVIDED FOR UNDERGROUND PIPING AS SPECIFIED.
12. RESTRAINED FLEXIBLE COUPLINGS FOR STEEL PIPE SHALL BE DESIGNED FOR 100 PSI LINE PRESSURE IN ACCORDANCE WITH AWWA MANUAL MII, FIGURES 19.15 AND 19.16. AWWA MANUAL M11, TABLE 19.7 SHALL BE UTILIZED.
13. UNLESS OTHERWISE SPECIFIED, INSULATION SHALL NOT EXTEND THROUGH SLEEVES. CHILLED WATER MUST PENETRATE WITH INSULATION.
14. WHERE CAST IRON PIPE IS EMBEDDED IN CONCRETE AT AN EXPANSION JOINT, USE TYPE L PENETRATION.
15. WEEP RINGS SHALL HAVE A MINIMUM DIAMETER 3-INCHES GREATER THAN THE OUTSIDE PIPE DIAMETER.
16. "TANK SIDE OF WALL" SHALL MEAN SIDE OF WALL NORMALLY EXPOSED TO LIQUID, EARTH, OR OUTSIDE ATMOSPHERE.
17. SEAL WITH MASTIC SEALANT WHERE WALL IS EXPOSED TO LIQUID, EARTH, OR A HAZARDOUS (CLASSIFIED) AREA.

PIPE PENETRATION TYPES

	CONDITION		TYPE		
	FROM	TO	STEEL PIPE	CAST IRON	PLASTIC PIPE
1	TANK	TANK BELOW W.S.	E, H OR K	E, F, G OR J	E
2	TANK	TANK ABOVE W.S.	D OR E	D OR E	D OR E
3	PASSAGE	TANK BELOW W.S.	E, H OR K	E, F, G OR J	E
4	PASSAGE	TANK ABOVE W.S.	A, C, D OR E	A, C, D OR E	A, C, D OR E
5	PASSAGE	PASSAGE	B OR C SEE NOTE 6	B OR C SEE NOTE 6	B OR C SEE NOTE 6
6	PASSAGE	OUTSIDE WALL	D OR E	D OR E	D OR E
7	PASSAGE	ROOF	AS SHOWN ON DRAWING OR X1		
8	TANK	OUTSIDE WALL	E OR F	E, F OR G	E



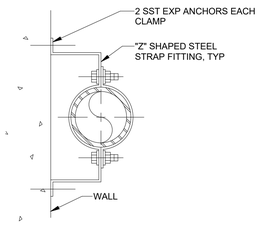
NOTE:

1. ABOVE SIZES ARE NOMINAL PIPE DIAMETERS IN INCHES
2. SPACING BETWEEN SUPPORTS SHALL BE PER TABLE A/D2301.
3. STANCHIONS INSTALLED OUTDOORS MUST WITHSTAND WIND SPEEDS OF UP TO 165 MILES PER HOUR.

3" THROUGH 20" PIPE

TYPE 10 PIPE STANCHION SADDLE

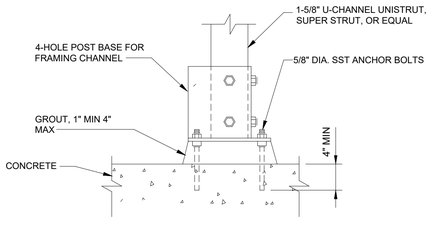
D2110 N.T.S.



FOR VERTICAL PIPE ONLY 3/4"
THROUGH 8" PIPE

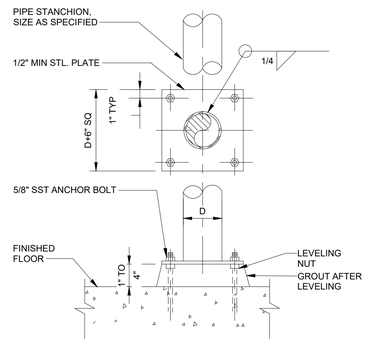
TYPE 11 OFFSET PIPE CLAMP

D2111 N.T.S.



TYPE E FRAMING CHANNEL POST BASE

D3105 N.T.S.



TYPE N PIPE STANCHION FLOOR ATTACHMENT

D3113 N.T.S.

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
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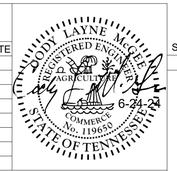


LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. D-002

SEWER BASIN: NS-9

SHEET 2 OF 4

DIVISION OF ENGINEERING

STANDARD DETAILS

3628 WINPLACE RD

MEMPHIS, TENNESSEE

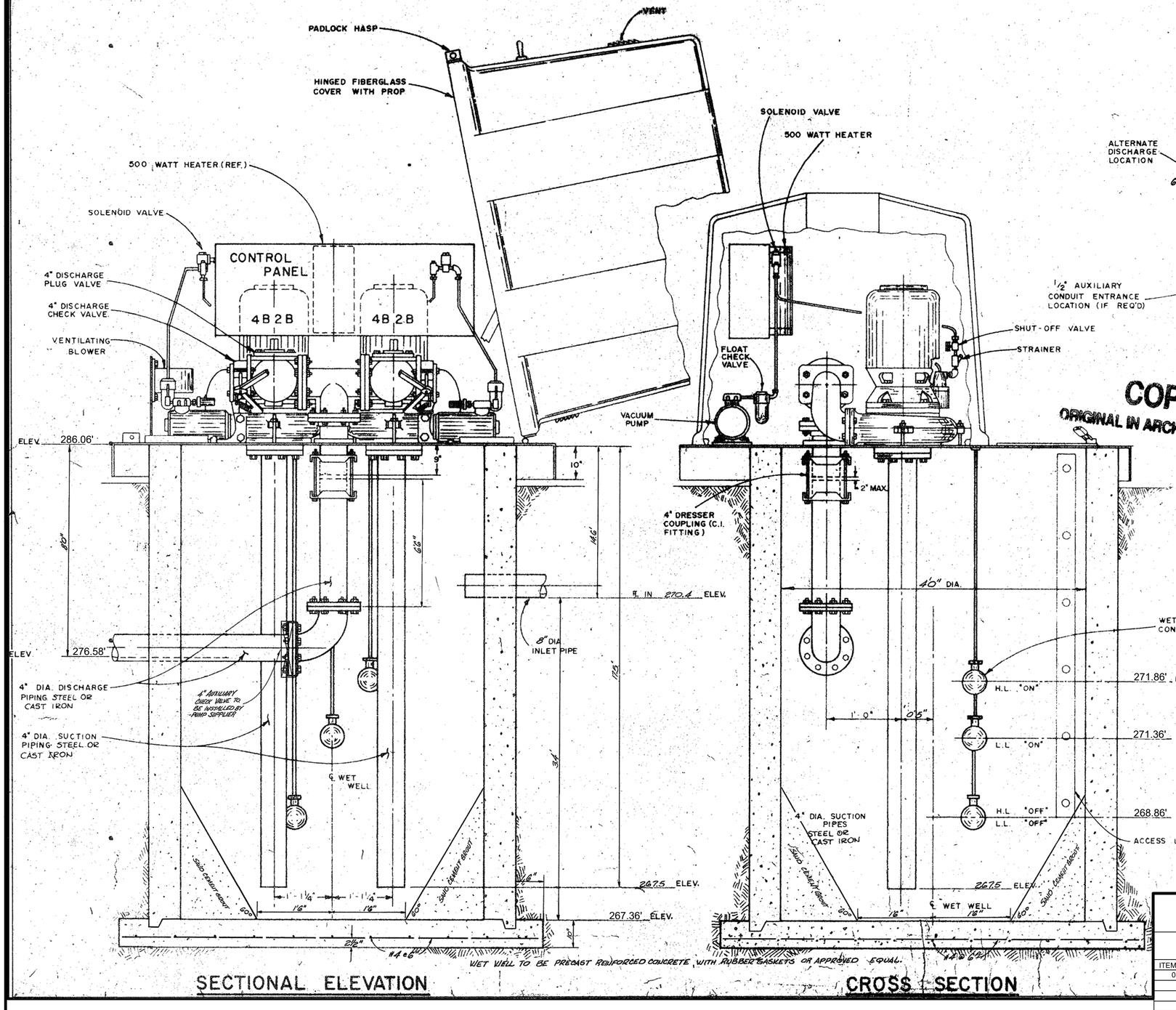
SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

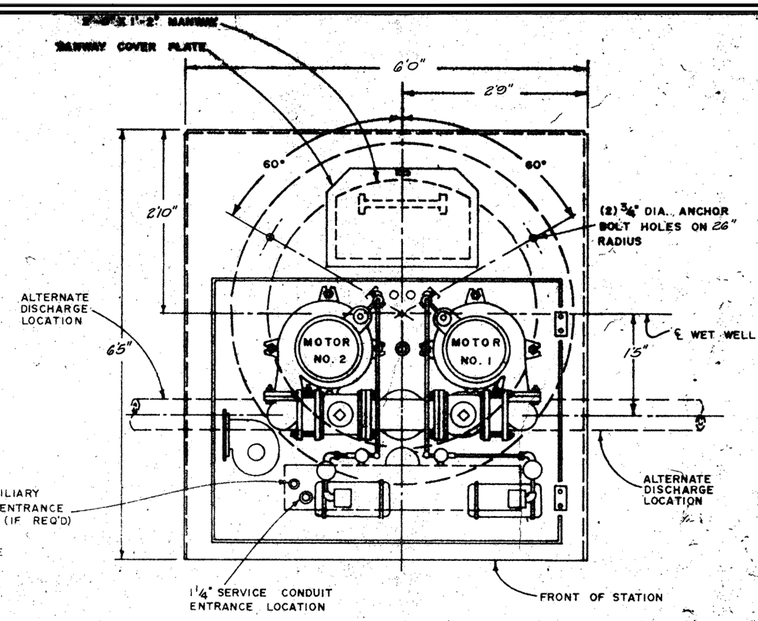
DESIGN BY: CLM DATE: 06/24 SCALE: NONE

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPW\D2304708 FILENAME: D-002_WINPLACE RD.DWG PLOT DATE: 6/24/2024





PLAN VIEW

MACHINERY CHAMBER (COVER DELETED FOR CLARITY)

RECORD DRAWING

COPY
ORIGINAL IN ARCHIVE DRAWER

May 11, 1979:
THIS DETAIL SHEET WAS REVISED TO SHOW A HIGHER INLET PIPE ELEVATION FOR THE INCOMING GRAVITY SEWER AND CORRESPONDING HIGHER ELEVATIONS ON THE WET WELL LEVEL CONTROL SWITCHES. THIS HIGHER INLET PIPE ELEVATION WAS DETERMINED AFTER THE GAS TRANSMISSION LINES WERE FOR DEPTH AND ADEQUATE CLEARANCE BETWEEN THEM AND THE SANITARY SEWER WAS ALLOWED. THIS MODIFICATION SLIGHTLY REDUCED THE STATIC SUCTION LIFT.

APPROVAL _____ DEPUTY DIRECTOR CIVIL ENGR.

Pump Capacity Requirement (each pump)	300 GAL/MIN
Motor	5 HP
Power	
Spherical Solid	3 IN.
Pipework Diameter	4 IN.
Length of force main from pump to outlet.	105. FT.
Wet well diameter	4 FT.
Dynamic Suction Lift:	19.5 FT.
Static Suction Lift 16.7 FT.	
Suction Friction 2.8 FT.	
Dynamic discharge head	9.0 FT.
Static Discharge Head 0 FT.	
Force Main Friction 9.0 FT.	
Total Dynamic Head	28.5 FT.
Wet Well Top Elevation	268.06'
Wet Well Floor Elevation	267.36'
Inlet Pipe Elevation	270.4
Wet Well Discharge Elevation	276.58'
Pump Switches:	
High Level, Low Level "off" elevation	268.86'
Low Level "on" Elevation	271.36'
High Level "on" Elevation	271.86'
Priming Lift	16.5 FT.
Available Wet Positive Suction Head	10.0 FT.
Holding Capacity of Wet Well	217 GAL.

NOTE:
AUXILIARY CHECK VALVE REQUIRED NEXT TO PIPE ELBOW AT POINT OF EXIST - PURPOSE TO KEEP PUMPS FROM LOSING PRIM BECAUSE OF SHORT PUMPING DISTANCE.

Alarm system monitored by South Treatment Plant to be provided by pump manufacturer.

THIS SHEET SHOWS THE DETAILS OF A SMITH & LOVELESS DIVISION, ECODYNE CORPORATION, MODEL "S" WET WELL MOUNTED SEWAGE PUMP STATION AND WAS FURNISHED TO US BY THE CITY OF MEMPHIS ENGINEERING DEPARTMENT'S BUREAU OF SEWER DESIGN.

GENERAL NOTES:

1. DRAWING OF EXISTING PUMP STATION IS FOR REFERENCE ONLY. CONTRACTOR TO FIELD VERIFY EXISTING ELEVATIONS AND LOCATION OF EQUIPMENT.

REVISIONS

ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

BODY LAYNE MCCOY REGISTERED ENGINEER DEPT. OF AGRICULTURE 6-24-24 COMMISSION NO. 119650 STATE OF TENNESSEE

LIFT STATION DESIGN GROUP 3 C
DEVELOPER: SARP 10
ENGINEER: BROWN AND CALDWELL

DWG NO. D-101

SEWER BASIN: NS-9

SHEET 3 OF 4
DIVISION OF ENGINEERING

EXST. LIFT STATION PLAN & SECTION

3628 WINPLACE RD.

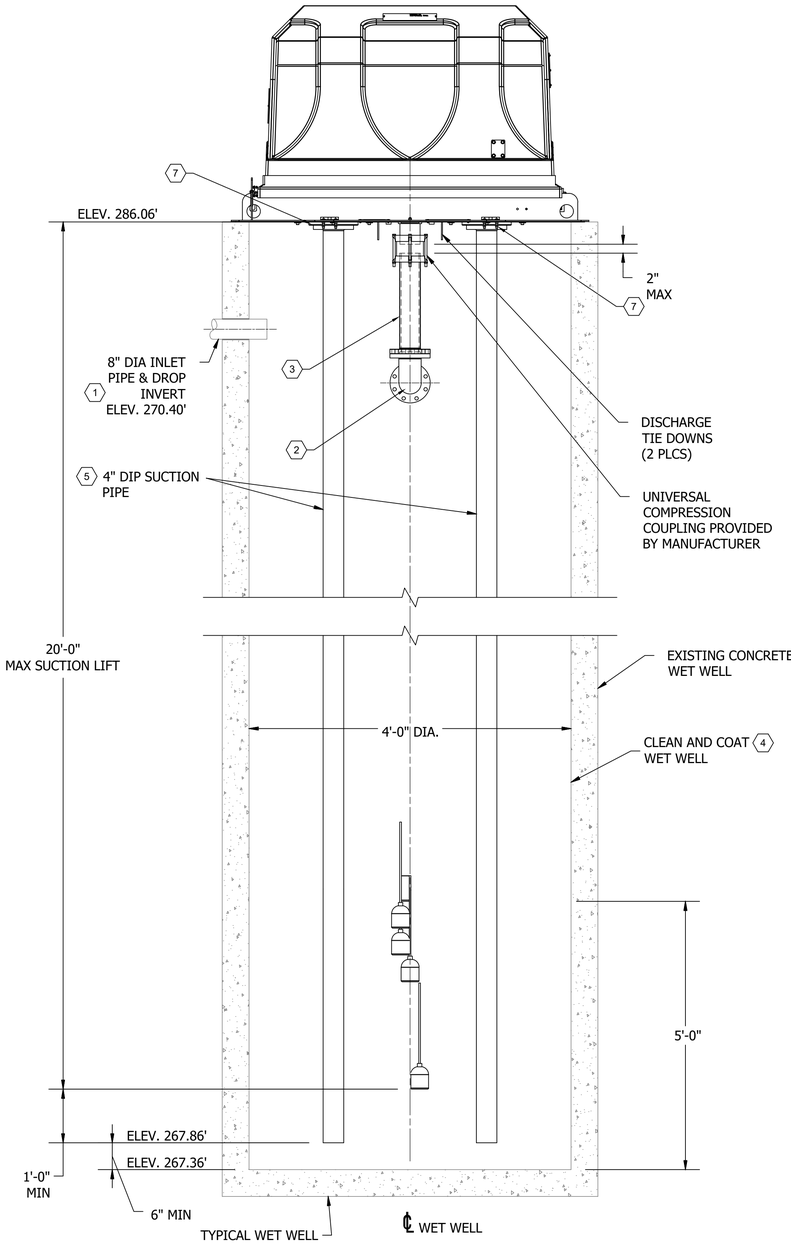
MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127
DESIGN BY: CLM DATE: 06/24 SCALE: SHOWN
REVIEWED

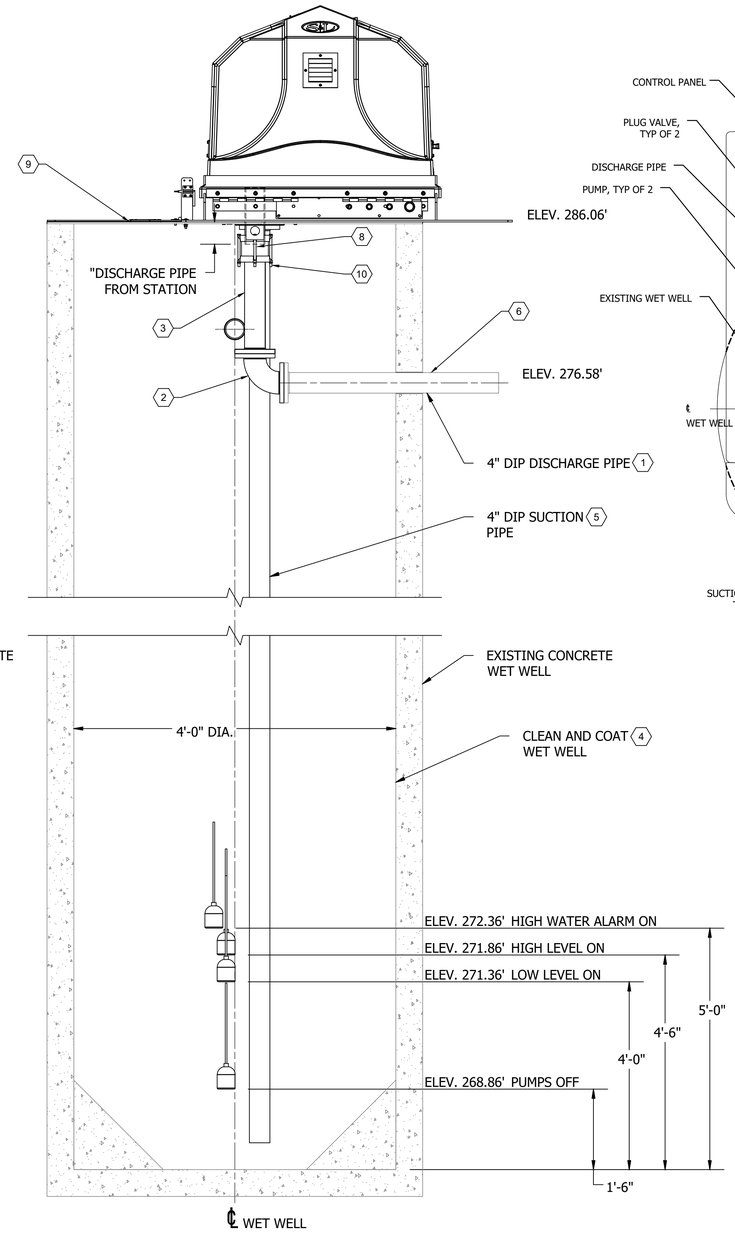
CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWD2304708 FILENAME: D-01-101.DWG PLOT DATE: 6/24/2024

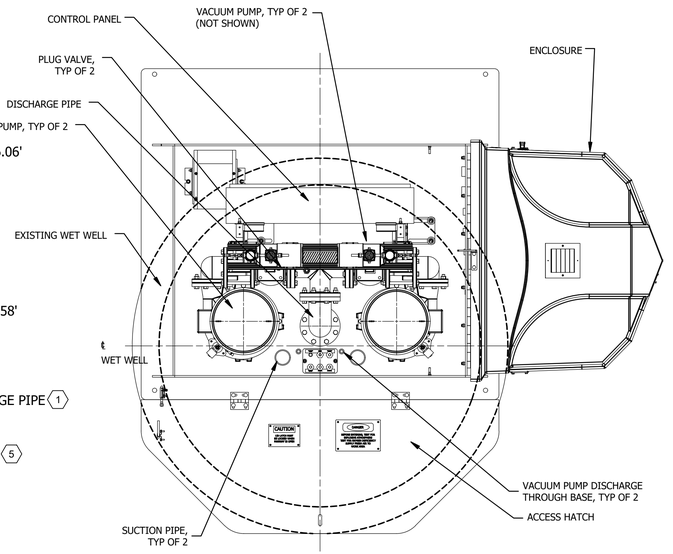
DESCRIPTION	EXISTING PUMPS 1 & 2
FLOW	300 GPM
TDH	29-FT



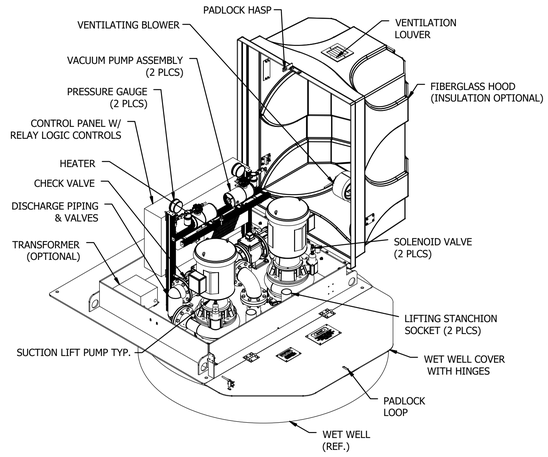
FRONT SECTIONAL ELEVATION



SIDE SECTIONAL ELEVATION



PLAN VIEW



A D-102 LIFT STATION ISOMETRIC
SCALE: NTS

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY AND CONFIRM EXISTING CONDITIONS AND ELEVATIONS PRIOR TO COMMENCING WORK.
2. CONTRACTOR TO INSTALL PROPOSED EQUIPMENT AND APPURTENANCES AT ELEVATIONS, LOCATIONS, AND DIMENSIONS SAME AS EXISTING.
3. INTERIOR OF EXISTING WET WELL SHALL BE DRAINED, CLEANED, AND LINED PRIOR TO INSTALLING PROPOSED EQUIPMENT AND ACCESSORIES. LINING SHALL BE INSTALLED AFTER NEW WALL PENETRATIONS ARE COMPLETED.
4. CONTRACTOR SHALL PROVIDE ALL FITTINGS, PIPING, JOINTS, AND APPURTENANCES AS SHOWN TO BE BY OTHERS AS NECESSARY FOR THE WORK SHOWN.
5. SEE ELECTRICAL DRAWINGS FOR CONDUIT ROUTING AND WIRING.
6. ALL PIPING IN WET WELL SHALL BE DUCTILE IRON MATERIAL.
7. CONTRACTOR TO DEMOLISH AND REPLACE ALL PIPING AND APPURTENANCES INDICATED AS "NOT BY S&L".
8. NEW FLOAT SWITCHES TO BE INSTALLED AT SAME ELEVATIONS AS EXISTING FOR CONTROL OF PUMPS AND ALARMS.

KEY NOTES:

1. EXISTING INLET AND DISCHARGE PIPING ENTERING AND EXITING THE WET WELL TO REMAIN AS-IS.
2. 4" STANDARD FLG. 90-DEGREE ELBOW
3. 4" D.I. SPOOL LENGTH TO FIT
4. WET WELL CLEANING, INSPECTIONS, AND LINING
   - 4.a. ONCE BYPASS PUMPING IS ESTABLISHED, POWER WASH AND DRAIN INTERIOR OF WET WELL.
   - 4.b. CONTRACTOR TO INSPECT CONDITION OF CONCRETE SURFACES AND PROVIDE BRIEF WRITTEN REPORT TO IDENTIFY SURFACE CONDITION RELATIVE TO ACCEPTABILITY TO RECEIVE PROTECTIVE LINING. CONTRACTOR TO CONSULT WITH LINING MANUFACTURER ON-SITE AS NEEDED. REPORT TO INCLUDE SUMMARY OF OBSERVATIONS, RECOMMENDATIONS FOR REPAIRS, AND INCLUDE SUPPORTING PHOTOS.
   - 4.c. PROVIDE REPAIR PROPOSAL AS NEEDED WITH RECOMMENDED REPAIR PRODUCTS AND PROCEDURES PRIOR TO PROCEEDING. PROVIDE APPROVAL LETTER FROM LINING MANUFACTURER TO SUPPORT REPAIR RECOMMENDATIONS.
   - 4.d. AFTER COMPLETION OF APPROVED CONCRETE REPAIRS, PROVIDE FINAL SURFACE PREP FOLLOWED BY LINING OF INTERIOR BASE, WALLS, AND CEILING AS SPECIFIED IN SECTION 02537.
5. REPLACE EXISTING PIPE AS SHOWN.
6. CONTRACTOR TO SUPPORT EXISTING DISCHARGE PIPE FROM WETWELL WHILE REPLACING DISCHARGE PIPE FROM THE PUMP.
7. USE GASKETS AND SEALANT PROVIDED WITH STATION FOR A TIGHT SUCTION PIPE CONNECTION.
8. COMPRESSION COUPLING PIPE FITTING
9. PRIOR TO SETTING THE STATION ON TOP OF THE WET WELL, APPLY A LAYER OF NON-SHRINK OR EPOXY GROUT ON THE TOP SURFACE OF THE WET WELL. THE STATION WILL THEN BED DOWN IN THE GROUT, GIVING THE STATION FIRM SUPPORT AND REDUCING NOISE TRANSMISSIONS. THE BASE PLATE SHOULD BE LEVEL IN ALL DIRECTIONS WHEN COMPLETE.
10. THE DISCHARGE IS TO BE ORIENTED IN ACCORDANCE WITH THE ENGINEER'S PLAN. MANUFACTURER WILL PROVIDE A COMPRESSION TYPE COUPLING TO JOIN THE FORCE MAIN TO THE STATION DISCHARGE PIPE. COMPRESSION TYPE COUPLINGS DO NOT PROVIDE PIPE END RESTRAINT. TWO LUGS SHALL BE PROVIDED (ONE ON EITHER SIDE OF THE DISCHARGE) ON THE UNDERSIDE OF THE BASEPLATE FOR SECURING THE VERTICAL SECTION OF THE DISCHARGE PIPE FROM SEPARATING IN THE COUPLING. TIE THE DISCHARGE PIPE TO THE STATION TO PREVENT SEPARATION FROM THE COUPLING IN THE VERTICAL DIRECTION BY USING AN ALL-THREADED ROD, CABLE OR CHAIN (PROVIDED BY CONTRACTOR). THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ADEQUATE RESTRAINT AGAINST ANY HORIZONTAL THRUST DEVELOPED. THE RESTRAINT SHALL BE TIED TO THE STRUCTURE. AS THE STATION BASEPLATE IS NOT DESIGNED TO WITHSTAND HORIZONTAL THRUST FORCES. ALL DISCHARGE PIPES SHOULD BE SECURED.

LIFT STATION PLAN AND SECTION
SCALE: 3/4" = 1'-0"

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

LIFT STATION DESIGN GROUP 3 C
DEVELOPER: SARP 10
ENGINEER: BROWN AND CALDWELL

CODY LAYNE MOORE — REGISTERED ENGINEER — DEPARTMENT OF AGRICULTURE — COMMERCE — No. 119850 — STATE OF TENNESSEE — 6-24-24

DWG NO. D-102

SEWER BASIN: NS-9

SHEET 4 OF 4
DIVISION OF ENGINEERING

PROP. LIFT STATION PLAN & SECTION

3628 WINPLACE RD.

MEMPHIS, TENNESSEE

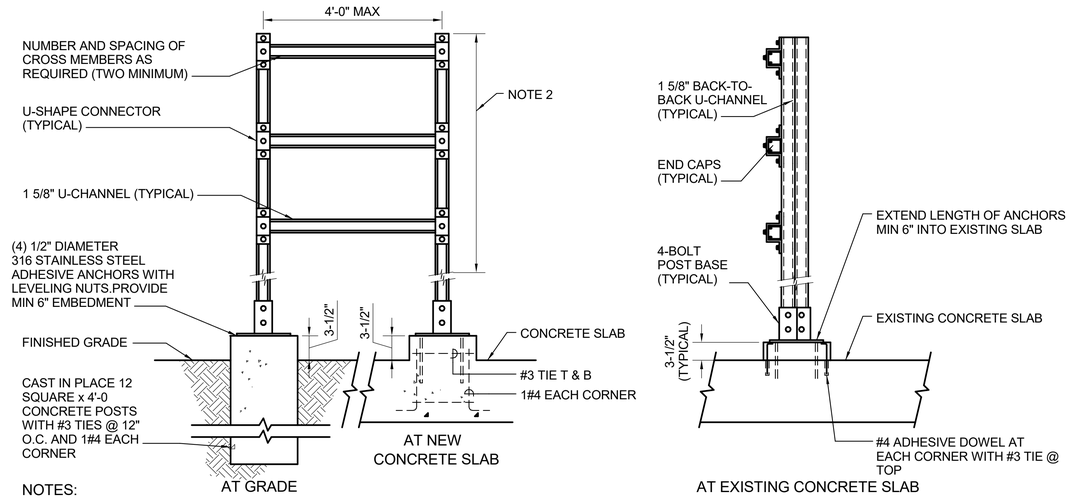
SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127
DESIGN BY: CLM DATE: 06/24 SCALE: SHOWN
REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWD2304708 FILENAME: D-01-102.DWG PLOT DATE: 6/24/2024

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	LIGHTING		**BASIC MATERIALS**
A	AREA LIGHT (LETTER REFERENCES FIXTURE SCHEDULE)	1	BRANCH CIRCUIT WIRE & CONDUIT RUN CONCEALED IN WALL OR ABOVE CEILING, HOME RUN TO PANELBOARD. A NUMERAL, IF PRESENT AT ARROW HEAD, INDICATES CIRCUIT NUMBER. ANY BRANCH CIRCUIT SHOWN WITHOUT SLASH MARKS INDICATES A CONDUIT CONTAINING (3) #12 AWG CONDUCTORS (HOT, NEUTRAL & GROUND). SLASH MARKS, IF PRESENT, INDICATE THE FOLLOWING: HOT (ENERGIZED) CONDUCTOR, NEUTRAL CONDUCTOR, & GROUND CONDUCTOR
	RED BEACON ALARM LIGHT		WIRE & CONDUIT RUN EXPOSED
	SERVICE AND DISTRIBUTION		WIRE & CONDUIT RUN IN OR UNDER FLOOR
	SWITCHBOARD		EXISTING LIGHT FIXTURE OR ELECTRICAL DEVICE MAY BE REMOVED AND/OR RELOCATED AND CIRCUITRY MADE CONTINUOUS WHERE REQUIRED. UNO, LINE TYPE TYPICAL FOR ALL DEVICES TO BE REMOVED AND/OR RELOCATED.
	DISTRIBUTION PANEL		
	BRANCH CIRCUIT PANEL		DISCONNECT SWITCH
T	TRANSFORMER	J	JUNCTION BOX
M	MOTOR CONNECTION		PUSHBUTTON
G	GENERATOR CONNECTION	S_M	MANUAL MOTOR STARTER SWITCH
	DISCONNECT SWITCH (FUSED AS REQUIRED)	S	SINGLE-POLE, SINGLE-THROW (S.P.S.T.) WALL SWITCH
	MOTOR CONTROLLER (SPECIFIED IN OTHER THAN DIV. 26)	S_K	KEYED WALL SWITCH
	COMBINATION MOTOR CONTROLLER & DISCONNECT SWITCH (SPECIFIED IN OTHER THAN DIV. 26)	S_D	WALL BOX DIMMER CONTROL
	EQUIPMENT NOT FURNISHED UNDER DIV. 26 (SPECIFIED IN OTHER THAN DIV. 26)	S_3	SINGLE-POLE, DOUBLE-THROW (S.P.D.T.) WALL SWITCH
M	ELECTRIC METER	S_{OS}	WALL SWITCH WITH OCCUPANCY SENSOR
R	RELAY		SINGLE RECEPTACLE IN WALL (NEMA 5-20R)
CB	CIRCUIT BREAKER		DUPLEX RECEPTACLE IN WALL (NEMA 5-20R)
LC	LIGHTING CONTACTOR	GFCI	G.F.I. TYPE DUPLEX RECEPTACLE IN WALL (NEMA 5-20R)
PC	PHOTOCELL		DUPLEX RECEPTACLE IN WALL, EMERGENCY CIRCUIT (NEMA 5-20R)
			DOUBLE DUPLEX RECEPTACLE IN WALL (NEMA 5-20R)
		WP	G.F.I. TYPE DUPLEX RECEPTACLE OUTDOORS (WEATHERPROOF)
			SINGLE 240V RECEPTACLE FOR APPLIANCE OR EQUIPMENT (PER APPLIANCE RATING)
		X	X = TR (TAMPER RESISTANT) OR AF (ARC FAULT)
		IG	DUPLEX RECEPTACLE IN WALL WITH ISOLATED GROUND
			POINT OF CONNECTION



NOTES:

1. EQUIPMENT RACK SIZING:
   - A. ONE ITEM GREATER THAN 150 SQUARE INCHES.
   - B. TWO EQUIPMENT ITEMS GREATER THAN 130 SQUARE INCHES.
   - C. THREE OR MORE EQUIPMENT ITEMS.
   - D. PROVIDE 316 STAINLESS STEEL CHANNEL END-CAPS, AND FITTINGS
   - E. PROVIDE 1/4" MINIMUM ALUMINUM PLATE FOR SMALL ITEMS
2. MOUNT INDICATORS OR EQUIPMENT OPERATING HANDLES FOUR FEET ABOVE FLOOR OR PLATFORM.
3. MATERIAL AND HARDWARE PER SPECIFICATION DIVISION 16.

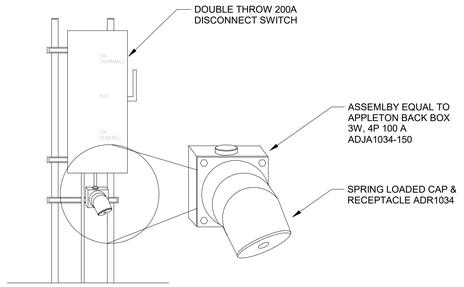
EQUIPMENT SUPPORT

SCALE: N.T.S.

ELECTRICAL ABBREVIATIONS

SYMBOL	DESCRIPTION
A	AMPERE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERES INTERRUPTING CURRENT
ANN	ANNUNCIATOR
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLP	CURRENT LIMITING PANEL
CT	CURRENT TRANSFORMER
CU	COPPER
DISC	DISCONNECT
EDF	ELECTRIC DRINKING FOUNTAIN
FAAP	FIRE ALARM ANNUMNICATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPS
G	GROUND
GFI	GROUND FAULT CURRENT INTERRUPTER
HP	HORSEPOWER
HZ	HERTZ
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT-AMPERE
KW	KILOWATT
LED	LIGHT EMITTING DIODE
MCC	MOTOR CONTROL CENTER
MLO	MAIN LUGS ONLY
N	NEUTRAL
NEC	NATIONAL ELECTRIC CODE
PF	POWER FACTOR
SOWB	SPACE ONLY WITH BUS
UGW	UNDERGROUND ELECTRICAL
V	VOLT
VA	VOLT-AMPERE
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHER PROOF
XFMR	TRNASFORMER
3P	THREE POLE
3PH	THREE PHASE
4W	FOUR WIRE
30/3	30 AMPERE, 3-POLE

CODE ANALYSIS - INTERNATIONAL BUILDING CODE 2015
CODE COMMENTS
JURISDICTION
Memphis and Shelby County Construction Code Enforcement
APPLICABLE CODES
2015 International Building Code with Local Amendments
2015 International Existing Building Code with Local Amendments
2015 International Residential Code with Local Amendments
2014 National Electrical Code
2018 Joint Electrical Code
2015 International Mechanical Code with Local Amendments
2015 International Fuel Gas Code with Local Amendments
2015 International Plumbing Code with Local Amendments
2015 International Energy Conservation Code with Local Amendments
2009 ICC A117.1 Accessibility and Useable Buildings and Facilities)by reference)
2013 ASME 17.1 Safety Code for Elevators and Escalators (by reference)



GENERATOR PLUG

SCALE: N.T.S.

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

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

RYAN J. HERTTER REGISTERED ENGINEER 0 AGRICULTURE Commission No. 106919 STATE OF TENNESSEE 6/24/24

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CADWELL

DWG NO. E-001

SEWER BASIN: NS-9

SHEET 1 OF 2

DIVISION OF ENGINEERING

ELECTRICAL - STANDARD DETAILS 1

3628 WINPLACE LIFT STATION
MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: RJH DATE: 06/24 SCALE: SHOWN

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

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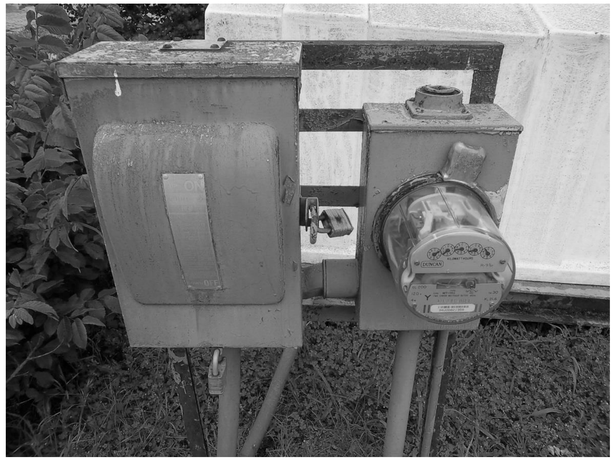
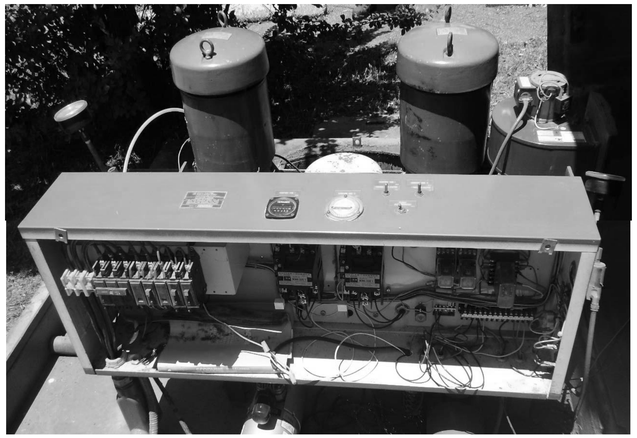


ELECTRICAL SERVICE ENTRANCE

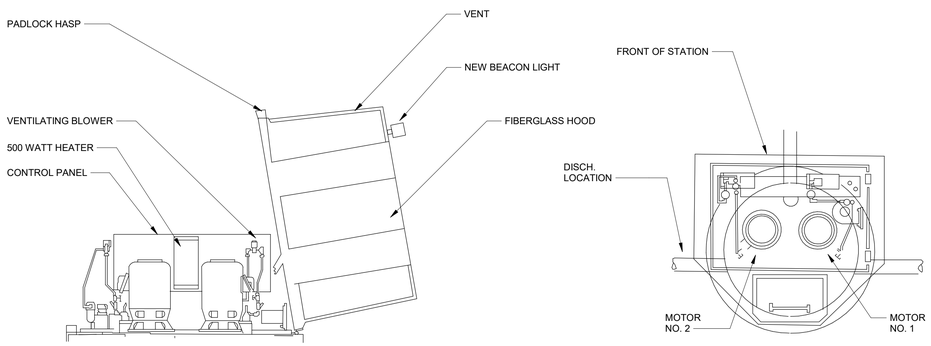


CONTROL PANEL TO BE REPLACED IN NEW SKID PACKAGE

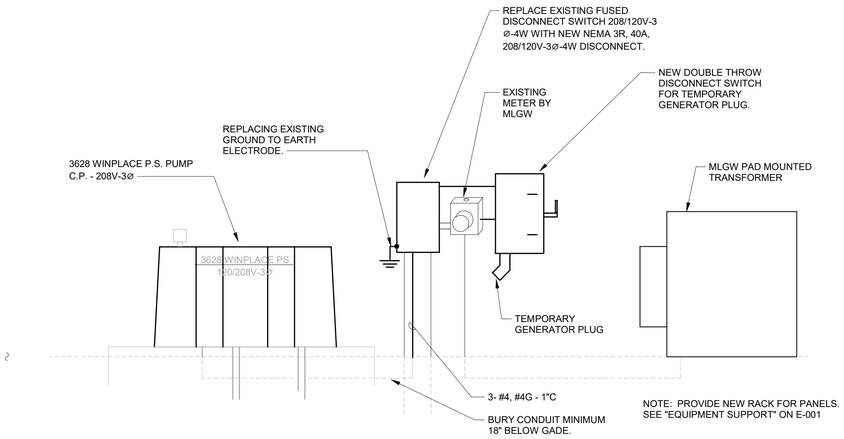
LIFT STATION COVER

GENERAL NOTES:

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE, AND ALL OTHER APPLICABLE STANDARDS AND REGULATIONS ENFORCED BY THE AUTHORITY HAVING JURISDICTION.
2. ALL ABOVE GROUND EXTERIOR CONDUIT SHALL BE GALVANIZED RIGID STEEL CONDUIT WITH CORROSION RESISTANT FITTINGS, CLAMPS AND SUPPORT.
3. IN THE EVENT OF CONFLICTS BETWEEN THE DRAWINGS, SPECIFICATIONS, CODES AND REGULATIONS, NOTIFY THE ENGINEER OF RECORD FOR HIS OPINION PRIOR TO INSTALLATION.
4. SHOP DRAWINGS SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL AND TO THE ENGINEER FOR REVIEW.
5. SMACNA SEISMIC RESTRAINT MANUAL, THIRD EDITION 2008, OR LATEST REVISION MAY BE USED AS A GUIDE FOR GENERAL SEISMIC SUPPORT DETAIL AND SUPPORT SPACING RECOMMENDATIONS.
6. COORDINATE LOCATION OF ALL LIGHTING FIXTURES, MECHANICAL EQUIPMENT AND ACCESS PANELS WITH EXISTING CONDITIONS PRIOR TO ROUGH-IN.
7. WHILE EFFORT HAS BEEN MADE TO IDENTIFY EXISTING CIRCUITS THAT ARE TO BE REMOVED OR REPLACED, THE INFORMATION MAY NOT BE ACCURATE.
8. ELECTRICAL CONTRACTOR SHALL VERIFY VOLTAGE AND AMP DRAW FOR ANY NEW EQUIPMENT.
9. CONTROL PANEL SHALL BE REPLACED ALONG WITH THE ENTIRE SKID PACKAGE.
10. THE MAIN CONTROL PANEL IS FED WITH AN EXISTING 208V 3PH 40A FUSED DISCONNECT ABOVE GRADE.
11. REPLACE FUSES ON DISCONNECT.
12. RE-CONNECT AND TIGHTEN ALL ELECTRICAL CONNECTIONS.
13. PROVIDE NEW DOUBLE THROW DISCONNECT AND GENERATOR PLUG FOR TEMPORARY POWER. PROVIDE OR EXTEND NEW SUPPORT STRUCTURE. SEE DETAIL ON E-001.
14. PROVIDE NEW RACK FOR DISCONNECT SWITCH, METER, AND DOUBLE THROW DISCONNECT SWITCH. RACK SHALL BE 36" AWAY FROM THE PUMP STATION PANEL FOR REQUIRED NEC CLEARANCE.
15. PROVIDE NEW NEMA 3R, 40A, 208/3 SERVICE DISCONNECT IN LIEU OF NEW FUSES.
16. BURY CONDUIT BETWEEN THE RACK AND THE STATION. CONDUIT SHALL BE MINIMUM OF 18" DEEP. CONDUIT MAY BE PVC BELOW GRADE, BUT MUST TRANSITION TO RIGID METAL AT ELBOW UP TO GRADE.



PUMP ELECTRICAL PLAN
SCALE: N.T.S.



RISER & SINGLE LINE DIAGRAM
SCALE: N.T.S.

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

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

RYAN J. HERTTER — REGISTERED ENGINEER — STATE OF TENNESSEE — AGRICULTURE — COMMERCE — NO. 106919 — 6/24/24

LIFT STATION DESIGN GROUP 3 C
DEVELOPER: SARP 10
ENGINEER: BROWN AND CADWELL

DWG NO. E-101

SEWER BASIN: NS-9

SHEET 2 OF 2
DIVISION OF ENGINEERING

ELECTRICAL - PLAN AND RISER DIAGRAM

3628 WINPLACE LIFT STATION
MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127
DESIGN BY: RJH DATE: 06/24 SCALE: SHOWN

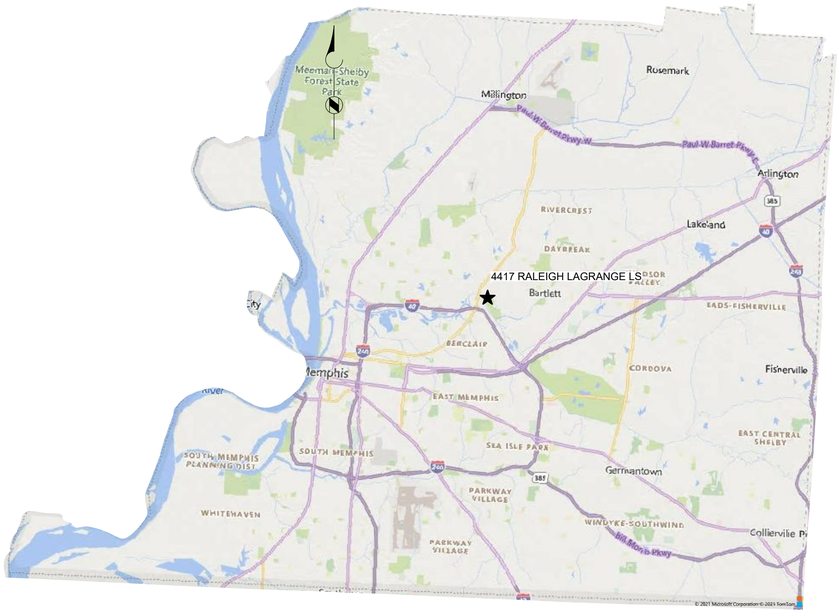
CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

LIFT STATION DESIGN GROUP 3 C
4417 RALEIGH LAGRANGE RD. LIFT STATION
SEWER ASSESSMENT & REHABILITATION PROGRAM (SARP10)
CITY OF MEMPHIS, TENNESSEE

SERVICE CONTRACT NO.
409278.61.0127

LOCATION MAP
MAP NOT TO SCALE

JUNE 2024
ISSUED FOR BID



VICINITY MAP
MAP NOT TO SCALE

PREPARED BY:

Brown AND Caldwell

Environmental Engineers and Consultants
1661 International Drive, Suite 400, Memphis, TN 38120
Phone: 901-708-4333

GENERAL NOTES:

1. AT ALL CROSSINGS OF EXISTING UTILITIES, THE CONTRACTOR SHALL FIELD LOCATE BY APPROPRIATE METHODS, THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES.
2. ALL SEWER TRENCHES SHALL BE PROPERLY BACKFILLED AT THE END OF EACH WORK DAY.
3. ALL DISTURBED AREAS SHALL BE SEEDED (WITH A SEASONAL MIX) AND COVERED WITH STRAW AT THE END OF EACH WEEK (AT A MINIMUM) OR MORE FREQUENTLY, AS CONDITIONS DICTATE, IN ADDITION TO EROSION CONTROLS REFERENCED ON PLANS.
4. ALL DISTURBED LAWN AREAS SHALL BE SODDED. MATCH EXISTING SOD TYPE.
5. CONTRACTOR IS FULLY RESPONSIBLE FOR DAMAGES OF EXISTING UTILITIES, AND PUBLIC/PRIVATE INFRASTRUCTURE AND PROPERTY. ANY DAMAGE TO EXISTING INFRASTRUCTURE (ABOVEGRADE OR BELOWGRADE) CAUSED BY THE CONTRACTOR'S OPERATIONS WILL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

SANITARY SEWER NOTES:

1. LOCATION OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND ARE NOT NECESSARILY ALL OF SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE APPROPRIATE UTILITY COMPANY TO DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND/OR UNDERGROUND STRUCTURES PRIOR TO THE INITIATION OF ANY CONSTRUCTION. CONTRACTOR SHALL ALSO ASSUME FULL RESPONSIBILITY FOR LOCATION OF EXISTING UTILITIES INVOLVING MLG&W, SOUTH CENTRAL BELL, AND/OR TEXAS GAS COMPANY, PLEASE CALL 1-800-351-1111. FOR SEWER SERVICE LOCATIONS, CALL 1-800-351-1111.
2. CONTRACTOR SHALL ENSURE UNINTERRUPTED SEWER SERVICE ON EXISTING SEWER AND SERVICE CONNECTIONS BY PROVIDING AMPLE TEMPORARY WASTEWATER PUMPING AND /OR BYPASSING.
3. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES.
4. ALL AREAS IN CUT OR FILL WHERE VEGETATION HAS BEEN REMOVED SHALL BE SEEDED, MULCHED, FERTILIZED, AND /OR SODDED AS REQUIRED TO PREVENT EROSION.
5. THE CONTRACTOR SHALL VERIFY EXISTING DATA AND REPORT ANY SIGNIFICANT DISCREPANCIES TO THE ENGINEER.
6. ALL SANITARY SEWER TO BE CONSTRUCTED AS PER CITY OF MEMPHIS STANDARDS CONSTRUCTION SPECIFICATIONS. SANITARY SEWER CONNECTIONS TO BE INSTALLED AS PER CITY OF MEMPHIS STANDARD SST-16.
7. ALL SEWER MANHOLE LIDS IN OPEN AREAS ARE TO BE CONSTRUCTED 1.5' ABOVE PROPOSED GRADE; IN BACKYARDS, MANHOLE LIDS ARE TO BE 1.5' ABOVE INITIAL GRADE, 0.5' ABOVE FINAL GRADE.
8. ALL SANITARY SEWER, INCLUDING SERVICE CONNECTIONS, WHICH HAS LESS THAN 1.5' CLEARANCE (OUTSIDE OF PIPES) WITH DRAINAGE OR IN FILLED AREAS SHALL BE CLASS 50 D.I.P. OR CONCRETE ENCASED, 10' BOTH SIDES OF CROSSING. ALL DUCTILE IRON PIPE SHALL BE POLYETHYLENE LINED OR SHALL BE TREATED WITH PROTECTO 401 OR APPROVED EQUIVALENT.
9. THE CITY OF MEMPHIS SHALL HAVE INGRESS/EGRESS RIGHTS TO USE PRIVATE YARDS FOR THE PURPOSE OF MAINTAINING ALL PUBLIC SEWER LINES AND SHALL BEAR NO RESPONSIBILITY FOR THE MAINTENANCE OF SAID PRIVATE DRIVES AND YARDS.
10. NO TREES, SHRUBS, PERMANENT STRUCTURES OR OTHER UTILITIES (EXCEPT FOR CROSSINGS) WILL BE ALLOWED WITHIN SANITARY SEWER EASEMENT. NO OTHER UTILITIES OR SERVICES MAY OCCUPY SANITARY SEWER EASEMENTS IN PRIVATE DRIVE AND YARDS EXCEPT FOR CROSSINGS.
11. ALL SANITARY SEWER MANHOLES IN REVERSE CROWN STREETS, ALLEYS OR DRIVES (PUBLIC OR PRIVATE) SHALL BE PROVIDED WITH GASKETS AND PLUGS FOR "PICK HOLES" TO PREVENT DRAINAGE INFLOW INTO SEWER SYSTEM.
12. THE CONTRACTOR SHALL PROVIDE ADEQUATE AND EFFECTIVE EROSION CONTROL AS NECESSARY TO PREVENT ANY SEDIMENT FROM ENTERING EXISTING DRAINAGE SYSTEM AND /OR ADJACENT PROPERTIES.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL REMOVE ALL UNDERGROUND UTILITIES AND ANY OTHER ITEMS IN ACCORDANCE WITH THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC) AND THE TECHNICAL SPECIFICATIONS. THE CONTRACTOR SHALL STRICTLY FOLLOW ALL CITY, STATE, AND FEDERAL GUIDELINES FOR REMOVAL AND DISPOSAL OF THESE FACILITIES.
2. ALL BUILDING, CONCRETE, ASPHALT PAVEMENT, AND GRANULAR SUBBASE IN AREAS OF DEMOLITION SHALL BE REMOVED FULL DEPTH PER THE DIRECTION OF THE GEOTECHNICAL ENGINEER. ALL SHALL BE DISPOSED IN ACCORDANCE WITH ALL CITY, STATE AND FEDERAL REGULATIONS.
3. CONTRACTOR SHALL REMOVE & REPAIR PAVEMENT AS REQUIRED FOR UTILITY CONSTRUCTION INCLUDING BUT NOT LIMITED TO : IRRIGATION SLEEVES, SITE LIGHTNING CONDUITS, WATER LINES, SANITARY SEWER LINES, STORM DRAINAGE LINES, ETC. CONTRACTOR HAS AN OPTION TO BORE CONDUITS.
4. PRIOR TO COMMENCING ANY UTILITY WORK, CONTRACTOR SHALL NOTIFY ANY SURROUNDING PROPERTY OWNERS WHO MAY EXPERIENCE A DISRUPTION IN SERVICE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MODIFYING ANY EXISTING IRRIGATION SYSTEM TO ACCOMMODATE PARTS OF THAT EXISTING SYSTEM THAT ARE REMOVED, ABANDONED OR DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL ALSO MODIFY ANY EXISTING IRRIGATION SYSTEM TO ACCOMMODATE NEW AREAS OF LANDSCAPING. ANY IRRIGATION SLEEVES SHALL BE INSTALLED PRIOR TO PAVING AND BACKFILLED PROPERLY BY THE SITE CONTRACTOR.
6. THE CONTRACTOR SHALL ENSURE ADEQUATE ACCESS IS PROVIDED DURING ALL PHASES OF CONSTRUCTION. COORDINATE WITH THE PROJECT MANAGER.
7. WHEN REMOVING UTILITIES, CONTRACTOR SHALL GROUT AND SEAL ANY STRUCTURES THAT ARE TO REMAIN PER LOCAL REGULATIONS.
8. UTILITIES SHOWN ARE LOCATED BY FIELD SURVEY AND RECORD DRAWINGS. ADDITIONAL UNDERGROUND UTILITIES WILL BE ENCOUNTERED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE ANY INACTIVE STRUCTURE & ALERT ENGINEER OF ANY ACTIVE, UNMAPPED STRUCTURES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION OF UTILITY DEMOLITION & RELOCATION.
10. CONTRACTOR SHALL NOT INTERRUPT DRAINAGE FROM ADJACENT PROPERTIES AND PUBLIC RIGHT-OF-WAYS.
11. ALL PUMPS, MOTORS, VALVES ETC REMOVED SHOULD BE RETURNED TO MEMPHIS WTCS DEPARTMENT. CONTACT JAMES GREENLEE FOR FURTHER DIRECTIONS, 901-636-0237.

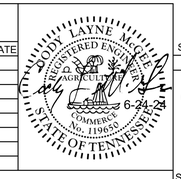
EROSION CONTROL NOTES:

1. CONSTRUCTION ENTRANCES (TO THE OFFICE OR LAY DOWN AREA, AND TO WORK AREAS) TO BE A MINIMUM 6" DEPTH T.D.O.T. NO. 1 OR NO. 2 STONE.
2. INSTALL SEDIMENT TUBE, WATTLES OR SILT FENCE AS DICTATED ON THE EROSION CONTROL PLANS. SEE DETAILS FOR MORE INFORMATION.
3. ALL STOCK PILE AREAS TO BE PROTECTED BY A COMBINATION OF SEDIMENT TUBE OR WATTLES AND SILT FENCE.
4. INSTALL INLET PROTECTION DEVICES AT STORM INLETS PRIOR TO CONSTRUCTION. SEE PLANS FOR LOCATIONS.
5. ALL NEWLY CUT OR FILL AREAS LACKING ADEQUATE VEGETATION SHALL BE FERTILIZED, MULCHED, SEEDED, AND /OR SODDED TO EFFECTIVELY CONTROL EROSION.
6. A SPECIFIC INDIVIDUAL SHALL BE DESIGNATED TO BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS ON EACH PROJECT SITE.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SOIL EROSION CONTROL MEASURES AS NOTED ON THE PLANS AND AS REQUESTED BY THE OWNER DURING THE CONSTRUCTION, AND AS NECESSARY TO PREVENT THE SEDIMENT FROM LEAVING THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SATISFYING THE REQUIREMENTS OF THE STATE OF TENNESSEE EROSION & SEDIMENT CONTROL HANDBOOK. ALL SOIL EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE CONTRACT SO AS TO PREVENT ANY SEDIMENTATION FROM WASHING OFF THE SITE ONTO ADJACENT PROPERTY OR PUBLIC RIGHTS-OF-WAY. SEDIMENT FENCE SHALL BE INSTALLED AS DIRECTED. THE CONTRACTOR SHALL MAINTAIN A LOG OF ALL MAINTENANCE ACTIVITIES FOR THE EROSION ELEMENTS AS REQUIRED BY THE STATE OF TENNESSEE DEPARTMENT OF WATER POLLUTION CONTROL.
8. A COPY OF THE EROSION CONTROL PLAN MUST BE AVAILABLE ON SITE FOR THE DWPC INSPECTOR ON REQUEST.
9. EROSION AND SEDIMENT CONTROL MEASURES MUST BE IN PLACE AND FUNCTIONAL BEFORE EARTH MOVING OPERATIONS BEGIN, AND MUST BE CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. TEMPORARY MEASURES MAY BE REMOVED AT THE BEGINNING OF THE WORK DAY, BUT MUST BE REPLACED AT THE END OF THE WORK DAY OR PRIOR TO RAINFALL EVENTS.
10. ALL CONTROL MEASURES SHALL BE CHECKED AND STATE REQUIREMENTS FOR MAINTENANCE AND REPAIRS SHALL BE MADE AS NECESSARY. DURING PROLONGED RAINFALL, DAILY CHECKING AND REPAIRING IS NECESSARY. THE PERMITTEE SHALL MAINTAIN RECORDS OF INSPECTION CHECKS, MAINTENANCE, AND REPAIRS.
11. THIS PLAN HAS BEEN REVIEWED AND APPEARS TO BE ADEQUATE. IF SEWER PIPE INSTALLATION BY BORE DOES NOT PROVIDE FOR EFFECTIVE SEDIMENT CONTROL AND EROSION PROTECTION, ADDITIONAL MEASURES WILL BE REQUIRED.
12. IF PUMPING IS REQUIRED, SEDIMENT LADEN WATER IS NOT TO BE DISCHARGED INTO THE STORM DRAIN OR THE STREET.

DRAWING INDEX

REVISIONS

ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024



LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. G-001

SEWER BASIN: WN04

SHEET 1 OF 3

DIVISION OF ENGINEERING

GENERAL NOTES AND DRAWING INDEX

4417 RALEIGH LAGRANGE RD.

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: CLM DATE: 06/24 SCALE: NONE

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWD2304698 FILENAME: G-001_4417 RALEIGH LAGRANGE.DWG PLOT DATE: 6/24/2024

CROSS REFERENCING SYSTEM

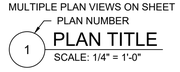
VIEW TITLES

1. PLAN TITLES:

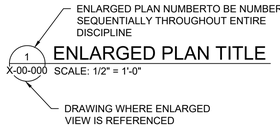
SINGLE PLAN VIEW ON SHEET

PLAN TITLE
SCALE: 1/4" = 1'-0"

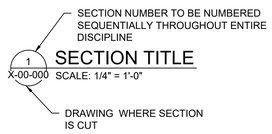
MULTIPLE PLAN VIEWS ON SHEET



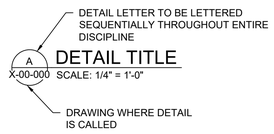
2. ENLARGED PLAN TITLES:



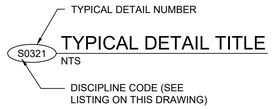
3. SECTION TITLES:



4. DETAIL AND PHOTO TITLES:

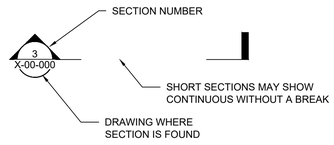


5. TYPICAL DETAIL TITLES:



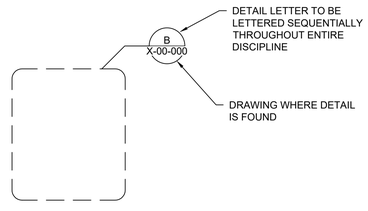
VIEW REFERENCE/CALLOUTS

1. SECTION CUTS:



2. DETAIL CALLOUT

A: BY CALLOUT:

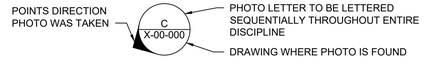


B: BY NOTE: "SEE DETAIL B/D-01-105"

B IS DETAIL REFERENCE LETTER

D-01-105 IS DRAWING WHERE DETAIL IS SHOWN

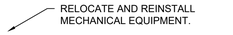
3. PHOTO INDICATORS



4. TYPICAL DETAIL REFERENCE

NOTATIONS

1. PROPOSED NOTES (with leaders)



ALL NOTES SHALL HAVE A HEIGHT OF 0.1". IF NOTE IS MORE THAN 2" WIDE AND 2 LINES THEN MAKE IT A KEYNOTE.

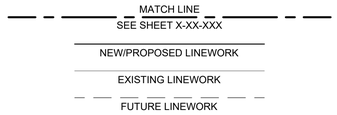
2. EXISTING NOTES (with leaders)

ALL EXISTING NOTES SHALL BE SCREENED.

3. KEYNOTES

KEYNOTES ARE NUMBERED SEQUENTIALLY ON PAGE. (ORDER IS NOT RELEVANT TO IMPORTANCE AND MAY BE RANDOM.)

MISCELLANEOUS

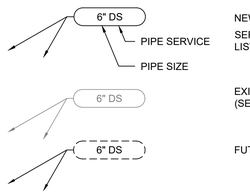


NORTH ARROW

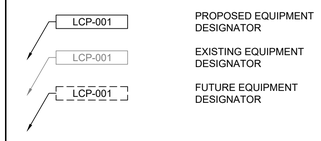
SCALE (CIVIL)

DIMENSIONS

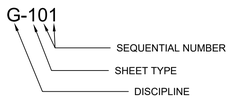
PIPING IDENTIFICATION SYSTEM



EQUIPMENT DESIGNATORS



DRAWING NUMBERING SYSTEM



DISCIPLINES

- G GENERAL
- XD DEMOLITION (X - DENOTES DISCIPLINE)
- C CIVIL
- S STRUCTURAL
- A ARCHITECTURAL
- D PROCESS/MECHANICAL
- M MECHANICAL/HVAC
- P PLUMBING
- E ELECTRICAL
- I INSTRUMENTATION

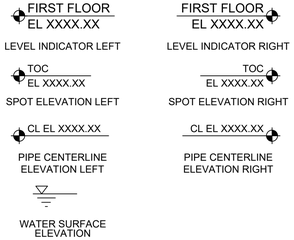
SHEET TYPE DESIGNATORS

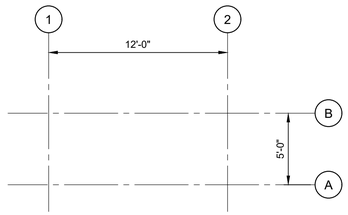
- 0 GENERAL - COVER SHEET, ABBREVIATIONS, LEGENDS, SYMBOLS, SHEET INDEX, STANDARD DETAILS
- 1 PLANS OR (PLANS AND SECTIONS)
- 2 ELEVATIONS AND PROFILES
- 3 SECTIONS
- 4 ENLARGED PLANS
- 5 DETAILS (TYPICAL DETAILS)
- 6 DIAGRAMS
- 7 SCHEDULES
- 8 USER DEFINED
- 9 3D REPRESENTATIONS (ISOMETRICS, PERSPECTIVES, RENDERINGS)

GENERAL NOTES

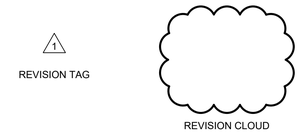
1. THE NOTE IN THE TITLEBLOCK OF THIS DRAWING WHICH READS "TWO INCHES AT FULL SCALE" APPEARS ON DRAWINGS FOR IDENTIFICATION OF SCALE DISTORTIONS ON HALF SIZE DRAWINGS AND DRAWING REPRODUCTIONS. IT SHALL MEAN THAT THE DRAWING IS FULL SIZE AND THE DRAWING SCALES ACCURATE WHEN THE LENGTH OF THIS LINE IS TWO INCHES. IF THE LENGTH IS OTHER THAN TWO INCHES, DRAWING SCALES MUST BE ADJUSTED ACCORDINGLY.
2. EXISTING PIPING IS DESIGNATED BY SERVICE RATHER THAN MATERIAL TYPE. MATERIAL TYPES, IF KNOWN, APPEAR OUTSIDE THE PIPING CALLOUT BUBBLE, AND MAY NOT BE THE SAME MATERIAL TYPES SPECIFIED FOR NEW PIPING.
3. ABBREVIATIONS USED IN THIS CONTRACT DOCUMENT CONFORM TO ANSI Y1.1, UNLESS NOTED OTHERWISE ON DRAWINGS. SEE SPEC. SECTION 01071 FOR ADDITIONAL ABBREVIATIONS.
4. ALL STANDARD DETAILS APPLY TO ALL THE CONTRACTORS WORK WHETHER SPECIFICALLY REFERENCED OR NOT.
5. SEE FRONT END SHEETS FOR EACH DISCIPLINES STANDARD SYMBOLS, ETC.
6. SEE ADDITIONAL GENERAL NOTES THROUGHOUT DRAWING SET.

LEVELS, GRIDS AND ELEVATION INDICATORS





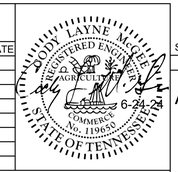
REVISIONS



ABBREVIATIONS

CAB	DIRECT BURIAL CABLE	IL	INDICATING LAMP	REL	RELAY
C-C	CENTER TO CENTER	INF	INFLUENT	RGS	RIGID GALVANIZED STEEL
CL	CENTERLINE	INV	INVERT	RS	RAW SEWAGE
CNTL	CONTROL				
		KV	KILOVOLT	SMH	SEWER MANHOLE
DB	DUCT BANK	KVA	KILOVOLT AMPERE	SS	SANITARY SEWER
		KW	KILOWATT	SST	STAINLES STEEL
EFF	EFFLUENT			STD	STANDARD
EJ	EXPANSION JOINT	LEL	LOWER EXPLOSIVE LIMIT	SWB	SWITCHBOARD
EL	ELEVATION	LLWL	LOW-LOW WATER LEVEL		
EMBD	EMBEDDED	LOS	LOCKOUT STOP	TB	TERMINAL BOX
EQ	EQUAL	LS	LIMIT SWITCH	TFR	TRANSFORMER
EQUIP	EQUIPMENT			TOC	TOP OF CONCRETE
ES	EXISTING SURFACE	MCC	MOTOR CONTROL CENTER	TRM	TRANSMITTER
EWEF	EACH WAY EACH FACE	MCU	MASTER CONTROL UNIT	TRN	TRANSDUCER
EXIST	EXISTING	MGD	MILLION GALLONS PER DAY	TRS	TRANSFER SWITCH
		MJ	MECHANICAL JOINT	TS	TEMPERATURE SWITCH
F	FAHRENHEIT, FACE, FUSE(D)	MME	MISCELLANEOUS MECHANICAL EQUIPMENT		
FC	FAIL CLOSED			UL	ULTIMATE LOAD
FE	FLOWMETER	N	NEUTRAL	UN	UNION
FH	FIRE HYDRANT, FLATHEAD	NPSH	NET POSITIVE SUCTION HEAD		
FIN	FINISHED			V	VALVE, VOLTS
FLR	FLOOR	OL	OVERLOAD	VAC	VOLTS ALTERNATING CURRENT
FM	FORCE MAIN			VAR	VARIES, VARIABLE
FO	FAIL OPEN	P	PUMP	VDC	VOLTS DIRECT CURRENT
		PL	PROPERTY LINE, PIPELINE, PLATE		
GFI	GROUND FAULT INTERRUPTOR	PNL	PANEL, PANELBOARD	WSTP	WATERSTOP
GPD	GALLONS PER DAY	PP	POWER POLE		
GRT	GROUT	PSIA	POUND PER SQUARE INCH ABSOLUTE	XP	EXPLOSIONPROOF
GSP	GALVANIZED STEEL PIPE	PSIG	POUNDS PER SQUARE INCH GAGE		
GV	GATE VALVE	PV	PLUG VALVE, PROCESS VARIABLE		
H/A	HAND AUTO	Q	RATE OF FLOW		
HHWL	HIGH-HIGH WATER LEVEL	QCPLG	QUICK COUPLING		
HOA	HAND-OFF-AUTO				
HP	HIGH PRESSURE, HIGH POINT, HORSEPOWER	R	RADIUS		
		RECP	RECEPTACLE		

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024



LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. G-002

SEWER BASIN: WN04

SHEET 2 OF 3

DIVISION OF ENGINEERING

ABBREVIATIONS, LEGENDS, & SYMBOLS

4417 RALEIGH LAGRANGE RD.

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: CLM DATE: 06/24 SCALE: NONE

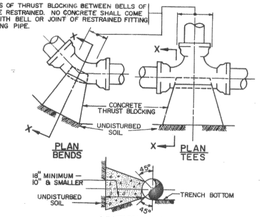
REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWD2304698 FILENAME: G-002_4417 RALEIGH LAGRANGE RD.DWG PLOT DATE: 6/24/2024

DEPARTMENT of ENGINEERING BUREAU of SEWER DESIGN, Wastewater DET — DRAFTSMAN: BRL — DATE: JUNE 2015 — SCALE: NTS

CONFINE LIMITS OF THRUST BLOCKING BETWEEN BELLS OF FITTING TO BE RESTRAINED. NO CONCRETE SHALL COME IN CONTACT WITH BELL OR JOINT OF RESTRAINED FITTING AND CONNECTING PIPE.



SECTION X-X
BENDS & TEES

CONCRETE THRUST BLOCKING SCHEDULE IN SQUARE FEET

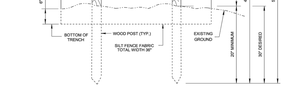
PIPE SIZE	BENDS 11¼°	22 ½°	45°	90°	STD. TEE
4	1.0	1.0	1.5	2.5	2.0
6	1.5	2.0	3.0	5.5	4.0
8	1.5	2.5	5.0	10.0	7.0
10	2.0	4.0	7.5	14.5	10.0
12	3.0	6.0	11.5	21.5	14.5
14	4.0	7.5	15.0	28.0	19.5
16	5.0	10.0	20.0	35.0	25.5
18	6.5	12.5	24.5	350★	32.0
20	8.5	16.5	32.6	350★	35.0★
24	10.0	200	35.0★	350★	350★
30	18.0	345	350★	350★	350★
36	25.0	350★	350★	350★	350★
42	32.5	350★	350★	350★	350★

BLOCKING SCHEDULE BASED ON 200 PSI WATER PRESSURE, 2,000 PSF SOIL BEARING PRESSURE & 1.25 SAFETY FACTOR.
★ INDICATES FITTINGS REQUIRING RESTRAINED JOINTS IN ADDITION TO CONC THRUST BLOCKING. SEE RESTRAINED JOINT SCHEDULE.

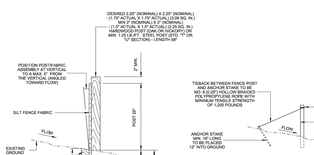
REVISIONS		
NO.	DATE	BY	REMARKS

CONVERSIONS	
ENGLISH	METRIC

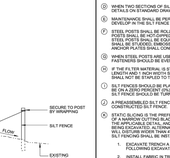
CITY OF MEMPHIS
DEPARTMENT of ENGINEERING
DESIGN STANDARD FOR CONCRETE THRUST BLOCK ING
Bryant Bondurant Jr. 3/31/10
CITY ENGINEER — DATE



ELEVATION VIEW



SECTIONAL VIEW



SILT FENCE TIEBACK FOR STEEL POSTS OR WOOD POSTS

(WHEN REQUIRED BY THE ENGINEER OR NOTED IN THE PLANS. COST TO BE INCLUDED IN THE ITEMS FOR SILT FENCE)

NOT TO SCALE

EROSION CONTROL PLAN LEGEND: * SF * SF * SF * SILT FENCE

SILT FENCE FABRIC SPECIFICATIONS

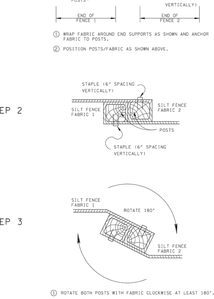
FABRIC PROPERTY AND TEST METHODS	REQUIRED PHYSICAL PROPERTIES (MARV VALUES OF TEST DATA)
GEOTEXTILE FABRIC TYPE	WOVEN SLIT FILM (PER AASHTO M288)
APPARENT OPENING SIZE (ASTM D4751)	#30 TO #70 STANDARD SIEVE
WATER FLUX (ASTM D4491)	≥ 4 GPM/FT²
TENSILE STRENGTH (ASTM D4632)	≥ 120 LB. (MARP DIRECTION) X 100 LB. (FILL DIRECTION)
ULTRAVIOLET STABILITY (% RETAINED PER ASTM D4355)	≥ 70%
ELONGATION (ASTM D4632)	≤ 20% (MAX)
BURST STRENGTH (ASTM D3786)	≥ 250 PSI
PUNCTURE STRENGTH (ASTM D4833)	≥ 60 LB.
TRAPEZOIDAL TEAR (ASTM D4533)	≥ 50 LB. (MARP DIRECTION) X 40 LB. (FILL DIRECTION)

SILT FENCE GENERAL NOTES

1. SILT FENCE IS USED TO INTERCEPT SMALL AMOUNTS OF SEDIMENT AND REDUCE VELOCITY FROM SHEET FLOW ONLY. DO NOT USE IT ADJACENT TO NATURAL WATER RESOURCES (WETLANDS OR STREAMS) OR ACROSS CONCENTRATED FLOW PATHS.
2. THE MAXIMUM DRAINAGE AREA SIZE FOR A CONTINUOUS BARRIER SHALL BE 1/4 ACRE PER 100 LINEAR FEET OF SILT FENCE. FOR SLOPE APPLICATIONS, THE MAXIMUM SLOPE LENGTH BEHIND THE SILT FENCE (DOWN SLOPE) SHALL BE 100 FEET (AS MEASURED ALONG THE GROUND SURFACE).
3. WHEN INSTALLED AT THE TOE OF A SLOPE, SILT FENCE SHOULD BE PLACED 5 FEET TO 7 FEET AWAY FROM THE TOE TO ALLOW SPACE FOR PONDING OF WATER, COLLECTION OF SEDIMENT, AND EASE OF MAINTENANCE AND REMOVAL.
4. WHEN TWO SECTIONS OF SILT FENCE FABRIC ADJOIN EACH OTHER THEY SHALL BE JOINED ACCORDING TO THE DETAILS ON STANDARD DRAWING EC-STR-3E.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED. CAPTURED SOIL MATERIAL SHALL BE REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE AND/OR OTHER EVIDENCE OF SILT FILTER CLOGGING IS OBSERVED.
6. STEEL POSTS SHALL BE ROLLED FROM HIGH CARBON STEEL AND SHALL HAVE A MINIMUM WEIGHT OF 1.00 LB/FT (1.33 LB/FT FOR HEAVY DUTY APPLICATIONS). POSTS SHALL BE EQUIPPED WITH AN EMBOSSED ANCHOR PLATE. WOOD POSTS SHALL BE A MINIMUM OF 1.5" X 1.5" (ACTUAL) IN CROSS SECTION. WOOD POSTS SHALL BE FREE OF KNOTS AND SPLITS THAT WOULD WEAKEN THE POST. THE WIRE BACKING FASTENED TO THE ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702.
7. WHEN STEEL POSTS ARE USED THEY SHALL HAVE A PROJECTION FOR FASTENING WIRE TO THEM. THE WIRE FASTENERS SHOULD BE EVENLY SPACED WITH AT LEAST FIVE PER POST.
8. IF THE FILTER MATERIAL IS STAPLED TO THE WOODEN STAKES, HEAVY DUTY WIRE STAPLES WITH ONE-INCH CROWN AND ½ INCH LEGS SHALL BE USED AND EVENLY SPACED WITH AT LEAST FOUR PER POST. SILT FENCE FABRIC SHALL NOT BE STAPLED TO TREES.
9. SILT FENCES SHOULD BE PLACED ALONG OR NEAR THE GROUND CONTOUR. THE BOTTOM OF FENCE AT GROUND LINE SHOULD BE ON A ZERO PERCENT (0%) GRADE, PLUS OR MINUS FIVE TENTHS OF ONE PERCENT (0.5%). THE ENDS OF A ROW OF SILT FENCE SHOULD BE TURNED UPSLOPE FORMING A J-HOOK TO FILTER ANY CONCENTRATED FLOW BEHIND FENCE.
10. A PREASSEMBLED SILT FENCE MEETING THE REQUIREMENTS OF THIS DRAWING IS ACCEPTABLE IN LIEU OF A FIELD ASSEMBLED SILT FENCE.
11. STATE ALONG IS THE PREFERRED METHOD OF FENCE INSTALLATION. STATIC SLICING WAS USED THE INSERTION OF A NARROW CUTTING BLADE, PLACED AT THE SPECIFIED ANCHOR DEPTH FOR THE GIVEN FABRIC AS SHOWN ON THIS DRAWING, INTO THE SOIL. THE FABRIC IS PULLED INTO THE SLOT BEHIND THE BLADE AS THE SOIL MATERIAL IS BEING EXCAVATED. ALTERNATE TRENCH-BASED METHODS ARE ALSO ACCEPTABLE. DO NOT USE EQUIPMENT THAT WILL DISTURB WIDER THAN 4" IN-SITU SOIL SUCH AS BACKHOE. FOR TRENCH-BASED INSTALLATIONS, SILT FENCING SHALL BE INSTALLED PER THE FOLLOWING STEPS AND IN THE FOLLOWING ORDER:
    1. EXCAVATE TRENCH A MAXIMUM OF 4 INCHES WIDE AND 8 INCHES DEEP. THE TRENCH SHALL BE HAND-CLEARED OF ANY LARGE ROCKS OR OTHER TO REMOVE BULKY DEBRIS SUCH AS ROCKS, SLITHER, AND SOIL CLODS FROM THE TRENCH.
    2. INSTALL FABRIC IN TRENCH.
    3. BACKFILL TRENCH (OVER FULL) WITH SOIL PLACED AROUND FABRIC.
    4. COMPACT SOIL BACKFILL WITH MECHANICAL EQUIPMENT. DO NOT DAMAGE THE FABRIC DURING COMPACTION (DAMAGED FABRIC SHALL BE REPLACED).
    5. DRIVE AND SET SUPPORT POSTS PER SPACING REQUIREMENTS GIVEN ON THE APPLICABLE FENCE DETAIL. AFTER THE PREASSEMBLED SILT FENCE, DRIVE SUPPORTS IN TO GROUND FIRST, FOLLOWED BY FABRIC PLACEMENT IN TRENCH.
    6. ATTACH FABRIC TO THE POSTS USING WIRE TIES OR STAPLES. SPACING AND DENSITY OF TIES OR STAPLES SHALL BE INSTALLED AS DESCRIBED IN NOTES 8 AND 10.
12. ONLY SILT FENCE FABRIC LISTED ON THE QUALIFIED PRODUCTS LIST MAY BE USED. ANY PRODUCTS LISTED ON THE QUALIFIED PRODUCTS LIST AS AN APPROVED ALTERNATE MAY ALSO BE USED.
13. SILT FENCE SHALL BE PAID FOR UNDER ITEM NUMBER 209-08.01 TEMPORARY SILT FENCE (WITHOUT BACKING) PER LINEAR FOOT. PAYMENT SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY FOR CONSTRUCTION, MAINTENANCE, AND REMOVAL OF THE SILT FENCE.
14. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE STRUCTURE AND PAID FOR UNDER ITEM NUMBER 209-09, SEDIMENT REMOVAL PER CUBIC YARD.

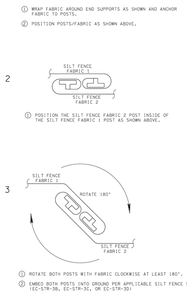
REV. 12-10-03: MODIFIED TABLE ③ AND GENERAL NOTE ⑫
REV. 7-09-04: CHANGED VALUES IN TABLE ③ TO MATCH MANUFACTURER VALUES
REV. 4-14-06: REMOVED PSI TESTS FROM TABLE ③, ADDED NOTE ⑮, MODIFIED GENERAL NOTES, REFORMATTED SHEET, REVISED NOTES, MISC. EDITS TO DRAWING
REV. 4-1-08: REVISED TEMPORARY REFERENCE, REVISED NOTES, AND MISC. EDITS TO DRAWING
REV. 8-12: MINOR EDITS TO GENERAL NOTES
REV. 5-14-12: CHANGED SECOND NOTE ⑬ TO NOTE ⑭
REV. 09-01-20: ADDED AASHTO REFERENCE IN TABLE, UPDATED GENERAL NOTES ⑫ AND REORDER SHEET
REV. 06-15-21: ADDED ALTERNATE POST MATERIAL, REVISED POST EMBEDMENT LENGTH

STATE OF TENNESSEE STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION
SILT FENCE
12-18-2002 — EC-STR-3B



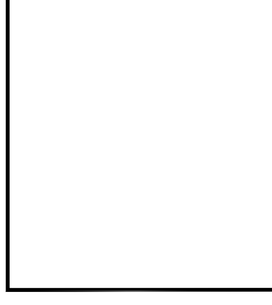
PLAN VIEW
JOINING SILT FENCE FABRIC SECTIONS (WOOD POSTS)

REV. 4-15-06: REFORMATTED SHEET, REVISED NOTES, MISC. EDITS TO DRAWING.
REV. 4-1-08: REVISED TEMPORARY REFERENCE, REVISED NOTES, AND MISC. EDITS TO DRAWING.
REV. 8-12: MINOR EDITS TO GENERAL NOTES.
REV. 6-10-14: MODIFIED SPACING TABLES, ADDED GEOTEXTILES ADDED NOTE ⑯



PLAN VIEW
JOINING SILT FENCE FABRIC SECTIONS (STEEL POSTS)

MINOR REVISION — FHWA APPROVAL NOT REQUIRED.
STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION
SILT FENCE FABRIC JOINING DETAILS
12-18-02 — EC-STR-3E



PLAN VIEW FOR DITCH APPLICATION

PLAN VIEW FOR SLOPE APPLICATION

SECTION A-A

SOCK HEIGHTS INSTALLED		
NOMINAL DIAMETER, D	INSTALLED HEIGHT OF SINGLE SOCK	INSTALLED HEIGHT OF STACKED SOCKS
8"	6.5"	N/A
12"	9.5"	19"
18"	14.5"	29"
24"	19"	38"

SECTION B-B

MINIMUM SPECIFICATION FOR FILTER MEDIA		
PROPERTY	UNITS	RANGE
pH	pH	5.0 - 8.5
MOISTURE CONTENT	% WET WEIGHT BASIS	< 60
ORGANIC MATTER CONTENT	% DRY WEIGHT BASIS	25 - 100
PHYSICAL CONTAMINANTS	% DRY WEIGHT BASIS	< 1
PARTICLE SIZE	% PASSING SELECTED MESH SIZE, DRY WEIGHT BASIS	2 INCH - 95% MIN/NO. 200 - 50% MAX. PARTICLE SIZE 2 INCHES

NOTE: MANUFACTURER SPECIFICATION MAY BE SUBSTITUTED WITH THE APPROVAL OF ENGINEER.

FILTER SOCK JOINT DETAIL (FOR SLOPE APPLICATION ONLY)

FILTER SOCK STACKING DETAIL
SEE NOTE ⑭

EROSION CONTROL PLAN LEGEND: ••SOCK••SOCK••SOCK••SOCK•• FILTER SOCK

FILTER SOCK CHECK DAM ESTIMATED QUANTITIES						
	V-DITCH			TRAPEZOIDAL DITCH		
	24" FILTER SOCK (TYPICAL 1 HIGH)	18" FILTER SOCK STACKED (TYPICAL 2 HIGH)	24" FILTER SOCK STACKED (TYPICAL 2 HIGH)	18" FILTER SOCK (TYPICAL 1 HIGH)	18" FILTER SOCK STACKED (TYPICAL 2 HIGH)	24" FILTER SOCK STACKED (TYPICAL 2 HIGH)
LENGTH (FT)	20	60	48	24	72	60

1. ESTIMATED QUANTITIES BASED ON 4:1 SIDE SLOPES. QUANTITIES WILL VARY BASED ON ACTUAL DITCH CONFIGURATIONS.
2. ESTIMATED QUANTITIES BASED ON 4FT BOTTOM WIDTH, 4 FT DEPTH, AND 4:1 SIDE SLOPES. QUANTITIES WILL VARY BASED ON ACTUAL DITCH CONFIGURATION.

FILTER SOCK SPACING FOR SLOPE APPLICATION				
SLOPE	8"	12"	18"	24"
2%	70'	80'	N/A	N/A
5%	50'	60'	80'	N/A
10%	20'	30'	70'	80'
6:1	N/A	20'	40'	50'
4:1	N/A	20'	30'	30'
3:1	N/A	N/A	20'	25'
2:1	N/A	N/A	20'	20'

N/A = NOT RECOMMENDED SPACING NOT TO EXCEED 80'

FILTER SOCK SPACING FOR DITCH APPLICATION	
DITCH SLOPE	MAXIMUM FILTER SOCK SPACING
LESS THAN 2%	80'
2%	50'
4%	40'
5%	30'
GREATER THAN 5%	20'

BASED ON 24" SEDIMENT TUBE SEE TABLE ON EC-STR-6 FOR OTHER HEIGHTS.

FILTER SOCK GENERAL NOTES

1. FILTER SOCKS CAN BE PLACED IN DITCHES OR AT THE TOP, ON THE FACE, OR AT THE TOE OF SLOPES AS NECESSARY TO INTERCEPT TRAPPING DEVICES. THEY CAN ALSO SERVE TO REMOVE SEDIMENT FROM RUNOFF AND RELEASE IT AS SHEET FLOW.
2. FILTER SOCKS INSTALLED ON A SLOPE SHALL BE PLACED ALONG OR ON THE GROUND CONTOUR, AT THE TOE OF SLOPES, OR IN A DITCH TO HELP REDUCE THE EFFECTS OF SOIL EROSION AND RETAIN SEDIMENT. SEDIMENT TUBES SHOULD NOT BE USED IN DITCHES OR STREAMS.
3. FOR DITCH APPLICATIONS, THE MAXIMUM DRAINAGE AREA SHALL BE 1/5 ACRES, AT SITES WHICH DRAIN TO EXCEPTIONAL TENNESSEE WATERS OR SEDIMENT-IMPAIRED STREAMS, THE MAXIMUM DRAINAGE AREA SHALL BE ½ ACRE PER 100 LF OF SOCK. FOR SLOPE APPLICATIONS, THE MAXIMUM DRAINAGE AREAS SHALL BE ¼ ACRE PER 100 LF OF SOCK.
4. FOR DITCH APPLICATIONS, THE MINIMUM INSTALLED HEIGHT OF A SINGLE SOCK, OR OF AN ASSEMBLY OF STACKED SOCKS, SHALL BE 19 INCHES. FILTER SOCKS MAY BE STACKED AS DETAILED ON THIS DRAWING TO ACHIEVE THE REQUIRED HEIGHT. SOCKS SHALL BE PLACED SUCH THAT THE TOP OF THE UPSTREAM SOCK IS NOT LOWER THAN THE TOP OF THE DOWNSTREAM SOCK. FOR SLOPES TO THE TOP OF BANK OR A MAXIMUM OF 3 FEET ABOVE THE INSTALLED HEIGHT OF FILTER SOCKS SHALL REMAIN IN PLACE UNTIL ALL UPSTREAM AREAS ARE PERMANENTLY STABILIZED.
5. FILTER SOCKS SHALL CONSIST OF A TUBULAR MESH SOCK WITH OPENINGS NO GREATER THAN ½ INCH AND FILLED WITH A MIXTURE OF COMPOST AND/OR SHREDDED WOOD MULCH THAT IS BIODEGRADABLE. FILL MATERIAL SHALL CONSIST OF EITHER WOOD CHIPS (MULCH) OR A 50/50 COMBINATION OF WOOD CHIPS AND MANUFACTURED COMPOST MATERIAL.
6. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED IN DIAMETERS OF 8, 12, 18 OR 24 INCHES. DIAMETER TOLERANCE IS 2 INCHES. A FILTER SOCK WILL FLATTEN OUT TO ABOUT 1.5 TIMES ITS PLACED THUS, THE INSTALLED HEIGHT WILL BE LESS THAN THE NOMINAL DIAMETER.
7. STEEL POSTS SHALL BE ROLLED FROM HIGH CARBON STEEL AND SHALL HAVE A MINIMUM WEIGHT OF 1.25 LB/FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH GRADE WEATHER RESISTANT STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH AN EMBOSSED, ANCHOR PLATE. WOOD POSTS SHALL BE A MINIMUM OF 1.5" X 1.5" (ACTUAL) IN CROSS SECTION. WOOD POSTS SHALL BE FREE OF KNOTS AND SPLITS THAT WOULD WEAKEN THE POST. THE WIRE BACKING FASTENED TO THE ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702.
8. FILTER SOCKS ARE FILLED ON THE PROJECT SITE AND MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED AS SHOWN ON THIS DRAWING.
9. ANY PRODUCT LISTED ON THE QUALIFIED PRODUCTS LIST AS AN APPROVED ALTERNATE TO FILTER SOCKS IS ALSO ACCEPTABLE. FOR DITCH APPLICATIONS, SANDBAG OR GRAVEL BAG BERMS MAY ALSO BE USED AS ALTERNATE MATERIALS.
10. FILTER SOCKS SHALL BE PAID FOR UNDER THE FOLLOWING ITEM NUMBERS:
    - 209-03.20 FILTER SOCK 18 INCH PER LINEAR FOOT
    - 209-03.22 FILTER SOCK 112 INCH PER LINEAR FOOT
    - 209-03.24 FILTER SOCK 24 INCH PER LINEAR FOOT
    - 209-03.25 FILTER SOCK 124 INCH PER LINEAR FOOT
    - 209-08.09 FILTER SOCK CHECK DAM PER EACH

    PAYMENT SHALL INCLUDE ALL MATERIALS (INCLUDING GEOTEXTILE FABRIC IF USED) AND LABOR NECESSARY FOR CONSTRUCTION, MAINTENANCE, AND REMOVAL OF FILTER SOCKS.
11. SEDIMENT SHALL BE REMOVED FROM BEHIND THE FILTER SOCK WHEN IT HAS ACCUMULATED TO ONE-HALF OF THE ORIGINAL HEIGHT OF THE STRUCTURE AND PAID FOR UNDER ITEM NUMBER 209-09, SEDIMENT REMOVAL PER CUBIC YARD.
12. FILTER SOCKS SHALL BE INSPECTED AFTER EACH RUNOFF EVENT AND SHALL BE REMOVED AND REPLACED IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.
13. FILTER SOCKS SHOULD BE REMOVED FROM SLOPES AFTER STABILIZATION IS COMPLETE. THIS MAY BE ACCOMPLISHED BY CUTTING THE SOCK OPEN AND SPREADING THE FILL MATERIAL ON THE SITE. ALL NON-BIODEGRADABLE MATERIALS SHALL BE REMOVED. FILTER SOCKS APPLIED IN DITCHES SHALL BE COMPLETELY REMOVED.
14. GEOTEXTILE FABRIC REQUIRED FOR SLOPE APPLICATION STEEPER THAN 6:1.

REV. 8-12: MINOR EDITS TO GENERAL NOTE.
REV. 6-10-14: MODIFIED SPACING TABLES, ADDED GEOTEXTILES ADDED NOTE ⑮

MINOR REVISION — FHWA APPROVAL NOT REQUIRED.
NOT TO SCALE
STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION
FILTER SOCK
4-1-08 — EC-STR-8

PLAN VIEW FOR DITCH APPLICATION

PLAN VIEW FOR SLOPE APPLICATION

SECTION A-A

STAKING DETAIL

SECTION C-C

SECTION B-B

JOINT STAKING DETAIL
(DITCH APPLICATION ONLY)

EROSION CONTROL PLAN LEGEND: TUBE••TUBE••TUBE SEDIMENT TUBE

SEDIMENT TUBE SPACING FOR SLOPE APPLICATION				
SLOPE	8"	12"	18"	20"	24"
2%	70'	80'	N/A	N/A	N/A
5%	30'	60'	80'	N/A	N/A
10%	20'	30'	70'	80'	80'
6:1	N/A	20'	40'	50'	55'
4:1	N/A	20'	30'	30'	30'
3:1	N/A	N/A	20'	25'	25'
2:1	N/A	N/A	20'	20'	20'

N/A = NOT RECOMMENDED SPACING NOT TO EXCEED 80'

BASED ON A 20" SEDIMENT TUBE SEE TABLE ON EC-STR-6 FOR OTHER HEIGHTS.

SEDIMENT TUBE SPACING FOR DITCH APPLICATION	
SLOPE	MAXIMUM SEDIMENT TUBE SPACING
LESS THAN 2%	80'
2%	50'
4%	40'
5%	30'
GREATER THAN 5%	20'

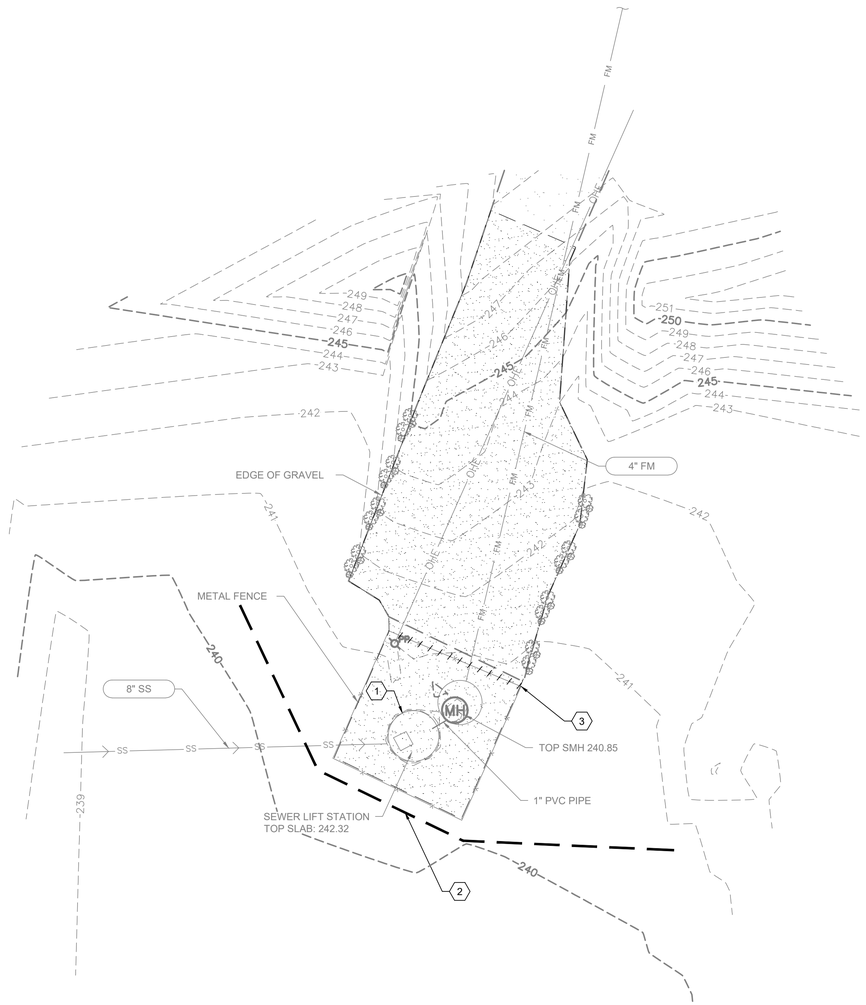
SEDIMENT TUBE GENERAL NOTES

1. SEDIMENT TUBES CAN BE PLACED AT THE TOP, ON THE FACE, OR AT THE TOE OF SLOPES AS NECESSARY TO INTERCEPT TRAPPING DEVICES. THEY CAN ALSO SERVE TO REMOVE SEDIMENT FROM RUNOFF AND RELEASE IT AS SHEET FLOW.
2. SEDIMENT TUBES SHALL BE INSTALLED ALONG OR ON THE GROUND CONTOUR, AT THE TOE OF SLOPES, OR IN A DITCH TO HELP REDUCE THE EFFECTS OF SOIL EROSION AND RETAIN SEDIMENT. SEDIMENT TUBES SHOULD NOT BE USED IN DITCHES OR STREAMS.
3. FOR DITCH APPLICATIONS, THE MAXIMUM DRAINAGE AREA SHALL BE 1/5 ACRES, AT SITES WHICH DRAIN TO EXCEPTIONAL TENNESSEE WATERS OR SEDIMENT-IMPAIRED STREAMS, THE MAXIMUM DRAINAGE AREA SHALL BE ½ ACRE PER 100 LF OF TUBE. FOR SLOPE APPLICATIONS, THE MAXIMUM DRAINAGE AREAS SHALL BE ¼ ACRE PER 100 LF OF TUBE.
4. SEDIMENT TUBES SHALL NOT BE USED ON PAVEMENT, ROCKY SOILS, OR AT ANY OTHER LOCATIONS WHERE THE STAKES CANNOT BE DRIVEN TO THE REQUIRED DEPTH.
5. SEDIMENT TUBES SHALL BE MANUFACTURED FROM WOOD EXCELSIOR, RICE OR WHEAT STRAW, COCONUT FIBERS, OR HARDWOOD MULCH THAT IS ENCLOSED BY A TUBULAR FLEXIBLE NETTING MATERIAL. ALL MATERIALS INCLUDING THE NETTING SHALL BE BIODEGRADABLE.
6. PINE NEEDLE AND LEAF MULCH FILLED SEDIMENT TUBES AND STRAW BALES ARE NOT ACCEPTABLE MATERIALS.
7. THE DIAMETER OF A SEDIMENT TUBE SHALL BE A MINIMUM OF 8 INCHES AND A MAXIMUM OF 32 INCHES. FOR SLOPE APPLICATIONS, A MINIMUM OF 12 INCHES. FOR DITCH APPLICATIONS, SEDIMENT TUBES SHALL BE A MINIMUM OF 20 INCHES.
8. SEDIMENT TUBES SHALL BE INSTALLED WITH WOODEN STAKES (MIN. 1.5" X 1.5" ACTUAL). THE STAKE SHALL BE EMBEDDED A MINIMUM OF 2 FEET.
9. SEDIMENT TUBES SHALL BE TRENCHED IN A MINIMUM OF 2 INCHES.
10. IF MORE THAN ONE SEDIMENT TUBE IS PLACED IN A ROW IN SLOPE APPLICATION, THE ENDS OF THE TUBES SHALL OVERLAP THE END STAKES. THE TUBES SHALL BE TIED OFF TO PREVENT F

NORTH

0 5 10 20

1" = 10'



LEGEND	
PP	EXISTING POWER POLE
MH	EXISTING MANHOLE
	EXISTING TREE GROUP
100	EXISTING CONTOUR
x x	EXISTING FENCE
SS	EXISTING SANITARY SEWER
OHE	EXISTING OVERHEAD ELECTRIC
	TO BE DEMOLISHED
	PERIMETER SEDIMENT CONTROL MEASURE
FM	EXISTING FORCEMAIN
	EXISTING GRAVEL

GENERAL NOTES:

1. BASE DRAWING DEVELOPED FROM "PARTIAL TOPOGRAPHIC SURVEY OF LIFT STATION AT #4417 RALEIGH LAGRANGE ROAD" DATED 11/18/21, PREPARED BY ASHWORTH ENGINEERING, PLLC. BROWN AND CALDWELL ASSUMES NO RESPONSIBILITY FOR ACCURACY OF THE SAME. DIMENSIONS, FEATURES, AND DETAILS MAY VARY FROM FIELD CONDITIONS. CONTRACTOR MUST VERIFY ALL EXISTING CONDITIONS THAT MAY IMPACT THE WORK.
2. EXISTING PIPE LOCATIONS SHOWN BASED ON CITY OF MEMPHIS GIS DATA AND FIELD VERIFICATION WHERE POSSIBLE. NOT ALL UNDERGROUND UTILITIES WERE LOCATED. CONTRACTOR SHALL VERIFY UTILITY AND PIPE LOCATIONS WITHIN ALL WORK AREAS PRIOR TO COMMENCING WORK.
3. ALL EXISTING INFRASTRUCTURE THAT IS TO REMAIN IN PLACE (PIPING, ELECTRIC CONDUITS, STORM PIPES, ETC.) TO BE PROTECTED IN ACCORDANCE WITH THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT, TENNESSEE CODE 65-31-101.

KEY NOTES:

1. DEMOLISH EXISTING ABOVE GRADE LIFT STATION INCLUDING PUMPS, PIPING, VALVES, FITTINGS, AND ACCESSORIES AS NECESSARY. EXISTING WET WELL STRUCTURE TO REMAIN IN PLACE.
2. CONTRACTOR TO PLACE EROSION CONTROLS AROUND AREAS OF DISTURBANCE TO PREVENT SEDIMENT RUNOFF FROM LEAVING THE WORK AREA. SEE DETAILS ON DRAWING G-003. ANY SEDIMENT THAT LEAVES THE WORK AREA, INCLUDING THAT TRACKED ONTO THE PAVEMENT, SHALL BE CLEANED UP IMMEDIATELY.
3. REPLACE FENCE AND GATES WITH MATERIALS THAT MATCH EXISTING.

NOTE: BEFORE THE BEGINNING OF CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY THE SITE DATUM WITH ALL SITE TBMS AND IMMEDIATELY REPORT IN WRITING ANY DISCREPANCIES TO THE ENGINEER.

SPECIAL FLOOD HAZARD STATEMENT:

THIS IS TO CERTIFY THAT BY GRAPHIC DETERMINATION THE ABOVE PLATTED PROPERTY IS NOT IN A SPECIAL FLOOD HAZARD AREA (SFHA) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD. THE SUBJECT PROPERTY IS SHOWN IN A FEMA ZONE X (NO SHADING ON FEMA MAP): AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO THE FEMA/FIRM MAP NUMBER 47157C0285F WITH AN EFFECTIVE DATE OF SEPTEMBER 28, 2007.

TEMPORARY BENCHMARK (T.B.M.) - TOP OF CONCRETE SLAB OF LIFT STATION

ELEVATION = 242.32 (NAVD88)

BENCHMARK (B.M.) - CITY OF MEMPHIS MONUMENT #865 - ELEVATION = 261.43 (NAVD88)

Know what's below. Call before you dig.

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

WILLIAM JAMES RAINES — REGISTERED ENGINEER — AGRICULTURE — COMMERCE — NO. 0010945 — STATE OF TENNESSEE

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. C-101

SEWER BASIN: WN04

SHEET 1 OF 2

DIVISION OF ENGINEERING

EXISTING SITE PLAN

4417 RALEIGH LAGRANGE RD.

MEMPHIS, TENNESSEE

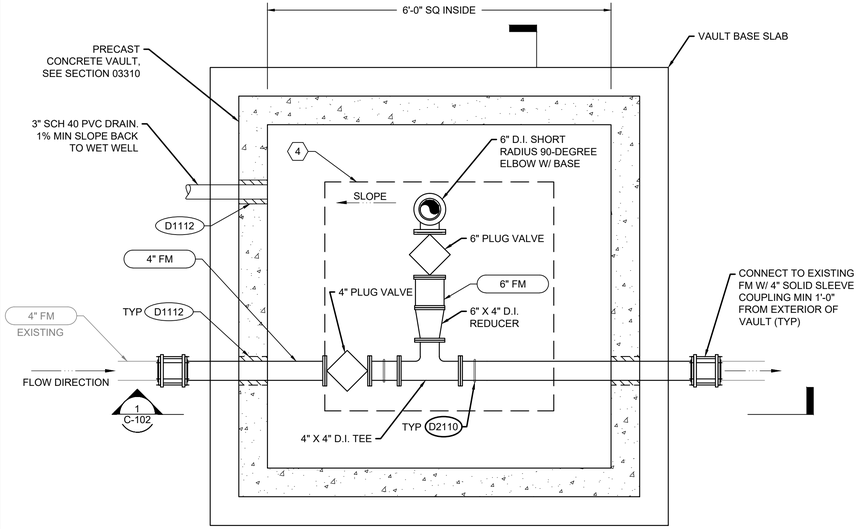
SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: WJR DATE: 06/24 SCALE: SHOWN

REVIEWED

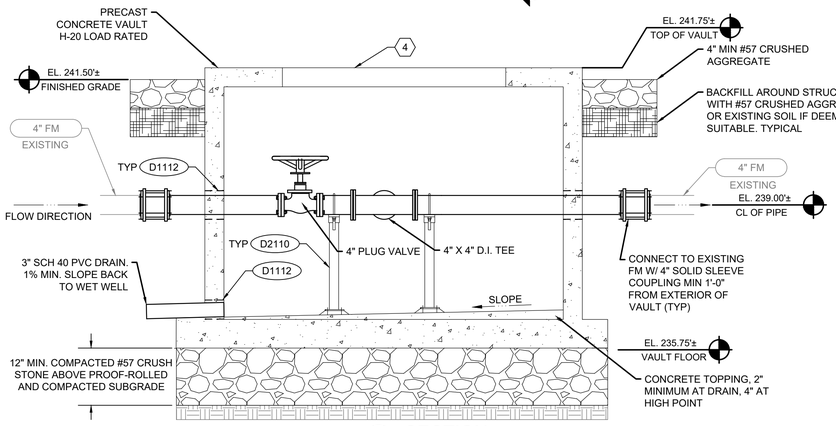
CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWD2304704 FILENAME: C-02-101.DWG PLOT DATE: 6/24/2024

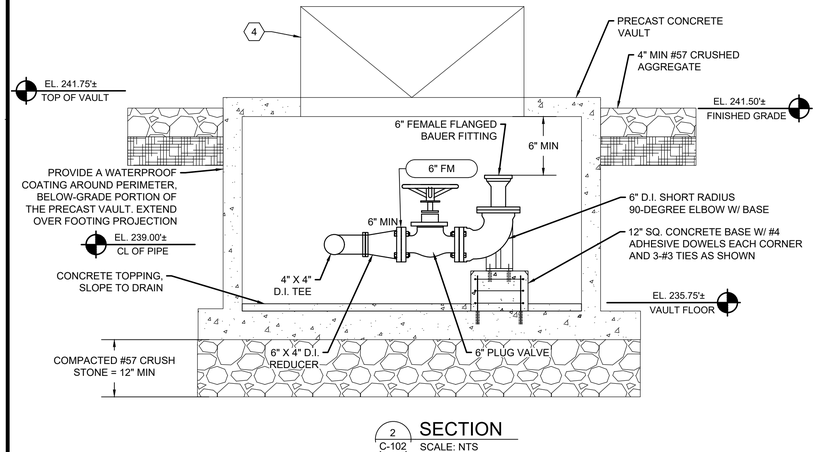


PLAN
SCALE: NTS

2 C-102

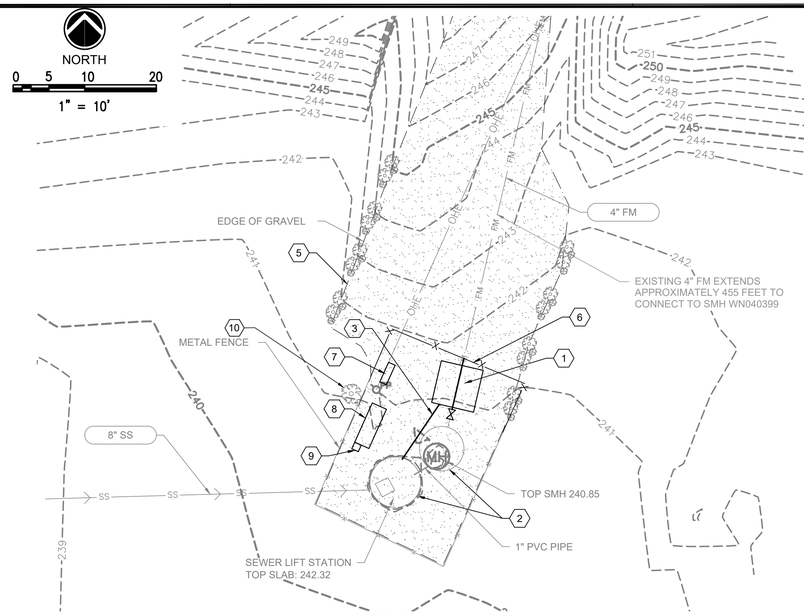


1 C-102 SECTION
SCALE: NTS



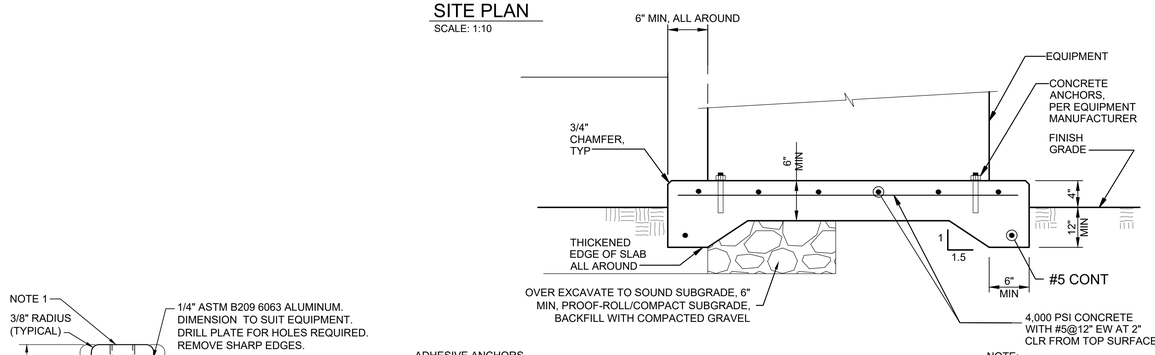
2 C-102 SECTION
SCALE: NTS

C C-102 FORCEMAIN EMERGENCY BYPASS CONNECTION DETAIL
SCALE: NTS

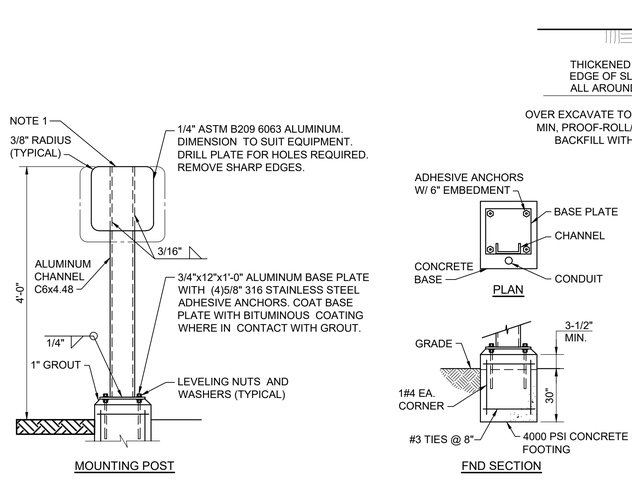


SITE PLAN
SCALE: 1:10

LEGEND	
PP	EXISTING POWER POLE
MH	EXISTING MANHOLE
	EXISTING TREE GROUP
100	EXISTING CONTOUR
X X	EXISTING FENCE
SS	EXISTING SANITARY SEWER
OHE	EXISTING OVERHEAD ELECTRIC
FM	EXISTING FORCEMAIN
X X	PROPOSED FENCE LOCATION
	EXISTING GRAVEL
	PROPOSED GRAVEL



A C-102 ELECTRICAL PANEL FOUNDATION DETAIL
SCALE: NTS



MOUNTING POST

FND SECTION

NOTES:
1. MOUNTING STAND PLATE: 2'x2' MAXIMUM

B C-102 INSTRUMENT SUPPORT DETAIL
SCALE: NTS

GENERAL NOTES:

1. BASE DRAWING DEVELOPED FROM "PARTIAL TOPOGRAPHIC SURVEY OF LIFT STATION AT #4417 RALEIGH LAGRANGE ROAD" DATED 11/18/21, PREPARED BY ASHWORTH ENGINEERING, PLLC. BROWN AND CALDWELL ASSUMES NO RESPONSIBILITY FOR ACCURACY OF THE SAME. DIMENSIONS, FEATURES, AND DETAILS MAY VARY FROM FIELD CONDITIONS. CONTRACTOR MUST VERIFY ALL EXISTING CONDITIONS THAT MAY IMPACT THE WORK.
2. EXISTING PIPE LOCATIONS SHOWN BASED ON CITY OF MEMPHIS GIS DATA AND FIELD VERIFICATION WHERE POSSIBLE. NOT ALL UNDERGROUND UTILITIES WERE LOCATED. CONTRACTOR SHALL VERIFY UTILITY AND PIPE LOCATIONS WITHIN ALL WORK AREAS PRIOR TO COMMENCING WORK.
3. ALL EXISTING INFRASTRUCTURE THAT IS TO REMAIN IN PLACE (PIPING, ELECTRIC CONDUITS, STORM PIPES, ETC.) TO BE PROTECTED IN ACCORDANCE WITH THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT, TENNESSEE CODE 65-31-101.
4. CONTRACTOR TO FIELD VERIFY AND CONFIRM EXISTING CONDITIONS AND ELEVATIONS PRIOR TO COMMENCING WORK. FINAL ELEVATIONS TO BE DETERMINED.
5. CONTRACTOR TO INSTALL PROPOSED EQUIPMENT AND APPURTENANCES AT ELEVATIONS, LOCATIONS, AND DIMENSIONS SAME AS EXISTING.
6. CONTRACTOR SHALL PROVIDE ALL FITTINGS, PIPING, JOINTS, AND APPURTENANCES AS NECESSARY FOR THE WORK SHOWN.
7. REFER TO ELECTRICAL DRAWINGS FOR ELECTRIC AND POWER DETAILS.
8. CONTRACTOR TO RESTORE ALL DISTURBED AREAS TO EXISTING CONDITIONS. DISTURBED GRASSED AREAS SHALL BE REVEGETATED. PAVEMENT AREAS THAT ARE CUT AND REMOVED AS PART OF THE WORK SHALL BE RESTORED TO MATCH EXISTING.
9. ALL NEW BURIED PIPING SHALL BE DUCTILE IRON WITH RESTRAINED MECHANICAL JOINTS. ALL NEW EXPOSED PIPING TO BE FLANGED DUCTILE IRON.
10. CONTRACTOR SHALL COORDINATE CORE-DRILLED HOLE SIZES AND LOCATIONS FOR PIPING PENETRATIONS WITH PRE-CAST MANUFACTURER.

KEY NOTES:

1. PROPOSED FORCEMAIN EMERGENCY BYPASS CONNECTION VAULT, SEE DETAIL C/102 ON THIS SHEET
2. INSTALL PROPOSED PUMPS, PIPING, VALVES, FITTINGS, AND ACCESSORIES WITHIN THE EXISTING WET WELL AND DRY-PIT. SEE PROCESS DRAWINGS FOR FURTHER DETAILS.
3. CONTRACTOR TO FIELD ROUTE NEW VAULT DRAIN LINE BACK TO WET WELL. SEE D-102 FOR CONNECTION TO WET WELL.
4. 48" x 48" (CLEAR OPENING) DOUBLE LEAF ALUMINUM ACCESS HATCH RATED FOR H-20 LOADING, PROVIDED BY USF FABRICATION, BILCO, HALLIDAY PRODUCTS, OR APPROVED EQUAL. ACCESS HATCH SHALL INCLUDE FALL PROTECTION SYSTEM PER OSHA REQUIREMENTS. PROVIDE AN ENGRAVED, VANDAL PROOF, WEATHER RESISTANT PLASTIC OR METAL SIGN, PERMANENTLY ATTACHED TO THE OUTSIDE TOP OF THE HATCH AS SUCH: "WARNING CONFINED SPACE, AUTHORIZED PERSONNEL ONLY"
5. TOP DRIVEWAY AREA WHERE SHOWN WITH MINIMUM 4 INCHES OF #57 AGGREGATE.
6. EXISTING FENCE AND ACCESS GATE. REPLACE EXISTING FENCE AND ACCESS GATE IN THEIR ENTIRETY. MATCH MATERIALS OF EXISTING FENCE AND GATE.
7. GENERATOR PLUG AND MANUAL TRANSFER SWITCH TO BE INSTALLED ON ELECTRICAL SUPPORT RACK. SEE ELECTRICAL DRAWINGS.
8. ELECTRICAL PANEL AND PAD. SEE DETAIL ON THIS SHEET.
9. LEVEL TRANSMITTER AND INSTRUMENT SUPPORT RACK. SEE DETAIL ON THIS SHEET.
10. TREE AND STUMP REMOVAL AND OFF-SITE DISPOSAL. REMOVE AND DISPOSE OF SYCAMORE (8" TO 18" DIAMETER) TREE ADJACENT TO LIFT STATION SITE. COORDINATE WITH OWNER.

SPECIAL FLOOD HAZARD STATEMENT:

THIS IS TO CERTIFY THAT BY GRAPHIC DETERMINATION THE ABOVE PLATTED PROPERTY IS NOT IN A SPECIAL FLOOD HAZARD AREA (SFHA) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD. THE SUBJECT PROPERTY IS SHOWN IN A FEMA ZONE X (NO SHADING ON FEMA MAP): AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO THE FEMA/FIRM MAP NUMBER 47157C0285F WITH AN EFFECTIVE DATE OF SEPTEMBER 28, 2007.

APPROVED FOR CONSTRUCTION:

THE DOCUMENT BEARING THIS STAMP HAS BEEN RECEIVED AND REVIEWED BY THE CITY OF MEMPHIS DIVISION OF ENGINEERING UNDER AUTHORITY DELEGATED BY THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION DIVISION OF WATER RESOURCES. IT IS HEREBY APPROVED FOR CONSTRUCTION BY THE CITY ENGINEER AS EVIDENCE BY HIS SIGNATURE IN THE TITLE BLOCK BELOW.

TEMPORARY BENCHMARK (T.B.M.) - TOP OF CONCRETE SLAB OF LIFT STATION

ELEVATION = 242.32 (NAVD88)

BENCHMARK (B.M.) - CITY OF MEMPHIS MONUMENT #865 - ELEVATION = 261.43 (NAVD88)

Tennessee811 Know what's below. Call before you dig.

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

WILLIAM JAMES RALPH REGISTERED ENGINEER AGRICULTURE CIVIL NO. 0010844 STATE OF TENNESSEE 6/24/2024

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. C-102

SEWER BASIN: WN04

SHEET 2 OF 2

DIVISION OF ENGINEERING

PROPOSED SITE PLAN

4417 RALEIGH LAGRANGE RD.

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: WJR DATE: 06/24 SCALE: SHOWN

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPW\D2304704 FILENAME: C-02-102.DWG PLOT DATE: 6/24/2024

VALVES

SCHEMATIC OR 2D	VALVE TYPE
	THREE WAY VALVE
	GATE VALVE (FLANGED)
	GATE VALVE (THREADED)
	PLUG VALVE (GEAR OPERATOR)
	PLUG VALVE (LEVER HANDLE)
	BALL VALVE (THREADED)
	BALL VALVE (FLANGED)
	BUTTERFLY VALVE (LUGGED/WAFER)
	BUTTERFLY VALVE (AWWA W/ HANDWHEEL ACTUATOR
	GLOBE VALVE (FLANGED)
	GLOBE VALVE (THREADED)
	DIAPHRAGM VALVE (FLANGED)
	DIAPHRAGM VALVE (THREADED)
	CHECK VALVE
	PUMP DISCHARGE VALVE
	DOUBLE LEAF CHECK VALVE
	ANGLE VALVE
	FLOAT VALVE
	PINCH VALVE
	FUSIBLE LINK VALVE
	NEEDLE VALVE
	BALL CHECK VALVE

SCHEMATIC OR 2D	VALVE TYPE
	GAUGE OR ROOT VALVE
	KNIFE GATE VALVE
	FLAP GATE
	BALANCING COCK
	CIRCUIT SETTER
	THERMOSTATICALLY CONTROLLED VALVE
	PRESSURE AND VACUUM RELIEF VALVE
	VACUUM RELIEF VALVE
	PRESSURE RELIEF VALVE
	IN-LINE, SPRING LOADED RELIEF VALVE
	PRESSURE REGULATING VALVE
	BACK PRESSURE REGULATING VALVE
S	SOLENOID VALVE
	DIAPHRAGM OPERATED VALVE
	PRESSURE BALANCE OPERATED VALVE
M	MOTOR OPERATED VALVE
	PISTON OPERATED VALVE
	CHLORINE INSTITUTE CONTAINER VALVE
	MUD VALVE
	WALL HYDRANT
	TELESCOPING VALVE
	BACKFLOW PREVENTER

MECHANICAL PIPE AND FITTINGS

2D SINGLE LINE	2D DOUBLE LINE	3D DOUBLE LINE	
			FLANGED JOINT
		OR	PLAIN OR GROOVED END MECHANICAL COUPLING
			PUSH ON OR BALL AND SOCKET JOINT
			MECHANICAL JOINT
			WELDED JOINT
			GROOVED END ADAPTER FLANGE x FLANGE
			UNION
			SLEEVE TYPE MECHANICAL COUPLING
			RESTRAINED SLEEVE TYPE MECHANICAL COUPLING
			FLANGED COUPLING ADAPTER
			RESTRAINED FLANGED COUPLING ADAPTER
			ELASTOMER AND FABRIC EXPANSION JOINT
			EXPANSION JOINT (SEE SPECS FOR TYPE)
			FLEXIBLE METAL HOSE
			ELBOW (PLAN)
			ELBOW UP
			ELBOW DOWN
			TEE (PLAN)
			TEE UP
			TEE DOWN
			LATERAL (PLAN)
			LATERAL UP
			LATERAL DOWN
			CONCENTRIC REDUCER
			ECCENTRIC REDUCER
			EQUIPMENT CONNECTION FITTING
			BLIND FLANGE OR CAP

MISCELLANEOUS DEVICES

A	UTILITY STATION (LETTER, IF ANY, DESIGNATES TYPE)
	HOSE RACK
	FLOOR DRAIN
XCO	CLEANOUT; X=DESIGNATION IF ANY
XKIP	RECOMMENDED MAIN ANCHOR POINT WITH ALLOWABLE FORCE ON STRUCTURE
	PIPE ANCHOR
W	SEAL WATER CONTROL UNIT
	QUICK COUPLING
	IN LINE PRESSURE SENSOR

XX	INSTRUMENT
DE	DENSITY ELEMENT
FE	FLOW ELEMENT
LE	LEVEL ELEMENT
PE	PRESSURE ELEMENT
PI	PRESSURE INDICATOR (GAUGE)
TE	TEMPERATURE ELEMENT
TI	TEMPERATURE INDICATOR

	CALIBRATION TUBE
	PULSATION DAMPENER

DEMOLITION SYMBOLS

	ITEMS SHADED SHALL BE DEMOLISHED AND REMOVED FROM THE SITE

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

BODY LAYNE MCCLAIN REGISTERED ENGINEER AGRICULTURE COMMERCE No. 119650 STATE OF TENNESSEE 6-24-24

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. D-001

SEWER BASIN: WN04

SHEET 1 OF 4

DIVISION OF ENGINEERING

LEGENDS AND SYMBOLS

4417 RALEIGH LAGRANGE RD.

MEMPHIS, TENNESSEE

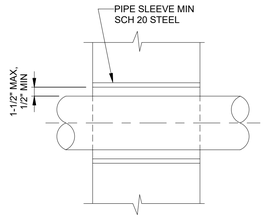
SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: CLM DATE: 06/24 SCALE: NONE

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

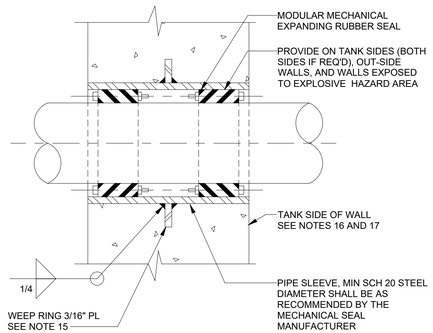
Path: C:\USERS\CGRANGER\BCPWD2304708 FILENAME: D-001_RALEIGH LAGRANGE.DWG PLOT DATE: 6/24/2024



FOR WALLS

D1102 TYPE B PIPE PENETRATION

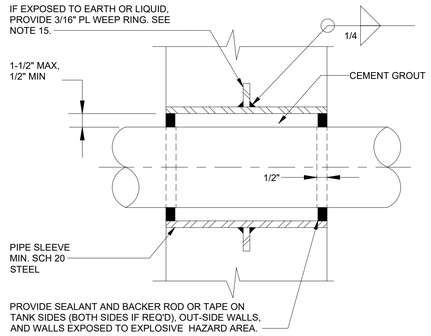
N.T.S.



FOR WALLS

D1104 TYPE D PIPE PENETRATION

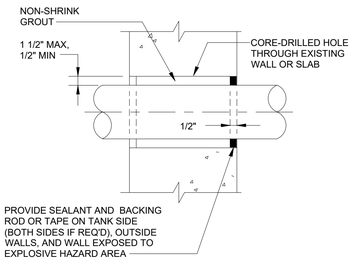
N.T.S.



FOR WALLS

D1105 TYPE E PIPE PENETRATION

N.T.S.



FOR PRECAST AND EXISTING
WALLS, FLOORS AND CEILINGS

D1112 TYPE X1 PIPE PENETRATION

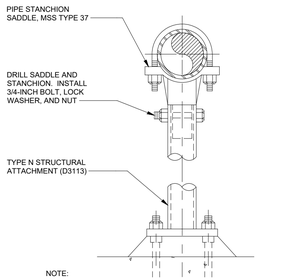
N.T.S.

GENERAL NOTES:

1. WHERE PIPES PASS THROUGH WALLS, FLOORS, OR CEILINGS, PENETRATIONS SHALL CONFORM TO TABLE, EXCEPT AS OTHERWISE SPECIFIED.
2. IN TABLE, "TANK" SHALL MEAN ANY PART OF A STRUCTURE CONTAINING LIQUID, OR IN CONTACT WITH THE EARTH.
3. IN TABLE, "PASSAGE" SHALL MEAN ANY ROOM, GALLERY, TUNNEL, OR SIMILAR ENCLOSURE.
4. IN TABLE, WATER SURFACE "WS" SHALL MEAN AN ELEVATION 9-INCHES ABOVE MAXIMUM WATER SURFACE SHOWN.
5. ALL STEEL SLEEVES SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
6. IN CONDITION 5, PENETRATION TYPE E,H,J, OR K SHALL BE USED WHERE ONE SIDE IS DESIGNATED AS HAZARDOUS (CLASSIFIED), WHERE FLOODING IS POSSIBLE, OR WHERE SPECIFIED.
7. SEAL FLANGES SHALL BE FACED AND DRILLED TO 150 POUND STANDARD. EACH JOINT SHALL BE FULL FACE GASKETED.
8. WHERE SPECIFIED, CAST IRON FLANGES MAY BE INSTALLED FLUSH WITH WALL AND TAPPED FOR STUDS.
9. PROVIDE CURB WHERE PENETRATING FLOOR, EXCEPT FOR PENETRATION TYPES A AND C. CURB SHALL BE 4" HIGH BY 3" WIDE.
10. PROVIDE A MINIMUM OF 3" CLEARANCE BETWEEN REINFORCING STEEL AND FERROUS METAL PENETRATIONS.
11. FLEXIBLE JOINTS SHALL BE PROVIDED FOR UNDERGROUND PIPING AS SPECIFIED.
12. RESTRAINED FLEXIBLE COUPLINGS FOR STEEL PIPE SHALL BE DESIGNED FOR 100 PSI LINE PRESSURE IN ACCORDANCE WITH AWWA MANUAL MII, FIGURES 19.15 AND 19.16. AWWA MANUAL M11, TABLE 19.7 SHALL BE UTILIZED.
13. UNLESS OTHERWISE SPECIFIED, INSULATION SHALL NOT EXTEND THROUGH SLEEVES. CHILLED WATER MUST PENETRATE WITH INSULATION.
14. WHERE CAST IRON PIPE IS EMBEDDED IN CONCRETE AT AN EXPANSION JOINT, USE TYPE L PENETRATION.
15. WEEP RINGS SHALL HAVE A MINIMUM DIAMETER 3-INCHES GREATER THAN THE OUTSIDE PIPE DIAMETER.
16. "TANK SIDE OF WALL" SHALL MEAN SIDE OF WALL NORMALLY EXPOSED TO LIQUID, EARTH, OR OUTSIDE ATMOSPHERE.
17. SEAL WITH MASTIC SEALANT WHERE WALL IS EXPOSED TO LIQUID, EARTH, OR A HAZARDOUS (CLASSIFIED) AREA.

PIPE PENETRATION TYPES

	CONDITION		TYPE		
	FROM	TO	STEEL PIPE	CAST IRON	PLASTIC PIPE
1	TANK	TANK BELOW W.S.	E, H OR K	E, F, G OR J	E
2	TANK	TANK ABOVE W.S.	D OR E	D OR E	D OR E
3	PASSAGE	TANK BELOW W.S.	E, H OR K	E, F, G OR J	E
4	PASSAGE	TANK ABOVE W.S.	A, C, D OR E	A, C, D OR E	A, C, D OR E
5	PASSAGE	PASSAGE	B OR C SEE NOTE 6	B OR C SEE NOTE 6	B OR C SEE NOTE 6
6	PASSAGE	OUTSIDE WALL	D OR E	D OR E	D OR E
7	PASSAGE	ROOF	AS SHOWN ON DRAWING OR X1		
8	TANK	OUTSIDE WALL	E OR F	E, F OR G	E



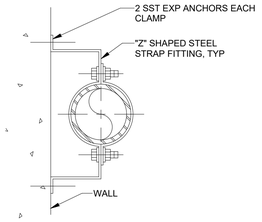
NOTE:

1. ABOVE SIZES ARE NOMINAL PIPE DIAMETERS IN INCHES
2. SPACING BETWEEN SUPPORTS SHALL BE PER TABLE A/D2301.
3. STANCHIONS INSTALLED OUTDOORS MUST WITHSTAND WIND SPEEDS OF UP TO 165 MILES PER HOUR.

3" THROUGH 20" PIPE

D2110 TYPE 10 PIPE STANCHION SADDLE

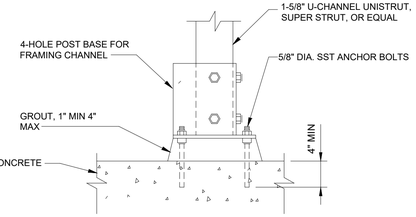
N.T.S.



FOR VERTICAL PIPE ONLY 3/4"
THROUGH 8" PIPE

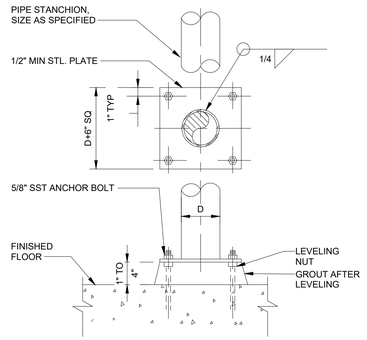
D2111 TYPE 11 OFFSET PIPE CLAMP

N.T.S.



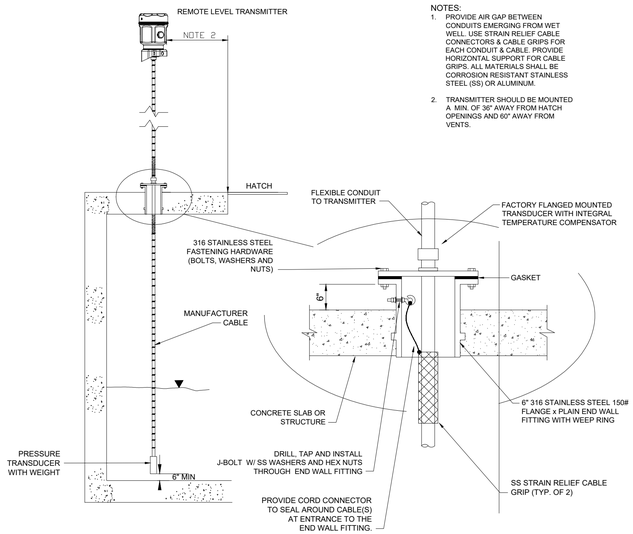
D3105 TYPE E FRAMING CHANNEL POST BASE

N.T.S.



D3113 TYPE N PIPE STANCHION FLOOR ATTACHMENT

N.T.S.



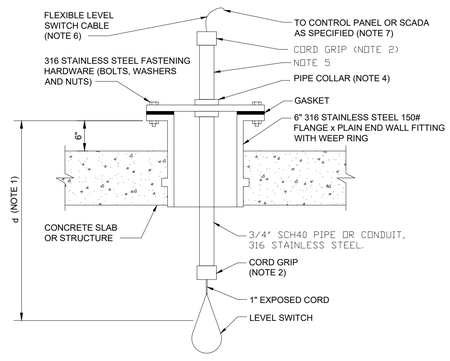
NOTES:

1. PROVIDE AIR GAP BETWEEN CONDUITS EMERGING FROM WET WELL. USE STRAIN RELIEF CABLE CONNECTORS & CABLE GRIPS FOR EACH CONDUIT & CABLE. PROVIDE HORIZONTAL SUPPORT FOR CABLE GRIPS. ALL MATERIALS SHALL BE CORROSION RESISTANT STAINLESS STEEL (SS) OR ALUMINUM.
2. TRANSMITTER SHOULD BE MOUNTED A MIN. OF 36" AWAY FROM HATCH OPENINGS AND 60" AWAY FROM VENTS.

SUBMERGED LEVEL / SENSOR
TRANSDUCER / FLANGE MOUNTED

I0005

N.T.S.



NOTES:

1. DISTANCE REQUIRED FOR SWITCH TO ACTUATE AT SPECIFIED LEVEL (d) .
2. PROVIDE NON-METALIC CORD GRIP SIZED FOR CORD ON SWITCH, T&B 2672 SERIES OR EQUAL. CONNECT TO CONDUIT WITH 316 STAINLESS STEEL COUPLING. PROVIDE SIMILAR GRIP FOR CONDUIT STUB-UP (NOT SHOWN) ALSO.
3. COORDINATE FLANGE UNIT AND STAND PIPE WITH TANK SUPPLIER OR CONCRETE INSTALLATION WORK.
4. TWO-PIECE CLAMP-TYPE PIPE COLLAR, 316 STAINLESS STEEL, STAFFORD 19S101PST, OR EQUAL. PROVIDE ONE ON EACH SIDE OF COVER TO SECURE PIPE. PROVIDE ONE WRAP OF VINYL TAPE UNDER CLAMP (SCOTCH 33, OR EQUAL) IF NECESSARY TO BUILD UP PIPE DIAMETER. BORE 1.06" HOLE IN END CAP FOR PIPE.
5. PROVIDE MINIMUM 12" OF PIPE BETWEEN TOP COLLAR AND GRIP TO ALLOW FOR ADJUSTMENT OF SWITCH ACTUATION LEVEL.
6. PROVIDE SLACK IN CABLE TO ALLOW WITHDRAWAL OF SWITCH WITHOUT DISCONNECTION. STORE CABLE BY WRAPPING CABLE AROUND BASE OF FLANGE. CONDUIT STUB-UP (NOT SHOWN) SHALL BE WITHIN 6 INCHES OF FLANGE AND SAME HEIGHT AS FLANGE.
7. PROVIDE 120V INTRINSICALLY SAFE BARRIER RELAY (GEMS 64101, DRYER SSR-15, OR EQUAL) IN LEVEL SWITCH TERMINAL BOX. LOCATE BOX AT EDGE OF (OUTSIDE) HAZARDOUS AREA.

LEVEL SWITCH
FLOAT SWITCH - FLANGED - IN SLAB

I6102

N.T.S.

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

CITY OF MEMPHIS — REGISTERED ENGINEER — BODY LAYNE MCCAY — AGRICULTURE — COMMERCE — NO. 119650 — STATE OF TENNESSEE — 6-24-24

DWG NO. D-002

SEWER BASIN: WN04

SHEET 2 OF 4

DIVISION OF ENGINEERING

STANDARD DETAILS

4417 RALEIGH LAGRANGE RD.

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: CLM DATE: 06/24 SCALE: NONE

REVIEWED

LIFT STATION DESIGN GROUP 3 C

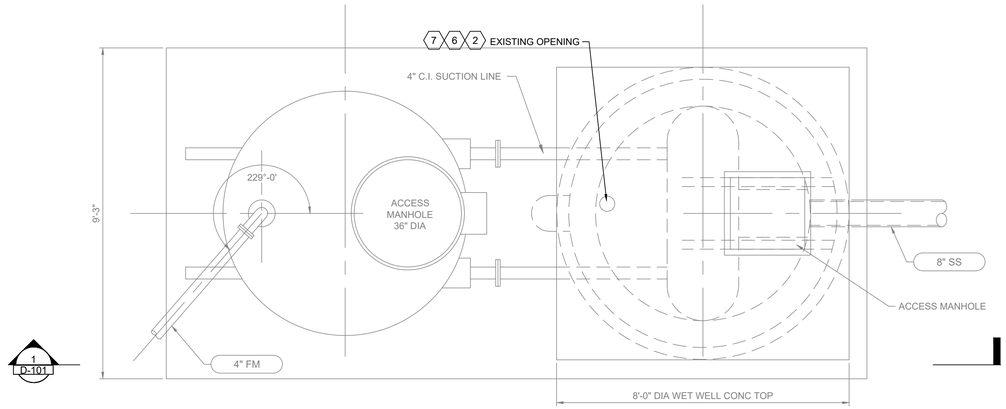
DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWID2304708 FILENAME: D-002_RALEIGH LAGRANGE.DWG PLOT DATE: 6/24/2024

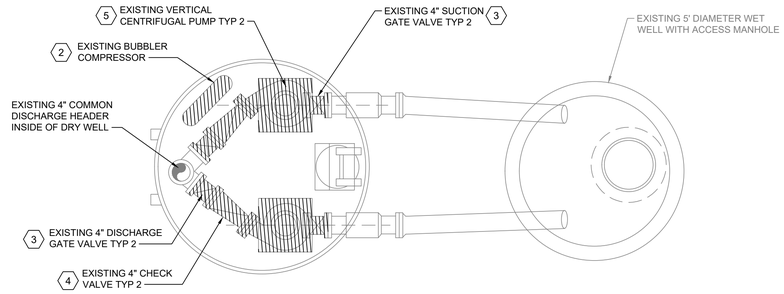
NORTH



1 D-101

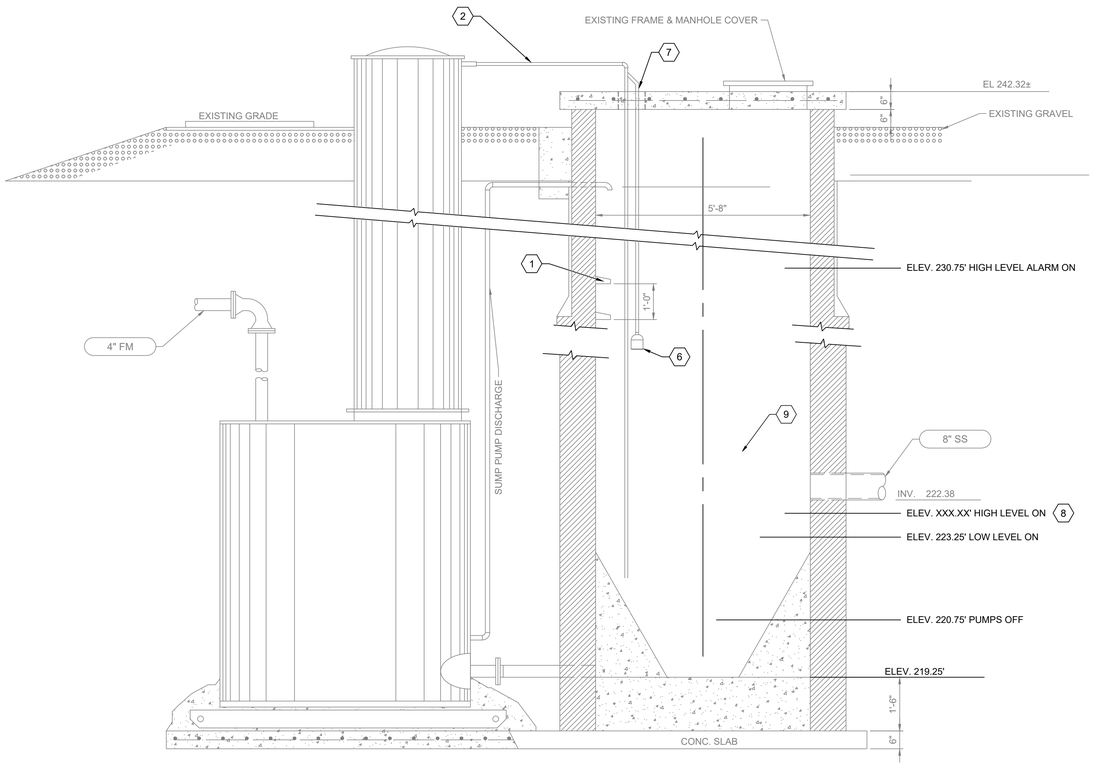
LIFT STATION PLAN

SCALE: 1/2" = 1'-0"



LIFT STATION LOWER LEVEL PLAN

SCALE: NTS



1 D-101

LIFT STATION SECTION

SCALE: 1/2" = 1'-0"

GENERAL NOTES:

1. DRAWING OF EXISTING PUMP STATION IS FOR REFERENCE ONLY. CONTRACTOR TO FIELD VERIFY EXISTING ELEVATIONS AND LOCATION OF EQUIPMENT.
2. DEMOLISH EXISTING PUMP, SUCTION AND DISCHARGE PIPING, AND ASSOCIATED APPURTENANCES FOR EACH DRY WELL PUMP AS SHOWN ON THIS DRAWING.

KEY NOTES:

1. DEMOLISH EXISTING STEPS IN WETWELL
2. DEMOLISH EXISTING BUBBLER SYSTEM, CONDUIT, WIRING, AND ASSOCIATED COMPONENTS.
3. DEMOLISH EXISTING GATE VALVES IN DRY WELL.
4. DEMOLISH EXISTING CHECK VALVES IN DRY WELL.
5. DEMOLISH EXISTING PUMPS IN DRY WELL.
6. DEMOLISH EXISTING FLOAT SWITCH, CABLE, CONDUIT, AND ACCESSORIES.
7. EXISTING OPENING IN WETWELL IS TO REMAIN AS-IS.
8. PER CONDITION ASSESSMENT REPORT LAG PUMP ON ELEVATION IS NOT PROVIDED. TO BE DETERMINED DURING CONSTRUCTION.
9. BAR SCREEN RACK AND FRAMING. REMOVE AND DISPOSE OF EXISTING BAR SCREEN RACK AND METAL FRAMING WITHIN INTERIOR OF EXISTING WET WELL.

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

JODY LAYNE MOORE REGISTERED ENGINEER AGRICULTURE 6-24-24 COMMERCE NO. 119650 STATE OF TENNESSEE

DWG NO. D-101

SEWER BASIN: WN04

SHEET 3 OF 4

DIVISION OF ENGINEERING

EXIST. LIFT STATION PLAN & SECTION

4417 RALEIGH LAGRANGE RD.

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

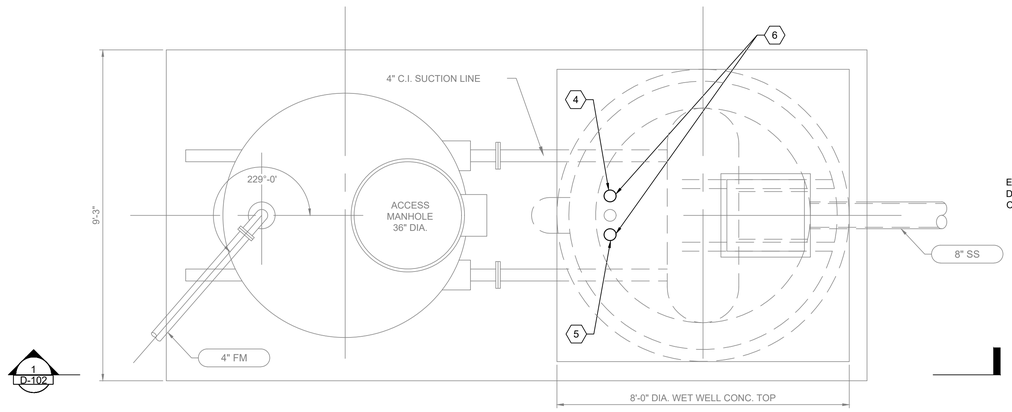
DESIGN BY: CLM DATE: 06/24 SCALE: SHOWN

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPW\D2304708 FILENAME: D-02-101.DWG PLOT DATE: 6/24/2024

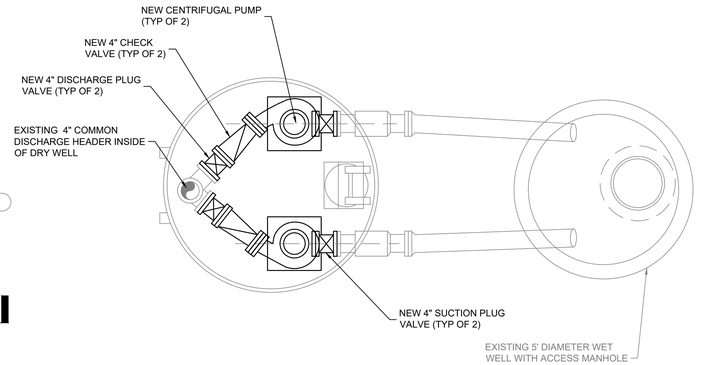
DESCRIPTION	EXISTING PUMPS 1 & 2
FLOW	100 GPM
TDH	89-FT



1 / D-102

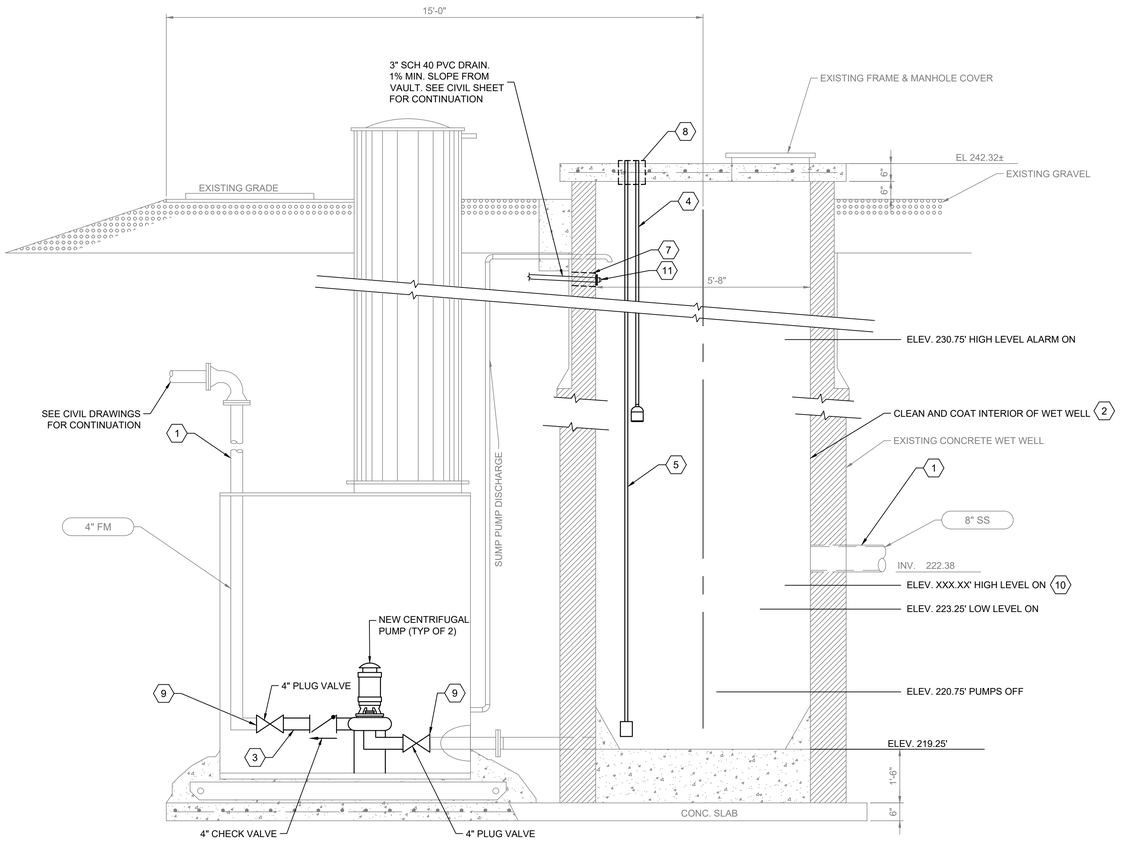
LIFT STATION PLAN

SCALE: 1/2" = 1'-0"



LIFT STATION LOWER LEVEL PLAN

SCALE: NTS



1 / D-102

LIFT STATION SECTION

SCALE: 1/2" = 1'-0"

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY AND CONFIRM EXISTING CONDITIONS AND ELEVATIONS PRIOR TO COMMENCING WORK.
2. CONTRACTOR TO INSTALL PROPOSED EQUIPMENT AND APPURTENANCES AT ELEVATIONS, LOCATIONS, AND DIMENSIONS SAME AS EXISTING.
3. INTERIOR OF EXISTING WET WELL SHALL BE DRAINED, CLEANED, AND LINED PRIOR TO INSTALLING PROPOSED EQUIPMENT AND ACCESSORIES. LINING SHALL BE INSTALLED AFTER NEW WALL PENETRATIONS ARE COMPLETED.
4. CONTRACTOR SHALL PROVIDE ALL FITTINGS, PIPING, JOINTS, AND APPURTENANCES AS SHOWN TO BE BY OTHERS AS NECESSARY FOR THE WORK SHOWN.
5. SEE ELECTRICAL DRAWINGS FOR CONDUIT ROUTING AND WIRING.
6. ALL PIPING IN WET WELL SHALL BE DUCTILE IRON MATERIAL.
7. SUMP PUMPS ARE TO REMAIN AS-IS AND ARE NOT SHOWN FOR CLARITY.
8. WHILE EFFORT HAS BEEN MADE TO SHOW PUMPS, VALVES, PIPING, AND FITTINGS, INFORMATION MAY NOT BE ACCURATE

KEY NOTES:

1. EXISTING INLET AND DISCHARGE PIPING ENTERING AND EXITING THE WET WELL TO REMAIN AS-IS.
2. WET WELL CLEANING, INSPECTIONS, AND LINING
   - 2.a. ONCE BYPASS PUMPING IS ESTABLISHED, POWER WASH AND DRAIN INTERIOR OF WET WELL.
   - 2.b. CONTRACTOR TO INSPECT CONDITION OF CONCRETE SURFACES AND PROVIDE BRIEF WRITTEN REPORT TO IDENTIFY SURFACE CONDITION RELATIVE TO ACCEPTABILITY TO RECEIVE PROTECTIVE LINING. CONTRACTOR TO CONSULT WITH LINING MANUFACTURER ON-SITE AS NEEDED. REPORT TO INCLUDE SUMMARY OF OBSERVATIONS, RECOMMENDATIONS FOR REPAIRS, AND INCLUDE SUPPORTING PHOTOS.
   - 2.c. PROVIDE REPAIR PROPOSAL AS NEEDED WITH RECOMMENDED REPAIR PRODUCTS AND PROCEDURES PRIOR TO PROCEEDING. PROVIDE APPROVAL LETTER FROM LINING MANUFACTURER TO SUPPORT REPAIR RECOMMENDATIONS.
   - 2.d. AFTER COMPLETION OF APPROVED CONCRETE REPAIRS, PROVIDE FINAL SURFACE PREP FOLLOWED BY LINING OF INTERIOR BASE, WALLS, AND CEILING AS SPECIFIED IN SECTION 02537.
3. REPLACE EXISTING PIPE AS SHOWN
4. HIGH LEVEL ALARM FLOAT, SEE DETAIL I6102/D-002
5. PRESSURE TRANSDUCER. SEE DETAIL I0005/D-002
6. CORE DRILL 6" DIAMETER OR SMALLER HOLE THROUGH CONCRETE TOP (CONTRACTOR COORDINATE). VERIFY REBAR LOCATION PRIOR TO DRILLING.
7. CORE DRILL MINIMUM 4" DIAMETER HOLE THROUGH SIDE OF WET WELL. USE NON-SHRINK GROUT TO FILL SPACE AROUND PIPE.
8. REFER TO DETAIL I0005 AND I6102 FOR PRESSURE TRANSDUCER AND FLOAT SWITCH INSTALLATION DETAILS.
9. CONNECTION BETWEEN NEW VALVES AND APPURTENANCES TO EXISTING 4" DI PIPE IN DRY WELL SHALL BE FLANGED CONNECTIONS.
10. PER CONDITION ASSESSMENT REPORT LAG PUMP ON ELEVATION IS NOT PROVIDED. TO BE DETERMINED DURING CONSTRUCTION.
11. 3" DUCKBILL CHECK VALVE

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

CODY LAYNE MCGEE — REGISTERED ENGINEER — No. 119638 — STATE OF TENNESSEE — 6-24-24

DWG NO. D-102

SEWER BASIN: WN04

SHEET 4 OF 4

DIVISION OF ENGINEERING

PROP. LIFT STATION PLAN & SECTION

4417 RALEIGH LAGRANGE RD.

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: CLM DATE: 06/24 SCALE: SHOWN

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWD2304708 FILENAME: D-02-102.DWG PLOT DATE: 6/24/2024

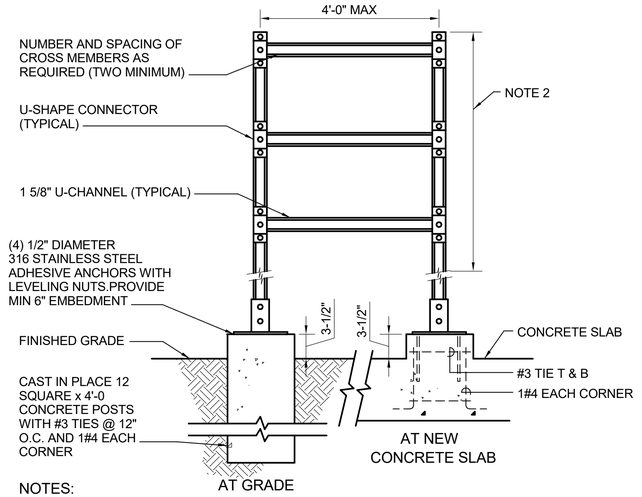
ELECTRICAL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	LIGHTING		**BASIC MATERIALS**
A	AREA LIGHT (LETTER REFERENCES FIXTURE SCHEDULE)	1	BRANCH CIRCUIT WIRE & CONDUIT RUN CONCEALED IN WALL OR ABOVE CEILING, HOME RUN TO PANELBOARD. A NUMERAL, IF PRESENT AT ARROW HEAD, INDICATES CIRCUIT NUMBER. ANY BRANCH CIRCUIT SHOWN WITHOUT SLASH MARKS INDICATES A CONDUIT CONTAINING (3) #12 AWG CONDUCTORS (HOT, NEUTRAL & GROUND). SLASH MARKS, IF PRESENT, INDICATE THE FOLLOWING: HOT (ENERGIZED) CONDUCTOR, NEUTRAL CONDUCTOR, & GROUND CONDUCTOR
	RED BEACON ALARM LIGHT		WIRE & CONDUIT RUN EXPOSED
	SERVICE AND DISTRIBUTION		WIRE & CONDUIT RUN IN OR UNDER FLOOR
	SWITCHBOARD		EXISTING LIGHT FIXTURE OR ELECTRICAL DEVICE MAY BE REMOVED AND/OR RELOCATED AND CIRCUITRY MADE CONTINUOUS WHERE REQUIRED. UNO, LINE TYPE TYPICAL FOR ALL DEVICES TO BE REMOVED AND/OR RELOCATED.
	DISTRIBUTION PANEL		
	BRANCH CIRCUIT PANEL		DISCONNECT SWITCH
T	TRANSFORMER	J	JUNCTION BOX
	MOTOR CONNECTION		PUSHBUTTON
G	GENERATOR CONNECTION	S_M	MANUAL MOTOR STARTER SWITCH
	DISCONNECT SWITCH (FUSED AS REQUIRED)	S	SINGLE-POLE, SINGLE-THROW (S.P.S.T.) WALL SWITCH
	MOTOR CONTROLLER (SPECIFIED IN OTHER THAN DIV. 26)	S_K	KEYED WALL SWITCH
	COMBINATION MOTOR CONTROLLER & DISCONNECT SWITCH (SPECIFIED IN OTHER THAN DIV. 26)	S_D	WALL BOX DIMMER CONTROL
⊗	EQUIPMENT NOT FURNISHED UNDER DIV. 26 (SPECIFIED IN OTHER THAN DIV. 26)	S_3	SINGLE-POLE, DOUBLE-THROW (S.P.D.T.) WALL SWITCH
M	ELECTRIC METER	S_{OS}	WALL SWITCH WITH OCCUPANCY SENSOR
R	RELAY		SINGLE RECEPTACLE IN WALL (NEMA 5-20R)
CB	CIRCUIT BREAKER		DUPLEX RECEPTACLE IN WALL (NEMA 5-20R)
LC	LIGHTING CONTACTOR	$_{GFCI}$	G.F.I. TYPE DUPLEX RECEPTACLE IN WALL (NEMA 5-20R)
PC	PHOTOCELL		DUPLEX RECEPTACLE IN WALL, EMERGENCY CIRCUIT (NEMA 5-20R)
			DOUBLE DUPLEX RECEPTACLE IN WALL (NEMA 5-20R)
		$_{WP}$	G.F.I. TYPE DUPLEX RECEPTACLE OUTDOORS (WEATHERPROOF)
			SINGLE 240V RECEPTACLE FOR APPLIANCE OR EQUIPMENT (PER APPLIANCE RATING)
		$_{X}$	X = TR (TAMPER RESISTANT) OR AF (ARC FAULT)
		$_{IG}$	DUPLEX RECEPTACLE IN WALL WITH ISOLATED GROUND
			POINT OF CONNECTION

ELECTRICAL ABBREVIATIONS

SYMBOL	DESCRIPTION
A	AMPERE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERES INTERRUPTING CURRENT
ANN	ANNUNCIATOR
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLP	CURRENT LIMITING PANEL
CT	CURRENT TRANSFORMER
CU	COPPER
DISC	DISCONNECT
EDF	ELECTRIC DRINKING FOUNTAIN
FAAP	FIRE ALARM ANNUMNICATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPS
G	GROUND
GFI	GROUND FAULT CURRENT INTERRUPTER
HP	HORSEPOWER
HZ	HERTZ
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT-AMPERE
KW	KILOWATT
LED	LIGHT EMITTING DIODE
MCC	MOTOR CONTROL CENTER
MLO	MAIN LUGS ONLY
N	NEUTRAL
NEC	NATIONAL ELECTRIC CODE
PF	POWER FACTOR
SOWB	SPACE ONLY WITH BUS
UGW	UNDERGROUND ELECTRICAL
V	VOLT
VA	VOLT-AMPERE
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHER PROOF
XFMR	TRNASFORMER
3P	THREE POLE
3PH	THREE PHASE
4W	FOUR WIRE
30/3	30 AMPERE, 3-POLE

CODE ANALYSIS - INTERNATIONAL BUILDING CODE 2015
CODE COMMENTS
JURISDICTION
Memphis and Shelby County Construction Code Enforcement
APPLICABLE CODES
2015 International Building Code with Local Amendments
2015 International Existing Building Code with Local Amendments
2015 International Residential Code with Local Amendments
2014 National Electrical Code
2018 Joint Electrical Code
2015 International Mechanical Code with Local Amendments
2015 International Fuel Gas Code with Local Amendments
2015 International Plumbing Code with Local Amendments
2015 International Energy Conservation Code with Local Amendments
2009 ICC A117.1 Accessibility and Useable Buildings and Facilities)by reference)
2013 ASME 17.1 Safety Code for Elevators and Escalators (by reference)

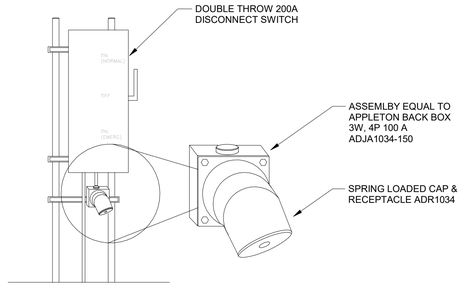


NOTES:

1. EQUIPMENT RACK SIZING:
   A. ONE ITEM GREATER THAN 150 SQUARE INCHES.
   B. TWO EQUIPMENT ITEMS GREATER THAN 130 SQUARE INCHES.
   C. THREE OR MORE EQUIPMENT ITEMS.
   D. PROVIDE 316 STAINLESS STEEL CHANNEL END-CAPS, AND FITTINGS
   E. PROVIDE 1/4" MINIMUM ALUMINUM PLATE FOR SMALL ITEMS
2. MOUNT INDICATORS OR EQUIPMENT OPERATING HANDLES FOUR FEET ABOVE FLOOR OR PLATFORM.
3. MATERIAL AND HARDWARE PER SPECIFICATION DIVISION 16.

EQUIPMENT SUPPORT

SCALE: N.T.S.



GENERATOR PLUG

SCALE: N.T.S.

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

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

RYAN J. HEWITT REGISTERED ENGINEER AGRICULTURE COMMERCE No. 106919 STATE OF TENNESSEE 6/24/24

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CADWELL

DWG NO. E-001

SEWER BASIN: WN04

SHEET 1 OF 2

DIVISION OF ENGINEERING

ELECTRICAL - STANDARD DETAILS 1

4417 RALEIGH LAGRANGE LIFT STATION
MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: RJH DATE: 06/24 SCALE: SHOWN

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

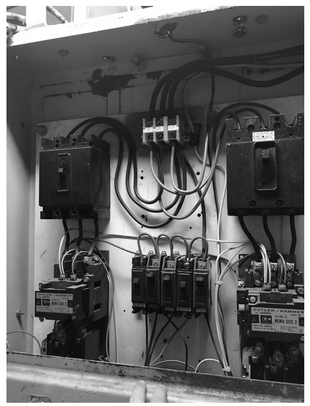
Path: P:\2021\21001 - SARP 10 - GROUP 3 LIFT STATIONS\CAD\XREFS FILENAME: 157456_TB.DWG PLOT DATE: ---- CAD USER: PAT HAGAN

VIEW FROM ACCESS ROAD

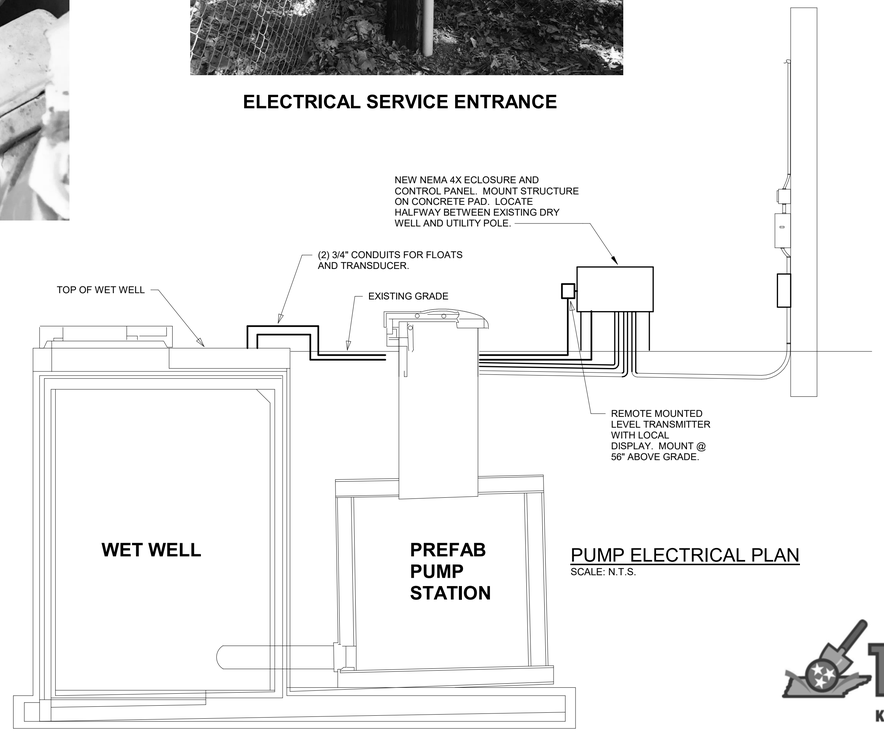
PUMP AND MOTOR

BUBBLER COMPRESSOR

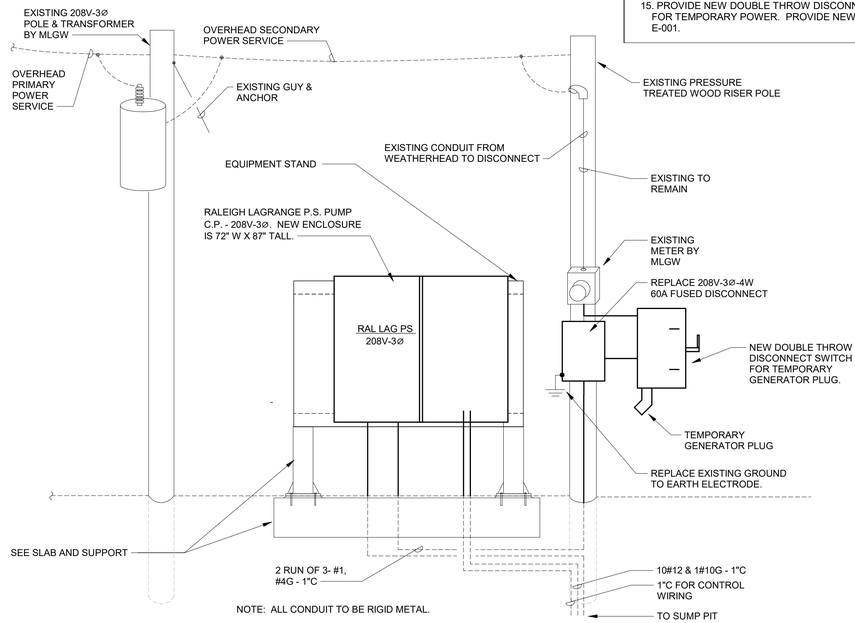
ELECTRICAL SERVICE ENTRANCE



ELECTRICAL CONTROLS



PUMP ELECTRICAL PLAN
SCALE: N.T.S.



RISER & SINGLE LINE DIAGRAM
SCALE: N.T.S.

GENERAL NOTES:

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE, AND ALL OTHER APPLICABLE STANDARDS AND REGULATIONS ENFORCED BY THE AUTHORITY HAVING JURISDICTION.
2. ALL ABOVE GROUND EXTERIOR CONDUIT SHALL BE GALVANIZED RIGID STEEL CONDUIT WITH CORROSION RESISTANT FITTINGS, CLAMPS AND SUPPORT.
3. IN THE EVENT OF CONFLICTS BETWEEN THE DRAWINGS, SPECIFICATIONS, CODES AND REGULATIONS, NOTIFY THE ENGINEER OF RECORD FOR HIS OPINION PRIOR TO INSTALLATION.
4. SHOP DRAWINGS SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL AND TO THE ENGINEER FOR REVIEW.
5. SMACNA SEISMIC RESTRAINT MANUAL, THIRD EDITION 2008, OR LATEST REVISION MAY BE USED AS A GUIDE FOR GENERAL SEISMIC SUPPORT DETAIL AND SUPPORT SPACING RECOMMENDATIONS.
6. COORDINATE LOCATION OF ALL LIGHTING FIXTURES, MECHANICAL EQUIPMENT AND ACCESS PANELS WITH EXISTING CONDITIONS PRIOR TO ROUGH-IN.
7. WHILE EFFORT HAS BEEN MADE TO IDENTIFY EXISTING CIRCUITS THAT ARE TO BE REMOVED OR REPLACED, THE INFORMATION MAY NOT BE ACCURATE.
8. ELECTRICAL CONTRACTOR SHALL VERIFY VOLTAGE AND AMP DRAW FOR ALL NEW EQUIPMENT.
9. ALL ELECTRICAL GEAR SHALL BE MOVED FROM THE PIT TO ABOVE GROUND. VERIFY NEW CONTROL PANEL WORKS WITH ANY REMAINING EQUIPMENT OR CONTROLS IN THE PIT.
10. REPLACE THE (2) 10HP PUMPS WITH (2) 10HP PUMPS. RUN NEW WIRE AND CONDUIT FROM THE NEW CONTROL PANEL ABOVE GRADE TO THE TWO NEW PUMPS.
11. THE MAIN CONTROL PANEL IS FED WITH AN EXISTING 208V 3PH 60A FUSED DISCONNECT ABOVE GRADE. ALL AUXILIARY EQUIPMENT IS CURRENTLY FED FROM THE CONTROL PANEL IN THE PIT. EXTEND POWER TO LIGHT, SUMP PUMP, BLOWER/DEHUMIDIFIER, & AIR COMPRESSOR USING ISO CABLE FROM THE NEW ENCLOSURE ABOVE GRADE TO THE EQUIPMENT. REPLACE 60A CIRCUIT BREAKER AND ENCLOSURE.
12. USE KELLUM TYPE WIRE MESH HANGERS TO SUPPORT ALL CORDS COMING FROM THE PUMP STATION CEILING. PROVIDE CLIPS ON THE WALL TO KEEP CORDS CLEAR OF SERVICE AREA.
13. CONTRACTOR SHALL ROUTE NEW CONDUITS FOR TRANSDUCER AND FLOATS IN A LOGICAL AND NEAT WORKMANSHIP MANNER.
14. BUBBLER SYSTEM AND COMPONENTS TO BE REMOVED. REFER TO "D" SHEETS.
15. PROVIDE NEW DOUBLE THROW DISCONNECT AND GENERATOR PLUG FOR TEMPORARY POWER. PROVIDE NEW SUPPORT. SEE DETAIL ON E-001.

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

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

RYAN J. HERTTER REGISTERED ENGINEER DIVISION OF ENGINEERING COMMISSION No. 106919 STATE OF TENNESSEE 6/24/24

LIFT STATION DESIGN GROUP 3 C
DEVELOPER: SARP 10
ENGINEER: BROWN AND CADWELL

DWG NO. E-101

SEWER BASIN: WN04

SHEET 2 OF 2

DIVISION OF ENGINEERING

ELECTRICAL - PLAN AND RISER DIAGRAM

4417 RALEIGH LAGRANGE LIFT STATION
MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127
DESIGN BY: RJH DATE: 06/24 SCALE: SHOWN

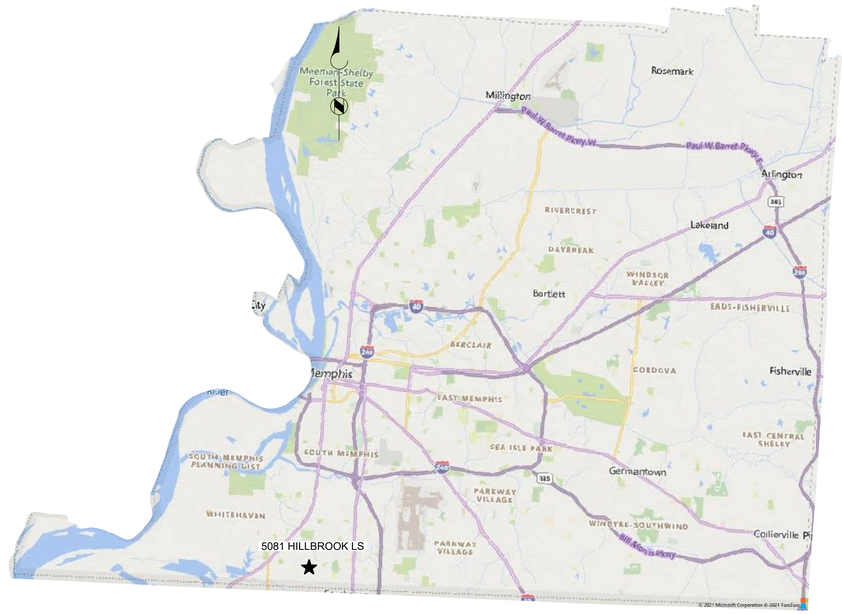
CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

LIFT STATION DESIGN GROUP 3 C
5081 HILLBROOK RD. LIFT STATION
SEWER ASSESSMENT & REHABILITATION PROGRAM (SARP10)
CITY OF MEMPHIS, TENNESSEE

SERVICE CONTRACT NO.
409278.61.0127

LOCATION MAP
MAP NOT TO SCALE

JUNE 2024
ISSUED FOR BID



VICINITY MAP
MAP NOT TO SCALE

PREPARED BY:

Brown AND Caldwell

Environmental Engineers and Consultants
1661 International Drive, Suite 400, Memphis, TN 38120
Phone: 901-708-4333

GENERAL NOTES:

1. AT ALL CROSSINGS OF EXISTING UTILITIES, THE CONTRACTOR SHALL FIELD LOCATE BY POST HOLING OR OTHER APPROPRIATE METHODS, THE HORIZONTAL AND VERTICAL LOCATION ALL EXISTING UTILITIES.
2. ALL SEWER TRENCHES SHALL BE PROPERLY BACKFILLED AT THE END OF EACH WORK DAY.
3. ALL DISTURBED AREAS SHALL BE SEEDED (WITH A SEASONAL MIX) AND COVERED WITH STRAW AT THE END OF EACH WEEK (AT A MINIMUM) OR MORE FREQUENTLY, AS CONDITIONS DICTATE, IN ADDITION TO EROSION CONTROLS REFERENCED ON PLANS.
4. ALL DISTURBED LAWN AREAS SHALL BE SODDED. MATCH EXISTING SOD TYPE.
5. CONTRACTOR IS FULLY RESPONSIBLE FOR DAMAGES OF EXISTING UTILITIES, AND PUBLIC/PRIVATE INFRASTRUCTURE AND PROPERTY. ANY DAMAGE TO EXISTING INFRASTRUCTURE (ABOVEGRADE OR BELOWGRADE) CAUSED BY THE CONTRACTOR'S OPERATIONS WILL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

SANITARY SEWER NOTES:

1. LOCATION OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND ARE NOT NECESSARILY ALL OF SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE APPROPRIATE UTILITY COMPANY TO DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND/OR UNDERGROUND STRUCTURES PRIOR TO THE INITIATION OF ANY CONSTRUCTION. CONTRACTOR SHALL ALSO ASSUME FULL RESPONSIBILITY FOR LOCATION OF EXISTING UTILITIES INVOLVING MLG&W, SOUTH CENTRAL BELL, AND/OR TEXAS GAS COMPANY, PLEASE CALL 1-800-351-1111. FOR SEWER SERVICE LOCATIONS, CALL 1-800-351-1111.
2. CONTRACTOR SHALL ENSURE UNINTERRUPTED SEWER SERVICE ON EXISTING SEWER AND SERVICE CONNECTIONS BY PROVIDING AMPLE TEMPORARY WASTEWATER PUMPING AND /OR BYPASSING.
3. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES.
4. CONTRACTOR SHALL NOTIFY THE CITY OF MEMPHIS CONSTRUCTION INSPECTION OFFICE AT 729-2462 A MINIMUM OF 24 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION.
5. ALL AREAS IN CUT OR FILL WHERE VEGETATION HAS BEEN REMOVED SHALL BE SEEDED, MULCHED, FERTILIZED, AND /OR SODDED AS REQUIRED TO PREVENT EROSION.
6. THE CONTRACTOR SHALL VERIFY EXISTING DATA AND REPORT ANY SIGNIFICANT DISCREPANCIES TO THE ENGINEER.
7. ALL SANITARY SEWER TO BE CONSTRUCTED AS PER CITY OF MEMPHIS STANDARDS CONSTRUCTION SPECIFICATIONS. SANITARY SEWER CONNECTIONS TO BE INSTALLED AS PER CITY OF MEMPHIS STANDARD SST-16.
8. ALL SEWER MANHOLE LIDS IN OPEN AREAS ARE TO BE CONSTRUCTED 1.5' ABOVE PROPOSED GRADE; IN BACKYARDS, MANHOLE LIDS ARE TO BE 1.5' ABOVE INITIAL GRADE, 0.5' ABOVE FINAL GRADE.
9. ALL SANITARY SEWER, INCLUDING SERVICE CONNECTIONS, WHICH HAS LESS THAN 1.5 CLEARANCE (OUTSIDE OF PIPES) WITH DRAINAGE OR IN FILLED AREAS SHALL BE CLASS 50 D.I.P. OR CONCRETE ENCASED, 10' BOTH SIDES OF CROSSING. ALL DUCTILE IRON PIPE SHALL BE POLYETHYLENE LINED OR SHALL BE TREATED WITH PROTECTO 401 OR APPROVED EQUIVALENT.
10. THE CITY OF MEMPHIS SHALL HAVE INGRESS/EGRESS RIGHTS TO USE PRIVATE YARDS FOR THE PURPOSE OF MAINTAINING ALL PUBLIC SEWER LINES AND SHALL BEAR NO RESPONSIBILITY FOR THE MAINTENANCE OF SAID PRIVATE DRIVES AND YARDS.
11. NO TREES, SHRUBS, PERMANENT STRUCTURES OR OTHER UTILITIES (EXCEPT FOR CROSSINGS) WILL BE ALLOWED WITHIN SANITARY SEWER EASEMENT. NO OTHER UTILITIES OR SERVICES MAY OCCUPY SANITARY SEWER EASEMENTS IN PRIVATE DRIVE AND YARDS EXCEPT FOR CROSSINGS.
12. ALL SANITARY SEWER MANHOLES IN REVERSE CROWN STREETS, ALLEYS OR DRIVES (PUBLIC OR PRIVATE) SHALL BE PROVIDED WITH GASKETS AND PLUGS FOR "PICK HOLES" TO PREVENT DRAINAGE INFLOW INTO SEWER SYSTEM.
13. THE CONTRACTOR SHALL PROVIDE ADEQUATE AND EFFECTIVE EROSION CONTROL AS NECESSARY TO PREVENT ANY SEDIMENT FROM ENTERING EXISTING DRAINAGE SYSTEM AND /OR ADJACENT PROPERTIES.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL REMOVE ALL UNDERGROUND UTILITIES AND ANY OTHER ITEMS IN ACCORDANCE WITH THE TDEC AND THE TECHNICAL SPECIFICATIONS. THE CONTRACTOR SHALL STRICTLY FOLLOW ALL CITY, STATE, AND FEDERAL GUIDELINES FOR REMOVAL AND DISPOSAL OF THESE FACILITIES.
2. ALL BUILDING, CONCRETE, ASPHALT PAVEMENT, AND GRANULAR SUBBASE IN AREAS OF DEMOLITION SHALL BE REMOVED FULL DEPTH PER THE DIRECTION OF THE GEOTECHNICAL ENGINEER. ALL SHALL BE DISPOSED IN ACCORDANCE WITH ALL CITY, STATE AND FEDERAL REGULATIONS.
3. CONTRACTOR SHALL REMOVE & REPAIR PAVEMENT AS REQUIRED FOR UTILITY CONSTRUCTION INCLUDING BUT NOT LIMITED TO : IRRIGATION SLEEVES, SITE LIGHTNING CONDUITS, WATER LINES, SANITARY SEWER LINES, STORM DRAINAGE LINES, ETC. CONTRACTOR HAS AN OPTION TO BORE CONDUITS.
4. PRIOR TO COMMENCING ANY UTILITY WORK, CONTRACTOR SHALL NOTIFY ANY SURROUNDING PROPERTY OWNERS WHO MAY EXPERIENCE A DISRUPTION IN SERVICE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MODIFYING ANY EXISTING IRRIGATION SYSTEM TO ACCOMMODATE PARTS OF THAT EXISTING SYSTEM THAT ARE REMOVED, ABANDONED OR DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL ALSO MODIFY ANY EXISTING IRRIGATION SYSTEM TO ACCOMMODATE NEW AREAS OF LANDSCAPING. ANY IRRIGATION SLEEVES SHALL BE INSTALLED PRIOR TO PAVING AND BACKFILLED PROPERLY BY THE SITE CONTRACTOR.
6. THE CONTRACTOR SHALL ENSURE ADEQUATE ACCESS IS PROVIDED DURING ALL PHASES OF CONSTRUCTION. COORDINATE WITH THE PROJECT MANAGER.
7. WHEN REMOVING UTILITIES, CONTRACTOR SHALL GROUT AND SEAL ANY STRUCTURES THAT ARE TO REMAIN PER LOCAL REGULATIONS.
8. UTILITIES SHOWN ARE LOCATED BY FIELD SURVEY AND RECORD DRAWINGS. ADDITIONAL UNDERGROUND UTILITIES WILL BE ENCOUNTERED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE ANY INACTIVE STRUCTURE & ALERT ENGINEER OF ANY ACTIVE, UNMAPPED STRUCTURES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION OF UTILITY DEMOLITION & RELOCATION.
10. CONTRACTOR SHALL NOT INTERRUPT DRAINAGE FROM ADJACENT PROPERTIES AND PUBLIC RIGHT-OF-WAYS.
11. ALL PUMPS, MOTORS, VALVES ETC REMOVED SHOULD BE RETURNED TO MEMPHIS WTCS DEPARTMENT. CONTACT JAMES GREENLEE FOR FURTHER DIRECTIONS, 901-636-0237.

EROSION CONTROL NOTES:

1. CONSTRUCTION ENTRANCES (TO THE OFFICE OR LAY DOWN AREA, AND TO WORK AREAS) TO BE A MINIMUM 6" DEPTH T.D.O.T. NO. 1 OR NO. 2 STONE.
2. INSTALL SEDIMENT TUBE, WATTLES OR SILT FENCE AS DICTATED ON THE EROSION CONTROL PLANS. SEE DETAILS FOR MORE INFORMATION.
3. ALL STOCK PILE AREAS TO BE PROTECTED BY A COMBINATION OF SEDIMENT TUBE OR WATTLES AND SILT FENCE.
4. INSTALL INLET PROTECTION DEVICES AT STORM INLETS PRIOR TO CONSTRUCTION. SEE PLANS FOR LOCATIONS.
5. ALL NEWLY CUT OR FILL AREAS LACKING ADEQUATE VEGETATION SHALL BE FERTILIZED, MULCHED, SEEDED, AND /OR SODDED TO EFFECTIVELY CONTROL EROSION.
6. A SPECIFIC INDIVIDUAL SHALL BE DESIGNATED TO BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS ON EACH PROJECT SITE.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SOIL EROSION CONTROL MEASURES AS NOTED ON THE PLANS AND AS REQUESTED BY THE OWNER DURING THE CONSTRUCTION, AND AS NECESSARY TO PREVENT THE SEDIMENT FROM LEAVING THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SATISFYING THE REQUIREMENTS OF THE STATE OF TENNESSEE EROSION & SEDIMENT CONTROL HANDBOOK. ALL SOIL EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE CONTRACT SO AS TO PREVENT ANY SEDIMENTATION FROM WASHING OFF THE SITE ONTO ADJACENT PROPERTY OR PUBLIC RIGHTS-OF-WAY. SEDIMENT FENCE SHALL BE INSTALLED AS DIRECTED. THE CONTRACTOR SHALL MAINTAIN A LOG OF ALL MAINTENANCE ACTIVITIES FOR THE EROSION ELEMENTS AS REQUIRED BY THE STATE OF TENNESSEE DEPARTMENT OF WATER POLLUTION CONTROL.
8. A COPY OF THE EROSION CONTROL PLAN MUST BE AVAILABLE ON SITE FOR THE DWPC INSPECTOR ON REQUEST.
9. EROSION AND SEDIMENT CONTROL MEASURES MUST BE IN PLACE AND FUNCTIONAL BEFORE EARTH MOVING OPERATIONS BEGIN, AND MUST BE CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. TEMPORARY MEASURES MAY BE REMOVED AT THE BEGINNING OF THE WORK DAY, BUT MUST BE REPLACED AT THE END OF THE WORK DAY OR PRIOR TO RAINFALL EVENTS.
10. ALL CONTROL MEASURES SHALL BE CHECKED AND STATE REQUIREMENTS FOR MAINTENANCE AND REPAIRS SHALL BE MADE AS NECESSARY. DURING PROLONGED RAINFALL, DAILY CHECKING AND REPAIRING IS NECESSARY. THE PERMITTEE SHALL MAINTAIN RECORDS OF INSPECTION CHECKS, MAINTENANCE, AND REPAIRS.
11. THIS PLAN HAS BEEN REVIEWED AND APPEARS TO BE ADEQUATE. IF SEWER PIPE INSTALLATION BY BORE DOES NOT PROVIDE FOR EFFECTIVE SEDIMENT CONTROL AND EROSION PROTECTION, ADDITIONAL MEASURES WILL BE REQUIRED.
12. IF PUMPING IS REQUIRED, SEDIMENT LADEN WATER IS NOT TO BE DISCHARGED INTO THE STORM DRAIN OR THE STREET.

DRAWING INDEX

REVISIONS

ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

CODY LAYNE MCCOY — REGISTERED ENGINEER — AGRICULTURE — 6-24-24 — COMMERCE — No. 119650 — STATE OF TENNESSEE

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. G-001

SEWER BASIN: NS 02-2

SHEET 1 OF 3

DIVISION OF ENGINEERING

GENERAL NOTES AND DRAWING INDEX

5081 HILLBROOK RD.

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: CLM DATE: 06/24 SCALE: NONE

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWD2304698 FILENAME: G-001_5081 HILLBROOK RD.DWG PLOT DATE: 6/24/2024

CROSS REFERENCING SYSTEM

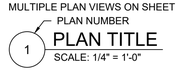
VIEW TITLES

1. PLAN TITLES:

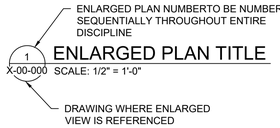
SINGLE PLAN VIEW ON SHEET

PLAN TITLE
SCALE: 1/4" = 1'-0"

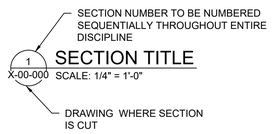
MULTIPLE PLAN VIEWS ON SHEET



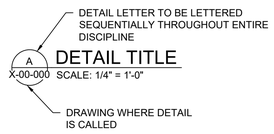
2. ENLARGED PLAN TITLES:



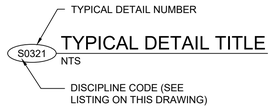
3. SECTION TITLES:



4. DETAIL AND PHOTO TITLES:

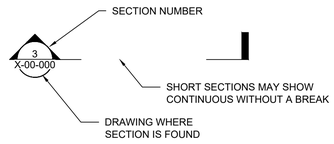


5. TYPICAL DETAIL TITLES:



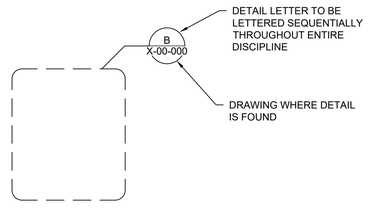
VIEW REFERENCE/CALLOUTS

1. SECTION CUTS:



2. DETAIL CALLOUT

A: BY CALLOUT:

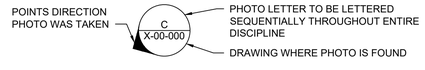


B: BY NOTE: "SEE DETAIL B/D-01-105"

B IS DETAIL REFERENCE LETTER

D-01-105 IS DRAWING WHERE DETAIL IS SHOWN

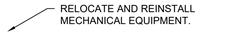
3. PHOTO INDICATORS



4. TYPICAL DETAIL REFERENCE

NOTATIONS

1. PROPOSED NOTES (with leaders)



ALL NOTES SHALL HAVE A HEIGHT OF 0.1". IF NOTE IS MORE THAN 2" WIDE AND 2 LINES THEN MAKE IT A KEYNOTE.

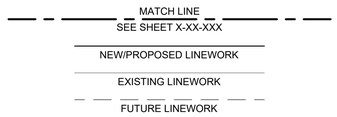
2. EXISTING NOTES (with leaders)

ALL EXISTING NOTES SHALL BE SCREENED.

3. KEYNOTES

KEYNOTES ARE NUMBERED SEQUENTIALLY ON PAGE. (ORDER IS NOT RELEVANT TO IMPORTANCE AND MAY BE RANDOM.)

MISCELLANEOUS

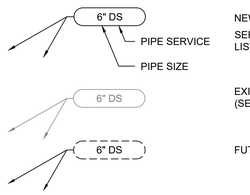


NORTH ARROW

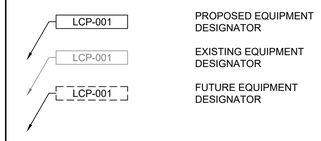
SCALE (CIVIL)

DIMENSIONS

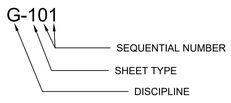
PIPING IDENTIFICATION SYSTEM



EQUIPMENT DESIGNATORS



DRAWING NUMBERING SYSTEM



DISCIPLINES

- G GENERAL
- XD DEMOLITION (X - DENOTES DISCIPLINE)
- C CIVIL
- S STRUCTURAL
- A ARCHITECTURAL
- D PROCESS/MECHANICAL
- M MECHANICAL/HVAC
- P PLUMBING
- E ELECTRICAL
- I INSTRUMENTATION

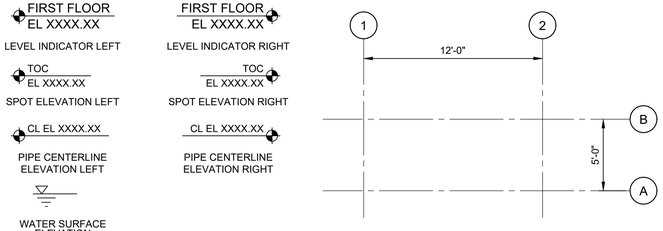
SHEET TYPE DESIGNATORS

- 0 GENERAL - COVER SHEET, ABBREVIATIONS, LEGENDS, SYMBOLS, SHEET INDEX, STANDARD DETAILS
- 1 PLANS OR (PLANS AND SECTIONS)
- 2 ELEVATIONS AND PROFILES
- 3 SECTIONS
- 4 ENLARGED PLANS
- 5 DETAILS (TYPICAL DETAILS)
- 6 DIAGRAMS
- 7 SCHEDULES
- 8 USER DEFINED
- 9 3D REPRESENTATIONS (ISOMETRICS, PERSPECTIVES, RENDERINGS)

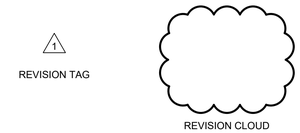
GENERAL NOTES

1. THE NOTE IN THE TITLEBLOCK OF THIS DRAWING WHICH READS "TWO INCHES AT FULL SCALE" APPEARS ON DRAWINGS FOR IDENTIFICATION OF SCALE DISTORTIONS ON HALF SIZE DRAWINGS AND DRAWING REPRODUCTIONS. IT SHALL MEAN THAT THE DRAWING IS FULL SIZE AND THE DRAWING SCALES ACCURATE WHEN THE LENGTH OF THIS LINE IS TWO INCHES. IF THE LENGTH IS OTHER THAN TWO INCHES, DRAWING SCALES MUST BE ADJUSTED ACCORDINGLY.
2. EXISTING PIPING IS DESIGNATED BY SERVICE RATHER THAN MATERIAL TYPE. MATERIAL TYPES, IF KNOWN, APPEAR OUTSIDE THE PIPING CALLOUT BUBBLE, AND MAY NOT BE THE SAME MATERIAL TYPES SPECIFIED FOR NEW PIPING.
3. ABBREVIATIONS USED IN THIS CONTRACT DOCUMENT CONFORM TO ANSI Y1.1, UNLESS NOTED OTHERWISE ON DRAWINGS. SEE SPEC. SECTION 01071 FOR ADDITIONAL ABBREVIATIONS.
4. ALL STANDARD DETAILS APPLY TO ALL THE CONTRACTORS WORK WHETHER SPECIFICALLY REFERENCED OR NOT.
5. SEE FRONT END SHEETS FOR EACH DISCIPLINES STANDARD SYMBOLS, ETC.
6. SEE ADDITIONAL GENERAL NOTES THROUGHOUT DRAWING SET.

LEVELS, GRIDS AND ELEVATION INDICATORS



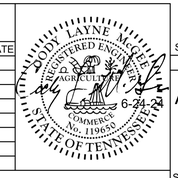
REVISIONS



ABBREVIATIONS

CAB	DIRECT BURIAL CABLE	IL	INDICATING LAMP	REL	RELAY
C-C	CENTER TO CENTER	INF	INFLUENT	RGS	RIGID GALVANIZED STEEL
CL	CENTERLINE	INV	INVERT	RS	RAW SEWAGE
CNTL	CONTROL				
		KV	KILOVOLT	SS	SANITARY SEWER
DB	DUCT BANK	KVA	KILOVOLT AMPERE	SST	STAINLES STEEL
		KW	KILOWATT	STD	STANDARD
EFF	EFFLUENT			SWB	SWITCHBOARD
EJ	EXPANSION JOINT	LEL	LOWER EXPLOSIVE LIMIT		
EL	ELEVATION	LLWL	LOW-LOW WATER LEVEL	TB	TERMINAL BOX
EMBD	EMBEDDED	LOS	LOCKOUT STOP	TFR	TRANSFORMER
EQ	EQUAL	LS	LIMIT SWITCH	TOC	TOP OF CONCRETE
EQUIP	EQUIPMENT			TRM	TRANSMITTER
ES	EXISTING SURFACE	MCC	MOTOR CONTROL CENTER	TRN	TRANSDUCER
EWEF	EACH WAY EACH FACE	MCU	MASTER CONTROL UNIT	TRS	TRANSFER SWITCH
EXIST	EXISTING	MGD	MILLION GALLONS PER DAY	TS	TEMPERATURE SWITCH
		MJ	MECHANICAL JOINT		
F	FAHRENHEIT, FACE, FUSE(D)	MME	MISCELLANEOUS MECHANICAL EQUIPMENT	UL	ULTIMATE LOAD
FC	FAIL CLOSED			UN	UNION
FE	FLOWMETER	N	NEUTRAL		
FH	FIRE HYDRANT, FLATHEAD	NPSH	NET POSITIVE SUCTION HEAD	V	VALVE, VOLTS
FIN	FINISHED			VAC	VOLTS ALTERNATING CURRENT
FLR	FLOOR	OL	OVERLOAD	VAR	VARIES, VARIABLE
FM	FORCE MAIN			VDC	VOLTS DIRECT CURRENT
FO	FAIL OPEN	P	PUMP		
		PL	PROPERTY LINE, PIPELINE, PLATE	WSTP	WATERSTOP
GFI	GROUND FAULT INTERRUPTOR	PNL	PANEL, PANELBOARD		
GPD	GALLONS PER DAY	PP	POWER POLE	XP	EXPLOSIONPROOF
GRT	GROUT	PSIA	POUND PER SQUARE INCH ABSOLUTE		
GSP	GALVANIZED STEEL PIPE	PSIG	POUNDS PER SQUARE INCH GAGE		
GV	GATE VALVE	PV	PLUG VALVE, PROCESS VARIABLE		
H/A	HAND AUTO	Q	RATE OF FLOW		
HHWL	HIGH-HIGH WATER LEVEL	QCPLG	QUICK COUPLING		
HOA	HAND-OFF-AUTO				
HP	HIGH PRESSURE, HIGH POINT, HORSEPOWER	R	RADIUS		
		RECP	RECEPTACLE		

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024



LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. G-002

SEWER BASIN: NS 02-2

SHEET 2 OF 3

DIVISION OF ENGINEERING

ABBREVIATIONS, LEGENDS, & SYMBOLS

5081 HILLBROOK RD.

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: CLM DATE: 06/24 SCALE: NONE

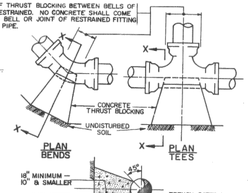
REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWD2304698 FILENAME: G-002_5081 HILLBROOK RD.DWG PLOT DATE: 6/24/2024

DEPARTMENT of ENGINEERING BUREAU of SEWER DESIGN, MEMPHIS, TENNESSEE — DRAFTSMAN, REG. DATE: 3/05 — SCALE: NOTE

CONFINE LIMITS OF THRUST BLOCKING BETWEEN BELLS OF FITTING TO BE RESTRAINED. NO CONCRETE SHALL COME IN CONTACT WITH BELL OR JOINT OF RESTRAINED FITTING AND CONNECTING PIPE.



CONCRETE THRUST BLOCKING SCHEDULE IN SQUARE FEET

PIPE SIZE	BENDS 11¼°	22 ½°	45°	90°	STD. TEE
4	1.0	1.0	1.5	2.5	2.0
6	1.5	2.0	3.0	5.5	4.0
8	1.5	2.5	5.0	10.0	7.0
10	2.0	4.0	7.5	14.5	10.0
12	3.0	6.0	11.5	21.5	14.5
14	4.0	7.5	15.0	28.0	19.5
16	5.0	10.0	20.0	35.0	25.5
18	6.5	12.5	24.5	35.0 ✱	32.0
20	8.5	16.5	32.5	35.0 ✱	35.0 ✱
24	10.0	20.0	35.0 ✱	35.0 ✱	35.0 ✱
30	18.0	34.5	35.0 ✱	35.0 ✱	35.0 ✱
36	25.0	35.0 ✱	35.0 ✱	35.0 ✱	35.0 ✱
42	32.5	35.0 ✱	35.0 ✱	35.0 ✱	35.0 ✱

BLOCKING SCHEDULE BASED ON 200 PSI WATER PRESSURE, 2,000 PSF SOIL BEARING PRESSURE & 1.25 SAFETY FACTOR.

✱ INDICATES FITTINGS REQUIRING RESTRAINED JOINTS IN ADDITION TO CONC. THRUST BLOCKING SEE RESTRAINED JOINT SCHEDULE.

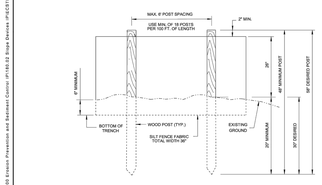
REVISIONS		
NO.	DATE	BY — REMARKS

CONVERSIONS	
ENGLISH	METRIC

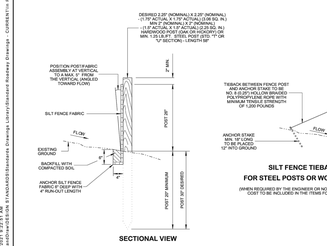
CITY OF MEMPHIS
DEPARTMENT of ENGINEERING

DESIGN STANDARD FOR CONCRETE THRUST BLOCK ING

Bryant Bondurant Jr. 3/24/82
CITY ENGINEER — DATE



ELEVATION VIEW



SECTIONAL VIEW

SILT FENCE TIEBACK FOR STEEL POSTS OR WOOD POSTS

(WHEN REQUIRED BY THE ENGINEER OR NOTED IN THE PLANS. COST TO BE INCLUDED IN THE ITEMS FOR SILT FENCE)

NOT TO SCALE

EROSION CONTROL PLAN LEGEND: * SF * SF * SF * SILT FENCE

REV. 10-18-00: MODIFIED TABLE ③ AND GENERAL NOTE ⑤.

REV. 7-20-04: CHANGED VALUES IN TABLE ③ TO REFLECT NEW VALUES.

REV. 4-15-08: DELETED PSA POSTS FROM TABLE ③. ADDED NOTE ⑦. REVISED NOTE ⑤, ADDED NOTE ⑧ TO GENERAL NOTES, REFORMATTED SHEET, REVISED NOTES, MISC. EDITS TO DRAWING.

REV. 4-1-08: REVISED TEMPORARY REFERENCE, REVISED NOTES, AND MISC. EDITS TO DRAWING.

REV. 8-1-13: MINOR EDITS TO GENERAL NOTES ⑤.

REV. 4-15-21: CHANGED SECOND NOTE ⑤ TO NOTE ⑥.

REV. 09-01-22: ADDED AASHTO REFERENCE IN TABLE, UPDATED GENERAL NOTES ⑤ AND REORDER SHEET.

REV. 06-13-23: ADDED ALTERNATE POST SPACING, REVISED POST EMBEDMENT LENGTH.

SILT FENCE FABRIC SPECIFICATIONS

FABRIC PROPERTY AND TEST METHODS	REQUIRED PHYSICAL PROPERTIES (MARV VALUES OF TEST DATA)
GEOTEXTILE FABRIC TYPE	WOVEN SLIT FILM (PER AASHTO M288)
APPARENT OPENING SIZE (ASTM D4751)	#30 TO #70 STANDARD SIEVE
WATER FLUX (ASTM D4491)	≥ 4 GPM/FT²
TENSILE STRENGTH (ASTM D4632)	≥ 120 LB. (GRAB) DIRECTION) X 120 LB. (FILL DIRECTION)
ULTRAVIOLET STABILITY (RETAINED STRENGTH ASTM D4355)	≥ 70%
ELONGATION (ASTM D4632)	≤ 20% (MAX)
BURST STRENGTH (ASTM D3786)	≥ 250 PSI
PUNCTURE STRENGTH (ASTM D4833)	≥ 80 LB.
TRAPEZOIDAL TEAR (ASTM D4533)	≥ 50 LB. (RAMP DIRECTION) X 40 LB. (FILL DIRECTION)

SILT FENCE GENERAL NOTES

① SILT FENCE IS USED TO INTERCEPT SMALL AMOUNTS OF SEDIMENT AND REDUCE VELOCITY FROM SHEET FLOW ONLY. DO NOT USE IT ADJACENT TO NATURAL WATER RESOURCES (WETLANDS OR STREAMS) OR ACROSS CONCENTRATED FLOW PATHS.

② THE MAXIMUM DRAINAGE AREA SIZE FOR A CONTINUOUS BARRIER SHALL BE 1/4 ACRE PER 100 LINEAR FEET OF FENCE AND THE MAXIMUM SLOPE STEEPNESS SHALL BE 50%. THE MAXIMUM SLOPE LENGTH BEHIND FENCE ON UPSLOPE SIDE SHALL BE 10 FEET (AS MEASURED ALONG THE GROUND SURFACE).

③ WHEN INSTALLED AT THE TOE OF A SLOPE, SILT FENCE SHOULD BE PLACED A FIXED 7.5 FEET AWAY FROM THE TOE TO ALLOW SPACE FOR PONDING OF WATER, COLLECTION OF SEDIMENT, AND EASE OF MAINTENANCE AND REMOVAL.

④ WHEN TWO SECTIONS OF SILT FENCE FABRIC ADJOIN EACH OTHER THEY SHALL BE JOINED ACCORDING TO THE DETAILS ON STANDARD DRAWING EC-STR-3E.

⑤ MAINTENANCE SHALL BE PERFORMED AS NEEDED. CAPTURED SOIL MATERIAL SHALL BE REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE AND/OR OTHER EVIDENCE OF SEDIMENT FILTER CLOGGING IS OBSERVED.

⑥ STEEL POSTS SHALL BE ROLLED FROM HIGH CARBON STEEL AND SHALL HAVE A MINIMUM WEIGHT OF 1.25 LB/FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH VISIBILITY PAINT. WOOD POSTS SHALL BE OF SOUND HARDWOOD AND SHALL BE FREE OF KNOTS, SPLITS OR OTHER DEFECTS WHICH WOULD WEAKEN THE POST. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702.

⑦ WHEN STEEL POSTS ARE USED THEY SHALL HAVE A PROJECTION FOR FASTENING WIRE TO THEM. THE WIRE FASTENERS SHOULD BE EVENLY SPACED WITH AT LEAST FIVE PER POST.

⑧ IF THE FILTER MATERIAL IS STAPLED TO THE WOODEN STAKES, HEAVY DUTY WIRE STAPLES WITH ONE-HALF INCH CROWNS SHALL BE USED AND EVENLY SPACED WITH AT LEAST FOUR PER POST. SILT FENCE FABRIC SHALL NOT BE STAPLED.

⑨ SILT FENCES SHOULD BE PLACED ALONG OR NEAR THE GROUND CONTOUR. THE BOTTOM OF FENCE AT GROUND LINE SHOULD BE ON A ZERO PERCENT (0%) GRADE, PLUS OR MINUS FIVE TENTHS OF ONE PERCENT (0.5%). THE ENDS OF A RUN OF SILT FENCE SHOULD BE TURNED UPSLOPE FORMING A J-HOOK TO ALTER ANY CONCENTRATED FLOW BEHIND FENCE.

⑩ A PREASSEMBLED SILT FENCE MEETING THE REQUIREMENTS OF THIS DRAWING IS ACCEPTABLE IN LIEU OF A FIELD ASSEMBLED SILT FENCE.

⑪ STAKE SLITTING IS THE PREFERRED METHOD OF FENCE INSTALLATION. STATIC SLICING INVOLVES THE INSERTION OF A NARROW CUTTING BLADE, PLACED AT THE SPECIFIED ANCHOR DEPTH FOR THE GIVEN FABRIC AS SHOWN ON THIS DRAWING, INTO THE SOIL. A SLICE IS MADE IN THE SOIL USING THE BLADE AND THE FABRIC IS PULLED INTO THE SLICE BEING EXCAVATED. ALTERNATE TRENCHING/BACKFILL METHODS ARE ALSO ACCEPTABLE. DO NOT USE EQUIPMENT THAT WILL DISTURB WIDER THAN 4" IN SITU SOIL SUCH AS BACKHOE. FOR TRENCH-BASED INSTALLATIONS, SILT FENCING SHALL BE INSTALLED PER THE FOLLOWING STEPS AND IN THE FOLLOWING ORDER:

1. EXCAVATE TRENCH A MAXIMUM OF 4 INCHES WIDE AND 8 INCHES DEEP. THE TRENCH SHALL BE HAND-CLEARED OF ROCKS AND OTHER DEBRIS SO AS TO REMOVE ROCKS LARGER THAN 4 INCHES IN DIAMETER AND OTHER DEBRIS THAT WILL CAUSE FENCE TOE, FABRIC OR FLOW FROM THE TRENCH.
2. INSTALL FABRIC IN TRENCH.
3. BACKFILL TRENCH OVER FABRIC WITH SOIL PLACED AROUND FABRIC.
4. COMPACT SOIL BACKFILL WITH MECHANICAL EQUIPMENT. DO NOT DAMAGE THE FABRIC DURING COMPACTION (HANDHELD FABRIC SHALL BE REPLACED).
5. DRIVE AND SET SUPPORT POSTS PER SPACING REQUIREMENTS GIVEN ON THE APPLICABLE FENCE DETAIL. WHEN TRENCHING IS USED TO INSTALL FENCE, DRIVE SUPPORT UP TO GROUND FREE, FOLLOWED BY FABRIC PLACEMENT IN TRENCH.
6. ATTACH FABRIC TO THE POSTS USING WIRE TIES OR STAPLES. SPACING AND DENSITY OF TIES OR STAPLES SHALL BE INSTALLED AS DESCRIBED IN NOTES ⑧ AND ⑨.

⑫ ONLY SILT FENCE FABRIC LISTED ON THE QUALIFIED PRODUCTS LIST MAY BE USED. ANY PRODUCTS LISTED ON THE QUALIFIED PRODUCTS LIST AS AN APPROVED ALTERNATE MAY ALSO BE USED.

⑬ SILT FENCE SHALL BE PAID FOR UNDER ITEM NUMBER 209-09.01 TEMPORARY SILT FENCE (WITHOUT BACKING) PER LINEAR FOOT. PAYMENT SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY FOR CONSTRUCTION, MAINTENANCE, AND REMOVAL OF THE SILT FENCE.

⑭ SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE STRUCTURE AND PAID FOR UNDER ITEM NUMBER 209-05, SEDIMENT REMOVAL PER CUBIC YARD.

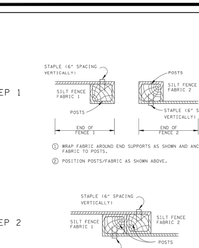
STATE OF TENNESSEE STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

SILT FENCE

12-19-2002 — EC-STR-3B

REV. 4-15-08: REFORMATTED SHEET, REVISED NOTES, MISC. EDITS TO DRAWING.

REV. 4-1-08: MISC. EDITS TO DRAWING, CHANGED DRAWING NAME, REFORMATTED SHEET.



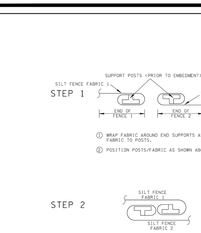
① WRAP FABRIC AROUND END SUPPORTS AS SHOWN AND ANCHOR FABRIC TO POSTS.

② POSITION POSTS/FABRIC AS SHOWN ABOVE.

① ROTATE BOTH POSTS WITH FABRIC CLOCKWISE AT LEAST 180°.

② EMBED BOTH POSTS INTO GROUND PER APPLICABLE SILT FENCE STANDARD DRAWING, EC-STR-3A, EC-STR-3C, OR EC-STR-3D.

PLAN VIEW
JOINING SILT FENCE
FABRIC SECTIONS (WOOD POSTS)



① POSITION THE SILT FENCE FABRIC 2 POST INSIDE OF THE SILT FENCE FABRIC 1 POST AS SHOWN ABOVE.

① ROTATE BOTH POSTS WITH FABRIC CLOCKWISE AT LEAST 180°.

② EMBED BOTH POSTS INTO GROUND PER APPLICABLE SILT FENCE STANDARD DRAWING, EC-STR-3A, EC-STR-3C, OR EC-STR-3D.

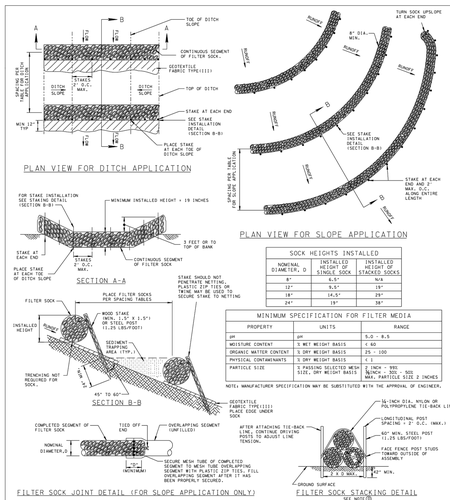
PLAN VIEW
JOINING SILT FENCE
FABRIC SECTIONS (STEEL POSTS)

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SILT FENCE FABRIC JOINING DETAILS

12-18-08 — EC-STR-3C



SOCK HEIGHTS INSTALLED		
NOMINAL DIAMETER, D	INSTALLED HEIGHT OF SINGLE SOCK	INSTALLED HEIGHT OF STACKED SOCKS
8"	6.5"	N/A
12"	9.5"	19"
18"	14.5"	29"
24"	19"	38"

MINIMUM SPECIFICATION FOR FILTER MEDIA		
PROPERTY	UNITS	RANGE
pH	pH	5.0 - 9.5
MOISTURE CONTENT	% WET WEIGHT BASIS	< 60
ORGANIC MATTER CONTENT	% DRY WEIGHT BASIS	25 - 100
PHYSICAL CONTAMINANTS	% DRY WEIGHT BASIS	< 1
PARTICLE SIZE	% PASSING SELECTED MESH SIZE, DRY WEIGHT BASIS	3 INCH - 95% MIN., PARTICLE SIZE 2 INCHES MAX.

NOTE: MANUFACTURER SPECIFICATION MAY BE SUBSTITUTED WITH THE APPROVAL OF ENGINEER.

FILTER SOCK CHECK DAM ESTIMATED QUANTITIES					
	V-DITCH			TRAPEZOIDAL DITCH	
	24" FILTER SOCK STACKED (HEIGHT: 19")	18" FILTER SOCK STACKED (HEIGHT: 14")	12" FILTER SOCK (HEIGHT: 9")	18" FILTER SOCK STACKED (HEIGHT: 29")	12" FILTER SOCK STACKED (HEIGHT: 19")
LENGTH(FT)	70	60	48	24	72

1. ESTIMATED QUANTITIES BASED ON 4:1 SIDE SLOPES, QUANTITIES WILL VARY BASED ON ACTUAL DITCH CONFIGURATIONS.
2. ESTIMATED QUANTITIES BASED ON 6FT BOTTOM WIDTH, 4:1 (F) SLOPE, AND 4:1 SIDE SLOPES. QUANTITIES WILL VARY BASED ON ACTUAL DITCH CONFIGURATION.

FILTER SOCK SPACING FOR SLOPE APPLICATION				
SLOPE	8"	12"	18"	24"
2%	70'	80'	N/A	N/A
5%	30'	60'	80'	N/A
10%	20'	30'	70'	80'
4:1	N/A	20'	50'	50'
3:1	N/A	20'	30'	30'
2:1	N/A	N/A	20'	20'

N/A = NOT RECOMMENDED

FILTER SOCK SPACING FOR DITCH APPLICATION	
DITCH SLOPE	MAXIMUM FILTER SOCK SPACING
LESS THAN 2%	80'
2%	80'
3%	50'
4%	40'
5%	30'
6%	20'
GREATER THAN 6%	20'

BASED ON AN INSTALLED HEIGHT OF 19 INCHES. SPACING NOT TO EXCEED 80'

FILTER SOCK GENERAL NOTES

① FILTER SOCKS CAN BE PLACED IN DITCHES OR AT THE TOP, ON THE FACE, OR AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES. THEY CAN ALSO SERVE TO REMOVE SEDIMENT FROM RUNOFF AND RELEASE IT AS SHEET FLOW.

② FILTER SOCKS INSTALLED ON A SLOPE WILL BE PLACED ALONG OR ON THE GROUND CONTOUR. FILTER SOCKS SHALL NOT BE PLACED AT THE TOE OF A SLOPE SHOULD BE PLACED A FIXED 7.5 FEET AWAY FROM THE TOE TO ALLOW SPACE FOR PONDING OF WATER, THE MAXIMUM DRAINAGE AREA SHALL BE ¼ ACRE PER 100 LF OF FILTER SOCK.

③ FOR DITCH APPLICATIONS, THE MAXIMUM DRAINAGE AREA SHALL BE 15 ACRES. AT SITES WHICH DRAIN TO EXCEPTIONAL TENNESSEE WATERS OR SEDIMENT-IMPAIRED STREAMS, THE MAXIMUM DRAINAGE AREA SHALL BE ¼ ACRE PER 100 LF OF FILTER SOCK. FILTER SOCKS SHALL NOT BE USED IN STREAMS, WETLANDS, OTHER NATURAL WATER RESOURCES, OR IN DITCHES WITH CONTINUOUS FLOWS.

④ FOR DITCH APPLICATIONS, THE MINIMUM INSTALLED HEIGHT OF A SINGLE SOCK, OR OF AN INDIVIDUAL SOCK IN A STACKED SET, SHALL BE 9 INCHES. THE MINIMUM DIAMETER OF A SOCK IN A MAXIMUM DRAINAGE AREA SHALL BE 8 INCHES. FILTER SOCKS SHALL NOT BE PLACED PERPENDICULAR TO THE FLOW OF WATER. FILTER SOCKS SHALL CONTINUE UP THE SIDE SLOPES TO THE TOP OF BANK OR A MAXIMUM OF 3 FEET ABOVE THE INSTALLED HEIGHT OF THE SOCK. FILTER SOCKS SHALL REMAIN IN PLACE UNTIL ALL UPSTREAM AREAS ARE PERMANENTLY STABILIZED.

⑤ FILTER SOCKS SHALL CONSIST OF A TUBULAR MESH SOCK WITH OPENINGS NO GREATER THAN 3 INCHES OF AN INCH IN SIZE. THE MESH SOCK IS NOT REQUIRED TO BE BIODEGRADABLE. FILL MATERIAL SHALL CONSIST OF EITHER WOOD CHIPS (MULCH) OR A 50/50 COMBINATION OF WOOD CHIPS AND MANUFACTURED COMPOST MATERIAL.

⑥ FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED IN DIAMETERS OF 8, 12, 18 OR 24 INCHES. THE DIAMETER OF A SOCK IN A SET OF STACKED SOCKS SHALL BE AT LEAST 4 INCHES LESS THAN THE DIAMETER OF THE PLACED SOCK BELOW IT. THE INSTALLED HEIGHT WILL BE LESS THAN THE NOMINAL DIAMETER.

⑦ STEEL POSTS SHALL BE ROLLED FROM HIGH CARBON STEEL AND SHALL HAVE A MINIMUM WEIGHT OF 1.25 LB/FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH VISIBILITY PAINT. WOOD POSTS SHALL BE OF SOUND HARDWOOD AND SHALL BE FREE OF KNOTS. ANCHOR PLATES HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702.

⑧ FILTER SOCKS ARE FILLED ON THE PROJECT SITE AND MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED AS SHOWN ON THIS DRAWING.

⑨ ANY PRODUCT LISTED ON THE QUALIFIED PRODUCTS LIST AS AN APPROVED ALTERNATE MAY ALSO BE USED. FOR DITCH APPLICATIONS, SANDBAG OR GRAVEL BAG BERMS MAY ALSO BE USED AS ALTERNATE MATERIALS.

⑩ FILTER SOCKS SHALL BE PAID FOR UNDER THE FOLLOWING ITEM NUMBERS:

209-05.20 FILTER SOCK 18 INCH PER LINEAR FOOT
209-05.21 FILTER SOCK 24 INCH PER LINEAR FOOT
209-05.22 FILTER SOCK 118 INCH PER LINEAR FOOT
209-05.23 FILTER SOCK 124 INCH PER LINEAR FOOT
209-08.09 FILTER SOCK CHECK DAM PER EACH

PAYMENT SHALL INCLUDE ALL MATERIALS (INCLUDING GEOTEXTILE FABRIC IF USED) AND LABOR NECESSARY FOR CONSTRUCTION, MAINTENANCE, AND REMOVAL OF FILTER SOCKS.

⑪ SEDIMENT SHALL BE REMOVED FROM BEHIND THE FILTER SOCK WHEN IT HAS ACCUMULATED TO ONE-HALF OF THE ORIGINAL HEIGHT OF THE STRUCTURE AND PAID FOR UNDER ITEM NUMBER 209-05, SEDIMENT REMOVAL PER CUBIC YARD.

⑫ FILTER SOCKS SHALL BE INSPECTED AFTER EACH RUNOFF EVENT AND SHALL BE REMOVED AND REPLACED IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.

⑬ FILTER SOCKS SHOULD BE REMOVED FROM SLOPES AFTER STABILIZATION IS COMPLETE. THIS MAY BE ACCOMPLISHED BY CUTTING THE SOCK OPEN AND SPREADING THE FILL MATERIAL ON THE SLOPE. THE GEOTEXTILE FABRIC SHALL ALSO BE REMOVED. FILTER SOCKS APPLIED IN DITCHES SHALL BE COMPLETELY REMOVED.

⑭ GEOTEXTILE FABRIC REQUIRED FOR SLOPE APPLICATION STEEPER THAN 4:1.

REV. 4-1-13: MINOR EDITS TO GENERAL NOTES.

REV. 6-10-19: MODIFIED SPACING TABLES. ADDED GEOTEXTILES ADDED NOTE ⑭.

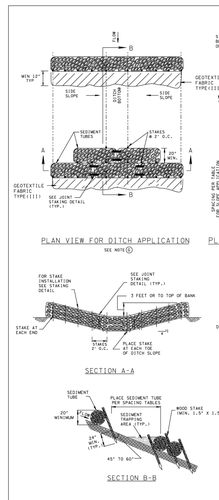
MINOR REVISION -- FHWA APPROVAL NOT REQUIRED

NOT TO SCALE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

FILTER SOCK

4-1-08 — EC-STR-8



SEDIMENT TUBE SPACING FOR SLOPE APPLICATION					
SLOPE	8"	12"	18"	20"	24"
2%	70'	80'	N/A	N/A	N/A
5%	30'	60'	80'	N/A	N/A
10%	20'	30'	70'	80'	80'
4:1	N/A	20'	40'	50'	50'
3:1	N/A	20'	30'	30'	30'
2:1	N/A	N/A	20'	20'	20'

N/A = NOT RECOMMENDED
SPACING NOT TO EXCEED 80'

SEDIMENT TUBE SPACING TABLE FOR DITCH APPLICATION	
SLOPE	MAXIMUM SEDIMENT TUBE SPACING
LESS THAN 2%	80'
2%	80'
3%	50'
4%	40'
5%	30'
6%	20'
GREATER THAN 6%	20'

BASED ON A 20" SEDIMENT TUBE
SEE TABLE ON EC-STR-4 FOR OTHER HEIGHTS.

SEDIMENT TUBE GENERAL NOTES

① SEDIMENT TUBES CAN BE PLACED AT THE TOP, ON THE FACE, OR AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES. THEY CAN ALSO SERVE TO REMOVE SEDIMENT FROM RUNOFF AND RELEASE IT AS SHEET FLOW.

② SEDIMENT TUBES SHALL BE INSTALLED ALONG OR ON THE GROUND CONTOUR, AT THE TOE OF SLOPES, OR IN A SERIES TO HELP REDUCE THE EFFECTS OF SOIL EROSION AND RETAIN SEDIMENT. SEDIMENT TUBES SHOULD NOT BE USED IN DITCHES OR STREAMS.

③ FOR DITCH APPLICATIONS, THE MAXIMUM DRAINAGE AREA SHALL BE 15 ACRES. AT SITES WHICH DRAIN TO EXCEPTIONAL TENNESSEE WATERS OR SEDIMENT-IMPAIRED STREAMS, THE MAXIMUM DRAINAGE AREA SHALL BE ¼ ACRE PER 100 LF OF TUBE. FOR SLOPE APPLICATIONS, THE MAXIMUM DRAINAGE AREA SHALL BE ¼ ACRE PER 100 LF OF TUBE.

④ SEDIMENT TUBES SHALL NOT BE USED ON PAVEMENT, ROCKY SOILS, OR AT ANY OTHER LOCATIONS WHERE THE STAKES CANNOT BE DRIVEN TO THE REQUIRED DEPTH.

⑤ SEDIMENT TUBES SHALL BE MANUFACTURED FROM WOOD EXCELSIOR, RICE OR WHEAT STRAW, COMPOST FIBERS, OR HARDWOOD MULCH THAT IS ENCLOSED BY A TUBULAR FLEXIBLE NETTING MATERIAL. ALL MATERIALS INCLUDING THE NETTING SHALL BE BIODEGRADABLE.

⑥ PINE NEEDLE AND LEAF MULCH FILLED SEDIMENT TUBES AND STRAW BALES ARE NOT ACCEPTABLE MATERIALS.

⑦ THE DIAMETER OF A SEDIMENT TUBE SHALL BE A MINIMUM OF 8 INCHES AND A MAXIMUM OF 24 INCHES. DIAMETER TOLERANCE IS 2 INCHES. FOR DITCH APPLICATIONS, SEDIMENT TUBES SHALL BE A MINIMUM OF 20 INCHES.

⑧ SEDIMENT TUBES SHALL BE INSTALLED WITH WOODEN STAKES (MIN. 1.5" X 1.5" ACTUAL). THE STAKE SHALL BE EMBEDDED A MINIMUM OF 2 FEET.

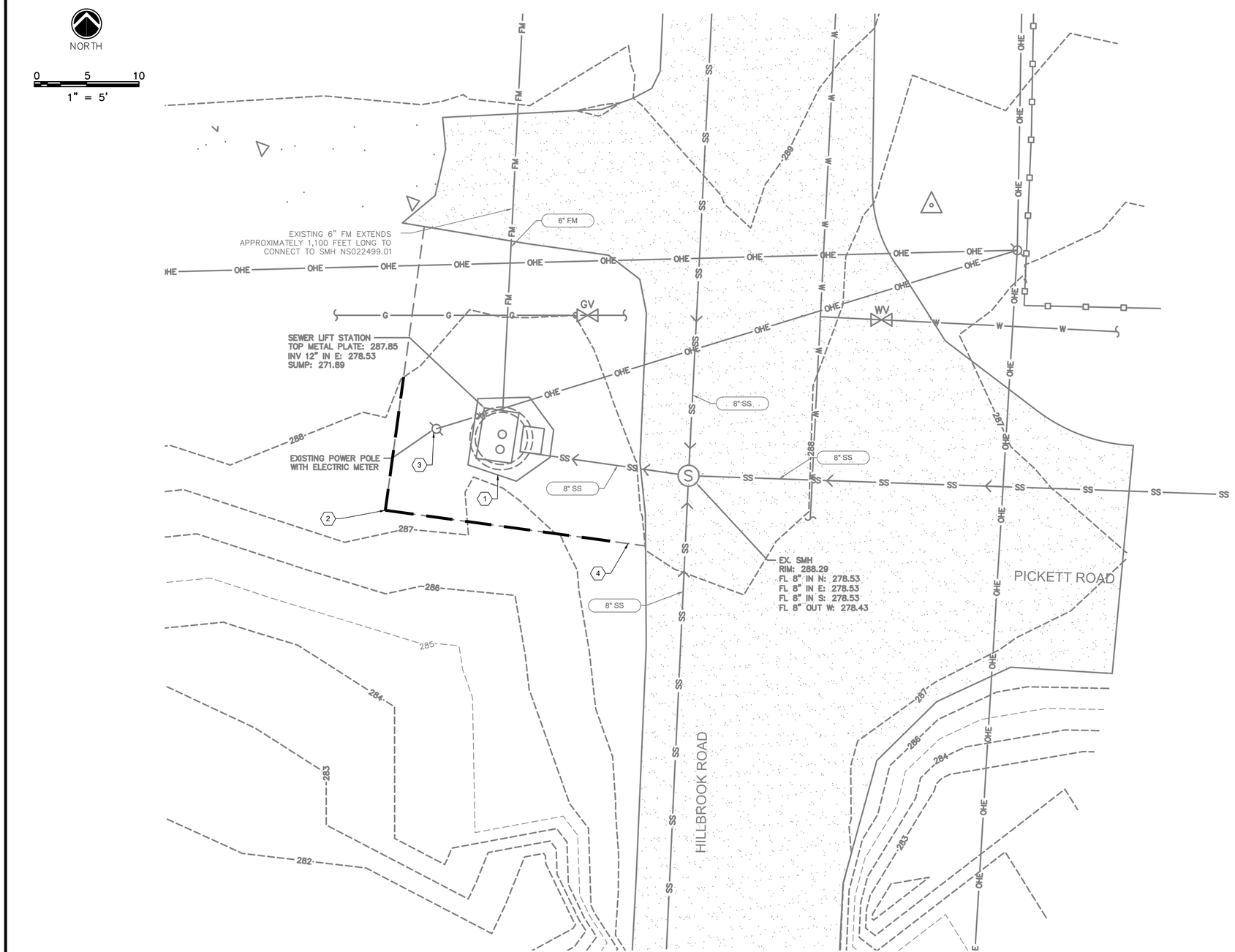
⑨ SEDIMENT TUBES SHALL BE TRENCHED IN A MINIMUM OF 2 INCHES.

⑩ IF MORE THAN ONE SEDIMENT TUBE IS PLACED IN A ROW IN SLOPE APPLICATION, THE TUBES SHALL BE OVERLAPPED A MINIMUM OF 24 INCHES TO PREVENT FLOW AND SEDIMENT FROM PASSING THROUGH THE FIELD JOINT. WHEN USED IN DITCHES, TWO ROWS OF TUBE SHALL BE PLACED ON THE CHANNEL BOTTOM WITH STAGGERED JOINTS AS SHOWN.

⑪ FOR DITCH APPLICATIONS, SEDIMENT TUBES SHALL BE A MINIMUM OF 20 INCH DIAMETER AND SHALL BE INSTALLED PERPENDICULAR TO THE FLOW OF WATER. TUBES SHALL CONTINUE UP THE SIDE SLOPES A MINIMUM OF 3 FEET PLUS THE DIAMETER OF THE TUBE, OR TO THE TOP OF THE DITCH, WHICHEVER IS LESS.

⑫ SEDIMENT TUBES USED IN SLOPE APPLICATIONS MAY REMAIN IN PLACE TO BIODEGRADE. FOR DITCH APPLICATIONS SEDIMENT TUBES SHALL BE COMPLETELY REMOVED AFTER FULLY ESTABLISHED VEGETATION HAS COMPLETELY DEVELOPED.

⑬ SEDIMENT TUBES SHALL BE PAID FOR UNDER THE FOL



LEGEND

	EXISTING POWER POLE
WV	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
	EXISTING SIGN
S	SEWER MANHOLE
WM	EXISTING WATER METER
	CONTROL POINT
	PROPERTY LINE
SS	EXISTING SANITARY SEWER
W	EXISTING WATER MAIN
FM	EXISTING FORCE MAIN
OHE	EXISTING OVERHEAD ELECTRIC
100	EXISTING CONTOUR
	EXISTING CONCRETE
	EXISTING ASPHALT

ABBREVIATION

SMH	SANITARY MANHOLE

GENERAL NOTES:

1. BASE DRAWING DEVELOPED FROM "PARTIAL TOPOGRAPHIC SURVEY OF HILLBROOK SEWER LIFT STATION" DATED 11/18/21, PREPARED BY ASHWORTH ENGINEERING, PLLC. BROWN AND CALDWELL ASSUMES NO RESPONSIBILITY FOR ACCURACY OF THE SAME. DIMENSIONS, FEATURES, AND DETAILS MAY VARY FROM FIELD CONDITIONS. CONTRACTOR MUST VERIFY ALL EXISTING CONDITIONS THAT MAY IMPACT THE WORK.
2. EXISTING PIPE LOCATIONS SHOWN BASED ON CITY OF MEMPHIS GIS DATA AND FIELD VERIFICATION WHERE POSSIBLE. NOT ALL UNDERGROUND UTILITIES WERE LOCATED. CONTRACTOR SHALL VERIFY UTILITY AND PIPE LOCATIONS WITHIN ALL WORK AREAS PRIOR TO COMMENCING WORK.
3. ALL EXISTING INFRASTRUCTURE AND SITE FEATURES THAT IS TO REMAIN IN PLACE (PIPING, ELECTRIC CONDUITS, STORM PIPES, ETC.) TO BE PROTECTED IN ACCORDANCE WITH THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT, TENNESSEE CODE 65-31-101.

KEY NOTES:

1. DEMOLISH EXISTING ABOVE GRADE LIFT STATION INCLUDING PUMPS, PIPING, VALVES, FITTINGS, AND ACCESSORIES AS NECESSARY. AND DELIVER TO THE CITY OF MEMPHIS. EXISTING WET WELL STRUCTURE TO REMAIN IN PLACE.
2. CONTRACTOR TO PLACE EROSION CONTROLS AROUND AREAS OF DISTURBANCE TO PREVENT SEDIMENT RUNOFF FROM LEAVING THE WORK AREA. SEE DETAILS ON DRAWING G-003. ANY SEDIMENT THAT LEAVES THE WORK AREA, INCLUDING THAT TRACK ONTO THE PAVEMENT, SHALL BE CLEANED UP IMMEDIATELY.
3. CONTRACTOR TO SUPPORT/PROTECT THE EXISTING UTILITIES DURING CONSTRUCTION.
4. REMOVE EXISTING VEGETATION AND GRADE TO SUBGRADE AROUND PERIMETER OF LIFT STATION.

SPECIAL FLOOD HAZARD STATEMENT:

THIS IS TO CERTIFY THAT BY GRAPHIC DETERMINATION THE ABOVE PLATTED PROPERTY IS NOT IN A SPECIAL FLOOD HAZARD AREA (SFHA) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD. THE SUBJECT PROPERTY IS SHOWN IN A FEMA ZONE X (NO SHADING ON FEMA MAP): AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO THE FEMA/FIRM MAP NUMBER 47157C0420F WITH AN EFFECTIVE DATE OF SEPTEMBER 28, 2007.

PROJECT BENCHMARKS

CITY BENCHMARK:

#1625 - CITY CAP IS LOCATED 700' N. OF CENTERLINE OF HOLMES ROAD., AT 5.2' E. OF EDGE OF PAVEMENT OF HILLBROOK ROAD., GLUED TO CONC. BASE FOR A 3" METAL POST, PAINTED YELLOW, 105' SE OF THE SE COR. OF MT. JOYNER CHURCH BLDG., ADDRESS # 5113.52.9' S, IF WIID P/POLE # 42214.-ELEVATION =302.50 (NAVD88)

SITE TBM:

TEMPORARY BENCHMARK (T.B.M.) - RIM OF SMH IN HILLBROOK ROAD JUST EAST OF LIFT STATION. ELEVATION=288.29 (NAVD88)

NOTE: BEFORE THE BEGINNING OF CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY THE SITE DATUM WITH ALL SITE TBMS AND IMMEDIATELY REPORT IN WRITING ANY DISCREPANCIES TO THE ENGINEER.

Tennessee811 Know what's below. Call before you dig.

REVISIONS

ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

BRADLEY J. DAVIS REGISTERED ENGINEER AGRICULTURE NO. 121070 STATE OF TENNESSEE
06-24-24

LIFT STATION DESIGN GROUP 3 C
DEVELOPER: SARP 10
ENGINEER: BROWN AND CALDWELL

DWG NO. C-101

SEWER BASIN: NS 02-2

SHEET 1 OF 2

DIVISION OF ENGINEERING

EXISTING SITE PLAN

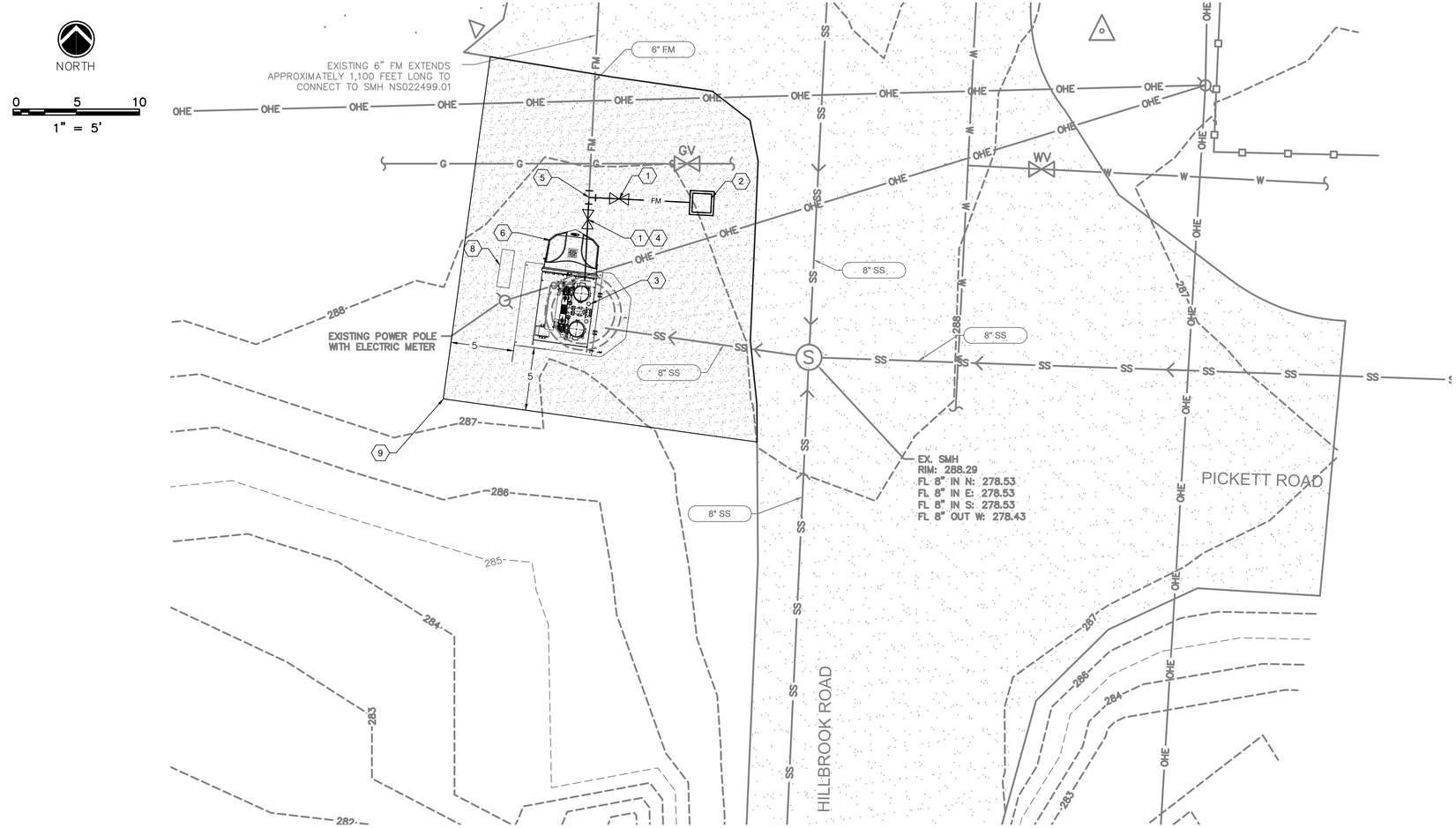
5081 HILLBROOK ROAD

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127
DESIGN BY: BRADLEY DAVIS, PE DATE: 06/24 SCALE: SHOWN

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE



LEGEND	
	EXISTING POWER POLE
	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
	EXISTING SIGN
S	SEWER MANHOLE
WM	EXISTING WATER METER
	CONTROL POINT
	PROPERTY LINE
SS	EXISTING SANITARY SEWER
W	EXISTING WATER MAIN
FM	EXISTING FORCE MAIN
OHE	EXISTING OVERHEAD ELECTRIC
400	EXISTING CONTOUR
	EXISTING CONCRETE
	EXISTING ASPHALT
	PROPOSED GRAVEL

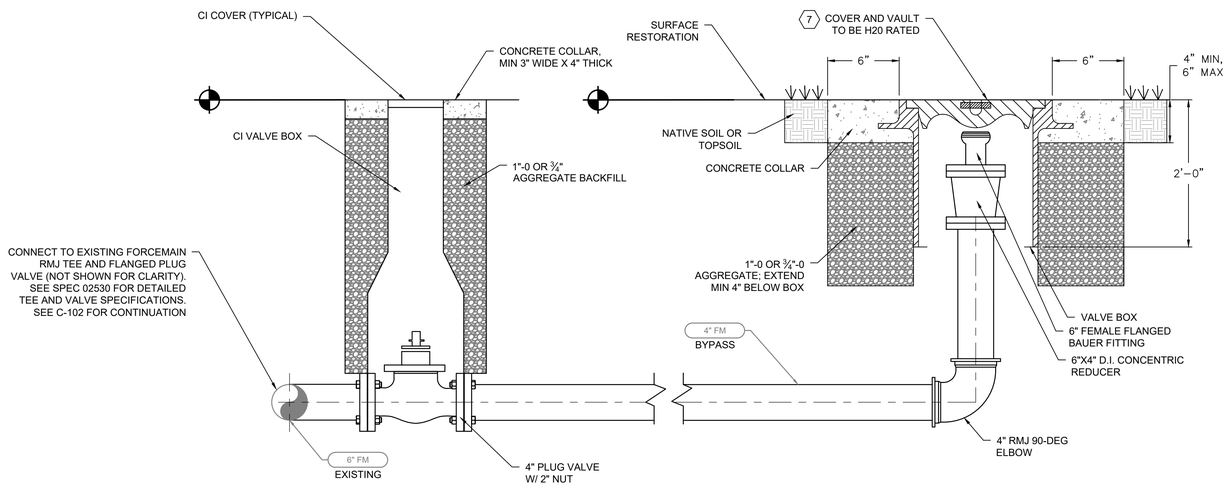
ABBREVIATION	
SMH	SANITARY MANHOLE

GENERAL NOTES:

1. BASE DRAWING DEVELOPED FROM "PARTIAL TOPOGRAPHIC SURVEY OF HILLBROOK SEWER LIFT STATION" DATED 11/18/21, PREPARED BY ASHWORTH ENGINEERING, PLLC. BROWN AND CALDWELL ASSUMES NO RESPONSIBILITY FOR ACCURACY OF THE SAME. DIMENSIONS, FEATURES, AND DETAILS MAY VARY FROM FIELD CONDITIONS. CONTRACTOR MUST VERIFY ALL EXISTING CONDITIONS THAT MAY IMPACT THE WORK.
2. EXISTING PIPE LOCATIONS SHOWN BASED ON CITY OF MEMPHIS GIS DATA AND FIELD VERIFICATION WHERE POSSIBLE. NOT ALL UNDERGROUND UTILITIES WERE LOCATED. CONTRACTOR SHALL VERIFY UTILITY AND PIPE LOCATIONS WITHIN ALL WORK AREAS PRIOR TO COMMENCING WORK.
3. ALL EXISTING INFRASTRUCTURE THAT IS TO REMAIN IN PLACE (PIPING, ELECTRIC CONDUITS, STORM PIPES, ETC.) TO BE PROTECTED IN ACCORDANCE WITH THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT, TENNESSEE CODE 65-31-101.
4. CONTRACTOR TO FIELD VERIFY AND CONFIRM EXISTING CONDITIONS AND ELEVATIONS PRIOR TO COMMENCING WORK.
5. CONTRACTOR TO INSTALL PROPOSED EQUIPMENT AND APPURTENANCES AT ELEVATIONS, LOCATIONS, AND DIMENSIONS SAME AS EXISTING.
6. CONTRACTOR SHALL PROVIDE ALL FITTINGS, PIPING, JOINTS, AND APPURTENANCES AS NECESSARY FOR THE WORK SHOWN.
7. REFER TO ELECTRICAL DRAWINGS FOR ELECTRIC AND POWER DETAILS.
8. CONTRACTOR TO RESTORE ALL DISTURBED AREAS TO EXISTING CONDITIONS. DISTURBED GRASSED AREAS SHALL BE REVEGETATED. PAVEMENT AREAS THAT ARE CUT AND REMOVED AS PART OF THE WORK SHALL BE RESTORED TO MATCH EXISTING.

KEY NOTES:

1. PROPOSED 4" STANDARD PORT ECCENTRIC PLUG VALVE WITH VALVE BOX.
2. PROPOSED FORCEMAIN EMERGENCY BYPASS CONNECTION, SEE DETAIL A/C-102 ON THIS SHEET
3. INSTALL PROPOSED ABOVE GRADE PACKAGED LIFT STATION, PIPING, VALVES, FITTINGS, AND ACCESSORIES PER MANUFACTURER'S INSTRUCTIONS. SEE PROCESS DRAWINGS FOR FURTHER DETAILS.
4. INSTALL PLUG VALVE ON FORCEMAIN PIPE UPSTREAM OF THE BYPASS TIE-IN.
5. 4" RESTRAINED MECHANICAL JOINT TEE
6. PRIOR TO INSTALLATION, VERIFY THAT THE LIFT STATION COVER DOES NOT CONTACT OTHER EXISTING OBJECTS WHEN OPEN. ADJUST THE COVER ORIENTATION IF NECESSARY TO PREVENT HITTING OTHER OBJECTS.
7. COVER AND VAULT TO BE PROVIDED BY OLDCASTLE, QUAZITE, OR ENGINEER-APPROVED EQUAL. INSTALL IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
8. GENERATOR PLUG AND MANUAL TRANSFER SWITCH TO BE INSTALLED ON ELECTRICAL SUPPORT RACK. SEE ELECTRICAL DRAWINGS.
9. PLACE WOVEN GEOTEXTILE (MIRAFI RS380I) OR APPROVED EQUAL. APPLY 6-INCHES OF CR610 GRAVEL TO FINAL GRADE. TOTAL AREA IS APPROXIMATELY 622 SQUARE FEET.



A C-102 FORCEMAIN EMERGENCY BYPASS CONNECTION DETAIL
NTS

NOTES:

1. ALL NEW BURIED PIPING SHALL BE 4-INCH DUCTILE IRON WITH RESTRAINED MECHANICAL JOINTS, UNLESS OTHERWISE SPECIFIED.
2. INSTALL BAUER FITTING NEAR ACCESS COVER FOR EASE OF MAINTENANCE AND OPERATION FROM GRADE WITHOUT THE USE OF ANY SPECIAL TOOLS.
3. LOCATION OF VALVES AND BYPASS CONNECTION TO BE SHOWN ON CIVIL DRAWINGS. CONTRACTOR TO INSTALL PROPOSED BYPASS PIPE LENGTH AS REQUIRED PER DRAWINGS AND EXISTING CONDITIONS.

APPROVED FOR CONSTRUCTION:

THE DOCUMENT BEARING THIS STAMP HAS BEEN RECEIVED AND REVIEWED BY THE CITY OF MEMPHIS DIVISION OF ENGINEERING UNDER AUTHORITY DELEGATED BY THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION DIVISION OF WATER RESOURCES. IT IS HEREBY APPROVED FOR CONSTRUCTION BY THE CITY ENGINEER AS EVIDENCE BY HIS SIGNATURE IN THE TITLE BLOCK BELOW.

SPECIAL FLOOD HAZARD STATEMENT:

THIS IS TO CERTIFY THAT BY GRAPHIC DETERMINATION THE ABOVE PLATTED PROPERTY IS NOT IN A SPECIAL FLOOD HAZARD AREA (SFHA) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD. THE SUBJECT PROPERTY IS SHOWN IN A FEMA ZONE X (NO SHADING ON FEMA MAP): AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO THE FEMA/FIRM MAP NUMBER 47157C0420F WITH AN EFFECTIVE DATE OF SEPTEMBER 28, 2007.

PROJECT BENCHMARKS

CITY BENCHMARK:

#1625 - CITY CAP IS LOCATED 700' N. OF CENTERLINE OF HOLMES ROAD., AT 5.2' E. OF EDGE OF PAVEMENT OF HILLBROOK ROAD., GLUED TO CONC. BASE FOR A 3" METAL POST, PAINTED YELLOW, 105' SE OF THE SE COR. OF MT. JOYNER CHURCH BLDG., ADDRESS # 5113.52.9' S, IF WIID P/POLE # 42214.-ELEVATION =302.50 (NAVD88)

SITE TBM:

TEMPORARY BENCHMARK (T.B.M.) - RIM OF SMH IN HILLBROOK ROAD JUST EAST OF LIFT STATION. ELEVATION=288.29 (NAVD88)

NOTE: BEFORE THE BEGINNING OF CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY THE SITE DATUM WITH ALL SITE TBMS AND IMMEDIATELY REPORT IN WRITING ANY DISCREPANCIES TO THE ENGINEER.

Tennessee811 Know what's below. Call before you dig.

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

BRADLEY DAVIS REGISTERED ENGINEER AGRICULTURE STATE OF TENNESSEE
06-24-24

LIFT STATION DESIGN GROUP 3 C
DEVELOPER: SARP 10
ENGINEER: BROWN AND CALDWELL

DWG NO. C-102

SEWER BASIN: NS 02-2

SHEET 2 OF 2
DIVISION OF ENGINEERING

PROPOSED SITE PLAN

5081 HILLBROOK ROAD

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127
DESIGN BY: BRADLEY DAVIS, PE DATE: 06/24 SCALE: SHOWN
REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

VALVES

SCHEMATIC OR 2D	VALVE TYPE
	THREE WAY VALVE
	GATE VALVE (FLANGED)
	GATE VALVE (THREADED)
	PLUG VALVE (GEAR OPERATOR)
	PLUG VALVE (LEVER HANDLE)
	BALL VALVE (THREADED)
	BALL VALVE (FLANGED)
	BUTTERFLY VALVE (LUGGED/WAFER)
	BUTTERFLY VALVE (AWWA W/ HANDWHEEL ACTUATOR
	GLOBE VALVE (FLANGED)
	GLOBE VALVE (THREADED)
	DIAPHRAGM VALVE (FLANGED)
	DIAPHRAGM VALVE (THREADED)
	CHECK VALVE
	PUMP DISCHARGE VALVE
	DOUBLE LEAF CHECK VALVE
	ANGLE VALVE
	FLOAT VALVE
	PINCH VALVE
	FUSIBLE LINK VALVE
	NEEDLE VALVE
	BALL CHECK VALVE

SCHEMATIC OR 2D	VALVE TYPE
	GAUGE OR ROOT VALVE
	KNIFE GATE VALVE
	FLAP GATE
	BALANCING COCK
	CIRCUIT SETTER
	THERMOSTATICALLY CONTROLLED VALVE
	PRESSURE AND VACUUM RELIEF VALVE
	VACUUM RELIEF VALVE
	PRESSURE RELIEF VALVE
	IN-LINE, SPRING LOADED RELIEF VALVE
	PRESSURE REGULATING VALVE
	BACK PRESSURE REGULATING VALVE
S	SOLENOID VALVE
	DIAPHRAGM OPERATED VALVE
M	PRESSURE BALANCE OPERATED VALVE
	MOTOR OPERATED VALVE
	PISTON OPERATED VALVE
	CHLORINE INSTITUTE CONTAINER VALVE
	MUD VALVE
	WALL HYDRANT
	TELESCOPING VALVE
	BACKFLOW PREVENTER

MECHANICAL PIPE AND FITTINGS

2D SINGLE LINE	2D DOUBLE LINE	3D DOUBLE LINE	
			FLANGED JOINT
		OR	PLAIN OR GROOVED END MECHANICAL COUPLING
			PUSH ON OR BALL AND SOCKET JOINT
			MECHANICAL JOINT
			WELDED JOINT
			GROOVED END ADAPTER FLANGE x FLANGE
			UNION
			SLEEVE TYPE MECHANICAL COUPLING
			RESTRAINED SLEEVE TYPE MECHANICAL COUPLING
			FLANGED COUPLING ADAPTER
			RESTRAINED FLANGED COUPLING ADAPTER
			ELASTOMER AND FABRIC EXPANSION JOINT
			EXPANSION JOINT (SEE SPECS FOR TYPE)
			FLEXIBLE METAL HOSE
			ELBOW (PLAN)
			ELBOW UP
			ELBOW DOWN
			TEE (PLAN)
			TEE UP
			TEE DOWN
			LATERAL (PLAN)
			LATERAL UP
			LATERAL DOWN
			CONCENTRIC REDUCER
			ECCENTRIC REDUCER
			EQUIPMENT CONNECTION FITTING
			BLIND FLANGE OR CAP

MISCELLANEOUS DEVICES

A	UTILITY STATION (LETTER, IF ANY, DESIGNATES TYPE)
	HOSE RACK
	FLOOR DRAIN
XCO	CLEANOUT; X=DESIGNATION IF ANY
XKIP	RECOMMENDED MAIN ANCHOR POINT WITH ALLOWABLE FORCE ON STRUCTURE
	PIPE ANCHOR
W	SEAL WATER CONTROL UNIT
	QUICK COUPLING
	IN LINE PRESSURE SENSOR

XX	INSTRUMENT
DE	DENSITY ELEMENT
FE	FLOW ELEMENT
LE	LEVEL ELEMENT
PE	PRESSURE ELEMENT
PI	PRESSURE INDICATOR (GAUGE)
TE	TEMPERATURE ELEMENT
TI	TEMPERATURE INDICATOR

	CALIBRATION TUBE
	PULSATION DAMPENER

DEMOLITION SYMBOLS

ITEMS SHADED SHALL BE DEMOLISHED AND REMOVED FROM THE SITE

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

BODY LAYNE MCGEE REGISTERED ENGINEER AGRICULTURE COMMERCE No. 119650 STATE OF TENNESSEE 6-24-24

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. D-001

SEWER BASIN: NS 02-2

SHEET 1 OF 4

DIVISION OF ENGINEERING

LEGENDS AND SYMBOLS

5081 HILLBROOK RD.

MEMPHIS, TENNESSEE

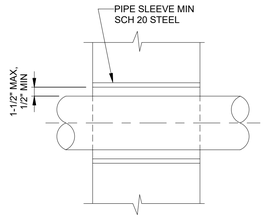
SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: CLM DATE: 06/24 SCALE: NONE

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

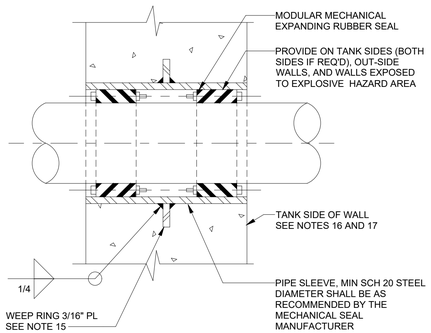
Path: C:\USERS\CGRANGER\BCPW\D2304708 FILENAME: D-001_HILLBROOK.DWG PLOT DATE: 6/24/2024



FOR WALLS

TYPE B PIPE PENETRATION

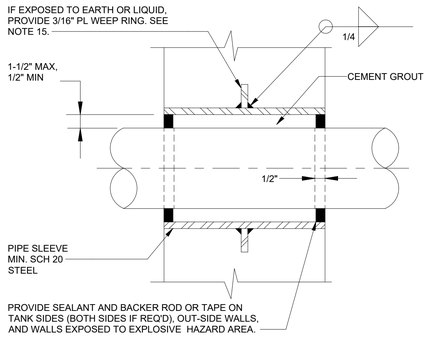
D1102 N.T.S.



FOR WALLS

TYPE D PIPE PENETRATION

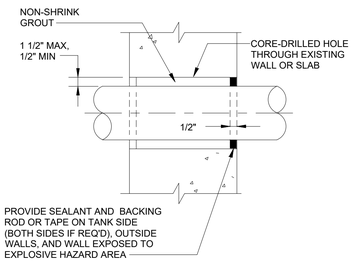
D1104 N.T.S.



FOR WALLS

TYPE E PIPE PENETRATION

D1105 N.T.S.



FOR PRECAST AND EXISTING
WALLS, FLOORS AND CEILINGS

TYPE X1 PIPE PENETRATION

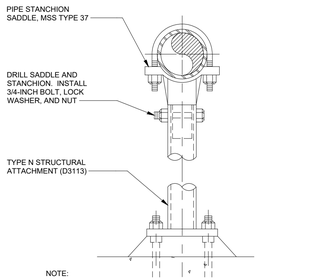
D1112 N.T.S.

GENERAL NOTES:

1. WHERE PIPES PASS THROUGH WALLS, FLOORS, OR CEILINGS, PENETRATIONS SHALL CONFORM TO TABLE, EXCEPT AS OTHERWISE SPECIFIED.
2. IN TABLE, "TANK" SHALL MEAN ANY PART OF A STRUCTURE CONTAINING LIQUID, OR IN CONTACT WITH THE EARTH.
3. IN TABLE, "PASSAGE" SHALL MEAN ANY ROOM, GALLERY, TUNNEL, OR SIMILAR ENCLOSURE.
4. IN TABLE, WATER SURFACE "WS" SHALL MEAN AN ELEVATION 9-INCHES ABOVE MAXIMUM WATER SURFACE SHOWN.
5. ALL STEEL SLEEVES SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
6. IN CONDITION 5, PENETRATION TYPE E,H,J, OR K SHALL BE USED WHERE ONE SIDE IS DESIGNATED AS HAZARDOUS (CLASSIFIED), WHERE FLOODING IS POSSIBLE, OR WHERE SPECIFIED.
7. SEAL FLANGES SHALL BE FACED AND DRILLED TO 150 POUND STANDARD. EACH JOINT SHALL BE FULL FACE GASKETED.
8. WHERE SPECIFIED, CAST IRON FLANGES MAY BE INSTALLED FLUSH WITH WALL AND TAPPED FOR STUDS.
9. PROVIDE CURB WHERE PENETRATING FLOOR, EXCEPT FOR PENETRATION TYPES A AND C. CURB SHALL BE 4" HIGH BY 3" WIDE.
10. PROVIDE A MINIMUM OF 3" CLEARANCE BETWEEN REINFORCING STEEL AND FERROUS METAL PENETRATIONS.
11. FLEXIBLE JOINTS SHALL BE PROVIDED FOR UNDERGROUND PIPING AS SPECIFIED.
12. RESTRAINED FLEXIBLE COUPLINGS FOR STEEL PIPE SHALL BE DESIGNED FOR 100 PSI LINE PRESSURE IN ACCORDANCE WITH AWWA MANUAL MII, FIGURES 19.15 AND 19.16. AWWA MANUAL M11, TABLE 19.7 SHALL BE UTILIZED.
13. UNLESS OTHERWISE SPECIFIED, INSULATION SHALL NOT EXTEND THROUGH SLEEVES. CHILLED WATER MUST PENETRATE WITH INSULATION.
14. WHERE CAST IRON PIPE IS EMBEDDED IN CONCRETE AT AN EXPANSION JOINT, USE TYPE L PENETRATION.
15. WEEP RINGS SHALL HAVE A MINIMUM DIAMETER 3-INCHES GREATER THAN THE OUTSIDE PIPE DIAMETER.
16. "TANK SIDE OF WALL" SHALL MEAN SIDE OF WALL NORMALLY EXPOSED TO LIQUID, EARTH, OR OUTSIDE ATMOSPHERE.
17. SEAL WITH MASTIC SEALANT WHERE WALL IS EXPOSED TO LIQUID, EARTH, OR A HAZARDOUS (CLASSIFIED) AREA.

PIPE PENETRATION TYPES

	CONDITION		TYPE		
	FROM	TO	STEEL PIPE	CAST IRON	PLASTIC PIPE
1	TANK	TANK BELOW W.S.	E, H OR K	E, F, G OR J	E
2	TANK	TANK ABOVE W.S.	D OR E	D OR E	D OR E
3	PASSAGE	TANK BELOW W.S.	E, H OR K	E, F, G OR J	E
4	PASSAGE	TANK ABOVE W.S.	A, C, D OR E	A, C, D OR E	A, C, D OR E
5	PASSAGE	PASSAGE	B OR C SEE NOTE 6	B OR C SEE NOTE 6	B OR C SEE NOTE 6
6	PASSAGE	OUTSIDE WALL	D OR E	D OR E	D OR E
7	PASSAGE	ROOF	AS SHOWN ON DRAWING OR X1		
8	TANK	OUTSIDE WALL	E OR F	E, F OR G	E



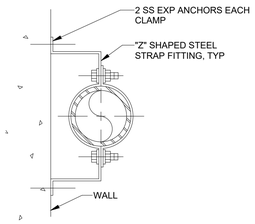
NOTE:

1. ABOVE SIZES ARE NOMINAL PIPE DIAMETERS IN INCHES
2. SPACING BETWEEN SUPPORTS SHALL BE PER TABLE A/D2301.
3. STANCHIONS INSTALLED OUTDOORS MUST WITHSTAND WIND SPEEDS OF UP TO 165 MILES PER HOUR.

3" THROUGH 20" PIPE

TYPE 10 PIPE STANCHION SADDLE

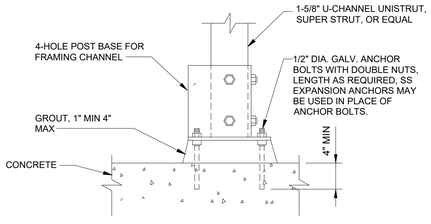
D2110 N.T.S.



FOR VERTICAL PIPE ONLY 3/4"
THROUGH 8" PIPE

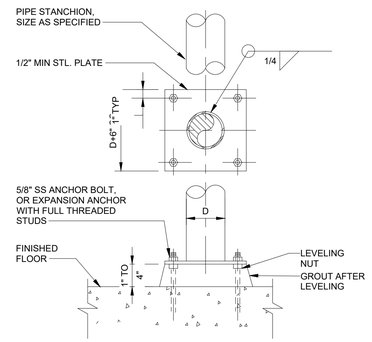
TYPE 11 OFFSET PIPE CLAMP

D2111 N.T.S.



TYPE E FRAMING CHANNEL POST BASE

D3105 N.T.S.

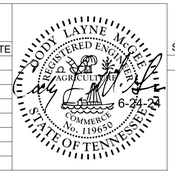


TYPE N PIPE STANCHION FLOOR ATTACHMENT

D3113 N.T.S.

REVISIONS

ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024



LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. D-002

SEWER BASIN: NS 02-2

SHEET 2 OF 4

DIVISION OF ENGINEERING

STANDARD DETAILS

5081 HILLBROOK RD.

MEMPHIS, TENNESSEE

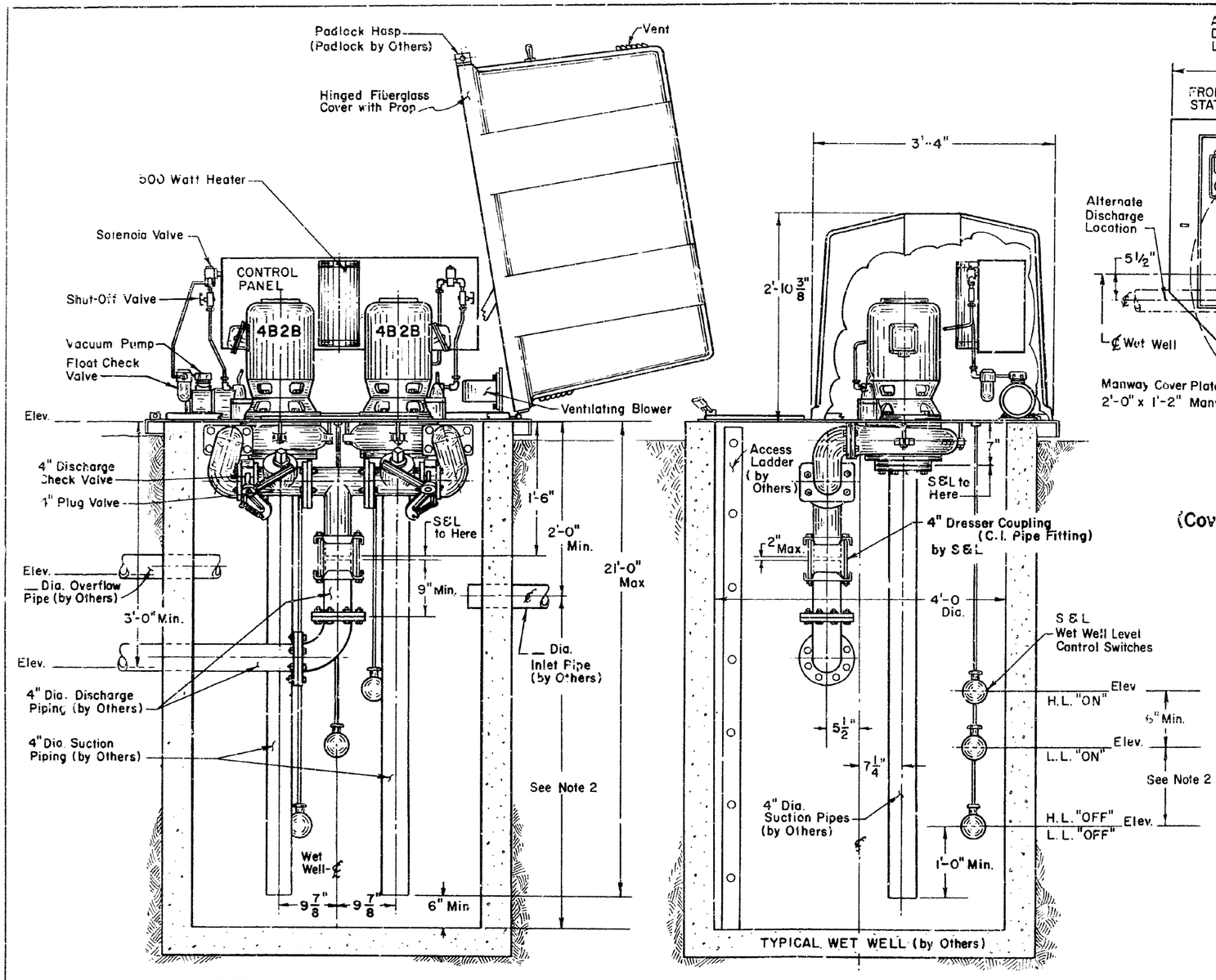
SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: CLM DATE: 06/24 SCALE: NONE

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPW\D2304708 FILENAME: D-002_HILLBROOK.DWG PLOT DATE: 6/24/2024



PLAN VIEW RECORD DRAWING

Machinery Chamber
(Cover Deleted For Clarity)

NOTES :-

1. Maximum Capacity – 300 G.P.M.
2. Allow One Minute Cycle Time, Based On Wet Well Capacity of 94 Gal. Per Foot.
3. If End of Discharge Line Is Below Elevation of Discharge Line at Point of Leaving Wet Well, Consult Factory.

PATENTED IN THE U.S.A. & FOREIGN COUNTRIES

GENERAL NOTES:

1. DRAWING OF EXISTING PUMP STATION IS FOR REFERENCE ONLY. CONTRACTOR TO FIELD VERIFY EXISTING ELEVATIONS AND LOCATION OF EQUIPMENT.

REVISIONS

ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

BRADLEY J. DAVIS — REGISTERED ENGINEER — AGRICULTURE — STATE OF TENNESSEE
06-24-24

LIFT STATION DESIGN GROUP 3 C
DEVELOPER: SARP 10
ENGINEER: BROWN AND CALDWELL

DWG NO. D-101

SEWER BASIN: NS 02-2

SHEET 3 OF 4
DIVISION OF ENGINEERING

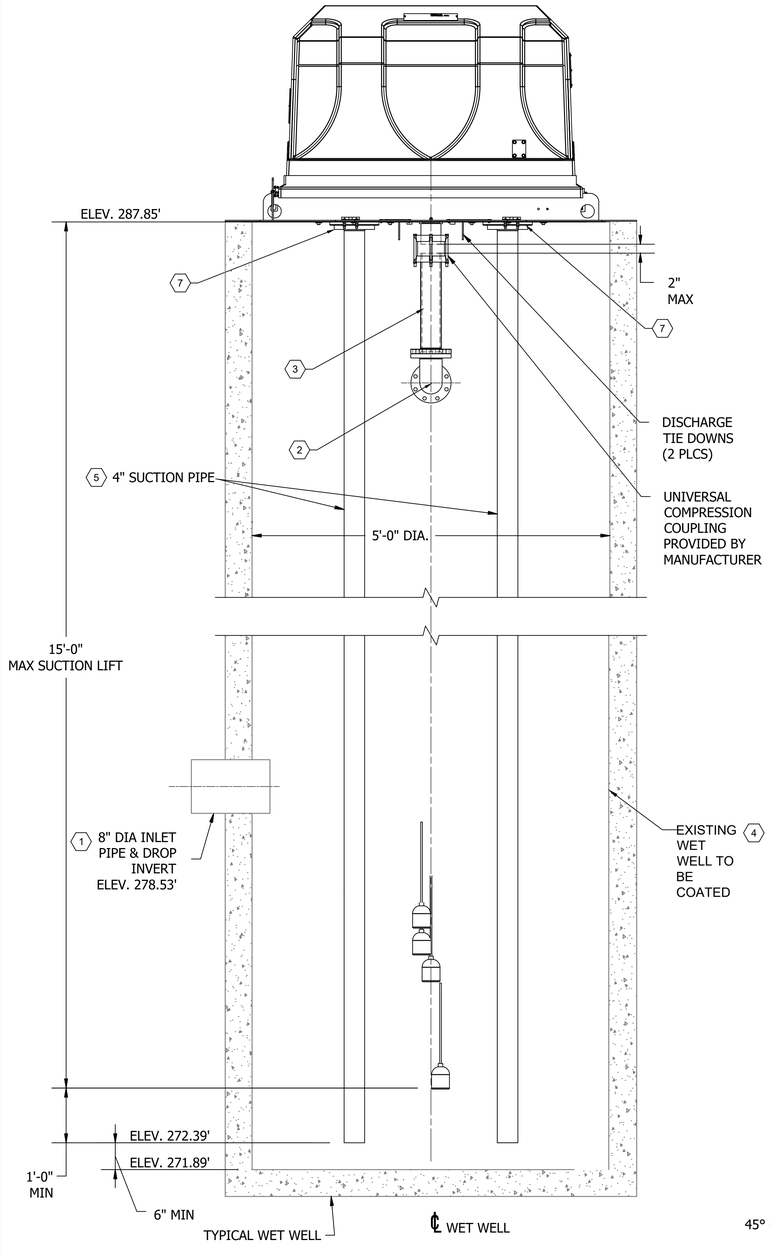
EXIST. LIFT STATION & PLAN SECTION

5081 HILLBROOK ROAD

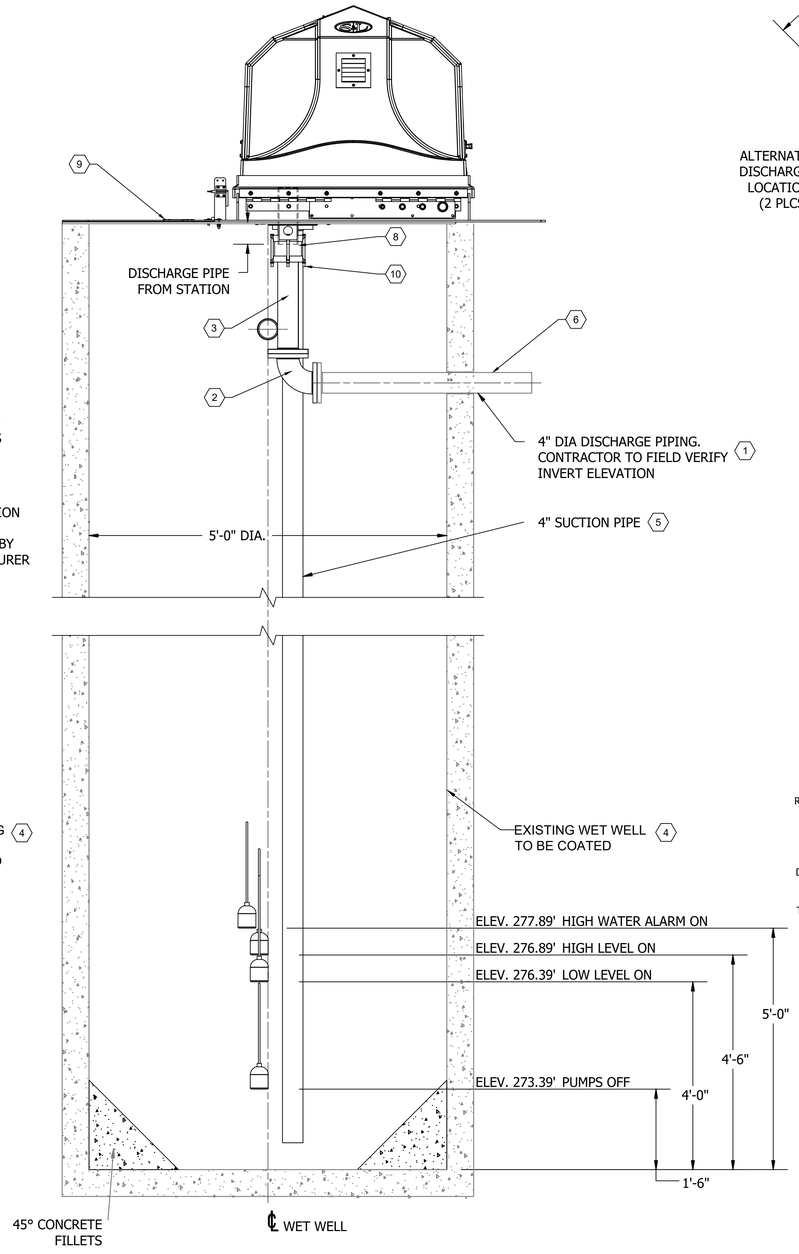
MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127
DESIGN BY: BRADLEY DAVIS, PE DATE: 06/24 SCALE: SHOWN
REVIEWED

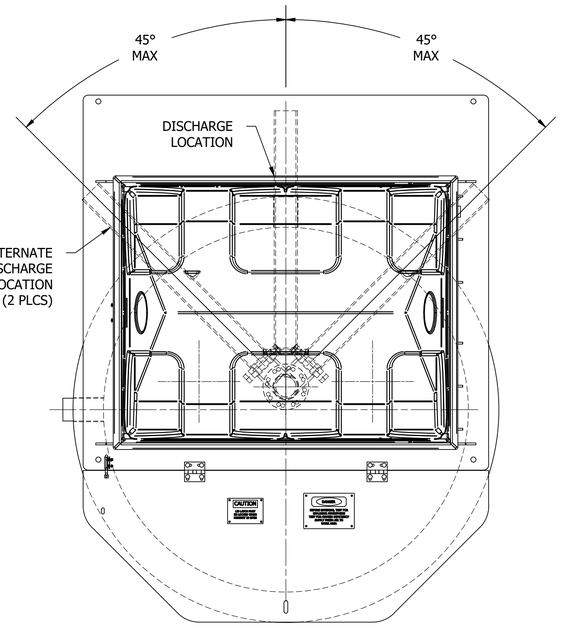
CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE



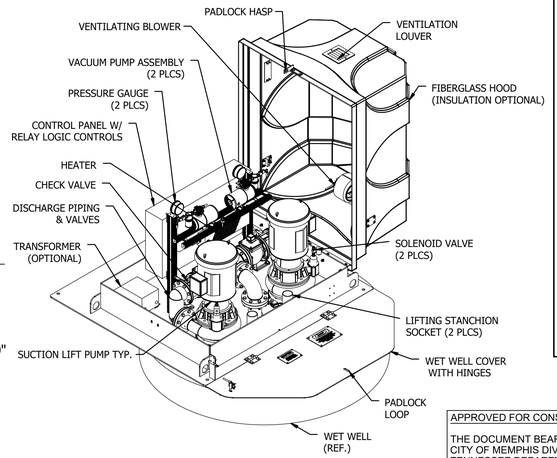
FRONT SECTIONAL ELEVATION



SIDE SECTIONAL ELEVATION



PLAN VIEW



A D-102 LIFT STATION ISOMETRIC
SCALE: NTS

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY AND CONFIRM EXISTING CONDITIONS AND ELEVATIONS PRIOR TO COMMENCING WORK.
2. CONTRACTOR TO INSTALL PROPOSED EQUIPMENT AND APPURTENANCES AT ELEVATIONS, LOCATIONS, AND DIMENSIONS SAME AS EXISTING.
3. INTERIOR OF EXISTING WET WELL SHALL BE DRAINED AND CLEANED PRIOR TO INSTALLING PROPOSED EQUIPMENT AND ACCESSORIES. CONTRACTOR SHALL OBSERVE INTERIOR OF EXISTING WET WELL PRIOR TO CLEANING PROCEDURES AND DOCUMENT PRE AND POST CONDITIONS.
4. CONTRACTOR SHALL PROVIDE ALL FITTINGS, PIPING, JOINTS, AND APPURTENANCES AS SHOWN TO BE BY OTHERS AS NECESSARY FOR THE WORK SHOWN.
5. SEE ELECTRICAL DRAWINGS FOR CONDUIT ROUTING AND WIRING.
6. ALL PIPING IN WET WELL SHALL BE DUCTILE IRON MATERIAL.
7. CONTRACTOR TO DEMOLISH AND REPLACE ALL PIPING AND APPURTENANCES INDICATED AS "NOT BY S&L".

KEY NOTES:

1. EXISTING INLET AND DISCHARGE PIPING ENTERING AND EXITING THE WET WELL TO REMAIN AS-IS.
2. 4" STANDARD FLG. 90-DEGREE ELBOW
3. 4" D.I. SPOOL LENGTH TO FIT
4. WET WELL CLEANING, INSPECTIONS, AND LINING
   - 4.a. ONCE BYPASS PUMPING IS ESTABLISHED, POWER WASH AND DRAIN INTERIOR OF WET WELL.
   - 4.b. CONTRACTOR TO INSPECT CONDITION OF CONCRETE SURFACES AND PROVIDE BRIEF WRITTEN REPORT TO IDENTIFY SURFACE CONDITION RELATIVE TO ACCEPTABILITY TO RECEIVE PROTECTIVE LINING. CONTRACTOR TO CONSULT WITH LINING MANUFACTURER ON-SITE AS NEEDED. REPORT TO INCLUDE SUMMARY OF OBSERVATIONS, RECOMMENDATIONS FOR REPAIRS, AND INCLUDE SUPPORTING PHOTOS.
   - 4.c. PROVIDE REPAIR PROPOSAL AS NEEDED WITH RECOMMENDED REPAIR PRODUCTS AND PROCEDURES PRIOR TO PROCEEDING. PROVIDE APPROVAL LETTER FROM LINING MANUFACTURER TO SUPPORT REPAIR RECOMMENDATIONS.
   - 4.d. AFTER COMPLETION OF APPROVED CONCRETE REPAIRS, PROVIDE FINAL SURFACE PREP FOLLOWED BY LINING OF INTERIOR BASE, WALLS, AND CEILING AS SPECIFIED IN SECTION 02537.
5. REPLACE EXISTING PIPE AS SHOWN
6. CONTRACTOR TO SUPPORT EXISTING DISCHARGE PIPE FROM WETWELL WHILE REPLACING DISCHARGE PIPE FROM THE PUMP.
7. USE GASKETS AND SEALANT PROVIDED WITH STATION FOR A TIGHT SUCTION PIPE CONNECTION.
8. COMPRESSION COUPLING PIPE FITTING
9. PRIOR TO SETTING THE STATION ON TOP OF THE WET WELL, APPLY A LAYER OF NON-SHRINK OR EPOXY GROUT ON THE TOP SURFACE OF THE WET WELL. THE STATION WILL THEN BED DOWN IN THE GROUT, GIVING THE STATION FIRM SUPPORT AND REDUCING NOISE TRANSMISSIONS. THE BASE PLATE SHOULD BE LEVEL IN ALL DIRECTIONS WHEN COMPLETE.
10. THE DISCHARGE IS TO BE ORIENTED IN ACCORDANCE WITH THE ENGINEER'S PLAN. MANUFACTURER WILL PROVIDE A COMPRESSION TYPE COUPLING TO JOIN THE FORCE MAIN TO THE STATION DISCHARGE PIPE. COMPRESSION TYPE COUPLINGS DO NOT PROVIDE PIPE END RESTRAINT. TWO LUGS SHALL BE PROVIDED (ONE ON EITHER SIDE OF THE DISCHARGE) ON THE UNDERSIDE OF THE BASEPLATE FOR SECURING THE VERTICAL SECTION OF THE DISCHARGE PIPE FROM SEPARATING IN THE COUPLING. TIE THE DISCHARGE PIPE TO THE STATION TO PREVENT SEPARATION FROM THE COUPLING IN THE VERTICAL DIRECTION BY USING AN ALL-THREADED ROD, CABLE OR CHAIN (PROVIDED BY CONTRACTOR). THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ADEQUATE RESTRAINT AGAINST ANY HORIZONTAL THRUST DEVELOPED. THE RESTRAINT SHALL BE TIED TO THE STRUCTURE, AS THE STATION BASEPLATE IS NOT DESIGNED TO WITHSTAND HORIZONTAL THRUST FORCES. ALL DISCHARGE PIPES SHOULD BE SECURED.

APPROVED FOR CONSTRUCTION:

THE DOCUMENT BEARING THIS STAMP HAS BEEN RECEIVED AND REVIEWED BY THE CITY OF MEMPHIS DIVISION OF ENGINEERING UNDER AUTHORITY DELEGATED BY THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION DIVISION OF WATER RESOURCES. IT IS HEREBY APPROVED FOR CONSTRUCTION BY THE CITY ENGINEER AS EVIDENCE BY HIS SIGNATURE IN THE TITLE BLOCK BELOW.

LIFT STATION PLAN AND SECTION
SCALE: 3/4" = 1'-0"

REVISIONS

ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

BRADLEY J. DAVIS REGISTERED ENGINEER AGRICULTURE NO. 107008 STATE OF TENNESSEE
06-24-24

LIFT STATION DESIGN GROUP 3 C
DEVELOPER: SARP 10
ENGINEER: BROWN AND CALDWELL

DWG NO. D-102

SEWER BASIN: NS 02-2

SHEET 4 OF 4

DIVISION OF ENGINEERING

PROP. LIFT STATION PLAN & SECTION

5081 HILLBROOK LIFT ROAD

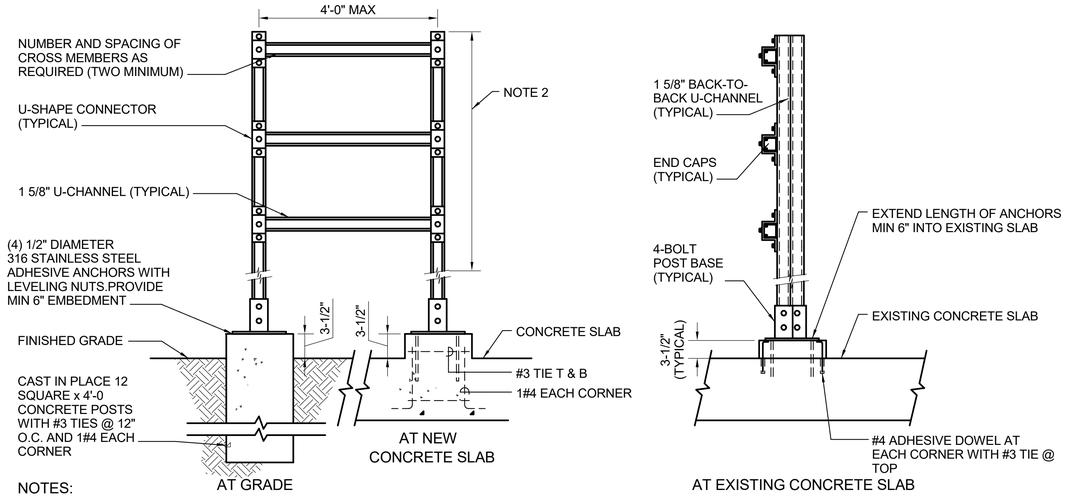
MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127
DESIGN BY: BRADLEY DAVIS, PE DATE: 06/24 SCALE: SHOWN
REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	LIGHTING		**BASIC MATERIALS**
A	AREA LIGHT (LETTER REFERENCES FIXTURE SCHEDULE)	1	BRANCH CIRCUIT WIRE & CONDUIT RUN CONCEALED IN WALL OR ABOVE CEILING, HOME RUN TO PANELBOARD. A NUMERAL, IF PRESENT AT ARROW HEAD, INDICATES CIRCUIT NUMBER. ANY BRANCH CIRCUIT SHOWN WITHOUT SLASH MARKS INDICATES A CONDUIT CONTAINING (3) #12 AWG CONDUCTORS (HOT, NEUTRAL & GROUND). SLASH MARKS, IF PRESENT, INDICATE THE FOLLOWING: HOT (ENERGIZED) CONDUCTOR, NEUTRAL CONDUCTOR, & GROUND CONDUCTOR
	RED BEACON ALARM LIGHT		WIRE & CONDUIT RUN EXPOSED
	SERVICE AND DISTRIBUTION		WIRE & CONDUIT RUN IN OR UNDER FLOOR
	SWITCHBOARD		EXISTING LIGHT FIXTURE OR ELECTRICAL DEVICE MAY BE REMOVED AND/OR RELOCATED AND CIRCUITRY MADE CONTINUOUS WHERE REQUIRED. UNO, LINE TYPE TYPICAL FOR ALL DEVICES TO BE REMOVED AND/OR RELOCATED.
	DISTRIBUTION PANEL		
	BRANCH CIRCUIT PANEL		
T	TRANSFORMER		DISCONNECT SWITCH
M	MOTOR CONNECTION	J	JUNCTION BOX
G	GENERATOR CONNECTION		PUSHBUTTON
	DISCONNECT SWITCH (FUSED AS REQUIRED)	S_M	MANUAL MOTOR STARTER SWITCH
	MOTOR CONTROLLER (SPECIFIED IN OTHER THAN DIV. 26)	S	SINGLE-POLE, SINGLE-THROW (S.P.S.T.) WALL SWITCH
	COMBINATION MOTOR CONTROLLER & DISCONNECT SWITCH (SPECIFIED IN OTHER THAN DIV. 26)	S_K	KEYED WALL SWITCH
	EQUIPMENT NOT FURNISHED UNDER DIV. 26 (SPECIFIED IN OTHER THAN DIV. 26)	S_D	WALL BOX DIMMER CONTROL
M	ELECTRIC METER	S_3	SINGLE-POLE, DOUBLE-THROW (S.P.D.T.) WALL SWITCH
R	RELAY	S_{OS}	WALL SWITCH WITH OCCUPANCY SENSOR
CB	CIRCUIT BREAKER		SINGLE RECEPTACLE IN WALL (NEMA 5-20R)
LC	LIGHTING CONTACTOR		DUPLEX RECEPTACLE IN WALL (NEMA 5-20R)
PC	PHOTOCELL	GFCI	G.F.I. TYPE DUPLEX RECEPTACLE IN WALL (NEMA 5-20R)
			DUPLEX RECEPTACLE IN WALL, EMERGENCY CIRCUIT (NEMA 5-20R)
			DOUBLE DUPLEX RECEPTACLE IN WALL (NEMA 5-20R)
		WP	G.F.I. TYPE DUPLEX RECEPTACLE OUTDOORS (WEATHERPROOF)
			SINGLE 240V RECEPTACLE FOR APPLIANCE OR EQUIPMENT (PER APPLIANCE RATING)
		X	X = TR (TAMPER RESISTANT) OR AF (ARC FAULT)
		IG	DUPLEX RECEPTACLE IN WALL WITH ISOLATED GROUND
			POINT OF CONNECTION



NOTES:

1. EQUIPMENT RACK SIZING:
   - A. ONE ITEM GREATER THAN 150 SQUARE INCHES.
   - B. TWO EQUIPMENT ITEMS GREATER THAN 130 SQUARE INCHES.
   - C. THREE OR MORE EQUIPMENT ITEMS.
   - D. PROVIDE 316 STAINLESS STEEL CHANNEL END-CAPS, AND FITTINGS
   - E. PROVIDE 1/4" MINIMUM ALUMINUM PLATE FOR SMALL ITEMS
2. MOUNT INDICATORS OR EQUIPMENT OPERATING HANDLES FOUR FEET ABOVE FLOOR OR PLATFORM.
3. MATERIAL AND HARDWARE PER SPECIFICATION DIVISION 16.

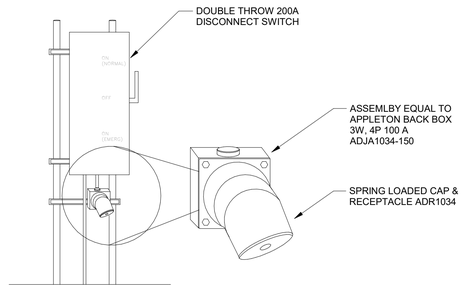
EQUIPMENT SUPPORT

SCALE: N.T.S.

ELECTRICAL ABBREVIATIONS

SYMBOL	DESCRIPTION
A	AMPERE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERES INTERRUPTING CURRENT
ANN	ANNUNCIATOR
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLP	CURRENT LIMITING PANEL
CT	CURRENT TRANSFORMER
CU	COPPER
DISC	DISCONNECT
EDF	ELECTRIC DRINKING FOUNTAIN
FAAP	FIRE ALARM ANNUMNICATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPS
G	GROUND
GFI	GROUND FAULT CURRENT INTERRUPTER
HP	HORSEPOWER
HZ	HERTZ
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT-AMPERE
KW	KILOWATT
LED	LIGHT EMITTING DIODE
MCC	MOTOR CONTROL CENTER
MLO	MAIN LUGS ONLY
N	NEUTRAL
NEC	NATIONAL ELECTRIC CODE
PF	POWER FACTOR
SOWB	SPACE ONLY WITH BUS
UGW	UNDERGROUND ELECTRICAL
V	VOLT
VA	VOLT-AMPERE
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHER PROOF
XFMR	TRNASFORMER
3P	THREE POLE
3PH	THREE PHASE
4W	FOUR WIRE
30/3	30 AMPERE, 3-POLE

CODE ANALYSIS - INTERNATIONAL BUILDING CODE 2015
CODE COMMENTS
JURISDICTION
Memphis and Shelby County Construction Code Enforcement
APPLICABLE CODES
2015 International Building Code with Local Amendments
2015 International Existing Building Code with Local Amendments
2015 International Residential Code with Local Amendments
2014 National Electrical Code
2018 Joint Electrical Code
2015 International Mechanical Code with Local Amendments
2015 International Fuel Gas Code with Local Amendments
2015 International Plumbing Code with Local Amendments
2015 International Energy Conservation Code with Local Amendments
2009 ICC A117.1 Accessibility and Useable Buildings and Facilities)by reference)



GENERATOR PLUG

SCALE: N.T.S.

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

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

RYAN J. HERITER REGISTERED ENGINEER AGRICULTURE No. 106919 STATE OF TENNESSEE 6/24/24

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CADWELL

DWG NO. E-001

SEWER BASIN: WN05-2

SHEET 1 OF 2

DIVISION OF ENGINEERING

ELECTRICAL - STANDARD DETAILS 1

5081 HILLBROOK LIFT STATION
MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: RJH DATE: 06/24 SCALE: SHOWN

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: P:\2021\121001 - SARP 10 - GROUP 3 LIFT STATIONS\CAD\XREFS FILENAME: 157456_TB.DWG PLOT DATE: ---- CAD USER: PAT HAGAN

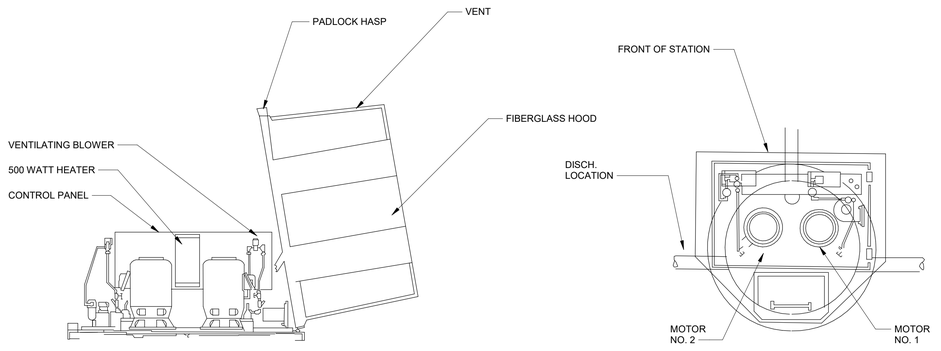
LIFT STATION

PUMP CONTROLLER MOTORS

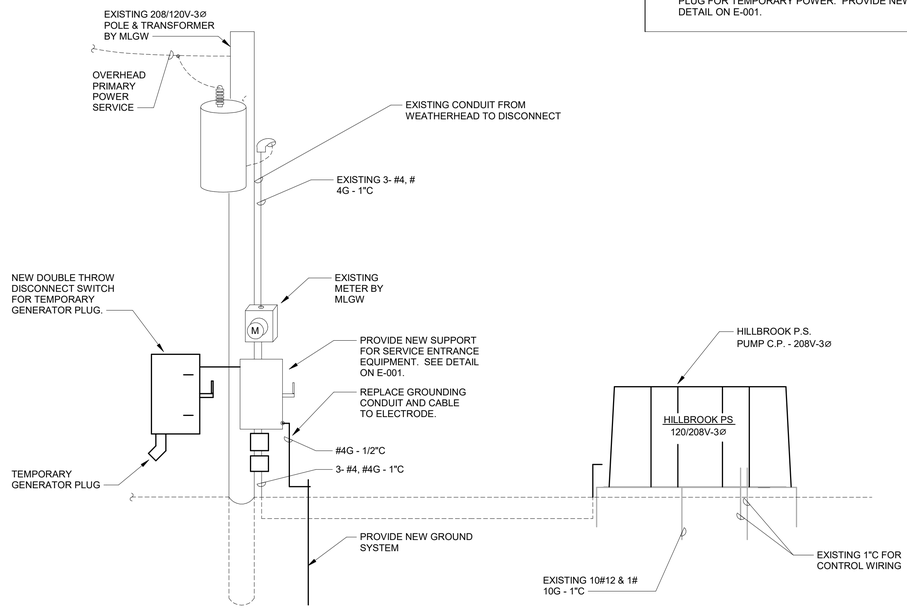
DISCONNECT FUSES

GROUND ROD

SERVICE ENTRANCE



PUMP ELECTRICAL PLAN
SCALE: N.T.S.



RISER & SINGLE LINE DIAGRAM
SCALE: N.T.S.

GENERAL NOTES:

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE, AND ALL OTHER APPLICABLE STANDARDS AND REGULATIONS ENFORCED BY THE AUTHORITY HAVING JURISDICTION.
2. ALL ABOVE GROUND EXTERIOR CONDUIT SHALL BE GALVANIZED RIGID STEEL CONDUIT WITH CORROSION RESISTANT FITTINGS, CLAMPS AND SUPPORT.
3. IN THE EVENT OF CONFLICTS BETWEEN THE DRAWINGS, SPECIFICATIONS, CODES AND REGULATIONS, NOTIFY THE ENGINEER OF RECORD FOR HIS OPINION PRIOR TO INSTALLATION.
4. SHOP DRAWINGS SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL AND TO THE ENGINEER FOR REVIEW.
5. SMACNA SEISMIC RESTRAINT MANUAL, THIRD EDITION 2008, OR LATEST REVISION MAY BE USED AS A GUIDE FOR GENERAL SEISMIC SUPPORT DETAIL AND SUPPORT SPACING RECOMMENDATIONS.
6. COORDINATE LOCATION OF ALL LIGHTING FIXTURES, MECHANICAL EQUIPMENT AND ACCESS PANELS WITH EXISTING CONDITIONS PRIOR TO ROUGH-IN.
7. WHILE EFFORT HAS BEEN MADE TO IDENTIFY EXISTING CIRCUITS THAT ARE TO BE REMOVED OR REPLACED, THE INFORMATION MAY NOT BE ACCURATE.
8. ELECTRICAL CONTRACTOR SHALL VERIFY VOLTAGE AND AMP DRAW FOR ALL NEW EQUIPMENT.
9. REPLACE THE EXISTING 5HP PUMPS AND RE-CONNECT POWER.
10. THE MAIN CONTROL PANEL IS FED WITH AN EXISTING 208V 3PH MOLDED CASE CIRCUIT BREAKER ABOVE GRADE.
11. REPLACE PLYWOOD MOUNTING BOARD WITH UNISTRUT MOUNTING HARDWARE. SEE DETAIL ON E-001.
12. REPLACE JUNCTION BOX AND RE-MOUNT JUNCTION BOX AND TRANSFORMER.
13. REPLACE CONDUIT AND CABLE TO RE-CONNECT AT GROUND ROD.
14. RE-CONNECT SCADA SYSTEM. REMOVE, STORE, AND RE-MOUNT ANTENA.
15. PROVIDE NEW DOUBLE THROW DISCONNECT AND GENERATOR PLUG FOR TEMPORARY POWER. PROVIDE NEW SUPPORT. SEE DETAIL ON E-001.

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

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

RYAN J. HERTTER REGISTERED ENGINEER No. 109919 STATE OF TENNESSEE

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CADWELL

DWG NO. E-101

SEWER BASIN: NS 02-2

SHEET 2 OF 2

DIVISION OF ENGINEERING

ELECTRICAL PLAN AND RISER DIAGRAM

5081 HILLBROOK LIFT STATION
MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: RJH DATE: 06/24 SCALE: SHOWN

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

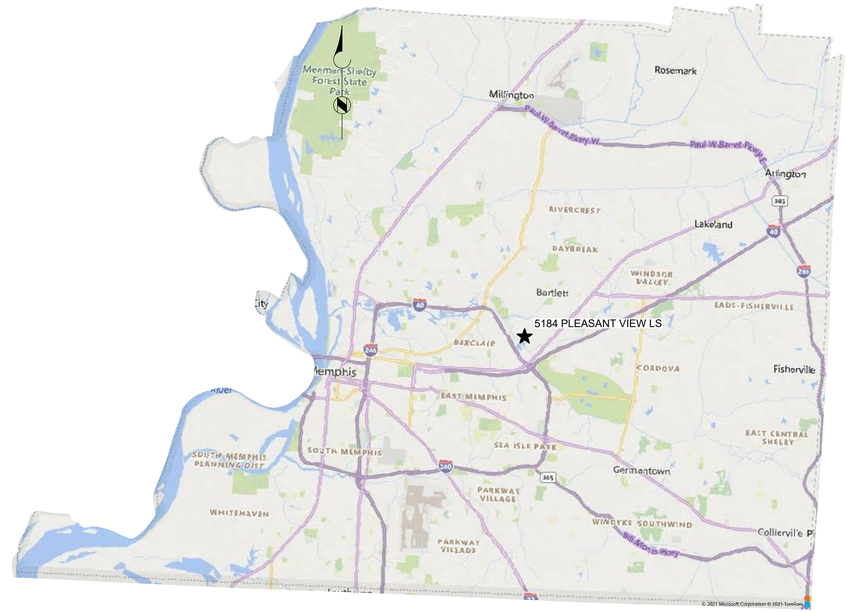
Path: P:\2021\21001 - SARP 10 - GROUP 3 LIFT STATIONS\CAD\XREFS FILENAME: 157456_TB.DWG PLOT DATE: ---- CAD USER: PAT HAGAN

LIFT STATION DESIGN GROUP 3 C
5184 PLEASANT VIEW RD. LIFT STATION
SEWER ASSESSMENT & REHABILITATION PROGRAM (SARP10)
CITY OF MEMPHIS, TENNESSEE

SERVICE CONTRACT NO.
409278.61.0127

LOCATION MAP
MAP NOT TO SCALE

JUNE 2024
ISSUED FOR BID



VICINITY MAP
MAP NOT TO SCALE

PREPARED BY:

Brown AND Caldwell

Environmental Engineers and Consultants
1661 International Drive, Suite 400, Memphis, TN 38120
Phone: 901-708-4333

GENERAL NOTES:

1. AT ALL CROSSINGS OF EXISTING UTILITIES, THE CONTRACTOR SHALL FIELD LOCATE BY APPROPRIATE METHODS, THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES.
2. ALL SEWER TRENCHES SHALL BE PROPERLY BACKFILLED AT THE END OF EACH WORK DAY.
3. ALL DISTURBED AREAS SHALL BE SEEDED (WITH A SEASONAL MIX) AND COVERED WITH STRAW AT THE END OF EACH WEEK (AT A MINIMUM) OR MORE FREQUENTLY, AS CONDITIONS DICTATE, IN ADDITION TO EROSION CONTROLS REFERENCED ON PLANS.
4. ALL DISTURBED LAWN AREAS SHALL BE SODDED. MATCH EXISTING SOD TYPE.
5. CONTRACTOR IS FULLY RESPONSIBLE FOR DAMAGES OF EXISTING UTILITIES, AND PUBLIC/PRIVATE INFRASTRUCTURE AND PROPERTY. ANY DAMAGE TO EXISTING INFRASTRUCTURE (ABOVEGRADE OR BELOWGRADE) CAUSED BY THE CONTRACTOR'S OPERATIONS WILL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

SANITARY SEWER NOTES:

1. LOCATION OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND ARE NOT NECESSARILY ALL OF SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE APPROPRIATE UTILITY COMPANY TO DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND/OR UNDERGROUND STRUCTURES PRIOR TO THE INITIATION OF ANY CONSTRUCTION. CONTRACTOR SHALL ALSO ASSUME FULL RESPONSIBILITY FOR LOCATION OF EXISTING UTILITIES INVOLVING MLG&W, SOUTH CENTRAL BELL, AND/OR TEXAS GAS COMPANY, PLEASE CALL 1-800-351-1111. FOR SEWER SERVICE LOCATIONS, CALL 1-800-351-1111.
2. CONTRACTOR SHALL ENSURE UNINTERRUPTED SEWER SERVICE ON EXISTING SEWER AND SERVICE CONNECTIONS BY PROVIDING AMPLE TEMPORARY WASTEWATER PUMPING AND /OR BYPASSING.
3. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES.
4. ALL AREAS IN CUT OR FILL WHERE VEGETATION HAS BEEN REMOVED SHALL BE SEEDED, MULCHED, FERTILIZED, AND /OR SODDED AS REQUIRED TO PREVENT EROSION.
5. THE CONTRACTOR SHALL VERIFY EXISTING DATA AND REPORT ANY SIGNIFICANT DISCREPANCIES TO THE ENGINEER.
6. ALL SANITARY SEWER TO BE CONSTRUCTED AS PER CITY OF MEMPHIS STANDARDS CONSTRUCTION SPECIFICATIONS. SANITARY SEWER CONNECTIONS TO BE INSTALLED AS PER CITY OF MEMPHIS STANDARD SST-16.
7. ALL SEWER MANHOLE LIDS IN OPEN AREAS ARE TO BE CONSTRUCTED 1.5' ABOVE PROPOSED GRADE; IN BACKYARDS, MANHOLE LIDS ARE TO BE 1.5' ABOVE INITIAL GRADE, 0.5' ABOVE FINAL GRADE.
8. ALL SANITARY SEWER, INCLUDING SERVICE CONNECTIONS, WHICH HAS LESS THAN 1.5' CLEARANCE (OUTSIDE OF PIPES) WITH DRAINAGE OR IN FILLED AREAS SHALL BE CLASS 50 D.I.P. OR CONCRETE ENCASED, 10' BOTH SIDES OF CROSSING. ALL DUCTILE IRON PIPE SHALL BE POLYETHYLENE LINED OR SHALL BE TREATED WITH PROTECTO 401 OR APPROVED EQUIVALENT.
9. THE CITY OF MEMPHIS SHALL HAVE INGRESS/EGRESS RIGHTS TO USE PRIVATE YARDS FOR THE PURPOSE OF MAINTAINING ALL PUBLIC SEWER LINES AND SHALL BEAR NO RESPONSIBILITY FOR THE MAINTENANCE OF SAID PRIVATE DRIVES AND YARDS.
10. NO TREES, SHRUBS, PERMANENT STRUCTURES OR OTHER UTILITIES (EXCEPT FOR CROSSINGS) WILL BE ALLOWED WITHIN SANITARY SEWER EASEMENT. NO OTHER UTILITIES OR SERVICES MAY OCCUPY SANITARY SEWER EASEMENTS IN PRIVATE DRIVE AND YARDS EXCEPT FOR CROSSINGS.
11. ALL SANITARY SEWER MANHOLES IN REVERSE CROWN STREETS, ALLEYS OR DRIVES (PUBLIC OR PRIVATE) SHALL BE PROVIDED WITH GASKETS AND PLUGS FOR "PICK HOLES" TO PREVENT DRAINAGE INFLOW INTO SEWER SYSTEM.
12. THE CONTRACTOR SHALL PROVIDE ADEQUATE AND EFFECTIVE EROSION CONTROL AS NECESSARY TO PREVENT ANY SEDIMENT FROM ENTERING EXISTING DRAINAGE SYSTEM AND /OR ADJACENT PROPERTIES.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL REMOVE ALL UNDERGROUND UTILITIES AND ANY OTHER ITEMS IN ACCORDANCE WITH THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC) AND THE TECHNICAL SPECIFICATIONS. THE CONTRACTOR SHALL STRICTLY FOLLOW ALL CITY, STATE, AND FEDERAL GUIDELINES FOR REMOVAL AND DISPOSAL OF THESE FACILITIES.
2. ALL BUILDING, CONCRETE, ASPHALT PAVEMENT, AND GRANULAR SUBBASE IN AREAS OF DEMOLITION SHALL BE REMOVED FULL DEPTH PER THE DIRECTION OF THE GEOTECHNICAL ENGINEER. ALL SHALL BE DISPOSED IN ACCORDANCE WITH ALL CITY, STATE AND FEDERAL REGULATIONS.
3. CONTRACTOR SHALL REMOVE & REPAIR PAVEMENT AS REQUIRED FOR UTILITY CONSTRUCTION INCLUDING BUT NOT LIMITED TO : IRRIGATION SLEEVES, SITE LIGHTNING CONDUITS, WATER LINES, SANITARY SEWER LINES, STORM DRAINAGE LINES, ETC. CONTRACTOR HAS AN OPTION TO BORE CONDUITS.
4. PRIOR TO COMMENCING ANY UTILITY WORK, CONTRACTOR SHALL NOTIFY ANY SURROUNDING PROPERTY OWNERS WHO MAY EXPERIENCE A DISRUPTION IN SERVICE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MODIFYING ANY EXISTING IRRIGATION SYSTEM TO ACCOMMODATE PARTS OF THAT EXISTING SYSTEM THAT ARE REMOVED, ABANDONED OR DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL ALSO MODIFY ANY EXISTING IRRIGATION SYSTEM TO ACCOMMODATE NEW AREAS OF LANDSCAPING. ANY IRRIGATION SLEEVES SHALL BE INSTALLED PRIOR TO PAVING AND BACKFILLED PROPERLY BY THE SITE CONTRACTOR.
6. THE CONTRACTOR SHALL ENSURE ADEQUATE ACCESS IS PROVIDED DURING ALL PHASES OF CONSTRUCTION. COORDINATE WITH THE PROJECT MANAGER.
7. WHEN REMOVING UTILITIES, CONTRACTOR SHALL GROUT AND SEAL ANY STRUCTURES THAT ARE TO REMAIN PER LOCAL REGULATIONS.
8. UTILITIES SHOWN ARE LOCATED BY FIELD SURVEY AND RECORD DRAWINGS. ADDITIONAL UNDERGROUND UTILITIES WILL BE ENCOUNTERED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE ANY INACTIVE STRUCTURE & ALERT ENGINEER OF ANY ACTIVE, UNMAPPED STRUCTURES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION OF UTILITY DEMOLITION & RELOCATION.
10. CONTRACTOR SHALL NOT INTERRUPT DRAINAGE FROM ADJACENT PROPERTIES AND PUBLIC RIGHT-OF-WAYS.
11. ALL PUMPS, MOTORS, VALVES ETC REMOVED SHOULD BE RETURNED TO MEMPHIS WTCS DEPARTMENT. CONTACT JAMES GREENLEE FOR FURTHER DIRECTIONS, 901-636-0237.

EROSION CONTROL NOTES:

1. CONSTRUCTION ENTRANCES (TO THE OFFICE OR LAY DOWN AREA, AND TO WORK AREAS) TO BE A MINIMUM 6" DEPTH T.D.O.T. NO. 1 OR NO. 2 STONE.
2. INSTALL SEDIMENT TUBE, WATTLES OR SILT FENCE AS DICTATED ON THE EROSION CONTROL PLANS. SEE DETAILS FOR MORE INFORMATION.
3. ALL STOCK PILE AREAS TO BE PROTECTED BY A COMBINATION OF SEDIMENT TUBE OR WATTLES AND SILT FENCE.
4. INSTALL INLET PROTECTION DEVICES AT STORM INLETS PRIOR TO CONSTRUCTION. SEE PLANS FOR LOCATIONS.
5. ALL NEWLY CUT OR FILL AREAS LACKING ADEQUATE VEGETATION SHALL BE FERTILIZED, MULCHED, SEEDED, AND /OR SODDED TO EFFECTIVELY CONTROL EROSION.
6. A SPECIFIC INDIVIDUAL SHALL BE DESIGNATED TO BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS ON EACH PROJECT SITE.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SOIL EROSION CONTROL MEASURES AS NOTED ON THE PLANS AND AS REQUESTED BY THE OWNER DURING THE CONSTRUCTION, AND AS NECESSARY TO PREVENT THE SEDIMENT FROM LEAVING THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SATISFYING THE REQUIREMENTS OF THE STATE OF TENNESSEE EROSION & SEDIMENT CONTROL HANDBOOK. ALL SOIL EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE CONTRACT SO AS TO PREVENT ANY SEDIMENTATION FROM WASHING OFF THE SITE ONTO ADJACENT PROPERTY OR PUBLIC RIGHTS-OF-WAY. SEDIMENT FENCE SHALL BE INSTALLED AS DIRECTED. THE CONTRACTOR SHALL MAINTAIN A LOG OF ALL MAINTENANCE ACTIVITIES FOR THE EROSION ELEMENTS AS REQUIRED BY THE STATE OF TENNESSEE DEPARTMENT OF WATER POLLUTION CONTROL.
8. A COPY OF THE EROSION CONTROL PLAN MUST BE AVAILABLE ON SITE FOR THE DWPC INSPECTOR ON REQUEST.
9. EROSION AND SEDIMENT CONTROL MEASURES MUST BE IN PLACE AND FUNCTIONAL BEFORE EARTH MOVING OPERATIONS BEGIN, AND MUST BE CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. TEMPORARY MEASURES MAY BE REMOVED AT THE BEGINNING OF THE WORK DAY, BUT MUST BE REPLACED AT THE END OF THE WORK DAY OR PRIOR TO RAINFALL EVENTS.
10. ALL CONTROL MEASURES SHALL BE CHECKED AND STATE REQUIREMENTS FOR MAINTENANCE AND REPAIRS SHALL BE MADE AS NECESSARY. DURING PROLONGED RAINFALL, DAILY CHECKING AND REPAIRING IS NECESSARY. THE PERMITTEE SHALL MAINTAIN RECORDS OF INSPECTION CHECKS, MAINTENANCE, AND REPAIRS.
11. THIS PLAN HAS BEEN REVIEWED AND APPEARS TO BE ADEQUATE. IF SEWER PIPE INSTALLATION BY BORE DOES NOT PROVIDE FOR EFFECTIVE SEDIMENT CONTROL AND EROSION PROTECTION, ADDITIONAL MEASURES WILL BE REQUIRED.
12. IF PUMPING IS REQUIRED, SEDIMENT LADEN WATER IS NOT TO BE DISCHARGED INTO THE STORM DRAIN OR THE STREET.

DRAWING INDEX

REVISIONS

ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

JODY LAYNE MCGEE — REGISTERED ENGINEER — AGRICULTURAL — No. 119650 — STATE OF TENNESSEE — 6-24-24

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. G-001

SEWER BASIN: WN05-2

SHEET 1 OF 3

DIVISION OF ENGINEERING

GENERAL NOTES AND DRAWING INDEX

5184 PLEASANT VIEW RD.

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: CLM DATE: 06/24 SCALE: NONE

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWD2304698 FILENAME: G-001_5184 PLEASANT VIEW RD.DWG PLOT DATE: 6/24/2024

CROSS REFERENCING SYSTEM

VIEW TITLES

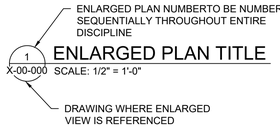
1. PLAN TITLES:

SINGLE PLAN VIEW ON SHEET

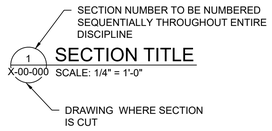
PLAN TITLE
SCALE: 1/4" = 1'-0"

MULTIPLE PLAN VIEWS ON SHEET

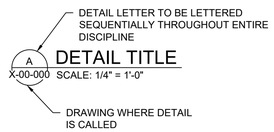
2. ENLARGED PLAN TITLES:



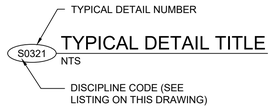
3. SECTION TITLES:



4. DETAIL AND PHOTO TITLES:

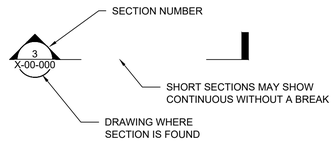


5. TYPICAL DETAIL TITLES:



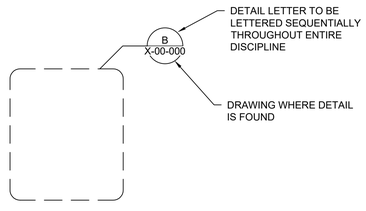
VIEW REFERENCE/CALLOUTS

1. SECTION CUTS:



2. DETAIL CALLOUT

A: BY CALLOUT:

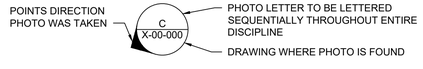


B: BY NOTE: "SEE DETAIL B/D-01-105"

B IS DETAIL REFERENCE LETTER

D-01-105 IS DRAWING WHERE DETAIL IS SHOWN

3. PHOTO INDICATORS



4. TYPICAL DETAIL REFERENCE

NOTATIONS

1. PROPOSED NOTES (with leaders)

ALL NOTES SHALL HAVE A HEIGHT OF 0.1". IF NOTE IS MORE THAN 2" WIDE AND 2 LINES THEN MAKE IT A KEYNOTE.

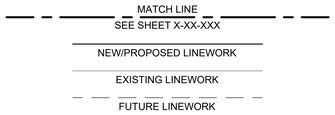
2. EXISTING NOTES (with leaders)

ALL EXISTING NOTES SHALL BE SCREENED.

3. KEYNOTES

KEYNOTES ARE NUMBERED SEQUENTIALLY ON PAGE. (ORDER IS NOT RELEVANT TO IMPORTANCE AND MAY BE RANDOM.)

MISCELLANEOUS

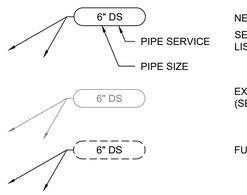


NORTH ARROW

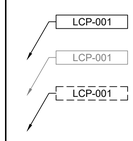
SCALE (CIVIL)

DIMENSIONS

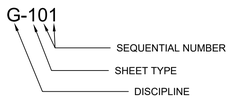
PIPING IDENTIFICATION SYSTEM



EQUIPMENT DESIGNATORS



DRAWING NUMBERING SYSTEM



DISCIPLINES

- G GENERAL
- XD DEMOLITION (X - DENOTES DISCIPLINE)
- C CIVIL
- S STRUCTURAL
- A ARCHITECTURAL
- D PROCESS/MECHANICAL
- M MECHANICAL/HVAC
- P PLUMBING
- E ELECTRICAL
- I INSTRUMENTATION

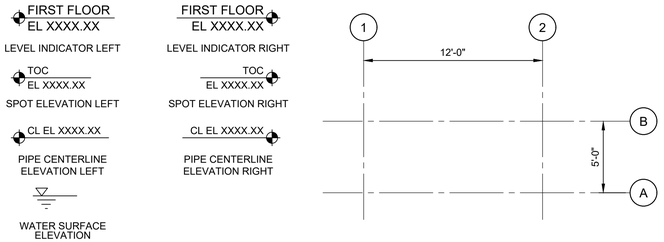
SHEET TYPE DESIGNATORS

- 0 GENERAL - COVER SHEET, ABBREVIATIONS, LEGENDS, SYMBOLS, SHEET INDEX, STANDARD DETAILS
- 1 PLANS OR (PLANS AND SECTIONS)
- 2 ELEVATIONS AND PROFILES
- 3 SECTIONS
- 4 ENLARGED PLANS
- 5 DETAILS (TYPICAL DETAILS)
- 6 DIAGRAMS
- 7 SCHEDULES
- 8 USER DEFINED
- 9 3D REPRESENTATIONS (ISOMETRICS, PERSPECTIVES, RENDERINGS)

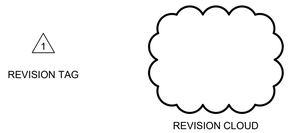
GENERAL NOTES

1. THE NOTE IN THE TITLEBLOCK OF THIS DRAWING WHICH READS "TWO INCHES AT FULL SCALE" APPEARS ON DRAWINGS FOR IDENTIFICATION OF SCALE DISTORTIONS ON HALF SIZE DRAWINGS AND DRAWING REPRODUCTIONS. IT SHALL MEAN THAT THE DRAWING IS FULL SIZE AND THE DRAWING SCALES ACCURATE WHEN THE LENGTH OF THIS LINE IS TWO INCHES. IF THE LENGTH IS OTHER THAN TWO INCHES, DRAWING SCALES MUST BE ADJUSTED ACCORDINGLY.
2. EXISTING PIPING IS DESIGNATED BY SERVICE RATHER THAN MATERIAL TYPE. MATERIAL TYPES, IF KNOWN, APPEAR OUTSIDE THE PIPING CALLOUT BUBBLE, AND MAY NOT BE THE SAME MATERIAL TYPES SPECIFIED FOR NEW PIPING.
3. ABBREVIATIONS USED IN THIS CONTRACT DOCUMENT CONFORM TO ANSI Y1.1, UNLESS NOTED OTHERWISE ON DRAWINGS. SEE SPEC. SECTION 01071 FOR ADDITIONAL ABBREVIATIONS.
4. ALL STANDARD DETAILS APPLY TO ALL THE CONTRACTORS WORK WHETHER SPECIFICALLY REFERENCED OR NOT.
5. SEE FRONT END SHEETS FOR EACH DISCIPLINES STANDARD SYMBOLS, ETC.
6. SEE ADDITIONAL GENERAL NOTES THROUGHOUT DRAWING SET.

LEVELS, GRIDS AND ELEVATION INDICATORS



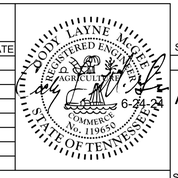
REVISIONS



ABBREVIATIONS

CAB	DIRECT BURIAL CABLE	IL	INDICATING LAMP	REL	RELAY
C-C	CENTER TO CENTER	INF	INFLUENT	RGS	RIGID GALVANIZED STEEL
CL	CENTERLINE	INV	INVERT	RS	RAW SEWAGE
CNTL	CONTROL				
		KV	KILOVOLT	SMH	SEWER MANHOLE
DB	DUCT BANK	KVA	KILOVOLT AMPERE	SS	SANITARY SEWER
		KW	KILOWATT	SST	STAINLES STEEL
EFF	EFFLUENT			STD	STANDARD
EJ	EXPANSION JOINT	LEL	LOWER EXPLOSIVE LIMIT	SWB	SWITCHBOARD
EL	ELEVATION	LLWL	LOW-LOW WATER LEVEL		
EMBD	EMBEDDED	LOS	LOCKOUT STOP	TB	TERMINAL BOX
EQ	EQUAL	LS	LIMIT SWITCH	TFR	TRANSFORMER
EQUIP	EQUIPMENT			TOC	TOP OF CONCRETE
ES	EXISTING SURFACE	MCC	MOTOR CONTROL CENTER	TRM	TRANSMITTER
EWEF	EACH WAY EACH FACE	MCU	MASTER CONTROL UNIT	TRN	TRANSDUCER
EXIST	EXISTING	MGD	MILLION GALLONS PER DAY	TRS	TRANSFER SWITCH
		MJ	MECHANICAL JOINT	TS	TEMPERATURE SWITCH
F	FAHRENHEIT, FACE, FUSE(D)	MME	MISCELLANEOUS MECHANICAL EQUIPMENT		
FC	FAIL CLOSED			UL	ULTIMATE LOAD
FE	FLOWMETER	N	NEUTRAL	UN	UNION
FH	FIRE HYDRANT, FLATHEAD	NPSH	NET POSITIVE SUCTION HEAD		
FIN	FINISHED			V	VALVE, VOLTS
FLR	FLOOR	OL	OVERLOAD	VAC	VOLTS ALTERNATING CURRENT
FM	FORCE MAIN			VAR	VARIES, VARIABLE
FO	FAIL OPEN	P	PUMP	VDC	VOLTS DIRECT CURRENT
		PL	PROPERTY LINE, PIPELINE, PLATE		
GFI	GROUND FAULT INTERRUPTOR	PNL	PANEL, PANELBOARD	WSTP	WATERSTOP
GPD	GALLONS PER DAY	PP	POWER POLE		
GRT	GROUT	PSIA	POUND PER SQUARE INCH ABSOLUTE	XP	EXPLOSIONPROOF
GSP	GALVANIZED STEEL PIPE	PSIG	POUNDS PER SQUARE INCH GAGE		
GV	GATE VALVE	PV	PLUG VALVE, PROCESS VARIABLE		
H/A	HAND AUTO	Q	RATE OF FLOW		
HHWL	HIGH-HIGH WATER LEVEL	QCPLG	QUICK COUPLING		
HOA	HAND-OFF-AUTO				
HP	HIGH PRESSURE, HIGH POINT, HORSEPOWER	R	RADIUS		
		RECP	RECEPTACLE		

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024



LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. G-002

SEWER BASIN: WN05-2

SHEET 2 OF 3

DIVISION OF ENGINEERING

ABBREVIATIONS, LEGENDS, & SYMBOLS

5184 PLEASANT VIEW RD.

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: CLM DATE: 06/24 SCALE: NONE

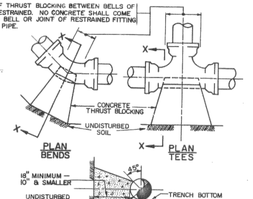
REVIEWED

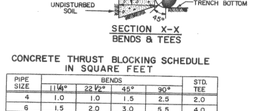
CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWD2304698 FILENAME: G-002_5184 PLEASANT VIEW RD.DWG PLOT DATE: 6/24/2024

DEPARTMENT of ENGINEERING BUREAU of SEWER DESIGN, MEMPHIS, TENNESSEE — DRAWN BY: RBA — DATE: 3/05 — SCALE: NTS

CONFINE LIMITS OF THRUST BLOCKING BETWEEN BELLS OF FITTING TO BE RESTRAINED. NO CONCRETE SHALL COME IN CONTACT WITH BELL OR JOINT OF RESTRAINED FITTING AND CONNECTING PIPE.





SECTION X-X
BENDS & TEES

CONCRETE THRUST BLOCKING SCHEDULE IN SQUARE FEET

PIPE SIZE	BENDS 11¼°	22 ½°	45°	90°	STD. TEE
4	1.0	1.0	1.5	2.5	2.0
6	1.5	2.0	3.0	5.5	4.0
8	1.5	2.5	5.0	10.0	7.0
10	2.0	4.0	7.5	14.5	10.0
12	3.0	6.0	11.5	21.5	14.5
14	4.0	7.5	15.0	28.0	19.5
16	5.0	10.0	20.0	35.0	25.5
18	6.5	12.5	24.5	35.0 ★	32.0
20	8.5	16.5	32.5	35.0 ★	35.0 ★
24	10.0	20.0	35.0 ★	35.0 ★	35.0 ★
30	18.0	34.5	35.0 ★	35.0 ★	35.0 ★
36	25.0	35.0 ★	35.0 ★	35.0 ★	35.0 ★
42	32.5	35.0 ★	35.0 ★	35.0 ★	35.0 ★

BLOCKING SCHEDULE BASED ON 200 PSI WATER PRESSURE, 2,000 PSF SOIL BEARING PRESSURE & 1.25 SAFETY FACTOR.

★ INDICATES FITTINGS REQUIRING RESTRAINED JOINTS IN ADDITION TO CONC. THRUST BLOCKING SEE RESTRAINED JOINT SCHEDULE.

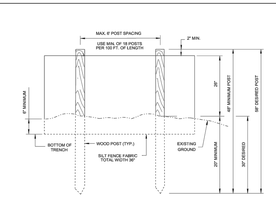
REVISIONS		
NO.	DATE	BY — REMARKS

CONVERSIONS	
ENGLISH	METRIC

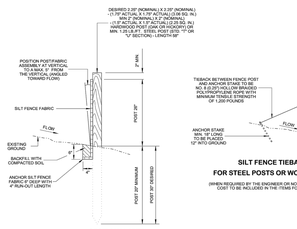
CITY OF MEMPHIS
DEPARTMENT of ENGINEERING

DESIGN STANDARD FOR CONCRETE THRUST BLOCK ING

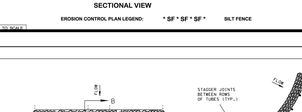
Bryant Bondurant Jr. 3/3/86
CITY ENGINEER — DATE



ELEVATION VIEW



SECTIONAL VIEW



SILT FENCE TIEBACK FOR STEEL POSTS OR WOOD POSTS

(WHEN REQUIRED BY THE ENGINEER OR NOTED IN THE PLANS. COST TO BE INCLUDED IN THE ITEMS FOR SILT FENCE)

EROSION CONTROL PLAN LEGEND: * SF * SF * SF * SILT FENCE

SILT FENCE FABRIC SPECIFICATIONS

FABRIC PROPERTY AND TEST METHODS	REQUIRED PHYSICAL PROPERTIES (MARV VALUES OF TEST DATA)
GEOTEXTILE FABRIC TYPE	WOVEN SLIT FILM (PER AASHTO M288)
APPARENT OPENING SIZE (ASTM D4751)	#30 TO #70 STANDARD SIEVE
WATER FLUX (ASTM D4491)	≥ 4 GPM/FT²T
TENSILE STRENGTH (ASTM D4632)	≥ 120 LB. (GRAB) DIRECTION) X 180 LB. (FILL DIRECTION)
ULTRAVIOLET STABILITY (AFTER 500 HRS PER ASTM D4355)	≥ 70%
ELONGATION (ASTM D4632)	≤ 20% (MAX)
BURST STRENGTH (ASTM D3786)	≥ 250 PSI
PUNCTURE STRENGTH (ASTM D4833)	≥ 80 LB.
TRAPEZOIDAL TEAR (ASTM D4533)	≥ 50 LB. (RAMP DIRECTION) X 40 LB. (FILL DIRECTION)

SILT FENCE GENERAL NOTES

1. SILT FENCE IS USED TO INTERCEPT SMALL AMOUNTS OF SEDIMENT AND REDUCE VELOCITY FROM SHEET FLOW ONLY. DO NOT USE IT ADJACENT TO NATURAL WATER RESOURCES (WETLANDS OR STREAMS) OR ACROSS CONCENTRATED FLOW PATHS.
2. THE MAXIMUM DRAINAGE AREA SIZE FOR A CONTINUOUS BARRIER SHALL BE 1/4 ACRE PER 100 LINEAR FEET OF SILT FENCE. THE MAXIMUM DRAINAGE AREA SHALL BE 1/2 ACRE PER 100 LINEAR FEET OF SILT FENCE WHEN FENCE ON UPHILL SIDE SHALL BE 110 FEET (33 MEASURED ALONG THE GROUND SURFACE).
3. WHEN INSTALLED AT THE TOE OF A SLOPE, SILT FENCE SHOULD BE PLACED A FEET TO 7 FEET AWAY FROM THE TOE TO ALLOW SPACE FOR PONDING OF WATER, COLLECTION OF SEDIMENT, AND EASE OF MAINTENANCE AND REMOVAL.
4. WHEN TWO SECTIONS OF SILT FENCE FABRIC ADJOIN EACH OTHER THEY SHALL BE JOINED ACCORDING TO THE DETAILS ON STANDARD DRAWING EC-STR-3E.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED. CAPTURED SOIL MATERIAL SHALL BE REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE AND/OR OTHER EVIDENCE OF FILTER CLOGGING IS OBSERVED.
6. STEEL POSTS SHALL BE ROLLED FROM HIGH CARBON STEEL AND SHALL HAVE A MINIMUM WEIGHT OF 1.33 LB/FT (1.25 LB/FT, PLUS 6% TOLERANCE) AND A MINIMUM CROSS-SECTIONAL AREA OF 0.40 SQUARE INCHES. POSTS SHALL BE EQUIPPED WITH A PROJECTION FOR FASTENING WIRE TO THEM. THE WIRE FASTENERS SHOULD BE EVENLY SPACED WITH AT LEAST FIVE PER POST. POST ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702.
7. WHEN STEEL POSTS ARE USED THEY SHALL HAVE A PROJECTION FOR FASTENING WIRE TO THEM. THE WIRE FASTENERS SHOULD BE EVENLY SPACED WITH AT LEAST FIVE PER POST.
8. IF THE FILTER MATERIAL IS STAPLED TO THE WOODEN STAKES, HEAVY DUTY WIRE STAPLES WITH ONE-HALF INCH CROWNS SHALL BE USED AND EVENLY SPACED WITH AT LEAST FOUR PER POST. SILT FENCE FABRIC SHALL NOT BE STAPLED.
9. SILT FENCES SHOULD BE PLACED ALONG OR NEAR THE GROUND CONTOUR. THE BOTTOM OF FENCE AT GROUND ARE SHOULD BE ON A ZERO PERCENT (0%) GRADE, PLUS OR MINUS FIVE TENTHS OF ONE PERCENT (0.5%). THE SHAPE OF A HOOK OF SILT FENCE SHOULD BE TURNED UPSLOPE FORMING A J-HOOK TO ALTER ANY CONCENTRATED FLOW BEHIND FENCE.
10. A PREASSEMBLED SILT FENCE MEETING THE REQUIREMENTS OF THIS DRAWING IS ACCEPTABLE IN LIEU OF A FIELD ASSEMBLED SILT FENCE.
11. STATIC SLICING IS THE PREFERRED METHOD OF FENCE INSTALLATION. STATIC SLICING INVOLVES THE INSERTION OF A NARROW CUTTING BLADE, PLACED AT THE SPECIFIED ANCHOR DEPTH FOR THE GIVEN FABRIC AS SHOWN ON THIS DRAWING, INTO THE SOIL WITH A SLICING ACTION PERPENDICULAR TO THE FENCE LINE. THE SOIL IS NOT TO BE EXCAVATED. ALTERNATIVE TRENCH-BASED METHODS ARE ALSO ACCEPTABLE. DO NOT USE EQUIPMENT THAT WILL DISTURB WIDER THAN 4" IN EITHER SOIL SUCH AS BACKHOE. FOR TRENCH-BASED INSTALLATIONS, SILT FENCING SHALL BE INSTALLED PER THE FOLLOWING STEPS AND IN THE FOLLOWING ORDER:
    1. EXCAVATE TRENCH A MAXIMUM OF 4 INCHES WIDE AND 8 INCHES DEEP. THE TRENCH SHALL BE HAND-CLEARED OF ALL ROCKS AND OTHER DEBRIS SUCH AS ROOTS. REMOVE BULKY DEBRIS SUCH AS ROCKS, STICKS, AND SOD. CLOSE FROM THE TRENCH.
    2. INSTALL FABRIC IN TRENCH.
    3. BACKFILL TRENCH (OVER-FILL) WITH SOIL PLACED AROUND FABRIC.
    4. COMPACT SOIL BACKFILL WITH MECHANICAL EQUIPMENT. DO NOT DAMAGE THE FABRIC DURING COMPACTION (DAMAGED FABRIC SHALL BE REPLACED).
    5. DRIVE AND SET SUPPORT POSTS PER SPACING REQUIREMENTS GIVEN ON THE APPLICABLE FENCE DETAIL. WHEN INSTALLING PREASSEMBLED SILT FENCE, DRIVE SUPPORT IN TO GROUND FIRST, FOLLOWED BY FABRIC PLACEMENT IN TRENCH.
    6. ATTACH FABRIC TO THE POSTS USING WIRE TIES OR STAPLES. SPACING AND DENSITY OF TIES OR STAPLES SHALL BE INSTALLED AS DESCRIBED IN NOTES ⑧ AND ⑨.
12. ONLY SILT FENCE FABRICS LISTED ON THE QUALIFIED PRODUCTS LIST MAY BE USED. ANY PRODUCTS LISTED ON THE QUALIFIED PRODUCTS LIST AS AN APPROVED ALTERNATE MAY ALSO BE USED.
13. SILT FENCE SHALL BE PAID FOR UNDER ITEM NUMBER 208-08.01 TEMPORARY SILT FENCE (WITHOUT BACKING) PER LINEAR FOOT. THIS PRICE SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY FOR CONSTRUCTION, MAINTENANCE, AND REMOVAL OF THE SILT FENCE.
14. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE STRUCTURE AND PAID FOR UNDER ITEM NUMBER 209-09, SEDIMENT REMOVAL PER CUBIC YARD.

STATE OF TENNESSEE STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

SILT FENCE

12-19-2002 — EC-STR-3B

REV. 12-19-02: MODIFIED TABLE ⑦ AND GENERAL NOTE ⑫

REV. 7-20-04: CHANGED VALUES IN TABLE ⑦ TO MATCH MARV VALUES.

REV. 4-1-08: DRAWING PDA DELETA FROM TABLE ⑦ ADDED NOTE ⑬. REVISED GENERAL NOTE ⑫, ADDED GENERAL NOTES. REFORMATTED SHEET. REVISED NOTES, MISC. EDITS TO DRAWING.

REV. 4-1-08: REVISED TEMPORARY REFERENCE. REVISED NOTES, AND MISC. EDITS TO DRAWING.

REV. 8-1-10: MINOR EDITS TO GENERAL NOTES.

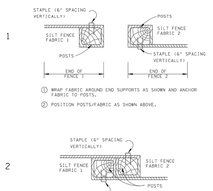
REV. 3-14-12: CHANGED SECOND NOTE ⑫ TO GENERAL NOTE ⑭.

REV. 09-01-20: ADDED AASHTO REFERENCE IN TABLE. UPDATED GENERAL NOTES ⑫ AND REVISION SHEET.

REV. 06-15-21: ADDED ALTERNATE POST SPACING. REVISED POST EMBEDMENT LENGTH.

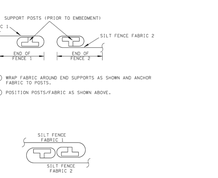
REV. 4-15-06: REFORMATTED SHEET. MISC. EDITS TO DRAWING. NOTES TO DRAWING.

REV. 4-1-08: MISC. EDITS TO DRAWING. CHANGED DRAWING NAME, REFORMATTED SHEET.



① WRAP FABRIC AROUND END SUPPORTS AS SHOWN AND ANCHOR FABRIC TO POSTS.
② POSITION POSTS/FABRIC AS SHOWN ABOVE.
③ ROTATE BOTH POSTS WITH FABRIC CLOCKWISE AT LEAST 180°.
④ EMBED BOTH POSTS INTO GROUND PER SILT FENCE STANDARD DRAWING EC-STR-3B.

PLAN VIEW
JOINING SILT FENCE
FABRIC SECTIONS (WOOD POSTS)



① WRAP FABRIC AROUND END SUPPORTS AS SHOWN AND ANCHOR FABRIC TO POSTS.
② POSITION POSTS/FABRIC AS SHOWN ABOVE.
③ ROTATE BOTH POSTS WITH FABRIC CLOCKWISE AT LEAST 180°.
④ EMBED BOTH POSTS INTO GROUND PER APPLICABLE SILT FENCE STANDARD DRAWING. (EC-STR-3B, EC-STR-3G, OR EC-STR-3D)

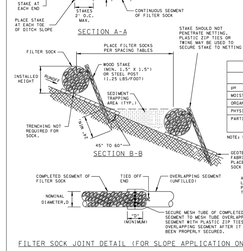
PLAN VIEW
JOINING SILT FENCE
FABRIC SECTIONS (STEEL POSTS)

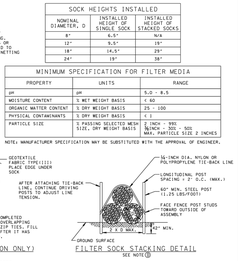
MINOR REVISION — FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

SILT FENCE FABRIC JOINING DETAILS

12-19-02 — EC-STR-3E





SOCK HEIGHTS INSTALLED			
NOMINAL DIAMETER, D	INSTALLED HEIGHT OF SINGLE SOCK	INSTALLED HEIGHT OF STACKED SOCKS	
8"	6.5"	N/A	
12"	9.5"	19"	
18"	14.5"	29"	
24"	19"	38"	

MINIMUM SPECIFICATION FOR FILTER MEDIA		
PROPERTY	UNITS	RANGE
pH	pH	5.0 - 9.5
MOISTURE CONTENT	% WET WEIGHT BASIS	< 40
ORGANIC MATTER CONTENT	% DRY WEIGHT BASIS	25 - 100
PHYSICAL CONTAMINANTS	% DRY WEIGHT BASIS	< 1
PARTICLE SIZE	% PASSING SELECTED MESH SIZE, DRY WEIGHT BASIS	3 INCH - 90% MIN. 1/2 INCH - 70% MAX. PARTICLE SIZE 2 INCHES

NOTE: MANUFACTURER SPECIFICATION MAY BE SUBSTITUTED WITH THE APPROVAL OF ENGINEER.

FILTER SOCK CHECK DAM ESTIMATED QUANTITIES						
	V-DITCH			TRAPEZOIDAL DITCH		
	24" FILTER SOCK (SINGLE HEIGHT 19")	18" FILTER SOCK STACKED (DOUBLE HEIGHT 29")	24" FILTER SOCK STACKED (DOUBLE HEIGHT 38")	18" FILTER SOCK STACKED (DOUBLE HEIGHT 29")	24" FILTER SOCK STACKED (DOUBLE HEIGHT 38")	
LENGTH (FT)	20	60	48	24	72	60

1. ESTIMATED QUANTITIES BASED ON 4:1 SIDE SLOPES. QUANTITIES WILL VARY BASED ON ACTUAL DITCH CONFIGURATIONS.
2. ESTIMATED QUANTITIES BASED ON 4FT BOTTOM WIDTH, 4:1 DEPTH, AND 4:1 SIDE SLOPES. QUANTITIES WILL VARY BASED ON ACTUAL DITCH CONFIGURATION.

FILTER SOCK SPACING FOR SLOPE APPLICATION				
SLOPE	8"	12"	18"	24"
2%	70'	80'	N/A	N/A
5%	35'	60'	80'	N/A
10%	20'	30'	70'	80'
6:1	N/A	25'	40'	55'
4:1	N/A	20'	30'	35'
3:1	N/A	N/A	20'	25'
2:1	N/A	N/A	20'	20'

N/A = NOT RECOMMENDED SPACING NOT TO EXCEED 80'

FILTER SOCK SPACING FOR DITCH APPLICATION	
DITCH SLOPE	MAXIMUM FILTER SOCK SPACING
LESS THAN 2%	80'
2%	80'
4%	40'
5%	30'
6%	20'
GREATER THAN 6%	20'

BASED ON AN INSTALLED HEIGHT OF 19 INCHES. SEE TABLE ON EC-STR-9 FOR OTHER HEIGHTS.

FILTER SOCK GENERAL NOTES

1. FILTER SOCKS CAN BE PLACED IN DITCHES OR AT THE TOP, ON THE FACE, OR AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES. THEY CAN ALSO SERVE TO REMOVE SEDIMENT FROM RUNOFF AND RELEASE IT AS SHEET FLOW.
2. FILTER SOCKS INSTALLED ON A SLOPE SHALL BE PLACED ALONG OR ON THE GROUND CONTOUR. THE TOP OF A FILTER SOCK ON A SLOPE SHOULD BE PLACED AT LEAST FIVE FEET FROM THE TOE OF THE SLOPE TO PROVIDE SEDIMENT STORAGE. THE MAXIMUM DRAINAGE AREA SHALL BE 1/4 ACRE PER 100 LINEAR FEET OF SOCK.
3. FOR DITCH APPLICATIONS, THE MAXIMUM DRAINAGE AREA SHALL BE 10 ACRES, AT SITES WHICH DRAIN TO EXCEPTIONAL TENNESSEE WATERS OR SEDIMENT-IMPAIRED STREAMS, THE MAXIMUM DRAINAGE AREA SHALL BE 5 ACRES. FOR DITCH APPLICATIONS, FILTER SOCKS SHALL NOT BE USED IN STREAMS, WETLANDS, OTHER NATURAL WATER RESOURCES, OR IN DITCHES WITH CONTINUOUS FLOWS.
4. FOR DITCH APPLICATIONS, THE MINIMUM INSTALLED HEIGHT OF A SINGLE SOCK, OR OF AN INDIVIDUAL SOCK IN A STACK OF SOCKS, SHALL BE 9 INCHES. FOR SLOPE APPLICATIONS, EXCEPT AS DETAILED ON THIS DRAWING TO ADVISE THE REQUIRED FILTER SOCK SHALL NOT BE PLACED PERPENDICULAR TO THE FLOW OF WATER. FILTER SOCKS SHALL CONTINUE UP THE SIDE SLOPES TO THE TOP OF BANK OR A MAXIMUM OF 3 FEET ABOVE THE INSTALLED HEIGHT OF THE FILTER SOCK. SHALL REMAIN IN PLACE UNTIL ALL UPSTREAM AREAS ARE PERMANENTLY STABILIZED.
5. FILTER SOCKS SHALL CONSIST OF A TUBULAR MESH SOCK WITH OPENINGS NO GREATER THAN 3/8THS OF AN INCH IN SIZE. THE MESH SOCK IS NOT REQUIRED TO BE BIODEGRADABLE. FILL MATERIAL SHALL CONSIST OF EITHER WOOD CHIPS (MULCH) OR A 50/50 COMBINATION OF WOOD CHIPS AND MANUFACTURED COMPOST MATERIAL.
6. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED IN DIAMETERS OF 8, 12, 18 OR 24 INCHES. FOR DITCH APPLICATIONS, THE DIAMETER OF A SINGLE SOCK, OR OF EACH SOCK IN A STACK, MAY BE 25 PERCENT LESS THAN THE NOMINAL DIAMETER.
7. STEEL POSTS SHALL BE ROLLED FROM HIGH CARBON STEEL AND SHALL HAVE A MINIMUM WEIGHT OF 1.25 LB/FT, POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH VISIBILITY PAINT. POSTS SHALL BE EQUIPPED WITH A PROJECTION FOR FASTENING WIRE TO THEM. ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702.
8. FILTER SOCKS ARE FILLED ON THE PROJECT SITE AND MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED AS SHOWN ON THIS DRAWING.
9. ANY PRODUCT LISTED ON THE QUALIFIED PRODUCTS LIST AS AN APPROVED ALTERNATE FILTER SOCK MAY BE USED. FOR SLOPE APPLICATIONS, SANDBAG OR GRAVEL BAG BERMS MAY ALSO BE USED AS ALTERNATE MATERIALS.
10. FILTER SOCKS SHALL BE PAID FOR UNDER THE FOLLOWING ITEM NUMBERS:

    209-03.20 FILTER SOCK 18 INCH) PER LINEAR FOOT
    209-03.21 FILTER SOCK 24 INCH) PER LINEAR FOOT
    209-03.01 FILTER SOCK 18 INCH) PER LINEAR FOOT
    209-03.23 FILTER SOCK 24 INCH) PER LINEAR FOOT
    209-08.09 FILTER SOCK CHECK DAM PER EACH

    PAYMENT SHALL INCLUDE ALL MATERIALS (INCLUDING GEOTEXTILE FABRIC IF USED) AND LABOR NECESSARY FOR CONSTRUCTION, MAINTENANCE, AND REMOVAL OF FILTER SOCKS.
11. SEDIMENT SHALL BE REMOVED FROM BEHIND THE FILTER SOCK WHEN IT HAS ACCUMULATED TO ONE-HALF OF THE ORIGINAL HEIGHT OF THE STRUCTURE AND PAID FOR UNDER ITEM NUMBER 209-09, SEDIMENT REMOVAL PER CUBIC YARD.
12. FILTER SOCKS SHALL BE INSPECTED AFTER EACH RUNOFF EVENT AND SHALL BE REMOVED AND REPLACED IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.
13. FILTER SOCKS SHOULD BE REMOVED FROM SLOPES AFTER STABILIZATION IS COMPLETE. THIS MAY BE ACCOMPLISHED BY CUTTING THE SOCK OPEN AND SPREADING THE FILL MATERIAL. THE MESH TUBE SHALL BE DISPOSED OF AS TRASH. WHEN REMOVED, FILTER SOCKS APPLIED IN DITCHES SHALL BE COMPLETELY REMOVED.
14. GEOTEXTILE FABRIC REQUIRED FOR SLOPE APPLICATION STEEPER THAN 6:1.

MINOR REVISION — FHWA APPROVAL NOT REQUIRED.

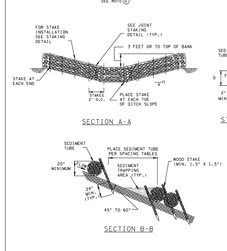
NOT TO SCALE

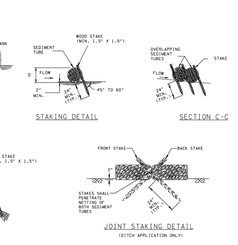
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

FILTER SOCK

4-1-08 — EC-STR-8

EROSION CONTROL PLAN LEGEND: ★SOCK★SOCK★SOCK★SOCK★ FILTER SOCK





SEDIMENT TUBE SPACING FOR SLOPE APPLICATION				
SLOPE	8"	12"	18"	20" 24"
2%	70'	80'	N/A	N/A
5%	30'	60'	80'	N/A
10%	20'	30'	70'	80' 80'
6:1	N/A	20'	40'	50' 55'
4:1	N/A	20'	30'	30' 30'
3:1	N/A	N/A	20'	20' 25'
2:1	N/A	N/A	20'	20' 20'

N/A = NOT RECOMMENDED SPACING NOT TO EXCEED 80'

BASED ON A 20" SEDIMENT TUBE
SEE TABLE ON EC-STR-9 FOR OTHER HEIGHTS.

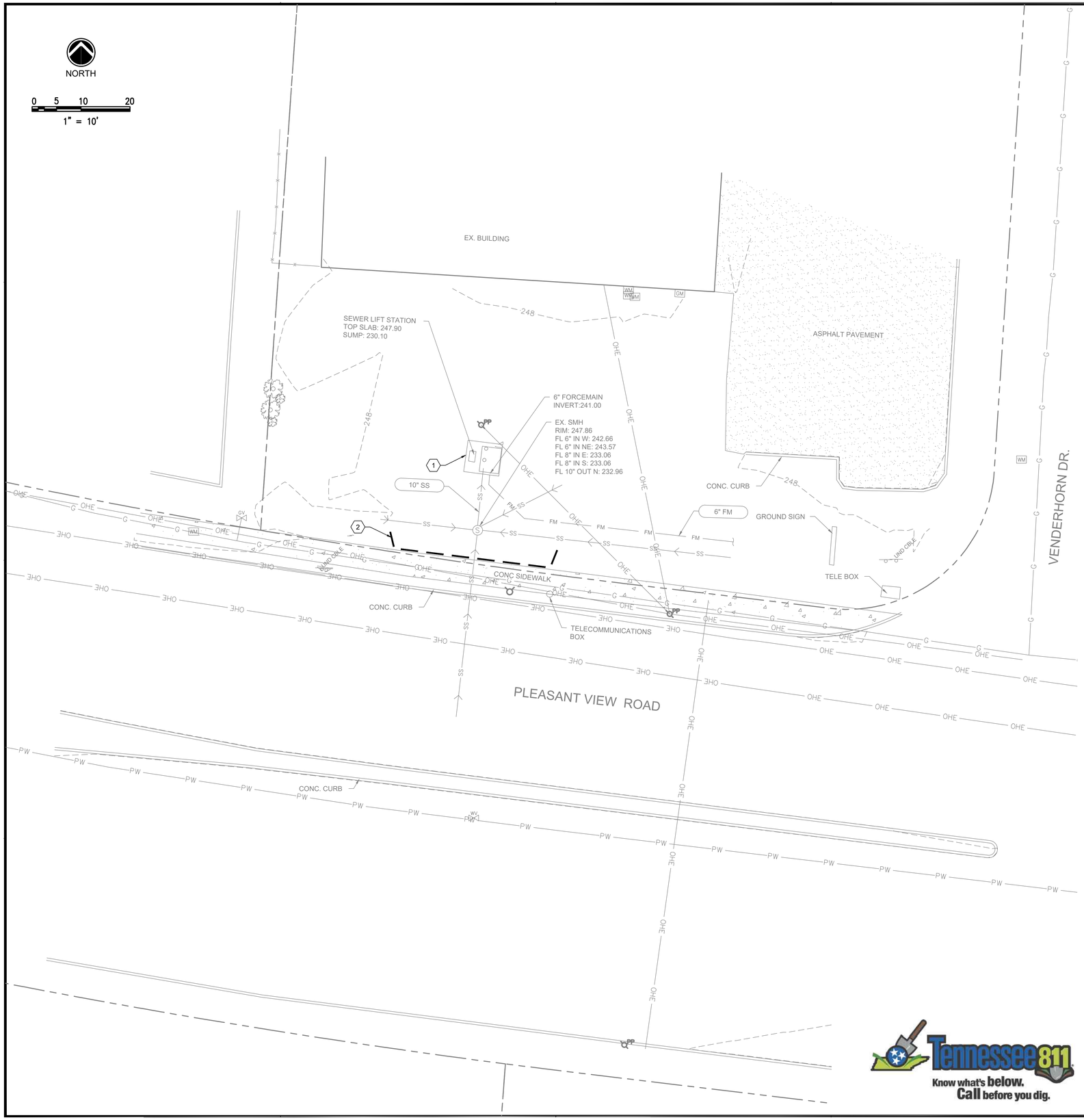
SEDIMENT TUBE SPACING TABLE FOR DITCH APPLICATION	
SLOPE	MAXIMUM SEDIMENT TUBE SPACING
LESS THAN 2%	80'
2%	80'
4%	50'
5%	40'
6%	30'
GREATER THAN 6%	20'

BASED ON A 20" SEDIMENT TUBE
SEE TABLE ON EC-STR-9 FOR OTHER HEIGHTS.

SEDIMENT TUBE GENERAL NOTES

1. SEDIMENT TUBES CAN BE PLACED AT THE TOP, ON THE FACE, OR AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES. THEY CAN ALSO SERVE TO REMOVE THE RUNOFF AS SHEET FLOW AND PROVIDE REMOVAL OF SEDIMENT FROM THE RUNOFF.
2. SEDIMENT TUBES SHALL BE INSTALLED ALONG OR ON THE GROUND CONTOUR, AT THE TOE OF SLOPES, OR IN A DITCH TO HELP REDUCE THE EFFECTS OF SOIL EROSION AND RETAIN SEDIMENT. SEDIMENT TUBES SHOULD NOT BE USED IN DITCHES OR STREAMS.
3. FOR DITCH APPLICATIONS, THE MAXIMUM DRAINAGE AREA SHALL BE 15 ACRES. AT SITES WHICH DRAIN TO EXCEPTIONAL TENNESSEE WATERS OR SEDIMENT-IMPAIRED STREAMS, THE MAXIMUM DRAINAGE AREA SHALL BE 5 ACRES. FOR SLOPE APPLICATIONS, THE MAXIMUM DRAINAGE AREAS SHALL BE 1/4 ACRE PER 100 LF OF TUBE.
4. SEDIMENT TUBES SHALL NOT BE USED ON PAVEMENT, ROCKY SOILS, OR AT ANY OTHER LOCATIONS WHERE THE STAKES CANNOT BE DRIVEN TO THE REQUIRED DEPTH.
5. SEDIMENT TUBES SHALL BE MANUFACTURED FROM WOOD EXCELSIOR, RICE OR WHEAT STRAW, COCONUT FIBERS, OR HARDWOOD MULCH THAT IS ENCLOSED BY A TUBULAR FLEXIBLE NETTING MATERIAL. ALL MATERIALS INCLUDING THE NETTING SHALL BE BIODEGRADABLE.
6. PINE NEEDLE AND LEAF MULCH FILLED SEDIMENT TUBES AND STRAW BALES ARE NOT ACCEPTABLE MATERIALS.
7. THE DIAMETER OF A SEDIMENT TUBE SHALL BE A MINIMUM OF 8 INCHES AND A MAXIMUM OF 24 INCHES. DIAMETER TOLERANCE IS 2 INCHES. FOR DITCH APPLICATIONS, SEDIMENT TUBES SHALL BE A MINIMUM OF 20 INCHES.
8. SEDIMENT TUBES SHALL BE INSTALLED WITH WOODEN STAKES (MIN. 1.5" x 1.5" ACTUAL). THE STAKE SHALL BE EMBEDDED A MINIMUM OF 2 FEET.
9. SEDIMENT TUBES SHALL BE TRENCHED IN A MINIMUM OF 2 INCHES.
10. IF MORE THAN ONE SEDIMENT TUBE IS PLACED IN A ROW IN SLOPE APPLICATION, THE TUBES SHALL BE OVERLAPPED A MINIMUM OF 24 INCHES TO PREVENT FLOW AND SEDIMENT FROM PASSING THROUGH THE FIELD JOINT. WHEN USED IN DITCHES, TWO RUNS OF TUBE SHALL BE PLACED ON THE CHANNEL BOTTOM WITH STAGGERED JOINTS AS SHOWN.
11. FOR DITCH APPLICATIONS, SEDIMENT TUBES SHALL BE A MINIMUM OF 20 INCH DIAMETER AND SHALL BE PLACED ON THE CHANNEL BOTTOM WITH STAGGERED JOINTS AS SHOWN. TUBES SHALL CONTINUE UP THE SIDE SLOPES A MINIMUM OF 3 FEET PLUS THE DIAMETER OF THE TUBE, OR TO THE TOP OF THE DITCH, WHICHEVER IS LESS.
12. SEDIMENT TUBES USED IN SLOPE APPLICATIONS MAY REMAIN IN PLACE TO BIODEGRADE. FOR DITCH APPLICATIONS SEDIMENT TUBES SHALL BE COMPLETELY REMOVED AFTER FULLY ESTABLISHED VEGETATION HAS COMPLETELY DEVELOPED.
13. SEDIMENT TUBES SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS NUMBERS:

    740-11.01 TEMPORARY SEDIMENT TUBE 18 INCH) PER LINEAR FOOT
    740-11.02 TEMPORARY SEDIMENT TUBE 132 INCH) PER LINEAR FOOT
    740-11.03 TEMPORARY SEDIMENT T



LEGEND	
PP	EXISTING POWER POLE
S	EXISTING SEWER MANHOLE
WV	EXISTING WATER VALVE
	EXISTING WATER HYDRANT
GV	EXISTING GAS VALVE
WM	EXISTING WATER METER
GM	EXISTING GAS METER
	EXISTING TREE GROUP
100	EXISTING CONTOUR
	PROPERTY LINE
SS	EXISTING SANITARY SEWER
OHE	EXISTING OVERHEAD ELECTRIC
	EXISTING FENCE
	PERIMETER SEDIMENT CONTROL MEASURE
PW	EXISTING POTABLE WATER
G	EXISTING GAS LINE
FM	EXISTING FORCE MAIN
	EXISTING CONCRETE
	EXISTING ASPHALT

GENERAL NOTES:

1. BASE DRAWING DEVELOPED FROM "PARTIAL TOPOGRAPHIC SURVEY OF PLEASANT VIEW LIFT STATION" DATED 11/18/21, PREPARED BY ASHWORTH ENGINEERING, PLLC. BROWN AND CALDWELL ASSUMES NO RESPONSIBILITY FOR ACCURACY OF THE SAME. DIMENSIONS, FEATURES, AND DETAILS MAY VARY FROM FIELD CONDITIONS. CONTRACTOR MUST VERIFY ALL EXISTING CONDITIONS THAT MAY IMPACT THE WORK.
2. EXISTING PIPE LOCATIONS SHOWN BASED ON CITY OF MEMPHIS GIS DATA AND FIELD VERIFICATION WHERE POSSIBLE. NOT ALL UNDERGROUND UTILITIES WERE LOCATED. CONTRACTOR SHALL VERIFY UTILITY AND PIPE LOCATIONS WITHIN ALL WORK AREAS PRIOR TO COMMENCING WORK.
3. ALL EXISTING INFRASTRUCTURE THAT IS TO REMAIN IN PLACE (PIPING, ELECTRIC CONDUITS, STORM PIPES, ETC.) TO BE PROTECTED IN ACCORDANCE WITH THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT, TENNESSEE CODE 65-31-101.

KEY NOTES:

1. DEMOLISH EXISTING ABOVE GRADE LIFT STATION INCLUDING PUMPS, PIPING, VALVES, FITTINGS, AND ACCESSORIES AS NECESSARY. EXISTING WET WELL STRUCTURE TO REMAIN IN PLACE.
2. CONTRACTOR TO PLACE EROSION CONTROLS AROUND AREAS OF DISTURBANCE TO PREVENT SEDIMENT RUNOFF FROM LEAVING THE WORK AREA. SEE DETAILS ON DRAWING G-003. ANY SEDIMENT THAT LEAVES THE WORK AREA, INCLUDING THAT TRACKED ONTO THE PAVEMENT, SHALL BE CLEANED UP IMMEDIATELY.

NOTE: BEFORE THE BEGINNING OF CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY THE SITE DATUM WITH ALL SITE TBMS AND IMMEDIATELY REPORT IN WRITING ANY DISCREPANCIES TO THE ENGINEER.

SPECIAL FLOOD HAZARD STATEMENT:

THIS IS TO CERTIFY THAT BY GRAPHIC DETERMINATION THE ABOVE PLATTED PROPERTY IS NOT IN A SPECIAL FLOOD HAZARD AREA (SFHA) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD. THE SUBJECT PROPERTY IS SHOWN IN A FEMA ZONE X (NO SHADING ON FEMA MAP): AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO THE FEMA/FIRM MAP NUMBER 47157C0292G WITH AN EFFECTIVE DATE OF FEBRUARY 6, 2013.

TEMPORARY BENCHMARK (T.B.M.) - TOP RIM SMH SOUTH OF LIFT STATION

ELEVATION = 247.86 (NAVD88)

BENCHMARK (B.M.) - NGS MONUMENT PID - FE0743 - ELEVATION = 359.05 (NAVD88)

Tennessee811 Know what's below. Call before you dig.

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

WILLIAM JAMES RAMEY — REGISTERED ENGINEER — AGRICULTURE — COMMERCE — NO. 0010944 — STATE OF TENNESSEE — 6/24/2024

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. C-101

SEWER BASIN: WN05-2

SHEET 1 OF 2

DIVISION OF ENGINEERING

EXISTING SITE PLAN

5184 PLEASANT VIEW RD.

MEMPHIS, TENNESSEE

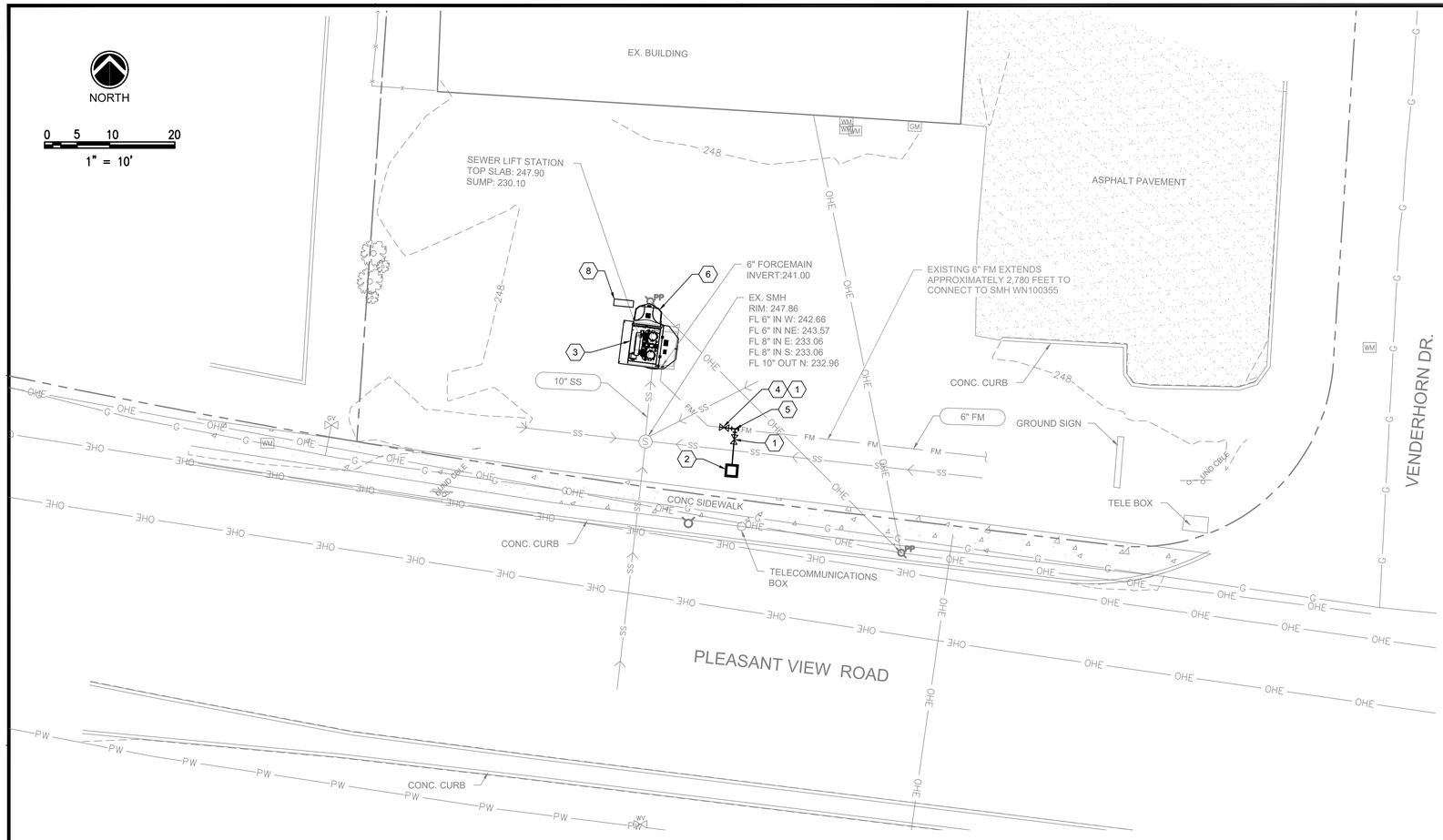
SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: WJR DATE: 06/24 SCALE: SHOWN

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWD2304704 FILENAME: C-04-101.DWG PLOT DATE: 6/24/2024



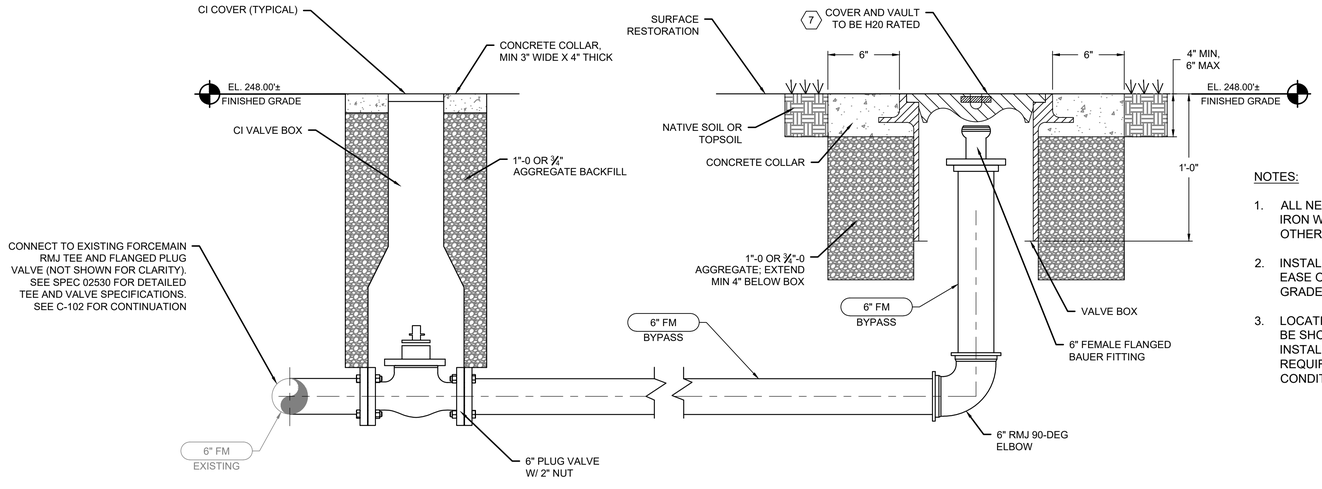
LEGEND	
PP	EXISTING POWER POLE
S	EXISTING SEWER MANHOLE
WV	EXISTING WATER VALVE
	EXISTING WATER HYDRANT
GV	EXISTING GAS VALVE
WM	EXISTING WATER METER
GM	EXISTING GAS METER
	EXISTING TREE GROUP
100	EXISTING CONTOUR
	PROPERTY LINE
SS	EXISTING SANITARY SEWER
OHE	EXISTING OVERHEAD ELECTRIC
x x	EXISTING FENCE
PW	EXISTING POTABLE WATER
G	EXISTING GAS LINE
FM	EXISTING FORCEMAIN
	EXISTING CONCRETE
	EXISTING ASPHALT

GENERAL NOTES:

1. BASE DRAWING DEVELOPED FROM "PARTIAL TOPOGRAPHIC SURVEY OF PLEASANT VIEW LIFT STATION" DATED 11/18/21, PREPARED BY ASHWORTH ENGINEERING, PLLC. BROWN AND CALDWELL ASSUMES NO RESPONSIBILITY FOR ACCURACY OF THE SAME. DIMENSIONS, FEATURES, AND DETAILS MAY VARY FROM FIELD CONDITIONS. CONTRACTOR MUST VERIFY ALL EXISTING CONDITIONS THAT MAY IMPACT THE WORK.
2. EXISTING PIPE LOCATIONS SHOWN BASED ON CITY OF MEMPHIS GIS DATA AND FIELD VERIFICATION WHERE POSSIBLE. NOT ALL UNDERGROUND UTILITIES WERE LOCATED. CONTRACTOR SHALL VERIFY UTILITY AND PIPE LOCATIONS WITHIN ALL WORK AREAS PRIOR TO COMMENCING WORK.
3. ALL EXISTING INFRASTRUCTURE THAT IS TO REMAIN IN PLACE (PIPING, ELECTRIC CONDUITS, STORM PIPES, ETC.) TO BE PROTECTED IN ACCORDANCE WITH THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT, TENNESSEE CODE 65-31-101.
4. CONTRACTOR TO FIELD VERIFY AND CONFIRM EXISTING CONDITIONS AND ELEVATIONS PRIOR TO COMMENCING WORK.
5. CONTRACTOR TO INSTALL PROPOSED EQUIPMENT AND APPURTENANCES AT ELEVATIONS, LOCATIONS, AND DIMENSIONS SAME AS EXISTING.
6. CONTRACTOR SHALL PROVIDE ALL FITTINGS, PIPING, JOINTS, AND APPURTENANCES AS NECESSARY FOR THE WORK SHOWN.
7. REFER TO ELECTRICAL DRAWINGS FOR ELECTRIC AND POWER DETAILS.
8. CONTRACTOR TO RESTORE ALL DISTURBED AREAS TO EXISTING CONDITIONS. DISTURBED GRASSED AREAS SHALL BE REVEGETATED. PAVEMENT AREAS THAT ARE CUT AND REMOVED AS PART OF THE WORK SHALL BE RESTORED TO MATCH EXISTING.

KEY NOTES:

1. PROPOSED 6" STANDARD PORT ECCENTRIC PLUG VALVE WITH VALVE BOX.
2. PROPOSED FORCEMAIN EMERGENCY BYPASS CONNECTION, SEE DETAIL A/C-102 ON THIS SHEET
3. INSTALL PROPOSED ABOVE GRADE PACKAGED LIFT STATION, PIPING, VALVES, FITTINGS, AND ACCESSORIES PER MANUFACTURER'S INSTRUCTIONS. SEE PROCESS DRAWINGS FOR FURTHER DETAILS.
4. INSTALL PLUG VALVE ON FORCEMAIN PIPE UPSTREAM OF THE BYPASS TIE-IN.
5. 6" RESTRAINED MECHANICAL JOINT TEE
6. PRIOR TO INSTALLATION, VERIFY THAT THE LIFT STATION COVER DOES NOT CONTACT OTHER EXISTING OBJECTS WHEN OPEN. ADJUST THE COVER ORIENTATION IF NECESSARY TO PREVENT HITTING OTHER OBJECTS.
7. COVER AND VAULT TO BE MANUFACTURED BY OLDCASTLE, QUAZITE, OR ENGINEER-APPROVED EQUAL. INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
8. GENERATOR PLUG AND MANUAL TRANSFER SWITCH TO BE INSTALLED ON ELECTRICAL SUPPORT RACK. SEE ELECTRICAL DRAWINGS.



A C-102 FORCEMAIN EMERGENCY BYPASS CONNECTION DETAIL
NTS

NOTES:

1. ALL NEW BURIED PIPING SHALL BE 6-INCH DUCTILE IRON WITH RESTRAINED MECHANICAL JOINTS, UNLESS OTHERWISE SPECIFIED.
2. INSTALL BAUER FITTING NEAR ACCESS COVER FOR EASE OF MAINTENANCE AND OPERATION FROM GRADE WITHOUT THE USE OF ANY SPECIAL TOOLS.
3. LOCATION OF VALVES AND BYPASS CONNECTION TO BE SHOWN ON CIVIL DRAWINGS. CONTRACTOR TO INSTALL PROPOSED BYPASS PIPE LENGTH AS REQUIRED PER DRAWINGS AND EXISTING CONDITIONS.

APPROVED FOR CONSTRUCTION:

THE DOCUMENT BEARING THIS STAMP HAS BEEN RECEIVED AND REVIEWED BY THE CITY OF MEMPHIS DIVISION OF ENGINEERING UNDER AUTHORITY DELEGATED BY THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION DIVISION OF WATER RESOURCES. IT IS HEREBY APPROVED FOR CONSTRUCTION BY THE CITY ENGINEER AS EVIDENCE BY HIS SIGNATURE IN THE TITLE BLOCK BELOW.

SPECIAL FLOOD HAZARD STATEMENT:

THIS IS TO CERTIFY THAT BY GRAPHIC DETERMINATION THE ABOVE PLATTED PROPERTY IS NOT IN A SPECIAL FLOOD HAZARD AREA (SFHA) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD. THE SUBJECT PROPERTY IS SHOWN IN A FEMA ZONE X (NO SHADING ON FEMA MAP); AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO THE FEMA/FIRM MAP NUMBER 47157C0292G WITH AN EFFECTIVE DATE OF FEBRUARY 6, 2013.

TEMPORARY BENCHMARK (T.B.M.) - TOP RIM SMH SOUTH OF LIFT STATION

ELEVATION = 247.86 (NAVD88)

BENCHMARK (B.M.) - NGS MONUMENT PID - FE0743 - ELEVATION = 359.05 (NAVD88)

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REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

WILLIAM JAMES RAINS — REGISTERED ENGINEER — AGRICULTURE — TENNESSEE — NO. 0010844 — STATE OF TENNESSEE — 6/24/2024

LIFT STATION DESIGN GROUP 3 C
DEVELOPER: SARP 10
ENGINEER: BROWN AND CALDWELL

DWG NO. C-102
SEWER BASIN: WN05-2
SHEET 2 OF 2
DIVISION OF ENGINEERING

PROPOSED SITE PLAN

5184 PLEASANT VIEW RD.

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127
DESIGN BY: WJR DATE: 06/24 SCALE: SHOWN
REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWD2304704 FILENAME: C-04-102.DWG PLOT DATE: 6/24/2024

VALVES

SCHEMATIC OR 2D	VALVE TYPE
	THREE WAY VALVE
	GATE VALVE (FLANGED)
	GATE VALVE (THREADED)
	PLUG VALVE (GEAR OPERATOR)
	PLUG VALVE (LEVER HANDLE)
	BALL VALVE (THREADED)
	BALL VALVE (FLANGED)
	BUTTERFLY VALVE (LUGGED/WAFER)
	BUTTERFLY VALVE (AWWA W/ HANDWHEEL ACTUATOR
	GLOBE VALVE (FLANGED)
	GLOBE VALVE (THREADED)
	DIAPHRAGM VALVE (FLANGED)
	DIAPHRAGM VALVE (THREADED)
	CHECK VALVE
	PUMP DISCHARGE VALVE
	DOUBLE LEAF CHECK VALVE
	ANGLE VALVE
	FLOAT VALVE
	PINCH VALVE
	FUSIBLE LINK VALVE
	NEEDLE VALVE
	BALL CHECK VALVE

SCHEMATIC OR 2D	VALVE TYPE
	GAUGE OR ROOT VALVE
	KNIFE GATE VALVE
	FLAP GATE
	BALANCING COCK
	CIRCUIT SETTER
	THERMOSTATICALLY CONTROLLED VALVE
	PRESSURE AND VACUUM RELIEF VALVE
	VACUUM RELIEF VALVE
	PRESSURE RELIEF VALVE
	IN-LINE, SPRING LOADED RELIEF VALVE
	PRESSURE REGULATING VALVE
	BACK PRESSURE REGULATING VALVE
S	SOLENOID VALVE
	DIAPHRAGM OPERATED VALVE
	PRESSURE BALANCE OPERATED VALVE
M	MOTOR OPERATED VALVE
	PISTON OPERATED VALVE
	CHLORINE INSTITUTE CONTAINER VALVE
	MUD VALVE
	WALL HYDRANT
	TELESCOPING VALVE
	BACKFLOW PREVENTER

MECHANICAL PIPE AND FITTINGS

2D SINGLE LINE	2D DOUBLE LINE	3D DOUBLE LINE	
			FLANGED JOINT
		OR	PLAIN OR GROOVED END MECHANICAL COUPLING
			PUSH ON OR BALL AND SOCKET JOINT
			MECHANICAL JOINT
			WELDED JOINT
			GROOVED END ADAPTER FLANGE x FLANGE
			UNION
			SLEEVE TYPE MECHANICAL COUPLING
			RESTRAINED SLEEVE TYPE MECHANICAL COUPLING
			FLANGED COUPLING ADAPTER
			RESTRAINED FLANGED COUPLING ADAPTER
			ELASTOMER AND FABRIC EXPANSION JOINT
			EXPANSION JOINT (SEE SPECS FOR TYPE)
			FLEXIBLE METAL HOSE
			ELBOW (PLAN)
			ELBOW UP
			ELBOW DOWN
			TEE (PLAN)
			TEE UP
			TEE DOWN
			LATERAL (PLAN)
			LATERAL UP
			LATERAL DOWN
			CONCENTRIC REDUCER
			ECCENTRIC REDUCER
			EQUIPMENT CONNECTION FITTING
			BLIND FLANGE OR CAP

MISCELLANEOUS DEVICES

A	UTILITY STATION (LETTER, IF ANY, DESIGNATES TYPE)
	HOSE RACK
	FLOOR DRAIN
XCO	CLEANOUT; X=DESIGNATION IF ANY
XKIP	RECOMMENDED MAIN ANCHOR POINT WITH ALLOWABLE FORCE ON STRUCTURE
	PIPE ANCHOR
W	SEAL WATER CONTROL UNIT
	QUICK COUPLING
	IN LINE PRESSURE SENSOR

XX	INSTRUMENT
DE	DENSITY ELEMENT
FE	FLOW ELEMENT
LE	LEVEL ELEMENT
PE	PRESSURE ELEMENT
PI	PRESSURE INDICATOR (GAUGE)
TE	TEMPERATURE ELEMENT
TI	TEMPERATURE INDICATOR

	CALIBRATION TUBE
	PULSATION DAMPENER

DEMOLITION SYMBOLS

	ITEMS SHADED SHALL BE DEMOLISHED AND REMOVED FROM THE SITE

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

BODY LAYNE MCCLAIN REGISTERED ENGINEER AGRICULTURE COMMERCE No. 119650 STATE OF TENNESSEE 6-24-24

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. D-001

SEWER BASIN: WN05-2

SHEET 1 OF 4

DIVISION OF ENGINEERING

LEGENDS AND SYMBOLS

5184 PLEASANT VIEW RD.

MEMPHIS, TENNESSEE

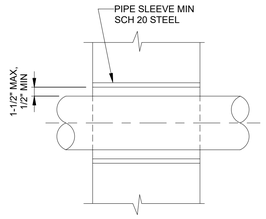
SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: CLM DATE: 06/24 SCALE: NONE

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

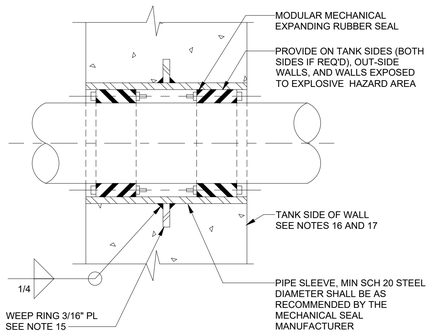
Path: C:\USERS\CGRANGER\BCPW\D2304708 FILENAME: D-001_PLEASANT VIEW.DWG PLOT DATE: 6/24/2024



FOR WALLS

TYPE B PIPE PENETRATION

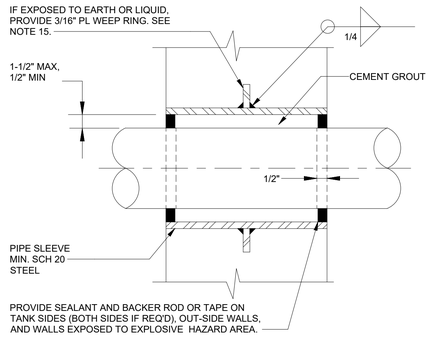
D1102 N.T.S.



FOR WALLS

TYPE D PIPE PENETRATION

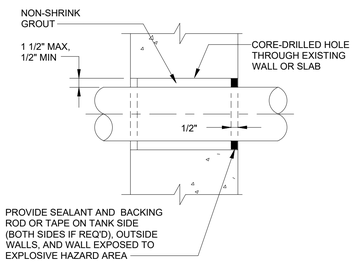
D1104 N.T.S.



FOR WALLS

TYPE E PIPE PENETRATION

D1105 N.T.S.



FOR PRECAST AND EXISTING
WALLS, FLOORS AND CEILINGS

TYPE X1 PIPE PENETRATION

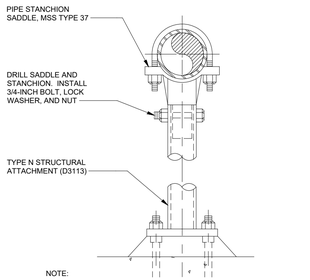
D1112 N.T.S.

GENERAL NOTES:

1. WHERE PIPES PASS THROUGH WALLS, FLOORS, OR CEILINGS, PENETRATIONS SHALL CONFORM TO TABLE, EXCEPT AS OTHERWISE SPECIFIED.
2. IN TABLE, "TANK" SHALL MEAN ANY PART OF A STRUCTURE CONTAINING LIQUID, OR IN CONTACT WITH THE EARTH.
3. IN TABLE, "PASSAGE" SHALL MEAN ANY ROOM, GALLERY, TUNNEL, OR SIMILAR ENCLOSURE.
4. IN TABLE, WATER SURFACE "WS" SHALL MEAN AN ELEVATION 9-INCHES ABOVE MAXIMUM WATER SURFACE SHOWN.
5. ALL STEEL SLEEVES SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
6. IN CONDITION 5, PENETRATION TYPE E,H,J, OR K SHALL BE USED WHERE ONE SIDE IS DESIGNATED AS HAZARDOUS (CLASSIFIED), WHERE FLOODING IS POSSIBLE, OR WHERE SPECIFIED.
7. SEAL FLANGES SHALL BE FACED AND DRILLED TO 150 POUND STANDARD. EACH JOINT SHALL BE FULL FACE GASKETED.
8. WHERE SPECIFIED, CAST IRON FLANGES MAY BE INSTALLED FLUSH WITH WALL AND TAPPED FOR STUDS.
9. PROVIDE CURB WHERE PENETRATING FLOOR, EXCEPT FOR PENETRATION TYPES A AND C. CURB SHALL BE 4" HIGH BY 3" WIDE.
10. PROVIDE A MINIMUM OF 3" CLEARANCE BETWEEN REINFORCING STEEL AND FERROUS METAL PENETRATIONS.
11. FLEXIBLE JOINTS SHALL BE PROVIDED FOR UNDERGROUND PIPING AS SPECIFIED.
12. RESTRAINED FLEXIBLE COUPLINGS FOR STEEL PIPE SHALL BE DESIGNED FOR 100 PSI LINE PRESSURE IN ACCORDANCE WITH AWWA MANUAL MII, FIGURES 19.15 AND 19.16. AWWA MANUAL M11, TABLE 19.7 SHALL BE UTILIZED.
13. UNLESS OTHERWISE SPECIFIED, INSULATION SHALL NOT EXTEND THROUGH SLEEVES. CHILLED WATER MUST PENETRATE WITH INSULATION.
14. WHERE CAST IRON PIPE IS EMBEDDED IN CONCRETE AT AN EXPANSION JOINT, USE TYPE L PENETRATION.
15. WEEP RINGS SHALL HAVE A MINIMUM DIAMETER 3-INCHES GREATER THAN THE OUTSIDE PIPE DIAMETER.
16. "TANK SIDE OF WALL" SHALL MEAN SIDE OF WALL NORMALLY EXPOSED TO LIQUID, EARTH, OR OUTSIDE ATMOSPHERE.
17. SEAL WITH MASTIC SEALANT WHERE WALL IS EXPOSED TO LIQUID, EARTH, OR A HAZARDOUS (CLASSIFIED) AREA.

PIPE PENETRATION TYPES

	CONDITION		TYPE		
	FROM	TO	STEEL PIPE	CAST IRON	PLASTIC PIPE
1	TANK	TANK BELOW W.S.	E, H OR K	E, F, G OR J	E
2	TANK	TANK ABOVE W.S.	D OR E	D OR E	D OR E
3	PASSAGE	TANK BELOW W.S.	E, H OR K	E, F, G OR J	E
4	PASSAGE	TANK ABOVE W.S.	A, C, D OR E	A, C, D OR E	A, C, D OR E
5	PASSAGE	PASSAGE	B OR C SEE NOTE 6	B OR C SEE NOTE 6	B OR C SEE NOTE 6
6	PASSAGE	OUTSIDE WALL	D OR E	D OR E	D OR E
7	PASSAGE	ROOF	AS SHOWN ON DRAWING OR X1		
8	TANK	OUTSIDE WALL	E OR F	E, F OR G	E



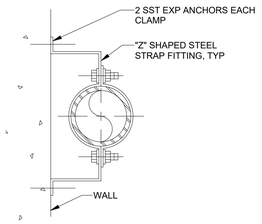
NOTE:

1. ABOVE SIZES ARE NOMINAL PIPE DIAMETERS IN INCHES
2. SPACING BETWEEN SUPPORTS SHALL BE PER TABLE A/D2301.
3. STANCHIONS INSTALLED OUTDOORS MUST WITHSTAND WIND SPEEDS OF UP TO 165 MILES PER HOUR.

3" THROUGH 20" PIPE

TYPE 10 PIPE STANCHION SADDLE

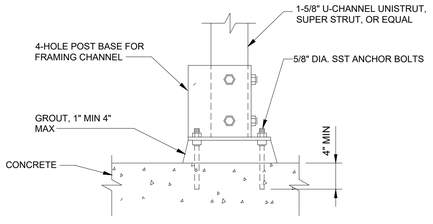
D2110 N.T.S.



FOR VERTICAL PIPE ONLY 3/4"
THROUGH 8" PIPE

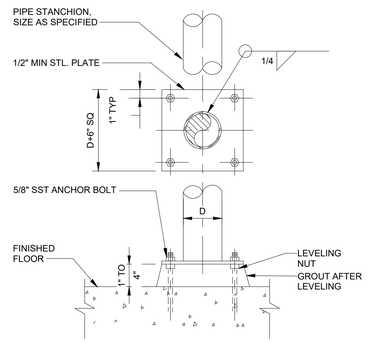
TYPE 11 OFFSET PIPE CLAMP

D2111 N.T.S.



TYPE E FRAMING CHANNEL POST BASE

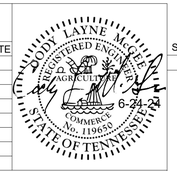
D3105 N.T.S.



TYPE N PIPE STANCHION FLOOR ATTACHMENT

D3113 N.T.S.

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024



LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. D-002

SEWER BASIN: WN05-2

SHEET 2 OF 4

DIVISION OF ENGINEERING

STANDARD DETAILS

5184 PLEASANT VIEW RD.

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

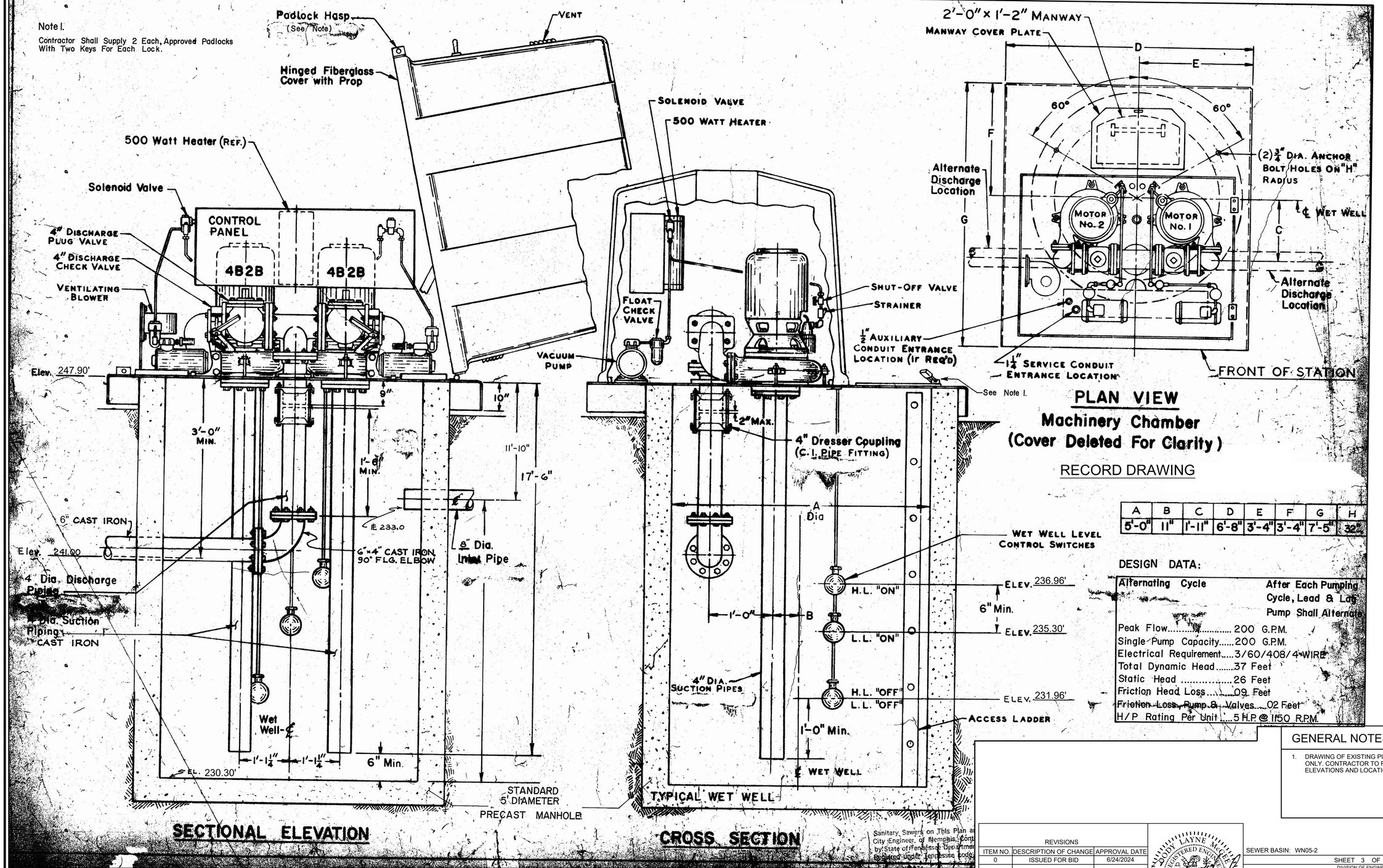
DESIGN BY: CLM DATE: 06/24 SCALE: NONE

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWID2304708 FILENAME: D-002_PLEASANT VIEW.DWG PLOT DATE: 6/24/2024

Note I.
Contractor Shall Supply 2 Each, Approved Padlocks With Two Keys For Each Lock.



SECTIONAL ELEVATION

CROSS SECTION

PLAN VIEW
Machinery Chamber (Cover Deleted For Clarity)

RECORD DRAWING

A	B	C	D	E	F	G	H
5'-0"	11"	1'-11"	6'-8"	3'-4"	3'-4"	7'-5"	32"

DESIGN DATA:

Alternating Cycle	After Each Pumping Cycle, Lead & Lag Pump Shall Alternate
Peak Flow	200 G.P.M.
Single Pump Capacity	200 G.P.M.
Electrical Requirement	3/60/408/4-WIRE
Total Dynamic Head	37 Feet
Static Head	26 Feet
Friction Head Loss	09 Feet
Friction Loss, Pump & Valves	02 Feet
H/P Rating Per Unit	5 H.P. @ 1150 R.P.M.

Sanitary Sewers on This Plan are Approved by City Engineer, of Memphis, Complies with by State of Tennessee Department of Public Health Regulations Under Tennessee Code Annotated

GENERAL NOTES:

1. DRAWING OF EXISTING PUMP STATION IS FOR REFERENCE ONLY. CONTRACTOR TO FIELD VERIFY EXISTING ELEVATIONS AND LOCATION OF EQUIPMENT.

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

LIFT STATION DESIGN GROUP 3 C
DEVELOPER: SARP 10
ENGINEER: BROWN AND CALDWELL

CLAUDY LAYNE MCGEE REGISTERED ENGINEER AGRICULTURE COMMERCE No. 119650 STATE OF TENNESSEE 6-24-24

DWG NO. D-101

SEWER BASIN: WN05-2

SHEET 3 OF 4
DIVISION OF ENGINEERING

EXST. LIFT STATION PLAN & SECTION

5184 PLEASANT VIEW RD.

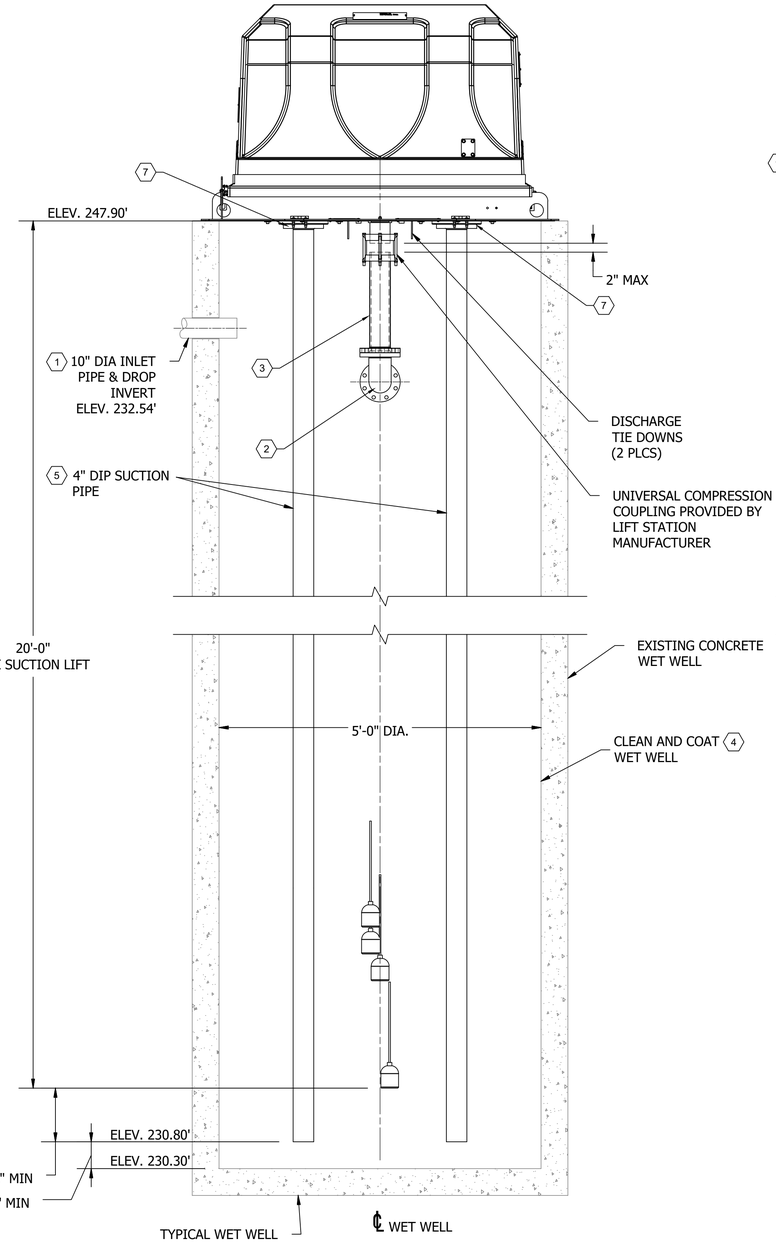
MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127
DESIGN BY: CLM DATE: 06/24 SCALE: SHOWN
REVIEWED

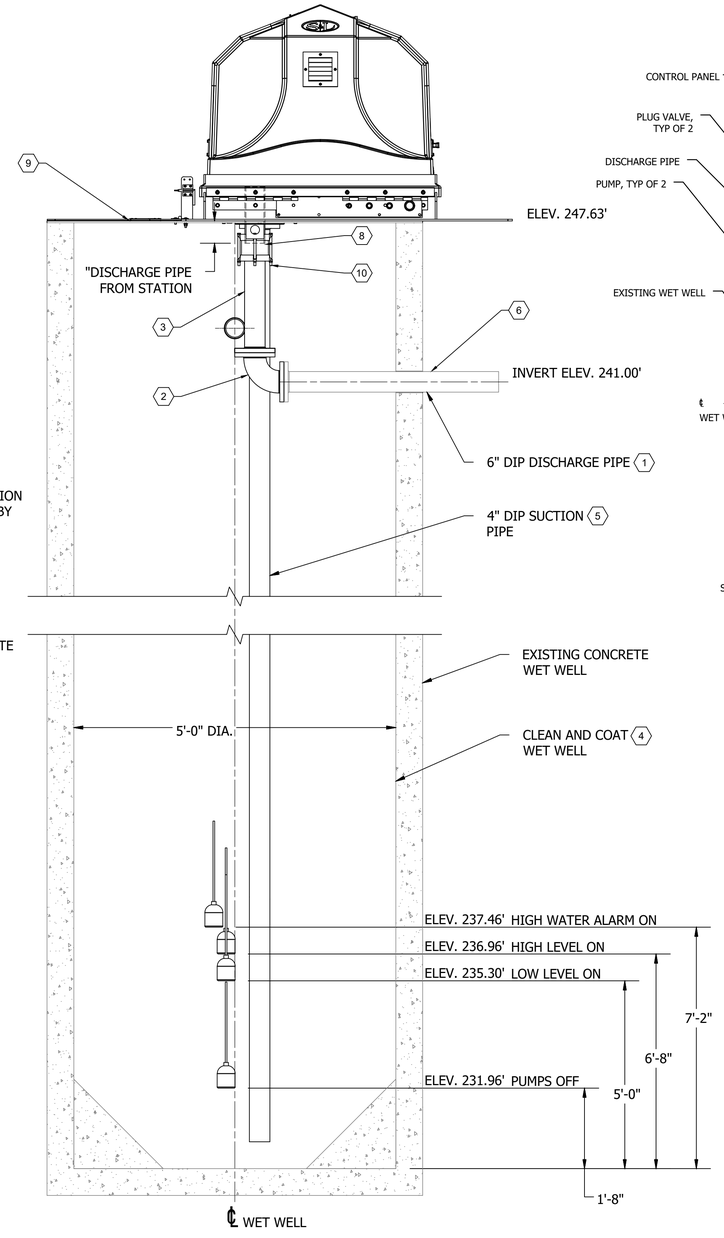
CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWD2304708 FILENAME: D-04-101.DWG PLOT DATE: 6/24/2024

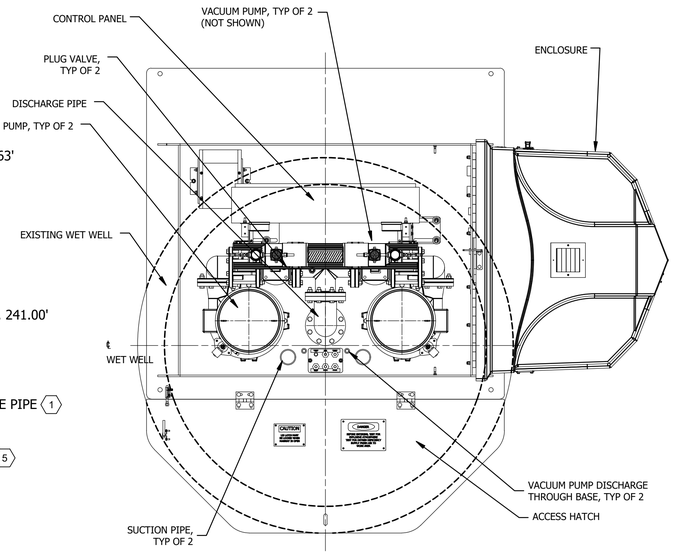
DESCRIPTION	EXISTING PUMPS 1 & 2
FLOW	200 GPM
TDH	37-FT



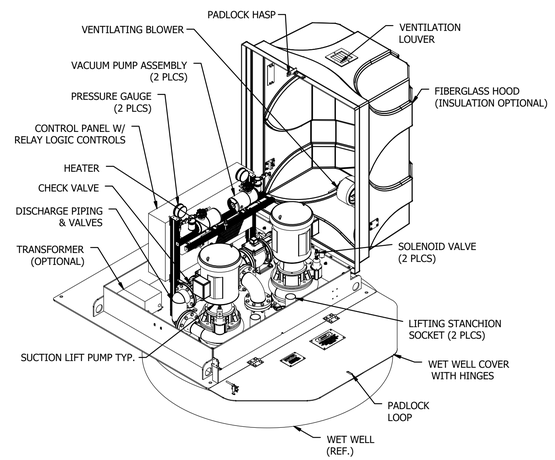
FRONT SECTIONAL ELEVATION



SIDE SECTIONAL ELEVATION



PLAN VIEW



A D-102 LIFT STATION ISOMETRIC
SCALE: NTS

LIFT STATION PLAN AND SECTION
SCALE: 3/4" = 1'-0"

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY AND CONFIRM EXISTING CONDITIONS AND ELEVATIONS PRIOR TO COMMENCING WORK.
2. CONTRACTOR TO INSTALL PROPOSED EQUIPMENT AND APPURTENANCES AT ELEVATIONS, LOCATIONS, AND DIMENSIONS SAME AS EXISTING.
3. INTERIOR OF EXISTING WET WELL SHALL BE DRAINED, CLEANED, AND LINED PRIOR TO INSTALLING PROPOSED EQUIPMENT AND ACCESSORIES. LINING SHALL BE INSTALLED AFTER NEW WALL PENETRATIONS ARE COMPLETED.
4. CONTRACTOR SHALL PROVIDE ALL FITTINGS, PIPING, JOINTS, AND APPURTENANCES AS SHOWN TO BE BY OTHERS AS NECESSARY FOR THE WORK SHOWN.
5. SEE ELECTRICAL DRAWINGS FOR CONDUIT ROUTING AND WIRING.
6. ALL PIPING IN WET WELL SHALL BE DUCTILE IRON MATERIAL.
7. CONTRACTOR TO DEMOLISH AND REPLACE ALL PIPING AND APPURTENANCES INDICATED AS "NOT BY S&L".
8. NEW FLOAT SWITCHES TO BE INSTALLED AT SAME ELEVATIONS AS EXISTING FOR CONTROL OF PUMPS AND ALARMS.

KEY NOTES:

1. EXISTING INLET AND DISCHARGE PIPING ENTERING AND EXITING THE WET WELL TO REMAIN AS-IS.
2. 6"X4" STANDARD FLG. 90-DEGREE ELBOW
3. 4" D.I. SPOOL LENGTH TO FIT
4. WET WELL CLEANING, INSPECTIONS, AND LINING
   - 4.a. ONCE BYPASS PUMPING IS ESTABLISHED, POWER WASH AND DRAIN INTERIOR OF WET WELL.
   - 4.b. CONTRACTOR TO INSPECT CONDITION OF CONCRETE SURFACES AND PROVIDE BRIEF WRITTEN REPORT TO IDENTIFY SURFACE CONDITION RELATIVE TO ACCEPTABILITY TO RECEIVE PROTECTIVE LINING. CONTRACTOR TO CONSULT WITH LINING MANUFACTURER ON-SITE AS NEEDED. REPORT TO INCLUDE SUMMARY OF OBSERVATIONS, RECOMMENDATIONS FOR REPAIRS, AND INCLUDE SUPPORTING PHOTOS.
   - 4.c. PROVIDE REPAIR PROPOSAL AS NEEDED WITH RECOMMENDED REPAIR PRODUCTS AND PROCEDURES PRIOR TO PROCEEDING. PROVIDE APPROVAL LETTER FROM LINING MANUFACTURER TO SUPPORT REPAIR RECOMMENDATIONS.
   - 4.d. AFTER COMPLETION OF APPROVED CONCRETE REPAIRS, PROVIDE FINAL SURFACE PREP FOLLOWED BY LINING OF INTERIOR BASE, WALLS, AND CEILING AS SPECIFIED IN SECTION 02537.
5. REPLACE EXISTING PIPE AS SHOWN
6. CONTRACTOR TO SUPPORT EXISTING DISCHARGE PIPE FROM WETWELL WHILE REPLACING DISCHARGE PIPE FROM THE PUMP.
7. USE GASKETS AND SEALANT PROVIDED WITH STATION FOR A TIGHT SUCTION PIPE CONNECTION.
8. COMPRESSION COUPLING PIPE FITTING
9. PRIOR TO SETTING THE STATION ON TOP OF THE WET WELL, APPLY A LAYER OF NON-SHRINK OR EPOXY GROUT ON THE TOP SURFACE OF THE WET WELL. THE STATION WILL THEN BED DOWN IN THE GROUT, GIVING THE STATION FIRM SUPPORT AND REDUCING NOISE TRANSMISSIONS. THE BASE PLATE SHOULD BE LEVEL IN ALL DIRECTIONS WHEN COMPLETE.
10. THE DISCHARGE IS TO BE ORIENTED IN ACCORDANCE WITH THE ENGINEER'S PLAN. MANUFACTURER WILL PROVIDE A COMPRESSION TYPE COUPLING TO JOIN THE FORCE MAIN TO THE STATION DISCHARGE PIPE. COMPRESSION TYPE COUPLINGS DO NOT PROVIDE PIPE END RESTRAINT. TWO LUGS SHALL BE PROVIDED (ONE ON EITHER SIDE OF THE DISCHARGE) ON THE UNDERSIDE OF THE BASEPLATE FOR SECURING THE VERTICAL SECTION OF THE DISCHARGE PIPE FROM SEPARATING IN THE COUPLING. TIE THE DISCHARGE PIPE TO THE STATION TO PREVENT SEPARATION FROM THE COUPLING IN THE VERTICAL DIRECTION BY USING AN ALL-THREADED ROD, CABLE OR CHAIN (PROVIDED BY CONTRACTOR). THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ADEQUATE RESTRAINT AGAINST ANY HORIZONTAL THRUST DEVELOPED. THE RESTRAINT SHALL BE TIED TO THE STRUCTURE, AS THE STATION BASEPLATE IS NOT DESIGNED TO WITHSTAND HORIZONTAL THRUST FORCES. ALL DISCHARGE PIPES SHOULD BE SECURED.

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

BOBBY LAYNE MCGEE REGISTERED ENGINEER AGRICULTURE COMMERCE No. 119658 STATE OF TENNESSEE 6-24-24

LIFT STATION DESIGN GROUP 3 C
DEVELOPER: SARP 10
ENGINEER: BROWN AND CALDWELL

DWG NO. D-102

SEWER BASIN: WN05-2

SHEET 4 OF 4
DIVISION OF ENGINEERING

PROP. LIFT STATION PLAN & SECTION

5184 PLEASANT VIEW RD.

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127
DESIGN BY: CLM DATE: 06/24 SCALE: SHOWN
REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWD2304708 FILENAME: D-04-102.DWG PLOT DATE: 6/24/2024

ELECTRICAL LEGEND

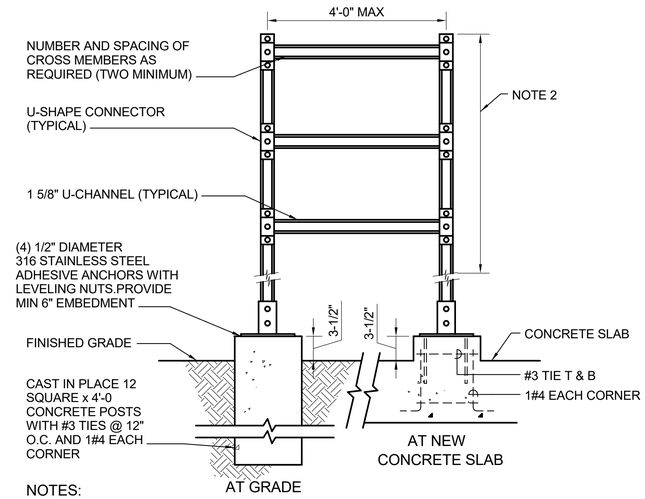
SYMBOL	DESCRIPTION
	LIGHTING
A	AREA LIGHT (LETTER REFERENCES FIXTURE SCHEDULE)
	RED BEACON ALARM LIGHT
	SERVICE AND DISTRIBUTION
	SWITCHBOARD
	DISTRIBUTION PANEL
	BRANCH CIRCUIT PANEL
T	TRANSFORMER
	MOTOR CONNECTION
G	GENERATOR CONNECTION
	DISCONNECT SWITCH (FUSED AS REQUIRED)
	MOTOR CONTROLLER (SPECIFIED IN OTHER THAN DIV. 26)
	COMBINATION MOTOR CONTROLLER & DISCONNECT SWITCH (SPECIFIED IN OTHER THAN DIV. 26)
	EQUIPMENT NOT FURNISHED UNDER DIV. 26 (SPECIFIED IN OTHER THAN DIV. 26)
M	ELECTRIC METER
R	RELAY
CB	CIRCUIT BREAKER
LC	LIGHTING CONTACTOR
PC	PHOTOCELL

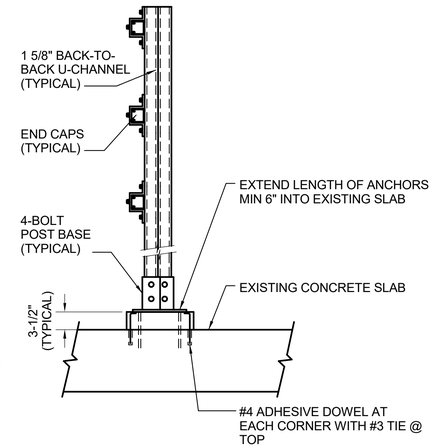
SYMBOL	DESCRIPTION
	BASIC MATERIALS
1	BRANCH CIRCUIT WIRE & CONDUIT RUN CONCEALED IN WALL OR ABOVE CEILING, HOME RUN TO PANELBOARD. A NUMERAL, IF PRESENT AT ARROW HEAD, INDICATES CIRCUIT NUMBER. ANY BRANCH CIRCUIT SHOWN WITHOUT SLASH MARKS INDICATES A CONDUIT CONTAINING (3) #12 AWG CONDUCTORS (HOT, NEUTRAL & GROUND). SLASH MARKS, IF PRESENT, INDICATE THE FOLLOWING: HOT (ENERGIZED) CONDUCTOR, NEUTRAL CONDUCTOR, & GROUND CONDUCTOR
	WIRE & CONDUIT RUN EXPOSED
	WIRE & CONDUIT RUN IN OR UNDER FLOOR
	EXISTING LIGHT FIXTURE OR ELECTRICAL DEVICE MAY BE REMOVED AND/OR RELOCATED AND CIRCUITRY MADE CONTINUOUS WHERE REQUIRED. UNO, LINE TYPE TYPICAL FOR ALL DEVICES TO BE REMOVED AND/OR RELOCATED.
	DISCONNECT SWITCH
J	JUNCTION BOX
	PUSHBUTTON
S_M	MANUAL MOTOR STARTER SWITCH
S	SINGLE-POLE, SINGLE-THROW (S.P.S.T.) WALL SWITCH
S_K	KEYED WALL SWITCH
S_D	WALL BOX DIMMER CONTROL
S_3	SINGLE-POLE, DOUBLE-THROW (S.P.D.T.) WALL SWITCH
S_{OS}	WALL SWITCH WITH OCCUPANCY SENSOR
	SINGLE RECEPTACLE IN WALL (NEMA 5-20R)
	DUPLEX RECEPTACLE IN WALL (NEMA 5-20R)
GFCI	G.F.I. TYPE DUPLEX RECEPTACLE IN WALL (NEMA 5-20R)
	DUPLEX RECEPTACLE IN WALL, EMERGENCY CIRCUIT (NEMA 5-20R)
	DOUBLE DUPLEX RECEPTACLE IN WALL (NEMA 5-20R)
WP	G.F.I. TYPE DUPLEX RECEPTACLE OUTDOORS (WEATHERPROOF)
	SINGLE 240V RECEPTACLE FOR APPLIANCE OR EQUIPMENT (PER APPLIANCE RATING)
X	X = TR (TAMPER RESISTANT) OR AF (ARC FAULT)
IG	DUPLEX RECEPTACLE IN WALL WITH ISOLATED GROUND
	POINT OF CONNECTION

ELECTRICAL ABBREVIATIONS

SYMBOL	DESCRIPTION
A	AMPERE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERES INTERRUPTING CURRENT
ANN	ANNUNCIATOR
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLP	CURRENT LIMITING PANEL
CT	CURRENT TRANSFORMER
CU	COPPER
DISC	DISCONNECT
EDF	ELECTRIC DRINKING FOUNTAIN
FAAP	FIRE ALARM ANNUMNICATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPS
G	GROUND
GFI	GROUND FAULT CURRENT INTERRUPTER
HP	HORSEPOWER
HZ	HERTZ
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT-AMPERE
KW	KILOWATT
LED	LIGHT EMITTING DIODE
MCC	MOTOR CONTROL CENTER
MLO	MAIN LUGS ONLY
N	NEUTRAL
NEC	NATIONAL ELECTRIC CODE
PF	POWER FACTOR
SOWB	SPACE ONLY WITH BUS
UGW	UNDERGROUND ELECTRICAL
V	VOLT
VA	VOLT-AMPERE
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHER PROOF
XFMR	TRNASFORMER
3P	THREE POLE
3PH	THREE PHASE
4W	FOUR WIRE
30/3	30 AMPERE, 3-POLE

CODE ANALYSIS - INTERNATIONAL BUILDING CODE 2015
CODE COMMENTS
JURISDICTION
Memphis and Shelby County Construction Code Enforcement
APPLICABLE CODES
2015 International Building Code with Local Amendments
2015 International Existing Building Code with Local Amendments
2015 International Residential Code with Local Amendments
2014 National Electrical Code
2018 Joint Electrical Code
2015 International Mechanical Code with Local Amendments
2015 International Fuel Gas Code with Local Amendments
2015 International Plumbing Code with Local Amendments
2015 International Energy Conservation Code with Local Amendments
2009 ICC A117.1 Accessibility and Useable Buildings and Facilities)by reference)
2013 ASME 17.1 Safety Code for Elevators and Escalators (by reference)



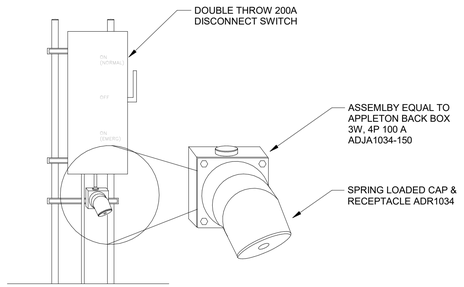


NOTES:

1. EQUIPMENT RACK SIZING:
   - A. ONE ITEM GREATER THAN 150 SQUARE INCHES.
   - B. TWO EQUIPMENT ITEMS GREATER THAN 130 SQUARE INCHES.
   - C. THREE OR MORE EQUIPMENT ITEMS.
   - D. PROVIDE 316 STAINLESS STEEL CHANNEL END-CAPS, AND FITTINGS
   - E. PROVIDE 1/4" MINIMUM ALUMINUM PLATE FOR SMALL ITEMS
2. MOUNT INDICATORS OR EQUIPMENT OPERATING HANDLES FOUR FEET ABOVE FLOOR OR PLATFORM.
3. MATERIAL AND HARDWARE PER SPECIFICATION DIVISION 16.

EQUIPMENT SUPPORT

SCALE: N.T.S.



GENERATOR PLUG

SCALE: N.T.S.

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

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

RYAN J. HERRITER REGISTERED ENGINEER AGRICULTURE No. 109919 STATE OF TENNESSEE 6/24/24

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CADWELL

DWG NO. E-001

SEWER BASIN: WN05-2

SHEET 1 OF 2

DIVISION OF ENGINEERING

ELECTRICAL STANDARD DETAILS 1

5184 PLEASANT VIEW LIFT STATION
MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: RJH DATE: 06/24 SCALE: SHOWN

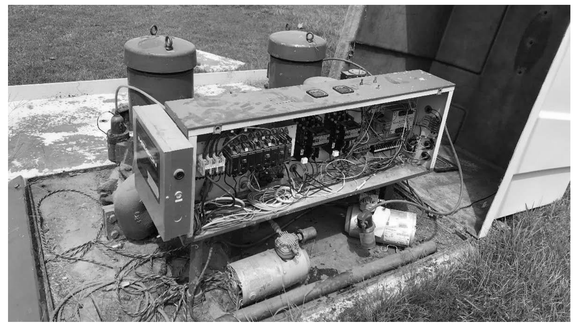
CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: P:\2021\21001 - SARP 10 - GROUP 3 LIFT STATIONS\CAD\XREFS FILENAME: 157456_TB.DWG PLOT DATE: ---- CAD USER: PAT HAGAN

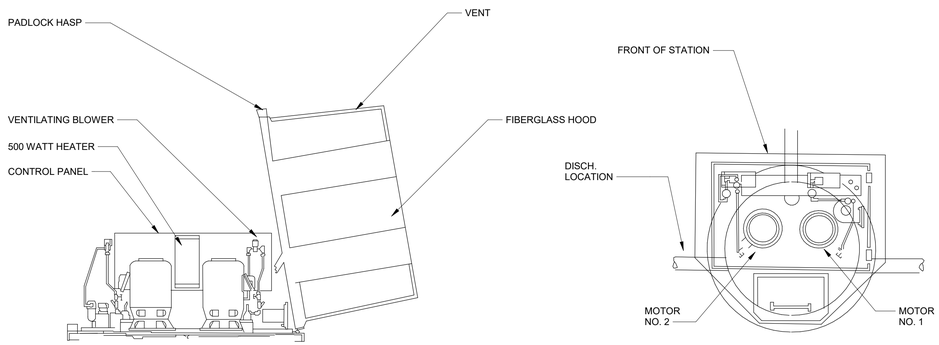
LIFT STATION COVER

CONTROL PANEL PUMP MOTORS

TOPSIDE BUBBLER ENCLOSURES

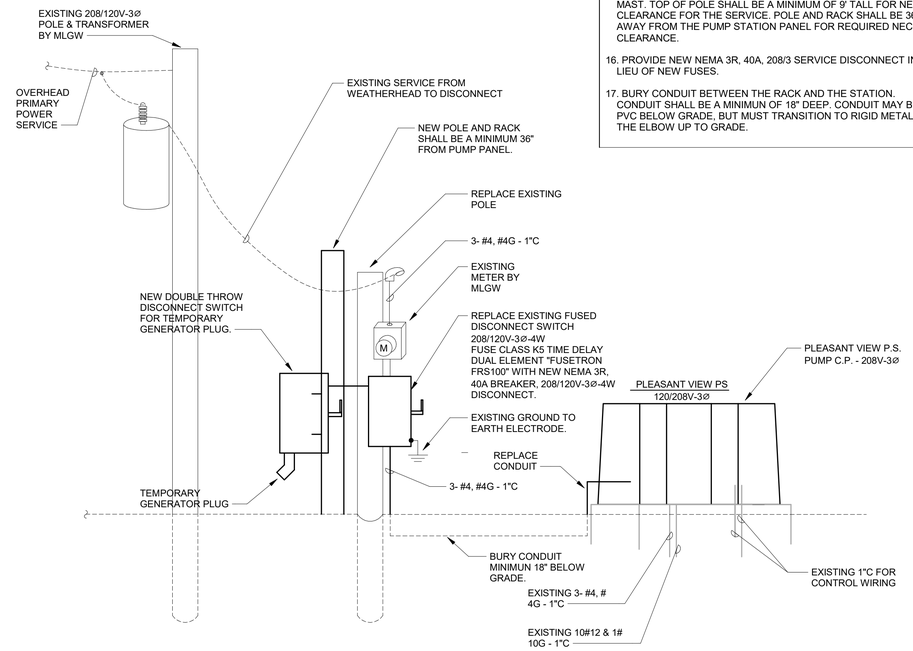


CONTROL PANEL ELECTRONICS



PUMP ELECTRICAL PLAN

SCALE: N.T.S.



RISER & SINGLE LINE DIAGRAM

SCALE: N.T.S.

GENERAL NOTES:

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE, AND ALL OTHER APPLICABLE STANDARDS AND REGULATIONS ENFORCED BY THE AUTHORITY HAVING JURISDICTION.
2. ALL ABOVE GROUND EXTERIOR CONDUIT SHALL BE GALVANIZED RIGID STEEL CONDUIT WITH CORROSION RESISTANT FITTINGS, CLAMPS AND SUPPORT.
3. IN THE EVENT OF CONFLICTS BETWEEN THE DRAWINGS, SPECIFICATIONS, CODES AND REGULATIONS, NOTIFY THE ENGINEER OF RECORD FOR HIS OPINION PRIOR TO INSTALLATION.
4. SHOP DRAWINGS SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL AND TO THE ENGINEER FOR REVIEW.
5. SMACNA SEISMIC RESTRAINT MANUAL, THIRD EDITION 2008, OR LATEST REVISION MAY BE USED AS A GUIDE FOR GENERAL SEISMIC SUPPORT DETAIL AND SUPPORT SPACING RECOMMENDATIONS.
6. COORDINATE LOCATION OF ALL MECHANICAL EQUIPMENT AND ACCESS PANELS WITH EXISTING CONDITIONS PRIOR TO ROUGH-IN.
7. WHILE EFFORT HAS BEEN MADE TO IDENTIFY EXISTING CIRCUITS THAT ARE TO BE REMOVED OR REPLACED, THE INFORMATION MAY NOT BE ACCURATE.
8. ELECTRICAL CONTRACTOR SHALL VERIFY VOLTAGE AND AMP DRAW FOR ANY NEW EQUIPMENT.
9. CONTROL PANEL SHALL BE REPLACED ALONG WITH THE ENTIRE SKID PACKAGE.
10. THE MAIN CONTROL PANEL IS FED WITH AN EXISTING 208V 3PH 40A FUSED DISCONNECT ABOVE GRADE.
11. REPLACE FUSES ON DISCONNECT.
12. RE-CONNECT AND TIGHTEN ALL ELECTRICAL CONNECTIONS.
13. BUBBLER SYSTEM AND COMPONENTS TO BE REMOVED. REFER TO "D" SHEETS.
14. PROVIDE NEW DOUBLE THROW DISCONNECT AND GENERATOR PLUG FOR TEMPORARY POWER. PROVIDE NEW SUPPORT. SEE DETAIL ON E-001.
15. PROVIDE NEW UTILITY POLE FOR ATTACHING THE SERVICE MAST. TOP OF POLE SHALL BE A MINIMUM OF 9' TALL FOR NEC CLEARANCE FOR THE SERVICE. POLE AND RACK SHALL BE 36" AWAY FROM THE PUMP STATION PANEL FOR REQUIRED NEC CLEARANCE.
16. PROVIDE NEW NEMA 3R, 40A, 208/3 SERVICE DISCONNECT IN LIEU OF NEW FUSES.
17. BURY CONDUIT BETWEEN THE RACK AND THE STATION. CONDUIT SHALL BE A MINIMUM OF 18" DEEP. CONDUIT MAY BE PVC BELOW GRADE, BUT MUST TRANSITION TO RIGID METAL AT THE ELBOW UP TO GRADE.

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

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

RYAN J. HERTTER — REGISTERED ENGINEER — AGRICULTURE — COMMERCE — No. 106913 — STATE OF TENNESSEE — 6/24/24

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CADWELL

DWG NO. E-101

SEWER BASIN: WN05-2

SHEET 2 OF 2

DIVISION OF ENGINEERING

ELECTRICAL - PLAN AND RISER DIAGRAM

5184 PLEASANT VIEW LIFT STATION

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: RJH DATE: 06/24 SCALE: SHOWN

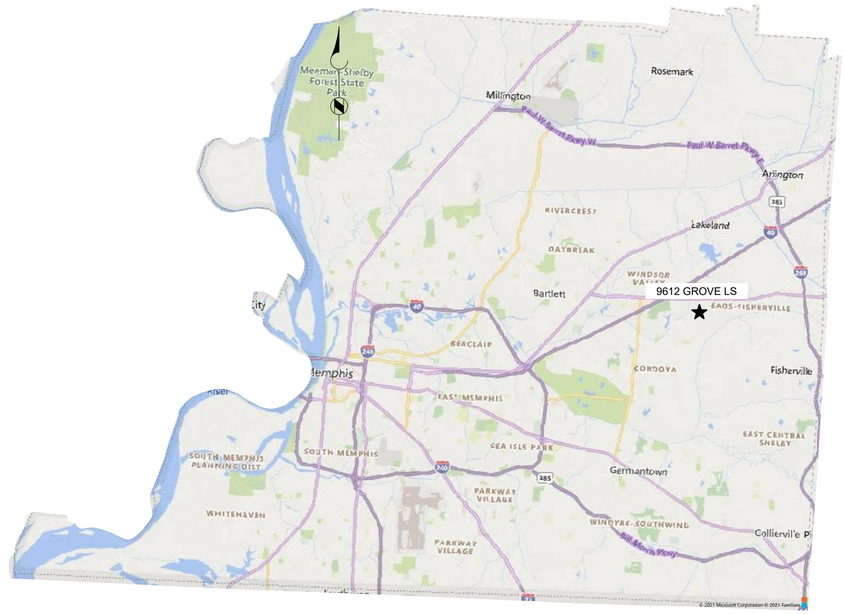
CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

LIFT STATION DESIGN GROUP 3 C
9612 GROVE RD. LIFT STATION
SEWER ASSESSMENT & REHABILITATION PROGRAM (SARP10)
CITY OF MEMPHIS, TENNESSEE

SERVICE CONTRACT NO.
409278.61.0127

LOCATION MAP
MAP NOT TO SCALE

JUNE 2024
ISSUED FOR BID



VICINITY MAP
MAP NOT TO SCALE

PREPARED BY:

Brown AND Caldwell

Environmental Engineers and Consultants
1661 International Drive, Suite 400, Memphis, TN 38120
Phone: 901-708-4333

GENERAL NOTES:

1. AT ALL CROSSINGS OF EXISTING UTILITIES, THE CONTRACTOR SHALL FIELD LOCATE BY POST HOLING OR OTHER APPROPRIATE METHODS, THE HORIZONTAL AND VERTICAL LOCATION ALL EXISTING UTILITIES.
2. ALL SEWER TRENCHES SHALL BE PROPERLY BACKFILLED AT THE END OF EACH WORK DAY.
3. ALL DISTURBED AREAS SHALL BE SEEDED (WITH A SEASONAL MIX) AND COVERED WITH STRAW AT THE END OF EACH WEEK (AT A MINIMUM) OR MORE FREQUENTLY, AS CONDITIONS DICTATE, IN ADDITION TO EROSION CONTROLS REFERENCED ON PLANS.
4. ALL DISTURBED LAWN AREAS SHALL BE SODDED. MATCH EXISTING SOD TYPE.
5. CONTRACTOR IS FULLY RESPONSIBLE FOR DAMAGES OF EXISTING UTILITIES, AND PUBLIC/PRIVATE INFRASTRUCTURE AND PROPERTY. ANY DAMAGE TO EXISTING INFRASTRUCTURE (ABOVEGRADE OR BELOWGRADE) CAUSED BY THE CONTRACTOR'S OPERATIONS WILL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

SANITARY SEWER NOTES:

1. LOCATION OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND ARE NOT NECESSARILY ALL OF SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE APPROPRIATE UTILITY COMPANY TO DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND/OR UNDERGROUND STRUCTURES PRIOR TO THE INITIATION OF ANY CONSTRUCTION. CONTRACTOR SHALL ALSO ASSUME FULL RESPONSIBILITY FOR LOCATION OF EXISTING UTILITIES INVOLVING MLG&W, SOUTH CENTRAL BELL, AND/OR TEXAS GAS COMPANY, PLEASE CALL 1-800-351-1111. FOR SEWER SERVICE LOCATIONS, CALL 1-800-351-1111.
2. CONTRACTOR SHALL ENSURE UNINTERRUPTED SEWER SERVICE ON EXISTING SEWER AND SERVICE CONNECTIONS BY PROVIDING AMPLE TEMPORARY WASTEWATER PUMPING AND /OR BYPASSING.
3. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES.
4. CONTRACTOR SHALL NOTIFY THE CITY OF MEMPHIS CONSTRUCTION INSPECTION OFFICE AT 729-2462 A MINIMUM OF 24 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION.
5. ALL AREAS IN CUT OR FILL WHERE VEGETATION HAS BEEN REMOVED SHALL BE SEEDED, MULCHED, FERTILIZED, AND /OR SODDED AS REQUIRED TO PREVENT EROSION.
6. THE CONTRACTOR SHALL VERIFY EXISTING DATA AND REPORT ANY SIGNIFICANT DISCREPANCIES TO THE ENGINEER.
7. ALL SANITARY SEWER TO BE CONSTRUCTED AS PER CITY OF MEMPHIS STANDARDS CONSTRUCTION SPECIFICATIONS. SANITARY SEWER CONNECTIONS TO BE INSTALLED AS PER CITY OF MEMPHIS STANDARD SST-16.
8. ALL SEWER MANHOLE LIDS IN OPEN AREAS ARE TO BE CONSTRUCTED 1.5' ABOVE PROPOSED GRADE; IN BACKYARDS, MANHOLE LIDS ARE TO BE 1.5' ABOVE INITIAL GRADE, 0.5' ABOVE FINAL GRADE.
9. ALL SANITARY SEWER, INCLUDING SERVICE CONNECTIONS, WHICH HAS LESS THAN 1.5 CLEARANCE (OUTSIDE OF PIPES) WITH DRAINAGE OR IN FILLED AREAS SHALL BE CLASS 50 D.I.P. OR CONCRETE ENCASED, 10' BOTH SIDES OF CROSSING. ALL DUCTILE IRON PIPE SHALL BE POLYETHYLENE LINED OR SHALL BE TREATED WITH PROTECTO 401 OR APPROVED EQUIVALENT.
10. THE CITY OF MEMPHIS SHALL HAVE INGRESS/EGRESS RIGHTS TO USE PRIVATE YARDS FOR THE PURPOSE OF MAINTAINING ALL PUBLIC SEWER LINES AND SHALL BEAR NO RESPONSIBILITY FOR THE MAINTENANCE OF SAID PRIVATE DRIVES AND YARDS.
11. NO TREES, SHRUBS, PERMANENT STRUCTURES OR OTHER UTILITIES (EXCEPT FOR CROSSINGS) WILL BE ALLOWED WITHIN SANITARY SEWER EASEMENT. NO OTHER UTILITIES OR SERVICES MAY OCCUPY SANITARY SEWER EASEMENTS IN PRIVATE DRIVE AND YARDS EXCEPT FOR CROSSINGS.
12. ALL SANITARY SEWER MANHOLES IN REVERSE CROWN STREETS, ALLEYS OR DRIVES (PUBLIC OR PRIVATE) SHALL BE PROVIDED WITH GASKETS AND PLUGS FOR "PICK HOLES" TO PREVENT DRAINAGE INFLOW INTO SEWER SYSTEM.
13. THE CONTRACTOR SHALL PROVIDE ADEQUATE AND EFFECTIVE EROSION CONTROL AS NECESSARY TO PREVENT ANY SEDIMENT FROM ENTERING EXISTING DRAINAGE SYSTEM AND /OR ADJACENT PROPERTIES.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL REMOVE ALL UNDERGROUND UTILITIES AND ANY OTHER ITEMS IN ACCORDANCE WITH THE TDEC AND THE TECHNICAL SPECIFICATIONS. THE CONTRACTOR SHALL STRICTLY FOLLOW ALL CITY, STATE, AND FEDERAL GUIDELINES FOR REMOVAL AND DISPOSAL OF THESE FACILITIES.
2. ALL BUILDING, CONCRETE, ASPHALT PAVEMENT, AND GRANULAR SUBBASE IN AREAS OF DEMOLITION SHALL BE REMOVED FULL DEPTH PER THE DIRECTION OF THE GEOTECHNICAL ENGINEER. ALL SHALL BE DISPOSED IN ACCORDANCE WITH ALL CITY, STATE AND FEDERAL REGULATIONS.
3. CONTRACTOR SHALL REMOVE & REPAIR PAVEMENT AS REQUIRED FOR UTILITY CONSTRUCTION INCLUDING BUT NOT LIMITED TO : IRRIGATION SLEEVES, SITE LIGHTNING CONDUITS, WATER LINES, SANITARY SEWER LINES, STORM DRAINAGE LINES, ETC. CONTRACTOR HAS AN OPTION TO BORE CONDUITS.
4. PRIOR TO COMMENCING ANY UTILITY WORK, CONTRACTOR SHALL NOTIFY ANY SURROUNDING PROPERTY OWNERS WHO MAY EXPERIENCE A DISRUPTION IN SERVICE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MODIFYING ANY EXISTING IRRIGATION SYSTEM TO ACCOMMODATE PARTS OF THAT EXISTING SYSTEM THAT ARE REMOVED, ABANDONED OR DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL ALSO MODIFY ANY EXISTING IRRIGATION SYSTEM TO ACCOMMODATE NEW AREAS OF LANDSCAPING. ANY IRRIGATION SLEEVES SHALL BE INSTALLED PRIOR TO PAVING AND BACKFILLED PROPERLY BY THE SITE CONTRACTOR.
6. THE CONTRACTOR SHALL ENSURE ADEQUATE ACCESS IS PROVIDED DURING ALL PHASES OF CONSTRUCTION. COORDINATE WITH THE PROJECT MANAGER.
7. WHEN REMOVING UTILITIES, CONTRACTOR SHALL GROUT AND SEAL ANY STRUCTURES THAT ARE TO REMAIN PER LOCAL REGULATIONS.
8. UTILITIES SHOWN ARE LOCATED BY FIELD SURVEY AND RECORD DRAWINGS. ADDITIONAL UNDERGROUND UTILITIES WILL BE ENCOUNTERED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE ANY INACTIVE STRUCTURE & ALERT ENGINEER OF ANY ACTIVE, UNMAPPED STRUCTURES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION OF UTILITY DEMOLITION & RELOCATION.
10. CONTRACTOR SHALL NOT INTERRUPT DRAINAGE FROM ADJACENT PROPERTIES AND PUBLIC RIGHT-OF-WAYS.
11. ALL PUMPS, MOTORS, VALVES ETC REMOVED SHOULD BE RETURNED TO MEMPHIS WTCS DEPARTMENT. CONTACT JAMES GREENLEE FOR FURTHER DIRECTIONS, 901-636-0237.

EROSION CONTROL NOTES:

1. CONSTRUCTION ENTRANCES (TO THE OFFICE OR LAY DOWN AREA, AND TO WORK AREAS) TO BE A MINIMUM 6" DEPTH T.D.O.T. NO. 1 OR NO. 2 STONE.
2. INSTALL SEDIMENT TUBE, WATTLES OR SILT FENCE AS DICTATED ON THE EROSION CONTROL PLANS. SEE DETAILS FOR MORE INFORMATION.
3. ALL STOCK PILE AREAS TO BE PROTECTED BY A COMBINATION OF SEDIMENT TUBE OR WATTLES AND SILT FENCE.
4. INSTALL INLET PROTECTION DEVICES AT STORM INLETS PRIOR TO CONSTRUCTION. SEE PLANS FOR LOCATIONS.
5. ALL NEWLY CUT OR FILL AREAS LACKING ADEQUATE VEGETATION SHALL BE FERTILIZED, MULCHED, SEEDED, AND /OR SODDED TO EFFECTIVELY CONTROL EROSION.
6. A SPECIFIC INDIVIDUAL SHALL BE DESIGNATED TO BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS ON EACH PROJECT SITE.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SOIL EROSION CONTROL MEASURES AS NOTED ON THE PLANS AND AS REQUESTED BY THE OWNER DURING THE CONSTRUCTION, AND AS NECESSARY TO PREVENT THE SEDIMENT FROM LEAVING THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SATISFYING THE REQUIREMENTS OF THE STATE OF TENNESSEE EROSION & SEDIMENT CONTROL HANDBOOK. ALL SOIL EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE CONTRACT SO AS TO PREVENT ANY SEDIMENTATION FROM WASHING OFF THE SITE ONTO ADJACENT PROPERTY OR PUBLIC RIGHTS-OF-WAY. SEDIMENT FENCE SHALL BE INSTALLED AS DIRECTED. THE CONTRACTOR SHALL MAINTAIN A LOG OF ALL MAINTENANCE ACTIVITIES FOR THE EROSION ELEMENTS AS REQUIRED BY THE STATE OF TENNESSEE DEPARTMENT OF WATER POLLUTION CONTROL.
8. A COPY OF THE EROSION CONTROL PLAN MUST BE AVAILABLE ON SITE FOR THE DWPC INSPECTOR ON REQUEST.
9. EROSION AND SEDIMENT CONTROL MEASURES MUST BE IN PLACE AND FUNCTIONAL BEFORE EARTH MOVING OPERATIONS BEGIN, AND MUST BE CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. TEMPORARY MEASURES MAY BE REMOVED AT THE BEGINNING OF THE WORK DAY, BUT MUST BE REPLACED AT THE END OF THE WORK DAY OR PRIOR TO RAINFALL EVENTS.
10. ALL CONTROL MEASURES SHALL BE CHECKED AND STATE REQUIREMENTS FOR MAINTENANCE AND REPAIRS SHALL BE MADE AS NECESSARY. DURING PROLONGED RAINFALL, DAILY CHECKING AND REPAIRING IS NECESSARY. THE PERMITTEE SHALL MAINTAIN RECORDS OF INSPECTION CHECKS, MAINTENANCE, AND REPAIRS.
11. THIS PLAN HAS BEEN REVIEWED AND APPEARS TO BE ADEQUATE. IF SEWER PIPE INSTALLATION BY BORE DOES NOT PROVIDE FOR EFFECTIVE SEDIMENT CONTROL AND EROSION PROTECTION, ADDITIONAL MEASURES WILL BE REQUIRED.
12. IF PUMPING IS REQUIRED, SEDIMENT LADEN WATER IS NOT TO BE DISCHARGED INTO THE STORM DRAIN OR THE STREET.

DRAWING INDEX

REVISIONS

ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

CODY LAYNE MCREE — REGISTERED ENGINEER — AGRICULTURE — COMMERCE — NO. 119650 — STATE OF TENNESSEE — 6-24-24

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. G-001

SEWER BASIN: WN-010

SHEET 1 OF 3

DIVISION OF ENGINEERING

GENERAL NOTES AND DRAWING INDEX

9612 GROVE RD.

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: CLM DATE: 06/24 SCALE: NONE

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWD2304688 FILENAME: G-001_9612 GROVE RD.DWG PLOT DATE: 6/24/2024

CROSS REFERENCING SYSTEM

VIEW TITLES

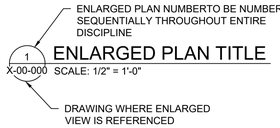
1. PLAN TITLES:

SINGLE PLAN VIEW ON SHEET

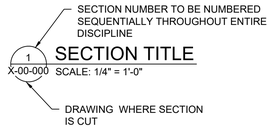
PLAN TITLE
SCALE: 1/4" = 1'-0"

MULTIPLE PLAN VIEWS ON SHEET

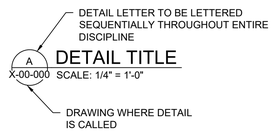
2. ENLARGED PLAN TITLES:



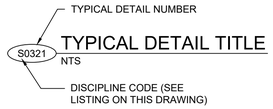
3. SECTION TITLES:



4. DETAIL AND PHOTO TITLES:

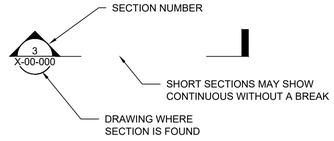


5. TYPICAL DETAIL TITLES:



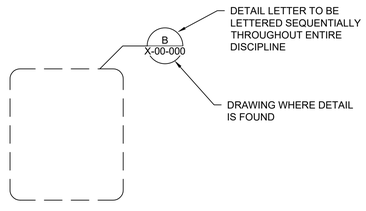
VIEW REFERENCE/CALLOUTS

1. SECTION CUTS:



2. DETAIL CALLOUT

A: BY CALLOUT:

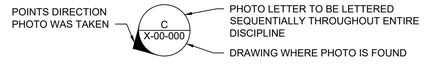


B: BY NOTE: "SEE DETAIL B/D-01-105"

B IS DETAIL REFERENCE LETTER

D-01-105 IS DRAWING WHERE DETAIL IS SHOWN

3. PHOTO INDICATORS



4. TYPICAL DETAIL REFERENCE

NOTATIONS

1. PROPOSED NOTES (with leaders)

ALL NOTES SHALL HAVE A HEIGHT OF 0.1". IF NOTE IS MORE THAN 2" WIDE AND 2 LINES THEN MAKE IT A KEYNOTE.

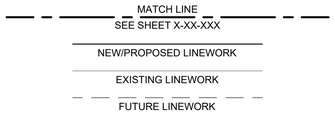
2. EXISTING NOTES (with leaders)

ALL EXISTING NOTES SHALL BE SCREENED.

3. KEYNOTES

KEYNOTES ARE NUMBERED SEQUENTIALLY ON PAGE. (ORDER IS NOT RELEVANT TO IMPORTANCE AND MAY BE RANDOM.)

MISCELLANEOUS

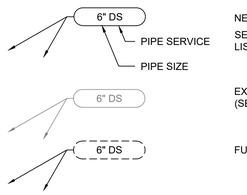


NORTH ARROW

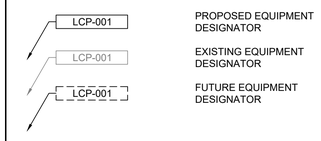
SCALE (CIVIL)

DIMENSIONS

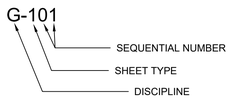
PIPING IDENTIFICATION SYSTEM



EQUIPMENT DESIGNATORS



DRAWING NUMBERING SYSTEM



DISCIPLINES

- G GENERAL
- XD DEMOLITION (X - DENOTES DISCIPLINE)
- C CIVIL
- S STRUCTURAL
- A ARCHITECTURAL
- D PROCESS/MECHANICAL
- M MECHANICAL/HVAC
- P PLUMBING
- E ELECTRICAL
- I INSTRUMENTATION

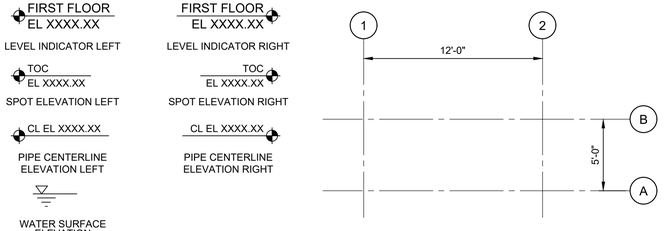
SHEET TYPE DESIGNATORS

- 0 GENERAL - COVER SHEET, ABBREVIATIONS, LEGENDS, SYMBOLS, SHEET INDEX, STANDARD DETAILS
- 1 PLANS OR (PLANS AND SECTIONS)
- 2 ELEVATIONS AND PROFILES
- 3 SECTIONS
- 4 ENLARGED PLANS
- 5 DETAILS (TYPICAL DETAILS)
- 6 DIAGRAMS
- 7 SCHEDULES
- 8 USER DEFINED
- 9 3D REPRESENTATIONS (ISOMETRICS, PERSPECTIVES, RENDERINGS)

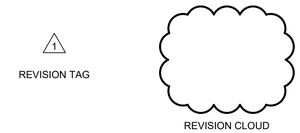
GENERAL NOTES

1. THE NOTE IN THE TITLEBLOCK OF THIS DRAWING WHICH READS "TWO INCHES AT FULL SCALE" APPEARS ON DRAWINGS FOR IDENTIFICATION OF SCALE DISTORTIONS ON HALF SIZE DRAWINGS AND DRAWING REPRODUCTIONS. IT SHALL MEAN THAT THE DRAWING IS FULL SIZE AND THE DRAWING SCALES ACCURATE WHEN THE LENGTH OF THIS LINE IS TWO INCHES. IF THE LENGTH IS OTHER THAN TWO INCHES, DRAWING SCALES MUST BE ADJUSTED ACCORDINGLY.
2. EXISTING PIPING IS DESIGNATED BY SERVICE RATHER THAN MATERIAL TYPE. MATERIAL TYPES, IF KNOWN, APPEAR OUTSIDE THE PIPING CALLOUT BUBBLE, AND MAY NOT BE THE SAME MATERIAL TYPES SPECIFIED FOR NEW PIPING.
3. ABBREVIATIONS USED IN THIS CONTRACT DOCUMENT CONFORM TO ANSI Y1.1, UNLESS NOTED OTHERWISE ON DRAWINGS. SEE SPEC. SECTION 01071 FOR ADDITIONAL ABBREVIATIONS.
4. ALL STANDARD DETAILS APPLY TO ALL THE CONTRACTORS WORK WHETHER SPECIFICALLY REFERENCED OR NOT.
5. SEE FRONT END SHEETS FOR EACH DISCIPLINES STANDARD SYMBOLS, ETC.
6. SEE ADDITIONAL GENERAL NOTES THROUGHOUT DRAWING SET.

LEVELS, GRIDS AND ELEVATION INDICATORS



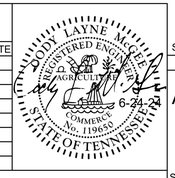
REVISIONS



ABBREVIATIONS

CAB	DIRECT BURIAL CABLE	IL	INDICATING LAMP	REL	RELAY
C-C	CENTER TO CENTER	INF	INFLUENT	RGS	RIGID GALVANIZED STEEL
CL	CENTERLINE	INV	INVERT	RS	RAW SEWAGE
CNTL	CONTROL				
		KV	KILOVOLT	SS	SANITARY SEWER
DB	DUCT BANK	KVA	KILOVOLT AMPERE	SST	STAINLES STEEL
		KW	KILOWATT	STD	STANDARD
EFF	EFFLUENT			SWB	SWITCHBOARD
EJ	EXPANSION JOINT	LEL	LOWER EXPLOSIVE LIMIT		
EL	ELEVATION	LLWL	LOW-LOW WATER LEVEL	TB	TERMINAL BOX
EMBD	EMBEDDED	LOS	LOCKOUT STOP	TFR	TRANSFORMER
EQ	EQUAL	LS	LIMIT SWITCH	TOC	TOP OF CONCRETE
EQUIP	EQUIPMENT			TRM	TRANSMITTER
ES	EXISTING SURFACE	MCC	MOTOR CONTROL CENTER	TRN	TRANSDUCER
EWEF	EACH WAY EACH FACE	MCU	MASTER CONTROL UNIT	TRS	TRANSFER SWITCH
EXIST	EXISTING	MGD	MILLION GALLONS PER DAY	TS	TEMPERATURE SWITCH
		MJ	MECHANICAL JOINT		
F	FAHRENHEIT, FACE, FUSE(D)	MME	MISCELLANEOUS MECHANICAL EQUIPMENT	UL	ULTIMATE LOAD
FC	FAIL CLOSED			UN	UNION
FE	FLOWMETER	N	NEUTRAL		
FH	FIRE HYDRANT, FLATHEAD	NPSH	NET POSITIVE SUCTION HEAD	V	VALVE, VOLTS
FIN	FINISHED			VAC	VOLTS ALTERNATING CURRENT
FLR	FLOOR	OL	OVERLOAD	VAR	VARIES, VARIABLE
FM	FORCE MAIN			VDC	VOLTS DIRECT CURRENT
FO	FAIL OPEN	P	PUMP		
		PL	PROPERTY LINE, PIPELINE, PLATE	WSTP	WATERSTOP
GFI	GROUND FAULT INTERRUPTOR	PNL	PANEL, PANELBOARD		
GPD	GALLONS PER DAY	PP	POWER POLE	XP	EXPLOSIONPROOF
GRT	GROUT	PSIA	POUND PER SQUARE INCH ABSOLUTE		
GSP	GALVANIZED STEEL PIPE	PSIG	POUNDS PER SQUARE INCH GAGE		
GV	GATE VALVE	PV	PLUG VALVE, PROCESS VARIABLE		
H/A	HAND AUTO	Q	RATE OF FLOW		
HHWL	HIGH-HIGH WATER LEVEL	QCPLG	QUICK COUPLING		
HOA	HAND-OFF-AUTO				
HP	HIGH PRESSURE, HIGH POINT, HORSEPOWER	R	RADIUS		
		RECP	RECEPTACLE		

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024



LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. G-002

SEWER BASIN: WN-010

SHEET 2 OF 3

DIVISION OF ENGINEERING

ABBREVIATIONS, LEGENDS, & SYMBOLS

9612 GROVE RD.

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: CLM DATE: 06/24 SCALE: NONE

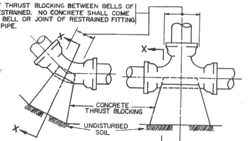
REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWD2304698 FILENAME: G-002_9612 GROVE RD.DWG PLOT DATE: 6/24/2024

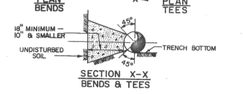
DEPARTMENT of ENGINEERING BUREAU of SEWER DESIGN, Wastewater DET — DRAFTSMAN DBE, DATE: JUN 3RS, SCALE: NTS

CONFINE LIMITS OF THRUST BLOCKING BETWEEN BELLS OF FITTING TO BE RESTRAINED. NO CONCRETE SHALL COME IN CONTACT WITH BELL OR JOINT OF RESTRAINED FITTING AND CONNECTING PIPE.



PLAN BENDS

PLAN TEES



SECTION X-X
BENDS & TEES

CONCRETE THRUST BLOCKING SCHEDULE IN SQUARE FEET

PIPE SIZE	BENDS 11¼°	22 ½°	45°	90°	STD. TEE
4	1.0	1.0	1.5	2.5	2.0
6	1.5	2.0	3.0	5.5	4.0
8	1.5	2.5	5.0	10.5	7.0
10	2.0	4.0	7.5	14.5	10.0
12	3.0	6.0	11.5	21.5	14.5
14	4.0	7.5	15.0	28.0	19.5
16	5.0	10.0	20.0	35.0	25.5
18	6.5	12.5	24.5	350★	32.0
20	8.5	16.5	32.6	350★	35.0★
24	10.0	200	35.0★	350★	350★
30	18.0	345	350★	350★	350★
36	250	350★	350★	350★	350★
42	32.5	350★	350★	350★	350★

BLOCKING SCHEDULE BASED ON 200 PSI WATER PRESSURE, 2,000 PSF SOIL BEARING PRESSURE & 1.25 SAFETY FACTOR.
★ INDICATES FITTINGS REQUIRING RESTRAINED JOINTS IN ADDITION TO CONC THRUST BLOCKING. SEE RESTRAINED JOINT SCHEDULE.

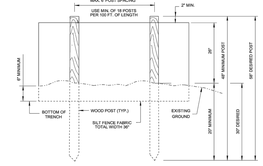
REVISIONS			
NO.	DATE	BY	REMARKS

CONVERSIONS	
ENGLISH	METRIC

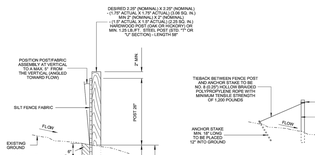
CITY OF MEMPHIS
DEPARTMENT of ENGINEERING

DESIGN STANDARD FOR CONCRETE THRUST BLOCK ING

Bryant Bondurant Jr. 3/9/82
CITY ENGINEER — DATE



ELEVATION VIEW



SECTIONAL VIEW

SILT FENCE TIEBACK
FOR STEEL POSTS OR WOOD POSTS

(WHEN REQUIRED BY THE ENGINEER OR NOTED IN THE PLANS. COST TO BE INCLUDED IN THE ITEMS FOR SILT FENCE)

EROSION CONTROL PLAN LEGEND: * SF * SF * SF * SILT FENCE

NOT TO SCALE

SILT FENCE FABRIC SPECIFICATIONS

FABRIC PROPERTY AND TEST METHODS	REQUIRED PHYSICAL PROPERTIES (MARV VALUES OF TEST DATA)
GEOTEXTILE FABRIC TYPE	WOVEN SLIT FILM (PER AASHTO M288)
APPARENT OPENING SIZE (ASTM D4751)	#30 TO #70 STANDARD SIEVE
WATER FLUX (ASTM D4491)	≥ 4 GPM/FT²
TENSILE STRENGTH (ASTM D4632)	≥ 120 LB. (MARP DIRECTION) X 100 LB. (FILL DIRECTION)
ULTRAVIOLET STABILITY AFTER 500 HRS PER ASTM D4355)	≥ 70%
ELONGATION (ASTM D4632)	≥ 20% (MAX)
BURST STRENGTH (ASTM D3786)	≥ 250 PSI
PUNCTURE STRENGTH (ASTM D4833)	≥ 60 LB
TRAPEZOIDAL TEAR (ASTM D4533)	≥ 50 LB. (MARP DIRECTION) X 40 LB. (FILL DIRECTION)

SILT FENCE GENERAL NOTES

1. SILT FENCE IS USED TO INTERCEPT SMALL AMOUNTS OF SEDIMENT AND REDUCE VELOCITY FROM SHEET FLOW ONLY. DO NOT USE IT ADJACENT TO NATURAL WATER RESOURCES (WETLANDS OR STREAMS) OR ACROSS CONCENTRATED FLOW PATHS.
2. THE MAXIMUM DRAINAGE AREA SIZE FOR A CONTINUOUS BARRIER SHALL BE 1/4 ACRE PER 100 LINEAR FEET OF SILT FENCE. THE MAXIMUM DRAINAGE AREA SHALL BE 1/2 ACRE PER 100 LF OF SILT FENCE LENGTH BEHIND FENCE ON UPSLOPE SIDE SHALL BE TO FEET (AS MEASURED ALONG THE GROUND SURFACE).
3. WHEN INSTALLED AT THE TOE OF A SLOPE, SILT FENCE SHOULD BE PLACED A FEET TO 7 FEET AWAY FROM THE TOE TO ALLOW SPACE FOR PONDING OF WATER, COLLECTION OF SEDIMENT, AND EASE OF MAINTENANCE AND REMOVAL.
4. WHEN TWO SECTIONS OF SILT FENCE FABRIC ADJOIN EACH OTHER THEY SHALL BE JOINED ACCORDING TO THE DETAILS ON STANDARD DRAWING EC-STR-3E.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED. CAPTURED SOIL MATERIAL SHALL BE REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE, WHEN SEDIMENT REACHES HALF OF THE FENCE HEIGHT, OR WHEN OTHER EVIDENCE OF FILTER CLOGGING IS OBSERVED.
6. STEEL POSTS SHALL BE ROLLED FROM HIGH CARBON STEEL AND SHALL HAVE A MINIMUM WEIGHT OF 1.33 LB/FT. POSTS SHALL BE EQUIPPED WITH AN ANCHOR PLATE WITH A MINIMUM AREA OF 14 SQUARE INCHES. WOOD POSTS SHALL BE SOUND HARDWOOD STAKES WITH ANCHOR PLATES WITH A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE EQUIPPED WITH ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702.
7. WHEN STEEL POSTS ARE USED THEY SHALL HAVE A PROJECTION FOR FASTENING WIRE TO THEM. THE WIRE FASTENERS SHOULD BE EVENLY SPACED WITH AT LEAST FIVE PER POST.
8. IF THE FILTER MATERIAL IS STAPLED TO THE WOODEN STAKES, HEAVY DUTY WIRE STAPLES WITH ONE-HALF INCH CROWNS SHALL BE USED. STAPLES WILL BE USED AND EVENLY SPACED WITH AT LEAST FOUR PER POST. SILT FENCE FABRIC SHALL NOT BE STAPLED TO TREES.
9. SILT FENCES SHOULD BE PLACED ALONG OR NEAR THE GROUNDS CONTOUR. THE BOTTOM OF FENCE AT GROUND ARE SHOULD BE ON A ZERO PERCENT (0%) GRADE, PLUS OR MINUS FIVE TENTHS OF ONE PERCENT (0.5%). THE ENDS OF A RUN OF SILT FENCE SHOULD BE TURNED UPSLOPE FORMING A CHOOK TO ALTERNATE CONCENTRATED FLOW BEHIND FENCE.
10. A PREASSEMBLED SILT FENCE MEETING THE REQUIREMENTS OF THIS DRAWING IS ACCEPTABLE IN LIEU OF A FIELD ASSEMBLED SILT FENCE.
11. STATIC SLICING IS THE PREFERRED METHOD OF FENCE INSTALLATION. STATIC SLICING INVOLVES THE INSERTION OF A NARROW CUTTING BLADE, PLACED AT THE SPECIFIED ANCHOR DEPTH FOR THE GIVEN FABRIC AS SHOWN ON THIS DRAWING, INTO THE SOIL. THE FABRIC IS PLACED IN THE SLICED SLOT AND THE SOIL IS COMPACTED ON THE FABRIC BEING EXCAVATED. ALTERNATE TRENCHED-BACKED METHODS ARE ALSO ACCEPTABLE. DO NOT USE EQUIPMENT THAT WILL DISTURB WIDER THAN 4" IN SITU SOIL SUCH AS BACKHOE. FOR TRENCH-BASED INSTALLATIONS, SILT FENCING SHALL BE INSTALLED PER THE FOLLOWING STEPS AND IN THE FOLLOWING ORDER:
    1. EXCAVATE TRENCH A MAXIMUM OF 4 INCHES WIDE AND 8 INCHES DEEP. THE TRENCH SHALL BE HAND-CLEARED OF ROCKS, DEBRIS, AND OTHER OBJECTS THAT WOULD REMOVE BULKY DEBRIS SUCH AS ROCKS, STICKS, AND SOD. CLOSE FROM THE TRENCH.
    2. INSTALL FABRIC IN TRENCH.
    3. BACKFILL TRENCH (OVER-FILL) WITH SOIL PLACED AROUND FABRIC.
    4. COMPACT SOIL BACKFILL WITH MECHANICAL EQUIPMENT. DO NOT DAMAGE THE FABRIC DURING COMPACTION (DAMAGED FABRIC SHALL BE REPLACED).
    5. DRIVE AND SET SUPPORT POSTS PER SPACING REQUIREMENTS GIVEN ON THE APPLICABLE FENCE DETAIL. WHEN PREASSEMBLED SILT FENCE, DRIVE SUPPORT IN TO GROUND FIRST, FOLLOWED BY FABRIC PLACEMENT IN TRENCH.
    6. ATTACH FABRIC TO THE POSTS USING WIRE TIES OR STAPLES. SPACING AND DENSITY OF TIES OR STAPLES SHALL BE INSTALLED AS DESCRIBED IN NOTES (7) AND (8).
12. ONLY SILT FENCE FABRIC LISTED ON THE QUALIFIED PRODUCTS LIST MAY BE USED. ANY PRODUCTS LISTED ON THE QUALIFIED PRODUCTS LIST AS AN APPROVED ALTERNATE MAY ALSO BE USED.
13. SILT FENCE SHALL BE PAID FOR UNDER ITEM NUMBER 209.09, TEMPORARY SILT FENCE (WITHOUT BACKING) PER LINEAR FOOT. THE PRICE BID SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY FOR CONSTRUCTION, MAINTENANCE, AND REMOVAL OF THE SILT FENCE.
14. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE STRUCTURE AND PAID FOR UNDER ITEM NUMBER 209.09, SEDIMENT REMOVAL PER CUBIC YARD.

STATE OF TENNESSEE
DEPARTMENT of TRANSPORTATION
STANDARD DRAWING

SILT FENCE

12-18-2002 EC-STR-3B

REV. 12-18-02: MODIFIED TABLE ③ AND GENERAL NOTE ⑫

REV. 7-15-04: CHANGED VALUES IN TABLE ③ TO MEET MANUFACTURERS VALUES.

REV. 4-14-06: REVISED FIN TESTS FROM TABLE ③ ADDED NOTE ⑬ ADDED ITEM NUMBER TO GENERAL NOTES. REFORMATTED SHEET. REVISED NOTES, MISC. EDITS TO DRAWING.

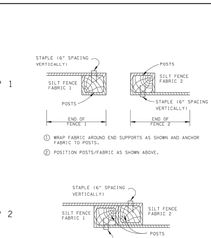
REV. 4-1-08: REVISED TEMPORARY REFERENCE, REVISED NOTES, AND MISC. EDITS TO DRAWING.

REV. 8-12: MINOR EDITS TO GENERAL NOTES.

REV. 3-10-21: CHANGED SECOND NOTE ⑫ TO NOTE ⑭.

REV. 09-01-21: ADDED AASHTO REFERENCE IN TABLE. UPDATED GENERAL NOTES ⑫ AND REVISION SHEET.

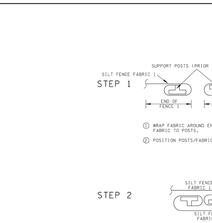
REV. 06-10-21: ADDED ALTERNATE POST MATERIAL. REVISED POST EMBEDMENT LENGTHS.



① WRAP FABRIC AROUND END SUPPORTS AS SHOWN AND ANCHOR FABRIC TO POSTS.
② POSITION POSTS/FABRIC AS SHOWN ABOVE.

① ROTATE BOTH POSTS WITH FABRIC CLOCKWISE AT LEAST 180°.
② EMBED BOTH POSTS INTO GROUND PER APPLICABLE SILT FENCE STANDARD DRAWING. (EC-STR-3A, EC-STR-3C, OR EC-STR-3D)

PLAN VIEW
JOINING SILT FENCE
FABRIC SECTIONS (WOOD POSTS)



① POSITION THE SILT FENCE FABRIC 2 POST INSIDE OF THE SILT FENCE FABRIC 1 POST AS SHOWN ABOVE.

① ROTATE BOTH POSTS WITH FABRIC CLOCKWISE AT LEAST 180°.
② EMBED BOTH POSTS INTO GROUND PER APPLICABLE SILT FENCE STANDARD DRAWING. (EC-STR-3A, EC-STR-3C, OR EC-STR-3D)

PLAN VIEW
JOINING SILT FENCE
FABRIC SECTIONS (STEEL POSTS)

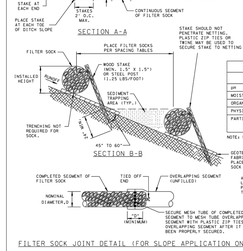
MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

NOT TO SCALE

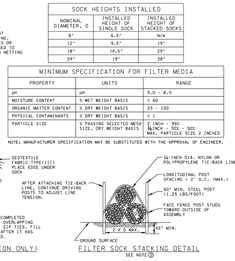
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SILT FENCE FABRIC JOINING DETAILS

12-18-06 EC-STR-3C



PLAN VIEW FOR DITCH APPLICATION



PLAN VIEW FOR SLOPE APPLICATION

SECTION A-A

SECTION B-B

FILTER SOCK JOINT DETAIL (FOR SLOPE APPLICATION ONLY)

FILTER SOCK STACKING DETAIL
SEE NOTE ⑩

FILTER SOCK CHECK DAM ESTIMATED QUANTITIES

	V-DITCH			TRAPEZOIDAL DITCH		
	24" FILTER SOCK (ONE SOCK HEIGHT 12")	18" FILTER SOCK STACKED (TWO SOCKS HEIGHT 18")	12" FILTER SOCK STACKED (THREE SOCKS HEIGHT 20")	24" FILTER SOCK STACKED (TWO SOCKS HEIGHT 24")	18" FILTER SOCK STACKED (THREE SOCKS HEIGHT 28")	12" FILTER SOCK STACKED (FOUR SOCKS HEIGHT 28")
LENGTH (FT)	20	60	48	24	72	60

1. ESTIMATED QUANTITIES BASED ON 4:1 SIDE SLOPES. QUANTITIES WILL VARY BASED ON ACTUAL DITCH CONFIGURATIONS.
2. ESTIMATED QUANTITIES BASED ON 4FT BOTTOM WIDTH, 4:1 DEPTH, AND 4:1 SIDE SLOPES. QUANTITIES WILL VARY BASED ON ACTUAL DITCH CONFIGURATION.

FILTER SOCK SPACING FOR SLOPE APPLICATION

SLOPE	8"	12"	18"	24"
2%	70'	80'	N/A	N/A
5%	35'	60'	80'	N/A
10%	20'	30'	70'	80'
6:1	N/A	25'	40'	55'
4:1	N/A	20'	30'	35'
3:1	N/A	N/A	25'	25'
2:1	N/A	N/A	20'	20'

N/A = NOT RECOMMENDED
SPACING NOT TO EXCEED 80'

FILTER SOCK SPACING FOR DITCH APPLICATION

DITCH SLOPE	MAXIMUM FILTER SOCK SPACING
LESS THAN 2%	80'
2%	80'
3%	50'
4%	40'
5%	30'
6%	20'
GREATER THAN 6%	20'

BASED ON AN INSTALLED HEIGHT OF 19 INCHES. SEE TABLE ON EC-STR-6 FOR OTHER HEIGHTS.

SOCK HEIGHTS INSTALLED

NOMINAL DIAMETER, D	INSTALLED HEIGHT OF SINGLE SOCK	INSTALLED HEIGHT OF STACKED SOCKS
8"	6.5"	N/A
12"	9.5"	19"
18"	14.5"	29"
24"	19"	38"

MINIMUM SPECIFICATION FOR FILTER MEDIA

PROPERTY	UNITS	RANGE
pH	pH	5.0 - 9.5
MOISTURE CONTENT	% WET WEIGHT BASIS	< 40
ORGANIC MATTER CONTENT	% DRY WEIGHT BASIS	25 - 100
PHYSICAL CONTAMINANTS	% DRY WEIGHT BASIS	< 1
PARTICLE SIZE	% PASSING SELECTED MESH SIZE, DRY WEIGHT BASIS	3 INCH - 90% MIN. 1 INCH - 70% MIN. MAX. PARTICLE SIZE 2 INCHES

NOTE: MANUFACTURER SPECIFICATION MAY BE SUBSTITUTED WITH THE APPROVAL OF ENGINEER.

FILTER SOCK GENERAL NOTES

1. FILTER SOCKS CAN BE PLACED IN DITCHES OR AT THE TOP, ON THE FACE, OR AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES. THEY CAN ALSO SERVE TO REMOVE SEDIMENT FROM RUNOFF AND RELEASE IT AS SHEET FLOW.
2. FILTER SOCKS INSTALLED ON A SLOPE SHALL BE PLACED ALONG OR ON THE GROUND CONTOUR, AT THE TOE OF SLOPES, OR IN A SLOPE TO HELP REDUCE THE EFFECTS OF SOIL EROSION AND RETAIN SEDIMENT. SEDIMENT TUBES SHOULD NOT BE USED IN DITCHES OR STREAMS.
3. FOR DITCH APPLICATIONS, THE MAXIMUM DRAINAGE AREA SHALL BE 1/5 ACRES. AT SITES WHICH DRAIN TO EXCEPTIONAL TENNESSEE WATERS OR SEDIMENT-IMPAIRED STREAMS, THE MAXIMUM DRAINAGE AREA SHALL BE 1/4 ACRE PER 100 LF OF TUBE. FOR SLOPE APPLICATIONS, THE MAXIMUM DRAINAGE AREAS SHALL BE 1/4 ACRE PER 100 LF OF TUBE.
4. FOR DITCH APPLICATIONS, THE MINIMUM INSTALLED HEIGHT OF A SINGLE SOCK, OR OF AN INDIVIDUAL SOCK IN A STACKED ASSEMBLY OF SOCKS, SHALL BE 19 INCHES. SOCKS SHALL NOT BE INSTALLED ON THIS DRAWING TO ACHIEVE THE REQUIRED FILTER SOCK HEIGHT. SOCKS SHALL BE PLACED PERPENDICULAR TO THE FLOW OF WATER. FILTER SOCKS SHALL CONTINUE UP THE SIDE SLOPES A MINIMUM OF 2 FEET PLUS THE DIAMETER OF THE SOCK. WHEN USED ON SLOPES, FILTER SOCKS SHALL REMAIN IN PLACE UNTIL ALL AREAS ARE PERMANENTLY STABILIZED.
5. FILTER SOCKS SHALL CONSIST OF A TUBULAR MESH SOCK WITH OPENINGS NO GREATER THAN 3/8THS OF AN INCH IN SIZE. THE MESH SOCK IS NOT REQUIRED TO BE BIODEGRADABLE. FILL MATERIAL SHALL CONSIST OF EITHER WOOD CHIPS (MULCH OR A 50/50 COMBINATION OF WOOD CHIPS AND MANUFACTURED COMPOST MATERIAL.
6. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED IN DIAMETERS OF 8, 12, 18 OR 24 INCHES. FOR DITCH APPLICATIONS, THE MINIMUM DIAMETER OF A SINGLE SOCK OR A STACKED ASSEMBLY OF SOCKS, SHALL BE 19 INCHES. IF MORE THAN ONE SOCK IS PLACED, THEY SHALL BE STACKED AS SHOWN ON THIS DRAWING TO ACHIEVE THE REQUIRED FILTER SOCK HEIGHT. SOCKS SHALL BE PLACED PERPENDICULAR TO THE FLOW OF WATER. FILTER SOCKS SHALL CONTINUE UP THE SIDE SLOPES TO THE TOP OF BANK OR A MAXIMUM OF 3 FEET ABOVE THE INSTALLED HEIGHT OF THE SOCK. FILTER SOCKS SHALL REMAIN IN PLACE UNTIL ALL UPSTREAM AREAS ARE PERMANENTLY STABILIZED.
7. FILTER SOCKS SHALL CONSIST OF A TUBULAR MESH SOCK WITH OPENINGS NO GREATER THAN 3/8THS OF AN INCH IN SIZE. THE MESH SOCK IS NOT REQUIRED TO BE BIODEGRADABLE. FILL MATERIAL SHALL CONSIST OF EITHER WOOD CHIPS (MULCH OR A 50/50 COMBINATION OF WOOD CHIPS AND MANUFACTURED COMPOST MATERIAL.
8. FILTER SOCKS ARE TYPICALLY SUPPLIED AND INSTALLED IN DIAMETERS OF 8, 12, 18 OR 24 INCHES. FOR DITCH APPLICATIONS, THE MINIMUM DIAMETER OF A SINGLE SOCK OR A STACKED ASSEMBLY OF STACKED SOCKS, SHALL BE 19 INCHES. FILTER SOCKS MAY BE STACKED AS SHOWN ON THIS DRAWING TO ACHIEVE THE REQUIRED FILTER SOCK HEIGHT. SOCKS SHALL BE PLACED PERPENDICULAR TO THE FLOW OF WATER. FILTER SOCKS SHALL CONTINUE UP THE SIDE SLOPES TO THE TOP OF BANK OR A MAXIMUM OF 3 FEET ABOVE THE INSTALLED HEIGHT OF THE SOCK. FILTER SOCKS SHALL REMAIN IN PLACE UNTIL ALL UPSTREAM AREAS ARE PERMANENTLY STABILIZED.
9. STEEL POSTS SHALL BE ROLLED FROM HIGH CARBON STEEL AND SHALL HAVE A MINIMUM WEIGHT OF 1.25 LB/FT. POSTS SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH VISIBILITY PAINT. POSTS SHALL BE EQUIPPED WITH AN ANCHOR PLATE WITH A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED. POSTS AND ANCHOR PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A702.
10. FILTER SOCKS ARE FILLED ON THE PROJECT SITE AND MAY BE UP TO 250 FEET LONG. WHEN USED ON LONG SLOPES, FILTER SOCKS MAY BE JOINTED AS SHOWN ON THIS DRAWING.
11. ANY PRODUCT LISTED ON THE QUALIFIED PRODUCTS LIST AS AN APPROVED ALTERNATE MAY BE USED. FOR SLOPE APPLICATIONS, SANDBAG OR GRAVEL BAG BERMS MAY ALSO BE USED AS ALTERNATE MATERIALS.
12. FILTER SOCKS SHALL BE PAID FOR UNDER THE FOLLOWING ITEM NUMBERS:

    209-03.20 FILTER SOCK 18 INCH) PER LINEAR FOOT
    209-03.21 FILTER SOCK 24 INCH) PER LINEAR FOOT
    209-03.22 FILTER SOCK 12E INCH) PER LINEAR FOOT
    209-03.23 FILTER SOCK 12H INCH) PER LINEAR FOOT
    209-08.09 FILTER SOCK CHECK DAM PER EACH

    PAYMENT SHALL INCLUDE ALL MATERIALS (INCLUDING GEOTEXTILE FABRIC IF USED) AND LABOR NECESSARY FOR CONSTRUCTION, MAINTENANCE, AND REMOVAL OF FILTER SOCKS.
13. SEDIMENT SHALL BE REMOVED FROM BEHIND THE FILTER SOCK WHEN IT HAS ACCUMULATED TO ONE-HALF OF THE ORIGINAL HEIGHT OF THE STRUCTURE AND PAID FOR UNDER ITEM NUMBER 209-09, SEDIMENT REMOVAL PER CUBIC YARD.
14. FILTER SOCKS SHALL BE INSPECTED AFTER EACH RUNOFF EVENT AND SHALL BE REMOVED AND REPLACED IF SIGNS OF UNDERCUTTING OR DOWNSTREAM RILLS ARE OBSERVED.
15. FILTER SOCKS SHALL BE REMOVED FROM SLOPES AFTER STABILIZATION IS COMPLETE. THIS MAY BE ACCOMPLISHED BY CUTTING THE SOCK OPEN AND SPREADING THE FILL MATERIAL. THE MESH TUBE SHALL BE DISPOSED OF AS TRASH. IT SHALL BE REMOVED. FILTER SOCKS APPLIED IN DITCHES SHALL BE COMPLETELY REMOVED.
16. GEOTEXTILE FABRIC REQUIRED FOR SLOPE APPLICATION STEEPER THAN 6:1.

REV. 8-12-21: MINOR EDITS TO GENERAL NOTES.

REV. 9-10-21: MODIFIED SPACING TABLES. ADDED GEOTEXTILE FABRIC ADDED NOTE ⑯

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

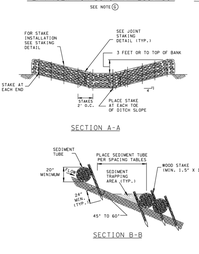
NOT TO SCALE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

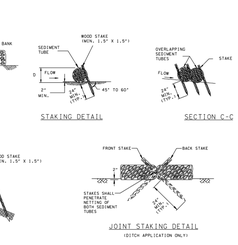
FILTER SOCK

4-1-08 EC-STR-8

EROSION CONTROL PLAN LEGEND: ••SOCK••SOCK••SOCK••SOCK•• FILTER SOCK



PLAN VIEW FOR DITCH APPLICATION



PLAN VIEW FOR SLOPE APPLICATION

SEDIMENT TUBE SPACING FOR SLOPE APPLICATION

SLOPE	8"	12"	18"	20"	24"
2%	70'	80'	N/A	N/A	N/A
5%	30'	60'	80'	N/A	N/A
10%	20'	30'	70'	80'	80'
6:1	N/A	20'	40'	50'	55'
4:1	N/A	20'	30'	30'	30'
3:1	N/A	N/A	20'	25'	25'
2:1	N/A	N/A	20'	20'	20'

N/A = NOT RECOMMENDED
SPACING NOT TO EXCEED 80'

BASED ON A 20' SEDIMENT TUBE
SEE TABLE ON EC-STR-6 FOR OTHER HEIGHTS.

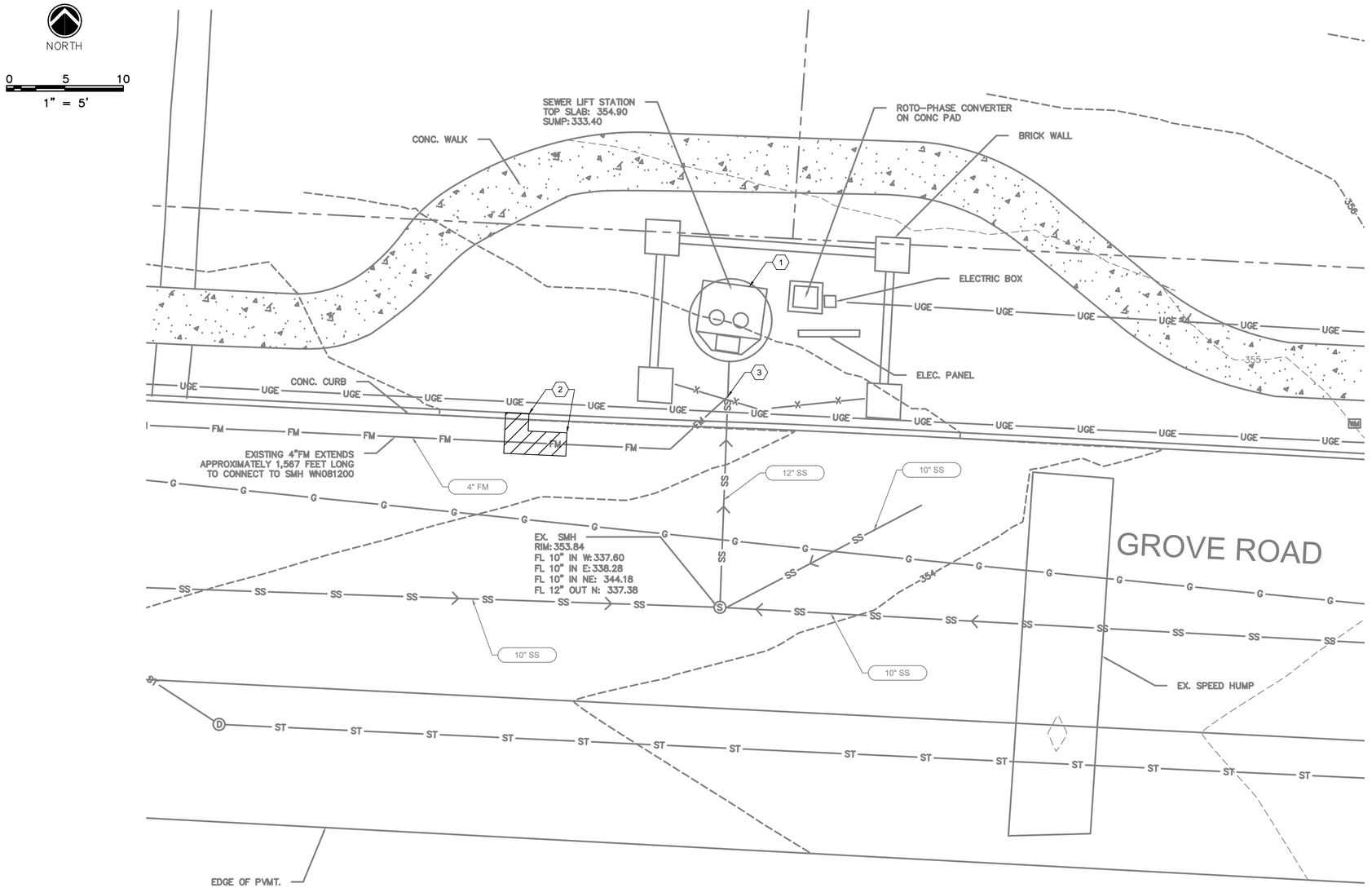
SEDIMENT TUBE SPACING FOR DITCH APPLICATION

SLOPE	MAXIMUM SEDIMENT TUBE SPACING
LESS THAN 2%	80'
2%	80'
3%	50'
4%	40'
5%	30'
6%	20'
GREATER THAN 6%	20'

BASED ON A 20' SEDIMENT TUBE
SEE TABLE ON EC-STR-6 FOR OTHER HEIGHTS.

SEDIMENT TUBE GENERAL NOTES

1. SEDIMENT TUBES CAN BE PLACED AT THE TOP, ON THE FACE, OR AT THE TOE OF SLOPES AS SEDIMENT-TRAPPING DEVICES. THEY CAN ALSO SERVE TO REMOVE THE RUNOFF AS SHEET FLOW AND PROVIDE REMOVAL OF SEDIMENT FROM THE RUNOFF.
2. SEDIMENT TUBES SHALL BE INSTALLED ALONG OR ON THE GROUND CONTOUR, AT THE TOE OF SLOPES, OR IN A SLOPE TO HELP REDUCE THE EFFECTS OF SOIL EROSION AND RETAIN SEDIMENT. SEDIMENT TUBES SHOULD NOT BE USED IN DITCHES OR STREAMS.
3. FOR DITCH APPLICATIONS, THE MAXIMUM DRAINAGE AREA SHALL BE 1/5 ACRES. AT SITES WHICH DRAIN TO EXCEPTIONAL TENNESSEE WATERS OR SEDIMENT-IMPAIRED STREAMS, THE MAXIMUM DRAINAGE AREA SHALL BE 1/4 ACRE PER 100 LF OF TUBE. FOR SLOPE APPLICATIONS, THE MAXIMUM DRAINAGE AREAS SHALL BE 1/4 ACRE PER 100 LF OF TUBE.
4. SEDIMENT TUBES SHALL NOT BE USED ON PAVEMENT, ROCKY SOILS, OR AT ANY OTHER LOCATIONS WHERE THE STAKES CANNOT BE DRIVEN TO THE REQUIRED DEPTH.
5. SEDIMENT TUBES SHALL BE MANUFACTURED FROM WOOD EXCELSIOR, RICE OR WHEAT STRAW, COCONUT FIBERS, OR HARDWOOD MULCH THAT IS ENCLOSED BY A TUBULAR FLEXIBLE NETTING MATERIAL. ALL MATERIALS INCLUDING THE NETTING SHALL BE BIODEGRADABLE.
6. PINE NEEDLE AND LEAF MULCH FILLED SEDIMENT TUBES AND STRAW BALES ARE NOT ACCEPTABLE MATERIALS.
7. THE DIAMETER OF A SEDIMENT TUBE SHALL BE A MINIMUM OF 8 INCHES AND A MAXIMUM OF 24 INCHES. DIAMETER TOLERANCE IS 2 INCHES. FOR DITCH APPLICATIONS, SEDIMENT TUBES SHALL BE A MINIMUM OF 20 INCHES.
8. SEDIMENT TUBES SHALL BE INST



LEGEND	
	EXISTING POWER POLE
WV	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
	EXISTING SIGN
S	SEWER MANHOLE
WM	EXISTING WATER METER
	CONTROL POINT
	PROPERTY LINE
SS	EXISTING SANITARY SEWER
W	EXISTING WATER MAIN
FM	EXISTING FORCE MAIN
ST	EXISTING STORM DRAIN
UGE	EXISTING UNDERGROUND ELECTRIC
OHE	EXISTING OVERHEAD ELECTRIC
100	EXISTING CONTOUR
	EXISTING CONCRETE
	EXISTING ASPHALT
	DEMOLITION

ABBREVIATION	
SMH	SANITARY MANHOLE

GENERAL NOTES:

1. BASE DRAWING DEVELOPED FROM "PARTIAL TOPOGRAPHIC SURVEY OF GROVE SEWER LIFT STATION" DATED 11/18/21, PREPARED BY ASHWORTH ENGINEERING, PLLC. BROWN AND CALDWELL ASSUMES NO RESPONSIBILITY FOR ACCURACY OF THE SAME. DIMENSIONS, FEATURES, AND DETAILS MAY VARY FROM FIELD CONDITIONS. CONTRACTOR MUST VERIFY ALL EXISTING CONDITIONS THAT MAY IMPACT THE WORK.
2. EXISTING PIPE LOCATIONS SHOWN BASED ON CITY OF MEMPHIS GIS DATA AND FIELD VERIFICATION WHERE POSSIBLE. NOT ALL UNDERGROUND UTILITIES WERE LOCATED. CONTRACTOR SHALL VERIFY UTILITY AND PIPE LOCATIONS WITHIN ALL WORK AREAS PRIOR TO COMMENCING WORK.
3. ALL EXISTING INFRASTRUCTURE AND SITE FEATURES THAT ARE TO REMAIN IN PLACE (PIPING, ELECTRIC CONDUITS, STORM PIPES, ETC.) TO BE PROTECTED IN ACCORDANCE WITH THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT, TENNESSEE CODE 65-31-101.

KEY NOTES:

1. DEMOLISH EXISTING ABOVE GRADE LIFT STATION INCLUDING PUMPS, PIPING, VALVES, FITTINGS, AND ACCESSORIES AS NECESSARY AND DELIVER TO THE CITY OF MEMPHIS. EXISTING WET WELL STRUCTURE TO REMAIN IN PLACE.
2. SAW CUT AND REMOVE EXISTING CURB AND GUTTER, AND ASPHALT FOR NEW BYPASS INSTALLATION.
3. EXISTING FORCE MAIN IS ABOVE EXISTING SANITARY GRAVITY SEWER.

SPECIAL FLOOD HAZARD STATEMENT:

THIS IS TO CERTIFY THAT BY GRAPHIC DETERMINATION THE ABOVE PLATTED PROPERTY IS NOT IN A SPECIAL FLOOD HAZARD AREA (SFHA) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD. THE SUBJECT PROPERTY IS SHOWN IN A FEMA ZONE X (NO SHADING ON FEMA MAP): AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO THE FEMA/FIRM MAP NUMBER 47157C0330G WITH AN EFFECTIVE DATE OF FEBRUARY 06, 2013.

PROJECT BENCHMARKS

CITY BENCHMARK:

#1673 - CITY CAP IS LOCATED ON THE W. SIDE OF DAVIES PLANTATION ROAD., SET 7-17-03, GLUED TO TOP OF CURB 263' N. OF THE CENTERLINE OF GROVE ROAD. AT ADDRESS 2641 & 2631 AT PROPERTY LINE CROW'S FOOT. - ELEVATION : 300.89

SITE TBM:

TEMPORARY BENCHMARK (T.B.M.) - RIM OF SMH JUST OF LIFT STATION. ELEVATION=353.84(NAVD88)

NOTE: BEFORE THE BEGINNING OF CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY THE SITE DATUM WITH ALL SITE TBMS AND IMMEDIATELY REPORT IN WRITING ANY DISCREPANCIES TO THE ENGINEER.

Tennessee811 Know what's below. Call before you dig.

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

BRADLEY J. DAVIS REGISTERED ENGINEER AGRICULTURE 10719 STATE OF TENNESSEE
06-24-24

LIFT STATION DESIGN GROUP 3 C
DEVELOPER: SARP 10
ENGINEER: BROWN AND CALDWELL

DWG NO. C-101

SEWER BASIN: WN-010

SHEET 1 OF 2
DIVISION OF ENGINEERING

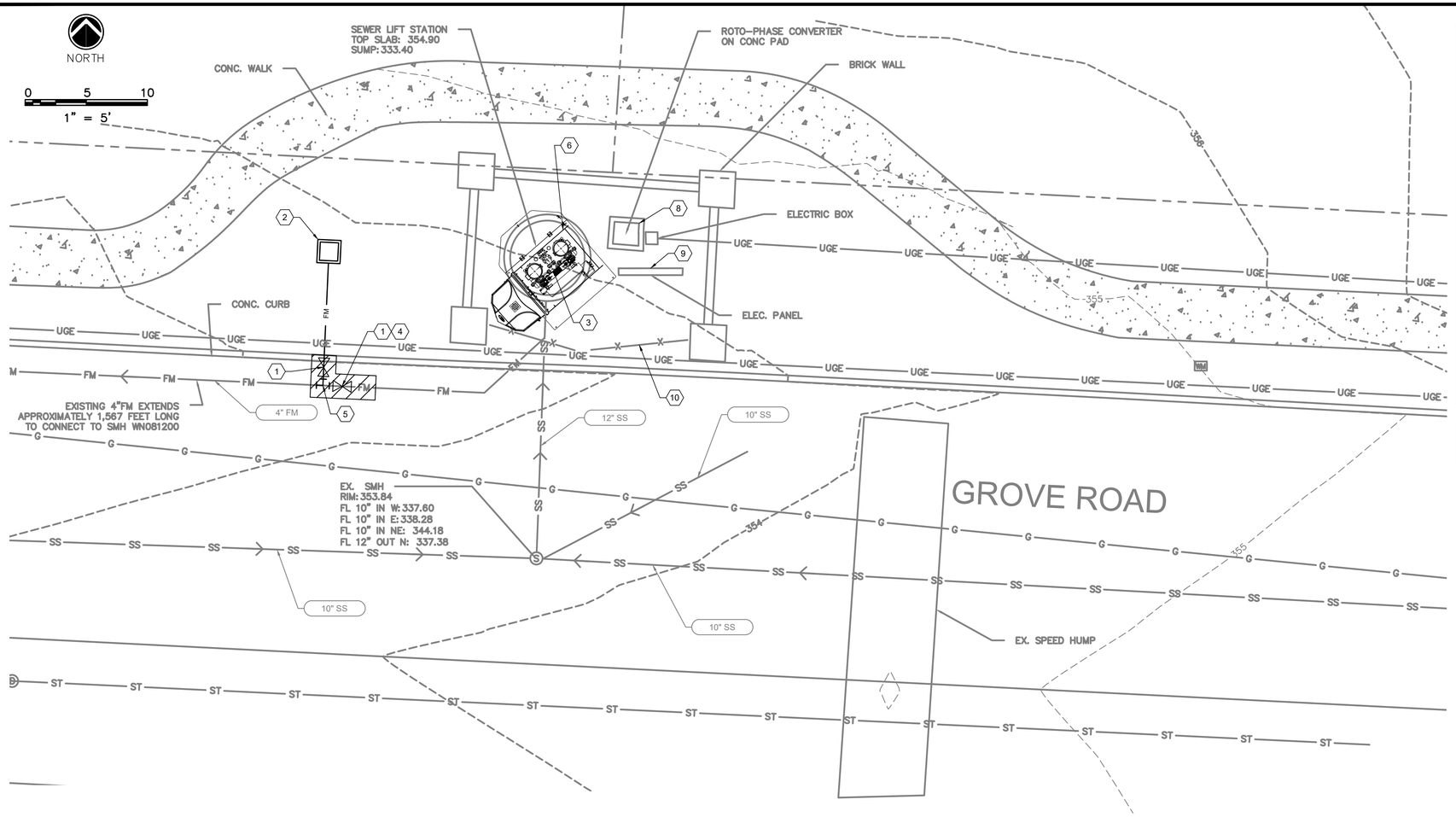
EXISTING SITE PLAN

9612 GROVE ROAD

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127
DESIGN BY: BRADLEY DAVIS, PE DATE: 06/24 SCALE: SHOWN
REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE



LEGEND	
	EXISTING POWER POLE
	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
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S	SEWER MANHOLE
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	CONTROL POINT
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	EXISTING CONCRETE
	EXISTING ASPHALT
	DEMOLITION

ABBREVIATION	
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GENERAL NOTES:

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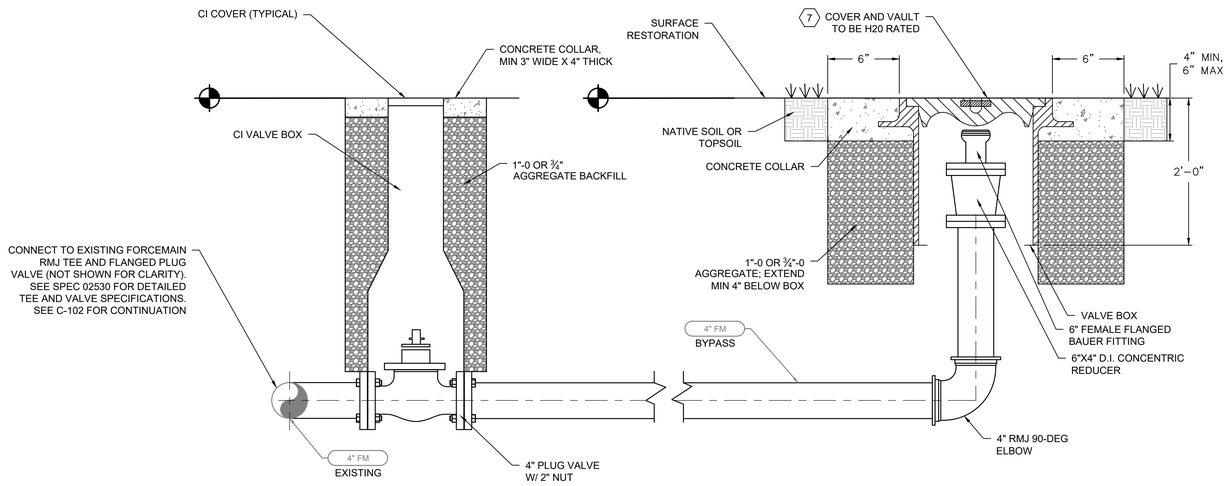
2. EXISTING PIPE LOCATIONS SHOWN BASED ON CITY OF MEMPHIS GIS DATA AND FIELD VERIFICATION WHERE POSSIBLE. NOT ALL UNDERGROUND UTILITIES WERE LOCATED. CONTRACTOR SHALL VERIFY UTILITY AND PIPE LOCATIONS WITHIN ALL WORK AREAS PRIOR TO COMMENCING WORK.
3. ALL EXISTING INFRASTRUCTURE THAT IS TO REMAIN IN PLACE (PIPING, ELECTRIC CONDUITS, STORM PIPES, ETC.) TO BE PROTECTED IN ACCORDANCE WITH THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT, TENNESSEE CODE 65-31-101.
4. CONTRACTOR TO FIELD VERIFY AND CONFIRM EXISTING CONDITIONS AND ELEVATIONS PRIOR TO COMMENCING WORK.
5. CONTRACTOR TO INSTALL PROPOSED EQUIPMENT AND APPURTENANCES AT ELEVATIONS, LOCATIONS, AND DIMENSIONS SAME AS EXISTING.
6. CONTRACTOR SHALL PROVIDE ALL FITTINGS, PIPING, JOINTS, AND APPURTENANCES AS NECESSARY FOR THE WORK SHOWN.
7. REFER TO ELECTRICAL DRAWINGS FOR ELECTRIC AND POWER DETAILS.
8. CONTRACTOR TO RESTORE ALL DISTURBED AREAS TO EXISTING CONDITIONS. DISTURBED GRASSED AREAS SHALL BE REVEGETATED. PAVEMENT AREAS THAT ARE CUT AND REMOVED AS PART OF THE WORK SHALL BE RESTORED TO MATCH EXISTING.

KEY NOTES:

1. PROPOSED 4" STANDARD PORT ECCENTRIC PLUG VALVE WITH VALVE BOX.
2. PROPOSED FORCEMAIN EMERGENCY BYPASS CONNECTION, SEE DETAIL A/C-102 ON THIS SHEET.
3. INSTALL PROPOSED ABOVE GRADE PACKAGED LIFT STATION, PIPING, VALVES, FITTINGS, AND ACCESSORIES PER MANUFACTURER'S INSTRUCTIONS. SEE PROCESS DRAWINGS FOR FURTHER DETAILS.
4. INSTALL PLUG VALVE ON FORCEMAIN PIPE UPSTREAM OF THE BYPASS TIE-IN.
5. 4" RESTRAINED MECHANICAL JOINT TEE.
6. PRIOR TO INSTALLATION, VERIFY THAT THE LIFT STATION COVER DOES NOT CONTACT OTHER EXISTING OBJECTS WHEN OPEN. ADJUST THE COVER ORIENTATION IF NECESSARY TO PREVENT HITTING OTHER OBJECTS.
7. COVER AND VAULT TO BE PROVIDED BY OLDCASTLE, QUAZITE, OR ENGINEER-APPROVED EQUAL. INSTALL IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
8. REMOVE ROTO-PHASE CONVERTER.
9. GENERATOR PLUG AND MANUAL TRANSFER SWITCH. INSTALL ON EXISTING ELECTRICAL SUPPORT RACK. SEE ELECTRICAL DRAWINGS.
10. REMOVE AND REPLACE LOCKABLE METAL GATE WITH CEDAR WOOD FENCE. DIMENSIONS TO MATCH EXISTING. METAL FRAMING TO REMAIN AND TO BE PAINTED WITH APPROPRIATE COATING.



A C-102 FORCEMAIN EMERGENCY BYPASS CONNECTION DETAIL
NTS

NOTES:

1. ALL NEW BURIED PIPING SHALL BE 4-INCH DUCTILE IRON WITH RESTRAINED MECHANICAL JOINTS, UNLESS OTHERWISE SPECIFIED.
2. INSTALL BAUER FITTING NEAR ACCESS COVER FOR EASE OF MAINTENANCE AND OPERATION FROM GRADE WITHOUT THE USE OF ANY SPECIAL TOOLS.
3. LOCATION OF VALVES AND BYPASS CONNECTION TO BE SHOWN ON CIVIL DRAWINGS. CONTRACTOR TO INSTALL PROPOSED BYPASS PIPE LENGTH AS REQUIRED PER DRAWINGS AND EXISTING CONDITIONS.

Tennessee811 Know what's below. Call before you dig.

APPROVED FOR CONSTRUCTION:

THE DOCUMENT BEARING THIS STAMP HAS BEEN RECEIVED AND REVIEWED BY THE CITY OF MEMPHIS DIVISION OF ENGINEERING UNDER AUTHORITY DELEGATED BY THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION DIVISION OF WATER RESOURCES. IT IS HEREBY APPROVED FOR CONSTRUCTION BY THE CITY ENGINEER AS EVIDENCE BY HIS SIGNATURE IN THE TITLE BLOCK BELOW.

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REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

BRADLEY J. DAVIS REGISTERED ENGINEER AGRICULTURE No. 107008 STATE OF TENNESSEE
06-24-24

LIFT STATION DESIGN GROUP 3 C
DEVELOPER: SARP 10
ENGINEER: BROWN AND CALDWELL

DWG NO. C-102

SEWER BASIN: WN-10

SHEET 2 OF 2

DIVISION OF ENGINEERING

PROPOSED SITE PLAN

9612 GROVE ROAD

MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127
DESIGN BY: BRADLEY DAVIS, PE DATE: 06/24 SCALE: SHOWN
REVIEWED

CITY DEPUTY CIVIL ENGINEER ____ DATE ____ CITY ENGINEER ____ DATE

VALVES

SCHEMATIC OR 2D	VALVE TYPE
	THREE WAY VALVE
	GATE VALVE (FLANGED)
	GATE VALVE (THREADED)
	PLUG VALVE (GEAR OPERATOR)
	PLUG VALVE (LEVER HANDLE)
	BALL VALVE (THREADED)
	BALL VALVE (FLANGED)
	BUTTERFLY VALVE (LUGGED/WAFER)
	BUTTERFLY VALVE (AWWA W/ HANDWHEEL ACTUATOR
	GLOBE VALVE (FLANGED)
	GLOBE VALVE (THREADED)
	DIAPHRAGM VALVE (FLANGED)
	DIAPHRAGM VALVE (THREADED)
	CHECK VALVE
	PUMP DISCHARGE VALVE
	DOUBLE LEAF CHECK VALVE
	ANGLE VALVE
	FLOAT VALVE
	PINCH VALVE
	FUSIBLE LINK VALVE
	NEEDLE VALVE
	BALL CHECK VALVE

SCHEMATIC OR 2D	VALVE TYPE
	GAUGE OR ROOT VALVE
	KNIFE GATE VALVE
	FLAP GATE
	BALANCING COCK
	CIRCUIT SETTER
	THERMOSTATICALLY CONTROLLED VALVE
	PRESSURE AND VACUUM RELIEF VALVE
	VACUUM RELIEF VALVE
	PRESSURE RELIEF VALVE
	IN-LINE, SPRING LOADED RELIEF VALVE
	PRESSURE REGULATING VALVE
	BACK PRESSURE REGULATING VALVE
S	SOLENOID VALVE
	DIAPHRAGM OPERATED VALVE
	PRESSURE BALANCE OPERATED VALVE
M	MOTOR OPERATED VALVE
	PISTON OPERATED VALVE
	CHLORINE INSTITUTE CONTAINER VALVE
	MUD VALVE
	WALL HYDRANT
	TELESCOPING VALVE
	BACKFLOW PREVENTER

MECHANICAL PIPE AND FITTINGS

2D SINGLE LINE	2D DOUBLE LINE	3D DOUBLE LINE	
			FLANGED JOINT
		OR	PLAIN OR GROOVED END MECHANICAL COUPLING
			PUSH ON OR BALL AND SOCKET JOINT
			MECHANICAL JOINT
			WELDED JOINT
			GROOVED END ADAPTER FLANGE x FLANGE
			UNION
			SLEEVE TYPE MECHANICAL COUPLING
			RESTRAINED SLEEVE TYPE MECHANICAL COUPLING
			FLANGED COUPLING ADAPTER
			RESTRAINED FLANGED COUPLING ADAPTER
			ELASTOMER AND FABRIC EXPANSION JOINT
			EXPANSION JOINT (SEE SPECS FOR TYPE)
			FLEXIBLE METAL HOSE
			ELBOW (PLAN)
			ELBOW UP
			ELBOW DOWN
			TEE (PLAN)
			TEE UP
			TEE DOWN
			LATERAL (PLAN)
			LATERAL UP
			LATERAL DOWN
			CONCENTRIC REDUCER
			ECCENTRIC REDUCER
			EQUIPMENT CONNECTION FITTING
			BLIND FLANGE OR CAP

MISCELLANEOUS DEVICES

A	UTILITY STATION (LETTER, IF ANY, DESIGNATES TYPE)
	HOSE RACK
	FLOOR DRAIN
XCO	CLEANOUT; X=DESIGNATION IF ANY
XKIP	RECOMMENDED MAIN ANCHOR POINT WITH ALLOWABLE FORCE ON STRUCTURE
	PIPE ANCHOR
W	SEAL WATER CONTROL UNIT
	QUICK COUPLING
	IN LINE PRESSURE SENSOR

XX	INSTRUMENT
DE	DENSITY ELEMENT
FE	FLOW ELEMENT
LE	LEVEL ELEMENT
PE	PRESSURE ELEMENT
PI	PRESSURE INDICATOR (GAUGE)
TE	TEMPERATURE ELEMENT
TI	TEMPERATURE INDICATOR

	CALIBRATION TUBE
	PULSATION DAMPENER

DEMOLITION SYMBOLS

	ITEMS SHADED SHALL BE DEMOLISHED AND REMOVED FROM THE SITE

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

BODY LAYNE MCGEE REGISTERED ENGINEER AGRICULTURE COMMERCE No. 119650 STATE OF TENNESSEE 6-24-24

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. D-001

SEWER BASIN: WN-10

SHEET 1 OF 4

DIVISION OF ENGINEERING

LEGENDS AND SYMBOLS

9612 GROVE RD.

MEMPHIS, TENNESSEE

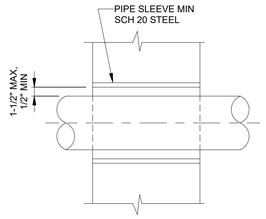
SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: CLM DATE: 06/24 SCALE: NONE

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

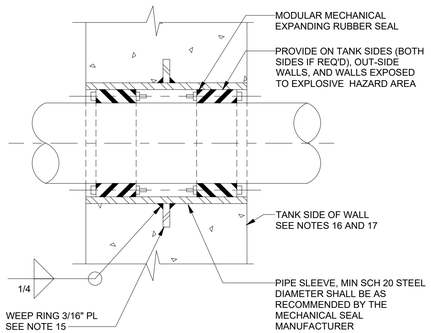
Path: C:\USERS\CGRANGER\BCPW\D2304708 FILENAME: D-001_GROVE RD.DWG PLOT DATE: 6/24/2024



FOR WALLS

TYPE B PIPE PENETRATION

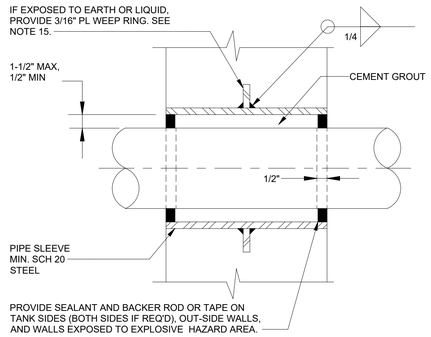
D1102 N.T.S.



FOR WALLS

TYPE D PIPE PENETRATION

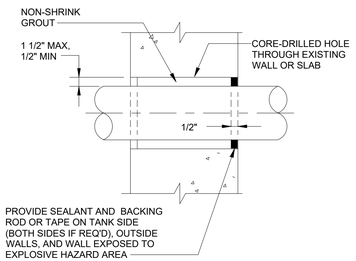
D1104 N.T.S.



FOR WALLS

TYPE E PIPE PENETRATION

D1105 N.T.S.



FOR PRECAST AND EXISTING
WALLS, FLOORS AND CEILINGS

TYPE X1 PIPE PENETRATION

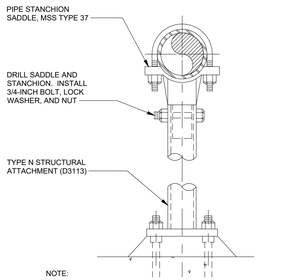
D1112 N.T.S.

GENERAL NOTES:

1. WHERE PIPES PASS THROUGH WALLS, FLOORS, OR CEILINGS, PENETRATIONS SHALL CONFORM TO TABLE, EXCEPT AS OTHERWISE SPECIFIED.
2. IN TABLE, "TANK" SHALL MEAN ANY PART OF A STRUCTURE CONTAINING LIQUID, OR IN CONTACT WITH THE EARTH.
3. IN TABLE, "PASSAGE" SHALL MEAN ANY ROOM, GALLERY, TUNNEL, OR SIMILAR ENCLOSURE.
4. IN TABLE, WATER SURFACE "WS" SHALL MEAN AN ELEVATION 9-INCHES ABOVE MAXIMUM WATER SURFACE SHOWN.
5. ALL STEEL SLEEVES SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
6. IN CONDITION 5, PENETRATION TYPE E,H,J, OR K SHALL BE USED WHERE ONE SIDE IS DESIGNATED AS HAZARDOUS (CLASSIFIED), WHERE FLOODING IS POSSIBLE, OR WHERE SPECIFIED.
7. SEAL FLANGES SHALL BE FACED AND DRILLED TO 150 POUND STANDARD. EACH JOINT SHALL BE FULL FACE GASKETED.
8. WHERE SPECIFIED, CAST IRON FLANGES MAY BE INSTALLED FLUSH WITH WALL AND TAPPED FOR STUDS.
9. PROVIDE CURB WHERE PENETRATING FLOOR, EXCEPT FOR PENETRATION TYPES A AND C. CURB SHALL BE 4" HIGH BY 3" WIDE.
10. PROVIDE A MINIMUM OF 3" CLEARANCE BETWEEN REINFORCING STEEL AND FERROUS METAL PENETRATIONS.
11. FLEXIBLE JOINTS SHALL BE PROVIDED FOR UNDERGROUND PIPING AS SPECIFIED.
12. RESTRAINED FLEXIBLE COUPLINGS FOR STEEL PIPE SHALL BE DESIGNED FOR 100 PSI LINE PRESSURE IN ACCORDANCE WITH AWWA MANUAL MII, FIGURES 19.15 AND 19.16. AWWA MANUAL M11, TABLE 19.7 SHALL BE UTILIZED.
13. UNLESS OTHERWISE SPECIFIED, INSULATION SHALL NOT EXTEND THROUGH SLEEVES. CHILLED WATER MUST PENETRATE WITH INSULATION.
14. WHERE CAST IRON PIPE IS EMBEDDED IN CONCRETE AT AN EXPANSION JOINT, USE TYPE L PENETRATION.
15. WEEP RINGS SHALL HAVE A MINIMUM DIAMETER 3-INCHES GREATER THAN THE OUTSIDE PIPE DIAMETER.
16. "TANK SIDE OF WALL" SHALL MEAN SIDE OF WALL NORMALLY EXPOSED TO LIQUID, EARTH, OR OUTSIDE ATMOSPHERE.
17. SEAL WITH MASTIC SEALANT WHERE WALL IS EXPOSED TO LIQUID, EARTH, OR A HAZARDOUS (CLASSIFIED) AREA.

PIPE PENETRATION TYPES

	CONDITION		TYPE		
	FROM	TO	STEEL PIPE	CAST IRON	PLASTIC PIPE
1	TANK	TANK BELOW W.S.	E, H OR K	E, F, G OR J	E
2	TANK	TANK ABOVE W.S.	D OR E	D OR E	D OR E
3	PASSAGE	TANK BELOW W.S.	E, H OR K	E, F, G OR J	E
4	PASSAGE	TANK ABOVE W.S.	A, C, D OR E	A, C, D OR E	A, C, D OR E
5	PASSAGE	PASSAGE	B OR C SEE NOTE 6	B OR C SEE NOTE 6	B OR C SEE NOTE 6
6	PASSAGE	OUTSIDE WALL	D OR E	D OR E	D OR E
7	PASSAGE	ROOF	AS SHOWN ON DRAWING OR X1		
8	TANK	OUTSIDE WALL	E OR F	E, F OR G	E



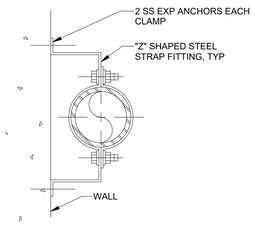
NOTE:

1. ABOVE SIZES ARE NOMINAL PIPE DIAMETERS IN INCHES
2. SPACING BETWEEN SUPPORTS SHALL BE PER TABLE A/D2301.
3. STANCHIONS INSTALLED OUTDOORS MUST WITHSTAND WIND SPEEDS OF UP TO 165 MILES PER HOUR.

3" THROUGH 20" PIPE

TYPE 10 PIPE STANCHION SADDLE

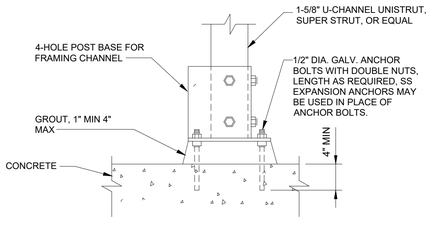
D2110 N.T.S.



FOR VERTICAL PIPE ONLY 3/4"
THROUGH 8" PIPE

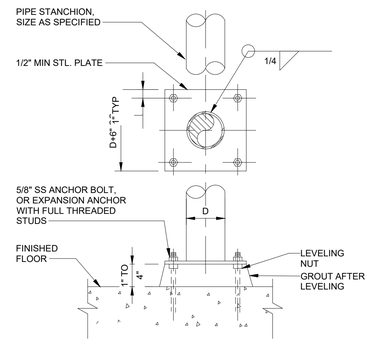
TYPE 11 OFFSET PIPE CLAMP

D2111 N.T.S.



TYPE E FRAMING CHANNEL POST BASE

D3105 N.T.S.

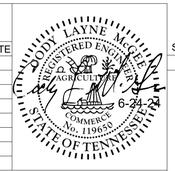


TYPE N PIPE STANCHION FLOOR ATTACHMENT

D3113 N.T.S.

REVISIONS

ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024



LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. D-002

SEWER BASIN: WN-10

SHEET 2 OF 4

DIVISION OF ENGINEERING

STANDARD DETAILS

9612 GROVE RD.

MEMPHIS, TENNESSEE

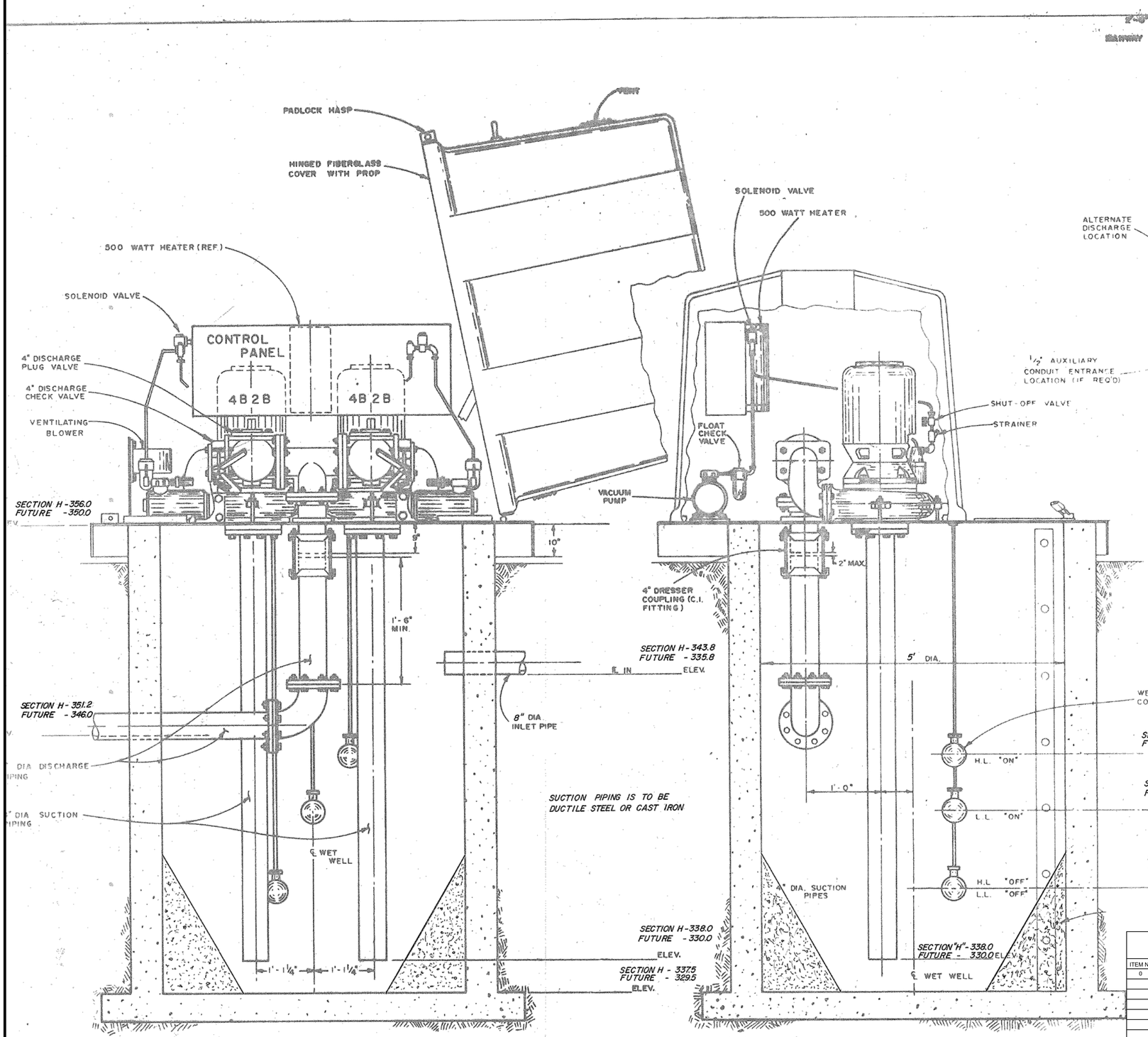
SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

DESIGN BY: CLM DATE: 06/24 SCALE: NONE

REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: C:\USERS\CGRANGER\BCPWID2304708 FILENAME: D-002_GROVE RD.DWG PLOT DATE: 6/24/2024



PLAN VIEW RECORD DRAWING

MACHINERY CHAMBER (COVER DELETED FOR CLARITY)

SEWAGE LIFT STATION DATA:	SECTION "H"	FUTURE
PUMP CAPACITY (EACH PUMP)	40 GAL/MIN	130 GAL/MIN
SPHERICAL SOLID	3 IN	3 IN
DIAMETER OF FORCE MAIN	4 IN	4 IN
LENGTH OF FORCE MAIN	680 FT	1460 FT
ELEVATION OF OUTLET INVERT	370.0	370.0
ELEVATION OF INLET INVERT	343.8	335.8
STATIC SUCTION LIFT	17.5 FT	19.5 FT
SUCTION FRICTION	0.2 FT	1.6 FT
STATIC DISCHARGE HEAD	13.5 FT	19.5 FT
DISCHARGE FRICTION	1.2 FT	23.7 FT
TOTAL DYNAMIC HEAD	32.4 FT	64.3 FT
PUMP MOTORS (EACH PUMP)	7.5 BHP	7.5 BHP

SPECIAL INSTRUCTIONS

1. STATION SHALL BE SMITH & LOVELESS, OR APPROVED EQUAL.
2. AN ALL-WEATHER ACCESS ROAD 10' WIDE SHALL BE PROVIDED IN A DEDICATED EASEMENT.
3. AN ELECTRIC SERVICE POLE SHALL BE PLACED ON THE OPPOSITE SIDE OF THE STATION FROM THE ACCESS ROAD.
4. PROVIDE FOR ADEQUATE SURFACE DRAINAGE.
5. THE STATION MAIN PLATE SHALL BE SECURED TO THE WET WELL.
6. THE STATION MAIN SWITCH NEAR THE METER BASE SHALL BE A THERMAL OVERLOAD TRIP-TYPE CIRCUIT BREAKER; BREAKER-FUSE-TYPE SWITCH WILL NOT BE ACCEPTED.
7. IF THE PHASE CONVERTER IS A ROTO-PHASE TYPE, IT MUST HAVE A SEPARATE BREAKER.
8. ALL CIRCUITS SHALL BE RIGID CONDUIT WITH ALL HORIZONTAL RUNS BURIED.
9. ALL WIRING SHALL BE COPPER.
10. VAULT TOP SHALL EXTEND 12 INCHES MINIMUM AND 24 INCHES MAXIMUM ABOVE SURROUNDING AREA.
11. VAULTED STATIONS SHALL BE AS FOLLOWS:
    (a) SEALED AGAINST SURFACE WATER, GROUND WATER AND SEWAGE FROM THE WET WELL.
    (b) PROVIDE BLOWER WITH INLET AND OUTLET DUCTS.
    (c) PROVIDE SUMP PUMP. THE SUMP FOR WHICH IS RECESSED IN THE FLOOR PLATE.
    (d) PROVIDE DEHUMIDIFIER WITH DRAIN TO SUMP.
    (e) PROVIDE INTERIOR LIGHT.
12. PUMP VOLUTES AND CHECK VALVES SHALL BE ABOVE THE FLOOR PLATE.
13. THE PUMP INTAKE PIPING SHALL BE SCHEDULE 40 STEEL WITH RIGID FLANGES.
14. PUMP DISCHARGE SHALL BE SCHEDULE 40 STEEL WITH RIGID FLANGES TO OUTSIDE THE WET WELL WALL.
15. PROVIDE STRUTHERS-DUNN PUMP SEQUENCE ALTERNATOR.
16. PROVIDE TIME DELAY RELAY TO PREVENT SIMULTANEOUS PUMP START.
17. FURNISH ONE NORMALLY CLOSED CONTACT ALARM FLOAT SWITCH (NO LIGHT OR HORN).
18. FURNISH FIVE (5) COPIES OF STATION MANUFACTURER'S MANUALS WITH WIRING DIAGRAMS AND DATA SHEET.

GENERAL NOTES:

1. DRAWING OF EXISTING PUMP STATION IS FOR REFERENCE ONLY. CONTRACTOR TO FIELD VERIFY EXISTING ELEVATIONS AND LOCATION OF EQUIPMENT.

REVISIONS

ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

BRADLEY J. DAVIS REGISTERED ENGINEER AGRICULTURE 107078 STATE OF TENNESSEE

06-24-24

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CALDWELL

DWG NO. D-101

SEWER BASIN: WN-10

SHEET 3 OF 4

DIVISION OF ENGINEERING

EXIST. LIFT STATION PLAN & SECTION

9612 GROVE ROAD

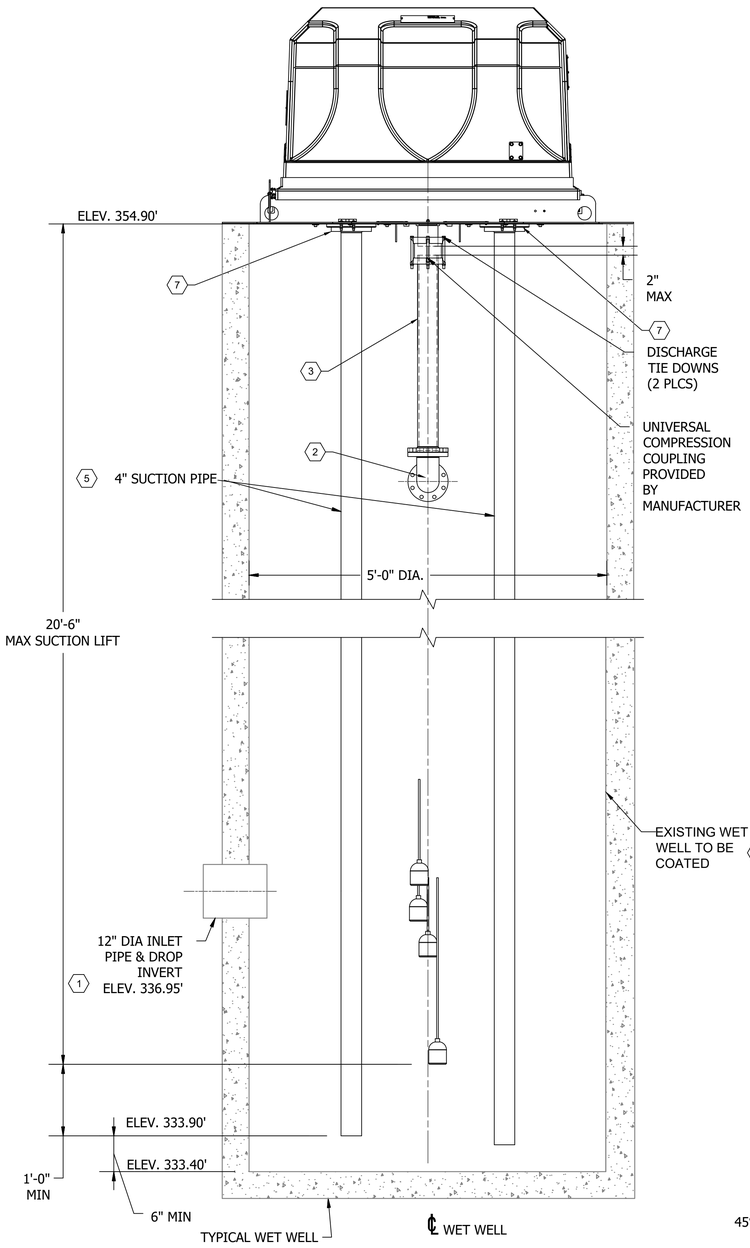
MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

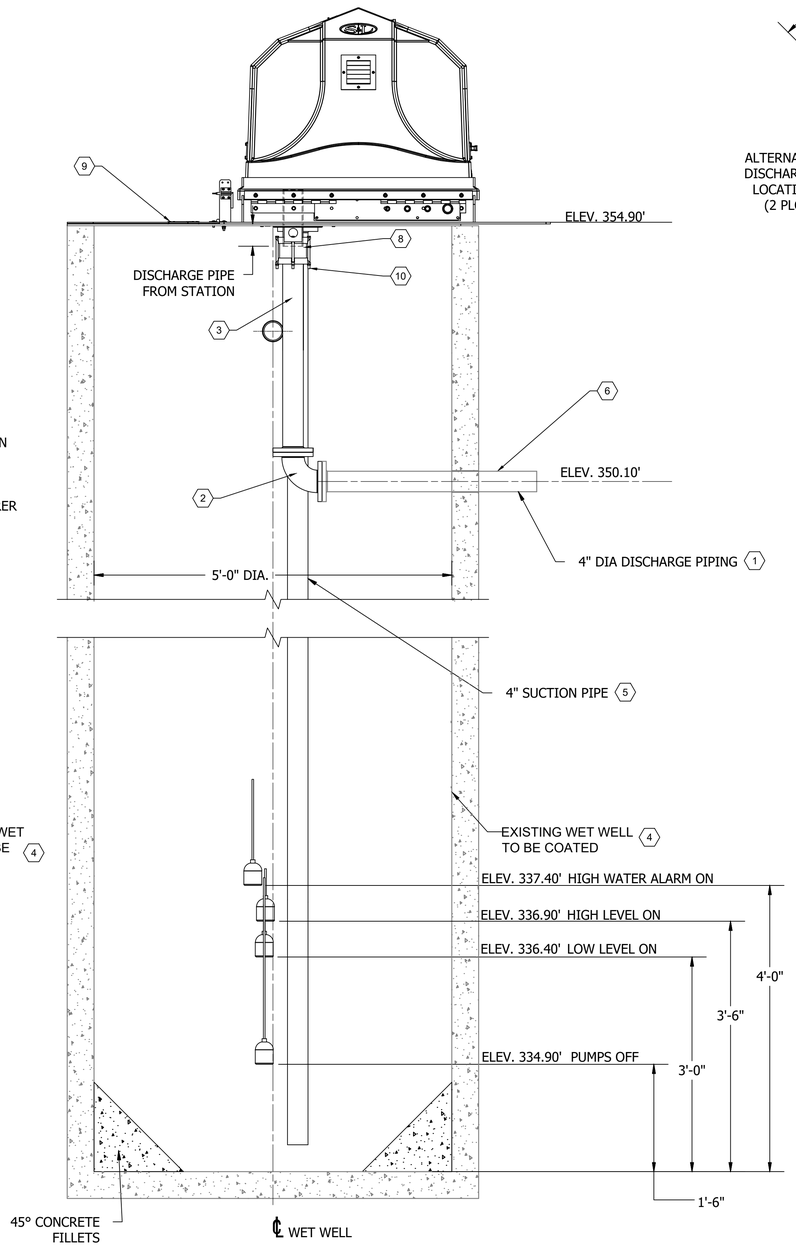
DESIGN BY: BRADLEY DAVIS, PE DATE: 06/24 SCALE: SHOWN

REVIEWED

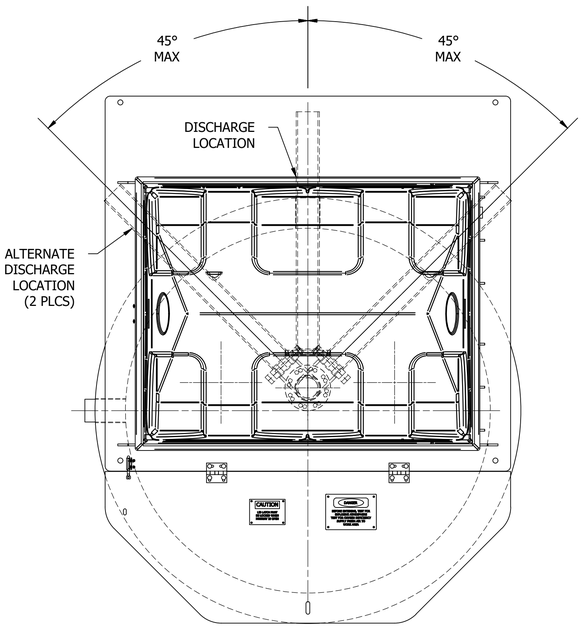
CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE



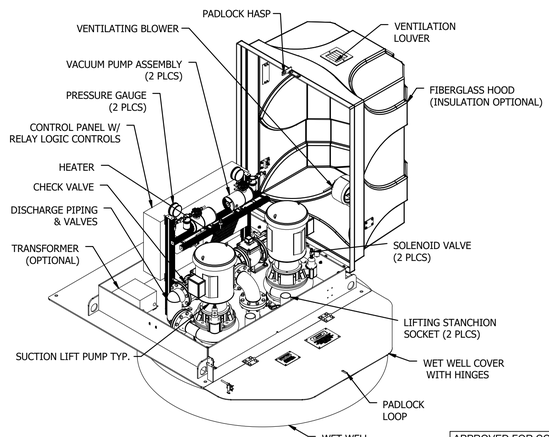
FRONT SECTIONAL ELEVATION



SIDE SECTIONAL ELEVATION



PLAN VIEW



A D-102 LIFT STATION ISOMETRIC
SCALE: NTS

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY AND CONFIRM EXISTING CONDITIONS AND ELEVATIONS PRIOR TO COMMENCING WORK.
2. CONTRACTOR TO INSTALL PROPOSED EQUIPMENT AND APPURTENANCES AT ELEVATIONS, LOCATIONS, AND DIMENSIONS SAME AS EXISTING.
3. INTERIOR OF EXISTING WET WELL SHALL BE DRAINED AND CLEANED PRIOR TO INSTALLING PROPOSED EQUIPMENT AND ACCESSORIES. CONTRACTOR SHALL OBSERVE INTERIOR OF EXISTING WET WELL PRIOR TO CLEANING PROCEDURES AND DOCUMENT PRE AND POST CONDITIONS.
4. CONTRACTOR SHALL PROVIDE ALL FITTINGS, PIPING, JOINTS, AND APPURTENANCES AS SHOWN TO BE BY OTHERS AS NECESSARY FOR THE WORK SHOWN.
5. SEE ELECTRICAL DRAWINGS FOR CONDUIT ROUTING AND WIRING.
6. ALL PIPING IN WET WELL SHALL BE DUCTILE IRON MATERIAL.
7. CONTRACTOR TO DEMOLISH AND REPLACE ALL PIPING AND APPURTENANCES INDICATED AS "NOT BY S&L".

KEY NOTES:

1. EXISTING INLET AND DISCHARGE PIPING ENTERING AND EXITING THE WET WELL TO REMAIN AS-IS.
2. 4" STANDARD FLG. 90-DEGREE ELBOW
3. 4" D.I. SPOOL LENGTH TO FIT
4. WET WELL CLEANING, INSPECTIONS, AND LINING
   - 4.a. ONCE BYPASS PUMPING IS ESTABLISHED, POWER WASH AND DRAIN INTERIOR OF WET WELL.
   - 4.b. CONTRACTOR TO INSPECT CONDITION OF CONCRETE SURFACES AND PROVIDE BRIEF WRITTEN REPORT TO IDENTIFY SURFACE CONDITION RELATIVE TO ACCEPTABILITY TO RECEIVE PROTECTIVE LINING. CONTRACTOR TO CONSULT WITH LINING MANUFACTURER ON-SITE AS NEEDED. REPORT TO INCLUDE SUMMARY OF OBSERVATIONS, RECOMMENDATIONS FOR REPAIRS, AND INCLUDE SUPPORTING PHOTOS.
   - 4.c. PROVIDE REPAIR PROPOSAL AS NEEDED WITH RECOMMENDED REPAIR PRODUCTS AND PROCEDURES PRIOR TO PROCEEDING. PROVIDE APPROVAL LETTER FROM LINING MANUFACTURER TO SUPPORT REPAIR RECOMMENDATIONS.
   - 4.d. AFTER COMPLETION OF APPROVED CONCRETE REPAIRS, PROVIDE FINAL SURFACE PREP FOLLOWED BY LINING OF INTERIOR BASE, WALLS, AND CEILING AS SPECIFIED IN SECTION 02537.
5. REPLACE EXISTING PIPE AS SHOWN
6. CONTRACTOR TO SUPPORT EXISTING DISCHARGE PIPE FROM WETWELL WHILE REPLACING DISCHARGE PIPE FROM THE PUMP.
7. USE GASKETS AND SEALANT PROVIDED WITH STATION FOR A TIGHT SUCTION PIPE CONNECTION.
8. COMPRESSION COUPLING PIPE FITTING
9. PRIOR TO SETTING THE STATION ON TOP OF THE WET WELL, APPLY A LAYER OF NON-SHRINK OR EPOXY GROUT ON THE TOP SURFACE OF THE WET WELL. THE STATION WILL THEN BED DOWN IN THE GROUT, GIVING THE STATION FIRM SUPPORT AND REDUCING NOISE TRANSMISSIONS. THE BASE PLATE SHOULD BE LEVEL IN ALL DIRECTIONS WHEN COMPLETE.
10. THE DISCHARGE IS TO BE ORIENTED IN ACCORDANCE WITH THE ENGINEER'S PLAN. MANUFACTURER WILL PROVIDE A COMPRESSION TYPE COUPLING TO JOIN THE FORCE MAIN TO THE STATION DISCHARGE PIPE. COMPRESSION TYPE COUPLINGS DO NOT PROVIDE PIPE END RESTRAINT. TWO LUGS SHALL BE PROVIDED (ONE ON EITHER SIDE OF THE DISCHARGE) ON THE UNDERSIDE OF THE BASEPLATE FOR SECURING THE VERTICAL SECTION OF THE DISCHARGE PIPE FROM SEPARATING IN THE COUPLING. TIE THE DISCHARGE PIPE TO THE STATION TO PREVENT SEPARATION FROM THE COUPLING IN THE VERTICAL DIRECTION BY USING AN ALL-THREADED ROD, CABLE OR CHAIN (PROVIDED BY CONTRACTOR). THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ADEQUATE RESTRAINT AGAINST ANY HORIZONTAL THRUST DEVELOPED. THE RESTRAINT SHALL BE TIED TO THE STRUCTURE, AS THE STATION BASEPLATE IS NOT DESIGNED TO WITHSTAND HORIZONTAL THRUST FORCES. ALL DISCHARGE PIPES SHOULD BE SECURED.

APPROVED FOR CONSTRUCTION:

THE DOCUMENT BEARING THIS STAMP HAS BEEN RECEIVED AND REVIEWED BY THE CITY OF MEMPHIS DIVISION OF ENGINEERING UNDER AUTHORITY DELEGATED BY THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION DIVISION OF WATER RESOURCES. IT IS HEREBY APPROVED FOR CONSTRUCTION BY THE CITY ENGINEER AS EVIDENCE BY HIS SIGNATURE IN THE TITLE BLOCK BELOW.

LIFT STATION PLAN AND SECTION
SCALE: 3/4" = 1'-0"

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

BRADLEY J. DAVIS REGISTERED ENGINEER 39 AGRICULTURE NUMBER 107070 STATE OF TENNESSEE
06-24-24

LIFT STATION DESIGN GROUP 3 C
DEVELOPER: SARP 10
ENGINEER: BROWN AND CALDWELL

DWG NO. D-102

SEWER BASIN: WN-10

SHEET 4 OF 4
DIVISION OF ENGINEERING

PROP. LIFT STATION PLAN & SECTION

9612 GROVE ROAD

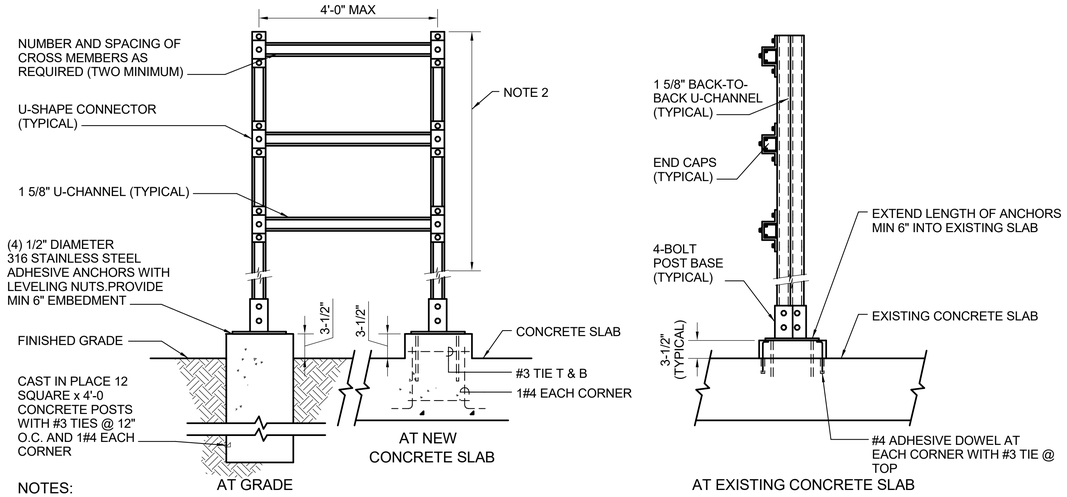
MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127
DESIGN BY: BRADLEY DAVIS, PE DATE: 06/24 SCALE: SHOWN
REVIEWED

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	LIGHTING		**BASIC MATERIALS**
A	AREA LIGHT (LETTER REFERENCES FIXTURE SCHEDULE)	1	BRANCH CIRCUIT WIRE & CONDUIT RUN CONCEALED IN WALL OR ABOVE CEILING, HOME RUN TO PANELBOARD. A NUMERAL, IF PRESENT AT ARROW HEAD, INDICATES CIRCUIT NUMBER. ANY BRANCH CIRCUIT SHOWN WITHOUT SLASH MARKS INDICATES A CONDUIT CONTAINING (3) #12 AWG CONDUCTORS (HOT, NEUTRAL & GROUND). SLASH MARKS, IF PRESENT, INDICATE THE FOLLOWING: HOT (ENERGIZED) CONDUCTOR, NEUTRAL CONDUCTOR, & GROUND CONDUCTOR
	RED BEACON ALARM LIGHT		
	SERVICE AND DISTRIBUTION		WIRE & CONDUIT RUN EXPOSED
	SWITCHBOARD		WIRE & CONDUIT RUN IN OR UNDER FLOOR
	DISTRIBUTION PANEL		
	BRANCH CIRCUIT PANEL		EXISTING LIGHT FIXTURE OR ELECTRICAL DEVICE MAY BE REMOVED AND/OR RELOCATED AND CIRCUITRY MADE CONTINUOUS WHERE REQUIRED. UNO, LINE TYPE TYPICAL FOR ALL DEVICES TO BE REMOVED AND/OR RELOCATED.
T	TRANSFORMER		
M	MOTOR CONNECTION		DISCONNECT SWITCH
G	GENERATOR CONNECTION	J	JUNCTION BOX
	DISCONNECT SWITCH (FUSED AS REQUIRED)		PUSHBUTTON
	MOTOR CONTROLLER (SPECIFIED IN OTHER THAN DIV. 26)	S_M	MANUAL MOTOR STARTER SWITCH
	COMBINATION MOTOR CONTROLLER & DISCONNECT SWITCH (SPECIFIED IN OTHER THAN DIV. 26)	S	SINGLE-POLE, SINGLE-THROW (S.P.S.T.) WALL SWITCH
	EQUIPMENT NOT FURNISHED UNDER DIV. 26 (SPECIFIED IN OTHER THAN DIV. 26)	S_K	KEYED WALL SWITCH
M	ELECTRIC METER	S_D	WALL BOX DIMMER CONTROL
R	RELAY	S_3	SINGLE-POLE, DOUBLE-THROW (S.P.D.T.) WALL SWITCH
CB	CIRCUIT BREAKER	S_{OS}	WALL SWITCH WITH OCCUPANCY SENSOR
LC	LIGHTING CONTACTOR		SINGLE RECEPTACLE IN WALL (NEMA 5-20R)
PC	PHOTOCELL		DUPLEX RECEPTACLE IN WALL (NEMA 5-20R)
		GFCI	G.F.I. TYPE DUPLEX RECEPTACLE IN WALL (NEMA 5-20R)
			DUPLEX RECEPTACLE IN WALL, EMERGENCY CIRCUIT (NEMA 5-20R)
			DOUBLE DUPLEX RECEPTACLE IN WALL (NEMA 5-20R)
		WP	G.F.I. TYPE DUPLEX RECEPTACLE OUTDOORS (WEATHERPROOF)
			SINGLE 240V RECEPTACLE FOR APPLIANCE OR EQUIPMENT (PER APPLIANCE RATING)
		X	X = TR (TAMPER RESISTANT) OR AF (ARC FAULT)
		IG	DUPLEX RECEPTACLE IN WALL WITH ISOLATED GROUND
			POINT OF CONNECTION



NOTES:

1. EQUIPMENT RACK SIZING:
   - A. ONE ITEM GREATER THAN 150 SQUARE INCHES.
   - B. TWO EQUIPMENT ITEMS GREATER THAN 130 SQUARE INCHES.
   - C. THREE OR MORE EQUIPMENT ITEMS.
   - D. PROVIDE 316 STAINLESS STEEL CHANNEL END-CAPS, AND FITTINGS
   - E. PROVIDE 1/4" MINIMUM ALUMINUM PLATE FOR SMALL ITEMS
2. MOUNT INDICATORS OR EQUIPMENT OPERATING HANDLES FOUR FEET ABOVE FLOOR OR PLATFORM.
3. MATERIAL AND HARDWARE PER SPECIFICATION DIVISION 16.

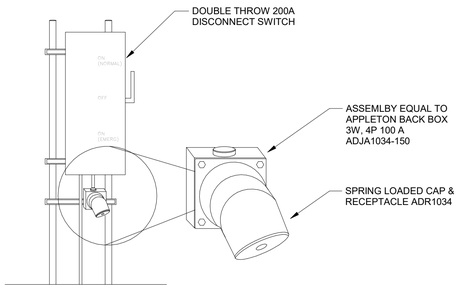
EQUIPMENT SUPPORT

SCALE: N.T.S.

ELECTRICAL ABBREVIATIONS

SYMBOL	DESCRIPTION
A	AMPERE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERES INTERRUPTING CURRENT
ANN	ANNUNCIATOR
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLP	CURRENT LIMITING PANEL
CT	CURRENT TRANSFORMER
CU	COPPER
DISC	DISCONNECT
EDF	ELECTRIC DRINKING FOUNTAIN
FAAP	FIRE ALARM ANNUMNICATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPS
G	GROUND
GFI	GROUND FAULT CURRENT INTERRUPTER
HP	HORSEPOWER
HZ	HERTZ
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT-AMPERE
KW	KILOWATT
LED	LIGHT EMITTING DIODE
MCC	MOTOR CONTROL CENTER
MLO	MAIN LUGS ONLY
N	NEUTRAL
NEC	NATIONAL ELECTRIC CODE
PF	POWER FACTOR
SOWB	SPACE ONLY WITH BUS
UGW	UNDERGROUND ELECTRICAL
V	VOLT
VA	VOLT-AMPERE
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHER PROOF
XFMR	TRNASFORMER
3P	THREE POLE
3PH	THREE PHASE
4W	FOUR WIRE
30/3	30 AMPERE, 3-POLE

CODE ANALYSIS - INTERNATIONAL BUILDING CODE 2015
CODE COMMENTS
JURISDICTION
Memphis and Shelby County Construction Code Enforcement
APPLICABLE CODES
2015 International Building Code with Local Amendments
2015 International Existing Building Code with Local Amendments
2015 International Residential Code with Local Amendments
2014 National Electrical Code
2018 Joint Electrical Code
2015 International Mechanical Code with Local Amendments
2015 International Fuel Gas Code with Local Amendments
2015 International Plumbing Code with Local Amendments
2015 International Energy Conservation Code with Local Amendments
2009 ICC A117.1 Accessibility and Useable Buildings and Facilities)by reference)
2013 ASME 17.1 Safety Code for Elevators and Escalators (by reference)



GENERATOR PLUG

SCALE: N.T.S.

Know what's below. Call before you dig.

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

RYAN J. HEATTER REGISTERED ENGINEER AGRICULTURE COMMERCE No. 106919 STATE OF TENNESSEE 6/24/24

LIFT STATION DESIGN GROUP 3 C

DEVELOPER: SARP 10

ENGINEER: BROWN AND CADWELL

DWG NO. E-001

SEWER BASIN: WN-10

SHEET 1 OF 2

DIVISION OF ENGINEERING

ELECTRICAL - STANDARD DETAILS 1

9612 GROVE LIFT STATION
MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127

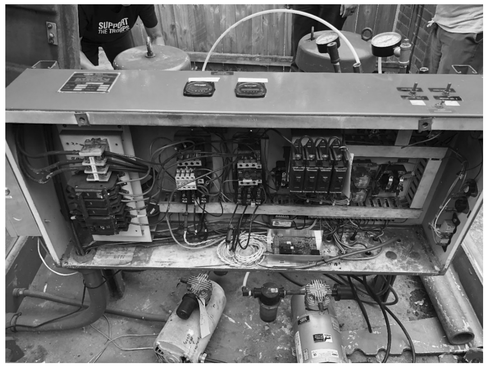
DESIGN BY: RJH DATE: 06/24 SCALE: SHOWN

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: P:\2021\121001 - SARP 10 - GROUP 3 LIFT STATIONS\CAD\XREFS FILENAME: 157456_TB.DWG PLOT DATE: ---- CAD USER: PAT HAGAN

LIFT STATION COVER

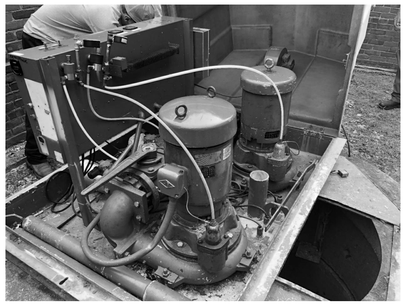
SERVICE ENTRANCE



CONTROL PANEL

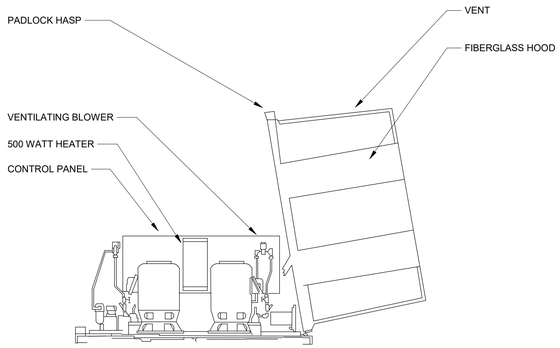
ROTO-PHASE CONVERTER

DISCONNECT FUSES

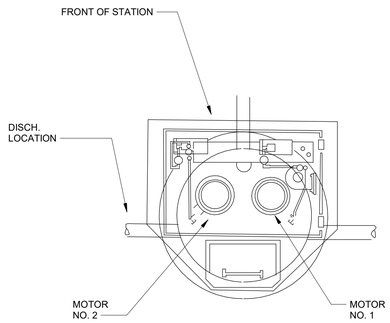


MOTORS

SCADA CONTROL BOX

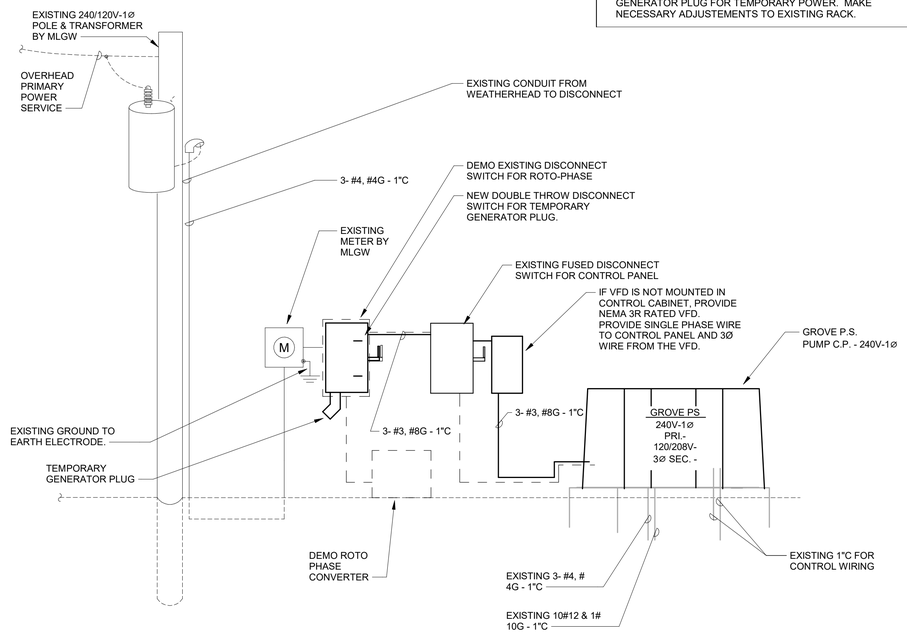


PUMP ELECTRICAL PLAN
SCALE: N.T.S.



GENERAL NOTES:

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE, AND ALL OTHER APPLICABLE STANDARDS AND REGULATIONS ENFORCED BY THE AUTHORITY HAVING JURISDICTION.
2. ALL ABOVE GROUND EXTERIOR CONDUIT SHALL BE GALVANIZED RIGID STEEL CONDUIT WITH CORROSION RESISTANT FITTINGS, CLAMPS AND SUPPORT.
3. IN THE EVENT OF CONFLICTS BETWEEN THE DRAWINGS, SPECIFICATIONS, CODES AND REGULATIONS, NOTIFY THE ENGINEER OF RECORD FOR HIS OPINION PRIOR TO INSTALLATION.
4. SHOP DRAWINGS SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL AND TO THE ENGINEER FOR REVIEW.
5. SMACNA SEISMIC RESTRAINT MANUAL, THIRD EDITION 2008, OR LATEST REVISION MAY BE USED AS A GUIDE FOR GENERAL SEISMIC SUPPORT DETAIL AND SUPPORT SPACING RECOMMENDATIONS.
6. COORDINATE LOCATION OF ALL LIGHTING FIXTURES, MECHANICAL EQUIPMENT AND ACCESS PANELS WITH EXISTING CONDITIONS PRIOR TO ROUGH-IN.
7. WHILE EFFORT HAS BEEN MADE TO IDENTIFY EXISTING CIRCUITS THAT ARE TO BE REMOVED OR REPLACED, THE INFORMATION MAY NOT BE ACCURATE.
8. ELECTRICAL CONTRACTOR SHALL VERIFY VOLTAGE AND AMP DRAW FOR ANY NEW EQUIPMENT.
9. CONTROL PANEL SHALL BE REPLACED ALONG WITH THE ENTIRE SKID PACKAGE.
10. THE MAIN CONTROL PANEL IS FED WITH AN EXISTING 208V 3PH 40A FUSED DISCONNECT ABOVE GRADE.
11. REPLACE FUSES ON DISCONNECT.
12. RE-CONNECT AND TIGHTEN ALL ELECTRICAL CONNECTIONS.
13. PROVIDE NEW VFD IN LIEU OF ROTO PHASE CONVERTER. VFD MAY BE INCLUDED WITH CONTROLLER OR MOUNTED SEPERATELY. NEW WIRE FROM VFD MUST BE RATED FOR 1.75 TIMES THE MOTOR HORSEPOWER. PUMP MUST BE VFD RATED WITH PROPOER INSULATION.
14. PROVIDE NEW DOUBLE THROW DISCONNECT AND GENERATOR PLUG FOR TEMPORARY POWER. MAKE NECESSARY ADJUSTEMENTS TO EXISTING RACK.



RISER & SINGLE LINE DIAGRAM
SCALE: N.T.S.

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

REVISIONS		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE
0	ISSUED FOR BID	6/24/2024

RYAN J. HERTTER REGISTERED ENGINEER AGRICULTURE COMMERCE No. 106919 STATE OF TENNESSEE 6/24/24

LIFT STATION DESIGN GROUP 3 C
DEVELOPER: SARP 10
ENGINEER: BROWN AND CADWELL

DWG NO. E-101

SEWER BASIN: WN-10

SHEET 2 OF 2

DIVISION OF ENGINEERING

ELECTRICAL - PLAN AND RISER DIAGRAM

9612 GROVE LIFT STATION
MEMPHIS, TENNESSEE

SURVEY BY: WES ASHWORTH, RLS DATE: 10/21 PROJECT NO: 4029278.61.0127
DESIGN BY: RJH DATE: 06/24 SCALE: SHOWN

CITY DEPUTY CIVIL ENGINEER DATE CITY ENGINEER DATE

Path: P:\2021\21001 - SARP 10 - GROUP 3 LIFT STATIONS\CAD\XREFS FILENAME: 157466_TB.DWG PLOT DATE: ---- CAD USER: PAT HAGAN