

MEMPHIS-SHELBY COUNTY SCHOOLS

**RICHLAND ELEMENTARY  
SCHOOL DRAINAGE  
IMPROVEMENTS**

*100% SUBMITTAL*

JANUARY 2026

PROJECT LOCATION:

5440 RICH ROAD MEMPHIS,  
TN 38120

DRAINAGE BASIN  
WHITE STATION  
SWEETBRIER

SEWER BASIN  
WS-06



VICINITY MAP  
SCALE: NTS

**PROJECT SCOPE OF WORK**

THIS PROJECT CONSISTS OF REPLACING THE EXISTING DRAINAGE SYSTEM ON THE WEST SIDE OF THE SCHOOL TO ADDRESS ONGOING DRAINAGE ISSUES AND CONSTRUCTING A NEW SANITARY SEWER FOR THE WEST BUILDING TO CONNECT TO THE PUBLIC SEWER LOCATED WEST OF THE SITE.

SITE IMPROVEMENTS INCLUDE INSTALLING LARGER DRAINAGE PIPES TO INCREASE CAPACITY AND NEWLY REDESIGNED SWALES TO IMPROVE DRAINAGE FROM THE WEST BUILDING TO THE PUBLIC SEWER WEST OF THE SITE. REGRADING THE LANDSCAPED AREA UNDER THE WEST BUILDING BRIDGES, CONSTRUCTING A LARGE HEADWALL WITH WING WALLS TO MANAGE AND DIRECT STORMWATER DISCHARGE, AND REPLACING A CRACKED SANITARY SEWER PIPE.

THE EXISTING SCHOOL BUILDINGS AND THE ELEMENTARY SCHOOL PARKING LOT WILL REMAIN UNCHANGED.

**PROJECT SPECIFICATIONS:**

CONSTRUCT THE PROJECT IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. PROJECT SPECIFICATIONS ARE BASED LARGELY ON CITY OF MEMPHIS STANDARD CONSTRUCTION SPECIFICATIONS WITH SITE-SPECIFIC MODIFICATIONS AND MEMPHIS-SHELBY COUNTY SCHOOLS DESIGN AND CONSTRUCTION GUIDELINES.



**SHEET LIST TABLE**

SHEET NUMBER	SHEET TITLE
G000	COVER SHEET
G001	GENERAL NOTES
C100	EXISTING PLAN (SEWER)
C101	EXISTING PLAN (DRAINAGE)
C102	DEMO PLAN
C103	SITE PLAN - OVERALL
C104	SITE PLAN
C105	GRADING & DRAINAGE PLAN 1
C106	GRADING & DRAINAGE PLAN 2
C107	GRADING & DRAINAGE PLAN 3
C108	GRADING & DRAINAGE PLAN 4
C109	GRADING & DRAINAGE PLAN 5
C110	GRADING & DRAINAGE PLAN 6
C111	PRIVATE SEWER PLAN 1
C112	PRIVATE SEWER PLAN 2
C113	EROSION & SEDIMENT CONTROL PLAN
C114	DETAILS 1
C115	DETAILS 2
C116	DETAILS 3
C200	TRAFFIC CONTROL PLAN

REVIEW PLANS  
NOT FOR  
CONSTRUCTION











VICINITY MAP  
NOT TO SCALE

EXISTING FEATURES LEGEND	
	BUILDING
	CONCRETE
	ASPHALT
	RFRAP
	STORM LINE
	STORM INLET
	SANITARY SEWER LINE
	SANITARY SEWER MANHOLE
	OVERHEAD ELECTRIC
	WORK CONTOURS
	MINOR CONTOURS
	CLEAN OUT
	POWER POLE
	TREE
	OVERHEAD POWER LINE
	METAL FENCE
	ASSUMED LINE (NOT CONFIRMED)

PROPOSED FEATURES LEGEND	
	STORMWATER DISCHARGE/ INPUT LOCATION
	STORM LINE
	STORM INLETS
	STORM MANHOLE
	CLEAN OUT
	REVEGETATED AREA WITH 800
	NEW CONCRETE
	NEW ASPHALT
	NEW RFRAP
	CATCH BASIN
	SEWER MANHOLE
	STORM CLEAN OUT
	SEWER CLEAN OUT
	MAJOR CONTOURS
	MINOR CONTOURS

- GENERAL SITE NOTES:**
- CONTRACTOR MUST SECURE ALL NECESSARY PERMITS PRIOR TO BEGINNING WORK.
  - ATTENTION IS DRAWN TO THE FACT THAT THE PRODUCTION OF THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGN PRESENTED HEREIN, IS THE PROPERTY OF ABES ENGINEERING, INC. AND IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE WRITTEN PERMISSION OF ABES ENGINEERING, INC. ANY SPECIFIC APPROVE AND CLIENT FOR WHICH IT WAS PREPARED.
  - IF ANY CONFLICTS OR DISCREPANCIES ARE FOUND ON THE CONSTRUCTION DOCUMENTS OR FIELD CONDITIONS, THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL SETBACKS, EASEMENTS, AND DIMENSIONS SHOWN HEREON BEFORE BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL SETBACKS, EASEMENTS, AND DIMENSIONS SHOWN HEREON BEFORE BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL SETBACKS, EASEMENTS, AND DIMENSIONS SHOWN HEREON BEFORE BEGINNING CONSTRUCTION.
  - ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND DETAILS.
  - ALL ACCESSIBLE SITE FEATURES SHALL BE CONSTRUCTED TO MEET ALL APPLICABLE CODES AND REGULATIONS.
  - NOTIFY THE CITY INSPECTOR TWENTY-FOUR (24) HOURS BEFORE BEGINNING CONSTRUCTION.
  - REFER TO THE CITY ENGINEER FOR ANY CHANGES TO THE DESIGN.
  - CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER SUCH THAT WORKERS AND THE PUBLIC SHALL NOT BE INJURED OR PROPERTY DAMAGED.
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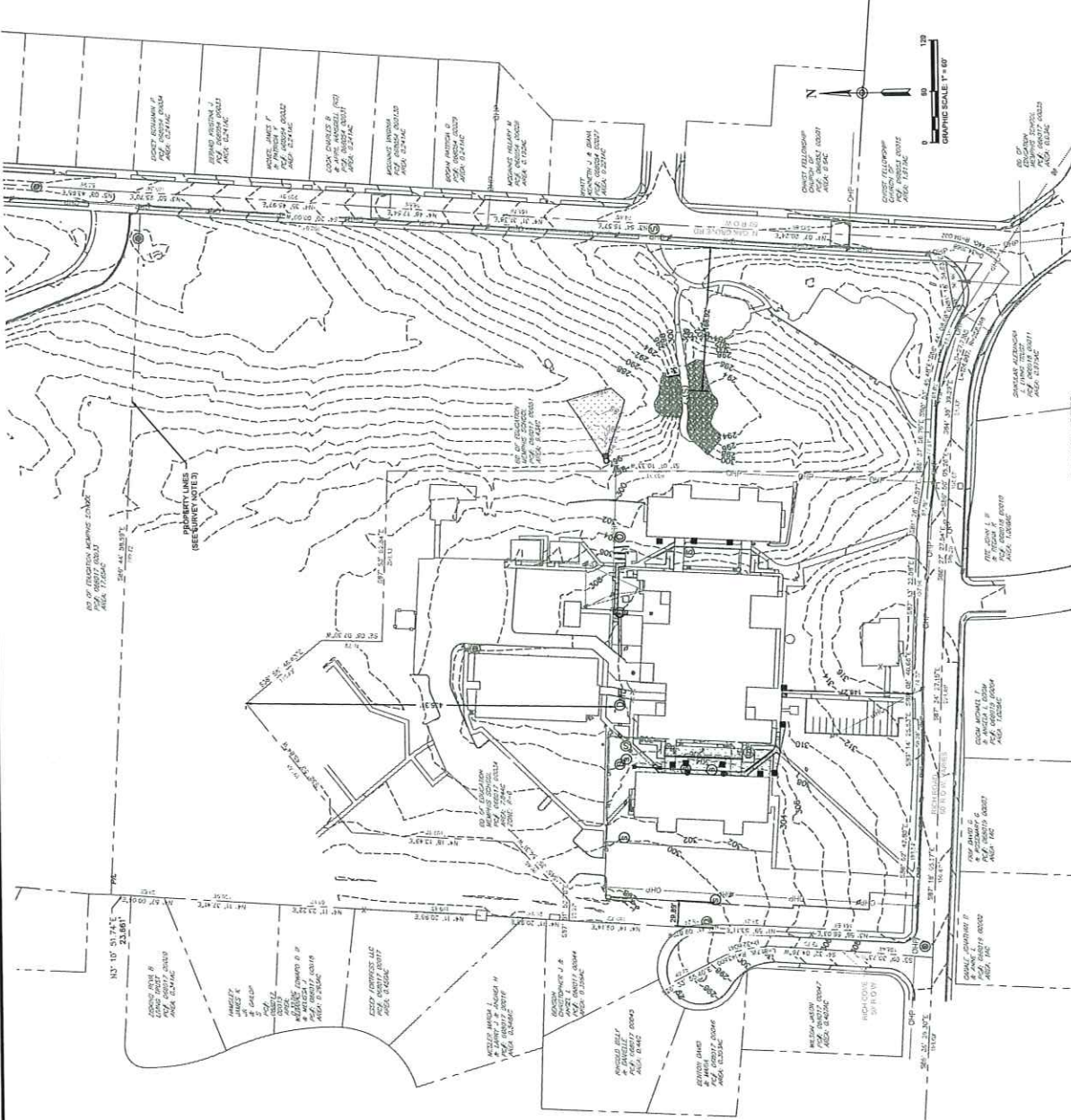
**FEMA NOTE:**  
THE SUBJECT PROPERTY IS LOCATED IN ZONE "X" AREAS DETERMINED TO BE AT RISK OF FLOODING BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY AS SHOWN ON FLOOD INSURANCE RATE MAP DATED FEBRUARY 6, 2015. THE ADDRESS OF THIS PROPERTY IS 5440 RICH RD. COAL BENCHMARK AT THE CORNER AT THE BACK OF CURB. SEWER MANHOLE IS LOCATED AT THE CORNER AT THE BACK OF CURB. SUBMERSIBLE ULTRASONIC STATION, SWEETBRIER. C103

SHEET 1 OF 2  
SITE PLAN - OVERALL  
5440 RICH RD  
MEMPHIS, TN

DATE: MAY 25 2023  
PROJECT NO: 23-05-01  
SCALE: 1"=40'

DESIGN BY: HONORARY PE  
REVIEWED

DEPUTY CITY ENGINEER  
DATE: CITY ENGINEER



**ABES ENGINEERING**

ENGINEERING  
CONSULTANTS & SHELBY COUNTY

**SURVEY NOTES**

- SITE SURVEY PERFORMED BY ASHWORTH ENGINEERING, JUNE 2023
- USING REAL-TIME KINEMATICS LINKED TO THE TDDI REFERENCE
- USE FOUND PAVEMENT ASHphalt BROWN IN SITE PLAN FOR ELEVATION CONTROL
- FIELD BOUNDARY SURVEY

**SANITARY SEWER NOTE**

- NO OTHER UTILITIES OR SERVICES EXIST FOR PROPOSED AREAS WILL UTILITIES OR SERVICES OCCUPY SANITARY SEWER EASEMENTS, NO OTHER UTILITIES OR SERVICES WILL OCCUPY SANITARY SEWER EASEMENTS
- PRIVATE DRIVES AND YARDS FOR THE PURPOSE OF MAINTAINING ALL PUBLIC SEWER LINES AND SANITARY SEWER LINES AND YARDS. RESPONSIBILITY FOR THE MAINTENANCE OF THIS PRIVATE DRIVE AND YARD.

**ROW NOTE**

- PLEASE BE ADVISED THAT A BUILDING PERMIT ISSUED BY THE CITY OF MEMPHIS DOES NOT ALLOW FOR ALTERNATIONS AND/OR IMPROVEMENTS TO ANY RIGHT-OF-WAY (ROW) MAINTAINED BY THE CITY OF MEMPHIS. ALL WORK IS LIMITED TO WORK PERFORMED ON SIDEWALKS, CURB AND GUTTER, DRIVE AND YARD AREAS. THE CITY OF MEMPHIS CITY ENGINEERS OFFICE AT (901) 544-1100.



PROJECT LOCATION

EXISTING FEATURES LEGEND	
[Symbol]	BUILDING
[Symbol]	CONCRETE
[Symbol]	ASPHALT
[Symbol]	RRIMP
[Symbol]	STORM LINE
[Symbol]	STORM INLET
[Symbol]	SANITARY SEWER LINE
[Symbol]	SANITARY SEWER MANHOLE
[Symbol]	OVERHEAD ELECTRIC
[Symbol]	MAJOR CONTOURS
[Symbol]	MINOR CONTOURS
[Symbol]	CLEAN OUT
[Symbol]	POWER POLE
[Symbol]	TREE
[Symbol]	OVERHEAD POWER LINE
[Symbol]	METAL FENCE
[Symbol]	ASSUMED LINE (NOT CONFIRMED)

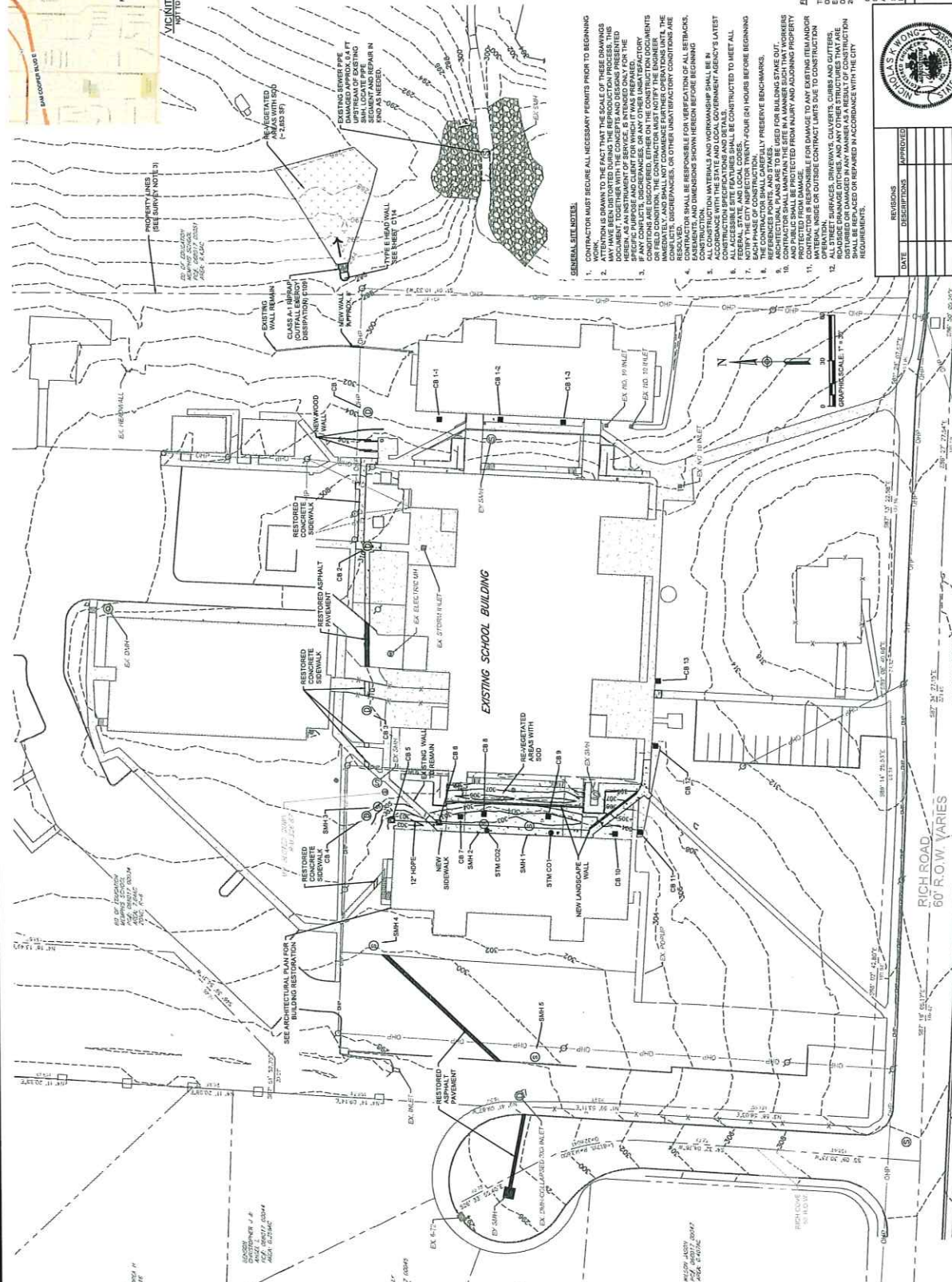
  

PROPOSED FEATURES LEGEND	
[Symbol]	STORMWATER DISCHARGE/SPILT LOCATION
[Symbol]	STORM LINE
[Symbol]	STORM INLETS
[Symbol]	STORM MANHOLE
[Symbol]	CLEAN OUT
[Symbol]	REGRAVED AREA WITH 500
[Symbol]	NEW CONCRETE
[Symbol]	NEW ASPHALT
[Symbol]	NEW RRIMP
[Symbol]	CATCH BASIN
[Symbol]	SEWER MANHOLE
[Symbol]	STORM CLEAN OUT
[Symbol]	STM CO
[Symbol]	SNW CO
[Symbol]	MAJOR CONTOURS
[Symbol]	MINOR CONTOURS

**GENERAL NOTE:**  
 THE SUBJECT PROPERTY IS LOCATED IN AN AREA DETERMINED TO BE A FLOOD HAZARD ZONE AS ESTABLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY AS SHOWN ON THE FLOOD HAZARD MAP OF THE CITY OF MEMPHIS, TENNESSEE, DATED FEBRUARY 6, 2013. THE NEAREST BFE IS 250 LOCATED NORTHWEST OF THE SITE.  
 C-04: BRIDGE #304 - 803 RD AND MONTELEO RD.  
 CITY MONUMENT IS ON THE NE CORNER. AT THE BACK OF CURB, AT THE END OF RIDING ON THE RICH RD SIDE, ELEV: 280.61  
 DRAINAGE BASIN, WHITE STATION, SW/4 SW/4

DATE	REVISIONS	APPROVED

**ABES ENGINEERING**  
 5440 RICH RD  
 MEMPHIS, TN  
 PROJECT NO. 18-26-01  
 DATE: JAN 28  
 SCALE: 1"=30'  
 DESIGNED BY: NICK WONS, PE  
 REVIEWED BY: NICK WONS, PE  
 DEPUTY CITY ENGINEER DATE: CITY ENGINEER DATE



- GENERAL SITE NOTES:**
1. CONTRACTOR MUST SECURE ALL NECESSARY PERMITS PRIOR TO BEGINNING WORK.
  2. ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF ANY WORKS TO BE PERFORMED SHALL BE AS SHOWN ON THE DRAWINGS AND SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND CONDITIONS OF CONTRACT.
  3. IF ANY CONFLICTS, DISCREPANCIES, OR ANY OTHER UNUSUAL CONDITIONS OR FIELD CONDITIONS, THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY. THE ENGINEER SHALL HAVE THE FINAL SAY IN ALL MATTERS OF CONFLICT, DISCREPANCY, OR OTHER UNUSUAL CONDITIONS ARE REQUIRED.
  4. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS, EASEMENTS, AND DIMENSIONS SHOWN HEREON BEFORE BEGINNING WORK.
  5. ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE STATE AND FEDERAL GOVERNMENT AGENCY'S LATEST REQUIREMENTS.
  6. ALL ACCESSIBLE SITE FEATURES SHALL BE CONSTRUCTED TO MEET ALL APPLICABLE ADA REQUIREMENTS.
  7. NOTIFY THE CITY INSPECTOR TWENTY-FOUR (24) HOURS BEFORE BEGINNING CONSTRUCTION.
  8. EACH PART OF THE WORK SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE CITY INSPECTOR.
  9. REFERENCED POINTS AND STAKES SHALL BE USED FOR BUILDING STAKE OUT.
  10. CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER SUCH THAT WORKERS AND PUBLIC FROM ADJACENT PROPERTIES ARE NOT DISTURBED OR INJURED.
  11. CONTRACTOR IS RESPONSIBLE FOR DAMAGING TO ANY EXISTING ITEM UNDER THE SURFACE OF THE SITE OR OUTSIDE CONTRACT LIMITS DUE TO CONSTRUCTION OPERATION.
  12. ALL STREET SURFACES, CURBS, AND OTHER STRUCTURES THAT ARE DISTURBED OR DAMAGED IN ANY MANNER AS A RESULT OF CONSTRUCTION SHALL BE REPAIRED OR REPLACED IN ACCORDANCE WITH THE CITY REQUIREMENTS.

**ROW NOTE**

1. PLEASE BE ADVISED THAT A BUILDING PERMIT ISSUED BY THE MEMPHIS COUNTY OFFICE OF CONSTRUCTION CODE ENFORCEMENT (MCCO) IS REQUIRED FOR ANY CONSTRUCTION WORK WITHIN THE RIGHT-OF-WAY (R.O.W.) MAINTAINED BY THE CITY OF MEMPHIS. A TERMINATING PERMIT IS REQUIRED FOR ANY CONSTRUCTION WORK WITHIN THE R.O.W. NOT APPLICABLE TO THIS PROJECT.

**SANITARY SEWER NOTE**

1. NO OTHER UTILITIES OR FACILITIES (EXCEPT FOR CROSSINGS) WILL BE ALLOWED WITHIN SANITARY SEWER CONSTRUCTION RIGHTS TO USE THE CITY OF MEMPHIS SANITARY SEWER SYSTEMS.
2. THE CITY OF MEMPHIS SHALL HAVE INDISPENSIBLE RIGHTS TO USE THE CITY OF MEMPHIS SANITARY SEWER SYSTEMS FOR THE MAINTENANCE OF SAID PRIVATE DRIVES AND YARDS.

**SURVEY NOTES**

1. SURVEY SHALL BE CONDUCTED BY A LICENSED SURVEYOR AND SHALL BE IN ACCORDANCE WITH THE SURVEYING ACT OF 1968.
2. NETWORK, MANHOLE, AND ASPHALT (SHOWN IN SITE PLAN) FOR ELEVATION CONTROL.
3. PROPERTY LINES FROM SHELBY CO. OR DATUM NOT FROM A FIELD BOUNDARY SURVEY.

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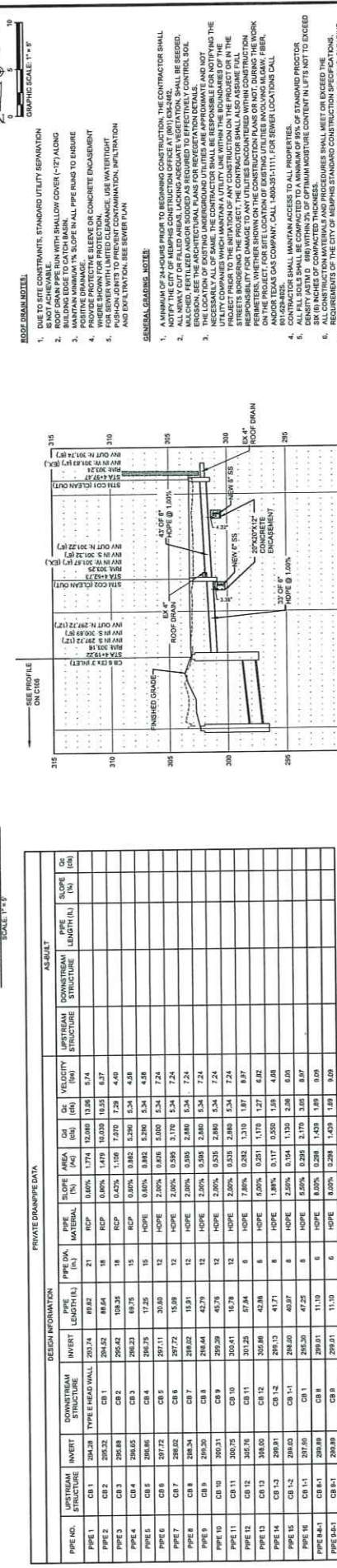
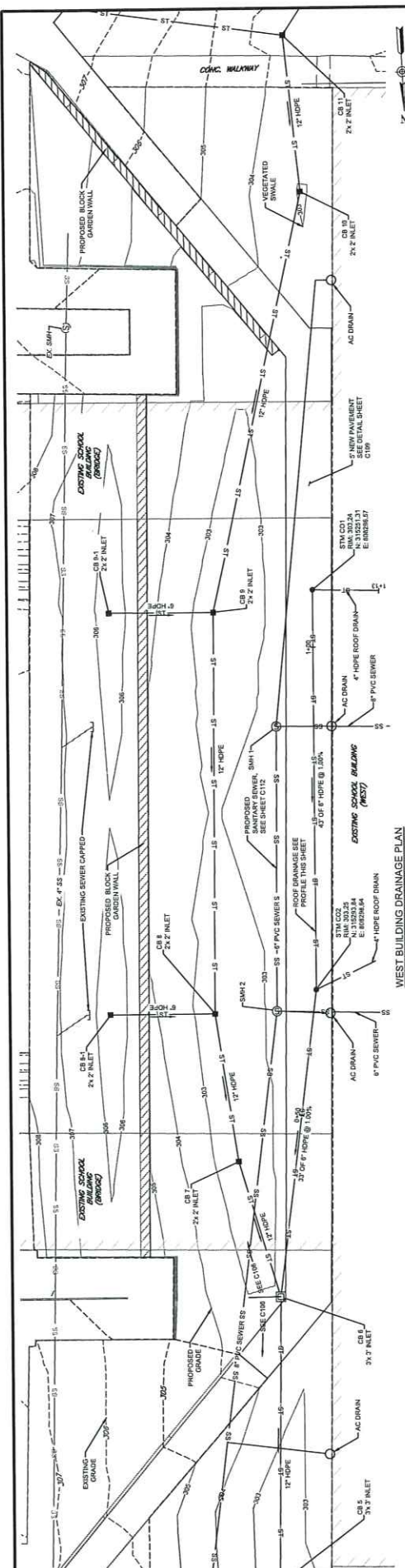
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**ABES ENGINEERING**







- ROOF DRAIN PIPE PROFILE**  
VERT SCALE 1" = 4"
1. DUE TO SITE CONSTRAINTS, STANDARD UTILITY SEPARATION IS NOT ACHIEVABLE.
  2. ALL NEW UTILITY SHALL BE SHALLOW COVER (-17') ALONG BUILDING EDGE TO CATCH BASIN.
  3. MAINTAIN MINIMUM 1% SLOPE IN ALL PIPE RUNS TO ENSURE PROTECTIVE SLEEVES OR CONCRETE ENCASUREMENT WHERE SHOWN FOR PROTECTION PURPOSES. USE WATER-TIGHT PUSH-ON JOINTS TO PREVENT CONTAMINATION, INFILTRATION AND EXPANSION. SEE SEWER PLAN.
  4. MAINTAIN ACCESS TO ALL PROPERTIES.
  5. ALL TELL SLOLS SHALL BE COMPACTED TO A MINIMUM OF 85% OF STANDARD PROCTOR DENSITY. ALL FILL SHALL BE FREE OF ORGANIC MATERIALS AND SHALL BE FREE OF ALL ROCKS AND LIMBS LARGER THAN 6 INCHES IN DIAMETER.
  6. ALL CONSTRUCTION MATERIALS AND PROCEDURES SHALL BE IN ACCORDANCE WITH THE CITY OF MEMPHIS SPECIFICATIONS.
  7. PROPERTY LINES SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION. GRADING, CLEARING AND THE ERECTION OR REMOVAL OF FENCES ALONG PROPERTY LINES SHALL BE FULLY RESPONSIBLE FOR THE CONTRACTOR.
  8. VERIFY SITE CONDITIONS PRIOR TO CONSTRUCTION. NOTIFY THE CITY OF MEMPHIS CONSTRUCTION DEPARTMENT OF ANY VIOLATIONS PRIOR TO CONSTRUCTION.
  9. ALL GRADING WORK SHALL BE PERFORMED IN SUCH A MANNER THAT ADJACENT PROPERTIES ARE NOT DAMAGED. EACH GRADE SHALL BE SLOTTED AWAY FROM THE FOUNDATION FOR DRAINAGE. FOR GROUND FLOOR RESIDENTIAL LINES, THE GROUND FLOOR FINISHED GRADE SHALL BE SLOTTED AWAY FROM THE FOUNDATION FOR DRAINAGE. THERE IS NO MINIMUM FOR GROUND FLOOR NON-RESIDENTIAL LINES. THE MINIMUM GRADE AWAY FROM THE FOUNDATION SHALL MAINTAIN A POSITIVE SLOPE IN ALL DIRECTIONS.

**REVISIONS**

DATE	DESCRIPTION	APPROVED

**GENERAL NOTES:**

1. THE SUBJECT PROPERTY IS LOCATED IN ZONE 7. AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AS PER FLOOD INSURANCE RATE MAP NUMBER 47102000G, DATED FEBRUARY 9, 2011, THE HIGHEST FLOOD ELEVATION IS 300.00. THE PROPERTY IS LOCATED NORTHWEST OF THE SITE.

**ABES ENGINEERING**

MEMPHIS, TN  
6440 RICH RD  
MEMPHIS, TN 38119  
PHONE: (901) 525-1234  
FAX: (901) 525-1234  
WWW.ABESENGINEERING.COM

**RICHLAND ELEMENTARY - DRAINAGE IMPROVEMENT**  
ENGINEER: ABES ENGINEERING  
OWNER: MEMPHIS & SHELBY SCHOOLS

DATE: 01-11-2008

PROJECT NO: 08-20-01  
SCALE: AS SHOWN  
REVIEWED

DEPUTY CITY ENGINEER DATE: CITY ENGINEER

DATE: 01-11-2008

**EXISTING FEATURES LEGEND**

- BUILDING
- CONCRETE
- ASPHALT
- BITUMAST
- STORM LINE
- STORM INLET
- SANITARY SEWER MANHOLE
- OVERHEAD ELECTRIC
- MAJOR CONTOURS
- MINOR CONTOURS
- CLEAN OUT
- POWER POLE
- OVERHEAD POWER LINE
- METAL FENCE
- ASSUMED LINE (NOT CONFIRMED)

**PROPOSED FEATURES LEGEND**

- SEWER LINE
- STORM LINE
- STORM INLETS
- STORM MANHOLE
- CLEAN OUT
- NEW CONCRETE
- NEW ASPHALT
- NEW BITUMAST
- CATCH BASIN
- SEWER MANHOLE
- STORM CLEAN OUT
- SEWER CLEAN OUT
- MAJOR CONTOURS
- MINOR CONTOURS

**DRAINAGE NOTES**

- THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, MATERIAL, INVERT ELEVATION, AND LOCATION OF ALL EXISTING UTILITIES AND RECORD THEM ON THE PLANS. ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND PLANS SHOULD BE REPORTED TO THE ENGINEER IMMEDIATELY AND CORRECTED BEFORE CONSTRUCTION BEGINS.
- THE CONTRACTOR SHALL CALCULATE AND EXPOSE THE EXISTING STORM DRAIN AT THE POINT OF CONNECTION USING METHODS THAT PREVENT DAMAGE TO THE PIPE AND ANY ADJACENT UTILITIES OR UNOCCUPIED UTILITIES.
- THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR PROTECTING THE EXISTING UTILITIES DURING ALL PHASES OF CONSTRUCTION. ANY DAMAGE CAUSED BY THE CONTRACTOR TO EXISTING UTILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- RECONNECTION TO SEWER DRAIN MANHOLES SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF MEMPHIS STANDARD DETAILS AND SPECIFICATIONS AND MUST BE APPROVED BY THE ENGINEER AND THE CITY OF MEMPHIS. ALL CONNECTIONS SHALL BE MADE USING APPROVED FITTINGS, COUPLERS, BOOTS, GASKETS, OR CORE DRILLS AS APPLICABLE TO THE PIPE MATERIAL AND MANHOLE TYPE.
- CONNECTION OPENINGS CREATED IN THE MANHOLE SHALL BE COVERED WITH A MANHOLE STRUCTURE THAT IS STRENGTH AND DESIGN APPROVED BY THE ENGINEER. ALL OPENINGS SHALL BE SEALED WITH NON-SHRINK, NON-METALLIC GROUT.
- THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AT ALL TIMES. NO FLOW CONTROL IS REQUIRED. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SUCH VISUALS AS NO. 10 INLET, NO. 12 INLET, NO. 14 INLET, NO. 16 INLET, NO. 18 INLET, NO. 20 INLET, NO. 24 INLET, NO. 30 INLET, NO. 36 INLET, NO. 42 INLET, NO. 48 INLET, NO. 54 INLET, NO. 60 INLET, NO. 72 INLET, NO. 84 INLET, NO. 96 INLET, NO. 108 INLET, NO. 120 INLET, NO. 144 INLET, NO. 168 INLET, NO. 192 INLET, NO. 216 INLET, NO. 240 INLET, NO. 270 INLET, NO. 300 INLET, NO. 324 INLET, NO. 360 INLET, NO. 396 INLET, NO. 432 INLET, NO. 468 INLET, NO. 504 INLET, NO. 540 INLET, NO. 576 INLET, NO. 612 INLET, NO. 648 INLET, NO. 684 INLET, NO. 720 INLET, NO. 756 INLET, NO. 792 INLET, NO. 828 INLET, NO. 864 INLET, NO. 900 INLET, NO. 936 INLET, NO. 972 INLET, NO. 1008 INLET, NO. 1044 INLET, NO. 1080 INLET, NO. 1116 INLET, NO. 1152 INLET, NO. 1188 INLET, NO. 1224 INLET, NO. 1260 INLET, NO. 1296 INLET, NO. 1332 INLET, NO. 1368 INLET, NO. 1404 INLET, NO. 1440 INLET, NO. 1476 INLET, NO. 1512 INLET, NO. 1548 INLET, NO. 1584 INLET, NO. 1620 INLET, NO. 1656 INLET, NO. 1692 INLET, NO. 1728 INLET, NO. 1764 INLET, NO. 1800 INLET, NO. 1836 INLET, NO. 1872 INLET, NO. 1908 INLET, NO. 1944 INLET, NO. 1980 INLET, NO. 2016 INLET, NO. 2052 INLET, NO. 2088 INLET, NO. 2124 INLET, NO. 2160 INLET, NO. 2196 INLET, NO. 2232 INLET, NO. 2268 INLET, NO. 2304 INLET, NO. 2340 INLET, NO. 2376 INLET, NO. 2412 INLET, NO. 2448 INLET, NO. 2484 INLET, NO. 2520 INLET, NO. 2556 INLET, NO. 2592 INLET, NO. 2628 INLET, NO. 2664 INLET, NO. 2700 INLET, NO. 2736 INLET, NO. 2772 INLET, NO. 2808 INLET, NO. 2844 INLET, NO. 2880 INLET, NO. 2916 INLET, NO. 2952 INLET, NO. 2988 INLET, NO. 3024 INLET, NO. 3060 INLET, NO. 3096 INLET, NO. 3132 INLET, NO. 3168 INLET, NO. 3204 INLET, NO. 3240 INLET, NO. 3276 INLET, NO. 3312 INLET, NO. 3348 INLET, NO. 3384 INLET, NO. 3420 INLET, NO. 3456 INLET, NO. 3492 INLET, NO. 3528 INLET, NO. 3564 INLET, NO. 3600 INLET, NO. 3636 INLET, NO. 3672 INLET, NO. 3708 INLET, NO. 3744 INLET, NO. 3780 INLET, NO. 3816 INLET, NO. 3852 INLET, NO. 3888 INLET, NO. 3924 INLET, NO. 3960 INLET, NO. 3996 INLET, NO. 4032 INLET, NO. 4068 INLET, NO. 4104 INLET, NO. 4140 INLET, NO. 4176 INLET, NO. 4212 INLET, NO. 4248 INLET, NO. 4284 INLET, NO. 4320 INLET, NO. 4356 INLET, NO. 4392 INLET, NO. 4428 INLET, NO. 4464 INLET, NO. 4500 INLET, NO. 4536 INLET, NO. 4572 INLET, NO. 4608 INLET, NO. 4644 INLET, NO. 4680 INLET, NO. 4716 INLET, NO. 4752 INLET, NO. 4788 INLET, NO. 4824 INLET, NO. 4860 INLET, NO. 4896 INLET, NO. 4932 INLET, NO. 4968 INLET, NO. 5004 INLET, NO. 5040 INLET, NO. 5076 INLET, NO. 5112 INLET, NO. 5148 INLET, NO. 5184 INLET, NO. 5220 INLET, NO. 5256 INLET, NO. 5292 INLET, NO. 5328 INLET, NO. 5364 INLET, NO. 5400 INLET, NO. 5436 INLET, NO. 5472 INLET, NO. 5508 INLET, NO. 5544 INLET, NO. 5580 INLET, NO. 5616 INLET, NO. 5652 INLET, NO. 5688 INLET, NO. 5724 INLET, NO. 5760 INLET, NO. 5796 INLET, NO. 5832 INLET, NO. 5868 INLET, NO. 5904 INLET, NO. 5940 INLET, NO. 5976 INLET, NO. 6012 INLET, NO. 6048 INLET, NO. 6084 INLET, NO. 6120 INLET, NO. 6156 INLET, NO. 6192 INLET, NO. 6228 INLET, NO. 6264 INLET, NO. 6300 INLET, NO. 6336 INLET, NO. 6372 INLET, NO. 6408 INLET, NO. 6444 INLET, NO. 6480 INLET, NO. 6516 INLET, NO. 6552 INLET, NO. 6588 INLET, NO. 6624 INLET, NO. 6660 INLET, NO. 6696 INLET, NO. 6732 INLET, NO. 6768 INLET, NO. 6804 INLET, NO. 6840 INLET, NO. 6876 INLET, NO. 6912 INLET, NO. 6948 INLET, NO. 6984 INLET, NO. 7020 INLET, NO. 7056 INLET, NO. 7092 INLET, NO. 7128 INLET, NO. 7164 INLET, NO. 7200 INLET, NO. 7236 INLET, NO. 7272 INLET, NO. 7308 INLET, NO. 7344 INLET, NO. 7380 INLET, NO. 7416 INLET, NO. 7452 INLET, NO. 7488 INLET, NO. 7524 INLET, NO. 7560 INLET, NO. 7596 INLET, NO. 7632 INLET, NO. 7668 INLET, NO. 7704 INLET, NO. 7740 INLET, NO. 7776 INLET, NO. 7812 INLET, NO. 7848 INLET, NO. 7884 INLET, NO. 7920 INLET, NO. 7956 INLET, NO. 7992 INLET, NO. 8028 INLET, NO. 8064 INLET, NO. 8100 INLET, NO. 8136 INLET, NO. 8172 INLET, NO. 8208 INLET, NO. 8244 INLET, NO. 8280 INLET, NO. 8316 INLET, NO. 8352 INLET, NO. 8388 INLET, 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### EXISTING FEATURES LEGEND

	BUILDING
	CONCRETE
	ASPHALT
	RFRAP
	STORMLINE
	STORMINLET
	SANITARY SEWER LINE
	SANITARY SEWER MANHOLE
	OVERHEAD ELECTRIC
	MAJOR CONTOURS
	MINOR CONTOURS
	CLEAN OUT
	POWER POLE
	TREE
	OVERHEAD POWER LINE
	METAL FENCE

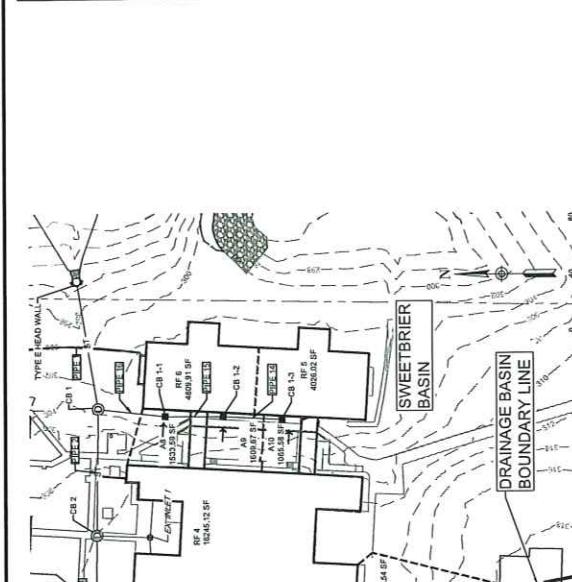
### PROPOSED FEATURES LEGEND

	STORMWATER DISCHARGE INPUT LOCATION
	STORMLINE
	STORMINLET
	STORMMANHOLE
	REVEGETATED AREA WITH SOD
	NEW CONCRETE
	NEW ASPHALT
	NEW RFRAP

### GENERAL GRADING NOTES:

- A MINIMUM OF 3% GRADE PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE CITY OF MEMPHIS CONSTRUCTION DEPARTMENT (BY E-MAIL) PRIOR TO THE START OF CONSTRUCTION. VEGETATION SHALL BE SEED, MULCH, FERTILIZED AND/OR SOILED AS REQUIRED TO PROTECT EXISTING VEGETATION. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN ON THIS PLAN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE UTILITY COMPANIES WHICH MAINTAIN A UTILITY LINE WITHIN THE PROJECT. THE CONTRACTOR SHALL ALSO ASSUME FULL RESPONSIBILITY FOR VERIFYING THE LOCATION OF ALL UTILITIES WITHIN CONSTRUCTION PERMITS, WHETHER SHOWN ON THE ALGAVY, FERR, AND/OR TEXAS GAS COMPANY CALL LOGS (1-1-11). FOR REVEGETATION, CONTACT THE CITY OF MEMPHIS PLANNING DEPARTMENT FOR A PERMIT TO REVEGETATE. ALL FILL SOLE SHALL BE COMPACTED TO A MINIMUM OF 8% OF MOISTURE CONTENT IN LITS NOT TO EXCEED 8X (8) INCHES OF COMPACTED THICKNESS. ALL PROPOSED STORMWATER DRAINAGE EXCEEDS THE REQUIREMENTS OF THE CITY OF MEMPHIS STANDARD CONSTRUCTION SPECIFICATIONS. FIELD VERIFIED PRIOR TO CONSTRUCTION. GRADING, CLEARING AND THE ERECTION OR REMOVAL OF FENCES ALONG PROPERTY LINES SHALL BE FULLY RESPONSIBLE TO THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY SITE CONDITIONS PRIOR TO CONSTRUCTION. NOTIFY THE CITY OF MEMPHIS CONSTRUCTION INSPECTION OFFICE ENGINEER PRIOR TO CONSTRUCTION. ALL GRADING WORK SHALL BE PERFORMED IN SUCH A MANNER THAT ADJACENT PROPERTIES ARE NOT DAMAGED OR ADVERSELY AFFECTED.
- LOT DRAINAGE: FINISH GRADE SHALL BE SLOPED AWAY FROM THE ADJACENT SIDEWALK. THE GROUND FLOOR FINISH ELEVATION SHALL BE A MINIMUM OF 18 INCHES ABOVE THE ADJACENT SIDEWALK. THERE IS AN ADJACENT SIDEWALK TO THE EAST OF THE PROPERTY. THE MINIMUM GRADE AWAY FROM THE FOUNDATION SHALL MAINTAIN A POSITIVE SLOPE IN ALL DIRECTIONS.

THE SUBJECT PROPERTY IS LOCATED IN ZONE "X". AREAS DETERMINED TO BE OUTSIDE THE 2% ANNUAL CHANCE FLOODPLAIN AS PER FLOOD LINES ESTABLISHED BY THE MEMPHIS WATER AND SEWER DEPARTMENT (MWD) ON FEBRUARY 6, 2018. THE HIGHEST ELEVATION OF THE PROPERTY IS 281.00 FEET. THE HIGHEST ELEVATION OF THE ADJACENT SIDEWALK IS 280.00 FEET. THE HIGHEST ELEVATION OF THE ADJACENT SIDEWALK IS 280.00 FEET. THE HIGHEST ELEVATION OF THE ADJACENT SIDEWALK IS 280.00 FEET.

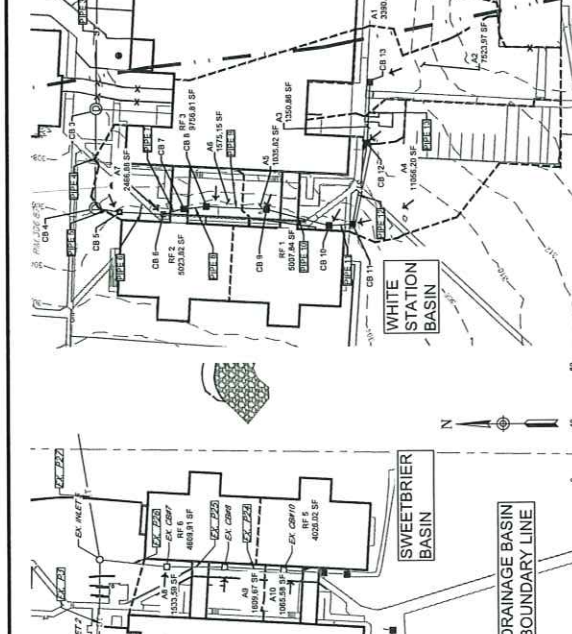


### PROPOSED DRAINAGE AREAS

Basin	Description	Area (sq ft)	Peak Flow (cfs)	1% Rainfall Intensity (in/hr)	2% Rainfall Intensity (in/hr)	5% Rainfall Intensity (in/hr)	10% Rainfall Intensity (in/hr)	15% Rainfall Intensity (in/hr)	20% Rainfall Intensity (in/hr)
PMP1	WHITE STATION BASIN	77278	1.774	0.84	7.58	8.86	10.05	10.98	12.06
PMP2	SWEETBRIER BASIN	64431	1.478	0.84	6.39	7.35	8.34	9.11	10.00
PMP3	STATION BASIN	5033.85	0.82	0.74	3.32	3.88	4.40	4.81	5.29
PMP4	STATION BASIN	38431	0.882	0.74	3.32	3.88	4.40	4.81	5.29
PMP5	STATION BASIN	38431	0.882	0.74	3.32	3.88	4.40	4.81	5.29
PMP6	STATION BASIN	29333	0.955	0.66	1.99	2.33	2.64	2.88	3.17
PMP7	STATION BASIN	24337	0.559	0.66	1.87	2.15	2.49	2.71	2.99
PMP8	STATION BASIN	23245	0.282	0.58	0.87	0.96	1.09	1.19	1.31
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PMP15	STATION BASIN	23245	0.282	0.58	0.87	0.96	1.09	1.19	1.31
PMP16	STATION BASIN	23245	0.282	0.58	0.87	0.96	1.09	1.19	1.31
PMP17	STATION BASIN	23245	0.282	0.58	0.87	0.96	1.09	1.19	1.31
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PMP20	STATION BASIN	23245	0.282	0.58	0.87	0.96	1.09	1.19	1.31

### GENERAL NOTES:

- AREA CALCULATIONS: PROPOSED IMPERVIOUS AREA = 48,279 SF (1.11 AC) TOTAL IMPERVIOUS AREA = 48,279 SF (1.11 AC)
- THE IMPERVIOUS AREA OF THE SITE WILL NOT INCREASE AS PART OF THIS PROJECT. THE PROPOSED DRAINAGE AREAS WHICH DO NOT PROVIDE ADEQUATE STORMWATER CONVEYANCE, THE NEW SYSTEM IS DESIGNED TO MEET THE DESIGN CAPACITY STANDARD OF THE NEW MEMPHIS & SHELBY COUNTY STORMWATER MANAGEMENT MANUAL. THE DRAINAGE PATTERNS OF THE SITE WILL REMAIN UNCHANGED FOLLOWING THE PROPOSED DRAINAGE IMPROVEMENT.

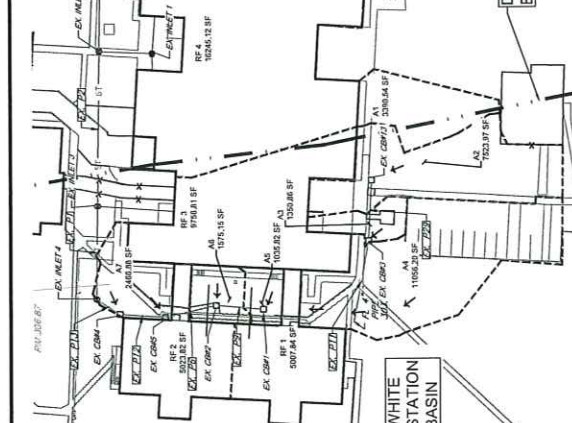


### EXISTING DRAINAGE AREAS

Basin	Description	Area (sq ft)	Peak Flow (cfs)	1% Rainfall Intensity (in/hr)	2% Rainfall Intensity (in/hr)	5% Rainfall Intensity (in/hr)	10% Rainfall Intensity (in/hr)	15% Rainfall Intensity (in/hr)	20% Rainfall Intensity (in/hr)
EX-P1	WHITE STATION BASIN	77278	1.774	0.84	7.58	8.86	10.05	10.98	12.06
EX-P2	SWEETBRIER BASIN	64431	1.478	0.84	6.39	7.35	8.34	9.11	10.00
EX-P3	STATION BASIN	5033.85	0.82	0.74	3.32	3.88	4.40	4.81	5.29
EX-P4	STATION BASIN	38431	0.882	0.74	3.32	3.88	4.40	4.81	5.29
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EX-P14	STATION BASIN	23245	0.282	0.58	0.87	0.96	1.09	1.19	1.31
EX-P15	STATION BASIN	23245	0.282	0.58	0.87	0.96	1.09	1.19	1.31
EX-P16	STATION BASIN	23245	0.282	0.58	0.87	0.96	1.09	1.19	1.31
EX-P17	STATION BASIN	23245	0.282	0.58	0.87	0.96	1.09	1.19	1.31
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### DRAINAGE DESIGN NOTES:

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### PROPOSED DRAINAGE AREAS

Basin	Description	Area (sq ft)	Peak Flow (cfs)	1% Rainfall Intensity (in/hr)	2% Rainfall Intensity (in/hr)	5% Rainfall Intensity (in/hr)	10% Rainfall Intensity (in/hr)	15% Rainfall Intensity (in/hr)	20% Rainfall Intensity (in/hr)
PMP1	WHITE STATION BASIN	77278	1.774	0.84	7.58	8.86	10.05	10.98	12.06
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### DRAINAGE DESIGN NOTES:

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RICHARD ELEMENTARY - DRAINAGE IMPROVEMENT  
OWNER: MEMPHIS & SHELBY COUNTY  
DESIGNER: ABES ENGINEERING  
DATE: 01-31-2020

DATE: 01-31-2020  
DESIGNER: NICHOLAS W. WONG  
DATE: 01-31-2020  
SCALE: 1"=40'





- ### EXISTING FEATURES LEGEND
- BUILDING
  - STORM LINE
  - STORM INLET
  - SANITARY SEWER LINE
  - SANITARY SEWER MANHOLE
  - OVERHEAD ELECTRIC
  - MAJOR CONTOURS
  - MINOR CONTOURS
  - CLEAN CUT
  - POWER POLE
  - OVERHEAD POWER LINE
  - METAL FENCE
  - ASSUMED LINE (NOT CONFIRMED)

- ### PROPOSED FEATURES LEGEND
- STORM LINE
  - STORM MANHOLE
  - SEWER MANHOLE
  - CLEAN CUT

### SANITARY SEWER NOTE

- LOCATION OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND ARE NOT NECESSARILY ACCURATE. THE EXACT LOCATION OF ALL UTILITIES AND/OR UNDERGROUND STRUCTURES PRIOR TO THE INCEPTION OF ANY CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES AND/OR UNDERGROUND STRUCTURES PRIOR TO THE INCEPTION OF ANY CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY OF MEMPHIS, TENNESSEE, AND/OR ANY OTHER AGENCIES INVOLVED IN THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY OF MEMPHIS, TENNESSEE, AND/OR ANY OTHER AGENCIES INVOLVED IN THE PROJECT. PLEASE CALL 311.
- CONTRACTOR SHALL ENSURE UNINTERRUPTED SEWER SERVICE ON EXISTING SEWER AND SERVICE CONNECTIONS BY PROVIDING AMPLIFIED WATER TREATMENT PUMPING AND/OR BYPASSING. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES.
- CONTRACTOR SHALL NOTIFY THE CITY OF MEMPHIS CONSTRUCTION INSPECTION OFFICE AT 48 HOURS A MINIMUM OF 24 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION.
- ALL AREAS & CUT OR FILL WHERE VEGETATION HAS BEEN REMOVED SHALL BE SEEDED, MULCHED, FERTILIZED, AND OR SOOLED AS REQUIRED TO PREVENT EROSION.
- THE CONTRACTOR SHALL VERIFY EXISTING DATA AND REPORT ANY SIGNIFICANT DISCREPANCIES TO THE ENGINEER.
- ALL SANITARY SEWER TO BE CONSTRUCTED AS PER CITY OF MEMPHIS STANDARD CONSTRUCTION SPECIFICATIONS AND STANDARD DETAILS.
- ALL SEWER MANHOLES FOR OPEN AREAS ARE TO BE CONSTRUCTED 1.5' ABOVE PROPOSED GRADE. IN BACKYARDS, MANHOLES ARE TO BE 1.5' ABOVE INITIAL GRADE, 0.5' ABOVE FINAL GRADE.
- 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 B D.I.P. OR CONCRETE UNLESS OTHERWISE NOTED. ALL DUCTILE IRON PIPE SHALL BE POLYETHYLENE GLASS REINFORCED (DIP) WITH PROTECTIVE COATING. ALL OTHER PIPES SHALL BE POLYETHYLENE GLASS REINFORCED (DIP) WITH PROTECTIVE COATING. ALL PIPES SHALL BE CLASS B D.I.P. OR CONCRETE UNLESS OTHERWISE NOTED.
- THE SLOPE OF ALL SANITARY SEWER LINES SHALL BE MAINTAINED AS SHOWN FOR THE MAINTENANCE OF AID PRIVATE DRIVE, FENCES AND YARDS.
- NO TREES, SHRUBS, PERMANENT STRUCTURES OR OTHER UTILITIES (EXCEPT FOR CROSSINGS) WILL BE ALLOWED WITHIN SANITARY SEWER RIGHT-OF-WAY. ALL TREES, SHRUBS, PERMANENT STRUCTURES OR OTHER UTILITIES OR SERVICES MAY OCCUPY SANITARY SEWER RIGHT-OF-WAY WITH PERMITS AND PLANS FOR PROTECTION TO PREVENT DAMAGE TO SANITARY SEWER SYSTEMS.
- ALL SANITARY SEWER MANHOLES IN REVERSE DRAINAGE AREAS SHALL BE CONSTRUCTED AS PER STANDARD DETAILS. ALL SANITARY SEWER MANHOLES IN REVERSE DRAINAGE AREAS SHALL BE CONSTRUCTED AS PER STANDARD DETAILS.
- THE CONTRACTOR SHALL PROVIDE ADEQUATE AND EFFECTIVE EROSION CONTROL AS NECESSARY TO PREVENT ANY SLATON ALONG THE LENGTH OF ALL SEWER PIPE, SERVICE CONNECTIONS, MANHOLES AND STUBS PER STANDARD CONSTRUCTION SPECIFICATIONS AND STANDARD DETAILS (SD-171).

### AC DRAIN NOTE

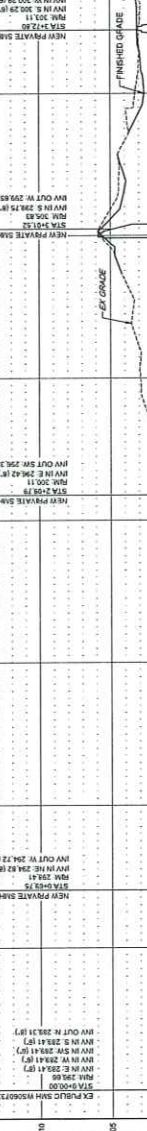
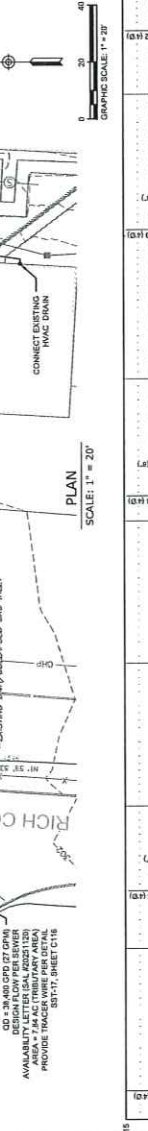
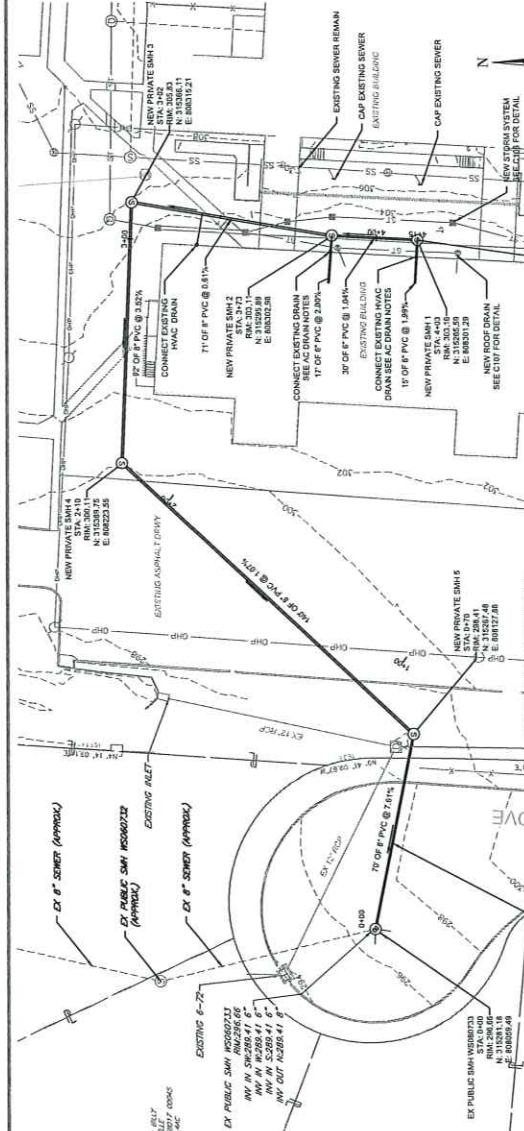
- CONTRACTOR SHALL VERIFY THE LOCATION, SIZE, INVERT ELEVATION, AND CONDITION OF THE EXISTING 4" AC DRAIN PIPE PRIOR TO CONSTRUCTION. ALL EXISTING AC DRAIN PIPES SHALL BE REPORTED TO THE ENGINEER BEFORE PROCEEDING.
- CONNECTION TO THE NEW SANITARY SEWER PIPE SHALL USE A CITY OF MEMPHIS APPROVED TRANSITION COUPLER OR FITTING SUITABLE FOR THE PIPE TYPES AND DIAMETERS SHOWN ON THE PLANS.
- THE EXISTING AC PIPE SHALL BE PREPARED TO ENSURE A WATER TIGHT JOINT TO PREVENT PIPE MOVEMENT DURING CONNECTION.
- CONNECTION ALIGNMENT SHALL MAINTAIN THE DESIGN SLOPE OF THE EXISTING AC PIPE. ALL CONNECTIONS SHALL BE APPROVED BY THE CITY OF MEMPHIS CONSTRUCTION INSPECTION OFFICE PRIOR TO CONSTRUCTION. WITHOUT APPROVAL, ALL CONNECTIONS SHALL BE APPROVED BY THE CONTRACTOR'S ENGINEER.
- CONTRACTOR SHALL ENSURE ALL CONNECTIONS ARE LEAK-FREE AND MEET CITY OF MEMPHIS SANITARY SEWER STANDARD SPECIFICATIONS.

### TN STATE PLANE COORDINATE TABLE

SMID	N	E	(N/SUBUL)	E (S/SUBUL)
EX PUBLIC SAN W382673	0+00.00	31281.1600	00000.0000	00000.0000
NEW PRIVATE SAN 1	0+48.75	31282.4700	00000.0000	00000.0000
NEW PRIVATE SAN 2	2+00.00	31283.7800	00000.0000	00000.0000
NEW PRIVATE SAN 3	3+00.00	31285.0900	00000.0000	00000.0000
NEW PRIVATE SAN 4	3+72.00	31286.4000	00000.0000	00000.0000
NEW PRIVATE SAN 5	4+00.00	31287.7100	00000.0000	00000.0000

### ROW NOTE

- PLEASE BE ADVISED THAT A BILLING PRIMEY (BIL) BY THE MEMPHIS COUNTY OFFICE OF PUBLIC WORKS AND UTILITIES IS REQUIRED FOR ALL CONSTRUCTION WORK WITHIN THE CITY OF MEMPHIS. THE CITY OF MEMPHIS WILL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY OF MEMPHIS, TENNESSEE, AND/OR ANY OTHER AGENCIES INVOLVED IN THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE CITY OF MEMPHIS, TENNESSEE, AND/OR ANY OTHER AGENCIES INVOLVED IN THE PROJECT. PLEASE CALL 311.



### REVISIONS

DATE	DESCRIPTION	APPROVED

### ABES ENGINEERING

ENGINEERS ARCHITECTS

1013-1099

MEMPHIS, TN

OWNER: RICHARD ELEMANTARY - DRAINAGE IMPROVEMENT

ENGINEER: RICHARD ELEMANTARY

DATE: 01-13-2020

SCALE: 1"=20'

DATE: 01-13-2020

SCALE: 1"=20'

### APPROVED FOR CONSTRUCTION

THE ENGINEER HAS REVIEWED THE DRAWINGS AND SPECIFICATIONS AND HAS DETERMINED THAT THEY COMPLY WITH THE REQUIREMENTS OF THE GENERAL CORPORATION ACT OF 1996 AND THE RULES AND REGULATIONS OF THE BOARD OF PROFESSIONAL ENGINEERS AND SURVEYORS OF THE STATE OF TENNESSEE. THE ENGINEER HAS REVIEWED THE DRAWINGS AND SPECIFICATIONS AND HAS DETERMINED THAT THEY COMPLY WITH THE REQUIREMENTS OF THE GENERAL CORPORATION ACT OF 1996 AND THE RULES AND REGULATIONS OF THE BOARD OF PROFESSIONAL ENGINEERS AND SURVEYORS OF THE STATE OF TENNESSEE.

DATE: 01-13-2020

SCALE: 1"=20'

### PRIVATE SEWER PLAN 2

5440 RICH RD

MEMPHIS, TN

DATE: 01-13-2020

SCALE: 1"=20'

DATE: 01-13-2020

SCALE: 1"=20'

### APPROVED FOR CONSTRUCTION

THE ENGINEER HAS REVIEWED THE DRAWINGS AND SPECIFICATIONS AND HAS DETERMINED THAT THEY COMPLY WITH THE REQUIREMENTS OF THE GENERAL CORPORATION ACT OF 1996 AND THE RULES AND REGULATIONS OF THE BOARD OF PROFESSIONAL ENGINEERS AND SURVEYORS OF THE STATE OF TENNESSEE. THE ENGINEER HAS REVIEWED THE DRAWINGS AND SPECIFICATIONS AND HAS DETERMINED THAT THEY COMPLY WITH THE REQUIREMENTS OF THE GENERAL CORPORATION ACT OF 1996 AND THE RULES AND REGULATIONS OF THE BOARD OF PROFESSIONAL ENGINEERS AND SURVEYORS OF THE STATE OF TENNESSEE.

DATE: 01-13-2020

SCALE: 1"=20'

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DATE: 01-13-2020

SCALE: 1"=20'









