

# CITY OF MEMPHIS SHELBY COUNTY, TENNESSEE

## SOUTH BARKSDALE STREET SIPHON & GRAVITY SEWER IMPROVEMENTS JANUARY 2018



LOCATION MAP:



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REVISION				SEWER BASIN NN-2 SHEET 1 OF 1		CO.0
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE				
				DIVISION OF ENGINEERING <b>SARP10</b> <b>S. BARKSDALE ST. SIPHON &amp; GRAVITY SEWER IMPROVEMENTS</b> <b>COVER SHEET</b> LOCATION: S. BARKSDALE STREET MEMPHIS, TENNESSEE		
DIVISION OF ENGINEERING S. BARKSDALE ST. SIPHON & GRAVITY SEWER IMPROVEMENTS DEVELOPER: SARP10 ENGINEER: LDA ENGINEERING			SURVEY DATE: 01/05/2018 DESIGN BY: LDA ENGIN.	BOOK SCALE: 1" = 500' REVIEWED:		



**TYPICAL CONSTRUCTION NOTES:**

- 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 DAMAGE TO ANY UTILITIES ENCOUNTERED WITHIN CONSTRUCTION PERIMETERS. FOR SITE LOCATIONS OF EXISTING UTILITIES INVOLVING M.L.G.&W., SOUTH CENTRAL BELL, AND/OR TEXAS GAS COMPANY, PLEASE CALL 1-800-351-1111 OR 811. FOR SEWER SERVICE LOCATIONS, CALL 901-636-8025.
- CONTRACTOR SHALL ENSURE UNINTERRUPTED SEWER SERVICE ON EXISTING SEWER AND SERVICE CONNECTIONS BY PROVIDING AMPLE TEMPORARY WASTEWATER PUMPING AND/OR BYPASSING.
- CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES.
- CONTRACTOR SHALL NOTIFY THE CITY OF MEMPHIS CONSTRUCTION INSPECTION OFFICE AT 636-2462 A MINIMUM OF 24 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION.
- ALL AREAS IN CUT OR FILL WHERE VEGETATION HAS BEEN REMOVED SHALL BE SEEDED, MULCHED, FERTILIZED, AND/OR SODDED 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. SANITARY SEWER SERVICE CONNECTIONS TO BE INSTALLED AS PER CITY OF MEMPHIS STANDARD SST-16.
- 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.
- 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" MINIMUM BOTH SIDES OF CROSSING. ALL DUCTILE IRON PIPE (D.I.P.) SHALL BE POLYETHYLENE LINED OR SHALL BE TREATED WITH PROTECTO 401 OR APPROVED EQUIVALENT.
- THE CITY OF MEMPHIS SHALL HAVE INGRESS/EGRESS RIGHTS TO USE PRIVATE DRIVES AND YARDS FOR THE PURPOSE OF MAINTAINING ALL PUBLIC SEWER LINES AND SHALL BEAR NO RESPONSIBILITY FOR THE MAINTENANCE OF SAID PRIVATE DRIVES AND YARDS.
- 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 DRIVES AND YARDS EXCEPT FOR CROSSINGS.
- 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.
- THE CONTRACTOR SHALL PROVIDE ADEQUATE AND EFFECTIVE EROSION CONTROL AS NECESSARY TO PREVENT ANDY SILTATION INTO EXISTING DRAINAGE SYSTEM AND/OR ADJACENT PROPERTIES.

**GENERAL SANITARY SEWER NOTES:**

- ALL SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS OF THE CITY OF MEMPHIS, MODIFIED BY SARP10.
- CONNECTIONS TO EXISTING FACILITIES SHALL BE MADE ONLY UNDER THE SUPERVISION OF A REPRESENTATIVE OF SARP10.
- BACKFILL FOR SEWER LINES UNDER STREETS AND DRIVEWAYS IS TO BE COMPACTED CRUSHED STONE MEETING CITY OF MEMPHIS STANDARDS.
- AS-BUILT DRAWINGS MUST BE COMPLETED AND SUBMITTED PRIOR TO ACCEPTANCE OF SEWER LINES BY THE CITY OF MEMPHIS.
- NO OTHER UTILITIES MAY BE INSTALLED IN THE SAME TRENCH AS THE SEWER LINES OR LATERAL SERVICE LINES.
- CONTRACTOR SHALL DETERMINE "LIVE OR ABANDONED" STATUS OF ALL EXISTING SERVICES CONNECTED TO MAIN LINE SEGMENTS AS DESIGNATED FOR REPLACEMENT PRIOR TO RE-CONNECTION. ABANDONED OR INACTIVE SERVICES ARE NOT TO BE RECONNECTED TO THE NEW LINE UNLESS DIRECTED BY THE OWNER'S REPRESENTATIVE.
- CONTRACTOR SHALL RECONNECT TO EXISTING SEWER LINES IN CONJUNCTION WITH NEW MANHOLE INSTALLATION.
- CONTRACTOR SHALL CONFER WITH PROPERTY OWNER TO CONFIRM INSTALLATION OF CONCRETE RING AROUND CLEAN OUT ASSEMBLY, AND/OR STANDARD SEWER CLEANOUT COVER.
- BACKFILL AROUND CLEAN OUT ASSEMBLY MUST BE PLACED AND COMPACTED TO FINAL GRADE TO MATCH EXISTING PROPERTY AND ADJOINING PROPERTY.
- CONTRACTOR SHALL ENSURE UNINTERRUPTED SEWER SERVICES ON EXISTING SEWER AND SERVICE CONNECTIONS BY PROVIDING AMPLE TEMPORARY WASTEWATER PUMPING AND/OR BYPASSING.
- THE CONTRACTOR SHALL VERIFY EXISTING DATA AND REPORT ANY SIGNIFICANT DISCREPANCIES TO THE ENGINEER.
- MANHOLES LOCATED WITHIN 100-YEAR FLOOD PLAIN SHOULD EXTEND MINIMUM OF 12" (1'-0") ABOVE THE 100-YEAR FLOOD LEVEL REGARDLESS OF WHETHER THE MANHOLE IS IN RESIDENTIAL, COMMERCIAL, OR RURAL PROPERTY. AS AN ALTERNATIVE, A MANHOLE LOCATED WITHIN THE 100-YEAR FLOOD PLAIN MUST HAVE A SEALED COVER AND VENT STACK IF IT EXTENDS LESS THAN THE MINIMUM 12" ABOVE THE 100-YEAR FLOOD LEVEL. WITHIN THIS ALTERNATIVE THE VENT STACK COULD BE LIMITED TO EVERY OTHER MANHOLE IF LOCATED WITHIN A RESIDENTIAL AREA. ANY ALTERNATIVES OTHER THAN WHAT IS SHOWN ON THE PLANS REQUIRES APPROVAL FROM SARP10 PRIOR TO CONSTRUCTION.

**GENERAL NOTES:**

- THE CONTRACTOR SHALL CONTACT THE TENNESSEE ONE-CALL CENTER AT 811 PRIOR TO DIGGING.
- THE CONTRACTOR SHALL MAINTAIN TRAFFIC AND PROVIDE ADVANCE WARNING SIGNS AND TEMPORARY TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE CITY OF MEMPHIS AND TDOT REQUIREMENTS AND THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN ADVANCE WARNING SIGNS AND TEMPORARY TRAFFIC CONTROL SIGNS AND MARKINGS AS REQUIRED BY THE MUTCD THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN IN ACCORDANCE WITH THE CITY OF MEMPHIS AND TDOT REQUIREMENTS AND THE LATEST EDITION OF THE MUTCD PRIOR TO ANY CONSTRUCTION ACTIVITIES FOR OWNER APPROVAL.
- THE CONTRACTOR SHALL MAINTAIN VEHICULAR AND PEDESTRIAN ACCESS TO RESIDENTS AND BUSINESSES THROUGHOUT CONSTRUCTION.
- REPLACE CONCRETE AND ASPHALT DRIVEWAYS BY STRAIGHT LINEAR SAW CUT 12 INCHES OUTSIDE THE DISTURBED TRENCH AREA ON PROPERTY SIDE. REPLACE TO EDGE OF PAVEMENT OF EXISTING CITY STREET AND/OR COUNTY ROAD ON ROADWAY SIDE. SHOULD CUTS FALL WITHIN 2 FEET OF AN EXISTING JOINT, REPLACE TO JOINT.
- EXISTING UTILITY SERVICE LINES, METERS, ETC. DAMAGED DURING CONSTRUCTION ARE TO BE REPAIRED OR REPLACED IN ACCORDANCE WITH THE GOVERNING UTILITY REQUIREMENTS.
- THESE PLANS ARE BASED ON AN ACTUAL FIELD SURVEY AND LAYOUT OF THE SEWER SYSTEM. ANY DISCREPANCIES BETWEEN THE PLAN LOCATIONS AND THE ACTUAL FIELD LOCATIONS SHALL BE IMMEDIATELY COMMUNICATED TO THE DESIGN ENGINEER.
- CONTRACTOR TO REMOVE EXISTING CULVERTS AND INSTALL NEW CULVERTS UNDER DRIVEWAYS AS REQUIRED FOR NEW SEWER LINE INSTALLATION. CULVERT REPLACEMENT COST TO BE INCLUDED IN UNIT PRICE OF NEW SEWER LINE.
- WATER LINES AND OTHER UTILITIES SHOWN FOR INFORMATIONAL PURPOSES. VERIFY LOCATION PRIOR TO CONSTRUCTION TO PREVENT DAMAGE TO EXISTING UTILITIES.
- REPLACEMENT OF CONCRETE DITCHES SHALL BE IN ACCORDANCE WITH TDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
- EXISTING PIPE SIZES, MATERIALS, MANHOLE DEPTHS, AND LATERAL LOCATIONS TAKEN FROM THE CITY OF MEMPHIS DRAWINGS AND FIELD INFORMATION.
- CONTRACTOR TO VERIFY MANHOLE ANGLES, PIPE TYPES AND SIZES, AND, INVERT ELEVATIONS PRIOR TO ORDERING NEW PRECAST MANHOLES.
- CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL SEWER LATERALS AND RECONNECT TO NEW SEWER LINE AS NECESSARY.
- LOCATION OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND 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 ASSUME FULL RESPONSIBILITY FOR DAMAGE TO ANY UTILITIES ENCOUNTERED WITHIN CONSTRUCTION PERIMETERS. FOR SITE LOCATION OF EXISTING UTILITIES INVOLVING M.L.G.&W., SOUTH CENTRAL BELL, AND/OR TEXAS GAS COMPANY, PLEASE CALL 1-800-351-1111.
- CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES.
- THE CONTRACTOR SHALL VERIFY EXISTING DATA AND REPORT ANY SIGNIFICANT DISCREPANCIES TO THE ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AS NEEDED TO PROPERLY AND SAFELY COMPLETE THE WORK.
- ALL GRADING WORK SHALL BE PERFORMED IN SUCH A MANNER THAT ADJACENT PROPERTIES ARE NOT DAMAGED OR ADVERSELY AFFECTED.
- CONTRACTOR SHALL EPOXY COAT ALL PROPOSED MANHOLES.
- THIS PROPERTY IS LOCATED WITHIN AN AREA DESIGNATED AS "ZONE X UNDER OTHER AREAS" AS DETERMINED FROM F.E.M.A. FLOOD INSURANCE RATE MAPS COMMUNITY RATE MAPS COMMUNITY PANEL NUMBERS 47157C0260F DATED SEPTEMBER 28, 2007 AND 47157C0430F DATED SEPTEMBER 28, 2007.

**EROSION AND SEDIMENT CONTROL NOTES:**

- CONSTRUCTION ENTRANCES (TO OFFICE OR LAY DOWN AREA, AND TO WORK AREAS) TO BE MINIMUM 6" DEPTH T.D.O.T. NO. 1 OR NO. 2 STONE.
- INSTALL WATLES OR SILT FENCE AS DICTATED ON THE EROSION CONTROL PLANS. SEE DETAILS FOR MORE INFORMATION.
- ALL STOCK PILE AREAS TO BE PROTECTED BY A COMBINATION OF WATLES AND SILT FENCE.
- INSTALL INLET PROTECTION DEVICES AT STORM SEWER INLETS PRIOR TO CONSTRUCTION. SEE PLANS FOR LOCATIONS.
- ALL NEWLY CUT OR FILL AREAS LACKING ADEQUATE VEGETATION SHALL BE FERTILIZED, MULCHED, SEEDED, AND/OR SODDED TO EFFECTIVELY CONTROL SOIL EROSION.
- A SPECIFIC INDIVIDUAL SHALL BE DESIGNATED TO BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS ON EACH PROJECT SITE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SOIL EROSION CONTROL MEASURES AS NOTED ON THE PLANS, AS REQUESTED BY THE OWNER DURING CONSTRUCTION, AND AS NECESSARY TO PREVENT SEDIMENT FROM LEAVING THE SITE. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR SATISFYING THE REQUIREMENTS OF THE STATE OF TENNESSEE DEPARTMENT OF WATER POLLUTION CONTROL AS SET FORTH IN THE 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 RIGHT-OF-WAY. SEDIMENT FENCE SHALL BE INSTALLED AS DIRECTED. THE CONTRACTOR SHALL MAINTAIN A LOG OF ALL MAINTENANCE ACTIVITIES FOR THE EROSION CONTROL ELEMENTS AS REQUIRED BY THE STATE OF TENNESSEE DEPARTMENT OF WATER POLLUTION CONTROL.
- A COPY OF THE EROSION CONTROL PLAN MUST BE AVAILABLE ON SITE FOR THE DWPC INSPECTOR ON REQUEST.
- EROSION AND SEDIMENT CONTROL MEASURE 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.
- 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 MAY BE NECESSARY. THE PERMITTEE SHALL MAINTAIN RECORDS OF INSPECTION CHECKS, MAINTENANCE AND REPAIRS.

**CONSTRUCTION SEQUENCE NOTES:**

- CONSTRUCTION AND IMPLEMENTATION OF EROSION AND SEDIMENT CONTROLS AS SHOWN ON THE CONSTRUCTION PLANS;
- MODIFICATION OF EXISTING UTILITIES, IF NECESSARY;
- EXCAVATION OF TRENCH AND PIPE INSTALLATION. NO MORE THAN 500'LF OF CONSTRUCTION DISTURBANCE WILL TAKE PLACE AT A TIME;
- INSTALLATION OF PIPES, VALVES, AND APPURTENANCES IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS;
- BACKFILL OF PIPE AND INITIAL CLEANUP, TEMPORARY STABILIZATION WITH SEEDING AND STRAW;
- FINAL CLEANUP;
- FINAL STABILIZATION WITH SEEDING/STRAWING;
- REMOVAL OF EROSION AND SEDIMENT CONTROLS.

**TUNNELING, BORING, AND JACKING NOTES:**

- SEWER PIPE WILL BE CONSTRUCTED BY TUNNELING, BORING, OR JACKING, ONLY AT THOSE LOCATIONS SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER. CARRIER PIPE FOR THESE APPLICATIONS WILL BE OF THE TYPE SPECIFIED IN THE PLANS AND SPECIFICATIONS. GRADE AND ALIGNMENT WILL BE MAINTAINED THROUGH ALL LINER PIPES. THE CONTRACTOR WILL SUBMIT SHOP DRAWINGS DETAILING THE METHOD, EQUIPMENT AND MATERIAL TO BE USED FOR TUNNELING, BORING, AND JACKING OPERATIONS TO THE ENGINEER FOR REVIEW AND APPROVAL. THE APPROVAL BY THE ENGINEER OF ANY DRAWINGS OR PLANS WILL NOT IN ANY WAY BE DEEMED TO RELEASE THE CONTRACTOR FROM FULL RESPONSIBILITY FOR COMPLETE AND ACCURATE PERFORMANCE OF THE WORK ACCORDING TO THE CONTRACT DRAWINGS AND SPECIFICATIONS.
- WHEN TUNNELING, BORING, OR JACKING IS REQUIRED UNDER RAILROADS, HIGHWAYS, STREETS, OR OTHER FACILITIES, CONSTRUCTION WILL NOT INTERFERE WITH OPERATION OF THE RAILROAD, STREET, HIGHWAY, OR OTHER FACILITY AND WILL NOT WEAKEN OR DAMAGE ANY EMBANKMENT OR STRUCTURE. NO WATER SHALL BE INTRODUCED INTO ANY TUNNELING, BORING, OR JACKING EXCAVATION THAT LIES WITHIN CITY, STATE, OR RAILROAD RIGHT-OF-WAY. A BORING THAT USES A BENTONITE SLURRY MAY BE ALLOWED AT THE DISCRETION OF THE ENGINEER AND THE OWNER OF THE RIGHT-OF-WAY.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTION OF UTILITIES AND SEWERS AGAINST DAMAGE BY HIS WORK. IF ANY UTILITY ABOVE OR NEAR THE TUNNEL IS ENDANGERED OR HAS BEEN DAMAGED BECAUSE OF THE CONSTRUCTION OPERATIONS, THE UTILITY OWNER WILL BE NOTIFIED IMMEDIATELY AND WILL BE GIVEN ACCESS TO THE AREA TO CARRY OUT ALL NECESSARY REPAIRS TO SUCH UTILITIES. IF ANY SEWERS ARE DAMAGED, IT WILL BE THE REASONABILITY OF THE CONTRACTOR TO MAKE THE NECESSARY REPAIRS. IF ANY PUBLIC OR PRIVATE PROPERTY IS ENDANGERED OR HAS BEEN DAMAGED DUE TO TUNNELING, BORING, OR JACKING OPERATIONS. IT WILL BE REPAIRED AT THE CONTRACTORS EXPENSE. ALL COST AND EXPENSE TO THE CONTRACTOR OF CARRYING OUT THE ABOVE REQUIREMENTS WILL BE CONSIDERED INCLUDED IN THE BID PRICES FOR THE COMPLETED SEWER INSTALLATION.
- ACCESS PITS WILL BE OF SUFFICIENT SIZE TO PROVIDE AMPLE WORKING SPACE FOR THE JACKING OR BORING EQUIPMENT, REACTION BLOCKS, BRACING, LINER PLATES, SPOIL REMOVAL, AND 2 SECTIONS OF PIPE. PROVISIONS WILL BE MADE FOR THE ERECTION OF GUIDE RAILS IN THE BOTTOM OF THE PIT WHERE APPLICABLE. IF DRAINAGE IS TO BE DISCHARGED FROM THE JACKING PIT, A COLLECTION SUMP WILL BE PROVIDED. WHEREVER END TRENCHES ARE CUT IN THE SIDES OF THE EMBANKMENT OR BEYOND IT, SUCH WORK WILL BE SHEETED SECURELY AND BRACED SATISFACTORILY TO PREVENT EARTH CAVING.
- THE CONTRACTOR WILL FURNISH AND OPERATE ALL NECESSARY PUMPING EQUIPMENT OF AMPLE CAPACITY AND ARRANGE TO KEEP TUNNELS AND SHAFTS FREE OF WATER DURING CONSTRUCTION AND TO DISPOSE OF WATER SATISFACTORILY. DURING PLACEMENT OF CONCRETE, DRAINAGE AND PUMPING WILL BE ARRANGED SO CONCRETE IS PLACED IN DRY CONDITIONS. NO WATER WILL FLOW OVER THE CONCRETE UNTIL IT HAS SET AND WILL NOT BE DAMAGED.

- EXIST. SANITARY SEWER MANHOLE ○
- EXIST. SEWER CLEANOUT ○ C.O.
- EXIST. WATER METER ○ W.M.
- EXIST. GAS METER ○ G.M.
- EXIST. SEWER VALVE ▷▷ S.V.
- EXIST. SEWER VALVE ▷▷ W.V.
- EXIST. SEWER VALVE ▷▷ G.V.
- EXIST. FIRE HYDRANT ASSEMBLY ◇◇◇
- EXIST. BLOW-OFF VALVE ▷▷▷
- EXIST. AIR RELEASE VALVE ◇◇◇
- EXIST. REDUCER ◁
- EXIST. UNDERGROUND TELEPHONE BOX □ UG/T BOX
- EXIST. POWER POLE ○ P.P.
- EXIST. LIGHT POLE ○ L.P.
- EXIST. CATCH BASIN □ C.B.
- EXIST. IRON PIN FOUND ● I.P.F.
- EXIST. MAIL BOX □ M.B.
- EXIST. SIGN ○
- EXIST. TOP OF BANK T.O.B.
- EXIST. BOTTOM OF BANK B.O.B.
- EXIST. RIP-RAP [Pattern]
- EXIST. PROPERTY LOT NUMBERS ③

- NEW SANITARY SEWER MANHOLE ●
- NEW SEWER CLEANOUT ○ C.O.
- NEW WATER METER ● W.M.
- NEW GAS METER ● G.M.
- NEW SEWER VALVE ▷▷ S.V.
- NEW SEWER VALVE ▷▷ W.V.
- NEW SEWER VALVE ▷▷ G.V.
- NEW FIRE HYDRANT ASSEMBLY ◇◇◇
- NEW BLOW-OFF VALVE ▷▷▷
- NEW AIR RELEASE VALVE ◇◇◇
- NEW REDUCER ◁
- NEW UNDERGROUND TELEPHONE BOX □ UG/T BOX
- NEW POWER POLE ○ P.P.
- NEW LIGHT POLE ○ L.P.
- NEW CATCH BASIN □ C.B.
- NEW IRON PIN FOUND ● I.P.F.
- NEW MAIL BOX □ M.B.
- NEW SIGN ○
- NEW PERMANENT UTILITY EASEMENT [Pattern]
- NEW TEMPORARY CONSTRUCTION EASEMENT [Pattern]
- NEW RIP-RAP [Pattern]
- NEW PROPERTY LOT NUMBERS ③

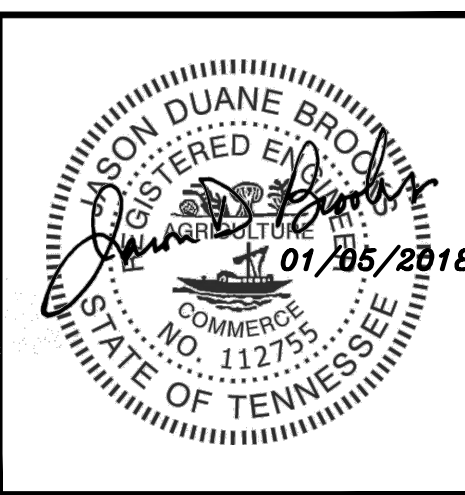
**LEGEND**

- EXIST. PAVED ROADWAY OR DRIVEWAY [Symbol]
- EXIST. GRAVEL ROADWAY OR DRIVEWAY [Symbol]
- EXIST. RIGHT-OF-WAY [Symbol]
- EXIST. PROPERTY LINE [Symbol]
- EXIST. STORM CULVERT [Symbol]
- EXIST. FENCE [Symbol]
- EXIST. STREAM/DITCH [Symbol]
- EXIST. EASEMENT [Symbol]
- EXIST. WATER LINE [Symbol]
- EXIST. SANITARY SEWER LINE [Symbol]
- EXIST. SEWER FORCE MAIN LINE [Symbol]
- EXIST. OVERHEAD ELECTRICAL [Symbol]
- EXIST. UNDERGROUND ELECTRICAL [Symbol]
- EXIST. OVERHEAD TELEPHONE [Symbol]
- EXIST. UNDERGROUND TELEPHONE [Symbol]
- EXIST. OVERHEAD ELEC./TELE/CABLE [Symbol]
- EXIST. UNDERGROUND FIBER OPTIC [Symbol]
- EXIST. GAS LINE [Symbol]
- EXIST. TREETLINE [Symbol]
- EXIST. GUARDRAIL [Symbol]
- EXIST. MAJOR CONTOURS [Symbol]
- EXIST. MINOR CONTOURS [Symbol]

- NEW PAVED ROADWAY OR DRIVEWAY [Symbol]
- NEW GRAVEL ROADWAY OR DRIVEWAY [Symbol]
- NEW RIGHT-OF-WAY [Symbol]
- NEW PROPERTY LINE [Symbol]
- NEW STORM CULVERT [Symbol]
- NEW FENCE [Symbol]
- NEW STREAM/DITCH [Symbol]
- NEW EASEMENT [Symbol]
- NEW WATER LINE [Symbol]
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- NEW TREETLINE [Symbol]
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- NEW MAJOR CONTOURS [Symbol]
- NEW MINOR CONTOURS [Symbol]

- NEW SILT FENCE [Symbol]
- NEW WATLES/SEDIMENT TUBES [Symbol]
- NEW DISTURBED AREA LIMITS [Symbol]
- NEW SILT FENCE [Symbol]
- NEW WATLES/SEDIMENT TUBES [Symbol]
- NEW EROSION CONTROL BLANKET [Symbol]
- NEW BUFFER ZONE [Symbol]
- NEW INLET PROTECTION [Symbol]
- NEW SEDIMENT TRAP [Symbol]
- NEW OUTLET PROTECTION [Symbol]
- NEW RIP RAP FILTER RING [Symbol]
- NEW CONSTRUCTION ENTRANCE [Symbol]
- NEW CHECK DAM [Symbol]
- NEW DIVERSION DITCH [Symbol]
- NEW CHECK DAM [Symbol]
- NEW SURVEY CONTROL POINT [Symbol]
- NEW SURVEY BENCHMARK [Symbol]
- ABANDON SANITARY GRAVITY SEWER LINE [Symbol]
- ABANDON SEWER FORCE MAIN LINE [Symbol]
- ABANDON SANITARY SEWER MANHOLE [Symbol]

REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE

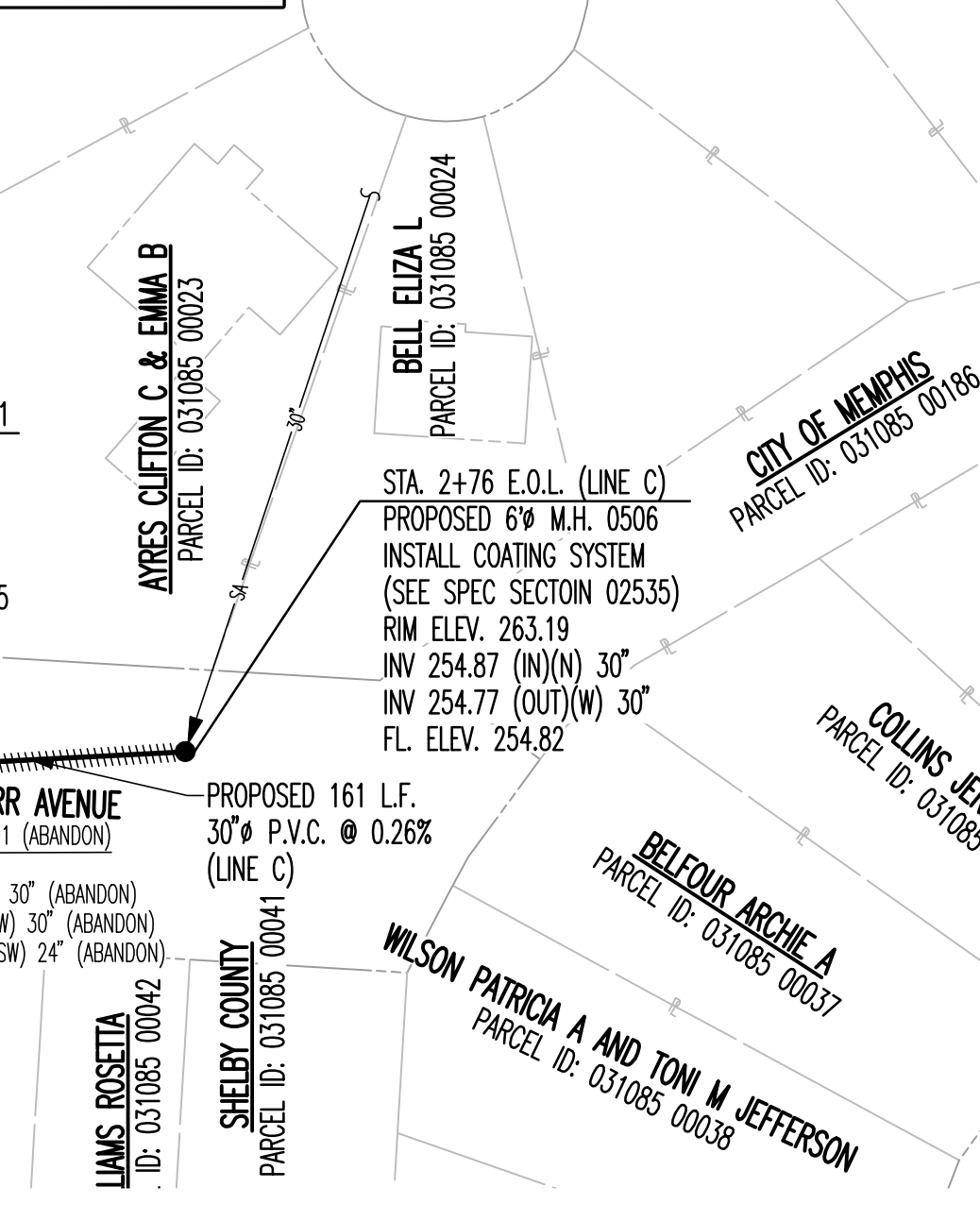
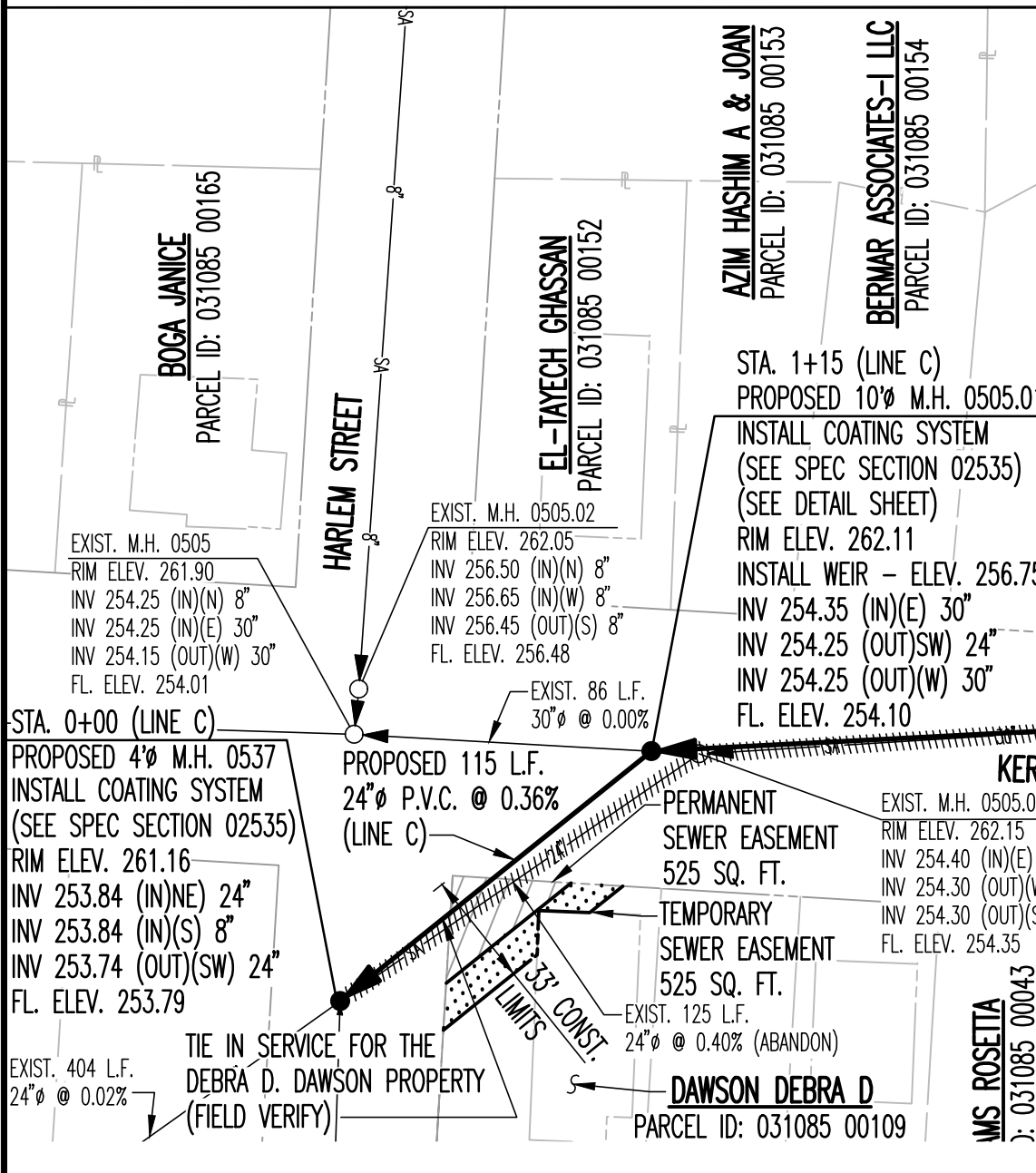
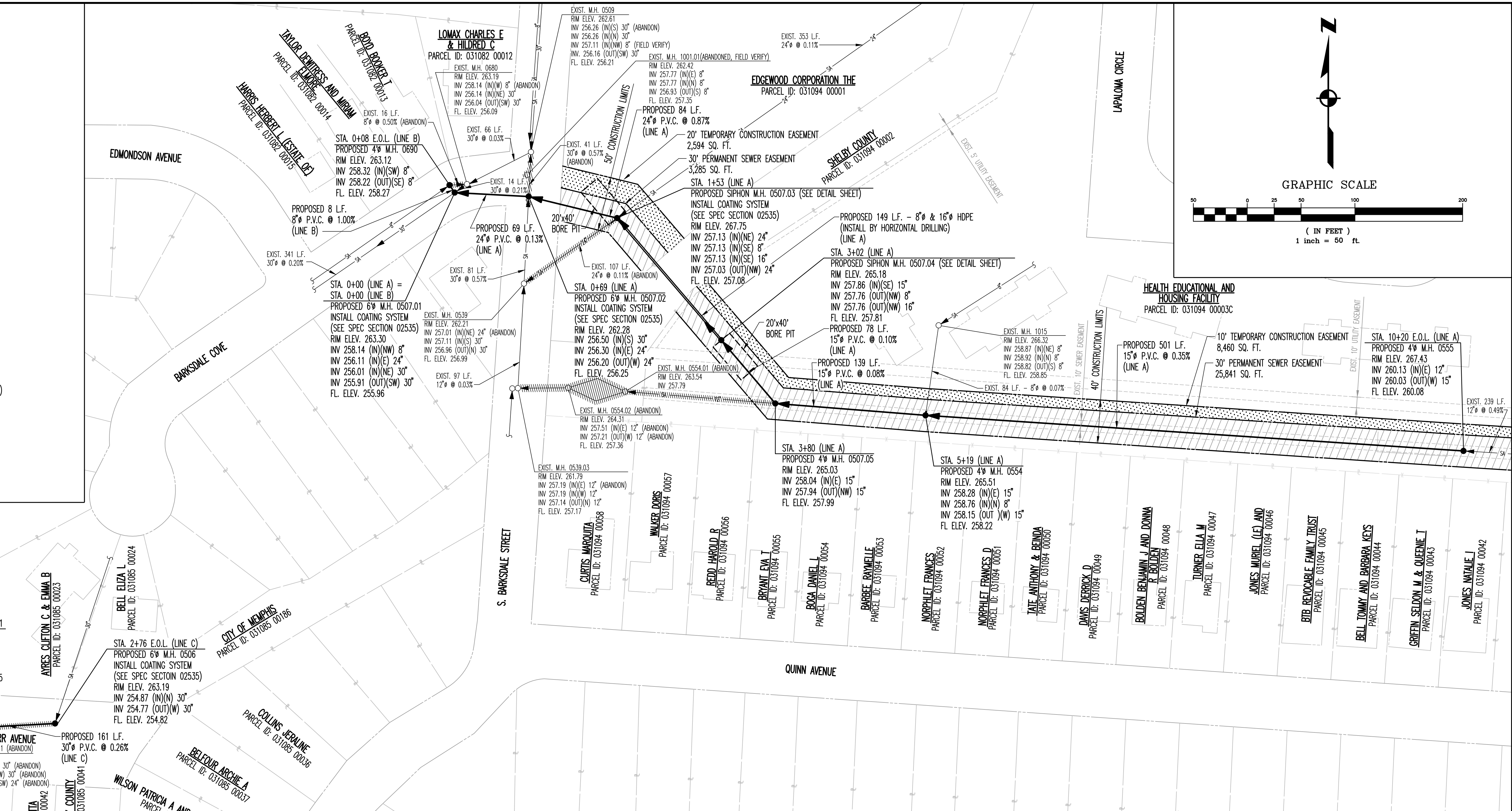


DIVISION OF ENGINEERING  
 S. BARKDALE ST. SIPHON & GRAVITY SEWER IMPROVEMENTS  
 DEVELOPER: SARP10  
 ENGINEER: LDA ENGINEERING

<b>SEWER BASIN NN-2 SHEET 1 OF 1</b>		<b>C0.1</b>
DIVISION OF ENGINEERING <b>SARP10</b> <b>S. BARKDALE ST. SIPHON &amp; GRAVITY</b> <b>SEWER IMPROVEMENTS</b> <b>GENERAL NOTES AND LEGEND</b> LOCATION: S. BARKDALE STREET MEMPHIS, TENNESSEE		
SURVEY DESIGN BY	DATE	BOOK
LDA ENGIN.	01/05/2018	NO SCALE
DEPUTY CITY ENGINEER	DATE	CITY ENGINEER



- TYPICAL CONSTRUCTION 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 DAMAGE TO ANY UTILITIES ENCOUNTERED WITHIN CONSTRUCTION PERIMETERS. FOR SITE LOCATIONS OF EXISTING UTILITIES INVOLVING M.L.G.&W., SOUTH CENTRAL BELL, AND/OR TEXAS GAS COMPANY, PLEASE CALL 1-800-351-1111 OR 811. FOR SEWER SERVICE LOCATIONS, CALL 901-636-8025.
  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 636-2462, 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 STANDARD CONSTRUCTION SPECIFICATIONS. SANITARY SEWER SERVICE 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" MINIMUM BOTH SIDES OF CROSSING. ALL DUCTILE IRON PIPE (D.I.P.) 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 DRIVES AND 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 DRIVES 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 ANDY SILTATION INTO EXISTING DRAINAGE SYSTEM AND/OR ADJACENT PROPERTIES.

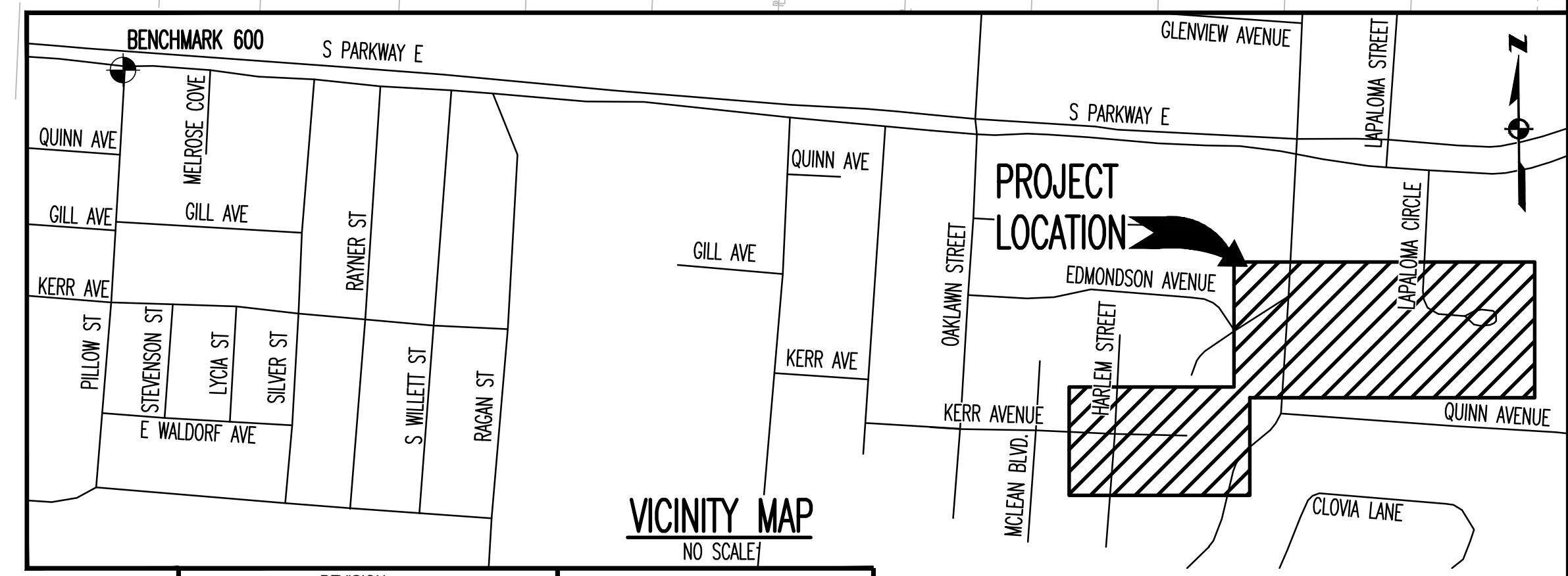


Name	Size (in)	Material	DS Manhole	US Manhole	DS Invert (ft) / Depth (ftm to Inv)	US Invert (ft) / Depth (ftm to Inv)	Length (ft)	% Slope	Qc (gpm)	Qd (gpm)	Acres
1 (LINE A)	24	P.V.C.	PROPOSED 6" M.H. 0507.01	PROPOSED 6" M.H. 0507.02	256.11/7.39	256.20/6.08	69.00	0.13	3,660	3,760	274
2 (LINE A)	24	P.V.C.	PROPOSED 6" M.H. 0507.02	PROPOSED M.H. 0507.03	256.30/6.08	257.03/10.72	84.00	0.87	9,471	3,760	254
3 (LINE A)	8	HDPE	PROPOSED M.H. 0507.03	PROPOSED M.H. 0507.04	257.13/10.72	257.76/7.42	149.00	-	**	480	244
4 (LINE A)	16	HDPE	PROPOSED M.H. 0507.03	PROPOSED M.H. 0507.04	257.13/10.72	257.76/7.42	149.00	-	**	480	244
5 (LINE A)	15	P.V.C.	PROPOSED M.H. 0507.04	PROPOSED 4" M.H. 0507.05	257.86/7.42	257.94/7.09	78.00	0.10	920	480	244
6 (LINE A)	15	P.V.C.	PROPOSED 4" M.H. 0507.05	PROPOSED 4" M.H. 0554	258.04/7.09	258.15/7.36	139.00	0.08	820	480	244
7 (LINE A)	15	P.V.C.	PROPOSED 4" M.H. 0554	PROPOSED 4" M.H. 0555	258.28/7.36	260.03/7.40	501.00	0.35	1,720	480	244
8 (LINE B)	8	P.V.C.	PROPOSED 6" M.H. 0507.01	PROPOSED 4" M.H. 0690	258.14/7.69	258.22/4.90	8.00	1.00	540	150	5
10 (LINE C)	24	P.V.C.	PROPOSED 4" M.H. 0537	PROPOSED 10" M.H. 0505.01	253.84/7.42	254.25/7.86	115.00	0.36	6,090	3,920	907
11 (LINE C)	30	P.V.C.	PROPOSED 10" M.H. 0505.01	PROPOSED 6" M.H. 0506	254.35/7.86	254.77/8.42	161.00	0.26	9,390	3,920	907

\*\* SIPHON FLOWS IN A PRESSURE SCENARIO; CAPACITY IS VELOCITY DEPENDANT. SIPHON HAS BEEN SIZED TO PROVIDE MINIMUM VELOCITY OF 3 FT./SEC. IN DESIGN FLOW SCENARIO.

NOTES:  
 1. B.M. THE CITY BENCHMARK USED FOR THIS PROJECT IS CITY BENCHMARK 600, LOCATED AT THE INTERSECTION OF SOUTH PARKWAY AND PULLOW STREET. THE BENCHMARK IS LOCATED ON THE SOUTHWEST CORNER OF THE INTERSECTION. THE MARK IS A BRASS CAP/NIPPLE ON TOP OF A 4"x4" CONCRETE POST. THE MARK IS 3.2' WEST OF THE BACK OF SIDEWALK, AND 4.2' SOUTH OF THE BACK OF SIDEWALK. ELEVATION = 271.08  
 2. THIS PROPERTY IS LOCATED WITHIN AN AREA DESIGNATED AS "ZONE X UNDER OTHER AREAS" AS DETERMINED FROM F.E.M.A. FLOOD INSURANCE RATE MAPS COMMUNITY RATE MAPS COMMUNITY PANEL NUMBERS 4715/0220F DATED SEPTEMBER 28, 2007 AND 4715/00430F DATED SEPTEMBER 28, 2007.

**LEGEND**  
 [Symbol] EXISTING SANITARY SEWER TO BE ABANDONED



REVISION

ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE

**PROJECT LOCATION**

**SEWER BASIN NN-2 SHEET 1 OF 1**

**C0.2**

DIVISION OF ENGINEERING  
**SARP10**  
**S. BARKSDALE ST. SIPHON & GRAVITY SEWER IMPROVEMENTS**  
**SEWER PLAN**  
 LOCATION: S. BARKSDALE STREET  
 MEMPHIS, TENNESSEE

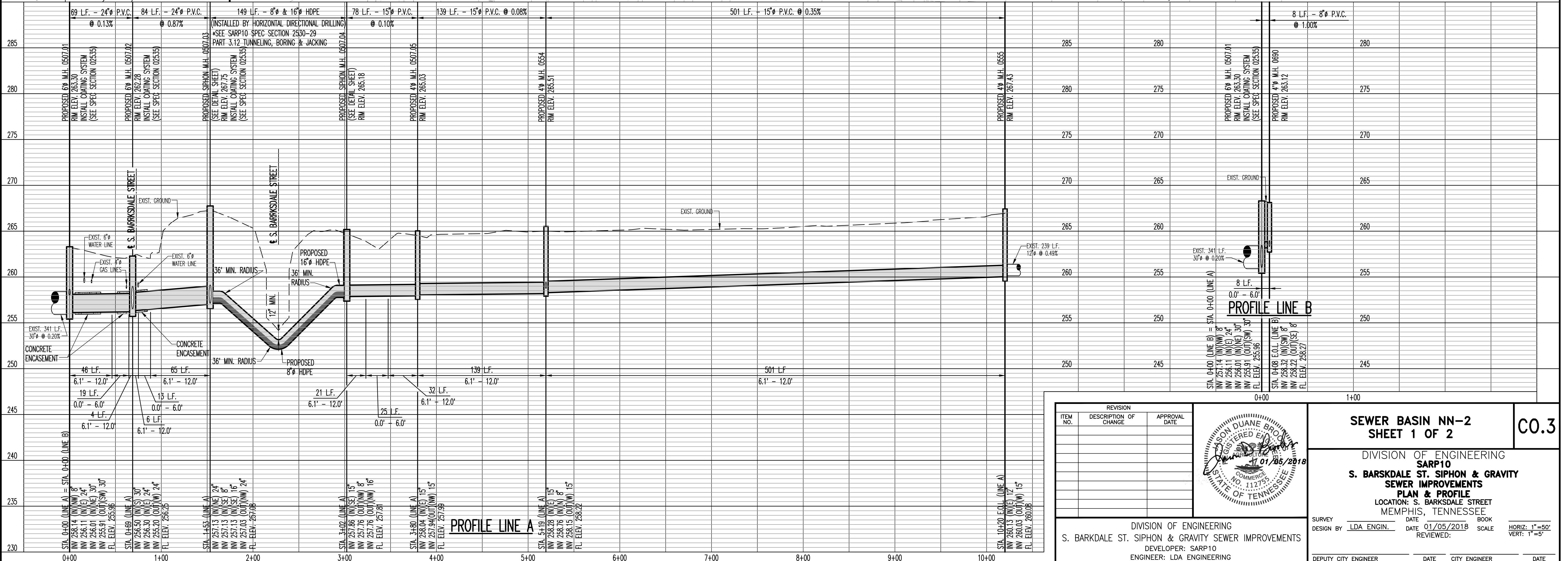
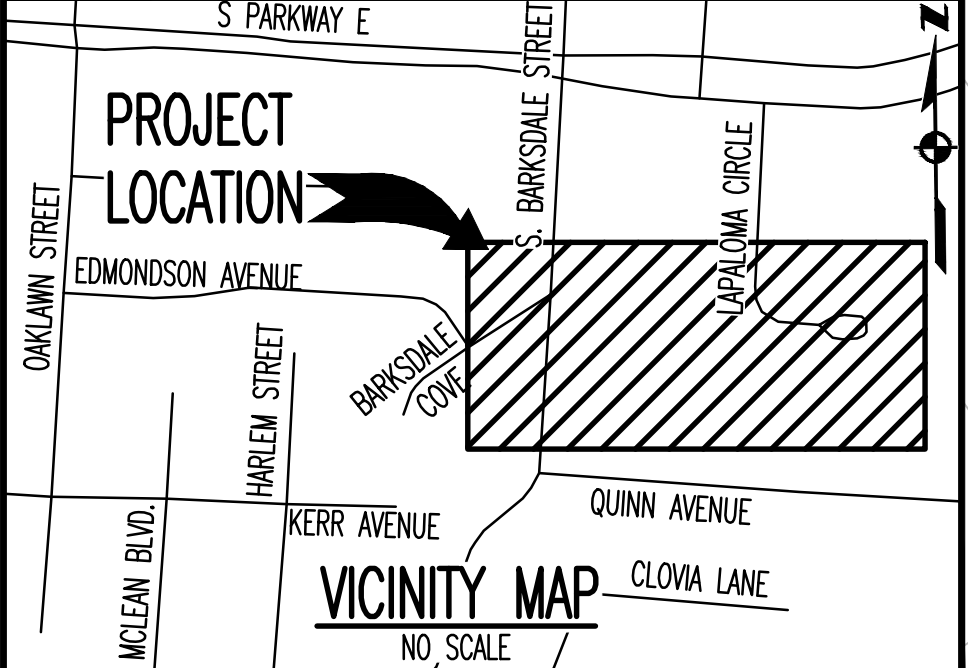
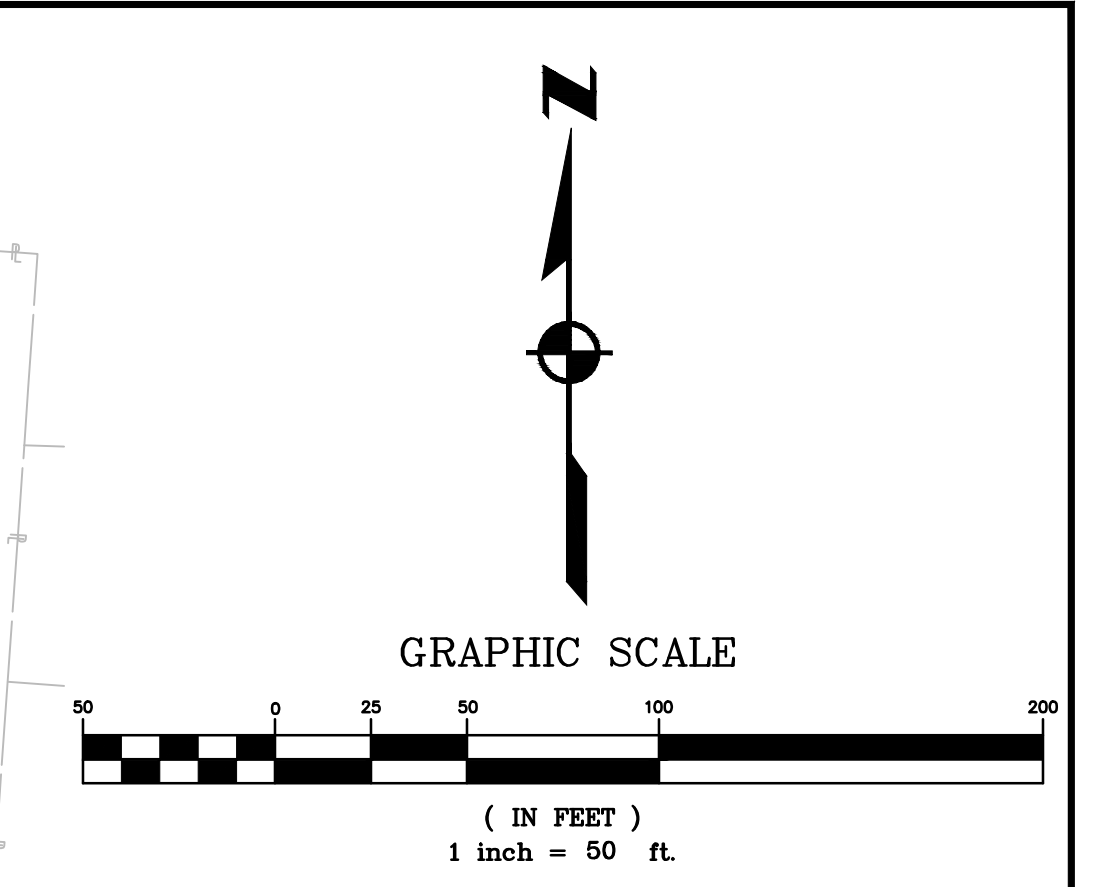
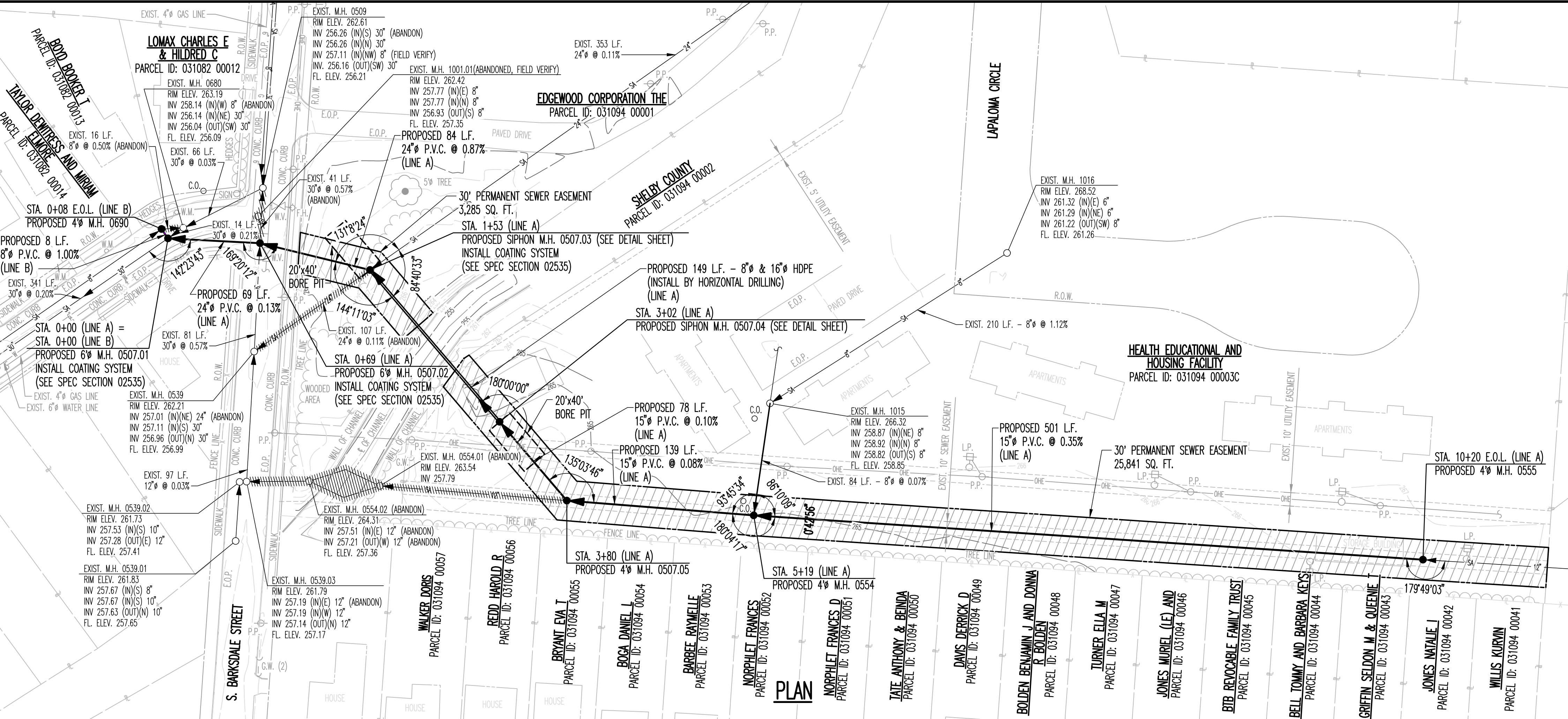
DIVISION OF ENGINEERING  
**S. BARKSDALE ST. SIPHON & GRAVITY SEWER IMPROVEMENTS**  
 DEVELOPER: SARP10  
 ENGINEER: LDA ENGINEERING

SURVEY DESIGN BY: LDA ENGIN. DATE: 01/05/2018 BOOK SCALE: 1"=50'

DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE



- TYPICAL CONSTRUCTION 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 DAMAGE TO ANY UTILITIES ENCOUNTERED WITHIN CONSTRUCTION PERIMETERS. FOR SITE LOCATIONS OF EXISTING UTILITIES INVOLVING M.G.A.W., SOUTH CENTRAL BELL, AND/OR TEXAS GAS COMPANY, PLEASE CALL 1-800-351-1111 OR 811. FOR SERVICE LOCATIONS, CALL 901-636-8025.
  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 636-2462, A MINIMUM OF 24 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION.
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REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE

REVISION OF ENGINEERING  
S. BARKSDALE ST. SIPHON & GRAVITY SEWER IMPROVEMENTS  
DEVELOPER: SARP10  
ENGINEER: LDA ENGINEERING

**SEWER BASIN NN-2**  
**SHEET 1 OF 2**

DIVISION OF ENGINEERING  
**SARP10**  
**S. BARKSDALE ST. SIPHON & GRAVITY**  
**SEWER IMPROVEMENTS**  
**PLAN & PROFILE**  
LOCATION: S. BARKSDALE STREET  
MEMPHIS, TENNESSEE

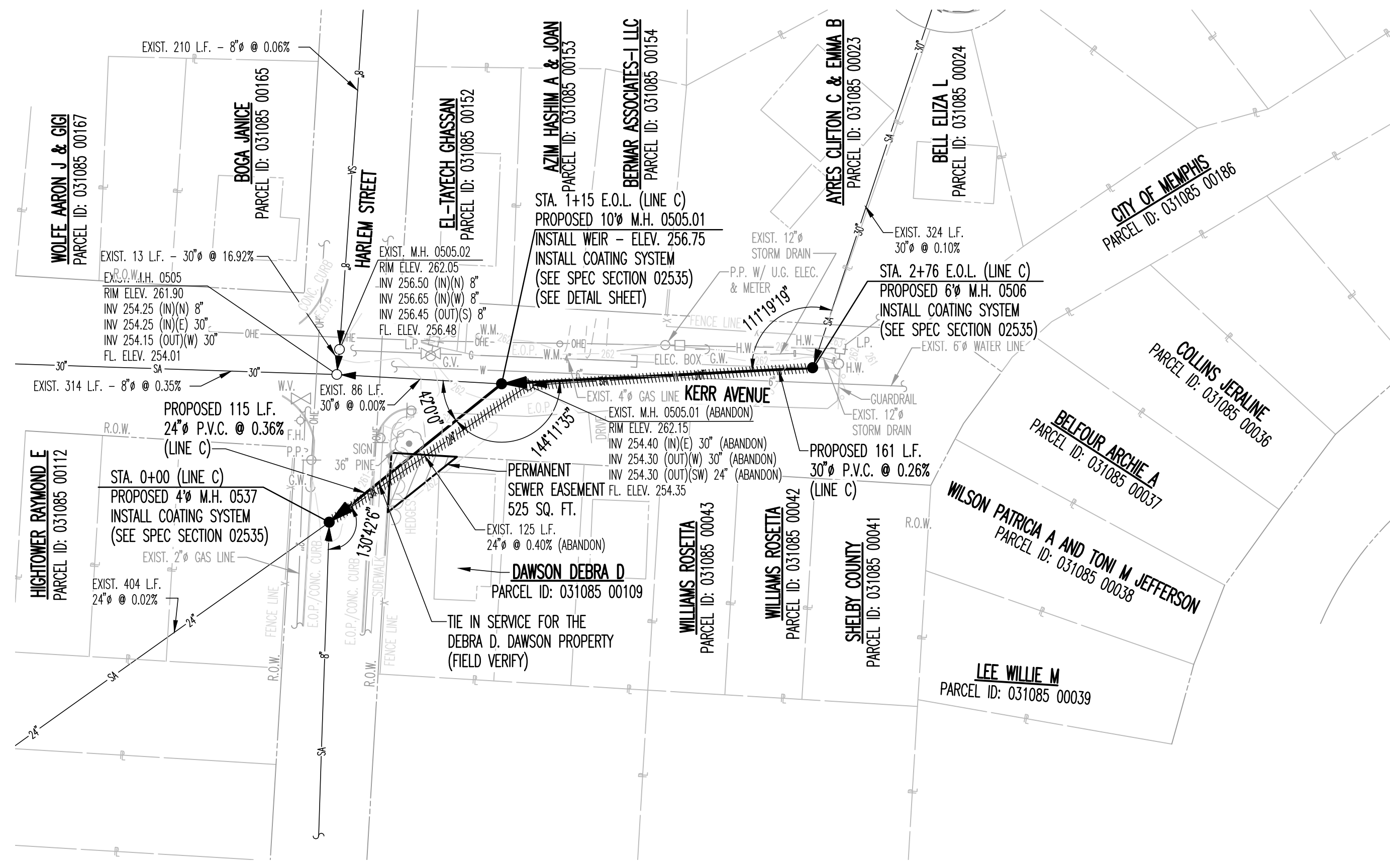
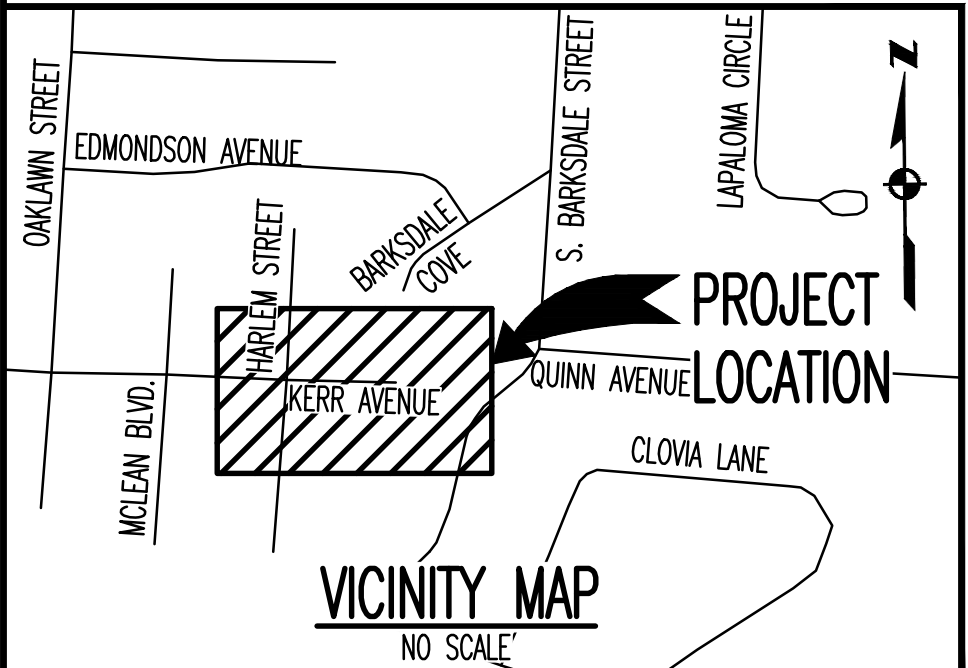
SURVEY DATE: 01/05/2018  
DESIGN BY: LDA ENGIN. DATE: 01/05/2018  
DEPUTY CITY ENGINEER: DATE: CITY ENGINEER: DATE:

**C0.3**

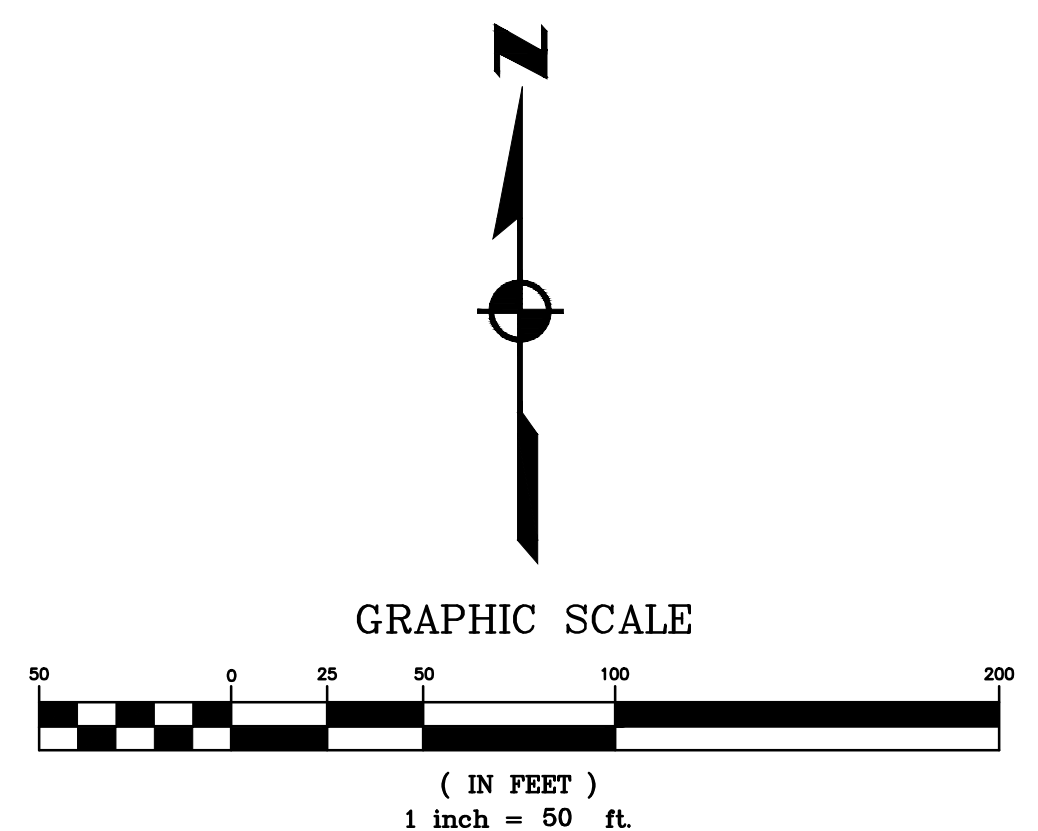
HORIZ: 1"=50'  
VERT: 1"=5'



- TYPICAL CONSTRUCTION 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 DAMAGE TO ANY UTILITIES ENCOUNTERED WITHIN CONSTRUCTION PERIMETERS. FOR SITE LOCATIONS OF EXISTING UTILITIES INVOLVING M.G.A.W., SOUTH CENTRAL BELL AND/OR TEXAS GAS COMPANY, PLEASE CALL 1-800-351-1111 OR 811. FOR SEWER SERVICE LOCATIONS, CALL 901-636-8025.
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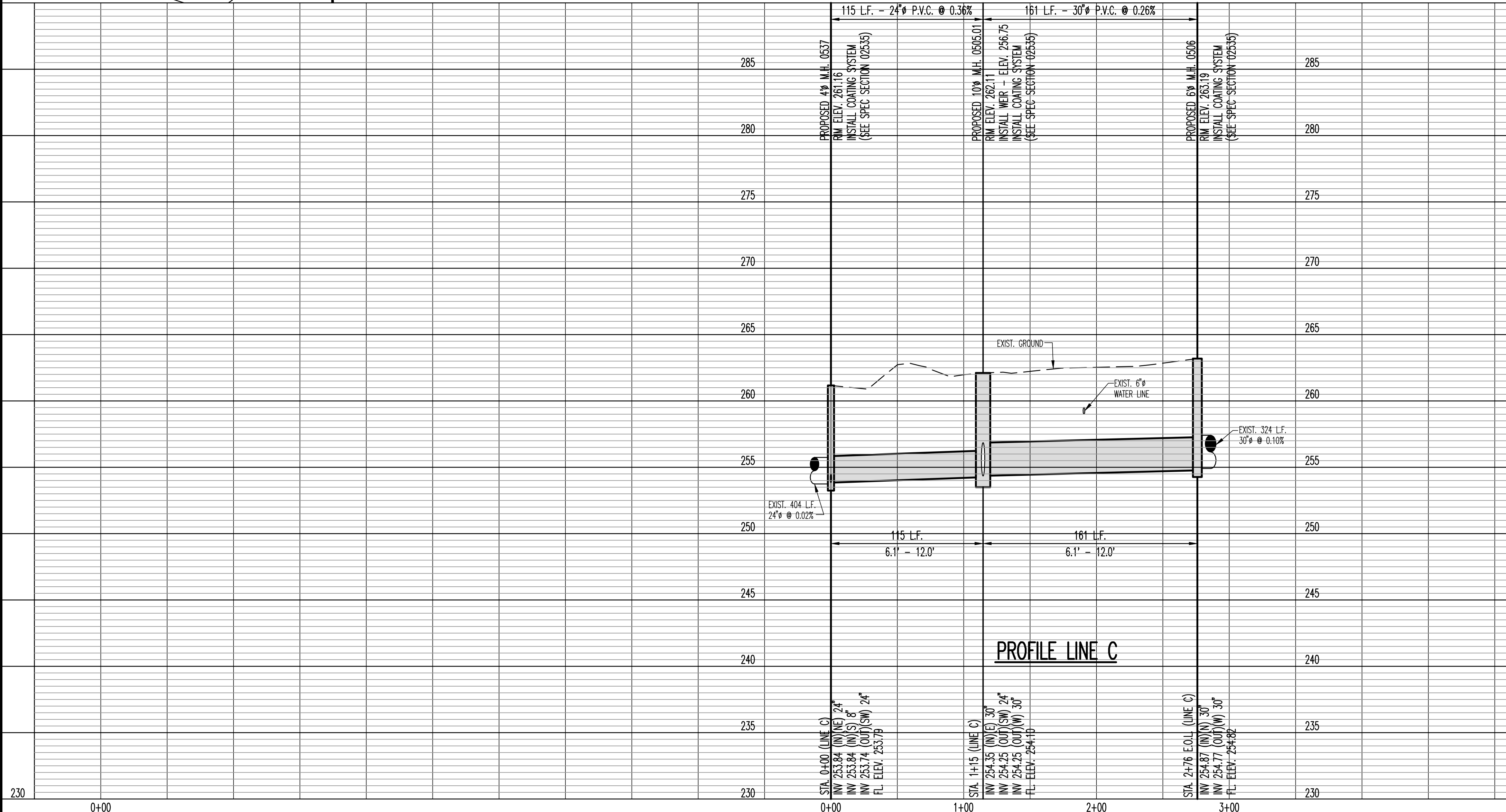
**PLAN**



- NOTES:**
1. BM: THE CITY BENCHMARK USED FOR THIS PROJECT IS CITY BENCHMARK 600, LOCATED AT THE INTERSECTION OF SOUTH PARKWAY AND PELLOW STREET. THE BENCHMARK IS LOCATED ON THE SOUTHWEST CORNER OF THE INTERSECTION. THE MARK IS A BRASS CAP/NIPPLE ON TOP OF A 4"x4" CONCRETE POST. THE MARK IS 3.2' WEST OF THE BACK OF SIDEWALK, AND 4.2' SOUTH OF THE BACK OF SIDEWALK. ELEVATION = 271.68
  2. THIS PROPERTY IS LOCATED WITHIN AN AREA DESIGNATED AS "ZONE X UNDER OTHER AREAS" AS DETERMINED FROM F.E.M.A. FLOOD INSURANCE RATE MAPS COMMUNITY RATE MAPS COMMUNITY PANEL NUMBERS 471570260F DATED SEPTEMBER 28, 2007 AND 471570430F DATED SEPTEMBER 28, 2007.

**LEGEND**

EXISTING SANITARY SEWER TO BE ABANDONED



REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



DIVISION OF ENGINEERING  
S. BARKSDALE ST. SIPHON & GRAVITY SEWER IMPROVEMENTS  
DEVELOPER: SARP10  
ENGINEER: LDA ENGINEERING

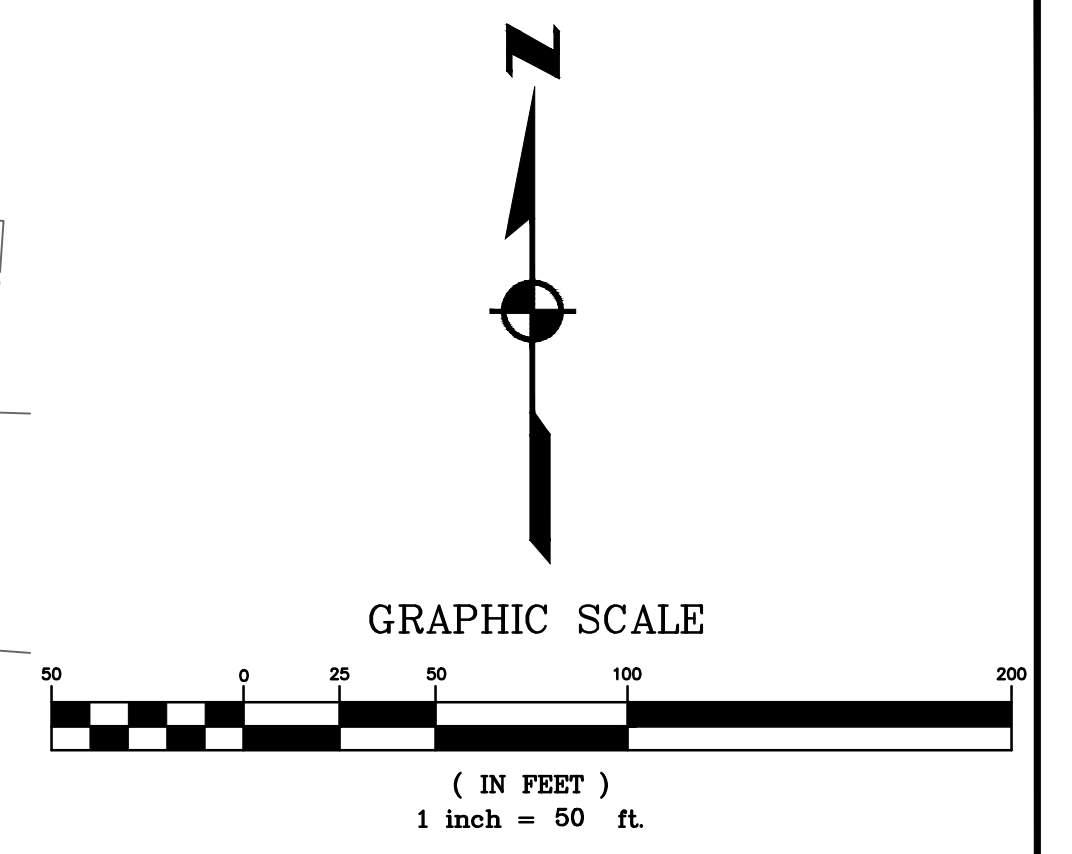
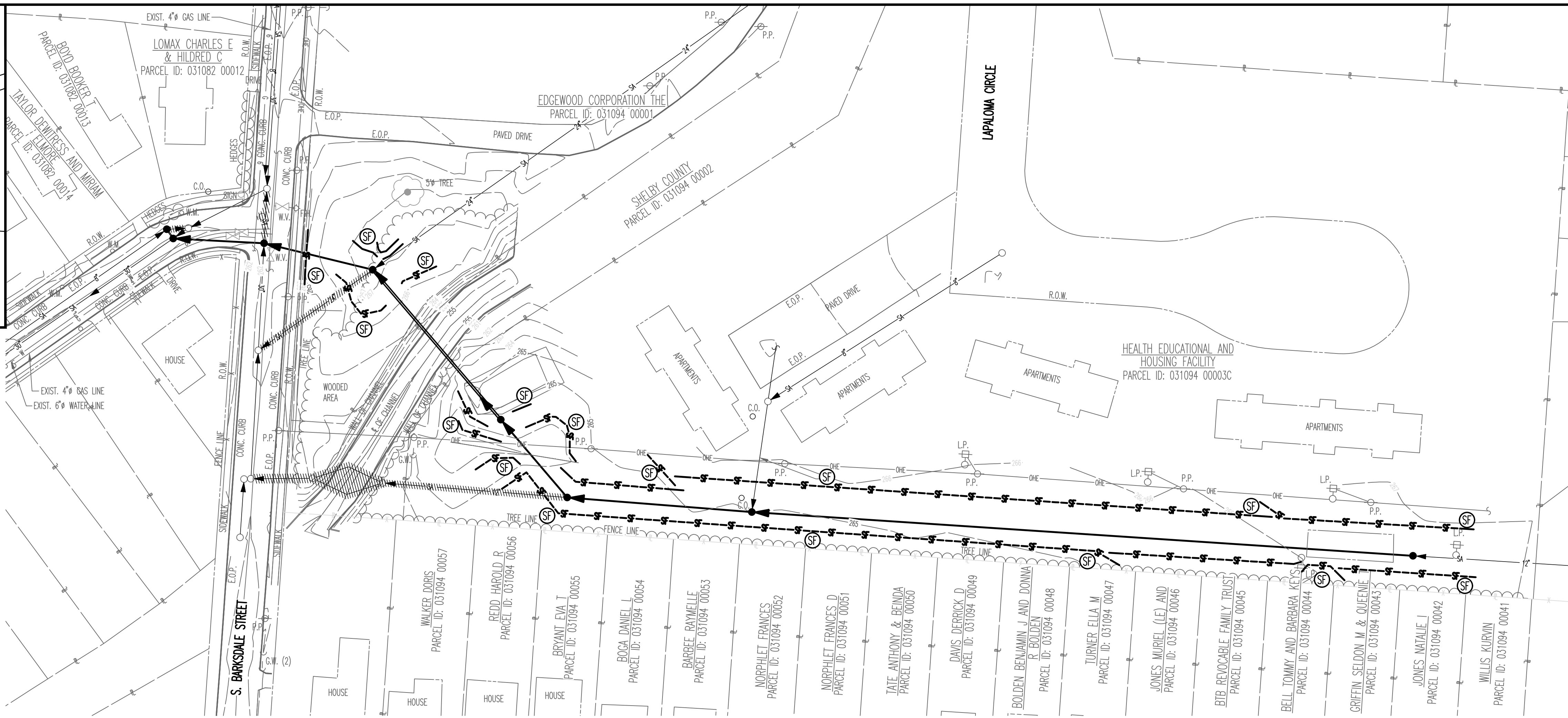
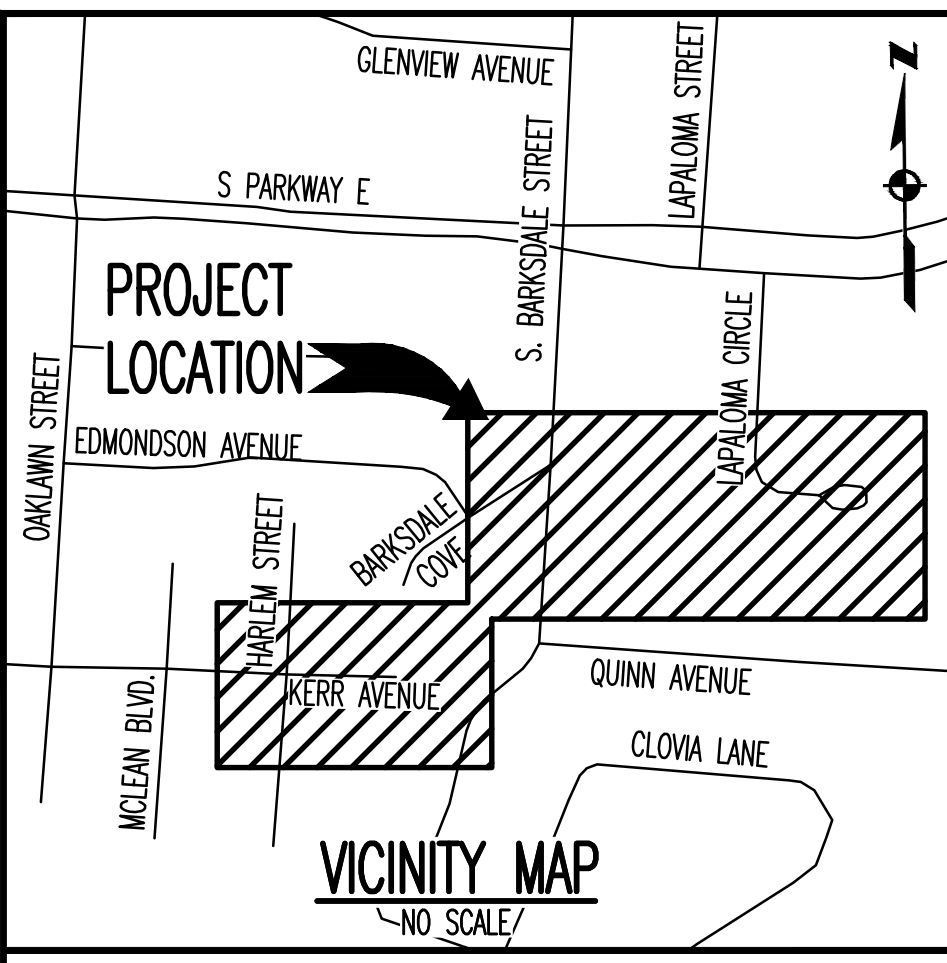
**SEWER BASIN NN-2**  
**SHEET 2 OF 2** **CO.4**

DIVISION OF ENGINEERING  
**SARP10**  
**S. BARKSDALE ST. SIPHON & GRAVITY**  
**SEWER IMPROVEMENTS**  
**PLAN & PROFILE**  
LOCATION: S. BARKSDALE STREET  
MEMPHIS, TENNESSEE

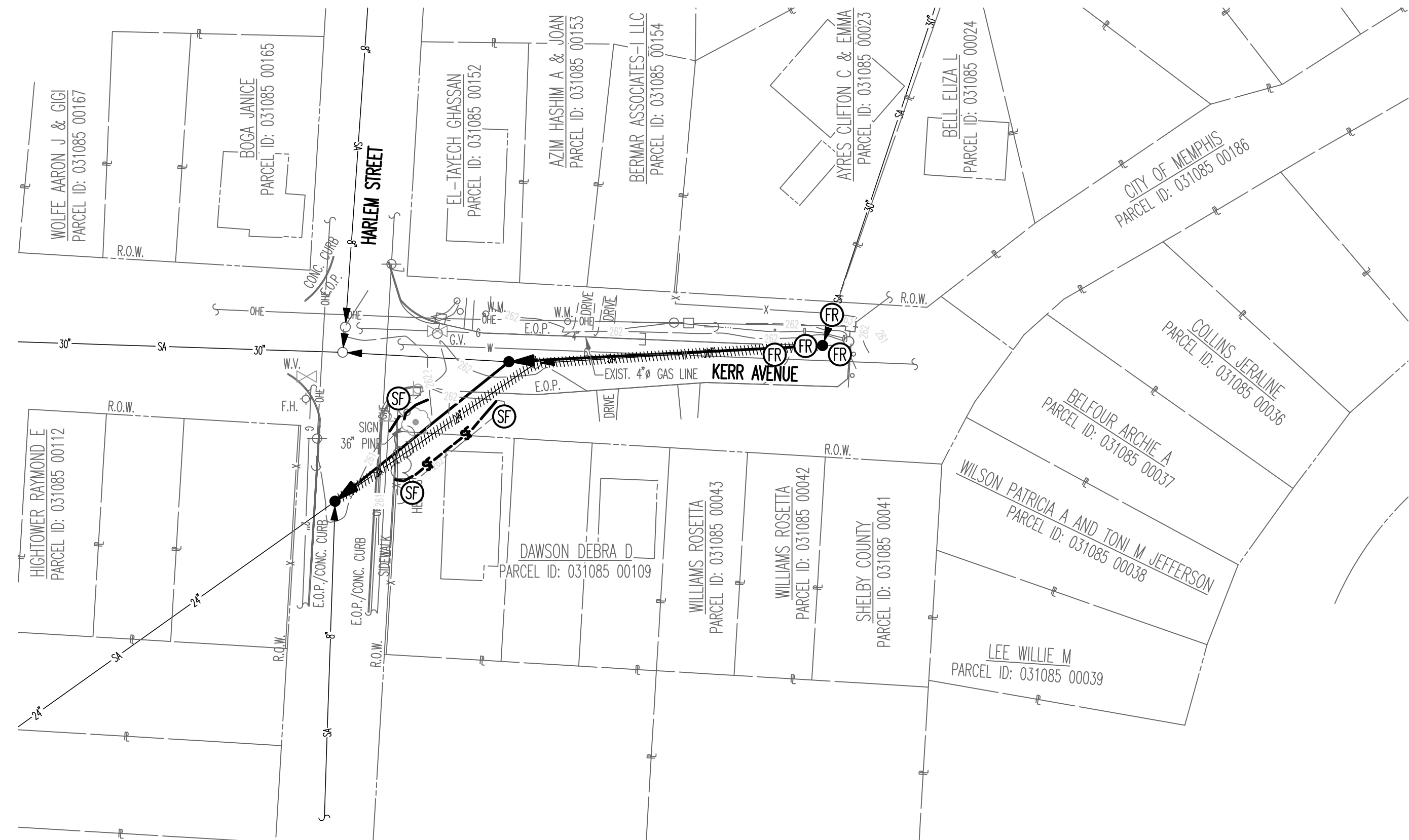
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DESIGN BY: LDA ENGIN. DATE: 01/05/2018  
BOOK: SCALE: HORIZ: 1"=50'  
REVIEWED: VERT: 1"=5'

DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE





**LINE A AND B**

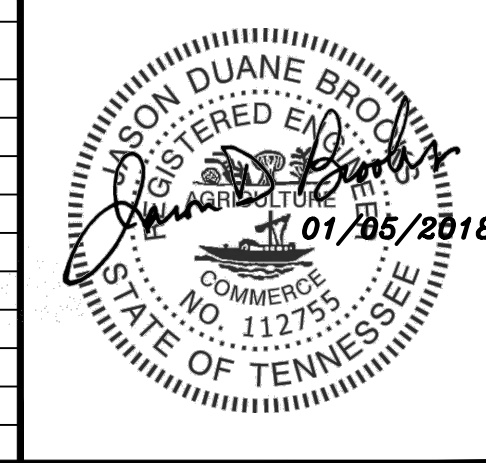


**LINE C**

- NOTES:**
1. BM: THE CITY BENCHMARK USED FOR THIS PROJECT IS CITY BENCHMARK 600, LOCATED AT THE INTERSECTION OF SOUTH PARKWAY AND PILLOW STREET. THE BENCHMARK IS LOCATED ON THE SOUTHWEST CORNER OF THE INTERSECTION. THE MARK IS A BRASS CAP/NIPPLE ON TOP OF A 4"x4" CONCRETE POST. THE MARK IS 3.2' WEST OF THE BACK OF SIDEWALK, AND 4.2' SOUTH OF THE BACK OF SIDEWALK. ELEVATION = 271.08
  2. THIS PROPERTY IS LOCATED WITHIN AN AREA DESIGNATED AS "ZONE X UNDER OTHER AREAS" AS DETERMINED FROM F.E.M.A. FLOOD INSURANCE RATE MAPS COMMUNITY RATE MAPS COMMUNITY PANEL NUMBERS 4715700260F DATED SEPTEMBER 28, 2007 AND 4715700430F DATED SEPTEMBER 28, 2007.

**LEGEND**  
 EXISTING SANITARY SEWER TO BE ABANDONED

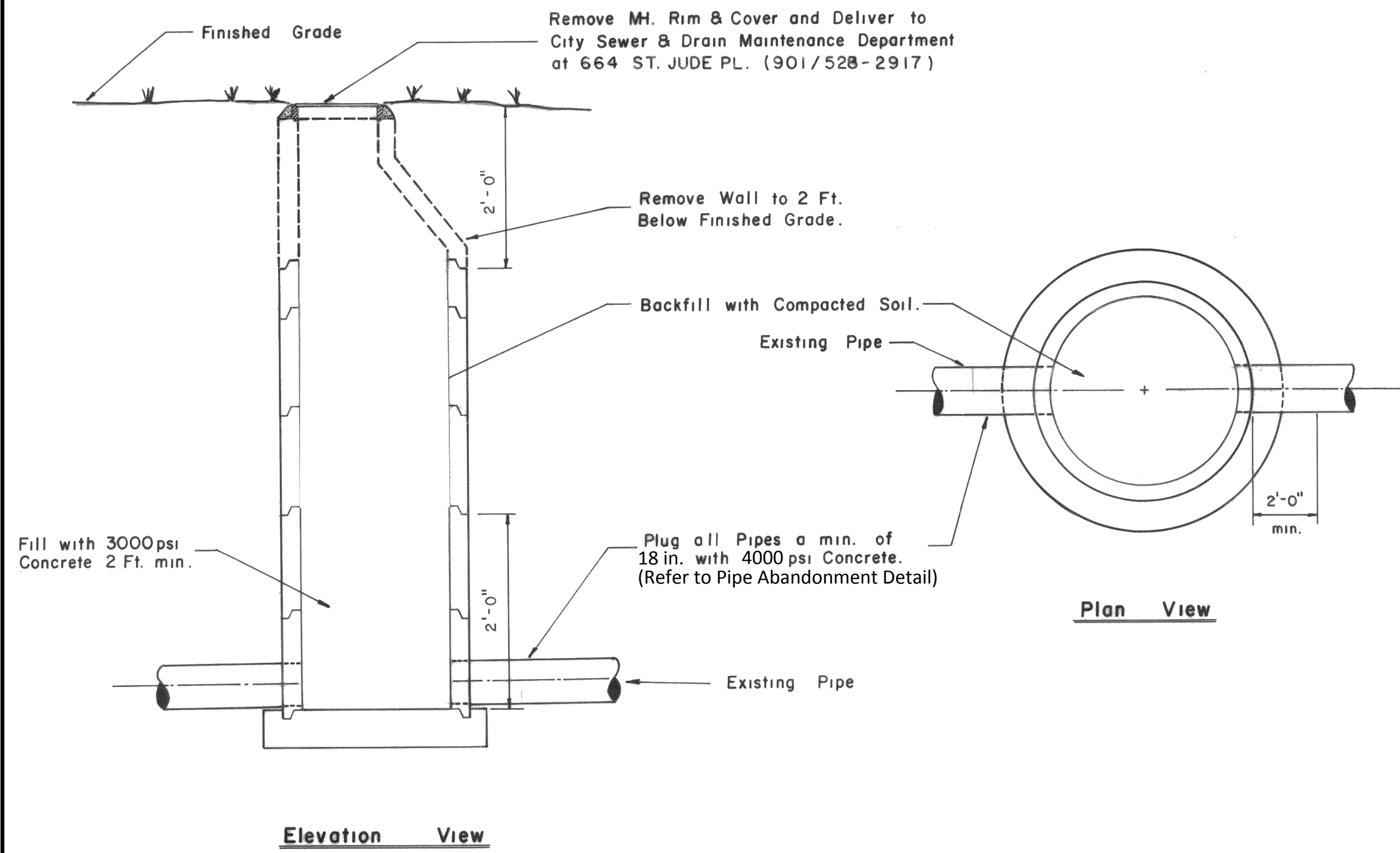
REVISION	APPROVAL DATE
ITEM NO.	DESCRIPTION OF CHANGE



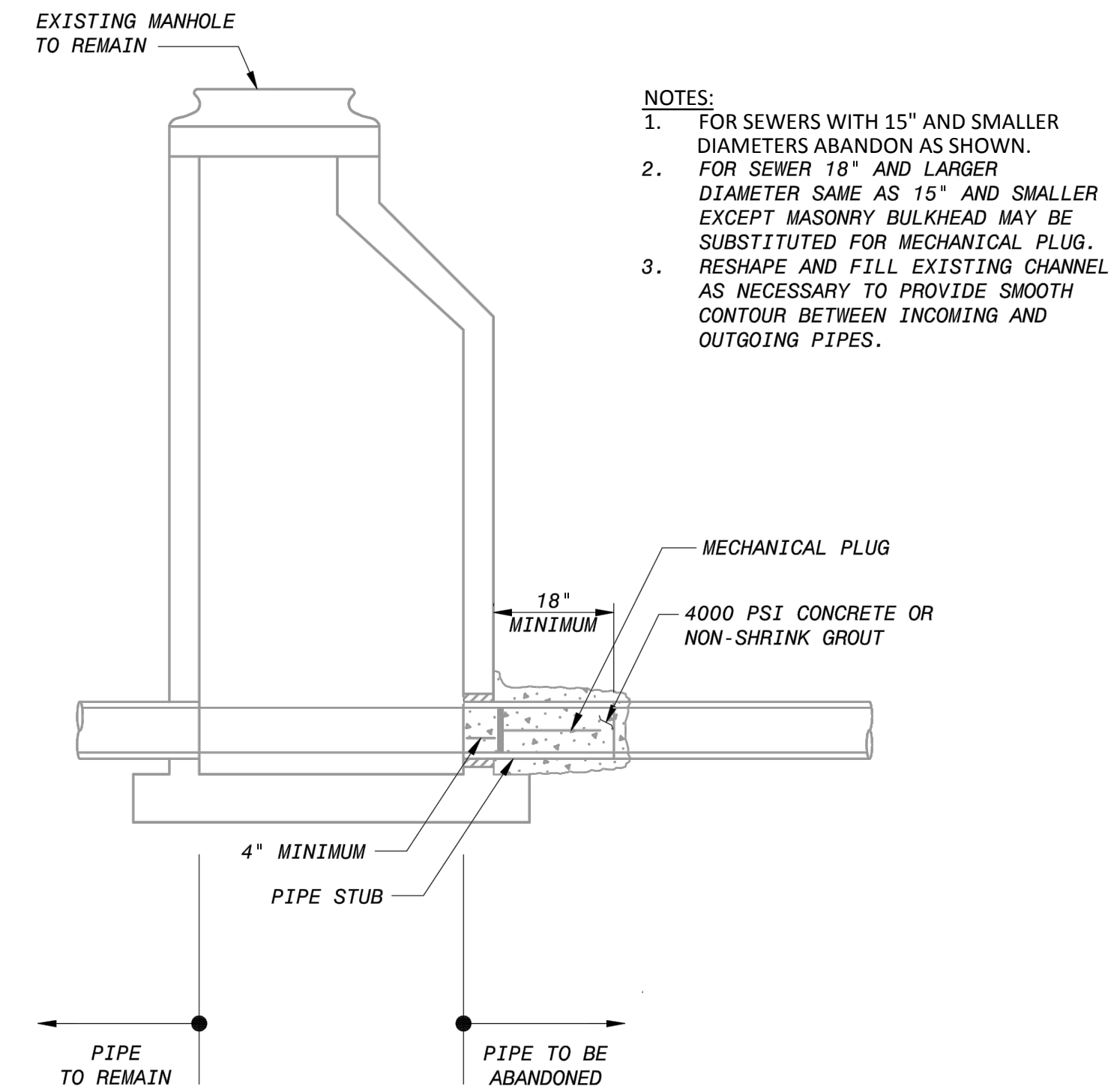
DIVISION OF ENGINEERING  
 S. BARKSDALE ST. SIPHON & GRAVITY SEWER IMPROVEMENTS  
 DEVELOPER: SARP10  
 ENGINEER: LDA ENGINEERING

<b>SEWER BASIN NN-2</b> <b>SHEET 1 OF 1</b>	<b>C0.5</b>
DIVISION OF ENGINEERING <b>SARP10</b> <b>S. BARKSDALE ST. SIPHON &amp; GRAVITY</b> <b>SEWER IMPROVEMENTS</b> <b>EROSION AND SEDIMENT CONTROL</b> LOCATION: S. BARKSDALE STREET MEMPHIS, TENNESSEE	
SURVEY DATE: _____ 800K DESIGN BY: LDA ENGIN. DATE: 01/05/2018 SCALE: 1"=50' REVIEWED: _____	DEPUTY CITY ENGINEER: _____ DATE: _____ CITY ENGINEER: _____ DATE: _____

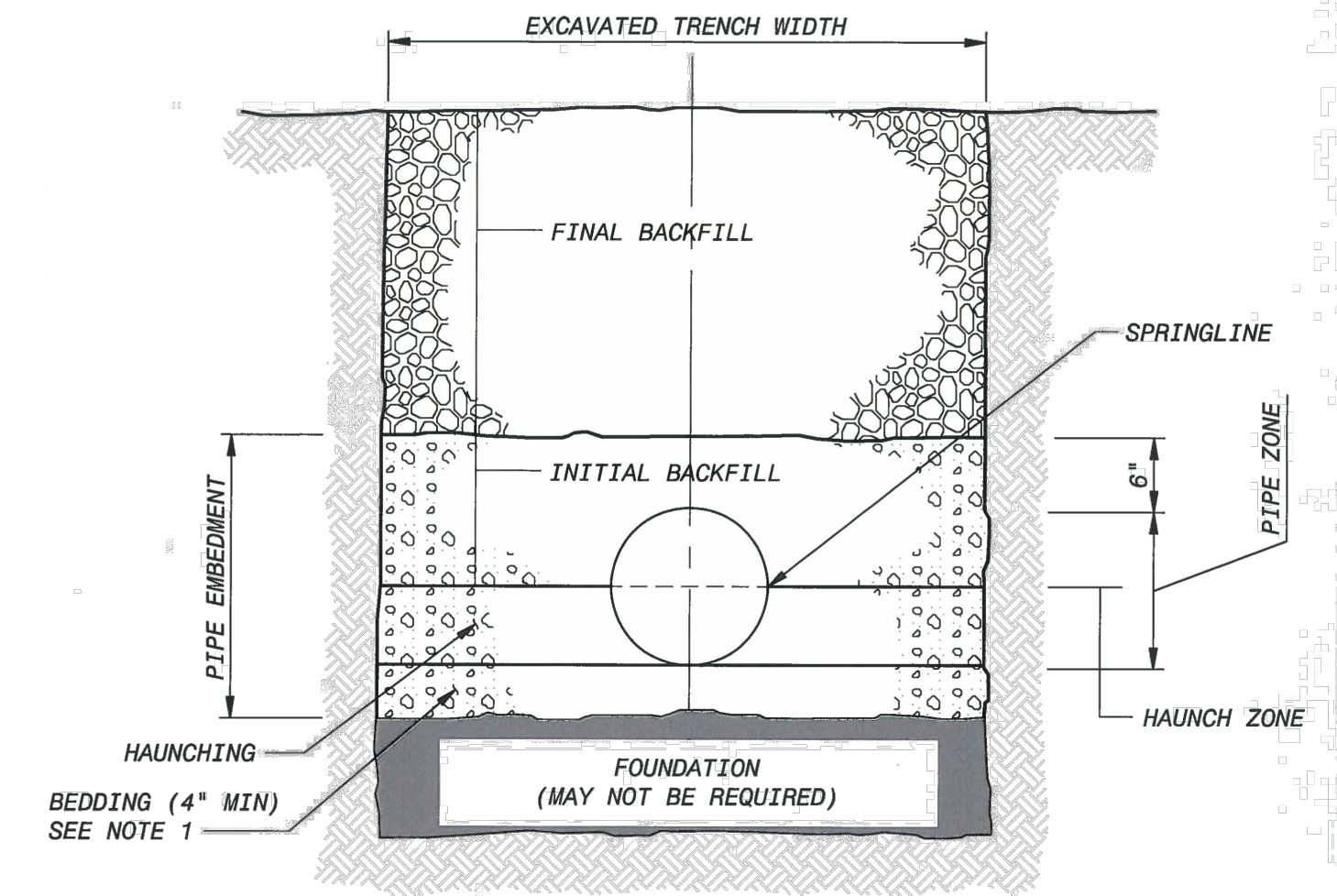




**ABANDONED MANHOLE DETAIL SST-10**

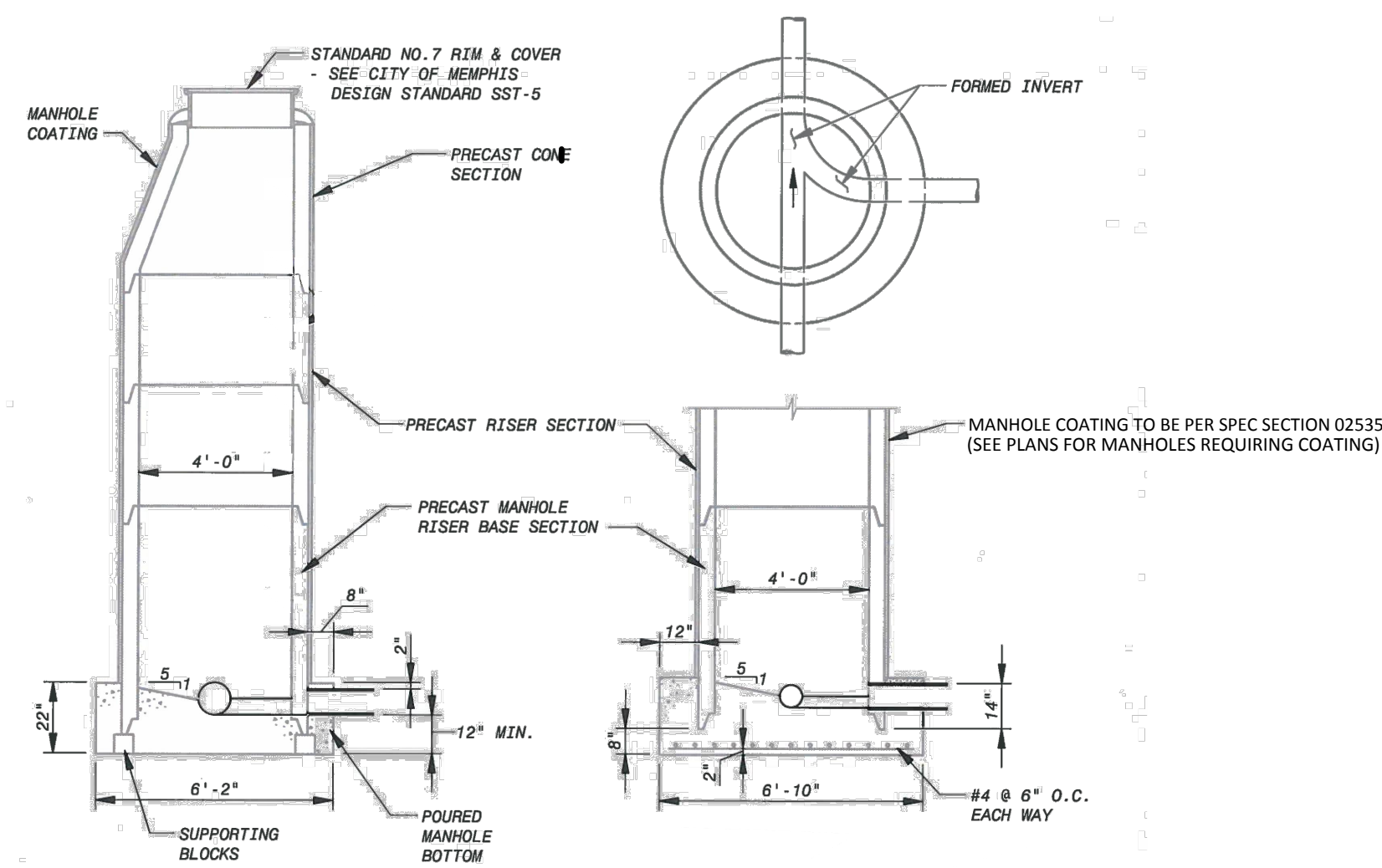


**ABANDONMENT OF PIPE AT MANHOLE**



- NOTES:**
1. INSTALL CRUSHED LIMESTONE ASTM D-448-54 TABLE 1, #67 FOR PIPE EMBEDMENT MATERIAL. THE QUANTITY OF CRUSHED LIMESTONE FOR PIPE EMBEDMENT IS INCIDENTAL TO SEWER PIPE INSTALLATION AND NO SEPARATE PAYMENT WILL BE MADE.
  2. INSTALL FINAL BACKFILL PER SPEC. SECTION 02530.

**TRENCH CROSS SECTION SHOWING TERMINOLOGY**



**TYPICAL PRECAST MANHOLE**

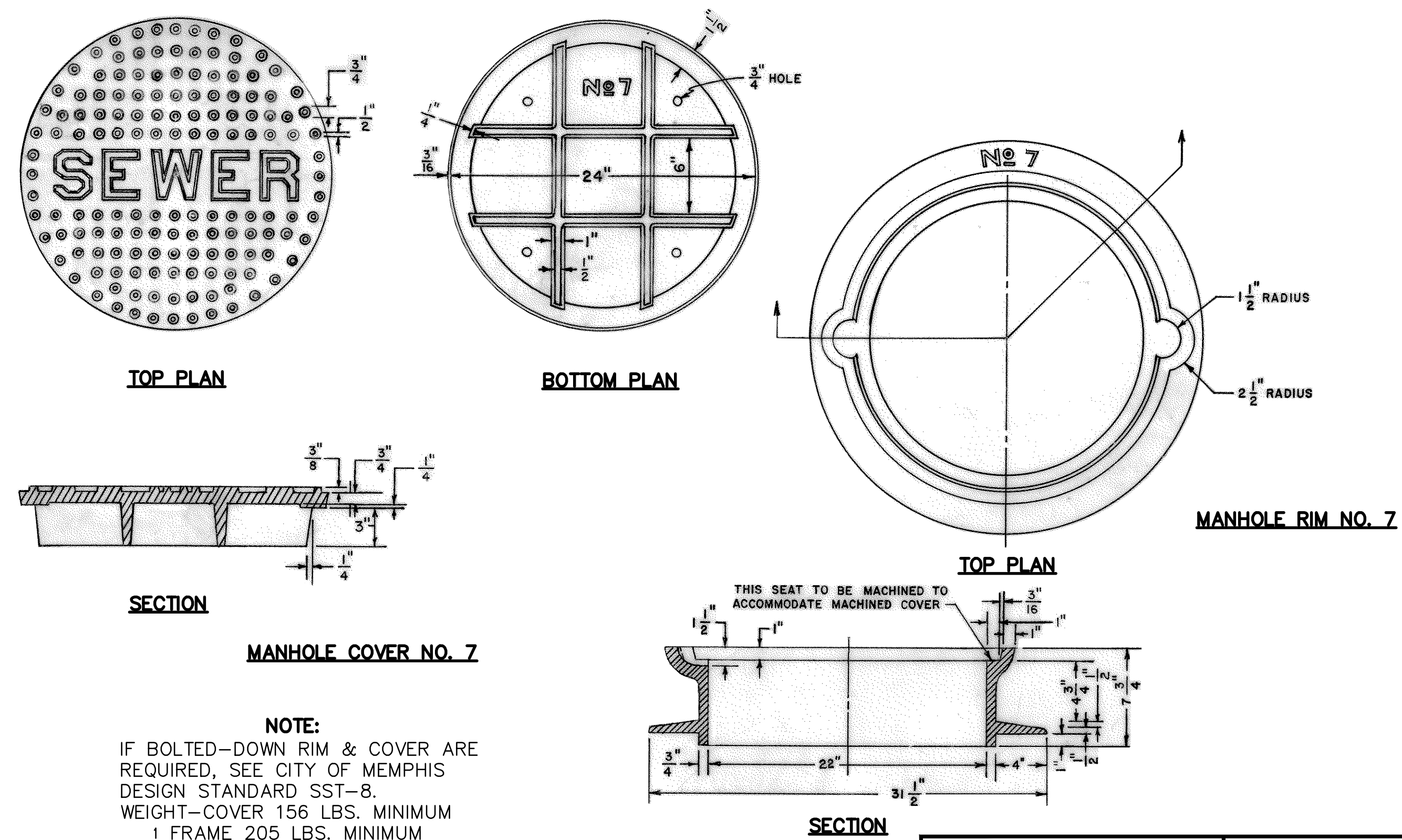
**ALTERNATE (MANHOLES IN EXCESS OF 20' DEEP)**

**JOINT SEALANT:** CONCRETE MORTAR SHALL BE USED TO SEAL JOINTS AFTER THE INSTALLATION OF AN APPROVED GASKET MATERIAL BETWEEN ALL PRECAST MANHOLE SECTIONS.

**BASE SECTIONS:** MANHOLE BOTTOM SHALL NOT BE POURED UNTIL PRECAST BASE SECTION OF MANHOLE AND PIPE STUBS OUT & IN ARE IN PLACE. PIPE STUBS OUTSIDE OF MANHOLE SHALL HAVE A MINIMUM LENGTH OF 12" AND A MAXIMUM LENGTH OF 15" FROM OUTSIDE OF MANHOLE TO THE FIRST JOINT OF PIPE. CONCRETE USED TO FORM BASES AND INVERTS SHALL BE 3,000 p.s.i.

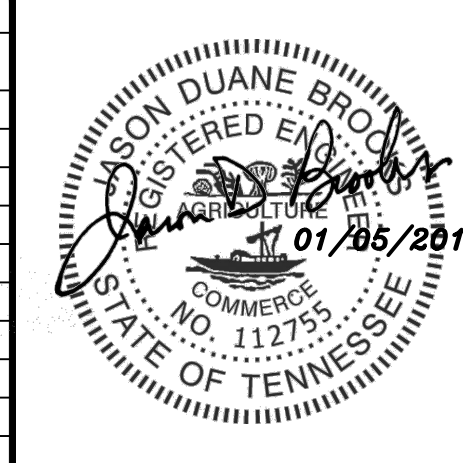
**SUBSTITUTES:** POURED-IN-PLACE MANHOLES MAY BE SUBSTITUTED FOR PRECAST MANHOLES, PROVIDED A FORMAL, WRITTEN REQUEST HAS BEEN SUBMITTED TO & APPROVED BY THE ENGINEER OF DESIGN. ALL POURED-IN-PLACE MANHOLES SHALL CONFORM TO CITY OF MEMPHIS STANDARD DRAWINGS NO. SST-6 AND SST-7.

**PRECAST SANITARY MANHOLE SST-1**



**MANHOLE RIM AND COVER DETAIL SST-5**

REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



DIVISION OF ENGINEERING  
S. BARKDALE ST. SIPHON & GRAVITY SEWER IMPROVEMENTS  
DEVELOPER: SARP10  
ENGINEER: LDA ENGINEERING

**SEWER BASIN NN-2  
SHEET 1 OF 3**

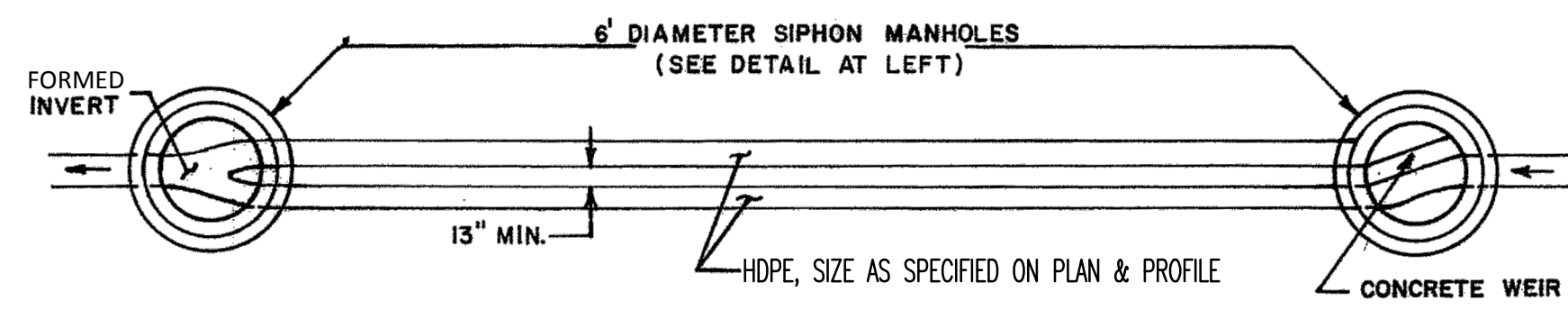
**C0.6**

DIVISION OF ENGINEERING  
**SARP10**  
**S. BARKDALE ST. SIPHON & GRAVITY SEWER IMPROVEMENTS**  
**TYPICAL DETAILS**  
LOCATION: S. BARKDALE STREET  
MEMPHIS, TENNESSEE

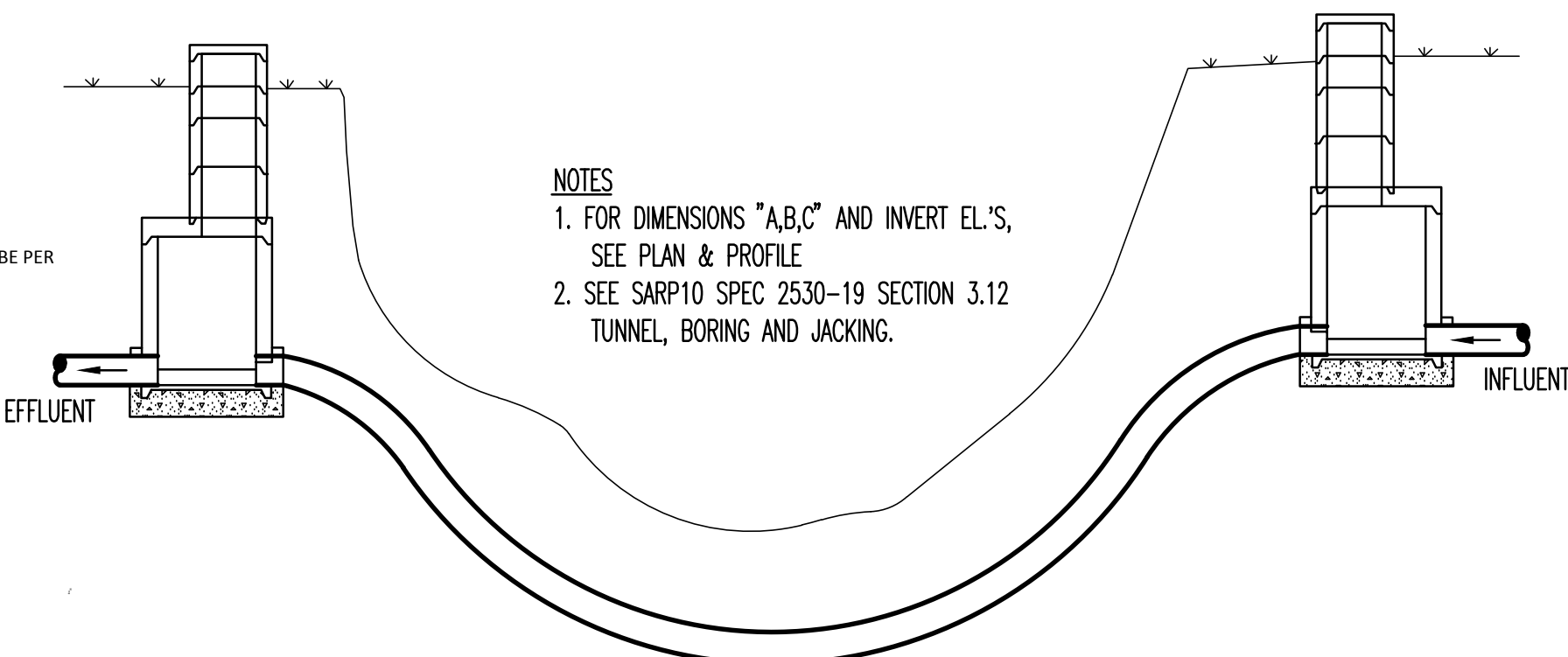
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REVIEWED: \_\_\_\_\_

DEPUTY CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_ CITY ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_



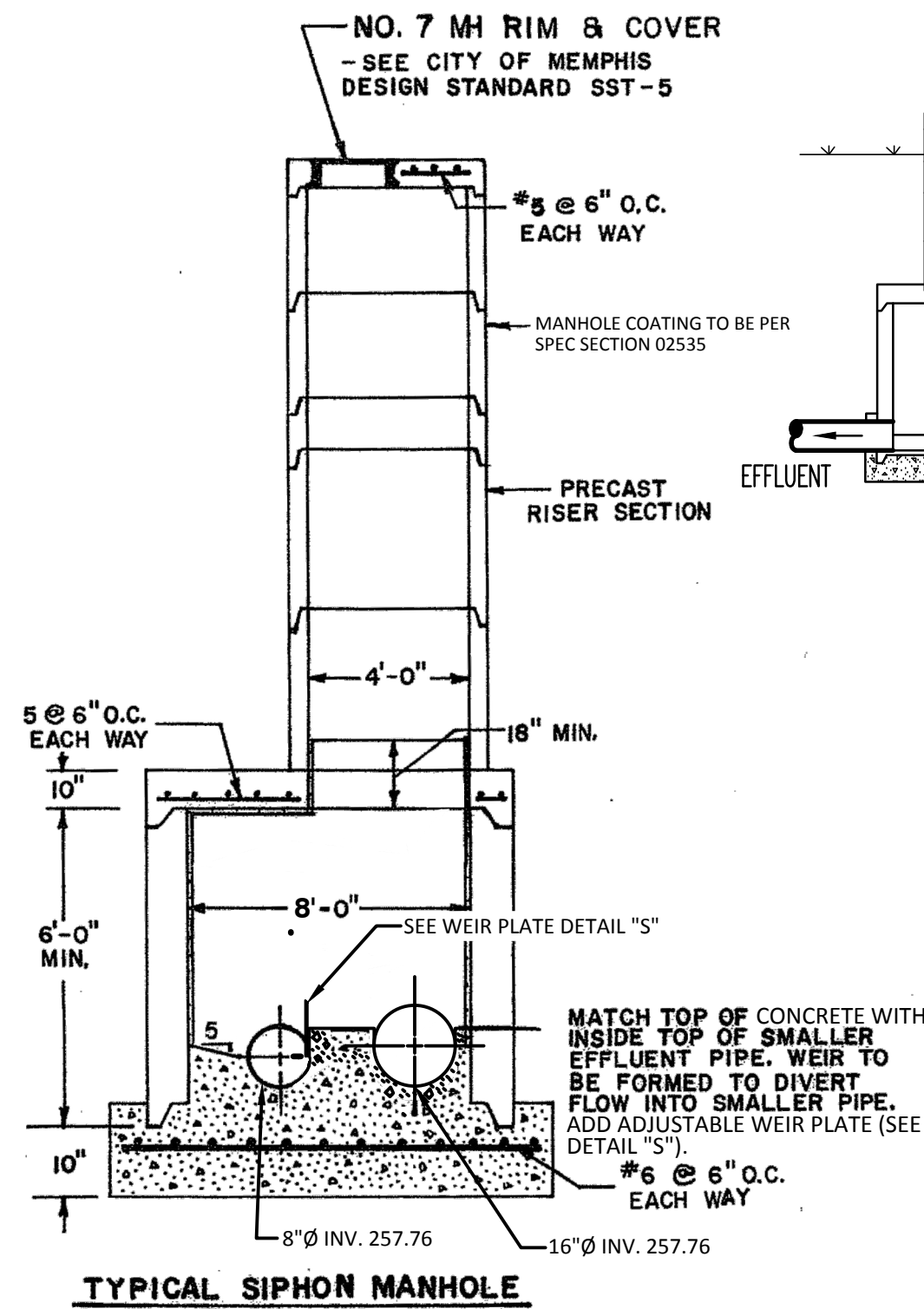


PLAN VIEW



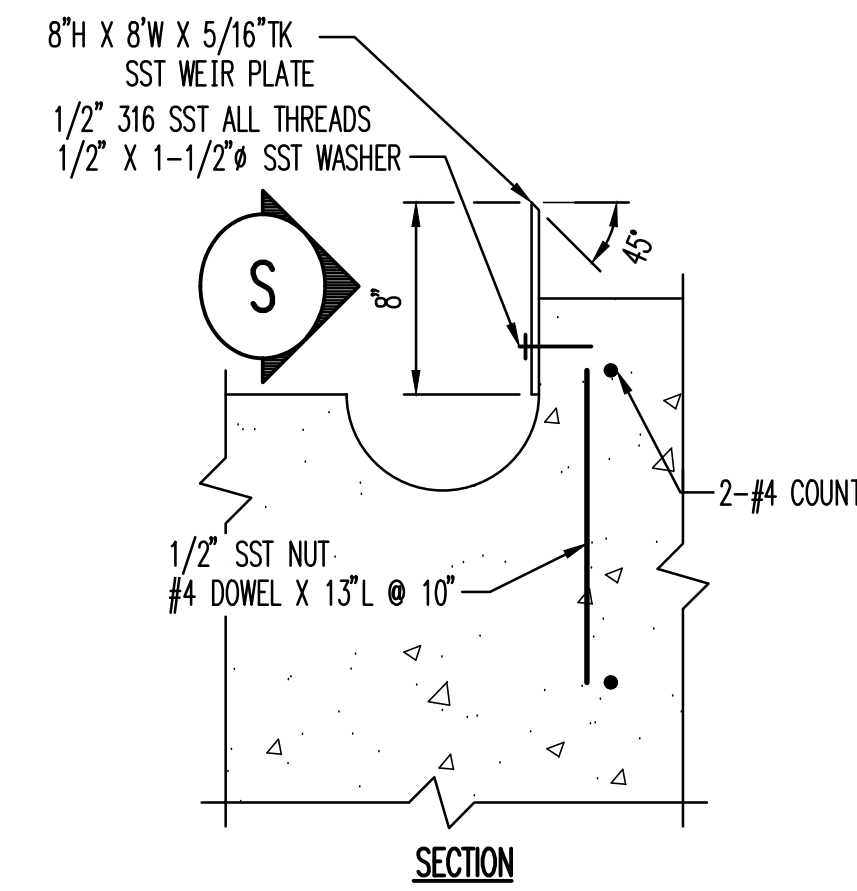
- NOTES
1. FOR DIMENSIONS "A,B,C" AND INVERT EL.'S, SEE PLAN & PROFILE
  2. SEE SARP10 SPEC 2530-19 SECTION 3.12 TUNNEL, BORING AND JACKING.

ELEVATION VIEW

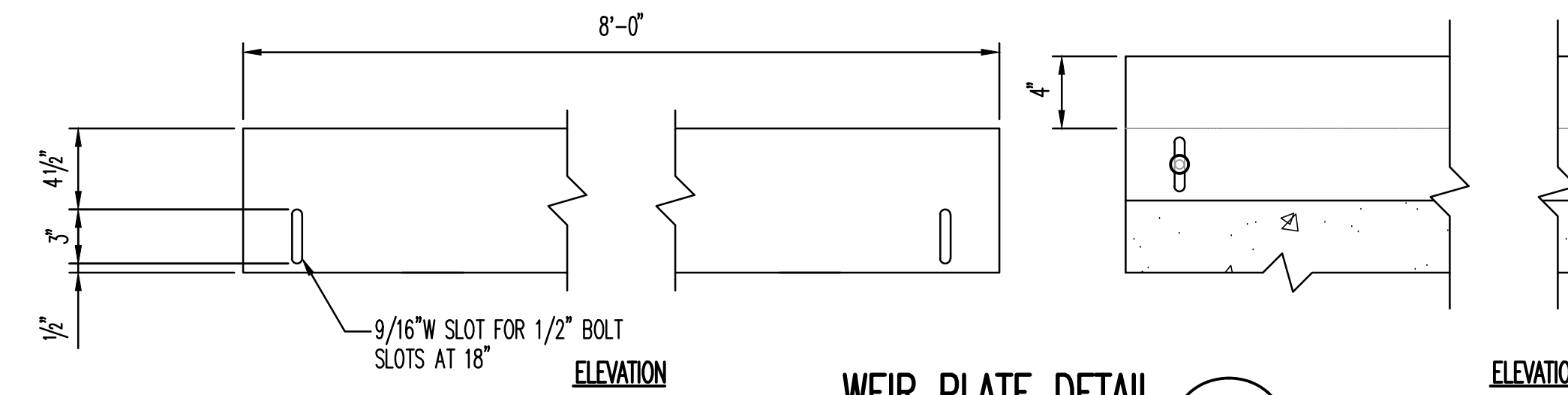


TYPICAL SIPHON MANHOLE

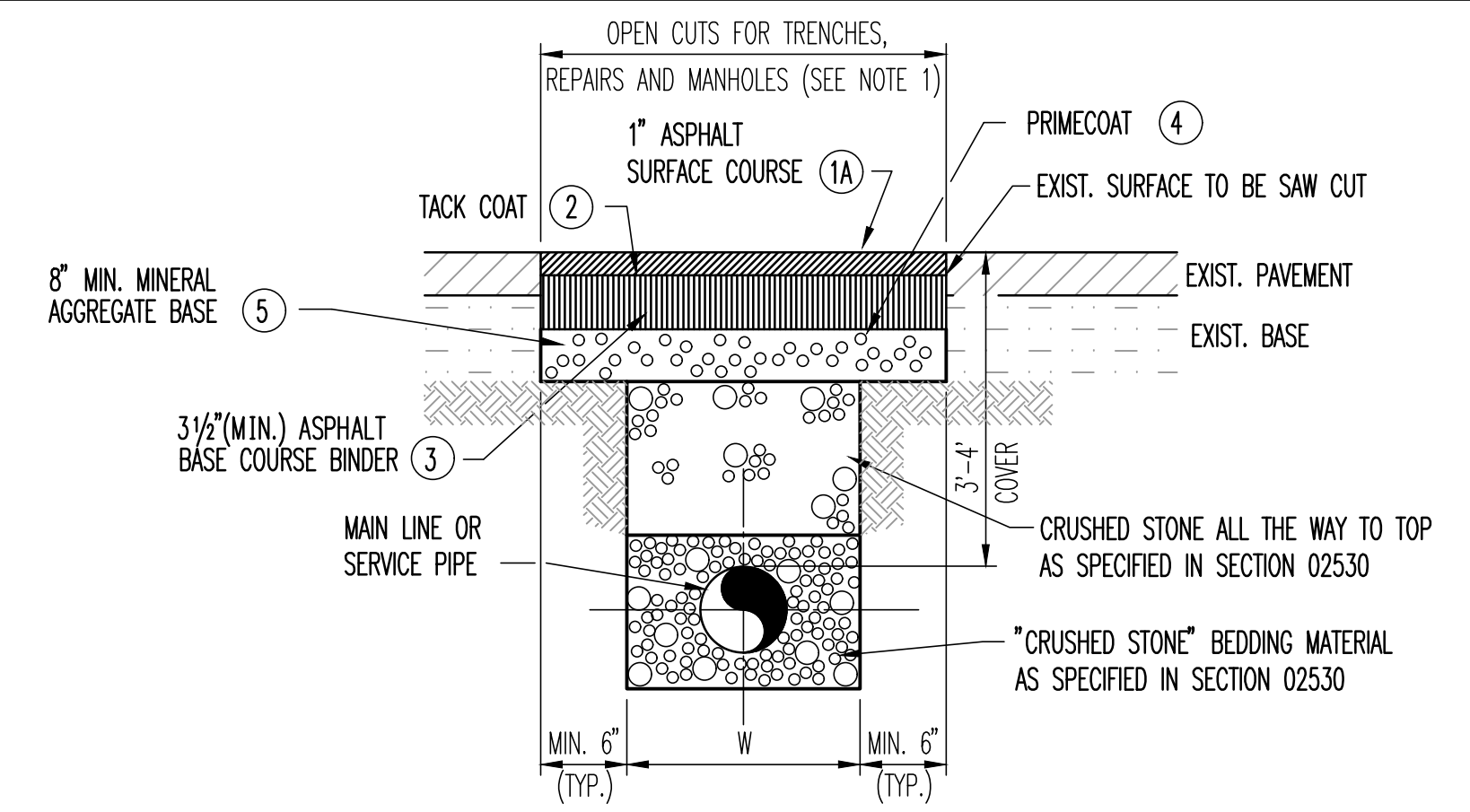
TYPICAL INVERTED SIPHON DETAIL (FOR SMALL DIAMETER SEWER)



SECTION



WEIR PLATE DETAIL S

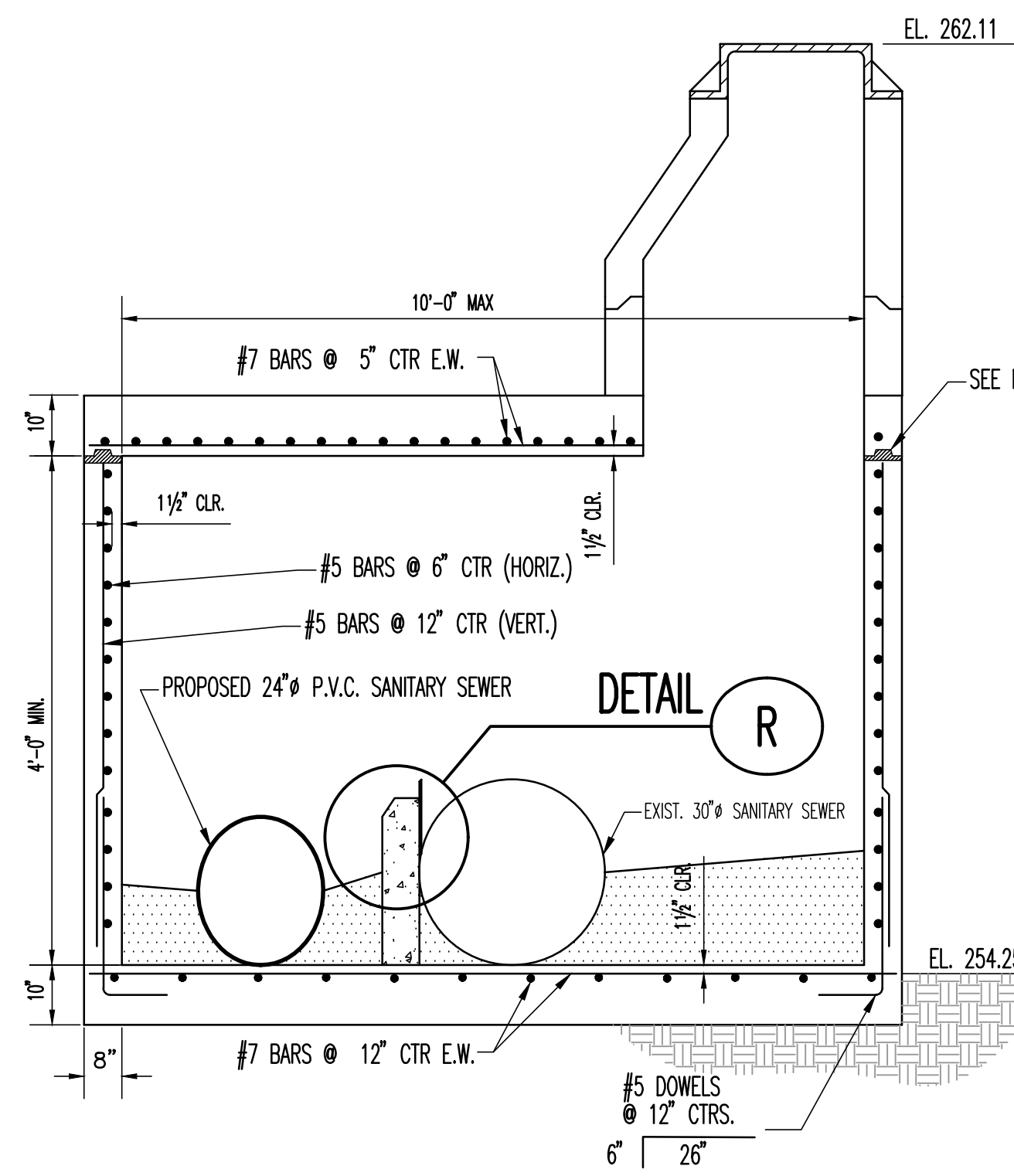


- NOTES:
1. EXISTING PAVEMENTS SHALL BE REMOVED TO CLEAN, STRAIGHT LINES PARALLEL AND PERPENDICULAR TO THE FLOW OF TRAFFIC.
  2. DO NOT CONSTRUCT PATCHES WITH ANGLED SIDES AND/OR IRREGULAR SHAPES.
  3. ALL REPAIRS SHALL BE FULL LANE WIDTH.
  4. FOR PATCHES IN ASPHALT, A TACK COAT SHALL BE APPLIED TO ALL EDGES OF THE EXISTING ASPHALT BEFORE PLACING THE NEW PAVEMENT.
  5. AFTER PLACING THE NEW ASPHALT, ALL SEAMS (JOINTS BETWEEN THE NEW AND EXISTING PAVEMENTS SHALL BE SEALED WITH AN ASPHALT TACK COAT OR RUBBERIZED CRACK SEAL MATERIAL.
  6. PATCHES SHALL HAVE A SMOOTH LONGITUDINAL GRADE AND CROSS SLOPE CONSISTENT WITH THE EXISTING ROADWAY.

TYPICAL ASPHALT PAVEMENT REPLACEMENT

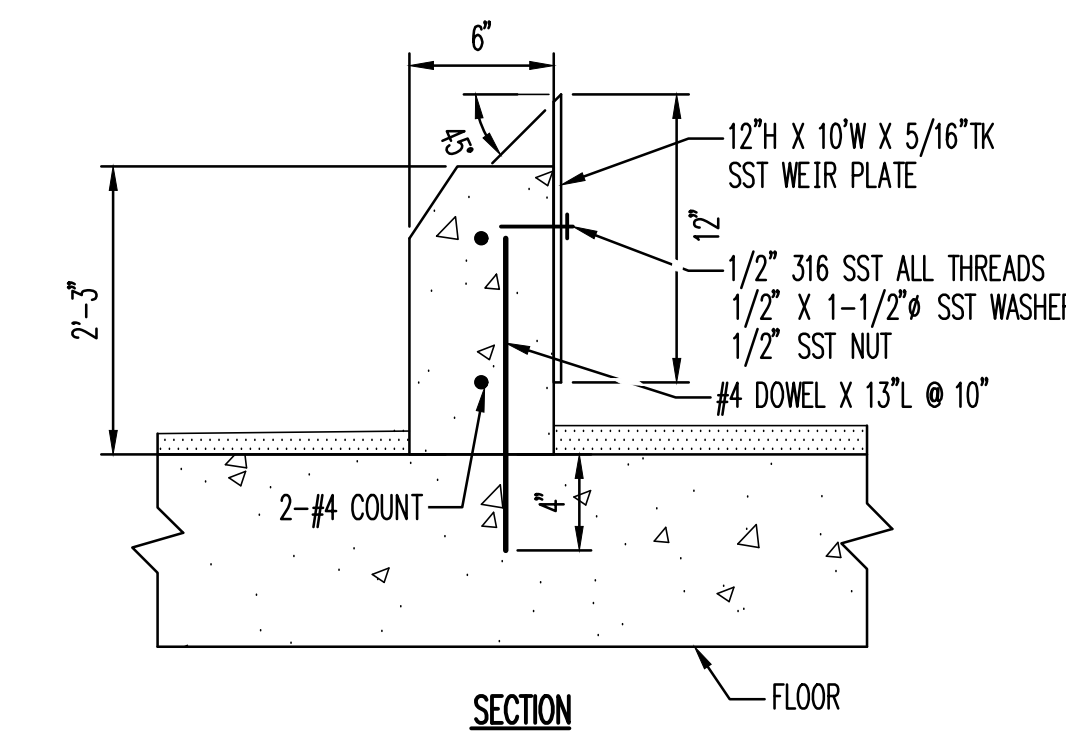
PAVEMENT SCHEDULE	
①	BITUMINOUS SURFACING COURSE (ROADWAY) A. 411E (MODIFIED) B. 411E (T.D.O.T. STD. OR MODIFIED)
②	BITUMINOUS MATERIAL FOR TACK COAT (TC) (RATE - 0.02 GAL./SQ.YARD)
③	BITUMINOUS BINDER COURSE (ROADWAY) @ MIN. 3 1/2" THICK - 307 B
④	BITUMINOUS MATERIAL FOR PRIME COAT (PC) (RATE - 0.35 GAL./SQ. YARD).
⑤	MINERAL AGGREGATE BASE @ MIN. 8" DEEP TYPE "A" BASE, GRADING "D".

- NOTES:
1. PAVEMENT DEPTHS SHOWN IN THE DETAILS ARE MINIMUM FOR THIS PROJECT, BUT MAY BE INCREASED AT THE DIRECTION OF THE ENGINEER.
  2. ROADWAYS AND HIGHWAYS SHALL HAVE SURFACE COURSE PLACED AND HEAT BLENDED AND SEALED TO EXISTING PAVEMENT TO PRODUCE A SMOOTH/SEALED SURFACE. MEANS, METHODS AND EQUIPMENT SHALL BE SUBMITTED AND APPROVED BY THE ENGINEER PRIOR TO BEGINNING WORK ON THE PROJECT.

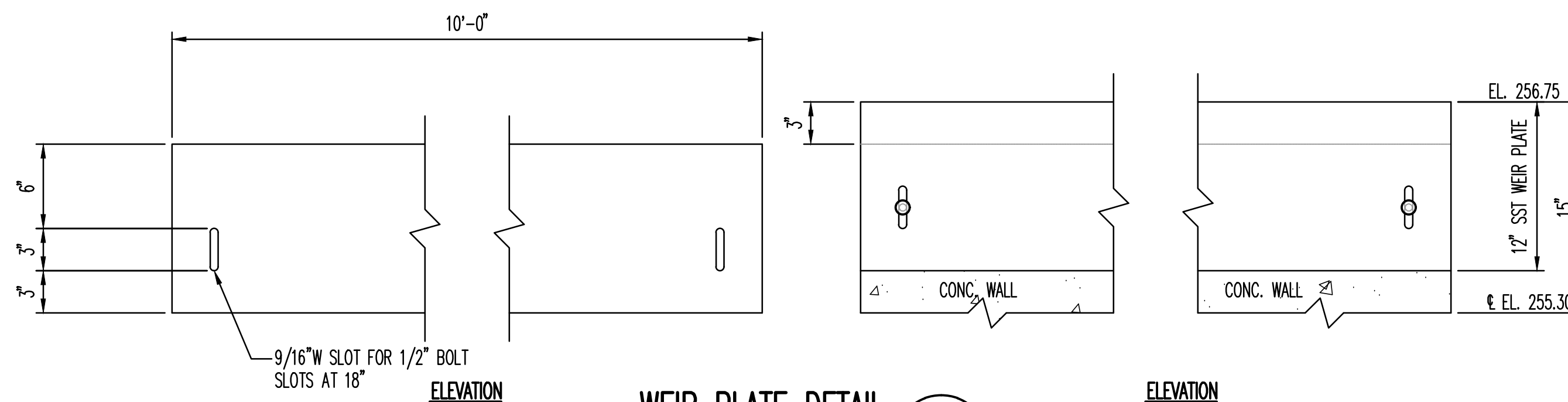


MANHOLE 0505.01 DETAIL (SEE CITY OF MEMPHIS DESIGN STANDARD FOR REINFORCED CONCRETE JUNCTION BOX DWG. NO. 49)

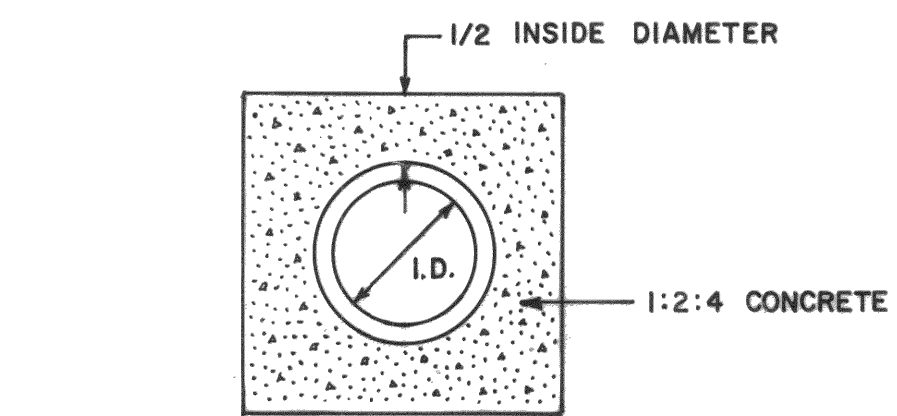
- GENERAL NOTES:
1. PROVIDE A MORTAR BED TO SET THE FIRST MANHOLE SECTION. ROUGH FINISH THE TOP OF THE SLAB IN THIS AREA TO ENSURE A GOOD BOND.
  2. IF THE TOP SLAB IS PRECAST, PROVIDE A MORTAR BED BETWEEN THE TOP SLAB AND THE WALLS. CAST A 2" x 4" KEYWAY IN THE BOTTOM OF THE TOP SLAB AND ROUGH FINISH THE TOP OF THE WALLS. ADEQUATE MORTAR SHALL BE USED TO FULLY FILL THE KEY. IF THE TOP SLAB IS POURED IN PLACE, EXTEND THE #5 WALL BARS 7" INTO THE TOP SLAB.
  3. MANHOLE STEPS TO BEGIN 18" ABOVE THE BENCH AND ONE ADDITIONAL STEP SHALL BE PLACED ON THE SIDE OPPOSITE THE LADDER NEAR THE TOP.
  4. THE FOUNDATION MATERIAL BELOW THE JUNCTION BOX SHALL BE ADEQUATE TO SUPPORT 2000 PSI OR SHALL BE UNDERCUT TO SUITABLE MATERIAL.
  5. ALL CONCRETE TO BE CLASS A. CONCRETE (f<sub>c</sub> = 4000 PSI @ 28 DAYS).
  6. DESIGN LOAD: ASSHTO HS20-44 0'-5' OF COVER.
- \*ALL HORIZ. BARS TO BE DEVELOPED AROUND CORNERS WITH 18" LAPS.



SECTION

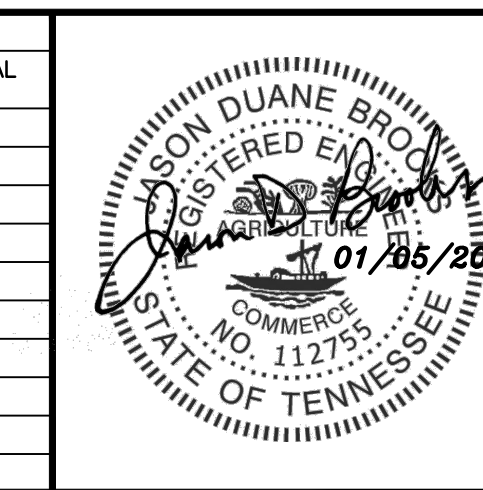


WEIR PLATE DETAIL R



STANDARD CONCRETE ENCASEMENT

REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



**SEWER BASIN NN-2 SHEET 2 OF 3**

**C0.7**

DIVISION OF ENGINEERING  
SARP10  
S. BARKSDALE ST. SIPHON & GRAVITY SEWER IMPROVEMENTS  
TYPICAL DETAILS

LOCATION: S. BARKSDALE STREET  
MEMPHIS, TENNESSEE

DIVISION OF ENGINEERING  
S. BARKSDALE ST. SIPHON & GRAVITY SEWER IMPROVEMENTS  
DEVELOPER: SARP10  
ENGINEER: LDA ENGINEERING

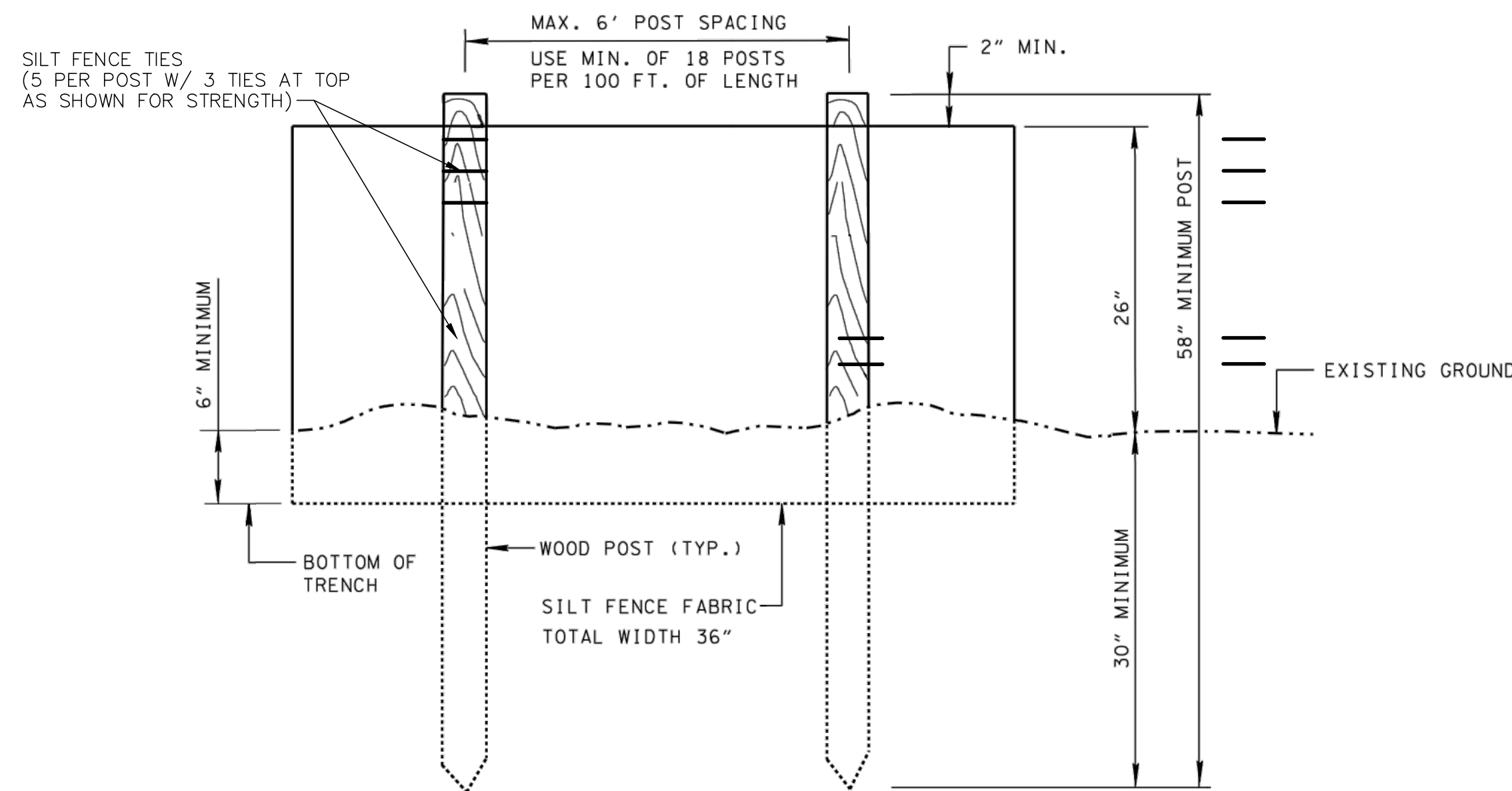
SURVEY DESIGN BY: LDA ENGIN.  
DATE: 01/05/2018  
BOOK: AS SHOWN  
SCALE: AS SHOWN  
REVIEWED:



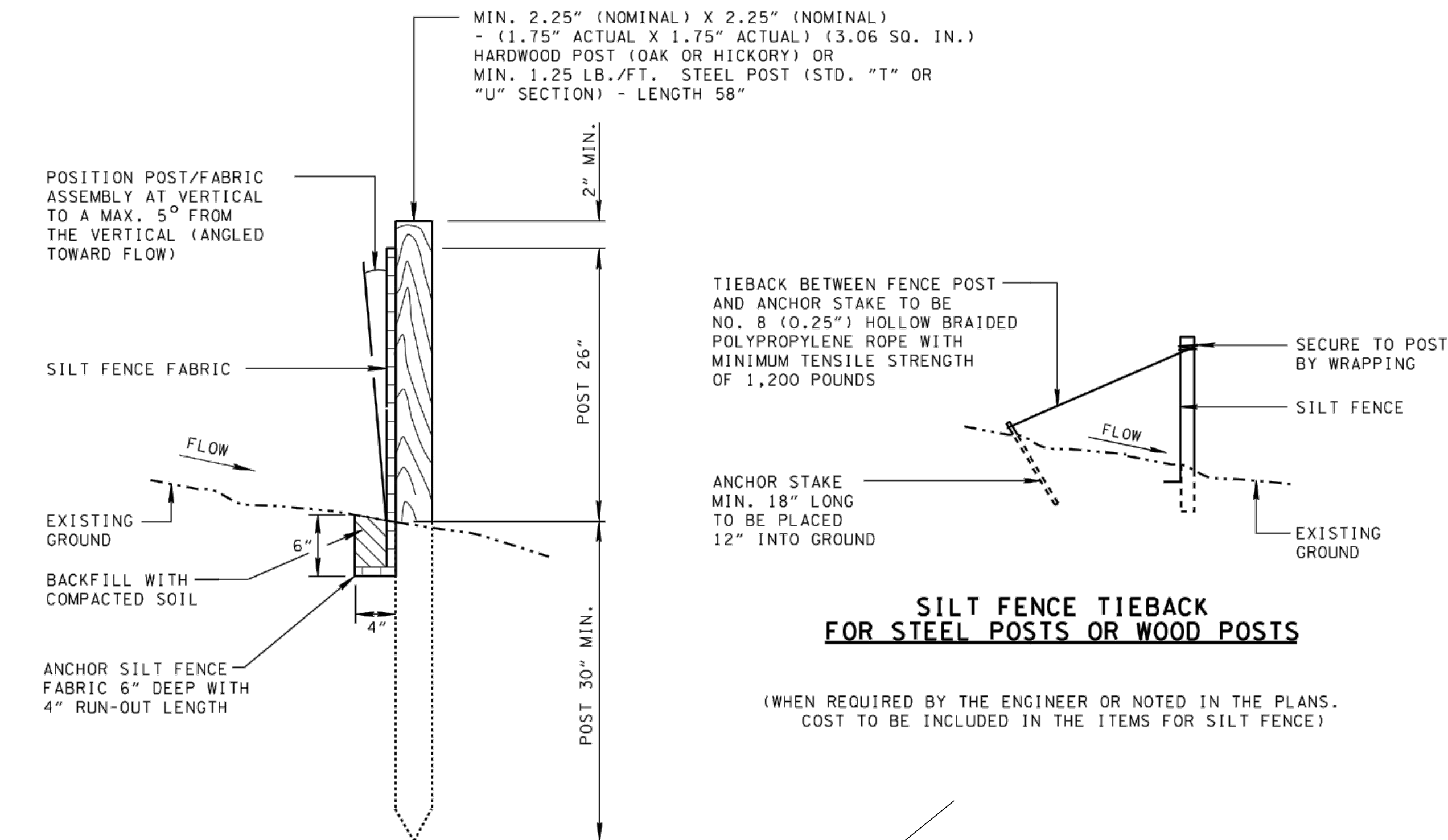
**SILT FENCE FABRIC SPECIFICATIONS**

FABRIC PROPERTY AND TEST METHODS	REQUIRED PHYSICAL PROPERTIES (MARV VALUES OF TEST DATA)
GEOTEXTILE FABRIC TYPE	WOVEN SLIT FILM
APPARENT OPENING SIZE (ASTM D4751)	#30 TO #70 STANDARD SIEVE
WATER FLUX (ASTM D4491)	≥ 4 GPM/FT <sup>2</sup>
TENSILE STRENGTH (ASTM D4632)	≥ 120 LB. (WARP 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. (WARP DIRECTION) X 40 LB. (FILL DIRECTION)

- REV. 12-18-03: MODIFIED TABLE ① AND GENERAL NOTE ②
- REV. 7-29-04: CHANGED VALUES IN TABLE 1 FROM MEAN TO MARV VALUES.
- REV. 4-15-06: REMOVED POA SPECS. FROM TABLE 1. ADDED NOTE ②. REVISED TABLE TITLE. REORDERED 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.



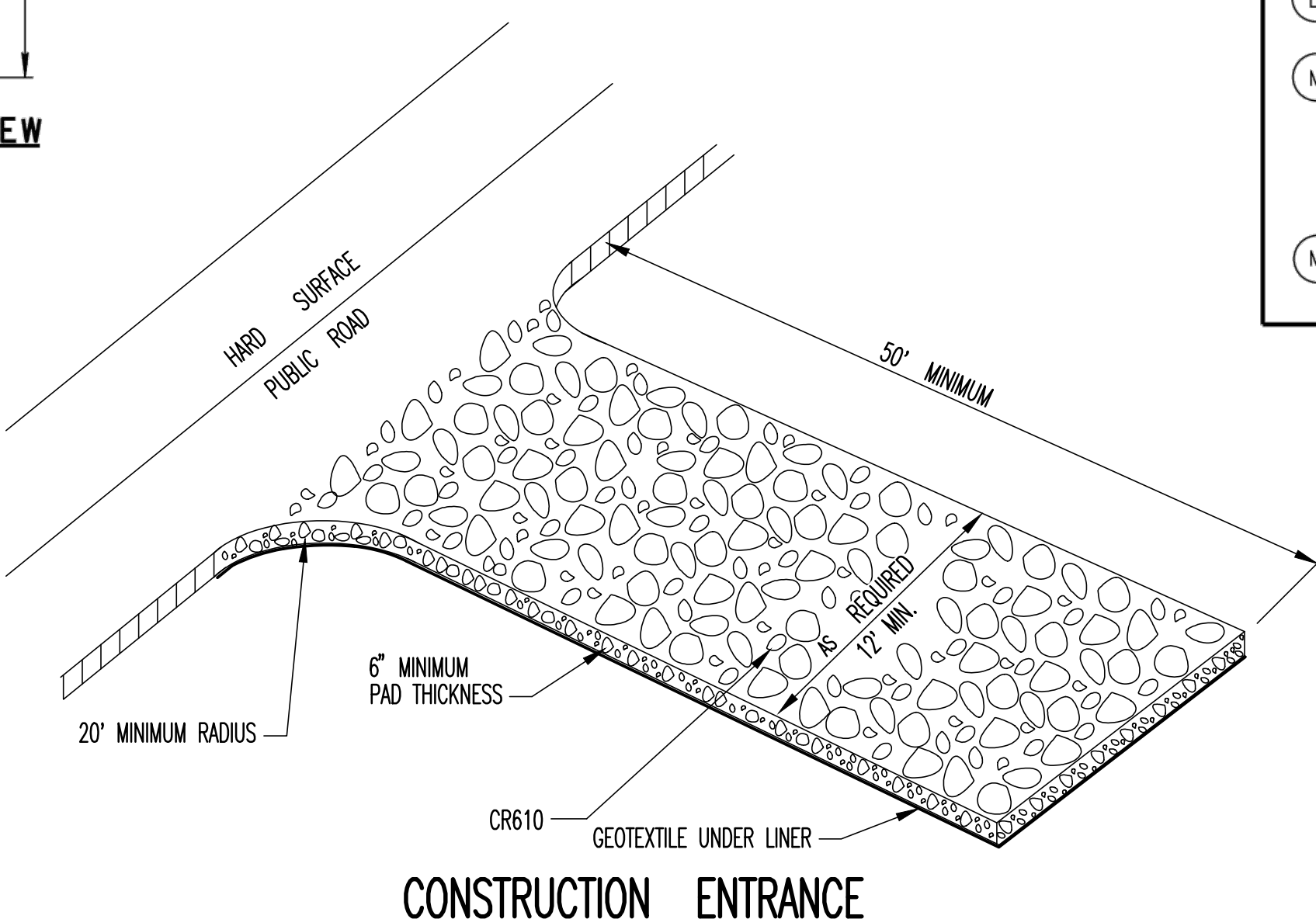
**ELEVATION VIEW**



**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)

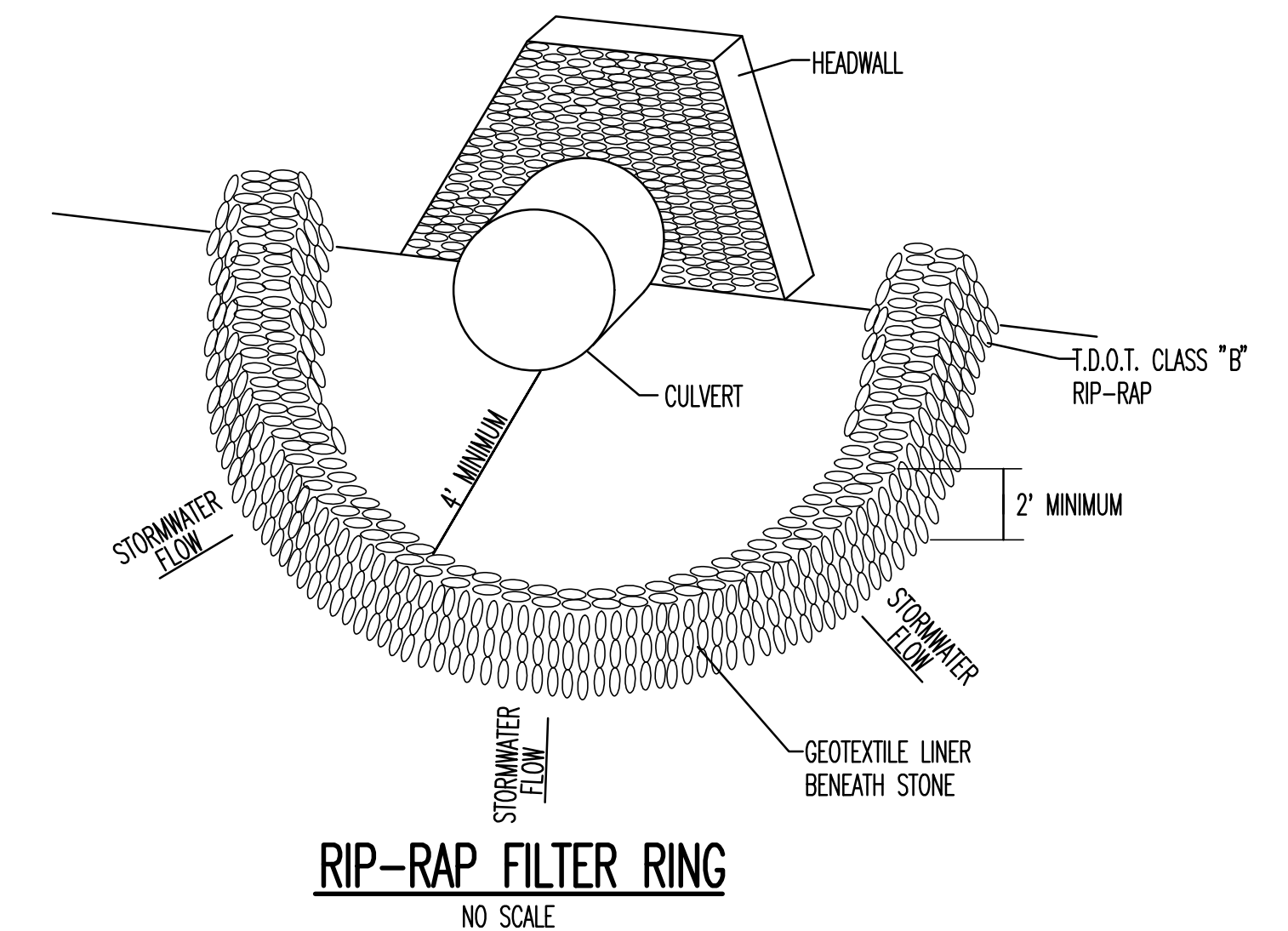
**SECTIONAL VIEW**



**CONSTRUCTION ENTRANCE**

**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 ¼ ACRE PER 100 LINEAR FEET OF FENCE LENGTH UP TO A MAXIMUM DRAINAGE AREA OF 2 ACRES. MAXIMUM SLOPE LENGTH BEHIND FENCE ON UPSLOPE SIDE SHALL BE 110 FEET (AS MEASURED ALONG THE GROUND SURFACE).
- (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 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 HOT-DIPPED GALVANIZED OR PAINTED WITH HIGH GRADE WEATHER RESISTANT STEEL PAINT. STEEL POSTS SHALL BE EQUIPPED WITH AN ANCHOR PLATE HAVING A MINIMUM AREA OF 14 SQUARE INCHES. POSTS SHALL BE STUDDED, EMBOSSED, OR PUNCHED TO AID IN THE ATTACHMENT OF THE WIRE BACKING. 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-HALF INCH LENGTH AND 1 INCH WIDTH 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 GROUNDLINE 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.
- (J) A PREASSEMBLED SILT FENCE MEETING THE REQUIREMENTS OF THIS DRAWING IS ACCEPTABLE IN LIEU OF A FIELD CONSTRUCTED SILT FENCE.
- (K) 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 THE APPLICABLE DETAIL, AND SIMULTANEOUSLY PULLING THE FENCE FABRIC INTO THE TRENCH AS THE TRENCH IS BEING EXCAVATED. ALTERNATE TRENCH-BASED METHODS ARE ALSO ACCEPTABLE. FOR TRENCH-BASED INSTALLATIONS, SILT FENCING SHALL BE INSTALLED PER THE FOLLOWING STEPS AND IN THE FOLLOWING ORDER:
  - EXCAVATE TRENCH A MAXIMUM OF 4 INCHES WIDE AND 6 INCHES DEEP. THE TRENCH SHALL BE HAND-CLEANED FOLLOWING EXCAVATION TO REMOVE BULKY DEBRIS SUCH AS ROCKS, STICKS, AND SOIL CLOUDS FROM THE TRENCH.
  - INSTALL FABRIC IN TRENCH.
  - BACKFILL TRENCH (OVER-FILL) WITH SOIL PLACED AROUND FABRIC.
  - COMPACT SOIL BACKFILL WITH MECHANICAL EQUIPMENT. DO NOT DAMAGE THE FABRIC DURING COMPACTION (DAMAGED FABRIC SHALL BE REPLACED).
  - DRIVE AND SET SUPPORT POSTS PER SPACING REQUIREMENTS GIVEN ON THE APPLICABLE FENCE DETAIL. FOR PRE-ASSEMBLED SILT FENCE, DRIVE SUPPORT IN TO GROUND FIRST, FOLLOWED BY FABRIC PLACEMENT IN TRENCH.
  - ATTACH FABRIC TO THE POSTS USING WIRE TIES OR STAPLES. SPACING AND DENSITY OF TIES OR STAPLES SHALL BE INSTALLED AS DESCRIBED IN NOTES F AND G.
- (L) 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.
- (M) SILT FENCE SHALL BE PAID FOR UNDER THE FOLLOWING ITEM NUMBER:
  - 209-08.03 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.
- (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.



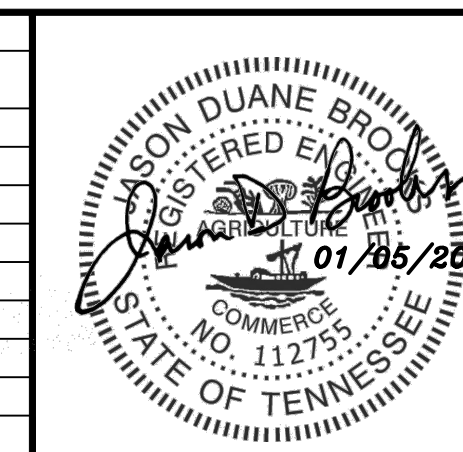
TIME OF YEAR	TYPE	% BY WEIGHT
FEBRUARY - MARCH	KY-31 TALL FESCUE	80
	ENGLISH RYE	5
	KOREAN LESPEDEZA	15
JUNE - SEPTEMBER	KY-31 TALL FESCUE	55
	ENGLISH RYE	20
	KOREAN LESPEDEZA	15
	GERMAN MILLET	10
OCTOBER - JANUARY	KY-31 TALL FESCUE	70
	ENGLISH RYE	20
	WHITE CLOVER	10

\* FOR MORE INFORMATION PLEASE SEE SWPPP FOR THIS PROJECT.

**PLANTING SCHEDULE**

□ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

REVISION	APPROVAL
ITEM NO.	DESCRIPTION OF CHANGE



DIVISION OF ENGINEERING  
S. BARKDALE ST. SIPHON & GRAVITY SEWER IMPROVEMENTS  
DEVELOPER: SARP10  
ENGINEER: LDA ENGINEERING

**SEWER BASIN NN02  
SHEET 3 OF 3**

**C0.8**

DIVISION OF ENGINEERING  
SARP10  
S. BARKDALE ST. SIPHON & GRAVITY SEWER IMPROVEMENTS  
TYPICAL DETAILS  
LOCATION: S. BARKDALE STREET  
MEMPHIS, TENNESSEE

SURVEY DESIGN BY: LDA ENGIN. DATE: 01/05/2018 BOOK: NO SCALE  
DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE