CONSTRUCTION PLANS
FOR PERMITTING ONLY

WATER SYSTEM IMPROVEMENTS FACILITIES PLAN

PREPARED FOR:

CITY OF PARKER, FLORIDA

CITY COUNCIL

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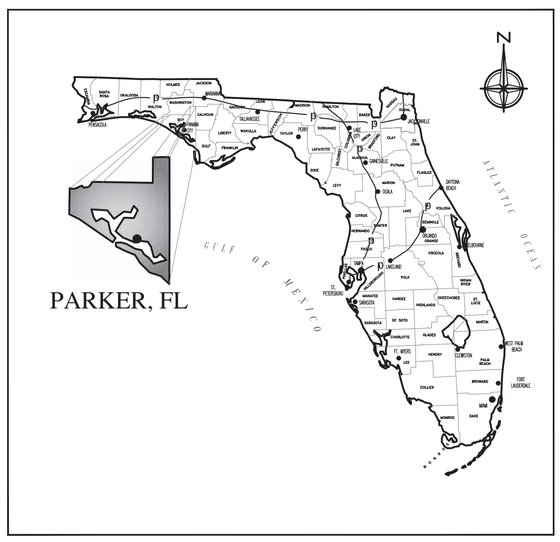
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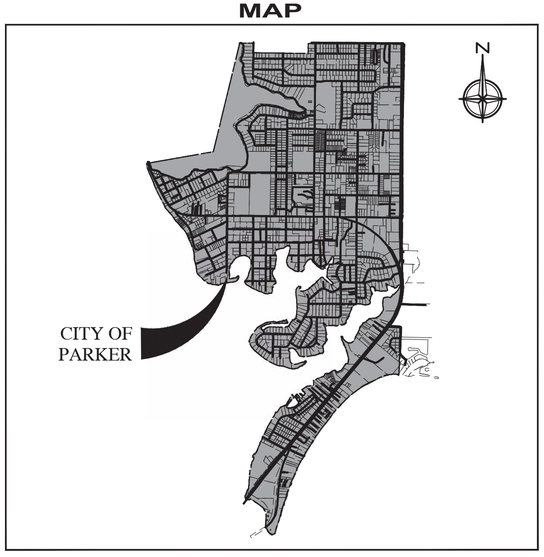
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THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.005, F.A.C.

VICINITY MAP



LOCATION MAP



DATE: 6/20/2023

INDEX OF SHEETS

	C0.0	COVER SHEET	* C1.16	BLACKSHEAR DRIVE
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	C0.3	GENERAL NOTES SHEET 3 of 3	* C1.19	WOOD AVENUE & WEST COOPER DRIVE
	C1.0	KEY SHEET	C1.20	EAST ALMA AVENUE & ETHLYN AVENUE
*	C1.1	BOB LITTLE ROAD	* C1.21	EAST COOPER DRIVE & KENDRICK EASEMENT
*	C1.2	BOB LITTLE ROAD	* C1.22	OAKSHORE DRIVE
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*	C1.4	PITTS AVENUE	C2.0	DIRECTIONAL BORE PROFILES
*	C1.5	PITTS AVENUE	C3.0	STANDARD UTILITY DETAILS
*	C1.6	ASTER STREET	C3.1	STANDARD UTILITY DETAILS
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*	C1.8	EAST 4TH STREET & DAVIS LANE		
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*	C1.15	JANICE LOOP		

* INDICATES SHEETS NOT INCLUDED IN THIS SUBMITTAL SET

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY:

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GENERAL PROVISIONS

1. THE CONTRACTOR SHALL OBTAIN FROM THE OWNER COPIES OF ALL AVAILABLE REGULATORY AGENCY PERMITS AND LOCAL AGENCY PERMITS.

2. CONTRACTOR, AS PART OF THE BASE BID, SHALL FIELD LOCATE ALL UNDERGROUND UTILITIES WITHIN THE PROJECT AREA WITHIN THE 30 DAYS OF PROJECT AWARD. CONTRACTOR SHALL REVIEW THE PLANS AND SHALL NOTE ANY DISCREPENCIES TO THE ENGINEER IMMEDIATELY.

3. CONTRACTORS, AS PART OF THE BASE BID, SHALL PROVIDE ALL COORDINATION WITH UTILITY PROVIDERS TO PROVIDE FOR THE MATERIALS AND WORK NEEDED TO PROVIDE SERVICES TO THE PROJECT.

4. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE FOR ALL DEMOLITION OF ABOVE GROUND AND UNDERGROUND IMPROVEMENTS IN ORDER TO CONSTRUCT THE PROPOSED IMPROVEMENTS NOTED ON THE PLANS. UNLESS APPROVED IN WRITING FROM THE OWNER, ALL MATERIALS SHALL BE REMOVED FROM THE SITE AS PART OF THE BASE BID.

5. ALL DETAILS AND REFERENCES TO FDOT REFER TO THE LATEST EDITION OF THE FDOT DESIGN STANDARDS.

6. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LOCATION OF ALL UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC AND FIRE PROTECTION WATER SERVICE, ELECTRICAL, TELEPHONE AND GAS SERVICE. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES, IN SUCH A MANNER AS TO AVOID CONFLICT AND ASSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH UTILITY REQUIREMENTS AS TO LOCATION AND SCHEDULING FOR TIE-INS/ CONNECTIONS PRIOR TO CONNECTING TO EXISTING UTILITIES.

7. CONTRACTOR AND HIS SURVEYOR SHALL NOTE THE PROJECT BENCHMARK INFORMATION PROVIDED IN THE PLANS AND VERIFY PRIOR TO CONSTRUCTION.

8. ALL CONSTRUCTION PROJECTS 1 OR MORE ACRES IN SIZE THAT DISCHARGE TO OFFSITE AREAS ARE REQUIRED TO COMPLY WITH THE REQUIREMENTS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORMWATER DISCHARGE FROM SMALL AND LARGE CONSTRUCTION ACTIVITIES. IN ORDER TO MEET NPDES REQUIREMENTS, THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING, INSPECTING, MAINTAINING, AND REPORTING ON ALL ELEMENTS OF THE SWPPP, COMPLETING AND SUBMITTING THE REQUIRED NOTICE OF INTENT (NOI) AND NOTICE OF TERMINATION (NOT) FORMS AS THE OPERATOR, AND PAYING ALL ASSOCIATED FEES. FOR PROJECTS LESS THAN 1 ACRE IN SIZE THAT ARE NOT REQUIRED TO COMPLY WITH THE NPDES GENERAL PERMIT, THE CONTRACTOR IS STILL RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO AND DURING CONSTRUCTION IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.

9. UNLESS OTHERWISE NOTED ON THE PLANS, THE CONTRACTOR SHALL USE THE GEOMETRY PROVIDED ON THE CONSTRUCTION PLANS. BENCHMARK INFORMATION SHALL BE PROVIDED TO THE CONTRACTOR BY THE OWNER OR OWNER'S SURVEYOR. ANY DISCREPANCIES BETWEEN FIELD MEASUREMENTS AND CONSTRUCTION PLAN INFORMATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.

10. BASE SURVEY INFORMATION INCLUDING BUT NOT LIMITED TO ELEVATIONS, EASEMENTS, RIGHTS OF WAY, AND OTHER TOPOGRAPHIC INFORMATION HAS BEEN PREPARED BY OTHER PROFESSIONALS. ANCHOR CEI, INC. ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION.

11. THIS SET OF PLANS MAY CONTAIN DRAWINGS PREPARED BY OTHER PROFESSIONALS, WHICH CONTAIN THE NAME, ADDRESS, AND LOGO OF THE PROFESSIONAL. ANCHOR CEI, INC. IS NOT RESPONSIBLE FOR DRAWINGS PREPARED BY OTHER PROFESSIONALS.

12. THE CONTRACTOR SHALL SUBMIT ONE ELECTRONIC COPY OF SHOP DRAWINGS TO THE ENGINEER TO KEEP FOR HIS RECORDS. THE ENGINEER WILL NOT PROVIDE FOR APPROVAL OF SHOP DRAWINGS, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL MATERIALS FOR ACCURACY PRIOR TO ORDERING THE MATERIALS. ANY DESCREPENCIES IDENTFIED BY THE CONTRACTOR SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.

13. PROTECT BENCHMARKS, PROPERTY CORNERS, AND OTHER SURVEY MONUMENTS FROM DAMAGE OR DISPLACEMENT. IF MARKER NEEDS TO BE REMOVED IT SHALL BE REFERENCED BY LICENSED LAND SURVEYOR AND REPLACED, AS NECESSARY, BY SAME.

14. THE CONTRACTOR IS RESPONSIBLE FOR ALL QUALITY CONTROL TESTING. AS A MINIMUM, TESTING SHALL INCLUDE A) PIPING AND STRUCTURAL EXCAVATION, BEDDING AND BACKFILL MATERIALS AND DENSITY TESTS; B) DETERMINATION OF COMPACTIVE EFFORT NEEDED FOR COMPLIANCE WITH THE DENSITY REQUIREMENTS; C) PORTLAND CEMENT CONCRETE AND ASPHALT PAVING QUALITY CONTROL TESTING INCLUDING DESIGN MIX REVIEW, MATERIALS, FIELD SLUMP AND AIR CONTENT, AND FIELD AND LAB CURED STRENGTH SAMPLES AND TESTING.

15. IN ADDITION TO QUALITY CONTROL TESTING, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REQUIRED TESTING OR APPROVALS FOR ANY WORK (OR ANY PART THEREOF) IF LAWS OR REGULATIONS OF ANY PUBLIC BODY HAVING JURISDICTION SPECIFICALLY REQUIRE TESTING, INSPECTIONS OR APPROVAL. THE CONTRACTOR SHALL PAY ALL COSTS IN CONNECTION THEREWITH AND SHALL FURNISH THE OWNER AND ENGINEER THE REQUIRED CERTIFICATES OF INSPECTION, TESTING OR APPROVAL.

16. ANY DESIGN OR TESTING LABORATORY UTILIZED BY THE CONTRACTOR SHALL BE AN INDEPENDENT LABORATORY ACCEPTABLE TO THE OWNER AND THE ENGINEER, APPROVED IN WRITING, AND COMPLYING WITH THE LATEST EDITION OF THE "RECOMMENDED REQUIREMENTS FOR INDEPENDENT LABORATORY QUALIFICATION", PUBLISHED BY THE AMERICAN COUNCIL OF INDEPENDENT LABORATORIES.

17. TESTING RESULTS SHALL BE PROVIDED TO THE OWNER/OPERATOR AND THE ENGINEER. ALL TEST RESULTS SHALL BE PROVIDED (PASSING AND FAILING) ON A REGULAR AND IMMEDIATE BASIS.

18. THE ENTIRE PROJECT SITE SHALL BE THOROUGHLY CLEANED AT THE COMPLETION OF THE WORK. CLEAN ALL INSTALLED PIPELINES, STRUCTURES, SIDEWALKS, PAVED AREAS, ACCUMULATED SILT IN PONDS, PLUS ALL ADJACENT AREAS AFFECTED BY CONSTRUCTION, AS DIRECTED BY THE OWNER OR JURISDICTIONAL AGENCY. EQUIPMENT TO CLEAN THESE SURFACES SHALL BE SUBJECT TO APPROVAL BY THE OWNER.

19. ALL DISTRUBED AREAS WITHIN RIGHT OF WAYS SHALL BE SODDED.

20. CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST STANDARDS OF OSHA DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING AND OTHER MEANS OF PROTECTION. THIS TO INCLUDE BUT NOT BE LIMITED, FOR ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE TO COMPLY WITH PERFORMANCE CRITERIA FOR OSHA.

21. THE CONTRACTOR SHALL RECOGNIZE AND ABIDE BY ALL OSHA EXCAVATION SAFETY STANDARDS, INCLUDING THE FLORIDA TRENCH SAFETY ACT (90-96, LAWS OF FLORIDA). ANY MATERIAL, CONSTRUCTION METHODS, OR MATERIAL COST TO COMPLY WITH THESE LAWS SHALL BE INCIDENTAL TO THE CONTRACT.

22. CONTRACTOR MUST STOP OPERATION AND NOTIFY THE OWNER FOR PROPER DIRECTION IF ANY ENVIRONMENTAL OR HEALTH RELATED CONTAMINATE IS ENCOUNTERED DURING EXCAVATION.

UTILITY GENERAL NOTES

1. THE UTILITY DATA SHOWN ON THESE PLANS WAS LOCATED BY THE RESPECTIVE UTILITY, OR IS BASED ON UTILITY DRAWINGS, MAPS, OR FIELD RECONNAISSANCE.

2. THE LOCATION, MATERIAL TYPE, AND SIZE OF ALL EXISTING UTILITIES SHOWN ON THE PLANS HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITIES AND TO MAKE THE NECESSARY ARRANGEMENTS FOR ANY RELOCATIONS OF THESE UTILITIES WITH THE OWNER OF THE UTILITY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING AN UNDERGROUND UTILITY, WHETHER SHOWN ON THE PLANS OR LOCATED BY THE UTILITY COMPANY. ANY UTILITIES, WHETHER SHOWN ON THESE PLANS OR NOT, THAT INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE CLOSELY COORDINATED WITH THE ENGINEER AND THE RESPECTIVE UTILITY COMPANY FOR RELOCATION OR PROPER INSTRUCTION.

3. A SINGLE POINT UTILITY IDENTIFICATION SERVICE HAS BEEN SET UP FOR EXISTING UTILITIES. THE CONTRACTOR IS TO CONTACT THE SUNSHINE STATE ONE CALL CENTER BY DIALING "811" AT LEAST TWO (2) AND NO MORE THAN FIVE (5) WORKING DAYS PRIOR TO THE SPECIFIC CONSTRUCTION ACTIVITY FOR FIELD LOCATION. NOTE THAT NOT ALL UTILITIES PARTICIPATE IN THIS PROGRAM. THE CONTRACTOR SHOULD CONTACT ALL NON-PARTICIPATING UTILITIES SEPARATELY FOR FIELD LOCATION OF THEIR FACILITIES AT LEAST TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.

4. THE UTILITY PROVIDERS NOTED ON THE COVER SHEET HAVE PREVIOUSLY INDICATED THAT THEY MAY HAVE FACILITIES IN THE VICINITY OF THE CONSTRUCTION AREA.

5. THE CONTRACTOR SHALL KEEP LOCATE TICKETS UP TO DATE AT ALL TIMES.

6. THE CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION WITH EACH UTILITY AND ALL COSTS ASSOCIATED WITH THE PROTECTION OF EXISTING FACILITIES DURING CONSTRUCTION. THE CONTRACTOR SHALL ALSO COORDINATE NECESSARY RELOCATIONS OR OTHER CONSTRUCTION RELATED MATTERS WITH EACH UTILITY.

7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN IN SERVICE ALL EXISTING PIPING ENCOUNTERED DURING CONSTRUCTION UNLESS OTHERWISE INDICATED IN THE DRAWINGS. ANY PIPING WHICH CAN BE REMOVED DURING CONSTRUCTION WITHOUT UNDUE INTERRUPTION OF SERVICE MAY BE REMOVED AND REPLACED BY THE CONTRACTOR WITH THE PERMISSION OF THE OWNER AND THE ENGINEER.

8. TYPICAL DETAILS AND PROPOSED CONSTRUCTION AS SHOWN ILLUSTRATE THE ENGINEER'S INTENT AND ARE NOT PRESENTED AS A SOLUTION TO ALL CONSTRUCTION PROBLEMS ENCOUNTERED IN THE FIELD. THE CONTRACTOR MAY ALTER THE PROPOSED CONSTRUCTION TO SUIT FIELD CONDITIONS, PROVIDED IT COMPLIES WITH THE PROJECT SPECIFICATIONS AND APPROVAL IS RECEIVED FROM THE ENGINEER. WHERE SUCH PROPOSED REVISIONS DEVIATE FROM THE FDEP CONSTRUCTION PERMIT, THEN SUCH REVISIONS WILL ALSO REQUIRE APPROVAL FROM FDEP.

9. FOR EACH RESPECTIVE PIPELINE CONSTRUCTION REQUIRED, THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION, DEPTH, SIZE, MATERIAL TYPE, AND ALIGNMENT OF ALL EXISTING PIPES, CABLES, ETC. TO BE CROSSED OR CONNECTED TO. IF THE CONTRACTOR DEEMS NECESSARY (A) A CHANGE IN ALIGNMENT OR DEPTH, OR THE NEED FOR ADDITIONAL FITTINGS, BENDS, OR COUPLINGS, WHICH REPRESENT A DEPARTURE FROM THE CONTRACT DRAWING, OR (B) A NEED FOR RELOCATION OF EXISTING UTILITIES, THEN DETAILS OF SUCH DEPARTURES, RELOCATIONS, OR ADDITIONAL FITTINGS, INCLUDING CHANGES IN RELATED PORTIONS OF THE PROJECT AND THE REASONS THEREFORE, SHALL BE SUBMITTED WITH SHOP DRAWINGS. APPROVED DEPARTURES FOR THE CONTRACTOR'S CONVENIENCE SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.

10. THE CONTRACTOR SHALL PROVIDE AT HIS OWN EXPENSE ALL NECESSARY TEST PUMPING EQUIPMENT, WATER, WATER METERS, PRESSURE GAUGES, AND OTHER EQUIPMENT, MATERIAL AND FACILITIES REQUIRED FOR ALL HYDROSTATIC, LEAKAGE, AND PRESSURE TESTING. THE CONTRACTOR SHALL CONTACT THE ENGINEER AND THE OWNER IN WRITTEN FORM, FORTY-EIGHT (48) HOURS IN ADVANCE OF PROPOSED TESTING. THE CONTRACTOR SHALL PERFORM SATISFACTORY PRETESTING PRIOR TO NOTIFICATION.

AS-BUILT DRAWING REQUIREMENTS

1. AS-BUILT DRAWINGS SHALL BE PROVIDED BY THE CONTRACTOR TO THE ENGINEER AT LEAST THREE WEEKS PRIOR TO FINAL INSPECTION. ALL AS-BUILT DATA SHALL BE PROVIDED BY A FLORIDA LICENSED SURVEYOR, SIGNED, SEALED AND DATED BY THE RESPONSIBLE PARTY. THE CONTRACTOR SHALL BE RESPONSBILE TO IDENTIFY ALL AS-BUILT SURVEY REQUIREMENTS BY THE GOVERNING AGENCIES PRIOR TO START OF CONSTRUCTION TO ENSURE THAT AS-BUILT INFORMATION IS PROVIDED FOR.

2. ALL RECORD DRAWINGS SHALL BE PREPARED BY THE CONTRACTOR IN ACAD FORMAT USING CONSTRUCTION PLAN SHEETS PROVIDED BY THE ENGINEER. AS-BUILT INFORMATION SHALL BE FIELD VERIFIED, MEASURED, ADDED TO THE ACAD FILES OF THE CONSTRUCTION PLAN SHEETS PROVIDED BY THE ENGINEER, AND CERTIFIED, SIGNED AND SEALED BY THE CONTRACTOR'S LICENSED SURVEYOR WHO WILL BE RESPONSIBLE FOR THE ACCURACY OF ALL DIMENSIONS AND ELEVATIONS.

3. THE AS-BUILT INFORMATION IS TO INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

A. HORIZONTAL LOCATIONS AND VERTICAL ELEVATIONS FOR ALL UTILITY AND STORM STRUCTURES INCLUDING BUT NOT LIMITED TO MANHOLES, INLETS AND CLEANOUTS, INCLUDING STRUCTURE TOP AND INVERT ELEVATIONS.

B. DISTANCE ALONG PIPELINES BETWEEN STRUCTURES.

C. STORMWATER POND TOP OF BERM AND POND BOTTOM ELEVATIONS AND HORIZONTAL DIMENSIONS MEASURED AT A MINIMUM OF TEN LOCATIONS PER POND, AT LOCATIONS DESIGNATED BY THE ENGINEER. TOP OF POND HORIZONTAL DIMENSIONS ARE ALSO TO BE TIED TO PROPERTY CORNERS, EASEMENTS, AND RIGHTS-OF-WAY.

D. STORMWATER CONTROL STRUCTURE DIMENSIONS AND ELEVATIONS, INCLUDING ALL WEIRS, SLOTS, ORIFICES, GRATES, AND SKIMMERS.

E. STORMWATER CONVEYANCE SYSTEMS INCLUDING DIMENSIONS, ELEVATIONS, CONTOURS, AND CROSS SECTIONS.

F. HORIZONTAL LOCATIONS AND VERTICAL ELEVATIONS OF ALL UTILITY VALVES, FITTINGS, CONNECTION POINTS, ETC.

G. VERTICAL ELEVATIONS OF ALL PIPELINES AT CROSSINGS OF POTABLE WATER MAINS (WHETHER THE WATER MAIN IS EXISTING OR NEW) IN ORDER TO DOCUMENT THAT THE MINIMUM REQUIRED VERTICAL SEPARATION HAS BEEN MET.

H. UTILITY PIPELINE TIED HORIZONTALLY TO EDGE OF PAVEMENT AND RIGHT-OF-WAY LINES, LOCATED EVERY 200-FT PLUS ALL CHANGES IN HORIZONTAL OFFSET.

I. PAVEMENT WIDTH AND ELEVATIONS AT THE CENTERLINE AND EDGE OF PAVEMENT EVERY 200 FEET PLUS AT ALL CHANGES IN LONGITUDINAL SLOPE, CROSS SLOPE, INLET LOCATIONS, AND AT ALL DRIVEWAY AND STREET INTERSECTIONS. FOR PARKING LOTS, RECORD CENTERLINE AND EDGE OF PAVEMENT ELEVATIONS ALONG ALL DRIVE AISLES AND ISLANDS.

J. ALL PARKING AREAS AND SIDEWALK RAMPS DESIGNATED FOR HANDICAP ACCESS SHALL CONTAIN HORIZONTAL AND VERTICAL MEASUREMENTS IN ORDER TO VERIFY REQUIRED WIDTHS AND SLOPES HAVE BEEN MET.

K. HORIZONTAL AND VERTICAL DATA FOR ANY CONSTRUCTION THAT DEVIATES FROM THE APPROVED ENGINEERING DRAWINGS.

L. WHERE THE PLANS CONTAIN SPECIFIC HORIZONTAL LOCATION DATA, SUCH AS STATION AND OFFSET, THE AS-BUILT DRAWINGS ARE TO REFLECT THE ACTUAL HORIZONTAL LOCATION.

M. WHERE THE PLANS CONTAIN SPECIFIC VERTICAL ELEVATION DATA, THE AS-BUILT DRAWINGS ARE TO REFLECT THE ACTUAL MEASURED VERTICAL ELEVATION.

N. ANY ADDITIONAL INFORMATION REQUIRED BY GOVERNING AGENCIES.

4. IN CASES WHERE THE OWNER DETERMINES PARTIAL CLEARANCES FROM PERMITTING AGENCIES ARE BENEFICIAL TO THE OWNER FOR COMPLETED PORTIONS OF THE PROJECT, PROVIDE PRELIMINARY AS-BUILT DRAWINGS (ACAD FORMAT) TO THE ENGINEER FOR ITS USE IN PREPARING THE PARTIAL CLEARANCE APPLICATIONS FOR THE OWNER.

5. COMPLETE AS-BUILT DRAWINGS THAT ARE FOUND TO BE SATISFACTORY AS A RESULT OF THE ENGINEER'S REVIEW WILL BE USED AS THE BASIS FOR THE FINAL PROJECT RECORD DRAWINGS PREPARED BY THE ENGINEER USING THE CONTRACTOR PROVIDED AS-BUILT DRAWINGS PLUS ENGINEER ADDED INFORMATION.

TRAFFIC CONTROL

1. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A MAINTENANCE OF TRAFFIC (M.O.T.) PLAN PRIOR TO CONSTRUCTION. THE M.O.T. PLAN SHALL SHOW ALL PROPOSED TRAFFIC CONTROL SIGNS, PAVEMENT MARKINGS, AND BARRICADES, AND SHALL DETAIL ALL PROPOSED CONSTRUCTION SEQUENCING. THE M.O.T. PLAN AND INSTALLED TRAFFIC CONTROL MEASURES SHALL BE APPROVED BY THE ENGINEER, OWNER, AND ROADWAY JURISDICTIONAL AGENCY PRIOR TO CONSTRUCTION. IN GENERAL, ROADWAY AND DRIVEWAY LANE CLOSURES ARE PROHIBITED DURING CONSTRUCTION UNLESS SPECIFICALLY DETAILED ON THESE PLANS. IN THE EVENT IT IS DETERMINED THAT ROADWAY AND DRIVEWAY LANE CLOSURES WILL BE ALLOWED, THE CLOSURES SHALL BE RESTRICTED TO THE HOURS BETWEEN 9:00 A.M. AND 4:00 P.M. UNLESS OTHERWISE AUTHORIZED IN THE APPROVED M.O.T.

2. ALL TRAFFIC CONTROL MEASURES SHALL BE IN ACCORDANCE WITH FDOT INDEX NO. 600 AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL TRAFFIC CONTROL MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND MAINTAINED DURING CONSTRUCTION.

3. INSPECT TRAFFIC CONTROL DEVICES ON A DAILY BASIS TO ENSURE PLACEMENT OF BARRICADES AND FUNCTION OF LIGHTS IS MAINTAINED THROUGHOUT CONSTRUCTION.

4. CONTACT PROPERTY OWNERS AFFECTED BY CONSTRUCTION. COORDINATE TEMPORARY DRIVEWAY CLOSURES AND SEQUENCING. MAINTAIN ACCESS FOR ALL PROPERTY OWNERS DURING CONSTRUCTION.

5. WET UNSTABILIZED AREAS AS NECESSARY TO CONTROL DUST.

6. ADJUST TRAFFIC CONTROL DEVICES AS REQUIRED UNDER EMERGENCY CONDITIONS.

7. THE CONTRACTOR IS EXPECTED TO COORDINATE ITS ACTIVITIES WITH OTHER CONTRACTORS WHO MAY BE WORKING IN THE IMMEDIATE VICINITY.

8. WHEN WORK OCCURS WITHIN 15-FT OF ACTIVE ROAD TRAVEL LANES BUT NO CLOSER THAN 2-FT FROM THE EDGE OF PAVEMENT, SIGNAGE AND WARNING DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH FDOT INDEX NO. 600 AND 602.

9. TYPE I OR TYPE II BARRICADES AT 20-FT CENTERS SHALL BE PLACED AND MAINTAINED ALONG THE EDGE OF THE ROAD WHEREVER DROP-OFFS OR OTHER HAZARDS EXIST AND TO BLOCK ENTRANCE INTO COMPLETED OR PARTIALLY COMPLETED PAVEMENTS UNTIL SUCH PAVEMENTS ARE OPEN TO PUBLIC USE.

SITE PREPARATION

1. UNLESS OTHERWISE DIRECTED BY THE OWNER OR ENGINEER, THE CONTRACTOR IS EXPECTED TO CONTAIN ALL CONSTRUCTION ACTIVITIES WITHIN THE PROPERTY, RIGHT-OF-WAY, AND EASEMENTS AS INDICATED ON THE DRAWINGS. AT NO TIME SHALL THE CONTRACTOR DISTURB SURROUNDING PROPERTIES OR TRAVEL ON SURROUNDING PROPERTIES WITHOUT WRITTEN CONSENT FROM THE PROPERTY OWNER. ANY REPAIR OR RECONSTRUCTION OF DAMAGED AREAS IN SURROUNDING PROPERTIES SHALL BE REPAIRED BY THE CONTRACTOR ON AN IMMEDIATE BASIS. ALL COSTS FOR REPAIRS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND NO EXTRA COMPENSATION SHALL BE PROVIDED.

2. STAKE OUT THE CONSTRUCTION, ESTABLISH LINES AND LEVELS, TEMPORARY BENCH MARKS, BATTER BOARDS, CENTERLINES, BASELINES, AND REFERENCE POINTS FOR THE WORK, AND VERIFY ALL DIMENSIONS RELATING TO INTERCONNECTION WITH EXISTING FEATURES. REPORT ANY INCONSISTENCIES IN THE PROPOSED GRADES, LINES AND LEVELS, DIMENSIONS AND LOCATIONS TO THE ENGINEER BEFORE COMMENCING WORK.

3. PROTECT ALL TREES AND SHRUBS LOCATED OUTSIDE THE RIGHT-OF-WAY, EASEMENTS, AND OWNER SECURED PROPERTY, PARTICULARLY THOSE TREES AND SHRUBS LOCATED ADJACENT TO WORK AREAS.

4. WITHIN THE RIGHT-OF-WAY, EASEMENTS, AND OWNER SECURED PROPERTY, THE INTENT IS TO ALLOW TREES AND SHRUBS TO REMAIN IN ACCORDANCE WITH THE FOLLOWING SCHEDULE: NEW ROADWAY CONSTRUCTION - TREES AND SHRUBS TO REMAIN WHERE LOCATED MORE THAN 15 FEET FROM THE BACK OF CURB, OR OUTSIDE THE LIMITS OF EXCAVATION OR FILL AREAS, WHICHEVER IS FURTHER. UTILITY PIPELINE CONSTRUCTION - TREES AND SHRUBS TO REMAIN OUTSIDE A 15 FOOT WIDE PATH, CENTERED ON THE PIPELINE.

5. TREES TO REMAIN IN THE CONSTRUCTION AREA SHALL BE BOXED, FENCED OR OTHERWISE PROTECTED IN ACCORDANCE WITH DETAILS ON THE DRAWINGS. DO NOT PERMIT HEAVY EQUIPMENT OR STOCKPILES WITHIN BRANCH SPREAD

6. AREAS TO RECEIVE CLEARING AND GRUBBING SHALL INCLUDE ALL AREAS TO BE OCCUPIED BY THE PROPOSED IMPROVEMENTS, AREAS FOR FILL AND SITE GRADING, AND BORROW SITES. REMOVE TREES OUTSIDE OF THESE AREAS ONLY AS INDICATED ON THE DRAWINGS OR AS APPROVED IN WRITING BY THE ENGINEER.

7. CLEARING SHALL CONSIST OF REMOVING TREES AND BRUSH AND DISPOSAL OF OTHER MATERIALS THAT ENCROACH UPON OR OTHERWISE OBSTRUCT THE WORK.

8. EXERCISE EXTREME CARE DURING THE CLEARING AND GRUBBING OPERATIONS. DO NOT DAMAGE EXISTING STRUCTURES, PIPES OR UTILITIES.

9. GRUBBING SHALL CONSIST OF REMOVING AND DISPOSING OF STUMPS, ROOTS LARGER THAN 2" IN DIAMETER, AND MATTED ROOTS. REMOVE TO A DEPTH OF NOT LESS THAN 18" BELOW THE ORIGINAL SURFACE LEVEL OF THE GROUND.

10. ALL COMBUSTIBLE DEBRIS AND REFUSE FROM SITE PREPARATION OPERATIONS SHALL BE REMOVED TO LEGAL OFFSITE DISPOSAL AREAS.

DEWATERING

1. DESIGN AND PROVIDE A DEWATERING SYSTEM USING ACCEPTED AND PROFESSIONAL METHODS CONSISTENT WITH CURRENT INDUSTRY PRACTICE. PROVIDE A DEWATERING SYSTEM OF SUFFICIENT SIZE AND CAPACITY TO CONTROL GROUNDWATER IN A MANNER THAT PRESERVES STRENGTH OF FOUNDATION SOILS, DOES NOT CAUSE INSTABILITY OR RAVELING OF EXCAVATION SLOPES, AND DOES NOT RESULT IN DAMAGE TO EXISTING STRUCTURES. WHERE NECESSARY TO THESE PURPOSES, LOWER WATER LEVEL IN ADVANCE OF EXCAVATION, UTILIZING WELLS, WELLPOINTS, OR SIMILAR POSITIVE METHODS. MAINTAIN THE GROUNDWATER LEVEL TO A MINIMUM OF 2 FEET BELOW EXCAVATIONS. PROVIDE PIEZOMETERS IF DIRECTED BY THE ENGINEER TO DOCUMENT THE GROUNDWATER LEVEL IS BEING MAINTAINED.

2. CONTROL, BY ACCEPTABLE MEANS, ALL WATER REGARDLESS OF SOURCE AND BE FULLY RESPONSIBLE FOR DISPOSAL OF THE WATER. NO ADDITIONAL PAYMENT WILL BE MADE FOR ANY SUPPLEMENTAL MEASURES TO CONTROL SEEPAGE, GROUNDWATER, OR ARTESIAN HEAD.

3. DEWATERING DISCHARGE FROM THE SITE SHALL COMPLY WITH ALL NPDES GENERAL PERMIT REQUIREMENTS AND STATE WATER QUALITY STANDARDS. PROVIDE ALL TESTING AND PERMITTING REQUIRED AND COMPLY WITH ALL TREATMENT OR DISPOSAL METHODS REQUIRED TO MEET ALL LOCAL, STATE AND FEDERAL REQUIREMENTS.

4. OPEN PUMPING WITH SUMPS AND DITCHES SHALL BE ALLOWED, PROVIDED IT DOES NOT RESULT IN BOILS, LOSS OF FINES, SOFTENING OF THE GROUND, OR INSTABILITY OF SLOPES. SUMPS SHALL BE LOCATED OUTSIDE OF LOAD BEARING AREAS SO THE BEARING SURFACES WILL NOT BE DISTURBED. WATER CONTAINING SILT IN SUSPENSION SHALL NOT BE PUMPED INTO SEWER LINES OR ADJACENT STREAMS. DURING NORMAL PUMPING, AND UPON DEVELOPMENT OF WELL(S), LEVELS OF FINE SAND OR SILT IN THE DISCHARGE WATER SHALL NOT EXCEED 5 PPM.

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Designed: E. Moore, PE
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Job No.: 1620-006
Date: Mar. 2021 © 2023

GENERAL NOTES SHEET 1 of 3

SRF WATERSYSTEM UPGRADE
PARKER, FLORIDA

THIS SHEET NOT VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS.

Sheet No.
C0.1

5. IF DEWATERING EQUIPMENT NEEDED EXCEEDS ANY OF THE FOLLOWING: 1) 6" PUMP VOLUTE; 2) 100,000 GPD TOTAL 24 HOUR (1 DAY) DEWATERING, AND; 3) 1,000,000 GPD PUMP CAPACITY, THE CONTRACTOR SHALL BE REQUIRED TO PERMIT THE DEWATERING SYSTEM WITH THE WATER MANAGEMENT DISTRICT.

6. CONTINUOUSLY MAINTAIN EXCAVATIONS IN A DRY CONDITION WITH POSITIVE DEWATERING METHODS DURING PREPARATION OF SUBGRADE, INSTALLATION OF PIPE, AND CONSTRUCTION OF STRUCTURES UNTIL THE CRITICAL PERIOD OF CONSTRUCTION AND/OR BACKFILL IS COMPLETED TO PREVENT DAMAGE OF SUBGRADE SUPPORT, PIPING, STRUCTURE, SIDE SLOPES, OR ADJACENT FACILITIES FROM FLOTATION OR OTHER HYDROSTATIC PRESSURE IMBALANCE.

7. WHEN CONSTRUCTION IS COMPLETE, REMOVE ALL DEWATERING EQUIPMENT FROM THE SITE, INCLUDING WELLS AND RELATED TEMPORARY ELECTRICAL SERVICE.

GRADING

1. SMOOTH TRANSITIONS SHALL BE PROVIDED BETWEEN CONTOURS OR SPOT ELEVATIONS AS SHOWN ON THE PLANS TO ACCOMPLISH THE GRADING INTENT. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER FINAL GRADING HAS BEEN COMPLETED. CONTRACTOR SHALL NOTIFY OWNER AND ENGINEER PRIOR TO DEMOBILIZATION OF GRADING EQUIPMENT TO DETERMINE THAT THE GRADING INTENT HAS BEEN ACHIEVED.

2. ALL PROPOSED ELEVATIONS ON THE PLANS WITHIN PAVED AREAS ARE SHOWN AT PAVEMENT, UNLESS OTHERWISE NOTED.

3. ALL PAVING SURFACES IN INTERSECTIONS AND ADJACENT SECTIONS SHALL BE GRADED TO DRAIN POSITIVELY AND TO PROVIDE A SMOOTHLY TRANSITIONED DRIVING SURFACE FOR VEHICLES WITH NO SHARP BREAKS IN GRADE, AND NO UNUSUALLY STEEP OR REVERSE CROSS SLOPES. THE STANDARD CROWN MAY HAVE TO BE CHANGED IN ORDER TO DRAIN POSITIVELY IN THE AREA OF INTERSECTIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCOMPLISH THE ABOVE AND THE ENGINEER SHALL BE CONSULTED SO THAT HE MAY MAKE ANY AND ALL REQUIRED INTERPRETATIONS OF THE PLANS OR GIVE SUPPLEMENTARY INSTRUCTIONS TO ACCOMPLISH THE INTENT OF THE PLANS.

4. UNIFORMLY SMOOTH GRADE THE SITE. DEPRESSIONS FROM SETTLEMENT SHALL BE FILLED AND COMPACTED. TOPS OF EMBANKMENTS AND BREAKS IN GRADE SHALL BE ROUNDED. FINISHED SURFACES SHALL BE REASONABLY SMOOTH, COMPACTED, FREE FROM IRREGULAR SURFACE CHANGES AND COMPARABLE TO THE SMOOTHNESS OBTAINED BY BLADE-GRADER OPERATIONS.

5. NEWLY GRADED AREAS SHALL BE PROTECTED FROM TRAFFIC AND EROSION. ALL SETTLEMENT OR WASHING AWAY THAT MAY OCCUR FROM ANY CAUSE PRIOR TO SEEDING OR ACCEPTANCE SHALL BE REPAIRED AND GRADES RE-ESTABLISHED TO THE REQUIRED ELEVATIONS AND SLOPES AT NO ADDITIONAL COST TO THE OWNER.

EXCAVATION, TRENCHING, AND FILL

1. THE CONTRACTOR SHALL RECOGNIZE AND ABIDE BY ALL OSHA EXCAVATION SAFETY STANDARDS, INCLUDING THE FLORIDA TRENCH SAFETY ACT (FS 553.60-553.64). ANY MATERIAL, CONSTRUCTION METHODS, OR MATERIAL COST TO COMPLY WITH THESE LAWS SHALL BE INCIDENTAL TO THE CONTRACT.

2. ROUGH EXCAVATE AND GRADE ANY PROPOSED STORMWATER PONDS AT THE START OF SITE GRADING ACTIVITIES. DIRECT SITE RUNOFF TO THE PONDS TO MINIMIZE RUNOFF TO OFFSITE AREAS.

3. POND CONSTRUCTION SHALL RESULT IN THE FINISHED POND HAVING SIDE SLOPES AND DIMENSIONS THAT ARE IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO ENSURE THAT THESE REQUIREMENTS HAVE BEEN MET. IF THE CONSTRUCTED SIDE SLOPES ARE STEEPER THAN THE REQUIRED SIDE SLOPES, OR THE POND VOLUME IS NOT WITHIN THREE (3) PERCENT OF THE DESIGN VOLUME, THE CONTRACTOR SHALL BE REQUIRED TO MAKE CORRECTIONS TO THE POND AT NO ADDITIONAL COST TO THE OWNER.

4. FIELD DENSITY TESTING FREQUENCIES: A) ONE TEST FOR EACH 10,000 SQUARE FEET OR FRACTION THEREOF PER LIFT OF GENERAL BACKFILLING, MINIMUM 2 TESTS EACH LAYER; B) ONE TEST FOR EACH 100 SQUARE FEET OR FRACTION THEREOF OF BACKFILL AROUND AND UNDER STRUCTURES; C) ONE TEST FOR EACH 300 LINEAL FEET OR FRACTION THEREOF PER LIFT OF GENERAL BACKFILLING IN THE PIPELINE TRENCH; D) ONE TEST PER LIFT PER EACH CHANGE IN TYPE OF FILL; E) ONE TEST PER 1000 SQUARE FEET OF PAVEMENT SUBGRADE, MINIMUM OF 2 TESTS.

5. IT IS INTENDED THAT PREVIOUSLY EXCAVATED MATERIALS CONFORMING TO THE FOLLOWING REQUIREMENTS BE UTILIZED WHEREVER POSSIBLE.

A. ACCEPTABLE MATERIALS: AASHTO M145 CLASSIFICATION A-1, A-3, A-2-4, A-2-6; ASTM D2487 CLASSIFICATION GW, GP, GM, SM, SW, SP; UNLESS OTHERWISE DISAPPROVED WITHIN THE SOIL AND SUBSURFACE INVESTIGATION REPORTS. NO MORE THAN 12% OF ACCEPTABLE MATERIALS SHALL PASS THE NUMBER 200 SIEVE.

B. UNACCEPTABLE MATERIALS: AASHTO M145 CLASSIFICATION A-2-5, A-2-7, A-4, A-5, A-6, A-7, A-8; ASTM D2487 CLASSIFICATION GC, SC, ML, MH, CL, CH, OL, OH, PT; UNLESS OTHERWISE APPROVED WITHIN THE SOIL AND SUBSURFACE INVESTIGATION REPORTS.

6. PROVIDE BARRIERS, WARNING LIGHTS AND OTHER PROTECTIVE DEVICES AT ALL EXCAVATIONS.

7. SIDEWALKS, ROADS, STREETS, AND PAVEMENTS SHALL NOT BE BLOCKED OR OBSTRUCTED BY EXCAVATED MATERIALS, EXCEPT AS AUTHORIZED BY THE ENGINEER, IN WHICH CASE ADEQUATE TEMPORARY PROVISIONS MUST BE MADE FOR SATISFACTORY TEMPORARY PASSAGE OF PEDESTRIANS, AND VEHICLES. MINIMIZE INCONVENIENCE TO PUBLIC TRAVEL OR TO TENANTS OCCUPYING ADJOINING PROPERTY.

8. FURNISH, INSTALL, AND MAINTAIN, WITHOUT ADDITIONAL COMPENSATION, SHEETING, BRACING, AND SHORING SUPPORT REQUIRED TO KEEP EXCAVATIONS WITHIN THE PROPERTY OR EASEMENTS PROVIDED, TO SUPPORT THE SIDES OF THE EXCAVATION, AND TO PREVENT ANY MOVEMENT WHICH MAY DAMAGE ADJACENT PAVEMENTS OR STRUCTURES, DAMAGE OR DELAY THE WORK, OR ENDANGER LIFE AND HEALTH. VOIDS OUTSIDE THE SUPPORTS SHALL BE IMMEDIATELY FILLED AND COMPACTED.

9. SHEETING, SHORING, AND BRACING USED FOR THE SUPPORT OF EXCAVATIONS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED BY THE STATE OF FLORIDA.

10. ALL EXCAVATIONS SHALL BE MADE BY OPEN CUT UNLESS OTHERWISE INDICATED. SLOPE SIDES OF TRENCHES IN ACCORDANCE WITH OSHA REQUIREMENTS AND THE RECOMMENDATIONS CONTAINED WITHIN THE PROJECT GEOTECHNICAL REPORT.

11. EXCAVATE TRENCHES TO DEPTH INDICATED OR REQUIRED FOR INDICATED FLOW LINES AND INVERT ELEVATIONS. OVER EXCAVATE TRENCHES A MINIMUM OF 2 FEET WHERE EXCAVATIONS OCCUR WITHIN UNSUITABLE SOILS, AND REPLACE OVER EXCAVATED MATERIAL WITH SUITABLE SOILS.

12. TRENCH BOTTOMS AND THE BOTTOMS OF ALL STRUCTURES SHALL BE KEPT DRY, COMPACTED, AND STABLE TO A DEPTH TWO FEET BELOW THE BOTTOM OF THE TRENCH OR STRUCTURE.

13. ALL BEDDING, FILL, AND BACKFILL MATERIAL SHALL BE SUITABLE SOILS OR FLOWABLE FILL. WHERE TRENCH OR EXCAVATION IS WITHIN THE INFLUENCE AREA OF ROADWAYS, STRUCTURES, FOUNDATIONS, OR SLABS, PLACE BACKFILL IN LAYERS OF 8 INCH LOOSE DEPTH. IN ALL OTHER AREAS, PLACE FILL AND BACKFILL IN LAYERS OF 12 INCH LOOSE DEPTH.

14. MINIMUM DENSITY REQUIREMENT (ASTM D1557 OR AASHTO T180): BACKFILL AND FILL UNDER AND WITHIN THE INFLUENCE AREA OF ROADWAYS, STRUCTURES, SLABS, FOUNDATIONS = 98 PERCENT; BACKFILL AND FILL PLACED WITHIN PUBLIC ROAD RIGHT-OF-WAY AND UTILITY EASEMENTS = 95 PERCENT; BACKFILL AND FILL PLACED WITHIN POND AND ROAD EMBANKMENT = 95 PERCENT; BACKFILL AND FILL PLACED IN ALL OTHER AREAS = 90 PERCENT.

UTILITY SEPARATION REQUIREMENTS

1. THE HORIZONTAL SEPARATION BETWEEN WATER MAINS AND SANITARY SEWER, STORM SEWER, WASTEWATER FORCE MAINS AND ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

A. THE OUTSIDE OF WATER MAINS SHALL BE A MINIMUM OF FIVE FEET FROM THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, VACUUM TYPE SANITARY SEWER MAIN.

B. THE OUTSIDE OF WATER MAINS SHALL BE A MINIMUM OF TEN FEET FROM THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY SANITARY SEWER AND WASTEWATER FORCE MAIN. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN THE OUTSIDE OF WATER MAINS AND THE OUTSIDE OF GRAVITY SANITARY SEWERS CAN BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.

C. THE OUTSIDE OF WATER MAINS SHALL BE A MINIMUM OF TEN FEET FROM ALL PARTS OF ANY EXISTING OR PROPOSED ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM SUCH AS SEPTIC TANKS, DRAIN-FIELDS, AND GREASE TRAPS. ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS DO NOT INCLUDE PACKAGE SEWAGE TREATMENT FACILITIES AND PUBLIC WASTEWATER TREATMENT FACILITIES.

2. THE VERTICAL SEPARATION BETWEEN WATER MAINS AND SANITARY AND STORM SEWER, WASTEWATER OR STORMWATER FORCE MAINS, MAINS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

A. WHEREVER POSSIBLE, WATER MAINS SHALL CROSS OVER EXISTING OR PROPOSED GRAVITY SANITARY SEWER, VACUUM TYPE SANITARY SEWER, AND STORM SEWER, SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES ABOVE THE OUTSIDE OF THE SEWER. WHERE IT IS NOT POSSIBLE FOR THE WATER MAIN TO CROSS OVER EXISTING OR PROPOSED GRAVITY SANITARY SEWER, VACUUM TYPE SANITARY SEWER, AND STORM SEWER, THEN THE WATER MAIN CAN CROSS UNDER THESE TYPES OF PIPELINE SYSTEMS PROVIDED THE OUTSIDE OF THE WATER MAIN IS AT LEAST 18 INCHES BELOW THE OUTSIDE OF THE PIPELINE. AT THE CROSSING, THE PROPOSED PIPE JOINTS SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST FIVE FEET FROM VACUUM TYPE SANITARY SEWER OR STORM SEWER JOINTS, AND AT LEAST TEN FEET FROM GRAVITY SANITARY SEWER JOINTS.

B. WHEREVER POSSIBLE, WATER MAINS SHALL CROSS OVER EXISTING OR PROPOSED RECLAIMED WATER MAINS, WASTEWATER FORCE MAINS AND STORMWATER FORCE MAINS. WHETHER THE WATER MAIN CROSSES OVER OR UNDER THESE TYPES OF PIPELINE SYSTEMS, THE OUTSIDE OF THE WATER MAIN SHALL BE AT LEAST 18 INCHES FROM THE OUTSIDE OF THE EXISTING OR PROPOSED RECLAIMED WATER MAIN, WASTEWATER FORCE MAIN AND STORMWATER FORCE MAIN. AT THE CROSSING, THE PROPOSED PIPE JOINTS SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST FIVE FEET FROM RECLAIMED WATER MAIN JOINTS AND STORMWATER FORCE MAIN JOINTS, AND AT LEAST TEN FEET FROM THE JOINTS OF WASTEWATER FORCE MAINS.

3. NO WATER MAIN SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF A SANITARY SEWER MANHOLE.

4. NEW OR RELOCATED FIRE HYDRANTS SHALL BE LOCATED SUCH THAT THE UNDERGROUND DRAIN (WEEP HOLE) IS AT LEAST:

A. FIVE FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, RECLAIMED WATER MAIN, OR VACUUM TYPE SANITARY SEWER.

B. TEN FEET FROM ANY EXISTING OR PROPOSED GRAVITY SANITARY SEWER AND WASTEWATER FORCE MAIN.

C. TEN FEET FROM ANY ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM SUCH AS SEPTIC TANKS, DRAINFIELDS, AND GREASE TRAPS. ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS DO NOT INCLUDE PACKAGE SEWAGE TREATMENT FACILITIES AND PUBLIC WASTEWATER TREATMENT FACILITIES.

WATER DISTRIBUTION SYSTEMS

1. THE ENTITY THAT WILL OPERATE AND MAINTAIN THE WATER SYSTEMS SHOWN ON THESE PLANS IS THE CITY OF PARKER. THE CONTRACTOR SHALL MEET ALL THE REQUIREMENTS OF THE CITY OF PARKER..

2. INSTALL ALL WATER AND RECLAIMED MAINS AT A MINIMUM 36 INCHES OF COVER.

3. BURIED DUCTILE IRON PIPE SHALL COMPLY WITH THE FOLLOWING PRESSURE CLASS (PC) DESIGNATIONS UNLESS OTHERWISE INDICATED ON THE DRAWINGS: A) 12" DIAMETER AND SMALLER = PC 350; B) 14" THROUGH 24" DIAMETER = PC 250; C) 30" THROUGH 64" DIAMETER = PC 200.

4. DUCTILE IRON PIPE AND FITTINGS WITHIN 10 FEET OF GAS MAINS SHALL HAVE AN 8-MIL POLYETHYLENE WRAP IN ACCORDANCE WITH ANSI/AWWA C105/A21.5.

5. PVC PIPE SHALL BE NATIONAL SANITATION FEDERATION (NSF) APPROVED. PIPE SHALL HAVE MARKINGS ON EACH SECTION SHOWING CONFORMANCE TO THE ABOVE SPECIFICATIONS. JOINTS SHALL BE RUBBER GASKETED CONFORMING TO AWWA C900 OR C905 THE BELL SHALL BE INTEGRAL WITH THE PIPE AND OF EQUAL OR GREATER PRESSURE RATING. THE BELL OF PIPE AND FITTINGS USING PUSH-ON JOINTS SHALL HAVE AN INTEGRAL GROOVE TO RETAIN THE GASKET IN PLACE.

6. ALL FITTINGS SHALL BE MANUFACTURED OF DUCTILE IRON, CONFORMING TO ANSI/AWWA C110/A21.10 OR ANSI/AWWA C153/A21.53. ALL FULL BODY (C110/A21.10) FITTINGS SHALL BE PRESSURE RATED TO 250 PSI, MINIMUM. ALL COMPACT FITTINGS (C153/A21.53) SHALL BE PRESSURE RATED TO 350 PSI, MINIMUM.

7. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE LINED AND COATED. INTERIOR LINING SHALL BE STANDARD THICKNESS CEMENT MORTAR LINING PER ANSI/AWWA C104/A21.4. EXTERIOR COATING FOR BURIED PIPE AND FITTINGS SHALL BE A PETROLEUM ASPHALTIC COATING IN ACCORDANCE WITH ANSI/AWWA C110/A21.10. EXTERIOR COATING OF EXPOSED PIPE AND FITTINGS SHALL BE FACTORY APPLIED RUST INHIBITING EPOXY PRIMER, MINIMUM 3 MILS DRY FILM THICKNESS. AFTER INSTALLATION, EXTERIOR SURFACES SHALL BE PAINTED WITH A TWO COAT SYSTEM. THE FIRST COAT (INTERMEDIATE COAT) SHALL BE 4.0-10.0 MIL DFT TNEMEC COLOR HI-BUILD EPOXOLINE II SERIES N69 OR APPROVED EQUAL, AND THE FINAL COAT SHALL BE 2.0-3.0 MIL DFT TNEMEC ENDURASHIELD SERIES 73 OR APPROVED EQUAL. THE FINAL COAT PAINT COLOR SHALL BE AS SELECTED BY THE LOCAL UTILITY.

8. MECHANICAL AND PUSH ON JOINTS FOR DUCTILE IRON PIPE AND FITTINGS SHALL BE RUBBER GASKETED, CONFORMING TO ANSI/AWWA C111/A21.11. LUBRICANTS OTHER THAN THAT FURNISHED BY THE PIPE MANUFACTURER WITH THE PIPE SHALL NOT BE USED.

9. RESTRAINED JOINTS FOR DUCTILE IRON PIPE BELL JOINTS SHALL BE AMERICAN FAST GRIP GASKET, MCWANE SURE GRIP 350 GASKET, U.S. PIPE FIELD LOK 350 GASKET, OR EBAA IRON MEGA LUG SERIES 1100HD. RESTRAINED JOINTS FOR DUCTILE IRON PIPE AND FITTING MECHANICAL JOINTS SHALL BE EBAA IRON MEGA LUG SERIES 1100, STAR GRIP SERIES 3000, OR TYLER UNION TUF-GRIP SERIES TLD. LOCKING BELL JOINT RESTRAINT SHALL BE AMERICAN FLEX RING JOINT, AMERICAN LOK-RING JOINT, OR U.S. PIPE TR-FLEX. RESTRAINED JOINTS FOR PVC PIPE MECHANICAL JOINTS SHALL BE TYLER UNION SERIES 2000 TUF GRIP TLP, JCM SUR-GRIP BELL RESTRAINER, FORD UNI-FLANGE SERIES 1500 CIRCLE LOCK, OR EBAA IRON MEGA LUG SERIES 2000PV. RESTRAINED JOINTS FOR PVC PIPE PUSH ON JOINTS SHALL BE EBAA IRON MEGA LUG SERIES 1500 OR SERIES 1600 (C900 PVC), SERIES 2800 (C905 PVC), FORD UNI-FLANGE SERIES 1390, OR SMITH-BLAIR BELL-LOK SERIES 165. PIPE JOINTS SHALL BE RESTRAINED UPSTREAM AND DOWNSTREAM OF FITTINGS IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS OR THE TABLE SHOWN IN THE DRAWINGS, WHICHEVER IS GREATER.

10. POLYETHYLENE PIPE AND TUBING SHALL BE COLOR CODED BLUE (POTABLE WATER) OR PURPLE (RECLAIMED WATER). PIPE AND FITTINGS SHALL BE NSF APPROVED FOR THE USAGE TO WHICH THEY ARE TO BE APPLIED. JOINTS IN SDR-PR PE PIPE SHALL BE BUTT HEAT FUSION OR SOCKET HEAT FUSION TYPE. FITTINGS SHALL BE MANUFACTURED OF THE SAME MATERIAL AS THE PIPE AND SHALL BE OF THE SAME SDR OR LESS. PROVIDE ADAPTERS AS REQUIRED TO JOIN PE PIPE TO PIPE, FITTINGS AND EQUIPMENT OF OTHER MATERIALS.

11. SERVICE SADDLES SHALL MEET THE REQUIREMENTS OF AWWA C800 AND SHALL CONSIST OF EPOXY COATED DUCTILE IRON BODIES IN ACCORDANCE WITH ASTM A536, WITH DOUBLE STAINLESS STEEL STRAPS, BOLTS, WASHERS AND NUTS. STAINLESS STEEL SHALL BE TYPE 304, AND NUTS ARE TO BE TEFLON COATED. THE DUCTILE IRON BODY IS TO BE FUSION BONDED NYLON COATED, MINIMUM THICKNESS 12 MILS, OUTLET OF SADDLE IS TO HAVE NPT THREADS. SERVICE SADDLES SHALL BE MANUFACTURED BY FORD, MUELLER, OR SMITH-BLAIR.

12. ALL SERVICES SHALL INCLUDE THE FOLLOWING: CURB STOPS, UNIONS AS REQUIRED, CORPORATION STOPS. CONFORMANCE WITH AWWA C800 AND C901 IS REQUIRED. THE CONTRACTOR SHALL CUT "W" IN THE TOP CURB OF EACH WATER SERVICE AND A "V" AT ALL VALVE LOCATIONS. CUT W'S AND V'S SHALL BE HIGHLIGHTED WITH BLUE PAINT.

13. UNLESS OTHERWISE NOTED IN THE PLANS, THE UTILITY COMPANY SHALL PROVIDE AND INSTALL WATER METERS METERS. CONTRACTOR SHALL CONSTRUCT WATER SERVICE SERVICE TO THE CORPORATION STOP.

14. UNLESS OTHERWISE INDICATED OR SPECIFIED, ALL VALVES TWO INCHES AND SMALLER SHALL BE ALL BRASS OR BRONZE; VALVES OVER TWO INCHES SHALL BE IRON BODY, FULLY BRONZE OR BRONZE MOUNTED.

15. VALVES 4 INCHES AND LARGER SHALL BE LINED AND COATED. BURIED AND EXPOSED VALVES SHALL BE COATED INSIDE AND OUT WITH A RUST INHIBITING EPOXY PRIMER, FOLLOWED BY AN EPOXY COATING MEETING THE REQUIREMENTS OF AWWA C550, APPLIED AT THE FACTORY. THE INTERIOR OF VALVES WITH A CAST IRON OR DUCTILE IRON BODY SHALL BE COATED WITH AN EPOXY PROTECTIVE COATING MEETING NSF INTERNATIONAL STANDARD 61 AND AWWA C550. AFTER INSTALLATION, EXTERIOR SURFACES SHALL BE PAINTED WITH A TWO COAT SYSTEM. THE FIRST COAT (INTERMEDIATE COAT) SHALL BE 4.0-10.0 MIL DFT TNEMEC COLOR HI-BUILD EPOXOLINE II SERIES N69 OR APPROVED EQUAL, AND THE FINAL COAT SHALL BE 2.0-3.0 MIL DFT TNEMEC ENDURASHIELD SERIES 73 OR APPROVED EQUAL. THE FINAL COAT PAINT COLOR SHALL BE AS SELECTED BY THE LOCAL UTILITY.

16. ALL VALVES 12" AND SMALLER SHALL BE GATE VALVES UNLESS OTHERWISE INDICATED ON THE DRAWINGS. GATE VALVES 3 INCHES TO 12 INCHES SHALL CONFORM TO AWWA C509 OR AWWA C515. THE VALVES SHALL BE IRON BODY, CAST IRON FULLY ENCAPSULATED MOLDED RUBBER WEDGE COMPLYING WITH ASTM D2000, NON-RISING STEM WITH O-RING SEALS. VALVES SHALL OPEN COUNTERCLOCKWISE.

17. TAPPING SLEEVES ARE TO BE 18-8 TYPE 304 STAINLESS STEEL AND STAINLESS STEEL OUTLET, AS MANUFACTURED BY JCM OR APPROVED EQUAL. TAPPING VALVES SHALL BE RESILIENT SEATED GATE VALVES AND SHALL CONFORM TO THE REQUIREMENTS OF AWWA C509. TAPPING VALVES SHALL BE AMERICAN FLOW CONTROL SERIES 2500, CLOW SERIES F-6100, OR MUELLER SERIES A2361.

18. VALVES 14" AND LARGER SHALL BE BUTTERFLY VALVES. BUTTERFLY VALVES SHALL MEET OR EXCEED THE DESIGN STRENGTH, TESTING AND PERFORMANCE REQUIREMENTS OF AWWA C504, CLASS 150. VALVE BODY SHALL BE MECHANICAL JOINT END TYPE VALVE CONSTRUCTED OF CAST IRON OR DUCTILE IRON. DISC SHALL BE ONE PIECE CAST DESIGN WITH NO EXTERNAL RIBS TRANSVERSE TO FLOW. DISC SHALL BE CAST IRON OR DUCTILE IRON. THE RESILIENT SEAT SHALL MATE WITH A 304 OR 316 STAINLESS STEEL SURFACE.

19. VALVE SEATS SHALL BE MECHANICALLY RETAINED, AND MAY BE INSTALLED ON EITHER THE BODY OR DISC. O-RING SEATS ON VALVE DISCS ARE UNACCEPTABLE. SEATS FOR VALVES 14" DIAMETER AND LARGER SHALL BE FULLY FIELD REPLACEABLE WITHOUT THE USE OF SPECIAL TOOLS. OPERATORS OF THE ENCLOSED TRAVELING-NUT TYPE SHALL BE PROVIDED UNLESS OTHERWISE INDICATED.

20. ALL BURIED VALVES SHALL BE PROVIDED WITH ADJUSTABLE VALVE BOXES APPROXIMATELY 5 INCHES IN DIAMETER WITH A MINIMUM THICKNESS OF 3/16 INCH CAST IRON. BOXES SHALL BE OF SUFFICIENT LENGTH TO OPERATE ALL VALVES BURIED IN THE GROUND, CONSISTING OF BASE, CENTER SECTION, AND TOP SECTION WITH COVER. VALVE BOXES LOCATED IN UNPAVED AREAS SHALL BE SLIP TYPE DESIGN TO PERMIT MOVEMENT OF THE TOP SECTION WITHOUT TRANSMITTING FORCES ONTO THE VALVE BODY. VALVE BOXES CAST INTO CONCRETE OR ASPHALT SURFACING SHALL HAVE BRASS COVERS. ALL VALVE BOX COVERS SHALL BE INTERNALLY CHAINED TO VALVE BOXES WITH AN APPROXIMATELY 18 INCH GALVANIZED CHAIN. VALVE BOX COVERS SHALL BE CAST WITH THE INSCRIPTION "WATER" OR "RECLAIMED WATER".

21. PVC PIPES SHALL BE COLOR CODED BLUE (WATER MAINS) OR PURPLE (RECLAIMED WATER MAINS) AND STENCILED (0.75-INCH LETTERING ON THE PIPE IN AT LEAST THREE AREAS PER PIPE SECTION) "POTABLE WATER MAIN" OR "RECALIMED WATER MAIN" AS APPLICABLE.

22. INSTALL IDENTIFICATION TAPE ALONG ALL DUCTILE IRON PIPE AND PVC PIPE, MINIMUM THICKNESS 4 MILS, WIDTH 6 INCHES, LETTER SIZE 1 INCH. APPLY TAPE TO SURFACE OF PIPE, CONTINUOUSLY EXTENDING FROM JOINT TO JOINT. TAPE COLOR AND LETTERING SHALL BE BLACK PRINTING ON BLUE BACKGROUND (WATER MAINS), BLACK PRINTING ON PURPLE BACKGROUND (RECLAIMED WATER MAINS). PLACE TAPE AS FOLLOWS: 2" - 8" PIPE - CENTER ALONG TOP HALF OF PIPE; 10" - 18" PIPE - PLACE ALONG BOTH SIDES OF THE TOP HALF OF PIPE; 20" PIPE AND LARGER - PLACE ON BOTH SIDES OF TOP HALF OF PIPE WITH A THIRD STRIP CENTERED ALONG TOP HALF OF PIPE.

23. INSTALL WARNING TAPE ALONG ALL PIPELINES, PLACED 2 FEET ABOVE PIPE. TAPE SHALL BE 6-INCH WIDE VINYL CONTINUOUS TAPE. TAPE SHALL BE COLORED BLUE (WATER MAINS) OR PURPLE (RECLAIMED WATER MAINS) WITH BLACK LETTERING, CODED AND WORDED "CAUTION: WATER MAIN BURIED BELOW", OR "CAUTION: RECLAIMED WATER MAIN BURIED BELOW", AS APPLICABLE.

24. INSTALL LOCATING WIRE ALONG ALL PVC PIPELINES. WIRE SHALL BE COLOR-CODED 10 GAUGE CONTINUOUS INSULATED WIRE. COLOR CODING SHALL BE SIMILAR TO WARNING TAPE COLORS. INSTALL LOCATOR WIRE ALONG ALL PRESSURIZED PIPELINES 2" AND LARGER. LOOP WIRE INTO ALL VALVE BOXES. LOOPING TO OCCUR EVERY 500 FEET MINIMUM. WHERE THERE ARE NO VALVE BOXES TO ALLOW LOOPING, PROVIDE ACCESS BOXES PER CITY REQUIREMENTS. CHECK WIRE FOR ELECTRICAL CONTINUITY.

25. ALL CHANGES IN DIRECTION SHALL BE MADE WITH FITTINGS OR APPROVED JOINT DEFLECTION. BENDING OF PIPE, EXCEPT COPPER AND POLYETHYLENE, IS PROHIBITED. JOINT DEFLECTION SHALL NOT EXCEED 75% OF THE MANUFACTURER'S RECOMMENDED MAXIMUM DEFLECTION.

26. TEST PROCEDURES SHALL BE APPROVED BY THE ENGINEER. ALL TESTS SHALL BE MADE IN THE PRESENCE OF THE ENGINEER AND UTILITY. NOTIFY THE ENGINEER AND THE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY WORK IS TO BE INSPECTED OR TESTED.

27. PROVIDE ALL EQUIPMENT FOR TESTING. INCREMENTS ON GAGES USED FOR LOW PRESSURE AIR TESTING SHALL BE OF SCALED TO THE NEAREST 0.1 PSI. GAGES, PUMPS, AND HOSES SHALL BE IN GOOD WORKING ORDER WITH NO NOTICEABLE LEAKS.

28. ALL SERVICE LINES SHALL BE COMPLETED PRIOR TO TESTING, AND ARE SUBJECT TO THE SAME TESTING REQUIREMENTS AS THE MAIN LINE.

29. THE SEQUENCE OF TESTING AND DISINFECTION SHALL BE AS FOLLOWS: 1) CONDUCT PRESSURE AND LEAKAGE TESTING; 2) PERFORM FLUSHING PER UTILITY REQUIREMENTS AND AWWA C651; 3) DISINFECT THE WATER MAIN, INCLUDING VALVES AND FITTINGS; AND 4) DECHLORINATE AND FLUSH AFTER DISINFECTION.

30. APPLY HYDROSTATIC TEST PRESSURE OF 150 PSI (WATER MAINS), 200 PSI (FIRE MAINS), OR 150 PSI (RECLAIMED WATER MAINS) FOR 10 MINUTES AND FOR SUCH ADDITIONAL PERIOD NECESSARY FOR THE ENGINEER TO COMPLETE THE INSPECTION OF THE LINE UNDER TEST. DO NOT EXCEED PIPE MANUFACTURER'S SUGGESTED TIME DURATION AT THE TEST PRESSURE. IF DEFECTS ARE NOTED, REPAIRS SHALL BE MADE AND THE TEST REPEATED UNTIL ALL PARTS OF THE LINE WITHSTAND THE TEST PRESSURE.

31. APPLY LEAKAGE TEST PRESSURE OF 150 PSI (WATER MAINS), 200 PSI (FIRE MAINS) OR 150 PSI (RECLAIMED WATER MAINS). MAINTAIN PRESSURE AT A MAXIMUM VARIATION OF 5% DURING THE ENTIRE LEAKAGE TEST. THE DURATION OF THE LEAKAGE TEST SHALL BE TWO HOURS MINIMUM, AND FOR SUCH ADDITIONAL TIME NECESSARY FOR THE ENGINEER TO COMPLETE INSPECTION OF THE SECTION OF LINE UNDER TEST. LEAKAGE MEASUREMENTS SHALL NOT BE STARTED UNTIL A CONSTANT TEST PRESSURE HAS BEEN ESTABLISHED. THE LINE LEAKAGE SHALL BE MEASURED BY MEANS OF A WATER METER INSTALLED ON THE SUPPLY SIDE OF THE PRESSURE PUMP.

32. NO LEAKAGE IS ALLOWED IN EXPOSED PIPING, BURIED PIPING WITH FLANGED, THREADED, OR WELDED JOINTS OR BURIED NON-POTABLE PIPING IN CONFLICT WITH POTABLE WATER LINES.

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Designed: E. Moore, PE
Drawn: B. Silcox
Checked: E. Moore, PE
Job No.: 1620-006
Date: Mar. 2021 © 2023

GENERAL NOTES SHEET 2 of 3

SRF WATERSYSTEM UPGRADE
PARKER, FLORIDA

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33. TESTED SECTIONS OF BURIED PIPING WITH SLIP-TYPE OR MECHANICAL JOINTS WILL NOT BE ACCEPTED IF IT HAS A LEAKAGE RATE IN EXCESS OF THAT RATE DETERMINED BY THE FORMULA L = SDP/148000 WHERE L = MAXIMUM PERMISSIBLE LEAKAGE RATE, IN GALLONS PER HOUR, THROUGHOUT THE ENTIRE LENGTH OF LINE BEING TESTED; S = LENGTH OF LINE TESTED (IN FEET); D = NOMINAL INTERNAL DIAMETER (IN INCHES) OF THE PIPE; AND P = THE SQUARE ROOT OF THE ACTUAL PRESSURE IN PSIG ON ALL JOINTS IN THE TESTED PORTION OF THE LINE. THIS ACTUAL PRESSURE SHALL BE DETERMINED BY FINDING THE DIFFERENCE BETWEEN THE AVERAGE ELEVATION OF ALL TESTED PIPE JOINTS AND THE ELEVATION OF THE PRESSURE GAUGE AND ADDING THE DIFFERENCE IN ELEVATION HEAD TO THE AUTHORIZED TEST PRESSURE.

34. ALL APPARENT LEAKS DISCOVERED WITHIN ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER SHALL BE LOCATED AND REPAIRED BY CONTRACTOR, REGARDLESS OF THE TOTAL LINE LEAKAGE RATE.

35. PRIOR TO DISINFECTION, CONDUCT FULL DIAMETER FLUSHING OF PIPELINE IN SECTIONS IN ORDER TO REMOVE ANY SOLIDS OR CONTAMINATED MATERIAL THAT MAY HAVE BECOME LODGED IN THE PIPE.

36. OBTAIN A MINIMUM FLUSHING VELOCITY OF 2.5 FEET PER SECOND PER AWWA C651.

37. ALL TAPS REQUIRED FOR FLUSHING AND THE TEMPORARY OR PERMANENT RELEASE OF AIR AS NEEDED FOR FLUSHING SHALL BE PROVIDED BY THE CONTRACTOR.

38. DISINFECT ALL POTABLE WATER LINES, FIRE LINES, VALVES, FITTINGS, HYDRANTS. THE WATER MAIN DISINFECTION AND BACTERIOLOGICAL SAMPLING AND METHODS OF DISINFECTION FOR ALL WATER CONTAINMENT DEVICES AND PIPING SYSTEMS SHALL CONFORM TO AWWA C651. THE DISCHARGE LOCATIONS FOR THE CHLORINATED WATER SHALL BE APPROVED BY THE OWNER. NEUTRALIZE THE CHLORINE RESIDUAL BY MEANS OF A REDUCING AGENT IN ACCORDANCE WITH AWWA C651.

39. ALL DISINFECTION WORK SHALL BE ACCEPTABLE TO THE STATE HEALTH AUTHORITY. IF ANY REQUIREMENTS OF THIS SECTION ARE IN CONFLICT WITH REQUIREMENTS OF THE AUTHORITY FOR DISINFECTION, THOSE OF THE AUTHORITY SHALL GOVERN. ALL BACTERIOLOGICAL TESTING SHALL BE PERFORMED BY A STATE CERTIFIED LABORATORY CONTRACTED BY THE CONTRACTOR. PROPER CHAIN OF CUSTODY PROCEDURES MUST BE FOLLOWED AND SAMPLES SHALL ONLY BE COLLECTED BY CERTIFIED LABORATORY PERSONNEL. COPIES OF ALL TESTING RESULTS AND ALL RELATED CORRESPONDENCE FROM THE TESTING LAB SHALL BE SUBMITTED TO THE OWNER, UTILITY, AND ENGINEER.

SIGNS AND PAVEMENT MARKINGS

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND THE LATEST IMPLEMENTED EDITION OF FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS.

2. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC WITH RAISED PAVEMENT MARKERS (TYPE 911 - 4" x 4"). RAISED PAVEMENT MARKERS ARE TO BE INSTALLED IN ACCORDANCE WITH THESE PLANS AND FDOT INDEX NO. 17352.

3. PARKING STALL PAVEMENT MARKINGS SHALL BE PAINTED. PAINT SHALL MEET THE REQUIREMENTS OF FDOT SPECIFICATION SECTION 971, NON-REFLECTIVE WHITE TRAFFIC PAINT, TWO COATS.

4. ALL ROADWAY TRAFFIC SIGNS SHALL BE MANUFACTURED USING HIGH INTENSITY RETROREFLECTIVE MATERIALS. THE BACK OF ALL FINISHED PANELS SHALL BE STENCILED WITH THE DATE OF FABRICATION, THE FABRICATOR'S INITIALS, AND THE NAME OF THE SHEETING IN THREE-INCH LETTERS.

5. INTERNAL SITE TRAFFIC SIGNS ARE NOT REQUIRED TO BE RETROREFLECTIVE.

6. THE CONTRACTOR SHALL VERIFY THE REQUIRED LENGTH OF THE SIGN COLUMN SUPPORTS IN THE FIELD PRIOR TO FABRICATION.

7. CONTRACTOR SHALL PROVIDE AND INSTALL ALL SIGNS, BASES, ANCHOR BOLTS, CONDUITS, WIRING, ETC.

8. ALL PAVEMENT MARKINGS REQUIRE LAYOUT APPROVAL IN THE FIELD BY THE ENGINEER PRIOR TO INSTALLATION.

9. PRIOR TO FINAL PAVEMENT MARKING INSTALLATION, A TWO WEEK CURE TIME OF THE ASPHALT IS REQUIRED.

PAVING, SIDEWALKS, AND CURBING

1. MATERIALS AND CONSTRUCTION METHODS FOR THE ROADWAY AND PAVING CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.

2. ROADWAY PAVING, BASE, AND SUBGRADE THICKNESSES SHALL BE IN ACCORDANCE WITH DETAILS ON THESE DRAWINGS.

3. SIDEWALKS ARE TO BE CONSTRUCTED IN THE AREAS AS SHOWN ON THE CONSTRUCTION PLANS. HANDICAPPED RAMPS SHALL BE PROVIDED AT ALL INTERSECTIONS AND SHALL BE IN ACCORDANCE WITH THE FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION, LATEST EDITION.

4. CURBING SHALL BE CONSTRUCTED WHERE NOTED ON THE CONSTRUCTION PLANS. ALL CURBS SHALL HAVE SAW CUT CONTRACTION JOINTS AND SHALL BE CONSTRUCTED AT INTERVALS NOT TO EXCEED 10'-0" ON CENTER. CONSTRUCTION OF CURBS SHALL BE IN CONFORMANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION) SECTION 520 AND DETAILS PROVIDED ON THE CONSTRUCTION PLANS.

5. FIELD COMPACTION DENSITY, STABILITY, AND THICKNESS TESTING FREQUENCIES OF SUB-BASE, BASE, AND ASPHALT SHALL BE TESTED ONCE EVERY 300 LINEAR FEET OF PAVING PER 24-FT WIDE STRIP, STAGGERED LEFT, CENTER AND RIGHT OF CENTERLINE. WHERE LESS THAN 300 LINEAR FEET OF SUB-BASE, BASE, AND ASPHALT IS PLACED IN ONE DAY, PROVIDE MIN. OF ONE TEST FOR EACH PER DAY'S CONSTRUCTION AT A LOCATION DESIGNATED BY THE ENGINEER. ASPHALT EXTRACTION GRADATION SHALL BE TESTED FROM GRAB SAMPLES COLLECTED ONCE EVERY 1800 SQUARE YARDS OF ASPHALT DELIVERED TO THE SITE (OR A MINIMUM OF ONCE PER DAY).

HORIZONTAL DIRECTIONAL DRILLING

1. POLYETHYLENE PIPE AND FITTINGS FOR POTABLE WATER MAINS SHALL BE IN ACCORDANCE WITH AWWA C906, STANDARD CODE DESIGNATION STANDARD CODE DESIGNATION PE 3408. PIPE 4-30 INCH DIAMETER SHALL BE DR11, PC 160. THE MANUFACTURER SHALL CERTIFY THAT THE MATERIALS USED TO MANUFACTURE PIPE AND FITTINGS MEET THESE REQUIREMENTS. THE PIPE SIZING SHALL BE IN ACCORDANCE WITH DUCTILE IRON SIZING SYSTEM (DIOD). PIPE USING THE NEWER ASTM DESIGNATIONS FOR THE MATERIAL IS ACCEPTABLE, PROVIDED IT IS STAMPED "PE3408/PE4710 - AWWA C906" OR "PE3408/PE3608/PE4710 - AWWA C906".

2. POLYETHYLENE PIPE AND FITTINGS FOR RECLAIMED WATER, SEWER FORCE MAIN, OR STORM SEWER SHALL BE IN ACCORDANCE WITH AWWA C906, STANDARD CODE DESIGNATION PE 4710, DR 11, 200 PSI. THE MANUFACTURER SHALL CERTIFY THAT THE MATERIALS USED TO MANUFACTURE PIPE AND FITTINGS MEET THESE REQUIREMENTS. THE PIPE SIZING SHALL BE IN ACCORDANCE WITH DUCTILE IRON PIPE SIZING SYSTEM (DIPS)

3. POLYETHYLENE PIPE AND TUBING USED FOR SERVICE LINES ½-3 INCH DIAMETER SHALL BE POLYETHYLENE IN ACCORDANCE WITH AWWA C901, STANDARD CODE DESIGNATION PE 4710, SDR 9 (OUTSIDE DIAMETER BASED DIMENSION RATIO), 250 PSI. PIPE AND FITTINGS SHALL BE NSF APPROVED FOR THE USAGE TO WHICH THEY ARE TO BE APPLIED. PIPE AND TUBING SHALL BE COLOR CODED BLUE FOR POTABLE WATER, PURPLE FOR RECLAIMED WATER, AND GREEN FOR SANITARY SEWER.

4. POLYETHYLENE MECHANICAL JOINT ADAPTERS AND FLANGE ADAPTERS SHALL BE MANUFACTURED IN ACCORDANCE WITH AWWA C906. MECHANICAL JOINT ADAPTERS SHALL BE FITTED WITH GLAND RINGS PRESSURE RATED EQUAL TO OR GREATER THAN THE MATING PIPE, AND SHALL BE MADE WITH SUFFICIENT THROUGH-BORE LENGTH TO BE CLAMPED IN A HEAT FUSION JOINING MACHINE WITHOUT THE USE OF SUB-END HOLDER. THE SEALING SURFACE OF THE FLANGE ADAPTER SHALL BE MACHINED WITH A SERIES OF SMALL V-SHAPED GROOVES TO PROVIDE GASTKETLESS SEALING, OR TO RESTRAIN THE GASKET AGAINST BLOW-OUT.

5. HDPE PIPE TERMINATIONS SHALL BE FITTED WITH A MECHANICAL JOINT ADAPTER KIT THAT WILL ENABLE THE HDPE PIPE TO BE JOINED WITH MECHANICAL JOINT FITTINGS. THE ADAPTER SHALL BE AWWA COMPLIANT, AND THE PRESSURE RATING FOR THE ADAPTER SHALL MATCH THE PRESSURE RATING FOR THE HDPE PIPE. MECHANICAL JOINT ADAPTERS SHALL BE MANUFACTURED IN STANDARD DIPS SIZES FOR CONNECTING DIPS SIZED POLYETHYLENE PIPE TO MECHANICAL JOINT FITTINGS, SHALL CONTAIN A STAINLESS STEEL REINFORCING COLLAR AND AWWA C110 DUCTILE IRON GLAND RING, GASKET AND EXTRA LENGTH T-BOLTS.

6. GLANDS, BOLTS, AND GASKETS SHALL BE MANUFACTURED IN ACCORDANCE WITH AWWA C153. BOLTS AND NUTS SHALL BE GRADE 2 OR HIGHER.

7. ALL POLYETHYLENE PIPE SHALL BE BLACK, AND SHALL CONTAIN A CONTINUOUS COLORED STRIPE, 2 INCHES WIDE, LOCATED AT NO GREATER THAN 90 DEGREE INTERVALS AROUND THE PIPE. STRIPE COLOR SHALL BE EITHER BLUE (WATER MAINS), PURPLE (RECLAIMED WATER MAINS), GREEN (SANITARY SEWER AND FORCE MAINS) OR BLACK (NO STRIPE - STORM SEWER).

8. TRACER WIRE SHALL BE COLOR-CODED 10 GAUGE CONTINUOUS INSULATED WIRE, WITH HDPE JACKET (MIN. THICKNESS OF 45 MILS) SPECIFICALLY MANUFACTURED FOR USE IN HORIZONTAL DIRECTIONAL DRILL INSTALLATIONS. THE COLOR OF THE WIRE JACKET SHALL BE SIMILAR TO PIPELINE IDENTIFICATION COLORS. INSTALL TRACER WIRE ALONG POLYETHYLENE PIPE PRIOR TO PULLING THROUGH BORE HOLE. TAPE WIRE TO PIPE EVERY 5 FEET MINIMUM ALONG THE PIPELINE. AFTER PULLING PIPE, CLEAN EXPOSED ENDS FOR INSTALLATION OF FITTINGS, TEST TRACER WIRE FOR CONTINUITY.

9. HIGH DENSITY POLYETHYLENE PIPE SHALL BE HEAT FUSED AND TESTED AS PER MANUFACTURER'S GUIDELINES BEFORE INSTALLATION IN THE BORE HOLE.

10. BRANCH CONNECTIONS TO THE MAIN SHALL BE MADE WITH POLYETHYLENE SADDLE FITTINGS OR MECHANICAL JOINT DUCTILE IRON TEES.

11. JOINTS BETWEEN PLAIN END POLYETHYLENE PIPES AND POLYETHYLENE FITTINGS SHALL BE MADE BY BUTT FUSION, AND JOINTS BETWEEN THE POLYETHYLENE MAIN AND SADDLE BRANCH POLYETHYLENE FITTINGS SHALL BE MADE USING SADDLE FUSION USING ONLY PROCEDURES THAT ARE RECOMMENDED BY THE PIPE AND FITTING MANUFACTURER. EXTERNAL AND INTERNAL BEADS SHALL NOT BE REMOVED.

12. CONNECT POLYETHYLENE PIPE TO HYDRANTS, VALVES, AND DUCTILE IRON FITTINGS USING A MECHANICAL JOINT ADAPTER WITH A GLAND RING. PLACE GLAND RING BEHIND ADAPTER PRIOR TO FUSING. FUSE USING AN ELECTROFUSION COUPLING IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. AFTER FUSING, CONNECT TO MECHANICAL JOINT. RESTRAIN ALL NON-POLYETHYLENE PIPE AND PRESSURE TEST CONNECTIONS AS REQUIRED IN INDIVIDUAL PIPELINE GENERAL NOTES.

13. CONNECT POLYETHYLENE PIPE TO ABOVE GRADE VALVES AND FITTINGS USING MECHANICAL FLANGE ADAPTERS. THE FLANGE ADAPTERS ARE TO BE SELF-RESTRAINED.

14. INSTALL ALL MECHANICAL JOINTS AND FLANGE CONNECTIONS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PROCEDURE. AT LEAST 1 HOUR AFTER INITIAL ASSEMBLY, FLANGE CONNECTIONS SHALL BE RE-TIGHTENED FOLLOWING THE TIGHTENING PATTERN AND TORQUE STEP RECOMMENDATIONS OF THE MANUFACTURER. THE FINAL TIGHTENING TORQUE SHALL BE 100 FT-LBS OR LESS AS RECOMMENDED BY THE MANUFACTURER.

15. THE SIZE OF THE HORIZONTAL DIRECTIONAL DRILL RIG USED SHALL BE THE INDUSTRY STANDARD SIZE NEEDED BASED ON DRILLING DISTANCE, PIPE DIAMETER, AND SOIL CONDITIONS.

16. AT ROAD CROSSINGS WITHIN FDOT RIGHT-OF-WAY, THE MINIMUM COVER SHALL BE 10 TIMES THE REAMER SIZE IN INCHES UNDER THE PAVED SURFACE. ANY PROPOSED CHANGES TO THE DEPTH AND LENGTH OF THE DIRECTIONAL BORE FROM WHAT IS SHOWN ON THE DRAWINGS MUST BE APPROVED BY THE ENGINEER IN WRITING, PRIOR TO COMMENCEMENT OF DRILLING.

17. AT ROAD CROSSINGS WITHIN PUBLIC OR PRIVATE RIGHT-OF-WAY THAT IS NOT FDOT RIGHT-OF-WAY, THE MINIMUM COVER SHALL BE AS INDICATED IN THE DRAWINGS. IN NO CASE SHALL MAINS 4" AND LARGER HAVE LESS THAN 4 FEET COVER AT ROAD CROSSINGS. ANY PROPOSED CHANGES TO THE DEPTH AND LENGTH OF THE DIRECTIONAL BORE FROM WHAT IS SHOWN ON THE DRAWINGS MUST BE APPROVED BY THE ENGINEER IN WRITING, PRIOR TO COMMENCEMENT OF DRILLING.

18. IN ROAD RIGHT-OF-WAY IN NON-PAVED AREAS, THE MINIMUM DIRECTIONAL BORE DEPTH SHALL BE 4 FEET MINIMUM AND 8 FEET MAXIMUM (TYPICAL DEPTH OF 4-6 FEET), AS INDICATED ON THE DRAWINGS.

19. AS-BUILT VARIANCE FROM THE DESIGN BOREPATH SHALL BE WITHIN 2 FEET IN THE HORIZONTAL PLANE. VERTICALLY, INSTALL AT ROAD CROSSINGS AT THE MINIMUM DEPTH SPECIFIED HEREIN, AND INSTALL AT A MAXIMUM DEPTH OF NO MORE THAN 3-FT DEEPER THAN THE SPECIFIED MINIMUM DEPTH. ANY PROPOSED CHANGE TO THE LENGTH OF THE DIRECTIONAL DRILLED PIPELINE MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION. FINAL ACCEPTANCE INCLUDING FINAL PAYMENT OF DIRECTIONAL BORED PIPELINES WILL NOT BE MADE UNTIL DIRECTIONAL BORE LOGS HAVE BEEN SUBMITTED AND THE INFORMATION ON THE BORE LOGS DOCUMENTS THE DEPTH OF THE INSTALLED PIPELINE IS IN ACCORDANCE WITH THESE GENERAL NOTES.

20. BACK REAMING SHALL BE CONDUCTED TO ENLARGE AND PREPARE THE BORE HOLE FOR PIPE INSTALLATION. MINIMIZE POTENTIAL DAMAGE FROM SOIL DISPLACEMENT OR SETTLEMENT BY LIMITING THE RATIO OF THE BORE HOLE TO THE PRODUCT SIZE. THE SIZE OF THE BACK REAMER BIT OR PILOT BIT, IF NO BACK REAMING IS REQUIRED, SHALL BE LIMITED RELATIVE TO THE PRODUCT DIAMETER TO BE INSTALLED AS FOLLOWS:: 4" PIPE = 8" BIT; 6" PIPE = 10" BIT; 8" PIPE = 12" BIT; 10" PIPE = 14" BIT; 12" AND LARGER PIPE = BIT TO BE PIPE OUTSIDE DIAMETER PLUS 6 INCHES. NOTE THESE REAMER SIZES ARE APPROXIMATE. SHOULD THE DIRECTIONAL DRILL CONTRACTOR CHOOSE TO USE A LARGER REAMER SIZE, THE LARGER SIZE COULD RESULT IN THE NEED FOR A DEEPER AND LONGER BORE. THE RESULTING INCREASED BORE LENGTH AND OR DEPTH SHALL BE AT NO ADDITIONAL COST TO THE OWNER.

21. ENSURE ADEQUATE REMOVAL OF SOIL CUTTINGS AND STABILITY OF THE BORE HOLE BY MONITORING THE DRILLING FLUIDS SUCH AS THE PUMPING RATE, PRESSURES, VISCOSITY AND DENSITY DURING THE PILOT BORE, BACK REAMING AND PIPE INSTALLATION. OBTAIN THE ENGINEER'S APPROVAL OF THE LOCATION AND ALL CONDITIONS NECESSARY TO CONSTRUCT RELIEF HOLES TO RELIEVE EXCESS PRESSURE AND ENSURE THE PROPER DISPOSITION OF DRILLING FLUIDS IS MAINTAINED.

22. MINIMIZE HEAVING DURING PULL BACK. THE PULL BACK RATE USED SHALL MAXIMIZE THE REMOVAL OF SOIL CUTTINGS WITHOUT BUILDING EXCESS DOWN HOLE PRESSURE. CONTAIN EXCESS DRILLING FLUIDS AT ENTRY AND EXIT POINTS UNTIL THEY ARE RECYCLED OR REMOVED FROM THE SITE OR VACUUMED DURING DRILLING OPERATIONS. ENTRY AND EXIT PITS ARE TO BE OF SUFFICIENT SIZE TO CONTAIN THE EXPECTED RETURN OF DRILLING FLUIDS AND SOIL CUTTINGS.

23. ENSURE THAT ALL DRILLING FLUIDS ARE DISPOSED OF OR RECYCLED IN A MANNER ACCEPTABLE TO THE APPROPRIATE LOCAL, STATE, OR FEDERAL REGULATORY AGENCIES. IF IN THE DRILLING PROCESS IT BECOMES EVIDENT THAT THE SOIL IS CONTAMINATED, CONTACT THE ENGINEER IMMEDIATELY. DO NOT CONTINUE DRILLING WITHOUT THE ENGINEER'S APPROVAL.

24. INSTALL THE CARRIER IN THE BORE HOLE WITHIN THE SAME DAY THAT THE PRE-BORE IS COMPLETED TO ENSURE STABILITY.

25. IF AN OBSTRUCTION IS ENCOUNTERED DURING BORING WHICH PREVENTS COMPLETION OF THE INSTALLATION IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS, EITHER REMOVE THE PIPE OR ABANDON THE PIPE IN PLACE AT THE DISCRETION OF THE ENGINEER. IF PIPE CANNOT BE WITHDRAWN AND ENGINEER APPROVES ABANDONING THE PIPE IN PLACE, CUT PIPE OFF AT LEAST 3 FEET BELOW GROUND SURFACE, FILL ANNULAR SPACE AND PIPE WITH EXCAVATABLE FLOWABLE FILL AND CAP ENDS OF PIPE WITH BLIND FLANGE.

26. IN THE EVENT OF FAILURE TO INSTALL PIPE, RETAIN POSSESSION OF PIPE AND REMOVE IT FROM THE SITE. UPON APPROVAL OF THE ENGINEER, FILL THE ABANDONED BORE HOLE WITH EXCAVATABLE FLOWABLE FILL. SUBMIT A NEW INSTALLATION PROCEDURE AND REVISED PLANS TO THE ENGINEER FOR APPROVAL BEFORE RESUMING WORK AT ANOTHER LOCATION.

27. IF THE SUBMITTED BORING LOGS INDICATE THE INSTALLED ALIGNMENT DOES NOT MEET VERTICAL OR HORIZONTAL ALIGNMENT REQUIREMENTS, THE BORING IS CONSIDERED A FAILURE, AND THE DIRECTIONAL BORED PIPELINE SHALL BE EITHER RE-BORED OR OTHERWISE REMEDIED AT THE DISCRETION OF THE OWNER.

28. IF, DURING CONSTRUCTION, DAMAGE IS OBSERVED TO THE FACILITY, CEASE ALL WORK UNTIL RESOLUTION TO MINIMIZE FURTHER DAMAGE AND A PLAN OF ACTION FOR RESTORATION IS OBTAINED AND APPROVED BY THE ENGINEER.

29. DISINFECT ALL POTABLE WATER MAINS IN ACCORDANCE WITH AWWA C651. ALL POLYETHYLENE WATER MAINS, FORCE MAINS, AND RECLAIMED WATER MAINS ARE TO BE PRESSURE TESTED. SUBJECT PIPELINE TO BE TESTED TO A 4 HOUR EXPANSION PHASE PRIOR TO COMMENCING LEAKAGE TESTING. PIPELINE EXPANSION SHALL BE ACCOMPLISHED BY APPLYING HYDROSTATIC TEST PRESSURE OF 150 PSI (WATER MAINS, RECLAIMED WATER MAINS) OR 100 PSI (FORCE MAINS). IN ORDER TO COMPENSATE FOR THE INITIAL EXPANSION OF THE PIPELINE, ADD SUFFICIENT MAKE-UP WATER AT HOURLY INTERVALS TO RETURN TO THE REQUIRED TEST PRESSURE. AT THE END OF THE FOURTH HOUR, THE TEST PHASE IS TO COMMENCE.

30. CONDUCT FIELD LEAK TESTING IN ACCORDANCE WITH ASTM F2164 AND AS INDICATED HEREIN. THE ASTM F2164 DEFINED ONE HOUR TEST AND PASSING TEST CRITERIA (NO VISIBLE LEAKS AND THE PRESSURE IS MAINTAINED WITHIN 5% OF THE TEST PRESSURE) DOES NOT APPLY TO THIS PROJECT. THE TEST PHASE SHALL CONSIST OF A TWO HOUR PRESSURE TEST, AS REQUIRED BY THE ENGINEER. AT THE END OF THE TEST PHASE, MEASURE THE AMOUNT OF MAKEUP WATER REQUIRED TO RETURN TO THE TEST PRESSURE. THE PIPELINE PASSES THE PRESSURE TEST IF THE MAKEUP WATER REQUIRED DOES NOT EXCEED THE FOLLOWING: 6" MAINS - ALLOWABLE MAKEUP WATER IS 0.6 GAL/100 FT OF PIPELINE TESTED; 8" MAINS - ALLOWABLE MAKEUP WATER IS 1.0 GAL/100 FT OF PIPELINE TESTED; 12" MAINS - ALLOWABLE MAKEUP WATER IS 2.3 GAL/100 FT OF PIPELINE TESTED; 16" MAINS - ALLOWABLE MAKEUP WATER IS 3.3 GAL/100 FT OF PIPELINE TESTED.

31. IF ANY DEFECTS OR LEAKS ARE REVEALED, THEY SHOULD BE CORRECTED AND THE PIPELINE RETESTED AFTER A MINIMUM 24 HOUR RECUPERATION PERIOD BETWEEN TESTS. TOTAL TESTING CONDUCTED ON A SECTION OF PIPELINE SHALL NOT EXCEED 8 HOURS WITHIN A 24 HOUR PERIOD.

32. ALL APPARENT LEAKS DISCOVERED WITHIN ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER SHALL BE LOCATED AND REPAIRED BY CONTRACTOR, REGARDLESS OF THE TOTAL LINE LEAKAGE RATE.

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Drawn: B. Silcox
Checked: E. Moore, PE
Job No.: 1620-006
Date: Mar. 2021 © 2023

GENERAL NOTES SHEET 3 of 3

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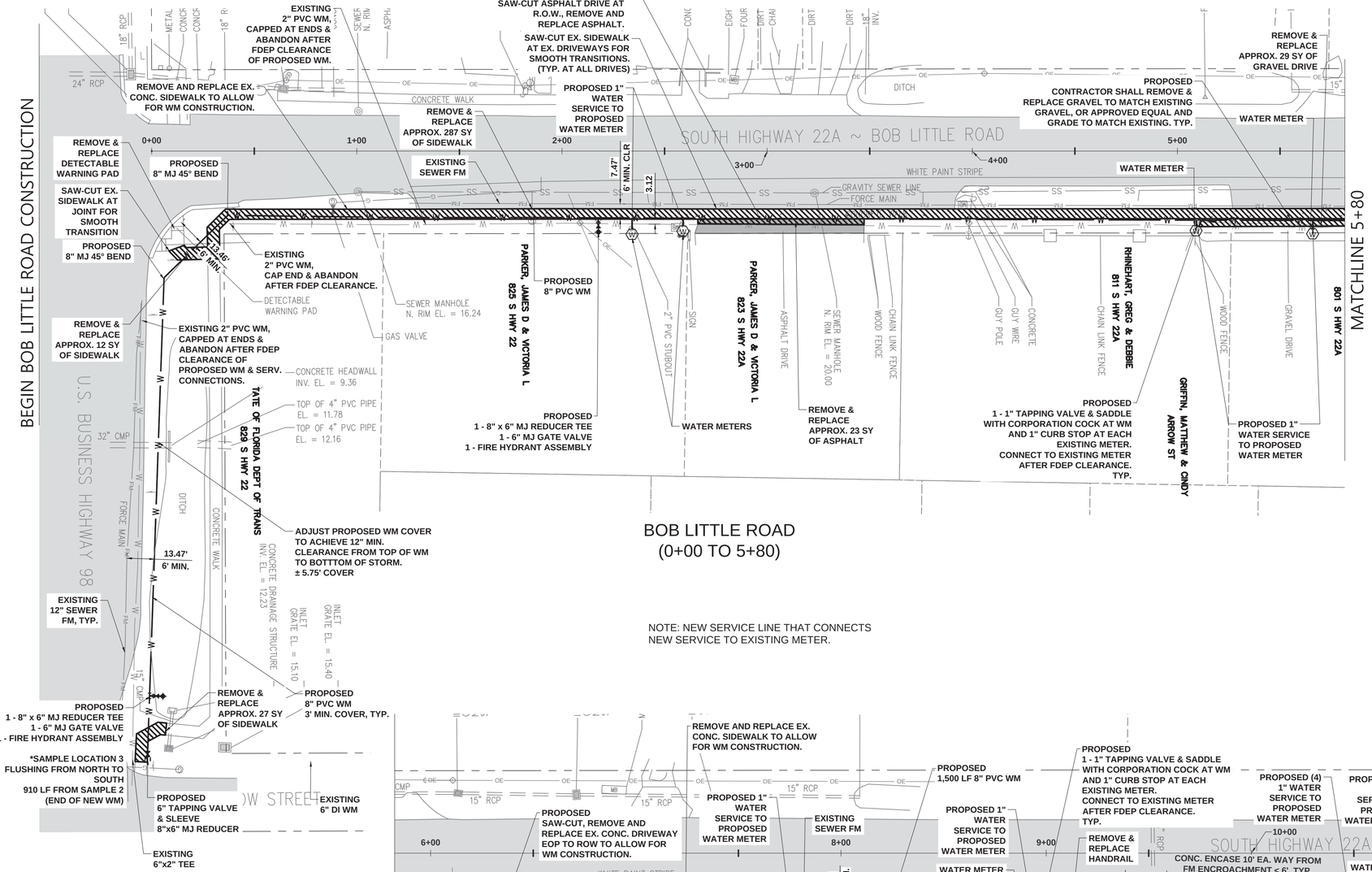
KEY SHEET

SRF WATERSYSTEM UPGRADE
PARKER, FLORIDA

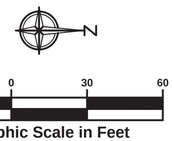
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NOTE: NEW SERVICE LINE THAT CONNECTS NEW SERVICE TO EXISTING METER.



LEGEND & ABBREVIATIONS

- = GAS VALVE
- = IRON ROD
- = MITERED END SECTION
- = SANITARY MANHOLE
- = SEWER VALVE
- = WATER METER
- = WATER VALVE
- –COMM– = COMMUNICATION LINE
- –GM– = GAS MAIN
- –WL– = WATER LINE
- PVC = POLYVINYL CHLORIDE PIPE
- RCP = REINFORCED CONCRETE PIPE
- = PROPOSED ASPHALT
- = PROPOSED GRAVEL
- = PROPOSED CONCRETE SIDEWALK
- = EXISTING PAVEMENT
- = REMOVAL & REPLACE WORK

NOTES:

1. CONTRACTOR SHALL MAINTAIN 6 FT. MINIMUM HORIZONTAL CLEARANCE FROM EXISTING SEWER FORCEMAINS OR GRAVITY SEWER PIPE.
2. CONTRACTOR SHALL MAINTAIN 3 FT. MINIMUM HORIZONTAL CLEARANCE FROM EXISTING STORM SEWER OR RECLAIMED WATER PIPE.
3. REFER TO "LOCATION OF PUBLIC WATER MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314, DETAIL SHEET C3.3.

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BOB LITTLE ROAD (1 OF 2)

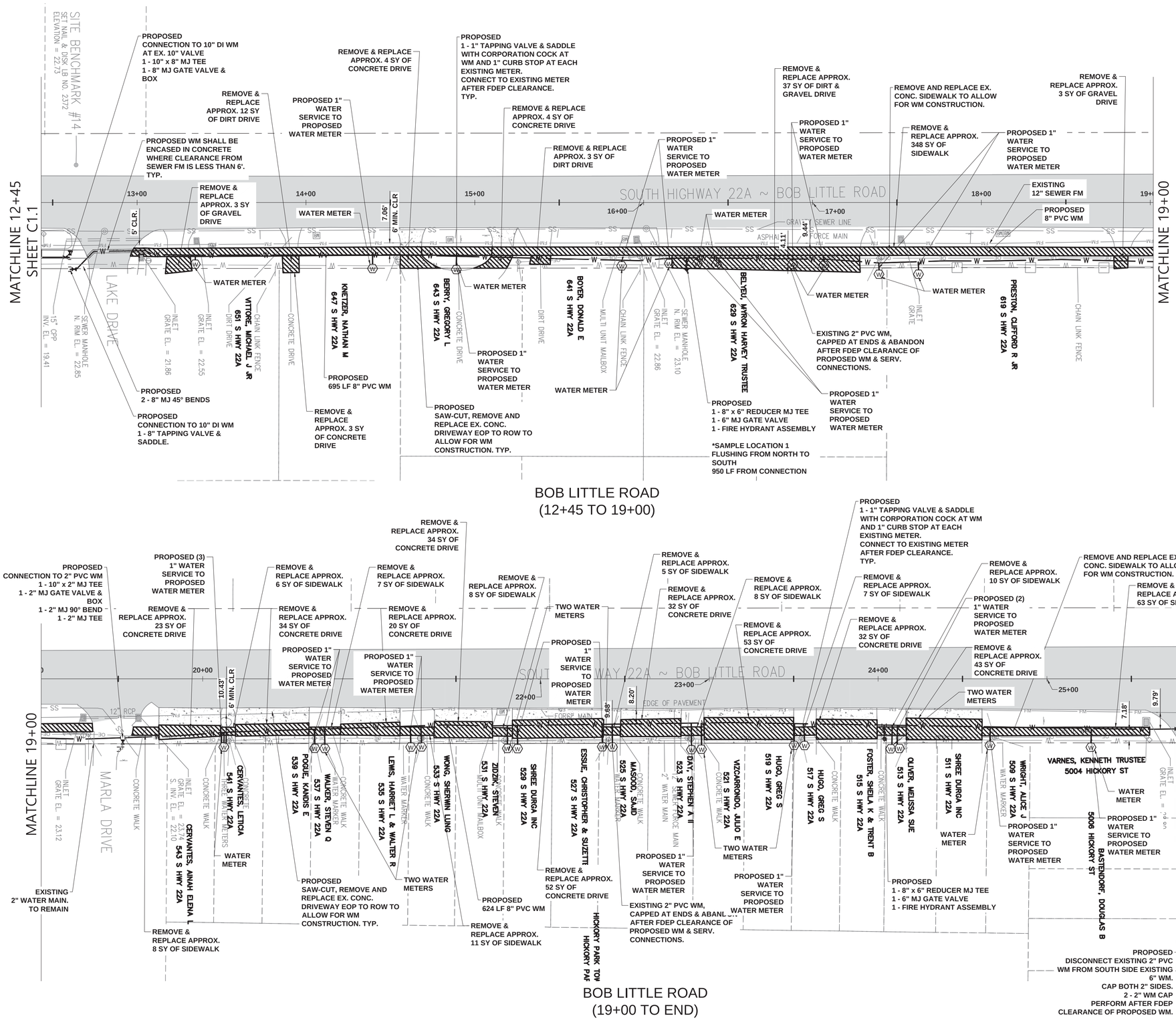
SRF WATERSYSTEM UPGRADE

PARKER, FLORIDA

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Sheet No.
C1.1

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30 0 30 60

Graphic Scale in Feet

LEGEND & ABBREVIATIONS

- = GAS VALVE
- = IRON ROD
- = MITERED END SECTION
- = SANITARY MANHOLE
- = SEWER VALVE
- = WATER METER
- = WATER VALVE
- –COMM– = COMMUNICATION LINE
- –GM– = GAS MAIN
- –WL– = WATER LINE
- PVC = POLYVINYL CHLORIDE PIPE
- RCP = REINFORCED CONCRETE PIPE
- = PROPOSED ASPHALT
- = PROPOSED GRAVEL
- = PROPOSED CONCRETE SIDEWALK
- = EXISTING PAVEMENT
- = REMOVAL & REPLACING WORK

NOTES:

1. CONTRACTOR SHALL MAINTAIN 6 FT. MINIMUM HORIZONTAL CLEARANCE FROM EXISTING SEWER FORCEMAINS OR GRAVITY SEWER PIPE.
2. CONTRACTOR SHALL MAINTAIN 3 FT. MINIMUM HORIZONTAL CLEARANCE FROM EXISTING STORM SEWER OR RECLAIMED WATER PIPE.
3. REFER TO "LOCATION OF PUBLIC WATER MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314, DETAIL SHEET C3.3.

Anchor CEI
Engineering that works.
P. 850.215.1285 • F. 850.215.1286
450 Magnolia Avenue, Panama City, FL 32401
CA Number 31422

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No.	Date	Revision
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Drawn: B. Silcox
Checked: E. Moore, PE
Job No.: 1620-006
Date: Mar. 2021 © 2023

BOB LITTLE ROAD (2 OF 2)

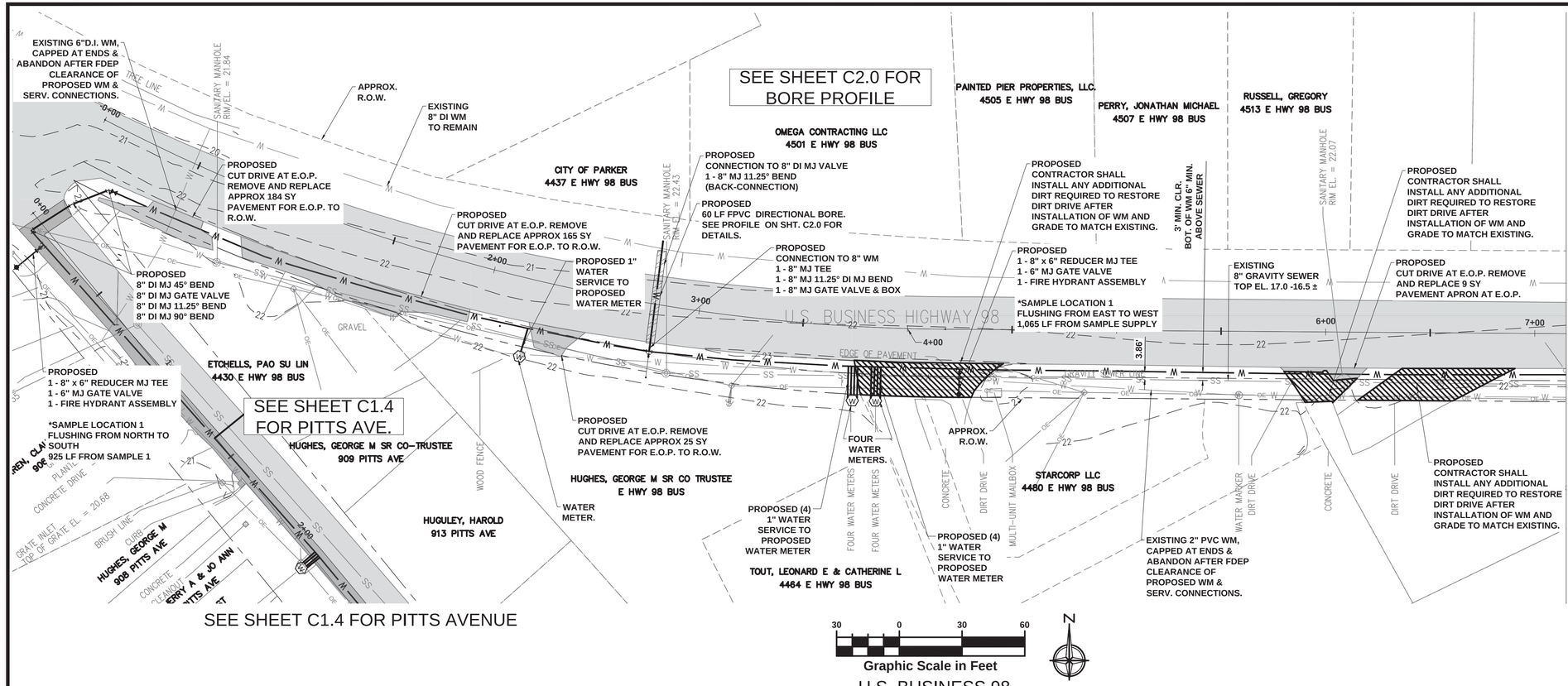
SRF WATERSYSTEM UPGRADE

PARKER, FLORIDA

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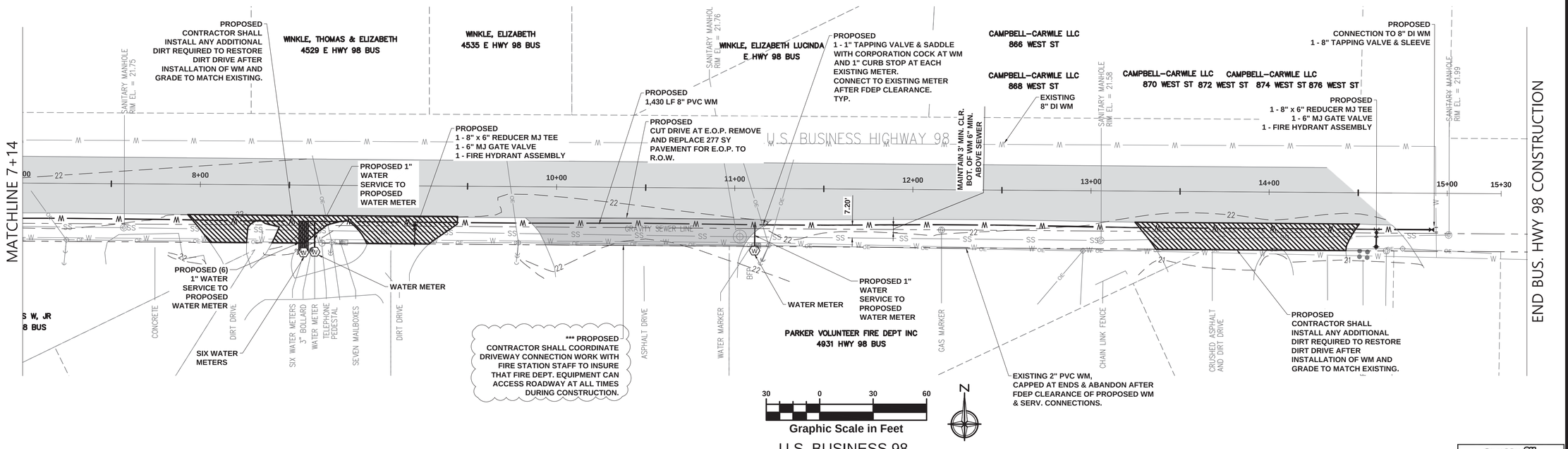


LEGEND & ABBREVIATIONS

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4. CONTRACTOR SHALL ADHERE TO FDOT "MAINTENANCE OF TRAFFIC" STANDARD INDEX NO. 102-602, TWO-LANE AND MULTI-LANE WORK ON SHOULDER DURING CONSTRUCTION ALONG FDOT ROADWAYS.



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No.	Date	Revision
1	6/20/2023	Add Bus. 98 Construction

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Job No.: 1620-006
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U.S. BUSINESS HIGHWAY 98

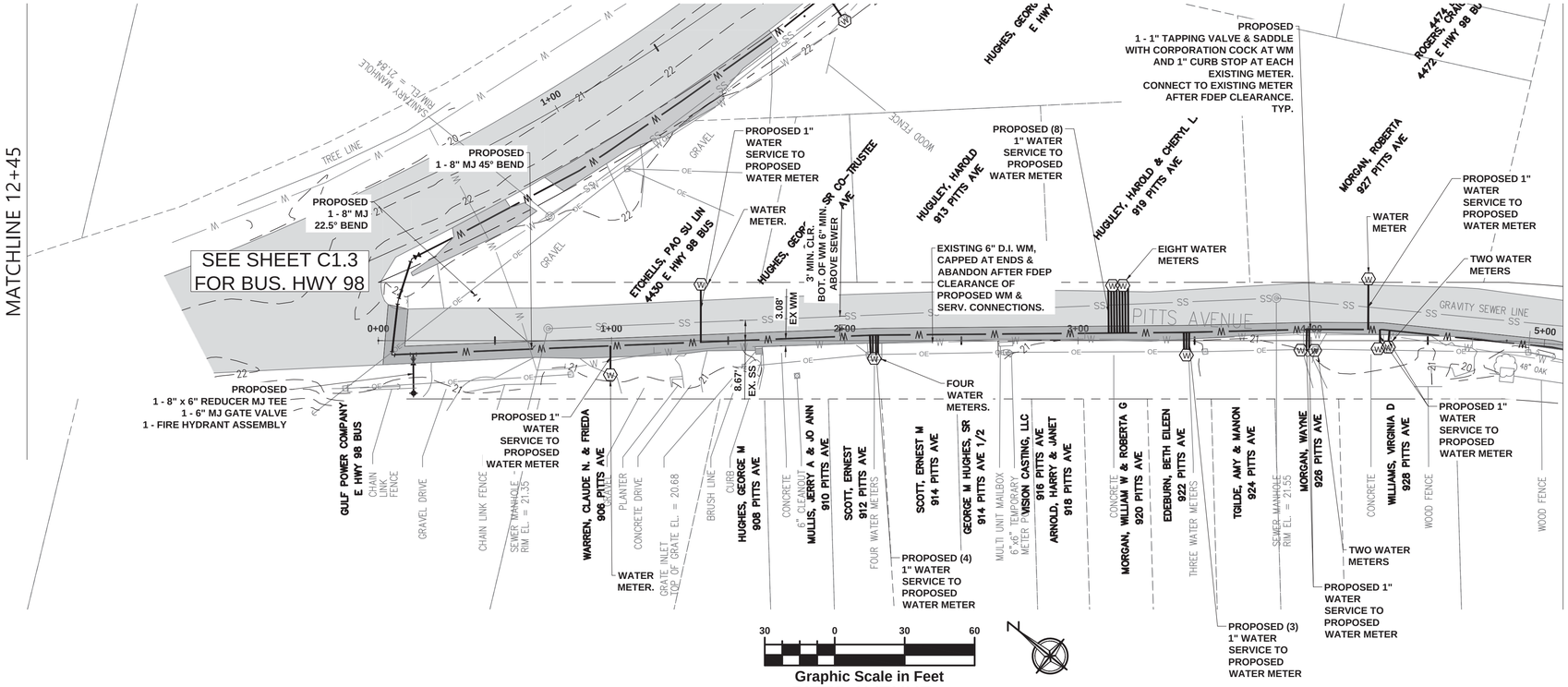
SRF WATERSYSTEM UPGRADE

PARKER, FLORIDA

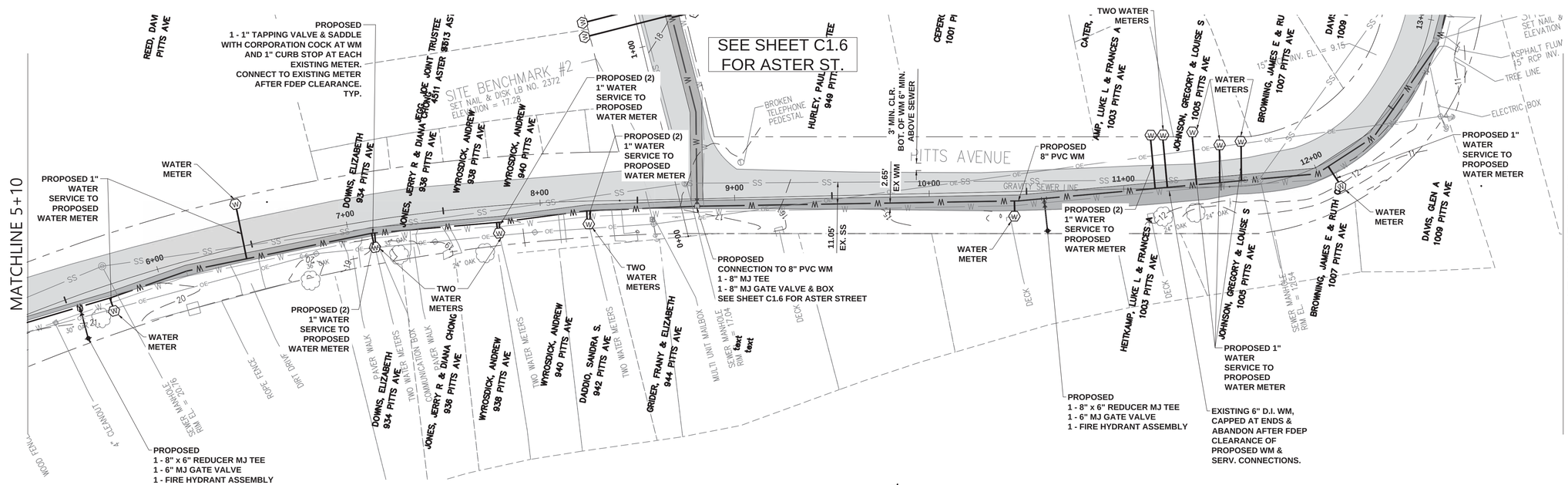
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Sheet No.
C1.3



PITTS AVENUE



PITTS AVENUE

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PITTS AVENUE

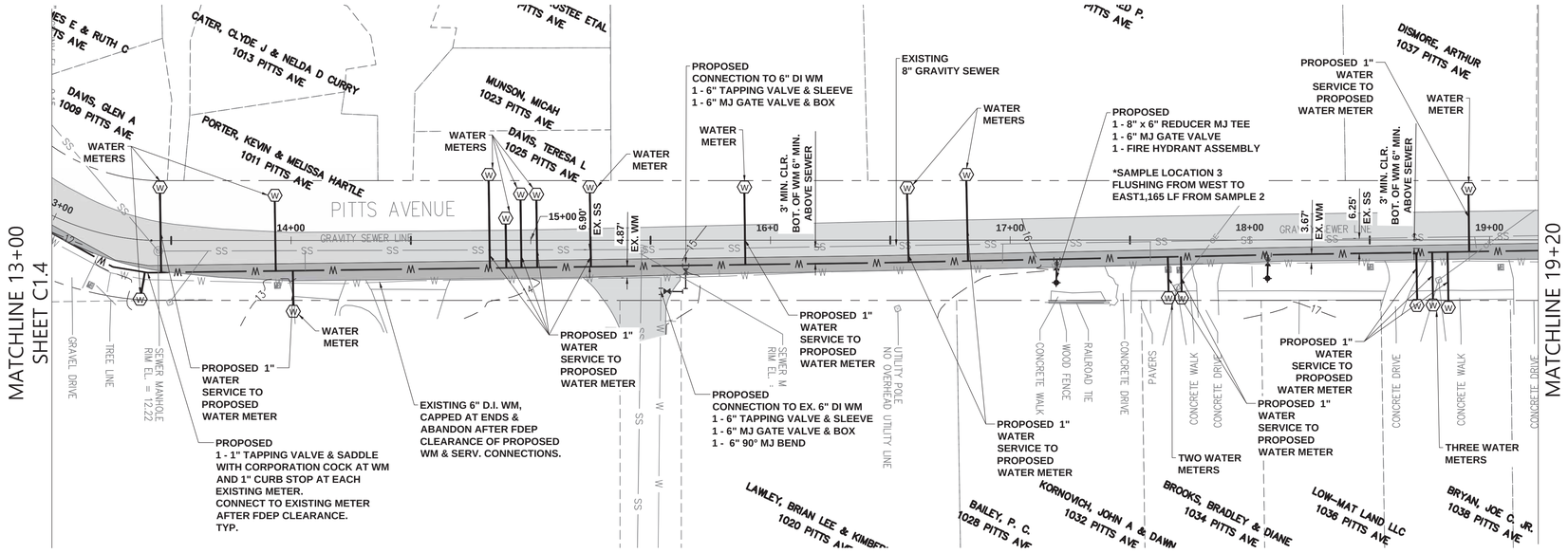
SRF WATERSYSTEM UPGRADE

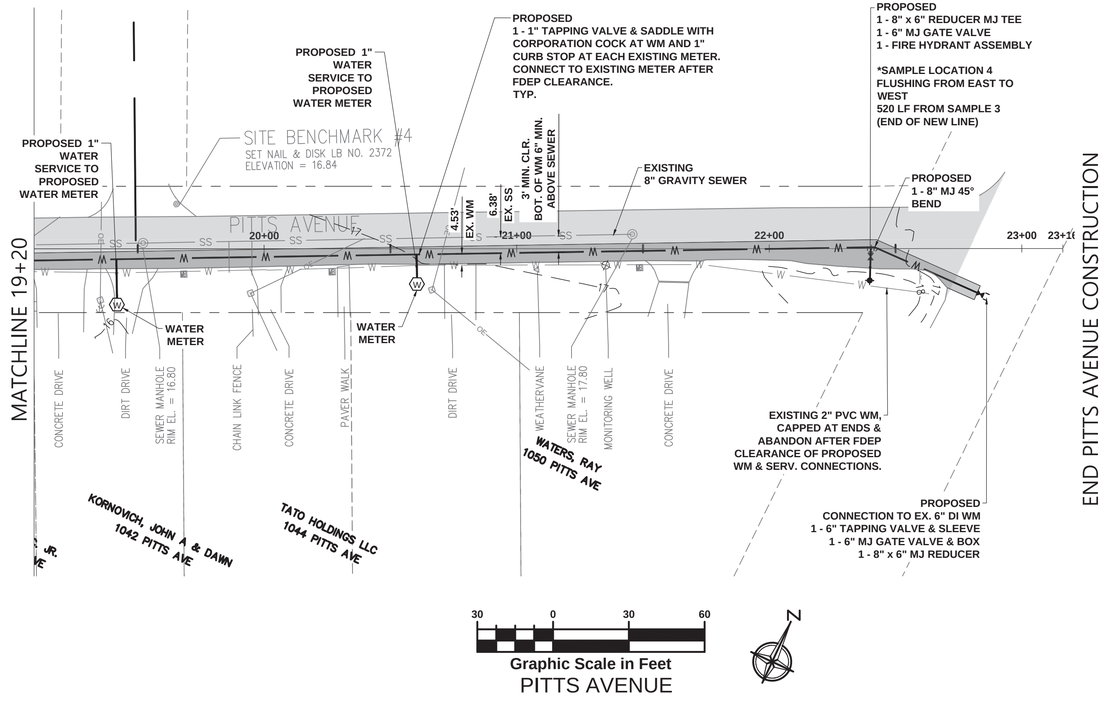
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LEGEND & ABBREVIATIONS

- GV = GAS VALVE
- = IRON ROD
- = MITERED END SECTION
- = SANITARY MANHOLE
- SV = SEWER VALVE
- = WATER METER
- WV = WATER VALVE
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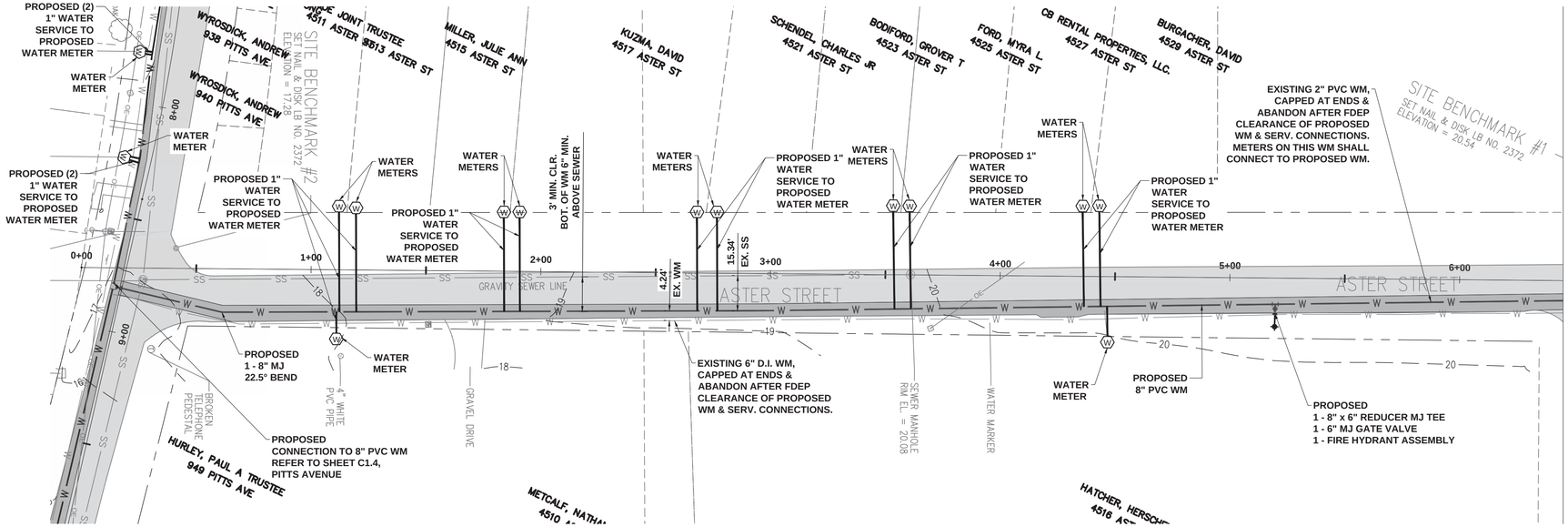
PITTS AVENUE

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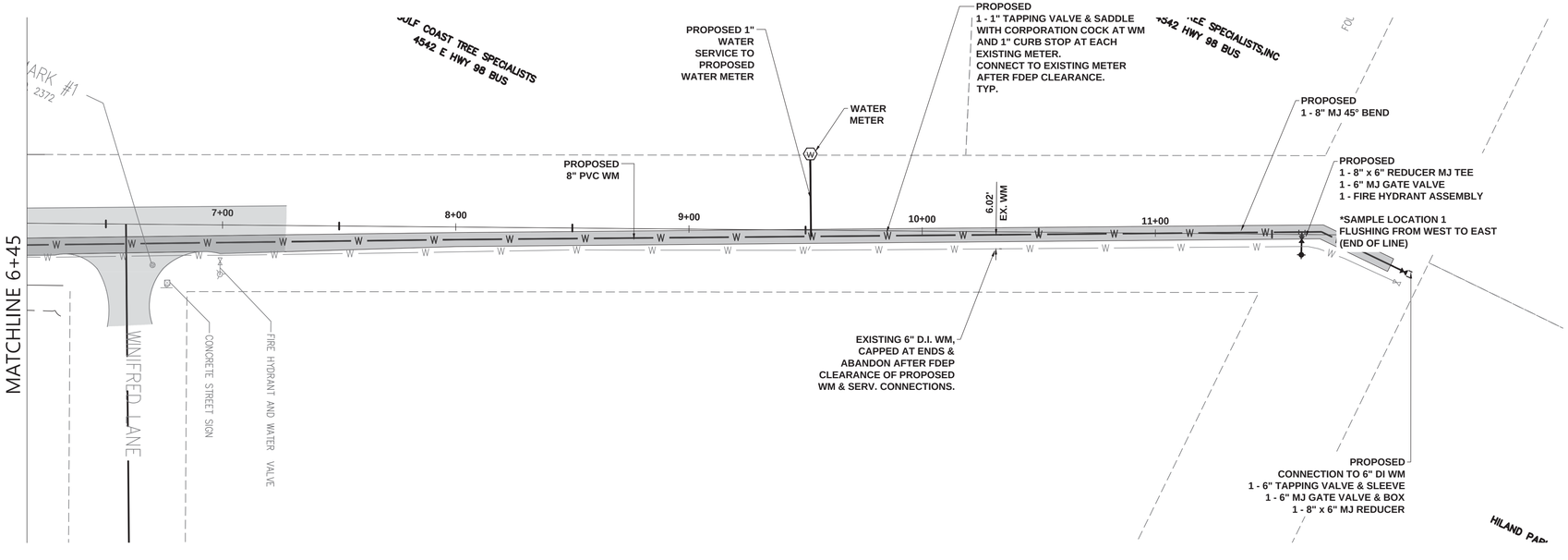
Sheet No.
C1.5



30 0 30 60

Graphic Scale in Feet

ASTER STREET



30 0 30 60

Graphic Scale in Feet

ASTER STREET

LEGEND & ABBREVIATIONS

- = GAS VALVE
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ASTER STREET

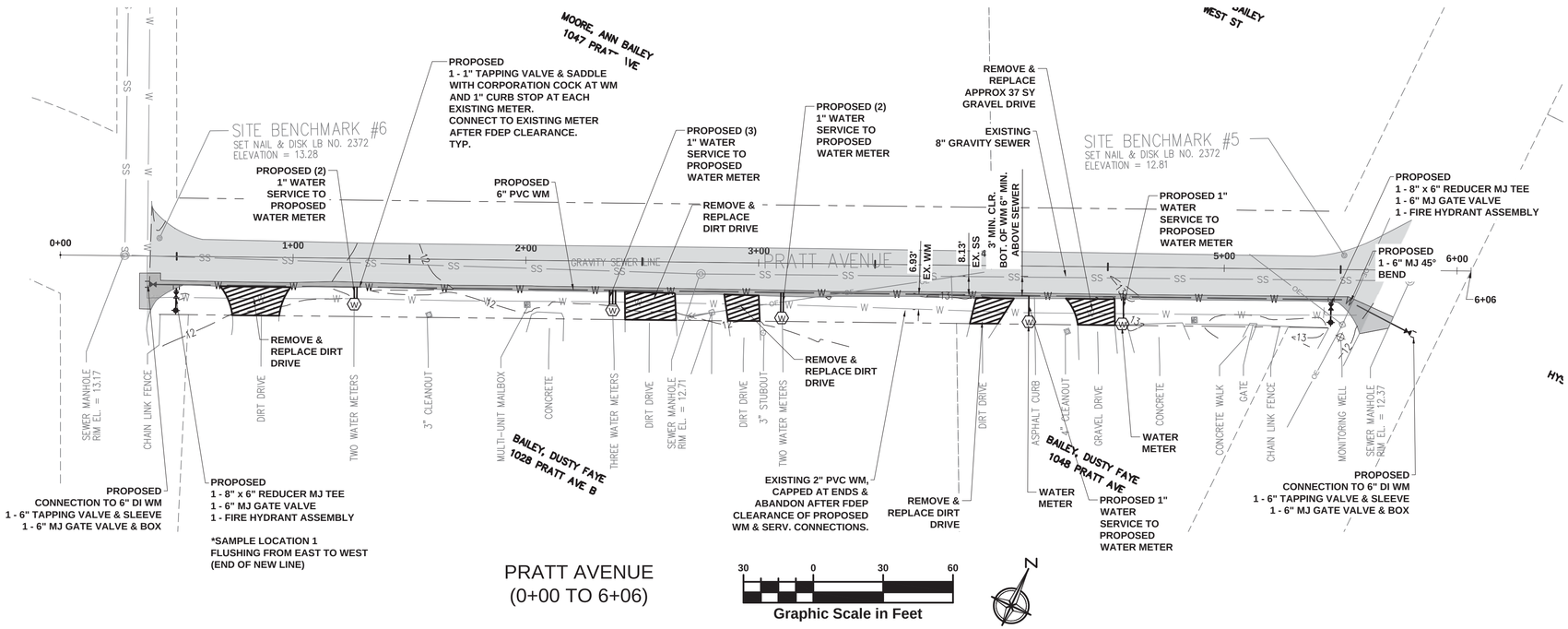
SRF WATERSYSTEM UPGRADE
PARKER, FLORIDA

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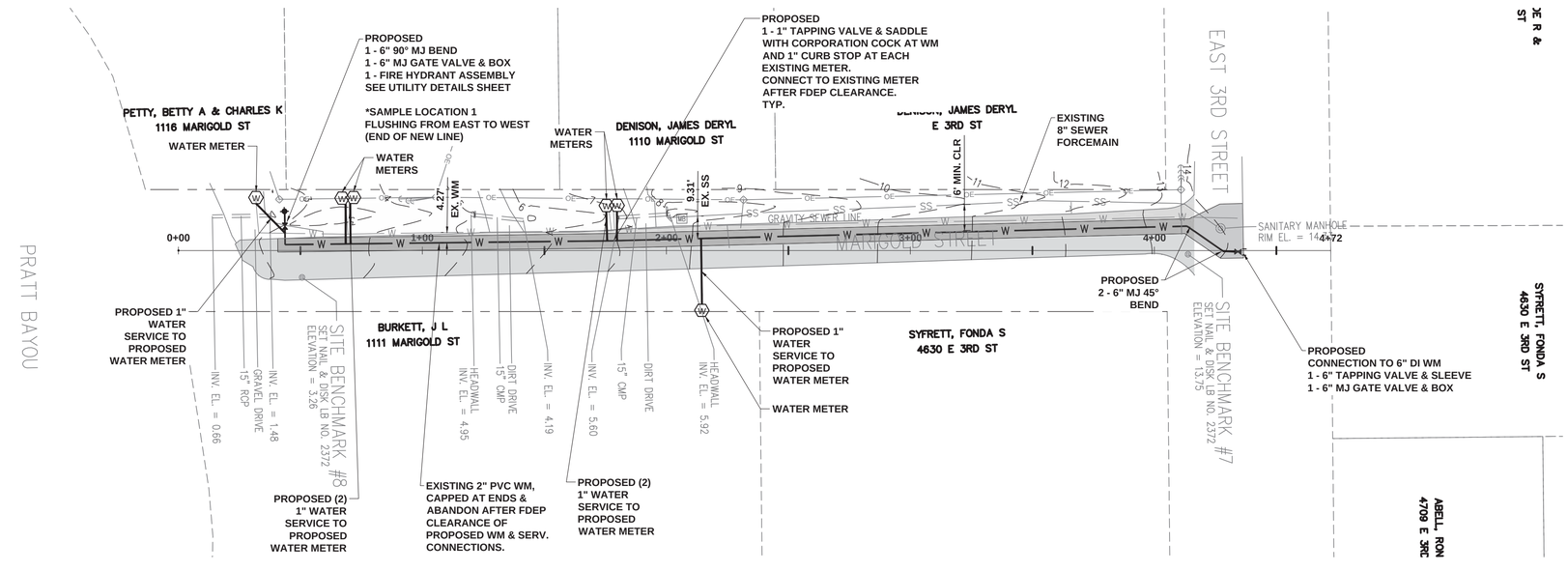
Sheet No.
C1.6

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PRATT AVENUE
(0+00 TO 6+06)

30 0 30 60
Graphic Scale in Feet



MARIGOLD STREET
(0+00 TO 4+72)

30 0 30 60
Graphic Scale in Feet

LEGEND & ABBREVIATIONS

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- = PROPOSED GRAVEL
- = PROPOSED CONCRETE SIDEWALK
- = EXISTING PAVEMENT
- = REMOVAL & REPLACE WORK

NOTES:

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Anchor CEI
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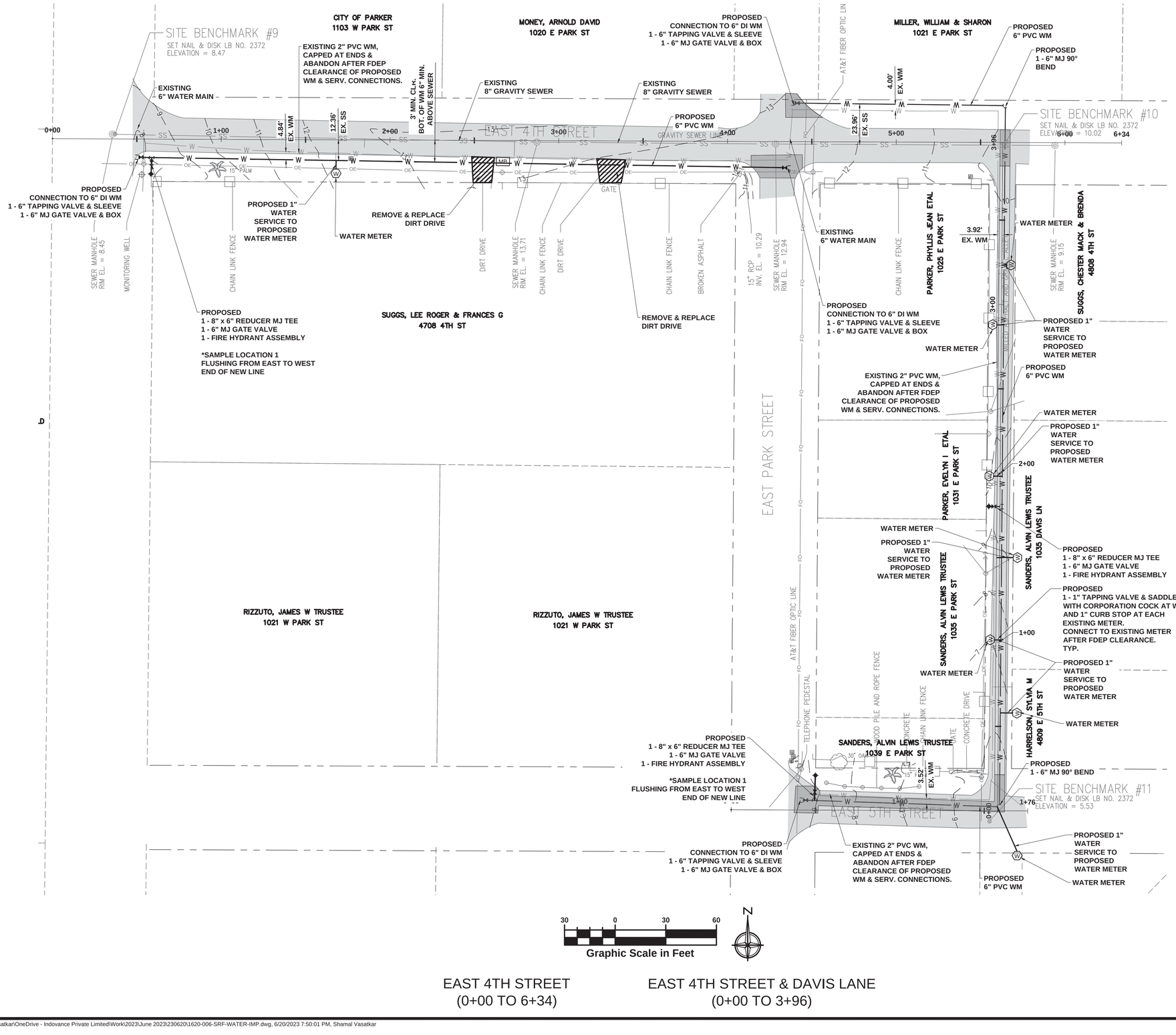
PRATT AVENUE & MARIGOLD STREET

SRF WATERSYSTEM UPGRADE
PARKER, FLORIDA

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Sheet No.
C1.7



EAST 4TH STREET
(0+00 TO 6+34)

EAST 4TH STREET & DAVIS LANE
(0+00 TO 3+96)

LEGEND & ABBREVIATIONS

- = GAS VALVE
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- = PROPOSED CONCRETE SIDEWALK
- = EXISTING PAVEMENT
- = REMOVAL & REPLACE WORK
- MB = MAIL BOX

NOTES:

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1	6/20/2023	Revised per comments

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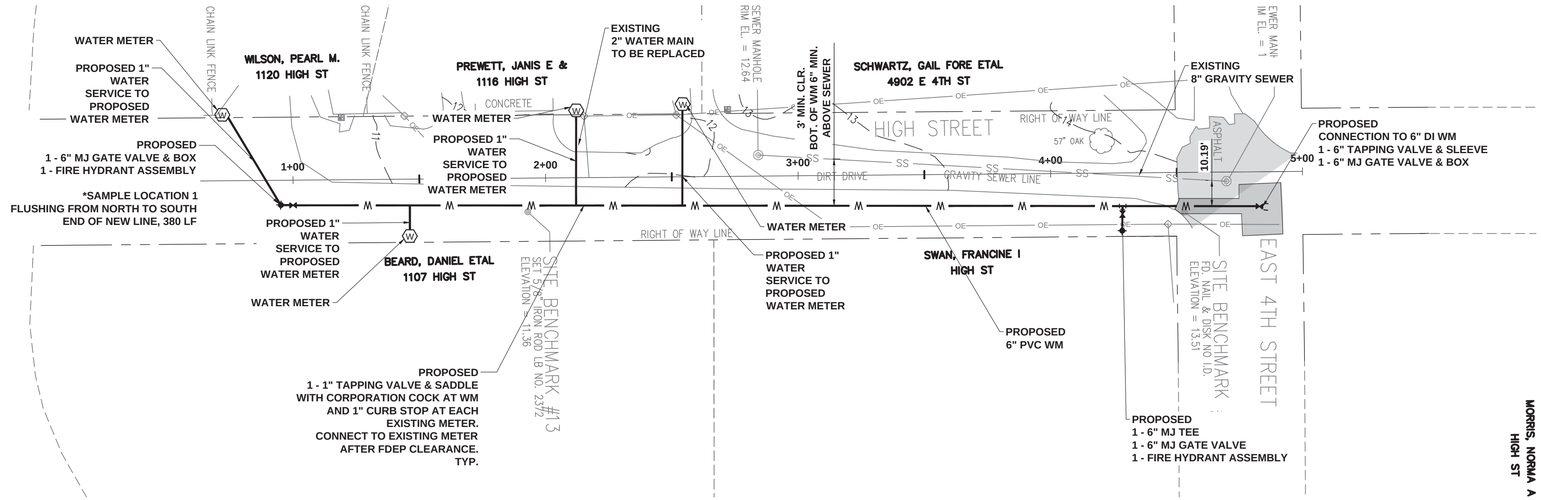
EAST 4TH STREET & DAVIS LANE

SRF WATERSYSTEM UPGRADE
PARKER, FLORIDA

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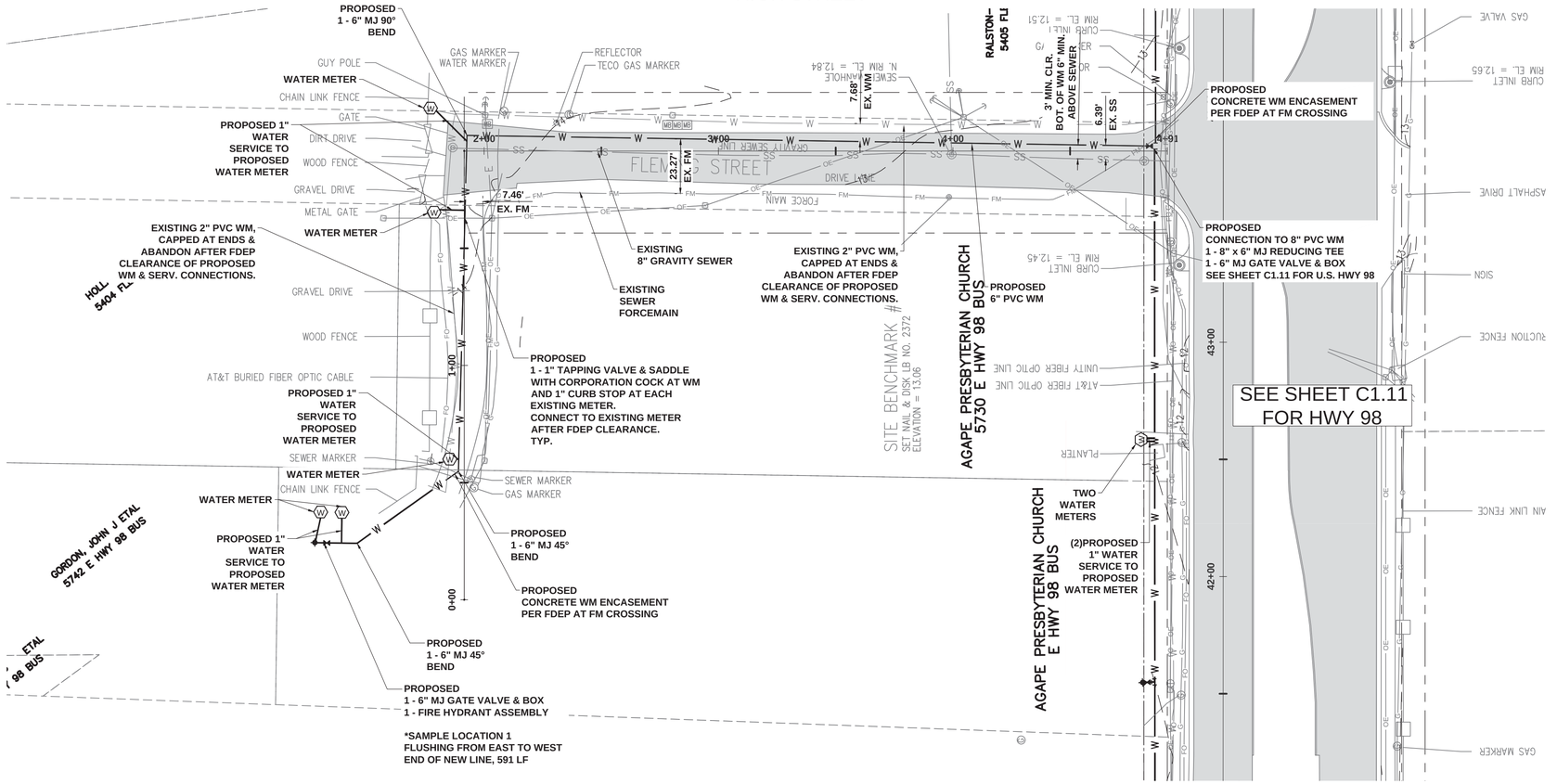
Sheet No.
C1.8



30 0 30 60

Graphic Scale in Feet

HIGH STREET



FLEMING STREET

30 0 30 60

Graphic Scale in Feet

LEGEND & ABBREVIATIONS

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HIGH STREET & FLEMING STREET

SRF WATERSYSTEM UPGRADE

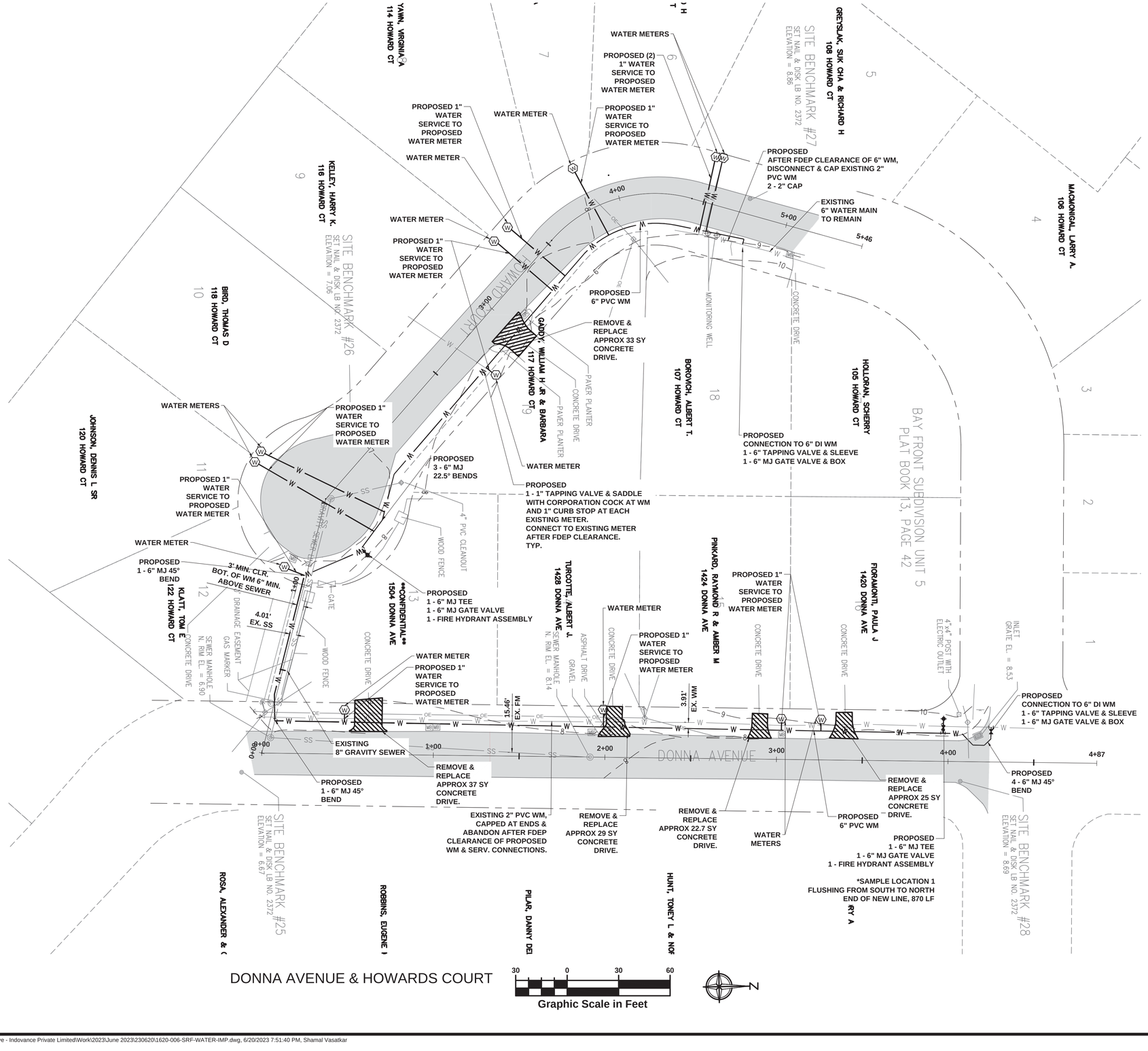
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LEGEND & ABBREVIATIONS

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- = MITERED END SECTION
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DONNA AVENUE & HOWARD COURT

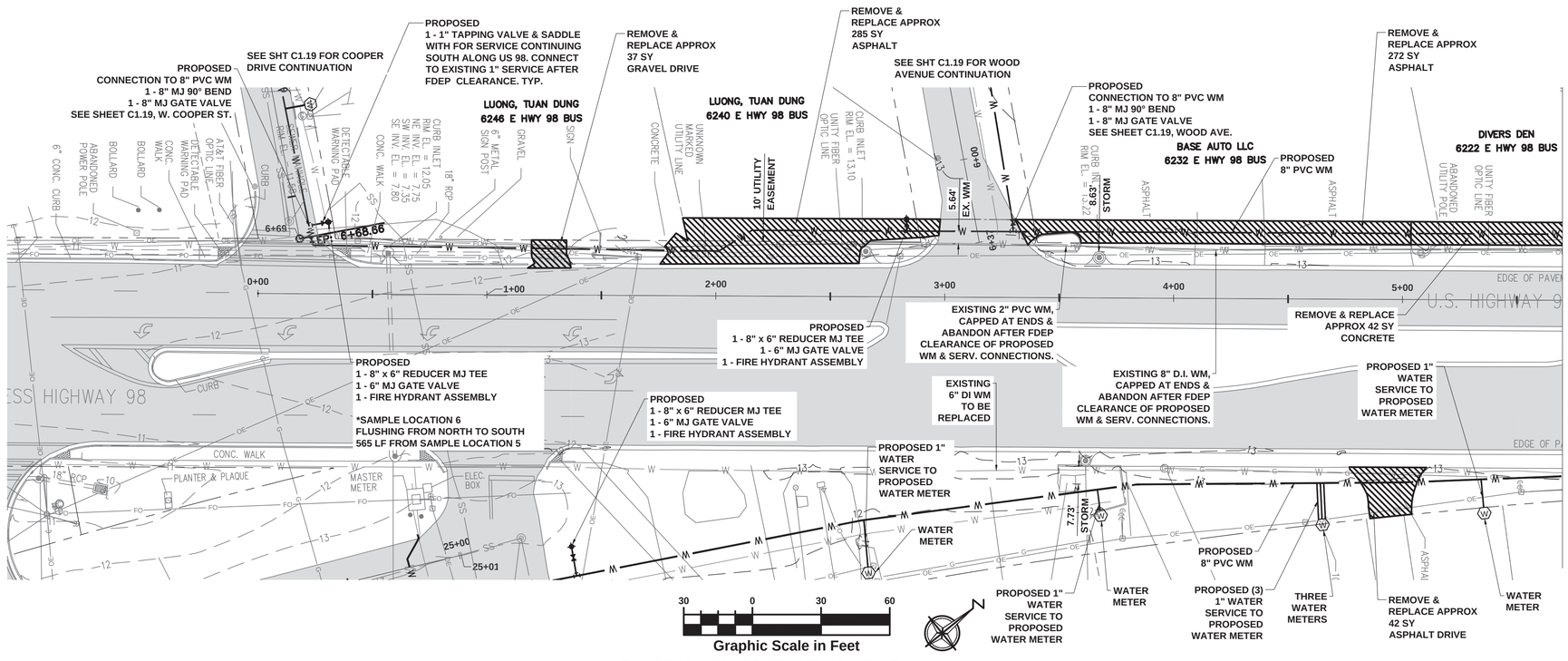
SRF WATERSYSTEM UPGRADE

PARKER, FLORIDA

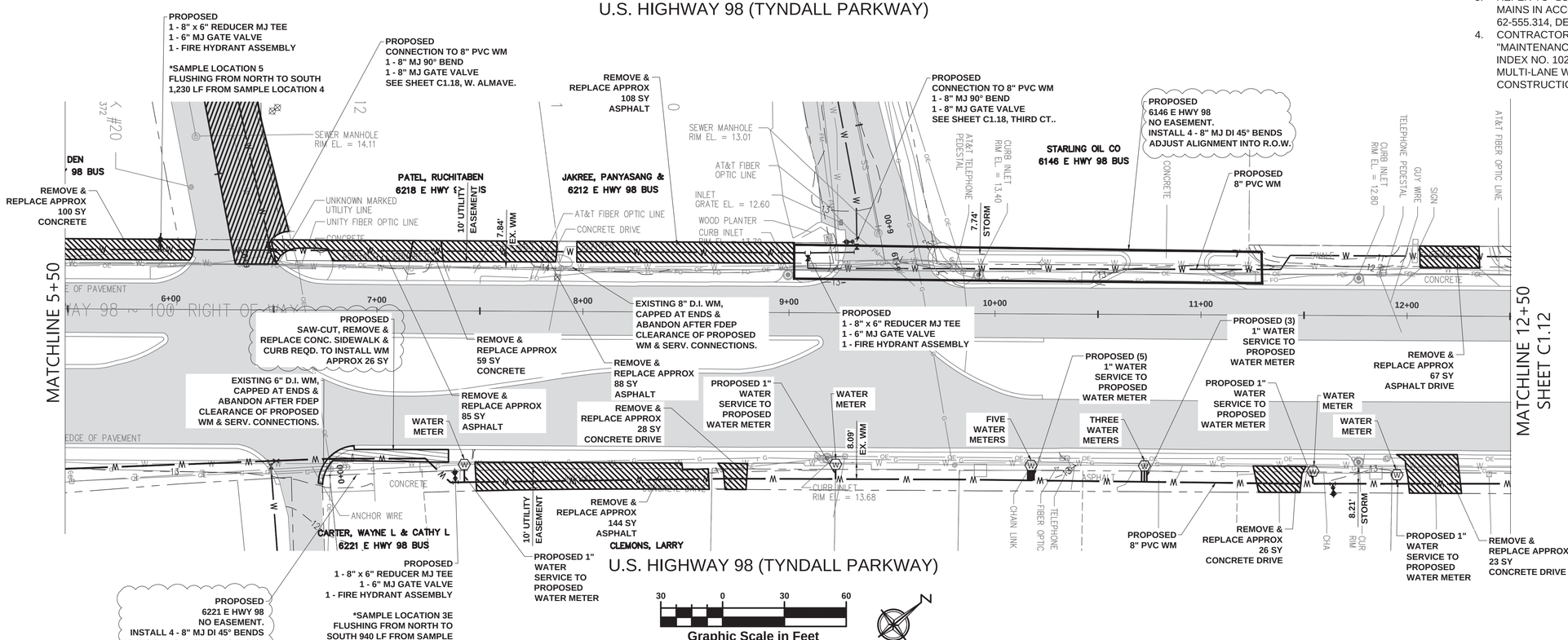
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C1.10

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U.S. HIGHWAY 98 (TYNDALL PARKWAY)



U.S. HIGHWAY 98 (TYNDALL PARKWAY)

LEGEND & ABBREVIATIONS

- = GAS VALVE
- = IRON ROD
- = MITERED END SECTION
- = SANITARY MANHOLE
- = SEWER VALVE
- = WATER METER
- = WATER VALVE
- —COMM— = COMMUNICATION LINE
- —GM— = GAS MAIN
- —WL— = WATER LINE
- PVC = POLYVINYL CHLORIDE PIPE
- RCP = REINFORCED CONCRETE PIPE
- = PROPOSED ASPHALT
- = PROPOSED GRAVEL
- = PROPOSED CONCRETE SIDEWALK
- = EXISTING PAVEMENT
- = REMOVAL & REPLACE WORK

NOTES:

1. CONTRACTOR SHALL MAINTAIN 6 FT. MINIMUM HORIZONTAL CLEARANCE FROM EXISTING SEWER FORCEMAINS OR GRAVITY SEWER PIPE.
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4. CONTRACTOR SHALL ADHERE TO FDOT "MAINTENANCE OF TRAFFIC" STANDARD INDEX NO. 102-602, TWO-LANE AND MULTI-LANE WORK ON SHOULDER DURING CONSTRUCTION ALONG FDOT ROADWAYS.

Anchor CEI
Engineering that works.
P. 850.215.1285 • F. 850.215.1286
450 Magnolia Avenue, Panama City, FL 32401
CA Number 31422

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No.	Date	Revision
1		
2		
3		
4		
5		
6		
7		

Designed: E. Moore, PE
Drawn: B. Silcox
Checked: E. Moore, PE
Job No.: 1620-006
Date: Mar. 2021
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U.S. HIGHWAY 98 (TYNDALL PARKWAY)

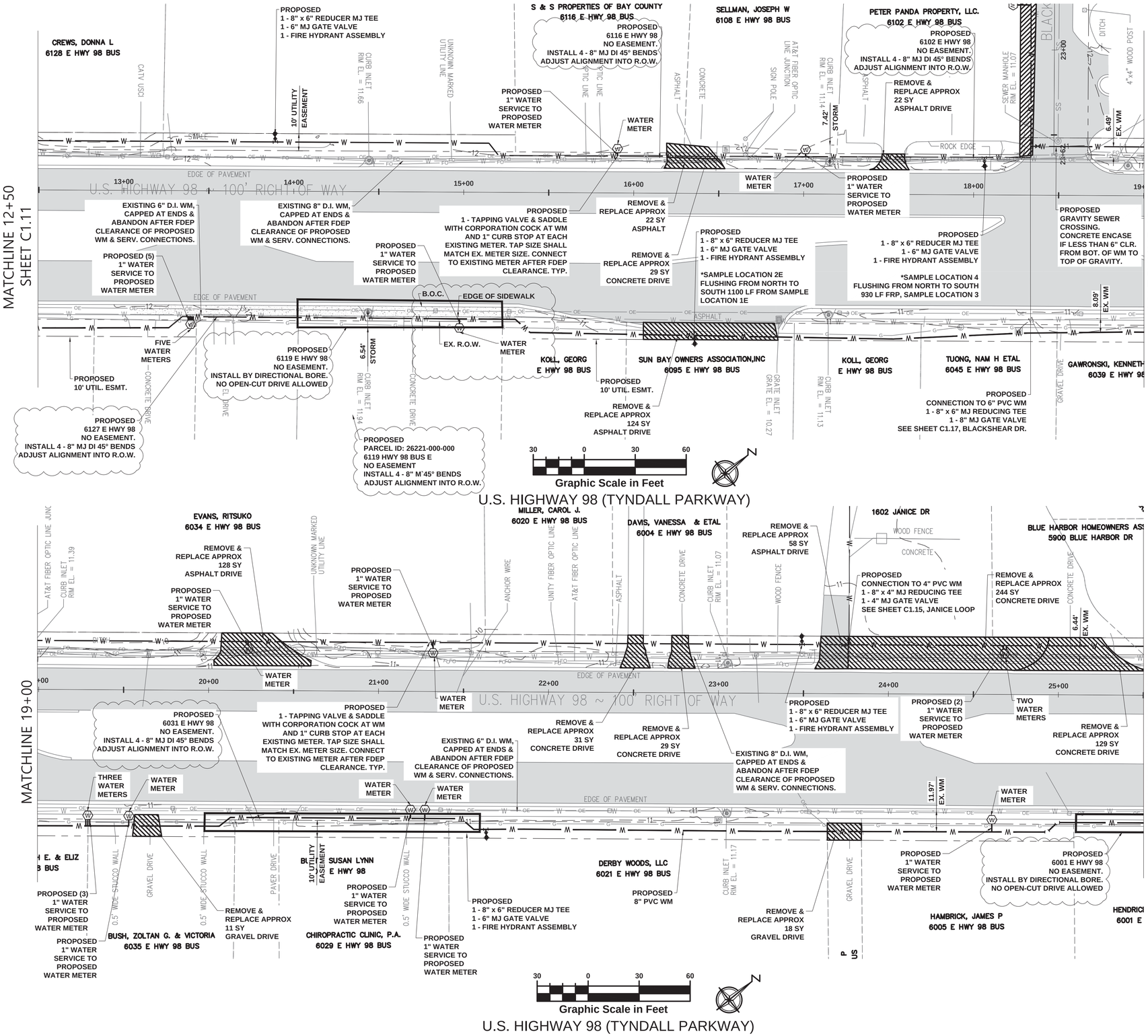
SRF WATERSYSTEM UPGRADE

PARKER, FLORIDA

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Sheet No.
C1.11



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U.S. HIGHWAY 98 (TYNDALL PARKWAY)

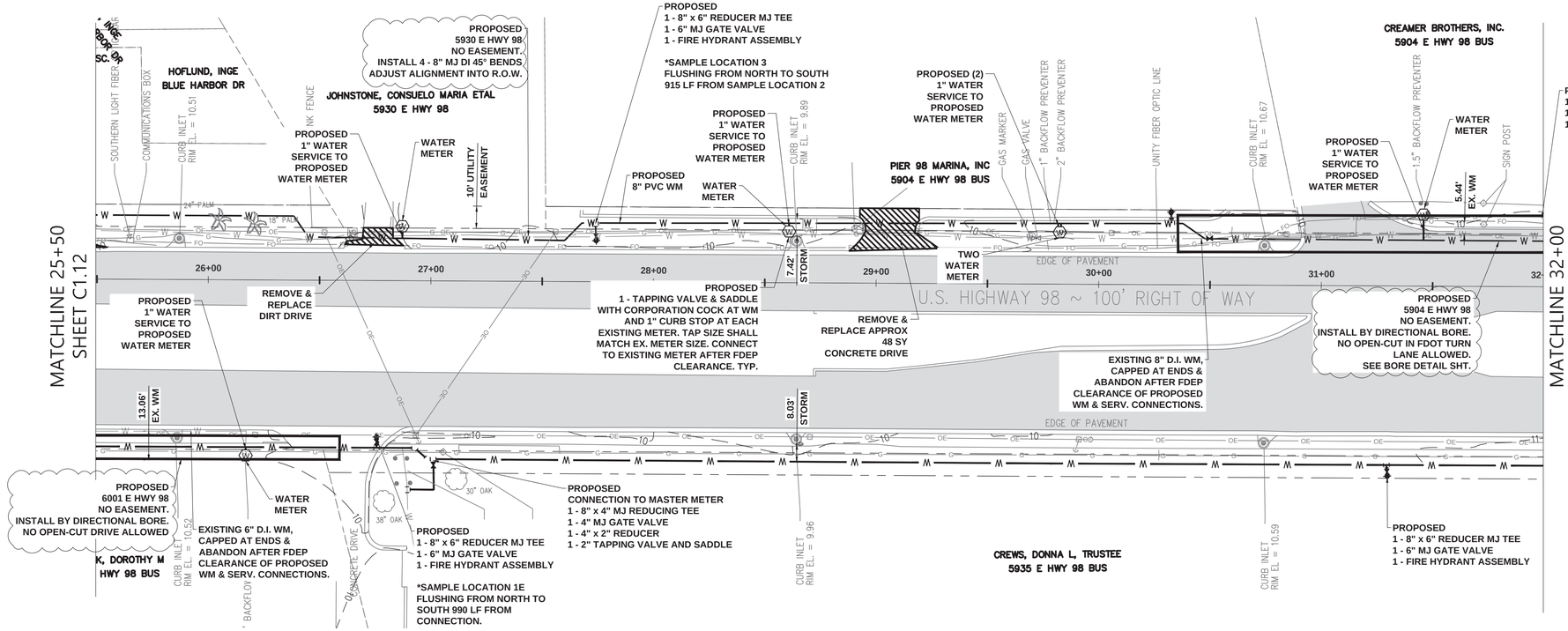
SRF WATERSYSTEM UPGRADE

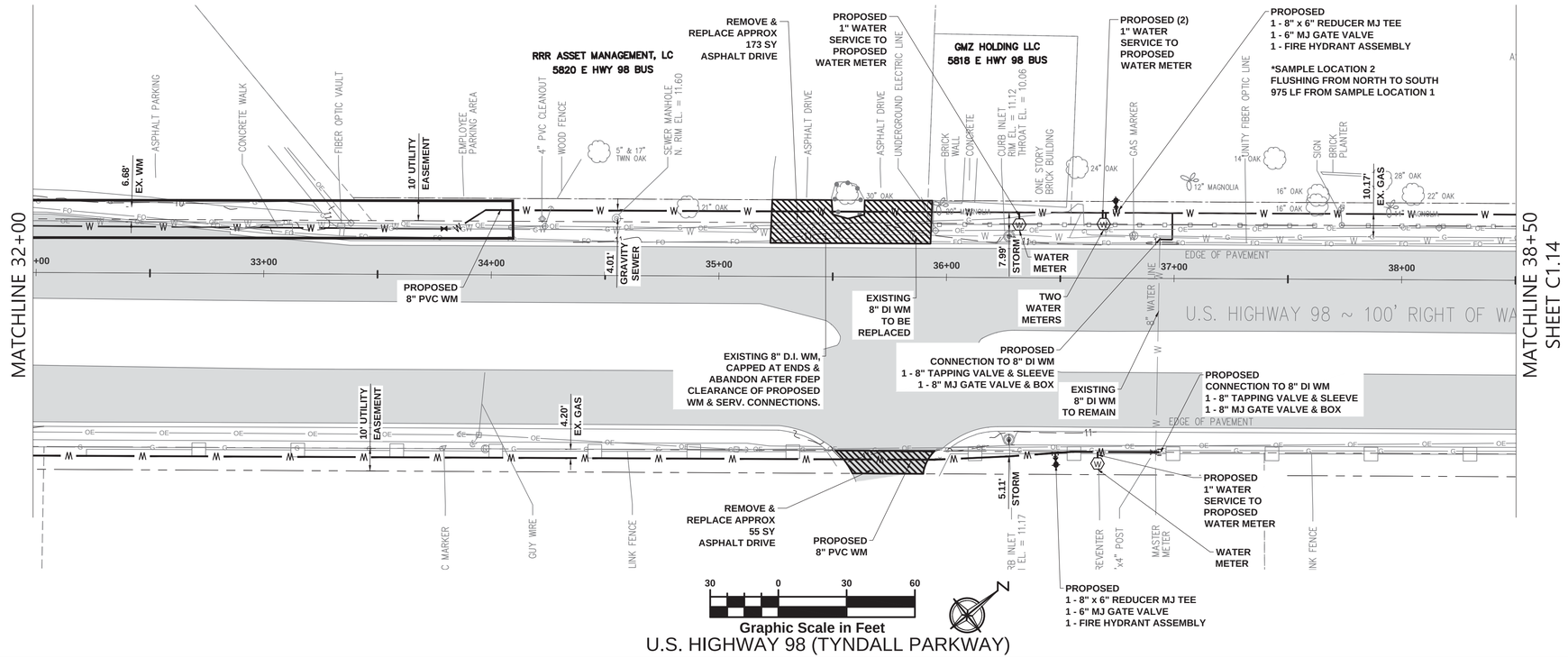
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U.S. HIGHWAY 98 (TYNDALL PARKWAY)

SRF WATERSYSTEM UPGRADE

PARKER, FLORIDA

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Sheet No.
C1.13

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MATCHLINE 38+50
SHEET C1.13

REMOVE & REPLACE APPROX 59 SY ASPHALT DRIVE

PROPOSED 1 - 8" x 6" REDUCER MJ TEE 1 - 6" MJ GATE VALVE 1 - FIRE HYDRANT ASSEMBLY

PRESBYTERY OF FLORIDA INC 5750 E HWY 98 BUS

PROPOSED 8" PVC WM

AGAPE PRESBYTERIAN CHURCH E HWY 98 BUS

10' UTILITY EASEMENT

PROPOSED GRAVITY & FM SEWER CROSSING. CONCRETE ENCASE IF LESS THAN 6" CLR. FROM BOT. OF WM TO TOP OF GRAVITY & 12" FOR FM.

SITE BENCHMARK #24
SET NAIL & DISK LB NO. 2372
ELEVATION = 13.06

PROPOSED CONNECTION TO 8" PVC WM REFER TO SHEET C1.9 FOR FLEMING STREET

REMOVE & REPLACE APPROX 58 SY CONCRETE DRIVE

REMOVE & REPLACE APPROX 57 SY ASPHALT DRIVE

HL, WAYNE E
E HWY 98 BUS

DAHL, WAYNE
5700 S TYNDALL PKWY

SMUGGLER'S COVE DEV LLC
5664 E HWY 98 BUS

WATER METER

5.67' EX. WM

4.90' STORM

WATER METER

TWO WATER METERS

PROPOSED (2) 1" WATER SERVICE TO PROPOSED WATER METER

PROPOSED 1 - 1" TAPPING VALVE & SADDLE WITH CORPORATION COCK AT WM AND 1" CURB STOP AT EACH EXISTING METER. CONNECT TO EXISTING METER AFTER FDEP CLEARANCE. TYP.

PROPOSED 1" WATER SERVICE TO PROPOSED WATER METER

EXISTING 8" D.I. WM, CAPPED AT ENDS & ABANDON AFTER FDEP CLEARANCE OF PROPOSED WM & SERV. CONNECTIONS.

PROPOSED 1 - 8" x 6" REDUCER MJ TEE 1 - 6" MJ GATE VALVE 1 - FIRE HYDRANT ASSEMBLY

*SAMPLE LOCATION 1 FLUSHING FROM NORTH TO SOUTH 1,025 LF FROM SUPPLY

REMOVE & REPLACE APPROX 32 SY GRAVEL

TEO WATER METERS

PROPOSED (2) 1" WATER SERVICE TO PROPOSED WATER METER

CITY OF PARKER
5815 E HWY 98 BUS

RUDRA P INC
5711 E HWY 98 BUS

FELTMAN, JAMES
5561 E HWY 98

EICHELS, PAUL SU
5652 E HWY 98 BUS

MATCHLINE 49+00

U.S. HIGHWAY 98 (TYNDALL PARKWAY)

MATCHLINE 49+00

PROPOSED 1 - 8" x 6" REDUCER MJ TEE 1 - 6" MJ GATE VALVE 1 - FIRE HYDRANT ASSEMBLY

CLEANSING AND GRUBBING

10' UTILITY EASEMENT

HARDERS HOLDING COMPANY, INC.
5521 E HWY 98 BUS

PROPOSED 8" PVC WM

PROPOSED 1 - 8" x 6" REDUCER MJ TEE 1 - 6" MJ GATE VALVE 1 - FIRE HYDRANT ASSEMBLY

WATER METER

6.37' EX. WM

6.26' STORM

DAHL, WAYNE E.
5612 E HWY 98 BUS

PROPOSED CONNECTION TO 6" DI WM 1 - 6" TAPPING VALVE & SLEEVE 1 - 6" MJ GATE VALVE & BOX 1 - 8" x 6" MJ REDUCER 90° BEND

U.S. HIGHWAY 98 ~ 100' RIGHT OF WAY

REMOVE & REPLACE APPROX 74 SY GRAVEL DRIVE

EXISTING 6" D.I. WM, CAPPED AT ENDS & ABANDON AFTER FDEP CLEARANCE OF PROPOSED WM & SERV. CONNECTIONS.

REMOVE & REPLACE APPROX 90 SY GRAVEL DRIVE

REMOVE & REPLACE APPROX 41 SY GRAVEL DRIVE

PROPOSED 1" WATER SERVICE TO PROPOSED WATER METER

PROPOSED 1" WATER SERVICE TO PROPOSED WATER METER

PROPOSED GRAVITY SEWER CROSSING. CONCRETE ENCASE IF LESS THAN 6" CLR. FROM BOT. OF WM TO TOP OF SS.

KIRKLAND, NELL R
5531 E HWY 98

END TYNDALL PARKWAY CONSTRUCTION

Graphic Scale in Feet
30 0 30 60

U.S. HIGHWAY 98 (TYNDALL PARKWAY)

LEGEND & ABBREVIATIONS

- GV = GAS VALVE
- = IRON ROD
- = MITERED END SECTION
- SMH = SANITARY MANHOLE
- SV = SEWER VALVE
- WM = WATER METER
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Drawn: B. Silcox
Checked: E. Moore, PE
Job No.: 1620-006
Date: Mar. 2021 © 2023

U.S. HIGHWAY 98 (TYNDALL PARKWAY)

SRF WATERSYSTEM UPGRADE

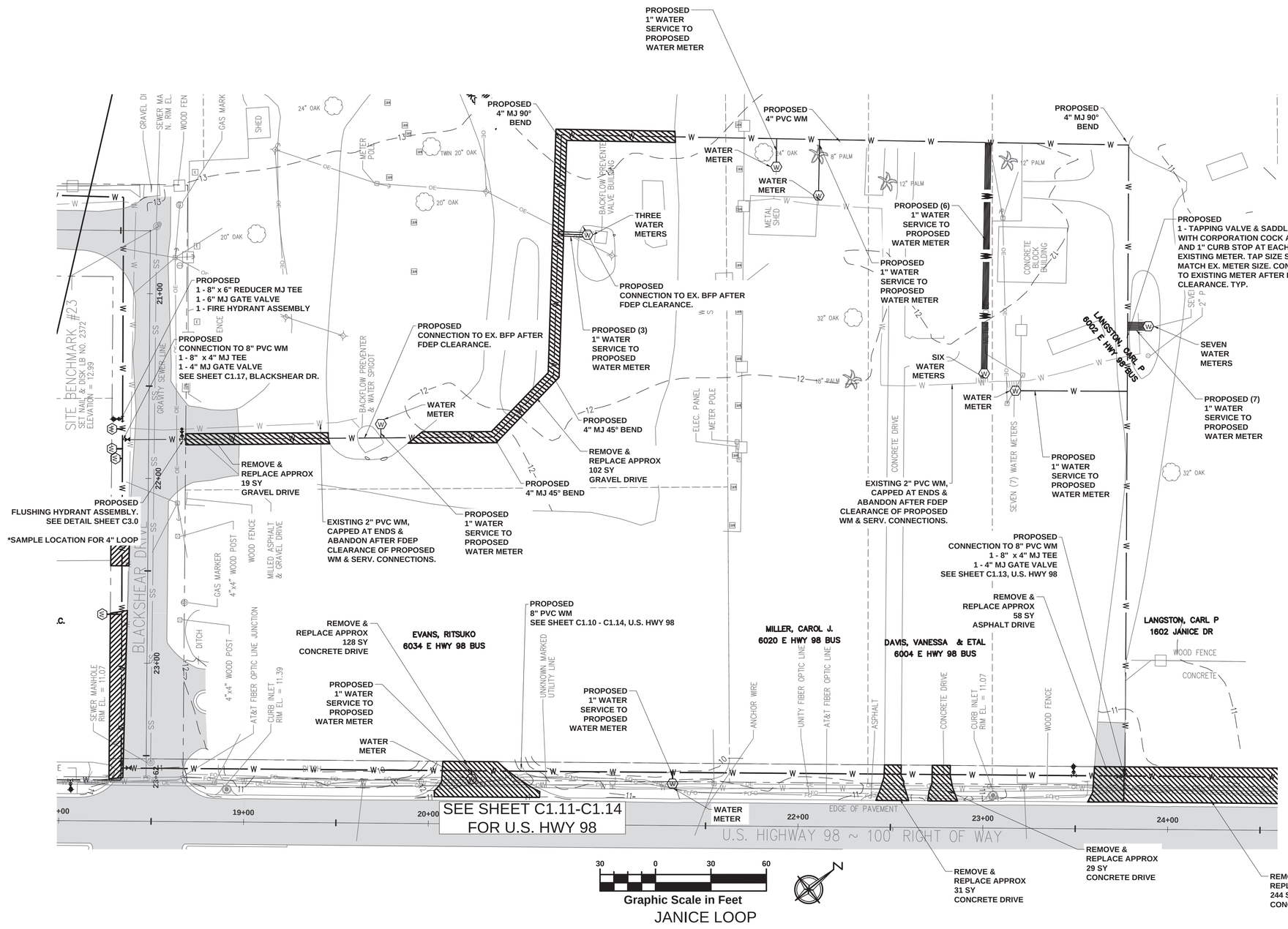
PARKER, FLORIDA

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Sheet No.
C1.14

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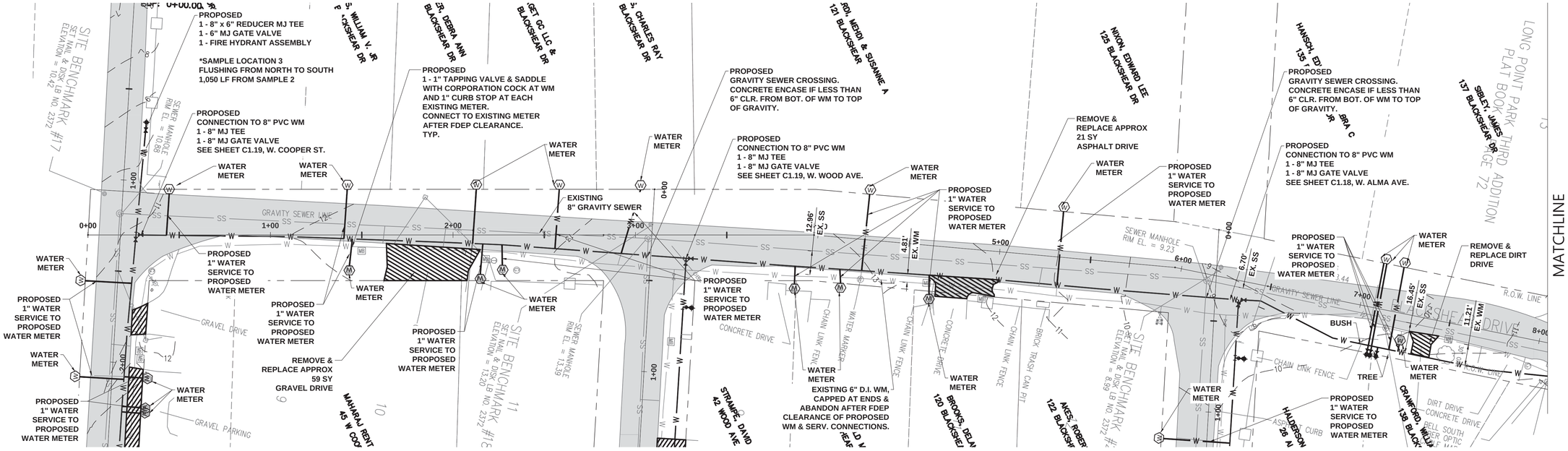
JANICE LOOP

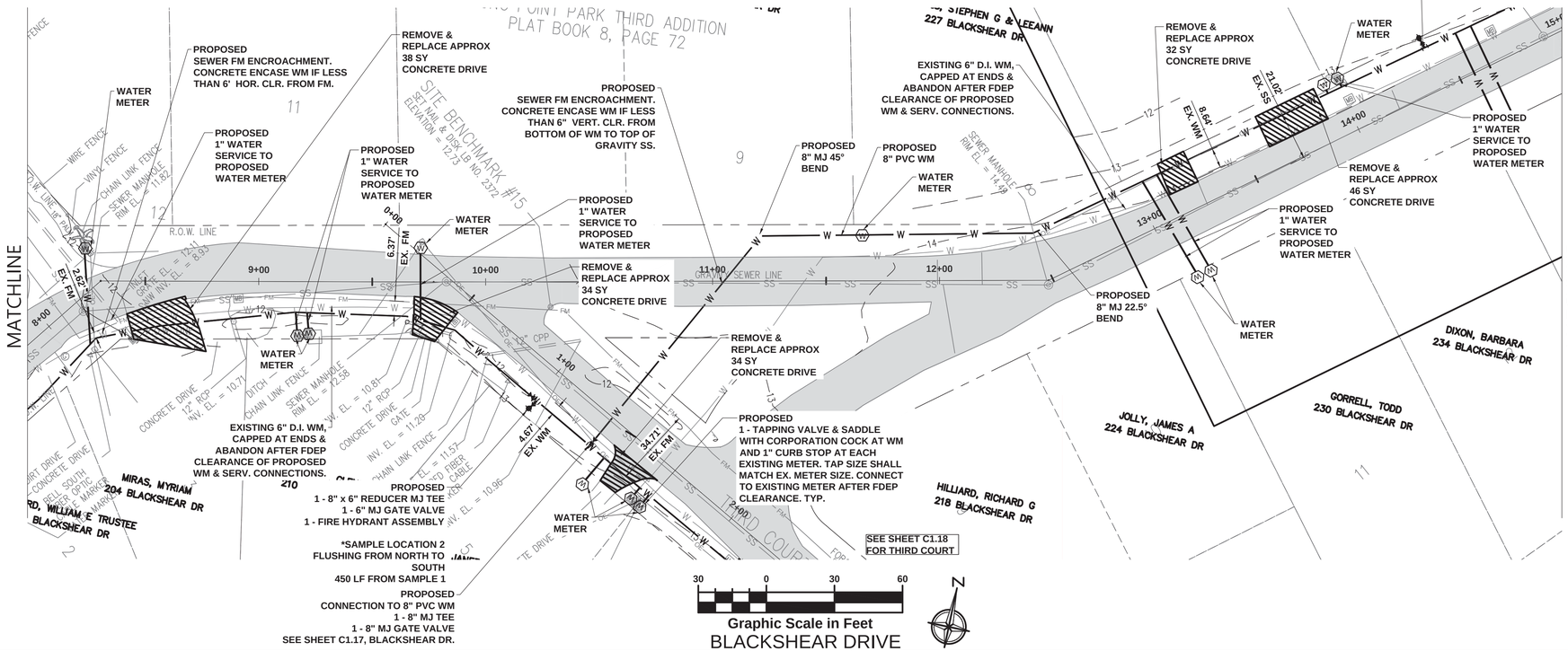
SRF WATERSYSTEM UPGRADE
PARKER, FLORIDA

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Sheet No.
C1.15





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- = BUSH
- = TREE

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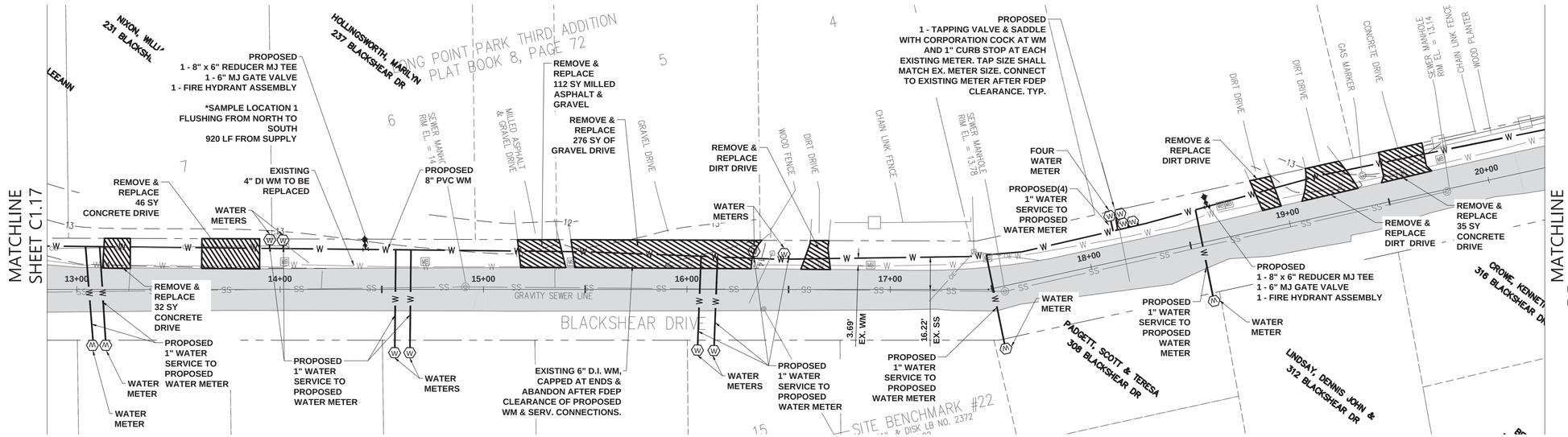
BLACKSHEAR DRIVE

SRF WATERSYSTEM UPGRADE
PARKER, FLORIDA

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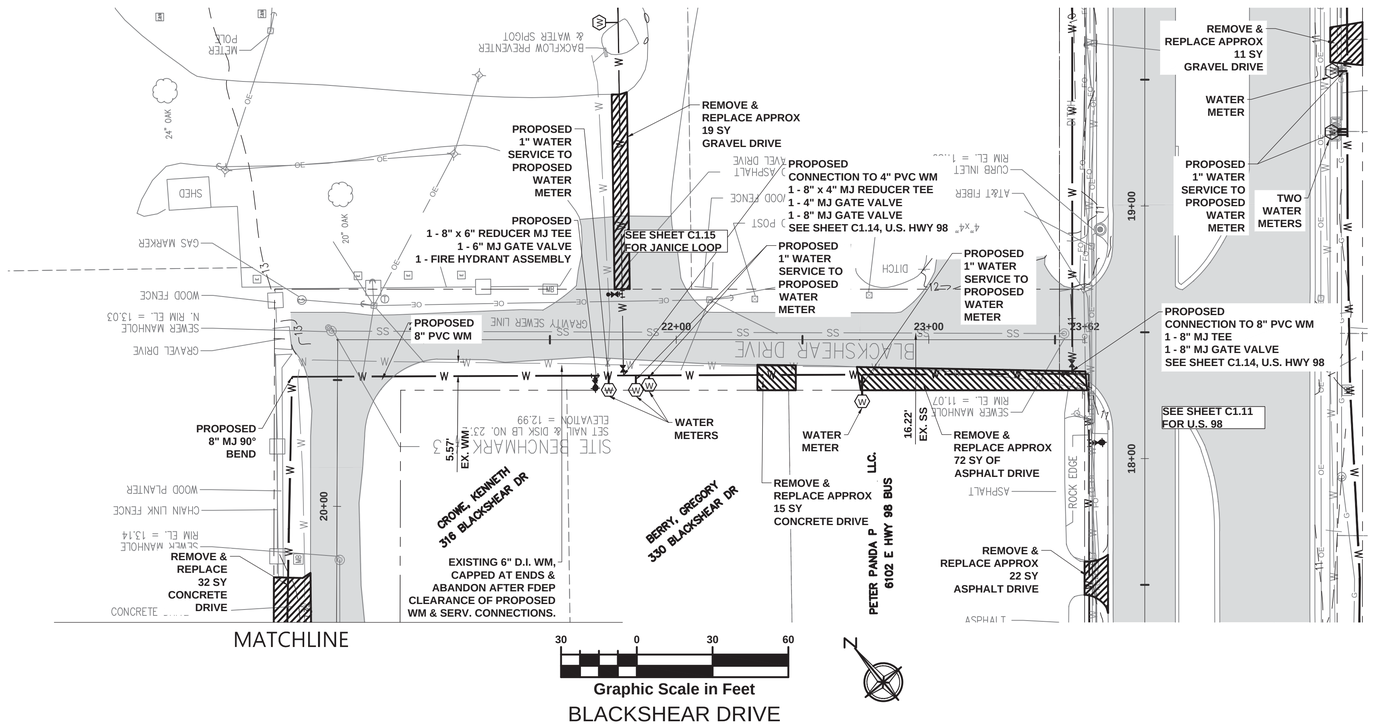
Sheet No.
C1.16



30 0 30 60

Graphic Scale in Feet

BLACKSHEAR DRIVE



30 0 30 60

Graphic Scale in Feet

BLACKSHEAR DRIVE

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BLACKSHEAR DRIVE

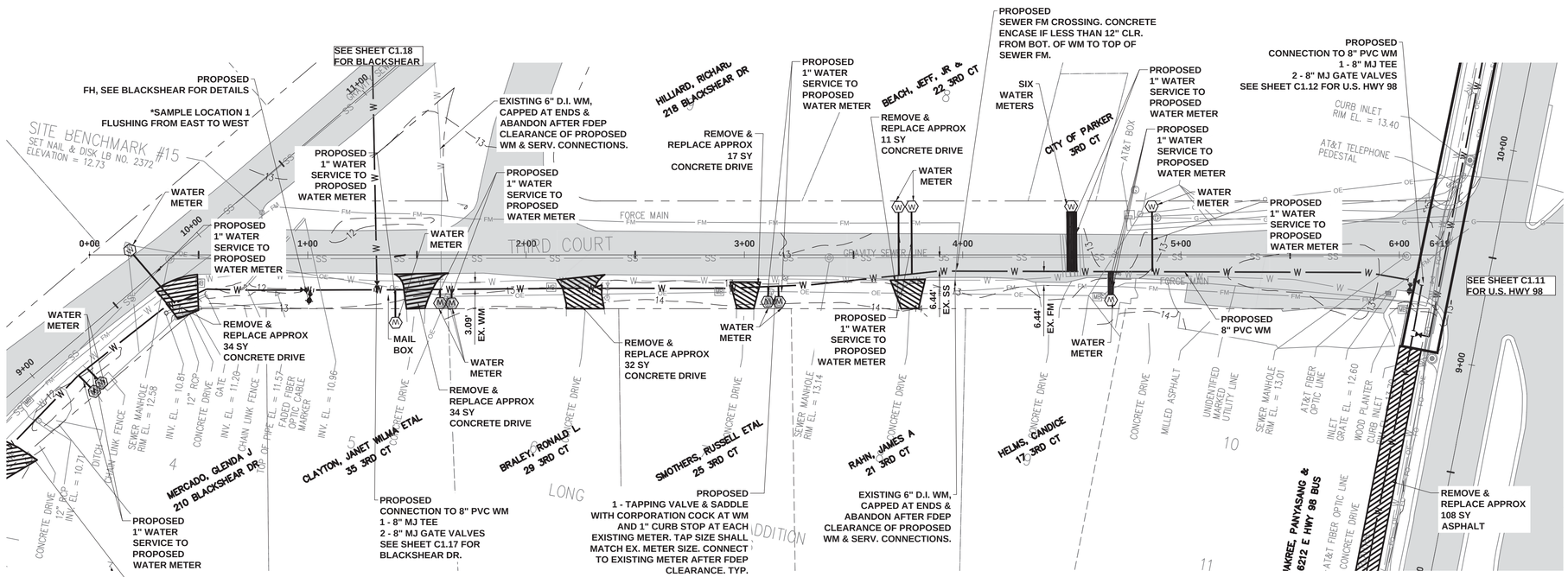
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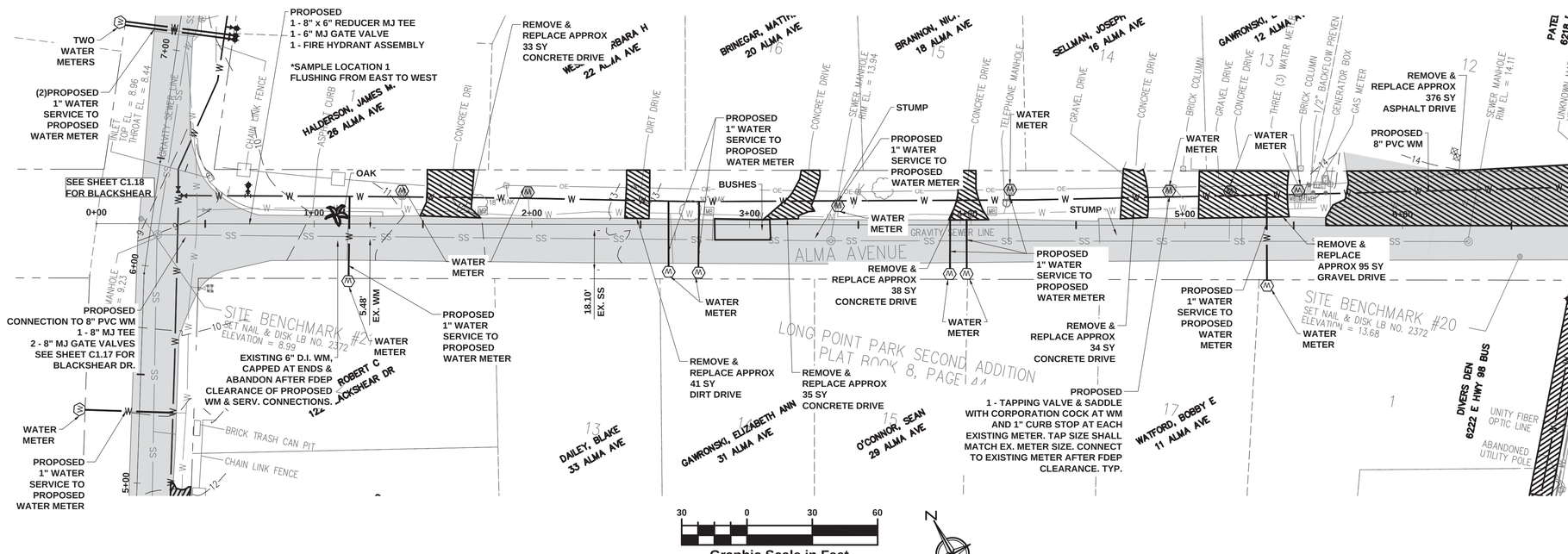
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Sheet No.
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THIRD COURT & ALMA AVENUE

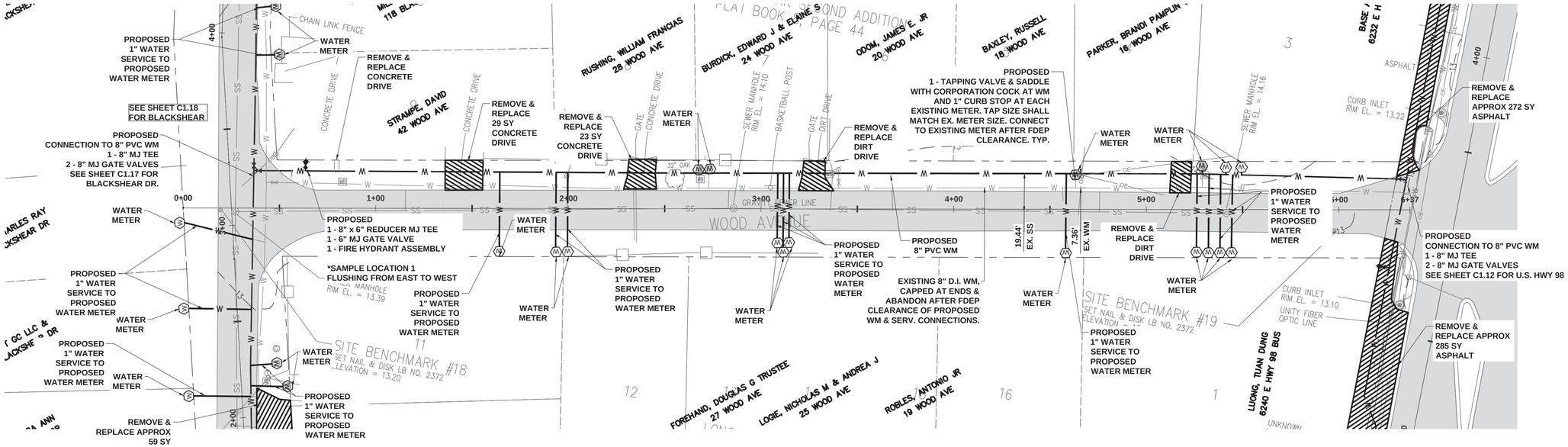
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PARKER, FLORIDA

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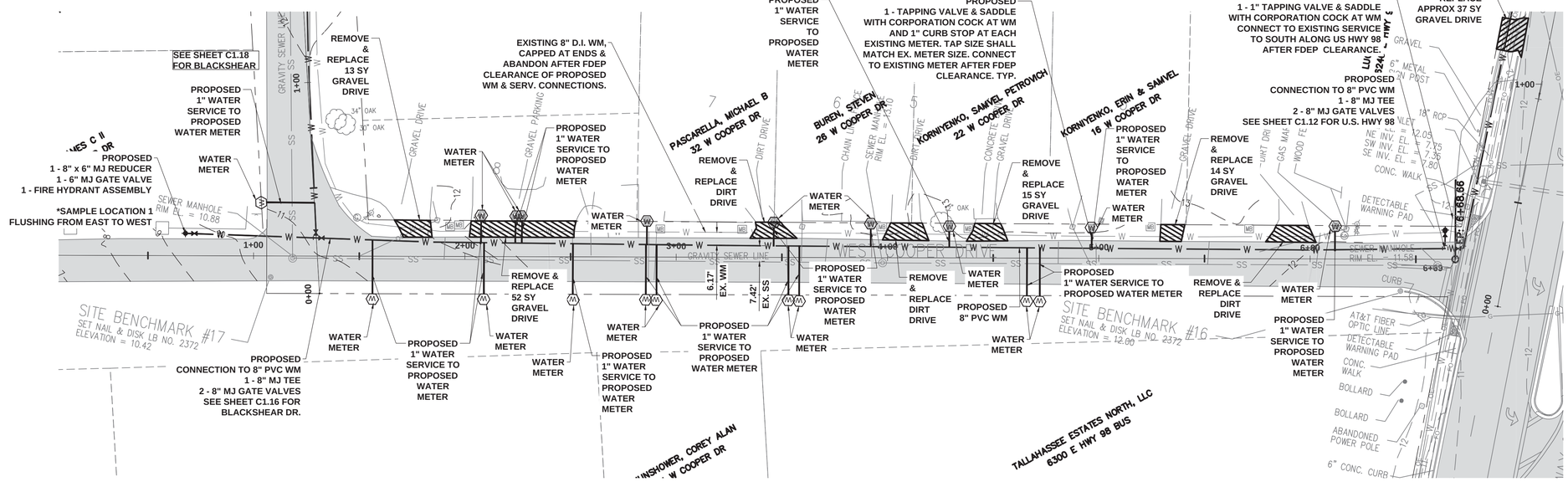
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WOOD AVENUE



WEST COOPER DRIVE

LEGEND & ABBREVIATIONS

- = GAS VALVE
- = IRON ROD
- = MITERED END SECTION
- = SANITARY MANHOLE
- = SEWER VALVE
- = WATER METER
- = WATER VALVE
- —COMM— = COMMUNICATION LINE
- —GM— = GAS MAIN
- —WL— = WATER LINE
- PVC = POLYVINYL CHLORIDE PIPE
- RCP = REINFORCED CONCRETE PIPE
- = PROPOSED ASPHALT
- = PROPOSED GRAVEL
- = PROPOSED CONCRETE SIDEWALK
- = EXISTING PAVEMENT
- = REMOVAL & REPLACE WORK
- = BUSH
- = TREE

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CA Number 31422

This item has been electronically signed and sealed by Elizabeth S. Moore, PE on June 20, 2023 using a digital signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

No.	Date	Revision
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Designed: E. Moore, PE
Drawn: B. Silcox
Checked: E. Moore, PE
Job No.: 1620-006
Date: Mar. 2021 © 2023

WOOD AVENUE & WEST COOPER DRIVE

SRF WATERSYSTEM UPGRADE

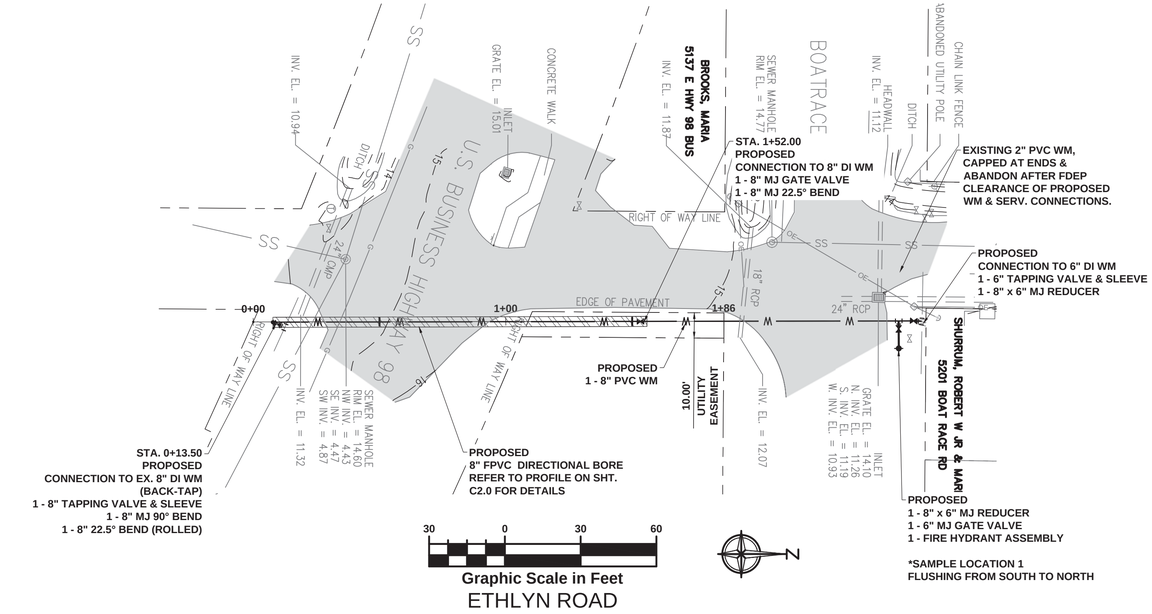
PARKER, FLORIDA

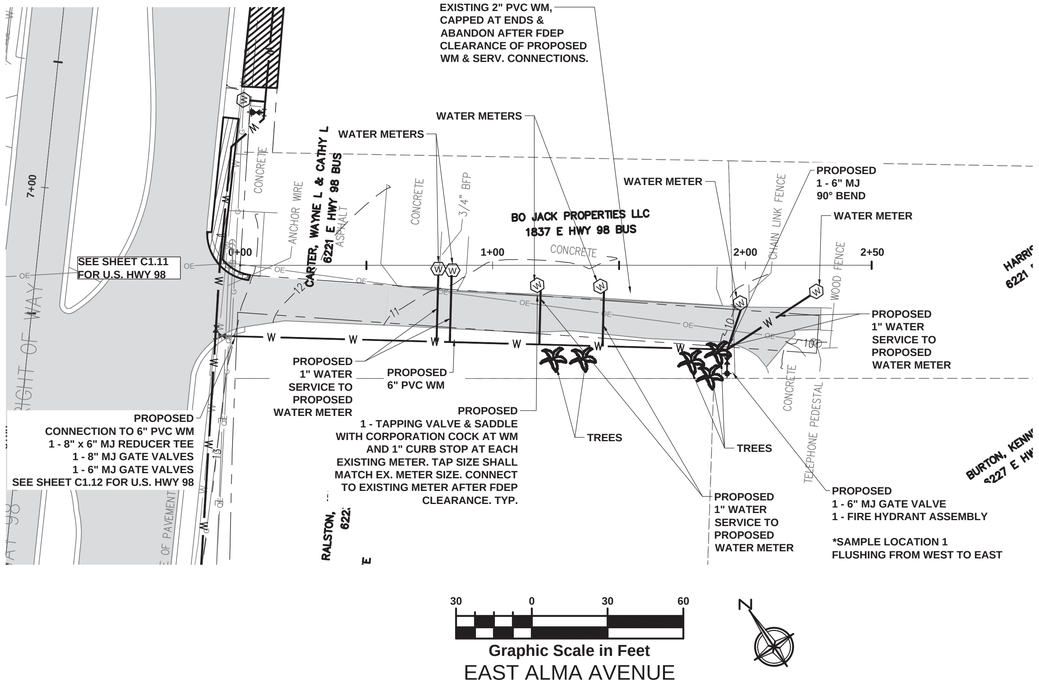
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LEGEND & ABBREVIATIONS

- = GAS VALVE
- = IRON ROD
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- = SANITARY MANHOLE
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- = PROPOSED ASPHALT
- = PROPOSED GRAVEL
- = PROPOSED CONCRETE SIDEWALK
- = REWORK & REPAIR WORK
- = EXISTING PAVEMENT
- = TREE

NOTES:

1. CONTRACTOR SHALL MAINTAIN 6 FT. MINIMUM HORIZONTAL CLEARANCE FROM EXISTING SEWER FORCEMAINS OR GRAVITY SEWER PIPE.
2. CONTRACTOR SHALL MAINTAIN 3 FT. MINIMUM HORIZONTAL CLEARANCE FROM EXISTING STORM SEWER OR RECLAIMED WATER PIPE.
3. REFER TO "LOCATION OF PUBLIC WATER MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314, DETAIL SHEET C3.3.
4. CONTRACTOR SHALL ADHERE TO FDOT "MAINTENANCE OF TRAFFIC" STANDARD INDEX NO. 102-602, TWO-LANE AND MULTI-LANE WORK ON SHOULDER DURING CONSTRUCTION ALONG FDOT ROADWAYS.

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Job No.: 1620-006
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EAST ALMA AVENUE

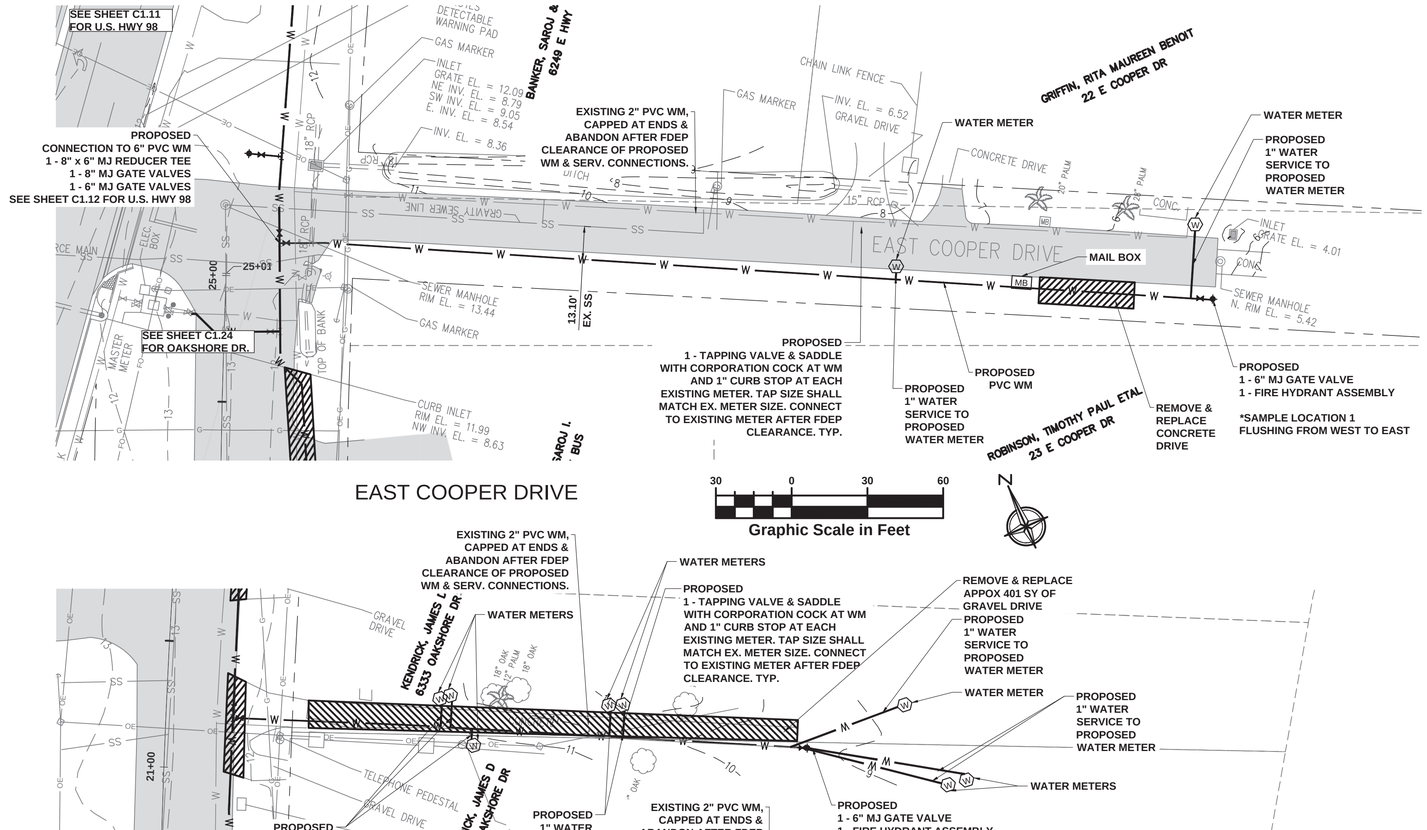
SRF WATERSYSTEM UPGRADE

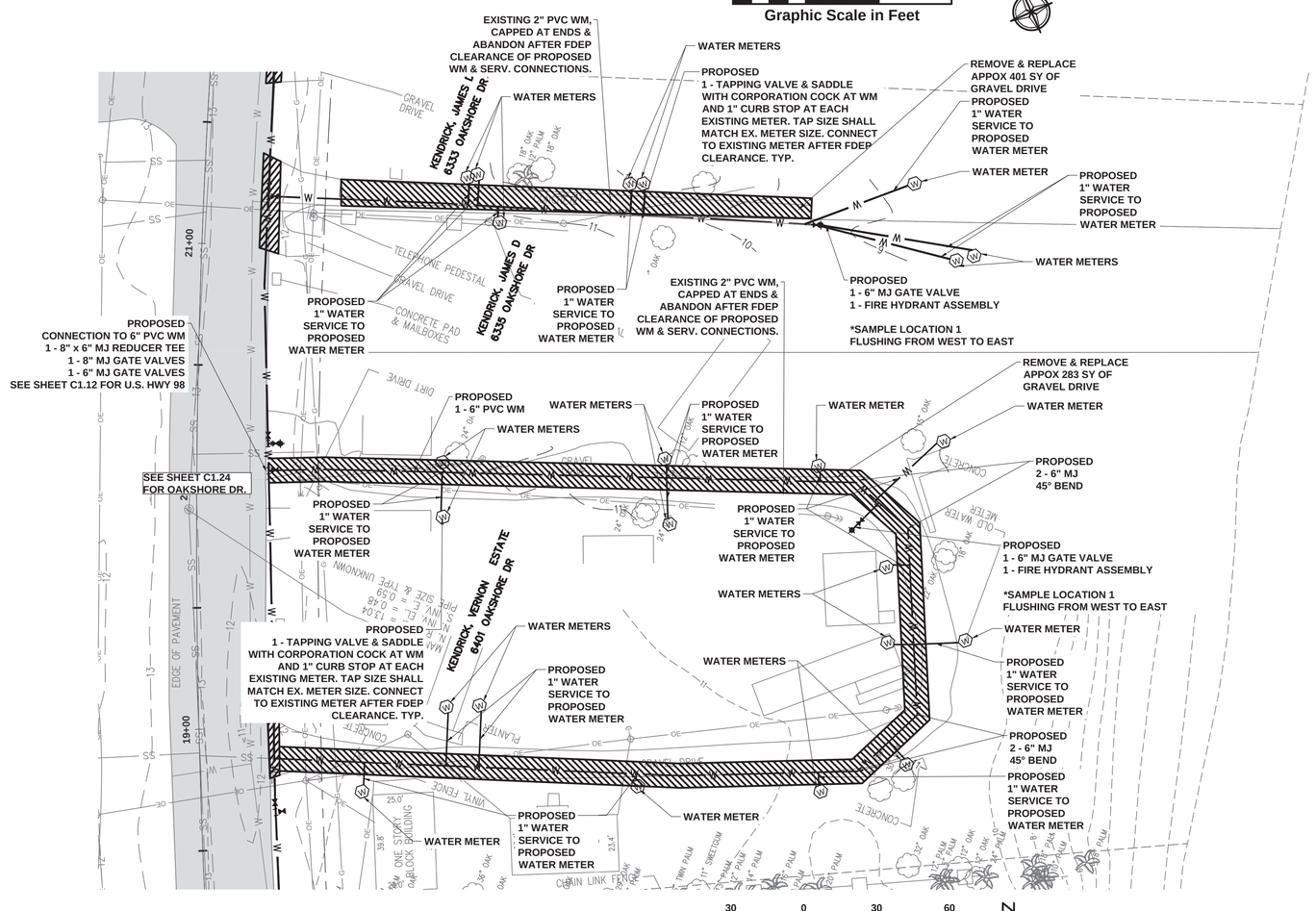
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LEGEND & ABBREVIATIONS

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- RCP = REINFORCED CONCRETE PIPE
- = PROPOSED ASPHALT
- = PROPOSED GRAVEL
- = PROPOSED CONCRETE SIDEWALK
- = REWORK & REPAIR WORK
- = EXISTING PAVEMENT
- MB = MAIL BOX

NOTES:

1. CONTRACTOR SHALL MAINTAIN 6 FT. MINIMUM HORIZONTAL CLEARANCE FROM EXISTING SEWER FORCEMAINS OR GRAVITY SEWER PIPE.
2. CONTRACTOR SHALL MAINTAIN 3 FT. MINIMUM HORIZONTAL CLEARANCE FROM EXISTING STORM SEWER OR RECLAIMED WATER PIPE.
3. REFER TO "LOCATION OF PUBLIC WATER MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314, DETAIL SHEET C3.3.

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EAST COOPER DRIVE & KENDRICK EASEMENT

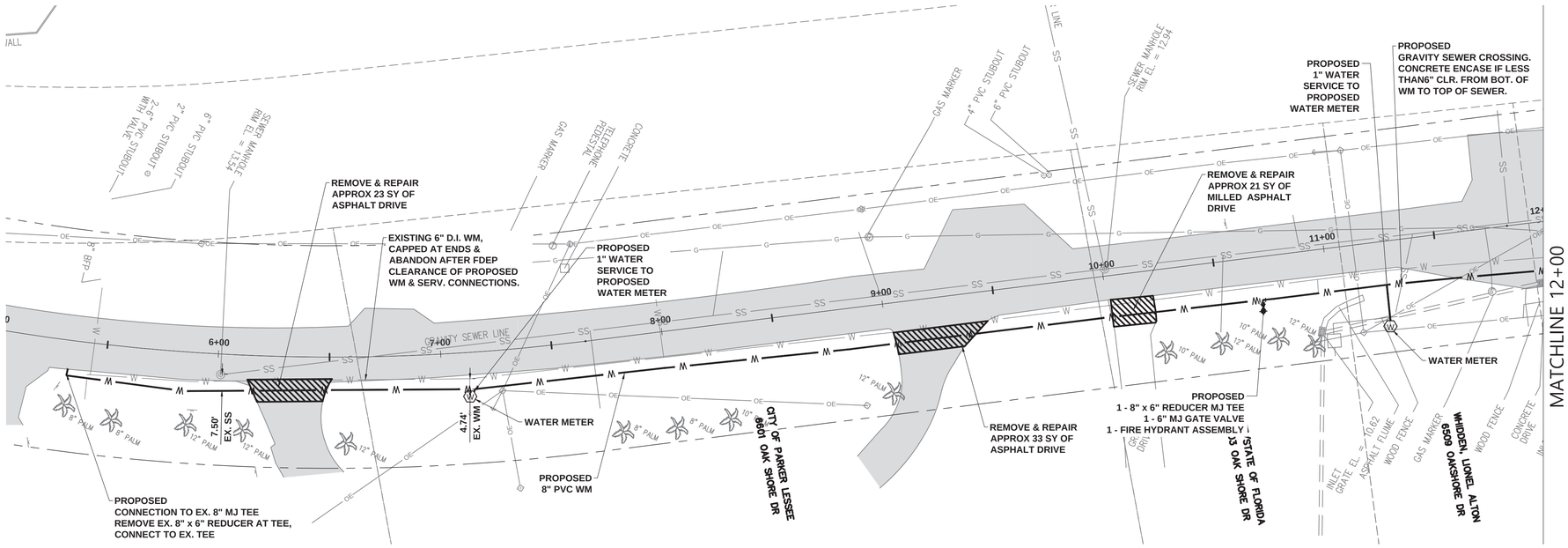
SRF WATERSYSTEM UPGRADE

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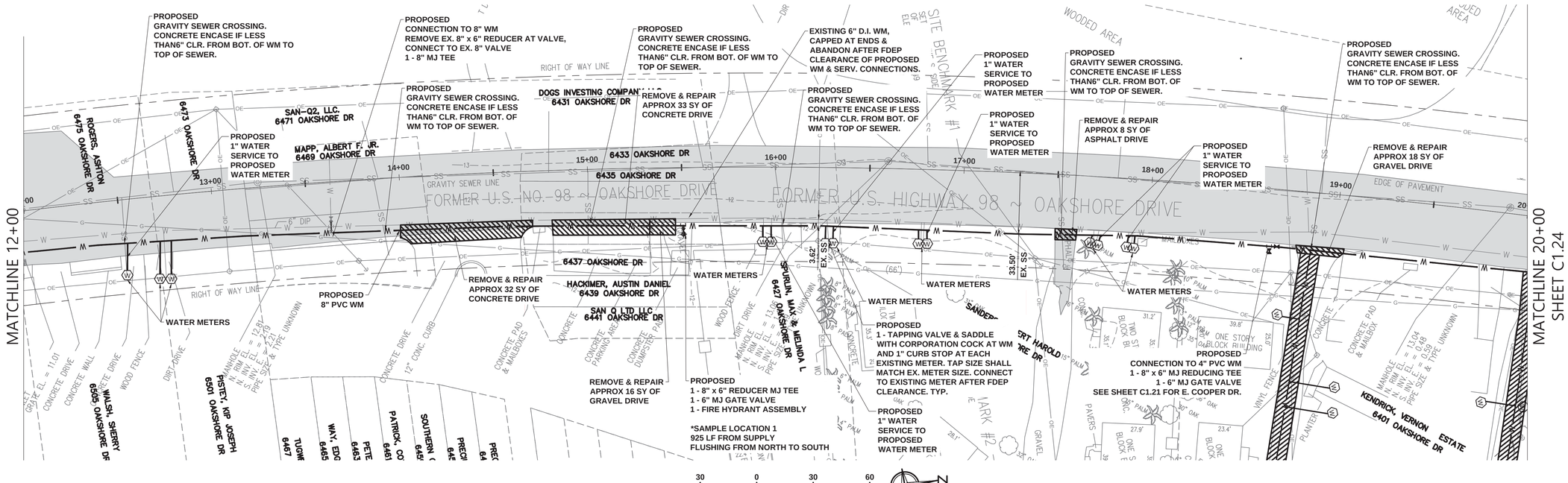
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OAKSHORE DRIVE



OAKSHORE DRIVE

LEGEND & ABBREVIATIONS

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- = PROPOSED GRAVEL
- = PROPOSED CONCRETE SIDEWALK
- = REMOVAL & REPLACE WORK
- = EXISTING PAVEMENT

NOTES:

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OAKSHORE DRIVE

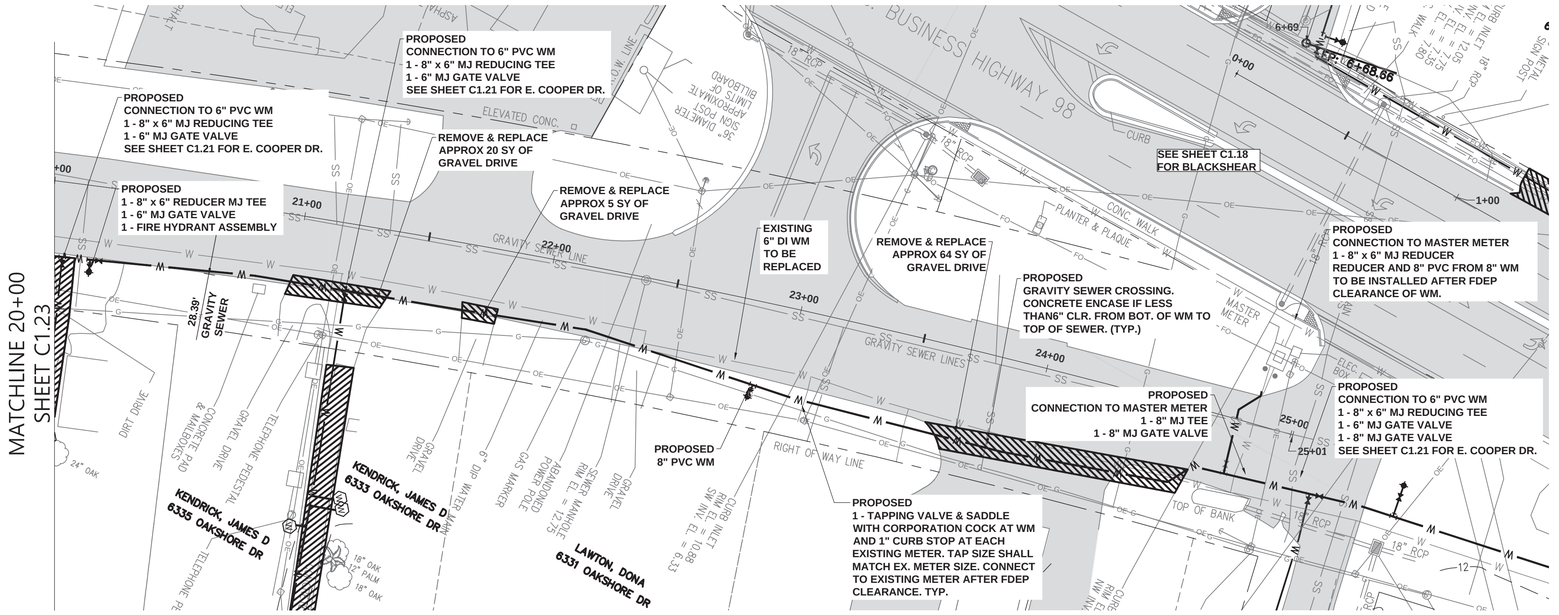
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OAKSHORE DRIVE

30 0 30 60

Graphic Scale in Feet

LEGEND & ABBREVIATIONS

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OAKSHORE DRIVE

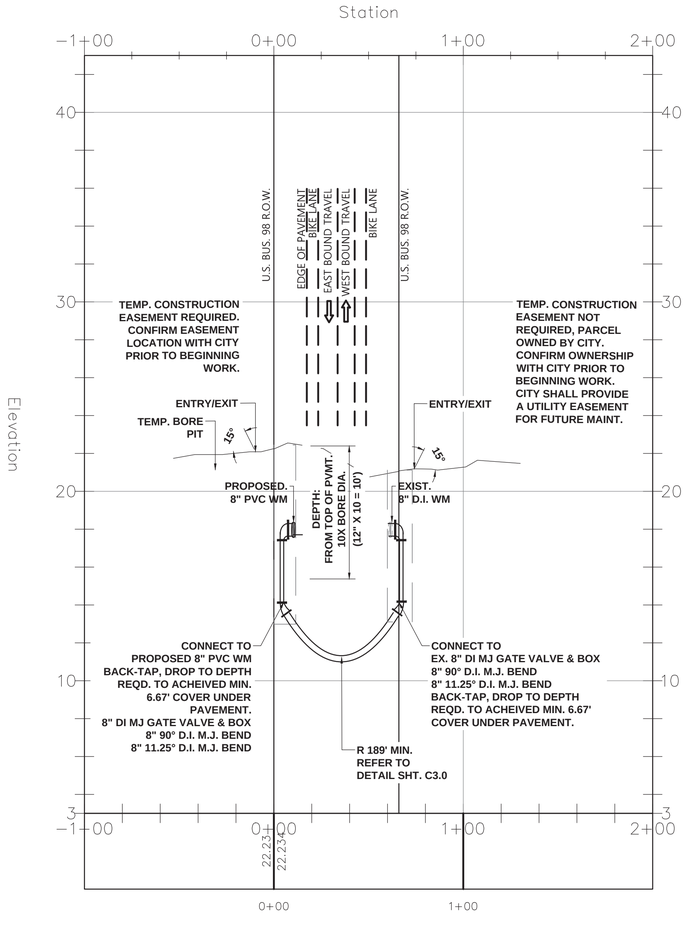
SRF WATERSYSTEM UPGRADE
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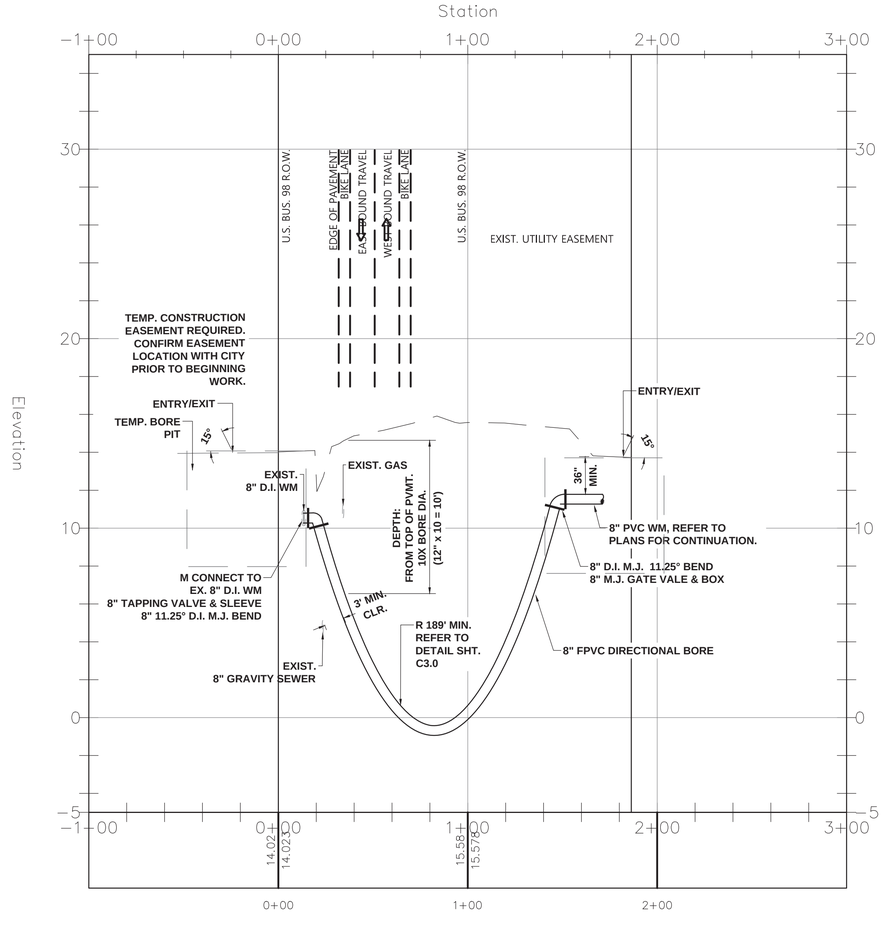
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Bus.98_Bore PROFILE



Ethlyn_Alignment - (1) PROFILE



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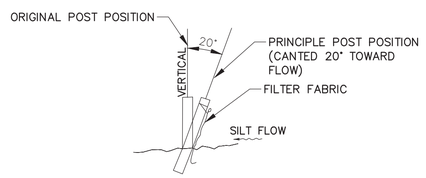
DIRECTIONAL BORE PROFILES

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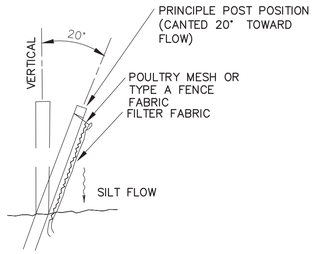
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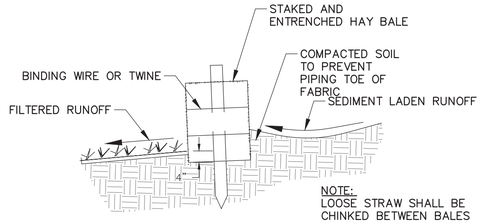
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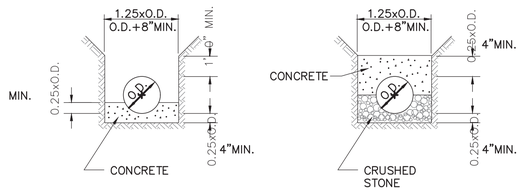


SECTION



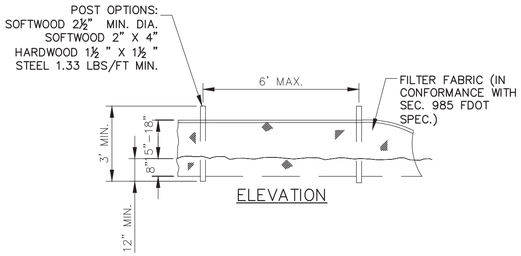
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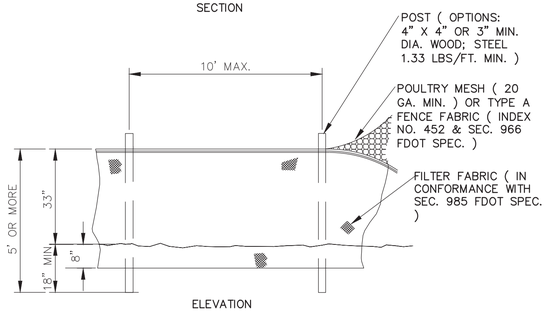


CONCRETE CRADLE CONCRETE ARCH

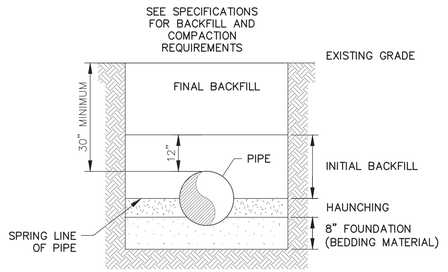
CLASS "A"

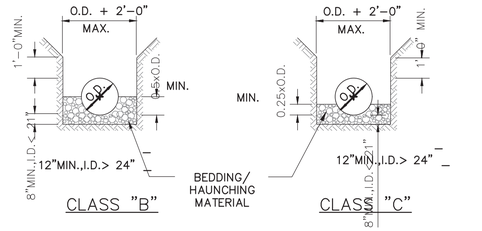


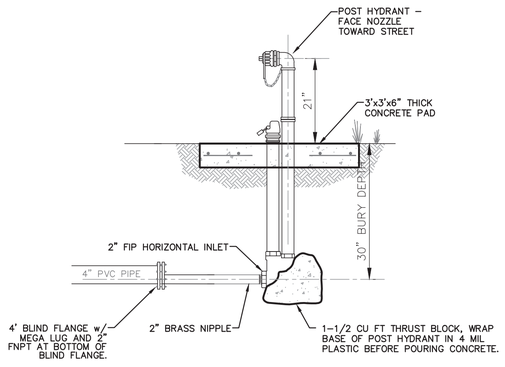
ELEVATION



ELEVATION

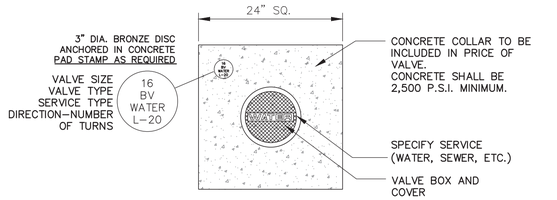




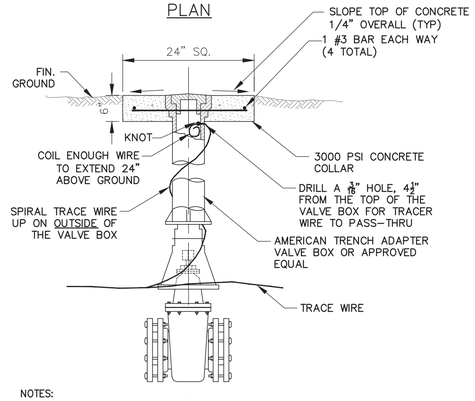


POST HYDRANTS SHALL BE NON–FREEZING, SELF DRAINING TYPE WITH A 30" BURY. HYDRANTS SHALL BE FURNISHED WITH A 2" FIP HORIZONTAL INLET, A NON–TURNING OPERATING ROD, AND SHALL OPEN LEFT. BRONZE OPERATING MECHANISM AND ALUMINUM PLUNGER DESIGN, AND BE SERVICABLE FROM ABOVE GRADE WITH NO DIGGING. THE OUTLET SHALL ALSO BE BRONZE AND BE 2–1/2" NST. HYDRANTS SHALL BE LOCKABLE TO PREVENT UNAUTHORIZED USE. MAINGAURD NO. 77 AS MANUFACTURED BY KUPFERLE FOUNDRY CO., ST. LOUIS, MO, OR CITY APPROVED EQUAL.

FLUSHING POST HYDRANT ASSEMBLY DETAIL

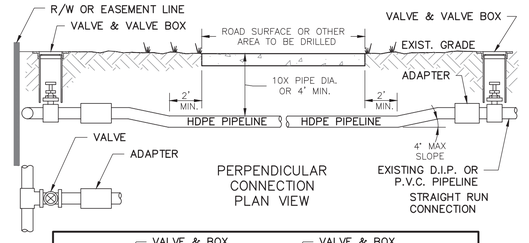


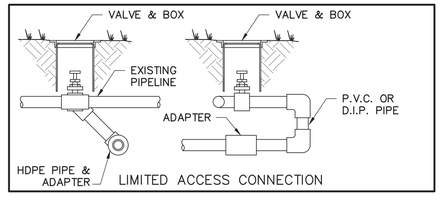
PLAN

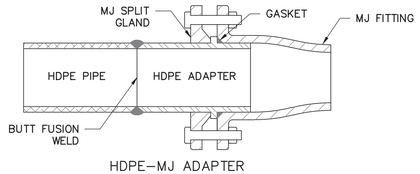


NOTES:
1. SEE SPECIFICATIONS FOR TECHNICAL REQUIREMENTS AND APPROVED GATE VALVES AND VALVE BOXES.
2. PVC EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
3. THE ACTUATING NUT FOR DEEPER VALVES SHALL BE EXTENDED TO COME UP TO 2 FOOT DEPTH BELOW FINISHED GRADE.

SECTION







HDPE–MJ ADAPTER

NOTES:

1. DIRECTIONAL DRILLS SHALL BE COMPLETED USING DR11 HDPE PIPE, DUCTILE IRON SIZE.
2. ALL DIRECTIONAL DRILLS SHALL BE AT A DEPTH OF 10X PIPE DIAMETER BELOW THE ROADWAY SURFACE OR 4' WHICHEVER IS GREATER.
3. ALL HDPE MUST BE COLOR CODED (SAFETY BLUE–WATER, SAFETY GREEN FOR SEWER AND PANTONE PURPLE FOR RECLAIMED WATER); BUTT FUSION WELDED; AND CONNECTED WITH HDPE–MJ ADAPTER.
4. BORE SHALL EXTEND A MINIMUM OF 8 FEET BEYOND EDGE OF PAVEMENT.

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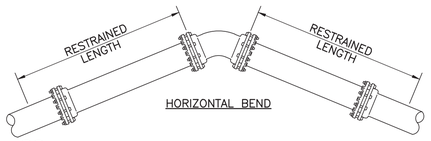
STANDARD UTILITY DETAILS

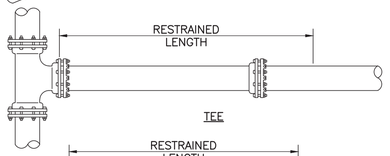
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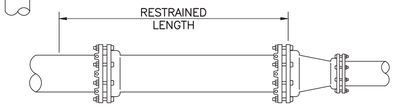
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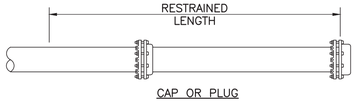
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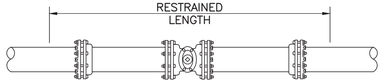
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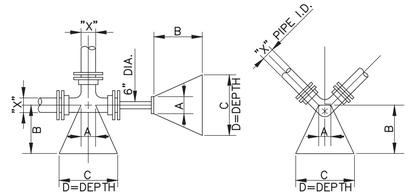












150 PSI TEST PRESSURE
2000 PSF SOIL BEARING

		X*	A	B	C	D
DEAD END & TEES		16"	1'-3"	3'-6"	7'-6"	4'-9"
		12"	1'-0"	3'-0"	5'-6"	3'-6"
		10"	1'-0"	2'-6"	4'-9"	3'-0"
		8"	0'-10"	2'-0"	4'-0"	2'-6"
		6"	0'-8"	1'-6"	2'-9"	1'-9"
BENDS	90°	16"	1'-3"	5'-6"	9'-0"	5'-6"
		12"	1'-0"	4'-0"	6'-9"	4'-3"
		10"	1'-0"	3'-0"	5'-9"	3'-6"
		8"	0'-10"	2'-6"	4'-9"	3'-0"
		6"	0'-8"	1'-6"	3'-6"	2'-9"
	45°	16"	1'-3"	3'-6"	6'-9"	4'-3"
		12"	1'-0"	2'-3"	5'-3"	3'-3"
		10"	1'-0"	2'-3"	4'-6"	2'-9"
		8"	0'-10"	1'-6"	3'-6"	2'-3"
		6"	0'-8"	1'-3"	2'-6"	1'-6"
	22 1/2°	16"	1'-3"	1'-6"	4'-9"	3'-0"
		12"	1'-0"	1'-6"	3'-6"	2'-3"
		10"	1'-0"	1'-3"	3'-0"	2'-0"
		8"	0'-10"	1'-0"	2'-6"	1'-6"
		6"	0'-8"	1'-0"	1'-9"	1'-3"
	11 1/4°	16"	1'-3"	1'-6"	3'-3"	2'-0"
		12"	1'-0"	1'-6"	2'-6"	1'-6"
		10"	1'-0"	1'-0"	2'-3"	1'-3"
		8"	0'-10"	1'-0"	1'-9"	1'-0"
		6"	0'-8"	1'-0"	1'-6"	0'-6"

X* = DIAMETER OF PIPE TO BE BLOCKED

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DR-18 PVC PIPE

MAIN PIPE SIZE	HORIZ. BENDS			TEES						REDUCERS				PLUGS & VALVES
	90°	45°	22.5°	SIZE / LENGTH						SIZE / LENGTH				
24	90	38	18	X24 169	X20 132	X16 90	X12 38	X10 6		X20 64	X16 117	X12 158		214
20	78	32	16	X20 141	X16 101	X12 63	X10 24	X8 1		X16 65	X12 115	X10 149		184
16	66	27	13	X16 111	X12 67	X10 41	X8 12			X12 64	X10 107	X8 111		151
12	52	22	10	X12 80	X10 56	X8 31	X6 7			X10 58	X8 82	X6 86		118
10	44	18	9	X10 63	X8 40	X6 7				X8 33	X6 61	X4 81		100
8	37	15	7	X8 49	X6 18	X4 1				X6 35	X4 90			83
6	29	12	6	X6 29	X4 1					X4 33				63
4	21	8	4	X4 12										45

NOTES:

1. RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.
2. ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTINGSECTIONS OF PIPE.
3. ALL ISOLATIONVALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.
4. PIPE SIZES ARE GIVEN IN INCHES.
5. RESTRAINED PIPE LENGTHS ARE GIVEN IN FEET.
6. LENGTHS SHOWN ARE FOR A TEST PRESURE OF 180 PSI.
7. THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON SOIL CLASSIFICATION SP WITH AWWA TYPE 3 TRENCH CONDITIONS, 180 PSI TEST PRESSURE, 3 FEET OF COVER AND 1.5 FACTOR OF SAFTEY. ACTUAL BURY CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY.
8. RESTRAINED LENGTHS TO BE APPLIED TO PIPELINES PER DETAIL RESTRAINED LENGTHS FOR PIPE.

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (POLY-WRAPPED)

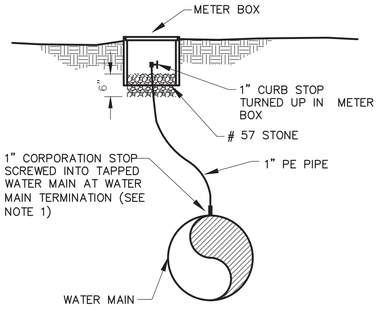
MAIN PIPE SIZE	HORIZ. BENDS			TEES						REDUCERS				PLUGS & VALVES
	90°	45°	22.5°	SIZE / LENGTH						SIZE / LENGTH				
36	142	59	28	X36 393	X30 318	X24 232	X20 165	X16 84	X12 1	X30 137	X24 247	X20 309	X16 359	453
30	124	51	25	X30 332	X24 252	X20 189	X16 115	X12 23	X10 1	X24 137	X20 213	X16 276		391
24	106	44	21	X24 270	X20 211	X16 143	X12 61	X10 10	X8 1	X20 98	X16 178	X12 241		327
20	92	38	18	X20 225	X16 161	X12 85	X10 39	X8 1		X16 98	X12 176	X10 227		280
16	77	32	15	X16 177	X12 127	X10 65	X8 19	X6 1		X12 98	X10 163	X8 169		231
12	61	25	12	X12 127	X10 88	X8 50	X6 1			X10 88	X8 95	X6 131		181
10	52	22	10	X10 101	X8 64	X6 11				X8 51	X6 94	X4 125		153
8	44	18	9	X8 78	X6 30	X4 1				X6 54	X4 92			128
6	34	14	7	X6 46	X4 1					X4 50				98
4	24	10	5	X4 19										69

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (NON-WRAPPED)

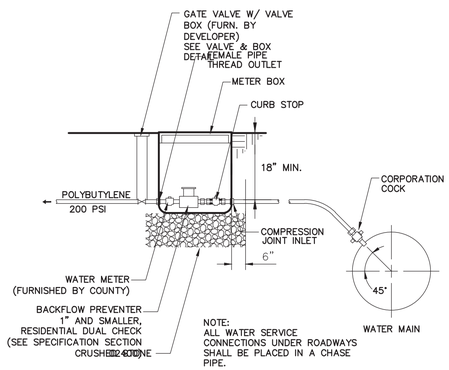
MAIN PIPE SIZE	HORIZ. BENDS			TEES						REDUCERS				PLUGS & VALVES
	90°	45°	22.5°	SIZE / LENGTH						SIZE / LENGTH				
36	100	42	20	X36 163	X30 132	X24 96	X20 68	X16 35	X12 1	X30 57	X24 103	X20 128	X16 149	188
30	88	37	18	X30 138	X24 104	X20 78	X16 48	X12 10	X10 1	X24 57	X20 88	X16 114		162
24	75	31	15	X24 112	X20 87	X16 59	X12 25	X10 4	X8 1	X20 40	X16 74	X12 100		135
20	65	27	13	X20 93	X16 67	X12 35	X10 16	X8 1		X16 41	X12 73	X10 94		116
16	54	22	11	X16 73	X12 44	X10 27	X8 8	X6 1		X12 41	X10 68	X8 70		96
12	43	18	8	X12 53	X10 37	X8 21	X6 1			X10 37	X8 40	X6 54		75
10	37	15	7	X10 42	X8 26	X6 5				X8 21	X6 39	X4 52		63
8	30	13	6	X8 32	X6 12	X4 1				X6 22	X4 38			53
6	24	10	5	X6 19	X4 1					X4 21				41
4	17	7	3	X4 8										29

NOTE:

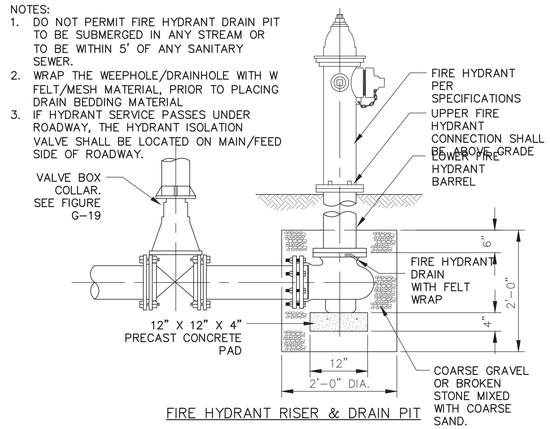
SEE RESTRAINED LENGTHS FOR PVC PIPE DETAIL FOR NOTES 1 THROUGH 8 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR DIP.



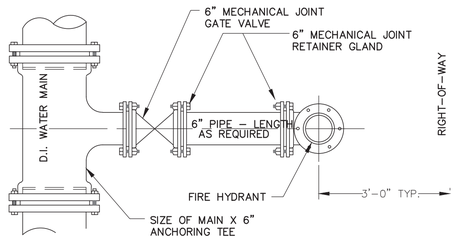
NOTE 1: DOUBLE STRAP SERVICE CLAMP REQUIRED ON ALL CONNECTIONS TO PVC WATER MAIN.

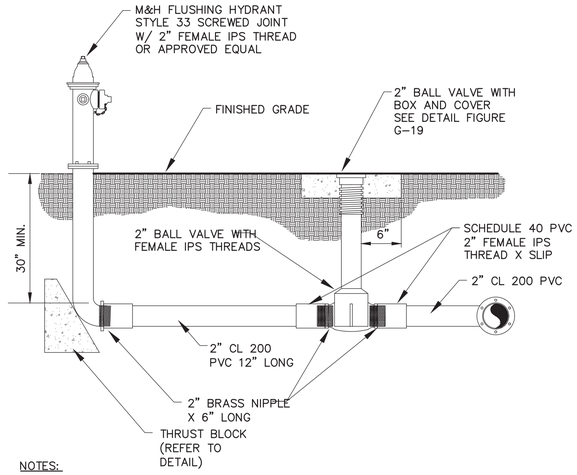


NOTES:
1. DO NOT PERMIT FIRE HYDRANT DRAIN PIT TO BE SUBMERGED IN ANY STREAM OR TO BE WITHIN 5' OF ANY SANITARY SEWER.
2. WRAP THE WEEPHOLE/DRAINHOLE WITH W FELT/MESH MATERIAL, PRIOR TO PLACING DRAIN BEDDING MATERIAL
3. IF HYDRANT SERVICE PASSES UNDER ROADWAY, THE HYDRANT ISOLATION VALVE SHALL BE LOCATED ON MAIN/FEED SIDE OF ROADWAY.



FIRE HYDRANT RISER & DRAIN PIT

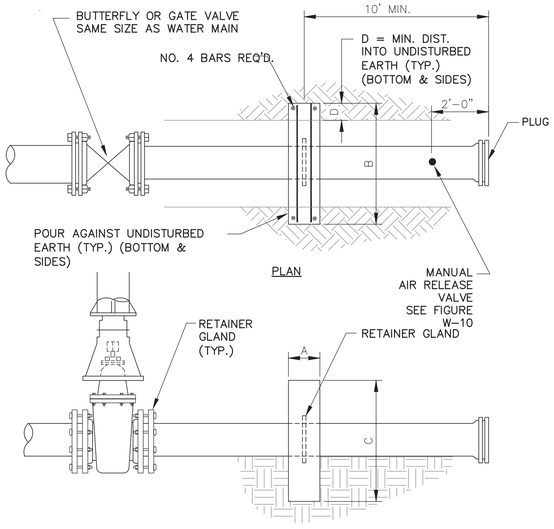




NOTES:

1. FLUSH HYDRANTS SHALL BE INSTALLED BETWEEN BACK OF CURB AND FACE OF SIDEWALK WITHIN R/W EXCEPT WHERE CONDITIONS AND OR REGULATION PROHIBIT. FLUSH HYDRANTS SHALL BE LOCATED WITHIN RIGHTS OF WAY OR UTILITY EASEMENTS.
2. ALL RODS AND ASSOCIATED HARDWARE SHALL BE STAINLESS STEEL.
3. ALL MECHANICAL JOINTS SHALL USE MEGA-LUG RESTRAINT TYPE RETAINING GLANDS. VALVE BOXES SHALL BE HEIGHT ADJUSTABLE.

RESTRAINED LENGTHS FOR PIPE



SECTION

MAIN DIA	CONCRETE COLLAR DIM. A	B	C	D	REINFORCING STEEL
16"	1'-3"	6'-6"	6'-6"	1'-6"	#8 @ 12" O.C. E.W.E.F.
12"	1'-2"	5'-3"	5'-3"	1'-0"	#7 @ 12" O.C. E.W.E.F.
6" or 8"	1'-0"	4'-0"	4'-0"	0'-8"	#6 @ 12" O.C. E.W.E.F.

TEST PRESSURE: 150 P.S.I.
SOIL BEARING PRESSURE: 3000 P.S.F.

Anchor CEI Engineering that works.
P. 850.215.1285 • F. 850.215.1286
450 Magnolia Avenue, Panama City, FL 32401
CA Number 31422

No.	Date	Revision
A		

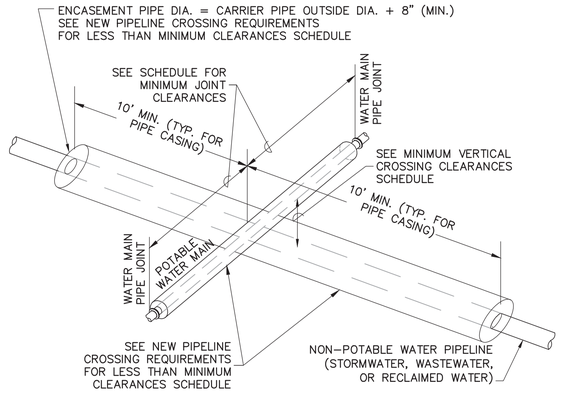
Designed: E. Moore, PE
Drawn: B. Silcox
Checked: E. Moore, PE
Job No.: 1620-006
Date: Mar. 2021 © 2023

STANDARD UTILITY DETAILS

SRF WATERSYSTEM UPGRADE
PARKER, FLORIDA

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Sheet No.
C3.1



MINIMUM VERTICAL CROSSING CLEARANCES

1. WATER MAIN ABOVE STORMWATER (GRAVITY) OR WASTEWATER (GRAVITY & VACUUM): 6" (MIN.) 12"+ (PREFERRED)
2. WATER MAIN BELOW STORMWATER (GRAVITY) OR WASTEWATER (GRAVITY & VACUUM): 12" (MIN.)
3. WATER MAIN ABOVE OR BELOW STORMWATER, WASTEWATER & RECLAIMED WATER (PRESSURE): 12" (MIN.)

MINIMUM WATER MAIN JOINT SPACING

1. STORMWATER (GRAVITY & PRESSURE), WASTEWATER (VACUUM) OR RECLAIMED WATER (PRESSURE): 3' O.C.
2. WASTEWATER (GRAVITY & PRESSURE): 6' O.C.

NEW PIPELINE CROSSING REQUIREMENTS FOR LESS THAN MINIMUM VERTICAL CROSSING CLEARANCES

1. POTABLE WATER MAIN:
   WATER MAIN OR WATER MAIN IN CASING PIPE OF AWWA C-150 DUCTILE IRON PIPE (DIP):
   - 4"-12" – CLASS 350 OR EQUIVALENT WALL STRENGTH PIPE
   - 14"-24" – CLASS 250 OR EQUIVALENT WALL STRENGTH PIPE
   - 30"+ – CLASS 150 OR EQUIVALENT WALL STRENGTH PIPE

2. WASTEWATER / RECLAIMED WATER MAIN:
   WASTEWATER / RECLAIMED WATER MAIN OR WASTEWATER / RECLAIMED WATER MAIN IN CASING PIPE OF AWWA
   C-150 DUCTILE IRON PIPE (DIP):
   - 4"-12" – CLASS 350 OR EQUIVALENT WALL STRENGTH PIPE
   - 14"-24" – CLASS 250 OR EQUIVALENT WALL STRENGTH PIPE
   - 30"+ – CLASS 150 OR EQUIVALENT WALL STRENGTH PIPE

VERTICAL CROSSING SEPARATION REQUIREMENTS
(SEE F.D.E.P. RULE 62-555.314(1) & (2) F.A.C.)

LOCATION OF PUBLIC WATER SYSYEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314

Other Pipe	Horizontal Separation	Crossings (1)	Joint Spacing @ Crossings (Full Joint Centered)
Storm Sewer, Stormwater Force Main, Reclaimed Water (2)	Water Main 3 ft. minimum	Water Main 12 inches is the minimum, except for storm sewer, then 6 inches is the minimum and 12 inches is preferred	Alternate 3 ft. minimum Water Main
Vacuum Sanitary Sewer	Water Main 10 ft. preferred 3 ft. minimum	Water Main 12 inches preferred 6 inches minimum	Alternate 3 ft. minimum Water Main
Gravity or Pressure Sanitary Sewer, Sanitary Sewer Force Main, Reclaimed Water (4)	Water Main 10 ft. preferred 6 ft. minimum (3)	Water Main 12 inches is the minimum, except for gravity sewer, then 6 inches is the minimum and 12 inches is preferred	Alternate 6 ft. minimum Water Main
On-Site Sewage Treatment & Disposal System	10 ft. minimum	---	---

(1) Water main should cross above other pipe. When water main must be below other pipe, the minimum separation is 12 inches.
(2) Reclaimed water regulated under Part III of Chapter 62-610, F.A.C.
(3) 3 ft. for gravity sanitary sewer where the bottom of the water main is laid at least 6 inches above the top of the gravity sanitary sewer.
(4) Reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.

Disclaimer – This document is provided for your convenience only. Please refer to F.A.C. Rule 62-555.314 for additional construction requirements.

Anchor CEI Engineering that works.
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450 Magnolia Avenue, Panama City, FL 32401
CA Number 31422

No.	Date	Revision

Designed: E. Moore, PE
Drawn: B. Silcox
Checked: E. Moore, PE
Job No.: 1620-006
Date: Mar. 2021 © 2023

STANDARD UTILITY DETAILS

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