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ROADWAY AND UTILITY PLANS

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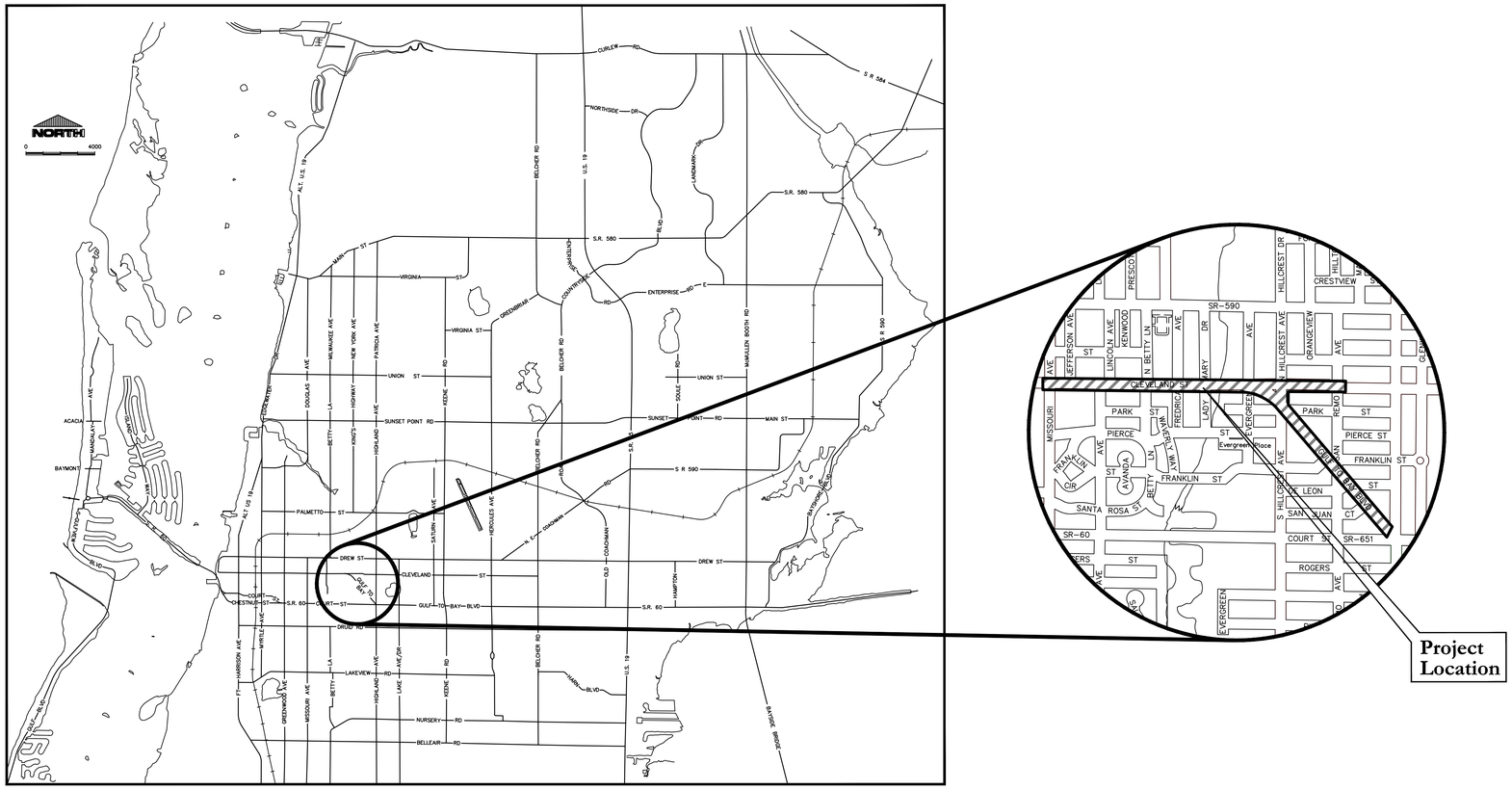
CLEARWATER

BRIGHT AND BEAUTIFUL · BAY TO BEACH

CITY OF CLEARWATER, FLORIDA ESTABLISHED 1915

CLEVELAND STREET PHASE III AND FESTIVAL CORE



CITY OFFICIALS

Frank Hibbard	Mayor
Mark Bunker	Councilmember
Kathleen Beckman	Councilmember
David Allbritton	Councilmember
Hoyt Hamilton	Councilmember
William B. Horne II	City Manager

Tara L. Kivett, P.E.
City Engineer

Approved For Construction

Elliot Shoberg
Digitally signed by Elliot Shoberg
Date: 2021.01.14 14:29:47 -05'00'

Date Approved

CHRISTINA M. NEWCOMB No.62962 STATE OF FLORIDA PROFESSIONAL ENGINEER

Christina M. Newcomb
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DN: E=C.Newcomb@gaiconsultants.com, CN=Christina M. Newcomb
Reason: I am the author of this document
Date: 2021.01.13 15:30:03-05'00'

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C, BY:

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

GAI CONSULTANTS, INC.
3820 NORTHDALE BLVD., STE 102B
TAMPA, FL 33624
CERTIFICATE OF AUTORIZATION 9951
CHRISTINA M. NEWCOMB, P.E. NO 62962

100% PLANS BID SET

City Project No. 16-0003-EN
City Plan Set No. 2016017

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

GOVERNING SPECIFICATIONS

THE FOLLOWING SPECIFICATIONS ARE REFERENCED FOR WORK AND MATERIALS ON THIS PROJECT:

1. CITY OF CLEARWATER STANDARDS, TECHNICAL SPECIFICATIONS, AND CONTRACT DOCUMENTS.
2. FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
3. FDOT DESIGN STANDARDS FOR DESIGN, CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS ON THE STATE HIGHWAY SYSTEM, LATEST EDITION.
4. SHOULD A DISCREPANCY OCCUR BETWEEN SPECIFICATIONS, THE MOST STRINGENT REQUIREMENT SHALL GOVERN.
5. ALL WORK PERFORMED SHALL COMPLY WITH THE REGULATIONS AND ORDINANCES OF THE VARIOUS GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE WORK.

GENERAL AND CONSTRUCTION NOTES

1. THE TERM 'CITY', WHEN REFEREED TO IN THE PLANS, SHALL BE UNDERSTOOD TO BE THE CITY OF CLEARWATER.
2. ALL WORKMANSHIP AND MATERIALS USED IN THE CONSTRUCTION OF THIS PROJECT SHALL BE NEW AND CONFORM TO THE PLANS AND SPECIFICATIONS, UNLESS OTHERWISE NOTED.
3. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION AND MAINTAIN COPIES OF ALL PERMITS ON–SITE AND SHALL ADHERE TO ALL PERMIT CONDITIONS DURING CONSTRUCTION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PENALTIES/FINES LEVIED DUE TO WORK THAT IS NOT IN ACCORDANCE WITH PERMIT CONDITIONS.
5. THE CONTRACTOR SHALL MAINTAIN AN ACCURATE SET OF MARKED–UP DRAWINGS (AS–BUILTS) AT THE CONSTRUCTION SITE.
6. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AT LEAST 48 HOURS BEFORE BEGINNING CONSTRUCTION (DEMOLITION AND/OR RELOCATION OF & EXCAVATION NEAR EXISTING UNDERGROUND OR ABOVEGROUND UTILITIES) IN ACCORDANCE WITH FLORIDA STATUTES. IF PERMITS ARE REQUIRED FOR SUCH WORK, THE CONTRACTOR SHALL OBTAIN SUCH PERMITS FROM THE UTILITY COMPANY CONCERNED IN ADVANCE OF CONSTRUCTION.
7. THE CONTRACTOR SHALL CALL "SUNSHINE STATE ONE CALL "811" (1–800–432–4770) A MINIMUM OF 2 DAYS AND A MAXIMUM OF 5 DAYS PRIOR TO START OF CONSTRUCTION.
8. LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF THE PREPARATION OF THESE PLANS, BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. CONTRACTOR SHALL VERIFY THE LOCATION, ELEVATIONS AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES AFFECTING HIS WORK PRIOR TO CONSTRUCTION.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXAMINING IN DETAIL BOTH THE BID DOCUMENTS AND THE EXISTING SITE CONDITIONS. ANY DISCREPANCIES DISCOVERED BETWEEN THE BID DOCUMENTS AND THE EXISTING SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING AT THE TIME OF BIDDING OR DISCOVERY. NO PAYMENT WILL BE MADE AFTER CONTRACT COMPLETION FOR FAILURE TO REPORT SUCH CONDITION, OR FOR ERRORS ON THE PART OF THE CONTRACTOR AT THE TIME OF BIDDING.
10. THE CONTRACTOR SHALL CONTACT THE ENGINEER'S OFFICE IMMEDIATELY ON ANY CONFLICTS ARISING DURING CONSTRUCTION.
11. ALL CONSTRUCTION ACTIVITIES MUST CONFORM TO THE LOCAL NOISE ORDINANCE. CONTRACTOR SHALL USE NOISE REDUCED MACHINERY WHEN POSSIBLE TO MINIMIZE IMPACTS TO RESIDENTS.
12. HOURS OF WORK SHALL BE IN ACCORDANCE WITH THE LOCAL GOVERNMENTAL AGENCY.
13. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION SAFETY. SPECIAL PRECAUTIONS MAY BE REQUIRED IN THE VICINITY OF POWER LINES AND OTHER UTILITIES.
14. NO CONTRACTOR IDENTIFICATION SIGNS SHALL BE PERMITTED ON THE PROJECT SITE, EXCEPT FOR THE PROJECT INFORMATION SIGNS.
15. ALL SECTION CORNERS OR PROPERTY CORNERS DISLOCATED OR DISTURBED BY THE CONSTRUCTION ACTIVITIES SHALL BE RESET BY A REGISTERED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE. ALL CITY BENCHMARKS SHALL BE PROTECTED DURING CONSTRUCTION.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL REQUIRED PERMITS INCLUDING BUT NOT LIMITED TO DEWATERING, BUILDING PERMIT, ETC.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A HURRICANE PREPARATION PLAN TO THE CITY'S REPRESENTATIVE FOR REVIEW AND APPROVAL PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.

    ANY DAMAGE TO CITY, COUNTY, OR STATE ROADS CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR IN A TIMELY MANNER AND TO THE SATISFACTION OF THE CITY'S ENGINEERING REPRESENTATIVE. PAYMENT SHALL NOT BE MADE FOR THIS WORK.
18. THE CONTRACTOR SHALL PROTECT PRIVATE PROPERTY.
19. THE CONTRACTOR SHALL PROVIDE ALL SHEETING, SHORING AND BRACING REQUIRED TO PROTECT ADJACENT STRUCTURES OR TO MINIMIZE TRENCH WIDTH. WHERE A SEPARATE PAY ITEM IS NOT PROVIDED, THE COST OF ALL SHEETING AND BRACING REQUIRED SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE ITEM OF WORK FOR WHICH SHEETING, SHORING AND BRACING IS ANTICIPATED TO BE REQUIRED IN ACCORDANCE WITH LOCAL, STATE, OR FEDERAL REGULATIONS FOR CONSTRUCTION.
20. ALL SIDEWALK AND BIKE LANE CONSTRUCTION SHALL MEET THE REQUIREMENTS OF AMERICANS WITH DISABILITIES ACT (ADA).
21. ALL UNDERGROUND UTILITY SYSTEMS AND PIPES AS NOTED ON THE PLANS MUST BE INSTALLED BEFORE THE ROADWAY BASE AND SURFACE ARE CONSTRUCTED.
22. CONSIDERING THE FINES AND THE STRATIFIED NATURE OF THE SUBSURFACE SOILS, THE CONTRACTOR IS RECOMMENDED TO RETAIN A QUALIFIED DEWATERING CONSULTANT TO ASSIST IN DEVELOPING AN EFFECTIVE DEWATERING PLAN.
23. THE CONTRACTOR SHALL COORDINATE ABANDONMENT AND/OR RELOCATION OF EXISTING POWER LINES AND POLES WITH DUKE ENERGY.
24. ALL TRAFFIC CONTROL WARNING AND REGULATORY SIGNS IDENTIFIED ON THE PLANS TO BE RELOCATED OR REMOVED SHALL NOT BE TAKEN OUT OF OPERATION UNTIL PERMANENT TRAFFIC SIGNS ARE INSTALLED. IF REQUIRED, DUE TO CONSTRUCTION ACTIVITIES, THE EXISTING TRAFFIC CONTROL SIGNS MAY BE RELOCATED TEMPORARILY AS DIRECTED BY THE CITY CONSTRUCTION INSPECTOR.
25. CONTRACTOR TO RESTORE ALL MAILBOXES, SIGNS AND OTHER ABOVE GROUND APPURTENANCES DISTURBED BY CONSTRUCTION ACTIVITIES.
26. MATERIALS INTERFERING WITH CONSTRUCTION SHALL BE DISPOSED OF AS DIRECTED BY THE ENGINEER UNLESS OTHERWISE NOTED ON THE PLANS.
27. ALL EXCESS SOIL RESULTING FROM CONSTRUCTION ACTIVITIES THAT IS NOT CLAIMED BY THE OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF BY THE CONTRACTOR.
28. THE CONTRACTOR SHALL DISPOSE OF ALL UNSUITABLE MATERIALS, CONSTRUCTION DEBRIS, AND OTHER WASTE MATERIALS OFFSITE IN ACCORDANCE WITH APPLICABLE REGULATORY AGENCY REQUIREMENTS AT THE CONTRACTOR'S EXPENSE. ALL BACKFILL SHALL BE FREE OF UNSUITABLE MATERIALS.
29. THE CONTRACTOR SHALL IDENTIFY OWNER PROPERTIES WITH IRRIGATION SYSTEMS AND PROVIDE DOCUMENTATION VERIFYING THE SYSTEM IS FUNCTIONAL. CONTRACTOR SHALL PROTECT EXISTING IRRIGATION SYSTEM BY REMOVING SPRINKLER HEADS AND PIPING IN CONFLICT WITH INSTALLATION WORK BY CAPPING CUT LINES. CONTRACTOR SHALL RESTORE THE IRRIGATION SYSTEM INCLUDING BUT NOT LIMITED TO SPRINKLER HEADS AND PIPING DURING RESTORATION.
30. THE CONTRACTOR SHALL COORDINATE ALL WORK TO BE DONE OUTSIDE OF THE CITY OF CLEARWATER RIGHT–OF–WAY WITH CITY STAFF AND THE PROPERTY OWNER BEFORE COMMENCEMENT OF WORK.

POLE LIGHT NOTES:

1. PROPOSED POLE LIGHTS INDICATED IN THE PLANS WILL BE INSTALLED BY DUKE ENERGY UNDER SEPARATE AGREEMENT WITH THE CITY OF CLEARWATER, AND IS NOT A PART OF THE CONTRACTOR'S WORK.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF ALL ELECTRICAL CONDUIT, PULL BOXES, & WIRING. COORDINATE WITH DUKE ENERGY AND THE CITY OF CLEARWATER PRIOR TO COMMENCEMENT OF WORK.

SURVEY NOTES

1. THE CITY OF CLEARWATER CONTROL NETWORK'S HORIZONTAL DATUM IS: NORTH AMERICAN DATUM (N.A.D.), FLORIDA STATE PLANE COORDINATES, FLORIDA WEST ZONE 83 (1999).
2. THE CITY OF CLEARWATER CONTROL NETWORK'S VERTICAL DATUM IS: NORTH AMERICAN VERTICAL DATUM (N.A.V.D.) 1988.
3. THE SURVEY WAS PROVIDED BY THE CITY OF CLEARWATER LAND SURVEY DIVISION. THE LAST DATE OF FIELD SURVEY IS 06/27/2016.
4. THE CITY BENCHMARK REFERENCED ARE BENCHMARKS E–7.5 HAVING AN ELEVATION OF 17.5967' AND E–9 HAVING AND ELEVATION OF 71.8694'.
5. ANY NATIONAL GEODETIC SURVEY (NGS) MONUMENT WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF IN DANGER OF DAMAGE, CONTRACTOR SHALL NOTIFY THE CITY'S FIELD REPRESENTATIVE IMMEDIATELY AND CONTACT THE NATIONAL GEODETIC SURVEY INFORMATION CENTER.

PAVING, GRADING AND DRAINAGE

1. CONTRACTOR SHALL UNIFORMLY RESTORE FINAL GRADE FOR PROPER DRAINAGE TOWARD ROADWAY. ALL DISTURBED AREAS SHALL BE RESTORED WITHIN 15 DAYS TO A CONDITION EQUAL TO OR BETTER THAN EXISTING CONDITIONS.
2. ALL DISTURBED LANDSCAPED AND/OR GRASSED AREAS SHALL BE RESTORED UNIFORMLY AND TO BE GENERALLY AT THE SAME ELEVATION AS EXISTING GRADES.
3. ALL VOIDS AFTER PLACEMENT OF SOD SHALL BE FILLED WITH PREPARED SOIL MIX. THE SOD SHALL BE ROLLED TO MEET THE PROPOSED GRADES. SOD PLACED ON SLOPES (3:1 OR STEEPER) SHALL BE PEGGED.
4. AREAS OF EXPOSED EARTH RESULTING FROM CONSTRUCTION SHALL BE SODDED IN KIND UNLESS OTHERWISE NOTED ON THE PLANS.
5. ANY EXISTING SOD AREAS THAT ARE UNNECESSARILY DISTURBED DURING THE LANDSCAPE INSTALLATION SHALL BE RESODDED TO MATCH EXISTING.
6. THE CONTRACTOR SHALL ENSURE THAT THE STORMWATER SYSTEM FUNCTIONS THROUGHOUT CONSTRUCTION AND SHALL JET CLEAN THE EXISTING AND PROPOSED STORM SYSTEMS PRIOR TO FINAL INSPECTION. COMPENSATION FOR THIS WORK ITEM SHALL BE INCLUDED WITH THE CONSTRUCTION OF PROPOSED STORM PIPES.
7. THE CONTRACTOR IS RESPONSIBLE FOR ALL REQUIRED MATERIAL TESTING. THIS INCLUDES PRELIMINARY WATER SAMPLES TO SATISFY THE FDEP GENERIC PERMIT FOR THE DISCHARGE OF PRODUCED GROUNDWATER. SAMPLING TO OCCUR 30 DAYS PRIOR TO THE START OF DEWATERING.
8. TESTING OF STABILIZATION, BASE, AND PAVEMENT, AS WELL AS COMPACTION OF BACKFILL FOR PIPES AND STRUCTURES, SHALL BE PERFORMED ACCORDING TO THE REQUIREMENTS OF CITY OF CLEARWATER, THE CONTRACT SPECIFICATIONS, AND FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
9. ALL CONCRETE SHALL HAVE FIBERMESH AND A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 3,000 PSI (28 DAY STRENGTH), UNLESS OTHERWISE NOTED ON THE PLANS.
10. NO SURFACING MATERIAL IS TO BE APPLIED TO ANY MANHOLE COVERS, FRAMES, VALVE BOXES, GAS DROPS, ETC. ALL EXISTING AND PROPOSED UTILITY AND STORMWATER STRUCTURES WITHIN ANY PAVED OR CONCRETE AREA SHALL BE ADJUSTED SO THAT THE TOP SURFACE OF COVERS OR FRAMES SHALL BE FLUSH WITH FINISHED GRADE.
11. A CCTV INSPECTION OF THE NEW STORM SEWER IN DIGITAL FORMAT UTILIZING THE INDUSTRY–STANDARD PIPELINE ASSESSMENT AND CERTIFICATION PROGRAM (PACP) CODING SYSTEM SHALL BE PROVIDED TO THE CITY AS A COMPACT DISC. THE CD/VIDEO SHALL BE TAKEN AFTER JET CLEANING THE SYSTEM AND PRIOR TO CONSTRUCTING THE ROADWAY AND PRIOR TO PLACING THE NEW STORM SEWER SYSTEM INTO SERVICE. DATA SHALL BE COLLECTED UTILIZING CUES GRANITE SOFTWARE.
12. CONTRACTOR SHALL SUBMIT PLAN TO OWNER AND ENGINEER INDICATING HOW DRAINAGE WILL BE DIVERTED OR OTHERWISE ACCOMODATED DURING CONSTRUCTION OF THE NEW STORMWATER COLLECTION SYSTEM.

MAINTENANCE OF TRAFFIC

1. THE CONTRACTOR SHALL FURNISH, ERECT AND MAINTAIN ALL NECESSARY TRAFFIC CONTROL AND SAFETY DEVICES, PER FDOT INDEX 600 SERIES, AND IN ACCORDANCE WITH THE LATEST EDITION OF US DEPARTMENT OF TRANSPORTATION'S MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE LATEST FDOT DESIGN STANDARDS.
2. CONTRACTOR SHALL PROVIDE THE CITY OF CLEARWATER, TRAFFIC OPERATIONS, A DETAILED MOT PLAN, SHOWING ALL ROAD CLOSURE DEVICES AND DETAILS. ONCE THE MOT IS APPROVED, THE ROAD CLOSURE CAN TAKE PLACE 48 HOURS AFTER DATE OF THE APPROVAL.
3. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN EFFECTIVE BARRICADES, DANGER SIGNALS, SIGNS AND PEDESTRIAN DETOURS IN ALL AREAS WHERE REQUIRED FOR THE PROTECTION OF THE WORK AND THE SAFETY OF THE PUBLIC.
4. IF IT BECOMES NECESSARY FOR THE CONTRACTOR TO CLOSE ANY STREET TO THROUGH TRAFFIC WITHIN THE LIMITS OF CONSTRUCTION, ACCESS FOR LOCAL TRAFFIC WITH DESTINATION WITHIN THE PROJECT LIMITS OF CONSTRUCTION SHALL BE MAINTAINED. IF DURING CONSTRUCTION, ACCESS FOR LOCAL TRAFFIC IS CHANGED, THEN THE PROPERTY OWNERS AFFECTED SHALL BE GIVEN AT LEAST THREE DAYS ADVANCE NOTICE. THE CONTRACTOR SHALL SUBMIT THE TRAFFIC CONTROL PLAN FOR APPROVAL PRIOR TO IMPLEMENTATION.
5. THE CONTRACTOR'S SUPERVISOR OR FOREMAN CONTROLLING THE WORK SHALL HAVE A CURRENT WORK ZONE TRAFFIC CONTROL SAFETY CERTIFICATION FROM THE INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION OR A CURRENT TRAFFIC SUPERVISOR CERTIFICATION FROM FDOT. THE CERTIFIED SUPERVISOR SHALL BE ON THE PROJECT SITE AT ALL TIMES WHILE WORK IS BEING CONDUCTED.
6. NONCOMPLIANCE WITH THE APPROVED TRAFFIC CONTROL PLAN OR CREATING AN UNSAFE ENVIRONMENT WILL RESULT IN A WORK STOPPAGE UNTIL CONDITIONS ARE CORRECTED AND APPROVED BY THE CITY CONSTRUCTION SUPERVISOR.

TREE PROTECTION

1. THE CONTRACTOR WILL BE RESPONSIBLE FOR ADHERING TO ALL TREE PROTECTION MEASURES REQUIRED BY THE CITY OF CLEARWATER'S CODES, ORDINANCES AND STANDARD SPECIFICATIONS. THIS WILL INCLUDE ALL TREE BARRICADES, ROOT PRUNING AND TREE TRIMMING/PRUNING ACTIVITIES. THESE REQUIREMENTS WILL APPLY WITHIN THE SPECIFIED 'LIMITS OF WORK,' AND WILL ALSO BE APPLICABLE IN ALL AREAS WHERE THE CONTRACTOR AND/OR HIS SUBCONTRACTORS STAGE, STORE OR PARK VEHICLES, EQUIPMENT, MATERIALS AND DEBRIS.
2. ALL TREE PRUNING AND/OR ROOT PRUNING ON EXISTING TREES TO BE PRESERVED WILL ONLY BE PERFORMED BY OR UNDER THE DIRECT SUPERVISION OF AN INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA) CERTIFIED ARBORIST. FURTHERMORE, ALL TREE WORK SHALL CONFORM TO THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) 2001, AMERICAN NATIONAL STANDARD FOR TREE CARE OPERATIONS – TREE, SHRUB AND OTHER WOODY PLANT MAINTENANCE – STANDARD PRACTICES (PRUNING) ANSI A–300.
3. WHERE CALLED FOR ON THE PLANS, INSTALL TREE BARRICADES, EROSION CONTROL/SILT FENCING OR OTHER APPROVED PROTECTIVE BARRIERS AROUND ALL TREES TO BE PRESERVED, PER CITY STANDARD DETAIL. WHERE APPLICABLE, PROTECTIVE BARRIERS WILL BE PLACED IN ROOT PRUNE TRENCHES.
4. PRIOR TO ANY FIELD CHANGES TAKING PLACE, IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO REVIEW THE POTENTIAL IMPACTS TO EXISTING TREES WITH HIS CERTIFIED ARBORIST AND INCLUDE ANY AND ALL RECOMMENDED TREE PROTECTION MEASURES IN HIS PROPOSAL TO MODIFY THE APPROVED DESIGN. THE CITY'S ENGINEERING REPRESENTATIVE MUST APPROVE, IN WRITING, ANY CHANGES TO THE APPROVED DESIGN PRIOR TO IMPLEMENTATION OF SAID CHANGE.
5. THE CONTRACTOR WILL AVOID ANY OPEN EXCAVATIONS, FILL OR OTHER CONSTRUCTION ACTIVITIES WHENEVER POSSIBLE WITHIN THE 'CRITICAL ROOT ZONE' OF ANY EXISTING TREE (I.E., UNDER THE DRIPLINE/CANOPY).
6. WHERE CONSTRUCTION ACTIVITIES ARE ANTICIPATED TO LAST FOR AN EXTENDED PERIOD OF TIME NEAR EXISTING TREES, THE CONTRACTOR SHALL INSTALL AND MAINTAIN CITY APPROVED TREE BARRICADES AS SHOWN IN THE STANDARD DETAILS AND APPROVED BY THE CITY'S ENGINEERING REPRESENTATIVE.
7. WOOD CHIPS, MULCH OR ANOTHER CUSHIONING SURFACE MATERIAL APPROVED BY THE CITY'S ENGINEERING REPRESENTATIVE SHALL BE PLACED TO A MINIMUM DEPTH OF 10" OVER AREAS WHERE ROOTS ARE PRESENT AND CONSTRUCTION TRAFFIC OCCURS.
8. ALL TREE PROTECTION MEASURES SHALL REMAIN IN PLACE AT ALL TIMES DURING CONSTRUCTION UNTIL THE CITY'S ENGINEERING REPRESENTATIVE AUTHORIZES REMOVAL.

ROOT PRUNING

1. THE CONTRACTOR WILL COORDINATE WITH THE CITY'S ENGINEERING REPRESENTATIVE, TIM KURTZ @ (727) 562–4737, TO OBTAIN APPROVAL IN ADVANCE OF ANY AND ALL WORK WITHIN THE CRITICAL ROOT ZONE OF ANY EXISTING TREES TO REMAIN.
2. IF ROOT PRUNING IS NECESSARY, IT CAN ONLY BE PERFORMED BY OR UNDER THE DIRECT SUPERVISION OF AN INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA) CERTIFIED ARBORIST, AND MUST ADHERE TO THE FOLLOW CONDITIONS:
    a. ROOT PRUNING WILL BE LIMITED TO A MINIMUM OF TWELVE INCHES PER ONE INCH OF THE TRUNK DIAMETER FROM THE TREE BASE. ANY EXCEPTION MUST BE APPROVED BY THE CITY'S ENGINEERING REPRESENTATIVE PRIOR TO SAID ROOT PRUNING.
    b. ROOTS WILL BE CUT CLEANLY, AS FAR FROM THE TRUNK OF THE TREE AS POSSIBLE. ROOT PRUNING WILL BE DONE TO A MINIMUM DEPTH OF 18 INCHES FROM EXISTING GRADE, OR TO THE DEPTH OF THE DISTURBANCE IF LESS THAN 18 INCHES.
    c. ROOT PRUNING WILL BE PERFORMED USING A ROOT CUTTING MACHINE, SPECIFICALLY DESIGNED FOR THIS PURPOSE. ALTERNATE EQUIPMENT OR TECHNIQUES MUST BE APPROVED BY THE CITY'S ENGINEERING REPRESENTATIVE, PRIOR TO ANY WORK ADJACENT TO TREES TO BE PRESERVED.
    d. ROOT PRUNING WILL BE COMPLETED, INSPECTED AND ACCEPTED PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION OR OTHER IMPACTS TO THE CRITICAL ROOT ZONES OF TREES TO BE PROTECTED.
    e. EXCAVATIONS IN AN AREA WHERE ROOT ARE PRESENT WILL NOT CAUSE THE TEARING OR RIPPING OF TREE ROOTS. ROOTS MUST FIRST BE CLEANLY SEVERED PRIOR TO CONTINUING WITH THE EXCAVATION, OR TUNNELED AROUND TO PREVENT DAMAGE TO THE ROOT.
    f. TREE ROOTS WILL NOT BE EXPOSED TO DRYING OUT. ROOT ENDS MUST BE COVERED WITH NATIVE SOIL OR BURLAP AND KEPT MOIST UNTIL FINAL BACKFILL OR FINAL GRADES HAVE BEEN ESTABLISHED.
    g. WHEN DEEMED APPROPRIATE (E.G., DURING PERIODS OF DROUGHT) THE CITY REPRESENTATIVE MAY REQUIRE A TEMPORARY IRRIGATION SYSTEM BE UTILIZED IN THE REMAINING CRITICAL ROOT ZONES OF ROOT PRUNED TREES.

EROSION CONTROL AND DEWATERING

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTROL AND PREVENT EROSION AND THE TRANSPORTATION OF SEDIMENT TO SURFACE DRAINS AND OUTFALLS.
2. THE CONTRACTOR SHALL PREPARE AND SUBMIT A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) CRITERIA FOR A NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) ACTIVITIES PERMIT.
3. THE CONTRACTOR MUST OBTAIN A FDEP GENERIC PERMIT FOR THE DISCHARGE OF PRODUCED GROUND WATER, IF DEWATERING WITH OFFSITE DISCHARGE WILL BE REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR ALL REQUIRED PRELIMINARY WATER SAMPLES TO SATISFY THE FDEP GENERIC PERMIT FOR THE DISCHARGE OF PRODUCED GROUND WATER. SAMPLING SHALL OCCUR THIRTY (30) DAYS PRIOR TO THE START OF DEWATERING.

UTILITY OWNERS

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Attention: Kyle Perkins
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Wide Open West (WOW!)
FLSP2144
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Pinellas Park, Florida 33782
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Duke Energy
Attention: Mr. Rico Ashley
2166 Palmetto Street, Bldg. F
Clearwater, Florida 33765
Phone: (727) 562–5767

Clearwater Gas System
Attention: Mr. Robert Jaeger
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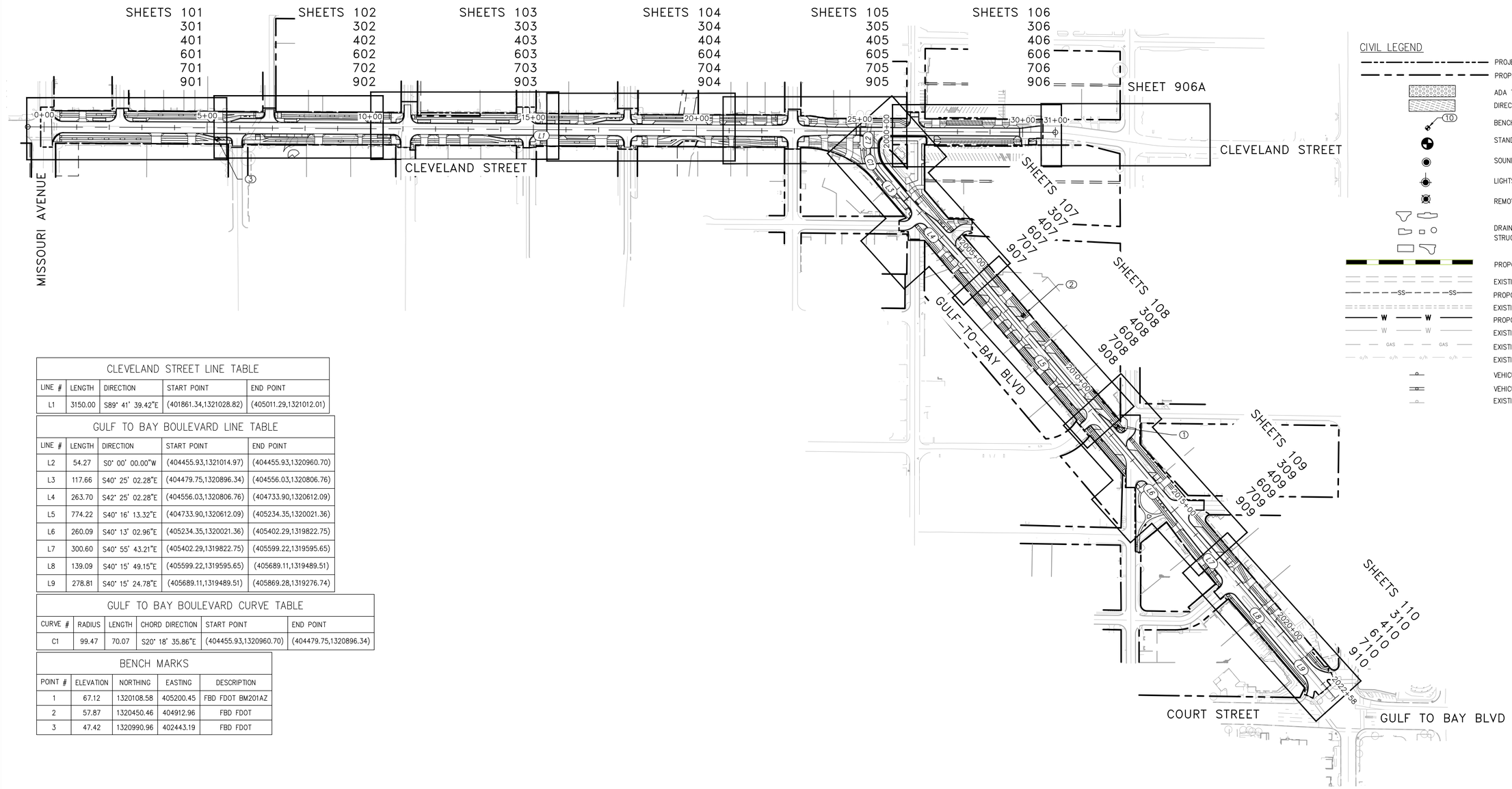
CIVIL STANDARD ABBREVIATIONS

AASHO	AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS	FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION	PVMT	PAVEMENT	VC	VERTICAL CURVE
AASHTO	AMERICAN ASSOCATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	F.F.	FINISH FLOW ELEVATION	PCC	POINT OF COMPOUND CURVE	VCP	VITRIFIED CLAY PIPE
ABD	ABANDONED	FH	FIRE HYDRANT	PEP	POLYETHYLENE PIPE	VERT	VERTICAL
AC	ACRE	FIT	FITTING	PI	POINT OF INTERSECTION	VPC	VERTICAL POINT OF CURVE
ADDL	ADDITIONAL	FLG	FLANGE	P/L	PROPERTY LINE	VPI	VERTICAL POINT OF INTERSECTION
ALT	ALTERNATE	FM	FORCE MAIN	POB	POINT OF BEGINNING	VPT	VERTICAL POINT OF TANGENCY
ALUM	ALUMINUM	FL	FLOW LINE	POC	POINT OF CONNECTION		
APPROX	APPROXIMATE	FT	FEET OR FOOT	PC	POINT OF CURVE	W	WEST
ARV	AIR RELEASE VALVE			POJ	PUSH ON JOINT	W/	W/
ARVV	AIR RELEASE VACUUM VALVE	GA	GAUGE	PP	POWER POLE	WM	WATERMAIN
ASPH	ASPHALT	GAL	GALLON	PRC	POINT OF REVERSE CURVE	W/O	WITHOUT
ASTM	AMERICAN STANDARD FOR TESTING MATERIALS	GALV	GALVANIZED	PRM	PERMANENT REFERENCE MONUMENT	WWF	WELDED WIRE FABRIC
		GM	GAS MAIN	PROP	PROPOSED	WT	WEIGHT
BFPB	BACKFLOW PREVENTER	GPM	GALLONS PER MINUTE	PROJ	PROJECT		
B/L	BASE LINE	GR	GRADE	PT	POINT OF TANGENCY	X	COORDINATE DISTANCE (EAST-WEST)
BLDG	BUILDING	GRT	GRATE	PVC	POLYVINYL CHLORIDE	XING	CROSSING
BLK	BLOCK	GRTG	GRATING	PV	PLUG VALVE	RD	ROAD
BM	BENCHMARK	GV	GATE VALVE	PW	POTABLE WATER		
BO	BLOW-OFF	GPH	GALLONS PER HOUR			Y	COORDINATE DISTANCE (NORTH - SOUTH)
BOC	BACK OF CURB			Q	DISCHARGE (FLOW RATE)	YDS	YARDS
BRG	BEARING	HB	HOSE BIBB				
BS	BOTTOM STEP ELEVATION	HDPE	HIGH DENSITY POLYETHYLENE	R	RADIUS		
BV	BUTTERFLY VALVE	HORZ	HORIZONTAL	RNG	RANGE		
BW	BOTTOM OF WALL	HP	HORSEPOWER	RCP	REINFORCED CONCRETE PIPE		
		HT	HEIGHT	RCPA	REINFORCED CONCRETE PIPE ARCH		
C&G	CURB AND GUTTER	HWL	HIGH WATER LEVEL	RD	ROOF DRAIN		
CB	CATCH BASIN			RED	REDUCER		
CD	CONDENSATE PIPE	ID	INSIDE DIAMETER	REINF	REINFORCED		
CEM	CEMENT	IN	INCHES	REQD	REQUIRED		
CFS	CUBIC FEET PER SECOND	INL	INLET	RP	RADIUS POINT		
CI	CAST IRON	INSTL	INSTALL	RPZBFP	REDUCED PRESSURE ZONE BACKFLOW PREVENTER		
CV	CHECK VALVE	INTR	INTERIOR	RT	RIGHT		
C/L	CENTER LINE	IP	IRON PIPE	R/W	RIGHT OF WAY		
CL	CLEARANCE	INV	INVERT				
CM	CONCRETE MONUMENT	IW	INDUSTRIAL WATER (FIRE)	S	SOUTH		
CMP	CORRUGATED METAL PIPE			SCHED	SCHEDULE		
CMPA PIPE	CORRUGATED METAL ARCH PIPE	JB	JUNCTION BOX	SE	SOUTHEAST		
CND	CONDUIT	JCT	JUNCTION	SECT	SECTION		
CO	CLEAN OUT	JT	JOINT	SGL	SINGLE		
COL	COLUMN			SHTG	SHEETING		
CONC	CONCRETE	L	LENGTH OF CURVE	SL	SLOPE		
CONN	CONNECTION	LAT	LATERAL	SPCG	SPACING		
CONST	CONSTRUCT	LBS	POUNDS	SPEC	SPECIFICATION		
CONT	CONTINUOUS	LBR	LIMEROCK BEARING RATIO	SF	SQUARE FOOT		
CONTR	CONTRACTOR	LF	LINEAR FEET	SQ	SQUARE		
COR	CORNER	LOW	LIMIT OF WORK	SAN	SANITARY SEWER		
CPLG	COUPLING	LP	LIGHT POLE	SST	STAINLESS STEEL		
CTG	COATING	LT	LEFT	STA	STATION		
CTR	CENTER	LWL	LOW WATER LEVEL	STD	STANDARD		
CATV	CABLE TELEVISION			STL	STEEL		
CULV	CULVERT	MATL	MATERIAL	STS	STORM SEWER		
CY	CUBIC YARD	MAX	MAXIMUM	SW	SOUTHWEST, SIDEWALK		
		M.E.G.	MATCH EXISTING GRADE	SYM	SYMMETRICAL		
D	DEGREE OF CURVATURE	MES	MITERED END SECTION	STR	STRUCTURE		
DA	DRAINAGE AREA	MES	MANUFACTURE				
DBL	DOUBLE	MGD	MILLION GALLONS PER DAY	T	TANGENT		
DDCVA	DOUBLE DETECTOR CHECK VALVE ASSEMBLY	MH	MANHOLE	TBM	TEMPORARY BENCHMARK		
DIA	DIAMETER	MI	MILE	TBR	TO BE REMOVED		
DIP	DUCTILE IRON PIPE	MIN	MINIMUM	TC	TOP OF CURB		
DR	DRAIN	MISC	MISCELLANEOUS	TEL	TELEPHONE		
DWG	DRAWINGS	MJ	MECHANICAL JOINT	TEMP	TEMPORARY		
		MON	MONUMENT	THK	THICKNESS		
E	EAST			TOB	TOP OF BANK		
EA	EACH	N	NORTH	TRANS	TRANSITION		
ECC	ECCENTRIC	N&C	NAIL AND CAP	TS	TOP STEP ELEVATION		
EL	ELEVATION	NE	NORTHEAST	TW	TOP OF WALL		
ELEC	ELECTRIC	NO	NUMBER	TWP	TOWNSHIP		
EL	ELEVATION	NOM	NOMINAL	TYP	TYPICAL		
ELEC	ELECTRIC	NTS	NOT TO SCALE				
ELLIP	ELLIPTICAL	NW	NORTHWEST	UD	UNDERDTAIN W/ SOCK		
EOP	EDGE OF PAVEMENT	NWE	NORMAL WATER ELEVATION	USC&GS	U.S. COASTAL & GEODETIC SURVEY (NOW NATIONAL GEODETIC SURVEY)		
EQ	EQUATION			USGS	U.S. GEODETIC SURVEY		
ESMT	EASEMENT	OC	ON CENTER	UTC	UNDERGROUND TELEPHONE CABLE		
EX ELEV	EXISTING ELEVATION	OD	OUTSIDE DIAMETER	UTVC	UNDERGROUND TELEVISION CABLE		
EXIST	EXISTING	OPNG



CIVIL LEGEND

- PROJECT LIMITS
- PROPERTY BOUNDARY/ RIGHT-OF-WAY LINE
- ADA TRUNCATED DOME SURFACE
- DIRECTIONAL INDICATOR FDOT INDEX 528-001
- BENCHMARK – SEE INFORMATION THIS SHEET
- STANDARD PENETRATION TEST BORING CONE
- SOUNDING LOCATION
- LIGHTS TO BE PROVIDED BY DUKE ENERGY
- REMOVABLE BOLLARDS
- DRAINAGE STRUCTURES
- PROPOSED STORM PIPE
- EXISTING STORM PIPE
- PROPOSED SEWER
- EXISTING SEWER PIPE
- PROPOSED WATER
- EXISTING WATER
- EXISTING GAS MAIN
- EXISTING OVERHEAD ELECTRIC
- VEHICULAR SIGN
- VEHICULAR SIGN (DOUBLE SIDED)
- EXISTING VEHICULAR SIGN

CLEVELAND STREET LINE TABLE

LINE #	LENGTH	DIRECTION	START POINT	END POINT
L1	3150.00	S89° 41' 39.42"E	(401861.34,1321028.82)	(405011.29,1321012.01)

GULF TO BAY BOULEVARD LINE TABLE

LINE #	LENGTH	DIRECTION	START POINT	END POINT
L2	54.27	S0° 00' 00.00"W	(404455.93,1321014.97)	(404455.93,1320960.70)
L3	117.66	S40° 25' 02.28"E	(404479.75,1320896.34)	(404556.03,1320806.76)
L4	263.70	S42° 25' 02.28"E	(404556.03,1320806.76)	(404733.90,1320612.09)
L5	774.22	S40° 16' 13.32"E	(404733.90,1320612.09)	(405234.35,1320021.36)
L6	260.09	S40° 13' 02.96"E	(405234.35,1320021.36)	(405402.29,1319822.75)
L7	300.60	S40° 55' 43.21"E	(405402.29,1319822.75)	(405599.22,1319595.65)
L8	139.09	S40° 15' 49.15"E	(405599.22,1319595.65)	(405689.11,1319489.51)
L9	278.81	S40° 15' 24.78"E	(405689.11,1319489.51)	(405869.28,1319276.74)

GULF TO BAY BOULEVARD CURVE TABLE

CURVE #	RADIUS	LENGTH	CHORD DIRECTION	START POINT	END POINT
C1	99.47	70.07	S20° 18' 35.86"E	(404455.93,1320960.70)	(404479.75,1320896.34)

BENCH MARKS

POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
1	67.12	1320108.58	405200.45	FBD FDOT BM201AZ
2	57.87	1320450.46	404912.96	FBD FDOT
3	47.42	1320990.96	402443.19	FBD FDOT

100% PLANS BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
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CLEVELAND STREET PHASE III AND FESTIVAL CORE KEY MAP

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: DOD	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: TAF	CHECKED BY: RF	SHEET NO.: 002

APPROVED BY

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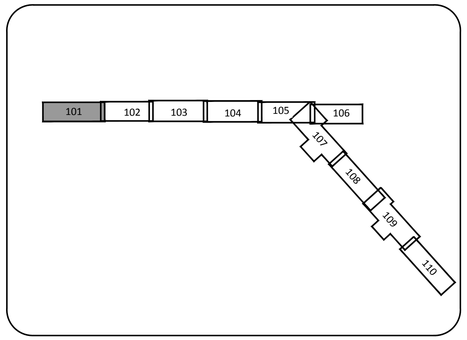
Key Map
(N.T.S.)



LEGEND

- LIMITS OF CLEARING AND GRUBBING
- EXISTING RIGHT OF WAY
- PROJECT LIMITS

NOTES:

1. WITHIN THE LIMITS OF CLEARING AND GRUBBING, UNLESS OTHERWISE NOTED ON THE PLANS, DEMOLISH THE FOLLOWING:
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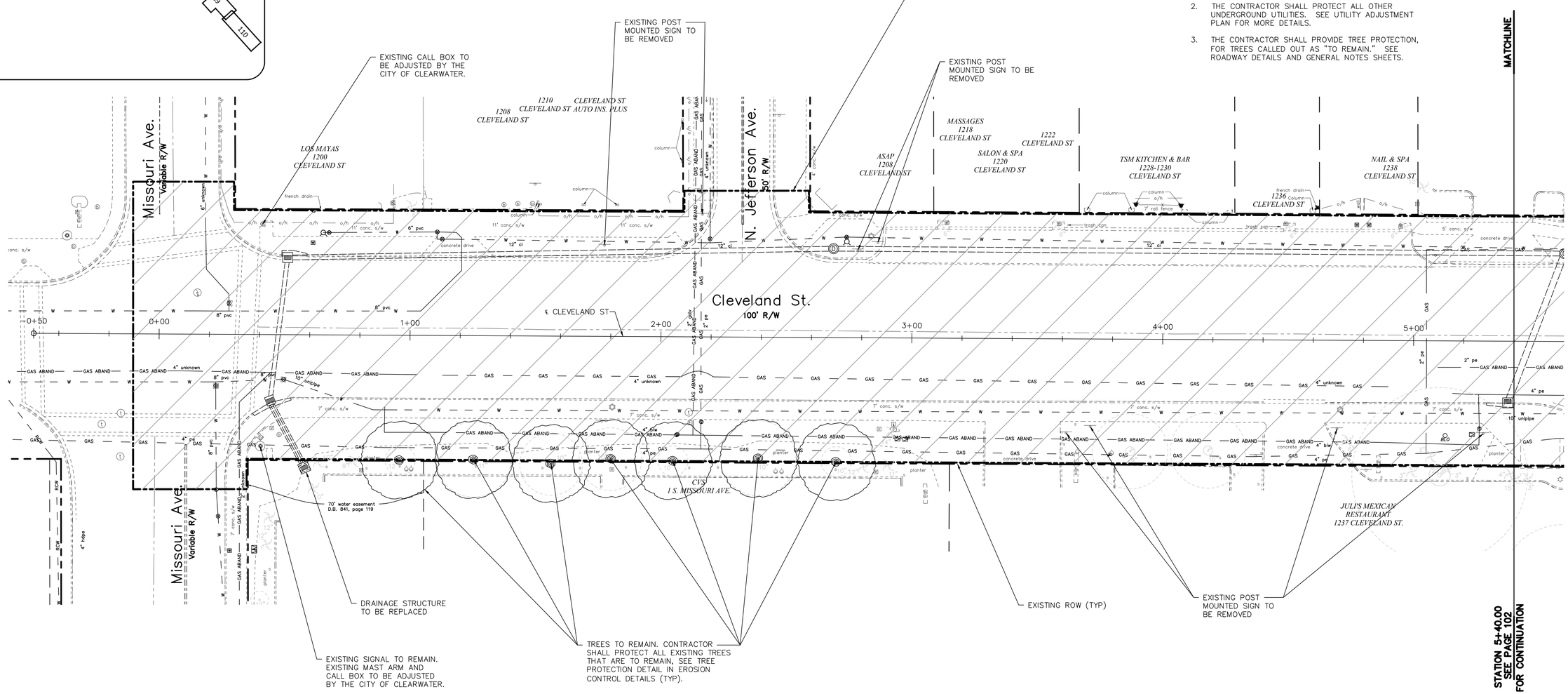
0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)



100% PLANS
BID SET

REVISION	BY	DATE

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Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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CLEVELAND STREET PHASE III AND FESTIVAL CORE DEMOLITION PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: RF	SHEET NO.: 101

APPROVED FOR CONSTRUCTION _____ DATE

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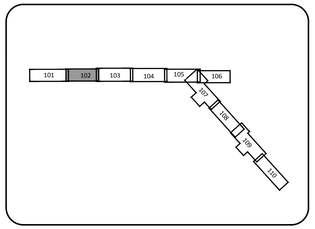
Key Map
(N.T.S.)



LEGEND

- LIMITS OF CLEARING AND GRUBBING
- EXISTING RIGHT OF WAY
- PROJECT LIMITS

NOTES:

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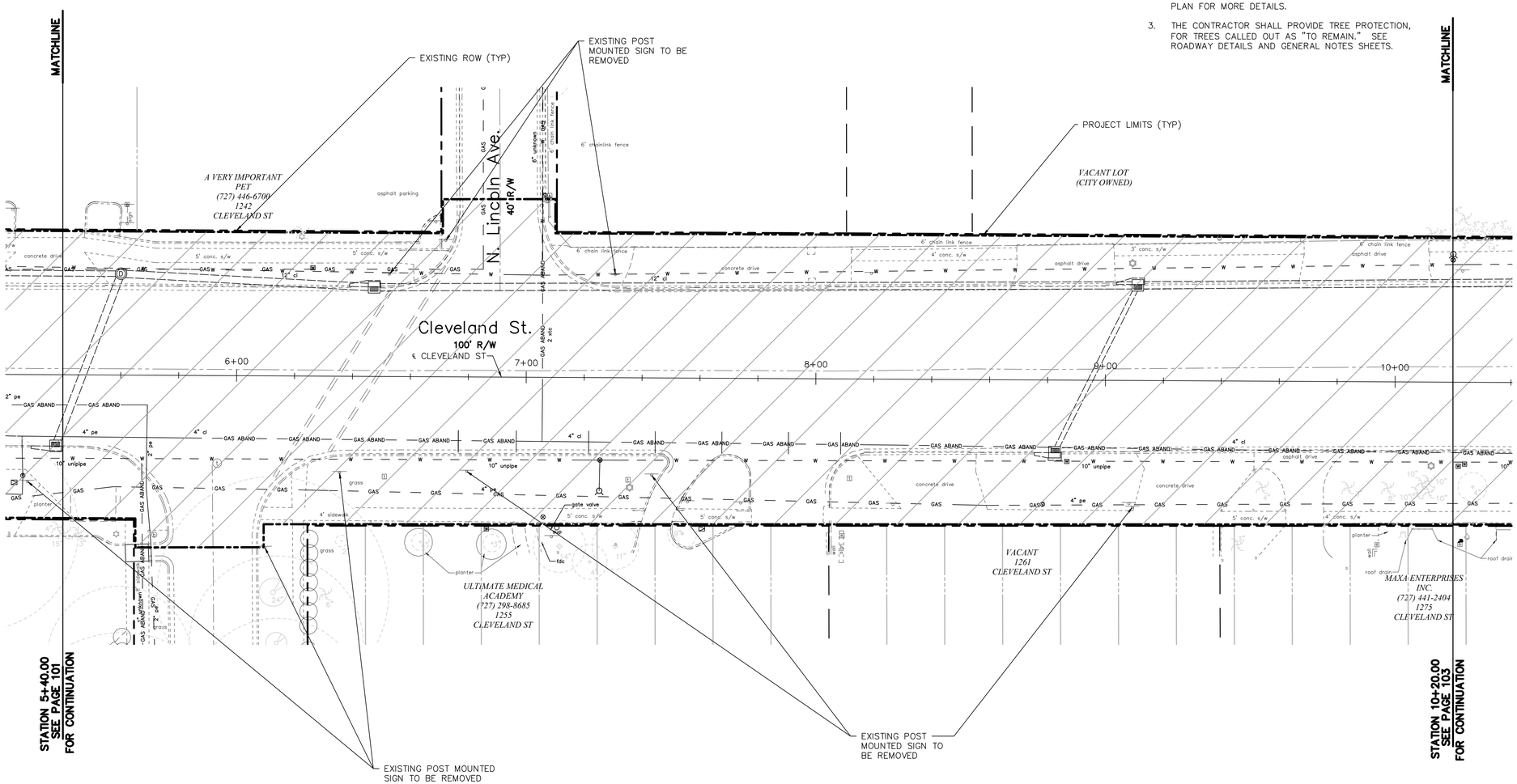
GRAPHIC SCALE (IN FEET)



100% PLANS
BID SET

REVISION	BY	DATE

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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
DEMOLITION PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: RF	SHEET NO.: 102
APPROVED FOR CONSTRUCTION			DATE

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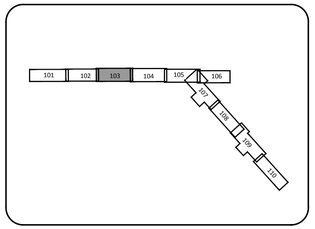
Key Map
(N.T.S.)



LEGEND

- LIMITS OF CLEARING AND GRUBBING
- EXISTING RIGHT OF WAY
- PROJECT LIMITS

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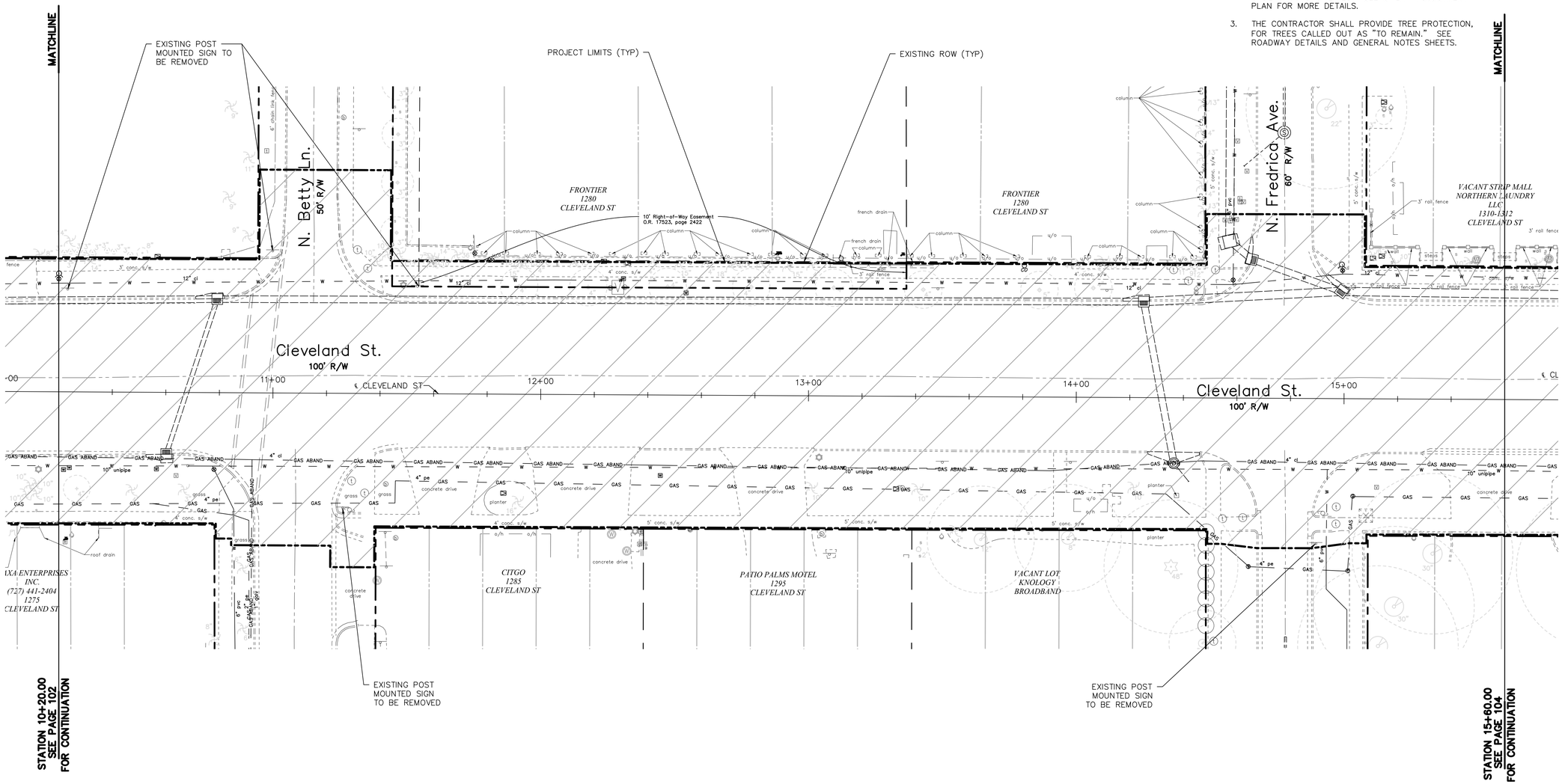
0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)



100% PLANS
BID SET

REVISION	BY	DATE

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Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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CLEVELAND STREET PHASE III AND FESTIVAL CORE DEMOLITION PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: RF	SHEET NO.: 103

APPROVED FOR CONSTRUCTION _____ DATE

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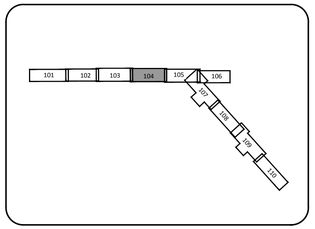
Key Map
(N.T.S.)



LEGEND

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- EXISTING RIGHT OF WAY
- PROJECT LIMITS

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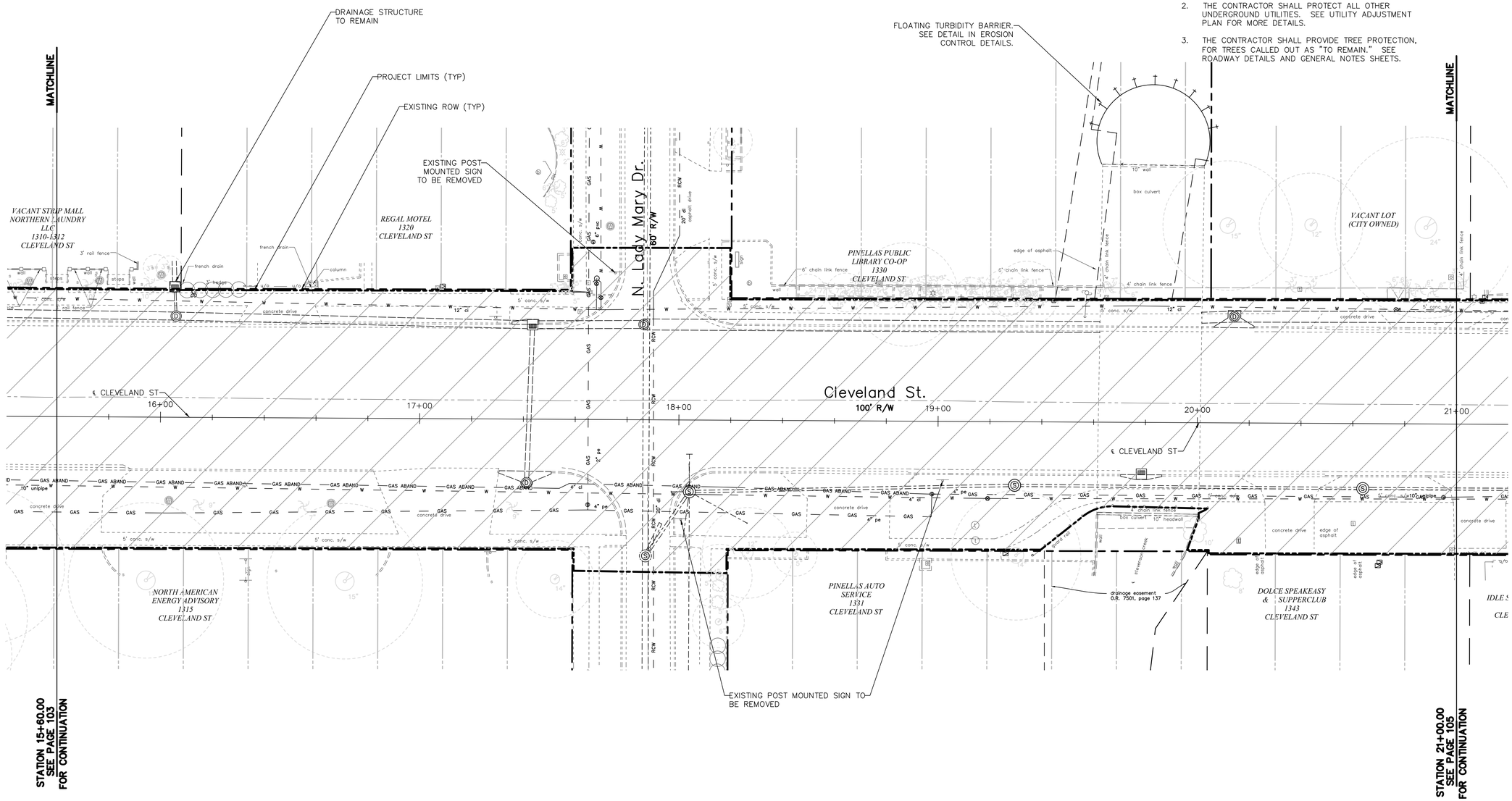
GRAPHIC SCALE (IN FEET)



100% PLANS
BID SET

REVISION	BY	DATE

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CLEVELAND STREET PHASE III AND FESTIVAL CORE DEMOLITION PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: RF	SHEET NO.: 104

APPROVED FOR CONSTRUCTION _____ DATE

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Key Map
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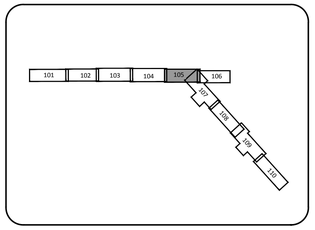

LEGEND

- LIMITS OF CLEARING AND GRUBBING
- EXISTING RIGHT OF WAY
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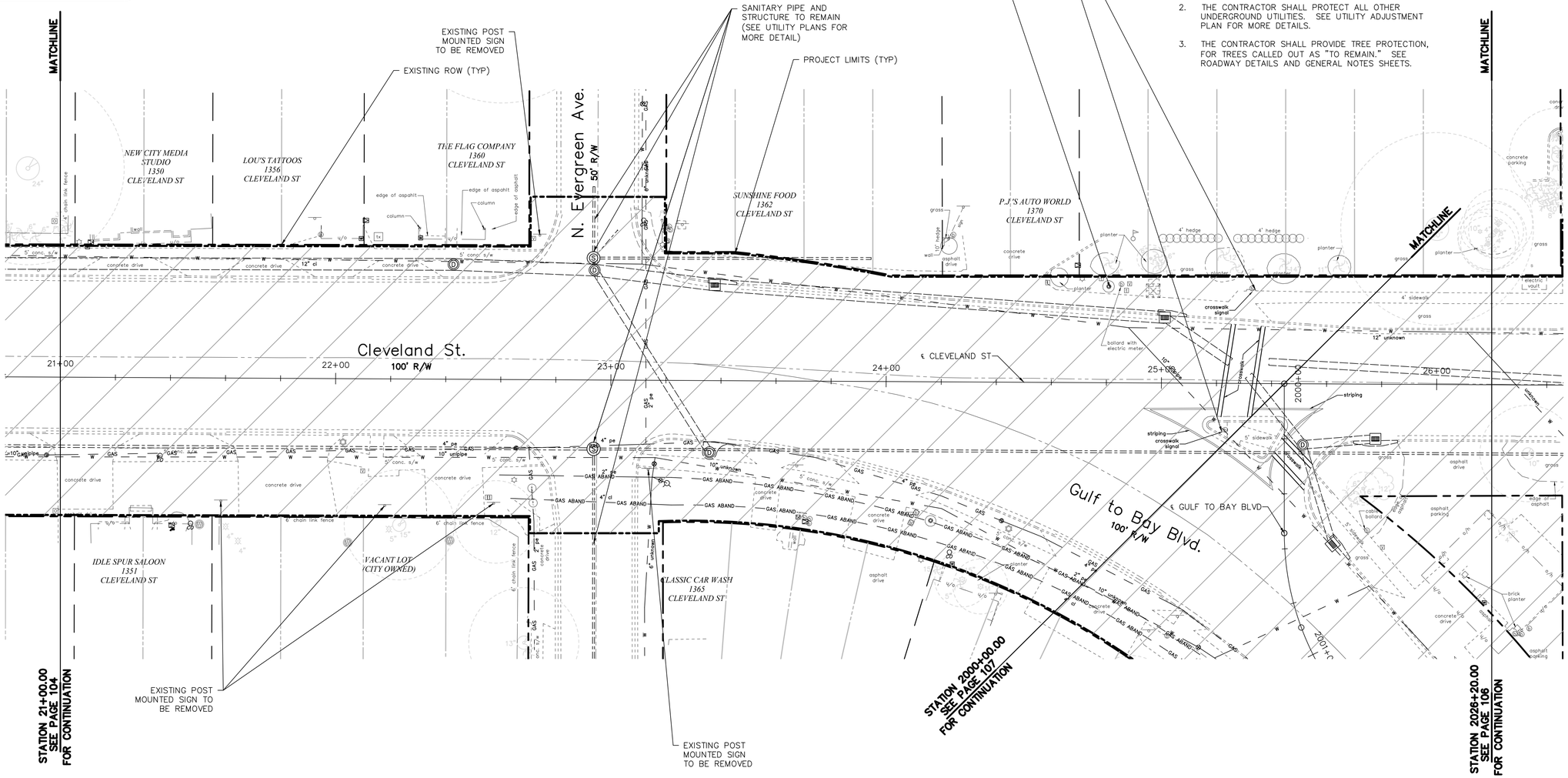

100% PLANS BID SET

REVISION	BY	DATE

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Certificate of Authorization 9951
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CLEVELAND STREET PHASE III AND FESTIVAL CORE DEMOLITION PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: RF	SHEET NO.: 105
APPROVED FOR CONSTRUCTION			DATE

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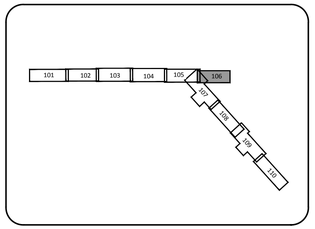
Key Map
(N.T.S.)



LEGEND

- LIMITS OF CLEARING AND GRUBBING
- EXISTING RIGHT OF WAY
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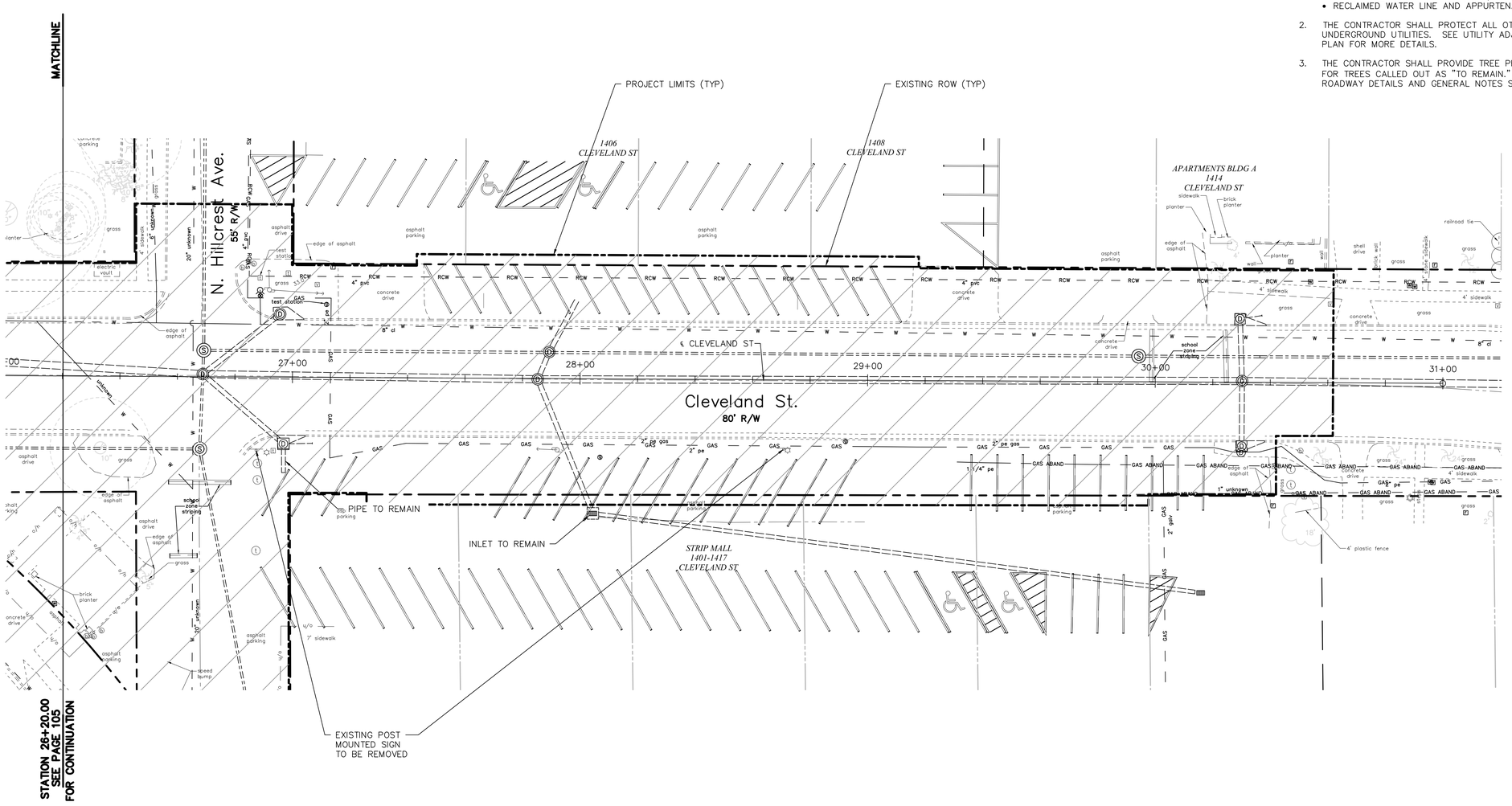
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)



100% PLANS
BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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ENGINEERING DEPARTMENT
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www.callsunshine.com
(800) 432-4770
MIN. 48 HOURS BEFORE YOU EXCAVATE

CLEVELAND STREET PHASE III AND FESTIVAL CORE DEMOLITION PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: RF	SHEET NO.: 106
APPROVED FOR CONSTRUCTION			DATE

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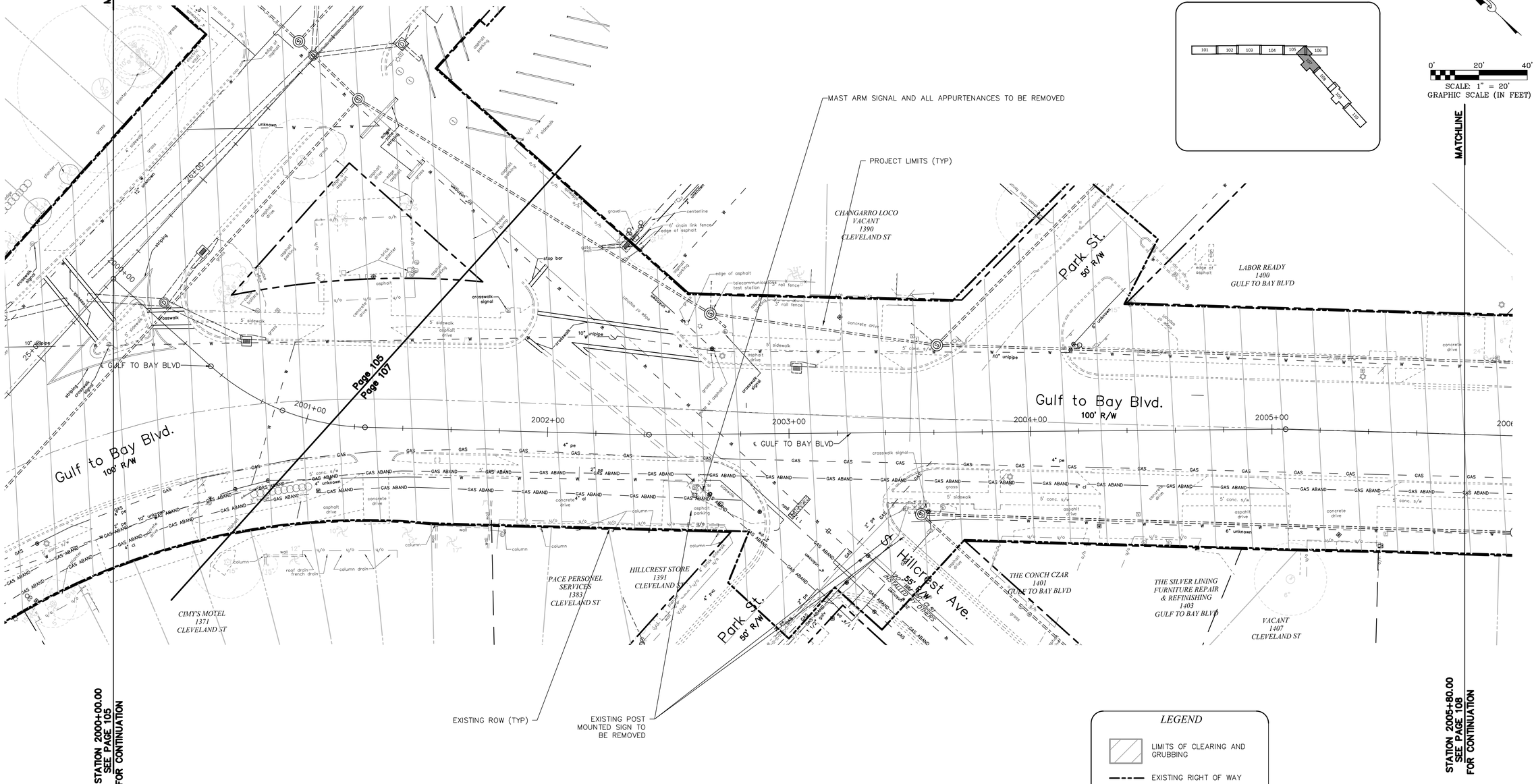

Key Map
(N.T.S.)

0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)

LEGEND

- LIMITS OF CLEARING AND GRUBBING
- EXISTING RIGHT OF WAY
- PROJECT LIMITS

NOTES:

1. WITHIN THE LIMITS OF CLEARING AND GRUBBING, UNLESS OTHERWISE NOTED ON THE PLANS, DEMOLISH THE FOLLOWING:
   - ALL EXISTING SURFACE FEATURES,
   - DRAINAGE STRUCTURES AND ASSOCIATED PIPES,
   - SANITARY SEWER LINE AND APPURTENANCES,
   - WATER LINE AND APPURTENANCES, AND
   - RECLAIMED WATER LINE AND APPURTENANCES
2. THE CONTRACTOR SHALL PROTECT ALL OTHER UNDERGROUND UTILITIES. SEE UTILITY ADJUSTMENT PLAN FOR MORE DETAILS.
3. THE CONTRACTOR SHALL PROVIDE TREE PROTECTION, FOR TREES CALLED OUT AS "TO REMAIN." SEE ROADWAY DETAILS AND GENERAL NOTES SHEETS.

100% PLANS
BID SET

REVISION	BY	DATE

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CLEVELAND STREET PHASE III AND FESTIVAL CORE DEMOLITION PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: RF	SHEET NO.: 107

APPROVED FOR CONSTRUCTION _____ DATE

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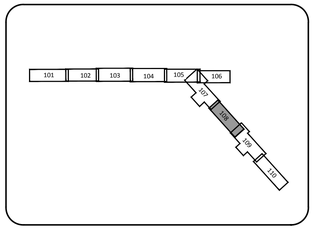
Key Map
(N.T.S.)



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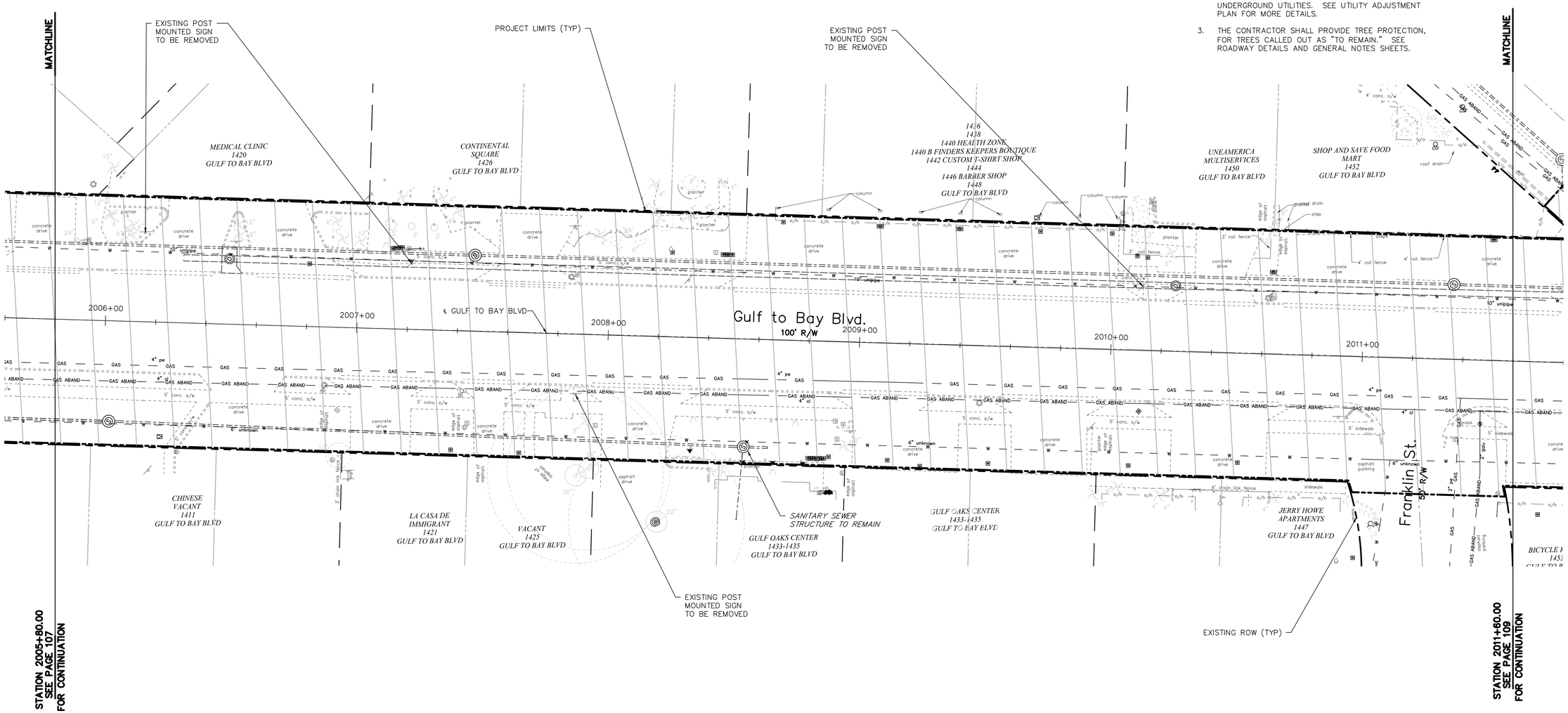
0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)



100% PLANS
BID SET

REVISION	BY	DATE

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CLEVELAND STREET PHASE III AND FESTIVAL CORE DEMOLITION PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: RF	SHEET NO.: 108

APPROVED FOR CONSTRUCTION _____ DATE

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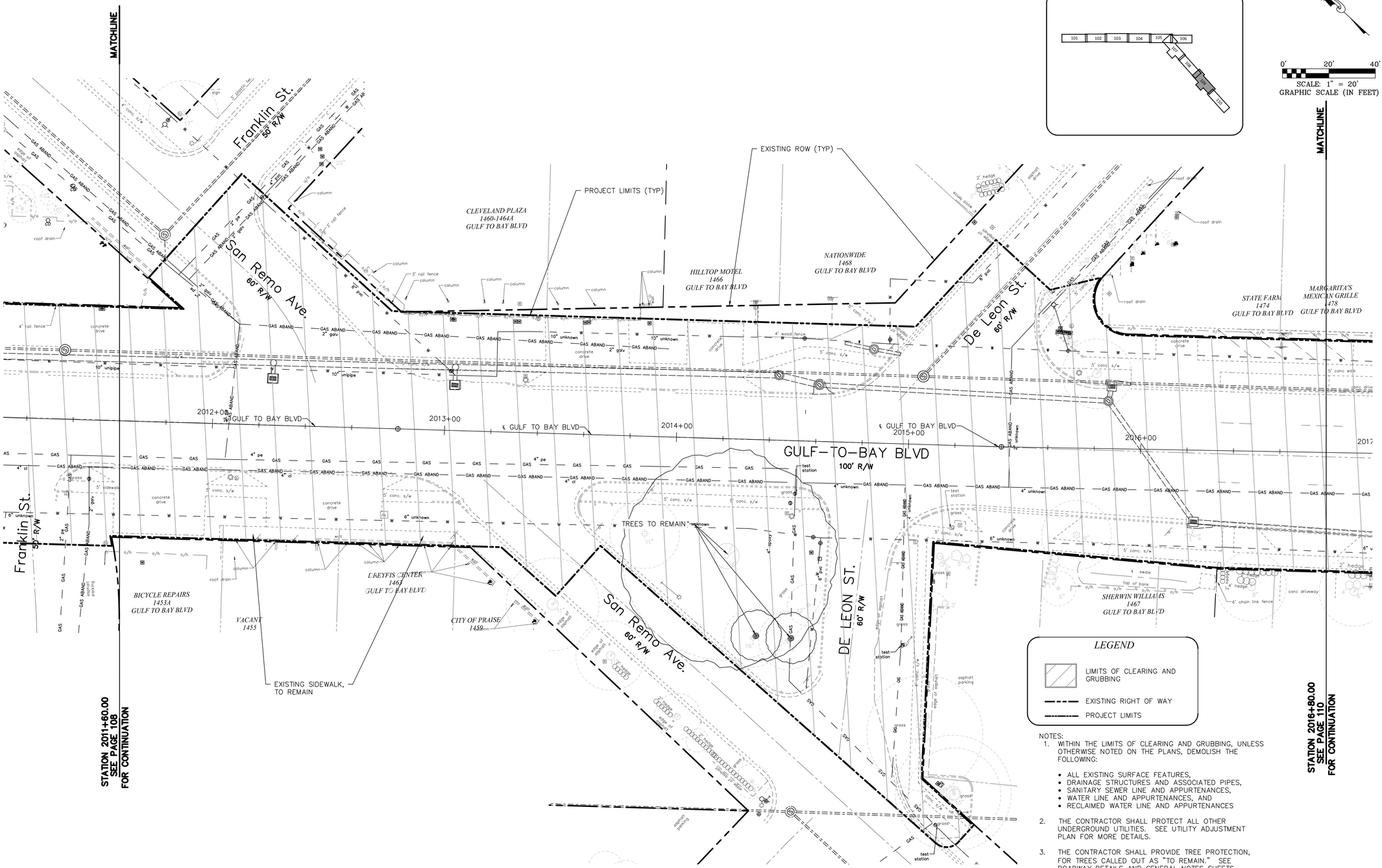

0' 20' 40'
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GRAPHIC SCALE (IN FEET)

LEGEND

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DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
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JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: RF	SHEET NO.: 109

APPROVED FOR CONSTRUCTION _____ DATE

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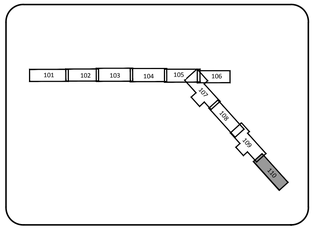
Key Map
(N.T.S.)



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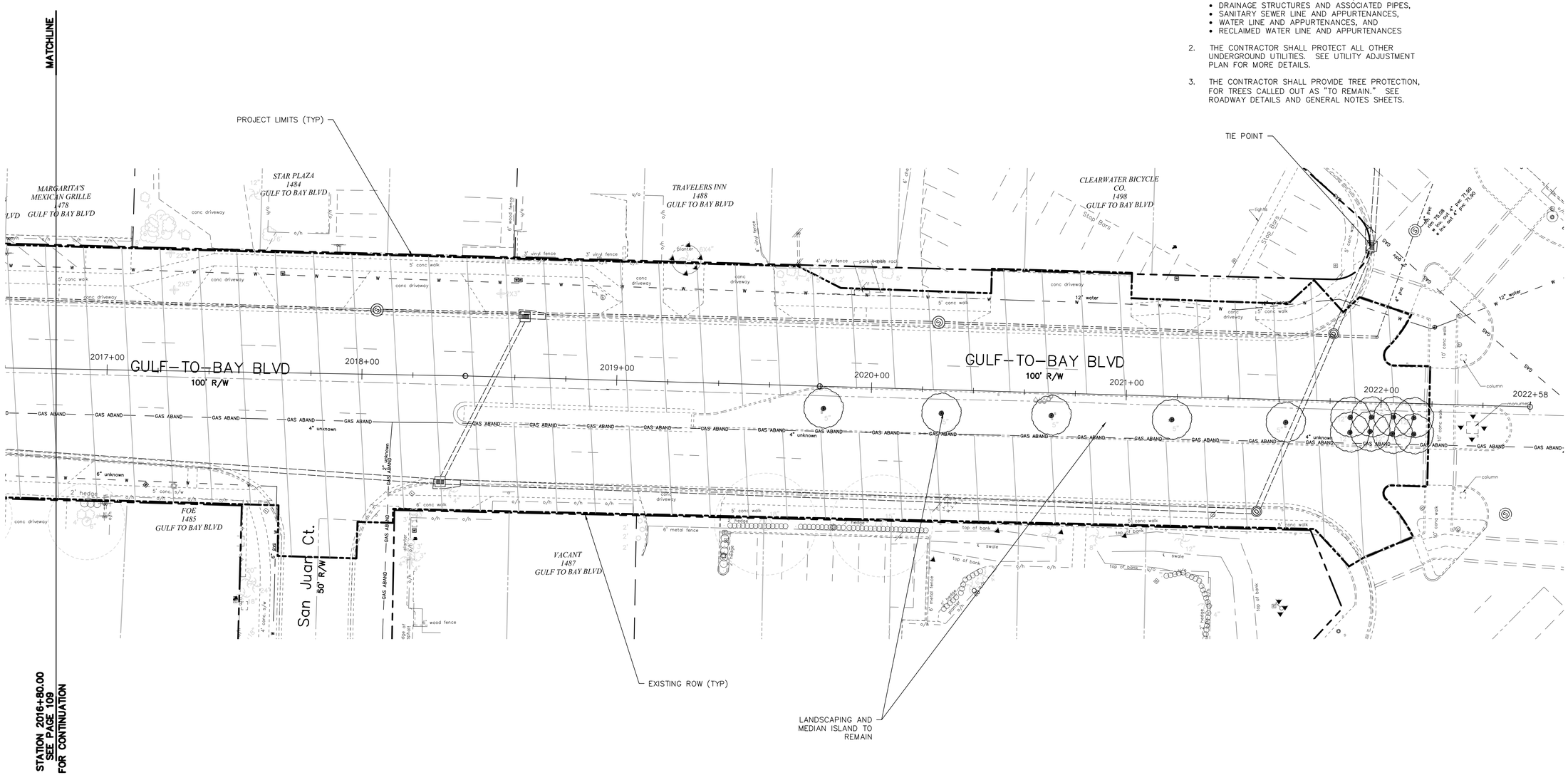
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)



100% PLANS
BID SET

REVISION	BY	DATE

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CLEVELAND STREET PHASE III AND FESTIVAL CORE DEMOLITION PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: RF	SHEET NO.: 110

APPROVED FOR CONSTRUCTION _____ DATE

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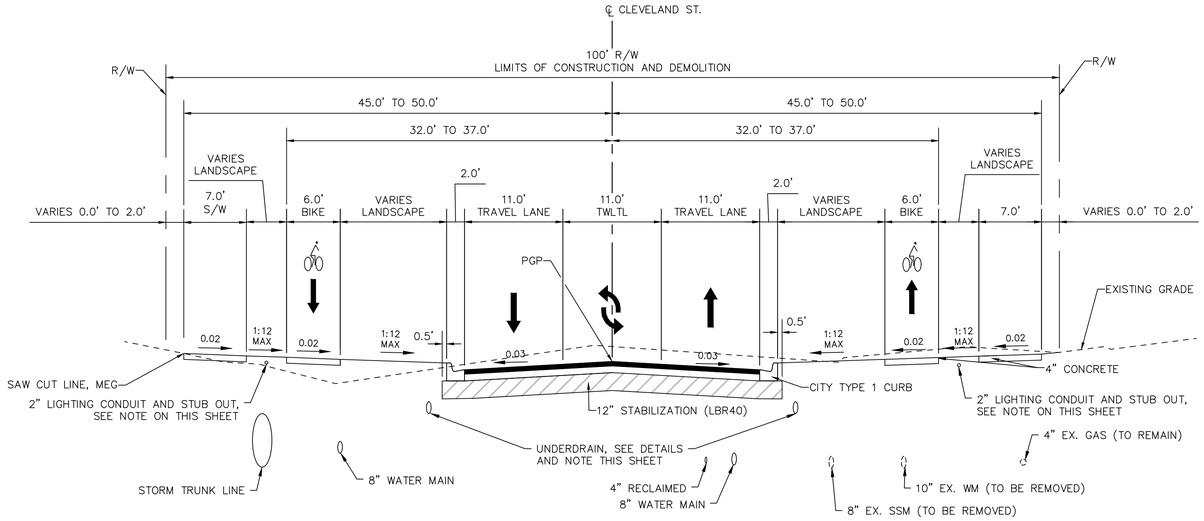
NOTES:

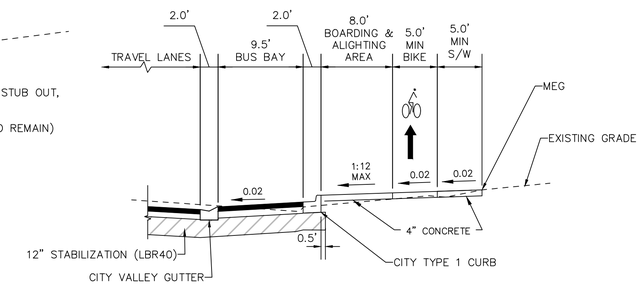
1. BOTH ON STREET BUS BAY AND PARALLEL PARKING CONFIGURATIONS ARE TYPICAL OF BOTH WESTBOUND OR EASTBOUND (SEE ROADWAY PLAN AND PROFILE SHEETS FOR LOCATIONS).
2. FOR THE PAVING TREATMENT OF THE CONCRETE BIKE LANE, SIDEWALKS, LANDINGS, AND ASPHALT CENTER TURN LANE, SEE LANDSCAPE PLANS.
3. THE CONTRACTOR SHALL INSTALL UNDERDRAIN AND UNDERDRAIN CLEANOUT LOCATION PER DETAIL, BUT FIELD ADJUST TO AVOID UTILITY CONFLICTS.
4. THE CONTRACTOR SHALL PROVIDE LIGHTING CONDUIT PER DUKE ENERGY'S DETAILS, WITH A STUB-UP AT THE LOCATION OF EACH PROPOSED LIGHT, SEE GENERAL NOTES, DUKE'S LIGHTING PLAN AND UTILITY ADJUSTMENT PLANS FOR MORE INFORMATION.



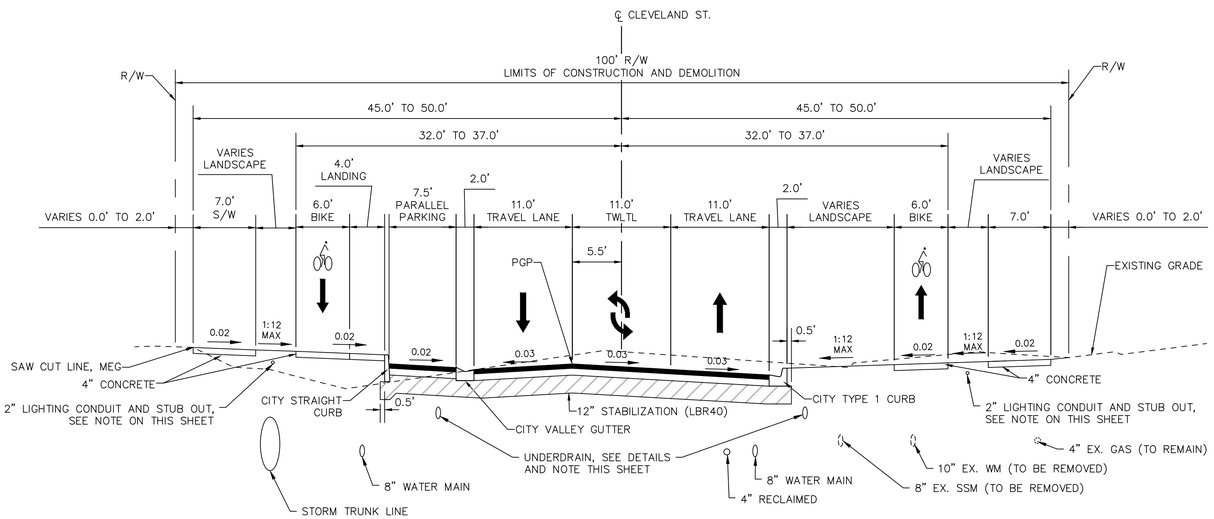
CLEVELAND STREET
STA. 0+23.89 TO STA. 3+13.79
NTS

NEW ROADWAY CONSTRUCTION

RECYCLED CONCRETE AGGREGATE (LBR 150) (8")
TYPE SP 12.5 STRUCTURAL COURSE (TLB) (2")



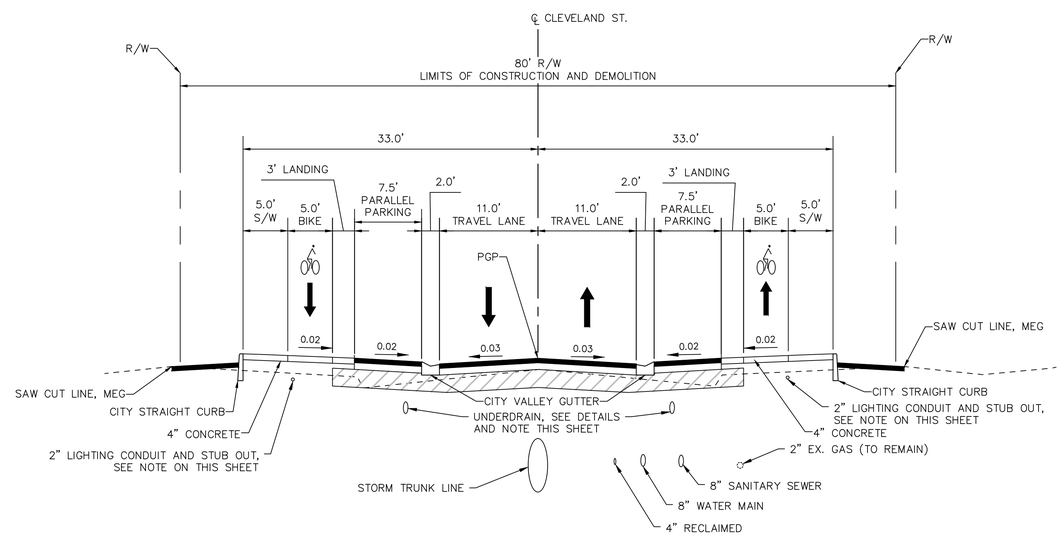
ON STREET BUS BAY
(TYPICAL OF BOTH SIDES)
NTS



CLEVELAND STREET
STA. 3+13.79 TO STA. 22+57.03
NTS

NEW ROADWAY CONSTRUCTION

RECYCLED CONCRETE AGGREGATE (LBR 150) (8")
TYPE SP 12.5 STRUCTURAL COURSE (TLB) (2")



CLEVELAND STREET
STA. 22+57.03 TO STA. 30+62.09
NTS

NEW ROADWAY CONSTRUCTION

RECYCLED CONCRETE AGGREGATE (LBR 150) (8")
TYPE SP 12.5 STRUCTURAL COURSE (TLB) (2")

Posted Speed = 25 mph
Design Speed = 30 mph

100% PLANS
BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
TYPICAL SECTION

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: RF	SHEET NO.: 201

APPROVED FOR CONSTRUCTION _____ DATE

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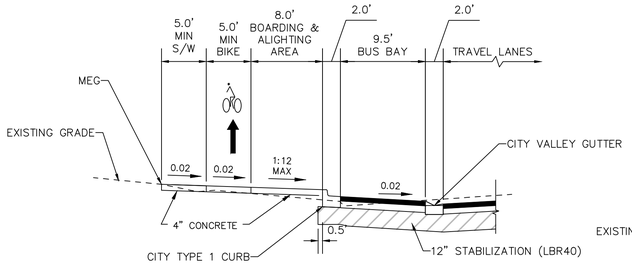
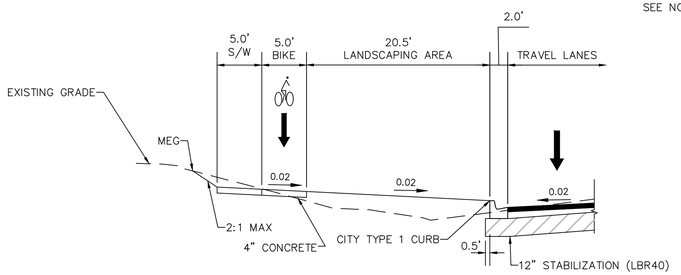
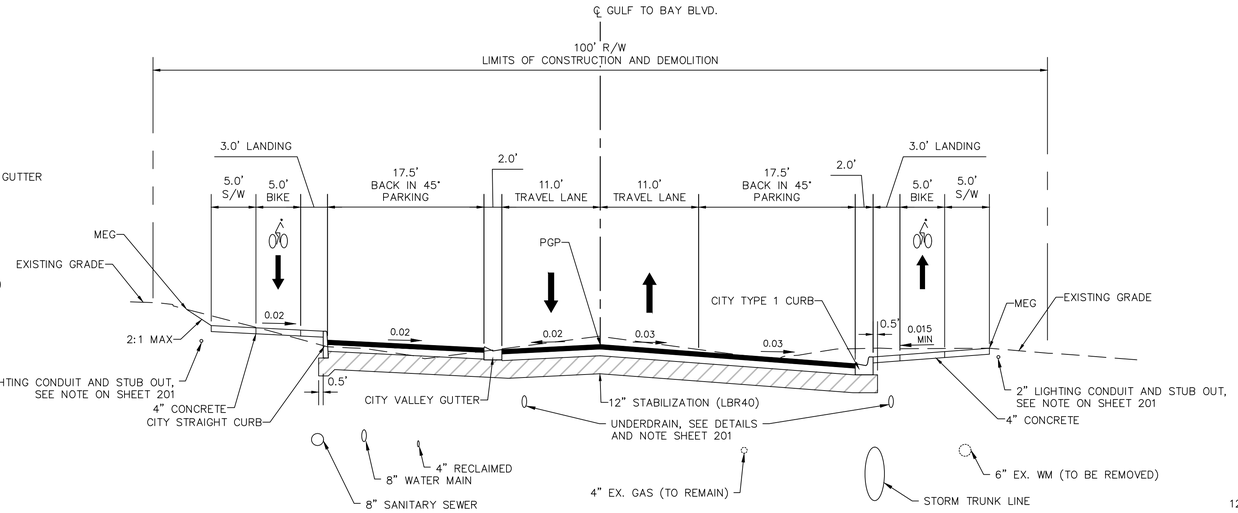


ON STREET BUS BAY
(TYPICAL NORTHBOUND)
NTS



NORTHBOUND LANDSCAPE AREAS
NTS



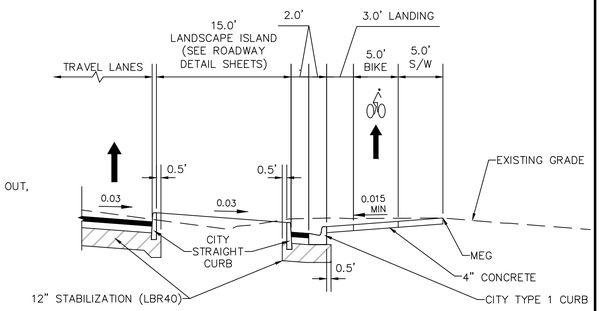
GULF TO BAY BLVD.
STA. 2000+00 TO STA. 2016+80.00
NTS

NEW ROADWAY CONSTRUCTION

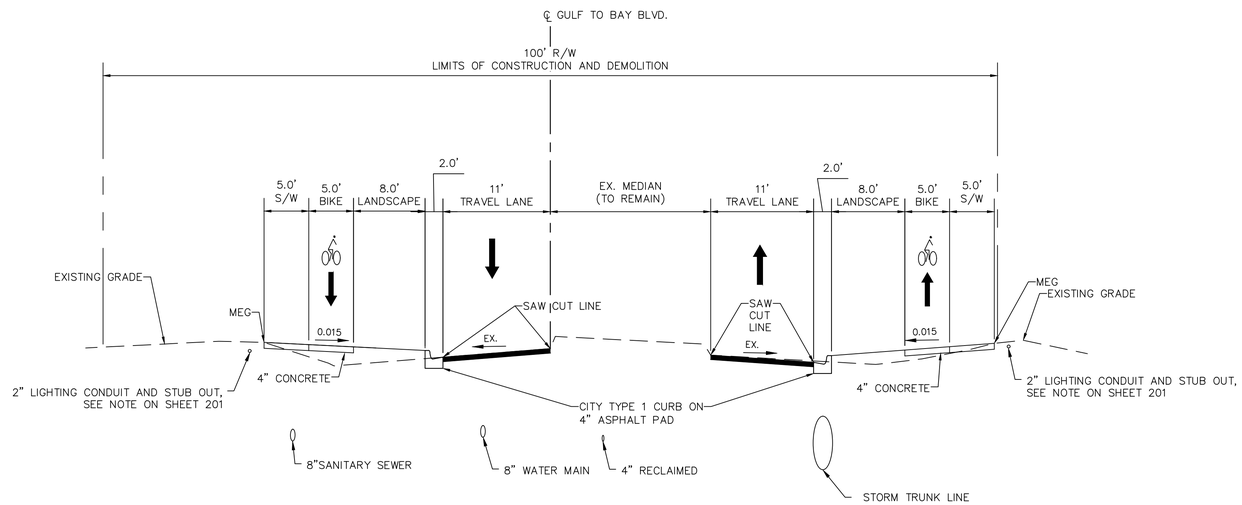
RECYCLED CONCRETE AGGREGATE (LBR 150) (8")
TYPE SP 12.5 STRUCTURAL COURSE (TLB) (2")

NOTES:

1. FOR THE PAVING TREATMENT OF THE CONCRETE BIKE LANE, SIDEWALKS, AND LANDINGS, SEE CSG SITE PLANS.



SOUTHBOUND LANDSCAPE AREAS
NTS



GULF TO BAY BLVD.
STA. 2016+80.00 TO 2022+60.00
NTS

MILL & RESURFACING

MILL
FOR DEPTH (2")

RESURFACE
TYPE SP 12.5 STRUCTURAL COURSE (TLB) (2")

Posted Speed = 25 mph
Design Speed = 30 mph

100% PLANS
BID SET

REVISION	BY	DATE

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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
TYPICAL SECTION

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: RF	SHEET NO.: 202

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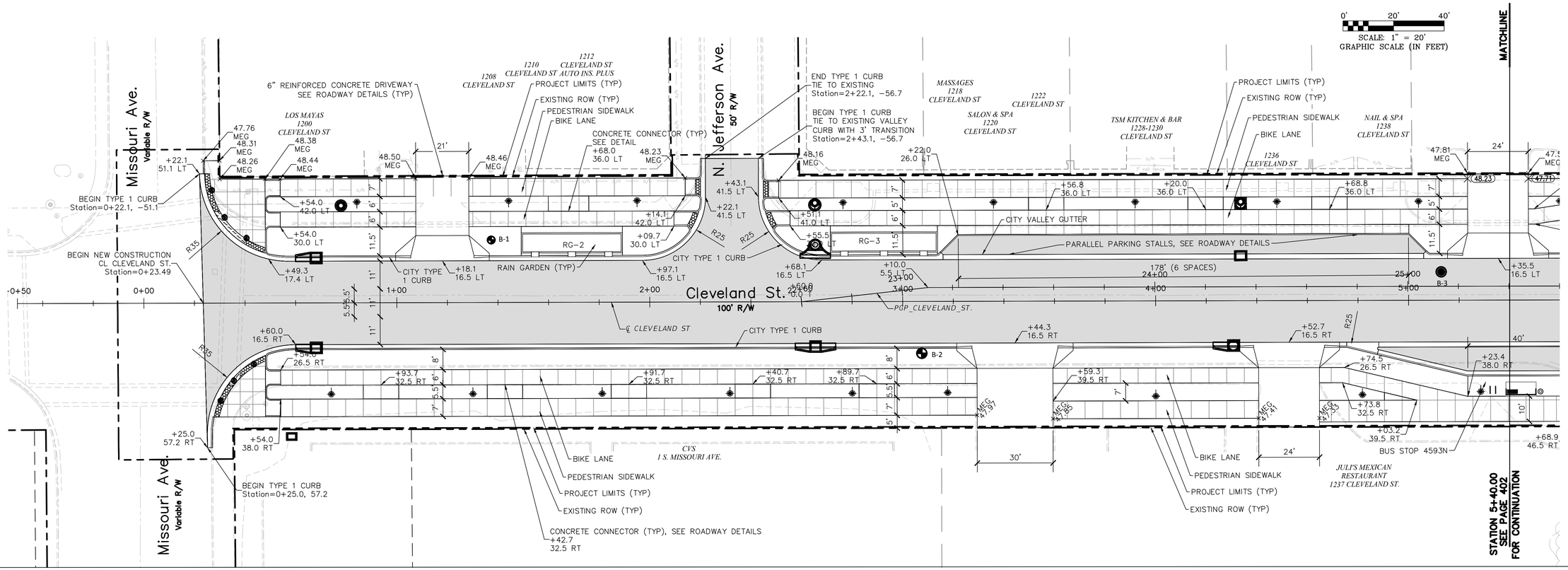

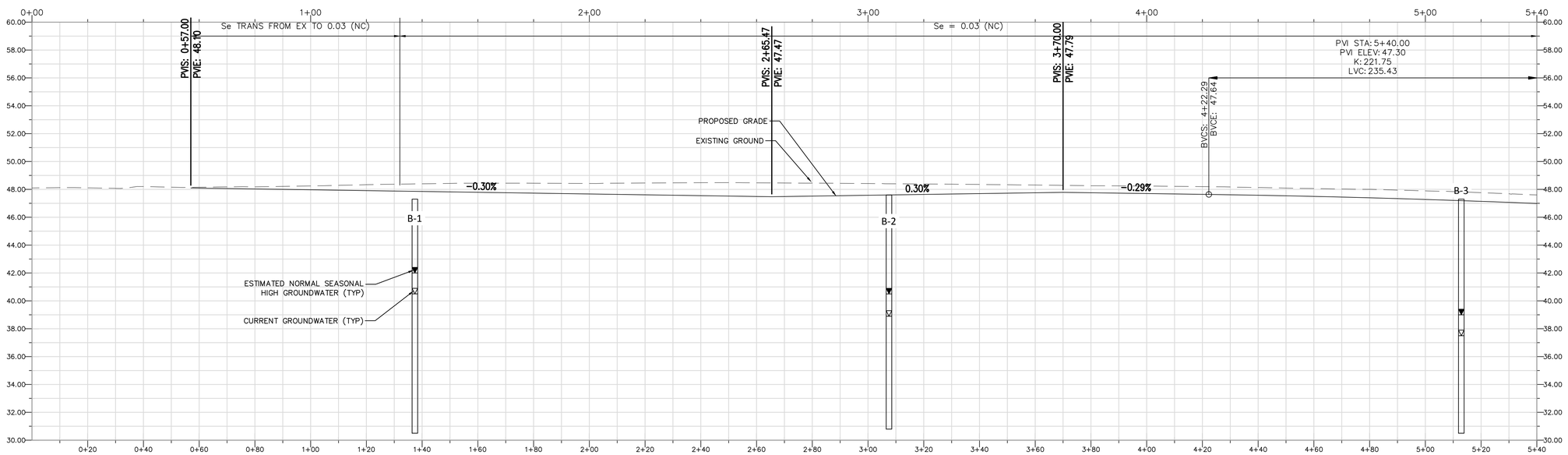

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CLEVELAND STREET PHASE III AND FESTIVAL CORE ROADWAY PLAN AND PROFILE

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JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 301
APPROVED FOR CONSTRUCTION			DATE

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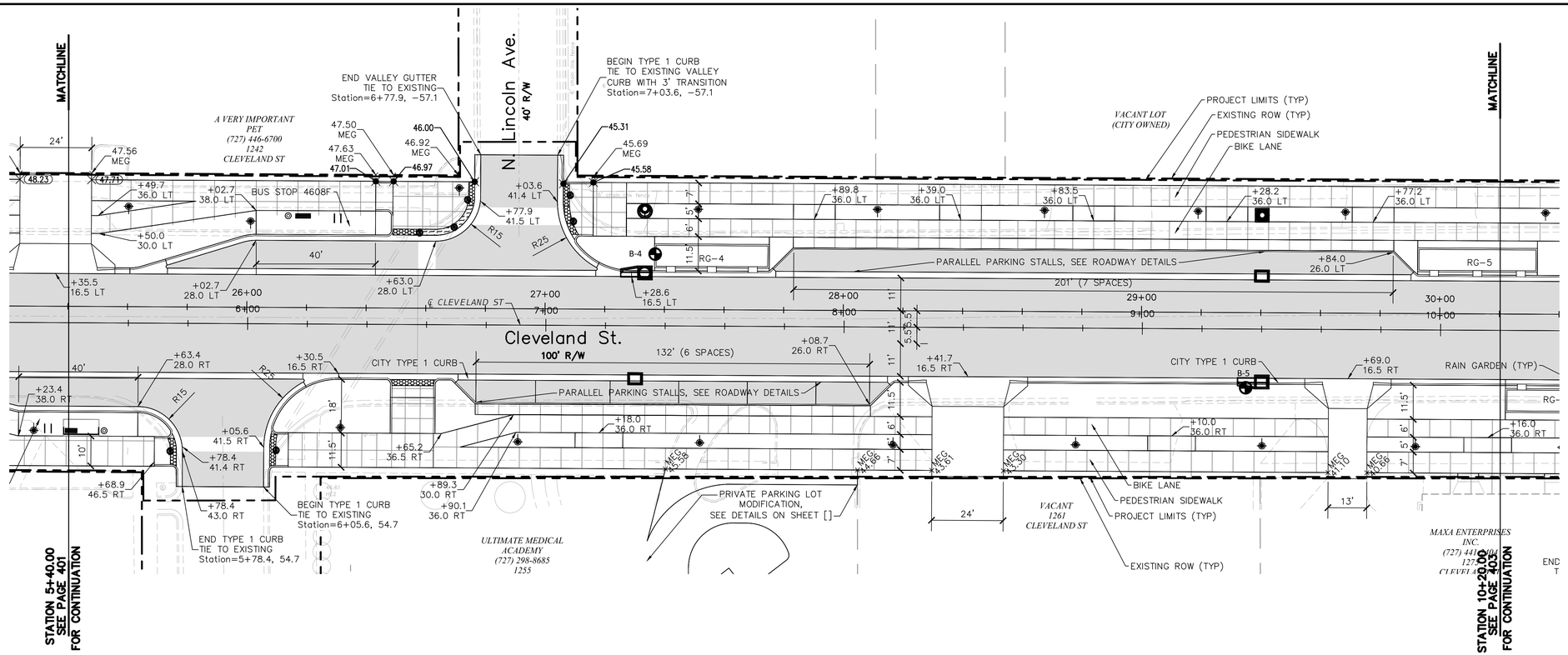

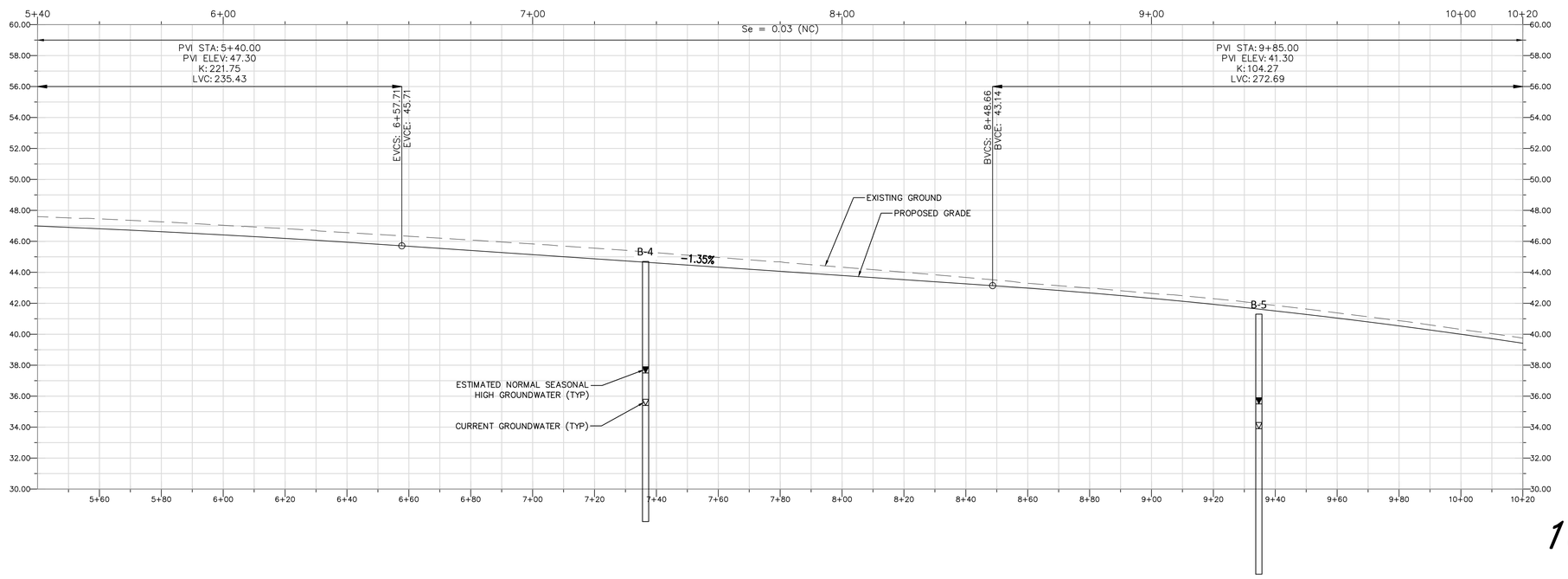

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CLEVELAND STREET PHASE III AND FESTIVAL CORE ROADWAY PLAN AND PROFILE

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JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 302
APPROVED FOR CONSTRUCTION			DATE

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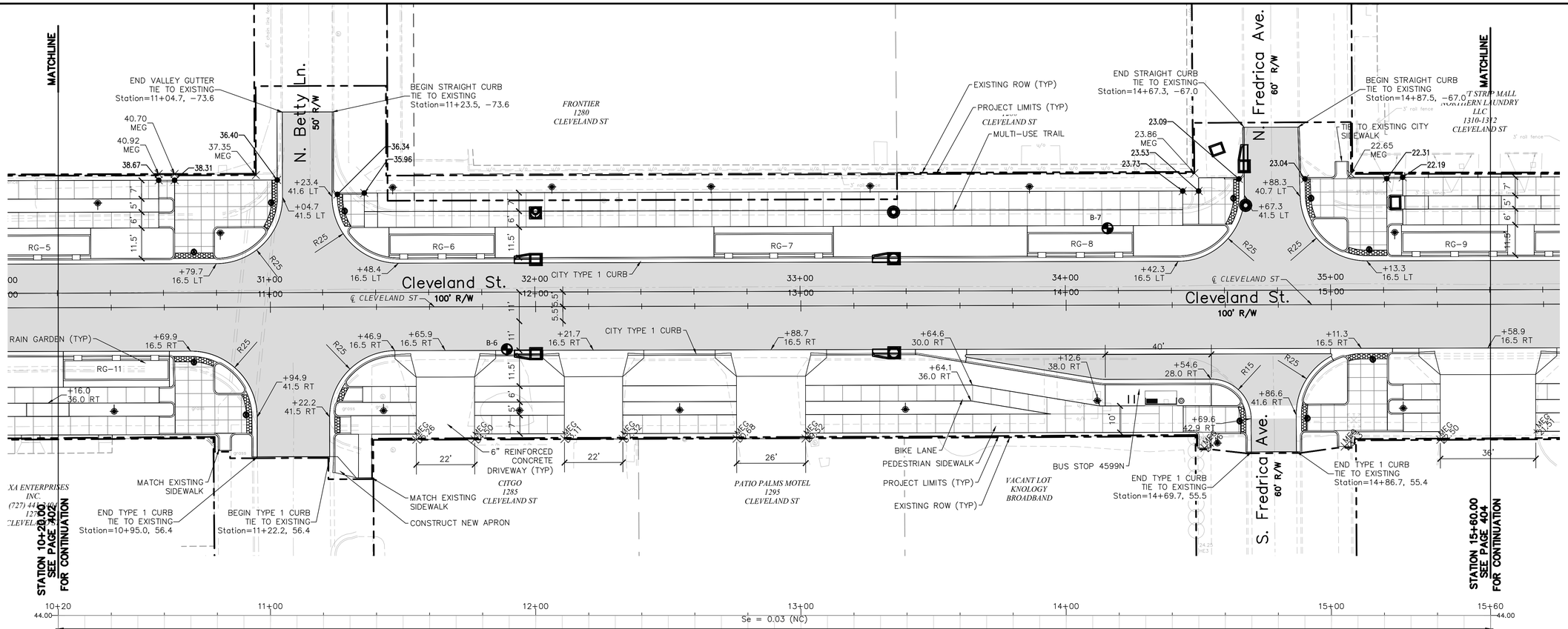

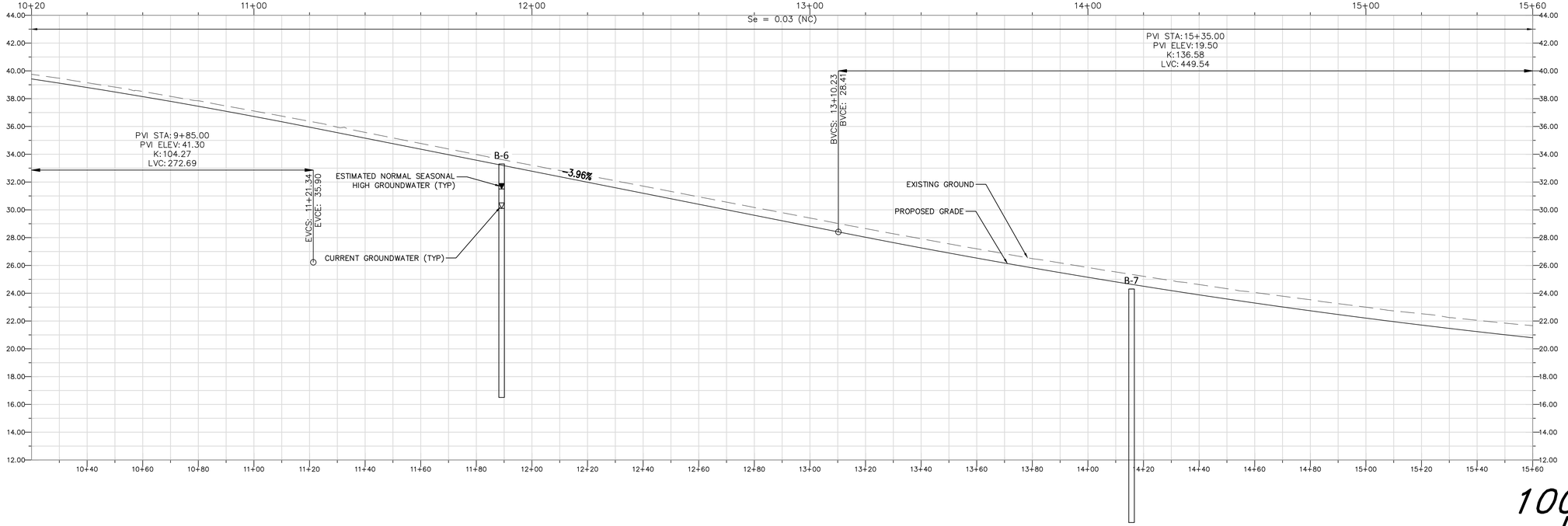

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Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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CLEVELAND STREET PHASE III AND FESTIVAL CORE ROADWAY PLAN AND PROFILE

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 303

APPROVED FOR CONSTRUCTION _____ DATE

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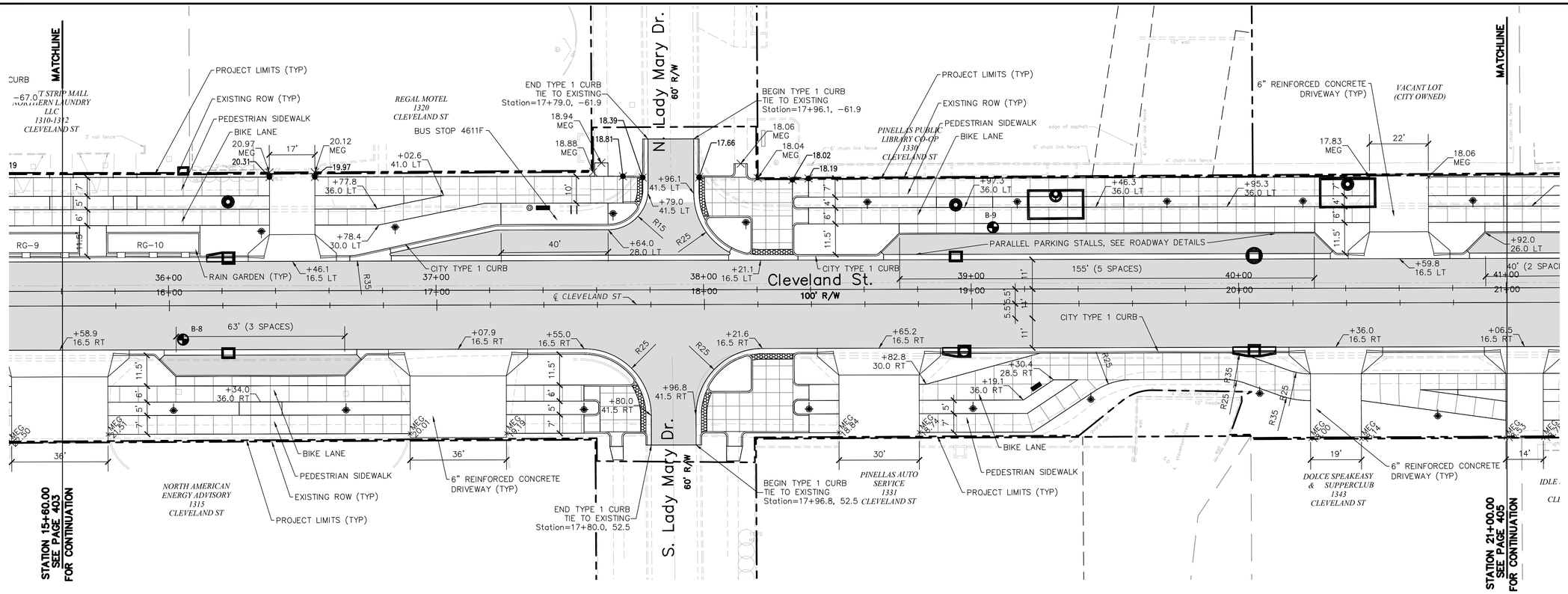

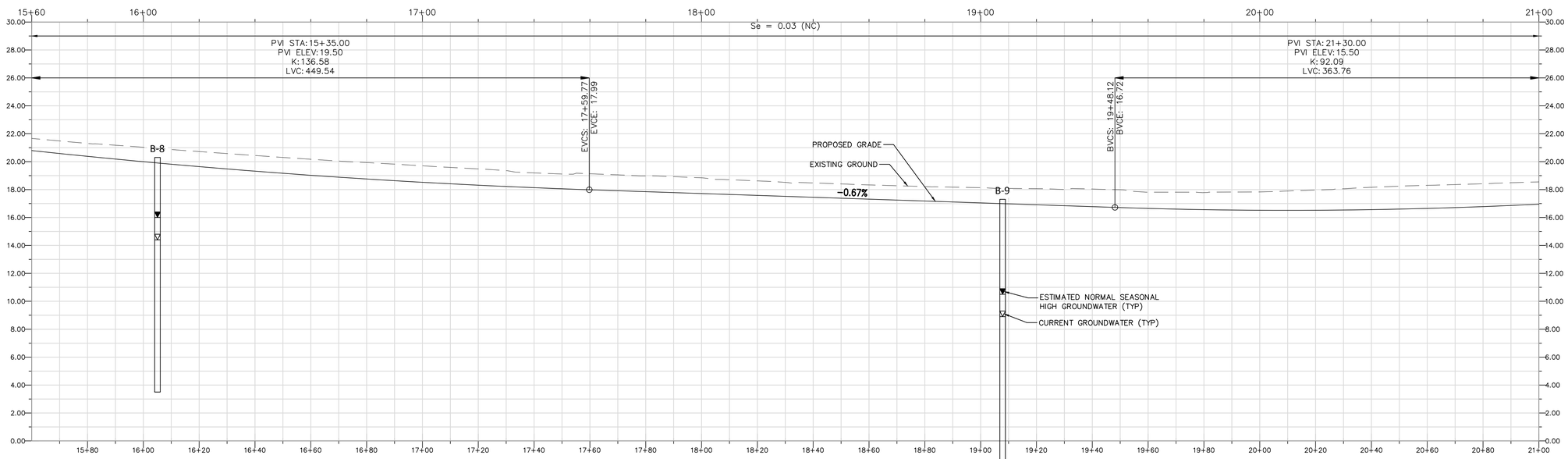

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CLEVELAND STREET PHASE III AND FESTIVAL CORE ROADWAY PLAN AND PROFILE

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 304
APPROVED FOR CONSTRUCTION			DATE

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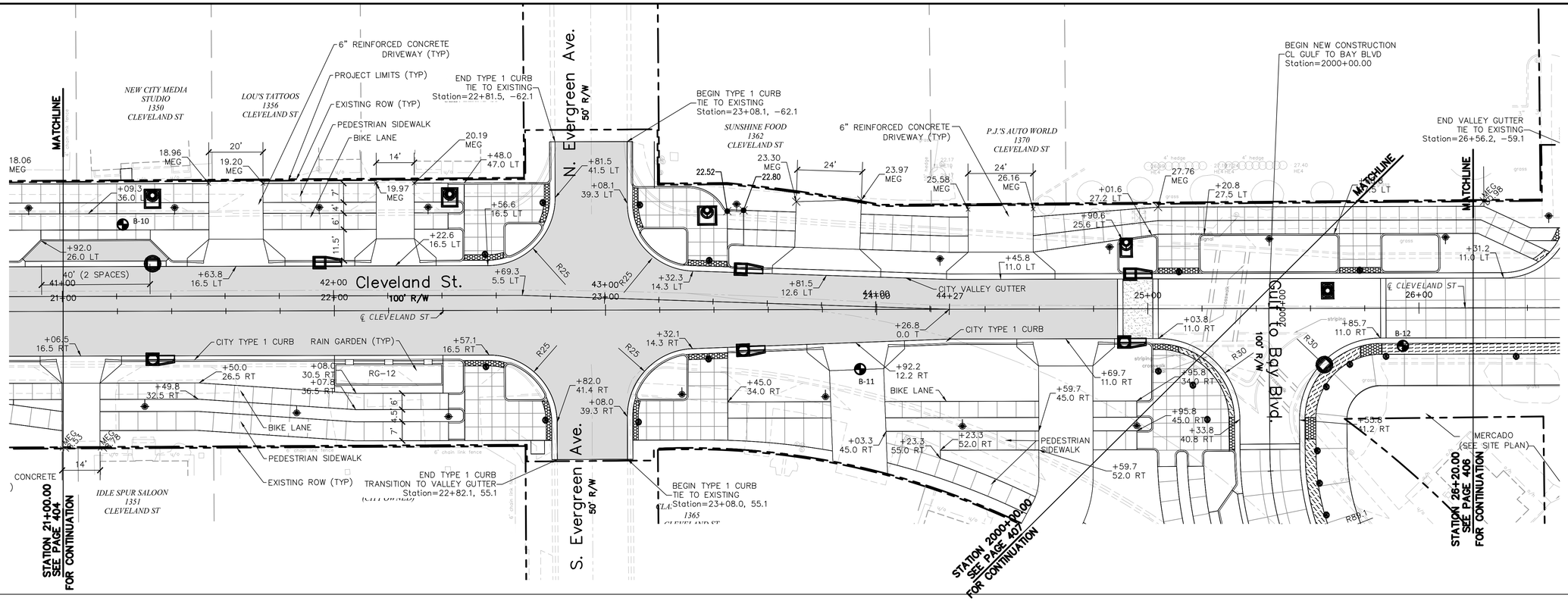

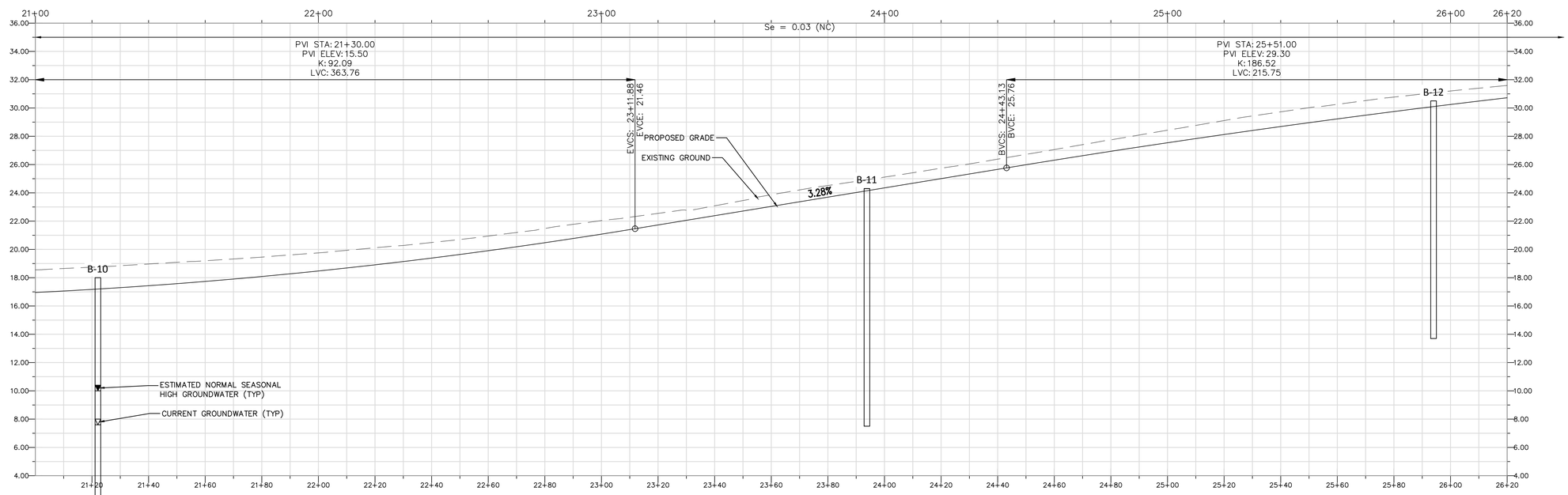

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CLEVELAND STREET PHASE III AND FESTIVAL CORE ROADWAY PLAN AND PROFILE

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 305

APPROVED FOR CONSTRUCTION _____ DATE

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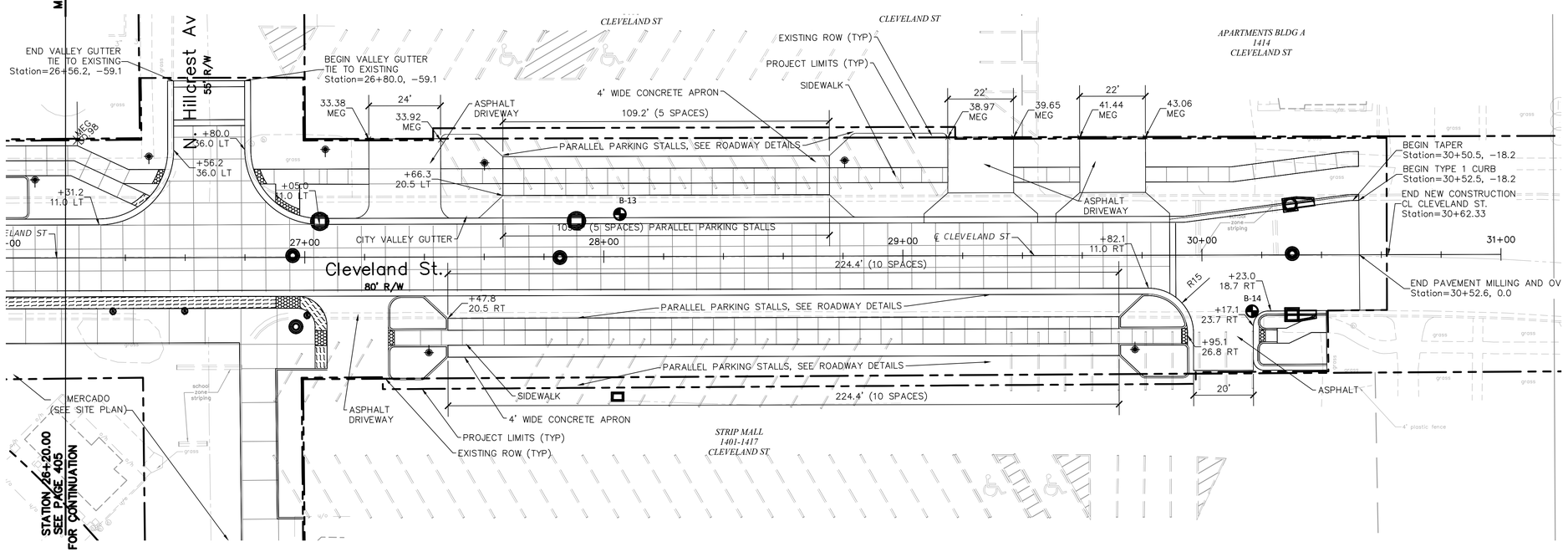

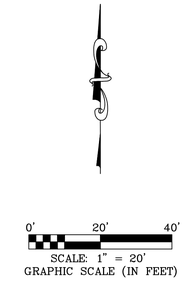

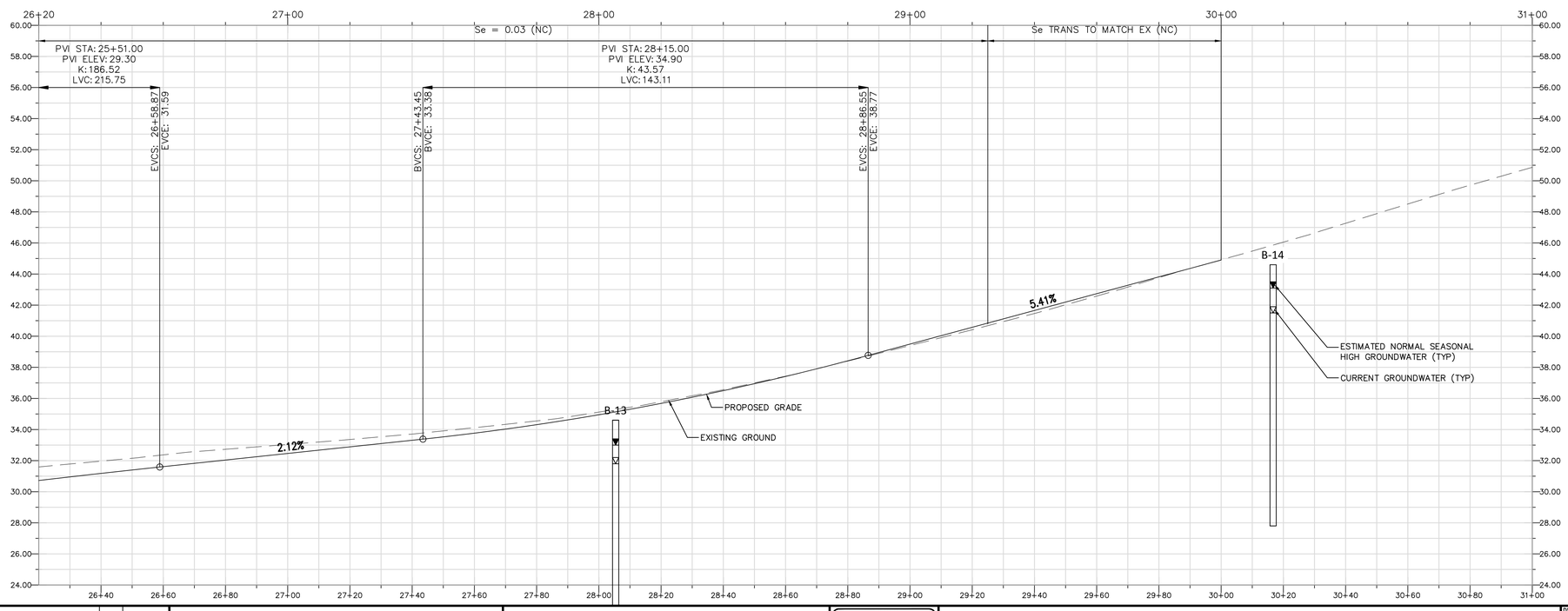

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CLEVELAND STREET PHASE III AND FESTIVAL CORE ROADWAY PLAN AND PROFILE

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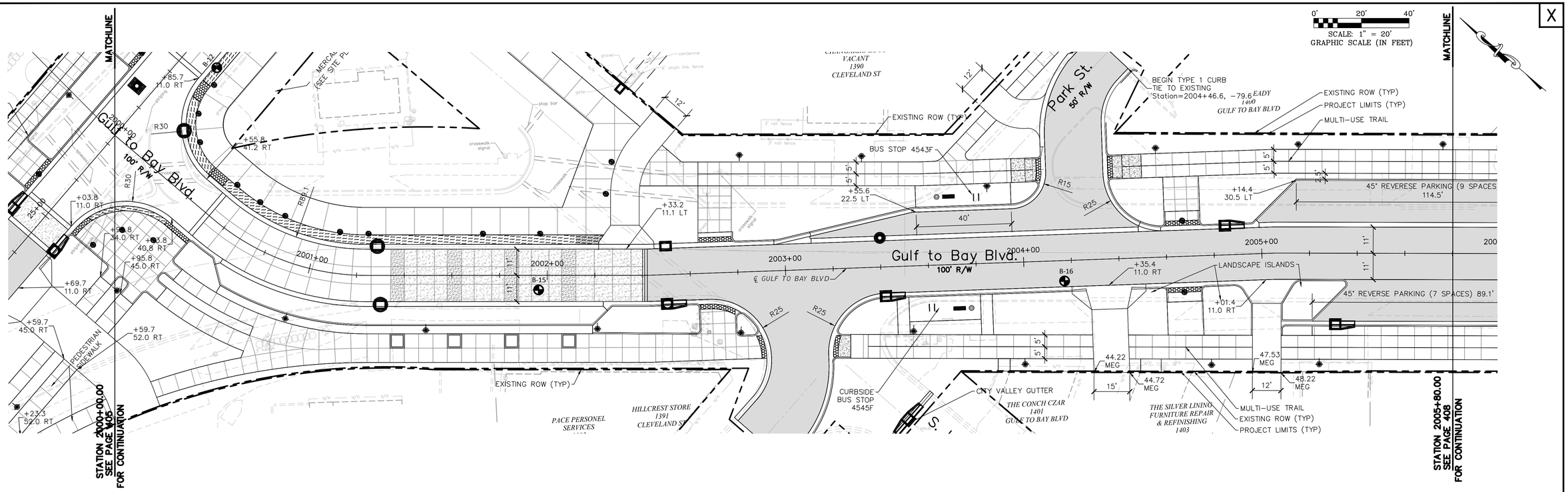

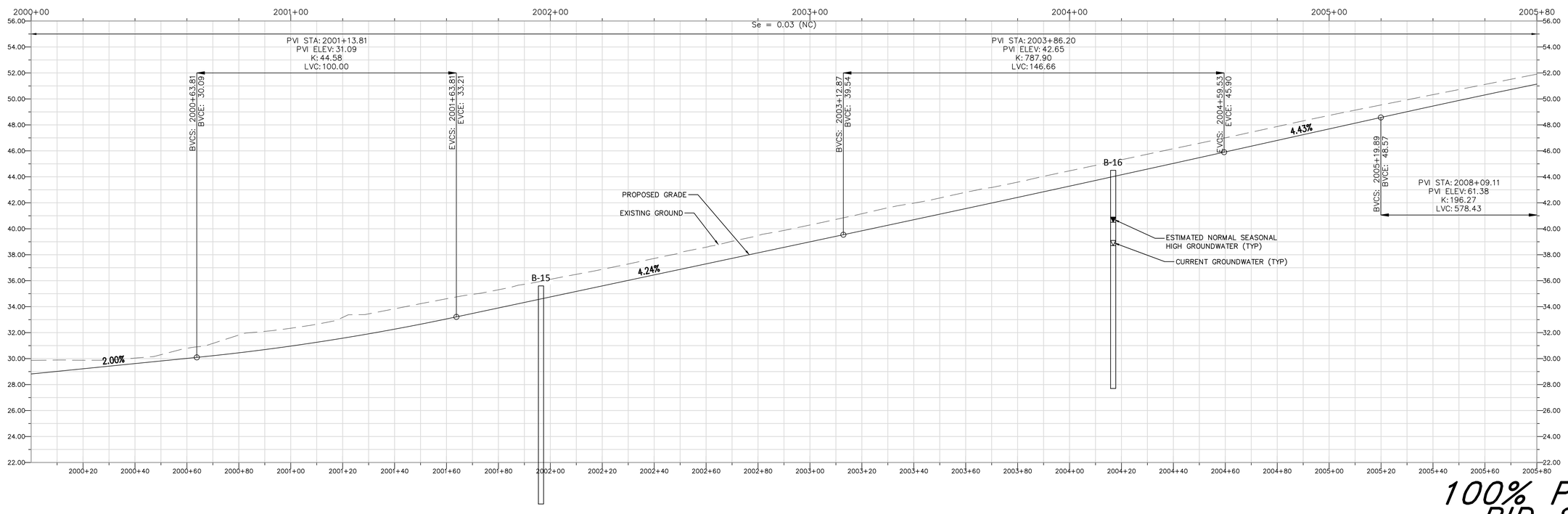

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DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
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JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 307

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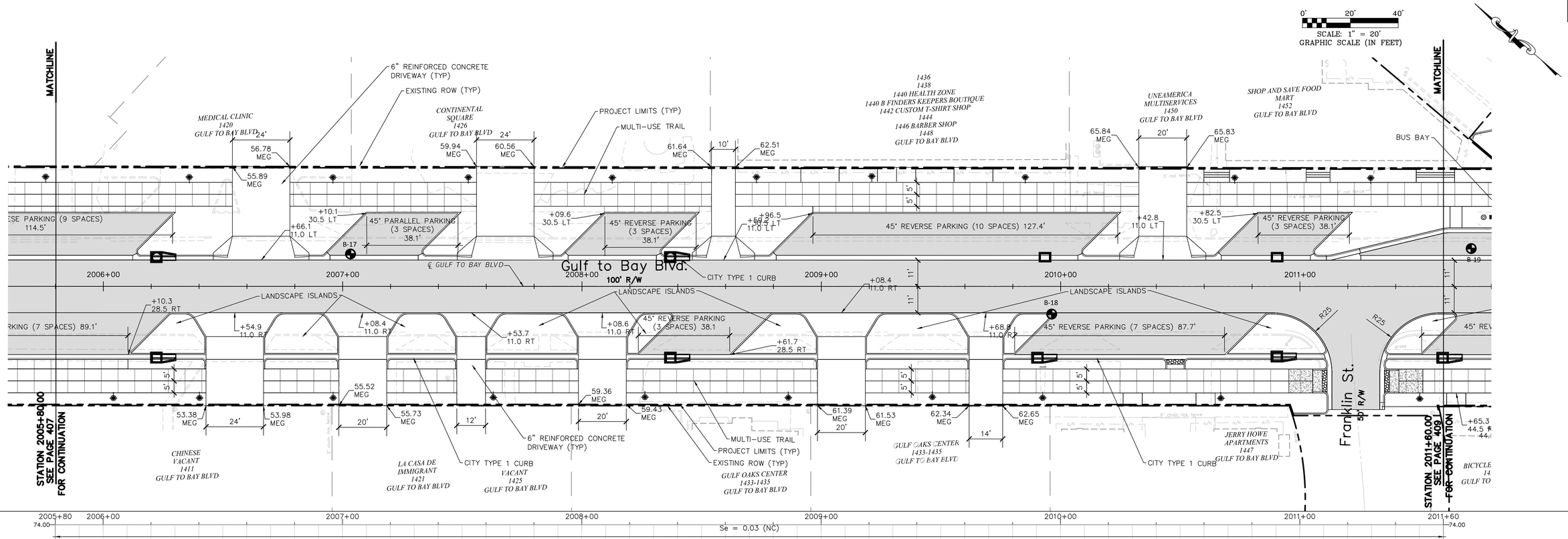

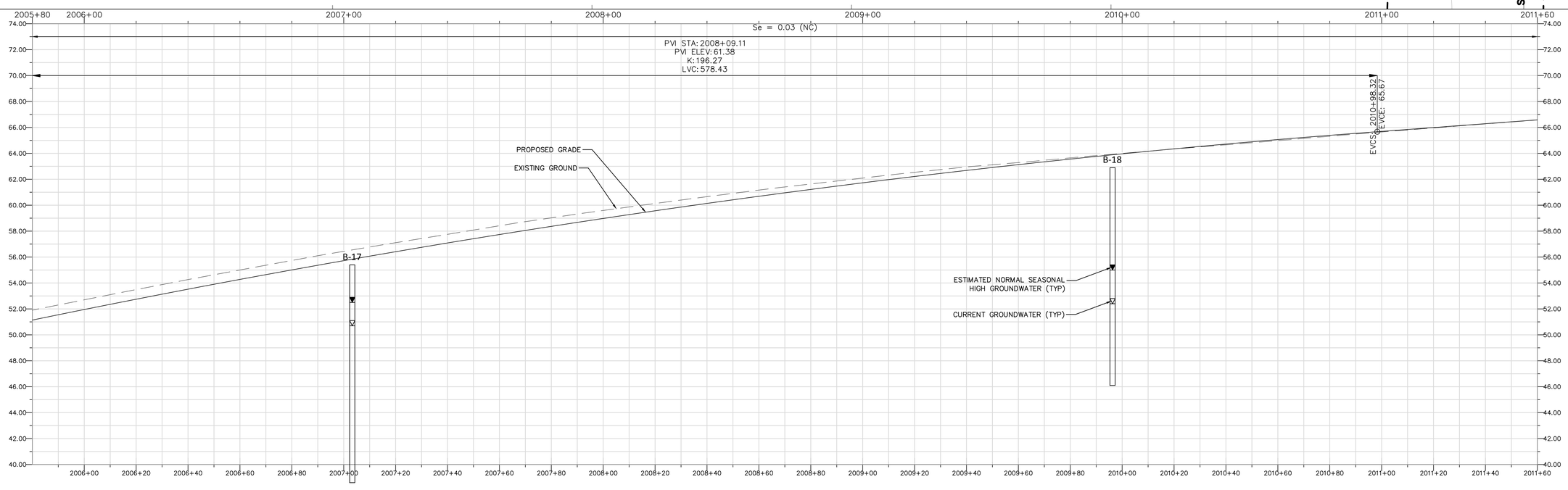

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DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
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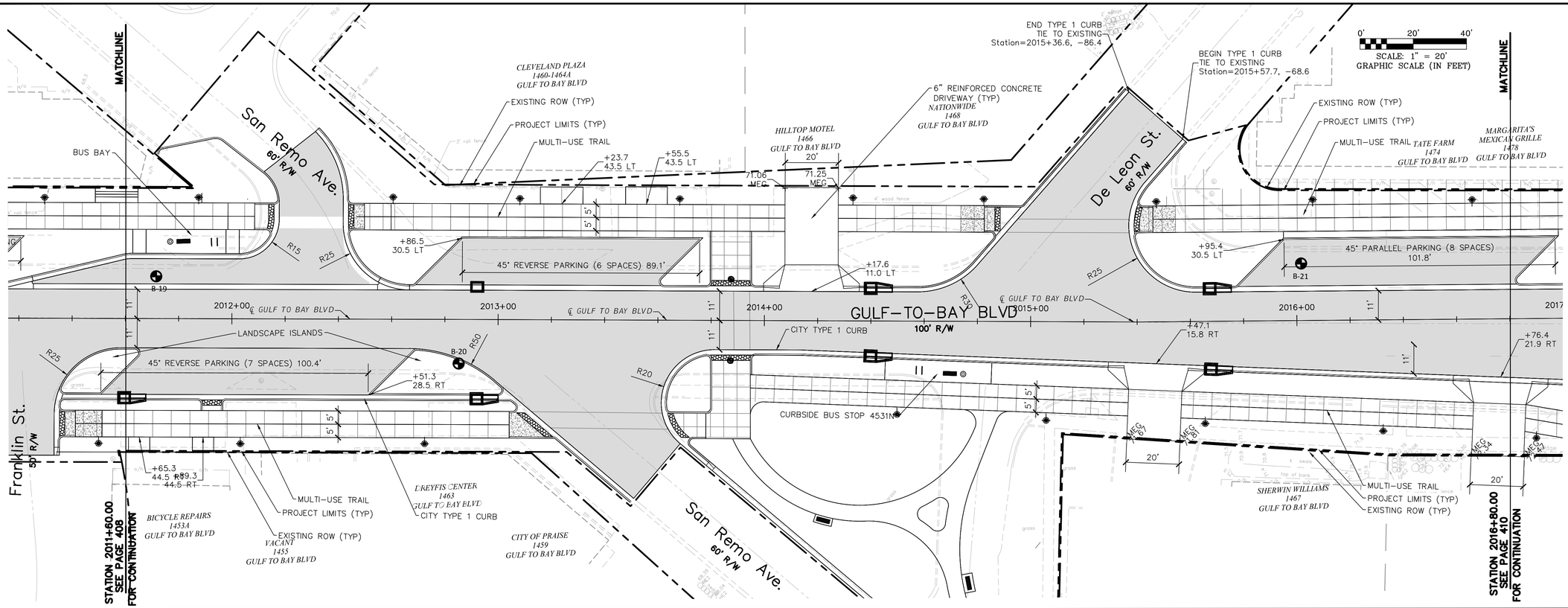

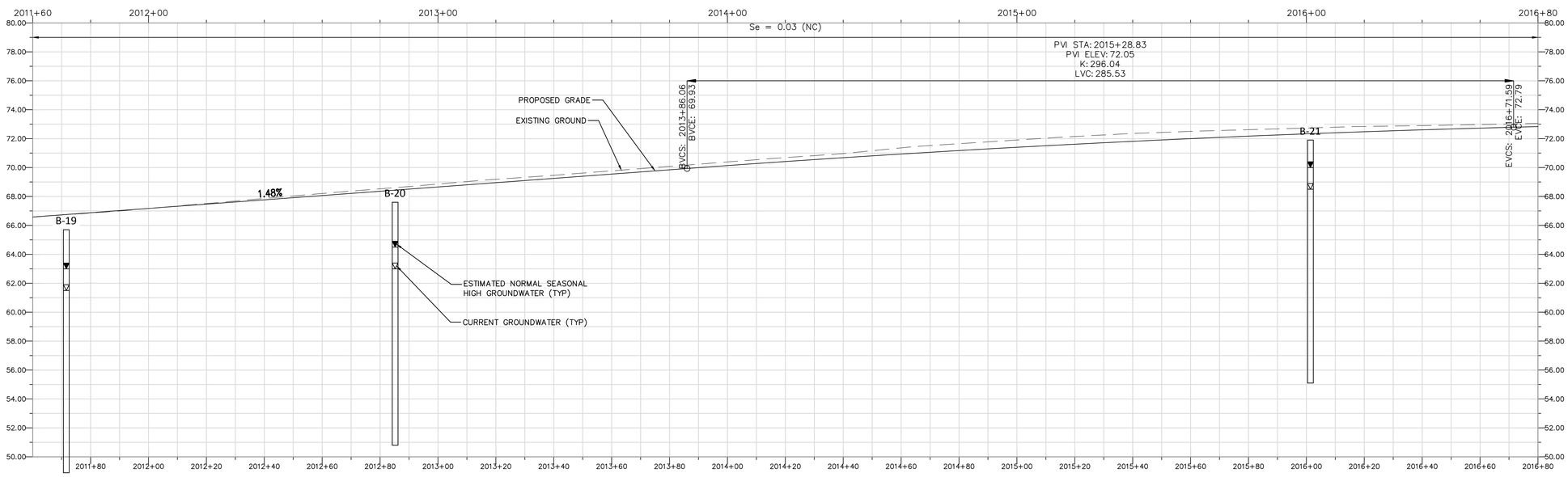

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DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
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JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 309
APPROVED FOR CONSTRUCTION			DATE

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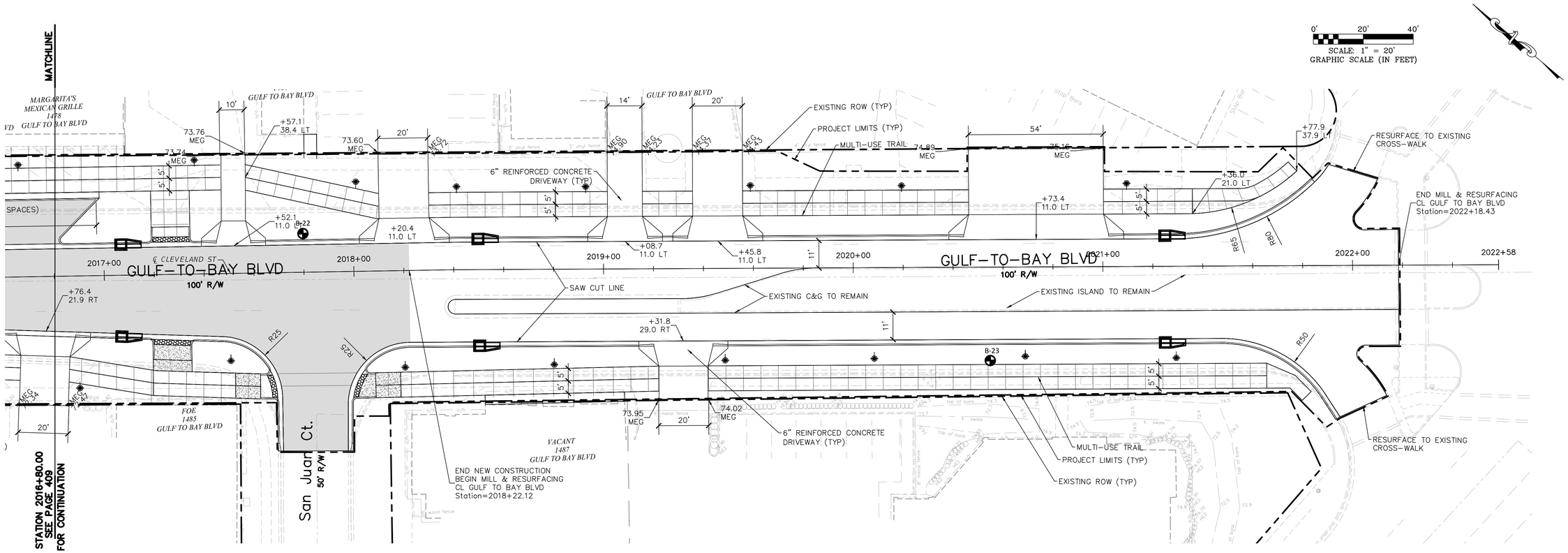

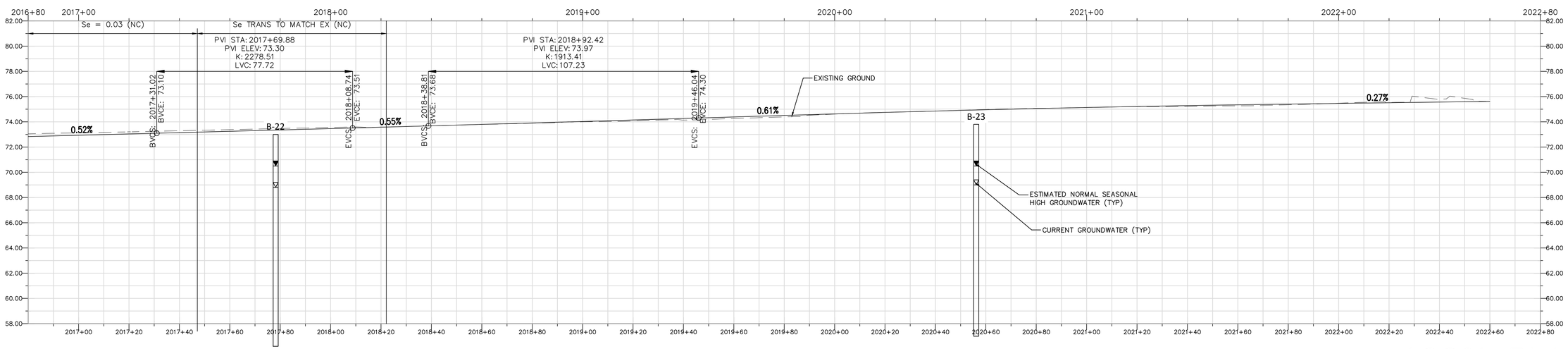

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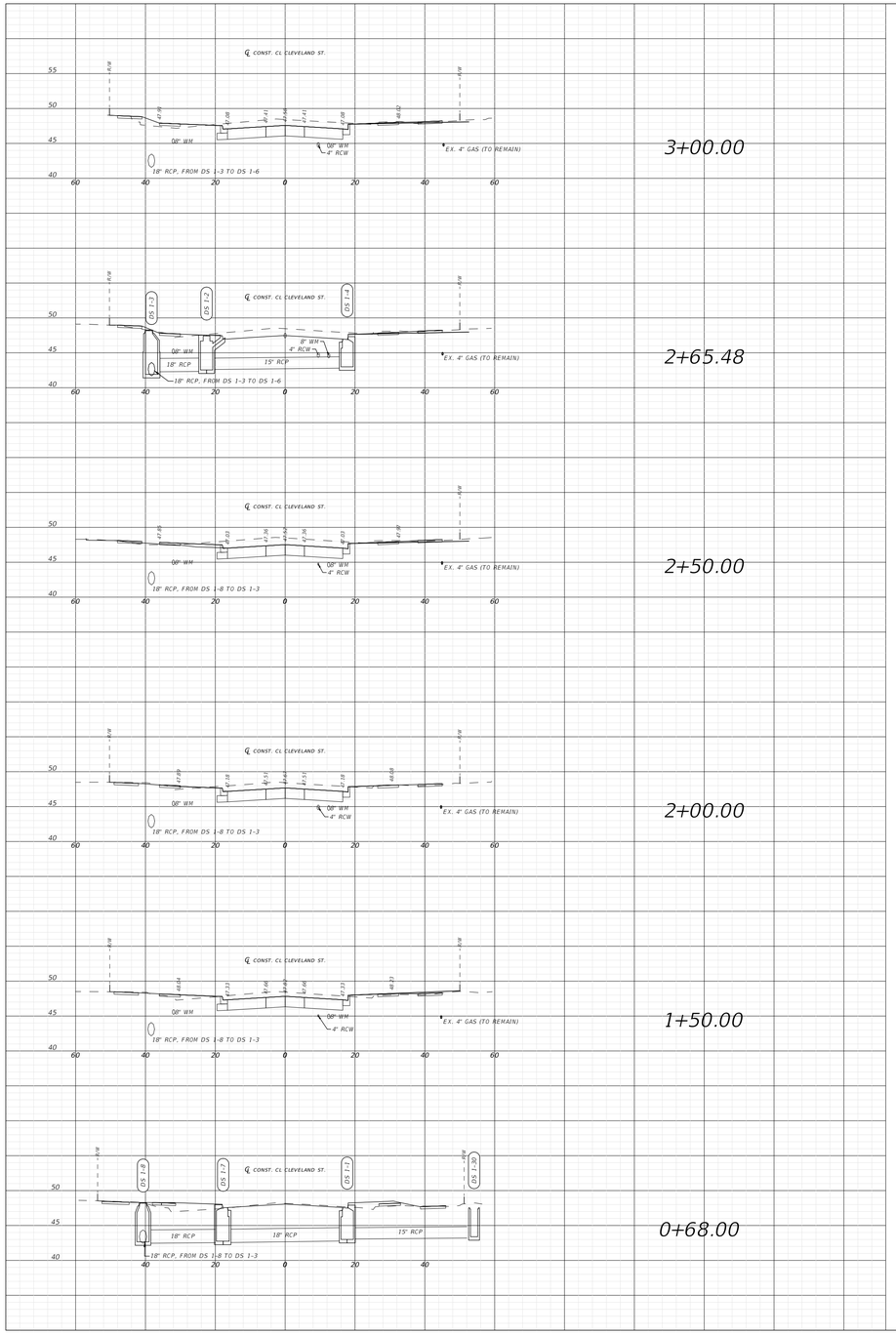

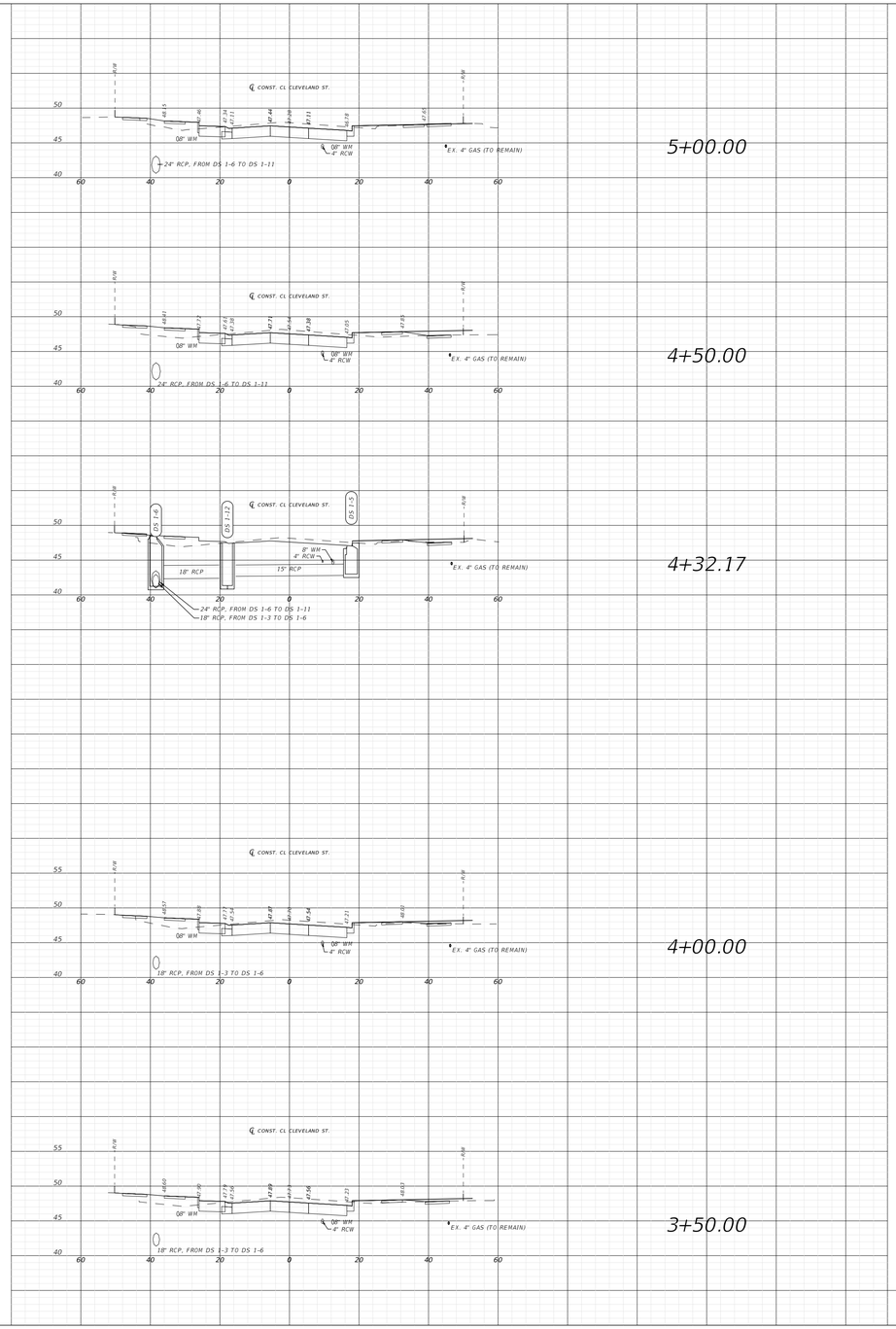

1" = 20' Horizontal
1" = 10' Vertical

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CLEVELAND STREET PHASE III AND FESTIVAL CORE CROSS SECTIONS – CLEVELAND ST.

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 311

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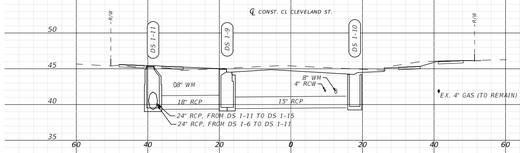

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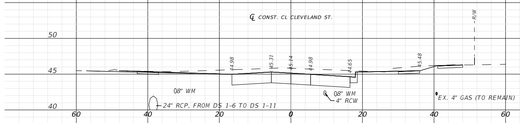

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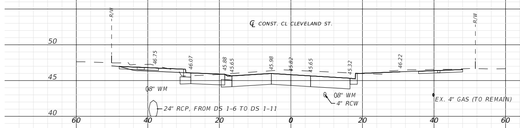

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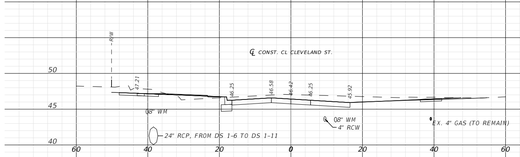

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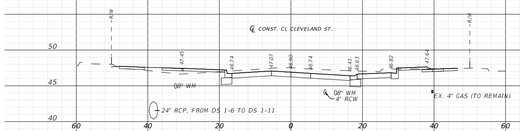

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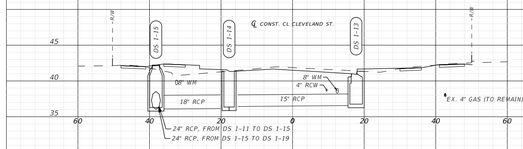

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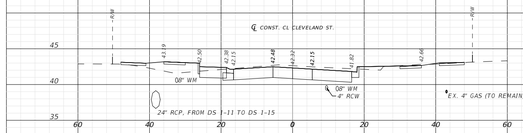

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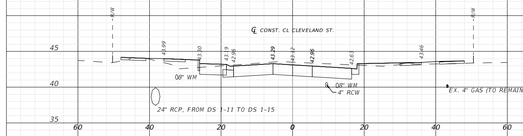

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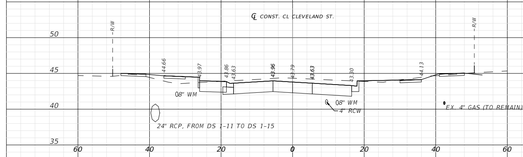

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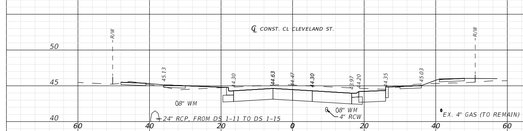

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1" = 20' Horizontal
1" = 10' Vertical

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CLEVELAND STREET PHASE III
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CROSS SECTIONS – CLEVELAND ST.

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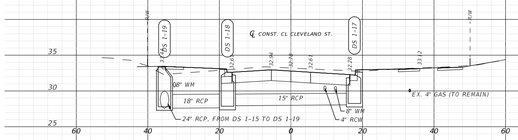

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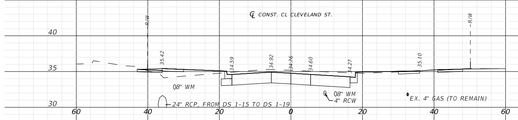

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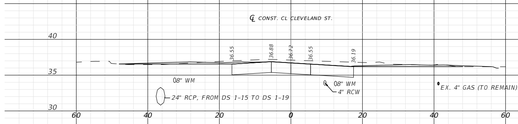

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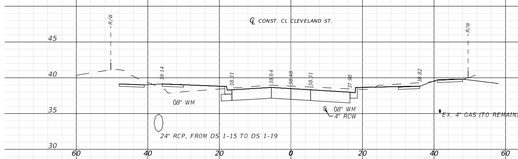

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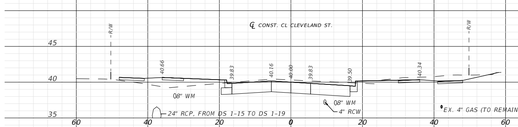

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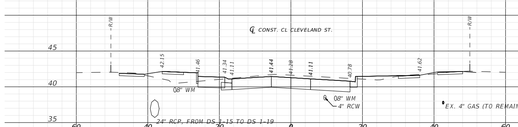

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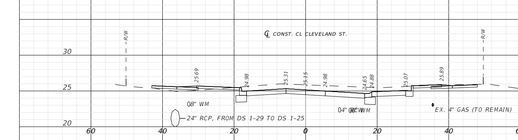

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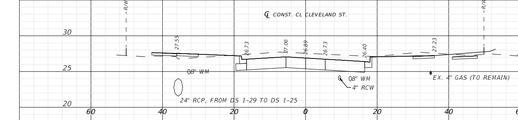

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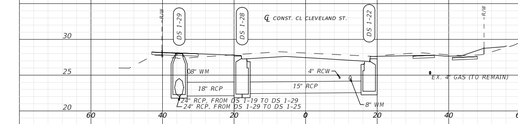

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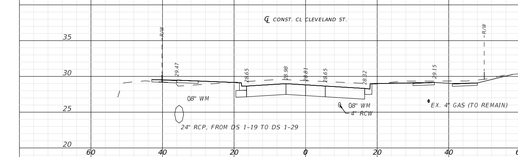

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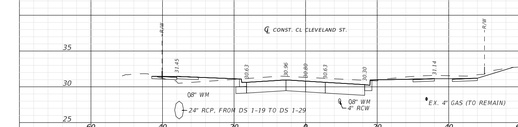

12+50.00

1" = 20' Horizontal
1" = 10' Vertical

100% PLANS
BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
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Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
CROSS SECTIONS – CLEVELAND ST.

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 313
APPROVED FOR CONSTRUCTION			DATE

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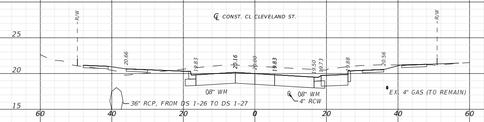

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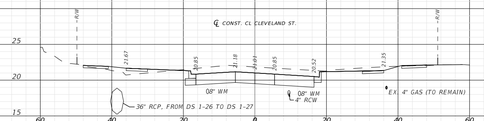

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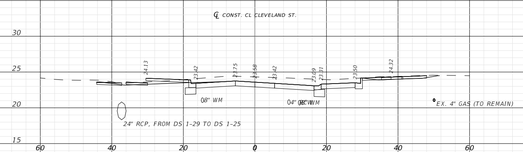
15+00.00



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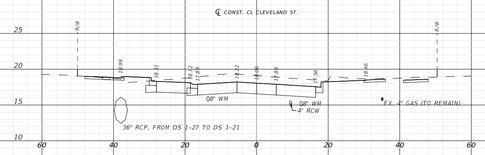

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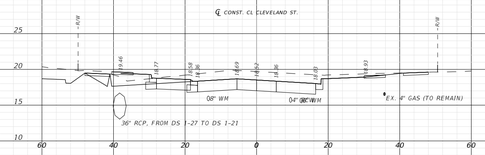

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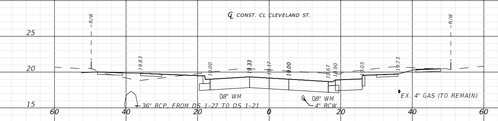

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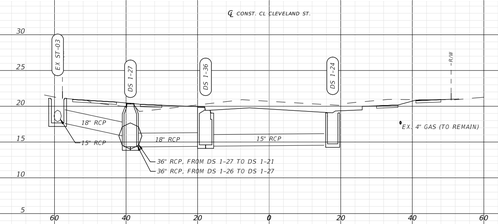

16+22.00

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REVISION	BY	DATE

gai consultants
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AND FESTIVAL CORE
CROSS SECTIONS – CLEVELAND ST.

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 314

APPROVED FOR CONSTRUCTION _____ DATE

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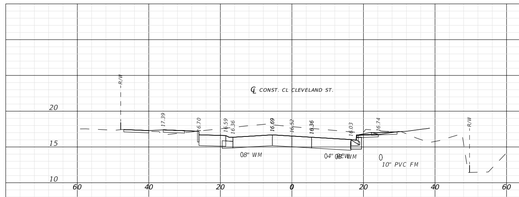

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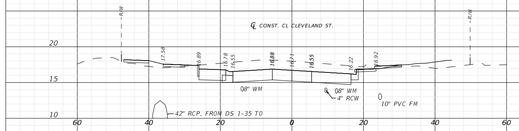

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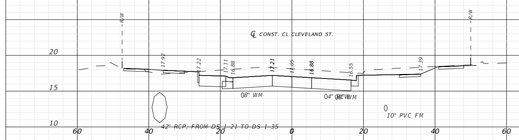

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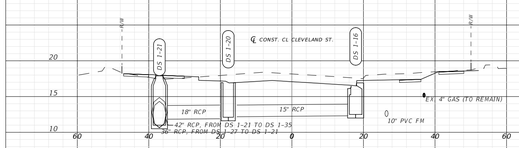

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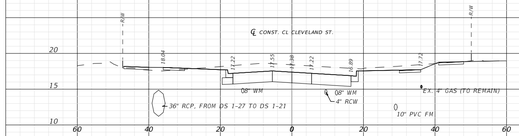

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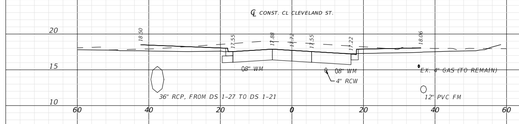

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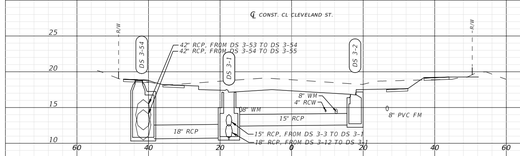

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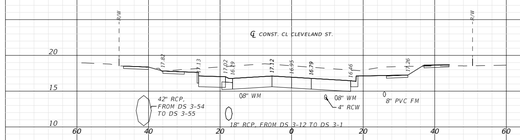

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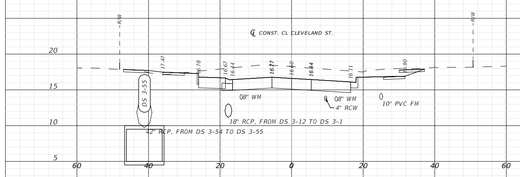

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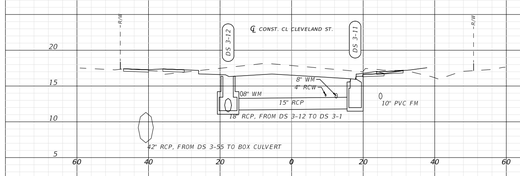

20+05.50

1" = 20' Horizontal
1" = 10' Vertical

100% PLANS
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REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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CLEVELAND STREET PHASE III AND FESTIVAL CORE CROSS SECTIONS – CLEVELAND ST.

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 315

APPROVED FOR CONSTRUCTION _____ DATE

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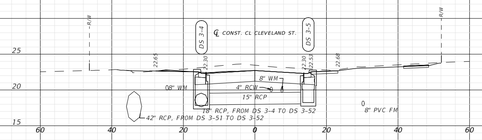

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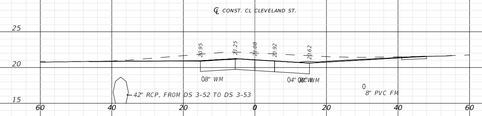

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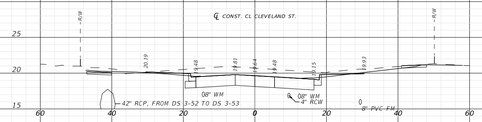

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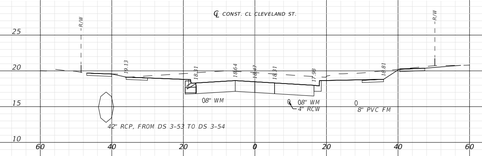

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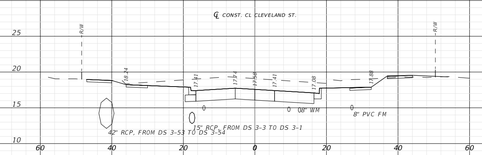

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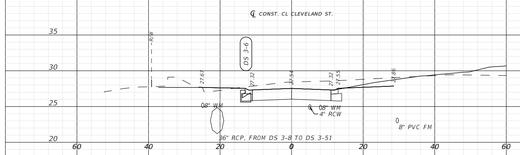

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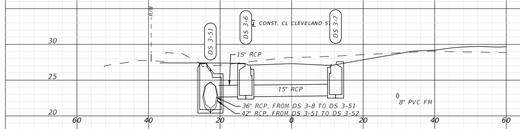

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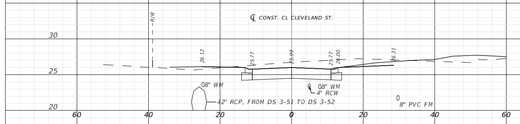

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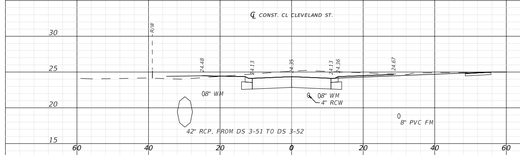

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CROSS SECTIONS – CLEVELAND ST.

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 316

APPROVED FOR CONSTRUCTION _____ DATE

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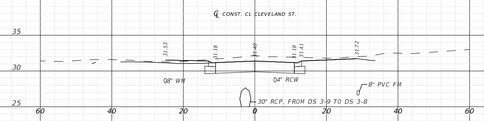

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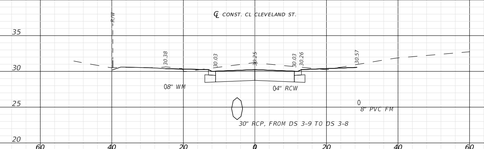

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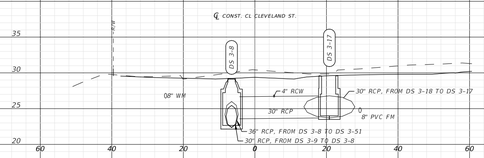

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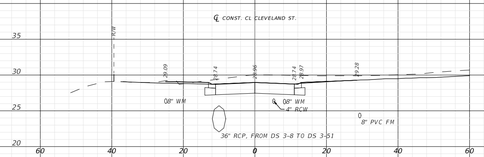

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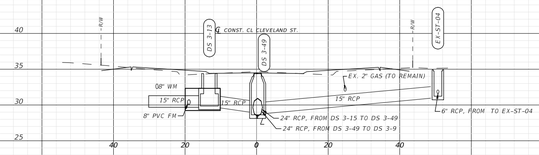

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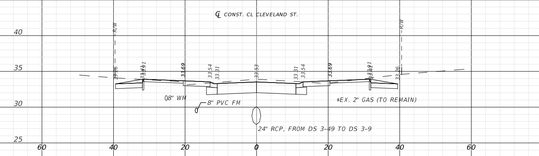

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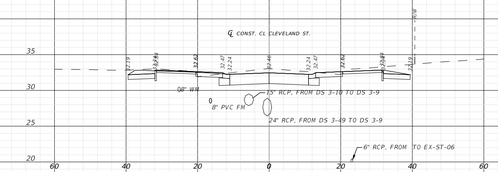

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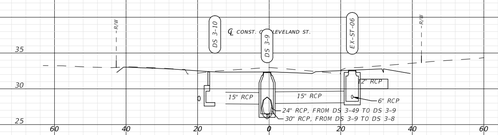

26+95.97

1" = 20' Horizontal
1" = 10' Vertical

100% PLANS
BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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CLEVELAND STREET PHASE III AND FESTIVAL CORE CROSS SECTIONS – CLEVELAND ST.

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 317

APPROVED FOR CONSTRUCTION _____ DATE

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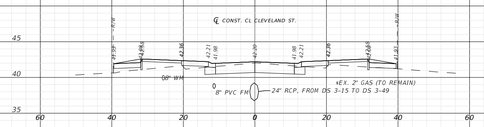
X



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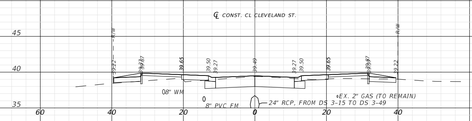

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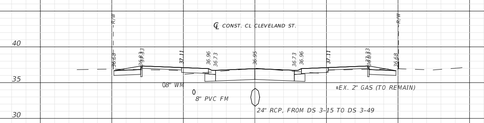
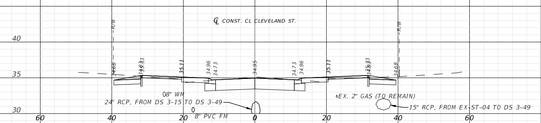


28+50.00



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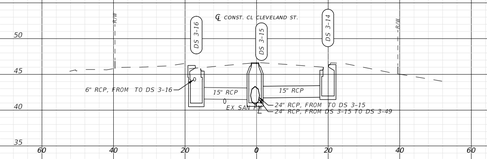

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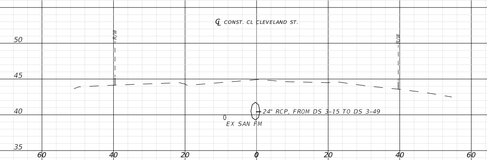

30+00.00

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BID SET

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CLEVELAND STREET PHASE III AND FESTIVAL CORE CROSS SECTIONS – CLEVELAND ST.

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 318

APPROVED FOR CONSTRUCTION _____ DATE

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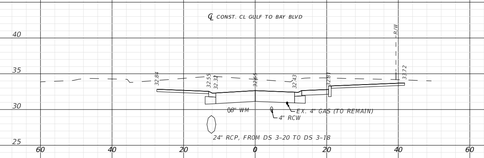

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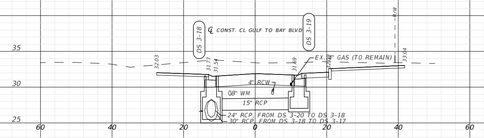

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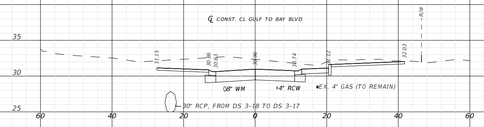

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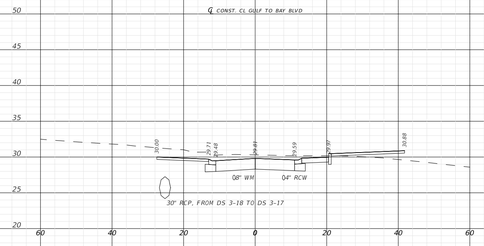

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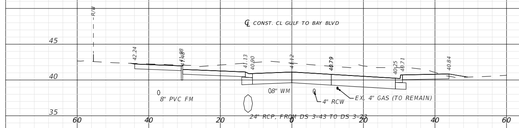

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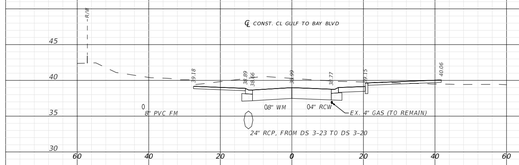

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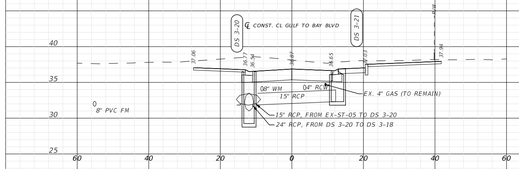

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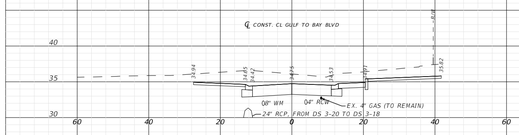

2002+00.00

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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
CROSS SECTIONS – GULF TO BAY

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 319

APPROVED FOR CONSTRUCTION _____ DATE

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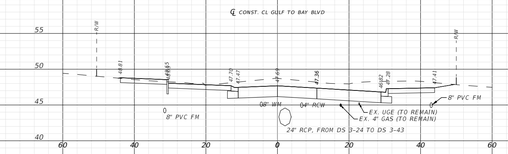

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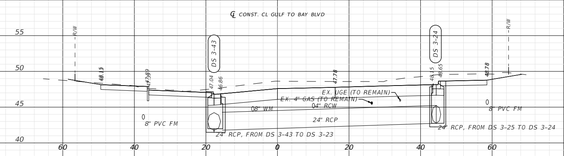

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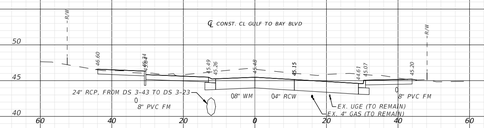

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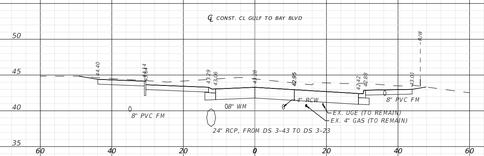

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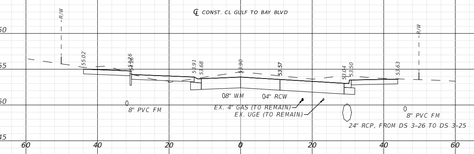

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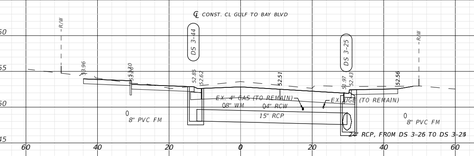

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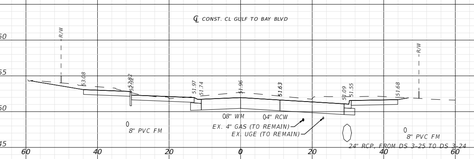

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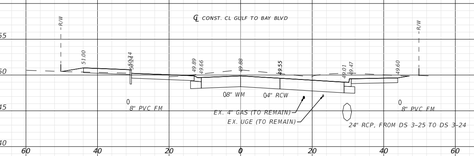

2005+50.00

1" = 20' Horizontal
1" = 10' Vertical

100% PLANS BID SET

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gai consultants
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EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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CLEVELAND STREET PHASE III AND FESTIVAL CORE CROSS SECTIONS – GULF TO BAY

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 320

APPROVED FOR CONSTRUCTION _____ DATE

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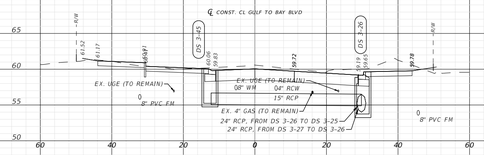

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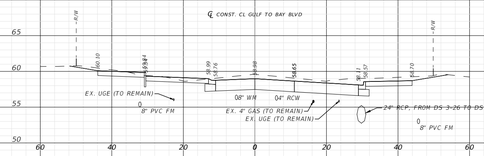

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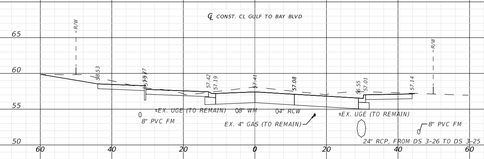

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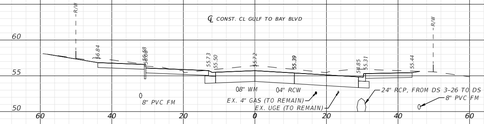

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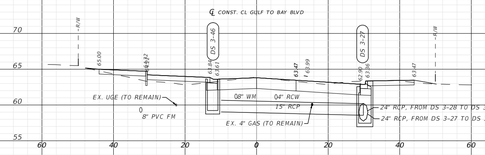

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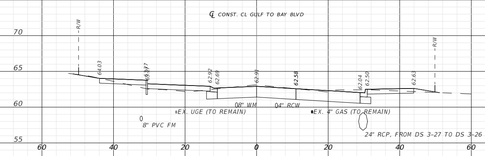

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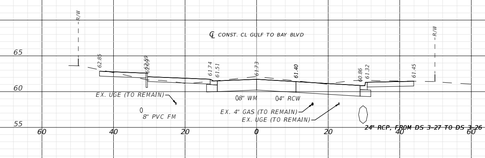

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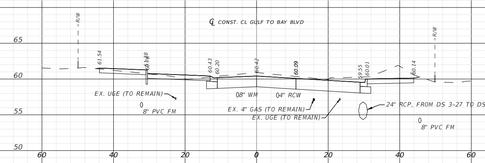

2008+50.00

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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
CROSS SECTIONS – GULF TO BAY

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 321

APPROVED FOR CONSTRUCTION _____ DATE

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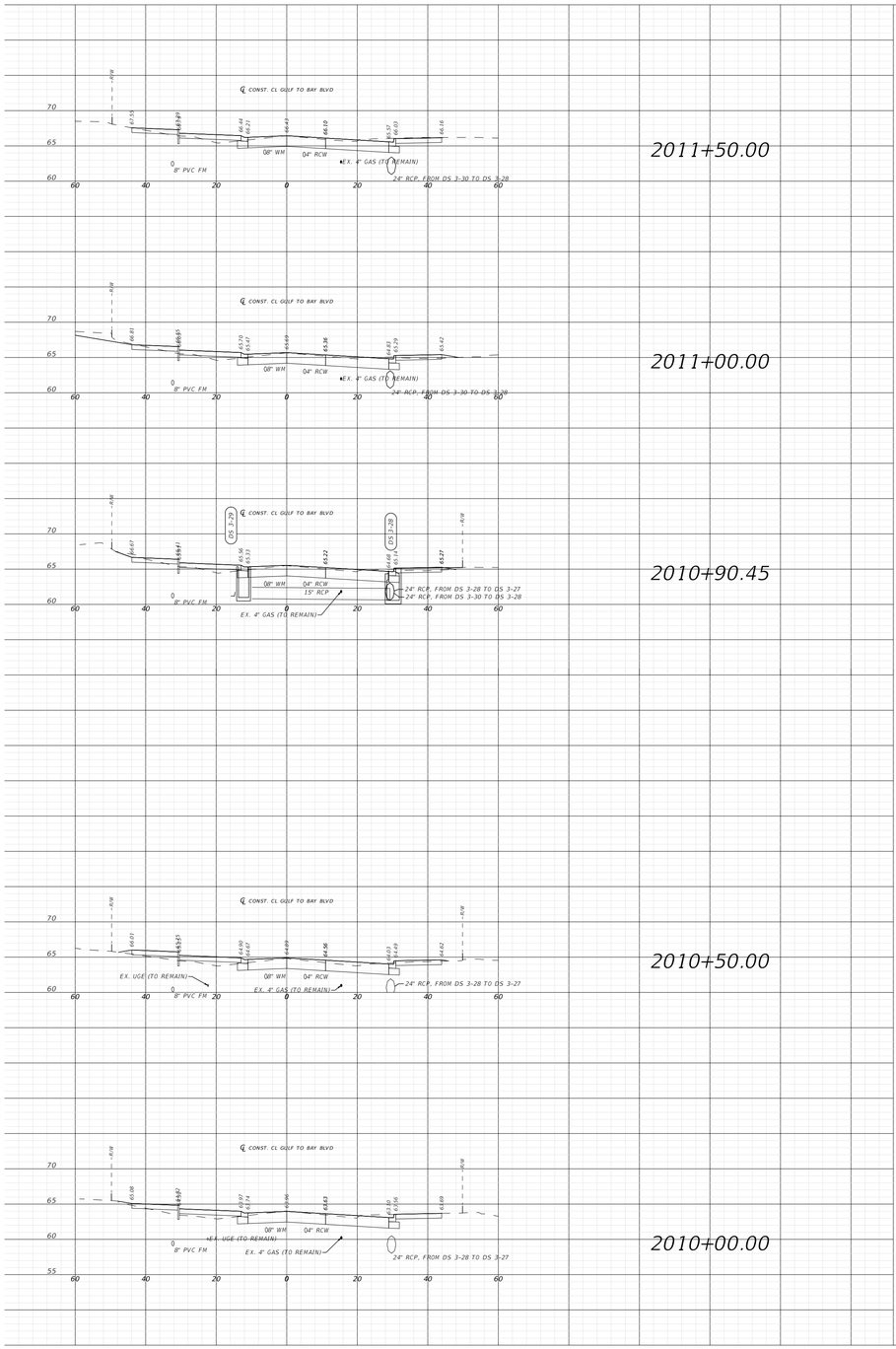

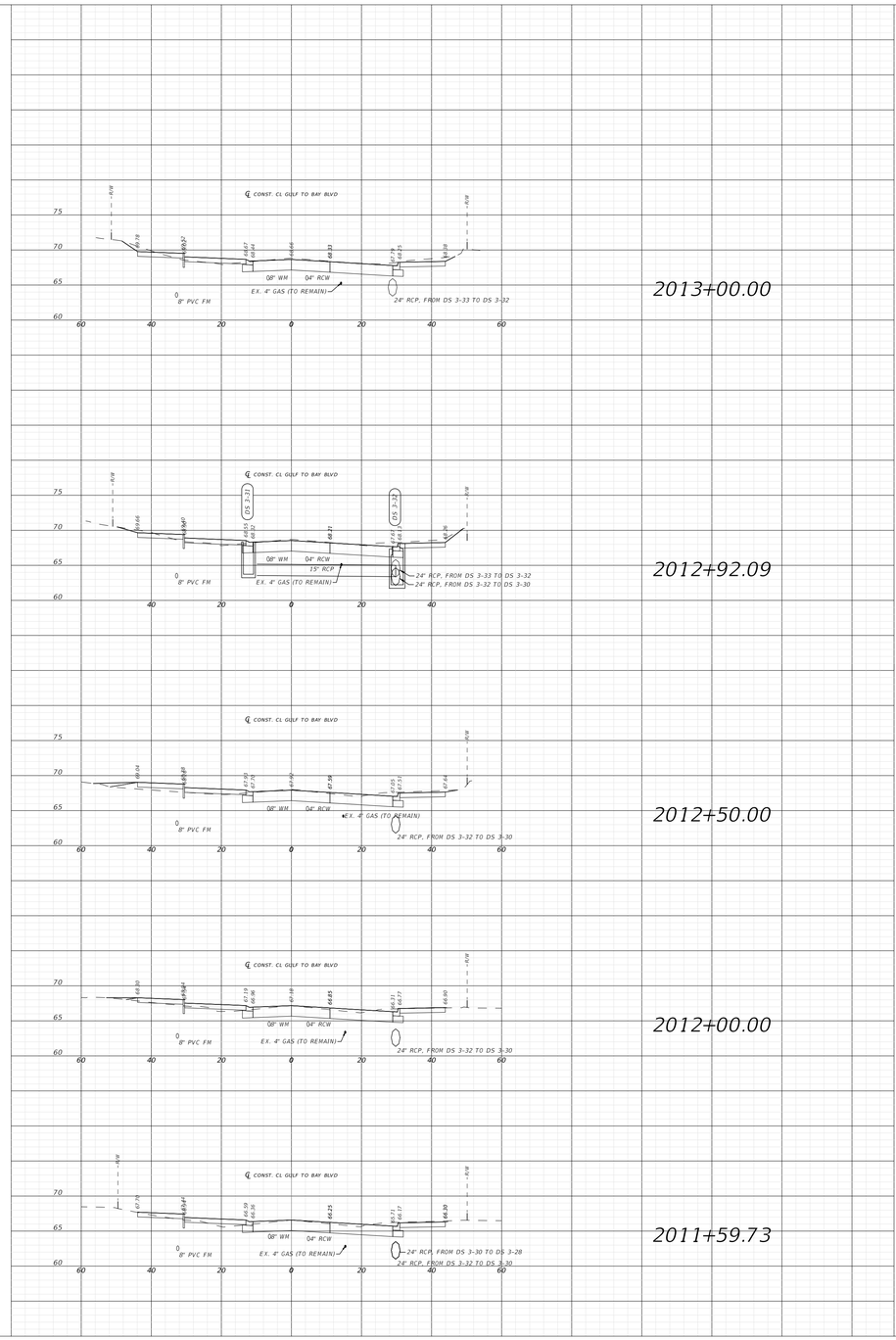

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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
CROSS SECTIONS – GULF TO BAY

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 322

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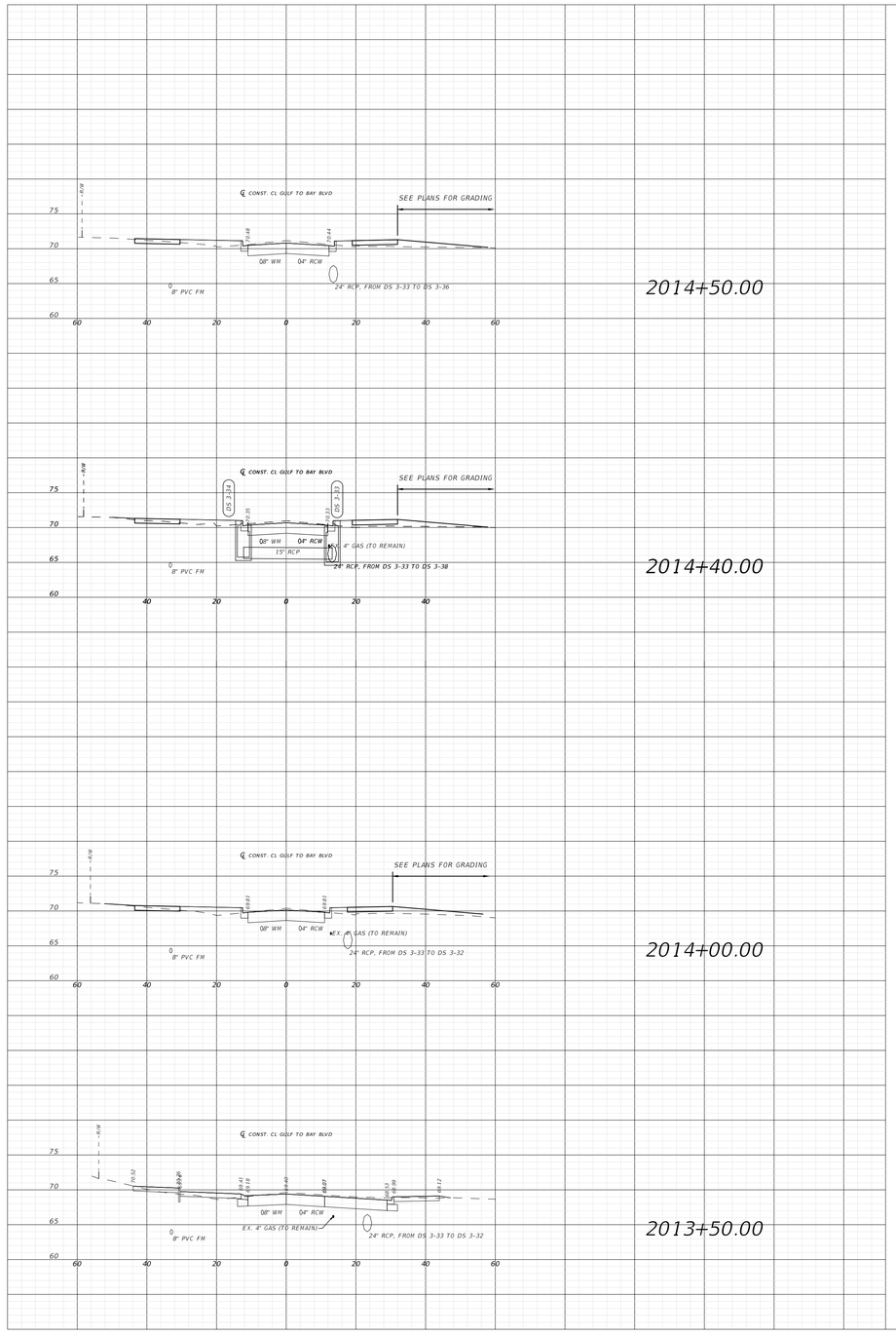

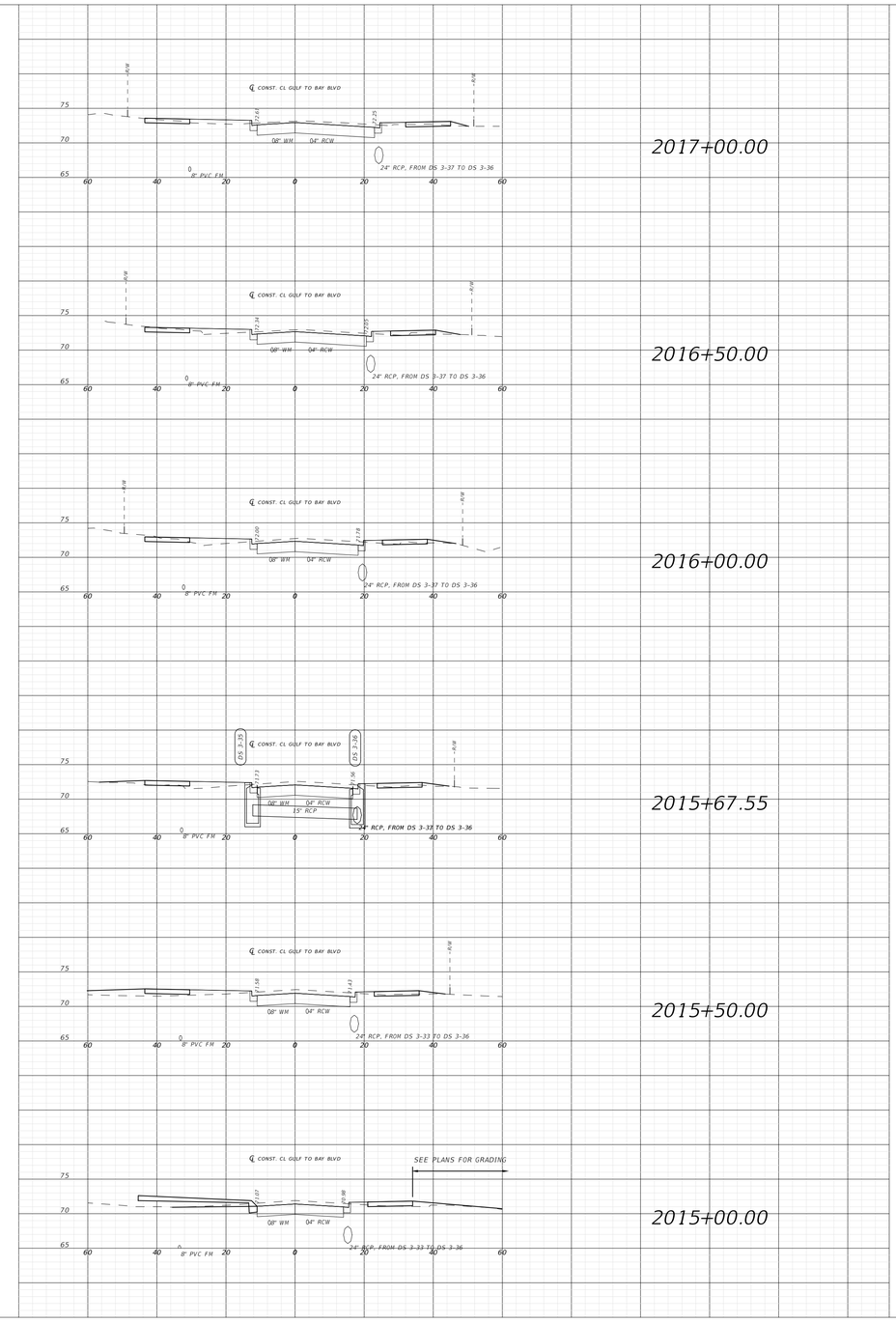

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DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 323

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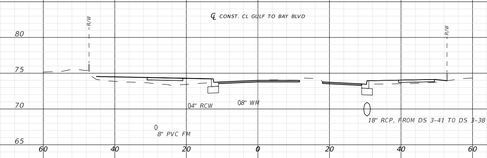

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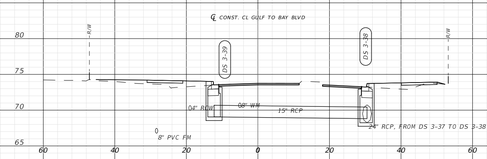

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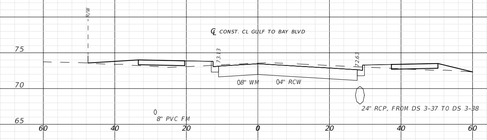

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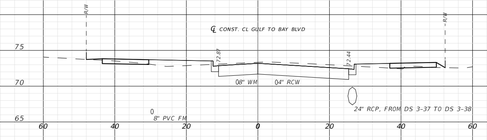

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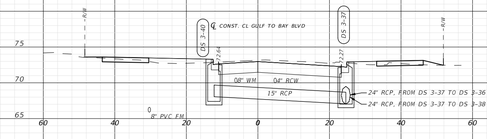

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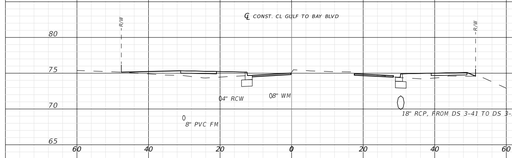
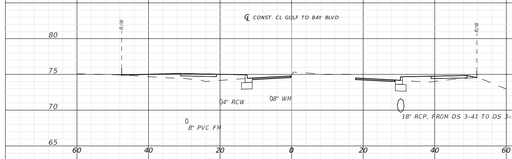
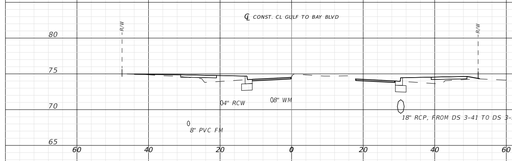


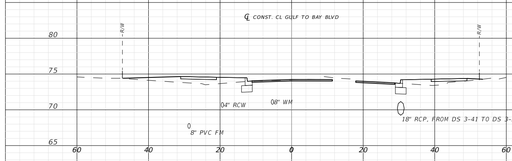
2021+00.00



2020+50.00



2020+00.00



2019+50.00

1" = 20' Horizontal
1" = 10' Vertical

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CLEVELAND STREET PHASE III AND FESTIVAL CORE CROSS SECTIONS – GULF TO BAY

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 324

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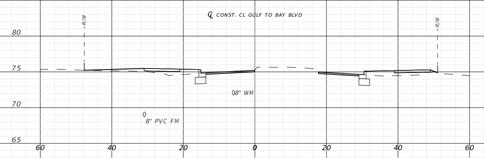
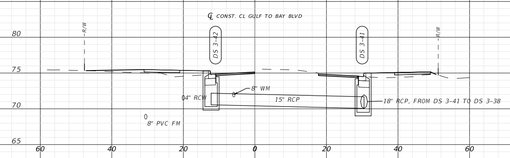


2021+50.00



2021+24.98

1" = 20' Horizontal
1" = 10' Vertical

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CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: MB	SHEET NO.: 325

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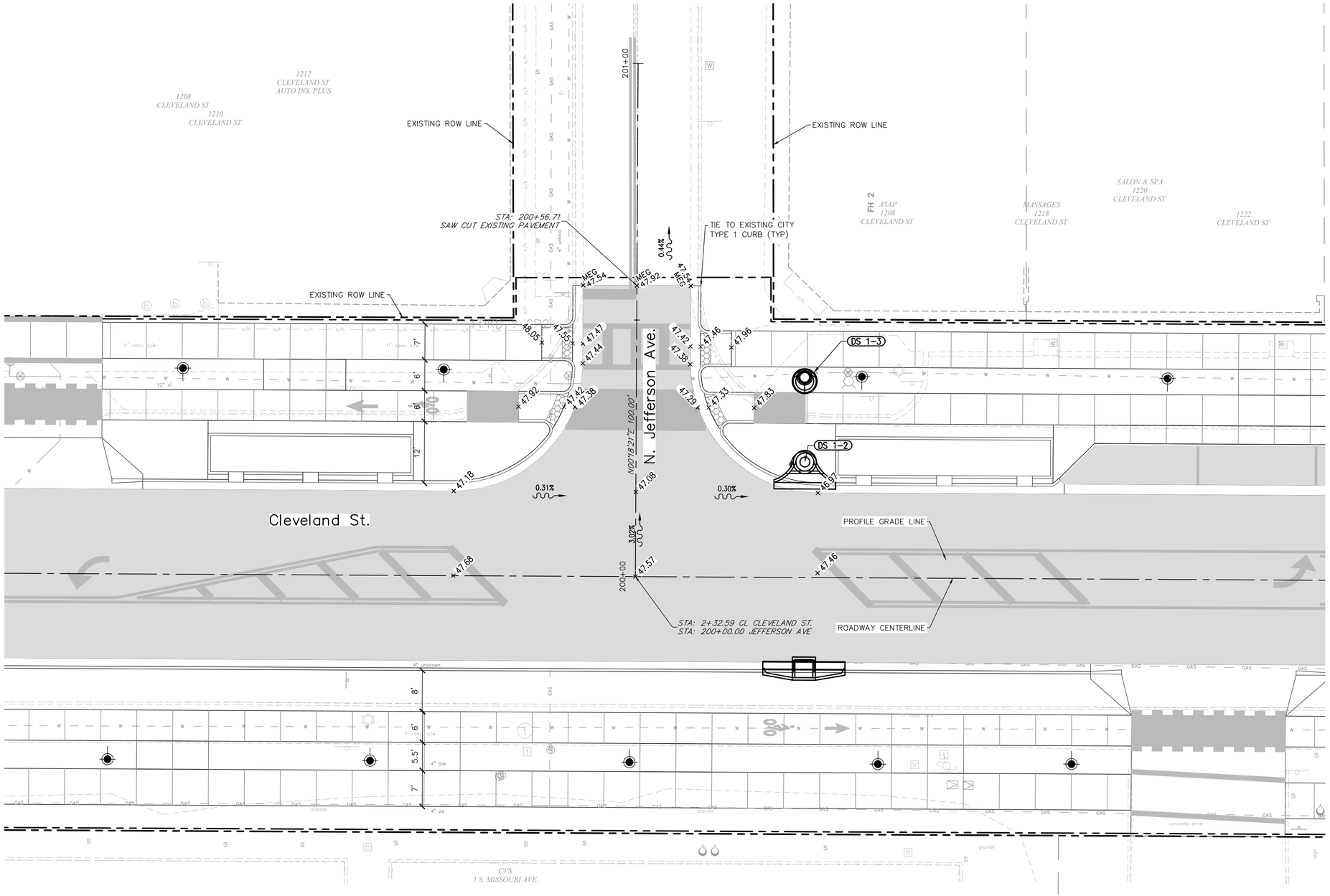

0' 10' 20'
SCALE: 1" = 10'
GRAPHIC SCALE (IN FEET)

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CLEVELAND STREET PHASE III AND FESTIVAL CORE ROADWAY INTERSECTION PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
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JOB NO.: A181093.02	DESIGNED BY: RF	CHECKED BY: CMN	SHEET NO.: 330

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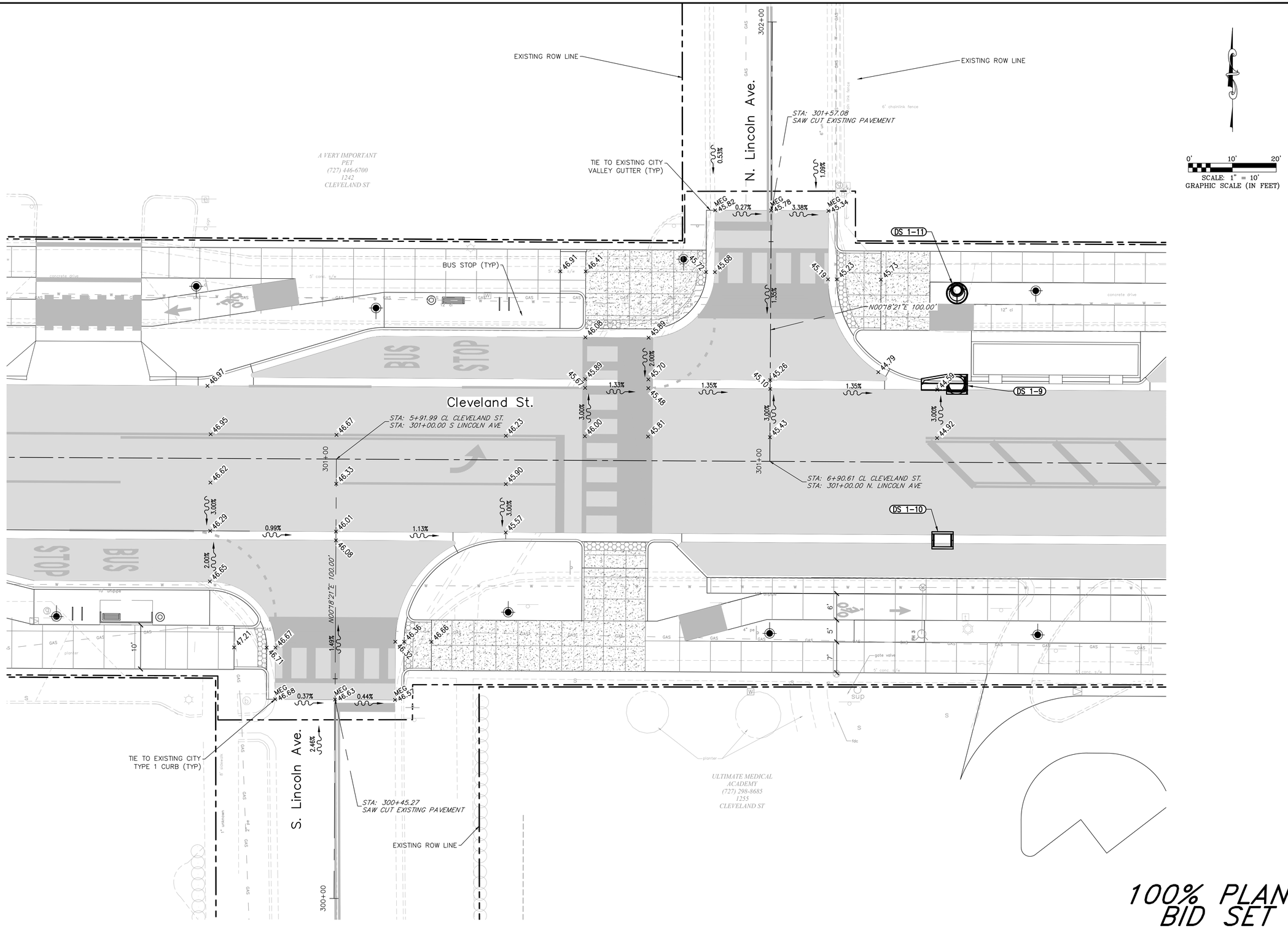

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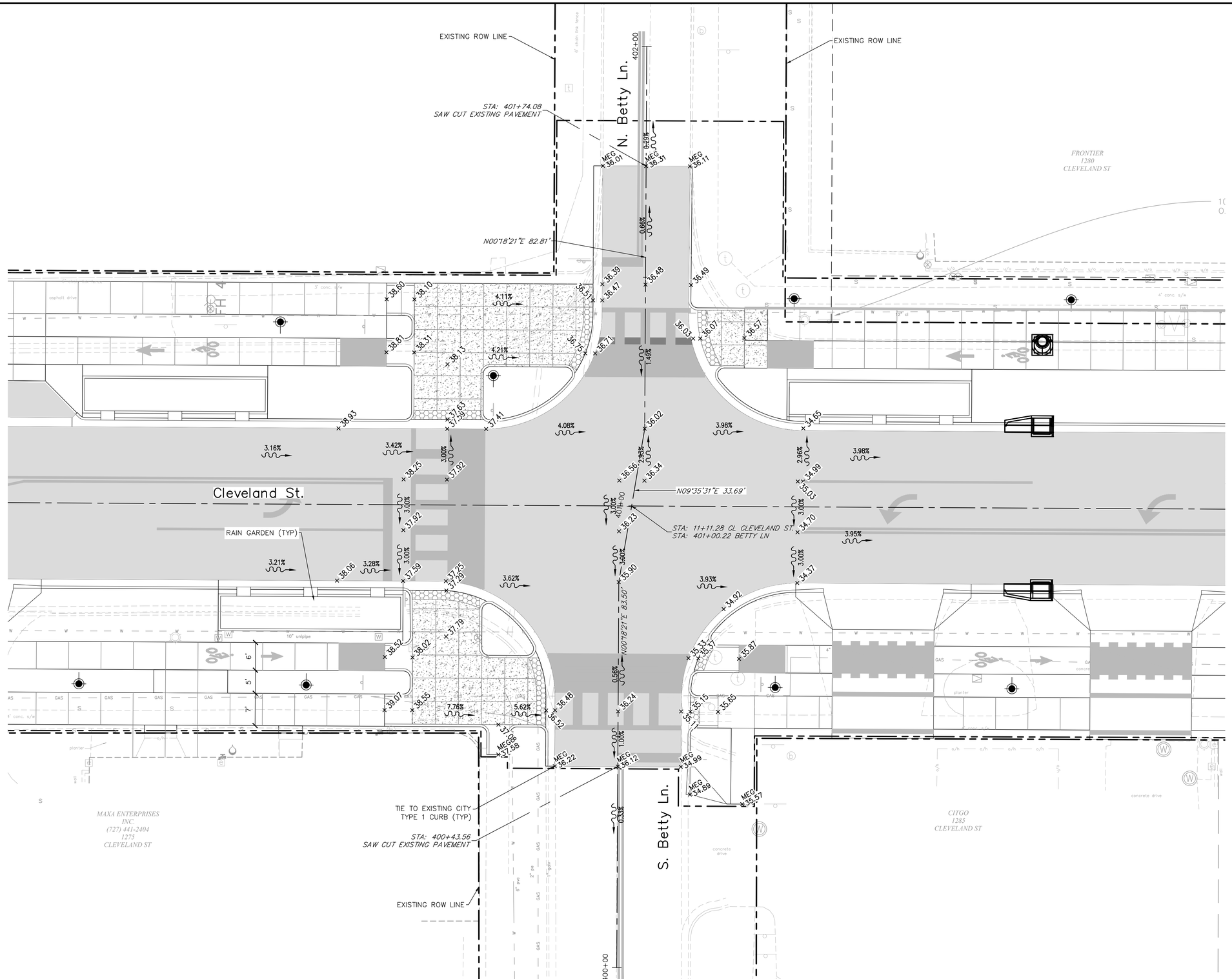

SCALE: 1" = 10'
GRAPHIC SCALE (IN FEET)

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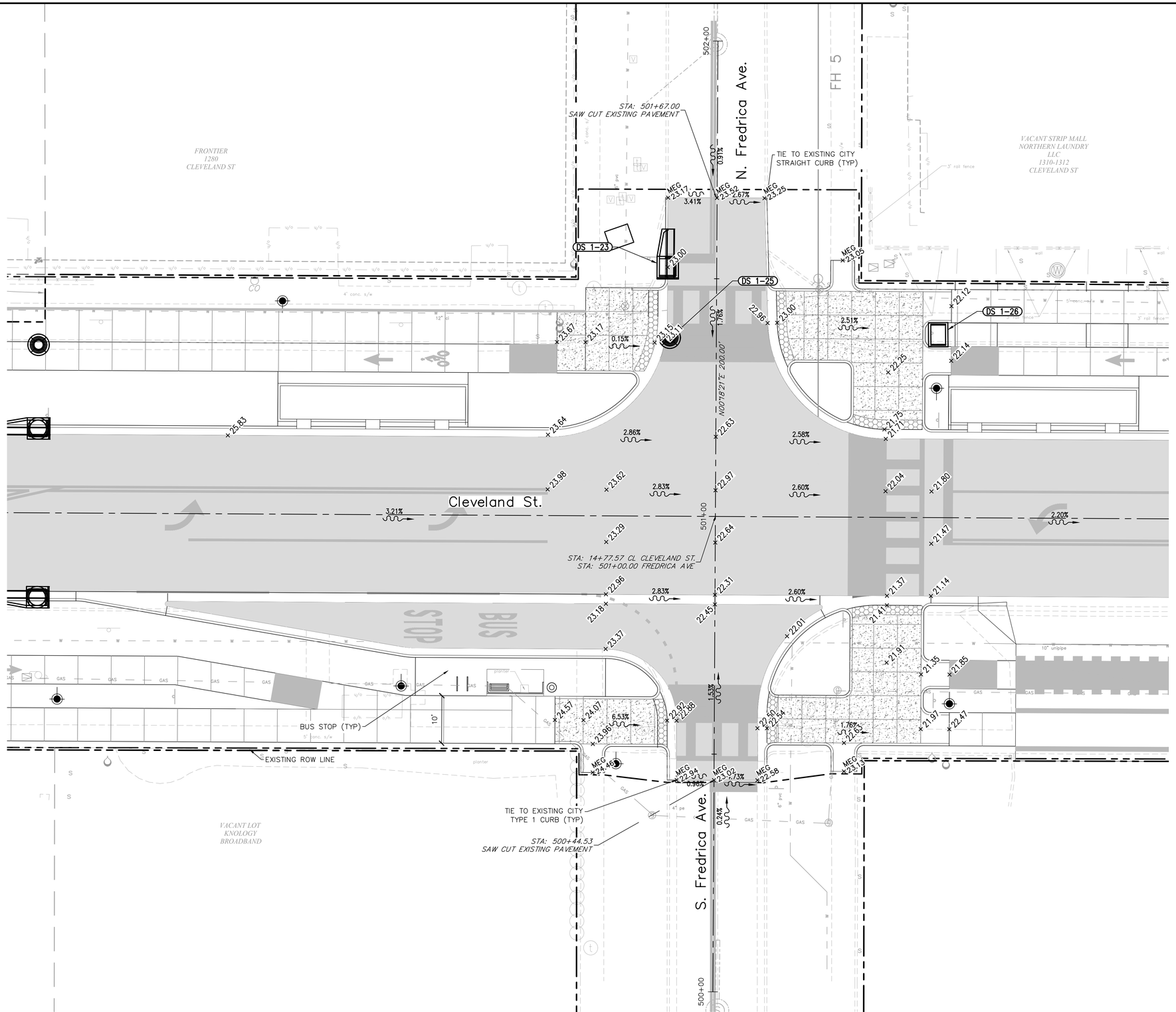

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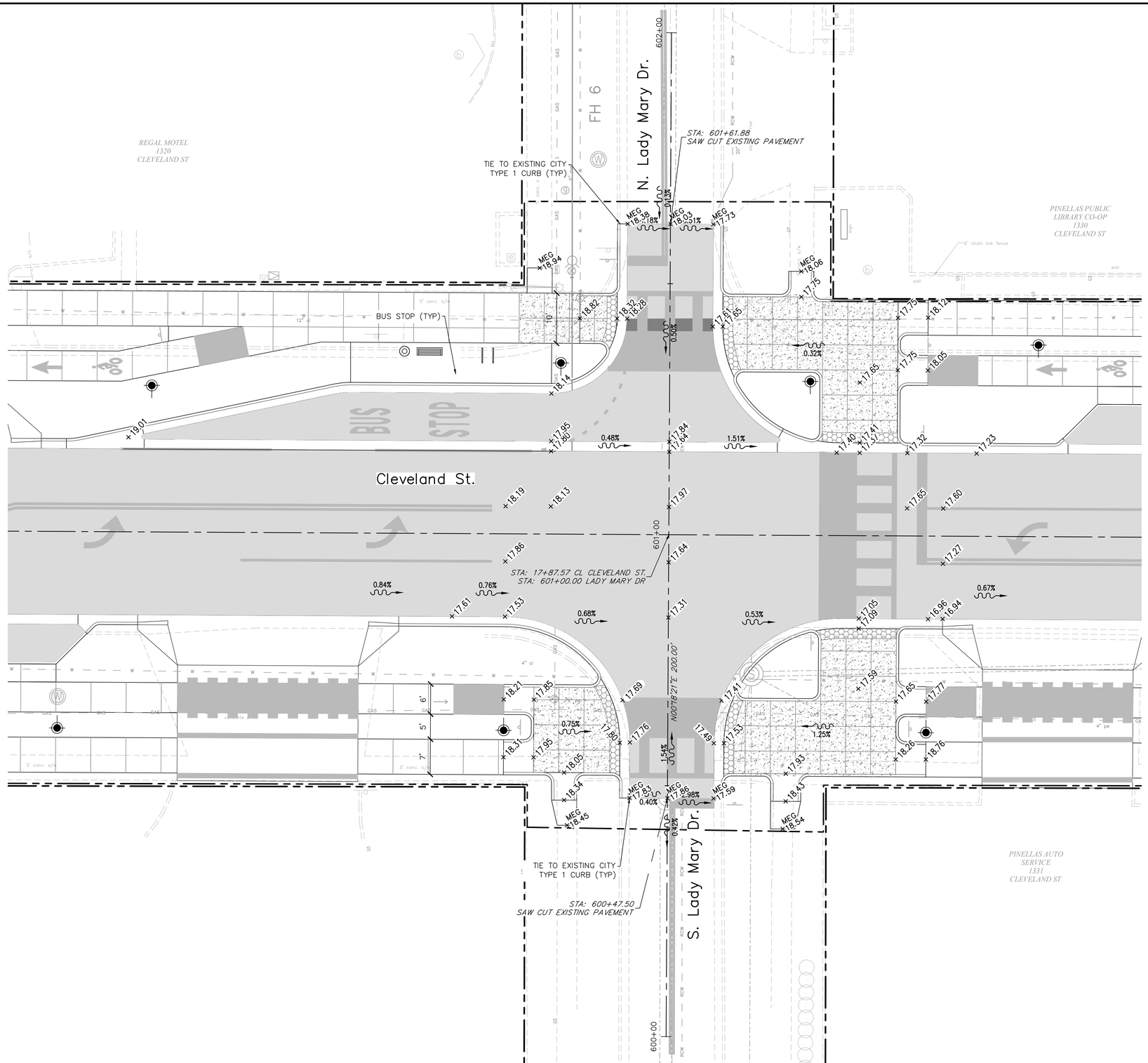

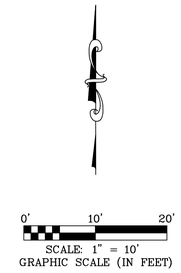

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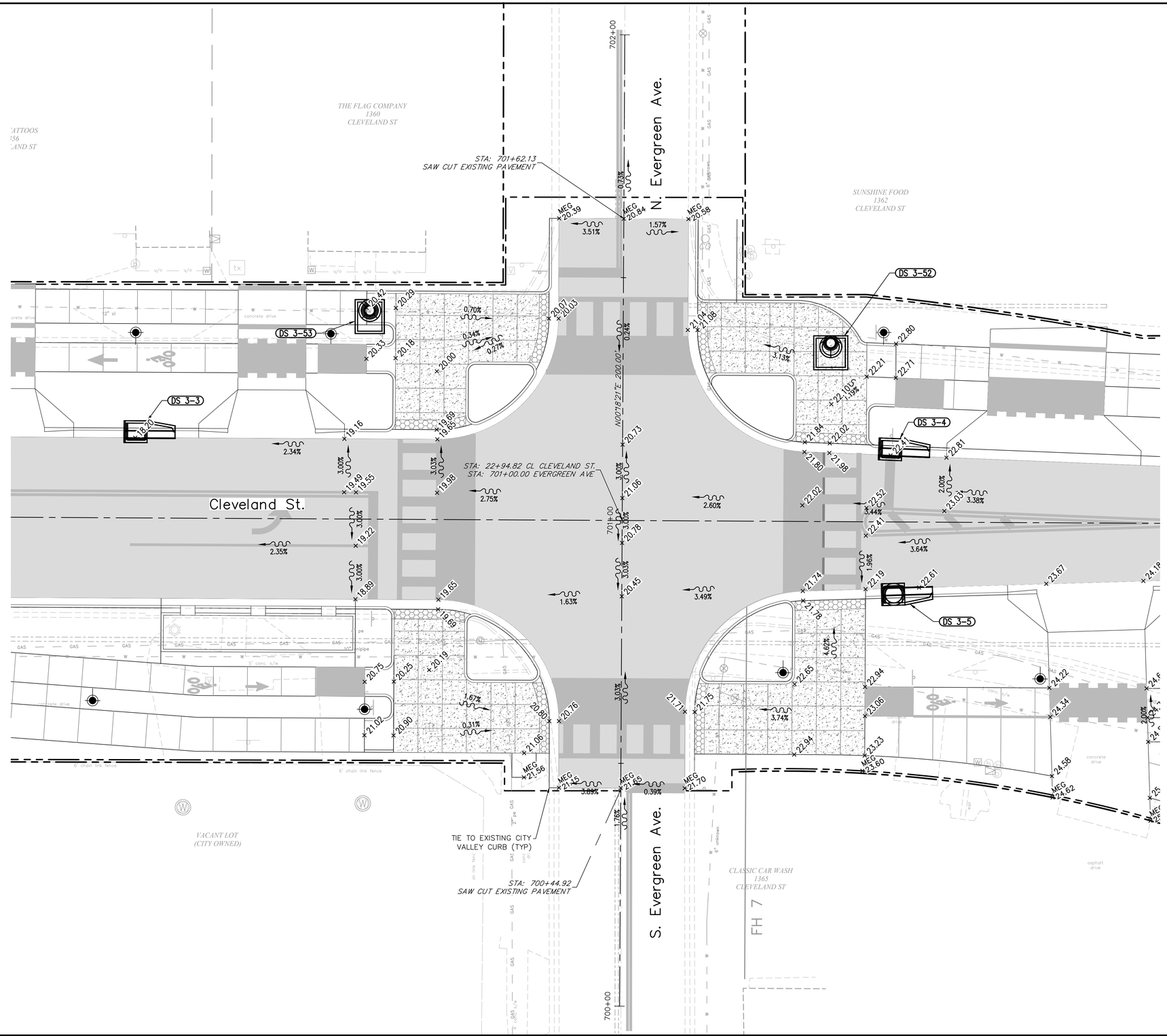

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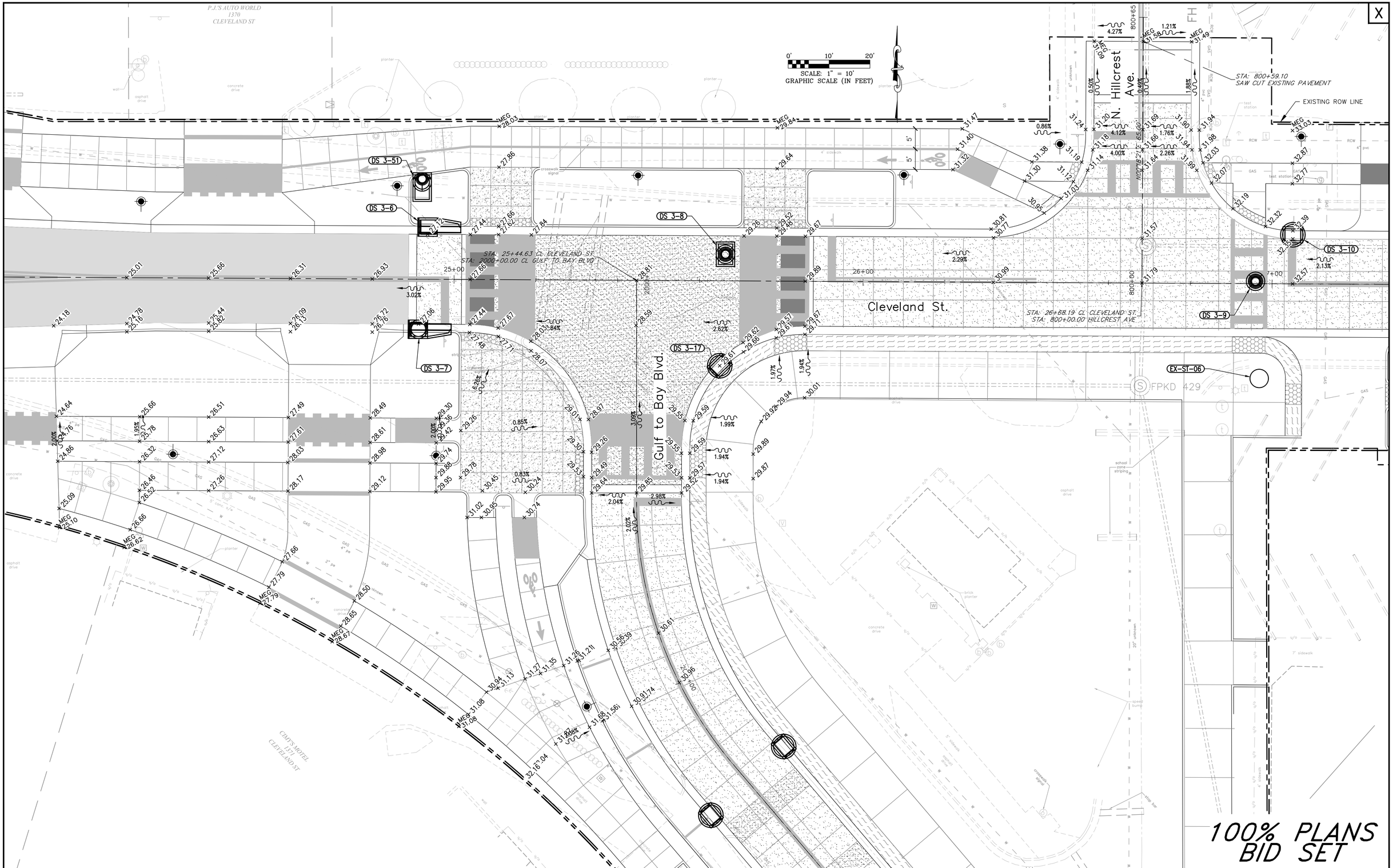

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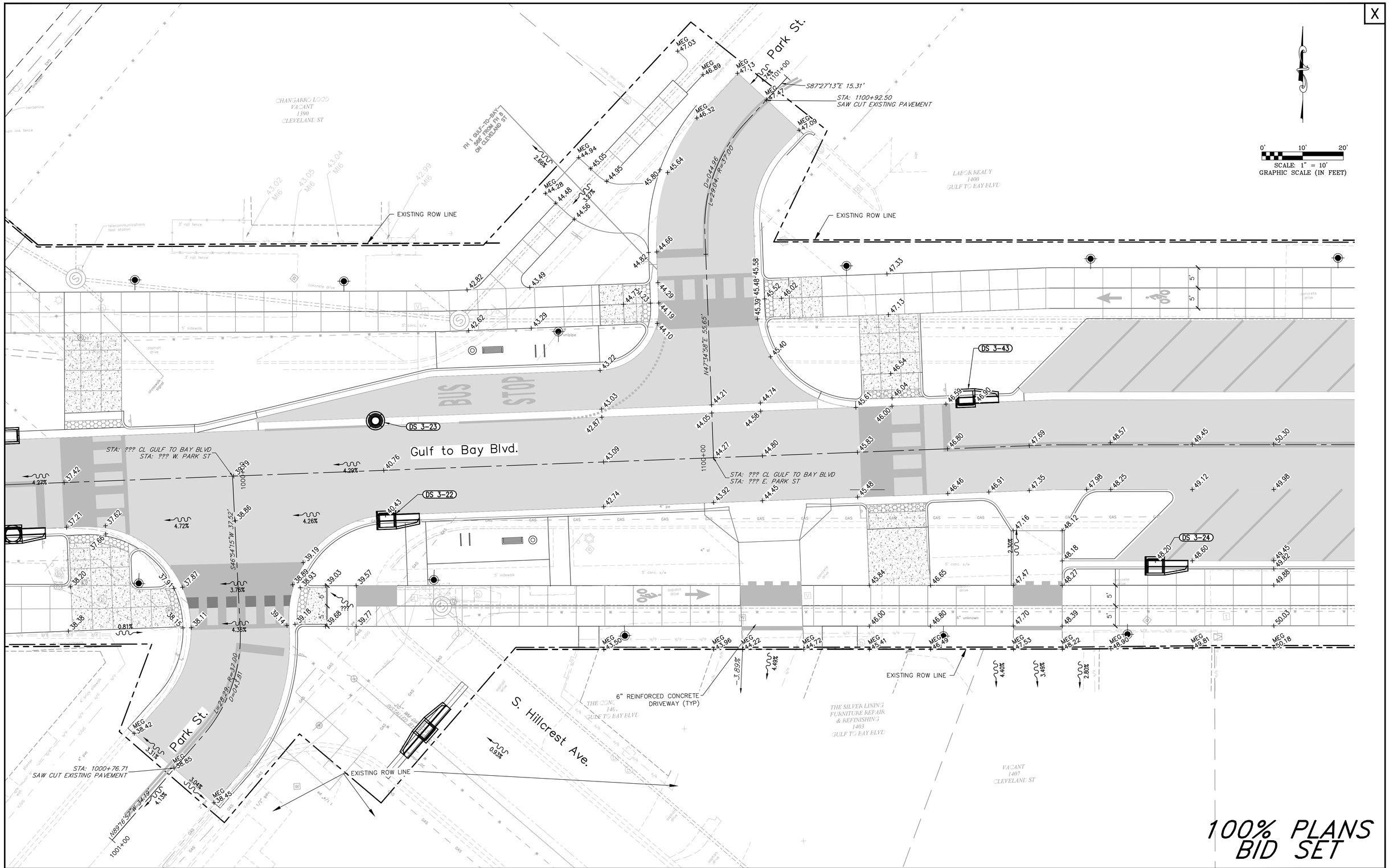

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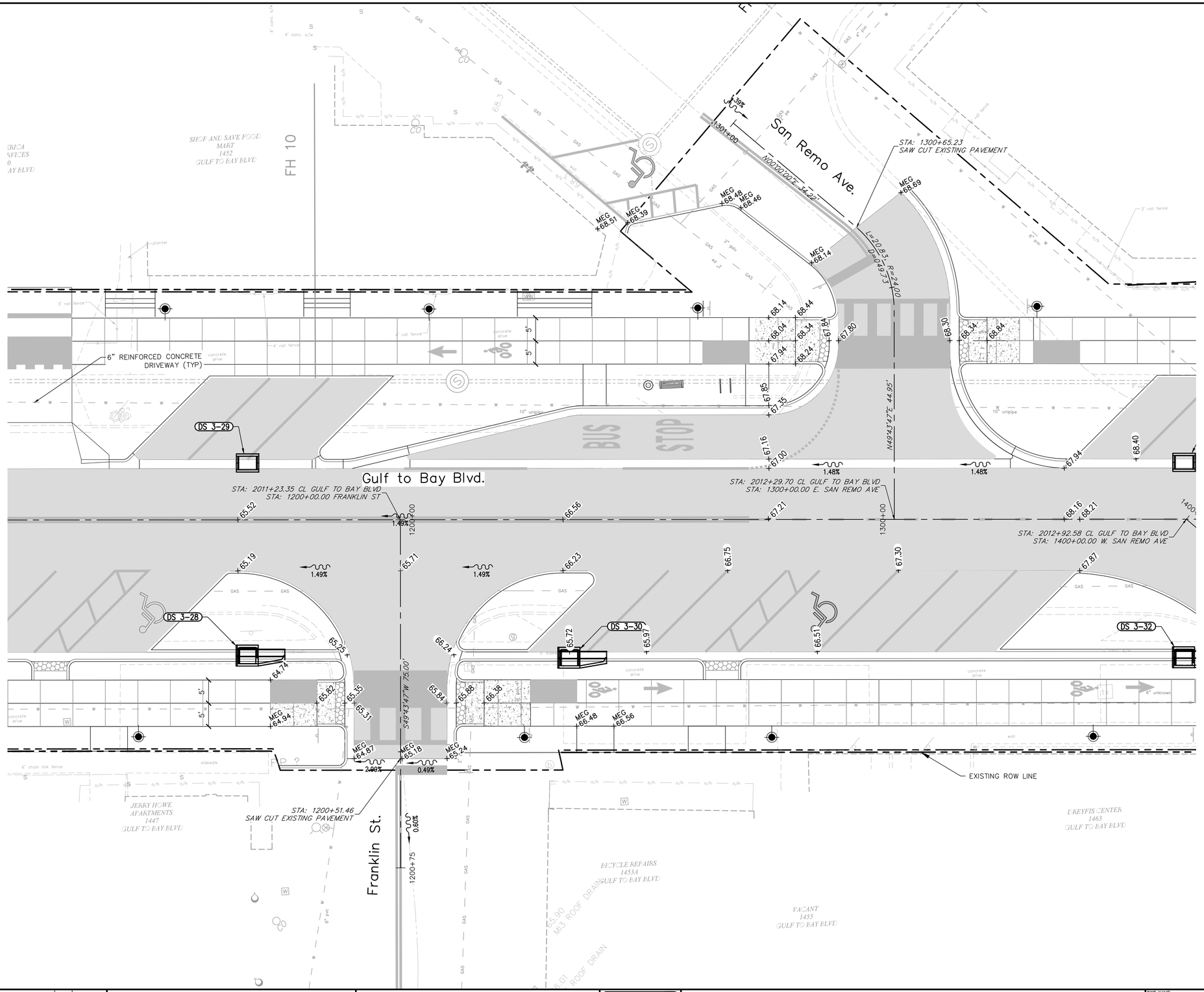

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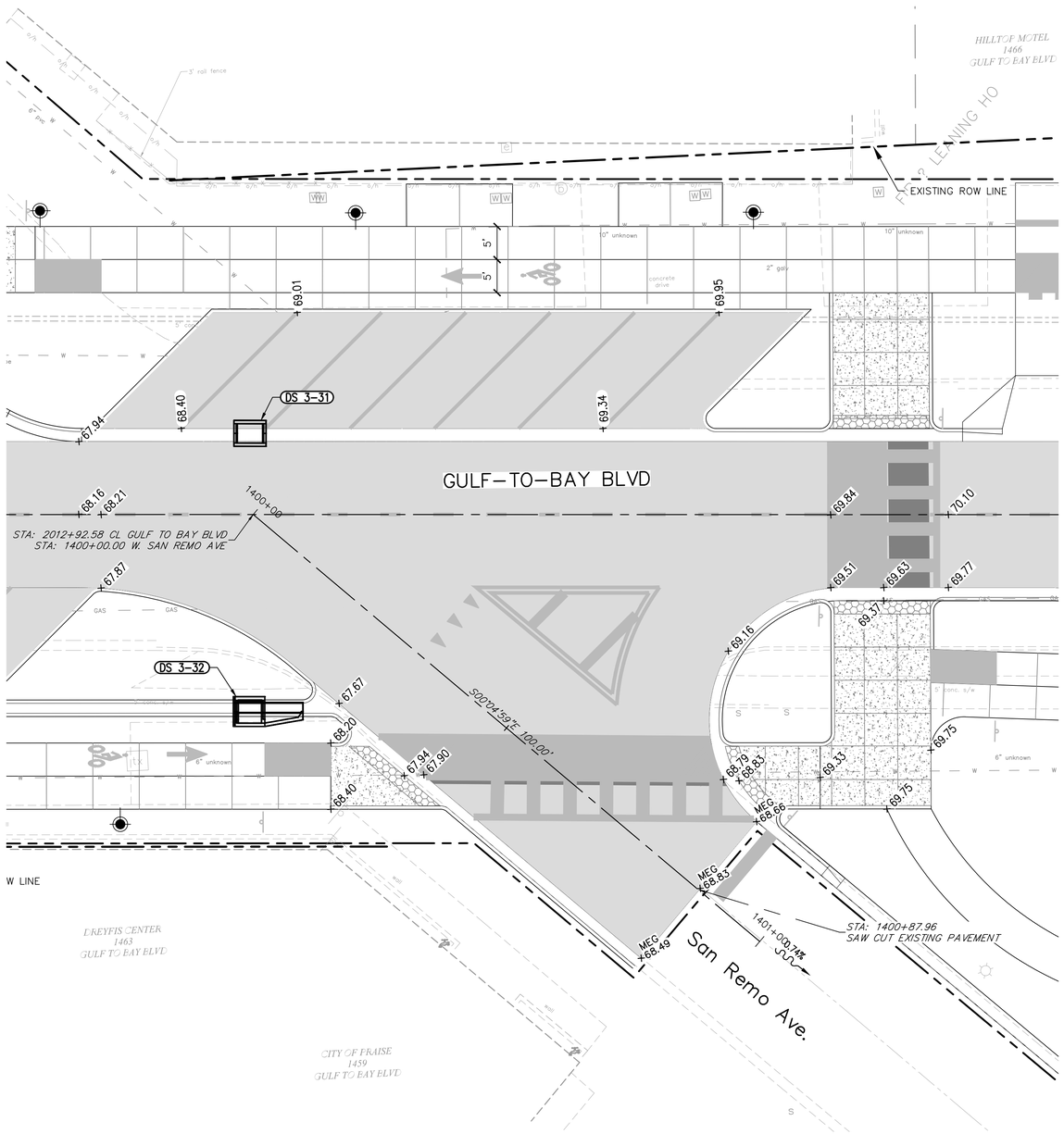

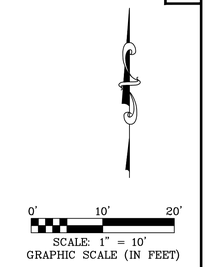

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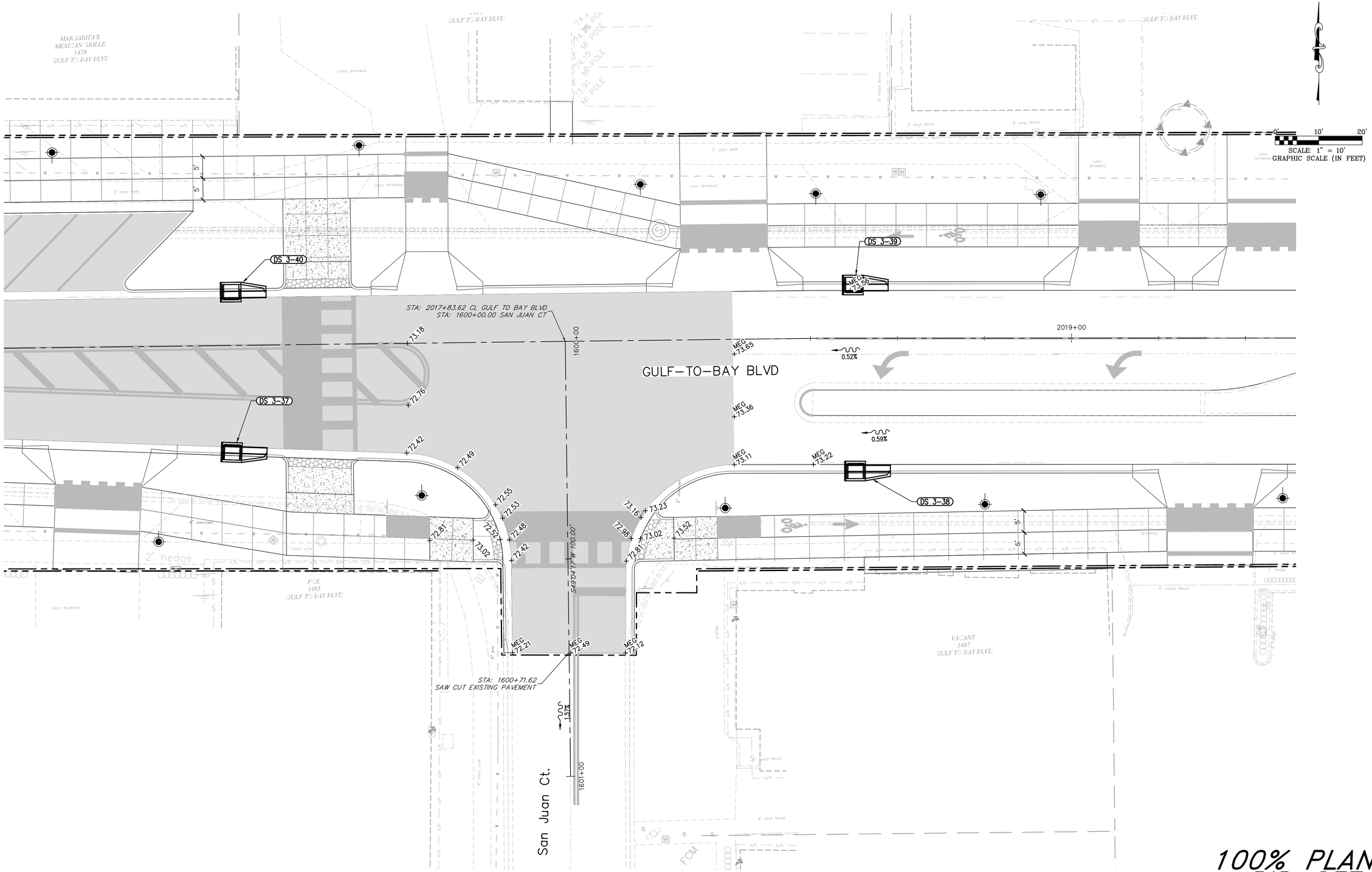

100% PLANS
BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756

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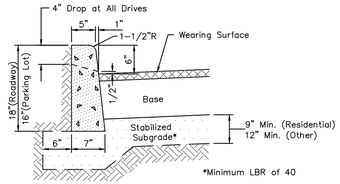
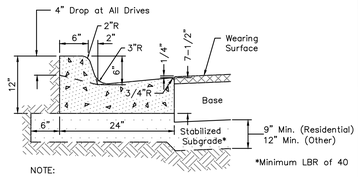
CLEVELAND STREET PHASE III AND FESTIVAL CORE ROADWAY INTERSECTION PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 04-08-19	DRAWN BY: CMN	HORIZ. 1" = 10'
JOB NO.: A181093.02	DESIGNED BY: RF	CHECKED BY: CMN	SHEET NO.: 340
APPROVED FOR CONSTRUCTION			DATE

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

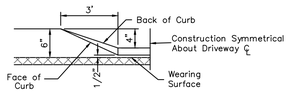


STRAIGHT CURB
N.T.S.



NOTE:
When used on high side of roadways, the cross slope of the gutter shall match the cross slope of the adjacent pavement and the thickness of the lip shall be 6", unless otherwise shown on plans.

TYPE I CURB
N.T.S.



3' TRANSITION AT DRIVES
N.T.S.

NOTES:
1. There shall be a 1/2" seal joint between back of curb and driveway.
2. Concrete in curbs shall be 3000 psi, with fiber mesh reinforcing.

DATE	REVISION DESCRIPTION	APP
2/27/17	SUBGRADE UPDATED	JWS
5/18/15	COMPACTION THICKNESS	S.R.

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
STREET SECTIONS AND DETAILS

TYPICAL CURB CROSS SECTIONS

INDEX NO.	PAGE NO.
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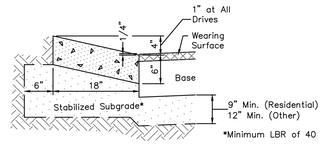
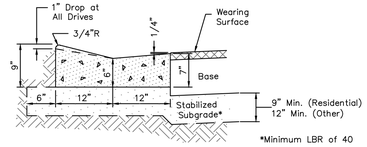
LATEST REVISION	2/27/17

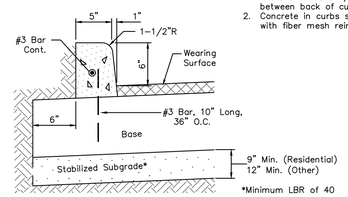


MODIFIED CURB

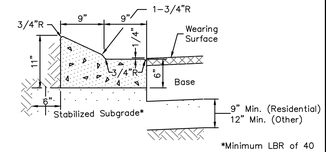


VALLEY GUTTER CURB

NOTES:
1. There shall be a 1/2" seal joint between back of curb and driveway.
2. Concrete in curbs shall be 3000 psi, with fiber mesh reinforcing.



PIN / DOWELLED CURB



MEDIAN CURB

DATE	REVISION DESCRIPTION	APP
2/27/17	SUBGRADE UPDATED	JWS
5/18/15	COMPACTION THICKNESS	S.R.

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
STREET SECTIONS AND DETAILS

TYPICAL CURB CROSS SECTIONS

INDEX NO.	PAGE NO.
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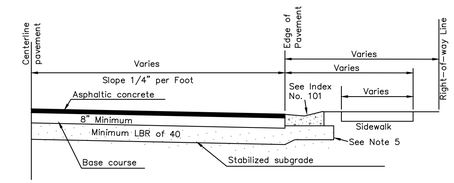
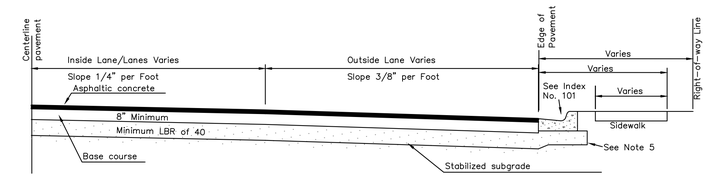


2 AND 3 LANE STREET
N.T.S.

NOTES:
1. Pavement materials and thickness, and base materials and thickness will be stated in construction drawings and scope of the work.
2. See construction drawings for curb type and lane widths.
3. See Section IV, 702 for acceptable base and subgrade materials
4. Refer to Index No. 109 and/or FDOT Detail 304 for Sidewalk criteria. The more stringent criteria will be required.
5. Stabilized subgrade shall be a minimum of 9" for neighborhood streets and a minimum of 12" for all other streets.



4 AND 5 LANE STREET
N.T.S.

DATE	REVISION DESCRIPTION	APP
2/24/17	ADDED NOTE	JWS
9/9/15	ADDED SIDEWALKS & ROW DETAIL TO DRAWING	J.S.

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
STREET SECTIONS AND DETAILS

TYPICAL STREET SECTION

INDEX NO.	PAGE NO.
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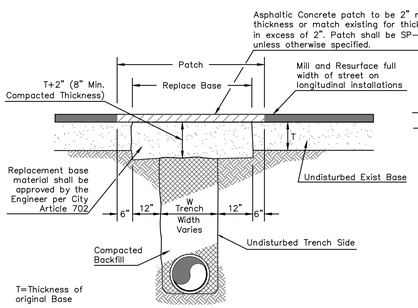
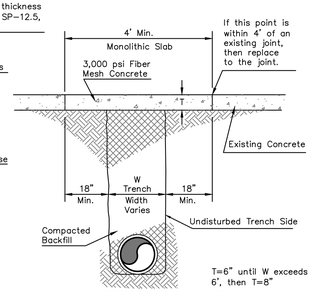


ASPHALT STREET AND DRIVEWAY REPLACEMENT REQUIRED FOR UTILITY CONSTRUCTION
N.T.S.



CONCRETE REPLACEMENT REQUIRED FOR UTILITY CONSTRUCTION
N.T.S.

DATE	REVISION DESCRIPTION	APP
3/17/11	ASPHALTIC CONC. PATCH & RESURFACE NOTE	D.S.R.

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
STREET SECTIONS AND DETAILS

STREET AND DRIVEWAY REPLACEMENT FOR CONCRETE & ASPHALTIC CONCRETE SURFACES

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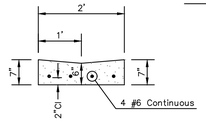
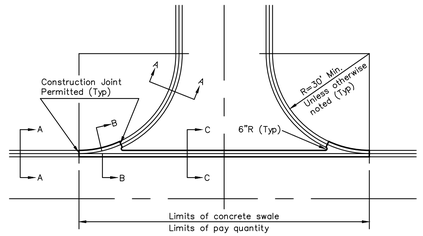
SECTION A–A
N.T.S.
Normal Valley Gutter Curb Section
See Index 101

SECTION B–B
N.T.S.



SECTION C–C
N.T.S.



PLAN
N.T.S.

NOTE:
Subject to City Engineer's approval.
To be used only in unique situations.

DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
STREET SECTIONS AND DETAILS

CONCRETE SWALE DETAIL
VALLEY GUTTER CURB

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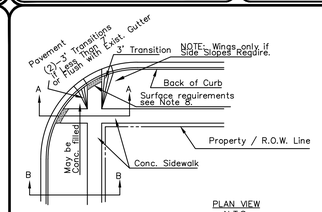
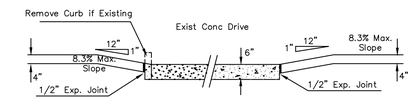
LATEST REVISION	2/22/2016

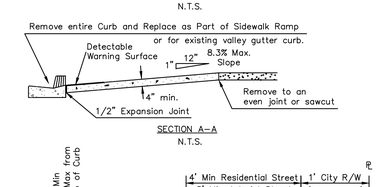


PLAN VIEW
N.T.S.

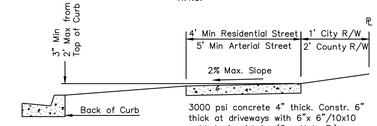
NOTES:
1. Provide tooled joints at distances matching the width. Also place expansion joints at driveways.
2. If some physical obstruction exists which prevents the placing of sidewalks as shown, contact the Engineering Division for alternate location or design.
3. Wooden and other spacers will not be permitted in sidewalks or driveways.
4. No coatings of any kind will be permitted on concrete sidewalks or driveways without specific approval of the City Engineer.
5. All concrete shall be 3000 psi min. @ 28 days, with fiber mesh reinforcing.
6. Concrete surface to be light broom finish.
7. Concrete driveway construction shall be 6" thick w 6"x 6"/10x10 welded wire fabric reinforcement.
8. Ramps shall have a detectable warning surface in conformance with requirements of FDOT Roadway and Traffic Design Standards, Detail 304 or most recent modifications.



TYPICAL DRIVEWAY CROSS SECTION
N.T.S.



SECTION A–A
N.T.S.



SECTION B–B
N.T.S.

DATE	REVISION DESCRIPTION	APP
8/12	REV. TO MAX SLOPE	TM
6/11	REV TO NOTE 8	TM

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
STREET SECTIONS AND DETAILS

TYPICAL SIDEWALK CONSTRUCTION & RAMP DETAIL

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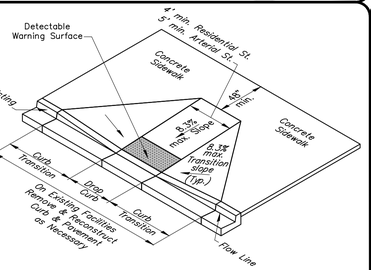
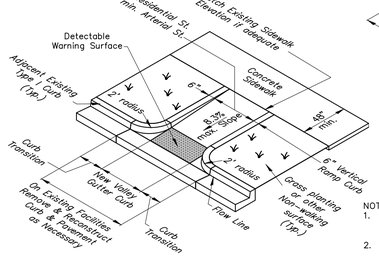
LATEST REVISION	2/22/2016



RAMP IN PEDESTRIAN ROUTE
N.T.S.



NOTES:
1. Public sidewalk curb ramps are designed to the Florida Department of Transportation (FDOT) Design Standards (most recent modifications) Index 304 to comply with the Americans with Disabilities Act.
2. Curb ramp detectable warning surfaces shall extend the full width of the ramp and shall be 24" deep. Detectable warning surfaces shall be constructed in accordance with FDOT Standard Specifications for Road and Bridge Construction, Section 527. Transition slopes are not to have detectable warning surfaces.
3. Depending on actual site conditions, alternate curb ramp designs are available for use. See FDOT Design Standards (most recent version) Index 304.
4. Ramp thickness shall be 4" minimum.

RETURNED CURB RAMPS
N.T.S.

DATE	REVISION DESCRIPTION	APP
11/2/2015	DETAIL REDRAWN	S.R.

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
STREET SECTIONS AND DETAILS

TYPICAL SIDEWALK CURB RAMPS

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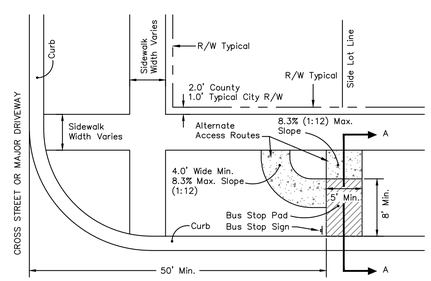
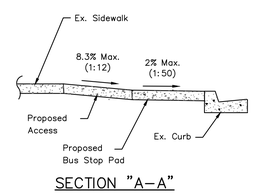


PLAN VIEW
N.T.S.



SECTION "A–A"
N.T.S.

NOTES:
1. Bus Stop Pad may extend from existing curb to or through the alignment of existing sidewalk.
2. The Bus Stop Pad will follow the same slope and will be flush with the back of curb.
3. The maximum slope across the long dimension of the Bus Stop Pad (perpendicular to the curb) must be a maximum of 2% (1:50). When field conditions do not allow a 2% (1:50) slope, the minimum feasible slope shall be provided, not to exceed 8.3% (1:12).
4. Paved access to the Bus Stop Pad from the sidewalk must meet City of Clearwater sidewalk standards and ADA standards with a maximum slope of 8.3% (1:12) and level rest stops no more than 30 feet apart. Location of access will be field determined. Slope of parkway area adjacent to Bus Stop Pad will be field determined.
5. Bus Stop Pad shall be a minimum of 6" reinforced concrete with 6"x6"/10x10 welded wire fabric reinforcement the same as concrete driveways.
6. Bus Stop Pad shall be centered as close to lot lines as possible. Existing bus stop signs may need to be relocated accordingly.

DATE	REVISION DESCRIPTION	APP
5/18/15	REV. NOTES	S.R.
8/12	REV. SLOPE	P.B.

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
STREET SECTIONS AND DETAILS

TYPICAL BUS STOP PAD DETAIL

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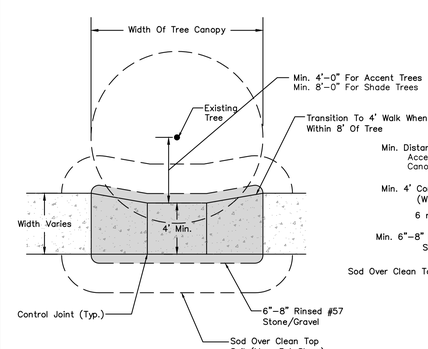
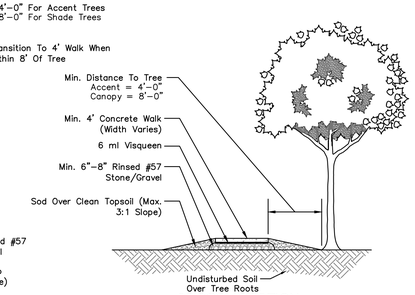
NOTE: All concrete sidewalk construction shall conform with minimum requirements found in City Index 109.



PLAN VIEW
N.T.S.



CROSS–SECTION
N.T.S.

DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
STREET SECTIONS AND DETAILS

SIDEWALK CONSTRUCTION WITH TREE PROTECTION

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100% PLANS SET

REVISION	BY	DATE

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Tampa, FL 33624
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EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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CLEVELAND STREET PHASE III AND FESTIVAL CORE ROADWAY DETAILS

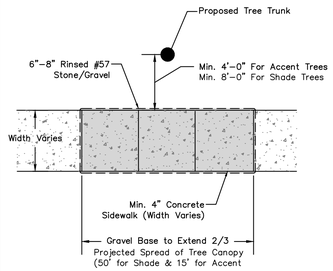
DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A HORIZ. 1" = 20'
CONTRACT NO.: 16–0003–EN	DATE DRAWN: 04–08–19	DRAWN BY: CMN	
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: RF	SHEET NO.: 350

APPROVED FOR CONSTRUCTION _____ DATE

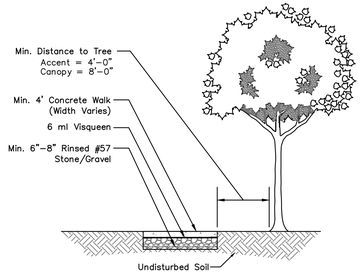
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

X

NOTE: All concrete sidewalk construction shall conform with minimum requirements found in City Index 109.



PLAN VIEW
N.T.S.



CROSS–SECTION
N.T.S.

DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
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STREET SECTIONS AND DETAILS

SIDEWALK CONSTRUCTION FOR FUTURE TREE PROTECTION

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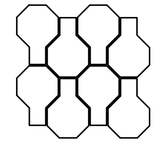
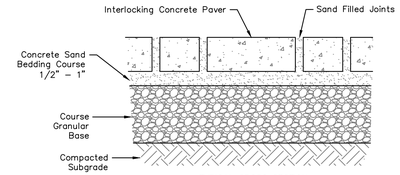


INSTALLATION PATTERN
(Pattern will vary with selected paver)



TYPICAL CROSS SECTION

NOTES:
1. Interlocking paving units shall generally be installed in accordance with manufacturer's requirements.
2. Paver Thickness: 2 3/8" – Residential, Light Duty Traffic; 3 1/8" – Commercial, Heavy Duty Traffic
3. Concrete Pavers to conform to ASTM C936–82.
4. Course Granular Base shall be in accordance with manufacturer's requirements (4" min. for 2 3/8" pavers and 8" min. for 3 1/8" pavers). Granular base shall be crushed concrete road base #57 and fines or other material approved by City Engineer.
5. Coloring or dye shall be uniform throughout each concrete paver unit. Dipped or externally colored paver units are unacceptable.
6. Pavers shall be installed with edge restraint and confined with cemented paver units, curbs, poured concrete or other suitable method.
7. Final finished surface shall be of uniform elevation or slope.
8. Subgrade shall be free of clay, organics, or other materials which will allow future settlement and compacted to 98% AASHTO T–180–57.
9. Polymeric sand or other joint filling material, as approved by the City Engineer, shall be installed between pavers in all areas that contain drainage structures, have slopes in excess of 2% or are subject to water runoff.
10. The cross slope on any required pedestrian path crossing a driveway and/or drive apron cannot exceed 2%.

For additional detail see Index No. 113; Sh. 2 of 2:
INTERLOCKING CONCRETE PAVER DETAIL FOR COMMERCIAL TRAFFIC AND ROW INSTALLATION

DATE	REVISION DESCRIPTION	APP
7/20/2012	NOTES 4,9,10 NEW SHEET 2 OF 2	M.Q.

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
STREET SECTIONS AND DETAILS

INTERLOCKING CONCRETE PAVER DETAIL FOR RESIDENTIAL AND PEDESTRIAN TRAFFIC

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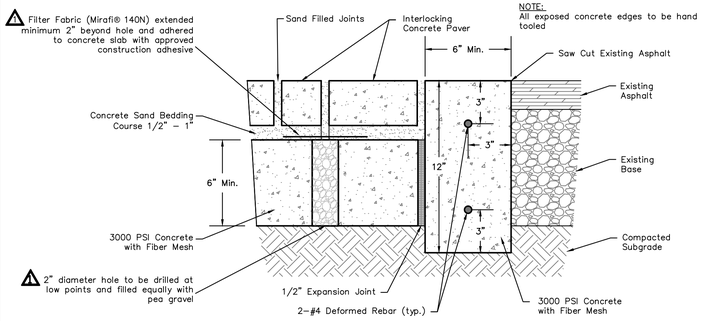

For additional detail see Index No. 113; Sh. 1 of 2:
INTERLOCKING CONCRETE PAVER DETAIL FOR RESIDENTIAL AND PEDESTRIAN TRAFFIC

DATE	REVISION DESCRIPTION	APP
12/17/13	ADDED DRAINAGE HOLE AND FILTER FABRIC	T.M.K.

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
STREET SECTIONS AND DETAILS

INTERLOCKING CONCRETE PAVER DETAIL FOR COMMERCIAL TRAFFIC AND ROW INSTALLATION

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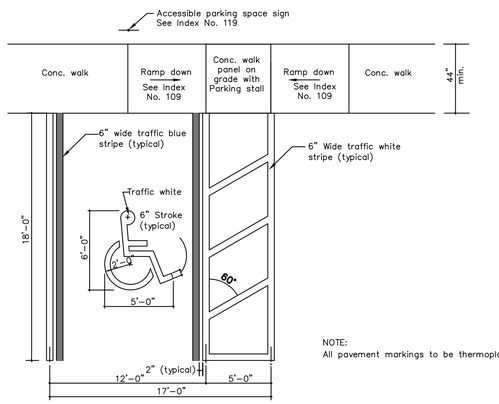
113	2 OF 2
LATEST REVISION 2/22/2016	



NOTE:
All pavement markings to be thermoplastic.

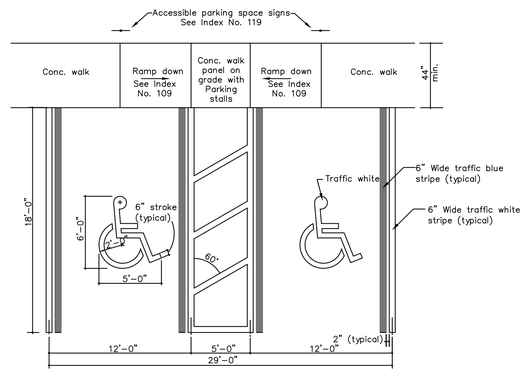
N.T.S.

DATE	REVISION DESCRIPTION	APP
5/18/15	ADDED NOTE	S.R.
2/15/12	CHANGE DETAIL NAME	H.P.

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
STREET SECTIONS AND DETAILS

ACCESSIBLE PARKING STALL – SINGLE

INDEX NO.	PAGE NO.
118	1 OF 2
LATEST REVISION 2/22/2016	



NOTE:
All pavement markings to be thermoplastic.

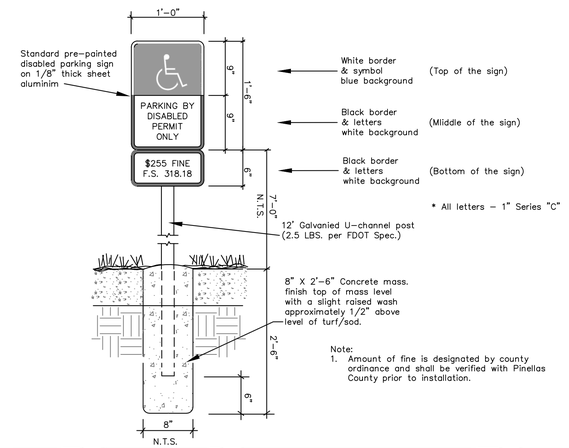
N.T.S.

DATE	REVISION DESCRIPTION	APP
5/18/15	ADDED NOTE	S.R.
2/15/12	CHANGE DETAIL NAME	H.P.

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
STREET SECTIONS AND DETAILS

ACCESSIBLE PARKING STALL – DOUBLE

INDEX NO.	PAGE NO.
118	2 OF 2
LATEST REVISION 2/22/2016	



Note:
1. Amount of fine is designated by county ordinance and shall be verified with Pinellas County prior to installation.

N.T.S.

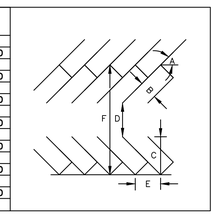
DATE	REVISION DESCRIPTION	APP
2/15/12	CHANGE DETAIL TITLE	H.P.
10/09	CHG. SIGN POST TYPE	H.P.

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
STREET SECTIONS AND DETAILS

TYPICAL ACCESSIBLE PARKING SIGN

INDEX NO.	PAGE NO.
119	1 OF 1
LATEST REVISION 2/22/2016	

A	B	C	D	E	F
0	8.0	8.0	12.0	23.0	28.0
45	9.0	19.5	13.0	12.7	52.0
50	9.0	20.0	14.0	11.7	54.0
60	9.0	20.5	18.0	10.4	59.0
70	9.0	20.0	19.0	9.6	59.0
80	9.0	19.5	24.0	9.1	63.0
90	9.0	18.0	24.0	9.0	60.0



A. Parking angle (Degrees)
B. Stall width (Feet)
C. Stall to curb (Feet)
D. Aisle width (Feet)
E. Curb length (Feet)
F. Min. overall double row with aisle between (Feet)

NOTES
1. All parking space striping to be white in color.
2. If a parking lot serves a use which generates 2,500 or more vehicle trips a day, such parking spaces shall be marked by white thermoplastic lines.
3. All City of Clearwater projects shall be in thermoplastic.

DATE	REVISION DESCRIPTION	APP
12/09	CHANGED NOTE NO. 2	T.E.

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
STREET SECTIONS AND DETAILS

STANDARD PARKING STALL

INDEX NO.	PAGE NO.
120	1 OF 1
LATEST REVISION 2/22/2016	

100% PLANS
BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
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(800) 432–4770
MIN. 48 HOURS BEFORE YOU EXCAVATE

CLEVELAND STREET PHASE III
AND FESTIVAL CORE
ROADWAY DETAILS

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16–0003–EN	DATE DRAWN: 04–08–19	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: RF	SHEET NO.: 351

APPROVED FOR CONSTRUCTION _____ DATE

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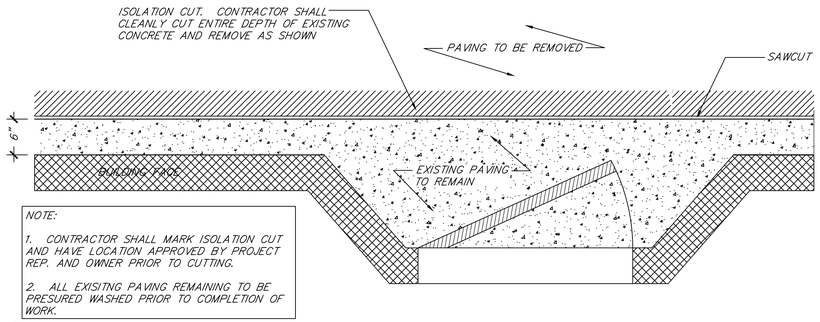
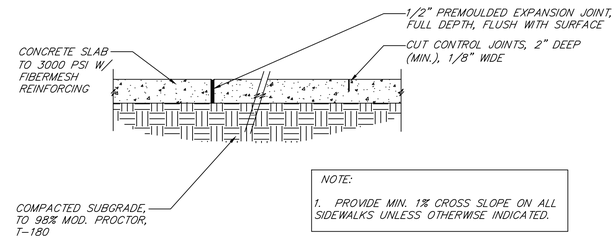
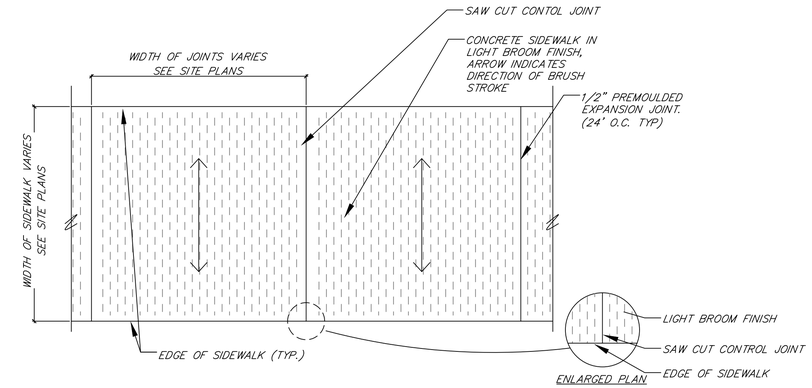
X



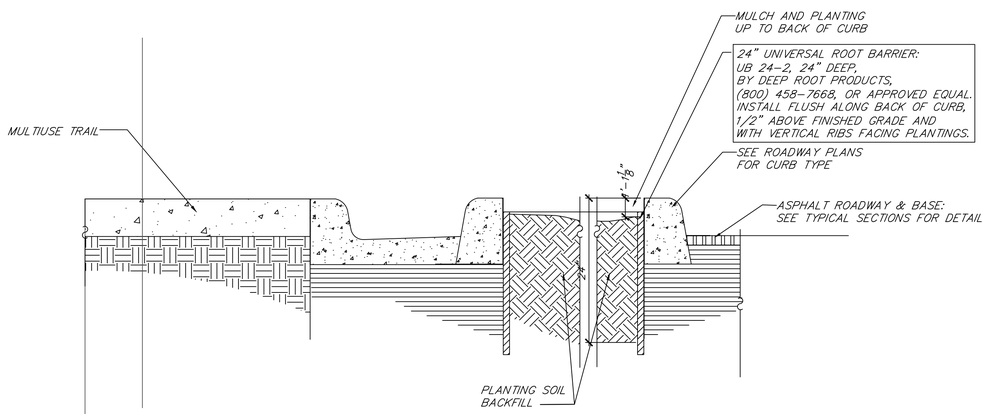
1 / 352 ISOLATION JOINT AT BUILDING FACE
NTS



2 / 352 TYPICAL CONCRETE SIDEWALK
NTS



3 / 352 TYPICAL CONCRETE SIDEWALK – PLAN
NTS



4 / 352 LANDSCAPE ISLANDS – GULF TO BAY BLVD
NTS

100% PLANS
BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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(800) 432-4770
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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
ROADWAY DETAILS

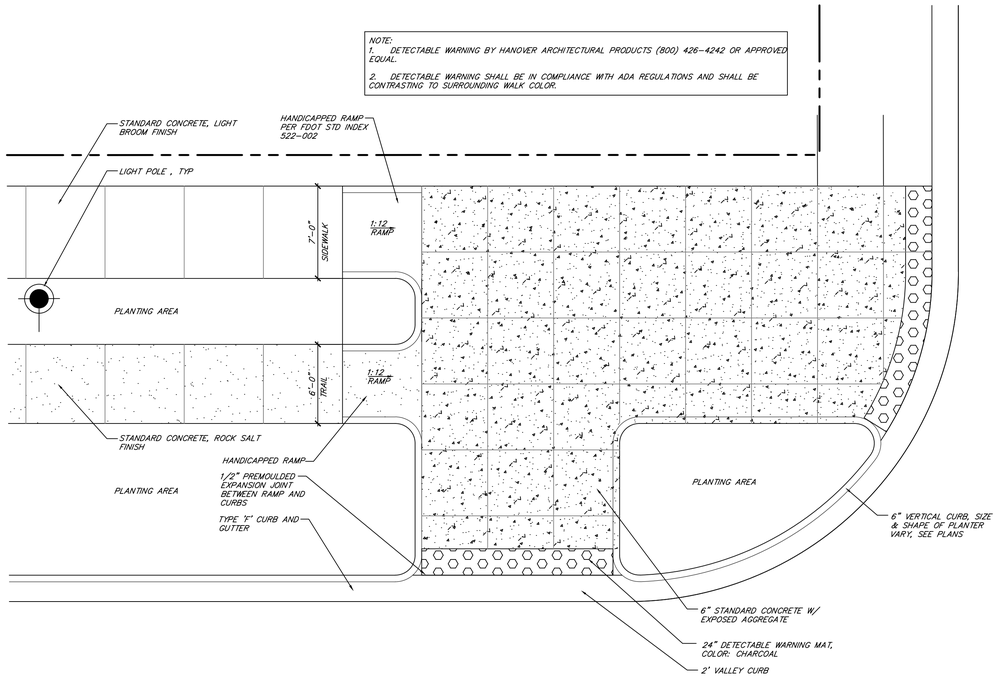
DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 04-08-19	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: RF	SHEET NO.: 352
APPROVED FOR CONSTRUCTION			DATE

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

X

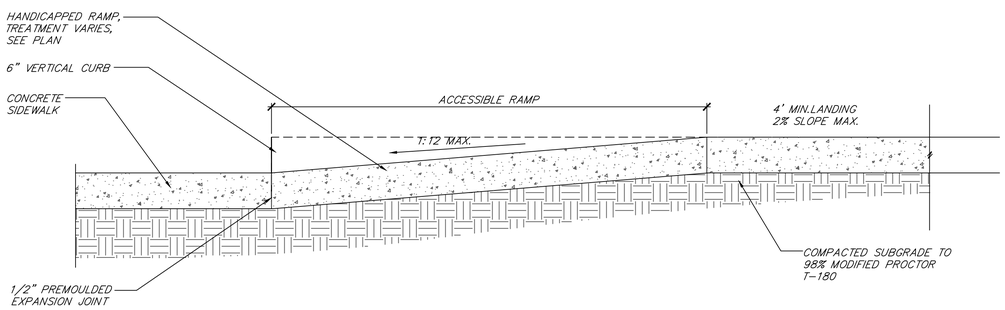
NOTE:
1. DETECTABLE WARNING BY HANOVER ARCHITECTURAL PRODUCTS (800) 426-4242 OR APPROVED EQUAL.

2. DETECTABLE WARNING SHALL BE IN COMPLIANCE WITH ADA REGULATIONS AND SHALL BE CONTRASTING TO SURROUNDING WALK COLOR.



1 / 353 CORNER TREATMENT ATGRADE
SCALE: 1/4"=1'-0"

FILE NAME: xr-corner treatment at grade



2 / 353 HANDICAP RAMP SECTION
SCALE: 1"=1'-0"

FILE NAME: xr-handramp-sec

100% PLANS
BID SET

REVISION	BY	DATE

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3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
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P.E. License Number: 62962

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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
ROADWAY DETAILS

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 04-08-19	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: RF	SHEET NO.: 353

APPROVED FOR CONSTRUCTION _____ DATE

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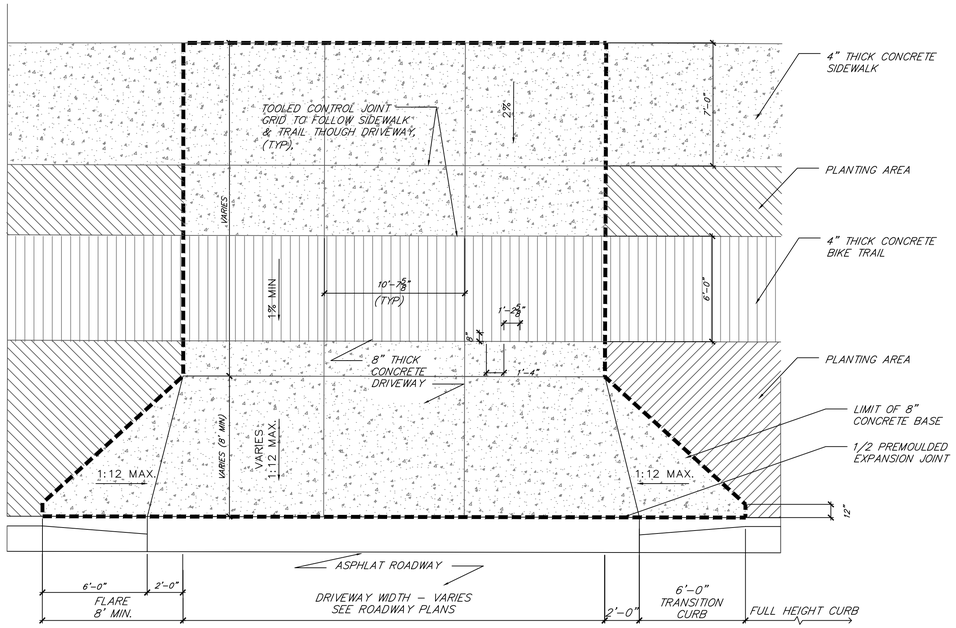
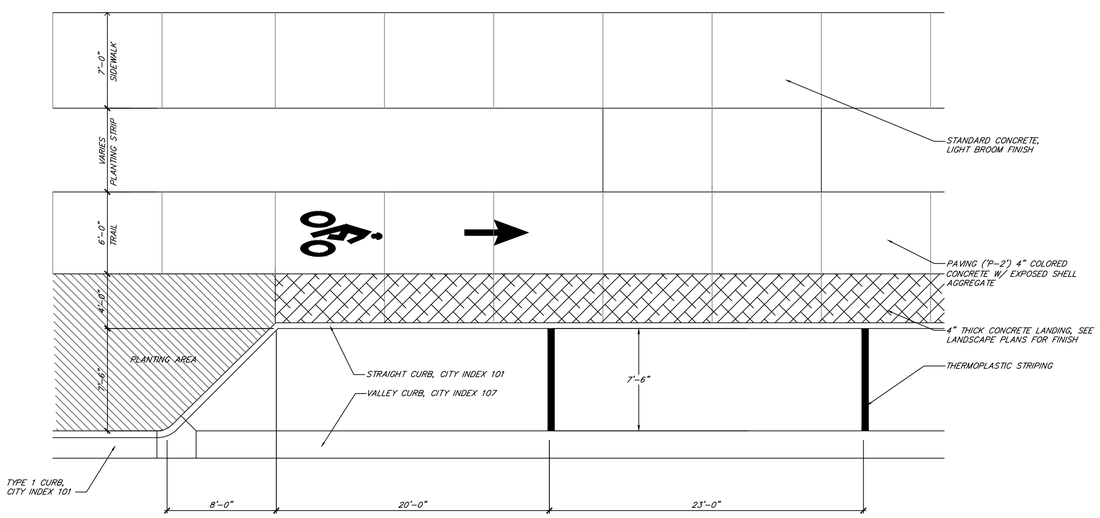
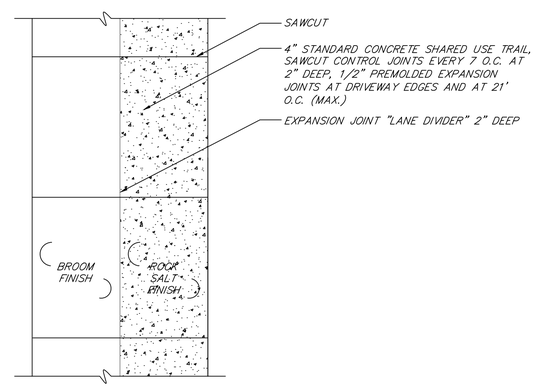


A / 353 TYPICAL CURB CUT & DRIVEWAY – PLAN
SCALE: 1/4" = 1'-0"

FILE NAME: xr-pave aprn plan



2 / 354 PARALLEL PARKING TREATMENT
SCALE: 1/4"=1'-0"



3 / 354 TYPICAL SHARED-USE PAVING PATTERN
SCALE: 1/4"=1'-0"

FILE NAME: xr-pave share-use pattern

100% PLANS BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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CLEVELAND STREET PHASE III AND FESTIVAL CORE ROADWAY DETAILS

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 04-08-19	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: RF	SHEET NO.: 354
APPROVED FOR CONSTRUCTION			DATE

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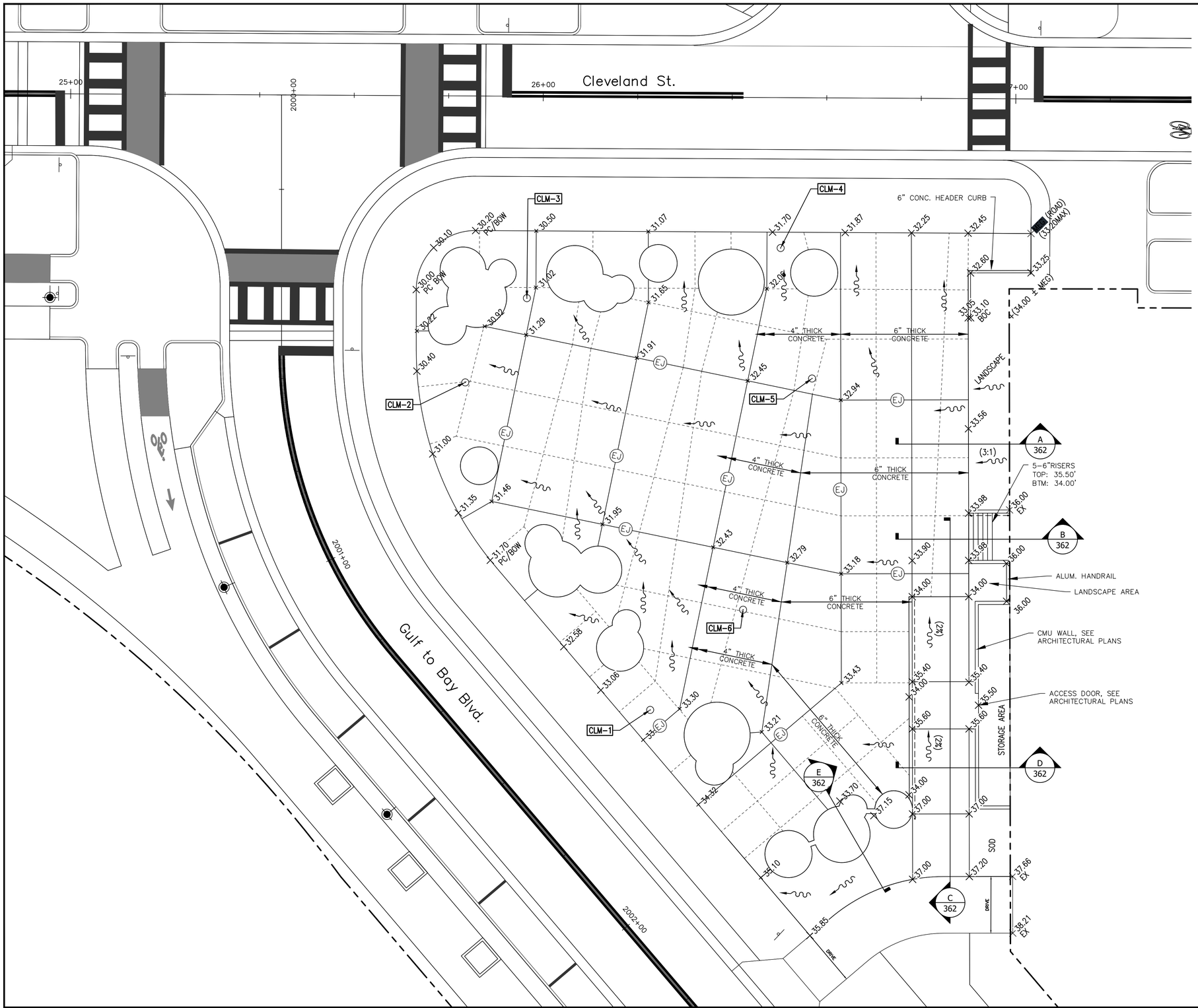

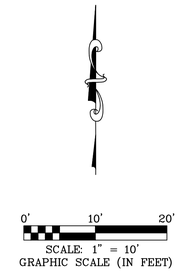

ITEM LOCATION			
Point #	NUMBER	Northing	Easting
1	PLT-1	1320854.23	404563.2025
2	PLT-2	1320878.82	404548.1291
3	PLT-3	1320897.93	404527.5544
4	PLT-4	1320914.65	404514.2162
5	PLT-5	1320936.45	404497.7580
6	PLT-6	1320972.07	404497.2242
7	PLT-7	1320976.49	404517.5032
8	PLT-8	1320979.30	404535.6475
9	PLT-9	1320975.34	404551.0877
10	PLT-10	1320977.35	404568.6321
11	CLM-1	1320884.75	404533.9279
12	CLM-2	1320954.10	404494.7940
13	CLM-3	1320971.95	404507.8342
14	CLM-4	1320982.56	404561.5372
15	CLM-5	1320954.93	404568.1776
16	CLM-6	1320905.97	404553.5873

NOTES:
1. SEE JOINT PLAN FOR GEOMETRY OF CONSTRUCTION JOINTS.
2. FOR CONCRETE FINISH, REFER TO ARCHITECTURAL SHEETS.

LEGEND

- EXPANSION JOINT WITH THICKENED EDGE
- CONSTRUCTION JOINTS
- HANDRAIL
- 33.90 PROPOSED SPOT ELEVATION
- CLM-5 COLUMN REFERENCE PT
- PLT-1 PLANTER REFERENCE PT
- DIRECTION OF DRAINAGE

100% PLANS
BID SET

REVISION	BY	DATE

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CLEVELAND STREET PHASE III AND FESTIVAL CORE FESTIVAL CORE SITE PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 04-08-19	DRAWN BY: CMN	HORIZ. 1" = 10'
JOB NO.: A181093.02	DESIGNED BY: RF	CHECKED BY: CMN	SHEET NO.: 360
APPROVED FOR CONSTRUCTION			DATE

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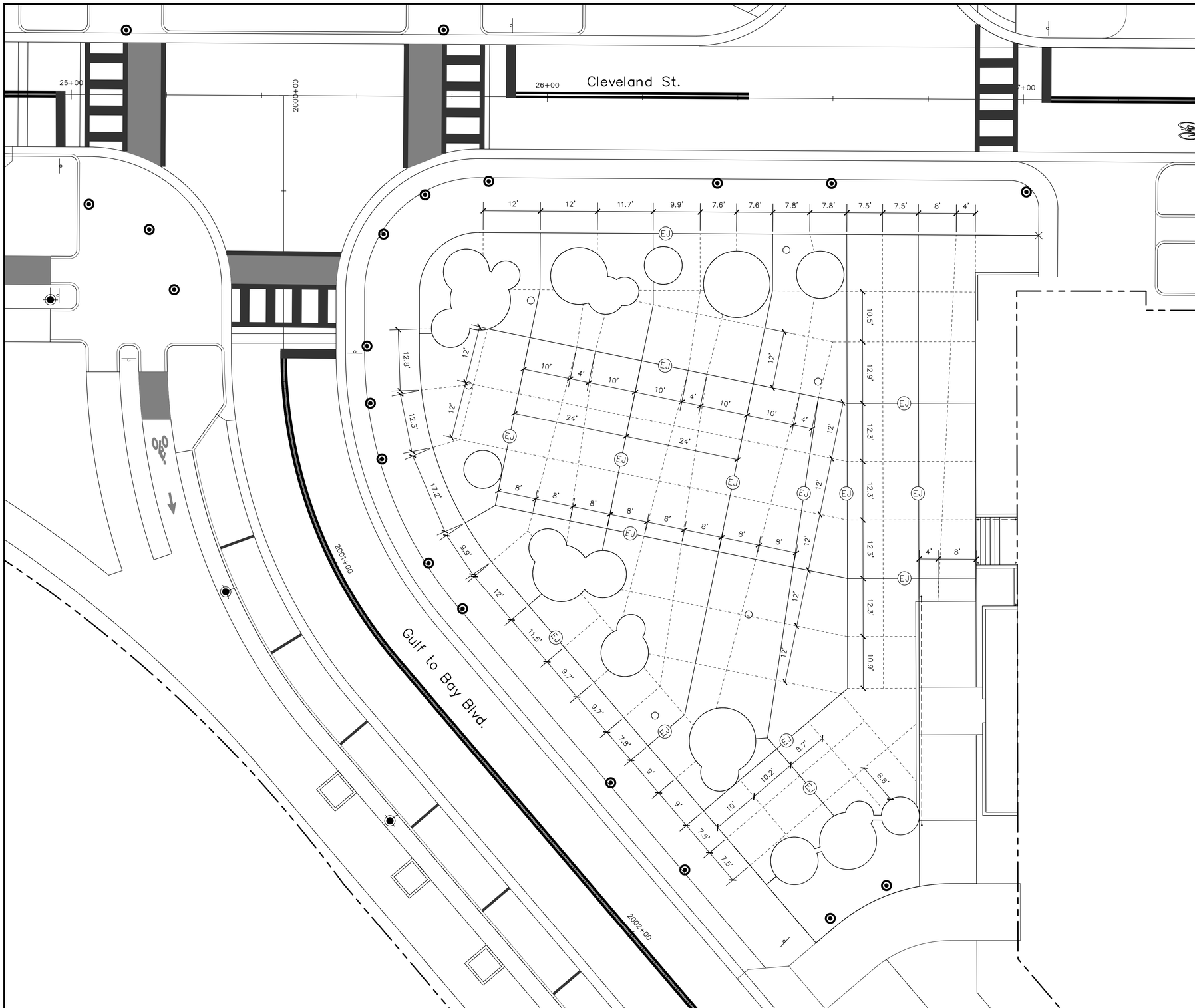

X

0' 10' 20'
SCALE: 1" = 10'
GRAPHIC SCALE (IN FEET)

100% PLANS
BID SET

REVISION	BY	DATE

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Certificate of Authorization 9951
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P.E. License Number: 62962

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CLEVELAND STREET PHASE III AND FESTIVAL CORE
FESTIVAL CORE JOINT PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 04-08-19	DRAWN BY: CMN	HORIZ. 1" = 10'
JOB NO.: A181093.02	DESIGNED BY: RF	CHECKED BY: CMN	SHEET NO.: 361

APPROVED FOR CONSTRUCTION _____ DATE

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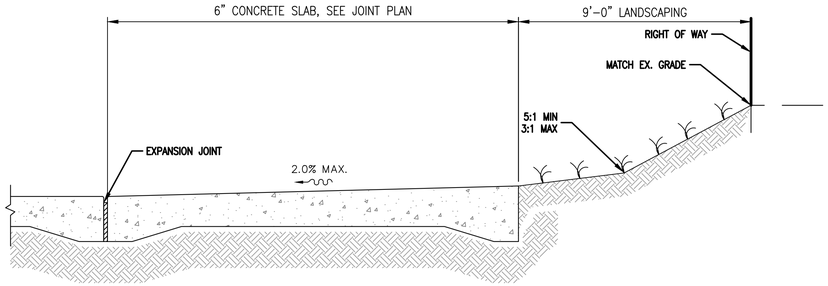
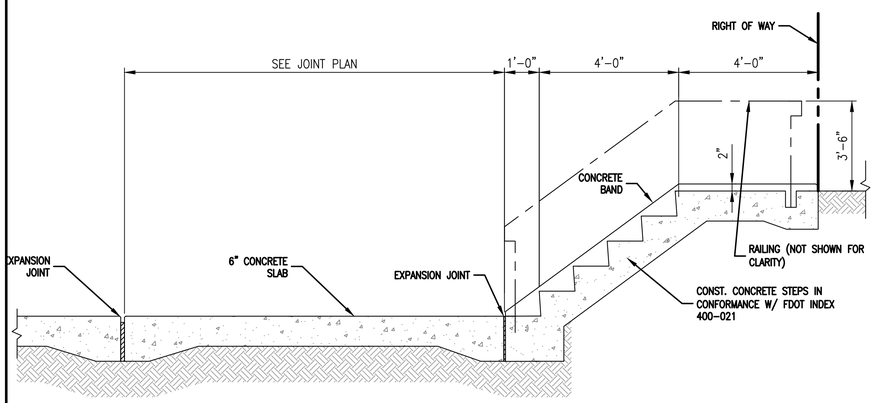


A SECTION
N.T.S.



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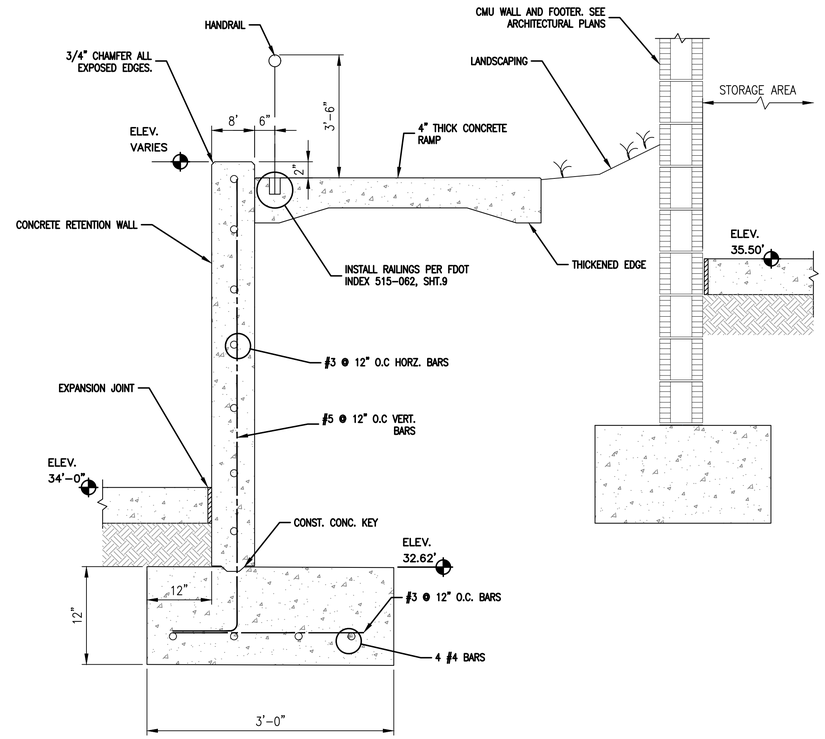
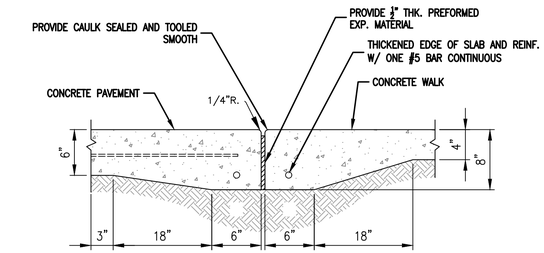
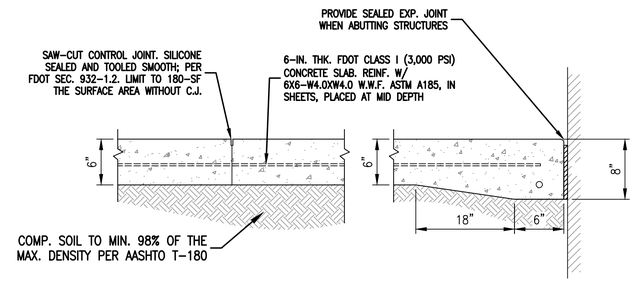


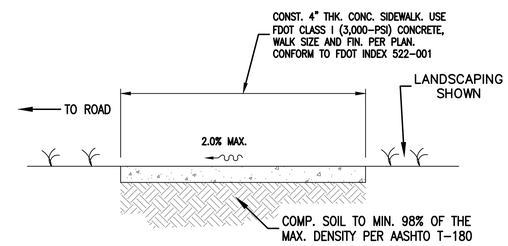
D SECTION
N.T.S.



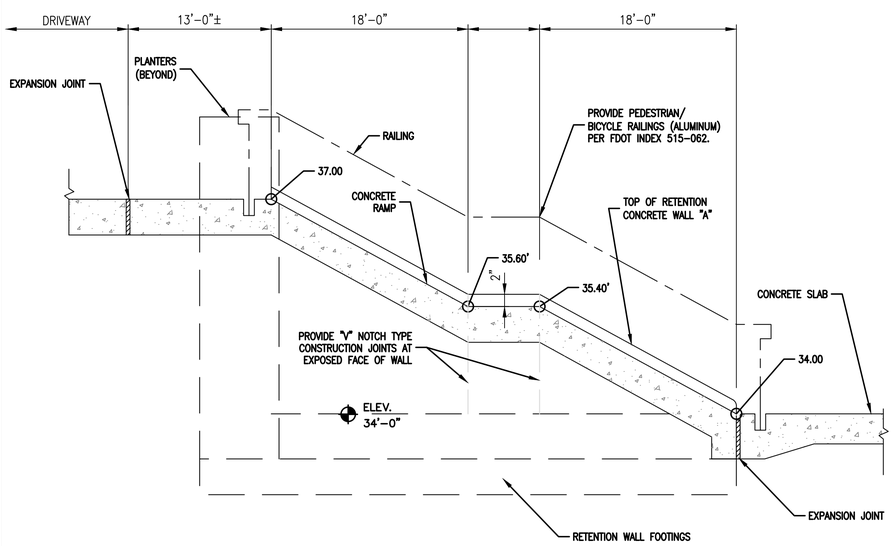
1 EXPANSION JOINT WITH THICKENED EDGE
N.T.S.



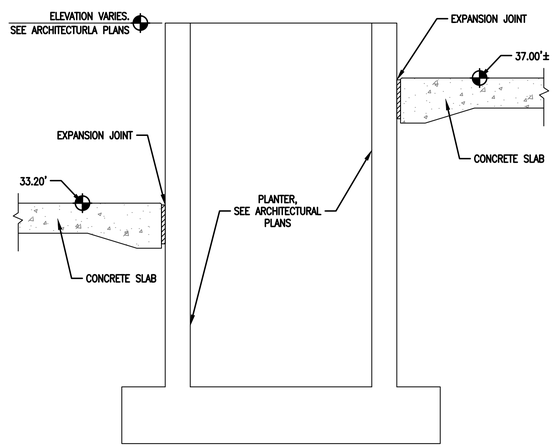
2 TYPICAL CONCRETE PAVEMENT DETAIL
N.T.S.



3 TYPICAL CONCRETE WALK DETAIL
N.T.S.



C SECTION
N.T.S.



E SECTION
N.T.S.

NOTES:

1. PROVIDE THICKENED EDGE FOR CONCRETE AT ALL EXPANSION JOINT LOCATIONS AND WHEN ABUTTING LANDSCAPE AREAS.
2. PROVIDE SEALED EXPANSION JOINTS, PER PLANS, OTHERWISE CONFORM TO FDOT INDEX 310.
3. CONCRETE WALK SHALL CONFORM TO FDOT SPEC. SECTION 522. USE MIN. 3,000-PSI CONCRETE.
4. PROVIDE ($\frac{3}{16}$"W. BY 1.0" D.) TOOLED OR SAW-CUT JOINTS.
5. PROVIDE CONCRETE BROOM FINISH IN STANDARD COLOR, UNLESS OTHERWISE INDICATED IN THE LANDSCAPE ARCHITECT DOCUMENTS.
6. THE WALK CROSS SLOPE SHALL NOT EXCEED 2%.

100% PLANS
BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
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P.E. License Number: 62962

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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
FESTIVAL CORE DETAILS

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 04-08-19	DRAWN BY: EAPS	HORIZ. 1" = 10'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: CMN	SHEET NO.: 362
APPROVED FOR CONSTRUCTION			DATE

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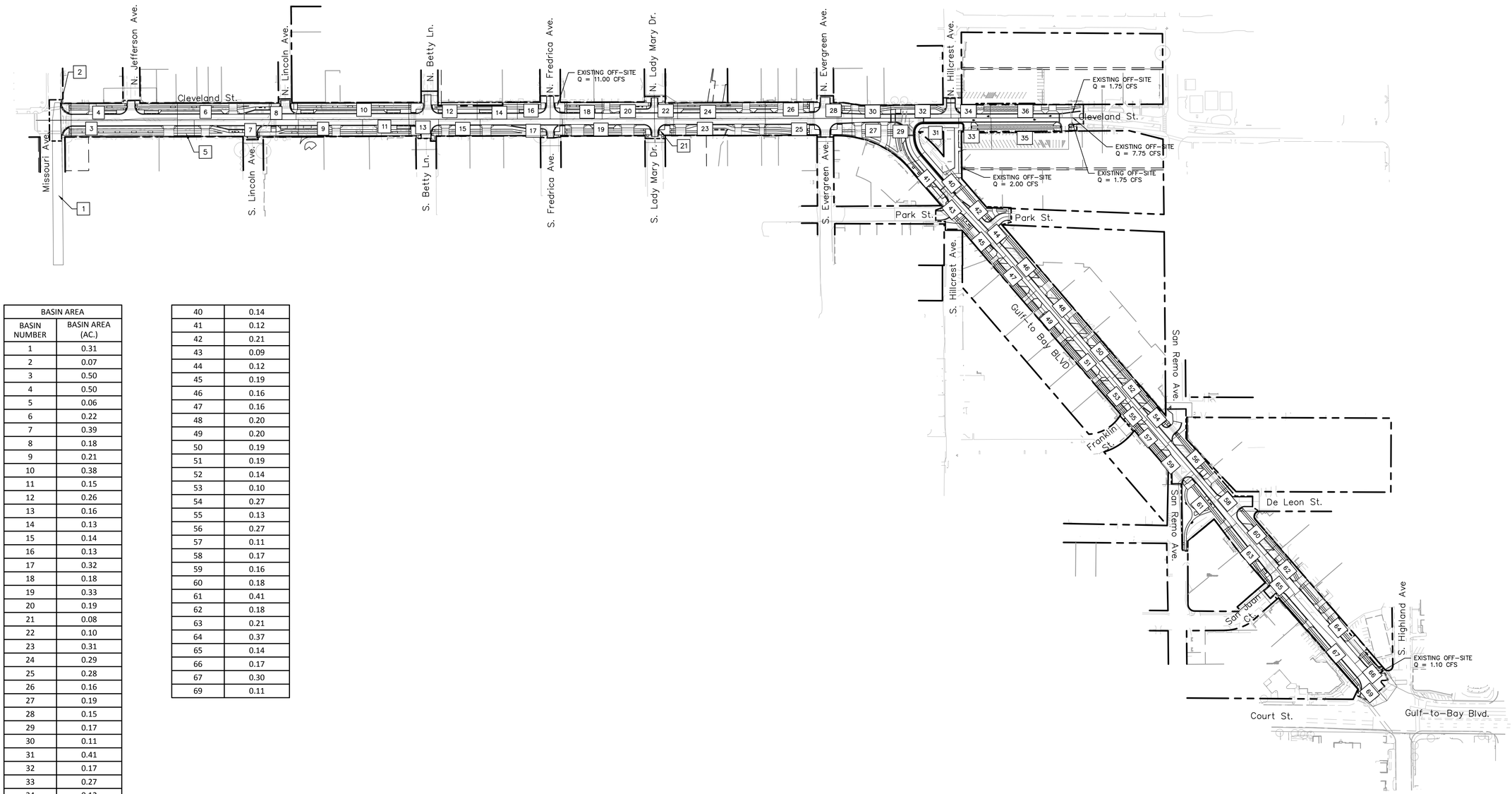
0' 120' 240'
SCALE: 1" = 120'
GRAPHIC SCALE (IN FEET)



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BASIN NUMBER	BASIN AREA (AC.)
1	0.31
2	0.07
3	0.50
4	0.50
5	0.06
6	0.22
7	0.39
8	0.18
9	0.21
10	0.38
11	0.15
12	0.26
13	0.16
14	0.13
15	0.14
16	0.13
17	0.32
18	0.18
19	0.33
20	0.19
21	0.08
22	0.10
23	0.31
24	0.29
25	0.28
26	0.16
27	0.19
28	0.15
29	0.17
30	0.11
31	0.41
32	0.17
33	0.27
34	0.12
35	0.50
36	0.22
40	0.14
41	0.12
42	0.21
43	0.09
44	0.12
45	0.19
46	0.16
47	0.16
48	0.20
49	0.20
50	0.19
51	0.19
52	0.14
53	0.10
54	0.27
55	0.13
56	0.27
57	0.11
58	0.17
59	0.16
60	0.18
61	0.41
62	0.18
63	0.21
64	0.37
65	0.14
66	0.17
67	0.30
69	0.11

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P.E. License Number: 62962

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CLEVELAND STREET PHASE III AND FESTIVAL CORE DRAINAGE BASINS MAP

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CED	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: EAPS	CHECKED BY: RF	SHEET NO.: 400

APPROVED FOR CONSTRUCTION _____ DATE

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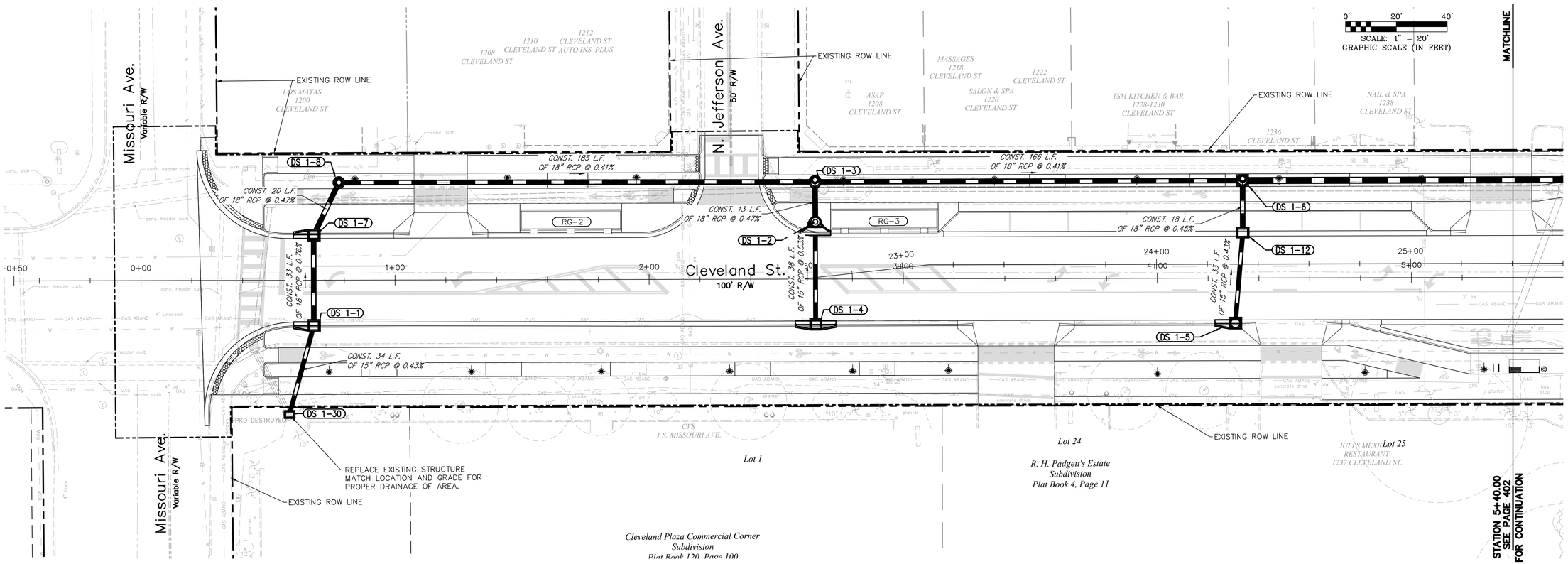

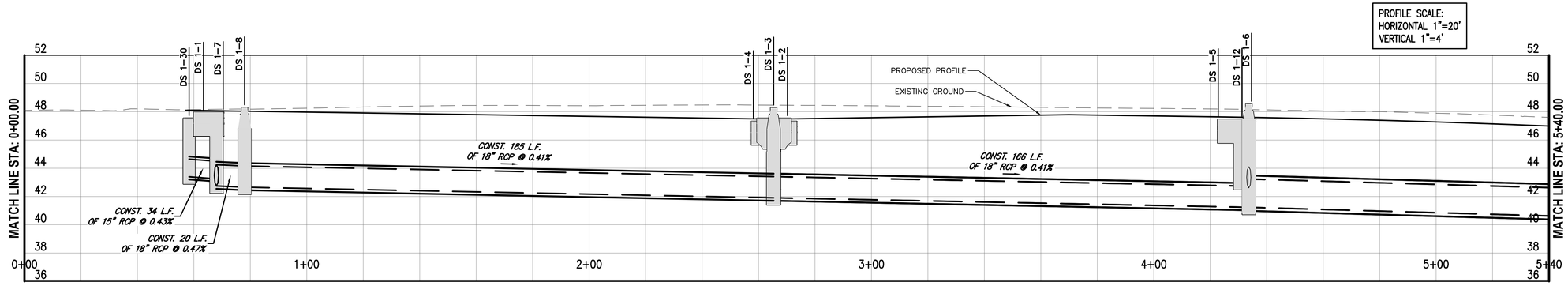

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CLEVELAND STREET PHASE III AND FESTIVAL CORE DRAINAGE PLAN AND PROFILE

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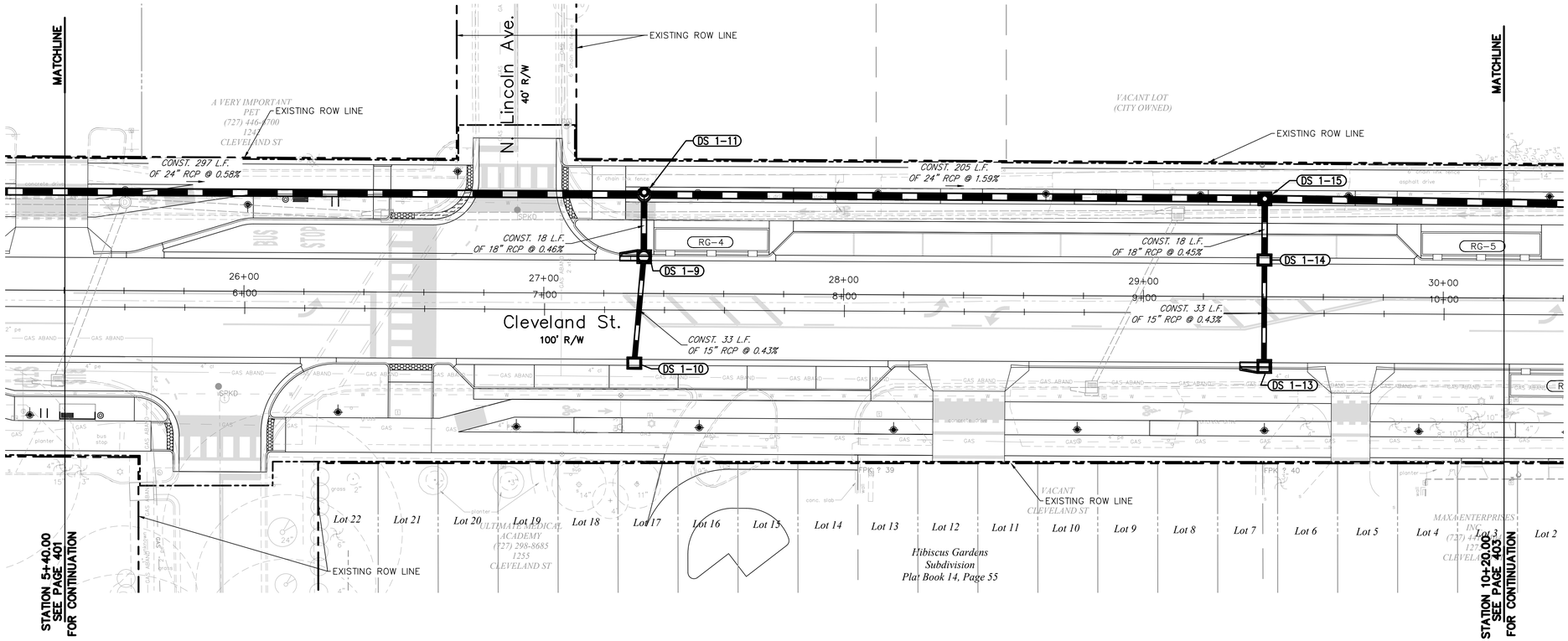

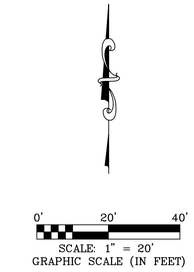

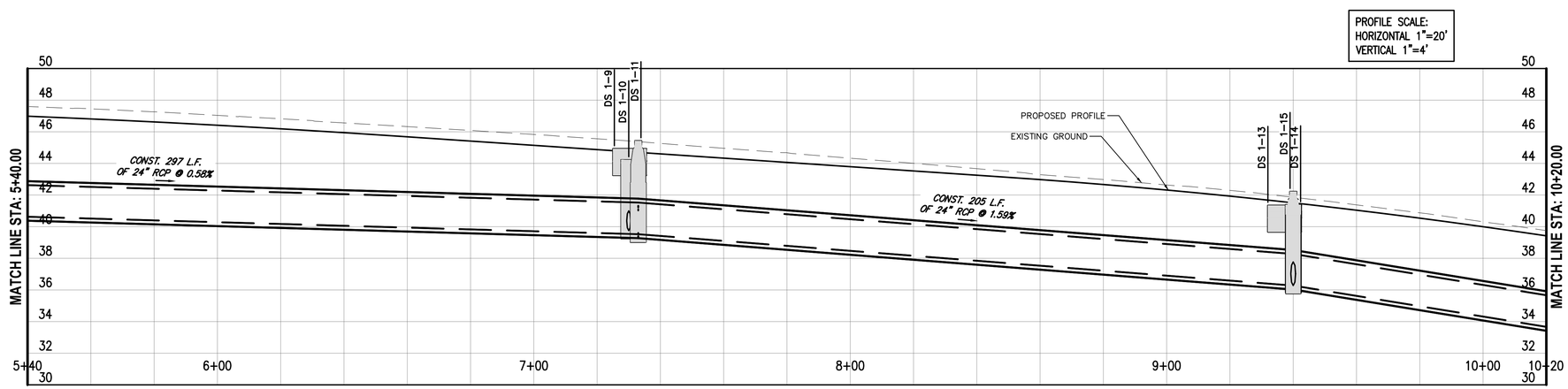

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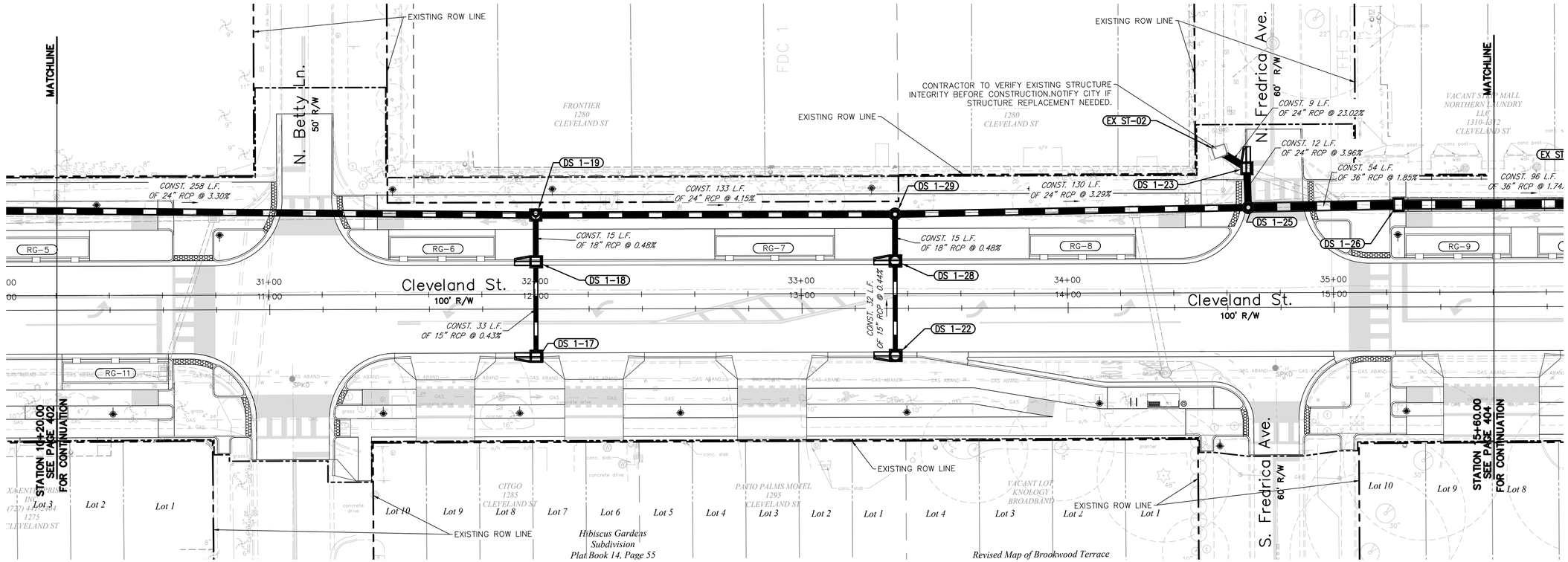

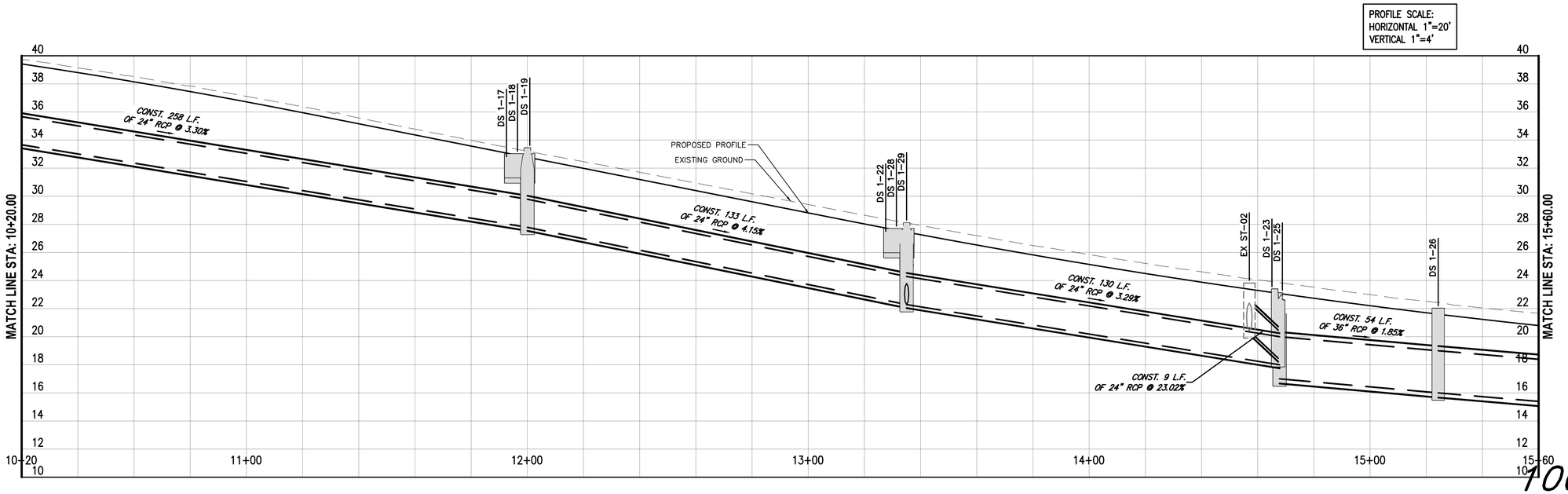

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JOB NO.: A181093.02	DESIGNED BY: EAPS	CHECKED BY: RF	SHEET NO.: 403
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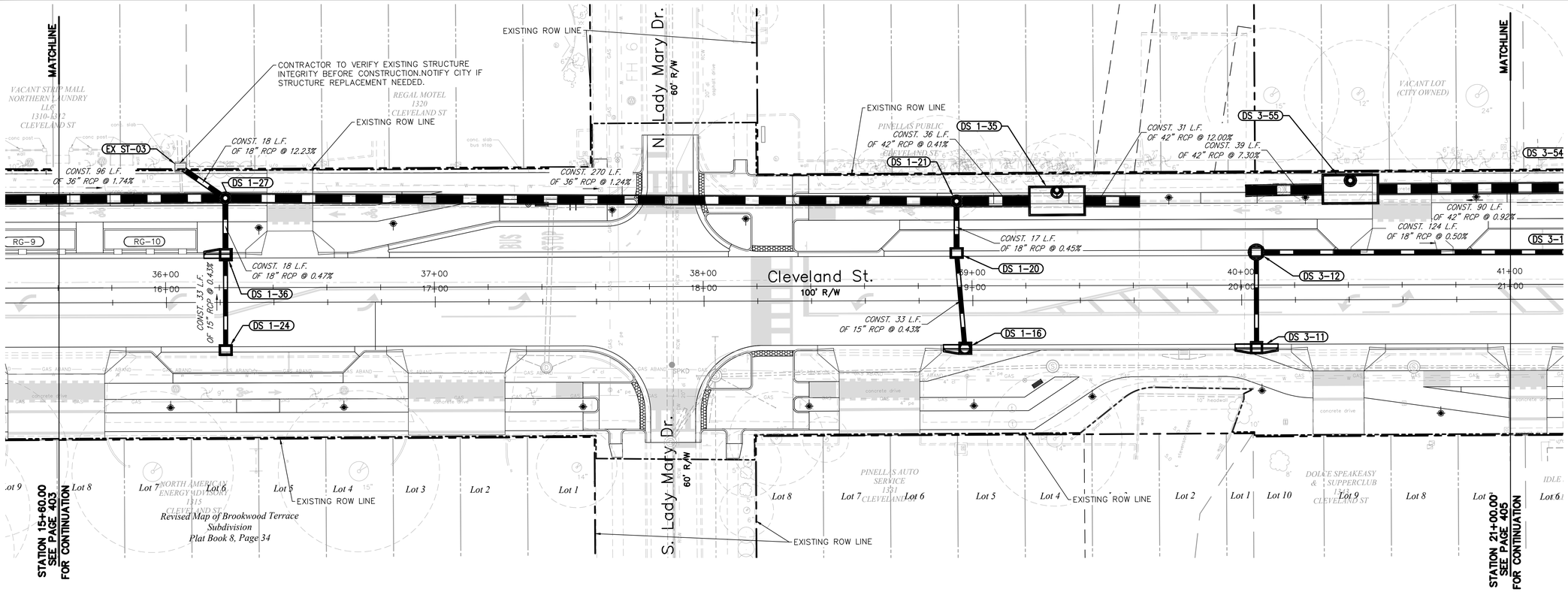

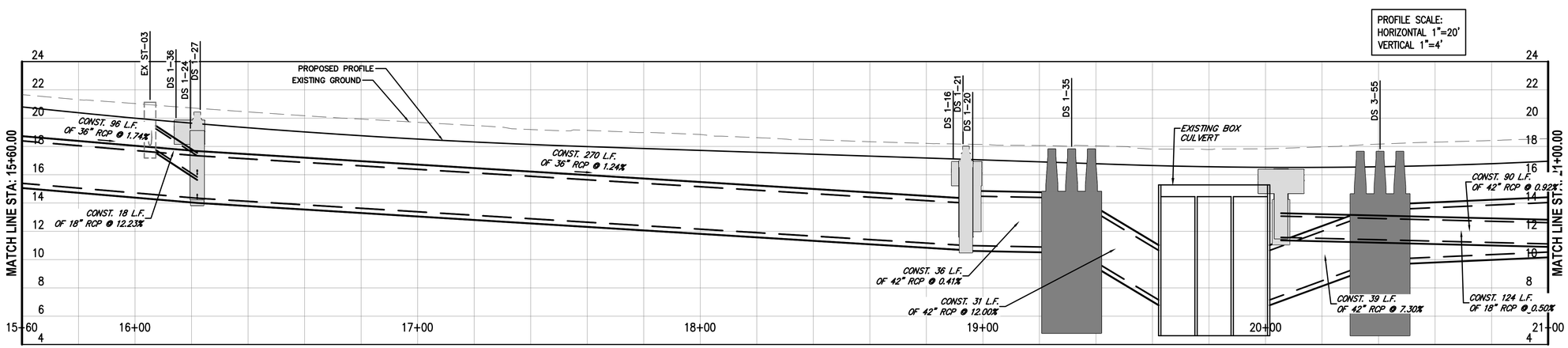

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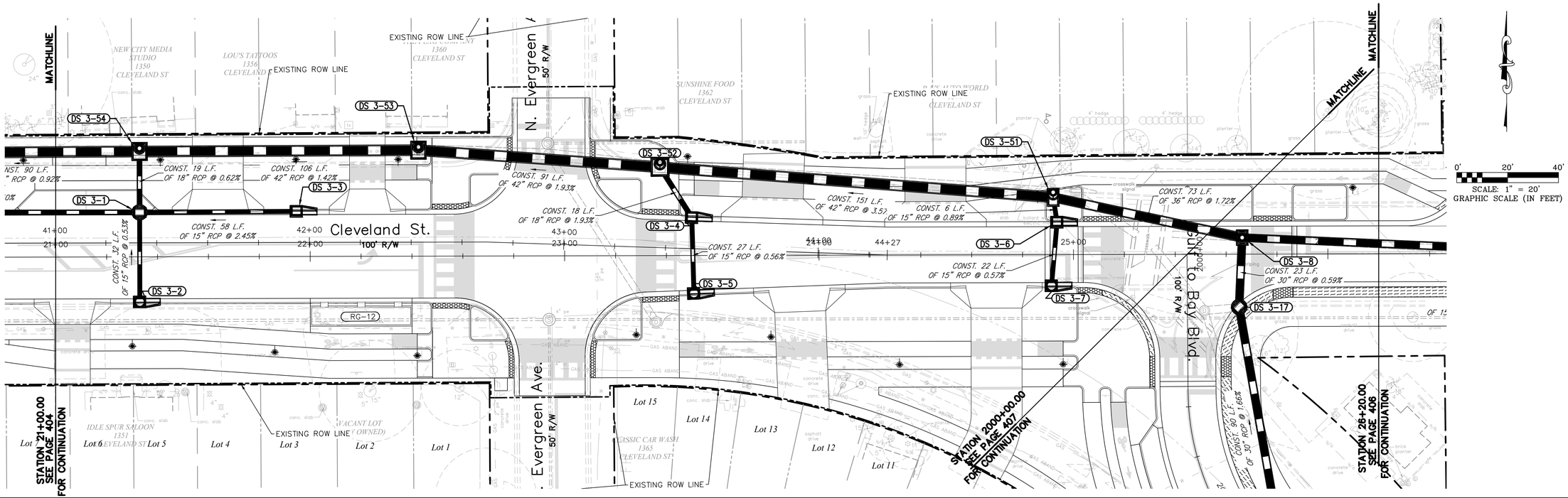

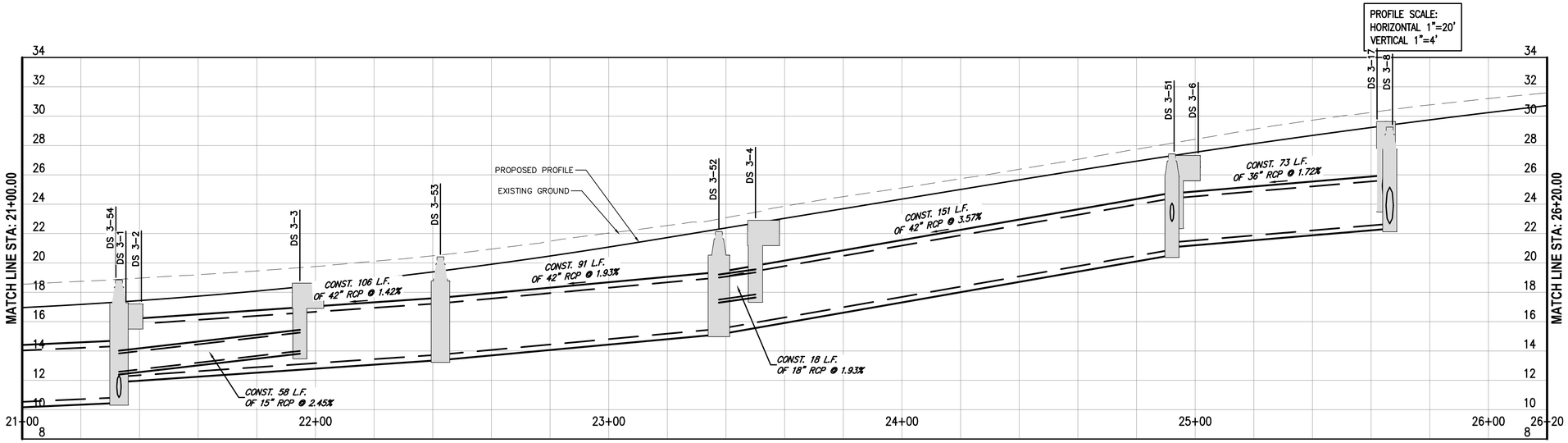

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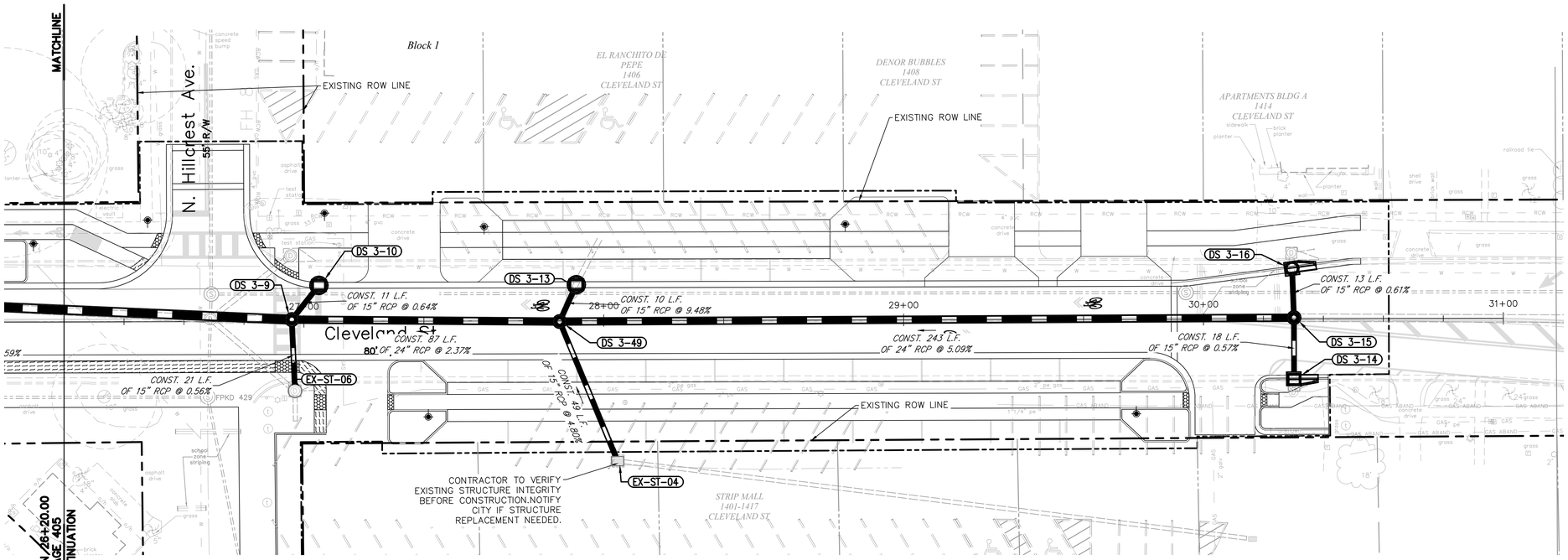

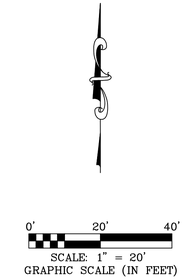

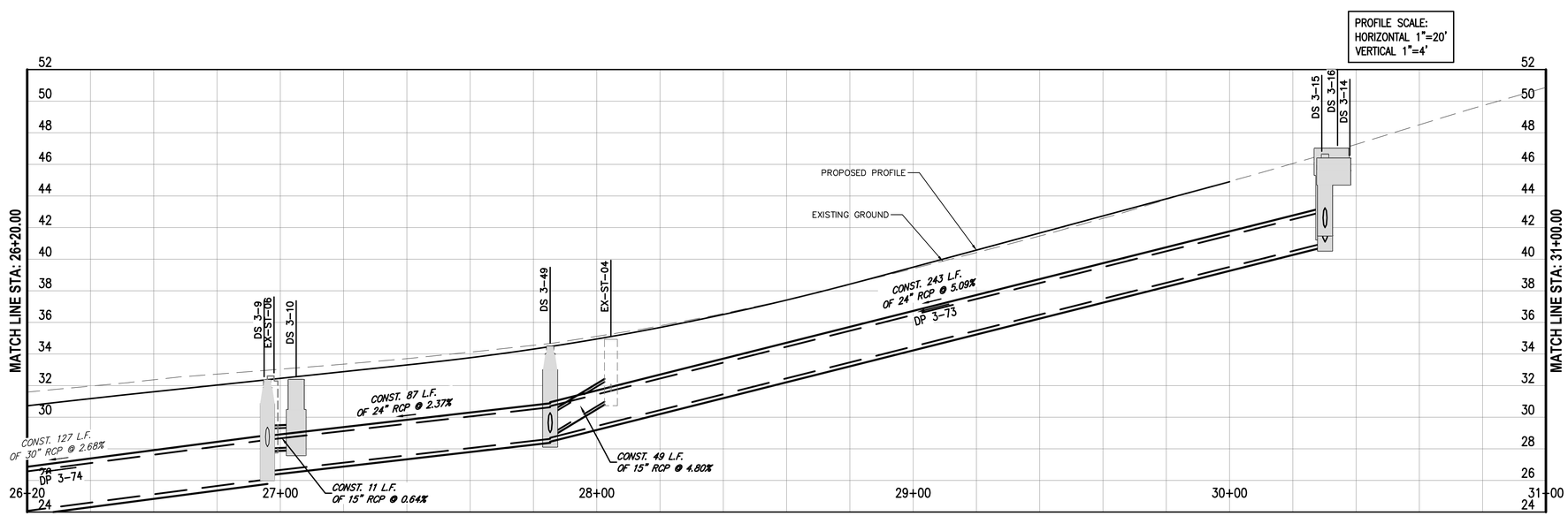

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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
DRAINAGE PLAN AND PROFILE

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
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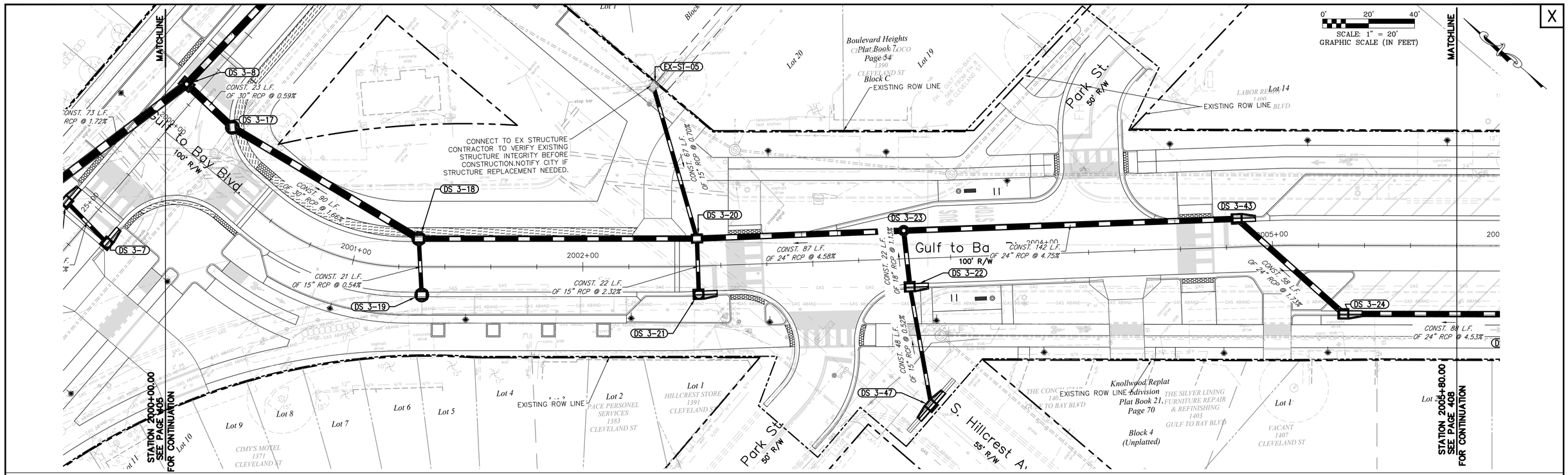

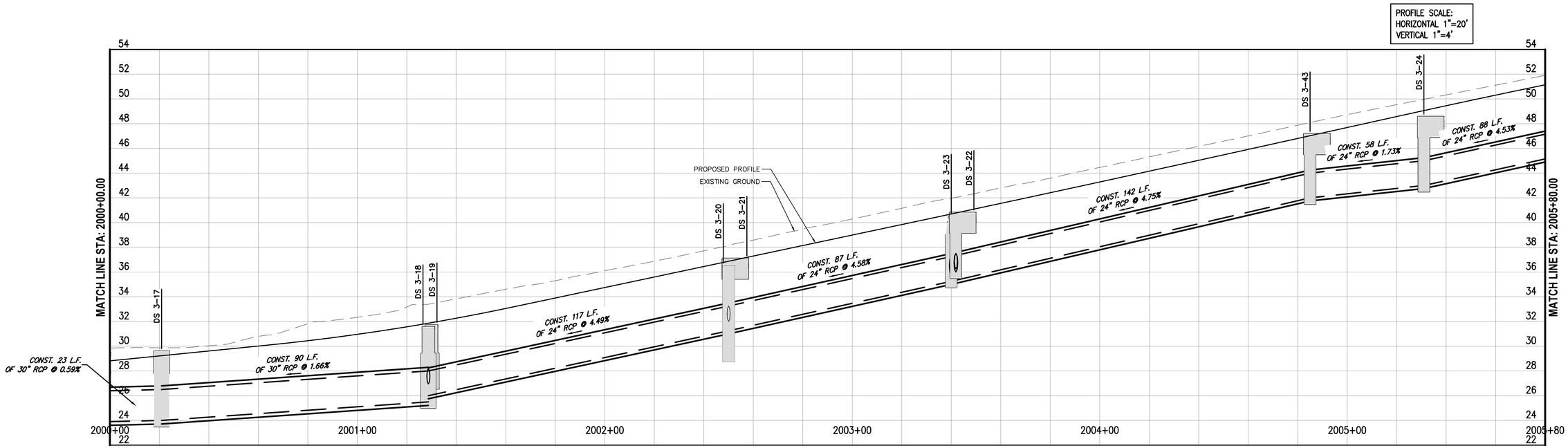

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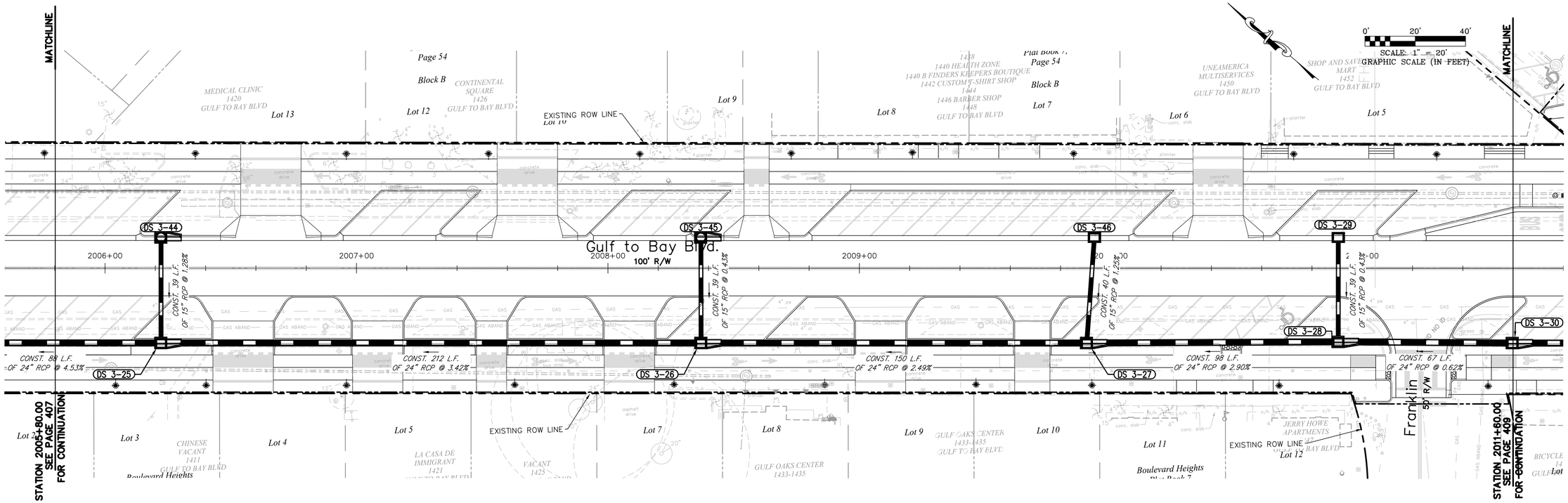

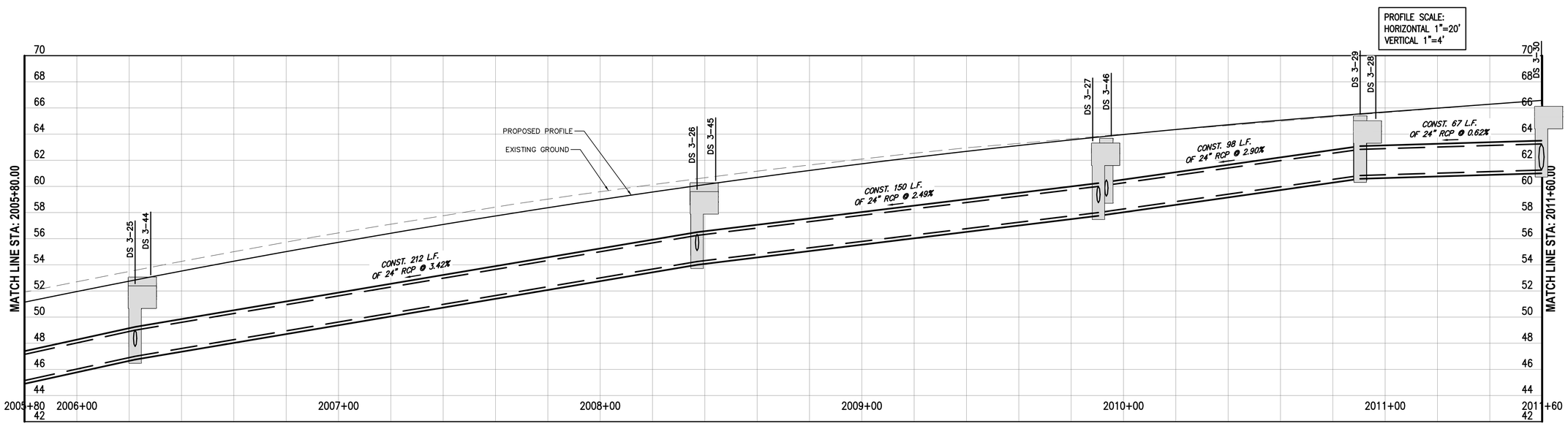

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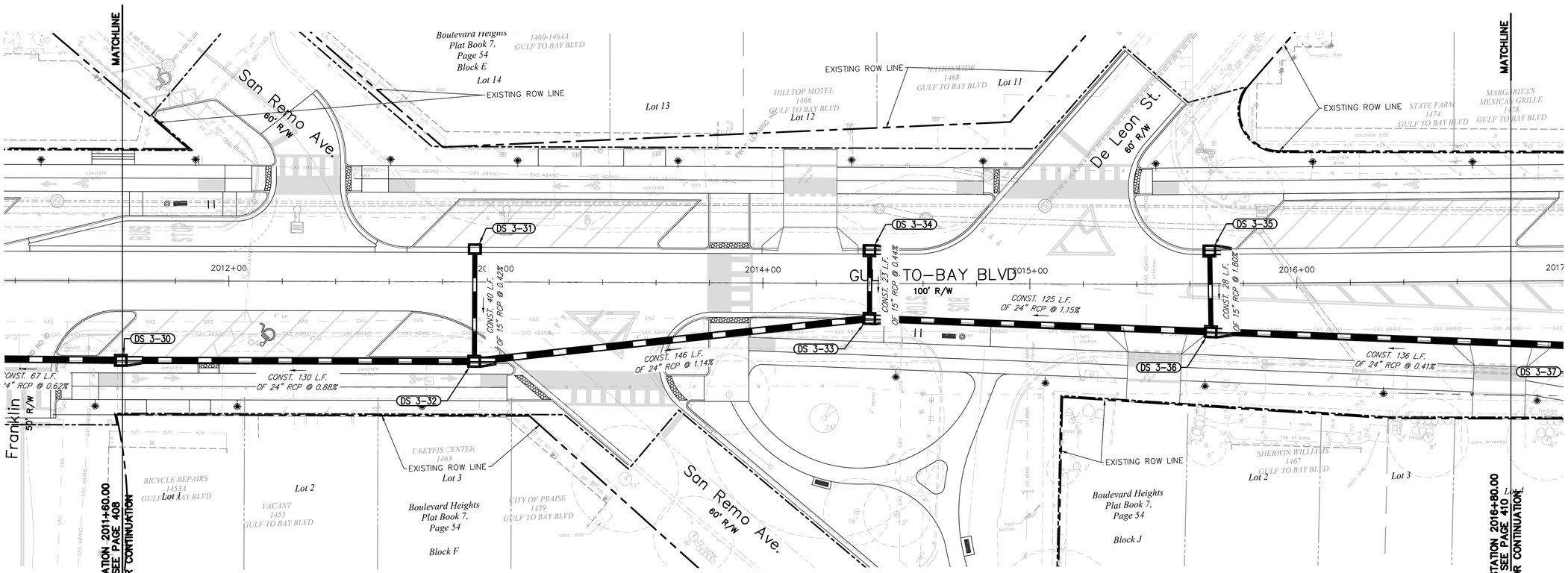
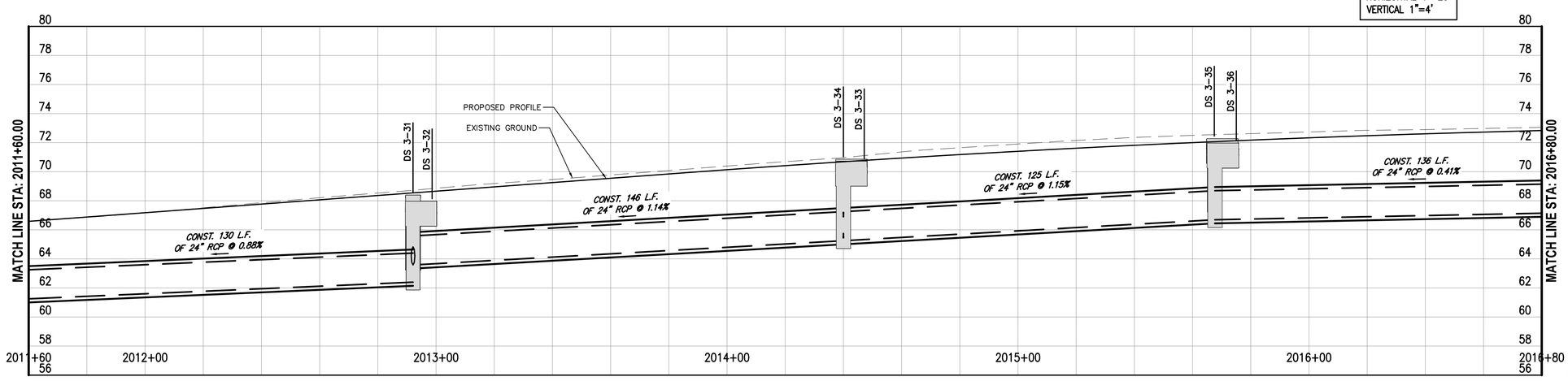


0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)

PROFILE SCALE:
HORIZONTAL 1"=20'
VERTICAL 1"=4'



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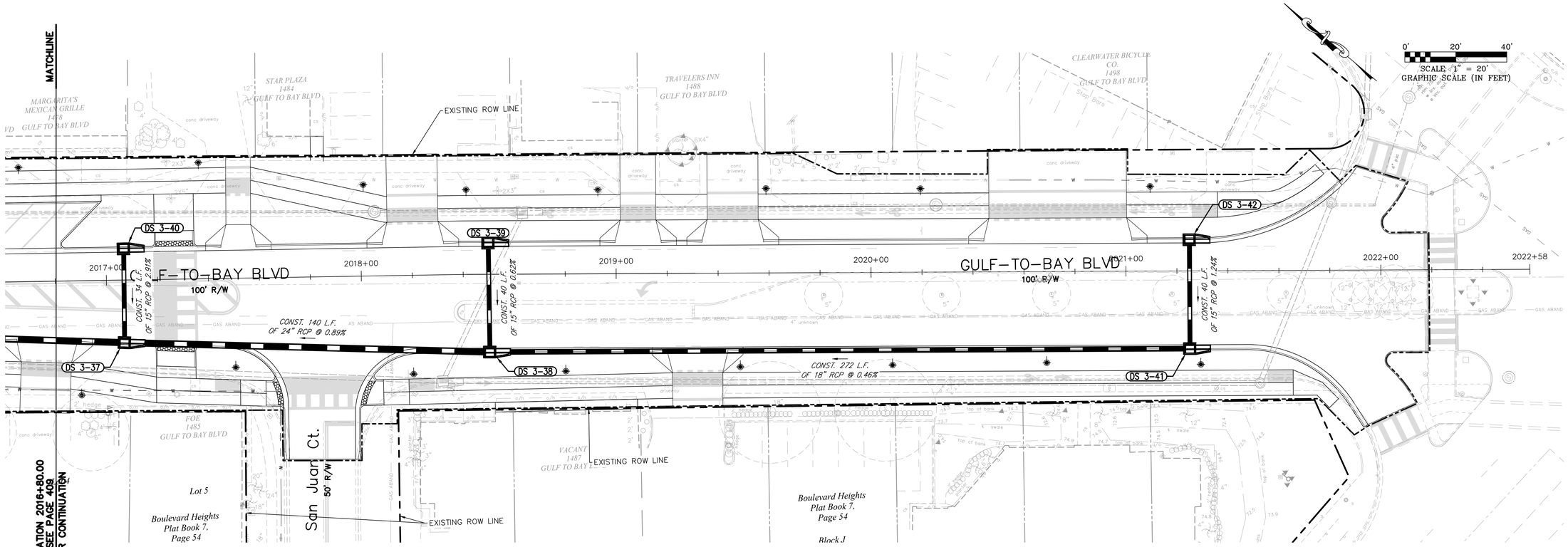

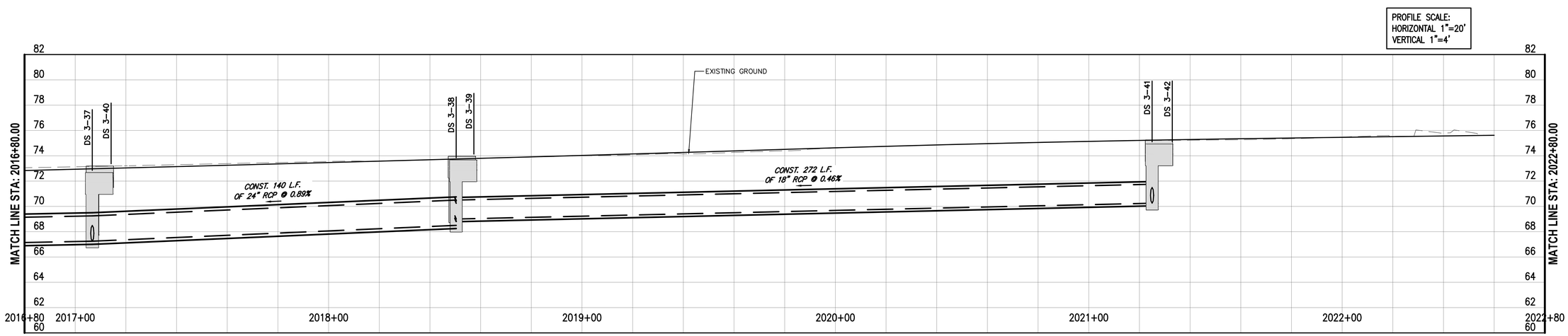

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DRAINAGE STRUCTURE SCHEDULE

STRUCTURE NAME	STRUCTURE DESCRIPTION	STATION OFFSET	RIM/GRATE ELEVATION	PIPE INVERT
DS 1-1	TYPE 5 CURB INLET	STA:0+68.00 OFF:17.750 R	47.91	INV IN=43.25 S 15" RCP INV OUT=43.00 N 18" RCP
DS 1-2	TYPE 4 CURB INLET	STA:2+65.47 OFF:-22.500 L	47.53	INV IN=42.80 S 15" RCP INV OUT=42.55 N 18" RCP
DS 1-3	TYPE 8 MH	STA:2+65.35 OFF:-38.256 L	48.28	INV IN=41.91 W 18" RCP INV IN=42.49 S 18" RCP INV OUT=41.91 E 18" RCP
DS 1-4	TYPE 6 CURB INLET	STA:2+65.49 OFF:17.750 R	47.32	INV OUT=43.00 N 15" RCP
DS 1-5	TYPE 5 CURB INLET	STA:4+30.67 OFF:17.734 R	47.45	INV OUT=43.00 N 15" RCP
DS 1-6	TYPE 8 MH	STA:4+33.67 OFF:-38.361 L	48.54	INV IN=41.24 W 18" RCP INV IN=42.52 S 18" RCP INV OUT=41.24 E 24" RCP
DS 1-7	TYPE 5 CURB INLET	STA:0+68.00 OFF:-17.750 L	47.96	INV IN=42.75 S 18" RCP INV OUT=42.75 NE 18" RCP
DS 1-8	TYPE 8 MH	STA:0+77.97 OFF:-38.404 L	48.30	INV IN=42.66 SW 18" RCP INV OUT=42.66 E 18" RCP
DS 1-9	TYPE 5 CURB INLET	STA:7+33.00 OFF:-17.755 L	44.92	INV IN=39.61 S 15" RCP INV OUT=39.61 N 18" RCP
DS 1-10	TYPE V GUTTER INLET	STA:7+30.00 OFF:17.766 R	44.22	INV OUT=39.75 N 15" RCP
DS 1-11	TYPE 8 MH	STA:7+33.00 OFF:-38.477 L	45.43	INV IN=39.52 W 24" RCP INV IN=39.52 S 18" RCP INV OUT=39.52 E 24" RCP
DS 1-12	TYPE V GUTTER INLET	STA:4+33.67 OFF:-17.782 L	47.48	INV IN=42.86 S 15" RCP INV OUT=42.61 N 18" RCP
DS 1-13	TYPE 5 CURB INLET	STA:9+40.00 OFF:17.750 R	41.34	INV OUT=36.75 N 15" RCP
DS 1-14	TYPE V GUTTER INLET	STA:9+40.00 OFF:-17.750 L	41.38	INV IN=36.61 S 15" RCP INV OUT=36.36 N 18" RCP
DS 1-15	TYPE 8 MH	STA:9+40.00 OFF:-38.189 L	42.22	INV IN=36.28 S 18" RCP INV IN=36.28 W 24" RCP INV OUT=36.28 E 24" RCP
DS 1-16	TYPE 5 CURB INLET	STA:18+97.00 OFF:17.750 R	16.91	INV OUT=12.50 N 15" RCP
DS 1-17	TYPE 5 CURB INLET	STA:12+00.00 OFF:17.750 R	32.62	INV OUT=28.25 N 15" RCP
DS 1-18	TYPE 5 CURB INLET	STA:12+00.00 OFF:-17.750 L	33.00	INV IN=28.11 S 15" RCP INV OUT=27.86 N 18" RCP
DS 1-19	TYPE 8 MH	STA:12+00.02 OFF:-35.346 L	33.42	INV IN=27.79 S 18" RCP INV IN=27.79 W 24" RCP INV OUT=27.79 E 24" RCP
DS 1-20	TYPE V GUTTER INLET	STA:18+94.00 OFF:-17.734 L	16.96	INV IN=12.36 S 15" RCP INV OUT=12.11 N 18" RCP
DS 1-21	TYPE 8 MH	STA:18+94.00 OFF:-36.985 L	17.99	INV IN=11.00 W 36" RCP INV IN=12.03 S 18" RCP INV OUT=11.00 E 42" RCP
DS 1-22	TYPE 5 CURB INLET	STA:13+35.00 OFF:17.750 R	27.30	INV OUT=22.75 N 15" RCP
DS 1-23	TYPE 5 CURB INLET	STA:14+67.27 OFF:-52.402 L	23.38	INV IN=18.47 NW 24" RCP INV OUT=18.47 S 24" RCP
DS 1-24	TYPE 4 CURB INLET	STA:16+22.00 OFF:17.739 R	19.09	INV OUT=14.75 N 15" RCP
DS 1-25	TYPE 8 MH	STA:14+67.76 OFF:-37.547 L	23.10	INV IN=18.00 W 24" RCP INV IN=18.00 N 24" RCP INV OUT=17.00 E 36" RCP
DS 1-26	TYPE D DBI	STA:15+24.23 OFF:-38.468 L	22.00	INV IN=16.00 W 36" RCP INV OUT=16.00 E 36" RCP
DS 1-27	TYPE 8 MH	STA:16+22.00 OFF:-38.790 L	20.41	INV IN=14.52 S 18" RCP INV IN=15.84 NW 18" RCP INV IN=14.34 W 36" RCP INV OUT=14.34 E 36" RCP
DS 1-28	TYPE 5 CURB INLET	STA:13+35.00 OFF:-17.750 L	27.68	INV IN=22.61 S 15" RCP INV OUT=22.36 N 18" RCP
DS 1-29	TYPE 8 MH	STA:13+35.02 OFF:-35.347 L	28.10	INV IN=22.29 W 24" RCP INV IN=22.29 S 18" RCP INV OUT=22.29 E 24" RCP
DS 1-30	TYPE C DBI	STA:0+58.32 OFF:52.798 R	47.54	INV OUT=43.40 N 15" RCP
DS 1-35	BAFFEL BOX SEE NOTE 1	STA:19+31.39 OFF:-37.039 L	17.81	INV IN=10.85 W 42" RCP INV OUT=10.85 E 42" RCP

DRAINAGE STRUCTURE SCHEDULE

STRUCTURE NAME	STRUCTURE DESCRIPTION	STATION OFFSET	RIM/GRATE ELEVATION	PIPE INVERT
DS 1-36	TYPE 5 CURB INLET	STA:16+22.00 OFF:-17.761 L	19.84	INV IN=14.61 S 15" RCP INV OUT=14.61 N 18" RCP
DS 3-1	TYPE V GUTTER INLET	STA:21+33.00 OFF:-17.516 L	17.15	INV IN=10.95 W 18" RCP INV IN=12.58 S 15" RCP INV IN=12.58 E 15" RCP INV OUT=10.95 N 18" RCP
DS 3-2	TYPE 5 CURB INLET	STA:21+33.00 OFF:17.734 R	17.18	INV OUT=12.75 N 15" RCP
DS 3-3	TYPE 5 CURB INLET	STA:21+94.68 OFF:-17.750 L	18.59	INV OUT=14.00 W 15" RCP
DS 3-4	TYPE 5 CURB INLET	STA:23+50.05 OFF:-14.938 L	22.87	INV IN=18.10 S 15" RCP INV OUT=17.85 NW 18" RCP
DS 3-5	TYPE 5 CURB INLET	STA:23+50.80 OFF:14.912 R	22.78	INV OUT=18.25 N 15" RCP
DS 3-6	TYPE 5 CURB INLET	STA:24+93.58 OFF:-12.750 L	27.29	INV IN=22.87 S 15" RCP INV OUT=22.88 N 15" RCP
DS 3-7	TYPE 5 CURB INLET	STA:24+91.35 OFF:12.250 R	27.58	INV OUT=23.00 N 15" RCP
DS 3-8	TYPE 8 MH	STA:25+66.32 OFF:-6.513 L	29.23	INV IN=22.66 E 30" RCP INV IN=23.86 S 30" RCP INV OUT=22.66 W 36" RCP
DS 3-9	TYPE 8 MH	STA:26+95.94 OFF:-0.579 L	32.36	INV IN=28.03 NE 15" RCP INV IN=26.57 E 24" RCP INV IN=28.13 S 15" RCP INV OUT=26.07 W 30" RCP
DS 3-10	TYPE V GUTTER INLET	STA:27+05.02 OFF:-12.000 L	32.37	INV OUT=28.10 SW 15" RCP
DS 3-11	TYPE 6 INLET	STA:20+05.50 OFF:17.750 R	16.36	INV OUT=12.00 N 15" RCP
DS 3-12	TYPE V GUTTER INLET	STA:20+05.50 OFF:-17.750 L	16.39	INV IN=11.82 S 15" RCP INV OUT=11.57 E 18" RCP
DS 3-13	TYPE V GUTTER INLET	STA:27+90.88 OFF:-12.000 L	34.42	INV IN=29.87 NE 15" EX RCP INV OUT=30.00 SW 15" RCP
DS 3-14	TYPE 5 CURB INLET	STA:30+30.18 OFF:19.942 R	46.38	INV OUT=42.00 N 15" RCP
DS 3-15	TYPE 8 MH	STA:30+30.19 OFF:-0.428 L	46.63	INV IN=41.67 N 15" RCP INV IN=41.90 S 15" RCP INV IN=41.09 E 24" EX RCP INV OUT=41.03 W 24" RCP
DS 3-16	TYPE 5 CURB INLET	STA:30+29.61 OFF:-16.840 L	47.00	INV IN=44.07 NE 6" EX PVC INV OUT=41.75 S 15" RCP
DS 3-17	TYPE V GUTTER INLET	STA:25+65.06 OFF:20.782 R	29.61	INV IN=24.00 S 30" RCP INV OUT=24.00 N 30" RCP
DS 3-18	TYPE V GUTTER INLET	STA:2001+28.70 OFF:-12.234 L	31.58	INV IN=26.00 SE 24" RCP INV IN=26.95 SW 15" RCP INV OUT=25.50 N 30" RCP
DS 3-19	TYPE V GUTTER INLET	STA:2001+29.96 OFF:12.234 R	31.73	INV OUT=27.06 NE 15" RCP
DS 3-20	TYPE V GUTTER INLET	STA:2002+50.04 OFF:-11.964 L	36.52	INV IN=32.00 NE 15" RCP INV IN=31.25 SE 24" RCP INV IN=32.00 SW 15" RCP INV OUT=31.25 NW 24" RCP
DS 3-21	TYPE 5 CURB INLET	STA:2002+50.00 OFF:12.250 R	37.11	INV OUT=32.50 NE 15" RCP
DS 3-22	TYPE 5 CURB INLET	STA:2003+41.87 OFF:12.250 R	40.82	INV IN=36.25 SW 15" RCP INV OUT=36.00 NE 18" RCP
DS 3-23	TYPE 8 MH	STA:2003+40.00 OFF:-12.250 L	40.52	INV IN=35.75 SW 18" RCP INV IN=35.25 SE 24" RCP INV OUT=35.25 NW 24" RCP
DS 3-24	TYPE 5 CURB INLET	STA:2005+31.00 OFF:29.750 R	48.57	INV IN=43.00 SE 24" RCP INV OUT=43.00 N 24" RCP
DS 3-25	TYPE 5 CURB INLET	STA:2006+22.27 OFF:29.750 R	52.36	INV IN=47.00 SE 24" RCP INV IN=47.75 NE 15" RCP INV OUT=47.00 NW 24" RCP
DS 3-26	TYPE 5 CURB INLET	STA:2008+37.04 OFF:29.752 R	59.57	INV IN=54.25 SE 24" RCP INV IN=55.08 NE 15" RCP INV OUT=54.25 NW 24" RCP
DS 3-27	TYPE 5 CURB INLET	STA:2009+90.42 OFF:29.750 R	63.29	INV IN=58.75 NE 15" RCP INV IN=58.00 SE 24" RCP INV OUT=58.00 NW 24" RCP
DS 3-28	TYPE 5 CURB INLET	STA:2010+90.45 OFF:29.249 R	64.99	INV IN=60.83 SE 24" RCP INV IN=60.83 NE 15" RCP INV OUT=60.83 NW 24" RCP
DS 3-29	TYPE V GUTTER INLET	STA:2010+90.45 OFF:-12.250 L	65.37	INV OUT=61.00 SW 15" RCP
DS 3-30	TYPE 5 CURB INLET	STA:2011+59.73 OFF:29.750 R	66.10	INV IN=61.25 SE 24" RCP INV OUT=61.25 NW 24" RCP

DRAINAGE STRUCTURE SCHEDULE

STRUCTURE NAME	STRUCTURE DESCRIPTION	STATION OFFSET	RIM/GRATE ELEVATION	PIPE INVERT
DS 3-31	TYPE V GUTTER INLET	STA:2012+92.09 OFF:-12.250 L	68.36	INV OUT=63.75 SW 15" RCP
DS 3-32	TYPE 5 CURB INLET	STA:2012+92.09 OFF:29.750 R	67.94	INV IN=63.58 NE 15" RCP INV IN=63.58 SE 24" RCP INV OUT=62.40 NW 24" RCP
DS 3-33	TYPE 5 CURB INLET	STA:2014+40.00 OFF:13.171 R	70.70	INV IN=65.65 NE 15" RCP INV IN=65.25 SE 24" RCP INV OUT=65.25 NW 24" RCP
DS 3-34	TYPE 5 CURB INLET	STA:2014+40.00 OFF:-12.250 L	70.83	INV OUT=65.75 SW 15" RCP
DS 3-35	TYPE 5 CURB INLET	STA:2015+67.46 OFF:-12.250 L	72.25	INV OUT=67.75 SW 15" RCP
DS 3-36	TYPE 5 CURB INLET	STA:2015+67.69 OFF:17.986 R	71.94	INV IN=66.69 SE 24" RCP INV IN=67.25 NE 15" RCP INV OUT=66.69 NW 24" RCP
DS 3-37	TYPE 5 CURB INLET	STA:2017+06.74 OFF:24.573 R	72.65	INV IN=67.25 SE 24" RCP INV IN=67.25 NE 15" RCP INV OUT=67.25 NW 24" RCP
DS 3-38	TYPE 5 CURB INLET	STA:2018+50.35 OFF:30.500 R	73.65	INV IN=69.00 SE 18" RCP INV IN=69.00 NE 15" RCP INV OUT=68.50 NW 24" RCP
DS 3-39	TYPE 5 CURB INLET	STA:2018+49.86 OFF:-12.250 L	73.93	INV OUT=69.25 SW 15" RCP
DS 3-40	TYPE 5 CURB INLET	STA:2017+06.97 OFF:-12.250 L	73.17	INV OUT=68.25 SW 15" RCP
DS 3-41	TYPE 5 CURB INLET	STA:2021+25.00 OFF:30.500 R	74.90	INV IN=70.25 NE 15" RCP INV OUT=70.25 NW 18" RCP
DS 3-42	TYPE 5 CURB INLET	STA:2021+24.97 OFF:-12.250 L	75.23	INV OUT=70.75 SW 15" RCP
DS 3-43	TYPE 5 CURB INLET	STA:2004+85.00 OFF:-12.250 L	47.18	INV IN=42.00 S 24" RCP INV OUT=42.00 NW 24" RCP
DS 3-44	TYPE 5 CURB INLET	STA:2006+22.27 OFF:-12.250 L	53.03	INV OUT=48.25 SW 15" RCP
DS 3-45	TYPE 5 CURB INLET	STA:2008+36.97 OFF:-12.250 L	60.25	INV OUT=55.25 SW 15" RCP
DS 3-46	TYPE V GUTTER INLET	STA:2009+93.46 OFF:-12.250 L	63.65	INV OUT=59.25 SW 15" RCP
DS 3-47	TYPE 6 INLET	STA:2003+49.29 OFF:64.177 R	41.17	INV OUT=36.50 NE 15" RCP
DS 3-49	TYPE 8 MH	STA:27+85.29 OFF:0.268 R	34.48	INV IN=29.03 NE 15" RCP INV IN=28.90 S 15" RCP INV IN=28.70 E 24" RCP INV OUT=28.63 W 24" RCP
DS 3-51	TYPE 8 MH	STA:24+92.08 OFF:-22.531 L	27.41	INV IN=21.40 E 36" RCP INV IN=22.83 S 15" RCP INV OUT=20.90 W 42" RCP
DS 3-52	TYPE 8 MH	STA:23+37.57 OFF:-34.757 L	22.10	INV IN=15.50 E 42" RCP INV IN=17.50 SE 18" RCP INV OUT=15.50 W 42" RCP
DS 3-53	TYPE 8 MH	STA:22+42.63 OFF:-41.702 L	20.39	INV IN=13.75 E 42" RCP INV OUT=13.75 W 42" RCP
DS 3-54	TYPE 8 MH	STA:21+33.00 OFF:-41.455 L	18.82	INV IN=12.25 E 42" RCP INV IN=10.83 S 18" RCP INV OUT=10.83 W 42" RCP
DS 3-55	BAFFEL BOX SEE NOTE 1	STA:20+40.53 OFF:-41.120 L	17.64	INV IN=10.00 E 42" RCP INV OUT=10.00 W 42" RCP
EX-ST-04	EXIST INLET	STA:2002+23.61 OFF:-225.163 L	34.93	INV IN=31.60 E 6" EX PVC INV OUT=31.23 N 15" RCP
EX-ST-05	EXIST INLET	STA:2002+30.70 OFF:-78.418 L	37.13	INV IN=34.44 E 6" EX PVC INV OUT=32.47 SW 15" RCP
EX-ST-06	EXIST INLET SEE NOTE 2	STA:26+96.97 OFF:23.189 R	32.61	INV IN=30.19 S 12" EX RCP INV IN=28.62 E 6" EX PVC INV OUT=28.25 N 15" RCP
EX ST-02	EXIST INLET	STA:14+57.02 OFF:-58.660 L	23.82	INV IN=20.40 N 24" EX RCP INV OUT=20.40 SE 24" RCP
EX ST-03	EXIST INLET	STA:16+05.31 OFF:-50.380 L	21.12	INV IN=18.02 N 15" EX RCP INV OUT=18.02 SE 18" RCP

NOTES:
1. SEE DETAIL SHEET 468 FOR ADDITIONAL INFORMATION ON BAFFLE BOX.
2. EXISTING TOP OF INLET TO BE REMOVED AND REPLACED WITH RING AND COVER. MATCH PROPOSED GRADE.
3. CONTRACTOR TO VERIFY THE CONDITION AND INTEGRITY OF ALL EXISTING STRUCTURES THAT ARE TO REMAIN AND BE TIED INTO THE PROPOSED DRAINAGE SYSTEM BEFORE CONSTRUCTION. NOTIFY CITY IF STRUCTURE REPLACEMENT NEEDED.

100% PLANS
BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756

NOTIFY 48 HOURS BEFORE YOU EXCAVATE
CALL 811
SUNSHINE STATE ONE CALL OF FLORIDA
www.callsunshine.com
(800) 432-4770
MIN. 48 HOURS BEFORE YOU EXCAVATE

CLEVELAND STREET PHASE III
AND FESTIVAL CORE
DRAINAGE STRUCTURE SCHEDULE

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CED	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: EAPS	CHECKED BY: RF	SHEET NO.: 411

APPROVED FOR CONSTRUCTION _____ DATE

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

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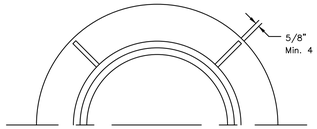
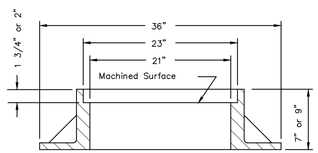
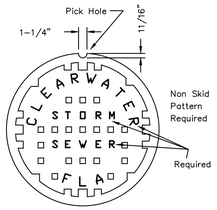


RING – HALF PLAN
N.T.S.

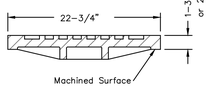
NOTES
1. Where roadway base is 8" or thicker use 9" ring, all other cases 7" ring is permissible.
2. Manufacturers model of storm ring and cover to be approved by City Engineer.
3. Perforated covers, when required shall be similar to solid covers.



RING SECTION
N.T.S.
Minimum Weight 7" 232 lbs.
9" 278 lbs.

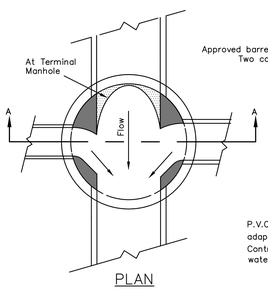


SOLID COVER
N.T.S.

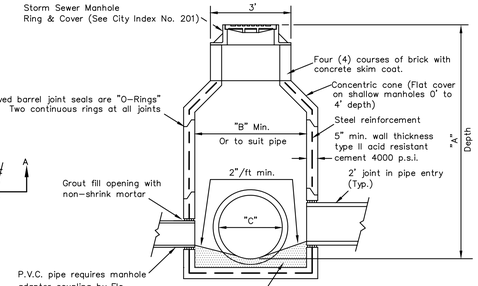


SOLID COVER SECTION
N.T.S.
Minimum Weight 128 lbs.

DATE	REVISION DESCRIPTION	S.R. / APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT STORM DETAILS	STORM SEWER MANHOLE RING & COVER TRAFFIC AREAS	INDEX NO. 201	PAGE NO. 1 OF 1	LATEST REVISION 2/22/2016
6/2/15	TITLE CHANGE	S.R.					



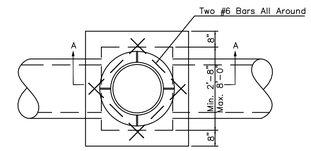
PLAN
N.T.S.



SECTION A–A
N.T.S.

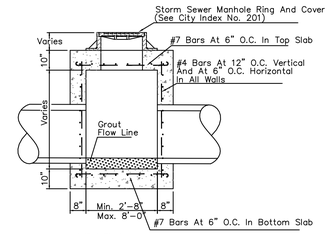
	A	B	C
Shallow 0'– 4'	4' Max	3'–6"	24" Max
Standard 4.1'– 6'	6' Max	4'	30" Max
Deep 6.1'– 10'	10'	4'	48" Max
Deep 10.1'– 14'	14'	5'	48" Max

DATE	REVISION DESCRIPTION	S.R. / APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT STORM DETAILS	PRECAST STORM SEWER MANHOLE	INDEX NO. 202	PAGE NO. 1 OF 1	LATEST REVISION 2/22/2016
6/2/15	ADDED/EDITED NOTES	S.R.					

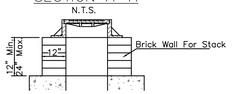


PLAN VIEW
N.T.S.

NOTES:
1. Storm sewers and manhole to be centered in junction box unless otherwise specified in plans.
2. All concrete to be 3,000 psi, with fiber mesh reinforcing.
3. All steel bars shall have 1 1/4" minimum cover unless otherwise shown and shall be hooked where indicated. Horizontal steel shall be lapped a minimum of 24 bar diameters at corners. On precast units, floor slabs may be secured to structure walls by no. 4 dowel bars (a minimum of 6 dowels) pushed into the wet concrete after the floor slab is placed.
4. Chamfer all exposed edges 3/4".



SECTION A–A
N.T.S.

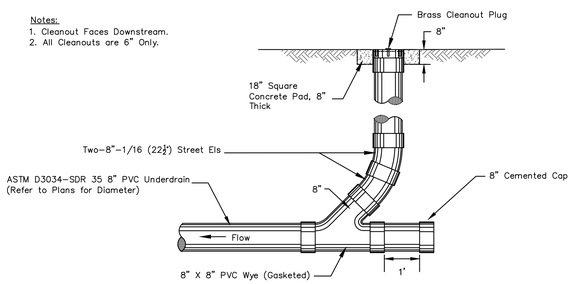


BRICK STACK (IF REQUIRED)
N.T.S.

DATE	REVISION DESCRIPTION	S.R. / APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT STORM DETAILS	JUNCTION BOX – TRAFFIC TYPE POURED CONCRETE	INDEX NO. 207	PAGE NO. 1 OF 1	LATEST REVISION 2/22/2016
6/3/15	EDITED NOTES	S.R.					

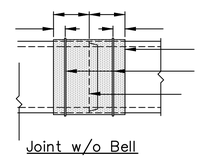
PLAN VIEW
N.T.S.

Notes:
1. Cleanout Faces Downstream.
2. All Cleanouts are 6" Only.

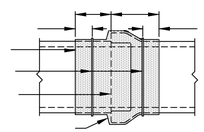


SECTION VIEW
N.T.S.

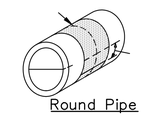
DATE	REVISION DESCRIPTION	S.R. / APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT STORM DETAILS	TERMINAL END UNDERDRAIN CLEANOUT (STORM)	INDEX NO. 218	PAGE NO. 4 OF 4	LATEST REVISION 2/22/2016
6/3/15	CORRECTION TO NOTES	S.R.					



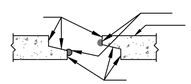
Joint w/o Bell



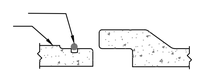
Joint w/ Bell



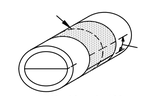
Round Pipe



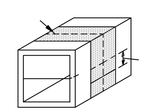
Tongue and Groove type joint with Double Gasket



Bell and Spigot type joint with "O Ring" Gasket



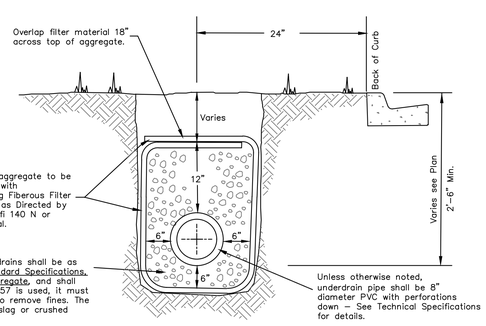
Elliptical Pipe



Box Culvert

Isometric Views

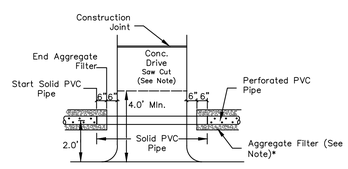
DATE	REVISION DESCRIPTION	S.R. / APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT STORM DETAILS	CONDUIT JOINT WRAP DETAIL	INDEX NO. 227	PAGE NO. 1 OF 1	LATEST REVISION 2/22/2016
6/3/15	REV. NOTES	S.R.					



Solid pipe (w/o perforations) is to be used under drives and roadways, with compacted backfill.

N.T.S.

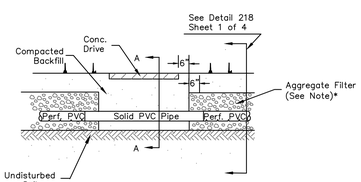
DATE	REVISION DESCRIPTION	S.R. / APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT STORM DETAILS	UNDERDRAIN DETAIL	INDEX NO. 218	PAGE NO. 1 OF 4	LATEST REVISION 2/22/2016
6/3/15	CORRECTED TEXT/COMBINED SERIES	S.R.					



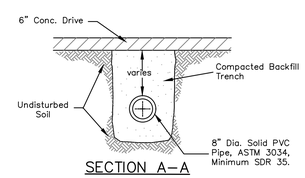
PLAN VIEW
N.T.S.

NOTE:
Saw Cut Drive if Nearest Const. Joint Over 7' from Back of Curb.

* Filter aggregate for underdrains shall be as specified in the FDOT Standard Specifications, Section 901 – Coarse Aggregate, and shall be either #6 or #57. If #57 is used, it must be washed and screened to remove fines. The aggregate may be stone, slag, or crushed gravel.



SECTION VIEW
N.T.S.



SECTION A–A
N.T.S.

DATE	REVISION DESCRIPTION	S.R. / APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT STORM DETAILS	UNDERDRAIN AT DRIVEWAYS	INDEX NO. 218	PAGE NO. 2 OF 4	LATEST REVISION 2/22/2016
6/3/15	CORRECTION TO NOTES	S.R.					

100% PLANS
BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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CLEARWATER, FL 33756

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CLEVELAND STREET PHASE III AND FESTIVAL CORE DRAINAGE DETAILS

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CED	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: EAPS	CHECKED BY: RF	SHEET NO.: 460

APPROVED FOR CONSTRUCTION _____ DATE

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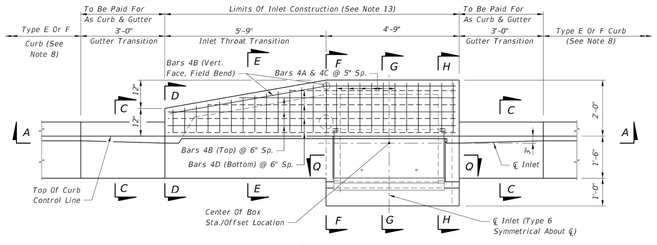
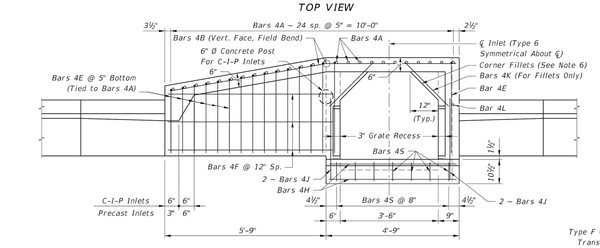
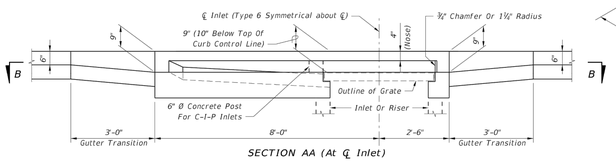


TOP VIEW



SECTION BB

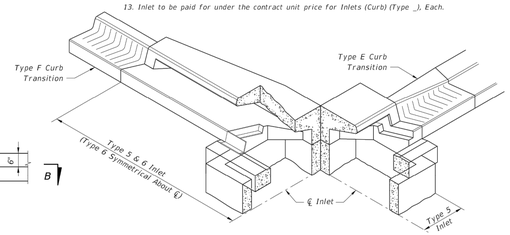


SECTION AA (At ℄ Inlet)

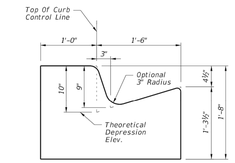
INLET TYPE 5 (Curb Inlet Type 6 Symmetrical With Left Half)

GENERAL NOTES

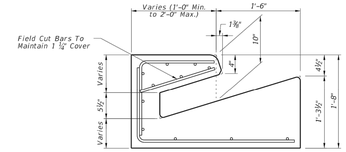
1. The finished grade and slope of the inlet tops are to conform with the finished cross slope and grade of the proposed sidewalk and/or border.
2. For inlets constructed on a curve, refer to the plans to determine the radius, and modify the inlet details accordingly. Bend steel when necessary.
3. All reinforcing steel to be Grade 60 bars with 1½" minimum cover unless otherwise shown, see Sheet 4 for equivalent area Welded Wire Reinforcement details.
4. Inlet tops shall be either cast-in-place or precast concrete. Precast units shall conform to the dimensions shown or in accordance with approved shop drawing's. Request for shop drawing approval shall be directed to the State Drainage Engineer.
5. Concrete meeting the requirements of ASTM C478 (4,000 psi) may be used in lieu of Class II concrete for precast units, manufactured in plants which meet the requirements of Section 449 of the Specifications.
6. Corner fillets are required at inlet opening for precast units or C-I-P units used in conjunction with circular inlet bottoms or skewed rectangular inlet boxes. Finish top of fillets flush with drain throat bottom and match slope.
7. For inlet bottoms see Index 425-010. Inlet tops are to be used with Type P bottoms, or Type J bottoms with 3'-6" square (Type B), 3'-6" or 4' round (Type A) risers or top slab openings.
8. These inlet tops are designed for use with standard curb and gutter Type E and Type F. Locate inlet outside of pedestrian crosswalks. For Type E curb, transition the shape of the curb over the gutter transition length to match the face of the inlet (Type F).
9. See Index 425-001 for supplemental details.
10. All steel used for frame and grate shall meet the requirements of ASTM A36/A36M.
11. Either cast iron grates or steel grates may be used.
12. When Alternate "G" grate is specified in the plans either the cast iron grate and galvanized steel frame or the the galvanized steel grate and frame must be used. Grates are to be grouted in accordance with the grouting detail shown on Sheet 5, in lieu of tack welding.
13. Inlet to be paid for under the contract unit price for Inlets (Curb) (Type _), Each.



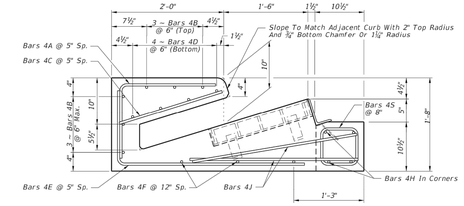
SKETCH SHOWING FRAME SEAT AND THROAT RECESS



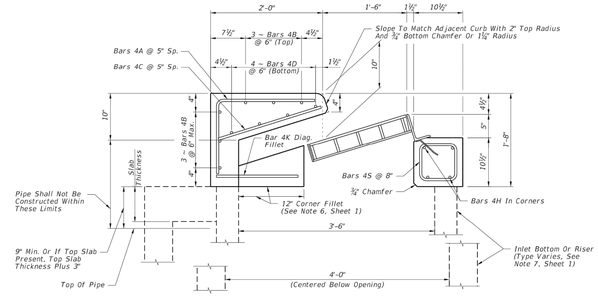
SECTION DD
(End View Of Inlet)



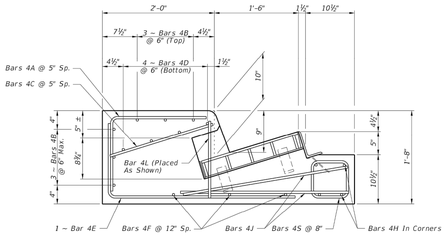
SECTION EE



SECTION FF



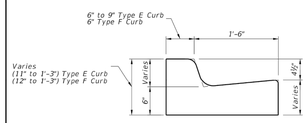
SECTION GG



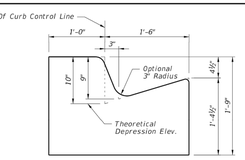
SECTION HH
(Type 5 Inlet Only)

CROSS REFERENCES:
For General Notes See Sheet 1.
For Location Of Sections DD Thru HH See Sheet 1.

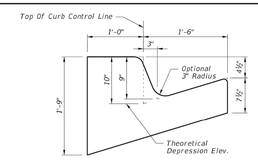
PRECAST DETAILS



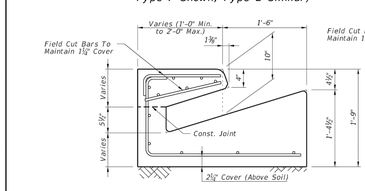
SECTION CC
(Gutter Transition
Type F Shown, Type E Similar)



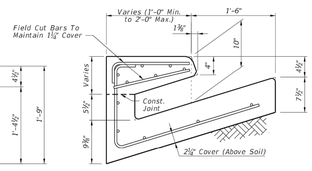
SECTION DD (OPTION A)
(End View Of Inlet)



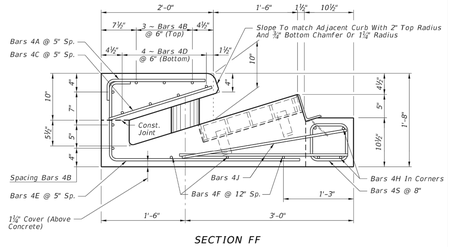
SECTION DD (OPTION B)
(End View Of Inlet)



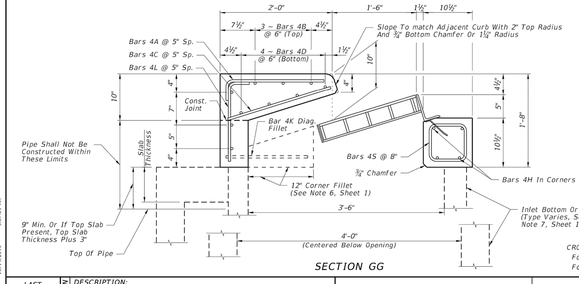
SECTION EE (OPTION A)



SECTION EE (OPTION B)



SECTION FF



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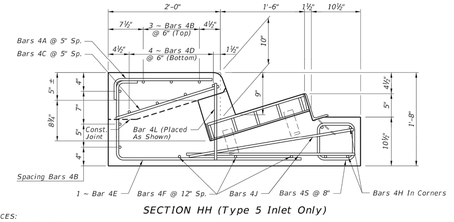
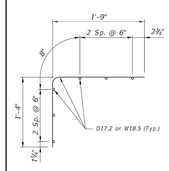


SECTION HH (Type 5 Inlet Only)

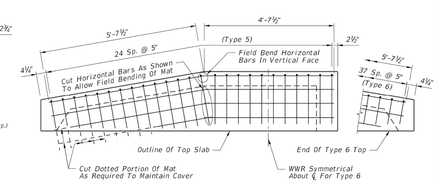
CROSS REFERENCES:
For General Notes See Sheet 1.
For Location Of Sections CC Thru HH See Sheet 1.

CAST-IN-PLACE DETAILS

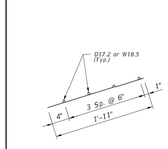
ALTERNATE REINFORCING STEEL DETAILS FOR WELDED WIRE REINFORCEMENT (WWR)



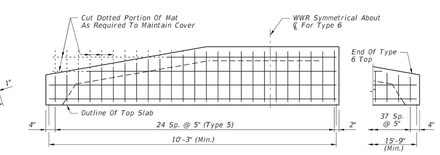
WELDED WIRE REINFORCEMENT
PIECE NO. 1



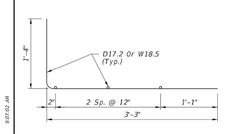
PLACEMENT SCHEMATIC FOR WELDED
WIRE REINFORCEMENT PIECE NO. 1



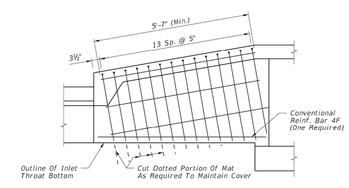
WELDED WIRE REINFORCEMENT
PIECE NO. 2



PLACEMENT SCHEMATIC FOR WELDED
WIRE REINFORCEMENT PIECE NO. 2



WELDED WIRE REINFORCEMENT
PIECE NO. 3



PLACEMENT SCHEMATIC FOR WELDED
WIRE REINFORCEMENT PIECE NO. 3

CONVENTIONAL REINFORCING STEEL BENDING DIAGRAMS

BILL OF REINFORCING STEEL

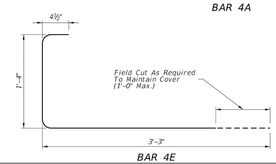
MARK	SIZE	TYPE 5 INLET NO.	TYPE 5 INLET LENGTH	TYPE 6 INLET NO.	TYPE 6 INLET LENGTH
A (Precast)	4	25	3'-1"	38	3'-1"
A (C-I-P)	4	25	2'-1½"	38	2'-1½"
B	4	6	10'-3"	6	15'-9"
C	4	25	11" to 1'-11"	38	11" to 1'-11"
D	4	4	10'-3"	4	15'-9"
E	4	16	4'-11½"	30	4'-11½"
F	4	3	6'-0"	6	6'-0"
H	4	4	4'-6"	4	4'-6"
J	4	4	3'-0"	4	3'-0"
K (Fillet)	4	2	2'-3"	2	2'-3"
L (Precast)	4	1	1'-4"	0	---
L (C-I-P)	4	10	1'-4"	9	1'-4"
S	4	7	3'-2"	7	3'-2"

REINFORCING STEEL NOTES:

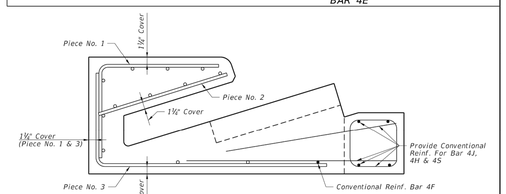
1. All bar dimensions in the bending diagrams are out to out.
2. Bars 4A and 4E may be combined into a single bar.
3. Welded Wire Reinforcement consists of Smooth or Deformed wire meeting the requirements of Specification Section 931.

BAR 4S

BAR 4A



BAR 4E



TYPICAL SECTION SHOWING
WELDED WIRE REINFORCEMENT

100% PLANS BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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CLEARWATER, FL 33756

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CLEVELAND STREET PHASE III AND FESTIVAL CORE DRAINAGE DETAILS

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CED	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: EAPS	CHECKED BY: RF	SHEET NO.: 461
APPROVED FOR CONSTRUCTION			DATE

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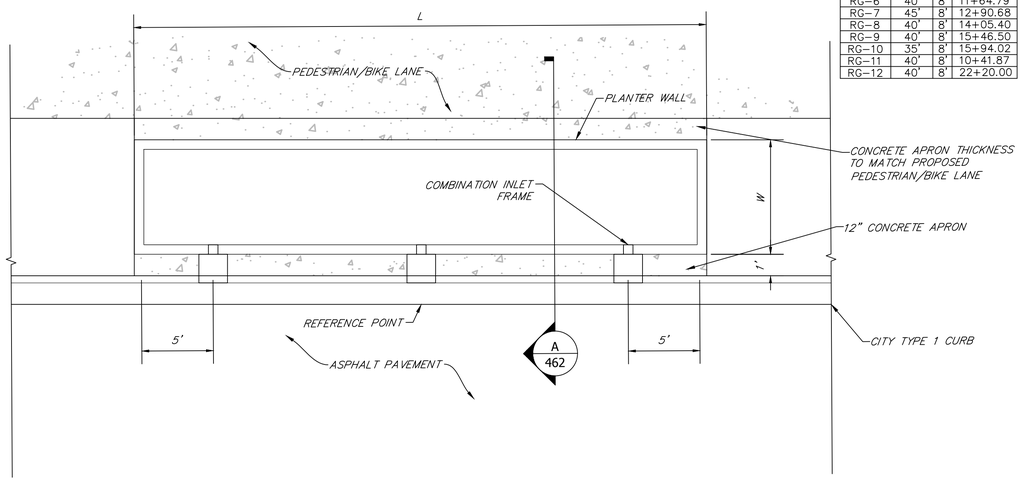
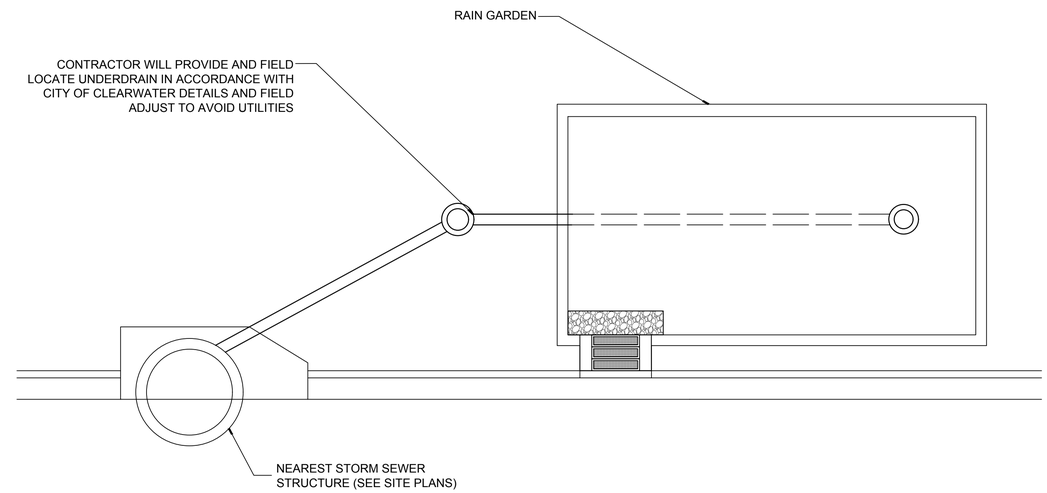
X

RAINGARDEN DIMENSION TABLE

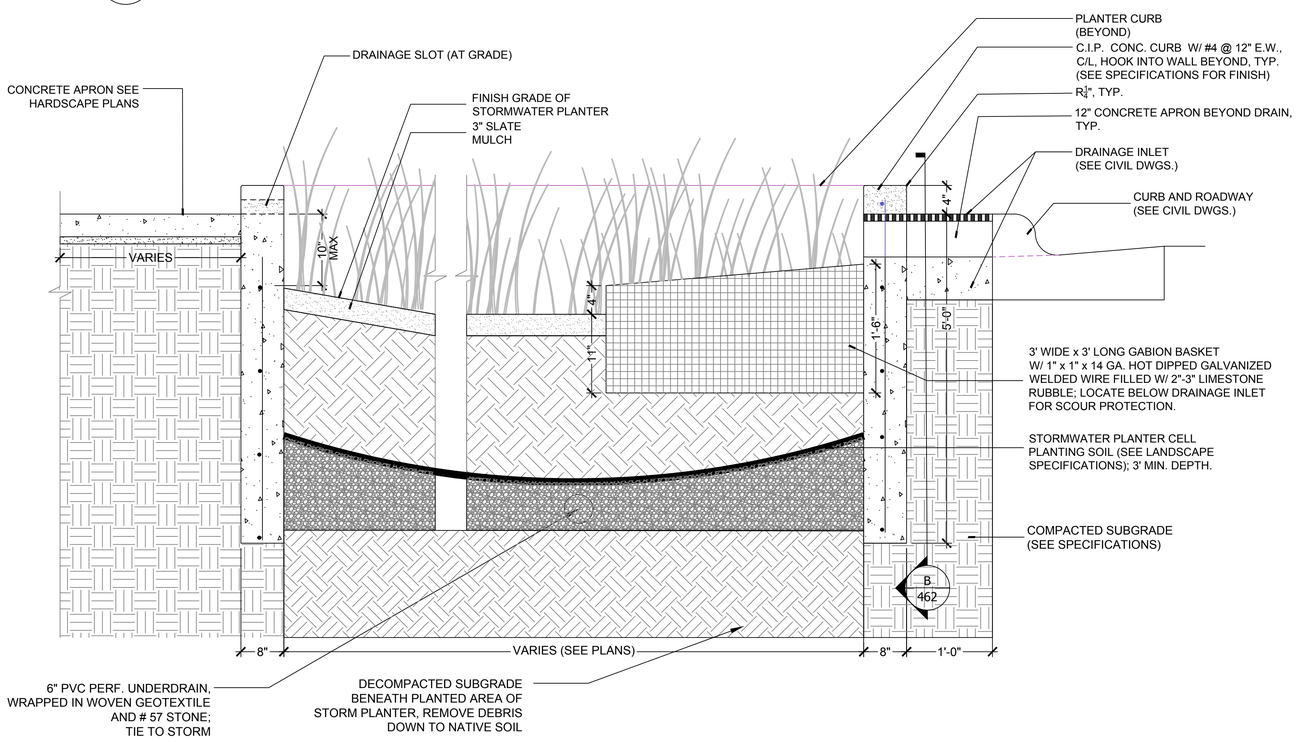
NAME	L	W	STATION
RG-2	40'	8'	1+66.85
RG-3	42.32'	8'	2+90.92
RG-4	38.47'	8'	7+55.56
RG-5	40.11'	8'	10+12.26
RG-6	40'	8'	11+64.79
RG-7	45'	8'	12+90.68
RG-8	40'	8'	14+05.40
RG-9	40'	8'	15+46.50
RG-10	35'	8'	15+94.02
RG-11	40'	8'	10+41.87
RG-12	40'	8'	22+20.00



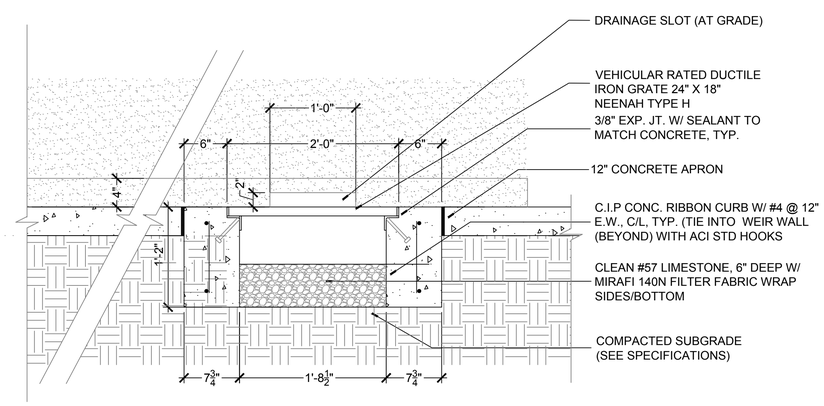
1 / 462 RAIN GARDEN PLAN DETAIL
NTS



2 / 462 STORMWATER PLANTER UNDERDRAIN PLAN (TYP)
NTS



A / 406 RAIN GARDEN SECTION
NTS



B / 462 CHANNEL DRAIN SECTION
NTS

100% PLANS
BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
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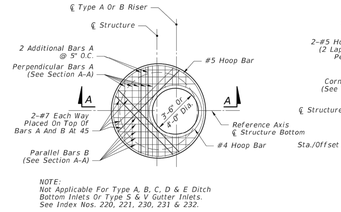
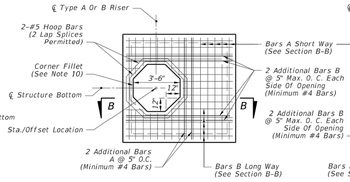
DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CED	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: EAPS	CHECKED BY: RF	SHEET NO.: 462
APPROVED FOR CONSTRUCTION			DATE

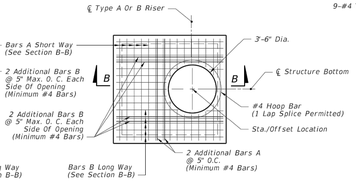
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



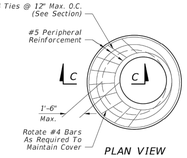
TOP SLAB REINFORCING STEEL DIAGRAM
(ALTERNATE A)



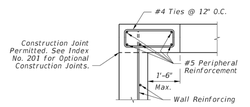
SQUARE OPENING WITH CORNER FILLETS
TOP SLAB REINFORCING STEEL DIAGRAM
(ALTERNATE B)



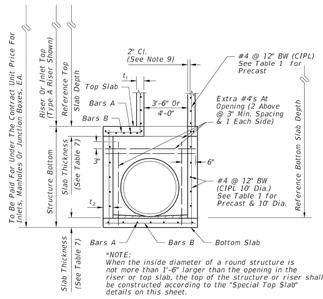
ROUND RISER OPENING



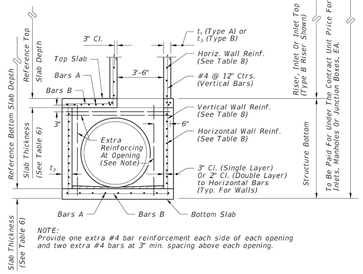
PLAN VIEW



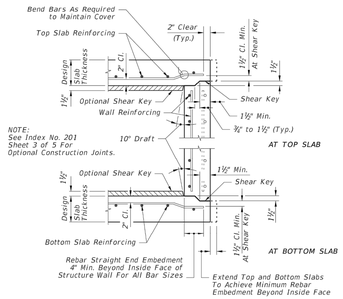
SECTION C-C
SPECIAL TOP SLAB*



SECTION A-A
(ALTERNATE A)



SECTION B-B
(ALTERNATE B)



TYPICAL SLAB TO WALL DETAILS
FOR PRECAST STRUCTURES

LAST REVISION	REVISION	DESCRIPTION:	FY 2017-18 DESIGN STANDARDS	STRUCTURE BOTTOMS TYPE J AND P	INDEX NO.	SHEET NO.
11/01/16					200	1 of 5

X

ROUND STRUCTURE BOTTOMS (ALTERNATE A) & ROUND RISERS– TABLE 1
Wall Thickness (t_1 & t_2) and Vertical & Horizontal Areas of Reinforcement (A_6)

Type	Structure/Riser Diameter (ft)	Cast–In–Place Items Class II Concrete			Precast Items				
					Class II Concrete			ASTM C478	
		t_1 Riser (in.)	t_2 Bottom (in.)	A_6 ($in.^2/ft.$)	t_1 Riser (in.)	t_2 Bottom (in.)	A_6 ($in.^2/ft.$)	t_1 or t_2 (in.)	A_6 *** ($in.^2/ft.$)
P	3'–6"	6	8	0.20	6	8	0.20	4**	0.105
P	4'–0"	6	8	0.20	6	8	0.20	5**	0.120
J	5'–0"	–	8	0.20	–	8	0.20	6**	0.150
J	6'–0"	–	8	0.20	–	8	0.20	6	0.180
J	7'–0"	–	8	0.20	–	8	0.20	7	0.210
J	8'–0"	–	8	0.20	–	8	0.20	8	0.240
J	10'–0"	–	10	0.40##	–	10	0.40##	10	0.300
J	12'–0"	–	10	0.40##	–	12	0.40##	12	0.360

TABLE 1 NOTES:
##Provide 0.20 eq. $in.^2/ft.$ at each face, 12" max. bar spacing.
**Modified minimum wall thickness.
***Min. total circumferential reinforcement for continuous steel hoops:
A_2 = 0.40 sq. in. for riser section height equal or less than 2'–0" (2 hoop min.)
A_2 = 0.60 sq. in. for riser section height more than 2'–0" up to 4'–0" (3 hoop min.)
Areas of reinforcing for precast items are based on Grade 60 reinforcing;
No reduction in the area of reinforcement is allowed for welded wire fabric in Table 1;
Area of vertical reinforcing may be reduced in accordance with ASTM C478.

SQUARE & RECTANGULAR STRUCTURES
(ALTERNATE B) – TABLE 2

Type	Wall Length (ft)	Max. Depth (ft)	Wall Thickness (t_1)	
			CIP (in.)	Precast (in.)
P	≤ 3'–6"	40	6 Riser 8 Bottom	6
J	4'–0"	40	8	6
J	5'–0"	22	–	6
J	6'–0"	15	–	6
J	5'–0" to 9'–0"	40	8	8
J	10'–0"	26	8	8
J	10'–0" to 12'–0"	40	10	9
J	16'–0"	35	–	9
J	16'–0"	40	10	10
J	20'–0"	25	–	9
J	20'–0"	30	10	10

TABLE 2 NOTES:
See Table 8 for Reinforcing Schedule.

GENERAL NOTES

1. Standard structure bottoms 4'–0" diameter and smaller (Alt. A) and 3'–6" square (Alt. B) are designated Type P. Larger standard structure bottoms are designated Type J. Risers are permitted for all structures. Round risers are designated Type A, square risers are designated Type B.
2. Walls of circular structures (Alt. A) constructed in place may be of brick or reinforced concrete. Precast and rectangular structures (Alt. B) shall be constructed of reinforced concrete only.
3. Wall thickness and reinforcement are for either reinforced cast–in–place or precast concrete units except that precast circular units may be furnished with walls in accordance with ASTM C478 (see modified wall thicknesses in Table 1).
4. Top and bottom slab thickness and reinforcement are for precast and cast–in–place construction. All concrete shall be of Class II concrete, except use Class IV concrete when shown in the Plans, for special applications of structures located in extremely aggressive environments. Concrete as specified in ASTM C478 (4000 psi) may be used in lieu of Class II concrete for precast items manufactured in accordance with Specifications Section 449.
5. All reinforcement shown is Grade 60 steel, deformed bar. Equivalent area Grade 40 steel or equivalent area smooth or deformed welded wire reinforcement in accordance with Specification Section 931 may be substituted according to Index No. 201, unless otherwise noted.
6. Alt. A or Alt. B structure bottoms may be used in conjunction with curb inlet tops Types 1, 2, 3, 4, 5, 6, 9, and 10, and any manhole or junction box unless otherwise shown in the plans or other standard drawings. Alt. B structure bottoms may be used in conjunction with curb inlet Types 7 & 8, or any ditch bottom inlet unless otherwise shown in the plans or other standard drawings.
7. Rectangular structures may be rotated as directed by the Engineer in order to facilitate connections between the structure walls and storm sewer pipes.
8. Except when ACI hooks are specifically required, reinforcement in top and bottom slab shall be straight embedment.
9. All reinforcement must have 2" minimum cover except for 3'-6" diameter precast circular units manufactured under ASTM C478, keyed construction otherwise shown. Additional bars used to restrain hole formers for precast structures with grouted pipe connections,may be left flush with the hole surface. Cut or bend reinforcement at pipe openings to maintain cover. Exposed ends of reinforcing at precast pipe openings and grouted joints must be removed to 1" below the concrete surface and sealed with a Type F epoxy in accordance with Specification Section 926. Horizontal steel in rectangular structures shall be lapped a minimum of 30 bar diameters or by standard hooks at corners.
10. The corner fillets shown are necessary for rectangular structures used with circular risers and inlet throats and when used on skew with rectangular risers, inlets and inlet throats. Fillets will be required in the top slab of the Alt. A structure bottoms when used with the Alt. B risers. Each fillet shall be reinforced with two #5 bars.
11. Inlet walls, throats, risers or manhole tops shall be secured to structures as shown on Index No. 201 (Sheet 3 of 5) Optional Construction Joints.
12. Structures with depths over 14' below the mean high water table are to be checked for flotation by the designer of the drainage project.
13. Units larger than specified standards may be substituted at the contractor's option when these units will not cause or increase the severity of utility conflicts. Such larger units shall be furnished at no additional cost to the Department. Larger Alt. A units cannot replace Alt. B units without approval of the Engineer. This note applies to this Index only.
14. For manhole and junction box tops, for frames and covers, and, for supplementary details and notes see Index No. 201.
15. Type J structure bottoms must have a minimum 6'-0" wall height when possible, for maintenance access.

LAST REVISION	REVISION	DESCRIPTION:	FY 2017-18 DESIGN STANDARDS	STRUCTURE BOTTOMS TYPE J AND P	INDEX NO.	SHEET NO.
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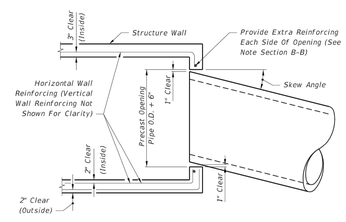
TABLE 3-MINIMUM STRUCTURE SIZES FOR SINGLE PIPE CONNECTION PER SIDE

PIPE SIZE	RECTANGULAR Side Dimension (L) Single Pipe Per Side	RECTANGULAR Side Dimension (L) Note Number	ROUND Diameter (D) Single Pipe or θ=180°	ROUND Diameter (D) 2 to 4 Pipes θ=90°
18"	3'-6"		3'-6"	4'-0"
24"	3'-6"		3'-6"	5'-0"
30"	3'-6"/4'-0"	2	4'-0"	6'-0"
36"	4'-0"/5'-0"	3	5'-0"	7'-0"
42"	5'-0"		6'-0"	7'-0"
48"	6'-0"		6'-0"	8'-0"
54"	6'-0"		7'-0"	10'-0"
60"	7'-0"		7'-0"	10'-0"
66"	7'-0"/8'-0"	4	8'-0"	12'-0"
72"	8'-0"		8'-0"	12'-0"
78"	9'-0"		10'-0"	12'-0"
84"	9'-0"		12'-0"	N/A

TABLE 3 NOTES:
1. For Round Structures sizes with variable angles between pipes and variable pipe sizes, refer to the FDOT Storm Drain Handbook.
2. For 3'-6" Precast Square Structure Bottoms, 30" Pipes with similar invert elevations are not permitted in adjacent walls. Use 4'-0" Side Dimensions when 30" pipe openings are required on adjacent walls and the difference in flow lines is less than 3'-0".
3. For 4'-0" Precast Square Structure Bottoms, 36" Pipes with similar invert elevations are not permitted in adjacent walls. Use 5'-0" Side Dimensions when 36" pipe openings are required on adjacent walls and the difference in flow lines is less than 3'-0".
4. For 7'-0" Precast Square Structure Bottoms, 66" Pipes with similar invert elevations are not permitted in adjacent walls. Use 8'-0" Side Dimensions when 66" pipe openings are required on adjacent walls and the difference in flow lines is less than 4'-0".



MAXIMUM PIPE SKEW FOR PRECAST ROUND OPENINGS
PLAN VIEW

TABLE 5 - MAXIMUM PIPE SKEW FOR PRECAST ROUND OPENINGS

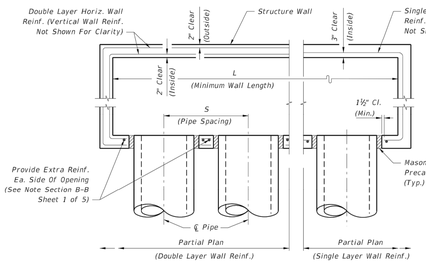
	WALL THICKNESS	PIPE SIZE 18"	24"	30"	36"	42"	48"	54"	60"	66"	72"	78"	84"
MAXIMUM SKEW ANGLE	8"	19°	17°	16°	16°	15°	14°	14°	13°	13°	13°	12°	12°
	6"	21°	20°	18°	17°	17°	16°	15°	15°	14°	14°	13°	13°

TABLE 5 NOTES:
These values are based on 2" clearance for precast structures.
Larger skews are possible for Cast–In–Place Structures or elliptical pipe openings when approved by the Engineer.

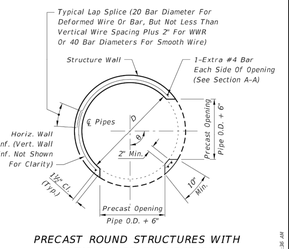
TABLE 4-MINIMUM SIZES FOR MULTIPLE PARALLEL PIPE CONNECTIONS FOR RECTANGULAR STRUCTURE BOTTOMS

PIPE SIZE	PIPE SPACING (S)	MINIMUM WALL LENGTH (L) FOR NUMBER OF PARALLEL PIPES 2	3	4
18"	2'-10"	6'-0"	8'-6"	11'-0"
24"	3'-5"	6'-6"	10'-0"	13'-6"
30"	4'-3"	8'-0"	12'-6"	16'-6"
36"	5'-1"	9'-6"	14'-6"	19'-6"
42"	6'-0"	11'-0"	17'-0"	–
48"	6'-9"	12'-6"	19'-0"	–
54"	7'-8"	14'-0"	–	–
60"	8'-6"	15'-0"	–	–
66"	9'-0"	16'-6"	–	–
72"	10'-0"	18'-0"	–	–
78"	10'-9"	19'-0"	–	–
84"	11'-8"	20'-6"	–	–

TABLE 4 NOTES:
1. Minimum wall lengths based on precast structures, using concrete pipe with maximum skew angles per Table 5.
2. Wall lengths exceeding 20'-0" require special designs.



MULTIPLE PARALLEL PIPE CONNECTIONS DETAIL
PLAN VIEW



PRECAST ROUND STRUCTURES WITH MULTIPLE PIPE CONNECTIONS

STRUCTURE SIZES FOR PIPE CONNECTIONS

LAST REVISION	REVISION	DESCRIPTION:	FY 2017-18 DESIGN STANDARDS	STRUCTURE BOTTOMS TYPE J AND P	INDEX NO.	SHEET NO.
07/01/07					200	3 of 5

SLAB DESIGNS - SQUARE AND RECTANGULAR STRUCTURES (TABLE 6)
(ALL SLABS 8" THICK EXCEPT AS NOTED - REINFORCING PARALLEL TO SHORT WAY AND LONG WAY)

SHORT-WAY SLAB DEPTH	SHORT-WAY SCHEDULE (Bars A)	LONG-WAY SLAB DEPTH	LONG-WAY SCHEDULE (Bars B)
SIZE: 3'-6" x UNLIMITED			
≥0.5' < 8'	B10	≥0.5' < 24'	B10
8' < 13'	B5.5	24'-40'	B5.5
13' < 31'	C6.5		
31'-40'	D7		
SIZE: 4' x UNLIMITED			
≥0.5' < 7'	B5.5	≥0.5' < 15'	B10
7' < 19'	C6.5	15' < 29'	B5.5
19' < 31'	D7	29'-40'	C6.5
31'-40'	E5		
SIZE: 5' x 5'			
≥0.5' < 3'	C6.5	≥0.5' < 3'	C6.5
3' < 7'	B5.5	3' < 13'	C6.5
7' < 22'	C6.5	13' < 22'	D7
22' < 29'	D7	22' < 29'	D4.5
29'-40'	E5	29'-40'	E5
SIZE: 5' x 6'			
≥0.5' < 12'	C6.5	≥0.5' < 3'	C6.5
12' < 26'	D7	3' < 9'	B5.5
26'-40'	E5	9' < 23'	C3.5
		23' < 35'	D4.5
		35'-40'	E5
SIZE: 5' x 7'			
≥0.5' < 10'	C6.5	≥0.5' < 10'	B5.5
10' < 20'	D7	10' < 31'	C3.5
20' < 34'	E5	31'-40'	D4.5
34'-40'	F5		
SIZE: 5' x 8'			
≥0.5' < 7'	C6.5	≥0.5' < 8'	B10
7' < 13'	D7	8' < 17'	B5.5
13' < 24'	E5	17' < 25'	C6.5
24'-40'	F5	25'-40'	C3.5
SIZE: 5' x 9'			
≥0.5' < 8'	C6.5	≥0.5' < 14'	B10
8' < 14'	D7	14' < 24'	B5.5
14' < 25'	E5	24' < 34'	C6.5
25'-40'	F5	34'-40'	C3.5
SIZE: 5' x UNLIMITED			
≥0.5' < 8'	C6.5	≥0.5' < 14'	B10
8' < 14'	D7	14' < 24'	B5.5
14' < 25'	E5	24' < 34'	C6.5
25'-40'	F5	34'-40'	C3.5

SHORT-WAY SLAB DEPTH	SHORT-WAY SCHEDULE (Bars A)	LONG-WAY SLAB DEPTH	LONG-WAY SCHEDULE (Bars B)
SIZE: 6' x 6'			
≥0.5' < 13'	C6.5	≥0.5' < 10'	C3.5
13' < 23'	D7	10' < 18'	D4.5
23'-40'	E5	18' < 27'	E5
		27' < 33'	E3
		33'-40'	F5
SIZE: 6' x 7'			
≥0.5' < 8'	C6.5	≥0.5' < 8'	C6.5
8' < 16'	D7	8' < 12'	C3.5
16' < 28'	E5	12' < 21'	D4.5
28'-40'	F5	21' < 28'	E5
		28' < 35'	E3
		35'-40'	F5
SIZE: 6' x 8'			
≥0.5' < 6'	C6.5	≥0.5' < 6'	B5.5
6' < 13'	D7	6' < 11'	C6.5
13' < 22'	E5	11' < 17'	C3.5
22' < 35'	F5	17' < 22'	D4.5
35'-40'	G5	22' < 32'	E5
		32'-40'	E3
SIZE: 6' x 9'			
≥0.5' < 8'	D7	≥0.5' < 8'	B5.5
8' < 14'	E5	8' < 14'	C6.5
14' < 24'	F5	14' < 21'	C3.5
24'-34'	G5	21' < 25'	D4.5
		25'-34'	E5
SIZE: 6' x UNLIMITED			
≥0.5' < 8'	D7	≥0.5' < 8'	B5.5
8' < 14'	E5	8' < 14'	C6.5
14' < 24'	F5	14' < 21'	C3.5
24'-34'	G5	21' < 25'	D4.5
		25'-34'	E5
SIZE: 7' x 7'			
≥0.5' < 8'	C6.5	≥0.5' < 4'	C6.5
8' < 15'	D7	4' < 7'	C3.5
15' < 26'	E5	7' < 11'	D4.5
26'-40'	F5	11' < 22'	E3
		22' < 32'	F3.5
		32'-40'	G3.5
SIZE: 7' x 8'			
≥0.5' < 5'	C6.5	≥0.5' < 5'	C6.5
5' < 11'	D7	5' < 8'	C3.5
11' < 19'	E5	8' < 13'	D4.5
19' < 30'	F5	13' < 22'	E3
30'-40'	G5	22' < 30'	F3.5
		30'-40'	G3.5
SIZE: 7' x 9'			
≥0.5' < 9'	D7	≥0.5' < 7'	C6.5
9' < 15'	E5	7' < 10'	C3.5
15' < 25'	F5	10' < 14'	D4.5
25' < 34'	G5	14' < 21'	E5
		21' < 29'	F5
		29'-34'	F3.5

SHORT-WAY SLAB DEPTH	SHORT-WAY SCHEDULE (Bars A)	LONG-WAY SLAB DEPTH	LONG-WAY SCHEDULE (Bars B)
SIZE: 8' x 8'			
≥0.5' < 10'	D7	≥0.5' < 9'	D4.5
10' < 19'	E5	9' < 13'	E5
19'-30'	F5	13' < 18'	F5
		18' < 23'	F3.5
		23'-30'	G3.5
SIZE: 8' x 9'			
≥0.5' < 8'	D7	≥0.5' < 7'	D7
8' < 14'	E5	7' < 9'	D4.5
14' < 23'	F5	9' < 15'	E3
23'-31'	G3.5	15' < 20'	F5
		20' < 23'	F3.5
		23'-31'	G3.5
SIZE: 9' x 9'			
≥0.5' < 8'	D7	≥0.5' < 7'	D4
8' < 14'	E5	7' < 10'	E5
14' < 22'	F5	10' < 17'	F3.5
		17' < 22'	G3.5
SIZE: 9'x9'x10" SLAB THICKNESS			
22' < 36'	F5	22' < 31'	F3.5
36'-40'	G5	31'-40'	G3.5
SIZE: 10'x10'x10" SLAB THICKNESS			
≥0.5' < 7'	C6.5	0.5' < 6'	C6.5
7' < 10'	D7	6' < 9'	D4.5
10' < 18'	E5	9' < 15'	E5
18' < 27'	F5	15' < 22'	F5
27'-32'	G5	22'-32'	G3.5
SIZE: 12'x12'x12" SLAB THICKNESS			
≥0.5' < 10'	D7	≥0.5' < 8'	D7
10' < 16'	E5	8' < 14'	E5
16' < 25'	F5	14' < 22'	F5
25'-35'	G5	22' < 30'	G5
		30'-35'	H4

SLAB AND WALL DESIGN TABLE NOTES

1. Size is the inside dimension(s) of a structure.
2. Slab reinforcement is appropriate for top, intermediate, and bottom slabs.
3. Bottom Slabs for precast 3'-6" x 3'-6" rectangular structures at 15' depth or less, may be 6" thick.
4. Slab depth is measured from finished grade to top of slab.
5. Wall depth is measured to the top of the bottom slab for boxes and to the top of the intermediate slab for risers.
6. Wall height is the distance between top of lower slab to bottom of upper slab. Maximum wall height is 12' for wall lengths exceeding 5', or 10' for wall lengths exceeding 12'.
7. Wall lengths exceeding 6'-0" require two layers of reinforcing (See Table 8) with 2" of cover from the horizontal bars to the inside and outside faces for each layer.
8. Wall lengths exceeding the dimensions or depths shown in Table 8, or 12'-0" diameter require a special design.
9. Wall thickness and reinforcing for rectangular structures is based on the longer wall length.
10. Reinforcing schedules with larger areas of steel may be substituted for schedules with smaller bar or wire spacing, except that Schedule B10 may not be substituted for Schedule A6. See Index 201, Sheet 4 for allowable bar spacing adjustments when larger areas of reinforcing are substituted.

SLAB DESIGNS - ROUND STRUCTURES (TABLE 7)

SLAB DEPTH	SLAB THICKNESS	REINF. (2-WAY) SCHEDULE
SIZE: 3'-6" DIAMETER		
2'-15'	6" Precast	C6.5
0.5' < 30'	8"	A6
30'-40'	8"	B5.5
SIZE: 4'-0" DIAMETER		
≥0.5' < 19'	8"	A6
19' < 30'	8"	B5.5
30'-40'	8"	C6.5
SIZE: 5'-0" DIAMETER		
≥0.5' < 15'	8"	B5.5
15' < 26'	8"	C6.5
26' < 35'	8"	D7
35'-40'	8"	D4.5
SIZE: 6'-0" DIAMETER		
≥0.5' < 9'	8"	B5.5
9' < 15'	8"	C6.5
15' < 22'	8"	C3.5
22' < 30'	8"	D4.5
30'-40'	8"	E5
SIZE: 7'-0" DIAMETER		
≥0.5' < 8'	8"	C3.5
8' < 16'	8"	D4.5
16' < 23'	8"	E5
23' < 27'	8"	E3
27'-40'	8"	F3.5
SIZE: 8'-0" DIAMETER		
≥0.5' < 10'	8"	D4.5
10' < 16'	8"	E5
16' < 19'	8"	E3
19' < 29'	8"	F3.5
29'-40'	10"	F5
SIZE: 10'-0" DIAMETER		
≥0.5' < 12'	10"	D4.5
12' < 20'	10"	E5
20' < 28'	10"	F5
28'-40'	10"	G3.5
SIZE: 12'-0" DIAMETER		
≥0.5' < 8'	10"	D4.5
8' < 13'	10"	E5
13' < 18'	10"	F5
18' < 26'	10"	G3.5
26'-40'	12"	G3.5

100% PLANS BID SET

LAST REVISION	REVISION	DESCRIPTION:	FY 2017-18 DESIGN STANDARDS	STRUCTURE BOTTOMS TYPE J AND P	INDEX NO.	SHEET NO.
11/01/16					200	4 of 5

REVISION	BY	DATE

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AND FESTIVAL CORE
DRAINAGE DETAILS

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16–0003–EN	DATE DRAWN: 02–01–2020	DRAWN BY: CED	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: EAPS	CHECKED BY: RF	SHEET NO.: 463

APPROVED FOR CONSTRUCTION _____ DATE

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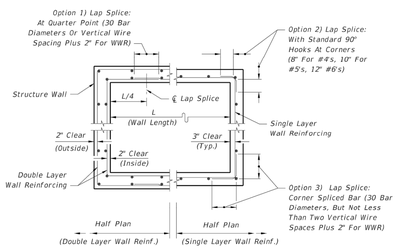
WALL DESIGNS - RECTANGULAR STRUCTURES (TABLE 8)

VERTICAL REINFORCING		HORIZONTAL REINFORCING		WALL THICKNESS
WALL DEPTH	SCHEDULE	WALL DEPTH	SCHEDULE	
SIZE: 3'-6" & RISERS				
≥1.17' - 40'	A12	≥1.17' < 10'	B10	6"/8"
		10' < 18'	B5.5	6"/8"
		18' < 29'	C6.5	6"/8"
		29' - 40'	C3.5	6"/8"
SIZE: 4'-0"				
≥1.17' - 40'	A12	≥1.17' < 6'	B10	6"/8"
		6' < 10'	B5.5	6"/8"
		10' < 20'	C6.5	6"/8"
		20' < 28'	C3.5	6"/8"
		28' - 40'	D4.5	6"/8"
SIZE: 5'-0"				
≥1.17' - 40'	A12	≥1.17' < 5'	B5.5	6"/8"
		5' < 9'	C6.5	6"/8"
		9' < 15'	C3.5	6"/8"
		15' < 22'	D4.5	6"/8"
		22' - 40'	E3	8"
SIZE: 6'-0"				
≥1.17' < 26'	A12	≥1.17' < 9'	C3.5	6"/8"
		9' < 15'	D4.5	6"/8"
		15' < 26'	E3	8"
	Inside	Outside	Inside	Outside
26' - 40'	A12	A12	26' - 40'	D7	D7	8"
SIZE: 7'-0"				
	Inside	Outside		Inside	Outside	
≥1.17' < 25'	A12	A12	≥1.17' < 7'	B10	B10	8"
26' - 40'	B10	B10	7' < 10'	B5.5	B5.5	8"
			10' < 20'	C6.5	C6.5	8"
			20' < 30'	D7	D7	8"
			30' - 40'	E5	E5	8"
SIZE: 8'-0"						
	Inside	Outside		Inside	Outside	
≥1.17' < 20'	A12	A12	≥1.17' < 6'	B5.5	B5.5	8"
20' - 40'	C6.5	C6.5	6' < 13'	C6.5	C6.5	8"
			13' < 22'	D7	D7	8"
			22' < 31'	E5	E5	8"
			31' - 40'	F5	F5	8"
SIZE: 9'-0"						
	Inside	Outside		Inside	Outside	
≥1.17' < 12'	A12	A12	≥1.17' < 8'	C6.5	C6.5	8"
12' < 28'	C6.5	C6.5	8' < 15'	D7	D7	8"
28' - 40'	D7	D7	15' < 23'	E5	E5	8"
			23' - 40'	F5	F5	8"
SIZE: 10'-0"						
	Inside	Outside		Inside	Outside	
≥1.17' < 10'	B10	B10	≥1.17' < 10'	D7	D7	8"
10' < 21'	C6.5	C6.5	10' < 17'	E5	E5	8"
21' < 26'	D7	D7	17' < 26'	F5	F5	8"
26' - 40'	C6.5	C6.5	26' - 40'	F5	F5	10"

VERTICAL REINFORCING		HORIZONTAL REINFORCING		WALL THICKNESS
WALL DEPTH	SCHEDULE	WALL DEPTH	SCHEDULE	
SIZE: 10'-0" (Precast Only)				
	Inside	Outside		Inside	Outside	
26' - 40'	D7	D7	26' - 40'	F5	F5	9"
SIZE: 12'-0"				
	Inside	Outside		Inside	Outside	
≥1.17' < 14'	B10	B10	≥1.17' < 10'	C6.5	C6.5	10"
14' < 25'	C6.5	C6.5	10' < 17'	D7	D7	10"
25' - 40'	D7	D7	17' < 24'	E5	E5	10"
			24' - 40'	F5	F5	10"
SIZE: 12'-0" (Precast Only)				
	Inside	Outside		Inside	Outside	
≥1.17' < 12'	B10	B10	≥1.17' < 10'	D7	D7	9"
12' < 24'	C6.5	C6.5	10' < 17'	D4.5	D4.5	9"
24' - 40'	D7	D7	17' < 23'	E5	E5	9"
			23' < 32'	F5	F5	9"
			32' - 40'	G5	G5	9"
SIZE: 16'-0"				
	Inside	Outside		Inside	Outside	
≥1.17' < 11'	C6.5	C6.5	≥1.17' < 13'	D7	D7	10"
11' < 20'	D7	D7	13' < 20'	E5	E5	10"
20' < 28'	E5	E5	20' < 28'	F5	F5	10"
28' - 40'	F5	F5	28' - 40'	G5	G5	10"
SIZE: 16'-0" (Precast Only)				
	Inside	Outside		Inside	Outside	
≥1.17' < 10'	C6.5	C6.5	≥1.17' < 9'	D7	D7	9"
10' < 18'	D7	D7	9' < 13'	D4.5	D4.5	9"
18' < 25'	E5	E5	13' < 19'	E5	E5	9"
25' - 35'	F5	F5	19' < 27'	F5	F5	9"
			27' - 35'	G5	G5	9"
SIZE: 20'-0"				
	Inside	Outside		Inside	Outside	
≥1.17' < 10'	C6.5	C6.5	≥1.17' < 8'	D7	D7	10"
10' < 17'	D7	D7	8' < 12'	E5	E5	10"
17' - 30'	E5	E5	12' < 20'	F5	F5	10"
			20' - 30'	G5	G5	10"
SIZE: 20'-0" (Precast Only)				
	Inside	Outside		Inside	Outside	
≥1.17' < 8'	C6.5	C6.5	≥1.17' < 8'	D4.5	D4.5	9"
8' < 13'	D7	D7	8' < 12'	E5	E5	9"
13' - 25'	E5	E5	12' < 19'	F5	F5	9"
			19' - 25'	G5	G5	9"

REINFORCING SCHEDULE				
SCHEDULE	GRADE 60 BARS OR 65 KSI & 70 KSI WELDED WIRE REINFORCING			
	GRADE 60 AREA (in.²/ft.)	MAXIMUM SPACING		
		GR 60 BARS (in.)	WWR EQUIV. AREA*	
			65 KSI (in.)	70 KSI (in.)
A12	0.20	12	8	8
A6	0.20	6	5	4½
B10	0.24	10	8	7½
B5.5	0.24	5½	5	4
C6.5	0.37	6½	6	5
C3.5	0.37	3½	3	2½
D7	0.53	7	6	5
D4.5	0.53	4½	4	3½
E5	0.73	5	4	4
E3	0.73	3	3	3
F5	1.06	5	4	4
F3.5	1.06	3½	3	3
G5	1.45	5	4	4
G.3.5	1.45	3½	3	3
H4	1.75	4	3	3

*Equivalent Area Welded Wire Reinforcing may be substituted in accordance with Index No. 201, Sheet 4.



WALL REINFORCING SPLICE DETAILS (ALTERNATE B)

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	STRUCTURE BOTTOMS TYPE J AND P	INDEX NO.	SHEET NO.
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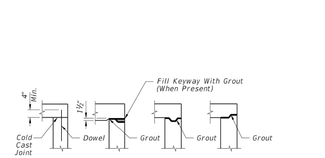
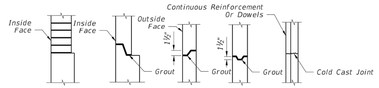
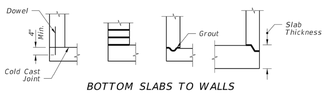
X



TOP SLABS TO WALLS



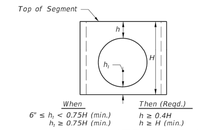
WALL JOINTS

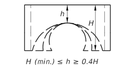


BOTTOM SLABS TO WALLS

1. One or more types of joints may be used in a single structure, except brick wall structure. Brick wall construction is permitted on circular units only.
2. All grouted joints are to have a maximum thickness of 1".
3. Keyways are to be a minimum of 1½" deep.
4. Joint dowels are to be #4 bars, 12" long with a minimum of 6 bars per joint approximately evenly spaced for circular structures or at maximum 12" spacing for rectangular structures. Bars may be either Adhesive Bonded Dowels in accordance with Specification Section 416, or placed approximately 6" into fresh concrete leaving the remainder to extend into the secondary cast. Welded wire reinforcement may be substituted for the dowel bar in accordance with the equivalent steel area table on Sheet 4.
5. Minimum cover on dowel reinforcing bars is 2" to outside face of structure.
6. Joints between wall segments and between wall segments and top or bottom slabs may be sealed either by preformed plastic gasket material using the procedures given in Section 430 of the Specifications or by non-shrink grout, in accordance with Section 934 of the Specifications.
7. Insert products approved by the Engineer may be used in lieu of dowel embedment.

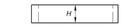
OPTIONAL CONSTRUCTION JOINTS





H (min.) ≤ h ≥ 0.4H

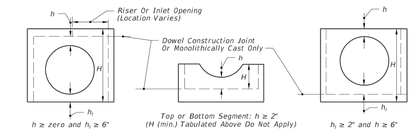
Segments may be inverted. Opening for pipe shall be the pipe OD plus 6" (± 2" tolerance). If h can not be attained, then a top or bottom slab must be attached to the segment as shown below.



H ≥ H (min.)

Minimum Value For H	
H (min.)	Box Or Riser Diameter
1'-0"	3'-6" & 4'-0"
1'-6"	5'-0" & 6'-0"
2'-0"	>6'-0"

SEPARATE RISER SEGMENTS WITH CONSTRUCTION JOINTS OTHER THAN DOWEL OPTION

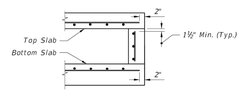


SEGMENTS FOR SLAB TO WALL DOWEL CONSTRUCTION JOINTS OR MONOLITHICALLY CAST SEGMENTS

NOTE: h may be less than 6" when approved by the Engineer, but not for inlet segments at finish grade elevation.

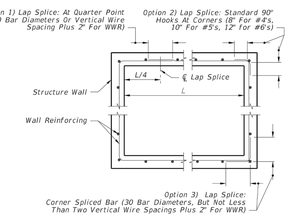
COMPARATIVE SIDE VIEWS

MINIMUM DIMENSIONS FOR BOX AND RISER SEGMENTS



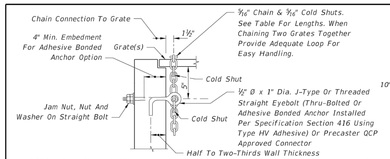
(NOTE: NOT APPLICABLE AROUND MANHOLE AND RISER OPENINGS)

REBAR STRAIGHT END EMBEDMENT FOR TOP AND BOTTOM SLABS



WALL REINFORCING SPLICE DETAILS

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	SUPPLEMENTARY DETAILS FOR MANHOLES & INLETS	INDEX NO.	SHEET NO.
07/01/15					201	3 of 5

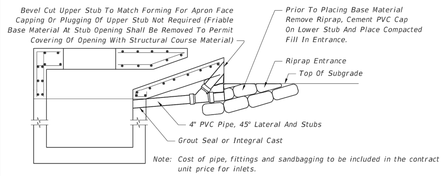


NOTE: When Alternate "G" grate is specified, the chain, bolt, nuts, washer and cold shuts shall be galvanized in accordance with Section 425 of the Standard Specifications.

Cost of eyebolt and chain to be included in the contract unit price for inlets.

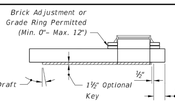
EYEBOLT AND CHAIN REQUIREMENTS				
Index Number	Inlet Type	Eye-Bolts	Length Of Chain	Handling & Remarks
217	(MB) 1	1	4'-0"	Slide & Spin
	(MB) 2	1	4'-0"	Slide & Spin
	(MB) 3	2	2 @ 4'-0"	Slide & Spin
	(MB) 4	2	2 @ 4'-0"	Slide & Spin
	(MB) 5	2	2 @ 4'-0"	Slide & Spin
218	(BW)	1	3'-8"	Slide Or Slide & Spin
219	(BW, RGD)	1	4'-0"	Slide & Spin
220	S	1	4'-0"	Slide & Spin
221	V	1	4'-0"	Slide & Spin
230	A	1	3'-0"	Slide
231	B	1	5'-0"	Slide & Spin
232	C	1	2'-6"	Slide & Spin
	D	1	2'-6"	Slide & Spin
	E	2	2 @ 2'-6"	Slide & Spin
	H	2	2 @ 2'-6"	Flip Ctr. Grate and Slide & Spin Single Free Grate
			1 or 2 @ 1'-6"	Ctr. Grate(s) Chained To One End Grate
233	F	1	3'-6"	Flip Or Slide & Spin
	G	1	6'-0"	Slide
			2'-0"	Lifting Loop
234	J	1	4'-0"	Slide & Spin

EYEBOLT AND CHAIN FOR LOCKING GRATES TO INLETS



Note: Cost of pipe, fittings and sandbagging to be included in the contract unit price for inlets.

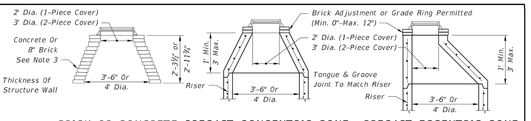
TEMPORARY DRAINS FOR SUBGRADE AND BASE



SECTION

Note: See Slab Designs Index No. 200.

TYPE 7



BRICK OR CONCRETE TYPE 8 — PRECAST CONCENTRIC CONE — PRECAST ECCENTRIC CONE

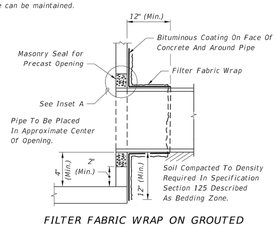
MANHOLE TOPS

NOTES (TOPS)

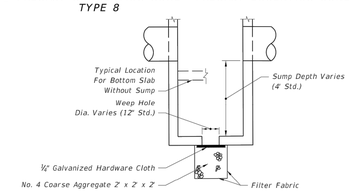
1. Manhole top Type 7 slabs shall be of Class II concrete. Concrete as specified in ASTM C478 may be used for precast units; see General Note No. 3.
2. Manhole top Type 7 slabs may be of cast-in-place or precast construction. The optional key is for precast tops and in lieu of dowels. Frame and slab openings are to be omitted when top is used over a junction box.
3. Manhole top Type 8 may be of cast-in-place or precast concrete construction or brick construction. For concrete construction, the concrete and steel reinforcement shall be the same as the supporting wall unit. An eccentric cone may be used.
4. Manhole tops shall be secured to structures by optional construction joints as shown on Sheet 3.
5. Frames can be adjusted a maximum 12" height with brick or precast ASTM C478 grade rings.
6. Substitution of manhole top Type 8 for manhole top Type 7 is allowed provided that minimum dimensions shown above are not reduced.
7. Substitution of Manhole top Type 7 for Type 8 is allowed if the minimum thickness (h) above pipe opening cannot be maintained with manhole top Type 8.

DESIGN NOTES

1. Manhole top Type 8 should be specified in the plans when depths shown above can be maintained.

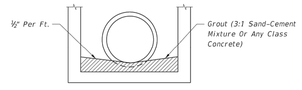


FILTER FABRIC WRAP ON GROUTED PIPE TO STRUCTURE JOINT



NOTE: Sump bottom appropriate for all manhole and inlet types. Sumps are to be constructed in inlet and manholes connected to French Drains unless excluded in the plans. At other locations, sump is to be constructed only where called for in the plans. Weep holes to be constructed in sump bottom only where called for in the plans. Cost of sump bottom and weep hole to be included in the contract unit price for inlet or manhole.

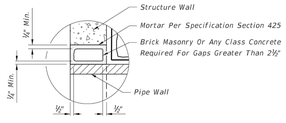
SUMP BOTTOM



FOR ALL STRUCTURES UNLESS EXCLUDED BY SPECIAL DETAIL

ALL PIPE TYPES

DRAINAGE STRUCTURE INVERT



INSET A

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	SUPPLEMENTARY DETAILS FOR MANHOLES & INLETS	INDEX NO.	SHEET NO.
07/01/12					201	2 of 5

100% PLANS BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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ENGINEERING DEPARTMENT
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CLEVELAND STREET PHASE III AND FESTIVAL CORE DRAINAGE DETAILS

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CED	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: EAPS	CHECKED BY: RF	SHEET NO.: 464

APPROVED FOR CONSTRUCTION _____ DATE

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EXAMPLE TABLE OF EQUIVALENT STEEL AREA

SCHEDULE	GRADE 60 REINFORCING BAR		EQUIVALENT GRADE 40 REINFORCING BAR		EQUIVALENT 65 KSI SMOOTH WELDED WIRE REINFORCEMENT		EQUIVALENT 70 KSI DEFORMED WELDED WIRE REINFORCEMENT	
	Bar Size & Spacing	Steel Area (in²/ft)	Bar Size & Spacing	Min. Steel Area (in²/ft)	Style Designation	Min. Steel Area (in²/ft)	Style Designation	Min. Steel Area (in²/ft)
A	#3 @ 6½" Ctrs. #4 @ 12" Ctrs.	0.20	#3 @ 4½" Ctrs. #4 @ 8" Ctrs. #5 @ 12" Ctrs.	0.30	3"x3"-W4.6xW4.6 4"x4"-W6.2xW6.2 6"x6"-W9.2xW9.2	0.1846	3"x3"-D4.3xD4.3 4"x4"-D5.7xD5.7 6"x6"-D8.6xD8.6	0.1714
B	#3 @ 5½" Ctrs. #4 @ 10" Ctrs.	0.24	#3 @ 3½" Ctrs. #4 @ 6½" Ctrs. #5 @ 10" Ctrs.	0.36	3"x3"-W5.5xW5.5 4"x4"-W7.4xW7.4 6"x6"-W11.1xW11.1	0.2215	3"x3"-D5.1xD5.1 4"x4"-D6.9xD6.9 6"x6"-D10.3xD10.3	0.2057
Special 1	#3 @ 5" Ctrs., #4 @ 9" Ctrs.	0.267	#3 @ 3" Ctrs. #4 @ 6" Ctrs. #5 @ 9" Ctrs.	0.40	3"x3"-W6.2xW6.2 4"x4"-W8.2xW8.2 6"x6"-W12.3xW12.3	0.2465	3"x3"-D5.7xD5.7 4"x4"-D7.6xD7.6 6"x6"-D11.4xD11.4	0.2289
C	#3 @ 3½" Ctrs. #4 @ 6½" Ctrs. #5 @ 10" Ctrs.	0.37	#4 @ 4" Ctrs. #5 @ 6½" Ctrs. #6 @ 9½" Ctrs.	0.555	3"x3"-W8.5xW8.5 4"x4"-W11.4xW11.4 6"x6"-W17.1xW17.1	0.3415	3"x3"-D7.9xD7.9 4"x4"-D10.6xD10.6 6"x6"-D15.9xD15.9	0.3171
D	#4 @ 4½" Ctrs. #5 @ 7" Ctrs. #6 @ 10" Ctrs.	0.53	#4 @ 3" Ctrs. #5 @ 4½" Ctrs. #6 @ 6½" Ctrs.	0.795	3"x3"-W12.2xW12.2 4"x4"-W16.3xW16.3 6"x6"-W24.5xW24.5	0.4892	3"x3"-D11.4xD11.4 4"x4"-D15.1xD15.1 6"x6"-D22.7xD22.7	0.4543
E	#4 @ 3" Ctrs. #5 @ 5" Ctrs. #6 @ 7" Ctrs.	0.73	#5 @ 3½" Ctrs. #6 @ 4½" Ctrs. #7 @ 6½" Ctrs.	1.095	3"x3"-W16.8xW16.8 4"x4"-W22.5xW22.5 6"x6"-W33.7xW33.7	0.6738	3"x3"-D15.6xD15.6 4"x4"-D20.9xD20.9 6"x6"-D31.3xD31.3	0.6257
F	#5 @ 3½" Ctrs. #6 @ 5" Ctrs. #7 @ 7" Ctrs.	1.06	#6 @ 3" Ctrs. #7 @ 4½" Ctrs. #8 @ 6" Ctrs.	1.59	3"x3"-W24.5xW24.5 4"x4"-W32.6xW32.6 6"x6"-W48.9xW48.9	0.9785	3"x3"-D22.7xD22.7 4"x4"-D30.3xD30.3 6"x6"-D45.4xD45.4	0.9086
Special 2	#5 @ 3" Ctrs. #6 @ 4" Ctrs. #7 @ 5½" Ctrs.	1.24	#7 @ 4" Ctrs. #8 @ 5" Ctrs.	1.86	3"x3"-W28.6xW28.6 4"x4"-W38.2xW38.2 6"x6"-W57.2xW57.2	1.1446	3"x3"-D26.6xD26.6 4"x4"-D35.4xD35.4 6"x6"-D53.1xD53.1	1.0629
G	#6 @ 3½" Ctrs. #7 @ 5" Ctrs.	1.46	#7 @ 3" Ctrs. #8 @ 4" Ctrs.	2.19	3"x3"-W33.7xW33.7 4"x4"-W44.9xW44.9	1.3477	3"x3"-D31.3xD31.3 4"x4"-D41.7xD41.7	1.2514

GENERAL NOTES

1. For square or rectangular precast drainage structures, using either deformed or smooth WWR meeting the requirements of Specification Section 931, WWR shall be continuous around the box and lapped in accordance with Option 1 or 3 as shown in the Wall Reinforcing Splice Details.
2. Horizontal steel in the walls of rectangular structures shall be lap spliced in accordance with Option 1, 2 or 3 as shown in the Wall Reinforcing Splice Details.
3. Welding of splices and laps is permitted. The requirements and restrictions placed on welding in AASHTO M259 shall apply.
4. Rebar straight end embedment of peripheral reinforcement may be used in lieu of ACI standard hooks for top and bottom slabs except when hooks are specifically called for in the plans or standard drawings.
5. Concrete as specified in ASTM C478, (4000 psi) may be used in lieu of Class II concrete in precast items manufactured in plants which meet the requirements in accordance with Specifcation Section 449.
6. Precast opening for pipe shall be the pipe OD plus 6" (± 2" tolerance). Mortar used to seal the pipe into the opening will be of such a mix that shrinkage will not cause leakage into or out of the structure. Dry-pack mortar may be used in lieu of brick and mortar construction to seal openings less than 2½' wide.
7. For pay item purposes, the height used to determine if a drainage structure is greater than 10 feet shall be computed using:
   A. the elevation of the top of the manhole lid,
   B. the grate elevation or the theoretical gutter grade elevation of an inlet, or
   C. the outside top elevation of a junction box less the flow line elevation of the lowest pipe or to top of sump floor.

NOTES FOR PRECAST OPTIONS AND EQUIVALENT REINFORCEMENT SUBSTITUTION

1. Details for optional precast inlet construction up to depths of 15' are shown on the inlet indexes.
2. When precast units are used in conjunction with Alt. "B" Structure Bottoms, Index No. 200, the interior dimensions of an Alt. "B" Bottom can be adjusted to reflect these inlet interior dimensions.
3. Concrete which meets the requirements of ASTM C478 or Class IV must be used for precast structures constructed with 6" wall or slab thickness.
4. Reinforcement can be either deformed bar reinforcement or welded wire reinforcement. Bar reinforcement other than 60 ksi may be used, however only two grades are recognized; Grade 40 and Grade 60. Smooth welded wire reinforcement, will be recognized as having a design strength of 65 ksi and deformed welded wire reinforcement will be recognized as having a design strength of 70 ksi. The area of reinforcement required may be adjusted in accordance with the Equivalent Steel Area Table provided. For bars and spacings not given, the steel area required can be determined by the following equations:

   Grade 40 Steel Area = $A_s 40 = \frac{60}{40} \times A_s 60$

   Smooth Welded Wire Reinforcement Steel Area = $A_s 65 = \frac{60}{65} \times A_s 60$

   Deformed Welded Wire Reinforcement Steel Area = $A_s 70 = \frac{60}{70} \times A_s 60$

   When a reduced area of reinforcement is provided, any maximum bar spacing shown must also be reduced as determined by the following equations, unless otherwise shown:

   Max. Grade 40 Bar Spacing = Grade 60 Bar Spacing
   Max. Smooth Welded Wire Spacing = Grade 60 Bar Spacing x 0.86
   Max. Deformed Welded Wire Spacing = Grade 60 Bar Spacing x 0.74

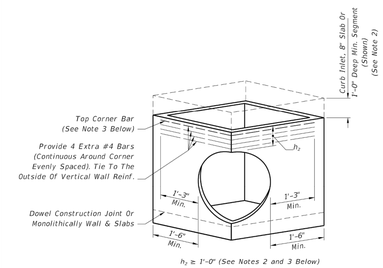
   When an increased area of reinforcing is provided, then the maximum bar spacing may be increased by the squared ratio of increased steel area, but not to exceed 12":

   Max. Bar Spacing Provided ≤ Max. Bar Spacing Required x $\left(\frac{\text{Steel Area Provided}}{\text{Min. Steel Area Required}}\right)^2$

   In no case will reinforcement with wires smaller than W3.1 or D4.0, or spacings greater than 8" be permitted. Bar reinforcement shall show the minimum yield designation grade mark or either the number 60 or one (1) grade mark line to be acceptable at the higher value. Maximum bar spacing shall not be greater than two (2) times the slab thickness with a maximum spacing of 12" or three (3) times the wall thickness, with a maximum spacing of 18" for vertical bars and 12" for horizontal bars. Wires smaller than W3.1 or D4.0 are permitted in the walls of ASTM C 478 round structure bottoms and round risers.
5. Fiber-reinforced concrete may be substituted for conventional steel reinforcement in accordance with the Structures Design Guidelines. Shop drawings corresponding to an approved fiber-reinforced concrete mix design must be submitted for approval to the State Drainage Engineer.

10/25/2016 8:19:12 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	SUPPLEMENTARY DETAILS FOR MANHOLES & INLETS	INDEX NO.	SHEET NO.
11/01/16					201	4 of 5

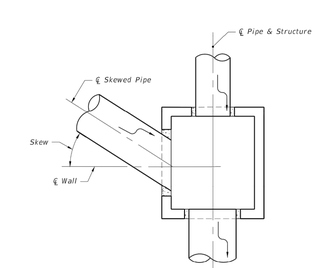


DESIGNER NOTE: Use only when round structures are not practical, engineer of record approval required.

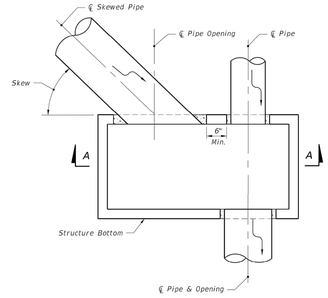
PICTORIAL VIEW

NOTE:
1. Submit Shop Drawings of corner openings for approval by the Engineer of Record.
2. h_2 may be less than 1'-0" when a minimum 1'-0" deep segment, 8" slab or curb inlet is provided above the corner opening.
3. For inlet segments at finish grade elevation substitute a #8 Bar for the top corner bar when 1'-0" ≤ h_2 < 2'-0".

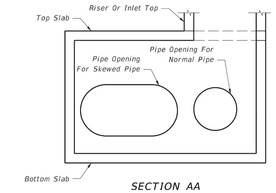
RECTANGULAR SEGMENT WITH PIPE OPENING AT CORNER



PLAN VIEW FOR SKEWS ≤ 45° (Not Centered)



PLAN VIEW FOR SKEWS > 45° (Not Centered)



SECTION AA
(Pipes Not Shown For Clarity)

DETAILS FOR SKEWED PIPES IN RECTANGULAR STRUCTURES

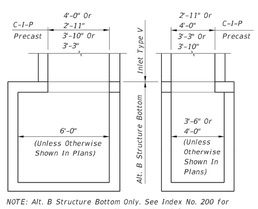
10/31/2016 10:16:02 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	SUPPLEMENTARY DETAILS FOR MANHOLES & INLETS	INDEX NO.	SHEET NO.
07/01/12					201	5 of 5

X

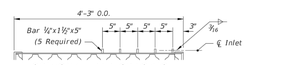
10/14/2019 9:12:02 AM

LAST REVISION	REVISION
11/01/17	

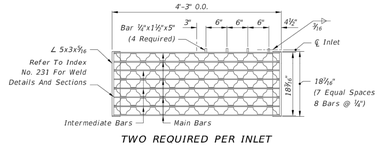


NOTE: Alt. B Structure Bottom Only. See Index No. 200 for structure bottom details and hole reinforcement. (For Pipes 30" Dia. And Larger)

INLET WITH STRUCTURE BOTTOM



OPTIONAL BAR SPACING



TWO REQUIRED PER INLET

5" Steel Grate: Main Bars 5"x⅛"
Intermediate Bars 1½"x¼"
Reticuline Bars 1½"x3/16"

GENERAL NOTES

1. This inlet is suitable for village swales, ditches, or other areas subject to heavy wheel loads, minimum debris. This inlet may be placed in areas subject to occasional pedestrian traffic such as landscaped areas and pavement areas where pedestrians can walk around the inlet. This inlet is not for use in a bicycle way.
2. When alternate "G" grate is specified in plans, the grate is to be hot dip galvanized after fabrication.
3. All reinforcing is Grade 60 bars with 2" min. cover unless otherwise noted. See Index No. 201 for equivalent area of welded wire fabric. Cut or bend bars out of way of pipe to clear pipe 1½".
4. All exposed edges and corners shall be ⅜" chamfer or tooled to ¼" radius.
5. All dimensions are for both precast and cast-in-place inlets unless otherwise noted.
6. For supplementary details see Index No. 201.
7. Inlet to be paid for under the contract unit price for Inlets (Gutter Type V), EA

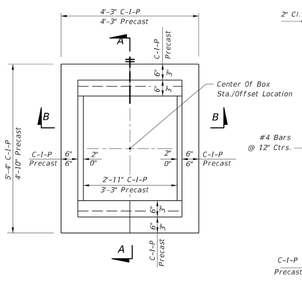
HORIZONTAL WALL REINFORCING SCHEDULE (TABLE 1)

WALL DEPTH	SCHEDULE	AREA (in.²/ft.)	MAX. SPACING BARS	MAX. SPACING WWF
0' - 5'	A12	0.20	12"	8"
5' - 9'	A6	0.20	6"	5"
9' - 12'	A4	0.20	4"	3"
9' - 15'	B5.5	0.24	5½"	5"

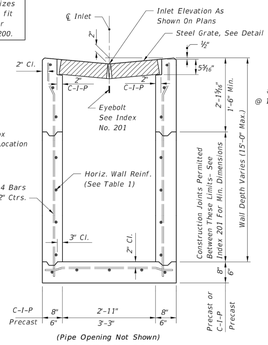
RECOMMENDED MAXIMUM PIPE SIZES

Inlet Inside Width	Pipe Size
2'-11" Or 3'-3"	24"
4'-0" Or 3'-10"	30"

Note: Recommended sizes are for concrete pipe. Sizes for other types of pipe must be verified for fit in accordance with Index No. 201. For larger pipe see bottom detail above and Index No. 200.

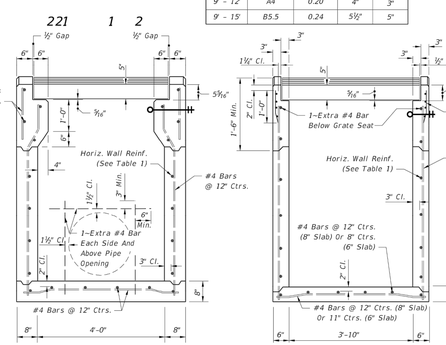


PLAN
(CAST-IN-PLACE INLET SHOWN WITHOUT GRATE; PRECAST INLET SIMILAR)



(Pipe Opening Not Shown)

SECTION BB
(CAST-IN-PLACE INLET SHOWN PRECAST INLET SIMILAR)



(Pipe Opening Shown)

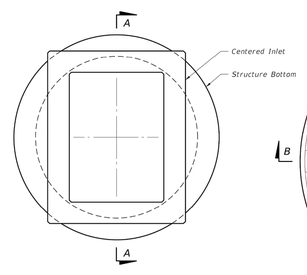
SECTION AA
(CAST-IN-PLACE INLET)

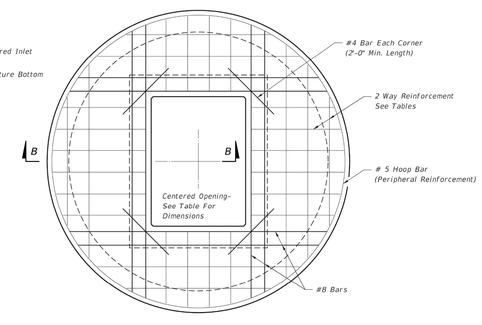
(Pipe Opening Not Shown)

SECTION AA
(PRECAST INLET)

10/31/2016 10:51:51 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	GUTTER INLET TYPE V	INDEX NO.	SHEET NO.
11/01/16					221	1 of 2





TOP SLAB REINFORCING DIAGRAM

TOP SLAB OPENINGS

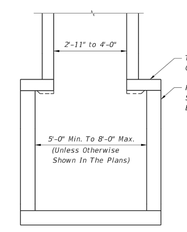
DIAMETER	OPENING SIZE MIN.	OPENING SIZE MAX.
5'-0" To 8'-0"	2'-11" x 4'-0"	3'-3" x 3'-10"

TOP SLAB REINFORCING SCHEDULE

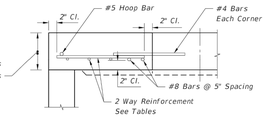
SCHEDULE	GRADE 60 (BAR) OR 65 KSI & 70 KSI (WIRE FABRIC) In.²/ft.
A	0.20
B	0.24
C	0.37
D	0.53
E	0.73
F	1.06
G	1.45

TOP SLAB WITH CENTERED OPENING

SLAB DEPTH	SLAB THICKNESS	REINFORCING (2 WAYS) SCHEDULE
SIZE: 5'-0"		
≥0.5' <30'	9½"	C
30'-40'	9½"	D
SIZE: 6'-0"		
0.5' < 8'	9½"	B
8' < 18'	9½"	C
18' < 30'	9½"	D
30' < 37'	9½"	E
37'-40'	9½"	G
SIZE: 8'-0"		
≥0.5' < 9'	11½"	C
9' < 15'	11½"	D
15' < 23'	11½"	E
23' < 33'	11½"	E
33'-40'	11½"	G



SECTION AA



SECTION BB

ALT. A STRUCTURE BOTTOM FOR INLET TYPE V

10/31/2016 10:25:54 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	GUTTER INLET TYPE V	INDEX NO.	SHEET NO.
07/01/05					221	2 of 2

100% PLANS BID SET

REVISION	BY	DATE

gai consultants
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Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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CLEVELAND STREET PHASE III AND FESTIVAL CORE DRAINAGE DETAILS

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CED	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: EAPS	CHECKED BY: RF	SHEET NO.: 465

APPROVED FOR CONSTRUCTION _____ DATE

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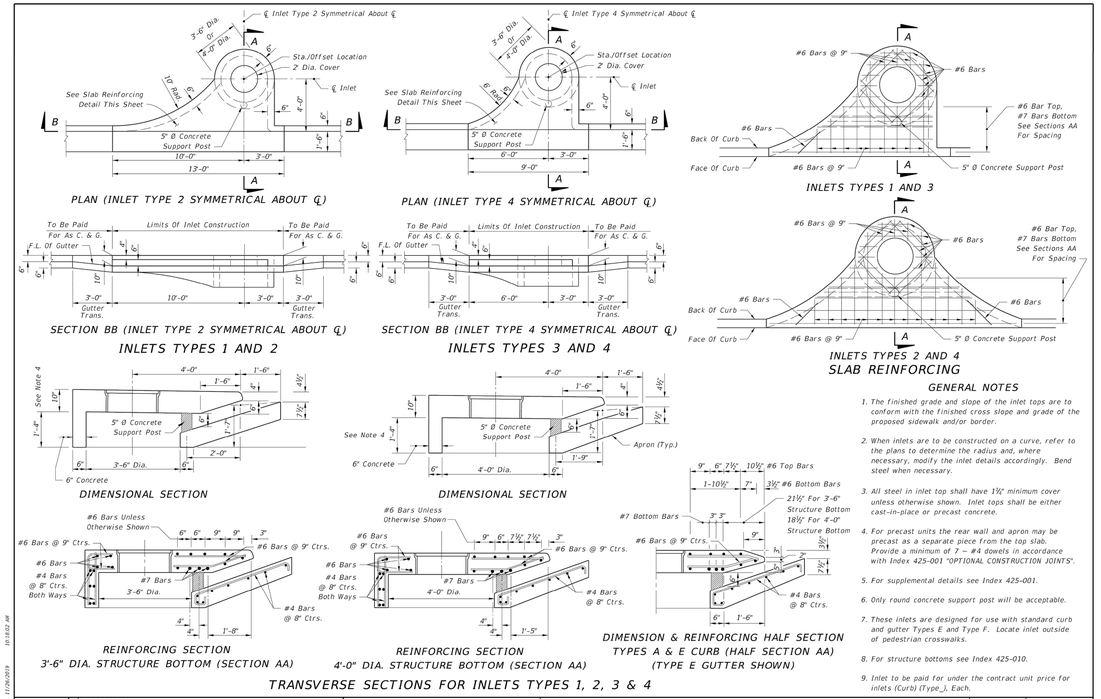
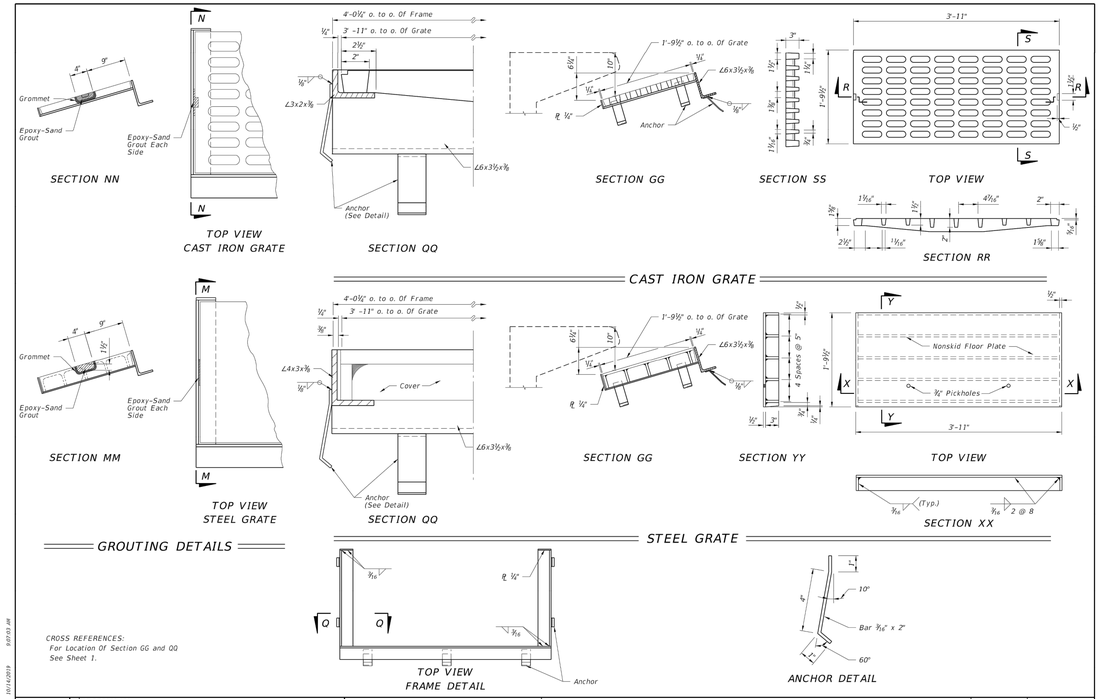


GENERAL NOTES

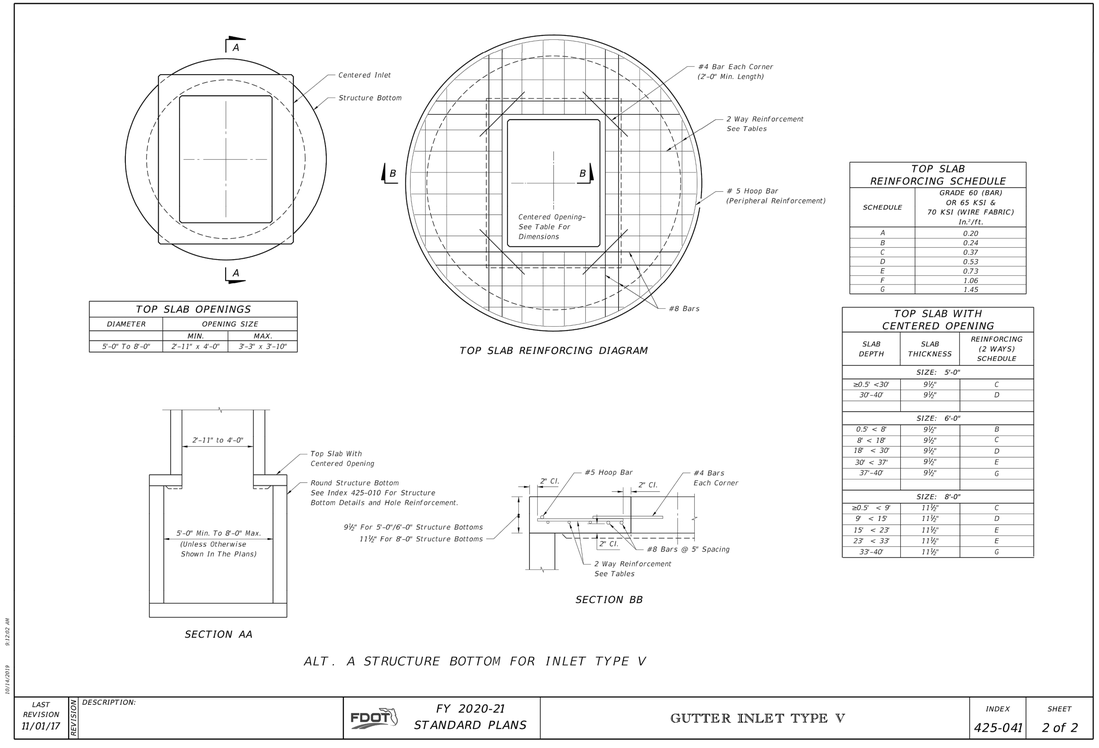
1. The finished grade and slope of the inlet tops are to conform with the finished cross slope and grade of the proposed sidewalk and/or border.
2. When inlets are to be constructed on a curve, refer to the plans to determine the radius and, where necessary, modify the inlet details accordingly. Bend steel when necessary.
3. All steel in inlet top shall have 1½" minimum cover unless otherwise shown. Inlet tops shall be either cast-in-place or precast concrete.
4. For precast units the rear wall and apron may be precast as a separate piece from the top slab. Provide a minimum of 7 – #4 dowels in accordance with Index 425-001 "OPTIONAL CONSTRUCTION JOINTS".
5. For supplemental details see Index 425-001.
6. Only round concrete support post will be acceptable.
7. These inlets are designed for use with standard curb and gutter Types E and Type F. Locate inlet outside of pedestrian crosswalks.
8. For structure bottoms see Index 425-010.
9. Inlet to be paid for under the contract unit price for inlets (Curb) (Type_), Each.

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	CURB INLET TOPS TYPES 1, 2, 3 AND 4	INDEX	SHEET
11/01/17					425-020	1 of 1



CROSS REFERENCES:
For Location Of Section GG and QQ
See Sheet 1.

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	CURB INLET TOPS TYPES 5 AND 6	INDEX	SHEET
11/01/17					425-021	5 of 5



TOP SLAB OPENINGS

DIAMETER	OPENING SIZE MIN.	OPENING SIZE MAX.
5'-0" To 8'-0"	2'-11" x 4'-0"	3'-3" x 3'-10"

TOP SLAB REINFORCING SCHEDULE

SCHEDULE	GRADE 60 (BAR) OR 65 KSI & 70 KSI (WIRE FABRIC) In.²/ft.
A	0.20
B	0.24
C	0.37
D	0.53
E	0.73
F	1.06
G	1.45

TOP SLAB WITH CENTERED OPENING

SLAB DEPTH	SLAB THICKNESS	REINFORCING (2 WAYS) SCHEDULE
SIZE: 5'-0"		
≥0.5' <30'	9½"	C
30'-40'	9½"	D
SIZE: 6'-0"		
0.5' < 8'	9½"	B
8' < 18'	9½"	C
18' < 30'	9½"	D
30' < 37'	9½"	E
37'-40'	9½"	G
SIZE: 8'-0"		
≥0.5' < 9'	11½"	C
9' < 15'	11½"	D
15' < 23'	11½"	E
23' < 33'	11½"	E
33'-40'	11½"	G

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	GUTTER INLET TYPE V	INDEX	SHEET
11/01/17					425-041	2 of 2

100% PLANS
BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756

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www.callsunshine.com
(800) 432-4770
MIN. 48 HOURS BEFORE YOU EXCAVATE

CLEVELAND STREET PHASE III AND FESTIVAL CORE DRAINAGE DETAILS

DWG NAME:	FIELD BOOK:	SURVEYED BY:	SCALE:
A181093.02			VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CED	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: EAPS	CHECKED BY: RF	SHEET NO.: 456

APPROVED FOR CONSTRUCTION _____ DATE

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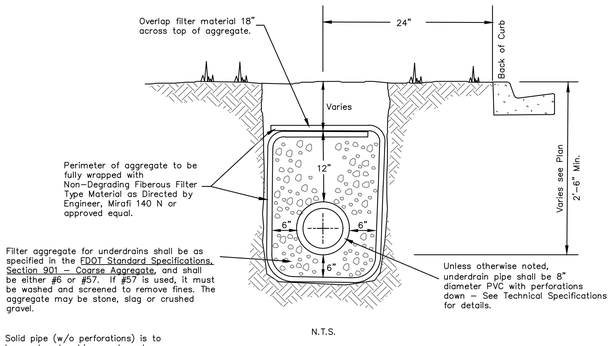


N.T.S.

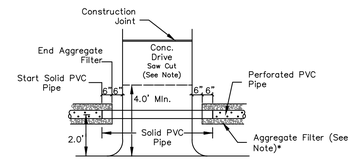
Solid pipe (w/o perforations) is to be used under drives and roadways, with compacted backfill.

DATE	REVISION DESCRIPTION	APP
6/3/15	CORRECTED TEXT/COMBINED SERIES	S.R.

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
STORM DETAILS

UNDERDRAIN DETAIL

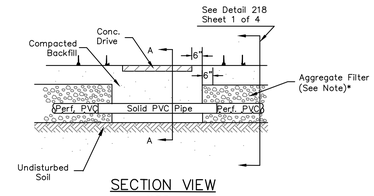
INDEX NO. 218 | PAGE NO. 1 OF 4 | LATEST REVISION 2/22/2016



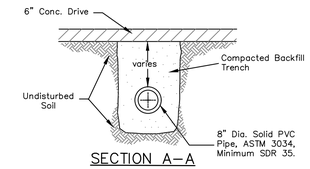
PLAN VIEW
N.T.S.

NOTE:
Saw Cut Drive if Nearest Const. Joint Over 7' from Back of Curb.

* Filter aggregate for underdrains shall be as specified in the FDOT Standard Specifications, Section 901 – Coarse Aggregate, and shall be either #6 or #57. If #57 is used, it must be washed and screened to remove fines. The aggregate may be stone, slag, or crushed gravel.



SECTION VIEW
N.T.S.



SECTION A–A
N.T.S.

DATE	REVISION DESCRIPTION	APP
6/3/15	CORRECTION TO NOTES	S.R.

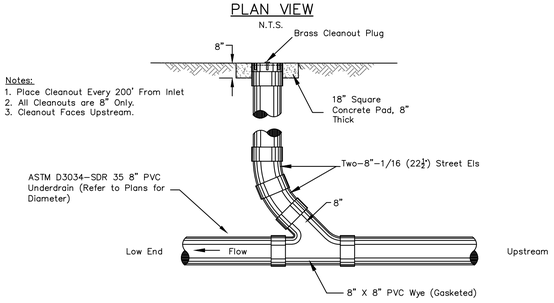
CITY OF CLEARWATER
ENGINEERING DEPARTMENT
STORM DETAILS

UNDERDRAIN AT DRIVEWAYS

INDEX NO. 218 | PAGE NO. 2 OF 4 | LATEST REVISION 2/22/2016

PLAN VIEW
N.T.S.

Notes:
1. Place Cleanout Every 200' From Inlet
2. All Cleanouts are 8" Only.
3. Cleanout Faces Upstream.



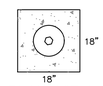
SECTION VIEW
N.T.S.

DATE	REVISION DESCRIPTION	APP
6/3/15	CORRECTION TO NOTES	S.R.

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
STORM DETAILS

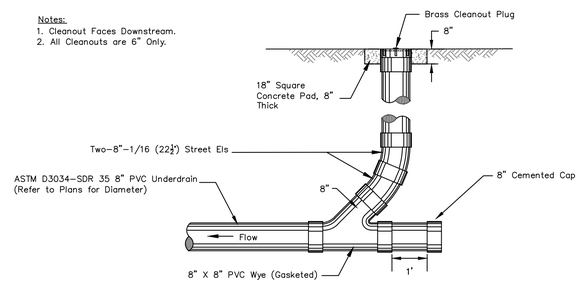
STANDARD UNDERDRAIN CLEANOUT (STORM)

INDEX NO. 218 | PAGE NO. 3 OF 4 | LATEST REVISION 2/22/2016



PLAN VIEW
N.T.S.

Notes:
1. Cleanout Faces Downstream.
2. All Cleanouts are 6" Only.



SECTION VIEW
N.T.S.

DATE	REVISION DESCRIPTION	APP
6/3/15	CORRECTION TO NOTES	S.R.

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
STORM DETAILS

TERMINAL END UNDERDRAIN CLEANOUT (STORM)

INDEX NO. 218 | PAGE NO. 4 OF 4 | LATEST REVISION 2/22/2016

100% PLANS
BID SET

REVISION	BY	DATE

gai consultants
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Tampa, FL 33624
Certificate of Authorization 9951
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CLEVELAND STREET PHASE III AND FESTIVAL CORE DRAINAGE DETAILS

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CED	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: EAPS	CHECKED BY: RF	SHEET NO.: 457

APPROVED FOR CONSTRUCTION _____ DATE

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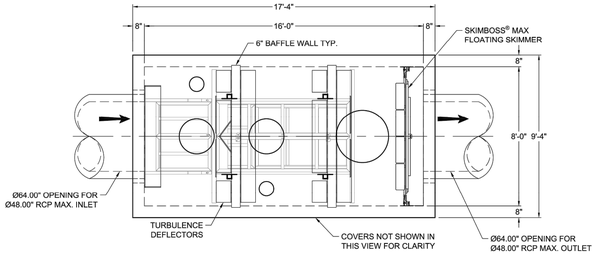
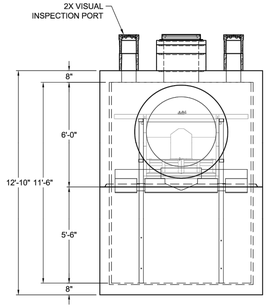
SITE SPECIFIC DATA			
Structure ID			West Box
Water Quality Flow Rate (cfs)			40
Peak Flow Rate (cfs)			PFR
Rim Elevation			17.81"
Pipe Data	**Pipe Size**	**Pipe Type**	**Invert Elevation**
Inlet	42"	RCP	10.86"
Outlet	42"	RCP	10.86"
Notes:			

PERFORMANCE SPECIFICATIONS	
Screen System Storage Volume	124.63 cf
Total Sump Volume	800.00 cf
NJDEP Sediment Storage Volume	122.60 cf
Peak Flow Capacity	102.68 cfs
Treatment Flow Capacities:*	
NJDEP 50% Removal, 75 micron	9.96 cfs
80% Removal, 150 micron	26.00 cfs

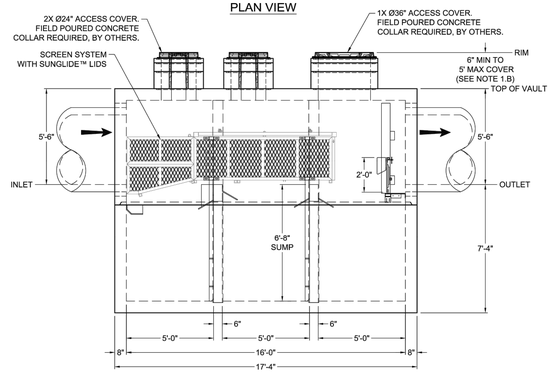
*Contact Oldcastle for alternative treatment flow capacities.



PLAN VIEW



LEFT END VIEW



ELEVATION VIEW

NOTES:

1. DESIGN LOADINGS:
   A. AASHTO HS-20-44 W/ IMPACT.
   B. STANDARD DESIGN FILL: 5' MAXIMUM; FLORIDA ONLY: 3' MAXIMUM.
   C. ASSUMED WATER TABLE: MAX 2' ABOVE TOP OF STRUCTURE. ASSUMED WATER TABLE FOR FLORIDA ONLY: AT TOP OF STRUCTURE.
   D. DRY LATERAL EARTH PRESSURE (EFP) = 45 PCF.
   E. LATERAL LIVE LOAD SURCHARGE = 80 PSF (APPLIED TO 8' BELOW GRADE).
   F. NO LATERAL SURCHARGE FROM ADJACENT BUILDINGS, WALLS, PIERS, OR FOUNDATIONS.
2. CONCRETE 28 DAY COMPRESSIVE STRENGTH SHALL BE 5,000 PSI MINIMUM.
3. STEEL REINFORCEMENT: REBAR, ASTM A-615 OR A-706, GRADE 60.
4. CEMENT: ASTM C-150 SPECIFICATION.
5. REQUIRED ALLOWABLE SOIL BEARING PRESSURE = 2,500 PSF. CONTRACTOR RESPONSIBLE TO ENSURE ADEQUATE BEARING SURFACE IS PROVIDED (I.E. COMPACTED AND LEVEL PER PROJECT SPECIFICATIONS).
6. REFERENCE STANDARD:
   A. ASTM C 890
   B. ASTM C 913
   C. ACI 318-14
7. INTERNALS SHALL CONSIST OF A FLOATING SKIMMER, FLOW DEFLECTORS, ELEVATED CENTRAL SCREEN SYSTEM AND SLIDING LIDS. THESE COMPONENTS EFFECTIVELY REDUCE HEAD LOSS, INCREASE POLLUTANT REMOVAL AND SIMPLIFY MAINTENANCE.
8. MAXIMUM PICK WEIGHT (COMBINED WEIGHT OF BASE, BAFFLE WALLS AND INTERNAL SCREEN SYSTEM) = 54,600 LBS. SECTION HEIGHTS, SLAB/WALL THICKNESSES AND KEYWAYS ARE SUBJECT TO CHANGE DUE TO AVAILABILITY AND PRODUCTION PLANT CAPACITY..
9. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT OLDCASTLE INFRASTRUCTURE.

THIS PRODUCT IS PROTECTED BY ONE OR MORE OF THE FOLLOWING US PATENT(S): 6,428,692; 7,270,747; 7,981,283; 8,142,666; 8,366,923; 8,491,797; 7,846,327; 8,034,236; RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

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Nutrient Separating Baffle Box®
NSBB-816

CUSTOMER: Ferguson Waterworks
JOB NAME: Cleveland St Phase 3
DRAWING NUMBER: NSBB-816 | REVISION: REV DATE | SHEET: 1 OF 1

1 / 457 DS-1-35 BAFFEL BOX DETAIL
NTS

SITE SPECIFIC DATA			
Structure ID			East Box
Water Quality Flow Rate (cfs)			65
Peak Flow Rate (cfs)			PFR
Rim Elevation			17.64"
Pipe Data	**Pipe Size**	**Pipe Type**	**Invert Elevation**
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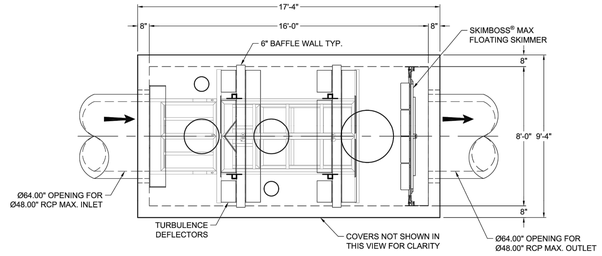
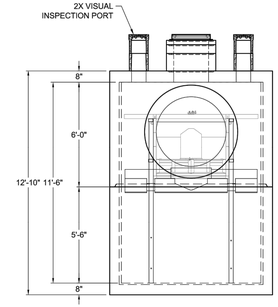
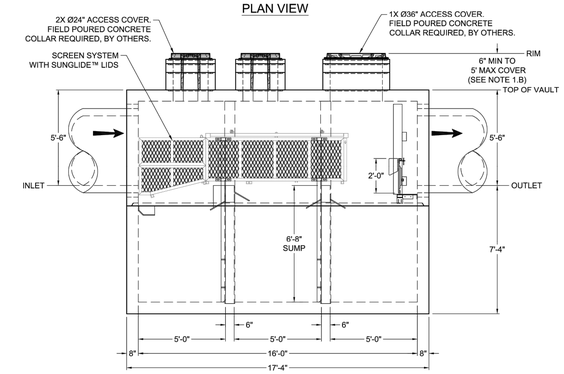


PLAN VIEW



LEFT END VIEW



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Nutrient Separating Baffle Box®
NSBB-816

CUSTOMER: Ferguson Waterworks
JOB NAME: Cleveland St Phase 3
DRAWING NUMBER: NSBB-816 | REVISION: REV DATE | SHEET: 1 OF 1

2 / 457 DS-3-55 BAFFEL BOX DETAIL
NTS

100% PLANS
BID SET

REVISION	BY	DATE

gai consultants
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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
BAFFLE BOX DETAIL

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CED	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: EAPS	CHECKED BY: RF	SHEET NO.: 457

APPROVED FOR CONSTRUCTION _____ DATE

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X

I. SITE DESCRIPTION

A. CONSTRUCTION ACTIVITY

RECONSTRUCTION OF APPROXIMATELY 3000 FEET OF CLEVELAND STREET FROM MISSOURI AVENUE TO JUST WEST OF SAN REMO AVE. AND 2200 FEET OF GULF-TO-BAY FROM COURT STREET TO CLEVELAND STREET. WORK INVOLVES CLEARING AND GRUBBING WITHIN THE LIMITS OF RIGHT-OR-WAY, CONSTRUCTING A ROADWAY, CURB AND GUTTER, DEDICATED BIKE LANES, SIDEWALKS, WATER, SANITARY SEWER, RECLAIMED WATER, AND STORMWATER MANAGEMENT SYSTEM.

B. PROJECT LIMITS

PROJECT LIMITS HAVE BEEN DEPICTED ON THE PLAN SHEETS.

C. PROJECT DESCRIPTION

ROADWAY IMPROVEMENTS ALONG CLEVELAND STREET AND GULF TO BAY

D. MAJOR SOIL DISTURBING ACTIVITIES

CLEARING AND GRUBBING, ROADWAY EXCAVATION, UTILITIES INSTALLATION AND STORMWATER.

E. PROJECT AREA

TOTAL AREA: 12.35 ACRES / TOTAL AREA TO BE DISTURBED: 12.35 ACRES

F. SOIL DATA

THE RESULTS OF THE SOIL BORINGS ALONG THE ROADWAY ARE PROVIDED IN THE GEOTECHNICAL REPORT PREPARED BY DRIGGERS ENGINEERING SERVICES INC. DATED JULY 28, 2017. SEE CONRACT DOCUMENTS.

G. DRAINAGE AREA

SEE DRAINAGE BASIN MAP (SHEET 400)

H. RECEIVING WATERS

STEVENSON CREEK – THE PROJECT OUTFALLS TO THE BOX CULVERT LOCATED UNDER CLEVELAND STREET AT STATION 19+80.

I. WETLANDS AREAS

WETLANDS ARE NOT LOCATED WITHIN THE PROJECT LIMTS.

II. CONTROLS

ALL CONTROLS SHALL BE CONSISTENT WITH PERFORMANCE STANDARDS FOR EROSION AND SEDIMENT CONTROL AND STORM-WATER TREATMENT SET FORTH IN S.62-40.432, F.A.C., THE APPLICABLE STORM-WATER OR ENVIRONMENTAL RESOURCE PERMITTING REQUIREMENTS OF THE DEPARTMENT OR A WATER MANAGEMENT DISTRICT AND THE GUIDELINES CONTAINED IN THE FLORIDA DEVELOPMENT MANUAL: A GUIDE TO SOUND LAND AND WATER MANAGEMENT (DEP, 1988) AND ANY SUBSEQUENT AMENDMENTS.

A. SEQUENCE OF MAJOR ACTIVITIES

THE CONTRACTOR SHALL PROVIDE A DETAILED SEQUENCE OF CONTRUCTION FOR ALL CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF MAJOR ACTIVITIES AS DESCRIBED BELOW, UNLESS THE CONTRACTOR PROPOSES A DIFFERENT SEQUENCE THAT IS EQUAL OR BETTER AT CONTROLLING EROSION AND TRAPPING SEDIMENT AND IS APPROVED BY THE CITY.

FOR EACH CONSTRUCTION PAHSE, THE CONTRACTOR SHALL INSTALL PERIMETER CONTROLS AND CLEARING AND GRUBBING NECESSARY FOR INSTALLATION OF CONTROLS, BUT BEFORE BEGINNING OTHER WORK FOR THE CONSTRUCTION PHASE.

1. CLEARING AND GRUBBING, EARTHWORK FOR STORM DRAIN, ROADWAY UNDERDRAIN AND UTILITY CONSTRUCTION. CONSTRUCT THE STORM DRAIN PIPE IN THE UPSTREAM DIRECTION.

2. EARTHWORK ASSOCIATED WITH THE CONSTRUCTION OF ROADWAY, CURB, SUBGRADE, BASE, PAVEMENT AND SIDEWALKS.

THE CONTRACTOR SHALL REMOVE PERIMETER CONTROLS ONLY AFTER ALL UPSTREAM AREAS ARE STABILIZED.

B. EROSION AND SEDIMENT CONTROL ACTIVITIES

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTROL AND PREVENT EROSION AND THE TRANSPORTATION OF SEDIMENT TO SURFACE DRAINS AND OUTFALLS USING BEST MANAGEMENT PRACTICES. REFER TO CONSTRUCTION PLANS, DETAILS, SPECIFICATIONS AND APPROVED PERMITS FOR DETAILS. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN THEY REACH ONE HALF THE HEIGHT ON AN EROSION DEVICE OR AS DIRECTED BY THE ENGINEER.

2. DURING THE CONSTRUCTION OF DRAINAGE STRUCTURES, AND OTHER STRUCTURES REQUIRING EXCAVATION, THE CONTRACTOR SHALL PLACE APPROVED BARRIERS OR OTHER APPROVED DEVICES AROUND SUCH STRUCTURES TO PREVENT EROSION AND THE MIGRATION OF SEDIMENT TO POINTS OUTSIDE THE CONSTRUCTION AREA. THE APPROVED BARRIERS OR OTHER APPROVED DEVICES SHALL BE PLACED IN ACCORDANCE WITH REQUIREMENTS OF FLORIDA STORMWATER EROSION AND SEDIMENTATION CONTROL INSPECTOR'S MANUAL, 2008, STATE OF FLORIDA EROSION AND SEDIMENT CONTROL DESIGNER AND REVIEWER MANUAL, LATEST EDITION OR AS DIRECTED BY THE ENGINEER.

3. REQUIRED EROSION CONTROL MEASURES MUST REMAIN INTACT THROUGHOUT CONSTRUCTION. FAILURE TO INSTALL OR PROPERLY MAINTAIN REQUIRED EROSION CONTROL WILL RESULT IN ENFORCEMENT ACTION. ALL EROSION CONTROL MEASURES, SAND, SILT, AND DEBRIS SHALL BE REMOVED FROM ALL DRAINAGE PIPES AND STRUCTURES AFTER CONSTRUCTION HAS BEEN COMPLETED AND PRIOR TO THE CITY FINAL WALK-THROUGH.

4. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SILT/TURBIDITY BARRIERS TO CONTROL EROSION AND SEDIMENT FROM TAKING PLACE OUTSIDE THE PROJECT LIMITS. THE SILT/TURBIDITY BARRIERS SHALL BE PLACED IN ACCORDANCE WITH REQUIREMENTS OF FLORIDA STORMWATER EROSION AND SEDIMENTATION CONTROL INSPECTOR'S MANUAL, 2008, STATE OF FLORIDA EROSION AND SEDIMENT CONTROL DESIGNER AND REVIEWER MANUAL, LATEST EDITION AND "CITY OF CLEARWATER EROSION AND SEDIMENTATION CONTROL" SECTION 7, THROUGHOUT THE DURATION OF THE PROJECT AND ALL ASPECTS OF CONSTRUCTION. ALL DAMAGED OR INEFFECTIVE EROSION CONTROL DEVICES SHALL BE REPLACED AT NO ADDITIONAL COST TO THE CITY.

5. EROSION CONTROL PLAN – ANY MODIFICATIONS TO THIS PLAN MUST BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REPRESENTING THE CONTRACTOR. THESE MODIFICATIONS MUST BE APPROVED BY THE CITY AND THE PERMITTING AGENCY. NO CONTRACT DELAYS WILL BE ALLOWED FOR SUCH MODIFICATIONS OR APPROVALS.

6. OUTFALL PROTECTION – PROJECT PIPE OR DITCH DISCHARGES INTO OFF-SITE OUTFALLS SHALL BE INSPECTED DAILY FOR POSSIBLE SEDIMENT BUILDUP OR TRANSPORT. OUTFALLS SHALL BE PROTECTED THROUGH USE OF EROSION CONTROL FEATURES AS NECESSARY TO CONTAIN ANY SEDIMENT LOSS TO THE IMMEDIATE AREA OF THE PROJECT. ANY SEDIMENT BUILDUP OR TRANSPORT OFF-SITE SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REMEDY. THE CONTRACTOR SHALL USE APPROPRIATE MEASURES AS DIRECTED BY THE PROJECT ENGINEER FOR OUTFALL PROTECTION.

7. APPROVED BARRIERS (OR OTHER APPROVED SEDIMENT CONTROL DEVICES) – THESE SHALL BE PLACED AT THE BASE OF ANY SLOPE WHERE A RAINFALL EVENT COULD ERODE A SLOPE AND TRANSPORT SEDIMENTS OFF-SITE. APPROVED BARRIERS SHALL BE DOUBLE STAKED IN ACCORDANCE WITH FLORIDA STORMWATER EROSION AND SEDIMENTATION CONTROL INSPECTOR'S MANUAL, 2008, AND STATE OF FLORIDA EROSION AND SEDIMENT CONTROL DESIGNER AND REVIEWER MANUAL, LATEST EDITION. ANY DAMAGED OR INEFFECTIVE APPROVED BARRIERS ARE TO BE REPLACED WITH NEW ONES. THE LOCATION AND INSTALLATION OF APPROVED BARRIERS SHALL BE AS DIRECTED BY THE PROJECT ENGINEER.

8. BACK OF SIDEWALK INLETS OR MEDIAN INLETS – THESE SHALL BE PROTECTED FROM SEDIMENT INTAKE UNTIL PROJECT IS COMPLETE. ELEVATION OF GROUND OUTSIDE INLET TOP SHALL NOT BE HIGHER THAN INLET TOP WITHOUT EROSION PROTECTION. APPROVED BARRIERS OR OTHER APPROVED SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AROUND INLET TOP. A SECOND ROW OF APPROVED BARRIERS OR OTHER APPROVED SEDIMENT CONTROL DEVICES SHALL BE PLACED AROUND INLET APPROXIMATELY 24" OUTSIDE FIRST ROW. BETWEEN ROWS THERE SHALL BE A DEPRESSION TO ACT AS A SEDIMENT BASIN. COMPLETED INLETS IN PAVED AREAS SHALL ALSO BE PROTECTED WITH A SINGLE LINE OF APPROVED BARRIERS OR OTHER APPROVED SEDIMENT CONTROL DEVICES TO PREVENT SEDIMENT INTAKE FROM OTHER AREAS.

9. STOCKPILED MATERIALS SHALL BE PROTECTED BY COVER, APPROVED BARRIERS OR OTHER APPROVED SEDIMENT CONTROL DEVICES.

10. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 3 DAYS AFTER ½" RAIN EVENT DISTURBANCE.

11. SEDIMENT TRAPPING MEASURES: SEDIMENT BASINS AND TRAPS, PERIMETER BERMS, FILTER FENCES, BERMS, SEDIMENT BARRIERS, VEGETATIVE BUFFERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT AND/OR PREVENT THE TRANSPORT OF SEDIMENT INTO WATERS OF THE STATE OR NEIGHBORING PROPERTIES SHALL BE INSTALLED, CONSTRUCTED OR, IN THE CASE OF VEGETATIVE BUFFERS, PROTECTED FROM DISTURBANCE, AS A FIRST STEP IN THE LAND ALTERATION PROCESS.

12. CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE NECESSARY DEWATERING PERMITS FROM THE LOCAL WATER MANAGEMENT DISTRICT OR OTHER REGULATORY AGENCY.

13. SUBMIT A DEWATERING PLAN TO THE ENGINEER FOR HIS RECORDS BEFORE BEGINNING CONSTRUCTION.

14. WHERE PUMPS ARE TO BE USED TO REMOVE TURBID WATER FROM THE CONSTRUCTION AREA, THE WATER SHALL BE TREATED TO REDUCE TURBIDITY TO STATE WATER QUALITY STANDARDS PRIOR TO DISCHARGE TO THE WETLANDS. TREATMENT METHODS INCLUDE, FOR EXAMPLE, TURBID WATER BEING PUMPED INTO GRASSED SWALES OR APPROPRIATE VEGETATED AREAS (OTHER THAN UPLAND PRESERVATION AREAS AND WETLAND BUFFERS), SEDIMENTS BASINS, OR AREAS CONFINED BY AN APPROPRIATE ENCLOSURE SUCH AS TURBIDITY BARRIERS, AND KEPT CONFINED UNTIL ITS TURBIDITY LEVEL MEETS STATE WATER QUALITY STANDARDS.

15. IF WIND EROSION BECOMES SIGNIFICANT DURING CONSTRUCTION, THE CONTRACTOR SHALL STABILIZE THE AFFECTED AREA USING SPRINKLING, IRRIGATION, OR OTHER ACCEPTABLE METHODS.

16. WHERE APPLICABLE, SOIL TRACKING PREVENTION DEVICES SHALL BE PROVIDED AND MAINTAINED PER PINELLAS COUNTY EROSION & SEDIMENT CONTROL DETAILS.

17. THE EROSION CONTROL DEVICE QUANTITIES SHOWN ON THE BID FORMS ARE ESTIMATES OF THE ACTUAL QUANTITIES THAT MAY BE ENCOUNTERED DURING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SPECIFY ACTUAL QUANTITIES AND COSTS ASSOCIATED WITH THIS SPECIFIC EROSION CONTROL IMPLEMENTATION SCHEDULE. EROSION CONTROL ITEMS MAY BE ADDED OR DELETED FROM THE PAY ITEM LIST AS THE EROSION CONTROL IMPLEMENTATION SCHEDULE PROVIDED BY THE CONTRACTOR IS MODIFIED TO MEET SITE SPECIFIC CONDITIONS.

18. ALL EROSION CONTROL FENCES, BARRIERS, AND SILTATION DEVICES SHALL BE ERECTED PRIOR TO ANY LAND ALTERATIONS, SHALL BE MAINTAINED IN GOOD WORKING ORDER DURING CONSTRUCTION, AND REMOVED FOLLOWING SOIL STABILIZATION AND FINAL DRESSING. STOCKPILE AREAS SHALL INCLUDE SILT FENCING AROUND THE PERIMETER.

19. THE CONTRACTOR SHALL NOT RESTRICT OR BLOCK THE EXISTING DRAINAGE FLOW OVERLAND OR WITHIN RESHAPED SWALES. FLOW WITHIN EXISTING DRAINAGE PIPES SHALL BE MAINTAINED AT ALL TIMES. STORMWATER WILL BE CONVEYED VIA EXISTING SWALES, DITCHES, OR PROPOSED DITCHES, EXISTING AND PROPOSED STORM SEWERS.

20. THERE IS TO BE NO DISCHARGE (I.E. PUMPING, SHEET FLOW, SWALE, DITCH, ETC.) INTO EXISTING DITCHES OR CANALS WITHOUT THE USE OF SETTLING PONDS. IF THE CONTRACTOR DESIRES TO DISCHARGE INTO EXISTING DITCHES OR CANALS A SETTLING POND PLAN PREPARED BY THE CONTRACTOR MUST BE SUBMITTED TO AND APPROVED BY THE ENGINEER OF RECORD AND LOCAL REGULATORY AGENCY PRIOR TO CONSTRUCTION.

21. DURING DEWATERING OPERATIONS, THE CONTRACTOR SHALL NOT DISCHARGE DIRECTLY TO RECEIVING WATERS, EXISTING CONVEYANCES TO RECEIVING WATERS, OR WETLAND SYSTEMS. TEMPORARY SEDIMENT BASINS, TRAPS, OR SILTATION REDUCTION DEVICES SHALL BE UTILIZED TO COLLECT THE DISCHARGE FROM DEWATERING ACTIVITIES TO ELIMINATE THE POTENTIAL FOR OFF-SITE SEDIMENT TRANSPORT AND TO INSURE THAT DIRECT DISCHARGE DOES NOT OCCUR

22. BANKS SHALL BE PROTECTED FROM EROSION OR COLLAPSE DURING CONSTRUCTION. BANK PROTECTION MATERIAL SHALL BE CAREFULLY PLACED FROM THE BANK AND NOT DUMPED FROM ABOVE IN AN UNCONTROLLED MANNER. EROSION CONTROL FABRIC SHALL BE USED FOR EROSION PROTECTION WHERE SOD WILL NOT HOLD OR BECOME ESTABLISHED IN TIME TO PROTECT THE BANKS. UNLESS OTHERWISE SPECIFIED IN THE PLANS, UPON COMPLETION OF CONSTRUCTION, ALL BANKS AND WATERWAYS SHALL BE RESTORED TO THEIR PRE-CONSTRUCTION CONFIGURATION AND PROTECTED FROM EROSION.

23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING POND FILTRATION SYSTEMS FROM BEING CLOGGED UNTIL THE CITY OF CLEARWATER DETERMINES THE CONSTRUCTION IS COMPLETE. IF FILTER MATERIAL IS CONTAMINATED, IT SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR.

C. STABILIZATION PRACTICES

DURING CONSTRUCTION THE CONTRACTOR WILL PROVIDE STABILIZATION FOR AREAS WHICH HAVE BEEN CLEARED AND NOT REWORKED WITHIN FOURTEEN (14) CALENDAR DAYS. THE CONTRACTOR MAY UTILIZE TEMPORARY SEEDING OR TEMPORARY SODDING IN ACCORDANCE WITH SECTION 570 OF THE "FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION".

X	TEMPORARY SODDING
	TEMPORARY GRASSING
X	PERMANENT SODDING OR SEEDING
	PRESERVATION OF NATURAL RESOURCES
	BUFFER ZONES

D. STRUCTURAL PRACTICES

	SYNTHETIC BALES (LF)
X	ARTIFICIAL COVERINGS/ ROLLED EROSION CONTROL PRODUCTS (SY)
X	INLET PROTECTION SYSTEM (EA)
X	LITTER REMOVAL AND DISPOSAL (AC)
X	MOWING (AC)
	SLOPE DRAINS (TEMPORARY)/ RUNOFF CONTROL STRUCTURES (LF)
X	SOIL TRACKING PREVENTION DEVICE (EA)
X	SEDIMENT BASINS/CONTAINMENT SYSTEMS (EA)
	OTHER

E. DESCRIPTION OF STORM WATER MANAGEMENT

EXISTING STORM DRAIN SYSTEM WITHIN IN THE PROJEC LIMITS, WILL BE REPLACED IN-KIND, TO CONVEY RUNOFF TO TWO PROPOSED BAFFLE BOXES. THE BAFFLE BOXES THEN DRAIN INTO STEVENSON CREEK AND THE BOX CULVERT LOCATED UNDER CLEVELAND STREET AND STATION 22+00.

F. WASTE DISPOSAL

THE CONTRACTOR SHALL PROVIDE LITTER CONTROL AND COLLECTION WITHIN THE PROJECT BOUNDARIES DURING CONSTRUCTION ACTIVITIES. ANY CHEMICAL CONTAINERS SHALL BE DISPOSED OF BY THE CONTRACTOR ACCORDING TO EPA'S STANDARD PRACTICES AS DETAILED BY THE MANUFACTURER. NO SOLID MATERIALS INCLUDING BUILDING & CONSTRUCTION MATERIALS SHALL BE DISCHARGED TO WETLANDS OR BURIED ON SITE. ALL WASTE MATERIAL WILL BE COLLECTED AND STORED IN DUMPSTERS PER LOCAL SOLID WASTE REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED A MINIMUM OF TWICE A WEEK OR MORE OFTEN IF NECESSARY, AND THE TRASH WILL BE HAULED TO THE APPROPRIATE COUNTY LOCATION FOR DUMPING.

G. OFFSITE VEHICLE TRACKING

STABILIZED CONSTRUCTION ENTRANCES SHALL BE PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS. THE PAVED STREETS WILL BE CLEANED AS DIRECTED BY THE CONSTRUCTION INSPECTOR AND ENGINEER TO REMOVE ANY EXCESS MUD, DIRT OR ROCK TRACKED FROM THE SITE. DUMP TRUCKS HAULING MATERIAL FROM OR TO THE SITE WILL BE COVERED WITH A TARPAULIN AT ALL TIMES.

H. SANITARY WASTE

FDOT STANDARD SPEC. FOR ROAD AND BRIDGE CONSTRUCTION" SECTION 7 – 6 "SANITARY PROVISIONS. "THE CONTRACTOR SHALL PROVIDE AND MAINTAIN, IN A NEAT AND SANITARY CONDITION, SUCH ACCOMMODATION FOR THE USE OF HIS EMPLOYEES AS ARE NECESSARY TO COMPLY WITH THE REQUIREMENTS AND REGULATIONS OF THE STATE AND LOCAL BOARDS OF HEALTH. COMMIT NO PUBLIC NUISANCE."

100% PLANS
BID SET

REVISION	BY	DATE

gai consultants
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Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756

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And Festival Core
SWPPP NOTES

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 04-08-19	DRAWN BY: DOD	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: TAF	CHECKED BY: RF	SHEET NO.: 470 OF

APPROVED FOR CONSTRUCTION _____ DATE

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

X

I. HAZARDOUS WASTE

THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE CITY IN WRITING IF ANY HAZARDOUS WASTE MATERIAL IS ENCOUNTERED DURING SITE INVESTIGATION OR CONSTRUCTION.

THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR NOTIFYING THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) WITHIN 24 HOURS OF THE DISCOVERY.

ALL HAZARDOUS WASTE MATERIALS, IF ENCOUNTERED, WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL, STATE, AND FEDERAL REGULATIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED.

IN CASE OF DISPOSING ANY HAZARDOUS WASTE MATERIAL FOLLOWING LOCAL, STATE, AND FEDERAL REGULATIONS, A COPY OF DISPOSAL MANIFEST HAS TO BE PROVIDED TO THE CITY IN TIMELY FASHION.

J. WATER QUALITY MONITORING (MIXING ZONES)

THE WATER THAT WILL BE SAMPLED FOR STATE WATER QUALITY STANDARDS FOR CONSTRUCTION ACTIVITIES PROHIBIT A TURBIDITY INCREASE OF GREATER THAN 29 NTU'S ABOVE AMBIENT CONDITIONS AT THE COMPLIANCE LOCATION OF THE MIXING ZONES. TO MAINTAIN THIS STANDARD, TURBIDITY MONITORING SHALL OCCUR DURING ALL IN-WATER CONSTRUCTION ACTIVITIES AT EACH COMPLIANCE AND BACKGROUND STATION. THE FOLLOWING PROCEDURE SHALL BE USED:

1. FREQUENCY: TWICE A DAY, AT LEAST 4 HOURS APART DURING FREQUENCY OF ACTUAL CONSTRUCTION OPERATIONS.

2. LOCATIONS: ALL STATIONS SHALL BE SAMPLED AT 2 FEET ABOVE LOCATIONS THE BOTTOM, AT MID-DEPTH, AND AT THE SURFACE, OR AS DIRECTED BY PERMITTING AGENCIES. IF WATER IS LESS THAN THREE FEET DEEP, ONLY MID-DEPTH SAMPLES ARE REQUIRED.

3. BACKGROUND: 500 FEET UP-CURRENT FROM THE CONSTRUCTION BACKGROUND ACTIVITY AND OUTSIDE OF ANY TURBIDITY PLUME FROM THE CONSTRUCTION ACTIVITY.

4. COMPLIANCE: 300 FEET DOWN CURRENT FROM THE CONSTRUCTION COMPLIANCE ACTIVITY WITHIN ANY VISIBLE TURBIDITY PLUME, OR AS DIRECTED BY PERMITTING AGENCIES.

5. METHOD: ALL SAMPLES SHALL BE COLLECTED WITH A KEMMERER, VAN DORN METHOD, OR SIMILAR SAMPLER WHICH IS DESIGNED TO COLLECT IN SITU WATER SAMPLES.

6. REPORTING: ALL MONITORING DATA SHALL BE SUBMITTED WITHIN ONE REPORTING WEEK OF ANALYSIS WITH DOCUMENTS CONTAINING THE FOLLOWING INFORMATION:

- PERMIT NUMBER
- DATES OF SAMPLING AND ANALYSIS
- LOCATION OF SAMPLE (I.E., STATION AND WATER COLUMN LOCATION)
- A STATEMENT DESCRIBING THE METHODS USED IN COLLECTION, HANDLING,
- STORAGE, AND ANALYSIS OF THE SAMPLES
- A MAP INDICATING THE SAMPLING LOCATIONS
- STATEMENT, BY THE INDIVIDUAL RESPONSIBLE FOR IMPLEMENTATION OF THE SAMPLING PROGRAM, CONCERNING THE AUTHENTICITY, PRECISION, LIMITS OF DETECTION AND ACCURACY OF DATA.

MONITORING REPORTS SHALL INCLUDE INFORMATION ON THE GENERAL ANTECEDENT WEATHER CONDITIONS.

IF MONITORING REVEALS VIOLATIONS OF THE STATE WATER QUALITY STANDARD FOR TURBIDITY, CONSTRUCTION ACTIVITIES SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL CORRECTIVE MEASURES HAVE BEEN TAKEN AND TURBIDITY HAS RETURNED TO ACCEPTABLE LEVELS. ANY SUCH OCCURRENCE SHALL ALSO BE IMMEDIATELY REPORTED TO THE REGULATORY AGENCIES. IN THE EVENT THAT STATE WATER QUALITY STANDARDS ARE NOT ATTAINED, THE CONTRACTOR SHALL IMPLEMENT A CONTINGENCY PLAN WHICH COMPLIES WITH THE PROJECT SWFWMD/FDEP ERP AND PINELLAS COUNTY NPDES REQUIREMENTS AT NO ADDITIONAL COST TO THE COUNTY. ANY FINES SHALL BE RESPONSIBILITY OF THE CONTRACTORS.

K. APPROVED STATE, LOCAL PLANS, OR STORM WATER PERMITS

PROJECT IS EXEMPT AS DETERMINED BY SWFWMD (DECEMBER 14, 2017).

III. MAINTENANCE

A. INSPECTION

THE CITY INSPECTOR SHALL BE RESPONSIBLE FOR COMPLETING THE CITY OF CLEARWATER D.E.I. NPDES / SWPPP CONSTRUCTION INSPECTION REPORT AFTER ANY ½" RAINFALL OR WEEKLY, IF NO RAIN EVENT OCCURRED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN RAIN GAUGES ON THE PROJECT SITE AND RECORD WEEKLY RAIN FALL. THE CITY INSPECTOR SHALL ALSO COMPLETE THE CITY'S D.E.I. NPDES COMPLIANCE CHECKLIST FOR CONSTRUCTION SITES.

B. NON-STORM WATER DISCHARGES

IT IS EXPECTED THAT THE FOLLOWING NON-STORM WATER DISCHARGES MAY OCCUR FROM THE SITE DURING THE CONSTRUCTION PERIOD:

- WATER FROM WATER LINE FLUSHING
- PAVEMENT WASH WATERS (WHERE NO SPILL OR LEAKS OF VEHICLE AND HAZARDOUS MATERIALS HAVE OCCURRED)
- UNCONTAMINATED GROUNDWATER FROM DE-WATERING ACTIVITIES

ALL NON-STORM WATER DISCHARGES WILL BE DIRECTED TO THE SEDIMENT BASIN PRIOR TO DISCHARGE OR AS DIRECTED BY THE ENGINEER. IF CONTAMINATED SOIL OR GROUNDWATER IS ENCOUNTERED, DEATERING SHOULD CEASE IMMEDIATELY AND THE ENGINEER WILL BE CONTACTED.

C. MATERIAL MANAGEMENT PRACTICES

THE FOLLOWING ARE THE MATERIAL HANDLING PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF:

1. THESE GOOD HOUSEKEEPING PRACTICES SHALL BE FOLLOWED ON-SITE DURING CONSTRUCTION:

- STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB ON SITE.
- ALL MATERIALS STORED ON SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR ORIGINAL MANUFACTURER'S LABELED CONTAINERS UNDER A ROOF OR OTHER CONTAINED ENCLOSURE.
- SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
- WHENEVER POSSIBLE, ALL OF A PRODUCT SHALL BE USED BEFORE DISPOSING OF THE CONTAINER. MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED.
- THE SITE SUPERINTENDENT SHALL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ON-SITE.

2. THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:

- PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RE-SEALABLE.
- SECONDARY CONTAINMENT SHALL BE PROVIDED FOR ALL OPENED CONTAINERS. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHALL BE KEPT ON-SITE ON THE CONSTRUCTION OFFICE TRAILER.
- IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURERS OR LOCAL STATE RECOMMENDED METHODS OF PROPER DISPOSAL SHALL BE FOLLOWED.
- THE CONTRACTOR MUST IDENTIFY A DESIGNATED FUEL TANK STORAGE AREA, AWAY FROM DRAINAGE STRUCTURES, PONDS, BASINS, AND WETLANDS, WITH SECONDARY CONTAINMENT (SPILL COLLECTION).

3. CONCRETE TRUCKS:

- CONTRACTOR SHALL DESIGNATE AN AREA AWAY FROM DRAINAGE STRUCTURES, PONDS, BASINS, AND WETLANDS FOR DISCHARGE OF SURPLUS CONCRETE OR DRUM WASH WATER AND SHALL INSTALL A CONTAINMENT BERM AROUND THIS AREA TO PREVENT RUNOFF TO THE REMAINDER OF THE SITE.
- HARD DEBRIS SHALL BE DISPOSED OF BY CONTRACTOR UPON COMPLETION OF THE PROJECT.

4. SPILL CONTROL PRACTICES:

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIALS MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP.

- MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION CLEANUP SUPPLIES.
- ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
- THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
- SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.
- THE SPILL PREVENTION PLAN WILL BE PREPARED BY THE CONTRACTOR AND KEPT IN THE CONSTRUCTION OFFICE TRAILER AND WILL INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE ARE OTHERS. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED. ALL SPILLS AND RESPONSES WILL BE REPORTED TO THE APPROPRIATE AGENCY.
- THE SITE SUPERINTENDENT WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. HE WILL DESIGNATE OTHER SITE PERSONNEL WHO WILL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ON SITE.
- USE AND CHARACTERISTICS OF FUEL OR CHEMICAL STORAGE TANK ON SITE SHALL COMPLY WITH ALL RELATED FEDERAL, STATE, AND LOCAL REGULATIONS. STORAGE TANKS MUST BE LOCATED AS FAR AS POSSIBLE FROM ANY DRAINAGE STRUCTURES, DITCHES, AND/OR SURFACE WATERS. IN ADDITION, THE CONTRACTOR MUST PROVIDE A SECONDARY CONTAINMENT WITH A LINER CHEMICALLY RESISTANT TO THE FUEL OR CHEMICAL STORED ON SITE. THE SECONDARY CONTAINMENT MUST BE SIZED TO CONTAIN MINIMUM OF ONE AND A HALF TIME THE TOTAL CAPACITY OF STORAGE TANK BEING USED. CONTRACTOR HAS TO PROVIDE A DAILY INSPECTION LOG FOR THE SECONDARY CONTAINMENT WITH INDICATION OF DATE, INSPECTORS NAME AND INSPECTION REPORT. FURTHERMORE, ANY CONTAMINATION HAS TO BE IMMEDIATELY CONTAINED AND THE COUNTY INSPECTOR MUST BE NOTIFIED OF THE NATURE AND EXTEND OF THE CONTAMINATION.

PERMITTEE CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

TARA KIVET, P.E. DATE
ENGINEERING CONSTRUCTION MANAGER
CITY OF CLEARWATER
APPLICANT-AUTHORIZED AGENT

CONTRACTOR CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND, AND SHALL COMPLY WITH , THE TERMS AND CONDITIONS OF THE STATE OF FLORIDA GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES AND THIS STORMWATER POLLUTION PREVENTION PLAN PREPARED THEREUNDER.

GENERAL CONTRACTOR NAME & TITLE DATE

COMPANY NAME

COMPANY STREET ADDRESS

CITY, STATE, ZIP CODE

100% PLANS
BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756

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Clevelnd Street Phase III
And Festival Core
SWPPP NOTES

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 04-08-19	DRAWN BY: DOD	HORIZ. 1" = 20'
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APPROVED FOR CONSTRUCTION DATE

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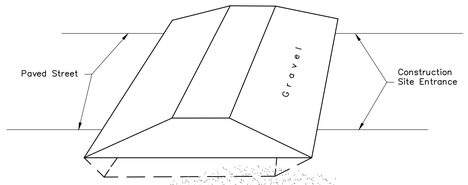
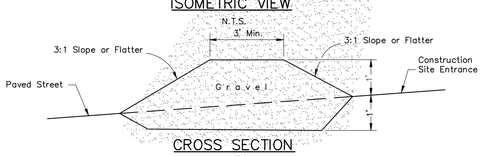
CONTRACTOR'S RESPONSIBILITY
Erosion and Sedimentation controls are performance based criteria. If the BMPs provided do not prevent soils from leaving a construction site, then the Contractor is required to employ additional procedures to provide clean runoff from a site.



ISOMETRIC VIEW
N.T.S.



CROSS SECTION
N.T.S.

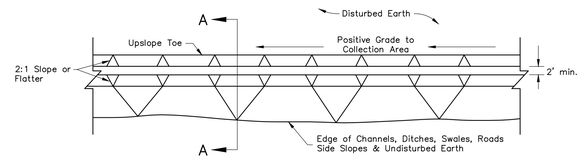
DATE	REVISION DESCRIPTION	APP
5/18/15	CONTRACTOR NOTE ADDED	S.R.

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
EROSION AND SILTATION CONTROL POLICY

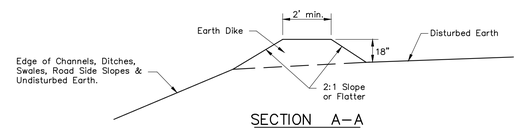
TEMPORARY EROSION CONTROL
GRAVEL INTERCEPTOR BERM

INDEX NO. 601 | PAGE NO. 1 OF 1
LATEST REVISION 2/22/2016

CONTRACTOR'S RESPONSIBILITY
Erosion and Sedimentation controls are performance based criteria. If the BMPs provided do not prevent soils from leaving a construction site, then the Contractor is required to employ additional procedures to provide clean runoff from a site.



PLAN VIEW
N.T.S.



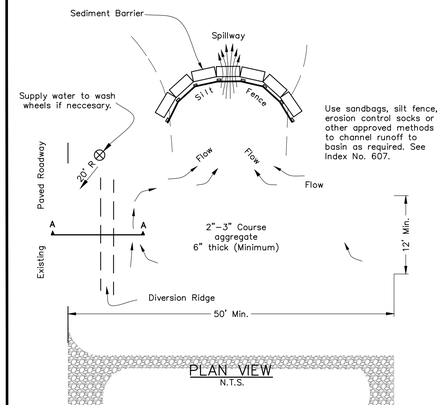
SECTION A–A
N.T.S.

DATE	REVISION DESCRIPTION	APP
5/18/15	CONTRACTOR NOTE ADDED	S.R.

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
EROSION AND SILTATION CONTROL POLICY

TEMPORARY EROSION CONTROL
DIVERSION BERM

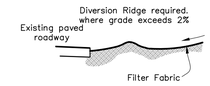
INDEX NO. 602 | PAGE NO. 1 OF 2
LATEST REVISION 2/22/2016



PLAN VIEW
N.T.S.

CONTRACTOR'S RESPONSIBILITY
Erosion and Sedimentation controls are performance based criteria. If the BMPs provided do not prevent soils from leaving a construction site, then the Contractor is required to employ additional procedures to provide clean runoff from a site.

NOTES:
1. The entrance shall be maintained in a condition that will prevent tracking or flowing of sediment onto Public Right–of–Way. This may require top dressing, repair and/or cleaning of any measures used to trap sediment.
2. When necessary, wheels shall be cleaned prior to entrance onto Public Right–of–Way.
3. When washing is required, it shall be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.



SECTION A – A
N.T.S.

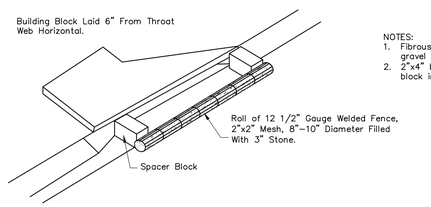
DATE	REVISION DESCRIPTION	APP
5/18/15	CONTRACTOR NOTE ADDED	S.R.

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
EROSION AND SILTATION CONTROL POLICY

TEMPORARY EROSION CONTROL
DIVERSION BERM

INDEX NO. 602 | PAGE NO. 2 OF 2
LATEST REVISION 2/22/2016

CONTRACTOR'S RESPONSIBILITY
Erosion and Sedimentation controls are performance based criteria. If the BMPs provided do not prevent soils from leaving a construction site, then the Contractor is required to employ additional procedures to provide clean runoff from a site.



NOTES:
1. Fibrous filler material in front of block prevents gravel from washing into structure.
2. 2"x4" behind block and across throat helps keep block in place. Place in outer hole of spacer block.

N.T.S.

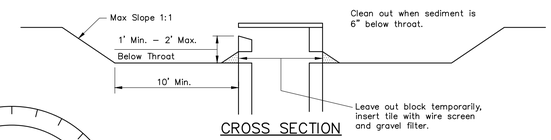
DATE	REVISION DESCRIPTION	APP
5/18/15	CONTRACTOR NOTE ADDED	

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
EROSION AND SILTATION CONTROL POLICY

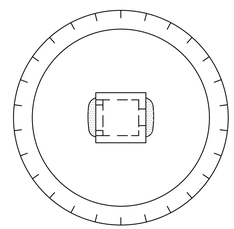
TEMPORARY SEDIMENT TRAP
AT CURB INLET

INDEX NO. 604 | PAGE NO. 1 OF 1
LATEST REVISION 2/22/2016

CONTRACTOR'S RESPONSIBILITY
Erosion and Sedimentation controls are performance based criteria. If the BMPs provided do not prevent soils from leaving a construction site, then the Contractor is required to employ additional procedures to provide clean runoff from a site.



CROSS SECTION
N.T.S.



PLAN VIEW
N.T.S.

Circular shape is not essential – Vary shape to fit drainage area and terrain. Observe to check trap efficiency and modify as necessary to insure satisfactory trapping of sediment.

DATE	REVISION DESCRIPTION	APP
5/18/15	CONTRACTOR NOTE ADDED	

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
EROSION AND SILTATION CONTROL POLICY

TEMPORARY SEDIMENT TRAP
AT STORM DRAIN INLET

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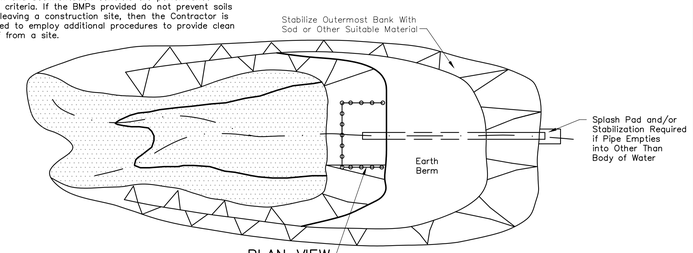
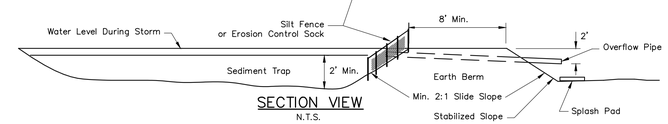
LATEST REVISION 2/22/2016

CONTRACTOR'S RESPONSIBILITY
Erosion and Sedimentation controls are performance based criteria. If the BMPs provided do not prevent soils from leaving a construction site, then the Contractor is required to employ additional procedures to provide clean runoff from a site.



PLAN VIEW
N.T.S.



SECTION VIEW
N.T.S.

DATE	REVISION DESCRIPTION	APP
5/18/15	CONTRACTOR NOTE ADDED/EDITED DRAWING	S.R.

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
EROSION AND SILTATION CONTROL POLICY

TEMPORARY EROSION CONTROL
SEDIMENT BASIN

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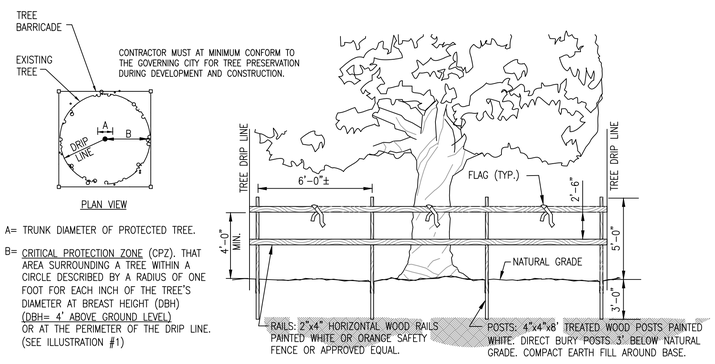
LATEST REVISION 2/22/2016



A= TRUNK DIAMETER OF PROTECTED TREE.

B= CRITICAL PROTECTION ZONE (CPZ). THAT AREA SURROUNDING A TREE WITHIN A CIRCLE DESCRIBED BY A RADIUS OF ONE FOOT FOR EACH INCH OF THE TREE'S DIAMETER AT BREAST HEIGHT (DBH) (DBH= 4' ABOVE GROUND LEVEL) OR AT THE PERIMETER OF THE DRIP LINE. (SEE ILLUSTRATION #1)

TREE PROTECTION

100% PLANS
BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756

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(800) 432–4770
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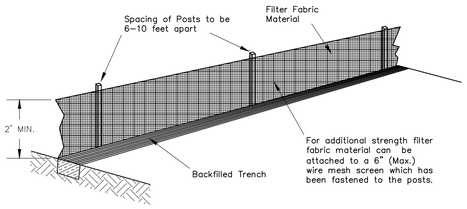
CLEVELAND STREET PHASE III AND FESTIVAL CORE EROSION & SEDIMENTATION CONTROL DETAILS

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16–0003–EN	DATE DRAWN: 02–01–2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: RF	SHEET NO.: 472

APPROVED FOR CONSTRUCTION _____ DATE

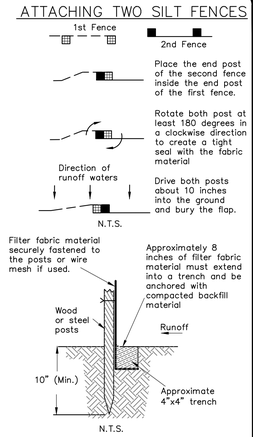
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

CONTRACTOR'S RESPONSIBILITY
Erosion and Sedimentation controls are performance based criteria. If the BMPs provided do not prevent soils from leaving a construction site, then the Contractor is required to employ additional procedures to provide clean runoff from a site.



N.T.S.

ATTACHING TWO SILT FENCES



N.T.S.

N.T.S.

5/18/15	CONTRACTOR NOTE ADDED	S.R.
DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
EROSION AND SILTATION CONTROL POLICY

INSTALLING A FILTER FABRIC SILT FENCE

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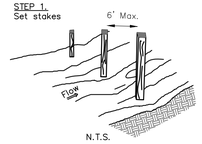
LATEST REVISION 2/22/2016

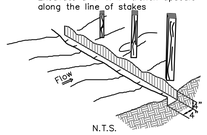
CONTRACTOR'S RESPONSIBILITY
Erosion and Sedimentation controls are performance based criteria. If the BMPs provided do not prevent soils from leaving a construction site, then the Contractor is required to employ additional procedures to provide clean runoff from a site.

STEP 1.
Set stakes

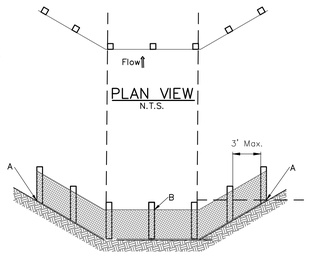


N.T.S.

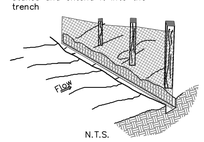
STEP 2.
Excavate a 4" x 4" trench upscale along the line of stakes



N.T.S.

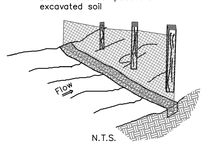


STEP 3.
Staple filter material to stakes and extend it into the trench



N.T.S.

STEP 4.
Backfill and compact the excavated soil



N.T.S.

5/18/15	CONTRACTOR NOTE ADDED	S.R.
DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
EROSION AND SILTATION CONTROL POLICY

INSTALLING A FILTER FABRIC SILT FENCE

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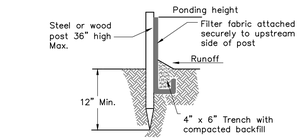
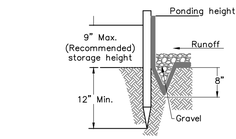
LATEST REVISION 2/22/2016

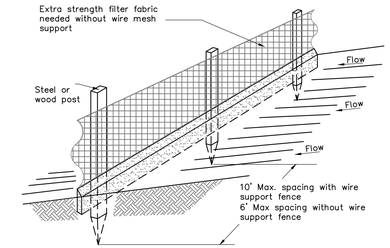
CONTRACTOR'S RESPONSIBILITY
Erosion and Sedimentation controls are performance based criteria. If the BMPs provided do not prevent soils from leaving a construction site, then the Contractor is required to employ additional procedures to provide clean runoff from a site.



STANDARD DETAIL
TRENCH WITH NATIVE BACKFILL



ALTERNATE DETAIL
TRENCH WITH GRAVEL



N.T.S.

NOTES:
1. Inspect and repair fence after each storm event and remove sediment when necessary.
2. Removed sediment shall be deposited to an area that will not contribute sediment off–site and can be permanently stabilized.
3. Silt fence shall be placed on slope contours to maximize ponding efficiency.

5/18/15	CONTRACTOR NOTE ADDED	S.R.
DATE	REVISION DESCRIPTION	APP

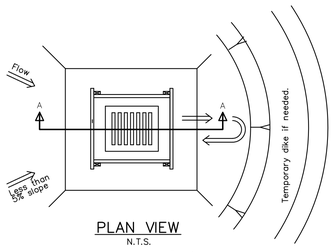
CITY OF CLEARWATER
ENGINEERING DEPARTMENT
EROSION AND SILTATION CONTROL POLICY

INSTALLING A FILTER FABRIC SILT FENCE

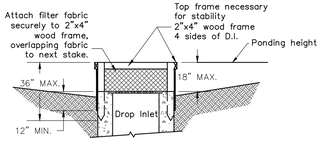
INDEX NO. 607 | PAGE NO. 3 OF 3
LATEST REVISION 2/22/2016

CONTRACTOR'S RESPONSIBILITY
Erosion and Sedimentation controls are performance based criteria. If the BMPs provided do not prevent soils from leaving a construction site, then the Contractor is required to employ additional procedures to provide clean runoff from a site.

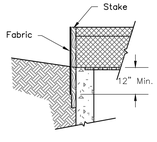
NOTES:
1. Drop inlet sediment barriers are to be used for small, nearly level drainage areas. (Less than 5%).
2. Use 2"x4" wood or equivalent metal stakes. (3' Min. length).
3. Install 2"x4" wood top frame to insure stability.
4. The top of the frame (ponding height) must be well below the ground elevation downslope to prevent runoff from bypassing the inlet.
   A temporary dike may be necessary on the downslope side of the structure.
5. Mirafi or approved erosion control fabric shall be wrapped around grate.
6. The method shall not apply to inlets receiving concentrated flows, such as in street or highway medians.



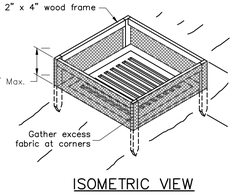
PLAN VIEW
N.T.S.



SECTION A–A
N.T.S.



DETAIL OF STAKE & FABRIC ORIENTATION
N.T.S.



ISOMETRIC VIEW
N.T.S.

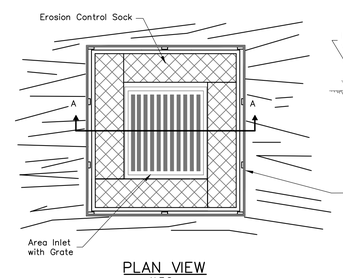
5/18/15	CONTRACTOR NOTE ADDED	S.R.
DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
EROSION AND SILTATION CONTROL POLICY

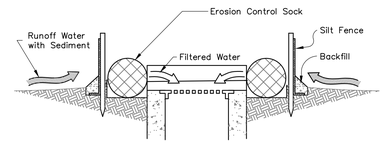
TEMPORARY SEDIMENT BARRIER AT A DROP INLET

INDEX NO. 608 | PAGE NO. 1 OF 2
LATEST REVISION 2/22/2016

CONTRACTOR'S RESPONSIBILITY
Erosion and Sedimentation controls are performance based criteria. If the BMPs provided do not prevent soils from leaving a construction site, then the Contractor is required to employ additional procedures to provide clean runoff from a site.



PLAN VIEW
N.T.S.



SECTION A–A
N.T.S.

This method of inlet protection is applicable where the inlet drains a relatively flat area (slopes no greater than 5%) where sheet or overland flows (not exceeding 0.5 cfs) are typical. The method shall not apply to inlets receiving concentrated flows, such as street or highway medians.

5/18/15	CONTRACTOR NOTE ADDED	S.R.
DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
EROSION AND SILTATION CONTROL POLICY

TEMPORARY SEDIMENT BARRIER AT STORM DRAIN DROP INLET

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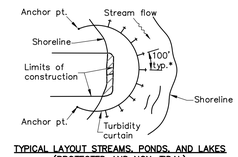
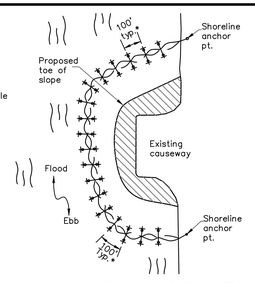
LATEST REVISION 2/22/2016

CONTRACTOR'S RESPONSIBILITY
Erosion and Sedimentation controls are performance based criteria. If the BMPs provided do not prevent soils from leaving a construction site, then the Contractor is required to employ additional procedures to provide clean runoff from a site.

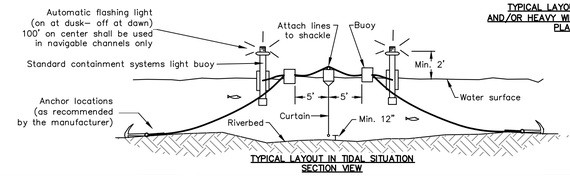


TYPICAL LAYOUT STREAMS, PONDS, AND LAKES (PROTECTED AND NON–TIDAL) PLAN VIEW

LEGEND:
- * This distance is variable
- Stake or anchor every 100' (typical)
- Anchor & anchor buoy
- Barrier movement due to tidal change
- Fill area



TYPICAL LAYOUT TIDAL WATERS AND/OR HEAVY WIND AND WAVE ACTION PLAN VIEW



TYPICAL LAYOUT IN TIDAL SITUATION SECTION VIEW

NOTE:
Anchoring with buoys, as shown, removes all vertical forces from the curtain. hence, the curtain will not sink from wind or current loads.

N.T.S.

5/18/15	CONTRACTOR NOTE ADDED	S.R.
DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
EROSION AND SILTATION CONTROL POLICY

TYPICAL INSTALLATION LAYOUTS OF FLOATING TURBIDITY BARRIERS

INDEX NO. 609 | PAGE NO. 1 OF 1
LATEST REVISION 2/22/2016

100% PLANS
BID SET

REVISION	BY	DATE

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3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756

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CLEVELAND STREET PHASE III AND FESTIVAL CORE EROSION CONTROL DETAILS

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16–0003–EN	DATE DRAWN: 02–01–2020	DRAWN BY: CMN	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: RF	SHEET NO.: 473

APPROVED FOR CONSTRUCTION _____ DATE

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

X

1. THE CONTRACTOR SHALL CONSTRUCT PROPOSED UTILITIES IN ACCORDANCE WITH THE CITY OF CLEARWATER'S ENGINEERING CONSTRUCTION STANDARDS AND SPECIFICATIONS (LATEST EDITIONS) AND THE CONTRACT DOCUMENTS.

2. ALL NEW UTILITIES SHALL BE INSTALLED WITH 36" MINIMUM COVER UNLESS NOTED OTHERWISE ON THE PLANS.

3. EXISTING WATER SERVICE LINES SHALL BE FIELD LOCATED AND PROTECTED DURING CONSTRUCTION.

4. IF ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE EXISTING WATER MAIN CONSISTING OF "UNIVERSAL PIPE".

5. AT UTILITY CROSSINGS, THE LOWEST PIPE SHALL BE INSTALLED FIRST.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING OF ALL MAINS IN ACCORDANCE WITH CURRENT STANDARDS OF THE CITY OF CLEARWATER AND THE CONTRACT DOCUMENTS. CONTRACTOR SHALL NOTIFY THE CITY'S REPRESENTATIVE AND THE ENGINEER AT LEAST 48 HOURS IN ADVANCE OF PERFORMING TESTS OR SHUTDOWNS. ONLY CITY PERSONNEL WILL OPERATE THE VALVES FOR SHUTDOWNS.

7. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN REMOVING OR PRUNING TREES/ROOTS, CURBS, AND ROADWAY. TREE ROOTS FREQUENTLY GROW AROUND UTILITY PIPES INCLUDING SERVICE LINES AND WATER METERS. SERVICE LINES CAN BE SHALLOW AND JUST BELOW THE CURBS MAKING THEM SUSCEPTIBLE TO BREAKAGE OR BEING PULLED OUT OF THE MAINS. THE CONTRACTOR SHALL CONTACT THE CITY'S WATER DIVISION PRIOR TO CONSTRUCTION IN ORDER TO MARK SERVICE LINES AND METER LOCATIONS.

8. ALL SERVICE CONNECTIONS SHALL BE MADE USING TAPPING SLEEVES SO THAT ISSUING A BOIL WATER ALERT TO THE CITIZENS CAN BE AVOIDED.

9. THE CONTRACTOR SHALL COORDINATE WITH THE CITY OF CLEARWATER PRIOR TO CONSTRUCTION TO DETERMINE IF EXISTING RCW AND WATER VALVES ARE OPERATIONAL WITHIN THE PROPOSED CONSTRUCTION LIMITS. NONFUNCTIONAL VALVES RESULTING FROM CONSTRUCTION SHALL BE REPLACED.

10. HORIZONTAL AND VERTICAL ADJUSTMENTS TO EXISTING PRESSURE MAINS MAY REQUIRE THE USE OF LINE STOPS TO PREVENT SERVICE INTERRUPTIONS. LINE STOP ASSEMBLY PAY ITEM PER EACH UNIT IS PROVIDED IN THE CONSTRUCTION DOCUMENTS.

11. A CCTV INSPECTION OF THE NEW SANITARY SEWER IN DIGITAL FORMAT UTILIZING THE INDUSTRY-STANDARD PIPELINE ASSESSMENT AND CERTIFICATION PROGRAM (PACP) CODING SYSTEM SHALL BE PROVIDED TO THE CITY AS A COMPACT DISC. THE CD/VIDEO SHALL BE TAKEN PRIOR TO CONSTRUCTING THE ROADWAY AND PRIOR TO PLACING THE NEW SANITARY SEWER SYSTEM INTO SERVICE. DATA SHALL BE COLLECTED UTILIZING CUES GRANITE SOFTWARE
.

12. INSTALLATION OF GRAVITY SEWER PIPE SHALL BE IN CONFORMANCE WITH RECOMMENDED PRACTICES CONTAINED IN STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS ASTM D2321. CONNECTIONS TO MANHOLES WITH SANITARY PIPE SHALL USE A JOINT TWO (2) FEET IN LENGTH AND SHALL USE AN APPROVED WATER STOP AROUND PIPE JOINT ENTRY.

13. THE BOTTOM TRENCH WIDTH IN AN UNSUPPORTED TRENCH SHALL BE LIMITED TO THE MINIMUM PRACTICABLE WIDTH ALLOWING WORKING SPACE TO PLACE AND COMPACT THE HAUNCHING MATERIAL. THE USE OF TRENCH BOXES AND MOVABLE SHEETING SHALL BE PERFORMED IN SUCH A MANNER THAT REMOVAL, BACKFILL AND COMPACTION WILL NOT DISTURB COMPACTED HAUNCHING MATERIAL OR PIPE ALIGNMENT. DEWATERING OF THE TRENCH BOTTOM SHALL BE ACCOMPLISHED USING ADEQUATE MEANS TO ALLOW PREPARATION OF BEDDING, PLACEMENT OF THE HAUNCHING MATERIAL AND PIPE IN THE TRENCH WITHOUT STANDING WATER. DEWATERING SHALL CONTINUE UNTIL SUFFICIENT BACKFILL IS PLACED ABOVE THE PIPE TO PREVENT FLOATATION OR MISALIGNMENT. CONNECTIONS TO MANHOLES WITH SANITARY PIPE SHALL USE A JOINT 2 FEET IN LENGTH AND SHALL USE AN APPROVED WATER STOP AROUND PIPE JOINT ENTRY.

14. THE CONTRACTOR SHALL MONITOR THE ELEVATIONS OF NEARBY UTILITIES DURING CONSTRUCTION.

15. EXISTING RCW MAINS ARE ACTIVE AND THE HOURS OF USAGE ARE BEFORE 10 AM AND AFTER 4 PM. NOTIFY RCW SUPERVISOR, (MIKE VACCA), AT LEAST 48 HOURS IN ADVANCE OF ANY RCW SHUTDOWN OR FOR OFFSETS THAT ARE PART OF THIS UPGRADE TO THE STORM SYSTEM.

16. ANY EXISTING RCW SERVICE LINES REPLACED SHALL BE POLY SERVICE TUBING.

17. THE EXISTING 12" WATER MAIN SHALL REMAIN IN SERVICE FOR THE DURATION OF CONSTRUCTION OF THE REPLACEMENT 12" WATER MAIN. TAPPING OPERATIONS SHALL BE CONDUCTED DURING HOURS OF MINIMUM DEMAND (10:00 PM TO 6:00 AM), AND INTERRUPTION OF WATER SERVICE SHALL NOT EXCEED 8 HOURS ON THREE SEPERATE NIGHTS, 24 HOURS TOTAL.

18. PRIOR TO CONNECTING THE NEW WATER MAINS, THE CONTRACTOR SHALL PREPARE AND SUBMIT A SCHEDULE DETAILING THE PROPOSED SEQUENCE OF INSTALLATION OF ALL FITTINGS, TAPPING SLEEVES, VALVES AND LINE STOPS, FOR ENGINEER'S REVIEW AND APPROVAL.

19. THE CONTRACTOR SHALL USE EXTREME CARE IN EXCAVATIONS IN PROXIMITY TO EXISTING WATER MAINS AND OTHER UTILITIES. THE CONTRACTOR SHALL PROVIDE ADEQUATE, TEMPORARY THRUST RESTRAINT AT BENDS, VALVE AND TEES IN EXISTING WATER MAINS AND OTHER PRESSURIZED CONDUITS IN PROXIMITY TO HIS EXCAVATION AS REQUIRED TO PREVENT ANY DISLODGEMENT, SEPARATION, OR LEAKAGE OF THESE FACILITIES.

20. ALL PIPE BEDDING SHALL BE TYPE 3, EXCEPT AS OTHERWISE SHOWN, SPECIFIED OR DIRECTED BY THE ENGINEER.

21. THE CONTRACTOR SHALL INSTALL THE WATER TRANSMISSION MAIN TO THE ELEVATION SHOWN ON THE PLANS WITH NO INTERMEDIATE HIGH OR LOW POINTS BETWEEN SHOWN. PRIOR TO THE PIPE MANUFACTUR, THE CONTRACTOR SHALL VERIFY THE ELEVATIONS OF ALL UTILITES CROSSING THE WATER TRANSMISSION MAIN AND WHERE THE REQUIRED SEPARATION CANNOT BE ACHIEVED, SHALL NOTIFY THE ENGINEER, WHO WILL DIRECT THE CONTRACTOR TO ADJUST THE VERTICAL ALIGNMENT AS NECESSARY.

22. CONTRACTOR MUST SUBMIT PLAN TO PROVIDE UNINTERRUPTED SANITARY SEWER SERVICE TO THE ENGINEER.

23. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN NEAR THE VCP INFRASTRUCTURE TO MINIMIZE POTENTIAL DAMAGE. ANY DAMAGE WILL BE REPAIRED AND RESTORED TO OPERATIONAL INTEGRITY AT CONTRACTOR'S EXPENSE.

24. PROTECT EXISTING UTILITIES / SERVICE LINE/ METERS / MAINS, TO REMAIN, DURING CONSTRUCTION.

25. ALL NEW AND RELOCATED PRESSURIZED MAINS SHALL HAVE MECHANICAL RESTRAINTS PER CITY OF CLEARWATER SPECIFICATIONS.

26. CONTRACTOR TO NOTIFY CITY IF WATER MAINS ARE UNCOVERED AND LEAD GOOSE NECKS ARE DISCOVERED AT THE SERVICE LINE CONNECTION TO THE MAIN. THESE LEAD FITTINGS NEED TO BE REMOVED AND REPLACED PER CITY CONSTRUCTION STANDARD.

27. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING OF ALL NEWLY CONSTRUCTED UTILITIES IN ACCORDANCE WITH CURRENT STANDARDS OF LOCAL JURISDICTION. THE CONTRACTOR SHALL NOTIFY THE LOCAL JURISDICTION AND THE OWNER OR AN AUTHORIZED REPRESENTATIVE AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF PERFORMING TESTS.

28. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI (28-DAY STRENGTH), UNLESS OTHERWISE NOTED ON DRAWINGS.

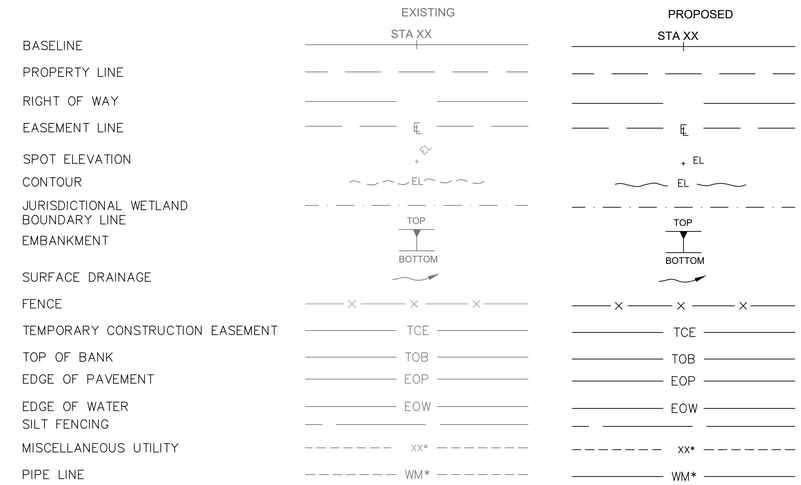
29. NO SURFACING MATERIAL IS TO BE APPLIED TO ANY MANHOLE COVERS, FRAMES, VALVE BOXES, GAS DROPS, ETC. ALL EXISTING AND PROPOSED UTILITY AND STORM SEWER STRUCTURES WHOSE TOPS WILL BE EXPOSED WITHIN ANY PAVED AREA SHALL BE ADJUSTED SO THAT THE TOP SURFACE OF COVERS OR FRAMES SHALL BE FLUSH WITH THE PAVEMENT SURFACE.

30. UTILITY BOXES IN CONCRETE OR PAVER AREAS SHALL BE ADJUSTED TO GRADE AND SQUARE TO THE EDGE OF CONCRETE OR PAVERS. NO EXISTING UTILITY OR PROPOSED BOXES, PULLBOXES, PEDESTALS OR VALVES SHALL BE INSTALLED WHERE THEY ARE NOT FULLY PRESENT WITHIN EITHER SURFACE CONCRETE OR PAVERS. THE MINIMUM WIDTH AROUND ALL EXISTING OR PROPOSED BOXES, PULLBOXES, PEDESTALS OR VALVES SHALL BE 4 INCHES.

31. THE CONTRACTOR SHALL PROVIDE UTILITY SERVICE LINES AND LATERALS , IN ACCORDANCE WITH THE NOTES ON THE PLANS SHEETS.

32. PLEASE CALL MR. WILLIAM ANDERSON, AS SOON AS POSSIBLE, REGARDING ANY UTILITY ISSUES AT (727) 562-4960, EXT 7227.

33. SEE PLANS FOR ADDITIONAL CONSTRUCTION PLANS



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REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

CITY OF CLEARWATER, FLORIDA
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CLEVELAND STREET PHASE III AND FESTIVAL CORE GENERAL UTILITY NOTES

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 04-08-19	DRAWN BY: DOD	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: TAF	CHECKED BY: RF	SHEET NO.: 600

APPROVED FOR CONSTRUCTION _____ DATE

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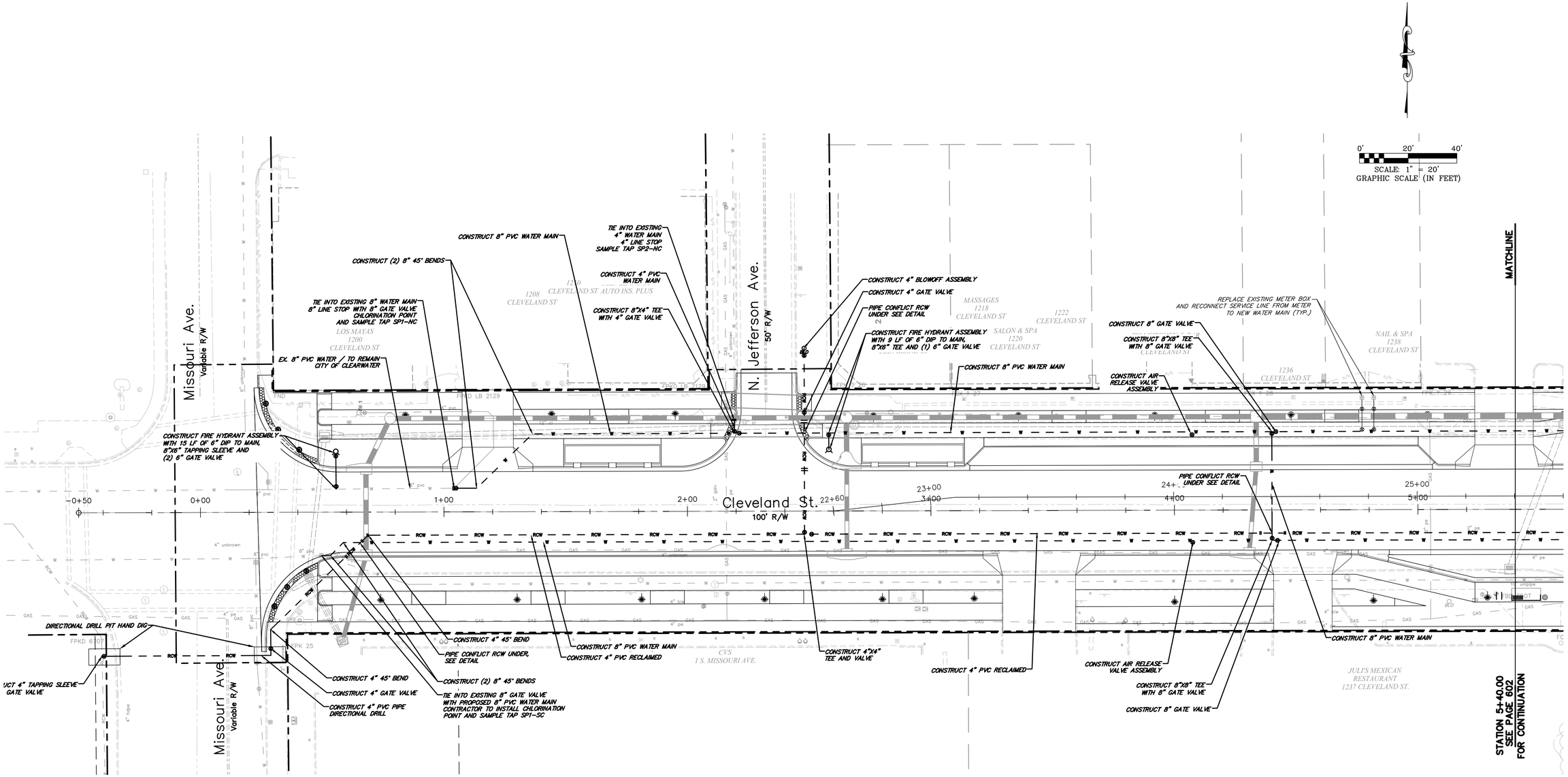

CONSTRUCTION NOTES:

1. SERVICES LINES: SERVICE LINES AND CONNECTIONS ARE NOT SHOWN. THE CONTRACTOR SHALL PROVIDE SERVICE LINES AS FOLLOWS:

   1.1. RECLAIMED WATER: THE CONTRACTOR SHALL COORDINATE WITH THE CITY OF CLEARWATER PUBLIC UTILITIES TO FIELD DETERMINE THE LOCATION OF PROPOSED RECLAIMED WATER SERVICE LINES AND BOX FOR EACH PROPERTY AND INSTALL THE LINE IN THE FOLLOWING SIZES:
   - COMMERCIAL: 2" SERVICE LINE
   - RESIDENTIAL: 1" SERVICE LINE

   1.2. POTABLE WATER: THE CONTRACTOR SHALL FIELD LOCATE AND VERIFY THE EXISTING WATER METER SIZE FOR EACH PROPERTY AND PROVIDE A SERVICE LINE SIZED TO MATCH. LABOR FOR METER TIE-IN CONNECTION SHALL BE COMPLETED BY:
   - CITY OF CLEARWATER, PUBLIC UTILITIES: 2" AND UNDER
   - CONTRACTOR: 3" AND GREATER

   1.3. SANITARY SEWER SERVICE LINE: THE CONTRACTOR SHALL FIELD LOCATE EXISTING SANITARY SEWER LATERAL CONNECTIONS. THE LATERAL LINES SHALL BE REPLACED IN-KIND, TO THE RIGHT OF WAY LINE AND A NEW CLEANOUT SHALL BE PROVIDED.

2. RESTRAINTS: THE COST FOR MEGALUG RESTRAINTS IS INCLUDED IN THE UNIT PRICE OF THE LINE, HOWEVER THE CONTRACTOR SHALL PROVIDE BELL RESTRAINTS FOR BOTH THE EXISTING AND PROPOSED WATERMAIN CONNECTIONS UNDER SEPERATE PAY ITEM.

3. APPURTENANCES: IT IS THE CONTRACTOR RESPONSIBILITY TO PROVIDE FOR ALL APPURTENANCES AS REQUIRED BY THE DETAILS, CITY OF CLEARWATER INDEX AND CONTRACT SPECIFICATIONS.

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gai consultants
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EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
UTILITY PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY: SH	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: DOD	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: SH	CHECKED BY: JA	SHEET NO.: 601

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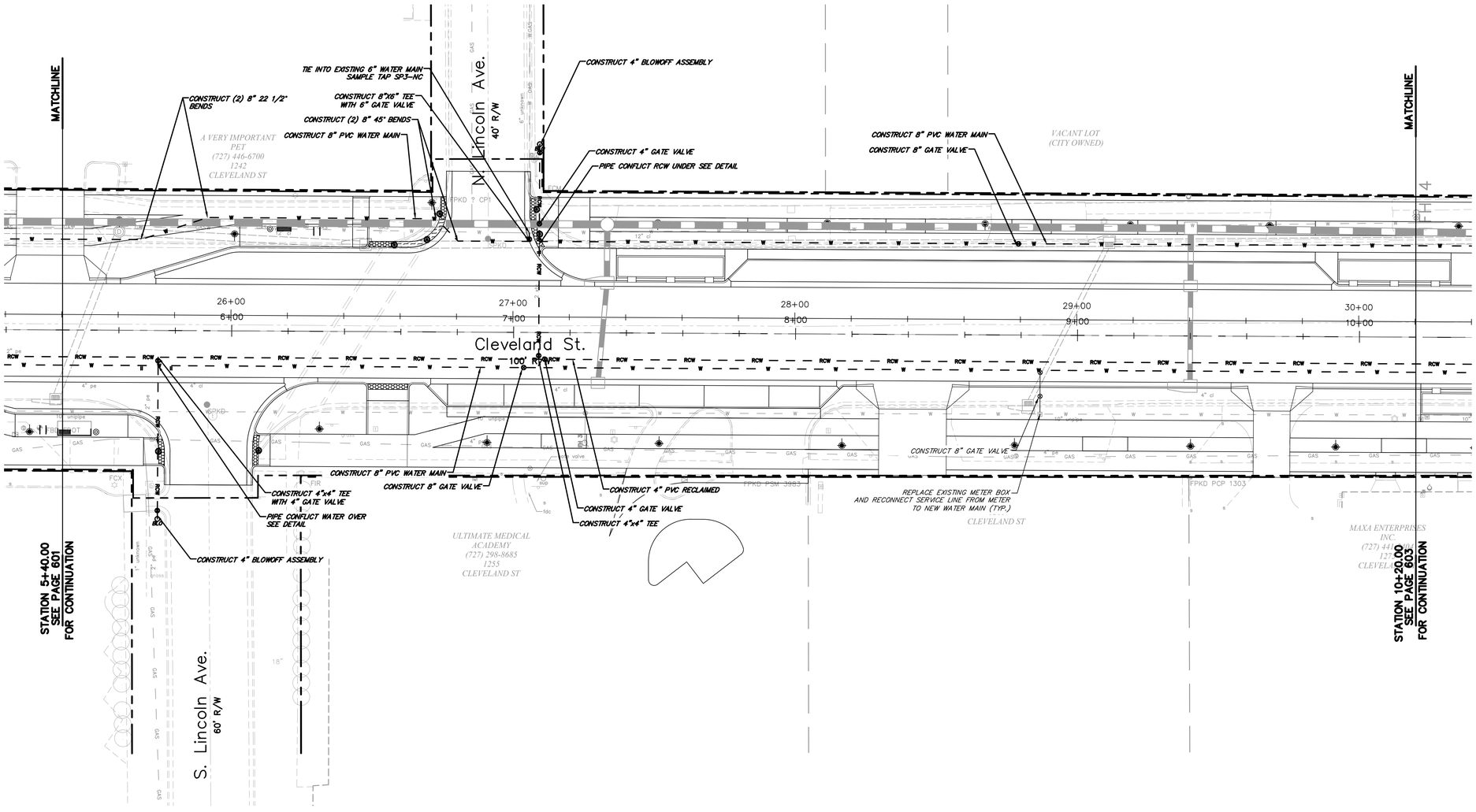

NOTES:

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2. FOR GENERAL UTILITY NOTES, SEE SHEET 600.

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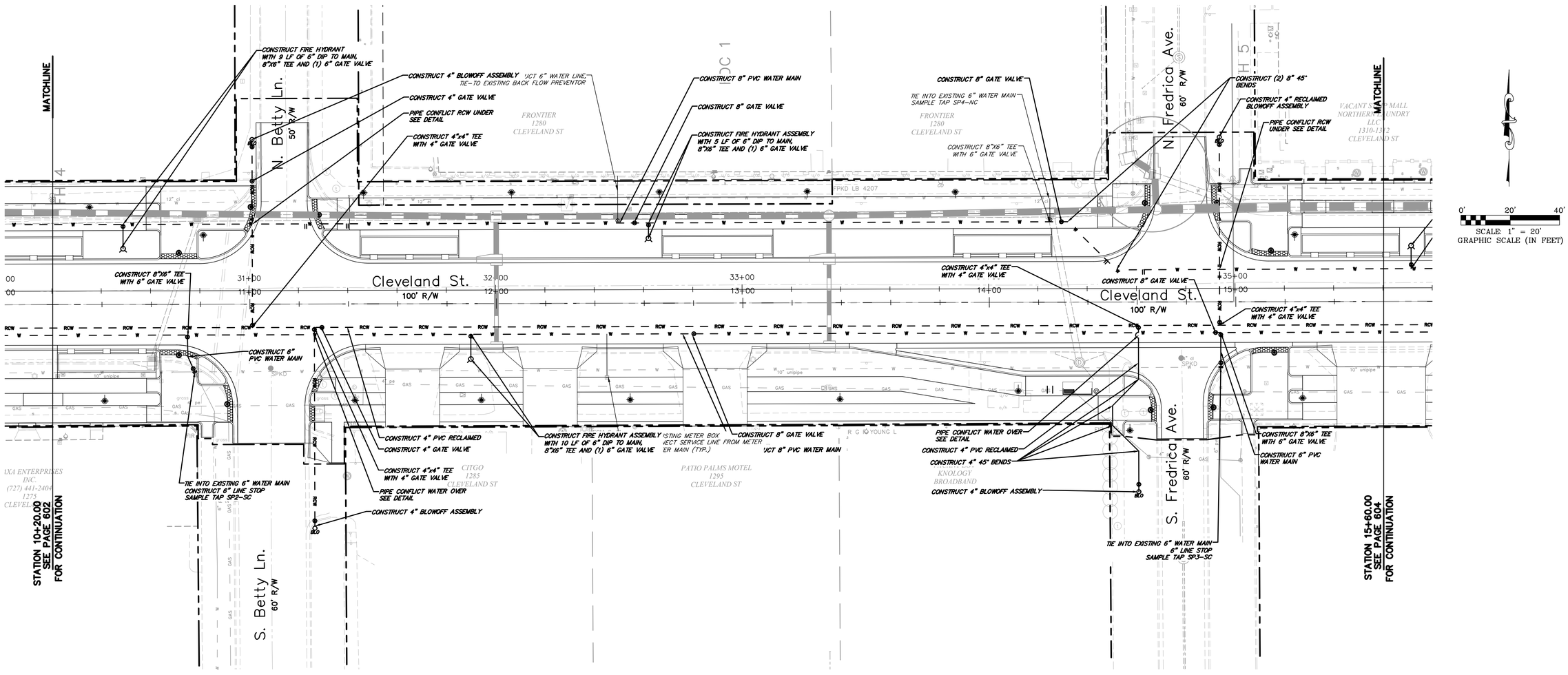

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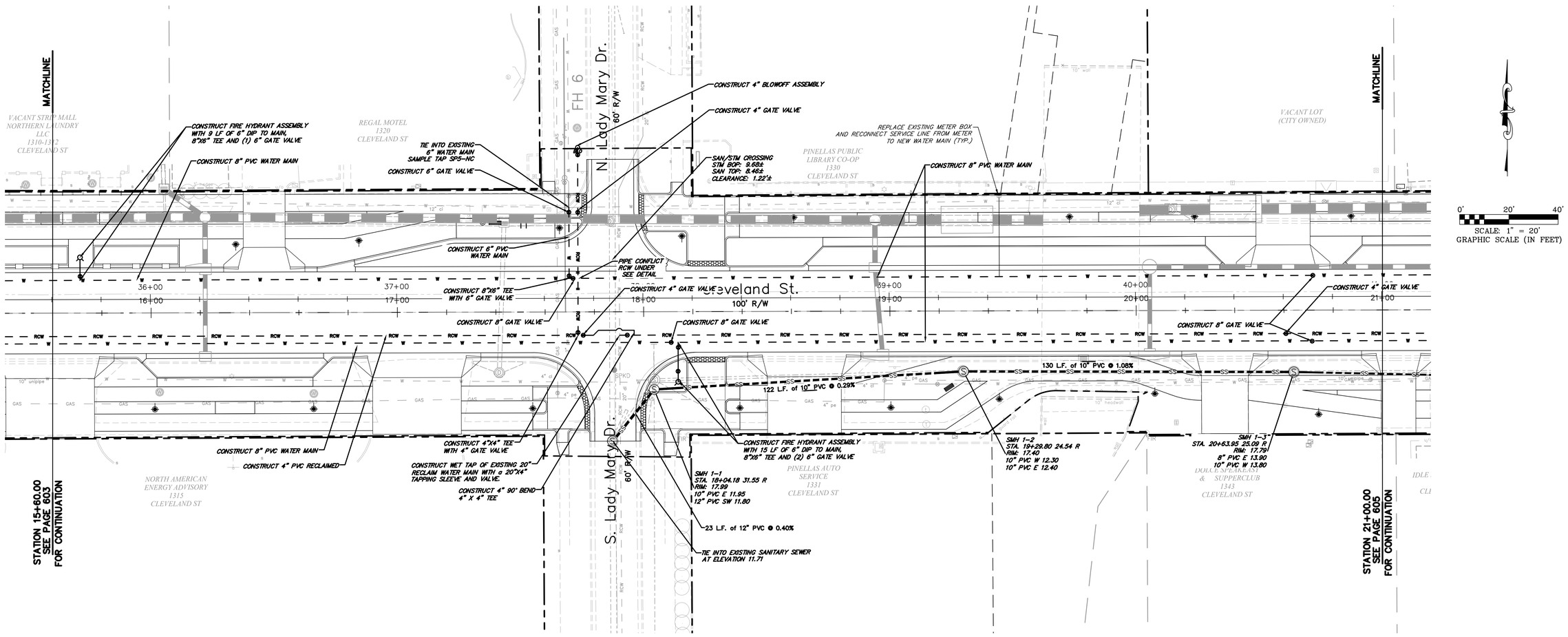

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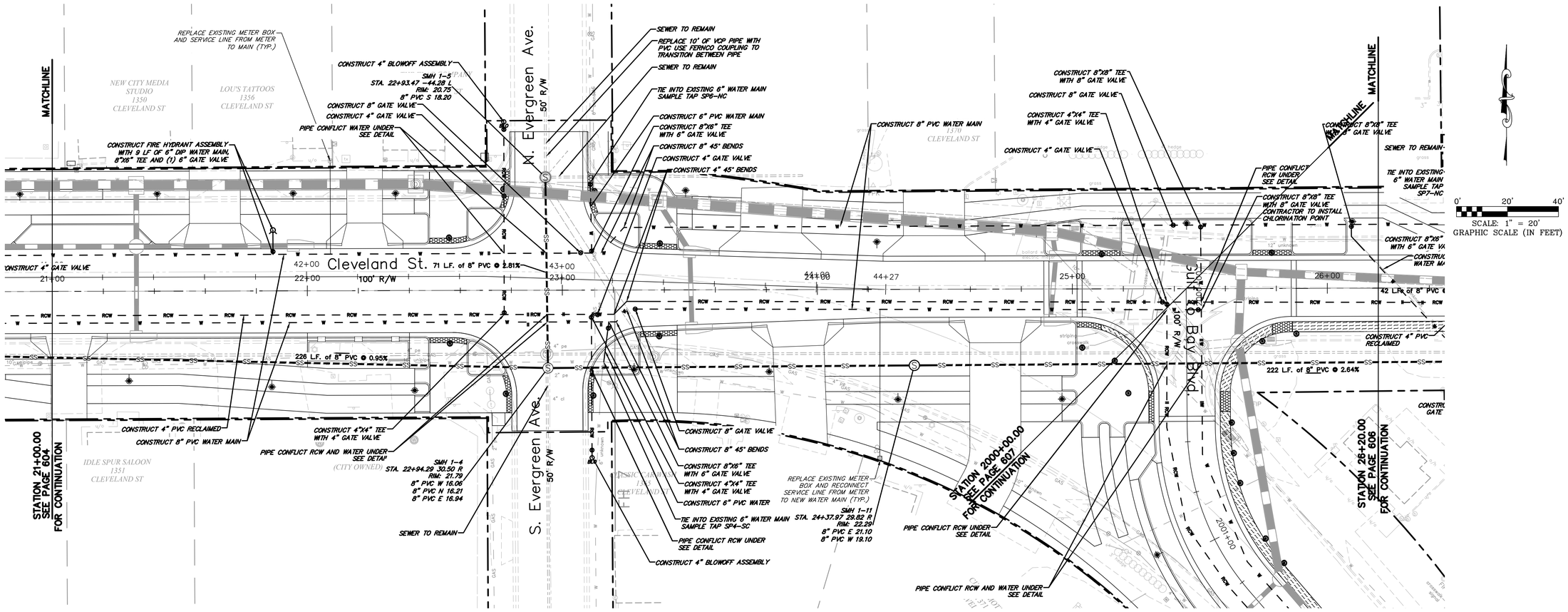

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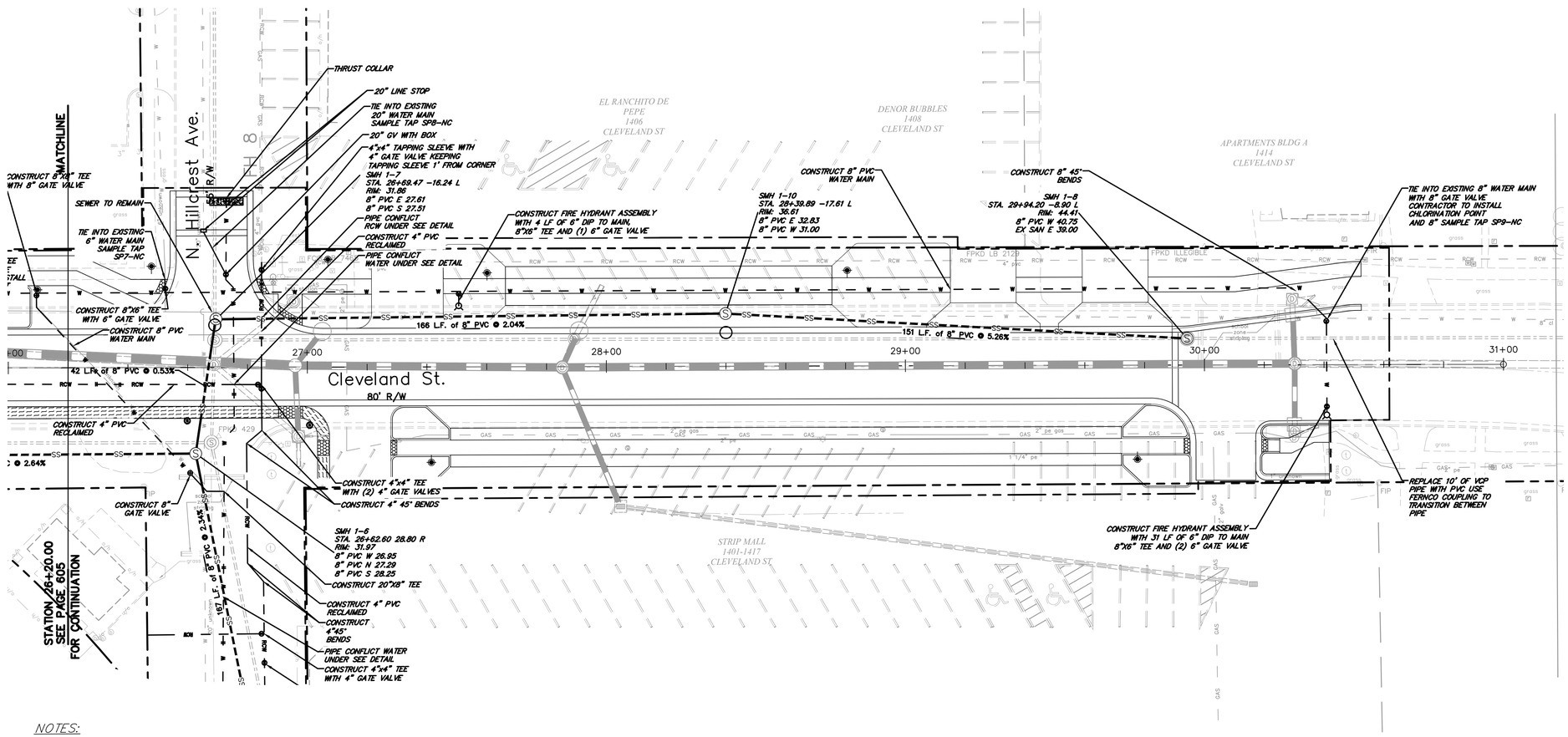

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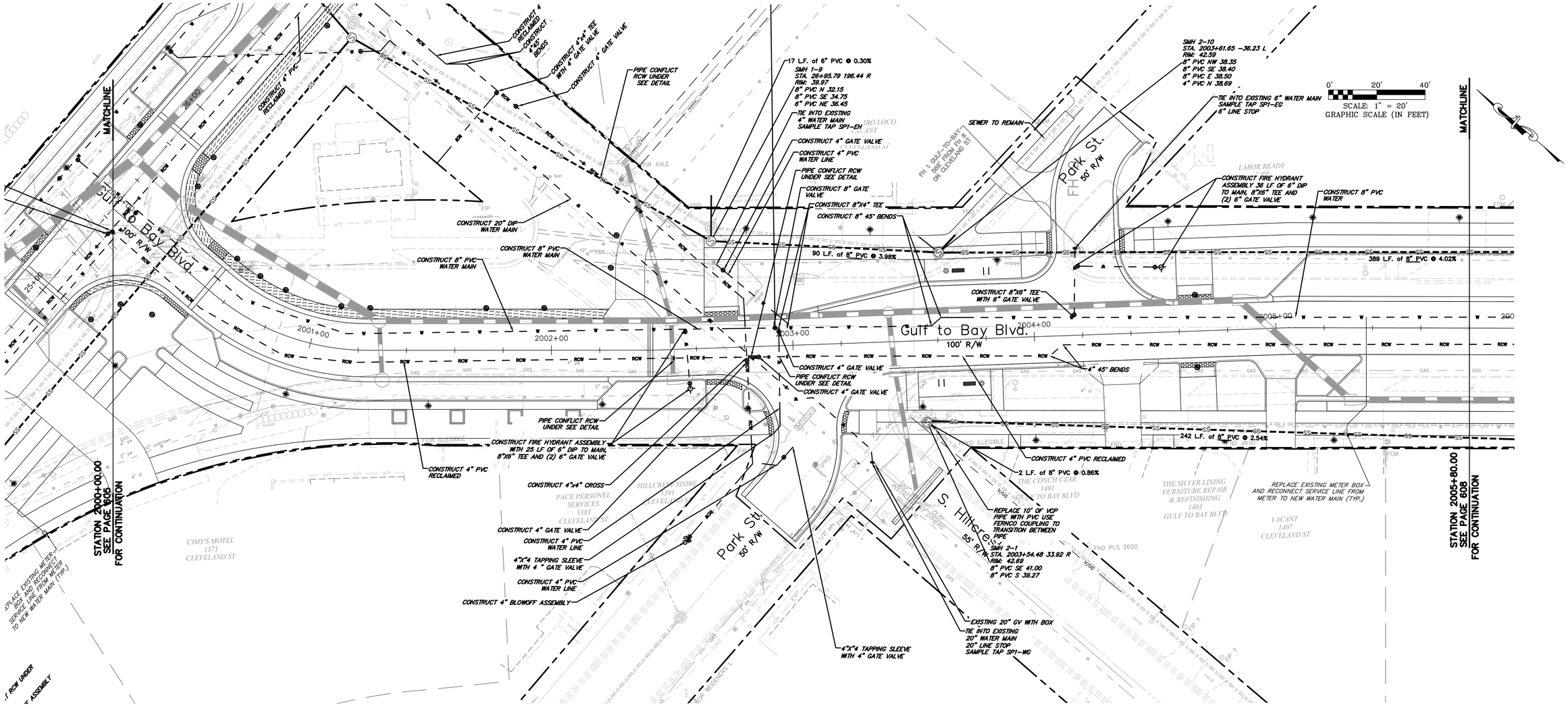

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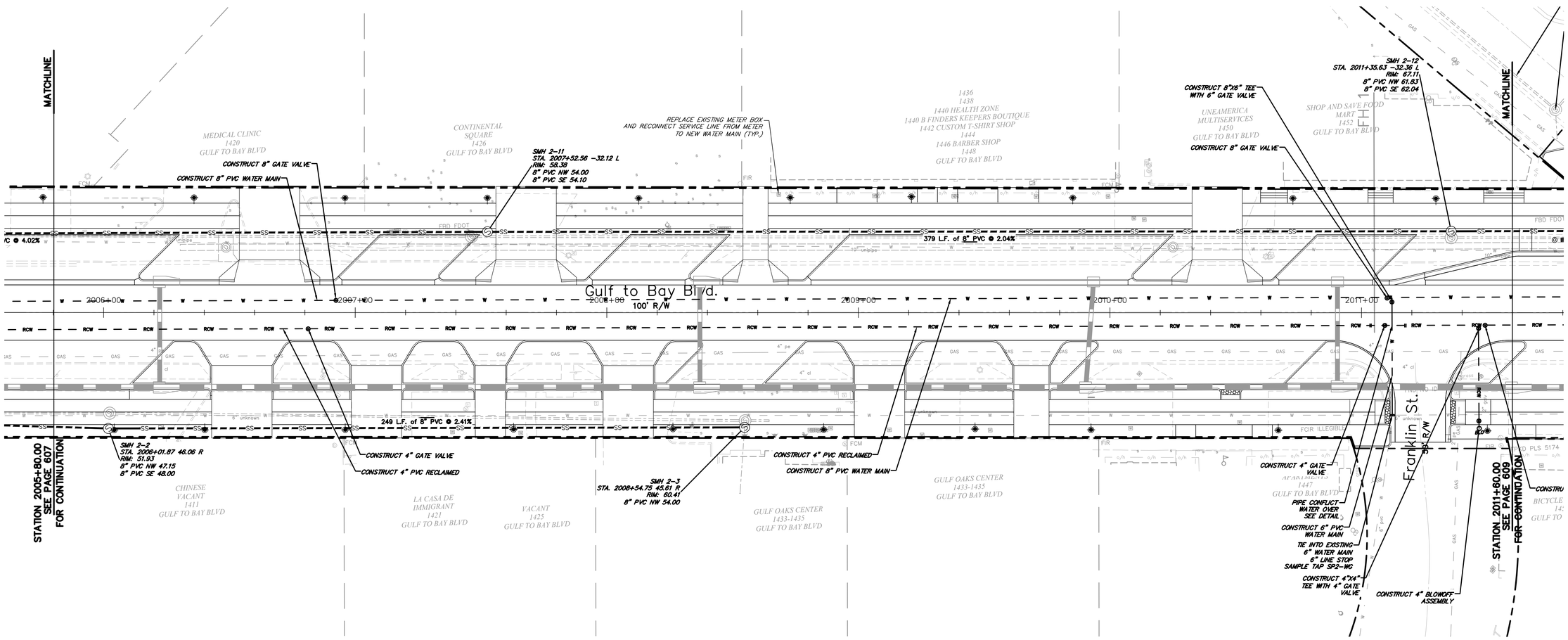
0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)



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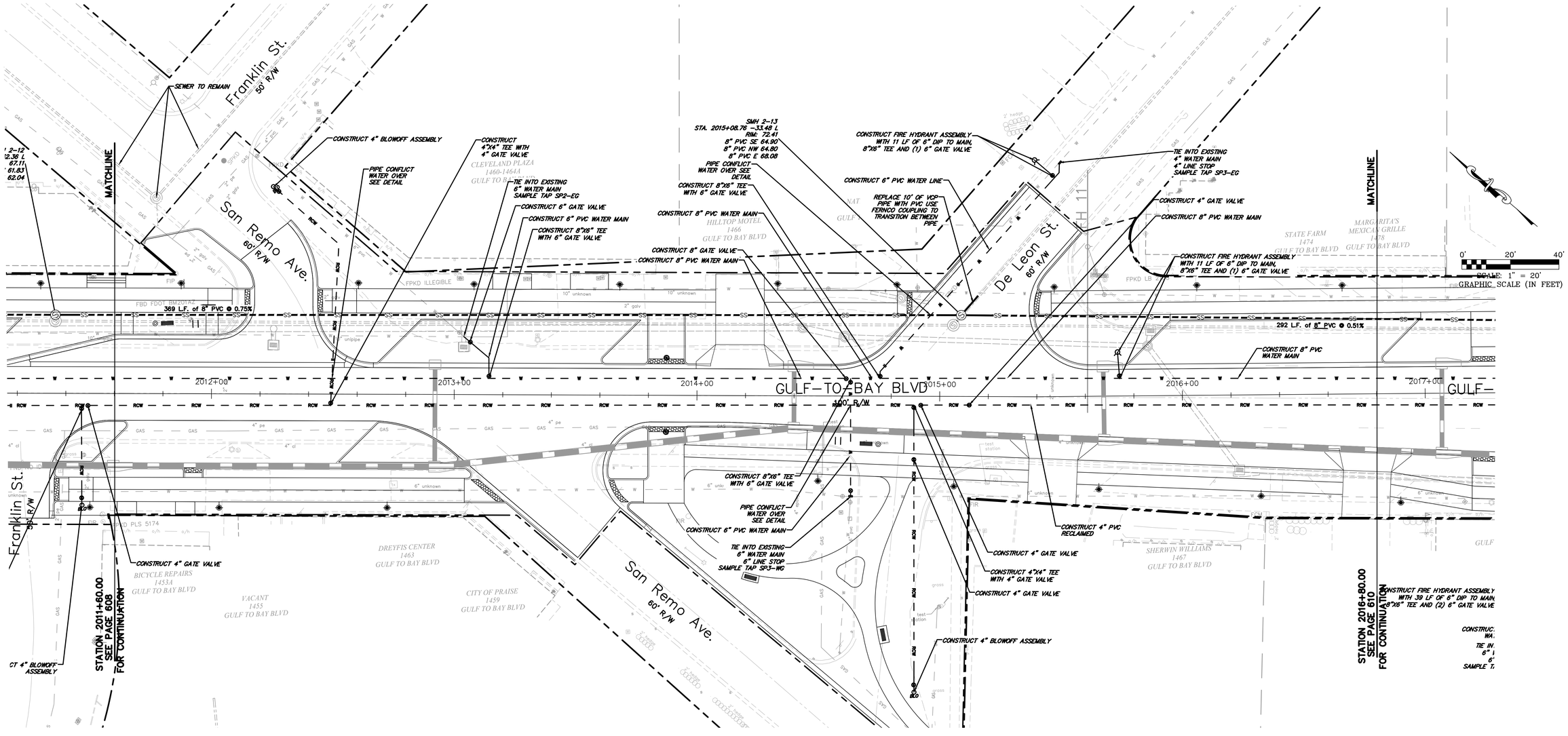

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www.callsunshine.com
(800) 432-4770
MIN. 48 HOURS BEFORE YOU EXCAVATE

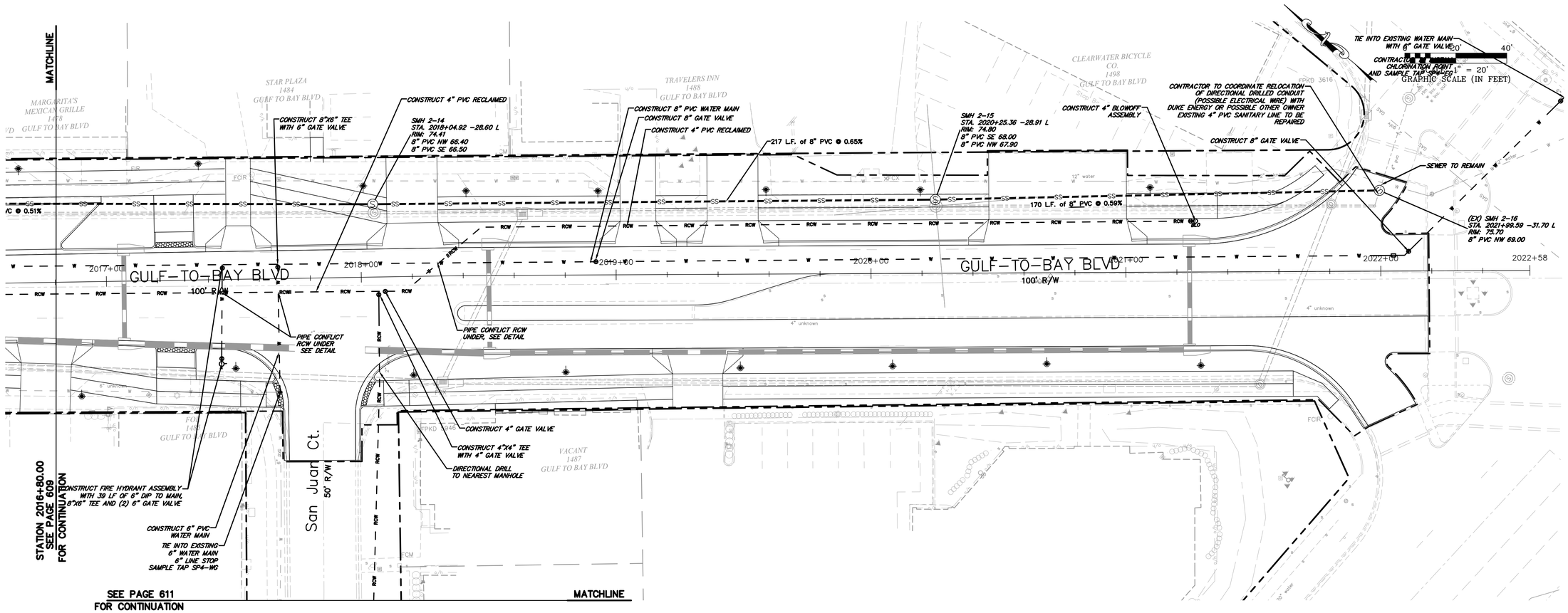
CLEVELAND STREET PHASE III AND FESTIVAL CORE UTILITY PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY: SH	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: DOD	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: SH	CHECKED BY: JA	SHEET NO.: 609

APPROVED FOR CONSTRUCTION _____ DATE

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

X



NOTES:

1. FOR CONSTRUCTION NOTES, SEE SHEET 601.
2. FOR GENERAL UTILITY NOTES, SEE SHEET 600.

100% PLANS
BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756

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(800) 432-4770
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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
UTILITY PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY: SH	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: DOD	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: SH	CHECKED BY: JA	SHEET NO.: 610
APPROVED FOR CONSTRUCTION			DATE

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

X

0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)

NOTES:

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2. FOR GENERAL UTILITY NOTES, SEE SHEET 600.

100% PLANS
BID SET

REVISION	BY	DATE

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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
UTILITY PLAN

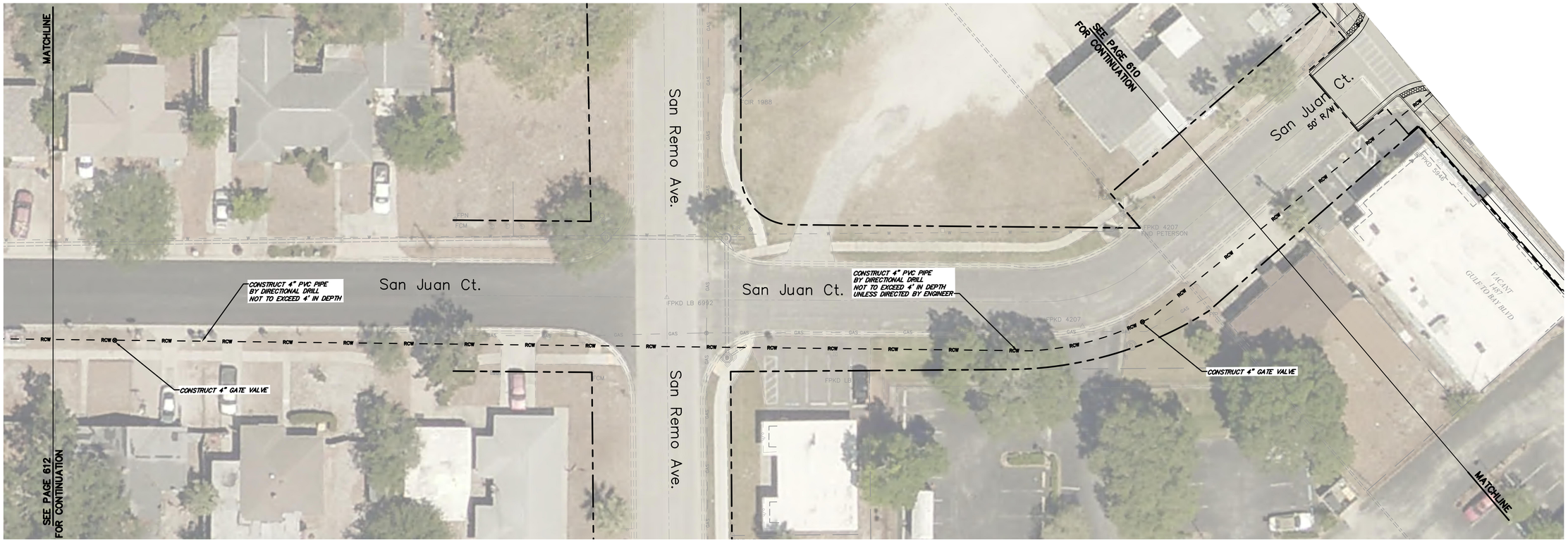
DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY: SH	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: DOD	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: SH	CHECKED BY: JA	SHEET NO.: 612

APPROVED FOR CONSTRUCTION _____ DATE

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

X

0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)



NOTES:

1. FOR CONSTRUCTION NOTES, SEE SHEET 601.
2. FOR GENERAL UTILITY NOTES, SEE SHEET 600.

100% PLANS
BID SET

REVISION	BY	DATE

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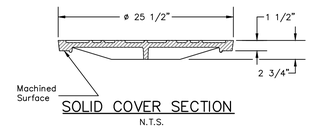
CLEVELAND STREET PHASE III AND FESTIVAL CORE UTILITY PLAN

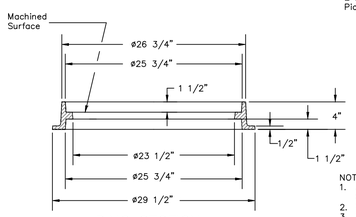
DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY: SH	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: DOD	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: SH	CHECKED BY: JA	SHEET NO.: 611
APPROVED FOR CONSTRUCTION			DATE

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



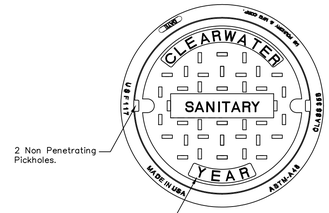
SOLID COVER SECTION

N.T.S.



RING SECTION

N.T.S.

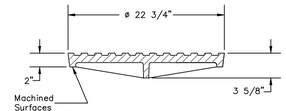


SOLID COVER

N.T.S.

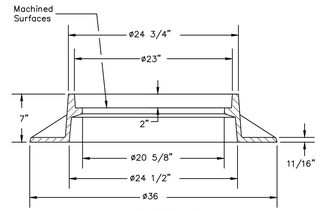
NOTES:
1. U.S. Foundry No. 117 Ring and BL Cover, or equal, if approved by City of Clearwater Engineer.
2. Private manhole covers must not say "Clearwater" on them.
3. Ring must be centered on opening.
4. Install 18 gauge 304 stainless steel manhole storm water inflow abatement insert (dish/pan).
5. See also City of Clearwater's Technical Specification Section IV.

DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT SANITARY SEWER DETAILS	SANITARY SEWER MANHOLE COVER NON-ROADWAY APPLICATION	INDEX NO. 301	PAGE NO. 1 or 3	LATEST REVISION 10/21/2019



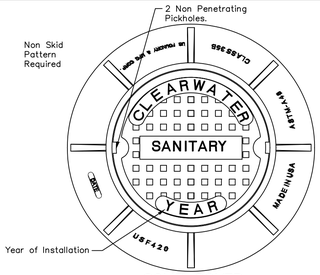
SOLID COVER SECTION

N.T.S.



RING SECTION

N.T.S.



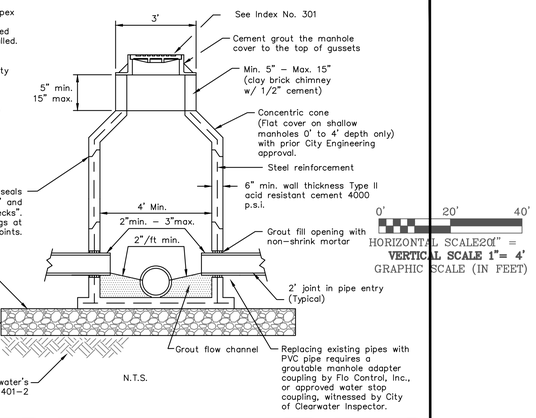
SOLID COVER

N.T.S.

NOTES:
1. Where roadway base is 8" or thicker, use 9" ring.
2. Manufacturer's model USF 420 Ring & G Cover, or equal, if approved by City of Clearwater Engineer.
3. Heavy Traffic (Multi-lane) with cover located in travel lane will require ring and cover by EJ Group ERGO Assembly, Product Number 00104083L0 or equal, See Index 301 Page 3 of 3.
4. Private manhole covers must not say "Clearwater" on them.
5. Ring must be centered on opening.
6. Install 18 gauge 304 stainless steel manhole storm water inflow abatement insert (dish/pan).
7. See also City of Clearwater's Technical Specification Section IV.

DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT SANITARY SEWER DETAILS	SANITARY SEWER MANHOLE COVER FOR ROADWAY APPLICATION	INDEX NO. 301	PAGE NO. 2 or 3	LATEST REVISION 10/21/2019

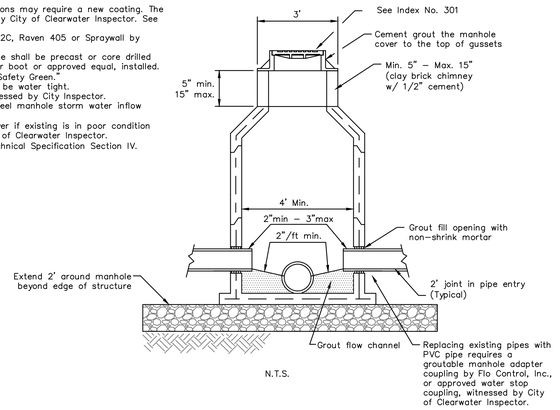
NOTES:
1. All new manholes must be AASHTO M85 Type II cement with Xypex Admix C-1000R.
2. All pipe penetrations into manhole shall be precast or core drilled with a flexible Kor-N-Seal rubber boot or approved equal, installed.
3. All pipes must be color coded "Safety Green."
4. Doghouse manholes are not permitted.
5. Flat top manholes are not permitted unless pre-approved by City Engineer.
6. All connections to manhole shall be water tight.
7. All manhole coring must be witnessed by City Inspector.
8. Install 18 gauge 304 stainless steel manhole storm water inflow abatement insert (dish/pan).
9. See also City of Clearwater's Technical Specification Section IV.



N.T.S.

DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT SANITARY SEWER DETAILS	NEW PRECAST SANITARY MANHOLE DETAIL	INDEX NO. 302	PAGE NO. 1 or 3	LATEST REVISION 10/21/2019

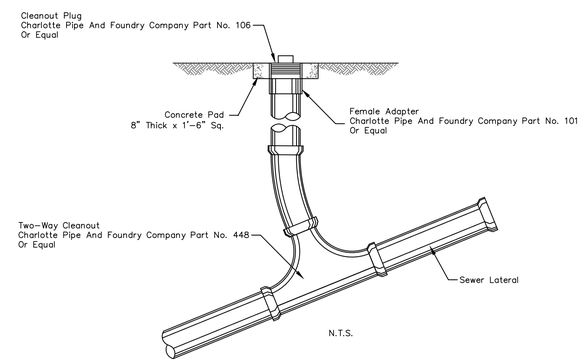
NOTES:
1. Any new manhole cores/connections may require a new coating. The new coating will be determined by City of Clearwater Inspector. See Note 2.
2. Interior shall be Strong Seal MS 2C, Raven 405 or Spraywall by Sprayroq.
3. All pipe penetrations into manhole shall be precast or core drilled with a flexible Kor-N-Seal rubber boot or approved equal, installed.
4. All pipes must be color coded "Safety Green."
5. All connections to manhole shall be water tight.
6. All manhole coring must be witnessed by City Inspector.
7. Install 18 gauge 304 stainless steel manhole storm water inflow abatement insert (dish/pan).
8. Contractor to replace ring & cover if existing is in poor condition which will be determined by City of Clearwater Inspector.
9. See also City of Clearwater's Technical Specification Section IV.



N.T.S.

DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT SANITARY SEWER DETAILS	EXISTING SANITARY MANHOLE DETAIL	INDEX NO. 302	PAGE NO. 3 or 3	LATEST REVISION 10/21/2019

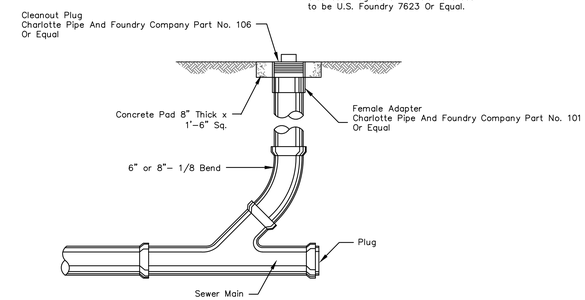
NOTE
Cleanout Plug Cover for traffic areas to be U.S. Foundry 7623 Or Equal.



N.T.S.

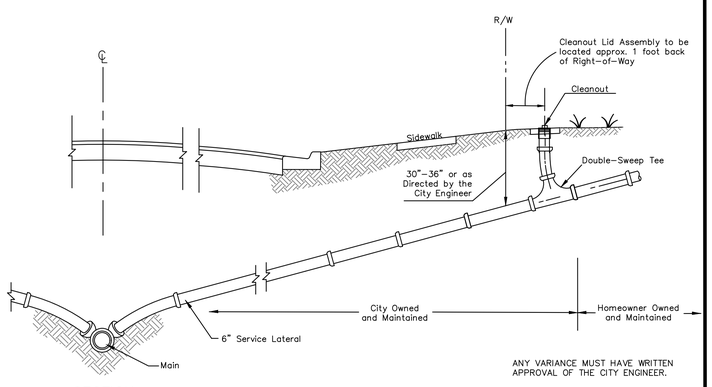
DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT SANITARY SEWER DETAILS	STANDARD CLEANOUT (SANITARY)	INDEX NO. 304	PAGE NO. 1 or 2	LATEST REVISION 2/22/2016

NOTE:
Cleanout Plug Cover for traffic areas to be U.S. Foundry 7623 Or Equal.



N.T.S.

DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT SANITARY SEWER DETAILS	STANDARD TERMINAL END CLEANOUT (SANITARY)	INDEX NO. 304	PAGE NO. 2 or 2	LATEST REVISION 2/22/2016

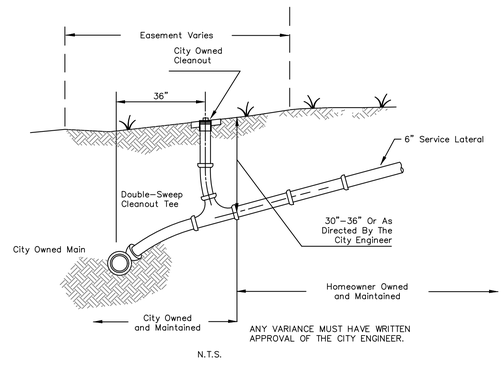


SECTION

N.T.S.

ANY VARIANCE MUST HAVE WRITTEN APPROVAL OF THE CITY ENGINEER.

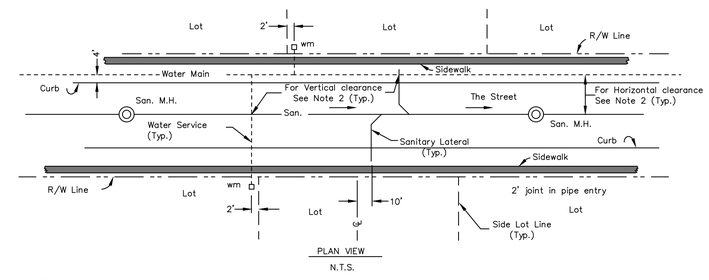
DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT SANITARY SEWER DETAILS	STREET LATERAL DETAIL	INDEX NO. 305	PAGE NO. 1 or 3	LATEST REVISION 2/22/2016
8/17/2015	CLEANOUT LOCATION REVISED	PEND.					



ANY VARIANCE MUST HAVE WRITTEN APPROVAL OF THE CITY ENGINEER.

N.T.S.

DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT SANITARY SEWER DETAILS	EASEMENT AREA LATERAL DETAIL	INDEX NO. 305	PAGE NO. 2 or 3	LATEST REVISION 2/22/2016



N.T.S.

NOTES:
1. Sanitary laterals to be within 10' of center of lot on downhill side of center of lot.
2. Vertical and horizontal clearance between potable water main and sanitary sewer lateral at each intersection to be per FDEP requirements. (See F.A.C. Rule 62-555)

DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT SANITARY SEWER DETAILS	SANITARY LATERAL LOCATIONS	INDEX NO. 305	PAGE NO. 3 or 3	LATEST REVISION 2/22/2016
6/27/16	Revised Note 2	R.F.					

100% PLANS BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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CLEVELAND STREET PHASE III AND FESTIVAL CORE UTILITY DETAILS

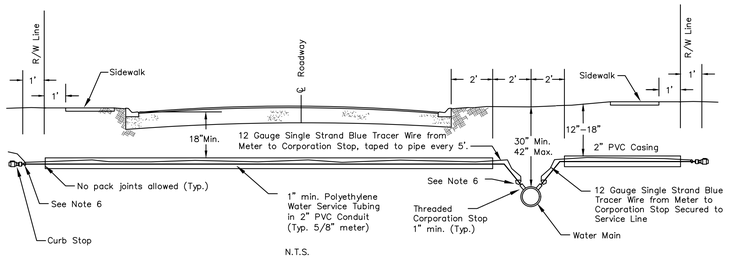
DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 04-08-19	DRAWN BY: DOD	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: TAF	CHECKED BY: RF	SHEET NO.: 620

APPROVED FOR CONSTRUCTION _____ DATE

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

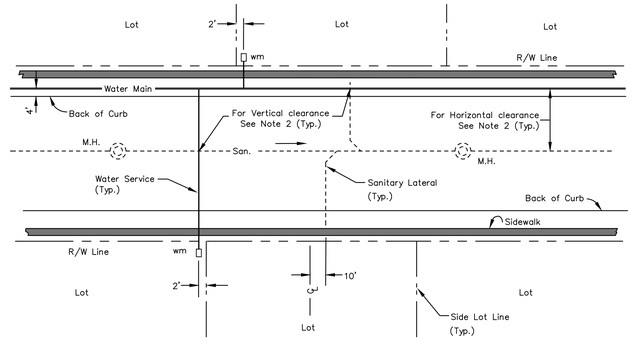
X

NOTES:
1. PVC casing shall be 2x the size of the service line and appropriately color coded.
2. PVC conduit to be between 18"–24" below the surface measured from the top of face of curb.
3. Water Mains to be min. 30" below grade and approx. 4' back of curb.
4. Curb Stop to be located approx. 1 foot back of Right–of–Way.
5. Casing to be continuous, 2' from tap to 2' to curb stop.
6. Connect 12 gauge Tracer Wire with tie wraps at Corporation Stop and at Curb Stop. Provide 1 foot minimum excess length of Tracer Wire in Meter Box.
7. Insert stiffeners at Corporation Stop and Curb Stop. Stiffeners shall be manufactured by Mars Company P.O. Box 830340, Ocala, FL 34483
8. Service lines 90° from main to meter.
9. See also City of Clearwater's Technical Specifications Section IV.



N.T.S.

DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT POTABLE WATER DETAILS	1"–2" WATER MAIN SERVICE LINE TYPICAL SECTION	INDEX NO. 401	PAGE NO. 2 or 3	LATEST REVISION 10/21/2019

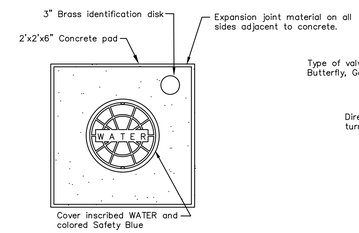


N.T.S.

NOTES:
1. See Index 401, Sheet 1 of 3, Note 2 regarding Water Meter and Service Tap locations under driveways.
2. Vertical and horizontal clearance between potable water main and sanitary sewer lateral at each intersection to be per FDEP requirements. (See F.A.C. Rule 62–555)
3. See also City of Clearwater's Technical Specification Section IV.

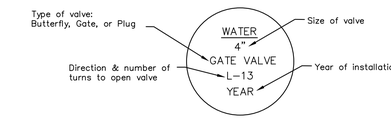
DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT POTABLE WATER DETAILS	WATER METER AND SERVICE LOCATIONS PLAN VIEW	INDEX NO. 401	PAGE NO. 3 or 3	LATEST REVISION 10/21/2019

NOTES:
1. Extension on valve box shall be set so as to reserve 1/2 of the adjustment length for future use.
2. Valve key extension required on valves with operator nut over 3' deep.
3. Install 3" brass identification disk in concrete, per detail below.
4. Terminate insulated, solid 12 gauge copper tracer wire at 12" above box cover.
5. Valve Box to be centered in concrete slab in green space only.
6. See also City of Clearwater's Technical Specification Section IV.



WATER VALVE BOX
CONCRETE PAD PLAN VIEW

N.T.S.

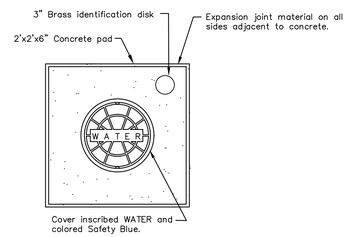


3" BRASS IDENTIFICATION DISK

N.T.S.

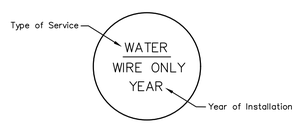
DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT POTABLE WATER DETAILS	POTABLE WATER VALVE BOX CONCRETE PAD PLAN VIEW GREEN SPACE ONLY	INDEX NO. 402	PAGE NO. 2 or 3	LATEST REVISION 10/21/2019

NOTES:
1. Extension on valve box shall be set so as to reserve 1/2 of the adjustment length for future use.
2. Install 3" brass identification disk in concrete, per detail below.
3. Terminate insulated, solid 12 gauge copper tracer wire at 12" above box cover.
4. Valve Box to be centered in concrete slab in green space only.
5. See also City of Clearwater's Technical Specification Section IV.



WATER VALVE BOX
CONCRETE PAD PLAN VIEW

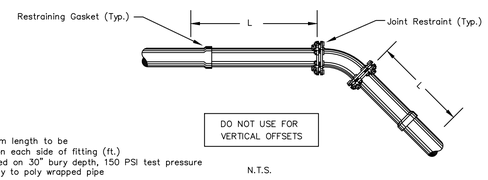
N.T.S.



3" BRASS IDENTIFICATION DISK

N.T.S.

DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT POTABLE WATER DETAILS	POTABLE WATER TRACING WIRE STATION CONCRETE PAD PLAN VIEW GREEN SPACE ONLY	INDEX NO. 402	PAGE NO. 3 or 3	LATEST REVISION 10/21/2019



L = Minimum length to be restrained on each side of fitting (ft.)
Figures based on 30" bury depth, 150 PSI test pressure
Figures apply to poly wrapped pipe

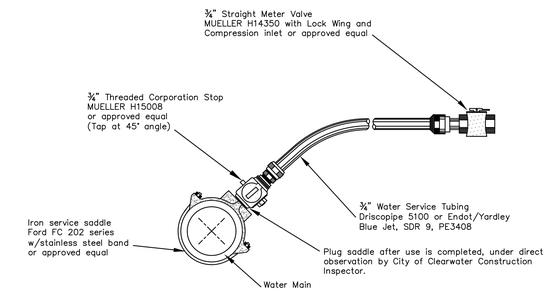
N.T.S.

NOM. PIPE SIZE	ELBOWS (deg.)				VALVES TEES	DEAD END
	11.25	22.50	45	90		
	LENGTH IN FEET (L)					
4"	22	22	22	42	50	50
6"	22	22	25	50	67	67
8"	22	22	35	60	85	85
12"	22	22	42	100	125	125
16"	22	30	55	130	150	150
20"	22	33	65	150	160	160

The following joints must be restrained in all applications:
1. Bend – inlet and outlet
2. Tee – inlet and outlets
3. Offsets – inlet and outlet
4. Caps
5. Plugs
6. Dead ends
7. Hydrant runouts shall be restrained as dead ends

NOTES:
1. Water mains larger than 8" will be ductile iron pipe only.
2. Thrust restraint on slipjoint ductile iron pipe shall be U.S. Pipe Field Lock Gaskets for Tyton Joint Pipe or American Fast–Grip Gaskets for American Fastite Pipe, witnessed by Construction Inspector.
3. Thrust restraints on slip joint PVC pipe shall be EBBA iron 1500 Series restrainers, or approved equal.
4. Thrust restraint on Ductile Iron Fittings shall be provided by the use of Megalug Retainers and mechanical joint fittings.
5. No thrust blocks allowed.
6. See also City of Clearwater's Technical Specification Section IV.

DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT POTABLE WATER DETAILS	RESTRAINED JOINT DETAIL (PVC & DIP)	INDEX NO. 403	PAGE NO. 1 or 1	LATEST REVISION 10/21/2019

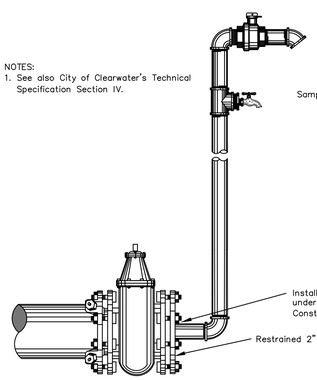


N.T.S.

NOTES:
1. Insert stiffeners at Corporation Stop and Curb Stop. Stiffeners shall be manufactured by Mars Company P.O. Box 830340, Ocala, FL 34483
2. See also City of Clearwater's Technical Specification Section IV.

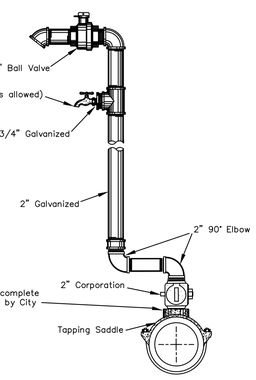
DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT POTABLE WATER DETAILS	CHLORINATION / SAMPLE POINT	INDEX NO. 408	PAGE NO. 1 or 2	LATEST REVISION 10/21/2019

NOTES:
1. See also City of Clearwater's Technical Specification Section IV.



END CONNECTION

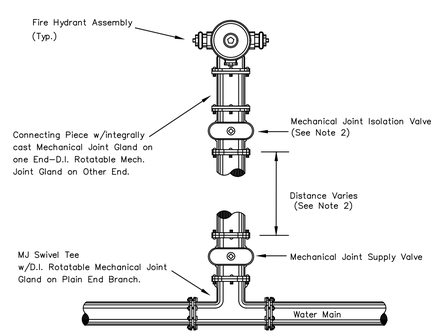
N.T.S.



TOP CONNECTION

N.T.S.

DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT POTABLE WATER DETAILS	TEMPORARY BLOWOFF AND SAMPLE POINT	INDEX NO. 408	PAGE NO. 2 or 2	LATEST REVISION 10/21/2019



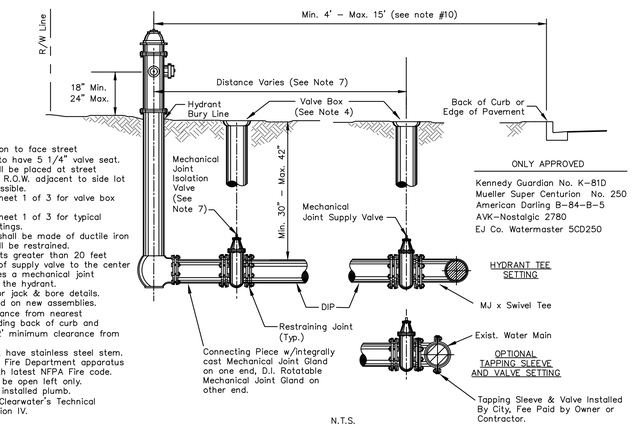
N.T.S.

NOTES:
1. All joints must be restrained and must be ductile iron pipe.
2. A mechanical joint isolation valve is required at the hydrant on hydrant runouts greater than 20 feet from center of supply valve to the center of the hydrant.
3. Hydrant sets can be purchased and installed by the City (does not include tap). 727–562–4600.
4. All hydrants must have stainless steel stem.
5. All hydrants must be installed plumb.
6. 4' minimum clearance from nearest obstruction, including back of curb and vehicular travel. 2' minimum clearance from sidewalk.
7. All clearances for Fire Department apparatus must conform with latest NFPA Fire code.
8. See also City of Clearwater's Technical Specification Section IV.

ONLY APPROVED

Kennedy Guardian No. K–81D
Mueller Super Centurion No. 250
American Darling B–84–B–5
AVK–Nostalgic 2780
EJ Co. Watermaster 5CD250

DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT POTABLE WATER DETAILS	TYPICAL FIRE HYDRANT SETTING PLAN VIEW	INDEX NO. 409	PAGE NO. 1 or 3	LATEST REVISION 10/22/2019



NOTES:
1. Steamer connection to face street
2. All fire hydrants to have 5 1/4" valve seat.
3. Fire hydrants shall be placed at street corners or in the R.O.W. adjacent to side lot lines whenever possible.
4. See Index 402, Sheet 1 of 3 for valve box settings.
5. See Index 409, Sheet 1 of 3 for typical connections & fittings.
6. Hydrant runouts shall be made of ductile iron pipe. All joints will be restrained.
7. On hydrant runouts greater than 20 feet from the center of supply valve to the center of hydrant requires a mechanical joint isolation valve at the hydrant.
8. See Index 407, for jack & bore details.
9. No lift kits allowed on new assemblies.
10. 4' minimum clearance from nearest obstruction, including back of curb and vehicular travel. 2' minimum clearance from sidewalk.
11. All hydrants must have stainless steel stem.
12. All clearances for Fire Department apparatus must conform with latest NFPA Fire code.
13. Gate Valves shall be open left only.
14. Hydrant must be installed plumb.
15. See also City of Clearwater's Technical Specification Section IV.

ONLY APPROVED

Kennedy Guardian No. K–81D
Mueller Super Centurion No. 250
American Darling B–84–B–5
AVK–Nostalgic 2780
EJ Co. Watermaster 5CD250

N.T.S.

DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT POTABLE WATER DETAILS	TYPICAL FIRE HYDRANT SETTING SECTION VIEW	INDEX NO. 409	PAGE NO. 2 or 3	LATEST REVISION 10/22/2019

100% PLANS BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
UTILITY DETAILS

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16–0003–EN	DATE DRAWN: 04–08–19	DRAWN BY: DOD	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: TAF	CHECKED BY: RF	SHEET NO.: 621
APPROVED FOR CONSTRUCTION			DATE

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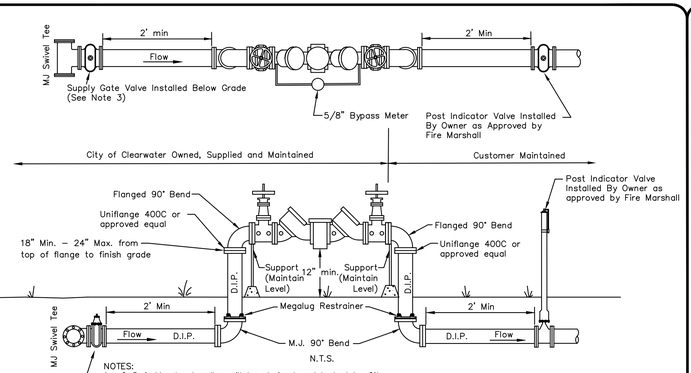
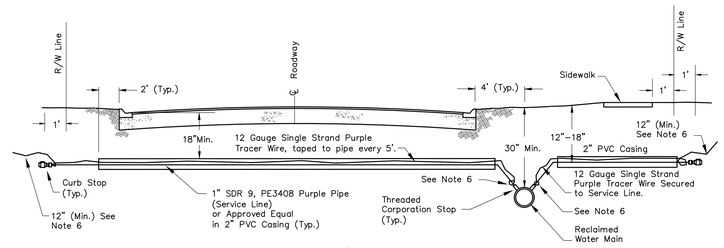


N.T.S.

NOTES:
1. O S & Y valve handles will be chained and locked by City.
2. DDCVA will be painted after installation by City.
3. Gate valve shall be set at water main. For all fire line sets over 20 feet from water main, an additional isolation gate valve shall be installed within 2' of device.
4. All pipes between the water main and Post Indicator Valve shall be ductile iron. All bells restrained.
5. Minimum of 3' clearance from back of curb and sidewalk.
6. Minimum of 3' clearance around all sides.
7. No concrete slabs allowed under device.
8. Contractor must purchase DDCVA sets from the City of Clearwater Customer Service Department (727-562-4600). City will install.
9. See also City of Clearwater's Technical Specification Section IV.

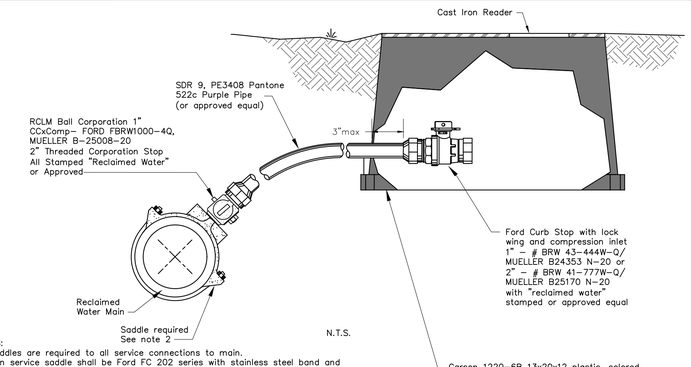
DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT POTABLE WATER DETAILS	TYPICAL FIRE LINE DDCVA 90° RISE 4", 6" & 8" MODELS	INDEX NO. 410	PAGE NO. 2 or 2	LATEST REVISION 10/21/2019

NOTES:
1. 2" PVC casing, colored Pantone 522c, shall extend to customer side of sidewalk.
2. PVC casing to be min. 18" below the surface measured from top of face of curb.
3. Reclaimed Water Mains to be min. 30" below grade and approx. 4' back of curb.
4. Curb Stop to be located approx. 1 foot back of Right-of-Way.
5. Service Line to be min. 12" and max. 18" below grade.
6. Connect 12-gauge tracer wire with tie wraps at Corporation Stop and at Curb Stop. Provide 1 foot minimum excess length of tracer wire in Meter Box.
7. 12-gauge single strand tracer wire should accompany all reclaimed Service Line installations.
8. 2" SDR 9 purple pipe or approved equal Service Line shall be in 4" casing, colored Pantone 522c.
9. See also City of Clearwater's Technical Specification Section IV.



N.T.S.

DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT RECLAIMED WATER DETAILS	RECLAIMED WATER MAIN SERVICE LINES TYPICAL SECTION	INDEX NO. 501	PAGE NO. 1 or 2	LATEST REVISION 10/21/2019



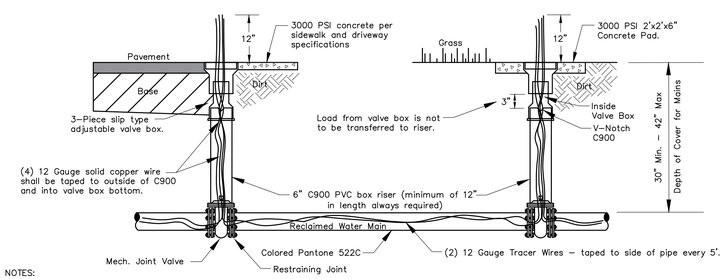
N.T.S.

NOTES:
1. Saddles are required to all service connections to main.
2. Iron service saddle shall be Ford FC 202 series with stainless steel band and epoxy coated ductile iron body, or approved equal.
5. Taps should be made on a 45° angle from top of pipe. For cover less than 30", City of Clearwater Engineering Department approval is required.
6. For all other taps that can not be done as described above refer to Potable Water Main Service Connection Detail, (Swing Joint Installation).
7. Stiffeners shall be manufactured by Mars Company P.O. Box 830340, Ocala, FL 34483
8. See also City of Clearwater's Technical Specifications Section IV.

DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT RECLAIMED WATER DETAILS	RESIDENTIAL RECLAIMED WATER CONNECTION	INDEX NO. 501	PAGE NO. 2 or 2	LATEST REVISION 10/21/2019

Roadway/Sidewalk Installation

Green Space Installation

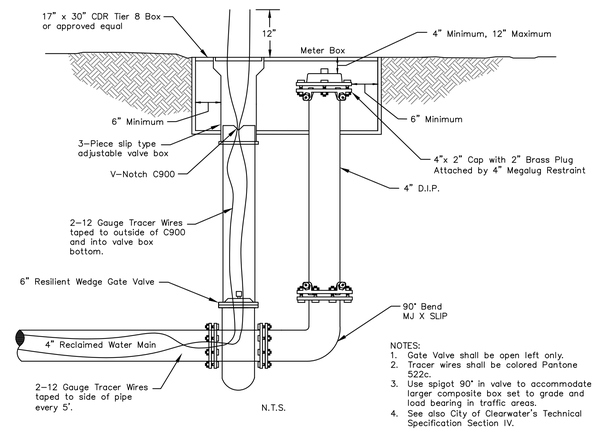


NOTES:
1. Must center operation nut in box
2. C900 Riser to be one continuous section and color coded Pantone 522c.
3. Gate Valves shall be open left only.
4. Valve key extensions required on valves with operator nut over 3' deep.
5. Tracer Wire required in all applications including on D.I.P. and colored Pantone 522c.
6. See also City of Clearwater's Technical Specification Section IV.

SECTION VIEW

N.T.S.

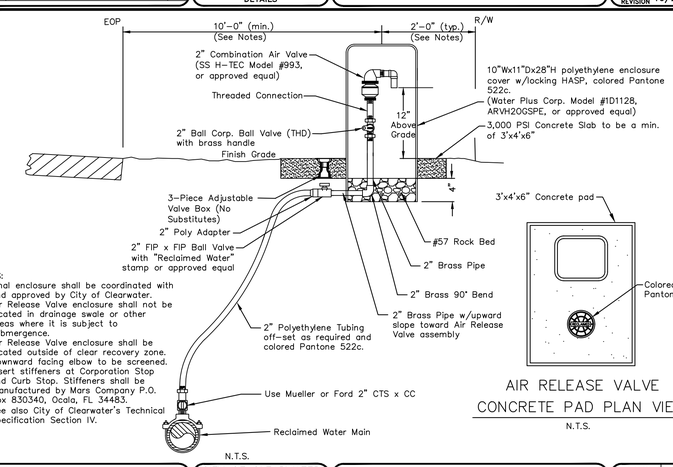
DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT RECLAIMED WATER DETAILS	RECLAIMED WATER TYPICAL VALVE & BOX SETTINGS	INDEX NO. 502	PAGE NO. 1 or 3	LATEST REVISION 10/21/2019



N.T.S.

NOTES:
1. Gate Valve shall be open left only.
2. Tracer wires shall be colored Pantone 522c.
3. Use spigot 90° in valve to accommodate 1 larger composite box set to grade and load bearing in traffic areas.
4. See also City of Clearwater's Technical Specification Section IV.

DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT RECLAIMED WATER DETAILS	RECLAIMED 4" BLOWOFF DETAIL	INDEX NO. 503	PAGE NO. 2 or 2	LATEST REVISION 11/08/2019



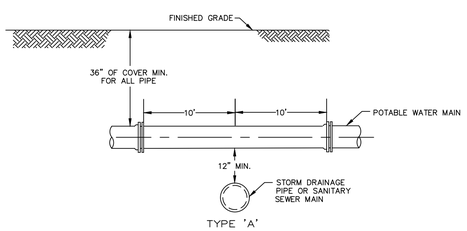
NOTES:
1. Final enclosure shall be coordinated with and approved by City of Clearwater.
2. Air Release Valve enclosure shall not be located in drainage swale or other areas where it is subject to submergence.
3. Air Release Valve enclosure shall be located outside of clear recovery zone.
4. Downward facing elbow to be screened.
5. Insert stiffeners at Corporation Stop and Curb Stop. Stiffeners shall be manufactured by Mars Company P.O. Box 830340, Ocala, FL 34483.
6. See also City of Clearwater's Technical Specification Section IV.

N.T.S.

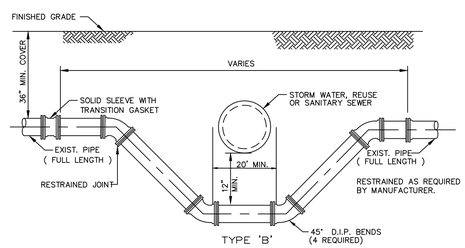
AIR RELEASE VALVE CONCRETE PAD PLAN VIEW

N.T.S.

DATE	REVISION DESCRIPTION	APP	CITY OF CLEARWATER ENGINEERING DEPARTMENT RECLAIMED WATER DETAILS	TYPICAL AIR RELEASE VALVE RECLAIMED WATER APPLICATION	INDEX NO. 505	PAGE NO. 1 or 1	LATEST REVISION 10/21/2019



TYPE 'A'



TYPE 'B'

NOTES:

1. TYPE "A" CROSSING SHALL BE THE PREFERRED CONFIGURATION. TYPE "B" MAY BE USED ONLY UPON SPECIFIC APPROVAL.
2. CONCRETE ENCASEMENT OF A SANITARY SEWER MAIN IS AN ALTERNATIVE METHOD OF ADDRESSING A CONFLICT WHEN 12" VERTICAL SEPARATION DISTANCE CANNOT BE MAINTAINED. IN SUCH INSTANCES, THE MINIMUM PIPE VERTICAL SEPARATION SHALL BE 9". (NOTE THAT THIS DOES NOT APPLY TO SERVICE LATERALS)
3. LOWERING OF EXISTING WATER MAIN & FORCE MAIN BY DEFLECTION METHOD MAY BE ACCEPTABLE IF EXISTING FIELD CONDITIONS PERMIT.
4. LENGTH OF SECTION BASED ON MINIMUM LENGTH AS DETERMINED BY DIPRA RESTRAINED JOINT MANUAL
5. INSTALL RESTRAINED JOINTS, AS REQUIRED, FROM DEFLECTION POINT IN BOTH DIRECTIONS (20' MIN.)

TYPICAL PIPE CROSSING DETAIL

N.T.S.

100% PLANS BID SET

REVISION	BY	DATE

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P.E. License Number: 62962

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CLEVELAND STREET PHASE III AND FESTIVAL CORE UTILITY DETAILS

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16–0003–EN	DATE DRAWN: 04–08–19	DRAWN BY: DOD	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: TAF	CHECKED BY: RF	SHEET NO.: 622

APPROVED FOR CONSTRUCTION _____ DATE

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Key Map
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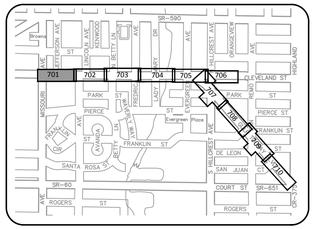
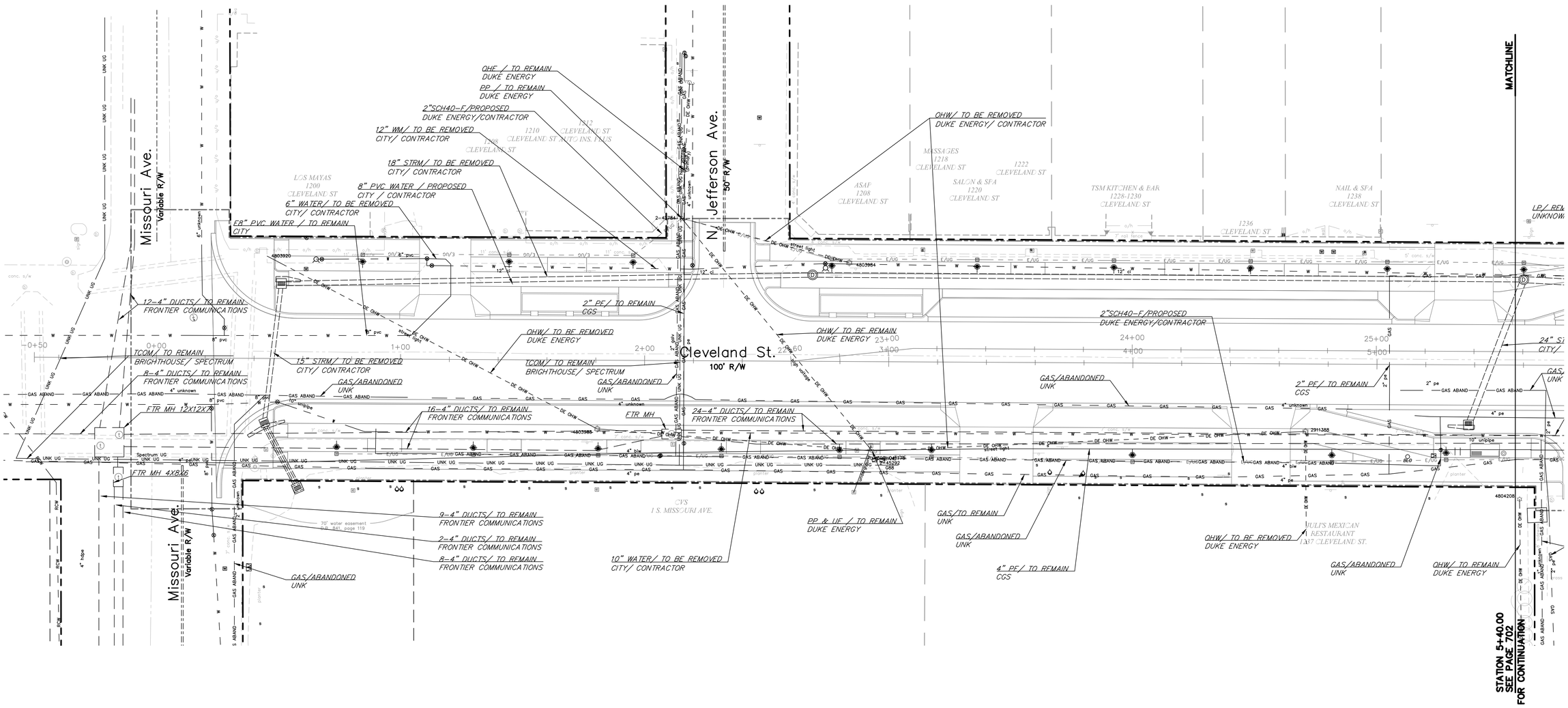


0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)



NOTES:
1. ALL LIGHT POLES SERVICES BY DUKE ENERGY, TO BE REMOVED, UNLESS OTHERWISE NOTED.
2. CONTRACTOR TO FURNISH AND INSTALL CONDUIT AND STUB-UP AT EACH PROPOSED STREET LIGHT LOCATION. CONTRACTOR SHALL COORDINATE WITH DUKE ENERGY AND CITY OF CLEARWATER FOR LIGHTING LOCATION PRIOR TO THE START OF CONSTRUCTION.
3. DUKE ENERGY TO FURNISH AND INSTALL STREET LIGHT FIXTURES.

100% PLANS
BID SET

REVISION	BY	DATE

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Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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Cleveland Street Phase III And Festival Core UTILITY ADJUSTMENT PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CED	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: CMN	SHEET NO.: 701
APPROVED FOR CONSTRUCTION			DATE

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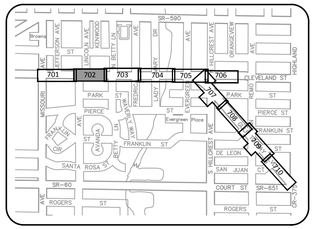
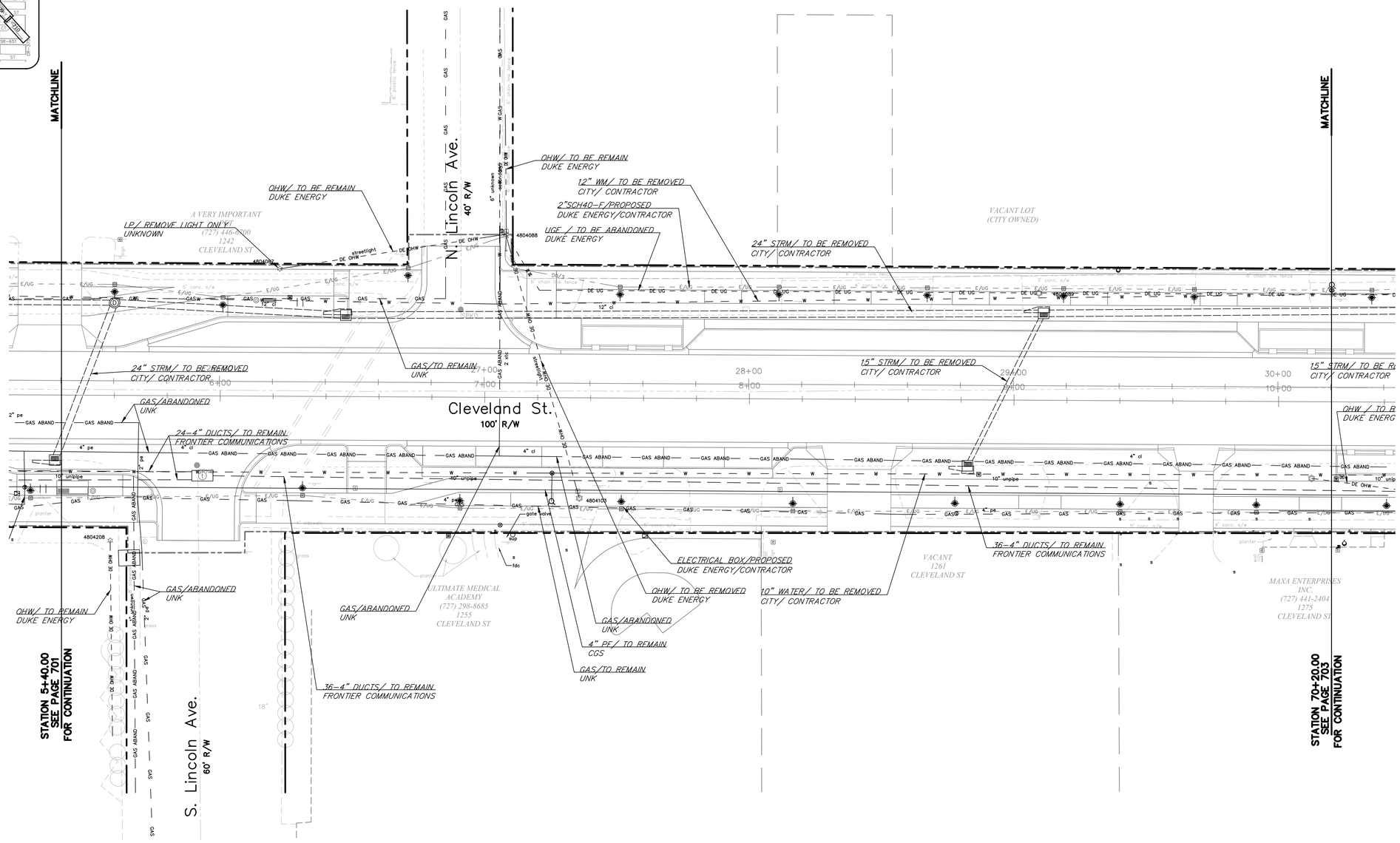
Key Map
(N.T.S.)





0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)

NOTES:
1. ALL LIGHT POLES SERVICES BY DUKE ENERGY, TO BE REMOVED, UNLESS OTHERWISE NOTED.
2. CONTRACTOR TO FURNISH AND INSTALL CONDUIT AND STUB-UP AT EACH PROPOSED STREET LIGHT LOCATION. CONTRACTOR SHALL COORDINATE WITH DUKE ENERGY AND CITY OF CLEARWATER FOR LIGHTING LOCATION PRIOR TO THE START OF CONSTRUCTION.
3. DUKE ENERGY TO FURNISH AND INSTALL STREET LIGHT FIXTURES.

100% PLANS
BID SET

REVISION	BY	DATE

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Cleveland Street Phase III And Festival Core UTILITY ADJUSTMENT PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CED	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: CMN	SHEET NO.: 702
APPROVED FOR CONSTRUCTION			DATE

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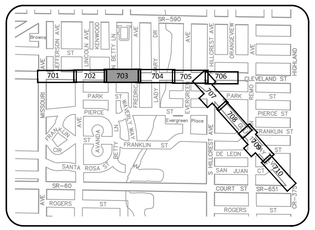
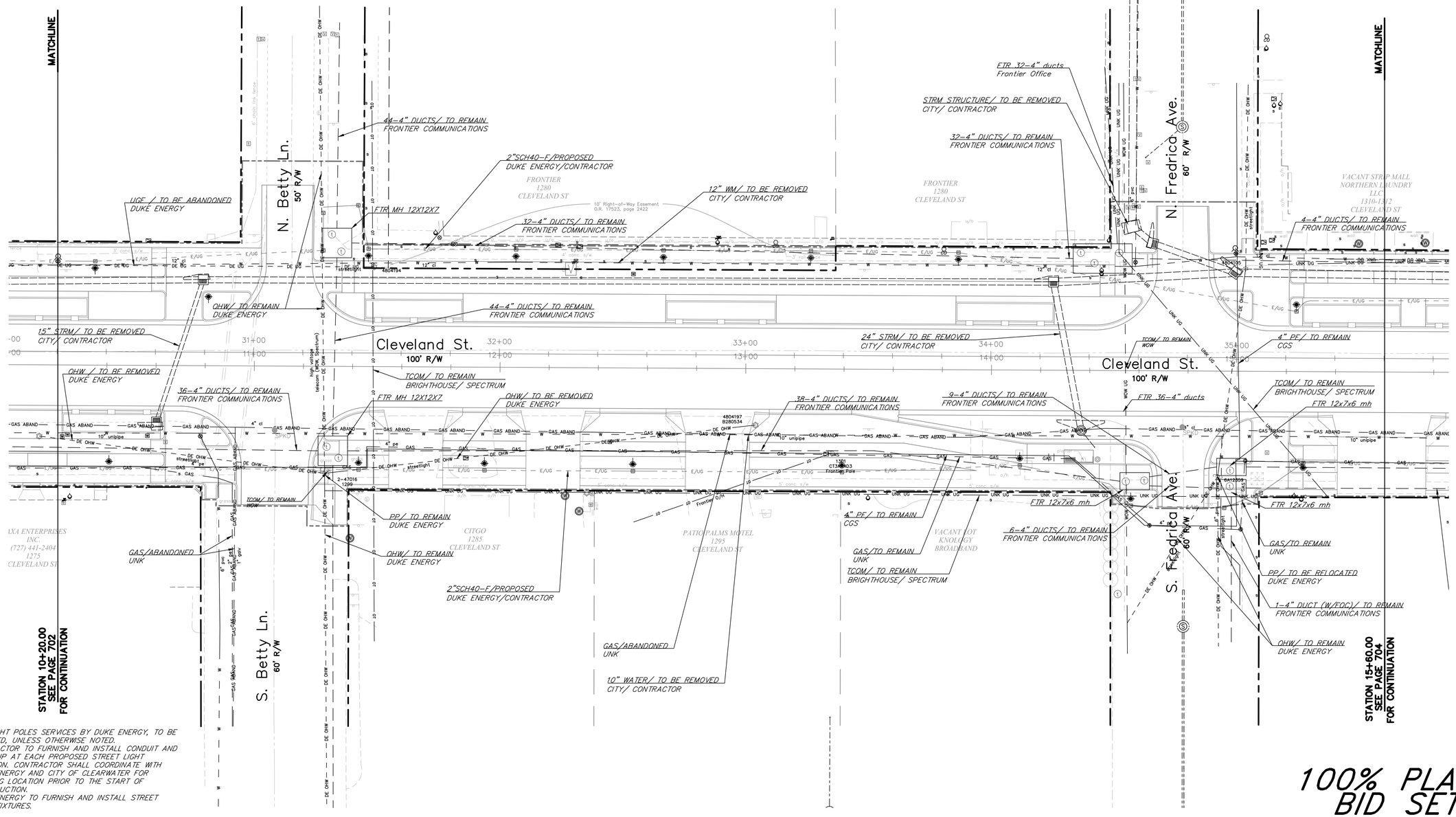
Key Map
(N.T.S.)





NOTES:
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3. DUKE ENERGY TO FURNISH AND INSTALL STREET LIGHT FIXTURES.

100% PLANS
BID SET

REVISION	BY	DATE

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Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
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Cleveland Street Phase III
And Festival Core
UTILITY ADJUSTMENT PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CED	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: CMN	SHEET NO.: 703
APPROVED FOR CONSTRUCTION			DATE

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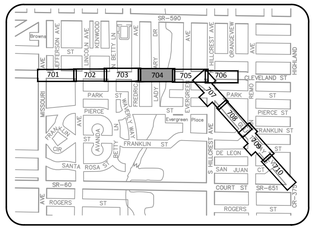
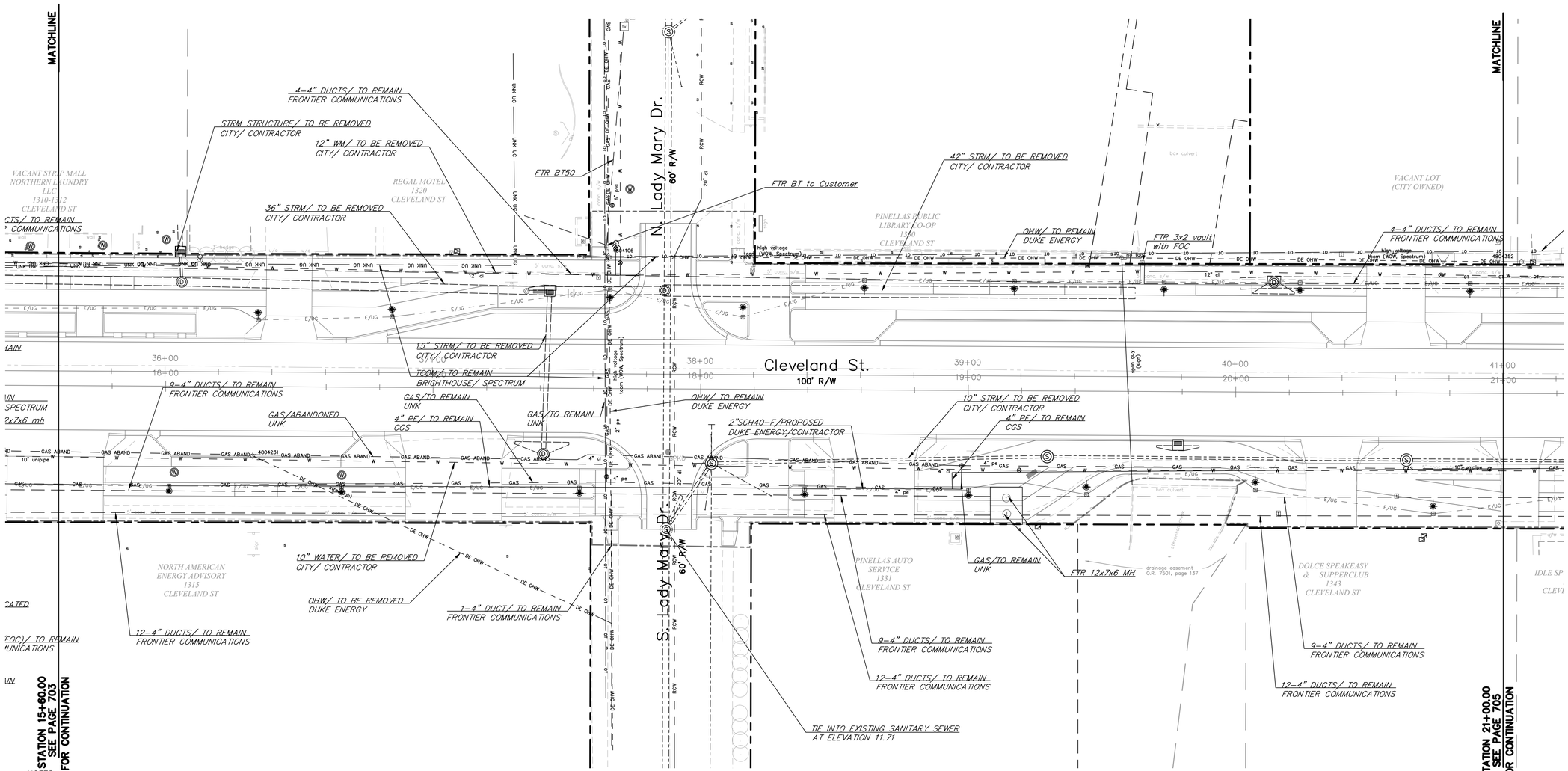
Key Map
(N.T.S.)



0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)



NOTES:
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3. DUKE ENERGY TO FURNISH AND INSTALL STREET LIGHT FIXTURES.

100% PLANS
BID SET

REVISION	BY	DATE

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3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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Cleveland Street Phase III And Festival Core UTILITY ADJUSTMENT PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CED	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: CMN	SHEET NO.: 704
APPROVED FOR CONSTRUCTION			DATE

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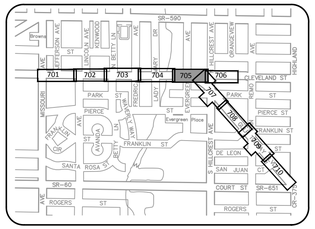
Key Map
(N.T.S.)



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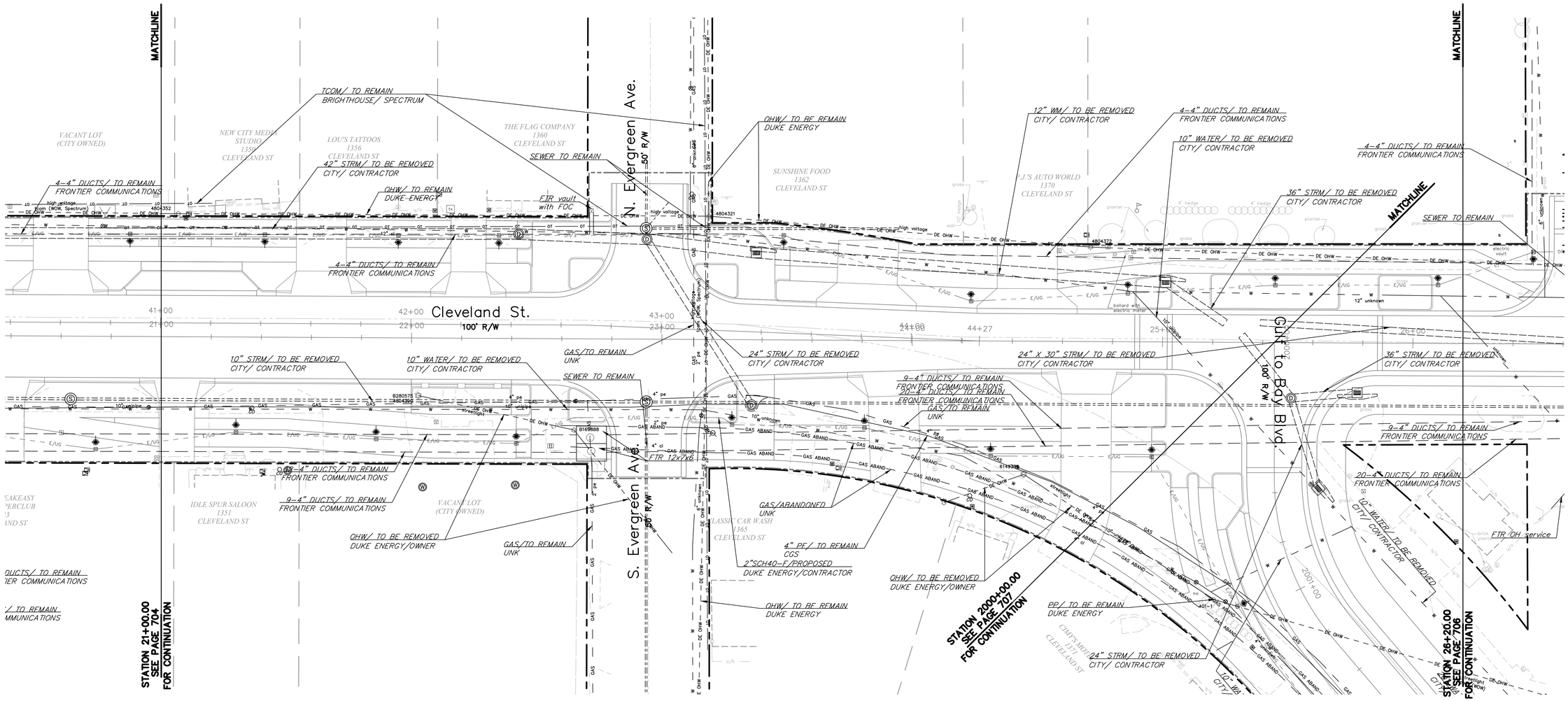
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)



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Cleveland Street Phase III And Festival Core UTILITY ADJUSTMENT PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CED	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: CMN	SHEET NO.: 705

APPROVED FOR CONSTRUCTION _____ DATE

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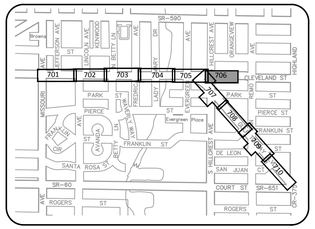
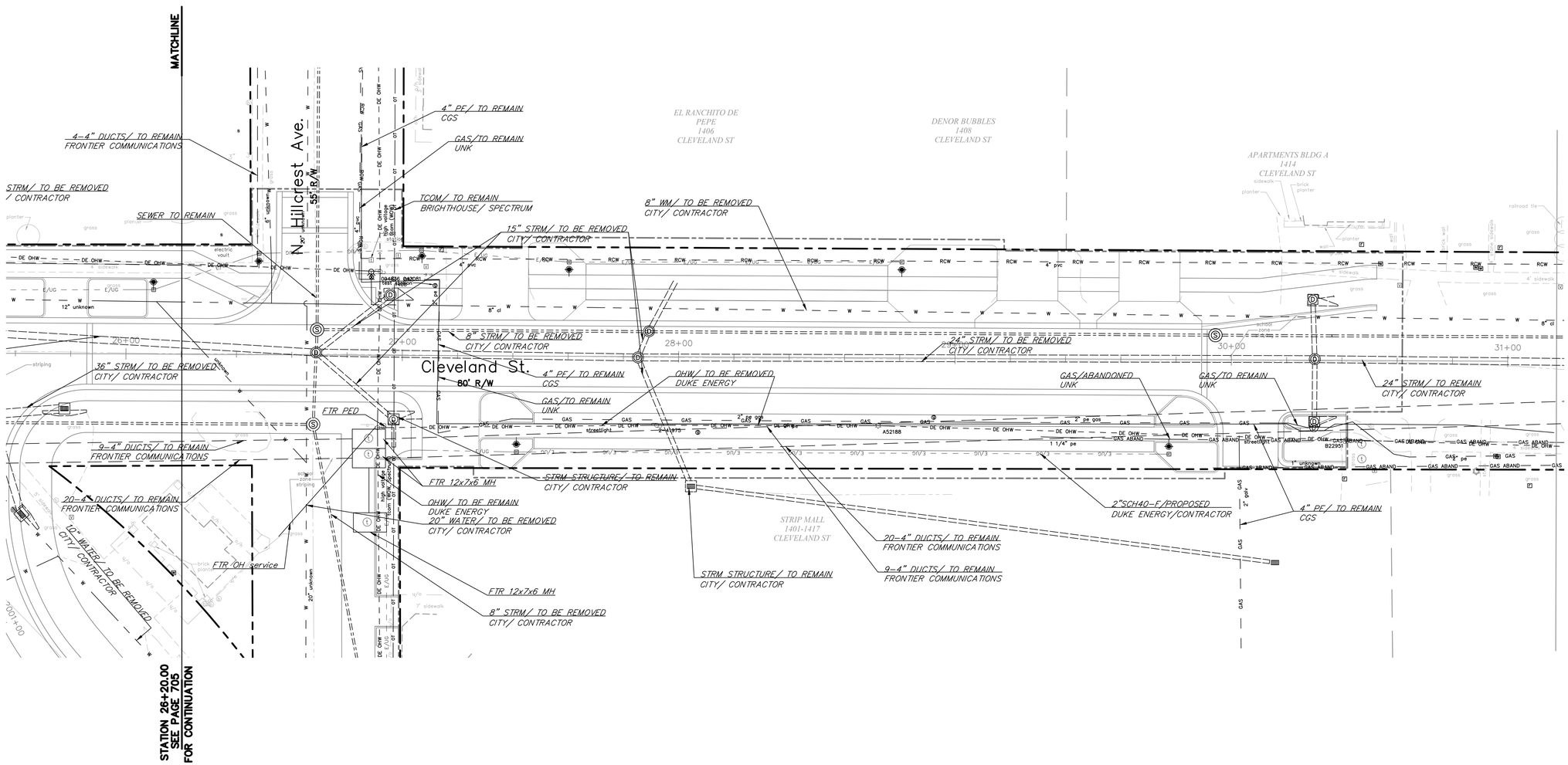
Key Map
(N.T.S.)



0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)



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Cleveland Street Phase III And Festival Core UTILITY ADJUSTMENT PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CED	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: CMN	SHEET NO.: 706

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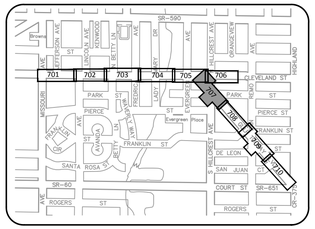
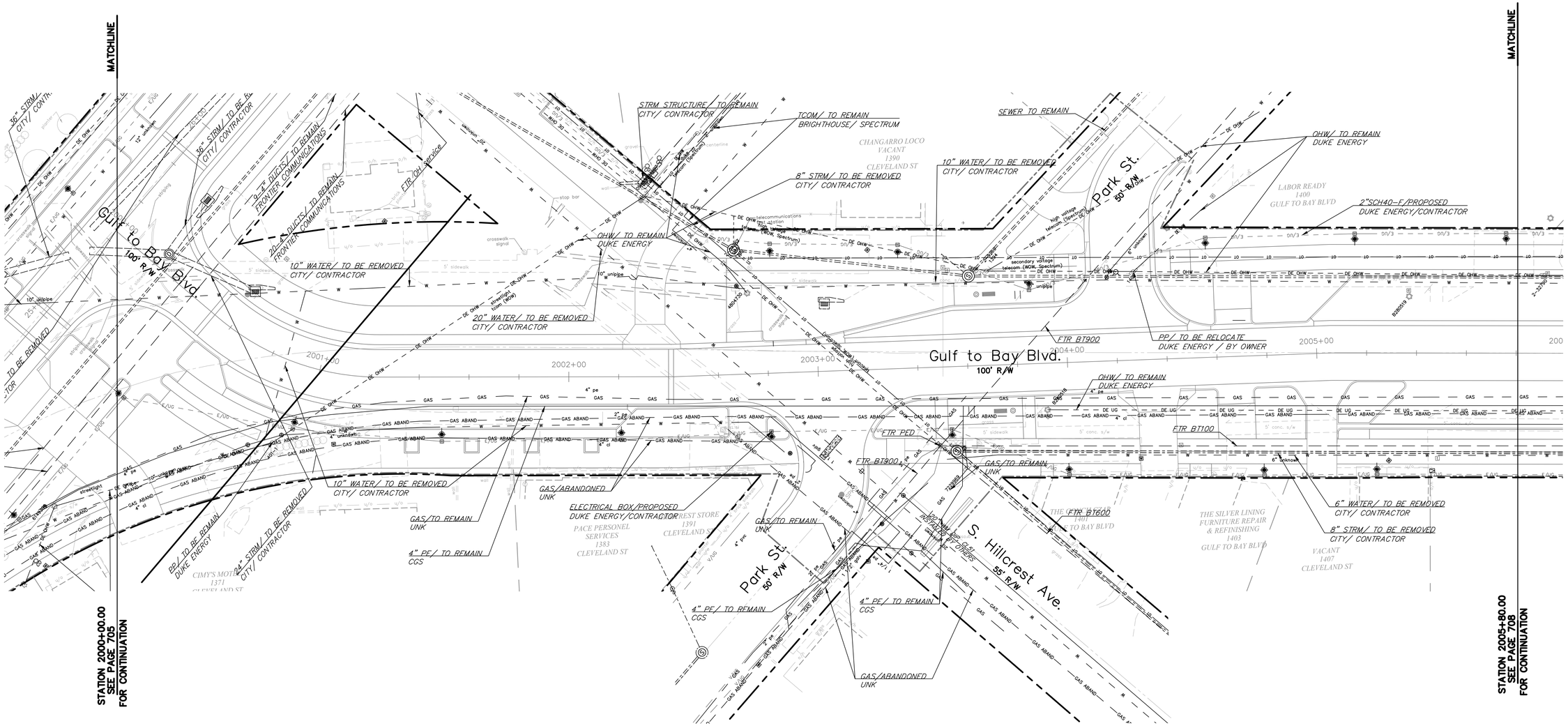
Key Map
(N.T.S.)



0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)



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JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: CMN	SHEET NO.: 707

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Key Map
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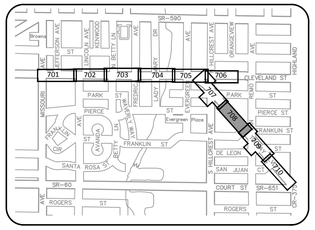
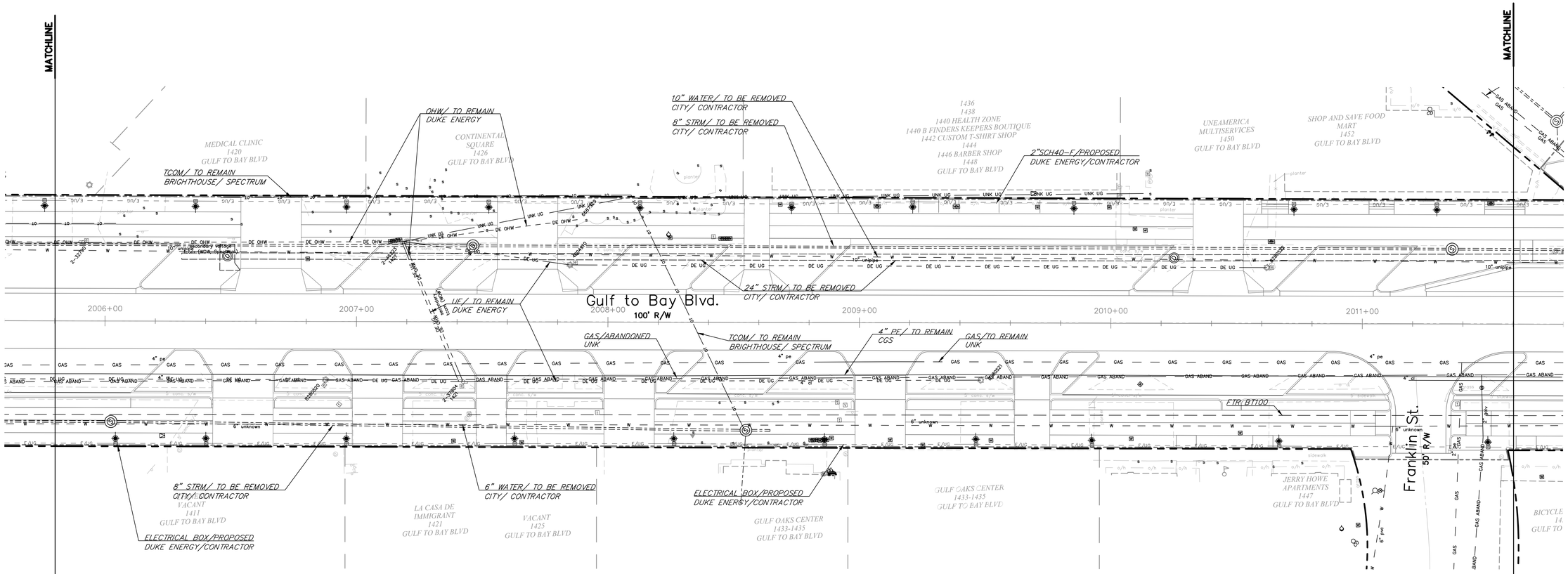


0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)



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Cleveland Street Phase III
And Festival Core
UTILITY ADJUSTMENT PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: CED	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: CMN	SHEET NO.: 708

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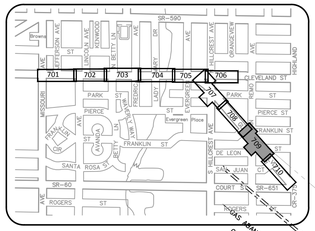

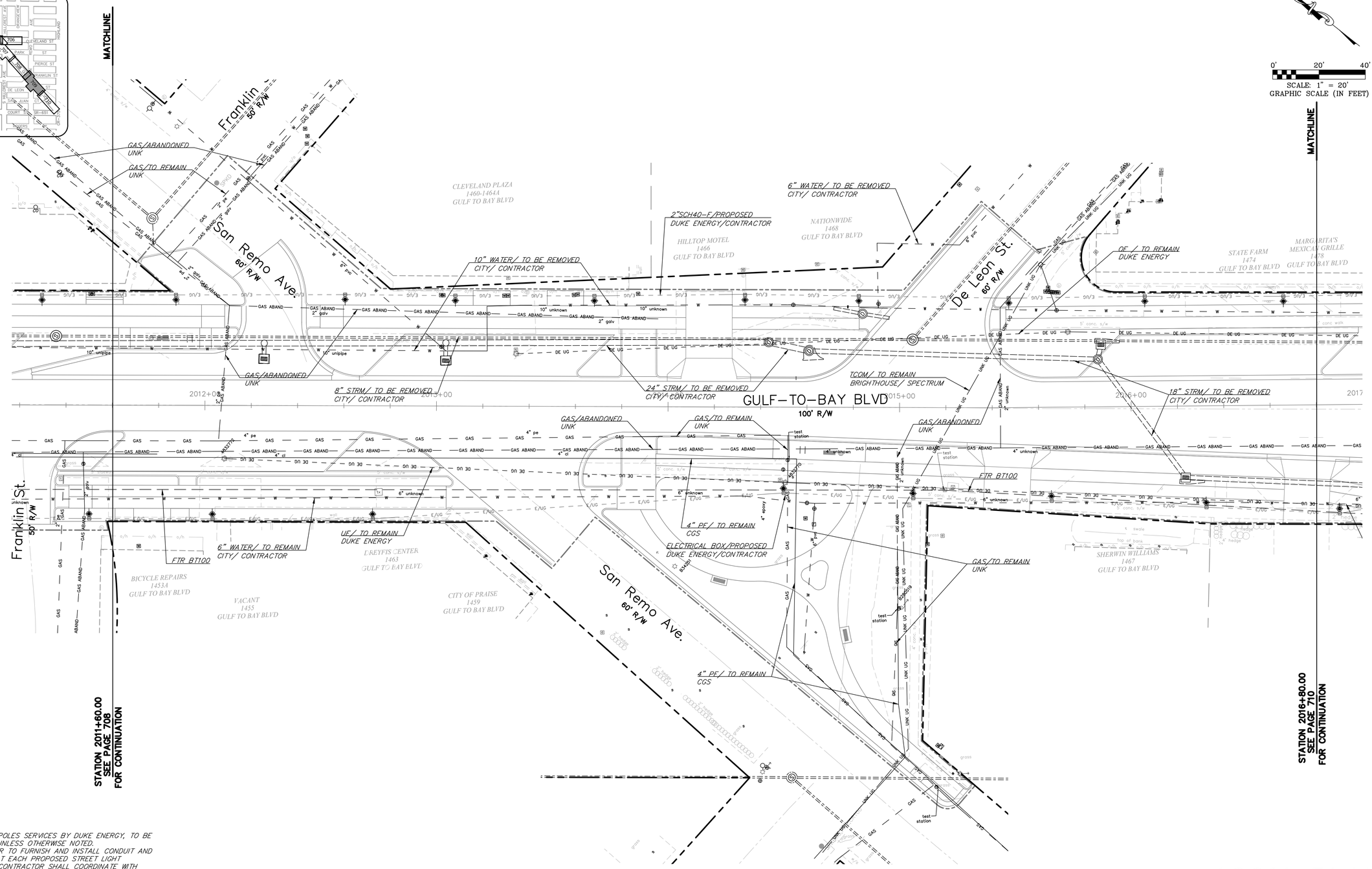

0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)

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Cleveland Street Phase III And Festival Core UTILITY ADJUSTMENT PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
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JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: CMN	SHEET NO.: 709

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Key Map
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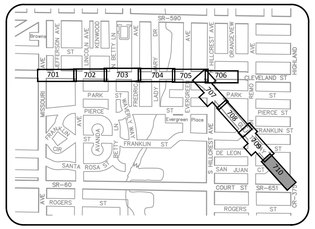

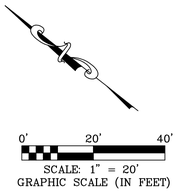

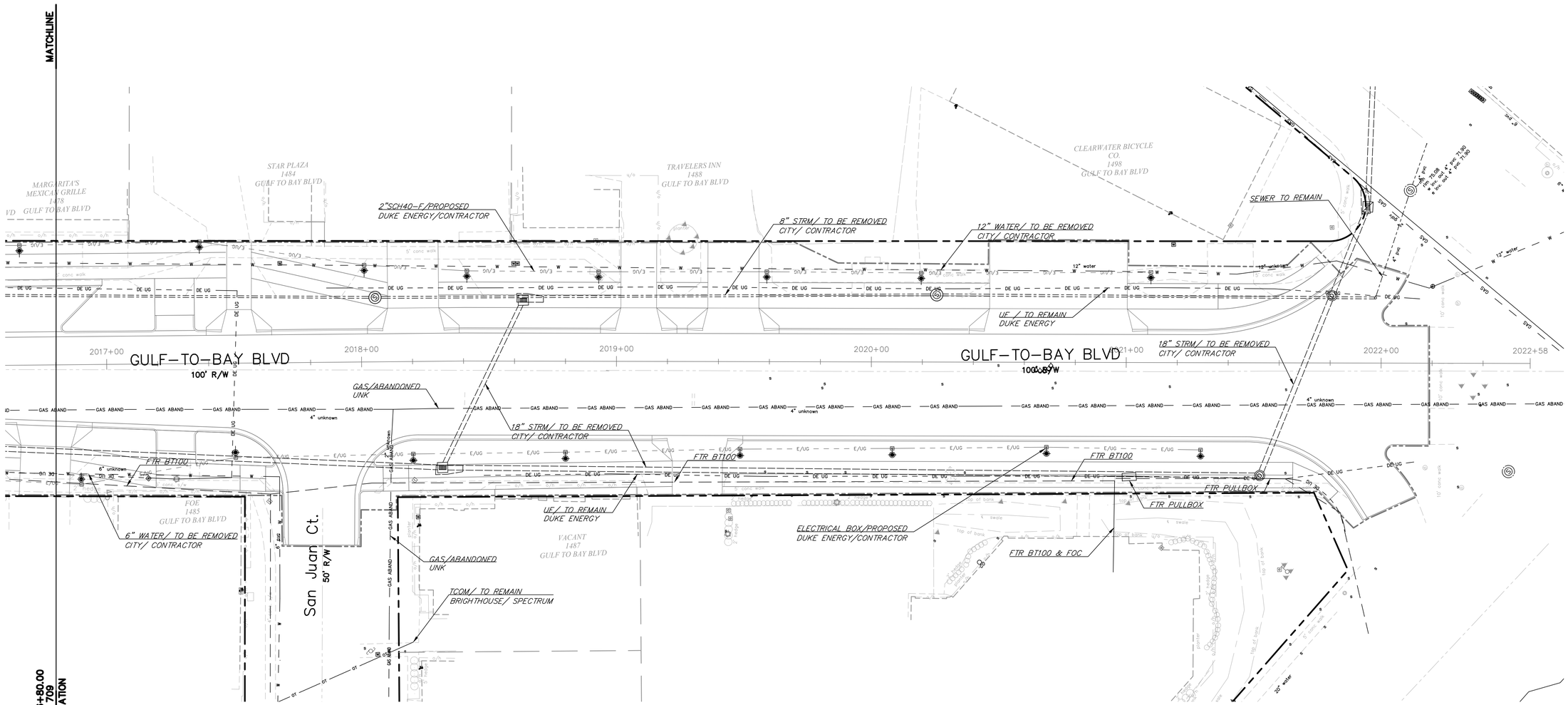

STATION 2016+80.00
SEE PAGE 709
FOR CONTINUATION

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Cleveland Street Phase III And Festival Core UTILITY ADJUSTMENT PLAN

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JOB NO.: A181093.02	DESIGNED BY: CMN	CHECKED BY: CMN	SHEET NO.: 710
APPROVED FOR CONSTRUCTION			DATE

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X

0' 20' 40'
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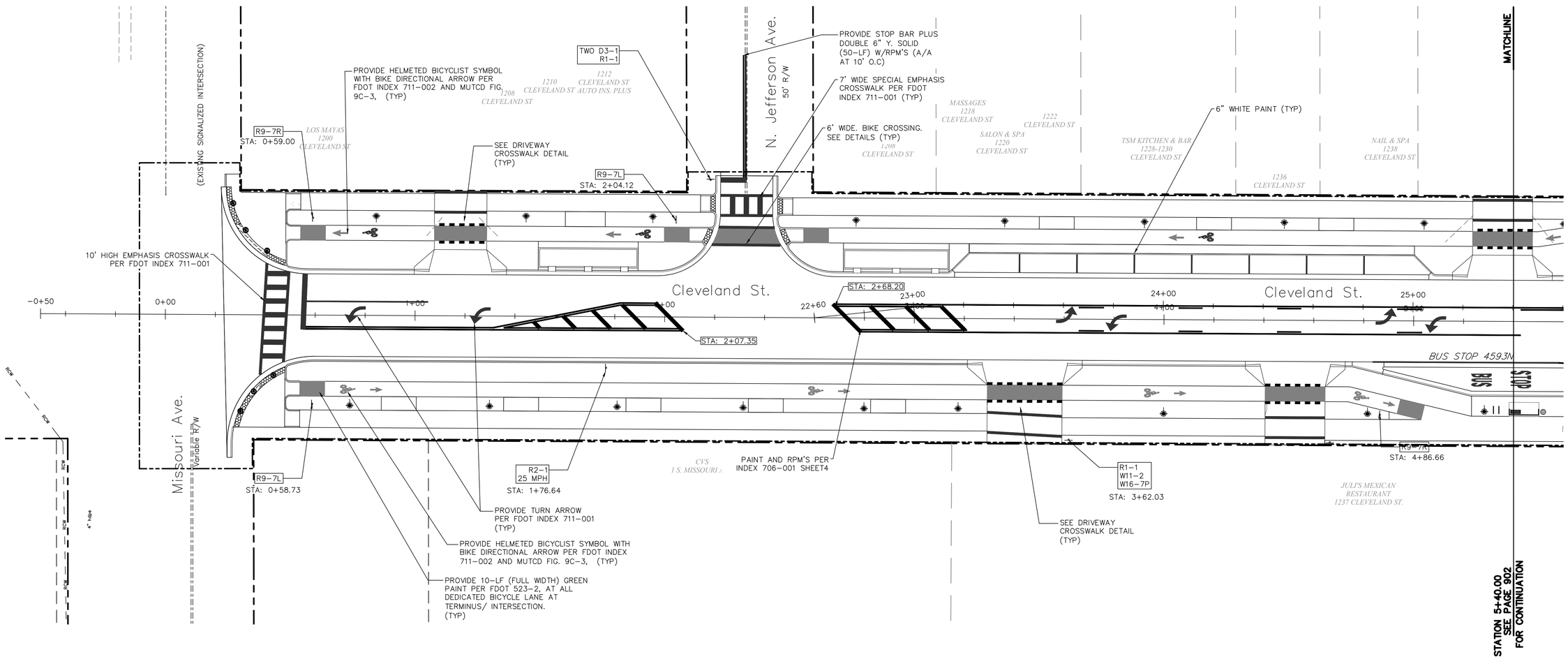
GRAPHIC SCALE (IN FEET)



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CLEVELAND STREET PHASE III AND FESTIVAL CORE TRAFFIC SIGN & PAVEMENT MARKING PLANS

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: DOD	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: TAF	CHECKED BY: RF	SHEET NO.: 901

APPROVED FOR CONSTRUCTION _____ DATE

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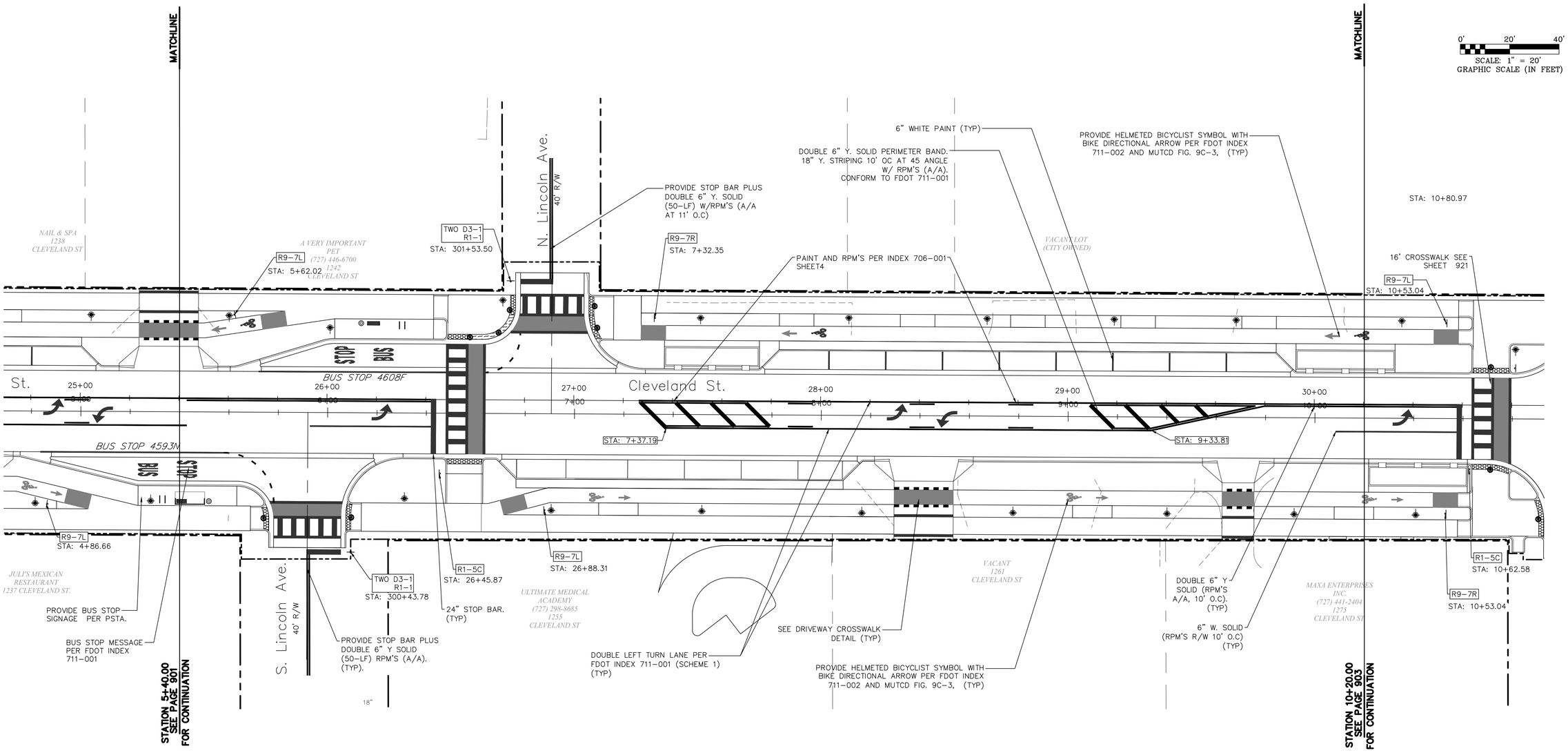

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JOB NO.: A181093.02	DESIGNED BY: TAF	CHECKED BY: RF	SHEET NO.: 902

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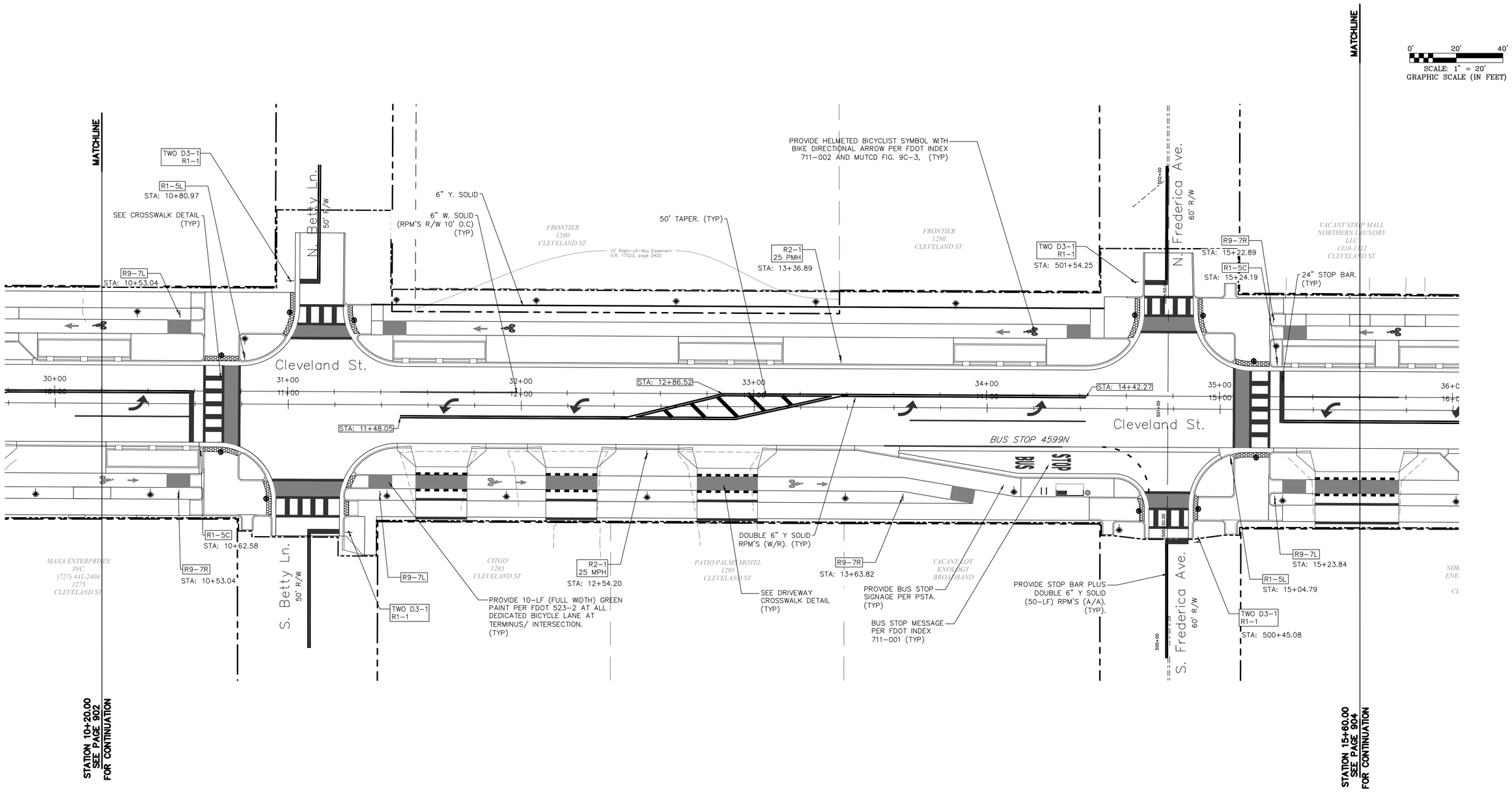
X



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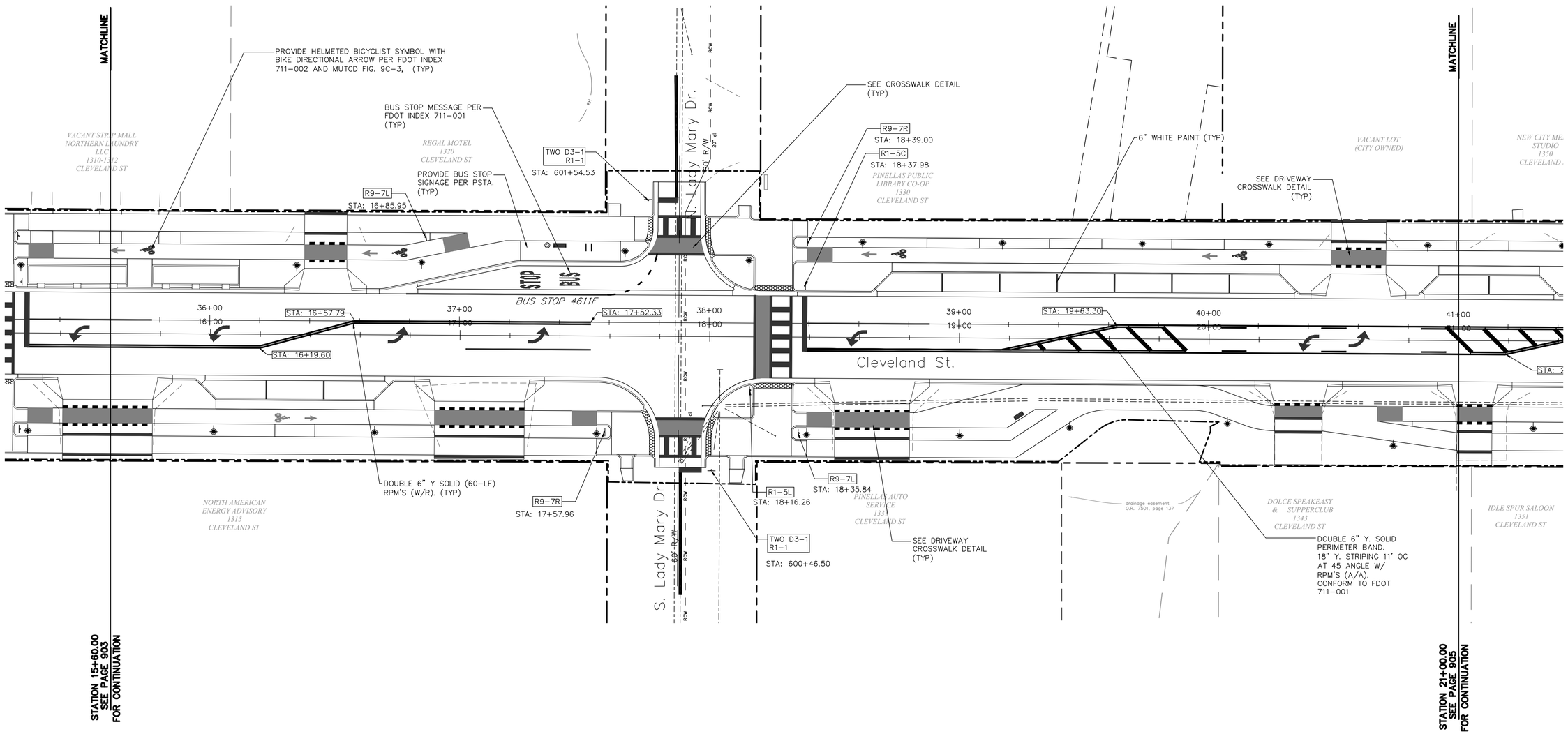
JOB NO.: A181093.02	DESIGNED BY: TAF	CHECKED BY: RF	SHEET NO.: 903

APPROVED FOR CONSTRUCTION _____ DATE

X

0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)



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CLEVELAND STREET PHASE III
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TRAFFIC SIGN & PAVEMENT MARKING PLANS

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JOB NO.: A181093.02	DESIGNED BY: TAF	CHECKED BY: RF	SHEET NO.: 904

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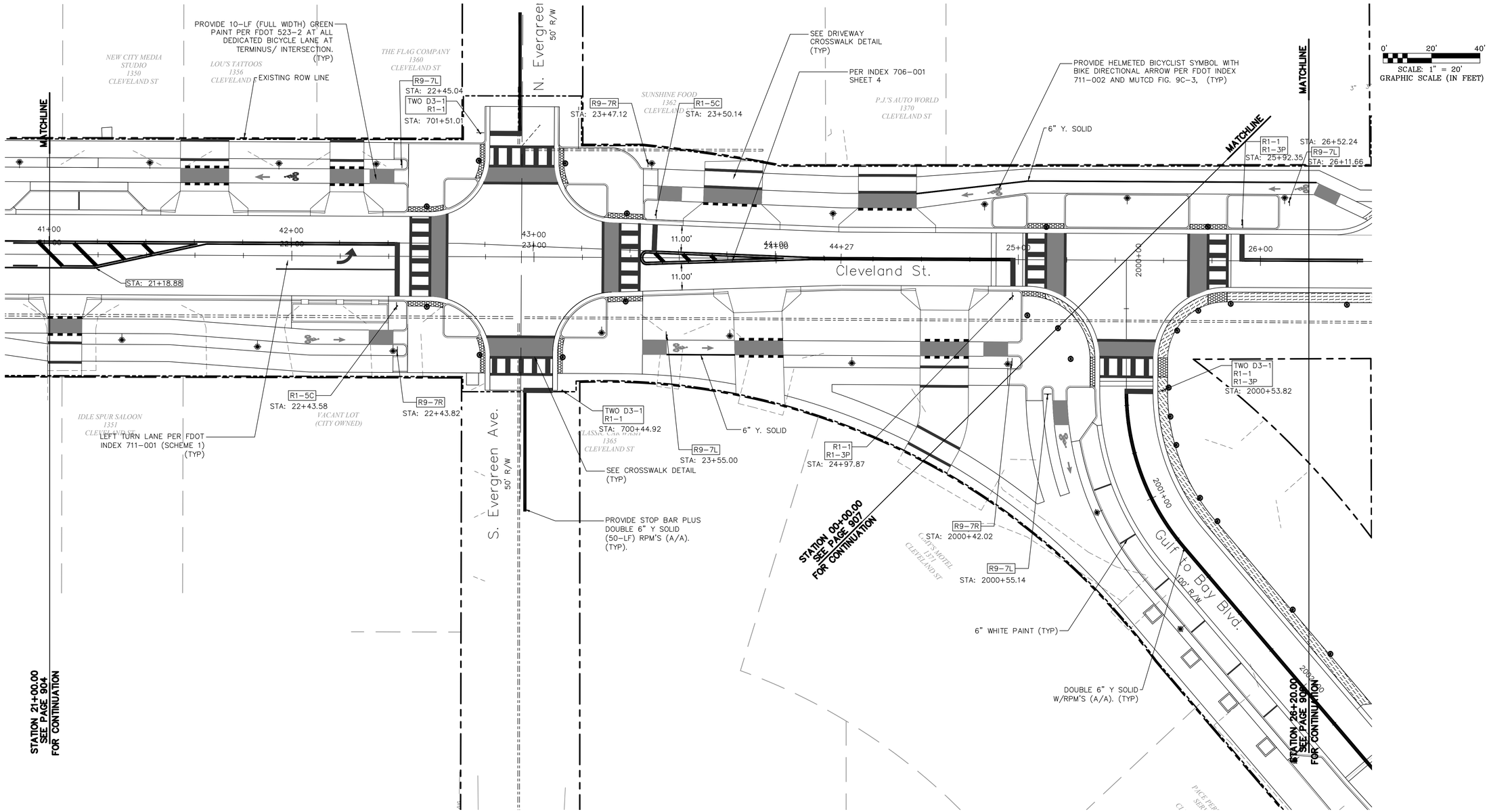

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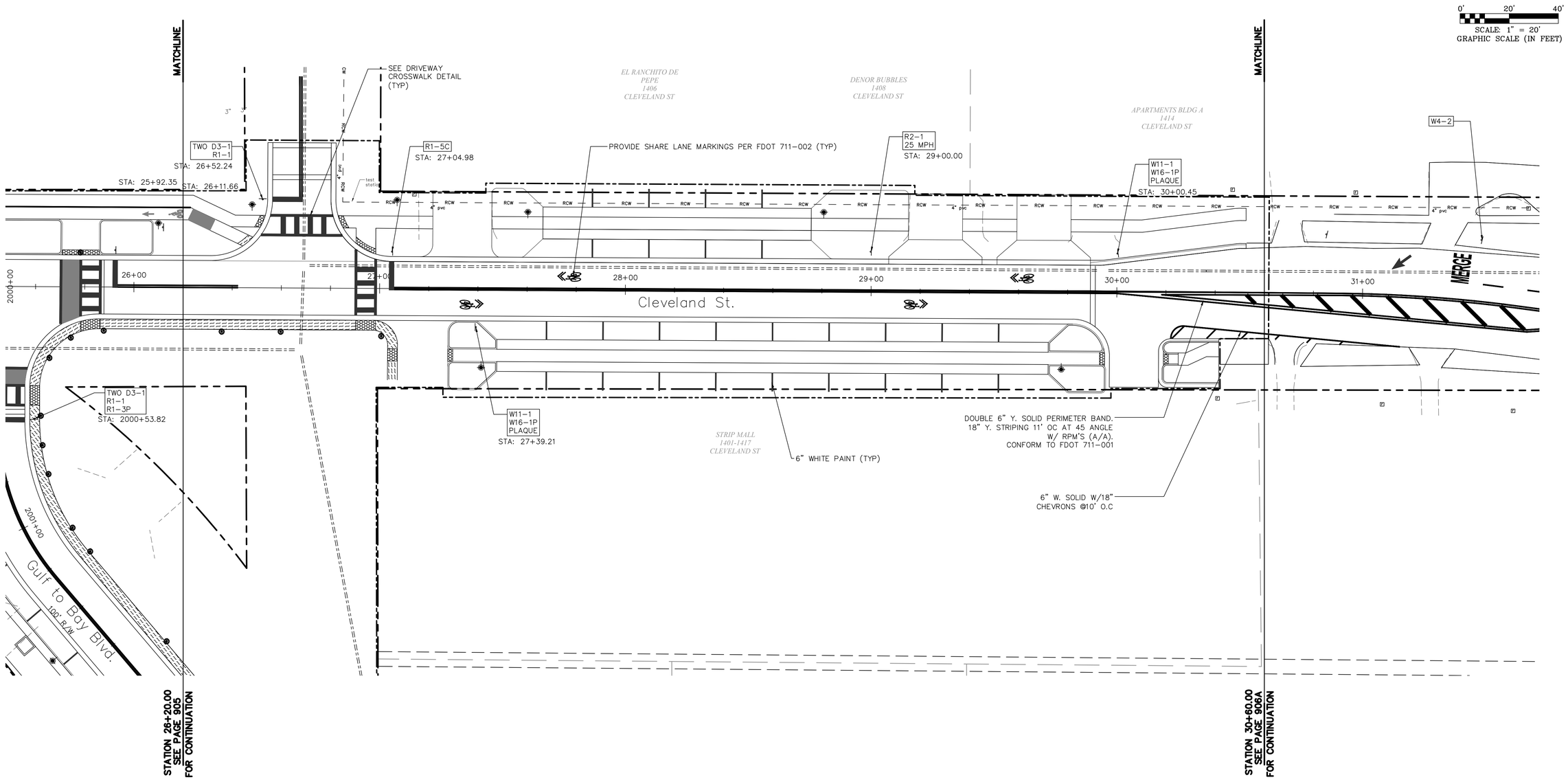
CLEVELAND STREET PHASE III AND FESTIVAL CORE TRAFFIC SIGN & PAVEMENT MARKING PLANS

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: DOD	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: TAF	CHECKED BY: RF	SHEET NO.: 905

APPROVED FOR CONSTRUCTION _____ DATE

X



100% PLANS
BID SET

REVISION	BY	DATE

gai consultants
3820 Northdale Boulevard, Suite 102B
Tampa, FL 33624
Certificate of Authorization 9951
EOR: Christina M. Newcomb, P.E.
P.E. License Number: 62962

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CLEVELAND STREET PHASE III AND FESTIVAL CORE TRAFFIC SIGN & PAVEMENT MARKING PLANS

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CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: DOD	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: TAF	CHECKED BY: RF	SHEET NO.: 906

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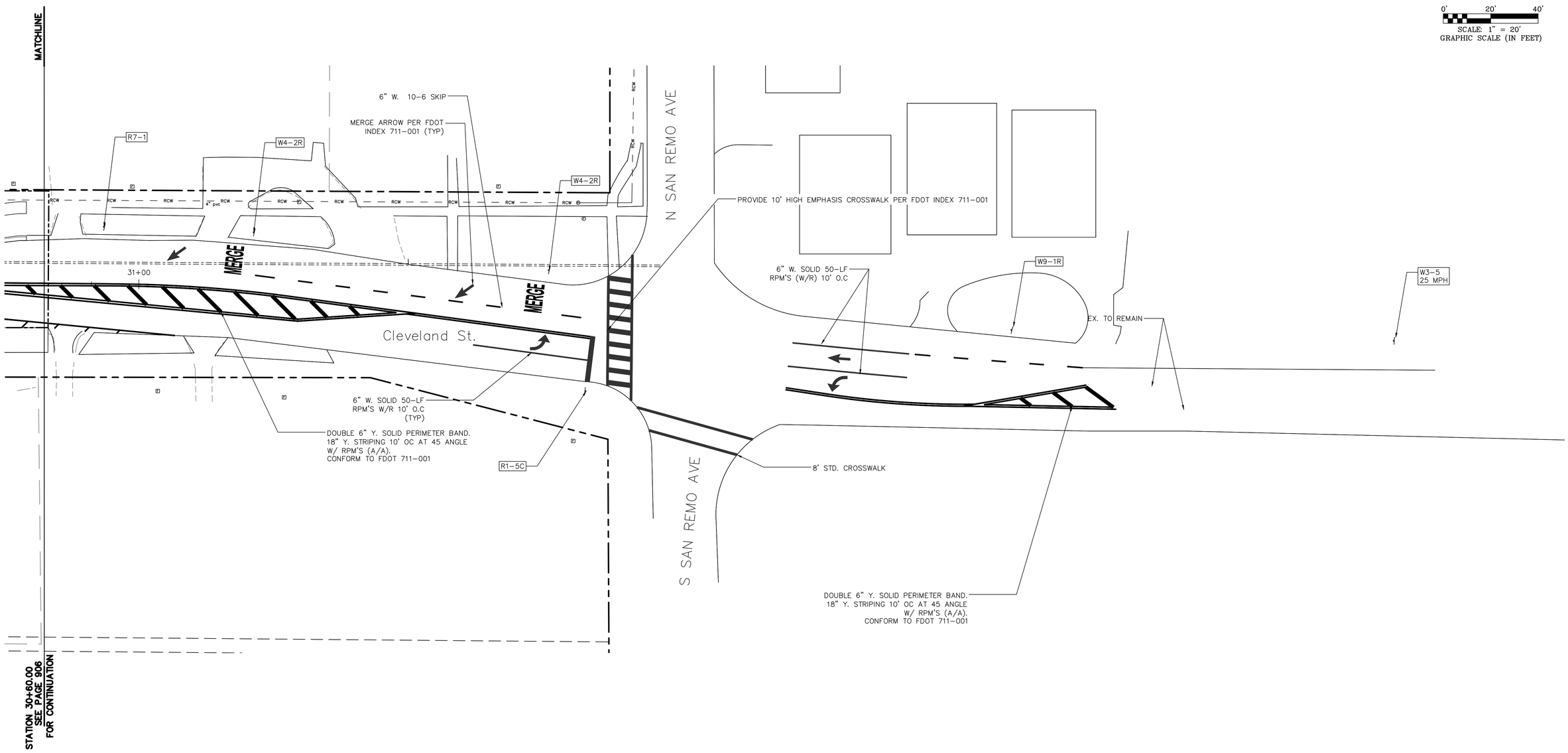

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CLEVELAND STREET PHASE III AND FESTIVAL CORE TRAFFIC SIGN & PAVEMENT MARKING PLANS

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CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: DOD	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: TAF	CHECKED BY: RF	SHEET NO.: 906A

APPROVED FOR CONSTRUCTION _____ DATE

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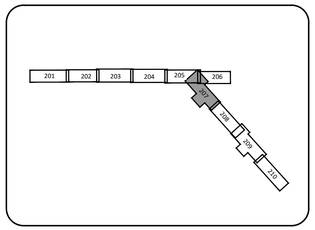
Key Map
(N.T.S.)



0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)

MATCHLINE

TWO D3-1
R1-1

STA: 26+52.24

STA: 26+11.66

STA: 25+92.35

STA: 27+39.21

TWO D3-1
R1-1
R1-3P

STA: 2000+53.82

Page 905
Page 907

R1-5L
STA: 2002+79.78

telecommunications test station

SEE DRIVEWAY CROSSWALK DETAIL (TYP)

CHANGARRO LOCO
VACANT
1390
CLEVELAND ST

TWO D3-1
R1-1

R6-1

PROVIDE BUS STOP SIGNAGE PER PSTA. (TYP)

Park S
50' R/W

PROVIDE HELMETED BICYCLIST SYMBOL WITH BIKE DIRECTIONAL ARROW PER FDOT INDEX 711-002 AND MUTCD FIG. 9C-3, (TYP)

PROVIDE STOP BAR PLUS DOUBLE 6" Y SOLID (50-LF) RPM'S (A/A). (TYP).

LABOR READY
1400
GULF TO BAY BLVD

R1-5C
STA: 2004+80.15

BUS STOP 4543F

BUS STOP

2000+00
2001+00
2002+00
2003+00
2004+00
2005+00

Gulf to Bay Blvd.
100' R/W

BUS STOP 4545F

24" STOP BAR. (TYP)

R1-5C
STA: 2002+57.43

DOUBLE 6" Y SOLID W/RPM'S (A/A). (TYP)

PACE PERSONEL SERVICES
1383
CLEVELAND ST

HILLCREST STORE
1391
CLEVELAND ST

SEE CROSSWALK DETAIL (TYP)

STA: 24+97.87

CIMY'S MOTEL
1371
CLEVELAND ST

Park St
50' R/W

TWO D3-1
R1-1

R9-7L
STA: 2003+33.28

Hillcrest Ave.
55' R/W

205'

PROVIDE BUS STOP SIGNAGE PER PSTA. (TYP)

1401
GULF TO BAY BLVD

R1-5L
STA: 2004+58.31

THE SILVER LINING FURNITURE REPAIR & REFINISHING
1403
GULF TO BAY BLVD

6" WHITE SOLID. PAINT (TYP)

VACANT
1407
CLEVELAND ST

W14-1

OM1-1

STATION 00+00.00
SEE PAGE 905
FOR CONTINUATION

STATION 5+80.00
SEE PAGE 908
FOR CONTINUATION

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CLEVELAND STREET PHASE III
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TRAFFIC SIGN & PAVEMENT MARKING PLANS

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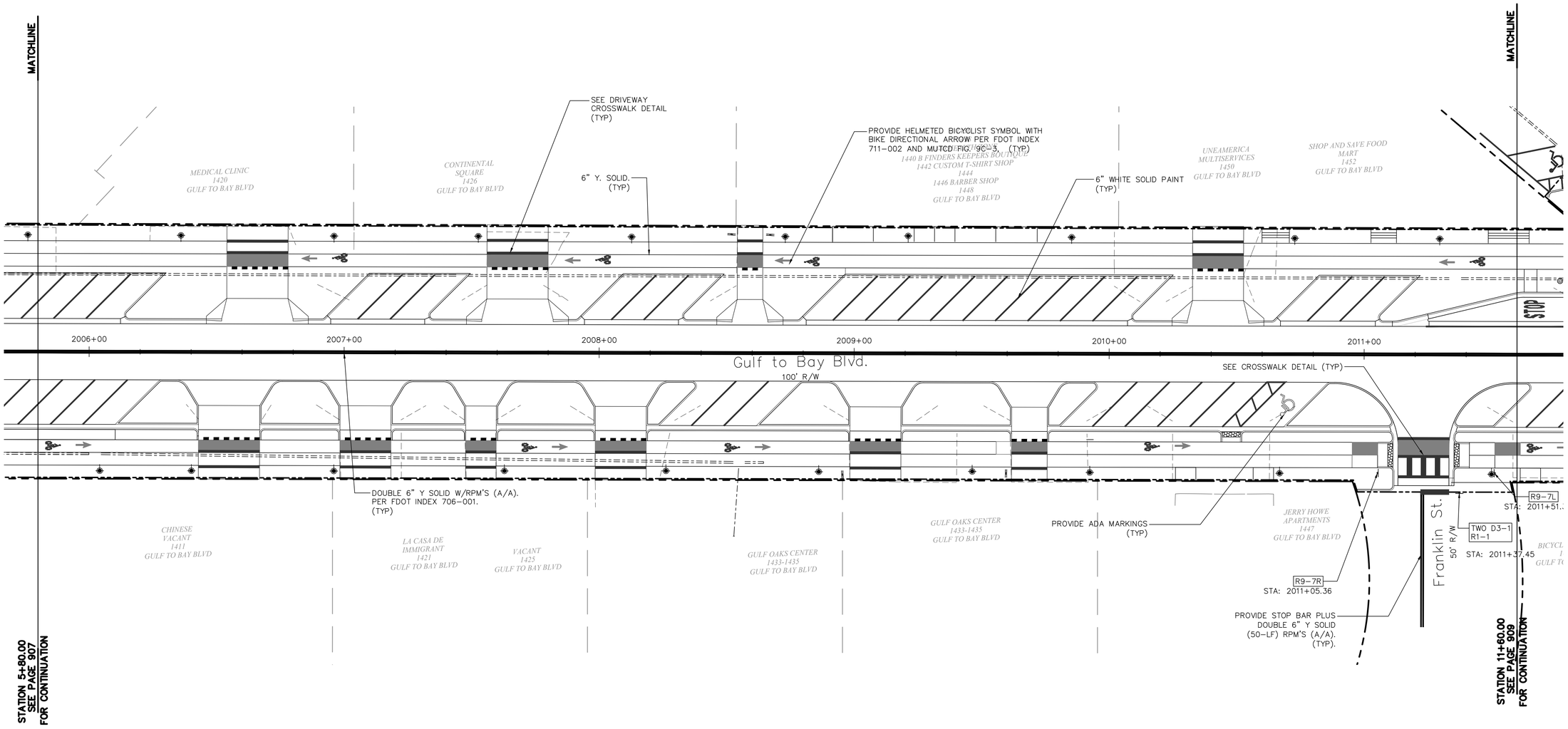
JOB NO.: A181093.02	DESIGNED BY: TAF	CHECKED BY: RF	SHEET NO.: 907

APPROVED FOR CONSTRUCTION _____ DATE

X

0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)



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BID SET

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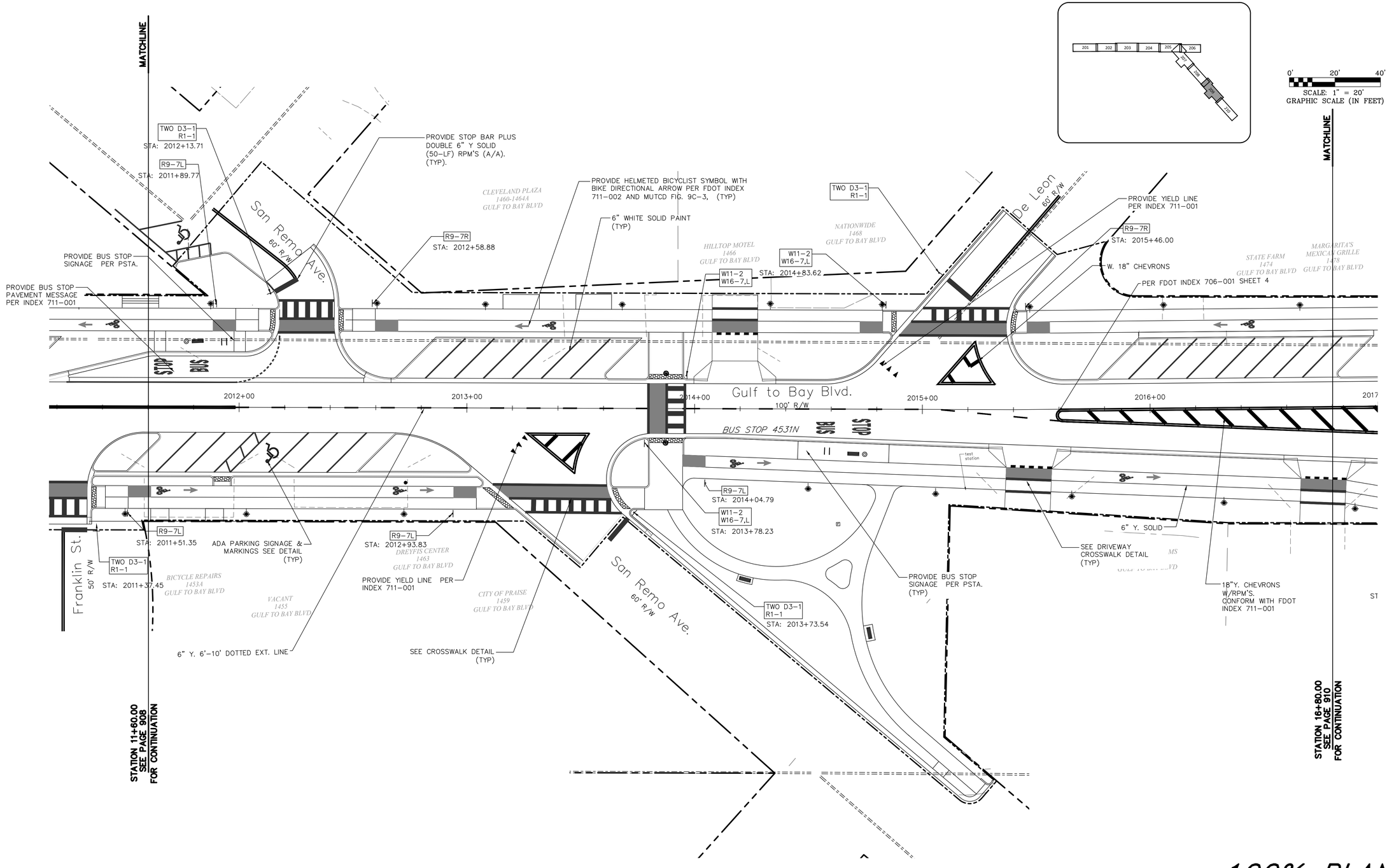
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: DOD	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: TAF	CHECKED BY: RF	SHEET NO.: 908

APPROVED FOR CONSTRUCTION _____ DATE

X

Key Map
(N.T.S.)

0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)



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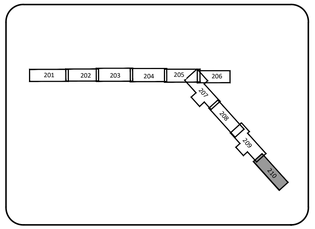
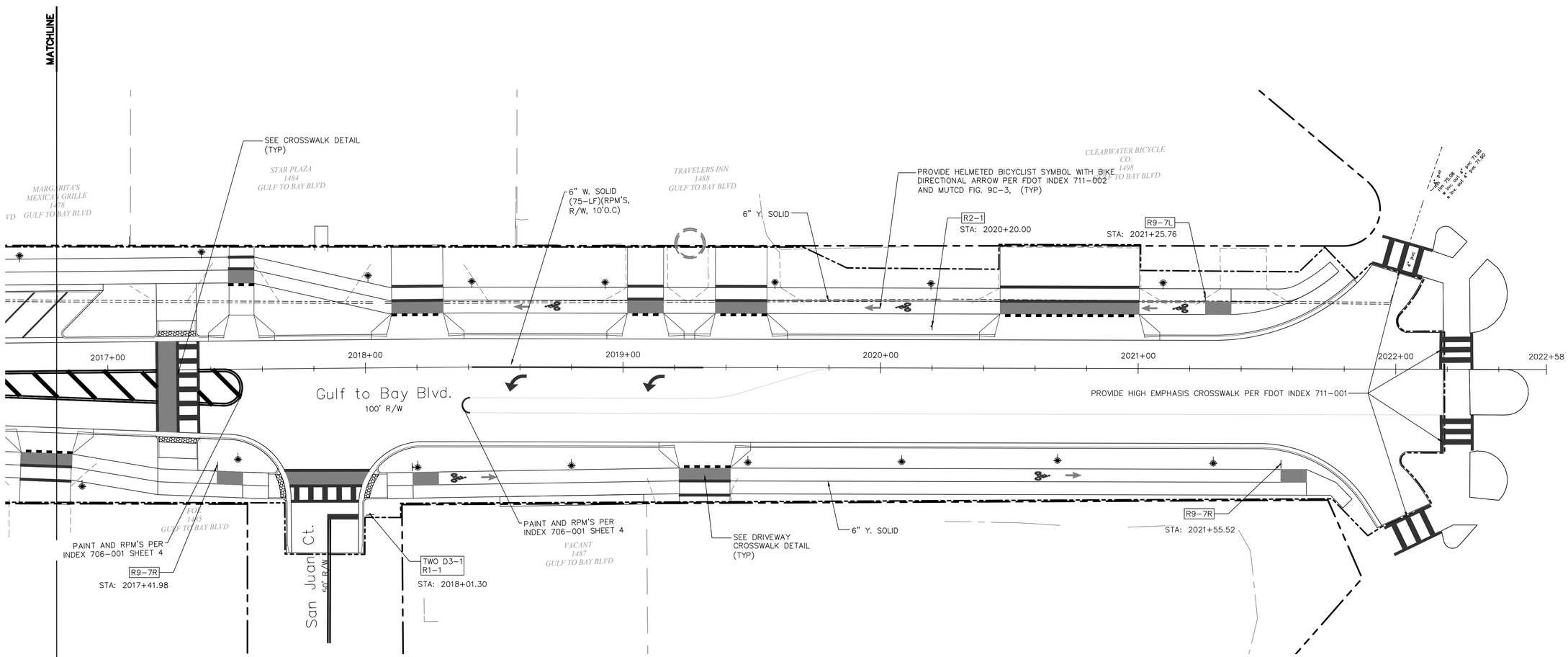
APPROVED FOR CONSTRUCTION _____ DATE

X

Key Map
(N.T.S.)



0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)



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CLEVELAND STREET PHASE III AND FESTIVAL CORE TRAFFIC SIGN & PAVEMENT MARKING PLANS

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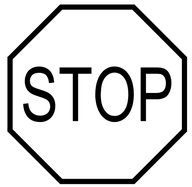
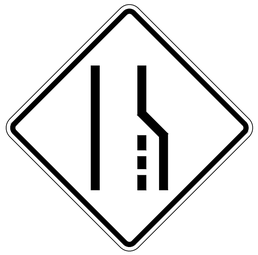
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: DOD	HORIZ. 1" = 20'
JOB NO.: A181093.02	DESIGNED BY: TAF	CHECKED BY: RF	SHEET NO.: 910 OF 910

APPROVED FOR CONSTRUCTION _____ DATE



STOP
R1-1
36"
R1-1(B)
18"

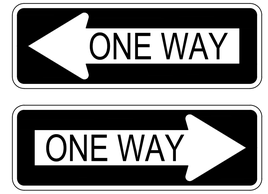
SPEED LIMIT
R2-1
30"X36"



LANE ENDS
W4-2R
48"X48"

REDUCE SPEED LIMIT AHEAD
W3-5
48"X48"

RIGHT LANE ENDS
W9-1R
48"X48"

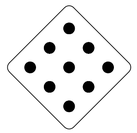


ONE WAY
R6-1 (L&R)
36"X12"

BICYCLE KEEP LEFT
R9-7L
18"X12"

BICYCLE KEEP RIGHT
R9-7R
18"X12"

DOWNWARD DIAGONAL ARROW
W16-7P (L&R)
24" X 12"



OBJECT MARKER TYPE 1
OM1-1
18"X18"

PEDESTRIAN TRAFFIC
W11-2
36"X36"

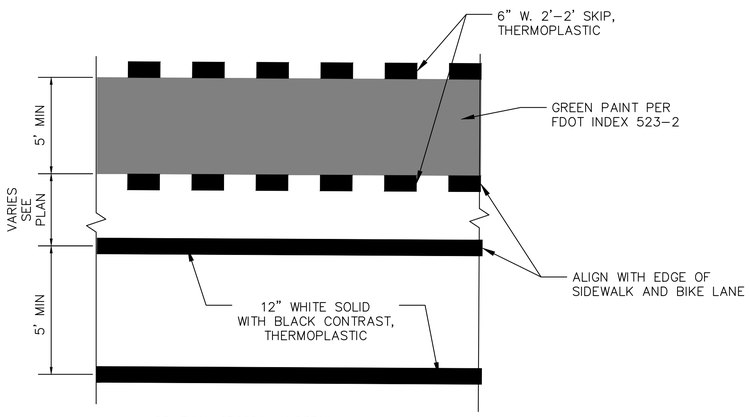
LEFT LANE ENDS
W9-1L
36"X36"

STREET NAME SIGN
D3-1
WITHOUT BORDER
8"XVAR.
BLUE RETROREFLECTIVE
BACKGROUND

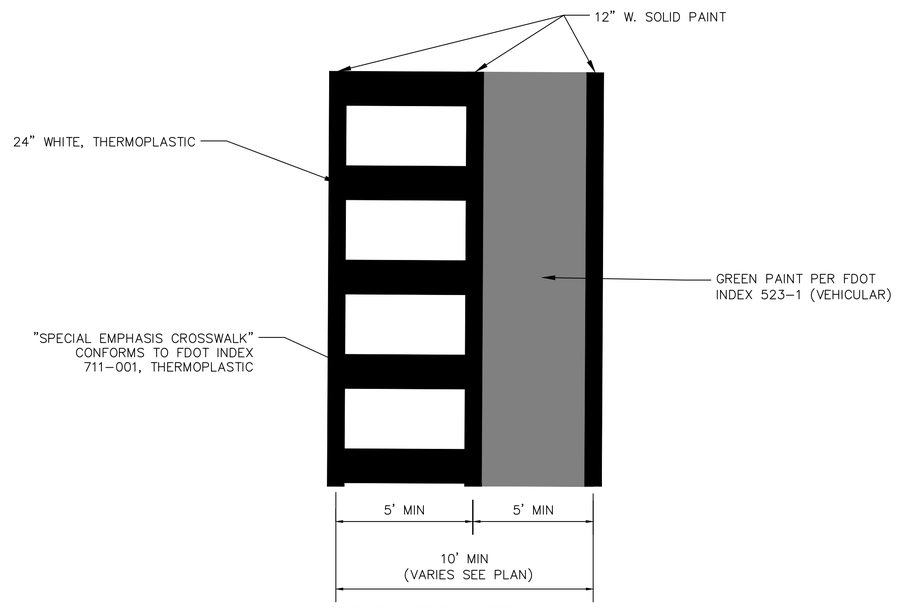
NOTES:
1. PROVIDE STREET NAME SIGNS OF BOTH INTERSECTING ROAD NAMES AT EACH LOCATION NOTED ON PLANS.
2. COORDINATE WITH THE CITY OF CLEARWATER FOR INSTALLATION

STOP HERE TO PEDESTRIANS
R1-5C
36"X48"

ALL WAY
R1-3P
18"X 6"



DRIVEWAY CROSSWALK DETAIL



ROADWAY CROSSWALK DETAIL

NOTES:
WIDTH VARIES SEE PLAN. FOR BOTH BIKE AND PEDESTRIAN CROSSING, USE 5' MIN FOR SIDE ROADS ONLY

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CLEVELAND STREET PHASE III AND FESTIVAL CORE
TRAFFIC SIGN & PAVEMENT MARKING DETAILS

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. N/A
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02-01-2020	DRAWN BY: DOD	HORIZ. 1" = 20'
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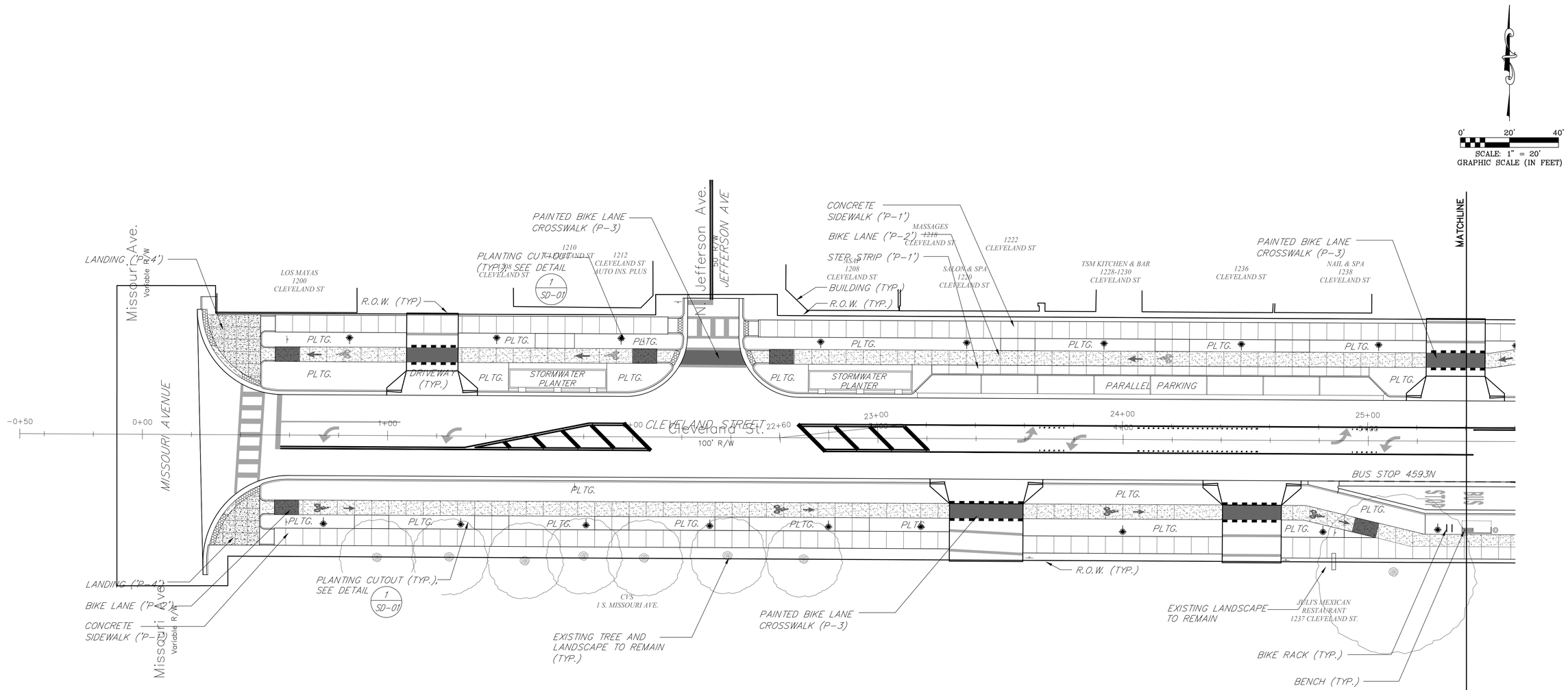

PAVING SCHEDULE	
'P-1'	CONCRETE PAVING, SIDEWALK & STEP STRIP STANDARD CONCRETE, NO COLOR, BROOM FINISH
'P-2'	CONCRETE PAVING, BIKE LANE STANDARD CONCRETE, NO COLOR, ROCK SALT FINISH
'P-3'	BIKE LANE AT DRIVEWAY APRONS & CROSSWALKS GREEN PAINTED CONCRETE W/ PAVEMENT MARKINGS
'P-4'	CONCRETE PAVING, LANDINGS STANDARD CONCRETE W/EXPOSED GRANITE AGGREGATE, OVERSEED W/ SALT & PEPPER GRANITE (3/4") AND WASH DOWN (HEAVY APPLICATION)
'P-5'	CONCRETE PAVING DETECTABLE WARNING
'V-1'	VEHICULAR PAVING AT FESTIVAL CORE STD. CONC. W/ EXPOSED GRANITE AGGREGATE, OVERSEED W/ SALT & PEPPER GRANITE (3/8" MINUS) AND WASH DOWN (LIGHT APPLICATION)
'V-2'	VEHICULAR PAVING AT FESTIVAL CORE STD. CONC. W/ EXPOSED GRANITE AGGREGATE, OVERSEED W/ SALT & PEPPER GRANITE (3/8" MINUS) AND WASH DOWN (HEAVY APPLICATION)

SYMBOL	FURNISHINGS
	BENCH
	LITTER RECEPTACLE
	BIKE RACK
	REMOVABLE BOLLARDS
	LIGHT

NOTE:
1. ALL POLE LIGHTS INDICATED WILL BE INSTALLED BY DUKE ENERGY UNDER SEPARATE AGREEMENT WITH THE CITY OF CLEARWATER, AND IS NOT A PART OF THE WORK.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF ALL ELECTRICAL CONDUIT, PULL BOXES, & WIRING.

SITE AMENITIES	
BENCHES	MODEL: SCARBOROUGH, BACKLESS BENCH W/ CENTER ARM, SURFACE MOUNT, COLOR: BLACK, BY LANDSCAPE FORMS OR APPROVED EQUAL
LITTER RECEPTACLES	MODEL: SCARBOROUGH, SIDE OPEN W/ DOME LID, SURFACE MOUNT, COLOR: BLACK, BY LANDSCAPE FORMS OR APPROVED EQUAL
BIKE RACK	MODEL:LOOP BIKE RACK, COLOR: BLACK, BY MADRAX OR APPROVED EQUAL
REMOVABLE BOLLARD	MODEL: SAN FRANCISCO, ALUMINUM REMOVABLE BOLLARD. COLOR: BLACK, BY URBAN ACCESSORIES OR APPROVED EQUAL

COMMUNITY SOLUTIONS GROUP
618 E. SOUTH STREET
SUITE 700
ORLANDO, FL 32801
407 423-8398
A GAI CONSULTANTS, INC SERVICE GROUP
CERTIFICATE OF AUTHORIZATION: EB9951

A181093.02

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RECORD DRAWINGS
SURVEYED BY: DRAWN BY:
REVIEWED BY: PROJECT ENGINEER DATE
APPROVED BY: ENGINEER DATE

REVISION	BY	DATE

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CLEVELAND STREET PHASE III AND FESTIVAL CORE SITE PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
JOB NO.: A181093.02	DESIGNED BY: RP/FB	CHECKED BY: FB	SHEET NO.: SP-01

APPROVED FOR CONSTRUCTION

Filename: Z:\WFRA\2018\A181093.02 - CLEVELAND P3 CON PLAN - DV\CAD\PRODUCTION DWGS\LA\A181093.02_1_SP.DWG
Last Modified by: RUTH FORBES
Last Modified: Mar 05, 2020 3:27 PM

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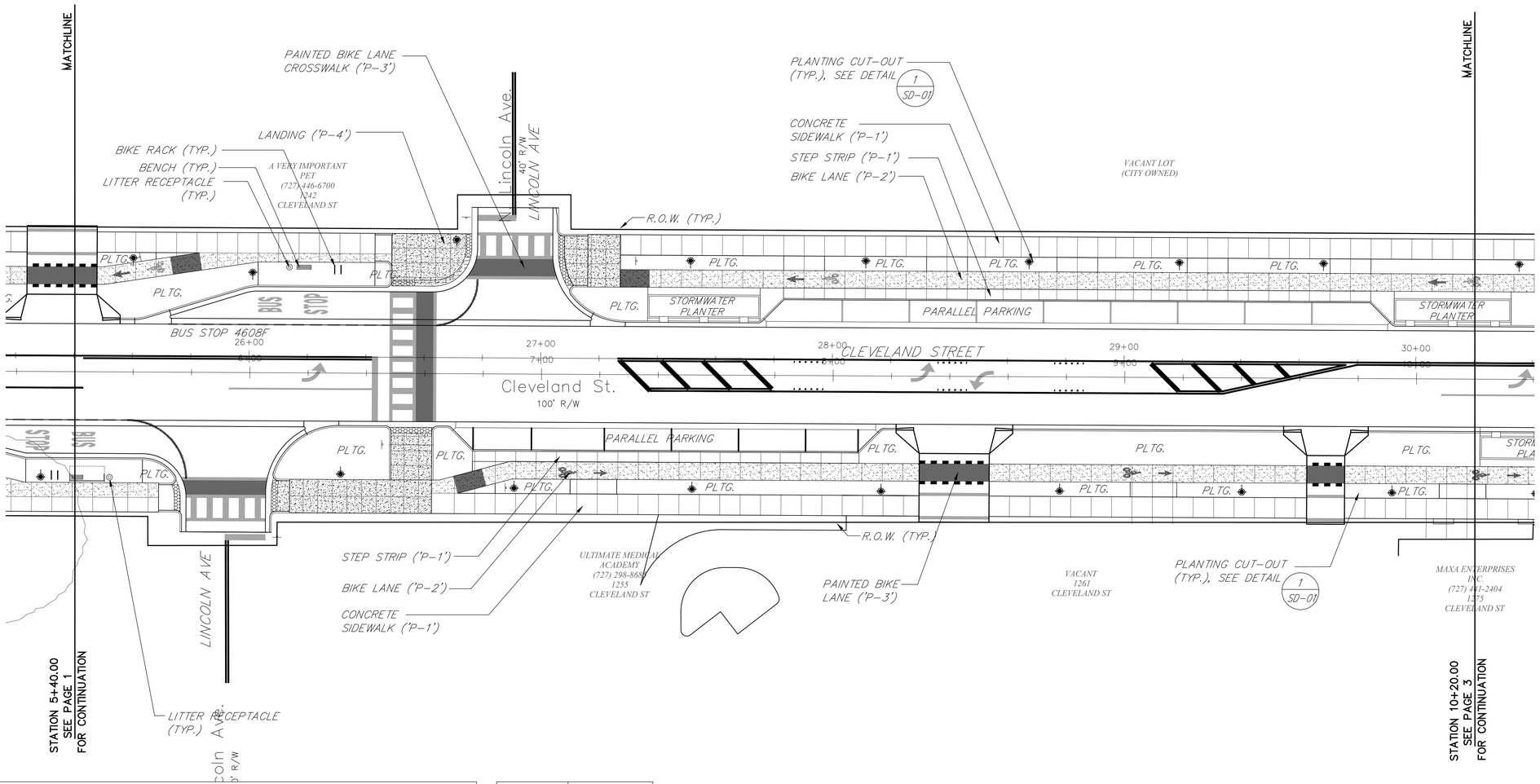

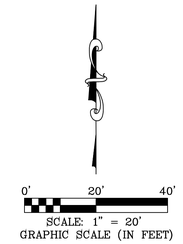

PAVING SCHEDULE	
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'P-2'	CONCRETE PAVING, BIKE LANE STANDARD CONCRETE, NO COLOR, ROCK SALT FINISH
'P-3'	BIKE LANE AT DRIVEWAY APRONS & CROSSWALKS GREEN PAINTED CONCRETE W/ PAVEMENT MARKINGS
'P-4'	CONCRETE PAVING, LANDINGS STANDARD CONCRETE W/EXPOSED GRANITE AGGREGATE, OVERSEED W/ SALT & PEPPER GRANITE (3/4") AND WASH DOWN (HEAVY APPLICATION)
'P-5'	CONCRETE PAVING DETECTABLE WARNING
'V-1'	VEHICULAR PAVING AT FESTIVAL CORE STD. CONC. W/ EXPOSED GRANITE AGGREGATE, OVERSEED W/ SALT & PEPPER GRANITE (3/8" MINUS) AND WASH DOWN (LIGHT APPLICATION)
'V-2'	VEHICULAR PAVING AT FESTIVAL CORE STD. CONC. W/ EXPOSED GRANITE AGGREGATE, OVERSEED W/ SALT & PEPPER GRANITE (3/8" MINUS) AND WASH DOWN (HEAVY APPLICATION)

SYMBOL	FURNISHINGS
	BENCH
	LITTER RECEPTACLE
	BIKE RACK
	REMOVABLE BOLLARDS
	LIGHT

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A181093.02

100% PLANS BID SET

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REVIEWED BY: PROJECT ENGINEER DATE
APPROVED BY: ENGINEER DATE

REVISION | BY | DATE

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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
SITE PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
JOB NO.: A181093.02	DESIGNED BY: RP/FB	CHECKED BY: FB	SHEET NO.: SP-02

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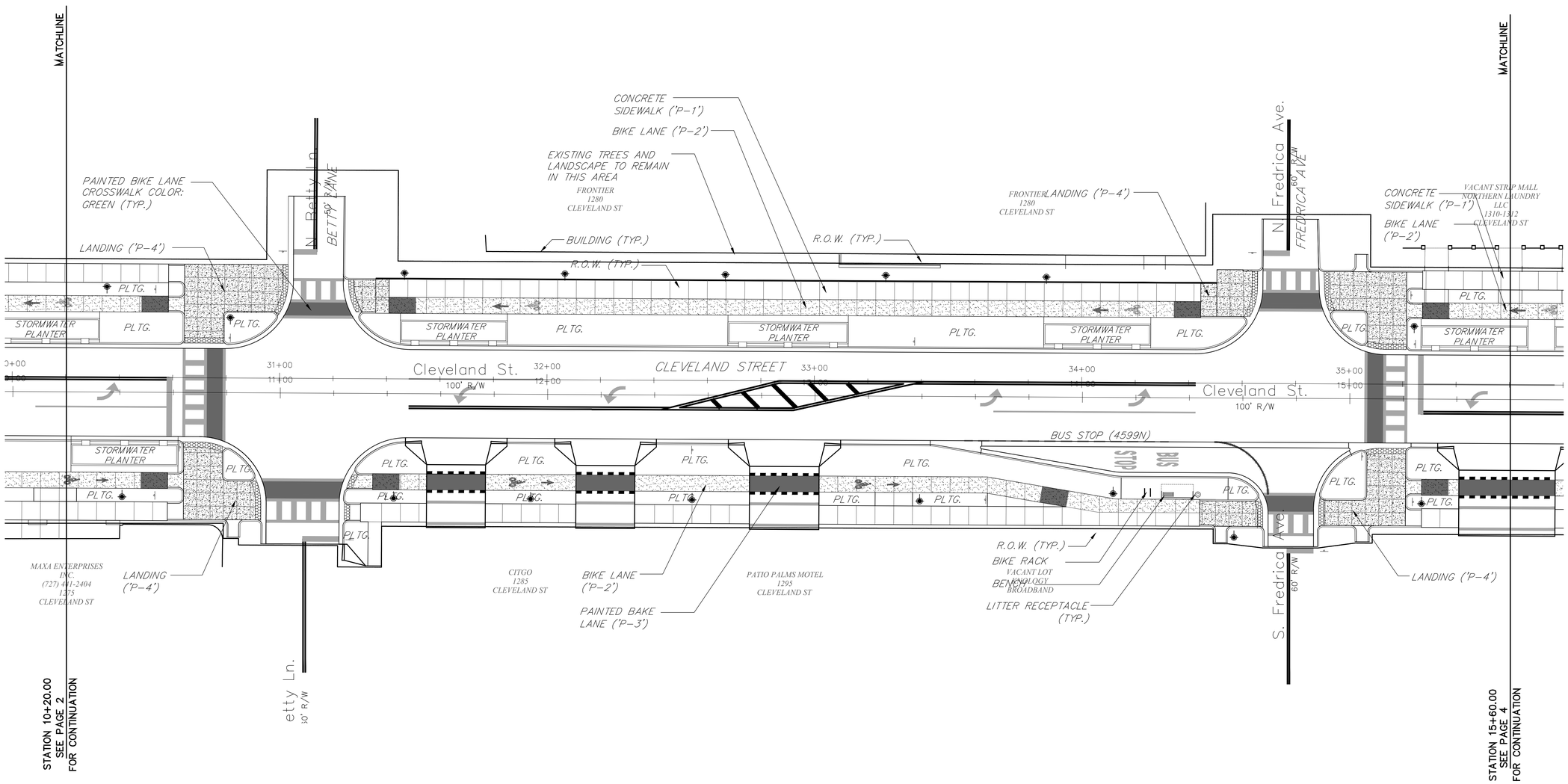

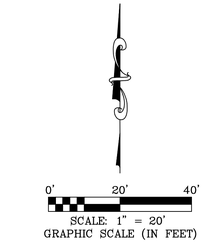

PAVING SCHEDULE	
'P-1'	CONCRETE PAVING, SIDEWALK & STEP STRIP STANDARD CONCRETE, NO COLOR, BROOM FINISH
'P-2'	CONCRETE PAVING, BIKE LANE STANDARD CONCRETE, NO COLOR, ROCK SALT FINISH
'P-3'	BIKE LANE AT DRIVEWAY APRONS & CROSSWALKS GREEN PAINTED CONCRETE W/ PAVEMENT MARKINGS
'P-4'	CONCRETE PAVING, LANDINGS STANDARD CONCRETE W/EXPOSED GRANITE AGGREGATE, OVERSEED W/ SALT & PEPPER GRANITE (3/4") AND WASH DOWN (HEAVY APPLICATION)
'P-5'	CONCRETE PAVING DETECTABLE WARNING
'V-1'	VEHICULAR PAVING AT FESTIVAL CORE STD. CONC. W/ EXPOSED GRANITE AGGREGATE, OVERSEED W/ SALT & PEPPER GRANITE (3/8" MINUS) AND WASH DOWN (LIGHT APPLICATION)
'V-2'	VEHICULAR PAVING AT FESTIVAL CORE STD. CONC. W/ EXPOSED GRANITE AGGREGATE, OVERSEED W/ SALT & PEPPER GRANITE (3/8" MINUS) AND WASH DOWN (HEAVY APPLICATION)

SYMBOL	FURNISHINGS
	BENCH
	LITTER RECEPTACLE
	BIKE RACK
	REMOVABLE BOLLARDS
	LIGHT

NOTE:
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2. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF ALL ELECTRICAL CONDUIT, PULL BOXES, & WIRING.

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CERTIFICATE OF AUTHORIZATION: EB9951

A181093.02

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REVIEWED BY: PROJECT ENGINEER DATE
APPROVED BY: ENGINEER DATE

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CLEVELAND STREET PHASE III AND FESTIVAL CORE SITE PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
JOB NO.: A181093.02	DESIGNED BY: RP/FB	CHECKED BY: FB	SHEET NO.: SP-03

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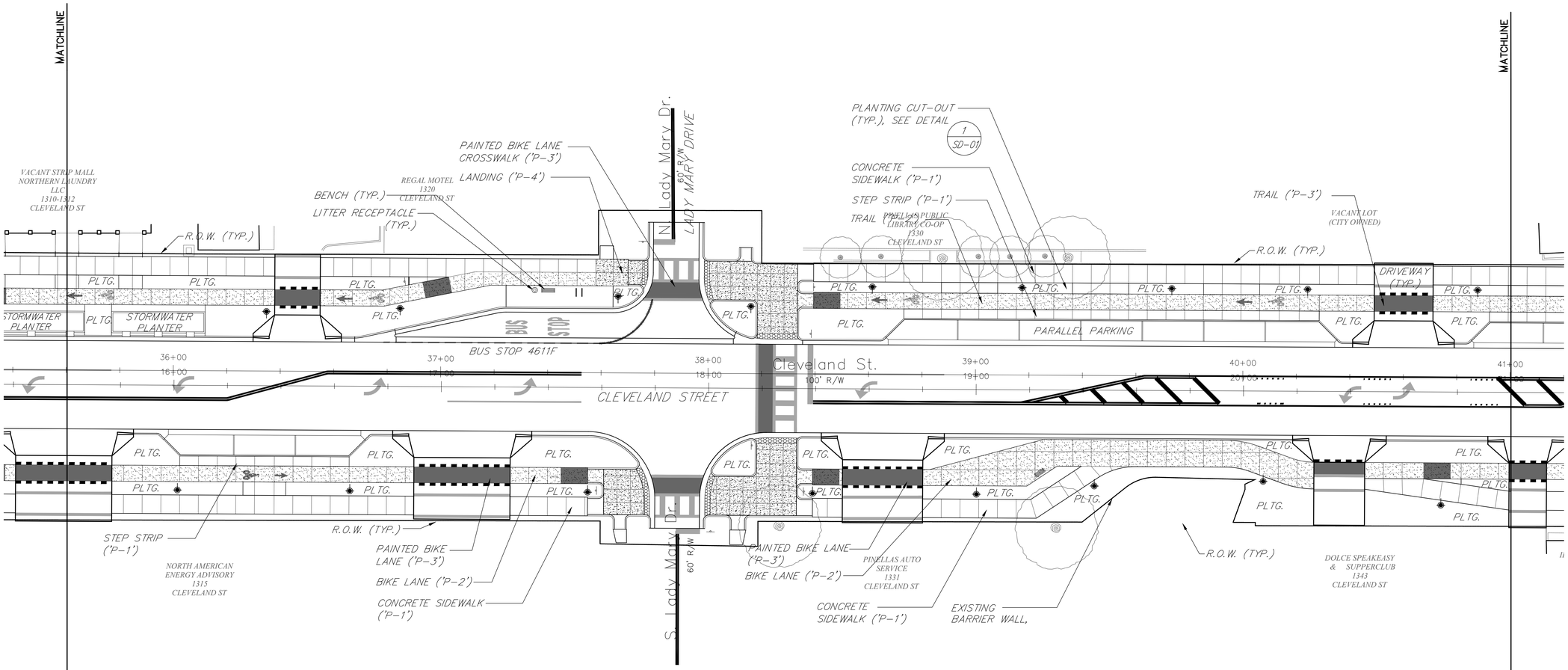
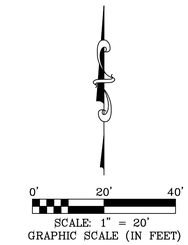
Last Modified Date: 6/22/2020 3:37 PM





STATION 15+60.00
SEE PAGE 3
FOR CONTINUATION

STATION 21+00.00
SEE PAGE 5
FOR CONTINUATION

PAVING SCHEDULE	
'P-1'	CONCRETE PAVING, SIDEWALK & STEP STRIP STANDARD CONCRETE, NO COLOR, BROOM FINISH
'P-2'	CONCRETE PAVING, BIKE LANE STANDARD CONCRETE, NO COLOR, ROCK SALT FINISH
'P-3'	BIKE LANE AT DRIVEWAY APRONS & CROSSWALKS GREEN PAINTED CONCRETE W/ PAVEMENT MARKINGS
'P-4'	CONCRETE PAVING, LANDINGS STANDARD CONCRETE W/EXPOSED GRANITE AGGREGATE, OVERSEED W/ SALT & PEPPER GRANITE (3/4") AND WASH DOWN (HEAVY APPLICATION)
'P-5'	CONCRETE PAVING DETECTABLE WARNING
'V-1'	VEHICULAR PAVING AT FESTIVAL CORE STD. CONC. W/ EXPOSED GRANITE AGGREGATE, OVERSEED W/ SALT & PEPPER GRANITE (3/8" MINUS) AND WASH DOWN (LIGHT APPLICATION)
'V-2'	VEHICULAR PAVING AT FESTIVAL CORE STD. CONC. W/ EXPOSED GRANITE AGGREGATE, OVERSEED W/ SALT & PEPPER GRANITE (3/8" MINUS) AND WASH DOWN (HEAVY APPLICATION)

SYMBOL	FURNISHINGS
	BENCH
	LITTER RECEPTACLE
	BIKE RACK
	REMOVABLE BOLLARDS
	LIGHT

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A181093.02

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CLEVELAND STREET PHASE III AND FESTIVAL CORE SITE PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. HORIZ. AS SHOWN
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	
JOB NO.: A181093.02	DESIGNED BY: RP/FB	CHECKED BY: FB	SHEET NO.: SP-04
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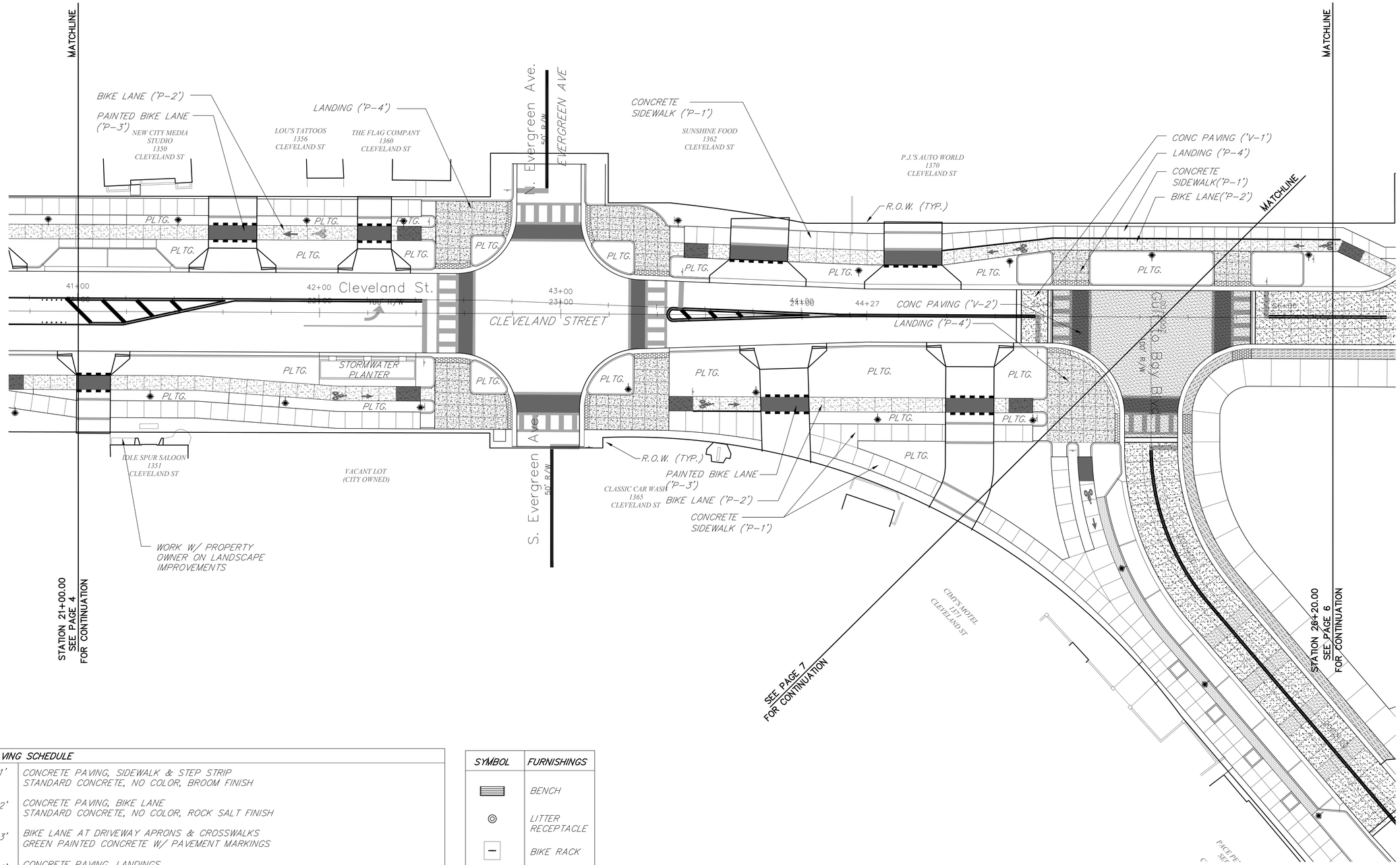

PAVING SCHEDULE	
'P-1'	CONCRETE PAVING, SIDEWALK & STEP STRIP STANDARD CONCRETE, NO COLOR, BROOM FINISH
'P-2'	CONCRETE PAVING, BIKE LANE STANDARD CONCRETE, NO COLOR, ROCK SALT FINISH
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'V-2'	VEHICULAR PAVING AT FESTIVAL CORE STD. CONC. W/ EXPOSED GRANITE AGGREGATE, OVERSEED W/ SALT & PEPPER GRANITE (3/8" MINUS) AND WASH DOWN (HEAVY APPLICATION)

SYMBOL	FURNISHINGS
	BENCH
	LITTER RECEPTACLE
	BIKE RACK
	REMOVABLE BOLLARDS
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CLEVELAND STREET PHASE III AND FESTIVAL CORE SITE PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
JOB NO.: A181093.02	DESIGNED BY: RP/FB	CHECKED BY: FB	SHEET NO.: SP-05
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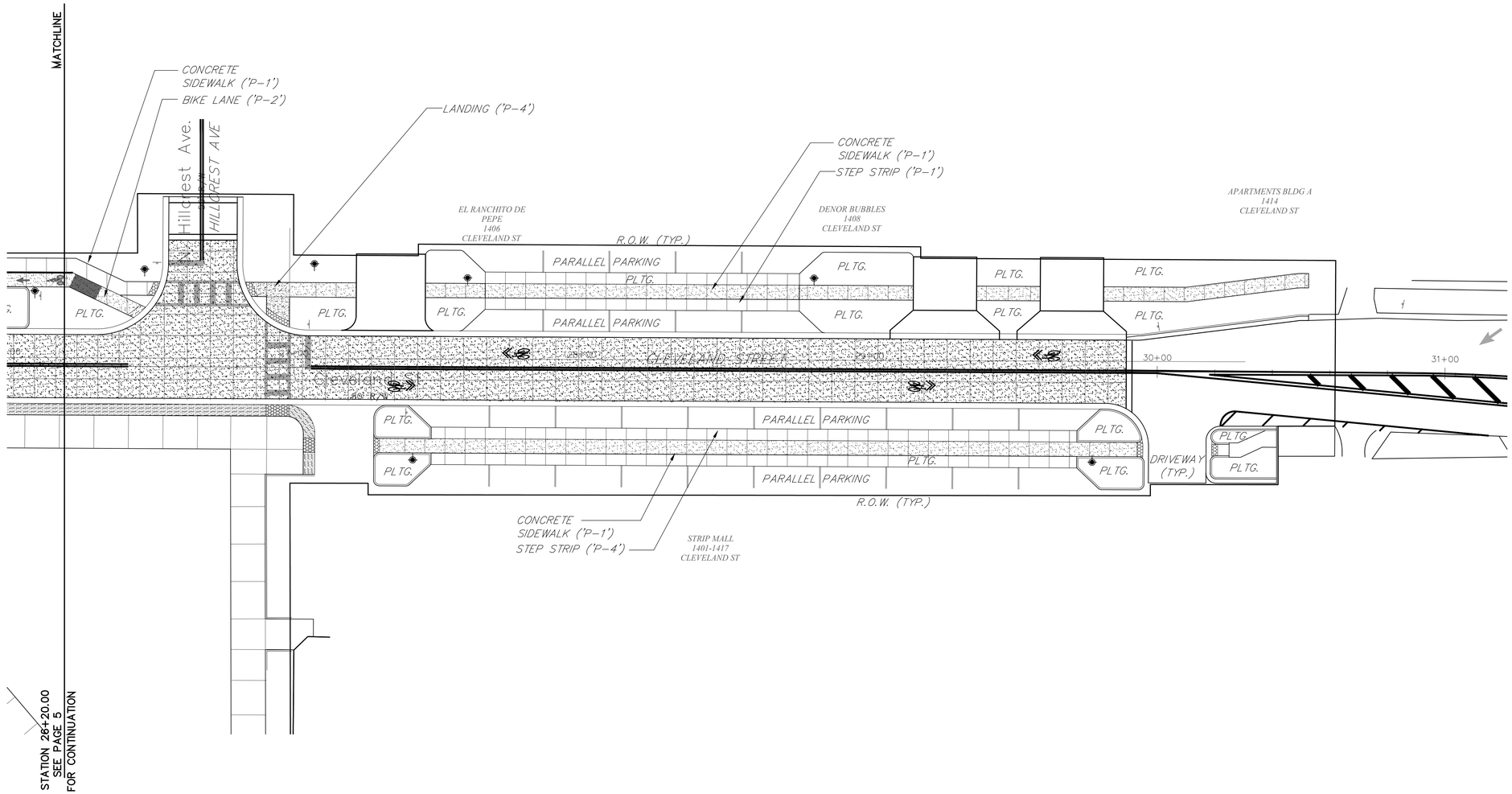

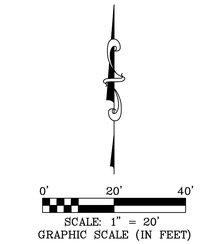

PAVING SCHEDULE	
'P-1'	CONCRETE PAVING, SIDEWALK & STEP STRIP STANDARD CONCRETE, NO COLOR, BROOM FINISH
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SYMBOL	FURNISHINGS
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	LITTER RECEPTACLE
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	REMOVABLE BOLLARDS
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CLEVELAND STREET PHASE III AND FESTIVAL CORE SITE PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
JOB NO.: A181093.02	DESIGNED BY: RP/FB	CHECKED BY: FB	SHEET NO.: SP-06

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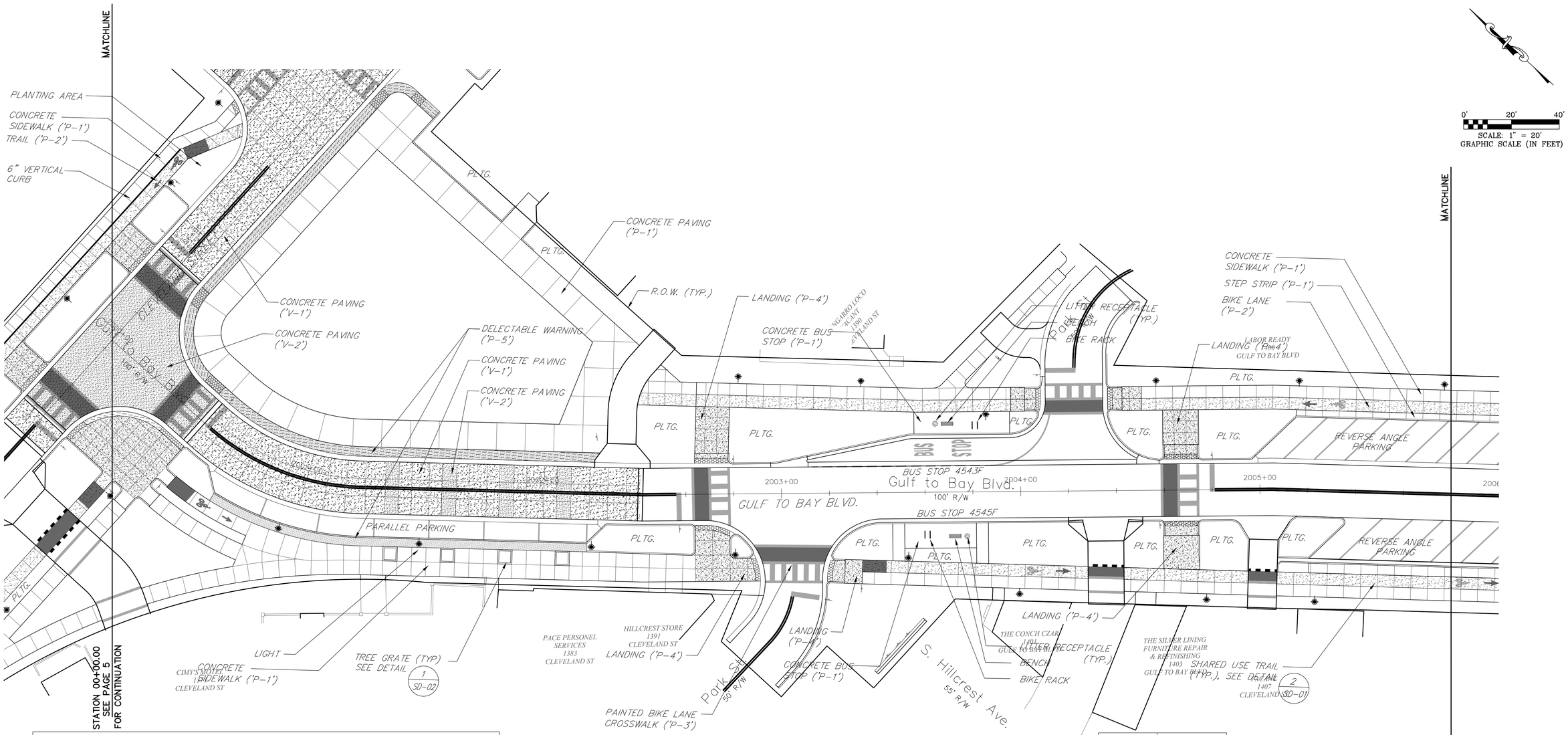

PAVING SCHEDULE	
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	BENCH
	LITTER RECEPTACLE
	BIKE RACK
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CLEVELAND STREET PHASE III AND FESTIVAL CORE SITE PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
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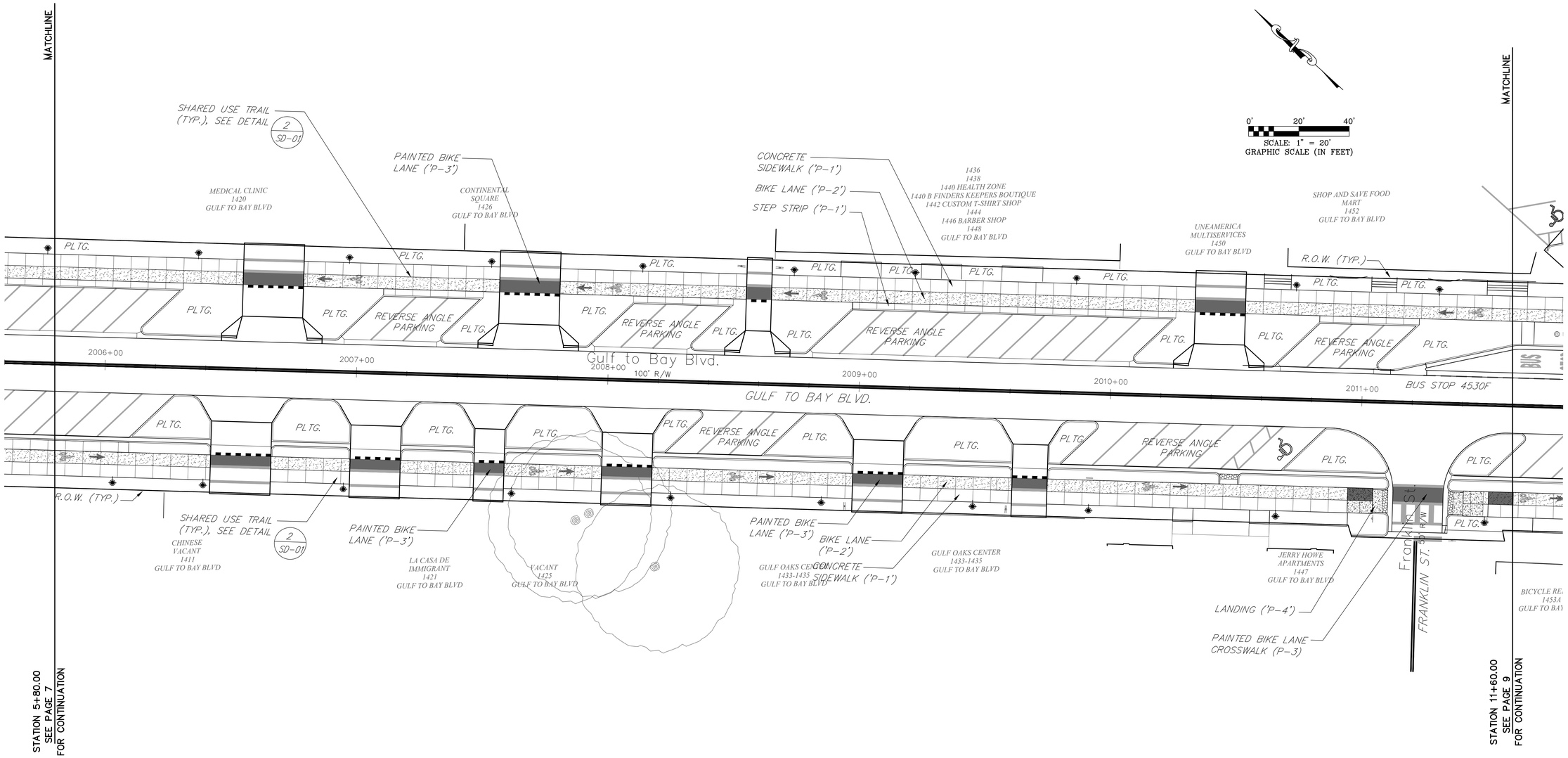

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SYMBOL	FURNISHINGS
	BENCH
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CLEVELAND STREET PHASE III AND FESTIVAL CORE SITE PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
JOB NO.: A181093.02	DESIGNED BY: RP/FB	CHECKED BY: FB	SHEET NO.: SP-08
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Last Modified by: RUTH PERRY
Last Modified date: 2020-02-03 3:37 PM

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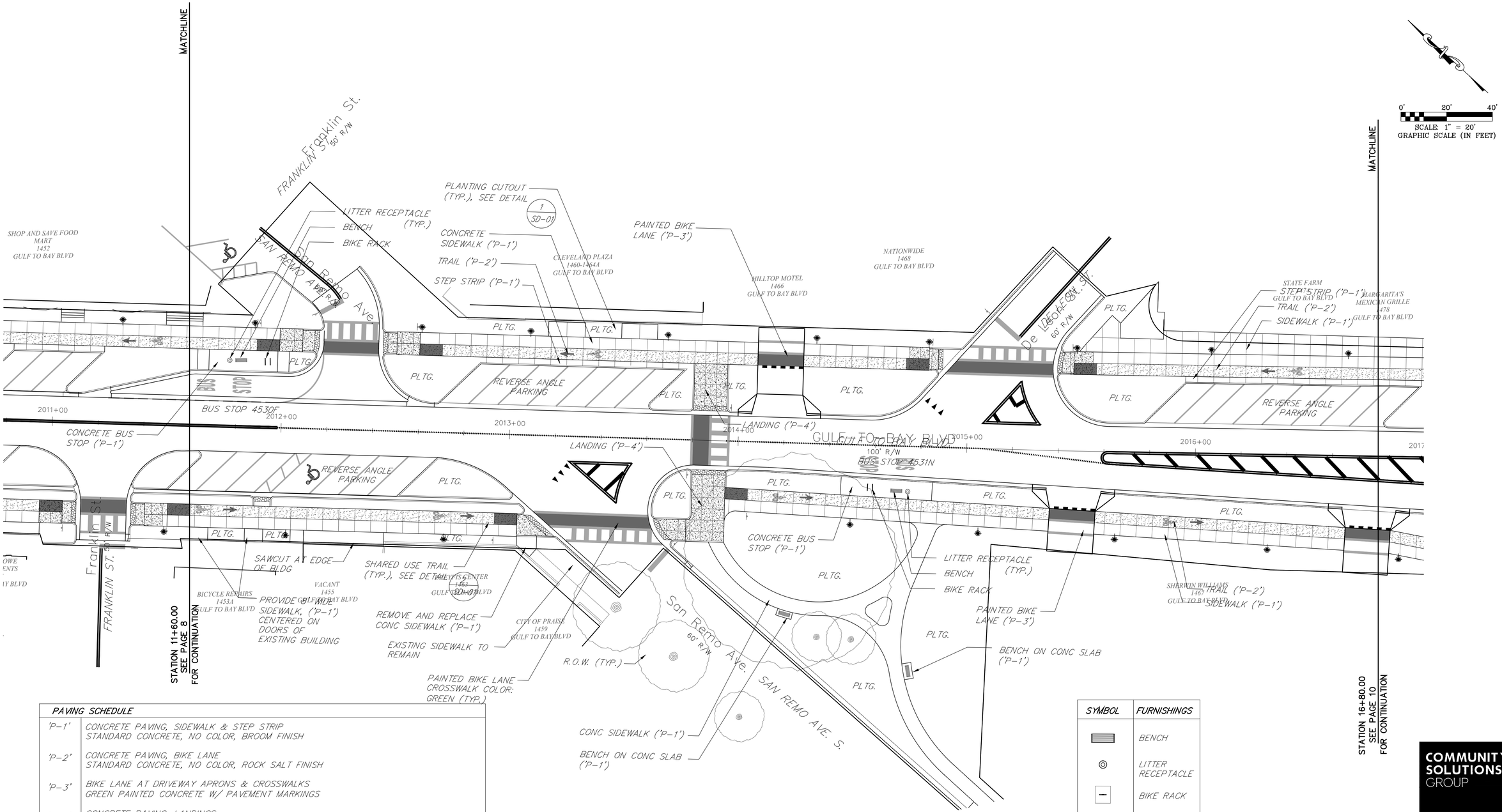

PAVING SCHEDULE	
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SYMBOL	FURNISHINGS
▭	BENCH
◎	LITTER RECEPTACLE
—	BIKE RACK
◉	REMOVABLE BOLLARDS
✦	LIGHT

NOTE:
1. ALL POLE LIGHTS INDICATED WILL BE INSTALLED BY DUKE ENERGY UNDER SEPARATE AGREEMENT WITH THE CITY OF CLEARWATER, AND IS NOT A PART OF THE WORK.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF ALL ELECTRICAL CONDUIT, PULL BOXES, & WIRING.

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CERTIFICATE OF AUTHORIZATION: EB9951

A181093.02

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CLEVELAND STREET PHASE III AND FESTIVAL CORE SITE PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
JOB NO.: A181093.02	DESIGNED BY: RP/FB	CHECKED BY: FB	SHEET NO.: SP-09

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Last Modified date: 8/21/2020 3:38 PM

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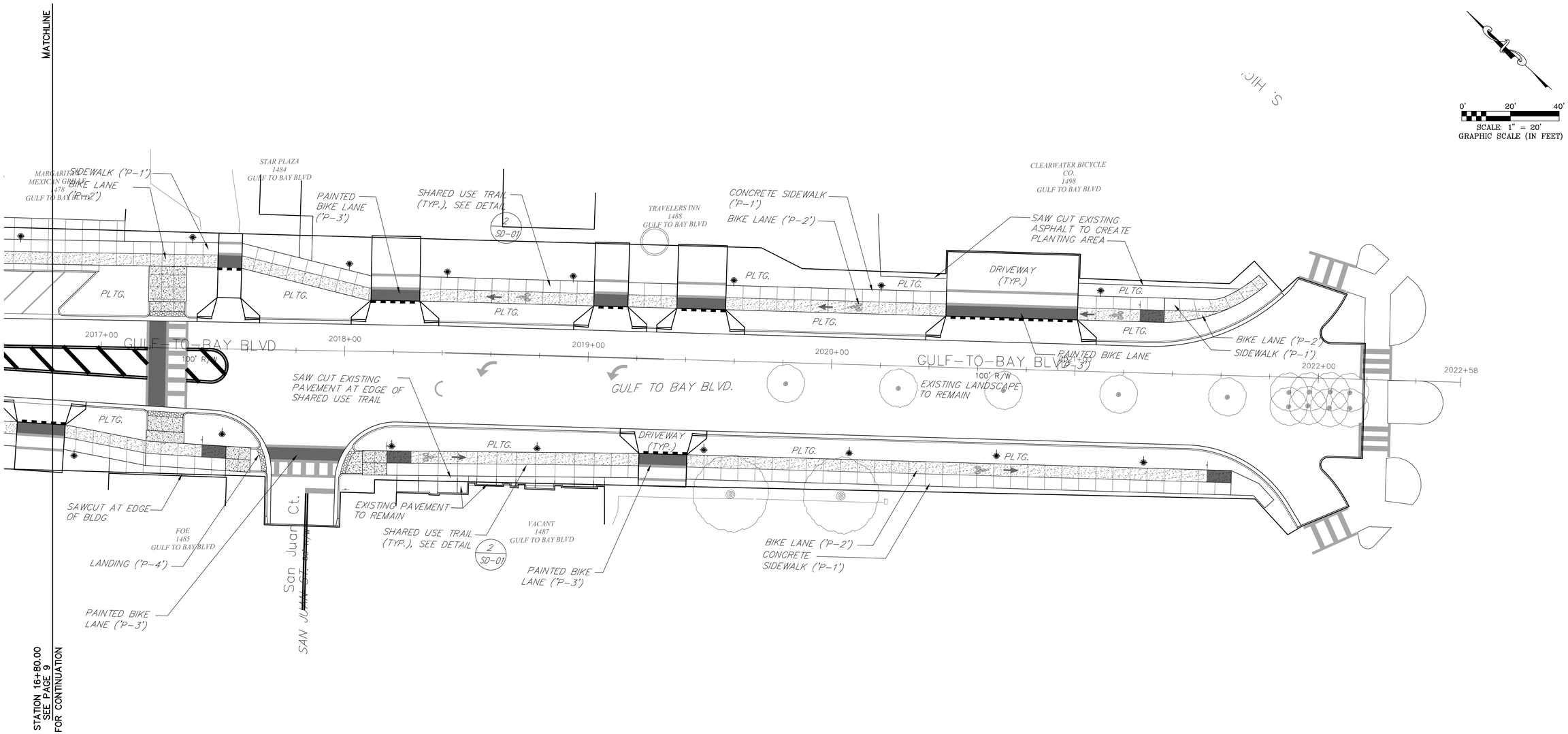

PAVING SCHEDULE	
'P-1'	CONCRETE PAVING, SIDEWALK & STEP STRIP STANDARD CONCRETE, NO COLOR, BROOM FINISH
'P-2'	CONCRETE PAVING, BIKE LANE STANDARD CONCRETE, NO COLOR, ROCK SALT FINISH
'P-3'	BIKE LANE AT DRIVEWAY APRONS & CROSSWALKS GREEN PAINTED CONCRETE W/ PAVEMENT MARKINGS
'P-4'	CONCRETE PAVING, LANDINGS STANDARD CONCRETE W/EXPOSED GRANITE AGGREGATE, OVERSEED W/ SALT & PEPPER GRANITE (3/4") AND WASH DOWN (HEAVY APPLICATION)
'P-5'	CONCRETE PAVING DETECTABLE WARNING
'V-1'	VEHICULAR PAVING AT FESTIVAL CORE STD. CONC. W/ EXPOSED GRANITE AGGREGATE, OVERSEED W/ SALT & PEPPER GRANITE (3/8" MINUS) AND WASH DOWN (LIGHT APPLICATION)
'V-2'	VEHICULAR PAVING AT FESTIVAL CORE STD. CONC. W/ EXPOSED GRANITE AGGREGATE, OVERSEED W/ SALT & PEPPER GRANITE (3/8" MINUS) AND WASH DOWN (HEAVY APPLICATION)

SYMBOL	FURNISHINGS
	BENCH
	LITTER RECEPTACLE
	BIKE RACK
	REMOVABLE BOLLARDS
	LIGHT

NOTE:
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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
SITE PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
JOB NO.: A181093.02	DESIGNED BY: RP/FB	CHECKED BY: FB	SHEET NO.: SP-10
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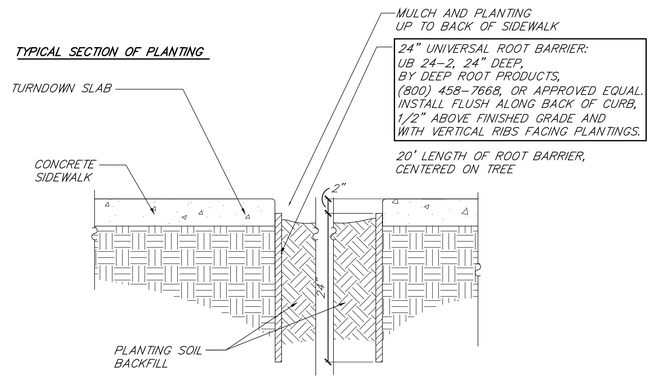
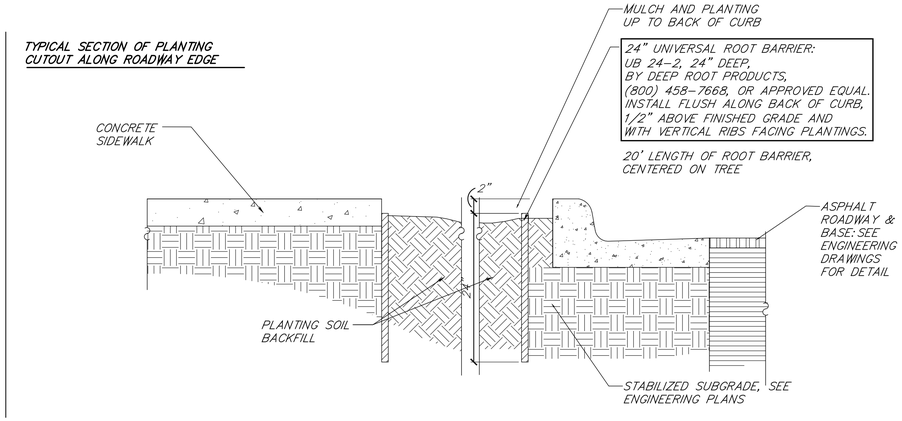
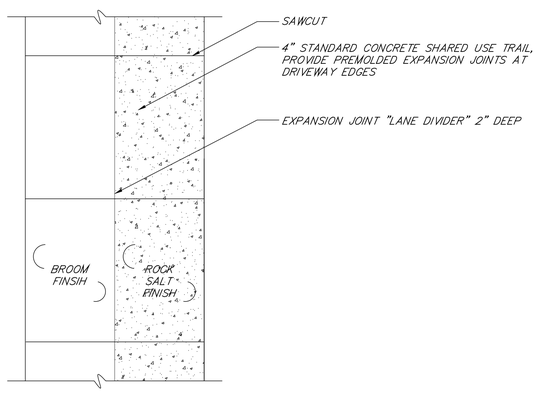




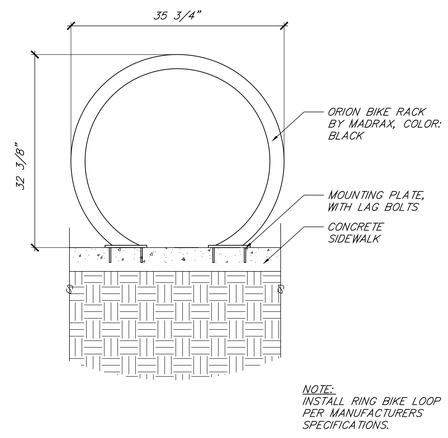
1 / SD-01 PLANTING CUTOUTS – SECTION
SCALE: 1"=1'-0"

FILE NAME: xr-pav-curb



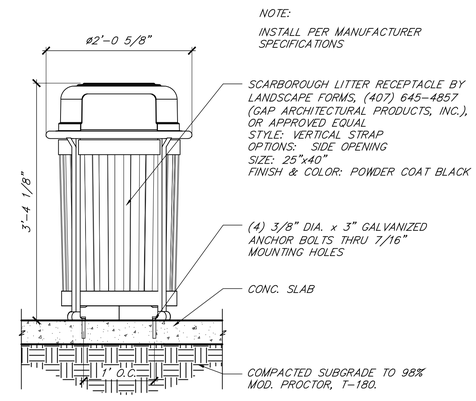
2 / SD-01 TYPICAL SHARED-USE PAVING PATTERN
SCALE: 1/4"=1'-0"

FILE NAME: xr-pave share-use pattern



3 / SD-01 TYPICAL BIKE RACK– SECTION
SCALE: 1" = 1'-0"

FILE NAME: xr-bikerack



4 / SD-01 LITTER RECEPTACLE ON PAVERS
SCALE: 1"=1'-0"

FILE NAME: xr-furn trash

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CLEVELAND STREET PHASE III
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SITE DETAILS

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
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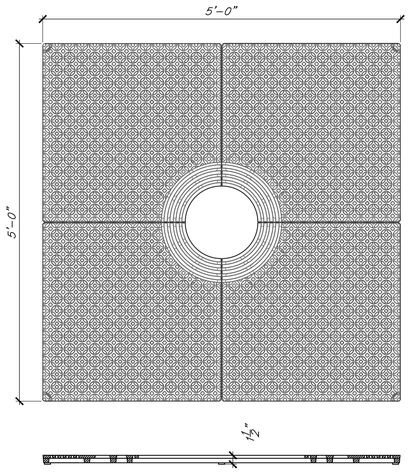
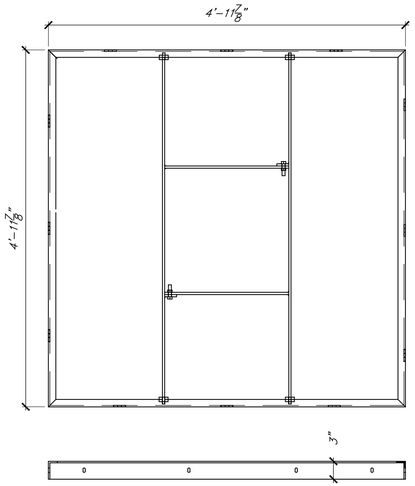
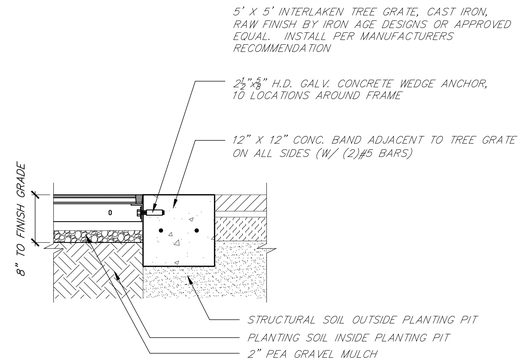


TREE GRATE – SCALE: 1" = 1'-0"



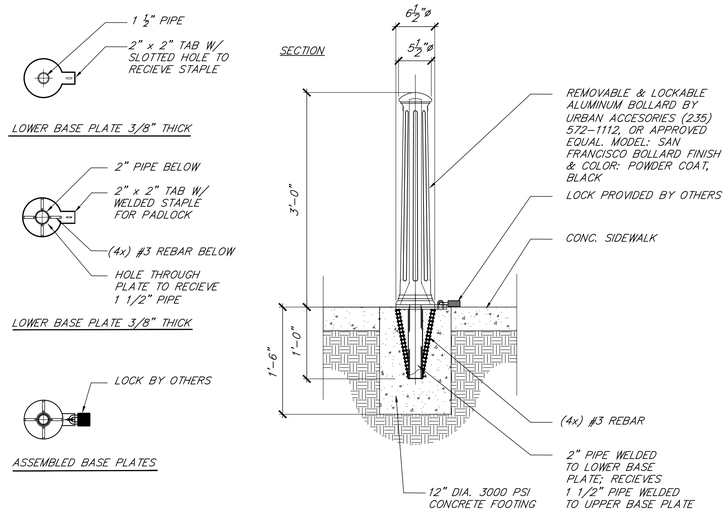
TREE GRATE FRAME – SCALE: 1" = 1'-0"



TREE GRATE FRAME CONNECTION – SCALE: 1" = 1'-0"

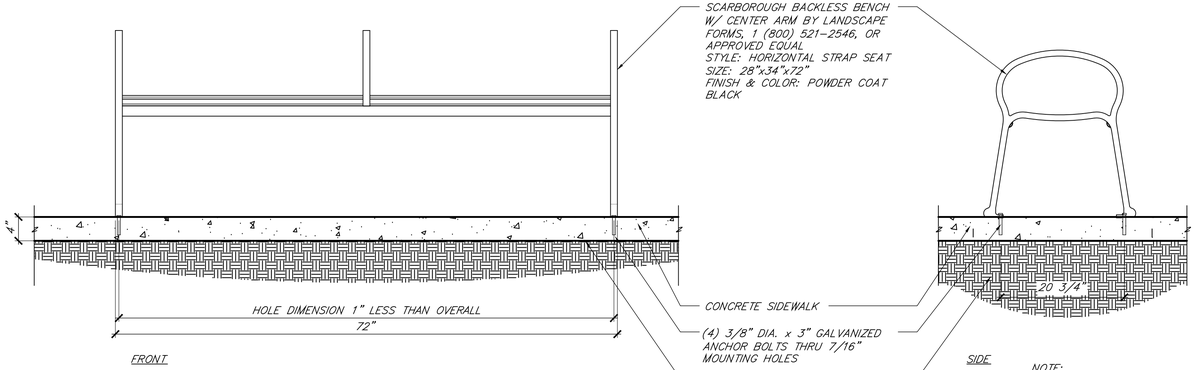
1 SD-02 TREE GRATE
SCALE:

FILE NAME: xr-tree grate



2 SD-02 REMOVABLE BOLLARD DETAIL
SCALE: 1"=1'-0"

FILE NAME: bollard



NOTE:
INSTALL PER MANUFACTURER SPECIFICATIONS

3 SD-02 TYPICAL BENCH INSTALLATION DETAIL
SCALE: 1"=1'-0"

FILE NAME: bench

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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
SITE DETAILS

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
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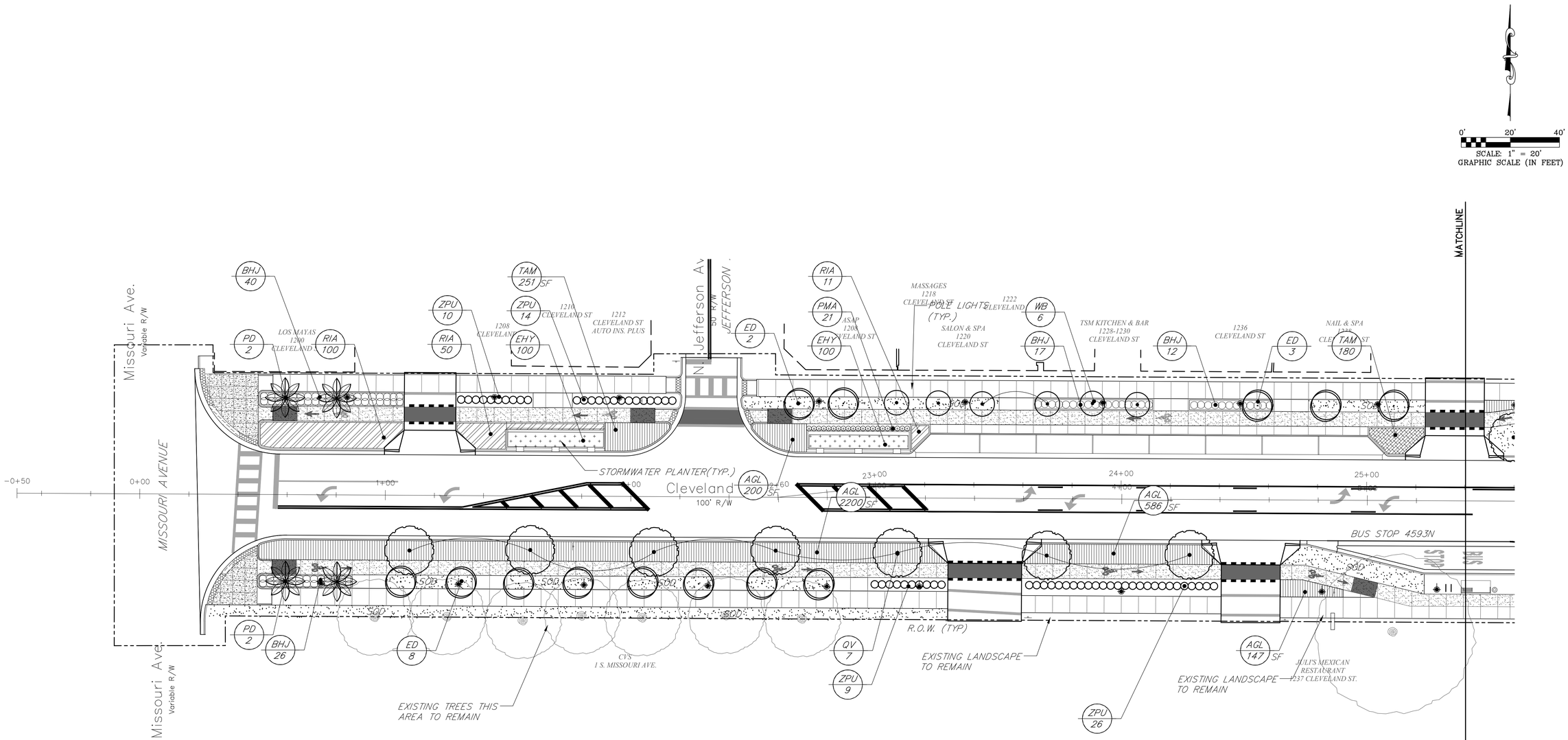

STATION 5+40.00
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CLEVELAND STREET PHASE III AND FESTIVAL CORE LANDSCAPE PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
JOB NO.: A181093.02	DESIGNED BY: RP/FB	CHECKED BY: FB	SHEET NO.: LA-01
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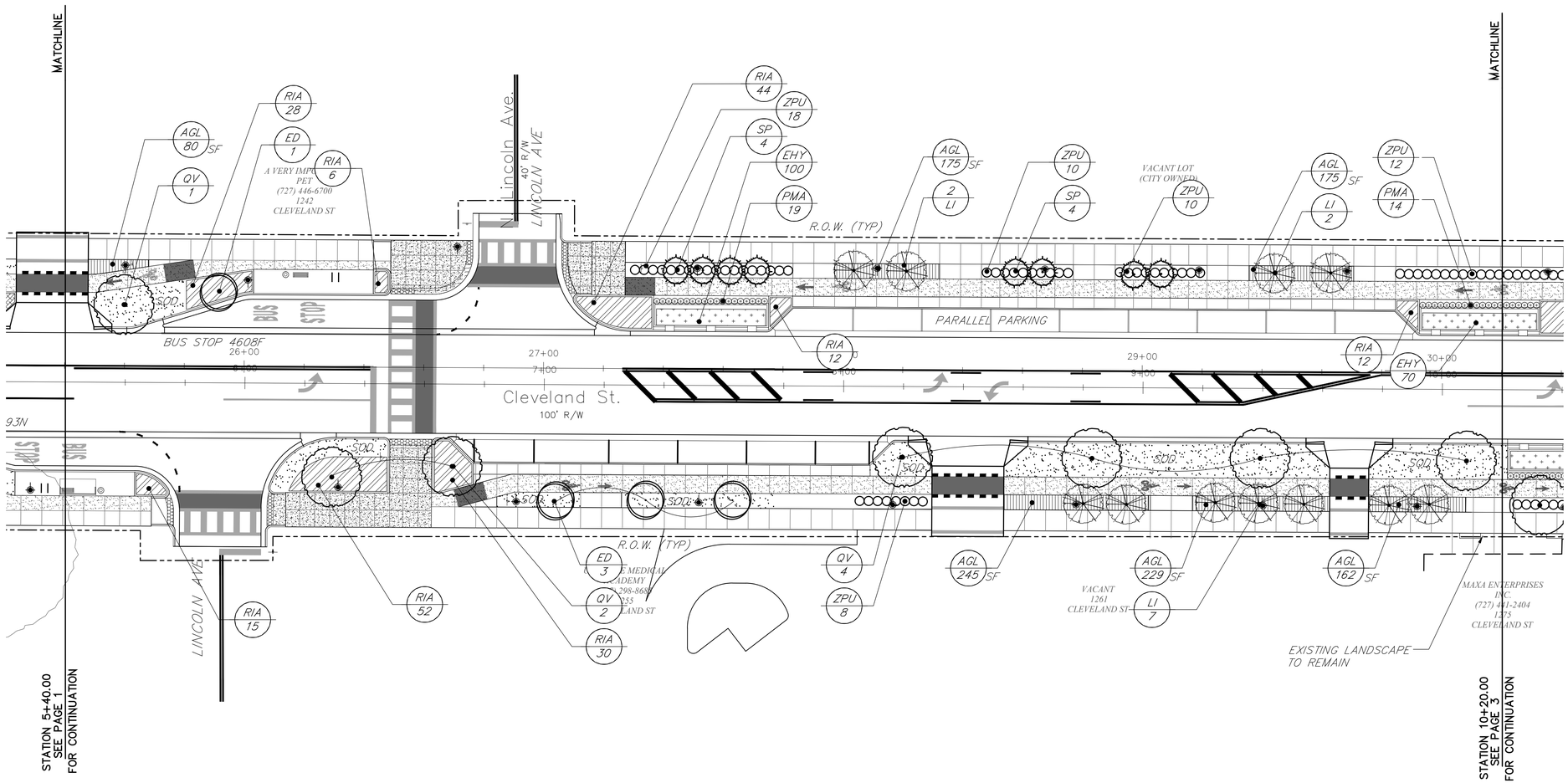

0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)

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DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
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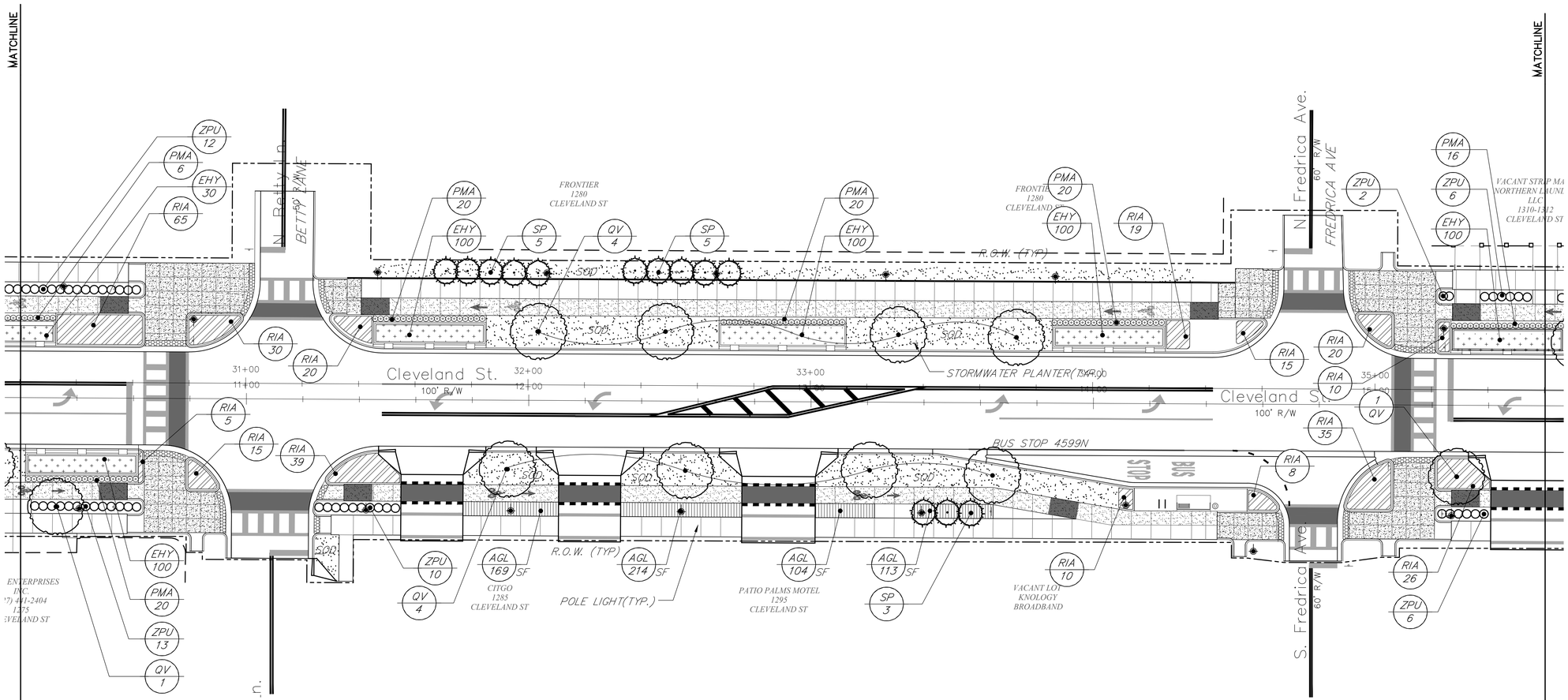

STATION 10+20.00
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STATION 15+60.00
SEE PAGE 4
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0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)

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CLEVELAND STREET PHASE III AND FESTIVAL CORE LANDSCAPE PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
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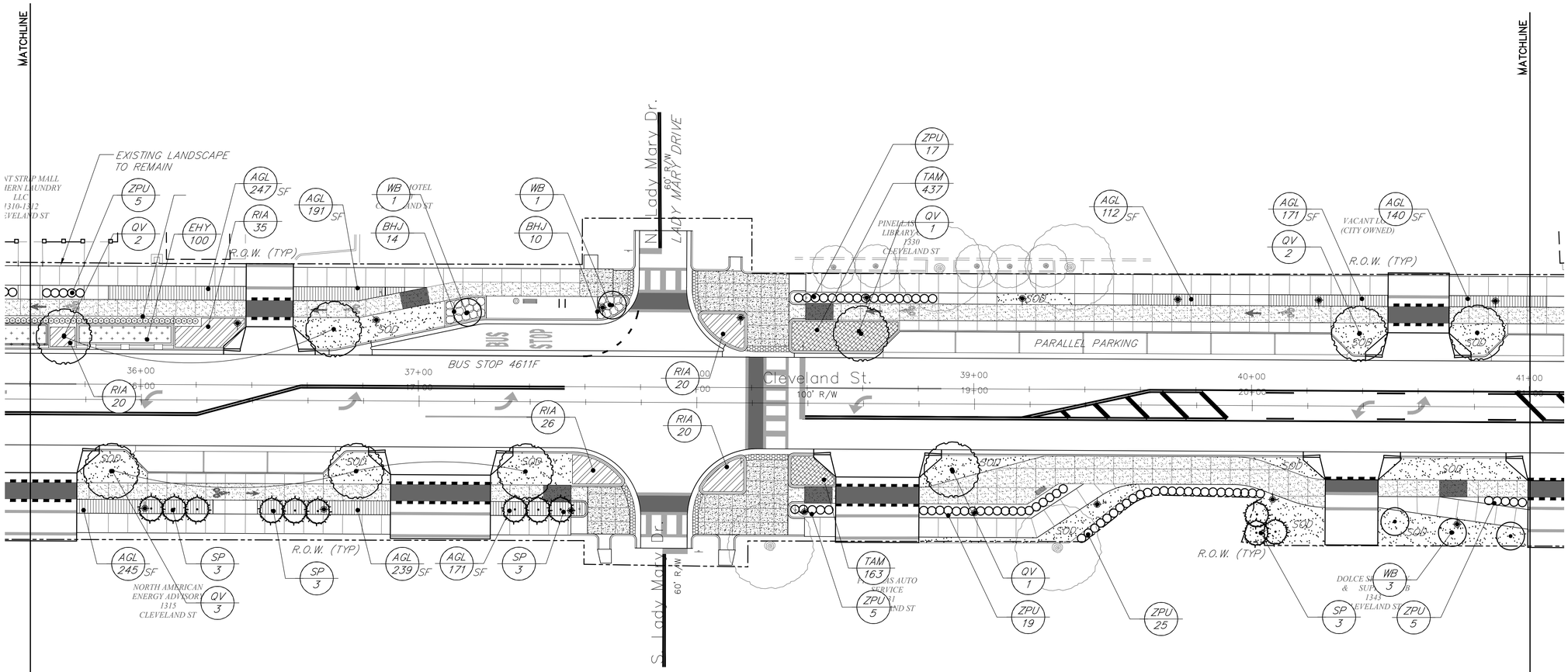

0' 20' 40'
SCALE: 1" = 20'
GRAPHIC SCALE (IN FEET)

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CLEVELAND STREET PHASE III AND FESTIVAL CORE LANDSCAPE PLAN

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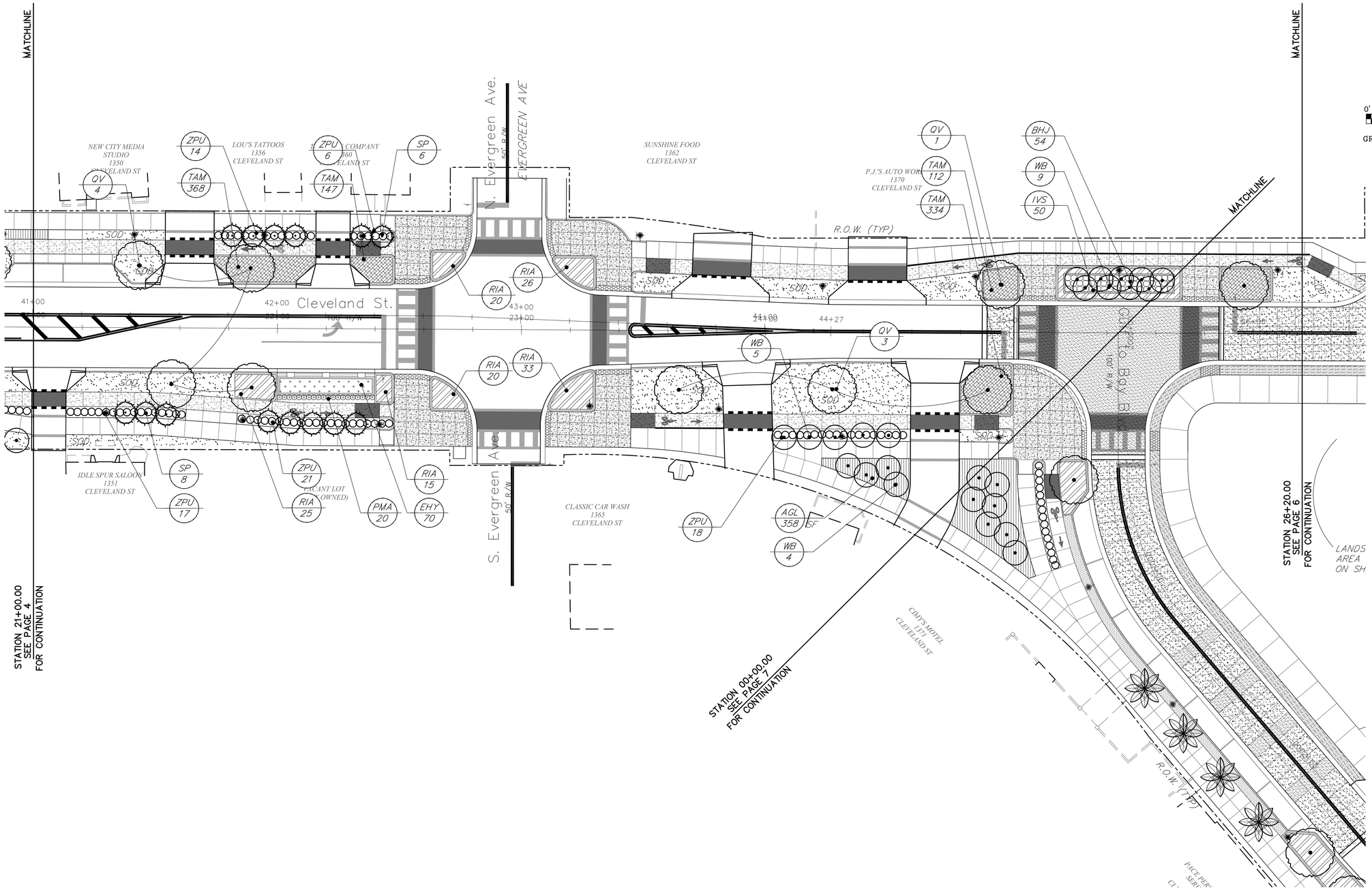

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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
LANDSCAPE PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. / HORIZ. AS SHOWN
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	
JOB NO.: A181093.02	DESIGNED BY: RP/FB	CHECKED BY: FB	SHEET NO.: LA-05
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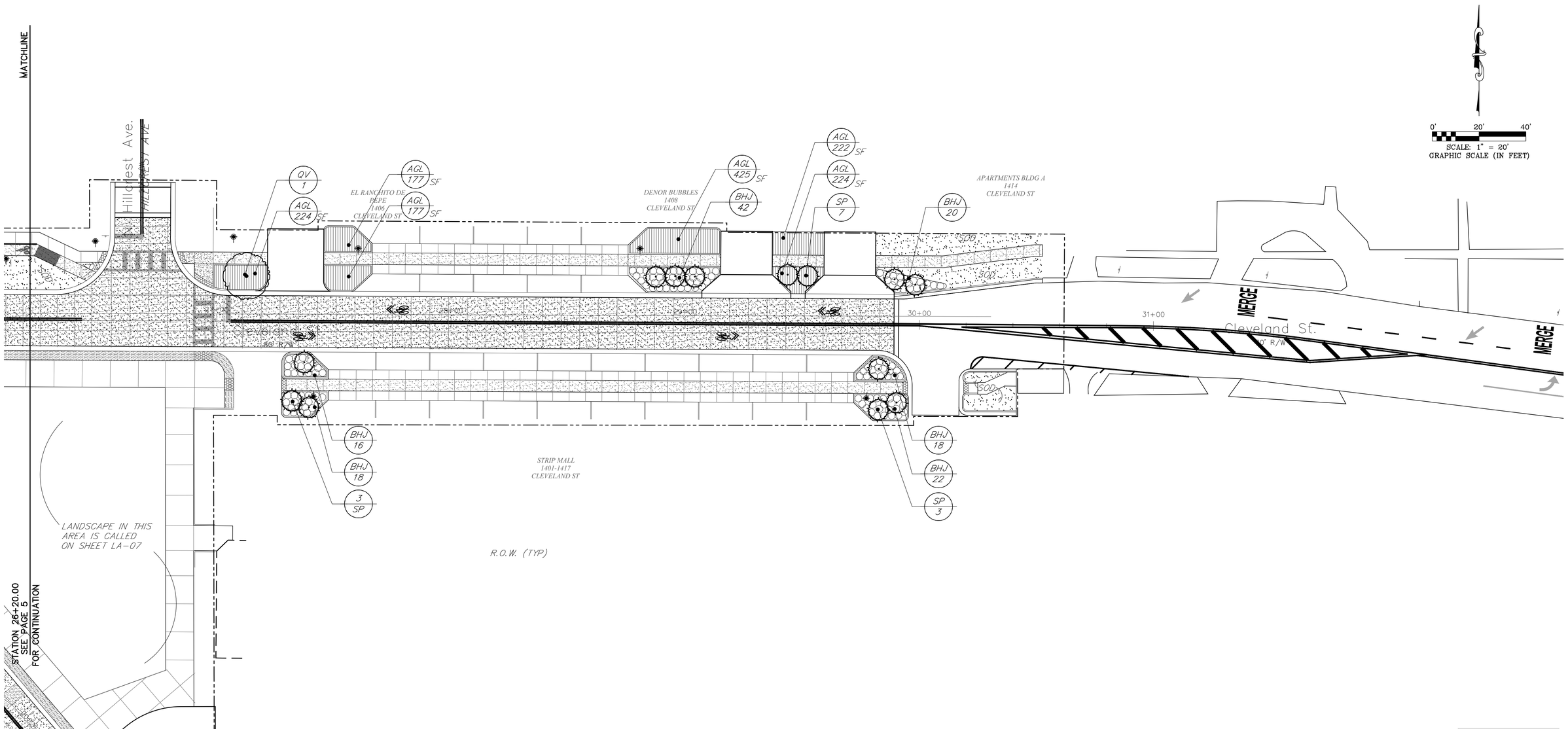

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CERTIFICATE OF AUTHORIZATION: EB9951

A181093.02

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CLEVELAND STREET PHASE III AND FESTIVAL CORE LANDSCAPE PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
JOB NO.: A181093.02	DESIGNED BY: RP/FB	CHECKED BY: FB	SHEET NO.: LA-06
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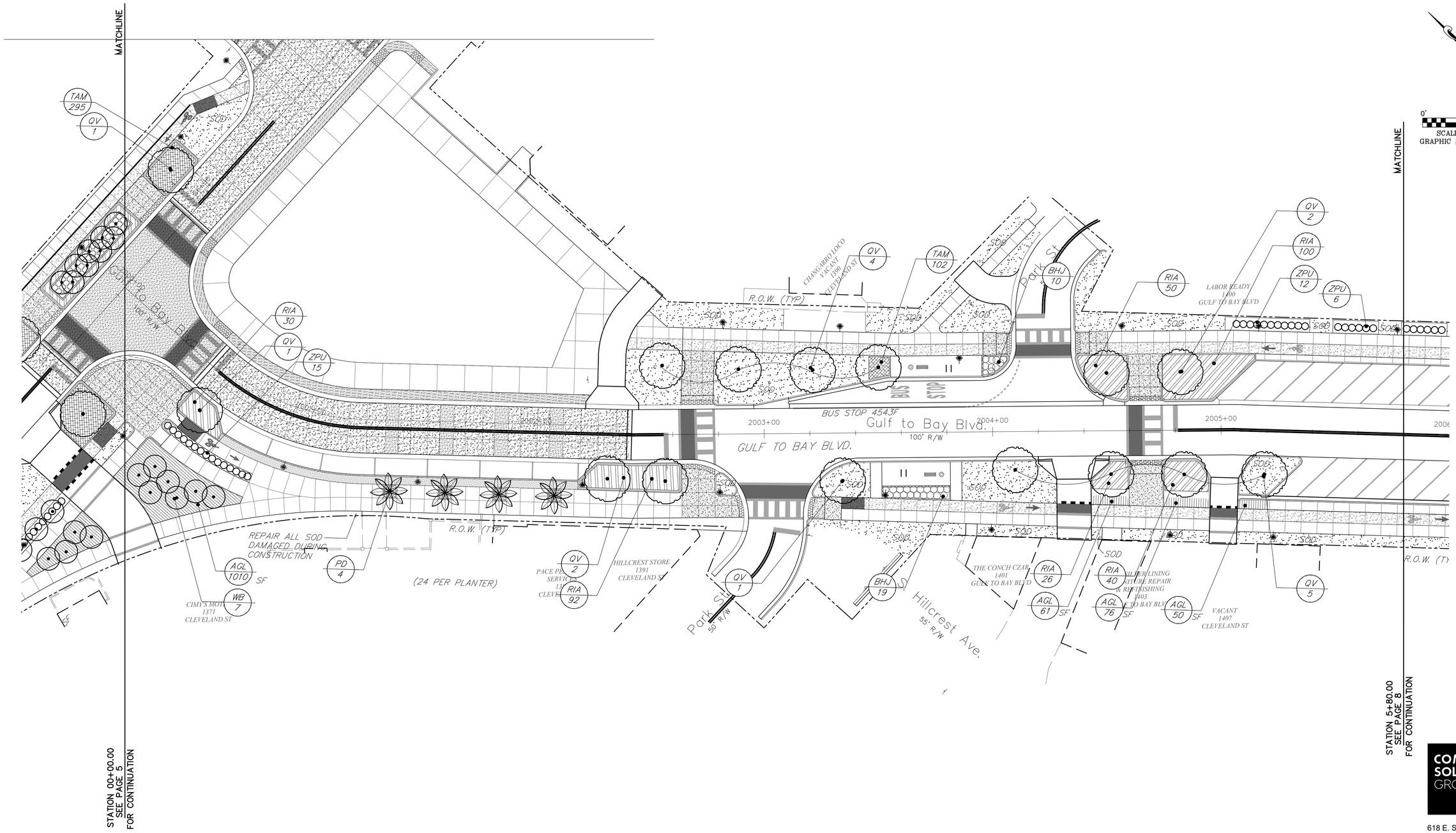

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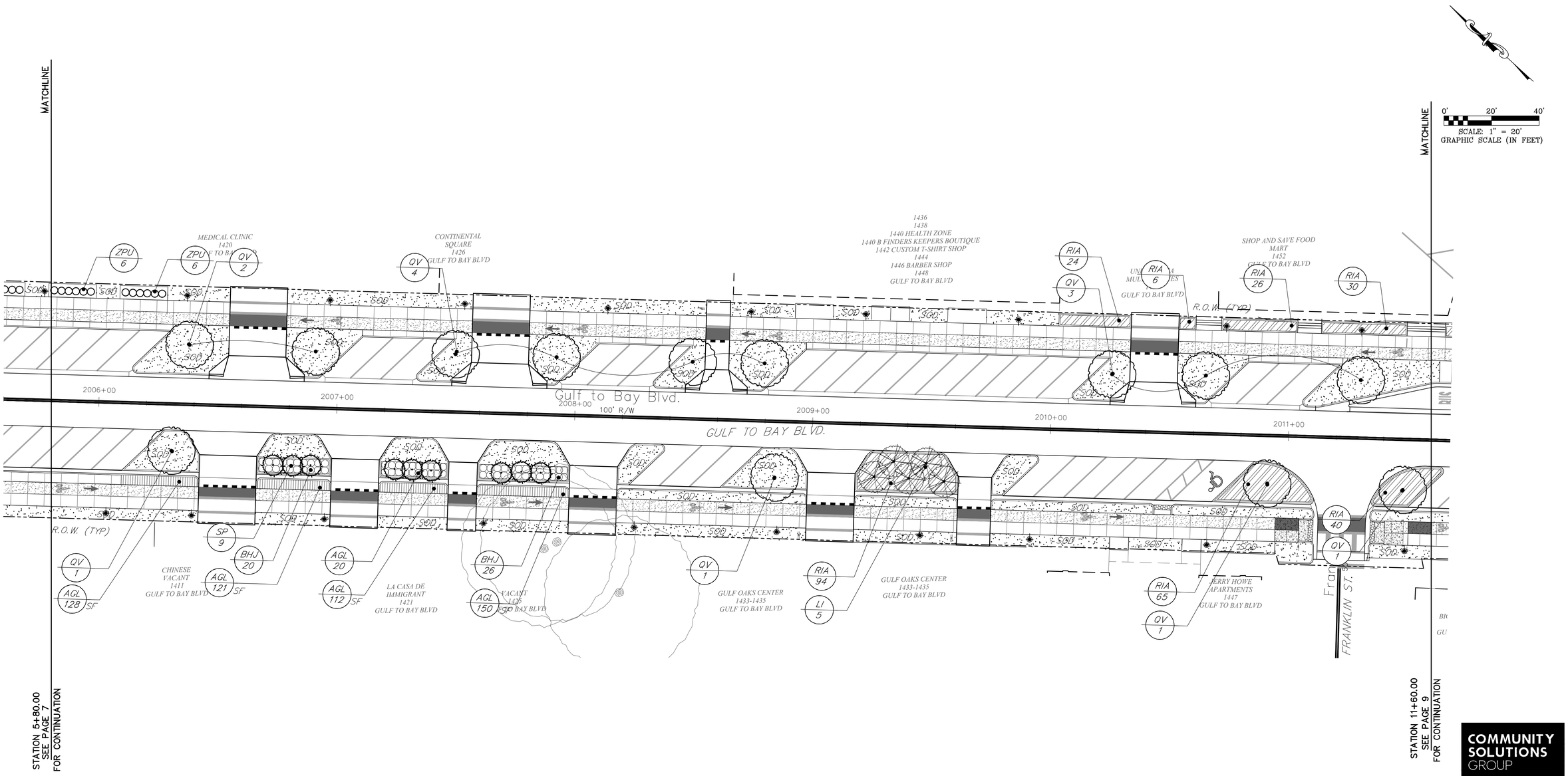

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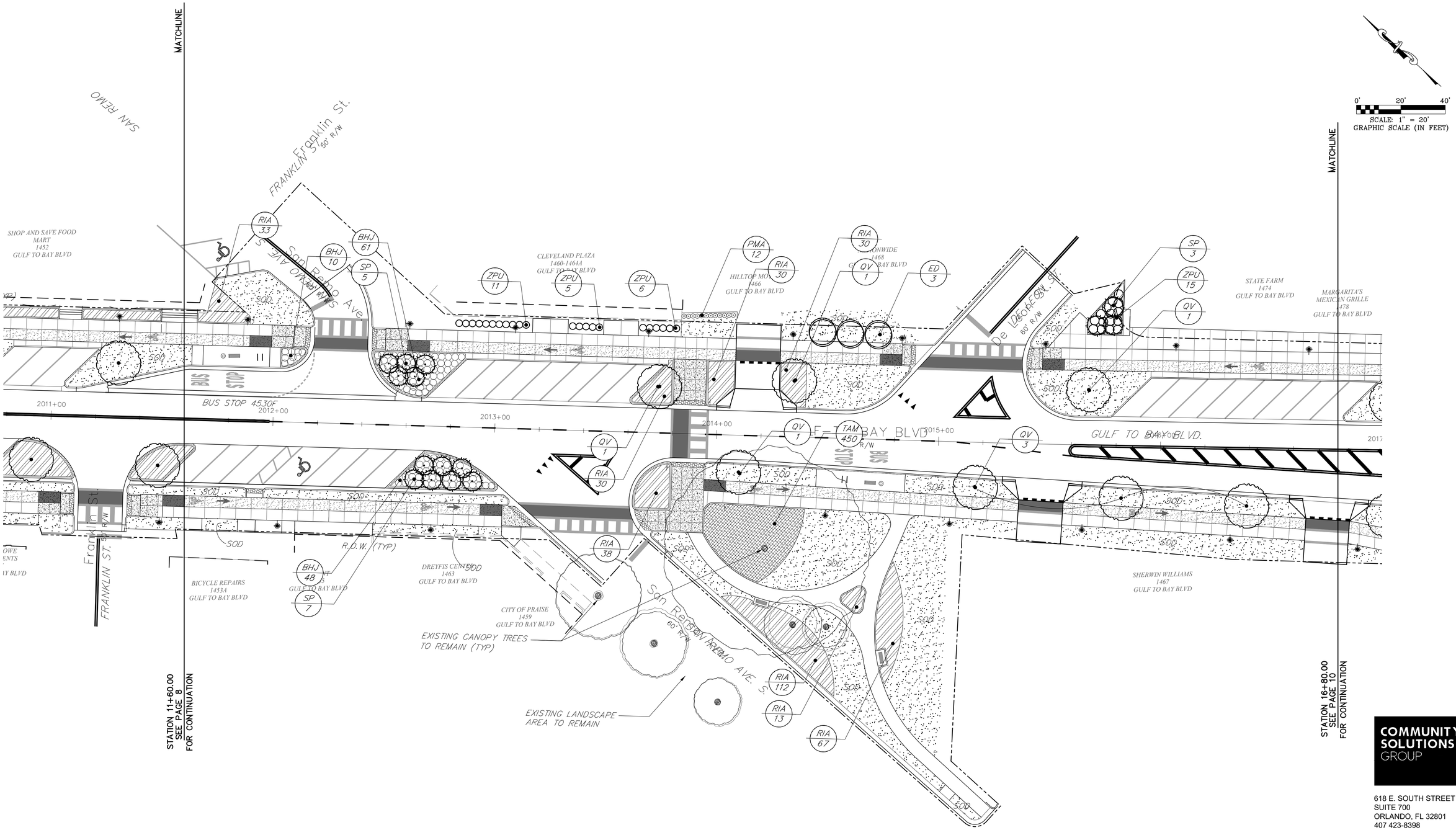

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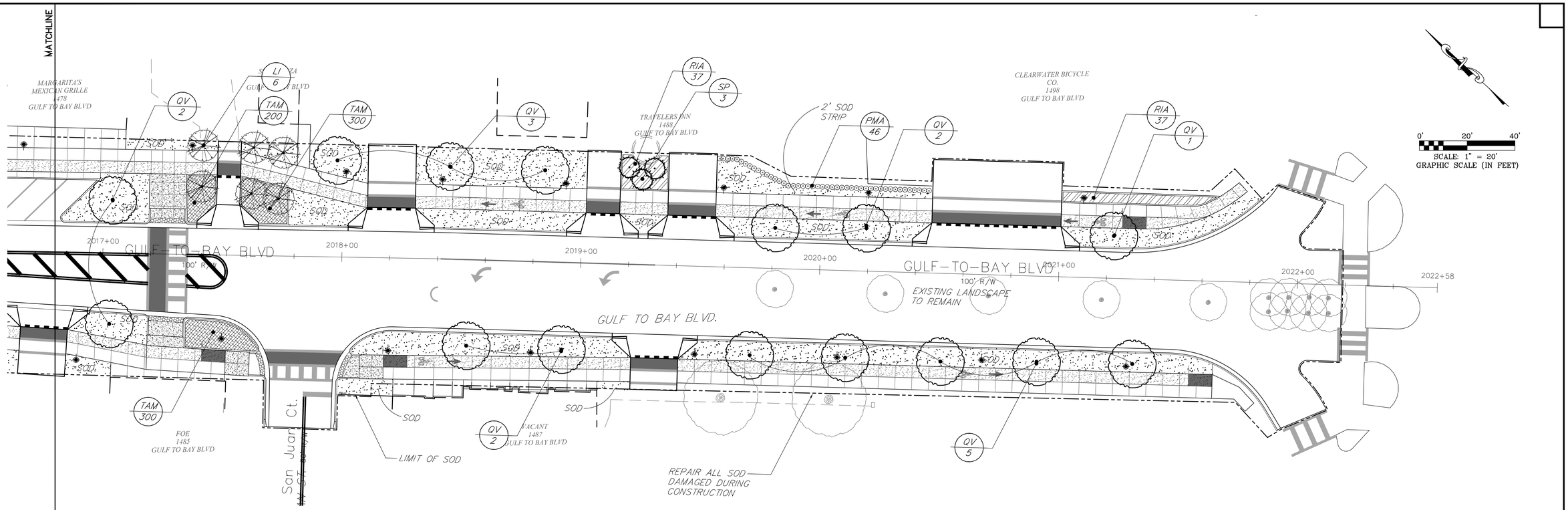

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SEE PAGE 9
FOR CONTINUATION

TREES & PALMS						
KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
ED	20	Elaeocarpus decipiens	Japanese Blueberry	16'–18' Ht. x 10'–12' Sprd.	A.S.	Single straight trunk, 7' C.T.
LI	20	Lagerstroemia indica 'Muskogee'	Lavender Crape Myrtle	16'–18' Ht. x 10'–12' Sprd.	A.S.	Multi-trunk, 3–4 trunk main., 7' C.T.
PD	8	Phoenix dactylifera 'Medjool'	Medjool Date Palm	14' C.T.	A.S.	Full, Symmetrical Heads, Diamond cut
QV	92	Quercus virginiana	Live Oak	10'–12' Overall Height	A.S.	2.5" Cal., Full Canopy
SP	84	Sabal palmetto	Sabal Palm	10'–16' C.T.	A.S.	Stagger Heights 'Equal percentage'
WB	36	Wodyetia bifurcata	Foxtail Palm	12'–16' C.T.	A.S.	Stagger Heights
SHRUBS & GROUND COVERS						
KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
AGL	9850	Arachis glabrata 'Ecoturf'	Perennial Peanut	Full Mats	S.F.	Fully rooted mats
BHJ	503	Bougainvillea 'Helen Johnson'	Dwf Bougainvillea	18"–20" x 18"–20	36" O.C.	3 Gallon, Full
EHY	1070	Equisetum hyemale	Horsetail	15"–18" O.A.	24" O.C.	1 Gallon, Full
IVS	50	Ilex vomitoria 'Shillings Dwarf'	Dwf Yaupon Holly	12"–15" x 15"–18"	30" O.C.	3 Gallon, Full
PMA	265	Podocarpus macrophyllus 'Pringles'	Dwf Podocarpus	28"–30" Ht. x 28"–30" Sprd.	24" O.C.	7 Gallon, Full
RIA	1986	Rhaphiolepis indica 'Alba'	Indian Hawthorn	15"–18" x 15"–18"	30" O.C.	3 Gallon, Full
TAM	3639	Trachelospermum asiaticum 'Minima'	Asiatic Jasmine	8"–10" Sprd.	12" O.C.	1 Galon, Full
ZPU	400	Zamia pumila	Coontie	15"–18" Ht. x 18"–24" Sprd.	36" O.C.	7 Gallon, Full
SOD AND MULCH						
SOD	54,200	Bermuda 'Latitude 36'		Contractor to verify amount.		
MULCH	215 C.Y.	Mini Pine Bark (1"–2" size)	3" Min. Deep	Contractor to verify amount.		

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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
LANDSCAPE PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16–0003–EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
JOB NO.: A181093.02	DESIGNED BY: RP/FB	CHECKED BY: FB	SHEET NO.: LA–10

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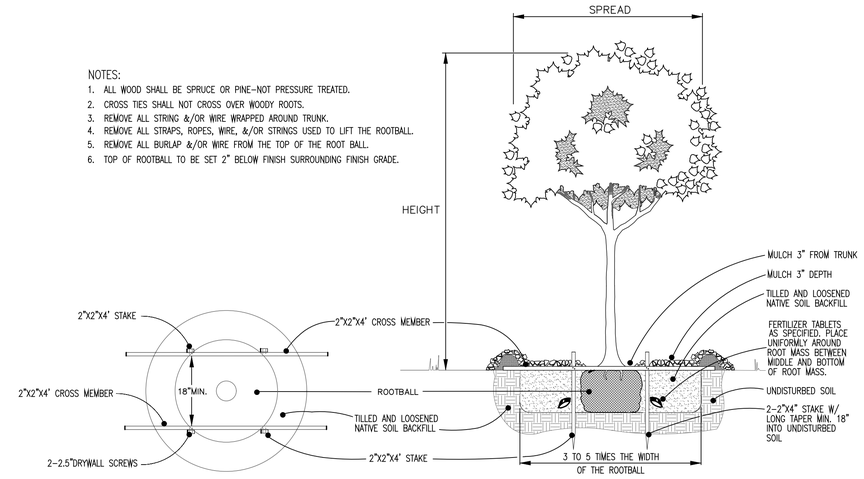
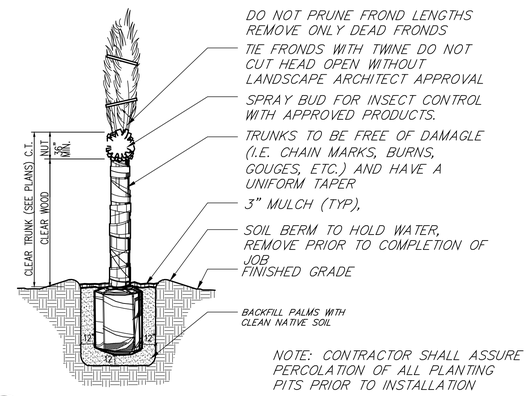
Last Modified Date: 6/22/2020 7:44 PM

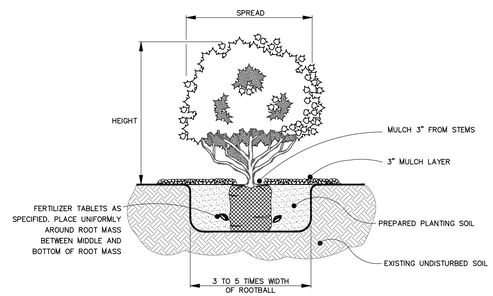
NOTES:
1. ALL WOOD SHALL BE SPRUCE OR PINE-NOT PRESSURE TREATED.
2. CROSS TIES SHALL NOT CROSS OVER WOODY ROOTS.
3. REMOVE ALL STRING &/OR WIRE WRAPPED AROUND TRUNK.
4. REMOVE ALL STRAPS, ROPES, WIRE, &/OR STRINGS USED TO LIFT THE ROOTBALL.
5. REMOVE ALL BURLAP &/OR WIRE FROM THE TOP OF THE ROOT BALL.
6. TOP OF ROOTBALL TO BE SET 2" BELOW FINISH SURROUNDING FINISH GRADE.



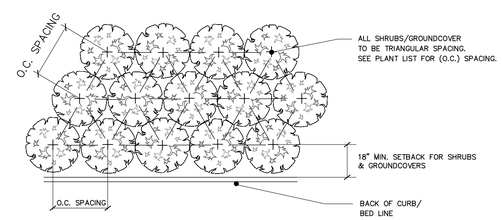
1 LA-11 TREE PLANTING DETAIL- CITY STANDARD
SCALE: N.T.S.
FILE NAME: la-treeplanting



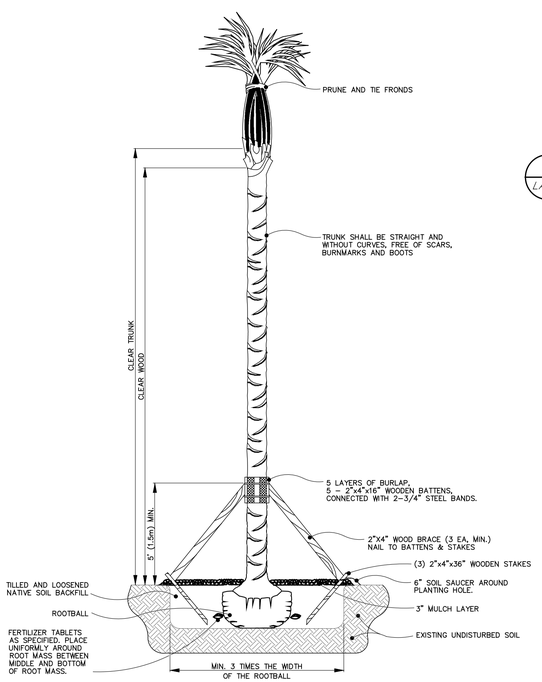
2 LA-11 DATE PALM INSTALLATION DETAIL
SCALE: N.T.S.



4 LA-11 SHRUB AND GROUNDCOVER PLANTING DETAIL- CITY STANDARD
SCALE: N.T.S.
FILE NAME: la-shrub&groundcover



5 LA-11 PLANT SPACING DETAIL
SCALE: N.T.S.
FILE NAME: la-plantspacing



3 LA-11 PALM PLANTING DETAIL- CITY STANDARD
SCALE: N.T.S.
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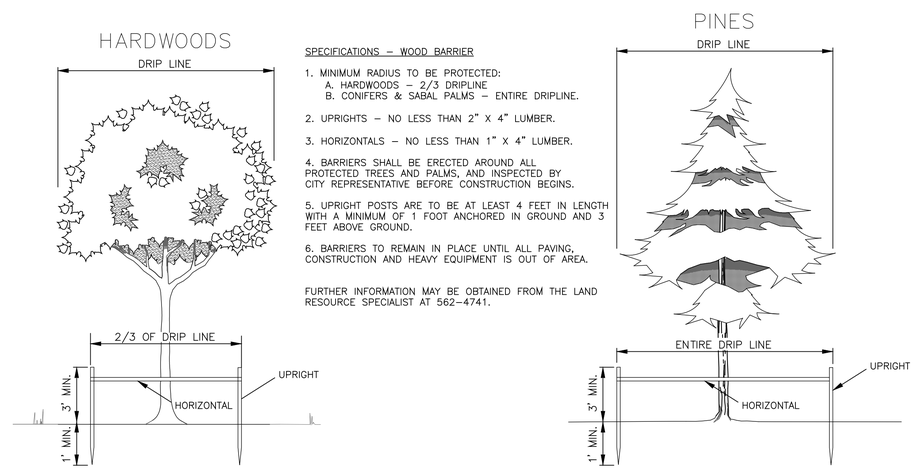

SPECIFICATIONS - WOOD BARRIER

1. MINIMUM RADIUS TO BE PROTECTED:
   A. HARDWOODS - 2/3 DRIPLINE
   B. CONIFERS & SABAL PALMS - ENTIRE DRIPLINE.
2. UPRIGHTS - NO LESS THAN 2" X 4" LUMBER.
3. HORIZONTALS - NO LESS THAN 1" X 4" LUMBER.
4. BARRIERS SHALL BE ERECTED AROUND ALL PROTECTED TREES AND PALMS, AND INSPECTED BY CITY REPRESENTATIVE BEFORE CONSTRUCTION BEGINS.
5. UPRIGHT POSTS ARE TO BE AT LEAST 4 FEET IN LENGTH WITH A MINIMUM OF 1 FOOT ANCHORED IN GROUND AND 3 FEET ABOVE GROUND.
6. BARRIERS TO REMAIN IN PLACE UNTIL ALL PAVING, CONSTRUCTION AND HEAVY EQUIPMENT IS OUT OF AREA.

FURTHER INFORMATION MAY BE OBTAINED FROM THE LAND RESOURCE SPECIALIST AT 562-4741.

6 LA-11 TREE BARRICADE DETAIL- CITY STANDARD
SCALE: N.T.S.
FILE NAME: la-treebarricades

GENERAL LANDSCAPE NOTES

1. The Landscape Contractor shall grade planting beds, as required, to provide positive drainage and promote optimum plant growth.
2. All recommended trees and plant materials will be graded as Nursery Grade No. 1 or better as outlined by the Florida Department of Agriculture and Consumer Services, Division of Plant Industry "Grades and Standards for Nursery Plants", 7th Edition, 1998 as revised from time to time.
3. All planting shall be done in accordance with the Florida Nurserymen's and Grower's Associations approved practices.
4. All plants shall be fertilized with Agriform 20-10-5 tablets as per the manufacturers specifications in conjunction with note # 5.
5. The prepared planting soil shall be excavated to a minimum depth of 24" and backfilled using the approximate proportions of topsoil: 50% sand and 50% organic material consisting of native well decomposed top soil from the Clearwater area. It should provide a good pliable and thoroughly mixed medium with adequate aeration, drainage and water-holding capacity. It shall also be free of all extraneous debris, such as rocks, stones, weeds, etc. and contain a ph range from 5.5 to 6.5.
6. All planting areas shall receive a 3" layer of mini pinebark mulch (1-2" overall size), which is to be watered-in after installation.
7. The plant material schedule is presented for the convenience of the Landscape Contractor. In the event of a discrepancy between the plan and the plant key, the plan shall prevail.
8. Plants shall meet size, container, and spacing specifications. Any material not meeting specifications shall be removed and replaced at the contractor's expense.
9. All tree and shrub locations are subject to change. All locations shall be approved by the City Project Manager prior to planting.
10. The Landscape Contractor shall be responsible for examining fully both the site and the bid documents. Discrepancies in the documents or the actual site conditions shall be reported to the City Project Manager in writing at the time of bidding or discovery. No account shall be made after contract completion for failure to report such condition, or for errors on the part of the Landscape Contractor at the time of bidding.
11. The Landscape Contractor shall be responsible for securing all necessary applicable permits and licenses to perform the work set forth in this plan set and the specifications.
12. Plant material shall be bid as specified unless unavailable, at which time the City Project Manager will be notified by telephone and in writing of intended changes.
13. Any and all questions concerning the plan set and/or specifications shall be directed to the City Project Manager at (727) 562-4737.
14. There shall be no additions, deletions or substitutions without the written approval of the City Project Manager.
15. The Landscape Contractor shall guarantee, in writing, plant survivability for a period of twelve (12) months from final acceptance by the City Project Manager.
16. All dimensions to be field-checked by the Landscape Contractor prior to landscape material installation. Discrepancies shall be reported immediately to the City Project Manager.
17. All materials must be as specified on the landscape plan. If materials or labor do not adhere to specifications, they will be rejected by the City Project Manager with proper installation carried out by Landscape Contractor at no additional cost.
18. All permits necessary are to be provided by the installing contractor unless otherwise specifically stated in the specifications.
19. No contractor identification signs shall be permitted on the project, except for the project information signs.
20. Existing sod shall be removed as necessary to accommodate new plantings.
21. Any existing sod areas that are unnecessarily disturbed during the landscape installation shall be resodded to match existing.
22. The Landscape Contractor will be responsible for the collection, removal, and proper disposal of any and all debris generated during the installation of this project.
23. All trees located within sod areas are to have a 5' diameter tree ring filled with a 3" layer of mini pine bark mulch (1-2" overall size).
24. All planting areas are to be constructed, whereby all non native soils and aggregates are removed.
25. Excavation of planting median shall penetrate through to native soil and backfilled with native soil from Clearwater area at a minimum depth of 24"

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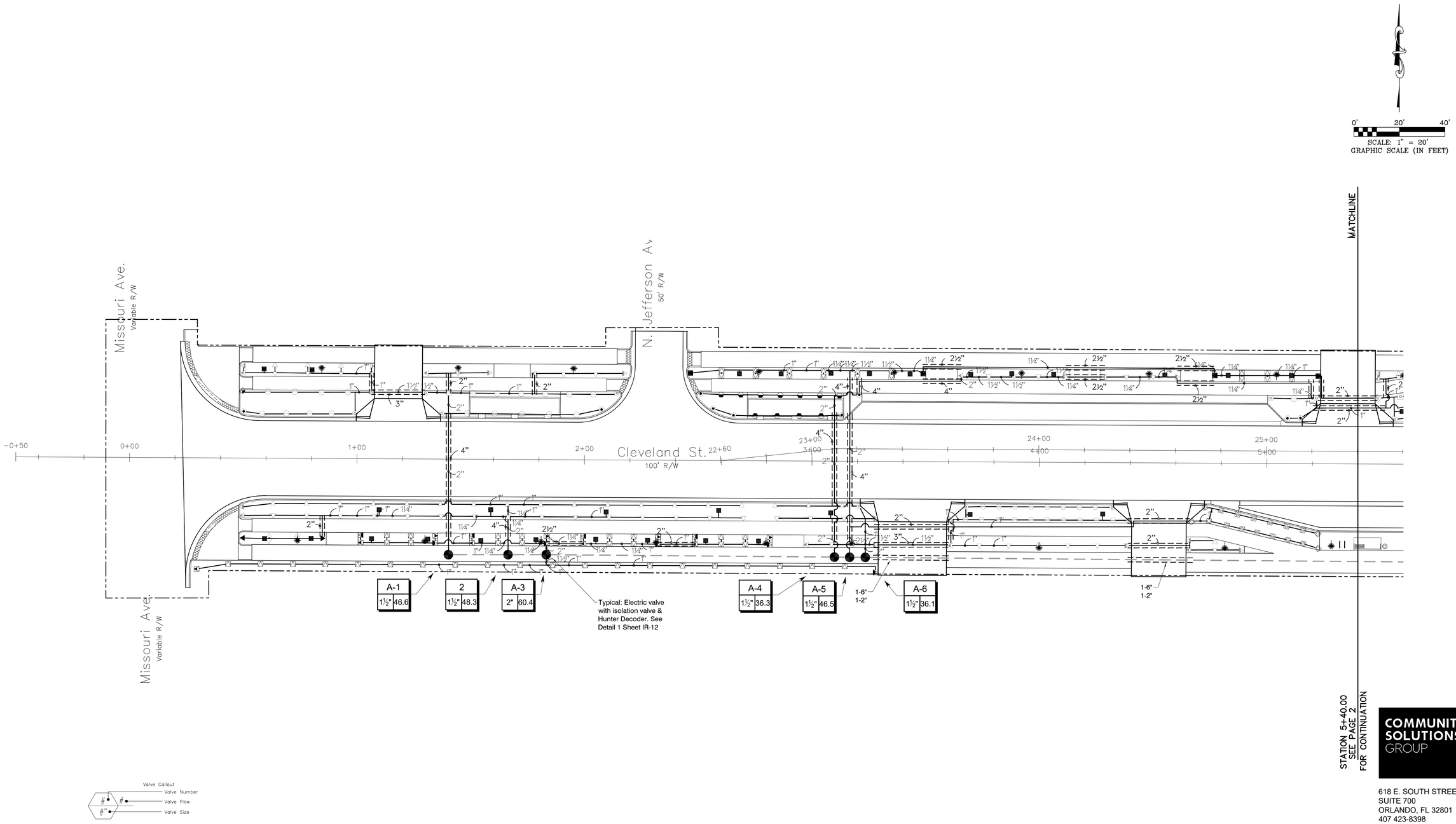

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Last Modified: Mon Feb 03, 2020 3:05 PM

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CLEVELAND STREET PHASE III AND FESTIVAL CORE IRRIGATION PLAN

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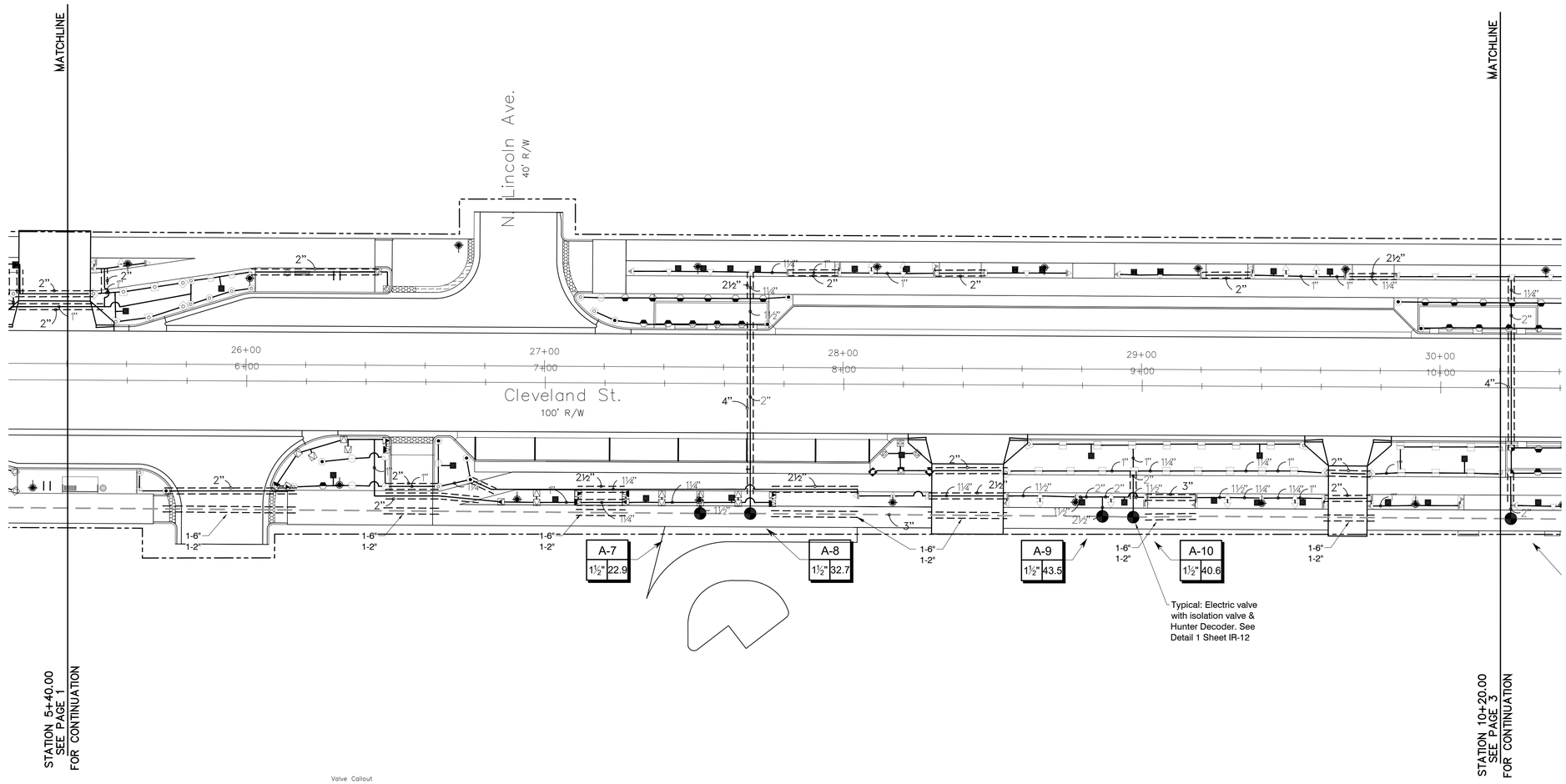

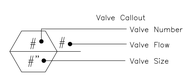

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CLEVELAND STREET PHASE III AND FESTIVAL CORE IRRIGATION PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. HORIZ. AS SHOWN
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	
JOB NO.: A181093.02	DESIGNED BY: RP/FB	CHECKED BY: FB	SHEET NO.: IR-02
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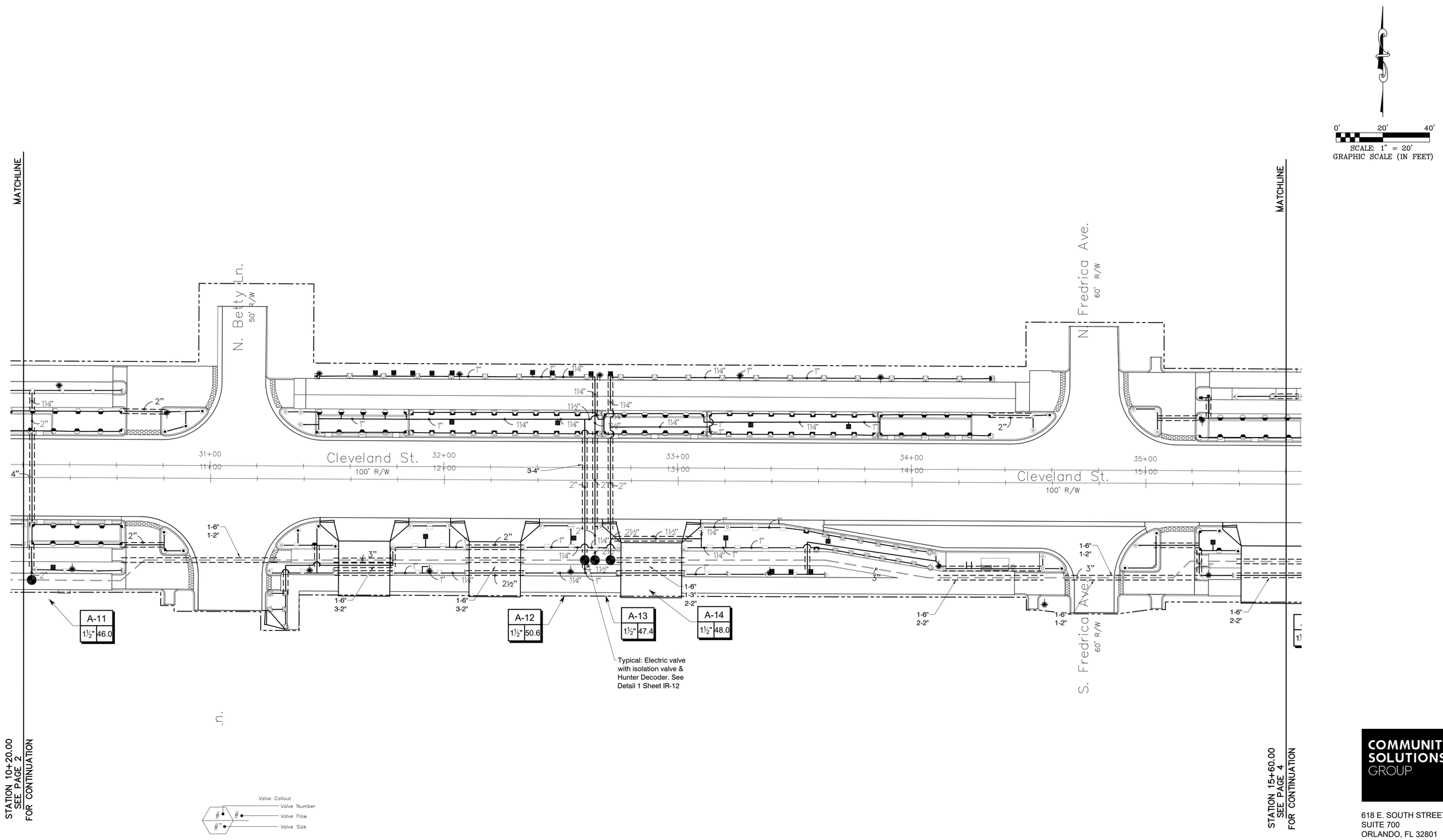

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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
IRRIGATION PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
JOB NO.: A181093.02	DESIGNED BY: RP/FB	CHECKED BY: FB	SHEET NO.: IR-03
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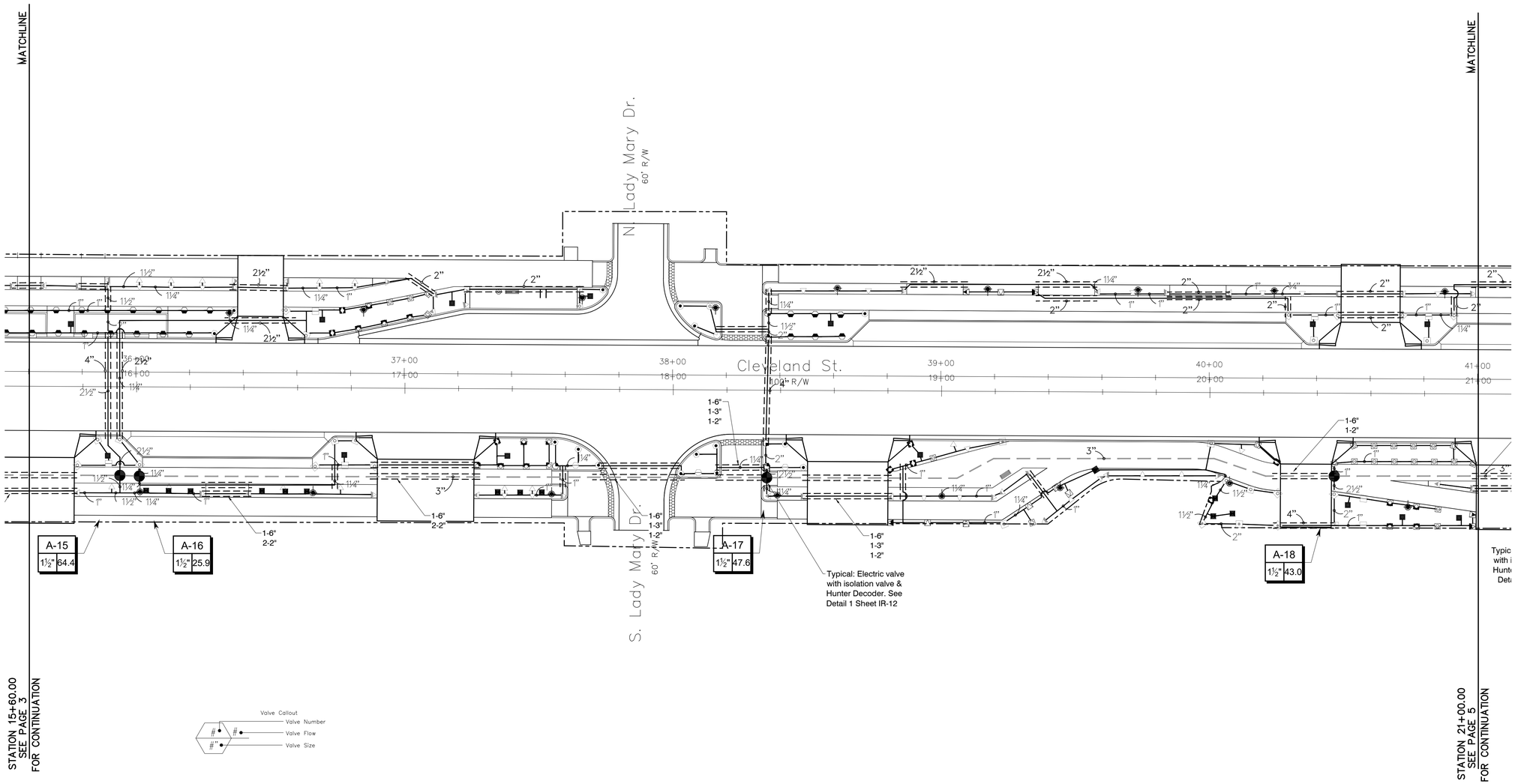

0' 20' 40'
SCALE: 1" = 20'
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CLEVELAND STREET PHASE III AND FESTIVAL CORE IRRIGATION PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
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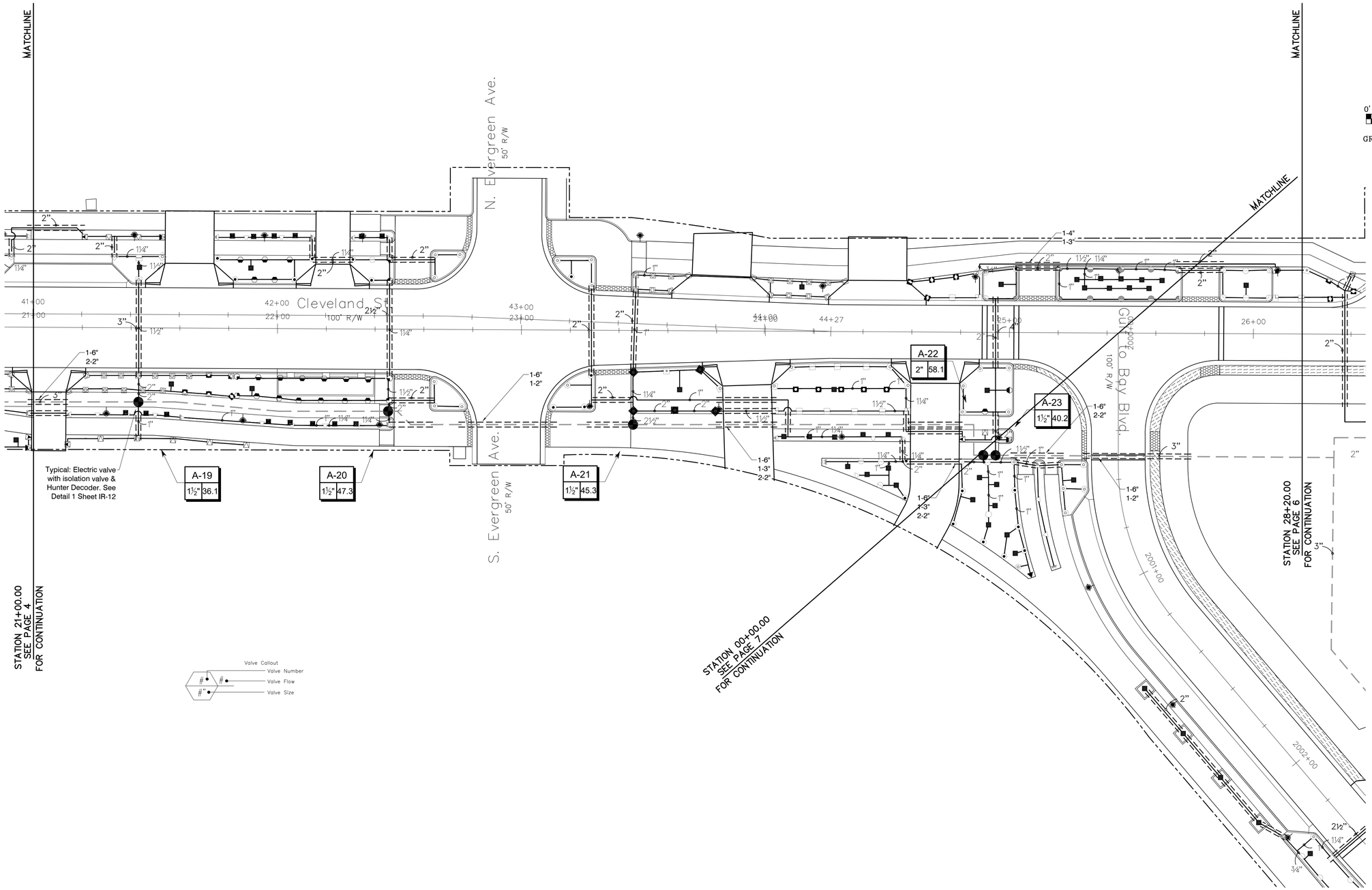

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CLEVELAND STREET PHASE III AND FESTIVAL CORE IRRIGATION PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT. / HORIZ. AS SHOWN
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	
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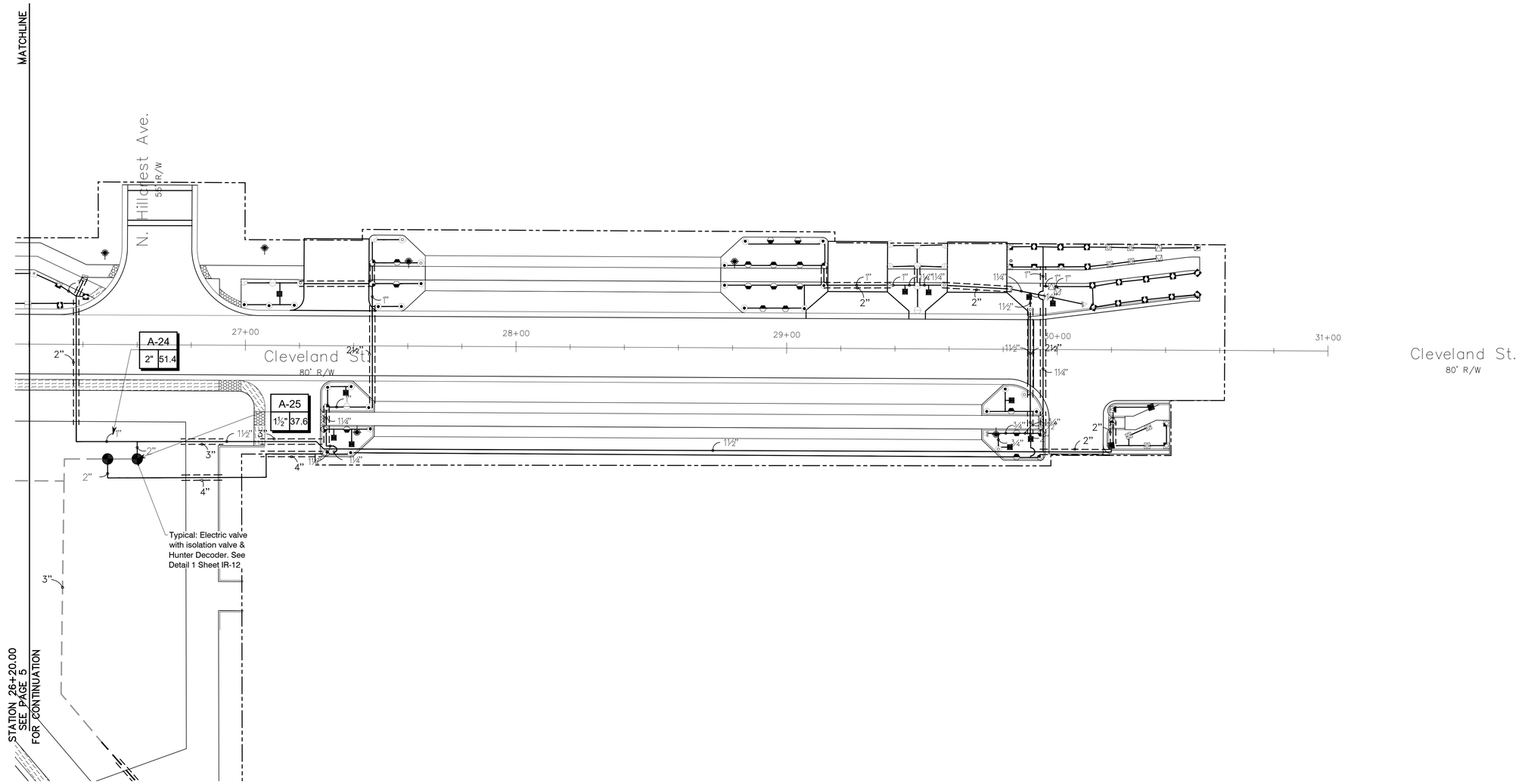

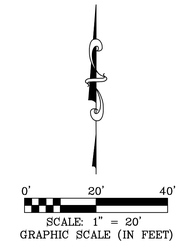

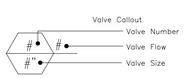

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CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
JOB NO.: A181093.02	DESIGNED BY: RP/FB	CHECKED BY: FB	SHEET NO.: IR-06

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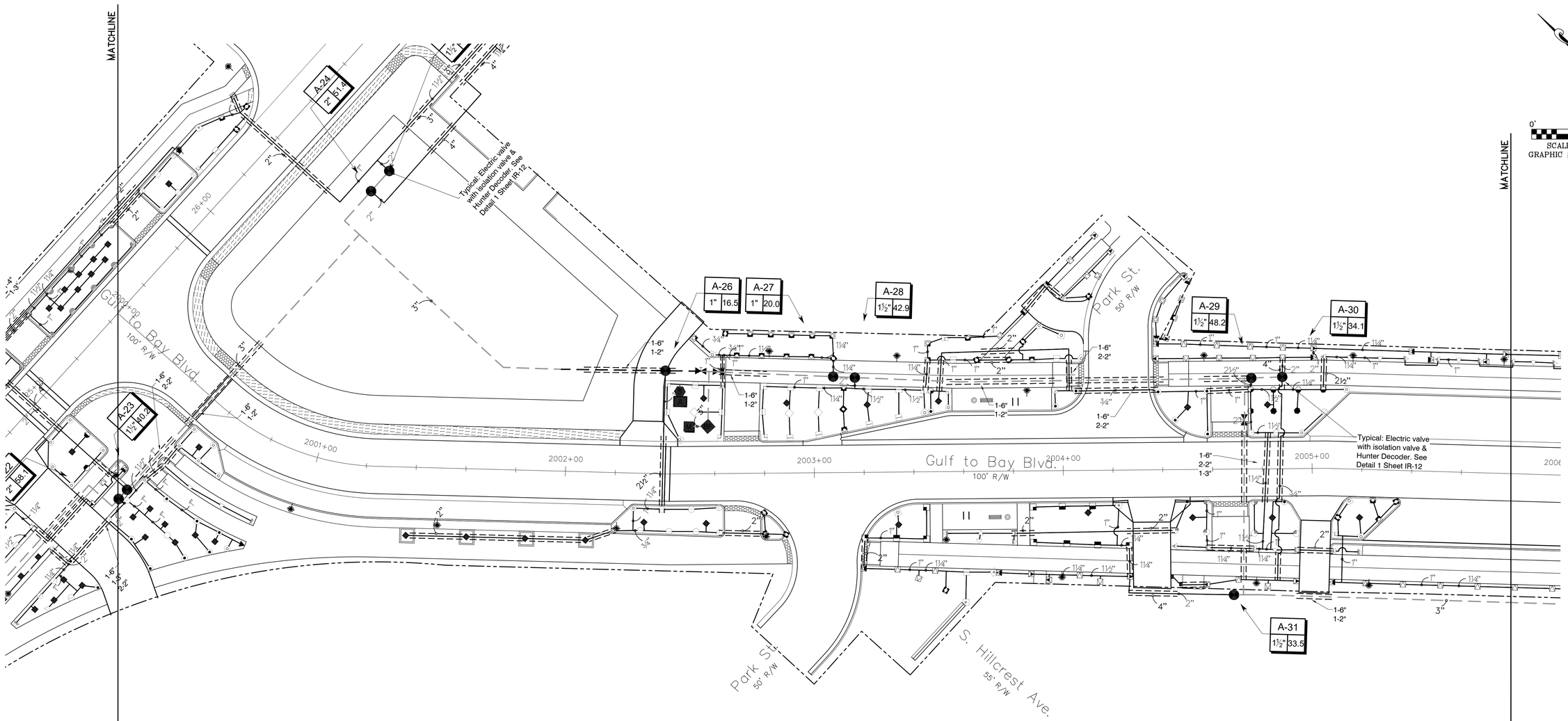

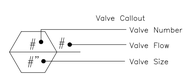

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STATION 5+80.00
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AND FESTIVAL CORE
IRRIGATION PLAN

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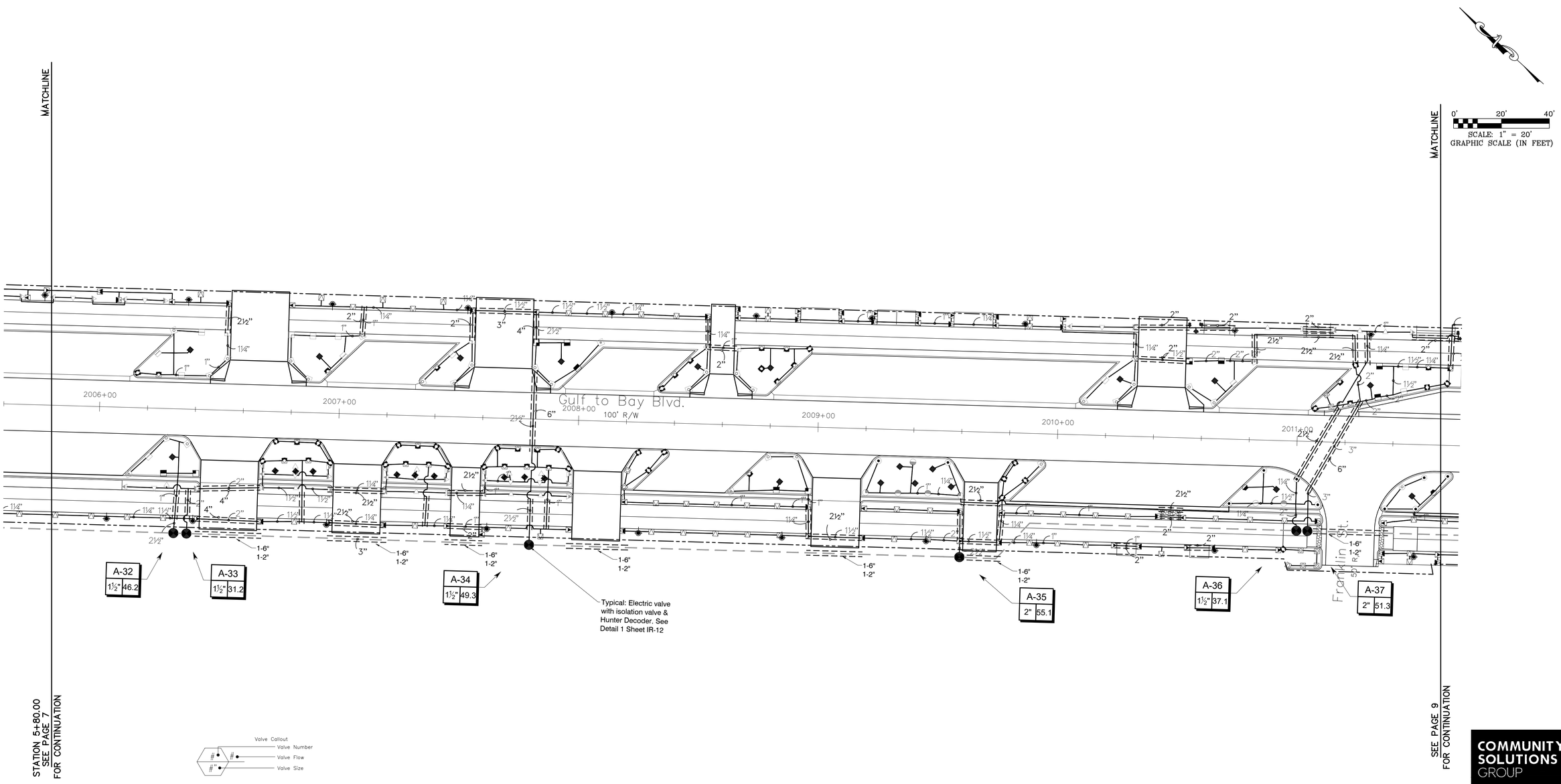

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DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
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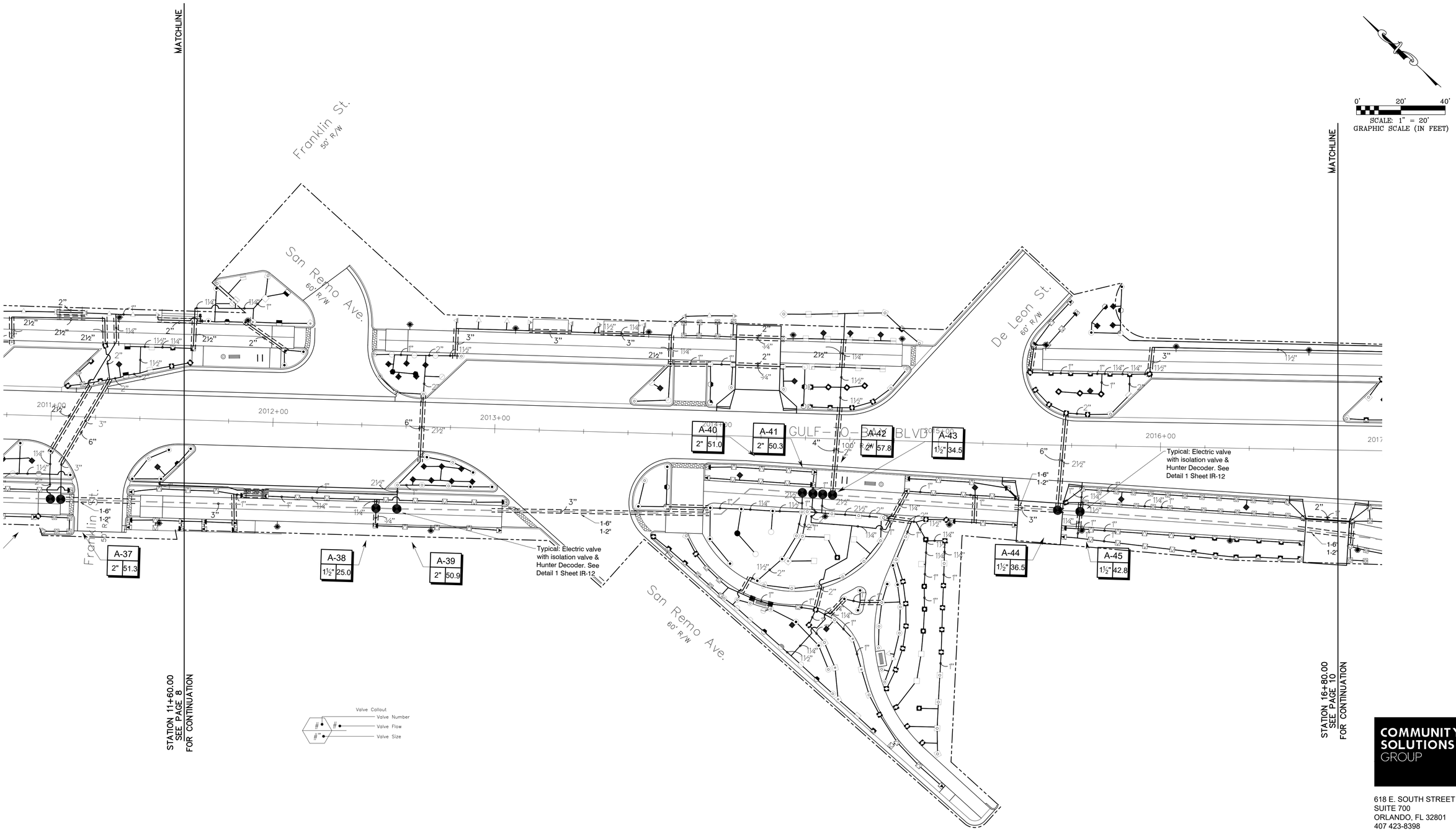

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DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
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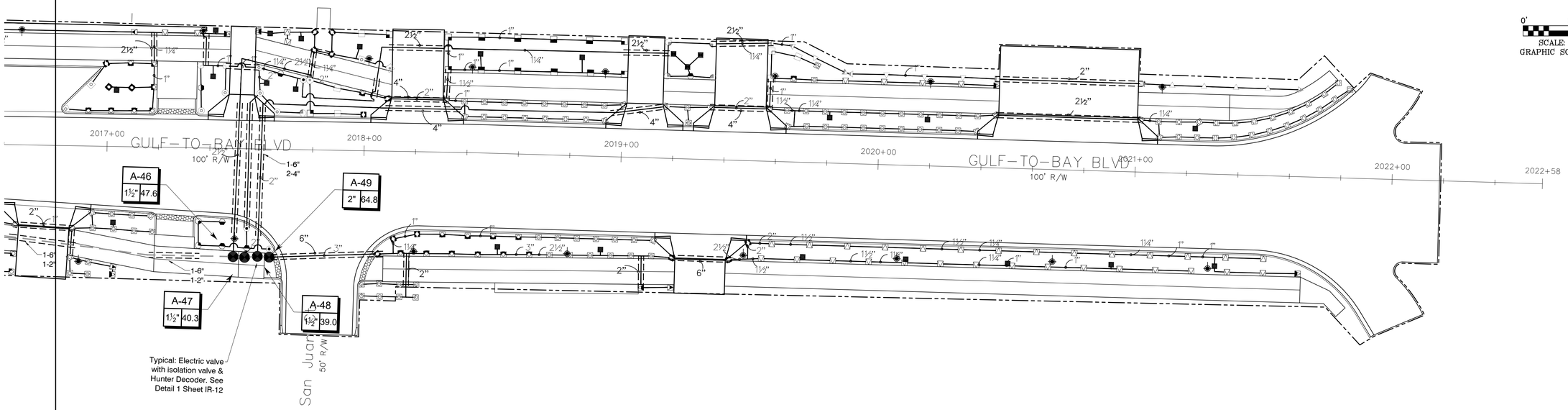

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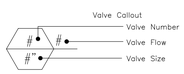
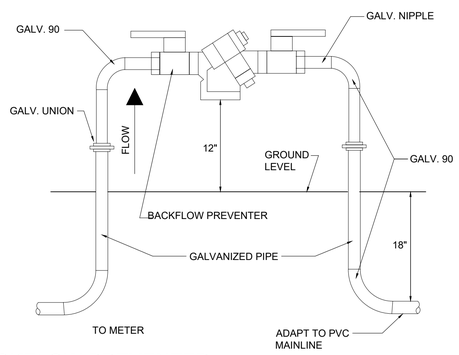


INSTALL ALL BACKFLOW PREVENTION DEVICES AND ALL PIPING BETWEEN THE POINT OF CONNECTION AND THE BACKFLOW PREVENTER AS PER LOCAL CODES. THE BACKFLOW DEVICE SHALL BE INSTALLED WITHIN A SHRUB/GROUNCOVER AREA. IF THE BACKFLOW CANNOT BE LOCATED WITHIN THE LANDSCAPING, THEN ADDITIONAL LANDSCAPING WILL BE REQUIRED TO SCREEN THE DEVICE FROM PUBLIC VIEW. FINAL LOCATION SHALL BE DETERMINED BY OWNER'S AUTHORIZED REPRESENTATIVE.



BACKFLOW PREVENTER

SCALE: NTS

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AND FESTIVAL CORE
IRRIGATION PLAN

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CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	
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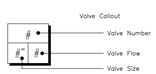
Last Modified: Sat, Jan 11, 2020 3:59 PM

IRRIGATION_SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
EST LCS RCS CST SST	Rain Bird RD-06-P30 15 Strip Series Turf Spray 6.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2" NPT Female Threaded Inlet.	413
Q T H F	Rain Bird RD-06-P30 8 Series MPR Turf Spray 6.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2" NPT Female Threaded Inlet.	176
Q T H F	Rain Bird RD-06-P30 10 Series MPR Turf Spray 6.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2" NPT Female Threaded Inlet.	174
Q T H TQ F	Rain Bird RD-06-P30 12 Series MPR Turf Spray 6.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2" NPT Female Threaded Inlet.	61
Q T H TQ F	Rain Bird RD-06-P30 15 Series MPR Turf Spray 6.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2" NPT Female Threaded Inlet.	2
4 6 18	Rain Bird 18RD-06-P30 ADJ Turf Spray 6.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2" NPT Female Threaded Inlet.	5
08HE-VAN 12HE-VAN 10HE-VAN 15HE-VAN	Rain Bird RD-06-P30 HE-VAN Series Turf Spray 6.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2" NPT Female Threaded Inlet.	345
Q T H TT TQ F	Rain Bird RD-06-P30 U12 Series Turf Spray 6.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2" NPT Female Threaded Inlet. Pressure Regulating. With Non Potable Purple Cap.	69
Q T H TT TQ F	Rain Bird RD-06-P30 U15 Series Turf Spray 6.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2" NPT Female Threaded Inlet. Pressure Regulating. With Non Potable Purple Cap.	37
2Q 2H 2F 4Q 4H 4F	Rain Bird 1812-5AM-PRS-NP SQ Series Shrub Spray 12.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. 1/2" NPT Female Threaded Inlet. With Seal-A-Matic Check Valve, Pressure Regulating Device, and Non-Potable Purple Cap.	9
EST LCS RCS CST SST	Rain Bird 1812-5AM-PRS-NP 15 Strip Series Shrub Spray 12.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. 1/2" NPT Female Threaded Inlet. With Seal-A-Matic Check Valve, Pressure Regulating Device, and Non-Potable Purple Cap.	384
Q T H F	Rain Bird 1812-5AM-PRS-NP 8 Series MPR Shrub Spray 12.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. 1/2" NPT Female Threaded Inlet. With Seal-A-Matic Check Valve, Pressure Regulating Device, and Non-Potable Purple Cap.	39
Q T H F	Rain Bird 1812-5AM-PRS-NP 10 Series MPR Shrub Spray 12.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. 1/2" NPT Female Threaded Inlet. With Seal-A-Matic Check Valve, Pressure Regulating Device, and Non-Potable Purple Cap.	202
Q T H TQ F	Rain Bird 1812-5AM-PRS-NP 12 Series MPR Shrub Spray 12.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. 1/2" NPT Female Threaded Inlet. With Seal-A-Matic Check Valve, Pressure Regulating Device, and Non-Potable Purple Cap.	17
Q T H TQ F	Rain Bird 1812-5AM-PRS-NP 15 Series MPR Shrub Spray 12.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. 1/2" NPT Female Threaded Inlet. With Seal-A-Matic Check Valve, Pressure Regulating Device, and Non-Potable Purple Cap.	12
08HE-VAN 12HE-VAN 10HE-VAN 15HE-VAN	Rain Bird 1812-5AM-PRS-NP HE-VAN Series Shrub Spray 12.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. 1/2" NPT Female Threaded Inlet. With Seal-A-Matic Check Valve, Pressure Regulating Device, and Non-Potable Purple Cap.	247
Q T H TT TQ F	Rain Bird RD-12-P30-F-NP-U U12 Series 12.0" Pop-Up, with 30 psi in-stem pressure regulation, Flow-Shield Technology, and Non-Potable Cover (purple cap). 1/2" NPT female threaded inlet.	60
Q T H TT TQ F	Rain Bird RD-12-P30-F-NP-U U15 Series 12.0" Pop-Up, with 30 psi in-stem pressure regulation, Flow-Shield Technology, and Non-Potable Cover (purple cap). 1/2" NPT female threaded inlet.	21
25 50 T0 20	Rain Bird 1800-1400 Flood Fixed flow rate (0.25-2.0GPM), full circle bubbler, 1/2" FIPT. Each .5 GPM symbol represents 2-.25 GPM bubblers. Each 1 GPM symbol represent 2-.5 GPM bubblers	530

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	Irritrol 200B Irritrol 200B Control valve in 12" Purple Valve Box. Install Hunter Decoder at each valve. Install a Nibco T-113 2" Isolation valve prior to each valve.	49
	Nibco T-113 Class 125 bronze gate shut off valve with wheel handle, same size as mainline pipe diameter at valve location. Size Range - 1/4" - 3"	51
	Hunter A2C-75D-PP 75-Station Decoder controller on a Plastic Pedestal.	1
	Hunter MINI-CLIK Rain Sensor, mount as noted	1
	Watts 2" Backflow Preventer Check Local Codes for Exact Specifications	1
	Water Meter 2"	1
	Irrigation Lateral Line: PVC Schedule 40-NP	30,785 l.f.
	Irrigation Mainline: PVC Schedule 40-NP 3" Mainline	4,374 l.f.
	Pipe Sleeve: PVC Schedule 40 Extend end of sleeves 18' beyond edges of pavement or construction.	6,989 l.f.



CONTROLLER A & B TO RUN SIMULTANEOUSLY

UNDERGROUND IRRIGATION SPECIFICATIONS

1.0 GENERAL

1.1 SUMMARY: Includes but not limited to:
- A. Furnishing and installing sprinkler system as described in Contract Documents complete with accessories necessary for proper functioning.

1.2 SYSTEM DESCRIPTION:
- A. Design Requirements:
  1. Layout of Irrigation Heads:
     - a. Location of heads shown on Drawings is approximate. Actual placement may vary slightly as is required to achieve full, even coverage without spraying onto buildings, sidewalks, fences, etc.
     - b. During layout, consult with Landscape Architect to verify proper placement and make recommendations, where revisions are advisable.

1.3 QUALITY ASSURANCE:
- A. Regulatory Requirements:
  1. Work and materials shall be in accordance with latest rules and regulations, and other applicable state or local laws. Nothing in Contract Documents is to be construed to permit work not conforming to these codes.
- B. Pre-Installation Conference:
  1. Meet with Owner and Landscape Architect to discuss and clarify all aspects of job requirements prior to commencing work of this Section.
- C. System Adjustments:
  1. Minor adjustments in system will be permitted to avoid existing fixed obstructions.
  2. Mainline, laterals, and valves are shown for clarity purposes only. All irrigation equipment to be with landscape area. Mainline, laterals and valves to be installed as far away from existing and new specimen trees as possible.
- D. 1. Documentation and submittal of actual water supply performance prior to commencing installation.

1.4 SUBMITTALS:
- A. Record Drawings:
  1. Prepare an accurate as-built drawing as installation proceeds to be submitted prior to final inspection. Drawing shall include:
     - a. Detail and dimension changes made during construction.
     - b. Significant details and dimensions not shown in original Bidding Documents.
  2. Maintain, at job site, one copy of Contract Documents (as defined in General Conditions) and relevant shop drawings.
  3. Clearly mark each document "PROJECT RECORD COPY" and maintain in good condition for use of the Landscape Architect and Owner.
  4. As-built drawing shall be clearly drawn on reproducible mylar.
  5. Submit product literature for all sprinklers, valves, pipe, wire, wire connectors and controller.
  6. Final payment for system will not be authorized until accurate and complete submittals are delivered to the Landscape Architect.
- B. Instruction Manual:
  1. Provide instruction manual which lists complete instructions for system operation and maintenance.

1.5 PRODUCT STORAGE:
- A. During construction and storage, protect materials from damage and prolonged exposure to sunlight.

1.6 WARRANTY:
- A. Standard one (1) year warranty stipulated in General Conditions shall include:
  1. Completed system including parts and labor.
  2. Filling and repairing depressions and replacing plantings due to settlement of irrigation trenches for one (1) year following final acceptance.
  3. System adjustment to supply proper coverage to areas to receive water.

1.7 MAINTENANCE:
- A. Extra Materials:
  1. In addition to installed system, furnish Owner with the following items at close-out:
     - a. Two sprinkler head bodies of each size and type.
     - b. Two nozzles for each size and type.
     - c. Two adjusting keys for each sprinkler head cover type.

2.0 PRODUCTS:

2.1 PIPE, PIPE FITTINGS, AND CONNECTIONS:
- A. Pipe shall be continuously and permanently marked with Manufacturer's name, size, schedule, type, and working pressure.
- B. Pipe:
  1. Pressure Lines: as indicated on plans.
  2. Lateral Lines: as indicated on plans.
  3. Risers: sch. 80 PVC, gray
- C. Fittings:
  1. Schedule 40 PVC.
- D. Sleeving:
  1. Schedule 40 PVC.

2.2 SPRINKLER HEADS:
- A. Conform to requirements shown on Drawings as to type, radius of throw, pressure, and discharge.

2.3 AUTOMATIC SPRINKLER SYSTEM:
- A. Control valves shall be of size and type indicated on Drawings.
- B. Control wire shall be Hunter ID1BLU for controller A and ID1PUR for controller B. All wire splices into the Hunter IDWIRE1 shall be made with 3M-DBR6 wire splices. Ground controller per manufacture specifications. Ground control wire every 500' per manufacture specifications. Wires splices from decoder to solenoid to be made with 3M-DBY wire splices.

2.4 VALVES:
- A. Electric Valves:
  1. Make and model shown on Drawings.
- B. Gate valves:
  1. Bronze construction, angle type, 150 pound class, threaded connections, with cross-type operating handle designed to receive operating key.
- C. Automatic Controller:
  1. Make and model shown on Drawings.
- D. Backflow Preventor:
  1. Make and model shown on Drawings.

2.5 VALVE ACCESSORIES:
- A. Valve Boxes:
  1. Ametek or Brooks rectangular heavy duty valve box with locking lid or Landscape Architect approved equal.
  2. Do not install more than one (1) valve in a single box.
  3. Valve boxes shall be large enough for easy removal or maintenance of valves.

3.0 EXECUTION:

3.1 PREPARATION:
- A. Protection:
  1. Work or others damaged by this Section during course of its work shall be replaced or repaired by original installer at this Section's expense.

3.2 INSTALLATION:
- A. Trenching and Backfilling:
  1. Over-excavate trenches by two (2") inches and bring back to indicated depth by filling with fine, rock-free soil or sand.
  2. Cover pipe both top and sides with two (2") inches of material specified in paragraph above. In no case shall there be less than two (2") inches of rock-free soil or sand surrounding pipe.
  3. Do not cover pressure main, sprinkler pipe, or fittings until the Landscape Architect has inspected and approved system.
- B. Installation of Plastic Pipe:
  1. Install plastic pipe in a manner to provide for expansion and contraction as recommended by Manufacturer.
  2. Unless otherwise indicated on Drawings, install main lines with a minimum cover of eighteen (18") inches based on finish grade. Install lateral lines with a minimum cover of twelve (12") inches based on finish grade.
  3. Install pipe and wires under driveways or parking areas in specified sleeves a minimum of eighteen (18") inches below finish grade or as shown on Drawings.
  4. Locate no sprinkler head closer than twelve (12") inches from building foundation. Heads immediately adjacent to mowing strips, walks or curbs shall be one (1") inch below top of mowing strip, walk or curb and have a minimum of one (1") inch clearance between head and mowing strip, walk or curb.
  5. Drawings show arrangement of piping. Should local conditions necessitate rearrangement, obtain approval of Landscape Architect prior to proceeding with work.
  6. Cut plastic pipe square. Remove burrs at cut ends prior to installation so unobstructed flow will result.
  7. Make solvent weld joints in the following manner:
     - a. Clean mating pipe and fitting with clean, dry cloth and apply one (1) coat of P-70 primer to each.
     - b. Apply uniform coat of 711 solvent to outside of pipe.
     - c. Apply solvent to fitting in similar manner.
     - d. Reapply a light coat of solvent to pipe and quickly insert into fitting.
     - e. Give pipe or fitting a quarter turn to insure even distribution of solvent and make sure pipe is inserted to full depth of fitting socket.
     - f. Hold in position for fifteen (15) seconds minimum or long enough to secure joint.
     - g. Wipe off solvent appearing on outer shoulder of fitting.
     - h. Do not use an excessive amount of solvent thereby causing an obstruction to form on the inside of pipe.
     - i. Allow joints to set at least 24 hours before applying pressure to PVC pipe.
  8. Tape threaded connection with teflon tape.
  9. Install concrete thrust blocks wherever change of direction occurs a PVC main pressure lines.
- C. Control Valves and Controller:
  1. Install controller, control wires, and valves in accordance with Manufacturer's recommendations and according to applicable electrical code.
  2. Install valves in plastic boxes with reinforced heavy duty plastic covers. Locate valve box tops at finish grade.
  3. Install remote control valves in valve boxes positioned over valve so all parts of valve can be reached for service. Set cover of valve box even with finish grade.
  4. Install all valve boxes over nine (9") inches of gravel for drainage.
- D. Sprinkler Heads:
  1. Prior to the installation of sprinkler heads, open control valves and use full head of water to flush out system.
  2. Set sprinkler heads perpendicular to finish grade.
  3. Set lawn sprinkler heads adjacent to existing walks, curbs, and other paved areas to grade.

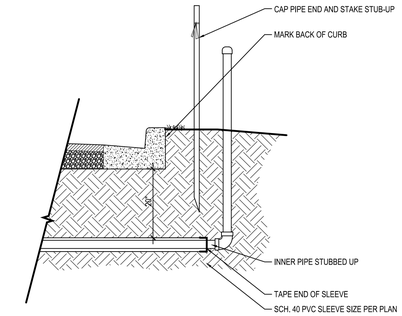
3.3 FIELD QUALITY CONTROL:
- A. Flushing and Testing:
  1. Test pressure lines at a pressure of 100 psi for four (2) hours. The pressure shall not drop below 95 psi at any time during the test. Notify Landscape Architect 24 hours prior to test. Do not backfill lines until approved by Landscape Architect.

3.4 ADJUSTMENT AND CLEANING:
- A. Adjust heads to proper grade when turf is sufficiently established to allow walking on it without appreciable harm. Such lowering or raising of of heads shall be part of the original contract with no additional charge to the Owner.
- B. Adjust sprinkler heads for proper distribution and trim to ensure spray does not fall on building.
- C. Adjust watering time of valves to provide proper amounts of water to all plants.

3.5 DEMONSTRATION:
- A. After system is installed and approved, instruct Owners Representative in complete operation and maintenance.

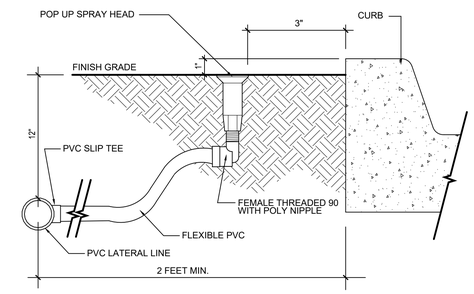
END OF SECTION

PROVIDE MEASUREMENTS FROM 2 REFERENCE POINTS TO STUB UP ON THE AS-BUILD DRAWING

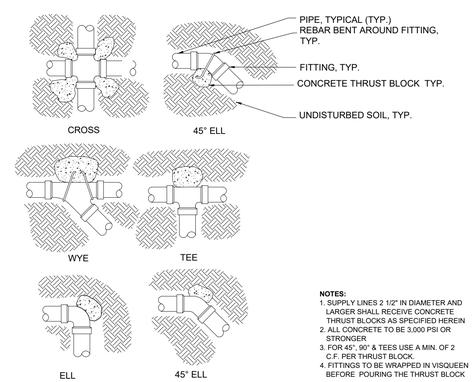


SLEEVING ROUGH-IN DETAIL

SCALE: NTS



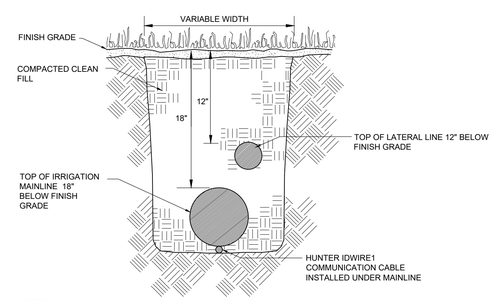
SHRUB / TURF HEAD NEXT TO CURB INSTALLATION DETAIL



NOTES:
1. SUPPLY LINES 2 1/2" IN DIAMETER AND LARGER SHALL RECEIVE CONCRETE THRUST BLOCKS AS SPECIFIED HEREIN
2. ALL CONCRETE TO BE 3,000 PSI OR STRONGER
3. FOR 45°, 90° & TEES USE A MIN. OF 2 C.F. PER THRUST BLOCK.
4. FITTINGS TO BE WRAPPED IN VISQUEEN BEFORE POURING THE THRUST BLOCK

THRUST BLOCK REINFORCEMENT DETAILS

SCALE: NTS



NOTES:
1. DEPTH MEASUREMENTS ARE TO BE DONE FROM FINISH GRADE TO TOP OF PIPE.
2. PROVIDE A 6" MINIMUM VERTICAL SEPARATION BETWEEN MAINLINES AND LATERAL LINES.
3. ALL TRENCHES SHALL BE BACKFILLED WITH CLEAN SOIL FREE OF DEBRIS & NOXIOUS WEEDS.

TRENCHING DETAIL

SCALE: NTS

COMMUNITY SOLUTIONS GROUP
618 E. SOUTH STREET
SUITE 700
ORLANDO, FL 32801
407 423-8398

A GAI CONSULTANTS, INC SERVICE GROUP
CERTIFICATE OF AUTHORIZATION: EB9951

A181093.02

100% BID PLANS SET

Filename: Z:\NFRA\2018\A181093.02 - CLEVELAND P3 CON PLAN - D\CAD\PRODUCTION DWGS\LA\A181093.02_4_IRR.DWG
Last Modified By: RP/FB, 7/2020
Last Modified Date: 8/27/2020 3:59 PM

RECORD DRAWINGS
SURVEYED BY: DRAWN BY:
REVIEWED BY: PROJECT ENGINEER DATE
APPROVED BY: ENGINEER DATE

REVISION	BY	DATE

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756

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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
IRRIGATION PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16-0003-EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
JOB NO.: A181093.02	DESIGNED BY: RP/FB	CHECKED BY: FB	SHEET NO.: IR-11
APPROVED FOR CONSTRUCTION			

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

GENERAL NOTES:

1. Irrigation system design requirements: 100 GPM @ 55 PSI. The irrigation Contractor shall verify the available GPM and PSI prior to installation of the system.
2. Do not willfully install the irrigation as shown on the drawings when it is obvious in the field that conditions exist that might not have been considered in the design process. For example: obstructions, grade differences, water levels dimensional differences, etc. Refer to the landscape plan to avoid conflicts with proposed trees or shrubs.
3. Piping may sometimes be indicated as being located in unlikely areas: i.e., under buildings, outside property lines, under pavement, in lakes or ditches, etc. This is done for graphic clarity only. Whenever possible, piping is to be installed in open, green areas.
4. Pipe sizes shall conform to those on the drawing. Substituting with smaller pipe sizes will not be permitted.
5. Mainline to be laid with tracking wire/tape firmly attached throughout project. Leave 18" of excess cable at terminal ends in 6" round valve boxes. See Parks and Rec Irrigation Spec page for type.
6. If required the Irrigation Contractor shall provide the necessary Right of Way use permits.
7. Mainline to be installed with a minimum of 24" depth of cover, lateral lines are to be installed with a minimum of 12" depth of cover.
8. Unless otherwise indicated all sleeves are to be PVC Sch 40 and at least two (2) nominal sizes larger than the pipe to be sleeved.
9. **Valve box/covers** to be set at finish grade, in open visible areas of turf. Not to be in close proximity to plantings for future maintenance.
10. Valve boxes will be Carson with T cover (Heavy Duty), 10" round for wire splices and gate valves and rectangular (11.5" x 17" x 12-18" deep) with Green lids if source is potable. If source is Reclaim then lids must be purple.
11. **PVC cement**: Plasti-Weld 303 regular clear and Plasti-Weld 903 purple primer for CPVC, PVC.
12. All 24 volt control wire to be Hunter Industries approved two wire
13. **All wire connections to be Hunter Industries approved DBRY-6 Connectors.**
14. All pop up sprinkler heads shall be Rainbird RD 1800 PRS series, installed level and flush to grade.
15. Must use Rainbird "U" Series nozzles.
16. Mount all heads and bubblers on **1/ 2 " PVC (IPS) Spiral reinforced flex pipe: a minimum of 30" length of flex**, to be used for (Black) whips on rotors, bubblers and Pop-ups.
17. Do not use "little valve risers" at all. Not required
18. Provide Hunter Handheld ROAM XL Remote kit. To be used for remote operation during inspection and maintenance of the project.
19. Install all heads a minimum of 12" from any structures.
20. Location of all sprinkler heads shall be site adjusted to minimize water overthrow onto building surfaces and walkways.
21. Use Nibco Brass construction Gate valves, female threaded on both sides, sized appropriate to source side delivery pipe, in line with electronic valve for shut off and isolation of zone for repair.
22. **All electric valves must be numbered**: with permanent tag made of non corrosive material, such as plastic cattle ear tag. each valve will be numbered accordingly as it is in the timer(s).
23. The rain shut off device shall be installed to meet local codes and/or minimum manufacturer's recommendations.
24. **The irrigation contractor shall prepare an AS-BUILT drawing on reproducible paper showing all main line piping, control wires and valves by showing exact measurements from hard surfaces.**
25. The owner will supply power to the irrigation controller.
26. Any other equipment required that is not otherwise detailed or specified shall be installed as per manufacturer's recommendations and specifications.
27. Velocity not to exceed 5' per second.

VALVE SCHEDULE

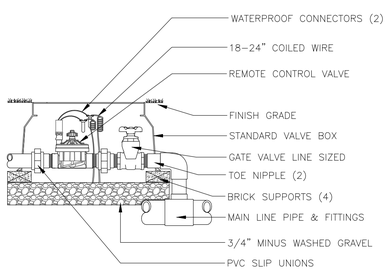
NUMBER	MODEL	SIZE	TYPE	GPM	PSI	PSI @ POC	PRECIP
2	Imtrol 200B	1-1/2"	Shrub Spray	48.34	36.09	45.25	2.20 in/h
A-1	Imtrol 200B	1-1/2"	Shrub Spray	46.58	36.01	44.65	1.89 in/h
A-3	Imtrol 200B	2"	Turf Spray	60.38	35.85	49.64	2.66 in/h
A-4	Imtrol 200B	1-1/2"	Shrub Spray	36.35	37.60	42.80	2.00 in/h
A-5	Imtrol 200B	1-1/2"	Turf Spray	46.50	38.65	46.81	2.67 in/h
A-6	Imtrol 200B	1-1/2"	Shrub Spray	36.08	36.46	41.56	1.97 in/h
A-7	Imtrol 200B	1-1/2"	Turf Spray	22.91	35.84	37.80	2.78 in/h
A-8	Imtrol 200B	1-1/2"	Shrub Spray	32.72	35.38	39.06	2.39 in/h
A-9	Imtrol 200B	1-1/2"	Shrub Spray	43.46	35.45	41.38	2.99 in/h
A-10	Imtrol 200B	1-1/2"	Turf Spray	40.57	34.72	39.93	1.87 in/h
A-11	Imtrol 200B	1-1/2"	Shrub Spray	46.04	35.44	41.68	1.89 in/h
A-12	Imtrol 200B	1-1/2"	Shrub Spray	50.60	35.64	42.32	1.75 in/h
A-13	Imtrol 200B	1-1/2"	Turf Spray	47.35	35.66	41.58	1.80 in/h
A-14	Imtrol 200B	1-1/2"	Turf Spray	48.03	35.65	41.70	1.74 in/h
A-15	Imtrol 200B	1-1/2"	Shrub Spray	64.37	37.34	46.30	1.95 in/h
A-16	Imtrol 200B	1-1/2"	Turf Spray	25.94	35.26	36.97	1.73 in/h
A-17	Imtrol 200B	1-1/2"	Shrub Spray	47.60	35.17	39.61	1.83 in/h
A-18	Imtrol 200B	1-1/2"	Turf Spray	42.96	35.46	38.68	1.76 in/h
A-19	Imtrol 200B	1-1/2"	Turf Spray	36.06	35.21	37.38	1.69 in/h
A-20	Imtrol 200B	1-1/2"	Shrub Spray	47.33	35.41	38.72	1.90 in/h
A-21	Imtrol 200B	1-1/2"	Turf Spray	45.31	35.44	38.26	1.79 in/h
A-22	Imtrol 200B	2"	Shrub Spray	58.13	34.07	37.92	2.21 in/h
A-23	Imtrol 200B	1-1/2"	Shrub Spray	40.21	35.09	37.05	2.27 in/h
A-24	Imtrol 200B	2"	Shrub Spray	51.38	40.22		1.65 in/h
A-25	Imtrol 200B	1-1/2"	Turf Spray	37.56	42.29		1.64 in/h
A-26	Imtrol 200B	1"	Shrub Spray	16.48	34.47		2.14 in/h
A-27	Imtrol 200B	1"	Turf Spray	19.98	34.77		1.57 in/h
A-28	Imtrol 200B	1-1/2"	Turf Spray	42.90	35.49	37.16	1.72 in/h
A-29	Imtrol 200B	1-1/2"	Shrub Spray	48.16	35.77	38.24	1.83 in/h
A-30	Imtrol 200B	1-1/2"	Turf Spray	34.12	35.33	36.67	1.60 in/h
A-31	Imtrol 200B	1-1/2"	Turf Spray	33.50	35.47	36.88	1.69 in/h
A-32	Imtrol 200B	1-1/2"	Turf Spray	46.24	34.21	37.12	1.63 in/h
A-33	Imtrol 200B	1-1/2"	Shrub Spray	31.24	34.92	36.38	2.43 in/h
A-34	Imtrol 200B	1-1/2"	Turf Spray	49.32	35.81	39.49	1.62 in/h
A-35	Imtrol 200B	2"	Turf Spray	55.13	34.53	39.71	1.73 in/h
A-36	Imtrol 200B	1-1/2"	Shrub Spray	37.12	35.38	38.13	1.80 in/h
A-37	Imtrol 200B	2"	Turf Spray	51.27	36.01		1.74 in/h
A-38	Imtrol 200B	1-1/2"	Turf Spray	25.01	35.72	37.22	1.97 in/h
A-39	Imtrol 200B	2"	Shrub Spray	50.88	34.33	39.68	1.87 in/h
A-40	Imtrol 200B	2"	Shrub Spray	50.98	34.51	40.46	1.67 in/h
A-41	Imtrol 200B	2"	Turf Spray	50.33	35.51	41.33	1.85 in/h
A-42	Imtrol 200B	2"	Turf Spray	57.76	36.74		1.56 in/h
A-43	Imtrol 200B	1-1/2"	Turf Spray	34.50	34.79	37.71	1.78 in/h
A-44	Imtrol 200B	1-1/2"	Turf Spray	36.51	34.86	38.27	1.77 in/h
A-45	Imtrol 200B	1-1/2"	Turf Spray	42.77	35.39	40	1.87 in/h
A-46	Imtrol 200B	1-1/2"	Turf Spray	47.64	35.52	41.61	1.81 in/h
A-47	Imtrol 200B	1-1/2"	Shrub Spray	40.33	44.49	49	1.84 in/h
A-48	Imtrol 200B	1-1/2"	Turf Spray	39.00	39.82	44.07	1.78 in/h
A-49	Imtrol 200B	2"	Turf Spray	64.75	34.94	45.83	1.97 in/h

WATERING SCHEDULE

NUMBER	MODEL	TYPE	PRECIP	IN./WEEK	MIN./WEEK	GAL./WEEK	GAL./DAY
2	Imtrol 200B	Shrub Spray	2.20 in/h	1.25	35	1,692	
A-1	Imtrol 200B	Shrub Spray	1.89 in/h	1.25	40	1,863	
A-3	Imtrol 200B	Turf Spray	2.66 in/h	1.25	29	1,751	
A-4	Imtrol 200B	Shrub Spray	2.00 in/h	1.25	38	1,381	
A-5	Imtrol 200B	Turf Spray	2.67 in/h	1.25	29	1,348	
A-6	Imtrol 200B	Shrub Spray	1.97 in/h	1.25	38	1,371	
A-7	Imtrol 200B	Turf Spray	2.78 in/h	1.25	27	618.6	
A-8	Imtrol 200B	Shrub Spray	2.39 in/h	1.25	32	1,047	
A-9	Imtrol 200B	Shrub Spray	2.99 in/h	1.25	26	1,130	
A-10	Imtrol 200B	Turf Spray	1.87 in/h	1.25	41	1,663	
A-11	Imtrol 200B	Shrub Spray	1.89 in/h	1.25	40	1,841	
A-12	Imtrol 200B	Shrub Spray	1.75 in/h	1.25	43	2,176	
A-13	Imtrol 200B	Turf Spray	1.80 in/h	1.25	42	1,989	
A-14	Imtrol 200B	Turf Spray	1.74 in/h	1.25	43	2,065	
A-15	Imtrol 200B	Shrub Spray	1.95 in/h	1.25	39	2,510	
A-16	Imtrol 200B	Turf Spray	1.73 in/h	1.25	44	1,142	
A-17	Imtrol 200B	Shrub Spray	1.83 in/h	1.25	42	1,999	
A-18	Imtrol 200B	Turf Spray	1.76 in/h	1.25	43	1,847	
A-19	Imtrol 200B	Turf Spray	1.69 in/h	1.25	45	1,623	
A-20	Imtrol 200B	Shrub Spray	1.90 in/h	1.25	40	1,893	
A-21	Imtrol 200B	Turf Spray	1.79 in/h	1.25	42	1,903	
A-22	Imtrol 200B	Shrub Spray	2.21 in/h	1.25	34	1,976	
A-23	Imtrol 200B	Shrub Spray	2.27 in/h	1.25	34	1,367	
A-24	Imtrol 200B	Shrub Spray	1.65 in/h	1.25	46	2,364	
A-25	Imtrol 200B	Turf Spray	1.64 in/h	1.25	46	1,728	
A-26	Imtrol 200B	Shrub Spray	2.14 in/h	1.25	35	576.8	
A-27	Imtrol 200B	Turf Spray	1.57 in/h	1.25	48	959.2	
A-28	Imtrol 200B	Turf Spray	1.72 in/h	1.25	44	1,888	
A-29	Imtrol 200B	Shrub Spray	1.83 in/h	1.25	42	2,023	
A-30	Imtrol 200B	Turf Spray	1.60 in/h	1.25	47	1,604	
A-31	Imtrol 200B	Turf Spray	1.69 in/h	1.25	45	1,507	
A-32	Imtrol 200B	Turf Spray	1.63 in/h	1.25	46	2,127	
A-33	Imtrol 200B	Shrub Spray	2.43 in/h	1.25	31	968.4	
A-34	Imtrol 200B	Turf Spray	1.62 in/h	1.25	47	2,318	
A-35	Imtrol 200B	Turf Spray	1.73 in/h	1.25	44	2,426	
A-36	Imtrol 200B	Shrub Spray	1.80 in/h	1.25	42	1,559	
A-37	Imtrol 200B	Turf Spray	1.74 in/h	1.25	44	2,256	
A-38	Imtrol 200B	Turf Spray	1.97 in/h	1.25	39	975.4	
A-39	Imtrol 200B	Shrub Spray	1.87 in/h	1.25	41	2,086	
A-40	Imtrol 200B	Shrub Spray	1.67 in/h	1.25	45	2,294	
A-41	Imtrol 200B	Turf Spray	1.85 in/h	1.25	41	2,064	
A-42	Imtrol 200B	Turf Spray	1.56 in/h	1.25	48	2,772	
A-43	Imtrol 200B	Turf Spray	1.78 in/h	1.25	43	1,484	
A-44	Imtrol 200B	Turf Spray	1.77 in/h	1.25	43	1,570	
A-45	Imtrol 200B	Turf Spray	1.87 in/h	1.25	41	1,754	
A-46	Imtrol 200B	Turf Spray	1.81 in/h	1.25	42	2,001	
A-47	Imtrol 200B	Shrub Spray	1.84 in/h	1.25	41	1,653	
A-48	Imtrol 200B	Turf Spray	1.78 in/h	1.25	43	1,677	
A-49	Imtrol 200B	Turf Spray	1.97 in/h	1.25	38	2,461	
		TOTALS:			1,978	85,292	

CRITICAL ANALYSIS

Generated:	2020-07-14 12:58
P.O.C. NUMBER: 01	
Water Source Information:	
FLOW AVAILABLE	
Water Meter Size:	2"
Flow Available:	109.89 gpm
PRESSURE AVAILABLE	
Static Pressure at POC:	55.00 psi
Elevation Change:	5.00 ft
Service Line Size:	2 1/2"
Length of Service Line:	20.00 ft
Pressure Available:	52.00 psi
DESIGN ANALYSIS	
Maximum Station Flow:	64.75 gpm
Flow Available at POC:	109.89 gpm
Residual Flow Available:	45.14 gpm
Cntical Station:	A-3
Design Pressure:	30.00 psi
Friction Loss:	3.77 psi
Fittings Loss:	0.38 psi
Elevation Loss:	0.00 psi
Loss through Valve:	1.70 psi
Pressure Req. at Cntical Station:	35.85 psi
Loss for Fittings:	1.00 psi
Loss for Main Line:	10.05 psi
Loss for POC to Valve Elevation:	0.00 psi
Loss for Backflow:	0.00 psi
Loss for Water Meter:	2.74 psi
Cntical Station Pressure at POC:	49.64 psi
Pressure Available:	52.00 psi
Residual Pressure Available:	2.36 psi



1 GLOBE VALVE WITH ISOLATION VALVE

nts FX–IR–HUNT–VALV–22

COMMUNITY SOLUTIONS GROUP

618 E. SOUTH STREET
SUITE 700
ORLANDO, FL 32801
407 423-8398

A GAI CONSULTANTS, INC SERVICE GROUP
CERTIFICATE OF AUTHORIZATION: EB9951

A181093.02

100% PLANS BID SET

Filename: Z:\MFRA\2018\A181093.02 - CLEVELAND P3 CON PLAN - D\CAD\PRODUCTION DWGS\LA\A181093.02_4_IRR.DWG
Last Modified by: RP/FB
Last Modified date: 07/07/2020 3:59 PM

RECORD DRAWINGS

SURVEYED BY: DRAWN BY:

REVIEWED BY:

PROJECT ENGINEER DATE

APPROVED BY:

ENGINEER DATE

REVISION	BY	DATE

CITY OF CLEARWATER, FLORIDA
ENGINEERING DEPARTMENT
100 S. MYRTLE AVE.
CLEARWATER, FL 33756

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CLEVELAND STREET PHASE III
AND FESTIVAL CORE
IRRIGATION PLAN

DWG NAME: A181093.02	FIELD BOOK:	SURVEYED BY:	SCALE: VERT.
CONTRACT NO.: 16–0003–EN	DATE DRAWN: 02/01/2020	DRAWN BY: LY/RP	HORIZ. AS SHOWN
JOB NO.: A181093.02	DESIGNED BY: RP/FB	CHECKED BY: FB	SHEET NO.: IR–12

APPROVED FOR CONSTRUCTION

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