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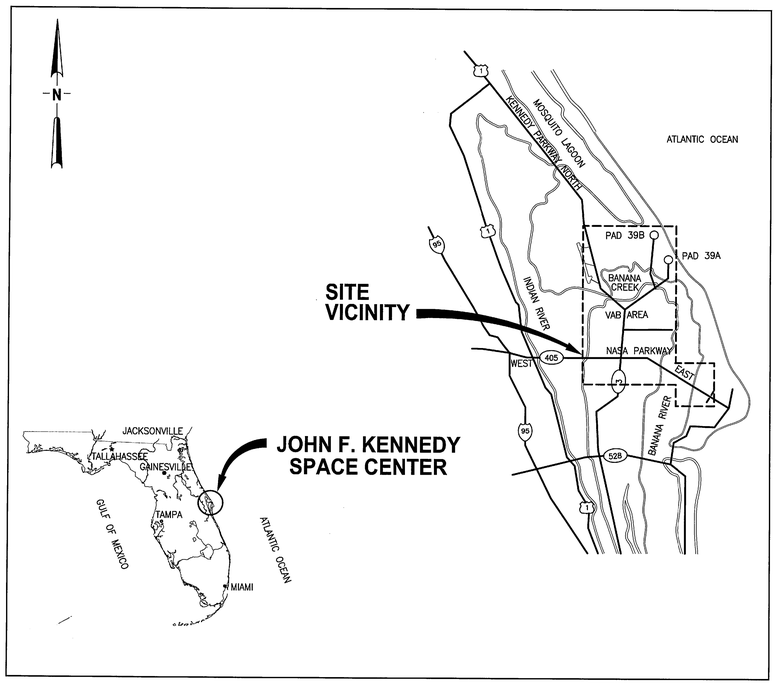
SPECIFICATION REFERENCE NO 79K38878

REVITALIZE WATER & WASTEWATER SYSTEMS

VOLUME 4 OF 5 - WATER SYSTEM ADDITIONAL



SITE VICINITY MAP

NTS

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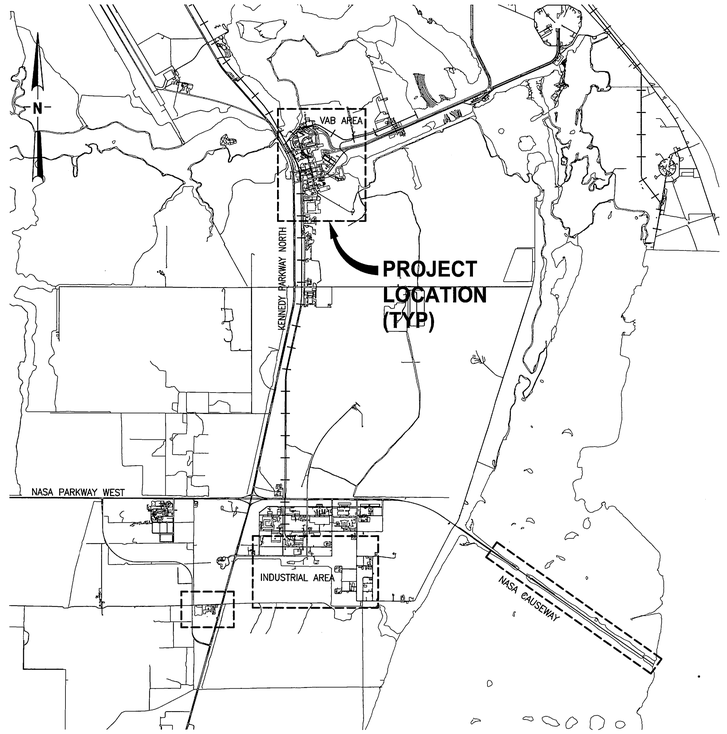

PROJECT LOCATION MAP

NTS

Previous Water & Wastewater Packages - For Historical Tracking Only

PCN	Title	Document Type	Associated Study/Drawing/Spec Numbers
901961	Kennedy Space Center Water Distribution System	System Drawing	81K00694
902352	KSC Sanitary Sewer Collection System	System Drawing	81K00695
98307	Water Consumption Analysis Study	Study Report	KSC-TA-7292
98497	Kennedy Space Center Wastewater System Study Phase I	Study Report	KSC-DX-8046
98497.1	KSC Wastewater Study Phase II	Study Report	KSC-TA-8906
96968.2	Upgrade KSC Water and Wastewater Systems, Phase 3 - Water System Condition Assessment and Regional Modeling Report	Study Report	KSC-TA-10385
96968	Revitalize and Upgrade KSC Water & Wastewater Systems	Contract Documents	79K36173; 79K36174; 79K36255; 79K36256; 79K36257
96968.1	Upgrade KSC Water and Wastewater Systems, Phase 2	Contract Documents	79K38517; 79K38518; 79K38648; 79K38649; 98K05225
98814	Revitalize KSC Water Systems	Contract Documents	79K38699; 79K38700; 79K38701; 79K38702; 79K38720; 79K38721
98815	Revitalize KSC Wastewater Systems	Contract Documents	79K38703; 79K38704
96968.3	Revitalize Water & Wastewater Systems	Contract Documents	79K38877; 79K38878; 79K38879; 79K38880

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SYM	ZONE	DESCRIPTION	DATE	APPROVED
B		REVISED SHEETS 1-2, 9, 16, 32, 47-48, AND 51-52	03/07/12	
A		ADDED SHEET	10/31/11	

REVISIONS

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APPROVED R. KOLLER	
APPROVED K. MILLER	3-9-12
P.Y. YU	3/12/12

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JOHN F. KENNEDY SPACE CENTER, NASA
KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

COVER SHEET

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	B

PROJ. NO. 96968.3 SHEET 1 OF 54

V1

KSC FORM 1-11 (3/76)(C/G 3/94)

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SYM	ZONE	DESCRIPTION	DATE	APPROVED
B		REVISED DRAWING INDEX	03/07/12	
A		ADDED SHEET	10/31/11	

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

DRAWING INDEX

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	F	79K38877 VOL 4	B
PROJ. NO. 96968.3		SHEET 2	

V2

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GENERAL NOTES

1. TOPOGRAPHIC SURVEY INFORMATION WAS PROVIDED BY JONES EDMUNDS ON SEP 30, 2011. THE SURVEY ONLY APPLIES WITHIN THE LIMITS OF SURVEY LINE SHOWN ON THE DRAWINGS. AREAS INSIDE THE LIMITS OF SURVEY REPRESENT SURVEYED FEATURES FOUND DURING FIELD INVESTIGATION, UNLESS OTHERWISE NOTED. ELEVATION INFORMATION SHOWN IS FROM LIDAR FROM FDEM CONTRACT 07-HS-34-14-00-22-469 OBTAINED SEPTEMBER 2007 IN RESPONSIBLE CHARGE OF DAVID S. MAUNE, PSM OF DEWBERRY.
2. THE VERTICAL DATUM IS BASED ON NAVD 1988, US SURVEY FEET.
3. THE HORIZONTAL DATUM IS BASED ON THE NAD FLORIDA STATE PLANE EAST 1983, US SURVEY FEET.
4. A KSC EXCAVATION PERMIT IS REQUIRED FOR THIS PROJECT. CONTACT THE CONTRACTING OFFICER AND MISSION SUPPORT AT (321) 861-3840 FOR AN UNDERGROUND UTILITY SCAN.
5. ANY PROPERTY CORNERS, MONUMENTS, OR BENCH MARKS WITHIN THE PROJECT AREA SHALL BE PROTECTED. ANY DAMAGE TO SUCH ITEMS SHALL BE RESTORED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE GOVERNMENT. IF ANY SUCH ITEMS ARE IN DANGER OF DAMAGE OR HAVE BEEN DAMAGED, THE CONTRACTOR SHALL NOTIFY THE CO IMMEDIATELY.
6. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF AN INDEPENDENT REGISTERED PROFESSIONAL LAND SURVEYOR FOR LAYOUT. PROOF OF REGISTRATION SHALL BE SUBMITTED TO THE CO 14 DAYS PRIOR TO STARTING THE SURVEY.
7. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN BASED ON INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE DRAWINGS BUT ARE NOT PURPORTED TO BE CORRECT. THERE MAY BE OTHER IMPROVEMENTS, UTILITIES, ETC. WHICH ARE WITHIN THE PROJECT AREA. CONTRACTOR SHALL VERIFY, PRIOR TO CONSTRUCTION, THE LOCATIONS, ELEVATIONS, DIMENSIONS, TYPES, AND CONDITIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THE DRAWINGS) AFFECTING HIS/HER WORK.
8. THERE IS NO GUARANTEE THAT ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES WERE DISCOVERED AND SHOWN ON THE PLANS. THE CONTRACTOR SHALL FIELD VERIFY EXISTING UTILITIES (SIZE, MATERIALS OF CONSTRUCTION, OUTSIDE DIAMETER, WALL THICKNESS, ROUNDNESS, ELEVATIONS, ETC.) WHICH IN ANY WAY REFLECT/INCLUDE CONNECTIONS TO OR CONSTRUCTION NEAR EXISTING UTILITIES. CONTRACTOR SHALL INCLUDE FIELD MEASUREMENTS ON SUBMITTALS.
9. THE CONTRACTOR SHALL NOTIFY THE CO IN WRITING IMMEDIATELY IF CONFLICTS BETWEEN THE DRAWINGS AND ACTUAL CONDITIONS ARE DISCOVERED. THE CONTRACTOR SHALL ACCURATELY RECORD ANY SUCH CONFLICTS ON THE CONSTRUCTION DRAWINGS.
10. THE CONTRACTOR SHALL COORDINATE THE RELOCATION OF CONFLICTING UNDERGROUND UTILITIES AS NEEDED WITH THE CO. CONTRACTOR SHALL COORDINATE CONSTRUCTION SCHEDULE WITH CONTRACTING OFFICER CONCERNING RELOCATION OF UTILITIES AND ANY ADDITIONAL RELOCATIONS RESULTING FROM CONFLICTS NOT DELINEATED ON THE DRAWINGS.
11. THE CONTRACTOR SHALL PRESERVE AND MAINTAIN EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES WITHIN THE PROJECT AREA INCLUDING, BUT NOT LIMITED TO, PROPERLY SUPPORTING THE INTEGRITY OF ANY UTILITIES EXPOSED AS PART OF THIS WORK. ANY DAMAGE SHALL BE REPAIRED TO PRE-EXISITING CONDITIONS, BY AND AT THE EXPENSE OF THE CONTRACTOR, FOR APPROVAL OF THE CO.
12. THE CONTRACTOR IS RESPONSIBLE FOR BRACING, SHORING, OR PROVIDING OTHER MEANS NECESSARY TO PROTECT AND SUPPORT EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES (EXPOSED OR UNEXPOSED) THAT MAY BE IMPACTED BY HIS/HER WORK.
13. AT THE CONTRACTOR'S EXPENSE, THE CONTRACTOR SHALL RESTORE TO PRE-EXISTING CONDITIONS FOR APPROVAL OF THE CO ALL PAVING, STABILIZED EARTH, DRIVEWAYS, CURBS, SIDEWALKS, FENCES, SOD, LANDSCAPING, CULVERTS, DITCHING, SIGNS, ETC WITH THE SAME TYPE OF MATERIAL THAT WAS REMOVED OR DAMAGED DURING CONSTRUCTION AS A RESULT OF CONSTRUCTION AS DIRECTED BY THE CO WITHOUT AN INCREASE IN THE CONTRACT OR PRICE. THIS INCLUDES ALL ASPHALT, CONCRETE, GRASS OR SOD REMOVAL NOT SPECIFICALLY IDENTIFIED ON THE DRAWINGS.
14. THE CONTRACTOR SHALL LAY PIPE TO UNIFORM GRADE BETWEEN INDICATED ELEVATION POINTS. CONTRACTOR SHALL TAKE CARE TO PROVIDE PROPER GRADE ELEVATIONS AND ALIGNMENTS.
15. SIZE OF FITTINGS SHOWN ON PLANS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE UNLESS OTHERWISE NOTED. TYPE OF JOINT AND FITTING MATERIAL SHALL BE AS SPECIFIED UNLESS NOTED OTHERWISE.
16. PIPE HANGERS AND SUPPORTS ARE NOT SHOWN UNLESS A SPECIAL TYPE OR CONFIGURATION IS REQUIRED. FINAL SUPPORTS, LOCATIONS, AND TYPES SHALL BE DETERMINED BY THE CONTRACTOR AND INCLUDED IN THE PIPELINE DRAWING SUBMITTALS FOR REVIEW AND APPROVAL BY THE CO PRIOR TO INSTALLATION. MAXIMUM SPACING SHALL BE AS SPECIFIED.
17. ALL PRESSURIZED PIPE/FITTING JOINTS, FLEXIBLE CONNECTORS, FLANGED COUPLING ADAPTERS, ETC, SHALL BE RESTRAINED USING SPECIFIED RESTRAINT SYSTEM UNLESS NOTED OTHERWISE.
18. SYMBOLS, LEGENDS, AND PIPE USE IDENTIFICATIONS SHOWN SHALL BE FOLLOWED THROUGHOUT THE DRAWINGS, WHEREVER APPLICABLE. ALL OF THE VARIOUS PIPING APPLICATIONS ARE NOT NECESSARILY USED IN THE PROJECT. ALL BURIED AND EXPOSED PIPING SHALL BE PRESSURE TESTED AS SPECIFIED.
19. THE CONTRACTOR SHALL NOTIFY THE CO IN WRITING AT LEAST 14 FULL WORKING DAYS IN ADVANCE OF MAKING ANY CONNECTION TO THE WATER SYSTEM. ADDITIONALLY, THE CONTRACTOR SHALL OBTAIN WRITTEN AUTHORIZATION FROM THE CO A MINIMUM OF 14 WORKING DAYS PRIOR TO INTERRUPTING WATER, SEWER, COMMUNICATION, ELECTRICAL, OR OTHER UTILITY SERVICE.
20. THE CONTRACTOR SHALL MAKE ALL CONNECTIONS TO NEW AND EXISTING UTILITIES AS SHOWN ON THE DRAWINGS AND SHALL FURNISH ALL LABOR AND MATERIALS NECESSARY TO COMPLETE THE WORK.
21. NUMBER AND LOCATION OF UNIONS SHOWN ON DRAWINGS ARE ONLY APPROXIMATE. CONTRACTOR TO PROVIDE ALL UNIONS NECESSARY TO FACILITATE CONVENIENT REMOVAL OF VALVES AND MECHANICAL EQUIPMENT.
22. WHERE A FLANGED COUPLING ADAPTER IS SHOWN, A STANDARD FLANGE SHALL BE USED TO JOIN THE COUPLING ADAPTER.
23. ALL ANCHORS AND FASTENERS SHALL BE 316 STAINLESS STEEL UNLESS NOTED OTHERWISE. ALL PIPE/FITTING BOLT ASSEMBLIES SHALL BE CARBON STEEL AS SPECIFIED AND COATED AS SPECIFIED.
24. CONTRACTOR SHALL PROVIDE MEANS TO DEWATER SOILS FOR ALL CONSTRUCTION WORK INCLUDING WORK TO DRAIN, CLEAN, REHABILITATE, REPAIR, MODIFY, OR CONSTRUCT NEW OR EXISTING STRUCTURES OR UTILITIES.
25. FITTINGS MAY BE USED FOR PIPE ALIGNMENT CHANGES RATHER THAN DEFLECTING AT THE CONTRACTOR'S OPTION AND WITH NO ADDITIONAL COMPENSATION. ANYWHERE A FITTING CAN BE ROLLED AS AN OFFSET THE CONTRACTOR IS PERMITTED TO DO SO. WITH REGARDS TO THE UTILITY CONFLICTS, THE CONTRACTOR IS TO DEFLECT THE WATER MAIN TO CROSS THE UTILITY IF DEFLECTION CAN BE ACCOMPLISHED WITHIN 2 PIPE LENGTHS OF THE UTILITY. IF DEFLECTION IS NOT POSSIBLE THE CONTRACTOR MUST CROSS THE UTILITY IN ACCORDANCE WITH THE TYPICAL UTILITY CONFLICT DETAIL.
26. NOT ALL FITTINGS ARE SHOWN ON DRAWINGS. THE MINIMUM PIPE COVER MUST BE MAINTAINED. ADD FITTINGS FOR VERTICAL OFFSETS.
27. ALL DRAINAGE AREAS THAT ARE CROSSED BY PIPELINES SHALL NOT BE OBSTRUCTED EXCEPT FOR SHORT PERIODS AS MAY BE NECESSARY DURING ACTUAL CONSTRUCTION HOURS.
28. THE CONTRACTOR SHALL NOT PLACE ANY FILL MATERIAL WITHIN WETTED DITCH OR WETLAND AREAS, AND SHALL INSTALL SILTATION FENCES BETWEEN WORK AND SUCH AREAS WHEN WORKING ADJACENT TO EITHER TYPE OF AREA.
29. THE CONTRACTOR SHALL COMPLY WITH ALL CONDITIONS AND REQUIREMENTS OF ALL PERMITS OBTAINED FOR THIS PROJECT. CONTRACTOR SHALL RETAIN ON THE WORK SITE COPIES OF ANY PERMITS REQUIRED FOR CONSTRUCTION.
30. THIS PROJECT HAS THE POTENTIAL TO IMPACT THREATENED, ENDANGERED, AND PROTECTED SPECIES SUCH AS BUT NOT LIMITED TO THE GOPHER TORTOISE. THE CONTRACTOR SHALL CONTACT THE CO AND NASA ENVIRONMENTAL 14 DAYS PRIOR TO CONSTRUCTION ACTIVITIES IN ORDER FOR THE GOVERNMENT TO PERFORM SURVEY AND RELOCATION ACTIVITIES OF ANY IDENTIFIED SPECIES.
31. ALL MATERIALS, COATINGS, AND CHEMICALS THAT CONTACT RAW AND/OR DRINKING WATER SHALL BE IN CONFORMANCE WITH ANSI/NSF STANDARD 61.
32. ALL ROADWAY CROSSINGS FOR PIPE SIZES 4 INCHES IN DIAMETER OR SMALLER SHALL BE SLEEVED.
33. HDD WITH CARRIER PIPES ADJACENT TO DI PIPING WILL HAVE RESTRAINED DI FOR THE CARRIER PIPE MATERIAL AND HDPE FOR THE CASING PIPE MATERIAL UNLESS NOTED OTHERWISE ON THE DRAWINGS.
34. ALL EXPOSED CONCRETE SLABS SHALL HAVE CHAMFERED EDGES.
35. NOT USED.
36. THE CONTRACTOR IS RESPONSIBLE FOR CALCULATING THE VOLUME OF SOIL DISPLACED WITHIN THE SMWU AREAS. THE CONTRACTOR SHALL PROVIDE THE CO WITH THE APPROXIMATE VOLUME OF CONTAMINATED SOIL SO THAT THE PROPER ARRANGEMENTS CAN BE MADE FOR ITS REMOVAL AND DISPOSITION.
37. ASSUME ALL EXISTING PIPING IS ASBESTOS CEMENT PUSH-ON JOINT WITH MECHANICAL FITTINGS UNLESS NOTED OTHERWISE IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL VERIFY THE EXISTING PIPE DIAMETER, PIPE MATERIAL, AND PIPE CONNECTION TYPE. IF PIPE ENCOUNTERED IS NOT CONSISTENT WITH THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER OF THE INCONSISTENCY WITHIN 1 BUSINESS DAY.
38. THE CONTRACTOR SHALL ADD A CAP OR RESTRAINED PLUG TO THE END OF ALL EXISTING LINES WHICH ARE TO REMAIN ACTIVE.
39. PIPING DESIGNATED WITH THE WM-R LINETYPE IS WATER MAIN THAT WILL REPLACE EXISTING PIPING. THE EXISTING PIPING AND ASSOCIATED APPURTENANCES WILL BE REMOVED IN THEIR ENTIRETY. THE LOCATION AND ELEVATION OF THE REPLACEMENT PIPING SHALL MATCH THAT OF THE EXISTING PIPING TO BE REMOVED. CONTRACTOR SHALL PROVIDE SUFFICIENT FITTINGS FOR ALL HORIZONTAL AND VERTICAL CHANGES REQUIRED TO INSTALL PIPE IN EXISTING LOCATION. CONTRACTOR SHALL PROVIDE TEMPORARY WATER DURING REPLACEMENT.
40. ADDITIONAL UTILITY CONFLICTS MAY NOT BE INDICATED ON THE DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING SEPARATION REQUIREMENTS AT NO ADDITIONAL COST TO THE GOVERNMENT. SEE DETAIL 1/C43
41. CONTRACTOR SHALL COMPLETELY SOD ALL DISTURBED AREAS. SOD VARIETY SHALL MATCH ADJACENT UNDISTURBED AREAS AND BE CERTIFIED WEED-FREE. ALL SOD ON SLOPES GREATER THAN 3:1 SHALL BE STAKED. CONTRACTOR SHALL FERTILIZE AND THOROUGHLY WATER ALL SOD AT TIME OF PLANTING AND AS NECESSARY UNTIL MATERIAL IS ESTABLISHED.
42. ALL EXISTING STORMWATER DRAINAGE PATTERNS AND CHANNELS ARE TO BE MAINTAINED. CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER IF THE WORK APPEARS TO INTERRUPT AN EXISTING STORMWATER DRAINAGE PATTERN. CONTRACTOR SHALL MAINTAIN A CLEAR PATH FOR ALL SURFACE WATER DRAINAGE STRUCTURES AND DITCHES DURING ALL PHASES OF CONSTRUCTION AND SHALL USE WHATEVER MEANS NECESSARY TO MANAGE STORMWATER SUCH THAT THE IMPACT TO CONSTRUCTION AND/OR SURROUNDING FACILITIES IS MINIMIZED. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EROSION, SEDIMENT TRANSPORT, DISTURBED FOUNDATIONS, IMPACT TO STRUCTURES, AND ANY OTHER DAMAGE CAUSED DURING CONSTRUCTION.
43. CONTRACTOR SHALL PREVENT THE DISCHARGE OF SEDIMENT INTO DRAINAGE DITCHES DUE TO CONSTRUCTION OPERATIONS. APPROVED EROSION CONTROL DEVICES SHALL BE INSTALLED AND MAINTAINED WITH BEST MANAGEMENT PRACTICES TO PREVENT DISCHARGE OF SEDIMENT INTO A DRY OR WET WATERCOURSE. EROSION CONTROL SHALL CONSIST OF ANCHORED HAY BALES, SILT FENCE, OR OTHER EROSION CONTROL METHODS APPROVED BY THE ENGINEER. SILT FENCE SHALL BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE FDOT STANDARD SPECIFICATIONS SECTION 104.
44. CONTRACTOR SHALL COMPLY WITH THE TURBIDITY CONTROL REQUIREMENTS OF THE SJRWMD, WHICH AT A MINIMUM MAY INCLUDE USING TURBIDITY CURTAINS. THE CONTRACTOR SHALL PREVENT INCREASES IN TURBIDITY IN EXCESS OF WATER QUALITY STANDARDS.
45. DRAINAGE STRUCTURES AND CULVERTS SHALL REMAIN FREE OF SEDIMENTATION AT ALL TIMES DURING CONSTRUCTION AND SHALL BE CLEANED OF SEDIMENT AFTER COMPLETION OF PAVING OPERATIONS.
46. UNVERIFIED UTILITIES AND AREAS OUTSIDE LIMITS OF SURVEY ARE BASED ON THE BEST AVAILABLE INFORMATION, INCLUDING NASA KSC GIS MAPS AND AS-BUILT DRAWINGS.

GENERAL ABBREVIATIONS

AC	ASBESTOS CEMENT
ACM	ASBESTOS CONTAINING MATERIAL
AIP	ABANDONED IN PLACE
ALUM	ALUMINUM
APPROX	APPROXIMATE
ARV	AIR RELEASE VALVE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AVE	AVENUE
AWWA	AMERICAN WATER WORKS ASSOCIATION
BF	BLIND FLANGE
BFP	BACKFLOW PREVENTER
BFV	BUTTERFLY VALVE
BLD	BLIND
BLDG	BUILDING
BM	BENCH MARK
BTM	BOTTOM
BTM/	BOTTOM OF
BV	BALL VALVE
BYP	BY-PASS
C/L, CL, ℄	CENTERLINE
C&D	CONSTRUCTION AND DEMOLITION
CFR	CODE OF FEDERAL REGULATIONS
CI	CAST IRON
CLF	CHAIN LINK FENCE
CLP	CONCRETE LIGHT POLE
CLR	CLEARANCE
CO	CONTRACTING OFFICER
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CV	CHECK VALVE
DET	DETAIL
DI	DUCTILE IRON
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DWG	DRAWING
EA	EACH
ECC	ECCENTRIC
ELB	ELBOW
ELEC	ELECTRICAL
EL, ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
EQ	EQUALLY
EST	ELEVATED STORAGE TANK
EW	EACH WAY
EXIST	EXISTING
FAB	FABRICATED
FAC	FLORIDA ADMINISTRATIVE CODE
FCA	FLANGED COUPLING ADAPTER
FCV	FLOW CONTROL VALVE
FDEP	FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FFE	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
FIG	FIGURE
FIN	FINISHED
FJ	FLANGED JOINT
FL	FLOOR
FLEX	FLEXIBLE
FLG	FLANGE(D)
FM	FORCE MAIN
FT	FOOT
GFE	GOVERNMENT FINISHED EQUIPMENT
GPM	GALLONS PER MINUTE
GR	GRADE
GS	GALVANIZED STEEL
GV	GATE VALVE
HDD	HORIZONTAL DIRECTIONAL DRILL
HDPE	HIGH DENSITY POLYETHYLENE
HP	HORSEPOWER
HORIZ	HORIZONTAL
HSP	HIGH SERVICE PUMP
HT	HEIGHT
IA	INDUSTRIAL AREA
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IPS	IRON PIPE SIZE
JT	JOINT
KCCS	KENNEDY COMPLEX CONTROL SYSTEM
KSC	KENNEDY SPACE CENTER
LBS	POUNDS
LC	LAUNCH COMPLEX
LF	LINEAR FEET
LG	LONG
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
N	NORTHING
N/A	NOT APPLICABLE
NAD	NORTH AMERICAN DATUM
NASA	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
NAVD	NORTH AMERICAN VERTICAL DATUM
NIC	NOT IN CONTRACT
NC	NORMALLY CLOSED
NO., #	NUMBER
NOM	NOMINAL
NPT	NATIONAL PIPE TAPER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PCB	POLYCHLORINATED BIPHENYLS
PC	POINT OF CURVATURE
PCV	PRESSURE CONTROL VALVE
PE	PLAIN END
PET	POLYETHYLENE TUBING
PID	PROPORTIONAL INTEGRAL DERIVATIVE
PIV	POST INDICATOR VALVE
PLC	PROGRAMMABLE LOGIC CONTROLLER
POJ	PUSH ON JOINT
PPE	PERSONAL PROTECTIVE EQUIPMENT
PRL	POTENTIAL RELEASE LOCATION
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PWQ	PROCESS WASTE QUESTIONNAIRE
RCP	REINFORCED CONCRETE PIPE
RED	REDUCER
REINF	REINFORCED
REQ'D	REQUIRED
RJ	RESTRAINED JOINT
RMJ	RESTRAINED MECHANICAL JOINT
RPOJ	RESTRAINED PUSH ON JOINT
RPZ	REDUCED PRESSURE ZONE
R/W	RIGHT OF WAY
SCH	SCHEDULE
STD	STANDARD
SE	SOUTH EAST
SQ	SQUARE
SR	STATE ROAD
SS, SST	STAINLESS STEEL
STL	STEEL
SWD	SIDE WATER DEPTH
SWJ	SOLVENT WELD JOINT
SWMU	SOLID WASTE MANAGEMENT UNIT
T/	TOP OF
T	THICK
TOC	TOP OF CONCRETE
THD	THREADED
TRP	TECHNICAL RESPONSE PACKET
TYP	TYPICAL
UG	UNDERGROUND
VAB	VEHICLE ASSEMBLY BUILDING
VIC	VISITOR INFORMATION CENTER
W/	WITH
W	WIDE
WDS	WATER DISTRIBUTION SYSTEM
WM	WATER MAIN
WS	WELDED STEEL
WT	WEIGHT

NOTE:
A. THIS IS A STANDARD ABBREVIATION LIST. SOME ABBREVIATIONS MAY APPEAR ON THIS LIST AND NOT IN THE DRAWING.

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ST of LICENSURE: FL LICENSE NO: 48898		
APPROVED	M. CLARK	12/05/11
V3	K. MILLER	12/5/11

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHN F. KENNEDY SPACE CENTER, NASA
KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5 WATER SYSTEM ADDITIONAL

GENERAL NOTES AND ABBREVIATIONS

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 3	

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CIVIL LEGEND

- LIMITS OF DEMOLITION WORK
- ASPHALT RESTORATION
- CONCRETE RESTORATION
- LIMEROCK RESTORATION
- CONCRETE SIDEWALK RESTORATION
- ASPHALT PAVEMENT RESTORATION WITH SLEEVED PIPE
- CONCRETE RESTORATION WITH SLEEVED PIPE
- HORIZONTAL DIRECTIONAL DRILL
- JACK AND BORE
- WM — WATER MAIN
- WM-R — WATER MAIN REPLACEMENT
- FM-PB — FORCE MAIN (PIPE BURSTING)
- FM-OC — FORCE MAIN (OPEN CUT)
- 100 — COORDINATE POINT
- BO — BLOW OFF
- BOLLARD
- BSP — BACTERIOLOGICAL SAMPLE POINT
- UTILITY CONFLICT AREA – WATER MAIN
- UTILITY CONFLICT AREA – WATER MAIN IN-KIND REPLACEMENT
- SPT BORING LOCATION
- LIMITS OF SURVEY (SEE NOTE 1 ON V3)
- FULLY GROUTED ABANDONED WATER MAIN
- C1 — SHEET OUTLINE AND DRAWING NUMBER
- (GAS) (GAS) — TYPICAL UNVERIFIED UTILITY (SEE NOTE 46 ON V3)

PIPING SYMBOLS

DOUBLE LINE	SINGLE LINE	
		EXISTING PIPE
		NEW PIPE
		EXISTING PIPE TO BE REMOVED
		FLANGED JOINT
		MECHANICAL JOINT OR RESTRAINED PUSH-ON JOINT
		FLEXIBLE COUPLING ADAPTER
		HUB & SPIGOT JOINT
		FLANGED COUPLING ADAPTER W/ THRUST TIES
		FLEXIBLE COUPLING WITH THRUST TIES
		BLIND FLANGE
		90° ELBOW UP
		90° ELBOW DOWN
		TEE UP
		TEE DOWN
		FLANGED COUPLING ADAPTER
		PUMP EXPANSION COUPLING

MECHANICAL LEGEND

DOUBLE LINE	SINGLE LINE	
		ELBOW UP
		ELBOW DOWN
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
		UNION
		CAP
		TEE
		TEE W/ RESTRAINED PLUG
		ELBOW, 90 DEGREE
		ELBOW, 45 DEGREE
		ELBOW, 22.5 DEGREE
		ELBOW, 11.25 DEGREE
		ABANDON IN PLACE
		SLEEVE
		TEMPORARY LINE STOP

VALVE SYMBOLS

DOUBLE LINE	SINGLE LINE	
		GATE
OR		BUTTERFLY
		BALL
		CHECK
OR		PRESSURE CONTROL
		AIR RELEASE AND/OR VACUUM RELIEF. SEE DETAIL 3/C40
		PRESSURE SAFETY RELEASE VALVE
	NV-01-12	TYPICAL VALVE IDENTIFICATION NUMBER
	V-ABFH1000 / ABFH1000	TYPICAL FIRE HYDRANT AND ISOLATION VALVE IDENTIFICATION NUMBER

NOTES

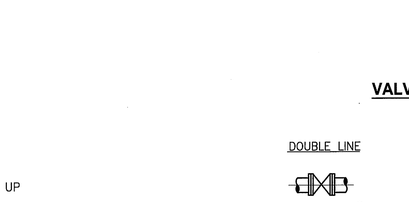
A. THIS IS A STANDARD LEGEND SHEET. SOME SYMBOLS MAY APPEAR ON THE LEGEND AND NOT ON THE DRAWINGS.

B. EXISTING PIPE, EQUIPMENT, AND FEATURES ARE SHOWN LIGHT-LINED AND/OR SCREENED. PROPOSED PIPE AND EQUIPMENT IS SHOWN HEAVY-LINED OR BOLD.

SURVEY LEGEND

= BACK-FLOW PREVENTER	= LIGHT POLE	= CONCRETE
= BOLLARD	= MANHOLE, UNKNOWN	= FENCELINE
= CURB INLET, STORM GRATE	= MANHOLE, SANITARY SEWER	= TREELINE
= CONCRETE LIGHT POLE	= MANHOLE, STORM SEWER	= UNDERGROUND CABLE TV
= CLEAN-OUT (SANITARY)	= MONITORING WELL	= UNDERGROUND ELECTRIC
= CONCRETE POWER POLE	= STORM GRATE	= UNDERGROUND FIBER OPTIC CABLE
= ELECTRIC MARKER	= SIGN	= UNDERGROUND UNKNOWN UTILITY
= ELECTRIC BOX	= SEWER VALVE	= UNDERGROUND GAS
= ELECTRIC HANDHOLE	= SPRINKLER HEAD	= RAILROAD
= ELECTRIC METER	= TELEPHONE HANDHOLE	= SANITARY SEWER
= ELECTRIC MANHOLE	= TELEPHONE BOX	= SANITARY FORCEMAIN
= ELECTRIC TRANSFORMER	= TELEPHONE MARKER	= SITE FEATURE
= FIRE DEPARTMENT CONNECTION	= TELEPHONE MANHOLE	= STEAMLINE
= FIRE METER	= TELEPHONE PEDESTAL	= STORM SEWER
= FIBER OPTIC CABLE MARKER	= TRAFFIC SIGNAL BOX	= UNDERGROUND WATER
= FIBER OPTIC CABLE HANDHOLE	= TRAFFIC SIGNAL	= UNDERGROUND CHILLED WATER
= GAS MARKER	= WATER METER	= OVERHEAD ELECTRIC
= GAS METER	= WATER SPIGOT	= COMMUNICATIONS
= GUY	= WATER VALVE	
= GAS VALVE	= WELL	
= HYDRANT	= WOOD POWER POLE	
= INDICATOR VALVE	= SOFT DIG	

DESIGNATIONS



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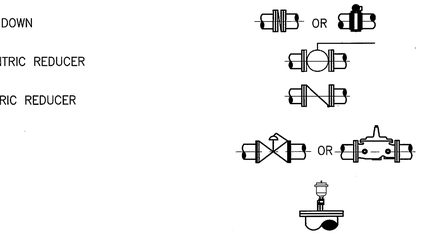
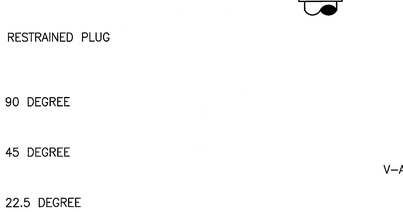


DETAIL DESIGNATION



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APPROVED M. CLARK	10/31/11
K. MILLER	11/1/11

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5 WATER SYSTEM ADDITIONAL

DRAWING LEGENDS AND DESIGNATIONS

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 4	

V4

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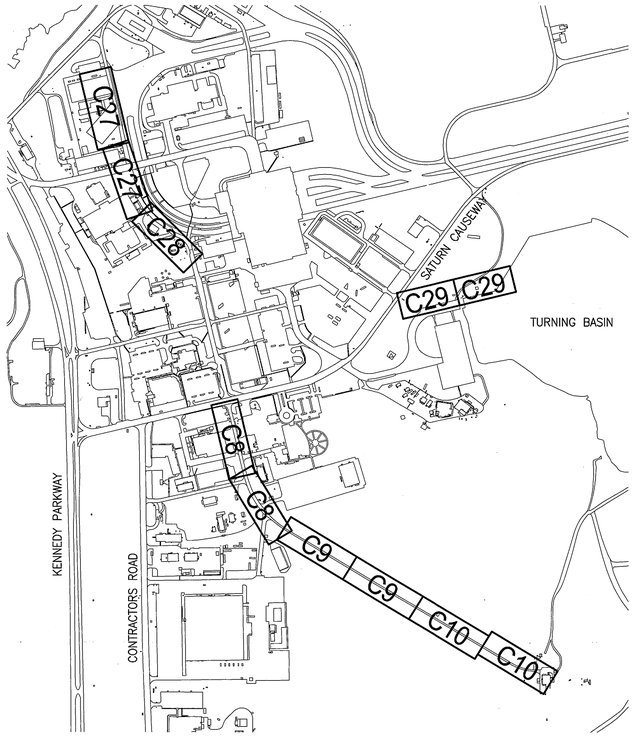
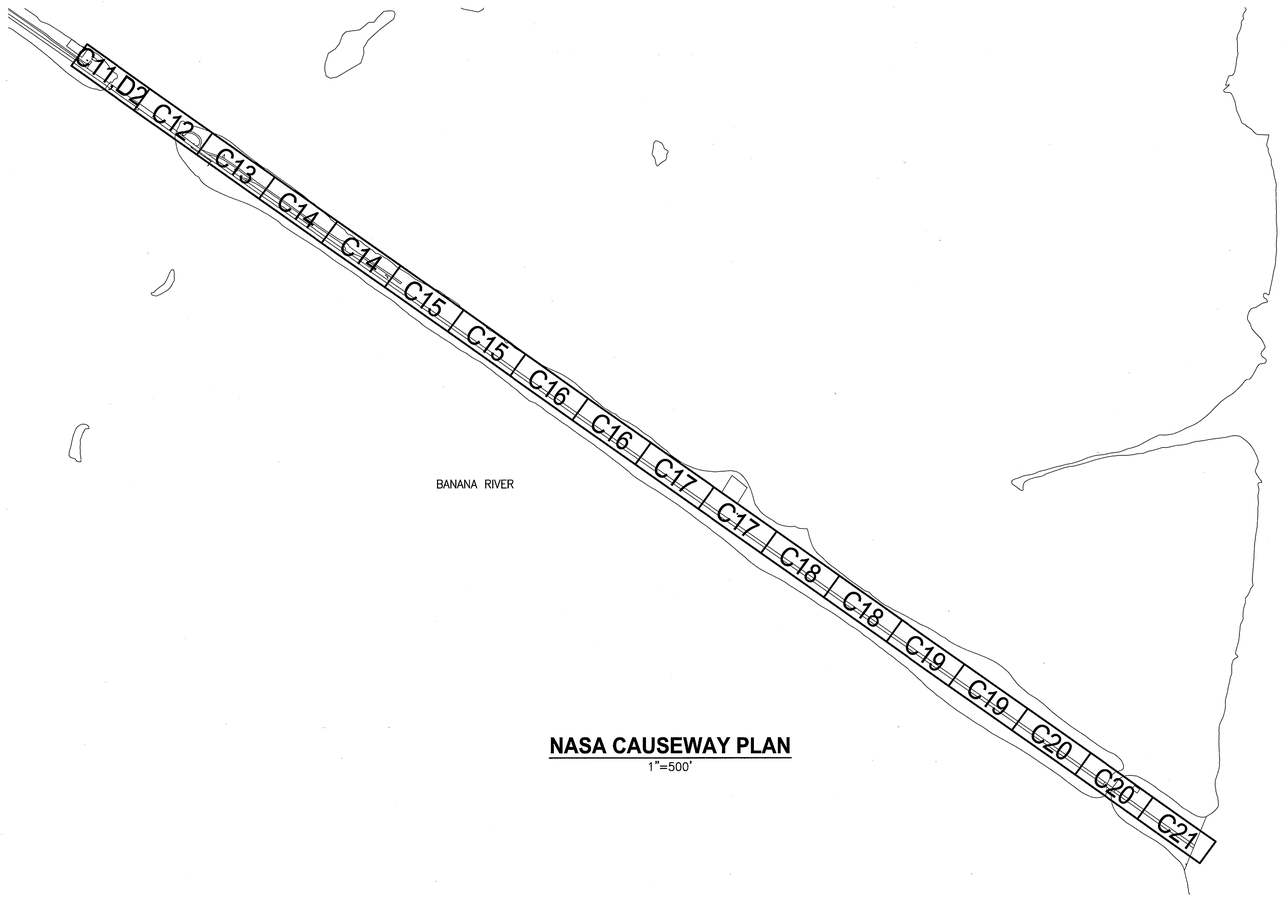
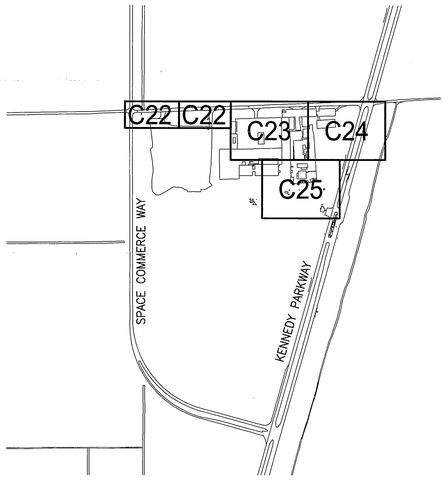


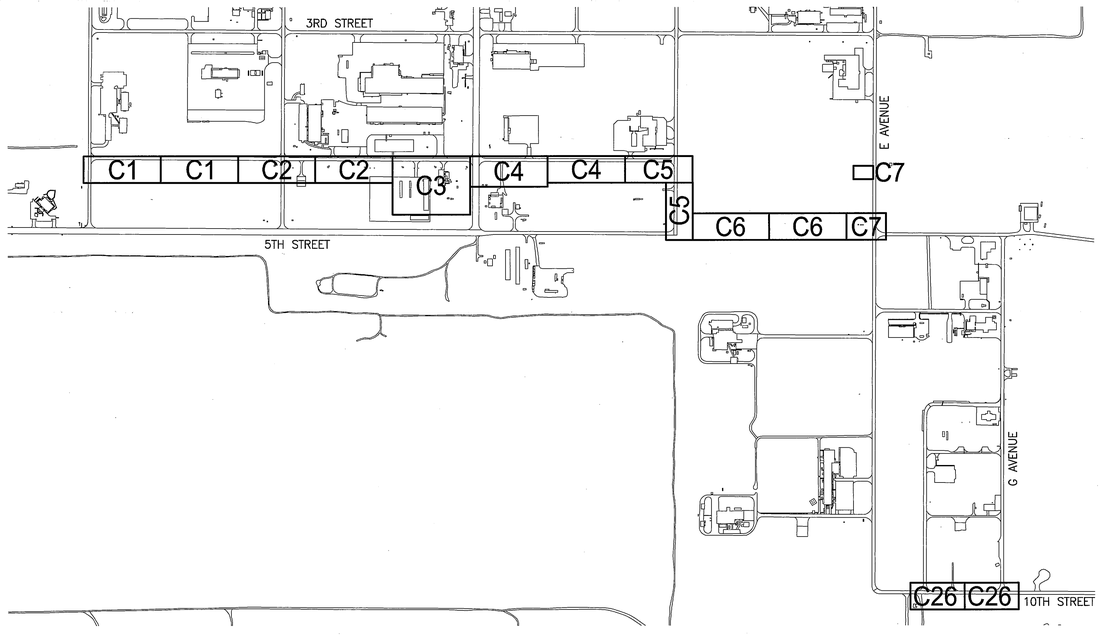
VAB AREA PLAN
1"=500'



NASA CAUSEWAY PLAN
1"=500'



RANSOM ROAD AREA PLAN
1"=500'



INDUSTRIAL AREA PLAN
1"=500'

GRAPHIC SCALE
0 250 500 1000
SCALE IN FEET
1"=500'

N

V5

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K. MILLER	11/1/11

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

KEY MAP (SOUTH)

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 5	

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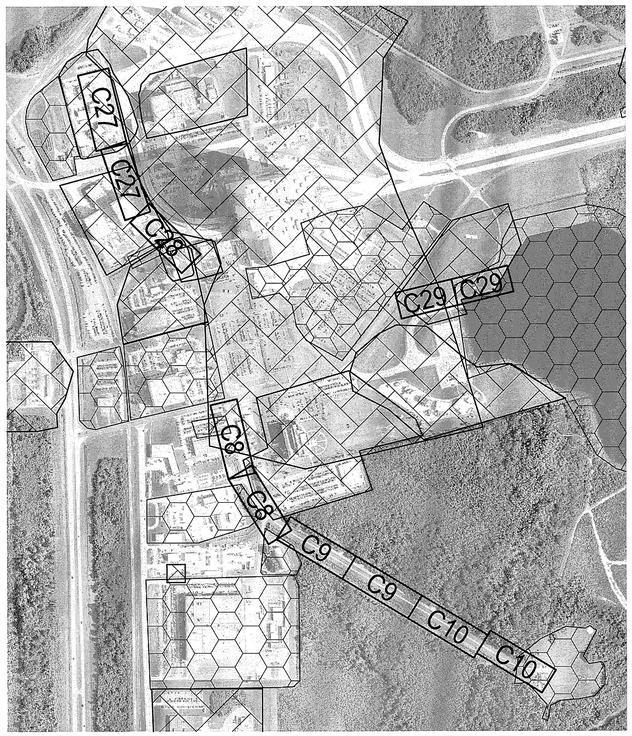
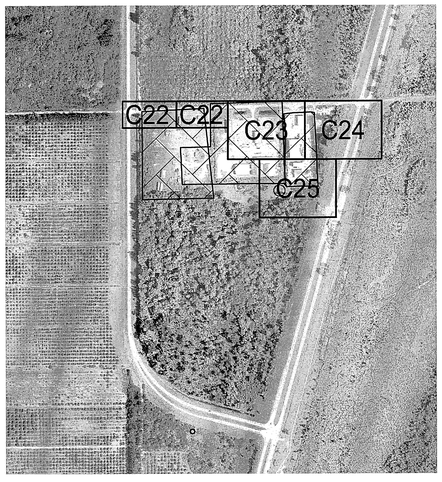


VAB AREA PLAN
1"=500'



RANSOM ROAD AREA PLAN
1"=500'

INDUSTRIAL AREA PLAN
1"=500'

GENERAL NOTES:

1. THE SYSTEMS BEING MODIFIED MAY BE LOCATED WITHIN VARIOUS SWMU OR PRL. THESE SITES CONTAIN GROUNDWATER CONTAMINATION, SOIL CONTAMINATION, OR BOTH. SOIL EXCAVATED FROM THE LAND SURFACE TO ANY DEPTH SHALL BE RETURNED TO THE AREA OF EXCAVATION FROM WHICH IT WAS REMOVED. SOIL EXCAVATED FROM THE SITE THAT CANNOT BE RETURNED TO THE AREA FROM WHICH IT WAS REMOVED SHALL BE COLLECTED BY THE CONTRACTOR AND PLACED IN AN APPROPRIATE CONTAINER IN ACCORDANCE WITH THE REGULATIONS. THE CONTRACTOR SHALL COORDINATE WITH THE CO AND NASA ENVIRONMENTAL TO HAVE THE EXCAVATED SOIL SAMPLED TO DETERMINE IF IT IS A HAZARDOUS WASTE. THE SOIL SHALL BE DISPOSED OF IN ACCORDANCE WITH THE PWQ/TRP PROCESS. THE CONTRACTOR SHALL USE BEST MANAGEMENT PRACTICES TO PREVENT EROSION AND REMOVAL OF SOIL FROM SITE.
2. DEWATERING EFFLUENT SHALL BE DISCHARGED TO GRADE UPLAND OF THE EXCAVATED AREA AND ALLOWED TO PERCOLATE BACK INTO THE PERVIOUS GROUND SURFACE. DEWATERING SHALL NOT EXCEED 50 GPM WITHIN A SWMU OR PRL, UNLESS AUTHORIZED BY THE CO AND NASA ENVIRONMENTAL. BEST MANAGEMENT PRACTICES SHALL BE USED TO PREVENT DEWATERING EFFLUENT FROM ENTERING SURFACE WATERS. THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN TO THE CO AND NASA ENVIRONMENTAL 14 DAYS PRIOR TO COMMENCEMENT OF DEWATERING WORK WITHIN A SWMU OR PRL BOUNDARY FOR DEWATERING PLAN APPROVAL.
3. THE SIZE AND LOCATIONS OF SWMU/PRL AREAS ARE BASED ON THE BEST AVAILABLE INFORMATION AND LOCATIONS AND SIZE OF AREAS ARE APPROXIMATE.
4. THE CONTRACTOR IS TO CONTACT THE CO SHOULD CONTAMINANTS OR SUSPECTED CONTAMINANTS BE IDENTIFIED OUTSIDE THE LIMITS OF THE IDENTIFIED SWMU/PRL AREAS AND WITHIN THE LIMITS OF CONSTRUCTION.
5. SWMU/PRL CONTAMINANT DATA WAS PROVIDED BY NASA ENVIRONMENTAL.

LEGEND

SWMU SITE

PRL SITE

GRAPHIC SCALE
0 250 500 1000
SCALE IN FEET
1"=500'

N

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

SWMU/PRL SITE KEY MAP

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 6	

EN1

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SWMU CONTAMINANTS

SWMU	CONTAMINANTS	LOCATION (MEDIA)	STATUS	NOTES	DWG NO
4	POLYCHLORINATED BIPHENYLS (PCBS), POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS)	SOIL	LTM		
	VOLATILE ORGANIC COMPOUNDS (VOCS)	GROUNDWATER			
8	CHLORINATED VOLATILE ORGANIC COMPOUNDS [CVOCS (TCE, CDCE, VINYL CHLORIDE (VC))], PENTACHLOROPHENOL (PCP)	GROUNDWATER	CMS		
	ZINC, ARSENIC, BERYLLIUM, LEAD, BENZO(A)PYRENE (BAP), COPPER, CADMIUM, CHROMIUM, PAHS, PCBS, PCP	SOIL, SEDIMENT			
9	CVOCS (TCE, CDCE, VC), METALS (ALUMINUM, ARSENIC, BARIUM, LEAD, MERCURY, THALLIUM)	GROUNDWATER	CMI		
	BENZO(A)PYRENE (BAP), ARSENIC, NICKEL, ZINC	SOIL, SEDIMENT			
10	VOCS AND PCBS (GROUNDWATER); NONE (SOIL)	GROUNDWATER: WATER TABLE TO 30 FT BELOW LAND SURFACE	CMI		C22, C23, C25
13	PAHS, METALS	SOIL, SEDIMENT	CMI		
	VOCS	GROUNDWATER			
14	PCBS, PAHS, ARSENIC	SOIL, SEDIMENT	LTM		
	VOCS, IRON	GROUNDWATER			
21	PCBS	SOILS: PCBS IN SURFACE SOILS SURROUNDING SANDBLAST FACILITIES	LUCIP		C23–C25
24C	VOCS AND PETROLEUM	GROUNDWATER: SEE SWMU 035 FOR PETROLEUM, LOW LEVEL VOCS CAN ALSO BE FOUND IN GENERAL AREA BELOW 20 FT BLS	LTM	PART OF SWMU 056	C30
30	VOCS, SEMIVOLATILE ORGANIC COMPOUNDS (SVOCS)	GROUNDWATER	CMI		
35	PETROLEUM	GROUNDWATER: SMALL AREA OF PETROLEUM CONTAMINANTS IN SHALLOW GROUNDWATER NORTH OF ABOVE GROUND STORAGE TANKS	SA		C30
36	VOCS	PART OF GROUNDWATER PLUME FROM SWMU 010 ENCROACHES ON THE SOUTHEAST CORNER OF THIS SITE	SA		C22
39	VOCS	GROUNDWATER	CMI		
40	VOCS	GROUNDWATER: WATER TABLE TO 50 FT BELOW LAND SURFACE	LTM		C29
41	VOCS[(TDCE, CDCE, VC, DFP (DECAFLUOROPENTANE)]	GROUNDWATER	RFI/IM		
43	PCBS	SOIL	CMI		
44	PAHS, PCBS, THALLIUM	SOIL	LUCIP		C29
45	NICKEL	SWALE SOIL	CMI		
	VOCS	GROUNDWATER			
55	PCBS, METALS	SOIL	CMI, LTM		
	VOCS	GROUNDWATER			
56	VOCS, AMMONIA	GROUNDWATER	CMI		C29, C30
	BAP, PCBS	SOIL			
67	PCBS, PAHS	SOIL	CMI		
	VOCS, ALUMINUM	GROUNDWATER			
70	VOCS [TRICHLOROFLUOROMETHANE (TCFM) AND VC] AND ALUMINUM	GROUNDWATER	LUCIP		
72	METALS, PAHS, AND TRPH	SOIL, SWALE SOIL	CMI		C8, C29–C31
	ALUMINUM, VOCS	GROUNDWATER			
76	PCBS, PAHS	SOIL	LTM		
	VOCS, IRON	GROUNDWATER			
77	CVOCS	GROUNDWATER	RFI/IM		
	COPPER, CHROMIUM	SOIL			
79	VINYL CHLORIDE	GROUNDWATER	CS		
80	VOCS	GROUNDWATER: WATER TABLE TO 50 FT BELOW LAND SURFACE	LTM		C8
81	COPPER, ARSENIC, BAP, DIBENZO(A,H)ANTHRACENE, TOTAL PETROLEUM HYDROCARBONS (TPH)	SOIL/SWALE SOIL	LTM		
	ANTIMONY	GROUNDWATER			

SWMU CONTAMINANTS

82	VOCS (CDCE, VC)	GROUNDWATER	CMS		
84	1,1–BIPHENYL, ARSENIC, LEAD	GROUNDWATER	CMI		
85	VC	GROUNDWATER	LTM		
88	CVOCS (TCE, VC)	GROUNDWATER	CMI		C2
89	TCE, CDCE, VC	GROUNDWATER	RFI/IM		
90	PCBS, TRPH, BARIUM, CHROMIUM, TCE, FREON 113	SOIL	CMS/IM		
	TETRACHLOROETHENE (PCE), TCE, CDCE, 1,1–DCE, 1,1 DCA, VC, FREON 113	GROUNDWATER			
91	VC	GROUNDWATER	RFI		
92	PCBS, PAHS	SOIL	CMI		
94	AMMONIA	GROUNDWATER	LTM		
95	VOCS (TCE, 1,1–DCE, CDCE, TDCE, VC)	GROUNDWATER	CMS/IM		
96	BARIUM, COPPER, PCBS, TOTAL PETROLEUM HYDROCARBONS (TPH)	SOIL	CMI		
98	AMMONIA	GROUNDWATER	LTM		
99	BAP, PAHS	SOIL	LTM		
	PETROLEUM HYDROCARBONS	GROUNDWATER			
100	VOCS (TCE, CDCE, TDCE, VC)	GROUNDWATER	RFI		
101	VOCS WITH VINYL CHLORIDE ONLY CONTAMINANT OF CONCERN EXCEEDING GW CLEANUP CRITERIA	GROUNDWATER	LTM		C30
102	VOCS (TCE, CDCE, VC)	GROUNDWATER	RFI		
104	PCBS	SOIL, CONCRETE	RFI/IM		
106	(AROCLOR–1254, BENZO(A)PYRENE TOTAL EQUIVALENTS [BAP TEQ], ARSENIC, BARIUM, CHROMIUM, COPPER, LEAD, MERCURY	SOIL	RFI/IM		
	VINYL CHLORIDE	GROUNDWATER			

PRL CONTAMINANTS

PRL	CONTAMINANTS	LOCATION (MEDIA)	STATUS	NOTES	DWG NO
51	PETROLEUM	GROUNDWATER AND SOIL: AREA SOUTH OF FACILITY CONTAINS PETROLEUM PRODUCTS FROM 5–15 FT BLS.	CMI		C8
84	VOCS	GROUNDWATER: WATER TABLE TO 50 FT BELOW LAND SURFACE	LTM	CRAWLER PARK SITE SOUTH, PART OF SWMU 044	
	METALS AND PAHS(SOIL)	SOIL			
86B	PCBS	GROUNDWATER: PCBS IN SHALLOW GROUNDWATER (5 TO 15 FT BLS) SOUTH OF AN POWER BUILDING	LTM	STP14, PART OF SWMU 021	C25
149	ARSENIC	SOILS: ARSENIC IN SURFACE SOILS BENEATH PLAYGROUND POUR AND PLAY SURFACE	LUCIP		
150	PCBS	SOIL: PCBS IN SOIL BENEATH TRANSFORMER PAD ONLY	LUCIP		C3
164	NO CONCERNS IN THIS AREA	NONE	LTM		
165	NOT AVAILABLE		SAR	SAR ON HOLD	
166	PCBS, BAP	SOIL	CS	CURRENTLY UNDERGOING IM, WILL BE NFA	C10
167	PCBS, COPPER	SOIL, GROUNDWATER	CS/IM	NFA PENDING SRCO	
170	PCBS	SOIL, CONCRETE, ASPHALT	CS	SOIL IM NO EARLIER THAN FY12	
172	NOT AVAILABLE	SOIL, GROUNDWATER	CS	NO LOCS NEAR LIFT STATION, CS ON HOLD	
174	PCBS, BAP, COPPER, CHROMIUM, TPH 2,6–DINITROTOLUENE, CARBAZOLE, ACENAPTHENE, NAPTHALENE, DIBENZO(A,H)ANTHRACENE	SOIL	CS		
	DIBENZO(A,H)ANTHRACENE	GROUNDWATER			
175	NOT AVAILABLE	SOIL AND GROUNDWATER	CS	CS ON HOLD	
176	NO CONTAMINANTS IDENTIFIED YET	CS ON HOLD	CS		C31
182	BAP, ZINC	SOIL	CS		
	DCE	GROUNDWATER			
187	NOT AVAILABLE	SOIL AND GROUNDWATER	CS	CS ON HOLD (FY12 AT EARLIEST)	

SAR= SWMU ASSESSMENT REPORT SITE REHABILITATION SRCO= COMPLETION ORDER

ASBESTOS SCHEDULE

MATERIAL TYPE	ASBESTOS	FRIABLE	CONDITION	QUANTITY	UNIT	LOCATION	COMMENTS
4" AC PIPE	YES *	NO	N/A	268	LF	PIPING	BURIED ASBESTOS CEMENT PIPE
6" AC PIPE	YES *	NO	N/A	1489	LF	PIPING	BURIED ASBESTOS CEMENT PIPE
8" AC PIPE	YES *	NO	N/A	5845	LF	PIPING	BURIED ASBESTOS CEMENT PIPE
12" AC PIPE	YES *	NO	N/A	4185	LF	PIPING	BURIED ASBESTOS CEMENT PIPE
14" AC PIPE	YES *	NO	N/A	1623	LF	PIPING	BURIED ASBESTOS CEMENT PIPE
16" AC PIPE	YES *	NO	N/A	9048	LF	PIPING	BURIED ASBESTOS CEMENT PIPE

REPORT BY JONES EDMUNDS

N/A= CONDITION OF BURIED PIPE COULD NOT BE OBSERVED

BAP= BENZO(A)PYRENE

BLS = BELOW LAND SURFACE

CDCE= CIS–DICHLOROETHENE

CS= CONFIRMATION SAMPLING

CMI= CORRECTIVE MEASURES IMPLEMENTATION

CMS= CORRECTIVE MEASURES STUDY

CVOCS= CHLORINATED VOLATILE ORGANIC COMPOUNDS

DCA= DICHLOROETHANE

DCE= DICHLOROETHANE

DFP= DECAFLUOROPENTANE

IM= INTERIM MEASURE

LTM= LONG TERM MONITORING

LUCIP= LAND USE CONTROL IMPLEMENTATION PLAN

PAHS= POLYNUCLEAR AROMATIC HYDROCARBONS

PCBS= POLYCHLORNATED BIPHENYLS

PCP= PENTACHLOROPHENOL

RFI= RESOURCE CONSERVATION RECOVERY ACT (RCRA) FACILITY INVESTIGATION

TCE= TRICHLOROETHENE

TCFM= TRICHLOROFLUOROMETHANE

TDCE= TRANS–DICHLOROETHENE

TRPH= TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

TPH= TOTAL PETROLEUM HYDROCARBONS

VC= VINYL CHLORIDE

VOCS= VOLATILE ORGANIC COMPOUNDS

ENVIRONMENTAL NOTES

A. THE CONTRACTOR SHALL SUBMIT A SITE SPECIFIC HEALTH AND SAFETY PLAN TO THE CO PRIOR TO START OF WORK PER SPECIFICATION SECTION 01 35 26. THE SPECIAL CONDITIONS OF THE CONTRACT DOCUMENTS, AND ALL APPLICABLE STATE AND FEDERAL REQUIREMENTS.

B. HEAVY METALS AND/OR PCB'S IN PAINT AND MATERIALS ARE ASSUMED ON THE MATERIALS TO BE DEMOLISHED. CONCENTRATIONS ARE LOW ENOUGH IN RELATION TO OVERALL WEIGHT OF THE STRUCTURE THAT THE GOVERNMENT WILL ALLOW DISPOSAL AT THE GOVERNMENT OWNED KSC CLASS III LANDFILL SUBJECT TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. UNPAINTED METALS AND CONCRETE SHALL BE RECYCLED IN ACCORDANCE WITH THE SPECIAL CONDITIONS OF THE CONTRACT DOCUMENTS.

ASBESTOS ABATEMENT NOTES

C. THIS PROJECT INCLUDES CUTTING AND CAPPING OF ASBESTOS CEMENT PIPE TO BE ABANDONED IN PLACE. REFER TO CIVIL SHEETS FOR LOCATIONS. THE CONTRACTOR SHALL HANDLE ASBESTOS CONTAINING MATERIALS IN ACCORDANCE WITH APPLICABLE STATE AND FEDERAL REGULATIONS, SPECIFICATION 02 82 13.00 98 AND THE CONTRACT REQUIREMENTS.

D. THIS PROJECT INCLUDES REMOVAL OF ASBESTOS CEMENT PIPE. REFER TO ASBESTOS SCHEDULE FOR QUANTITIES TO BE REMOVED. THE CONTRACTOR SHALL ABATE AND DISPOSE OF CEMENT PIPE IN ACCORDANCE WITH APPLICABLE STATE AND FEDERAL REGULATIONS, SPECIFICATION 02 82 13.00 98, AND THE CONTRACT DOCUMENTS.

E. SITE SPECIFIC ASBESTOS WORK PLANS MUST BE PROVIDED FOR ALL WORK ASSOCIATED WITH THE IDENTIFIED ASBESTOS CONCRETE PIPES.

F. ITEMS SHOWN IN THE ASBESTOS COLUMN OF THE SCHEDULES AS "YES*" HAVE BEEN ASSUMED TO CONTAIN ASBESTOS DUE TO THE HAZARDS AND CRITICAL NATURE ASSOCIATED WITH THE SYSTEM. THE CONTRACTOR SHALL ASSUME THESE ITEMS ARE POSITIVE FOR ASBESTOS. THE CONTRACTOR HAS THE OPTION TO SAMPLE MATERIAL BEFORE DEMOLITION BEGINS IN ORDER TO MINIMIZE THE DEMOLITION SCHEDULE.

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET- INITIAL RELEASE TO EDC	12/05/11	

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SUBMITTED K. RIVERA	12/05/11
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APPROVED M. CLARK	12/6/11
K. MILLER	12/5/11

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHN F. KENNEDY SPACE CENTER, NASA
KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5 WATER SYSTEM ADDITIONAL

SWMU/PRL CONTAMINANTS AND ENVIRONMENTAL/ASBESTOS NOTES

FILE NO.	SIZE	DWG. NO.	REV
EN2	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 7	

KSC FORM 1-11 (3/76)(C/G 3/94)

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GENERAL DEMOLITION NOTES

1. COORDINATE WITH CO FOR POWER SYSTEM ISOLATION LOCKOUT, TAGOUT AND DEMOLITION.
2. THE CONTRACTOR SHALL NOTE THAT ALL OVERHEAD AND UNDERGROUND UTILITIES MAY NOT BE SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL FIELD LOCATE AND INCLUDE CONSIDERATION OF SUCH UTILITIES PRIOR TO BIDDING AND PRIOR TO EXECUTION OF WORK.
3. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING DIMENSIONS AND DETERMINING ALL MATERIAL QUANTITIES.
4. CONTRACTOR SHALL NOT COMMENCE DEMOLITION WORK UNTIL ALL UTILITIES HAVE BEEN VERIFIED TO BE DISCONNECTED AND ISOLATED. IF NECESSARY, THE CONTRACTOR SHALL NOTIFY THE CO 30 DAYS PRIOR TO ANY DEMOLITION TO ALLOW FOR ICS CONTRACTORS TO RELOCATE COMMUNICATION LINES AND EQUIPMENT. THE CONTRACTOR SHALL NOT DEMOLISH ANY ELECTRICAL EQUIPMENT UNTIL IT HAS BEEN DE-ENERGIZED COMPLETELY, DISCONNECTED AT ALL POSSIBLE SOURCES, AND VERIFIED DE-ENERGIZED AT THE EQUIPMENT WITH THE PROPER ELECTRICAL TEST EQUIPMENT.
5. THE CONTRACTOR SHALL NOTIFY THE CO IN WRITING AT LEAST 14 DAYS IN ADVANCE OF DISCONNECTING ANY ACTIVE SYSTEM. THE CONTRACTOR SHALL PROVIDE THE CO A SCHEDULE AND SEQUENCE PLAN PRIOR TO COMMENCING WORK.
6. THE CONTRACTOR SHALL PROVIDE CONTROL AND MAINTENANCE OF TRAFFIC IN ACCORDANCE WITH FDOT INDEX 600 THROUGH 665.
7. FDOT INDICES SHALL REFER TO THE "2010 FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS." FDOT SPECIFICATIONS SHALL REFER TO THE "2010 FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION."
8. ITEMS IDENTIFIED TO BE SALVAGED AND RETURNED TO THE GOVERNMENT SHALL BE REMOVED CAREFULLY IN ORDER TO MAINTAIN THEIR CONDITION FOR FUTURE USE.
9. CONTRACTOR SHALL NOT CLOSE OR OBSTRUCT STREETS, WALKS, OR OTHER ADJACENT OCCUPIED OR IN-USE FACILITIES WITHOUT PERMISSION FROM THE CO. PROVIDE ALTERNATE ROUTES AROUND CLOSED OR OBSTRUCTED TRAFFIC WAYS.
10. CONTRACTOR SHALL CONDUCT DEMOLITION OPERATIONS AND DEBRIS REMOVAL WITH MINIMAL INTERFERENCE TO ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED AND IN-USE FACILITIES.
11. CONTRACTOR SHALL ERECT AND MAINTAIN A MINIMUM 4-FOOT TALL CONSTRUCTION BARRIER AT SITE TO LIMIT ACCESS TO THE CONSTRUCTION SITE. THE CONSTRUCTION FENCE SHALL BE INSTALLED PRIOR TO ANY DEMOLITION ACTIVITIES.
12. FACILITIES AND IMPROVEMENTS TO REMAIN SHALL BE CLEANED OF DUST, DIRT, AND DEBRIS CAUSED BY DEMOLITION OPERATIONS. THE CONTRACTOR SHALL RETURN ADJACENT AREAS TO PRE-CONSTRUCTION CONDITIONS.
13. REMOVAL, DEMOLITION, STORAGE, HAULING AND DISPOSAL SHALL COMPLY WITH REGULATIONS BY FDEP, RCRA, TSCA, OSHA, EPA, FDOT AND ANY OTHER AUTHORITY HAVING JURISDICTION.
14. CONTRACTOR IS REQUIRED TO POLICE WORK AREAS DAILY FOR LOOSE TRASH AND DEBRIS. WIND BLOWN DEBRIS MUST BE COLLECTED DAILY AND PROPERLY DISPOSED TO PREVENT MIGRATION OF DEBRIS/TRASH OFFSITE.
15. BACKFILL AND COMPACTION WORK SHALL PROVIDE THE MINIMUM SLOPE TO DRAIN PROPERLY. PONDING OF WATER SHALL BE AVOIDED.
16. IF DURING DEMOLITION THE CONTRACTOR ENCOUNTERS MATERIALS OR SUBSTANCES NOT IDENTIFIED IN CONTRACT DOCUMENTS, THE CONTRACTOR SHALL IMMEDIATELY REPORT THESE MATERIALS TO THE CO AND PROCEED AS DIRECTED BY THE CO.
17. ALL EXISTING STORMWATER DRAINAGE PATTERNS AND CHANNELS SHALL BE MAINTAINED. THE CONTRACTOR SHALL NOTIFY THE CO IF THE WORK APPEARS TO INTERRUPT AN EXISTING STORMWATER DRAINAGE PATTERN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ANY EROSION, SEDIMENT TRANSPORT, DISTURBED FOUNDATIONS AND IMPACT TO STRUCTURES, AND ANY OTHER DAMAGE TO CHANNELS AND DRAINAGE PATTERNS CAUSED DURING DEMOLITION.
18. ALL CONSTRUCTION AND DEMOLITION DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED BY THE CONTRACTOR IN ACCORDANCE WITH FEDERAL AND STATE REGULATIONS AND NASA KSC POLICY.
19. CONTRACTOR SHALL FILL ALL DISTURBED AREAS TO EXISTING ELEVATIONS, GRADE THE SITE LEVEL, AND SOD ALL DISTURBED AREAS.
20. ALL DEMOLITION DEBRIS SHALL BE REMOVED FROM THE SITE PERIMETER WITHIN 3 DAYS OF DEMOLITION.
21. THE CONTRACTOR SHALL HAND EXCAVATE ALL EXISTING UNDERGROUND DISCONNECTION POINTS TO DETERMINE THE LOCATION, MATERIAL, SIZE, JOINT LOCATION AND TYPE.
22. FUEL PIPING AND DAY TANK REMOVED SHALL BE CLEANED BY TRIPLE RINSING WITH WATER PRIOR TO SALVAGE OR DELIVERY TO DISPOSAL SITE. RINSE WATER SHALL BE CONTAINERIZED IN 55 GALLON DRUMS PROVIDED BY AND DISPOSED OF BY THE GOVERNMENT.
23. REQUIREMENTS FOR "HOT" PERMITS AND FIRE WATCHES ARE LOCATED IN THE CONTRACT DOCUMENTS SAFETY PLAN.
24. DELIVER DIESEL ENGINE AND ACCESSORIES (BATTERY CHARGER AND 24 VDC PANEL) TO RANSOM ROAD SALVAGE FACILITY FOR GOVERNMENT DISPOSITION.
25. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH 2011 NATIONAL ELECTRICAL CODE.

ELECTRICAL DEMOLITION NOTES

E1 DISCONNECT AND REMOVE 120 VAC CONDUCTORS FROM CIRCUITS FOR FUEL PUMP, ENGINE HEATER (LOCATED ON ENGINE BLOCK) AND 24VDC BATTERY CHARGER. MARK BREAKERS AS SPARE AFTER COMPLETION OF WORK.

E2 REMOVE 24VDC BATTERY CHARGER AND DC WIRING TO BATTERY STAND. REMOVE WIRING AND CONDUIT FROM BATTERY STAND TO 24VDC DISTRIBUTION PANEL.

E3 REMOVE 24VDC CONDUCTORS FROM 24VDC DISTRIBUTION PANEL TO ENGINE CONTROL PANEL , ENGINE STARTER, AND SOLENOID CONTROL PANEL. REMOVE ADDITIONAL CONDUIT TO FUTURE ENGINE LOCATION. DEMOLISH 24VDC POWER DISTRIBUTION PANEL.

E4 REMOVE 24 VDC CONDUCTORS BETWEEN SOLENOID CONTROL PANEL AND FIVE SOLENOID CONTROL VALVES LOCATED WITHIN VALVE PIT. DEMOLISH SOLENOID CONTROL PANEL.

ENVIRONMENTAL NOTES

1. HEAVY METALS IN PAINT AND MATERIALS ARE ASSUMED ON THE FACILITIES AND ITEMS TO BE DEMOLISHED. CONCENTRATIONS ARE LOW ENOUGH IN RELATION TO OVERALL WEIGHT OF THE STRUCTURE THAT THE GOVERNMENT WILL ALLOW THE DISPOSAL OF THE CONSTRUCTION AND DEMOLITION DEBRIS FROM THE STRUCTURE AT THE GOVERNMENT OWNED KSC CLASS III LANDFILL SUBJECT TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. RECYCLING IS PERMITTED AND SHALL BE IN ACCORDANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS AND NASA KSC CONTRACT CLAUSES.
2. THIS PROJECT HAS THE POTENTIAL TO IMPACT THREATENED, ENDANGERED, AND PROTECTED SPECIES. THE CONTRACTOR SHALL CONTACT THE CONTRACTING OFFICER AND NASA ENVIRONMENTAL 14 DAYS PRIOR TO DEMOLITION IN ORDER FOR THE GOVERNMENT TO PERFORM A BIOLOGICAL SURVEY.
3. PAINTED MATERIALS SHALL BE ASSUMED TO BE PCB BULK PRODUCT WASTE AND SHALL BE DISPOSED OF AT THE KSC CLASS III LANDFILL.
4. UNPAINTED METALS AND CONCRETE SHALL BE RECYCLED IN ACCORDANCE WITH KSC CONTRACT CLAUSES, AND STATE AND FEDERAL REQUIREMENTS.
5. DEMOLITION WORK SHALL INCLUDE ABATEMENT OF ASBESTOS CONTAINING MATERIALS (ACM) WHERE ENCOUNTERED DURING CONSTRUCTION. REFER TO THE ASBESTOS SCHEDULE FOR LOCATIONS OF ASBESTOS CONTAINING MATERIALS. ABATEMENT SHALL BE IN ACCORDANCE WITH KSC CONTRACT CLAUSE "ASBESTOS ABATEMENT" AND REGULATIONS.
6. CONTRACTOR SHALL SUBMIT TO FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) A "NOTICE OF ASBESTOS RENOVATION OR DEMOLITION" FORM (www.dep.state.fl.us/air/forms.html. DEP FORM 62-257.900(1)) 10 DAYS PRIOR TO DEMOLITION AND/OR DISTURBANCE OF ACM. THE CONTRACTING OFFICER SHALL BE COPIED ON ALL REPORTS SUBMITTED TO FDEP. THIS FORM SHALL BE SUBMITTED FOR ASBESTOS DISTURBANCE AS WELL AS DEMOLITION OF ANY LOAD SUPPORTING STRUCTURAL MEMBER OF A FACILITY REGARDLESS OF FACILITY SIZE.
7. ANY ADDITIONAL ACM ENCOUNTERED, NOT REPORTED IN THE ASBESTOS SURVEY, SHALL BE REPORTED TO THE CONTRACTING OFFICER IMMEDIATELY FOLLOWING DISCOVERY. NO ADDITIONAL ACM ABATEMENT SHALL BE PERFORMED WITHOUT WRITTEN AUTHORIZATION FROM THE CONTRACTING OFFICER.
8. NON-FRIABLE ASBESTOS WILL BE ACCEPTED AT THE KSC CLASS III LANDFILL UPON DETERMINATION USING KSC FORM 28-1024 AND SIGNED BY THE NASA ENVIRONMENTAL BRANCH CHIEF. A RECEIPT OF DISPOSAL SHALL BE COPIED TO THE CONTRACTING OFFICER. DISPOSAL OF ALL FRIABLE ACM DEMOLITION DEBRIS SHALL BE AT THE BREVARD COUNTY LANDFILL LOCATED ON ADAMSON ROAD IN COCOA, FL. THE CONTRACTOR SHALL NOTIFY THE KSC CLASS III AND BREVARD COUNTY LANDFILLS 24 HOURS IN ADVANCE OF DELIVERY OF ASBESTOS CONTAINING MATERIALS.
9. ITEMS SHOWN IN THE ASBESTOS COLUMN OF THE SCHEDULES AS "YES*" HAVE BEEN ASSUMED TO CONTAIN ASBESTOS DUE TO THE HAZARDS AND CRITICAL NATURE ASSOCIATED WITH THE SYSTEM. THE CONTRACTOR SHALL ASSUME THESE ITEMS ARE POSITIVE FOR ASBESTOS. THE CONTRACTOR HAS THE OPTION TO SAMPLE MATERIAL BEFORE DEMOLITION BEGINS IN ORDER TO MINIMIZE THE DEMOLITION SCHEDULE.

W-3 PUMP STATION ASBESTOS TABLE

ROOM NUMBER	MATERIAL TYPE	ASBESTOS	FRIABLE	CONDITION	QUANTITY	UNIT	LOCATION	COMMENTS	REPORT BY
INTERIOR	DUCT/HVAC MATERIAL WHITE CLOTH VIBRATION JOINT	YES	YES	GOOD	12	LF	HVAC DUCT	WHITE CLOTH VIBRATION JOINT	JONES EDMUNDS
INTERIOR	MISCELLANEOUS MATERIAL (BUILDING JOINT)	YES	NO	GOOD	240	LF	FLOOR	INTERIOR BUILDING EXPANSION JOINTS IN CONCRETE FLOOR	JONES EDMUNDS
INTERIOR / EXTERIOR	MISCELLANEOUS MATERIAL (CAULK)	YES	NO	GOOD	220	LF	WINDOWS	CAULKING AROUND INTERIOR AND EXTERIOR OF WINDOWS AND DOORS	JONES EDMUNDS
INTERIOR	MISCELLANEOUS MATERIAL (PIPE INSULATION)	YES*	NO	GOOD	2	SF	PIPING	CLOTH WRAP AROUND WATER LINES ON WEST INTERIOR WALL	JONES EDMUNDS
INTERIOR / EXTERIOR	MISCELLANEOUS MATERIAL (GASKETS)	YES*	NO	GOOD	50	EA	PIPING	VARIOUS DIAMETER GASKETS ON ABOVE GROUND AND HIDDEN UNDERGROUND PIPING	JONES EDMUNDS
INTERIOR / EXTERIOR	MISCELLANEOUS MATERIAL (PACKING/CAULKING)	YES*	NO	GOOD	12	SF	WALLS	PACKING/CAULKING AROUND WALL PENETRATIONS	JONES EDMUNDS
EXTERIOR	MISCELLANEOUS MATERIAL (EXPANSION JOINT)	YES*	NO	GOOD	300	LF	WALLS	PAINTED EXTERIOR WALL EXPANSION JOINTS	JONES EDMUNDS
EXTERIOR	ELECTRICAL BOX (FIBROUS)	YES*	NO	GOOD	1	EA	WALL	EXTERIOR FIBROUS ELECTRIC BOX ON EAST WALL	JONES EDMUNDS
EXTERIOR	ROOFING (CORE)	YES*	NO	GOOD	700	SF	ROOF	MAIN BUILT-UP ROOF CORE	JONES EDMUNDS
EXTERIOR	ROOFING (FLASHING)	YES*	NO	GOOD	2	EA	ROOF	BUILT-UP ROOF/FLASHING (AROUND VENTS)	JONES EDMUNDS
EXTERIOR	ROOFING (OTHER)	YES*	NO	GOOD	6	EA	ROOF	BUILT-UP ROOF/MASTIC (MASTIC UNDER LIGHTNING PROTECTION SYSTEM)	JONES EDMUNDS

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET - INITIAL RELEASE TO EPC	12/05/11	KM

REVISIONS

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APPROVED H. CLARK	12/07/11
K. MILLER	12/6/11

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHN F. KENNEDY SPACE CENTER, NASA
KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

W3 PUMP STATION DEMOLITION NOTES

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 8	

D1

KSC FORM 1-11 (3/76)(C/G 3/94)

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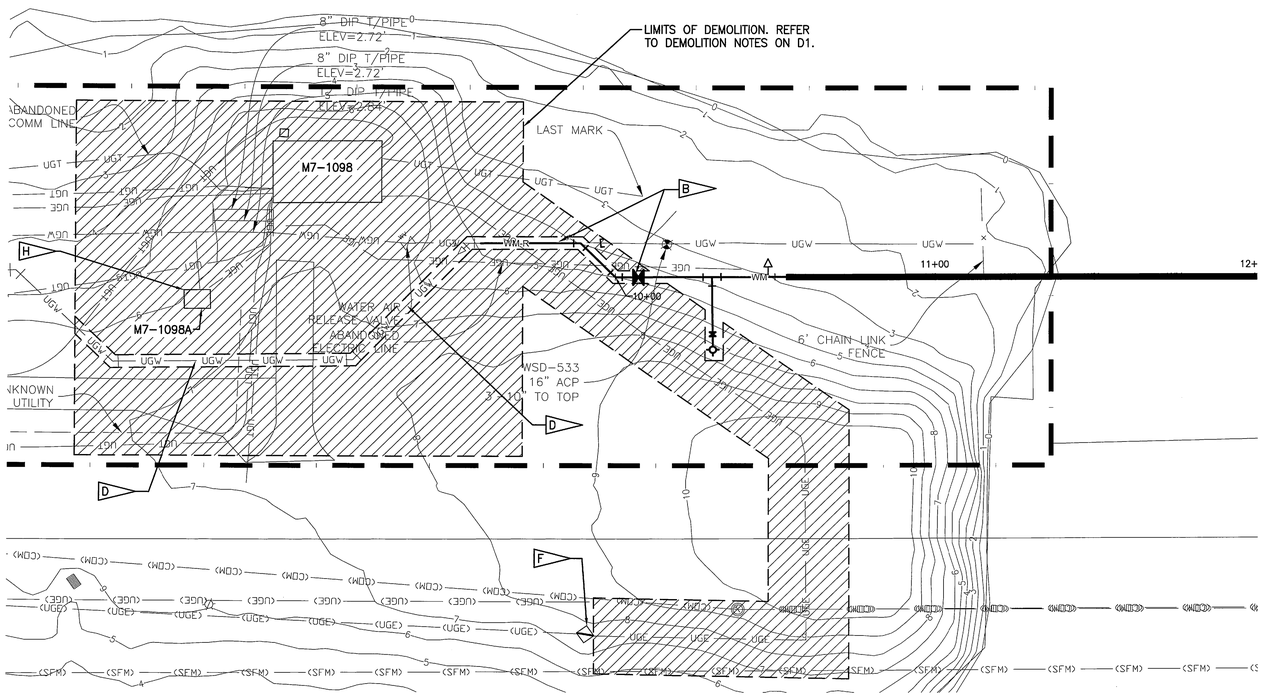
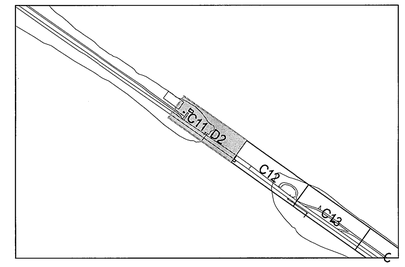


W3 PUMP STATION DEMOLITION PLAN
1"=20'



KEY MAP
NTS

SPECIFIC NOTES

A. DEMOLISH W-3 PUMP STATION (M7-1098), FOUNDATIONS AND ASSOCIATED APPURTENANCES, CONCRETE SLAB, VALVE PIT, PIPE TRENCH, AND ASSOCIATED SUPPORTS.

B. 16" DI WM INSTALLED UNDER 79K38877 VOLUME 4 TO REMAIN.

C. SECURITY TOWER, APPURTENANCES AND FOUNDATION TO REMAIN.

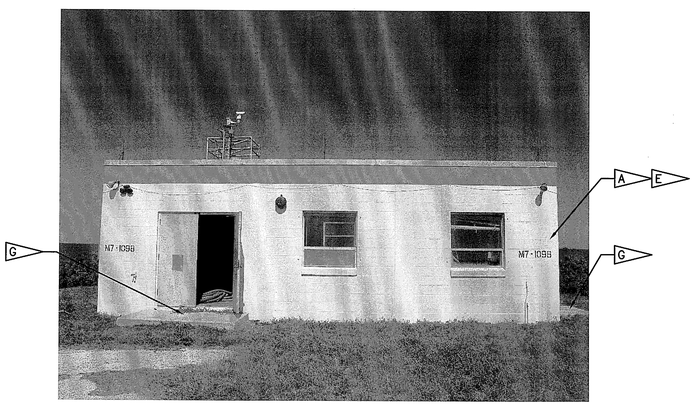
D. EXISTING 12" DI WM INSTALLED UNDER 79K38700 TO REMAIN.

E. THE CONTRACTOR SHALL DEMOLISH ALL ELECTRICAL EQUIPMENT AT EXISTING W-3 PUMP STATION INCLUDING ALL CONDUCTORS AND CONDUIT. DEMOLISH EXISTING CONDUCTORS AND CONDUIT FROM MAIN CIRCUIT BREAKER AND TERMINATE TO EXISTING 112.5 KVA SUBSTATION.

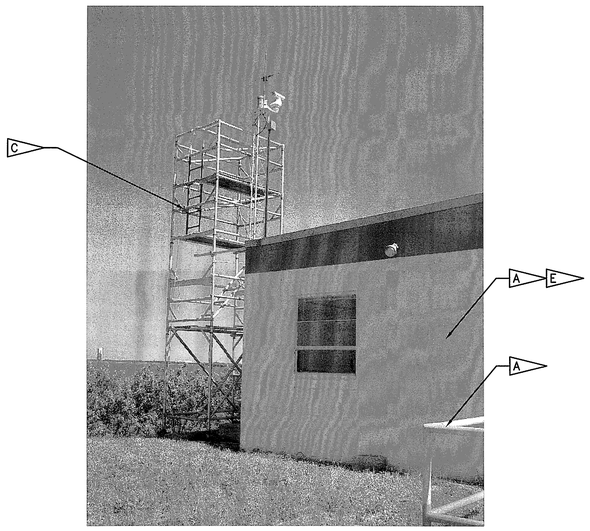
F. EXISTING 112.5 KVA SUBSTATION WITH 480V, 3ø SECONDARY PER DRAWING 203-218, SHEET 13 OF 14 TO REMAIN.

G. DEMOLISH CONCRETE SLABS.

H. M7-1098A TO BE REMOVED BY OTHERS.



M7-1098



M7-1098

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

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SYM	ZONE	DESCRIPTION	DATE	APPROVED
B		REVISED NOTE D	03/07/12	
A		ADDED SHEET	12/05/11	

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5 WATER SYSTEM ADDITIONAL

W3 PUMP STATION DEMOLITION PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	B
PROJ. NO. 96968.3		SHEET 9	

D2

FORM 1-11 (3/76)(C/G 3/94)

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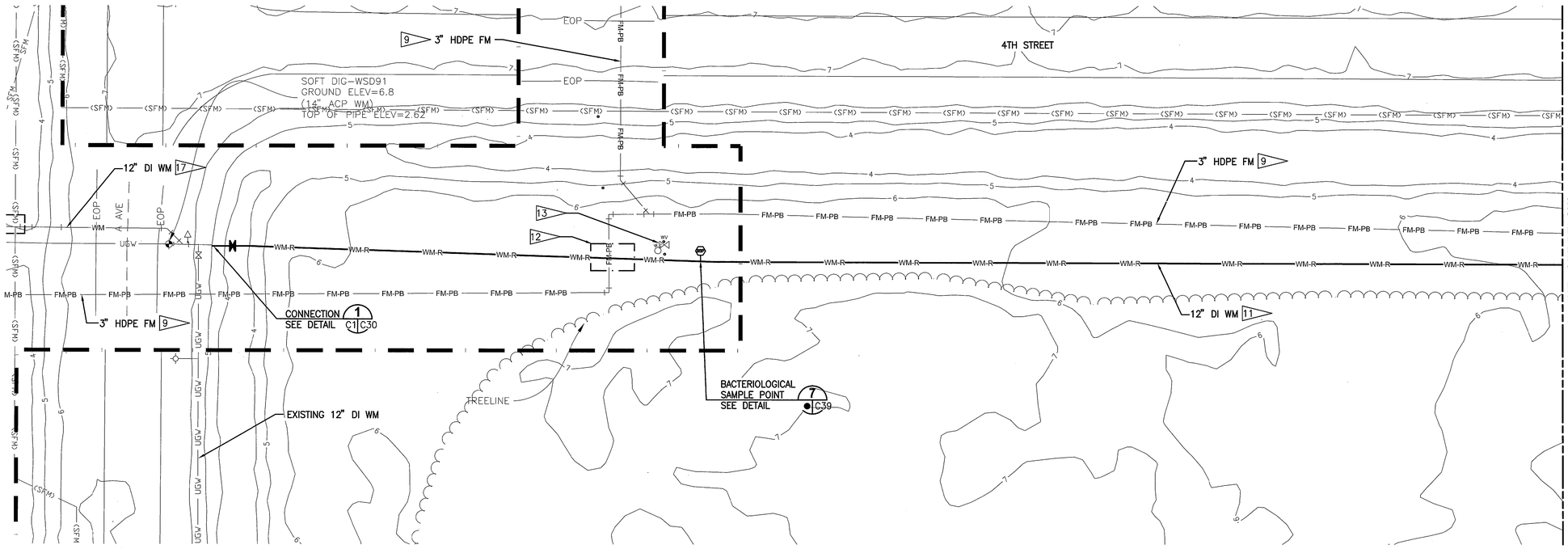
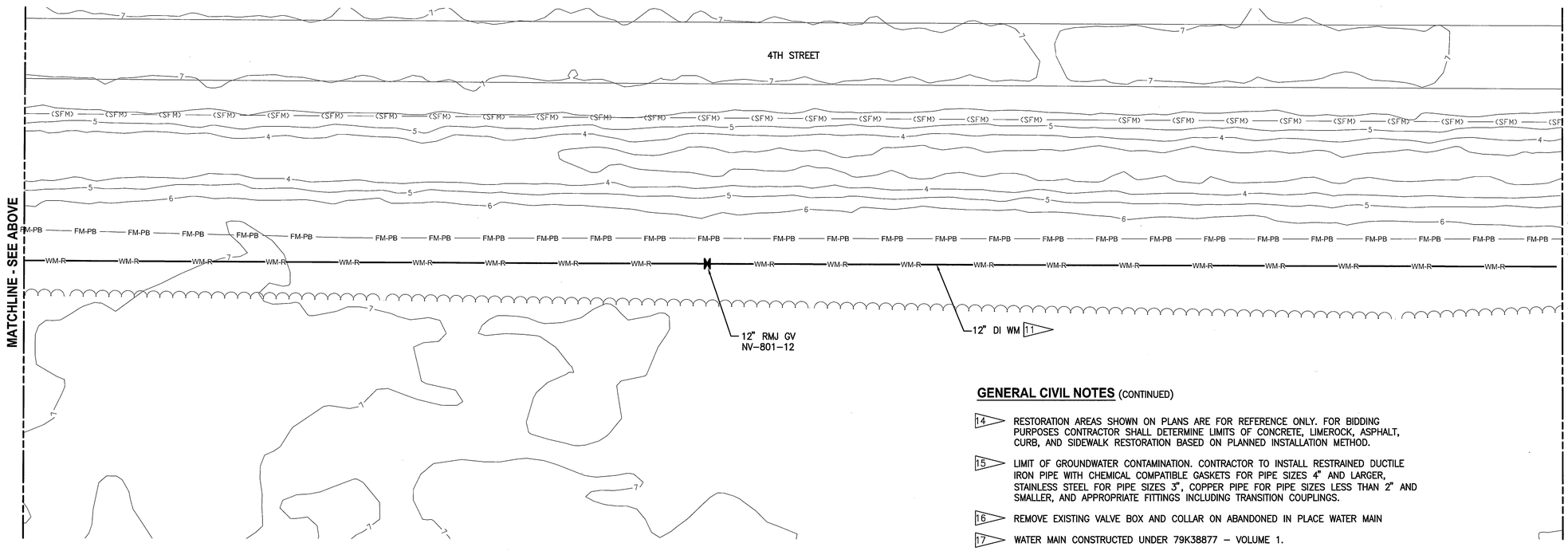
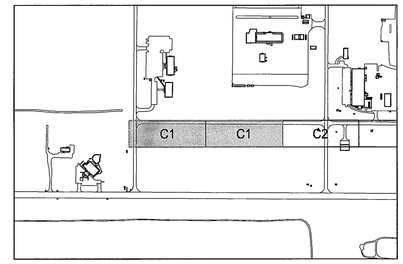


4TH STREET PLAN
1"=20'



4TH STREET PLAN
1"=20'



KEY MAP
NTS

GENERAL CIVIL NOTES

1. REMOVE AND REINSTALL FENCE AS REQUIRED FOR INSTALLATION OF WATER MAIN. CONTRACTOR TO COORDINATE WITH CO AND NASA SECURITY BEFORE FENCING IS REMOVED. CONTRACTOR SHALL PROVIDE 6' CHAIN LINK FENCING TO ENSURE FACILITY SECURITY.
2. REMOVE EXISTING FIRE HYDRANT ASSEMBLY AND ANY EXISTING BOLLARDS.
3. FULLY GROUT ABANDONED WATER MAIN. EXTEND GROUT 10 FEET BEYOND EDGE OF ROADWAY, CRAWLERWAY, OR TWO-WAY UNLESS NOTED OTHERWISE ON THE PLANS. SEE SPECIFICATIONS FOR GROUT MATERIAL.
4. REMOVE AND REPLACE EXISTING BOLLARDS AS REQUIRED FOR INSTALLATION OF WATER MAIN, MATCH EXISTING SIZE AND LOCATION. IF EXISTING LOCATION CONFLICTS WITH WATER MAIN, CONTRACTOR TO COORDINATE NEW LOCATION WITH CO. SEE DETAIL (SIM) 3 C38
5. REMOVE AND RESET SIGN AS REQUIRED FOR INSTALLATION OF WATER MAIN. SIGN SHALL BE PLACED IN ORIGINAL LOCATION AND MATCH EXISTING ORIENTATION AND HEIGHT. SIGN POST SHALL BE SECURED IN GROUND WITH CONCRETE, AND MATCH EXISTING EMBEDMENT. IF POST LOCATION CONFLICTS WITH WATER MAIN, CONTRACTOR TO COORDINATE NEW LOCATION WITH CO.
6. PROVIDE TEMPORARY SUPPORT FOR POWER OR LIGHT POLE AS REQUIRED FOR INSTALLATION OF NEW WATER MAIN.
7. REMOVE AND REPLACE CULVERT AS REQUIRED FOR INSTALLATION OR REMOVAL OF WATER MAIN. REPLACE MES PER FDOT STANDARD INDEX No. 273. PIPE TO MATCH EXISTING LOCATION, SIZE, MATERIAL, AND INVERTS.
8. WATER MAIN CONSTRUCTED UNDER 79K38700.
9. FORCE MAIN CONSTRUCTED UNDER 79K38877 – VOLUME 3.
10. PROVIDE THRUST BLOCK PER DETAIL 3 C42
11. DEMOLISH AND REMOVE EXISTING AC WATER MAIN PER SPECIFICATION 02 82 13.00 98
12. POTENTIAL UTILITY CONFLICT FOR REPLACE WATER MAIN. MAINTAIN ORIGINAL PIPELINE ALIGNMENT. CONTRACTOR SHALL PROVIDE SUFFICIENT FITTINGS FOR EXISTING UTILITY CONFLICTS AT ALL LOCATIONS.
13. DEMOLISH AND REMOVE EXISTING BACTERIOLOGICAL SAMPLE POINT.

GENERAL CIVIL NOTES (CONTINUED)

14. RESTORATION AREAS SHOWN ON PLANS ARE FOR REFERENCE ONLY. FOR BIDDING PURPOSES CONTRACTOR SHALL DETERMINE LIMITS OF CONCRETE, LIMEROCK, ASPHALT, CURB, AND SIDEWALK RESTORATION BASED ON PLANNED INSTALLATION METHOD.
15. LIMIT OF GROUNDWATER CONTAMINATION. CONTRACTOR TO INSTALL RESTRAINED DUCTILE IRON PIPE WITH CHEMICAL COMPATIBLE GASKETS FOR PIPE SIZES 4" AND LARGER, STAINLESS STEEL FOR PIPE SIZES 3", COPPER PIPE FOR PIPE SIZES LESS THAN 2" AND SMALLER, AND APPROPRIATE FITTINGS INCLUDING TRANSITION COUPLINGS.
16. REMOVE EXISTING VALVE BOX AND COLLAR ON ABANDONED IN PLACE WATER MAIN
17. WATER MAIN CONSTRUCTED UNDER 79K38877 – VOLUME 1.

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

N

C1

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET-INITIAL RELEASE TO EOC	12/05/11	

REVISIONS

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SIGNATURES	DATE
DRAWN P. SIMMS	12/05/11
CHECKED M. CLARK	12/05/11
SUBMITTED R. BEST	12/05/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	12/7/11
K. MILLER	12/9/11

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A

PROJ. NO. 96968.3 SHEET 10

SC FORM 1-11 (3/76)(C/G 3/94)

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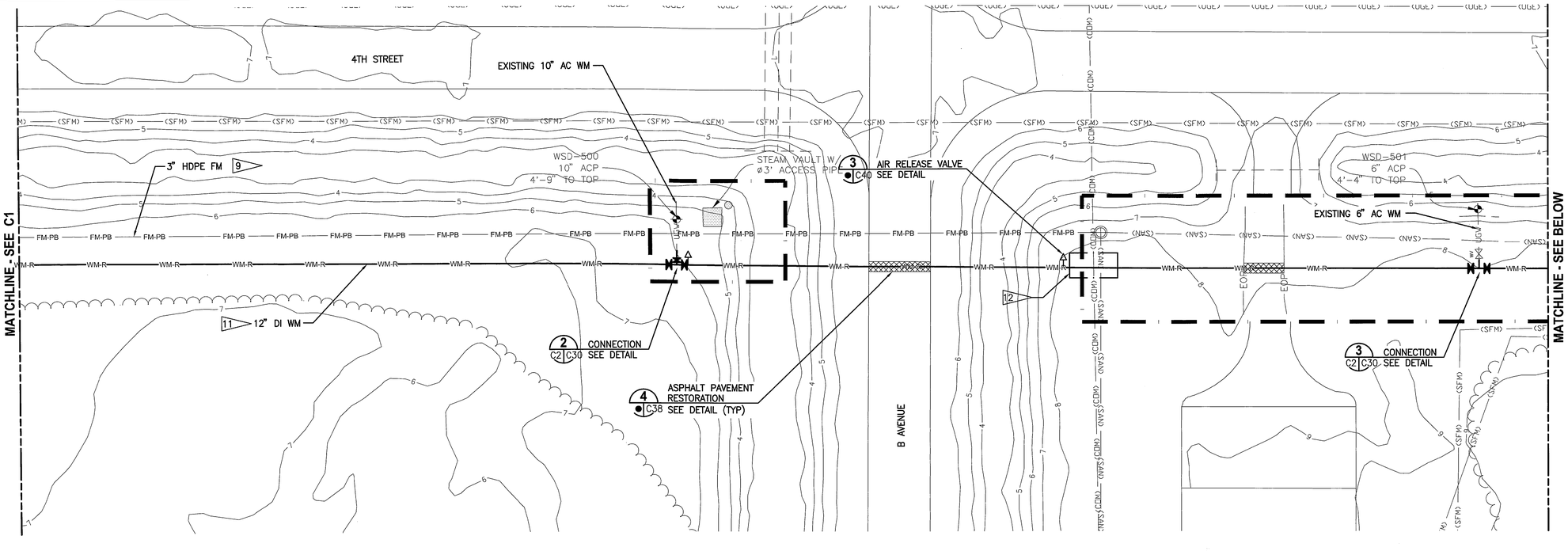
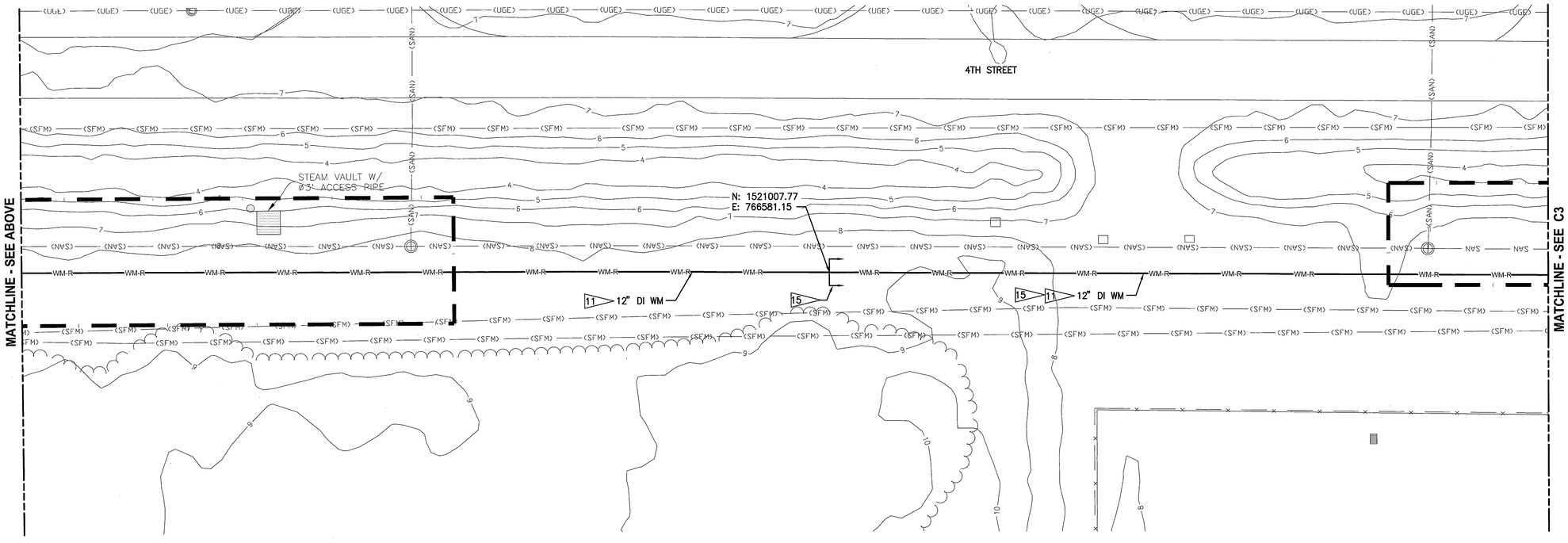
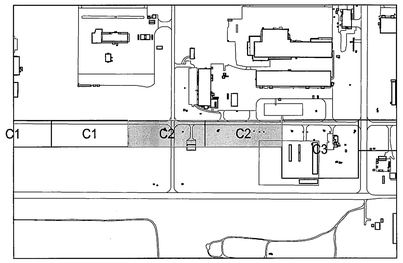


4TH STREET PLAN
1"=20'



4TH STREET PLAN
1"=20'



KEY MAP
NTS

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

N

C2

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CHECKED M. CLARK	12/05/11
SUBMITTED R. BEST	12/05/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	12/05/11
K. MILLER	12/5/11

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 11	

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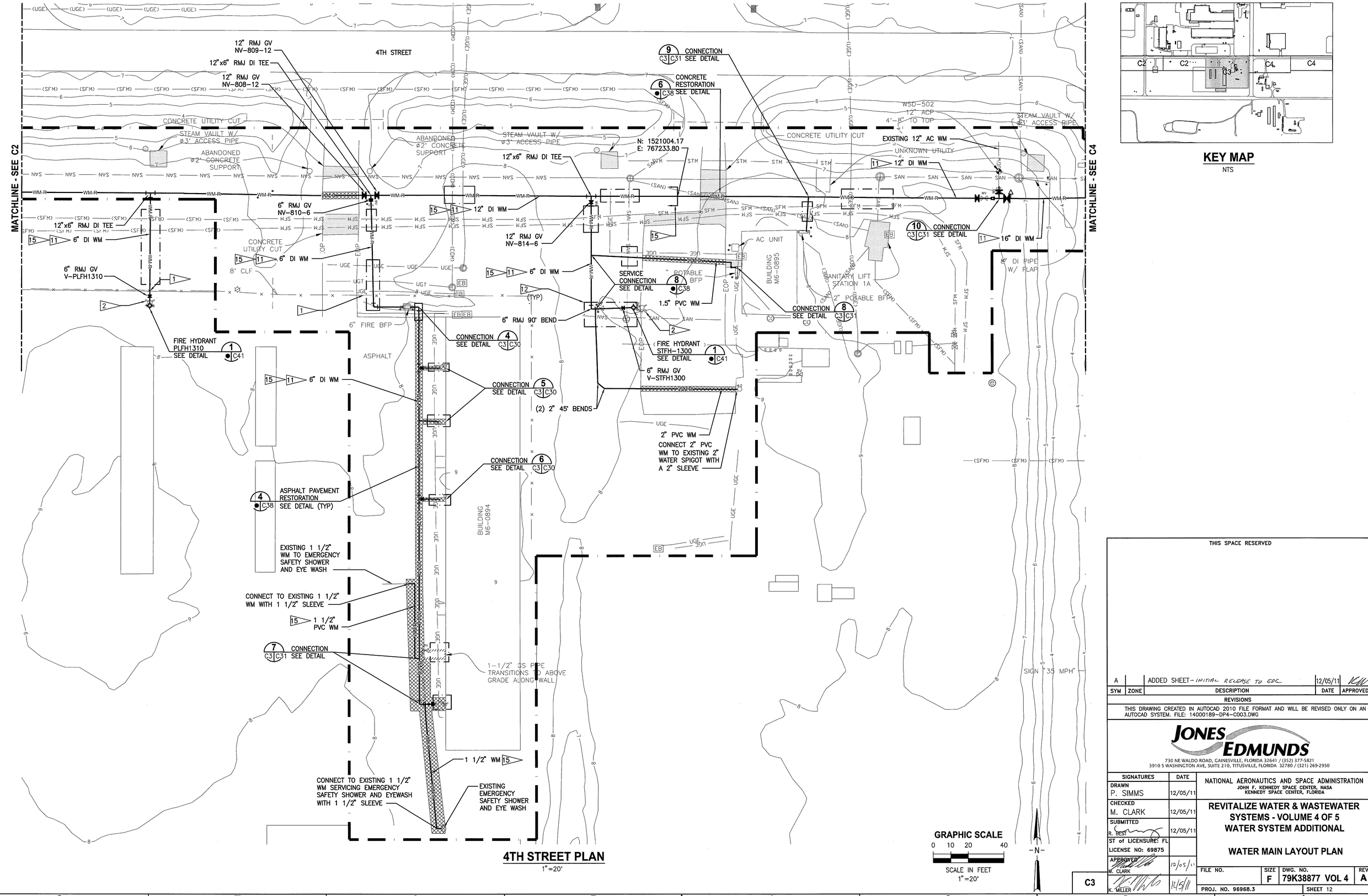

4TH STREET PLAN
1"=20'

KEY MAP
NTS

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A		ADDED SHEET - INITIAL RELEASE TO EDC	12/05/11	KM

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CHECKED M. CLARK	12/05/11
SUBMITTED R. BEST	12/05/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	12/05/11
K. MILLER	12/5/11

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5 WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A

PROJ. NO. 96968.3 | SHEET 12

C3

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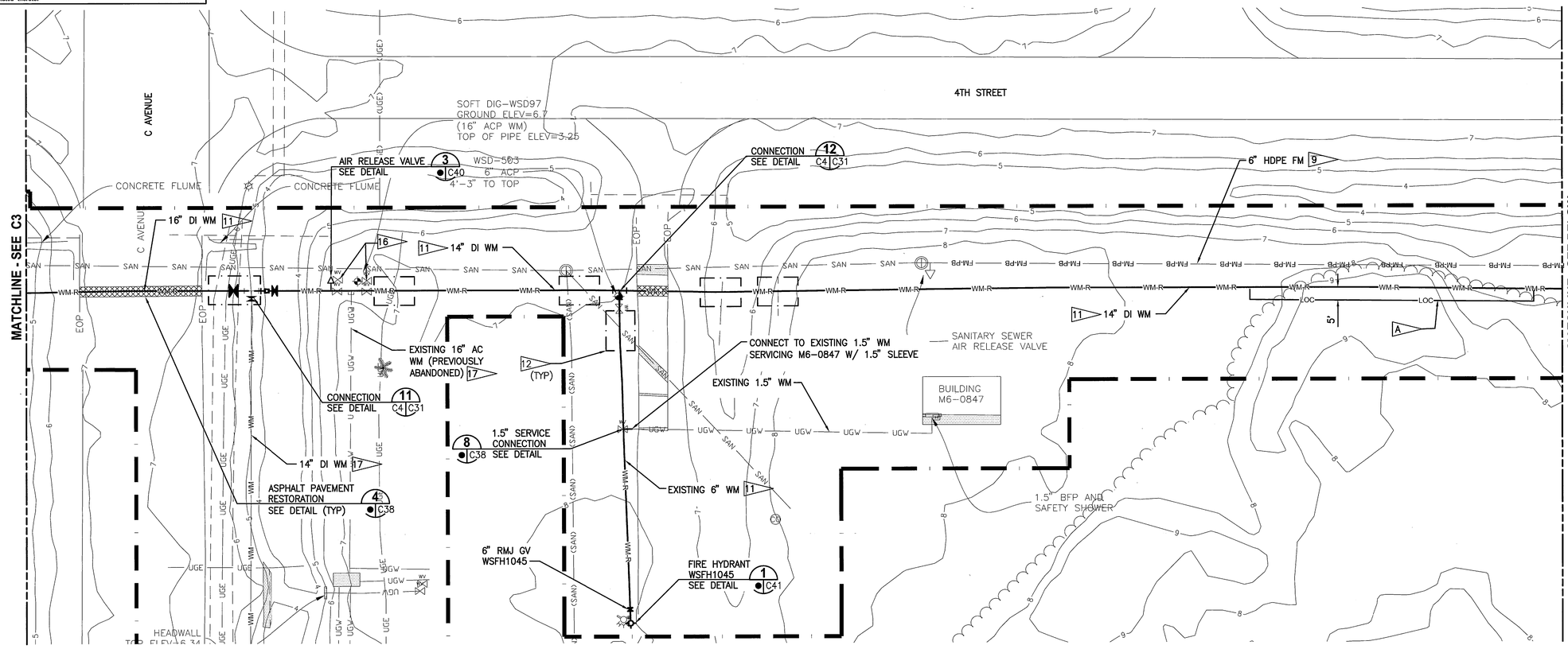
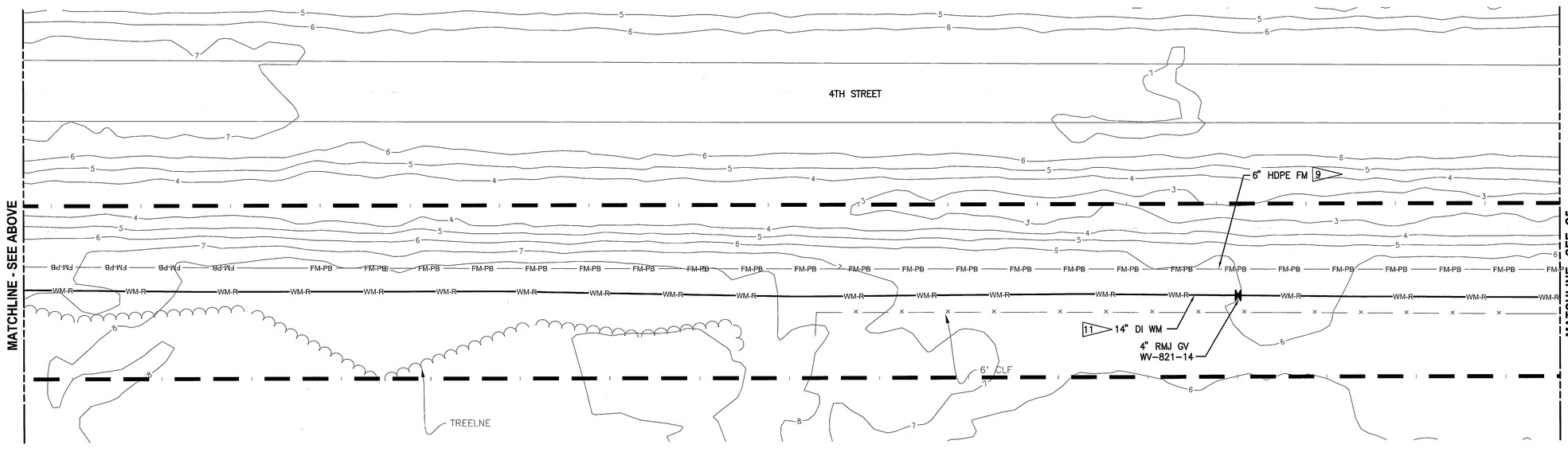
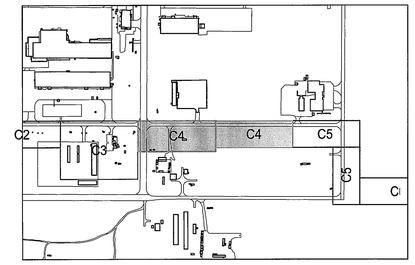


4TH STREET PLAN
1"=20'



4TH STREET PLAN
1"=20'



KEY MAP
NTS

NOTE

A CONTRACTOR SHALL CLEAR ALL TREES AND VEGETATION BETWEEN THE LIMITS OF CLEARING LINE AND THE EXISTING TREELINE. SEE SPECIFICATION SECTION 31 00 00 3.3.2.

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

N

C4

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SUBMITTED R. BEST	10/31/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	10/31/11
K. MILLER	11/2/11

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 13	

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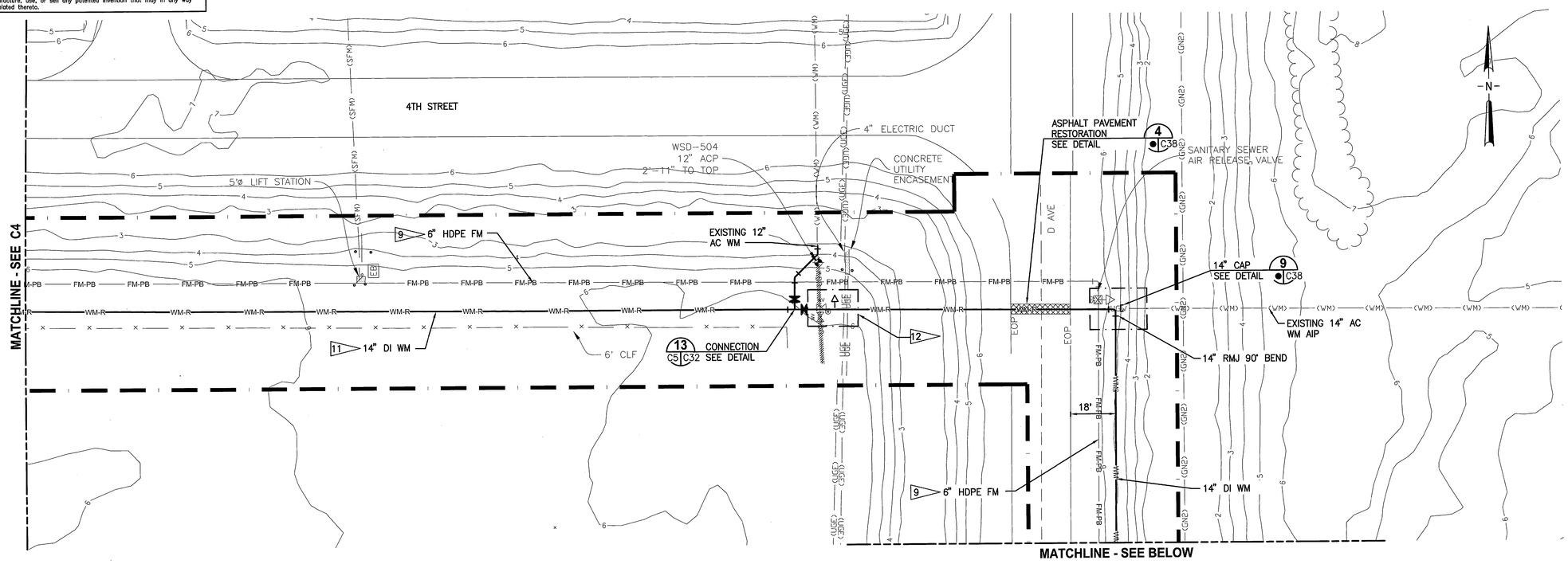
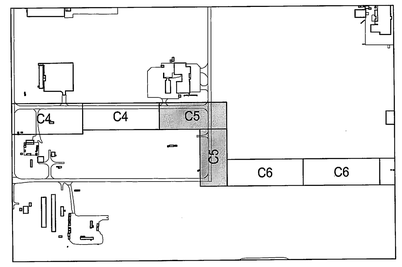


4TH STREET PLAN
1"=20'



KEY MAP
NTS

NOTE

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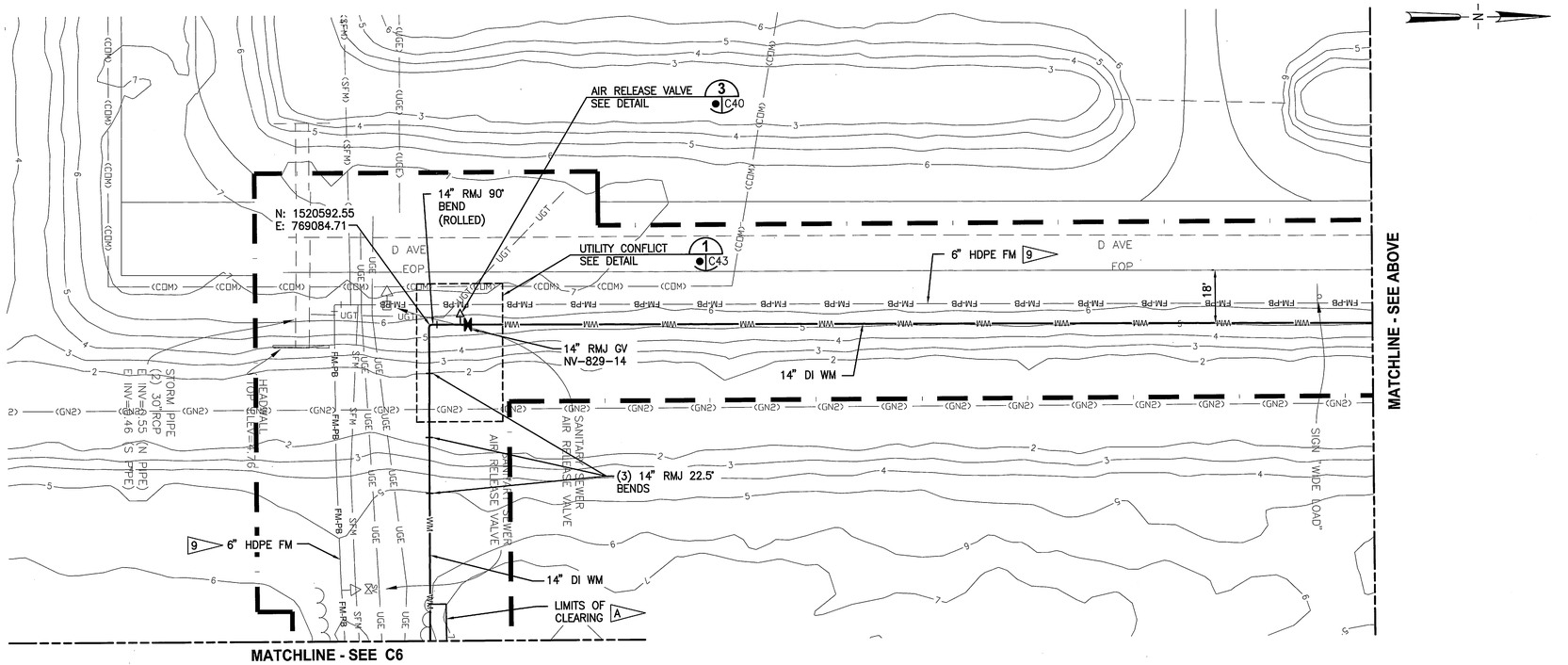

D AVENUE PLAN
1"=20'

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET- INITIAL RELEASE TO EDC	12/05/11	

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APPROVED M. CLARK	12/7/11
K. MILLER	12/9/11

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5 WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 14	

C5

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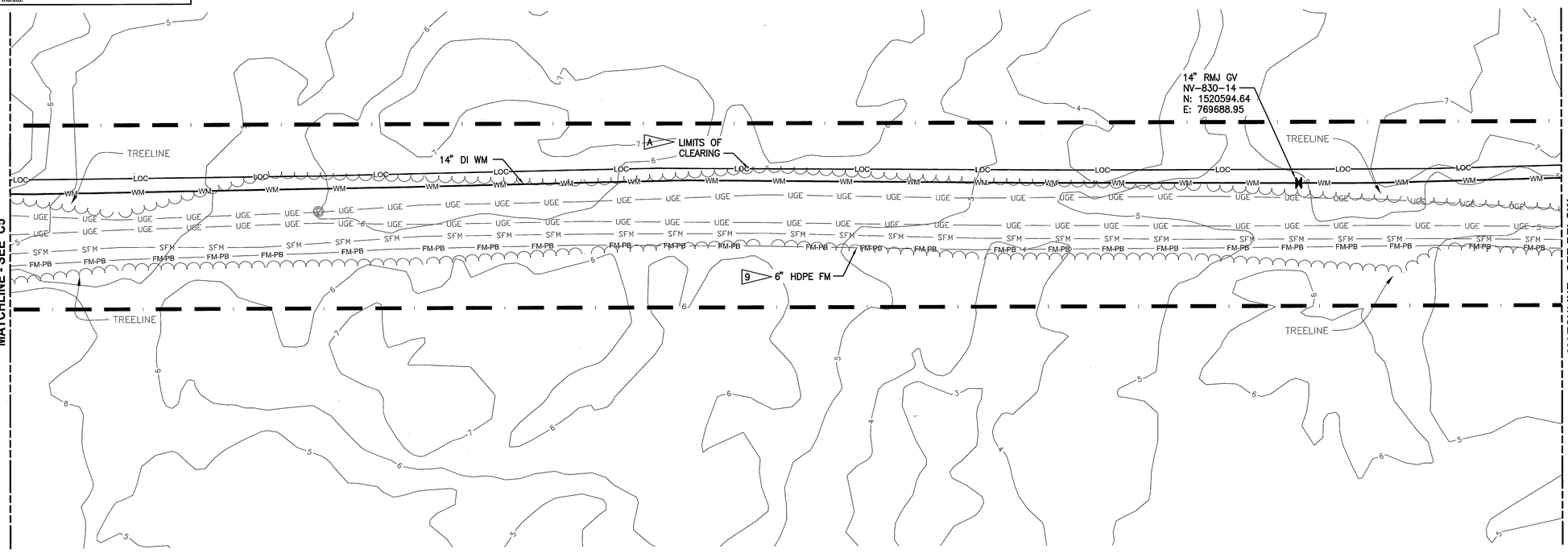
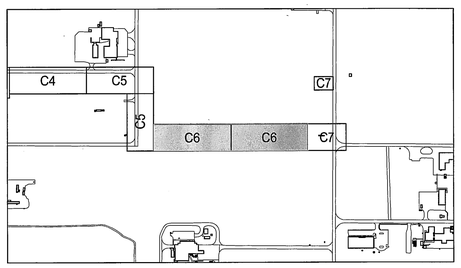


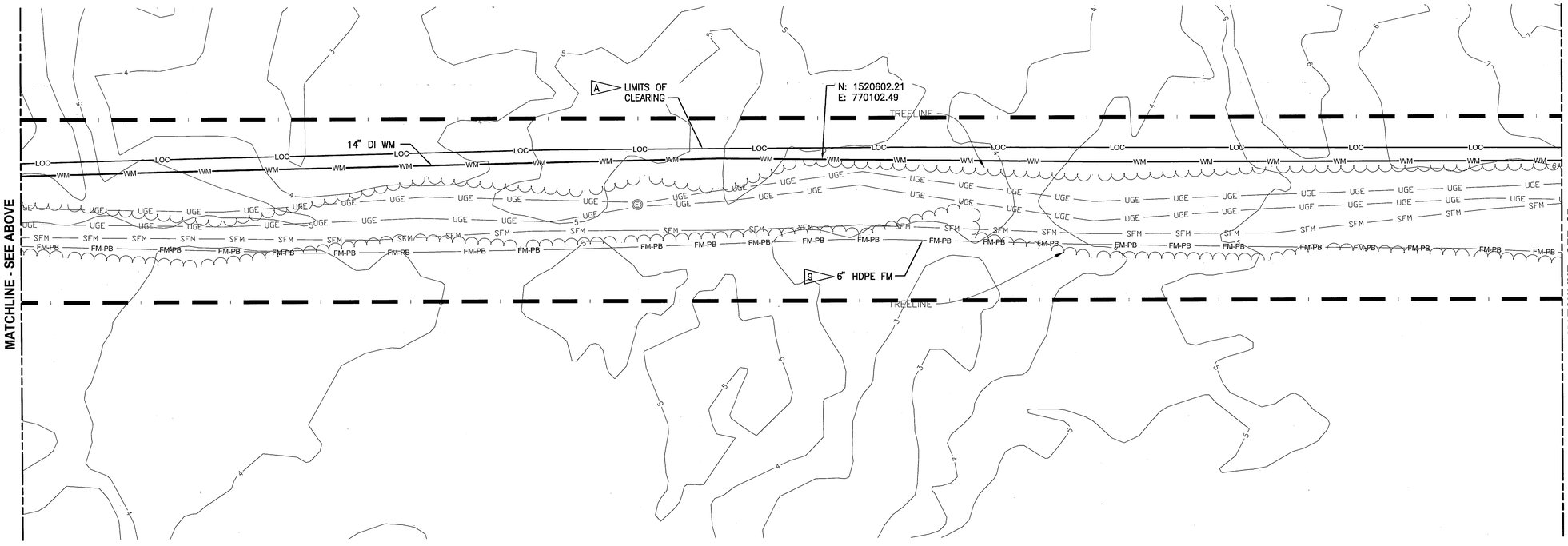
5TH STREET PLAN
1"=20'



KEY MAP
NTS

NOTE

A CONTRACTOR SHALL CLEAR ALL TREES AND VEGETATION BETWEEN THE LIMITS OF CLEARING LINE AND THE EXISTING TREELINE. SEE SPECIFICATION SECTION 31 00 00 3.3.2.



5TH STREET PLAN
1"=20'

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

N

C6

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SIGNATURES	DATE
DRAWN P. SIMMS	10/31/11
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SUBMITTED R. BEST	10/31/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	10/31/11
K. MILLER	11/2/11

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KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 15	

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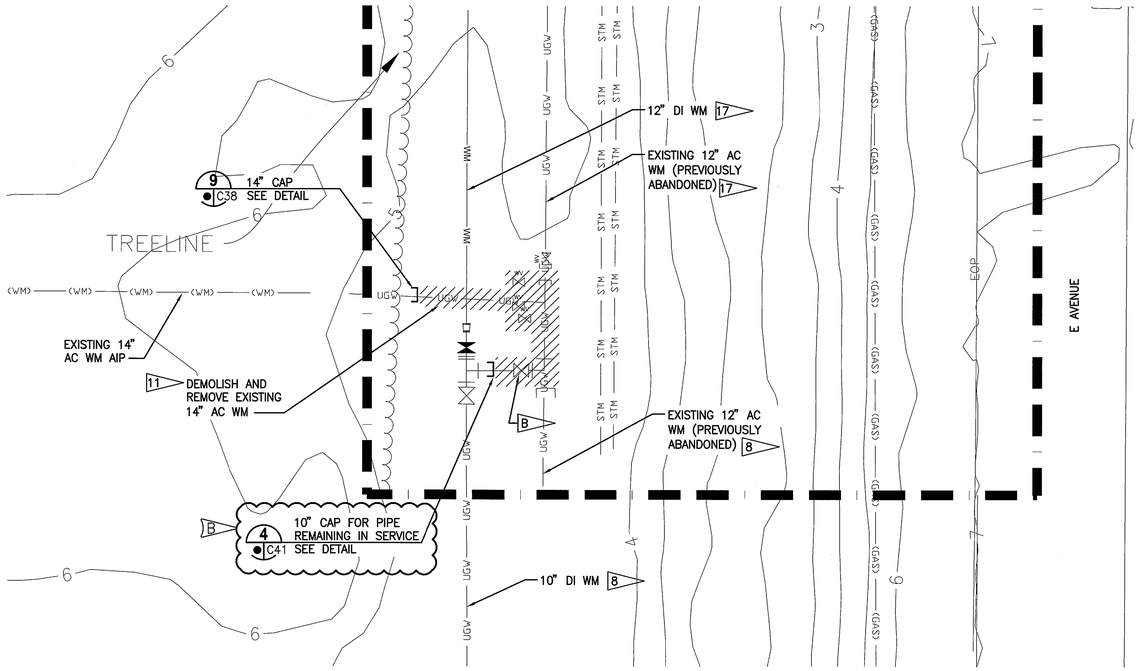
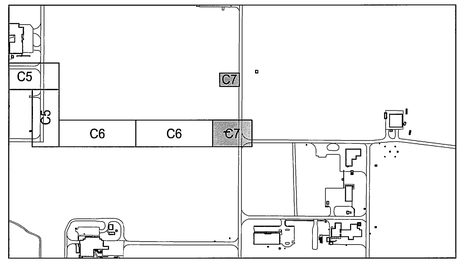


E AVENUE PLAN
1"=10'

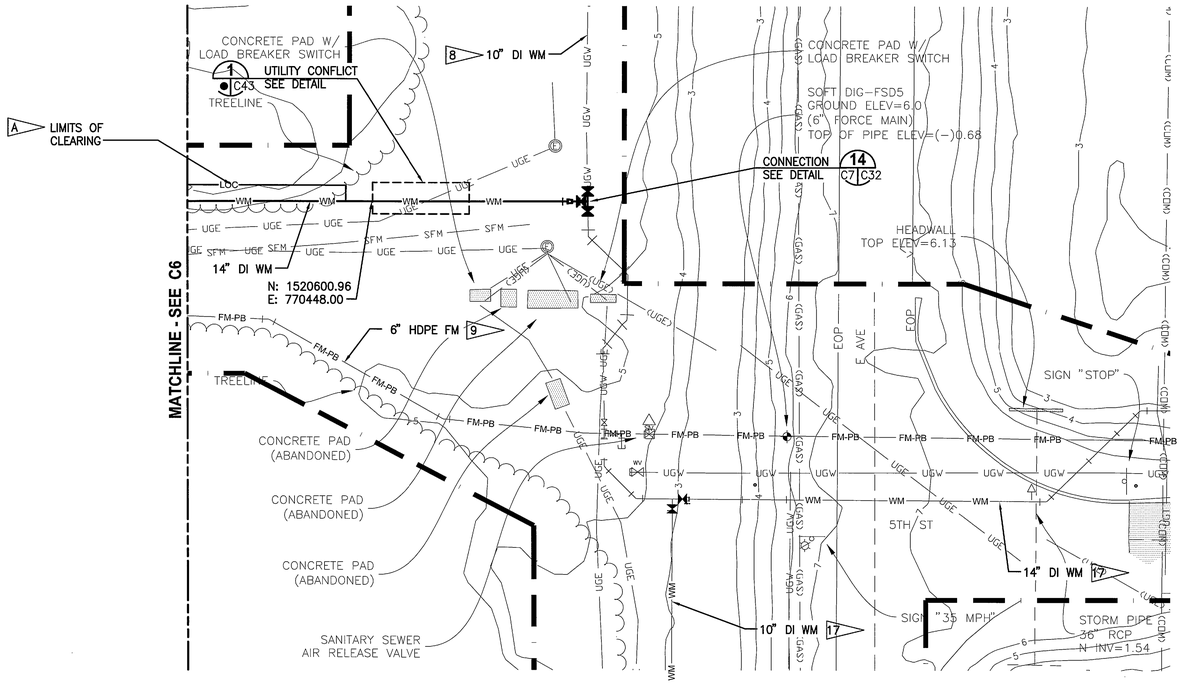


KEY MAP
NTS

NOTE

A CONTRACTOR SHALL CLEAR ALL TREES AND VEGETATION BETWEEN THE LIMITS OF CLEARING LINE AND THE EXISTING TREELINE. SEE SPECIFICATION SECTION 31 00 00 3.3.2.

B VALVE E-5-G SHALL BE SALVAGED AND RETURNED TO GOVERNMENT.



5TH STREET & E AVENUE PLAN
1"=20'

GRAPHIC SCALE
0 5 10 20
SCALE IN FEET
1"=10'

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

N

C7

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
B		REVISED CAP CALLOUT	03/07/12	
A		ADDED SHEET	12/05/11	

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SIGNATURES	DATE
DRAWN P. SIMMS	12/05/11
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SUBMITTED R. BEST	12/05/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	
K. MILLER	

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5 WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	B
PROJ. NO. 96968.3		SHEET 16	

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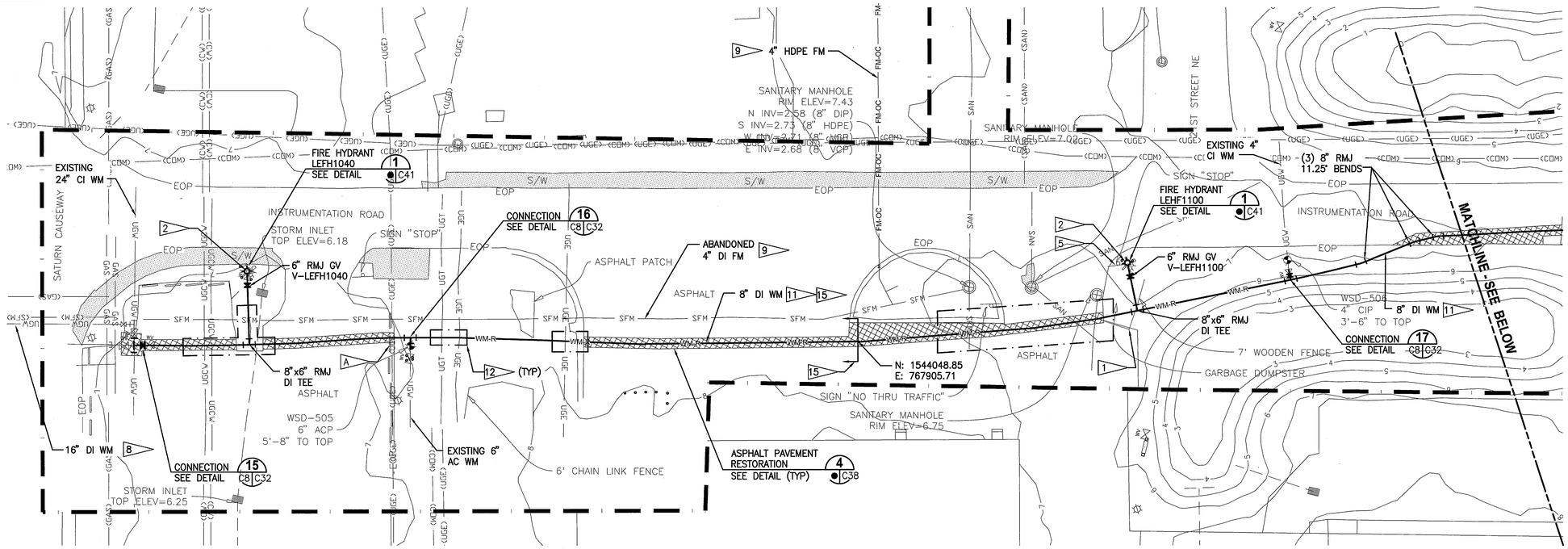
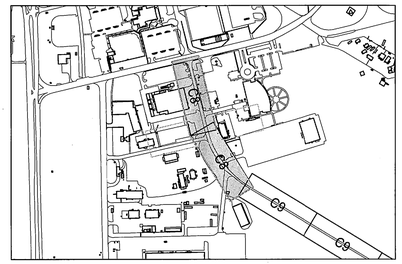


INSTRUMENTATION ROAD PLAN

1"=20'

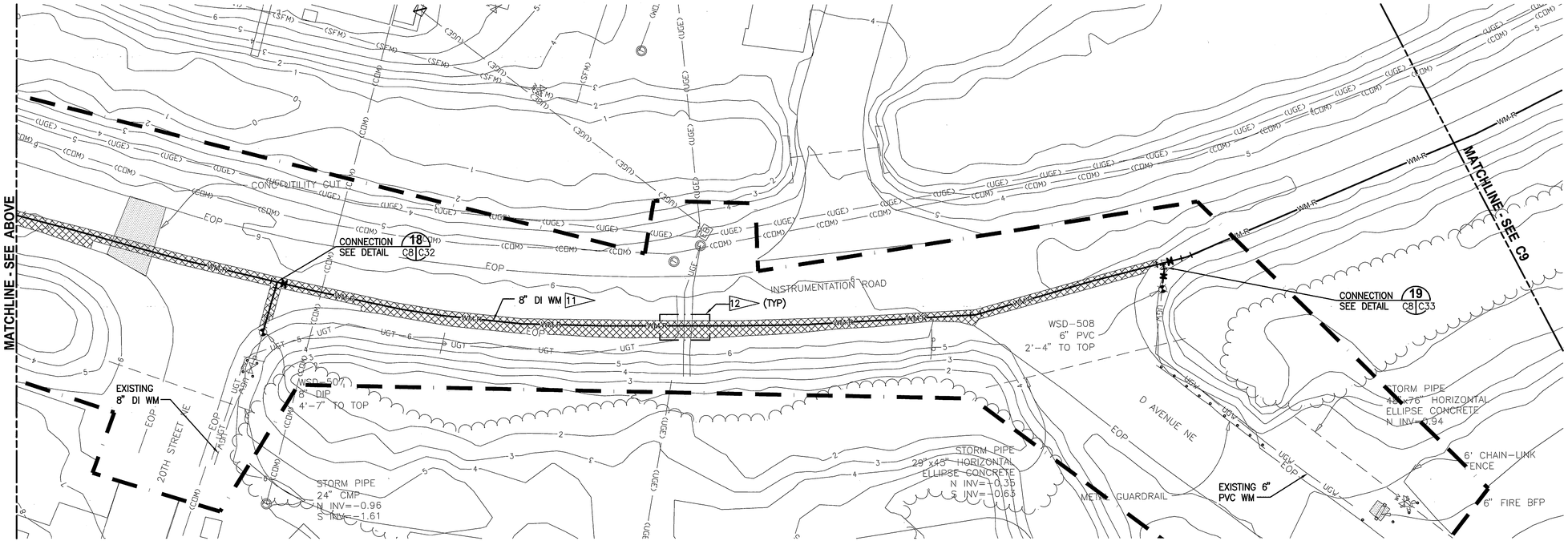


KEY MAP

NTS

NOTE:

A — REMOVE AND RESET CONCRETE WHEELSTOP AS REQUIRED FOR INSTALLATION OF NEW WATER MAIN.



INSTRUMENTATION ROAD PLAN

1"=20'

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET - INITIAL RELEASE TO EDC	10/31/11	

REVISIONS

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3910 S WASHINGTON AVE, SUITE 210, TITUSVILLE, FLORIDA 32780 / (321) 269-2950

SIGNATURES	DATE
DRAWN P. SIMMS	10/31/11
CHECKED M. CLARK	10/31/11
SUBMITTED R. BEST	10/31/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	10/31/11
K. MILLER	11/2/11

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHN F. KENNEDY SPACE CENTER, NASA
KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 17	

C8

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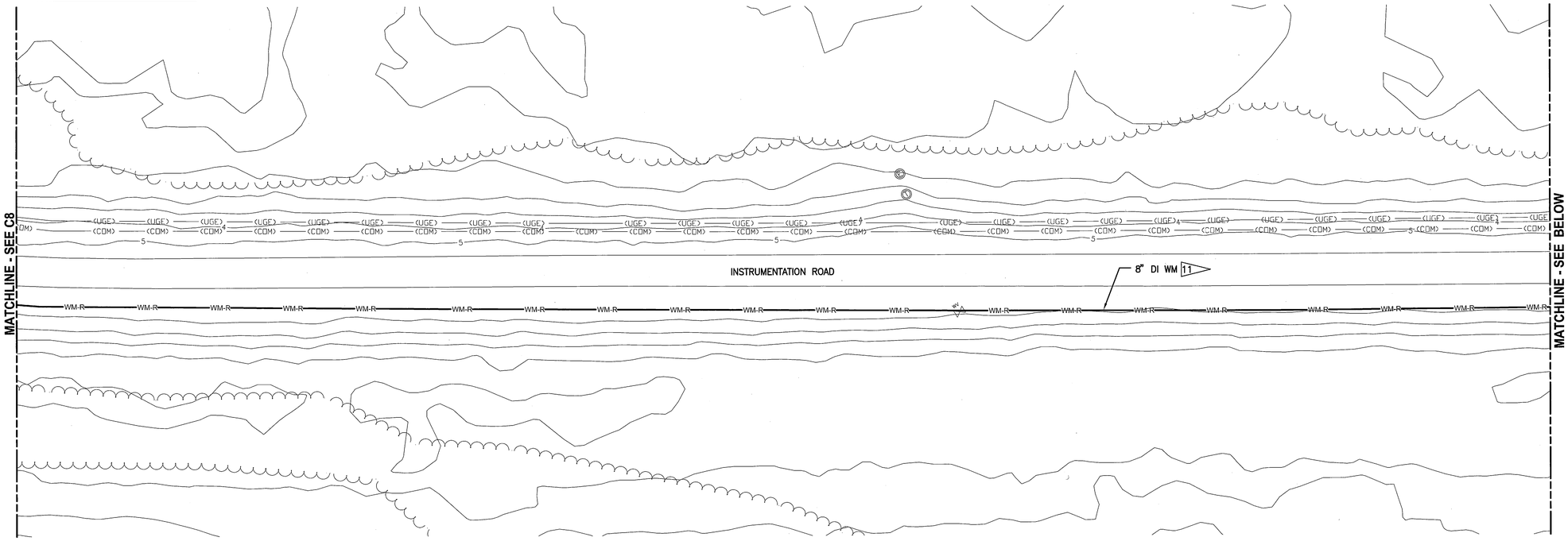
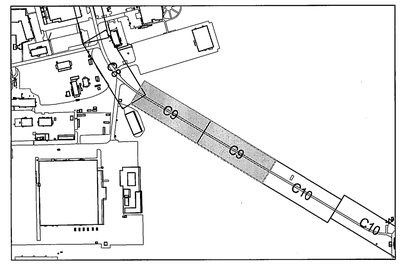
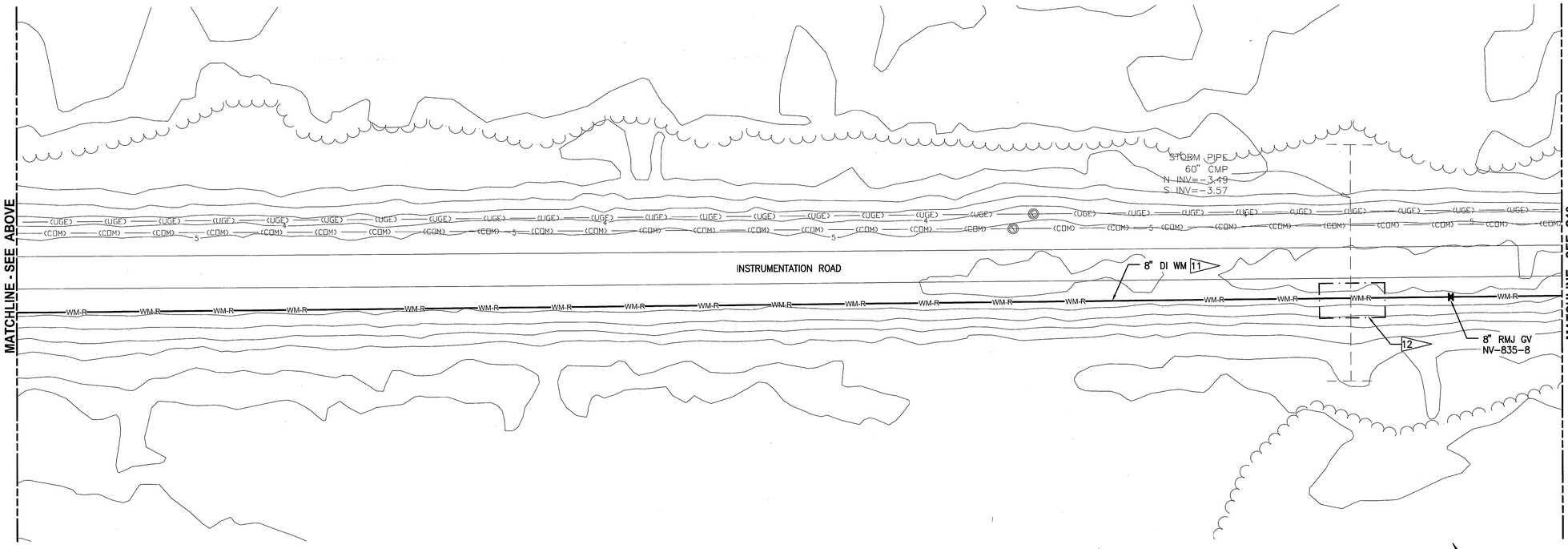


INSTRUMENTATION ROAD PLAN
1"=20'



KEY MAP
NTS



INSTRUMENTATION ROAD PLAN
1"=20'

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

N

C9

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A		ADDED SHEET- INITIAL RELEASE TO EDC	10/31/11	

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3910 S WASHINGTON AVE, SUITE 210, TITUSVILLE, FLORIDA 32780 / (321) 269-2950

SIGNATURES	DATE
DRAWN P. SIMMS	10/31/11
CHECKED M. CLARK	10/31/11
SUBMITTED R. BEST	10/31/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	10/31/11
K. MILLER	11/2/11

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
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KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5 WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 18	

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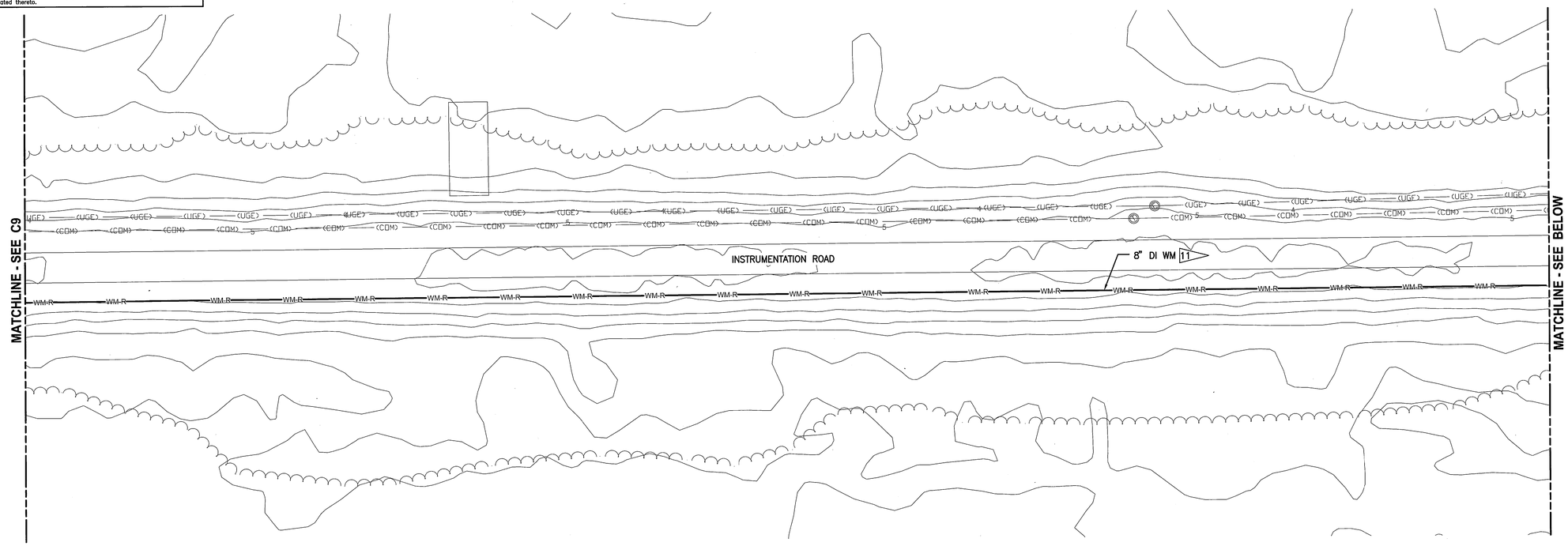
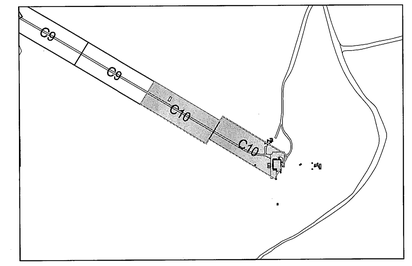
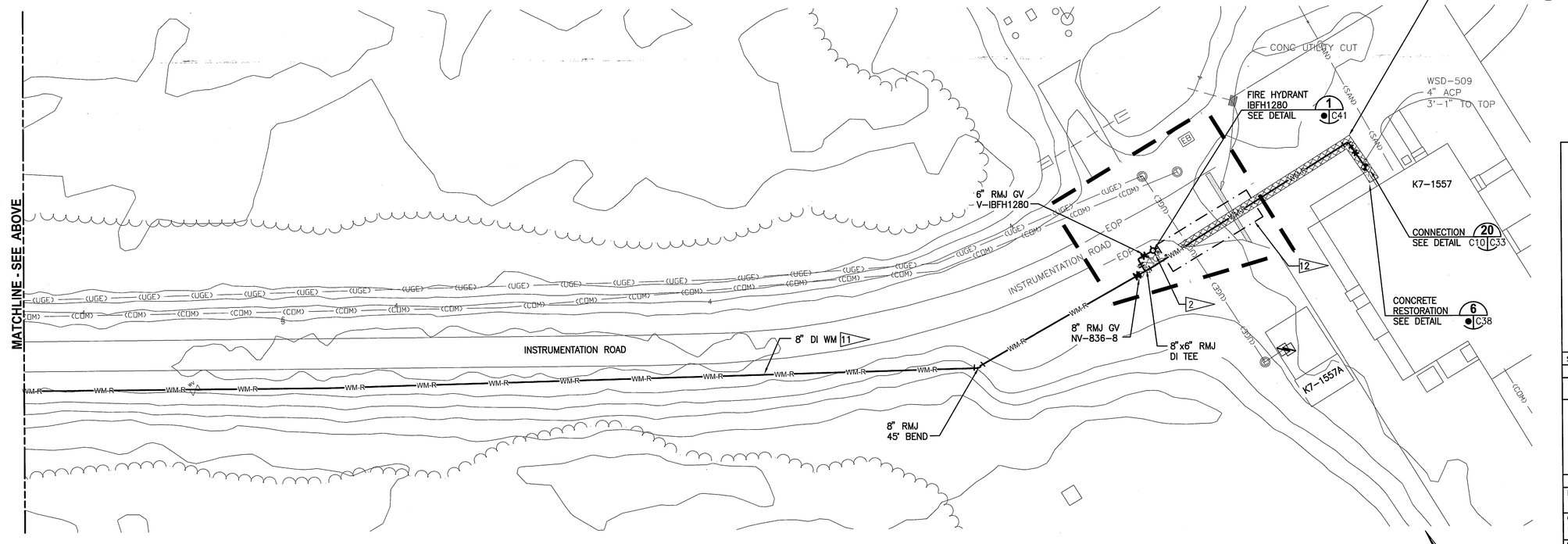


INSTRUMENTATION ROAD PLAN
1"=20'



KEY MAP
NTS



INSTRUMENTATION ROAD PLAN
1"=20'

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET - INITIAL RELEASE TO EDC	10/31/11	

REVISIONS

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3910 S WASHINGTON AVE, SUITE 210, TITUSVILLE, FLORIDA 32780 / (321) 269-2950

SIGNATURES	DATE
DRAWN P. SIMMS	10/31/11
CHECKED M. CLARK	10/31/11
SUBMITTED R. BEST	10/31/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	10/31/11
K. MILLER	11/2/11

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
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KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A

PROJ. NO. 96968.3 SHEET 19

C10

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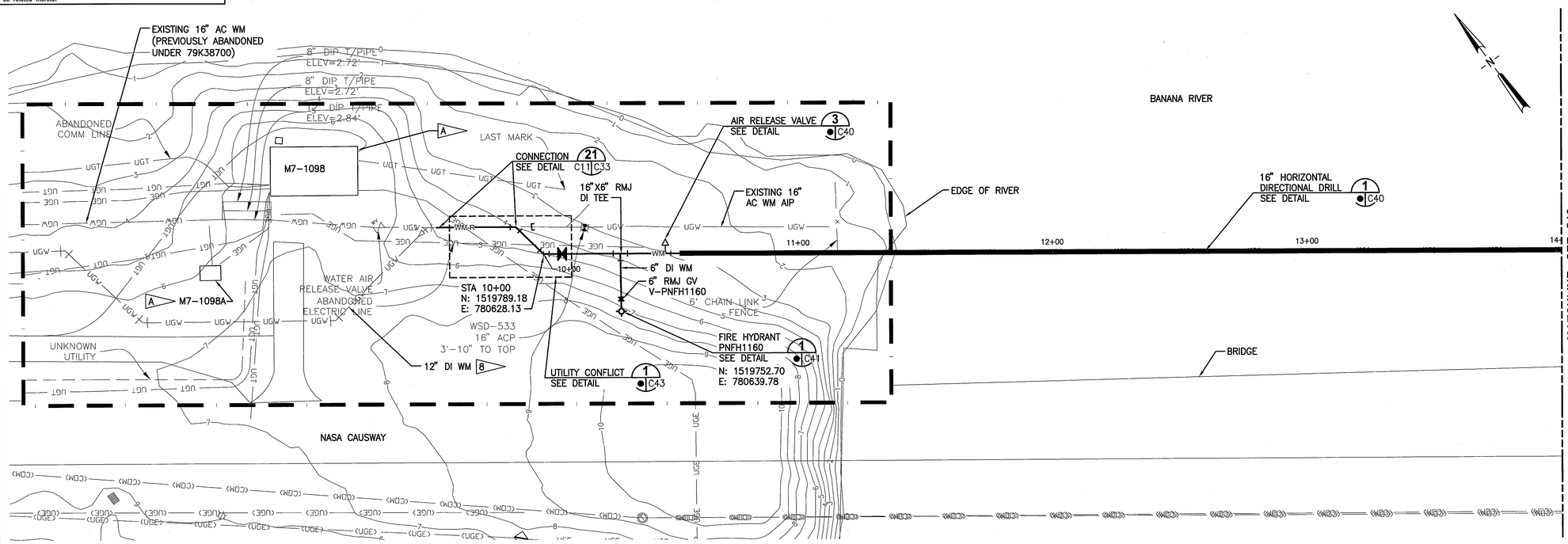
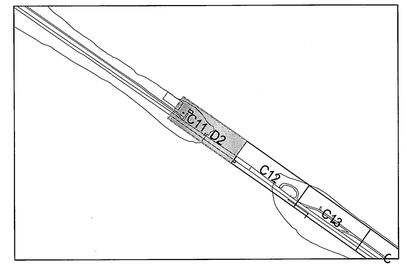


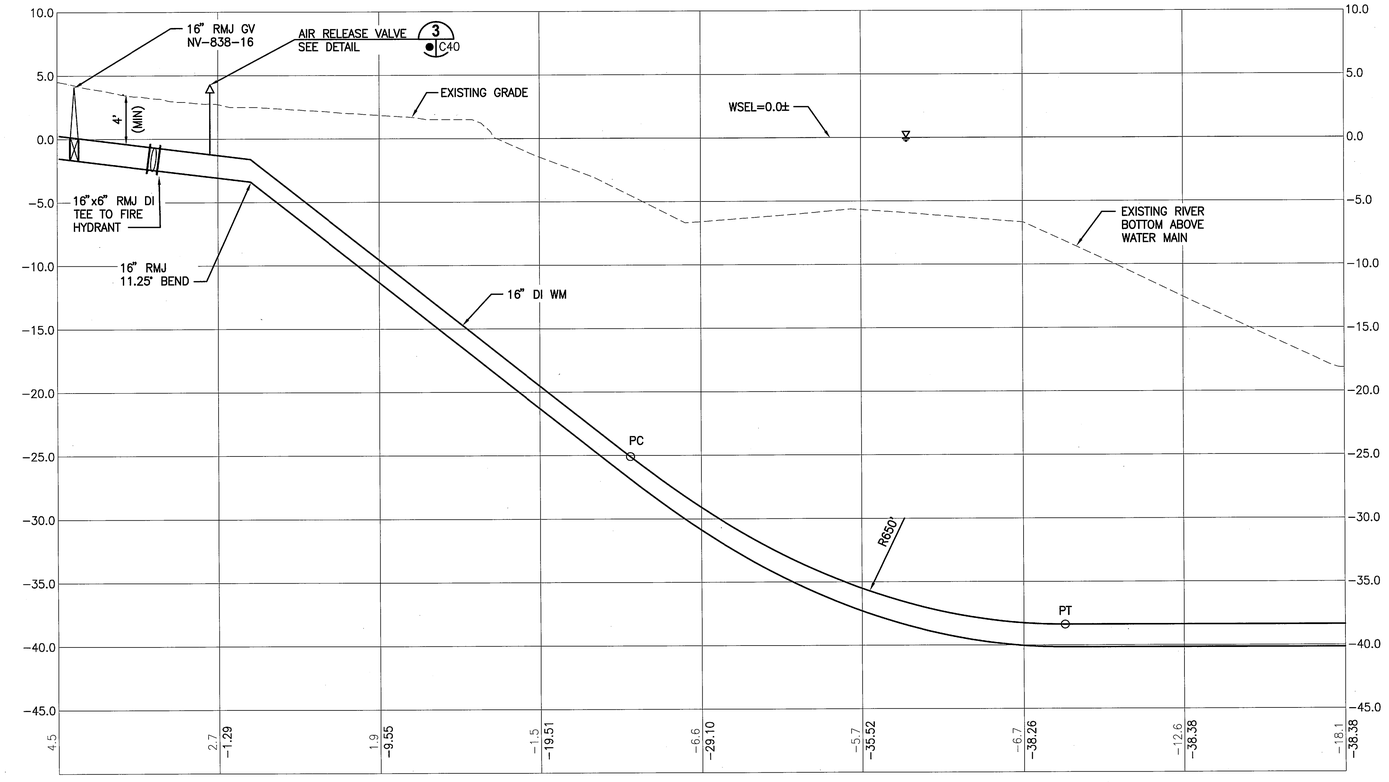
NASA CAUSEWAY PLAN
1"=20'



KEY MAP
NTS

NOTE

A SEE D1 AND D2 FOR W3 PUMP STATION DEMOLITION NOTES AND PLANS.



NASA CAUSEWAY PROFILE
H: 1"=20'
V: 1"=4'

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

GRAPHIC SCALE
0 2 4 8
SCALE IN FEET
1"=4'

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET - INITIAL RELEASE TO EDC	10/31/11	

REVISIONS

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3910 S WASHINGTON AVE, SUITE 210, TITUSVILLE, FLORIDA 32780 / (321) 269-2950

SIGNATURES	DATE
DRAWN P. SIMMS	10/31/11
CHECKED M. CLARK	10/31/11
SUBMITTED R. BEST	10/31/11
ST of LICENSURE: FL	
LICENSE NO: 69875	
APPROVED M. CLARK	10/31/11
K. MILLER	11/2/11

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5 WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 20	

C11

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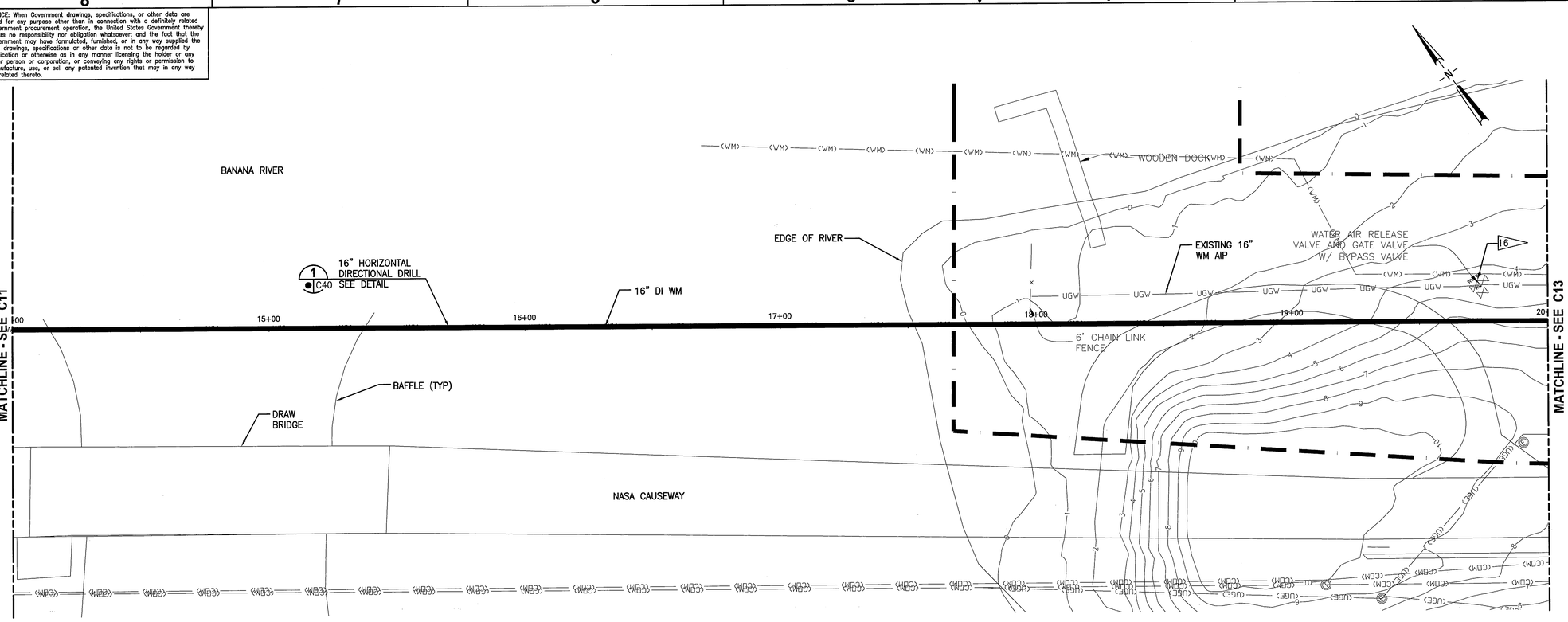
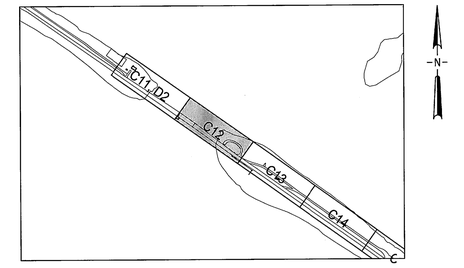


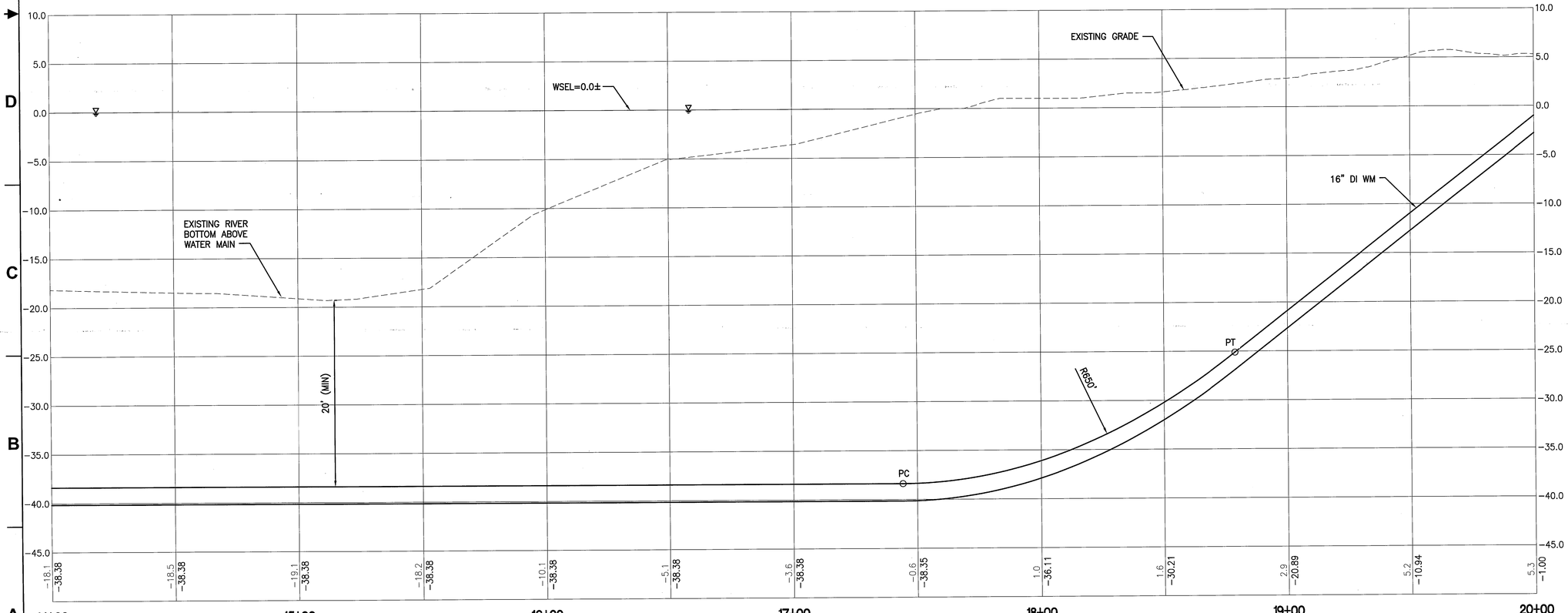
NASA CAUSEWAY PLAN
1"=20'



KEY MAP
NTS

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

GRAPHIC SCALE
0 2 4 8
SCALE IN FEET
1"=4'



NASA CAUSEWAY PROFILE
H: 1"=20'
V: 1"=4'

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET-INITIAL RELEASE TO EDC	10/31/11	KM

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3910 S WASHINGTON AVE, SUITE 210, TITUSVILLE, FLORIDA 32780 / (321) 269-2950

SIGNATURES	DATE
DRAWN P. SIMMS	10/31/11
CHECKED M. CLARK	10/31/11
SUBMITTED R. BEST	10/31/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	11/3/11
K. MILLER	11/2/11

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5 WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 21	

C12

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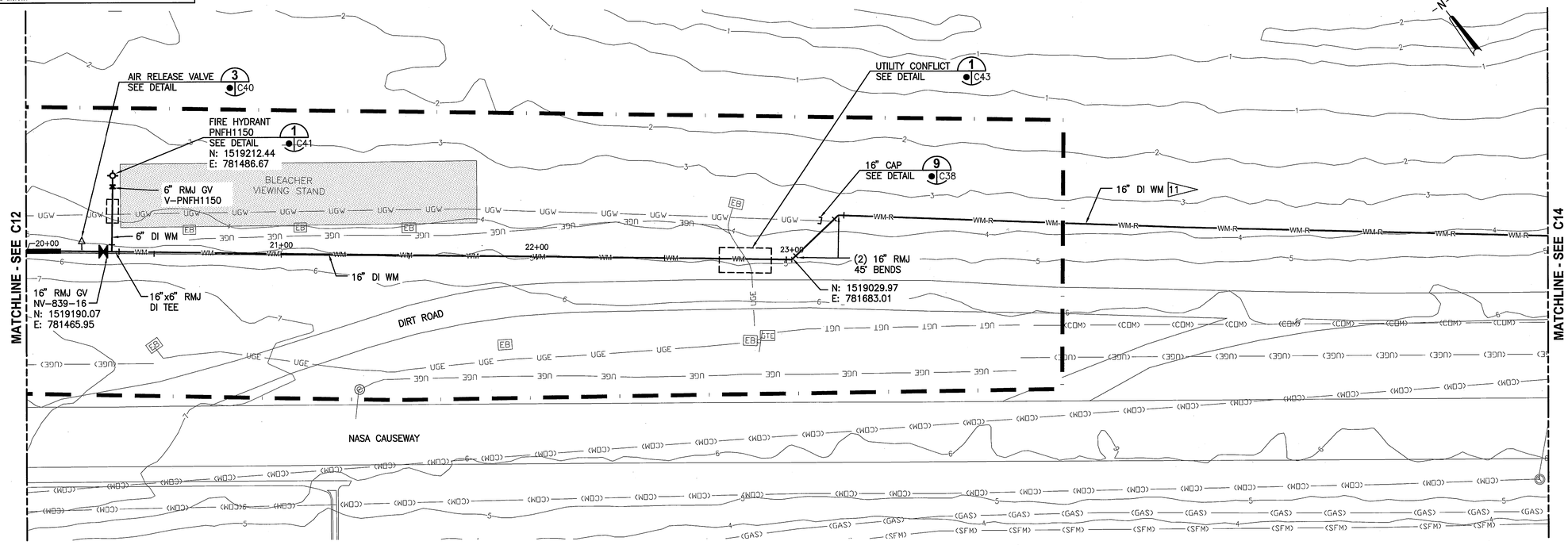
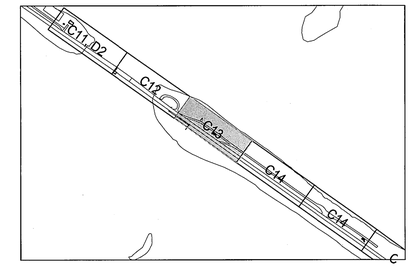


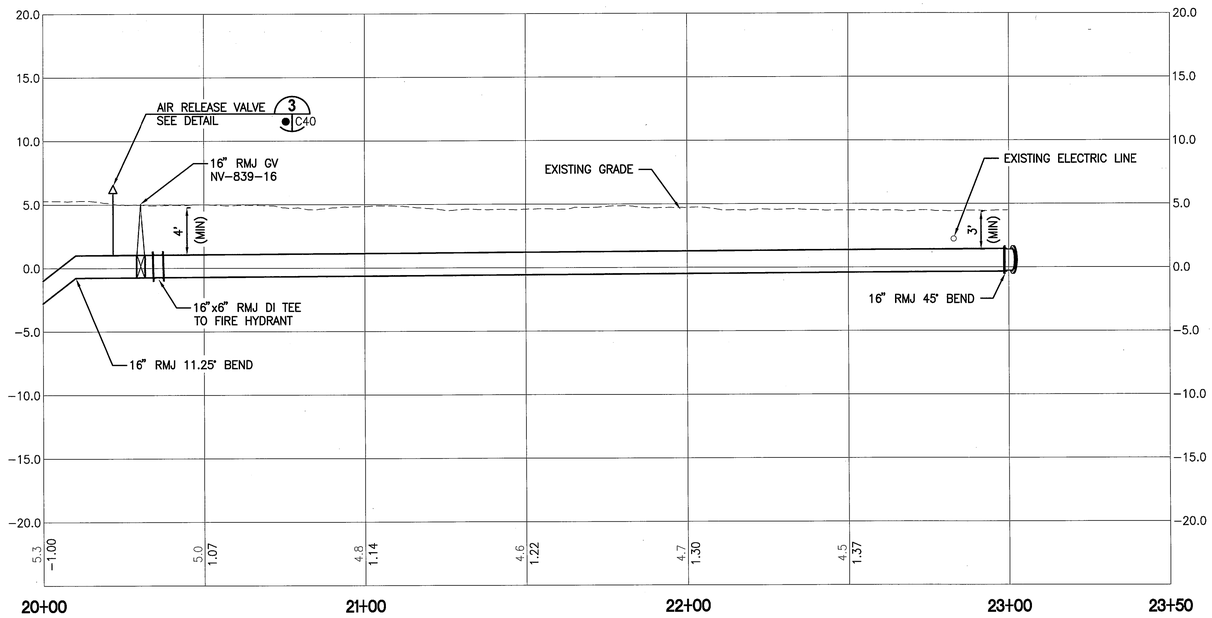
NASA CAUSEWAY PLAN
1"=20'



KEY MAP
NTS

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

GRAPHIC SCALE
0 2 4 8
SCALE IN FEET
1"=4'



NASA CAUSEWAY PROFILE
H: 1"=20'
V: 1"=4'

THIS SPACE RESERVED

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SIGNATURES	DATE
DRAWN P. SIMMS	10/31/11
CHECKED M. CLARK	10/31/11
SUBMITTED R. BEST	10/31/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	10/31/11
K. MILLER	11/2/11

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 22	

C13

FSC FORM 1-11 (3/76)(C/G 3/94)

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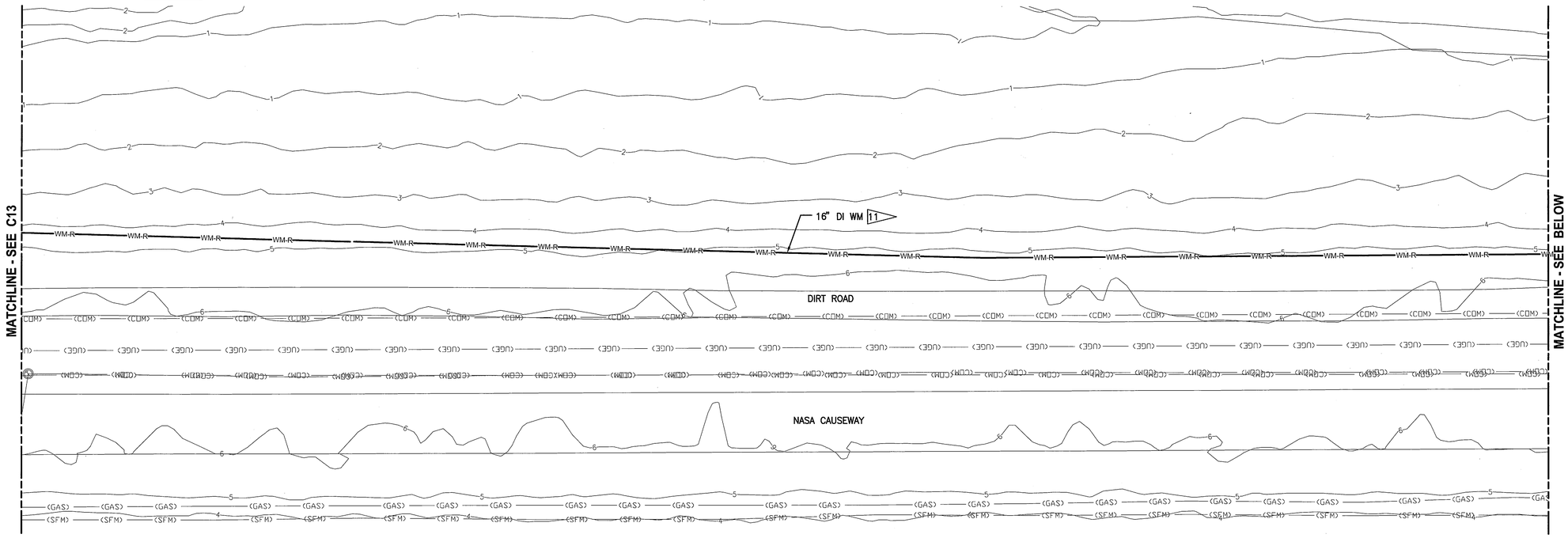
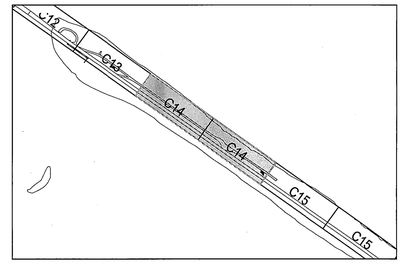
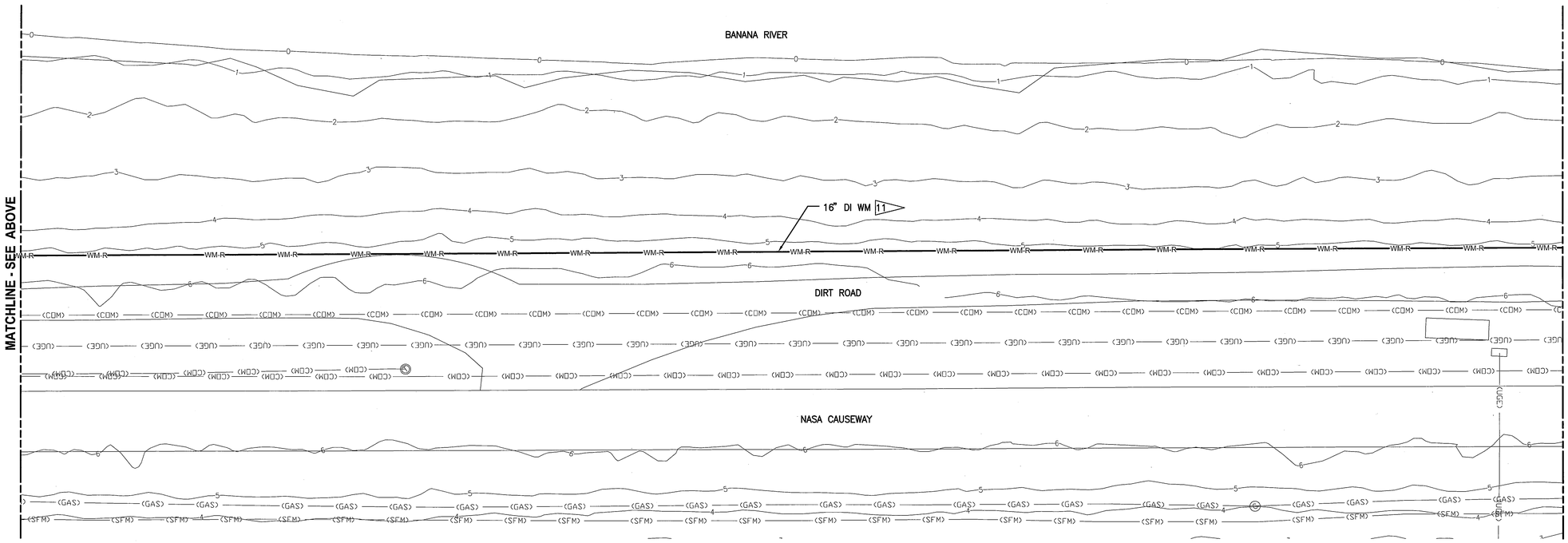


NASA CAUSEWAY PLAN
1"=20'



KEY MAP
NTS



NASA CAUSEWAY PLAN
1"=20'

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

C14

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET - INITIAL RELEASE TO EDL	10/31/11	KML

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3910 S WASHINGTON AVE, SUITE 210, TITUSVILLE, FLORIDA 32780 / (321) 269-2950

SIGNATURES	DATE
DRAWN P. SIMMS	10/31/11
CHECKED M. CLARK	10/31/11
SUBMITTED R. BEST	10/31/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	10/31/11
K. MILLER	11/2/11

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JOHN F. KENNEDY SPACE CENTER, NASA
KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL
WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 23	

KSC FORM 1-11 (3/76)(C/G 3/94)

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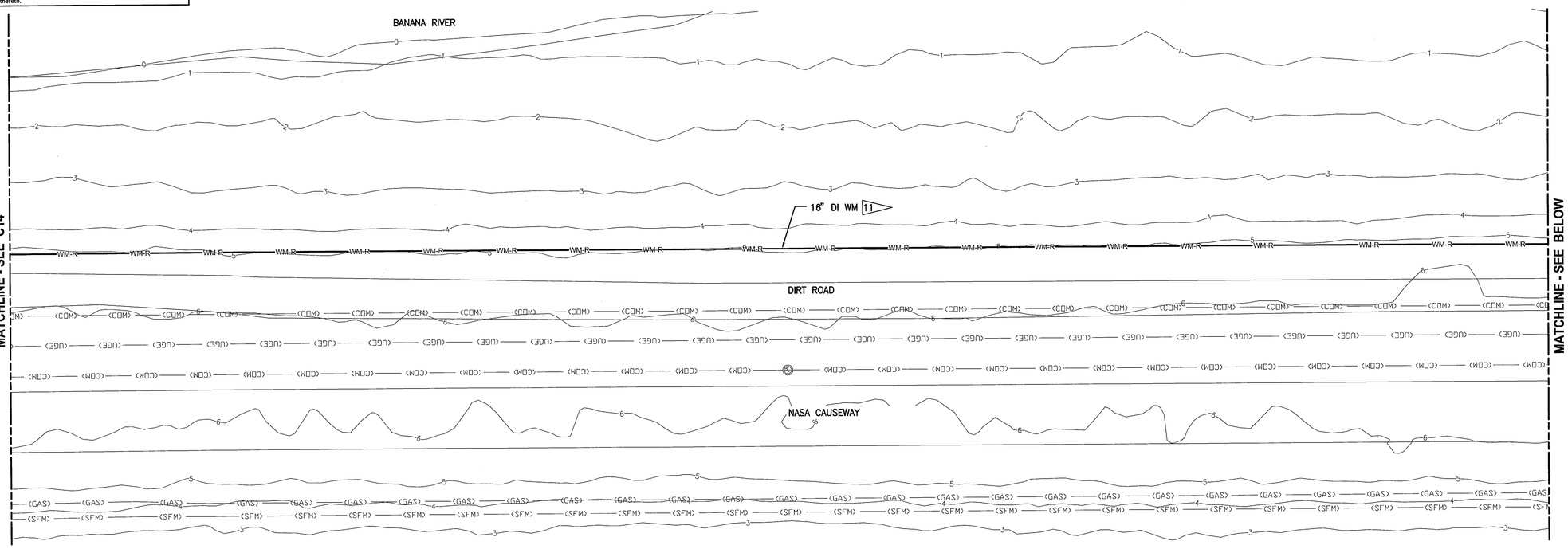
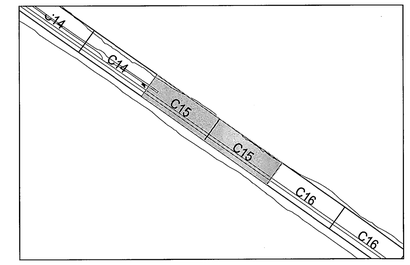


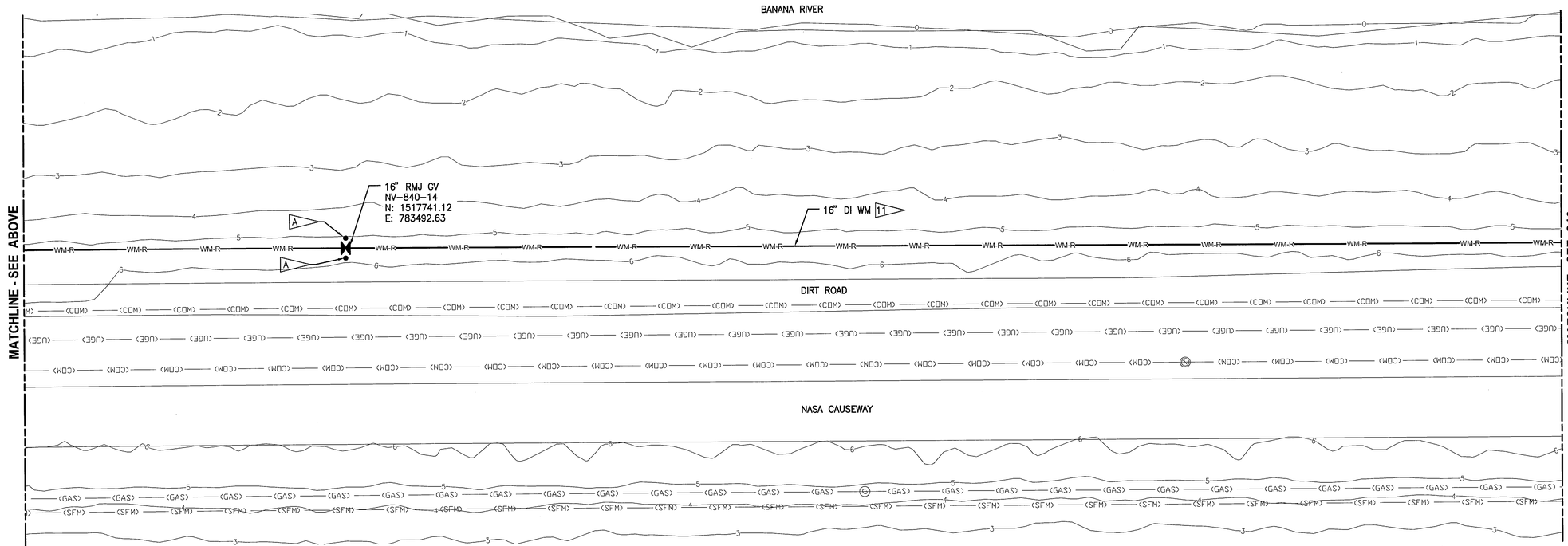
NASA CAUSEWAY PLAN
1"=20'



KEY MAP
NTS

NOTE

A — INSTALL TWO BOLLARDS AT 1' OFFSET PERPENDICULAR TO WM ALIGNMENT. SEE DETAIL 3/C38



NASA CAUSEWAY PLAN
1"=20'

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

C15

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET - INITIAL RELEASE TO EDL	12/05/11	

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3910 S WASHINGTON AVE, SUITE 210, TITUSVILLE, FLORIDA 32780 / (321) 269-2950

SIGNATURES	DATE
DRAWN P. SIMMS	12/05/11
CHECKED M. CLARK	12/05/11
SUBMITTED R. BEST	12/05/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	12/05/11
K. MILLER	12/6/11

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JOHN F. KENNEDY SPACE CENTER, NASA
KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL
WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 24	

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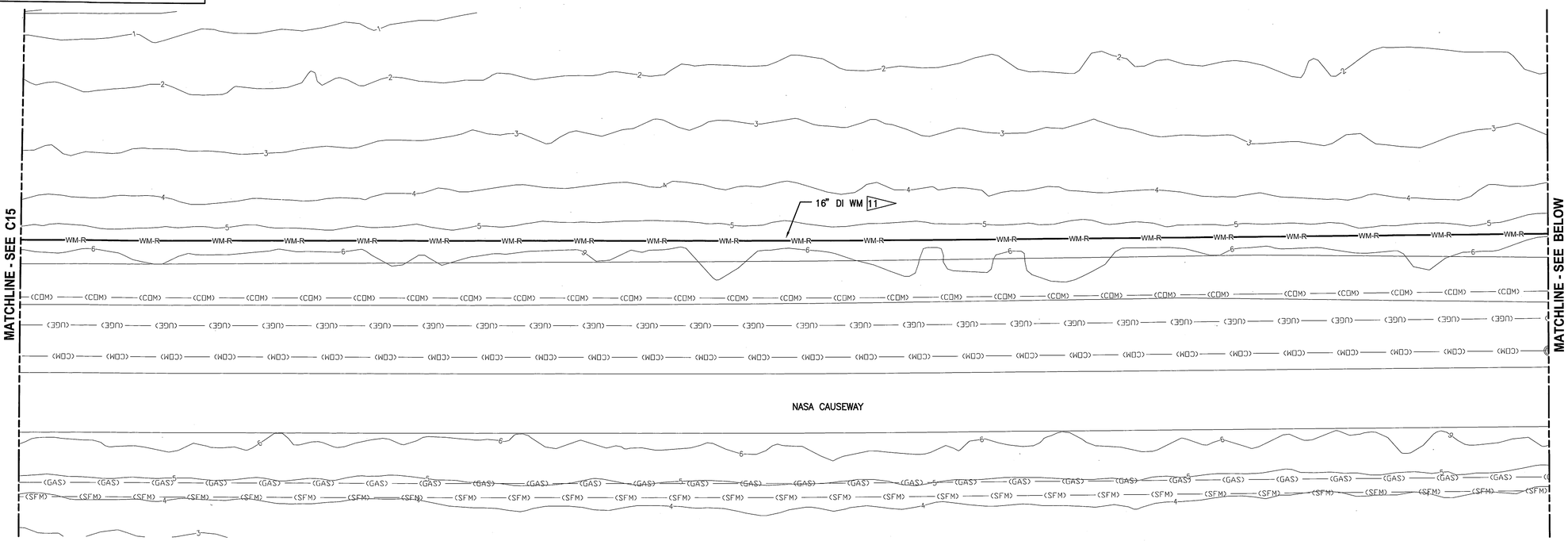
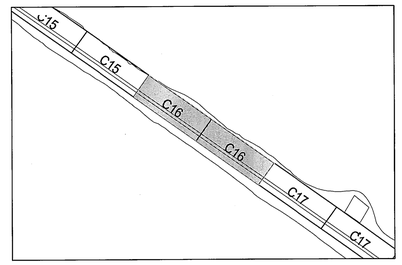
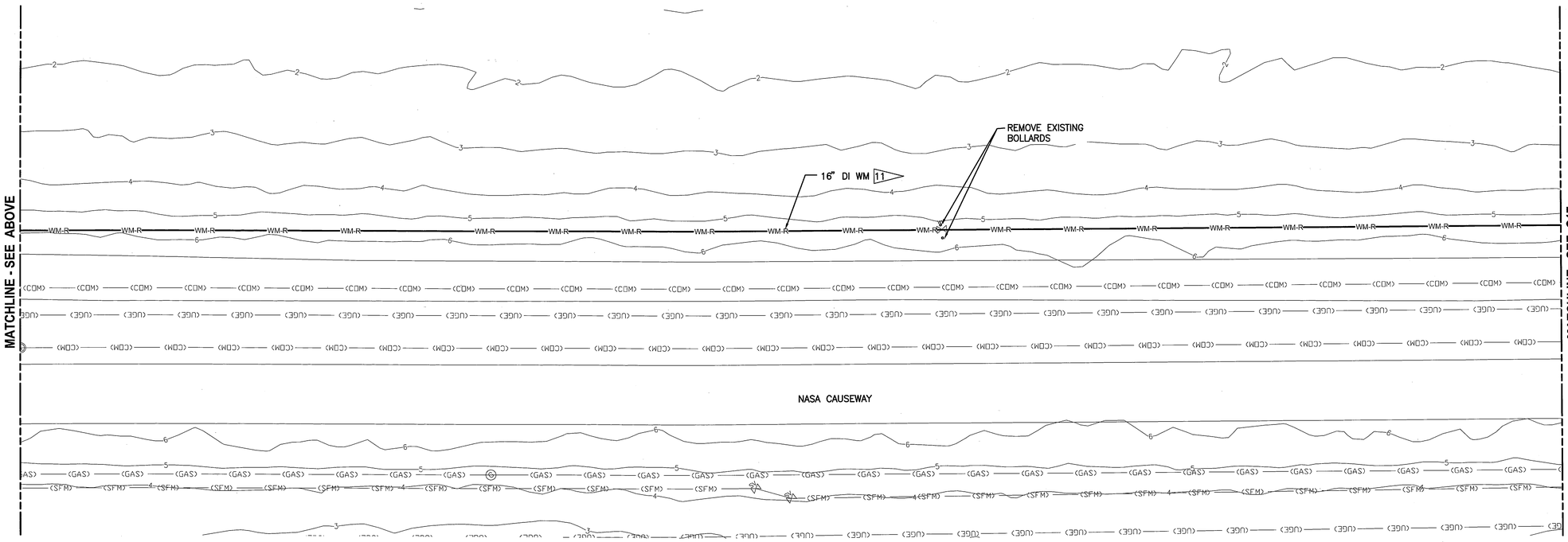


NASA CAUSEWAY PLAN
1"=20'



KEY MAP
NTS



NASA CAUSEWAY PLAN
1"=20'

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET- INITIAL RELEASE TO EDL	10/31/11	

REVISIONS

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JONES EDMUNDS
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
3910 S WASHINGTON AVE, SUITE 210, TITUSVILLE, FLORIDA 32780 / (321) 269-2950

SIGNATURES	DATE
DRAWN P. SIMMS	10/31/11
CHECKED M. CLARK	10/31/11
SUBMITTED R. BEST	10/31/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	10/31/11
K. MILLER	11/2/11

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHN F. KENNEDY SPACE CENTER, NASA
KENNEDY SPACE CENTER, FLORIDA

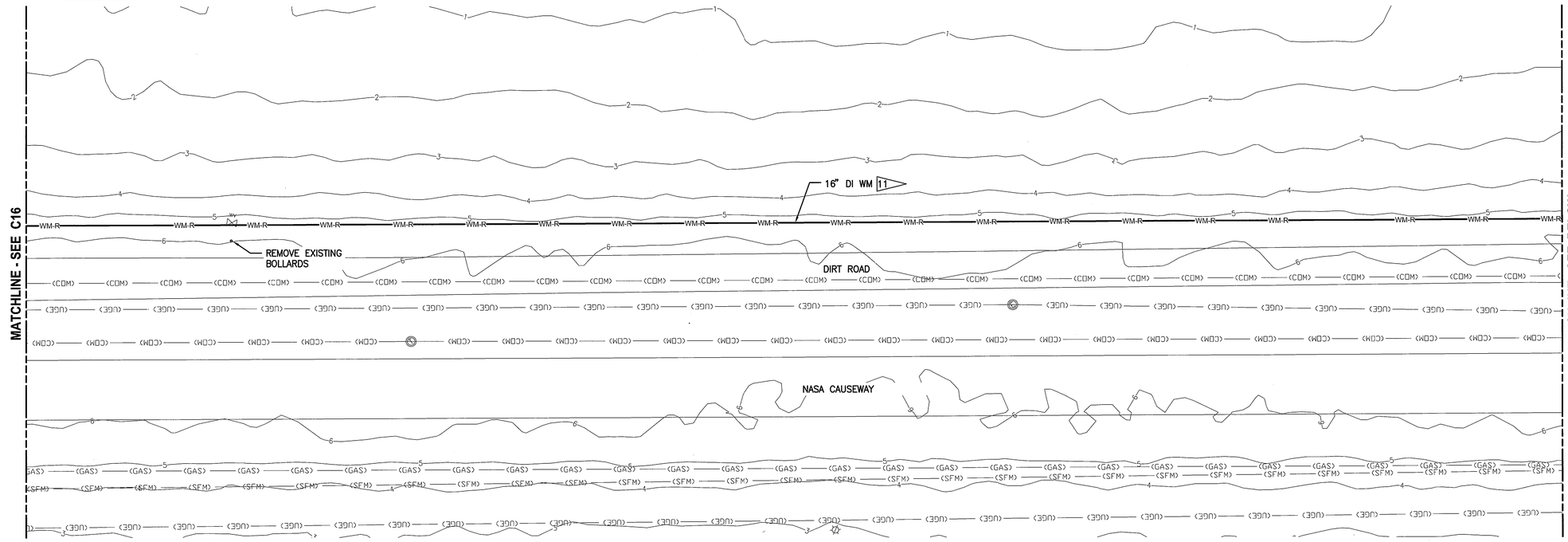
REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

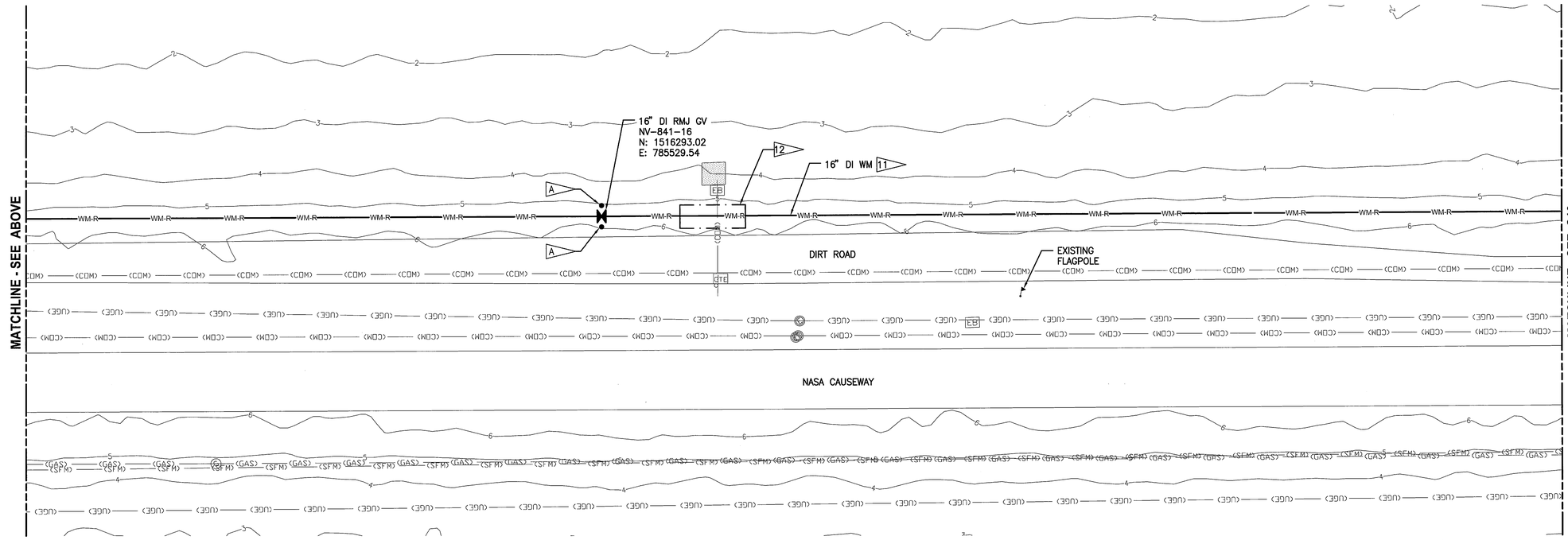
FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 25	

C16

NOTICE: When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

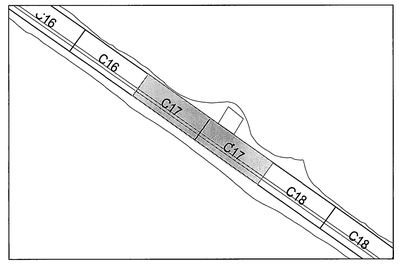


NASA CAUSEWAY PLAN
1" =20'



NASA CAUSEWAY PLAN
1" =20'

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1" =20'



KEY MAP
NTS

NOTE

A — INSTALL TWO BOLLARDS AT 1' OFFSET PERPENDICULAR TO WM ALIGNMENT. SEE DETAIL 3/C38

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET - INITIAL RELEASE TO EDC	12/05/11	

REVISIONS

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3910 S WASHINGTON AVE, SUITE 210, TITUSVILLE, FLORIDA 32780 / (321) 269-2950

SIGNATURES	DATE
DRAWN P. SIMMS	12/05/11
CHECKED M. CLARK	12/05/11
SUBMITTED R. BEST	12/05/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	12/05/11
K. MILLER	12/5/11

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHN F. KENNEDY SPACE CENTER, NASA
KENNEDY SPACE CENTER, FLORIDA.

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL
WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 26	

C17

KSC FORM 1-11 (3/76)(C/G 3/94)

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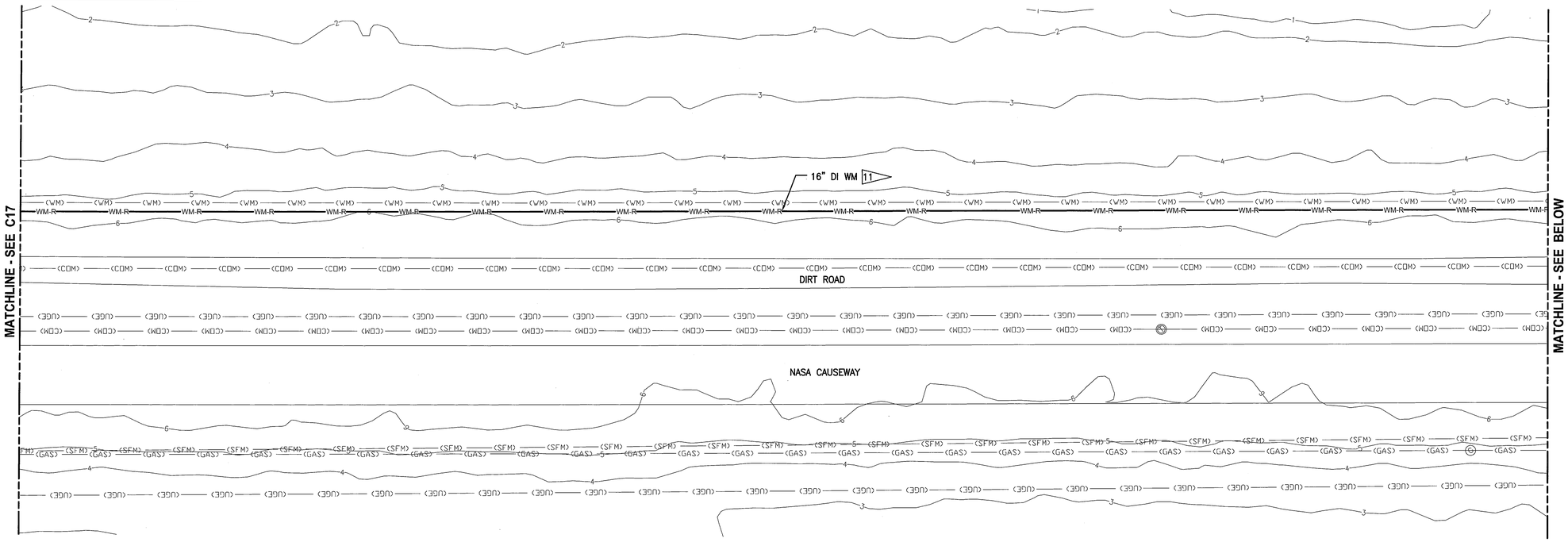
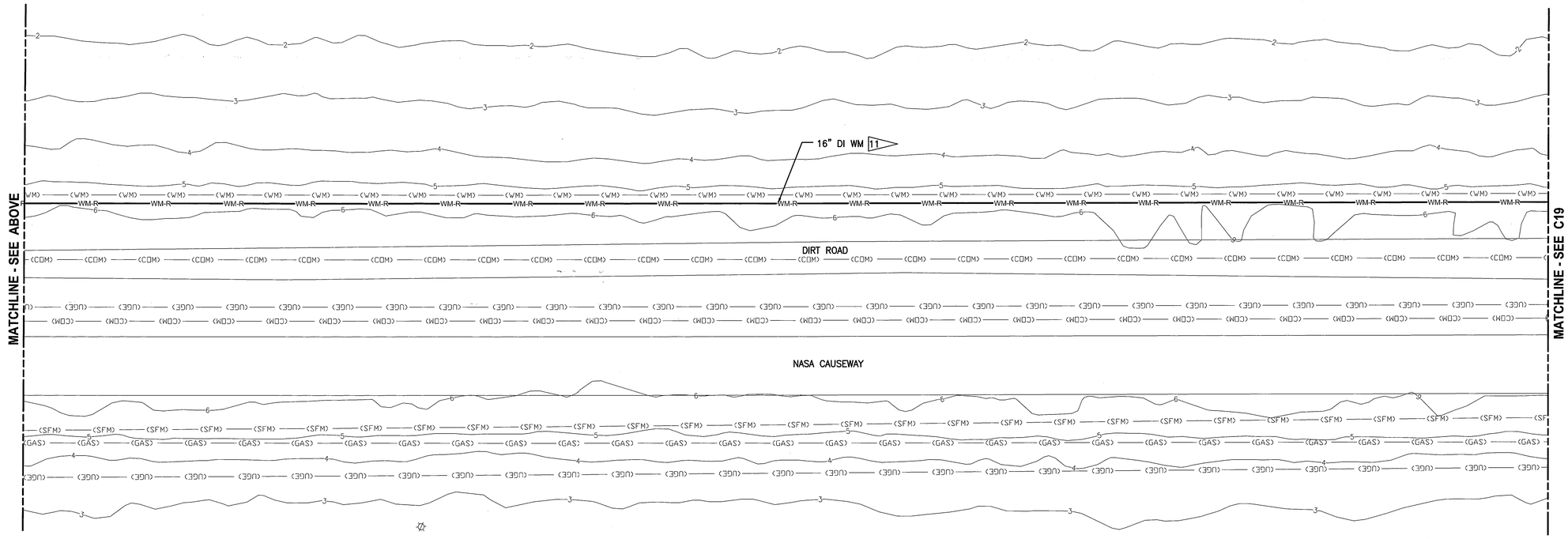
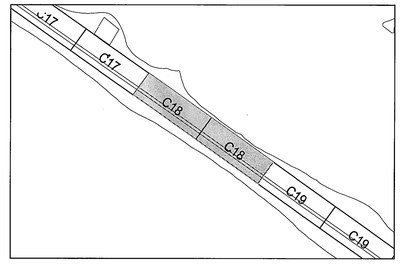


NASA CAUSEWAY PLAN
1"=20'



NASA CAUSEWAY PLAN
1"=20'



KEY MAP
NTS

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET - INITIAL RELEASE TO EDC	10/31/11	

REVISIONS

THIS DRAWING CREATED IN AUTOCAD 2010 FILE FORMAT AND WILL BE REVISED ONLY ON AN AUTOCAD SYSTEM. FILE: 14000189-DP4-C018.DWG

JONES EDMUNDS
730 NE WALDO ROAD, GAINESVILLE, FLORIDA 32641 / (352) 377-5821
3910 S WASHINGTON AVE, SUITE 210, TITUSVILLE, FLORIDA 32780 / (321) 269-2950

SIGNATURES	DATE
DRAWN P. SIMMS	10/31/11
CHECKED M. CLARK	10/31/11
SUBMITTED R. BEST	10/31/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	10/31/11
K. MILLER	11/2/11

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
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KENNEDY SPACE CENTER, FLORIDA

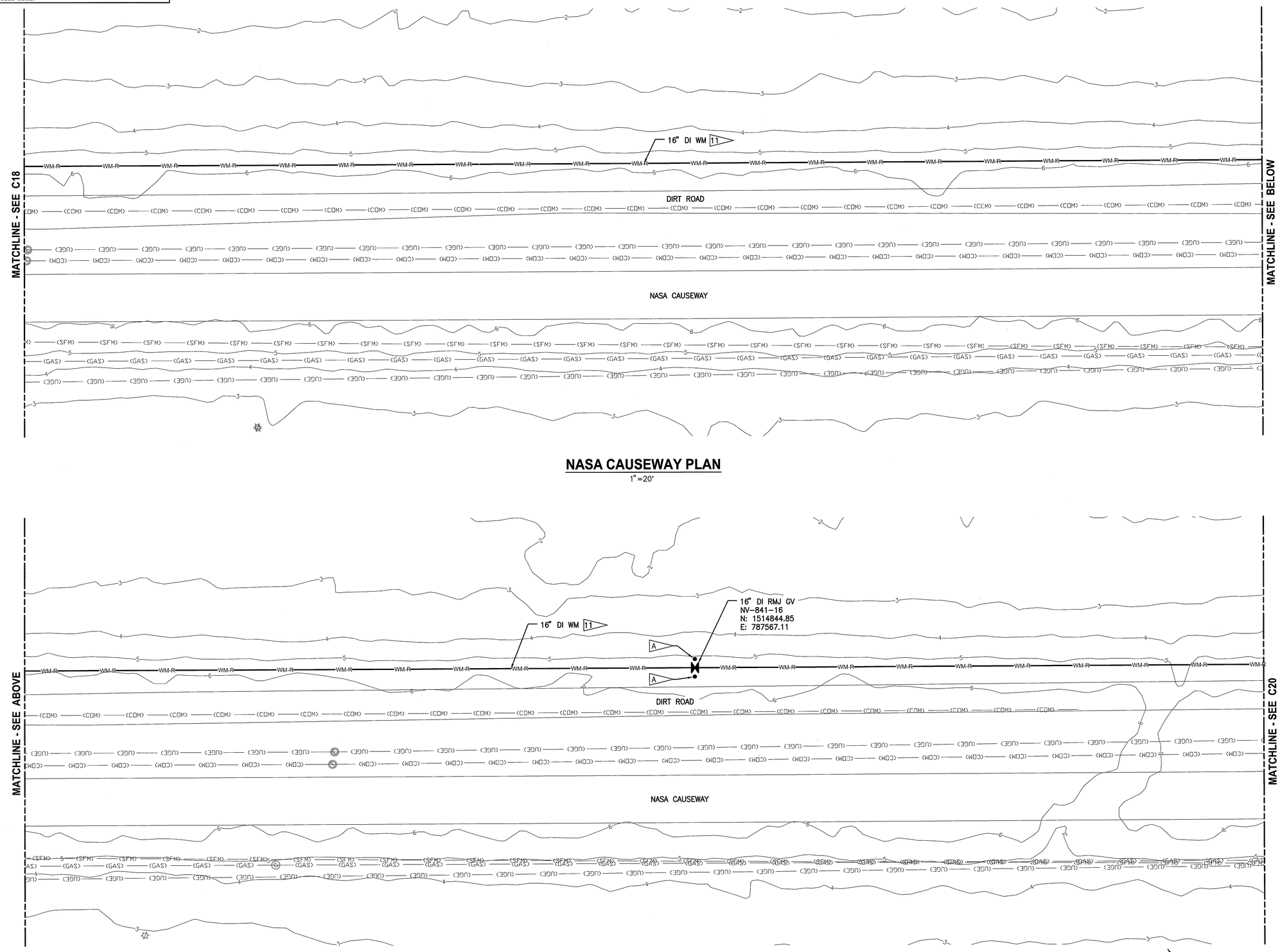
REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

C18

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 27	

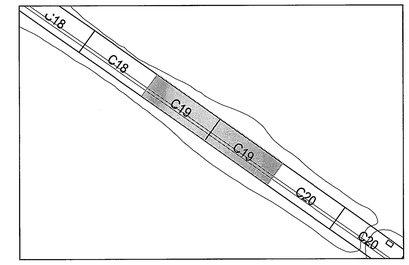
NOTICE: When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.



NASA CAUSEWAY PLAN
1"=20'

NASA CAUSEWAY PLAN
1"=20'

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'



KEY MAP
NTS

NOTE

A INSTALL TWO BOLLARDS AT 1' OFFSET PERPENDICULAR TO WM ALIGNMENT. SEE DETAIL 3/C38

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET- INITIAL RELEASE TO EAK	12/05/11	KAM

REVISIONS

THIS DRAWING CREATED IN AUTOCAD 2010 FILE FORMAT AND WILL BE REVISED ONLY ON AN AUTOCAD SYSTEM. FILE: 14000189-DP4-C019.DWG

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3910 S WASHINGTON AVE, SUITE 210, TITUSVILLE, FLORIDA 32780 / (321) 269-2950

SIGNATURES	DATE
DRAWN P. SIMMS	12/05/11
CHECKED M. CLARK	12/05/11
SUBMITTED R. BEST	12/05/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	12/05/11
K. MILLER	12/5/11

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JOHN F. KENNEDY SPACE CENTER, NASA
KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

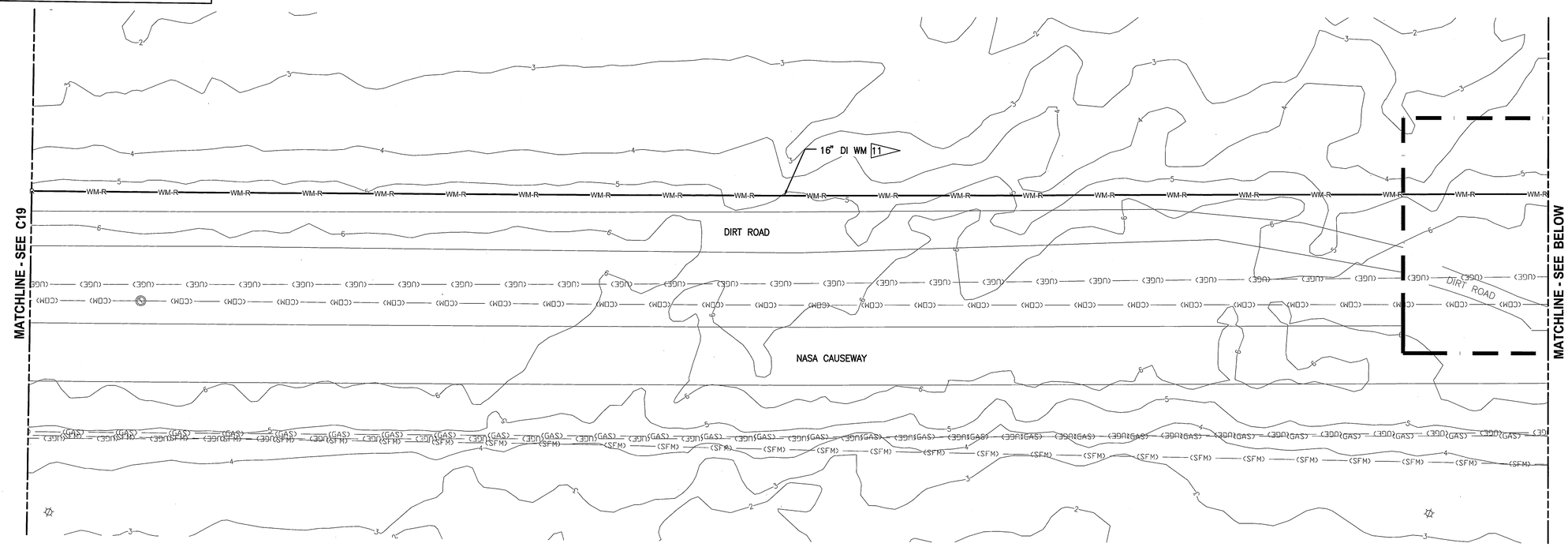
WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 28	

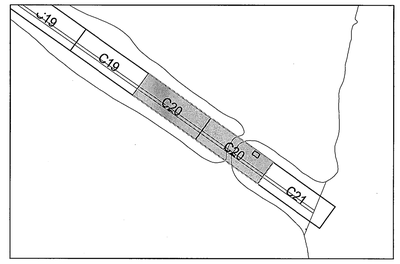
C19

NSC FORM 1-11 (3/76)(C/G 3/94)

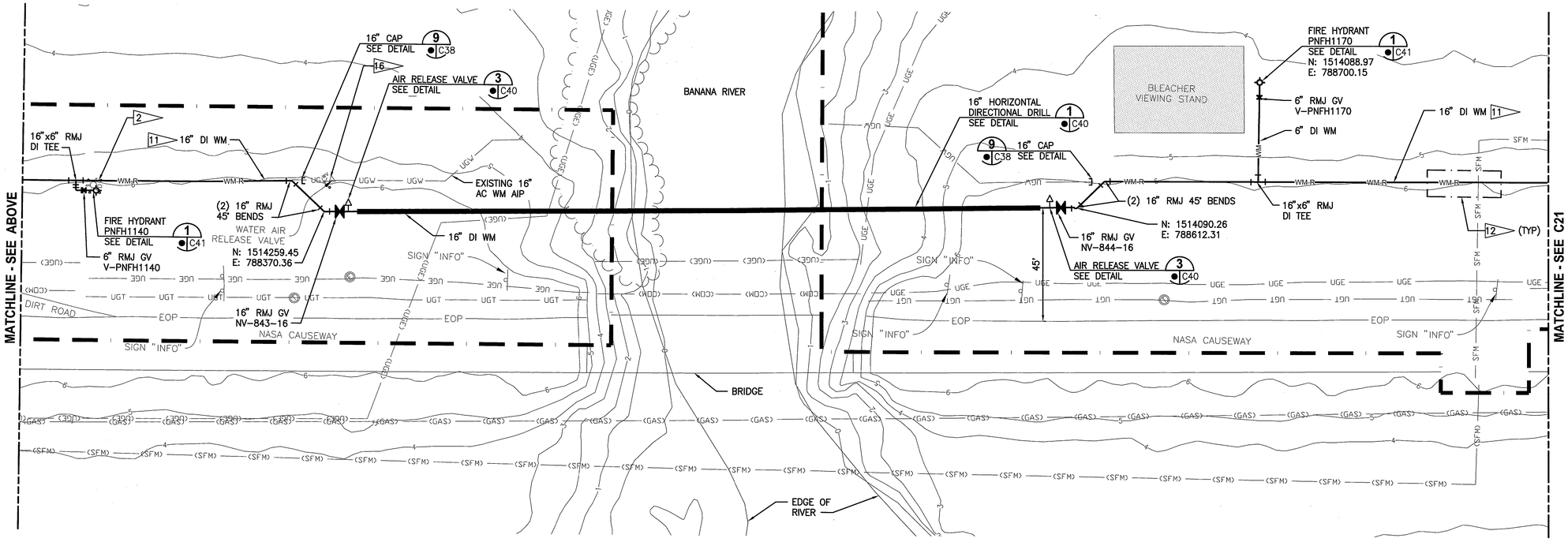
NOTICE: When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.



NASA CAUSEWAY PLAN
1"=20'



KEY MAP
NTS



NASA CAUSEWAY PLAN
1"=20'

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

C20

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET-INITIAL RELEASE TO EDC	10/31/11	K.M.

REVISIONS

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SIGNATURES	DATE
DRAWN P. SIMMS	10/31/11
CHECKED M. CLARK	10/31/11
SUBMITTED R. BEST	10/31/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	10/31/11
K. MILLER	11/2/11

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHN F. KENNEDY SPACE CENTER, NASA
KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL
WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 29	

FORM 1-11 (3/76)(C/G 3/94)

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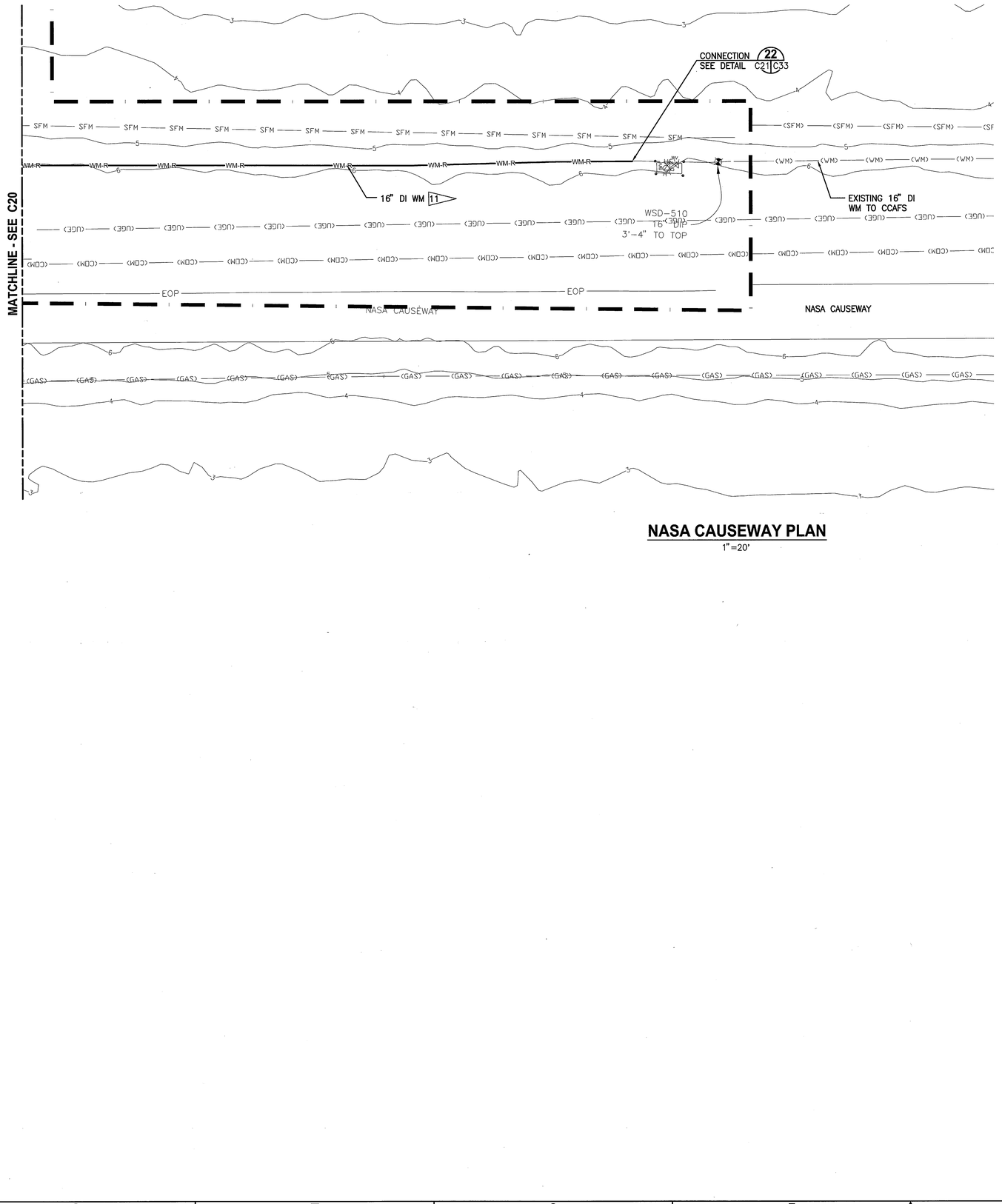
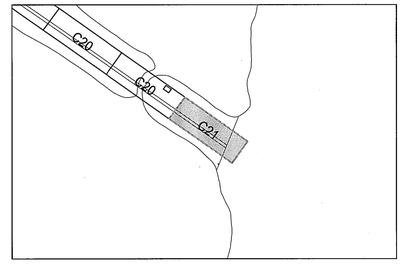


NASA CAUSEWAY PLAN
1"=20'



KEY MAP
NTS

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET-INITIAL RELEASE TO EDC	10/31/11	

REVISIONS

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3910 S WASHINGTON AVE, SUITE 210, TITUSVILLE, FLORIDA 32780 / (321) 269-2950

SIGNATURES	DATE
DRAWN P. SIMMS	10/31/11
CHECKED M. CLARK	10/31/11
SUBMITTED R. BEST	10/31/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	10/31/11
K. MILLER	11/2/11

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JOHN F. KENNEDY SPACE CENTER, NASA
KENNEDY SPACE CENTER, FLORIDA

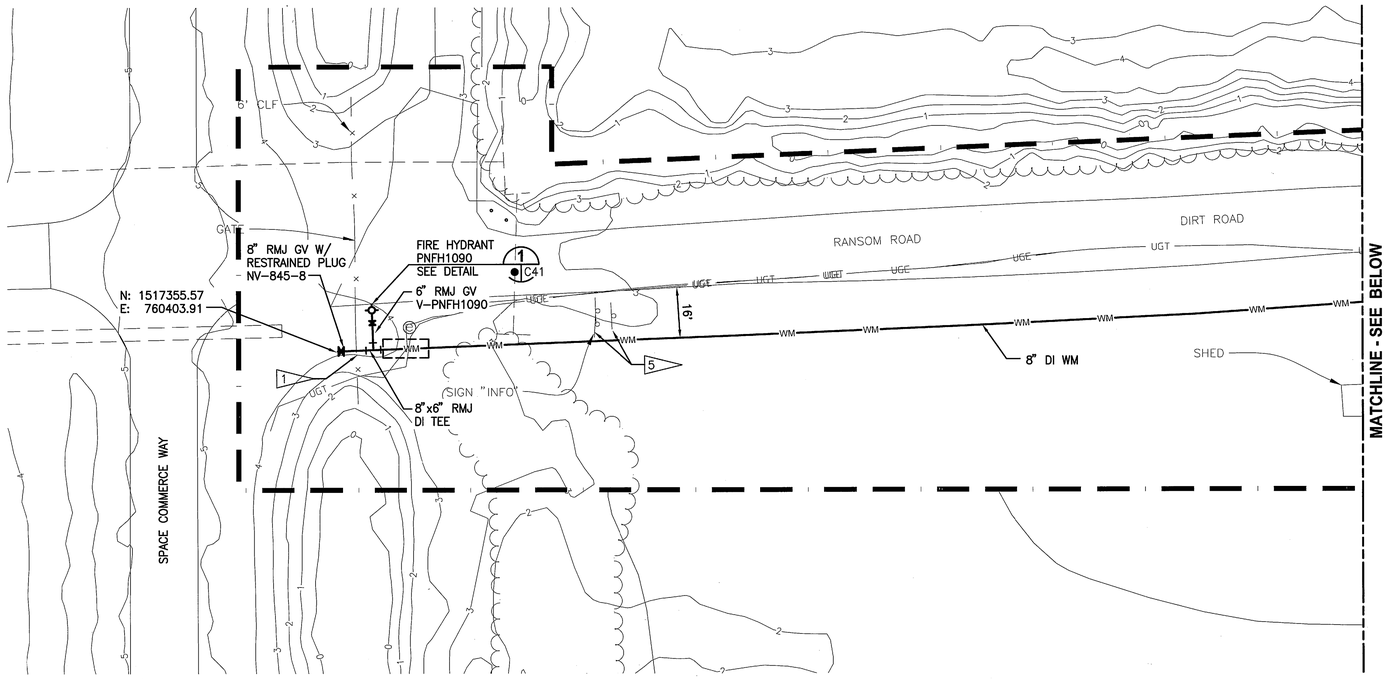
REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

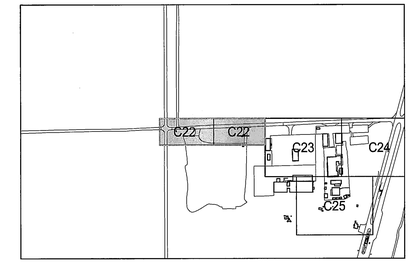
FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 30	

C21

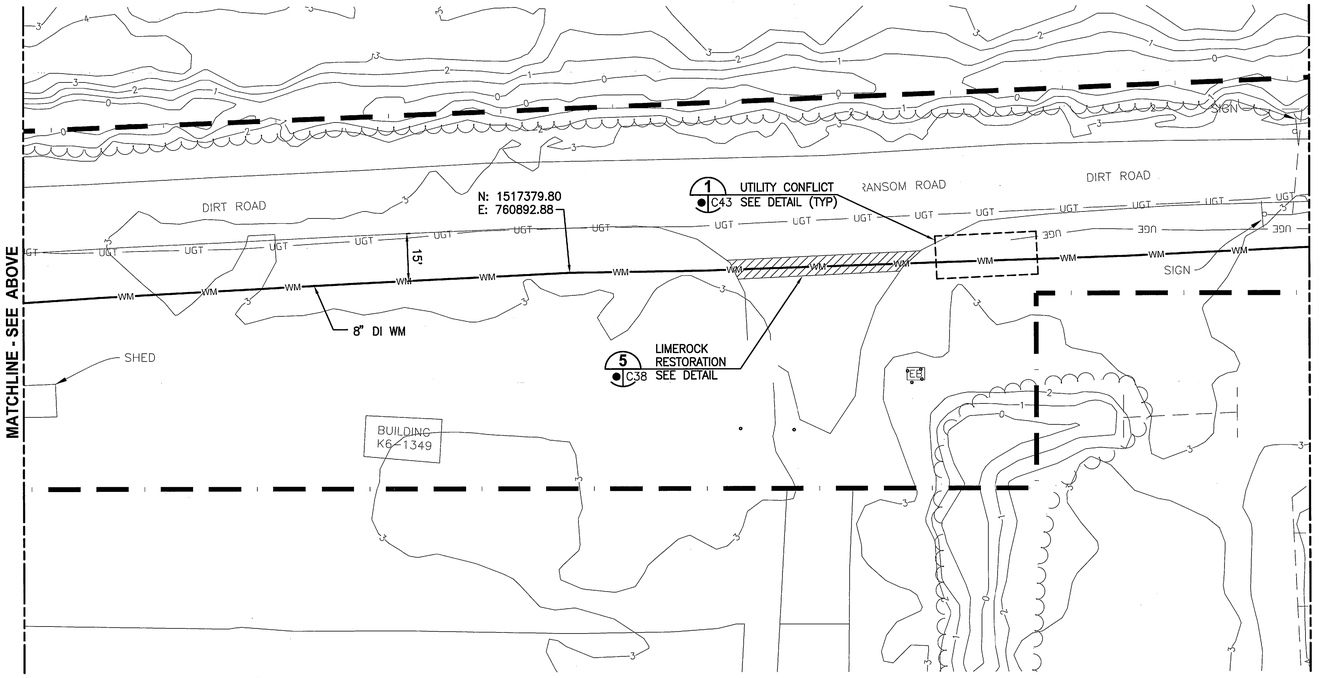
NOTICE: When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.



RANSOM ROAD PLAN
1"=20'



KEY MAP
NTS



RANSOM ROAD PLAN
1"=20'

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

N

C22

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET-INITIAL RELEASE TO EOC	10/31/11	

REVISIONS

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3910 S WASHINGTON AVE, SUITE 210, TITUSVILLE, FLORIDA 32780 / (321) 269-2950

SIGNATURES	DATE
DRAWN P. SIMMS	10/31/11
CHECKED M. CLARK	10/31/11
SUBMITTED R. BEST	10/31/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	10/31/11
K. MILLER	11/2/11

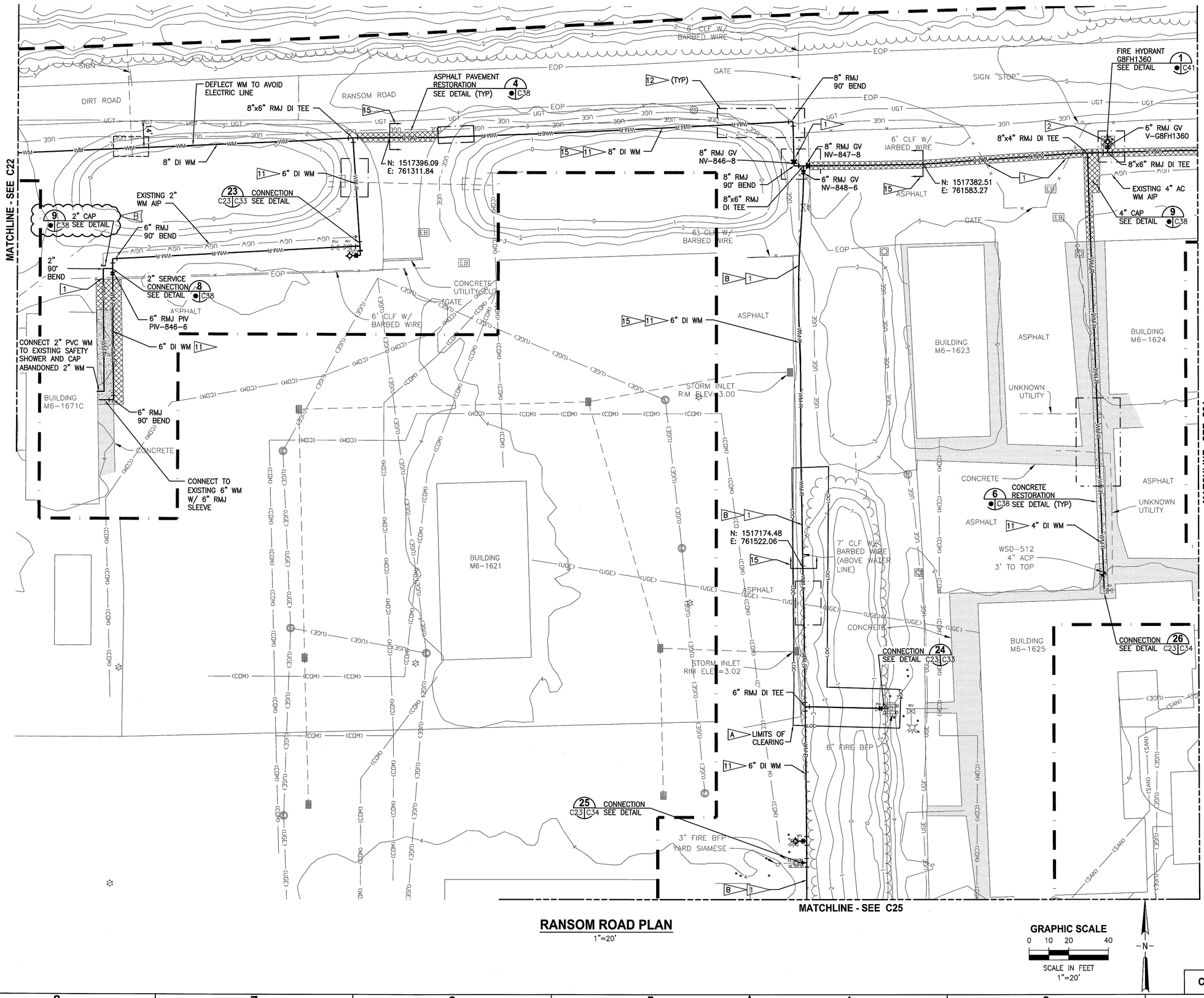
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHN F. KENNEDY SPACE CENTER, NASA
KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5 WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

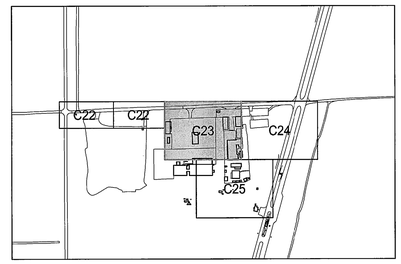
FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 31	

NOTICE: When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.



RANSOM ROAD PLAN
1"=20'

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'



KEY MAP
NTS

NOTE

A — CONTRACTOR SHALL CLEAR ALL TREES AND VEGETATION BETWEEN THE LIMITS OF CLEARING LINES. SEE SPECIFICATION SECTION 31 00 00 3.3.2.

B — RELOCATE EXISTING FENCE AT THE DIRECTION OF THE CO.

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
B		ADDED CAP DETAIL CALLOUT	03/07/12	MC
A		ADDED SHEET	12/05/11	

REVISIONS

THIS DRAWING CREATED IN AUTOCAD 2010 FILE FORMAT AND WILL BE REVISED ONLY ON AN AUTOCAD SYSTEM. FILE: 14000189-DP4-C023.DWG

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3910 S WASHINGTON AVE, SUITE 210, TITUSVILLE, FLORIDA 32780 / (321) 269-2950

SIGNATURES		DATE
DRAWN	P. SIMMS	12/05/11
CHECKED	M. CLARK	12/05/11
SUBMITTED	R. BEST	12/05/11
ST of LICENSURE: FL LICENSE NO: 69875		
APPROVED	M. CLARK	
	K. MILLER	

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHN F. KENNEDY SPACE CENTER, NASA
KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	B
PROJ. NO. 96968.3		SHEET 32	

C23

NOTICE: When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

ASPHALT PAVEMENT RESTORATION SEE DETAIL (TYP) 4 C38

RANSOM ROAD

EOP

ASPHALT

SIGN "STOP"

SLEEVED PIPE SEE DETAIL 4 C39

A LIMITS OF CLEARING

B

11 8" DI WM

15'

5'

1

4" AC WM AIP

6' CLF W/ BARBED WIRE

ABANDONED 4" AC WM

4" CAP SEE DETAIL 9 C38

3

12

8" RMJ 11.25" BEND

KENNEDY PARKWAY (SOUTHBOUND)

KENNEDY PARKWAY (NORTHBOUND)

SIGN "INFO"

CONCRETE RESTORATION SEE DETAIL (TYP) 6 C38

CONCRETE

LIMITS OF CLEARING A

CONNECTION 27 SEE DETAIL C24 C34

ABANDONED 4" AC WM

EXISTING 24" WM

MATCHLINE - SEE C23

MATCHLINE - SEE C25

RANSOM ROAD PLAN

1"=20'

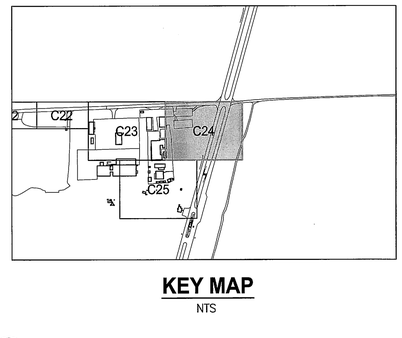
GRAPHIC SCALE

0 10 20 40

SCALE IN FEET

1"=20'

N



KEY MAP

NTS

NOTE

A CONTRACTOR SHALL CLEAR ALL TREES AND VEGETATION BETWEEN THE LIMITS OF CLEARING LINE. SEE SPECIFICATION SECTION 31 00 00 3.3.2.

B CONTRACTOR SHALL DEMOLISH AND REMOVE EXISTING 4" WM AND APPURTENANCES.

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET - INITIAL RELEASE TO EOC	12/05/11	KM

REVISIONS

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JONES EDMUNDS

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3910 S WASHINGTON AVE, SUITE 210, TITUSVILLE, FLORIDA 32780 / (321) 269-2950

SIGNATURES	DATE
DRAWN P. SIMMS	12/05/11
CHECKED M. CLARK	12/05/11
SUBMITTED R. BEST	12/05/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	12/09/11
K. MILLER	12/5/11

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHN F. KENNEDY SPACE CENTER, NASA
KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5 WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A

PROJ. NO. 96968.3 SHEET 33

C24

NSC FORM 1-11 (3/76)(C/G 3/94)

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MATCHLINE - SEE C23

MATCHLINE - SEE C24

11 6" DI WM

28 CONNECTION C25 C34 SEE DETAIL

EMERGENCY SAFETY SHOWER AND EYEWASH

7' CLF W/ BARBED WIRE (ABOVE WATER LINE)

2" PVC WM

BUILDING M6-1671

29 CONNECTION C25 C34 SEE DETAIL

WSD-513 2" PVC 1' TO TOP

WSD-514 2" CIP 2'-3" TO TOP

A LIMITS OF CLEARING

2" PVC WM

2" PVC 45° BEND

3/4" WATER SPIGOT

30 CONNECTION C25 C34 SEE DETAIL

12 (TYP)

LIMITS OF CLEARING A

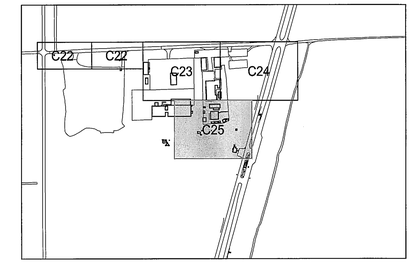
15'

2" PVC WM

SANITARY LIFT STATION

CONNECTION 31 SEE DETAIL C25 C35

BUILDING M6-1723



KEY MAP
NTS

NOTE

A CONTRACTOR SHALL CLEAR ALL TREES AND VEGETATION BETWEEN THE LIMITS OF CLEARING LINES. SEE SPECIFICATION SECTION 31 00 00 3.3.2.

RANSOM ROAD PLAN
1"=20'

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

-N-

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SUBMITTED R. BEST	12/05/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	12/05/11
K. MILLER	12/5/11

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A

PROJ. NO. 96968.3 SHEET 34

C25

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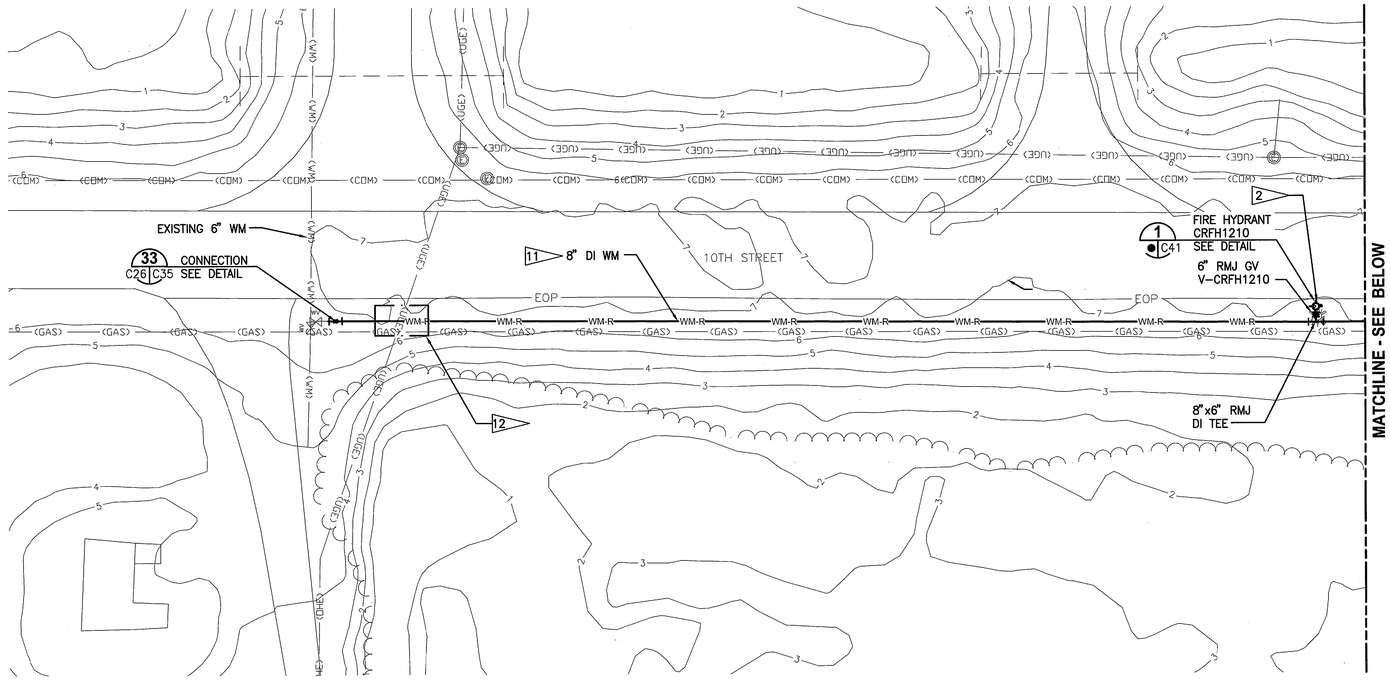
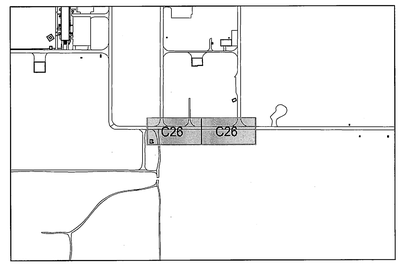
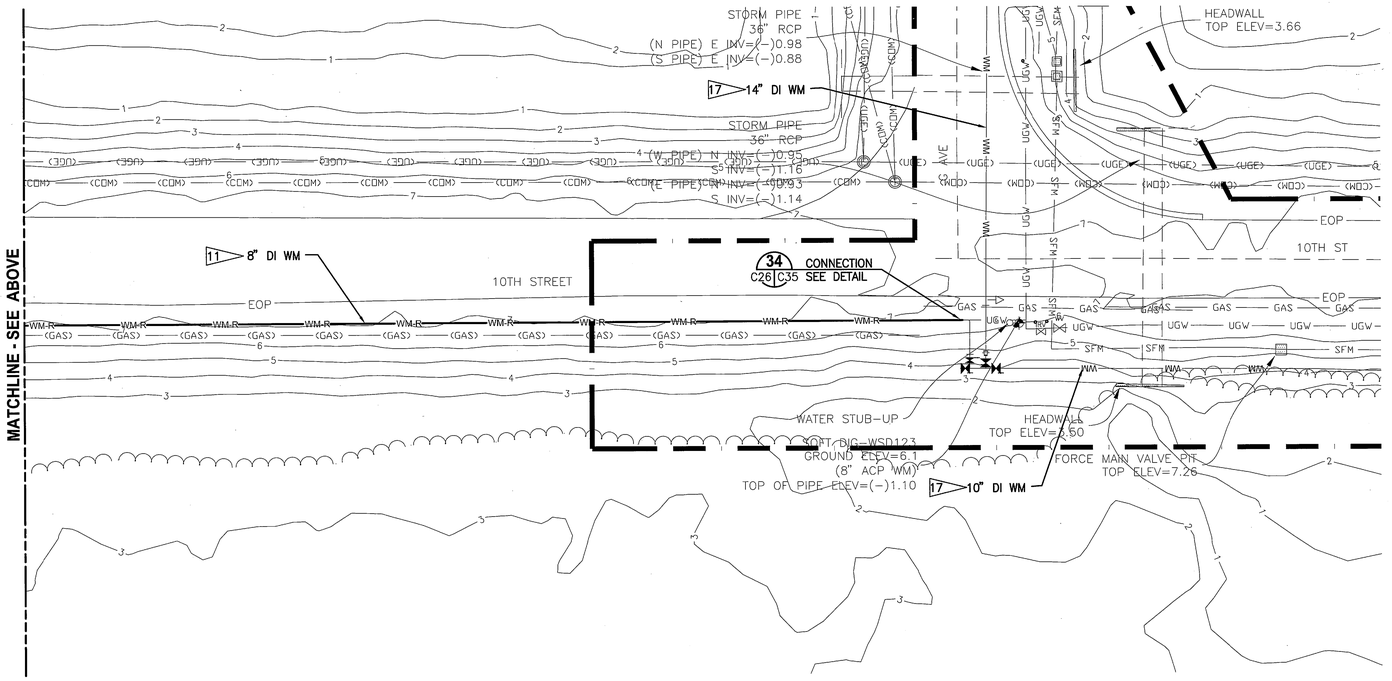


10th STREET PLAN
1"=20'



KEY MAP
NTS



10th STREET PLAN
1"=20'

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

-N-

C26

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SIGNATURES	DATE
DRAWN P. SIMMS	10/31/11
CHECKED M. CLARK	10/31/11
SUBMITTED R. BEST	10/31/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	10/31/11
K. MILLER	11/2/11

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 35	

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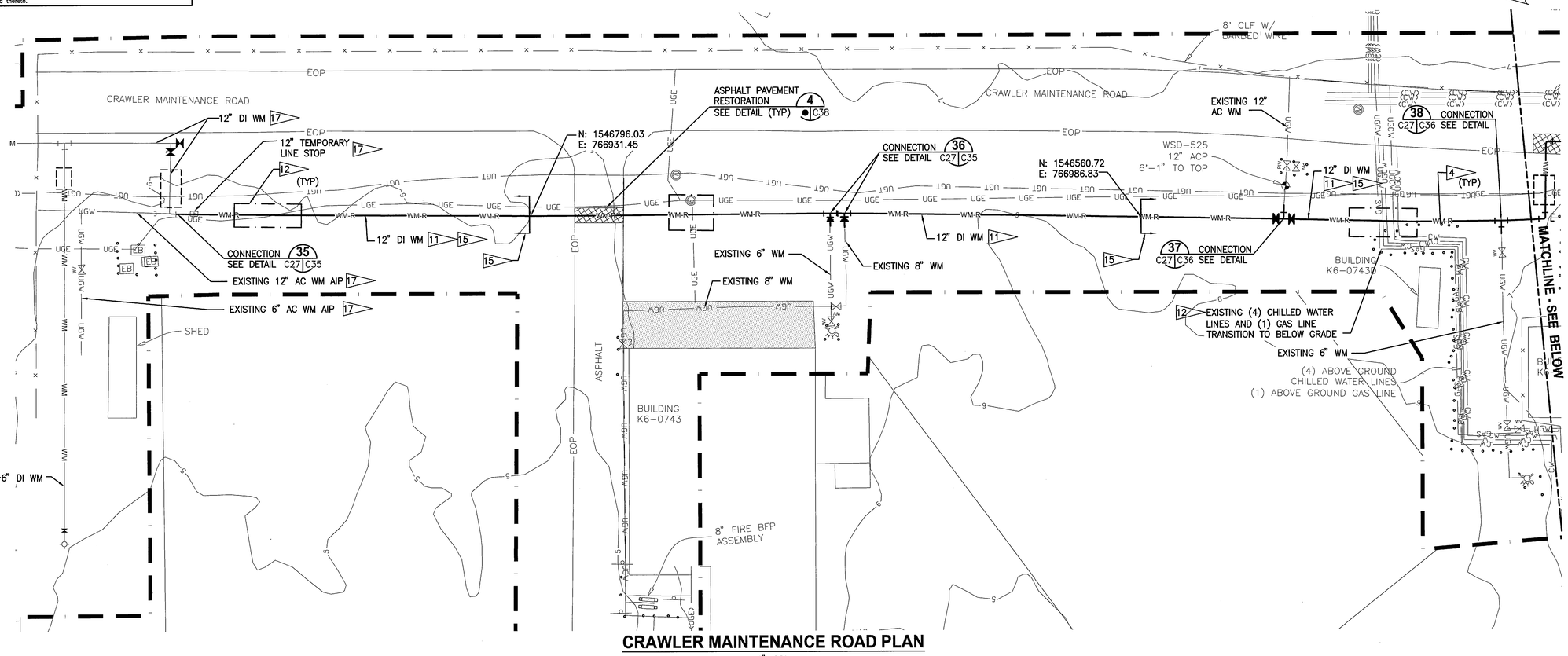
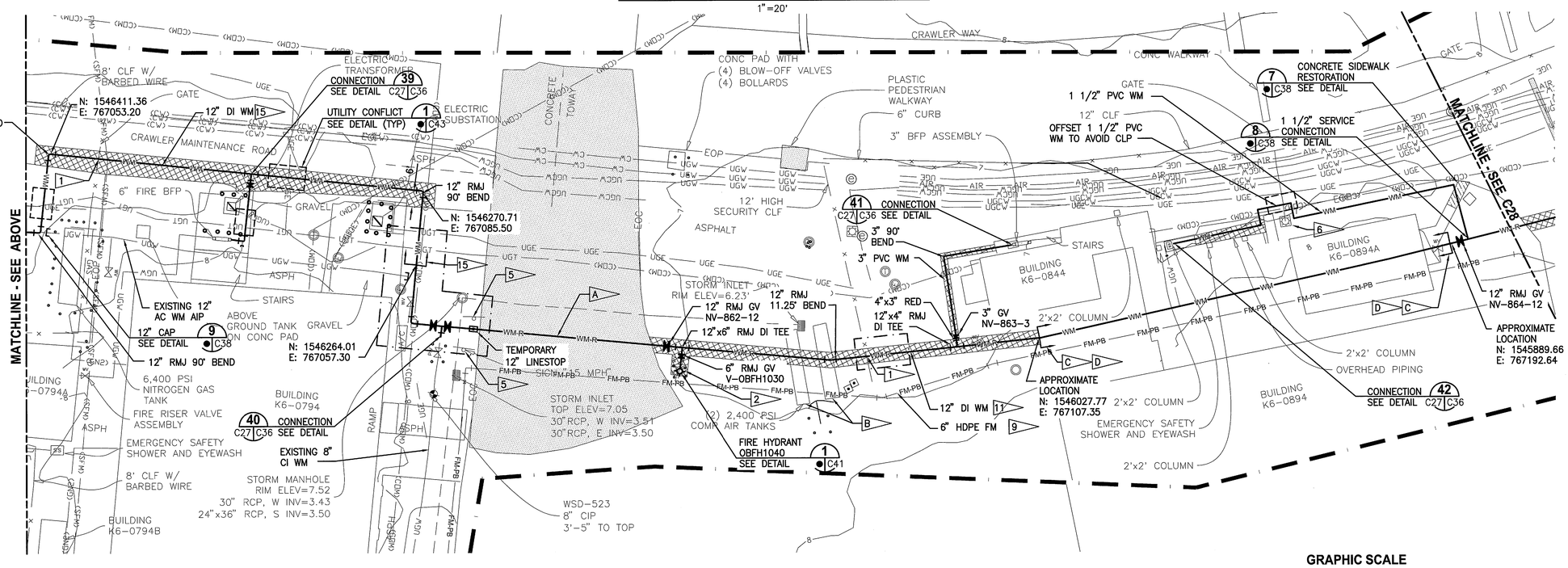
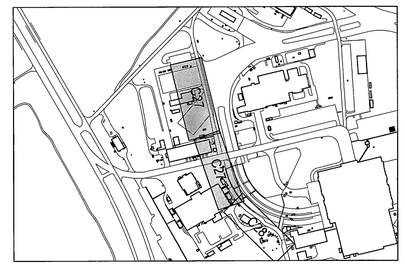


CRAWLER MAINTENANCE ROAD PLAN
1"=20'



CRAWLER MAINTENANCE ROAD PLAN
1"=20'

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'



KEY MAP
NTS

NOTES

A. CONTRACTOR TO REMOVE EXISTING 12" AC WM OUT OF EXISTING 21" RCP SLEEVE BENEATH TOW-WAY. CONTRACTOR TO REUSE EXISTING SLEEVE TO INSTALL APPROXIMATELY 80' OF 12" DI WM.

B. CONTRACTOR TO TEMPORARILY REMOVE AND RECONNECT (2) 2,400 PSI COMPRESSED AIR TANKS FOR INSTALLATION OF NEW 12" WATER MAIN. THE AIR TANKS, WHEN RECONNECTED, SHALL BE CONFIGURED TO MATCH THE EXISTING CONDITIONS. CONTRACTOR TO COORDINATE TEMPORARY REMOVAL AND RECONNECTION WITH CO.

C. SLIP LINE EXISTING 12" AC WM PER SPECIFICATION 31 01 99.

D. CONNECT DI WM TO CIPP WM. SEE DETAIL 2 C27|C41

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ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	12/05/11
K. MILLER	12/5/11

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL
WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 36	

C27

NASA FORM 1-11 (3/76)(C/G 3/94)

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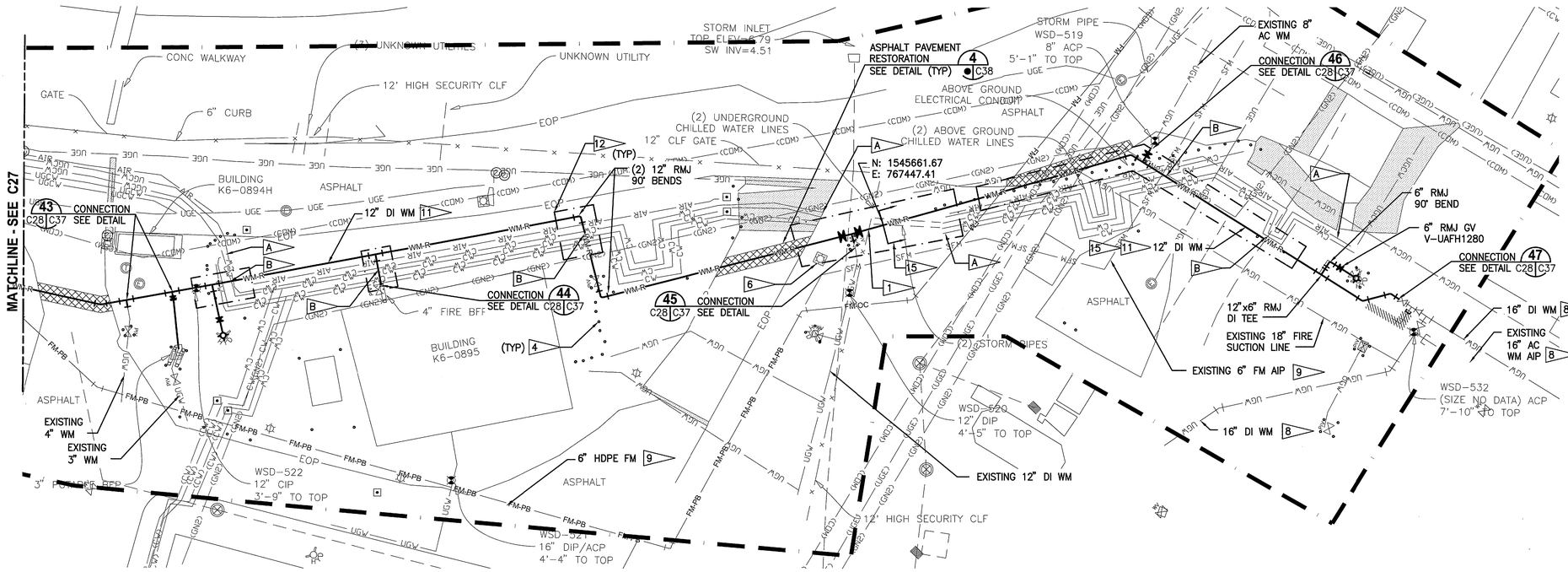
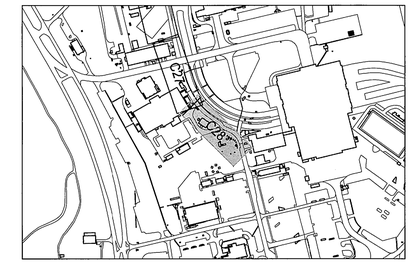


SAFE HAVEN ROAD PLAN
1" =20'



KEY MAP
NTS

NOTES
A — EXISTING CHILLED WATER LINES AND COMPRESSED AIR LINES TRANSITION BETWEEN ABOVE AND BELOW GRADE.

B — CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT FOR ABOVE GRADE CHILLED WATER LINES FOR INSTALLATION OF NEW WATER MAIN.

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1" =20'

C28

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL
WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 37	

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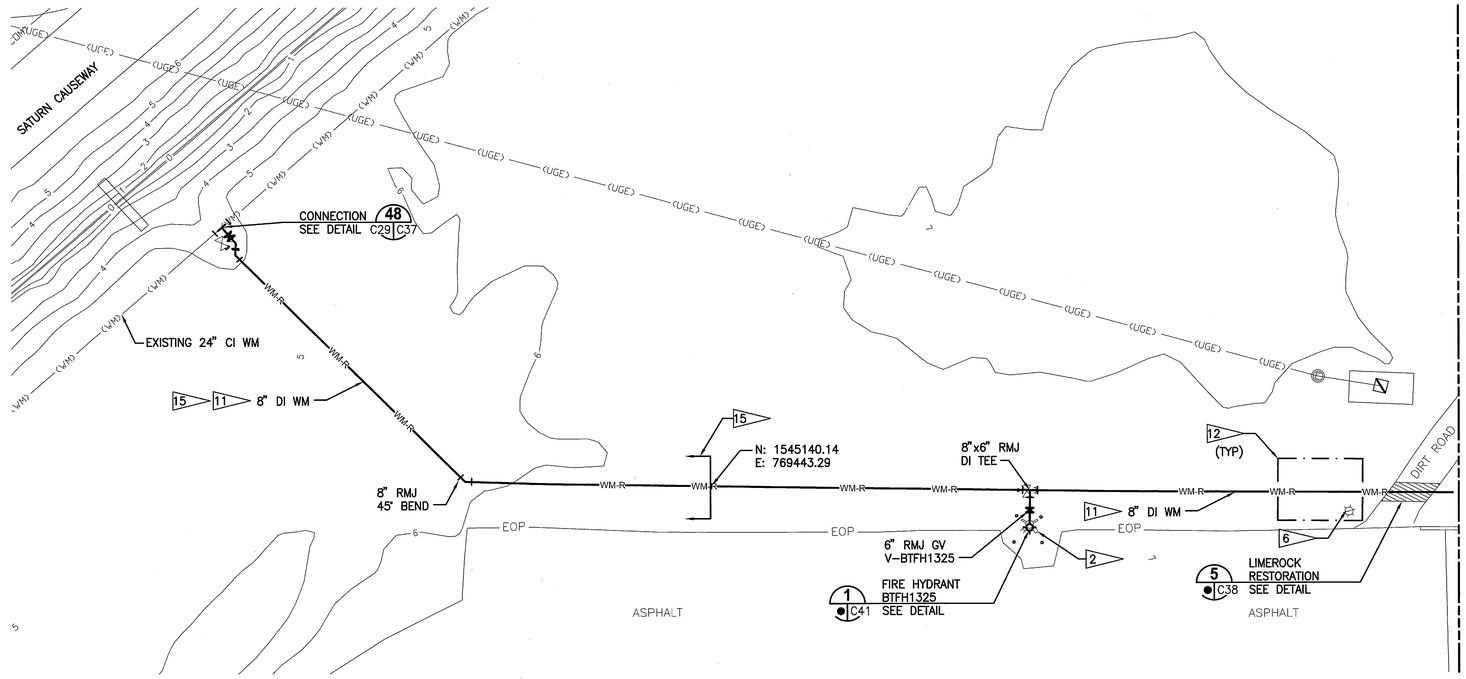
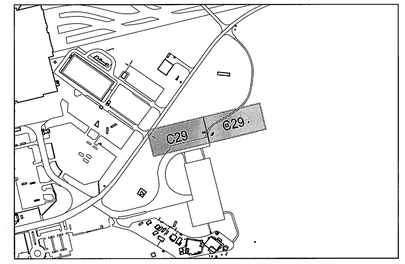
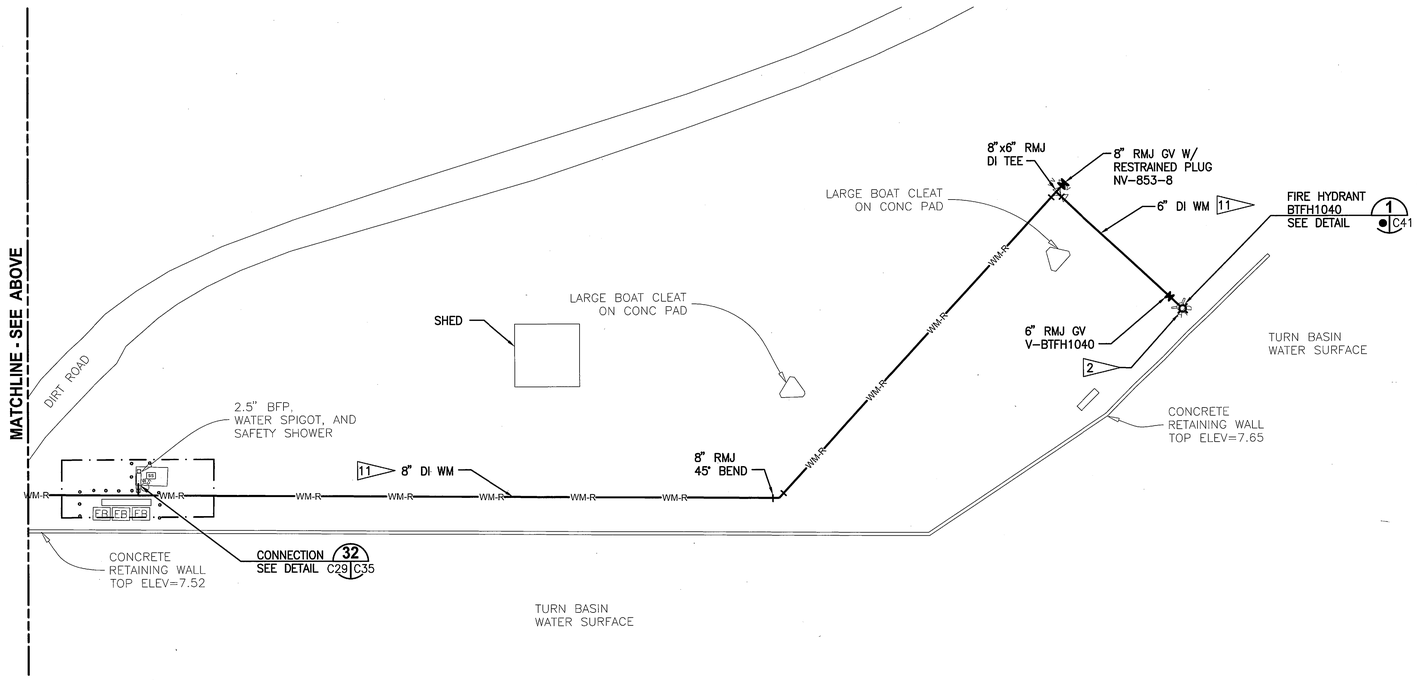


TURNING BASIN PLAN
1"=20'



KEY MAP
NTS



TURNING BASIN PLAN
1"=20'

GRAPHIC SCALE
0 10 20 40
SCALE IN FEET
1"=20'

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET - INITIAL RELEASE TO EDL	10/31/11	KM

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K. MILLER	11/2/11

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

WATER MAIN LAYOUT PLAN

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 38	

C29

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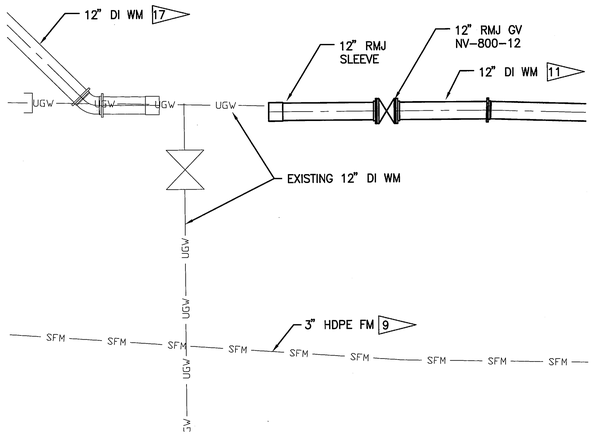
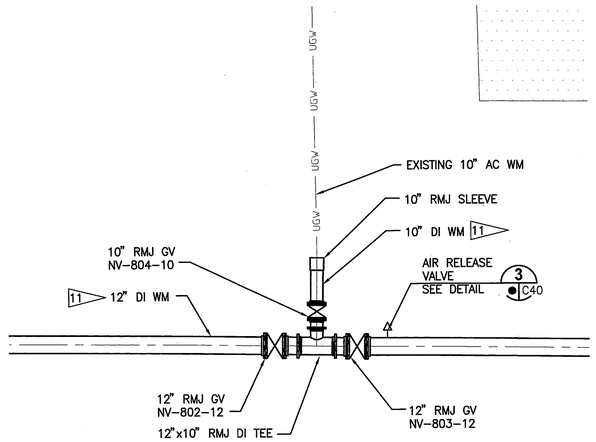
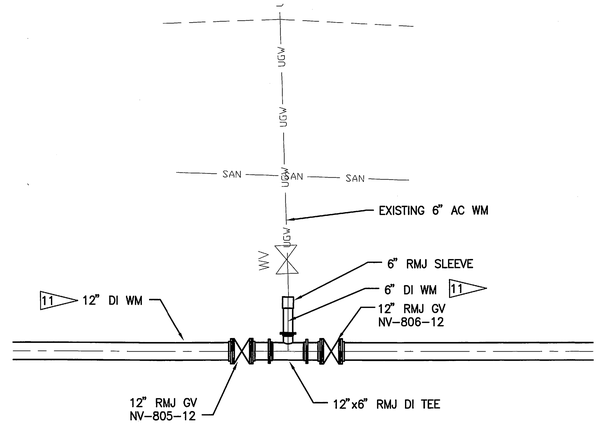


CONNECTION DETAIL 1
1/4"=1'-0"
C1 | C30

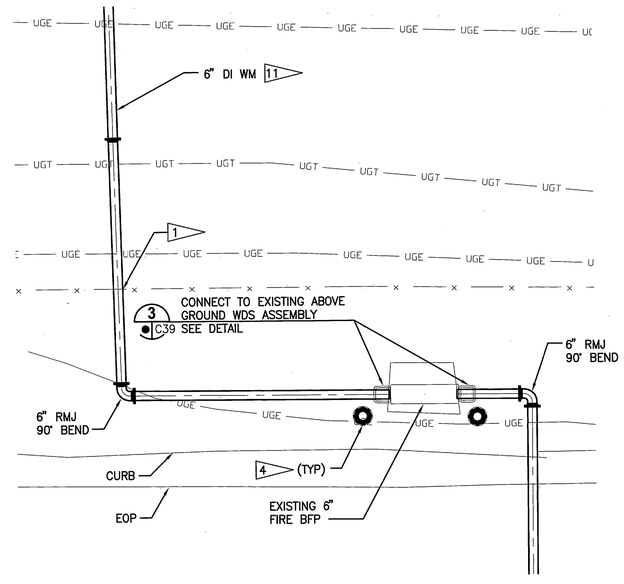


CONNECTION DETAIL 2
1/4"=1'-0"
C2 | C30

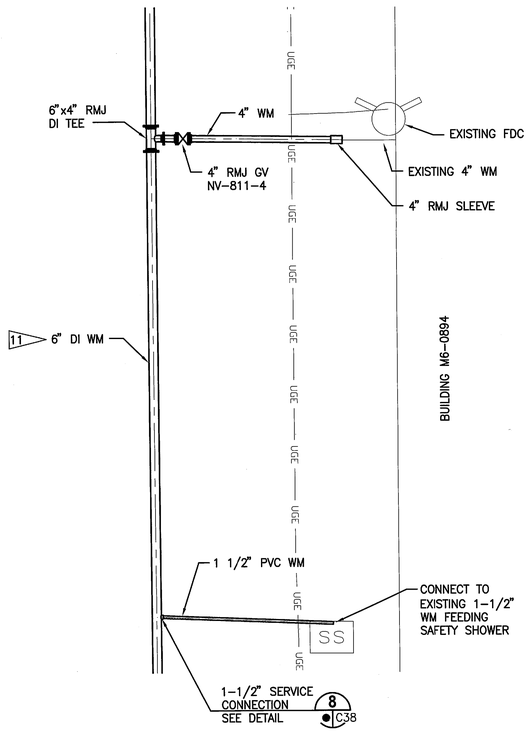


CONNECTION DETAIL 3
1/4"=1'-0"
C2 | C30

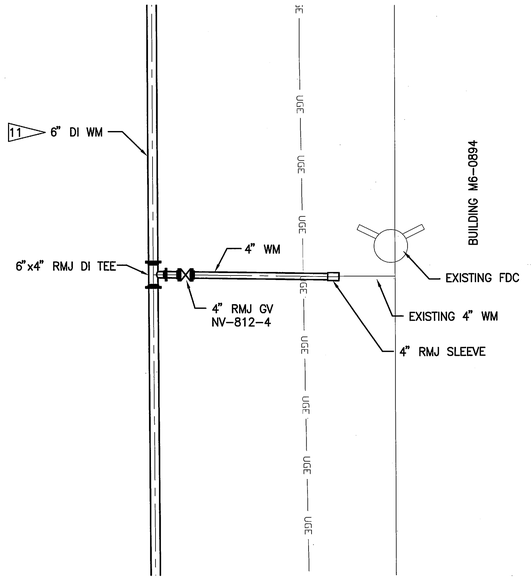
GRAPHIC SCALE
0 1 2 4 8
SCALE IN FEET
1/4"=1'-0"



CONNECTION DETAIL 4
1/4"=1'-0"
C3 | C30



CONNECTION DETAIL 5
1/4"=1'-0"
C3 | C30



CONNECTION DETAIL 6
1/4"=1'-0"
C3 | C30

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL
CONNECTION DETAILS

C30

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 39	

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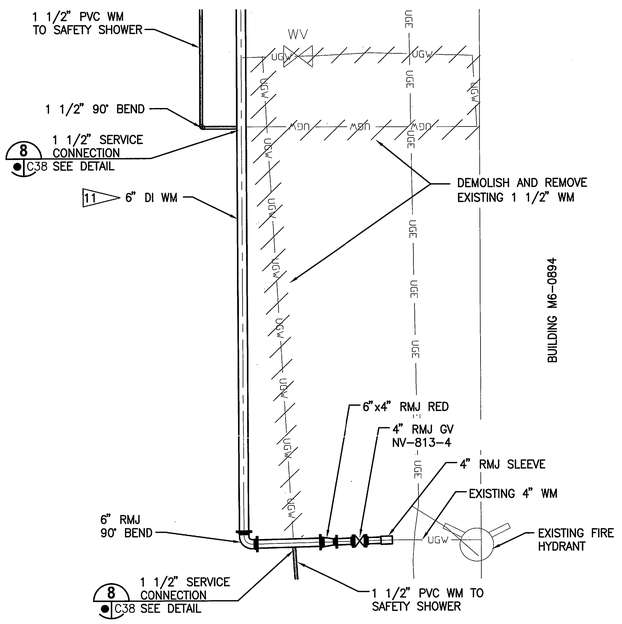
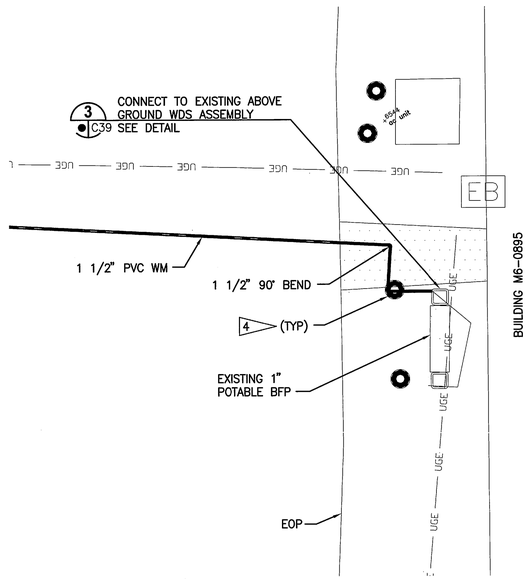
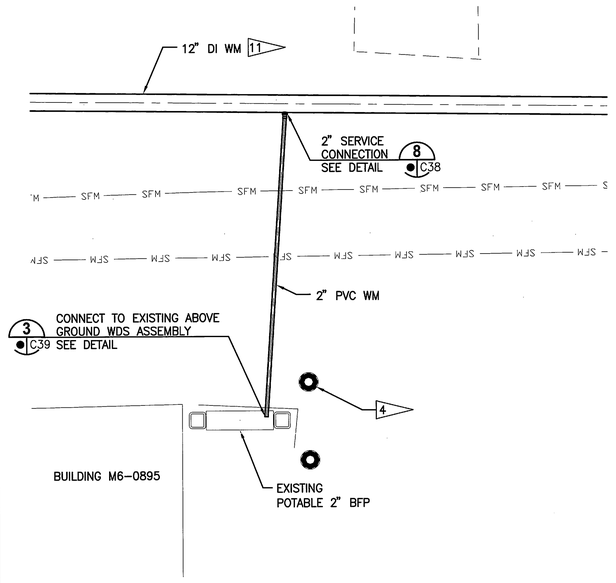


CONNECTION DETAIL 7
1/4"=1'-0" C3 C31



CONNECTION DETAIL 8
1/4"=1'-0" C3 C31



CONNECTION DETAIL 9
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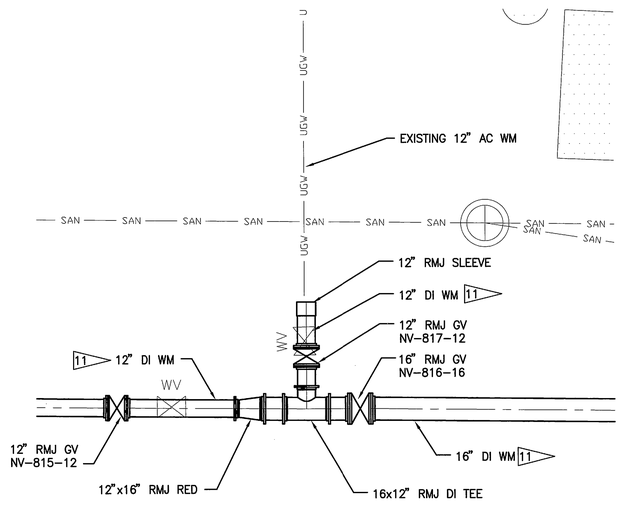
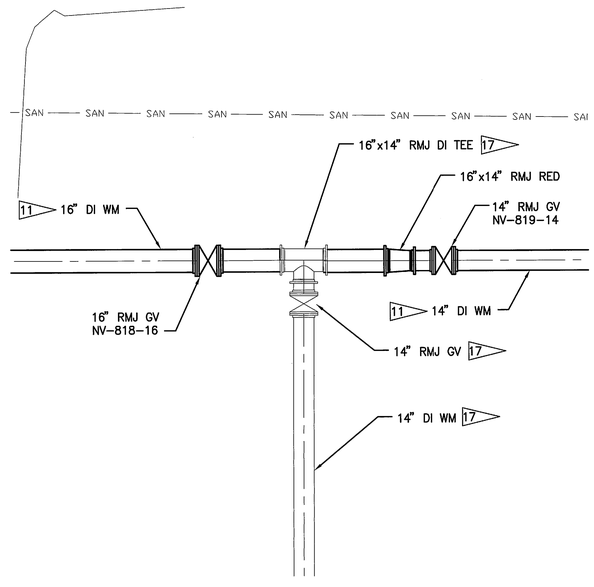


CONNECTION DETAIL 10
1/4"=1'-0" C3 C31



CONNECTION DETAIL 11
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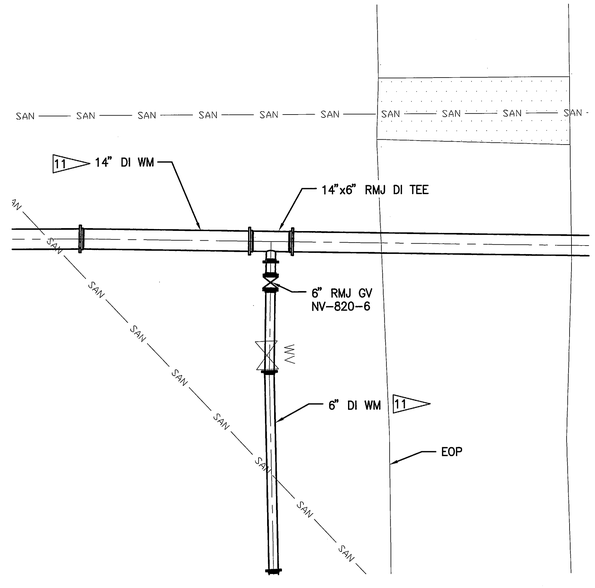

CONNECTION DETAIL 12
1/4"=1'-0" C4 C31

GRAPHIC SCALE
0 1 2 4 8
SCALE IN FEET
1/4"=1'-0"

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SIGNATURES	DATE
DRAWN P. SIMMS	12/05/11
CHECKED M. CLARK	12/05/11
SUBMITTED R. BEST	12/05/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	12/05/11
K. MILLER	12/5/11

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHN F. KENNEDY SPACE CENTER, NASA
KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5 WATER SYSTEM ADDITIONAL

CONNECTION DETAILS

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 40	

C31

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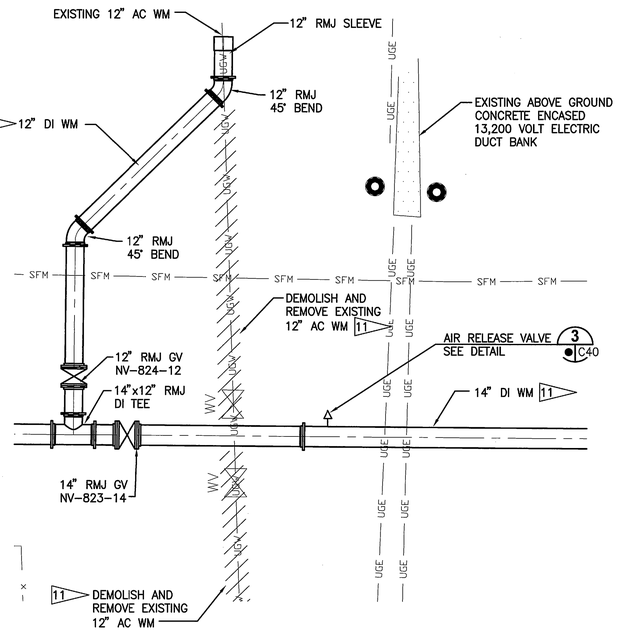
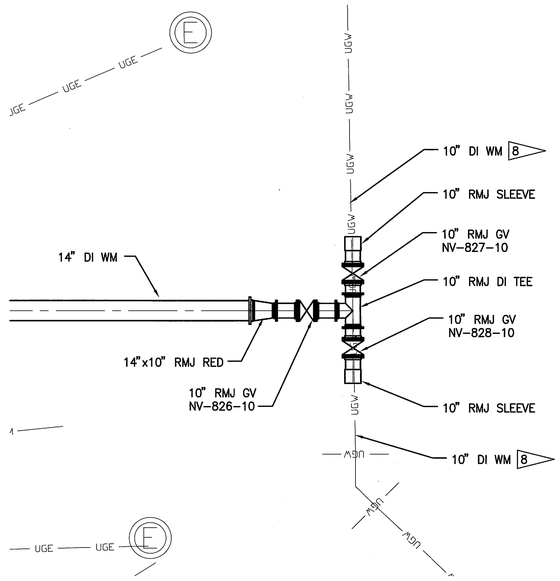
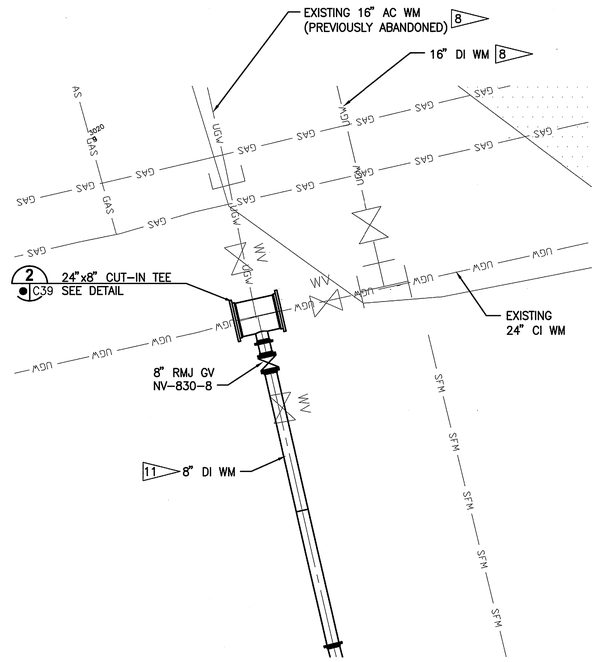


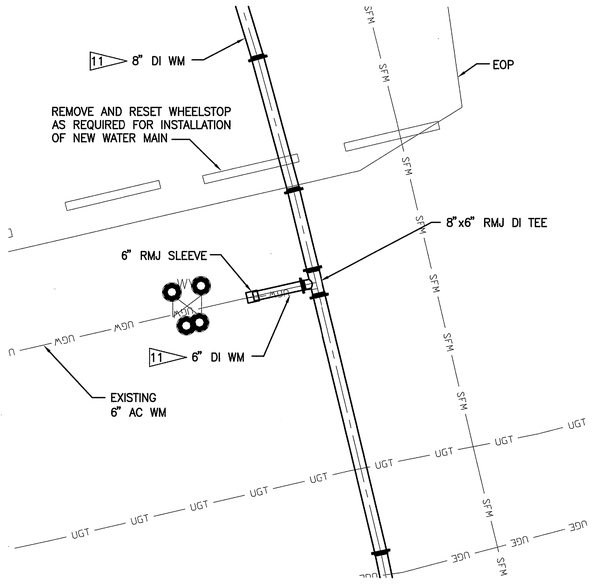
CONNECTION DETAIL 13
1/4"=1'-0"
C5 | C32



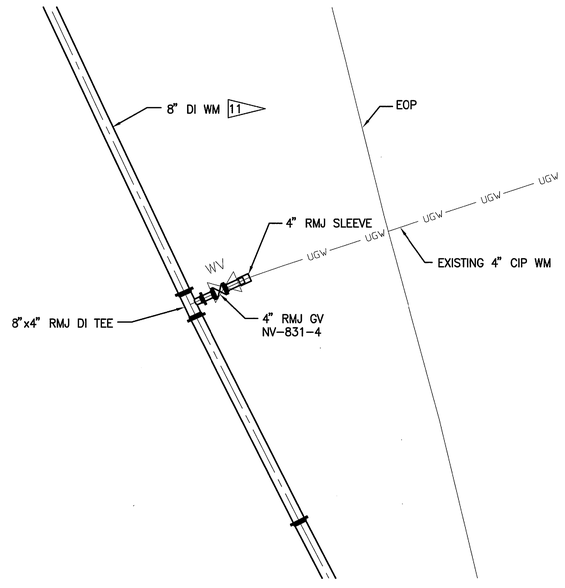
CONNECTION DETAIL 14
1/4"=1'-0"
C7 | C32



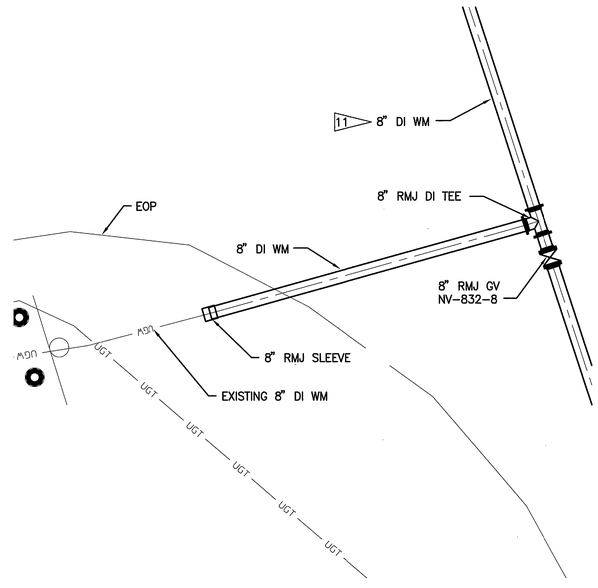
CONNECTION DETAIL 15
1/4"=1'-0"
C8 | C32



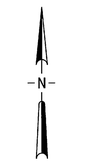
CONNECTION DETAIL 16
1/4"=1'-0"
C8 | C32



CONNECTION DETAIL 17
1/4"=1'-0"
C8 | C32



CONNECTION DETAIL 18
1/4"=1'-0"
C8 | C32



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SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET - INITIAL RELEASE TO EDC	12/05/11	

REVISIONS

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SIGNATURES	DATE
DRAWN P. SIMMS	12/05/11
CHECKED M. CLARK	12/05/11
SUBMITTED R. BEST	12/05/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	12/7/11
K. MILLER	12/9/11

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KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL
CONNECTION DETAILS

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A

PROJ. NO. 96968.3 | SHEET 41

C32

FSC FORM 1-11 (3/76)(C/G 3/94)

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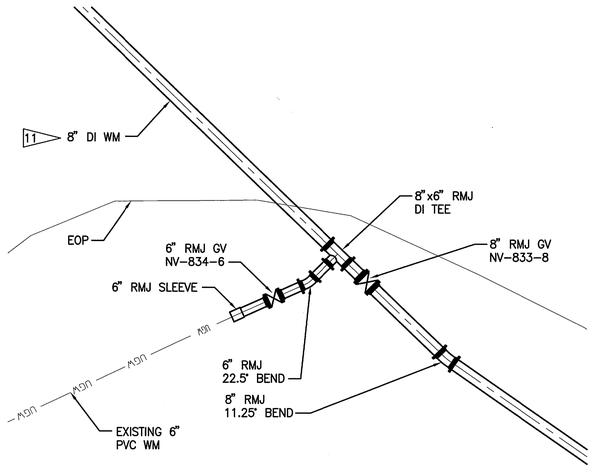
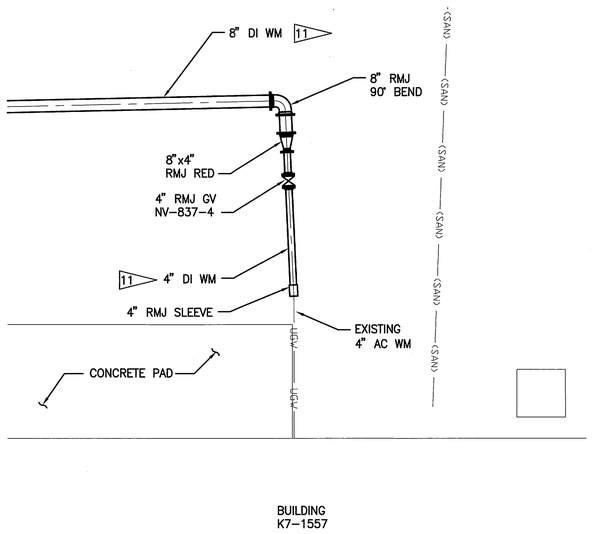
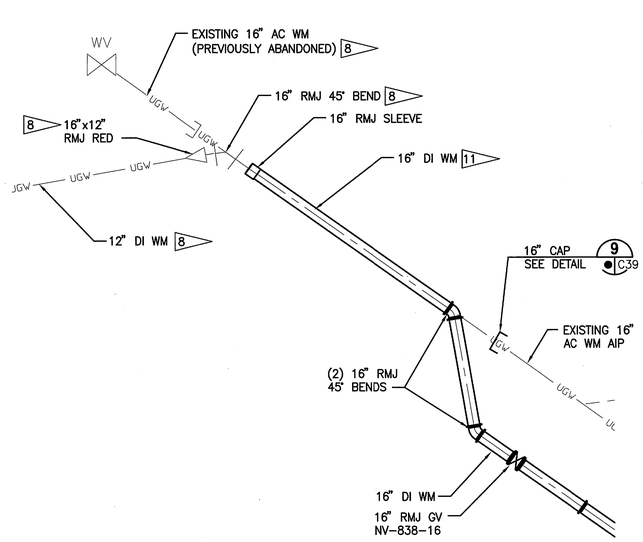


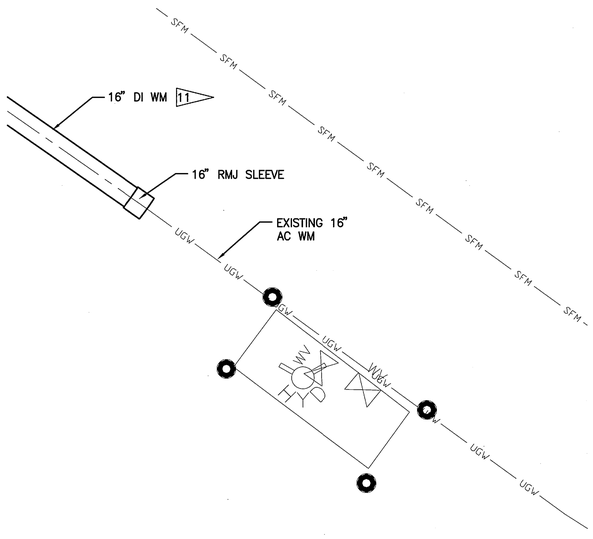
CONNECTION DETAIL 19
1/4"=1'-0" C8 | C33



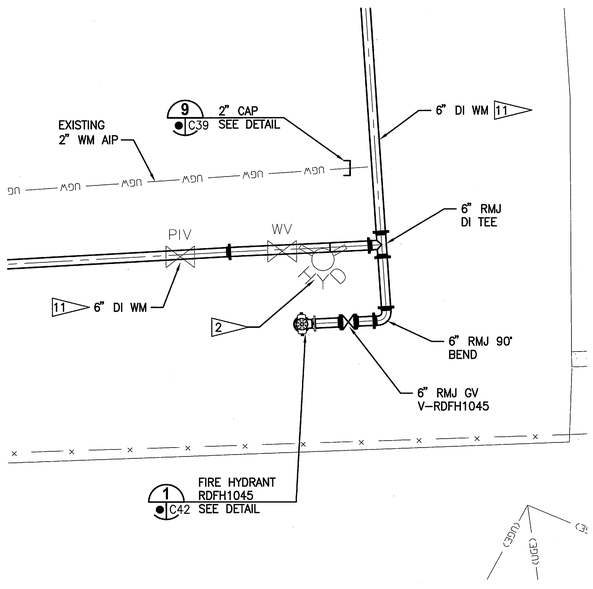
CONNECTION DETAIL 20
1/4"=1'-0" C10 | C33



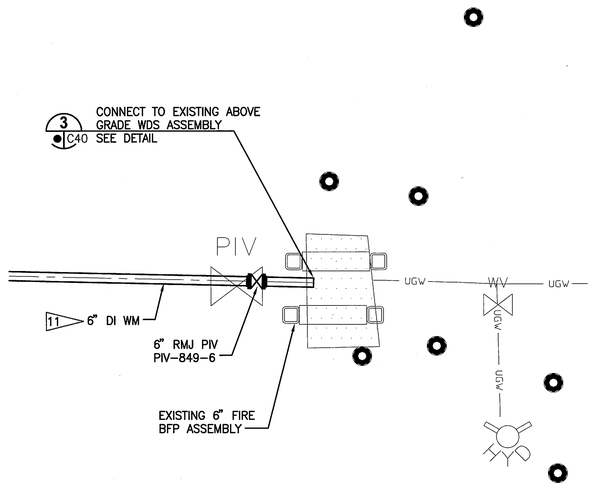
CONNECTION DETAIL 21
1/8"=1'-0" C11 | C33



CONNECTION DETAIL 22
1/4"=1'-0" C21 | C33



CONNECTION DETAIL 23
1/4"=1'-0" C23 | C33



CONNECTION DETAIL 24
1/4"=1'-0" C23 | C33

- N -

GRAPHIC SCALE
0 1 2 4 8
SCALE IN FEET
1/4"=1'-0"

GRAPHIC SCALE
0 2 4 8 16
SCALE IN FEET
1/8"=1'-0"

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SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET - INITIAL RELEASE TO EDL	10/31/11	

REVISIONS

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SIGNATURES	DATE
DRAWN P. SIMMS	10/31/11
CHECKED M. CLARK	10/31/11
SUBMITTED R. BEST	10/31/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	10/31/11
K. MILLER	11/2/11

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JOHN F. KENNEDY SPACE CENTER, NASA
KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

CONNECTION DETAILS

C33

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A

PROJ. NO. 96968.3 SHEET 42

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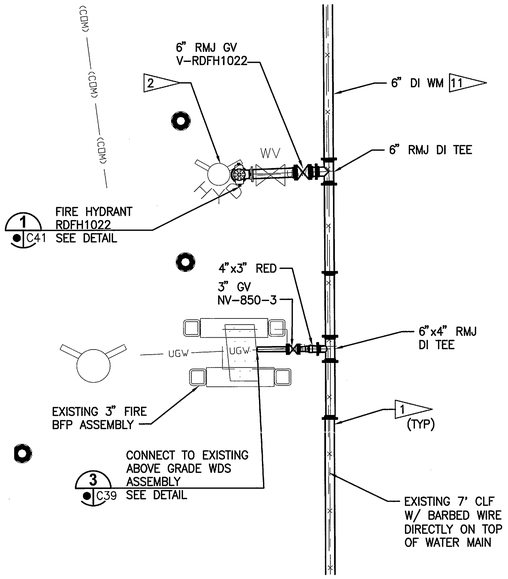
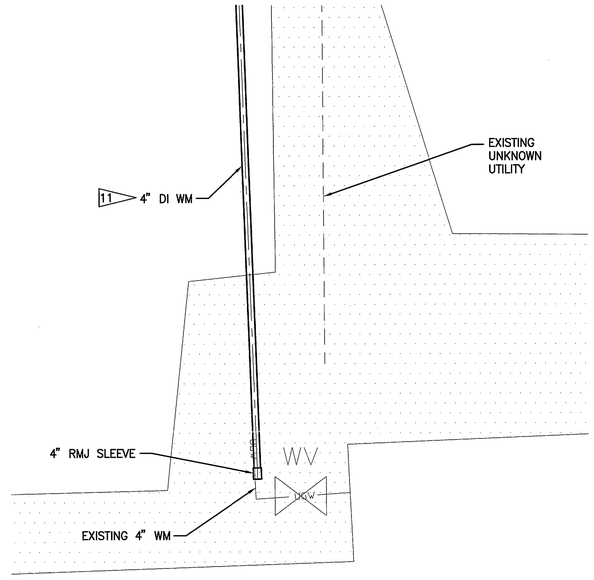
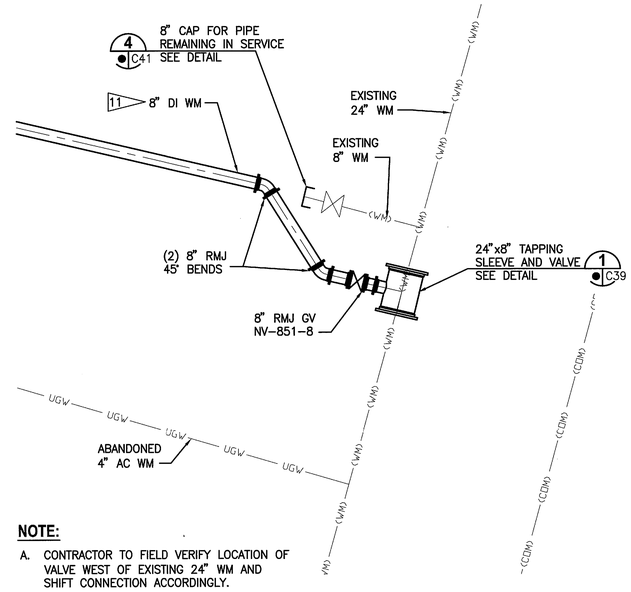


CONNECTION DETAIL 25
1/4"=1'-0"
C23 | C34



BUILDING M6-1625

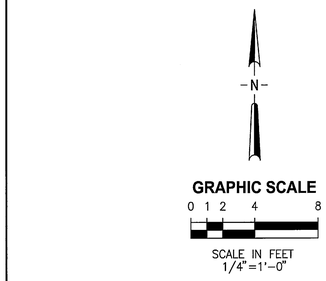
CONNECTION DETAIL 26
1/4"=1'-0"
C23 | C34

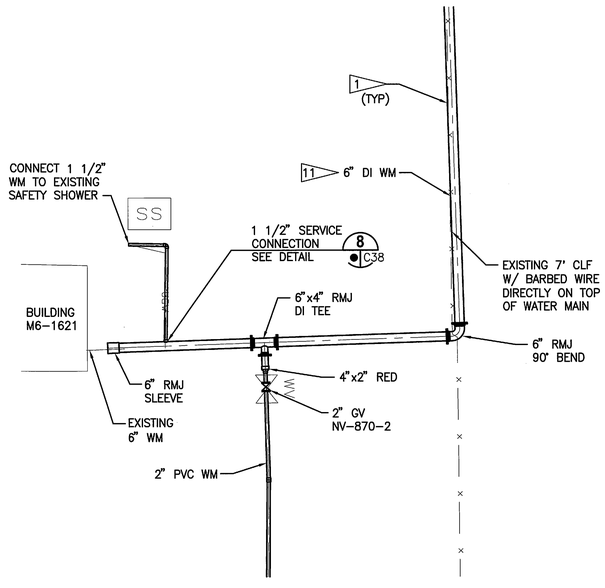


NOTE:

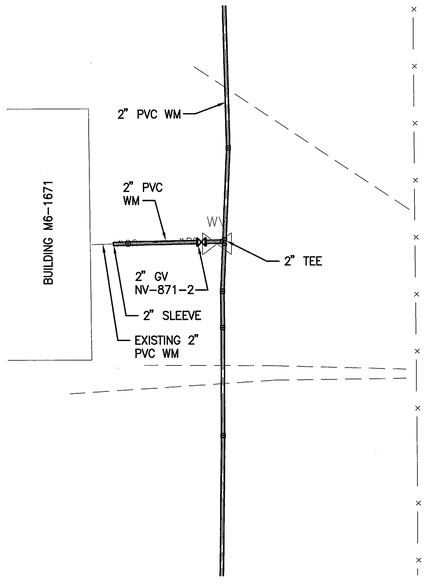
A. CONTRACTOR TO FIELD VERIFY LOCATION OF VALVE WEST OF EXISTING 24" WM AND SHIFT CONNECTION ACCORDINGLY.

CONNECTION DETAIL 27
1/4"=1'-0"
C24 | C34

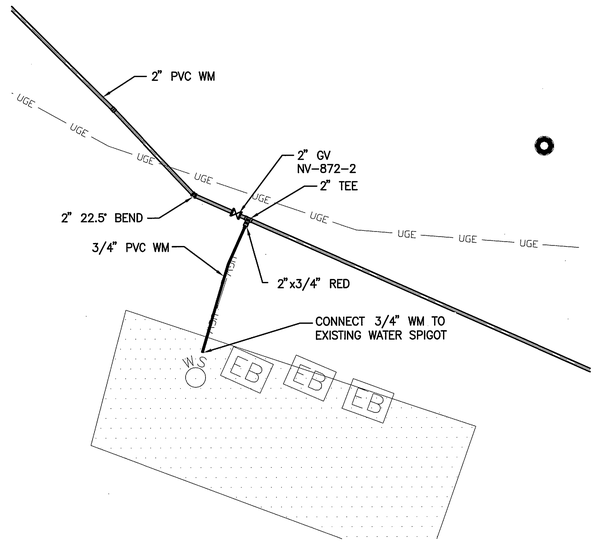




CONNECTION DETAIL 28
1/4"=1'-0"
C25 | C34



CONNECTION DETAIL 29
1/4"=1'-0"
C25 | C34



CONNECTION DETAIL 30
1/4"=1'-0"
C25 | C34

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SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET-INITIAL RELEASE TO EPC	12/05/11	KM

REVISIONS

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APPROVED M. CLARK	12/05/11
K. MILLER	12/6/11

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

CONNECTION DETAILS

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A

PROJ. NO. 96968.3 | SHEET 43

C34

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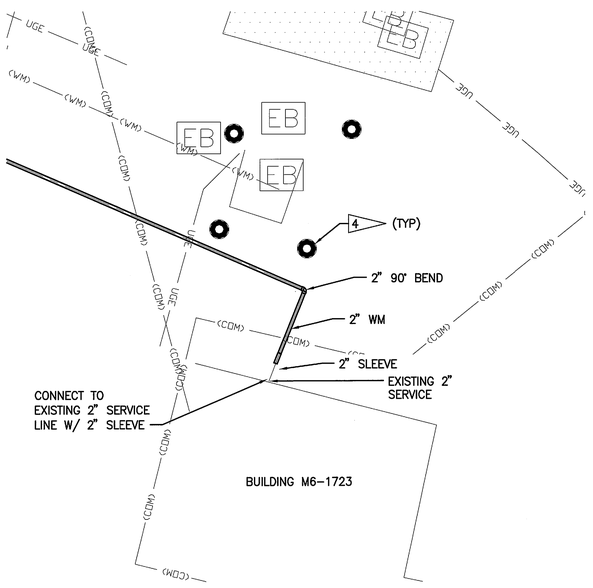
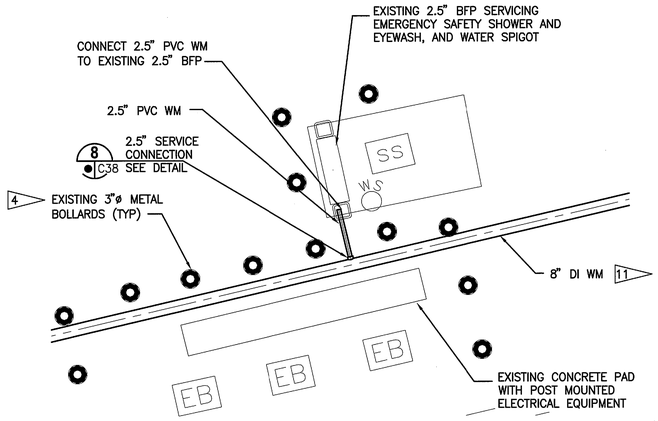
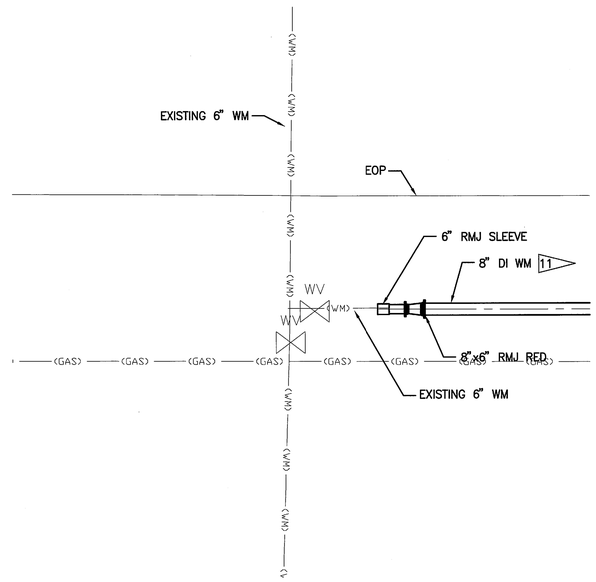


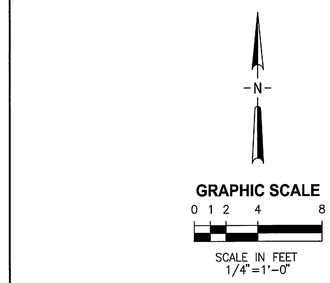
CONNECTION DETAIL 31
1/4"=1'-0" C25 C35



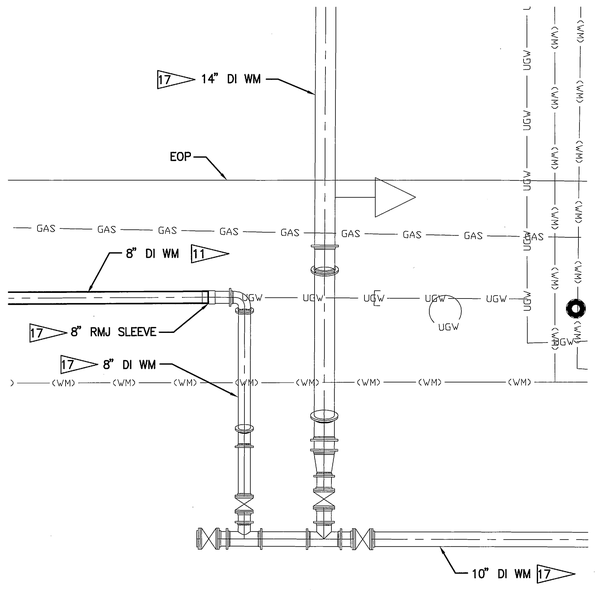
CONNECTION DETAIL 32
1/4"=1'-0" C29 C35



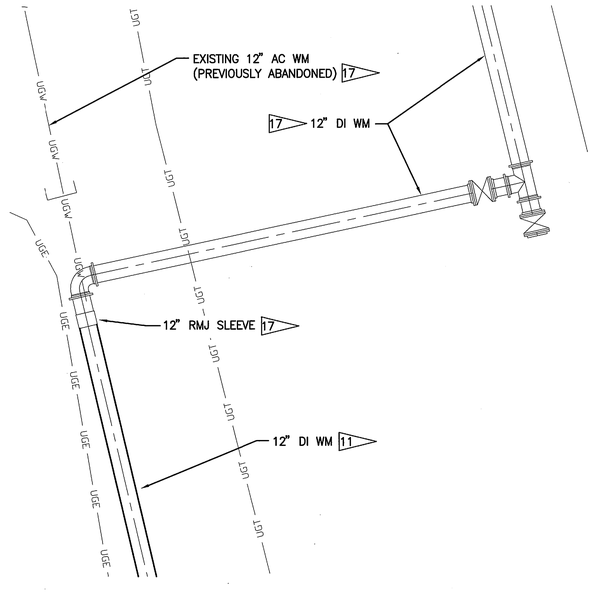
CONNECTION DETAIL 33
1/4"=1'-0" C26 C35



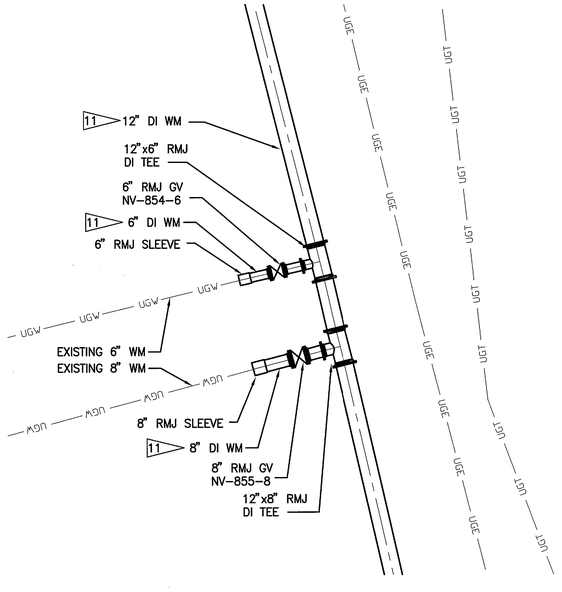
THIS SPACE RESERVED



CONNECTION DETAIL 34
1/4"=1'-0" C26 40



CONNECTION DETAIL 35
1/4"=1'-0" C27 C35



CONNECTION DETAIL 36
1/4"=1'-0" C27 C35

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET- INITIAL RELEASE TO EDC	10/31/11	

REVISIONS

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SIGNATURES	DATE
DRAWN P. SIMMS	10/31/11
CHECKED M. CLARK	10/31/11
SUBMITTED R. BEST	10/31/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED: M. CLARK	10/31/11
K. MILLER	11/2/11

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
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KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

CONNECTION DETAILS

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A

PROJ. NO. 96968.3 SHEET 44

C35

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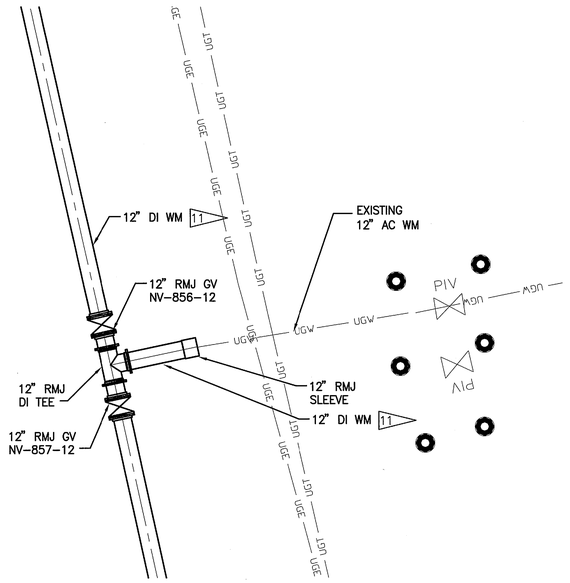
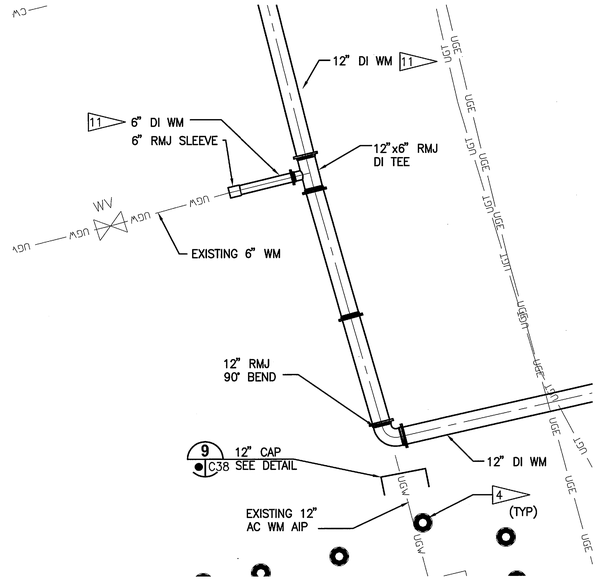
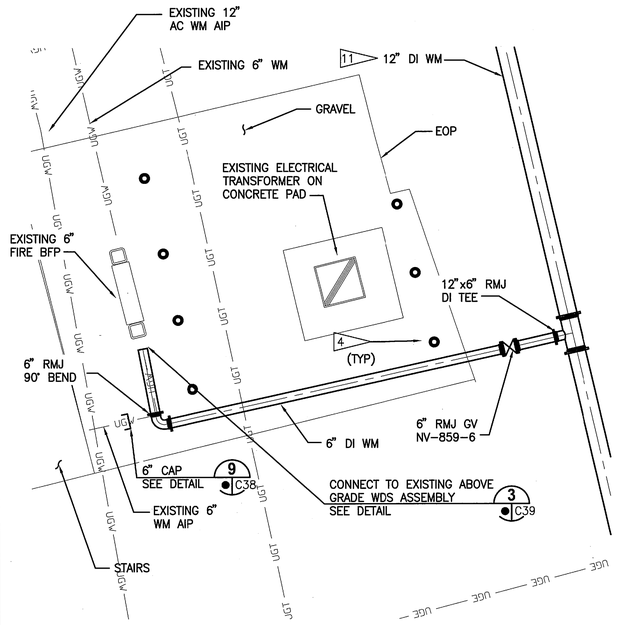


CONNECTION DETAIL 37
1/4"=1'-0" C27 | C36



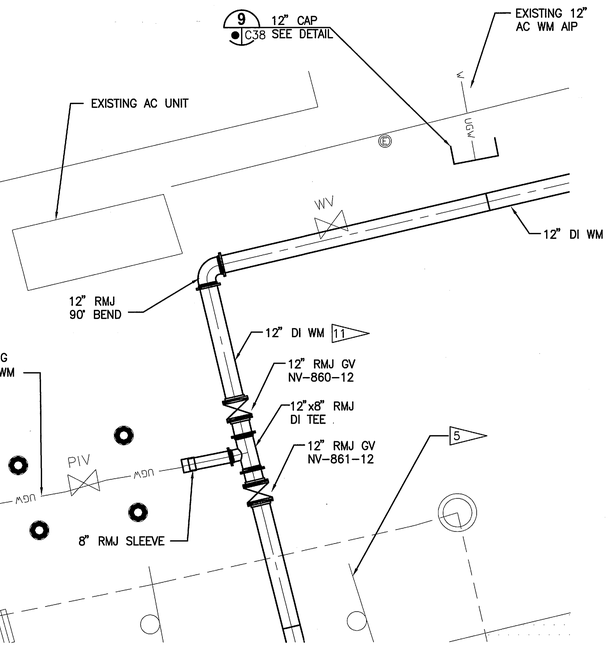
CONNECTION DETAIL 38
1/4"=1'-0" C27 | C36



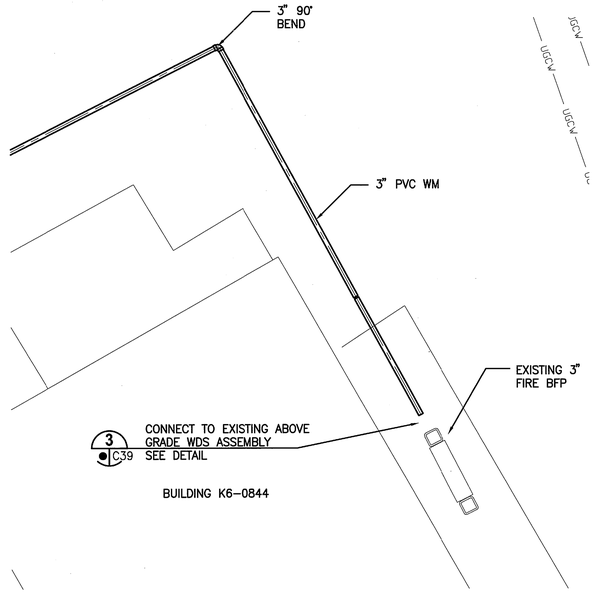
CONNECTION DETAIL 39
1/4"=1'-0" C27 | C36

N

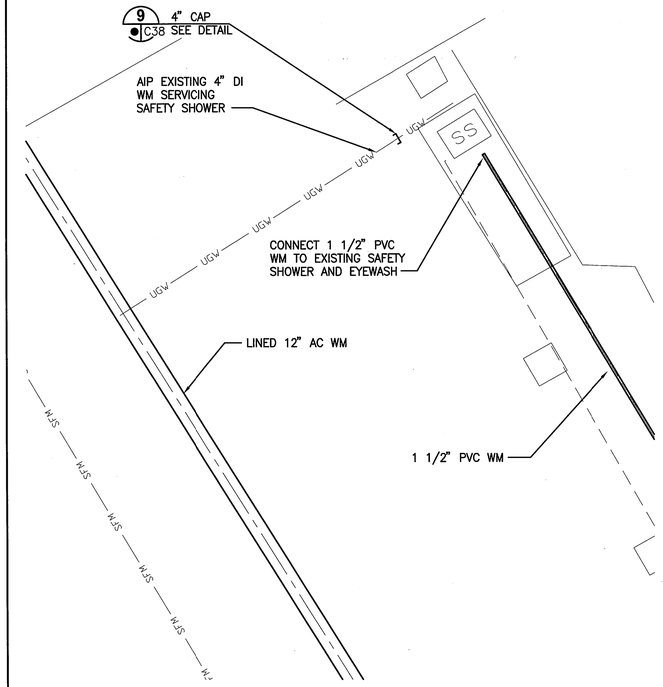
GRAPHIC SCALE
0 1 2 4 8
SCALE IN FEET
1/4"=1'-0"



CONNECTION DETAIL 40
1/4"=1'-0" C27 | C36



CONNECTION DETAIL 41
1/4"=1'-0" C27 | C36



CONNECTION DETAIL 42
1/4"=1'-0" C27 | C36

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SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET-INITIAL RELEASE TO EDC	10/31/11	KM

REVISIONS

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL
CONNECTION DETAILS

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 45	

C36

FSC FORM 1-11 (3/76)(C/G 3/94)

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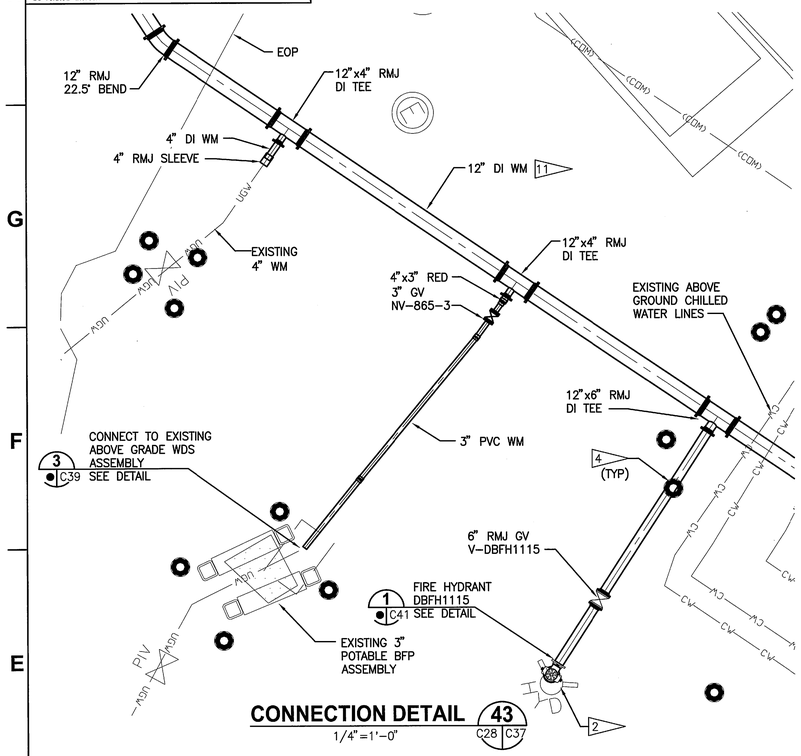
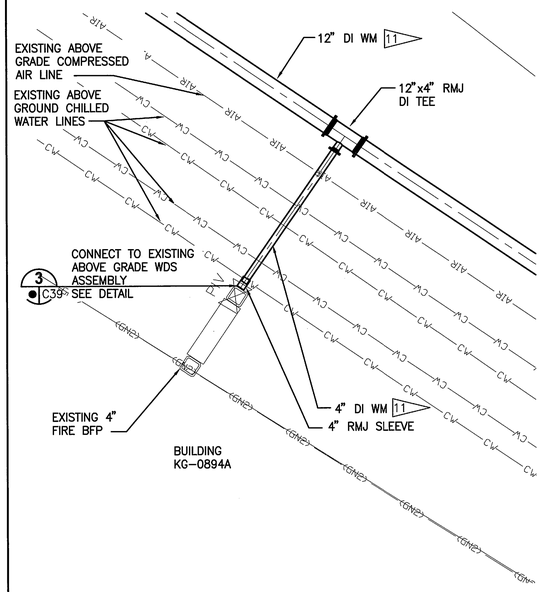
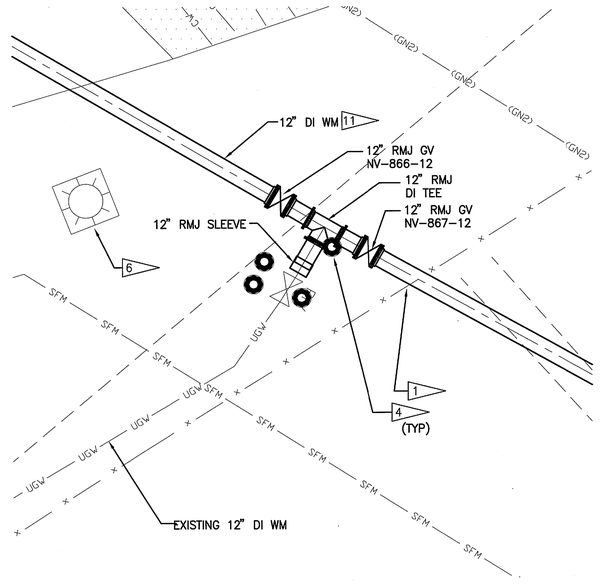


CONNECTION DETAIL 43 C28 C37
1/4"=1'-0"

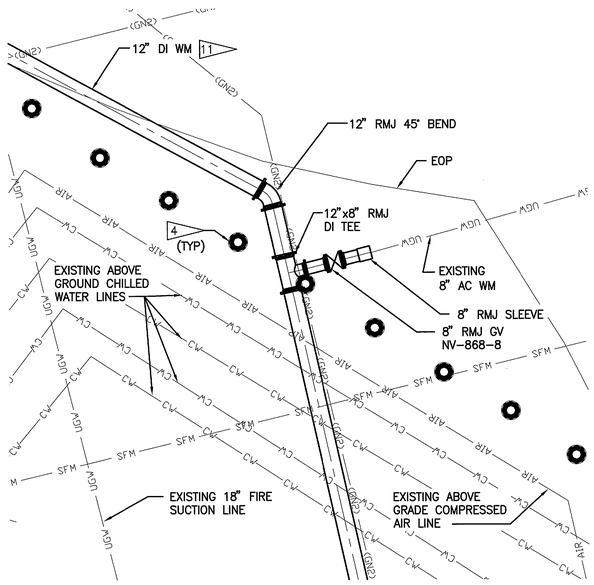


CONNECTION DETAIL 44 C28 C37
1/4"=1'-0"

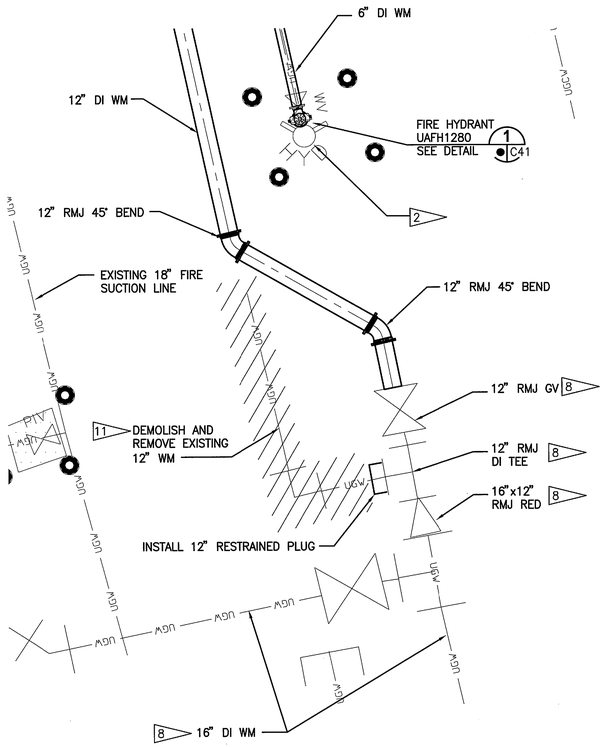


CONNECTION DETAIL 45 C28 C37
1/4"=1'-0"

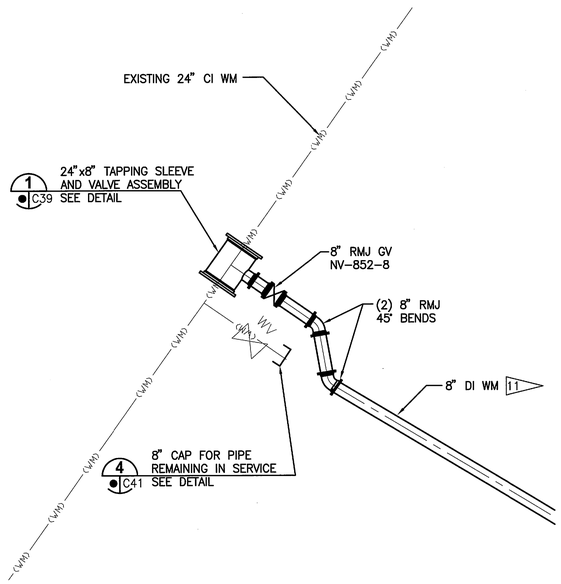
GRAPHIC SCALE
0 1 2 4 8
SCALE IN FEET
1/4"=1'-0"



CONNECTION DETAIL 46 C28 C37
1/4"=1'-0"



CONNECTION DETAIL 47 C28 C37
1/4"=1'-0"



CONNECTION DETAIL 48 C29 C37
1/4"=1'-0"

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SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET - INITIAL RELEASE TO EDC	12/05/11	

REVISIONS

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SIGNATURES	DATE
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CHECKED M. CLARK	12/05/11
SUBMITTED R. BEST	12/05/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	12/05/11
K. MILLER	12/5/11

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KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

CONNECTION DETAILS

C37

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 46	

FSC FORM 1-11 (3/76)(C/G 3/94)

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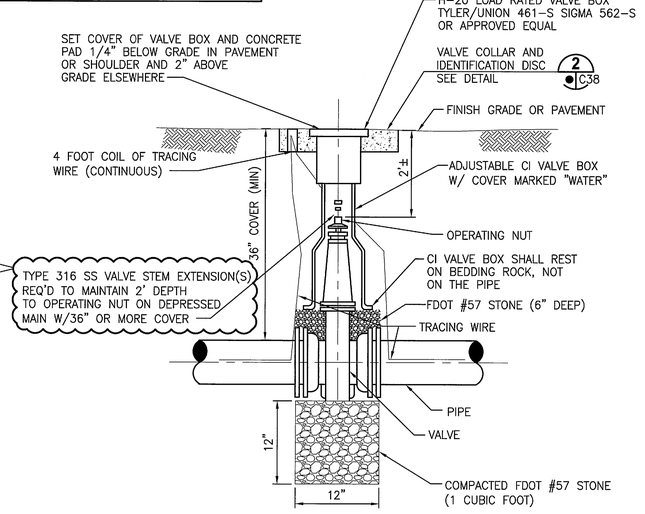
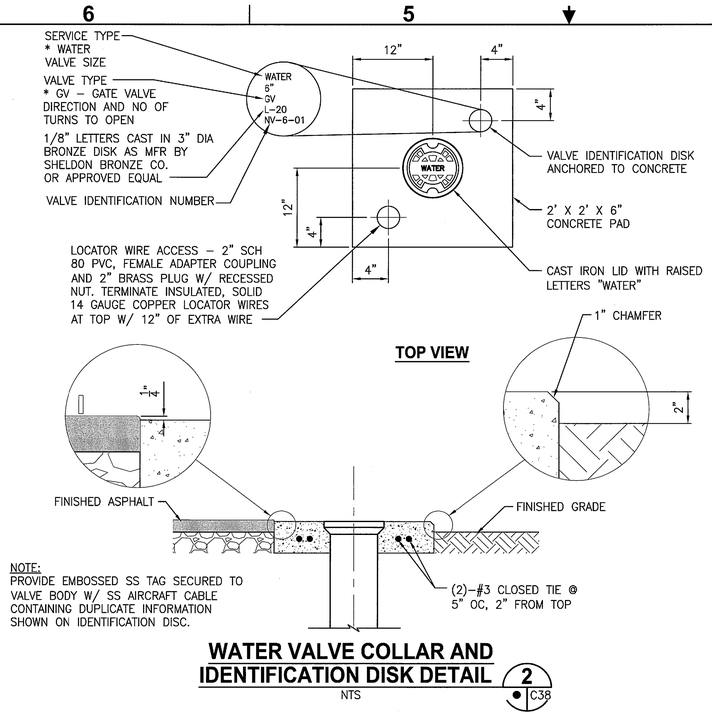
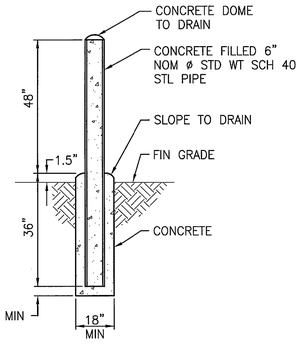


GATE VALVE BOX DETAIL 1
NTS C38



NOTE:
PROVIDE EMBOSSED SS TAG SECURED TO VALVE BODY W/ SS AIRCRAFT CABLE CONTAINING DUPLICATE INFORMATION SHOWN ON IDENTIFICATION DISC.

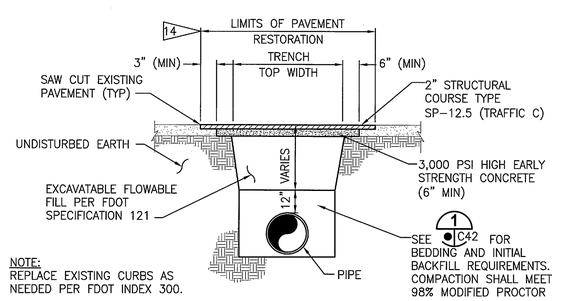
WATER VALVE COLLAR AND IDENTIFICATION DISK DETAIL 2
NTS C38



NOTES:
A. ACTUAL INSTALLATION LOCATION OF EACH BOLLARD SHALL BE AS SHOWN ON THE DRAWINGS OR AS DIRECTED IN THE FIELD.

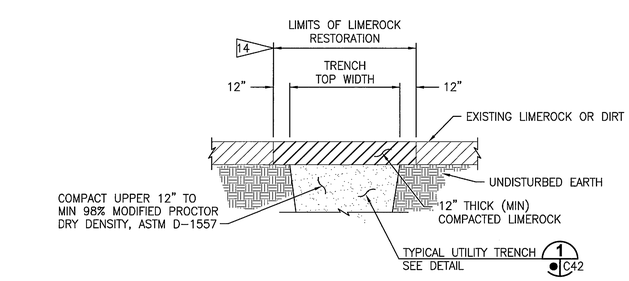
B. PAINT ALL PIPING MATERIALS OSHA SAFETY YELLOW.

BOLLARD DETAIL 3
NTS C38

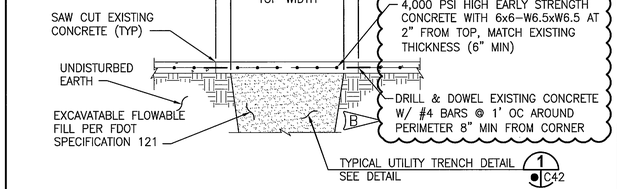


NOTE:
REPLACE EXISTING CURBS AS NEEDED PER FDOT INDEX 300.

ASPHALT PAVEMENT RESTORATION DETAIL 4
NTS C38



LIMEROCK RESTORATION DETAIL 5
NTS C38



NOTES:
A. DRILL AND DOWEL 1 LOCATION EACH SIDE FOR CURB REPAIR.

B. MATCH EXISTING GRADE AND FINISH.

C. REPLACE EXISTING CURBS AS NEEDED PER FDOT INDEX 300.

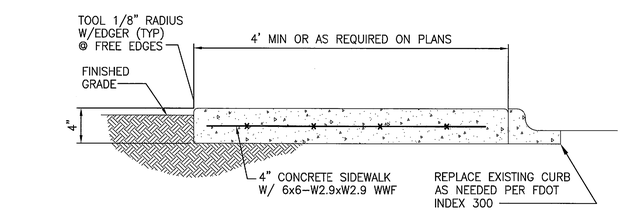
D. WATER TO CEMENT RATIO SHALL NOT EXCEED 0.45

E. PLACE CONTRACTION JOINTS @12' OC (MAX)

F. CONCRETE SHALL BE CURED MOIST, BY SPRAYING OR FOGGING, FOR FIRST 48 HOURS (MIN)

CONCRETE RESTORATION DETAIL 6
NTS C38

THIS SPACE RESERVED

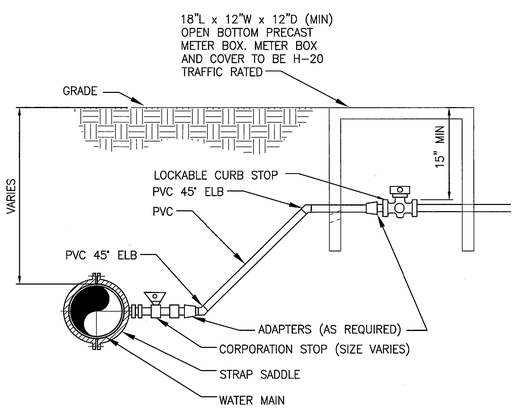


NOTES:
A. TOOL JOINTS SHALL BE LOCATED 5' APART ALONG THE LENGTH OF THE SIDEWALK.

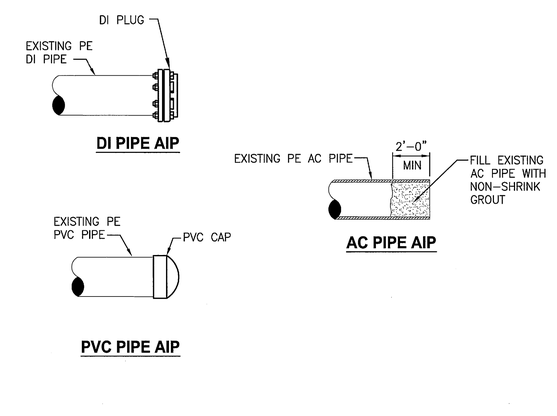
B. CONTROL JOINTS SHALL BE LOCATED AT 10' SPACING ALONG THE LENGTH OF THE SIDEWALK. CONTROL JOINTS SHALL INCLUDE THE CONSTRUCTION OF 1/2" WIDE EXPANSION JOINT MATERIAL FOR THE DEPTH AND WIDTH OF THE SIDEWALK.

C. MATCH EXISTING SIDEWALK DEPTH, WIDTH, JOINT AND CONTROL JOINT LOCATIONS AS REQUIRED.

CONCRETE SIDEWALK RESTORATION DETAIL 7
NTS C38



TYPICAL SERVICE CONNECTION DETAIL 8
NTS C38



CAP DETAIL 9
NTS C38

SYM	ZONE	DESCRIPTION	DATE	APPROVED
B		REVISED DETAIL 1 AND DETAIL 6	03/07/12	
A		ADDED SHEET	12/05/11	

REVISIONS

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SUBMITTED R. BEST	12/05/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	
K. MILLER	

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JOHN F. KENNEDY SPACE CENTER, NASA
KENNEDY SPACE CENTER, FLORIDA

REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5 WATER SYSTEM ADDITIONAL

CIVIL DETAILS

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	B
PROJ. NO. 96968.3		SHEET 47	

C38

FORM 1-11 (3/76)(C/G 3/94)

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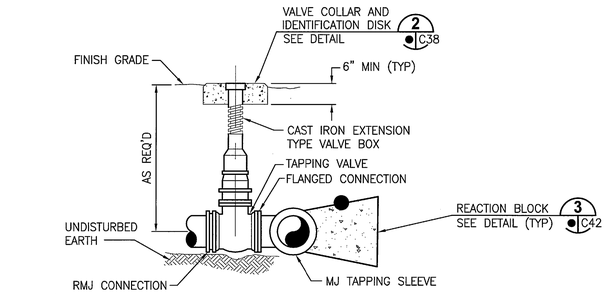
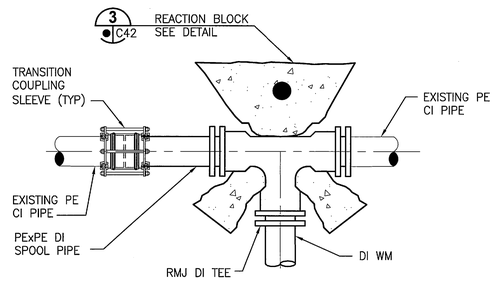
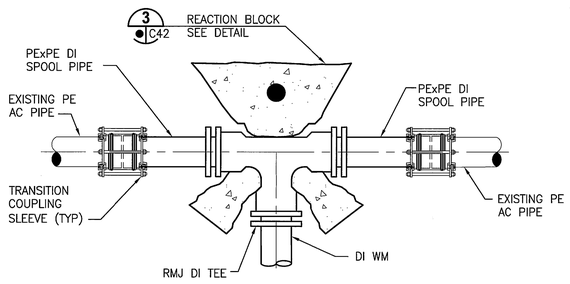


WET TAPPING SLEEVE AND VALVE DETAIL 1 C39
NTS



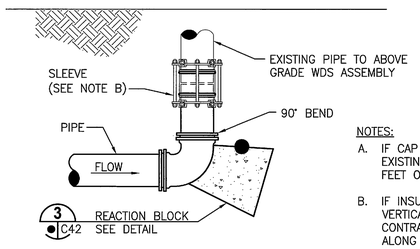
CUT-IN TO EXISTING CI PIPE



CUT-IN TO EXISTING AC PIPE

NOTE:
SPOOL AND SLEEVE PIPING LAYOUT TO BE SIMILAR FOR CUT-IN CROSS. REACTION BLOCK ARRANGEMENT SHALL BE PER DETAIL 3 C42

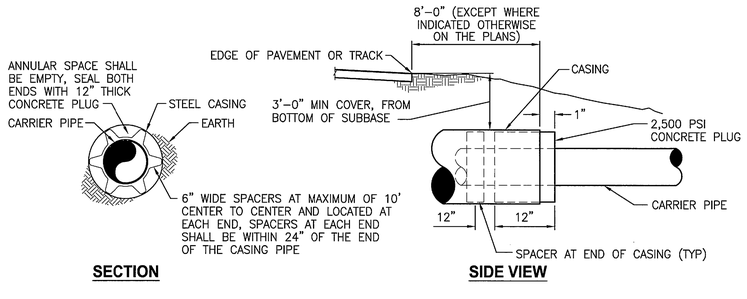
CUT-IN TEE DETAIL 2 C39
NTS



TYPICAL SECTION

NOTES:
A. IF CAP NOT SHOWN ON DRAWINGS, EXISTING PIPE TO BE CAPPED WITHIN 5 FEET OF NEW CONNECTION LOCATION.
B. IF INSUFFICIENT SPACE EXISTS FOR VERTICAL CONNECTION AS SHOWN, CONTRACTOR MAY INSTALL SLEEVE ALONG THE HORIZONTAL LEG OF PIPE, WITH THE CO APPROVAL.
C. FITTINGS SHALL BE RMJ FOR DI PIPE, AND SWJ FOR SCH 80 PVC PIPE.
D. REACTION BLOCK NOT REQUIRED FOR PIPES SMALLER THAN 4".

ASSEMBLY CONNECTION DETAIL FOR CONNECTION TO EXISTING ABOVE GRADE WDS 3 C39
NTS



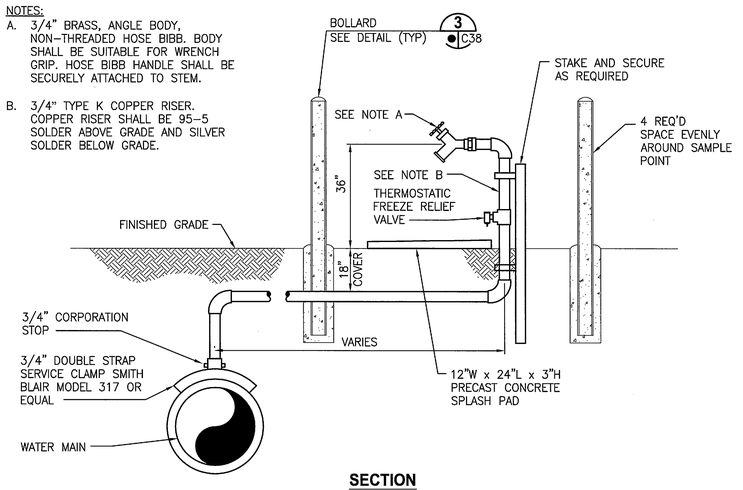
SECTION

SIDE VIEW

CARRIER PIPE NOMINAL DIAMETER	CASING	
	DIA	MIN WALL THICKNESS
6"	20"	0.375"
8"	22	0.375"
10"	24"	0.375"
12"	30"	0.375"

TYPICAL SLEEVED PIPE DETAIL 4 C39
NTS

NOTES:
A. 3/4" BRASS, ANGLE BODY, NON-THREADED HOSE BIBB. BODY SHALL BE SUITABLE FOR WRENCH GRIP. HOSE BIBB HANDLE SHALL BE SECURELY ATTACHED TO STEM.
B. 3/4" TYPE K COPPER RISER. COPPER RISER SHALL BE 95-5 SOLDER ABOVE GRADE AND SILVER SOLDER BELOW GRADE.



SECTION

TYPICAL BACTERIOLOGICAL SAMPLE POINT DETAIL 7 C39
NTS

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
B		REVISED DETAIL 1	03/07/12	MC
A		ADDED SHEET	12/05/11	

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

CIVIL DETAILS

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	B
PROJ. NO. 96968.3		SHEET 48	

C39

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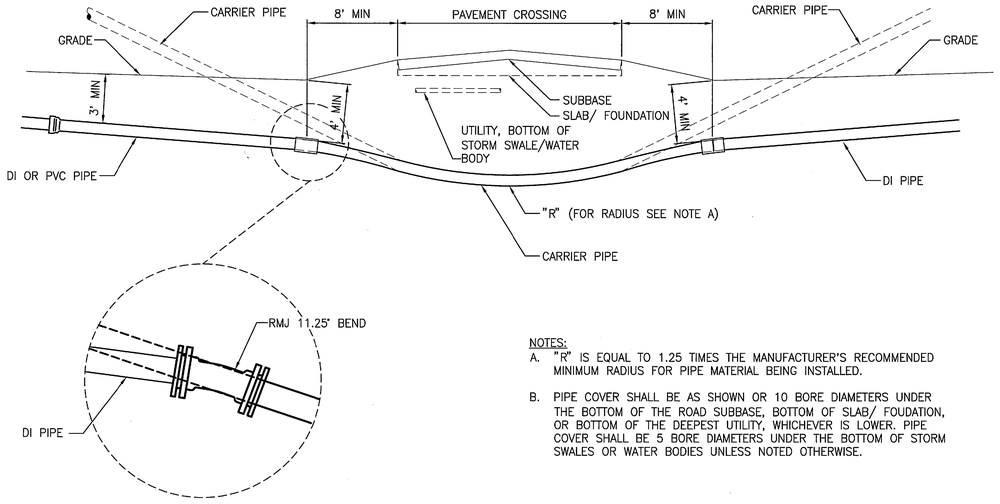
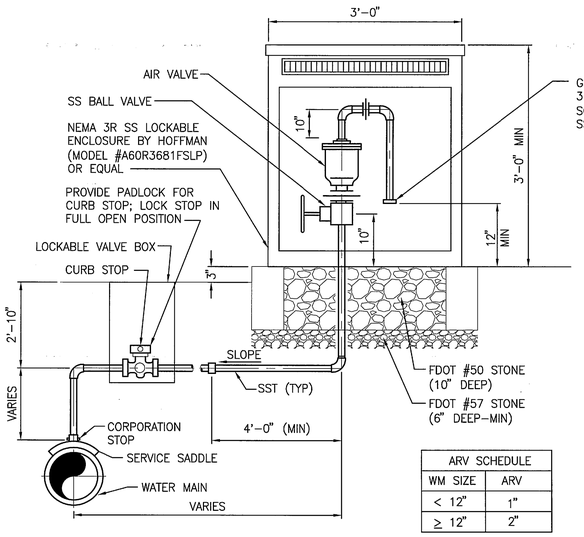


CONNECTION DETAIL (TYP BOTH SIDES)

NOTES:
A. "R" IS EQUAL TO 1.25 TIMES THE MANUFACTURER'S RECOMMENDED MINIMUM RADIUS FOR PIPE MATERIAL BEING INSTALLED.

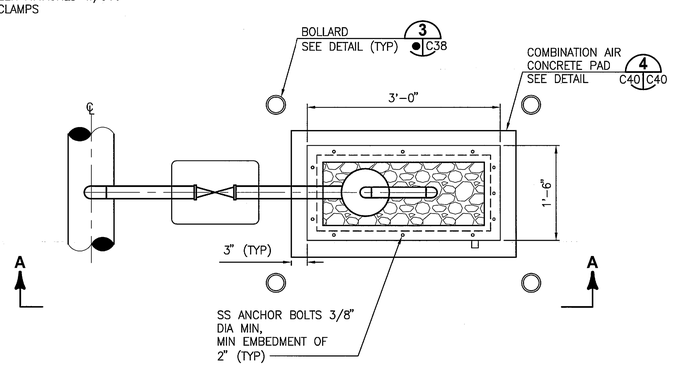
B. PIPE COVER SHALL BE AS SHOWN OR 10 BORE DIAMETERS UNDER THE BOTTOM OF THE ROAD SUBBASE, BOTTOM OF SLAB/ FOUDATION, OR BOTTOM OF THE DEEPEST UTILITY, WHICHEVER IS LOWER. PIPE COVER SHALL BE 5 BORE DIAMETERS UNDER THE BOTTOM OF STORM SWALES OR WATER BODIES UNLESS NOTED OTHERWISE.

TYPICAL HORIZONTAL DIRECTIONAL DRILL DETAIL 1/C40
NTS



ARV SCHEDULE	
WM SIZE	ARV
< 12"	1"
≥ 12"	2"

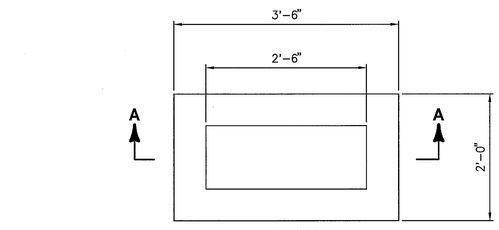
SECTION A-A



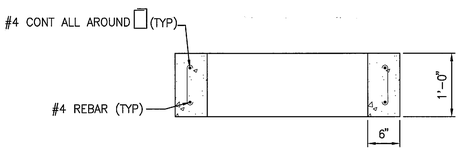
PLAN

NOTE:
A. ALL PIPING, FITTINGS, AND VALVES CONNECTING THE ARV TO THE WM SHALL BE THE SAME SIZE AS THE ARV INLET.

COMBINATION AIR VALVE DETAIL 3/C40
NTS



PLAN



SECTION A-A

COMBINATION AIR VALVE CONCRETE PAD DETAIL 4/C40
NTS

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SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET- INITIAL RELEASE TO EDC	10/31/11	KM

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

CIVIL DETAILS

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 49	

C40

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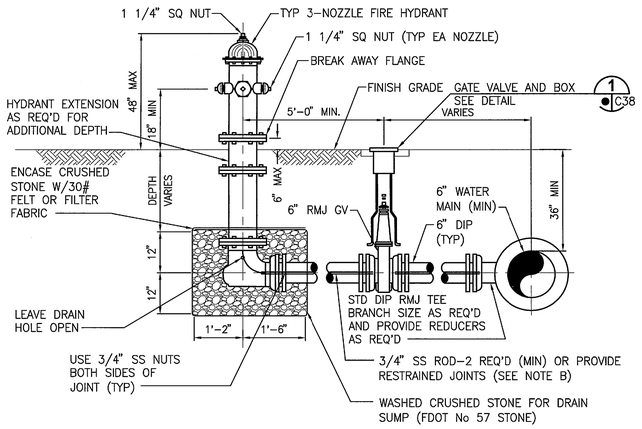


NOTES:
A. FIRE HYDRANT INSTALLATION SHALL BE IN ACCORDANCE WITH NASA-STD 8719.11A SECTION 5.3.2

B. 3/4" STAINLESS STEEL ROD CUT AND THREADED AS REQUIRED, OR PROVIDE RESTRAINED JOINTS.

C. FIRE HYDRANTS SHALL BE INSTALLED BETWEEN 3' AND 7' FROM EDGE OF PAVEMENT.

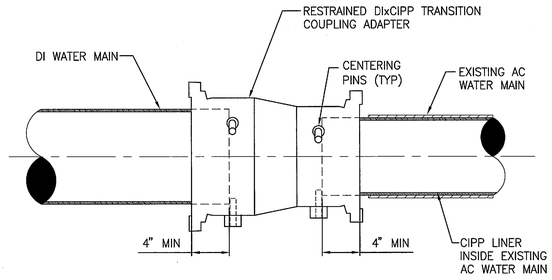
D. TIE RODS, NUTS, WASHERS AND OTHER FASTENERS SHALL BE GALVANIZED OR TYPE 316 STAINLESS STEEL.

E. 4 1/2" PUMPER NOZZLE TO BE PERPENDICULAR TO CENTERLINE OF MAJOR STREET.

F. FIRE HYDRANT ASSEMBLY INCLUDES ALL THAT IS SHOWN INCLUDING DI PIPE TO R/W, DIP TEE AT MAIN, HYDRANT, REDUCERS, VALVE, HYDRANT EXTENSIONS, VALVE EXTENSIONS, ALL PIPING AND MISCELLANEOUS APPURTENANCES REQUIRED FOR A COMPLETE INSTALLATION.

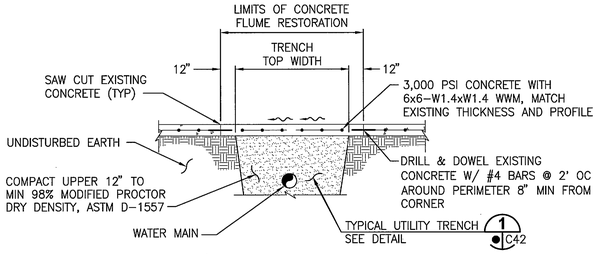
G. FOR FIRE HYDRANTS ALONG PAVED ROADWAYS, INSTALL RAISED PAVEMENT MARKER FOR FIRE HYDRANT IDENTIFICATION. MARKER SHALL BE BLUE AND IN ACCORDANCE WITH FDOT 706. MARKER SHALL BE LOCATED IN THE CENTER OF CLOSEST LANE PERPENDICULAR TO FIRE HYDRANT.

FIRE HYDRANT DETAIL 1
NTS C41



NOTES:
A. TRANSITION COUPLING ADAPTER SHALL MEET OR EXCEED AWWA STANDARD C219.
B. CENTERING RING - ASTM A GRADE 53 STEEL
C. END RINGS - ASTM A GRADE 795 STEEL.
D. GASKETS - EPDM COMPOUNDED FOR WATER AND SEWERAGE, MEETS NSF 61 REQUIREMENTS.
E. BOLTS AND NUTS - TYPE 304 STAINLESS STEEL, ROLLED THREAD AND ANTI GALLING COMPOUND.
F. BRIDGE - TYPE 304 STAINLESS STEEL.
G. COATING - 100% FUSION BONDED EPOXY FOR ENHANCED CORROSION PROTECTION. AVG THICKNESS 14MILS.

DI PIPE TO CIPP CONNECTION DETAIL 2
NTS C27 C41

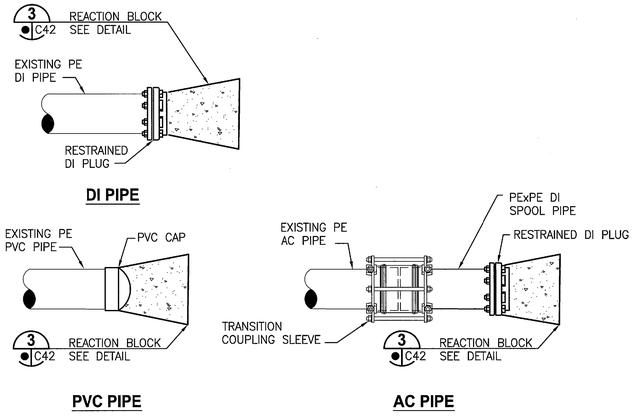


NOTES:
A. MATCH EXISTING FLUME PROFILE.

B. MATCH EXISTING GRADE AND FINISH.

C. REPLACE EXISTING CURBS AS NEEDED PER FDOT INDEX 300.

FLUME RESTORATION DETAIL 3
NTS C41



CAP FOR PIPES REMAINING IN SERVICE 4
NTS C41

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SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET - INITIAL RELEASE TO EDC	12/05/11	KM

REVISIONS

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SIGNATURES	DATE
DRAWN P. SIMMS	12/05/11
CHECKED M. CLARK	12/05/11
SUBMITTED R. BEST	12/05/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	12/7/11
K. MILLER	12/9/11

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL
CIVIL DETAILS

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 50	

C41

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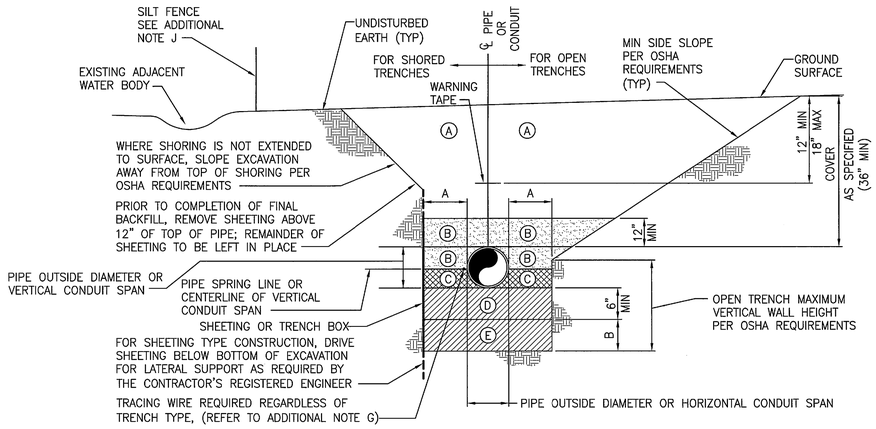


NOMINAL PIPE DIAMETER OR HORIZONTAL CONDUIT SPAN (INCHES)	MINIMUM SIDEWALL CLEARANCE	ADDITIONAL EXCAVATION DEPTH (1)
	A (INCHES)	B (INCHES)
LESS THAN 24	12	12
24 AND GREATER	18	18

(1) REQUIRED WHERE UNSUITABLE MATERIAL IS ENCOUNTERED.

ZONE NO.	ZONE NAME	MATERIAL	COMPACTION
(A)	FINAL BACKFILL	AS SPECIFIED	AT LEAST 95% MODIFIED PROCTOR MAXIMUM DRY DENSITY ASTM D-1557
(B)	INITIAL BACKFILL		
(C)	HAUNCHING		
(D)	BEDDING		
(E)	FOUNDATION		

TRENCH ZONE NOTES:

(A) FINAL BACKFILL SHALL BE INSTALLED IN LIFTS NOT EXCEEDING 6 INCHES, LOOSE MEASUREMENT. REFER TO ADDITIONAL NOTE H.

(B) INITIAL BACKFILL SHALL BE INSTALLED IN LIFTS NOT EXCEEDING 6 INCHES, LOOSE MEASUREMENT. ALL LIFTS SHALL BE COMPACTED BY HAND TAMPING OR AN APPROVED METHOD OF MECHANICAL TAMPING. REFER TO ADDITIONAL NOTE H.

(C) HAUNCHING SHALL BE IN COMPLETELY DEWATERED TRENCHES IN LIFTS NOT EXCEEDING 6 INCHES, LOOSE MEASUREMENT. ALL LIFTS SHALL BE COMPACTED BY HAND TAMPING. HAUNCHING SHALL BE BROUGHT UP EQUALLY ON BOTH SIDES OF THE PIPE.

(D) BEDDING SHALL BE INSTALLED IN COMPLETELY DEWATERED TRENCHES IN LIFTS NOT EXCEEDING 6 INCHES, LOOSE MEASUREMENT, AND SHALL BE COMPACTED BY HAND OR MECHANICAL TAMPING. PROPERLY SHAPED BELL HOLES SHALL BE EXCAVATED IN THE BEDDING TO PERMIT ASSEMBLY OF THE PIPE. REFER TO ADDITIONAL NOTE H.

NATIVE, UNDISTURBED MATERIAL IN COMPLETELY DEWATERED TRENCHES MEETING THE COMPACTION AND MATERIAL REQUIREMENTS FOR COMPACTED BEDDING MATERIAL NEED NOT BE REPLACED OR REWORKED, EXCEPT FOR SHAPING OF THE BELL HOLES, AND WHERE REFILL IS REQUIRED.

(E) FOUNDATION SHALL BE REQUIRED WHERE UNSUITABLE MATERIAL IS ENCOUNTERED. FOUNDATION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS FOR BEDDING. REFER TO ADDITIONAL NOTE H.

ADDITIONAL NOTES:

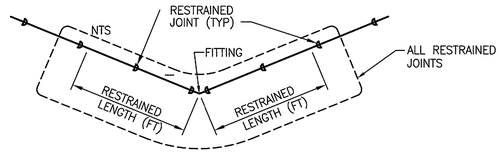
F. FOR TRENCHES IN VEHICULAR TRAFFIC AREAS OR BENEATH SURFACE IMPROVEMENTS (EG, SLAB, ETC.) SEE CONTRACT SPECIFICATIONS FOR ADDITIONAL COMPACTION REQUIREMENTS.

G. TRACING WIRE SHALL BE INSTALLED ON THE SIDE OF THE PIPE AND ATTACHED TO THE PIPE EVERY 10' W/ A NYLON WIRE TIE. IF THE WIRE IS DAMAGED OR NEEDS TO BE EXTENDED A 3M WATERPROOF TYPE UF SPLICE, OR APPROVED EQUAL, SHALL BE INSTALLED TO REPAIR THE WIRE. THE ENDS OF THE TRACING WIRE SHALL BE BROUGHT UP IN EVERY VALVE BOX ON THE LINE AND AT THE HYDRANT VALVES. THERE SHALL BE A MINIMUM COIL OF 3' LEFT UNDER THE VALVE BOX COVER. THE WIRE SHALL BE TESTED TO VERIFY CONDUCTIVITY.

H. ALTERNATIVE LIFT THICKNESSES, NOT EXCEEDING 12 INCHES LOOSE MEASUREMENT, ARE ACCEPTABLE IN TRENCH ZONES 1, 2, 4, AND 5 PROVIDED 1) THE LIFT THICKNESS DOES NOT EXCEED THE MAXIMUM VALUE RECOMMENDED IN WRITING BY THE APPLICABLE PIPE MANUFACTURER AND 2) FIELD TEST RESULTS CONFIRM THAT THE SPECIFIED COMPACTION REQUIREMENTS ARE BEING MET.

J. CONSTRUCT STORMWATER POLLUTION PREVENTION ITEMS ADJACENT TO ALL SOIL DISTURBANCES ACCORDING TO DETAILS ON EN3. PLACE ON DOWN SLOPE TO INTERCEPT SEDIMENT AND PROTECT NEARBY WATER BODIES AND UNDISTURBED AREAS. MAINTAIN STORMWATER POLLUTION PREVENTION ITEMS IN GOOD WORKING ORDER UNTIL ADEQUATE COVER MATERIALS ARE ESTABLISHED. IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT. BUILT UP SEDIMENT WILL BE REMOVED FROM STAKED SILT FENCE AND STAKED TURBIDITY BARRIERS WHEN IT HAS REACHED ONE-HALF THE HEIGHT OF THE SILT FENCE OR BARRIER.

TYPICAL UTILITY TRENCH DETAIL (1 / C42)
NTS



PIPE SIZE	FITTING								
	90° BEND	45° BEND	45° BEND (VERT)	22 1/2° BEND	22 1/2° BEND (VERT)	11 1/4° BEND	11 1/4° BEND (VERT)	VALVE, DEAD END OR REDUCER	TEE (BRANCH)
24"	89	37	113	18	36	9	18	273	273
16"	65	27	80	13	26	7	13	193	193
14"	58	24	71	12	23	6	12	172	172
12"	51	22	63	11	20	5	10	151	151
10"	44	18	53	9	17	5	9	128	128
8"	37	16	45	8	14	4	7	107	107
6"	29	12	34	6	11	3	6	82	82
4" (PVC)	17	8	16	4	8	2	4	38	37

NOTES:

A. RESTRAINED LENGTHS ARE IN FEET AND ARE FOR POLYETHYLENE WRAPPED DUCTILE IRON PIPE UNLESS OTHERWISE NOTED.

B. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION REGARDING RESTRAINED JOINTS.

C. THE SCHEDULE SHOWN IS FOR THE FOLLOWING SERVICE CONDITIONS 150 PSIG TEST PRESSURE; POORLY GRADED COARSE SAND; 36 INCHES COVER, TYPE 3 TRENCH CONDITIONS; AND 1.5 SAFETY FACTOR.

D. RESTRAINED LENGTHS SHOWN IN TABLE ARE IN FEET AND ARE MINIMUM LENGTHS REQUIRED IN EACH DIRECTION FROM FITTINGS OR VALVES.

E. ALL PIPE SHALL BE RESTRAINED TO THE NEXT JOINT BEYOND THE RESTRAINED LENGTH GIVEN.

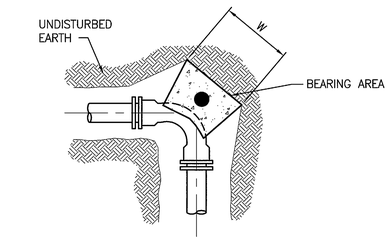
F. RESTRAINED LENGTH FOR REDUCERS SHALL BE BASED ON THE SIZE OF THE LARGEST END OF THE REDUCER.

G. CONTRACTOR SHALL HAVE FLORIDA LICENSED PROFESSIONAL ENGINEER VERIFY ALL THE RESTRAINED LENGTHS SHOWN IN THE TABLE ABOVE ARE ADEQUATE FOR ALL VARYING SOIL CONDITIONS ON THE PROJECT. THE CONTRACTOR'S ENGINEER SHALL PROVIDE A SIGNED AND SEALED STATEMENT THAT ALL PIPING WAS INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE TABLE ABOVE OR IN ACCORDANCE WITH THE FINDINGS OF THE CONTRACTOR'S PROFESSIONAL ENGINEER, WHICHEVER ARE MORE STRINGENT. CONTRACTOR'S COST FOR MEETING THESE REQUIREMENTS SHALL BE INCLUDED IN THEIR BID.

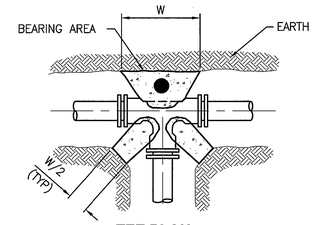
H. FOR CONNECTION OF PIPING TO EXISTING PIPING, WHEN THE REQUIRED RESTRAINED JOINT PIPE LENGTHS TO PREVENT PIPE MOVEMENT CANNOT BE ATTAINED IN ACCORDANCE WITH RESTRAINED JOINT SCHEDULE, THE APPROPRIATE TEE, VALVES, LINESTOPS, BEND AND/OR CROSS FITTING(S) SHALL BE FULLY RESTRAINED IN ACCORDANCE WITH THRUST BLOCK DETAIL TO PREVENT PIPE MOVEMENT. (3 / C42) (1 / C44)

J. WHERE HDD CONNECT TO PUSH-ON JOINT PIPING, THIS CONNECTION SHALL BE TREATED AS DEAD END W/ RESPECT TO THE RESTRAINED JOINT SCHEDULE.

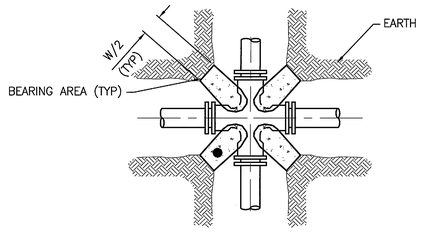
RESTRAINED JOINT SCHEDULE (2 / C42)
NTS



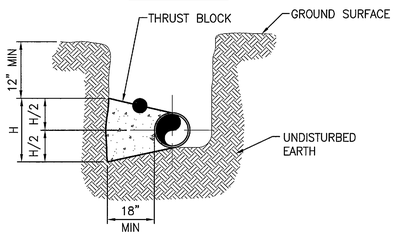
BENDS PLAN



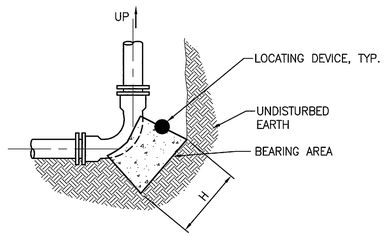
TEE PLAN



CROSS PLAN



ILLUSTRATIVE SECTION



BENDS IN SECTION

REACTION BLOCK BEARING AREA DIMENSIONS					
FITTING	11 1/4° BEND	22 1/2° BEND	45° BEND	90° BEND	TEE/CROSS/ PLUGS/CAPS
SIZE (in)	H x W (in)	H x W (in)	H x W (in)	H x W (in)	H x W (in)
4	11x11	15x15	20x20	28x28	23x23
6	15x15	21x21	29x29	40x40	33x33
8	20x20	27x27	38x38	52x52	44x44
10	24x24	33x33	47x47	63x63	53x53
12	28x28	40x40	55x55	75x75	63x63
14	33x33	46x46	64x64	87x87	73x73
16	37x37	52x52	73x73	99x99	83x83
18	42x42	58x58	82x82	111x111	93x93
24	55x55	77x77	108x108	146x146	123x123

(B)

REACTION BLOCK NOTES

A. BASED ON 150 PSI PRESSURE & 1500 PSF SOIL BEARING VALUE, 2.0 SAFETY FACTOR, WATER TABLE BELOW THE THRUST BLOCK, VERTICAL BLOCK FACE, AND A MINIMUM THICKNESS OF 18 INCHES. (B)

B. BEARING AREAS FOR PLUGS SHALL BE THE SAME AS FOR TEES.

C. FORM REACTION BLOCKS TO KEEP CONCRETE CLEAR OF JOINTS AND BOLTS.

D. REQUIRED REACTION BLOCK BEARING AREA SHALL BE PLACED AGAINST UNDISTURBED MATERIAL. WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE ALL LOOSE MATERIAL AND EXTEND REACTION BLOCK TO UNDISTURBED MATERIAL.

E. PLACE PRESSURE TREATED WOOD BOARDS IN FRONT OF PLUG, AT TEE, CROSS OR END OF PIPE BEFORE POURING CONCRETE REACTION BLOCK.

F. BACKFILL SHALL CONSIST ENTIRELY OF CLEAN SAND AND ROCK FRAGMENTS. ANY MUCK ENCOUNTERED SHALL BE REPLACED WITH BACKFILL COMPACTED TO 95% MODIFIED PROCTOR MAXIMUM DRY DENSITY, ASTM D1557.

G. CONTRACTOR TO OBTAIN LOCATING DEVICES AND TO EMBED THE DEVICE INTO THE TOP SURFACE ON THE THRUST BLOCK SUCH THAT HALF THE DEVICE IS EXPOSED AND THE LOCATION IS AT THE CENTROID OF THE THRUST BLOCK TOP SURFACE AREA. THE LOCATING DEVICES SHALL BE OMNI MARKER MODEL 161 WATER MARKER OR APPROVED EQUAL.

TYPICAL REACTION BLOCK (THRUST BLOCK) DETAILS (3 / C42)
NTS

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
B		REVISED DETAIL 3	03/07/12	
A		ADDED SHEET	12/05/11	

REVISIONS

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

CIVIL DETAILS

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	B
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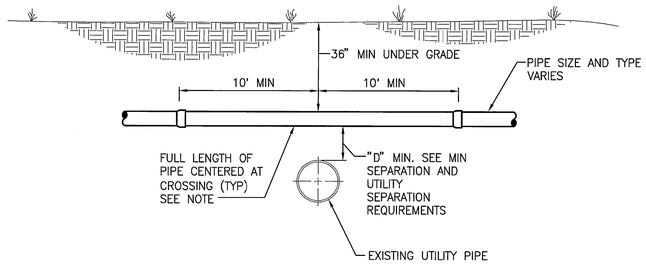
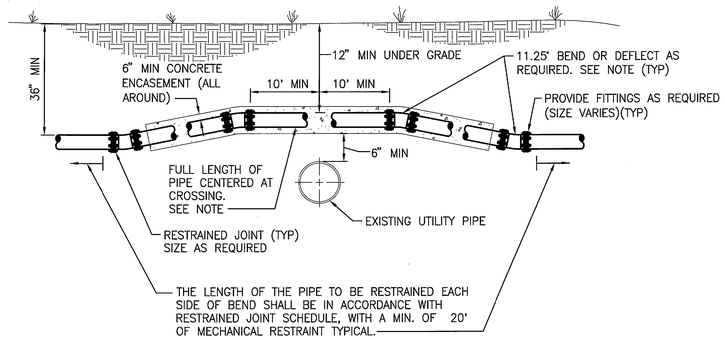
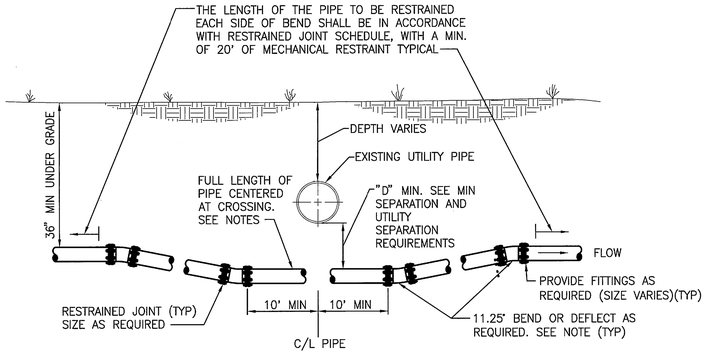


CROSSING OVER UTILITIES



NOTE: ENCASEMENT IS REQUIRED IF DEPTH FROM GRADE TO TOP OF PIPE IS LESS THAN 24 INCHES.

CROSSING OVER UTILITIES (ENCASED)



CROSSING UNDER UTILITIES

UTILITY SEPARATION REQUIREMENTS

A. IT IS REQUIRED THAT "WATER MAINS" BE INSTALLED, CLEANED, DISINFECTED AND HAVE A SATISFACTORY BACTERIOLOGICAL SURVEY PERFORMED IN ACCORDANCE WITH THE LATEST APPLICABLE AWWA STANDARDS AND CHAPTER 62–555, F.A.C. STANDARDS. FOR THE PURPOSE OF THIS SECTION, THE PHRASE "WATER MAINS" SHALL MEAN MAINS, INCLUDING TREATMENT PLANT PROCESS PIPING, CONVEYING EITHER RAW, PARTIALLY TREATED, OR FINISHED DRINKING WATER; FIRE HYDRANT LEADS; AND SERVICE LINES THAT HAVE AN INSIDE DIAMETER OF THREE (3) INCHES OR GREATER. IN ADDITION, THE PHRASE "REGULATED PUBLIC ACCESS RECLAIMED WATER" REFERS TO THE WATER REGULATED UNDER PART III OF CHAPTER 62.210, F.A.C.

B. NEW, RELOCATED OR EXISTING UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE (3) FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING REGULATED PUBLIC ACCESS RECLAIMED WATER.

C. NEW OR RELOCATED, UNDERGROUND SEWER/WATER MAINS SHALL BE LOCATED TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX (6) FEET, AND PREFERABLY TEN (10) FEET, BETWEEN THE OUTSIDE OF THE SEWER/WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED WATER/GRAVITY OR PRESSURE–TYPE SANITARY SEWER, NON–REGULATED RECLAIMED WATER, OR WASTEWATER FORCE MAIN. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY–TYPE SANITARY SEWERS MAY BE REDUCED TO THREE (3) FEET WHERE THE BOTTOM OF THE WATER MAIN IS LOCATED AT LEAST SIX (6) INCHES ABOVE THE TOP OF THE SEWER (SPECIAL CASE).

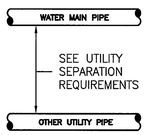
D. NEW, RELOCATED OR EXISTING UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY OR VACUUM–TYPE SANITARY SEWER, OR STORM SEWER SHALL BE LOCATED SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX (6) INCHES, AND PREFERABLE TWELVE (12) INCHES, ABOVE OR AT LEAST TWELVE (12) INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

E. NEW, RELOCATED OR EXISTING UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE–TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LOCATED SO THE OUTSIDE OF THE WATER MAIN IS A LEAST TWELVE (12) INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

F. AT THE UTILITY CROSSINGS DESCRIBED IN NOTES D AND E ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE (3) FEET FROM ALL JOINTS IN VACUUM–TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING REGULATED PUBLIC ACCESS RECLAIMED WATER, AND AT LEAST SIX (6) FEET FROM ALL JOINTS IN GRAVITY OR PRESSURE–TYPE SANITARY SEWERS, NON–REGULATED RECLAIMED WATER, OR WASTEWATER FORCE MAINS.

G. NEW, RELOCATED OR EXISTING FIRE HYDRANTS SHALL BE LOCATED SO THAT THE HYDRANTS ARE AT LEAST THREE (3) FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING REGULATED PUBLIC ACCESS RECLAIMED WATER; AT LEAST THREE (3) FEET, AND PREFERABLY TEN (10) FEET, FROM ANY EXISTING OR PROPOSED VACUUM–TYPE SANITARY SEWER; AT LEAST SIX (6) FEET, AND PREFERABLY TEN (10) FEET, FROM ANY EXISTING OR PROPOSED GRAVITY OR PRESSURE–TYPE SANITARY SEWER OR WASTEWATER FORCE MAIN.

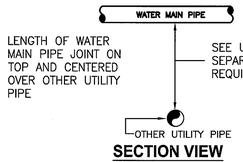
H. IF THE CONTRACTOR CAN NOT MEET THE MINIMUM SEPARATION REQUIREMENTS HE/SHE MUST NOTIFY THE CONTRACTING OFFICER. THE CONTRACTING OFFICER IS REQUIRED TO DISCUSS MITIGATION WITH FDEP AND OBTAIN FDEP APPROVAL PRIOR TO INSTALLING ANY UTILITIES NOT IN COMPLIANCE WITH FDEP MINIMUM SEPARATION REQUIREMENTS.



PLAN VIEW

OTHER PIPING TYPE	MINIMUM HORIZONTAL SEPARATION (FEET) SEE NOTE C
1. GRAVITY SANITARY SEWER	6
2. GRAVITY SANITARY SEWER (SPECIAL CASE, NOTE #3)	3
3. SEWAGE FORCE MAIN	6
4. GRAVITY STORM SEWER	3
5. RECLAIMED WATER (PUBLIC ACCESS)	3
6. ELECTRIC	3
7. OTHER	6 B

MINIMUM HORIZONTAL SEPARATION REQUIREMENTS



SECTION VIEW

OTHER PIPING TYPE	"D" – MINIMUM VERTICAL SEPARATION (INCHES) SEE NOTE D
1. GRAVITY SANITARY SEWER	6
2. SEWAGE FORCE MAIN	12
3. GRAVITY STORM SEWER	6
4. RECLAIMED WATER	12
5. ELECTRIC	6
6. OTHER	12 B

NOTE:

J. IF THE WATER MAIN IS BELOW THE SEWER PIPE, THEN A MINIMUM OF 12" VERTICAL SEPARATION IS REQUIRED.

K. THE CONTRACTOR MAY CHOOSE TO DEFLECT THE PROPOSED PIPE UNDER OR OVER THE EXISTING UTILITY PIPE IN LIEU OF USING FITTINGS AS LONG AS THE MINIMUM DISTANCE "D" IS MAINTAINED AND THE AMOUNT OF PIPE DEFLECTION MEETS THE REQUIREMENTS OF THE SPECIFICATIONS.

MINIMUM VERTICAL SEPARATION REQUIREMENTS

TYPICAL UTILITY CONFLICT DETAIL 1/C43

NTS

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SYM	ZONE	DESCRIPTION	DATE	APPROVED
B		REVISED DETAIL 1	03/07/12	
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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

CIVIL DETAILS

FILE NO.	SIZE	DWG. NO.	REV
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PROJ. NO. 96968.3		SHEET 52	

C43

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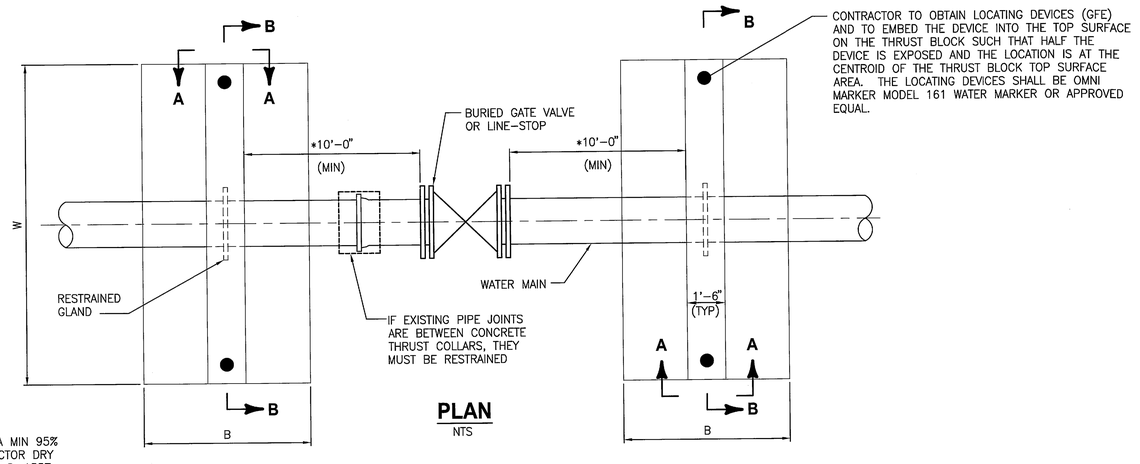
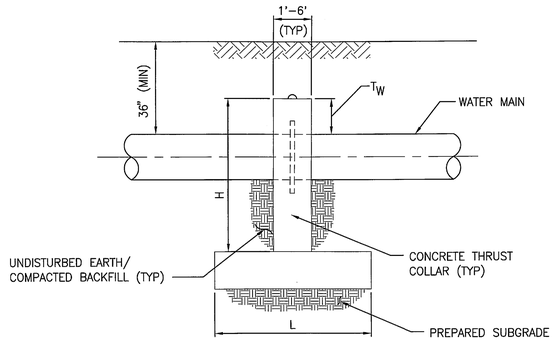


PLAN
NTS

NOTE:
* BASED ON A MIN 95% MODIFIED PROCTOR DRY DENSITY, ASTM D-1557



SECTION A-A
NTS

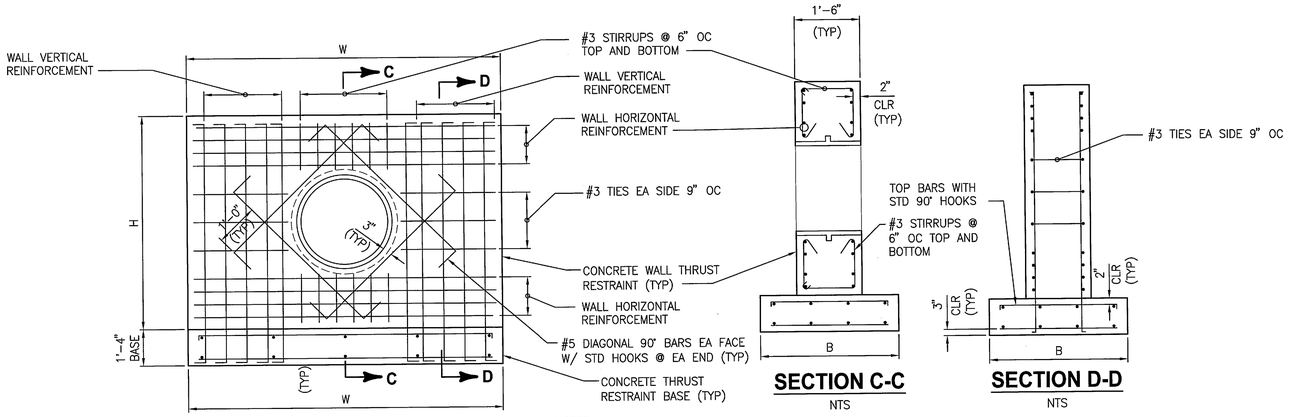
NOTE:

A. THIS THRUST RESTRAINT IS REQUIRED WHEN THE REQUIRED RESTRAINED JOINT PIPE LENGTHS TO PREVENT PIPE MOVEMENT CANNOT BE ATTAINED IN ACCORDANCE WITH RESTRAINED JOINT SCHEDULE, THE APPROPRIATE VALVES OR LINESTOPS SHALL BE FULLY RESTRAINED IN ACCORDANCE WITH THRUST BLOCK DETAIL TO PREVENT PIPE MOVEMENT. (1/C44)

B. THRUST COLLAR BLOCKS ARE DESIGNED FOR LATERAL SUPPORT ONLY. ASSUMED PRESSURE OF FLOW = 100 PSI, SOIL WEIGHT = 95 PCF, AND ANGLE OF SOIL INTERNAL FRICTION = 30°.

C. COMPRESSIVE STRENGTH BASED ON AGE OF 28 DAYS AND SHALL NOT BE LESS THAN 4,000 PSI.

D. PREPARED SUBGRADE SHALL BE BASED ON THE RECOMMENDATION OF THE GEOTECHNICAL ENGINEER. COMPACTED BACKFILL SHALL BE BASED ON A MINIMUM OF 95% MODIFIED PROCTOR DRY DENSITY, ASTM D1557.



SECTION B-B
NTS

SECTION C-C
NTS

SECTION D-D
NTS

NOTES:
A. ACTUAL INSTALLATION LOCATIONS SHALL BE AS DIRECTED BY THE ENGINEER.
B. PIPE SHALL BE CENTERED AND PLACED PERPENDICULAR TO THRUST BLOCK.

PIPE SUPPORT THRUST BLOCK SCHEDULE

PIPE SIZE (IN)	TOP OF WALL T_W (IN)	WALL				BASE			
		HEIGHT H (FT)	WIDTH W (FT)	REINFORCEMENT		LENGTH W (FT)	WIDTH B (FT)	REINFORCEMENT	
				VERTICAL	HORIZONTAL			LONGITUDINAL	TRANSVERSE
4	18	3'-6"	2'-6"	(3)-#4 EACH FACE	(4)-#4 EACH FACE	N/A	N/A	N/A	N/A
6	19	3'-10"	2'-8"	(3)-#4 EACH FACE	(4)-#4 EACH FACE	N/A	N/A	N/A	N/A
8	20	4'-2"	2'-10"	(3)-#4 EACH FACE	(4)-#4 EACH FACE	N/A	N/A	N/A	N/A
10	21	4'-6"	3'-10"	(4)-#4 EACH FACE	(4)-#4 EACH FACE	N/A	N/A	N/A	N/A
12	22	4'-10"	4'-10"	(4)-#5 EACH FACE	(5)-#5 EACH FACE	N/A	N/A	N/A	N/A
14	23	5'-2"	6'-0"	(5)-#5 EACH FACE	(5)-#5 EACH FACE	N/A	N/A	N/A	N/A
16	24	5'-6"	7'-2"	(6)-#5 EACH FACE	(5)-#5 EACH FACE	5'-6"	4'-6"	(5)-#5 T&B	#5 @ 8" OC T&B
18	25	5'-10"	8'-4"	(6)-#5 EACH FACE	(5)-#5 EACH FACE	5'-6"	5'-0"	(5)-#5 T&B	#5 @ 8" OC T&B

TYPICAL THRUST COLLAR DETAIL (1/C44)
NTS

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET - INITIAL RELEASE TO EDC	12/05/11	KM

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SIGNATURES	DATE
DRAWN J. ALLEN	12/05/11
CHECKED M. CLARK	12/05/11
SUBMITTED R. BEST	12/05/11
ST of LICENSURE: FL LICENSE NO: 69875	
APPROVED M. CLARK	12/05/11
K. MILLER	12/5/11

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

CIVIL DETAILS

FILE NO.	SIZE	DWG. NO.	REV
	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 53	

C44

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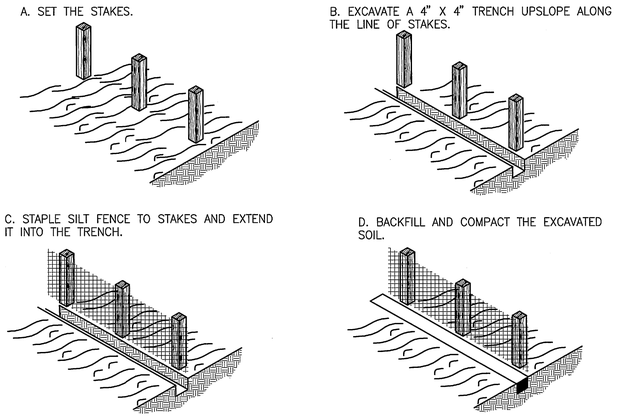
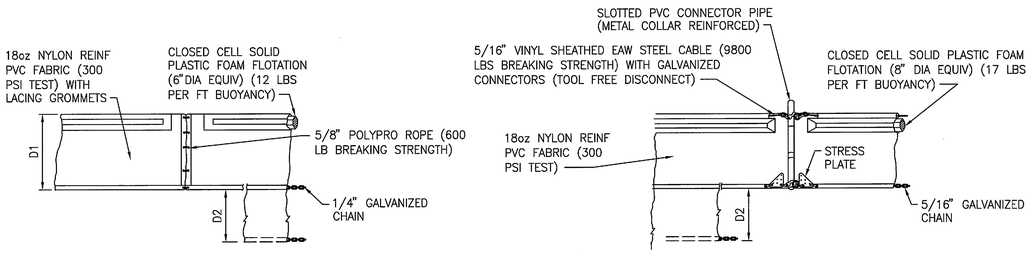


CONSTRUCTION OF A SILT FENCE DETAIL 1
NTS — C45



TYPE 1 **TYPE 2**

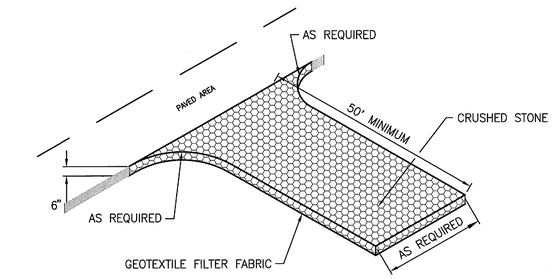
D1 =5' STD (SINGLE PANEL FOR DEPTHS 5' OR LESS)

D2 =5' STD (ADDITIONAL PANEL FOR DEPTHS 5')

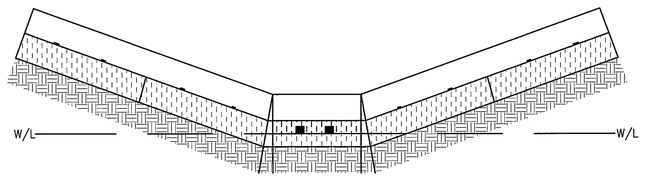
CURTAIN TO REACH BOTTOM UP TO DEPTHS OF 10 FEET. TWO (2) PANELS TO BE USED FOR DEPTHS GREATER THAN 10 FEET UNLESS SPECIAL DEPTH CURTAINS SPECIFICALLY CALL FOR IN THE PLANS OR AS DETERMINED BY THE ENGINEER.

NOTICE: COMPONENTS OF TYPES 1 AND 2 MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES 1 AND 2 SHALL BE AS APPROVED BY THE ENGINEER.

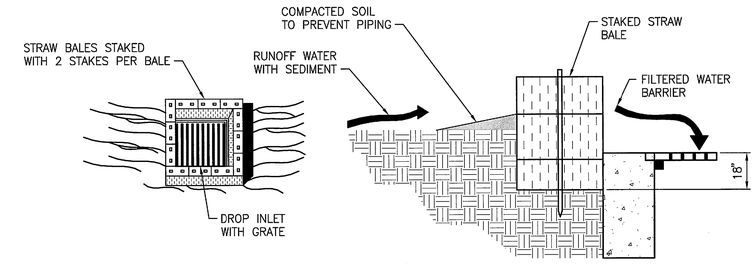
TYPICAL FLOATING TURBIDITY BARRIER DETAIL 2
NTS — C45



STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL 3
NTS — C45

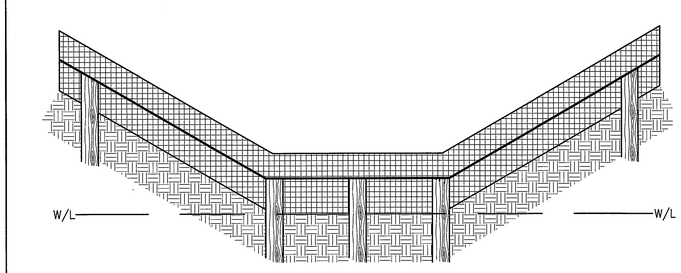


PROPER PLACEMENT OF A STRAW BALE IN A DRAINAGE WAY DETAIL 4
NTS — C45

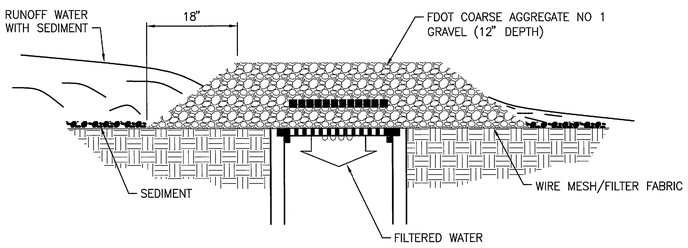


SPECIFIC APPLICATION
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5%) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 5.3 CFS) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

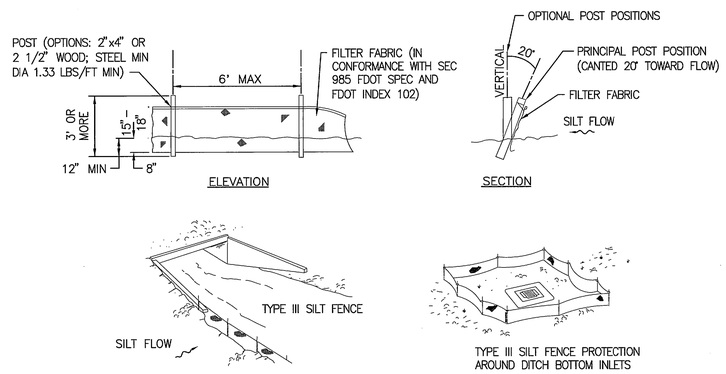
STRAW BALE DROP INLET SEDIMENT FILTER DETAIL 5
NTS — C45



PROPER PLACEMENT OF A SILT FENCE IN A DRAINAGE WAY DETAIL 6
NTS — C45



GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER DETAIL 7
NTS — C45



TYPE III SILT FENCE

NOTES:
A. DO NOT DEPLOY IN A MANNER THAT SILT FENCES WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.

B. WHEN JOINING BUTT ENDS OF SILT FENCE FABRIC; JOIN FABRIC ENDS, WRAP AROUND A POST 360-DEGREES, AND SET POST.

FDOT INDEX NUMBER 102 SILT FENCE DETAIL 8
NTS — C45

THIS SPACE RESERVED

SYM	ZONE	DESCRIPTION	DATE	APPROVED
A		ADDED SHEET- INITIAL RELEASE TO EDL	12/05/11	

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REVITALIZE WATER & WASTEWATER SYSTEMS - VOLUME 4 OF 5
WATER SYSTEM ADDITIONAL

STORMWATER POLLUTION PREVENTION DETAILS

FILE NO.	SIZE	DWG. NO.	REV
C45	F	79K38877 VOL 4	A
PROJ. NO. 96968.3		SHEET 54 OF 54	