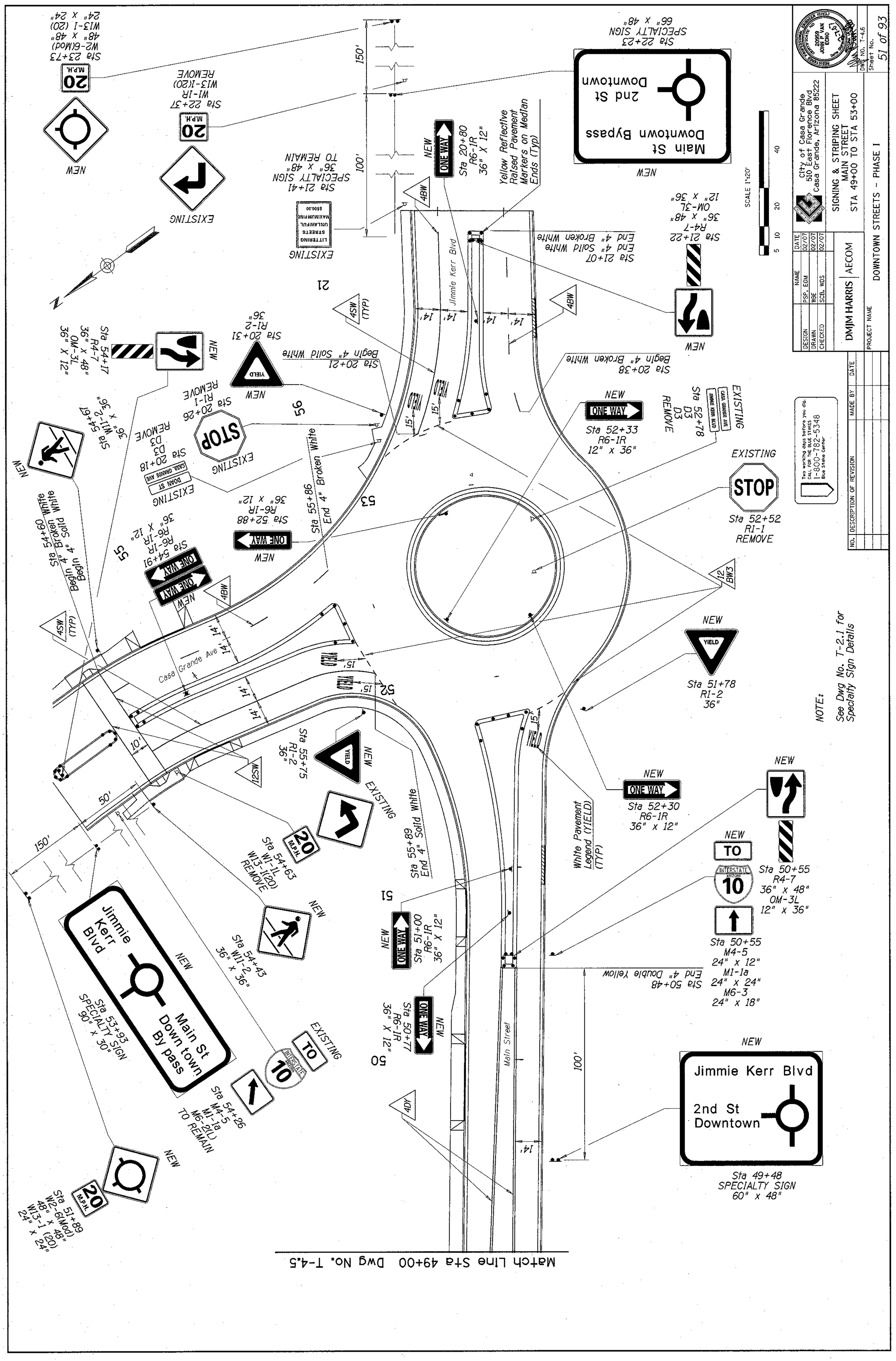


REGISTERED PROFESSIONAL ENGINEER (CIVIL)
CERTIFICATE NO. 20959
JOHN P VAN ECHO
STATE OF ARIZONA

DWG NO. T-4.6
Sheet No. 51 of 93

City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

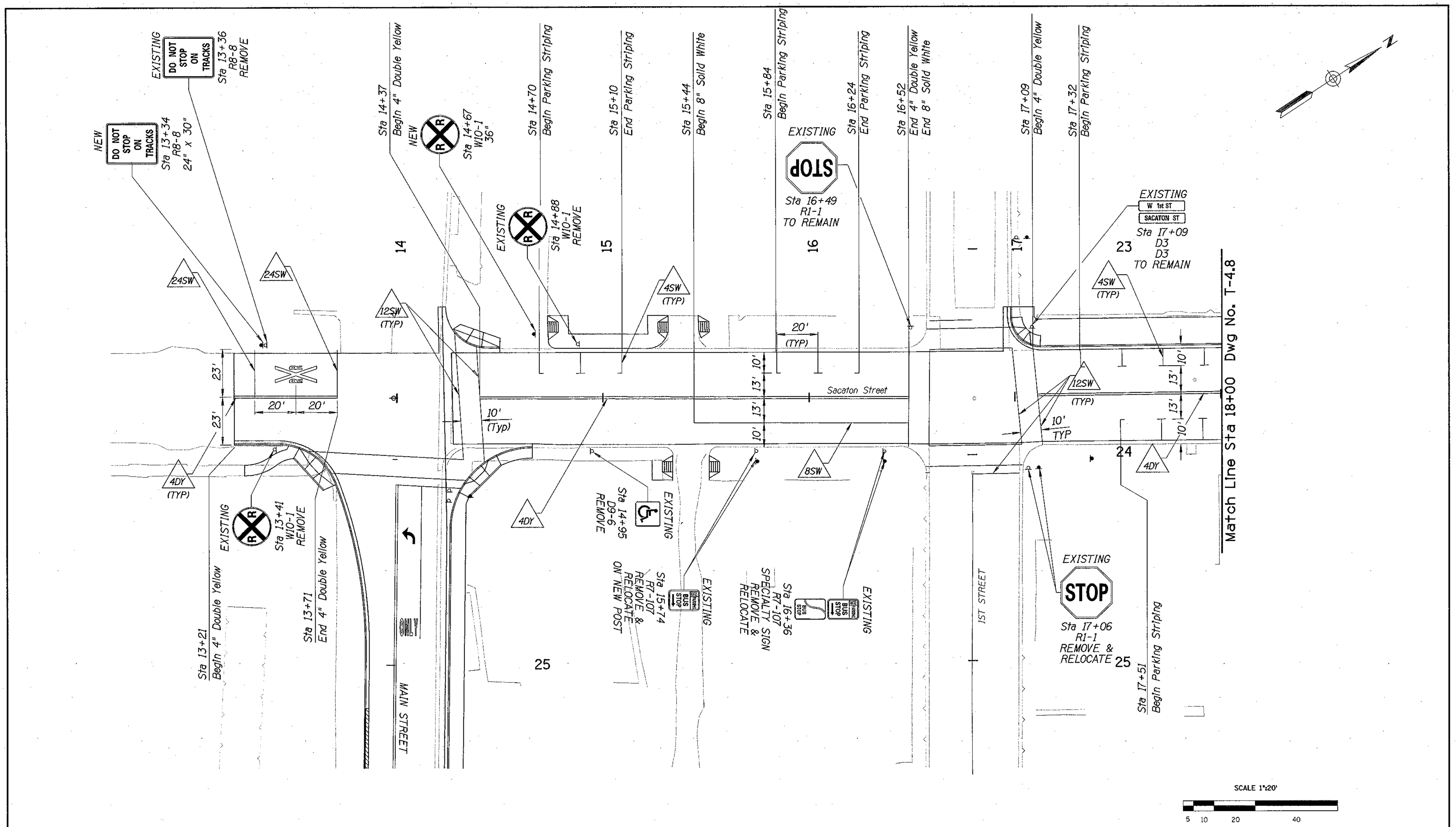
SIGNING & STRIPING SHEET
MAIN STREET
STA 49+00 TO STA 53+00

	NAME	DATE
DESIGN	PSP, EGM	02/07
DRAWN	WBE	02/07
CHECKED	SCB, WDS	02/07

DMJM HARRIS | AECOM

PROJECT NAME
DOWNTOWN STREETS - PHASE I

NO.	DESCRIPTION OF REVISION	MADE BY	DATE



NOTE:
1. See Dwg No. T-4.8 for Parking Striping Layout.
2. See Dwg No. T-4.1 for Main Street Signing & Striping.

Two working days before you dig.
CALL FOR THE BLUE STAKES
1-800-782-5348
Blue Stake Center

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

	NAME	DATE
DESIGN	PSP, EGM	02/07
DRAWN	WBE	02/07
CHECKED	SCB, WDS	02/07

DMJM HARRIS | AECOM

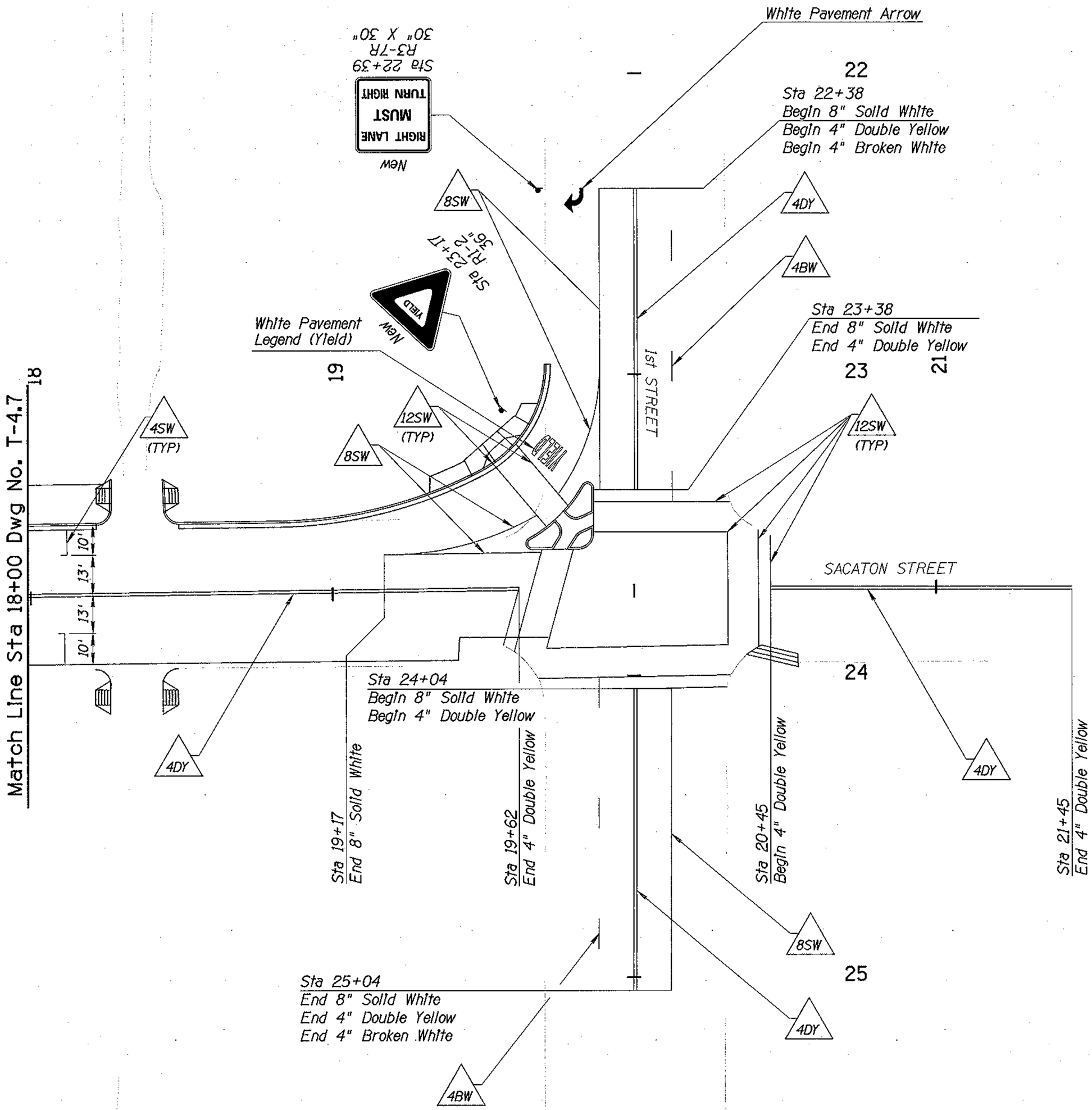
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

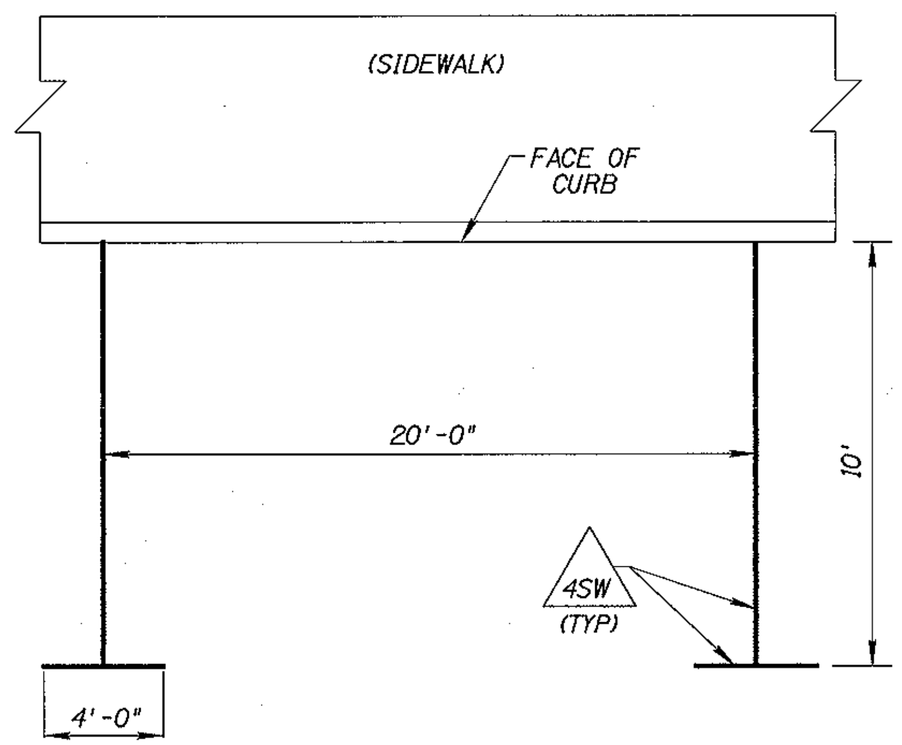
SIGNING & STRIPING SHEET
SACATON STREET
STA 13+95.81 TO STA 18+00

PROJECT NAME
DOWNTOWN STREETS - PHASE I

REGISTERED PROFESSIONAL ENGINEER (CIVIL)
CERTIFICATE NO. 20959
JOHN P VAN ECHO
Date Signed 2-7-07
ARIZONA U.S.A.

DWG NO. T-4.7
Sheet No.
52 of 93





STANDARD PARRALLEL PARKING SPACE
(NO SCALE)

SCALE 1":20'

5 10 20 40

Two working days before you dig.
CALL FOR THE BLUE STAKES
1-800-782-5348
Blue Stake Center

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

	NAME	DATE
DESIGN	PSP, EGM	02/07
DRAWN	WBE	02/07
CHECKED	SCB, WDS	02/07

City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

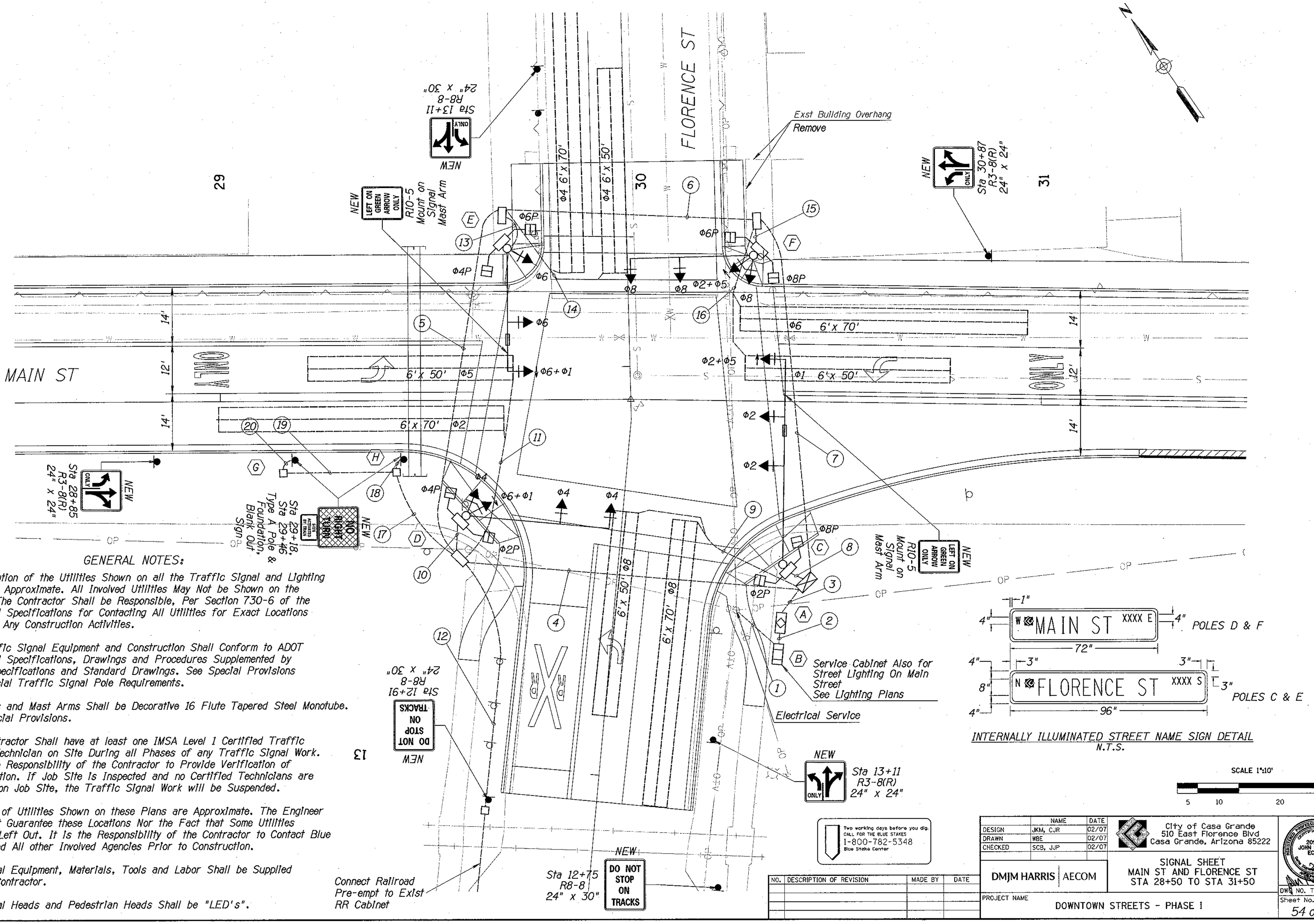
DMJM HARRIS | AECOM

SIGNING & STRIPING SHEET
SACATON STREET
STA 18+00 TO STA 23+00

PROJECT NAME
DOWNTOWN STREETS - PHASE I

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO. 20959
JOHN P VAN ECHO
DATE SIGNED 3-7-07
STATE OF ARIZONA

DWG NO. T-4.8
Sheet No.
53 of 93



GENERAL NOTES:

1. The Location of the Utilities Shown on all the Traffic Signal and Lighting Plans Is Approximate. All Involved Utilities May Not be Shown on the Plans. The Contractor Shall be Responsible, Per Section 730-6 of the Standard Specifications for Contacting All Utilities for Exact Locations Prior to Any Construction Activities.
2. All Traffic Signal Equipment and Construction Shall Conform to ADOT Standard Specifications, Drawings and Procedures Supplemented by ADOT Specifications and Standard Drawings. See Special Provisions for Special Traffic Signal Pole Requirements.
3. All Poles and Mast Arms Shall be Decorative 16 Flute Tapered Steel Monotube. See Special Provisions.
4. The Contractor Shall have at least one IMSA Level 1 Certified Traffic Signal Technician on Site During all Phases of any Traffic Signal Work. It Is the Responsibility of the Contractor to Provide Verification of Certification. If Job Site Is Inspected and no Certified Technicians are present on Job Site, the Traffic Signal Work will be Suspended.
5. Location of Utilities Shown on these Plans are Approximate. The Engineer Does Not Guarantee these Locations Nor the Fact that Some Utilities May be Left Out. It Is the Responsibility of the Contractor to Contact Blue Stake and All other Involved Agencies Prior to Construction.
6. All Signal Equipment, Materials, Tools and Labor Shall be Supplied by the Contractor.
7. All Signal Heads and Pedestrian Heads Shall be "LED's".

Two working days before you dig.
CALL FOR THE BLUE STAKES
1-800-782-5348
Blue Stake Center

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

	NAME	DATE
DESIGN	JKM, CJR	02/07
DRAWN	WBE	02/07
CHECKED	SCB, JJP	02/07

City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

DMJM HARRIS | AECOM

SIGNAL SHEET
MAIN ST AND FLORENCE ST
STA 28+50 TO STA 31+50

PROJECT NAME
DOWNTOWN STREETS - PHASE 1

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
20959
JOHN P VAN ECHO
Date Signed 12-31-07

DWG NO. T-5.1
Sheet No.
54 of 93

TRAFFIC SIGNAL CONTROLLER					
CABINET	TYPE	CONTROLLER	AUX. CONTROL	REMARKS	LOCATION
(A)	V	NEMA-8Φ MEETING THE CITY OF CASA GRANDE SPECIFICATIONS SEE SPECIAL PROVISIONS	RAILROAD PRE-EMPTION & BLANK OUT SIGN CONTROLS		STA 30+38, 62' RT
(B)		PADMOUNT TYPE III AF RAW ALUMINUM 26-000 STYLE METERED SERVICE 200 AMP 120/240V			STA 30+37, 70' RT

POLE NUMBER	TYPE *	MAST ARM SIGNAL	MAST ARM LUM. **	SIGNALS MTG.	SIGNALS FACE	P.B. SIGN	REMARKS ***	LOCATION
(C) IISNS; G 14' F 12' F	SP	50'	DBL	3-II 1-VII	1-F/1-G 1-F 2-M/H	2-TYPE I PPB (R)&(L) SEE NOTE 2	2-250W/240V HPS LUMINAIRE TYPE III MEDIUM CUTOFF W/PEC	STA 30+38, 48' RT
(D) IISNS; G; F 12' F; F	SP	35'	DBL	2-II 2-VII	2-F 1-F/1-G 2-M/H	2-TYPE I PPB (R)&(L) SEE NOTE 2	2-250W/240V HPS LUMINAIRE TYPE III MEDIUM CUTOFF	STA 29+60, 36' LT
(E) IISNS; G 12' F; F	SP	30'	DBL	2-II 1-V 1-VII	1-F/1-G 1-F 2-M/H	2-TYPE I PPB (R)&(L) SEE NOTE 2	2-250W/240V HPS LUMINAIRE TYPE III MEDIUM CUTOFF	STA 29+70, 37' LT
(F) IISNS; G; F 12' F; F	SP	30'	DBL	2-II 2-VII	2-F 1-F/1-G 2-M/H	2-TYPE I PPB (R)&(L) SEE NOTE 2	2-250W/240V HPS LUMINAIRE TYPE III MEDIUM CUTOFF	STA 30+30, 36' LT
(G)(H)	SP			2-XI	BLANK OUT SIGN		8' DECORATIVE POLE	STA 29+15, 20' RT STA 29+43, 20' RT

IISNS-INTERNALLY ILLUMINATED STREET NAME SIGN.

CONTRACTOR SHALL COORDINATE LAYOUT OF IISNS WITH CITY OF CASA GRANDE. NO SIGNS SHALL BE ORDERED UNTIL AN APPROVED LAYOUT IS RECEIVED.

* SPECIAL FLUTED TRAFFIC POLES- SEE SPECIAL PROVISIONS.

** DOUBLE CROSS ARM MOUNTING HEIGHT 16'. SEE SPECIAL PROVISIONS.

*** SPECIAL NOSTALGIA LUMINAIRES TO MATCH PEDESTRIAN LIGHTING. SEE SPECIAL PROVISIONS.

AWG	CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	CONDUIT SIZE IN INCHES	2.5"	2"	2-4"	2-4"	2-4"	2-4"	2-4"	4"	2"	4"	2"	3"	4"	2"	4"	2"	2"	2"	2"	2"
AWG	CIRCUIT PHASE	CONDUIT BY CONTRACTOR - WIRES BY APS																			
#14 IMSA CABLE **	20 CONDUCTOR CABLE			4	2	1		1	1		1			1		1					
	7 CONDUCTOR CABLE																				
	5 CONDUCTOR CABLE																				
	2 CONDUCTOR CABLE																				
#14	DETECTOR Φ1			*1				*1									o1				
	DETECTOR Φ2			*1	*1							o1									
	DETECTOR Φ4			*2	*2	*2									o2						
	DETECTOR Φ5			*1	*1							o1									
	DETECTOR Φ6			*1				*1									o1				
	DETECTOR Φ8			*2						o2											
#10 XHHW	LIGHTING		2	2	2	2		2	2		2			2		2					
	I.I.S.N.S.		2	2	2	2		2	2		2			2		2					
	I.I.N.R.T.S.		2	2	2													2	2	2	2
#8	BOND WIRE, GREEN, STANDARD		1	1	1	1	1	1	1	1	1		1	1		1	1	1	1	1	1
#8 THW	COMMON WHITE		1	1	1	1		1	1		1			1		1					
#6 THW	SERVICE 120/240V (2 BLACK & 1 WHITE)		3																		
☐	RAILROAD PRE-EMPT			1	1								1								

CONDUCTOR SCHEDULE LEGEND

* * IMSA CABLE 19-1 #14 AWG 2,5,7 AND 20 CONDUCTOR SOLID COPPER

IISNS INTERNALLY ILLUMINATED STREET NAME SIGN

IINRTS INTERNALLY ILLUMINATED NO RIGHT TURN SIGN

* I#14 AWG STRANDED 2 CONDUCTOR WITH SHIELD (IMSA 50-2)

o #14 AWG STRANDED, IMSA SPEC. 51-5, 1984

☐ TELCO CABLE #22 AWG 6 CONDUCTOR WITH OVERALL SHIELD

NOTES:

1. A RAISED PCC PAD 36" X 4" X WIDTH OF FOUNDATION SHALL BE PLACED IN FRONT OF CABINET FOUNDATION. PAD SHALL BE SET 2" BELOW THE FOUNDATION ELEVATION. SLOPE PAD AWAY FROM CABINET.
2. ALL PEDESTRIAN PUSH BUTTONS SHALL MEET ADA REQUIREMENTS.
3. THE STATIONS AND OFFSET FOR TRAFFIC SIGNAL POLES WHICH ARE SHOWN ON THE PLANS AND IN THE POLE/EQUIPMENT SCHEDULE ARE APPROXIMATE. THE FINAL LOCATION OF EACH POLE SHALL BE STAKED IN THE FIELD BY THE CONTRACTOR, AND APPROVED BY THE ENGINEER, TO INSURE THAT THE EDGE OF POLE FOUNDATION IS IMMEDIATELY ADJACENT (1-INCH MAXIMUM) TO THE BACK OF SIDEWALK, BACK OF WHEELCHAIR RAMP, OR INTEGRATED INTO THE SIDEWALK RAMP DESIGN. THE INTENT OF THIS CRITERIA IS TO INSURE THAT THE PEDESTRIAN PUSH BUTTON ASSEMBLIES ARE ACCESSIBLE TO WHEELCHAIR-BOUND PEDESTRIANS.
4. 20 CONDUCTOR IMSA CABLE SHALL RUN CONTINUOUS FROM POLE TO CABINET.

PHASE MOVEMENTS

DWELL ALL RED FLASH
(Except Φ1= Steady Red Light Arrows)

R/R PRE-EMPTION

IMSA CABLE 19-1, 1984 #14 AWG, 7 CONDUCTOR, 5 CONDUCTOR & 2 CONDUCTOR

OUTBOARD MAST ARM & TYPE "Q" & "G" HEADS	
7 CONDUCTOR CABLE	
BASIC COLOR	SIGNAL INTERVAL
RED	RED
ORANGE	YELLOW
GREEN	GREEN
BLACK	YELLOW ARROW
BLUE	GREEN ARROW
WHITE	VEH. COMMON
WHITE/BLACK	SPARE

TYPE "F" SIGNAL HEADS INBOARD & SIDE MOUNT	
5 CONDUCTOR CABLE	
BASIC COLOR	SIGNAL INTERVAL
RED	RED
ORANGE	YELLOW
GREEN	GREEN
WHITE	VEH. COMMON
BLACK	SPARE

PEDESTRIAN HEADS	
5 CONDUCTOR CABLE	
BASIC COLOR	SIGNAL INTERVAL
RED	DON'T WALK
GREEN	WALK
WHITE	PED. COMMON
BLACK	SPARE
ORANGE	SPARE

PUSH BUTTON	
2 CONDUCTOR CABLE	
BASIC COLOR	SIGNAL INTERVAL
BLACK	PUSH BUTTON
WHITE	P.B. COMMON

DOUBLE PEDESTRIAN HEADS		
7 CONDUCTOR CABLE		
BASIC COLOR	SIGNAL INTERVAL	PED PHASING
RED	DON'T WALK	4 & 8
ORANGE	SPARE	
GREEN	WALK	4 & 8
BLACK	DON'T WALK	2 & 6
BLUE	WALK	2 & 6
WHITE	COMMON	PED. COMMON
WHITE/BLACK	SPARE	

ALL CABLE SHALL BE TAGGED AS TO THEIR ASSIGNED PHASE IN THE PULL BOX.

Two working days before you dig. CALL FOR THE BLUE STAKES 1-800-782-5348 Blue Stake Center

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

	NAME	DATE
DESIGN	JKM, CJR	02/07
DRAWN	WBE	02/07
CHECKED	SCB, JJP	02/07

DMJM HARRIS | AECOM

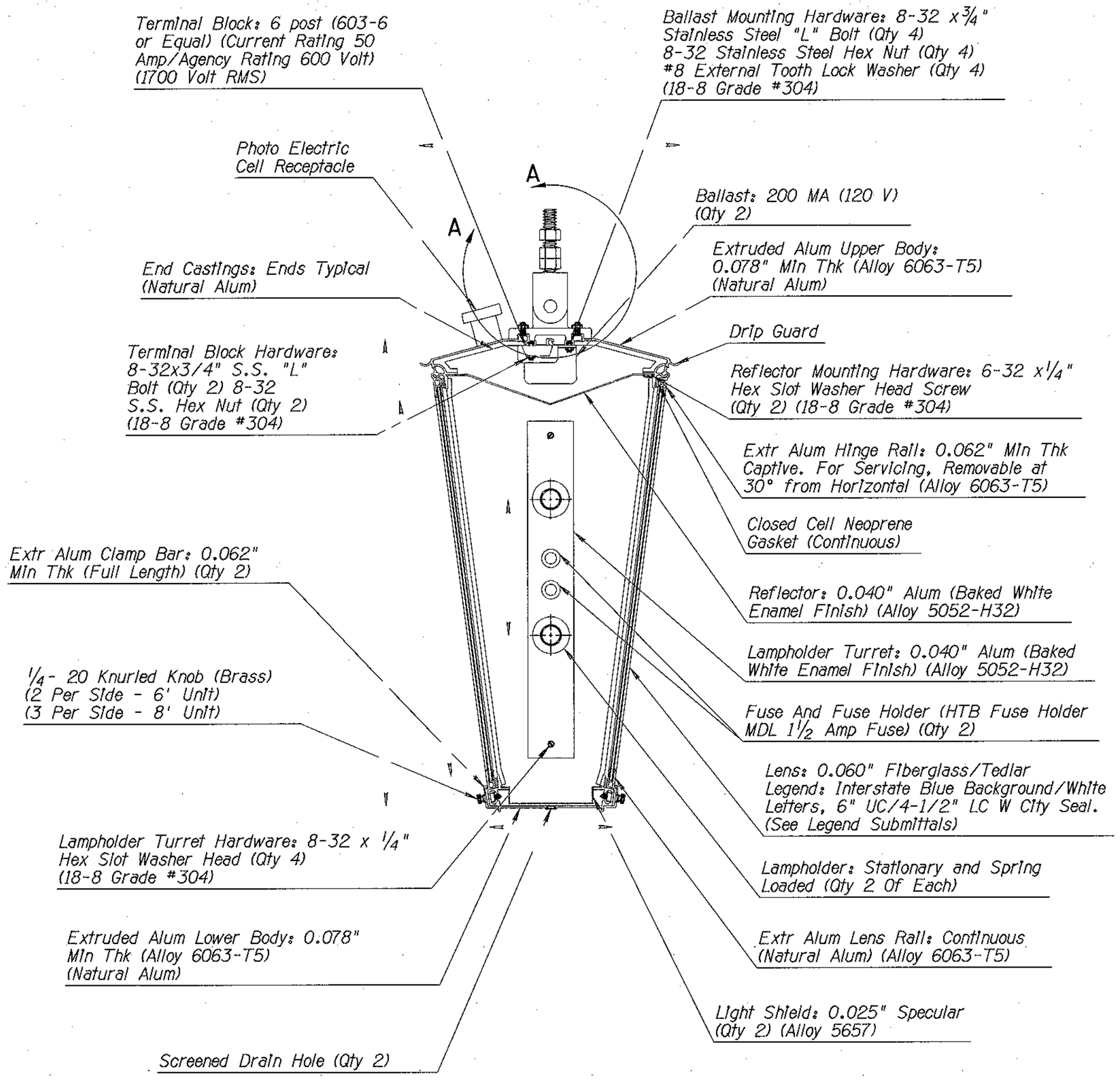
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

MAIN ST AND FLORENCE ST POLE/CONDUCTOR SCHEDULES AND PHASE DIAGRAMS

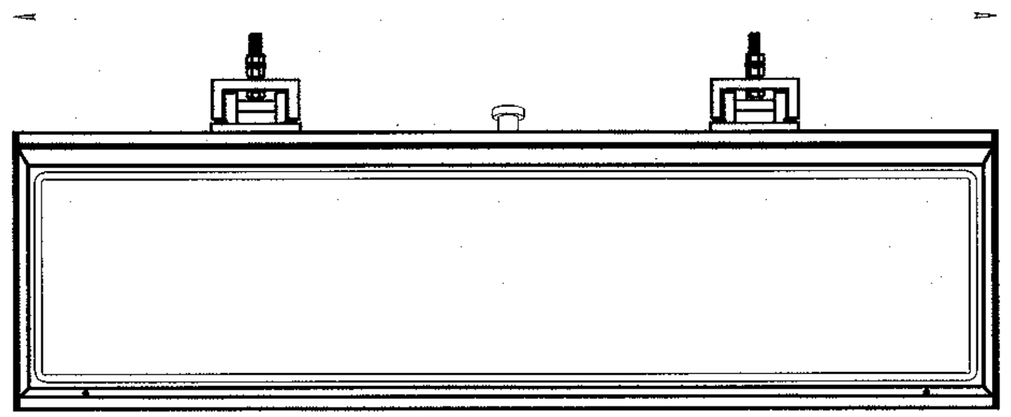
PROJECT NAME: DOWNTOWN STREETS - PHASE I

PROFESSIONAL ENGINEER (CIVIL) CERTIFICATE NO. 20959 JOHN P VAN ECHO

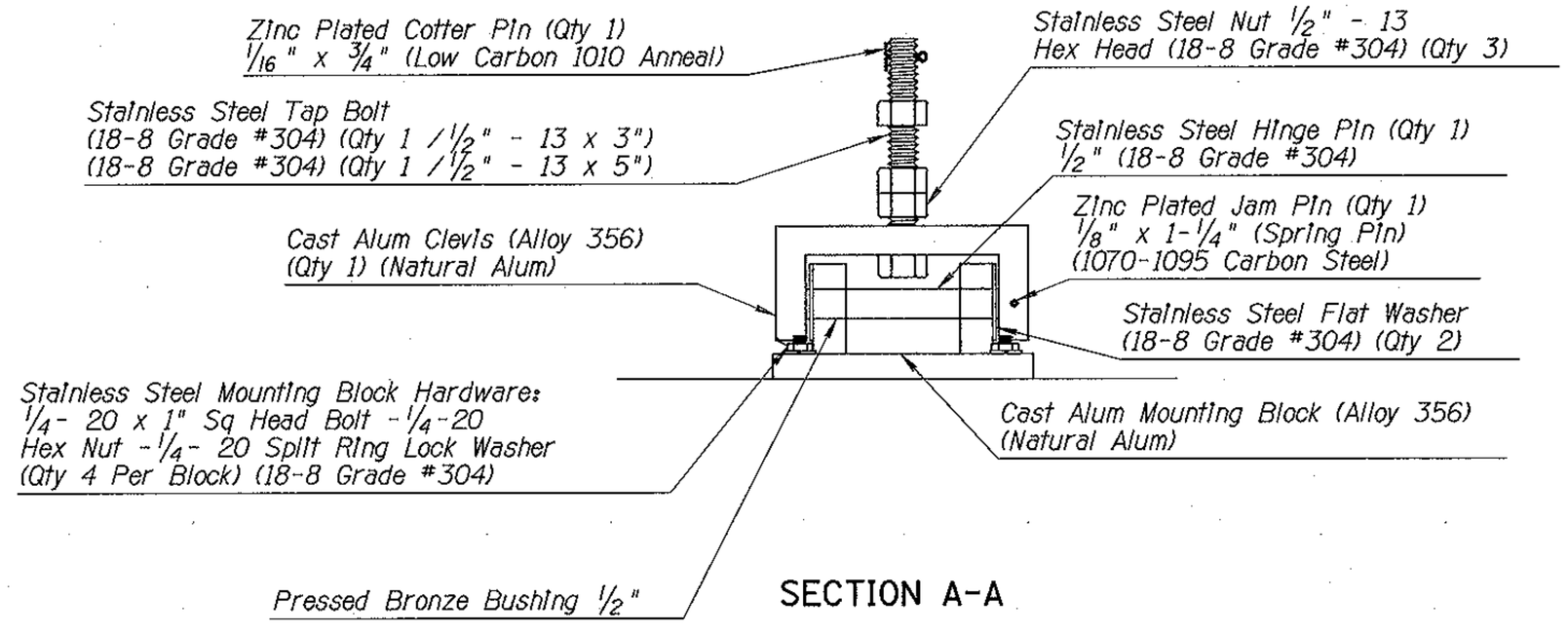
DWG NO. T-5.2



CROSS SECTION



PLAN VIEW



SECTION A-A

Note:
1. Grounding Wire Hardware: Stainless Steel 8-32 x 3/4" "L" Bolt - 8-32 Hex Nut - #8 External Tooth Lock Washer - (Qty 1)

Two working days before you dig. CALL FOR THE BLUE STAKES 1-800-782-5348 Blue Stake Center

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

	NAME	DATE
DESIGN	PSP, CJR	02/07
DRAWN	WBE	02/07
CHECKED	SCB, JJP	02/07

DMJM HARRIS | AECOM

City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

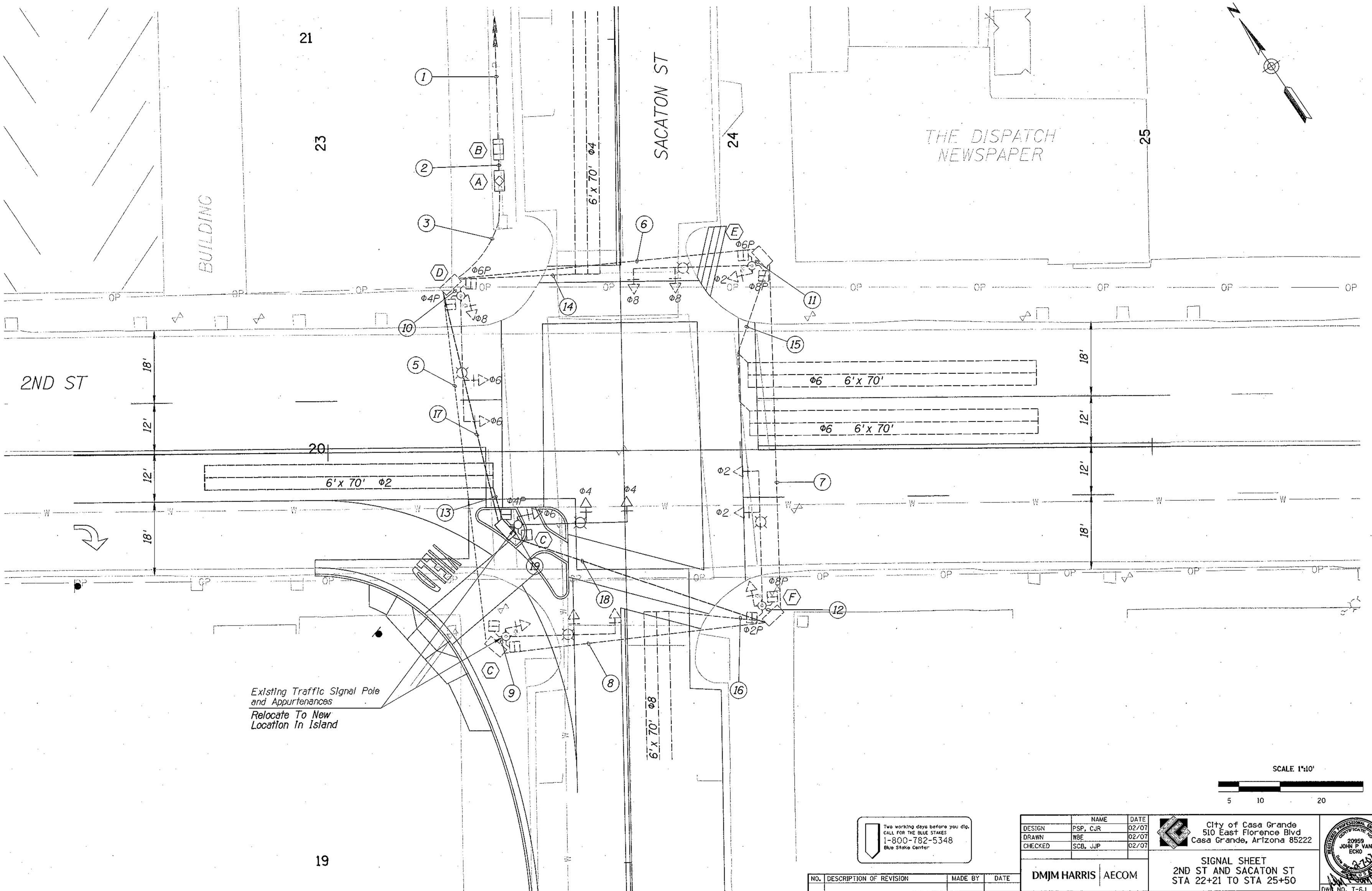
INTERNALLY ILLUMINATED SIGN DETAIL

PROJECT NAME
DOWNTOWN STREETS - PHASE I

REGISTERED PROFESSIONAL ENGINEER — CERTIFICATE NO. 20959 JOHN P VAN ECHO — STATE OF ARIZONA U.S.A.

DWG NO. T-5.3

Sheet No.
56 of 93



For General Notes See Dwg No. T-5.1

Two working days before you dig. CALL FOR THE BLUE STAKES 1-800-782-5348 Blue Stake Center

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

	NAME	DATE
DESIGN	PSP, CJR	02/07
DRAWN	WBE	02/07
CHECKED	SCB, JJP	02/07

DMJM HARRIS | AECOM

City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

SIGNAL SHEET
2ND ST AND SACATON ST
STA 22+21 TO STA 25+50

REGISTERED PROFESSIONAL ENGINEER (CIVIL) CERTIFICATE NO. 20959 JOHN P VAN ECHO Date Signed 2-7-07 ARIZONA U.S.A.

DWG NO. T-6.1

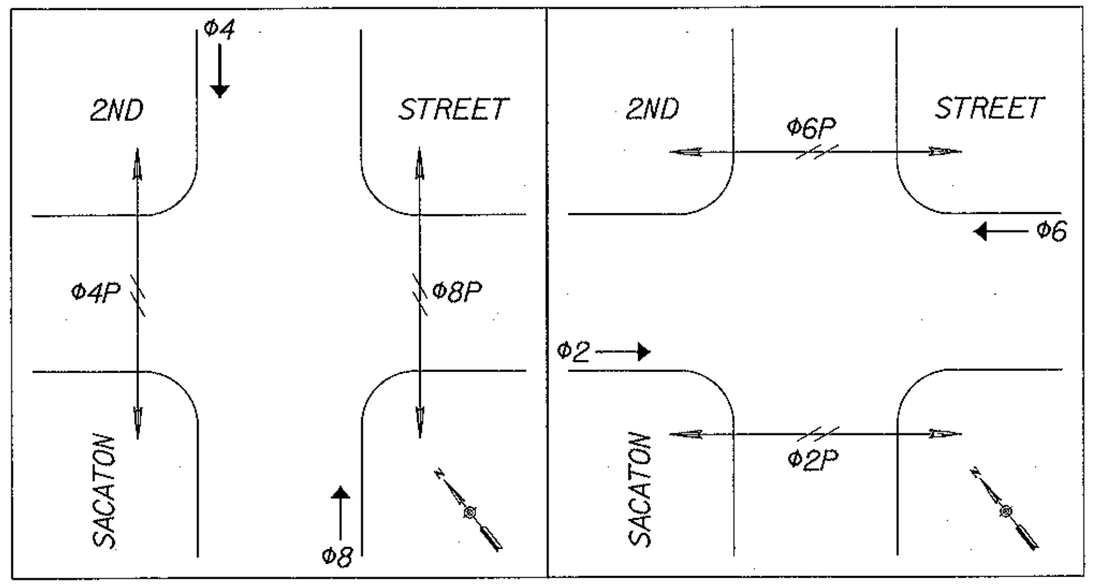
PROJECT NAME
DOWNTOWN STREETS - PHASE I

Sheet No.
57 of 93

TRAFFIC SIGNAL CONTROLLER					
CABINET	TYPE	CONTROLLER	AUX. CONTROL	REMARKS	LOCATION
(A)	V			EXISTING TO REMAIN	STA 23+42, 66' LT
(B)				EXISTING METERED SERVICE TO REMAIN	STA 23+42, 73' LT

POLE		MAST ARM		SIGNALS		P.B. SIGN	REMARKS ***	LOCATION
NUMBER	TYPE *	SIGNAL	LUM.**	MTG.	FACE			
(C) F F F	-	-	-	-	-	-	EXISTING TO BE RELOCATED SEE NOTE	STA 23+46, 18' RT
(D)	-	-	-	-	-	-	EXISTING TO REMAIN	-
(E)	-	-	-	-	-	-	EXISTING TO REMAIN	-
(F)	-	-	-	-	-	-	EXISTING TO REMAIN	-

NOTE:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE NEW BOLT PATTERN OF THE SIGNAL BASE MATCHES THE EXISTING BOLT PATTERN.



PHASE MOVEMENTS

	CONDUIT RUN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	CONDUIT SIZE IN INCHES	E	E	E		E	E	E	E	E	E	E	E	2"	E	E	E	2-3"	2-3"	3"
AWG	CIRCUIT PHASE																			
#14	20 CONDUCTOR CABLE				NOT USED													2	1	
IMSA	7 CONDUCTOR CABLE																			1
CABLE	5 CONDUCTOR CABLE	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN		ABANDON IN PLACE	EXISTING TO REMAIN	EXISTING TO REMAIN	ABANDON IN PLACE	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN		EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN			3
* *	2 CONDUCTOR CABLE																			2
#14	DETECTOR Φ2													o2				*2		
	DETECTOR Φ4				NOT USED													o2		
	DETECTOR Φ6																			
	DETECTOR Φ8				NOT USED													*1	*1	o2
#10	LIGHTING																	2	2	2
XHHW	I.I.S.N.S.																	2	2	2
#8	BOND WIRE, GREEN, STANDARD																	1	1	1
#8	COMMON WHITE				NOT USED													1	1	1
THW																				
#6 THW	SERVICE 120/240V (2 BLACK & 1 WHITE)																			

IMSA CABLE 19-1, 1984 #14 AWG, 7 CONDUCTOR, 5 CONDUCTOR & 2 CONDUCTOR

OUTBOARD MAST ARM & TYPE "Q" HEADS	
7 CONDUCTOR CABLE	
BASIC COLOR	SIGNAL INTERVAL
RED	RED
ORANGE	YELLOW
GREEN	GREEN
BLACK	YELLOW ARROW
BLUE	GREEN ARROW
WHITE	VEH. COMMON
WHITE/BLACK	SPARE

TYPE "F" SIGNAL HEADS INBOARD & SIDE MOUNT	
5 CONDUCTOR CABLE	
BASIC COLOR	SIGNAL INTERVAL
RED	RED
ORANGE	YELLOW
GREEN	GREEN
WHITE	VEH. COMMON
BLACK	SPARE

PEDESTRIAN HEADS	
5 CONDUCTOR CABLE	
BASIC COLOR	SIGNAL INTERVAL
RED	DON'T WALK
GREEN	WALK
WHITE	PED. COMMON
BLACK	SPARE
ORANGE	SPARE

PUSH BUTTON	
2 CONDUCTOR CABLE	
BASIC COLOR	SIGNAL INTERVAL
BLACK	PUSH BUTTON
WHITE	P.B. COMMON

DOUBLE PEDESTRIAN HEADS		
7 CONDUCTOR CABLE		
BASIC COLOR	SIGNAL INTERVAL	PED PHASING
RED	DON'T WALK	4 & 8
ORANGE	SPARE	
GREEN	WALK	4 & 8
BLACK	DON'T WALK	2 & 6
BLUE	WALK	2 & 6
WHITE	COMMON	PED. COMMON
WHITE/BLACK	SPARE	

ALL CABLE SHALL BE TAGGED AS TO THEIR ASSIGNED PHASE IN THE PULL BOX.

CONDUCTOR SCHEDULE LEGEND

* *	IMSA CABLE 19-1 #14 AWG 2,5,7 AND 20 CONDUCTOR SOLID COPPER
IISNS	INTERNALLY ILLUMINATED STREET NAME SIGN
*	#14 AWG STRANDED 2 CONDUCTOR WITH SHIELD (IMSA 50-2)
o	#14 AWG STRANDED, IMSA SPEC. 51-5, 1984
E	EXISTING

Two working days before you dig.
CALL FOR THE BLUE STAKES
1-800-782-5348
Blue Stake Center

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

	NAME	DATE
DESIGN	PSP	02/07
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CHECKED	SCB, JJP	02/07

DMJM HARRIS | AECOM

City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

2ND ST AND SACATON ST
POLE/CONDUCTOR SCHEDULES
AND PHASE DIAGRAMS

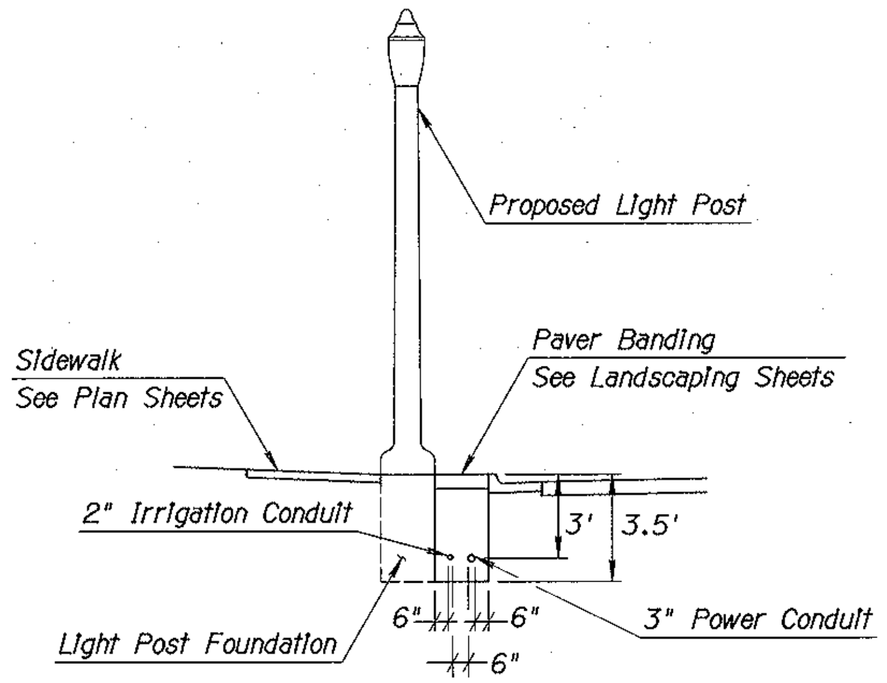
PROJECT NAME
DOWNTOWN STREETS - PHASE I

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
20959
JOHN P VAN ECHO
STATE OF ARIZONA
12-31-07

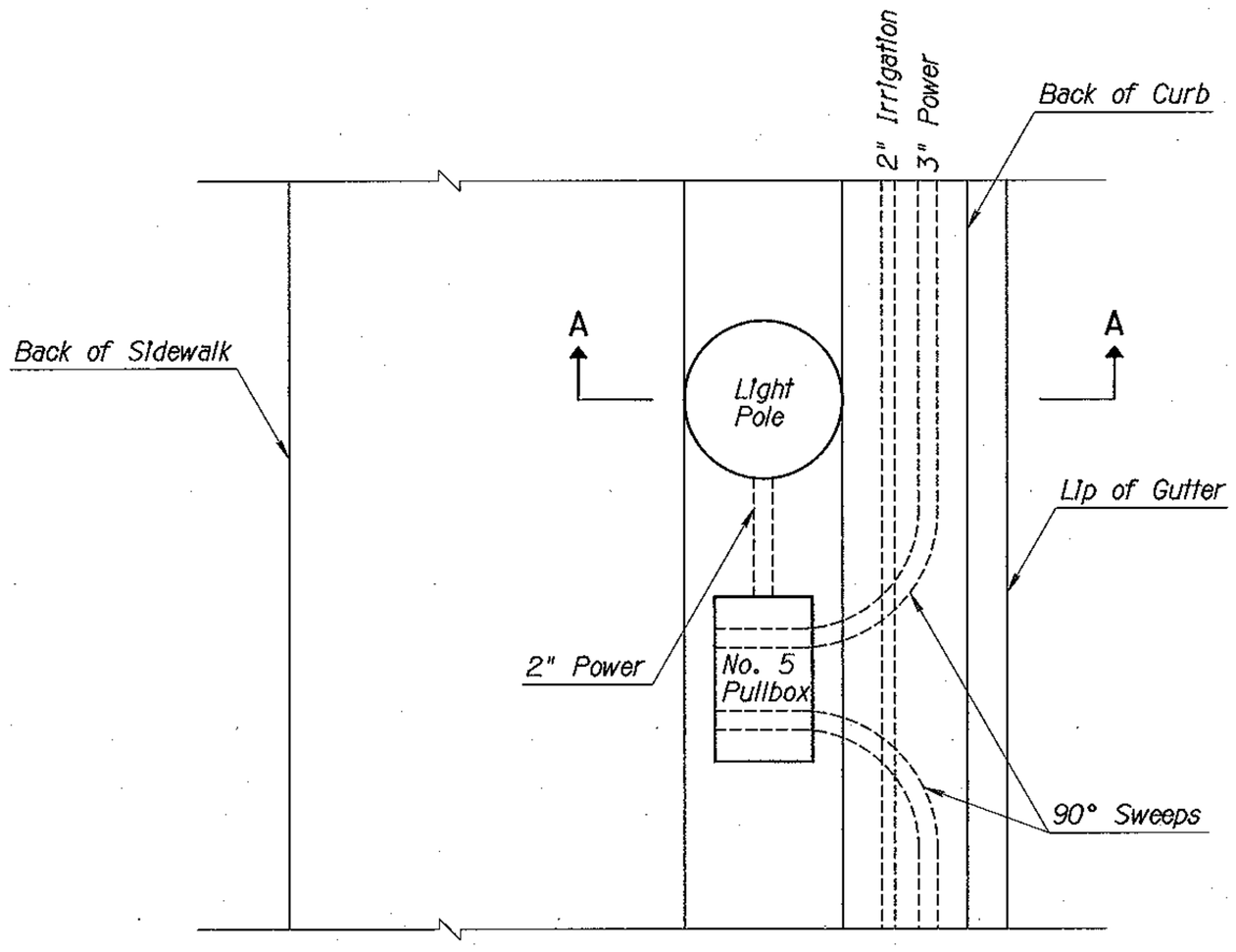
DWG NO. T-6.2
Sheet No.
58 of 93

GENERAL NOTES:

1. EXACT LOCATION OF CONDUIT RUNS AND PULLBOX LOCATIONS SHALL BE DETERMINED BY THE ENGINEER.
2. POLE SETBACKS SHALL BE MEASURED FROM EDGE OF TRAVEL WAY TO CENTER OF POLE AS INDICATED ON POLE SCHEDULE.
3. REFER TO ADOT STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS FOR ALL LIGHTING WORK UNDER THIS CONTRACT.
4. ALL EXISTING EQUIPMENT AND LIGHTING SYSTEM(S) SHALL REMAIN IN OPERATION UNTIL NEW SYSTEM(S) ARE ENERGIZED.
5. CONTRACTOR IS TO REQUEST IN WRITING TO THE RESIDENT ENGINEER WHEN FIELD ADJUSTMENT OF POLES IS NECESSARY TO AVOID CONFLICT WITH UTILITIES OR CONSTRUCTION.
6. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES WHETHER SHOWN HEREIN OR NOT AND SHALL PROTECT THEM FROM DAMAGE. CONTRACTOR SHALL BEAR ALL EXPENSES FOR REPAIR OR REPLACEMENT IN CONJUNCTION WITH EXECUTION OF THIS CONTRACT.
7. ALL WIRE SHALL BE COPPER.
8. VERTICAL MOUNT LUMINAIRES BALLASTS SHALL BE HIGH POWER FACTORY RATED AND OPERABLE AT 240 VOLT, SINGLE PHASE.
9. WHERE INDICATED REMOVE EXISTING FOUNDATIONS AND PULLBOXES AND BACKFILL AND COMPACT AREAS REQUIRED.
10. ALL ELECTRICAL WORK SHALL CONFORM TO THE 2000 EDITION OF THE ADOT STANDARD SPECIFICATIONS FOR ROAD BRIDGE CONSTRUCTION AND THE 1985 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND LIGHTING ALONG WITH ANY SUBSEQUENT AMENDEMENTS PRIOR TO BID DATE.
11. CONTRACTOR SHALL COORDINATE THE CONSTRUCTION WORK REQUIREMENTS OF THE LIGHTING PLANS WITH THE CONSTRUCTION WORK REQUIREMENTS OF THE TOTAL PROJECT PLAN SET(S). CONTRACTOR IS RESPONSIBLE FOR HIS WORK LAYOUT REQUIREMENTS AND SHALL INSTALL HIS WORK ON A TIMELY AND COORDINATED BASIS WITH THE OTHER PROJECT TRADE GROUPS.
12. REFER TO CIVIL DRAWINGS FOR LOCATION(S) OF UNDERGROUND UTILITIES AND COORDINATE ALL CONDUIT INSTALLATION REQUIREMENTS WITH OTHER TRADE GROUPS
13. CONTRACTOR SHALL INSTALL CONDUIT FROM LOAD CENTER SERVICE POINT PER UTILITY REQUIREMENTS. CONTACT JACK ROWLAND AT APS, (520) 421-8364
14. CONTRACTOR IS RESPONSIBLE FOR CONTACTING "BLUE STAKE" FOR VERIFICATION OF UNDERGROUND UTILITY LOCATIONS.
15. TOP OF POLE FOUNDATIONS SHALL BE FLUSH WITH SURROUNDING FINAL GRADE ELEVATION(S). REFER TO ADOT STANDARD T.S. 6-1, OR AS INDICATED ON PLANS.
16. NEW VERTICAL MOUNTED LUMINAIRES SHALL BE HIGH PRESSURE SODIUM FULL CUTOFF TYPE, WITH I.E.S. TYPE LIGHT DISTRIBUTION AS INDICATED ON THE POLE SCHEDULE.
17. TRENCH BACKFILL MATERIAL & COMPACTION REQUIREMENTS SHALL CONFORM TO ARIZONA PUBLIC SERVICE REQUIREMENTS.
18. CONTRACTOR TO VERIFY SERVICE POWER AND VOLTAGE REQUIREMENTS FOR LUMINAIRES IN FLORENCE STREET PRIOR TO ORDERING LUMINAIRES.



TYPICAL TRENCH DETAIL
SECTION A-A



TYPICAL ELECTRICAL CONDUIT CONFIGURATION
PLAN VIEW

SYMBOL LEGEND (NEW)

- SPECIAL PEDESTRIAN LUMINAIRE, DECORATOR POLE, BASE
- LUMINAIRE MAST ARM, POLE, BY APS
- #5 PULLBOX
- #7 PULLBOX
- TYPE IV LIGHTING LOAD CENTER AND CABINET PER ADOT DETAIL T.S. 3-2 & T.S. 3-3
- CONDUIT STUBOUT
- CONDUIT, UNDERGROUND
- (X) X = CONDUIT RUN NUMBER REFER TO CONDUCTOR SCHEDULE
- (1/A) 1 = POLE NUMBER, A = CIRCUIT NUMBER

CONDUCTOR SCHEDULE

	CONDUIT RUN NUMBER	A	B	C	D	E
	CONDUIT SIZE IN INCHES	3	3	2(3)	2	2½
AWG	CIRCUIT PHASE	NUMBER OF WIRES				
#8	CIRCUIT A	2		2		
	CIRCUIT B	2		2		
	CIRCUIT C		2	2		
	CIRCUIT D		2	2		
#8	GROUND	1	1	1	1	
#12	LEAD INTO LUMINAIRES				2	
	SERVICE LATERAL					*

* CONTRACTOR TO INSTALL CONDUIT TO APS SERVICE LOCATION PER APS REQUIREMENTS. APS WILL INSTALL CONDUCTORS.

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

	NAME	DATE
DESIGN	PSP	02/07
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City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

DMJM HARRIS | AECOM

GENERAL NOTES, SYMBOLS & CONDUIT SCHEDULE

PROJECT NAME
DOWNTOWN STREETS - PHASE I

REGISTERED PROFESSIONAL ENGINEER — CERTIFICATE NO. 20959 — JOHN P VAN ECHO — Date Signed 2-27-07 — ARIZONA U.S.A.

DWG NO. T-7.1
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CIRCUIT	POLE NO	CONSTRUCTION ℄	STATION	"OFFSET" "FT"	POLE HT FT	POLE TYPE	LUMINAIRES WATT (HPS)	TYPE OF IES LIGHT DISTRIBUTION	PHASE CONNECTION	MAST ARM	NOTES
A	1	MAIN STREET	24+20	30.00 L	16	'SP'	250	III			
B	2	MAIN STREET	25+11	23.50 L	16	'SP'	250	III			
A	3	MAIN STREET	26+97	23.50 L	16	'SP'	250	III			
B	4	MAIN STREET	28+77	23.50 L	16	'SP'	250	III			
C	5	MAIN STREET	31+16	23.50 L	16	'SP'	250	III			
D	6	MAIN STREET	32+80	23.50 L	16	'SP'	250	III			
C	7	MAIN STREET	33+65	23.50 L	16	'SP'	250	III			
		MAIN STREET	34+92	22.00 L							Pull Box & Conduit Only
		MAIN STREET	36+80	22.00 L							Pull Box & Conduit Only
		MAIN STREET	38+66	22.00 L							Pull Box & Conduit Only
		MAIN STREET	39+26	22.00 L							Pull Box & Conduit Only
		MAIN STREET	40+38	22.00 L							Pull Box & Conduit Only
		MAIN STREET	42+30	22.00 L							Pull Box & Conduit Only
		MAIN STREET	44+30	22.00 L							Pull Box & Conduit Only
		MAIN STREET	45+89	22.00 L							Pull Box & Conduit Only
		MAIN STREET	46+97	22.00 L							Pull Box & Conduit Only
		MAIN STREET	47+92	22.00 L							Pull Box & Conduit Only
		MAIN STREET	49+56	22.00 L							Pull Box & Conduit Only
		MAIN STREET	50+35	22.00 L							Pull Box & Conduit Only
		MAIN STREET	51+20	30.00 L							Pull Box & Conduit Only
		MAIN STREET	51+67	44.50 L							Pull Box & Conduit Only
		MAIN STREET	52+50	3.50 L							Pull Box & Conduit Only
		FLORENCE STREET	16+49	35.7 L	14	'SP'	100	NA			Replace Existing Poles
		FLORENCE STREET	17+06	21.4 R	14	'SP'	100	NA			Replace Existing Poles
		FLORENCE STREET	23+04	22.3 L	14	'SP'	100	NA			Replace Existing Poles
		FLORENCE STREET	23+03	19.3 L	14	'SP'	100	NA			Replace Existing Poles
		FLORENCE STREET	23+59	21.8 R	14	'SP'	100	NA			Replace Existing Poles
		FLORENCE STREET	23+59	18.8 L	14	'SP'	100	NA			Replace Existing Poles
		FLORENCE STREET	26+33	19.3 R	14	'SP'	100	NA			Replace Existing Poles
		FLORENCE STREET	26+33	22.1 L	14	'SP'	100	NA			Replace Existing Poles
		FLORENCE STREET	26+89	20.8 R	14	'SP'	100	NA			Replace Existing Poles
		FLORENCE STREET	26+88	21.6 L	14	'SP'	100	NA			Replace Existing Poles

Notes:

1. Existing lighting Poles on Florence Street shall be Replaced with New Type SP Poles on New Foundations. Remove Existing Poles and Install New Type 5 Pull Box at Each Pole Location. Connect New Pole to Existing Circuits and Bond Wire. Exact Location of Poles shall be Determined by the Engineer.

2. Existing Lighting Poles and Traffic Signal Equipment to be Removed shall be Delivered to the City of Casa Grande at Maintance Yard on Sacaton St. Contact Pedro Apodaca at 520-251-0021 at Least 48 Hours Before Delivery of Materials.

3. Type SP Poles are Special 16-Fluted Tapered Steel Monotube.
   -Union Metal Corp. Drawing No. BI775-54-B6-Y1 (16 ft) and BI775-54-B6-Y2 (14 ft)
   Pole Base Is Ornamental Split Base.
   -Union Metal Corp. Pacific #54
   Luminaire Is Vertical Lamp Construction
   -Union Metal Corp. Style NL124S-4 Drawing #NL124S-4-A1-Y1

Two working days before you dig. CALL FOR THE BLUE STAKES 1-800-782-5348 Blue Stake Center

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

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CHECKED	SCB, JJP	02/07

DMJM HARRIS | AECOM

City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

LIGHT POLE SCHEDULE

PROJECT NAME
DOWNTOWN STREETS - PHASE I

REGISTERED PROFESSIONAL ENGINEER — CERTIFICATE NO. 20959 JOHN P VAN ECHO — 2-7-07 — STATE OF ARIZONA — U.S.A.

DWG NO. T-7.2

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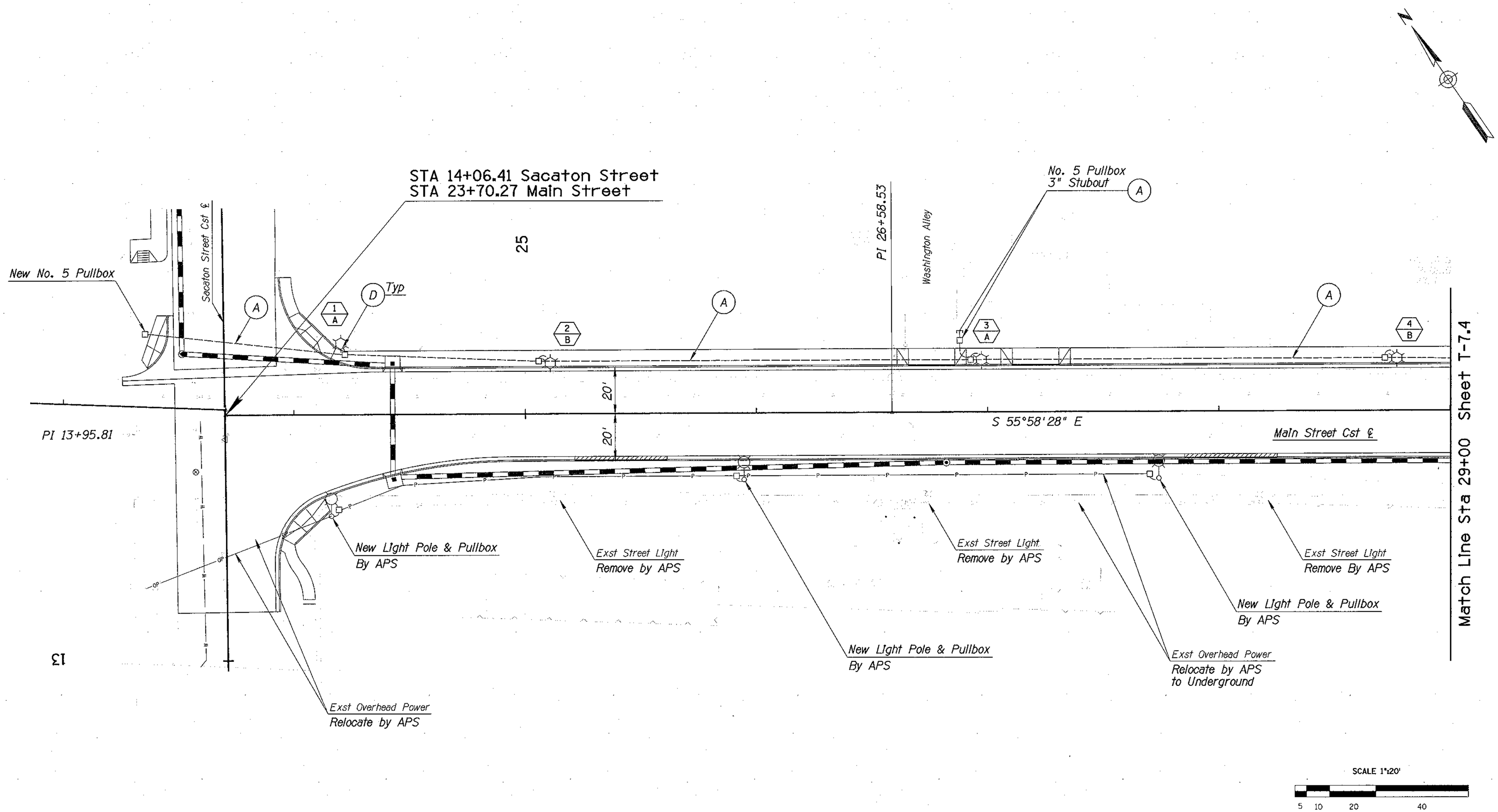

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City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

DMJM HARRIS | AECOM

LIGHTING SHEET
MAIN STREET
STA 23+74.39 TO STA 29+00

PROJECT NAME
DOWNTOWN STREETS - PHASE I

REGISTERED PROFESSIONAL ENGINEER (CIVIL)
CERTIFICATE NO. 20959
JOHN P VAN ECHO
Date Signed 2-7-07
ARIZONA U.S.A.

DWG NO. T-7.3
Sheet No.
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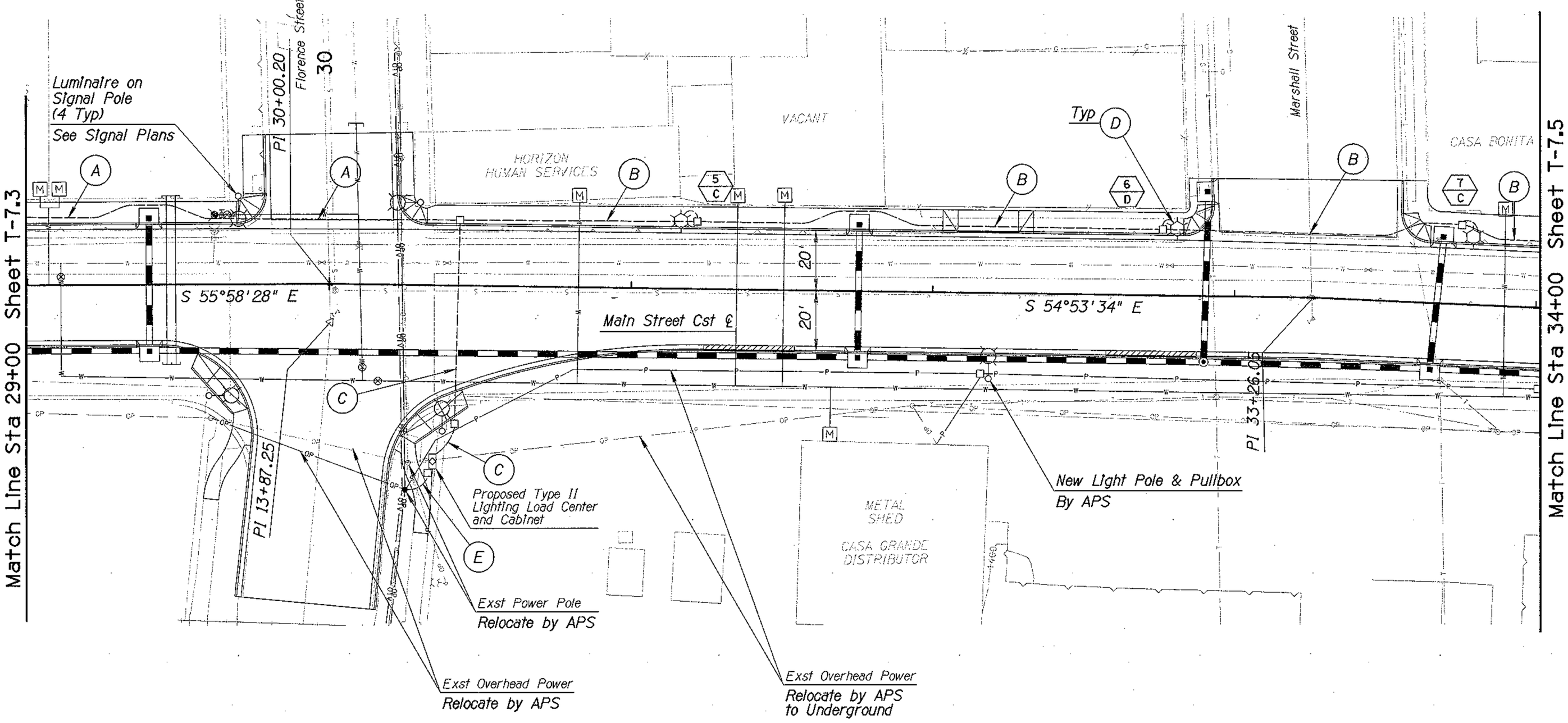

SCALE 1":20'

5 10 20 40

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CALL FOR THE BLUE STAKES
1-800-782-5348
Blue Stake Center

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City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

LIGHTING SHEET
MAIN STREET
STA 29+00 TO STA 34+00

PROJECT NAME
DOWNTOWN STREETS - PHASE I

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
20959
JOHN P VAN ECHO
Date 2-7-07
ARIZONA U.S.A.

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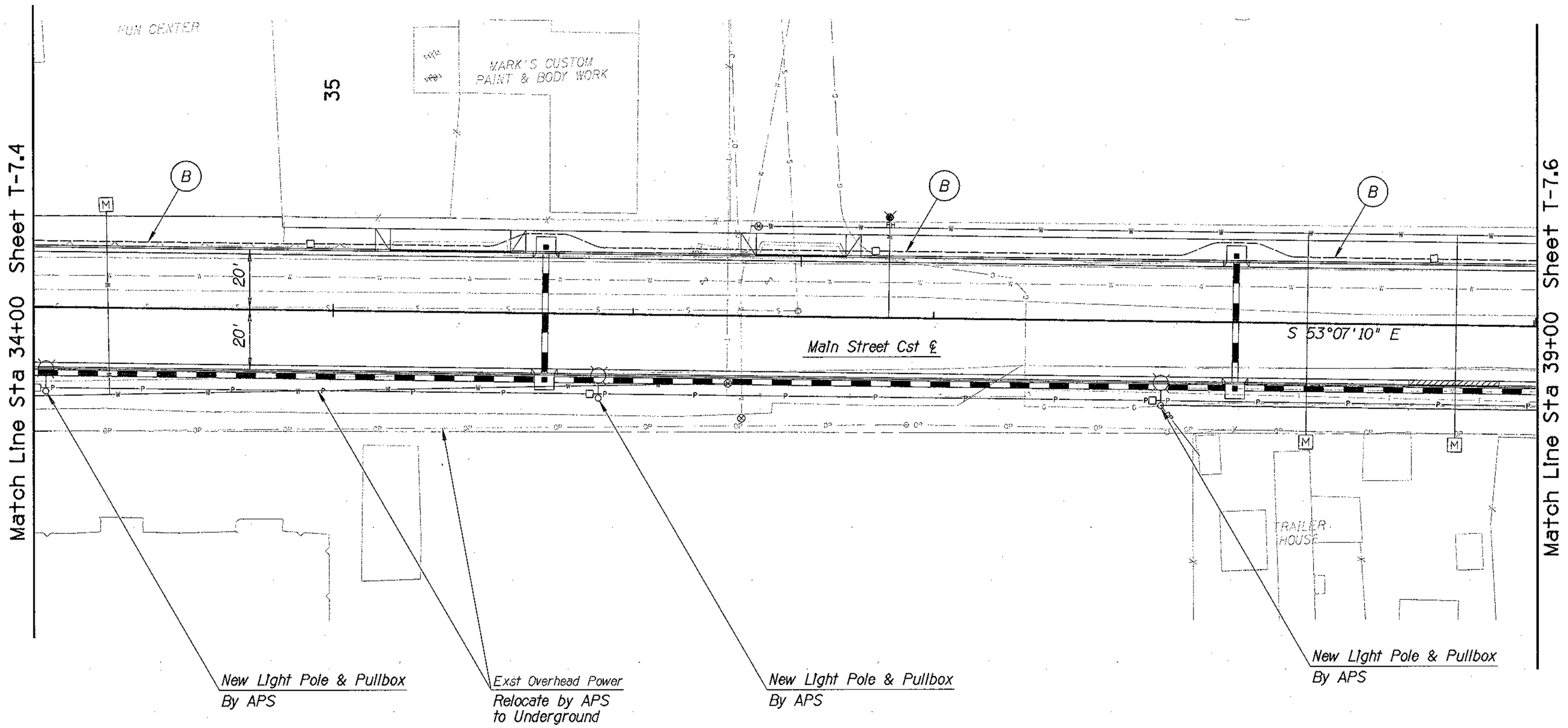

SCALE 1":20'

5 10 20 40

Two working days before you dig.
CALL FOR THE BLUE STAKES
1-800-782-5348
Blue Stake Center

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City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

LIGHTING SHEET
MAIN STREET
STA 34+00 TO STA 39+00

PROJECT NAME
DOWNTOWN STREETS - PHASE I

REGISTERED PROFESSIONAL ENGINEER (CIVIL)
CERTIFICATE NO.
20959
JOHN P VAN ECHO
02-7-07
ARIZONA U.S.A.

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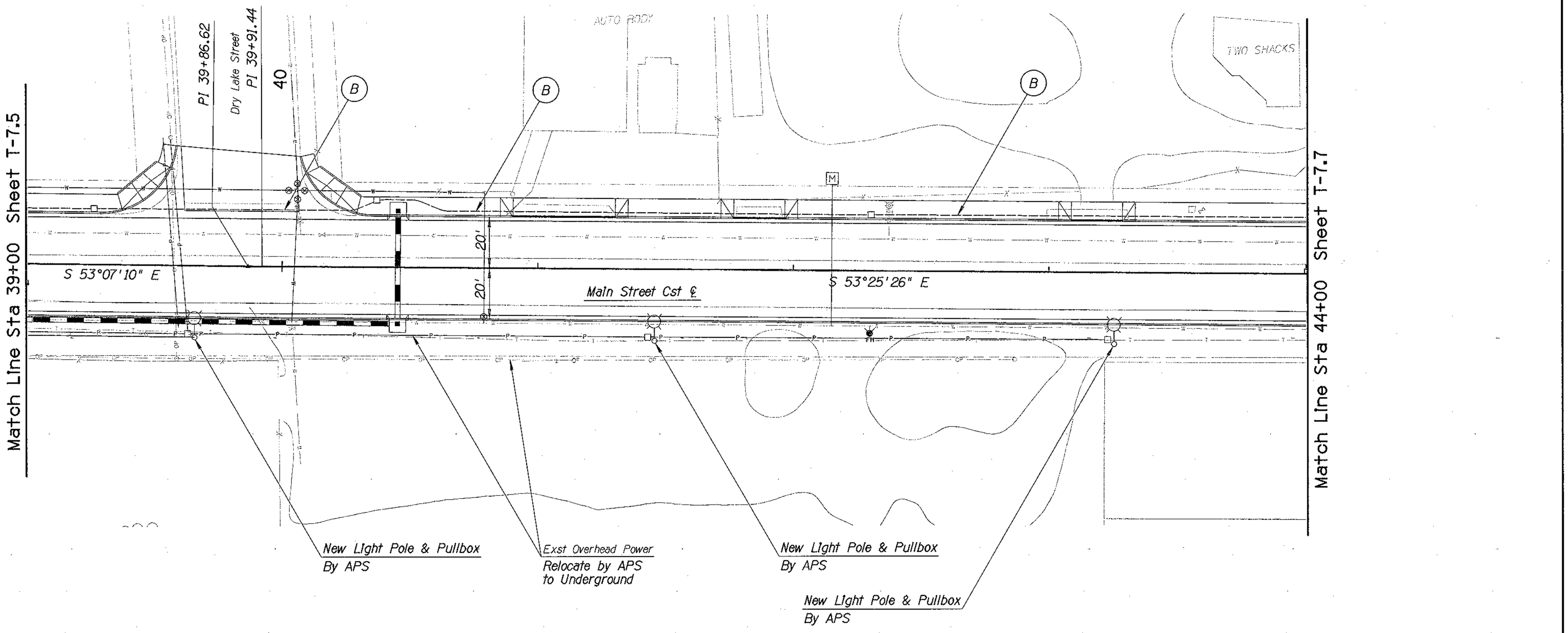

SCALE 1":20'

5 10 20 40

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CALL FOR THE BLUE STAKES
1-800-782-5348
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City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

DMJM HARRIS | AECOM

LIGHTING SHEET
MAIN STREET
STA 39+00 TO STA 44+00

PROJECT NAME
DOWNTOWN STREETS - PHASE I

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
20959
JOHN P VAN ECHO
2-7-07
ARIZONA U.S.A.

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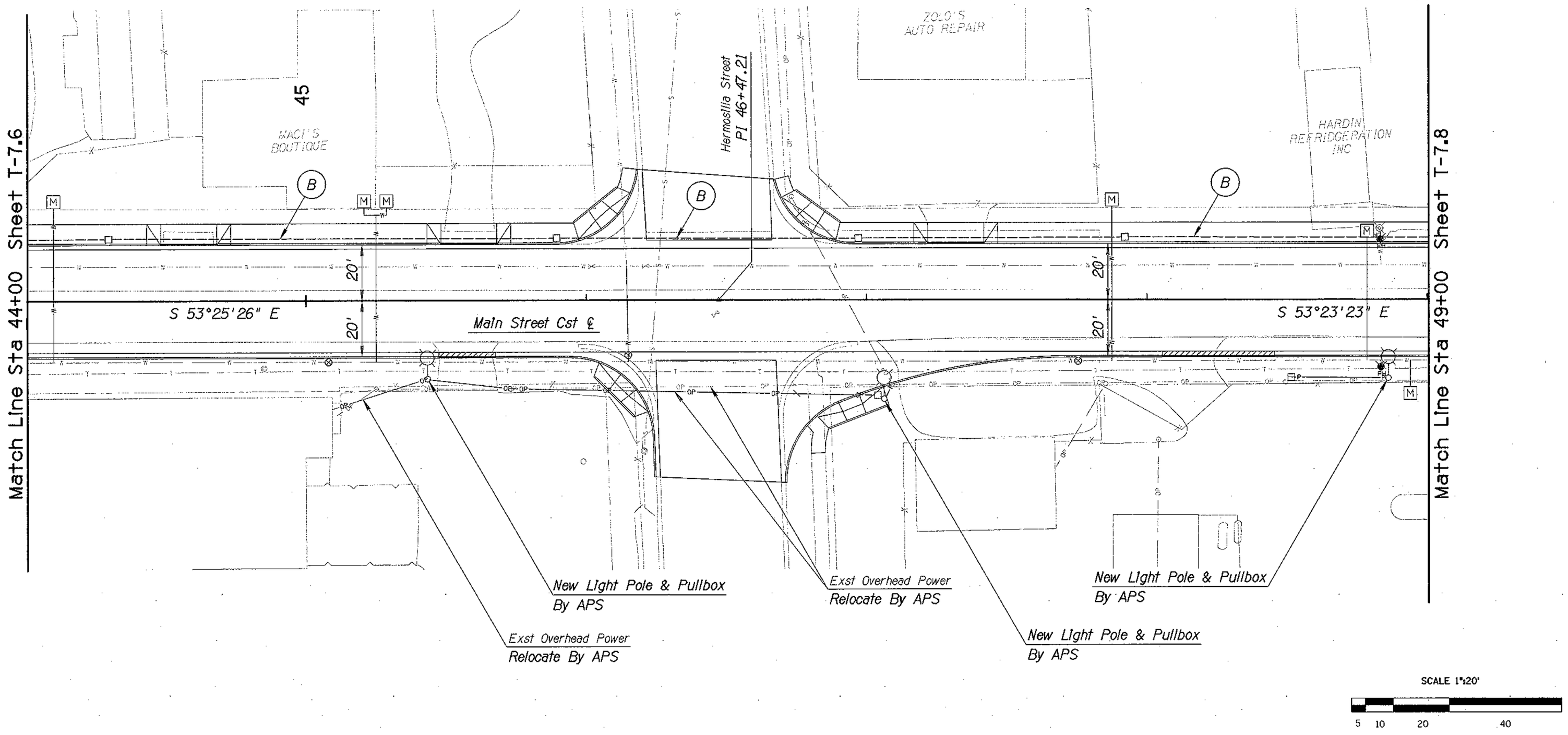

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CALL FOR THE BLUE STAKES
1-800-782-5348
Blue Stake Center

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City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

LIGHTING SHEET
MAIN STREET
STA 44+00 TO STA 49+00

PROJECT NAME
DOWNTOWN STREETS - PHASE I

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
20959
JOHN P VAN ECHO
DATE 2-7-07
ARIZONA U.S.A.

DWG NO. T-7.7
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Match Line Sta 49+00 Sheet T-7.7

Exst Light Pole
To be Removed By APS

Exst Overhead Power
To be Removed By APS

PT 54+95.16

55

Exst Overhead Power
To be Removed By APS

Exst Overhead Power
To Remain

New Underground Power
By APS

New Light Pole & Pullbox
By APS

New Light Pole & Pullbox
By APS

Casa Grande Ave

52

PI 53+05.11

Doan Street

TRI-VALLEY
PUMP CO.

50

PI 51+01.65

Exst Light Pole
To be Removed By APS

Exst Overhead Power
Relocate By APS

Jimmie Kerr Blvd

Main Street Cst ℄

S 53°23'23" E

Exst Power Pole
To be Removed By APS

Exst Light Pole
Remove

STA 52+57.67 Main Street
STA 56+61.89 Casa Grande Ave
STA 52+57.10 Jimmie Kerr Blvd

Exst Power Pole
Relocate By APS

Exst Overhead Power
Relocate By APS

BLDG

Exst Overhead Power
Relocate By APS

New Light Pole & Pullbox
By APS

Exst Overhead Power
Relocate by APS
to Underground

Exst Power Pole
To be Removed By APS

New Light Pole & Pullbox
By APS

SCALE 1":20'

5 10 20 40

Two working days before you dig.
CALL FOR THE BLUE STAKES
1-800-782-5348
Blue Stake Center

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City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

LIGHTING SHEET
MAIN STREET
STA 49+00 TO STA 53+00

PROJECT NAME
DOWNTOWN STREETS - PHASE I

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
20959
JOHN P. VAN ECHO
3-7-07
ARIZONA U.S.A.

DWG NO. T-7.8

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CITY OF CASA GRANDE LANDSCAPE & IRRIGATION GENERAL NOTES:

1. ALL LANDSCAPE AND IRRIGATION INSTALLED WITHIN THE PUBLIC RIGHT-OF-WAY OR OTHER CITY MAINTAINED AREAS SHALL BE INSTALLED PER THE APPROVED PLANS. ALL LANDSCAPING APPROVED AS A PART OF THE SITE PLAN PROCESS SHALL BE INSTALLED PER THE APPROVED PLANS. ANY DEVIATIONS TO THE APPROVED PLANS REQUIRE CITY APPROVAL.

2. PERMITS ARE REQUIRED FOR ELECTRICAL CONNECTIONS, INCLUDING ELECTRIC METER INSTALLATION, BACKFLOW PREVENTERS AND WORK WITHIN THE CITY RIGHT-OF-WAY OR CITY DEDICATED PROPERTY. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THESE PERMITS PRIOR TO THE COMMENCEMENT OF ANY WORK.

3. ALL LANDSCAPE PROJECTS REQUIRING CITY MAINTENANCE OR WITHIN THE CITY RIGHT-OF-WAY SHALL BE INSPECTED FOR THE FOLLOWING:

A. PLANT LOCATIONS: THESE LOCATIONS SHALL BE STAKED IN THE FIELD WITH IDENTIFICATION AS TO TREES OR SHRUBS, OR HOLES FOR THE PLANT MATERIALS MAY BE DUG WITH IDENTIFICATION OF PLANT TYPE. USE OF THIS METHOD DOES NOT RELIEVE THE CONTRACTOR OF ANY PLANT RELOCATIONS MADE BY THE CITY.

B. IRRIGATION INSTALLATIONS: INSPECTIONS SHALL BE MADE AT THE POINT THE IRRIGATION SYSTEM IS INSTALLED. INSPECTIONS AT A MINIMUM WILL INCLUDE BUT IS NOT LIMITED TO TAP, METER, PIPE DEPTH, TRENCH BEDDING MATERIAL, PRESSURE TEST, AUTOMATIC VALVE INSTALLATION, CONTROLLER, EMITTER INSTALLATIONS AND COVERAGE TEST WILL BE MADE.

C. SUBSTANTIAL COMPLETION: AN INSPECTION AT COMPLETION OF THE LANDSCAPE AND IRRIGATION INSTALLATION WILL BE MADE. ANY DEFICIENCIES IN THE INSTALLATION WILL BE NOTED AND CORRECTED BY THE CONTRACTOR DURING THE MAINTENANCE PERIOD.

D. FINAL ACCEPTANCE: A FINAL INSPECTION IS REQUIRED PRIOR TO CITY ACCEPTANCE OF THE LANDSCAPE AND IRRIGATION IMPROVEMENTS.

THE ABOVE INSPECTIONS REQUIRE A MINIMUM OF 48 HOURS PRIOR NOTIFICATION TO THE CITY. CALL THE CASA GRANDE COMMUNITY SERVICES DEPARTMENT, PARKS AND RIGHT-OF-WAY MAINTENANCE DIVISION AT 520-421-8677 AND SCHEDULE AN INSPECTION TIME THROUGH THE FRONT DESK. THE INSPECTION INFORMATION MUST INCLUDE THE LOCATION AND TYPE OF INSPECTION TO BE PERFORMED.

4. SEPARATE INSPECTIONS ARE REQUIRED FOR THE WATER TAP, METER INSTALLATION, BACKFLOW PREVENTER AND ELECTRICAL CONNECTIONS. CALL 520-421-8600 A MINIMUM OF 24 HOURS PRIOR TO ARRANGE FOR THESE INSPECTIONS.

5. LANDSCAPE AND IRRIGATION WHICH IS INSTALLED ON PRIVATE PROPERTY IN CONJUNCTION WITH A CITY APPROVED SITE PLAN WILL BE INSPECTED FOR CONFORMANCE TO THE APPROVED SITE PLAN PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

6. THE LANDSCAPE AND IRRIGATION FOR THIS PROJECT WILL BE MAINTAINED BY THE CITY PER THE APPROVED PLANS.

7. CITY TO MAINTAIN AT FINAL ACCEPTANCE. CONTRACTOR TO MAINTAIN PRIOR TO FINAL ACCEPTANCE.

8. RIGHT-OF-WAY AND CITY MAINTAINED AREAS REQUIRE SEPARATE WATER METER CONNECTIONS. RIGHT-OF-WAY AREAS DESIGNATED FOR MAINTENANCE BY THE ADJACENT PROPERTY OWNERS FOR COMMERCIAL, INDUSTRIAL AND MULTI-FAMILY DEVELOPMENTS SHALL HAVE THE RIGHT-OF-WAY IRRIGATION SYSTEM ISOLATED OR SEPARATED FROM THE ON-SITE IRRIGATION SYSTEM.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS, INSTALLATION, AND REQUIRED PERMIT FEE COST FOR THE WATER METER(S) DESIGNATED TO SERVE THE IRRIGATION SYSTEM.

10. ALL PLANTINGS AT MATURITY SHALL MAINTAIN A MINIMUM 6'-0" CLEARANCE AROUND ALL FIRE HYDRANTS AND FIRE SUPPRESSION DEVICES.

11. PLANTINGS SHALL NOT INTERFERE WITH ANY TRAFFIC CONTROL SIGNS AND SHALL MAINTAIN A MAXIMUM HEIGHT OF 30" WITHIN ANY VISIBILITY TRIANGLES.

12. INSTALLATION OF THE LANDSCAPE AND IRRIGATION SYSTEM INCLUDING ADDITION OF GROUND PLANE MATERIALS SHALL NOT IMPEDE THE FLOW OF DESIGNED DRAINAGE FACILITIES NOR DECREASE THE DESIGN VOLUME OF ANY DETENTION/RETENTION BASINS.

13. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL UNDERGROUND UTILITIES DURING THE LANDSCAPE AND IRRIGATION INSTALLATION.

14. ALL TREES SHALL MAINTAIN A MINIMUM OF 6'-0" CLEARANCE FROM ANY CITY WATER OR SEWER LINE. ALL PLANTINGS SHALL MAINTAIN A SUFFICIENT DISTANCE TO ANY SANITARY AND STORM SEWER MANHOLES TO ALLOW ACCESS BY MAINTENANCE VEHICLES.

15. A SWALE A MINIMUM OF 6" IN DEPTH SHALL BE PROVIDED IN ALL LANDSCAPE AREAS ADJACENT TO SIDEWALKS WITHIN THE CITY RIGHT-OF-WAY PER CITY DETAIL TO PROMOTE WATER HARVESTING.

16. ALL PLANTING AREAS (EXCEPT TURF AREAS) TO BE MAINTAINED BY THE CITY SHALL BE TREATED WITH A PRE-EMERGENT HERBICIDE BY A LICENSED APPLICATOR PRIOR TO AND AFTER THE PLACEMENT OF THE DECOMPOSED GRANITE, RIVER ROCK, ETC. APPLICATION DOCUMENTATION WILL BE REQUIRED PRIOR TO FINAL ACCEPTANCE OF THE LANDSCAPING BY THE CITY.

17. AS-BUILT DRAWINGS OF THE LANDSCAPE AND IRRIGATION SYSTEM ARE REQUIRED PRIOR TO FINAL ACCEPTANCE BY THE CITY AND FOR PROJECTS WITHIN THE CITY RIGHT-OF-WAY OR CITY OWNED PROPERTY. THE AS-BUILT DRAWINGS SHALL BE 4 MIL. PHOTO MYLAR SHOWING THE LOCATIONS OF ALL PLANTINGS AND THE DIMENSIONS TO FIXED POINTS OF ALL IRRIGATION EQUIPMENT, PIPING ETC.

18. PRIOR TO FINAL ACCEPTANCE, PLACE A LAMINATED 8 1/2 "x11" PAPER SHOWING THE CLOCK AND VALVE LOCATIONS.

LANDSCAPING & IRRIGATION GENERAL NOTES:

1. THE JOB SITE, AT THE COMPLETION OF THE CONSTRUCTION, SHALL BE CLEANED OF ANY DEBRIS OR SPOIL RESULTING FROM THE CONSTRUCTION. NO JOB WILL BE CONSIDERED COMPLETE UNTIL ALL CURBS, PAVEMENT, AND SIDEWALKS HAVE BEEN SWEPT CLEAN OF ALL DIRT AND DEBRIS, AND ALL SURVEY MONUMENTS ARE INSTALLED ACCORDING TO THE PLANS AND CITY SPECIFICATIONS.

2. ALL EQUIPMENT AND MATERIALS NOT SHOWN OR SPECIFIED ON THE PLANS OR IN THE SPECIFICATIONS BUT WHICH ARE REQUIRED TO COMPLETE THIS INSTALLATION, SHALL BE SUPPLIED BY THE CONTRACTOR AS PART OF THIS CONTRACT WORK.

3. ALL FRAMES, COVERS, VALVE BOXES, ETC., SHALL BE ADJUSTED TO FINISHED GRADE AFTER PLACING OF PAVEMENT OR PLANTING BEDS BY THE CONTRACTOR PER M.A.G. DETAIL 270 AND 422.

4. ALL LANDSCAPE AND IRRIGATION MATERIALS AND INSTALLATION SHALL COMPLY WITH SECTIONS 424, 425, 430, 440, 757, 795 OF THE M.A.G. SPECIFICATIONS AS AMENDED BY THE CITY OF CASA GRANDE.

5. THE CITY OF CASA GRANDE REQUIRES THAT ANY EXISTING BACK FLOW PREVENTION ASSEMBLIES SHALL BE TESTED AND APPROVED BY A CASA GRANDE CERTIFIED TECHNICIAN PRIOR TO THE REQUEST FOR FINAL INSPECTION.

6. LANDSCAPE REMOVAL IS A NON PAY ITEM (N.P.I.) AND THE COST FOR VEGETATIVE REMOVAL SHOULD BE INCLUDED IN SITE PREPARATION WORK ASSOCIATED WITH EACH ITEM OF WORK.

7. ALL EXISTING TREES AND SHRUBS UNLESS NOTED ARE TO BE PROTECTED IN PLACE. THE REMAINDER OF EXISTING VEGETATION (WEEDS, ETC.) UNLESS NOTED OTHERWISE SHALL BE REMOVED AND DISPOSED OF AS PART OF THE DEMOLITION PHASE OF THIS CONTRACT (NPI). ALL MATERIALS ARE TO BE REMOVED FROM PROJECT AREA AND DISPOSED OF PROPERLY OFF-SITE AT THE CONTRACTOR'S EXPENSE UNLESS OTHERWISE NOTED. (COMPACT THOSE AREAS DESIGNATED FOR PAVEMENT TO 95% OR AS SPECIFIED IN THE SOILS REPORT AND SCARIFY EXISTING SUBGRADE A MINIMUM OF 6-INCH DEPTH IN AREAS TO BE PLANTED).

8. ALL PLANT MATERIAL, OTHER THAN TREES, SHALL CONFORM TO GRADING, TYPE, ETC., AS SET FORTH IN "THE AMERICAN STANDARD FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN. ALL TREES SHALL CONFORM TO THE CURRENT "ARIZONA NURSERY ASSOCIATION TREE SPECIFICATIONS" AND M.A.G. SPEC 795.7. SHOULD ANY CONFLICTS IN SPECIFICATIONS OCCUR, THE ARIZONA NURSERY ASSOCIATION'S SPECIFICATIONS SHALL PREVAIL.

9. CITY RESERVES THE RIGHT TO INSPECT SHRUBS AND CONTAINERED TREES FOR CONDITION OF ROOT BALLS. FOR ANY SUCH INSPECTION WHICH MAY DESTROY ROOT BALL, CONTRACTOR SHALL SUPPLY ADDITIONAL PLANTS AT NO COST TO THE CITY.

10. THE CONTRACTOR SHALL HAVE THE PLANT PITS INSPECTED AND APPROVED BY CITY OF CASA GRANDE PRIOR TO PLANTING. CONTRACTOR SHALL REQUEST INSPECTION 48 HOURS IN ADVANCE.

11. TOPSOIL FOR TURF AREAS SHALL COMPLY WITH MAG SECTIONS 425, AND 795. ALL TURF AREAS SHALL BE PREPARED PER MAG SECTION 430 INCLUDING THE SPECIFIED CHEMICAL FERTILIZER TREATMENT, AND SECTION 795 OF MAG. A 2" LAYER OF APPROVED TOPSOIL SHALL BE PLACED OVER AND INCORPORATED INTO THE AREAS DESIGNATED FOR TURF. CONTRACTOR SHALL COMPLY WITH SPECIFICATIONS SECTION 2900.

12. PLANT PIT SOIL MIXTURE SHALL CONSIST OF EQUAL PARTS NATIVE TOPSOIL, NITROLIZED HUMUS AND SAND BY VOLUME, THOROUGHLY MIXED PRIOR TO BACK FILLING IN PITS. BACK FILLING SHALL BE IN 6-INCH LIFTS. EACH LIFT SHALL BE WATER SETTLED, WITHOUT PUDDLING.

13. CONTRACTOR SHALL STAKE TREE AND SHRUB LOCATIONS FOR 1-GALLON PLANTS AND LARGER, AND HAVE LOCATIONS APPROVED BY CITY OF CASA GRANDE PRIOR TO INSTALLATION. STAKES SHALL BE MARKED WITH PLANT NAME OR PLANT LEGEND ITEM NUMBER FROM PLANS.

14. CONTRACTOR SHALL INSTALL D.G. IN PLANTING BEDS AS FOLLOWS: DECOMPOSED GRANITE GROUND COVER SHALL BE 3/8 " MINUS PER MAG SECTION 430, 702, AND 795. PLACE AND ROLL TO 2" TOTAL DEPTH OVER 85% COMPACTED SUBGRADE. PRE-EMERGENT HERBICIDE SURFLAN, DACTHAL OR APPROVED EQUAL SHALL BE APPLIED BEFORE AND AFTER GRANITE PLACEMENT. SAMPLES OF D.G. ARE TO BE PROVIDED TO THE CITY OF CASA GRANDE FOR REVIEW & APPROVAL PRIOR TO PLACEMENT.

15. NO ROCKS LARGER THAN 1 INCH IN DIAMETER SHALL BE ALLOWED IN THE TOP 6 INCHES OF TOPSOIL WHERE TURF ESTABLISHMENT IS SPECIFIED ON THE PLANS. ROCK REMOVAL AS NECESSARY FOR THIS PROJECT IS A (N.P.I.). COST IS TO BE INCLUDED IN PREPARATION OF TURF BED FOR SEEDING PER MAG 430. CONTRACTOR SHALL HAVE TURF PLANTING SITE INSPECTED AND APPROVED BY CITY OF CASA GRANDE PRIOR TO TURF PLANTING.

16. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE JOB SITE TO BECOME FAMILIAR WITH ALL EXISTING CONDITIONS THAT COULD AFFECT THE INSTALLATION OF ANY WORK SET FORTH IN THESE PLANS PRIOR TO SUBMITTING A BID. CALL 520-421-8600 TO ARRANGE A TIME TO VISIT THE JOB SITE.

17. THE CONTRACTOR IS ADVISED THAT DAMAGE TO ANY PORTION OF THIS PROJECT'S EXISTING PAVEMENT, CURBING AND SURROUNDING AREA THAT IS NOT NOTED ON THE PLANS TO BE REMOVED, AS A RESULT OF THIS PROJECT, IS TO BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

18. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ANY DEBRIS RESULTING FROM THE DEMOLITION AND CONSTRUCTION. AT NO TIME SHALL ANY OF THIS MATERIAL OBSTRUCT THE NORMAL OPERATION OF ANY ADJOINING STREET OR TRAVELED WAY ASSOCIATED WITH THIS PROJECT.

19. WHERE CALICHE IS ENCOUNTERED IN PLANT PITS, DEPTH AND WIDTH OF PIT SHALL BE INCREASED BY ONE-THIRD (1/3) OVER SPECIFICATION, AND A LIQUID PENETRATION, "AL-KALICHE" OR EQUAL, SHALL BE INCORPORATED FOR EACH PIT PER MANUFACTURER'S RECOMMENDATIONS.

20. PROJECT RECORD (AS-BUILT) DRAWINGS FOR IRRIGATION SYSTEM:

A. MAINTAIN ON-SITE AND SEPARATE FROM DOCUMENTS USED FOR CONSTRUCTION, ONE COMPLETE SET OF CONTRACT DOCUMENTS AS PROJECT DOCUMENTS. KEEP DOCUMENTS CURRENT. DO NOT PERMANENTLY COVER WORK UNTIL AS-BUILT INFORMATION IS RECORDED.

B. RECORD PIPE AND WIRING NETWORK ALTERATIONS. RECORD WORK WHICH IS INSTALLED DIFFERENTLY THAN SHOWN ON THE CONSTRUCTION DRAWINGS. RECORD ACCURATE REFERENCE DIMENSIONS, MEASURED FROM AT LEAST TWO PERMANENT REFERENCE POINTS, OF EACH IRRIGATION SYSTEM VALVE, EACH BACKFLOW PREVENTION DEVICE, EACH CONTROLLER OR CONTROLLER UNIT, EACH SLEEVE END, EACH STUB-OUT FOR FUTURE PIPE OR WIRING CONNECTIONS, AND OTHER IRRIGATION COMPONENTS ENCLOSED WITHIN A VALVE BOX.

21. QUANTITIES ARE GIVEN ONLY FOR REFERENCE PURPOSES. CONTRACTOR TO VERIFY ALL LANDSCAPE QUANTITIES AND REPORT ANY DISCREPANCIES IMMEDIATELY. IN CASE OF A DISCREPANCY BETWEEN THE NUMBER OF PLANTS OF ANY SPECIES QUANTITIES OF TURF, DECOMPOSED GRANITE, CONC. HEADER AND ALL OTHER MATERIALS INDICATED ON THE DRAWINGS AND THE TOTAL NUMBER INDICATED ON THE MATERIALS LIST OR BID TAB, THE DRAWINGS SHALL BE ACCEPTED AS CORRECT.

22. CONTRACTOR SHALL VERIFY THE EXISTENCE AND LOCATION OF ALL EXISTING AND PROPOSED UNDERGROUND UTILITIES AND STRUCTURES PRIOR TO STARTING ANY WORK. REPORT IMMEDIATELY TO THE OWNER ANY CASES WHERE PLANT MATERIAL SHALL BE RELOCATED TO AVOID THE UTILITIES. DAMAGE BY THE CONTRACTOR TO ANY WORK SHALL BE REPLACED AND/OR REPAIRED BY THE CONTRACTOR AT HIS/HER EXPENSE.

24. ALL LANDSCAPE AREAS SHALL HAVE AN APPLIED TOPPING OF EITHER DECOMPOSED GRANITE, OR TURF SEED. FINISH GRADE AREAS ARE TO BE RAKED AND COMPACTED AS SPECIFIED IN MAG SECTIONS 430 AND LEFT SMOOTH AND EVEN WITH FINISH GRADE 1 1/2 " BELOW ALL STRUCTURES. PLANTED AREAS SHALL BE 1" BELOW ALL ADJACENT CURBS, WALKS, AND PAVING. NON-PLANTED AREAS SHALL BE 1/2 " BELOW ALL ADJACENT CURBS AND WALKS.

25. IF BOULDERS ARE SPECIFIED ON THE PLANS THEY SHALL BE FROM THE SAME SOURCE. PIT RUN BOULDERS ARE ALLOWED BUT MUST BE REVIEWED AND APPROVED BY THE CITY OF CASA GRANDE PRIOR TO INSTALLATION. CONTRACTOR SHALL VERIFY SOURCE AND TYPE OF BOULDER WITH CITY PRIOR TO ORDERING AND INSTALLING.

26. FOR SITE OBSERVATIONS CONDUCTED DURING THE CONSTRUCTION PHASE OF THE PROJECT REFER TO SECTION 105 OF MAG. THE CITY OF CASA GRANDE WILL PERFORM ALL INSPECTIONS.

27. FOR ADDITIONAL CONSTRUCTION NOTES REFER TO LANDSCAPE ARCHITECTURE AND IRRIGATION PLANS.

GENERAL - IRRIGATION SYSTEM

WORK INCLUDED: WORK UNDER THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NEW AUTOMATIC DRIP IRRIGATION SYSTEM COMPLETE, INCLUDING, AS INDICATED ON THE PLANS AND DESCRIBED IN STANDARD SPECIFICATIONS AND SUPPLEMENTAL SPECIFICATIONS, BUT NOT LIMITED TO ALL ELECTRICAL CONNECTIONS, PIPE, WIRING, VALVES, VALVE COVERS, CONTROLLERS, SECURITY CABINETS, ETC., FOR A COMPLETE, AUTOMATIC AND FULLY OPERATIONAL IRRIGATION SYSTEM.

THE CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT, AND MATERIALS TO INSTALL ALL WATER TAPS, METERS, BACKFLOW PREVENTERS WITH SECURITY CAGES, CONCRETE, TRENCHING, PIPE, BACKFILL, SLEEVES, WIRES, VALVE BOXES WITH COVERS, ALL PERMITS AND FEES ASSOCIATED WITH THIS WORK, ETC., REQUIRED TO PROVIDE SERVICE CONNECTIONS FOR INSTALLATION OF NEW WATER METERS AND WATER TAPS PER THE CITY OF CASA GRANDE STANDARDS AND MAG SPECIFICATIONS.

PLANT LEGEND

Species:	Quantity	Size
Trees:		
Olneya tesota Desert Ironwood	2	24" Box Multi-Trunk
Cercidium preacox Palo Brea	30	24" Box Multi-Trunk
Acacia saligna Weeping Wattle	31	15 Gallon Single-Trunk
Washingtonia robusta (existing) Mexican Fan Palm (existing)	1	
Pinus eldarica Mondel Pine	24	15 Gallon Single-Trunk
Quercus virginiana Southern Live Oak	111	15 Gallon Single-Trunk
Shrubs:		
Caesalpinia pulcherrima Red Bird of Paradise	39	5 Gallon
Convolvulus cneorum Bush Morning Glory	26	5 Gallon
Leucophyllum langmaniae 'Thunder Cloud' Sage	26	5 Gallon
Salvia greggii Autumn Sage	35	5 Gallon
Groundcovers:		
Dalea capitata 'Sierra Gold' Dalea	7	1 Gallon
Hymenoxys acaulis Angelita Daisy	128	1 Gallon
Lantana montevidensis Purple Trailing Lantana	165	1 Gallon
Setcreasea pallida Purple Heart Plant	4	1 Gallon
Verbena rigida Vervain Verbena	12	1 Gallon
Cactus and Accents:		
Agave americana 'Marginata' Agave Americana	9	5 Gallon
Agave vilmoriniana Octopus Agave	135	5 Gallon
Echinocactus grusonii Golden Barrel Cactus	20	5 Gallon

INERT MATERIALS: Decomposed Granite (D.G.) 3/8 " Minus 'Madison Gold' — 4103 Sq. Yd.

TURF MATERIAL: Hybrid Bermuda Princess 77 Seed — 52,751 Sq. Ft.

NOTE-
1. QUANTITIES SHOWN ARE OVERALL PROJECT LANDSCAPE QUANTITIES. THESE QUANITIES ARE SHOWN FOR CONTRACTOR CONVENIENCE ONLY. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES PER PLANS.
2. SEE SHEET L-13 FOR SITE AMENITIES SCHEDULE.

-WARNING-
OVERHEAD POWER LINES WITHIN PROJECT CONSTRUCTION LIMITS

Two working days before you dig CALL FOR THE BLUE STAKES 1-800-STAKE-IT (Blue Stake Center 1-800-782-5348)

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

DESIGN FILE: #DDN#
PLOT DATE: 1/19/2007

	NAME	DATE
DESIGN	D.D.	01/07
DRAWN	A.G.	01/07
CHECKED	J.E.	01/07

J2 Engineering and Environmental Design, LLC
4648 East Cotton Center Loop, Suite 102
Phoenix, Arizona 85040
Phone: 602.430.2221
www.j2design.us

CLIENT: City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT: DOWNTOWN STREETS IMPROVEMENTS PHASE ONE

SHEET TITLE: PLANTING SCHEDULE & GENERAL NOTES

DWG NO. L-1

Sht No. 67 of 93

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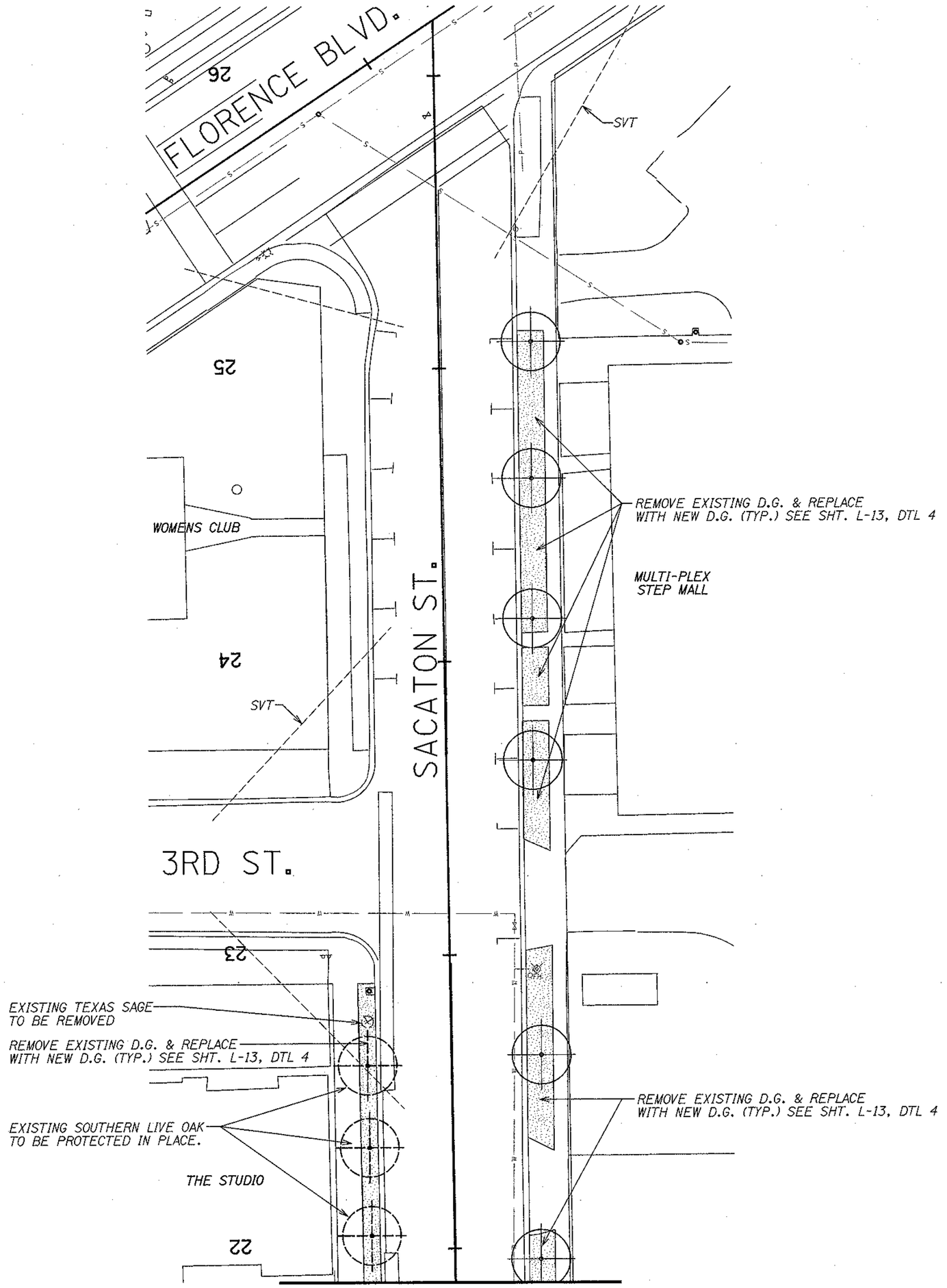
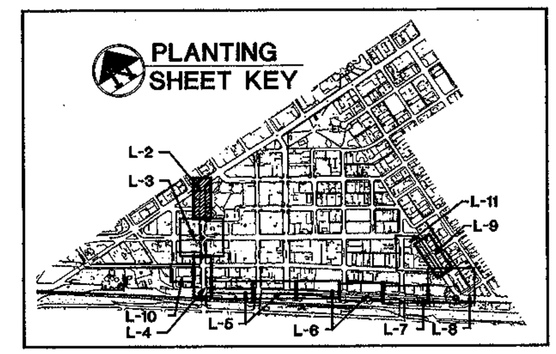


PLANT LEGEND

Species:	Size
Trees:	
Olneya tesota — Desert Ironwood	24" Box Multi-Trunk
Cercidium preacox — Palo Brea	24" Box Multi-Trunk
Acacia saligna — Weeping Wattle	15 Gallon Single-Trunk
Washingtonia robusta (existing) — Mexican Fan Palm (existing)	
Pinus eldarica — Mondel Pine	15 Gallon Single-Trunk
Quercus virginiana — Southern Live Oak	15 Gallon Single-Trunk
Shrubs:	
Caesalpinia pulcherrima — Red Bird of Paradise	5 Gallon
Convolvulus cneorum — Bush Morning Glory	5 Gallon
Leucophyllum langmaniae 'Thunder Cloud' — Sage	5 Gallon
Salvia greggii — Autumn Sage	5 Gallon
Groundcovers:	
Dalea capitata 'Sierra Gold' — Dalea	1 Gallon
Hymenoxys acaulis — Angelita Daisy	1 Gallon
Lantana montevidensis — Purple Trailing Lantana	1 Gallon
Setcreasea pallida — Purple Heart Plant	1 Gallon
Verbena rigida — Vervain Verbena	1 Gallon
Cactus and Accents:	
Agave americana 'Marginata' — Agave Americana	5 Gallon
Agave vilmoriniana — Octopus Agave	5 Gallon
Echinocactus grusonii — Golden Barrel Cactus	5 Gallon

INERT MATERIALS: Decomposed Granite (D.G.) 3/8 " Minus 'Madison Gold

NOTE:
SEE PLANT SCHEDULE ON SHEET L-1 FOR OVERALL LANDSCAPE QUANTITIES AND SIZES.



SCALE 1"=20'
0 5' 10' 20' 40'

-WARNING-
OVERHEAD POWER LINES WITHIN PROJECT CONSTRUCTION LIMITS

Two working days before you dig CALL FOR THE BLUE STAKES 1-800-STAKE-IT (Blue Stake Center 1-800-782-5348)

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

DESIGN FILE: DGN
PLOT DATE: 1/19/2007

	NAME	DATE
DESIGN	D.D.	01/07
DRAWN	A.G.	01/07
CHECKED	J.E.	01/07

J2 Engineering and Environmental Design, LLC
4649 East Cotton Gin Loop, Suite B2
Phoenix, Arizona 85040
Phone: 602.438.2221
www.j2design.biz

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT:
DOWNTOWN STREETS IMPROVEMENTS
PHASE ONE

SHEET TITLE:
SACATON STREET - LANDSCAPE
PLANTING PLAN

DWG NO.
L-2
Sht No. 68 of 93

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MATCHLINE - SEE SHEET L-2

SACATON ST.

2ND ST.

LIMIT OF PHASE ONE CONSTRUCTION

LIMIT OF PHASE ONE CONSTRUCTION

COTTON'S WONDER BAR

BUILDING

THE DISPATCH NEWSPAPER

TRAIL WORKS

NEW SIGN WORKS H/C

22

21

23

24

25

19

18

D.G. (TYP.)
SEE SHT L-13, DTL 4

EXIST. PINE TREE TO BE PROTECTED IN PLACE

D.G. (TYP.)
SEE SHT L-13, DTL 4

EXIST. PINE TREE TO BE PROTECTED IN PLACE

D.G. (TYP.)
SEE SHT L-13, DTL 4

SVT

PAVERS (TYP.)
SEE SHT L-13, DTL 5

SVT

TREE GRATES
SEE SHT L-13, DTL 7

PAVERS (TYP.)
SEE SHT L-13, DTL 5

TREE GRATES
SEE SHT L-13, DTL 7

PAVERS (TYP.)
SEE SHT L-13, DTL 5

EXISTING PALM TREE TO BE SALVAGED AND RELOCATED PER CITY FORCES

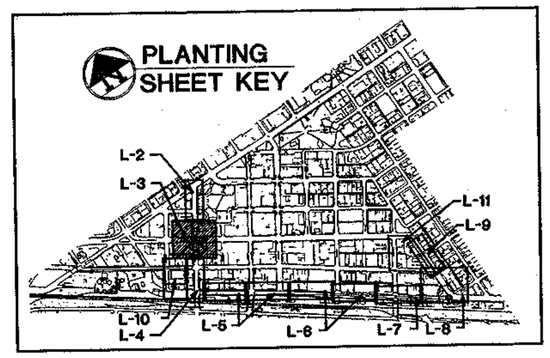
MATCHLINE - SEE SHEET L-4

PLANT LEGEND

Species:	Size
Trees:	
Olneya tesota — Desert Ironwood	24" Box Multi-Trunk
Cercidium preacox — Palo Brea	24" Box Multi-Trunk
Acacia saligna — Weeping Wattle	15 Gallon Single-Trunk
Washingtonia robusta (existing) — Mexican Fan Palm (existing)	
Pinus eldarica — Mondel Pine	15 Gallon Single-Trunk
Quercus virginiana — Southern Live Oak	15 Gallon Single-Trunk
Shrubs:	
Caesalpinia pulcherrima — Red Bird of Paradise	5 Gallon
Convolvulus cneorum — Bush Morning Glory	5 Gallon
Leucophyllum langmaniae 'Thunder Cloud' — Sage	5 Gallon
Salvia greggii — Autumn Sage	5 Gallon
Groundcovers:	
Dalea capitata 'Sierra Gold' — Dalea	1 Gallon
Hymenoxys acaulis — Angelita Daisy	1 Gallon
Lantana montevidensis — Purple Trailing Lantana	1 Gallon
Setcreasea pallida — Purple Heart Plant	1 Gallon
Verbena rigida — Vervain Verbena	1 Gallon
Cactus and Accents:	
Agave americana 'Marginata' — Agave Americana	5 Gallon
Agave vilmoriniana — Octopus Agave	5 Gallon
Echinocactus grusonii — Golden Barrel Cactus	5 Gallon

INERT MATERIALS:
Decomposed Granite (D.G.) 3/8 " Minus 'Madison Gold

NOTE:
SEE PLANT SCHEDULE ON SHEET L-1 FOR OVERALL LANDSCAPE QUANTITIES AND SIZES.



SCALE 1":20'
0 5' 10' 20' 40'

-WARNING-
OVERHEAD POWER LINES WITHIN PROJECT CONSTRUCTION LIMITS

Two working days before you dig CALL FOR THE BLUE STAKES
1-800-STAKE-IT
Blue Stake Center 1-800-782-5348

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

DESIGN FILE: #DGN#
PLOT DATE: 1/19/2007

	NAME	DATE
DESIGN	D.D.	01/07
DRAWN	A.G.	01/07
CHECKED	J.E.	01/07

J2 Engineering and Environmental Design, LLC
4649 East Cotton Gin Loop, Suite B2
Phoenix, Arizona 85040
Phone: 602.438.2221
www.j2design.us

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT:
DOWNTOWN STREETS IMPROVEMENTS
PHASE ONE

SHEET TITLE:
SACATON STREET - LANDSCAPE PLANTING PLAN

DWG NO.
L-3

Sht No. 69 of 93

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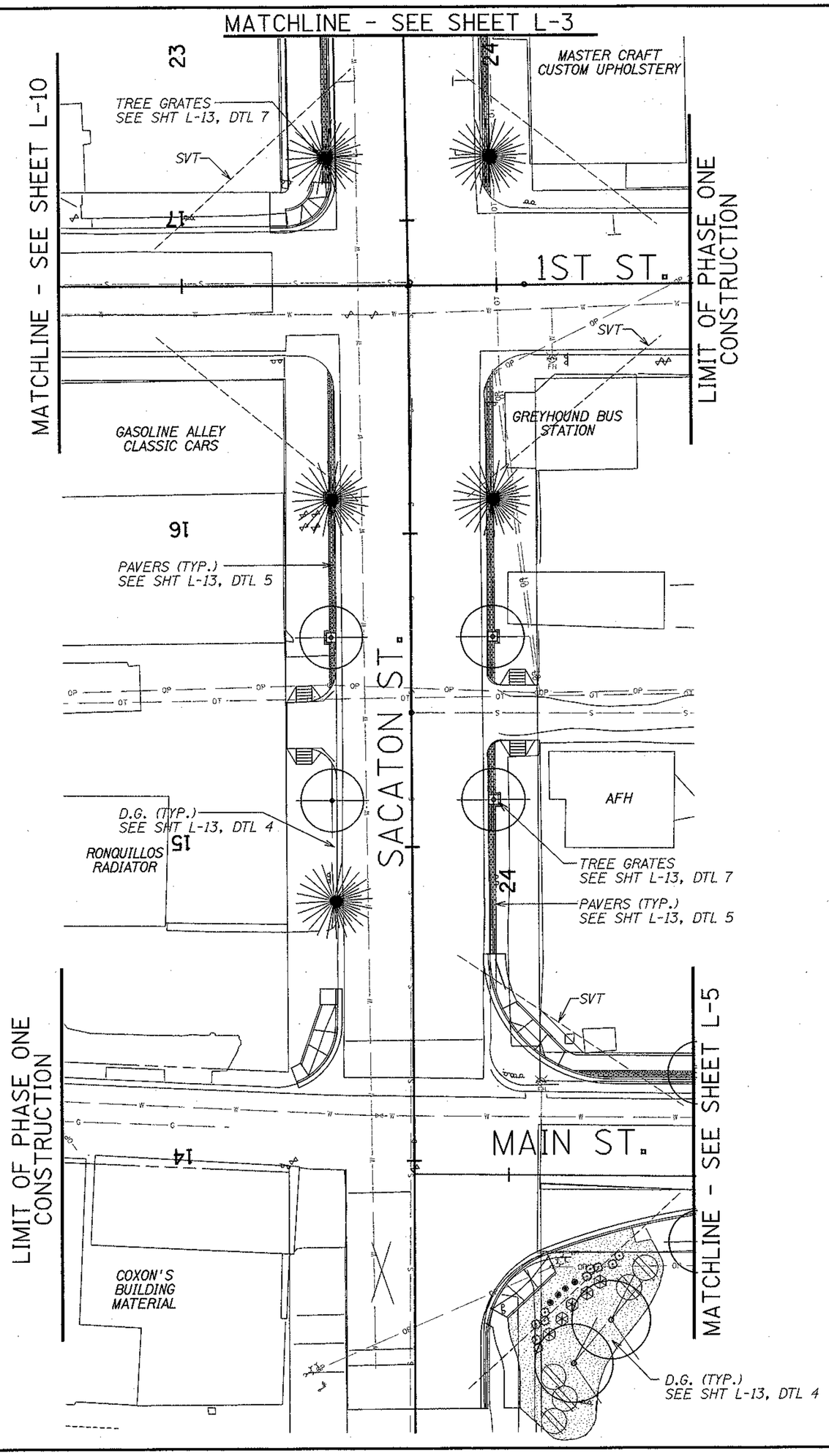
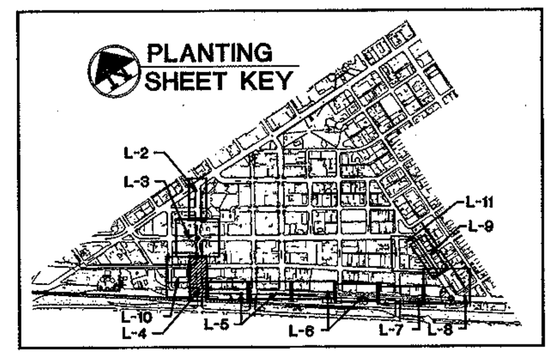


PLANT LEGEND

Species:	Size
Trees:	
Olneya tesota — Desert Ironwood	24" Box Multi-Trunk
Cercidium preacox — Palo Brea	24" Box Multi-Trunk
Acacia salicina — Weeping Wattle	15 Gallon Single-Trunk
Washingtonia robusta (existing) — Mexican Fan Palm (existing)	
Pinus eldarica — Mondel Pine	15 Gallon Single-Trunk
Quercus virginiana — Southern Live Oak	15 Gallon Single-Trunk
Shrubs:	
Caesalpinia pulcherrima — Red Bird of Paradise	5 Gallon
Convolvulus cneorum — Bush Morning Glory	5 Gallon
Leucophyllum langmaniae — 'Thunder Cloud' Sage	5 Gallon
Salvia greggii — Autumn Sage	5 Gallon
Groundcovers:	
Dalea capitata — 'Sierra Gold' Dalea	1 Gallon
Hymenoxys acaulis — Angelita Daisy	1 Gallon
Lantana montevidensis — Purple Trailing Lantana	1 Gallon
Setcreasea pallida — Purple Heart Plant	1 Gallon
Verbena rigida — Vervain Verbena	1 Gallon
Cactus and Accents:	
Agave americana 'Marginata' — Agave Americana	5 Gallon
Agave vilmorinana — Octopus Agave	5 Gallon
Echinocactus grusonii — Golden Barrel Cactus	5 Gallon

INERT MATERIALS:
Decomposed Granite (D.G.) 3/8 " Minus 'Madison Gold

NOTE:
SEE PLANT SCHEDULE ON SHEET L-1 FOR OVERALL LANDSCAPE QUANTITIES AND SIZES.



SCALE 1":20'
0 5' 10' 20' 40'

-WARNING-
OVERHEAD POWER LINES WITHIN PROJECT CONSTRUCTION LIMITS

Two working days before you dig CALL FOR THE BLUE STAKES
1-800-STAKE-IT
Blue Stake Center 1-800-782-5348

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

DESIGN FILE: DGN
PLOT DATE: 1/19/2007

	NAME	DATE
DESIGN	D.D.	01/07
DRAWN	A.G.	01/07
CHECKED	J.E.	01/07

J2 Engineering and Environmental Design, LLC
4649 East Cotton Gin Loop, Suite B2
Phoenix, Arizona 85040
Phone: 602.438.2221
www.j2design.us

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT: DOWNTOWN STREETS IMPROVEMENTS PHASE ONE

SHEET TITLE: SACATON STREET - LANDSCAPE PLANTING PLAN

DWG NO. L-4

Sht No. 70 of 93

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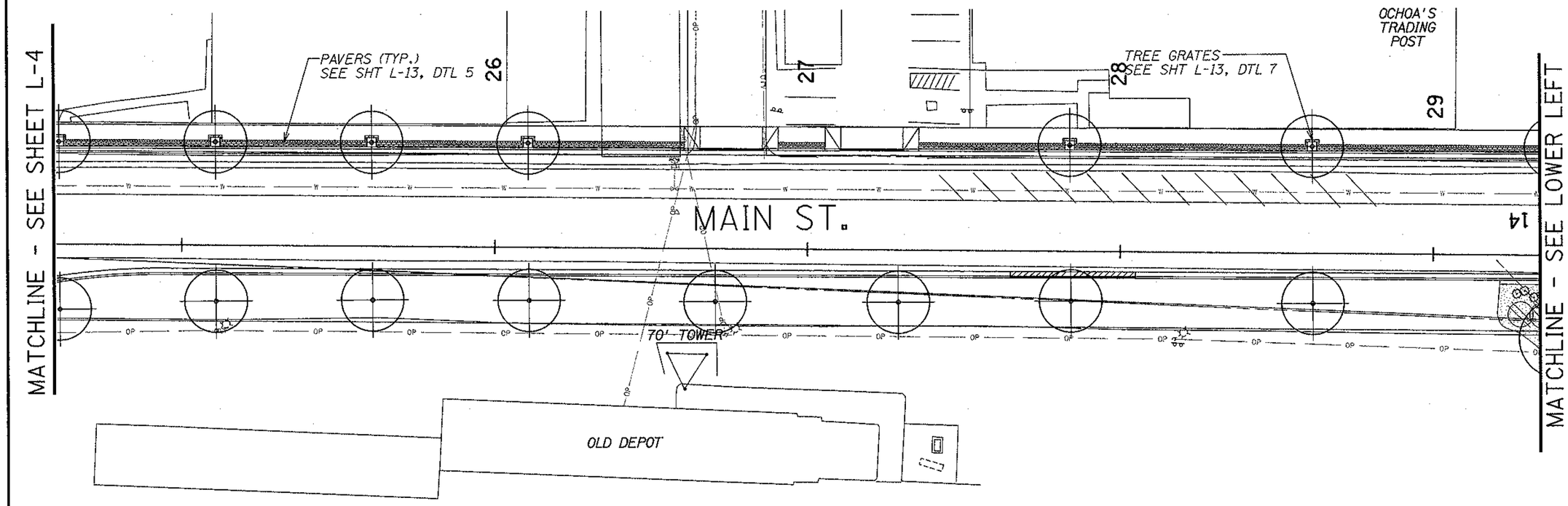
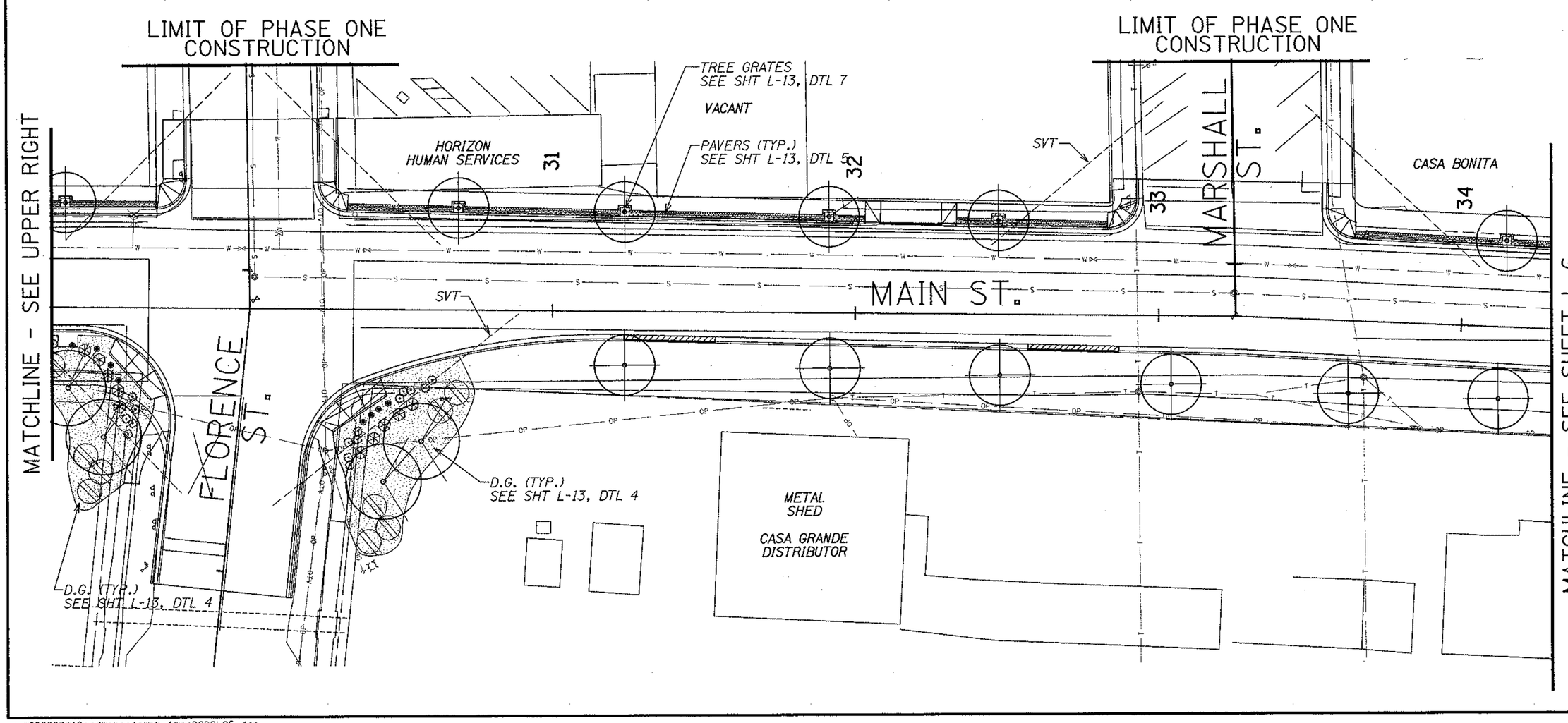


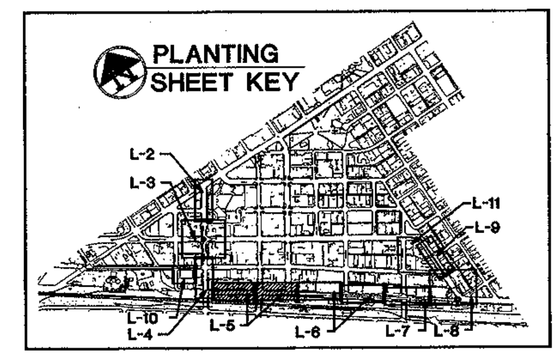


PLANT LEGEND

Species:	Size
Trees:	
Olneya tesota — Desert Ironwood	24" Box Multi-Trunk
Cercidium preacox — Palo Brea	24" Box Multi-Trunk
Acacia saligna — Weeping Wattle	15 Gallon Single-Trunk
Washingtonia robusta (existing) — Mexican Fan Palm (existing)	
Pinus eldarica — Mondel Pine	15 Gallon Single-Trunk
Quercus virginiana — Southern Live Oak	15 Gallon Single-Trunk
Shrubs:	
Caesalpinia pulcherrima — Red Bird of Paradise	5 Gallon
Convolvulus cneorum — Bush Morning Glory	5 Gallon
Leucophyllum langmaniae 'Thunder Cloud' — Sage	5 Gallon
Salvia greggii — Autumn Sage	5 Gallon
Groundcovers:	
Dalea capitata 'Sierra Gold' — Dalea	1 Gallon
Hymenoxys acaulis — Angelita Daisy	1 Gallon
Lantana montevidensis — Purple Trailing Lantana	1 Gallon
Setcreasea pallida — Purple Heart Plant	1 Gallon
Verbena rigida — Vervain Verbena	1 Gallon
Cactus and Accents:	
Agave americana 'Marginata' — Agave Americana	5 Gallon
Agave vilmorinana — Octopus Agave	5 Gallon
Echinocactus grusonii — Golden Barrel Cactus	5 Gallon

INERT MATERIALS: Decomposed Granite (D.G.) 3/8 " Minus 'Madison Gold

NOTE:
SEE PLANT SCHEDULE ON SHEET L-1 FOR OVERALL LANDSCAPE QUANTITIES AND SIZES.



-WARNING-
OVERHEAD POWER LINES WITHIN PROJECT CONSTRUCTION LIMITS

Two working days before you dig CALL FOR THE BLUE STAKES 1-800-STAKE-IT (1-800-782-5348) Blue Stake Center

SCALE 1"=20'
0 5' 10' 20' 40'

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

DESIGN FILE: DGN
PLOT DATE: 1/19/2007

	NAME	DATE
DESIGN	D.D.	01/07
DRAWN	A.C.	01/07
CHECKED	J.E.	01/07

J2 Engineering and Environmental Design, LLC
4649 East Cotton Gin Loop, Suite B2
Phoenix, Arizona 85040
Phone: 602.436.2221
www.j2design.us

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT:
DOWNTOWN STREETS IMPROVEMENTS
PHASE ONE

SHEET TITLE:
MAIN STREET - LANDSCAPE PLANTING PLAN

DWG NO.
L-5
Sht No. 71 of 93

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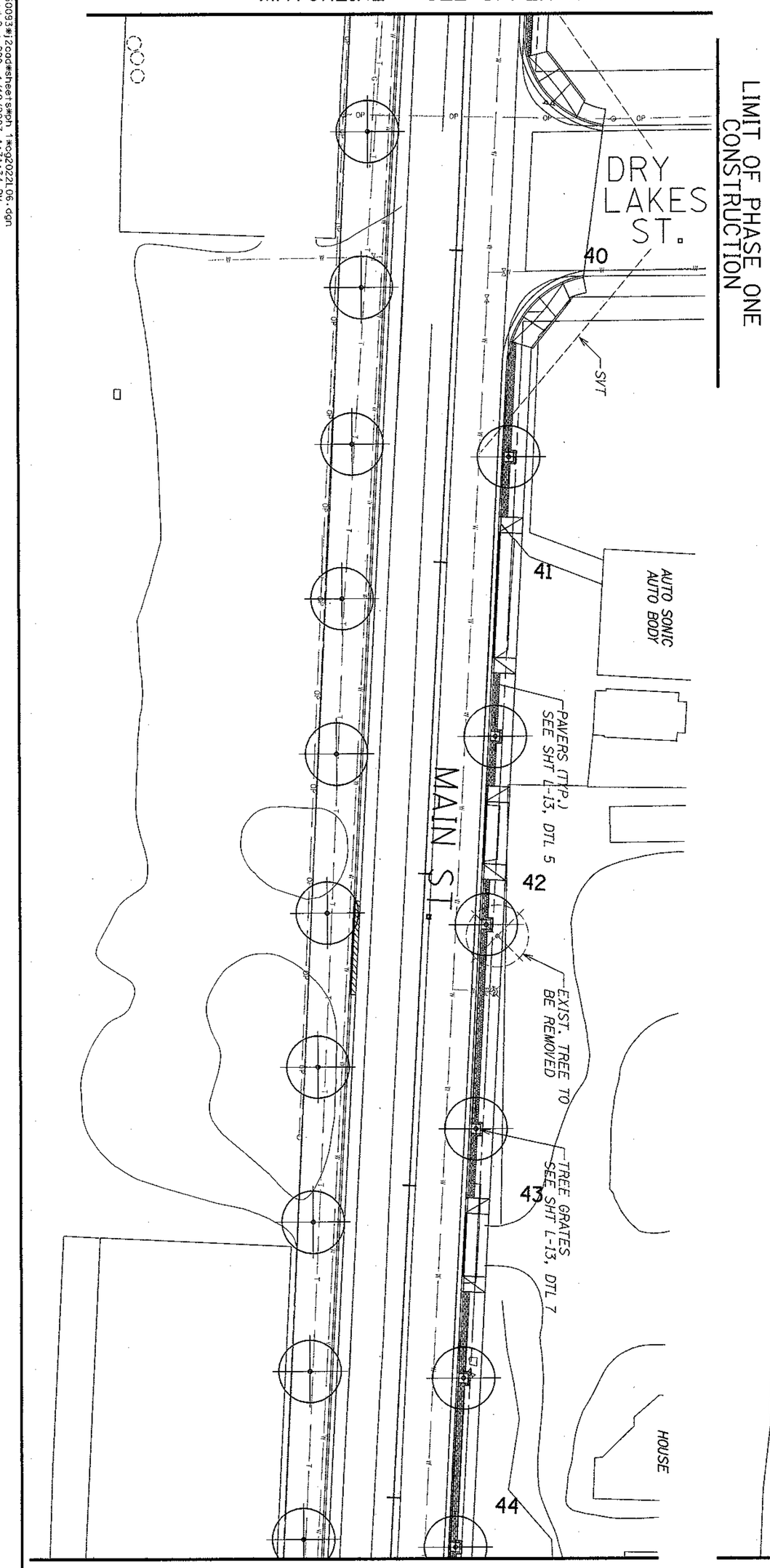
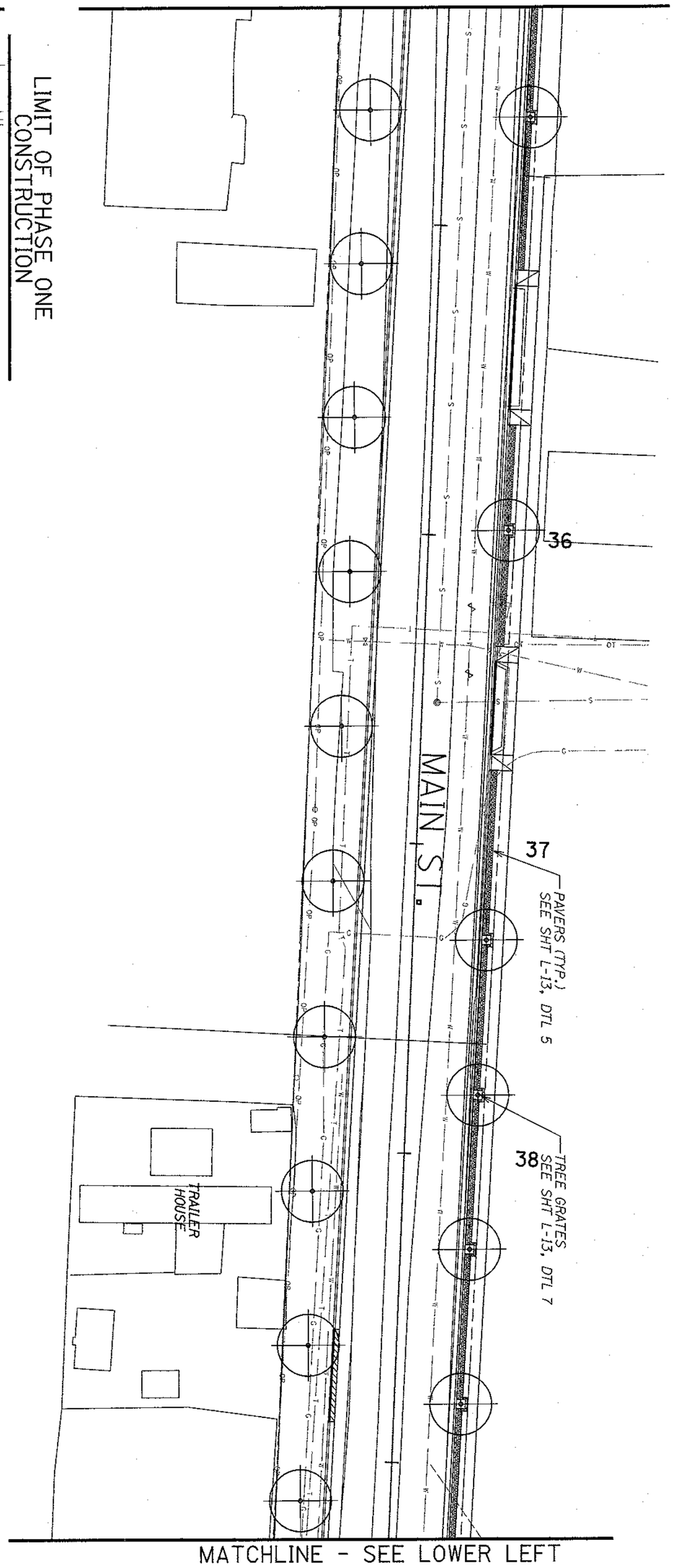
MATCHLINE - SEE UPPER RIGHT

MATCHLINE - SEE SHEET L-5





MATCHLINE - SEE SHEET L-7

MATCHLINE - SEE LOWER LEFT

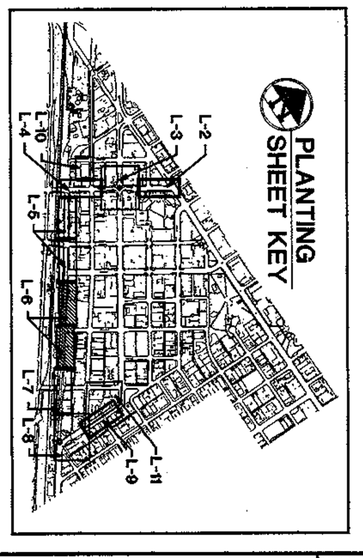
PLANT LEGEND

Species:	Size
Trees:	
— *Olneya tesota* Desert Ironwood	24" Box Multi-Trunk
— *Cercidium preacox* Palo Brea	24" Box Multi-Trunk
— *Acacia saligna* Weeping Wattle	15 Gallon Single-Trunk
— *Washingtonia robusta (textsting)* Mexican Fan Palm (textsting)	
— *Pinus eldarica* Mondel Pine	15 Gallon Single-Trunk
— *Quercus virginiana* Southern Live Oak	15 Gallon Single-Trunk
Shrubs:	
— *Caesalphia pulcherrima* Red Bird of Paradise	5 Gallon
— *Convolvus cneorum* Bush Morning Glory	5 Gallon
— *Leucophyllum langmaniae 'Thunder Cloud'* Sage	5 Gallon
— *Salvia greggii* Autumn Sage	5 Gallon
Groundcovers:	
— *Dalea capitata 'Sierra Gold'* Dalea	1 Gallon
— *Hymenoxys acaulis* Angelita Daisy	1 Gallon
— *Lantana montevidensis* Purple Trailing Lantana	1 Gallon
— *Setcreasea pallida* Purple Heart Plant	1 Gallon
— *Verbena rigida* Vervain Verbena	1 Gallon
Cactus and Accents:	
— *Agave americana 'Marginata'* Agave Americana	5 Gallon
— *Agave vilmoriana* Ootopus Agave	5 Gallon
— *Echinocactus grusonii* Golden Barrel Cactus	5 Gallon

INERT MATERIALS: *Decomposed Granite (D.G.) 3/8 " Minus 'Madison Gold*

NOTE: SEE PLANT SCHEDULE ON SHEET L-1 FOR OVERALL LANDSCAPE QUANTITIES AND SIZES.

PLANTING SHEET KEY



SCALE 1"=20'
0' 5' 10' 20' 40'

-WARNING-
OVERHEAD POWER LINES WITHIN PROJECT CONSTRUCTION LIMITS

1-800-STAKE-IT
Two working days before you dig CALL FOR THE BLUE STAKES
Blue Stake, Inc.
1-800-782-5348

DWG NO. L-6	PROJECT: DOWNTOWN STREETS IMPROVEMENTS PHASE ONE	CLIENT: City of Casa Grande, 510 East Florence Blvd, Casa Grande, Arizona 85222	J2 Engineering and Environmental Design, LLC, 4649 East Cotton Gin Loop, Suite B2, Phoenix, Arizona 85040, Phone: 602.438.2221, www.j2design.us
Sht No. 72 of 93	SHEET TITLE: MAIN STREET - LANDSCAPE PLANTING PLAN		

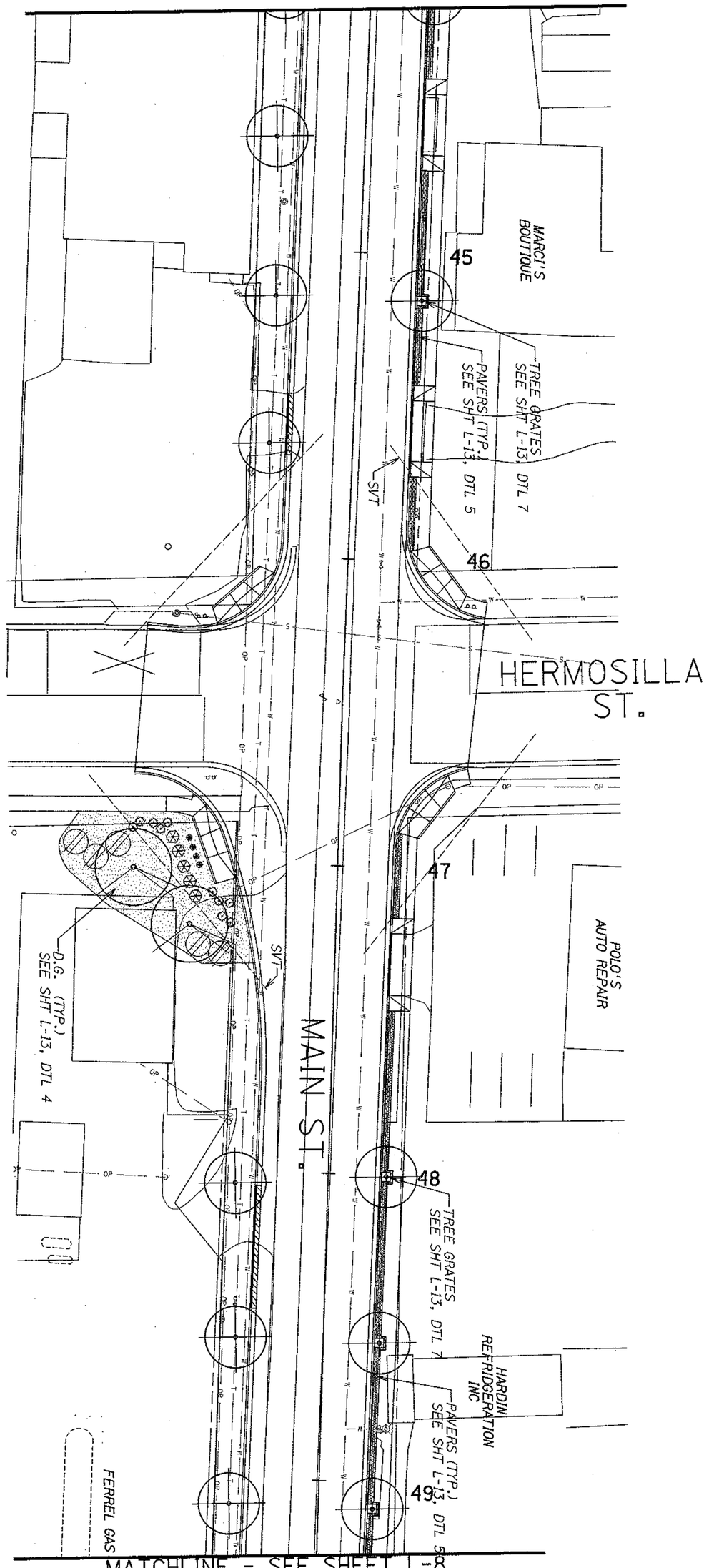
NO.	DESCRIPTION OF REVISION	MADE BY	DATE

	NAME	DATE
DESIGN	D.D.	01/07
DRAWN	A.G.	01/07
CHECKED	J.E.	01/07

DESIGN FILE: DGN
PLOT DATE: 1/19/2007

P:\#05093\j2cad\sheets\ph 1\cg2022L07.dgn
Plotted By: DDD 1/19/2007 1:31:36 PM

MATCHLINE - SEE SHEET L-6



MATCHLINE - SEE SHEET L-8

PLANT LEGEND

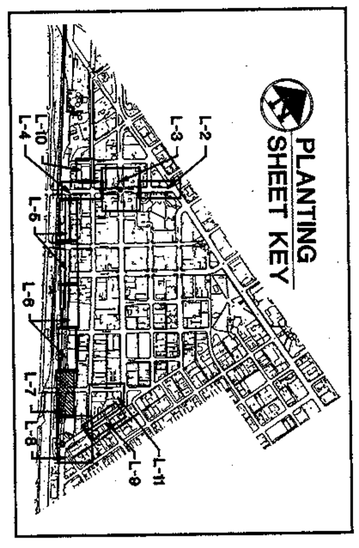
Species:	Size
Trees:	
— Olneya tesota Desert Ironwood	24" Box Multi-Trunk
— Ceroidium preacox Palo Brea	24" Box Multi-Trunk
— Acacia saligna Weeping Wattle	15 Gallon Single-Trunk
— Washingtonia robusta (existing) Mexican Fan Palm (existing)	
— Pinus eldarica Mondel Pine	15 Gallon Single-Trunk
— Quercus virginiana Southern Live Oak	15 Gallon Single-Trunk
Shrubs:	
— Caesalpinia pulcherrima Red Bird of Paradise	5 Gallon
— Convolvulus cneorum Bush Morning Glory	5 Gallon
— Leucophyllum langmaniae 'Thunder Cloud' Sage	5 Gallon
— Salvia greggii Autumn Sage	5 Gallon
Groundcovers:	
— Dalea capitata 'Sierra Gold' Dalea	1 Gallon
— Hymenoxys acaulis Angelita Daisy	1 Gallon
— Lantana montevidensis Purple Trailing Lantana	1 Gallon
— Setcreasea pallida Purple Heart Plant	1 Gallon
— Verbena rigida Verbain Verbena	1 Gallon
Cactus and Accents:	
— Agave americana 'Marginata' Agave Americana	5 Gallon
— Agave vilmoriniana Octopus Agave	5 Gallon
— Echinocactus grusonii Golden Barrel Cactus	5 Gallon

INERT MATERIALS:

Decomposed Granite (D.G.) 3/8 " Minus 'Madison Gold

NOTE:
SEE PLANT SCHEDULE ON SHEET L-1 FOR OVERALL LANDSCAPE QUANTITIES AND SIZES.

PLANTING SHEET KEY



SCALE 1:20'
0 5' 10' 20' 40'

-WARNING-
OVERHEAD POWER LINES WITHIN PROJECT CONSTRUCTION LIMITS

1-800-STAKE-IT
Two working days before you dig
CALL FOR THE BLUE STAKES
Blue Stake Center
1-800-782-5348

DWG NO. L-7	PROJECT: DOWNTOWN STREETS IMPROVEMENTS PHASE ONE	CLIENT: City of Casa Grande 510 East Florence Blvd Casa Grande, Arizona 85222	J2 Engineering and Environmental Design, LLC 4649 East Cotton Gin Loop, Suite B2 Phoenix, Arizona 85040 Phone: 602.438.2221 www.j2design.us
Sht No. 73 of 93	SHEET TITLE: MAIN STREET - LANDSCAPE PLANTING PLAN		

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

	NAME	DATE
DESIGN	D.D.	01/07
DRAWN	A.G.	01/07
CHECKED	J.E.	01/07

DESIGN FILE: DGN
PLOT DATE: 1/19/2007

MATCHLINE - SEE SHEET L-9

CASA GRANDE AVE.

PAVERS (TYP.)
SEE SHT L-13, DTL 5

D.G. (TYP.)
SEE SHT L-13, DTL 4

BENCH & BENCH PAD
SEE SHT L-13, DTL 8

TRI-VALLEY
PUMP CO.

6' SIDEWALK
SEE SHT L-13, DTL 1

D.G. (TYP.)
SEE SHT L-13, DTL 4

TREE GRATES
SEE SHT L-13, DTL 7

PAVERS (TYP.)
SEE SHT L-13, DTL 5

MATCHLINE - SEE SHEET L-7

MAIN STREET

PAVERS (TYP.)
SEE SHT L-13, DTL 5

VACANT

51 52 53 55 56 20 21

DOAN ST.

D.G. (TYP.)
SEE SHT L-13, DTL 4

CONCRETE HEADER
SEE SHT L-13, DTL 3

PAVERS (TYP.)
SEE SHT L-13, DTL 5

END OF PROJECT

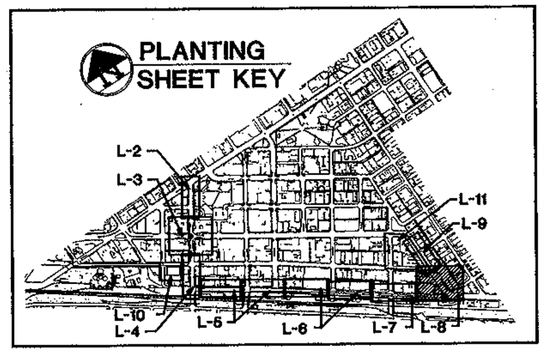
PLANT LEGEND

Species:	Size
Trees:	
Olneya tesota Desert Ironwood	24" Box Multi-Trunk
Cercidium preacox Palo Brea	24" Box Multi-Trunk
Acacia salicina Weeping Wattle	15 Gallon Single-Trunk
Washingtonia robusta (existing) Mexican Fan Palm (existing)	
Pinus eldarica Mondel Pine	15 Gallon Single-Trunk
Quercus virginiana Southern Live Oak	15 Gallon Single-Trunk
Shrubs:	
Caesalpinia pulcherrima Red Bird of Paradise	5 Gallon
Convolvulus cneorum Bush Morning Glory	5 Gallon
Leucophyllum langmaniae 'Thunder Cloud' Sage	5 Gallon
Salvia greggii Autumn Sage	5 Gallon
Groundcovers:	
Dalea capitata 'Sierra Gold' Dalea	1 Gallon
Hymenoxys acaulis Angelita Daisy	1 Gallon
Lantana montevidensis Purple Trailing Lantana	1 Gallon
Setcreasea pallida Purple Heart Plant	1 Gallon
Verbena rigida Vervain Verbena	1 Gallon
Cactus and Accents:	
Agave americana 'Marginata' Agave Americana	5 Gallon
Agave vilmoriniana Octopus Agave	5 Gallon
Echinocactus grusonii Golden Barrel Cactus	5 Gallon

INERT MATERIALS:
Decomposed Granite (D.G.) 3/8 " Minus 'Madison Gold

NOTE:
SEE PLANT SCHEDULE ON SHEET L-1 FOR OVERALL LANDSCAPE QUANTITIES AND SIZES.

PLANTING SHEET KEY



SCALE 1"=20'
0 5' 10' 20' 40'

-WARNING-
OVERHEAD POWER LINES WITHIN PROJECT CONSTRUCTION LIMITS

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Blue Stake Center
1-800-782-5348

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

DESIGN FILE: #DGN#
PLOT DATE: 1/19/2007

	NAME	DATE
DESIGN	D.D.	01/07
DRAWN	A.G.	01/07
CHECKED	J.E.	01/07

J2 Engineering and Environmental Design, LLC
4649 East Cotton Gin Loop, Suite B2
Phoenix, Arizona 85040
Phone: 602.436.2221
www.j2design.us

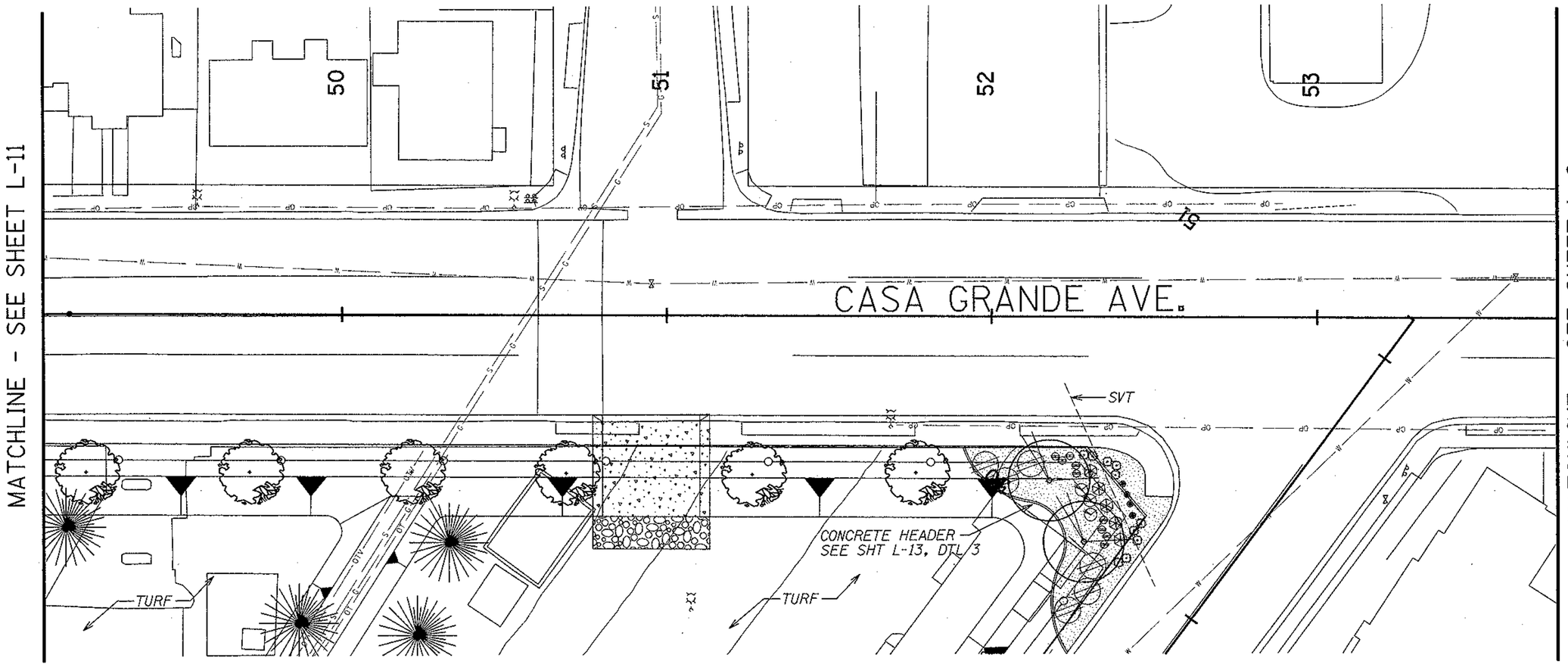
CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT:
DOWNTOWN STREETS IMPROVEMENTS
PHASE ONE

SHEET TITLE:
MAIN STREET - LANDSCAPE
PLANTING PLAN

DWG NO.
L-8
Sht No. 74 of 93

p:\050093\j2cad\sheets\ph 1\cg2022L08.dgn
Plotted By: DDD 1/19/2007 1:31:39 PM



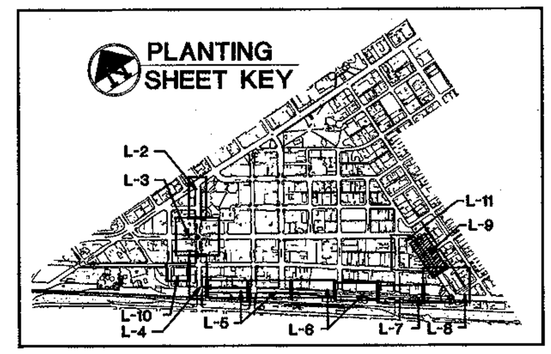
BASIN LANDSCAPE PLANTING PLAN
SEE SHT L-11

PLANT LEGEND

Species:	Size
Trees:	
Olneya tesota — Desert Ironwood	24" Box Multi-Trunk
Cercidium preacox — Palo Brea	24" Box Multi-Trunk
Acacia saligna — Weeping Wattle	15 Gallon Single-Trunk
Washingtonia robusta (existing) — Mexican Fan Palm (existing)	
Pinus eldarica — Mondel Pine	15 Gallon Single-Trunk
Quercus virginiana — Southern Live Oak	15 Gallon Single-Trunk
Shrubs:	
Caesalpinia pulcherrima — Red Bird of Paradise	5 Gallon
Convolvulus cneorum — Bush Morning Glory	5 Gallon
Leucophyllum langmaniae 'Thunder Cloud' — Sage	5 Gallon
Salvia greggii — Autumn Sage	5 Gallon
Groundcovers:	
Dalea capitata 'Sierra Gold' — Dalea	1 Gallon
Hymenoxys acaulis — Angelita Daisy	1 Gallon
Lantana montevidensis — Purple Trailing Lantana	1 Gallon
Setcreasea pallida — Purple Heart Plant	1 Gallon
Verbena rigida — Vervain Verbena	1 Gallon
Cactus and Accents:	
Agave americana 'Marginata' — Agave Americana	5 Gallon
Agave vilmorinana — Octopus Agave	5 Gallon
Echinocactus grusonii — Golden Barrel Cactus	5 Gallon

INERT MATERIALS:
Decomposed Granite (D.G.) 3/8 " Minus 'Madison Gold

NOTE:
SEE PLANT SCHEDULE ON SHEET L-1 FOR OVERALL LANDSCAPE QUANTITIES AND SIZES.



SCALE 1"=20'
0 5' 10' 20' 40'

-WARNING-
OVERHEAD POWER LINES WITHIN PROJECT CONSTRUCTION LIMITS

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Blue Stake Center 1-800-782-5348

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

DESIGN FILE: $DGN#
PLOT DATE: 1/19/2007

	NAME	DATE
DESIGN	D.D.	01/07
DRAWN	A.G.	01/07
CHECKED	J.E.	01/07

J2 Engineering and Environmental Design, LLC
4649 East Cotton Gin Loop, Suite B2
Phoenix, Arizona 85040
Phone: 602.438.2221
www.j2design.us

DIRK D. DEVRIES 19310 REGISTERED LANDSCAPE ARCHITECT

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT:
DOWNTOWN STREETS IMPROVEMENTS
PHASE ONE

SHEET TITLE:
CASA GRANDE AVENUE - LANDSCAPE PLANTING PLAN

DWG NO.
L-9
Sht No. 75 of 93

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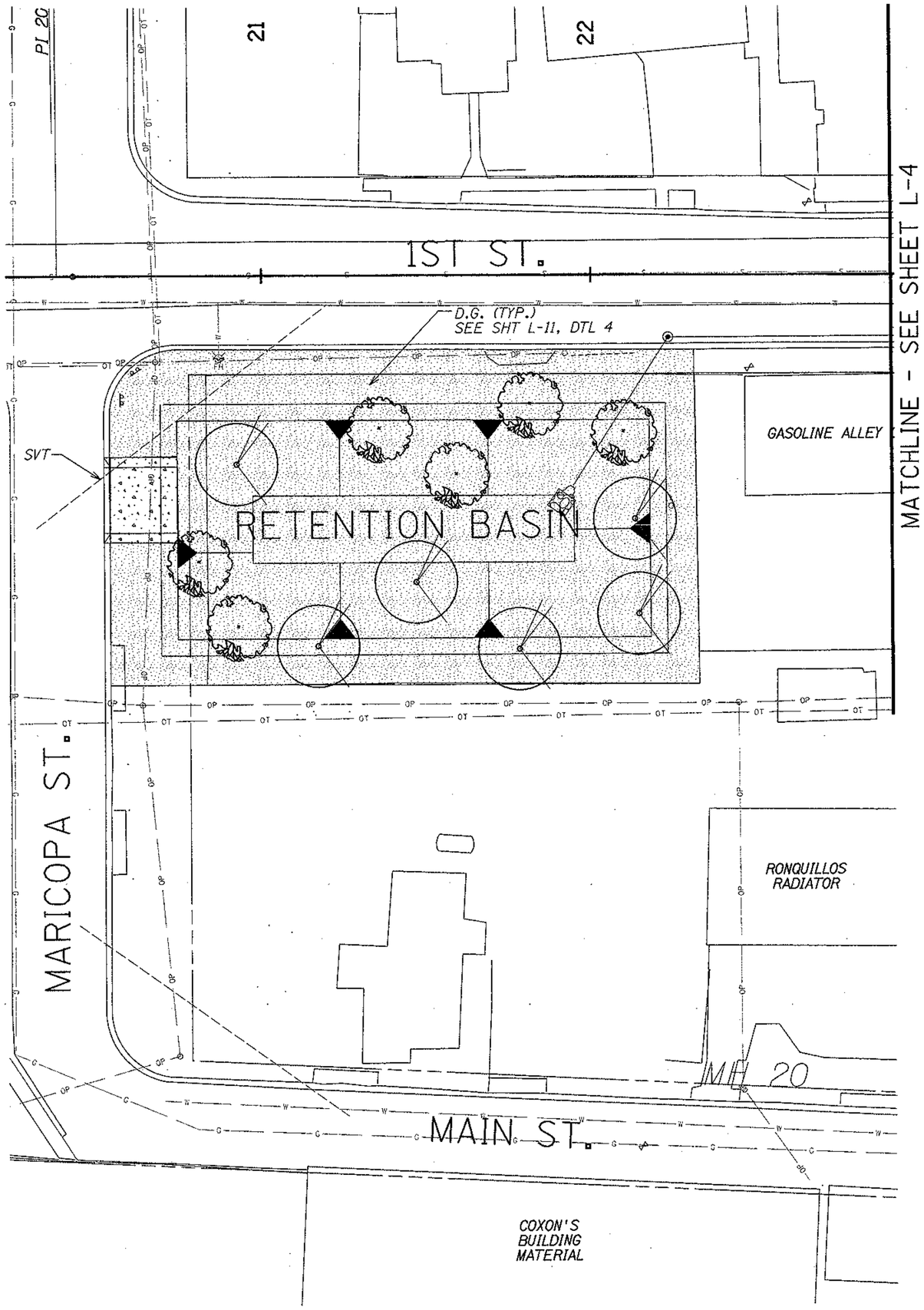
Plotted By: DDD 1/19/2007 1:31:41 PM

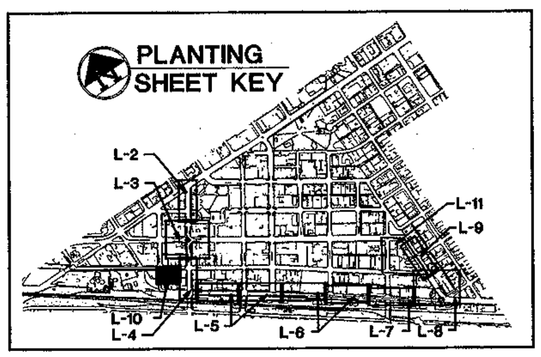


PLANT LEGEND

Species:	Size
Trees:	
Olneya tesota — Desert Ironwood	24" Box Multi-Trunk
Cercidium preacox — Palo Brea	24" Box Multi-Trunk
Acacia saligna — Weeping Wattle	15 Gallon Single-Trunk
Washingtonia robusta (existing) — Mexican Fan Palm (existing)	
Pinus eldarica — Mondel Pine	15 Gallon Single-Trunk
Quercus virginiana — Southern Live Oak	15 Gallon Single-Trunk
Shrubs:	
Caesalpinia pulcherrima — Red Bird of Paradise	5 Gallon
Convolvulus cneorum — Bush Morning Glory	5 Gallon
Leucophyllum langmaniae 'Thunder Cloud' — Sage	5 Gallon
Salvia greggii — Autumn Sage	5 Gallon
Groundcovers:	
Dalea capitata 'Sierra Gold' — Dalea	1 Gallon
Hymenoxys acaulis — Angelita Daisy	1 Gallon
Lantana montevidensis — Purple Trailing Lantana	1 Gallon
Setcreasea pallida — Purple Heart Plant	1 Gallon
Verbena rigida — Vervain Verbena	1 Gallon
Cactus and Accents:	
Agave americana 'Marginata' — Agave Americana	5 Gallon
Agave vilmoriniana — Octopus Agave	5 Gallon
Echinocactus grusonii — Golden Barrel Cactus	5 Gallon

INERT MATERIALS: Decomposed Granite (D.G.) — 3/8 " Minus 'Madison Gold

NOTE:
SEE PLANT SCHEDULE ON SHEET L-1 FOR
OVERALL LANDSCAPE QUANTITIES AND SIZES.



SCALE 1":20'
0 5' 10' 20' 40'

-WARNING-
OVERHEAD POWER LINES WITHIN PROJECT CONSTRUCTION LIMITS

Two working days before you dig CALL FOR THE BLUE STAKES
1-800-STAKE-IT
Blue Stake Center 1-800-782-5348

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

DESIGN FILE: OGN
PLOT DATE: 1/19/2007

	NAME	DATE
DESIGN	D.D.	01/07
DRAWN	A.G.	01/07
CHECKED	J.E.	01/07

J2 Engineering and Environmental Design, LLC
4649 East Cotton Gin Loop, Suite B2
Phoenix, Arizona 85040
Phone: 602.438.2221
www.j2design.us

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT: DOWNTOWN STREETS IMPROVEMENTS PHASE ONE

SHEET TITLE: 1ST AND MARICOPA BASIN- LANDSCAPE PLANTING PLAN

DWG NO. **L-10**

Sht No. 76 of 93

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2ND ST.

HERMOSILLA ST.

1ST ST.

CASA GRANDE AVE.

RETENTION BASIN

TURF

SVT

CONCRETE HEADER
SEE SHT L-13, DTL 3

46 47 48 49 50 51 52

PLANT LEGEND

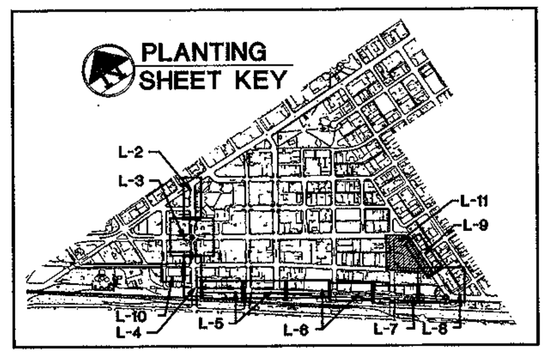
Species:	Size
Trees:	
Olneya tesota — Desert Ironwood	24" Box Multi-Trunk
Cercidium preacox — Palo Brea	24" Box Multi-Trunk
Acacia salicina — Weeping Wattle	15 Gallon Single-Trunk
Washingtonia robusta (existing) — Mexican Fan Palm (existing)	
Pinus eldarica — Mondel Pine	15 Gallon Single-Trunk
Quercus virginiana — Southern Live Oak	15 Gallon Single-Trunk
Shrubs:	
Caesalpinia pulcherrima — Red Bird of Paradise	5 Gallon
Convolvulus cneorum — Bush Morning Glory	5 Gallon
Leucophyllum langmaniae 'Thunder Cloud' — Sage	5 Gallon
Salvia greggii — Autumn Sage	5 Gallon
Groundcovers:	
Dalea capitata 'Sierra Gold' — Dalea	1 Gallon
Hymenoxys acaulis — Angelita Daisy	1 Gallon
Lantana montevidensis — Purple Trailing Lantana	1 Gallon
Setcreasea pallida — Purple Heart Plant	1 Gallon
Verbena rigida — Vervain Verbena	1 Gallon
Cactus and Accents:	
Agave americana 'Marginata' — Agave Americana	5 Gallon
Agave vilmoriniana — Octopus Agave	5 Gallon
Echinocactus grusonii — Golden Barrel Cactus	5 Gallon

INERT MATERIALS: Decomposed Granite (D.G.) 3/8 " Minus 'Madison Gold

NOTE:
SEE PLANT SCHEDULE ON SHEET L-1 FOR OVERALL LANDSCAPE QUANTITIES AND SIZES.

TURF MATERIAL: Hybrid Bermuda Princess 77 Seed

PLANTING SHEET KEY



-WARNING-
OVERHEAD POWER LINES WITHIN PROJECT CONSTRUCTION LIMITS

Two working days before you dig CALL FOR THE BLUE STAKES 1-800-STAKE-IT Blue Stake Center 1-800-782-5348

SCALE 1":20'
0 5' 10' 20' 40'

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

DESIGN FILE: DGN
PLOT DATE: 1/19/2007

	NAME	DATE
DESIGN	D.D.	01/07
DRAWN	A.G.	01/07
CHECKED	J.F.	01/07

J2 Engineering and Environmental Design, LLC
4649 East Cotton Gin Loop, Suite 82
Phoenix, Arizona 85040
Phone: 602.435.2221
www.j2design.us

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT:
DOWNTOWN STREETS IMPROVEMENTS
PHASE ONE

SHEET TITLE:
CASA GRANDE BASIN - LANDSCAPE PLANTING PLAN

DWG NO.
L-11
Sht No. 77 of 93

p:\050093\j2cad\sheets\ph 1\cg2022L11.dgn
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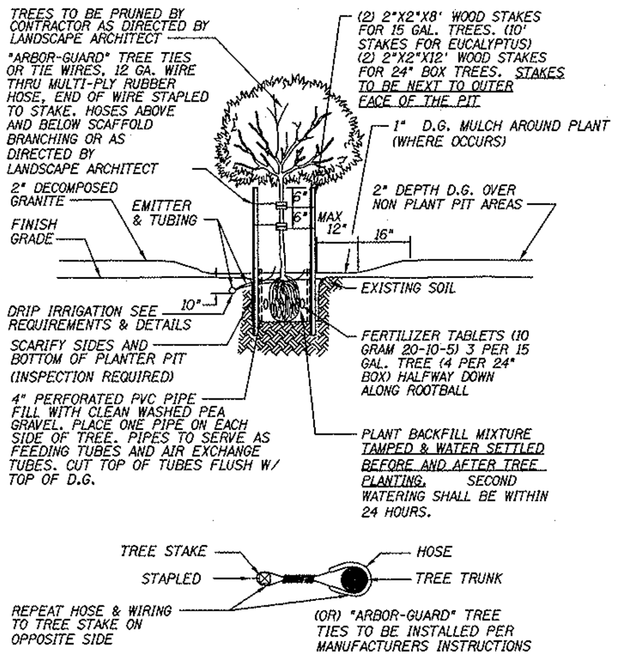
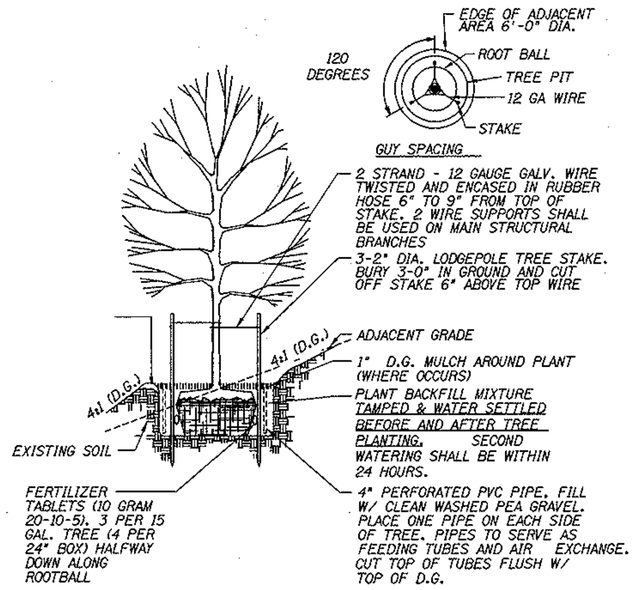


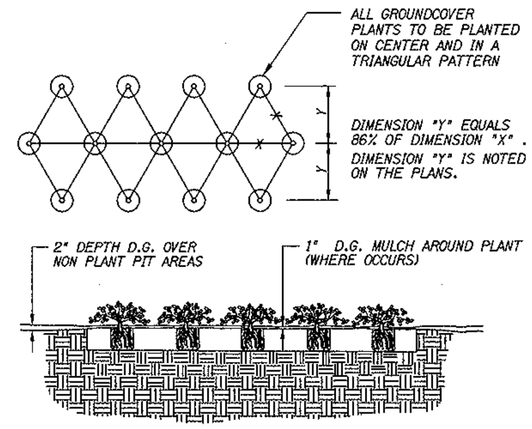
**NOTE:
*PLANTS DELIVERED WITH CRACKED OR BROKEN CONTAINERS WILL BE REJECTED.
*SEE SPECIFICATIONS FOR PLANT BACKFILL MIX
*MINIMUM PLANT PIT IS 2-1/2 TIMES THE DIAMETER, AND NO DEEPER THAN DEPTH OF THE ROOT BALL
*ROOTBALL CROWN TO BE 1/2" HIGHER THAN ADJACENT FINISH GRADE.

(1) TREE PLANTING IN D.G. AREAS NTS



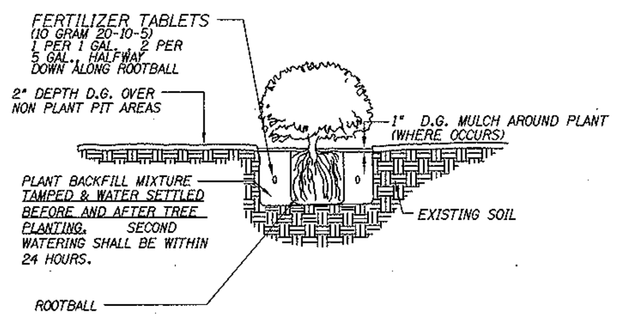
**NOTE:
*PLANTS DELIVERED WITH CRACKED OR BROKEN CONTAINERS WILL BE REJECTED.
*SEE SPECIFICATIONS FOR PLANT BACKFILL MIX
*MINIMUM PLANT PIT IS 2-1/2 TIMES THE DIAMETER, AND NO DEEPER THAN DEPTH OF THE ROOT BALL
*ROOTBALL CROWN TO BE 1/2" HIGHER THAN ADJACENT FINISH GRADE.

(2) TREE PLANTING ON SLOPES NTS



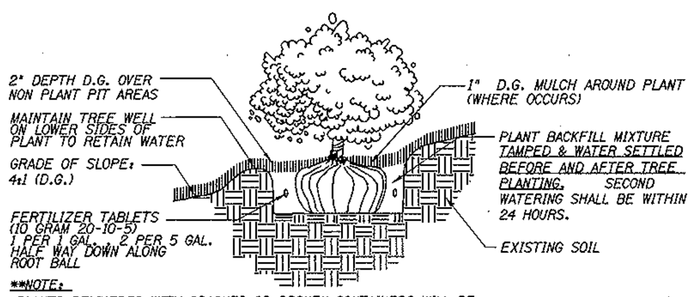
**NOTE:
*PLANTS DELIVERED WITH CRACKED OR BROKEN CONTAINERS WILL BE REJECTED.
*SEE SPECIFICATIONS FOR PLANT BACKFILL MIX
*MINIMUM PLANT PIT IS 2-1/2 TIMES THE DIAMETER, AND NO DEEPER THAN DEPTH OF THE ROOT BALL
*ROOTBALL CROWN TO BE 1/2" HIGHER THAN ADJACENT FINISH GRADE.

(3) GROUNDCOVER PLANTING NTS



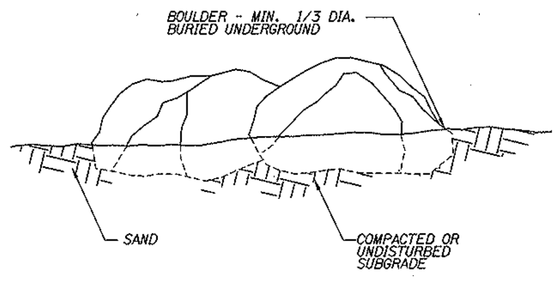
**NOTE:
*PLANTS DELIVERED WITH CRACKED OR BROKEN CONTAINERS WILL BE REJECTED.
*SEE SPECIFICATIONS FOR PLANT BACKFILL MIX
*MINIMUM PLANT PIT IS 2-1/2 TIMES THE DIAMETER, AND NO DEEPER THAN DEPTH OF THE ROOT BALL
*ROOTBALL CROWN TO BE 1/2" HIGHER THAN ADJACENT FINISH GRADE.

(4) SHRUB PLANTING NTS

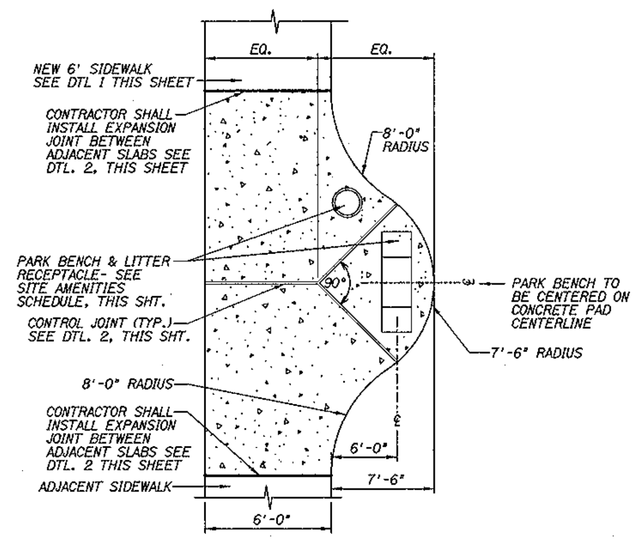


**NOTE:
*PLANTS DELIVERED WITH CRACKED OR BROKEN CONTAINERS WILL BE REJECTED.
*SEE SPECIFICATIONS FOR PLANT BACKFILL MIX
*MINIMUM PLANT PIT IS 2-1/2 TIMES THE DIAMETER, AND NO DEEPER THAN DEPTH OF THE ROOT BALL
*ROOTBALL CROWN TO BE 1/2" HIGHER THAN ADJACENT FINISH GRADE.

(5) SHRUB PLANTING ON SLOPES NTS



(6) LANDSCAPE BOULDER PLACEMENT NTS



NOTES:
1. CONCRETE SLAB SEE DTL. 1 THIS SHEET
2. CONCRETE SURFACE FINISH TO MATCH ADJACENT CONCRETE WALK
3. CONCRETE TO BE A SINGLE POUR BETWEEN EXPANSION JOINTS- SEE PLAN

(7) BENCH & LITTER RECEPTICAL LOCATION NTS

-WARNING-
OVERHEAD POWER LINES WITHIN PROJECT CONSTRUCTION LIMITS

Two working days before you dig CALL FOR THE BLUE STAKES
1-800-STAKE-IT
Blue Stake Center 1-800-782-5348

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

DESIGN FILE: #DGN#
PLOT DATE: 1/19/2007

	NAME	DATE
DESIGN	D.D.	01/07
DRAWN	A.G.	01/07
CHECKED	J.E.	01/07

12 Engineering and Environmental Design, LLC
4649 East Cotton Gin Loop, Suite B2
Phoenix, Arizona 85040
Phone: 602.438.2221
www.j2design.us

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT:
DOWNTOWN STREETS IMPROVEMENTS
PHASE ONE

SHEET TITLE:
LANDSCAPE DETAILS

DWG NO.
L-12
Sht No. 78 of 93

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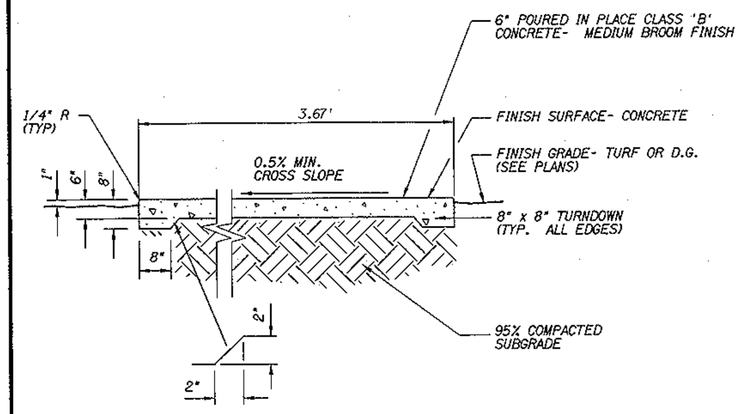
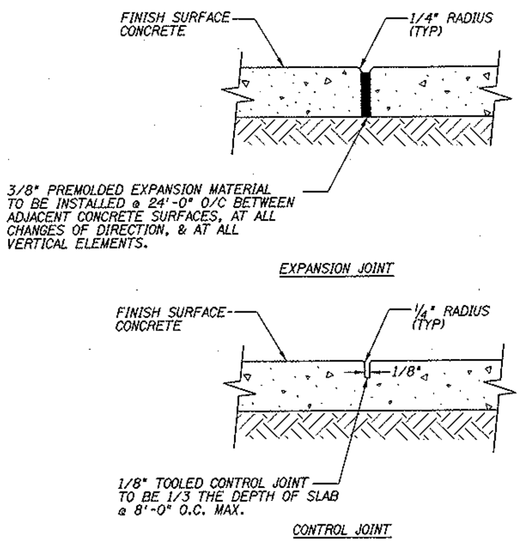
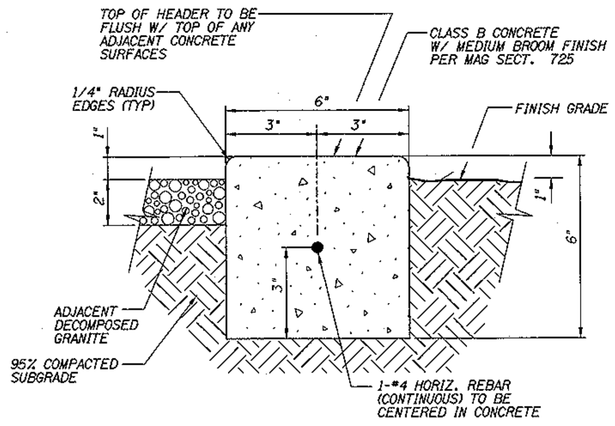


NOTE:
1. FOR EXPANSION AND/OR CONTROL JOINTS, SEE DETAIL 2, THIS SHEET

(1) CONCRETE WALK / PAVING NTS



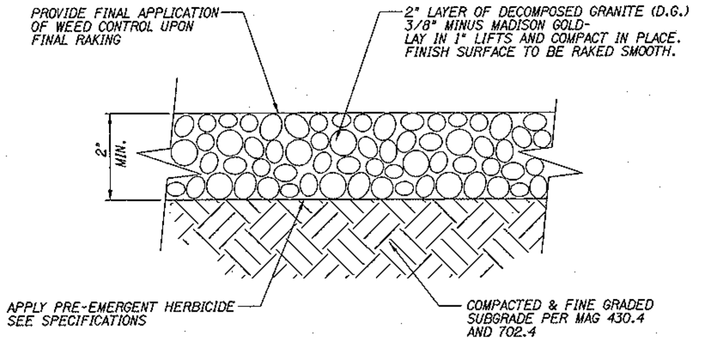
(2) CONCRETE WALK / PAVING NTS



HEADER BETWEEN D.G. & TURF

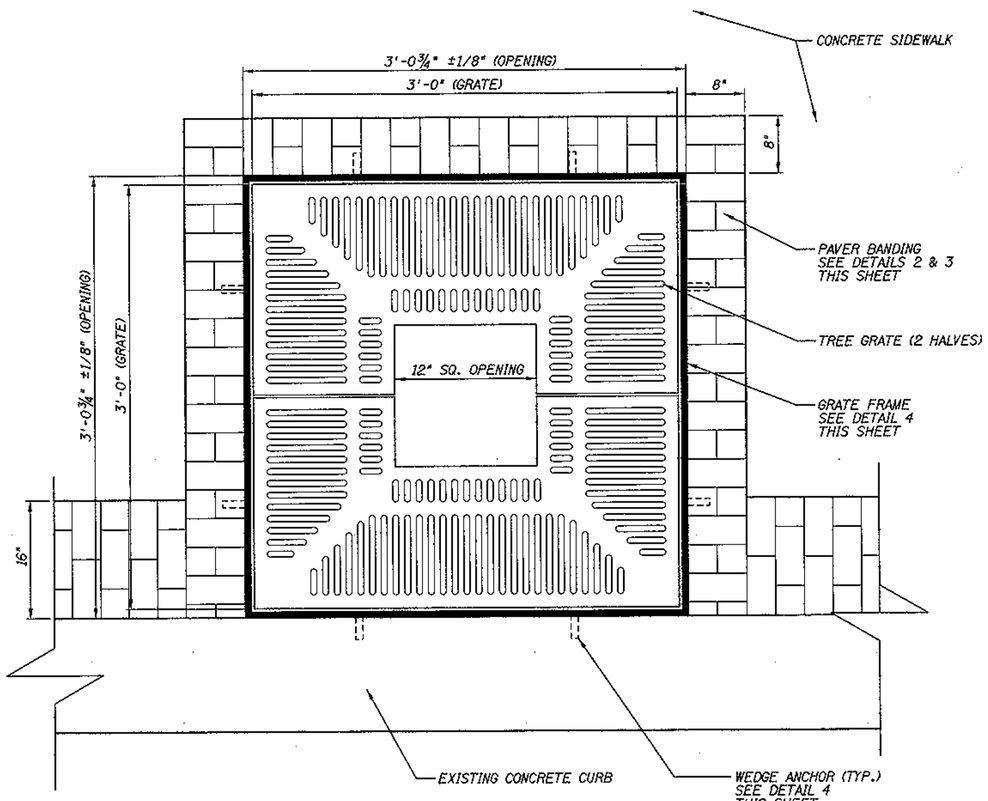
NOTES:
1. FOR EXPANSION JOINTS AND/OR CONTROL JOINTS, SEE DETAIL 2, THIS SHEET.
2. EXTRUDED HEADER IS NOT ACCEPTABLE.

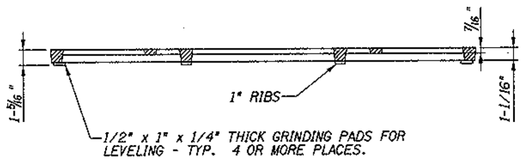
(3) CONCRETE HEADER NTS



NOTES:
1. ALL D.G. SLOPES IN EXCESS OF 6:1 SHALL BE COMPACTED BY WATER & ROLLING.
2. CONTRACTOR TO PROVIDE PROPOSED D.G. SAMPLE TO CITY FOR APPROVAL PRIOR TO ORDERING AND INSTALLATION.

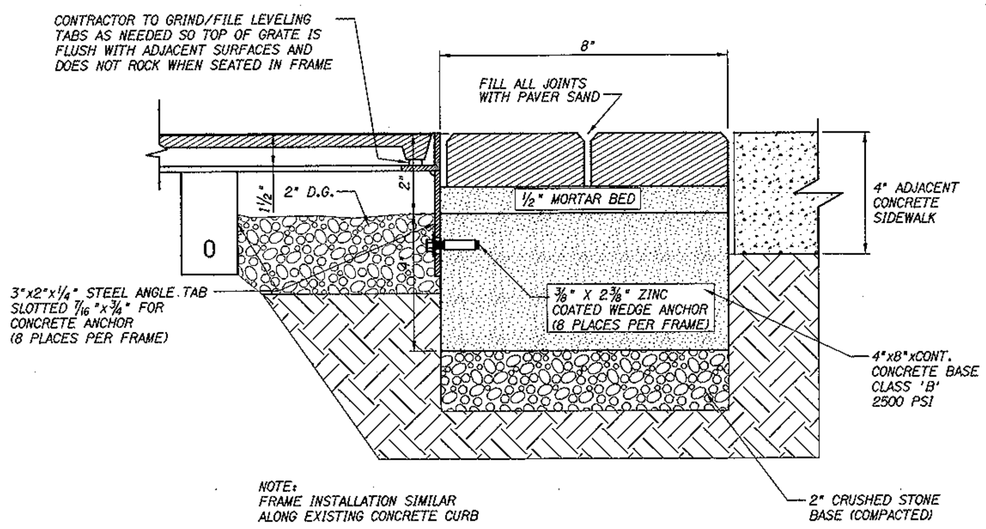
(4) DECOMPOSED GRANITE NTS



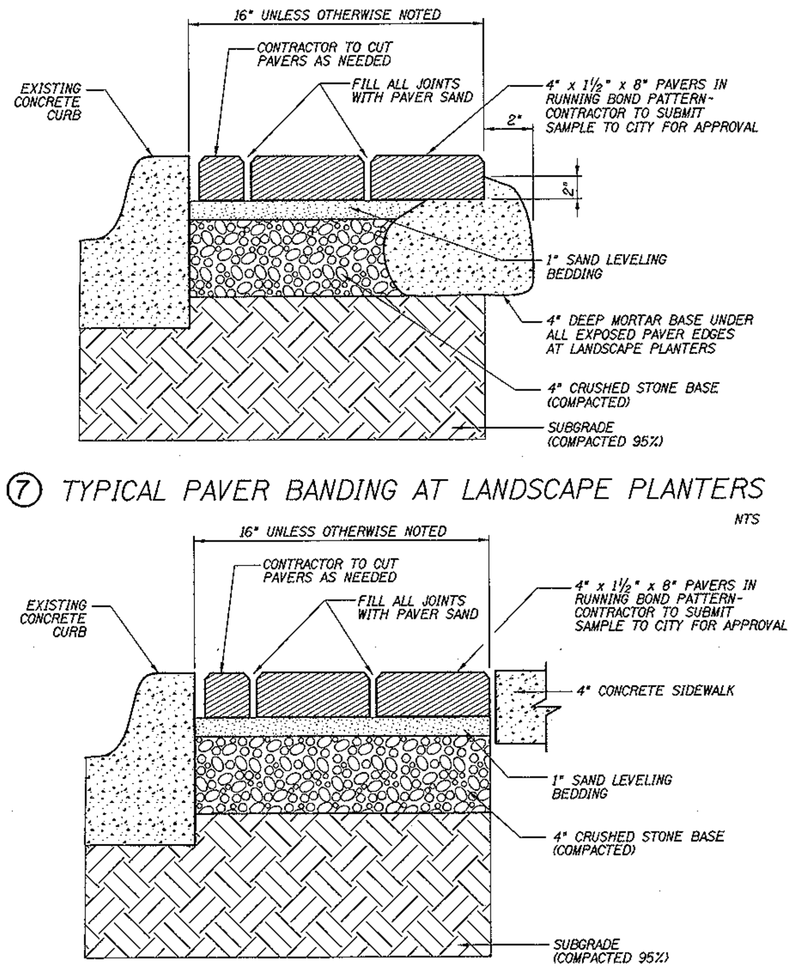


NOTES:
1. SLOT WIDTH IS 1/2" MAX. PER ADA COMPLIANCE.
2. GRATE CAST FROM GRAY IRON
3. TREE OPENING SIZE: 12"
4. STEEL ANGLE FRAME REQUIRED FOR INSTALLATION- USE MODEL #M3622F-4
5. OUTER FRAME DIMENSION TO BE 3/4" +-1/8" LARGER THAN GRATE

(5) TREE GRATE #M3622 NTS



(6) TREE GRATE FRAME #M3622F-4 NTS



(7) TYPICAL PAVER BANDING AT LANDSCAPE PLANTERS NTS

(8) TYPICAL PAVER BANDING AT SIDEWALK NTS

AMENITIES SCHEDULE:

ITEM:	MANUFACTURER:	MODEL:	COLOR:	REFERENCE:	QTY.:
BENCH- 6'-0" w/ BACK REST, CENTER ARM, & SURFACE MOUNTED	KEYSTONE RIDGE DESIGNS @ 1-800-284-8208	ATLANTA SERIES #AT26C	GLOSS BLACK	SEE SHEET L-8 & DETAIL 8, THIS SHEET FOR LOCATION	1 EA
LITTER RECEPTACLE- ROUND, 32 GALLON, & SURFACE MOUNTED	KEYSTONE RIDGE DESIGNS @ 1-800-284-8208	ATLANTA SERIES #AT3-32	GLOSS BLACK	SEE SHEET L-8 & DETAIL 8, THIS SHEET FOR LOCATION	1 EA
TREE GRATES- 3'x3' IN HALVES w/ 12" & 20" OPENINGS, CAST IRON, & ADA COMPLIANT	IRONSMITH @ 1-800-338-4766	#M3622- ADA 36"SQ. W/ 12" OPENING, CAST IRON, & FRAME #M3622F-4	NATURAL CAST IRON FINISH	SEE DETAILS 6 & 7, THIS SHEET	40 EA
CONCRETE PAVERS- 4"x1-1/2"x8" NOMINAL	PHOENIX BRICK @ 602-258-7158	STYLE, COLOR & LAYOUT DESIGN TO MATCH EXISTING PAVERS AS INSTALLED AT CITY HALL PLAZA		SEE DETAIL 5, THIS SHEET & SPECIFICATIONS	8,830 SF

NOTES:
1. CONTRACTOR TO PROVIDE ALL MATERIALS, LABOR, & EQUIPMENT TO PROVIDE A COMPLETE INSTALLATION.
2. INSTALL PER PLANS, PROJECT SPECIFICATIONS, & MANUFACTURER'S SPECIFICATIONS.
3. ITEMS SHALL BE BID AS NOTED OR SUBSTITUTED WITH AN APPROVED EQUAL PER THE CITY OF CASA GRANDE'S APPROVAL.
4. CONTRACTOR TO SUPPLY PROPOSED PAVER SAMPLE TO CITY FOR APPROVAL PRIOR TO INSTALLATION.

-WARNING-
OVERHEAD POWER LINES WITHIN PROJECT CONSTRUCTION LIMITS

Two working days before you dig CALL FOR THE BLUE STAKES
1-800-STAKE-IT
Blue Stake Center 1-800-782-5348

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

DESIGN FILE:
PLOT DATE:

	NAME	DATE
DESIGN	D.D.	01/07
DRAWN	A.G.	01/07
CHECKED	J.E.	01/07

J2 Engineering and Environmental Design, LLC
4649 East Cotton Gin Loop, Suite B2
Phoenix, Arizona 85040
Phone: 602.438.2221
www.j2design.us

REGISTERED LANDSCAPE ARCHITECT
19210
DIRK D. DEJONG
12/31/07
ARIZONA, U.S.A.

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT:
DOWNTOWN STREETS IMPROVEMENTS PHASE ONE

SHEET TITLE:
LANDSCAPE DETAILS

DWG NO.
L-13
Sht No. 79 of 93

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GENERAL IRRIGATION NOTES

1. ALL EQUIPMENT BID AS EQUAL MUST BE APPROVED BY THE CITY.
2. STAKE ALL LOCATIONS OF EMITTERS, VALVES, GATE VALVES, ROUTING OF MAINLINES, CONTROLLERS, BACKFLOW PREVENTER, ETC. AND OBTAIN APPROVAL OF LOCATIONS PRIOR TO INSTALLATION.
3. INSTALL EMITTERS ON THE HIGH SIDE OF ALL SHRUBS AND TREES.
4. TREES AND SHRUBS SHALL BE VALVED SEPARATELY.
5. ABOVE ALL SLEEVE AND MAINLINE LOCATIONS, INSTALL METALLIC LOCATOR TAPE APPROXIMATELY 12" BELOW GRADE.
6. ALL SLEEVES SHALL EXTEND 24" BEYOND ALL WALKS, CURBS, AND ROADWAYS.
7. WIRE ALL OPEN STATIONS FROM CLOCKS THROUGHOUT ENTIRE LENGTHS OF MAINLINES. NOTE THESE OPEN STATIONS ON INSIDE DOOR OF CLOCK. INSTALL TWO COMMON WIRES, ONE IN USE AND ONE AS EXTRA. EXTRA COMMON WIRE SHALL BE OF COLOR OTHER THAN ONE IN USE.
8. MAINTAIN AS-BUILT PLANS ON A DAILY BASIS, NOTING ALL CHANGES REGARDING INSTALLATION OF SYSTEM THAT DIFFERS FROM PLAN. UPON FINAL ACCEPTANCE OF PROJECT BY CITY, TURN IN ONE REPRODUCIBLE SET OF MYLAR PLANS AND ALL EQUIPMENT MANUALS.
9. IRRIGATION CONTRACTOR IS TO ADHERE TO ALL CITY OF CASA GRANDE'S SUPPLEMENTS TO MAG AND CITY STANDARD SPECIFICATIONS.
10. CONTRACTOR SHALL CONTACT CHRIS TAPIA (520) 705-3356 AT ARIZONA WATER COMPANY TO ARRANGE FOR WATER METER INSTALLATION. CONTRACTOR SHALL COORDINATE WITH CITY OF CASA GRANDE TO ESTABLISH WATER SERVICE ACCOUNT.

IRRIGATION CONTRACTOR NOTES

1. UPON BIDDING OF IRRIGATION PLANS, THE IRRIGATION CONTRACTOR SHALL RECOGNIZE THAT THESE PLANS ARE DIAGRAMMATIC AND INTENDED AS BASIC GUIDELINES ONLY. THEREFORE, THE FOLLOWING SHOULD BE NOTED:
   A. IRRIGATION COMPONENTS MAY BE SHOWN OUTSIDE PLANTING AREAS FOR CLARITY. AVOID CONFLICTS BETWEEN THE IRRIGATION SYSTEM, THE PLANTING MATERIALS, AND ARCHITECTURAL FEATURES. INSTALL IRRIGATION PIPE AND WIRING IN LANDSCAPED AREAS WHENEVER POSSIBLE.
   B. USE ONLY STANDARD TEES AND ELBOW FITTINGS. USE OF CROSS TYPE FITTINGS ARE NOT PERMITTED.
2. THE IRRIGATION CONTRACTOR SHALL INSTALL THE IRRIGATION SYSTEM TO SUPPLY 100% WATER COVERAGE TO ALL LANDSCAPE PLANT MATERIAL AND SHALL MAKE ALL FIELD ADJUSTMENTS AS NECESSARY TO ENSURE THE PROPER FUNCTIONING OF THE IRRIGATION SYSTEM AS INTENDED. ANY AND ALL OTHER EXISTING LANDSCAPING AND IRRIGATION (EXCEPT WHERE NOTED) DISTURBED BY THIS PHASE OF WORK SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO REPAIR BACK TO 100% CONDITION IN OPERATION AND APPEARANCE AT NO EXTRA COST TO CITY AND AT CITY'S APPROVAL.
3. ALL EXACT QUANTITIES OF EQUIPMENT REMAIN THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR AND HE SHALL PROVIDE HIS OWN MATERIALS TAKE OFF LIST. NO ADDITIONAL COST TO THE CITY WILL BE ACCEPTED FOLLOWING THE BIDDING OF THIS PROJECT.
4. THE IRRIGATION DESIGN ASSUMES A MINIMUM DYNAMIC PRESSURE FOR THE IRRIGATION SYSTEM OF 60 PSI.
5. READ THOROUGHLY AND BECOME FAMILIAR WITH THE SPECIFICATIONS AND THE INSTALLATION DETAILS FOR THIS AND RELATED WORK PRIOR TO CONSTRUCTION.
6. DO NOT PROCEED WITH THE INSTALLATION OF THE IRRIGATION SYSTEM WHEN IT IS OBVIOUS IN THE FIELD THAT DISCREPANCIES IN CONSTRUCTION DETAILS, LEGEND, NOTES, OR SPECIFICATIONS ARE DISCOVERED. BRING ALL SUCH OBSTRUCTIONS OR DISCREPANCIES TO THE ATTENTION OF THE CITY'S REPRESENTATIVE.
7. THE IRRIGATION CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF IRRIGATION SLEEVING. SLEEVES ARE REQUIRED FOR BOTH PIPING AND ELECTRICAL WIRING AT EACH HARDSCAPE CROSSING. COORDINATE THE INSTALLATION OF SLEEVING WITH OTHER TRADES. ANY PIPE OR WIRE WHICH PASSES BENEATH EXISTING HARDSCAPE WHERE SLEEVING WAS NOT INSTALLED REQUIRES HORIZONTAL BORING BY THE IRRIGATION CONTRACTOR.
8. ALL ELECTRICAL POWER TO THE NEW IRRIGATION CONTROL SYSTEM IS TO BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND ALL APPLICABLE LOCAL ELECTRIC UTILITY CODES.
9. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST MAG. SPECIFICATIONS AND DETAILS AND CITY OF CASA GRANDE SUPPLEMENTS TO MAG. SPECIFICATIONS AND DETAILS UNLESS MODIFIED ON THE PLAN.
10. WIRING FOR REMOTE CONTROL VALVES TO BE 10 AWG COMMON (WHITE), 12 AWG CONTROL (RED). LOOP TWO EXTRA 12 AWG (GREEN) WIRES FROM CONTROLLER THROUGH ALL VALVE BOXES TO LAST VALVE ON MAINLINE.

EMITTER SCHEDULE

Species:	Quantity / Type	Ports / Volume
Trees:		
Olneya tesota — Desert Ironwood	2 / Multi-Port	10 / 2 GPH
Cercidium preacox — Palo Brea	2 / Multi-Port	10 / 2 GPH
Acacia saligna — Weeping Wattle	1 / Multi-Port	6 / 2 GPH
Washingtonia robusta (existing) — Mexican Fan Palm (existing)	1 / Multi-Port	6 / 1 GPH
Pinus eldarica — Mondel Pine	2 / Multi-Port	10 / 2 GPH
Quercus virginiana — Southern Live Oak	2 / Multi-Port	12 / 2 GPH
Shrubs:		
Caesalpinia pulcherrima — Red Bird of Paradise	1 / Multi-Port	3 / 1 GPH
Convolvulus cneorum — Bush Morning Glory	1 / Multi-Port	2 / 1 GPH
Leucophyllum langmaniae 'Thunder Cloud' — Sage	1 / Multi-Port	3 / 1 GPH
Salvia greggii — Autumn Sage	1 / Multi-Port	2 / 1 GPH
Groundcovers:		
Dalea capitata 'Sierra Gold' — Dalea	1 / Single-Port	1 / 1 GPH
Hymenoxys acaulis — Angelita Daisy	1 / Single-Port	1 / 1 GPH
Lantana montevidensis — Purple Trailing Lantana	1 / Single-Port	1 / 1 GPH
Setcreasea pallida — Purple Heart Plant	1 / Multi-Port	2 / 1 GPH
Verbena rigida — Vervain Verbena	1 / Single-Port	1 / 1 GPH
Cactus and Accents:		
Agave americana 'Marginata' — Agave Americana	1 / Multi-Port	2 / 1 GPH
Agave vilmoriniana — Octopus Agave	1 / Multi-Port	2 / 1 GPH
Echinocactus grusonii — Golden Barrel Cactus	1 / Single-Port	1 / .5 GPH

EMITTER NOTES

1. INSTALL EMITTERS TO ALL PLANT MATERIAL ACCORDING TO EMITTER SCHEDULE.
2. INSTALL ALL EMITTERS UPGRADE FROM PLANT MATERIAL.
3. INSTALL EMITTERS A MAXIMUM OF 8" FROM SHRUB PIT LOCATIONS AND 24" FROM TREE PIT LOCATIONS.
4. USE RIGID 3/4 " CLASS 200 PVC AS EMITTER LATERALS THROUGHOUT.
5. INSTALL FLUSHING END CAPS AT ENDS OF LATERALS AS SHOWN. INSTALL ALL FLUSHING END CAPS IN A MINIMUM 10" DIA. CIRCULAR LOCKING VALVE BOX.
6. INSTALL ALL EQUIPMENT AS PER MANUFACTURERS INSTRUCTIONS AND SPECIFICATIONS AND PROVIDE 100% WATER COVERAGE TO ALL TREES, SHRUBS, AND GROUNDCOVERS.
7. IRRIGATION CONTRACTOR SHALL ENSURE EACH SHRUB AND TREE WILL HAVE ADEQUATE WATER COVERAGE.

IRRIGATION LEGEND

Symbol	Equipment
C	IRRIGATION CONTROLLER: CalSense ET2000-32-M-RR, 32 Station, Wire Link, Remote Receiver; SSE-R Stainless Steel Pedestal Enclosure, LR Dome, TP-1, TPB Transient Protection Board, TP-110 Surge Arrestor, LA-2 Line Amplifier, and Paige P-7171-D Cable to Communication Link
M	WATER METER: 2" New Installation
B	REDUCED PRESSURE BACKFLOW PREVENTION UNIT: 2" Wilkins 975 XLV, with Guardshack GS-3 Enclosure, Woodland Tan
	MASTER VALVE: 2" RainBird 200-GB
F	FLOW METER: 1 1/2" CalSense FM-1.5 Schedule 80 PVC
	REMOTE CONTROL VALVE: RainBird PEB Series- Size Per Plans
	GATE VALVE: Mueller 2360 Series Epoxy Coated Resilient Wedge, 2" Thread, 3" Push On
	PRESSURE REGULATOR AND FILTER ASSEMBLY: RainBird PSI-L30X-075 Regulator, RainBird QKCHK-075 Basket Filter
	QUICK COUPLER ASSEMBLY: RainBird 44LRC, 1", with Key
	TURF ROTOR ASSEMBLY: Hunter I-20 Ultra- I-20-36S-4.0, 360° - 37' Radius - 30 PSI
	TURF ROTOR ASSEMBLY: Hunter I-20 Ultra- I-20-ADS-4.0, 180° - 37' Radius - 30 PSI
	TURF ROTOR ASSEMBLY: Hunter I-20 Ultra- I-20-ADS-2.0, 90° - 32' Radius - 30 PSI
	FLUSH END CAP ASSEMBLY: 3/4" FHT Ball Valve with Flex PVC Riser
Not Shown	EMITTER- MULTI-OUTLET ASSEMBLY: RainBird XBT-6 Series
Not Shown	EMITTER- SINGLE-OUTLET ASSEMBLY: RainBird XBT Series

Symbol	IRRIGATION PIPE
———	MAINLINE PIPE: PVC Class 200- 3" Ringtite, 2" Solvent Weld -Size Per Plan
– – – – –	DRIP SUB-MAIN PIPE: PVC Class 200- 1" Solvent Weld
———	TURF LATERAL PIPE: PVC Class 200- Size Per Plan
———	TREE DRIP LATERAL PIPE: 3/4" PVC Class 200
-----------	SHRUB DRIP LATERAL PIPE: 3/4" PVC Class 200
E———E	SLEEVE PIPE: PVC SCHEDULE 40 DWV- Size Per Plans

-WARNING-
OVERHEAD POWER LINES WITHIN PROJECT CONSTRUCTION LIMITS

Two working days before you dig CALL FOR THE BLUE STAKES
1-800-STAKE-IT
Blue Stake Center 1-800-782-5348

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

DESIGN FILE: DGN
PLOT DATE: 1/19/2007

	NAME	DATE
DESIGN	D.D.	01/07
DRAWN	A.G.	01/07
CHECKED	J.E.	01/07

J2 Engineering and Environmental Design, LLC
4649 East Cotton Gin Loop, Suite B2
Phoenix, Arizona 85040
Phone: 602.438.2221
www.j2design.biz

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT:
DOWNTOWN STREETS IMPROVEMENTS
PHASE ONE

SHEET TITLE:
IRRIGAITON SCHEDULE & GENERAL NOTES

DWG NO.
I-1

Sht No. 80 of 93

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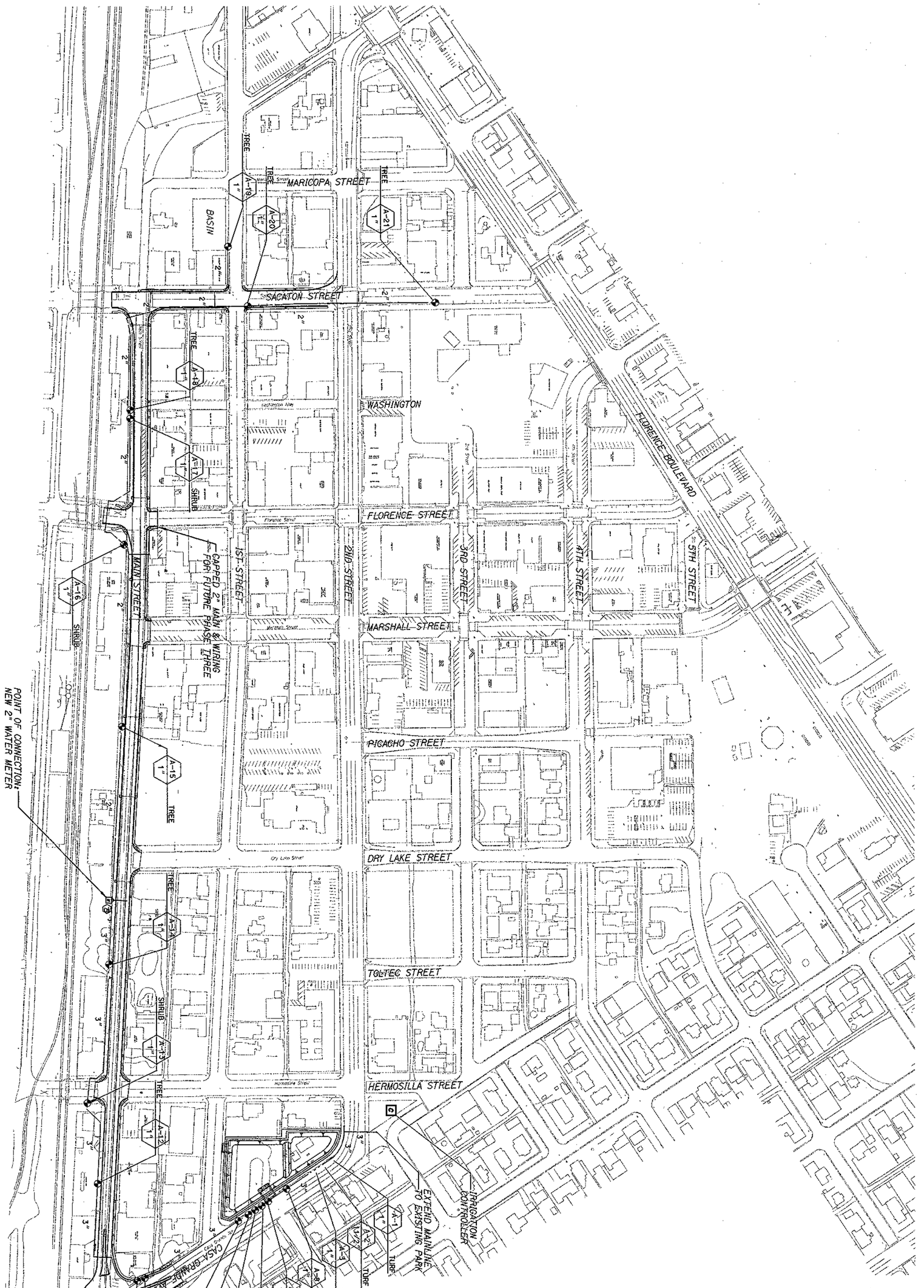

IRRIGATION LEGEND

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M	WATER METER, 2"
B	REDUCED PRESSURE BACKFLOW PREVENTION UNIT; 2" Wilkins 975 XLV, with Guardshack GS-3 Enclosure, Woodland Tan
F	MASTER VALVE; 2" RainBird 200-GB
	FLOW METER; 1 1/2" CalSense FM-1.5 Schedule 80 PVC
	REMOTE CONTROL VALVE; RainBird PEB Series- Size Per Plans
	GATE VALVE; Mueller 2360 Series Epoxy Coated Resilient Wedge, 2" Thread, 3" Push On
	PRESSURE REGULATOR AND FILTER ASSEMBLY; RainBird PSI-L30X-075 Regulator, RainBird QKCHK-075 Basket Filter
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Not Shown	EMITTER- MULTI-OUTLET ASSEMBLY; RainBird XBT-6 Series
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Symbol	IRRIGATION PIPE
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———	TURF LATERAL PIPE; PVC Class 200- Size Per Plan
———	TREE DRIP LATERAL PIPE; 3/4" PVC Class 200
.....	SHRUB DRIP LATERAL PIPE; 3/4" PVC Class 200
E- - - - - - - -3	SLEEVE PIPE; PVC SCHEDULE 40 DWV- Size Per Plans

-WARNING-
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1-800-STAKE-IT
Two working days before you dig CALL FOR THE BLUE STAKES
Blue Stake, Inc.
1-800-782-5348

DWG NO.	I-2
Sht No.	81 of 93

PROJECT:
DOWNTOWN STREETS IMPROVEMENTS
PHASE ONE

SHEET TITLE:
IRRIGATION MAINLINE PLAN

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

19210 DIRK D. DEWITT — Date Signed — ARIZONA, U.S.A.

J2 Engineering and Environmental Design, LLC
4649 East Cotton Gin Loop, Suite B2
Phoenix, Arizona 85040
Phone: 602.438.2221
www.j2design.us

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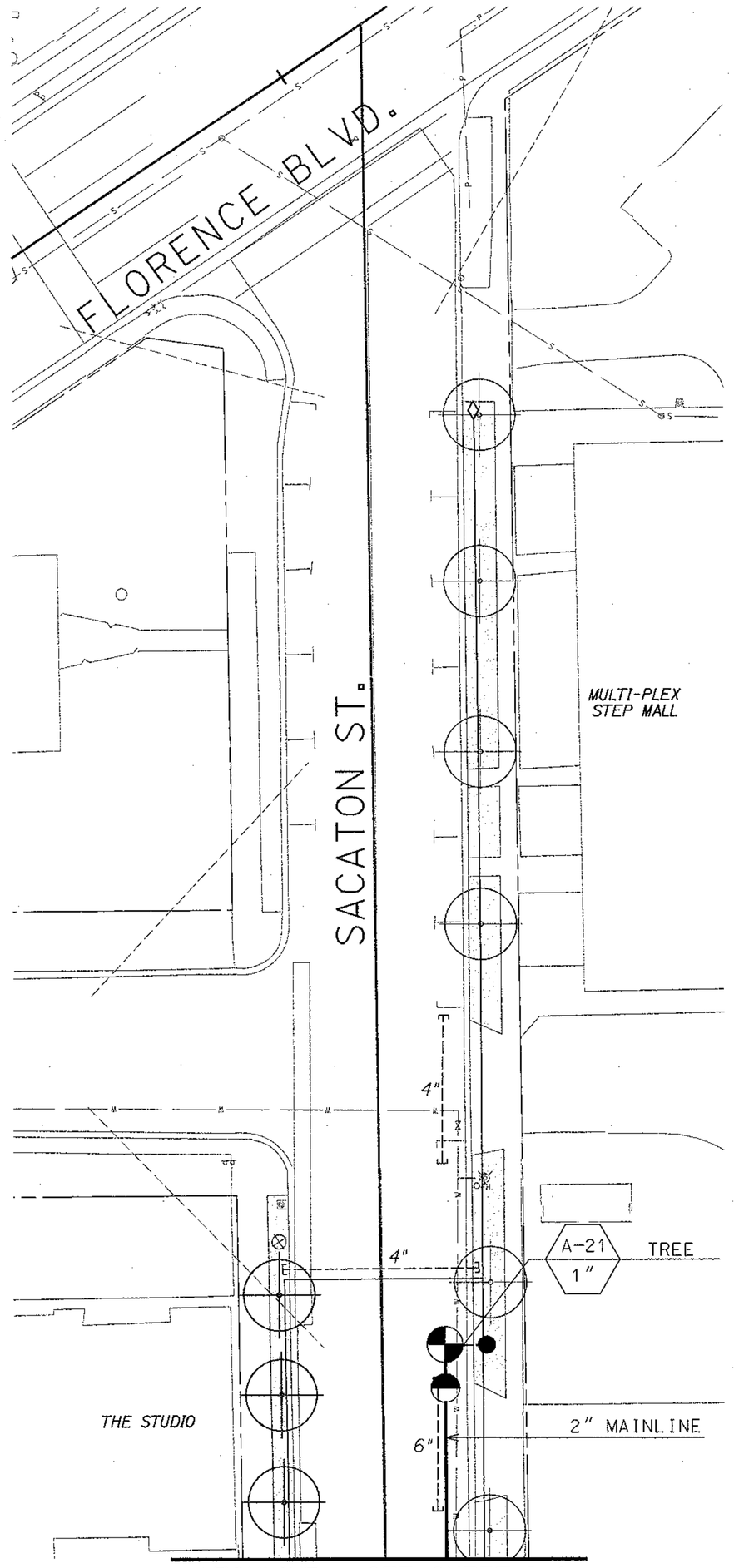

IRRIGATION LEGEND

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	PRESSURE REGULATOR AND FILTER ASSEMBLY: RainBird PSI-L30X-075 Regulator, RainBird 0KCHK-075 Basket Filter
	QUICK COUPLER ASSEMBLY: RainBird 44LRC, 1", with Key
	TURF ROTOR ASSEMBLY: Hunter I-20 Ultra- I-20-36S-4.0, 360° - 37' Radius - 30 PSI
	TURF ROTOR ASSEMBLY: Hunter I-20 Ultra- I-20-ADS-4.0, 180° - 37' Radius - 30 PSI
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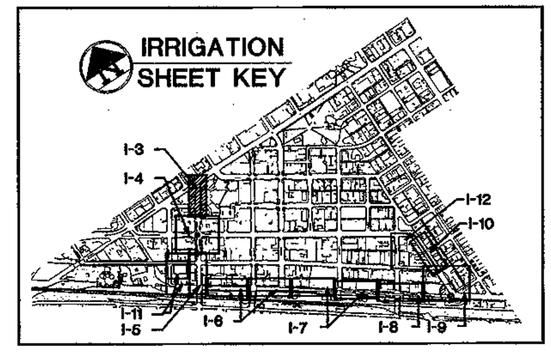
	FLUSH END CAP ASSEMBLY: 3/4" FHT Ball Valve with Flex PVC Riser
Not Shown	EMITTER- MULTI-OUTLET ASSEMBLY: RainBird XBT-6 Series
Not Shown	EMITTER- SINGLE-OUTLET ASSEMBLY: RainBird XBT Series

Symbol	IRRIGATION PIPE
	MAINLINE PIPE: PVC Class 200- 3" Ringtite, 2" Solvent Weld -Size Per Plan
	DRIP SUB-MAIN PIPE: PVC Class 200- 1" Solvent Weld
	TURF LATERAL PIPE: PVC Class 200- Size Per Plan
	TREE DRIP LATERAL PIPE: 3/4" PVC Class 200
	SHRUB DRIP LATERAL PIPE: 3/4" PVC Class 200
	SLEEVE PIPE: PVC SCHEDULE 40 DWV- Size Per Plans



SCALE 1":20'
0 5' 10' 20' 40'

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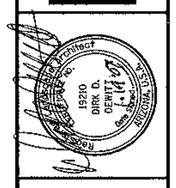


CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT:
DOWNTOWN STREETS IMPROVEMENTS
PHASE ONE

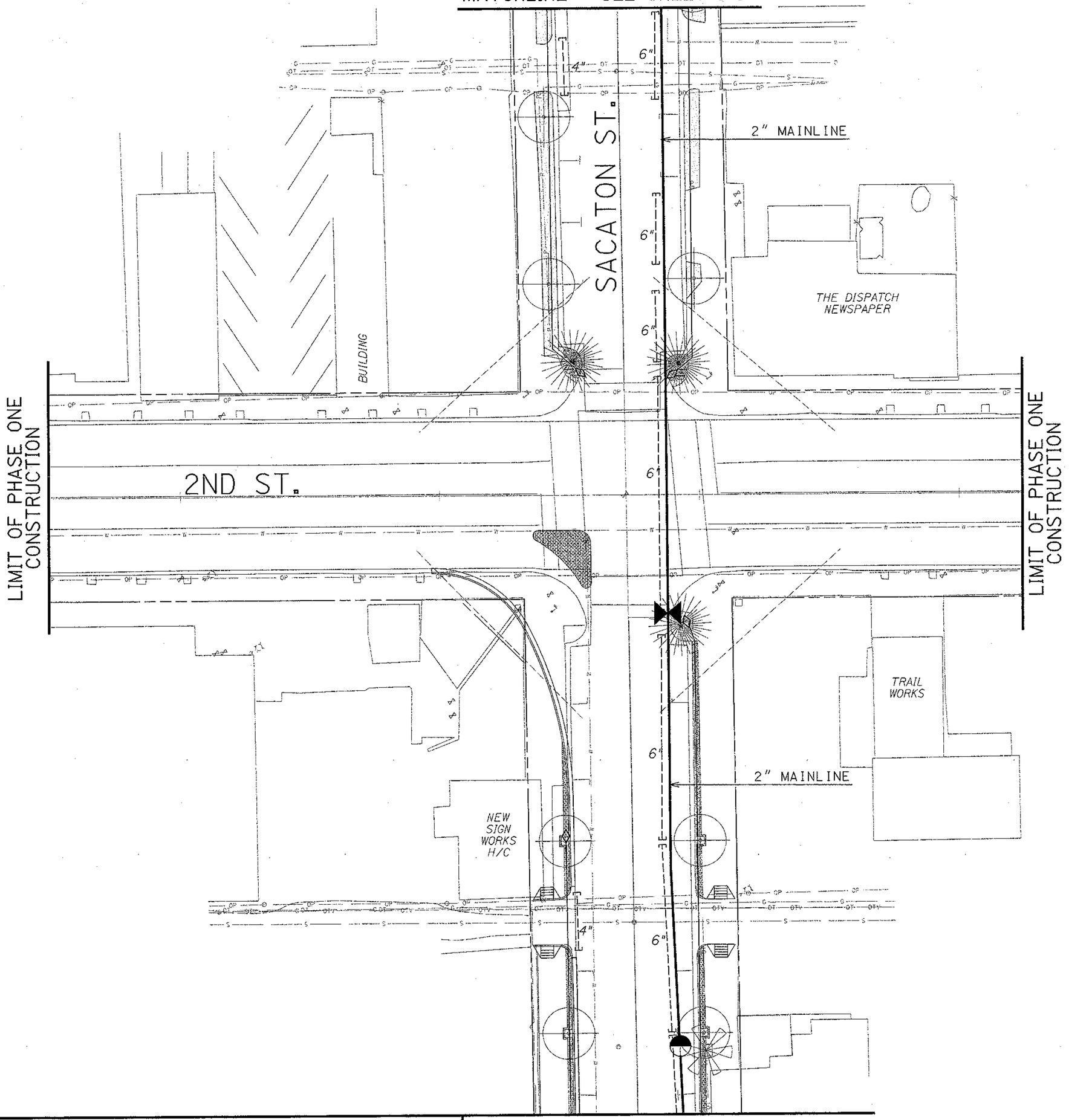
SHEET TITLE:
SACATON STREET - IRRIGATION PLAN

DWG NO.
I-3

Sht No. 82 of 93

p:\050093\j2cad\sheets\ph 1\cg2022103.dgn
Plotted By: DDD 1/19/2007 1:31:02 PM

MATCHLINE - SEE SHEET I-3



MATCHLINE - SEE SHEET I-11

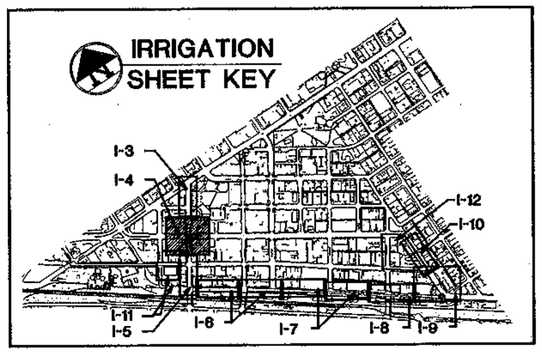
MATCHLINE - SEE SHEET I-5

IRRIGATION LEGEND

Symbol	Equipment
C	IRRIGATION CONTROLLER: CalSense ET2000-32-M-RR, 32 Station, Wire Link, Remote Receiver; SSE-R Stainless Steel Pedestal Enclosure, LR Dome, TP-1, TPB Transient Protection Board, TP-110 Surge Arrestor, LA-2 Line Amplifier, and Paige P-7171-D Cable to Communication Link
M	WATER METER: 2"
B	REDUCED PRESSURE BACKFLOW PREVENTION UNIT: 2" Wilkins 975 XLV, with Guardshack GS-3 Enclosure, Woodland Tan
	MASTER VALVE: 2" RainBird 200-GB
F	FLOW METER: 1 1/2" CalSense FM-1.5 Schedule 80 PVC
	REMOTE CONTROL VALVE: RainBird PEB Series- Size Per Plans
	GATE VALVE: Mueller 2360 Series Epoxy Coated Resilient Wedge, 2" Thread, 3" Push On
	PRESSURE REGULATOR AND FILTER ASSEMBLY: RainBird PSI-L30X-075 Regulator, RainBird QKCHK-075 Basket Filter
	QUICK COUPLER ASSEMBLY: RainBird 44LRC, 1", with Key
	TURF ROTOR ASSEMBLY: Hunter I-20 Ultra- I-20-36S-4.0, 360° - 37' Radius - 30 PSI
	TURF ROTOR ASSEMBLY: Hunter I-20 Ultra- I-20-ADS-4.0, 180° - 37' Radius - 30 PSI
	TURF ROTOR ASSEMBLY: Hunter I-20 Ultra- I-20-ADS-2.0, 90° - 32' Radius - 30 PSI
	FLUSH END CAP ASSEMBLY: 3/4" FHT Ball Valve with Flex PVC Riser
Not Shown	EMITTER- MULTI-OUTLET ASSEMBLY: RainBird XBT-6 Series
Not Shown	EMITTER- SINGLE-OUTLET ASSEMBLY: RainBird XBT Series

Symbol	IRRIGATION PIPE
	MAINLINE PIPE: PVC Class 200- 3" Ringtite, 2" Solvent Weld -Size Per Plan
	DRIP SUB-MAIN PIPE: PVC Class 200- 1" Solvent Weld
	TURF LATERAL PIPE: PVC Class 200- Size Per Plan
	TREE DRIP LATERAL PIPE: 3/4" PVC Class 200
	SHRUB DRIP LATERAL PIPE: 3/4" PVC Class 200
	SLEEVE PIPE: PVC SCHEDULE 40 DWV- Size Per Plans

IRRIGATION SHEET KEY



SCALE 1"=20'
0 5' 10' 20' 40'

-WARNING-
OVERHEAD POWER LINES WITHIN PROJECT CONSTRUCTION LIMITS

Two working days before you dig CALL FOR THE BLUE STAKES 1-800-STAKE-IT (Blue Stake Center 1-800-782-5348)

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

DESIGN FILE: DON
PLOT DATE: 1/19/2007

	NAME	DATE
DESIGN	D.D.	01/07
DRAWN	A.G.	01/07
CHECKED	J.E.	01/07

J2 Engineering and Environmental Design, LLC
4649 East Cotton Gin Loop, Suite B2
Phoenix, Arizona 85040
Phone: 602.438.2221
www.j2design.us

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

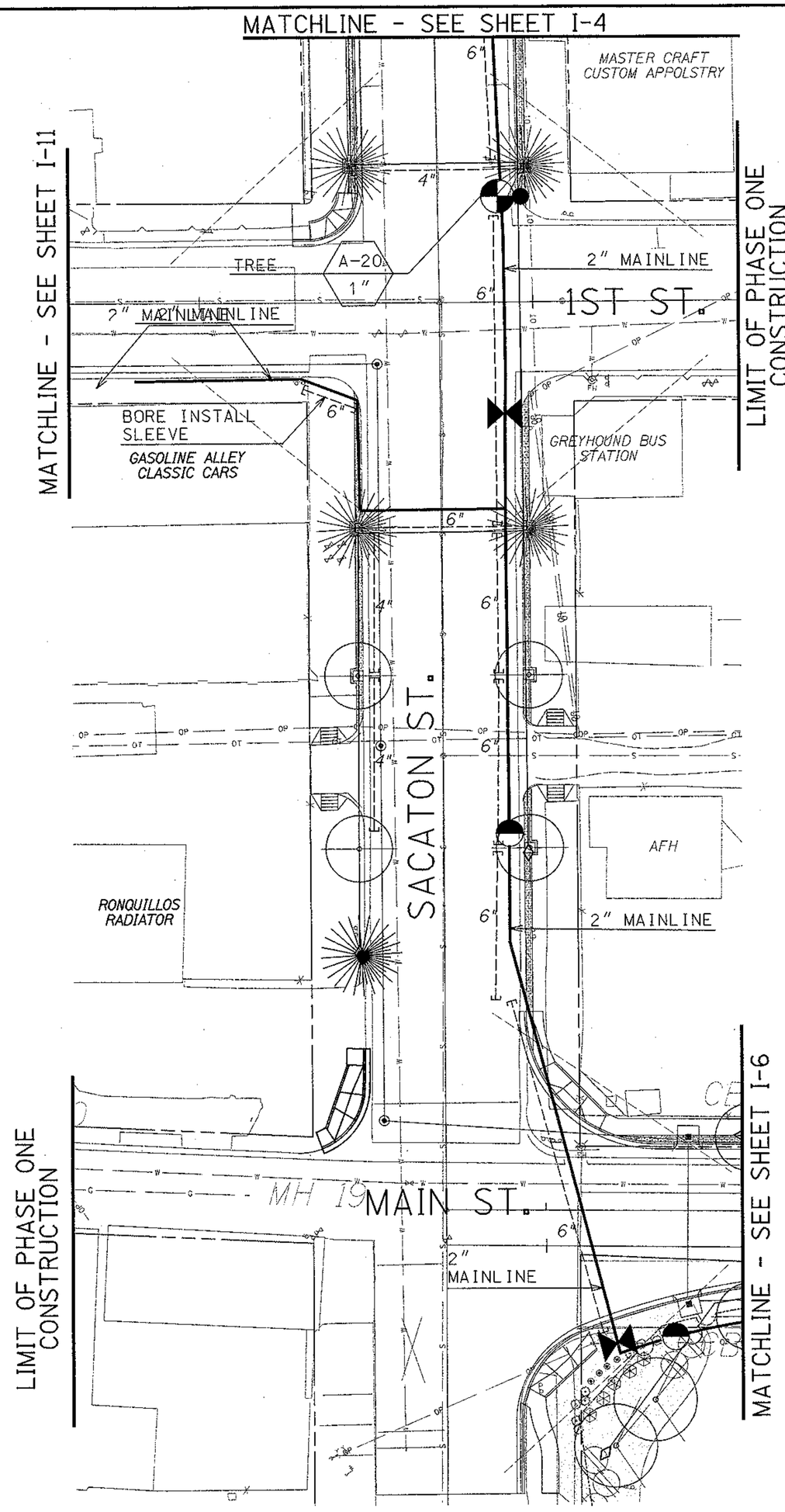
PROJECT: DOWNTOWN STREETS IMPROVEMENTS PHASE ONE

SHEET TITLE: SACATON STREET - IRRIGATION PLAN

DWG NO. I-4

Sht No. 83 of 93

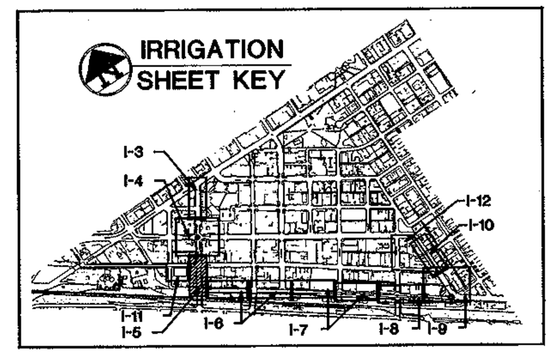
p:\050093\j2cad\sheets\ph 1\cg2022104.dgn
Plotted By: DDD 1/19/2007 1:31:04 PM



IRRIGATION LEGEND

Symbol	Equipment
C	IRRIGATION CONTROLLER: CalSense ET2000-32-M-RR, 32 Station, Wire Link, Remote Receiver; SSE-R Stainless Steel Pedestal Enclosure, LR Dome, TP-1, TPB Transient Protection Board, TP-110 Surge Arrestor, LA-2 Line Amplifier, and Paige P-7171-D Cable to Communication Link
M	WATER METER: 2"
B	REDUCED PRESSURE BACKFLOW PREVENTION UNIT: 2" Wilkins 975 XLV, with Guardshack GS-3 Enclosure, Woodland Tan
	MASTER VALVE: 2" RainBird 200-GB
F	FLOW METER: 1 1/2" CalSense FM-1.5 Schedule 80 PVC
	REMOTE CONTROL VALVE: RainBird PEB Series- Size Per Plans
	GATE VALVE: Mueller 2360 Series Epoxy Coated Resilient Wedge, 2" Thread, 3" Push On
	PRESSURE REGULATOR AND FILTER ASSEMBLY: RainBird PSI-L30X-075 Regulator, RainBird QKCHK-075 Basket Filter
	QUICK COUPLER ASSEMBLY: RainBird 44LRC, 1", with Key
	TURF ROTOR ASSEMBLY: Hunter I-20 Ultra- I-20-36S-4.0, 360° - 37' Radius - 30 PSI
	TURF ROTOR ASSEMBLY: Hunter I-20 Ultra- I-20-ADS-4.0, 180° - 37' Radius - 30 PSI
	TURF ROTOR ASSEMBLY: Hunter I-20 Ultra- I-20-ADS-2.0, 90° - 32' Radius - 30 PSI
	FLUSH END CAP ASSEMBLY: 3/4" FHT Ball Valve with Flex PVC Riser
Not Shown	EMITTER- MULTI-OUTLET ASSEMBLY: RainBird XBT-6 Series
Not Shown	EMITTER- SINGLE-OUTLET ASSEMBLY: RainBird XBT Series

Symbol	IRRIGATION PIPE
	MAINLINE PIPE: PVC Class 200- 3" Ringtite, 2" Solvent Weld -Size Per Plan
	DRIP SUB-MAIN PIPE: PVC Class 200- 1" Solvent Weld
	TURF LATERAL PIPE: PVC Class 200- Size Per Plan
	TREE DRIP LATERAL PIPE: 3/4" PVC Class 200
	SHRUB DRIP LATERAL PIPE: 3/4" PVC Class 200
	SLEEVE PIPE: PVC SCHEDULE 40 DWV- Size Per Plans



SCALE 1":20'
0 5' 10' 20' 40'

-WARNING-
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Two working days before you dig CALL FOR THE BLUE STAKES
1-800-STAKE-IT
Blue Stake Center 1-800-782-5348

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

DESIGN FILE: DGN
PLOT DATE: 1/19/2007

	NAME	DATE
DESIGN	D.D.	01 /07
DRAWN	A.G.	01 /07
CHECKED	J.E.	01 /07

J2 Engineering and Environmental Design, LLC
4649 East Cotton Gin Loop, Suite B2
Phoenix, Arizona 85040
Phone: 602.438.2221
www.j2design.us

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT:
DOWNTOWN STREETS IMPROVEMENTS
PHASE ONE

SHEET TITLE:
SACATON STREET - IRRIGATION PLAN

DWG NO.
I-5

Sht No. 84 of 93

p:*050093*j2cad*sheets*ph 1*cg2022105.dgn
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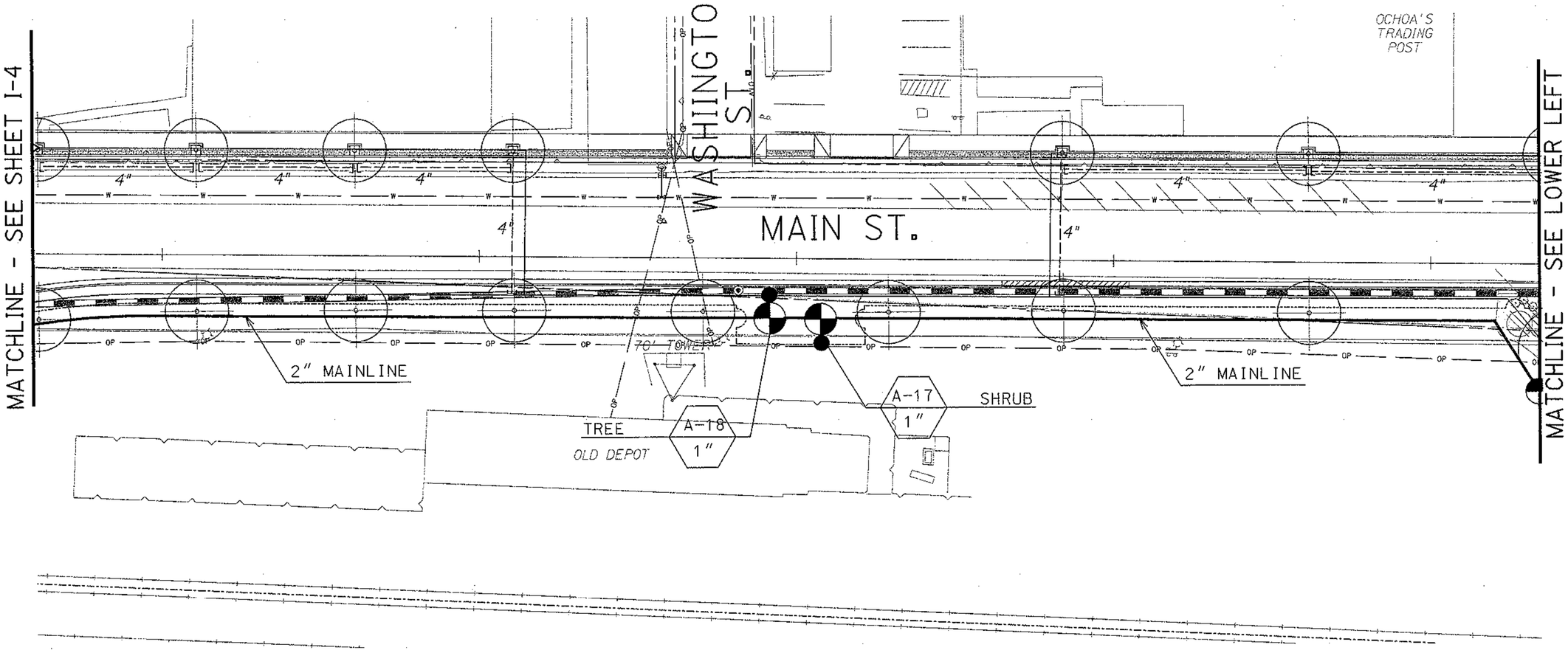

IRRIGATION LEGEND

Symbol	Equipment
C	IRRIGATION CONTROLLER: CalSense ET2000-32-M-RR, 32 Station, Wire Link, Remote Receiver; SSE-R Stainless Steel Pedestal Enclosure, LR Dome, TP-1, TPB Transient Protection Board, TP-110 Surge Arrestor, LA-2 Line Amplifier, and Paige P-7171-D Cable to Communication Link
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F	FLOW METER: 1 1/2" CalSense FM-1.5 Schedule 80 PVC
	REMOTE CONTROL VALVE: RainBird PEB Series- Size Per Plans
	GATE VALVE: Mueller 2360 Series Epoxy Coated Resilient Wedge, 2" Thread, 3" Push On
	PRESSURE REGULATOR AND FILTER ASSEMBLY: RainBird PSI-L30X-075 Regulator, RainBird QKCHK-075 Basket Filter
	QUICK COUPLER ASSEMBLY: RainBird 44LRC, 1", with Key
	TURF ROTOR ASSEMBLY: Hunter I-20 Ultra- I-20-36S-4.0, 360° - 37' Radius - 30 PSI
	TURF ROTOR ASSEMBLY: Hunter I-20 Ultra- I-20-ADS-4.0, 180° - 37' Radius - 30 PSI
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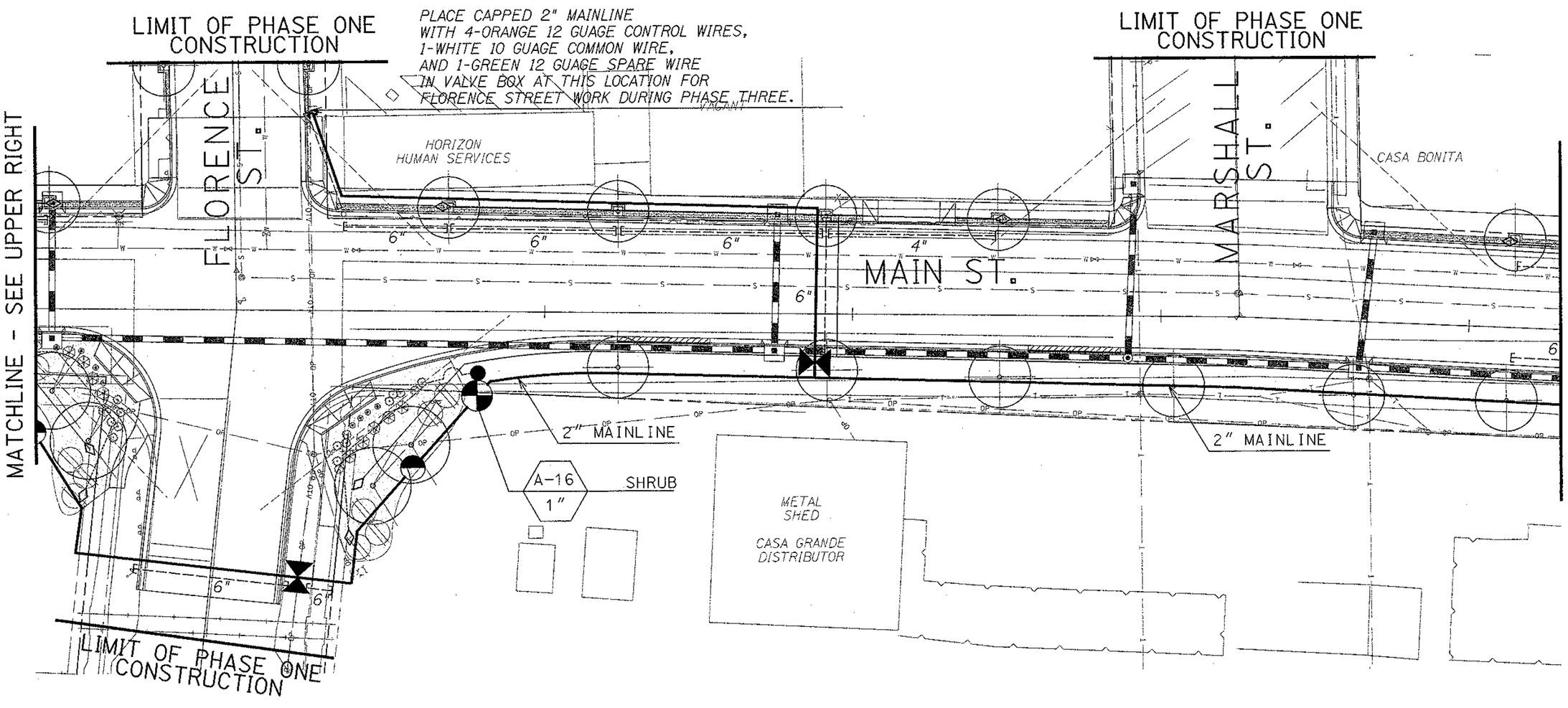
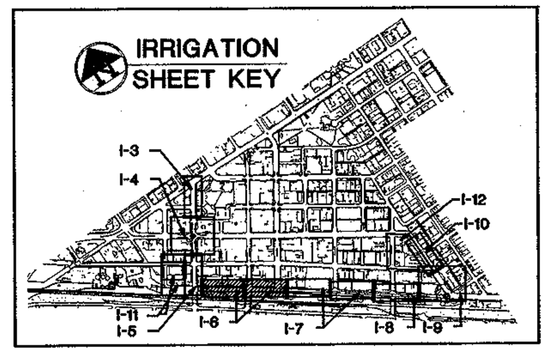
	FLUSH END CAP ASSEMBLY: 3/4" FHT Ball Valve with Flex PVC Riser
Not Shown	EMITTER- MULTI-OUTLET ASSEMBLY: RainBird XBT-6 Series
Not Shown	EMITTER- SINGLE-OUTLET ASSEMBLY: RainBird XBT Series

Symbol	IRRIGATION PIPE
	MAINLINE PIPE: PVC Class 200- 3" Ringtite, 2" Solvent Weld -Size Per Plan
	DRIP SUB-MAIN PIPE: PVC Class 200- 1" Solvent Weld
	TURF LATERAL PIPE: PVC Class 200- Size Per Plan
	TREE DRIP LATERAL PIPE: 3/4" PVC Class 200
	SHRUB DRIP LATERAL PIPE: 3/4" PVC Class 200
3	SLEEVE PIPE: PVC SCHEDULE 40 DWV- Size Per Plans

LIMIT OF PHASE ONE CONSTRUCTION

PLACE CAPPED 2" MAINLINE WITH 4-ORANGE 12 GUAGE CONTROL WIRES, 1-WHITE 10 GUAGE COMMON WIRE, AND 1-GREEN 12 GUAGE SPARE WIRE IN VALVE BOX AT THIS LOCATION FOR FLORENCE STREET WORK DURING PHASE THREE.





SCALE 1"=20'
0 5' 10' 20' 40'

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NO.	DESCRIPTION OF REVISION	MADE BY	DATE

DESIGN FILE: DGN
PLOT DATE: 1/19/2007

	NAME	DATE
DESIGN	D.D.	01/07
DRAWN	A.G.	01/07
CHECKED	J.E.	01/07

J2 Engineering and Environmental Design, LLC
4649 East Cotton Gin Loop, Suite B2
Phoenix, Arizona 85040
Phone: 602.438.2221
www.j2design.us

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

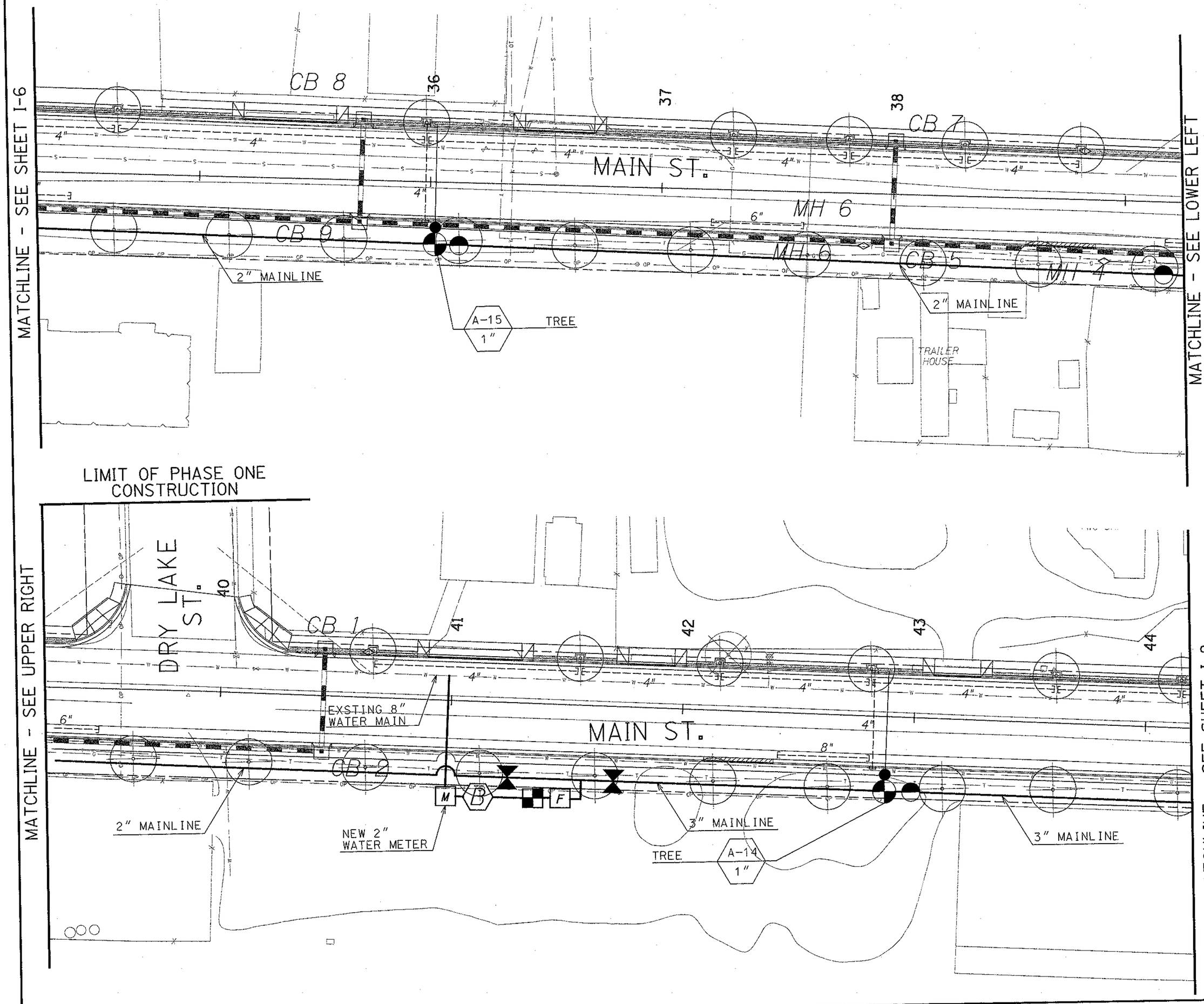
PROJECT:
DOWNTOWN STREETS IMPROVEMENTS
PHASE ONE

SHEET TITLE:
MAIN STREET - IRRIGATION PLAN

DWG NO.
I-6

Sht No. 85 of 93

p:\050093\j2cad\sheets\ph 1\cg2022106.dgn
Plotted By: DDD 1/19/2007 1:31:07 PM



IRRIGATION LEGEND

Symbol	Equipment
C	IRRIGATION CONTROLLER: CalSense ET2000-32-M-RR, 32 Station, Wire Link, Remote Receiver; SSE-R Stainless Steel Pedestal Enclosure, LR Dome, TP-1, TPB Transient Protection Board, TP-110 Surge Arrestor, LA-2 Line Amplifier, and Paige P-7171-D Cable to Communication Link
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	REMOTE CONTROL VALVE: RainBird PEB Series- Size Per Plans
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	TURF ROTOR ASSEMBLY: Hunter I-20 Ultra- I-20-ADS-2.0, 90° - 32' Radius - 30 PSI
	FLUSH END CAP ASSEMBLY: 3/4" FHT Ball Valve with Flex PVC Riser
Not Shown	EMITTER- MULTI-OUTLET ASSEMBLY: RainBird XBT-6 Series
Not Shown	EMITTER- SINGLE-OUTLET ASSEMBLY: RainBird XBT Series

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	MAINLINE PIPE: PVC Class 200- 3" Ringtite, 2" Solvent Weld -Size Per Plan
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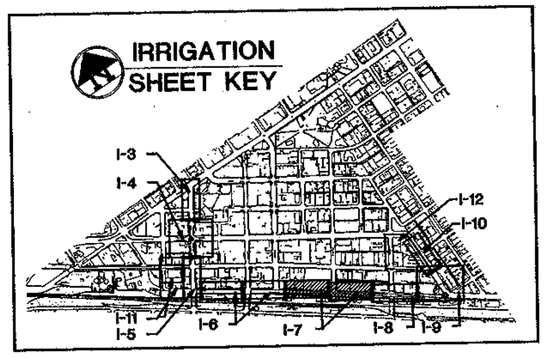
	TURF LATERAL PIPE: PVC Class 200- Size Per Plan
	TREE DRIP LATERAL PIPE: 3/4" PVC Class 200
	SHRUB DRIP LATERAL PIPE: 3/4" PVC Class 200
	SLEEVE PIPE: PVC SCHEDULE 40 DWV- Size Per Plans



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Blue Stake Center 1-800-782-5348

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Phoenix, Arizona 85040
Phone: 602.438.2221
www.j2design.us

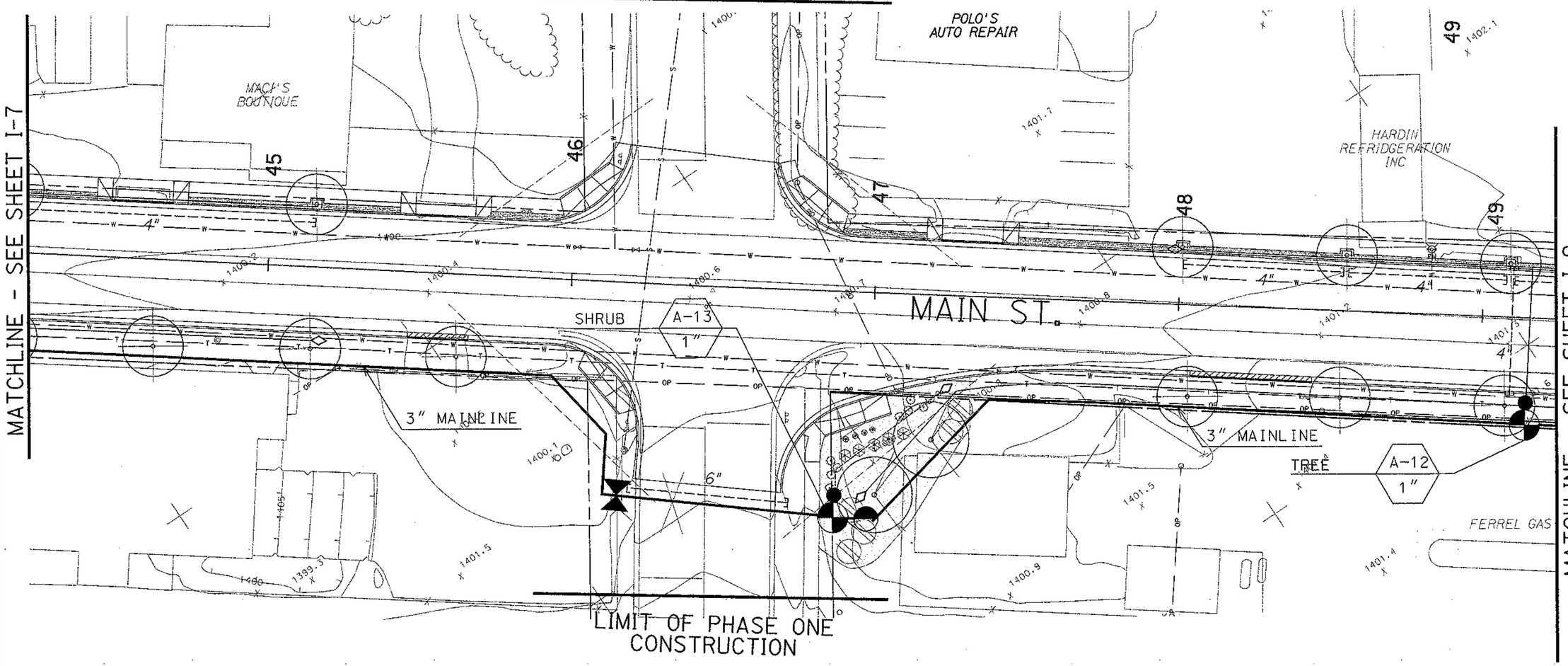
CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT:
DOWNTOWN STREETS IMPROVEMENTS
PHASE ONE

SHEET TITLE:
MAIN STREET - IRRIGATION PLAN

DWG NO.
I-7
Sht No. 86 of 93

p:\050093\j2cad\sheets\ph 1\cg2022107.dgn
Plotted By: DDD 1/19/2007 1:31:10 PM



IRRIGATION LEGEND

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Not Shown	EMITTER- SINGLE-OUTLET ASSEMBLY: RainBird XBT Series

Symbol	IRRIGATION PIPE
	MAINLINE PIPE: PVC Class 200- 3" Ringtite, 2" Solvent Weld -Size Per Plan
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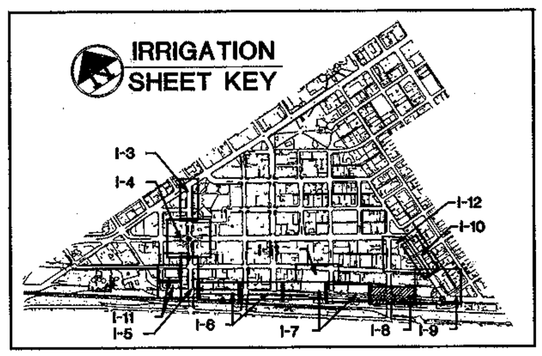
	TREE DRIP LATERAL PIPE: 3/4" PVC Class 200
	SHRUB DRIP LATERAL PIPE: 3/4" PVC Class 200
	SLEEVE PIPE: PVC SCHEDULE 40 DWV- Size Per Plans

IRRIGATION SHEET KEY



SCALE 1":20'
0 5' 10' 20' 40'

-WARNING-
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1-800-STAKE-IT
Blue Stake Center
1-800-782-5348

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DESIGN FILE: DGN
PLOT DATE: 1/19/2007

	NAME	DATE
DESIGN	D.D.	01/07
DRAWN	A.G.	01/07
CHECKED	J.E.	01/07

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4649 East Cotton Gin Loop, Suite 82
Phoenix, Arizona 85040
Phone: 602.435.2221
www.j2design.us

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT:
DOWNTOWN STREETS IMPROVEMENTS
PHASE ONE

SHEET TITLE:
MAIN STREET - IRRIGATION PLAN

DWG NO.
I-8

Sht No. 87 of 93

p:\050093\j2cad\sheets\ph 1\cg2022108.dgn
Plotted By: DDD 1/19/2007 1:31:11 PM

IRRIGATION LEGEND

Symbol	Equipment
C	IRRIGATION CONTROLLER: CalSense ET2000-32-M-RR, 32 Station, Wire Link, Remote Receiver; SSE-R Stainless Steel Pedestal Enclosure, LR Dome, TP-1, TPB Transient Protection Board, TP-110 Surge Arrestor, LA-2 Line Amplifier, and Paige P-7171-D Cable to Communication Link
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	TURF ROTOR ASSEMBLY: Hunter I-20 Ultra- I-20-ADS-4.0, 180° - 37' Radius - 30 PSI
	TURF ROTOR ASSEMBLY: Hunter I-20 Ultra- I-20-ADS-2.0, 90° - 32' Radius - 30 PSI
	FLUSH END CAP ASSEMBLY: 3/4" FHT Ball Valve with Flex PVC Riser
Not Shown	EMITTER- MULTI-OUTLET ASSEMBLY: RainBird XBT-6 Series
Not Shown	EMITTER- SINGLE-OUTLET ASSEMBLY: RainBird XBT Series

Symbol	IRRIGATION PIPE
	MAINLINE PIPE: PVC Class 200- 3" Ringtite, 2" Solvent Weld -Size Per Plan
	DRIP SUB-MAIN PIPE: PVC Class 200- 1" Solvent Weld
	TURF LATERAL PIPE: PVC Class 200- Size Per Plan
	TREE DRIP LATERAL PIPE: 3/4" PVC Class 200
	SHRUB DRIP LATERAL PIPE: 3/4" PVC Class 200
E 3	SLEEVE PIPE: PVC SCHEDULE 40 DWV- Size Per Plans

MATCHLINE - SEE SHEET I-10

CASA GRANDE AVE.

3" MAINLINE

TRI-VALLEY PUMP CO.

51

52

53

54

55

56

A-10 1" SHRUB

A-11 1" TREE

DOAN ST.

MAIN ST.

3" MAINLINE

VACANT

LIMIT OF PHASE ONE CONSTRUCTION

MATCHLINE - SEE SHEET I-8

IRRIGATION SHEET KEY

I-3 I-4 I-12 I-10 I-11 I-5 I-6 I-7 I-8 I-9

-WARNING-
OVERHEAD POWER LINES WITHIN PROJECT CONSTRUCTION LIMITS

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SCALE 1":20'
0 5' 10' 20' 40'

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

DESIGN FILE: #DGN#
PLOT DATE: 1/19/2007

	NAME	DATE
DESIGN	D.D.	01/07
DRAWN	A.G.	01/07
CHECKED	J.E.	01/07

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4649 East Cotton Gin Loop, Suite 82
Phoenix, Arizona 85040
Phone: 602.436.2221
www.j2design.us

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT:
DOWNTOWN STREETS IMPROVEMENTS
PHASE ONE

SHEET TITLE:
MAIN STREET - IRRIGATION PLAN

DWG NO.
I-9

Sht No. 88 of 93

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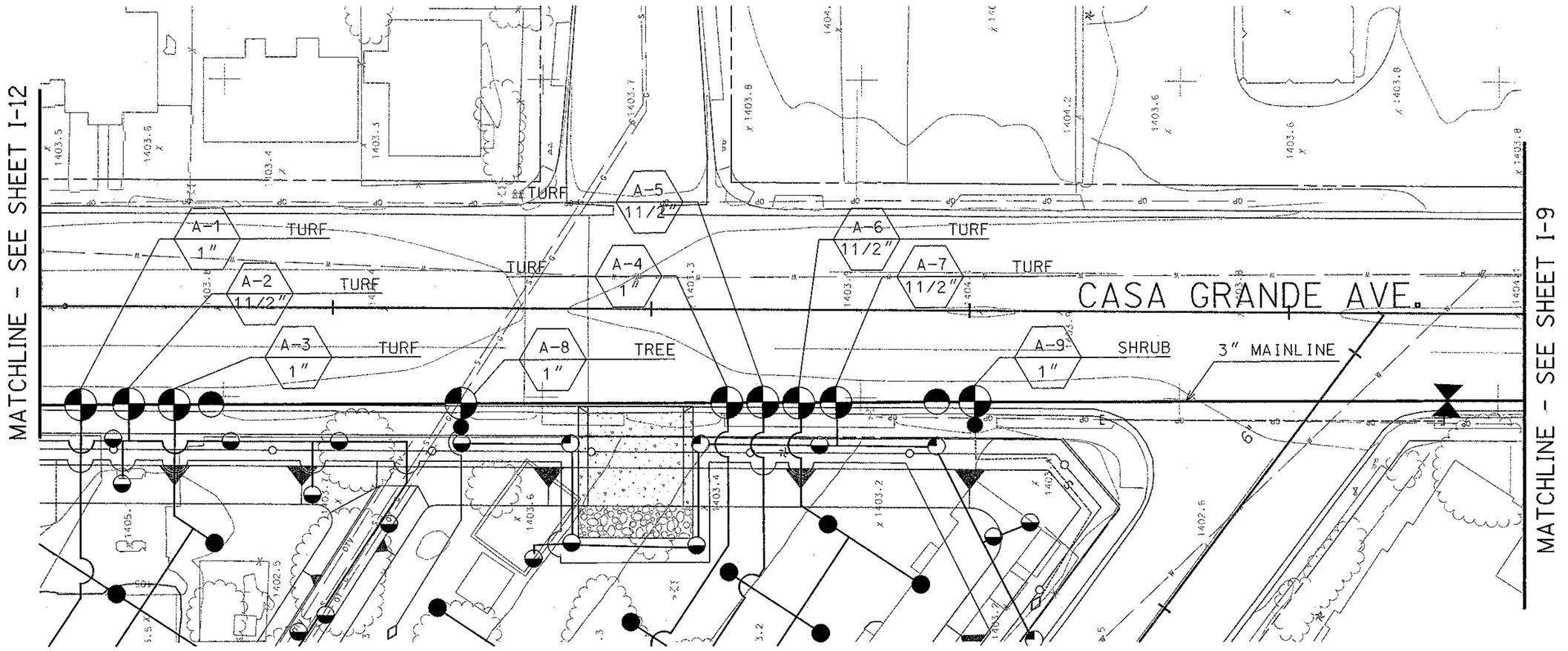
Plotted By: DDD 1/19/2007 1:31:15 PM

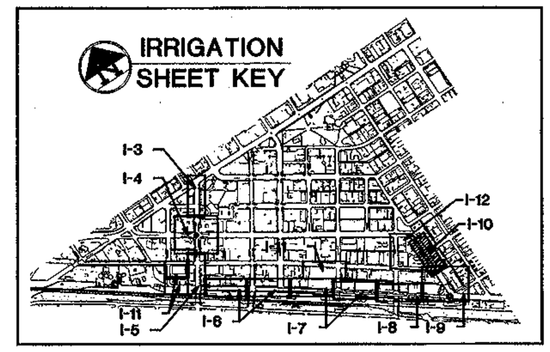


BASIN-C IRRIGATION PLAN
SEE SHT L-12

IRRIGATION LEGEND

Symbol	Equipment
C	IRRIGATION CONTROLLER: CalSense ET2000-32-M-RR, 32 Station, Wire Link, Remote Receiver; SSE-R Stainless Steel Pedestal Enclosure, LR Dome, TP-1, TPB Transient Protection Board, TP-110 Surge Arrestor, LA-2 Line Amplifier, and Paige P-7171-D Cable to Communication Link
M	WATER METER: 2"
B	REDUCED PRESSURE BACKFLOW PREVENTION UNIT: 2" Wilkins 975 XLV, with Guardshack GS-3 Enclosure, Woodland Tan
	MASTER VALVE: 2" RainBird 200-GB
F	FLOW METER: 1 1/2" CalSense FM-1.5 Schedule 80 PVC
	REMOTE CONTROL VALVE: RainBird PEB Series- Size Per Plans
	GATE VALVE: Mueller 2360 Series Epoxy Coated Resilient Wedge, 2" Thread, 3" Push On
	PRESSURE REGULATOR AND FILTER ASSEMBLY: RainBird PSI-L30X-075 Regulator, RainBird QKCHK-075 Basket Filter
	QUICK COUPLER ASSEMBLY: RainBird 44LRC, 1", with Key
	TURF ROTOR ASSEMBLY: Hunter I-20 Ultra- I-20-36S-4.0, 360° - 37' Radius - 30 PSI
	TURF ROTOR ASSEMBLY: Hunter I-20 Ultra- I-20-ADS-4.0, 180° - 37' Radius - 30 PSI
	TURF ROTOR ASSEMBLY: Hunter I-20 Ultra- I-20-ADS-2.0, 90° - 32' Radius - 30 PSI
	FLUSH END CAP ASSEMBLY: 3/4" FHT Ball Valve with Flex PVC Riser
Not Shown	EMITTER- MULTI-OUTLET ASSEMBLY: RainBird XBT-6 Series
Not Shown	EMITTER- SINGLE-OUTLET ASSEMBLY: RainBird XBT Series

Symbol	IRRIGATION PIPE
	MAINLINE PIPE: PVC Class 200- 3" Ringtite, 2" Solvent Weld -Size Per Plan
	DRIP SUB-MAIN PIPE: PVC Class 200- 1" Solvent Weld
	TURF LATERAL PIPE: PVC Class 200- Size Per Plan
	TREE DRIP LATERAL PIPE: 3/4" PVC Class 200
	SHRUB DRIP LATERAL PIPE: 3/4" PVC Class 200
	SLEEVE PIPE: PVC SCHEDULE 40 DWV- Size Per Plans



SCALE 1"=20'
0 5' 10' 20' 40'

-WARNING-
OVERHEAD POWER LINES WITHIN PROJECT CONSTRUCTION LIMITS

Two working days before you dig
CALL FOR THE BLUE STAKES
1-800-STAKE-IT
Blue Stake Center
1-800-782-5348

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

DESIGN FILE: DGN
PLOT DATE: 1/19/2007

	NAME	DATE
DESIGN	D.O.	01/07
DRAWN	A.G.	01/07
CHECKED	J.E.	01/07

J2 Engineering and Environmental Design, LLC
4649 East Cotton Gin Loop, Suite B2
Phoenix, Arizona 85040
Phone: 602.438.2221
www.j2design.us

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT:
DOWNTOWN STREETS IMPROVEMENTS
PHASE ONE

SHEET TITLE:
CASA GRANDE AVENUE - IRRIGATION PLAN

DWG NO.
I-10

p:*050093*j2cad*sheets*ph 1*cg2022I10.dgn
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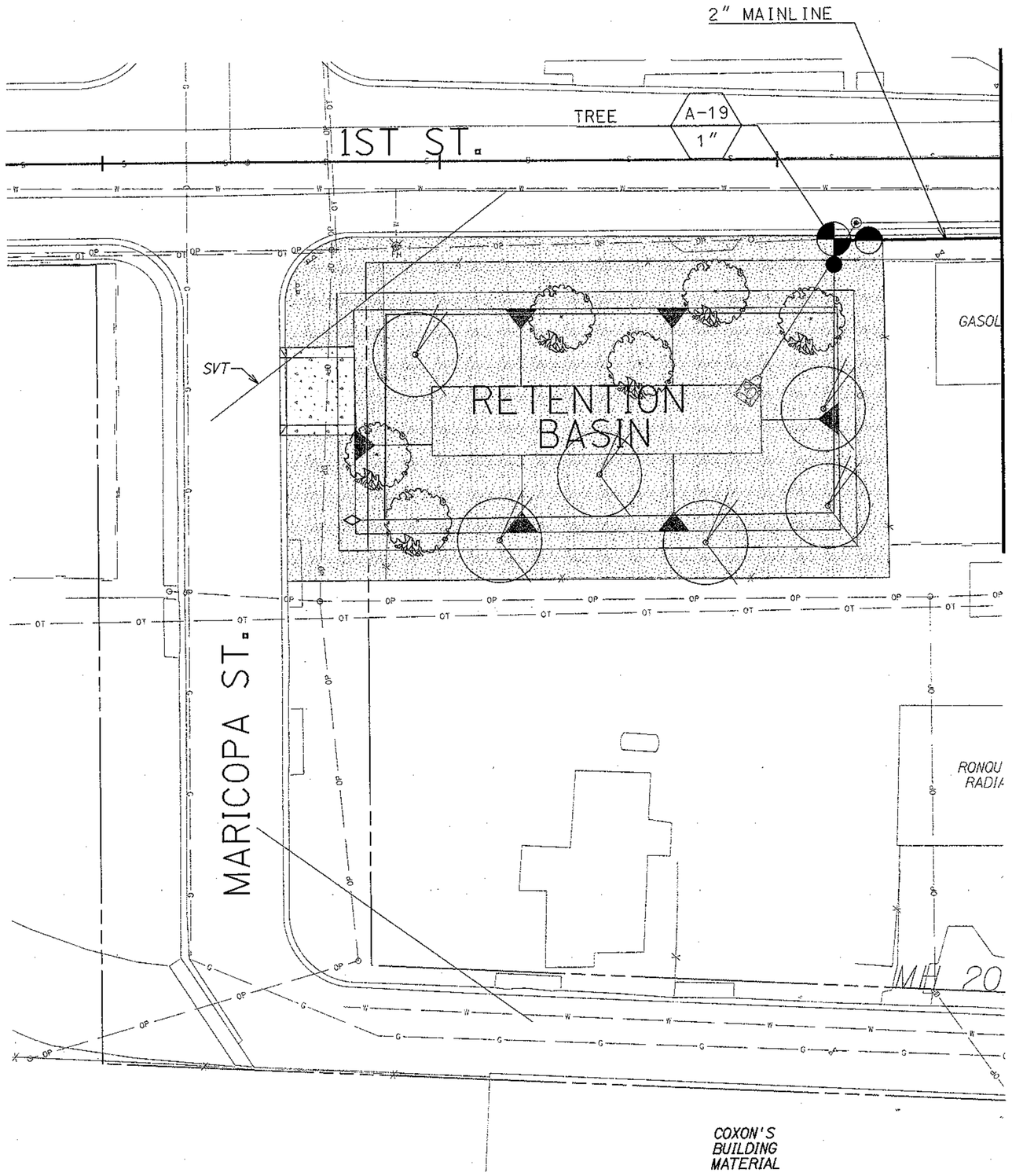

IRRIGATION LEGEND

Symbol	Equipment
C	IRRIGATION CONTROLLER: CalSense ET2000-32-M-RR, 32 Station, Wire Link, Remote Receiver; SSE-R Stainless Steel Pedestal Enclosure, LR Dome, TP-1, TPB Transient Protection Board, TP-110 Surge Arrestor, LA-2 Line Amplifier, and Paige P-TIT1-D Cable to Communication Link
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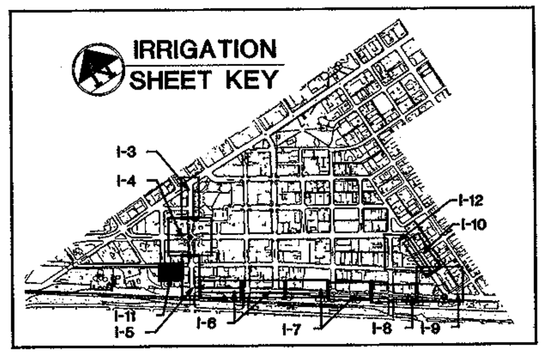

SCALE 1"=20'
0 5' 10' 20' 40'

-WARNING-
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1-800-STAKE-IT
Blue Stake Center 1-800-782-5348

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CHECKED	J.E.	01/07

J2 Engineering and Environmental Design, LLC
4649 East Cotton Gin Loop, Suite B2
Phoenix, Arizona 85040
Phone: 602.436.2221
www.j2design.us

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT:
DOWNTOWN STREETS IMPROVEMENTS
PHASE ONE

SHEET TITLE:
1ST STREET AND MARICOPA BASIN
IRRIGATION PLAN

DWG NO.
I-11

Sht No. 90 of 93

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2ND ST.

HERMOSILLA ST.

1ST ST.

CASA GRANDE AVE.

SVT

PROVIDE 3" CAPPED MAINLINE AT THIS LOCATION FOR FUTURE EXPANSION

3" MAINLINE

CONTRACTOR SHALL EXTEND 3" MAINLINE AND WIRES TO EXISTING PARK ON NORTH SIDE OF 2ND STREET. REPLACE EXISTING CONTROLLER WITH NEW CALSENSE CONTROLLER. WIRE NEW VALVES TO NEW CONTROLLER AND CONNECT WIRE FROM EXISTING PARK VALVES TO NEW CONTROLLER. EXTEND 4 ORANGE, & 1 GREEN 12 GAUGE & 1 WHITE 10 GAUGE WIRE FROM CONTROLLER TO FLORENCE STREET FOR FUTURE PHASE THREE EXPANSION.

BASIN

TURF

A-1 1" TURF 19.2 GPM

A-2 1 1/2" TURF 44.8 GPM

A-3 1" TURF 22.4 GPM

A-8 1" TREE

A-4 1" TURF 16.0 GPM

A-5 1 1/2" TURF 28.8 GPM

A-6 1 1/2" TURF 35.2 GPM

A-7 1 1/2" TURF 41.6 GPM

A-9 1" SHRUB

6"

SCALE 1"=20'

0 5' 10' 20' 40'

IRRIGATION LEGEND

Symbol	Equipment
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	SHRUB DRIP LATERAL PIPE: 3/4" PVC Class 200
E 3	SLEEVE PIPE: PVC SCHEDULE 40 DWV- Size Per Plans

IRRIGATION SHEET KEY

I-3 I-4 I-12 I-10 I-11 I-6 I-8 I-7 I-8 I-9

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DESIGN	D.D.	01/07
DRAWN	A.G.	01/07
CHECKED	J.E.	01/07

J2 Engineering and Environmental Design, LLC
4649 East Cotton Gin Loop, Suite B2
Phoenix, Arizona 85040
Phone: 602.430.2221
www.j2design.us

19310 DIRK D. BRUNING 1/19/07 CERTIFICATE NO. 19310 PROFESSIONAL ENGINEER

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT:
DOWNTOWN STREETS IMPROVEMENTS
PHASE ONE

SHEET TITLE:
CASA GRANDE BASIN
IRRIGATION PLAN

DWG NO.
I-12

Sht No. 91 of 93

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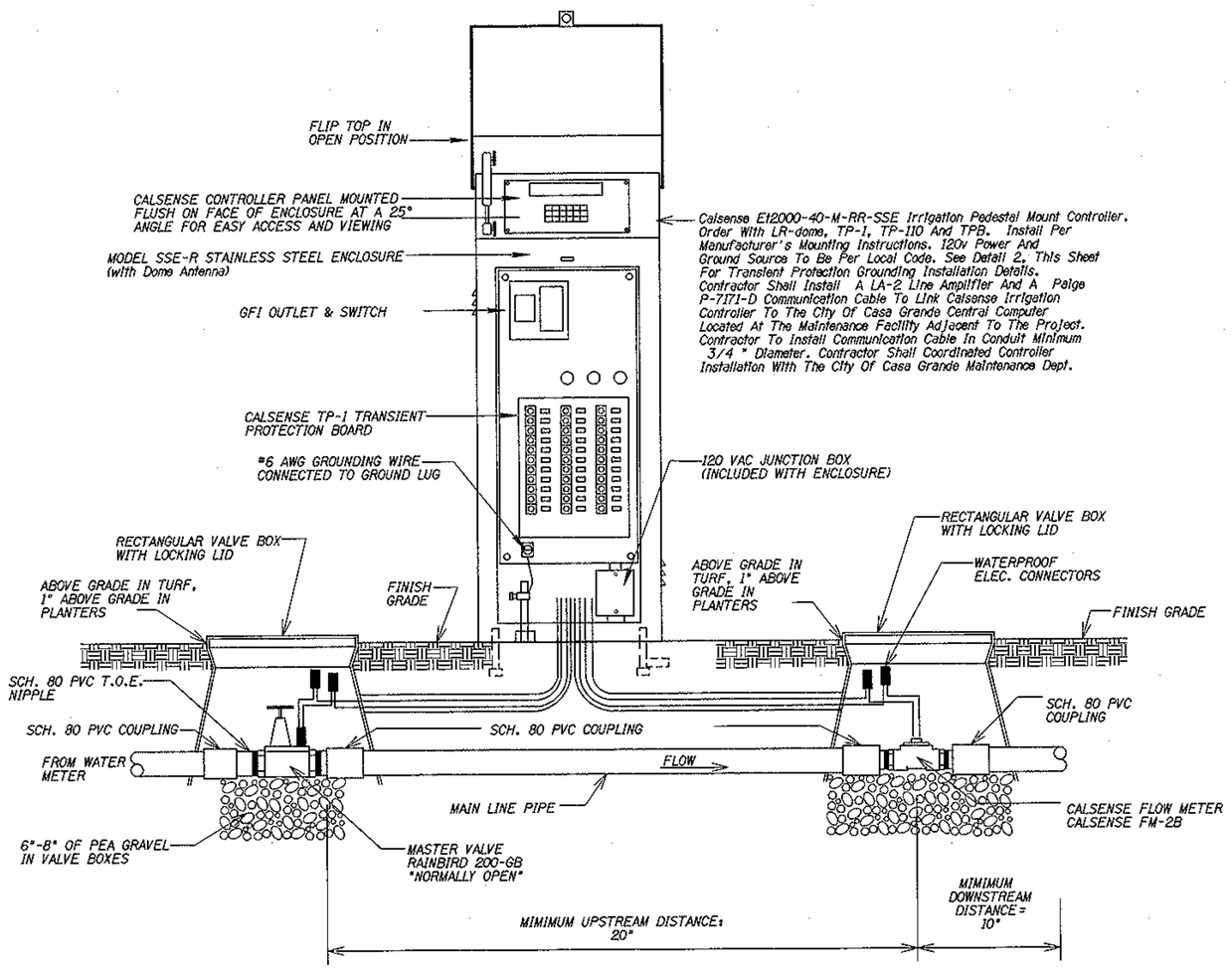
Plotted By: DDD 1/19/2007 1:31:20 PM



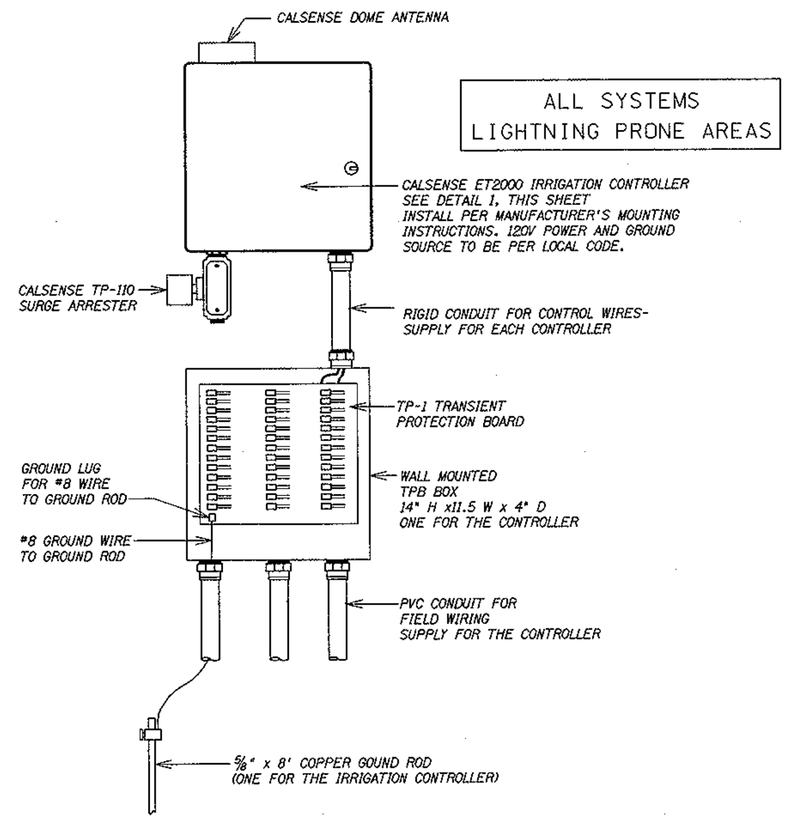
UPSTREAM/DOWNSTREAM DISTANCE MEASUREMENTS FOR FLOW METER "A"

THERE MUST BE FREE, UNRESTRICTED PIPE OF THE SAME SIZE AS THE FLOW METER, WITH A LENGTH OF AT LEAST 10 TIMES THE FLOW METER SIZE UPSTREAM, AND 5 TIMES THE FLOW METER SIZE DOWNSTREAM OF THE FLOW METER TEE.

FLOW METER
CALSENSE FM-2B
MIN. UPSTREAM DISTANCE - 20"
MIN. DOWNSTREAM DISTANCE - 10"

NOTE:
LOCATE MASTER VALVE AND FLOW METER AT BACKFLOW LOCATION.

① IRRIGATION CONTROLLER- FLOW METER & MASTER VALVE ASSEMBLY NTS



② TRANSIENT PROTECTION GROUNDING NTS

GENERAL - IRRIGATION SYSTEM:
WORK INCLUDED: WORK UNDER THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NEW AUTOMATIC DRIP/SPRAY IRRIGATION SYSTEM COMPLETE, INCLUDING, AS INDICATED ON THE PLANS AND DESCRIBED IN STANDARD SPECIFICATIONS AND SUPPLEMENTAL SPECIFICATIONS, BUT NOT LIMITED TO ALL ELECTRICAL CONNECTIONS, PIPE, WIRING, VALVES, VALVE COVERS, CONTROLLER, SECURITY CABINETS, ETC., FOR A COMPLETE, AUTOMATIC AND FULLY OPERATIONAL IRRIGATION SYSTEM PER MANUFACTURERS SPECIFICATIONS, THE CITY OF CASA GRANDE STANDARDS AND MAG SPECIFICATIONS.

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Blue Stake Center 1-800-782-5348

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

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DRAWN	A.G.	01/07
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4649 East Cotton Gin Loop, Suite B2
Phoenix, Arizona 85040
Phone: 602.436.2221
www.j2design.us

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT: DOWNTOWN STREETS IMPROVEMENTS PHASE ONE

SHEET TITLE: IRRIGATION DETAILS

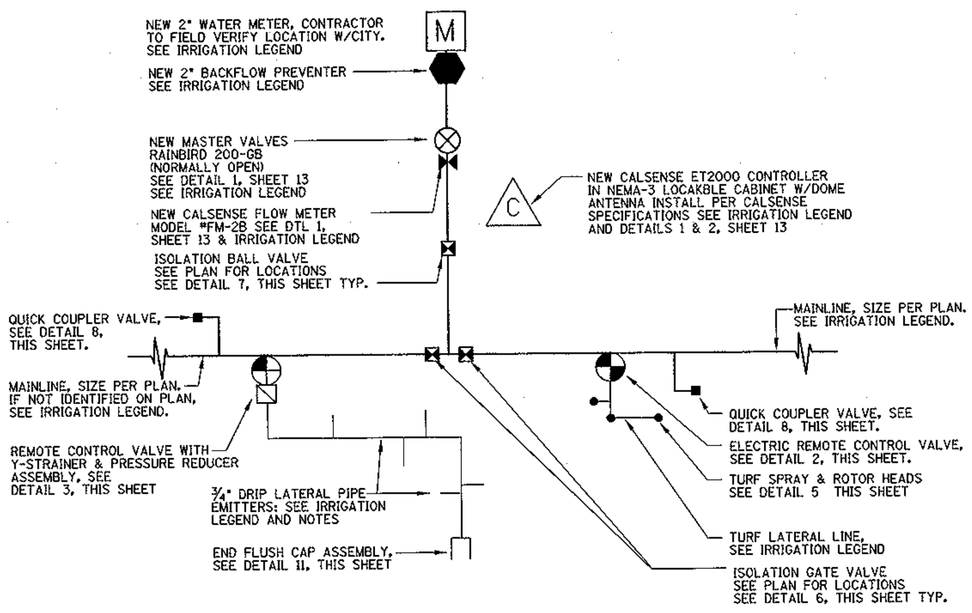
DWG NO. I-13

Sht No. 92 of 93

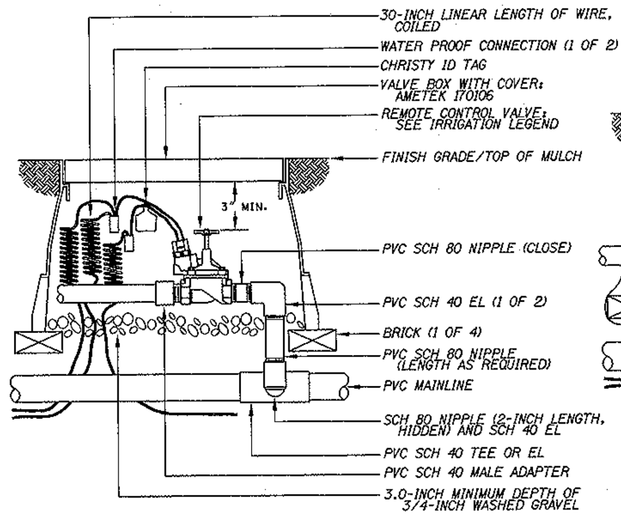
p:\050093\j2cad\sheets\ph 1\cg2022113.dgn
Plotted By: DDD 1/19/2007 1:31:21 PM

CONTRACTOR NOTE:
CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO PROVIDE THE ELECTRICAL POWER, TRANSFORMERS, CONDUIT, WIRE SLEEVING AND ALL ELECTRICAL INSTALLATION AND CONNECTIONS TO PROPERLY INSTALL THE CALSENSE IRRIGATION CONTROLLER AND ALL ASSOCIATED CALSENSE EQUIPMENT PER MANUFACTURER INSTRUCTIONS.

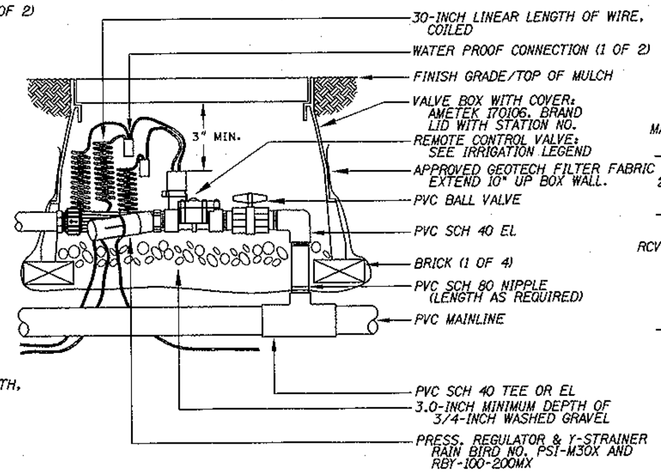
NOTE:
ALL MAINLINE PIPE SIZED PER PLAN. IF NOT IDENTIFIED ON PLAN, SEE IRRIGATION LEGEND.



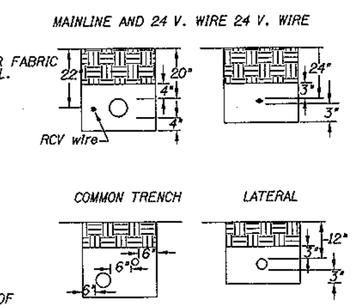
① IRRIGATION SYSTEM SCHEMATIC LAYOUT NTS



② ELECTRIC REMOTE CONTROL VALVE ASSEMBLY (TURF) NTS



③ ELECTRIC REMOTE CONTROL VALVE ASSEMBLY (DRIP) NTS



NOTES:

THE PIPE SHALL BE ISNTALLED IN LIFTS AS INDICATED BUT NOT EXCEEDING 6" AND COMPACTED FIRMLY AROUND THE PIPE.

INSTALL ALL PIPE PER MANUFACTURERS RECCOMENDATIONS AND ASTM STANDARDS #D 2774.

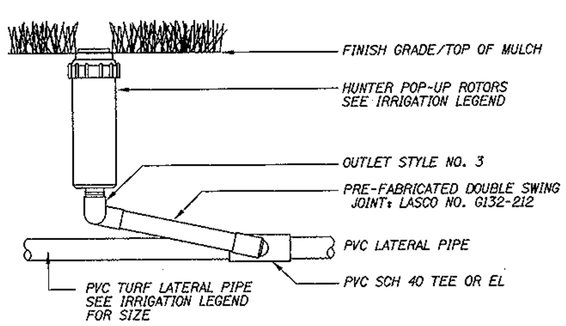
INSTALL ALL 120 V PER LOCAL CODES AND SPECIFICATIONS.

MIN. TRENCH WIDTH DETERMINED BY MAINTAINING A MIN. OF 6" ON BOTH SIDES OF PIPE. COMMON TRENCH REQUIRES A MIN. OF 6" TO SEPERATE PIPES AS DETAILED.

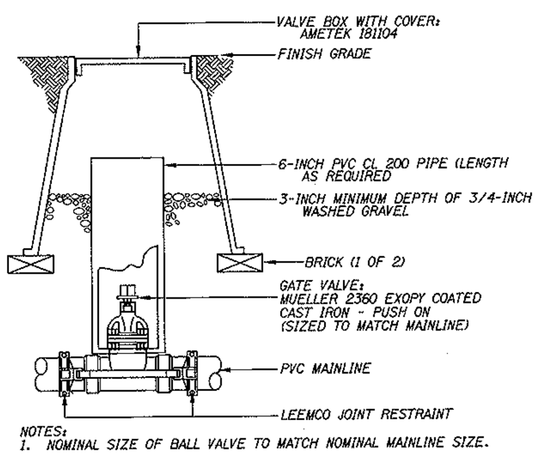
TAPE A LOOSE 20" LOOP IN ALL WIRING AT ALL DIRECTION CHANGES GREATE THAN 30 DEGREES. UNTAPE AFTER ALL CONNECTIONS ARE COMPLETED.

TAPE AND BUNDLE ALL WIRE AT 10' MAXIMUM INTERVALS.

④ TYPICAL TRENCH DETAILS NTS

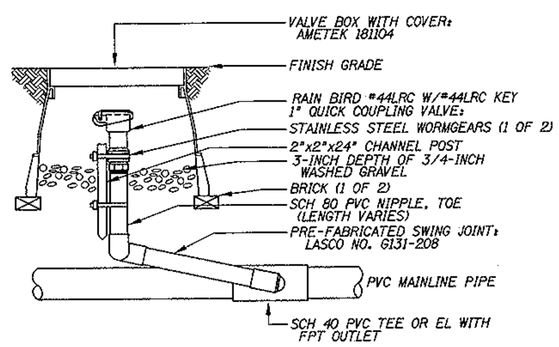


⑤ POP-UP ROTOR SPRINKLER ASSEMBLY NTS

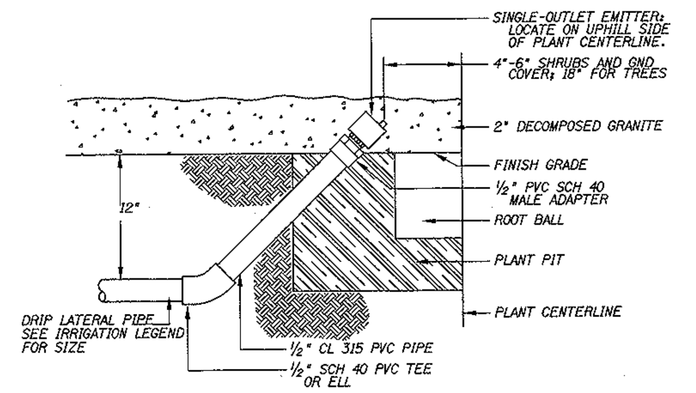


NOTES:
1. NOMINAL SIZE OF BALL VALVE TO MATCH NOMINAL MAINLINE SIZE.

⑥ GATE VALVE ASSEMBLY NTS

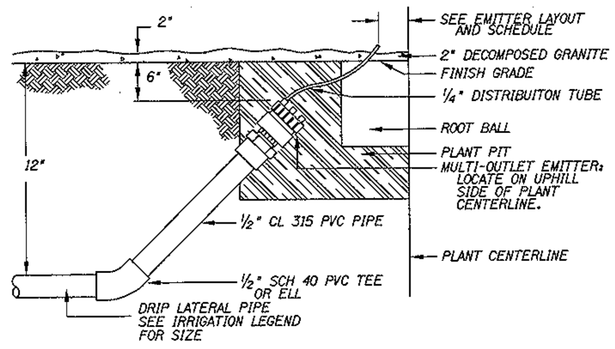


⑦ QUICK COUPLING VALVE ASSEMBLY



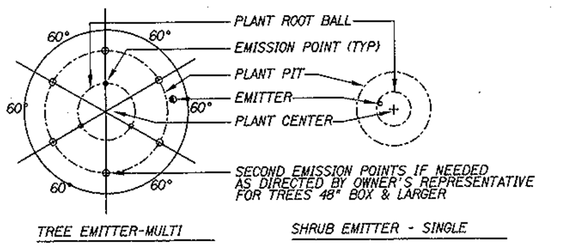
NOTE:
90 DEGREE ELL MAY BE USED IN LIEU OF 45 DEGREE IF PLANTER WIDTH IS LESS THAN SHOWN.

⑧ SINGLE-OUTLET DRIP EMITTER ASSEMBLY



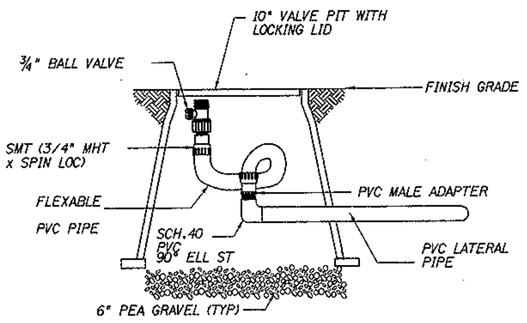
NOTES:
1. EMITTER TUBING EMISSION POINTS SHALL BE EQUALLY SPACED AND LOCATED TO DIRECT WATER FLOW TO PLANT ROOTBALL.
2. AT LEAST ONE EMITTER TUBE TO BE LOCATED WITHIN 4 INCHES OF PLANT CENTERLINE.
3. THREE HOLES OPEN INITIALLY.

⑨ MULTIPLE-OUTLET DRIP EMITTER ASSEMBLY NTS

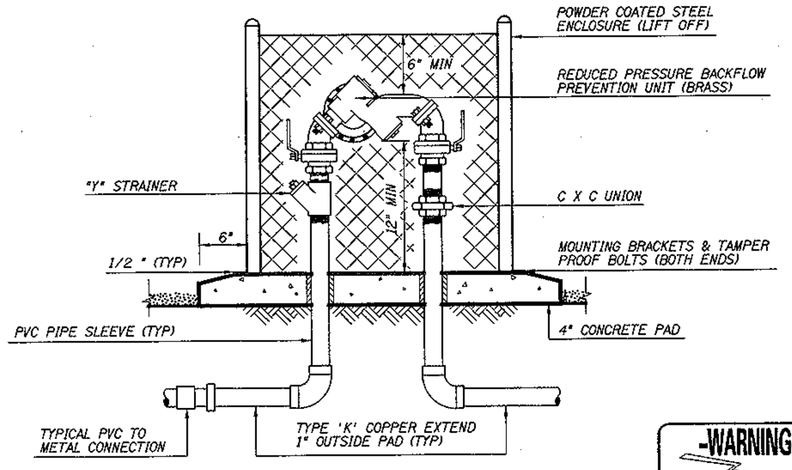


NOTE:
ALL EMISSION POINTS SHALL BE LOCATED ON UPHILL SIDE OF PLANT MATERIAL. ONE EMISSION POINT SHALL BE DIRECTED TO PLANT BALL AS INDICATED. ADDITIONAL EMISSION POINTS SHALL BE WITHIN PLANT PIT PERIMETER - 18" FROM TREE CENTER FOR 24" BOX TREE.

⑩ DRIP EMITTER LAYOUT DETAIL NTS



⑪ FLUSH END CAP ASSEMBLY NTS



⑫ REDUCED PRESSURE BACKFLOW ASSEMBLY NTS

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DESIGN FILE: #DGN#
PLOT DATE: 1/19/2007

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DRAWN	A.G.	01 /07
CHECKED	J.E.	01 /07

12 Engineering and Environmental Design, LLC
4649 East Cotton Gin Loop, Suite 102
Phoenix, Arizona 85040
Phone: 602.430.2221
www.i2design.us

CLIENT:
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PROJECT:
DOWNTOWN STREETS IMPROVEMENTS PHASE ONE

SHEET TITLE:
IRRIGATION DETAILS

DWG NO.
I-14

Sht No. 93 of 93

p:#050093#j2cad#sheets#ph 1#cg2022114.dgn
Plotted By: DDD 1/19/2007 1:31:23 PM

City OF Casa Grande, Main Street Improvements

PROJECT LOCATION

VICINITY MAP
N.T.S.

PRELIMINARY DRAWING

MUNICIPAL/COUNTY REVIEW

CITY:__________

COUNTY:__________

REVIEWED BY:__________

INITIAL:__________

DATE:__________

MARK SUGGESTIONS IN RED AND RETURN THIS DRAWING TO AN ARIZONA WATER COMPANY REPRESENTATIVE

ARIZONA WATER COMPANY REVIEW

W.A. NUMBER:__________

REVIEWED BY:__________

DATE:__________

MARK SUGGESTIONS IN RED AND RETURN IMMEDIATELY

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

Abandon And Replace Waterlines Along Main Street Between Sacaton Street And Casa Grande Avenue For The City Of Casa Grand Roadway Improvements

W.A.	P.E.	The above installation is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality	
SYSTEM	CASA GRANDE		
NW 1/4 SEC. 29 -T. 6S., R. 6E.			
TAX DIST.	PINAL COUNTY		
DATE: 3/21/03	SCALE: AS SHOWN	DWG. No.	CG-839
DRAWN BY: CO	SHEET 1 OF 14		

MICHAEL WHITEHEAD

FOR WATER ONLY

CALL TWO WORKING DAYS BEFORE YOU DIG
263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

CONSTRUCTION SPECIFICATIONS FOR THE INSTALLATION OF WATER DISTRIBUTION SYSTEMS - DUCTILE IRON

DEFINITIONS

A. Company. The words "Company" or "Arizona Water Company" mean Arizona Water Company, and where applicable, any division of Arizona Water Company, whose principal place of business is located at 3805 North Black Canyon Highway, Phoenix, Arizona 85015-5351 (Post Office Box 29006, Phoenix, Arizona 85038-9006).

B. Company's Authorized Representative. The words "Company's Authorized Representative" mean any officer of the Company, and any of the Company's Engineers, any Division Manager of the Company and/or such other person(s) designated in writing as the "Company's Authorized Representative" by the President or any Vice President of the Company.

C. Contractor. The word "Contractor" means either an individual or other entity employed to do the work as shown on the Construction Drawings and as specified herein.

D. Construction Drawings. The words "Construction Drawings" mean plans prepared by or on behalf of Arizona Water Company.

E. Contract. The word "Contract" means the written document titled "Proposal/Contract" when such document has been signed by an officer or other authorized representative of both the Contractor and the Company.

CONSTRUCTION SPECIFICATIONS FOR THE INSTALLATION OF WATER DISTRIBUTION SYSTEMS - DUCTILE IRON

1. GENERAL
All work is to be completed in a safe, workmanlike manner and in accordance with these Construction Specifications; any deviation therefrom must be approved in writing by the Company. Installations must conform with the requirements of all governmental regulating agencies and the cost of conforming to such regulations must be included in the unit bid prices. Examples of such regulations, without attempting to be inclusive, are:
a. Special compaction and paving for street crossing.
b. Shoring when required because of the trench depth.
c. Closing a trench in those areas where no open trench is allowed overnight.
d. Barricading and traffic control as required.

2. LOCATION MARKING
Alignment stakes as required in the opinion of the Company shall be furnished by the Company to the Contractor and shall be set by the Company at agreed upon intervals and offsets. Under normal circumstances these will reference the pipeline location five feet (5') into the right-of-way or measured from property pins. Grade stakes will be provided only when the Construction Drawings show a pipeline depth other than covered in these Specifications. It is the responsibility of the Contractor to preserve all survey work.

3. TRENCH EXCAVATION
The trench location is to be determined by the Construction Drawings.
FOR 8-INCH OR SMALLER PIPE: The depth of the trench prior to pipe laying shall be such that the finished pipeline shall have between thirty-six inches (36") and forty-two inches (42") of cover over the top of pipe unless otherwise specified on the Construction Drawings.
FOR 12-INCH AND LARGER PIPE: The depth of the trench prior to pipe laying shall be such that the finished pipeline shall have between forty-eight inches (48") and sixty inches (60") of cover over the top of pipe unless otherwise specified on the Construction Drawings.
The width of the trench at and below the level at the top of the pipe shall be a minimum of twelve inches (12") plus the outside diameter of the pipe barrel and a maximum of twenty-four inches (24") plus the outside diameter of the pipe barrel. The bottom of the trench shall be accurately graded to provide a uniform bearing for each length of pipe for the full length of the pipe, if the native material on the trench bottom can be reasonably dug by hand, bell holes shall be dug for the joints so that the joints in no way support the pipe. When native materials such as rock are encountered during trenching that will not provide a uniform support for the pipe, the trench will be over-excavated an additional six inches (6") and suitable bedding material will be placed in the trench. Bedding material will be placed by hand in four inch (4") lifts and compacted to ensure uniform compaction and to eliminate any voids under the pipe. When the space between the pipe and trench bottom varies, this must be backfilled and compacted in four inch (4") lifts to the mid-section of the pipe. Whenever the trench is over-excavated for whatever reason, the trench bottom will be brought up to the correct depth at the Contractor's expense using either method (a) or (b) as follows:
a. A.B.C. material shall be used and compacted to a uniform density of not less than 80% of the maximum density as determined by AASHTO T-99 method A and T-191.
b. Native material 100% of which will pass through a one and one-half inch (1-1/2") screen and at least 20% of which will pass through number-8 screen shall be used and compacted to a uniform density of not less than 85% of the maximum density as determined by AASHTO T-99 method A and T-191.

4. MATERIALS TO BE PROVIDED BY CONTRACTOR
Unless otherwise specified on the Construction Drawings or in the Contract, the Contractor will supply all of the necessary materials which will become a permanent and integral part of the water distribution system, including concrete blocking, anchors, backfill material, paving material and supplies used during the prosecution of the work. All materials provided by the Contractor to construct the water distribution system must be NSF Standard 61 approved. All potable water pipes and fittings shall have NSF-PW seal. Construction materials used in the water system shall be lead free as defined at AAC R28-4-504 and R18-1-101.
The Contractor will provide the following materials:
A. FIRE HYDRANTS: Mueller Super Centurion 250 Fire Hydrant, meets ANSI/AWWA C502 Standard,
Model No. A-421, 4-1/2" main valve opening, three way, 6" Mechanical Joint Shoe, 1-1/2" pentagon operating nut, color - yellow, drain open, open direction - left, 4' or 4'6" bury depending on application. For pumper and hose nozzle information see below.
(1) 1 - 4" Pumper Nozzle, NST and 2 - 2-1/2" Hose Nozzles, NST. (These locations only: Ajo, Casa Grande, Coolidge and San Manuel.)
(2) 1 - 4-1/2" Pumper Nozzle, NST and 2 - 2-1/2 " Hose Nozzles, NST. (These locations only: Apache Junction, Arizona City, Lakeside, Oracle, Overgaard, Pinewood, Rimrock, Sedona, Sierra Vista, White Tank and Winkelman.)
(3) 1 - 4-1/2" Pumper Nozzle, NST and 2 - 2-1/2" Hose Nozzles, NPT (Bisbee only.)
(4) 1 - 3" Pumper Nozzle GA 6-350 (6 threads per inch, 3.50 pitch diameter) and 2 - 2-1/2" Hose Nozzles, NPT (Miami only.)
(5) 1 - 3-1/2" Pumper Nozzle GA 6-411 (6 threads per inch, 4.11 pitch diameter)and 2 - 2-1/2" Hose Nozzle, NST (Superior only.)
B. FITTINGS: Manufactured by Tyler or Union. Crosses, Elbows, Tees, Cap, Reducer, Adapter, Plug, Blind Flange and Tapped Flange:
Ductile Iron, Class 350, SSB, Cast Iron Cement Lined. (1) Foster Adaptors for MJ, made by Infact Corporation: Available in size 4" to 16".
Part No. 4" = 4FA-BC, 6" = 6FA-BC, 8" = 8FA-BC, 10" = 10FA-BC, 12" = 12FA-BC, 16" = 16FA-BC.
C. DETECTOR CHECK VALVE: Mueller/ Hersey EDC III, iron body, including ⅝"x ¾" Trim Kit. Trim Kit Part No.: 4" = 282080, 6" = 282082, 8" = 282085, 10" = 282496.
D. GATE VALVES: Mueller Resilient Wedge Gate Valves, meets AWWA C509 specification, 250 psig, Non rising stem, Part No. A-2360, low zinc stems, epoxy coated inside and outside to meet the NSF 61 rating.
E. MEGALUG: Mechanical Joint restraint made of ductile iron conforming to ASTM 536-80, 250 psi made by EBAA Iron, Inc., series 1100 or equal.
F. METER BOXES: Available from U.S. Filter: (1) Concrete Box with a steel regular lid, Number 2, 3, and 4: Phoenix specification.
(2) Concrete Box with a steel regular lid, Number 1: Tucson specification.
G. PIPE, COPPER: Type K soft copper in 60 or 100 foot coils.
H. PIPE, DUCTILE IRON: Ductile Iron Pipe, Cement Lined, Push-on, conform to current ANSI/AWWA Specification A21.51/C151.
Pressure Class 350 (sizes 4" through 12"), Pressure Class 250 (sizes 14" through 20"), or Pressure Class 200 for 24" pipe. Vendors:
(1) Pacific States Cast Iron Pipe Company
(2) Griffin Pipe
(3) United States Pipe and Foundry Company
I. PIPE, PLASTIC: Plastic pipe, C-900 PVC per ANSI/AWWA C900, DR18, class 150, sizes 6" through 12". NSF 61 approved. Furnished in laying lengths of 20'
J. COUPLING: Mueller, straight three part union, tested to meet ANSI/AWWA C800, H15403, 110 Conductive compression. Viking Johnson brand, sold by Mueller: MaxiFit Straight (2"-24"), MaxiFitXtra Straight (4"-8") or MaxiStep Transition, tested to meet AWWA/ANSI C.219-91 specifications certified to ISO 9001:1994.
K. STOP, ANGLE METER, BALL: Mueller, valve, B24258, 110 conductive compression by meter swivel nut, tested to meet ANSI/AWWA C800, size ⅝"x ¾"x ¾" for a ¾" service or size 1" for a 1" service. Mueller, valve, B24265, female pipe thread by meter swivel nut, tested to meet ANSI/AWWA C800, size ⅝"x ¾"x ⅝" for a ¾" service or size 1" for a 1" service. Mueller, valve, H14351, straight meter valve, female pipe thread by meter swivel nut, tested to meet ANSI/AWWA C800, size ⅝"x ¾"x ¾" for double services.
L. STOP, CORP: Mueller, ball valve, B25008, CC thread by 110 conductive compression, tested to meet ANSI/AWWA C800 specifications, sizes: 2". ¾", 1" and 2". Mueller, ori-corp valve, H15013, CC thread by 110 conductive compression, tested to meet ANSI/AWWA C800 psi working pressure, tested to meet ANSI/AWWA C800 specification, size: 2".
M. STOP, CURB: Mueller Oriseal valve, H10291, iron pipe thread by iron pipe thread, quarter turn check, brass, tested to 300 psi working pressure, tested to meet ANSI/AWWA C800 specification, size: 2".
N. TAPPING SADDLE: Smith Blair, Cast Bronze ASTM-B584 85-5-5-5, double strap, iron pipe threads, Models 321 and 323. Washers are silicon bronze, ASTM-B36. Gaskets are grade 60 Buna N, or Mueller bronze double strap service saddle, BR 2 B series, cast bronze, ASTM-B585, 85-5-5-5, or H16084, 200 psig, meets ANSI/AWWA C800.
O. TAPPING SLEEVE: Mueller H304 Stainless Steel Tapping Sleeve, JCM 432 18-8 Type 304 Stainless Steel Tapping Sleeve, Romac "SST" Type 304 Stainless Steel Tapping Sleeve or CASCADE-style CST-EX stainless steel pressure-rated tapping sleeve.
P. U-BRANCH: Mueller, H15363, 1" 110 conductive compression by ¾" male, meets ANSI/AWWA C800 specifications, size: 1" x ¾" x 13-1/2", straight line.
Q. VALVE BOXES: Valve Box with Cover, adjustable, Tyler 562-A or equal, made of cast iron.
R. VAULTS: Utility Vault Company, Chandler, AZ.
(1) 4484-WA concrete vault with a 3660 aluminum double torsion door with a recessed padlock hasp, two - 18" x 24" center knockouts.
(2) 575-WA concrete vault with a 4874 aluminum double torsion door with a recessed padlock hasp, two - 18" x 24" center knock outs and adjustable frame.
(3) 612-5X-WA concrete vault with a 4874 aluminum double torsion door with a recessed padlock hasp, two - 18" x 24" center knockouts.
S. YOKES, METER: Relocator type copper meter yoke with horizontal inlet and outlet and meter thread ends, H14118, with lock wing ground key angle meter stop, sizes: 1" x 12",⅝" x¾" x 7",⅝" x¾" x 9".
T. AIR RELEASE VALVE: Crispin Model AR10 with 1" NPT inlet and½" NPT outlet, cast iron body and top flange; with a⅛" orifice with stainless steel valve sealing faces and BUNA-N rubber.
U. PRESSURE RELIEF VALVE: Watts 174A, Model M, 2" inlet, 2" outlet, Bronze Body, 30lb. to 150lb. pressure range.
V. POLYETHYLENE ENCASEMENT: For all pipeline and related fittings installed, EXCEPT for the Coolidge Division. Minimum 8 Mil. and installed per AWWA C105/A21.5-93 and ASTM A-674-89. Manufactured by the Pacific States Cast Iron Pipe Company.
W. BUTTERFLY VALVES: Mueller catalog Number 3211, 150 PSI Maximum working pressure. ANSI/AWWA C504 and NSF61 certified. Epoxy interior/exterior. Sizes 16" through 36".
X. TAPPING VALVE: Mueller Double Disc tapping valve, catalog number H867, Class 125, sizes 4" through 24", flange by mechanical joint per ANSI/AWWA C111 . Iron body, double disc, non-rising stem. Epoxy coated interior/exterior per ANSI/AWWA C550 for NSF 61 compliance. 200 PSI range for valves 4" to 12". 150 PSI range for valves 16" to 24".
The Contractor also will be required to provide the following materials, the cost of which will be included in its unit bid price: All material and concrete for thrust blocks, other anchors, reinforcing steel; all gravel, crushed stone, A.B.C., earth, sand, or screened material which may be required; all material for bracing and shoring trenches and for construction of forms; all barricades and traffic control equipment; all material for paving replacement and any water used for compaction of backfill.

5. INSTALLATION OF MATERIALS
All materials are to be installed in accordance with manufacturers recommendations unless otherwise directed by these Specifications. All pipe, fittings and valves shall be laid true to the lines, grades and locations established by the Specifications and the Construction Drawings. The ends and inside of the pipe shall be thoroughly cleaned and inspected for damage. No damaged materials shall be installed in the water distribution system. Whenever the work ceases for any reason, all open pipeline ends shall be tightly plugged by the Contractor. Concrete thrust blocks of the sizes required by the plans and specifications are to be provided at all valves, changes in direction or size, or at any other point where an unbalanced thrust due to water pressure would exist. Thrust blocks are to be formed to prevent any concrete from spilling over or into a joint. Trench curves as shown on the Construction Drawings may be made without fittings when using pipe up to twelve inches (12") in diameter, if the deflection of the pipe does not exceed five degrees (5°) or nineteen inches (19") per eighteen foot (18') length of pipe. The minimum radius of such curves will be two hundred five feet (205').
A. Prior to construction, the appropriate agency(ies) will be notified as required by the permit(s).
B. It shall be the contractor's responsibility to uncover all existing water lines being connected to, and to verify the location, depth and size of pipe before any construction begins.
C. Any construction performed without the knowledge of the duly authorized representative is liable for removal and replacement at the contractor's expense.
D. All fire hydrants, frames, covers and valve boxes, etc shall be adjusted to finished grade prior to the placing of asphaltic concrete surface course by the contractor (where applicable).
E. Air release valves shall be installed at water system high points per Standard Detail E-9-8-2.
F. All water services shall be set a minimum of two feet (2') on the customer's property, preferably within the P.U.E. and not within right-of-way.
G. Unless otherwise specified on the construction drawings, all water mains shall be installed five feet (5') from the the property line inside the right-of-way or easement.
H. Water valves shall be spaced not more than five hundred feet (500') in commercial districts and not more than eight hundred feet (800') in other districts. Variations may be required for transmission mains or special applications.
I. Installation of waterline casing shall be per Standard Specification E-9-24-1.

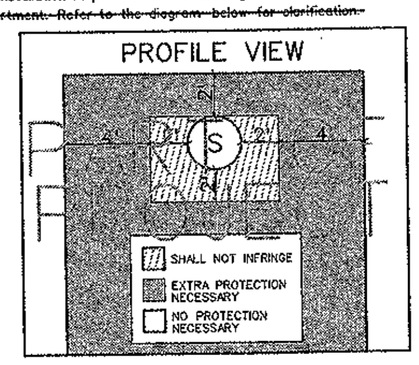
6. BACKFILL OF WATER MAIN TRENCHES
Backfill of any excavation shall conform to the requirements of any of the governmental agencies having jurisdiction over the location. If no governmental agency having such jurisdiction specifies backfill or compaction requirements, and no special requirements are shown on the Construction Drawings, the procedure set forth in this section will apply for water line trenches. The bedding material above the pipe and backfill material shall be compacted to a minimum of 70% compaction within a utility easement and 80% compaction within a right-of-way as determined by AASHTO T-99 method A and T-191. If water settling is used for compaction, it is the responsibility of the Contractor to prevent the pipe from floating.
The bedding material shall be either native material, 100% of which will pass through a one and one-half inch (1 1/2") screen and at least 20% of which will pass through a number-8 screen, or imported material which conforms to M.A.G. specifications for A.B.C. or type-B select materials. Bedding material shall be used below and around the pipe, and a minimum of twelve inches (12") above the pipe. The remainder of the trench shall be backfilled with native or imported material which shall be of sound earthen material free from broken concrete, wood, broken pavement, or other unsuitable substances. Except as otherwise specified, backfill may be material containing no pieces larger than eight inches (8") in greatest dimension. Where settlement occurs, additional backfill material shall be placed and compacted and the trench shall be brought to final grade.

7. HYDROSTATIC TESTING OF COMPLETED PIPELINES
Hydrostatic testing of water pipelines will be completed before the new system is connected into the existing water system so that all testing can be done against all new materials. The completed section of water pipeline to be tested shall be slowly filled with water with care being taken to expel all air from the pipe. If necessary, the pipe will be topped at high points to vent air. The Contractor shall provide all equipment and labor necessary to accomplish this testing and the price shall be included in the unit prices. The Contractor shall notify the Company in advance of the testing so that the Company can schedule a duly authorized representative to be at the site during testing. The Contractor, at its own expense, shall make any necessary repairs to the system being tested in order to cause the section being tested to meet the test limits set below. The Contractor may request authorization of the Company to connect the new pipelines to the existing system prior to completion of pressure testing when, in the Company's sole opinion and judgment, conditions warrant such connection. The Contractor shall assume all responsibility to complete pressure testing to Company's specifications after such connection, including, but not limited to, isolation of the new pipelines from the existing system, if necessary. Connections prior to completion of pressure testing shall not be made unless prior Company authorization has been obtained, and any extra expenses resulting from such connections shall be the sole responsibility of the Contractor. Leakage tests will be for a period of two hours at 200 plus or minus 5 psi at the point of lowest elevation: leakage may not exceed 0.1 gallons per hour per one thousand feet (1,000') of pipe per inch of diameter.

8. STERILIZATION AND FLUSHING OF COMPLETED WATER PIPELINES
Sterilization and flushing will conform to recommendations of Arizona State Department of Health Services Engineering Bulletin Number 8, latest edition, or any future Arizona Department of Environmental Quality bulletins.

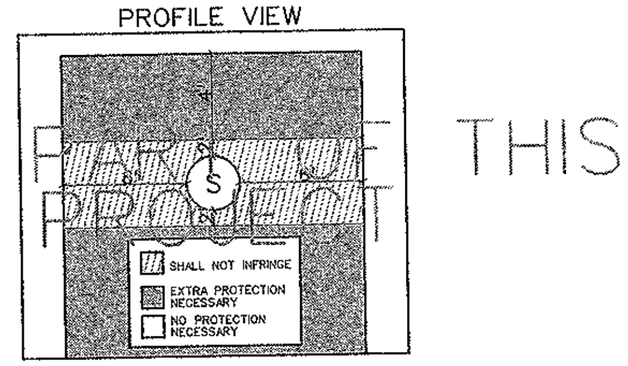
9. NO OTHER UTILITIES ALLOWED IN OR NEAR WATER PIPELINE TRENCHES
No other utility installations will be permitted in the water pipeline trench or within five feet (5') of the Company's water pipeline when running parallel to the water pipelines.

10. PROTECTION OF WATER MAINS NEAR SEWERS
Water/sewer line(s) separation shall be in accordance with AAC R18-4-502C. Water line(s)/septic systems separation shall be in accordance with AAC R18-9-A312C
If a conflict is encountered notify engineer before proceeding with work.
Plans will be resubmitted to ADEQ for authorization to use alternative construction techniques.
~~In order to protect water mains from contamination by sewers, the installation of the water mains must conform to the following requirements:~~
~~1. Horizontal: Where water lines and sewers are laid parallel to each other, the horizontal distance between them shall not be less than six feet (6'). Each line shall be laid on undisturbed or bedded material in a separate trench. Where conditions prevent the minimum horizontal separation set forth above, extra protection will be required. Extra protection shall consist of constructing the sewer main with mechanical joint ductile iron pipe or with slip joint ductile iron pipe if joint restraint is provided, or encasing the sewer main in concrete. Extra protection shall consist of constructing the water main with mechanical joint ductile iron pipe or with slip joint ductile iron pipe if joint restraint is provided. The water main shall not be encased in concrete. The Construction Drawings shall indicate the installation requirements. The drawings showing these exceptions shall have been approved by the appropriate state and/or county health department. Refer to the diagram below for clarification.~~



~~Under no circumstances will the horizontal separation between sewer mains and water mains be less than two feet (2'). All distances are to be measured from the outside of the sewer main to the outside of the water main.~~

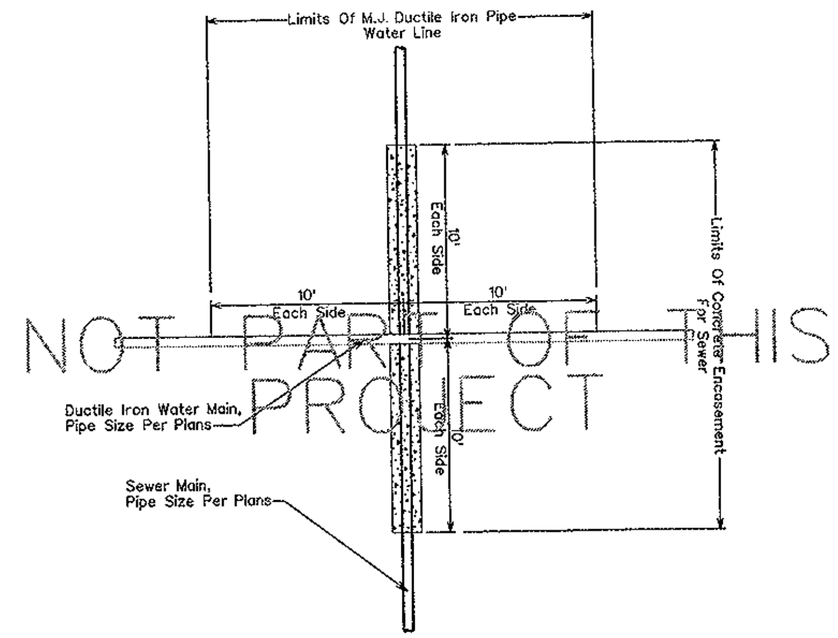
~~2. Vertical: When a water main is parallel to or crosses a sewer main within two feet (2') above the sewer or greater than two feet (2') below the sewer, extra protection will be required. Extra protection shall consist of constructing the sewer main with mechanical joint ductile iron pipe or with slip joint ductile iron pipe if joint restraint is provided, or encasing the sewer main in concrete. Extra protection shall consist of constructing the water main with mechanical joint ductile iron pipe or with slip joint ductile pipe if joint restraint is provided. The water main shall not be encased in concrete. The Construction Drawings shall indicate the installation requirements. The drawings showing these exceptions shall have been approved by the appropriate state and/or county health department. Under no circumstances will the vertical separation of a sewer main installed above a water main be less than two feet (2'). All distances are to be measured from the outside of the sewer main to the outside of the water main. Refer to the diagram above for clarification.~~
~~3. When unusual conditions such as, but not limited to, highway bridge crossings prevent the water and sewer main separations required from being met, the appropriate state and/or county health department will review and may approve requests for authorization to use alternate construction techniques; materials and joints on a case by case basis.~~
~~D. No water pipe shall pass through or come into contact with any part of a sewer manhole. The minimum horizontal separation between water mains and manholes shall be six feet (6'), measured from the center of the manhole.~~
~~E. The minimum separation between force mains or pressure sewers and water mains shall be two feet (2') vertically and six feet (6') horizontally under all conditions. Where a sewer force main crosses above, or less than six feet (6') below, a water line, the sewer main shall be encased in at least six inches (6") of concrete for ten feet (10') on either side of the water main. Refer to the diagram above right for clarification.~~



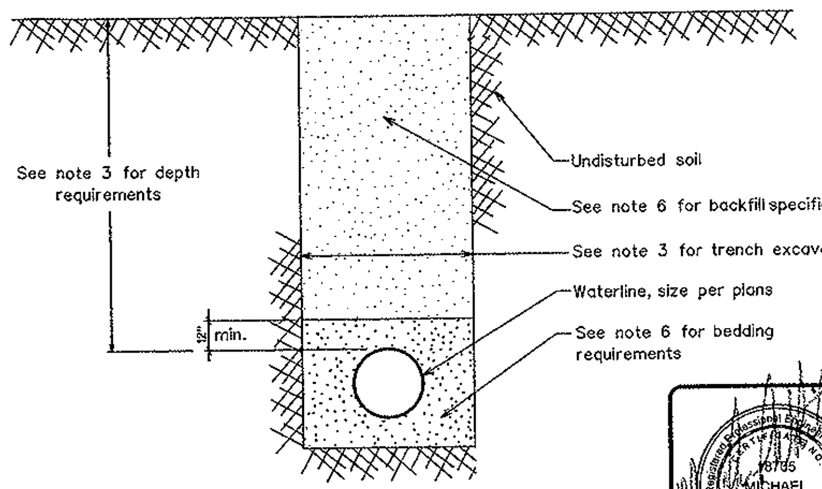
~~F. Sewer mains (gravity, pressure, force) shall be kept a minimum of fifty feet (50') from drinking water wells, unless the following conditions are met:~~
~~1. Water main pipe, pressure tested in place to 150 psi without excessive leakage, may be used for gravity sewers at distances greater than twenty feet (20') from drinking water wells.~~
~~2. Water main pipe, pressure tested in place to 150 psi without excessive leakage, may be used for pressure sewers and force mains at distances greater than twenty feet (20') from drinking water wells.~~
~~G. No septic tank/disposal field system shall be constructed within one hundred feet (100') of a drinking water well.~~
~~H. All distances are measured perpendicularly from the outside of the sewer main to the outside of the water main. Fitness separation requirements:~~
~~1. Do not apply to building plumbing or individual house service connections.~~
~~2. Use Mechanical joint ductile iron pipe with Megalug thrust restraints a minimum of ten (10') feet on each side of a sewer or storm drain crossing.~~
~~3. Use Mechanical joint ductile iron pipe with Megalug thrust restraints a minimum of ten (10') feet on each side of a water service line crossing.~~

11. COMPACTION
When crossing existing water mains a minimum of 95% compaction is required to the bottom of existing mains. Arizona Water Company requires that no slurry be permitted to contact existing cement/asbestos or ductile iron pipes. Slurry may be poured in the bottom of the sewer trench stopping three inches (3") below the existing water main. The backfill used around the main should be AB in sufficient depth to prevent slurry from contacting existing main.

12. WATER MAIN MATERIAL SPECIFICATIONS
Ductile iron pipe (Push-on type) minimum class 350, cement lined and conform to AWWA C151. All main line valves shall conform to AWWA C500 with a minimum working pressure of 200 psi. All cast iron fittings to be cement lined in accordance with AWWA C104 and shall conform to AWWA C110 with a minimum working pressure of 250 psi. Except For The Coolidge System - See Note 4.i.
A. Maximum joint deflection for 8" mechanical joint ductile iron pipe is seven degrees, seven minutes (7° 7') or twenty-seven inches (27") per eighteen foot (18') length pipe, for a maximum curve of one hundred forty five feet (145').
B. Maximum joint deflection for 8" & 12" mechanical joint ductile iron pipe is five degrees, twenty one minutes (5° 21') or twenty inches (20") per eighteen foot (18') length pipe, for a maximum curve of one hundred ninety five feet (195').
C. Maximum joint deflection for 6", 8" & 12" push-on joint ductile iron pipe is five degrees (5°) or nineteen inches (19") per eighteen foot (18') length pipe for a maximum curve of two hundred five feet (205').



PLAN VIEW OF SEWER CROSSINGS



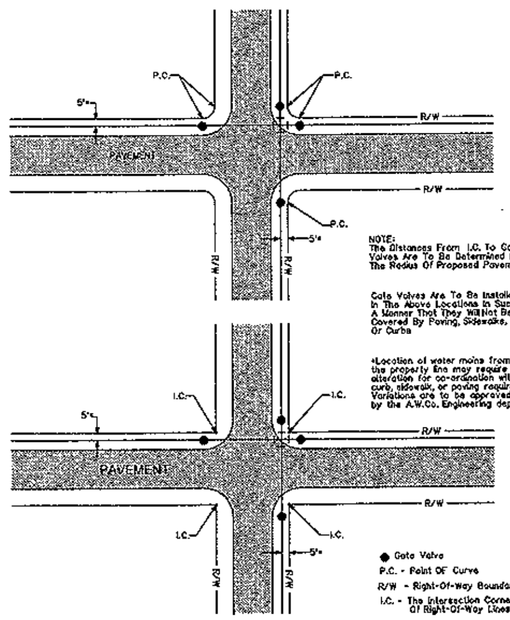
TYPICAL TRENCH DETAIL

FOR WATER ONLY

ARIZONA WATER COMPANY

DRAWING No. CG-839

SHEET 2 OF 14



NOTE:
The Distances From I.C. To Gate Valves Are To Be Determined By The Radius Of Proposed Pavement.

Gate Valves Are To Be Installed In The Above Locations In Such A Manner That They Will Not Be Covered By Paving, Sidewalks, Or Curbs

Location of water mains from the property line may require alteration for co-ordination with curb, sidewalk, or paving requirements. Variations are to be approved by the A.W.Co. Engineering Dept.

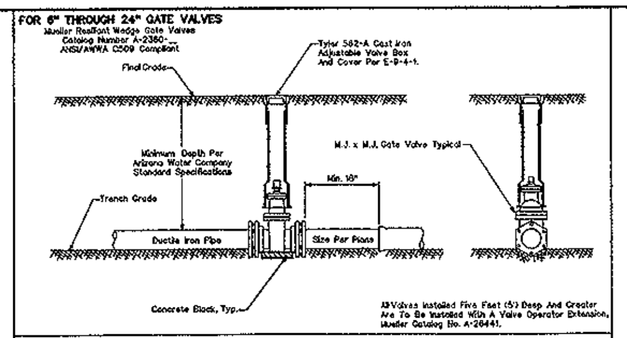
ARIZONA WATER COMPANY

STANDARD SPECIFICATION
FOR THE INSTALLATION OF

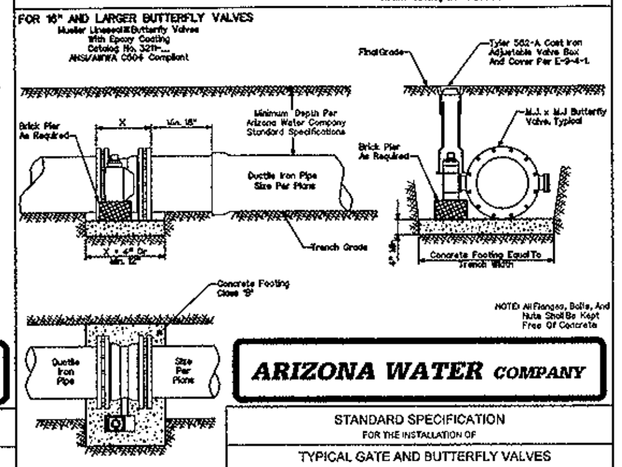
TYPICAL GATE VALVE LOCATIONS

DRAWN	CHECKED	DATE		E-9-1-1
CCO	M.W.	3/20/86	△ 1/30/2001	

FOR 6" THROUGH 24" GATE VALVES
Mueller Resilient Wedge Gate Valves Catalog Numbers A-2360-, A-2361- AWWA/ANSI C509 Compliant



FOR 16" AND LARGER BUTTERFLY VALVES
Mueller Lineseal(R)Butterfly Valves With Epoxy Coating Catalog No. 679-, AWWA/ANSI C504 Compliant

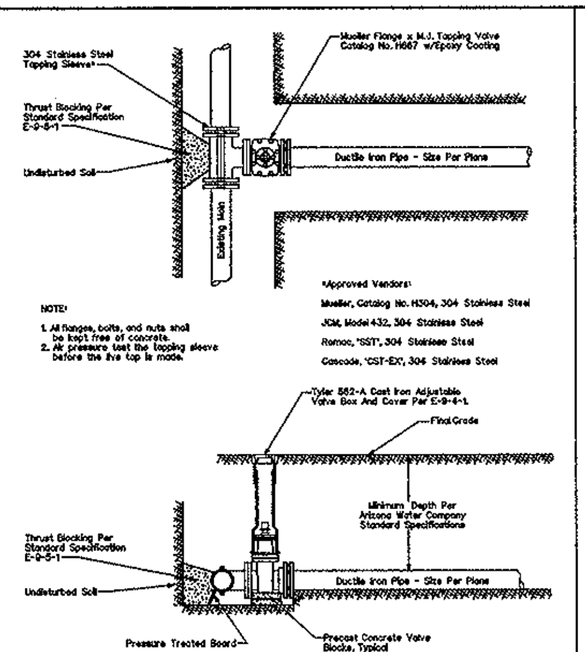


ARIZONA WATER COMPANY

STANDARD SPECIFICATION
FOR THE INSTALLATION OF

TYPICAL GATE AND BUTTERFLY VALVES

DRAWN	CHECKED	DATE		E-9-2-1
CB	MW	03.20.1988	△ 01.26.2001	



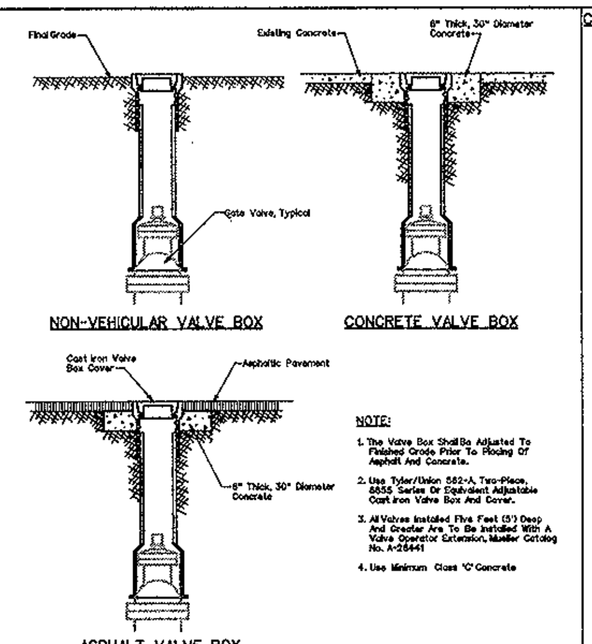
NOTE:
1. All flanges, bolts, and nuts shall be kept free of concrete.
2. All pressures test the tapping sleeve before the live tap is made.

ARIZONA WATER COMPANY

STANDARD SPECIFICATION
FOR THE INSTALLATION OF

TYPICAL TAPPING SLEEVE AND VALVE

DRAWN	CHECKED	DATE		E-9-3-1
CB	MW	03.20.1988	△ 01.26.2001	



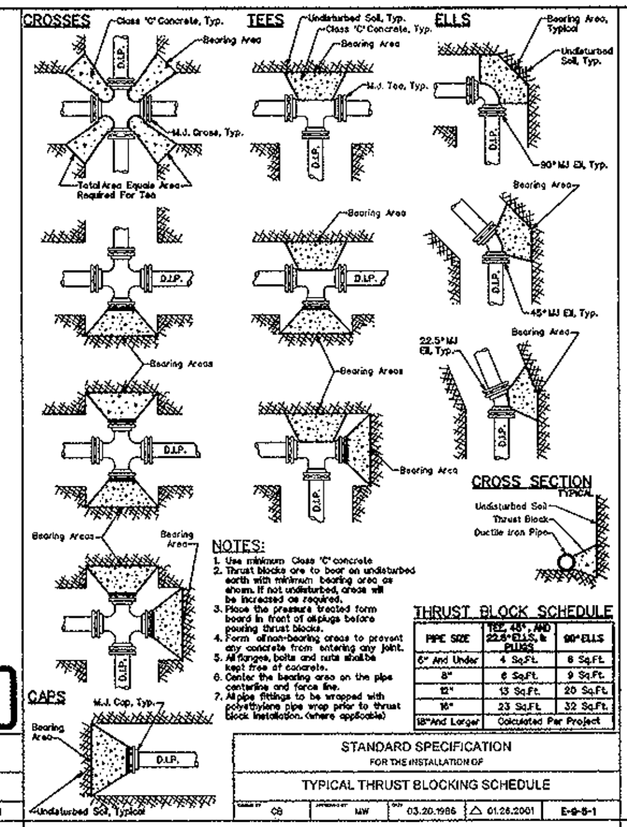
NOTE:
1. The Valve Box Shall Be Adjusted To Finished Grade Prior To Placing Of Asphalt And Concrete.
2. Use Tyler/Ideal 562-A, Two-Piece, 5655 Series Or Equivalent Adjustable Cast Iron Valve Box And Cover.
3. All Valves Installed Five Feet (5') Deep And Greater Are To Be Installed With A Valve Operator Extension, Mueller Catalog No. A-26441
4. Use Minimum Class "C" Concrete

ARIZONA WATER COMPANY

STANDARD SPECIFICATION
FOR THE INSTALLATION OF

TYPICAL VALVE SUBJECT TO NON-VEHICULAR AND VEHICULAR TRAFFIC

DRAWN	CHECKED	DATE		E-9-4-1
CB	MW	03.20.1988	△ 01.26.2001	



NOTES:
1. Use minimum Class "C" concrete.
2. Thrust blocks are to bear on undisturbed earth. Loose backfill or unstable areas, if not undisturbed, shall be excavated as required.
3. Place the pressure tested form board in front of stoppe before placing thrust blocks.
4. Form all non-bearing areas to prevent any concrete from entering any joint.
5. All flanges, bolts and nuts shall be kept free of concrete.
6. Center the bearing area on the pipe centerline and force toe.
7. All pipe fittings to be wrapped with polyethylene pipe wrap prior to thrust block installation, (where applicable)

THRUST BLOCK SCHEDULE

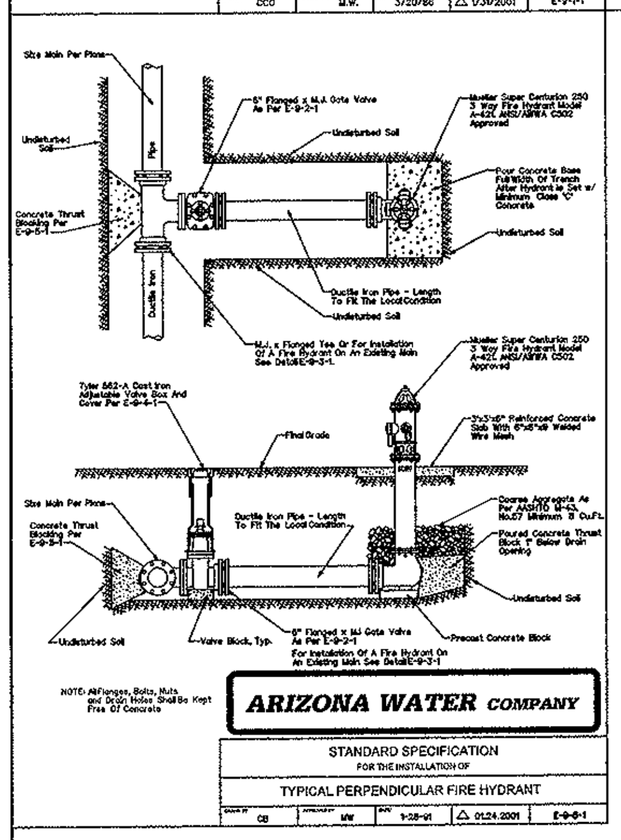
PIPE SIZE	TEE, 45°, AND 22.5° ELLS, & PLUGS	90° ELLS
6" And Under	4 Sq.Ft.	6 Sq.Ft.
8"	6 Sq.Ft.	9 Sq.Ft.
12"	13 Sq.Ft.	20 Sq.Ft.
16"	23 Sq.Ft.	32 Sq.Ft.
18" And Larger	Calculated Per Project	

ARIZONA WATER COMPANY

STANDARD SPECIFICATION
FOR THE INSTALLATION OF

TYPICAL THRUST BLOCKING SCHEDULE

DRAWN	CHECKED	DATE		E-9-5-1
CB	MW	03.20.1988	△ 01.26.2001	

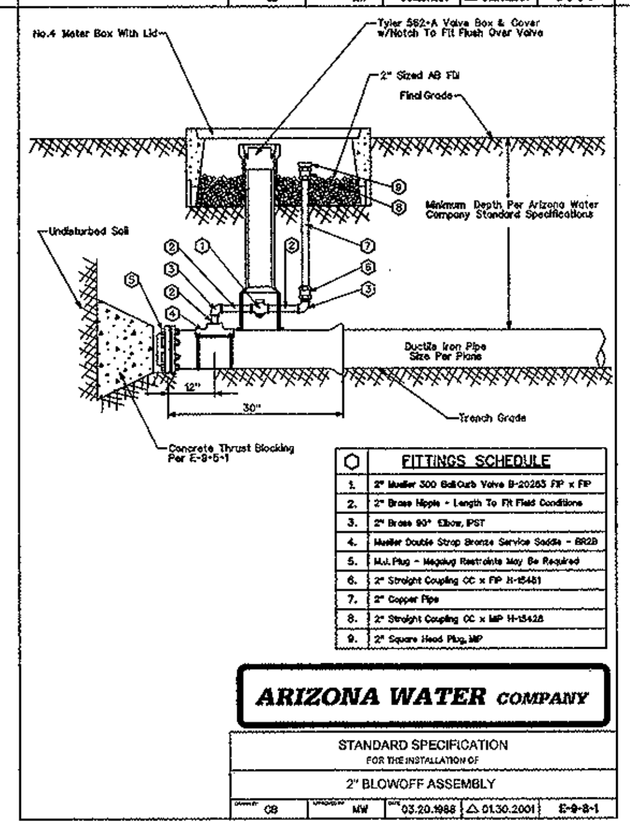


ARIZONA WATER COMPANY

STANDARD SPECIFICATION
FOR THE INSTALLATION OF

TYPICAL PERPENDICULAR FIRE HYDRANT

DRAWN	CHECKED	DATE		E-9-6-1
CB	MW	9-28-91	△ 01.26.2001	



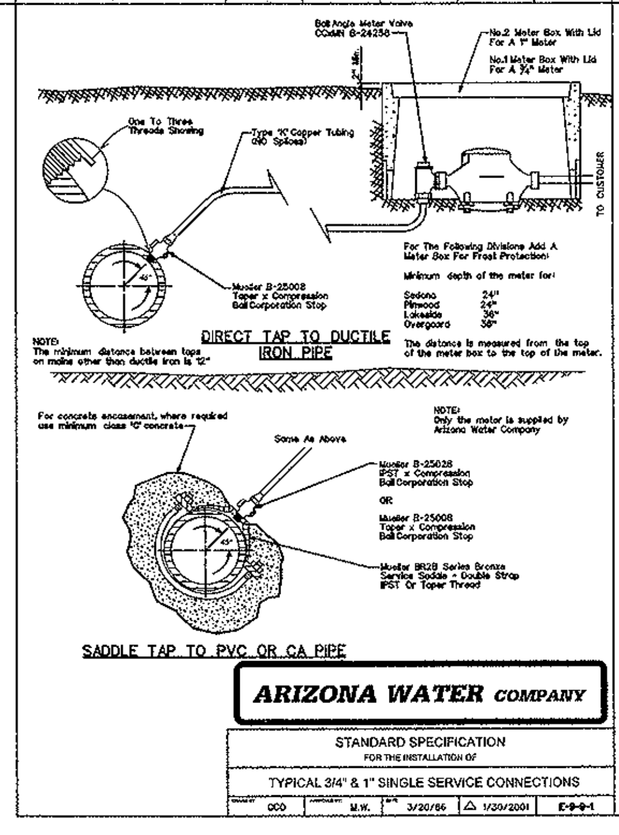
	FITTINGS SCHEDULE
1.	2" Mueller 300 Ball Curb Valve B-20283 FP x FP
2.	2" Brass Nipple - Length To Fit Field Conditions
3.	2" Brass 90° Elbow, FIST
4.	Mueller Double Strap Bronze Service Saddle - BR2B
5.	M.J. Plug - Megalug Restraints May Be Required
6.	2" Straight Coupling CC x MIP H-15421
7.	2" Copper Pipe
8.	2" Straight Coupling CC x MIP H-15426
9.	2" Square Head Plug, MIP

ARIZONA WATER COMPANY

STANDARD SPECIFICATION
FOR THE INSTALLATION OF

2" BLOWOFF ASSEMBLY

DRAWN	CHECKED	DATE		E-9-8-1
CB	MW	03.20.1988	△ 01.30.2001	

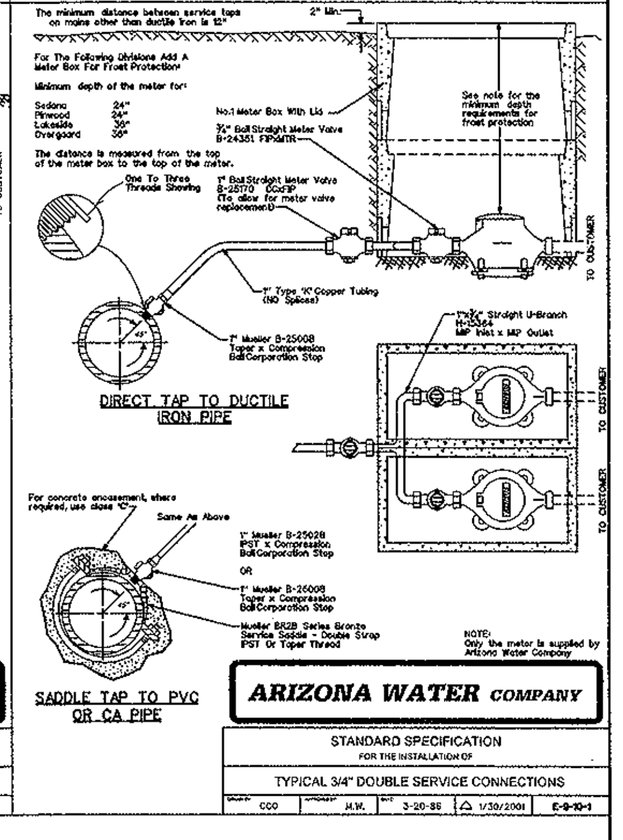


ARIZONA WATER COMPANY

STANDARD SPECIFICATION
FOR THE INSTALLATION OF

TYPICAL 3/4" & 1" SINGLE SERVICE CONNECTIONS

DRAWN	CHECKED	DATE		E-9-9-1
CCO	M.W.	3/20/86	△ 1/30/2001	



ARIZONA WATER COMPANY

STANDARD SPECIFICATION
FOR THE INSTALLATION OF

TYPICAL 3/4" DOUBLE SERVICE CONNECTIONS

DRAWN	CHECKED	DATE		E-9-10-1
CCO	M.W.	3-20-86	△ 1/30/2001	

FOR WATER ONLY

ARIZONA WATER COMPANY

DRAWING No.
CG-839

SHEET 3 OF 14

Match Line Sht.10

STA 13+98.42 Sacaton Street
STA 23+70.20 Main Street

Install 6" D.I.P. W/Polywrap

Exst R/W

Replace & Tie Over 1- Double Service

Install 1-8" Fl. Tee
1-8x6 Reducer
1-8" Fl. x M.J. G.V.
1-6" G.V.

New Conc Apron & Valley Gutter MAG Std Detail 240

Replace & Tie Over Single Service

Sta 23+70.14 (Main St C/L)
Sta 19+95.81 (Sacaton St C/L)

Exst R/W

STA 23+92.77 Main St
BEGIN RECONSTRUCTION

EQUATION
PI 23+70.29 Cst C/L

+93.35
59.58 Lt

Abandon Waterlines In Place

Replace Fire Hydrant In Sidewalk Behind Curb

Tie Into Exist. 8" C.A. Pipe

Abandon 3 Services

AFH

New Edge of Pavement

Existing Edge of Pavement

Replace & Tie Over Single Service

CUCO'S PLACE

PI 26+58.53

Washington Alley

PARKING

Exst R/W

Replace Fire Hydrant In Sidewalk Behind Curb

Replace & Tie Over Single Service

New Concrete Sidewalk MAG Std Detail 230

Exst Right-of-Way

OCHOA'S TRADING POST

Exst Curb & Gutter Remove

Exst Sidewalk Remove

Match Line Sta 29+00 See Sht.5

S 55°58'27" E

S 55°58'28" E

20' F/C

20' F/C

Main Street Cst C/L

Dip Under Proposed Culvert

Exst Main Street C/L

TO TOWER

Remove Exist. Tee & Valve

Exst R/W

New R/W

Install 1-8" M.J.G.V.

Exst Sewer Line To Remain

+93.11
63.77 Rt

Install 8" D.I.P. W/Polywrap

Match Exst Sidewalk See Detail A

Tie Into Exist. 4" C.I. Pipe W/8x4 Reducer

Existing Edge of Pavement

OLD DEPOT

New 8" T.S., 6" T.V.
New 6" D.I.P. To New Fire Hydrant Typ.

New Curb and Gutter MAG Std Detail 220 Type A

SCALE HOR. 1"=20'
VERT 1"=2'
5 10 20 40

Min. 3'

PVI 24+18.18
Elev 1395.51

PVI 26+30.00
Elev 1397.89

PVI 27+75.00
Elev 1397.50

0.6518%

-0.2700%

-0.1775%

Exist. 8" Waterline

100' VC

Tie Into Exist. Waterline

2' Min. Separation Between
Top Of Pipe And Proposed Culvert

1398
1396
1394
1392
1390

24+00 25+00 26+00 27+00 28+00 29+00

DESIGN FILE: $$DGN$$
PLOT DATE: $$DATE$$

FOR WATER ONLY

ARIZONA WATER COMPANY

DRAWING No.
CG-839

SHEET 4 OF 14

Two working days before you dig.
CALL FOR THE BLUE STAKES
1-800-782-5348
Blue Stake Center

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

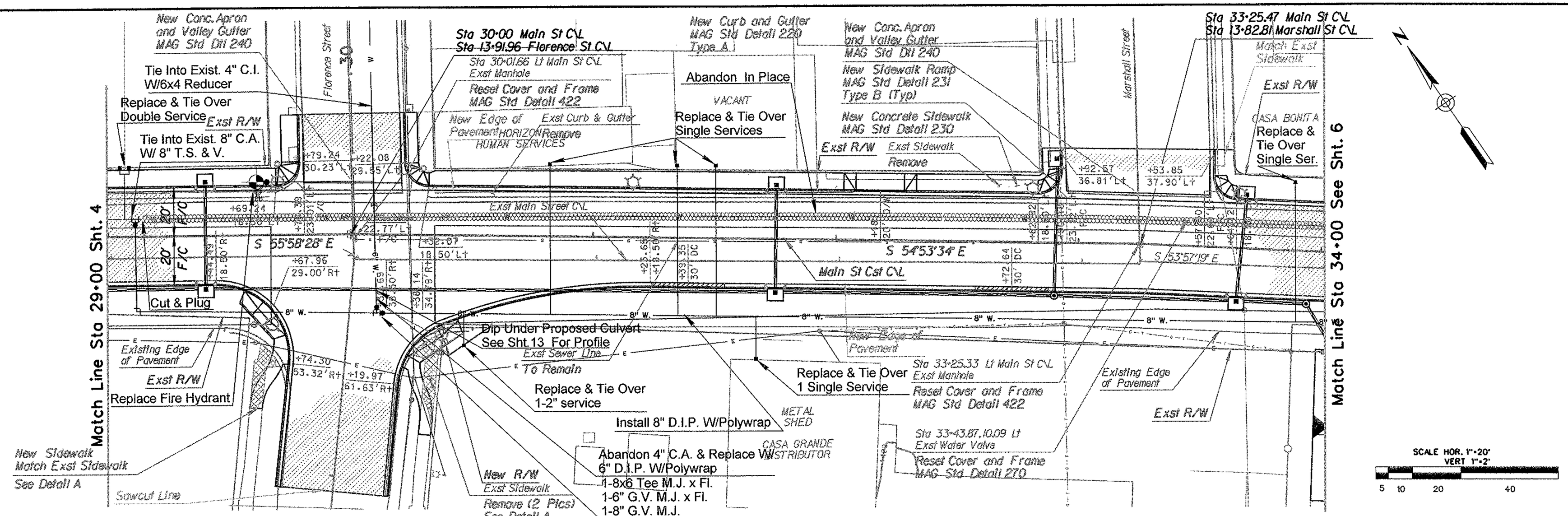
	NAME	DATE
DESIGN	AMC	02/03
DRAWN	SMM, REA	02/03
CHECKED	SCB	02/03

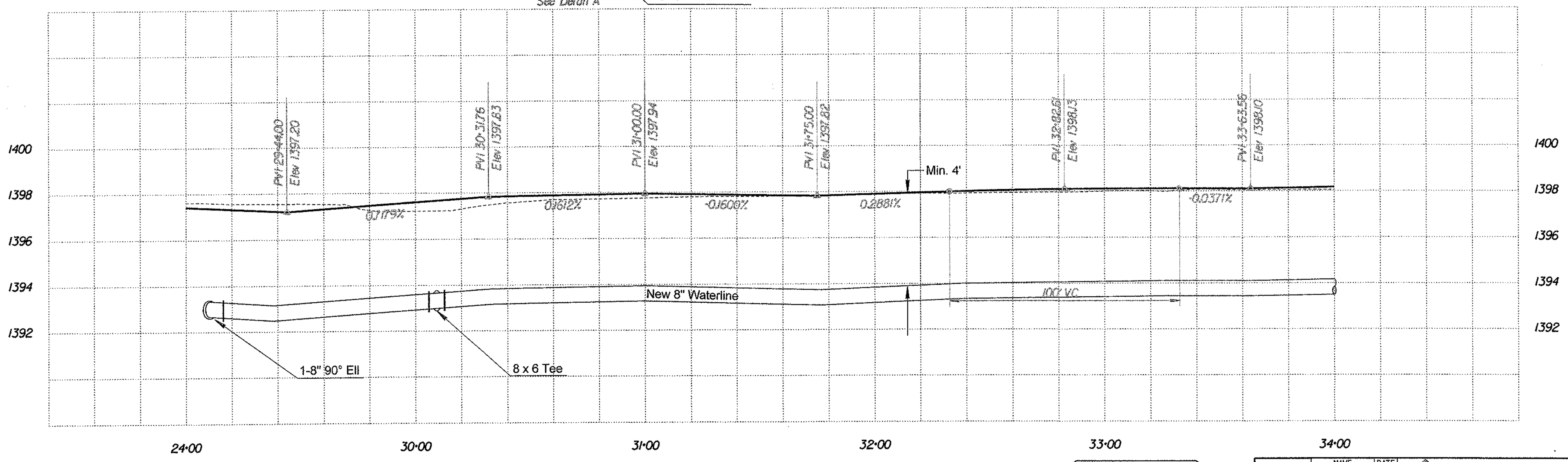
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

ENTRANCO
WWW.ENTRANCO.COM

PLAN SHEET
MAIN STREET
STA 23+70.20 TO STA 29+00

PROJECT NAME
DOWNTOWN STREETS - PHASE I





FOR WATER ONLY

ARIZONA WATER COMPANY

DRAWING No. CG-839

SHEET 5 OF 14

Two working days before you dig. CALL FOR THE BLUE STAKES 1-800-782-5348 Blue Stake Center

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

	NAME	DATE
DESIGN	AMC	02/03
DRAWN	SMM, REA	02/03
CHECKED	SCB	02/03

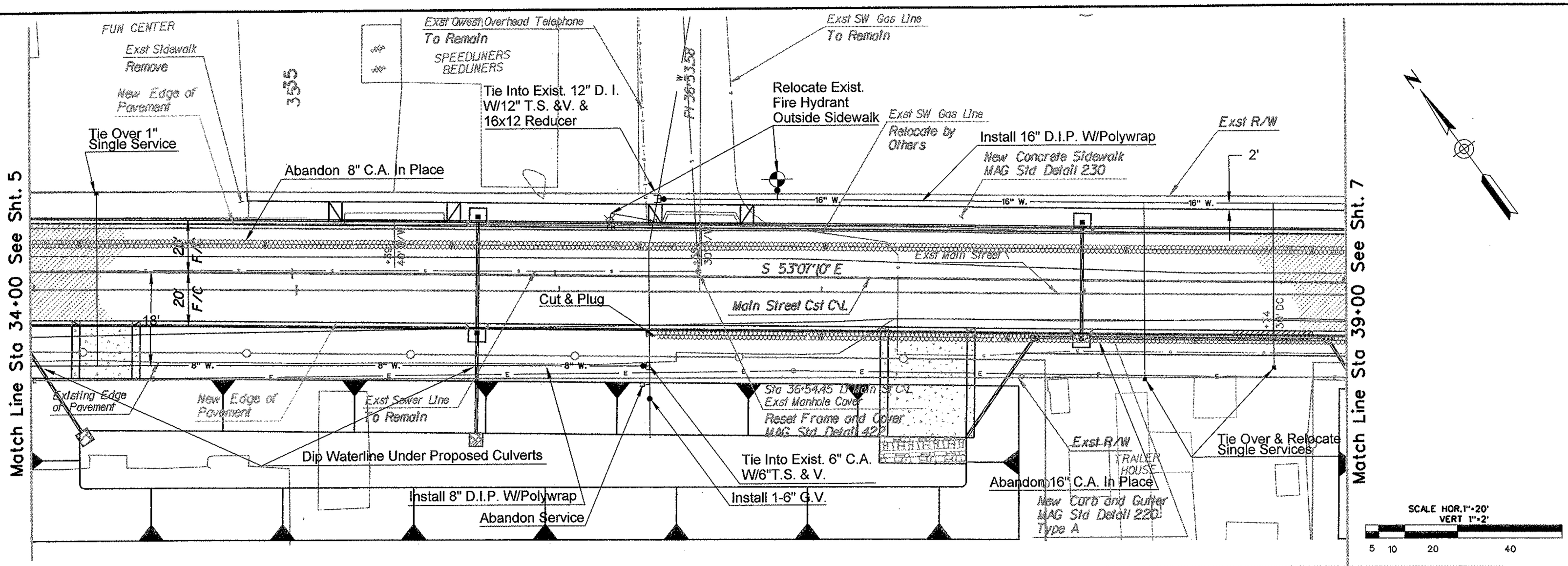
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

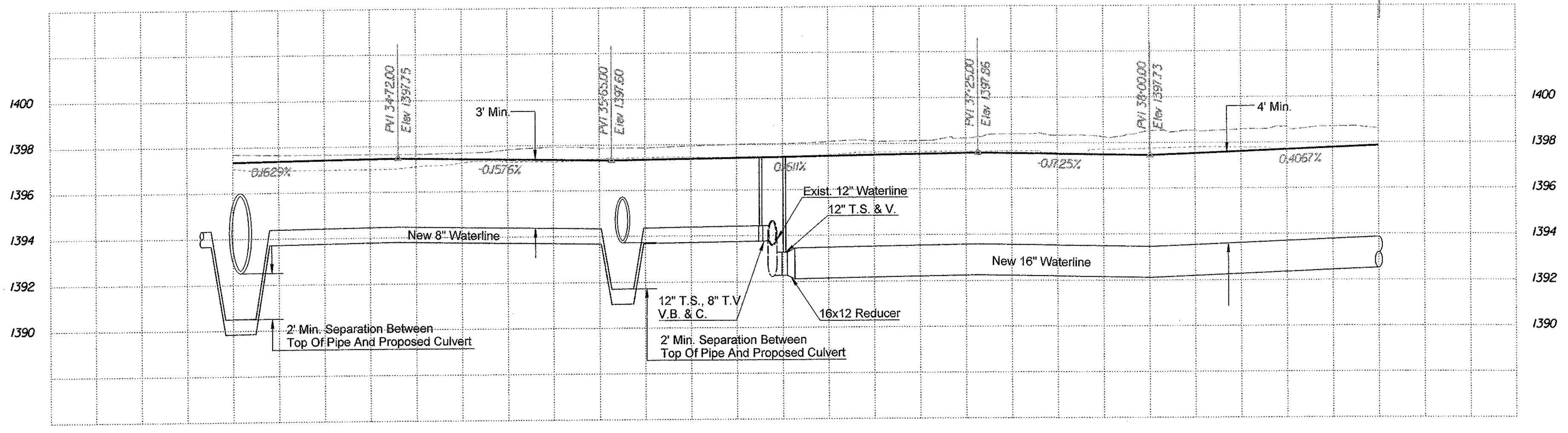
ENTRANCO www.entranco.com

PLAN SHEET
MAIN STREET
STA 29+00 TO STA 34+00

PROJECT NAME
DOWNTOWN STREETS - PHASE I

REVISION TITLE: $$REVISIONS
PLOT DATE: $$DATE$$





DESIGN FILE: $$DGNFILE$$
PLOT DATE: $$DATE$$

FOR WATER ONLY

ARIZONA WATER COMPANY

DRAWING No.
CG-839

SHEET 6 OF 14

Two working days before you dig. CALL FOR THE BLUE STAKES
1-800-782-5348
Blue Stake Center

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

	NAME	DATE
DESIGN	AMC	02/03
DRAWN	SMM, REA	02/03
CHECKED	SCB	02/03

City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

ENTRANCO
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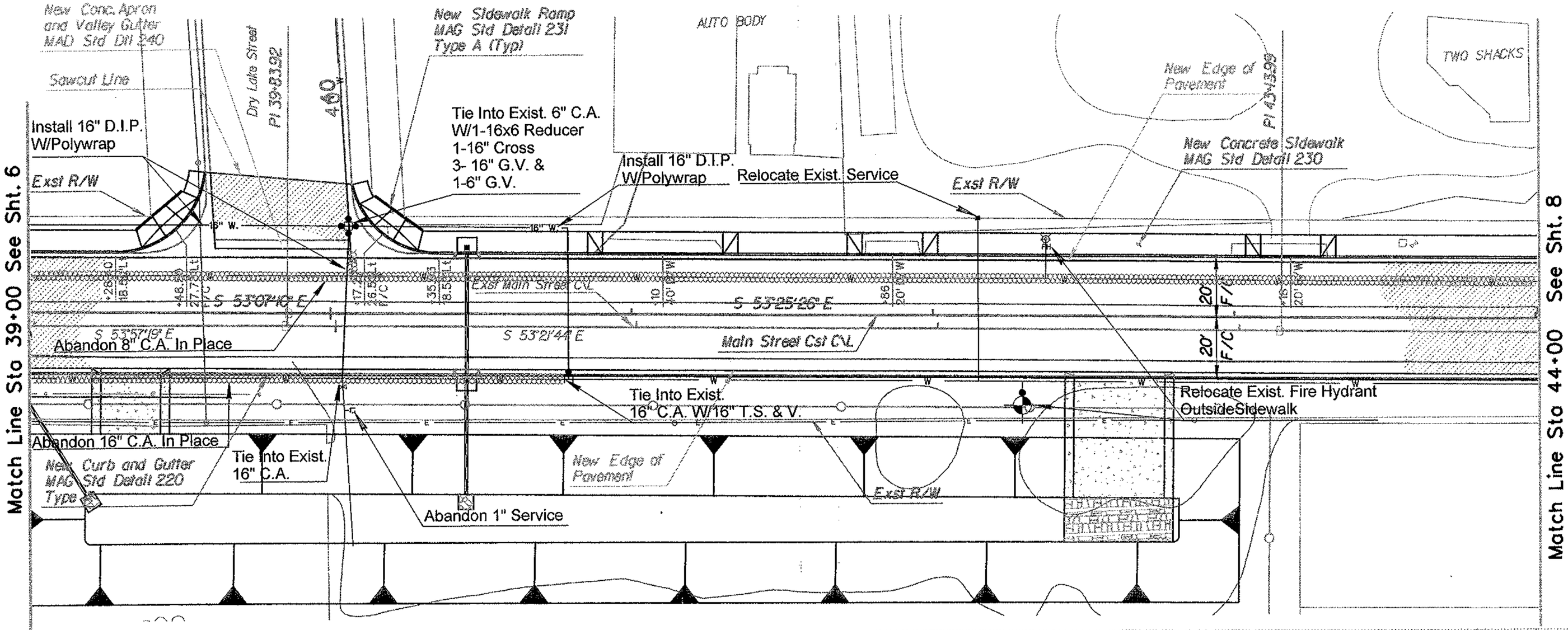
PLAN SHEET
MAIN STREET
STA 34+00 TO STA 39+00

PROJECT NAME
DOWNTOWN STREETS - PHASE I



FOR WATER ONLY

ARIZONA WATER COMPANY

DRAWING No.

CG-839

SHEET 7 OF 14

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

Two working days before you dig. CALL FOR THE BLUE STAKES 1-800-782-5348 Blue Stake Center

	NAME	DATE
DESIGN	AMC	02/03
DRAWN	SMM, REA	02/03
CHECKED	SCB	02/03

ENTRANCO WWW.ENTRANCO.COM

City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PLAN SHEET
MAIN STREET
STA 39+00 TO STA 44+00

PROJECT NAME
DOWNTOWN STREETS - PHASE I

DESIGN FILE: $$DGNFILE$$
PLOT DATE: $$DATE$$

Match Line Sta 44+00 See Sht. 7

Match Line Sta 49+00 See Sht. 9

Sawcut Line

New Conc. Apron and Valley Gutter MAG Std Dtl 240

Replace & Tie Over 1" Single Service

New Concrete Sidewalk MAG Std Detail 230

MACI'S BOUTIQUE

Abandon 8" C.A. In Place

Replace & Tie Over 1" Double Service

New Sidewalk Ramp MAG Std Detail 231 Type B (Typ)

Pl 46+44.25

Hermosita Street

Exst Sewer Line To Remain

ZOLO'S AUTO REPAIR

Tien Into Exist. 6" C.A.

Replace & Tie Over 1" Single Service

New Edge of Pavement

Abandon 4" C.A. In Place

New Concrete Sidewalk MAG Std Detail 230

Replace & Tie Over 1" Single Services

HARDIN REFRIDGERATION INC

Exst Main Street C\L

S 53°25'26" E

S 53°21'44" E

S 53°23'23" E

S 54°00'43" E

20' F/C

20' F/C

Install 1-16" M.J. G.V.

Replace & Tie Over 1" Single Service

Install 6" D.I.P. W/Polywrap

New Edge of Pavement

Tie Into Exist. 16" C.A. W/16 T.S., 6" T. V.

Sawcut Line

Exst Sidewalk Remove See Detail A

Install 1-16" M.J. G.V.

Relocate Fire Hydrant

Main Street Cst C\L

Replace & Tie Over 1" Single Service

New Curb and Gutter MAG Std Detail 220 Type A (Typ)

SCALE HOR. 1"=20'
VERT 1"=2'
5 10 20 40

PVI 44+25.00
Elev 1399.26

PVI 45+93.48
Elev 1400.25

PVI 46+90.00
Elev 1400.45

PVI 48+77.00
Elev 1401.14

4' Typ.

0.5918%

0.2068%

0.3672%

Exist. 16" Waterline

1402
1400
1398
1396
1394
1392

44+00 45+00 46+00 47+00 48+00 49+00

FOR WATER ONLY

ARIZONA WATER COMPANY

DRAWING No.
CG-839

SHEET 8 OF 14

Two working days before you dig.
CALL FOR THE BLUE STAKES
1-800-782-5348
Blue Stake Center

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

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DESIGN	AMC	02/03
DRAWN	SMM, REA	02/03
CHECKED	SCB	02/03

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City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

PLAN SHEET
MAIN STREET
STA 44+00 TO STA 49+00

PROJECT NAME
DOWNTOWN STREETS - PHASE I

DESIGN FILE: $$NAME$$
PLOT DATE: $$DATE$$

Sta 54+7.56
CASA GRANDE AVE
END CONSTRUCTION

Ext Qwest Overhead Telphone To Remain

Exst Sewer Line To Remain

Exst Curb, Gutter and Sidewalk Remove

PT 54+95.16

Exist Sidewalk To Remain

Exist. Casa Grande Ave C/L

Cut & Plug

Tie Into Exist. 6" C.A. W/6" T.S. & V.

1-6" 45° Ell

Install 6" D.I.P. W/Polywrap

Doan Street

Exst Qwest Overhead Telephone To Remain

Jimmie Kerr Cst C/L

TRI-VALLEY PUMP CO.

CASA GRANDE TRANSMISSION

PI 49+73.48

PI 51+01.65

Exst SW Gas Line Relocate By Others

Install & Tie Over 1" Single Service

Abandon 4" C.A. In Place

40' dw

25' dw

Exst Main Street C/L

S 54°00'43" E

S 53°23'23" E

Match Line Sta 49+00 See Sht. 8

Main Street Cst C/L

New Edge of Pavement

ERREL GAS

BLDG

Tie Into Exist 16" C.A. W/16" T.S., 6" T.V., V. B. & C.

Sta 21+37.37
(Jimmie Kerr Blvd Construction C/L)
END PAVING
Sawcut Line

New Roll Curb MAG Std Detail 220 Type C
See Staking Diagram

New Single Curb MAG Std Detail 222 Typ A

New Single Curb Mag Std Detail 220 Type C

New R/W

Sta. 56+61.89 Casa Grande Ave Cst C/L=
Sta 52+57.67 Main Street C/L

SCALE 1"=20'

5 10 20 40

Two working days before you dig. CALL FOR THE BLUE STAKES 1-800-782-5348 Blue Stake Center

	NAME	DATE
DESIGN	AMC	02/03
DRAWN	SMM, REA	02/03
CHECKED	SCB	02/03

City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

ENTRANCO www.entranco.com

PLAN SHEET
MAIN STREET
STA 49+00 TO STA19+71.52

PROJECT NAME
DOWNTOWN STREETS - PHASE I

ARIZONA WATER COMPANY

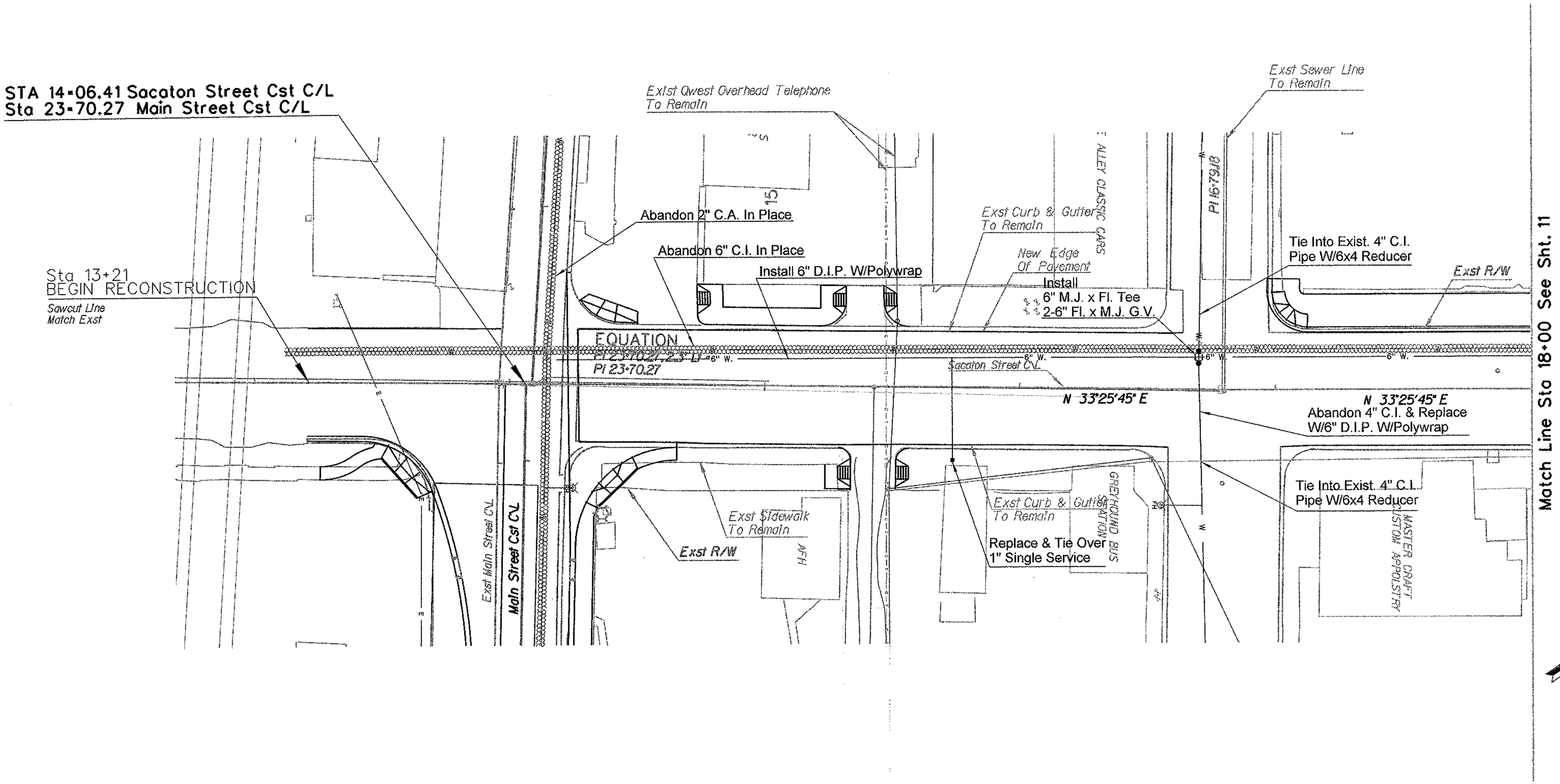
DRAWING No.
CG-839

SHEET 9 OF 14

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

15705 MICHAEL WHITEHEAD ARIZONA U.S.A. FOR WATER ONLY

DESIGN FILE: $$JUN$$
PLOT DATE: $$DATE$$



ARIZONA WATER COMPANY

DRAWING No. CG-839

SHEET 10 OF 14

Two working days before you dig. CALL FOR THE BLUE STAKES 1-800-782-5348 Blue Stake Center

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

	NAME	DATE
DESIGN	AMC	02/03
DRAWN	SMM, REA	02/03
CHECKED	SCB	02/03

City of Casa Grande
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Casa Grande, Arizona 85222

ENTRANCO
WWW.ENTRANCO.COM

PLAN SHEET
SACATON STREET
STA 13+21 TO STA 18+00

PROJECT NAME
DOWNTOWN STREETS - PHASE I

DESIGN FILE: $$DGN$$
PLOT DATE: $$DATE$$

Exst Qwest Overhead Telephone
To Remain

Exst Cox Communications
Overhead Television Cable
To Remain

Exst Sewer Line
To Remain

Exst SW Gas Line
To Remain

Sawcut Line
Match Exst Sidewalk

New R/W

New Sidewalk Ramp
Type A
MAG Std Detail 231

Abanon 4" C.A. in Place

Sawcut Line
Match Exst Sidewalk

Replace & Tie Over
Double Service

2nd Street

BUILDING

THE STUDIO

+71.57
75.46' Lt

+65.55
54.74' Lt

+74.50
38.07' Lt

+88.92
37.89' Lt

+44.23
33.42' Lt

+49.64
40.17' Lt

2' Typ

Sawcut Line

+88.60
12.00' Lt

New Scupper
See Detail D

Sacaton Street Cst \
N 32°42'46" E

+26.96
34.62' Lt

+81.39
27.69' Lt

+16.28
28.19' Lt

6" W/1.34

Remove Exist. Tee &
Install 8x6 Fl. x M.J. Tee &
1-6" Fl. x M.J. G.V.

+71.00
15.16' Rt

Match Line Sta 18+00 See Sht. 10

+43.52
33.52' Rt

Install 6" D.I.P. W/Polywrap

Sta 18+35.16 Sacaton Cst CL
Exst Manhole
Reset Frame and Cover
MAG Std Detail 422

+26.05
33.30' Rt

New Sidewalk Ramp
Detail B (Typ 4 Pics)

New Edge of
Pavement

Sta 19+71.19
END CONSTRUCTION

THE DISPATCH
NEWSPAPER

R=2'

New Single Curb
MAG Std Detail 222
Type A

+83.14
35.20' Lt

+86.87
34.17' Lt

R=46.5'

0.5'

4'
(Typ)

+86.69
18.94' Lt

+65.33
17.75' Lt

R=2'

+66.30
14.00' Lt

+81.69
14.00' Lt

R=5'

SACATON ISLAND

SCALE 1"=20'

5 10 20 40

N

ARIZONA WATER COMPANY

DRAWING No.
CG-839

SHEET 11 OF 14

Two working days before you dig.
CALL FOR THE BLUE STAKES
1-800-782-5348
Blue Stake Center

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

	NAME	DATE
DESIGN	AMC	02/03
DRAWN	SMM, REA	02/03
CHECKED	SCB	02/03

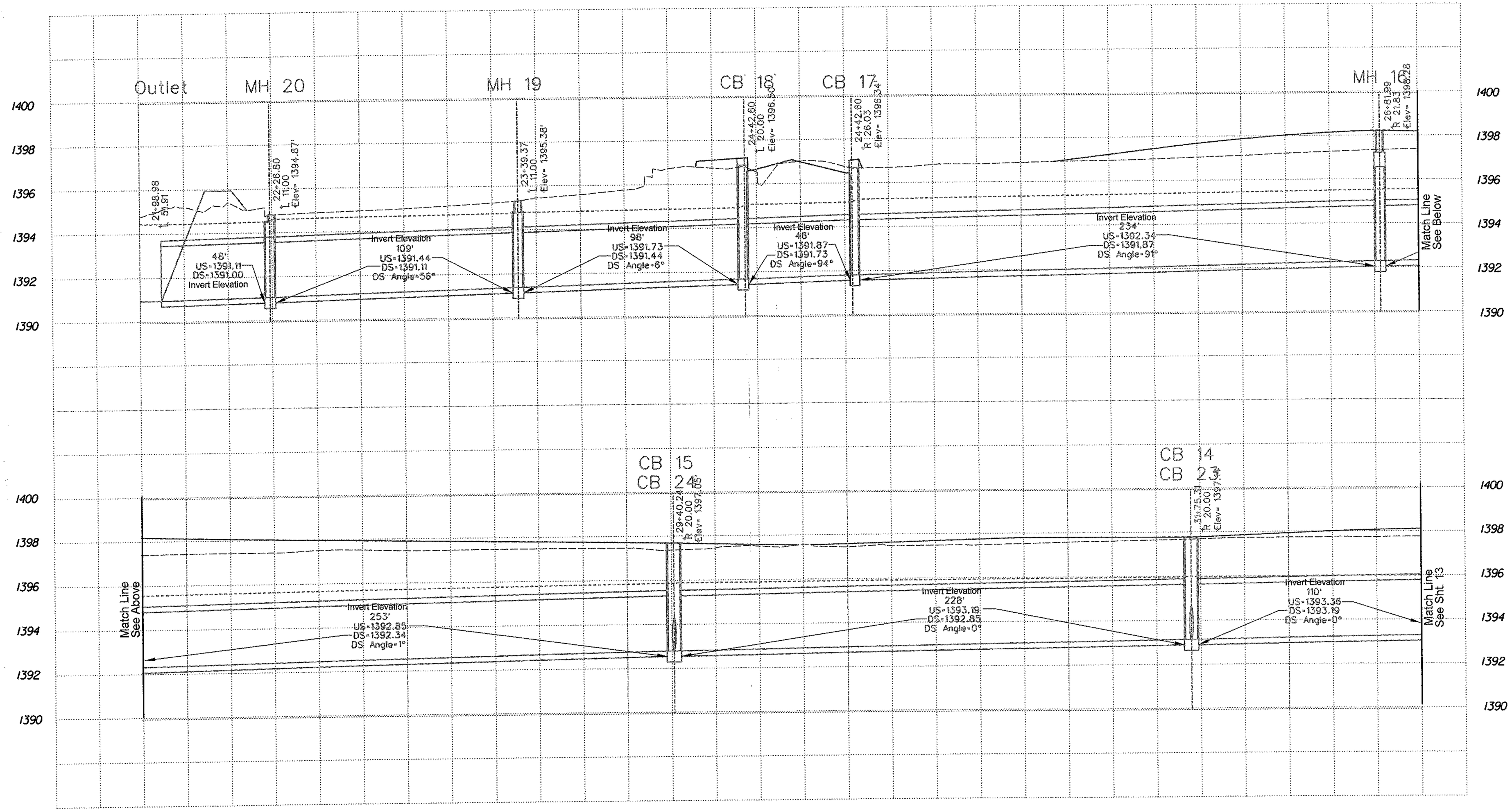
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

ENTRANCO
WWW.ENTRANCO.COM

PLAN SHEET
SACATON STREET
STA 18+00 TO STA 23+00

PROJECT NAME
DOWNTOWN STREETS - PHASE I

LEGION FILE: $FILENAME
PLOT DATE: $$DATE$$



DESIGN FILE: $$USER$$
PLOT DATE: $$DATE$$

FOR WATER ONLY

ARIZONA WATER COMPANY

DRAWING No.
CG-839

SHEET 12 OF 14

Two working days before you dig.
CALL FOR THE BLUE STAKES
1-800-782-5348
Blue Stake Center

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

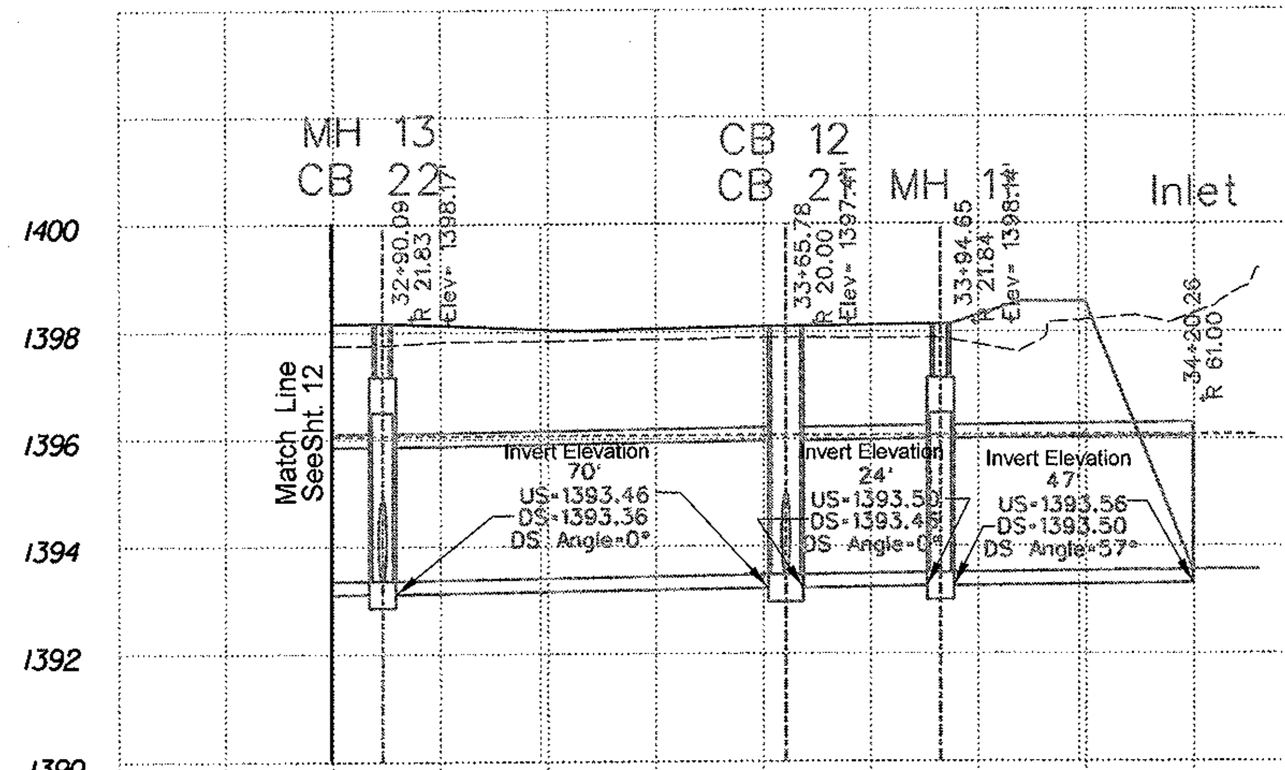
	NAME	DATE
DESIGN	AMC	02/03
DRAWN	SMM, REA	02/03
CHECKED	SCB	02/03

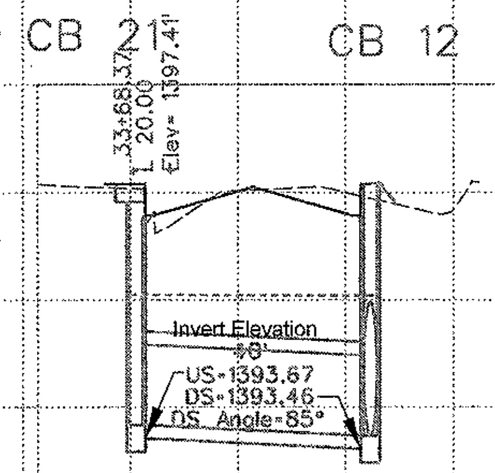
City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

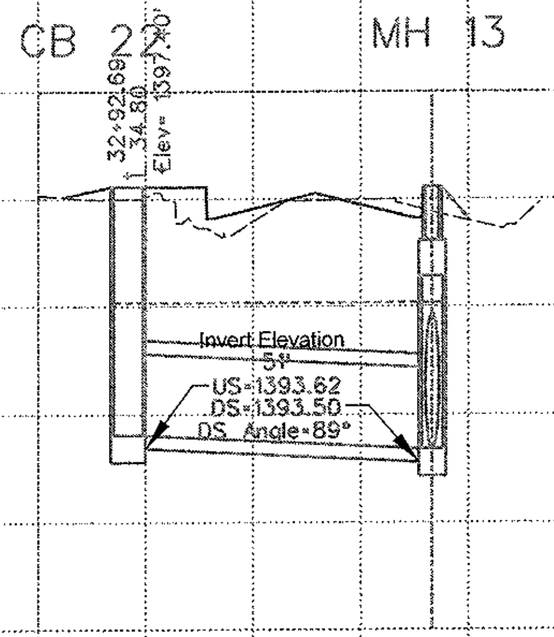
ENTRANCO
WWW.CNTRANCO.COM

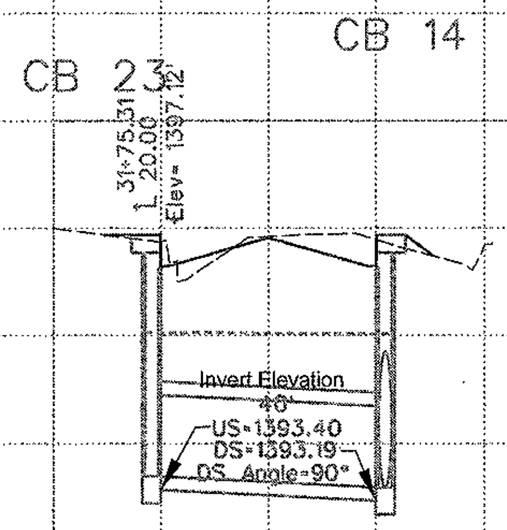
STORM DRAIN PROFILES

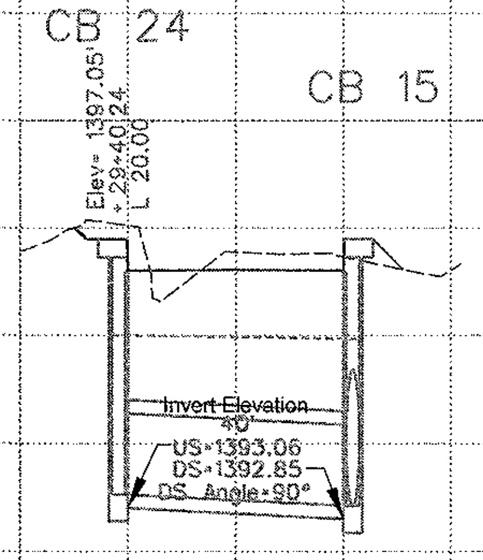
PROJECT NAME
DOWNTOWN STREETS - PHASE I











DESIGN FILE: $$JOB#$$
PLOT DATE: $$DATE$$

FOR WATER ONLY

ARIZONA WATER COMPANY

DRAWING No.
CG-839

SHEET 13 OF 14

Two working days before you dig.
CALL FOR THE BLUE STAKES
1-800-782-5348
Blue Stake Center

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

	NAME	DATE
DESIGN	AMC	02/03
DRAWN	SMM, REA	02/03
CHECKED	SCB	02/03

City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

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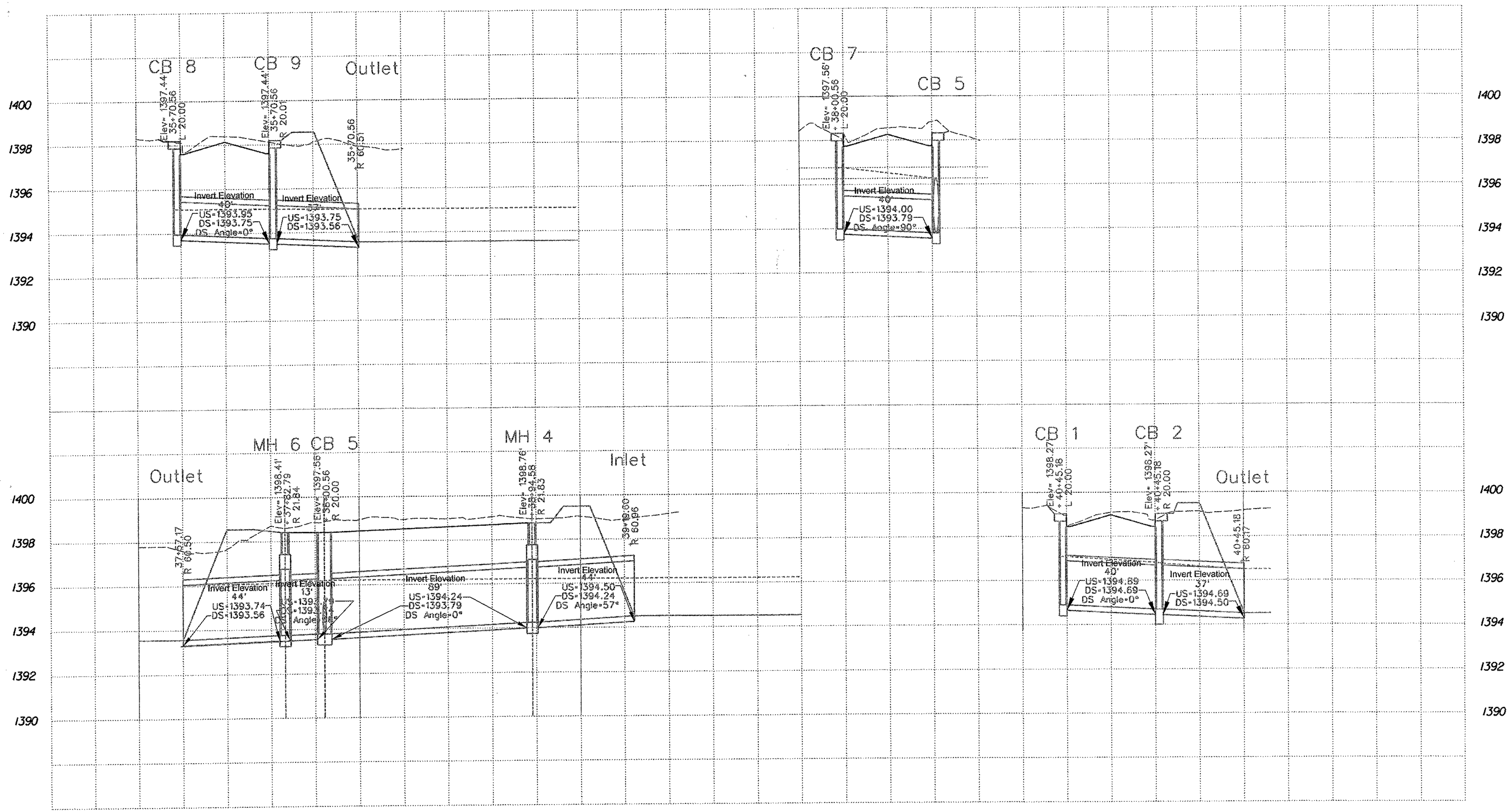
PROJECT NAME
DOWNTOWN STREETS - PHASE I



DESIGN FILE: $$JUNK$$
PLOT DATE: $$DATE$$

Two working days before you dig.
CALL FOR THE BLUE STAKES
1-800-782-5348
Blue Stake Center

NO.	DESCRIPTION OF REVISION	MADE BY	DATE

	NAME	DATE
DESIGN	AMC	02/03
DRAWN	SMM, REA	02/03
CHECKED	SCB	02/03

ARIZONA WATER COMPANY

DRAWING No.
CG-839

SHEET 14 OF 14

FOR WATER ONLY

City of Casa Grande
510 East Florence Blvd
Casa Grande, Arizona 85222

ENTRANCO
WWW.ENTRANCO.COM

PROJECT NAME
DOWNTOWN STREETS - PHASE I