

F.H.W.A. REGION	STATE	PROJ. NO.	NO.	TOTAL	AS BUILT
9	ARIZ.	WS90500273	1	63	

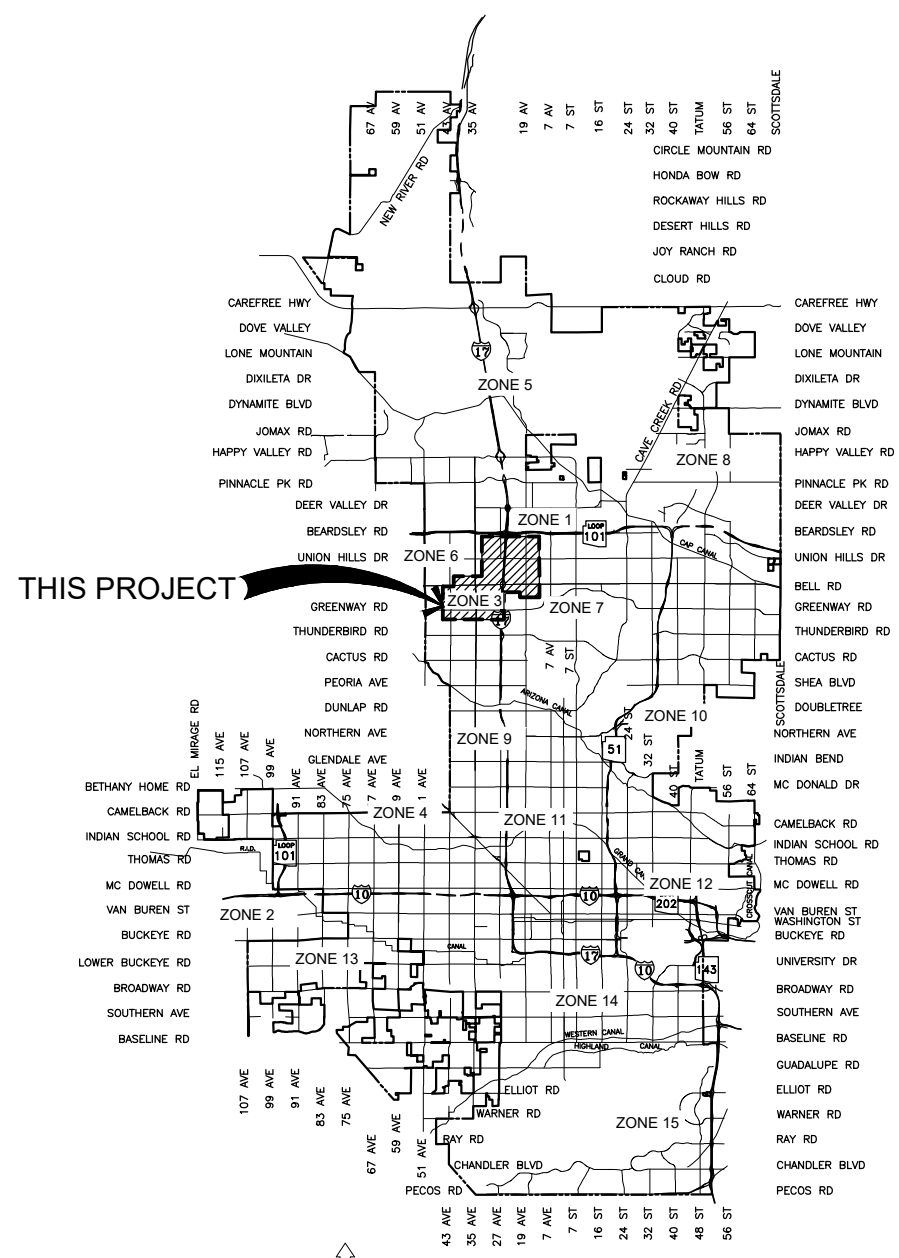
PEC PROJECT ENGINEERING CONSULTANTS
2432 W. PEORIA AVENUE, SUITE 1246
PHOENIX, AZ 85029
Phone: (602) 906-1901

DES: YX DR: HC CK: TOB DATE: 1/22

CITY OF PHOENIX WATER SERVICE DEPARTMENT LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3 WS90500273



JANUARY 2022



VICINITY MAP
City of Phoenix
N
NTS

MAYOR
KATE GALLEGO
CITY MANAGER
JEFFREY BARTON
CITY COUNCIL

- DISTRICT NO 1. ANN O'BRIEN
- DISTRICT NO 2. JIM WARING
- DISTRICT NO 3. DEBRA STARK
- DISTRICT NO 4. LAURA PASTOR
- DISTRICT NO 5. BETTY GUARDADO
- DISTRICT NO 6. SAL DICICCIO
- DISTRICT NO 7. YASSAMIN ANSARI
- DISTRICT NO 8. CARLOS GARCIA

CITY ENGINEER
ERIC J. FROBERG, P.E.

WATER SERVICES DIRECTOR
TROY HAYES, P.E.

INDEX OF SHEETS

SHEET NO.	DRAWING NO.	SHEET TITLE
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4	G-4	KEY MAP
5 - 7	G-5 TO G-7	MANHOLE LOCATION MAP
8 - 57	-	MANHOLE MAP BOOK
58 - 63	D-1 TO D-6	DETAILS

INSPECTION BLOCK

CITY PROJECT MANGER _____

CITY INSPECTOR _____

CONTRACTOR _____

DATE OF SUBSTANTIAL COMPLETION _____

DATE OF FINAL COMPLETION _____

1 YEAR WARRANTY END DATE _____

5 YEAR WARRANTY (COATINGS) END DATE _____

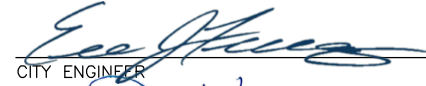
25 YEAR WARRANTY (INSERTS) END DATE _____


AS BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF

REGISTERED ENGINEER _____ DATE _____

REGISTRATION NUMBER _____

APPROVED  9/25/2023
CITY ENGINEER DATE

APPROVED  05/24/2022
WATER SERVICES DEPARTMENT DATE

REHABILITATION QUANTITIES		
DESCRIPTION	QUANTITY 60IN MH DIA	QUANTITY IRREGULAR SHAPE MH
MANHOLES REHABILITATED WITH INSERT LINING	31 EA 32 EA	1 EA
MANHOLES REHABILITATED WITH ONLY COATING	10 EA	
MANHOLES REHABILITATED WITH ONLY SPOT REPAIRS	7 EA	
TOTAL MANHOLES	48 EA 49 EA	1 EA
TOTAL MANHOLES REHABBED IN ZONE 3	49 EA 50 EA	



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WS90500273 Q.S. 35-19,35-20,36-19,36-20,36-24,36-25,37-19,37-20,37-24,37-25,37-26,38-24,39-23,39-24 & 40-23

REVISION BY CITY OF PHOENIX		REV BY	CHKD BY	DATE
DESCRIPTION				
NO.				
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DESCRIPTION				
NO.				
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DESCRIPTION				
NO.				

CITY OF PHOENIX PAVING NOTES

1. COMPACTION SHALL COMPLY WITH M.A.G SECTION 601.
2. CONSTRUCTION WITHIN THE RIGHT-OF-WAY SHALL CONFORM TO THE LATEST APPLICABLE MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) UNIFORM STANDARD SPECIFICATIONS AND DETAILS AND THE LATEST CITY OF PHOENIX SUPPLEMENT TO THE MAG UNIFORM STANDARD SPECIFICATIONS AND DETAILS.
3. THE ENGINEERING DESIGN ON THESE PLANS IS ONLY APPROVED BY THE CITY IN SCOPE AND NOT IN DETAIL. CONSTRUCTION QUANTITIES ON THESE PLANS ARE NOT VERIFIED BY THE CITY. APPROVAL OF THESE PLANS ARE FOR PERMIT PURPOSES ONLY AND SHALL NOT PREVENT THE CITY FROM REQUIRING CORRECTION OF ERRORS IN THE PLANS WHERE SUCH ERRORS ARE SUBSEQUENTLY FOUND TO BE IN VIOLATION OF ANY LAW, ORDINANCE, HEALTH, SAFETY, OR OTHER DESIGN ISSUES. IN ADDITION, THE PROPERTY OWNER MUST DEDICATE STREETS IN ACCORDANCE WITH MINIMUM RIGHT-OF-WAY STANDARDS MAP (ORDINANCE NO 437, LATEST AMENDMENT).
4. PLAN APPROVAL IS VALID FOR 180 DAYS. PRIOR TO PLAN APPROVAL EXPIRATION, ALL ASSOCIATED PERMITS SHALL BE PURCHASED OR THE PLANS SHALL BE RESUBMITTED FOR EXTENSION OF PLAN APPROVAL. THE EXPIRATION, EXTENSION, AND REINSTATEMENT OF CIVIL ENGINEERING PLANS AND PERMITS SHALL FOLLOW THE SAME GUIDELINES AS THOSE INDICATED IN THE PHOENIX BUILDING CONSTRUCTION CODE ADMINISTRATIVE PROVISIONS SECTION 105.3 FOR BUILDING PERMITS.
5. EXISTING OR NEWLY DAMAGED AND/OR DISPLACED CONCRETE CURB, GUTTER, SIDEWALK, OR DRIVEWAY SLAB THAT IS WITHIN THE RIGHT-OF-WAY SHALL BE REPAIRED OR REPLACED, AS NOTED BY CITY INSPECTORS, BEFORE FINAL ACCEPTANCE OF THE WORK.
6. ALL NEW OR RELOCATED UTILITIES SHALL BE PLACED UNDERGROUND.
7. THE ACTUAL POINT OF PAVEMENT MATCHING, AND/OR TERMINATION, SHALL BE DETERMINED IN THE FIELD BY THE INSPECTOR FOR THE CITY.
8. AN APPROVED PAVING PLAN SHALL BE ON THE JOB SITE AT ALL TIMES. DEVIATIONS FROM THE PLAN MUST BE PRECEDED BY AN APPROVED PLAN REVISION.
9. OBSTRUCTIONS TO PROPOSED IMPROVEMENTS IN THE RIGHT-OF-WAY SHALL BE REMOVED OR RELOCATED BEFORE BEGINNING CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
10. ALL EXISTING CATCH BASINS MUST BE RE-LOCATED WHEN THEY ARE SHOWN IN A NEWLY PROPOSED DRIVEWAY.
11. CONSTRUCTION OF SURFACE IMPROVEMENTS SHALL NOT BEGIN UNTIL CONFLICTING UNDERGROUND UTILITY CONSTRUCTION IS COMPLETED AND SERVICE CONNECTIONS TO ALL PLATTED LOTS HAVE BEEN ADEQUATELY EXTENDED PAST THE RIGHT-OF-WAY.
12. THE PERMIT HOLDER SHALL ARRANGE FOR THE RELOCATION AND RELOCATION COSTS OF ALL UTILITIES, INCLUDING ANY STREET LIGHTS, AND SUBMIT A UTILITY RELOCATION SCHEDULE PRIOR TO THE ISSUANCE OF A CONSTRUCTION PERMIT. RELOCATION OF WATER METERS SHALL BE DONE BY THE WATER SERVICES DEPARTMENT AFTER PAYMENT OF PREVAILING FEES. RELOCATION OF CITY FIRE HYDRANTS REQUIRE A SEPARATE PLAN REVIEW AND PERMIT AT THE CONTRACTOR'S EXPENSE.
13. ALL FRAMES, COVERS, VALVE BOXES, AND MANHOLE COVERS SHALL BE ADJUSTED TO FINISH GRADE PRIOR TO COMPLETION OF PAVING OR RELATED CONSTRUCTION. ADJUSTMENT OF EXISTING "TYPE A" OR "TYPE B" WATERLINE VALVE BOXES IN THE PARKWAY SHALL BE CONSIDERED INCIDENTAL TO PARKWAY GRADING. EXISTING "TYPE B" WATERLINE VALVE BOXES SHALL BE REPLACED WITH "TYPE A" BOXES PER COP STANDARD DETAIL P1391.
14. GRADING BETWEEN BACK OF CURB AND PROPERTY LINE SHALL BE LIMITED TO 4:1 SLOPE.
15. TREES AND SHRUBBERY IN THE RIGHT-OF-WAY THAT CONFLICT WITH PROPOSED IMPROVEMENTS SHALL NOT BE REMOVED WITHOUT APPROVAL OF THE CITY LANDSCAPE ARCHITECT. THE PERMIT HOLDER SHALL BE RESPONSIBLE FOR OBTAINING AUTHORIZATION TO REMOVE AND/OR RELOCATE SAID TREES OR AND RECREATION DEPARTMENT PRIOR TO ANY RIGHT-OF-WAY SHRUBBERY BY CALLING THE PARKS PLANT RELOCATIONS AT 602-262-6862.
16. THE INSPECTOR MUST CONTACT STREET TRANSPORTATION DEPARTMENT, TRAFFIC SERVICES DIVISION AT 602-495-0205 VOICE OR 602-534-5500 TTY TWO (2) WEEKS PRIOR TO COMPLETION OF PAVING WORK FOR SIGNING & STRIPING.
17. STREET PAVEMENT CUTS IN THE CITY RIGHT OF WAY WILL REQUIRE ASPHALT RESURFACING TREATMENT PER SECTION 31-49.1 OF THE PHOENIX CITY CODE.

CITY OF PHOENIX SEWER NOTES

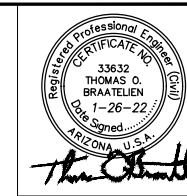
1. THE INSPECTOR FOR THE CITY SHALL BE NOTIFIED 48 HOURS BEFORE CONSTRUCTION BEGINS.
2. ANY SEWER MAIN 15 INCH IN SIZE OR 12 FEET IN DEPTH, OR GREATER, REQUIRES 5' MANHOLES.
3. ALL MANHOLES NEWLY CONSTRUCTED OR EXISTING THAT ARE WORKED IN FOR CONNECTIONS SHALL BE PAINTED WITH INSECTICIDE PAINT PER CITY OF PHOENIX SUPPLEMENT TO MAG SECTION 627.
4. MANHOLES WITH 60" DIAMETER AND PIPE GREATER THAN 12" REQUIRE COATING PER COP SUPPLEMENT 626. ANY EXISTING MANHOLES WITH CORROSION COATING THAT ARE DISTURBED OR ADJUSTED TO NEW FINISH GRADES SHALL HAVE ANY DAMAGED COATING REPAIRED, INCLUDING ALL ADJUSTING RINGS.
5. THIS SET OF PLANS HAS BEEN INITIALLY REVIEWED BY THE CITY OF PHOENIX, SUCH REVIEW IS PART OF THE PROCESS THAT DEVELOPER(S)/CONTRACTOR(S) MUST GO THROUGH IN ORDER TO OBTAIN A CONSTRUCTION PERMIT. THE RESULTS OF SUCH INITIAL REVIEW SHALL NOT DICTATE THE CITY OF PHOENIX'S FINAL DETERMINATION AS TO THE ACCEPTABILITY OF THE PLANS, NOR SHALL IT PREVENT THE CITY OF PHOENIX FROM REQUIRING ERRORS AND OMISSIONS, AS FOUND ON PLANS, BE ADDRESSED BY DEVELOPER(S) / CONTRACTOR(S), WHERE SUCH ERRORS AND OMISSIONS CAUSE THE PLANS TO BE IN VIOLATION OF OR INADEQUATE UNDER APPLICABLE FEDERAL/STATE/COUNTY/LOCAL CODES, ORDINANCES, REGULATIONS OR OTHER LAWS. THIS REVIEWED AND STAMPED SET OF PLANS MUST BE KEPT AT THE CONSTRUCTION SITE AT ALL TIMES.
6. ALL CONSTRUCTION IN CITY OF PHOENIX RIGHT-OF-WAY, OR EASEMENT, IS TO CONFORM TO MAG SPECIFICATIONS AND DETAILS AND CITY OF PHOENIX SUPPLEMENT TO MAG SPECIFICATIONS AND DETAILS, UNLESS MODIFIED ON THE PLANS.
7. ALL SEWER MAINS MUST HAVE A CCTV INSPECTION BEFORE ACCEPTED AS COMPLETE (SEE CITY OF PHOENIX SUPPLEMENT TO MAG SPECIFICATION SECTION 611.3(C)).
8. TRAFFIC REGULATIONS: ALL WORK MUST COMPLY WITH REQUIREMENTS OF THE CURRENT CITY OF PHOENIX "TRAFFIC BARRICADE MANUAL".
9. THE FOLLOWING MAG DETAILS ARE SPECIFICALLY NOT APPROVED.
425 24" ALUMINUM FRAME AND COVER
10. NEW MANHOLES ARE TO BE BUILT WITHOUT STEPS.
11. COMPACTION SHALL COMPLY WITH MAG SECTION 601 AND CITY OF PHOENIX SUPPLEMENTS.
12. NEW SEWER LINES ARE TO BE BUILT IN ACCORDANCE WITH CITY OF PHOENIX "STANDARD UTILITY LOCATIONS" OR AS SHOWN ON THE PLANS.
13. A SIX (6) FOOT MINIMUM HORIZONTAL SEPARATION FROM ANY UNDERGROUND UTILITY SHALL BE PROVIDE FOR SEWER MAINS, SEWER SERVICES, WATER MAINS, AND WATER SERVICES. THE MINIMUM HORIZONTAL SEPARATION IS MEASURED FROM OUTSIDE OF SEWER MAIN, SEWER SERVICE, WATER MAIN, OR WATER SERVICE TO OUTSIDE OF UNDERGROUND UTILITY.
14. A ONE (1) FOOT MINIMUM VERTICAL SEPARATION FROM ANY DRY UNDERGROUND UTILITY CROSSING SHALL BE PROVIDED FOR SEWER MAINS, SEWER SERVICES, WATER MAINS AND WATER SERVICES. THE MINIMUM VERTICAL SEPARATION IS MEASURED FROM OUTSIDE OF SEWER MAIN, SEWER SERVICE, WATER MAIN, OR WATER SERVICE TO OUTSIDE OF DRY UNDERGROUND UTILITY.
15. A TWO (2) FOOT MINIMUM VERTICAL SEPARATION SHALL BE PROVIDED BETWEEN ANY SEWER MAIN AND STORM DRAIN CROSSING A WATER MAIN. THE MINIMUM VERTICAL SEPARATION IS MEASURED FROM OUTSIDE OF WATER MAIN TO OUTSIDE OF SEWER MAIN OR STORM DRAIN MAIN. SEE MAG STANDARD DETAIL 404 FOR ADDITIONAL INFORMATION AND OR PROVISIONS FOR CLEARANCE.
16. EXCEPTIONS OR DEVIATIONS FROM THE ABOVE MINIMUM CLEARANCES MUST BE APPROVED AND SHOWN ON THE APPROVED WATER AND SEWER PLANS. WHEN UTILITY CONFLICTS ARE FOUND DURING CONSTRUCTION, ALL CHANGES AND REVISIONS MUST BE PRECEDED BY AN APPROVED PLAN REVISION.
17. ANY AND ALL MORE STRINGENT REQUIREMENTS REQUIRED BY FEDERAL, STATE, COUNTY, OR LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
18. ANY SEWER LINES THAT ARE INSTALLED WITH LESS THAN 0.004 FT/FT SLOPE MUST BE INSTALLED USING A LASER.
19. WHEN DIP SEWER PIPE IS USED, LINING IS REQUIRED PER CITY OF PHOENIX SUPPLEMENT TO MAG 751.
20. CONCRETE OR ASPHALT DAMAGED DURING THE COURSE OF CONSTRUCTION SHALL BE REMOVED AND REPLACED IN KIND PRIOR TO FINAL INSPECTION.
21. RECORD DRAWING SUBMITTALS MUST COMPLY WITH WATER SERVICES DEPARTMENT ENGINEERING POLICY P-85. A COPY OF THE POLICY CAN BE OBTAINED IN THE DEPARTMENT'S WEBSITE: [HTTP:PHOENIX.GOV/WATERSERVICES/DESIGN/ENGPOLICIES/INDEX.HTML](http://PHOENIX.GOV/WATERSERVICES/DESIGN/ENGPOLICIES/INDEX.HTML)

CITY OF PHOENIX GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH CONTRACT SPECIFICATIONS; PLANS; CITY OF PHOENIX SUPPLEMENTS TO MAG STANDARD SPECIFICATIONS AND DETAILS; AND MAG STANDARD SPECIFICATIONS AND DETAILS, IN THAT ORDER OF PRECEDENCE, AT THE TIME OF CONSTRUCTION BID.
2. FACILITIES WHICH ARE NOT SPECIFICALLY LOCATED WITH ACTUAL VERTICAL AND HORIZONTAL CONTROLS, ARE LOCATED ONLY APPROXIMATELY AND TO THE BEST AVAILABLE INFORMATION PROVIDED BY VARIOUS OWNERS OF THE FACILITIES, AND SUPPLEMENTED BY VISUAL SURFACE INFORMATION WHERE APPROPRIATE. ACCURACY, LOCATION AND COMPLETENESS OF THIS INFORMATION SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO INITIATION OF CONSTRUCTION.
3. AT LEAST TWO WORKING DAYS BEFORE CONSTRUCTION, THE CONTRACTOR SHALL CONTACT BLUESTAKE TO LOCATE AND FLAG UNDERGROUND UTILITIES. THE CONTRACTOR SHALL CONTACT OTHER APPROPRIATE UTILITIES DIRECTLY IF THEY ARE NOT ON BLUESTAKE SYSTEM.
4. VERTICAL CONTROL IS BASED ON NATIONAL GEODETIC SURVEY, NGVD 1929.
5. ALL CONSTRUCTION ACTIVITIES SHALL BE CONTAINED WITHIN THE PUBLIC RIGHT OF WAY OR IN EASEMENTS GRANTED FOR THE WATER AND/OR SEWER MAIN INSTALLATION. ANY EXISTING FEATURES DISTURBED OUTSIDE THESE LIMITS SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
6. TRAFFIC CONTROL SHALL CONFORM TO THE CITY OF PHOENIX "TRAFFIC BARRICADE MANUAL" AND SHALL BE SUBJECT TO CITY REVIEW AND APPROVAL.
7. ANY WORK BETWEEN 7:00 PM - 7:00 AM (BETWEEN OCTOBER 1ST - APRIL 30TH) OR 7:00 PM TO 6:00 AM (BETWEEN MAY 1ST - SEPTEMBER 30TH) IN THE RIGHT OF WAY (ARTERIAL AND COLLECTOR STREETS) REQUIRES AN AFTER HOURS WORK PERMIT.

CITY OF PHOENIX ENVIRONMENTAL NOTES

1. CONTRACTOR, SUBCONTRACTORS, AND ALL FIELD PERSONNEL SHALL BE PROVIDED THE ATTACHED MIGRATORY BIRD TREATY ACT FLYER. IF TREES OR SHRUBS WILL BE TRIMMED OR REMOVED BETWEEN FEBRUARY 1 AND AUGUST 31, OR IF AN ACTIVE BIRD NEST IS PRESENT IN THE WORK AREA, WORK SHALL CEASE WITHIN 100 FEET AND THE CITY OF PHOENIX ENVIRONMENTAL QUALITY SPECIALIST (ANDREA LOVE [602-495-6718] OR JAMES MARSHALL [602-534-3747]) SHALL BE NOTIFIED IMMEDIATELY.
2. CONTRACTOR, SUBCONTRACTORS, AND ALL FIELD PERSONNEL SHALL BE PROVIDED THE WESTERN BURROWING OWL FLYER. IF BURROWING OWLS OR POTENTIALLY ACTIVE BURROWS (NATURAL OR MAN-MADE HOLES 3 INCH DIAMETER OR GREATER) ARE OBSERVED DURING CONSTRUCTION, WORK SHALL CEASE WITHIN 100 FEET AND THE CITY OF PHOENIX ENVIRONMENTAL QUALITY SPECIALIST (ANDREA LOVE [602-495-6718] OR JAMES MARSHALL [602-534-3747]) SHALL BE NOTIFIED IMMEDIATELY.
3. IF THERE IS A CHANGE IN SCOPE OR THE PROJECT LIMITS, THE CITY OF PHOENIX ENVIRONMENTAL QUALITY SPECIALIST (ANDREA LOVE [602-495-6718] OR JAMES MARSHALL [602-534-3747]) SHALL BE CONTACTED TO EVALUATE POTENTIAL IMPACTS.
4. IF ANY ARCHAEOLOGICAL MATERIALS ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL CEASE ALL GROUND-DISTURBING ACTIVITIES WITHIN 10 METERS OF THE DISCOVERY AND THE CITY OF PHOENIX ARCHAEOLOGY OFFICE (602-534-1573) AND CITY OF PHOENIX ENVIRONMENTAL QUALITY SPECIALIST (ANDREA LOVE [602-495-6718] OR JAMES MARSHALL [602-534-3747]) SHALL BE NOTIFIED IMMEDIATELY AND ALLOWED TIME TO PROPERLY ASSESS THE MATERIALS.



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9	ARIZ.	WS90500273	2	63

PEC PROJECT ENGINEERING CONSULTANTS
2432 W. PEORIA AVENUE, SUITE 1246
PHOENIX, AZ 85029
Phone: (602) 906-1901

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LARGE DIAMETER SANITARY SEWER REHABILITATION
GRADE 5 & 4 MANHOLES - NORTH - ZONE 3
CITY OF PHOENIX, ARIZONA
WATER SERVICES DEPARTMENT

NOTES



DR:	HC	DES:	YX	CK:	TOB	SHEET	TOTAL
DATE:	1/22	DATE:	1/22	DATE:	1/22	NO.	SHEETS
SCALE:	NONE	DRAWING NO.	G-2			2	63

REVISION BY CITY OF PHOENIX		REV BY	CHK BY	DATE
DESCRIPTION				
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9	ARIZ.	WS90500273	3	63

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 PHOENIX, AZ 85029
 Phone: (602) 906-1901

ENGINEERING NOTES

1. THE CONTRACTOR SHALL SUPPORT AND PROTECT IN PLACE ALL EXISTING UTILITIES WITHIN THE EXCAVATION AS REQUIRED BY THE MAG SPECIFICATIONS AND THE CITY SUPPLEMENTS.
2. COMPACTION SHALL COMPLY WITH MAG SECTION 601 AND CITY OF PHOENIX SUPPLEMENTS AND AS INDICATED IN THE PROJECT PLANS AND DETAILS.
3. ALL REMOVAL AND REPLACEMENTS SHALL MATCH EXISTING UNLESS OTHERWISE NOTED ON PLANS OR IN CONTRACT SPECIFICATIONS.
4. CONTRACTOR TO VERIFY ALL ACCESS POINTS TO WORK ZONE PRIOR TO CONSTRUCTION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS WHICH ARE REQUIRED PRIOR TO CONSTRUCTION, EXCEPT AS DEFINED BY THE SPECIFICATIONS.

SEWER MANHOLE REHAB NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY ALL MANHOLE LOCATIONS, MATERIALS, CONDITIONS, AND DIMENSIONS BEFORE STARTING WORK AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
2. ANY CHANGES IN REHABILITATION METHODS SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL WHEN REQUIRED TO, ADJUST OR REPLACE EXISTING MANHOLE, FRAME, AND COVER TO MATCH EXISTING FINAL GRADE ACCORDING TO MAG STANDARD DETAILS NO. 422, 423 AND COP STD DTL P1424.
4. CONTRACTOR SHALL SUBMIT BYPASS PUMPING PLANS FOR ALL WORK AT THE PRE-CONSTRUCTION MEETING. BYPASS PUMPING PLANS MUST BE APPROVED BY THE ENGINEER PRIOR TO PERFORMING WORK.
5. SANITARY SEWER FLOW SHALL NOT BE DISRUPTED DURING CONSTRUCTION. CONTRACTOR SHALL PROVIDE BYPASS AND/OR DIVERSION AROUND THE LIMITS OF WORK.
6. SPILLS SHALL NOT BE PERMITTED AT ANY TIME DURING CONSTRUCTION. A SPILL IS DEFINED AS ANY RELEASE OF RAW SEWAGE, CONSTRUCTION WATER, OR OTHER LIQUIDS.
7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY FOR REMOVAL OF CONTAMINATED SOIL AND A HAUL PLAN TO THE DISPOSAL SITE.

ABBREVIATIONS

- ADOT ARIZONA DEPARTMENT OF TRANSPORTATION
- B BROKEN
- BOU BOTTOM OF UTILITY
- C COLLAR SHAPE CIRCULAR
- CCTV CLOSED CIRCUIT TELEVISION
- CIPP CAST IN PLACE PIPE
- CM CRACK MULTIPLE
- CONC CONCRETE
- COP CITY OF PHOENIX CONSTRUCTION
- CST
- DB DISPLACED BRICK
- DTL / DET DETAIL
- DIP DUCTILE IRON PIPE
- DWG DRAWING
- EA EACH
- ELEC ELECTRIC OR ELECTRICAL
- ELEV ELEVATION
- EX / EXIST EXISTING
- FDMC FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
- FL FLANGE
- FM FRACTURE MULTIPLE
- FND FOUND
- FO FIBER OPTIC
- (FT) FEET
- HH HANDHOLE
- ID IDENTIFICATION
- I.E. INVERT ELEVATION
- (IN) INCHES
- LFD LINING FAILURE DETACHED
- LT LEFT
- MC MARICOPA COUNTY
- MH MANHOLE
- MMM MORTAR MISSING MEDIUM
- PHX PHOENIX
- PHXSE PHOENIX OWNED PARCEL WITH COP SEWER EASEMENT
- PNDNG OWNERSHIP OF PARCEL IS CURRENTLY CHANGING
- PTPUE PRIVATE PROPERTY WITH COP PUBLIC UTILITY EASEMENT
- PTSE PRIVATE PROPERTY WITH COP SEWER EASEMENT
- PVC POLYVINYL CHLORIDE
- RT RIGHT
- SAM SURFACE AGGREGATE MISSING
- SAMM SURFACE AGGREGATE MISSING MECHANICAL
- SAMZ SURFACE AGGREGATE MISSING UNKNOWN
- SAP SURFACE AGGREGATE PROJECTING
- SAPZ SURFACE AGGREGATE PROJECTING UNKNOWN
- SH STEP HOLE
- SHT SHEET
- SRC SURFACE REINFORCEMENT CORRODED
- SRP SALT RIVER PROJECT
- SRPZ SURFACE REINFORCEMENT PROJECTING UNKNOWN
- SRV SURFACE REINFORCEMENT VISIBLE
- SRVZ SURFACE REINFORCEMENT VISIBLE UNKNOWN
- SSMH SANITARY SEWER MANHOLE
- STA STATION
- SW SOUTHWEST
- VCP VITRIFIED CLAY PIPE
- W/ WITH
- XXX UNKNOWN

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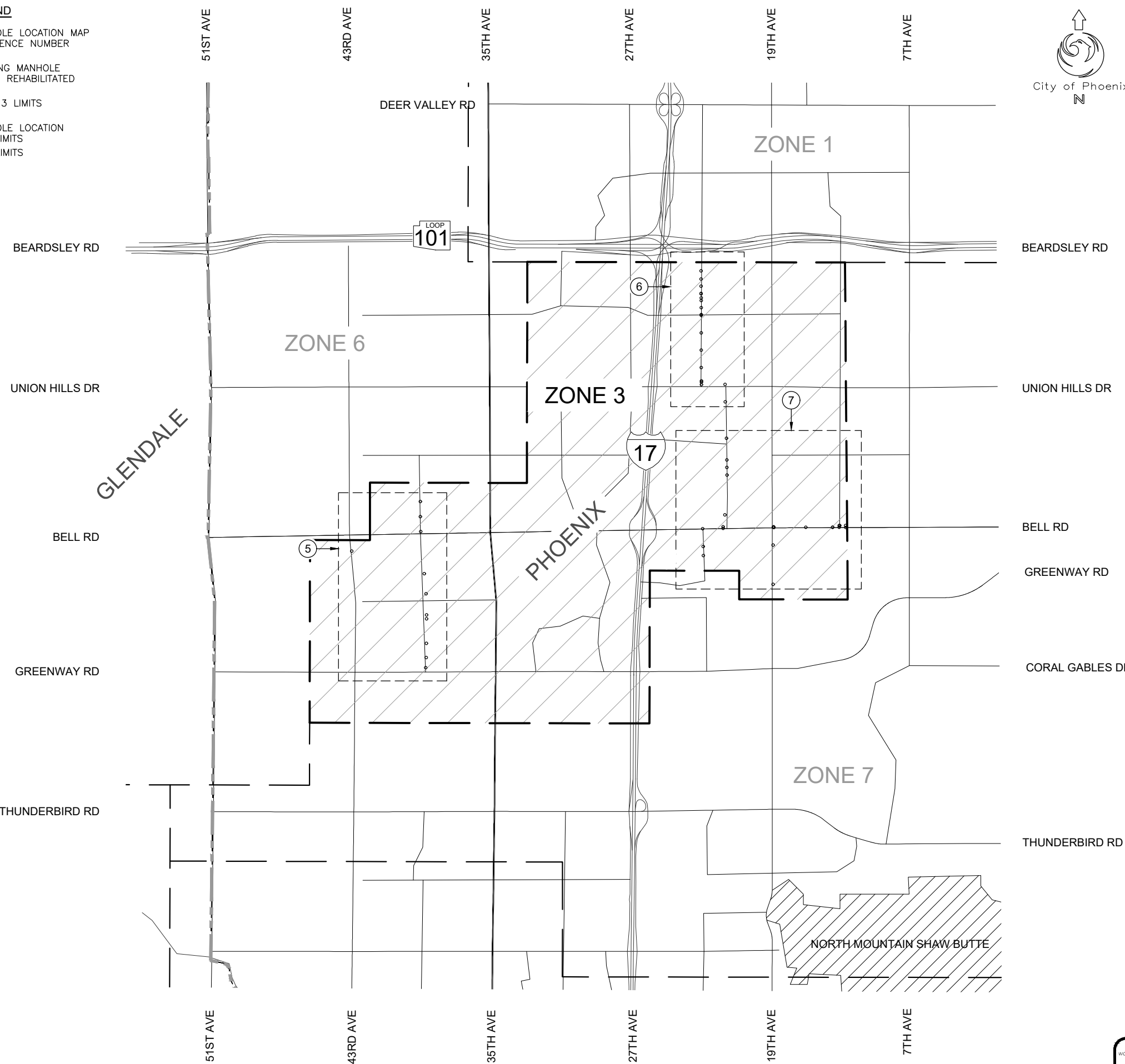


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DESCRIPTION			
NO.			

LEGEND

- (X) MANHOLE LOCATION MAP REFERENCE NUMBER
- EXISTING MANHOLE TO BE REHABILITATED
- [Hatched Box] ZONE 3 LIMITS
- [Dashed Line] MANHOLE LOCATION MAP LIMITS
- [Solid Line] CITY LIMITS



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QUARTER SECTIONS LIST	
QUARTER SECTIONS	MANHOLES
35-19	1
35-20	4
36-19	1
36-20	2
36-24	4
36-25	8
37-19	2
37-20	1
37-24	5
37-25	1
37-26	2
38-24	2
39-23	6 7
39-24	1
40-23	9
GRAND TOTAL	49 50

KEY MAP
NOT TO SCALE

NOTE:
PLANS FOR OTHER ZONES UNDER DIFFERENT SET OF PLANS.



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SCALE:		DRAWING		NO.	G-4	4	63

PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1224982	LOCATION ID: 36-19-209	CROSS STREET: JUNIPER AVE & 43RD AVE	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 11.2 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 36-19
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1				
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	146			
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9				
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901	Know what's below. Call before you dig.	SCALE OF MAP: 1:100	MANHOLE: 1 / 50	SHEET NUMBER: 8 OF 63
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MANHOLE 36-19-209
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

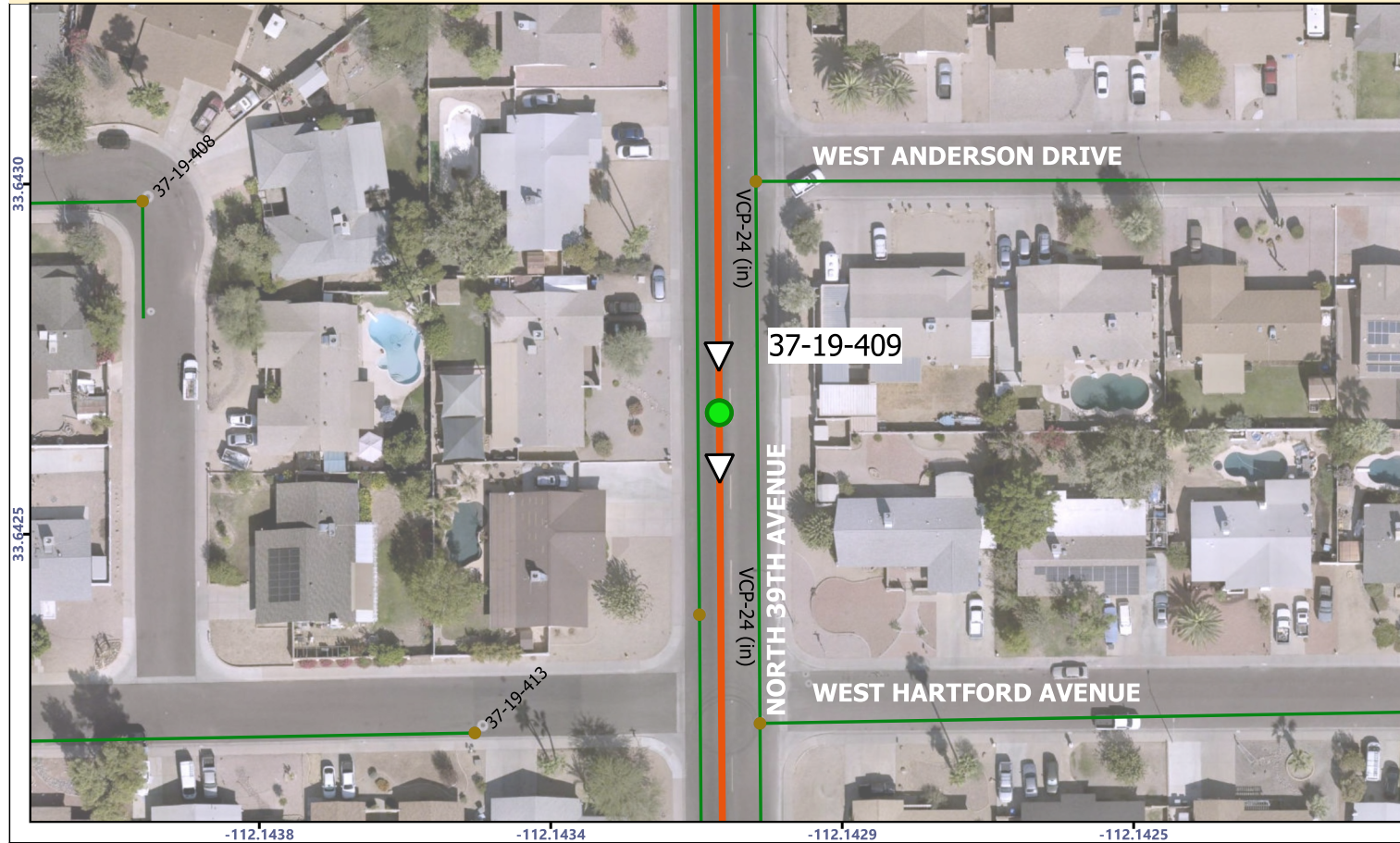
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1225382	LOCATION ID: 37-19-409	CROSS STREET: 39TH AVE & ANDERSON DR	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 14.5 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: EPOXY	QUARTER SECTION: 37-19
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	189				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
		REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7					
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9					
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _		

NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901	Know what's below. Call before you dig.	SCALE OF MAP: 1:100	MANHOLE: 2 / 50	SHEET NUMBER: 9 OF 63
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MANHOLE 37-19-409
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

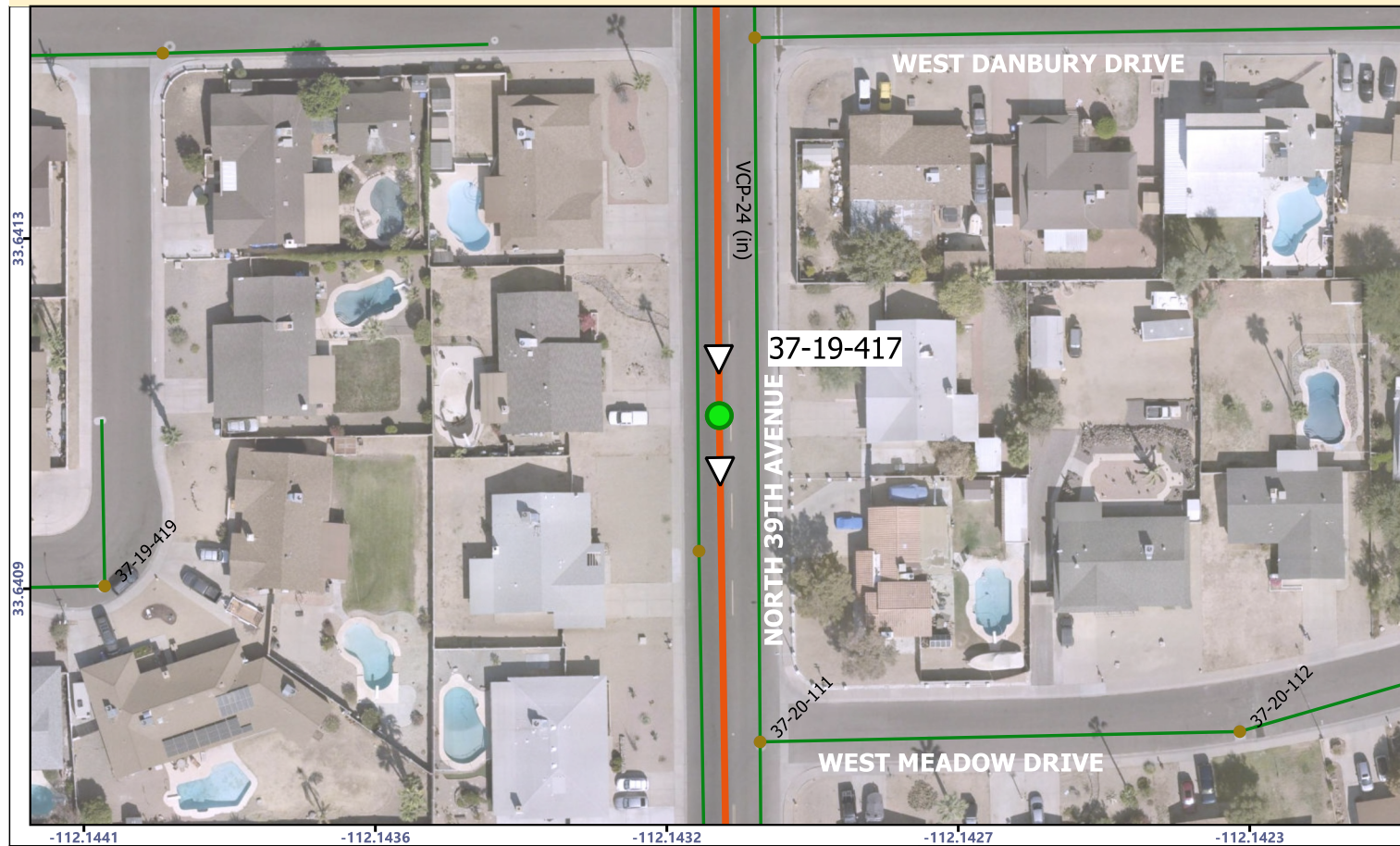
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1237470	LOCATION ID: 37-19-417	CROSS STREET: 39TH AVE & MEADOW DR	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 14.8 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: EPOXY	QUARTER SECTION: 37-19
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE FURNISHED FOR INSPECTION OR COPYING, EXCEPT AS SPECIFICALLY STATED IN THE CITY CODE, OR AS REQUIRED BY LAW"
THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1			
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	11.9			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _	

NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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	PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901		SCALE OF MAP: 1:100	MANHOLE: 3 / 50	SHEET NUMBER: 10 OF 63
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MANHOLE 37-19-417
WS90500273

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

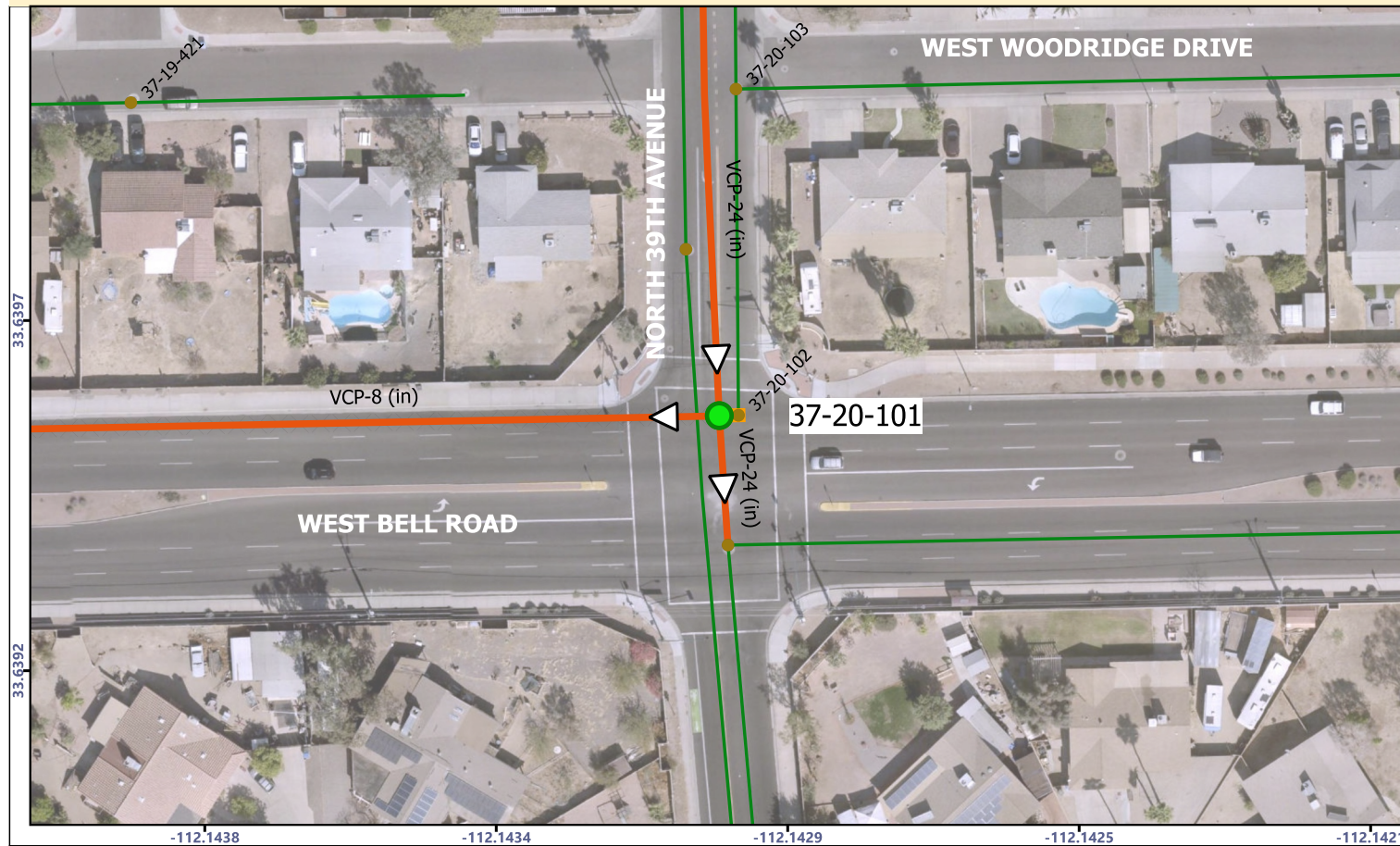
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1225507	LOCATION ID: 37-20-101	CROSS STREET: 39TH AVE & BELL RD	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 15.2 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: EPOXY	QUARTER SECTION: 37-20
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED CIVIL ENGINEER:
REGISTRATION NUMBER:
DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
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- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	156				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
		REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					
		JOINT REPAIR	EA	7					
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9					
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _		

NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.
B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.
C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.
D. COAT THE CHANNEL IF IT IS CONCRETE.
E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.
F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.
G. USE FLOW THROUGH PLUG IF NECESSARY.
H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.

	PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901		SCALE OF MAP: 1:100	MANHOLE: 4 / 50	SHEET NUMBER: 11 OF 63
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MANHOLE 37-20-101
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

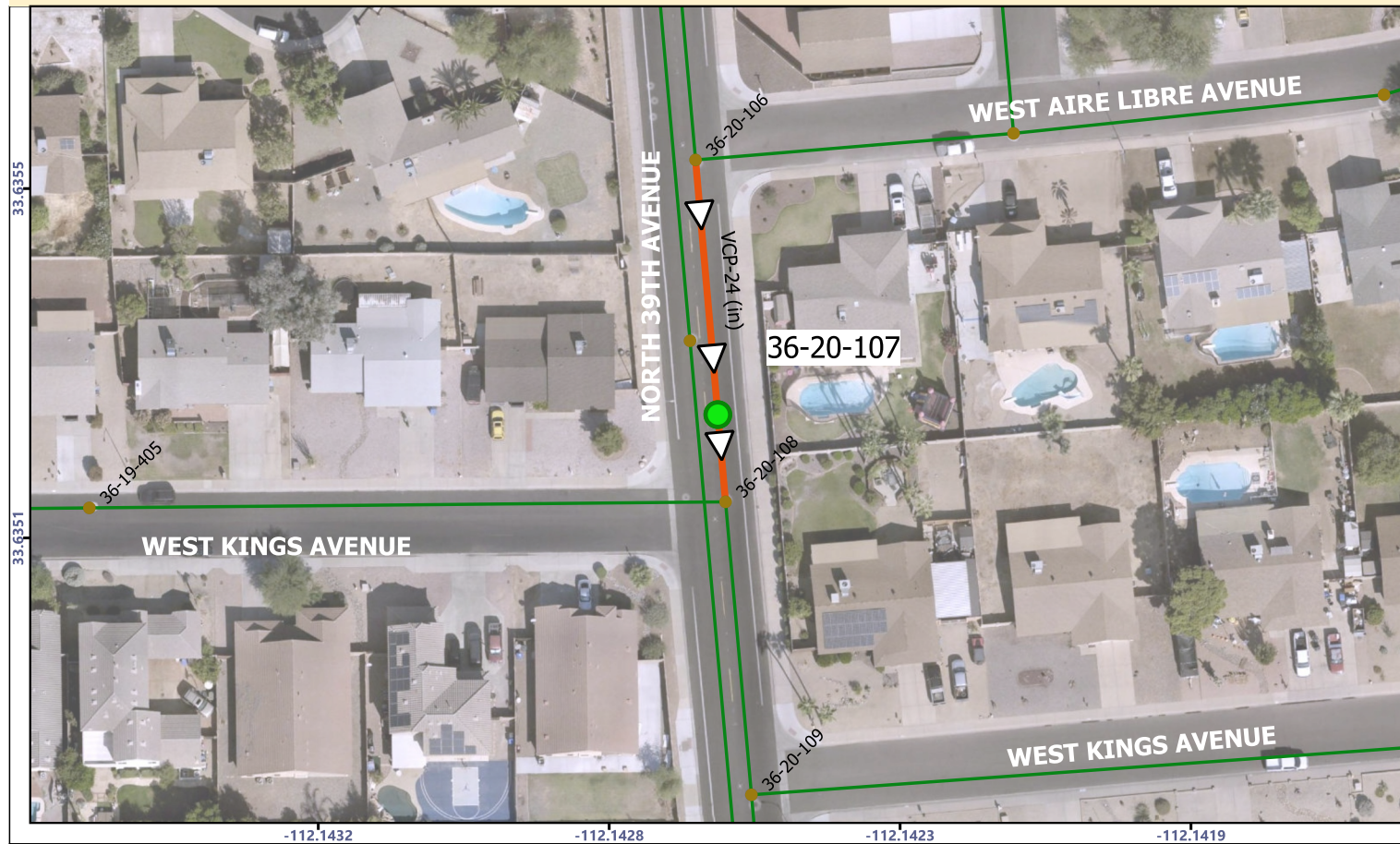
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1225051	LOCATION ID: 36-20-107	CROSS STREET: 39TH AVE & KINGS AVE	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 14.7 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: EPOXY	QUARTER SECTION: 36-20
COLLAR PRESENT: NO GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	221			
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9				
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____		DATE: _ / _ / _		

NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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	PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901		SCALE OF MAP: 1:100	MANHOLE: 5 / 50	SHEET NUMBER: 12 OF 63
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MANHOLE 36-20-107
WS90500273

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

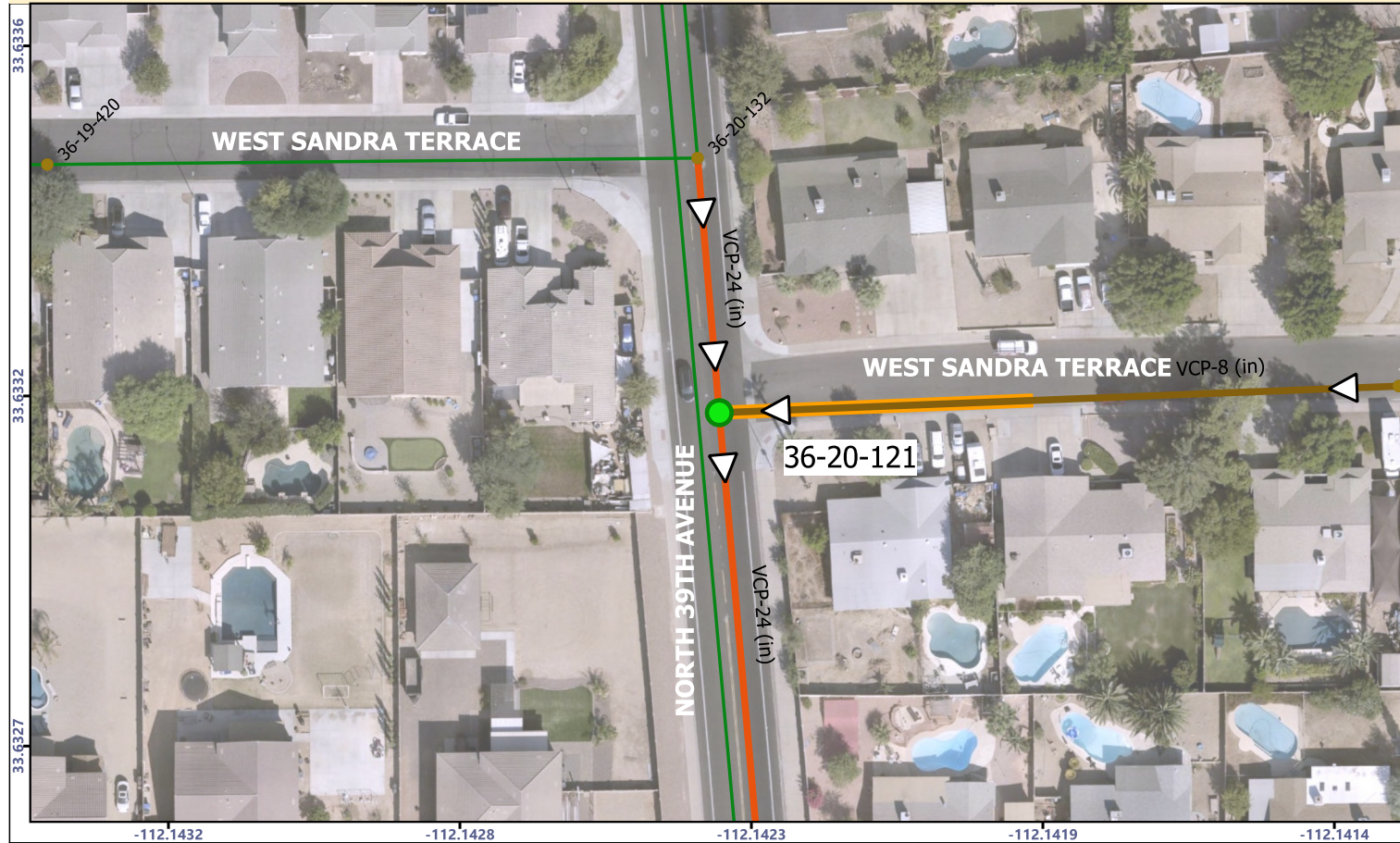
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1225072	LOCATION ID: 36-20-121	CROSS STREET: 39TH AVE & SANDRA TER	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 15.2 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: EPOXY	QUARTER SECTION: 36-20
COLLAR PRESENT: NO GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

ASSESSMENT NOTES:

AS BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED CIVIL ENGINEER:

REGISTRATION NUMBER:

DATE:

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
		REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7					
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	13.1				
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _		

NOTES

- A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.
- B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.
- C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.
- D. COAT THE CHANNEL IF IT IS CONCRETE.
- E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.
- F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.
- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.



PROJECT ENGINEERING CONSULTANTS
2432 W. PEORIA AVENUE, SUITE 1246
PHOENIX, AZ 85029
Phone: (602) 906-1901



SCALE OF MAP:
1:100

MANHOLE:
6 / 50

SHEET NUMBER:
13 OF 63

MANHOLE 36-20-121
WS90500273

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

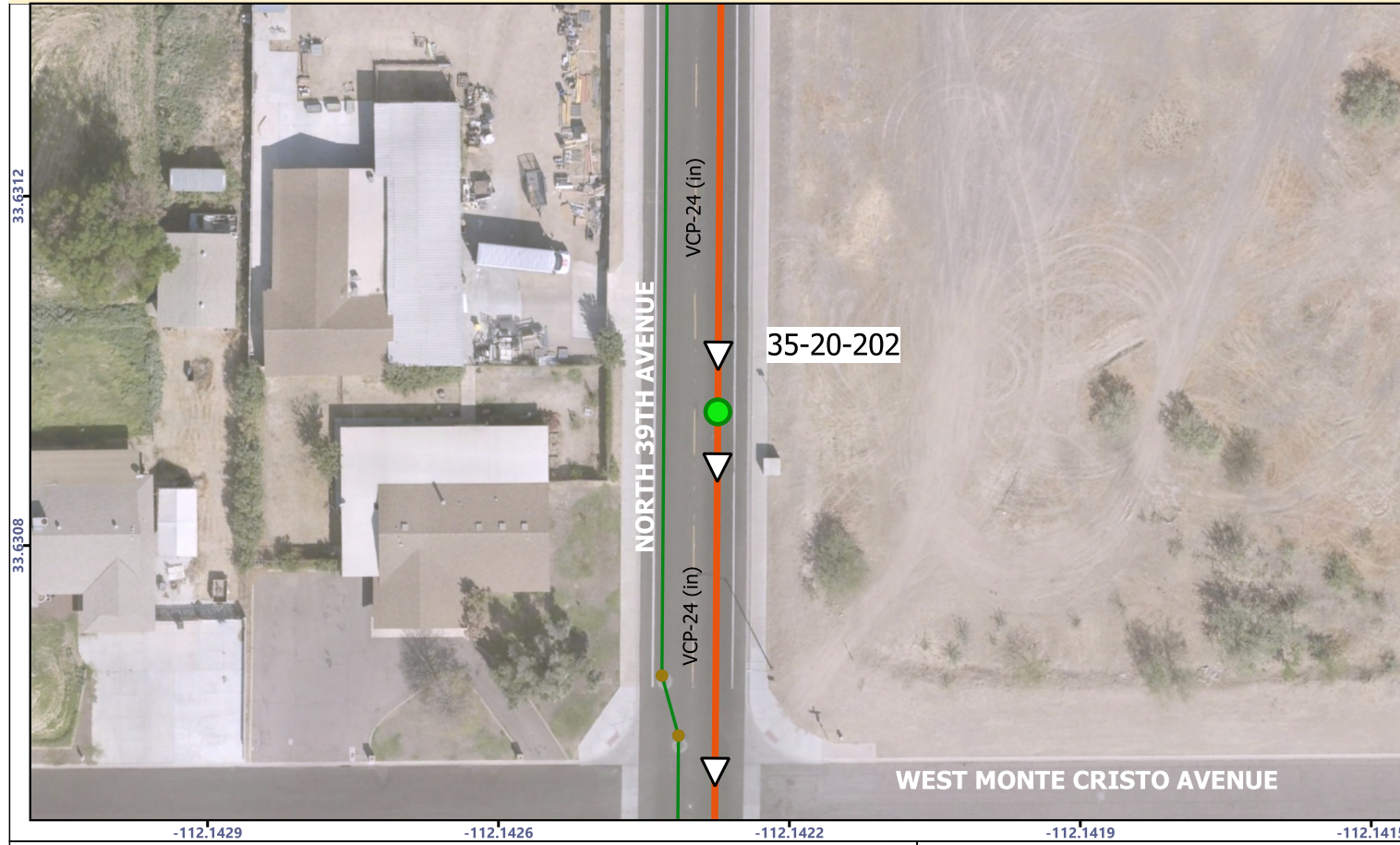
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1223558	LOCATION ID: 35-20-202	CROSS STREET: 39TH AVE & MONTE CRISTO AVE	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 13.6 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: EPOXY	QUARTER SECTION: 35-20
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	207				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
		REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7					
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9					
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _		

NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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	PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901		SCALE OF MAP: 1:75	MANHOLE: 7 / 50	SHEET NUMBER: 14 OF 63
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MANHOLE 35-20-202
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

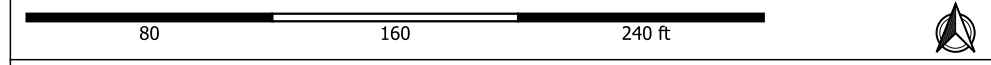
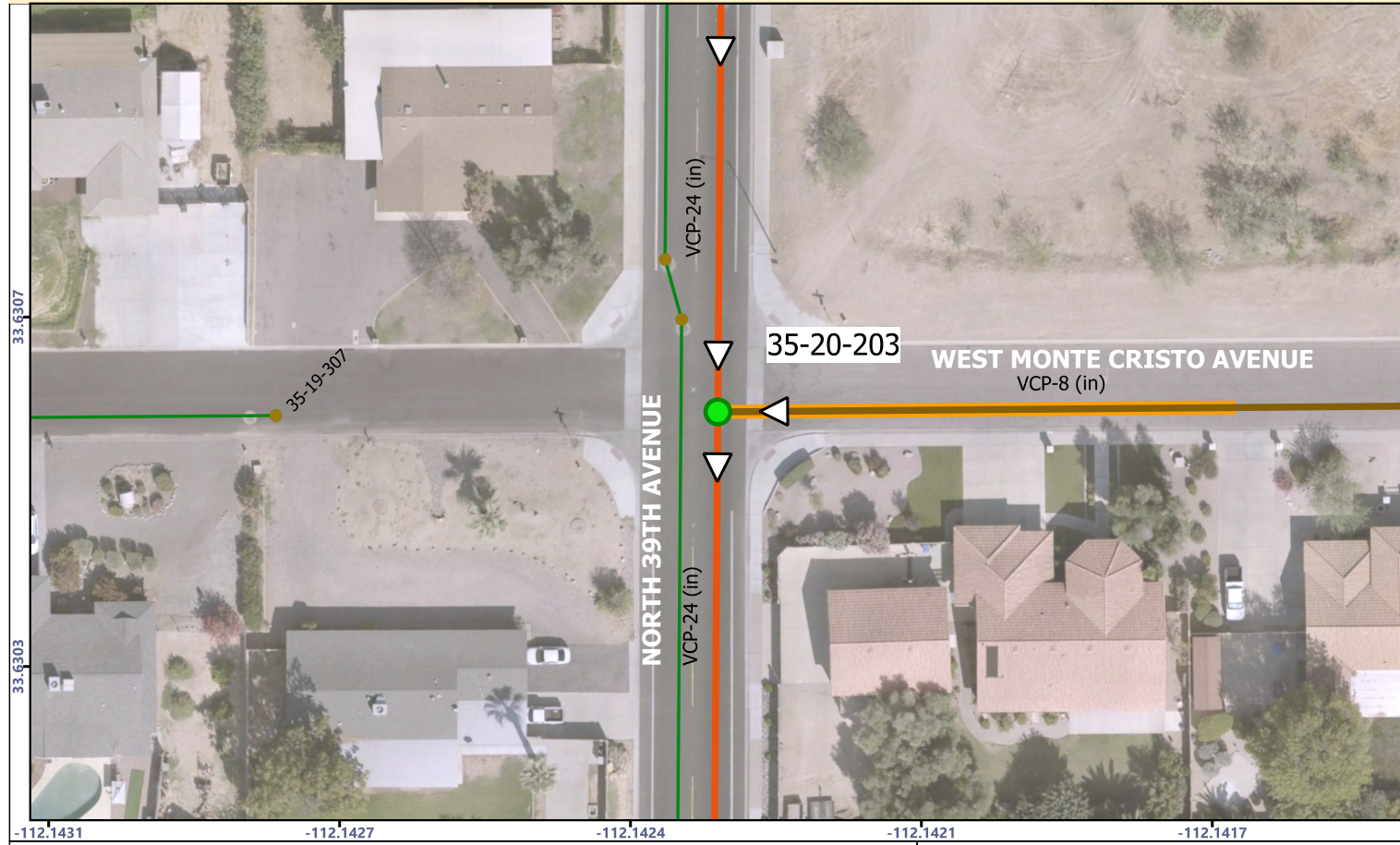
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1223564	LOCATION ID: 35-20-203	CROSS STREET: 39TH AVE & MONTE CRISTO AVE	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 26 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 13.6 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: EPOXY	QUARTER SECTION: 35-20
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED CIVIL ENGINEER:
REGISTRATION NUMBER:
DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	15			
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9				
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

<p>A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.</p> <p>B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.</p> <p>C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.</p> <p>D. COAT THE CHANNEL IF IT IS CONCRETE.</p> <p>E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.</p> <p>F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.</p> <p>G. USE FLOW THROUGH PLUG IF NECESSARY.</p> <p>H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.</p>		
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<p>PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901</p>	<p>Know what's below. Call before you dig.</p>	SCALE OF MAP: 1:75	MANHOLE: 8 / 50	SHEET NUMBER: 15 OF 63
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MANHOLE 35-20-203
WS90500273
CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

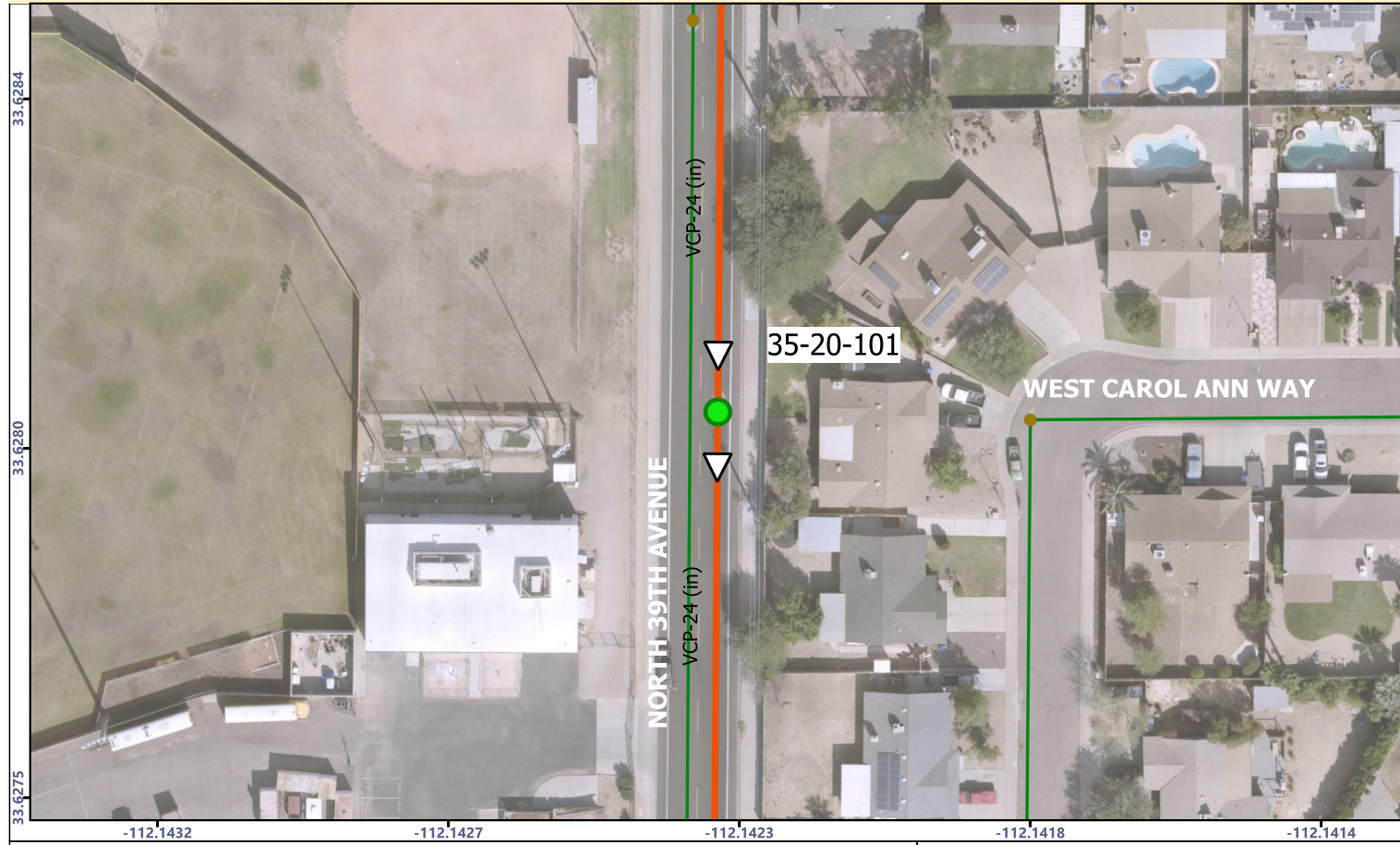
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1243457	LOCATION ID: 35-20-101	CROSS STREET: 39TH AVE & CAROL ANN WAY	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 13 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: EPOXY	QUARTER SECTION: 35-20
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

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	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1				
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	15			
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9				
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901		SCALE OF MAP: 1:100	MANHOLE: 9 / 50	SHEET NUMBER: 16 OF 63
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MANHOLE 35-20-101
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

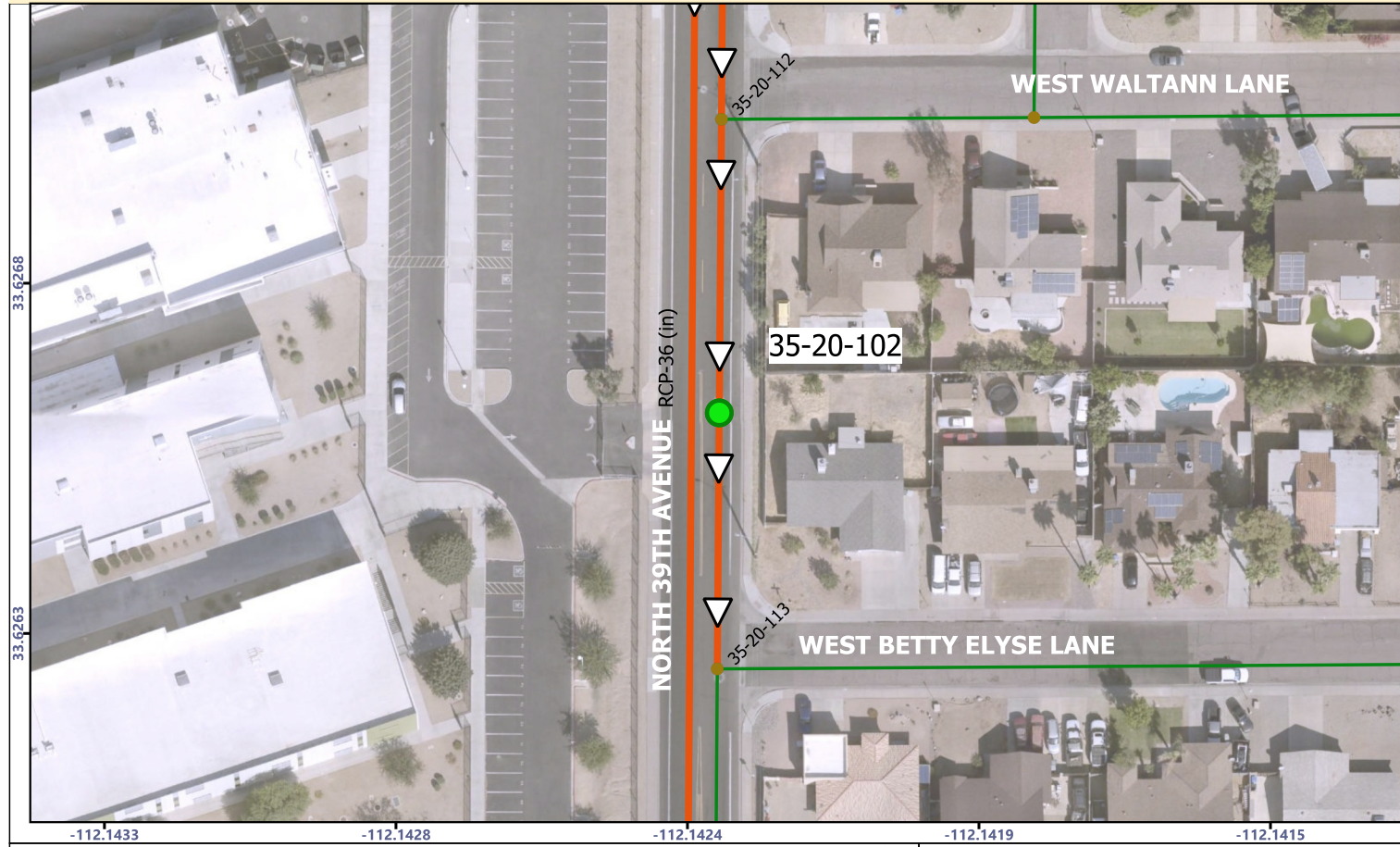
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1223599	LOCATION ID: 35-20-102	CROSS STREET: 39TH AVE & BETTY ELYSE LN	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 14.2 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: EPOXY	QUARTER SECTION: 35-20
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

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	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
		REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					
		JOINT REPAIR	EA	7					
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9					
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _		

NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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	PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901		SCALE OF MAP: 1:100	MANHOLE: 10 / 50	SHEET NUMBER: 17 OF 63
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MANHOLE 35-20-102
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

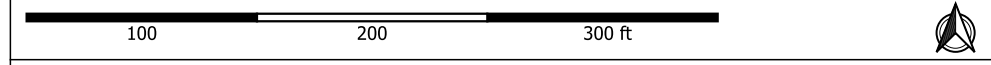
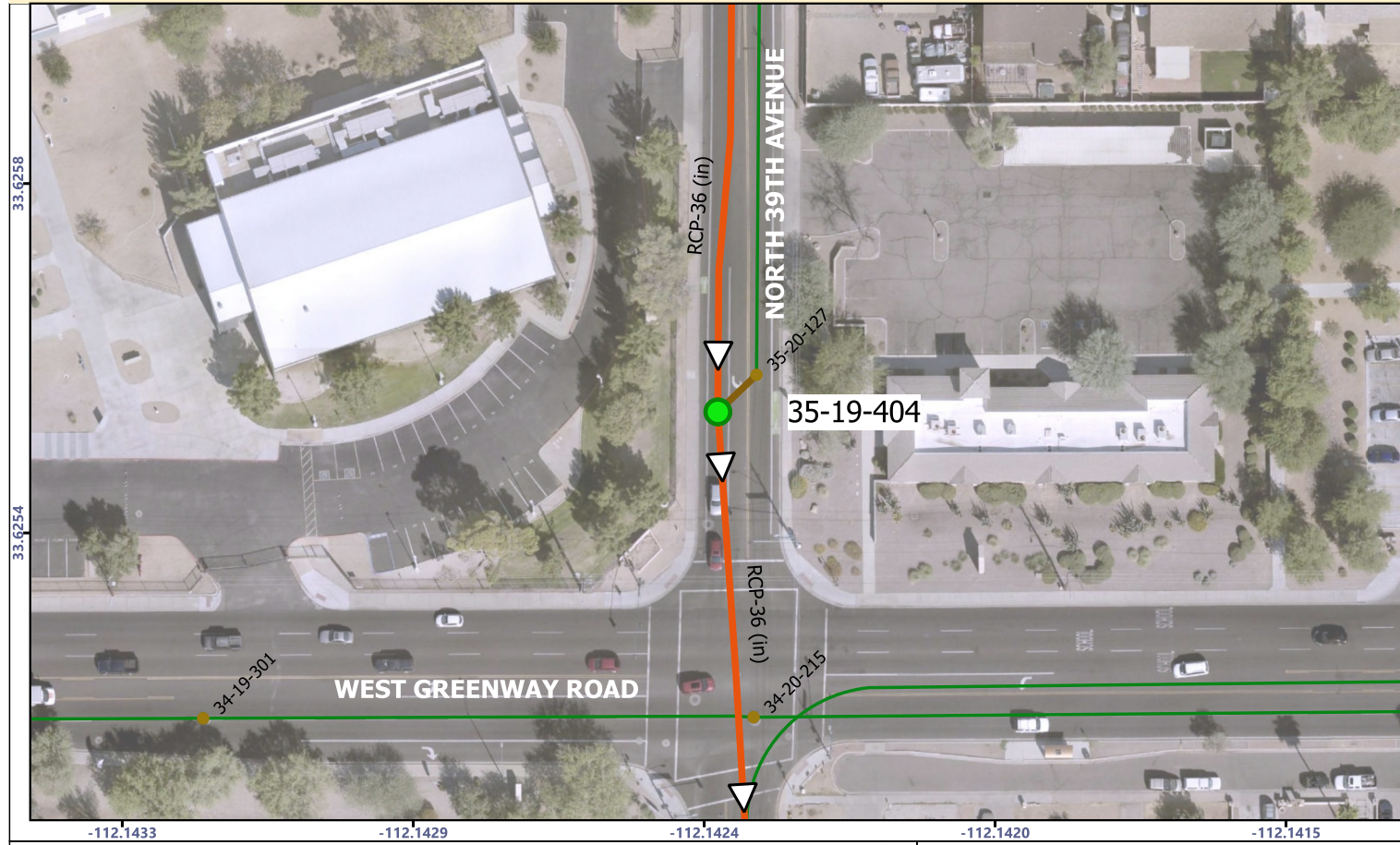
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1247080	LOCATION ID: 35-19-404	CROSS STREET: 39TH AVE & GREENWAY RD	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 22.5 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: EPOXY	QUARTER SECTION: 35-19
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION

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REGISTERED CIVIL ENGINEER:
REGISTRATION NUMBER:
DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
		REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					
		JOINT REPAIR	EA	7					
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	16.7				
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _		

NOTES

<p>A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.</p> <p>B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.</p> <p>C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.</p> <p>D. COAT THE CHANNEL IF IT IS CONCRETE.</p> <p>E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.</p> <p>F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.</p> <p>G. USE FLOW THROUGH PLUG IF NECESSARY.</p> <p>H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.</p>		
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	<p>PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901</p>		<p>SCALE OF MAP: 1:100</p>	<p>MANHOLE: 11 / 50</p>	<p>SHEET NUMBER: 18 OF 63</p>
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MANHOLE 35-19-404
WS90500273
CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

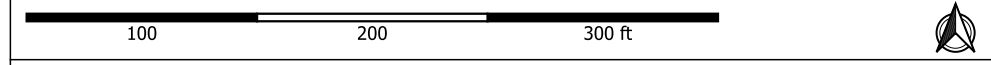
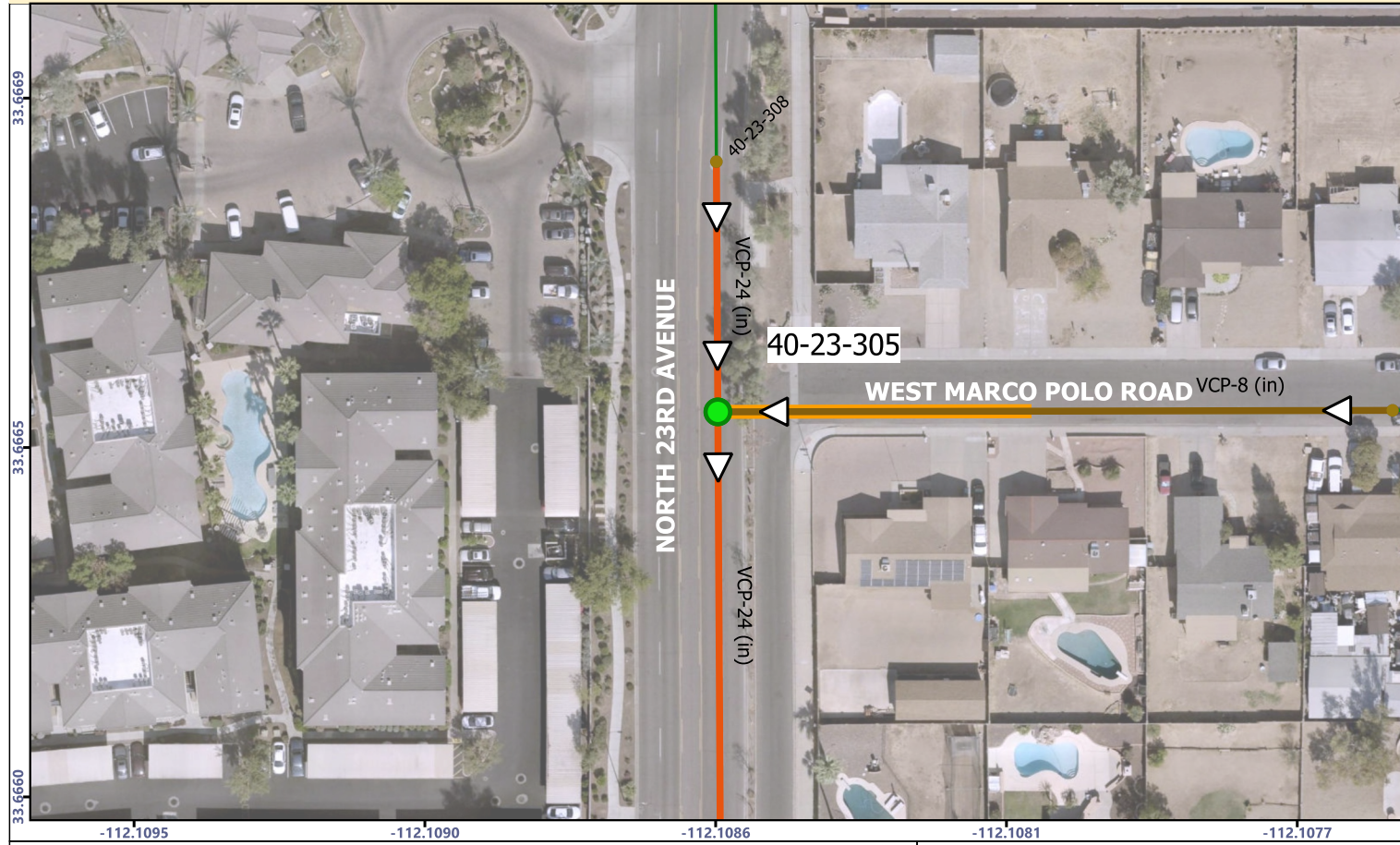
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1234650	LOCATION ID: 40-23-305	CROSS STREET: 23RD AVE & MARCO POLO RD	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 18.4 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 40-23
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION

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REGISTERED CIVIL ENGINEER:
REGISTRATION NUMBER:
DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	16			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

<p>A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.</p> <p>B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.</p> <p>C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.</p> <p>D. COAT THE CHANNEL IF IT IS CONCRETE.</p> <p>E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.</p> <p>F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.</p> <p>G. USE FLOW THROUGH PLUG IF NECESSARY.</p> <p>H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.</p>		
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<p>PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901</p>	<p>Know what's below. Call before you dig.</p>	SCALE OF MAP: 1:100	MANHOLE: 12 / 50	SHEET NUMBER: 19 OF 63
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MANHOLE 40-23-305
WS90500273

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

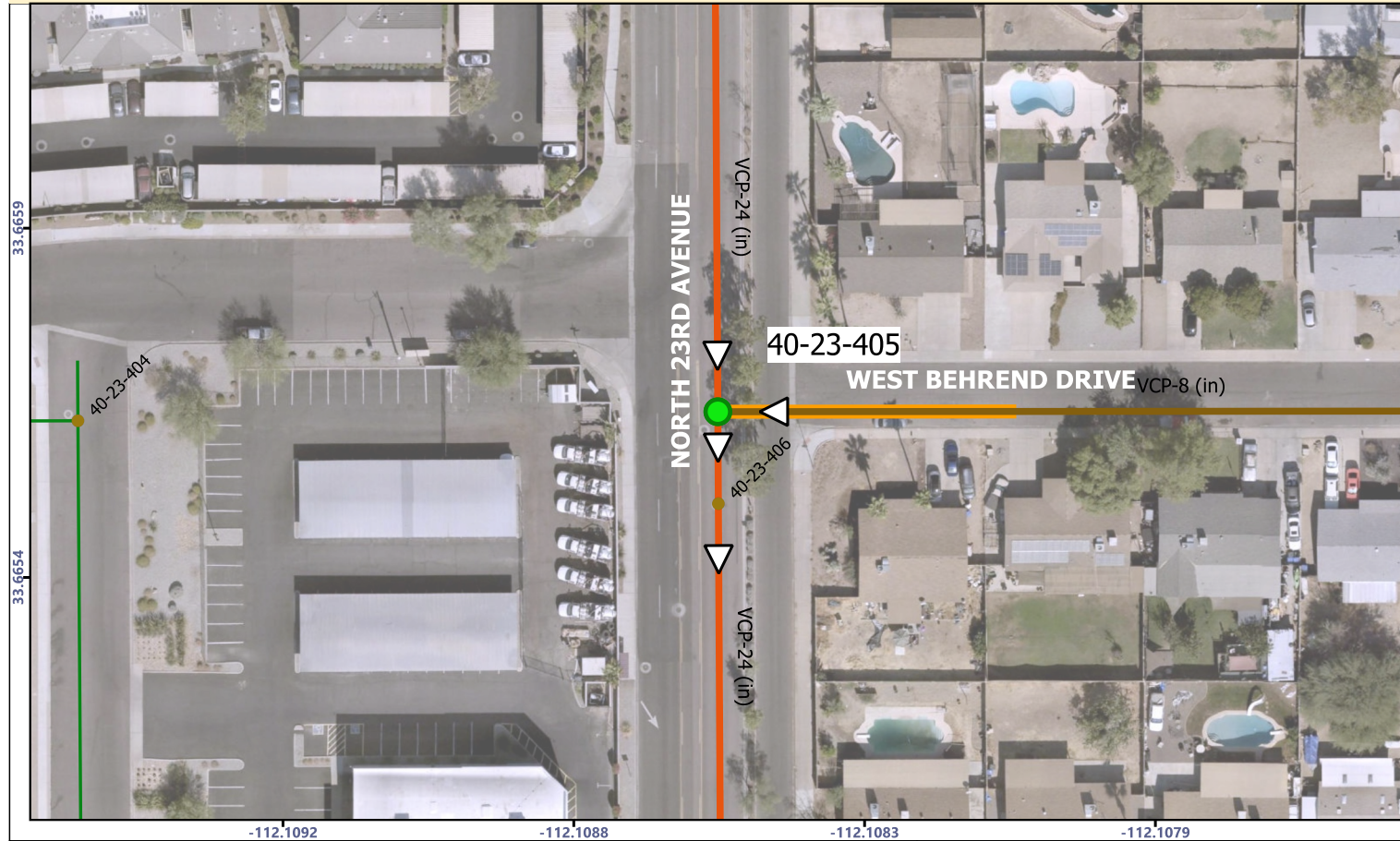
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1192241	LOCATION ID: 40-23-405	CROSS STREET: 23RD AVE & BEHREND DR	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 17.5 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 40-23
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE FURNISHED FOR INSPECTION OR COPYING, EXCEPT AS SPECIFICALLY STATED IN THE CITY CODE, OR AS REQUIRED BY LAW"
THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1				
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	236			
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9				
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _	

NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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	PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901		SCALE OF MAP: 1:100	MANHOLE: 13 / 50	SHEET NUMBER: 20 OF 63
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MANHOLE 40-23-405
WS90500273

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

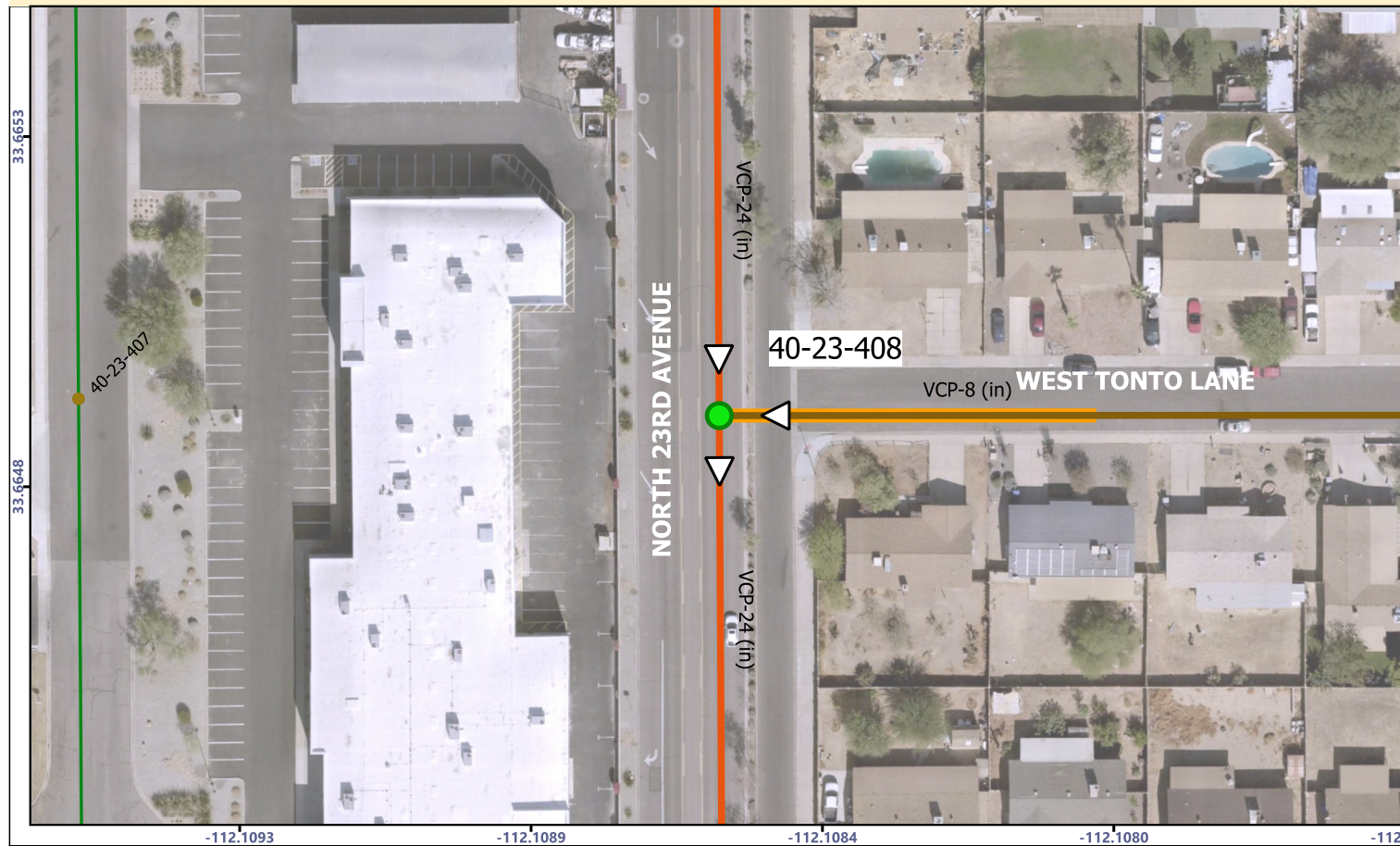
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1243320	LOCATION ID: 40-23-408	CROSS STREET: 23RD AVE & TONTO LN	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 16.9 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 40-23
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE FURNISHED FOR INSPECTION OR COPYING, EXCEPT AS SPECIFICALLY STATED IN THE CITY CODE, OR AS REQUIRED BY LAW"
THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
		REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7					
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	14				
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _		

NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901		SCALE OF MAP: 1:100	MANHOLE: 14 / 50	SHEET NUMBER: 21 OF 63
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MANHOLE 40-23-408
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

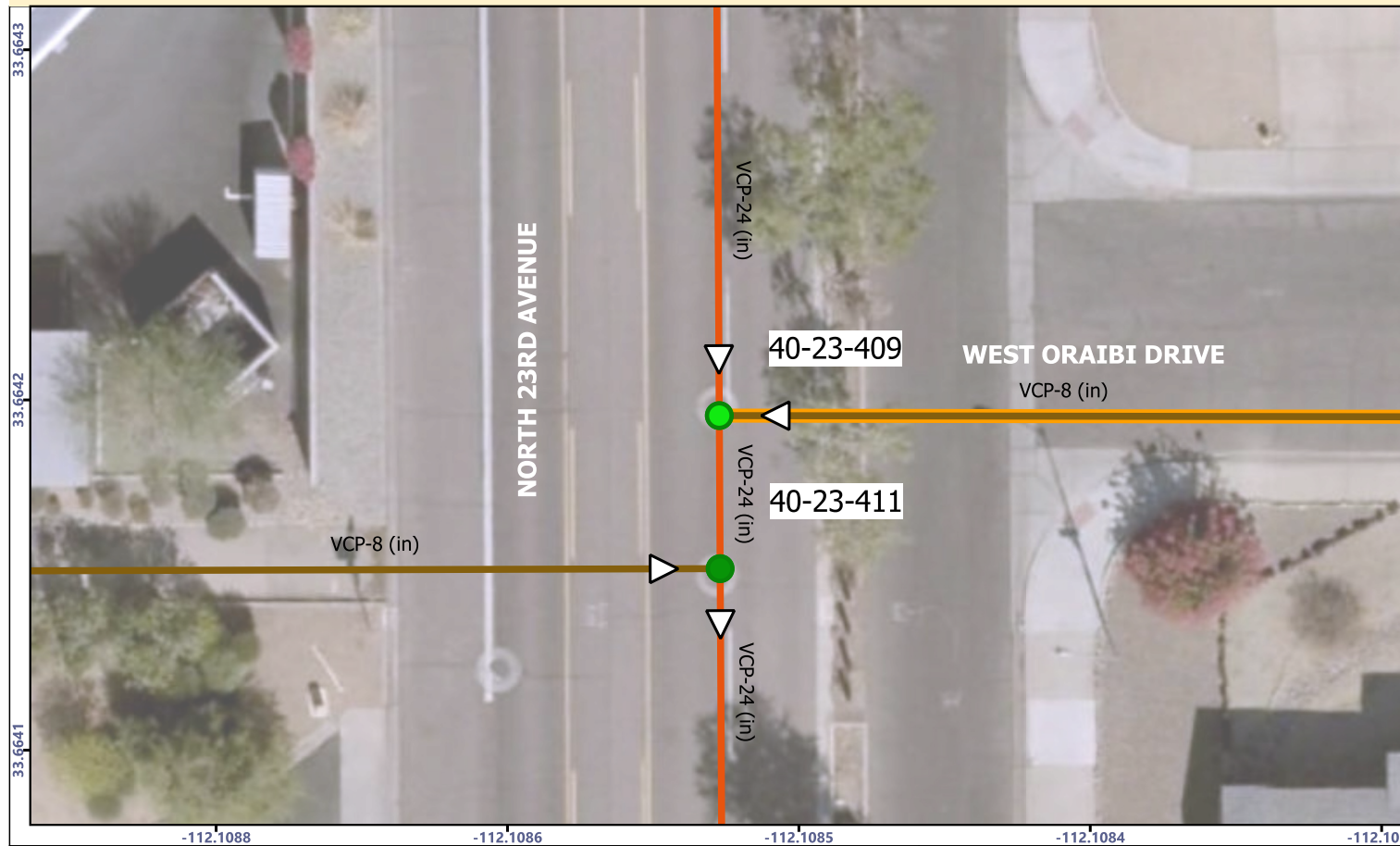
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1194404	LOCATION ID: 40-23-409	CROSS STREET: 23RD AVE & ORAIBI DR	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 16.8 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 40-23
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	13.8			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901	Know what's below. Call before you dig.	SCALE OF MAP: 1:25	MANHOLE: 15 / 50	SHEET NUMBER: 22 OF 63
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MANHOLE 40-23-409
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

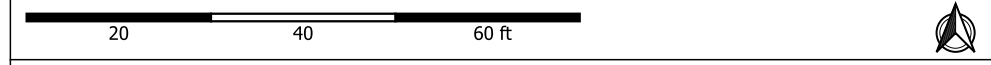
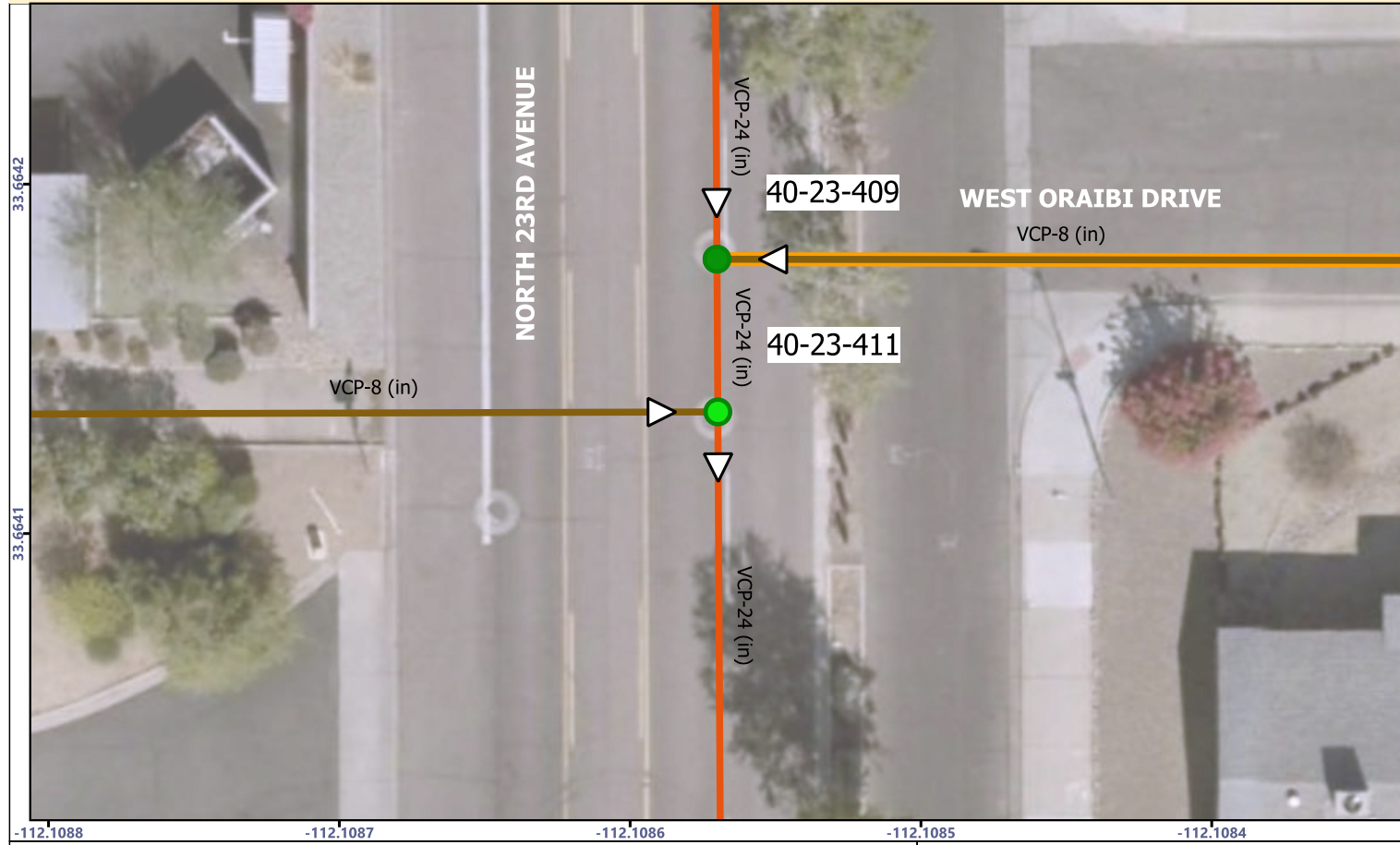
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1239978	LOCATION ID: 40-23-411	CROSS STREET: 23RD AVE & ORAIBI DR	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 16.9 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 40-23
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED CIVIL ENGINEER:
REGISTRATION NUMBER:
DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	218				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
		REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7					
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9					
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _		

NOTES

<p>A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.</p> <p>B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.</p> <p>C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.</p> <p>D. COAT THE CHANNEL IF IT IS CONCRETE.</p> <p>E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.</p> <p>F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.</p> <p>G. USE FLOW THROUGH PLUG IF NECESSARY.</p> <p>H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.</p>		
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<p>PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901</p>	<p>Know what's below. Call before you dig.</p>	SCALE OF MAP: 1:25	MANHOLE: 16 / 50	SHEET NUMBER: 23 OF 63
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MANHOLE 40-23-411
WS90500273
CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1194408	LOCATION ID: 40-23-412	CROSS STREET: 23RD AVE & WICKIEUP LN	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 17.1 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 40-23
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	14.8			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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	PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901		SCALE OF MAP: 1:50	MANHOLE: 17 / 50	SHEET NUMBER: 24 OF 63
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MANHOLE 40-23-412
WS90500273

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

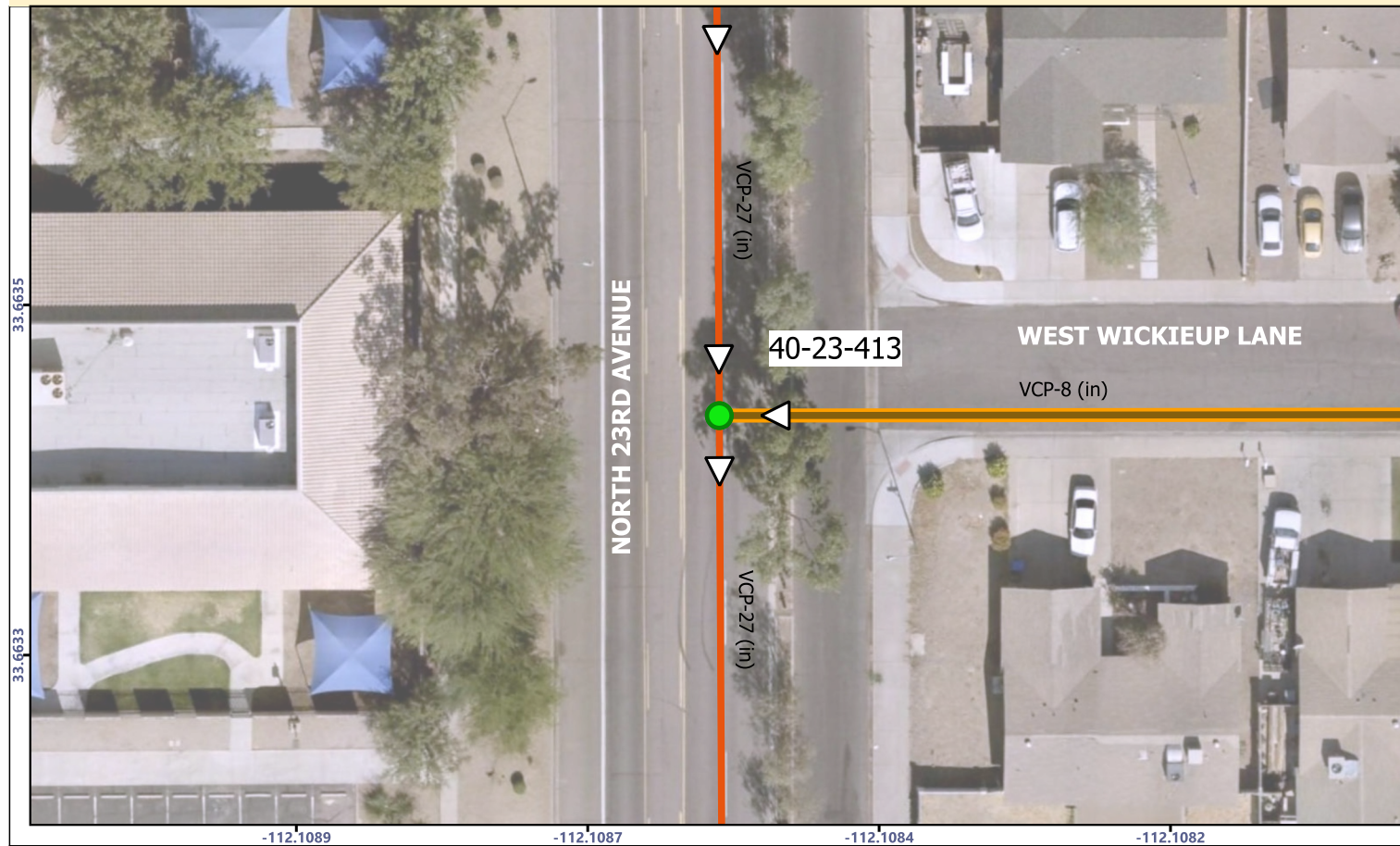
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1239979	LOCATION ID: 40-23-413	CROSS STREET: 23RD AVE & WICKIEUP LN	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 17 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 40-23
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



- LEGEND:**
- MANHOLE TO REPAIR
 - Pipe Connection on Wall
 - Pipe Connection Over Bench
 - Pipe Connection At Channel
 - Drop Pipe Connections
 - Existing Abandoned Sewer Main
 - Not in GIS Pipe Connections
 - City Sewer Main
 - ▷ Flow Direction
 - City Manholes / Not For Repair

ASSESSMENT NOTES:

AS BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED CIVIL ENGINEER:
REGISTRATION NUMBER:
DATE:

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE FURNISHED FOR INSPECTION OR COPYING, EXCEPT AS SPECIFICALLY STATED IN THE CITY CODE, OR AS REQUIRED BY LAW"
THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	14			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

<p>A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.</p> <p>B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.</p> <p>C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.</p> <p>D. COAT THE CHANNEL IF IT IS CONCRETE.</p> <p>E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.</p> <p>F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.</p> <p>G. USE FLOW THROUGH PLUG IF NECESSARY.</p> <p>H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.</p>		
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<p>PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901</p>	<p>Know what's below. Call before you dig.</p>	SCALE OF MAP: 1:50	MANHOLE: 18 / 50	SHEET NUMBER: 25 OF 63
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MANHOLE 40-23-413
WS90500273

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

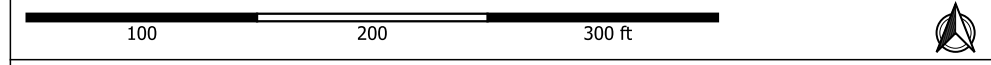
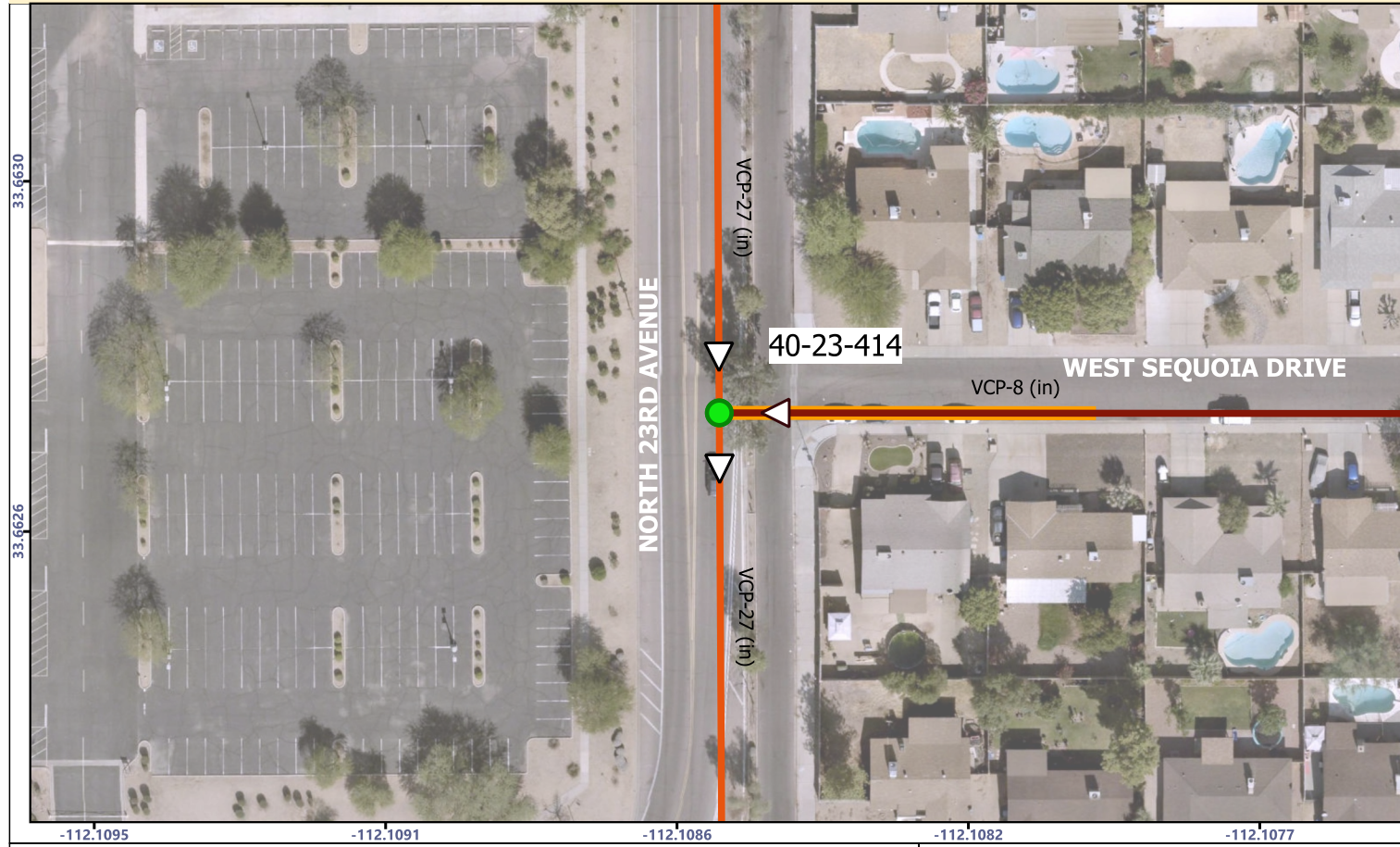
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1194410	LOCATION ID: 40-23-414	CROSS STREET: 23RD AVE & SEQUOIA DR	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 17 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 40-23
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED CIVIL ENGINEER:
REGISTRATION NUMBER:
DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE FURNISHED FOR INSPECTION OR COPYING, EXCEPT AS SPECIFICALLY STATED IN THE CITY CODE, OR AS REQUIRED BY LAW"
THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	13.8			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

<p>A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.</p> <p>B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.</p> <p>C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.</p> <p>D. COAT THE CHANNEL IF IT IS CONCRETE.</p> <p>E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.</p> <p>F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.</p> <p>G. USE FLOW THROUGH PLUG IF NECESSARY.</p> <p>H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.</p>		
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	PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901		SCALE OF MAP: 1:100	MANHOLE: 19 / 50	SHEET NUMBER: 26 OF 63
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MANHOLE 40-23-414
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

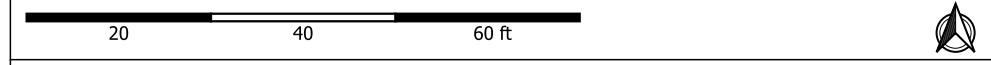
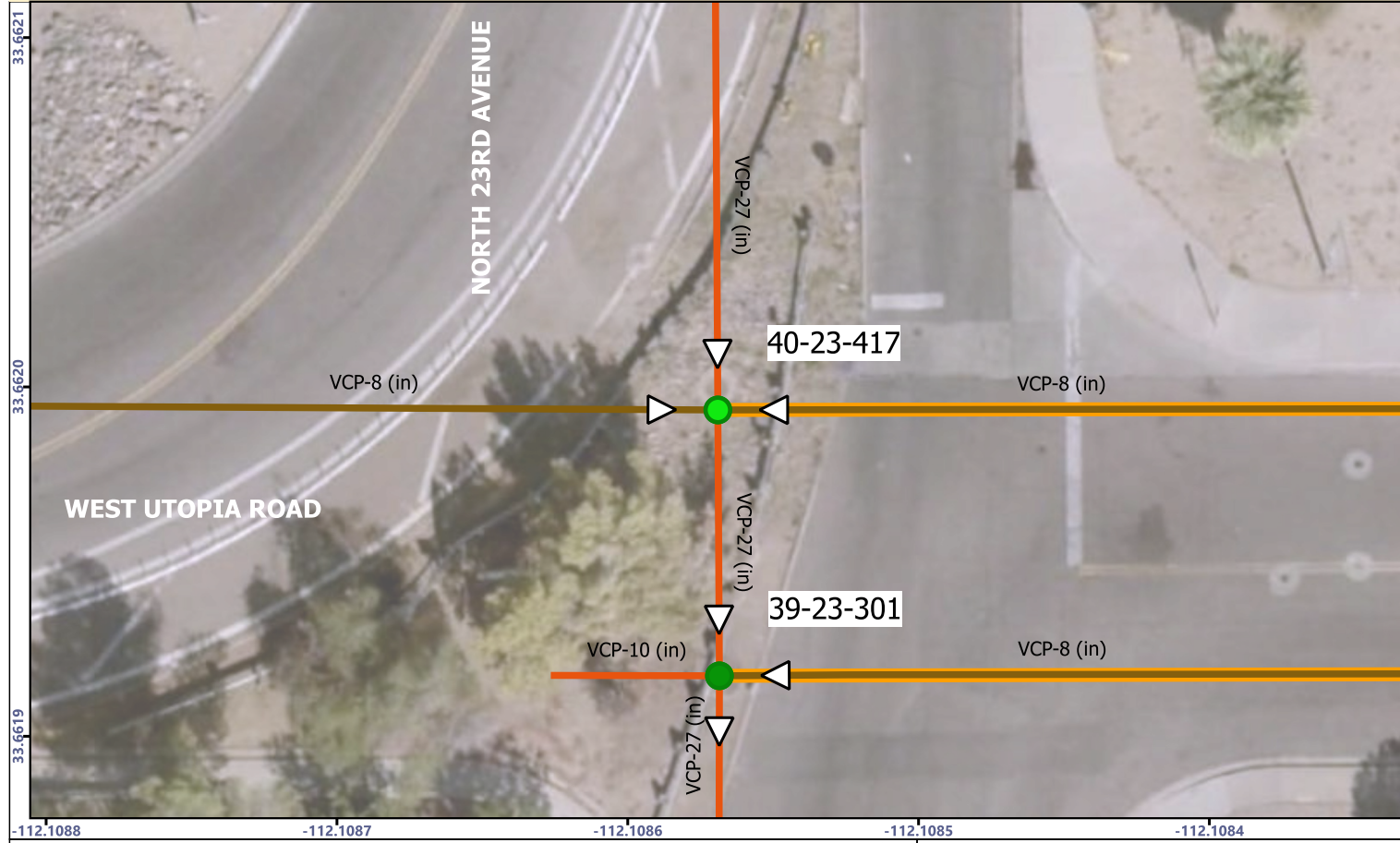
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1259691	LOCATION ID: 40-23-417	CROSS STREET: 23RD AVE & UTOPIA RD	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: EASEMENT/ RIGHT OF WAY
DEPTH RIM TO INVERT: 17.1 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 40-23
COLLAR PRESENT: YES GROUND TYPE: OTHER	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED CIVIL ENGINEER:
REGISTRATION NUMBER:
DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	14.7			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

<p>A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.</p> <p>B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.</p> <p>C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.</p> <p>D. COAT THE CHANNEL IF IT IS CONCRETE.</p> <p>E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.</p> <p>F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.</p> <p>G. USE FLOW THROUGH PLUG IF NECESSARY.</p> <p>H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.</p>		
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<p>PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901</p>	<p>Know what's below. Call before you dig.</p>	SCALE OF MAP: 1:25	MANHOLE: 20 / 50	SHEET NUMBER: 27 OF 63
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MANHOLE 40-23-417
WS90500273
CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

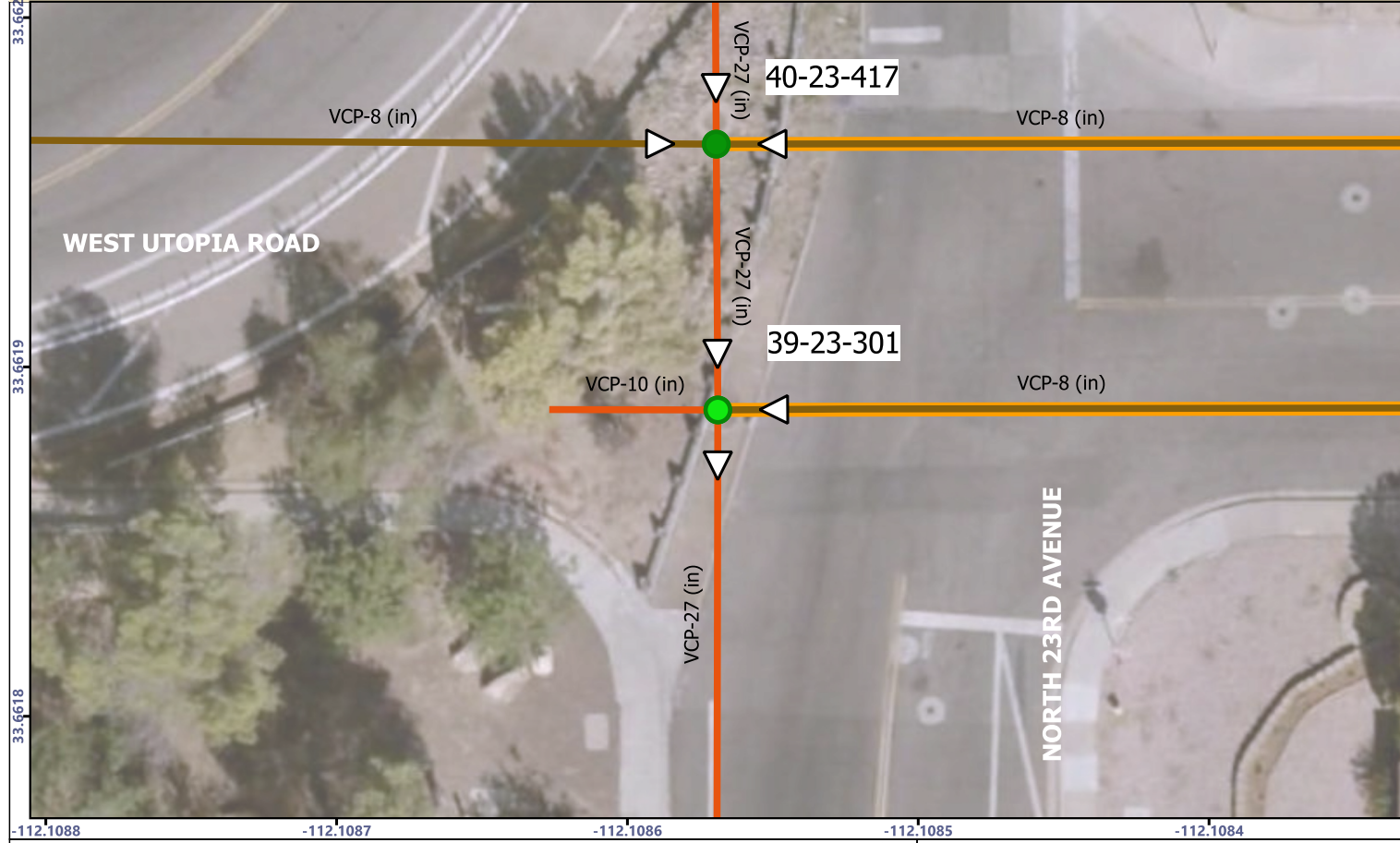
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1259702	LOCATION ID: 39-23-301	CROSS STREET: 23RD AVE & UTOPIA RD	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: EASEMENT/ RIGHT OF WAY
DEPTH RIM TO INVERT: 18.5 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 39-23
COLLAR PRESENT: YES GROUND TYPE: GRASS DIRT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	15.4			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901	Know what's below. Call before you dig.	SCALE OF MAP: 1:25	MANHOLE: 21 / 50	SHEET NUMBER: 28 OF 63
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MANHOLE 39-23-301
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1194875	LOCATION ID: 39-23-304	CROSS STREET: 23RD AVE & KERRY LN	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 17.6 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 39-23
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

ASSESSMENT NOTES:

AS BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED CIVIL ENGINEER:
REGISTRATION NUMBER:
DATE:

- LEGEND:**
- MANHOLE TO REPAIR
 - Pipe Connection on Wall
 - Pipe Connection Over Bench
 - Pipe Connection At Channel
 - Drop Pipe Connections
 - Existing Abandoned Sewer Main
 - Not in GIS Pipe Connections
 - City Sewer Main
 - ▷ Flow Direction
 - City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1				
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	237			
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9				
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES:
SPARK TEST RESULTS:
PULL TEST:

APPROVED BY:
PRINTED NAME: _____
COMPANY: _____

DATE: ____/____/____

NOTES

- A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.
- B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.
- C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.
- D. COAT THE CHANNEL IF IT IS CONCRETE.
- E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.
- F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.
- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.



	PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901		SCALE OF MAP: 1:100	MANHOLE: 22 / 50	SHEET NUMBER: 29 OF 63
	CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3				

MANHOLE 39-23-304
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

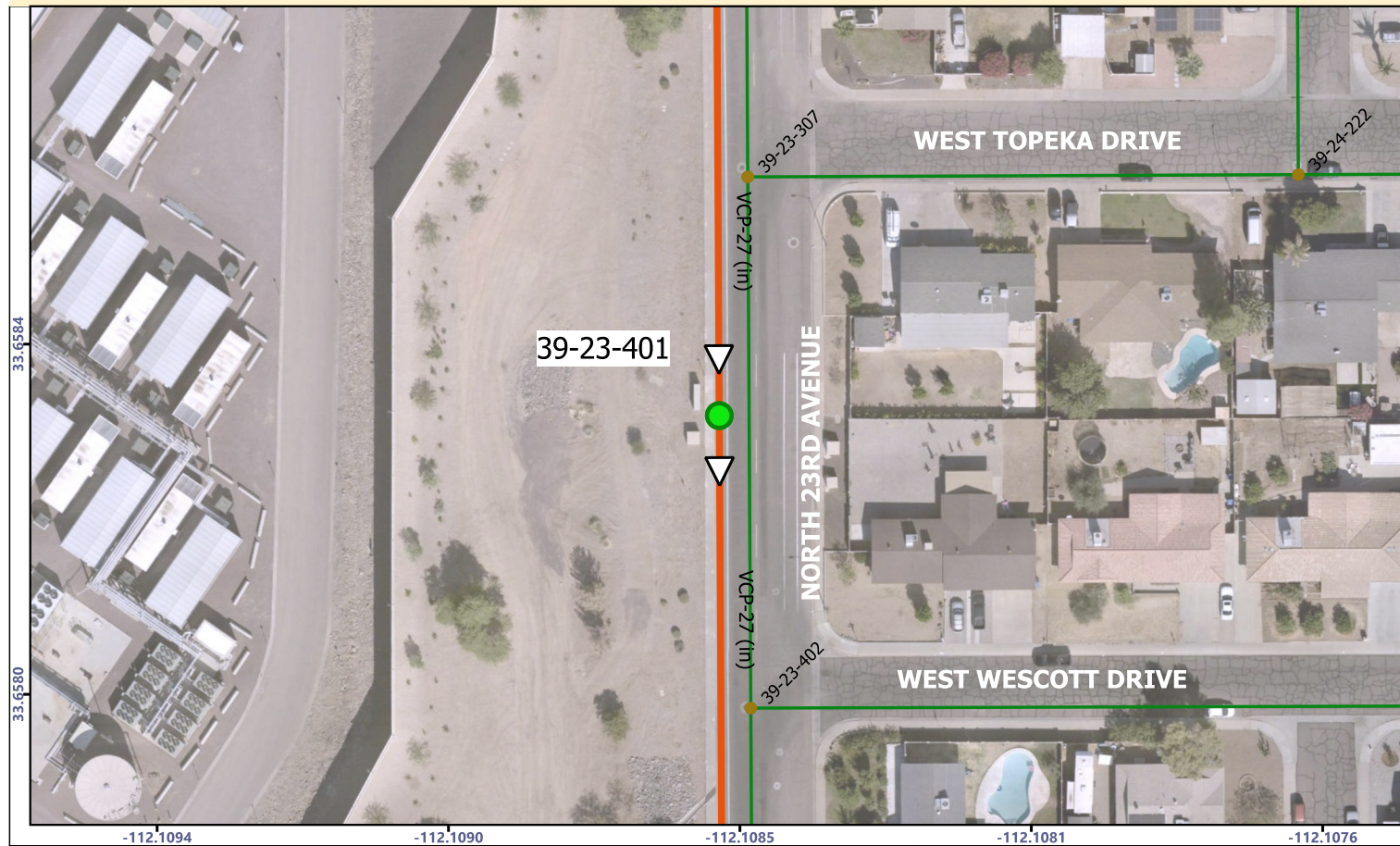
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1194878	LOCATION ID: 39-23-401	CROSS STREET: 23RD AVE & TOPEKA DR	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 26 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 16.2 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 39-23
COLLAR PRESENT: NO GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED CIVIL ENGINEER:
REGISTRATION NUMBER:
DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1				
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	228			
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9				
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

<p>A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.</p> <p>B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.</p> <p>C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.</p> <p>D. COAT THE CHANNEL IF IT IS CONCRETE.</p> <p>E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.</p> <p>F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.</p> <p>G. USE FLOW THROUGH PLUG IF NECESSARY.</p> <p>H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.</p>		
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<p>PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901</p>		SCALE OF MAP: 1:100	MANHOLE: 23 / 50	SHEET NUMBER: 30 OF 63
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MANHOLE 39-23-401
WS90500273

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

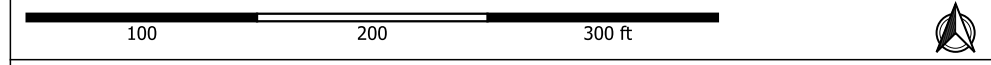
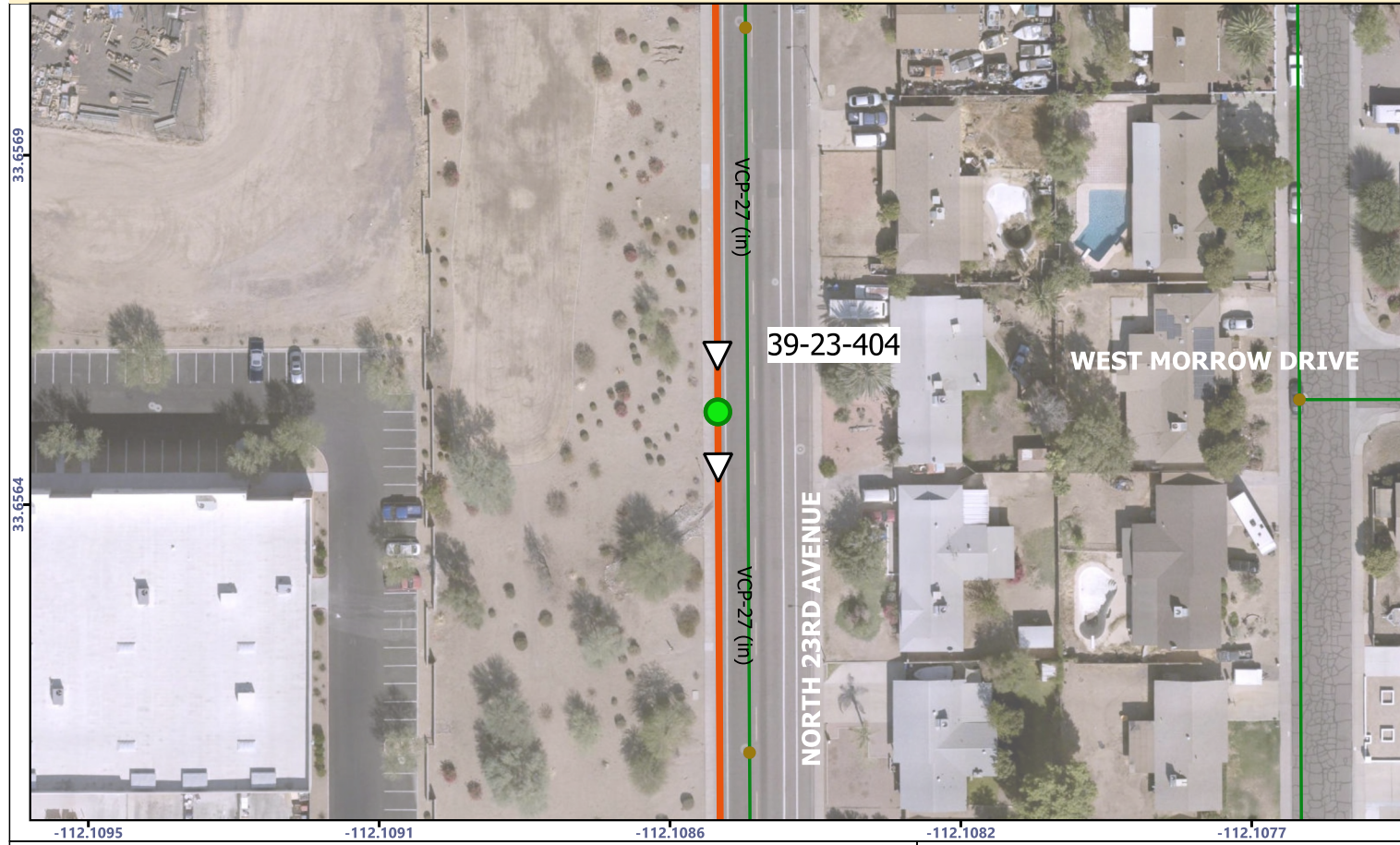
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1229771	LOCATION ID: 39-23-404	CROSS STREET: 23RD AVE & MORROW DR	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 17.3 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 39-23
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED CIVIL ENGINEER:
REGISTRATION NUMBER:
DATE:

- LEGEND:**
- MANHOLE TO REPAIR
 - Pipe Connection on Wall
 - Pipe Connection Over Bench
 - Pipe Connection At Channel
 - Drop Pipe Connections
 - Existing Abandoned Sewer Main
 - Not in GIS Pipe Connections
 - City Sewer Main
 - ▷ Flow Direction
 - City Manholes / Not For Repair

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THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	14.7			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES:
SPARK TEST RESULTS:
PULL TEST:

APPROVED BY:
PRINTED NAME: _____
COMPANY: _____

DATE: ____/____/____

NOTES

- A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.
- B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.
- C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.
- D. COAT THE CHANNEL IF IT IS CONCRETE.
- E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.
- F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.
- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.

	PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901		SCALE OF MAP: 1:100	MANHOLE: 24 / 50	SHEET NUMBER: 31 OF 63
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MANHOLE 39-23-404
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

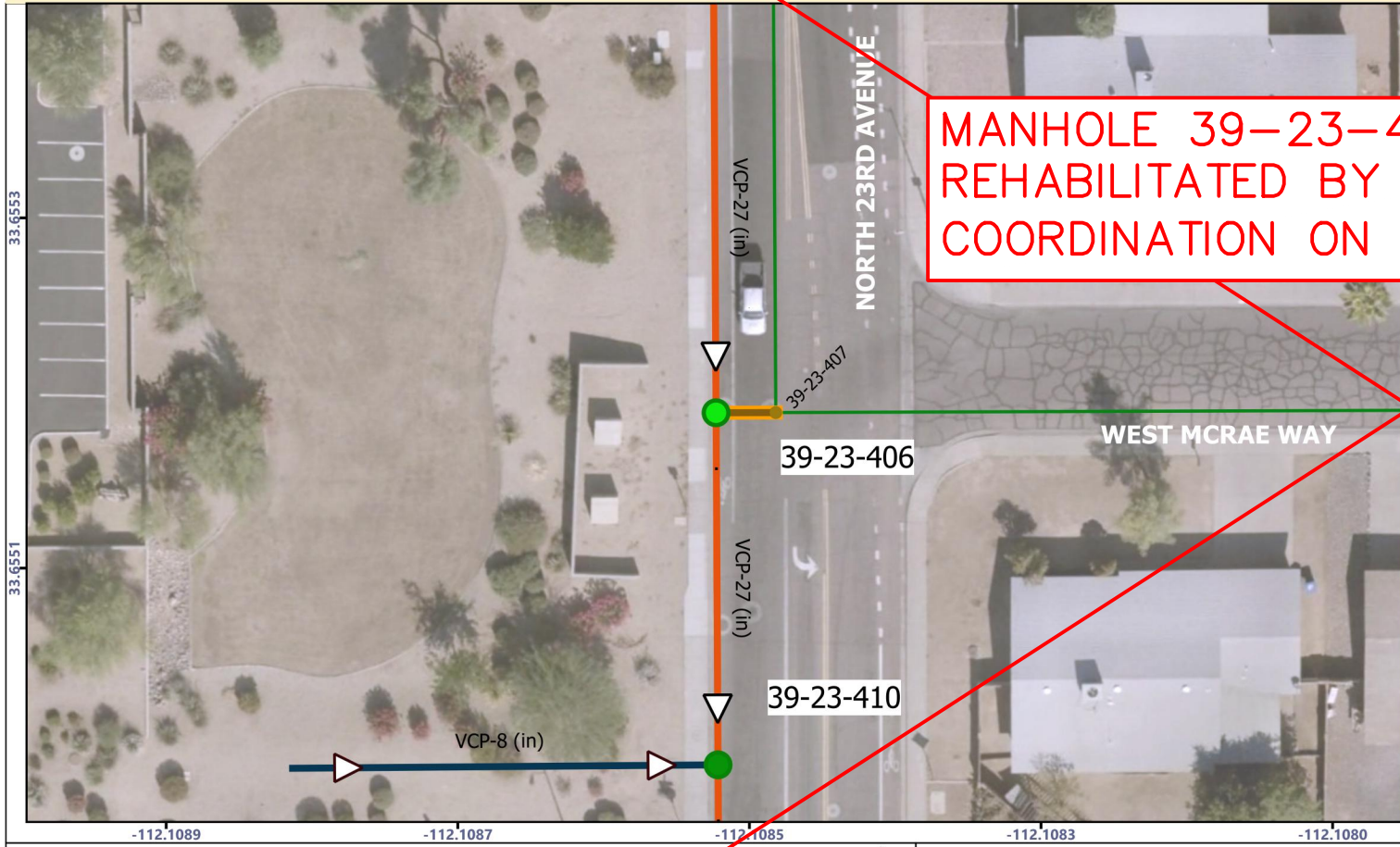
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1247789	LOCATION ID: 39-23-406	CROSS STREET: 23RD AVE & MCRAE WAY	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 18.3 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 39-23
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
DETAIL: ALL	PVC LINER	REPAIR & COAT MATCHING	SF	6				
		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	15.5			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES:
SPARK TEST RESULTS:
PULL TEST:

APPROVED BY:
PRINTED NAME: _____
COMPANY: _____

DATE: ____/____/____

NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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	PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901		SCALE OF MAP: 1:50	MANHOLE: 25 / 50	SHEET NUMBER: 32 OF 63
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MANHOLE 39-23-406
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

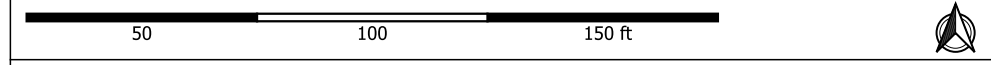
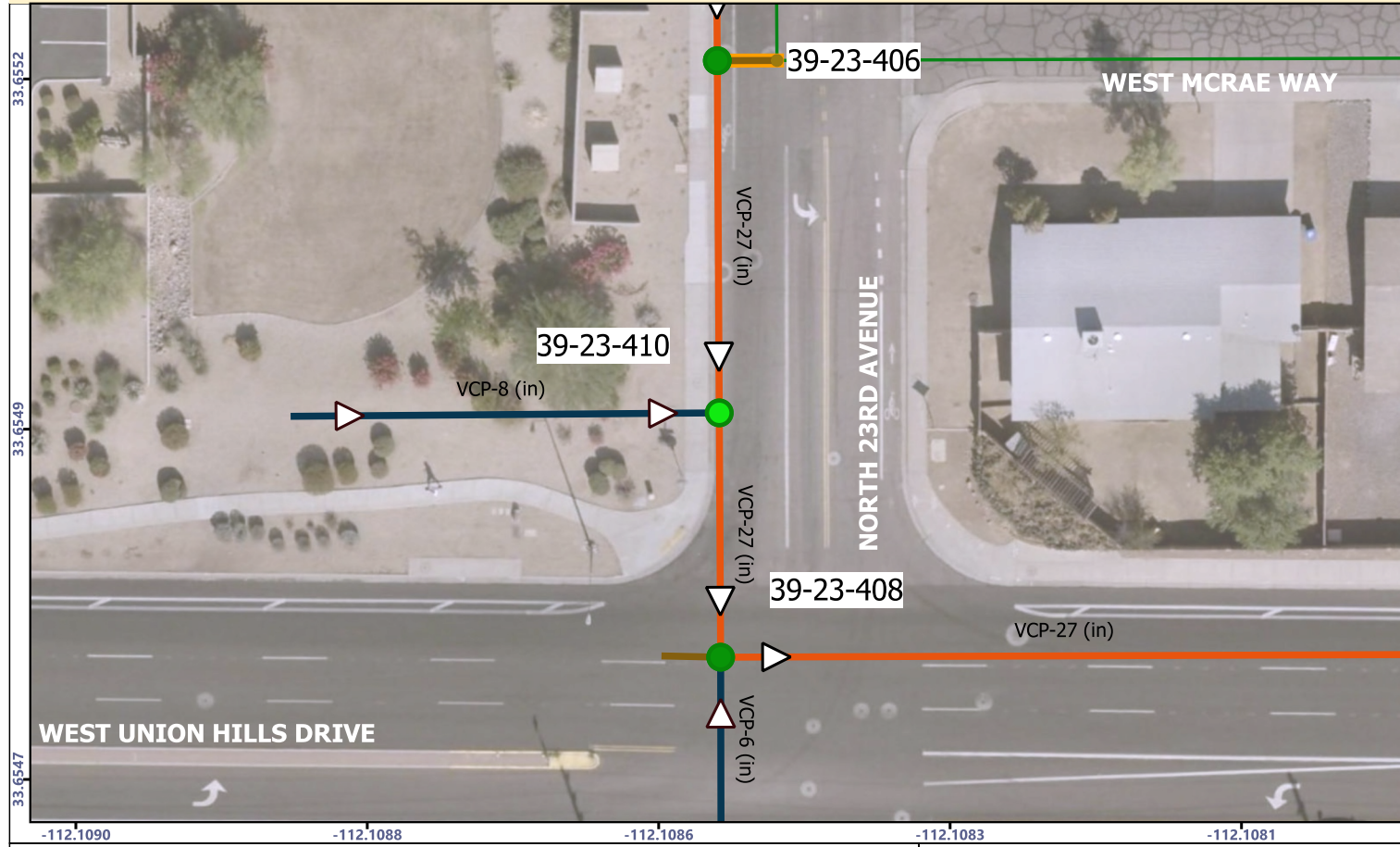
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID :	LOCATION ID: 39-23-410	CROSS STREET: 23RD AVE & UNION HILLS DR	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 18.6 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: EPOXY	QUARTER SECTION: 39-23
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION
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REGISTERED CIVIL ENGINEER:
REGISTRATION NUMBER:
DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
		REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7					
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9					
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _		

NOTES

<p>A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.</p>		
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	<p>PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901</p>		SCALE OF MAP: 1:50	MANHOLE: 26 / 50	SHEET NUMBER: 33 OF 63
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MANHOLE 39-23-410
WS90500273
CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

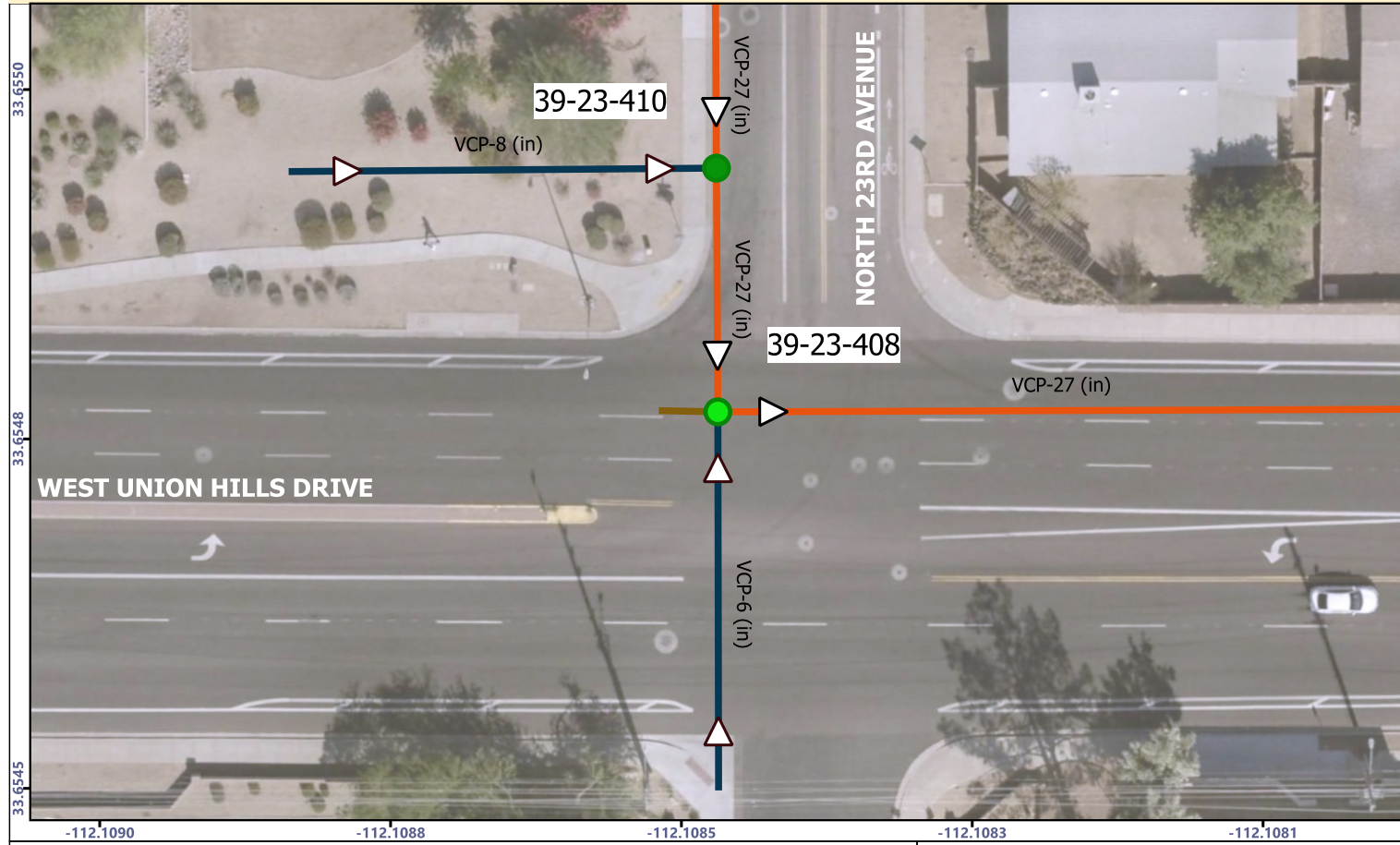
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1194883	LOCATION ID: 39-23-408	CROSS STREET: UNION HILLS DR & 23RD AVE	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 18.2 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 39-23
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1			
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	14.9			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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	PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901		SCALE OF MAP: 1:50	MANHOLE: 27 / 50	SHEET NUMBER: 34 OF 63
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MANHOLE 39-23-408
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1229509	LOCATION ID: 39-24-126	CROSS STREET: 21ST AVE & UNION HILLS DR	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 26.3 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 39-24
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1			
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	21.7			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901	Know what's below. Call before you dig.	SCALE OF MAP: 1:100	MANHOLE: 28 / 50	SHEET NUMBER: 35 OF 63
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MANHOLE 39-24-126
WS90500273

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

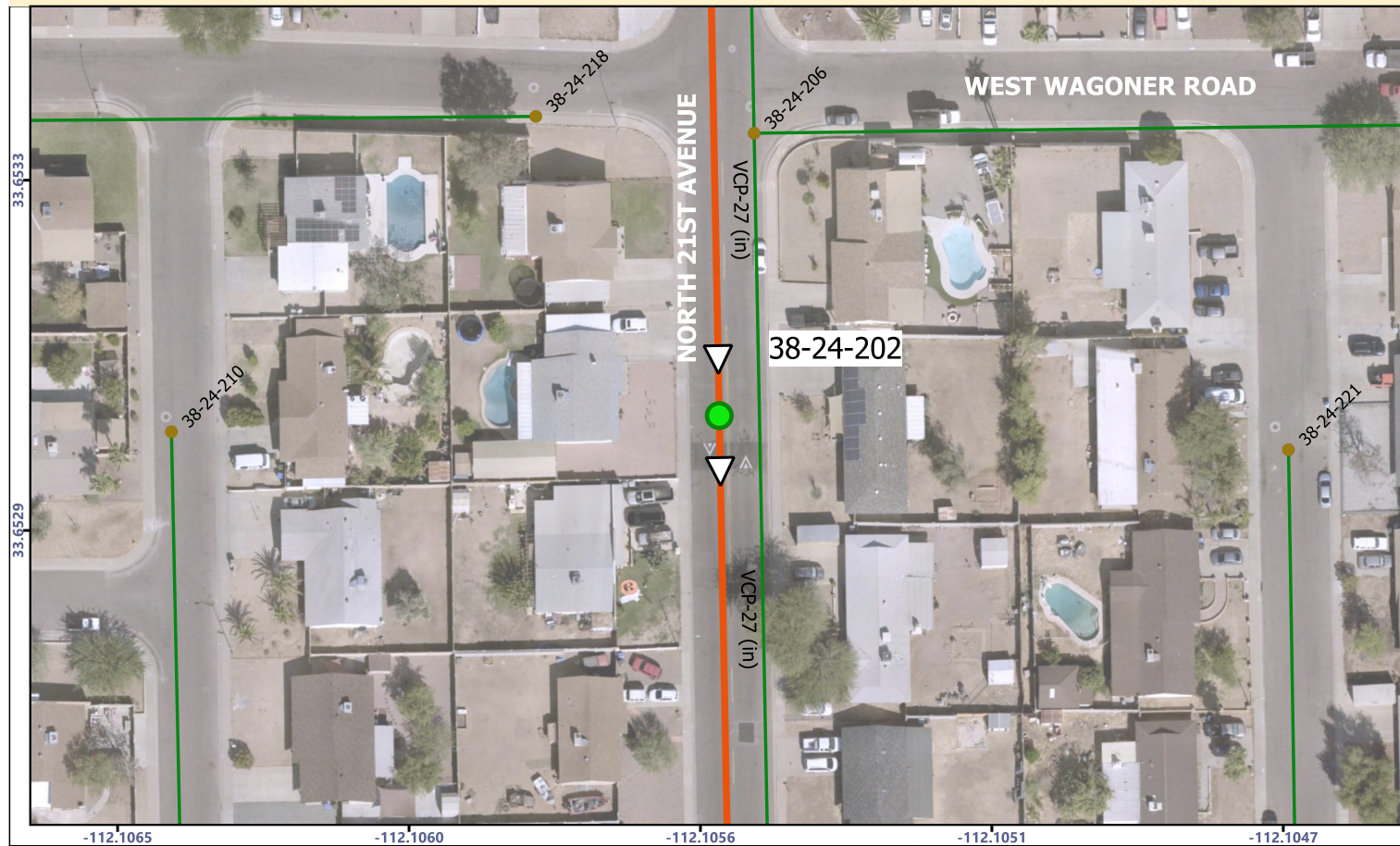
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1255988	LOCATION ID: 38-24-202	CROSS STREET: 21ST AVE & WAGONER RD	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 25.3 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 38-24
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1				
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	353			
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9				
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901	Know what's below. Call before you dig.	SCALE OF MAP: 1:100	MANHOLE: 29 / 50	SHEET NUMBER: 36 OF 63
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MANHOLE 38-24-202
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

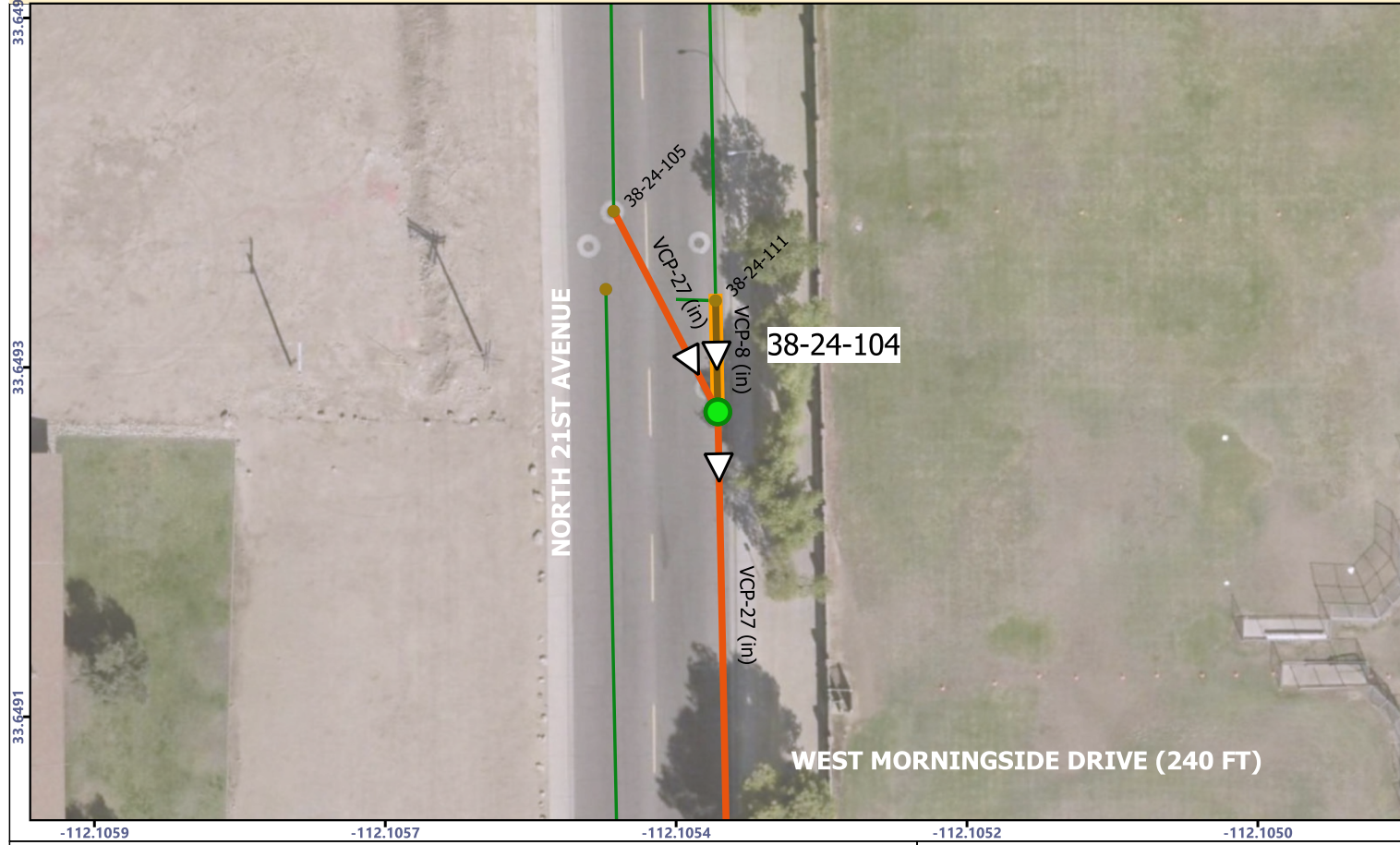
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1229710	LOCATION ID: 38-24-104	CROSS STREET: 21ST AVE & MORNINGSIDE DR	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 25.2 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 38-24
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE FURNISHED FOR INSPECTION OR COPYING, EXCEPT AS SPECIFICALLY STATED IN THE CITY CODE, OR AS REQUIRED BY LAW"
THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1			
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
		JOINT REPAIR	EA	7				
SHEET: D-4 DETAIL: 1 & 3	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	21.3			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _	

NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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	PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901		SCALE OF MAP: 1:50	MANHOLE: 30 / 50	SHEET NUMBER: 37 OF 63
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MANHOLE 38-24-104
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

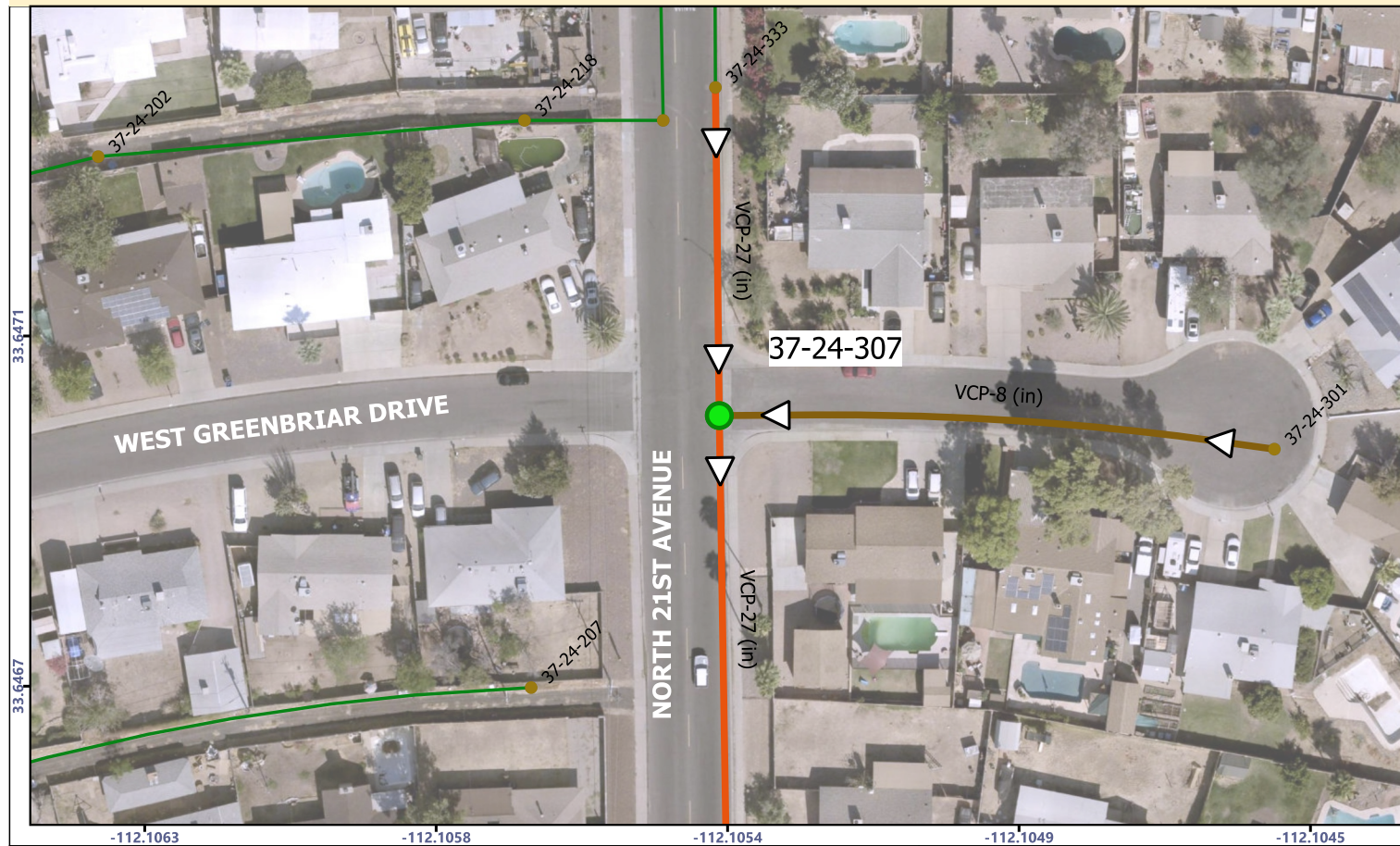
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1225669	LOCATION ID: 37-24-307	CROSS STREET: GREENBRIAR DR & 21ST AVE	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 22.5 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 37-24
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED CIVIL ENGINEER:
REGISTRATION NUMBER:
DATE:

- LEGEND:**
- MANHOLE TO REPAIR
 - Pipe Connection on Wall
 - Pipe Connection Over Bench
 - Pipe Connection At Channel
 - Drop Pipe Connections
 - Existing Abandoned Sewer Main
 - Not in GIS Pipe Connections
 - City Sewer Main
 - ▷ Flow Direction
 - City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
		REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7					
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	19.8				
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _		

NOTES

- A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.
- B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.
- C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.
- D. COAT THE CHANNEL IF IT IS CONCRETE.
- E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.
- F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.
- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.



<p>PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901</p>	<p>Know what's below. Call before you dig.</p>	SCALE OF MAP: 1:100	MANHOLE: 31 / 50	SHEET NUMBER: 38 OF 63
		<p>DATE: _____</p>		

MANHOLE 37-24-307
WS90500273

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

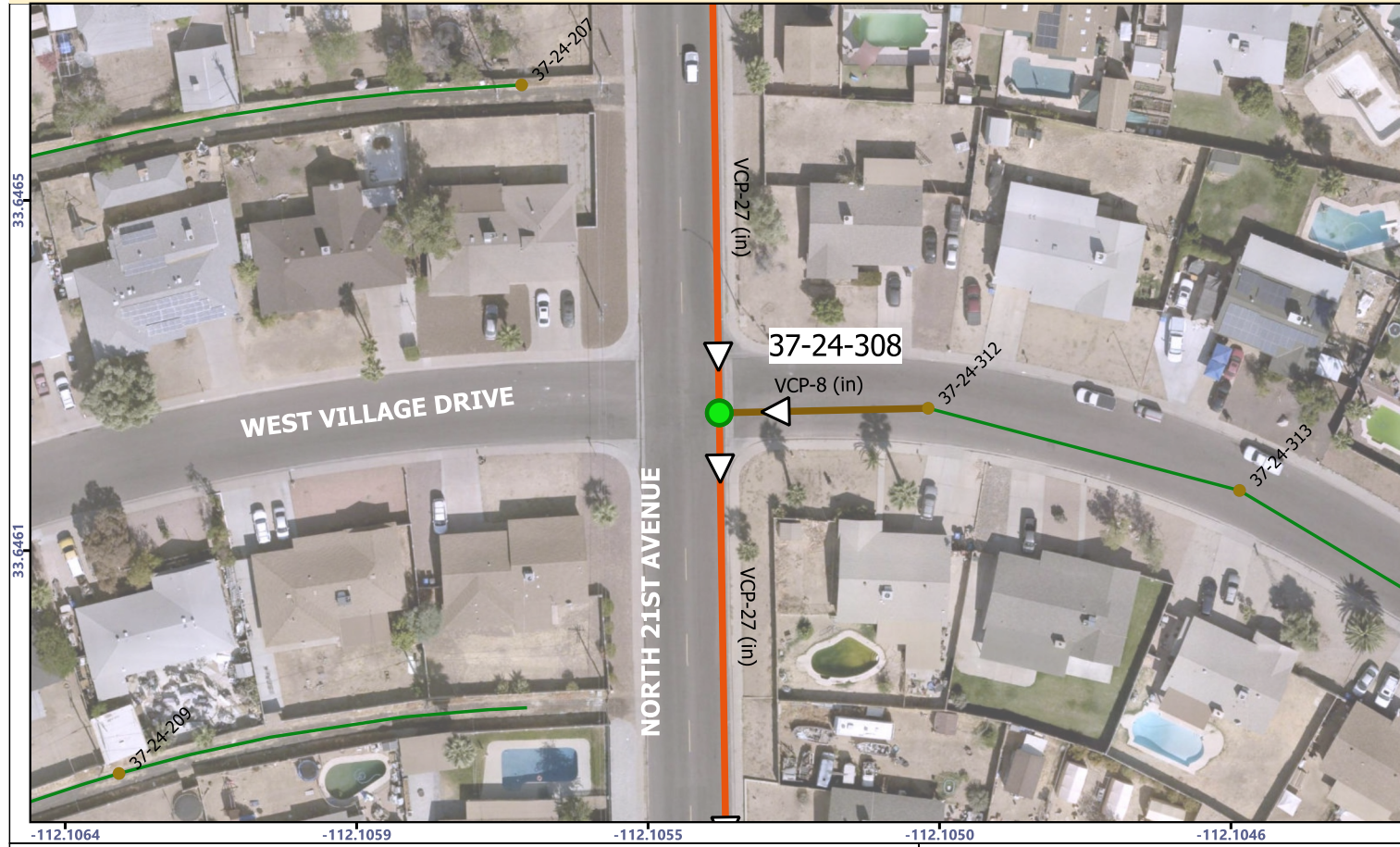
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1225678	LOCATION ID: 37-24-308	CROSS STREET: VILLAGE DR & 21ST AVE	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 22.1 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 37-24
COLLAR PRESENT: NO GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

ASSESSMENT NOTES:

AS BUILT CERTIFICATION

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REGISTERED CIVIL ENGINEER:
REGISTRATION NUMBER:
DATE:

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
		REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7					
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	19.4				
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _		

NOTES

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	<p>PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901</p>		SCALE OF MAP: 1:100	MANHOLE: 32 / 50	SHEET NUMBER: 39 OF 63
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MANHOLE 37-24-308
WS90500273
CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

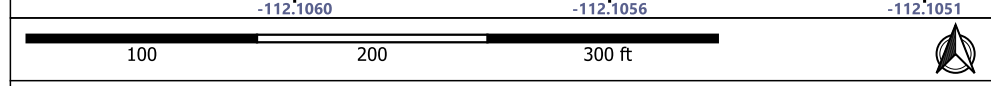
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1254364	LOCATION ID: 37-24-322	CROSS STREET: MEADOW DR & 21ST AVE	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 21.4 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 37-24
COLLAR PRESENT: NO GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

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REGISTERED CIVIL ENGINEER:
REGISTRATION NUMBER:
DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
		REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					
		JOINT REPAIR	EA	7					
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	18.8				
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _		

NOTES

<p>A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.</p> <p>B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.</p> <p>C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.</p> <p>D. COAT THE CHANNEL IF IT IS CONCRETE.</p> <p>E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.</p> <p>F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.</p> <p>G. USE FLOW THROUGH PLUG IF NECESSARY.</p> <p>H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.</p>		
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<p>PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901</p>	<p>Know what's below. Call before you dig.</p>	SCALE OF MAP: 1:100	MANHOLE: 33 / 50	SHEET NUMBER: 40 OF 63
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MANHOLE 37-24-322
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1247679	LOCATION ID: 37-24-118	CROSS STREET: 21ST AVE & DANBURY RD	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 19.9 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: EPOXY	QUARTER SECTION: 37-24
COLLAR PRESENT: NO GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION

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REGISTERED CIVIL ENGINEER:
REGISTRATION NUMBER:
DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
		REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7					
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	16.3				
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _		

NOTES

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MANHOLE 37-24-118
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

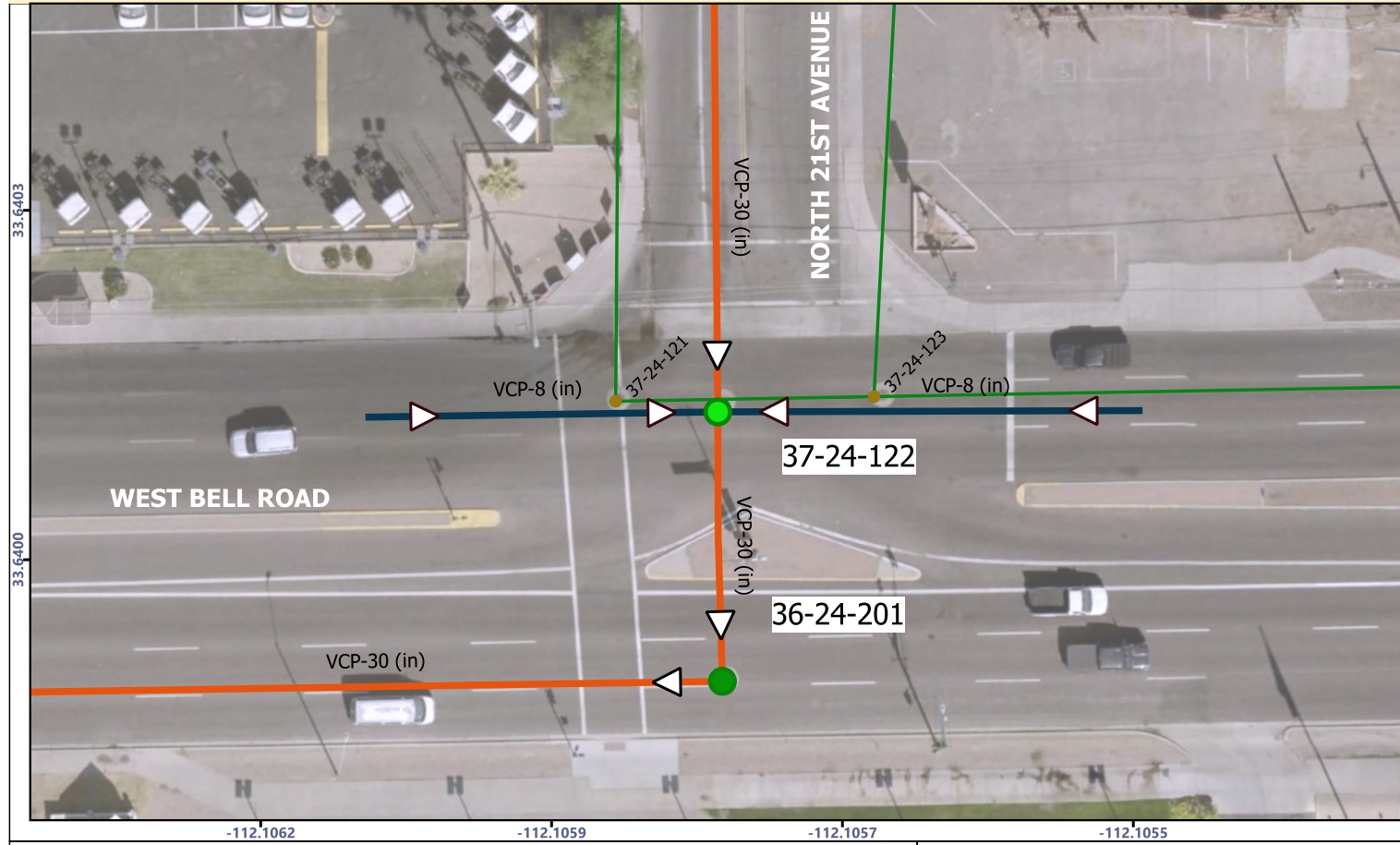
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1247681	LOCATION ID: 37-24-122	CROSS STREET: 21ST AVE & BELL RD	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 19.1 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 37-24
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

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	REGISTRATION NUMBER:
	DATE:

LEGEND:

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- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	13.8			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901	Know what's below. Call before you dig.	SCALE OF MAP: 1:50	MANHOLE: 35 / 50	SHEET NUMBER: 42 OF 63
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MANHOLE 37-24-122
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

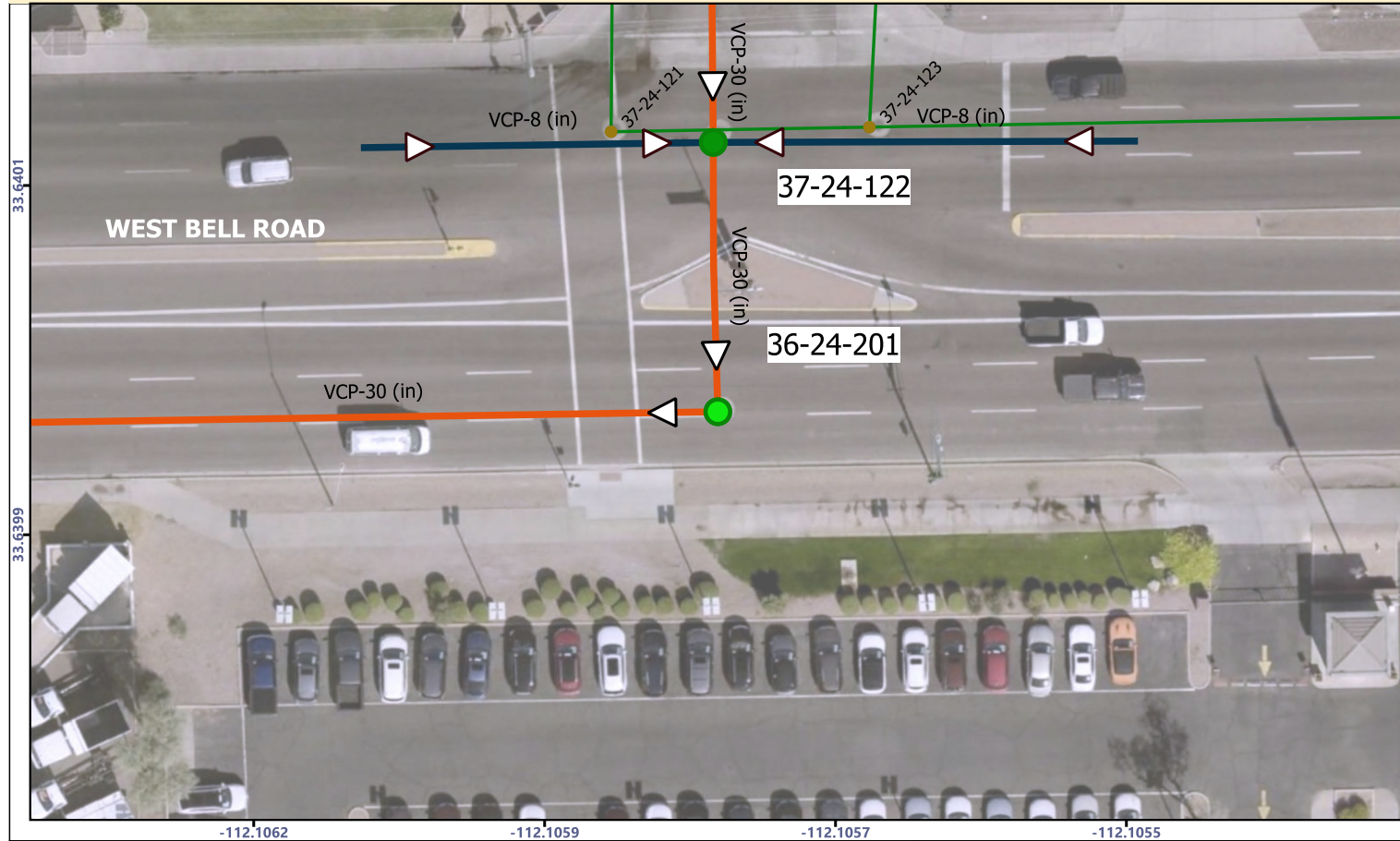
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1246704	LOCATION ID: 36-24-201	CROSS STREET: BELL RD & 21ST AVE	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 18.8 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 36-24
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:	
AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER: REGISTRATION NUMBER: DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE FURNISHED FOR INSPECTION OR COPYING, EXCEPT AS SPECIFICALLY STATED IN THE CITY CODE, OR AS REQUIRED BY LAW"
THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1			
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	15.5			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

<p>A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.</p>		
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	PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901		SCALE OF MAP: 1:50	MANHOLE: 36 / 50	SHEET NUMBER: 43 OF 63
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MANHOLE 36-24-201
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1247831	LOCATION ID: 36-24-203	CROSS STREET: 23RD AVE & BELL RD	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 18.9 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 36-24
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER: REGISTRATION NUMBER: DATE:
---	---

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1			
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	15.6			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _	

NOTES

<p>A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.</p>		
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<p>PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901</p>	<p>Know what's below. Call before you dig.</p>	SCALE OF MAP: 1:100	MANHOLE: 37 / 50	SHEET NUMBER: 44 OF 63
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MANHOLE 36-24-203
WS90500273

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1225219	LOCATION ID: 36-24-205	CROSS STREET: 23RD AVE & PHELPS RD	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 17.2 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 36-24
COLLAR PRESENT: NO GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	14.2			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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	PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901		SCALE OF MAP: 1:100	MANHOLE: 38 / 50	SHEET NUMBER: 45 OF 63
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MANHOLE 36-24-205
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

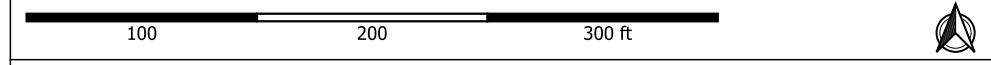
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1225221	LOCATION ID: 36-24-204	CROSS STREET: 23RD AVE & PHELPS RD	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: SECONDARY ROAD
DEPTH RIM TO INVERT: 17.2 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 36-24
COLLAR PRESENT: NO GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED CIVIL ENGINEER:
REGISTRATION NUMBER:
DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	14			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

<p>A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.</p>		
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<p>PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901</p>		SCALE OF MAP: 1:100	MANHOLE: 39 / 50	SHEET NUMBER: 46 OF 63
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MANHOLE 36-24-204
WS90500273
CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

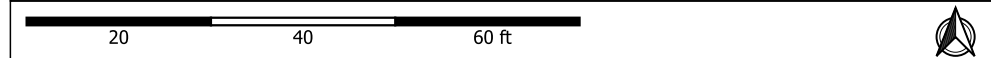
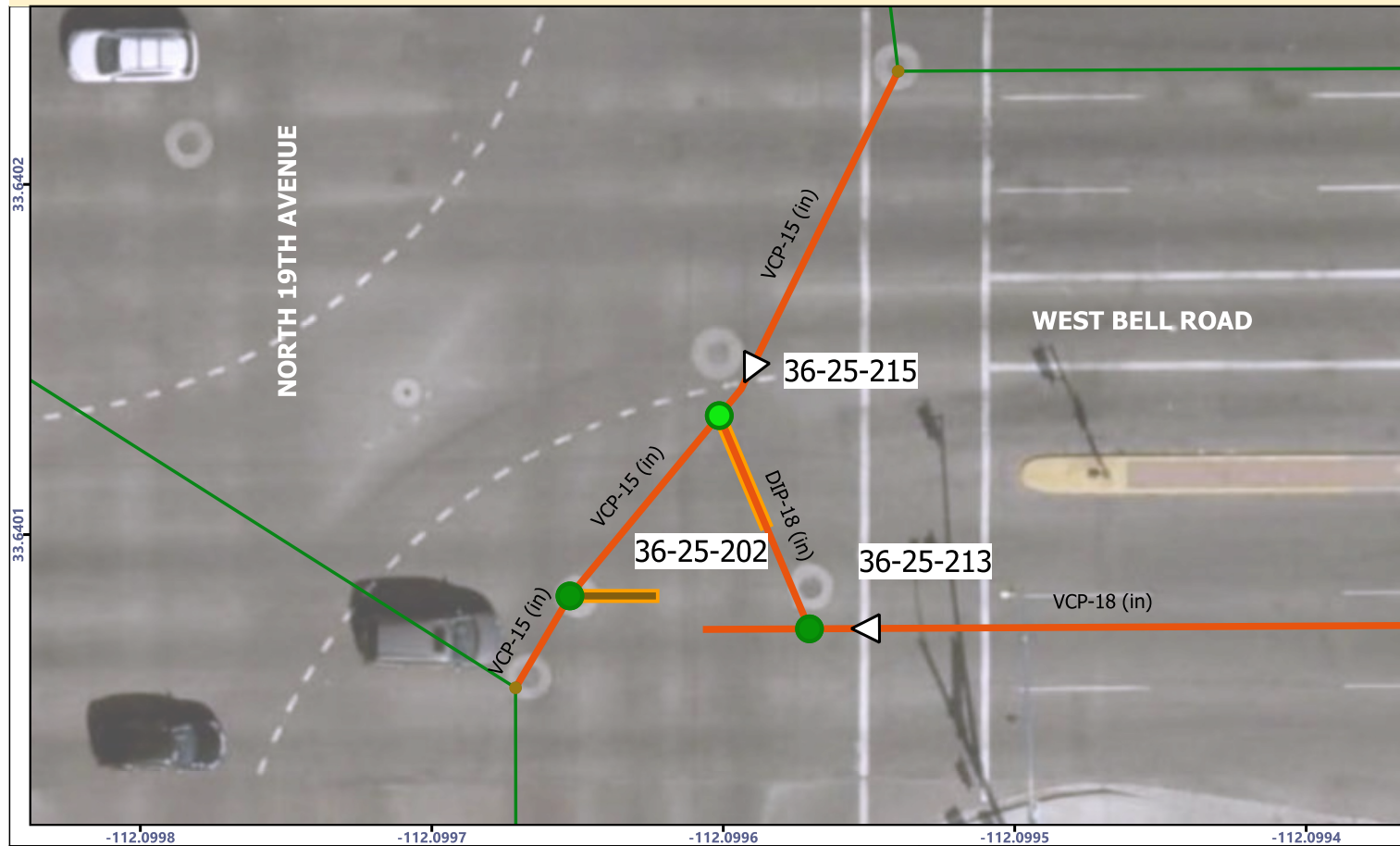
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1225242	LOCATION ID: 36-25-215	CROSS STREET: BELL RD & 19TH AVE	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 26.7 (FT)	BARREL DIAMETER: 53 (IN)	CORROSION PROTECTION: EPOXY	QUARTER SECTION: 36-25
COLLAR PRESENT: YES GROUND TYPE: OTHER	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:
53 (IN) COATED MANHOLE, REDUCED DIAMETER

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3	1			
		REPAIR & COAT 60 IN DIAMETER	EA	4				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1			
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8	24.8			
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9				
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES:
SPARK TEST RESULTS:
PULL TEST:

APPROVED BY:
PRINTED NAME: _____
COMPANY: _____

DATE: ____/____/____

NOTES

- A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.
- B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.
- C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.
- D. COAT THE CHANNEL IF IT IS CONCRETE.
- E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.
- F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.
- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.

 PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901	 Know what's below. Call before you dig.	SCALE OF MAP: 1:25	MANHOLE: 40 / 50	SHEET NUMBER: 47 OF 63
		 		

MANHOLE 36-25-215
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

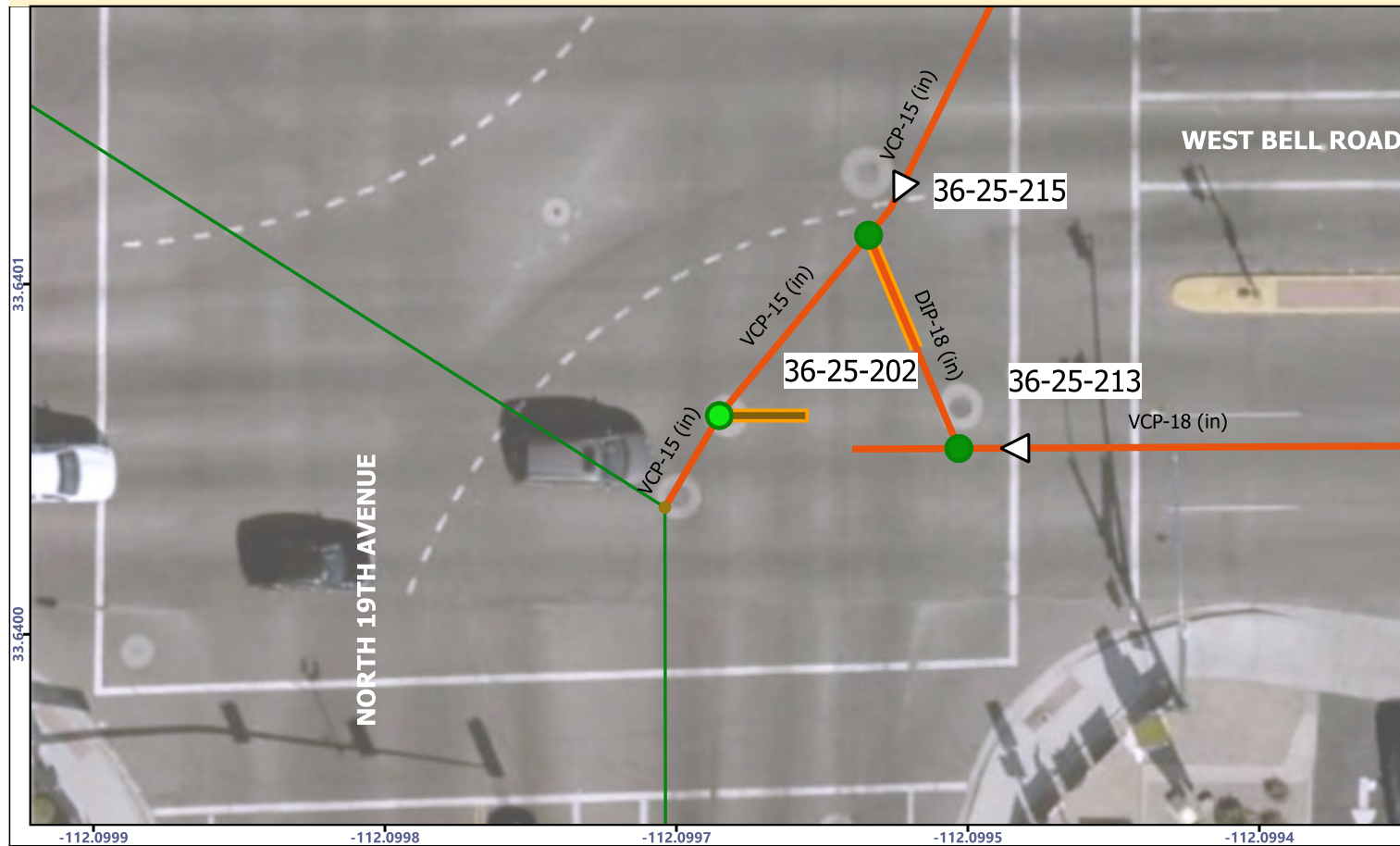
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1250842	LOCATION ID: 36-25-202	CROSS STREET: 19TH AVE & BELL RD	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 26 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 27.7 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 36-25
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
		JOINT REPAIR	EA	7				
SHEET: D-4 DETAIL: 1 & 3	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	25			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _	

NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901		SCALE OF MAP: 1:25	MANHOLE: 41 / 50	SHEET NUMBER: 48 OF 63
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MANHOLE 36-25-202
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

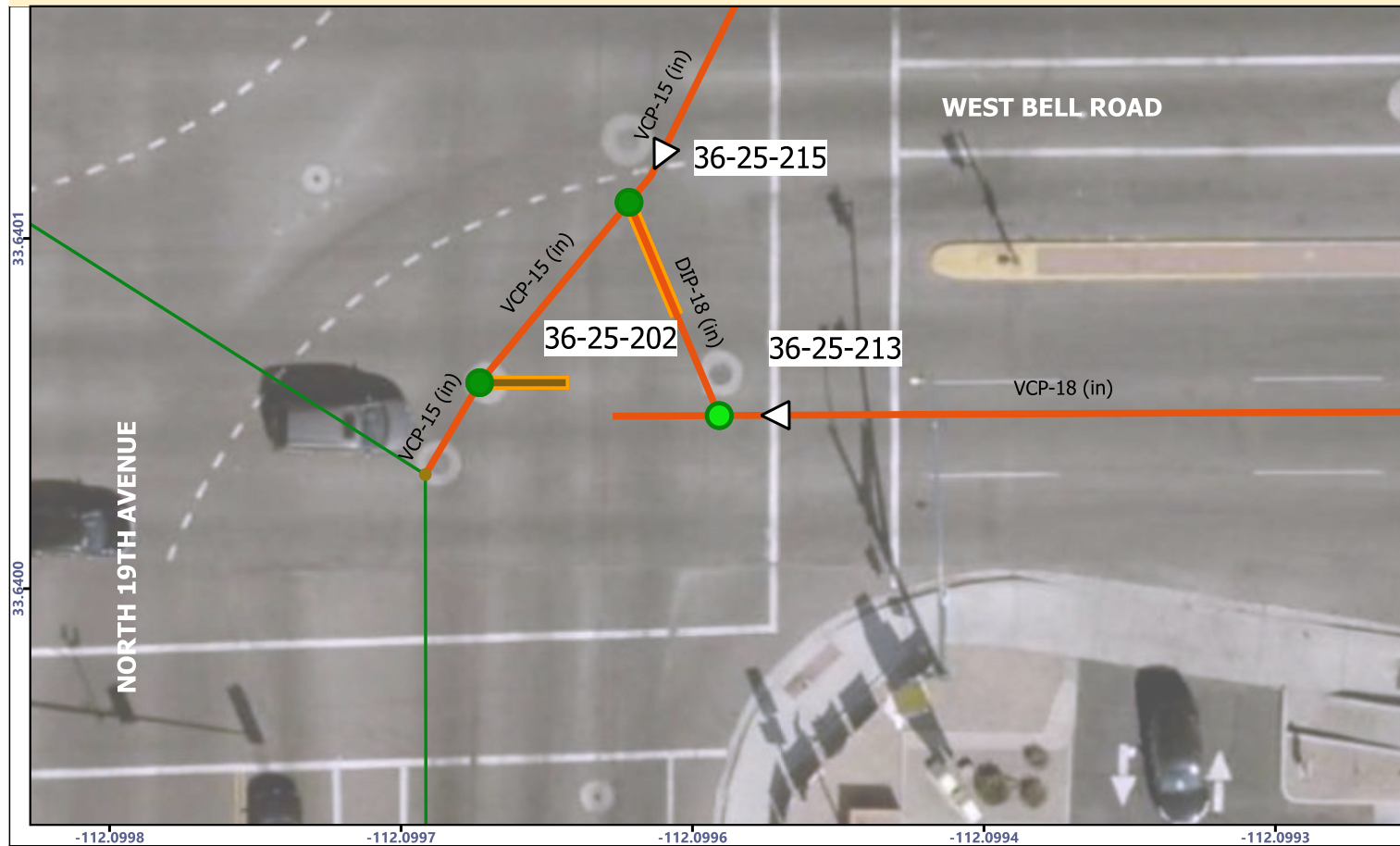
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1225247	LOCATION ID: 36-25-213	CROSS STREET: BELL RD & 19TH AVE	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 20.4 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 36-25
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE FURNISHED FOR INSPECTION OR COPYING, EXCEPT AS SPECIFICALLY STATED IN THE CITY CODE, OR AS REQUIRED BY LAW"
THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1			
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	17.9			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901	Know what's below. Call before you dig.	SCALE OF MAP: 1:25	MANHOLE: 42 / 50	SHEET NUMBER: 49 OF 63
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MANHOLE 36-25-213
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1246707	LOCATION ID: 36-25-214	CROSS STREET: 19TH AVE & TURF PARADISE RD	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 26.3 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 36-25
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE FURNISHED FOR INSPECTION OR COPYING, EXCEPT AS SPECIFICALLY STATED IN THE CITY CODE, OR AS REQUIRED BY LAW"
THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1				
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	382			
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9				
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _	

NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901	Know what's below. Call before you dig.	SCALE OF MAP: 1:100	MANHOLE: 43 / 50	SHEET NUMBER: 50 OF 63
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MANHOLE 36-25-214
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

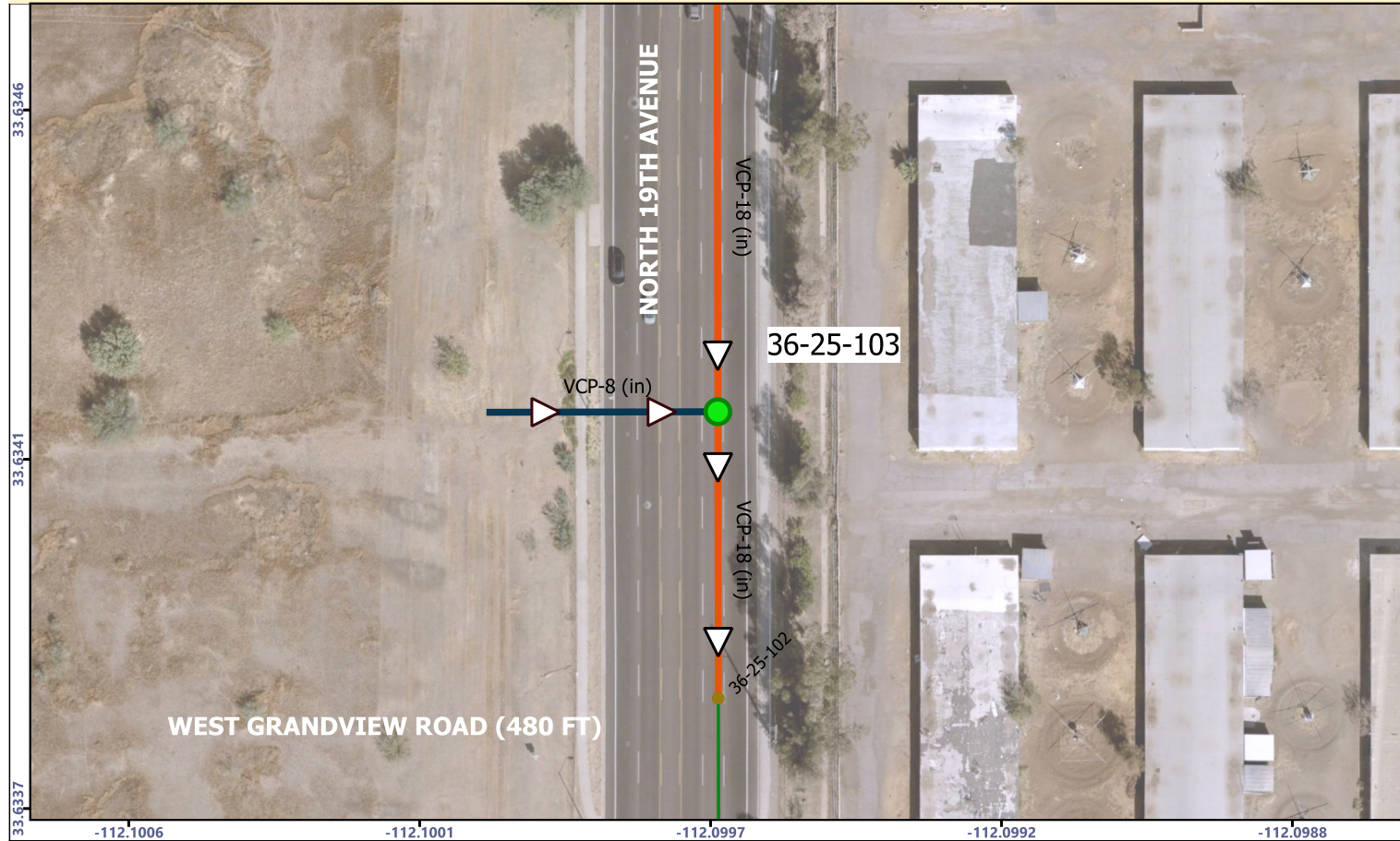
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1225254	LOCATION ID: 36-25-103	CROSS STREET: 19TH AVE & GRANDVIEW RD	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 20.3 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 36-25
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▶ Flow Direction
- City Manholes / Not For Repair

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THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	17.7			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901		SCALE OF MAP: 1:100	MANHOLE: 44 / 50	SHEET NUMBER: 51 OF 63
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MANHOLE 36-25-103
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

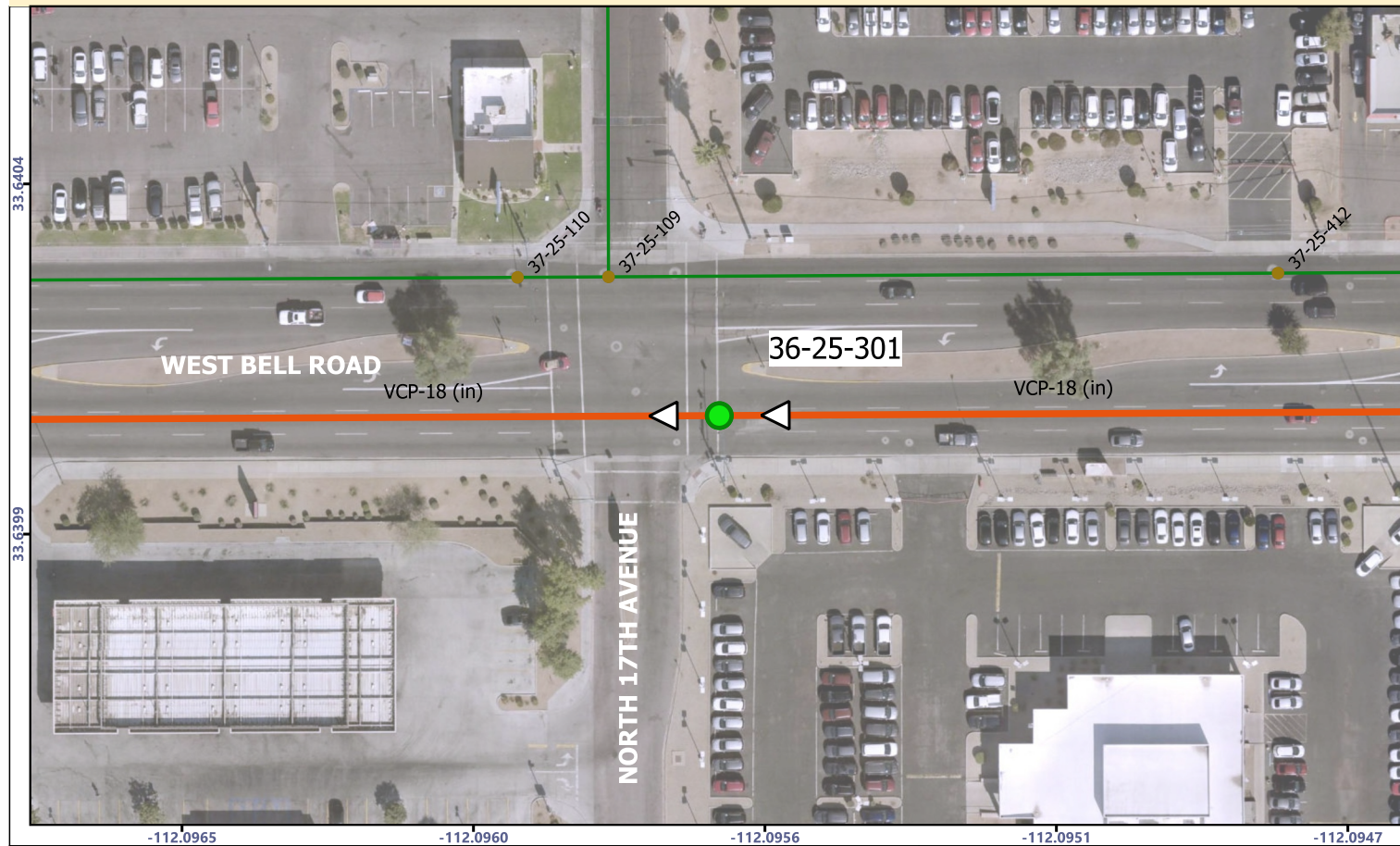
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1225245	LOCATION ID: 36-25-301	CROSS STREET: BELL RD & 17TH AVE	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 26 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 16.1 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 36-25
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED CIVIL ENGINEER:
REGISTRATION NUMBER:
DATE:

- LEGEND:**
- MANHOLE TO REPAIR
 - Pipe Connection on Wall
 - Pipe Connection Over Bench
 - Pipe Connection At Channel
 - Drop Pipe Connections
 - Existing Abandoned Sewer Main
 - Not in GIS Pipe Connections
 - City Sewer Main
 - ▷ Flow Direction
 - City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1				
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	243			
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9				
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES:
SPARK TEST RESULTS:
PULL TEST:

APPROVED BY:
PRINTED NAME: _____
COMPANY: _____

DATE: ____/____/____

NOTES

- A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.
- B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.
- C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.
- D. COAT THE CHANNEL IF IT IS CONCRETE.
- E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.
- F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.
- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.



PEEC PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901	ARIZONA811 Know what's below. Call before you dig.	SCALE OF MAP: 1:100	MANHOLE: 45 / 50	SHEET NUMBER: 52 OF 63
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MANHOLE 36-25-301
WS90500273
CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

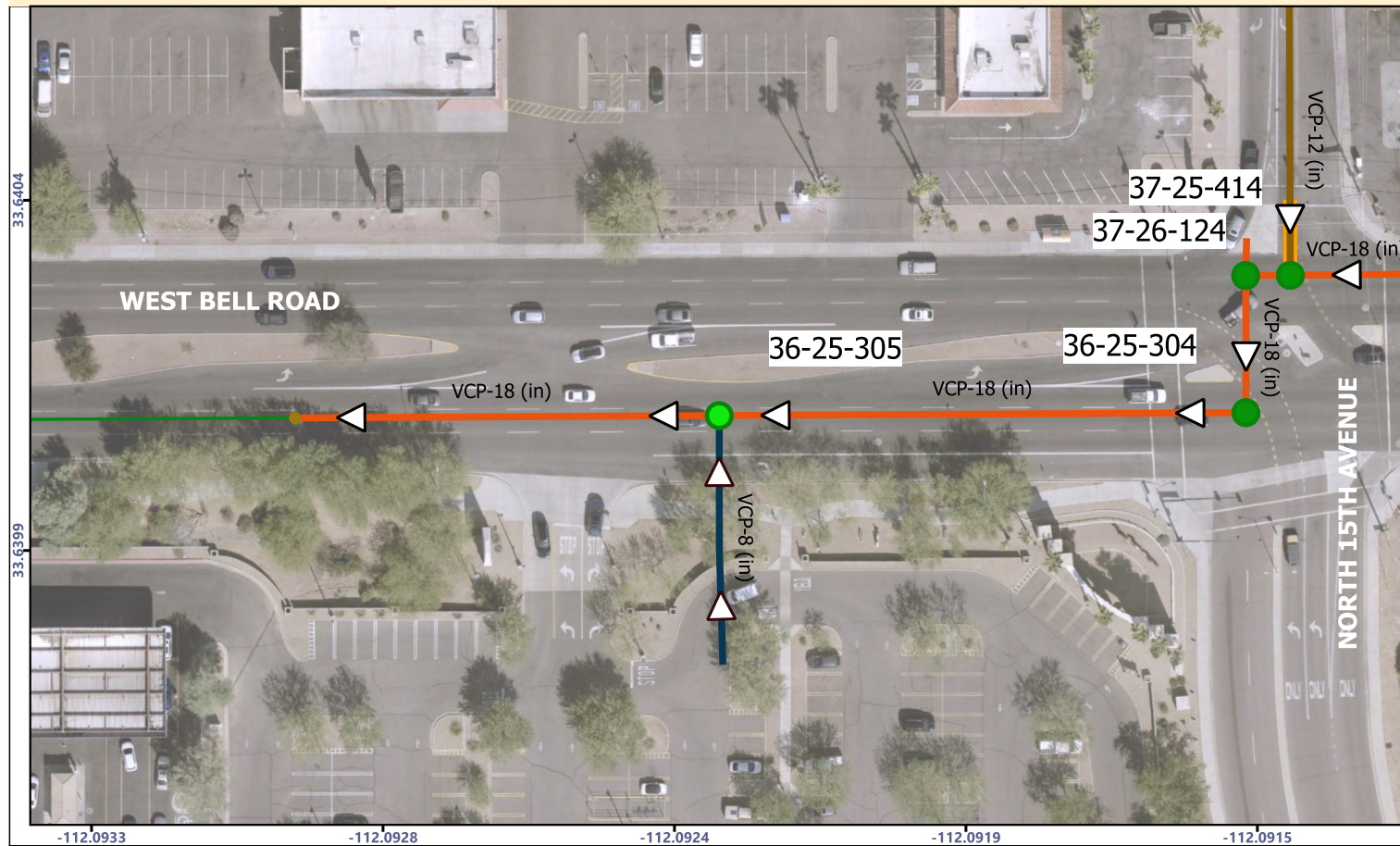
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1221441	LOCATION ID: 36-25-305	CROSS STREET: BELL RD & 15TH AVE	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 26 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 16.4 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 36-25
COLLAR PRESENT: NO GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED CIVIL ENGINEER:
REGISTRATION NUMBER:
DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	14.4			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

<p>A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.</p>		
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<p>PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901</p>	<p>Know what's below. Call before you dig.</p>	SCALE OF MAP: 1:100	MANHOLE: 46 / 50	SHEET NUMBER: 53 OF 63
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MANHOLE 36-25-305
WS90500273
CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

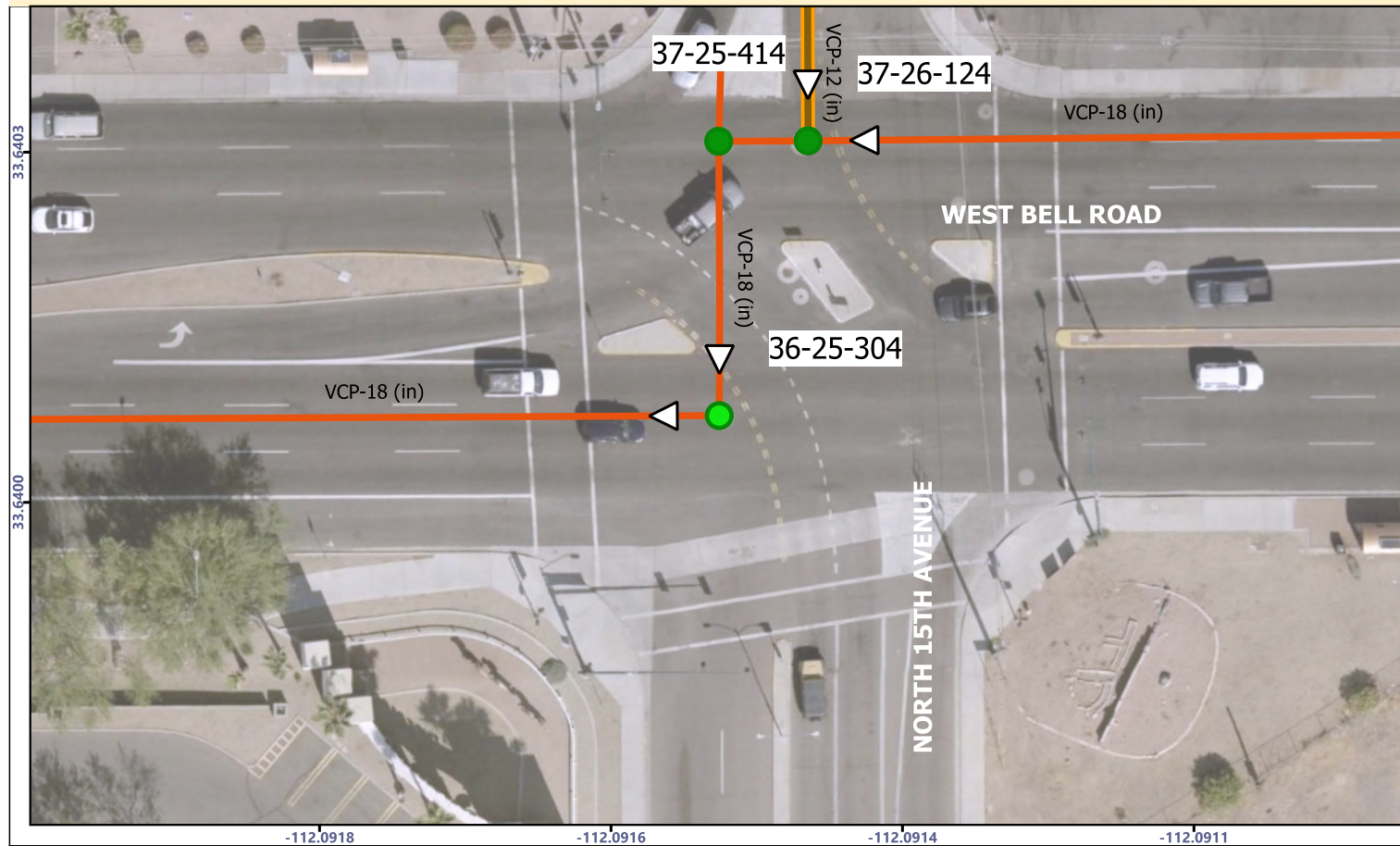
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1225243	LOCATION ID: 36-25-304	CROSS STREET: 15TH AVE & BELL RD	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 26 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 16.3 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 36-25
COLLAR PRESENT: NO GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:	
AS BUILT CERTIFICATION	REGISTERED CIVIL ENGINEER:
I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE FURNISHED FOR INSPECTION OR COPYING, EXCEPT AS SPECIFICALLY STATED IN THE CITY CODE, OR AS REQUIRED BY LAW"
THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
		REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7					
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	14.2				
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _		

NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901	Know what's below. Call before you dig.
--	--

MANHOLE 36-25-304
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

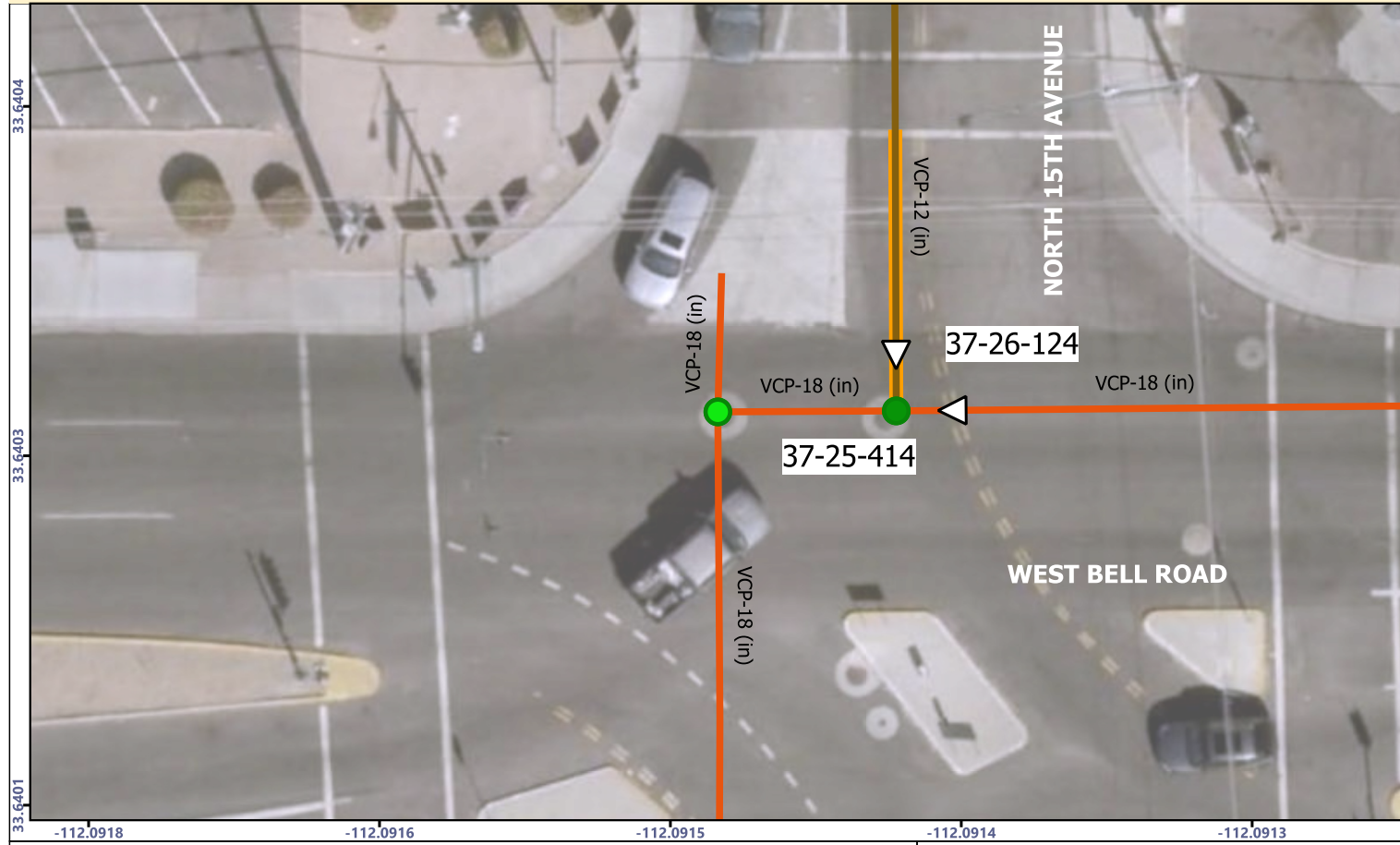
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1242634	LOCATION ID: 37-25-414	CROSS STREET: 15TH AVE & BELL RD	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 15.4 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 37-25
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.	REGISTERED CIVIL ENGINEER:
	REGISTRATION NUMBER:
	DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIAL USE ONLY AND MAY NOT BE FURNISHED FOR INSPECTION OR COPYING, EXCEPT AS SPECIFICALLY STATED IN THE CITY CODE, OR AS REQUIRED BY LAW"
THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1			
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
		JOINT REPAIR	EA	7				
SHEET: D-4 DETAIL: 1 & 3	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	13.4			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: _____ COMPANY: _____			DATE: _ / _ / _	

NOTES

A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.		
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PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901		SCALE OF MAP: 1:25	MANHOLE: 48 / 50	SHEET NUMBER: 55 OF 63
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MANHOLE 37-25-414
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

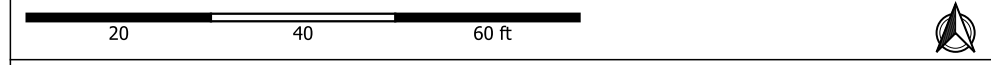
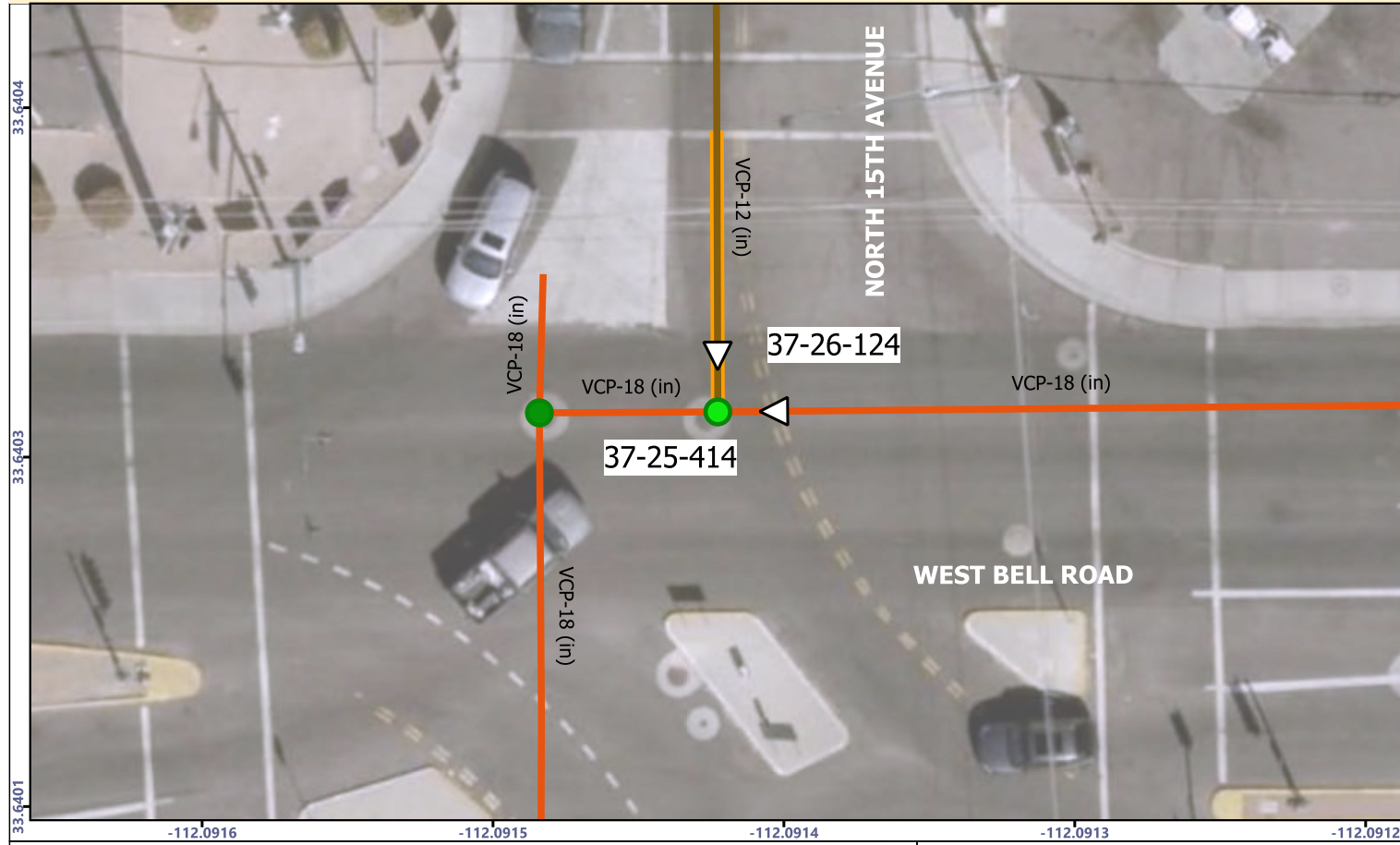
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1225839	LOCATION ID: 37-26-124	CROSS STREET: 15TH AVE & BELL RD	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 15.5 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 37-26
COLLAR PRESENT: YES GROUND TYPE: ASPHALT	NASSCO MACP STRUCTURAL GRADE: 5	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:

AS BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED CIVIL ENGINEER:
REGISTRATION NUMBER:
DATE:

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2				
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
		JOINT REPAIR	EA	7				
SHEET: D-4 DETAIL: 1 & 3	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	13.4			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES: SPARK TEST RESULTS: PULL TEST:	APPROVED BY: PRINTED NAME: _____ COMPANY: _____	DATE: _ / _ / _
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NOTES

<p>A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.</p> <p>B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.</p> <p>C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.</p> <p>D. COAT THE CHANNEL IF IT IS CONCRETE.</p> <p>E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.</p> <p>F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.</p> <p>G. USE FLOW THROUGH PLUG IF NECESSARY.</p> <p>H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.</p>		
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<p>PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901</p>	<p>Know what's below. Call before you dig.</p>	SCALE OF MAP: 1:25	MANHOLE: 49 / 50	SHEET NUMBER: 56 OF 63
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MANHOLE 37-26-124
 WS90500273
 CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
 REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

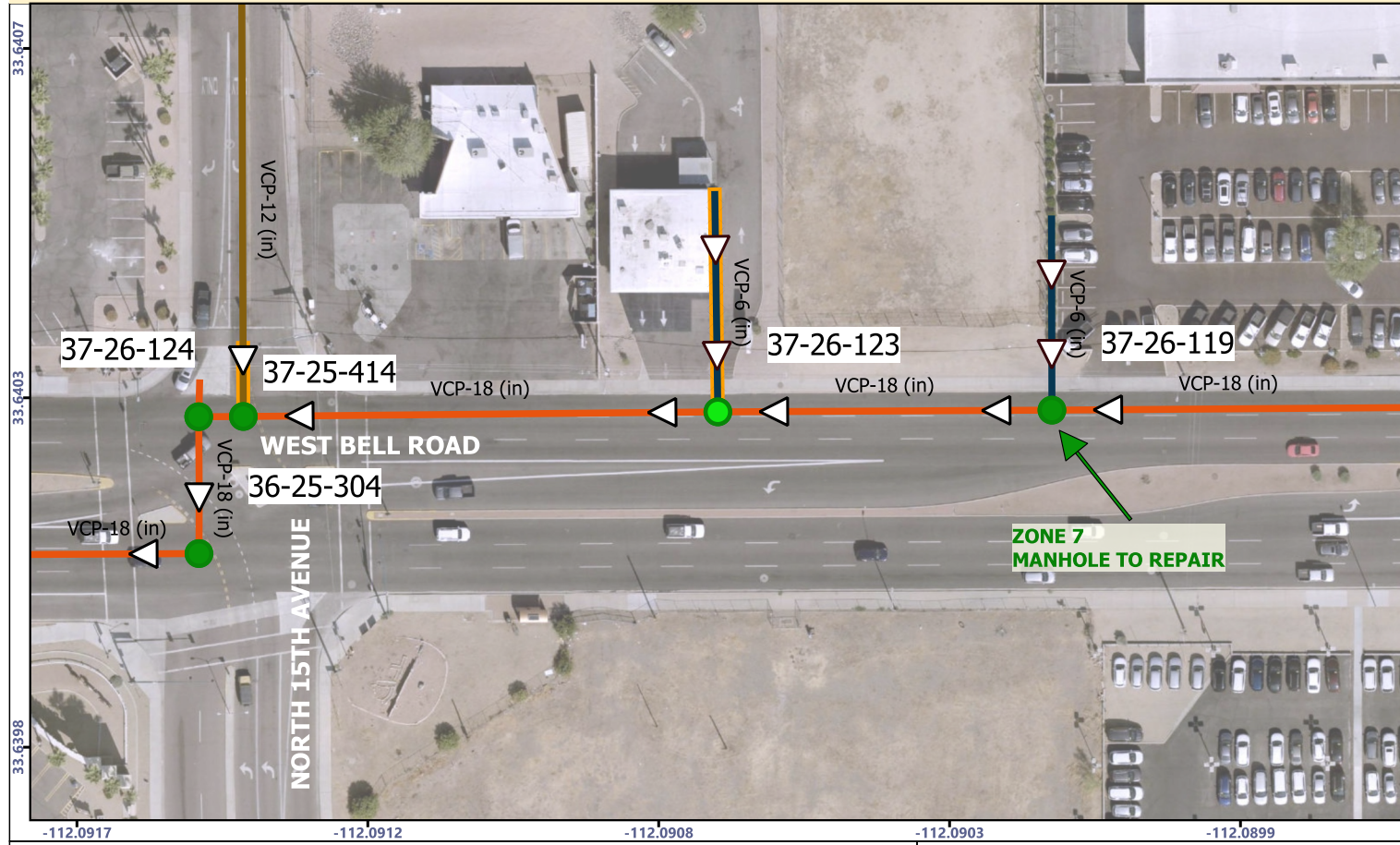
PROJECT INFORMATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3	PROJECT NUMBER: WS90500273
	CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID : I-1242656	LOCATION ID: 37-26-123	CROSS STREET: BELL RD & 15TH AVE	
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL: CAST IRON	COVER DIAMETER: 32 (IN)	ENVIRONMENT: MAJOR ARTERIAL ROAD
DEPTH RIM TO INVERT: 14.7 (FT)	BARREL DIAMETER: 60 (IN)	CORROSION PROTECTION: NOT COATED	QUARTER SECTION: 37-26
COLLAR PRESENT: YES GROUND TYPE: OTHER	NASSCO MACP STRUCTURAL GRADE: 4	EXISTING WALL MATERIAL: CONCRETE	NOTES:

MANHOLE LOCATION



ASSESSMENT NOTES:
ZONE 7 MANHOLE IN A DIFERENT SET OF PLANS

AS BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED CIVIL ENGINEER:	
REGISTRATION NUMBER:	
DATE:	

LEGEND:

- MANHOLE TO REPAIR
- Pipe Connection on Wall
- Pipe Connection Over Bench
- Pipe Connection At Channel
- Drop Pipe Connections
- Existing Abandoned Sewer Main
- Not in GIS Pipe Connections
- City Sewer Main
- ▷ Flow Direction
- City Manholes / Not For Repair

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REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1			
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	213			
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
		REPAIR & COAT 60 IN DIAMETER	EA	4	1			
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5				
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6				
		JOINT REPAIR	EA	7				
SHEET: D-4 DETAIL: 1 & 3	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9				
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				

NOTES:
SPARK TEST RESULTS:
PULL TEST:

APPROVED BY:
PRINTED NAME: _____
COMPANY: _____

DATE: ____/____/____

NOTES

<p>A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL. B. REMOVE ALL STEPS BEFORE REHABILITATION WORK. C. BLAST CLEAN MANHOLE BEFORE REHABILITATION. D. COAT THE CHANNEL IF IT IS CONCRETE. E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING. F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION. G. USE FLOW THROUGH PLUG IF NECESSARY. H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.</p>		
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	<p>PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901</p>		SCALE OF MAP: 1:100	MANHOLE: 50 / 50	SHEET NUMBER: 57 OF 63
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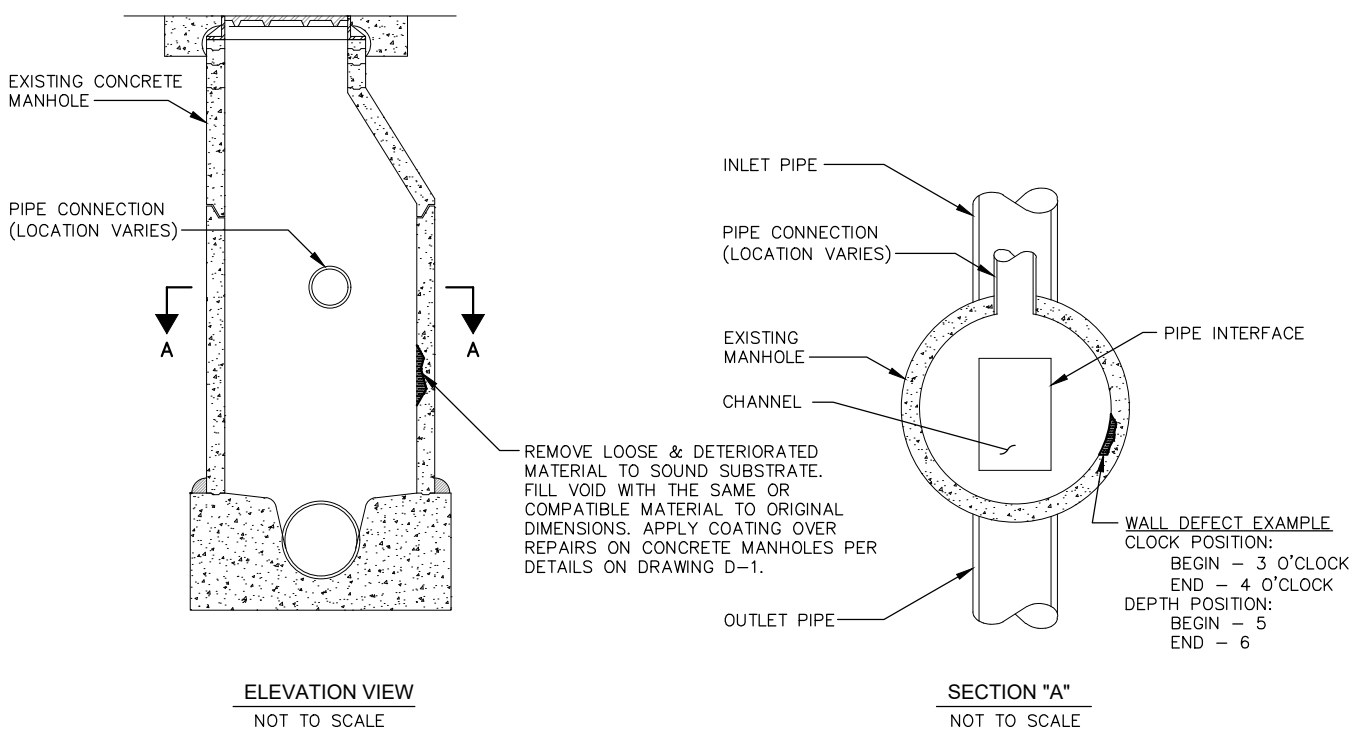
MANHOLE 37-26-123
WS90500273
CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER
REHABILITATION - GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

REVISION BY CITY OF PHOENIX	DESCRIPTION	REV BY	CHKD BY	DATE
NO.				
REVISION BY CITY OF PHOENIX	DESCRIPTION	REV BY	CHKD BY	DATE
NO.				
REVISION BY CITY OF PHOENIX	DESCRIPTION	REV BY	CHKD BY	DATE
NO.				



F.H.W.A. REGION	STATE	PROJ. NO.	NO.	TOTAL
9	ARIZ.	WS90500273	60	63

PEC PROJECT ENGINEERING CONSULTANTS
2432 W. PEORIA AVENUE, SUITE 1246
PHOENIX, AZ 85029
Phone: (602) 906-1901

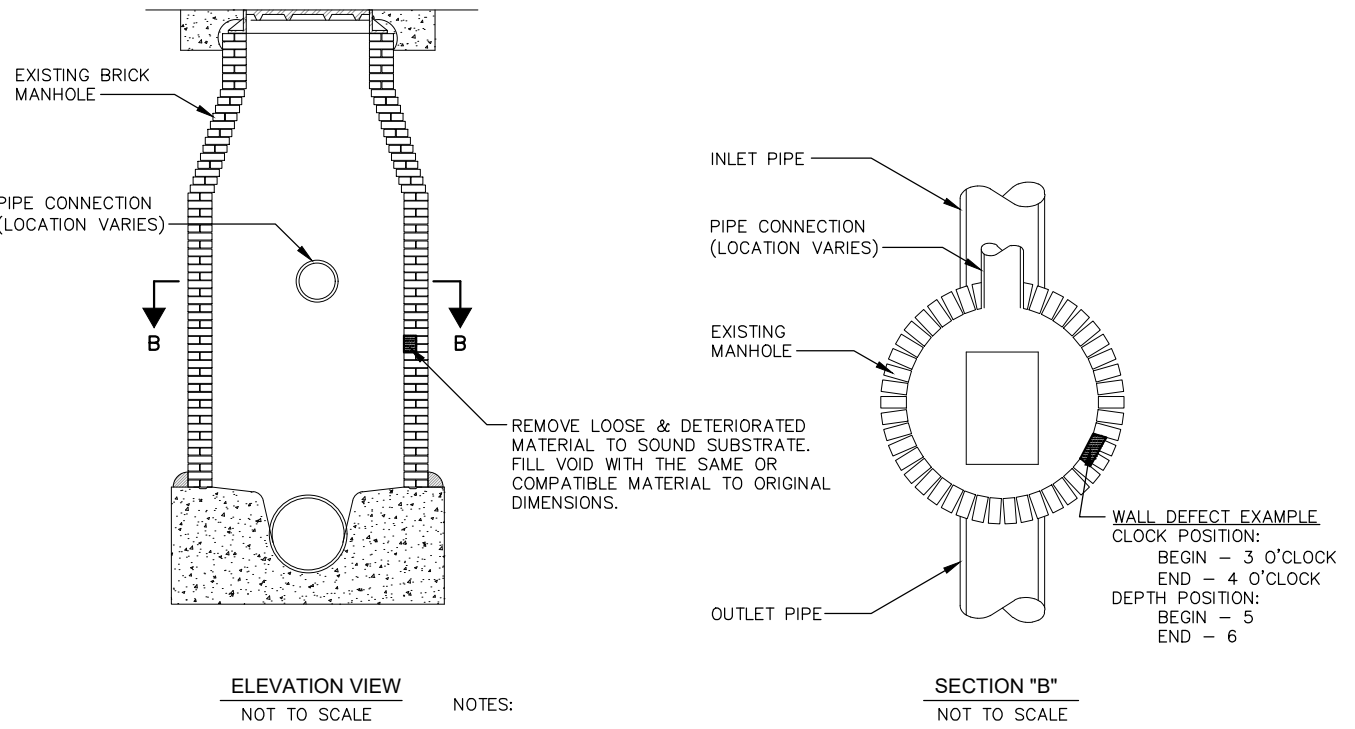


ELEVATION VIEW
NOT TO SCALE

SECTION "A"
NOT TO SCALE

NOTE:
CONTRACTOR SHALL PROVIDE A WATERTIGHT SEAL AROUND SPOT REPAIR.

TYPICAL SPOT REPAIR ON CONCRETE MANHOLE
NOT TO SCALE



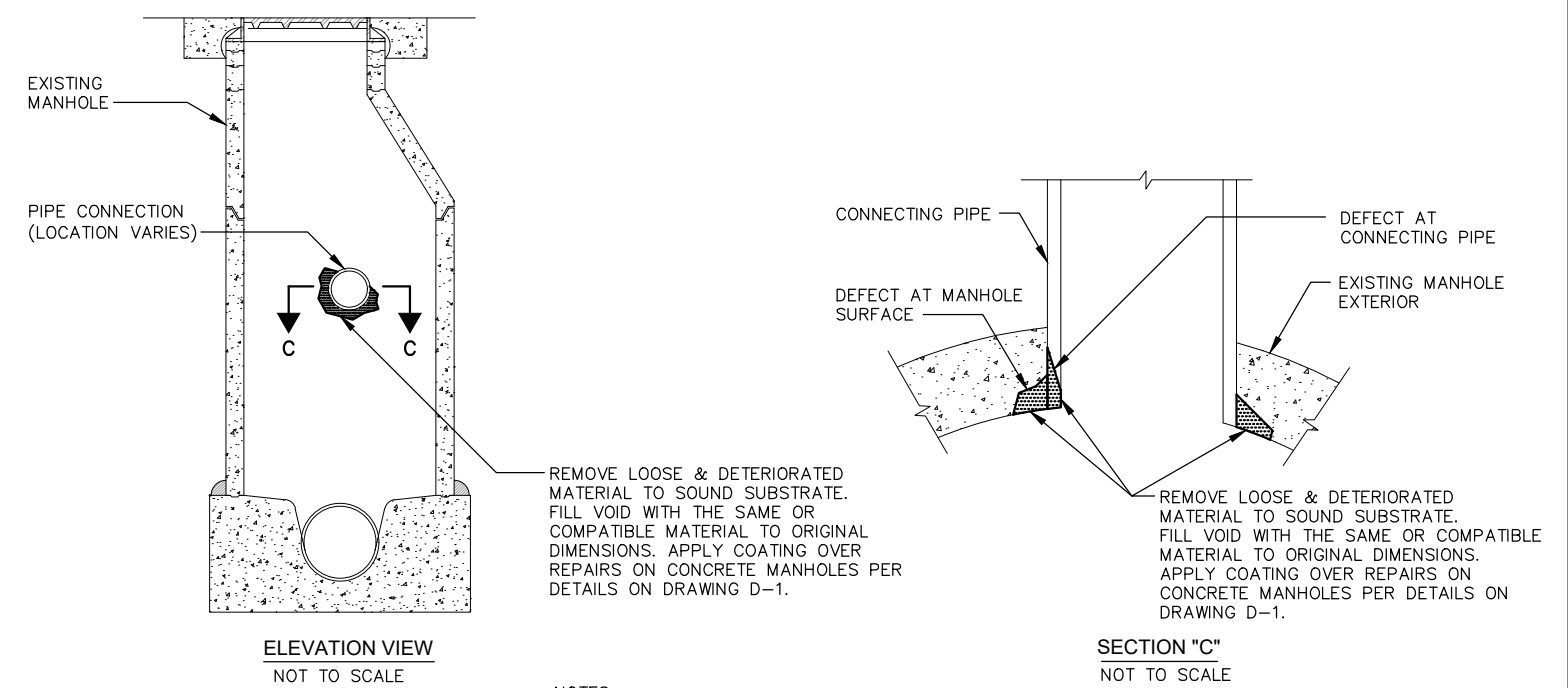
ELEVATION VIEW
NOT TO SCALE

SECTION "B"
NOT TO SCALE

NOTES:
1. CONTRACTOR SHALL PROVIDE A WATERTIGHT SEAL AROUND SPOT REPAIR.
2. DO NOT COAT BRICK.

TYPICAL SPOT REPAIR ON BRICK MANHOLE
NOT TO SCALE

DETAIL 1



ELEVATION VIEW
NOT TO SCALE

SECTION "C"
NOT TO SCALE

NOTES:
1. CONTRACTOR SHALL PROVIDE A WATERTIGHT SEAL AROUND SPOT REPAIR.
2. DO NOT COAT BRICK.

SPOT REPAIR AT PIPE CONNECTION
NOT TO SCALE

DETAIL 2

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LARGE DIAMETER SANITARY SEWER REHABILITATION
GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

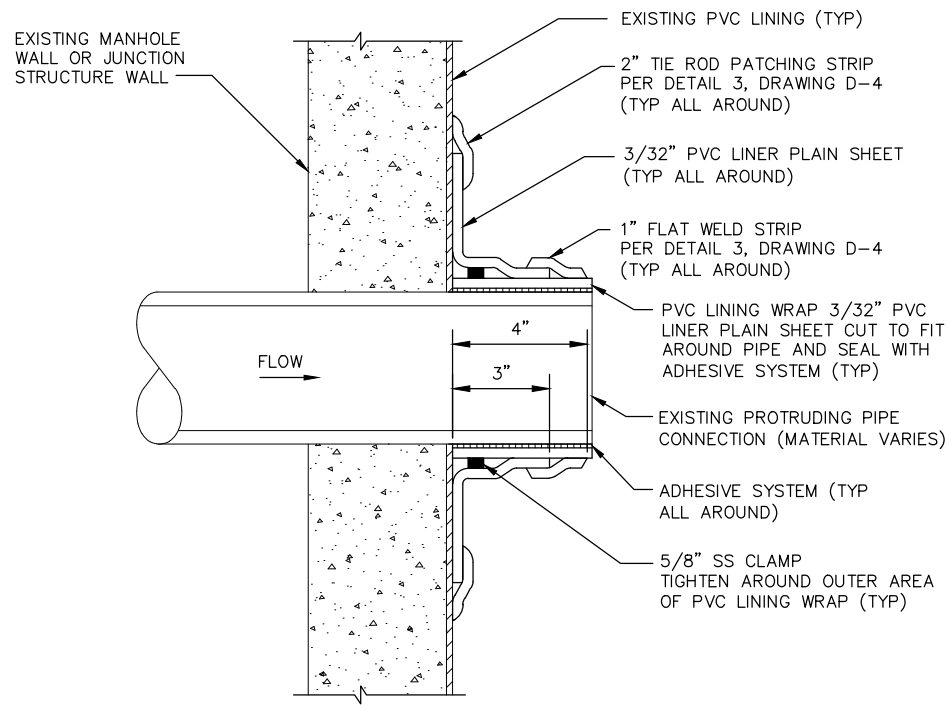
CITY OF PHOENIX, ARIZONA
WATER SERVICES DEPARTMENT

**REHABILITATION:
SPOT REPAIR ON CONCRETE AND
BRICK MANHOLE DETAILS**

DR:	HC	DES:	YX	CK:	TOB	SHEET	TOTAL
DATE:	1/22	DATE:	1/22	DATE:	1/22	NO.	SHEETS
SCALE:	NONE	DRAWING	NO.	D-3	60	63	



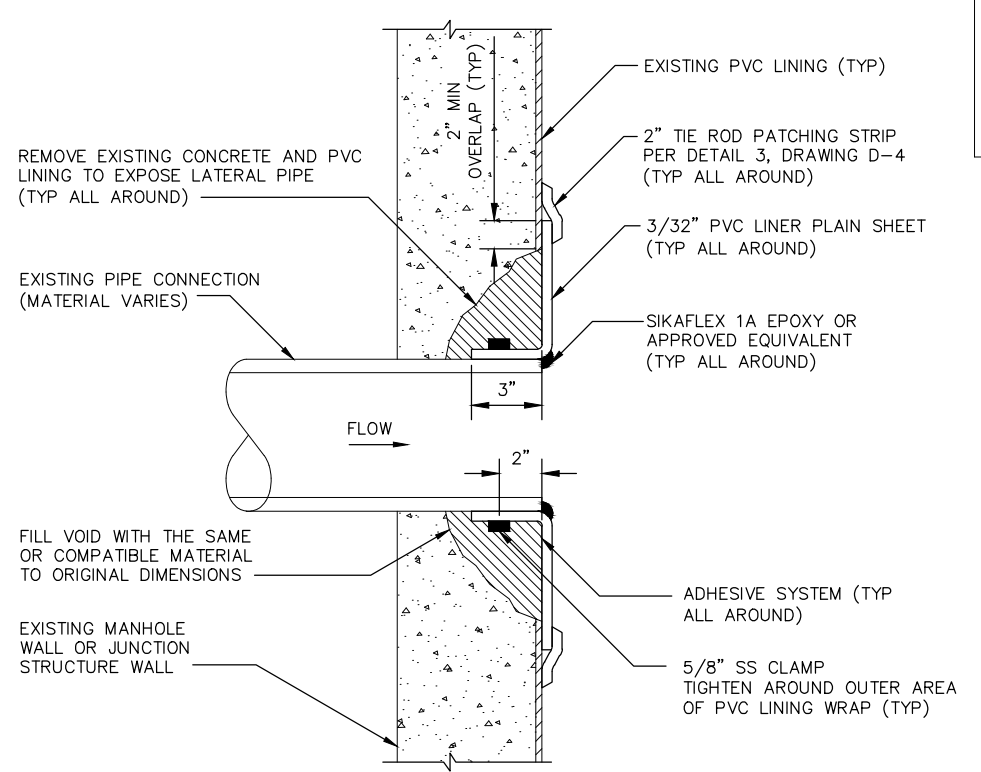
REVISION BY	CITY OF PHOENIX	DESCRIPTION	REV BY	CHK BY	DATE
NO.					
NO.					
NO.					
NO.					
NO.					
NO.					
NO.					
NO.					
NO.					



NOTES:

- TYPICALLY THE PLANS CALL OUT TO TRIM PIPE FLUSH TO MANHOLE INTERIOR SURFACE. IF THIS CAN NOT BE ACCOMPLISHED, PROCEED WITH THE METHOD OF SEALING THE PIPE CONNECTION SHOWN IN THIS DETAIL.

PROTRUDING PIPE PENETRATING PVC LINING REPAIR
NOT TO SCALE



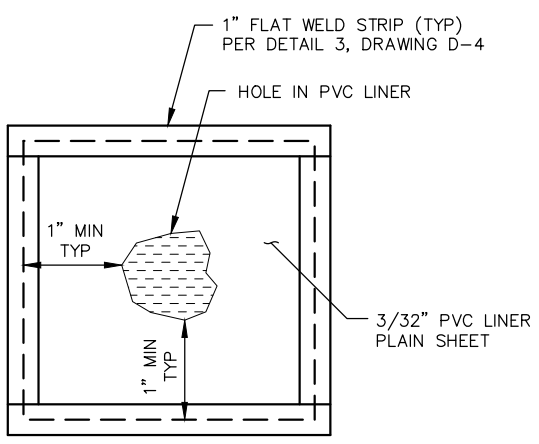
REMOVE EXISTING CONCRETE AND PVC LINING TO EXPOSE LATERAL PIPE (TYP ALL AROUND)

EXISTING PIPE CONNECTION (MATERIAL VARIES)

FILL VOID WITH THE SAME OR COMPATIBLE MATERIAL TO ORIGINAL DIMENSIONS

EXISTING MANHOLE WALL OR JUNCTION STRUCTURE WALL

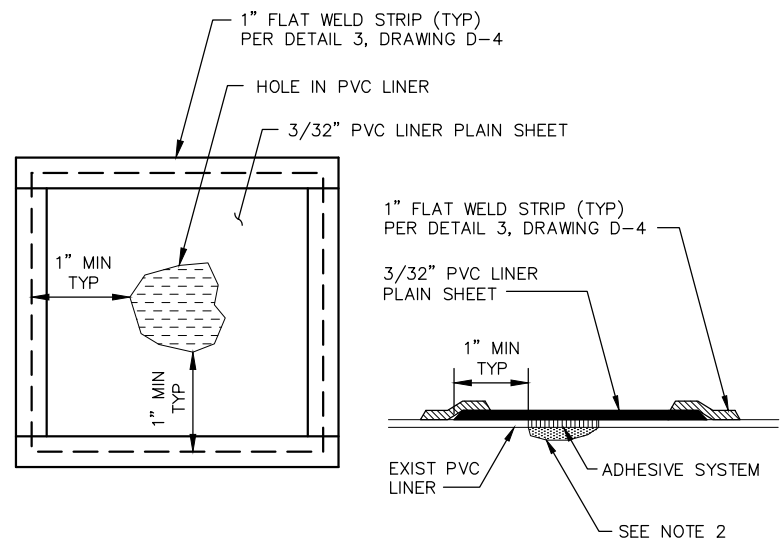
FLUSH PIPE PENETRATING PVC LINING REPAIR
NOT TO SCALE



NOTES:

- WHEN SMALL HOLES OR CUTS OCCUR IN THE PVC LINING THAT ARE SMALLER THAN 2", REPAIR WITH 2" ACCESSORY STRIP PER DETAIL 3 ON DRAWING D-4. COST IS CONSIDERED TO BE INCIDENTAL TO SMALL PATCH BID ITEM.
- REMOVE ALL LOOSE & DETERIORATED MATERIAL.

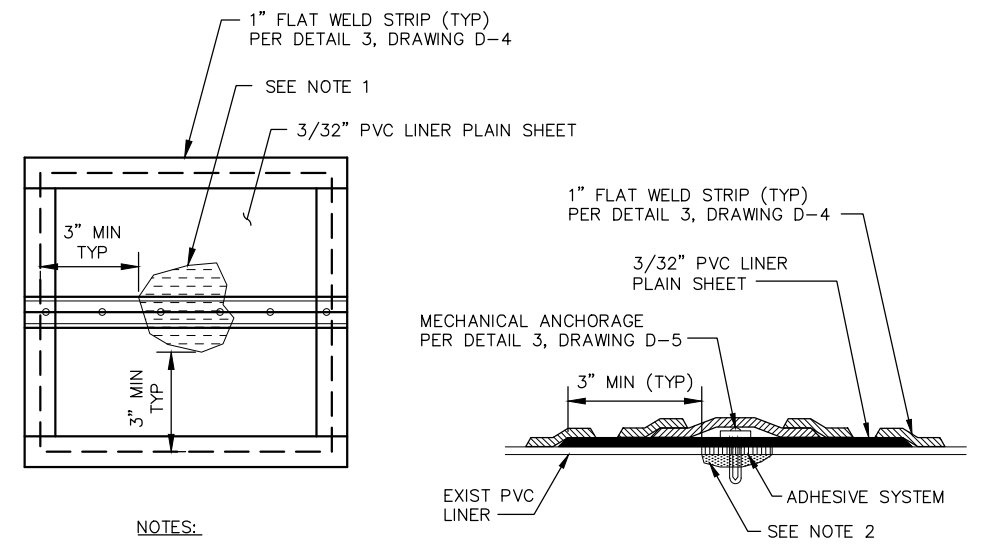
SMALL PATCH (2" UP TO 6" SQUARE)
NOT TO SCALE



NOTES:

- REMOVE ALL LOOSE & DETERIORATED MATERIAL.
- FILL VOID WITH THE SAME OR COMPATIBLE MATERIAL TO ORIGINAL DIMENSIONS AND GRIND TO A SMOOTH SURFACE.
- ATTACH PATCH TO HOLE AREA USING ADHESIVE SYSTEM OR APPROVED EQUIVALENT PRIOR TO APPLYING 1" FLAT WELD STRIP.

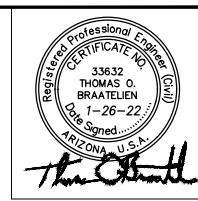
MEDIUM PATCH (6" UP TO 18" SQUARE)
NOT TO SCALE



NOTES:

- REMOVE ALL LOOSE & DETERIORATED MATERIAL.
- FILL VOID WITH THE SAME OR COMPATIBLE MATERIAL TO ORIGINAL DIMENSIONS AND GRIND TO A SMOOTH SURFACE.
- ATTACH PATCH TO HOLE AREA USING ADHESIVE SYSTEM OR APPROVED EQUIVALENT PRIOR TO APPLYING 1" FLAT WELD STRIP.
- MINIMUM 1-1/4 INCHES IN LENGTH AND PLACED ON MAXIMUM 6 INCH CENTERS (3 MINIMUM).
- LARGE PATCH SHALL NOT EXCEED 36 INCHES IN ANY DIMENSION WITHOUT OWNER/ENGINEER APPROVAL.

LARGE PATCH (18" UP TO 36")
NOT TO SCALE



F.H.W.A. REGION	STATE	PROJ. NO.	NO.	TOTAL
9	ARIZ.	WS90500273	63	63

PEC PROJECT ENGINEERING CONSULTANTS
2432 W. PEORIA AVENUE, SUITE 1246
PHOENIX, AZ 85029
Phone: (602) 906-1901

GENERAL NOTES

- ADDITIONAL PVC LINER REQUIREMENTS CAN BE FOUND IN THE SPECIFICATIONS.
- SHOP DRAWING SUBMITTAL REQUIRED ON ALL COMPONENTS.

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LARGE DIAMETER SANITARY SEWER REHABILITATION
GRADE 5 & 4 MANHOLES - NORTH - ZONE 3

CITY OF PHOENIX, ARIZONA
WATER SERVICES DEPARTMENT

**REHABILITATION:
PVC LINER REPAIR DETAILS -3**

DR:	HC	DES:	YX	CK:	TOB	SHEET	TOTAL
DATE:	1/22	DATE:	1/22	DATE:	1/22	NO.	SHEETS
SCALE:	NONE	DRAWING	NO.	D-6		63	63



DETAIL 1

DETAIL 2

DETAIL 3

DETAIL 4

DETAIL 5