

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



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

REHABILITATION QUANTITIES							
DESCRIPTION	QUANTITY 48IN MH DIA	QUANTITY 60IN MH DIA	QUANTITY IRREGULAR SHAPE MH				
MANHOLES REHABILITATED WITH INSERT LINING	1 EA	23 EA					
MANHOLES REHABILITATED WITH ONLY COATING		10 EA					
MANHOLES REHABILITATED WITH ONLY SPOT REPAIRS	3 EA	10 EA	3 EA				
TOTAL MANHOLES	4 EA	43 EA	3 EA				
TOTAL MANHOLES REHABBED IN ZONE 4		50 EA					



E	REGION	STATE	PROJ. NO.	NO.	TOTAL	AS BUILT
<i>₹</i>	9	ARIZ.	WS90500273	1	63	
	-	P		PEORIA , AZ 850	AVENUE, S 029	NSULTANTS UITE 1246
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# **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
1	G-1	COVER SHEET
2	G-2	NOTES
3	G-3	NOTES AND ABBREVIATIONS
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

# 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	



"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

9/25/2023 05/24/2022 DATE

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REVISION BY CITY OF PHOENIX	DESCRIPTION		
	NO.		
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32	NO.		
REVISION BY CITY OF PHOENIX	REV BY CKD BY DATE		
CITY O	ESCRIPTION		
REVISION BY	DESC		

#### CITY OF PHOENIX PAVING NOTES

- 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 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'
- 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 BE 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
- 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
- 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
- 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



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PROJ. NO.

NO. TOTAL

#### CITY OF PHOENIX GENERAL NOTES

- 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
- 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

- CONTRACTOR SUBCONTRACTORS AND ALL FIFLD 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 JÁMES MARSHALL [602-534-3747]) SHALL BE NOTIFIED IMMEDIATELY ÀND ALLOWED TÎME TO PROPERLY ASSESS THE MATERIALS.

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THIS DOCUMENT MUST BE KEPT SECURE AT ALL TIMES

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

CITY OF PHOENIX, ARIZONA WATER SERVICES DEPARTMENT

NOTES



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TE: 1/22	DATE: 1/	22 DATE:	1/22	NO.	SHEETS
CALE:	NONE	DRAWING NO.	G-2	2	63

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(Civil)	中	P	PROJECT ENGINEERING C 2432 W. PEORIA AVENUE PHOENIX, AZ 85229		

#### **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
- 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

BROKEN

BOU BOTTOM OF UTILITY

COLLAR SHAPE CIRCULAR CLOSED CIRCUIT TELEVISION

CAST IN PLACE PIPE

CM CRACK MULTIPLE

CONC CONCRETE

CITY OF PHOENIX CST

CONSTRUCTION

DB DTL / DET DIP DISPLACED BRICK DFTAIL

DUCTILE IRON PIPE

DWG DRAWING

FACH

ELEC ELECTRIC OR ELECTRICAL

**ELEVATION** 

EX / EXIST EXISTING

> FDMC FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

FLANGE FRACTURE MULTIPLE

FND FOUND

FIBER OPTIC FO

(FT) FEET

НН HANDHOLE

INVERT ELEVATION

(IN) INCHES

LFD LT LINING FAILURE DETACHED LEFT

MARICOPA COUNTY

MANHOLE

MORTAR MISSING MEDIUM MMM

**PHXSE** 

PHOENIX OWNED PARCEL WITH COP SEWER EASEMENT OWNERSHIP OF PARCEL IS CURRENTLY CHANGING PRIVATE PROPERTY WITH COP PUBLIC UTILITY EASEMENT PNDNG

PRIVATE PROPERTY WITH COP SEWER EASEMENT

POLYVINYL CHLORIDE PVC

RT RIGHT

SURFACE AGGREGATE MISSING SAMM

SURFACE AGGREGATE MISSING MECHANICAL SURFACE AGGREGATE MISSING UNKNOWN SAM7

SURFACE AGGREGATE PROJECTING

SAPZ SURFACE AGGREGATE PROJECTING UNKNOWN

STEP HOLE

SHT SHEET SURFACE REINFORCEMENT CORRODED

SRC

SALT RIVER PROJECT
SURFACE REINFORCEMENT PROJECTING UNKNOWN SRPZ

SRV SURFACE REINFORCEMENT VISIBLE

SURFACE REINFORCEMENT VISIBLE UNKNOWN

SSMH STA SANITARY SEWER MANHOLE

STATION

VCP VITRIFIED CLAY PIPE

W/

XXX UNKNOWN

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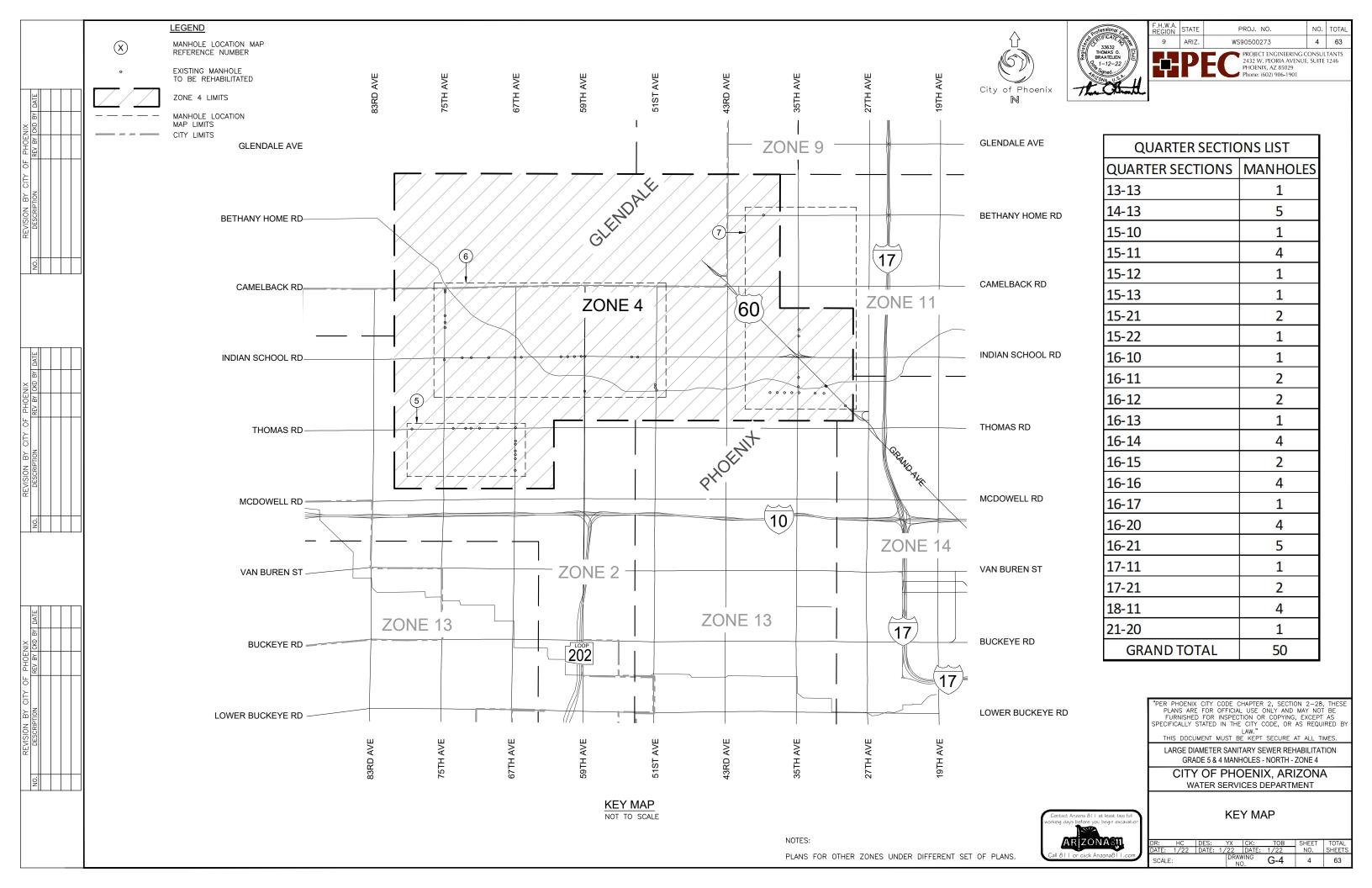
LARGE DIAMETER SANITARY SEWER REHABILITATION GRADE 5 & 4 MANHOLES - NORTH - ZONE 4

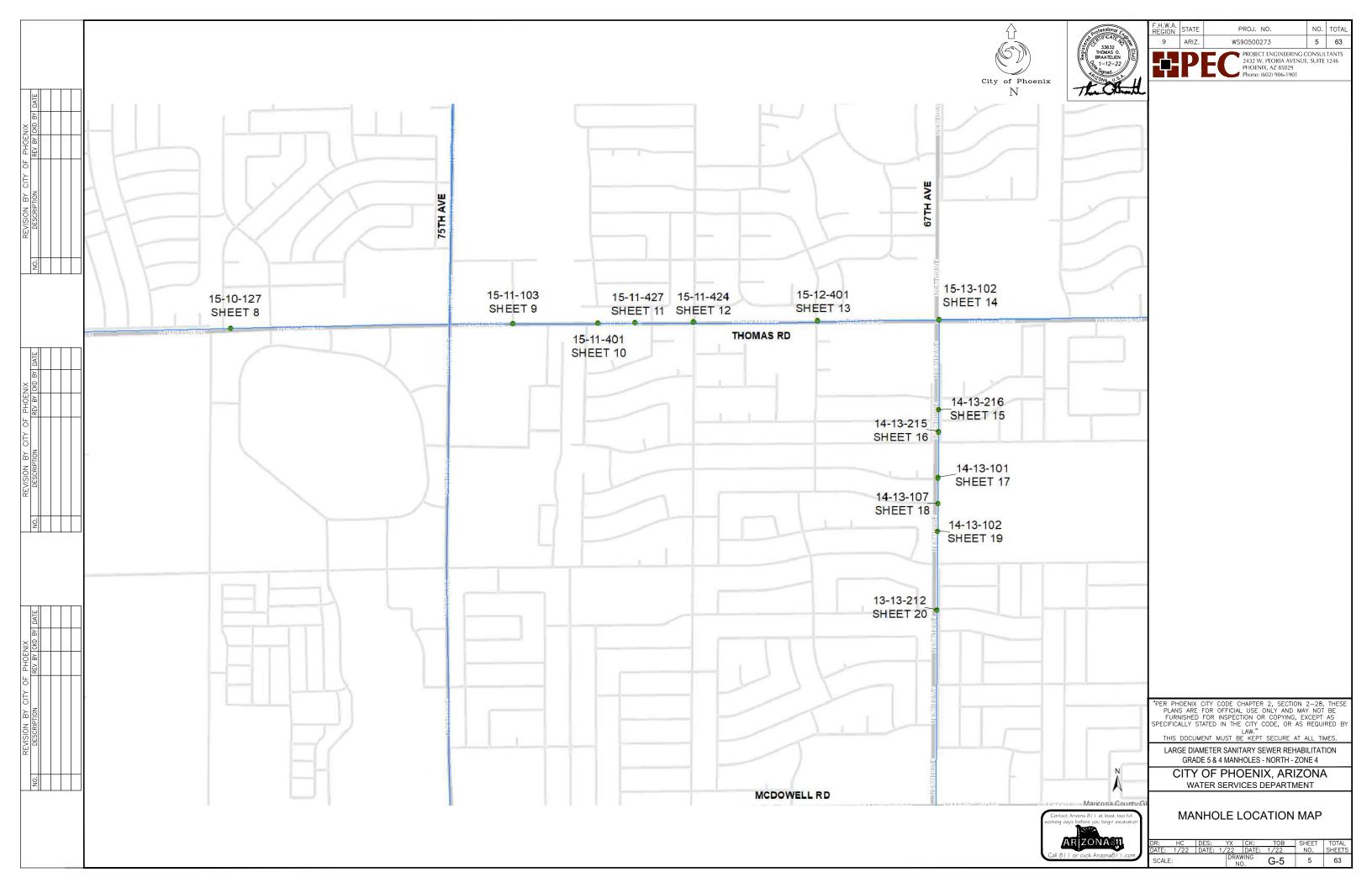
CITY OF PHOENIX, ARIZONA WATER SERVICES DEPARTMENT

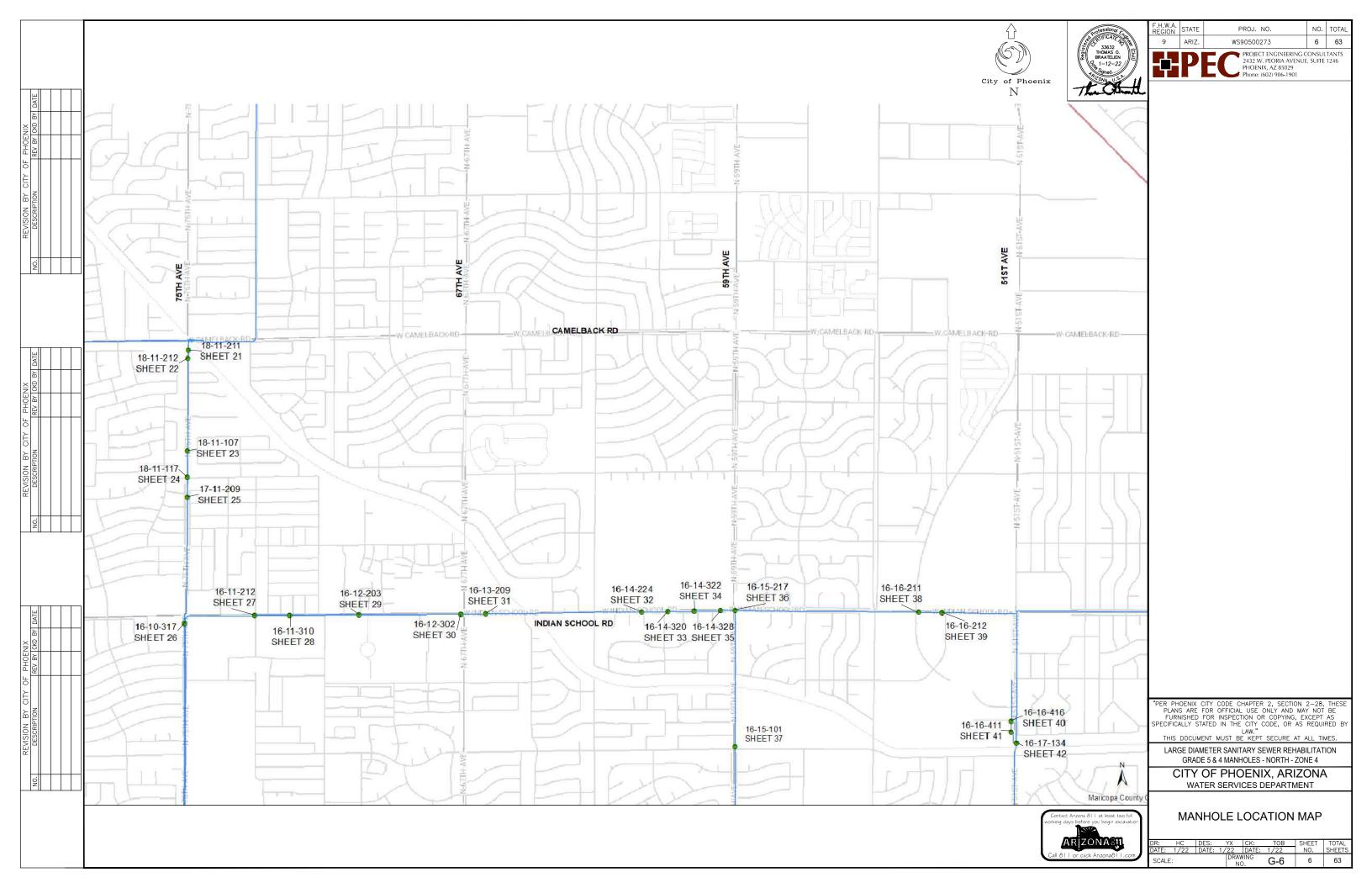
NOTES AND ABBREVIATIONS

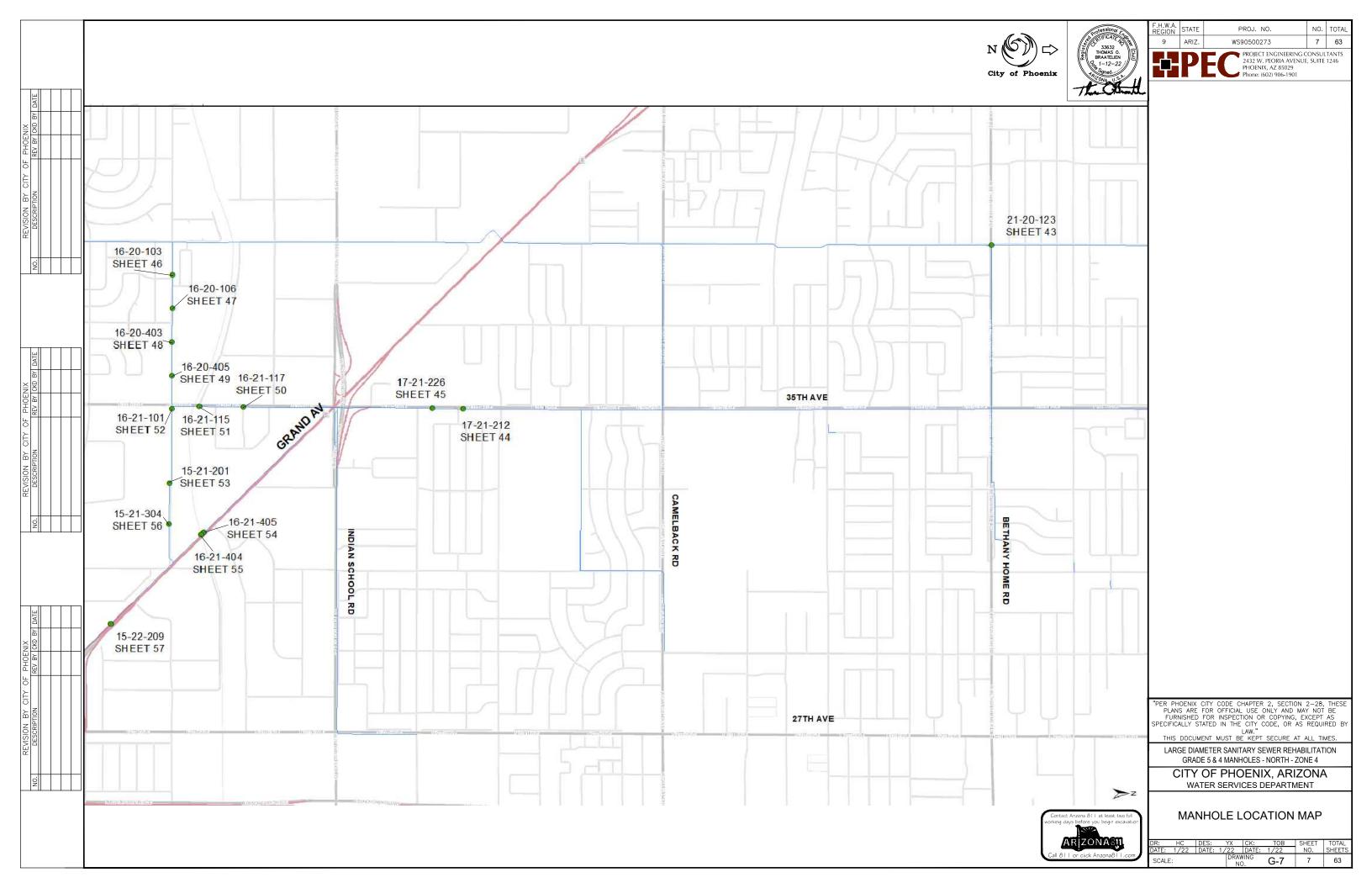


R: HC	DES:	YX CK:	TOB	SHEET	TOTAL
ATE: 1/22	DATE: 1/	22 DATE:	1/22	NO.	SHEETS
SCALE:	NONE	DRAWING NO.	G-3	3	63









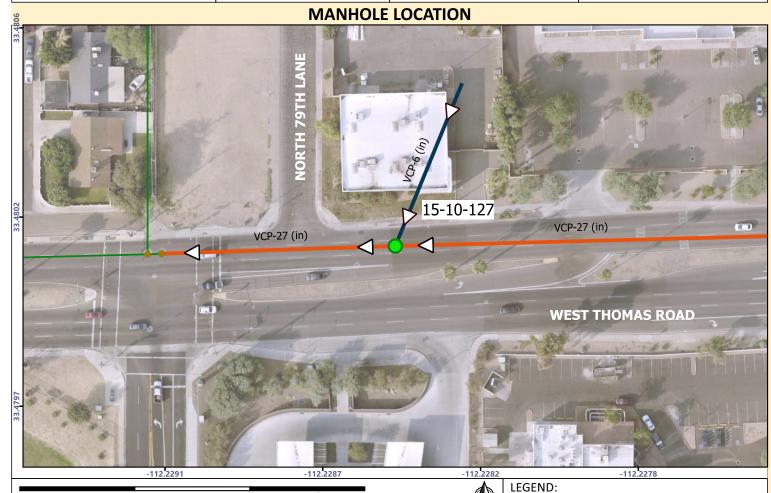
CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES -NORTH - ZONE 4

PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:						
I-1245960	15-10-127	THOMAS RD & 79TH LN						
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR					
	CAST IRON	32 (IN)	ARTERIAL ROAD					
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:					
10.8 (FT)	60 (IN)	NOT COATED	15-10					
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:					
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 5	CONCRETE						



200 **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:

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

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	CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY		APPROVED MATERIAL	MANUFACTURER	15-10-127
	MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				MANHOLE 1
	SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MAN
SHEET: D-4	SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
	DETAIL: 1	BENCII	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
	SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					VER
	SHEET: D-4-6 DETAIL: ALL	ALL	DEFECT REPAIR PATCHING	SF	6					ARY SEV
	SHEET: D-4 DETAIL: 1 & 3	PVC LINER	JOINT REPAIR	EA	7					R SANIT
	SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					RGE DIAMETER SANITARY SEWER
	SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	8.1				LARGE DI
	MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
	NOTES: SPARK TEST PULL TEST:	RESULTS:		APPROVED BY: PRINTED NAME: COMPANY:		DATE://		RVICES DEPT		

#### **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.

PHOENIX, AZ 85029

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





SCALE OF MAP: 1:100

MANHOLE: 1 / 50

8 OF 63



**GRADE 5** 

**REHABILITATION** 

**PHOENIX** 

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

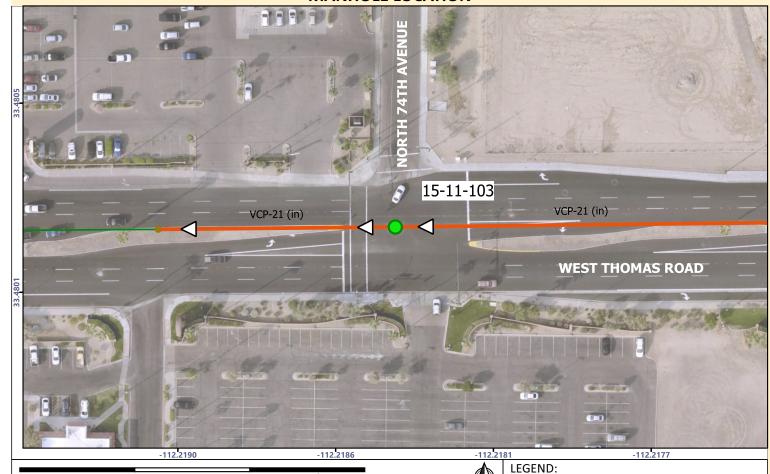
PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WANTOLL IN ONVALION								
WAM ID :	LOCATION ID:	CROSS STREET:						
I-1247857	15-11-103	74TH AVE & THOMAS RD						
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR					
	CAST IRON	26 (IN)	ARTERIAL ROAD					
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:					
11.7 (FT)	48 (IN)	NOT COATED	15-11					
COLLAR PRESENT: NO	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:					
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	BRICK						

# **MANHOLE LOCATION**



200 **ASSESSMENT NOTES:** 48 (IN) CONICAL WALL

# **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:

Existing Abandoned Sewer Main Not in GIS Pipe Connections City Sewer Main

Flow Direction

MANHOLE TO REPAIR

**Drop Pipe Connections** 

Pipe Connection on Wall

Pipe Connection Over Bench

Pipe Connection At Channel

City Manholes / Not For Repair

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIALUSE 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

			KEHABILITATION DE	SIGN	AND C	UANII	IIE2			
C	CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY		APPROVED MATERIAL	MANUFACTURER	15-11-103
	MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				MANHOLE 1
	SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	9				MAI
	SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
	DETAIL: 1	BENCH	REPAIR & COAT 60 IN DIAMETER	EA	4					
	SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					/ER
	SHEET: D-4-6 DETAIL: ALL		DEFECT REPAIR PATCHING	SF	6					ARY SEV
	SHEET: D-4 DETAIL: 1 & 3	PVC LINER	JOINT REPAIR	EA	7					R SANITA
	SHEET: D-2 DETAIL: 1	- INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					<b>GE DIAMETER SANITARY SEWER</b>
	SHEET: D-2 DETAIL: 2		INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE D
	MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
	NOTES: SPARK TEST PULL TEST:	RESULTS:		APPROVED BY: PRINTED NAME: COMPANY:		DATE://		RVICES DEPT		

#### **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.

PHOENIX, AZ 85029

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





SCALE OF MAP: 1:100

MANHOLE: 2 / 50

9 OF 63



**PHOENIX-**SHEET NUMBER

**4 MANHOLES** 

**GRADE 5** 

**REHABILITATION** 

**SERVICES DEPT** 

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

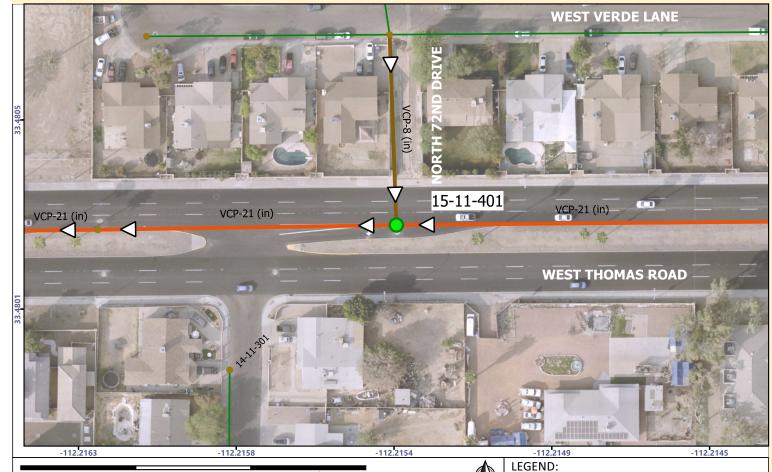
PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

#### MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:				
I-1247855	15-11-401	THOMAS RD & 72ND DR				
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR			
	CAST IRON	32 (IN)	ARTERIAL ROAD			
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:			
11.9 (FT)	60 (IN)	NOT COATED	15-11			
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:			
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	CONCRETE				

# **MANHOLE LOCATION**



200 300 ft **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:

**Drop Pipe Connections** Existing Abandoned Sewer Main

> City Sewer Main Flow Direction

City Manholes / Not For Repair

MANHOLE TO REPAIR

Pipe Connection on Wall Pipe Connection Over Bench

Pipe Connection At Channel

Not in GIS Pipe Connections

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIALUSE 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

		REHABILHATION DE	31011	AITE	COMITTI	ILO			_
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	1	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	MANHOLE 15-11-401
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					VHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	156				MAI
SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	BENCH	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					/ER
SHEET: D-4-6 DETAIL: ALL		DEFECT REPAIR PATCHING	SF	6					ARY SEW
SHEET: D-4 DETAIL: 1 & 3	PVC LINER	JOINT REPAIR	EA	7					R SANITA
SHEET: D-2 DETAIL: 1	INISEDT	INSTALL 42-IN DIAMETER INSERT	VF	8					<b>DIAMETER SANITARY SEWER</b>
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE DI
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
NOTES: SPARK TEST PULL TEST:	RESULTS:		APPROVED BY: PRINTED NAME: COMPANY:		DATE://		RVICES		

#### **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.

PHOENIX, AZ 85029

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.



SCALE OF MAP: 1:100

MANHOLE: 3 / 50



4 MANHOLES - NORTH - ZONE

**GRADE 5 &** 

**REHABILITATION -**

**SERVICES DEPT** 

PHOENIX -

SHEET NUMBER 10 OF 63

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - PROJECT NUMBER: WS90500273

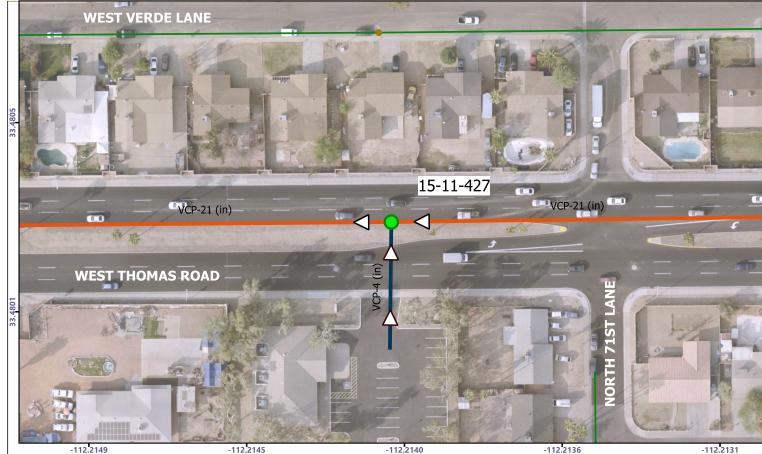
CITY PROJECT MANAGER: SAUL DURAN

NORTH - ZONE 4

# MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:				
I-1247854	15-11-427	THOMAS RD & 71ST LN				
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR			
	CAST IRON	26 (IN)	ARTERIAL ROAD			
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION: QUARTER SECTION:				
12.5 (FT)	48 (IN)	NOT COATED	15-11			
COLLAR PRESENT: NO	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:			
GROUND TYPE: GRAVEL	STRUCTURAL GRADE: 4	BRICK				

# **MANHOLE LOCATION**



LEGEND: 200 300 ft MANHOLE TO REPAIR **ASSESSMENT NOTES:** Pipe Connection on Wall Pipe Connection Over Bench Pipe Connection At Channel

# **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:

City Sewer Main Flow Direction

**Drop Pipe Connections** 

City Manholes / Not For Repair

Existing Abandoned Sewer Main

Not in GIS Pipe Connections

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# REHABILITATION DESIGN AND QUANTITIES

		KENABILITATION DE	SIGIN	AND	LOANII	IIES			
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	1	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	OLE 15-11-427
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	12				MA
SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	BLIVEIT	REPAIR & COAT 60 IN DIAMETER	EA	4					
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					VER
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					ARY SEV
SHEET: D-4 DETAIL: 1 & 3	FVC LINER	JOINT REPAIR	EA	7					R SANIT
SHEET: D-2 DETAIL: 1	INICEDT	INSTALL 42-IN DIAMETER INSERT	VF	8					DIAMETER SANITARY SEWER
SHEET: D-2 DETAIL: 2	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE DI
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
NOTES: SPARK TEST PULL TEST:	RESULTS:		APPROVED BY: PRINTED NAME: COMPANY:		DATE://		RVICES I		

#### **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.

PHOENIX, AZ 85029

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.



SCALE OF MAP: 1:100

MANHOLE: 4 / 50

SHEET NUMBER 11 OF 63



**SERVICES DEPT** PHOENIX -

**4 MANHOLES** 

Ø

**GRADE 5** 

REHABILITATION

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

NORTH - ZONE 4

#### MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:				
I-1247853	15-11-424	71ST AVE & THOMAS RD				
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR			
	CAST IRON	32 (IN)	ARTERIAL ROAD			
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:			
13 (FT)	60 (IN)	NOT COATED	15-11			
COLLAR PRESENT: NO	NASSCO MACP	EXISTING WALL MATERIAL: NOTES:				
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	CONCRETE				

# **MANHOLE LOCATION**



200 300 ft **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:

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 OFFICIALUSE 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.	1	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	15-11-424	M/SQUE00272
	MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				MANHOLE 1	W/C0
	SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MAN	
	SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3						
	DETAIL: 1	BEIVER	REPAIR & COAT 60 IN DIAMETER	EA	4	1					
	SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					VER	
	SHEET: D-4-6 DETAIL: ALL		DEFECT REPAIR PATCHING	SF	6					<b>ARY SEV</b>	
	SHEET: D-4 DETAIL: 1 & 3	PVC LINER	JOINT REPAIR	EA	7					R SANIT	,
	SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					<b>DIAMETER SANITARY SEWER</b>	1
_	SHEET: D-2 DETAIL: 1	INSTALL 54-IN DIAMETER INSERT	VF	9	10.3				LARGE D	[	
	MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					- 1	(
	NOTES: SPARK TEST PULL TEST:	RESULTS:		APPROVED BY: PRINTED NAME: COMPANY:			DATE://		RVICES DEPT		

#### **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.

PHOENIX, AZ 85029

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





SCALE OF MAP: 1:100

MANHOLE: 5 / 50

SHEET NUMBER 12 OF 63



PHOENIX -

**4 MANHOLES** 

**GRADE 5** 

**REHABILITATION** 

**SERVICES DEPT** 

WS90500273

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

NORTH - ZONE 4

#### MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:					
I-1253541	15-12-401	THOMAS RD & 69TH AVE					
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR				
	CAST IRON	26 (IN)	ARTERIAL ROAD				
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:				
13.6 (FT)	48 (IN)	NOT COATED	15-12				
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:				
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	BRICK					

# **MANHOLE LOCATION**



**ASSESSMENT NOTES:** 48 (IN) CONICAL WALL

# **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:

DATE:

REGISTRATION NUMBER:

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**

		REHABILHATION DE	SIUIV	AIVD G	CONTITU	ILJ			
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY		APPROVED MATERIAL	MANUFACTURER	15-12-401
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	10				MAI
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3	1				
	BLIVEIT	REPAIR & COAT 60 IN DIAMETER	EA	4					
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					VER
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					ARY SEV
SHEET: D-4 DETAIL: 1 & 3	T VC LINEIX	JOINT REPAIR	EA	7					R SANIT
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					<b>DIAMETER SANITARY SEWER</b>
SHEET: D-2 DETAIL: 2	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE D
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST PULL TEST:	RESULTS:		1	OVED BY: ED NAME: ANY:			DATE: /_	_/	RVICES DEPT

#### **NOTES**

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- 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.

PHOENIX, AZ 85029

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





SCALE OF MAP: 1:100

MANHOLE: 6 / 50

13 OF 63



**4 MANHOLES** 

**GRADE 5** 

REHABILITATION

**SERVICES DEPT** 

**PHOENIX** 

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

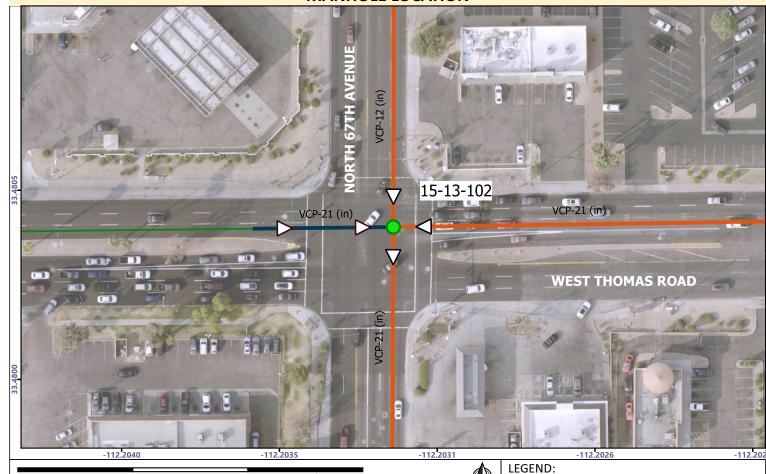
PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

	WAM ID :	LOCATION ID:	CROSS STREET:							
	I-1246115	15-13-102	THOMAS RD & 67TH AVE	RD & 67TH AVE						
	JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR						
		CAST IRON	26 (IN)	ARTERIAL ROAD						
	DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:						
	13.5 (FT)	48 (IN)	NOT COATED	15-13						
COLLAR PRESENT: NO NASSCO M		NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:						
	GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	BRICK							

# **MANHOLE LOCATION**



200

**ASSESSMENT NOTES:** 

9 O'CLOCK CONNECTION EXTENDED FOR VISIBILITY, NOT REAL GIS LENGHT

**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:

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

REHABILITATION DESIGN AND QUANTITIES									
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.			APPROVED MATERIAL	MANUFACTURER	LE 15-13-102
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MAN
SHEET: D-4		REPAIR & COAT 48 IN DIAMETER	EA	3	1				
DETAIL: 1	BENCH	REPAIR & COAT 60 IN DIAMETER	EA	4					
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1				/ER
SHEET: D-4-6 DETAIL: ALL		DEFECT REPAIR PATCHING	SF	6					SANITARY SEWER
SHEET: D-4 DETAIL: 1 & 3	PVC LINER	JOINT REPAIR	EA	7					
SHEET: D-2 DETAIL: 1	TAIL: 1 INSERT ET: D-2	INSTALL 42-IN DIAMETER INSERT	VF	8	11.9				DIAMETER
SHEET: D-2 DETAIL: 2		INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE DI
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
NOTES:	NOTES:			APPROVED BY:					
SPARK TEST RESULTS:				ED NAME:	:				CE
PULL TEST: COMPANY:							/	_/	ERVICES
NOTES									

#### **NOTES**

AR ZONA8

- 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.

PHOENIX, AZ 85029

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.



SCALE OF MAP:

1:100



SHEET NUMBER 14 OF 63

MANHOLE: 7 / 50

4 MANHOLES - NORTH - ZONE 4 **SERVICES DEPT** PHOENIX -REHABILITATION

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

PROJECT NUMBER: WS90500273

Flow Direction

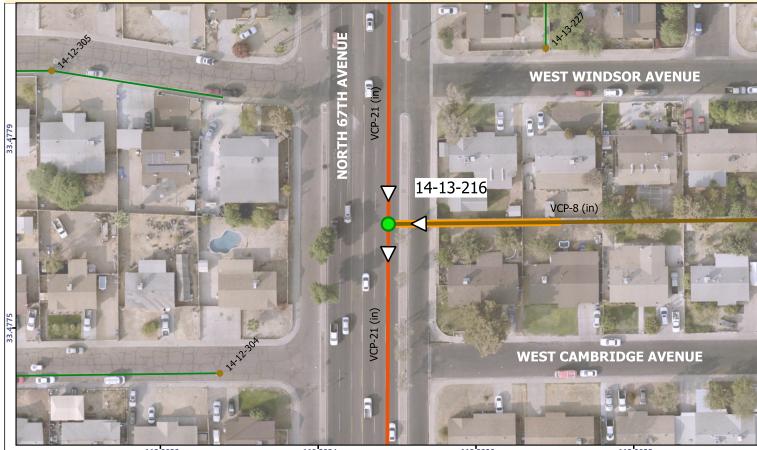
City Manholes / Not For Repair

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

	WAM ID :	LOCATION ID:	CROSS STREET:							
	I-1230261	14-13-216	67TH AVE & CAMBRIDGE AVE							
JURISDICTION: CITY OF PHOENIX		FRAME/COVER MATERIAL:								
		CAST IRON	26 (IN)	ARTERIAL ROAD						
	DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:						
	12.2 (FT)	60 (IN)	NOT COATED	14-13						
COLLAR PRESENT: YES NA		NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:						
	ROUND TYPE: OTHER STRUCTURAL GRADE: 4		BRICK							

# **MANHOLE LOCATION**



LEGEND: 200 300 ft MANHOLE TO REPAIR **ASSESSMENT NOTES:** Pipe Connection on Wall Pipe Connection Over Bench Pipe Connection At Channel **Drop Pipe Connections** REGISTERED CIVIL ENGINEER: **AS BUILT CERTIFICATION** Existing Abandoned Sewer Main I HEREBY CERTIFY THAT THE "RECORD DRAWING" Not in GIS Pipe Connections REGISTRATION NUMBER: MEASUREMENTS AS SHOWN HEREON WERE MADE City Sewer Main

DATE:

UNDER MY SUPERVISION OR AS NOTED ARE

BELIEF.

CORRECT TO THE BEST OF MY KNOWLEDGE AND

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIALUSE 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

		REHABILHATION DE	SIUIV	AIVD G	CONTITU	ILJ			
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY		APPROVED MATERIAL	MANUFACTURER	14-13-216
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	11				MAI
SHEET: D-4 DETAIL: 1	DENGL	REPAIR & COAT 48 IN DIAMETER	EA	3					
	BLIVEIT	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					VER
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					ARY SEV
SHEET: D-4 DETAIL: 1 & 3	T VC LINEIX	JOINT REPAIR	EA	7					R SANIT
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					<b>DIAMETER SANITARY SEWER</b>
SHEET: D-2 DETAIL: 2	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE D
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST PULL TEST:	RESULTS:			OVED BY: ED NAME: ANY:			DATE: /	_/	RVICES DEPT

#### **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.





SCALE OF MAP: 1:100

MANHOLE: 8 / 50

15 OF 63



**4 MANHOLES** 

**GRADE 5** 

**REHABILITATION** 

**SERVICES DEPT** 

**PHOENIX** 

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

PROJECT NUMBER: WS90500273

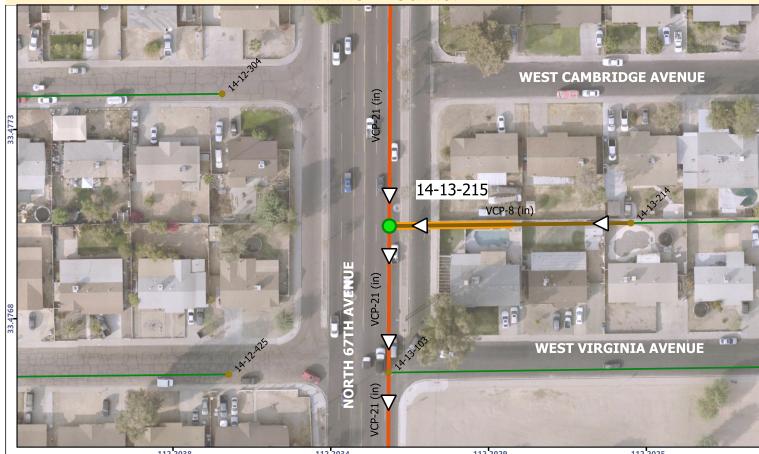
CITY PROJECT MANAGER: SAUL DURAN

City Manholes / Not For Repair

**MANHOLE INFORMATION** 

	WAM ID :	LOCATION ID:	CROSS STREET:				
	I-1201282	14-13-215	67TH AVE & VIRGINIA AVE				
	JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR			
		CAST IRON	26 (IN)	ARTERIAL ROAD			
	DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:			
	12.2 (FT)	60 (IN)	NOT COATED	14-13			
COLLAR PRESENT: NO NASSCO		NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:			
	GROUND TYPE: ASPHALT	TYPE: ASPHALT STRUCTURAL GRADE: 4					

**MANHOLE LOCATION** 



	-112.2038	-112.2034	-112.20	029	-112.2025
100	200	300 ft		LEGEND:	
ASSESSMENT NOTES:				0	MANHOLE TO REPAIR
					Pipe Connection on Wall
					Pipe Connection Over Bench
					Pipe Connection At Channel
AS BUILT CERTIFICATI	ON	REGISTERED CIVIL	ENGINEER:		Drop Pipe Connections
I HEREBY CERTIFY THA	AT THE "RECORD DRAWING"				Existing Abandoned Sewer Ma Not in GIS Pipe Connections
MEASUREMENTS AS S	SHOWN HEREON WERE MADE	REGISTRATION NU	MBER:		City Sewer Main
UNDER MY SUPERVIS	ION OR AS NOTED ARE				•
CORRECT TO THE BES	T OF MY KNOWLEDGE AND	DATE:			Flow Direction

BELIEF.

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIALUSE 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**

		KLIIADILIIAIION DL	SIUIV.	AND	COANTI	IILJ			_
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.		AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	LE 14-13-215 WS90500273
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				MANHOLE 14-13-21 WS9050027
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MAN
SHEET: D-4	SHEET: D-4 DETAIL: 1	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1		REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					/ER
SHEET: D-4-6 DETAIL: ALL		DEFECT REPAIR PATCHING	SF	6					ARY SEM
SHEET: D-4 DETAIL: 1 & 3	PVC LINER	JOINT REPAIR	EA	7					SANITA
SHEET: D-2 DETAIL: 1	INCEPT	INSTALL 42-IN DIAMETER INSERT	VF	8					GE DIAMETER SANITARY SEWER ORTH - ZONE 4
SHEET: D-2 DETAIL: 2	INSTALL 54-IN DIAMETER INSERT	VF	9	10.1				ARGE NORT	
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:				OVED BY: ED NAME: ANY:			DATE: /	_/	SERVICES DEPT - 5 & 4 MANHOLES
NOTES									
									~ -

#### **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.

PHOENIX, AZ 85029

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246

G. USE FLOW THROUGH PLUG IF NECESSARY.

PROJECT ENGINEERING CONSULTANTS

H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





SCALE OF MAP: 1:100

MANHOLE: 9 / 50

16 OF 63



**REHABILITATION - GRADE 5 &** 

PHOENIX -

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

PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:							
I-1245996	14-13-101	67TH AVE & WILSHIRE AVE							
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR						
	CAST IRON	32 (IN)	ARTERIAL ROAD						
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:						
11.8 (FT)	60 (IN)	NOT COATED	14-13						
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:						
GROUND TYPE: ASPHALT	ND TYPE: ASPHALT STRUCTURAL GRADE: 4								

# **MANHOLE LOCATION**



200 **ASSESSMENT NOTES:** 60 (IN) CONICAL WALL

**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:

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 OFFICIALUSE 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**

			<u> </u>	, u	(0,				
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS					MANUFACTURER	14-13-101
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	13				MAI
SHEET: D-4 DETAIL: 1	DENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
	BENCH	REPAIR & COAT 60 IN DIAMETER	EA	4					
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					/ER
SHEET: D-4-6 DETAIL: ALL	DVCLINED	DEFECT REPAIR PATCHING	SF	6					ARY SEW
SHEET: D-4 DETAIL: 1 & 3	PVC LINER	JOINT REPAIR	EA	7					<b>DIAMETER SANITARY SEWER</b>
SHEET: D-2 DETAIL: 1 INSERT SHEET: D-2 DETAIL: 2	INSTALL 42-IN DIAMETER INSERT	VF	8					AMETEI	
	INJERT	INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE DI
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:		APPROVED BY: PRINTED NAME: COMPANY:				DATE://		RVICES DEPT	
	MAG 422 MAG 423 COP P1424  SHEET: D-3 DETAIL: 1 & 2  SHEET: D-4 DETAIL: 1 - 5  SHEET: D-4-6 DETAIL: ALL  SHEET: D-4 DETAIL: 1 & 3  SHEET: D-2 DETAIL: 1  SHEET: D-2 DETAIL: 2  MAG 420  NOTES: SPARK TEST	MAG 422 MAG 423 COP P1424  SHEET: D-3 DETAIL: 1 & 2  SHEET: D-4 DETAIL: 1 - 5  SHEET: D-4-6 DETAIL: ALL  SHEET: D-4 DETAIL: 1 & 3  SHEET: D-2 DETAIL: 1  SHEET: D-2 DETAIL: 2  MAG 420  MANHOLE  NOTES: SPARK TEST RESULTS:	MAG 422 MAG 423 COP P1424  SHEET: D-3 DETAIL: 1 & 2  SHEET: D-4 DETAIL: 1  SHEET: D-2 DETAIL: 2  MAG 420  MANHOLE  REPLACE COLLAR, FRAME & COAT GRIP REPLACE MANHOLE  REPLACE MANHOLE  REPLACE MANHOLE  REPLACE MANHOLE  REPLACE MANHOLE  NOTES: SPARK TEST RESULTS:	MAG 422 MAG 423 COP P1424  SHEET: D-3 DETAIL: 1 & 2  SHEET: D-4 DETAIL: 1 - 5  SHEET: D-4-6 DETAIL: 1 & 3  SHEET: D-4 DETAIL: 1 & 3  SHEET: D-2 DETAIL: 2  MAG 420  MANHOLE  REPLACE COLLAR, FRAME & EA  REPLACE COLLAR, FRAME & COAT REPAIR & COAT 48 IN DIAMETER  EA  REPAIR & COAT 60 IN DIAMETER  EA  BENCH  BENCH  REPAIR & COAT 60 IN DIAMETER  EA  DEFECT REPAIR PATCHING SF  JOINT REPAIR  VF  INSTALL 42-IN DIAMETER INSERT  VF  MAG 420  MANHOLE  REPLACE MANHOLE  VF  NOTES: SPARK TEST RESULTS:  APPROPRINT	MAG 422 MAG 423 COP P1424  COLLAR, FRAME & COVER  REPLACE COLLAR, FRAME & COVER  SHEET: D-3 DETAIL: 1 & 2  SHEET: D-3 DETAIL: 1 & 2  SHEET: D-4 DETAIL: 1  SHEET: D-1 DETAIL: 1 - 5  CHANNEL  REPAIR & COAT & EA	DETAILS   COMPONENT   REHABILITATION   UNITS   NO.   QUANTITY	DETAILS   COMPONENT   REHABILITATION   ONITS   NO.   QUANTITY   QUANTITY	DETAILS   COMPONENT   REHABILIATION   ONITS   NO.   QUANTITY   QUANTITY   MATERIAL	DETAILS   COMPONENT   REHABICIATION   UNITS   NO.   QUANTITY   QUANTITY   MATERIAL   MANOFACTORE

#### **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.

PHOENIX, AZ 85029

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





SCALE OF MAP: 1:100

MANHOLE: 10 / 50

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**PHOENIX** 

**REHABILITATION** 

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

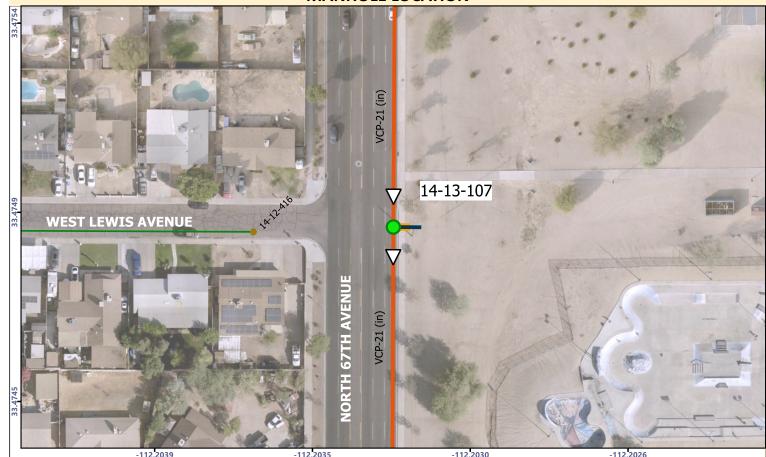
PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:							
I-1246151	14-13-107	67TH AVE & LEWIS AVE							
JURISDICTION: CITY OF PHOENIX	IX FRAME/COVER MATERIAL: COVER DIAMETER:		ENVIRONMENT: MAJOR						
	CAST IRON	32 (IN)	ARTERIAL ROAD						
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:						
11.8 (FT)	60 (IN)	NOT COATED	14-13						
COLLAR PRESENT: NO	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:						
GROUND TYPE: ASPHALT	/PE: ASPHALT STRUCTURAL GRADE: 4								

#### **MANHOLE LOCATION**



200 300 ft **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:** 

DATF:

Pipe Connection on Wall Pipe Connection Over Bench Pipe Connection At Channel

Existing Abandoned Sewer Main Not in GIS Pipe Connections City Sewer Main

LEGEND:

Flow Direction

City Manholes / Not For Repair

MANHOLE TO REPAIR

**Drop Pipe Connections** 

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029



SCALE OF MAP: 1:100

MANHOLE: 11 / 50

SHEET NUMBER 18 OF 63

AS BUILT | APPROVED CONSTRUCTION **BID ITEM** COMPONENT REHABILITATION UNITS MANUFACTURER DETAILS QUANTITY QUANTITY MATERIAL NO. MAG 422 COLLAR, FRAME REPLACE COLLAR, FRAME EΑ MAG 423 1 & COVER & COVER **COP P1424** SHEET: D-3 CHIMNEY, CONE DEFECT REPAIR COATING SF 2 159 DETAIL: 1 & 2 | & BARREL **REPAIR & COAT** EΑ 3 **48 IN DIAMETER** SHEET: D-4 BENCH DETAIL: 1 **REPAIR & COAT** EΑ 4 1 **60 IN DIAMETER** REPAIR SHEET: D-1 CHANNEL EΑ 5 DETAIL: 1 - 5 (SEE NOTE D) SHEET: D-4-6 SF **DEFECT REPAIR PATCHING** 6 DETAIL: ALL **PVC LINER** SHEET: D-4 JOINT REPAIR EΑ 7 **DETAIL: 1 & 3** SHEET: D-2 INSTALL 42-IN VF 8 DETAIL: 1 **DIAMETER INSERT** INSERT SHEET: D-2 **INSTALL 54-IN** VF 9 DETAIL: 1 **DIAMETER INSERT** MAG 420 MANHOLE REPLACE MANHOLE VF 10

REHABILITATION DESIGN AND QUANTITIES

NOTES:

SPARK TEST RESULTS: PULL TEST:

# **NOTES**

APPROVED BY:

COMPANY:

PRINTED NAME:

- 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.
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DATE:



14-13-107

MANHOLE

SEWER

SANITARY

DIAMETER !

LARGE

- NORTH - ZONE

**4 MANHOLES** 

જ

**5** 

GRADE

**REHABILITATION** 

PHOENIX

WS9050027

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CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

NORTH - ZONE 4

#### MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:						
I-1256680	14-13-102	67TH AVE & VERNON AVE						
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	ME/COVER MATERIAL: COVER DIAMETER:						
	CAST IRON	26 (IN)	ARTERIAL ROAD					
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:					
12.5 (FT)	60 (IN)	NOT COATED	14-13					
COLLAR PRESENT: NO	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:					
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	BRICK						

# **MANHOLE LOCATION**



100	200	300 ft	
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:

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**

		REHABILHATION DE	SIUIV	AIVD G	CONTITU	ILJ			
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY		APPROVED MATERIAL	MANUFACTURER	14-13-102
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	76				MAI
SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	REPAIR & COAT 60 IN DIAMETER	EA	4						
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					VER
SHEET: D-4-6 DETAIL: ALL	- PVC LINER	DEFECT REPAIR PATCHING	SF	6					ARY SEV
SHEET: D-4 DETAIL: 1 & 3	T VC LINEIX	JOINT REPAIR	EA	7					R SANIT
SHEET: D-2 DETAIL: 1	DETAIL: 1	INSTALL 42-IN DIAMETER INSERT	VF	8					<b>DIAMETER SANITARY SEWER</b>
SHEET: D-2 DETAIL: 2	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE D
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:				OVED BY: ED NAME: ANY:			DATE: /	_/	RVICES DEPT

#### **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.





SCALE OF MAP: 1:100

MANHOLE: 12 / 50

SHEET NUMBER 19 OF 63



**PHOENIX REHABILITATION** 

**GRADE 5** 

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

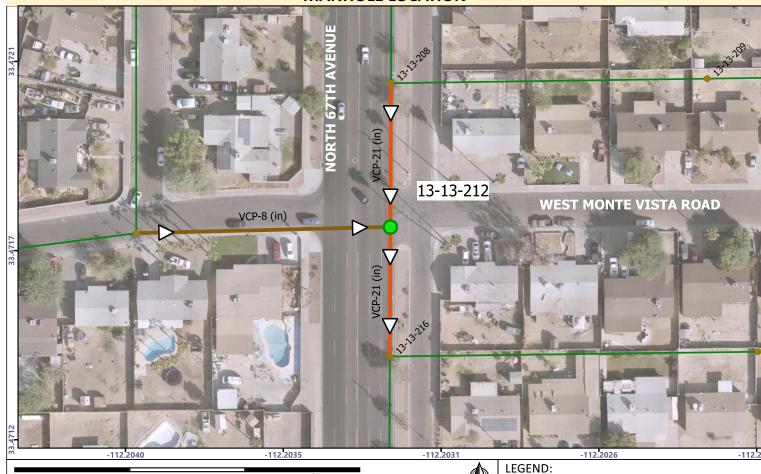
PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:							
I-1171050	13-13-212	MONTE VISTA RD & 67TH AVE							
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR						
	CAST IRON	26 (IN)	ARTERIAL ROAD						
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:						
12.8 (FT)	60 (IN)	NOT COATED	13-13						
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:						
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	BRICK							

**MANHOLE LOCATION** 



200 300 ft **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:

Existing Abandoned Sewer Main Not in GIS Pipe Connections City Sewer Main

MANHOLE TO REPAIR

Pipe Connection on Wall Pipe Connection Over Bench

**Drop Pipe Connections** 

Pipe Connection At Channel

Flow Direction

City Manholes / Not For Repair

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIALUSE 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

REHABILITATION DESIGN AND QUANTITIES									
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	1	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	13-13-212
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	11				MAN
SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	211311	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1				VER
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					ARY SEV
SHEET: D-4 DETAIL: 1 & 3	T VO LINEIX	JOINT REPAIR	EA	7					R SANIT
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					DIAMETER SANITARY SEWER
SHEET: D-2 DETAIL: 2	III SEKI	INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE D
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
NOTES: SPARK TEST RESULTS: PULL TEST:			1	OVED BY: ED NAME: ANY:	:		DATE: /	_/	RVICES I

#### **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.

PHOENIX, AZ 85029

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.



SCALE OF MAP: 1:100

MANHOLE: 13 / 50





**4 MANHOLES** 

**GRADE 5** 

**REHABILITATION** 

**PHOENIX** 

SHEET NUMBER 20 OF 63

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

NORTH - ZONE 4

#### MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:			
I-1192337	18-11-211	-11-211 75TH AVE & CAMELBACK RD			
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR		
	CAST IRON	32 (IN)	ARTERIAL ROAD		
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:		
10.1 (FT) 60 (IN)		NOT COATED	18-11		
COLLAR PRESENT: NO	NASSCO MACP	EXISTING WALL MATERIAL: NOTES:			
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	CONCRETE			

# **MANHOLE LOCATION**



LEGEND: 240 ft MANHOLE TO REPAIR **ASSESSMENT NOTES:** Pipe Connection on Wall Pipe Connection Over Bench Pipe Connection At Channel **Drop Pipe Connections** REGISTERED CIVIL ENGINEER: **AS BUILT CERTIFICATION** Existing Abandoned Sewer Main I HEREBY CERTIFY THAT THE "RECORD DRAWING" REGISTRATION NUMBER:

MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

DATE:

Not in GIS Pipe Connections City Sewer Main

Flow Direction

City Manholes / Not For Repair

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#### REHABILITATION DESIGN AND QUANTITIES

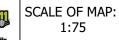
	REPABILITATION DESIGN AND QUANTITIES									
	CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.		AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	18-11-211
	MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					MANHOLE 1
	SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	124				MAI
	SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
	DETAIL: 1	211311	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
	SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					VER
	SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					ARY SEV
	SHEET: D-4 DETAIL: 1 & 3	T VE LINER	JOINT REPAIR	EA	7					DIAMETER SANITARY SEWER
	SHEET: D-2 DETAIL: 1		INSTALL 42-IN DIAMETER INSERT	VF	8					AMETE
	SHEET: D-2 DETAIL: 1	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE D
	MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
	NOTES: SPARK TEST PULL TEST:	ARK TEST RESULTS: PRINTED NAME:			DATE://		RVICES DEPT			

#### **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.







MANHOLE: 14 / 50

PHOENIX -REHABILITATION -SHEET NUMBER 21 OF 63

**4 MANHOLES** 

**GRADE 5** 

**SERVICES DEPT** 

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

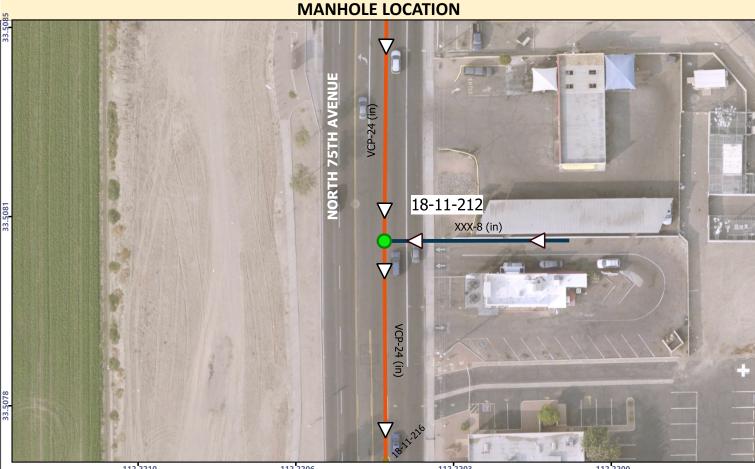
PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

City Manholes / Not For Repair

**MANHOLE INFORMATION** 

WAM ID :	LOCATION ID:	CROSS STREET:						
I-1192243	18-11-212	75TH AVE & CAMELBACK RD						
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR					
	CAST IRON	32 (IN)	ARTERIAL ROAD					
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:					
9.9 (FT)	60 (IN)	NOT COATED	18-11					
COLLAR PRESENT: NO	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:					
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	CONCRETE						



-112.2	210 -1	12.2206	-112.2203		-112.2200
80	160	240 ft		LEGEND:	
ASSESSMENT NOTES:			,,,		MANHOLE TO REPAIR
					Pipe Connection on Wall
					Pipe Connection Over Bench
					Pipe Connection At Channel
AS BUILT CERTIFICATION		REGISTERED CIVI	L ENGINEER:	***	Drop Pipe Connections Existing Abandoned Sewer Main
I HEREBY CERTIFY THAT TH	HE "RECORD DRAWING"				Not in GIS Pipe Connections
MEASUREMENTS AS SHOW	WN HEREON WERE MADE	REGISTRATION N	UMBER:		City Sewer Main
UNDER MY SUPERVISION	OR AS NOTED ARE				•

DATE:

CORRECT TO THE BEST OF MY KNOWLEDGE AND

BELIEF.

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIALUSE 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	LE 18-11-212 WS90500273
		REPLACE COLLAR, FRAME & COVER	EA	1					MANHOLE 18-11-212 WS90500273
	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	123				MAI
SHEET: D-4		REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1		REPAIR & COAT 60 IN DIAMETER	EA	4					
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					ÆR
SHEET: D-4-6 DETAIL: ALL		DEFECT REPAIR PATCHING	SF	6					\RY SEW
SHEET: D-4 DETAIL: 1 & 3	PVC LINER	JOINT REPAIR	EA	7					GE DIAMETER SANITARY SEWER ORTH - ZONE 4
SHEET: D-2 DETAIL: 1		INSTALL 42-IN DIAMETER INSERT	VF	8					AMETEF - ZONE
SHEET: D-2 DETAIL: 1	NSERT	INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE DI - NORTH
MAG 420 M	MANHOLE	REPLACE MANHOLE	VF	10					- · · ·
NOTES: SPARK TEST RE PULL TEST:	ESULTS:	1				DATE: /	_/	SERVICES DEPT - 5 & 4 MANHOLES	
NOTES									

#### **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.







SCALE OF MAP: 1:75

MANHOLE: 15 / 50

SHEET NUMBER 22 OF 63



PHOENIX -

**REHABILITATION - GRADE 5** 

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

PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

100000000000000000000000000000000000000									
WAM ID :	LOCATION ID:	CROSS STREET:							
I-1192331	18-11-107	MEADOWBROOK AVE & 75TH AVE							
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR						
	CAST IRON	32 (IN)	ARTERIAL ROAD						
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:						
11.2 (FT)	60 (IN)	NOT COATED	18-11						
COLLAR PRESENT: NO	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:						
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 5	CONCRETE							

#### **MANHOLE LOCATION**



200 **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:

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

		REHABILITATION DE	SIGIN	AND	UANTI	IIES			
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.		AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	18-11-107
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MAI
SHEET: D-4	RENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	REPAIR & COAT 60 IN DIAMETER	EA	4	1					
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					VER
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					ARY SEV
SHEET: D-4 DETAIL: 1 & 3	FVC LINER	JOINT REPAIR	EA	7					R SANIT
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					DIAMETER SANITARY SEWER
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9	8.8				LARGE DI
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
NOTES: SPARK TEST PULL TEST:	ARK TEST RESULTS: PRINTED NAME:			DATE://		RVICES I			

#### **NOTES**

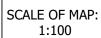
- A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.
- B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.
- C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.
- D. COAT THE CHANNEL IF IT IS CONCRETE.
- E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.
- F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.

PHOENIX, AZ 85029

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





MANHOLE: 16 / 50

23 OF 63



SHEET NUMBER

**GRADE 5** 

**REHABILITATION** 

**PHOENIX** 

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

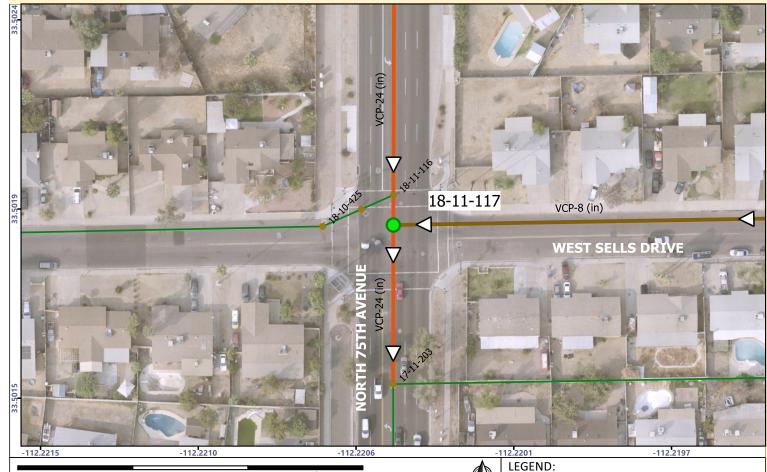
PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

#### MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:				
I-1192251	18-11-117	SELLS DR & 75TH AVE				
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR			
	CAST IRON	26 (IN)	ARTERIAL ROAD			
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:			
12.2 (FT)	12.2 (FT) 60 (IN)		18-11			
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:			
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	CONCRETE				

# **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.

DATE:

REGISTERED CIVIL ENGINEER:

REGISTRATION NUMBER:

**Drop Pipe Connections** Existing Abandoned Sewer Main

Not in GIS Pipe Connections City Sewer Main

Pipe Connection At Channel

MANHOLE TO REPAIR

Pipe Connection on Wall Pipe Connection Over Bench

Flow Direction

City Manholes / Not For Repair

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#### REHABILITATION DESIGN AND QUANTITIES

		REHABILITATION DE	SIGIN	AND	UANTI	IIES			
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY		APPROVED MATERIAL	MANUFACTURER	18-11-117
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	171				MAI
SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	BENCH	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					VER
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					ARY SEV
SHEET: D-4 DETAIL: 1 & 3	T VO EINEN	JOINT REPAIR	EA	7					R SANIT
SHEET: D-2 DETAIL: 1	- INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					DIAMETER SANITARY SEWER
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE D
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
NOTES: SPARK TEST RESULTS: PULL TEST:			APPROVED BY: PRINTED NAME: COMPANY:				DATE://		RVICES

#### **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.

PHOENIX, AZ 85029

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





SCALE OF MAP: 1:100

MANHOLE: 17 / 50

24 OF 63



SHEET NUMBER

**4 MANHOLES** 

**GRADE 5** 

**REHABILITATION** 

**SERVICES DEPT** 

**PHOENIX** 

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

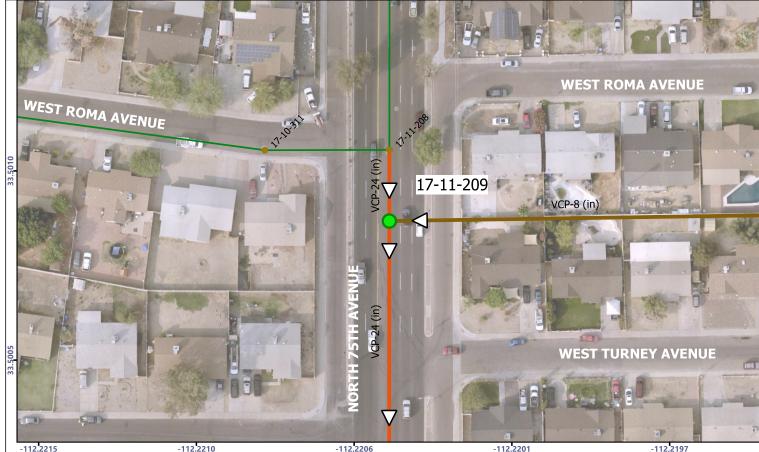
PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:								
I-1252978	17-11-209	75TH AVE & ROMA AVE								
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR							
	CAST IRON	32 (IN)	ARTERIAL ROAD							
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:							
11.7 (FT)	60 (IN)	NOT COATED	17-11							
COLLAR PRESENT: NO NASSCO MACP		EXISTING WALL MATERIAL:	NOTES:							
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	BRICK								

#### **MANHOLE LOCATION**



				a	a   a
-112.2215	-112.2210	-112.2206	-	112.2201	-112.2197
100	200	300 ft		LEGEND:	
ASSESSMENT NOTES:					MANHOLE TO REPAIR
					Pipe Connection on Wall
					Pipe Connection Over Bench
					Pipe Connection At Channel
AS BUILT CERTIFICATION	<u>ON</u>	REGISTERED CIVIL ENG	SINEER:		Drop Pipe Connections
	T THE UDECORD DRAWING	,		$\rightarrow\rightarrow$	Existing Abandoned Sewer Ma

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

Not in GIS Pipe Connections City Sewer Main

Flow Direction

City Manholes / Not For Repair

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#### REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION									$\sim$
DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	LE 17-11-209 WS90500273
		REPLACE COLLAR, FRAME & COVER	EA	1					MANHOLE 17-11-209 WS90500273
	HIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	4				MA
SHEET: D-4		REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	BENCH	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	HANNEL	REPAIR (SEE NOTE D)	EA	5	1				ÆR
SHEET: D-4-6 DETAIL: ALL		DEFECT REPAIR PATCHING	SF	6					ARY SEM
SHEET: D-4 DETAIL: 1 & 3	VC LINER	JOINT REPAIR	EA	7					R SANITA
SHEET: D-2 DETAIL: 1		INSTALL 42-IN DIAMETER INSERT	VF	8					GE DIAMETER SANITARY SEWER ORTH - ZONE 4
SHEET: D-2 DETAIL: 2		INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE DI - NORTH
MAG 420 M	/ANHOLE	REPLACE MANHOLE	VF	10					- 'A
NOTES: SPARK TEST RESULTS: PULL TEST:							DATE: /	_/	SERVICES DEPT - 5 & 4 MANHOLES
NOTES									

#### **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.





**REHABILITATION - GRADE 5 &** 

PHOENIX -

SHEET NUMBER 25 OF 63





SCALE OF MAP: 1:100

MANHOLE: 18 / 50

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

PROJECT NUMBER: WS90500273

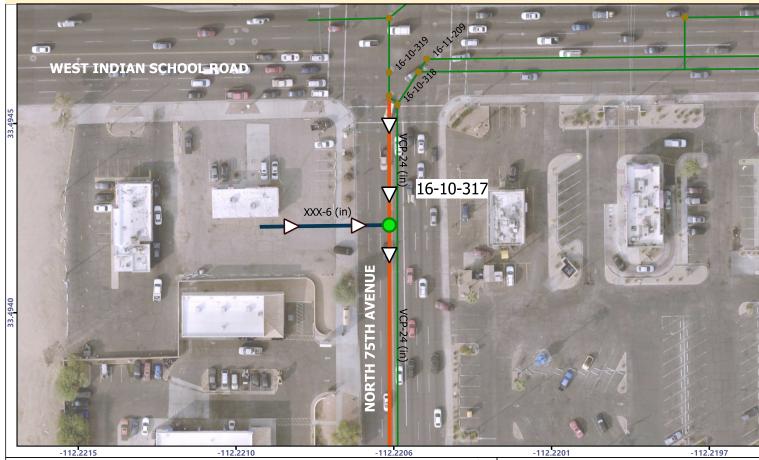
CITY PROJECT MANAGER: SAUL DURAN

City Manholes / Not For Repair

**MANHOLE INFORMATION** 

WAM ID :	LOCATION ID:	CROSS STREET:							
I-1252411	16-10-317	75TH AVE & INDIAN SCHOOL RD							
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR						
	CAST IRON	26 (IN)	ARTERIAL ROAD						
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:						
10.5 (FT)	60 (IN)	NOT COATED	16-10						
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:						
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	BRICK							

# **MANHOLE LOCATION**



				LEGEND:	
100	200	300 ft		LEGEND.	
ASSESSMENT NOTES:					MANHOLE TO REPAIR
					Pipe Connection on Wall
					Pipe Connection Over Bench
					Pipe Connection At Channel
AS BUILT CERTIFICATION	<u>ON</u>	REGISTERE	D CIVIL ENGINEER:		Drop Pipe Connections
I HEREBY CERTIFY THA	T THE "RECORD DRAV	VING"		<u> </u>	Existing Abandoned Sewer Main Not in GIS Pipe Connections
MEASUREMENTS AS S	HOWN HEREON WERI	E MADE REGISTRAT	ION NUMBER:		City Sewer Main
UNDER MY SUPERVISI	ON OR AS NOTED ARE			l .	

DATE:

CORRECT TO THE BEST OF MY KNOWLEDGE AND

BELIEF.

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIALUSE 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**

		REHABILHATION DE	31014	AND	COAITTI	ILO			_
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.		AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	MANHOLE 16-10-317 WS90500273
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					NHOLE 1 WS9
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	7				MAN
SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	BENCII	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1				VER
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					ARY SEV
SHEET: D-4 DETAIL: 1 & 3	T VC LINER	JOINT REPAIR	EA	7					R SANIT. 4
SHEET: D-2 DETAIL: 1		INSTALL 42-IN DIAMETER INSERT	VF	8					LARGE DIAMETER SANITARY SEWER - NORTH - ZONE 4
SHEET: D-2 DETAIL: 2	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9					ARGE DI NORTH
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:			APPROVED BY: PRINTED NAME: COMPANY:				DATE://		RVICES DEPT -

#### **NOTES**

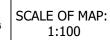
- A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.
- B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.
- C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.
- D. COAT THE CHANNEL IF IT IS CONCRETE.
- E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.
- F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.

PHOENIX, AZ 85029

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





MANHOLE: 19 / 50



**REHABILITATION - GRADE 5 &** 

PHOENIX -

SHEET NUMBER 26 OF 63

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

PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID :	LOCATION ID:								
I-1249502	16-11-212	73RD AVE & INDIAN SCHOOL RD							
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR						
	CAST IRON	32 (IN)	ARTERIAL ROAD						
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:						
10.9 (FT)	60 (IN)	NOT COATED	16-11						
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:						
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	CONCRETE							

# **MANHOLE LOCATION**



200 **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:

DATE:

REGISTRATION NUMBER:

Flow Direction

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

City Manholes / Not For Repair

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIALUSE 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**

	<b>.</b>	KENADIENANON DE	51011	AIT G	COMITTI	ILO			
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY		APPROVED MATERIAL	MANUFACTURER	16-11-212
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MAR
SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	BENCII	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1				/ER
SHEET: D-4-6 DETAIL: ALL	DETAIL: ALL	DEFECT REPAIR PATCHING	SF	6					ARY SEV
SHEET: D-4 DETAIL: 1 & 3	PVC LINER	JOINT REPAIR	EA	7					R SANIT
SHEET: D-2 DETAIL: 1	- INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					<b>DIAMETER SANITARY SEWER</b>
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	7.9				LARGE DI
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:			APPROVED BY: PRINTED NAME: COMPANY:				DATE://		RVICES DEPT

#### **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.





**4 MANHOLES** 

**GRADE 5** 

**REHABILITATION -**

**SERVICES DEPT** 

PHOENIX -

SHEET NUMBER 27 OF 63

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029



SCALE OF MAP: 1:100

MANHOLE: 20 / 50

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

PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

107/44/1012 IVI OILIVA II OIL									
WAM ID:	LOCATION ID:	CROSS STREET:							
I-1249501	16-11-310	INDIAN SCHOOL RD & 72ND AVE							
JURISDICTION: CITY OF PHOENIX	OICTION: CITY OF PHOENIX FRAME/COVER MATERIAL: COVER DIAMETER:		ENVIRONMENT: MAJOR						
	CAST IRON	32 (IN)	ARTERIAL ROAD						
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:						
11.4 (FT)	60 (IN)	NOT COATED	16-11						
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:						
GROUND TYPE: ASPHALT STRUCTURAL GRADE: 4		CONCRETE							

# **MANHOLE LOCATION**



200 **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:

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 OFFICIALUSE 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 OLIANTITIES

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	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
DETAIL: 1	BENCH	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	PVC LINER	JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INISEDT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9	7.9			
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.

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.

PHOENIX, AZ 85029





SCALE OF MAP: 1:100

MANHOLE: 21 / 50

SHEET NUMBER 28 OF 63



**PHOENIX** 

**MANHOLE 16-11-310** 

LARGE DIAMETER SANITARY SEWER

**4 MANHOLES** 

**GRADE 5** 

**REHABILITATION** 

**SERVICES DEPT** 

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

PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:							
I-1255619	16-12-203	INDIAN SCHOOL RD & 70TH AVE							
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR						
	CAST IRON	32 (IN)	ARTERIAL ROAD						
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:						
12.4 (FT)	60 (IN)	NOT COATED	16-12						
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:						
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	CONCRETE							

# **MANHOLE LOCATION**



200 300 ft **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:

Pipe Connection Over Bench

Pipe Connection At Channel **Drop Pipe Connections** 

MANHOLE TO REPAIR

Pipe Connection on Wall

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**

		112117 1512117 111011 52	0.0.0	, U	(0/11/11				l i
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	1	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	<b>MANHOLE 16-12-203</b>
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				VHOLE 16
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MAN
SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	DENCIT	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					VER
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					SANITARY SEWER
SHEET: D-4 DETAIL: 1 & 3	T VC LINEIX	JOINT REPAIR	EA	7					R SANIT
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					DIAMETER
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9	8.9				LARGE DI
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
NOTES: SPARK TEST PULL TEST:	RESULTS:		1		· 		DATE: /	_/	SERVICES D
		N	OTES						SEI

#### **NOTES**

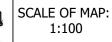
- A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.
- B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.
- C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.
- D. COAT THE CHANNEL IF IT IS CONCRETE.
- E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.
- F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.

PHOENIX, AZ 85029

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





MANHOLE: 22 / 50

29 OF 63



4 MANHOLES - NORTH - ZONE 4

**GRADE 5 &** 

**REHABILITATION -**

PHOENIX -

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

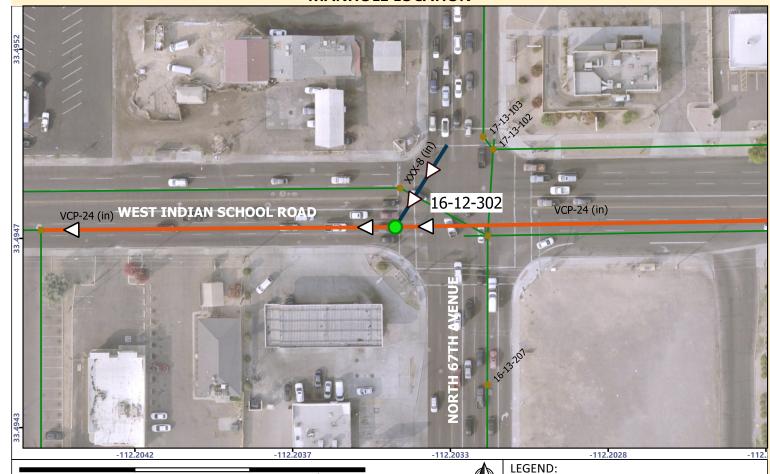
PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:			
I-1255615	16-12-302	INDIAN SCHOOL RD & 67TH AVE			
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR		
	CAST IRON	32 (IN)	ARTERIAL ROAD		
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:		
12 (FT)	60 (IN)	NOT COATED	16-12		
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:		
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 5	CONCRETE			

# **MANHOLE LOCATION**



200 **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:

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

		KENABILITATION DE	SIGN	AND C	<b>LI MAO</b>	IIEO			
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	1	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	16-12-302
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MAN
SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	SERVET!	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1				VER
SHEET: D-4-6 DETAIL: ALL	– PVC LINER	DEFECT REPAIR PATCHING	SF	6					ARY SEV
SHEET: D-4 DETAIL: 1 & 3	T VO LINEIX	JOINT REPAIR	EA	7					R SANIT
		INSTALL 42-IN DIAMETER INSERT	VF	8					DIAMETER SANITARY SEWER
SHEET: D-2 DETAIL: 1	III SENI	INSTALL 54-IN DIAMETER INSERT	VF	9	7.8				LARGE D
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
NOTES: SPARK TEST PULL TEST:	RESULTS:		APPROVED BY: PRINTED NAME: COMPANY:			DATE: _ //		RVICES	

#### **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.







SCALE OF MAP: 1:100

MANHOLE: 23 / 50

30 OF 63



**PHOENIX** SHEET NUMBER

**GRADE 5** 

REHABILITATION

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

PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:			
I-1250446	16-13-209	INDIAN SCHOOL RD & 67TH AVE			
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR		
	CAST IRON	32 (IN)	ARTERIAL ROAD		
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:		
12.1 (FT)	60 (IN)	NOT COATED	16-13		
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:		
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	CONCRETE			

**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:

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

MANHOLE TO REPAIR

Pipe Connection on Wall

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIALUSE 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

COLAR, FRAME   REPLACE COLLAR, FRAME   & COVER   & COV			REHABILITATION DE	:SIGN	AND C	UANII	HES		
COLLAR, FRAME   REPLACE MANHOLE	CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS		1		MANUFACTURER	16-13-209
SHEET: D-4 DETAIL: 1 & 2 & BARREL  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)  SHEET: D-4-6 DETAIL: ALL  PVC LINER  SHEET: D-4 DETAIL: 1 & 3  SHEET: D-2 DETAIL: 1 & 3  SHEET: D-2 DETAIL: 1  INSERT  INSTALL 42-IN DIAMETER INSERT  INSTALL 54-IN DIAMETER INSERT  MAG 420  MANHOLE  REPAIR & COAT 48 IN DIAMETER  EA 3  BENCH  REPAIR & COAT 60 IN DIAMETER  EA 5  SHEET: D-2 DETAIL: 1  INSERT  INSTALL 54-IN DIAMETER INSERT  ADDITION OF THE PAIR  ADD	MAG 423			EA	1				VHOLE 10
SHEET: D-4 DETAIL: 1  SHEET: D-1 DETAIL: 1-5  CHANNEL  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  SHEET: D-4 DETAIL: 1 & 3  SHEET: D-2 DETAIL: 1  SHEET: D-2 DETAIL: 1  INSTALL 42-IN DIAMETER  VF 8  MAG 420  MANHOLE  REPAIR  REPAIR  REPAIR (SEE NOTE D)  EA 5  SHEET: D-2 DETAIL: 1  INSTALL 42-IN DIAMETER INSERT  VF 9  MAG 420  MANHOLE  REPLACE MANHOLE  VF 10			DEFECT REPAIR COATING	SF	2	158			MA
DETAIL: 1  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  SHEET: D-4 DETAIL: 1 & 3  SHEET: D-2 DETAIL: 1  MAG 420  MANHOLE  REPAIR & COAT 60 IN DIAMETER SF 6  SHEET: D-2 DETAIL: 1  MAG 420  MANHOLE  REPLACE MANHOLE  VF 10	SHEET: D-4	DENGL		EA	3				
DETAIL: 1 - 5  CHANNEL  (SEE NOTE D)  EA 5  SHEET: D-4-6 DETAIL: ALL  PVC LINER  SHEET: D-4 DETAIL: 1 & 3  SHEET: D-2 DETAIL: 1  INSERT  SHEET: D-2 DETAIL: 1  INSERT  INSTALL 42-IN DIAMETER INSERT  VF 8  INSTALL 54-IN DIAMETER INSERT  WF 9  MAG 420  MANHOLE  REPLACE MANHOLE  VF 10		BENCH		EA	4	1			
SHEET: D-2 DETAIL: 1  INSTALL 42-IN DIAMETER INSERT  SHEET: D-2 DETAIL: 1  INSTALL 54-IN DIAMETER INSERT  VF 9  MAG 420  MANHOLE  REPLACE MANHOLE  VF 10	SHEET: D-1 DETAIL: 1 - 5	CHANNEL		EA	5				/ER
SHEET: D-2 DETAIL: 1  INSTALL 42-IN DIAMETER INSERT  SHEET: D-2 DETAIL: 1  INSTALL 54-IN DIAMETER INSERT  VF 9  MAG 420  MANHOLE  REPLACE MANHOLE  VF 10	SHEET: D-4-6 DETAIL: ALL		DEFECT REPAIR PATCHING	SF	6				RY SEW
SHEET: D-2 DETAIL: 1  INSTALL 54-IN DIAMETER INSERT  VF 9  MAG 420  MANHOLE  REPLACE MANHOLE  VF 10	SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7				SANIT
SHEET: D-2 DETAIL: 1  INSTALL 54-IN DIAMETER INSERT  VF 9  MAG 420  MANHOLE  REPLACE MANHOLE  VF 10				VF	8				AMETER
MAG 420 MANHOLE REPLACE MANHOLE VF 10		- INSERT		VF	9				ARGE DI
	MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				DEPT - L
NOTES	NOTES: SPARK TEST PULL TEST:	RESULTS:	1	PRINT	ED NAME:	·		_/	
			N	OTES					SEF

#### **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.







SCALE OF MAP: 1:100

MANHOLE: 24 / 50

SHEET NUMBER 31 OF 63



**PHOENIX-**

WS90500273

4 MANHOLES - NORTH - ZONE 4

**GRADE 5** 

REHABILITATION -

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

NORTH - ZONE 4

# MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:			
I-1175270	16-14-224	INDIAN SCHOOL RD & 61ST DR			
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: SIDEWALK		
	CAST IRON	32 (IN)			
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:		
12.3 (FT)	60 (IN)	NOT COATED	16-14		
COLLAR PRESENT: NO	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:		
GROUND TYPE: GRAVEL	STRUCTURAL GRADE: 4	CONCRETE			

# **MANHOLE LOCATION**



200 **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:

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 OFFICIALUSE 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.			APPROVED MATERIAL	MANUFACTURER	MANHOLE 16-14-224
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				NHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MAR
SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	BENCH	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					/ER
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					ARY SEW
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7					DIAMETER SANITARY SEWER
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					IAMETEI
SHEET: D-2 DETAIL: 1	III SERI	INSTALL 54-IN DIAMETER INSERT	VF	9	9.1				LARGE D
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
NOTES: SPARK TEST PULL TEST:	RESULTS:		APPROVED BY: PRINTED NAME: COMPANY:		DATE://		RVICES I		

#### **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.

PHOENIX, AZ 85029

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.



SCALE OF MAP: 1:100

MANHOLE: 25 / 50

32 OF 63



SHEET NUMBER

4 MANHOLES - NORTH - ZONE 4

**REHABILITATION - GRADE 5 &** 

PHOENIX -

**SERVICES DEPT** 

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

NORTH - ZONE 4

#### MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:			
I-1175269	16-14-320	INDIAN SCHOOL RD & 61ST AVE			
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: SIDEWALK		
	CAST IRON	32 (IN)			
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:		
11.9 (FT)	60 (IN)	NOT COATED	16-14		
COLLAR PRESENT: NO	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:		
GROUND TYPE: CONCRETE	STRUCTURAL GRADE: 4	CONCRETE			

# **MANHOLE LOCATION**



200 300 ft **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:

Existing Abandoned Sewer Main Not in GIS Pipe Connections

> City Sewer Main Flow Direction

MANHOLE TO REPAIR

**Drop Pipe Connections** 

Pipe Connection on Wall Pipe Connection Over Bench

Pipe Connection At Channel

City Manholes / Not For Repair

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIALUSE 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**

		KEHADIEHAHON DE		71110	(0/11/11				
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	1	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	MANHOLE 16-14-320
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				NHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MAR
SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	BLIVEIT	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					VER
SHEET: D-4-6 DETAIL: ALL	- PVC LINER	DEFECT REPAIR PATCHING	SF	6					ARY SEV
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7					R SANITA
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					DIAMETER SANITARY SEWER
SHEET: D-2 DETAIL: 1	INJERT	INSTALL 54-IN DIAMETER INSERT	VF	9	8.7				LARGE DI
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
NOTES: SPARK TEST PULL TEST:	RESULTS:		APPROVED BY: PRINTED NAME: COMPANY:		DATE: //		RVICES I		

#### **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.

PHOENIX, AZ 85029

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





SCALE OF MAP: 1:100

MANHOLE: 26 / 50



4 MANHOLES - NORTH - ZONE 4

**GRADE 5 &** 

REHABILITATION -

**SERVICES DEPT** 

PHOENIX -

SHEET NUMBER 33 OF 63

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

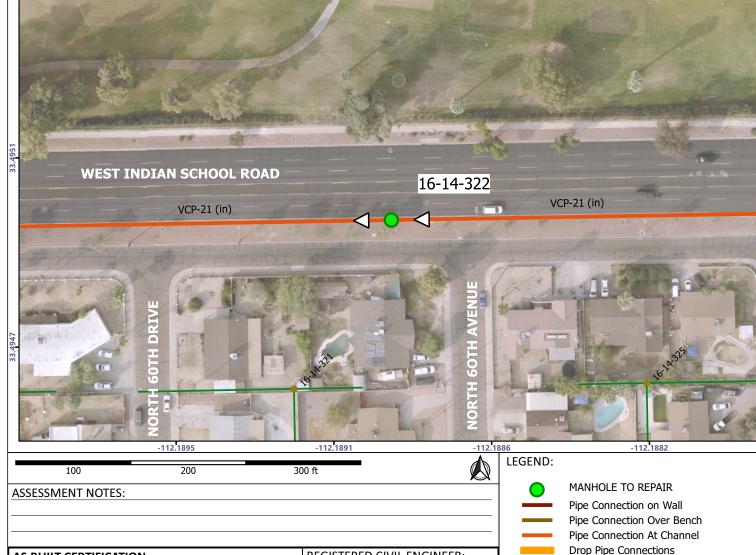
PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:			
I-1175268	16-14-322	INDIAN SCHOOL RD & 60TH AVE			
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: SIDEWALK		
	CAST IRON	32 (IN)			
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:		
11.3 (FT)	60 (IN)	NOT COATED	16-14		
COLLAR PRESENT: NO	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:		
GROUND TYPE: GRAVEL	STRUCTURAL GRADE: 4	CONCRETE			

# **MANHOLE LOCATION**



#### **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.

REGISTRATION NUMBER:

DATE:

REGISTERED CIVIL ENGINEER:

City Sewer Main Flow Direction

City Manholes / Not For Repair

Existing Abandoned Sewer Main

Not in GIS Pipe Connections

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIALUSE 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

		KENADIENANON DE	51011	AITD G	CANTIL	ILO				
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY		APPROVED MATERIAL	MANUFACTURER	16-14-322	WS90500273
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				<b>MANHOLE 1</b>	WS9
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MAR	
SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3						
DETAIL: 1		REPAIR & COAT 60 IN DIAMETER	EA	4	1					
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					VFR	
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					ARY SEV	
SHEET: D-4 DETAIL: 1 & 3	T VO EMEN	JOINT REPAIR	EA	7					RSANIT	4
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					SGE DIAMETER SANITARY SEWER	ORTH - ZONE
SHEET: D-2 DETAIL: 1	III SEKI	INSTALL 54-IN DIAMETER INSERT	VF	9	8.1				I ARGE D	
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10						S
NOTES: SPARK TEST PULL TEST:	RESULTS:		APPROVED BY: PRINTED NAME: COMPANY:		DATE://		SVICES DEPT	4 MAN		

#### **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.

PHOENIX, AZ 85029

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





SCALE OF MAP: 1:100

MANHOLE: 27 / 50

34 OF 63



**GRADE 5** 

**REHABILITATION** 

**PHOENIX** 

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

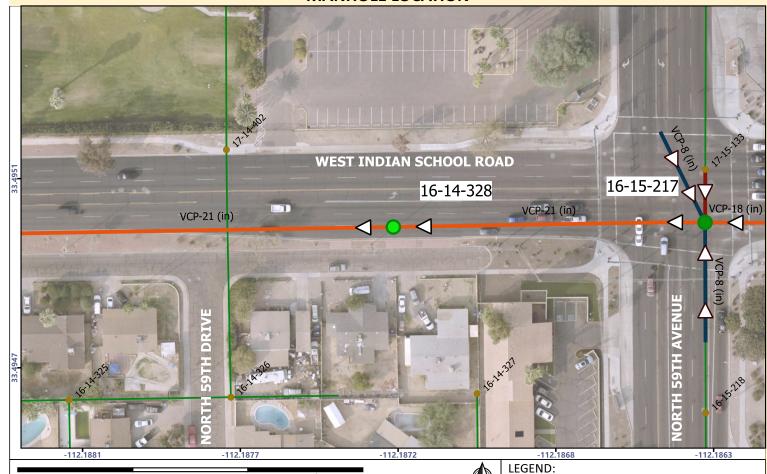
PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:				
I-1175267	16-14-328	INDIAN SCHOOL RD & 59TH DR				
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR			
	CAST IRON	32 (IN)	ARTERIAL ROAD			
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:			
11.3 (FT)	60 (IN)	NOT COATED	16-14			
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:			
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	CONCRETE				

# **MANHOLE LOCATION**



200 300 ft **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:

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

MANHOLE TO REPAIR

Flow Direction

City Manholes / Not For Repair

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#### REHABILITATION DESIGN AND QUANTITIES

REHABILITATION DE			SIGN AND QUANTITIES							
	CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY		APPROVED MATERIAL	MANUFACTURER	16-14-328
	MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				MANHOLE 1
	SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MAI
	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					VER
	SHEET: D-4-6 DETAIL: ALL PVC SHEET: D-4 DETAIL: 1 & 3	PVC LINER  SHEET: D-4 PETAIL: 1 & 3  SHEET: D-2 DETAIL: 1 INSERT	DEFECT REPAIR PATCHING	SF	6					ARY SEV
			JOINT REPAIR	EA	7					R SANIT
	SHEET: D-2 DETAIL: 1		INSTALL 42-IN DIAMETER INSERT	VF	8					<b>DIAMETER SANITARY SEWER</b>
	SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9	7.9				LARGE D
	MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
	NOTES: SPARK TEST PULL TEST:	ARK TEST RESULTS: PRINTED NAME:			DATE://		RVICES DEPT			

#### **NOTES**

- A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.
- B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.
- C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.
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- E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.
- F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.

PHOENIX, AZ 85029

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





SCALE OF MAP: 1:100

MANHOLE: 28 / 50

35 OF 63



**4 MANHOLES** 

**GRADE 5** 

**REHABILITATION** 

**PHOENIX** 

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

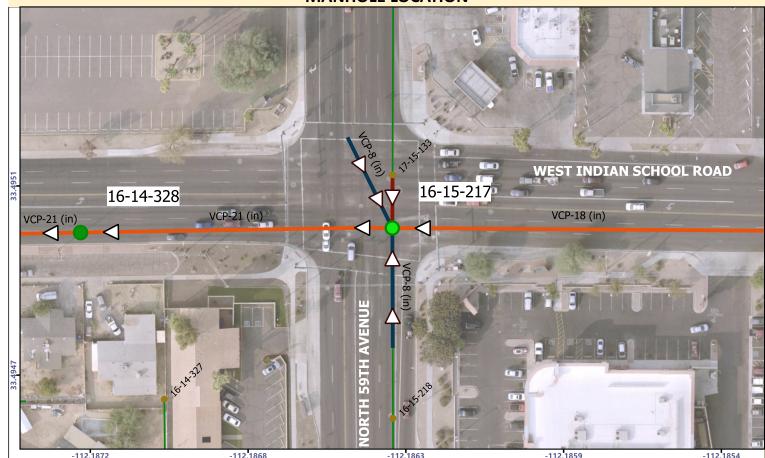
PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLF INFORMATION

IVIAIVIOLE IIVI ORIVIATION							
WAM ID :	LOCATION ID:	CROSS STREET:					
I-1246418	16-15-217	INDIAN SCHOOL RD & 59TH AVE					
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR				
	CAST IRON	32 (IN)	ARTERIAL ROAD				
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:				
11.1 (FT)	60 (IN)	NOT COATED	16-15				
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:				
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 5	CONCRETE					

# **MANHOLE LOCATION**



100	200	300 ft		LEGEND:	
ASSESSMENT NOTES:				<u>•</u>	MANHOLE TO REPAIR  Pipe Connection on Wall  Pipe Connection Over Bench  Pipe Connection At Channel
AS BUILT CERTIFICATION	N THE "RECORD DRAWING"	REGISTERE	D CIVIL ENGINEER:	<del>\\\</del>	Drop Pipe Connections  Existing Abandoned Sewer Main  Not in GTS Pipe Connections

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:

City Sewer Main

City Manholes / Not For Repair

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# **REHABILITATION DESIGN AND QUANTITIES**

CONSTRUCTION DETAILS COMPONENT REHABILITATION UNITS BID ITEM BID AS BUILT APPROVED MANUFACTURER OF MANUFACTURER	WS90500273						
	۰ 0						
MAG 422 MAG 423 COP P1424  COLLAR, FRAME & COVER  REPLACE COLLAR, FRAME & LANGE & LANG	MANHOLE 16-15-217 WS90500273						
SHEET: D-3 CHIMNEY, CONE DEFECT REPAIR COATING SF 2	MA						
REPAIR & COAT 48 IN DIAMETER EA 3							
DETAIL: 1  REPAIR & COAT 60 IN DIAMETER  EA 4 1							
SHEET: D-1 DETAIL: 1 - 5 CHANNEL REPAIR (SEE NOTE D)  EA 5 1	/ER						
SHEET: D-4-6 DETAIL: ALL PVC LINER  DEFECT REPAIR PATCHING SF 6	ARY SEW						
SHEET: D-4 DETAIL: 1 & 3 JOINT REPAIR EA 7	R SANITA						
SHEET: D-2 DETAIL: 1 INSERT INSERT INSERT INSERT INSERT	RGE DIAMETEI ORTH - ZONE						
SHEET: D-2 DETAIL: 1  INSTALL 54-IN DIAMETER INSERT  VF 9 8.3	₽Z						
	 ES						
NOTES: SPARK TEST RESULTS: PULL TEST:  APPROVED BY: PRINTED NAME: COMPANY:  - /_ /	SERVICES DEPT - s & 4 MANHOLES						
NOTES							

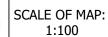
#### **NOTES**

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- 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.

PHOENIX, AZ 85029

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





MANHOLE: 29 / 50

SHEET NUMBER 36 OF 63



PHOENIX -

**REHABILITATION - GRADE 5 &** 

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

PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

#### MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:				
I-1241582	16-15-101	59TH AVE & OSBORN RD				
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR			
	CAST IRON	32 (IN)	ARTERIAL ROAD			
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:			
8.1 (FT)	48 (IN)	NOT COATED	16-15			
COLLAR PRESENT: NO NASSCO MACP		EXISTING WALL MATERIAL:	NOTES:			
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	BRICK				

#### **MANHOLE LOCATION**



LEGEND: 200 MANHOLE TO REPAIR **ASSESSMENT NOTES:** Pipe Connection on Wall Pipe Connection Over Bench Pipe Connection At Channel

#### **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:

**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 OFFICIALUSE 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**

			KENADIENANON DE	51011	AITE	COMITTI	1123			
	CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.		AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	MANHOLE 16-15-101
	MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					VHOLE 1
	SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					ΜA
	SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3	1				
	DETAIL: 1	BLINCH	REPAIR & COAT 60 IN DIAMETER	EA	4					
	SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1				/ER
	SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					ARY SEW
	SHEET: D-4 DETAIL: 1 & 3	PVC LINER	JOINT REPAIR	EA	7					RGE DIAMETER SANITARY SEWER
	SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					AMETE!
	SHEET: D-2 DETAIL: 2	INJERT	INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE DI
	MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
	NOTES: SPARK TEST PULL TEST:	RESULTS:		APPROVED BY: PRINTED NAME: COMPANY:				DATE: /	_/	RVICES I

#### **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.





**4 MANHOLES** 

**GRADE 5** 

**REHABILITATION** 

**SERVICES DEPT** 

PHOENIX -

SHEET NUMBER 37 OF 63





SCALE OF MAP: 1:100

MANHOLE: 30 / 50

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

PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

City Manholes / Not For Repair

**MANHOLE INFORMATION** 

WAM ID :	LOCATION ID:	CROSS STREET:				
I-1175065	16-16-211	INDIAN SCHOOL RD & MARYVALE PKY				
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR			
	CAST IRON	32 (IN)	ARTERIAL ROAD			
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:			
11.4 (FT)	60 (IN)	NOT COATED	16-16			
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:			
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	CONCRETE				

# **MANHOLE LOCATION**



				7.196	
-	112.1756	-112.1751	-112.1747		-112.1742
100	200	300 ft		LEGEND:	
ASSESSMENT NOTES:					MANHOLE TO REPAIR
		Ξ	Pipe Connection on Wall Pipe Connection Over Bench Pipe Connection At Channel		
AS BUILT CERTIFICATION	<u>ON</u>	REGISTEREI	O CIVIL ENGINEER:	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Drop Pipe Connections
I HEREBY CERTIFY THA	T THE "RECORD DRAWING"	PEGISTRATI	ON NUMBER:		Existing Abandoned Sewer Main Not in GIS Pipe Connections
UNDER MY SUPERVISION	HOWN HEREON WERE MADE ON OR AS NOTED ARE	REGISTRALI	ON NOWIDER.		City Sewer Main Flow Direction
CORRECT TO THE BEST	OF MY KNOWLEDGE AND	DATE:			Flow Direction

BELIEF.

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIALUSE 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**

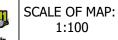
		KLIIADILIIAIION DL	SIUIV	AND C	COMINI	IILJ			_
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	1	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	16-16-211
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	140				MAR
SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	AIL: 1	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					VER
SHEET: D-4-6 DETAIL: ALL	DVC LINED	DEFECT REPAIR PATCHING	SF	6					ARY SEV
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7					R SANIT
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					LARGE DIAMETER SANITARY SEWER
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9					ARGE D
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					- 1
NOTES: SPARK TEST RESULTS: PULL TEST:			APPROVED BY: PRINTED NAME: COMPANY:				DATE: - //		<b>ERVICES DEPT</b>
			OTE 6						ш

#### **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.







MANHOLE:

31 / 50



SHEET NUMBER 38 OF 63

RVICES DEPT - LARGE DIAMETER SANITARY SEWER 4 MANHOLES - NORTH - ZONE 4 **SERVICES DEPT REHABILITATION - GRADE 5 &** PHOENIX -

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

PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:				
I-1175067	16-16-212	INDIAN SCHOOL RD & 53RD AVE				
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR			
	CAST IRON	32 (IN)	ARTERIAL ROAD			
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:			
11.9 (FT)	60 (IN)	NOT COATED	16-16			
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:			
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	CONCRETE				

#### **MANHOLE LOCATION**



300 ft **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:

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 OFFICIALUSE 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**

			KENADIENANON DE	51011	AITE	COMITTI	IILO				
	CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.		AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	16-16-212	0500072
	MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					MANHOLE 1	74/500
	SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	155				MA	
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3							
	DETAIL: 1	DETAIL: 1	REPAIR & COAT 60 IN DIAMETER	EA	4	1					
	SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					VER	
	SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					SANITARY SEWER	
	SHEET: D-4 DETAIL: 1 & 3	r ve liver	JOINT REPAIR	EA	7						
	SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					DIAMETER	()
	SHEET: D-2 DETAIL: 1	III SEKI	INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE D	
		MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L	(
NOTES: SPARK TEST RESULTS: PULL TEST:				APPROVED BY: PRINTED NAME: COMPANY:		ED NAME:		DATE://		RVICES	

#### **NOTES**

- A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.
- B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.
- C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.
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- F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.
- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





**GRADE 5** 

REHABILITATION

**PHOENIX** 

39 OF 63





SCALE OF MAP: 1:100

MANHOLE: 32 / 50

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

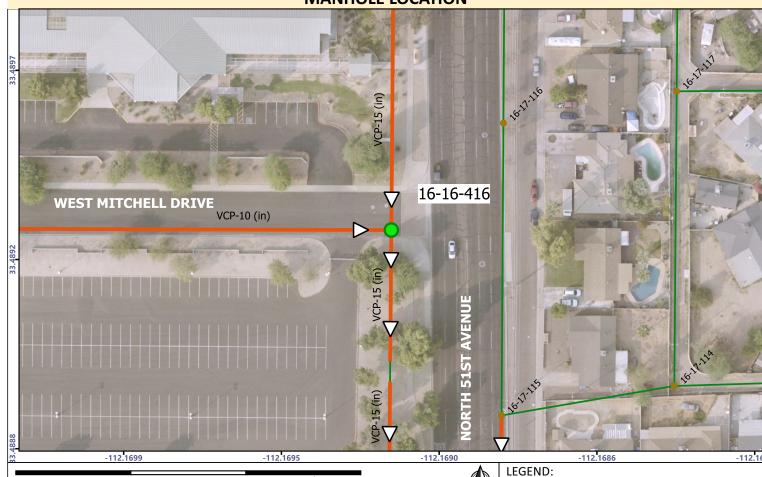
PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:				
I-1175081	16-16-416	MITCHELL DR & 51ST AVE				
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: SECONDARY			
	CAST IRON	32 (IN)	ROAD			
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:			
9.9 (FT)	60 (IN)	NOT COATED	16-16			
COLLAR PRESENT: YES NASSCO MACP		EXISTING WALL MATERIAL:	NOTES:			
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	CONCRETE				

**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:

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 OFFICIALUSE 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

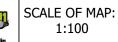
	REHABILITATION DESIGN AND QUANTITIES								
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.		AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	16-16-416
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	129				MAI
SHEET: D-4	DENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	I KENI( H	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					VER
SHEET: D-4-6 DETAIL: ALL	DVCTINED	DEFECT REPAIR PATCHING	SF	6					ARY SEV
SHEET: D-4 DETAIL: 1 & 3	PVC LINER	JOINT REPAIR	EA	7					R SANIT
SHEET: D-2 DETAIL: 1	INICEDT	INSTALL 42-IN DIAMETER INSERT	VF	8					<b>GE DIAMETER SANITARY SEWER</b>
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE D
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					- 1
NOTES: SPARK TEST RESULTS: PULL TEST:			APPROVED BY: PRINTED NAME: COMPANY:			DATE://		RVICES DEPT	

#### **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.







33 / 50

MANHOLE:



**4 MANHOLES** 

**GRADE 5** 

**REHABILITATION -**

SHEET NUMBER 40 OF 63

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

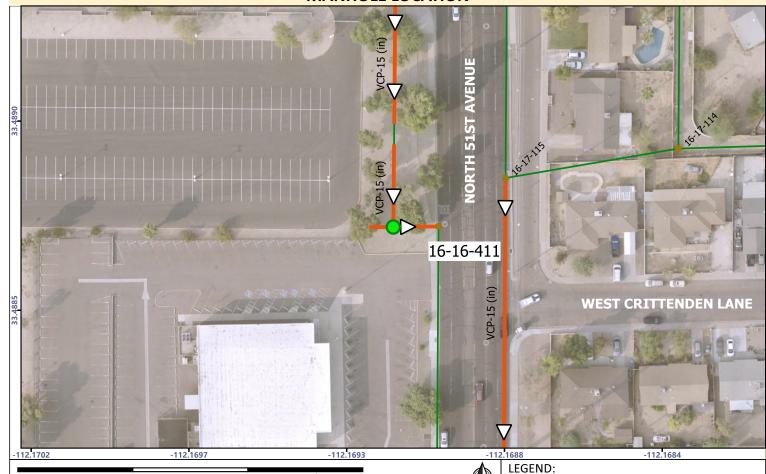
PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

	1717 (1711 0 = 1 11					
WAM ID :	LOCATION ID:	CROSS STREET:				
I-1233260	16-16-411	51ST AVE & CRITTENDEN LN				
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: EASEMENT/			
	CAST IRON	32 (IN)	RIGHT OF WAY			
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:			
9.4 (FT)	60 (IN)	NOT COATED	16-16			
COLLAR PRESENT: NO	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:			
GROUND TYPE: GRASS DIRT	STRUCTURAL GRADE: 5	CONCRETE				

# **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:

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**

			<u> </u>	, u	(0,				_
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS					MANUFACTURER	16-16-411
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MAI
SHEET: D-4	DENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	IREMIA	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1				/ER
SHEET: D-4-6 DETAIL: ALL SHEET: D-4 DETAIL: 1 & 3	PVC LINER	DEFECT REPAIR PATCHING	SF	6					ARY SEW
		JOINT REPAIR	EA	7					<b>DIAMETER SANITARY SEWER</b>
SHEET: D-2 DETAIL: 1	INICEDT	INSTALL 42-IN DIAMETER INSERT	VF	8					AMETEI
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9	7.7				LARGE DI
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:			APPROVED BY: PRINTED NAME: COMPANY:				DATE: //		RVICES DEPT
	MAG 422 MAG 423 COP P1424  SHEET: D-3 DETAIL: 1 & 2  SHEET: D-4 DETAIL: 1 - 5  SHEET: D-4-6 DETAIL: ALL  SHEET: D-4 DETAIL: 1 & 3  SHEET: D-2 DETAIL: 1  MAG 420  NOTES: SPARK TEST	MAG 422 MAG 423 COP P1424  SHEET: D-3 DETAIL: 1 & 2  SHEET: D-4 DETAIL: 1 - 5  SHEET: D-4-6 DETAIL: ALL  SHEET: D-4 DETAIL: 1 & 3  SHEET: D-4 DETAIL: 1 & 3  SHEET: D-2 DETAIL: 1  MAG 420  MANHOLE  NOTES: SPARK TEST RESULTS:	MAG 422 MAG 423 COP P1424  SHEET: D-3 DETAIL: 1 & 2  SHEET: D-4 DETAIL: 1  SHEET: D-2 DETAIL: 1  SHEET: D-2 DETAIL: 1  SHEET: D-2 DETAIL: 1  MAG 420  MANHOLE  REPLACE COLLAR, FRAME & COAT GRAPH & COAT	MAG 422 MAG 423 COP P1424  SHEET: D-3 DETAIL: 1 & 2  SHEET: D-4 DETAIL: 1 - 5  SHEET: D-4-6 DETAIL: 1 & 3  SHEET: D-4 DETAIL: 1 & 3  SHEET: D-2 DETAIL: 1 & 3  SHEET: D-2 DETAIL: 1 & 3  SHEET: D-4 MAG 420  MANHOLE  REPLACE COLLAR, FRAME & CA REPLACE COLLAR, FRAME & CA REPLACE COLLAR, FRAME & COAT GA REPLACE COAT GA RE	MAG 422 MAG 423 COP P1424  COLLAR, FRAME & COVER  REPLACE COLLAR, FRAME & COVER  SHEET: D-3 DETAIL: 1 & 2  SHEET: D-3 DETAIL: 1 & 2  SHEET: D-4 DETAIL: 1  SHEET: D-1 DETAIL: 1 - 5  CHANNEL  REPAIR & COAT & EA	DETAILS   COMPONENT   REHABILITATION   UNITS   NO.   QUANTITY	DETAILS   COMPONENT   REHABILITATION   ONITS   NO.   QUANTITY   QUANTITY	DETAILS   COMPONENT   REHABILIATION   ONITS   NO.   QUANTITY   QUANTITY   MATERIAL	DETAILS   COMPONENT   REHABICIATION   UNITS   NO.   QUANTITY   QUANTITY   MATERIAL   MANOFACTORE

#### **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.





SCALE OF MAP: 1:100

MANHOLE: 34 / 50

SHEET NUMBER 41 OF 63



PHOENIX -

4 MANHOLES - NORTH - ZONE 4

**GRADE 5** 

**REHABILITATION -**

**SERVICES DEPT** 

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

NORTH - ZONE 4

#### MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:				
I-1202907	16-17-134	NORTH 51ST AVENUE & WEST CRITTENDEN LANE				
JURISDICTION: SALT RIVER PROJECT	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR			
	CAST IRON	26 (IN)	ARTERIAL ROAD			
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:			
10.1 (FT)	48 (IN)	NOT COATED	16-17			
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:			
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	BRICK GRAND CANAL				

#### **MANHOLE LOCATION**



200 300 ft **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:

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 OFFICIALUSE 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**

		ILLIII (DILIII) (IIIOIT DL	.51011	/ (( T )	(0/11/11				
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.		AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	<b>MANHOLE 16-17-134</b>
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				WHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	7				MAN
SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3	1				
DETAIL: 1	BENCII	REPAIR & COAT 60 IN DIAMETER	EA	4					
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1				VER
SHEET: D-4-6 DETAIL: ALL	- PVC LINER	DEFECT REPAIR PATCHING	SF	6					SANITARY SEWER
SHEET: D-4 DETAIL: 1 & 3	PVC LINER	JOINT REPAIR	EA	7					R SANIT
SHEET: D-2 DETAIL: 1	- INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					DIAMETER
SHEET: D-2 DETAIL: 2	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE D
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
NOTES:       APPROVED BY:       DATE:         SPARK TEST RESULTS:       PRINTED NAME:					_/	SERVICES [			
NOTES									

#### **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.

PHOENIX, AZ 85029

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





WS9050027

4 MANHOLES - NORTH - ZONE 4

**REHABILITATION - GRADE 5 &** 

PHOENIX -

SHEET NUMBER 42 OF 63

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 AR ZONA81



SCALE OF MAP: 1:100

MANHOLE: 35 / 50

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

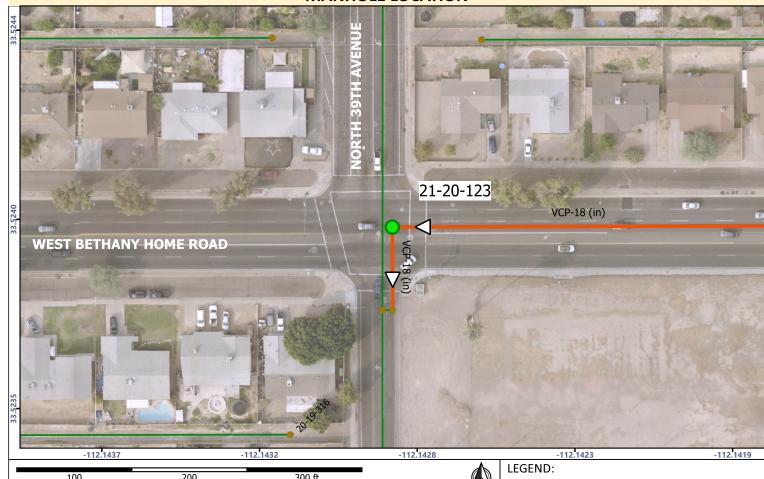
PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:						
I-1229146	21-20-123	BETHANY HOME RD & 39TH AVE						
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER: ENVIRONMENT: MAJOR						
	CAST IRON	32 (IN)	ARTERIAL ROAD					
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:					
19.8 (FT)	60 (IN)	NOT COATED	21-20					
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:					
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 5	CONCRETE						

### **MANHOLE LOCATION**



	 	<b>X</b>
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:

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 OFFICIALUSE 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

		REHADILHAHON DE	SIUIV	AND G	CONTITU	ILJ			
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY		APPROVED MATERIAL	MANUFACTURER	21-20-123
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				MANHOLE 2
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MAI
SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	BENCII	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1				VER
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					ARY SEV
SHEET: D-4 DETAIL: 1 & 3	r ve liven	JOINT REPAIR	EA	7					R SANIT
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					<b>DIAMETER SANITARY SEWER</b>
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9	16.8				LARGE D
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST PULL TEST:	FEST RESULTS: PRINTED NAME:		DATE: /	_/	RVICES DEPT				

#### **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.





4 MANHOLES - NORTH - ZONE 4

**GRADE 5** 

**REHABILITATION -**

**SERVICES DEPT** 

PHOENIX -

SHEET NUMBER 43 OF 63





SCALE OF MAP: 1:100

MANHOLE: 36 / 50

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - PROJECT NUMBER: WS90500273

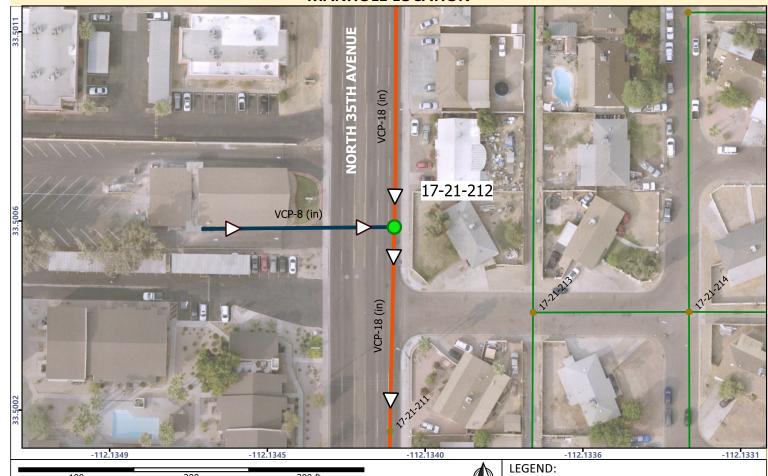
CITY PROJECT MANAGER: SAUL DURAN

NORTH - ZONE 4

#### MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:				
I-1246270	17-21-212	35TH AVE & TURNEY AVE				
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER: ENVIRONMENT: MAJOI				
	CAST IRON	26 (IN)	ARTERIAL ROAD			
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:			
10.3 (FT)	60 (IN)	NOT COATED	17-21			
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:			
GROUND TYPE: OTHER	STRUCTURAL GRADE: 4	BRICK				

# **MANHOLE LOCATION**



100	200	300 It	
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:

City Sewer Main Flow Direction

City Manholes / Not For Repair

MANHOLE TO REPAIR

**Drop Pipe Connections** 

Pipe Connection on Wall Pipe Connection Over Bench

Pipe Connection At Channel

Not in GIS Pipe Connections

Existing Abandoned Sewer Main

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIALUSE 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

		KEHABILITATION DE	SIGIN	AND	LOUNTI	IIES			
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	1	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	OLE 17-21-212
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MAL
SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	BENCII	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1				/ER
SHEET: D-4-6 DETAIL: ALL	DVC UNED	DEFECT REPAIR PATCHING	SF	6					ARY SEV
SHEET: D-4 DETAIL: 1 & 3	PVC LINER	JOINT REPAIR	EA	7					SANIT
SHEET: D-2 DETAIL: 1	INICEDE	INSTALL 42-IN DIAMETER INSERT	VF	8					DIAMETER SANITARY SEWER
SHEET: D-2 DETAIL: 2	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE DI
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
NOTES: SPARK TEST PULL TEST:	RESULTS:	,	1	OVED BY: ED NAME: ANY:	:		DATE: /	_/	RVICES D

#### **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.

PHOENIX, AZ 85029

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





**4 MANHOLES** 

**GRADE 5** 

**REHABILITATION** 

**PHOENIX** 

SHEET NUMBER 44 OF 63

AR ZONA8

SCALE OF MAP: 1:100

MANHOLE: 37 / 50

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

PROJECT NUMBER: WS90500273

Flow Direction

City Manholes / Not For Repair

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:					
I-1246272	17-21-226	35TH AVE & GLENROSA AVE					
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER: ENVIRONMENT: MAJOR					
	CAST IRON	26 (IN)	ARTERIAL ROAD				
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:				
10.7 (FT)	60 (IN)	NOT COATED	17-21				
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:				
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 5	CONCRETE					
	I-1246272 JURISDICTION: CITY OF PHOENIX  DEPTH RIM TO INVERT: 10.7 (FT)  COLLAR PRESENT: YES	I-1246272 17-21-226  JURISDICTION: CITY OF PHOENIX FRAME/COVER MATERIAL: CAST IRON  DEPTH RIM TO INVERT: BARREL DIAMETER: 10.7 (FT) 60 (IN)  COLLAR PRESENT: YES NASSCO MACP	I-1246272 17-21-226 35TH AVE & GLENROSA AVE  JURISDICTION: CITY OF PHOENIX FRAME/COVER MATERIAL: COVER DIAMETER: 26 (IN)  DEPTH RIM TO INVERT: BARREL DIAMETER: CORROSION PROTECTION: NOT COATED  COLLAR PRESENT: YES NASSCO MACP EXISTING WALL MATERIAL:				

4998		MANHOL	E LOCA	TION		
33.4993		VCP-8 (in)		7-21-226		
33.4989	SELECTE SELECTION OF THE PROPERTY OF THE PROPE	NORTH 35TH AVENUE	VCF-18 (in)	WEST GL	ENROSA AVENUE (240 I	8 -8
L	-112.1349	-112.1344	1 700	-112.1340	-112.1335	

LEGEND: MANHOLE TO REPAIR **ASSESSMENT NOTES:** Pipe Connection on Wall Pipe Connection Over Bench Pipe Connection At Channel **Drop Pipe Connections** REGISTERED CIVIL ENGINEER: **AS BUILT CERTIFICATION** Existing Abandoned Sewer Main I HEREBY CERTIFY THAT THE "RECORD DRAWING" Not in GIS Pipe Connections REGISTRATION NUMBER: MEASUREMENTS AS SHOWN HEREON WERE MADE City Sewer Main UNDER MY SUPERVISION OR AS NOTED ARE

DATE:

CORRECT TO THE BEST OF MY KNOWLEDGE AND

BELIEF.

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#### REHABILITATION DESIGN AND QUANTITIES

		REHADILHAHON DE	SIUIV	AND G	CONTITU	ILJ			
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY		APPROVED MATERIAL	MANUFACTURER	17-21-226
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MAI
SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	BLIVEIT	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					VER
SHEET: D-4-6 DETAIL: ALL	PVC LINER	DEFECT REPAIR PATCHING	SF	6					ARY SEV
SHEET: D-4 DETAIL: 1 & 3	T VC LINEIX	JOINT REPAIR	EA	7					R SANIT
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					<b>DIAMETER SANITARY SEWER</b>
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9	8.2				LARGE D
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST PULL TEST:	APPROVED BY: PRINTED NAME: COMPANY:			DATE: /	_/	RVICES DEPT			

#### **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.







SCALE OF MAP: 1:100

MANHOLE: 38 / 50



**4 MANHOLES** 

**REHABILITATION - GRADE 5** 

**PHOENIX-**

**SERVICES DEPT** 

SHEET NUMBER 45 OF 63

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

PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:						
I-1175219	16-20-103	OSBORN RD & 38TH AVE						
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER: ENVIRONMENT: SECOND						
	CAST IRON	24 (IN)	ROAD					
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:					
21.4 (FT)	60 (IN)	NOT COATED	16-20					
COLLAR PRESENT: NO	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:					
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 5	CONCRETE						

#### **MANHOLE LOCATION**



**ASSESSMENT NOTES:** 

#### **AS BUILT CERTIFICATION**

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REGISTERED CIVIL ENGINEER:

REGISTRATION NUMBER:

DATE:

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**

			KENADIENATION DE	51011	AITE	COMITTI	IILO			
	CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	LE 16-20-103
	MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				MANHOLE 1
	SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MAR
	SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
	DETAIL: 1	BENCII	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
	SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					/ER
	SHEET: D-4-6 DETAIL: ALL	- PVC LINER	DEFECT REPAIR PATCHING	SF	6					ARY SEV
	SHEET: D-4 DETAIL: 1 & 3	FVC LINER	JOINT REPAIR	EA	7					R SANIT
	SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					DIAMETER SANITARY SEWER
	SHEET: D-2 DETAIL: 1	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9	19.4				LARGE D
	MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					1 (
	SPARK TEST RESULTS:		PRINT	APPROVED BY: PRINTED NAME: COMPANY:			DATE://		RVICES DEPT	

#### **NOTES**

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PHOENIX, AZ 85029

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





SCALE OF MAP: 1:100

MANHOLE: 39 / 50

46 OF 63



WS90500273

4 MANHOLES - NORTH - ZONE 4

Ø

**GRADE 5** 

**REHABILITATION -**

**SERVICES DEPT** 

PHOENIX -

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

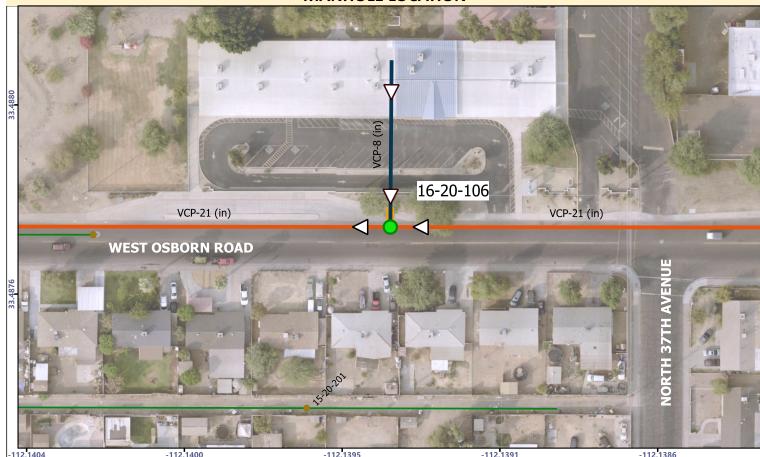
PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

WAM ID :	LOCATION ID:	CROSS STREET:						
I-1259198	16-20-106	OSBORN RD & 37TH AVE						
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: SECONDARY					
	CAST IRON	24 (IN)	ROAD					
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:					
21.4 (FT)	60 (IN)	NOT COATED	16-20					
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:					
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 5	CONCRETE						

MANHOLE INFORMATION

#### **MANHOLE LOCATION**



200 **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:

City Sewer Main Flow Direction

City Manholes / Not For Repair

MANHOLE TO REPAIR

**Drop Pipe Connections** 

Pipe Connection on Wall Pipe Connection Over Bench

Pipe Connection At Channel

Not in GIS Pipe Connections

Existing Abandoned Sewer Main

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#### **REHABILITATION DESIGN AND QUANTITIES**

		KEHADIEHAHON DE	31011	AITE	COMITTI	ILO			
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.		AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	MANHOLE 16-20-106
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				NHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MAR
SHEET: D-4	SHEET: D-4	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	BENCH	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					VER
SHEET: D-4-6 DETAIL: ALL		DEFECT REPAIR PATCHING	SF	6					ARY SEV
SHEET: D-4 DETAIL: 1 & 3	PVC LINER	JOINT REPAIR	EA	7					R SANIT
SHEET: D-2 DETAIL: 1		INSTALL 42-IN DIAMETER INSERT	VF	8					LARGE DIAMETER SANITARY SEWER
SHEET: D-2 DETAIL: 1	III JENI	INSTALL 54-IN DIAMETER INSERT	VF	9	18.3				ARGE D
	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
NOTES: SPARK TEST I PULL TEST:	RESULTS:		1	OVED BY: ED NAME ANY:	:		DATE: /	_/	RVICES

#### **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.
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SCALE OF MAP: 1:100

MANHOLE: 40 / 50

47 OF 63



4 MANHOLES - NORTH - ZONE 4

**GRADE 5** 

**REHABILITATION -**

**SERVICES DEPT** 

PHOENIX -

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

NORTH - ZONE 4

#### MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:			
I-1175220	16-20-403	OSBORN RD & 37TH AVE			
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: SECONDARY		
	CAST IRON	32 (IN)	ROAD		
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:		
21.8 (FT)	60 (IN)	NOT COATED	16-20		
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:		
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 5	CONCRETE			

#### **MANHOLE LOCATION**



200 **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:

Existing Abandoned Sewer Main Not in GIS Pipe Connections

> City Sewer Main Flow Direction

MANHOLE TO REPAIR

Pipe Connection on Wall Pipe Connection Over Bench

**Drop Pipe Connections** 

Pipe Connection At Channel

City Manholes / Not For Repair

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIALUSE 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**

			KENADIENANON DE	51011	AITE	COMITTI	112			
	CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	1	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	MANHOLE 16-20-403
	MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				NHOLE 1
	SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					ΜA
	SHEET: D-4	REPAIR & COAT 48 IN DIAMETER	EA	3						
	DETAIL: 1	IBENICH	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
	SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					Æ
	SHEET: D-4-6 DETAIL: ALL	DIGUNED	DEFECT REPAIR PATCHING	SF	6					ARY SEW
	SHEET: D-4 DETAIL: 1 & 3	PVC LINER	JOINT REPAIR	EA	7					RGE DIAMETER SANITARY SEWER
	SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					IAMETEI
	SHEET: D-2 DETAIL: 1	INJERT	INSTALL 54-IN DIAMETER INSERT	VF	9	19.4				LARGE DI
	MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
NOTES: SPARK TEST RESULTS: PULL TEST:			1		:		DATE: /	_/	RVICES I	

#### **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.

PHOENIX, AZ 85029

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





SCALE OF MAP: 1:100

MANHOLE: 41 / 50

48 OF 63



WS90500273

- NORTH - ZONE 4

**4 MANHOLES** 

Ø

**GRADE 5** 

**REHABILITATION -**

**SERVICES DEPT** 

PHOENIX -

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

PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

IVII II								
WAM ID :	LOCATION ID:	CROSS STREET:						
I-1251855	16-20-405	OSBORN RD & 35TH AVE						
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: SECONDARY					
	CAST IRON	32 (IN)	ROAD					
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:					
22.1 (FT)	60 (IN)	NOT COATED	16-20					
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:					
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 5	CONCRETE						

**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:

**Drop Pipe Connections** Existing Abandoned Sewer Main Not in GIS Pipe Connections

City Sewer Main

Flow Direction City Manholes / Not For Repair

MANHOLE TO REPAIR

Pipe Connection on Wall Pipe Connection Over Bench

Pipe Connection At Channel

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029





SCALE OF MAP: 1:100

MANHOLE: 42 / 50

REHABILITATION DESIGN AND QUANTITIES

CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID 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	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3				
DETAIL: 1	BENCH	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	T VC LINEIX	JOINT REPAIR	EA	7				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8				
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9	20.1			
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10				
	SPARK TEST RESULTS:			APPROVED BY: PRINTED NAME:			DATE:	
PULL TEST:		COMPANY:					_/	

# **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.





**MANHOLE 16-20-405** 

SANITARY SEWER

RVICES DEPT - LARGE DIAMETER 4 MANHOLES - NORTH - ZONE 4

**SERVICES DEPT** 

PHOENIX -

Ø

**GRADE 5** 

**REHABILITATION -**

WS90500273

SHEET NUMBER 49 OF 63

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

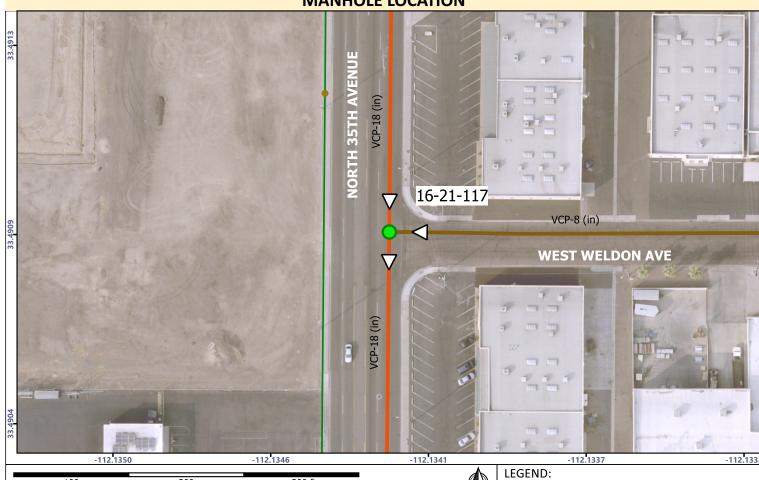
PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID:	LOCATION ID:	CROSS STREET:			
I-1244254	16-21-117	WELDON AVE & 35TH AVE			
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR		
	CAST IRON	32 (IN)	ARTERIAL ROAD		
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION: QUARTER SECTION:			
15.3 (FT)	60 (IN)	EPOXY	16-21		
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:		
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	CONCRETE			

**MANHOLE LOCATION** 



100	200	300 π	
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:

# 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 OFFICIALUSE 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 OLIANTITIES

		REHABILITATION DE	SIGN	AND C	UANTI	ΓIES			
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.		AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	5-21-117
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					<b>MANHOLE 16-21-117</b>
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	5				MAN
SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	BENCH	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					/ER
SHEET: D-4-6 DETAIL: ALL	DVCTINED	DEFECT REPAIR PATCHING	SF	6					SANITARY SEWER
SHEET: D-4 DETAIL: 1 & 3	PVC LINER	JOINT REPAIR	EA	7					
SHEET: D-2 DETAIL: 1	INCEPT	INSTALL 42-IN DIAMETER INSERT	VF	8					DIAMETER
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE DI
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
NOTES: SPARK TEST PULL TEST:	RESULTS:	,	1	DVED BY: ED NAME ANY:	:		DATE:/	_/	VICES D

#### **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.

PHOENIX, AZ 85029

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





SCALE OF MAP: 1:100

MANHOLE: 43 / 50



**4 MANHOLES** 

**REHABILITATION - GRADE 5** 

PHOENIX -

**SERVICES DEPT** 

SHEET NUMBER 50 OF 63

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

PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:			
I-1244252	16-21-115	35TH AVE & WHITTON AVE			
JURISDICTION: SALT RIVER PROJECT	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR		
POWER AND WATER	CAST IRON	32 (IN)	ARTERIAL ROAD		
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:		
17.8 (FT)	60 (IN)	EPOXY	16-21		
COLLAR PRESENT: NO	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:		
GROUND TYPE: CONCRETE	STRUCTURAL GRADE: 4	CONCRETE	GRAND CANAL		

**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:

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 OFFICIALUSE 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

REHABILITATION DESIGN AND QUANTITIES									
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	1	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	VE 16-21-115
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	22				MA
SHEET: D-4 DETAIL: 1	DENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
	BENCH	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					/ER
SHEET: D-4-6 DETAIL: ALL		DEFECT REPAIR PATCHING	SF	6					ARY SEW
SHEET: D-4 DETAIL: 1 & 3	PVC LINER	JOINT REPAIR	EA	7					DIAMETER SANITARY SEWER
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					IAMETEI
SHEET: D-2 DETAIL: 1		INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE D
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
NOTES: SPARK TEST RESULTS: PULL TEST:  APPROVED BY: PRINTED NAME: COMPANY:			DATE: /	_/	RVICES				

#### **NOTES**

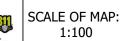
- A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.
- B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.
- C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.
- D. COAT THE CHANNEL IF IT IS CONCRETE.
- E. REINSTATE PIPE CONNECTIONS AFTER COATING OR LINING.
- F. RESTORE LANDSCAPE/PAVEMENT/SIDEWALK AFTER REHABILITATION.

PHOENIX, AZ 85029

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





MANHOLE:

44 / 50



4 MANHOLES - NORTH - ZONE 4

Ø

**REHABILITATION - GRADE 5** 

PHOENIX -

**SERVICES DEPT** 

SHEET NUMBER 51 OF 63

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

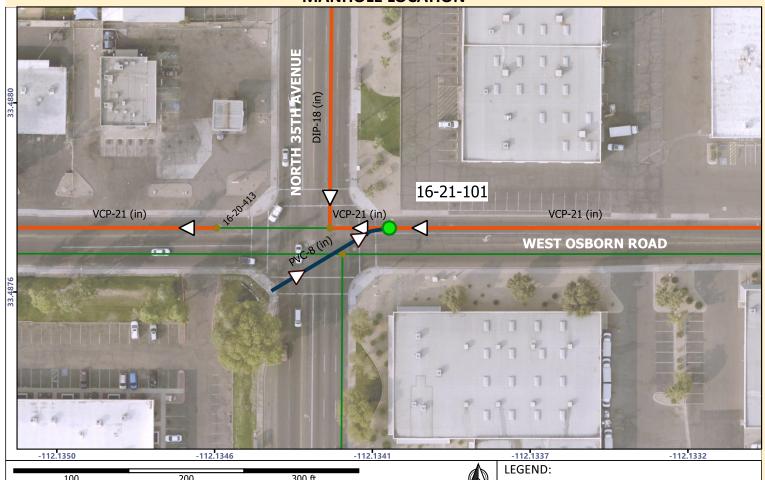
PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:				
I-1251881	16-21-101	OSBORN RD & 35TH AVE				
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR			
	CAST IRON	32 (IN)	ARTERIAL ROAD			
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:			
22 (FT)	60 (IN)	NOT COATED	16-21			
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:			
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 5	CONCRETE				

**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:

Pipe Connection on Wall

Pipe Connection Over Bench Pipe Connection At Channel **Drop Pipe Connections** 

MANHOLE TO REPAIR

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

REHABILITATION DESIGN AND QUANTITIES									
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	16-21-101
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MA
SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	BLINCII	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1				VER
SHEET: D-4-6 DETAIL: ALL	DVC LINED	DEFECT REPAIR PATCHING	SF	6					ARY SEV
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7					R SANIT
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					<b>GE DIAMETER SANITARY SEWER</b>
SHEET: D-2 DETAIL: 1	INSTALL 54-IN DIAMETER INSERT	VF	9	19.3				LARGE D	
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					- 1
NOTES: SPARK TEST PULL TEST:	SPARK TEST RESULTS: PRINTED NAME:		DATE: /	_/	RVICES DEPT				

#### **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.

PHOENIX, AZ 85029

PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246

- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





SCALE OF MAP: 1:100

MANHOLE: 45 / 50

52 OF 63



**4 MANHOLES** 

**GRADE 5** 

REHABILITATION

**SERVICES DEPT** 

**PHOENIX-**

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

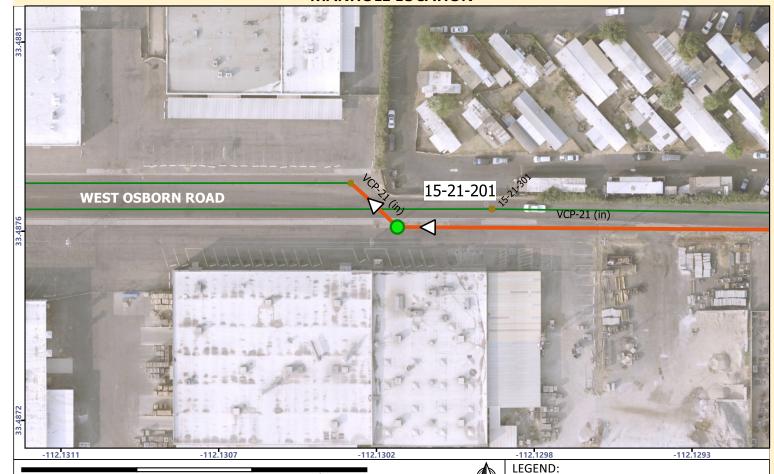
PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:						
I-1251840	15-21-201	OSBORN RD & 33RD AVE						
JURISDICTION: CITY OF PHOENIX	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: EASEMENT/					
	CAST IRON	32 (IN)	RIGHT OF WAY					
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:					
19.3 (FT)	60 (IN)	NOT COATED	15-21					
COLLAR PRESENT: NO	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:					
GROUND TYPE: GRASS DIRT	STRUCTURAL GRADE: 5	CONCRETE						

#### **MANHOLE LOCATION**



200 **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:

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 OFFICIALUSE 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**

			<u> </u>	, u	(0,				_
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS					MANUFACTURER	15-21-201
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MAR
SHEET: D-4 DETAIL: 1	DENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
	BENCH	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1				/ER
SHEET: D-4-6 DETAIL: ALL	DVC LINED	DEFECT REPAIR PATCHING	SF	6					ARY SEV
SHEET: D-4 DETAIL: 1 & 3	FVC LINER	JOINT REPAIR	EA	7					<b>DIAMETER SANITARY SEWER</b>
SHEET: D-2 DETAIL: 1	INISEDT	INSTALL 42-IN DIAMETER INSERT	VF	8					AMETE
SHEET: D-2 DETAIL: 1	INJENT	INSTALL 54-IN DIAMETER INSERT	VF	9	16.2				LARGE DI
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					
NOTES: SPARK TEST RESULTS: PULL TEST:			APPROVED BY: PRINTED NAME: COMPANY:				DATE: //		RVICES DEPT
	MAG 422 MAG 423 COP P1424  SHEET: D-3 DETAIL: 1 & 2  SHEET: D-4 DETAIL: 1 - 5  SHEET: D-4-6 DETAIL: ALL  SHEET: D-4 DETAIL: 1 & 3  SHEET: D-2 DETAIL: 1  MAG 420  NOTES: SPARK TEST	MAG 422 MAG 423 COP P1424  SHEET: D-3 DETAIL: 1 & 2  SHEET: D-4 DETAIL: 1 - 5  SHEET: D-4-6 DETAIL: ALL  SHEET: D-4 DETAIL: 1 & 3  SHEET: D-4 DETAIL: 1 & 3  SHEET: D-2 DETAIL: 1  MAG 420  MANHOLE  NOTES: SPARK TEST RESULTS:	MAG 422 MAG 423 COP P1424  SHEET: D-3 DETAIL: 1 & 2  SHEET: D-4 DETAIL: 1  SHEET: D-2 DETAIL: 1  SHEET: D-2 DETAIL: 1  SHEET: D-2 DETAIL: 1  MAG 420  MANHOLE  REPLACE COLLAR, FRAME & COAT GRAPH & COAT	MAG 422 MAG 423 COP P1424  SHEET: D-3 DETAIL: 1 & 2  SHEET: D-4 DETAIL: 1 - 5  SHEET: D-4-6 DETAIL: 1 & 3  SHEET: D-4 DETAIL: 1 & 3  SHEET: D-2 DETAIL: 1 & 3  SHEET: D-2 DETAIL: 1 & 3  SHEET: D-4 MAG 420  MANHOLE  REPLACE COLLAR, FRAME & CA REPLACE COLLAR, FRAME & CA REPLACE COLLAR, FRAME & COAT GA REPLACE COAT GA RE	MAG 422 MAG 423 COP P1424  COLLAR, FRAME & COVER  REPLACE COLLAR, FRAME & COVER  SHEET: D-3 DETAIL: 1 & 2  SHEET: D-3 DETAIL: 1 & 2  SHEET: D-4 DETAIL: 1  SHEET: D-1 DETAIL: 1 - 5  CHANNEL  REPAIR & COAT & EA	DETAILS   COMPONENT   REHABILITATION   UNITS   NO.   QUANTITY	DETAILS   COMPONENT   REHABILITATION   ONITS   NO.   QUANTITY   QUANTITY	DETAILS   COMPONENT   REHABILIATION   ONITS   NO.   QUANTITY   QUANTITY   MATERIAL	DETAILS   COMPONENT   REHABICIATION   UNITS   NO.   QUANTITY   QUANTITY   MATERIAL   MANOFACTORE

#### **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.





SCALE OF MAP: 1:100

MANHOLE: 46 / 50

SHEET NUMBER 53 OF 63



**PHOENIX-**

**SERVICES DEPT** 

**GRADE 5** 

**REHABILITATION -**

CITY OF PHOENIX - WATER SERVICES DEPT - LARGE DIAMETER SANITARY SEWER REHABILITATION - GRADE 5 & 4 MANHOLES - PROJECT NUMBER: WS90500273

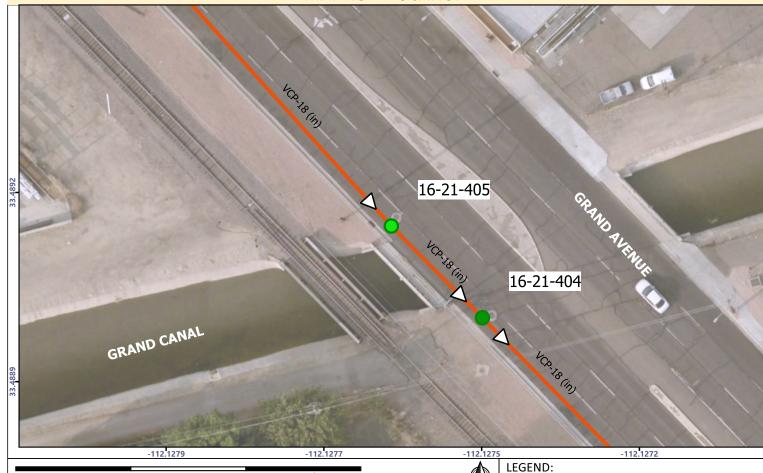
CITY PROJECT MANAGER: SAUL DURAN

NORTH - ZONE 4

#### MANHOLE INFORMATION

WAM ID :	LOCATION ID:	CROSS STREET:				
I-1251877	16-21-405	GRAND AVE & 32ND AVE				
JURISDICTION: ARIZONA	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR			
DEPARTMENT OF TRANSPORTATIO	N CAST IRON	26 (IN)	ARTERIAL ROAD			
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:			
16.5 (FT)	60 (IN)	NOT COATED	16-21			
COLLAR PRESENT: YES NASSCO MACP		EXISTING WALL MATERIAL:	NOTES:			
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	BRICK	GRAND CANAL			

#### **MANHOLE LOCATION**



50	100	150 ft	
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:

DATE:

REGISTRATION NUMBER:

Existing Abandoned Sewer Main Not in GIS Pipe Connections City Sewer Main

Flow Direction

MANHOLE TO REPAIR

**Drop Pipe Connections** 

Pipe Connection on Wall Pipe Connection Over Bench

Pipe Connection At Channel

City Manholes / Not For Repair

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIALUSE 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

		REHABILITATION DE	SIGIN	AND	LOANII	IIES			
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.		AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	MANHOLE 16-21-405
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				MHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2					MAR
SHEET: D-4	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1	BENCH	REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					VER
SHEET: D-4-6 DETAIL: ALL	DVC LINED	DEFECT REPAIR PATCHING	SF	6					ARY SEV
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7					R SANIT
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 42-IN DIAMETER INSERT	VF	8					DIAMETER SANITARY SEWER
SHEET: D-2 DETAIL: 2	III III	INSTALL 54-IN DIAMETER INSERT	VF	9	14.8				LARGE D
	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
NOTES: SPARK TEST   PULL TEST:	ARK TEST RESULTS: PRINTED NAME:		DATE: /	_/	RVICES				

#### **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.







SCALE OF MAP: 1:50

MANHOLE: 47 / 50

SHEET NUMBER



**PHOENIX** 54 OF 63

**4 MANHOLES** 

**GRADE 5** 

**REHABILITATION** 

**SERVICES DEPT** 

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

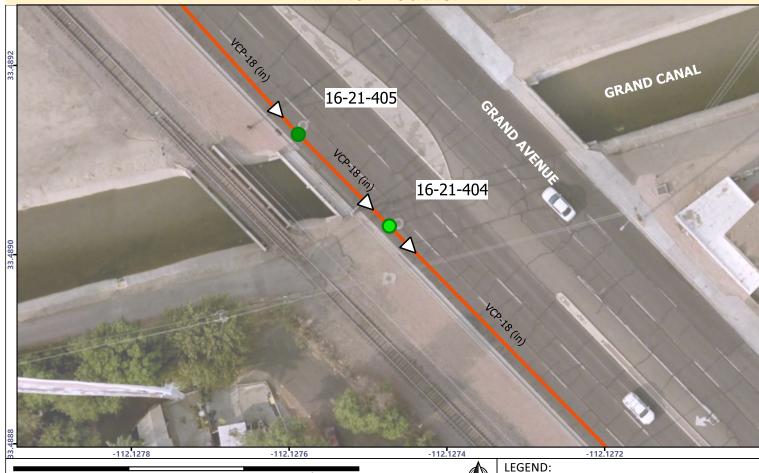
PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

WAM ID:	LOCATION ID:	CROSS STREET:					
I-1251878	16-21-404	GRAND AVE & 32ND AVE					
JURISDICTION: ARIZONA	FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR				
DEPARTMENT OF TRANSPORTATION	CAST IRON	32 (IN)	ARTERIAL ROAD				
DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:				
16.3 (FT)	60 (IN)	NOT COATED	16-21				
COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:				
GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 4	BRICK	GRAND CANAL				
DEPARTMENT OF TRANSPORTATION DEPTH RIM TO INVERT: 16.3 (FT) COLLAR PRESENT: YES	CAST IRON  BARREL DIAMETER: 60 (IN)  NASSCO MACP	32 (IN)  CORROSION PROTECTION:  NOT COATED  EXISTING WALL MATERIAL:	ARTERIAL ROAD  QUARTER SECTION: 16-21  NOTES:				

#### **MANHOLE LOCATION**



			1 1
50	100	150 ft	
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:

DATE:

Pipe Connection At Channel **Drop Pipe Connections** Existing Abandoned Sewer Main Not in GIS Pipe Connections REGISTRATION NUMBER: City Sewer Main

Flow Direction

MANHOLE TO REPAIR

Pipe Connection on Wall Pipe Connection Over Bench

City Manholes / Not For Repair

"PER PHOENIX CITY CODE CHAPTER 2, SECTION 2-28, THESE PLANS ARE FOR OFFICIALUSE 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

		KEHABILITATION DE	SIGIN	AND	UANTI	IIES			
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY		APPROVED MATERIAL	MANUFACTURER	16-21-404
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	20				MAI
SHEET: D-4 DETAIL: 1	BENCH	REPAIR & COAT 48 IN DIAMETER	EA	3					
	BENCH	REPAIR & COAT 60 IN DIAMETER	EA	4					
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					/ER
SHEET: D-4-6 DETAIL: ALL	DVC LINED	DEFECT REPAIR PATCHING	SF	6					ARY SEW
SHEET: D-4 DETAIL: 1 & 3	PVC LINER	JOINT REPAIR	EA	7					SANITA
SHEET: D-2 DETAIL: 1	INICEDT	INSTALL 42-IN DIAMETER INSERT	VF	8					<b>DIAMETER SANITARY SEWER</b>
SHEET: D-2 DETAIL: 2		INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE D
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
NOTES: SPARK TEST RESULTS: PULL TEST:		APPROVED BY: PRINTED NAME: COMPANY:				DATE://		RVICES	

#### **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.





**SERVICES DEPT** 

**PHOENIX** 

**GRADE 5** 

**REHABILITATION** 

SHEET NUMBER 55 OF 63





SCALE OF MAP: 1:50

MANHOLE: 48 / 50

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

PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

	WANTOE IN ORWATION						
	WAM ID:	LOCATION ID:	CROSS STREET:				
	I-1251841	15-21-304	OSBORN RD & GRAND AVE				
JURISDICTION: CITY OF PHOENIX		FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: SECONDARY			
		CAST IRON	32 (IN)	ROAD			
	DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:			
	19.1 (FT)	60 (IN)	NOT COATED	15-21			
	COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:			
	GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 5	CONCRETE				

#### **MANHOLE LOCATION**



200 300 ft **ASSESSMENT NOTES:** 

#### **AS BUILT CERTIFICATION**

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REGISTERED CIVIL ENGINEER:

REGISTRATION NUMBER:

DATE:

Pipe Connection on Wall Pipe Connection Over Bench

Pipe Connection At Channel **Drop Pipe Connections** Existing Abandoned Sewer Main Not in GIS Pipe Connections

MANHOLE TO REPAIR

City Sewer Main Flow Direction

City Manholes / Not For Repair

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#### REHABILITATION DESIGN AND QUANTITIES

REHABILITATION DESIGN AND QUANTITIES									
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	1	AS BUILT QUANTITY	APPROVED MATERIAL	MANUFACTURER	MANHOLE 15-21-304
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1	1				NHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	250				MAI
SHEET: D-4	SHEET: D-4 DETAIL: 1	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1		REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5					/ER
SHEET: D-4-6 DETAIL: ALL	PVC LINER SHEET: D-4	DEFECT REPAIR PATCHING	SF	6					SANITARY SEWER
SHEET: D-4 DETAIL: 1 & 3		JOINT REPAIR	EA	7					SANIT
SHEET: D-2 DETAIL: 1	INICEDE	INSTALL 42-IN DIAMETER INSERT	VF	8					DIAMETER
SHEET: D-2 DETAIL: 1	INSERT	INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE DI
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
NOTES: SPARK TEST PULL TEST:	PARK TEST RESULTS: PRINTED NAME:			DATE://		RVICES I			

#### **NOTES**

- A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.
- B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.
- C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.
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- G. USE FLOW THROUGH PLUG IF NECESSARY.
- H. PERFORM SPARK AND PULL TESTS AFTER REHABILITATION.





SCALE OF MAP: 1:100

MANHOLE: 49 / 50

56 OF 63



PHOENIX -SHEET NUMBER

**4 MANHOLES** 

Ø

**GRADE 5** 

**REHABILITATION -**

**SERVICES DEPT** 

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

PROJECT NUMBER: WS90500273

CITY PROJECT MANAGER: SAUL DURAN

MANHOLE INFORMATION

	WAM ID :	LOCATION ID:	CROSS STREET:				
	I-1246020	15-22-209	GRAND AVE & 30TH AVE				
JURISDICTION: ARIZONA		FRAME/COVER MATERIAL:	COVER DIAMETER:	ENVIRONMENT: MAJOR			
DEPARTMENT OF TRANSPORTATION		CAST IRON	26 (IN)	ARTERIAL ROAD			
	DEPTH RIM TO INVERT:	BARREL DIAMETER:	CORROSION PROTECTION:	QUARTER SECTION:			
	11.5 (FT)	60 (IN)	NOT COATED	15-22			
	COLLAR PRESENT: YES	NASSCO MACP	EXISTING WALL MATERIAL:	NOTES:			
	GROUND TYPE: ASPHALT	STRUCTURAL GRADE: 5	BRICK				

**MANHOLE LOCATION** 



100	200	300 It	
ASSESSMENT NO	OTES:		

# **AS BUILT CERTIFICATION**

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REGISTERED CIVIL ENGINEER:

REGISTRATION NUMBER:

DATE:

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

REHABILITATION DESIGN AND QUANTITIES									
CONSTRUCTION DETAILS	COMPONENT	REHABILITATION	UNITS	BID ITEM NO.	BID QUANTITY		APPROVED MATERIAL	MANUFACTURER	15-22-209
MAG 422 MAG 423 COP P1424	COLLAR, FRAME & COVER	REPLACE COLLAR, FRAME & COVER	EA	1					MANHOLE 1
SHEET: D-3 DETAIL: 1 & 2	CHIMNEY, CONE & BARREL	DEFECT REPAIR COATING	SF	2	11				MAI
SHEET: D-4	IBENICH	REPAIR & COAT 48 IN DIAMETER	EA	3					
DETAIL: 1		REPAIR & COAT 60 IN DIAMETER	EA	4	1				
SHEET: D-1 DETAIL: 1 - 5	CHANNEL	REPAIR (SEE NOTE D)	EA	5	1				/ER
SHEET: D-4-6 DETAIL: ALL	DVC UNED	DEFECT REPAIR PATCHING	SF	6					ARY SEW
SHEET: D-4 DETAIL: 1 & 3	PVC LINER	JOINT REPAIR	EA	7					3 SANITA
SHEET: D-2 DETAIL: 1	INICEDE	INSTALL 42-IN DIAMETER INSERT	VF	8					<b>DIAMETER SANITARY SEWER</b>
	INSTALL 54-IN DIAMETER INSERT	VF	9					LARGE DI	
MAG 420	MANHOLE	REPLACE MANHOLE	VF	10					DEPT - L
NOTES: SPARK TEST PULL TEST:	SPARK TEST RESULTS: PRINTED NAME:			DATE://		RVICES			

#### **NOTES**

- A. FIELD MEASURE DIMENSIONS BEFORE PURCHASING MATERIAL.
- B. REMOVE ALL STEPS BEFORE REHABILITATION WORK.
- C. BLAST CLEAN MANHOLE BEFORE REHABILITATION.
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- 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.





SCALE OF MAP: 1:150

MANHOLE: 50 / 50

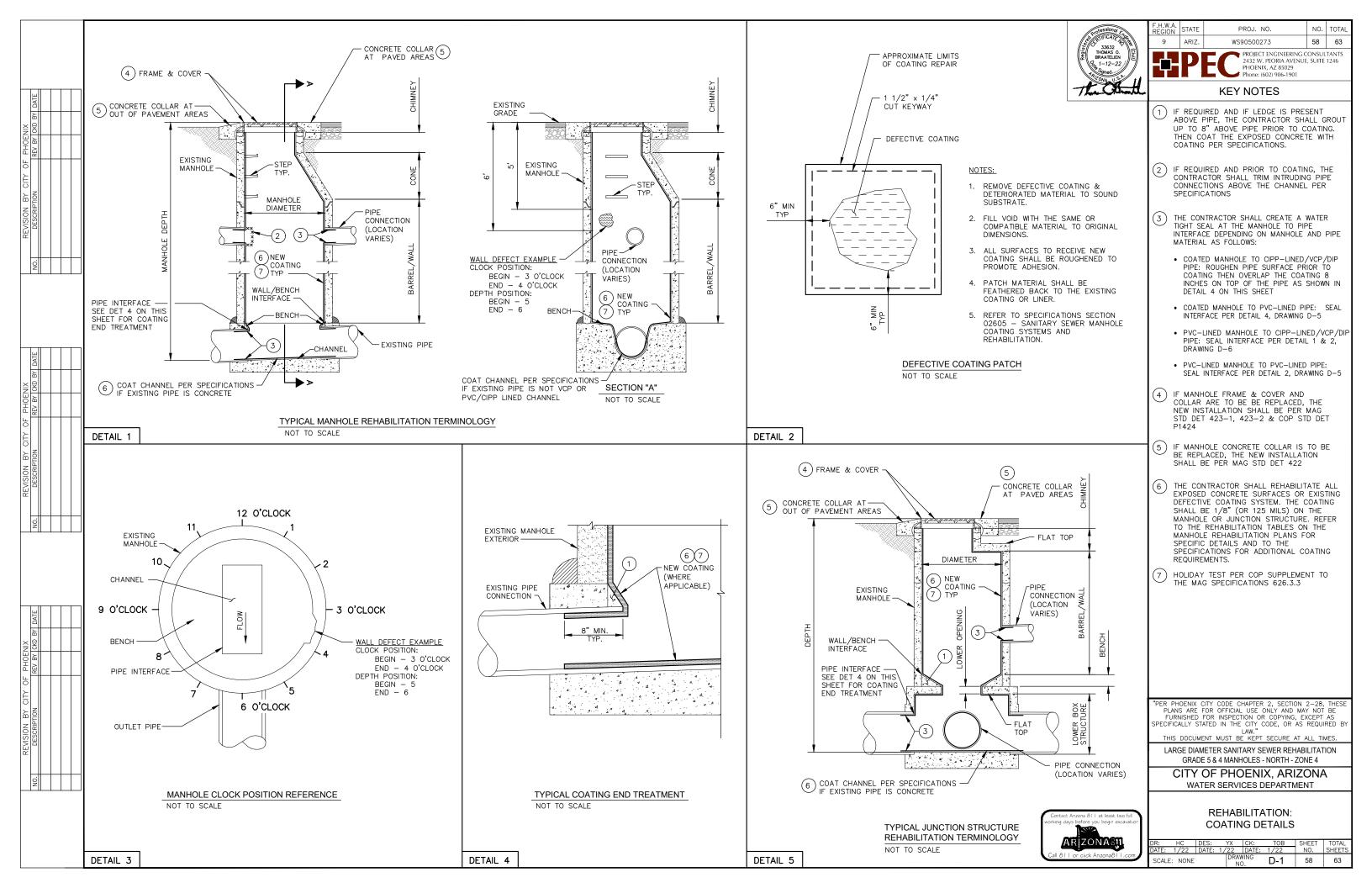
SHEET NUMBER 57 OF 63

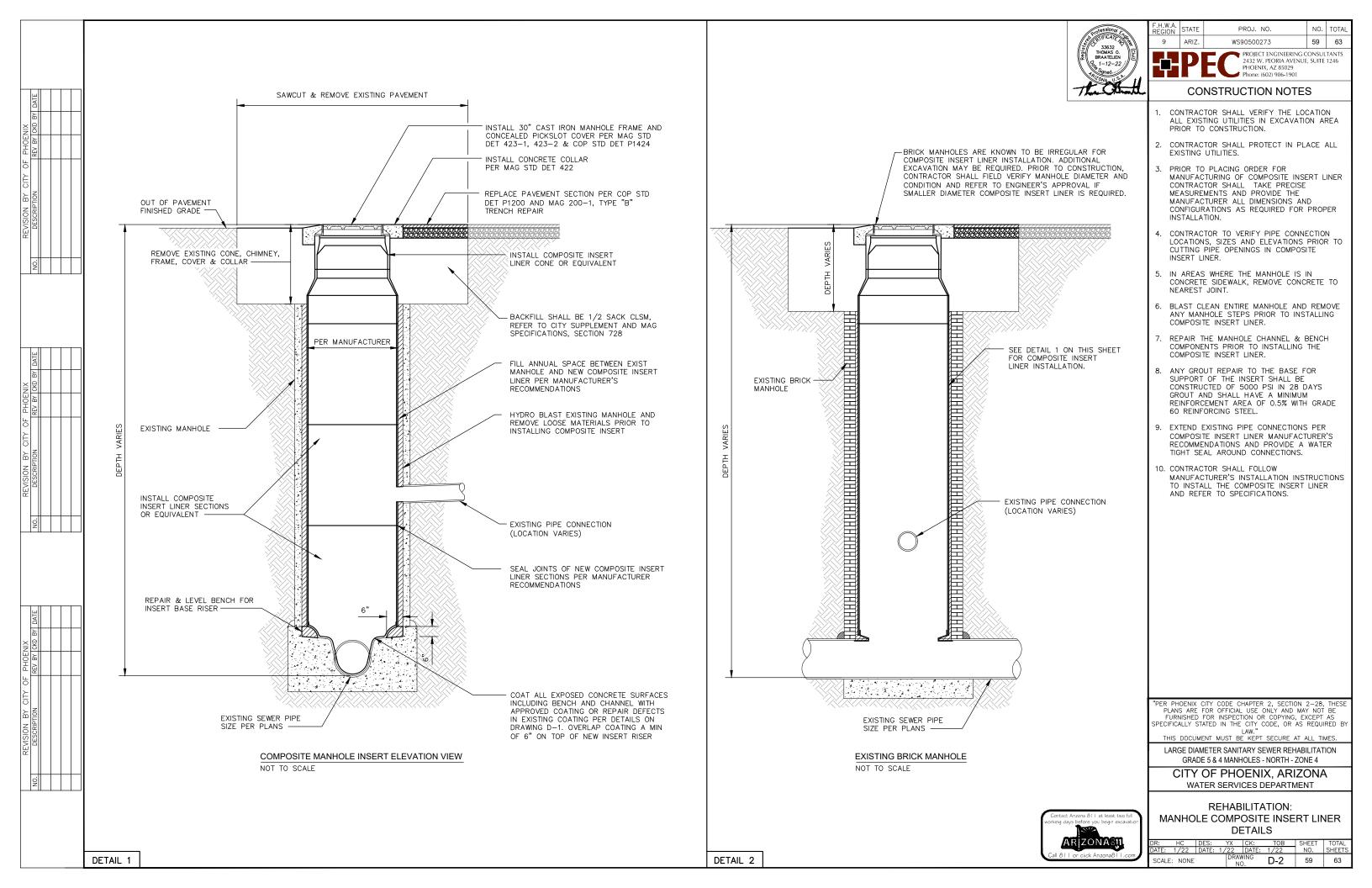


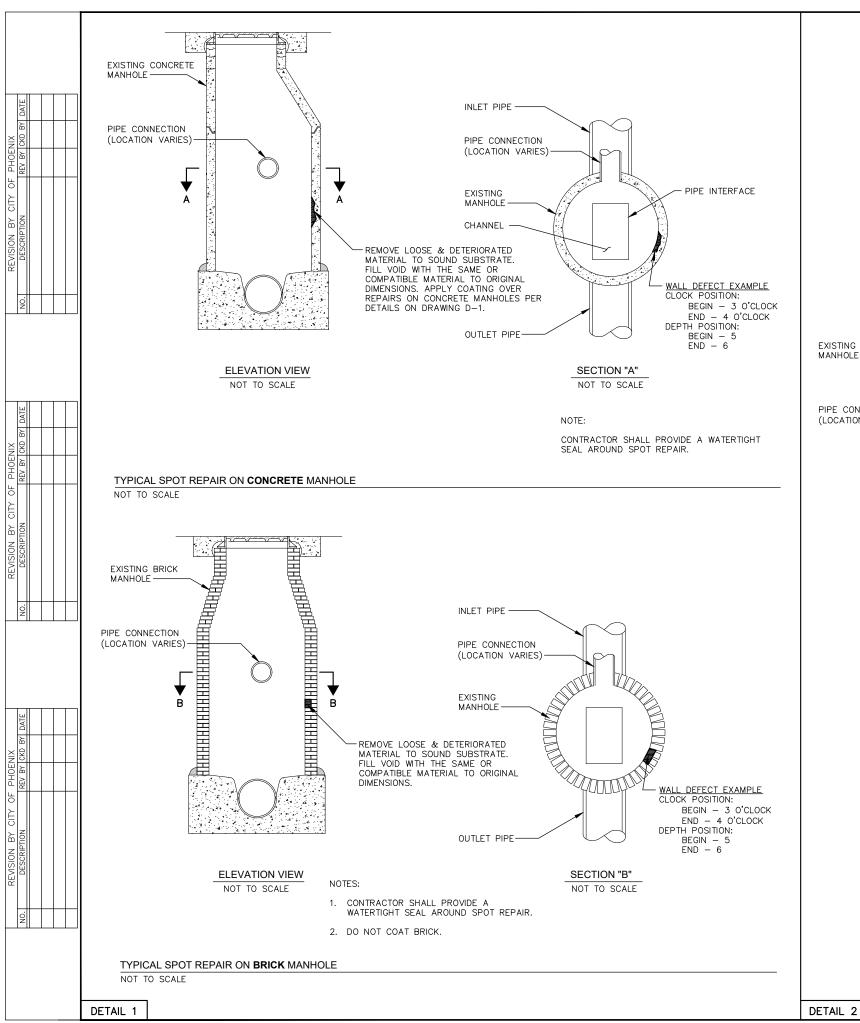
**PHOENIX** 

**GRADE 5** 

**REHABILITATION** 









WS90500273 60 63 PROJECT ENGINEERING CONSULTANTS 2432 W. PEORIA AVENUE, SUITE 1246 PHOENIX, AZ 85029 Phone: (602) 906-1901

PROJ. NO.

DEFECT AT

**EXTERIOR** 

REMOVE LOOSE & DETERIORATED MATERIAL TO SOUND SUBSTRATE

DRAWING D-1.

SECTION "C"

NOT TO SCALE

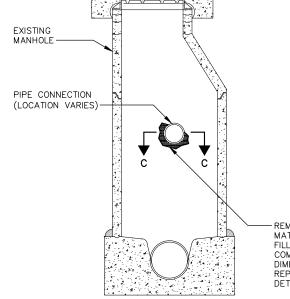
FILL VOID WITH THE SAME OR COMPATIBLE MATERIAL TO ORIGINAL DIMENSIONS.

APPLY COATING OVER REPAIRS ON

CONCRETE MANHOLES PER DETAILS ON

CONNECTING PIPE

EXISTING MANHOLE



**ELEVATION VIEW** 

NOT TO SCALE

DEFECT AT MANHOLE SURFACE

CONNECTING PIPE

REMOVE LOOSE & DETERIORATED MATERIAL TO SOUND SUBSTRATE. FILL VOID WITH THE SAME OR COMPATIBLE MATERIAL TO ORIGINAL DIMENSIONS. APPLY COATING OVER REPAIRS ON CONCRETE MANHOLES PER DETAILS ON DRAWING D-1.

CONTRACTOR SHALL PROVIDE A WATERTIGHT SEAL AROUND SPOT REPAIR.

2. DO NOT COAT BRICK.

SPOT REPAIR AT PIPE CONNECTION NOT TO SCALE

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

CITY OF PHOENIX, ARIZONA WATER SERVICES DEPARTMENT

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

RAWING NO. SCALE: NONE D-3 60

AR ZONASII

