DRAINAGE IMPROVEMENT PROJECT FOR:

# HARVARD STREET IMPROVEMENTS AND BASINS

DEVELOPED AS PART OF THE KINGMAN AREA DRAINAGE MASTER PLAN

*SURVEY NOTE:*
*THIS PLAN IS BASED ON TOPOGRAPHIC SURVEY DATA PROVIDED BY THE CITY OF KINGMAN'S SURVEYING DIVISION. PARCEL LINE AND RIGHT-OF-WAY LINES WERE ESTABLISHED FROM GIS DATA PROVIDED BY THE CITY OF KINGMAN. THE ENGINEER MAKES NO REPRESENTATION OR GUARANTEE REGARDING THE ACCURACY OF THE SURVEY DATA REFERENCED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING FEATURES, PROPERTY CORNERS, PROJECT BOUNDARIES, RIGHTS-OF-WAY AND TOPOGRAPHIC SURVEY DATA PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE OWNER'S AGENT IMMEDIATELY OF ANY DISCREPANCIES FOR RESOLUTION.*

*EARTHWORK QUANTITIES*
*NO PROJECT SPECIFIC GEOTECHNICAL INVESTIGATION HAS BEEN PERFORMED. ALL EARTHWORK IS CONSIDERED "UNCLASSIFIED."*

*APPROXIMATE EARTHWORK QUANTITIES:*

| | | |
|---|---|---|
| *CUT:* | *14,264* | *CY* |
| *FILL:* | *34* | *CY* |
| *NET:* | *14,230* | *CY CUT* |

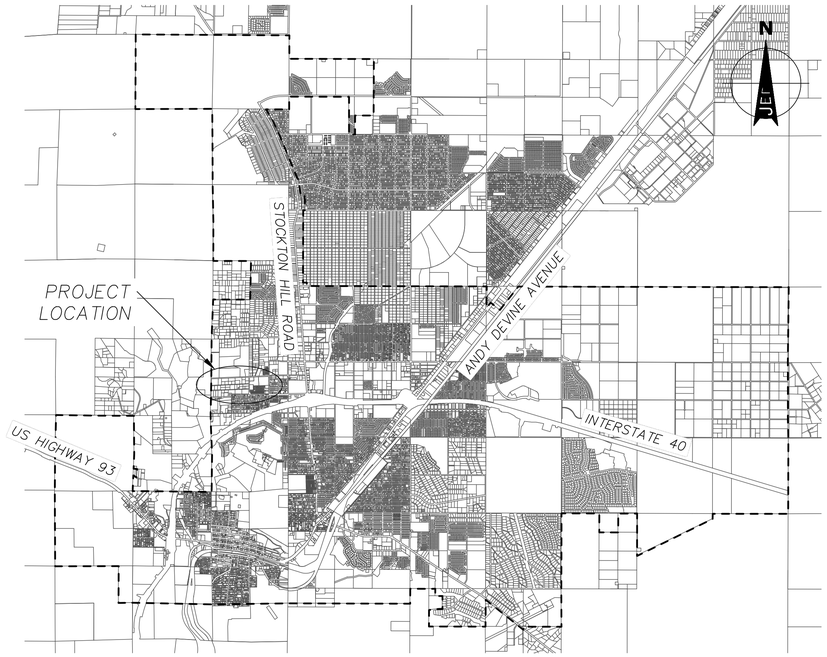
**THE EXCAVATION AND EMBANKMENT QUANTITIES ON THESE PLANS ARE APPROXIMATE ONLY AND IS BASED ON COMPARING THE EXISTING GROUND TO THE PROPOSED FINISHED GROUND. NO EARTHWORK VOLUME ADJUSTMENTS WERE MADE DUE TO OVEREXCAVATION AND FOOTING CONSTRUCTION, UTILITY INSTALLATION, PAVEMENT AND SUBGRADE THICKNESS, RIPRAP THICKNESS, LANDSCAPE MATERIALS, ETC. NO ALLOWANCE HAS BEEN MADE FOR SHRINK OR SWELL*

## DRAWING NUMBER & SHEET INDEX


| DRAWING NO. | SHEET NO. | TITLE |
|---|---|---|
| 01 | C1 | COVER SHEET |
| 02 | C2 | NOTES SHEET |
| 03 | C3 | DETAILS SHEET |
| 04 | C4 | DETAILS SHEET |
| 05 | C5 | DETAILS SHEET |
| 06 | C6 | PLAN & PROFILE SHEET |
| 07 | C7 | GRADING PLAN SHEET |
| 08 | C8 | GRADING PLAN SHEET |
| 09 | C9 | GRADING PLAN SHEET |

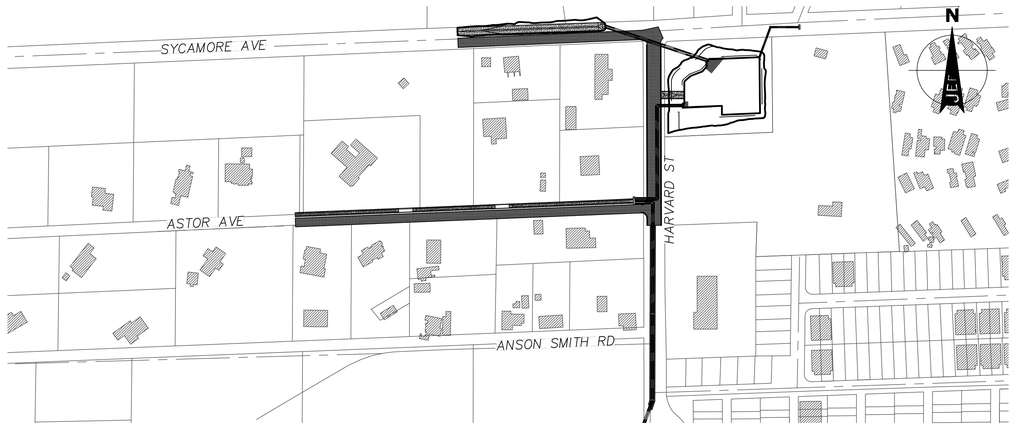

## QUANTITIES

| ITEM NUMBER | DESCRIPTION | QNTY | UNIT |
|---|---|---|---|
| | **REMOVALS** | | |
| 100 | REMOVE AND DISPOSE OF ASPHALT | 3070 | SY |
| 150 | ADJUST MANHOLE RING, FRAME, AND COVER TO FINISHED GRADE | 12 | EA |
| 151 | ADJUST VALVE BOX AND COVER TO FINISHED GRADE | 5 | EA |
| | **ROADWAY CONSTRUCTION** | | |
| 200 | 3" AC/6" ABC ASPHALT | 7185 | SY |
| 201 | NEW MAG TYPE 'A' CURB AND GUTTER PER MAG STD DET 220 | 1945 | LF |
| | **WATER CONSTRUCTION** | | |
| 300 | NEW VERTICAL WATER MAIN REALIGNMENT PER MAG STD DET 370 | 120 | LF |
| | **STORM WATER CONSTRUCTION** | | |
| 250 | GRADE NEW DETENTION BASIN 1 | | |
| 251 | CONSTRUCT NEW DETENTION BASIN MAINTENANCE ACCESS | 1 | EA |
| 252 | NEW CONCRETE SPILLWAY | 1355 | SF |
| 253 | NEW 18" RCP STORMDRAIN | 340 | LF |
| 254 | NEW 36" RCP STORMDRAIN | 2735 | LF |
| 255 | NEW HEADWALL PER MAG STD DET 501 | 4 | EA |
| 256 | NEW CONCRETE ROADSIDE CHANNEL PER DETAIL 3 | 9490 | SF |
| 257 | NEW CONCRETE ROADSIDE CHANNEL PER DETAIL 5 | 960 | SF |
| 257 | SAFETY RAIL PER DETAIL 6 | 970 | LF |
| 258 | NEW TRANSVERSE GRATE OUTLET PER DETAIL 8 | 1 | EA |
| 259 | NEW STORMDRAIN MANHOLE AND SHAFT PER MAG 520 & 522 | 10 | EA |
| 260 | NEW TRANSVERSE GRATE CATCHBASIN PER DETAIL 6 | 1 | EA |
| 261 | 12 THICK D50 = 6" RIPRAP PAD WITH NON-WOVEN FILTER FABRIC | 55 | CY |
| 262 | NEW CHAINLINK FENCE WITH ACCESS GATE PER COK SPECIFICATIONS | 1131 | LF |
| 263 | NEW 10'x3' REINFORCED CONCRETE BOX CULVERT | 80 | LF |
| | **EARTHWORK** | | |
| | CUT AND HAUL | 14,264 | CY |
| | FILL | 34 | CY |




CITY OF KINGMAN OVERVIEW

*SCALE: 1" = 5,000'*




KEY MAP

*SCALE: 1" = 200'*

## LEGEND

### EXISTING FEATURES

- INDEX CONTOUR (5' INTERVAL)
- INTERIM CONTOUR (1' INTERVAL)
- 2285 LABELS ON CONTOURS ARE NAVD88
- PARCEL LINE
- RIGHT OF WAY LINE
- STREET CENTERLINE
- SURVEY MONUMENT
- CONCRETE
- BACK OF CURB
- FACE OF CURB
- PAVEMENT EDGE
- FENCE LINE
- WALL LINE
- MAIL BOX
- SIDEWALK SCUPPER
- STREET SIGN
- OVERHEAD ELECTRIC LINES
- GAS LINES
- SANITARY SEWER LINES
- SD STORM DRAIN LINES
- TELEPHONE LINES
- WATER LINES
- WM WATER METER
- WATER VALVE
- WATER FIRE HYDRANT
- WATER MANHOLE
- SANITARY SEWER MANHOLE
- TELE/ELECTRIC/LIGHT POLE
- GUY WIRE
- GAS VALVE

### DESIGN FEATURES

- SURVEY & CONSTRUCTION CENTERLINE
- GRADING LIMIT
- INDEX CONTOUR (5' INTERVAL)
- INTERIM CONTOUR (1' INTERVAL)
- 2315 LABELS ON CONTOURS ARE NAVD88
- STORM DRAIN LINE
- CATCH BASIN
- SD STORM DRAIN MANHOLE
- PAVEMENT EDGE
- FACE OF CURB
- BACK OF CURB
- SIDEWALK
- CHAINLINK FENCE
- SIDEWALK/CONCRETE HATCH
- RIPRAP HATCH
- ASPHALT PAVEMENT
- FLOW DIRECTION

## PROJECT DATA

### ELEVATION DATA:

*THE ELEVATION DATUM FOR THIS PROJECT IS NAVD '88. LIDAR MAPPING WAS COMPLETED BY QUANTUM SPATIAL, INC. (QSI) IN NOVEMBER 2015 (QUANTUM SPATIAL, INC., 2016), AND NEXTMAP (INTERMAP TECHNOLOGIES, 2019) AND SUPPLEMENTED BY FIELD SURVEY IF NECESSARY.*

### EXISTING FEATURES:

*BACKGROUND DATA AND LINEWORK SHOWING EXISTING FEATURES WAS PROVIDED BY THE CITY OF KINGMAN ENGINEERING DEPARTMENT (NOVEMBER 2019) AND SUPPLEMENTED BY FIELD SURVEY IF NECESSARY.*

*THE ENGINEER MAKES NO REPRESENTATION OR GUARANTEE REGARDING THE ACCURACY OF THE SURVEY DATA REFERENCED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING FEATURES, PROPERTY CORNERS, PROJECT BOUNDARIES, RIGHTS-OF-WAY AND TOPOGRAPHIC SURVEY DATA PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE OWNER'S AGENT IMMEDIATELY OF ANY DISCREPANCIES FOR RESOLUTION.*

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
Call 811 or click Arizona811.com


JE FULLER
3111 N. Caden Ct. Suite 180
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| | REVISION DESCRIPTION | BY | DATE | APP. |

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| DATE OF ACCEPTANCE |
| INSPECTED BY |
| REVISED BY |
| CHECKED BY |
| ADEQ FILE NUMBER |
| DATE OF ADEQ APPROVAL |
| CITY CONTRACT NUMBER |
| CONTRACTOR |

REFERENCE DRAWINGS


**CITY OF KINGMAN**
ENGINEERING DEPARTMENT
310 NORTH 4TH STREET
KINGMAN, ARIZONA 86401
PHONE (928) 753-8122 FAX (928) 753-8118


| | |
|---|---|
| DESIGNED BY | JL |
| DRAWN BY | CF |
| CHECKED BY | JL |
| DATE DRAWN | 7/22/2020 |
| HORIZ. SCALE | N/A |
| VERT. SCALE | N/A |

PRELIMINARY NOT FOR CONSTRUCTION

DRAINAGE IMPROVEMENT PROJECT

HARVARD STREET IMPROVEMENTS AND BASIS

CONCEPTUAL DESIGN PLANS

C.O.K. PROJECT NO. ENG19-0066

FILENAME CS.dwg

SHEET NO. C1

1 OF 9

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## GENERAL NOTES

1. ENGINEERING DEPARTMENT'S CIVIL/SITE INSPECTION STAFF SHALL BE NOTIFIED 48 HOURS BEFORE ANY CONSTRUCTION BEGINS TELEPHONE (928) 753-8195.
2. ALL CONSTRUCTION TO CONFORM TO M.A.G. SPECIFICATIONS AND DETAILS AND CITY OF KINGMAN SUPPLEMENT TO M.A.G. SPECIFICATIONS AND DETAILS, UNLESS MODIFIED ON THE PLANS.
3. COMPACTION SHALL COMPLY WITH M.A.G. SECTION 601 & CITY OF KINGMAN SUPPLEMENTS.
4. CONSTRUCTION QUANTITIES ON THESE PLANS ARE NOT VERIFIED BY THE CITY.
5. ALL WORK MUST COMPLY WITH REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
6. 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.
7. EXACT POINT OF PAVEMENT MATCHING, TERMINATION AND OVERLAY, IF NECESSARY SHALL BE DETERMINED IN THE FIELD BY THE CITY ENGINEER OR HIS/HER AUTHORIZED REPRESENTATIVE.
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 THE 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. ANY AND ALL MORE STRINGENT REQUIREMENTS REQUIRED BY FEDERAL, STATE, COUNTY, OR LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
12. NO PAVING CONSTRUCTION SHALL BE STARTED UNTIL ALL UTILITY & STORM DRAIN LINES ARE COMPLETED UNDER PROPOSED PAVED AREAS.
13. UTILITY FACILITIES IN CONFLICT WITH THIS WORK SHALL BE RELOCATED BY THE CONTRACTOR. THIS ACTIVITY SHALL BE COORDINATED WITH THE OWNER OF THE UTILITY TO PREVENT ANY UNNECESSARY INTERRUPTION OF SERVICE.
14. THE PAVING CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADJUSTMENT AND PLACEMENT OF CONCRETE COLLARS, FRAMES, COVERS, AND VALVE BOXES AS NECESSARY FOR A COMPLETE JOB AS APPROVED BY THE CITY ENGINEER OR HIS/HER AUTHORIZED REPRESENTATIVE.
15. CONCRETE OR ASPHALT DAMAGED DURING THE COURSE OF CONSTRUCTION SHALL BE REMOVED AND REPLACED IN KIND PRIOR TO FINAL INSPECTION.
16. GRADING BETWEEN BACK OF CURB AND PROPERTY LINE SHALL BE LIMITED TO 4:1 SLOPE.
17. BASE COURSE SHALL NOT BE PLACED UNTIL SUB-GRADE HAS BEEN APPROVED BY THE CITY ENGINEER OR HIS/HER AUTHORIZED REPRESENTATIVE.
18. NO JOB WILL BE CONSIDERED COMPLETE UNTIL CURBS, PAVEMENTS AND SIDEWALKS HAVE BEEN SWEPT CLEAN OF ALL DIRT AND DEBRIS; AND SURVEY MONUMENTS ARE INSTALLED BY A LAND SURVEYOR, REGISTERED IN THE STATE OF ARIZONA.
19. THE LOCATION OF ALL WATER VALVES, FIRE HYDRANTS AND MANHOLES MUST AT ALL TIMES DURING CONSTRUCTION BE REFERENCED BY THE CONTRACTOR AND MADE AVAILABLE TO THE CITY.
20. EXISTING STREET AND TRAFFIC SIGNS WILL BE MAINTAINED DURING CONSTRUCTION AND RELOCATED BY THE CONTRACTOR AS DIRECTED BY THE CITY ENGINEER OR HIS/HER AUTHORIZED REPRESENTATIVE.
21. TREES AND SHRUBBERY IN THE RIGHT-OF-WAY THAT CONFLICT WITH PROPOSED IMPROVEMENTS SHALL NOT BE REMOVED WITHOUT APPROVAL OF THE ENGINEERING INSPECTOR.
22. IF UNANTICIPATED CONDITIONS ARE ENCOUNTERED DURING THE COURSE OF CONSTRUCTION AND ARE BEYOND THE SCOPE OF THE DESIGN, THE CONTRACTOR MUST SUBMIT CHANGES FOR APPROVAL BY THE CITY OF KINGMAN AND THE ENGINEER.
23. OMISSIONS OR CONFLICTS BETWEEN VARIOUS ELEMENTS OF THE DRAWINGS, NOTES, DETAILS, AND SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY AND RESOLVED PRIOR TO PROCEEDING WITH THE WORK.
24. THE CONTRACTOR IS REQUIRED TO CONTACT BLUE STAKE TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION TO DETERMINE ACCURATE UTILITY LOCATIONS. THE CONTRACTOR MUST KEEP ALL BLUE STAKE REQUESTS UP TO DATE, AND COMPLY WITH APPLICABLE ARIZONA REVISED STATUTES PERTAINING TO BLUE STAKE.
25. THE CONTRACTOR SHALL SUPPLY AND SET ALL STAKES FOR THE LINES, LEVELS, OR MEASUREMENTS OF THE WORK IN THEIR PROPER PLACES. ANY EXPENSE INCURRED IN REPLACING ANY STAKES WHICH THE CONTRACTOR OR HIS SUBORDINATES MAY HAVE FAILED TO PRESERVE SHALL BE THE CONTRACTOR'S RESPONSIBILITY. CONTRACTOR SHALL ALLOCATE COSTS FOR SAID SERVICES IN HIS UNIT PRICES FOR THE PROJECT.
26. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE BENCHMARK AND COMPARE THE SITE CONDITIONS WITH THE PLANS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES OBSERVED. SHOULD ANY BENCHMARK, GRADE OR DESIGN INDICATED ON THE PLANS BE SUSPECT THE ENGINEER SHALL BE NOTIFIED OF SAID BENCHMARK, GRADE OR PROBLEM AT LEAST TWENTY-FOUR HOURS BEFORE CONSTRUCTION IS SCHEDULED TO BEGIN IN THE AFFECTED AREA.
27. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREPARATION AND FURNISHING OF "AS CONSTRUCTED" RECORD PRINTS; INCLUDING THE WORK OF EACH SUB-CONTRACTOR.
28. CONTRACTOR SHALL PREPARE A STORMWATER POLLUTION PREVENTION (SWPP) PLAN FOR THE PROJECT AS REQUIRED UNDER THE AZPDES PERMIT PROGRAM, AND IN ACCORDANCE WITH THE 2013 STORMWATER CONSTRUCTION GENERAL PERMIT (CGP). THE CONTRACTOR IS RESPONSIBLE FOR PREPARING AND FILING ALL NOIs AND NOTs ASSOCIATED WITH THIS CONSTRUCTION ACTIVITY.
29. CONTRACTOR SHALL NOT LEAVE TRENCHES OR OTHER EXCAVATIONS OPEN/UNCOVERED AFTER WORKING HOURS. CONTRACTOR SHALL FOLLOW ALL APPLICABLE OSHA STANDARDS FOR TRENCH SAFETY.
30. ALL HDPE STORM DRAIN PIPE SHALL BE MANUFACTURED, DESIGNED AND INSTALLED IN ACCORDANCE WITH AASHTO M252, AASHTO M294, MAG AND THESE SPECIAL PROVISIONS.

## GENERAL NOTES (CONTINUED)

31. ALL HDPE STORM DRAIN PIPE SHALL BE TYPE 'S' CORRUGATED, WITH WATERTIGHT JOINTS.
32. AT A MINIMUM, ALL HDPE STORM DRAIN PIPE JOINTS SHALL MEET THE ASTM D-3212 WATERTIGHT REQUIREMENT OF 10.8 PSI (25 COLUMN FEET OF WATER HEAD).
33. THE CONTRACTOR SHALL PROVIDE A COPY OF AN ACCEPTED INDEPENDENT 3RD PARTY LAB CERTIFICATION THAT ALL THE PIPE AND JOINTS TO BE USED ON THE PROJECT MEET THE ASTM D-3212 WATERTIGHT STANDARD.
34. ALL HDPE PIPE CONNECTIONS TO MANHOLES SHALL MEET ASTM C-923 REQUIREMENTS.

## WATER NOTES

1. ENGINEERING DEPARTMENT'S CIVIL/SITE INSPECTION STAFF SHALL BE NOTIFIED 48 HOURS BEFORE ANY CONSTRUCTION BEGINS TELEPHONE (928) 753-8195.
2. ALL WATER VALVE BOXES SHALL BE PER CITY OF KINGMAN DETAIL 391-1 & 391-2.
3. ALL CONSTRUCTION TO CONFORM TO M.A.G. SPECIFICATIONS AND DETAILS AND CITY OF KINGMAN SUPPLEMENT TO M.A.G. SPECIFICATIONS AND DETAILS, UNLESS MODIFIED ON THE PLANS.
4. COMPACTION SHALL COMPLY WITH M.A.G. SECTION 601 & CITY OF KINGMAN SUPPLEMENTS.
5. NEW WATER LINES ARE TO BE BUILT IN STANDARD UTILITY LOCATIONS PER CITY OF KINGMAN DETAIL 120.
6. THIS SET OF PLANS HAS BEEN INITIALLY REVIEWED BY THE CITY OF KINGMAN. 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 KINGMAN'S FINAL DETERMINATION AS TO THE ACCEPTABILITY OF THE PLANS, NOR SHALL IT PREVENT THE CITY OF KINGMAN FROM REQUIRING ERRORS AND OMISSIONS, AS FOUND ON PLANS, BE ADDRESSED BY DEVELOPER(S) /CONTRACTOR(S), WHERE SUCH ERRORS AND OMISSIONS CAUSE THE PLANS TO BE IN VIOLATION OF OR INADEQUATE UNDER APPLICABLE FEDERAL/STATE/COUNTY/LOCAL CODES, ORDINANCES, REGULATIONS, OR OTHER LAWS. THIS REVIEWED AND STAMPED SET OF PLANS MUST BE KEPT AT THE CONSTRUCTION SITE AT ALL TIMES.
7. PIPE DEFLECTION SHALL NOT EXCEED ONE-HALF (½ ) THE MANUFACTURERS' RECOMMENDATIONS.
8. ALL WORK MUST COMPLY WITH REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
9. THE CONTRACTOR IS TO NOTIFY THE PUBLIC THAT WILL BE AFFECTED BY ANY SHUTDOWNS A MINIMUM OF 48 HOURS IN ADVANCE.
10. A SIX (6) FOOT MINIMUM HORIZONTAL SEPARATION FROM ANY UNDERGROUND UTILITY SHALL BE PROVIDED FOR SEWER MAINS AND WATER MAINS. THE MINIMUM HORIZONTAL SEPARATION IS MEASURED FROM OUTSIDE OF SEWER MAIN OR WATER MAIN TO OUTSIDE OF UNDERGROUND UTILITY.
11. A ONE (1) FOOT MINIMUM VERTICAL SEPARATION FROM ANY DRY UNDERGROUND UTILITY CROSSING SHALL BE PROVIDED FOR SEWER MAINS, SEWER SERVICES, WATER MAINS, AND WATER SERVICES. THE MINIMUM VERTICAL SEPARATION IS MEASURED FROM OUTSIDE OF SEWER MAIN, SEWER SERVICE, WATER MAIN, OR WATER SERVICE TO OUTSIDE OF DRY UNDERGROUND UTILITY.
12. 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 CITY OF KINGMAN STANDARD DETAIL 404 FOR ADDITIONAL INFORMATION AND/OR PROVISIONS FOR CLEARANCE.
13. EXCEPTIONS OR DEVIATIONS FROM THE ABOVE MINIMUM CLEARANCES MUST BE APPROVED AND SHOWN ON THE APPROVED WATER AND SEWER PLANS. WHEN UTILITY CONFLICTS ARE FOUND DURING CONSTRUCTION, ALL CHANGES AND REVISIONS MUST BE PRECEDED BY AN APPROVED PLAN REVISION.
14. ANY AND ALL MORE STRINGENT REQUIREMENTS REQUIRED BY FEDERAL, STATE, COUNTY, OR LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
15. WATER SERVICES SHALL BE INSTALLED PERPENDICULAR TO THE WATER MAIN. WATER SERVICES AT THE END OF CUL-DE SACS MAY VARY AS NECESSARY, BUT WILL BE APPROVED ON A CASE BY CASE BASIS.
16. ALL SERVICES SHALL RUN IN A STRAIGHT LINE FROM THE WATER MAIN TO THE METER BOX.
17. NEITHER WATER SERVICE METER BOX NOR ANY PORTION OF A WATER SERVICE SHALL BE INSTALLED UNDER AN EXISTING OR PROPOSED DRIVEWAY OR SIDEWALK RAMP.
18. CONCRETE OR ASPHALT DAMAGED DURING THE COURSE OF CONSTRUCTION SHALL BE REMOVED AND REPLACED IN KIND PRIOR TO FINAL INSPECTION.
19. PLAN APPROVAL IS VALID FOR ONE YEAR.

## SEWER NOTES

1. ENGINEERING DEPARTMENT'S CIVIL/SITE INSPECTION STAFF SHALL BE NOTIFIED 48 HOURS BEFORE ANY CONSTRUCTION BEGINS TELEPHONE (928) 753-8195.
2. ANY SEWER MAIN 15"IN SIZE OR 12'IN DEPTH, OR GREATER, REQUIRES 5' MANHOLES.
3. ALL CONSTRUCTION TO CONFORM TO M.A.G. SPECIFICATIONS AND DETAILS AND CITY OF KINGMAN SUPPLEMENT TO M.A.G. SPECIFICATIONS AND DETAILS, UNLESS MODIFIED ON THE PLANS.
4. COMPACTION SHALL COMPLY WITH M.A.G. SECTION 601 & CITY OF KINGMAN SUPPLEMENTS.
5. NEW SEWER LINES ARE TO BE BUILT IN STANDARD UTILITY LOCATIONS PER CITY OF KINGMAN DETAIL 120.
6. THIS SET OF PLANS HAS BEEN INITIALLY REVIEWED BY THE CITY OF KINGMAN. 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 KINGMAN'S FINAL DETERMINATION AS TO THE ACCEPTABILITY OF THE PLANS, NOR SHALL IT PREVENT THE CITY OF KINGMAN FROM REQUIRING ERRORS AND OMISSIONS, AS FOUND ON PLANS, BE ADDRESSED BY DEVELOPER(S) /CONTRACTOR(S), WHERE SUCH ERRORS AND OMISSIONS CAUSE THE PLANS TO BE IN VIOLATION OF OR INADEQUATE UNDER APPLICABLE FEDERAL/STATE/COUNTY/LOCAL CODES, ORDINANCES, REGULATIONS, OR OTHER LAWS. THIS REVIEWED AND STAMPED SET OF PLANS MUST BE KEPT AT THE CONSTRUCTION SITE AT ALL TIMES.
7. ALL LINES MUST BE TESTED FOR UNIFORM SLOPE BY LAMP LIGHTING OR REMOTE CAMERA BEFORE THEY ARE ACCEPTED AS COMPLETE. TESTING METHOD MUST BE APPROVED IN ADVANCE BY THE ENGINEERING DEPARTMENT. THE RESULTS SHALL BE RECORDED AND SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.
8. DEFLECTION TESTING FOR THE ENTIRE LENGTH OF PVC SEWER LINES SHALL BE PERFORMED IN ACCORDANCE WITH MAG STANDARD SPECIFICATION 615.11(C) AND AAC R18-9-E301(D)(2)(I).
9. ALL MANHOLES SHALL BE TESTED USING ONE OF THE FOLLOWING PROCEDURES:

A. WATER TESTING IN ACCORDANCE WITH AAC R-18-9-E301(D)(3)(E), THE ENTIRE MANHOLE SHALL BE FILLED WITH WATER AND EXFILTRATION SHALL BE LIMITED TO 0.0034 OF THE TOTAL MANHOLE VOLUME IN ONE HOUR.

B. VACUUM TESTING IN ACCORDANCE WITH AAC R-18-9-E301(D)(3)(E), MANHOLES SHALL BE TESTED IN ACCORDANCE WITH ASTM C1244-02, "STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY NEGATIVE AIR PRESSURE (VACUUM) TEST PRIOR TO BACKFILL".

10. THE CONTRACTOR SHALL PERFORM MANHOLE TESTING AFTER INSTALLATION OF THE MANHOLE CONE TO VERIFY WATER TIGHTNESS OF THE MANHOLE FROM THE TOP CONE DOWN. UPON SATISFACTORY TEST RESULTS, THE CONTRACTOR SHALL INSTALL THE MANHOLE RINGS AND SPACERS, COMPLETE WITH THE JOINTS AND SEAL THE MANHOLE TO A WATER TIGHT CONDITION.
11. THE ENTIRE SEWER LINE SHALL BE TESTED FOR TIGHTNESS FOR EACH PIPE MATERIAL IN ACCORDANCE WITH AAC R18-9E301(D)(2)(J).
12. ALL WORK MUST COMPLY WITH REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
13. NEW MANHOLES ARE TO BE BUILT WITHOUT STEPS.
14. A SIX (6) FOOT MINIMUM HORIZONTAL SEPARATION FROM ANY UNDERGROUND UTILITY SHALL BE PROVIDED FOR SEWER MAINS, AND WATER MAINS. THE MINIMUM HORIZONTAL SEPARATION IS MEASURED FROM OUTSIDE OF SEWER MAIN, OR WATER MAIN TO OUTSIDE OF UNDERGROUND UTILITY.
15. A ONE (1) FOOT MINIMUM VERTICAL SEPARATION FROM ANY DRY UNDERGROUND UTILITY CROSSING SHALL BE PROVIDED FOR SEWER MAINS, SEWER SERVICES, WATER MAINS, AND WATER SERVICES. THE MINIMUM VERTICAL SEPARATION IS MEASURED FROM OUTSIDE OF SEWER MAIN, SEWER SERVICE, WATER MAIN, OR WATER SERVICE TO OUTSIDE OF DRY UNDERGROUND UTILITY.
16. A TWO (2) FOOT MINIMUM VERTICAL SEPARATION SHALL BE PROVIDED BETWEEN ANY WATER MAIN OR STORM DRAIN CROSSING A SEWER MAIN. THE MINIMUM VERTICAL SEPARATION IS MEASURED FROM OUTSIDE OF SEWER MAIN TO OUTSIDE OF WATER MAIN OR STORM DRAIN MAIN. SEE CITY OF KINGMAN STANDARD DETAIL 404 FOR ADDITIONAL INFORMATION AND/OR PROVISIONS FOR CLEARANCE.
17. EXCEPTIONS OR DEVIATIONS FROM THE ABOVE MINIMUM CLEARANCES MUST BE APPROVED AND SHOWN ON THE APPROVED WATER AND SEWER PLANS. WHEN UTILITY CONFLICTS ARE FOUND DURING CONSTRUCTION, ALL CHANGES AND REVISIONS MUST BE PRECEDED BY AN APPROVED PLAN REVISION.
18. ANY AND ALL MORE STRINGENT REQUIREMENTS REQUIRED BY FEDERAL, STATE, COUNTY, OR LOCAL CODES OR ORDINANCES TAKE PRECEDENCE. ANY SEWER LINES THAT ARE INSTALLED WITH LESS THAN .004 FT/FT SLOPE MUST BE INSTALLED USING A LASER.
19. WHEN DIP SEWER PIPE IS USED, AN EPOXY LINING IS REQUIRED AS APPROVED BY THE CITY ENGINEER.
20. CONCRETE OR ASPHALT DAMAGED DURING THE COURSE OF CONSTRUCTION SHALL BE REMOVED AND REPLACED IN KIND PRIOR TO FINAL INSPECTION.
21. PLAN APPROVAL IS VALID FOR ONE YEAR.

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DRAINAGE IMPROVEMENT PROJECT

C.O.K. PROJECT NO.
ENG19-0066

FILENAME
CS.dwg

CITY OF KINGMAN
ENGINEERING DEPARTMENT
310 NORTH 4TH STREET
KINGMAN, ARIZONA 86401
PHONE (928) 753-8122 FAX (928) 753-8118

PRELIMINARY NOT FOR CONSTRUCTION

HARVARD STREET IMPROVEMENTS AND BASINS
NOTES

SHEET NO.
C2
2 OF 9

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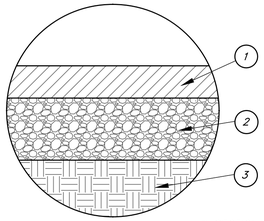


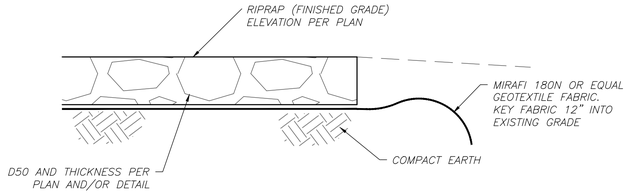

KEYNOTES:

1. 3" THICK, 3/4" ASPHALT PER MAG SPEC 321.
2. 6" THICK AGGREGATE BASE COURSE PER MAG SPEC. SEC. 310 AS AMENDED BY CITY OF KINGMAN, COMPACTED TO 100% UNDER PAVEMENT.
3. SUBGRADE PREPARATION PER MAG SPEC. SEC. 301.

* SECTION TO BE DETERMINED BY PROJECT SPECIFIC INVESTIGATION.

## 1 TYPICAL PAVEMENT SECTION

NTS




## 2 TYPICAL RIPRAP SECTION

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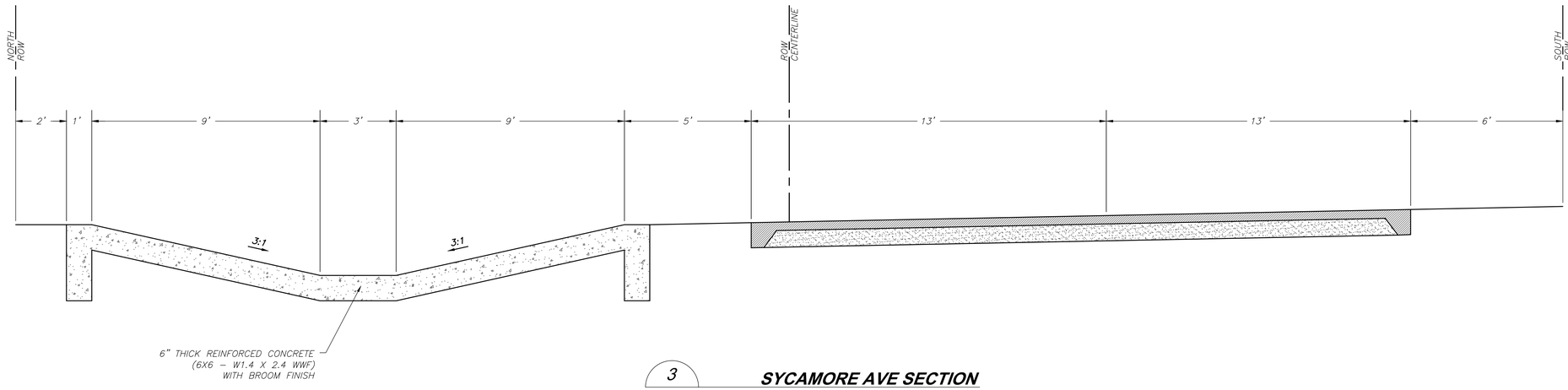
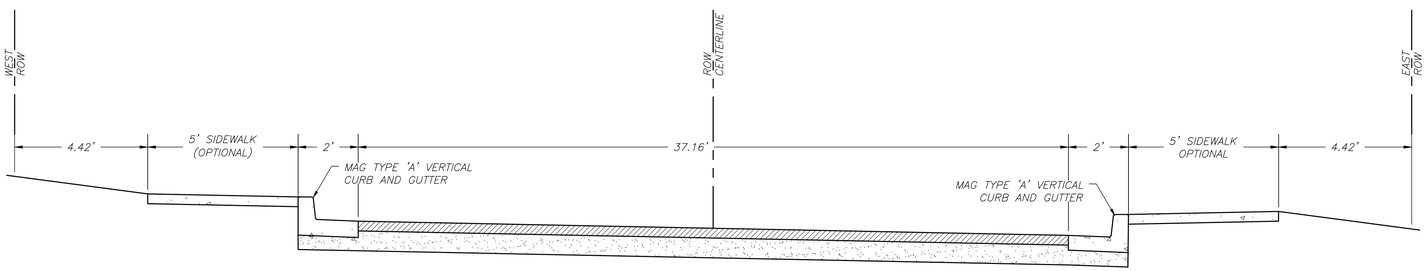



## 3 SYCAMORE AVE SECTION

NTS




## 4 HARVARD AVE SECTION

NTS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JE FULLER

DRAINAGE IMPROVEMENT PROJECT

C.O.K. PROJECT NO.
ENG19-0066

FILENAME
DT.dwg

CITY OF KINGMAN
ENGINEERING DEPARTMENT
310 NORTH 4TH STREET
KINGMAN, ARIZONA 86401
PHONE (928) 753-8122 FAX (928) 753-8118

PRELIMINARY NOT FOR CONSTRUCTION

HARVARD STREET IMPROVEMENTS AND BASINS
DETAILS

SHEET NO.
C3
3 OF 9

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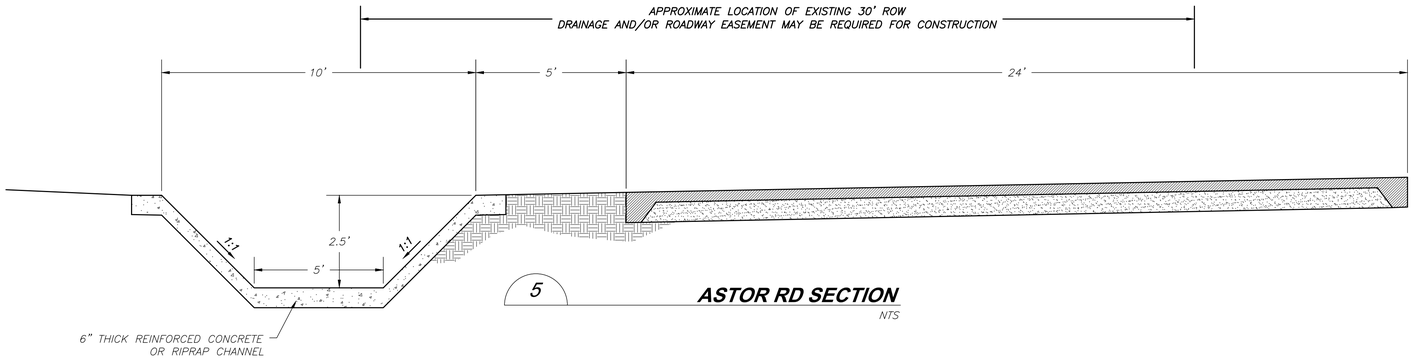
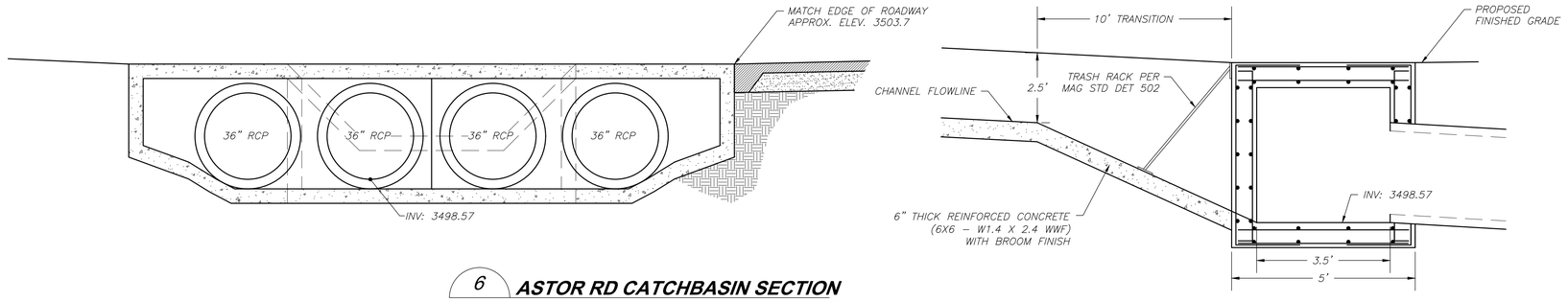
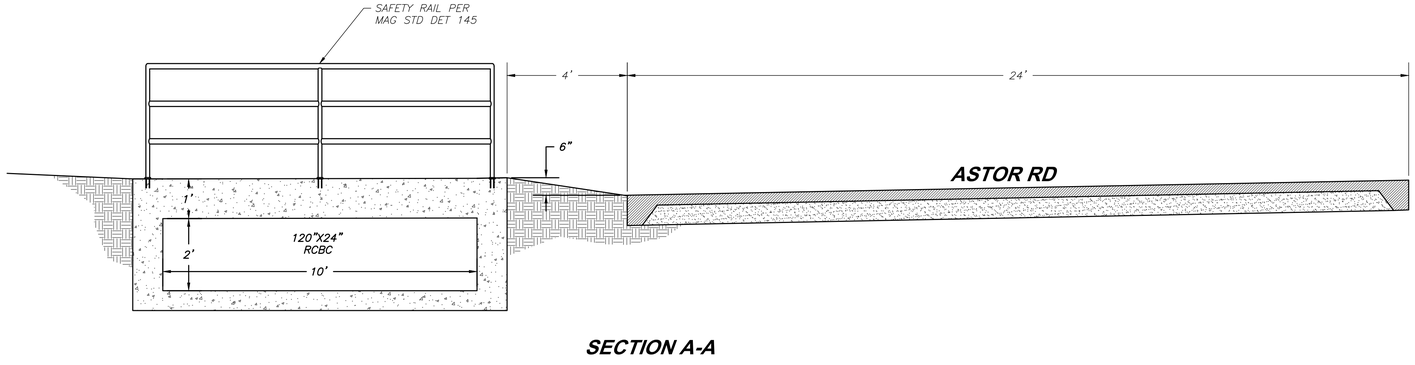


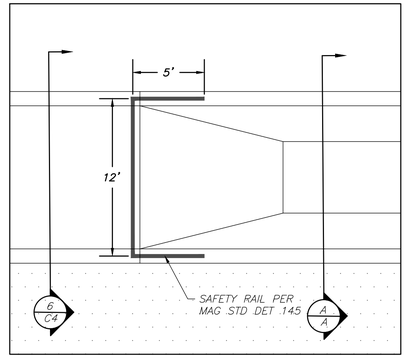

5 **ASTOR RD SECTION**
NTS




6 **ASTOR RD CATCHBASIN SECTION**
NTS




**SECTION A-A**




7 **BOX CUVERT DRIVEWAY SECTION**
NTS

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HARVARD STREET IMPROVEMENTS AND BASINS
DETAILS

SHEET NO.
C4
4 OF 9

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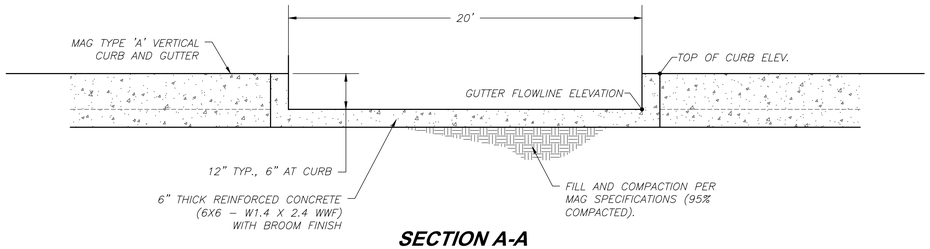
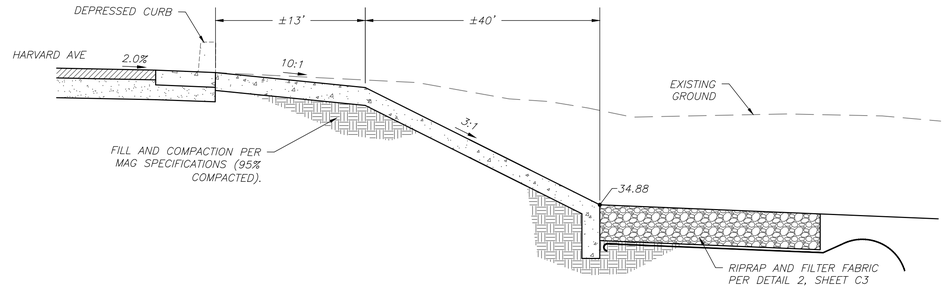


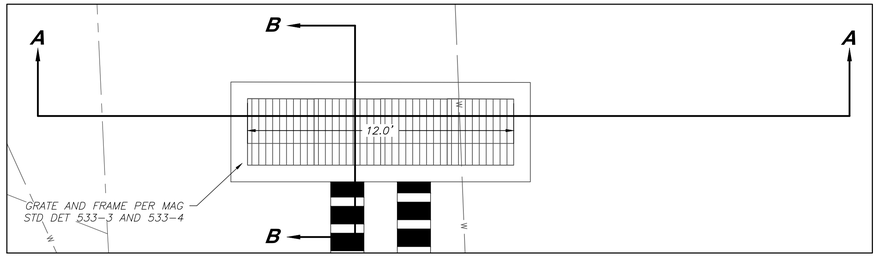

**SECTION A-A**



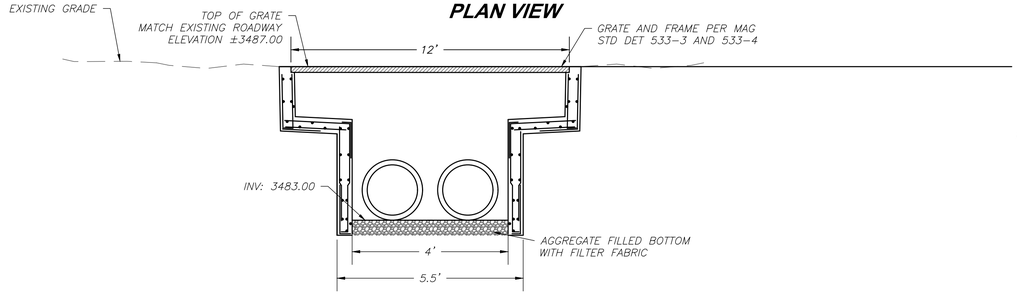

**SECTION B-B**

**8 CONCRETE SPILLWAY**

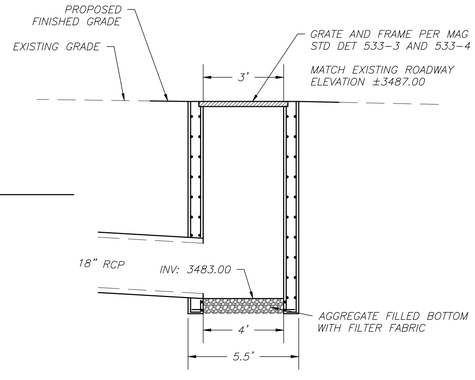
NTS




**PLAN VIEW**




**SECTION A-A**




**SECTION B-B**

**9 TRANSVERSE GRATE OUTLET**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DRAINAGE IMPROVEMENT PROJECT

C.O.K. PROJECT NO. ENG19-0066

FILENAME DT.dwg

CITY OF KINGMAN
ENGINEERING DEPARTMENT
310 NORTH 4TH STREET
KINGMAN, ARIZONA 86401
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PRELIMINARY NOT FOR CONSTRUCTION

HARVARD STREET IMPROVEMENTS AND BASINS
DETAILS

SHEET NO. C5
5 OF 9

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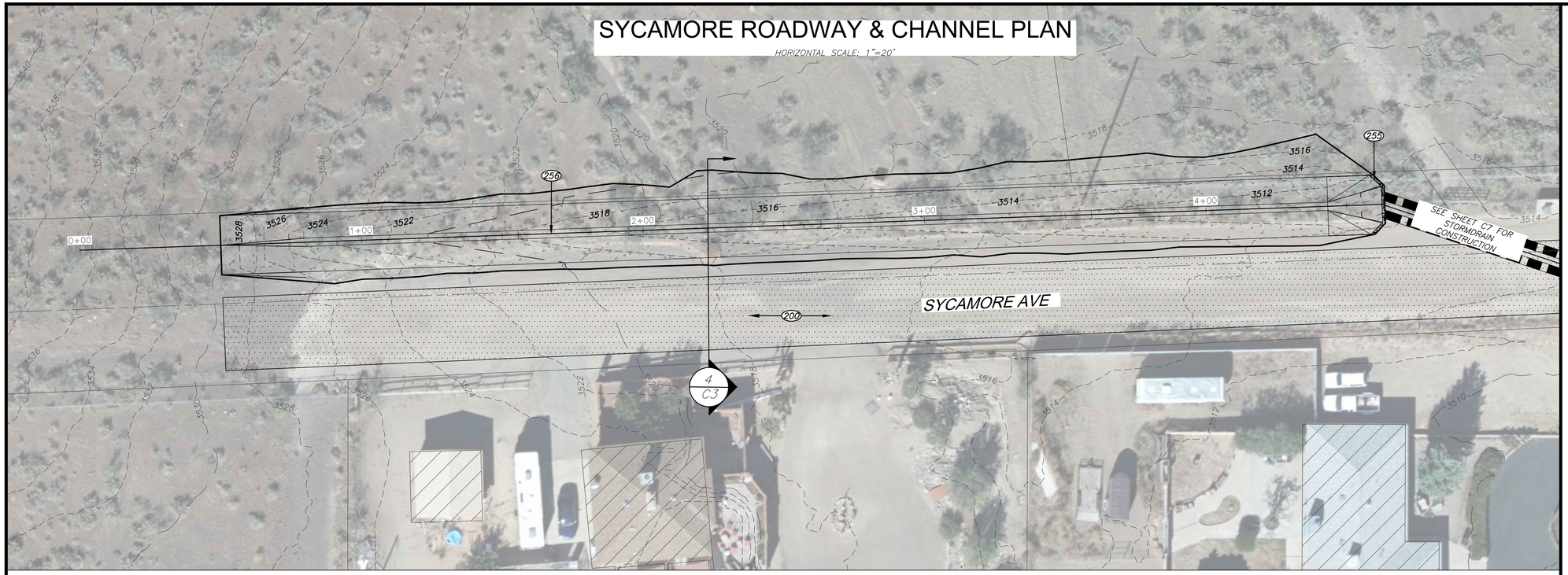
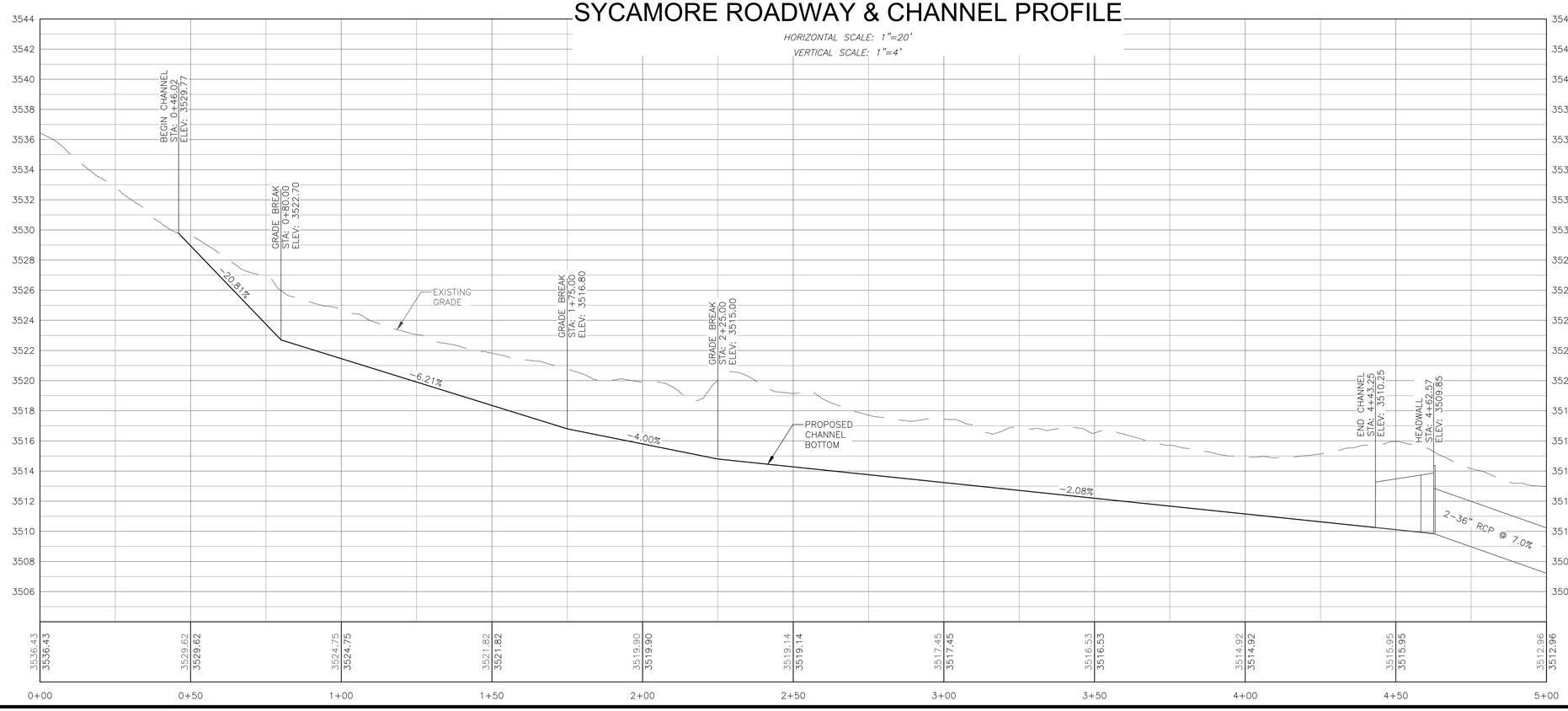
# SYCAMORE ROADWAY & CHANNEL PLAN

HORIZONTAL SCALE: 1"=20'




# SYCAMORE ROADWAY & CHANNEL PROFILE

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




CONSTRUCTION NOTES

SITE CONSTRUCTION
NOTE 200
NEW 3" AC/6" ABC ASPHALT PER DETAIL 1 SHEET C3.

NOTE 255
NEW HEADWALL PER MAG STD DET 501.

NOTE 256
NEW CONCRETE ROADSIDE CHANNEL PER DETAIL 3 SHEET C3.

N

GRAPHIC SCALE 1" = 20'
20 0 20 40 60

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DRAINAGE IMPROVEMENT PROJECT

C.O.K. PROJECT NO.
ENG19-0066

FILENAME
PP.dwg

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ENGINEERING DEPARTMENT
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KINGMAN, ARIZONA 86401
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# HARVARD STREET IMPROVEMENTS AND BASINS

PLAN AND PROFILE

SHEET NO.
C6
6 OF 9

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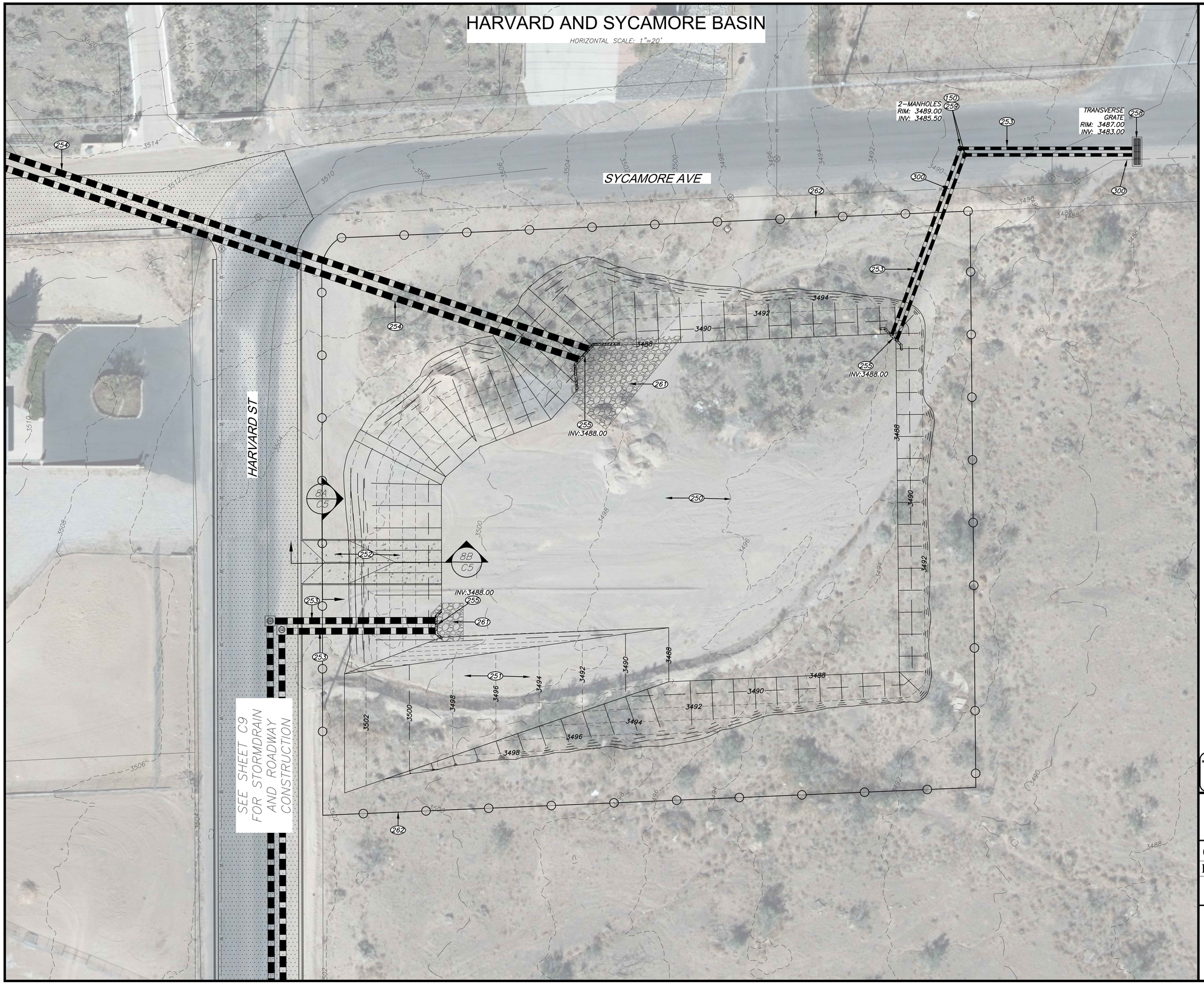
# HARVARD AND SYCAMORE BASIN

HORIZONTAL SCALE: 1"=20'




CONSTRUCTION NOTES

NOTE 150
ADJUST MANHOLE RING, FRAME AND COVER TO FINISHED GRADE PER COK STD DET 422.

NOTE 151
ADJUST VALVE BOX AND COVER TO FINISHED GRADE PER COK STD DETS 391-1 AND 391-2.

SITE CONSTRUCTION
NOTE 200
NEW 3" AC/6" ABC ASPHALT PER DETAIL 1 SHEET C3.

NOTE 201
NEW MAG TYPE 'A' CURB AND GUTTER PER MAG STD DET 220.

NOTE 250
GRADE NEW DETENTION BASIN PER GRADES SHOWN ON THIS SHEET.

NOTE 251
CONSTRUCT NEW DETENTION BASIN MAINTENANCE ACCESS.

NOTE 252
NEW CONCRETE SPILLWAY PER DETAIL 8, SHEET C5.

NOTE 253
NEW 18" RCP STORMDRAIN. TRENCHING PER COK STD DET 200-1.

NOTE 254
NEW 36" RCP STORMDRAIN. TRENCHING PER COK STD DET 200-1.

NOTE 255
NEW HEADWALL PER MAG STD DET 501.

NOTE 258
NEW TRANSVERSE GRATE OUTLET PER DETAIL 9 SHEET C5.

NOTE 259
NEW STORMDRAIN MANHOLE PER MAG STD DET 520, AND MANHOLE SHAFT PER MAG STD DET 522.

NOTE 261
12 THICK D50 = 6" RIPRAP PAD WITH MIRAFI NON-WOVEN FILTER FABRIC UNDER ROCK PER DETAIL 2, SHEET C3. TOP OF ROCK TO MATCH FINISH GRADE SPECIFIED ON PLANS.

NOTE 262
NEW CHAINLINK FENCE WITH ACCESS GATE PER COK SPECIFICATIONS.

WATER CONSTRUCTION
NOTE 300
NEW VERTICAL WATER MAIN REALIGNMENT PER MAG STD DET 370.

N

GRAPHIC SCALE 1" = 20'

20 0 20 40 60

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DRAINAGE IMPROVEMENT PROJECT

C.O.K. PROJECT NO.
ENG19-0066

FILENAME
GD.dwg


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ENGINEERING DEPARTMENT
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HARVARD STREET IMPROVEMENTS AND BASINS
GRADING

SHEET NO.
C7
7 OF 9

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## ASTOR AVE PLAN

HORIZONTAL SCALE: 1"=30'

## ASTOR AVE PLAN

HORIZONTAL SCALE: 1"=30'

CONSTRUCTION NOTES

REMOVALS

NOTE 100
SAWCUT, REMOVE AND DISPOSE OF ASPHALT.

NOTE 150
ADJUST MANHOLE RING, FRAME AND COVER TO FINISHED GRADE PER COK STD DET 422.

NOTE 151
ADJUST VALVE BOX AND COVER TO FINISHED GRADE PER COK STD DETS 391-1 AND 391-2.

SITE CONSTRUCTION

NOTE 200
NEW 3" AC/6" ABC ASPHALT PER DETAIL 1 SHEET C3.

NOTE 254
NEW 36" RCP STORMDRAIN. TRENCHING PER COK STD DET 200-1.

NOTE 257
NEW CONCRETE ROADSIDE CHANNEL PER DETAIL 5, SHEET C4.

NOTE 259
NEW STORMDRAIN MANHOLE PER MAG STD DET 520, AND MANHOLE SHAFT PER MAG STD DET 522.

NOTE 260
NEW TRANSVERSE GRATE CATCHBASIN PER DETAIL 6 SHEET C4.

NOTE 263
NEW 120"x24" REINFORCED CONCRETE BOX CULVERT PER ADOT STD DWG SD 6.01.

WATER CONSTRUCTION

NOTE 300
NEW VERTICAL WATER MAIN REALIGNMENT PER MAG STD DET 370.

N

GRAPHIC SCALE 1" = 30'

30 0 30 60 90

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DRAINAGE IMPROVEMENT PROJECT

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ENG19-0066

FILENAME
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ENGINEERING DEPARTMENT
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KINGMAN, ARIZONA 86401
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HARVARD STREET IMPROVEMENTS AND BASINS
GRADING

SHEET NO.
C8
8 OF 9

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