



P.I.A. Guidelines & Checklist

The Private Improvements Agreement (PIA) process was established to address right-of-way improvements resulting from private developments. However, not all developments are required to go through the PIA process. In general, “significant” improvements in the public right-of-way require a PIA; this ensures that the City has a record of such improvements for future reference and use. The following list provides some guidelines to assist in determining if a PIA is warranted for a given development. Please note that this list is not all-inclusive:

PIA’s are typically required for: (Plan and Profile sheet(s) required)

- Rezoning conditions: Some rezoning conditions may require a PIA for offsite improvements.
- Curbing: If the extent of curbing will result in impacts to existing drainage patterns.
- Drainage Structures: Box Culverts, Pipe Culvert, connections to existing drainage facilities.
- Drainage Improvements: Drainage grading.
- Paving: This includes acceleration lanes, deceleration lanes, and turn lanes.
- Median modifications: all median modifications.
- Traffic Devices: This includes signalization, new traffic signs, ..etc.
- Sidewalks along MS&R roadways.

PIA’s are not typically required for: (Plan sheet(s) required)

- Curb cuts/ Driveways
- Utility trenching and backfill
- Sidewalks on non-MS&R roadways
- Minor curb replacements
- Curb cut closures

If there is a question as to whether a PIA is required, consult with the Permits and Codes Unit of the Department of Transportation and Mobility (DTM) Engineering Division at 791-5100 or can be visited at 201 N. Stone Ave., 4th Floor or visit DTM’s website at (<https://www.tucsonaz.gov/tdot/engineering>)

Private Improvement Fees:

Applications for Private Improvement Agreements (PIA) shall pay a fee of five (5) percent of the estimated cost of the improvement as certified by the engineer of record for the applicant provided that the estimated cost is accepted and approved by the DTM. The fee for a Private Improvement Agreement shall be paid prior to final approval of the agreement by the City. (*COT Unified development Code Administrative Manual Section 4-01.14.0*)

The construction inspection fee is based on total project construction cost required to install all proposed improvements in the public right-of-way (ROW) excluding the wet and dry utilities.

A detailed itemized cost estimate to install improvements in the public ROW shall be submitted to the DTM for review and approval. The cost estimate shall include costs of materials, labor, and include all other related costs, including all applicable taxes. The cost estimate shall itemize each bid item including item description, item quantity, unit item cost and calculated item costs, and a grand total of all item costs.

In addition to the construction inspection fee, the owner / developer shall pay applicable fees for an onsite roadway surface treatment (at a minimum fog coat) of the entire subdivision / phase, offsite treatment may be required depending on field conditions. DTM shall determine the pavement surface treatment fee rate. Fees shall be paid to the City DTM prior to final acceptance.

The following is a list of items typically included in PIA projects; however, this is not an all-inclusive list. Improvements vary from project to project to project.

- Drainage structures: Box Culverts, Scuppers, Storm Drain, Storm Drain Manholes, Catch Basin, Valley Gutters, and Bank Protection (Public Drainage)
- Grading in R/W (subgrade preparation)
- Aggregate Base Course
- Asphaltic Concrete
- Asphalt Surface Treatments
- Pavement Patches
- Sidewalk (along common areas)
- Multi Use Pedestrian Paths including DG paths
- Survey monuments
- Valve Box and Manhole Adjustments (including sewer manholes)
- Curb and Headers
- Curb Access Ramps
- Guard Railing
- Barricade Railing
- Post Barricades
- Median Island Modifications (including landscaping)
- Street Signs
- Striping
- Light Poles
- Traffic Signals
- Landscaping (public)

P.I.A. Plan Checklist

The following will be required for first time submittal:

Copy of the **Approved/Substantially Approved:** Tentative Plat/Development Plan, Development Plan (PDF format), Drainage Report (PDF format) including any HEC-RAS input and output files and *Geotechnical/Soils report (PDF format).

A copy of the applicable **approved** documentation (PDF format) to be included with the submittal are: DSMR, Rezoning, P.A.D., WASH Ordinance, and ERZ approvals.

*A Geotechnical Report is required for submittals and must include pavement section and reference soil recommendation for public roads.

Drafting Standards:

- Final plans shall conform in appearance, format, accuracy and quality to standards used by the COT Department of Transportation Engineering Division. See DTM Active Practice Guideline No. 21 (<https://www.tucsonaz.gov/tdot/engineering>)
- Use latest version of DTM Engineering Plan Template (<https://www.tucsonaz.gov/tdot/engineering>)

The following items shall be included on Cover sheet:

- Administrative address.
- Engineering firm's logo
- Developer and owner's name
- Recordation information of Maps and Plats, Book and Page/Sequence Number must be noted on cover sheet of subdivision street improvement plans. Plat must be recorded before submittal of mylars for final review and approval.
- Basis of Elevation (Must reference COT field Book and Page).
- Basis of Bearing
- Development plan Number
- DSMR Number for improvements in public rights-of-way.

Required Paving Notes:

- All construction activity and test methods shall be in conformance with Pima Association of Governments (PAG) Standard Specifications for Public Improvements (SSPI) 2015 Edition or current edition.
- Drainage pipe shall conform to PAG SSPI Section 501 or as directed by the engineer.
- Pipe bedding shall conform to PAG Standard Detail 108.
- Aggregate Base Course shall conform to PAG SSPI Section 303.

- Asphaltic Concrete shall conform to PAG SSPI Section 406 (Update Sequence Number 2019-2).
- All concrete shall conform to PAG SSPI Section 1006, Class S, 3,000 PSI compressive strength at 28 days, unless otherwise specified.
- Pavement Section Design documentation, are in accordance to the approved Geotechnical Report, ***Report Name and Firm Name, Project Number.***
- All Drainage Infrastructures, indicated on the plans, are in accordance to the approved Drainage Report approved by Planning and Development Services Department.
- All changes to these plans must be cleared by the City of Tucson City Engineer's Permits and Codes Section, prior to construction.
- The City shall not be held liable for any errors and/or omissions on these plans. Items not meeting City Standards shall be repaired/replaced at no cost to the City.
- The Engineer of Record shall submit to the City for review any changes to the approved plans prior to construction. Additionally, the Engineer of Record shall certify all changes meeting all applicable standards, codes, and ordinances.
- An excavation permit shall be obtained from the City of Tucson Department of Transportation and Mobility prior to any work within the Public right-of-way.
- A pre-construction field meeting shall be conducted with the City of Tucson Department of Transportation and Mobility construction inspector prior to any work within the public right-of-way.
- The extent and type of surface treatments/repairs indicated on the plans may not be all inclusive of the work that is needed. Additional repairs, paving, or replacement may be needed depending on field conditions.
- The contractor shall contact and/or coordinate any work with DTM Streets & Traffic Maintenance Division, Median Island Maintenance Section ((520) 791-5279, ext. 234) prior to disturbing any COT DTM landscaping or irrigation systems. Additionally, the contractor shall repair or replace any disturbed COT DTM landscaping or irrigation systems, including replacement of any damaged plants. Contact David Marhefka @ (520) 400-2645 for inspection and permits for landscaping.
- The PIA Inspector shall verify that the "Saw-cut" line is located within competent pavement. Adjustments to the plan shall be documented and As-built; a one foot minimum shall be provided.
- Contractor shall obtain all other permits as required by Local, State and Federal requirements.
- A copy of the approved plan shall be kept in an easily accessible location on the site at all times during construction.
- Signage and striping shall be coordinated with DTM Traffic Engineering and installed at no expense to the public. Call Traffic Engineering at (520) 791-4259 prior to the installation or removal of

striping and signage.

- Upon commencement of work, traffic control devices shall be posted and maintained by the contractor until such time as the work is completed. All warning signs barricades etc. shall be in accordance with the manual on uniform traffic control devices adopted by the State of Arizona pursuant to A.R.S. 28-650. Contact DTM Traffic Engineering, (520) 791-4259, 48-hours prior to placing or removing any said traffic control devices.
- Contractor shall call ARIZONA 811 as mandated by the Arizona Revised Statutes before any construction begins to verify location of existing utilities shown or not shown. Existing utility locations shown hereon are only approximate. It is the contractor's responsibility to confirm horizontal and vertical location of all utilities without damaging same. Damaged utilities shall be repaired at no expense to the City.
- The contractor shall contact and/or coordinate any work with DTM Streets & Traffic Maintenance Division, Electric Shop (520) 791-3154 prior to relocation or placement of any street lighting or traffic facilities. Contact Gabriel Rascon @ (520) 400-7656 for street lighting/traffic signal plan review.
- The contractor shall comply with all applicable Occupational Safety and Health Administration regulations.
- Floodplain Use Permit No. _____, has been issued by Planning and Development Services Department for work impacting City and FEMA Floodplains.
- Cut and fill slopes shall be trimmed to the finish grade to produce a uniform cross-section. The slope of the excavations or embankments shall be shaped and trimmed as shown on the plans and left in a neat and orderly condition. All stones, roots, or other waste matter exposed on excavation or embankment slopes shall be removed and legally disposed of off-site by the contractor.
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PIA Guidelines:

- PIA Plans will be designed in accordance with COT Development Standards Sections 3 & 11, Chapter 25, COT Universal Development Code Technical Standards Manual, PAG Standard Specifications and Details for Public Improvement (2015 Edition), Transportation Access Management Guidelines for COT, Standards Manual for Drainage Design and Floodplain Management, Major Streets & Routes, Moratorium, ADOT Standard Details and ADA Standards.
- Lettering size for Paving Improvement plans is equal to or greater than 1/8 inch in height (12 point).
- Plan Symbols and Abbreviations will be accepted only as per the PAG Standard Details for Public Improvement 2003 Edition.
- Follow the City of Tucson, Engineering Division Active Practice Guidelines for Drafting Standards for the preparation of Project Plans, Office Procedure No. 8-1552-002. (see attached)
- Plans shall contain all the information necessary to build project as a "stand alone" project and not rely on references to other plans or plats for necessary construction or inspection information. The plans shall

show **ALL** improvements being installed in the ROW, other details about private property/on-site construction should be on the grading plans that are reviewed and approved by Planning and Development Services Development/Floodplain Review.

- Engineer of Record must provide written documentation that all utilities within the right of way have been cleared for construction.
- All Rezoning requirements pertaining to the rights-of-way must be met.
- Phasing of paving plans (subdivisions) shall correlate with approved tentative plat.
- All Easements, dedications, right-of-way shall be depicted in plan view and labeled with recordation information (sequence number, docket/page or plat book/page).
- Roadway profiles are required for new roadways, including widening projects, deceleration, acceleration and turn lanes. Refer to *DTM/Engineering Division Active Practices Guidelines No. 8* (<https://www.tucsonaz.gov/tdot/engineering>)
- Any storm-drain system in right-of-way must be Reinforced Concrete Pipe (RCP). Indicate class of pipe.
- Minimum diameter storm-drain allowed within right-of-way is eighteen (18) inches.
- Minimum height of a box culvert is 4 foot.
- Con-Arch drainage structures shall conform with DTM Active Practice guideline 28. Refer to *DTM/Engineering Division Active Practices Guidelines No. 8* (<https://www.tucsonaz.gov/tdot/engineering>)
- Public drainageways must be shown in their entirety on the plans. Private drainage easements, detention/retention, channels can be shown but should be labeled private and NOT PART OF P.I.A. Drainage access ramps must be provided for Public Drainageways. Ramp with a minimum 12-foot width at no more than 15% slope.
- A minimum of 1-foot (2 foot Preferred) buffer must be provided between top of slope and sidewalk (natural slopes). Slopes greater than 4:1 and deeper than 2 foot requires barricade railing.
- Hinge points of cut and fill slopes must have a minimum setback of two feet from right-of-way. (Slope on private side). *T.S.M. Sec. 2-01.9.3*
- Pedestrian areas/shoulders alongside of strip paved streets should be a minimum of 8 feet wide, slope @ 2% and be separate to drainage ditches/channels.
- Scuppers are required instead of depressed sidewalks and curb to create continuous sidewalk pedestrian circulation system. 10-yr storm water flows must be conveyed under the sidewalk and Storm flows over the 10-yr overtopping the sidewalk scupper must meet: The equation or design criteria $dv^2 < 18$ may be utilized to regulate flow depths and or flow rates exceeding the 10 year flood discharge magnitudes.
- *T.S.M. Sec 10-01.4.4.F*
- Scuppers with a height greater than 12 inches must have barricade railing (street side, back side

always provided).

- Barricade railing, along sidewalk scuppers, must be anchored in the piers of the scupper.
- Concrete headers are required along asphalt radius returns when residential streets intersect with arterial and collector streets without curbs.
- Curb access ramps on a continuous roadway/sidewalk shall have a minimum of 300 feet distance between ramps. Ramps opposite of one another must line up. All curb access ramps should have the 6-inch curb at back of ramp.
- Thickened pavement edge is required if concrete curb or header is not being installed. Minimum width of installed pavement has to be 2 feet in order to install thickened edge. Usually, this comes at the end of pavement tapers where they match back to the existing pavement edge.
- Existing pavement thickness and surface treatment shall be matched.
- When numerous pavement cuts are performed or where extensive pavement areas are disturbed additional pavement replacement/treatments will be required.
- Private utilities are not permitted within the public right-of-way.
- New irrigation facilities are permitted within the public rights-of-way pursuant to the following guidelines:
 - Private irrigation facilities roadway crossings will only be permitted in residential roadways and **NOT** permitted in arterial or collector roadways.
 - Lateral lines/mainlines under constant pressure shall not be permitted in the public rights-of-way.
 - The HOA will register private irrigation facilities placed in the public rights-of-way with Arizona 811 and become an Arizona 811 Blue Stake Inc. member.
 - Minimize the number of roadway crossings.
 - Sleeves must be in a recorded easement (easement width is dependent on what is needed for installation and/or repairs). To the extent possible, the easements should be created at the time of development/platting.
 - Irrigation lines shall be placed in ductile iron sleeves.
 - Sleeve shall extend beyond the right-of-way (into private property), unless otherwise approved by DTM.
 - HDPE continuous line (no joints under the pavement)
 - Irrigation lines shall have a minimum of thirty (30) inches of cover.
 - Detectable marking tape shall be installed.
 - Curb shall be marked/stamped with "IS" (Irrigation System) and/or placard at back of curb.

- Any roadways shown on the current Protected Streets Map, which has been newly constructed or overlaid within the past five years, are subject to the Pavement Cut Moratorium.
- Vertical curves are required on all streets where the algebraic difference in grade exceeds one (1) percent, and the minimum desirable vertical curve length is one hundred (100) feet.
- Projects adjoining other jurisdictions must have proposed improvements approved by affective jurisdiction.
- Any improvements within ADOT rights-of-way is required to be approved by ADOT.
 - ◊ Ajo Way: From I-19 west to City Limits (La Cholla)
 - ◊ Miracle Mile: From I-10 east to Oracle Rd.
 - ◊ Oracle Rd.: Miracle Mile north to city limits (Just north of River Rd.)

Detail sheet:

- Curve and line data must be provided in table format.
- Differing structural pavement sections on plan shall be specific to each street affected. Include a dimensioned pavement structural section for each. Indicate Mix # / Effective air voids (Per SSPI Sec 406), 5.5% MSR, 4.0% Local.
- A dimensioned detail for each type of curb access ramp to be built as part of the project must be shown. Truncated Domes required.
- A dimensioned detail for each type of drainage structure in the right-of-way to be built as part of the project must be shown.
- A dimensioned detail for each type of sidewalk structure to be built as part of the project must be shown.

General Record Document Procedures (8-20-2019 Revision):

- “As-Built” is no longer accepted as the name for deviations from plan during a project. According to ARS 32-152 these are now called “Record Documents”. The State Legislature mandated this change of name in 2016.
- Coversheet and all other pages will have a “Record Document / Dated: MM/DD/YYYY” block (see Record Document Block at <https://www.tucsonaz.gov/tdot/engineering>) on each page. Preferred locations for the coversheet is center bottom and for all other plan sheets are center bottom or upper right corner of the pages, but if the page is busy then any location is acceptable as long as the block is easily seen. We prefer the large block, so it is clearly visible when the 36” x 24” plan is shrunk onto a computer screen.
- The Registrant stamping the “As-builts” will accompany the stamp with the statement that it is “For Record Document.”
- The Registrant’s stamp and statement will be clouded with a revision triangle with a number inside the triangle. The change triangle number will be entered in to the

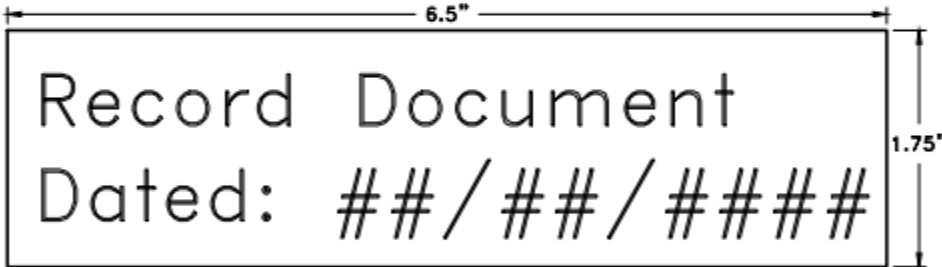
change/revision boxes at the center bottom of the plans indicating this is for “Record Document.”

- All Record Document notes will be clouded and in black color. Non-black colors, such as Red, are not allowed as it does not microfilm well.
- All Record Document notes will be created by computer aided programs, such as AutoCAD or PDF editors. All written notes must be typed.
- Scans of hand-drawn red-lined field notes are not acceptable.
- Changed information is clouded. Original notes are to be retained but struck-through.
- A triangle with a number is located next to the clouded areas.
- The triangle with change number is entered at the center bottom of the page in the revision block. “No.” will have the triangle’s number, “Date” will have the same date as the Record Document stamp, and the “Revision” will say Record Document. The change triangle number will be the next available number not used anywhere in the plans. The same change triangle number will be used throughout the plans.
- If there is not enough room to add the new clouded area(s) onto the page and retain the crossed-out original information, such as most of the page is revised, then cross-out the entire original page with black lines extending corner to corner. The clouded areas will be drawn on the new page, replacing the original information which does not need to be shown on this new page. Areas not changed will appear unclouded on this new page. The new page will be on a plan template with this new page containing the professional stamp(s) and other information as displayed on other page it is replacing. This page will have the same numbering as the original page it is replacing.
- If a changed area grows in size so that now it will not fit easily back into a modified original page, such as a changed and larger detail, and then add the changed information as a cloud on a new page. The original information is struck-out and a note attached referencing the new page. This new page will be on a project template with all project information, so it appears like the page of the plans it is modifying. The new page will be numbered the same as the page it is modifying with the addition of the letter “A”. For example if a detail was replacing/modifying page 32 then the new page will be labeled 32A. If more than one page is added then additional letters will be used, such as 32A, 32B, 32C and so on.
- When a design change results in the complete replacement of original plan sheet(s), such as switching from a box culvert to a con-arch, then the original sheet(s) will be crossed-out with black lines extending from corner to corner with a note referencing the new design pages. For example, “Voided. See con-arch sheets 32A through 32D”. The replacement plan sheet(s) need to have a note referencing they replace the previous design. This new page(s) will be on a project template with all project information, so it appears like the page(s) of the plans they are replacing. The new page will be numbered the same as the page it is modifying with the addition of the letter “A”. For example if a design detail was replacing one on page 32 then the new page will be labeled 32A. If more than one page is added then additional letters will be used, such as 32A, 32B, 32C and so on.

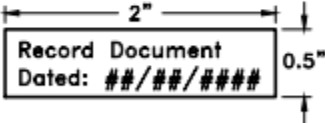
- Crossed-out pages will have no clouding around them. Just straight bold lines from corner to corner.
- Submitted Record Document plans will use the signed and accepted coversheet from COT Transportation web site. Please ask if assistance is needed.
- Submitted Record Document plans will be at 600 ppi (pixels per inch) resolution in both TIFF and PDF formats with the digital plan pages being 24" x 36" in size.
- If the coversheet plans have the "Constructed by", "Red-lines by" and "Record Document by" Lines then the coversheet's "Constructed by:" and "Record Document by:" shall be filled out by the consultant engineering firm. Name of the Construction Company and Completion Date, under the "Constructed by:" lines, will be provided by the Project Engineer. The consultant engineering firm will list themselves and the completion date of the Record Document under the "Record Document by:" lines. This date must match the subsequent dates on each additional page.

In accordance with A.R.S. 32-152, the City of Tucson requires all transportation engineering post-construction plans to have the Record Document blocks described below. Please reserve space in all transportation engineering construction plan submittals for the aforementioned Record Document blocks. To avoid confusion, the Record Document blocks shall not appear on plans until the final post-construction Record Document is submitted. The preferred location for the Record Document block on the plan cover page is the center or SE quadrant of the sheet. On subsequent plan pages the Record Document block should be within the SE, NE or center portion of the sheet where space permits. On all plan pages the Record Document block should be clearly visible to indicate that information on the plans reflects the post-construction conditions of the project. It is important that all information is accurately referenced and documented to be able to certify material quantities and also to serve as proof that the project was completed per the project plans, specifications and in accordance with all regulations.

COVER SHEET BLOCK DETAIL:




SUBSEQUENT SHEET(S) BLOCK DETAIL:



Revised 1/19

Scale: N.T.S. _____

RECORD DOCUMENT
BLOCK DETAIL

City of Tucson, Arizona
ENGINEERING DIVISION 

OFFICE PROCEDURE NO. 8-1552-002

REV. NO. 1, 9/12/00

OPERATIONS PLAN

SUPERSEDES ISSUE

DEPARTMENT OF TRANSPORTATION

DATED: October 1980

**ENGINEERING DIVISION
ACTIVE PRACTICES GUIDELINES**

PAGE 1 OF 8

PREPARED BY: Maps & Records Section

EFFECTIVE: 2/2000

APPROVED BY: Dewayne Tripp, & MDH

DATE: 2/3/000

SUBJECT: Drafting Standards for the preparation of Project Plans.

PURPOSE: The purpose of this procedure is to establish and promote uniform guidelines and details which are to be used in the preparation of engineering plans for the City of Tucson, Engineering Division.

GENERAL: The outlined procedure shall be used in conjunction with all other City of Tucson Standard Specifications and Details. The standards shall apply to all plans being prepared by the Engineering Division, Consultants preparing plans for the Engineering Division and Consultants preparing plans for private entities that require submittal to and approval by the City of Tucson. If plans are to be submitted to the Arizona Department of Transportation, ADOT standards and details will have precedence over City of Tucson standards and details.

TYPES OF

PLANS: 1. Improvement District Project Plans

Plans for improvement districts are ordered by the Mayor and Council. Benefiting property owners within each improvement district pay for a portion of the cost of the improvement in their area. For this reason, assessment diagram plans along with the construction plans are required for the determination of the individual property owner charges.

2. Bond and non-bond Plans

These plans are usually improvements in which costs are borne by the City. The preparation of plans shall be accomplished in the same manner as improvement district plans without the necessity of an assessment diagram.

3. Arizona Department of Transportation and Federally funded project plans

These plans are for construction of arterial streets within the City of Tucson, which are designated to receive Federal aid. The City of Tucson shares in the project cost. Plans for these projects shall be drawn in accordance with first, the City of Tucson standards; and second the Arizona Department of Transportation standards - in that order of precedence. FHWA and ADOT Track project numbers need to be shown on the plans.

If a share of the cost is to be assessed to properly owners, an assessment diagram will be required.

4. Private Improvement Agreement Project Plans

These plans are drawn by consultant engineers for private developers / individuals or other concerns. If the work to be performed is within the public right-of-way, a City easement, or is so designed that drainage through or across private property affects the drainage in a public right-of-way or easement, plans for work on the right-of-way must be approved by the City Engineer and should conform to the City of Tucson standards and details as outlined in this procedure.

TYPES OF SHEETS:

1. Cover Sheet

This is to be the first sheet or sheets of a set of plans. This sheet(s) shall be 24"x36" with a title block. The cover sheet will show the locations and the extent of the work to be performed and is to be drawn to the scale of 1"=100'. Orient the drawing with north arrow toward the top of the page. The cover sheet shall also show the name of the job, subdivision name, map and plat book and page, development number (if applicable), job number, plan number, sheet index, typical sections (may need additional sheets), legend for symbols, general notes and a location map at a scale of 3"= 1 mile in the upper right hand corner. Starting with the cover sheet all sheets will have a sequential page number located on the lower right hand corner (no letters).

2. Plan and Profile Sheets

- A. Each sheet shall be 24"x 36" in size and contain borders, profile grid across the bottom portion and a title block in the lower right hand corner. The stationing in the profile shall line up appropriately with the stationing in the plan view above. Plan/profile sheets shall not utilize aerial photographs unless approved by the City Engineers office.
- B. The plan/profile scale shall be 1"= 40" horizontal and 1"= 4' vertical unless directed otherwise by the City Engineers office. The profile grid shall contain a Plate "A" type pattern.
- C. The alignment and profile of an improvement shall be produced from Existing Maps and Data. Information shall be gathered from Maps & Plats, Record of Surveys, New Survey Data, Existing Survey Field Books, Docket and Page information and other necessary sources to show the area to be improved.
- D. The plan/profile shall show existing topography, culture, existing right-of-way, new right-of-way, survey control lines, existing curbs, new curbs, parcel, lot, block, subdivision name, dimensions, stationing, notes, all existing utility systems and new systems.
- E. The profile portion shall show existing grades at both right-of-way lines and centerline alignment. The new grades shall be shown at centerline and both top of curb and gutter, or at edge of pavement if no curb is to be constructed. All three control lines will show elevations, stationing, percent of grade and all necessary related profiles pertaining to existing sanitary sewers, storm sewers, utilities and house floor elevations.

2. Detail Sheets

All details of manholes, drainage pipes, catch basins, other structures, and cross-sections, which are required to complete a working set of drawings shall be shown on detail sheets. These sheets shall be the same size as the plan/ profile sheets. The suggested minimum scale for sections should be $1/4" = 1'$. Details of reinforced concrete should be at a scale of $3/8" = 1'$ or larger. The scale for most details will depend on the judgment of the designer. Clarity and space for dimensions and notes should form the criteria for the proper scale.

3. Assessment Sheets

The size of assessment diagrams shall be 24"x 36". The scale of the assessment property outline shall be $1" = 100'$. The positioning of the title, City Clerk's note, series number, legend, sheet number and other required information will vary according to the configuration of the property outline for each project. The City Clerk's signature is to be located to accommodate the City of Tucson pressed seal.

MYLAR: The plans, using black permanent ink, shall be produced on a high quality transparent Mylar similar or equal to K & E, 4 mil., double matte. The Mylar shall have a City of Tucson title block, and black borderlines. If the plans are to be produced electronically, Auto Cad, etc., then the mylars shall be produced by Silver Halide photographic or Xerographic process. A reference to photographic silver process is made under 11-481.B of the Arizona Revised Statutes.

Xerographic production shall only be accomplished by using the Oce 9700/9800 machine or City Engineers office approved equal. No other type of Xerographic or plotting type of process will be accepted. The city may also request the consultant to provide an electronic DXF copy of the improvement plans. The mylars shall be produced on double matte, 4mil, reverse/mirror image. Upon request, the City will furnish a 3-1/2" disc containing the standard title block, borders and plan/profile. The registrant stamp can be electronic, per the Arizona State Board of Technical Registration Rules, R4-30-304, effective May 1, 1995. Each Mylar will be signed by the registrant, using black permanent ink, and therefore become the original document for final submittal. The City's designated staff will sign the mylars for approval. After completion of the improvements, "As Built" will be performed on the mylars. The words "As Built" will be boldly placed on each sheet with a date and a note in the revision block. No erasing of the original document is allowed. Changes of stationing, grades, notes, etc. shall be lined out using black permanent ink and the new "As Built" information will be added using black permanent ink.

Large areas of changes will be clouded out or whole pages can be "X" out with "As Built" pages following, using an "A, B, etc." page designation. At no time will pencil notes, lines, dimensions, etc.; be allowed on the Mylar.

LETTERING: In order to produce clear legible prints, which can be reproduced from microfilm/scanning, the lettering shall be no smaller than $1/8"$ in height or 0.125".

LINE WORK: The line weight shall conform to the City/County Standard Detail Manual for Public Improvement.

Lightweight lines shall be used for all dimension lines and lines from descriptive notes to objects. They shall be continuous unbroken lines. The work shall be spaced so that these lines do not pass through other notes or details.

Arrows must be small and neat. They shall be placed in such a manner that there can be no question as to the line or object to which they refer.

In order to produce clear legible prints which can be reproduced from microfilm/scanning, no size smaller than 00 pen or Auto Cad equivalent .012 inch shall be used.

Stick-on materials to delineate new or existing improvements, notes, etc. will not be allowed unless approved by the City Engineer.

Areas of new pavement shall be lightly shaded, using a red pencil, on the backside of the Mylar. Shading along the new curb or edge of pavement will be adequate. The shading shall not be placed over utility lines, dimensions, etc. that may obscure the information.

Screening of existing conditions to emphasize new improvements will not be allowed unless approved by the City Engineers office. Screening is not feasible for reasons of microfilming or scanning of the final "As Built" plans.

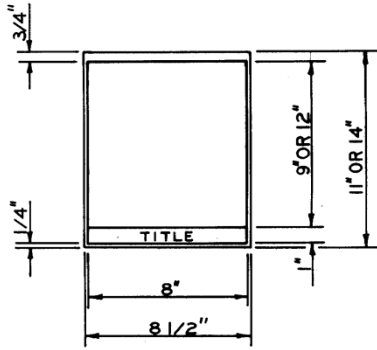
NORTH ARROW: Use the standard north arrow, as shown on page 8 on all maps, drawings and assessments diagrams. Direction of north arrow will be determined by stationing. All stationing will read from left to right.

STATIONING: All stationing on plan and profile sheets should increase as you read from Left to right. To accomplish this, (see NORTH ARROW) the survey should have increasing stationing from west to east or increasing stationing from north to south.

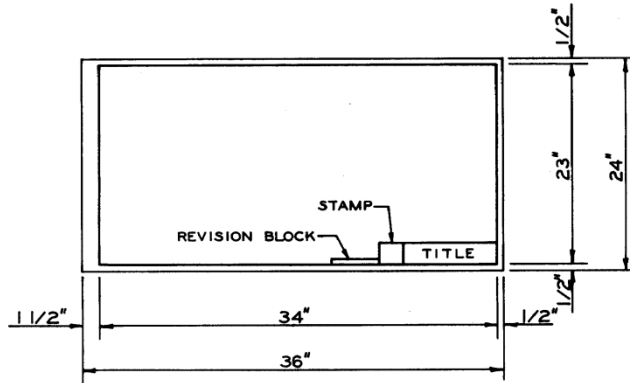
Note: If a survey is inadvertently run with increasing stationing in the wrong direction (say from south to north), the draftsman should lay out his sheet so that the stationing reads from left to right, regardless of which way the north arrow points (in this case, the north arrow would point to the right).

SYMBOLS AND

ABBREVIATIONS: Engineering Plans shall conform to the Standards found in the "City/County Standard" Detail Manual for Public Improvement, 2003 Edition or current edition.



MISCELLANEOUS MAPS
AND DRAWINGS



COVER SHEETS, PLAN, PLAN PROFILE
AND ASSESSMENT DIAGRAMS

STANDARD DRAWING SIZES



COVER SHEETS, PLAN, PLAN PROFILE
AND ASSESSMENT DIAGRAMS



FOR 8 1/2" X 11" OR 8 1/2" X 14"
MISCELLANEOUS MAPS AND DRAWINGS



THIS AREA OPTIONAL FOR CONSULTANT'S NAME/LOGO

THIS AREA FOR CONSULTANT'S NAME/LOGO WHEN USED

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

CITY OF TUCSON

THIS AREA FOR ENGINEER'S STAMP

TITLE

APPROVAL	DESIGNER	DATE	SCALE
PERMITS AND CODES SECTION	TRAFFIC ENGINEERING	STREETS AND TRAFFIC MAINTENANCE	ENGINEERING ADMINISTRATOR
DRWN. BY	CHKD. BY	REF.	PLAN NO.
DRWN. BY	CHKD. BY	REF.	PLAN NO.

5/16" 5" 2" 8 1/4" 1" 3 1/16" 1/16"

SHEET 1 TITLE BLOCK

DEPARTMENT OF TRANSPORTATION/ENGINEERING DIVISION

CITY OF TUCSON

THIS AREA FOR ENGINEER'S STAMP

TITLE

APPROVAL	DESIGNER	DATE	SCALE
DRWN. BY	CHKD. BY	REF.	PLAN NO.
DRWN. BY	CHKD. BY	REF.	PLAN NO.

5/16" 5" 2" 8 1/4" 2" 1"

SHEET 2 TITLE BLOCK AND SUBSEQUENT SHEETS