

4.3. EROSION CONTROL PLANS

This Section covers requirements for erosion control plans for all land disturbing activities except single-family residential construction. An erosion control plan in accordance with this Section shall be required for all other activities that require a building permit or disturb more than 5,000 square feet of existing ground cover. Plans and specifications prepared for construction of improvements shall address specific erosion and sediment control measures or techniques to implement a suitable program to control erosion from disturbed areas on site and to protect downstream properties from the deposition of sediment.

The requirements for erosion control plans within the City of Plano are very similar to the requirements established for the EPA-NPDES permit program, but with much more emphasis on the actual performance of BMPs installed.

Figure 4.3.A is an erosion control plan design checklist that is provided to assist the design professional in the preparation of an erosion control plan for a site and to ensure that all minimum required items have been addressed. All of the items listed should be included somewhere in the construction plan set, but do not necessarily have to be on one separate erosion control plan sheet. The use of this checklist does not relieve the design professional of his or her responsibilities in preparing construction plans and documents. Sound engineering design and judgment should be used by design professionals preparing construction documents for erosion and sediment control. Most of the information listed is already required for the preparation of construction plans or site plans for property development. On small sites some information may not be available or pertinent to the work involved. On a case-by-case basis City review staff may allow the omission of non-pertinent information. The following paragraphs briefly describe each item listed on the checklist:

GENERAL INFORMATION:

1. Owner's Name, Address & Phone - Is the property owner's name, current mailing address and phone number noted on the plans?
2. Developer's Name, Address & Phone - Is the developer's name, the job site representative for the project, current mailing address and phone number noted on the plans?
3. Engineer's Name, Address & Phone - Is the design engineer's name, the engineering company's name, current mailing address and phone number noted on the plans?
4. PE Seal, Sign & Date - Final construction documents shall be sealed, signed and dated by a professional engineer licensed to practice engineering in the State of Texas.
5. Site Acreage Noted - Note the total acreage of the property being developed.
6. Vicinity Map - Provide a vicinity map on the plans showing the general location of the project.
7. N. Arrow & Graphic Scale - Provide a properly orientated north arrow and a properly sized graphic scale bar on each plan view sheet. This item is very important due to the use of electronic drafting procedures where drawing sizes and scales can be literally changed with the flip of a button.

8. Title Block Complete - Is all information in the title block complete and correct on all plan sheets?
9. Revision Block Complete - Is there a revision block provided on the plan sheets? This item is particularly important on erosion control plans since it is very likely that there will be changes to the plan during the construction process. The use of a revision block on the plans makes keeping track of any revisions much easier.
10. Symbol Legend - Is there a complete and legible symbol legend provided on the plan sheets?
11. General Notes - Provide standard general notes as needed from Figure 4.3.B.

TOPOGRAPHIC INFORMATION:

1. Site Boundaries - Show the property lines, easement lines and right-of-way lines for the property being developed.
2. Existing Ground Contours - Show existing ground contours for the entire property and to the extent necessary around the perimeter of the site to show the relationship of the surrounding properties to the site. Use a 2-foot contour interval (or less) and make sure that at least two contours on the plan are labeled.
3. Existing Structures - Show any existing structures on the site and list them as either “to remain” or “to be removed” as appropriate.
4. Existing Utilities - Show any above ground and below ground utility locations for the site. Coordination with local utility companies and the use of utility locating services can solve many problems before they become major issues.
5. Existing Drainage Features - Show any existing on-site drainage features such as streams, rivers, lakes, ditches, wetlands, springs, etc.
6. 100-yr. Flood Plain with Elevations - Show any mapped 100-year flood plain located on or adjacent to the site. Flood Insurance Rate Maps are available for inspection in the City of Plano Engineering Division which show the general locations of mapped flood plains within the City and the 100-year flood elevations. Erosion control devices should be located outside the 100-year flood plain.
7. On-site Drainage Area Map - Show the drainage area boundaries for drainage sub-basins on site in accordance with the City of Plano’s, Design Manual for Storm Drainage Facilities.
8. Benchmark or TBM - Note the location and vertical information for the benchmark(s) or temporary benchmark(s) used for vertical control on the project.
9. Off-site Drainage Area Map - Show the drainage area boundaries for off-site drainage areas that impact the site in accordance with the City of Plano’s, Design Manual for Storm Drainage Facilities. If off-site drainage areas do not impact the site, then this item is not required.
10. Limits of Trees/Shrubs to Remain - Show and label the locations of individual trees and shrubs plus areas of dense trees and shrubs that are slated to remain on the property after development is complete.
11. Limits of Undisturbed Areas - Show and label the limits of existing ground cover on the site that are to remain undisturbed during the construction process.

DESIGN INFORMATION:

1. Construction Limits Shown - Clearly show the limits of construction on the plans.
2. Disturbed Area Noted (Acres) - Note the number of acres of disturbed land area for the project. This includes all areas disturbed on site as well as any off site borrow, spoil or utility construction areas. Areas in excess of 5 acres are required to obtain an NPDES permit in accordance with EPA regulations.
3. Proposed Grading Plan - Show proposed ground contours for the entire property and to the extent necessary around the perimeter of the site to show how proposed grades are to match existing grades. Use a 2-foot contour interval (or less) and make sure that at least two contours on the plan are labeled. Very flat sites may require the use of spot elevations and/or cross section views.
4. Proposed Structures & Pavement - Show layout of proposed improvements for the site as per the site plan or preliminary subdivision plat for the property.
5. Proposed Storm Drainage Plan & Calculations - Submit storm drainage plans and calculations in accordance with the City of Plano's, Design Manual for Storm Drainage Facilities.
6. Proposed Site Utilities - Submit site utility layout plans.
7. Construction Schedule & Phasing Plan - A written construction schedule of major site construction items must be on the plan. If the project is being done in phases the erosion control plan must be also phased to take into account the sequence of construction. Very complicated projects may require that several different phases of erosion control plans be implemented over the life of the project. Specific dates are not required and the schedule can be in a generic, outline type format.
8. Borrow & Spoil Areas Identified - Off site borrow and spoil areas are considered as part of the project site and must also comply with the erosion control requirements for the project. This includes the installation of BMPs to control off site sedimentation and the establishment of permanent ground cover on disturbed areas prior to final approval of the project.
9. BMP Locations - Are erosion control devices located properly to control sediment from leaving the site? Also, are the correct types of BMPs being used?
10. BMP Calculations - Submit calculations for the sizing and design of each BMP used for the project. BMPs should be properly labeled for easy identification (i.e. 1, 2, 3, etc. or A, B, C, etc.).
11. BMP Details - BMPs require adequate details for proper construction. This includes proper dimensioning and material specifications. The details included in this manual are accepted by the City of Plano for the control of erosion and sediment on construction sites. Some of these devices do require additional dimensions to be provided by the designer.
12. BMP Maintenance Schedule - Submit a BMP maintenance schedule for the BMPs proposed for use on the project. Chapter 5 in this manual gives recommended inspection and maintenance intervals for the different types of BMPs. The schedule should also identify the responsible party for the maintenance of the different BMPs used throughout the life of the project.

FIGURE 4.3.A
EROSION CONTROL PLAN DESIGN CHECKLIST

GENERAL INFORMATION

- | | |
|--|--|
| <input type="checkbox"/> OWNER'S NAME, ADDRESS & PHONE | <input type="checkbox"/> DEVELOPER'S NAME, ADDRESS & PHONE |
| <input type="checkbox"/> ENGR'S NAME, ADDRESS & PHONE | <input type="checkbox"/> PE SEAL, SIGN & DATE |
| <input type="checkbox"/> SITE ACREAGE NOTED | <input type="checkbox"/> VICINITY MAP |
| <input type="checkbox"/> N. ARROW & GRAPHIC SCALE | <input type="checkbox"/> TITLE BLOCK COMPLETE |
| <input type="checkbox"/> REVISION BLOCK COMPLETE | <input type="checkbox"/> SYMBOL LEGEND |
| <input type="checkbox"/> GENERAL NOTES | <input type="checkbox"/> OTHER _____ |

TOPOGRAPHIC INFORMATION

- | | |
|--|---|
| <input type="checkbox"/> SITE BOUNDARIES | <input type="checkbox"/> EXISTING GROUND CONTOURS |
| <input type="checkbox"/> EXISTING STRUCTURES | <input type="checkbox"/> EXISTING UTILITIES |
| <input type="checkbox"/> EXISTING DRAINAGE FEATURES | <input type="checkbox"/> 100-YR. FLOOD PLAIN WITH ELEVS. |
| <input type="checkbox"/> ON-SITE DRAINAGE AREA MAP | <input type="checkbox"/> BENCHMARK OR TBM |
| <input type="checkbox"/> OFF-SITE DRAINAGE AREA MAP | <input type="checkbox"/> LIMITS OF TREES/SHRUBS TO REMAIN |
| <input type="checkbox"/> LIMITS OF UNDISTURBED AREAS | <input type="checkbox"/> OTHER _____ |

DESIGN INFORMATION

- | | |
|---|--|
| <input type="checkbox"/> CONSTRUCTION LIMITS SHOWN | <input type="checkbox"/> DISTURBED AREA NOTED (ACRES) |
| <input type="checkbox"/> PROP. GRADING PLAN | <input type="checkbox"/> PROP. STRUCTURES & PAVEMENT |
| <input type="checkbox"/> PROP. STORM DRAIN. PLAN & CALCS. | <input type="checkbox"/> PROP. SITE UTILITIES |
| <input type="checkbox"/> CONSTR. SCHEDULE & PHASING PLAN | <input type="checkbox"/> BORROW & SPOIL AREAS IDENTIFIED |
| <input type="checkbox"/> BMP LOCATIONS | <input type="checkbox"/> BMP CALCULATIONS |
| <input type="checkbox"/> BMP DETAILS | <input type="checkbox"/> BMP MAINTENANCE SCHEDULE |
| <input type="checkbox"/> OTHER _____ | |

FIGURE 4.3.B
EROSION CONTROL PLAN
STANDARD GENERAL NOTES

1. EROSION CONTROL DEVICES AS SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF LAND DISTURBING ACITIVITIES ON THE PROJECT.

1. ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THE PROJECT. CHANGES ARE TO BE APPROVED BEFORE CONSTRUCTION BY THE DESIGN ENGINEER AND THE CITY OF PLANO ENGINEERING DIVISION.

2. IF THE EROSION CONTROL PLAN AS APPROVED CANNOT CONTROL EROSION AND OFF-SITE SEDIMENTATION FROM THE PROJECT THE EROSION CONTROL PLAN WILL BE REQUIRED TO BE REVISED AND/OR ADDITIONAL EROSION CONTROL DEVICES WILL BE REQUIRED ON SITE.

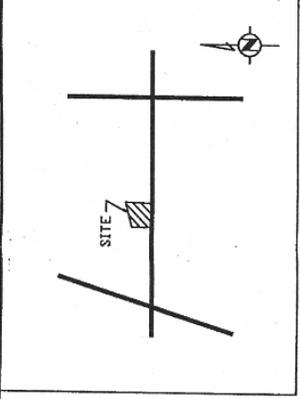
3. IF OFF-SITE SOIL BORROW OR SPOIL SITES ARE USED IN CONJUNCTION WITH THIS PROJECT, THIS INFORMATION SHALL BE DISCLOSED AND SHOWN ON THE EROSION CONTROL PLAN. OFF-SITE BORROW AND SPOIL AREAS ARE CONSIDERED A PART OF THE PROJECT SITE AND THEREFORE SHALL COMPLY WITH THE CITY OF PLANO EROSION CONTROL REQUIREMENTS. THESE AREAS SHALL BE STABILIZED WITH PERMANENT GROUND COVER PRIOR TO FINAL APPROVAL OF THE PROJECT.

BLANK

EXAMPLE
 EROSION CONTROL/
 GRADING PLAN
 SHEET 1 of 1

ABC SALES BLDG.
 OWNED and DEVELOPED
 by
 JDE DEVELOPER
 200 MAIN ST. PLANO, TX
 PHONE: (123)-987-6540

JOES ENGINEERING, INC.
 123 PUBLIC STREET
 ANYTOWN, TX, 12345
 PHONE (123)-456-7890



- GENERAL NOTES:
1. ADD NOTES FROM FIG. 4.3.B IN MANUAL
 2. DISTURBED AREA = 4.25 AC.
 3. UNDISTURBED AREA = 0.25 AC.
 4. TOTAL SITE AREA = 4.50 AC.
 5. SEE SHT. --- FOR PROP. UTILITIES
 6. SEE SHT. --- FOR DRAIN. CALCS.
 7. SEE SHT. --- AND IMPROVEMENTS
 8. SEE SHT. --- FOR BMP DETAILS

DATE
 SEAL
 SIGNATURE

REV.	BY	REVISION

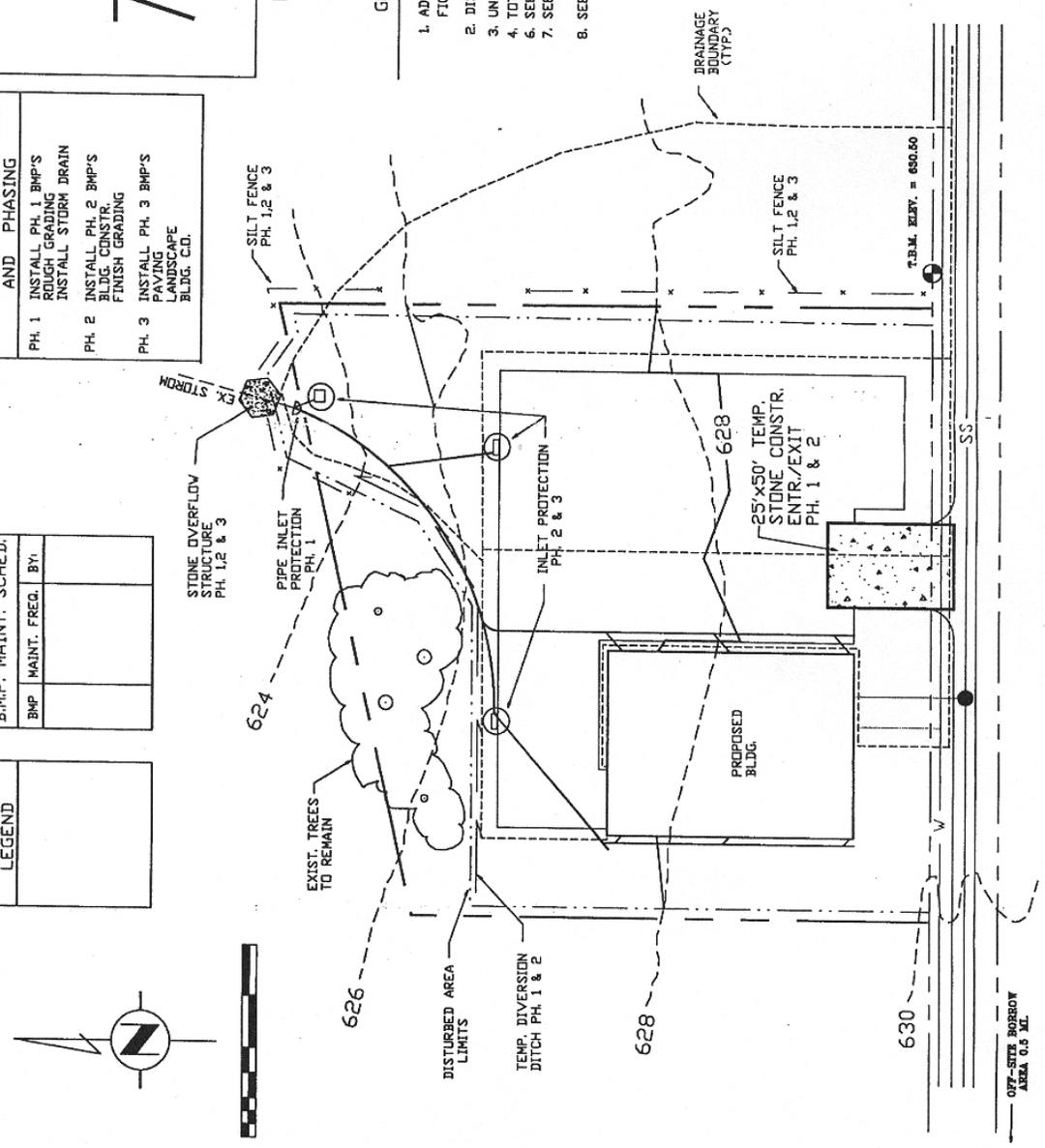
CONSTRUCTION SCHEDULE AND PHASING

PH. 1	INSTALL PH. 1 BMP'S ROUGH GRADING INSTALL STORM DRAIN
PH. 2	INSTALL PH. 2 BMP'S BLDG. CONSTR. FINISH GRADING
PH. 3	INSTALL PH. 3 BMP'S PAVING LANDSCAPE BLDG. C.D.

B.M.P. MAINT. SCHED.

BMP	MAINT. FREQ.	BY

SYMBOL LEGEND

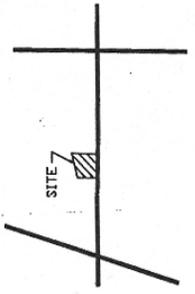


EXAMPLE
EROSION CONTROL
PLAN

SHEET 1 OF 1

SUBDIVISION ESTATES
OWNED and DEVELOPED
by
JOE DEVELOPER
PHONE (123)-987-6540
200 MAIN ST.
PLANO, TX

JOES ENGINEERING, INC.
123 PUBLIC STREET
ANYTOWN, TX, 12345
PHONE (123)-456-7890



GENERAL NOTES:

1. ADD NOTES FROM FIG. 4.3.9 IN MANUAL
2. DISTURBED AREA = 24.0 AC.
3. UNDISTURBED AREA = 0.5 AC.
4. TOTAL SITE AREA = 24.5 AC.
5. SEE SHT. --- FOR SITE GRADING
6. SEE SHT. --- FOR PROP. UTILITIES
7. SEE SHT. --- FOR DRAIN. CALCS. AND IMPROVEMENTS
8. SEE SHT. --- FOR BMP DETAILS

DATE
SIGNATURE
P.E.

REV. BY:	REVISION

CONSTRUCTION SCHEDULE AND PHASING

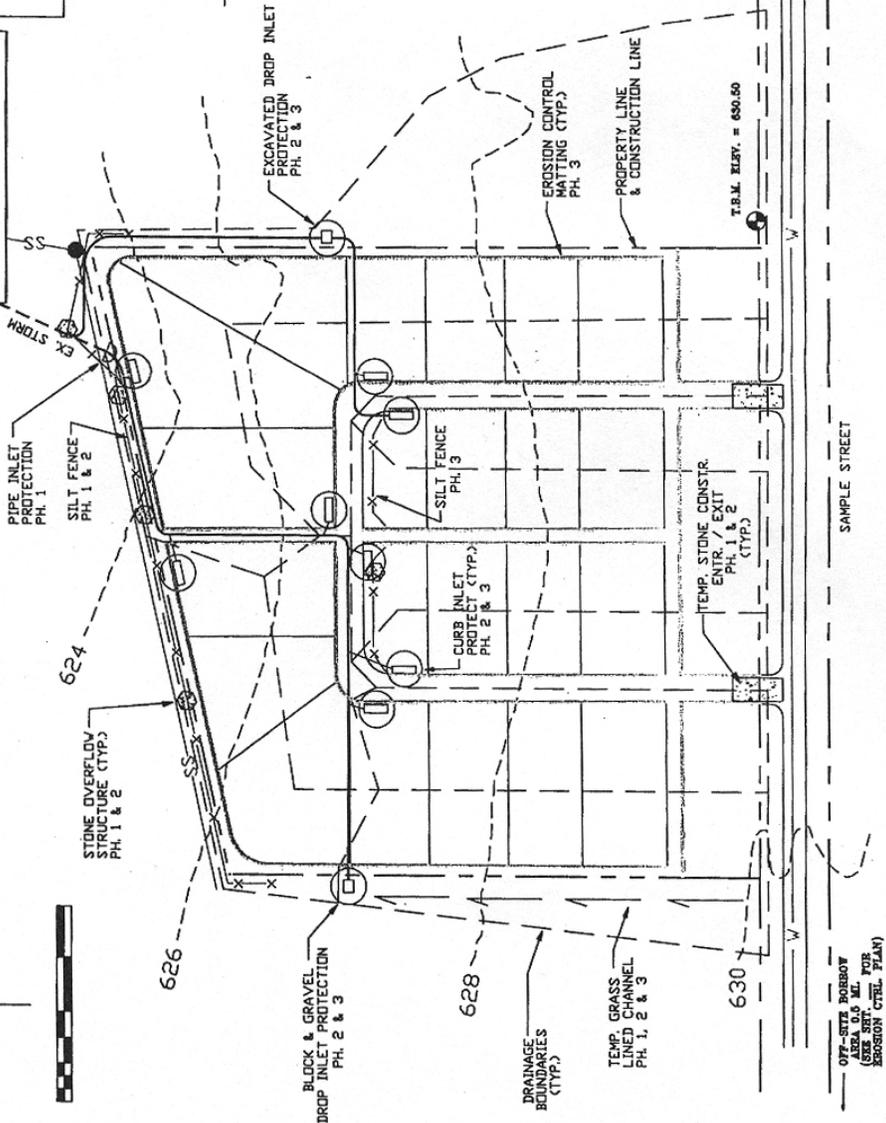
PH. 1	INSTALL PH. 1 BMP'S ROUGH GRADING INSTALL STORM DRAIN
PH. 2	INSTALL PH. 2 BMP'S LOT GRADING & UTIL. INSTAL STREET CONSTRUCTION
PH. 3	INSTALL PH. 3 BMP'S STABILIZE BARE AREA CITY ACCEPTANCE

B.M.P. MAINT. SCHED.

BMP	MAINT. FREQ.	BY:

SYMBOL LEGEND

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OFF-SITE ROBOBY
(AREA 50 M.
EROSION CTRL. PLAN)