

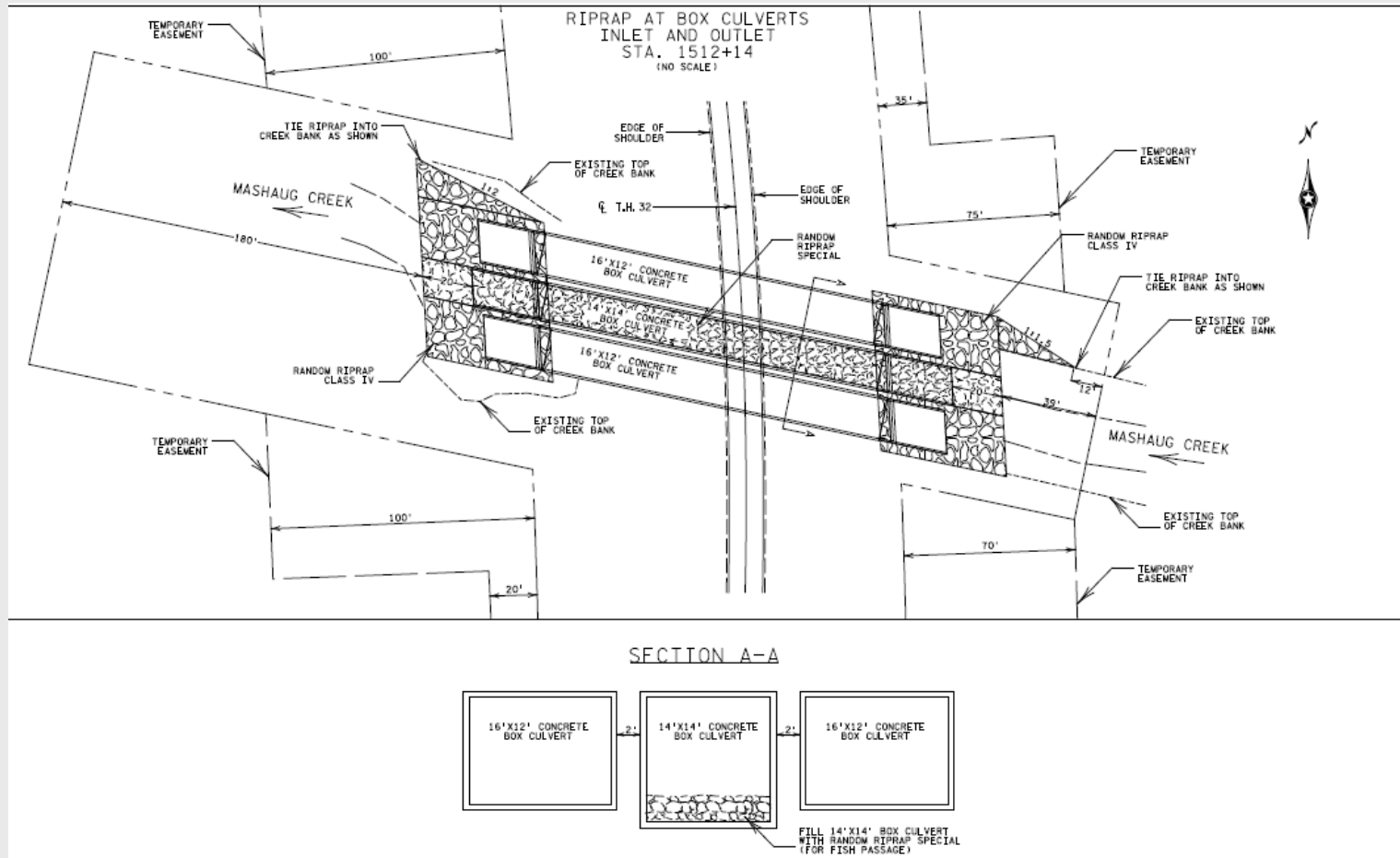
PLAN PRESENTATION BASICS DETAILS & STANDARD PLAN SHEETS

Project Design Services Unit

June 2019

DETAILS & STANDARD PLAN SHEETS

This section will cover the details and standard plan sheet portions of the plan set.



DETAILS

Details can be in with the construction details or they may be placed in the various sections they pertain to (e.g. drainage, traffic, etc.).

Details are included for any “special” and/or “modified” pay items that are not handled with a note. The location of these details should be referenced in the SEQ with the pay item.

Any modification to a standard plate should be shown as a detail.

Any detail not covered in a standard plate or standard plan sheet should be included as a detail.

Details may include a special provision write-up.

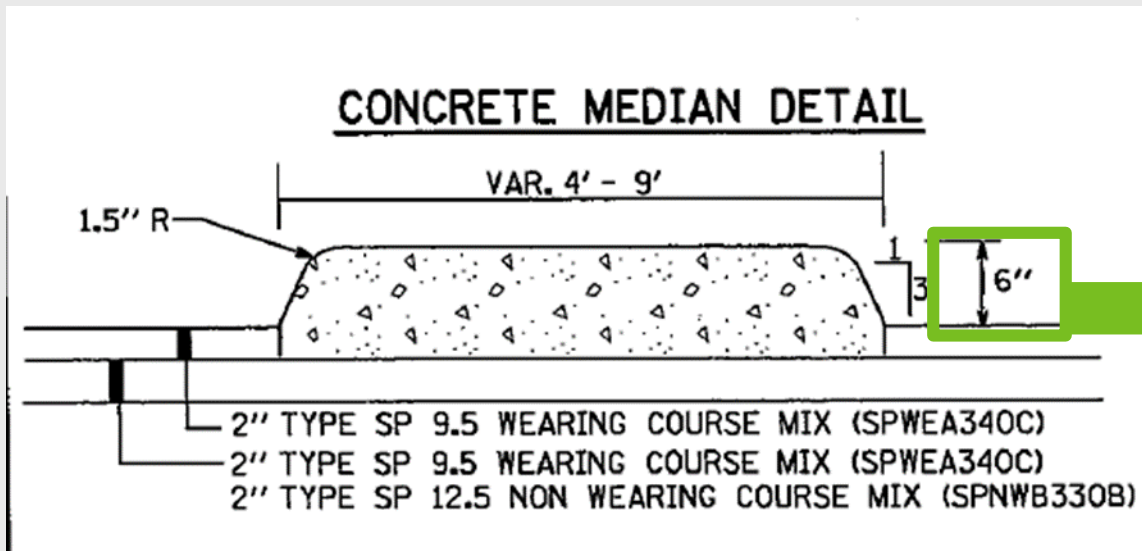
DETAILS

Some details that are often seen in plans are....

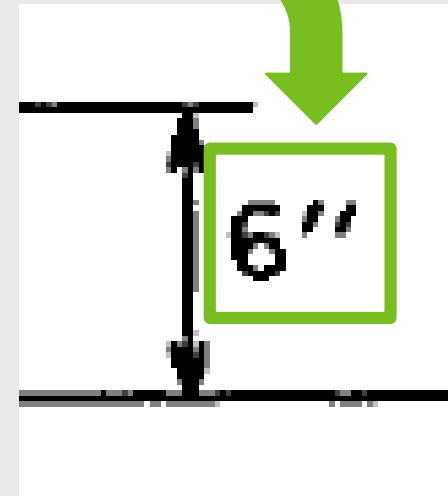
- Sign collars
- Stairways
- Railings
- Modified curb and gutter
- Tapers
- ADA intersections
- Concrete end posts
- Walls
- Guardrail end treatments
- Short radius
- Ponds
- Median 1:10 Aprons
- Culvert treatments
- Drainage structures
- Safety grates
- Trash guards
- Striping
- Rumble strips/stripEs
- Signs
- Lighting
- Signal
- Traffic management system
- Roadway weather information system

DETAILS

Details should include a detailed schematic of what is required.

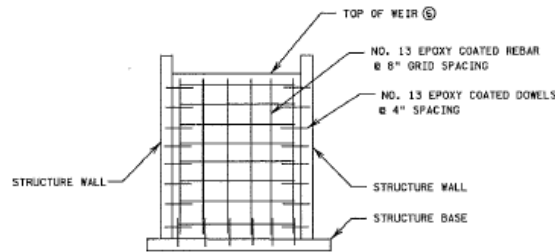
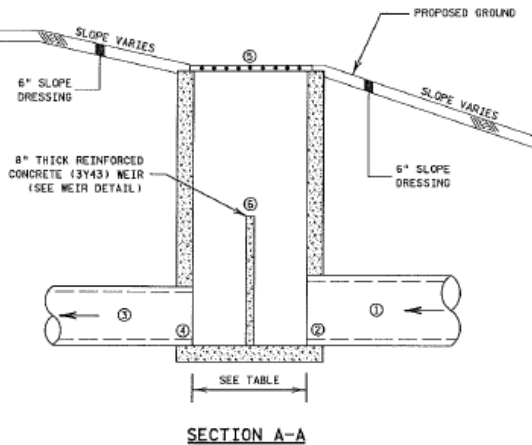


It should include dimensions with units and the units should be readable. Be aware that sometimes depending on the font the inch lines bleed together to look like a foot mark (one line instead of 2).



DETAILS

CONTROL STRUCTURE DETAILS: STRUCTURES 5117, 5130, 5131, 5158, 5170, 5181
DESIGN SPECIAL
(NOT TO SCALE)



WEIR DETAIL

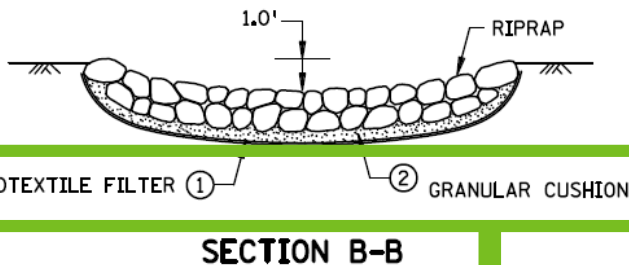
- GRADING SHALL BE CONSIDERED INCIDENTAL WITH NO DIRECT COMPENSATION BEING MADE.
- PAID FOR AS CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL. PAY ITEM CONSISTS OF WEIR WALL AND ALL HARDWARE REQUIRED FOR A COMPLETE INSTALLATION. STRUCTURE, PIPE, AND CASTING PAY ITEMS ARE INCLUDED ON TAB/PROFILES SHEETS.
- IN LIEU OF CAST-IN-PLACE WEIR WALL, AN 8" THICK PRECAST WALL WITH STAINLESS STEEL ANCHOR BOLTS AND ANGLES ON BOTH FACES OF EACH SIDE AND JOINTS ARE MADE WATERTIGHT WITH BENTONITE WATERSTOP AND NON-SHRINK GROUT.

- GRADING SHALL BE CONSIDERED INCIDENTAL WITH NO DIRECT COMPENSATION BEING MADE.
- PAID FOR AS CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL. PAY ITEM CONSISTS OF WEIR WALL AND ALL HARDWARE REQUIRED FOR A COMPLETE INSTALLATION. STRUCTURE, PIPE, AND CASTING PAY ITEMS ARE INCLUDED ON TAB/PROFILES SHEETS.

Details should include all materials needed. It should be clear if they are included in the price, incidental or if paid for separately.

DETAILS

Applicable notes makes sense and are accounted for.



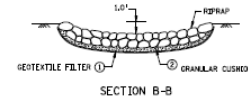
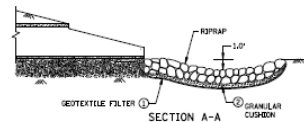
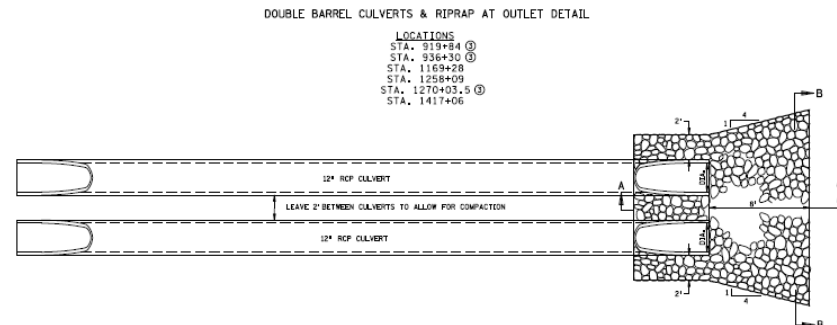
NOTES:

REQUIREMENTS FOR GEOTEXTILE TYPE, RIPRAP SIZE AND THICKNESS WILL BE DESIGNATED IN THE PLANS.

- ① GEOTEXTILE FILTER, SPEC. 3733, SHALL COVER THE BOTTOM AND SIDES OF THE AREA EXCAVATED FOR THE RIPRAP, GRANULAR FILTER MATERIALS.
- ② GRANULAR FILTER, SPEC. 3601, MAY BE USED AS A CUSHION LAYER. PLACE FILTER PER SPEC. 2511. THE CUSHION LAYER IS INCIDENTAL.

DETAILS & STD PLAN BASICS 2019-06

PLOTTER: MCDONALD 10/7/2017
PLOT: SHEET 29 OF 118



NOTES:

- REQUIREMENTS FOR GEOTEXTILE TYPE, RIPRAP SIZE AND THICKNESS WILL BE DESIGNATED IN THE PLANS.
- ① GEOTEXTILE FILTER, SPEC. 3733, SHALL COVER THE BOTTOM AND SIDES OF THE AREA EXCAVATED FOR THE RIPRAP, GRANULAR FILTER MATERIALS.
 - ② GRANULAR FILTER, SPEC. 3601, MAY BE USED AS A CUSHION LAYER. PLACE FILTER PER SPEC. 2511. THE CUSHION LAYER IS INCIDENTAL.
 - ③ RIPRAP AT OUTLET NOT INCLUDED AT THIS LOCATION.

1. REPORT DESIGNER: THE PLAN SHALL BE PREPARED BY AN ENGINEER OR ARCHITECT REGISTERED IN THE STATE OF ILLINOIS. THE DESIGNER SHALL BE RESPONSIBLE FOR THE DESIGN OF THE PROJECT.

DESIGNER: [Signature] DATE: 08-12-17

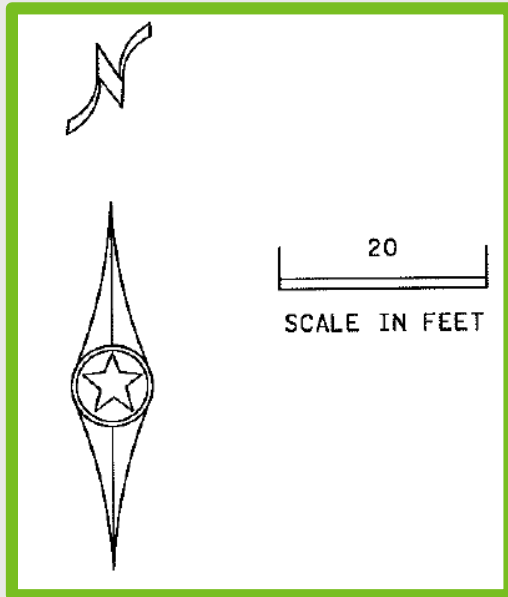
DESIGN DETAILS

STATE PROJ. NO. 3108-70 (TH 38) SHEET NO. 29 OF 118 SHEETS

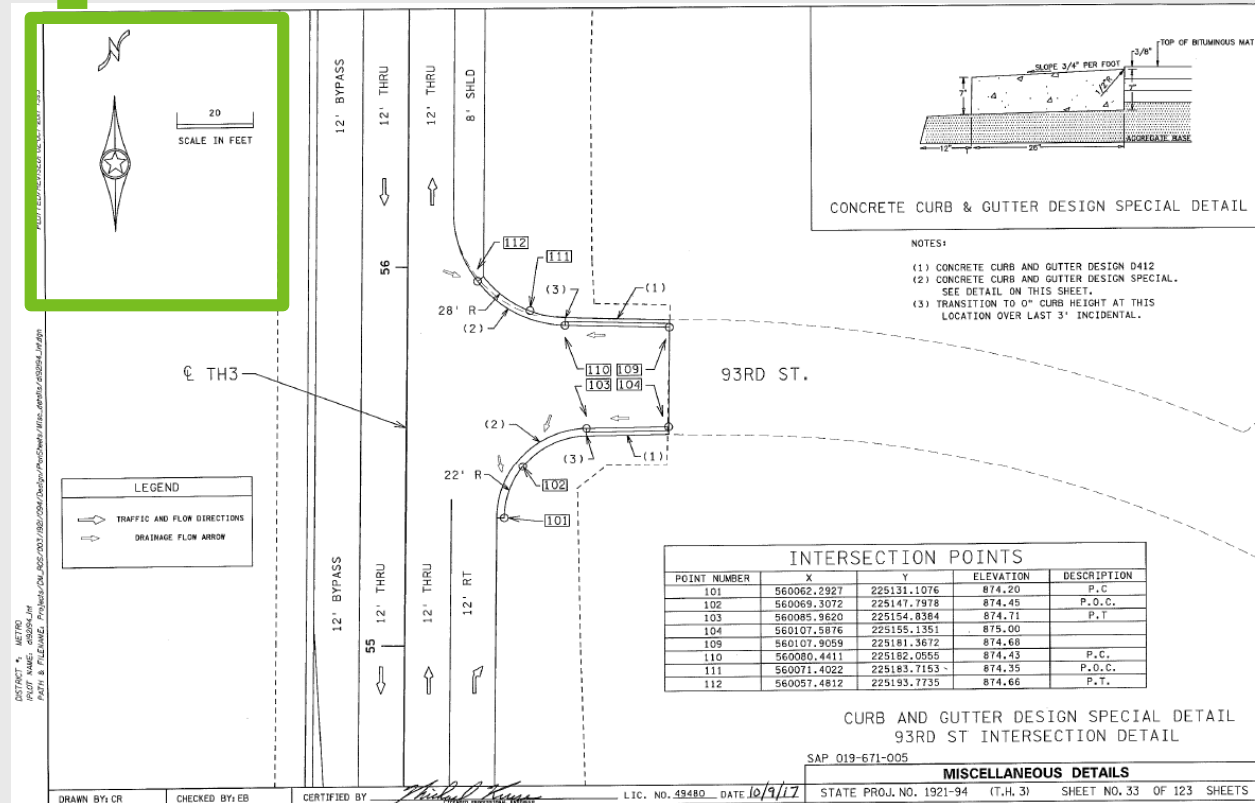
Cross reference to other sheets if applicable and make sure they are correct. Sometimes sheet numbers change later in the process and it gets missed in these notes.

DETAILS

Includes a north arrow and bar scale if applicable.

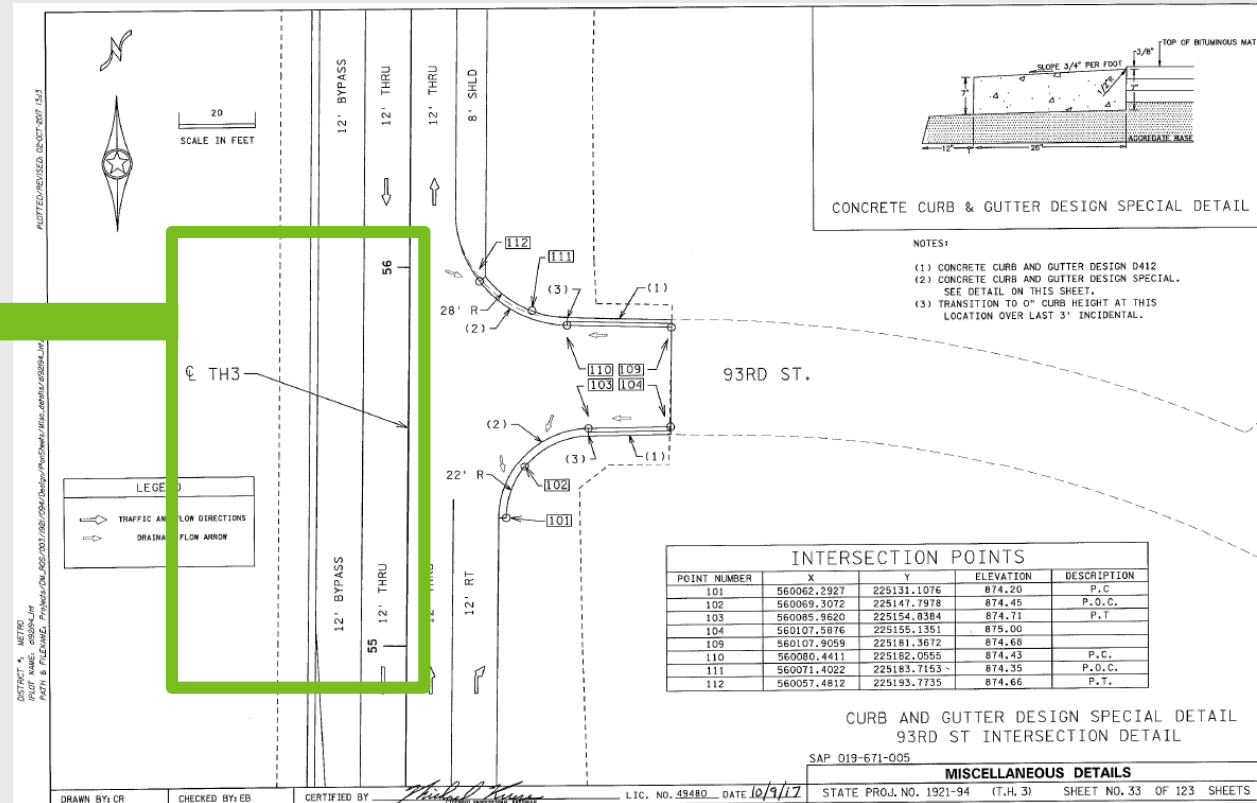
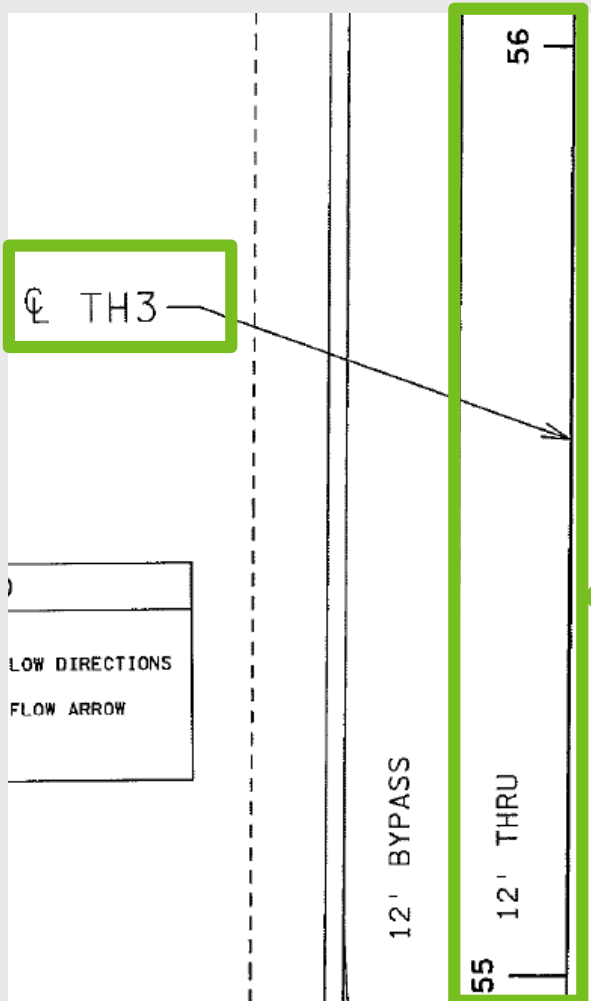


Never use numeric scales, only use bar scales.



DETAILS

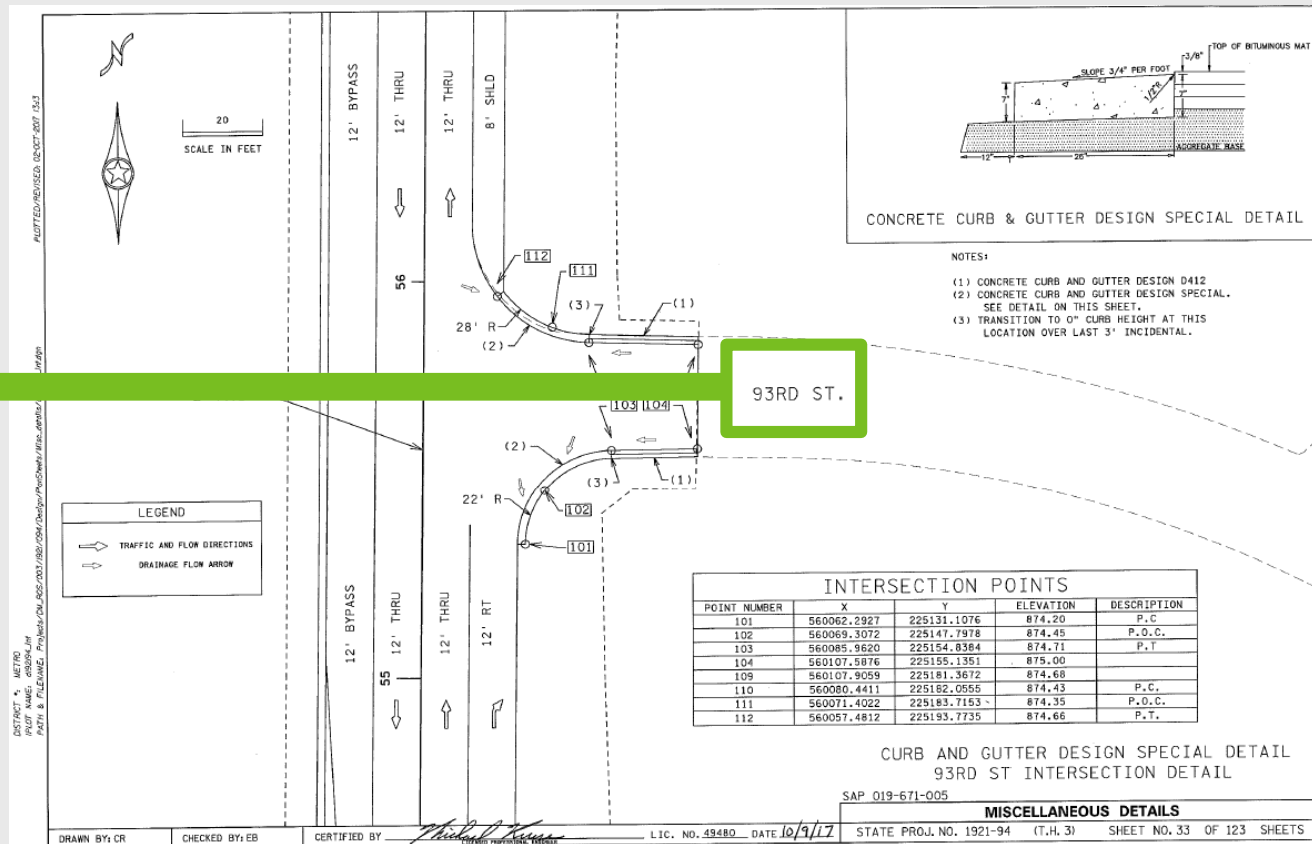
Roadway is labelled with the name and stationing.



DETAILS

Also label side streets

93RD ST.



DETAILS

Show a legend if necessary and make sure all patterns are accounted for and discernable from each other.

LEGEND

GXXXX CONTROL POINTS
RXXXX RADIUS CONTROL POINTS

☐☐☐ TRUNCATED DOMES

▨ LANDING AREA - 4' X 4' MIN. DIMENSIONS
AND MAX 2.0% SLOPE IN ALL DIRECTIONS

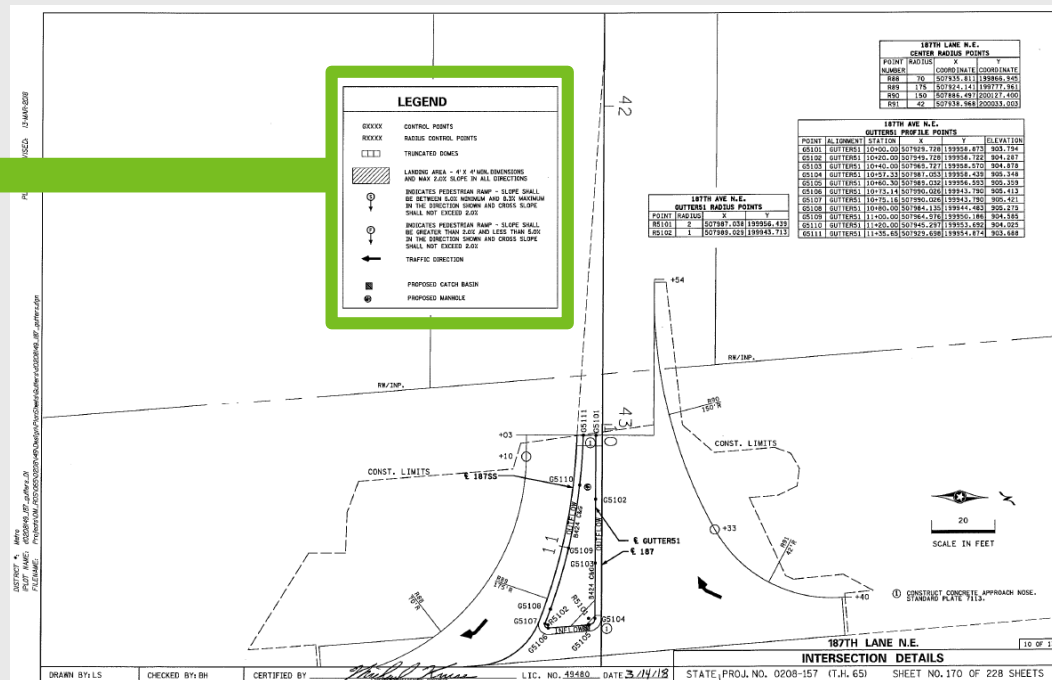
Ⓢ INDICATES PEDESTRIAN RAMP - SLOPE SHALL
BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM
IN THE DIRECTION SHOWN AND CROSS SLOPE
SHALL NOT EXCEED 2.0%

ⓕ INDICATES PEDESTRIAN RAMP - SLOPE SHALL
BE GREATER THAN 2.0% AND LESS THAN 5.0%
IN THE DIRECTION SHOWN AND CROSS SLOPE
SHALL NOT EXCEED 2.0%

← TRAFFIC DIRECTION

▨ PROPOSED CATCH BASIN

Ⓜ PROPOSED MANHOLE



DETAILS

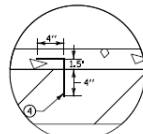
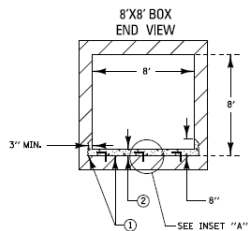
Each detail sheet must be signed. This is typically located in the bottom center of the sheet just left of the SP #.

This will include the Design Engineers (same person who signed the plan title sheet). It will include....

- Printed name
- Signature
- License Number
- Date

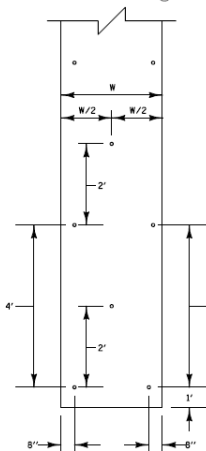
CONCRETE FLOOR OVERLAY

APPLIES: T.J.H. 61 STA. 1179+66



INSET
"A"

FLOOR ANCHOR LAYOUT PLAN VIEW ③



CONCRETE FLOOR OVERLAY		U
STATION	LOCATION	
1179+66	LY & RT	1
PROJECT TOTAL	16	1

- ① SANDBLAST INPLACE BOX CULVERT WALLS, AND FLOOR, (INCIDENTAL)
- ② OVERLAY BOX CULVERT FLOOR WITH 3" OF CONCRETE MIX (3Y47L)
- ③ ALL LABOR AND MATERIALS TO COMPLETE THE BOX CULVERT FLOOR OVERLAY SHALL BE PAID FOR AS - STRUCTURAL CONCRETE (3Y47L)
- ④ F&I - #4 EPOXY COATED REBAR BENT AS SHOWN IN DETAIL AT SPACING TYPICAL TO LAYOUT, DRILL AND GROUT BARS INTO CULVERT FLOOR, (INCIDENTAL)

PETE CREEK HYDRAULIC FLOW RATES
2 YEAR STORM EVENT 39.7 (CFS)
10 YEAR STORM EVENT 118 (CFS)
50 YEAR STORM EVENT 247 (CFS)

CONSTRUCTION DETAILS
SHEET NO. 42 OF 178 SHEETS

I HEREBY CERTIFY THAT THIS PLAN SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE 21-DEC-2017 LIC. NO. 43441 ENGINEER Daniel J. Erickson
DANIEL J. ERICKSON

SHEET SIGNATURE (Continued)

A different signature block will be used if these are signed by an Engineer different than the one who signed the title sheet. This will require the Board of AELSLAGID signature language which includes ...

- the certified by language
- Printed name
- Signature
- License number
- Date

I HEREBY CERTIFY THAT THIS PLAN SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE 21-DEC-2017 LIC. NO. 43441 ENGINEER *Daniel J. Erickson*
DANIEL J. ERICKSON

DESIGN DETAILS

For commonly used items there are some “Design Details” which can be found on the website at...
<https://standardplans.dot.state.mn.us/>

go to the bottom of the main menu, then find the one you need.

Standard Plans

Standard Drawings for use in Construction Plans

[Home](#)[Disclaimer](#)[Subscribe](#)[Request Change](#)[Contact](#)

≡ Main Menu →

Latest Updates

000 - Index, etc.

100 - Grading Plans

200 - Surfacing Plans

300 - Other Plans

400 - Drainage and Erosion Control

600 - Safety Features & Special Structures

All Current Plans

Download Cad Files

Guidelines for using Modified Plans

Design Details

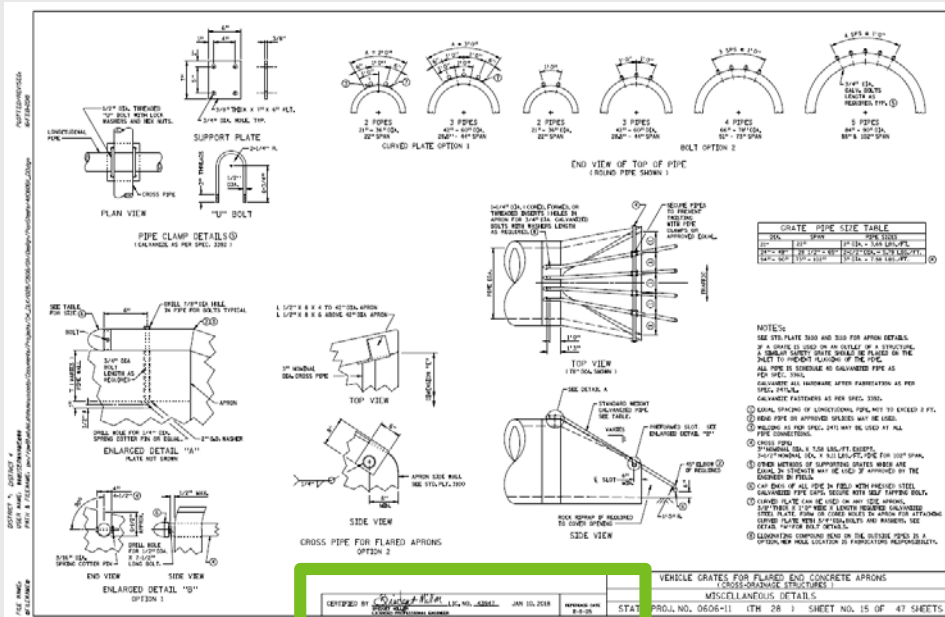
Show Records per page

1 2			
Update	St		Transmittal Date
19-02	St		3/11/2019
19-01	St		1/29/2019
Notice	Tr		3/14/2018
17-02	S		3/15/2017
17-01	Standard Plans 250 and 254		1/26/2017
16-07	Standard Plans 607, 609, 618, 619, and 684		12/02/2016

DESIGN DETAILS

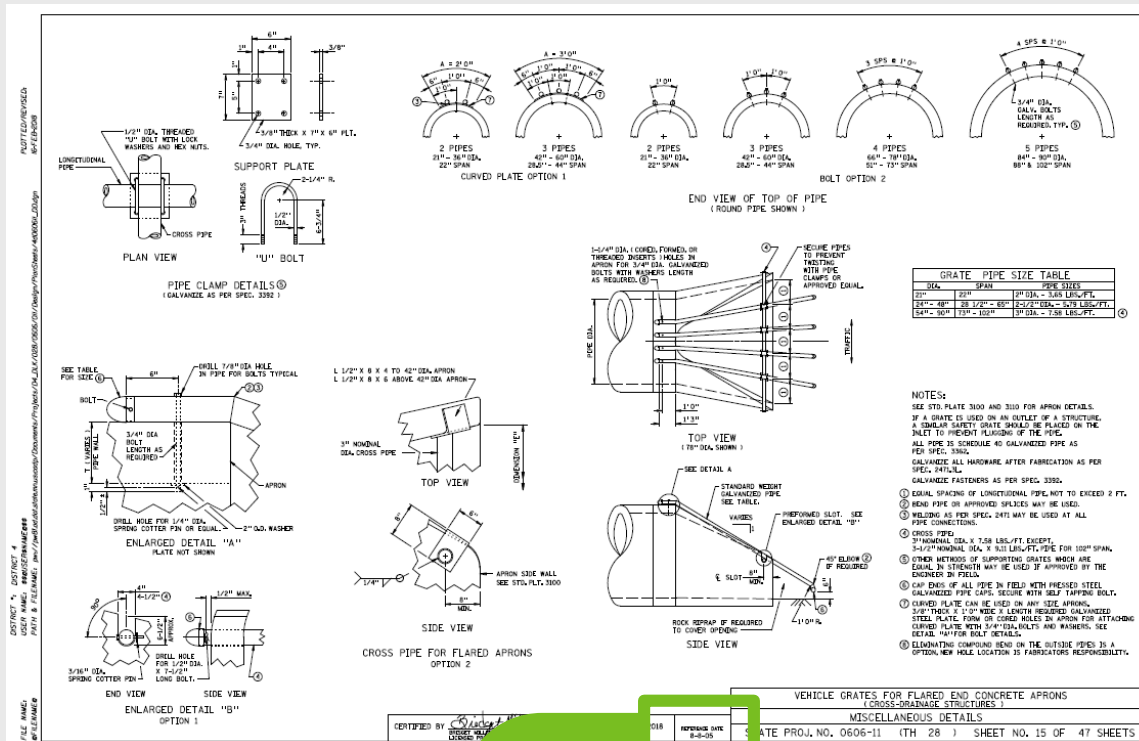
Design Details are NOT standard plan sheets. Standard plan sheets have a number assigned to them (5-297.XXX) and these do not.

These sheets need to be signed by a licensed engineer. Proprietary details should not be signed.



DESIGN DETAILS

Make sure they are the most recent version (e.g. check the date against that on the website).



VEHICLE GRATES FOR FLARED END CONCRETE APRONS (CROSS-DRAINAGE STRUCTURES)	
MISCELLANEOUS DETAILS	
REFERENCE DATE 8-8-05	STATE PROJ. NO. 0606-11 (TH 28) SHEET NO. 15 OF

STANDARD PLAN SHEET

Standard plan sheets are used for details that are done similarly statewide. It helps contractors know what is expected for certain situations.

Modifying a standard plan sheet shows the contractor what is different than the standard way of constructing it.

Standard plan sheets should be the most recent version.

STANDARD PLAN SHEETS

You should only include the ones that apply to the project not all in a series (e.g. 5-297.405).

The exception to this are the ADA sheets (5-297.250 & 5-297.254) which you need to include all of them in the series.

Include standard staking sheets (5-297.115) for all projects that involve grading.

STANDARD PLAN SHEET Modifications

If something is slightly different than the standard plan sheet it should be modified as per the website guidelines. Do NOT create your own detail or cut and paste from the standard plan sheet for minor modifications.

Filling in blanks and/or sheet cross references are not considered modifications.

STANDARD PLAN SHEET Modifications

When a standard plan sheet is modified it must follow the guidelines as shown on standard plates website (<https://standardplates.dot.state.mn.us/StdPlate.aspx>)

The screenshot shows the 'Standard Plans' website. At the top, there's a green header. Below it, the title 'Standard Plans' is followed by the subtitle 'Standard Drawings for use in Construction Plans'. A navigation bar contains links: Home, Disclaimer, Subscribe, Request Change, and Contact. A 'Main Menu' dropdown is open, listing categories from 000 to 600. The 'Guidelines for using Modified Plans' option is highlighted with a green box. To the right, there's a table with columns for 'Update', 'Transmittal Date', and a list of plan numbers. The table shows updates from 19-02 to 16-07.

Update	Transmittal Date
19-02	3/11/2019
19-01	1/29/2019
Notice	3/14/2018
17-02	3/15/2017
17-01	1/26/2017
16-07	12/02/2016

There is a link (Standard Plans) on the Design Scene & Guidance website under “Related resources” in the bottom left of the front page.

STANDARD PLAN SHEET Modifications

Cross-out the
Standard Sheet
number and Standard
Approved boxes in
the sheet border.

SUBSURFACE DRAIN, WIDENED PAVEMENT DESIGN WITH PAVEMENT EDGE DRAIN ①

NOTES:

- USE SPECIAL PROVISIONS FOR MATERIAL AND CONSTRUCTION DETAILS.
- PERMEABLE BASE SHOULD OVERLAY PAVEMENT MAXIMUM WIDTH PERMITTED BY STRUCTURAL DESIGN, BUT BOTTOM SHOULD NOT BE ABOVE THE BOTTOM OF IMPLACE PAVEMENT.
- AS REQUIRED BY DESIGN STANDARDS:
PASS - PERMEABLE ASPHALT STABILIZED BASE;
OASB - OPEN GRADED AGGREGATE BASE;
PAB - OPEN.
- DRAIN SHALL BE PAVEMENT EDGE DRAIN TYPE, AFTER COMPACTION, FINE FILTER AGGREGATE IN DRAIN SHALL EXTEND AT LEAST 4" ABOVE THE BOTTOM OF THE FUTURE PERMEABLE AGGREGATE BASE.
- GEOTEXTILE MAY BE LOCATED 12" BELOW CLASS 5 OR 6 BASE COURSE.
- IMPLACE UNDER PERMEABLE BASE.
- IF CLASS 5 OR 6 BASE IS TO BE PLACED BELOW THE PAB, BOTTOM OF PIPE SHALL BE A MINIMUM OF 12" BELOW BASE/SUBGRADE INTERFACES ON A SLOPE OF 8:1, MINIMUM 12" IS USED.

SUBSURFACE DRAIN, PERMEABLE BASE & DRAIN USED WITH PASSRC ①②

NOTES:

- PASSRC - PERMEABLE ASPHALT STABILIZED STRESS RELIEF COURSE.
- SEE SPECIAL PROVISIONS FOR MATERIAL AND CONSTRUCTION DETAILS.
- SEE TYPICAL SECTIONS FOR WIDTH AND DRAIN LOCATION.
- PERMEABLE AGGREGATE TO BE HEARD 12" ABOVE TOP OF PASSRC AFTER COMPACTION.
- INTERCEPTOR DRAINS TYPICALLY USED AT THIS LOCATION. SEE DETAIL & SPECIAL PROVISIONS IF APPLICABLE.
- IF THE RETAINING SHOULDER REMAINS IMPLACE, THE PASSRC AND SHOULDER CAN BE REMOVED BY HOLDING THROUGH, OR OTHER METHOD, PROVIDED THE REMAINING RETAINING SHOULDER IS NOT DISTURBED.
- SEE TYPICAL SECTIONS FOR DETAIL.
- REMOVED MODIFICATION FROM STANDARD PLAN.

MODIFIED

APPROVED BY: *Christopher By* 8-6-2014

STATE DESIGN ENGINEER

STANDARD PLAN 5-297.432

1 OF 1

88 SHEETS

MODIFIED

USE PASS OR OASB WITH PCC PAVEMENTS.

④ CLASS 3, 5 OR 6, AS SPECIFIED

SUBSURFACE DRAINS

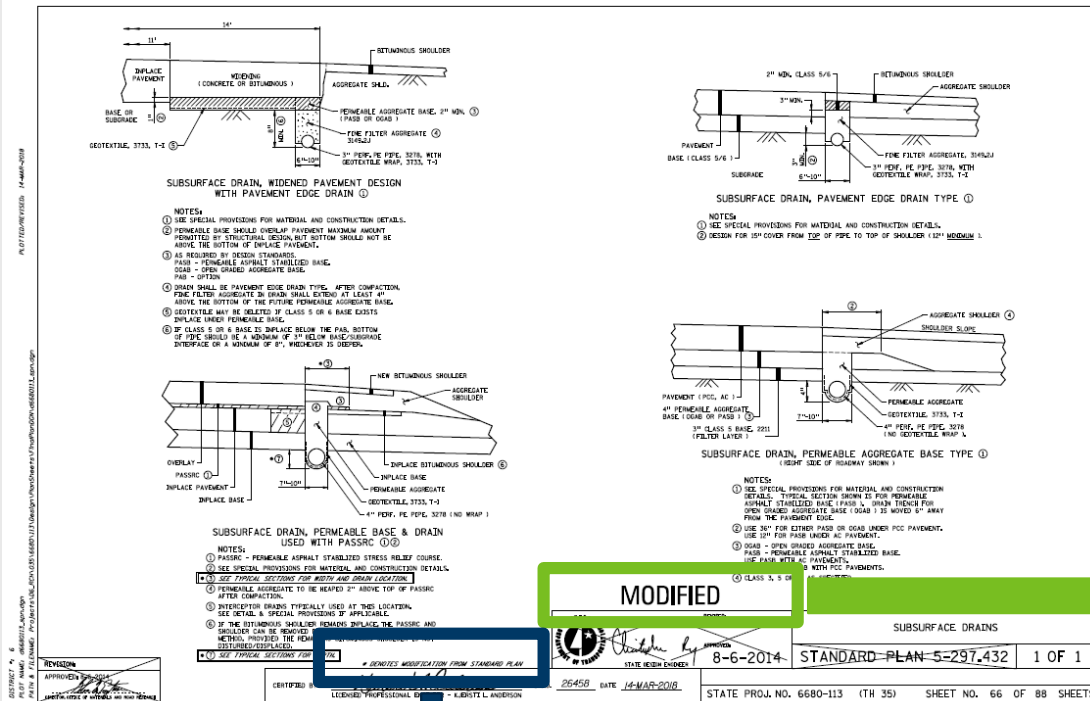
STANDARD PLAN 5-297.432

1 OF 1

STATE PROJ. NO. 6680-113 (TH 35) SHEET NO. 66 OF 88 SHEETS

STANDARD PLAN SHEET Modifications

Add “MODIFIED”
above the Standard
sheet
number/approval
box.



MODIFIED

MODIFIED

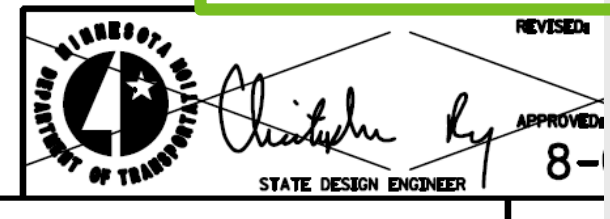
Add a
modification
note

7 DRAIN LOCATION. 11
2" ABOVE TOP OF PASSRC

**AT THIS LOCATION,
APPLICABLE.**

**INPLACE, THE PASSRC AND
3, TRENCHING, OR OTHER
MINOR SHOULDER IS NOT**

*** DENOTES MODIFICATION FROM STANDARD PLAN**



STANDARD PLAN SHEET Modifications

Add a signature
block to the left of
the Approval box.

PL-0770 (REVISED) 1-4-00-2008

SECTION 7, 6
P&T NAME: 6680113-TH35
P&T NO.: 6680113-TH35
P&T DATE: 14-MAR-2018
P&T BY: KJERSTI L. ANDERSON
P&T CHECKED: KJERSTI L. ANDERSON
P&T APPROVED: KJERSTI L. ANDERSON
P&T SIGNATURE: KJERSTI L. ANDERSON

SUBSURFACE DRAIN, WIDENED PAVEMENT DESIGN WITH PAVEMENT EDGE DRAIN

NOTES:

- USE SPECIAL PROVISIONS FOR MATERIAL AND CONSTRUCTION DETAILS.
- PERMEABLE BASE SHOULD OVERLAY PAVEMENT MAXIMUM 48 INCHES PERMITTED BY STRUCTURAL DESIGN, BUT BOTTOM SHOULD NOT BE ABOVE THE BOTTOM OF IMPLACE PAVEMENT.
- AS REQUIRED BY DESIGN STANDARDS:
PASS - PERMEABLE ASPHALT STABILIZED BASE;
OASB - OPEN GRADED AGGREGATE BASE;
PASB - OPEN
- DRAIN SHALL BE PAVEMENT EDGE DRAIN TYPE, AFTER COMPACTION, FINE FILTER AGGREGATE IN DRAIN SHALL EXTEND AT LEAST 6" ABOVE THE BOTTOM OF THE FUTURE PERMEABLE AGGREGATE BASE.
- GEOTEXTILE MAY BE LOCATED IF CLASS 5 OR 6 BASE EXISTS IMPLACE UNDER PERMEABLE BASE.
- IF CLASS 5 OR 6 BASE TO IMPLACE BELOW THE PAS, BOTTOM OF PIPE SHOULD BE A MINIMUM OF 12" BELOW BASE/SUBGRADE SURFACE OR A MINIMUM OF 8", WHICHEVER IS GREATER.

SUBSURFACE DRAIN, PERMEABLE AGGREGATE BASE & DRAIN USED WITH PASSRC

NOTES:

- PASSRC - PERMEABLE ASPHALT STABILIZED STRESS RELIEF COURSE.
- SEE SPECIAL PROVISIONS FOR MATERIAL AND CONSTRUCTION DETAILS.
- SEE TYPICAL SECTIONS FOR WIDTH AND DRAIN LOCATION.
- PERMEABLE AGGREGATE TO BE HEAVED 2" ABOVE TOP OF PASSRC AFTER COMPACTION.
- INTERCEPTOR DRAINS TYPICALLY USED AT THIS LOCATION. SEE DETAIL & SPECIAL PROVISIONS IF APPLICABLE.
- IF THE BITUMINOUS SHOULDER REMAINS IMPLACE, THE PASSRC AND SHOULDER CAN BE REMOVED BY MILLING, TRENCHING, OR OTHER METHOD, PROVIDING THE REMAINING BITUMINOUS SHOULDER IS NOT DISPLACED.
- SEE TYPICAL SECTIONS FOR DEPTH.
- SEE MODIFIED SECTION FROM STANDARD PLAN.

MODIFIED

DATE: 6-6-2014

STATE PROJ. NO. 6680-113 (TH 35) SHEET NO. 66 OF 88 SHEETS

CERTIFIED BY: *Kjersti L. Anderson* LIC. NO. 26458 DATE 14-MAR-2018

STATE PROJ. NO. 6680-113 (TH 35) SHEET NO. 66 OF 88 SHEETS

AL SECTIONS FOR WIDTH AND DRAIN LOCATION

AGGREGATE TO BE HEAVED 2" ABOVE TOP OF PASSRC (PACTION).

OR DRAINS TYPICALLY USED AT THIS LOCATION. L & SPECIAL PROVISIONS IF APPLICABLE.

BITUMINOUS SHOULDER REMAINS IMPLACE, THE PASSRC AND CAN BE REMOVED BY MILLING, TRENCHING, OR OTHER PROVIDED THE REMAINING BITUMINOUS SHOULDER IS NOT DISPLACED.

AL SECTIONS FOR DEPTH

MODIFIED



REVISION

APPROVED

8-6-2014

SUBSU

STANDARD PLAN

CERTIFIED BY:

Kjersti L. Anderson

LIC. NO. 26458

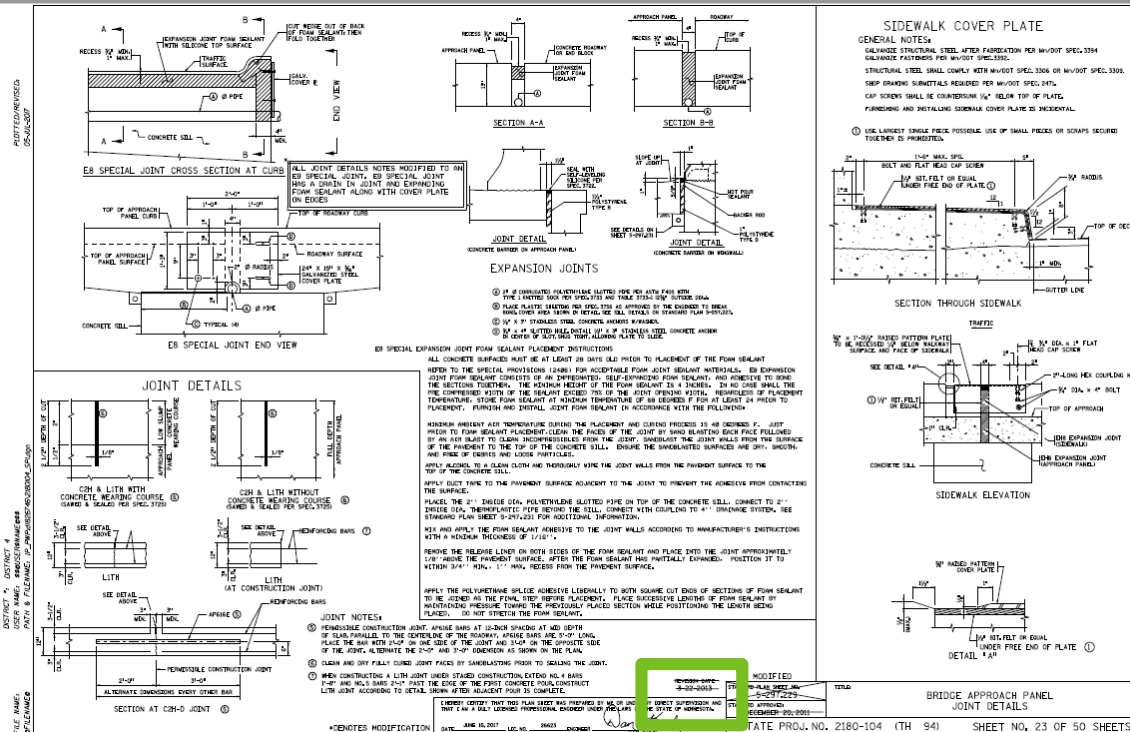
DATE 14-MAR-2018

LICENSED PROFESSIONAL ENGINEER - KJERSTI L. ANDERSON

STATE PROJ. NO. 6680-113 (TH 35)

STANDARD PLAN SHEET Modifications

Make sure to also
cross out the
revision date if
applicable.



REVISION DATE
3-22-2013

SUPERVISION AND
OF MINNESOTA.

by

MODIFIED

STANDARD PLAN SHEET NO.
5-297.229

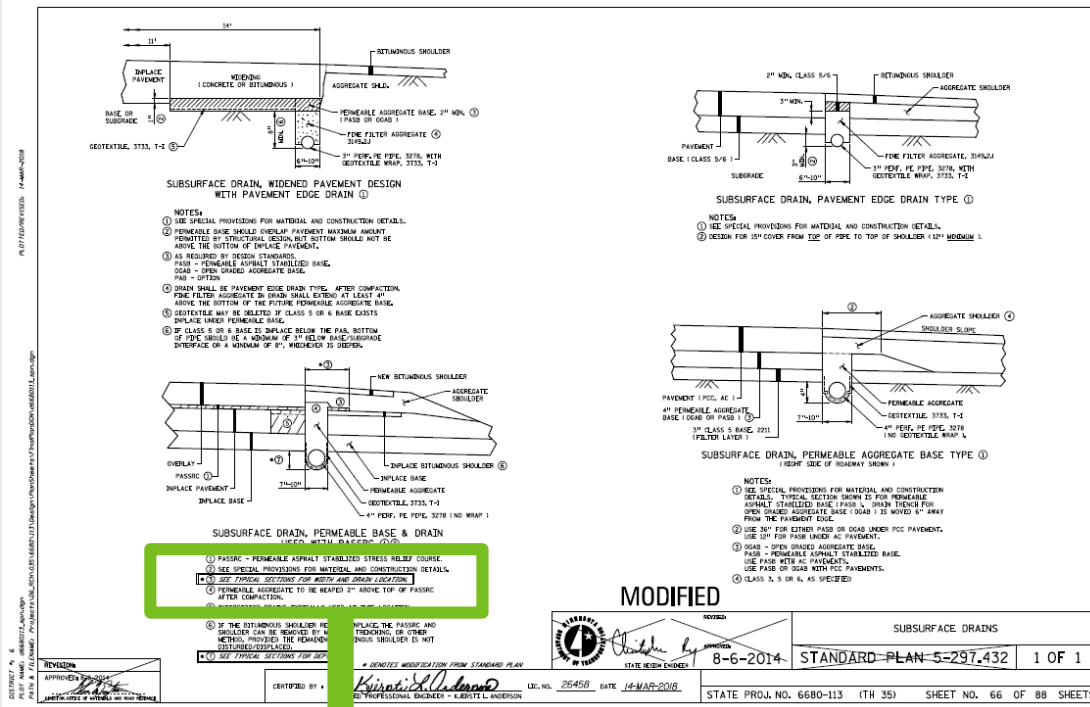
TITLE:

STANDARD APPROVED:
DECEMBER 20, 2011

STATE PROJ. NO. 2180-104

STANDARD PLAN SHEET Modifications

- Identify the changes to the standard plan sheet by...
- Italicize text.
 - Double box around change.
 - Place asterisk by modification (optional).



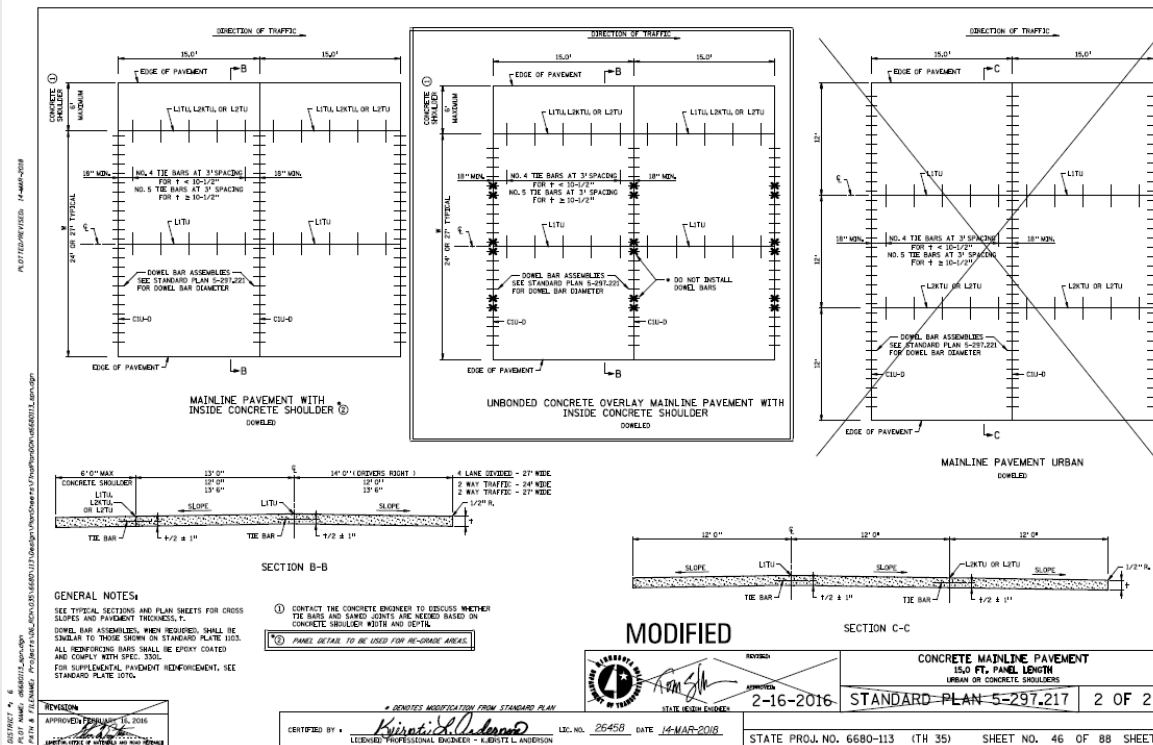
(2) SEE SPECIAL PROVISIONS FOR MATERIAL AND CONSTRUCTION

* (3) SEE TYPICAL SECTIONS FOR WIDTH AND DRAIN LOCATION.

(4) PERMEABLE AGGREGATE TO BE HEADED ON ABOVE TOP OF PA

STANDARD PLAN SHEET Modifications

It is not necessary to cross things out on the standard plan sheet that do not apply to your project unless your district has a policy to do so or if a standard plan sheet detail conflicts with a d miscellaneous detail placed in the plan.

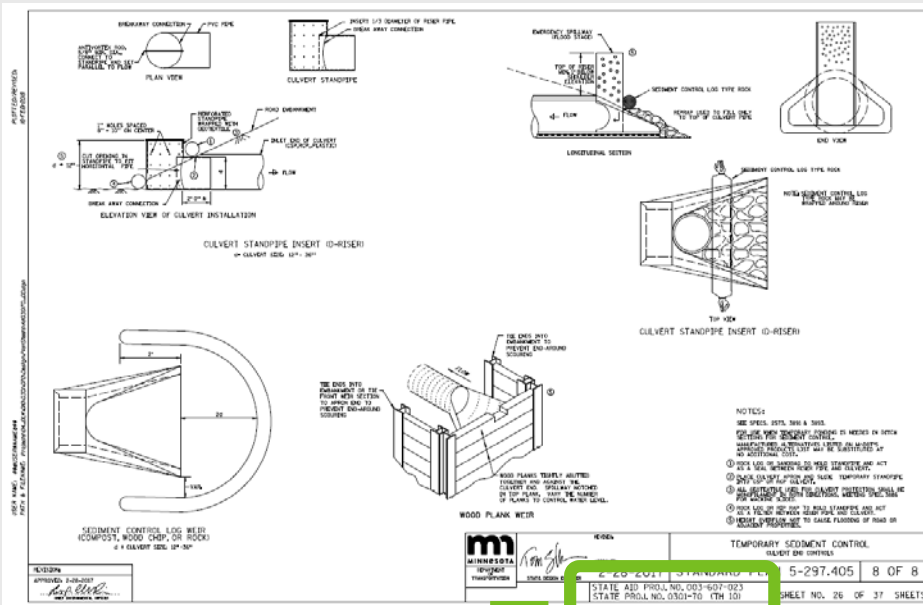


- If you DO cross things out
- It is considered a modification and needs to be shown as such.
 - The appropriate notes will also need to be crossed out.

DETAILS & STANDARD PLAN SHEETS

The project number(s) should be shown in the bottom right corner of the plan sheet. It should include the (TH #) but not the legislative number.

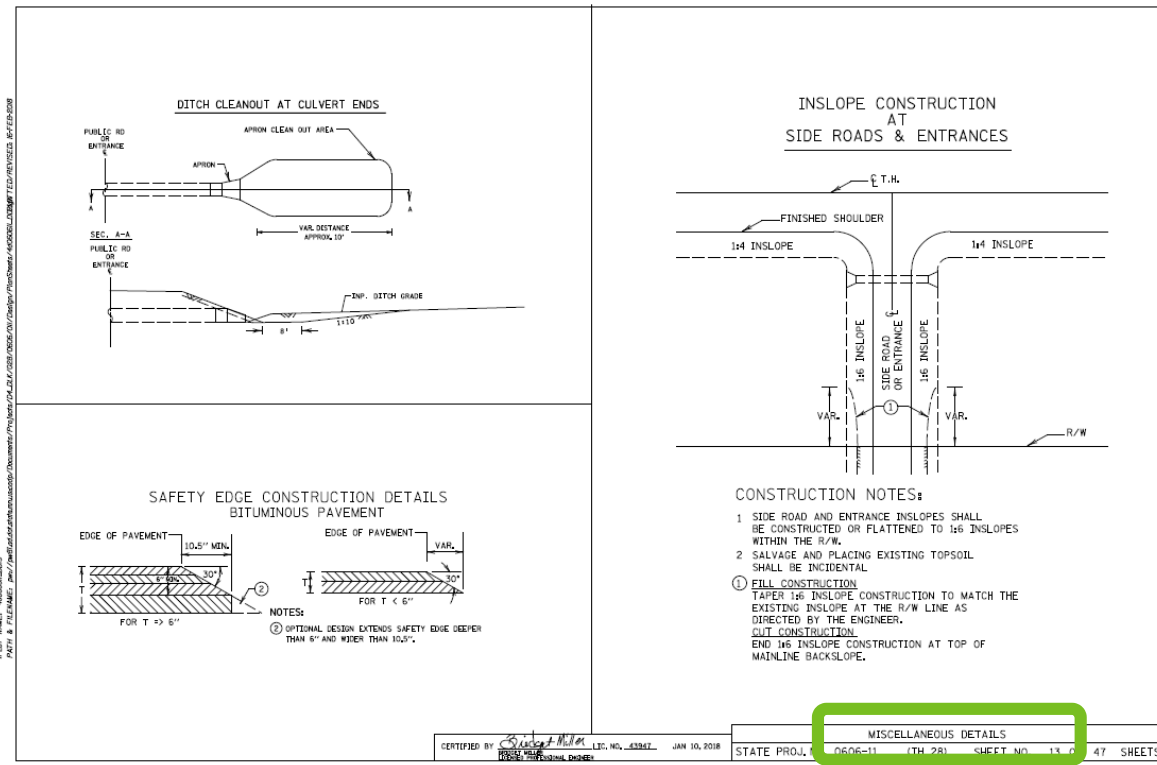
- When there are multiple project numbers as a minimum the PRIME SP number should be shown. It is optional to show all of the SP numbers. The main thing is to be consistent.
- ALL State Aid project numbers must also be shown on every sheet in the bottom right corner.



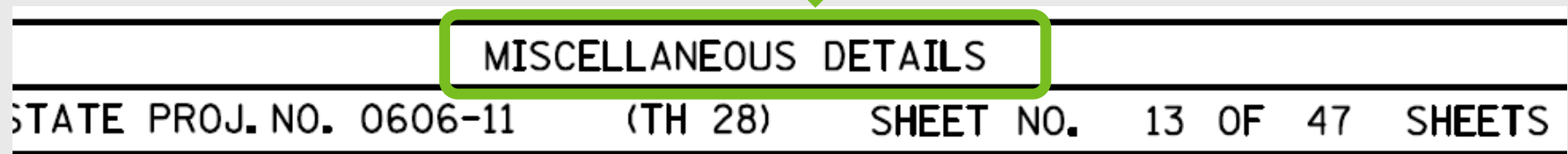
2-28-2017 STANDARD PLAN

STATE AID PROJ. NO. 003-607-023
STATE PROJ. NO. 0301-70 (TH 10)

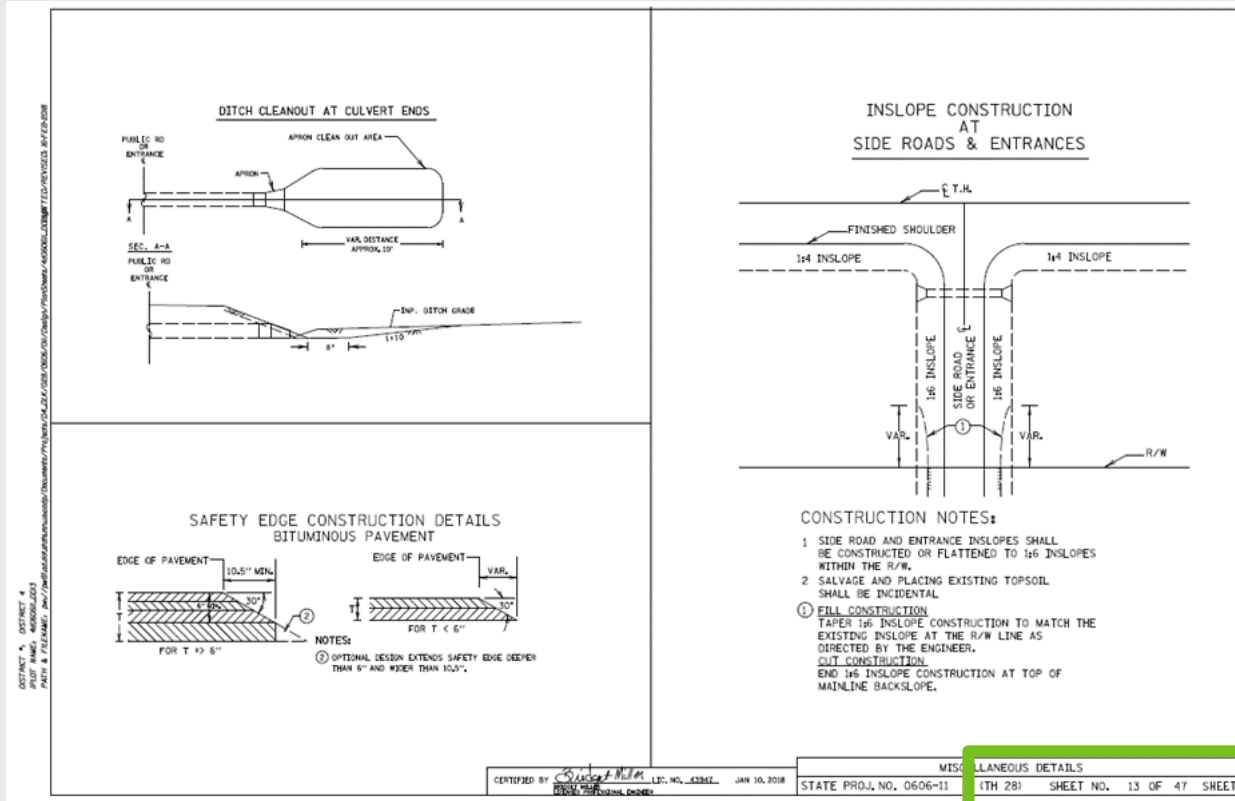
DETAILS & STANDARD PLAN SHEETS



The sheet label should be shown in the bottom right corner of the plan sheet. Above the SP # and SHEET number.



DETAILS & STANDARD PLAN SHEETS



The sheet number is shown in the bottom right corner of the plan sheet.

MISCELLANEOUS DETAILS

STATE PROJ. NO. 0606-11

(TH 28)

SHEET NO. 13 OF 47 SHEETS

QUESTIONS????

Any questions contact us ANYTIME:

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