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*FYI... For revised articles the bold text inside the brackets {} reflect additions and the bold cross-outs reflect deletions.*

## **CHAPTER 1 - CONSTRUCTION PLAN FOR....(Revised)**

*This section was revised for clarification...*

The description of work should reflect any major work such as alternate bid: alternate bituminous or concrete surfacing, grading, bituminous and/or concrete surfacing, {**ultrathin bonded wearing course, CPR, full depth reclamation**}, box culverts, ADA improvements, {**retaining walls, noise walls**}, bridges, signals, lighting, TMS, etc. Sidewalks, drainage, turn lanes, widening, utilities, etc. should not be included in the title. The only time that signing, striping, guardrail, erosion control, drainage, etc. should be in the title would be when that is the only work being done.

Examples would be:

“Construction Plan for Grading, Bituminous Surfacing and Signals”.

“Construction Plan for Signing”

## **CHAPTER 1 – LOCATED ON.... (Revised)**

*This section is revised to add the following paragraph....*

**{ It is recommended that the city/county are shown on the index map. If they are shown on the index map then they not need to be included in the located on section. }**

## **CHAPTER 1 – RPMA.....**

The Roadway Project Mapping Application (RPMA) references a frozen subset of Linear Referencing System (LRS), which is the Highway Performance Monitoring System (HPMS) data that is sent to FHWA on an annual basis.

RPMA must be used to determine the begin and end reference points of a project. The log point listing and Videolog use the old, frozen TIS data from 2014 and should no longer be used. By using these systems there is the risk of corrupting data, and the project location data could be inaccurate.

RPMA is based on a straight horizontal line and does not take into account hills and valleys as the old systems did. Therefore, the reference point values could be substantially different.

RPMA is only accessible internally. Therefore, outside users will need to contact their MnDOT project manager for assistance with this.

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RPMA can be found at MnDOT A to Z...go to “Roadway Data”...go to “Roadway Project Mapping Application (RPMA)...go to “Launch Roadway Project Mapping Application”.

## **CHAPTER 2 – AS BUILT**

Designers should include 2011.601 As Built in their plans whenever they have pay items pertaining to the following categories....

- Drainage/Stormwater
- Traffic Management Systems
- Lighting Systems
- Signing
- Traffic Control Signal Systems
- Traffic Barrier
- Earth Retaining Systems
- Noisewalls
- Landscaping

The MnDOT 2011.601 As-Built Specification and Pay Item requires the collection and submittal of as-built data, including electronic asset location data and/or red-lined plans, by a contractor, for these assets.

Designers should eliminate incidental as-built references in other parts of the specifications (besides bridge as-builts as they are working on incorporating that as well).

Some keys to help understand 2011.601 As-Builts

- Currently located S-63 (2011) AS BUILTS revised 3/20/18
  - ❖ Two methods of data accuracy requested per spec
  - ❖ Electronic deliverables include .csv file or shapefiles and/or red-lined plans via County Coordinate System.
- External Web-site: <http://www.dot.state.mn.us/gisspec/index.html>
  - ❖ More information that include asset specific information for contractors and example data tables: Table K and Table Z
  - ❖ Submittal information: MnDOT Project Engineer and copy [AsBuilts.DOT@state.mn.us](mailto:AsBuilts.DOT@state.mn.us) .

## **CHAPTER 2 – FUNDING (Revised)**

*This section is revised as follows .....*

As the funding has become more complicated it is necessary to make sure that it is entered into the system correctly and shown on the plans correctly.

The funding sources (e.g. state, federal, city, county, state aid, etc.) need to be determined early in the process. If there are multiple funding sources then the Statement of Estimated Quantities

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(SEQ) and the tabulations need to show the funding splits. ALL TABS need to show the funding splits, even traffic and drainage tabs.

Quantities on the estimated quantities sheets must be split into as many columns as there are separate funding groups; the factors that determine funding groups are funding source, project number, and percentage of participation. Specific funding information should be included at the top of each group column.

MnDOT participation should be indicated by showing the percentage of MnDOT participation for each group. When there is more than one State Project Number, each separate state funding source is a separate group and the appropriate State Project Number should be indicated.

**{The Federal Project Number, State Project Number, and State Aid Project Number must be shown on the construction plan title sheet. These will be located on the bottom right corner of the title sheet. At a minimum the Prime SP number needs to be in the bottom right corner of every sheet. The State Aid number(s) needs to be on the bottom right corner of EVERY plan sheet as well. The other SP numbers may also be on every sheet but do not have to be (other than the title sheet).}**

Local participation should be indicated by showing the percentage of local participation, and if applicable, the State Aid Project Number. Lump sum agreements should be identified with **{an alpha}** note at the top of the column ~~or noted for the pay items that the lump sum applies to.~~ The notes on the SEQ sheet will need to include ....

- ~~If it is lump sum~~
- ~~The agreement number~~
- ~~Who the agreement is with~~

**{A typical note for a...**

- **Schedule "T" agreement reads...100% CITY FUNDS S.A.P. XXX-XXX-XXX. SEE AGREEMENT NUMBER XXXXXXXX with the CITY OF CROCKER.**
- **Lump Sum or Lump Sum based on bids agreement reads...SEE LUMP SUM AGREEMENT NUMBER XXXXXXXX with SWANSON COUNTY.**

**Lump sum agreement Subnote should be added to the column when the items for a lump sum agreement are included in that column.**

**When 100% local funds apply to more than 5 items, then you need a column for those items.**

**When 100% local funds apply to 5 items or less and it is not a lump sum agreement, then subnote those items with an alpha character note which will read....100% CITY FUNDS SEE AGREEMENT NUMBER XXXXXXXX with the CITY OF CROCKER.}**

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For example....{replaced table}

ITEM	DESCRIPTION	UNITS	TOTAL ESTIMATED QUANTITY	ESTIMATED QUANTITY SP 111-111	EST. QUANT. SP 111-112-121 (B)
2021.501	MOBILIZATION	LUMP SUM			0.2
2105.504	GEOTEXTILE FABRIC TYPE 3	SQ YD	150	100	50
2118.507	AGGREGATE SURFACING (CV) CC	SQ YD	100	100	50
POSSIBLE NOTES....					
(A) SEE LUMP SUM AGREEMENT NUMBER 1234567 WITH THE CITY OF CROCKER					
or (A) SEE AGREEMENT NUMBER 1234567 WITH SWANSON COUNTY (57% FEDERAL, 16% STATE, 20% COUNTY FUNDS)					
or (A) SEE AGREEMENT NUMBER 1234568 WITH THE CITY OF CROCKER (100% CITY FUNDS)					
(B) SEE AGREEMENT NUMBER 1234567 WITH THE CITY OF CROCKER (100% STATE AID FUNDS)					
or (B) SEE AGREEMENT NO 1234567 WITH SWANSON COUNTY (80% STATE AID, 20% COUNTY FUNDS)					

ITEM	DESCRIPTION	UNITS	TOTAL ESTIMATED QUANTITY	ESTIMATED QUANTITY SP 111-11 (A)	ESTIMATED QUANTITY SAP 111-112-121 (B)	100% CITY OF CROCKER FUNDS (C)
2021.501	MOBILIZATION	LUMP SUM	1	0.5	0.3	0.2
2104.502	REMOVE CONCRETE APRON	EACH	10	5	3	2
2105.504	GEOTEXTILE FABRIC TYPE 3	SQ YD	150	100	50	50

- (A) SEE LUMP SUM AGREEMENT NUMBER 1234567 WITH THE CITY OF CROCKER
- or (A) SEE AGREEMENT NUMBER 1234567 WITH SWANSON COUNTY (64% FEDERAL, 16% STATE, 20% COUNTY FUNDS)
- (B) SEE AGREEMENT NO 1234568 WITH THE CITY OF CROCKER (100% STATE AID FUNDS)
- or (B) SEE AGREEMENT NO 1234568 WITH SWANSON COUNTY (80% STATE AID, 20% COUNTY FUNDS)
- (C) SEE AGREEMENT NO 1234569 WITH THE CITY OF CROCKER (100% CITY FUNDS)

The funding percentages must total 100% for each column.

If there are federal funds and/or unique funds the SEQ needs to show the funding splits. (e.g. 80% Federal/20% State Funds ). When there is more than one Federal Project Number, each separate federal aid funding source is shown as a separate group and the appropriate Federal Project Number should be indicated.

If the funding designations (80% Federal/20% State Funds) do not fit in the SEQ column headings then they should be shown as a note. The note should be a lettered note (e.g. A, B, C,

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etc.) not a numbered note. It should be set apart from the numbered notes so that it stands out and is noticed.

Do NOT use numbered notes for any funding items. Even the “100% State Funds” note should be a lettered note.

**~~The Federal Project Number, State Project Number, and State Aid Project Number must be shown on the construction plan title sheet.~~**

If federal funds are applied to the local share, the local federal funds must be identified in the STIP, and the local share needs a federal State Aid project number.

For further information regarding cost participation information required in the construction plan, see the “Metro Sample Plan,” MnDOT Policy for Cost Participation for Cooperative Construction Projects and Maintenance Responsibilities between MnDOT and Local Units of Government, or contact MnDOT’s Design Service Engineer, the Funding Program Coordinator in the MnDOT Office of Transportation System Management, or MnDOT’s **Municipal {Cooperative}** Agreements Engineer.

### **CHAPTER 3 – ADA SAFETY GRATES, CURB BOXES, and HELPER STRUCTURES** **(Revised)**

*The seventh paragraph is revised as follows...*

For ADA safe grates use the pay item 2506.502 CASTING ASSEMBLY by EACH. Where we typically reference what standard plate you would use we will add ADA instead. You will also need to include the detail for it in the plan which can be found at {MnDOT A to Z....go to “ADA Design and Construction Tools”} (<http://www.dot.state.mn.us/ada/design.html>)

### **CHAPTER 3 – ADA PAY ITEMS (Revised)**

*This section was revised regarding pay item usage...*

The ADA group has set up a location for their project design guide, provisions, pay items and other useful information which can be found on ProjectWise at...

[pw://pw8i.ad.dot.state.mn.us:cadp/Documents/Operations/ADA\\_Review/ADA\\_Provisions/](http://pw8i.ad.dot.state.mn.us:cadp/Documents/Operations/ADA_Review/ADA_Provisions/)

They have also established a **new** webpage which can be found at MnDOT A to Z ...go to “ADA Design and Construction Tools” (<http://www.dot.state.mn.us/ada/design.html>)

All designers should follow the design guide when working on ADA Improvements. <http://www.dot.state.mn.us/ada/pdf/adaprojectdesignguide.pdf>

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**{2018 ADA Pay Item changes:**

- **2521 Concrete Walk (ADA) will no longer be including the aggregate base. Designers must comp out the aggregate base by CV under all new concrete curb ramps for all projects.**
- **2531 Curb and Gutter (ADA) will follow the same recommendation as 2521 Concrete Walk.**

**These changes were necessary to clear up the confusion of when aggregate was incidental or not. Plan (P) quantities should not be used for these items due to varying field conditions. Minor earthwork is still incidental with the above pay items.**

**Use traditional pay items for 4" concrete walk, 6" and 8" driveway pavements. Compute 3" min. Aggregate base CV for all new concrete areas. Calculate grading quantities (common excavation, embankment) for all new sidewalk where none currently exists, or when the existing sidewalk width, alignment or profile change. Do not pay for grading when the sidewalk is replaced in kind.**

**2104 Remove & Replace Bituminous Pavement and 2232 Mill & Patch Bituminous Pavement are both now paid for as SQ FT instead of LIN FT.**

**2575 Site Restoration is paid for by EACH for Curb ramp only jobs, otherwise it is paid for by SQ FT for all jobs that are replacing sidewalk and driveways beyond the curb ramps.}**

~~**There has been some confusion on when to use the new ADA pay items and when to use the traditional pay items.**~~ The following are basic guidelines on which pay items should be used for which situations....

**Project 1 – Standalone Curb Ramp Replacement Project or Standalone Signal Installation/Replacement**

These projects would only use new ADA pay items for roadway/curb ramp work.

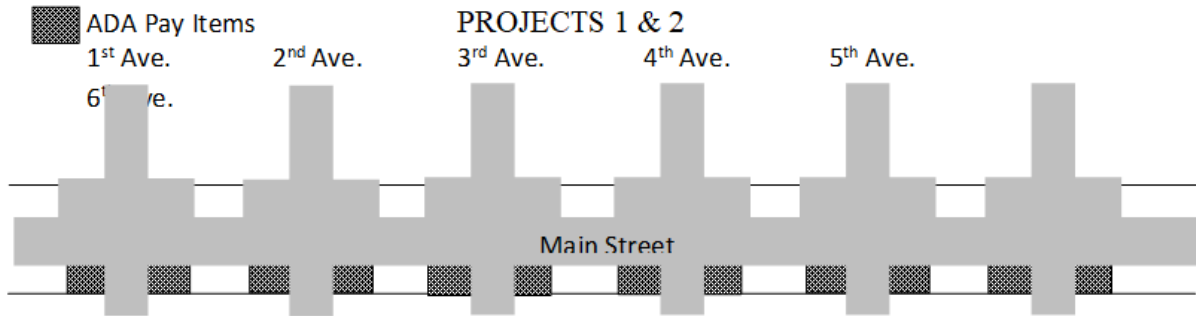
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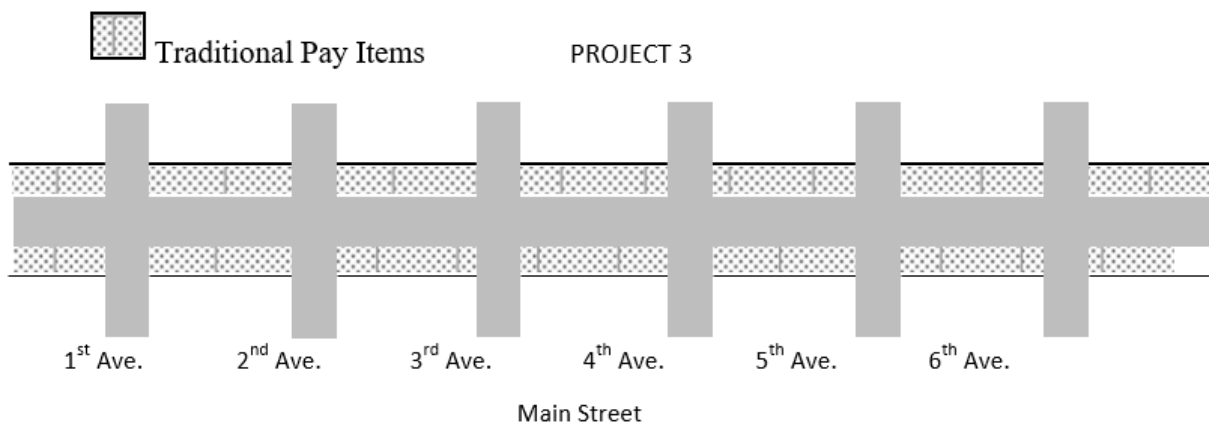


## **Project 2 – Mill & Overlay with Curb Ramp Replacements**

These projects would use ADA pay items for curb ramp work (Concrete Walk, Concrete Curb & Gutter, Site Restoration). Traditional pay items would be used for roadway work unless there are areas with curb ramp replacements beyond the mill & overlay limits. ~~in which case the ADA items for bituminous pavement could be used for bit. removal and replacement in those areas.~~ {The ADA Bituminous treatment pay items should be used for all the temporary bituminous areas prior to the mill and overlay.}

## **Project 3 – Reconstruction/Regrade**

Project is a roadway reconstruction project including replacement of sidewalk, signals, etc. Use all traditional pay items, no incidentals.



## **Project 4 – Mill & Overlay with Curb Ramp, Driveway, and Sidewalk Replacements**

Project is a mill and overlay with curb ramp replacements and replacement of sections of



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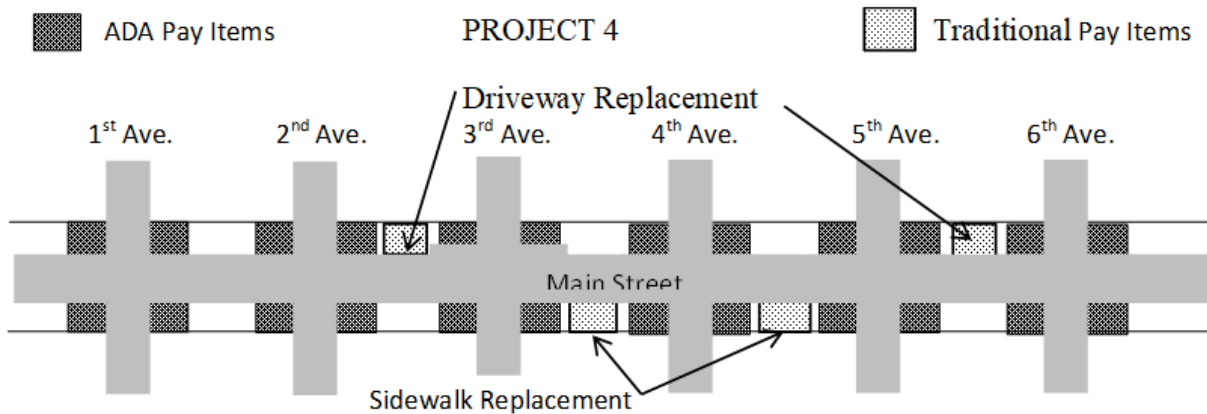


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sidewalk and some driveways.

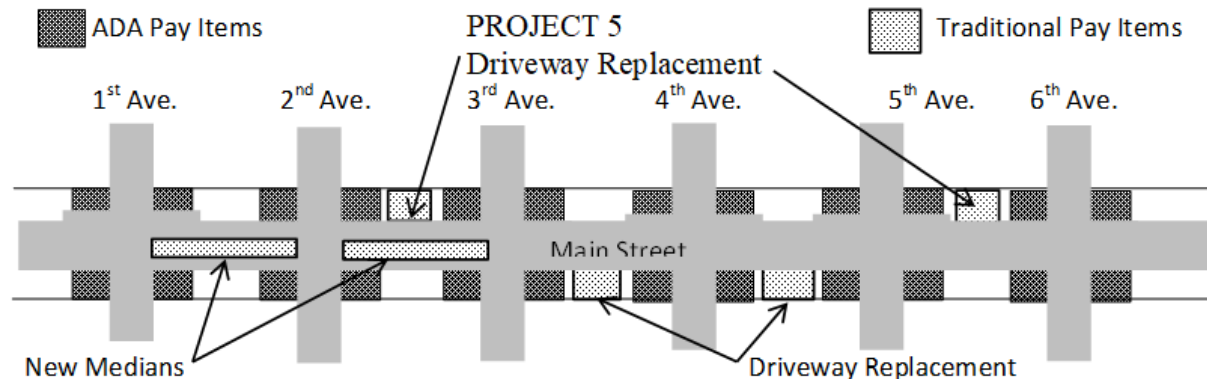
- Sidewalk and driveway replacements would be paid for using traditional pay items.
- Curb ramp replacements would be paid for using ADA pay items.



## **Project 5 – Access Management Project, Mill & Overlay, Median Installations, Driveway Replacements, and Curb Ramp Replacements**

Project is an access management project, which includes mill and overlay, installation of concrete medians, removal of some driveways and replacements of others, curb ramp replacements and APS signal upgrades.

- Installation of medians and driveway replacements would be paid for using traditional pay items.
- Curb ramp replacements would be paid for using ADA pay items.
- **If project was replacing all of the sidewalk, only traditional pay items would be used, no ADA pay items.**



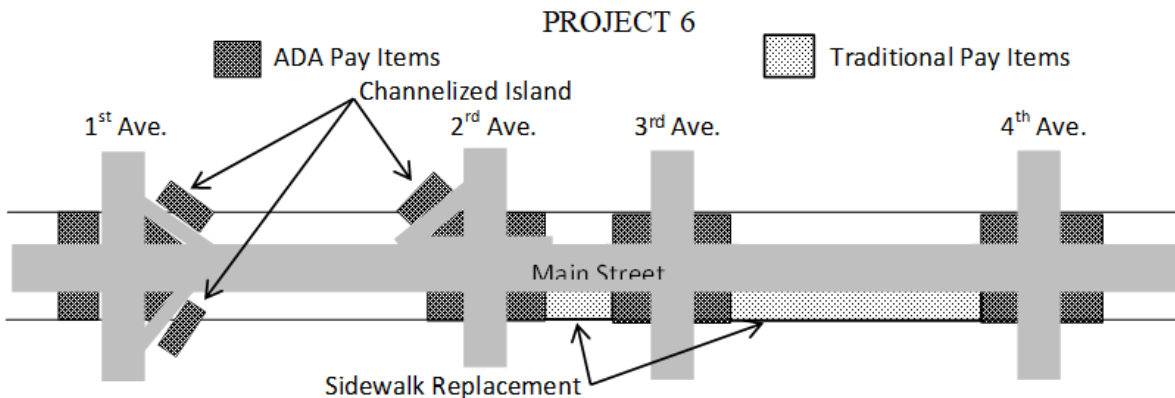


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## **Project 6 – Mill & Overlay, Sidewalk Additions, Replacement of Channelization Islands and Curb Ramps**

Project is a mill and overlay with ADA Improvements including pork chop channelization island replacements, curb ramps, and signal upgrades to APS. Project also adds 2 blocks of new sidewalk along the highway.

- Two blocks of new sidewalk would be paid for using traditional pay items. Sidewalks would be 4” concrete walk. Curb Ramps for the new sidewalk would be paid for using the ADA Concrete Walk pay item.
- All curb and gutter, pork chop island replacements, median modifications, and curb ramps would be paid for using ADA pay items: Concrete Walk and Concrete Curb & Gutter with aggregate base and earthwork incidental. Turf establishment and side grading would be paid for using Site Restoration pay item.



## **Project 7 – Full Regrade and Mill & Overlay with Curb Ramps**

Half of the project is highway reconstruction with a subcut including new sidewalks, drainage, lighting, signals, etc.

- On this portion of the project, traditional pay items would be used. Sidewalks would be 4” concrete walk and curb ramps would be 6” concrete walk. Aggregate Base, Earthwork, and Turf Establishment would all have traditional pay items. Curb and gutter payment would be paid for by the type. (B624, etc.)

The other half of the project is a mill and overlay with ADA Improvements including curb ramp replacements and APS signal upgrades.

- On this portion of the project, curb ramp replacements and curb and gutter at curb ramps would be paid for using ADA pay items: Concrete Walk and Concrete Curb & Gutter. Aggregate Base and any earthwork is incidental. Side grading and turf establishment would

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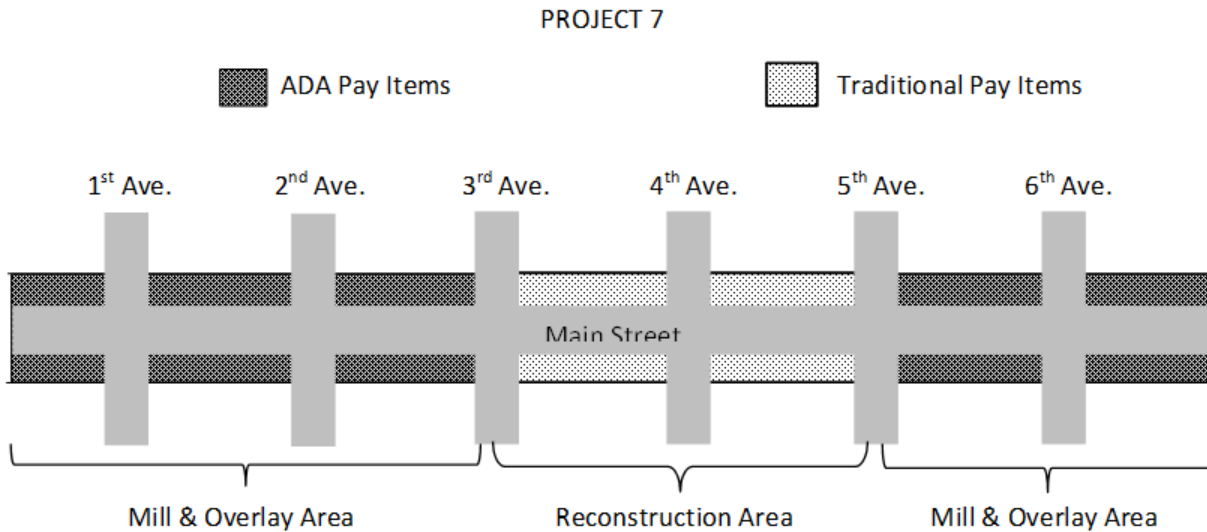
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be paid for using Site Restoration pay item by the **EACH {SQ FT.}** Ideally each site's grading limits would not touch so the limits of each site can be clearly defined.

Clarification: Curb ramp replacement includes all of the walk area necessary to meet existing walk grades, including any transition panels.

Curb Line Changes: In areas where curb lines are moving more than 2 feet, traditional pay items should be used for roadway pavement removal and replacement. ADA pay items would be used for concrete walk and concrete curb & gutter.



The following are the ADA pay items as mentioned in the examples above....

- 2104.503 REMOVE CURB AND GUTTER by LIN FT...note that sawcuts are incidental.
- 2104.518 REMOVE CONCRETE WALK by SQ FT...note that sawcuts are incidental.
- 2104.{~~618~~ 603} REMOVE AND REPLACE BITUMINOUS PAVEMENT by ~~LIN FT~~ {SQ FT}...for bituminous in poor condition.
- 2232.603 MILL AND PATCH BITUMINOUS PAVEMENT by LIN FT...for bit in good condition
- 2521.618 CONCRETE WALK by SQ FT
- 2531.603 CONCRETE CURB & GUTTER by LIN FT
- 2531.603 CONCRETE CURB DESIGN V by LIN FT
- 2531.618 TRUNCATED DOMES by SQ FT
- 2575.602 SITE RESTORATION by EACH, {for curb ramp only projects.
- **2575.618 SITE RESTORATION by SQ FT for curb ramp, sidewalk, and driveway projects.}**

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## **CHAPTER 10 – DOWEL BARS**

If the dowel bars are standard size according to the Dowel Bar Diameter table as shown on standard plan sheet 5-297.221 sheet 1 of 2 then use the pay item 2301.502 DOWEL BAR by EACH.

If however, the bar size is modified to a different diameter than the table on the standard plan sheet 5-297.221 sheet 1 of 2 then use the pay item 2301.602 "X" DOWEL BAR by EACH where "X" is the size of the dowel bar needed.

## **CHAPTER 12 - CULVERT WORK (Revised)**

*This section was revised for clarification....*

Whenever you revise a portion of a culvert, such as a lining or a salvage/install apron. You **need to {should}** make sure that the aprons are up to current standards. If a safety apron and/or grate is needed and the existing apron does not meet this then the designer **must {should}** replace the apron to bring it up to current standards. **{The District should address the risk and review run off the road data, safety concerns, etc., when making their decision.}**

## **CHAPTER 12 - FINE FILTER AGGREGATE FOR SUBSURFACE DRAINS (Deleted)**

*This section is deleted as it is covered in the 2018 Spec Book....*

~~Under the Spec 2502 in the 2016 and 2018 Spec Book it is not clear how fine filter aggregate is being paid for. Therefore, whenever using 2502 pipe drain items you will need to note somewhere in the plan that the fine filter aggregate is incidental.~~

## **CHAPTER 12 – 15” SAFETY APRON**

The 15” CS Safety apron is not covered by Standard Plate 3128. Therefore, when using this size metal safety apron be sure to include a detail in the plan for it.

## **CHAPTER 12 – PIPE BEDDING**

There has been confusion on plan preparation and payments associated with placing culvert and storm drain pipes.

Bedding details should be included in the plan for all projects with culvert or storm drain pipes. There are separate bedding details for the various types and conditions for pipes.

When there are Storm Sewer Pipes items (2503) in the plan...

- Payment for the bedding quantities should be included in the SEQ and Tabulations.
- Excavation and backfill do NOT need to be tabulated separately but are considered to be included in the cost of the storm sewer items.

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- Include the detail in the plan from...MnDOT A to Z...go to “Design Details”...go to “STORM DRAIN BEDDING” detail.
  - ❖ The detail on the left (RIGID) is for concrete pipes.
  - ❖ The detail on the right (Flexible) is for metal and/or plastic pipes.
  - ✦ These details should NOT need to be edited.

When there are Culvert items in the plan (2501) that...

- **Require treatments**, typically centerline culverts in areas prone to frost heave...
  - ❖ Payment for excavation, bedding, and special backfill quantities should be included in the SEQ and Tabulations (preferable the drainage tabulation).
  - ❖ Identify the treatment type in the Tabulations.
  - ❖ Include the detail in the plan from...MnDOT A to Z...go to “Design Details”...go to
    - ✦ “CULV BEDDING RIGID” if using concrete pipes.
    - ✦ “CULV BEDDING FLEX” if using metal and/or plastic pipes.
      - These details can be editing according to the District materials Engineers recommendations.
- Do **NOT require treatments**, typically centerline and side culverts for local roadways but do not typically apply to entrance culverts....
  - ❖ Payment for the bedding quantities should be included in the SEQ and Tabulations.
  - ❖ Excavation and backfill do NOT need to be tabulated separately but are considered to be included in the cost of the storm sewer items unless a special backfill is required. When special backfill is required backfill should be included in the SEQ and Tabulations.
  - ❖ Include the detail in the plan from...MnDOT A to Z...go to “Design Details”...go to
    - ✦ “CULV BEDDING RIGID” if using concrete pipes.
    - ✦ “CULV BEDDING FLEX” if using metal and/or plastic pipes.
      - Details are NOT modified unless an alternate bedding design is used.
- Are Entrance Culverts for agricultural, residential, or commercial entrances.
  - ❖ If placed with “Select grading material” as backfill then...
    - ✦ No detail is needed
    - ✦ No quantities need to be in the tabulations.
  - ❖ If specific bedding is required then...
    - ✦ Payment for the bedding quantities should be included in the SEQ and Tabulations.
    - ✦ Excavation and backfill do NOT need to be tabulated separately but are considered to be included in the cost of the culvert items.
  - ❖ Include the detail in the plan from...MnDOT A to Z...go to “Design Details”...go to
    - ✦ “CULV BEDDING RIGID” if using concrete pipes.
    - ✦ “CULV BEDDING FLEX” if using metal and/or plastic pipes.
      - Details are NOT modified unless an alternate bedding design is used.\

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When there are Box Culvert items (2412) in the plan...

- Payment for excavation, bedding, and special backfill quantities should be included in the SEQ and Tabulations.
- Include the detail in the plan from... MnDOT A to Z...go to “Design Details”...go to “BOX CULV BEDDING”
  - ❖ Details are NOT modified unless an alternate bedding design is used.

## **CHAPTER 14 - “J” RAIL DESIGN SPECIAL (Revised)**

*This section was revised for clarification....*

There has been some confusion regarding the type of standard plan sheet to reference for the Design Special attachment. This is based on the height of the rail. If the rail is 1’9” to center of rail (2’3” to top of {**plate beam**} rail), then you can do the “F” design with no rub rail. Some of the older “J” rails are at this height. So even though it is a “J” rail it might require the “F” rail design special detail (Standard plan 5-297.603) in the plan.

If the rail is the higher height-2’2” to center of rail (2’8” to top of {**plate beam**} rail), then you’ve got a bigger gap between the curb and bottom of rail, you would need to use the Standard Plan 5-297.618. It all has to do with the amount of gap between the rail and curb and the potential for snagging.

## **CHAPTER 14 – TYPE 31 GUARDRAIL (Revised)**

*The following subsection fixed a typo....*

- ▶ **GUARDRAIL END TREATMENTS**  
**TYPE 31 End TERMINALS**

### ***Removing***

When removing end treatments they may be the old B{8}338 guardrail end treatments. If that is the case see the article in this chapter under B8338 GUARDRAIL section on “Guardrail End Treatments...Removing”. If the new TYPE 31 then use the following items...

## **CHAPTER 18 – IDIQ PAY ITEMS**

IDIQ plans should never include a LUMP SUM pay item. These are too difficult to manage for IDIQ plans as the work will be variable depending on available funds.