

Mar 11, 2021 -- 2:47pm  
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# CITY OF RAMSEY

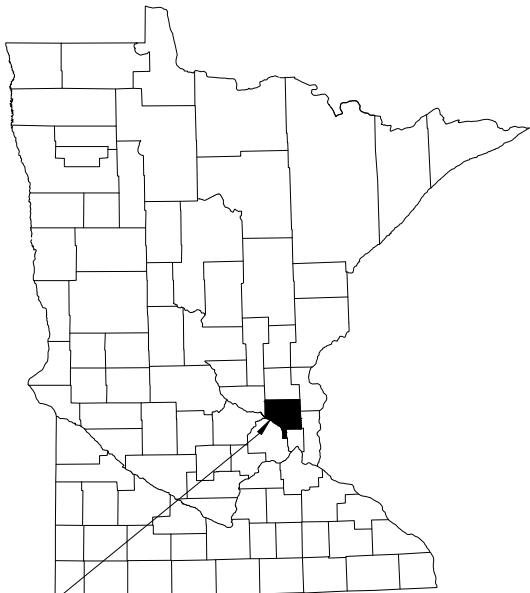
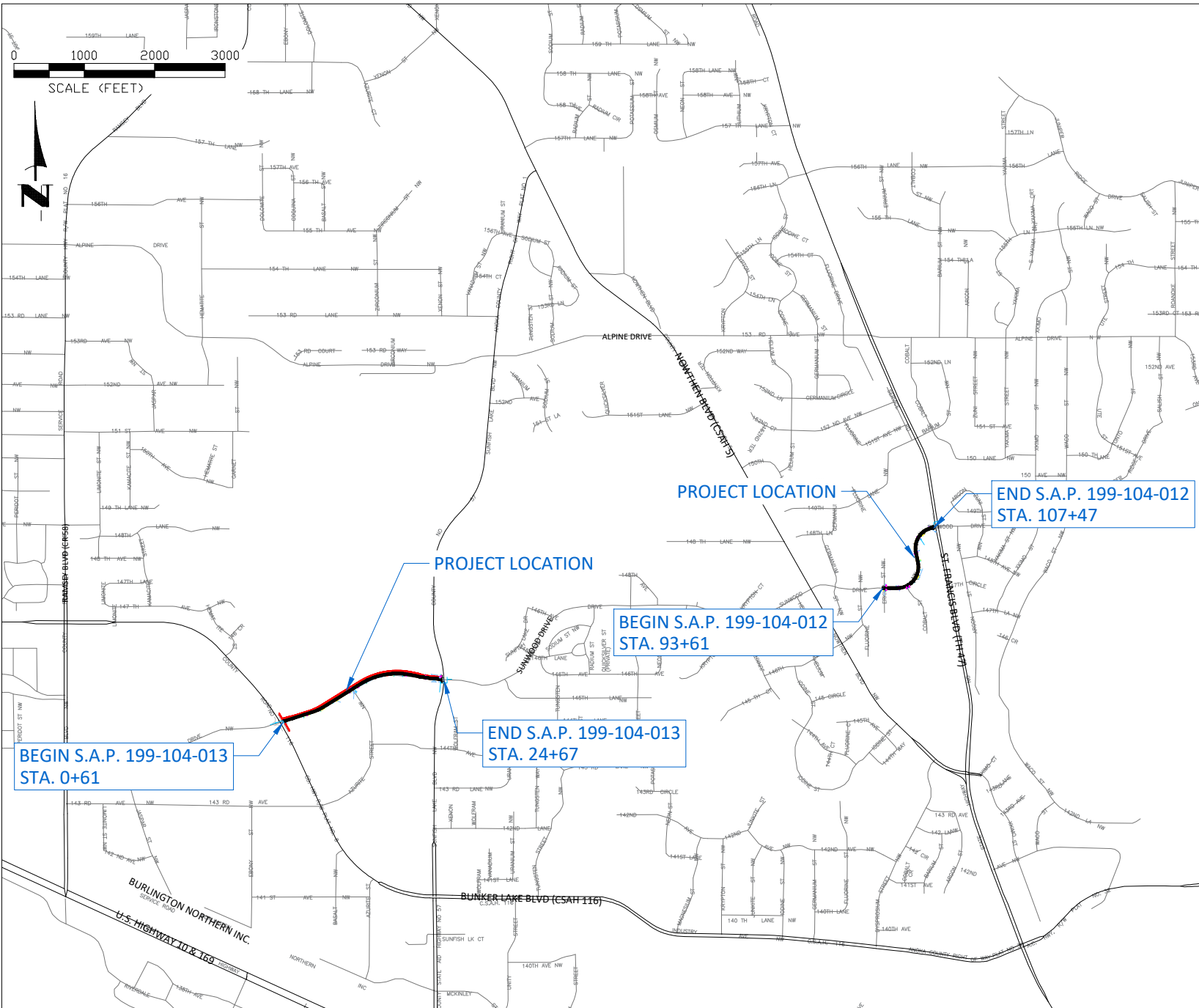
## 2021 MUNICIPAL STATE AID PAVEMENT OVERLAYS, CITY IMPROVEMENT PROJECT NO. 21-05 STREET CONSTRUCTION PLANS FOR BITUMINOUS MILLING AND PAVING.

S.A.P. 199-104-012 & S.A.P. 199-104-013

S.A.P. 199-104-012 LOCATED ON SUNWOOD DRIVE BETWEEN ERKIUM STREET AND ST. FRANCIS BOULEVARD (TH 47)

S.A.P. 199-104-013 LOCATED ON SUNWOOD DRIVE BETWEEN BUNKER LAKE BOULEVARD (CSAH 116) AND SUNFISH LAKE BOULEVARD (CR 57)

FROM NW 1/4 OF THE SE 1/4 OF S27, T32, R25 TO NE 1/4 OF THE NW 1/4 OF S25, T32, R25



CITY OF RAMSEY  
ANOKA COUNTY, MINNESOTA  
DISTRICT: METRO

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

NOTE: EXISTING UTILITY INFORMATION SHOWN ON THIS PLAN HAS BEEN PROVIDED BY THE UTILITY OWNER. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO COMMENCING CONSTRUCTION AS REQUIRED BY STATE LAW. NOTIFY GOPHER STATE ONE CALL 1-800-252-1166 OR 651-454-0002



## GOVERNING SPECIFICATIONS

THE 2018 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

ALL FEDERAL, STATE AND LOCAL LAWS, REGULATIONS AND ORDINANCES SHALL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

### SHEET INDEX

THIS PLAN CONTAINS 17 SHEETS

| SHEET NO. | DESCRIPTION                                                        |
|-----------|--------------------------------------------------------------------|
| 01        | TITLE SHEET                                                        |
| 02        | STATEMENT OF ESTIMATED QUANTITIES                                  |
| 03        | TYPICAL SECTION                                                    |
| 04        | CITY DETAILS                                                       |
| 05 - 10   | MINDOT PED RAMP DETAILS                                            |
| 11 - 13   | BITUMINOUS MILL & OVERLAY - SUNWOOD DRIVE (CSAH 116 TO CR 57)      |
| 14 - 15   | BITUMINOUS MILL & OVERLAY - SUNWOOD DRIVE (ERKIUM STREET TO TH 47) |
| 16        | PAVEMENT MARKING PLAN - SUNWOOD DRIVE (CSAH 116 TO CR 57)          |
| 17        | PAVEMENT MARKING PLAN - SUNWOOD DRIVE (ERKIUM STREET TO TH 47)     |

I hereby certify that this plan, specification, or report 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.

JOE FERIANCEK, P.E. 57095 LIC. NO. DATE 2/25/21

APPROVED: Bruce Wasy CITY ENGINEER, CITY OF RAMSEY DATE 3/11/21

For DATE 3/15/2021

DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

For DATE 3/15/2021

STATE AID ENGINEER: APPROVED FOR STATE AID FUNDING

SHEET 01 OF 17SHEETS

| PROJECT                          | STA. TO STA.    | GROSS LENGTH | BRIDGE LENGTH | NET LENGTH | NET LENGTH (MILES) | ADT (2021) | ADT (2041) | DESIGN ESAL | R VALUE | TON DESIGN | DESIGN SPEED | DESIGN SPEED NOT MET | NUMBER OF LANES | WIDTH OF LANES | NUMBER OF SHOULDERS | WIDTH OF LANES | FUNCTIONAL CLASSIFICATION |
|----------------------------------|-----------------|--------------|---------------|------------|--------------------|------------|------------|-------------|---------|------------|--------------|----------------------|-----------------|----------------|---------------------|----------------|---------------------------|
| S.A.P. 199-104-012 SUNWOOD DRIVE | 93+61 TO 107+47 | 1386 FT      | 0 FT          | 1386 FT    | 0.26 MI            | 710        | 781        | 82000       | 60      | 9          | 30 MPH       | N/A                  | 2               | 12             | 2                   | 8'             | COLLECTOR                 |
| S.A.P. 199-104-013 SUNWOOD DRIVE | 0+61 TO 24+67   | 2406 FT      | 0 FT          | 2406 FT    | 0.46 MI            | 1130       | 1243       | 131000      | 60      | 9          | 30 MPH       | N/A                  | 2               | 12             | 2                   | 8'             | COLLECTOR                 |

CITY OF RAMSEY  
7550 SUNWOOD DRIVE  
RAMSEY, MN 55303  
(763) 427-1410 FAX (763) 433-9898

STOPPING SIGHT DISTANCE BASED ON:  
3.5 FT - HEIGHT OF EYE  
2.0 FT - HEIGHT OF OBJECT

DATUM:  
VERTICAL: NAVD 88  
HORIZONTAL: ANOKA COUNTY COORDINATES (1996 ADJUSTMENT)

SAP 199-104-012  
SAP 199-104-013

| DATE    | REVISION                       |
|---------|--------------------------------|
| 3/11/21 | UPDATE NOTES & TYPICAL SECTION |
|         |                                |
|         |                                |
|         |                                |
|         |                                |

| 21-05 2021 MSA PAVEMENT OVERLAY IMPROVEMENTS |          |                |                                               |      |       |                                     |       |                                     |       |
|----------------------------------------------|----------|----------------|-----------------------------------------------|------|-------|-------------------------------------|-------|-------------------------------------|-------|
| STATEMENT OF ESTIMATED QUANTITIES            |          |                |                                               |      |       |                                     |       |                                     |       |
|                                              |          |                |                                               |      |       | PARTICIPATING<br>S.A.P. 199-104-012 |       | PARTICIPATING<br>S.A.P. 199-104-013 |       |
| NOTES                                        | ITEM NO. | MNDOT SPEC NO. | ITEM DESCRIPTION                              | UNIT | TOTAL | STREET                              | STORM | STREET                              | STORM |
|                                              | 1        | 2021.501       | MOBILIZATION                                  | LS   | 1     | 0.4                                 |       | 0.6                                 |       |
| 1                                            | 2        | 2104.503       | REMOVE CONCRETE CURB AND GUTTER               | LF   | 299   | 149                                 |       | 150                                 |       |
| 1                                            | 3        | 2104.503       | SAWING BITUMINOUS PAVEMENT (FULL DEPTH)       | LF   | 8     |                                     |       | 8                                   |       |
| 1                                            | 4        | 2104.503       | SAWING CONCRETE PAVEMENT (FULL DEPTH)         | LF   | 199   | 147                                 |       | 52                                  |       |
| 1                                            | 5        | 2104.504       | REMOVE CONCRETE VALLEY GUTTER                 | SY   | 39    | 39                                  |       |                                     |       |
| 1                                            | 6        | 2104.504       | REMOVE CONCRETE WALK                          | SY   | 69    | 42                                  |       | 27                                  |       |
| 1                                            | 7        | 2232.504       | MILL BITUMINOUS SURFACE (2.0")                | SY   | 15622 | 5762                                |       | 9860                                |       |
| 2                                            | 8        | 2357.506       | BITUMINOUS MATERIAL FOR TACK COAT             | GAL  | 1094  | 404                                 |       | 690                                 |       |
| 3                                            | 9        | 2360.509       | TYPE SP 9.5 WEARING COURSE MIXTURE (3,C) 2.0" | TON  | 1719  | 634                                 |       | 1085                                |       |
|                                              | 10       | 2503.602       | GROUT CATCH BASIN                             | EA   | 20    |                                     | 11    |                                     | 9     |
|                                              | 11       | 2503.602       | RESET CATCH BASIN                             | EA   | 5     |                                     | 1     |                                     | 4     |
|                                              | 12       | 2504.602       | ADJUST VALVE BOX                              | EA   | 13    | 3                                   |       | 10                                  |       |
|                                              | 13       | 2506.502       | ADJUST FRAME AND RING CASTING                 | EA   | 17    | 6                                   |       | 11                                  |       |
| 5                                            | 14       | 2521.504       | 6" CONCRETE WALK                              | SY   | 69    | 42                                  |       | 27                                  |       |
| 5                                            | 15       | 2531.503       | CONCRETE CURB & GUTTER DESIGN B618            | LF   | 299   | 149                                 |       | 150                                 |       |
| 5                                            | 16       | 2531.504       | 7" CONCRETE VALLEY GUTTER                     | SY   | 39    | 39                                  |       |                                     |       |
|                                              | 17       | 2531.618       | TRUNCATED DOMES                               | SF   | 128   | 72                                  |       | 56                                  |       |
| 4                                            | 18       | 2563.601       | TRAFFIC CONTROL                               | LS   | 1     | 0.4                                 |       | 0.6                                 |       |
| 6                                            | 19       | 2574.507       | TOPSOIL (LV)                                  | CY   | 12    | 7                                   |       | 5                                   |       |
|                                              | 20       | 2575.504       | SODDING TYPE LAWN                             | SY   | 77    | 45                                  |       | 32                                  |       |
|                                              | 21       | 2582.503       | 24" SOLID LINE PAINT (EPOXY)                  | LF   | 31    | 31                                  |       |                                     |       |
|                                              | 22       | 2582.503       | 4" BROKEN LINE PAINT (EPOXY)                  | LF   | 480   |                                     |       | 480                                 |       |
|                                              | 23       | 2582.503       | 4" DOUBLE SOLID LINE PAINT (EPOXY)            | LF   | 1425  | 1425                                |       |                                     |       |
|                                              | 24       | 2582.503       | 4" SOLID LINE PAINT (EPOXY)                   | LF   | 7249  | 2648                                |       | 4601                                |       |
|                                              | 25       | 2582.518       | CROSSWALK PAINT (EPOXY)                       | SF   | 256   | 256                                 |       |                                     |       |
|                                              | 26       | 2582.518       | PAVEMENT MESSAGE PAINT (EPOXY)                | SF   | 15    | 15                                  |       |                                     |       |

| STANDARD PLATES                                                                                            |                                                  |
|------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT |                                                  |
| 4026 A                                                                                                     | CONCRETE ENCASED CONCRETE ADJUSTING RINGS        |
| 4101 D                                                                                                     | RING CASTING FOR MANHOLE OR CATCH BASIN          |
| 4108 F                                                                                                     | ADJUSTING RINGS FOR CATCH BASINS AND MANHOLES    |
| 7038 A                                                                                                     | DETECTABLE WARNING SURFACE TRUNCATED DOMES       |
| 7100 H                                                                                                     | CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V) |
| 8000 J                                                                                                     | CHANNELIZERS (3 SHEETS)                          |

PAY ITEM NOTES:

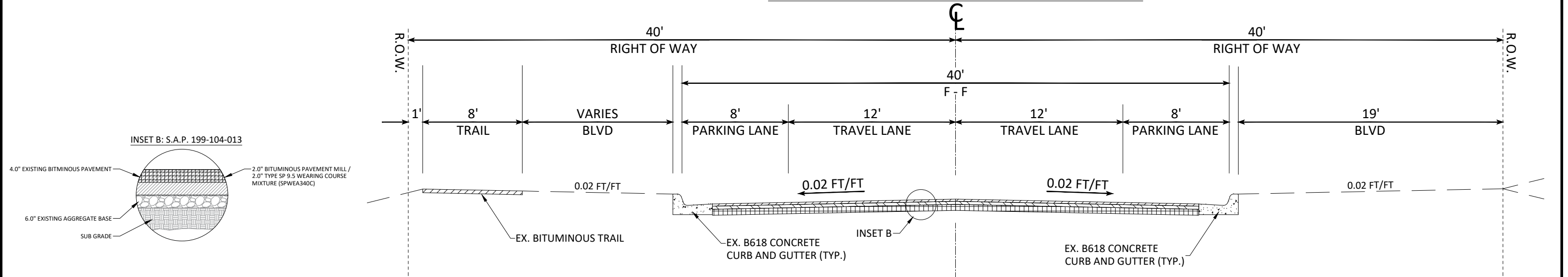
1. REMOVAL LIMITS SHALL BE MARKED IN THE FIELD BY CITY STAFF.
2. ESTIMATED QUANTITY BASED ON APPLICATION RATE OF 0.07 GAL/SY.
3. ESTIMATED QUANTITY BASED ON APPLICATION RATE OF 110 LB/SY-IN.
4. LUMP SUM QUANTITY SHALL INCLUDE ALL COST REQUIRED FOR MAINTAINING ALL FLAGGING OPERATIONS AS NECESSARY, MAINTAINING PEDESTRIAN ACCESS ROUTES, ANY SIGNAGE AND BARRICADES AS NECESSARY.
5. FINISH WITH CLEAR CURING COMPOUND.
6. CV TO LV CONVERSION FACTOR = 1.3.

GENERAL NOTES:

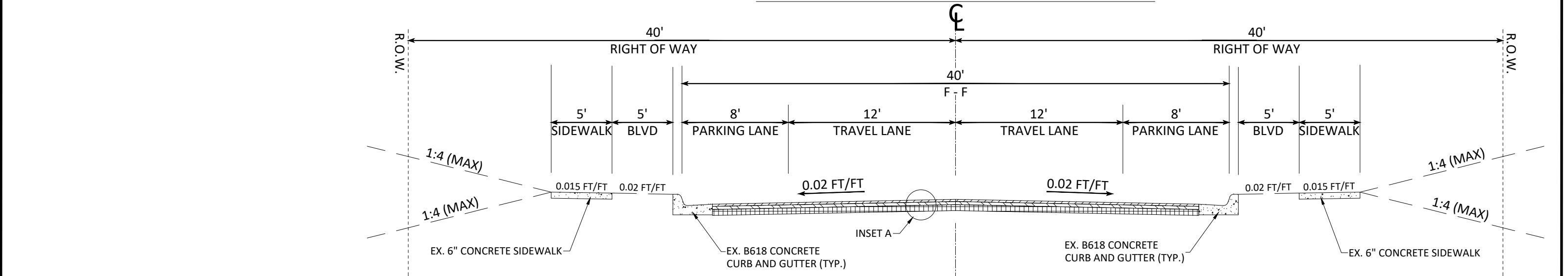
1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. IT IS NOT GUARANTEED ANY OR ALL EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING IRRIGATION SYSTEMS WITHIN THE PROJECT CONSTRUCTION LIMITS BEFORE COMMENCING WORK. THE CONTRACTOR IS RESPONSIBLE FOR AVOIDING DAMAGE TO IRRIGATION SYSTEMS WHERE POSSIBLE.

| STRIPING TABULATIONS      |           |         |        |                             |           |                       |                              |                        |                        |
|---------------------------|-----------|---------|--------|-----------------------------|-----------|-----------------------|------------------------------|------------------------|------------------------|
| S.A.P. 199-104-013        |           |         |        |                             |           |                       |                              |                        |                        |
| DESCRIPTION               | DIRECTION | STATION |        | PAVEMENT MESSAGE (EPOXY)    |           | 4" SOLID LINE (EPOXY) | 4" DOUBLE SOLID LINE (EPOXY) | 4" BROKEN LINE (EPOXY) | 24" SOLID LINE (EPOXY) |
|                           |           | START   | END    | CROSS WALK                  | LEFT TURN | WHITE                 | YELLOW                       | YELLOW                 | YELLOW                 |
|                           |           |         |        | SF                          | EA*       | LF                    | LF                           | LF                     | LF                     |
| 8' SHOULDER               | WB        | 0+65    | 24+29  |                             |           | 2368                  |                              |                        |                        |
| 8' SHOULDER               | EB        | 0+73    | 10+87  |                             |           | 1017                  |                              |                        |                        |
| CENTERLINE                |           | 0+76    | 24+36  |                             |           |                       |                              | 480                    |                        |
| 8' SHOULDER               | EB        | 12+09   | 24+31  |                             |           | 1216                  |                              |                        |                        |
| S.A.P. 199-104-013 TOTALS |           |         |        |                             |           | 4601                  |                              | 480                    |                        |
| S.A.P. 199-104-012        |           |         |        |                             |           |                       |                              |                        |                        |
| DESCRIPTION               | DIRECTION | STATION |        | PAVEMENT MESSAGE (EPOXY)    |           | 4" SOLID LINE (EPOXY) | 4" DOUBLE SOLID LINE (EPOXY) | 4" BROKEN LINE (EPOXY) | 24" SOLID LINE (EPOXY) |
|                           |           | START   | END    | CROSS WALK                  | LEFT TURN | WHITE                 | YELLOW                       | YELLOW                 | YELLOW                 |
|                           |           |         |        | SF                          | EA*       | LF                    | LF                           | LF                     | LF                     |
| 2'X8'                     |           | 94+17   | 94+17  | 112                         |           |                       |                              |                        |                        |
| 8' SHOULDER               | EB        | 94+31   | 96+89  |                             |           | 262                   |                              |                        |                        |
| CENTERLINE                |           | 94+32   | 96+89  |                             |           |                       | 257                          |                        |                        |
| 8' SHOULDER               | WB        | 94+32   | 107+36 |                             |           | 1349                  |                              |                        |                        |
| 8' SHOULDER               | EB        | 97+51   | 105+16 |                             |           | 769                   |                              |                        |                        |
| CENTERLINE                |           | 97+51   | 104+24 |                             |           |                       | 672                          |                        |                        |
| CENTERLINE                |           | 104+24  | 105+98 |                             |           |                       | 175                          |                        |                        |
| CENTERLINE                |           | 104+24  | 105+98 |                             |           |                       | 177                          |                        |                        |
| CENTER MEDIAN HATCHING    |           | 104+53  | 105+59 |                             |           |                       |                              |                        | 31                     |
| CENTERLINE                |           | 105+98  | 107+36 |                             |           |                       | 144                          |                        |                        |
| FOG LINE                  | EB        | 105+98  | 107+36 |                             |           | 130                   |                              |                        |                        |
| 14' LEFT TURN LANE        | EB        | 105+98  | 107+36 |                             |           | 138                   |                              |                        |                        |
| TURN LANE SYMBOL          | EB        | 106+21  | 106+21 |                             | 1         |                       |                              |                        |                        |
| 2'X8'                     |           | 107+43  | 107+43 | 144                         |           |                       |                              |                        |                        |
| S.A.P. 199-104-012 TOTAL  |           |         |        | 256                         | 1         | 2648                  | 1425                         |                        | 31                     |
|                           |           |         |        |                             |           |                       |                              |                        |                        |
| PROJECT TOTALS            |           |         |        | 256                         | 1         | 7249                  | 1425                         | 480                    | 31                     |
|                           |           |         |        | * TURN LANE SYMBOL 15.00 SF |           |                       |                              |                        |                        |

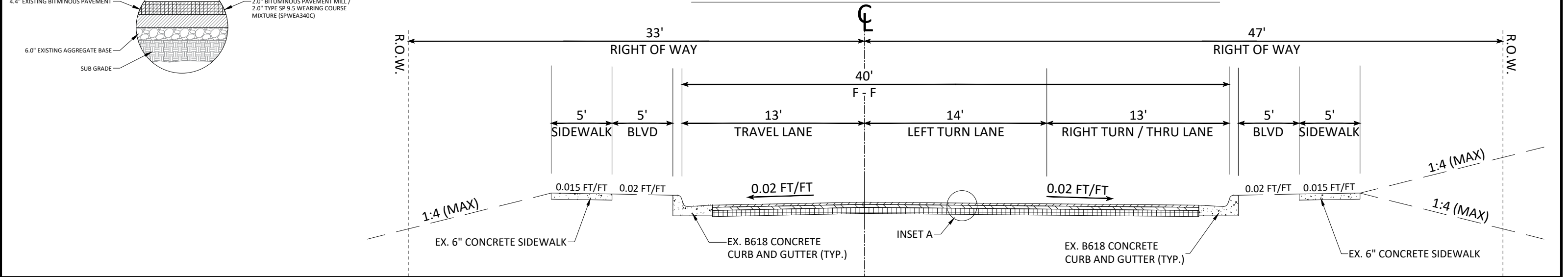
SUNWOOD DRIVE STA. 0+61 TO 24+67



SUNWOOD DRIVE STA. 93+61 TO 105+98

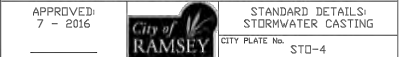


SUNWOOD DRIVE TURN LANE STA. 105+95 TO 107+47

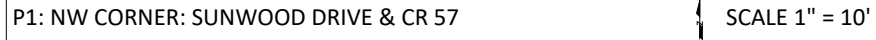




|                       |                                                                                   |                                           |
|-----------------------|-----------------------------------------------------------------------------------|-------------------------------------------|
| APPROVED:<br>7 - 2019 |  | STANDARD DETAILS:<br>TOPSOIL REQUIREMENTS |
|                       |                                                                                   | CITY PLATE No. ERO-6                      |



|                       |                                                                                       |                                                         |
|-----------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------|
| APPROVED:<br>2 - 2003 |  | STANDARD DETAILS:<br>MODIFIED CLASS 5<br>SPECIFICATIONS |
|                       |                                                                                       | CITY PLATE No. STR-26                                   |



← DRAINAGE FLOW ARROW

Mar 11, 2021 - 3:03pm  
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Date 2/25/21 Lic. No. 57095

|             |     |       |
|-------------|-----|-------|
| CHECKED BY: | LLL | 21-05 |
|-------------|-----|-------|



(763) 427-1410 FAX (763) 433-9898

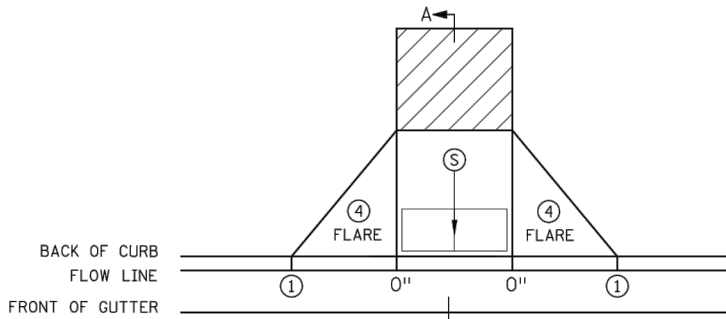
CITY OF RAMSEY, MINNESOTA

17  
SHEETS

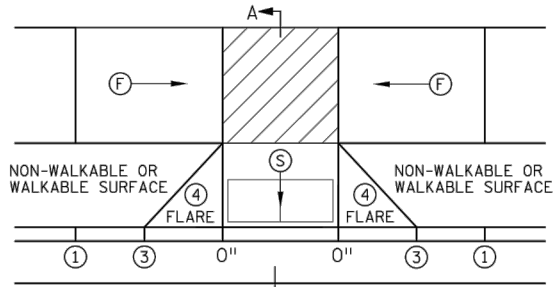


PLOTTED/REVISED: 4-APR-2018

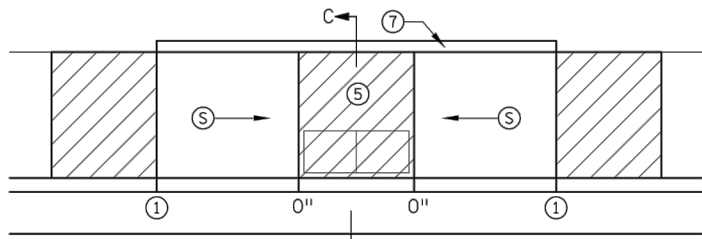
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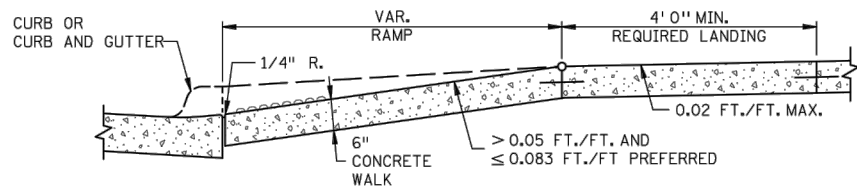
PERPENDICULAR



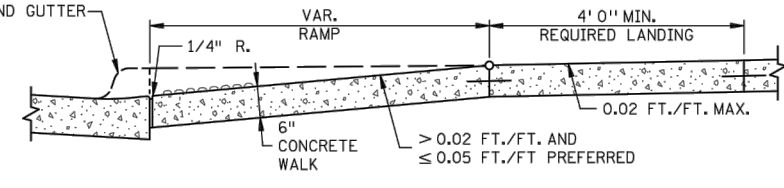
TIERED PERPENDICULAR



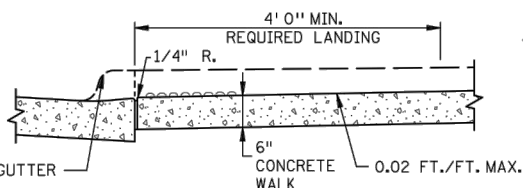
PARALLEL



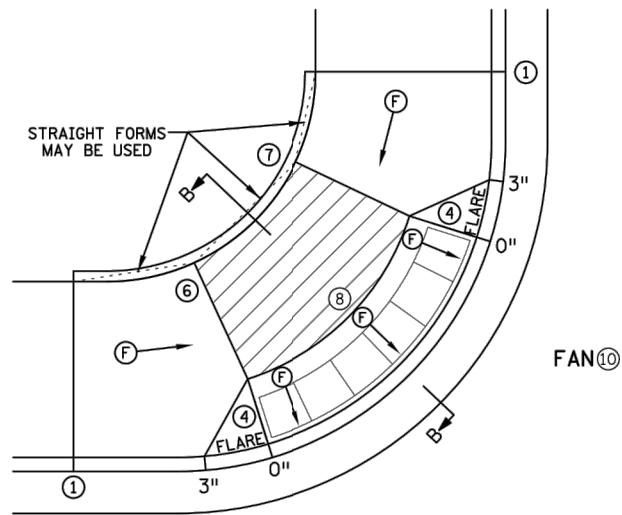
SECTION A-A  
PERPENDICULAR/TIERED/DIAGONAL



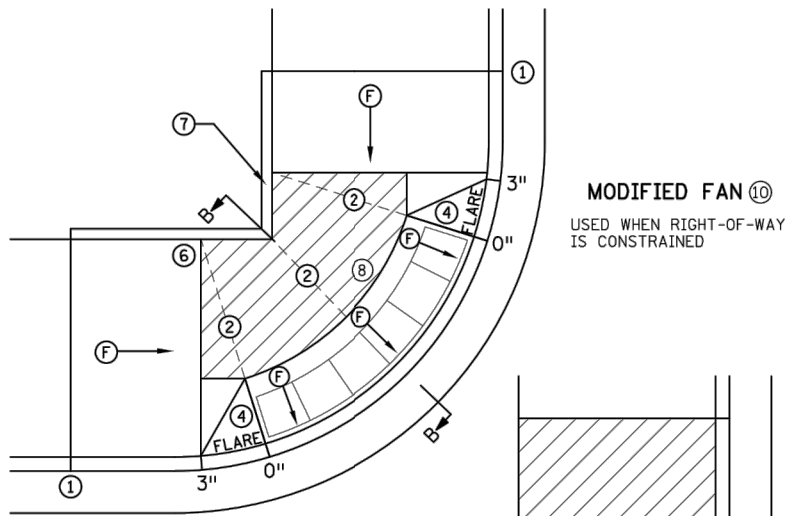
SECTION B-B  
FAN



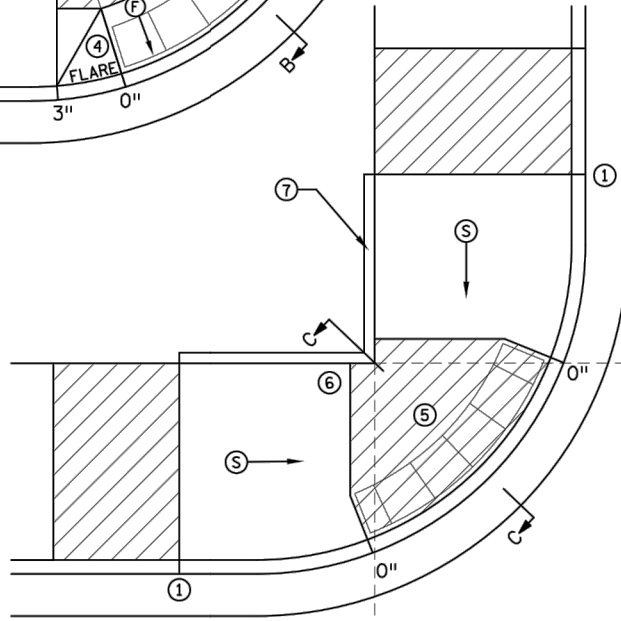
SECTION C-C  
PARALLEL/DEPRESSED CORNER



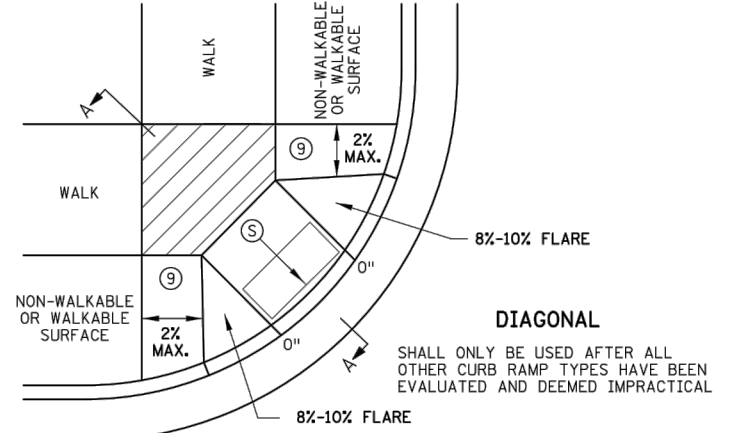
FAN 10



MODIFIED FAN 10  
USED WHEN RIGHT-OF-WAY  
IS CONSTRAINED



DEPRESSED CORNER



DIAGONAL

NOTES:

- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMP THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.
- INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.
- SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL RUNNING SLOPE IS GREATER THAN 5.0%.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.
- ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL, THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH, EXCEPT AS STATED IN 6 BELOW.
- TO ENSURE INITIAL RAMP AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS SHALL BE CAST SEPARATELY, FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND THE ADA SPECIAL PROVISIONS - PROSECUTION OF WORK (ADA).
- TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.
- WHEN THE BOULEVARD IS 4' WIDE OR LESS, THE TOP OF CURB TAPER SHALL MATCH THE RAMP SLOPES TO REDUCE NEGATIVE BOULEVARD SLOPES FROM THE TOP BACK OF CURB TO THE PAR.
- ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.
- 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMP. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER ENTIRE WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK. DETECTABLE WARNING SHOULD BE 6" LESS THAN THE PAR/TRAIL WIDTH. ARC LENGTH OF RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.
- RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.
- 1 MATCH FULL HEIGHT CURB.
- 2 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.
- 3 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.
- 4 SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS, WHEN INITIAL LANDING IS AT FULL CURB HEIGHT.
- 5 DETECTABLE WARNINGS MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
- 6 THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK. THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)
- 7 WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
- 8 A 7' MIN TOP RADIUS GRADE BREAK REQUIRED TO BE CONSTRUCTIBLE.
- 9 PAVE FULL WALK WIDTH.
- 10 "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.

LEGEND

- THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.
- S INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
- F 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%.
- LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PAR.
- X" CURB HEIGHT

|                            |
|----------------------------|
| REVISION:                  |
| APPROVED: JANUARY 23, 2017 |
| OPERATIONS ENGINEER        |



STANDARD PLAN 5-297.250 1 OF 6

APPROVED: 1-23-2017  
REVISED:

STATE PROJ. NO.

PEDESTRIAN CURB RAMP DETAILS

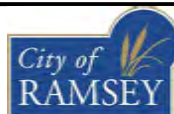
(T.H. ) SHEET NO. OF SHEETS

| DATE | REVISION |
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|      |          |

I hereby certify that this plan, specification, or report 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 \_\_\_\_\_ Lic. No. \_\_\_\_\_

|              |         |
|--------------|---------|
| DESIGNED BY: | JJF     |
| DRAWN BY:    | JJF     |
| CHECKED BY:  | LLL     |
| DATE:        | 2/24/21 |
| FILE:        | 21-05   |



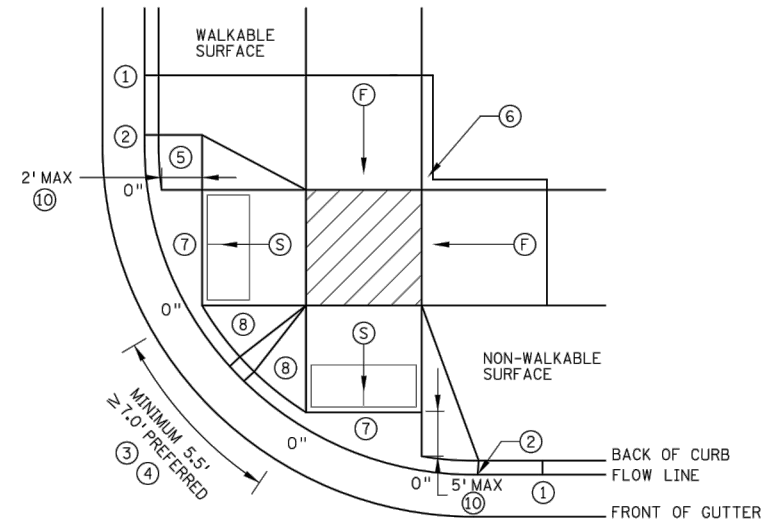
CITY OF RAMSEY  
7550 SUNWOOD DRIVE  
RAMSEY, MN 55303  
(763) 427-1410 FAX (763) 433-9898

S.A.P. 199-104-012 & S.A.P. 199-104-013  
MNDOT PED RAMP DETAILS

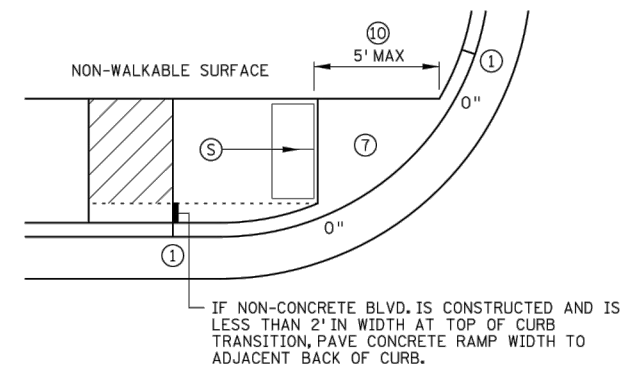
2021 MUNICIPAL STATE AID PAVEMENT OVERLAYS  
CITY PROJECT NO. 21-05  
CITY OF RAMSEY, MINNESOTA

PLOTTED/REVISED: 4-APR-2018

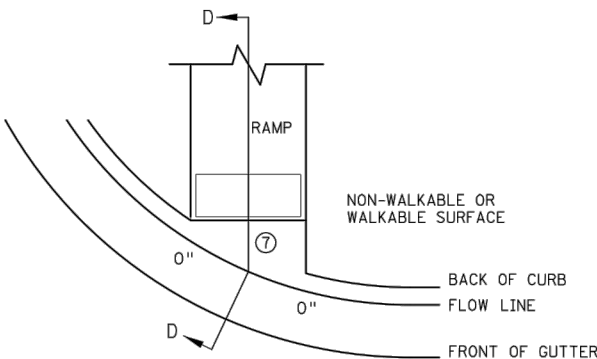
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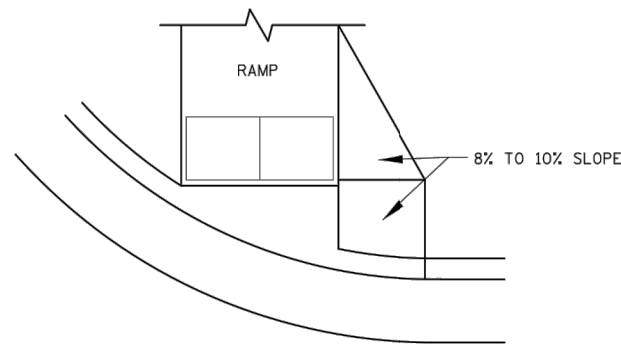
COMBINED DIRECTIONAL ⑨



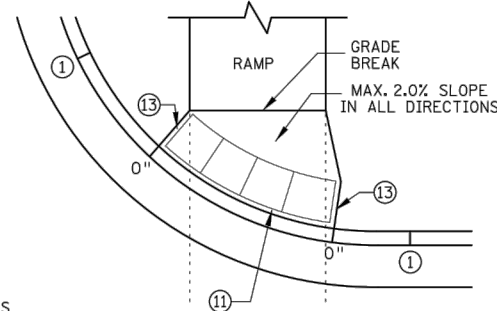
STANDARD ONE-WAY DIRECTIONAL ⑨



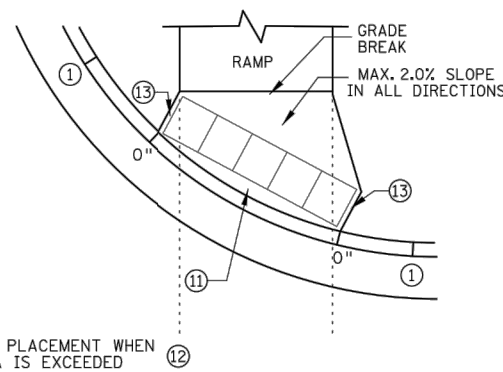
CURB FOR DIRECTIONAL RAMPS ⑭



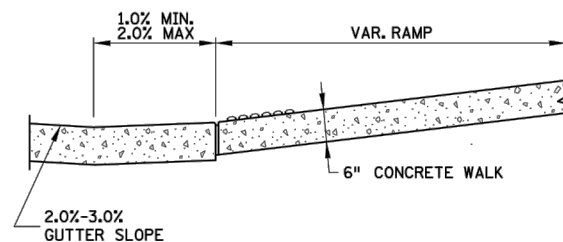
DIRECTIONAL RAMP WALKABLE FLARE



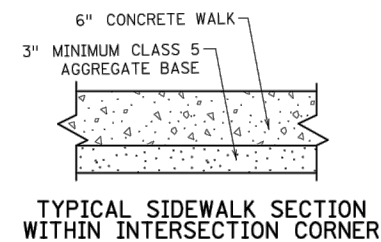
DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑪



ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB



SECTION D-D



TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30' OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOP GRADE BREAK OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL. THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH.

TO ENSURE INITIAL RAMPS AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS SHALL BE CAST SEPARATELY, FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND THE ADA SPECIAL PROVISION (PROSECUTION OF WORK).

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

WHEN THE BOULEVARD IS 4' WIDE OR LESS, THE TOP OF CURB TAPER SHALL MATCH THE RAMP SLOPES TO REDUCE NEGATIVE BOULEVARD SLOPES FROM THE TOP BACK OF CURB TO THE PAR.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4" MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER ENTIRE WIDTH OF SHARED-USE PATH AND THE ENTIRE PAR WIDTH OF THE WALK. DETECTABLE WARNING SHOULD BE 6" LESS THAN THE PAR/PATH WIDTH. ARC LENGTH OF RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB. SEE NOTES ⑩ & ⑪ FOR INFORMATION REGARDING RECTANGULAR DETECTABLE WARNING PLACEMENT.

- ① MATCH FULL CURB HEIGHT.
- ② 3" HIGH CURB WHEN USING A 3' LONG RAMP  
4" HIGH CURB WHEN USING A 4' LONG RAMP.
- ③ 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES)  
4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).
- ④ THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.
- ⑤ WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHOULD BE USED. SEE THE DETAIL ON THIS SHEET.
- ⑥ GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
- ⑦ MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.
- ⑧ 8% TO 10% WALKABLE FLARE.
- ⑨ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.
- ⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.
- ⑪ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.
- ⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.
- ⑬ THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
- ⑭ TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

⑤ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

⑥ 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%.

⑦ LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PAR.

X" CURB HEIGHT

REVISION:

APPROVED: JANUARY 23, 2017

OPERATIONS ENGINEER

CURB FOR DIRECTIONAL RAMPS ⑭



STANDARD PLAN 5-297.250

2 OF 6

STATE DESIGN ENGINEER

APPROVED: 1-23-2017  
REVISED:

STATE PROJ. NO.

PEDESTRIAN CURB RAMP DETAILS

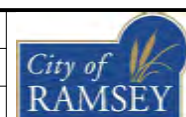
(T.H. ) SHEET NO. OF SHEETS

| DATE | REVISION |
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|      |          |
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I hereby certify that this plan, specification, or report 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 \_\_\_\_\_ Lic. No. \_\_\_\_\_

|              |         |
|--------------|---------|
| DESIGNED BY: | JJF     |
| DRAWN BY:    | JJF     |
| CHECKED BY:  | LLL     |
| DATE:        | 2/24/21 |
| FILE:        | 21-05   |



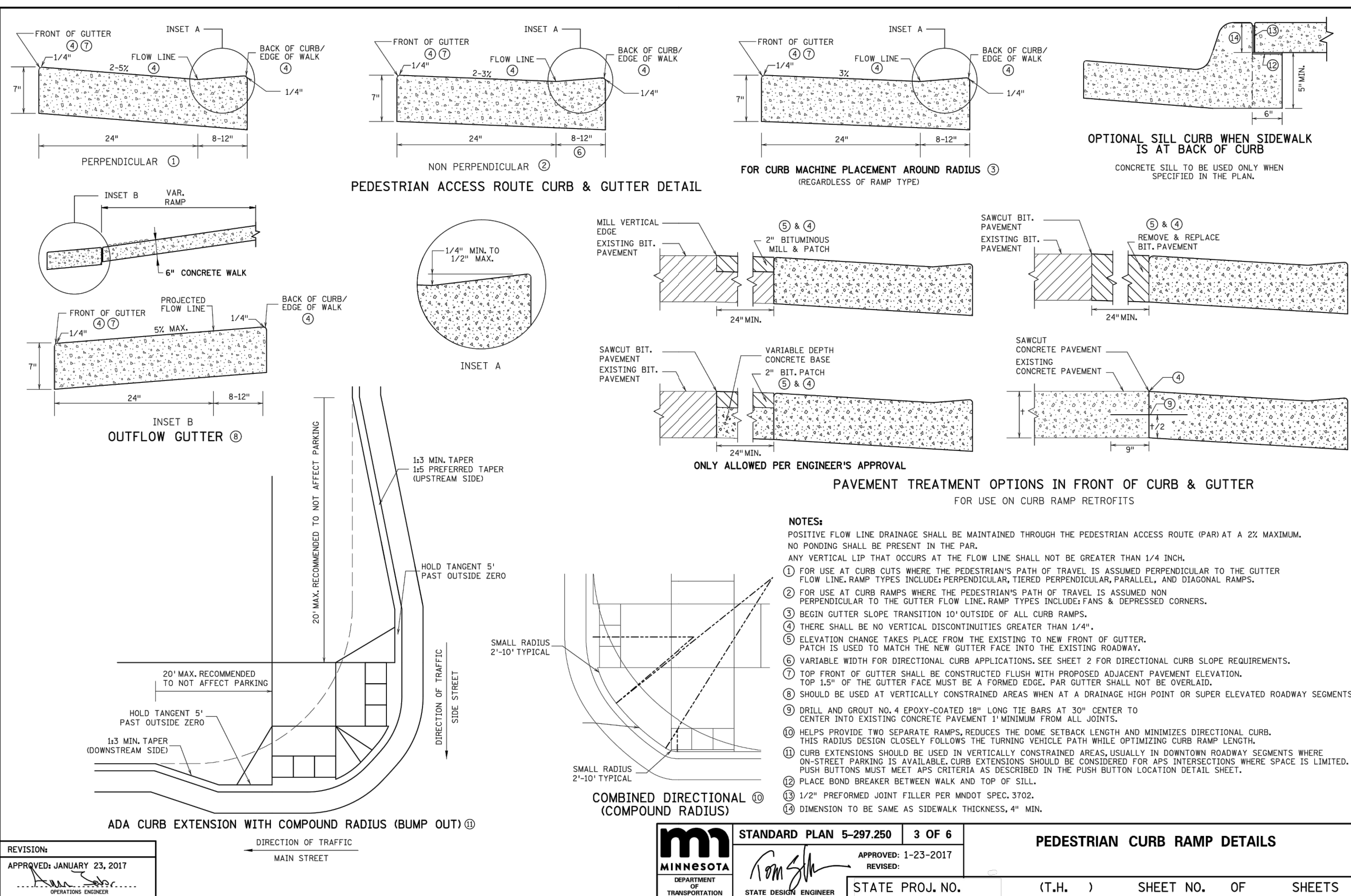
CITY OF RAMSEY  
7550 SUNWOOD DRIVE  
RAMSEY, MN 55303  
(763) 427-1410 FAX (763) 433-9898

S.A.P. 199-104-012 & S.A.P. 199-104-013  
MNDOT PED RAMP DETAILS

2021 MUNICIPAL STATE AID PAVEMENT OVERLAYS  
CITY PROJECT NO. 21-05  
CITY OF RAMSEY, MINNESOTA



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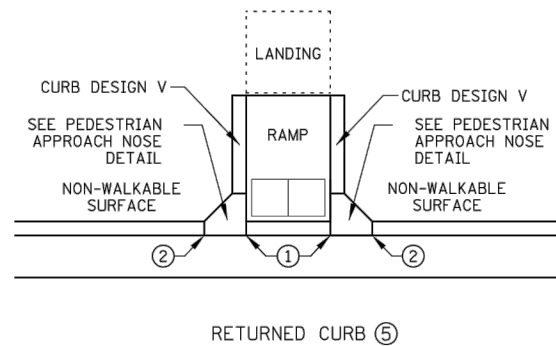
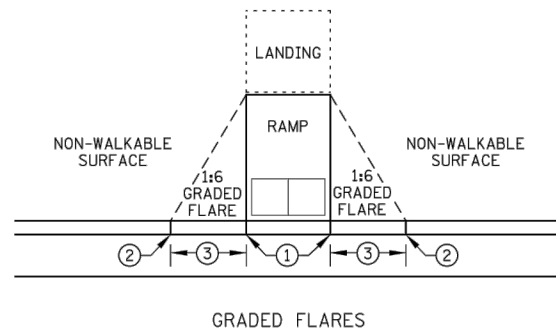
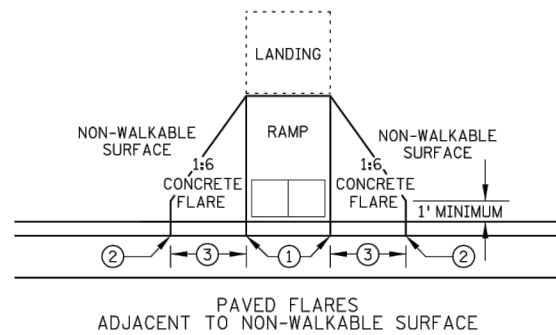
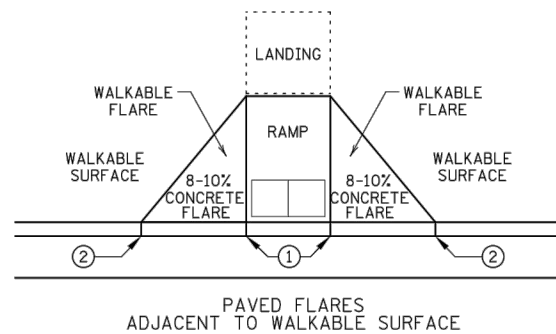


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| REVISION:                  |
| APPROVED: JANUARY 23, 2017 |
| OPERATIONS ENGINEER        |

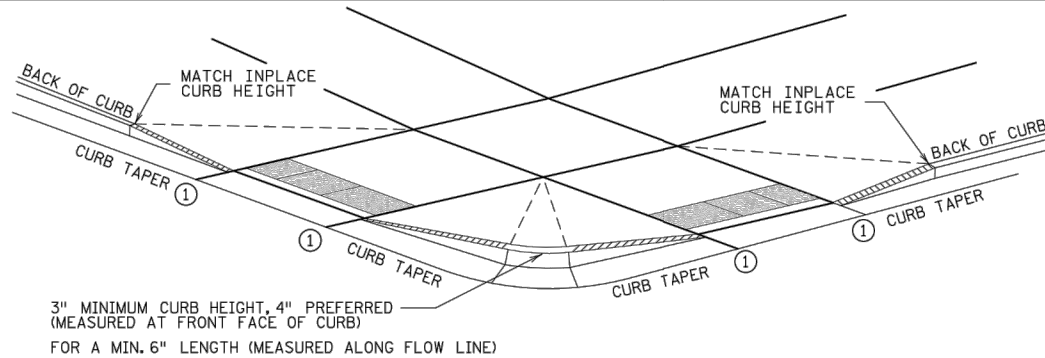
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|  | APPROVED: 1-23-2017<br>REVISED: | STATE PROJ. NO. | (T.H. )                      | SHEET NO. | OF SHEETS |



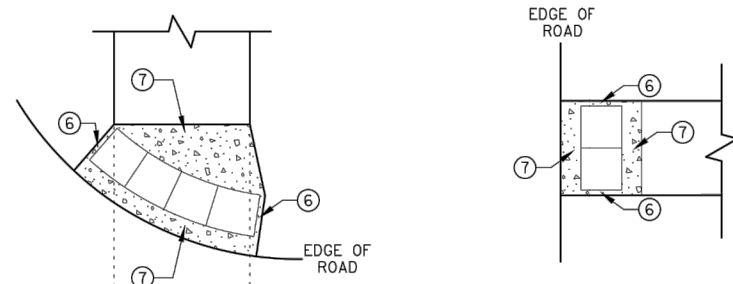
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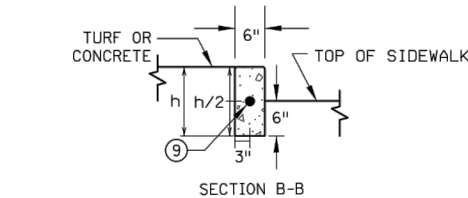
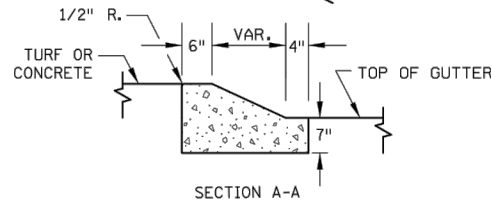
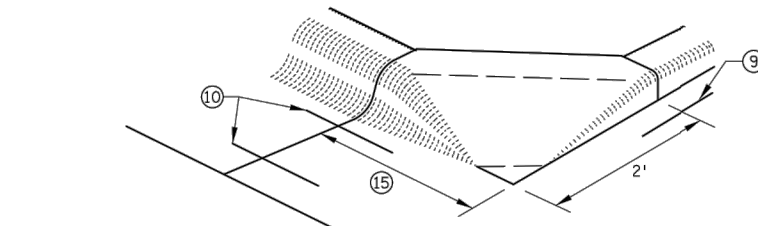
TYPICAL SIDE TREATMENT OPTIONS ④ ⑪



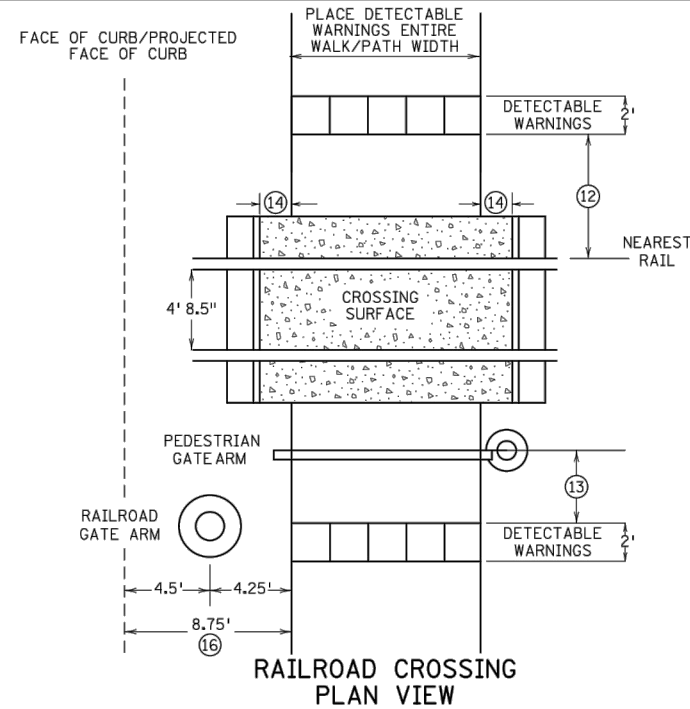
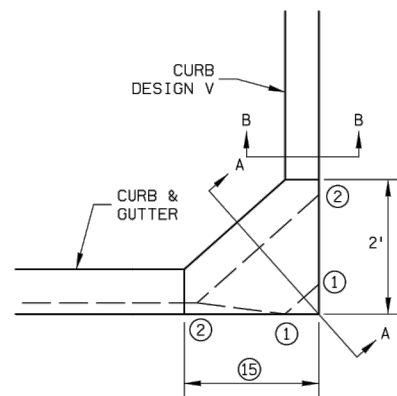
DETECTABLE EDGE WITH ⑧ CURB AND GUTTER



DETECTABLE EDGE WITHOUT CURB AND GUTTER



PEDESTRIAN APPROACH NOSE DETAIL (FOR RETURNED CURB SIDE TREATMENT)



NOTES:

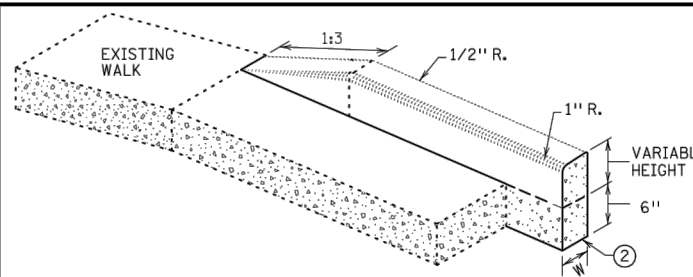
- SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED. CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMP FROM THE BACK OF CURB.
- ① 0" CURB HEIGHT.
  - ② FULL CURB HEIGHT.
  - ③ 2' FOR 4" HIGH CURB AND 3' FOR 6" HIGH CURB.
  - ④ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.
  - ⑤ TYPICALLY USED FOR MEDIANS AND ISLANDS.
  - ⑥ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" MAX. BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
  - ⑦ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF BITUMINOUS ROADWAY AND/OR BITUMINOUS SHARED-USE PATH TO PROVIDE VISUAL CONTRAST.
  - ⑧ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.
  - ⑨ DRILL AND GROUT 1 - NO. 4 12" LONG REINFORCEMENT BAR (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE V CURB.
  - ⑩ DRILL AND GROUT 2 - NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE CURB AND GUTTER.
  - ⑪ SIDE TREATMENT EXAMPLES SHOWN ARE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E. 6" LONG RAMP FOR 6" HIGH CURB). WHEN THE INITIAL LANDING IS MORE THAN 1" BELOW FULL HEIGHT CURB REFER TO SHEETS 1 & 2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE.
  - ⑫ NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL. FOR SKEWED RAILWAYS IN NO INSTANCE SHALL THE DETECTABLE WARNING BE CLOSER THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.
  - ⑬ WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM. THIS CRITERIA GOVERNS OVER NOTE ⑫.
  - ⑭ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.
  - ⑮ 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.
  - ⑯ SIDEWALK TO BE PLACED 8.75' MIN. FROM THE FACE OF CURB/PROJECTED FACE OF CURB. THIS ENSURES MIN. CLEARANCE BETWEEN THE SIDEWALK AND GATE ARM COUNTERWEIGHT SUPPORTS.

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| REVISION:                  |
| APPROVED: JANUARY 23, 2017 |
| OPERATIONS ENGINEER        |

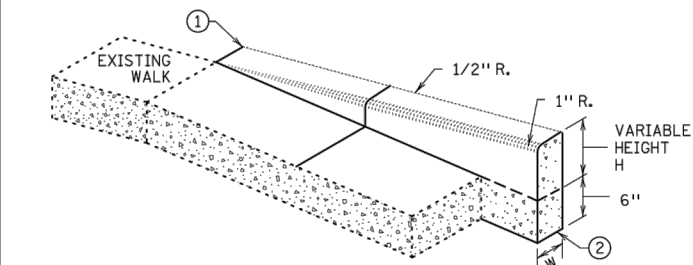
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|                                                                                       | APPROVED: 1-23-2017<br>REVISOR: | STATE PROJ. NO. | (T.H. )                      | SHEET NO. OF | SHEETS |

PLOTTED/REVISED: 4-APR-2018

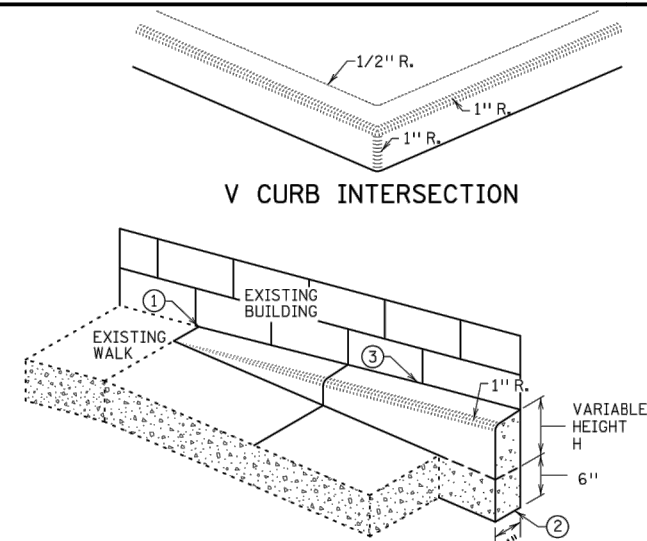
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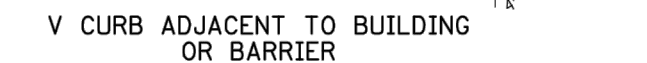
V CURB ADJACENT TO LANDSCAPE  
CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO LANDSCAPE  
CURB OUTSIDE SIDEWALK LIMITS

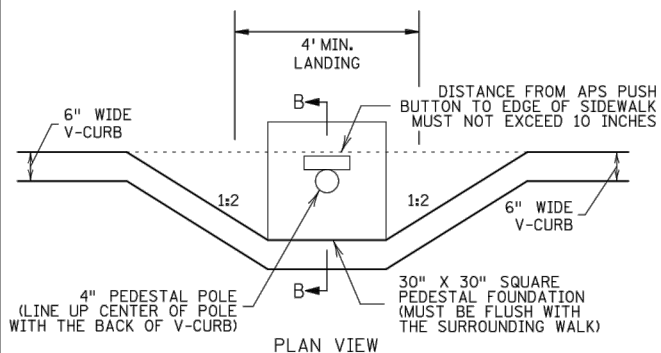


V CURB INTERSECTION

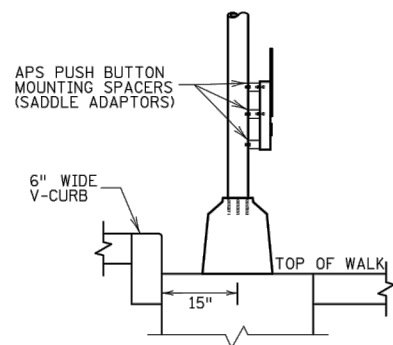


V CURB ADJACENT TO BUILDING  
OR BARRIER

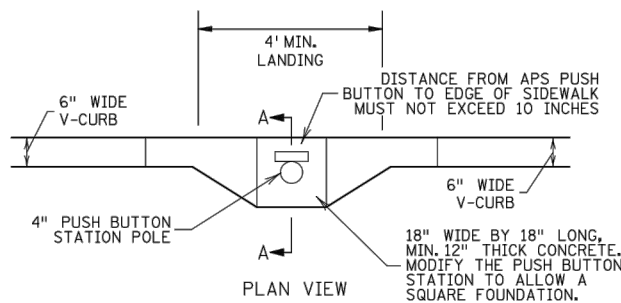
| CONCRETE CURB DESIGN V |                 |
|------------------------|-----------------|
| CURB HEIGHT<br>H       | CURB WIDTH<br>W |
| < 6"                   | 4"              |
| ≥ 6"                   | 6"              |



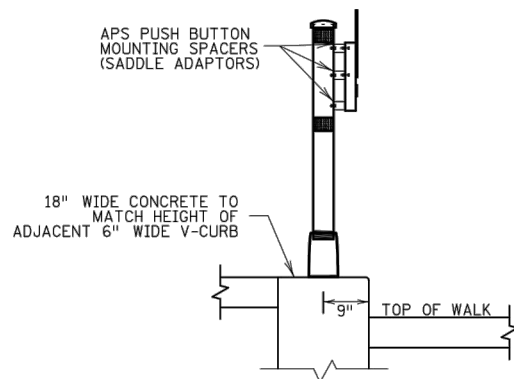
PLAN VIEW



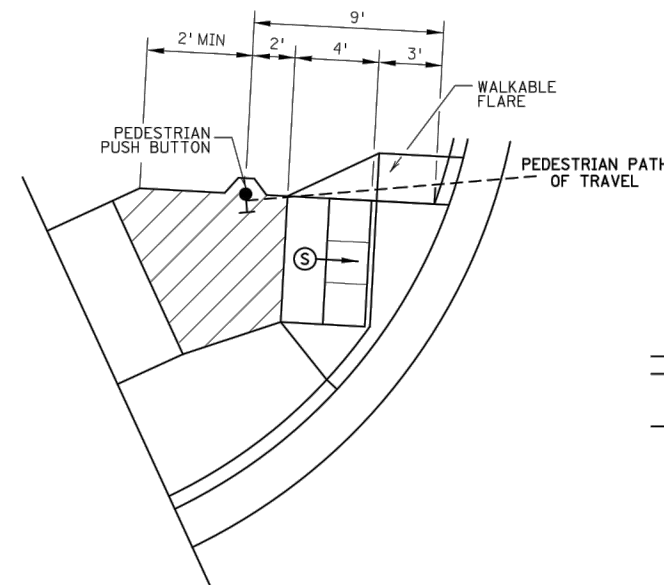
SECTION B-B  
SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



PLAN VIEW



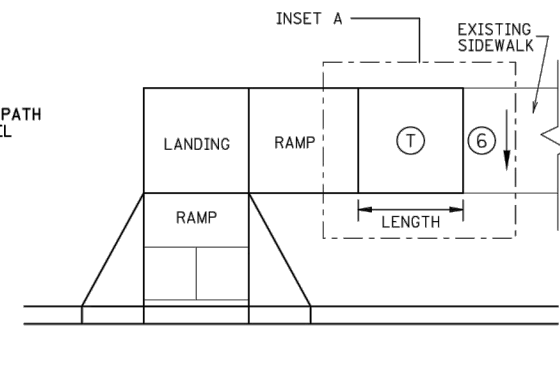
SECTION A-A  
PUSH BUTTON STATION (V-CURB)



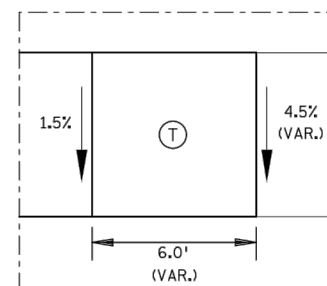
SEMI-DIRECTIONAL RAMP (3,4,9)

3' DOME SETBACK, 4' LONG RAMP AND  
PUSH BUTTON 9' FROM THE BACK OF CURB

PRIMARILY USED FOR APS APPLICATIONS  
WHERE THE PAR DOES NOT CONTINUE PAST  
THE PUSH BUTTON (DEAD-END SIDEWALK)



TRANSITION PANEL (4,5)



INSET A

#### NOTES:

A WALKABLE FLARE IS AN 8-10% CONCRETE FLARE THAT IS REQUIRED WHEN THE FLARE IS ADJACENT TO A WALKABLE SURFACE, OR WHEN THE PEDESTRIAN PATH OF TRAVEL OF A PUSH BUTTON TRAVERSES THE FLARE.

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.

V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.

- END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.
- ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.
- EDGE BETWEEN NEW V CURB AND INPLACE STRUCTURE SHALL BE SEALED AND BOND BREAKER SHALL BE USED BETWEEN EXISTING STRUCTURE AND PLACED V-CURB.
- THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.
- TRANSITION PANEL(S) ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).
- EXISTING CROSS SLOPE GREATER THAN 2.0%.

#### LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT, IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

- INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
- LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX. 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PAR.
- TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.



STANDARD PLAN 5-297.250

5 OF 6

APPROVED: 1-23-2017  
REVISED:

STATE PROJ. NO.

#### PEDESTRIAN CURB RAMP DETAILS

(T.H. ) SHEET NO. OF SHEETS

| DATE | REVISION |
|------|----------|
|      |          |
|      |          |
|      |          |
|      |          |

I hereby certify that this plan, specification, or report 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 \_\_\_\_\_ Lic. No. \_\_\_\_\_

|              |     |
|--------------|-----|
| DESIGNED BY: | JJF |
| DRAWN BY:    | JJF |
| CHECKED BY:  | LLL |

DATE: 2/24/21

FILE: 21-05



CITY OF RAMSEY  
7550 SUNWOOD DRIVE  
RAMSEY, MN 55303  
(763) 427-1410 FAX (763) 433-9898

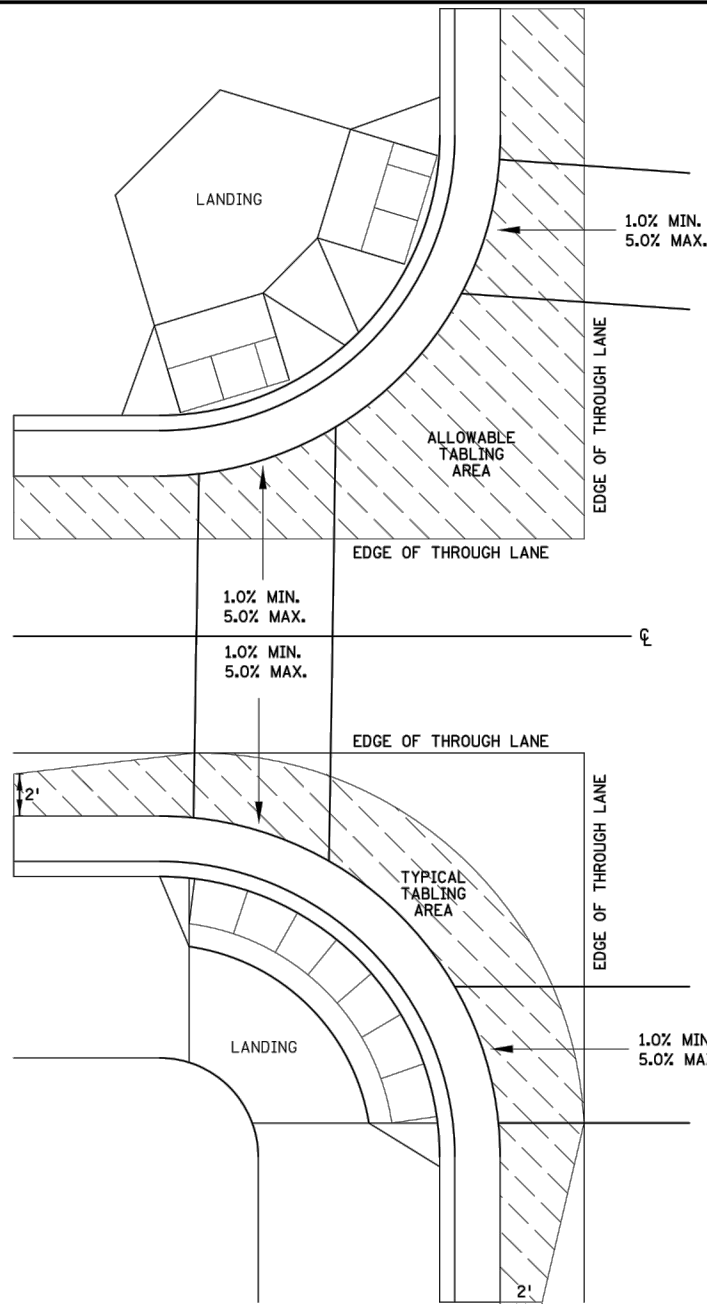
S.A.P. 199-104-012 & S.A.P. 199-104-013  
MNDOT PED RAMP DETAILS

2021 MUNICIPAL STATE AID PAVEMENT OVERLAYS  
CITY PROJECT NO. 21-05  
CITY OF RAMSEY, MINNESOTA

SHEET  
09  
OF  
17  
SHEETS



PLOTTED/REVISED: 4-APR-2018  
IPLT NAME: s250\_6.spp  
PATH & FILENAME: OTS\DesignStandards\Development\New Border\200\_Series\s250\_6.spp.dgn



CURB LINE AND ROAD CROSSING ADJUSTMENTS

"TABLING" OF CROSSWALKS MEANS MAINTAINING LESS THAN 2% CROSS SLOPE WITHIN A CROSSWALK, IS REQUIRED WHEN A ROADWAY IS IN A STOP OR YIELD CONDITION AND THE PROJECT SCOPE ALLOWS.

RECONSTRUCTION PROJECTS: ON FULL PAVEMENT REPLACEMENT PROJECTS "TABLING" OF ENTIRE CROSSWALK SHALL OCCUR WHEN FEASIBLE.

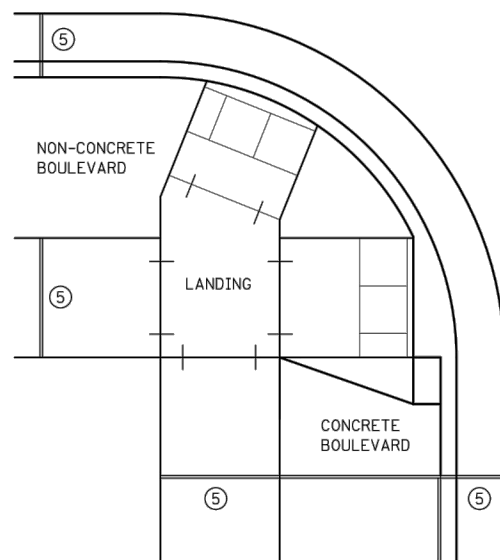
MILL & OVERLAY PROJECTS: "TABLING" OF FLOW LINES, IN FRONT OF THE PEDESTRIAN RAMP, IS REQUIRED WHEN THE EXISTING FLOW LINE IS GREATER THAN 2% WARPING OF THE BITUMINOUS PAVEMENT CAN NOT EXTEND INTO THE THROUGH LANE. TABLE THE FLOW LINE TO 2% OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

- 1) 1.0% MIN. CROSS-SLOPE OF THE ROAD
- 2) 5.0% MAX. CROSS-SLOPE OF THE ROAD
- 3) "TABLE" FLOW LINE UP TO 4% CHANGE FROM EXISTING SLOPE IN FRONT OF PEDESTRIAN RAMP
- 4) UP TO 2% CHANGE IN FLOW LINE FROM EXISTING SLOPE BEYOND THE PEDESTRIAN CURB RAMP

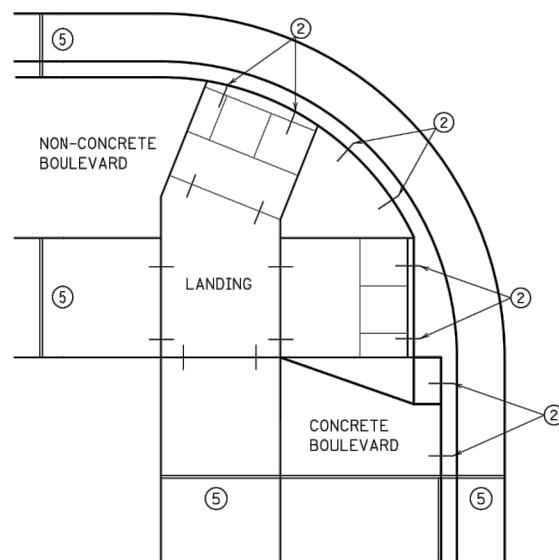
STAND-ALONE ADA RETROFITS: FOLLOW MILL & OVERLAY CRITERIA ABOVE HOWEVER ALL PAVEMENT WARPING IS DONE WITH BITUMINOUS PATCHING ON BITUMINOUS ROADWAYS AND FULL-DEPTH APRON REPLACEMENT ON CONCRETE ROADWAYS.

RAISING OF CURB LINES SHOULD OCCUR IN VERTICALLY CONSTRAINED AREAS. RAISE THE CURB LINES ENOUGH TO ALLOW COMPLIANT RAMPS OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

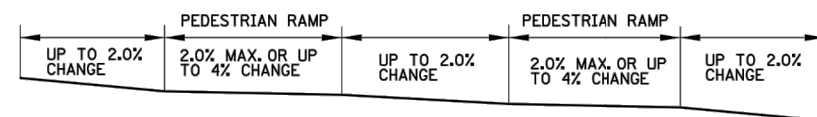
- 1) 1.0% MIN. AND 5.0% MAXIMUM CROSS-SLOPE OF THE ROAD
- 2) 1.0% MIN. FLOW LINE (ON EITHER SIDE OF PEDESTRIAN RAMP) TO MAINTAIN POSITIVE DRAINAGE
- 3) 5.0% RECOMMENDED MAX. FLOW LINE
- 4) LONGITUDINAL THROUGH LANE ROADWAY TAPERS SHOULD BE 1" VERTICAL PER 15' HORIZONTAL



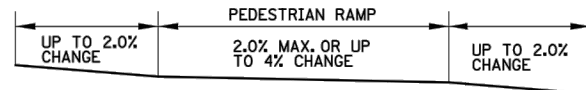
EXPANSION MATERIAL PLACEMENT FOR CONCRETE AND BITUMINOUS ROADWAYS



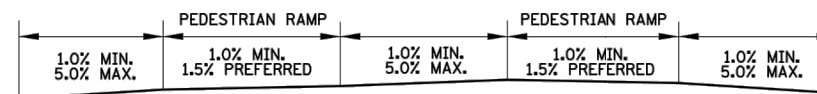
OPTIONAL CURB LINE REINFORCEMENT PLACEMENT ON BITUMINOUS ROADWAYS



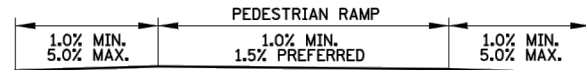
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



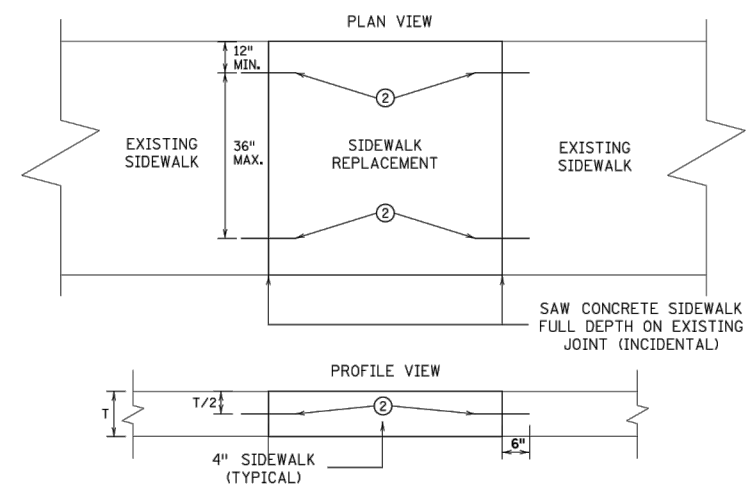
FLOW LINE PROFILE "TABLE" - FAN



FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

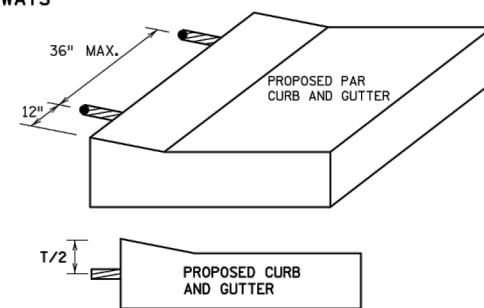


FLOW LINE PROFILE RAISE - FAN

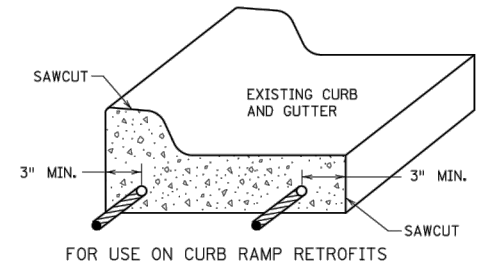


OPTIONAL SIDEWALK REINFORCEMENT

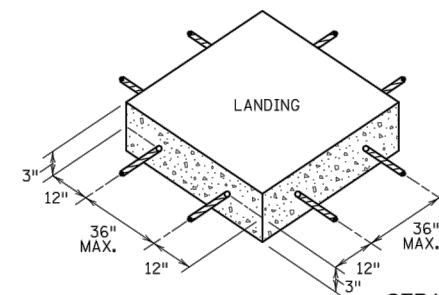
SIDEWALK REINFORCEMENT TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.



OPTIONAL CURB LINE REINFORCEMENT DETAILS



CURB AND GUTTER REINFORCEMENT



SEPARATE LANDING POUR REINFORCEMENT

NOTES:

- 1) TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET FOR ALL SEPARATELY POURED INITIAL LANDINGS.
- 2) DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS AT 36" MAXIMUM CENTER TO CENTER (EPOXY COATED). BARS TO BE ADJUSTED TO MATCH RAMP GRADE.
- 3) DRILL AND GROUT 2 - NO. 4 X 12" LONG REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS WITHIN RADIUS.
- 4) THIS OPTIONAL CURB LINE REINFORCEMENT DETAIL SHOULD ONLY BE USED ON BITUMINOUS ROADWAYS WHEN SPECIFIED IN THE PLAN.
- 5) 1/2 IN. PREFORMED JOINT FILLER MATERIAL PER MNDOT SPEC. 3702.

| REVISION:                  |
|----------------------------|
| APPROVED: JANUARY 23, 2017 |
| OPERATIONS ENGINEER        |

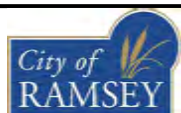
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|--|---------------------------------|-----------------|------------------------------|--------------|--------|
|  | STANDARD PLAN 5-297.250         | 6 OF 6          | PEDESTRIAN CURB RAMP DETAILS |              |        |
|  | APPROVED: 1-23-2017<br>REVISED: | STATE PROJ. NO. | (T.H. )                      | SHEET NO. OF | SHEETS |

| DATE | REVISION |
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Date \_\_\_\_\_ Lic. No. \_\_\_\_\_

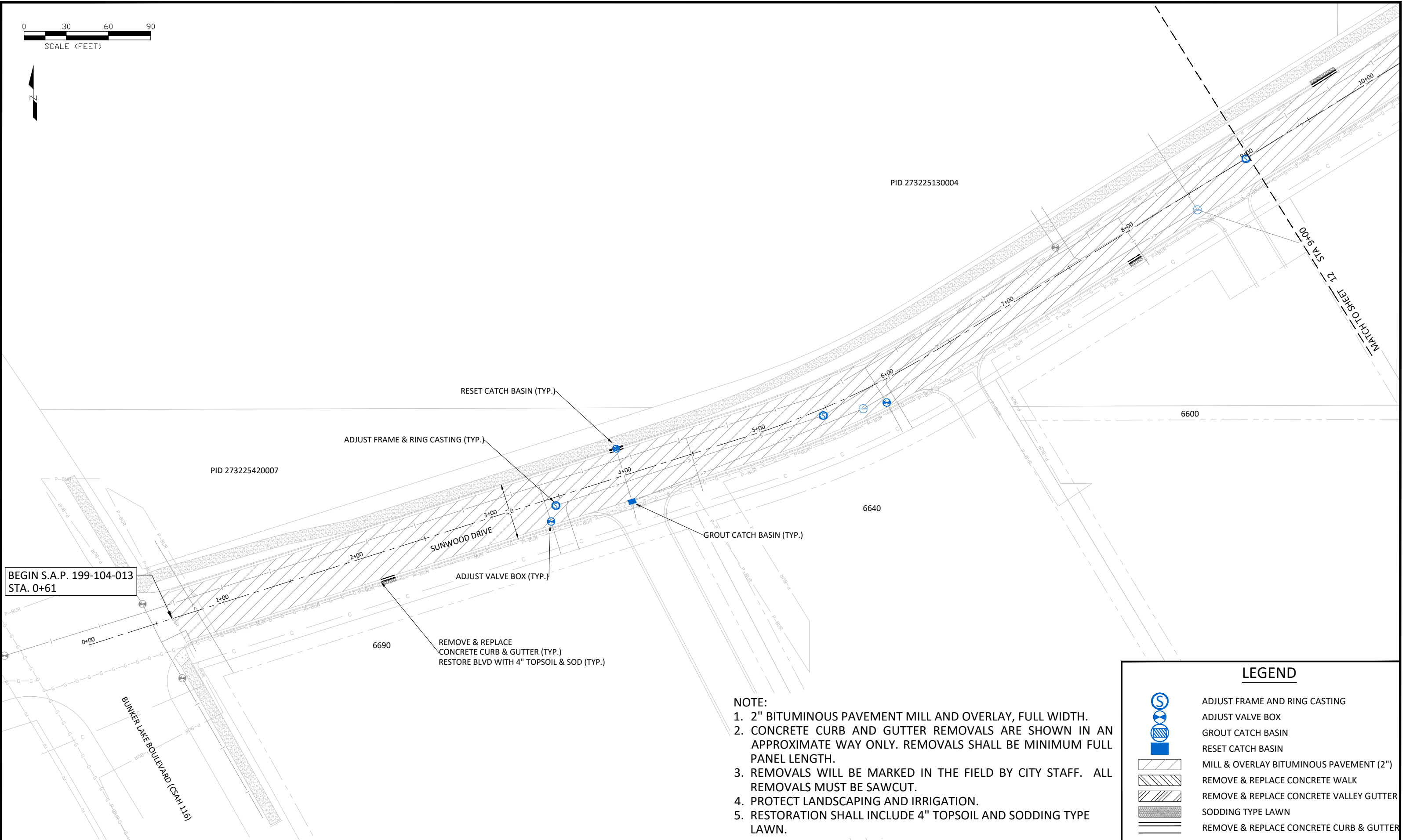
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| DESIGNED BY: | JJF | DATE: | 2/24/21 |
| DRAWN BY:    | JJF | FILE: | 21-05   |
| CHECKED BY:  | LLL |       |         |



CITY OF RAMSEY  
7550 SUNWOOD DRIVE  
RAMSEY, MN 55303  
(763) 427-1410 FAX (763) 433-9898

S.A.P. 199-104-012 & S.A.P. 199-104-013  
MNDOT PED RAMP DETAILS

2021 MUNICIPAL STATE AID PAVEMENT OVERLAYS  
CITY PROJECT NO. 21-05  
CITY OF RAMSEY, MINNESOTA



BEGIN S.A.P. 199-104-013  
STA. 0+61

- NOTE:
1. 2" BITUMINOUS PAVEMENT MILL AND OVERLAY, FULL WIDTH.
  2. CONCRETE CURB AND GUTTER REMOVALS ARE SHOWN IN AN APPROXIMATE WAY ONLY. REMOVALS SHALL BE MINIMUM FULL PANEL LENGTH.
  3. REMOVALS WILL BE MARKED IN THE FIELD BY CITY STAFF. ALL REMOVALS MUST BE SAWCUT.
  4. PROTECT LANDSCAPING AND IRRIGATION.
  5. RESTORATION SHALL INCLUDE 4" TOPSOIL AND SODDING TYPE LAWN.

### LEGEND

- ADJUST FRAME AND RING CASTING
- ADJUST VALVE BOX
- GROUT CATCH BASIN
- RESET CATCH BASIN
- MILL & OVERLAY BITUMINOUS PAVEMENT (2")
- REMOVE & REPLACE CONCRETE WALK
- REMOVE & REPLACE CONCRETE VALLEY GUTTER
- SODDING TYPE LAWN
- REMOVE & REPLACE CONCRETE CURB & GUTTER

|      |          |                                                                                                                                                                                                          |  |                  |               |                                                                                               |                                                                      |                                                                                                   |                          |
|------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------|---------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------|
| DATE | REVISION | I hereby certify that this plan, specification, or report 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 |  | DESIGNED BY: JJF | DATE: 2/24/21 | CITY OF RAMSEY<br>7550 SUNWOOD DRIVE<br>RAMSEY, MN 55303<br>(763) 427-1410 FAX (763) 433-9898 | S.A.P. 199-104-013<br>BITUMINOUS MILL & OVERLAY<br>STA. 0+61 TO 9+00 | 2021 MUNICIPAL STATE AID PAVEMENT OVERLAYS<br>CITY PROJECT NO. 21-05<br>CITY OF RAMSEY, MINNESOTA | SHEET 11 OF 17<br>SHEETS |
|      |          | JOE FERIANCEK<br>Date 2/25/21 Lic. No. 57095                                                                                                                                                             |  | DRAWN BY: JJF    | FILE: 21-05   |                                                                                               |                                                                      |                                                                                                   |                          |
|      |          |                                                                                                                                                                                                          |  | CHECKED BY: LLL  |               |                                                                                               |                                                                      |                                                                                                   |                          |





PID 273225140003

14730

RESET CATCH BASIN (TYP.)

ADJUST FRAME & RING CASTING (TYP.)

ADJUST VALVE BOX (TYP.)

REMOVE & REPLACE  
CONCRETE CURB & GUTTER (TYP.)  
RESTORE BLVD WITH 4" TOPSOIL & SOD (TYP.)

GROUT CATCH BASIN (TYP.)

MATCH TO SHEET 13 STA 17+50

MATCH TO SHEET 11 STA 9+00

PID 273225140005

- NOTE:
1. 2" BITUMINOUS PAVEMENT MILL AND OVERLAY, FULL WIDTH.
  2. CONCRETE CURB AND GUTTER REMOVALS ARE SHOWN IN AN APPROXIMATE WAY ONLY. REMOVALS SHALL BE MINIMUM FULL PANEL LENGTH.
  3. REMOVALS WILL BE MARKED IN THE FIELD BY CITY STAFF. ALL REMOVALS MUST BE SAWCUT.
  4. PROTECT LANDSCAPING AND IRRIGATION.
  5. RESTORATION SHALL INCLUDE 4" TOPSOIL AND SODDING TYPE LAWN.

LEGEND

- ADJUST FRAME AND RING CASTING
- ADJUST VALVE BOX
- GROUT CATCH BASIN
- RESET CATCH BASIN
- MILL & OVERLAY BITUMINOUS PAVEMENT (2")
- REMOVE & REPLACE CONCRETE WALK
- REMOVE & REPLACE CONCRETE VALLEY GUTTER
- SODDING TYPE LAWN
- REMOVE & REPLACE CONCRETE CURB & GUTTER

| DATE | REVISION |
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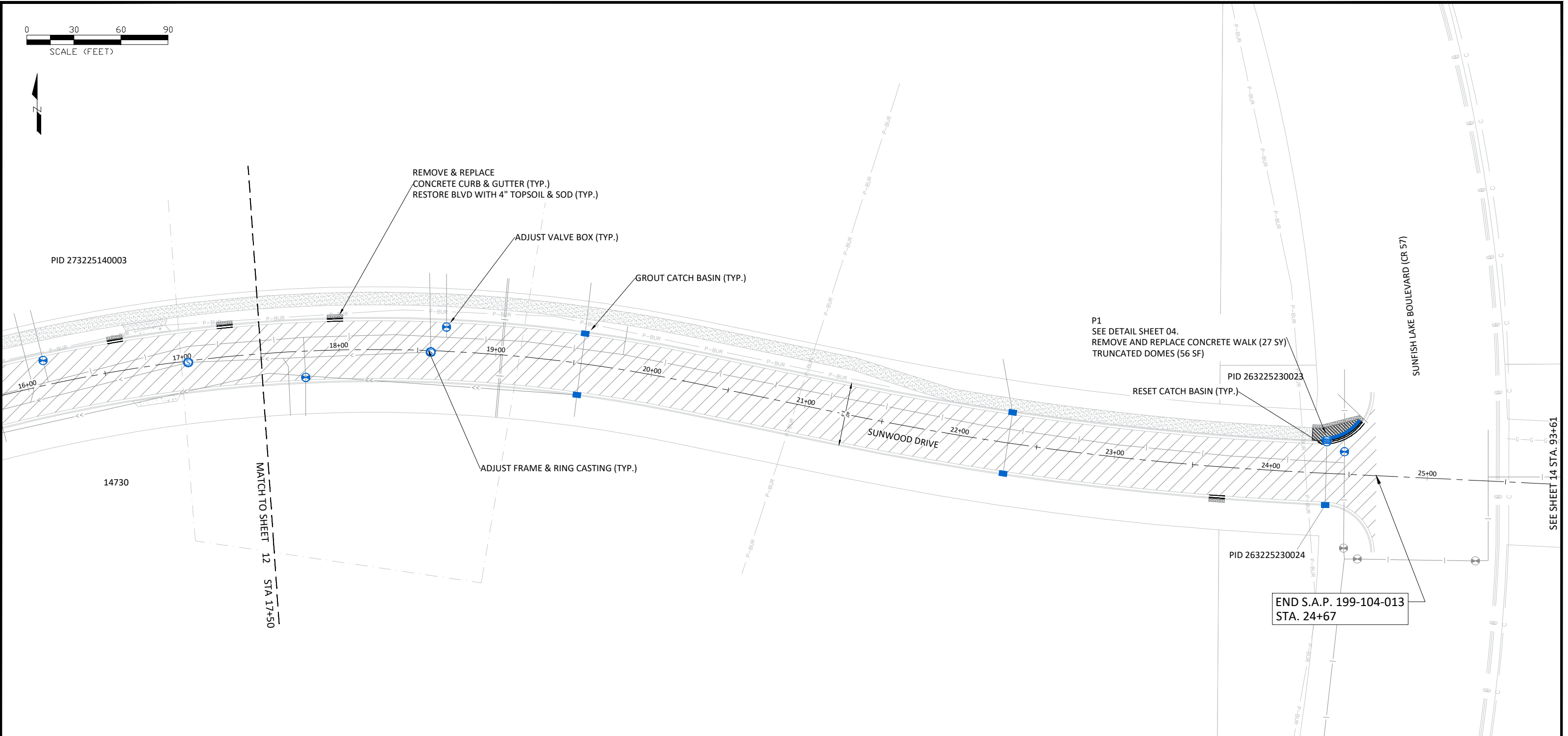
*Joe Feriancek*  
JOE FERIANCEK  
Date 2/25/21 Lic. No. 57095

|              |     |       |         |
|--------------|-----|-------|---------|
| DESIGNED BY: | JJF | DATE: | 2/24/21 |
| DRAWN BY:    | JJF | FILE: | 21-05   |
| CHECKED BY:  | LLL |       |         |

CITY OF RAMSEY  
7550 SUNWOOD DRIVE  
RAMSEY, MN 55303  
(763) 427-1410 FAX (763) 433-9898

S.A.P. 199-104-013  
BITUMINOUS MILL & OVERLAY  
STA. 9+00 TO 17+50

2021 MUNICIPAL STATE AID PAVEMENT OVERLAYS  
CITY PROJECT NO. 21-05  
CITY OF RAMSEY, MINNESOTA



NOTE:

1. 2" BITUMINOUS PAVEMENT MILL AND OVERLAY, FULL WIDTH.
2. CONCRETE CURB AND GUTTER REMOVALS ARE SHOWN IN AN APPROXIMATE WAY ONLY. REMOVALS SHALL BE MINIMUM FULL PANEL LENGTH.
3. REMOVALS WILL BE MARKED IN THE FIELD BY CITY STAFF. ALL REMOVALS MUST BE SAWCUT.
4. PROTECT LANDSCAPING AND IRRIGATION.
5. RESTORATION SHALL INCLUDE 4" TOPSOIL AND SODDING TYPE LAWN.

LEGEND



- ADJUST FRAME AND RING CASTING
- ADJUST VALVE BOX
- GROUT CATCH BASIN
- RESET CATCH BASIN
- MILL & OVERLAY BITUMINOUS PAVEMENT (2")
- REMOVE & REPLACE CONCRETE WALK
- REMOVE & REPLACE CONCRETE VALLEY GUTTER
- SODDING TYPE LAWN
- REMOVE & REPLACE CONCRETE CURB & GUTTER

| DATE | REVISION |
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JOE FERIANCEK  
Date 2/25/21 Lic. No. 57095

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CITY OF RAMSEY  
7550 SUNWOOD DRIVE  
RAMSEY, MN 55303  
(763) 427-1410 FAX (763) 433-9898

S.A.P. 199-104-013  
BITUMINOUS MILL & OVERLAY  
STA. 17+50 TO 24+67

2021 MUNICIPAL STATE AID PAVEMENT OVERLAYS  
CITY PROJECT NO. 21-05  
CITY OF RAMSEY, MINNESOTA



0 30 60 90  
SCALE (FEET)



PID 253225210060

MATCH TO SHEET 15 STA 101+00

P3  
SEE DETAIL SHEET 04.  
REMOVE AND REPLACE CONCRETE WALK (7 SY)  
TRUNCATED DOMES (18 SF)

14770

BEGIN S.A.P. 199-104-012  
STA. 93+61

ERKUM STREE

ADJUST FRAME & RING CASTING (TYP.)

ADJUST VALVE BOX (TYP.)

14771

REMOVE & REPLACE  
CONCRETE CURB & GUTTER (TYP.)  
RESTORE BLVD WITH 4" TOPSOIL & SOD (TYP.)

PID 253225210068

GROUT CATCH BASIN (TYP.)

SUNWOOD DRIVE

P2  
SEE DETAIL SHEET 04.  
REMOVE AND REPLACE CONCRETE WALK (9 SY)  
TRUNCATED DOMES (18 SF)

14761

P4  
SEE DETAIL SHEET 04.  
REMOVE AND REPLACE CONCRETE WALK (14 SY)  
TRUNCATED DOMES (18 SF)

PID 253225210067

REMOVE & REPLACE  
CONCRETE VALLEY GUTTER (11 SY)  
14760

P5  
SEE DETAIL SHEET 04.  
REMOVE AND REPLACE CONCRETE WALK (12 SY)  
TRUNCATED DOMES (18 SF)

REMOVE & REPLACE  
CONCRETE VALLEY GUTTER (28 SY)

14791

COBALT STREET

#### NOTE:

1. 2" BITUMINOUS PAVEMENT MILL AND OVERLAY, FULL WIDTH.
2. CONCRETE CURB AND GUTTER REMOVALS ARE SHOWN IN AN APPROXIMATE WAY ONLY. REMOVALS SHALL BE MINIMUM FULL PANEL LENGTH.
3. REMOVALS WILL BE MARKED IN THE FIELD BY CITY STAFF. ALL REMOVALS MUST BE SAWCUT.
4. PROTECT LANDSCAPING AND IRRIGATION.
5. RESTORATION SHALL INCLUDE 4" TOPSOIL AND SODDING TYPE LAWN.

#### LEGEND



ADJUST FRAME AND RING CASTING

ADJUST VALVE BOX

GROUT CATCH BASIN

RESET CATCH BASIN



MILL & OVERLAY BITUMINOUS PAVEMENT (2")



REMOVE & REPLACE CONCRETE WALK



REMOVE & REPLACE CONCRETE VALLEY GUTTER



SODDING TYPE LAWN



REMOVE & REPLACE CONCRETE CURB & GUTTER

I hereby certify that this plan, specification, or report 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

JOE FERIANCEK  
Date 2/25/21 Lic. No. 57095

DESIGNED BY: JJF  
DRAWN BY: JJF  
CHECKED BY: LLL

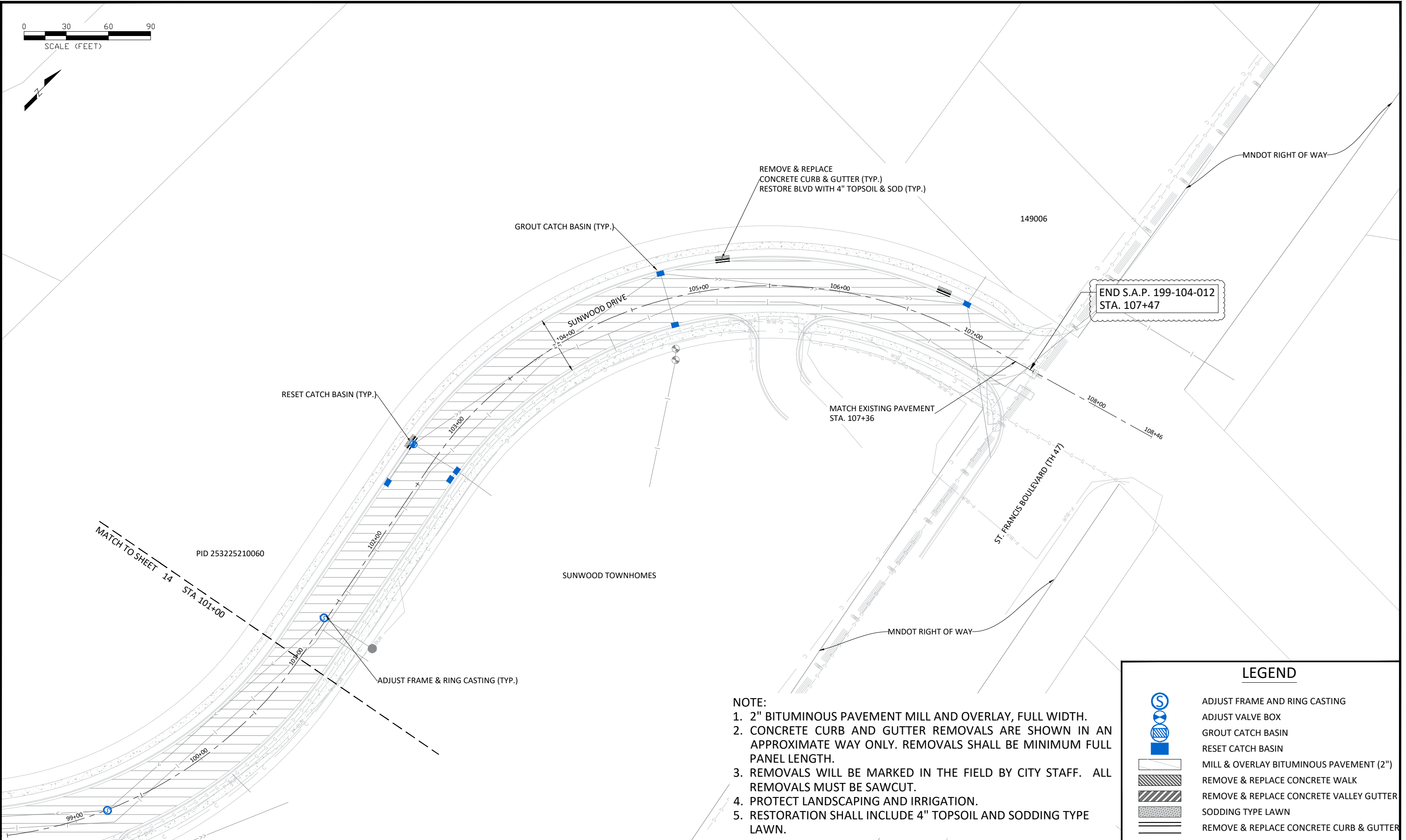
DATE: 2/24/21  
FILE: 21-05

CITY OF RAMSEY  
7550 SUNWOOD DRIVE  
RAMSEY, MN 55303  
(763) 427-1410 FAX (763) 433-9898

S.A.P. 199-104-012  
BITUMINOUS MILL & OVERLAY  
STA. 93+61 TO 101+00

2021 MUNICIPAL STATE AID PAVEMENT OVERLAYS  
CITY PROJECT NO. 21-05  
CITY OF RAMSEY, MINNESOTA

SHEET 14 OF 17  
SHEETS

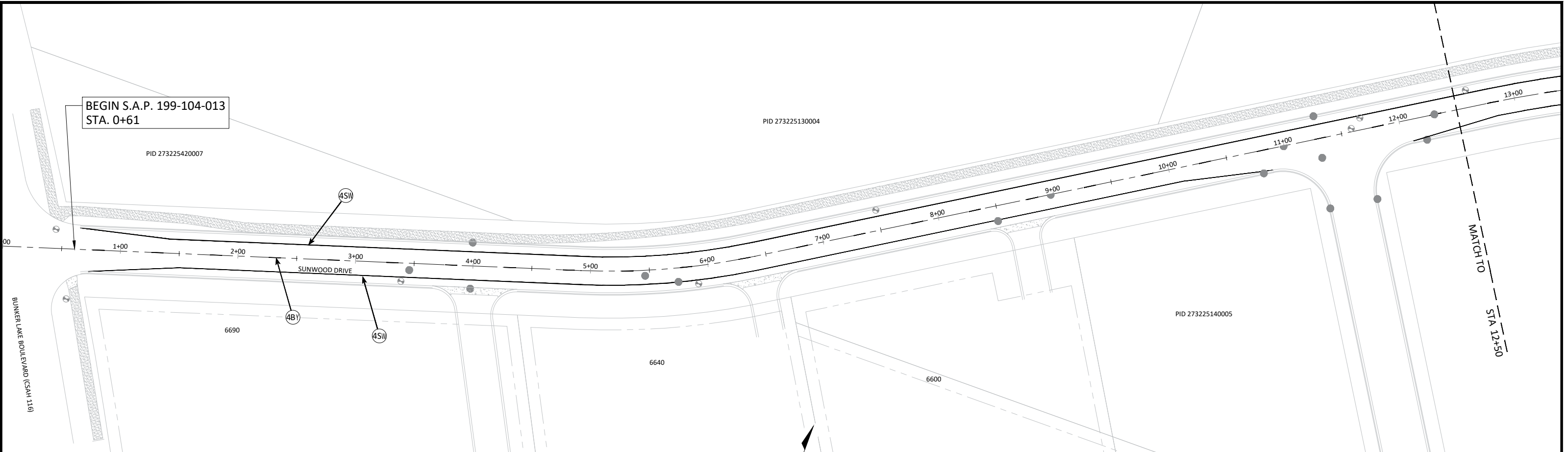


- NOTE:
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  3. REMOVALS WILL BE MARKED IN THE FIELD BY CITY STAFF. ALL REMOVALS MUST BE SAWCUT.
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  5. RESTORATION SHALL INCLUDE 4" TOPSOIL AND SODDING TYPE LAWN.

LEGEND

- ADJUST FRAME AND RING CASTING
- ADJUST VALVE BOX
- GROUT CATCH BASIN
- RESET CATCH BASIN
- MILL & OVERLAY BITUMINOUS PAVEMENT (2")
- REMOVE & REPLACE CONCRETE WALK
- REMOVE & REPLACE CONCRETE VALLEY GUTTER
- SODDING TYPE LAWN
- REMOVE & REPLACE CONCRETE CURB & GUTTER

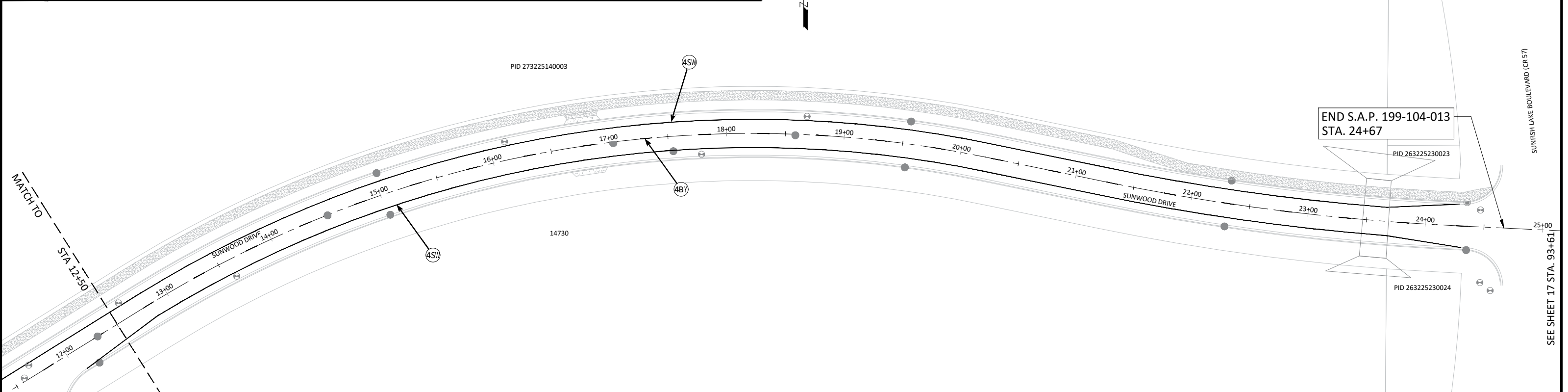


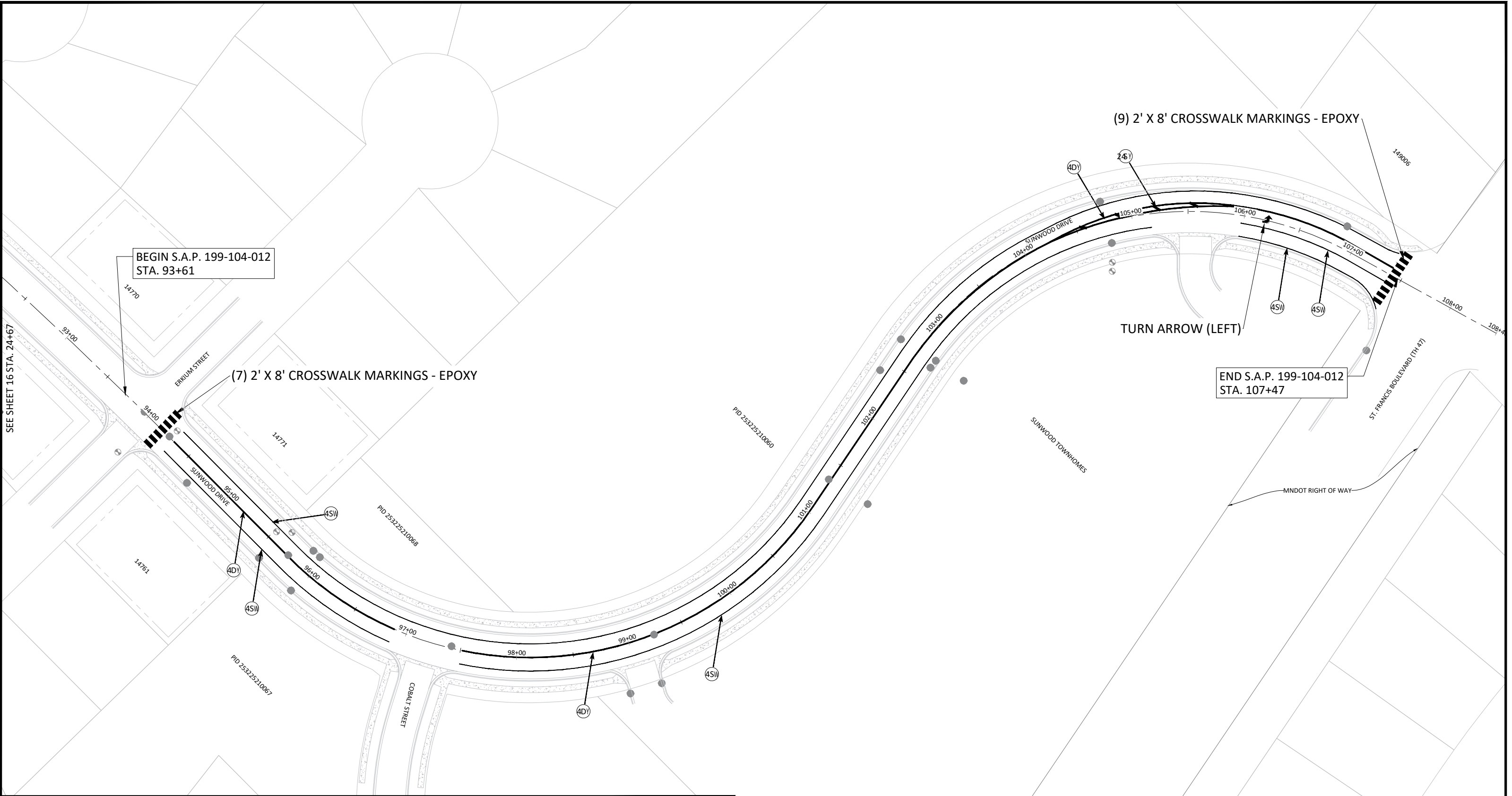


**LEGEND**  
PAVEMENT MARKING  
CROSSWALK MARKING  
TURN ARROW

**STRIPING KEY & LEGEND**  
1ST DIGIT WIDTH 4", 8", ETC.  
2ND DIGIT PATTERN S-SOLID B-BROKEN D-DOUBLE  
3RD DIGIT COLOR W-WHITE Y-YELLOW B-BLACK  
EXAMPLE: (4SW) = 4" SOLID WHITE - EPOXY  
CIRCLE - EPOXY

0 40 80 120  
SCALE (FEET)





LEGEND

PAVEMENT MARKING

CROSSWALK MARKING

TURN ARROW

STRIPING KEY & LEGEND

1ST DIGIT  
WIDTH  
4", 8", ETC.

2ND DIGIT  
PATTERN  
S-SOLID  
B-BROKEN  
D-DOUBLE

3RD DIGIT  
COLOR  
W-WHITE  
Y-YELLOW  
B-BLACK

EXAMPLE: 

4SW

 = 4" SOLID WHITE - EPOXY

04080120

SCALE (FEET)

|         |                             |
|---------|-----------------------------|
| DATE    | REVISION                    |
| 3/11/21 | UPDATE PROJECT END STATION. |
|         |                             |
|         |                             |
|         |                             |

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JOE FERIANCEK

Date 2/25/21 Lic. No. 57095

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CITY OF RAMSEY

7550 SUNWOOD DRIVE

RAMSEY, MN 55303

(763) 427-1410 FAX (763) 433-9898

S.A.P. 199-104-013  
PAVEMENT MARKING PLAN  
STA. 93+61 TO 107+36

2021 MUNICIPAL STATE AID PAVEMENT OVERLAYS  
CITY PROJECT NO. 21-05  
CITY OF RAMSEY, MINNESOTA