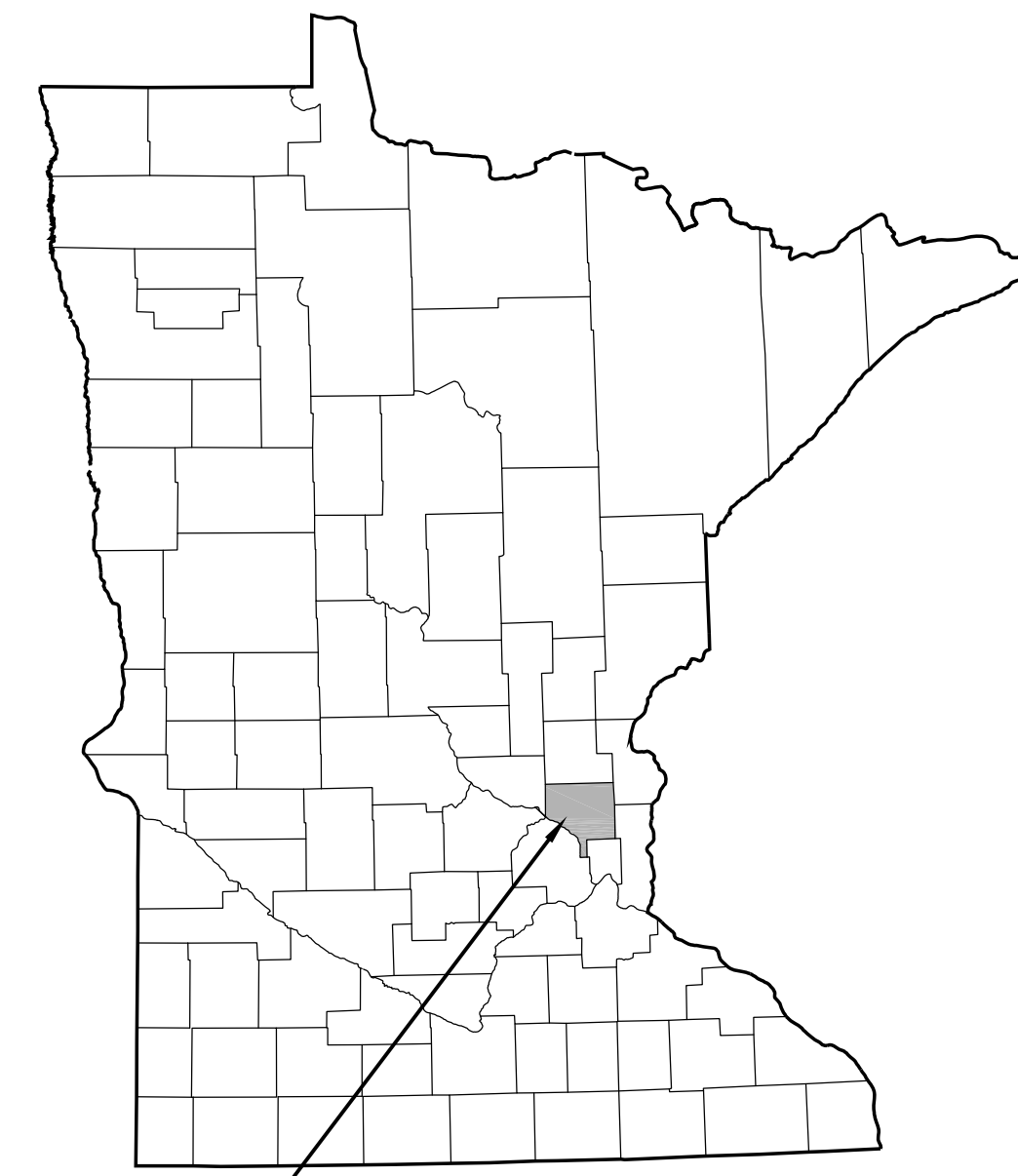
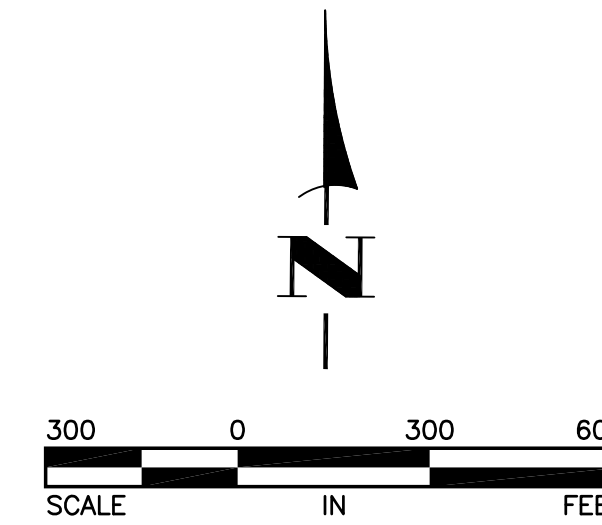
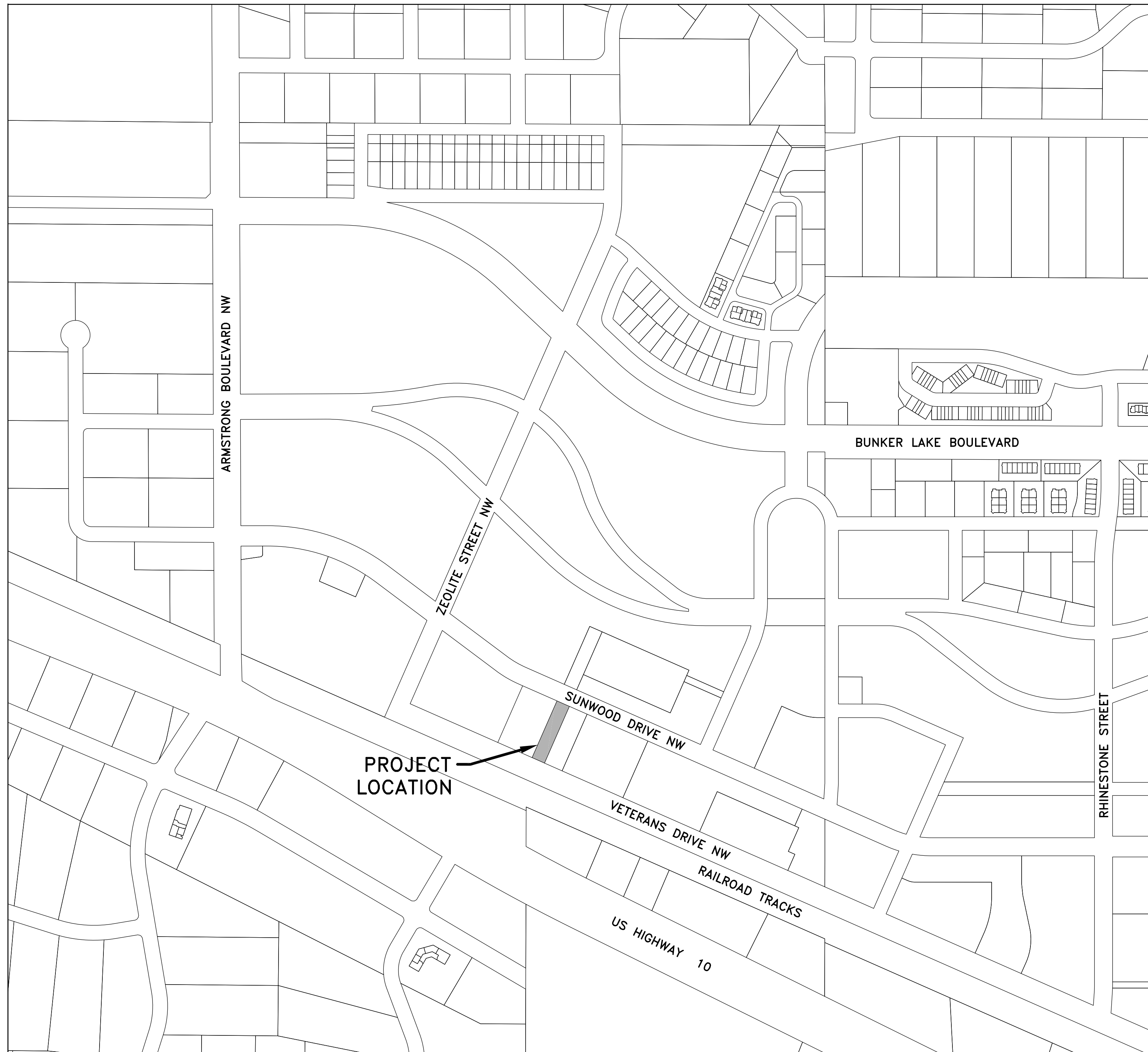


YOLITE STREET

CONSTRUCTION PLANS FOR BITUMINOUS SURFACING, CURB & GUTTER, DRAINAGE IMPROVEMENTS, SANITARY SEWER, WATERMAIN AND MISCELLANEOUS CONSTRUCTION CITY OF RAMSEY



CITY OF RAMSEY,
ANOKA COUNTY,
MINNESOTA

GOVERNING SPECIFICATIONS

THE 2016 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND THE 2013 CEAM STANDARD SPECIFICATIONS SHALL APPLY.

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 LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

ALL REQUIREMENTS OF THE PROJECT MANUAL FOR THE YOLITE STREET PROJECT.

SHEET INDEX

THIS PLAN CONTAINS 23 SHEETS

SHEET NO.	DESCRIPTION
1	TITLE
2	GENERAL CONSTRUCTION NOTES AND DETAILS
3	DETAILS & LEGEND
4-9	PEDESTRIAN CURB RAMP DETAILS
10-11	TYPICAL SECTIONS
12	EXISTING CONDITIONS AND REMOVALS
13	STREET PLAN AND PROFILE
14	SANITARY SEWER AND WATERMAIN PLAN
15	GRADING AND EROSION CONTROL
16-17	STRIPING LEGEND AND NOTES
18	STRIPING & SIGNAGE PLAN
19-21	SIGNAGE DETAILS
22	TRAFFIC CONTROL PLANS
X1	CROSS SECTIONS

APPROVED: _____ DATE: _____

BRUCE WESTBY, P.E.
CITY ENGINEER

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.

Craig J. Jochnik 23461 DATE 5/4/17
CRAIG J. JOCHNIK, P.E. LIC. NO.
HAKANSON ANDERSON
DESIGN ENGINEER

DATE	REVISION
6/1/17	CITY COMMENTS

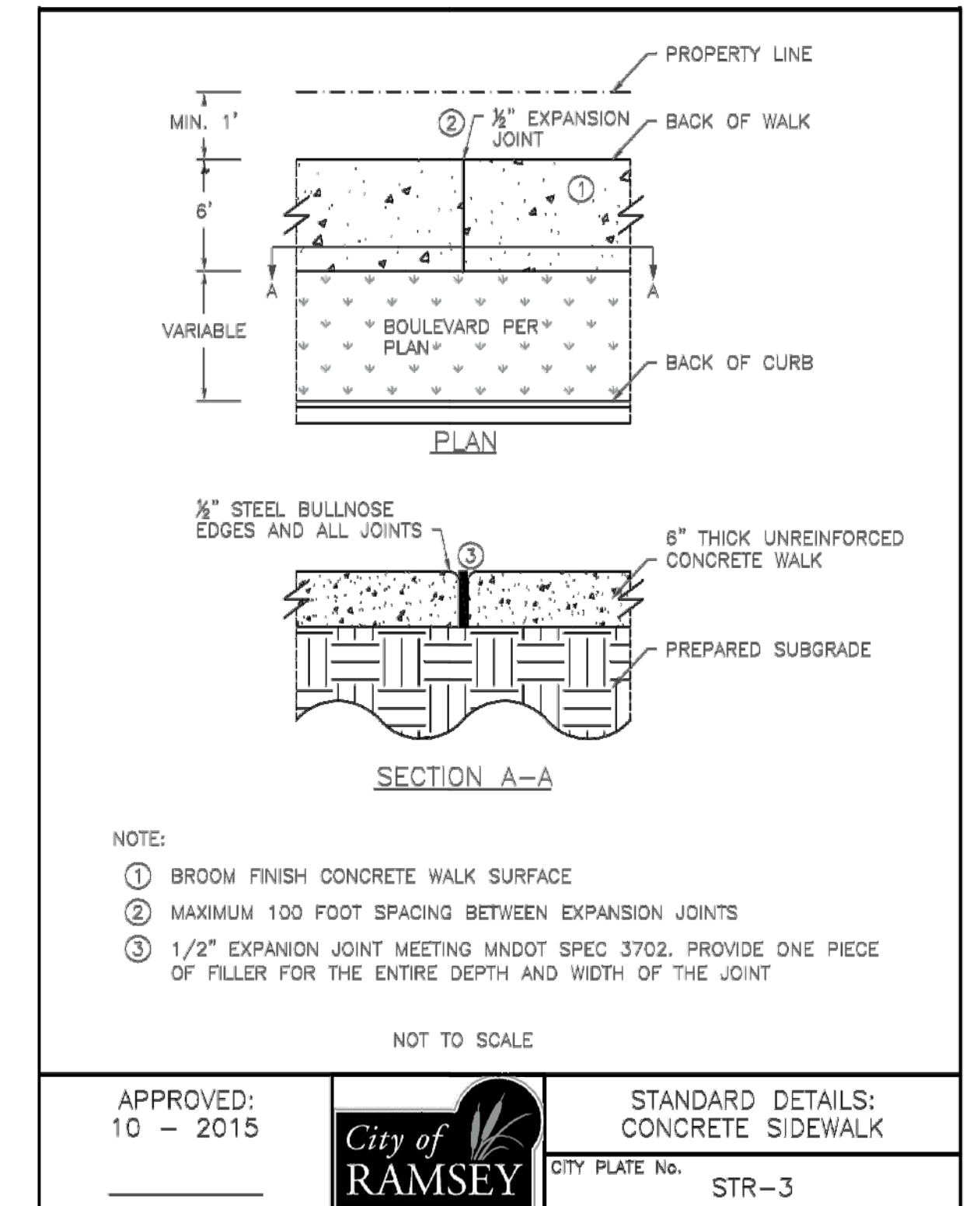
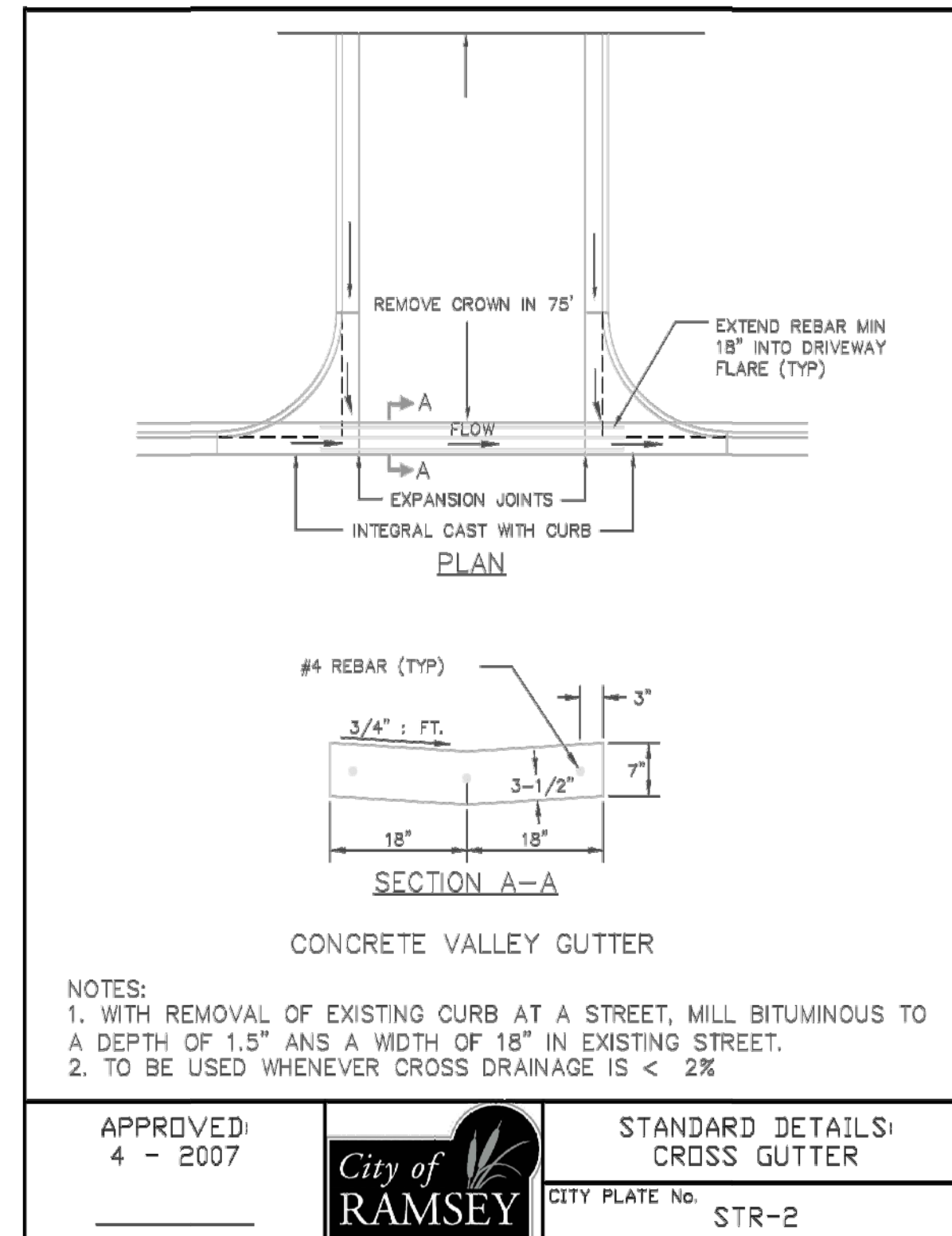
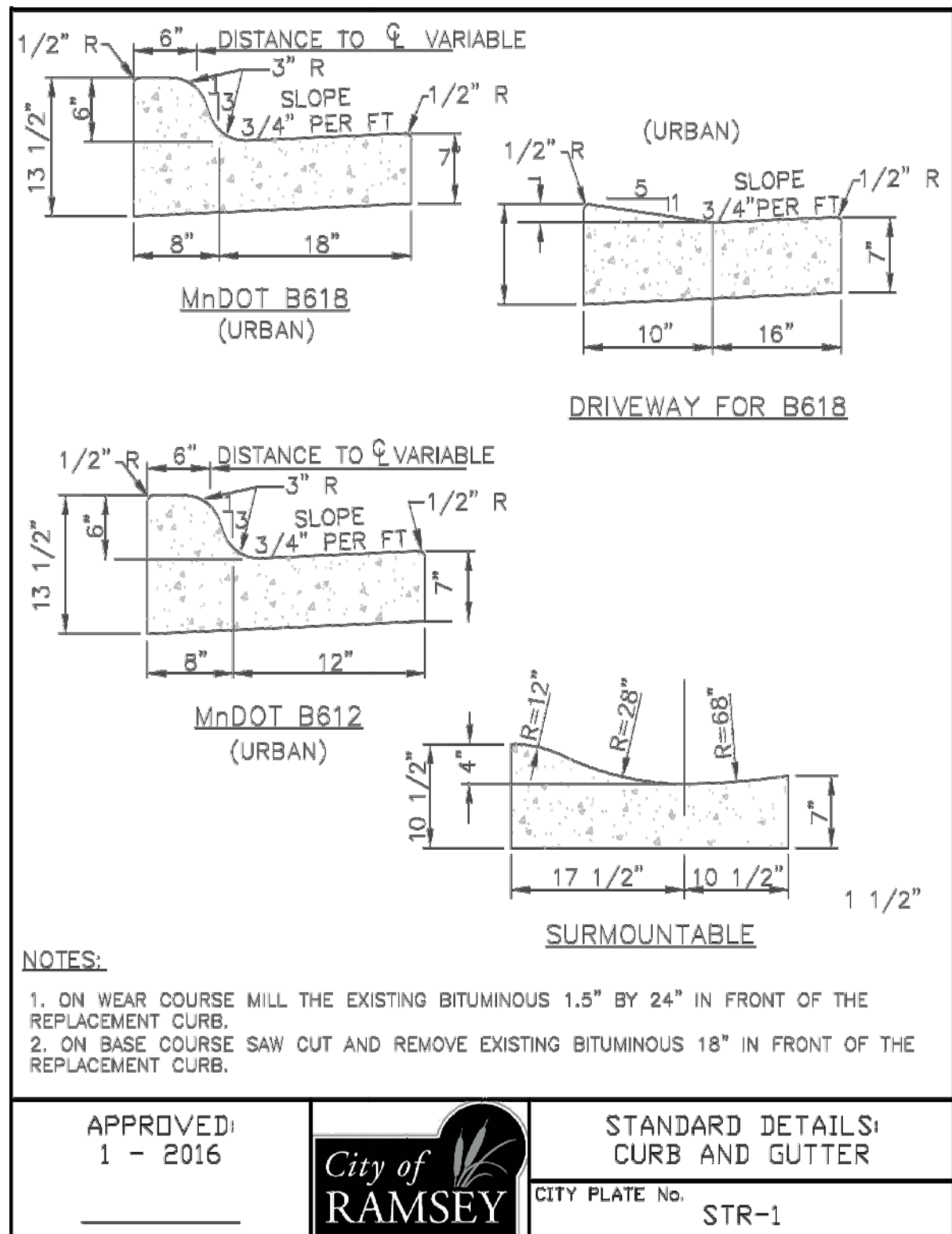
THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-2, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

GENERAL CONSTRUCTION AND SOILS NOTES:

- STRIP ALL INPLACE TOPSOIL IN AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS SLOPE DRESSING. IN AREAS OF PARKING LOT AND BUILDING CONSTRUCTION, THE EXPOSED SAND SHALL BE SURFACE COMPACTED TO AT LEAST 100% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY, ASTM D698, IN AT LEAST THE UPPER 3 FEET.
- UNLESS OTHERWISE RECOMMENDED IN THESE PLANS, THE GRADING SUBGRADE SHALL BE CONSTRUCTED OF SUITABLE GRADING MATERIAL. THE FILL SHALL BE PLACED IN 8" TO 10" LOOSE LIFTS, AND COMPACTED TO 100% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY.
- SUITABLE GRADING MATERIAL FOR THIS PROJECT SHALL CONSIST OF ALL SOILS ENCOUNTERED WITH THE EXCEPTION OF TOPSOIL, SILT, DEBRIS, ORGANIC MATERIAL AND OTHER UNSTABLE MATERIAL.
- PROVIDE A SAW CUT WHEN PLACING NEW PAVEMENT ADJACENT TO INPLACE PAVEMENT AND AT TERMINI OF CONSTRUCTION TO ENSURE A UNIFORM JOINT.
- BITUMINOUS AND CONCRETE ITEMS DISTURBED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF IN ACCORDANCE WITH Mn/DOT SPEC. 2104.3.
- USE TACK COAT BETWEEN ALL BITUMINOUS MIXTURES. THE BITUMINOUS TACK COAT MATERIAL SHALL BE APPLIED AT A UNIFORM RATE OF 0.05 GAL/SY TO 0.07 GAL/SY BETWEEN BITUMINOUS LAYERS. THE APPLICATION RATES ARE FOR UNDILUTED EMULSIONS (AS SUPPLIED FROM THE REFINERY) OR MC AND RC LIQUID ASPHALTS.
- PERFORMANCE GRADED (PG) ASPHALT BINDER PG 58-28, SPEC. 3151, SHALL BE USED FOR ALL BITUMINOUS MIXES ON THIS PROJECT. SPECIFIC PG GRADES SHALL BE LISTED AT THE END OF THE MIX DESIGNATION NUMBER SHOWN ON THE TYPICAL SECTION.
- THE BITUMINOUS MIXTURES SHALL MEET THE REQUIREMENTS OF SPECIFICATIONS 2360 AND 3139.
- ALL DISTURBED AREAS SHALL BE RESTORED WITH 4" OF TOPSOIL AND SOD. SEE CITY STANDARD PLATE ERO-6 ON SHEET 6 FOR TOPSOIL REQUIREMENTS.

GENERAL EROSION CONTROL NOTES:

- EROSION CONTROL SHALL CONFORM TO THE Mn/DOT EROSION CONTROL HANDBOOK.
- PRIOR TO ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL ACQUIRE THE NECESSARY MPCA NPDES STORMWATER PERMIT.
- THE CONTRACTOR SHALL INSTALL EROSION AND SEDIMENT CONTROL FACILITIES (BMP'S) PRIOR TO GRADING AND REMOVAL ACTIVITIES. BMP'S SHALL BE MAINTAINED FOR THE DURATION OF CONSTRUCTION ACTIVITIES AND POTENTIAL FOR EROSION HAS PASSED.
- THE CONTRACTOR SHALL SCHEDULE THEIR OPERATION TO MINIMIZE THE AMOUNT OF DISTURBED AREA AT ANY GIVEN TIME.
- BMP'S SHALL BE INSPECTED DAILY BY THE CONTRACTOR. OBSERVATIONS SHALL BE RECORDED IN THE INSPECTION LOG.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROPERLY DISPOSED OF WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION.
- THE CONTRACTOR SHALL FILE A NOTICE OF TERMINATION WITH THE MPCA AFTER FINAL STABILIZATION HAS BEEN APPROVED. THE CITY MUST APPROVE THE NOTICE OF TERMINATION PRIOR TO SUBMITTAL. ALL EROSION CONTROL INSPECTION LOGS MUST BE SUBMITTED TO THE CITY PRIOR TO ISSUANCE OF THE CERTIFICATE OF OCCUPANCY.
- STREETS SHALL BE CLEANED WITHIN 3 HOURS AFTER NOTIFICATION BY CITY THAT SWEEPING IS REQUIRED.



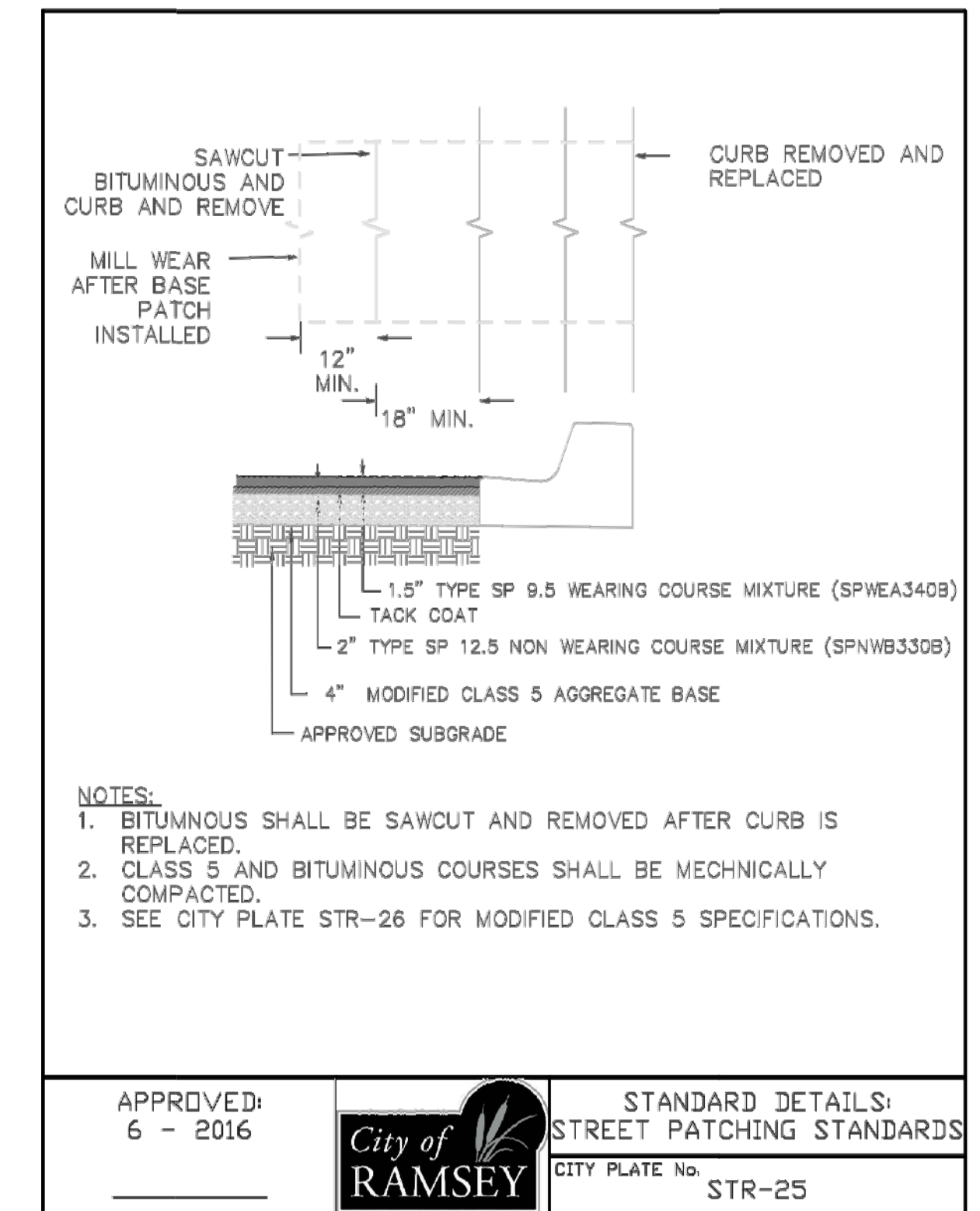
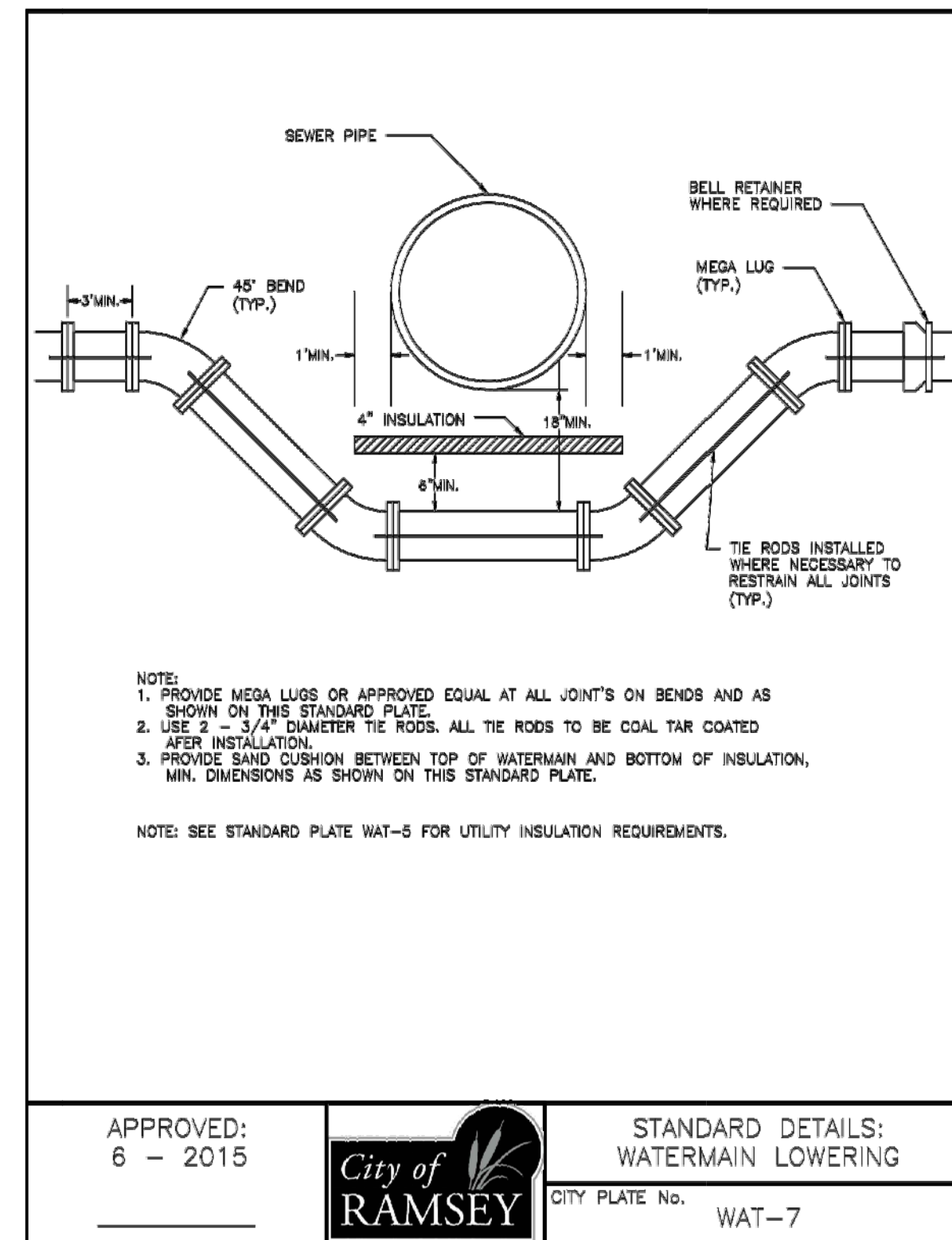
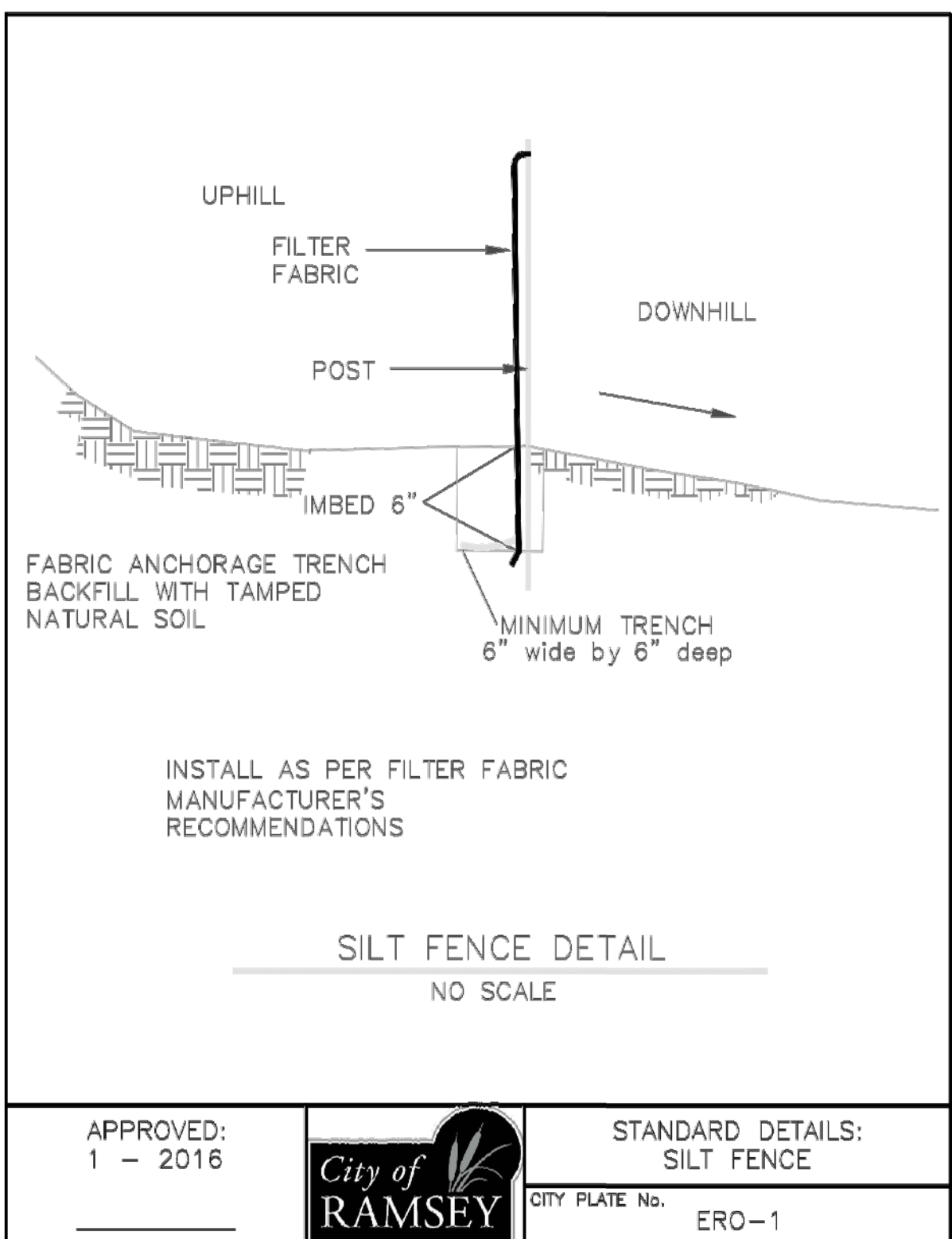
BASIS OF ESTIMATED QUANTITIES	
Bituminous Pavement	110lbs/yd ² /in
Bituminous Material for Tack Coat	0.07 Gal/yd ²
Seed Mixture 25-121	120 lbs/acre
Seed Mixture 25-151	120 lbs/acre
Type Hydraulic Mulch	2100 lbs/acre
Fertilizer Type 3 22-5-10	300 lbs/acre

MNDOT 2016 SPEC

MNDOT 2016 SPEC TABLE 3877-1 COMMON TOPSOIL BORROW REQUIREMENT		
REQUIREMENT	RANGE	TEST METHOD
MATERIAL PASSING THE 3/4 IN [19MM]	100%	ASTM D 422
MATERIAL PASSING NO. 4 [4.75MM]	>85%	-
CLAY	5% - 35%	ASTM D 422
SILT	5% - 70%	ASTM D 422
SAND	10% - 75%	ASTM D 422
ORGANIC MATTER	3% - 15%	ASTM D 2974
pH	6.1-7.8	ASTM G 51

NOTE:
1. INSTALLATION OF 4" OF TOPSOIL MEETING MNDOT SPECIFICATION 3877A COMMON TOPSOIL BORROW, MAY BE REQUIRED ACROSS ALL DISTURBED AREAS.
2. A SOIL CERTIFICATION FROM A GEOTECHNICAL FIRM MUST BE PROVIDED VERIFYING THE TOPSOIL MEETS SPECIFICATION ALONG WITH LOAD TICKETS TO VERIFY THE SOURCE OF MATERIAL AND QUANTITY.
3. TOPSOIL MUST COME FROM A CITY APPROVED SOURCE.

APPROVED: 1 - 2016
City of RAMSEY
CITY PLATE No. ERO-6
STANDARD DETAILS: TOPSOIL REQUIREMENTS

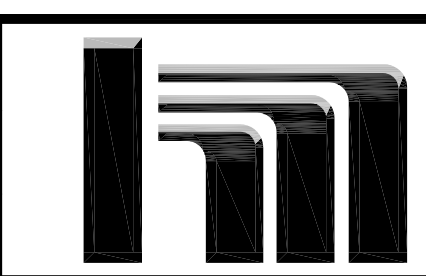


DATE	REVISION
6/1/17	CITY COMMENTS

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.

Craig J. Jochem
Date 5-4-17 CRAIG J. JOCHUM, P.E.
Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: MSS
CHECKED BY: CJJ

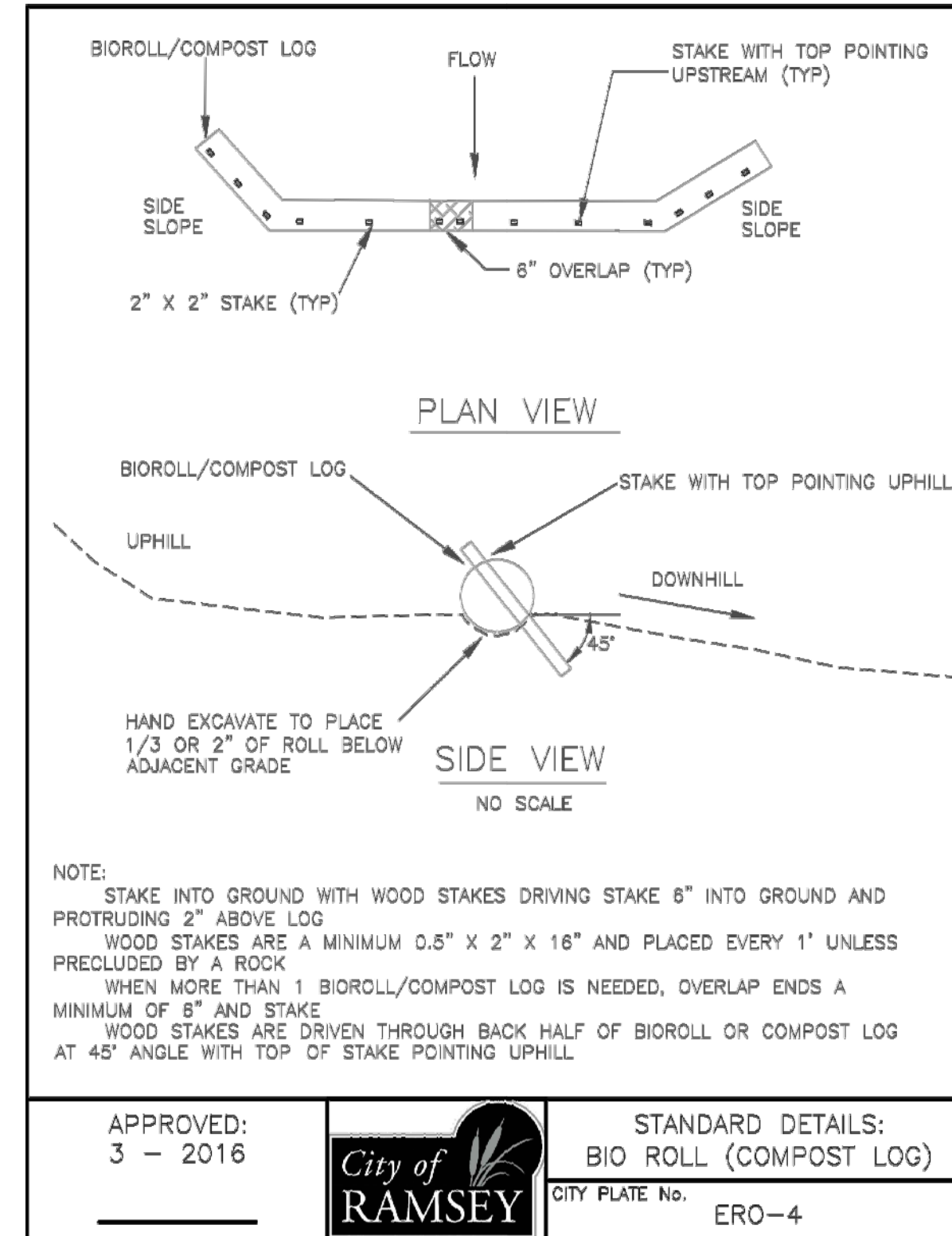
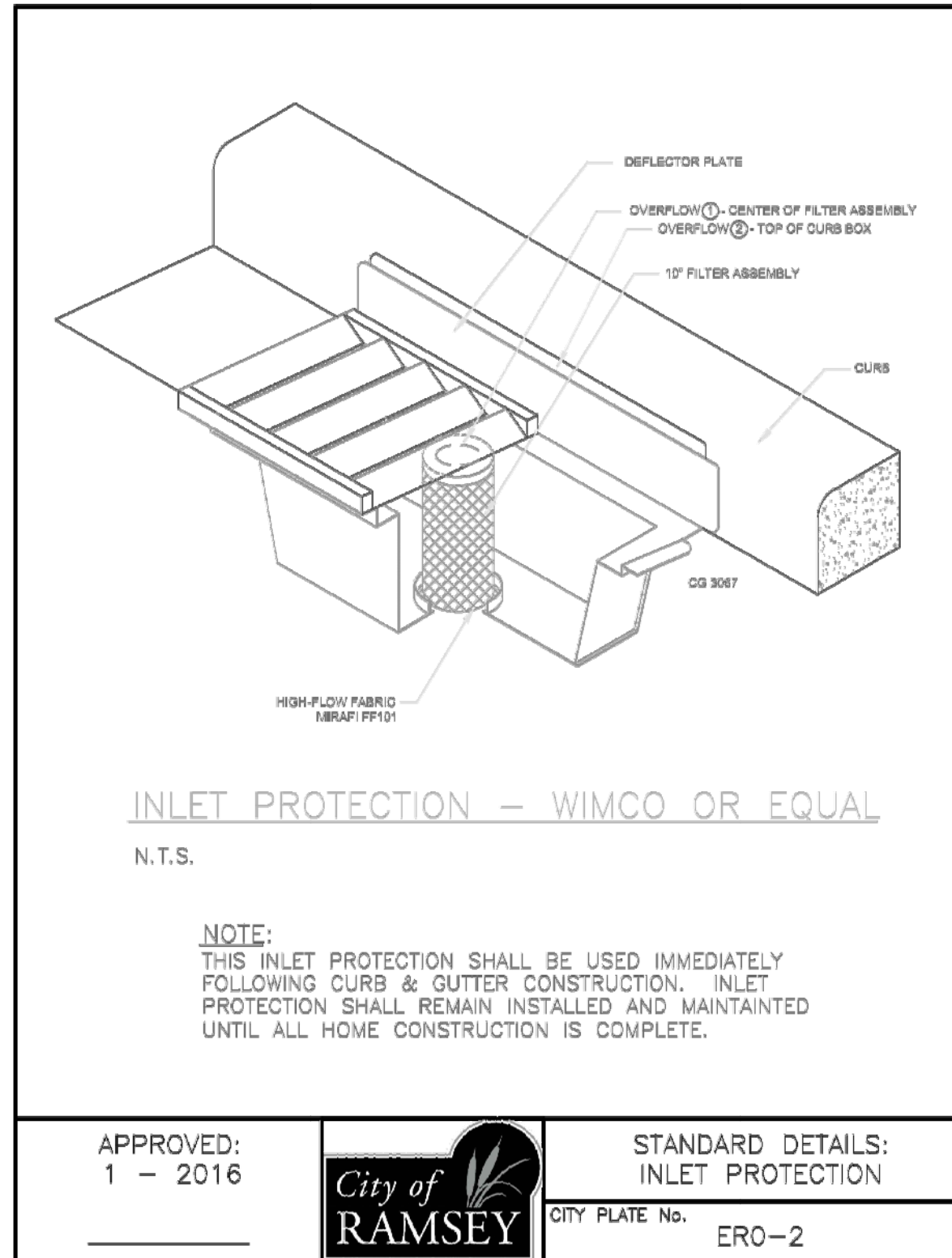
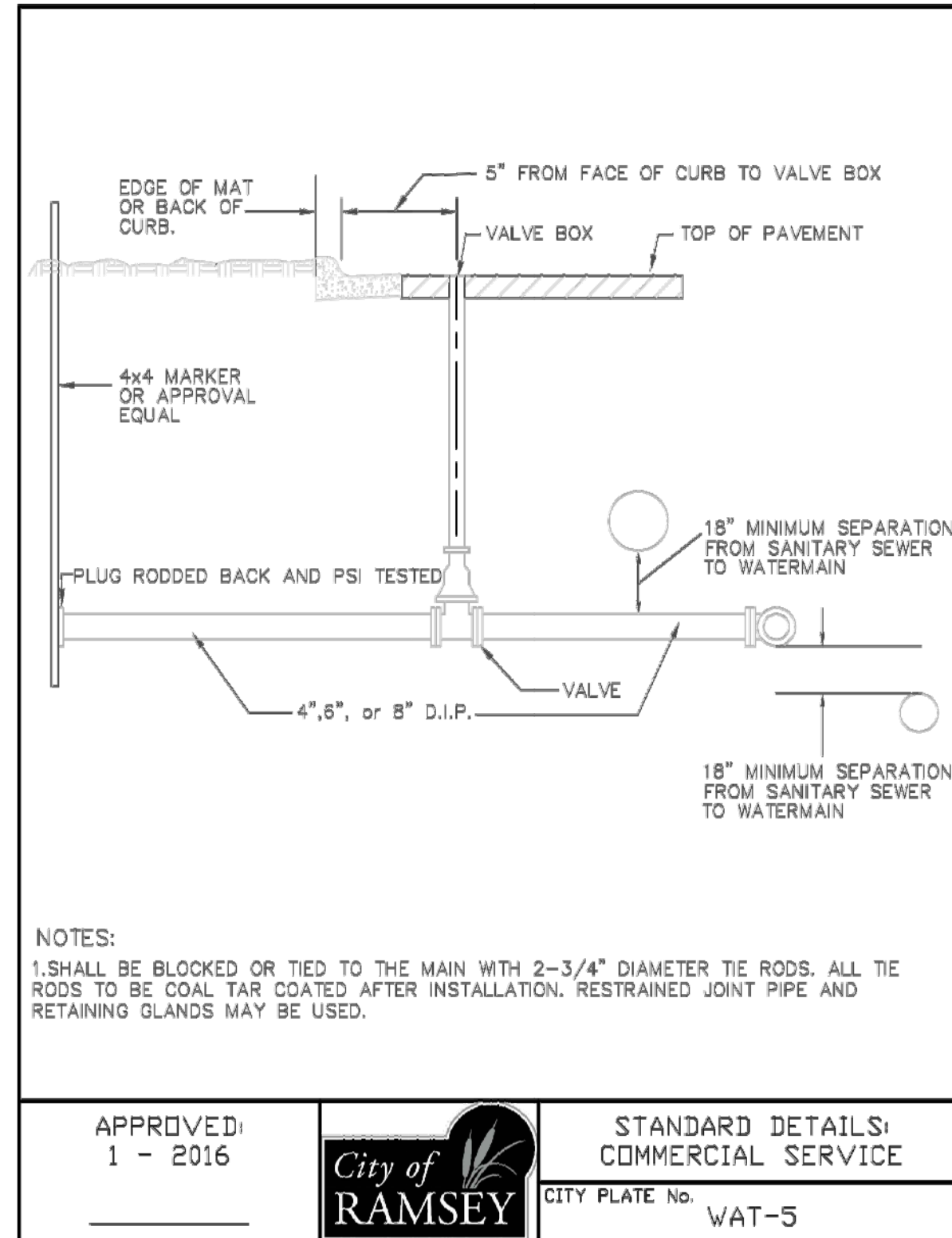
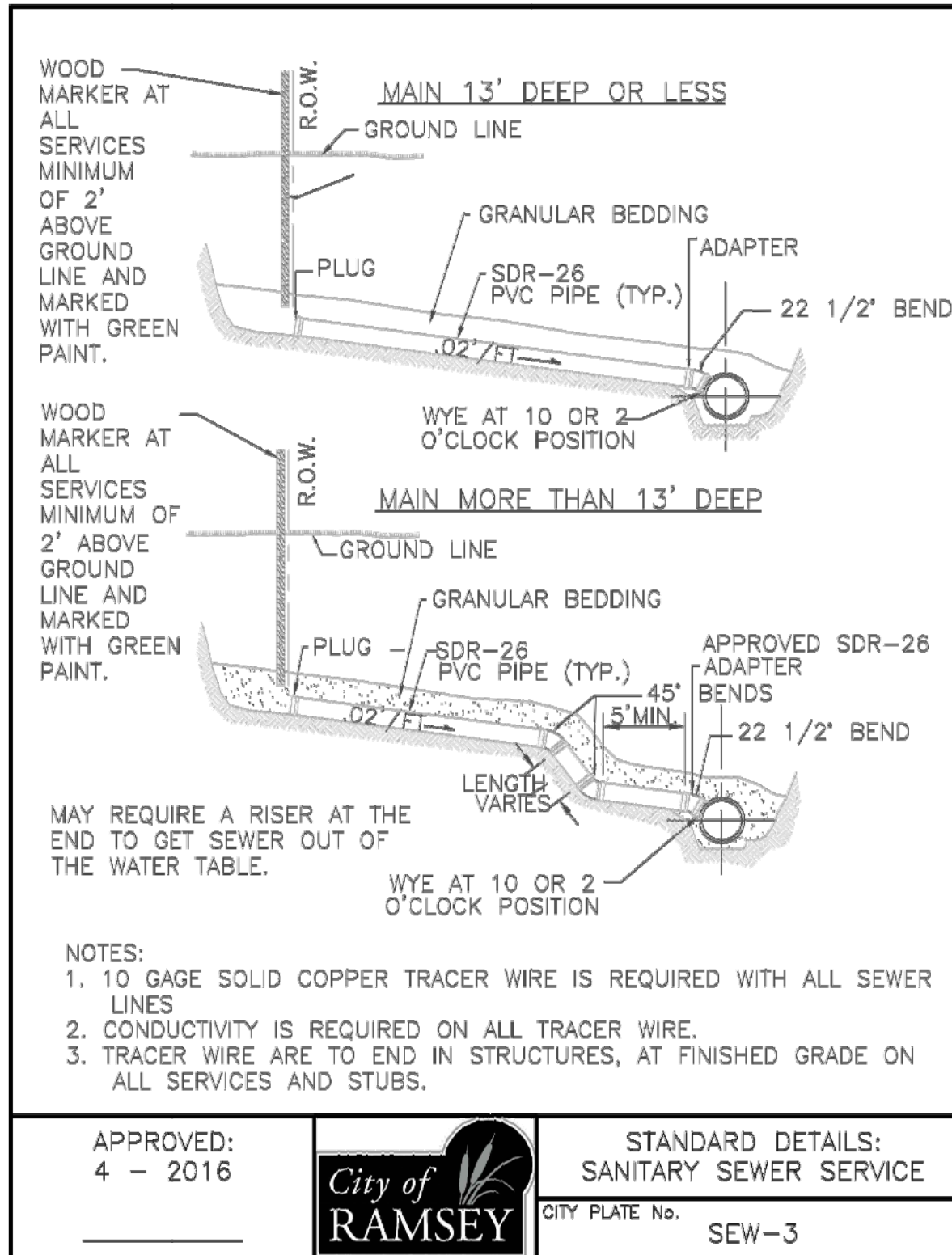


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Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
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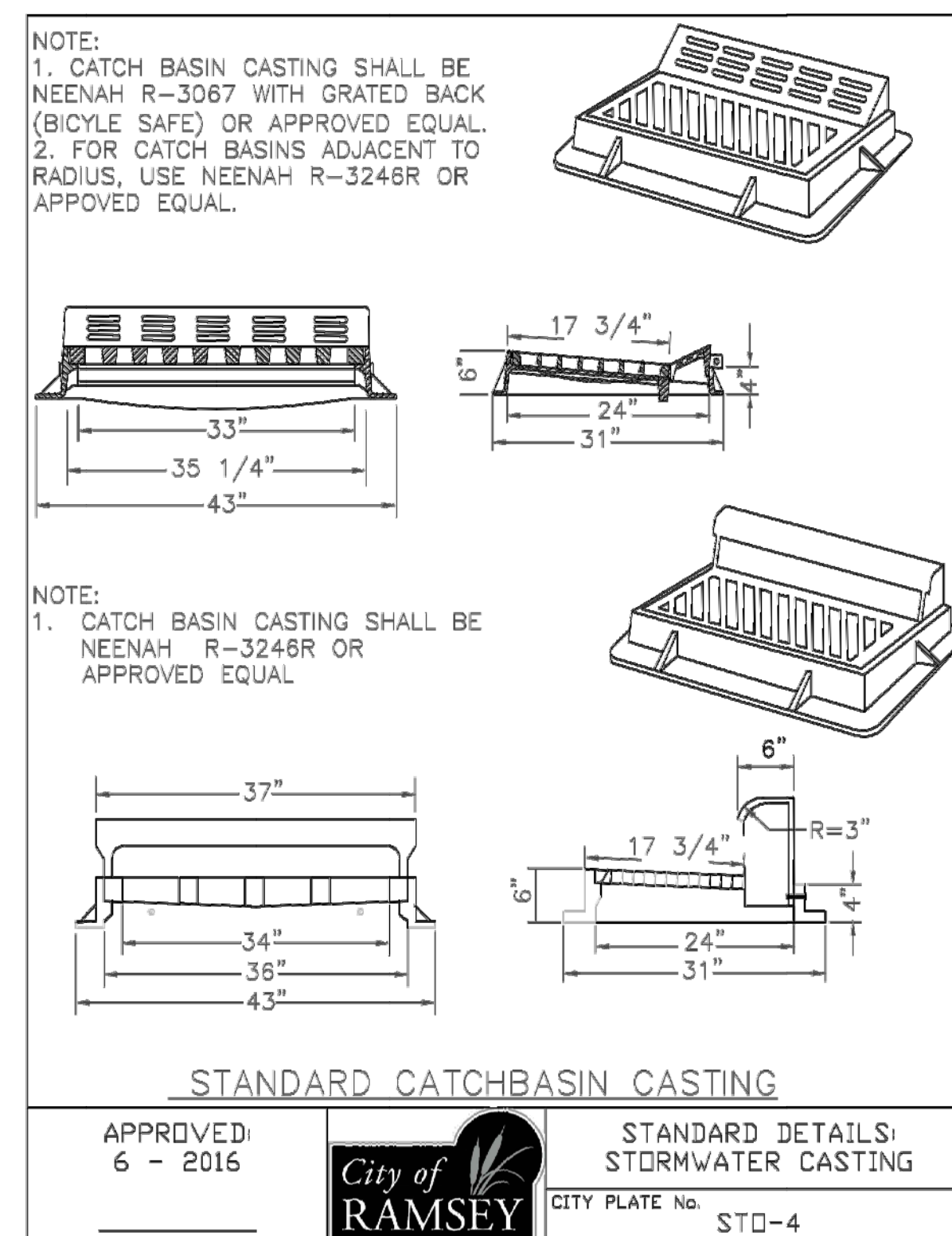
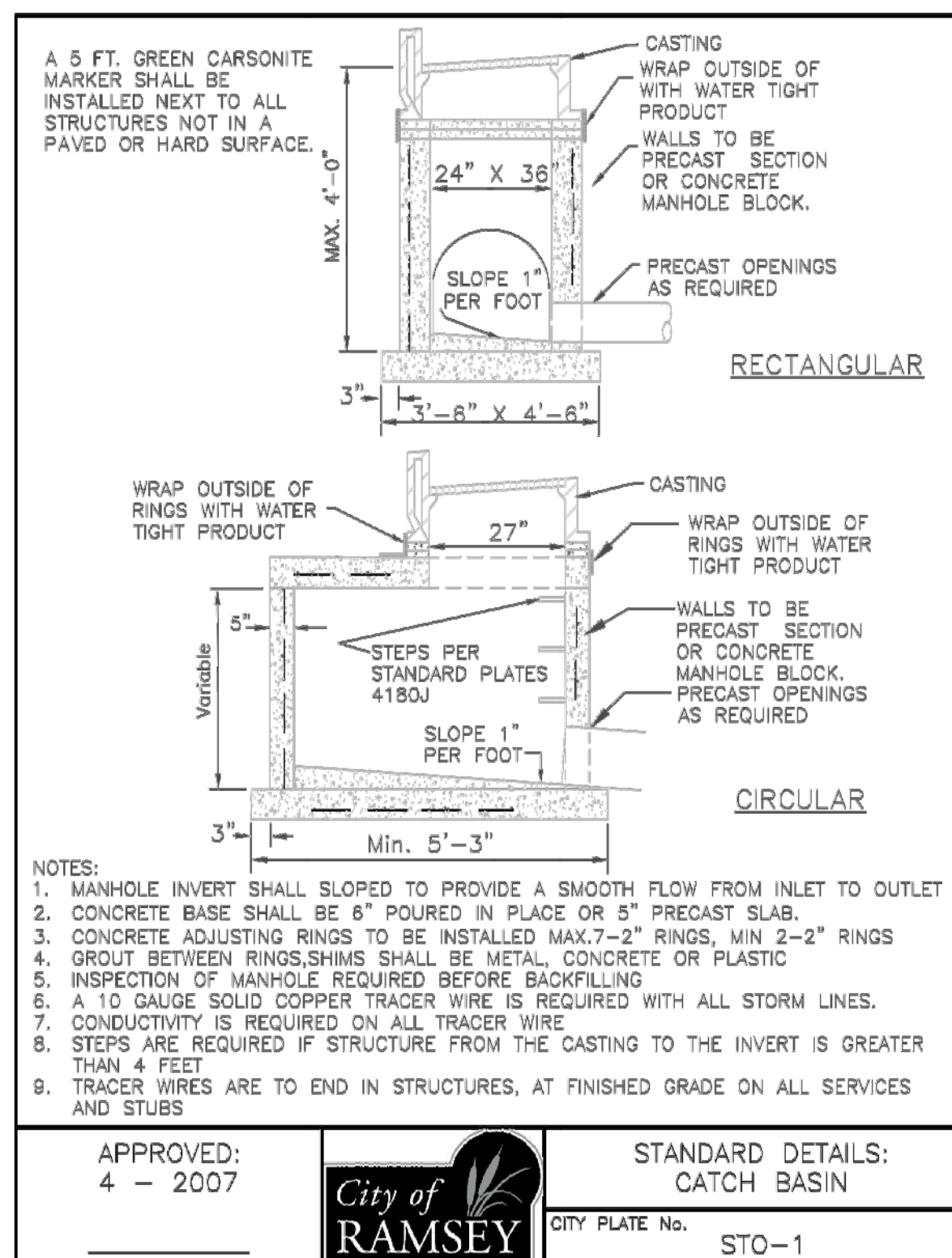
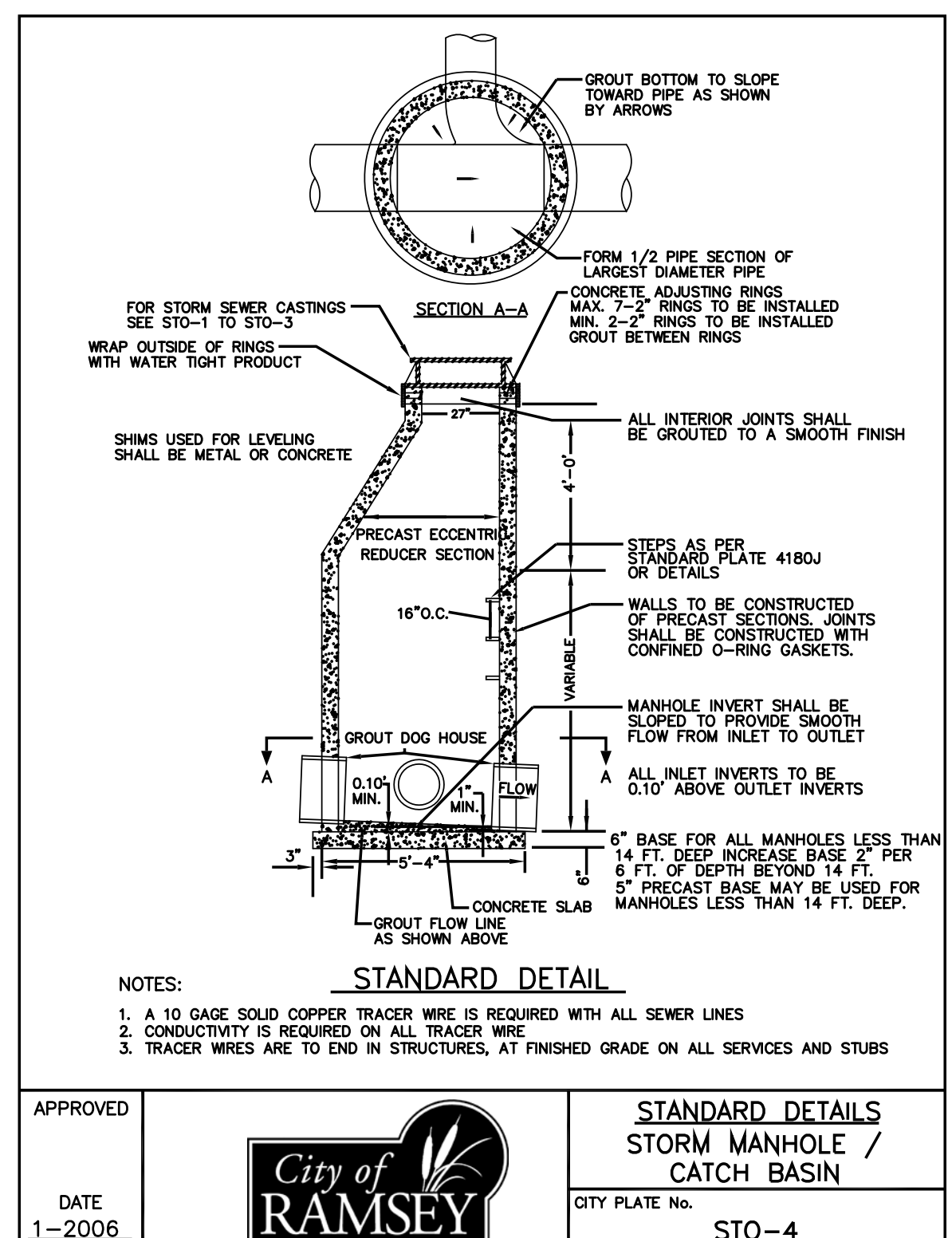
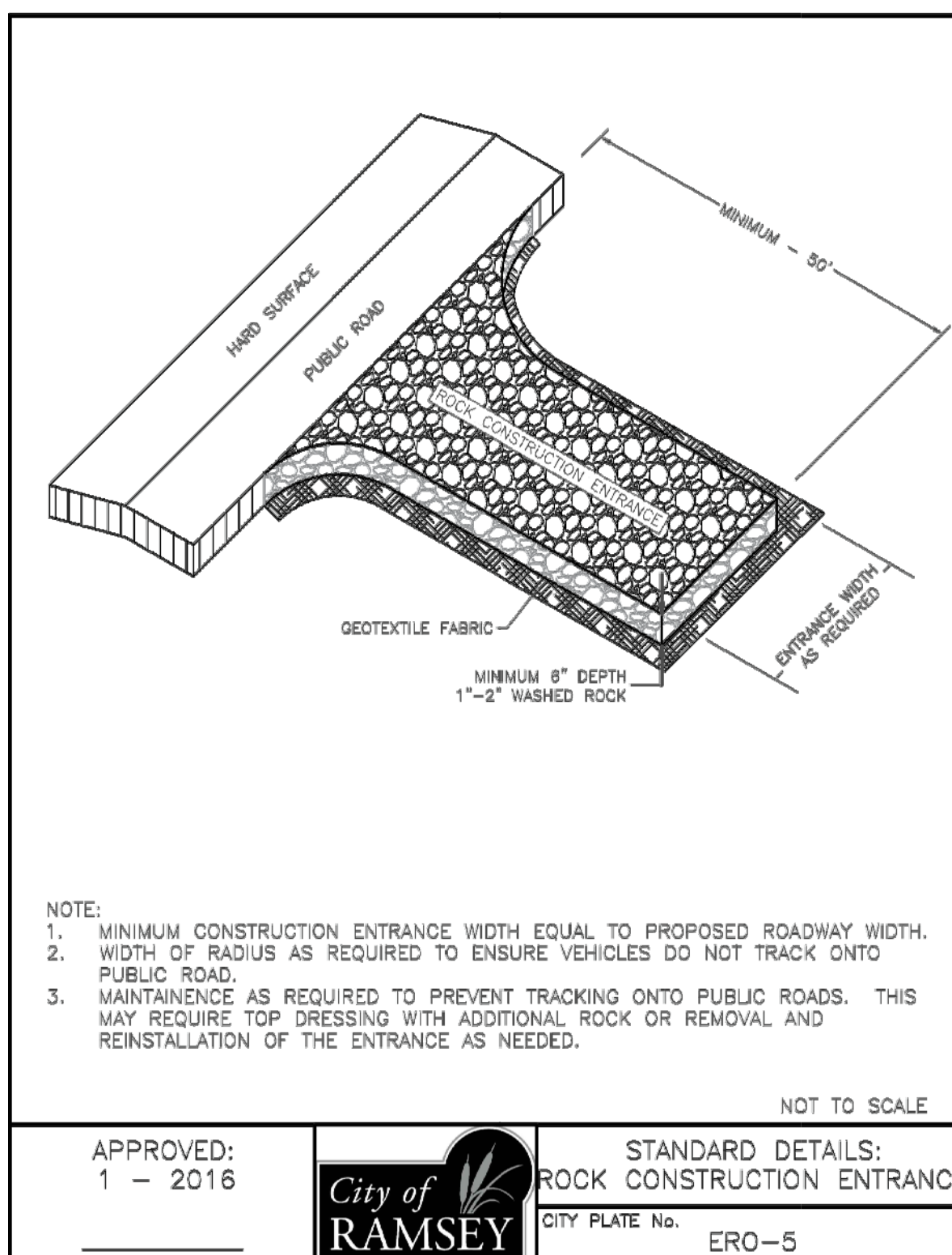
YOLITE STREET

GENERAL CONSTRUCTION NOTES AND DETAILS
CITY OF RAMSEY, MINNESOTA

SHEET 2 OF 22 SHEETS



- CONSTRUCTION PLAN LEGEND**
- X — X — EXISTING FENCE
 - X — X — SALVAGE FENCE
 - X — X — INSTALL SALVAGED FENCE
 - — — — EXISTING GRAVEL EDGE
 - — — — EXISTING RIGHT-OF-WAY
 - — — — PROPOSED RIGHT-OF-WAY
 - — — — PROPOSED CENTERLINE
 - 800 — — EXISTING CONTOUR
 - 800 — — PROPOSED CONTOUR
 - 877.0 — — SPOT ELEVATION
 - ⇒ — — DRAINAGE ARROW
 - — — — PROPERTY BOUNDARY
 - — — — EXISTING WATERMAIN
 - — — — PROPOSED WATERMAIN
 - — — — EXISTING SANITARY
 - — — — PROPOSED SANITARY
 - — — — SAWCUT CONCRETE PAVEMENT (FULL DEPTH)
 - — — — SAWCUT BITUMINOUS (FULL DEPTH)
 - — — — EXISTING TREE LINE
 - — — — CLEAR AND GRUB TREES
 - — — — EXISTING STORM SEWER
 - — — — PROPOSED STORM SEWER
 - — — — OVERHEAD POWER
 - — — — GAS LINE
 - — — — BURIED TELEPHONE LINE
 - — — — BURIED ELECTRIC LINE
 - — — — BURIED FIBER OPTIC
 - — — — EXISTING ELECTRIC PEDESTAL
 - — — — EXISTING CATCH BASIN
 - — — — PROPOSED CATCH BASIN
 - — — — EXISTING STORM MANHOLE
 - — — — PROPOSED STORM MANHOLE
 - — — — EXISTING HYDRANT
 - — — — PROPOSED HYDRANT
 - — — — EXISTING GATE VALVE
 - — — — PROPOSED GATE VALVE
 - — — — EXISTING SANITARY MANHOLE
 - — — — EXISTING CONCRETE
 - — — — PROPOSED CONCRETE
 - — — — EXISTING GRAVEL



DATE	REVISION
6/1/17	CITY COMMENTS

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.

Craig J. Jochem
 CRAIG J. JOCHUM, P.E.
 Lic. No. 23461

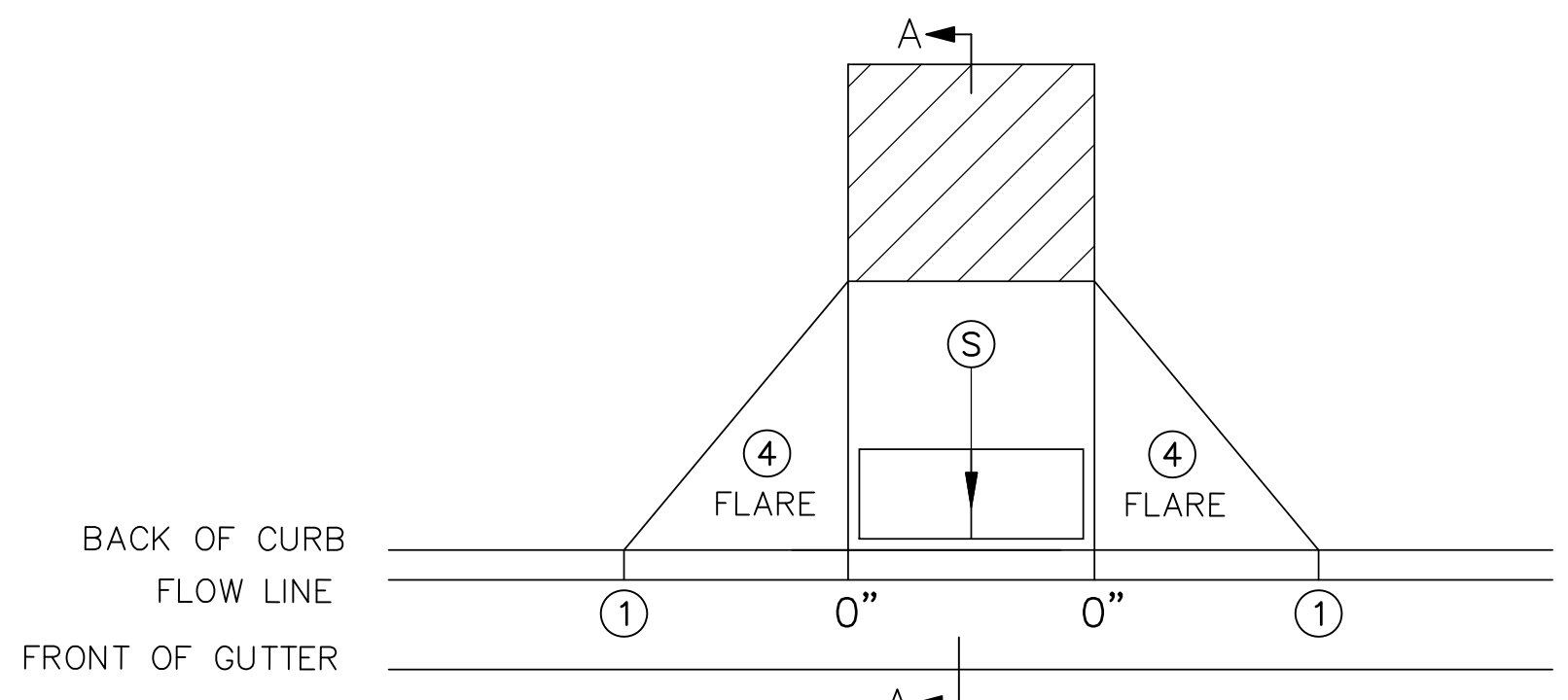
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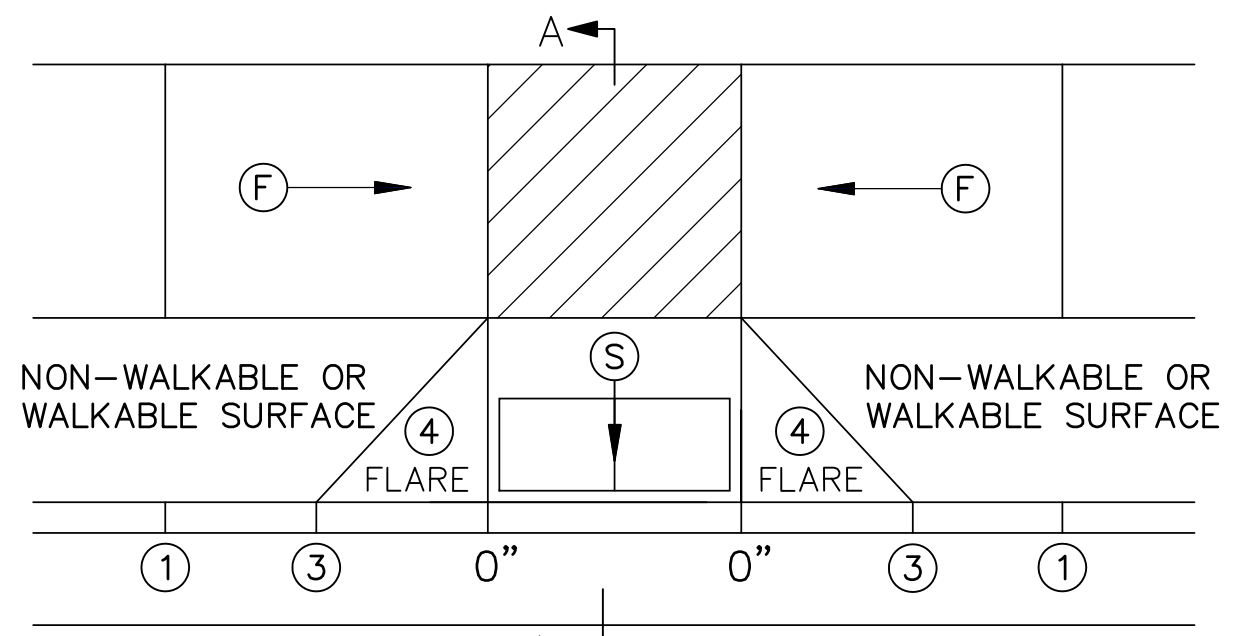
YOLITE STREET

DETAILS & LEGEND
 CITY OF RAMSEY, MINNESOTA

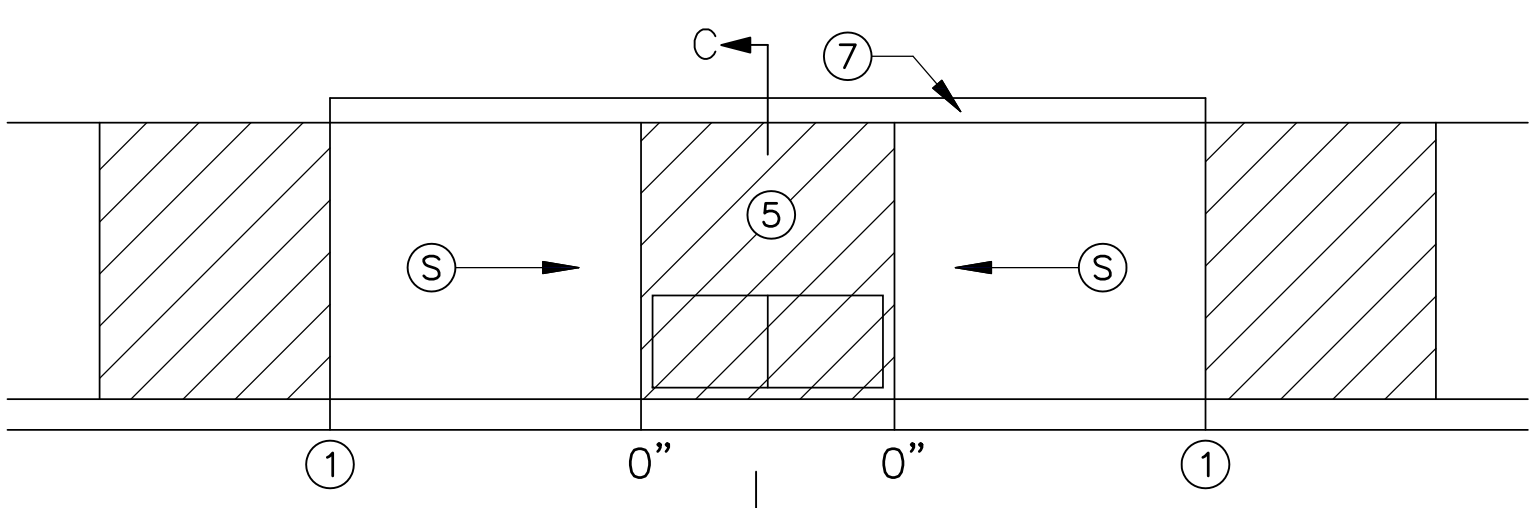
SHEET 3 OF 22 SHEETS
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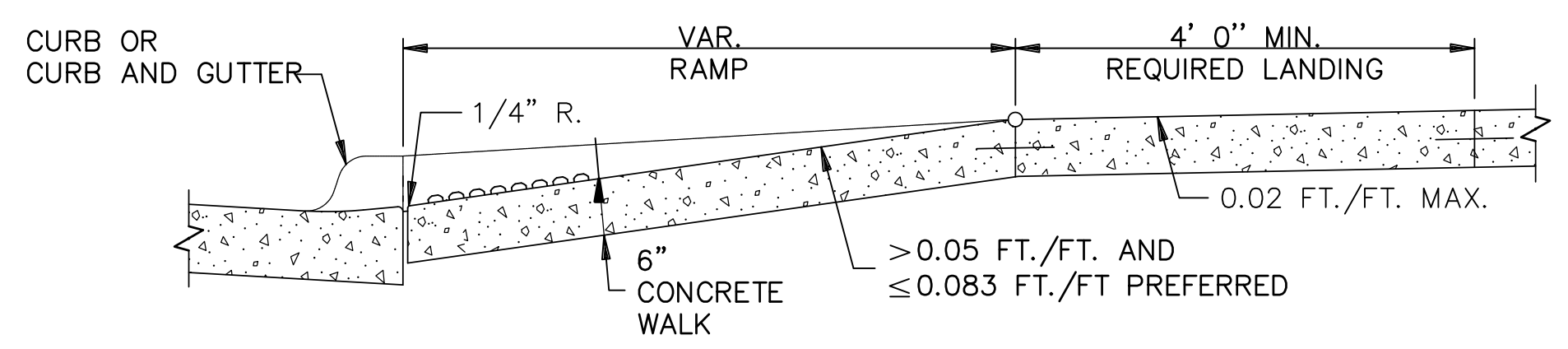
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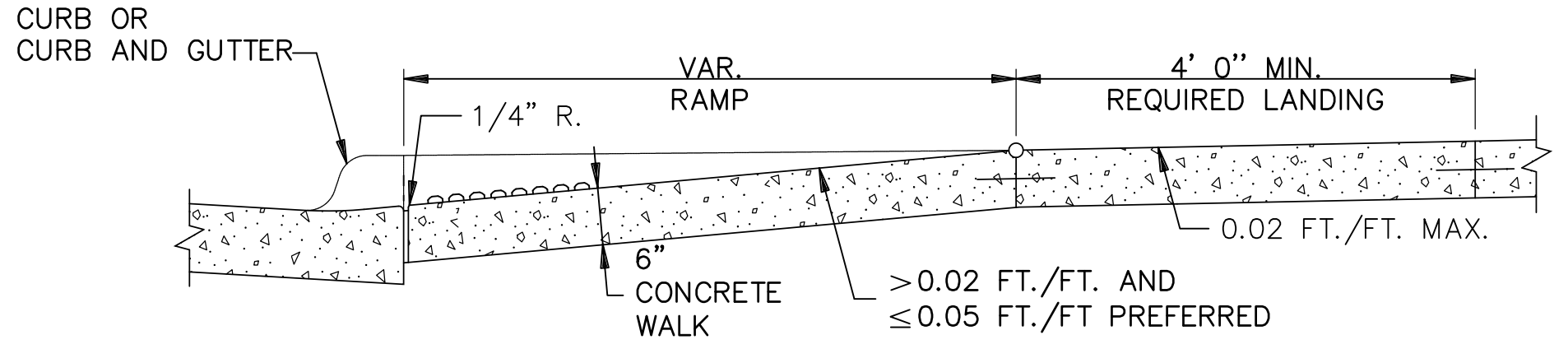
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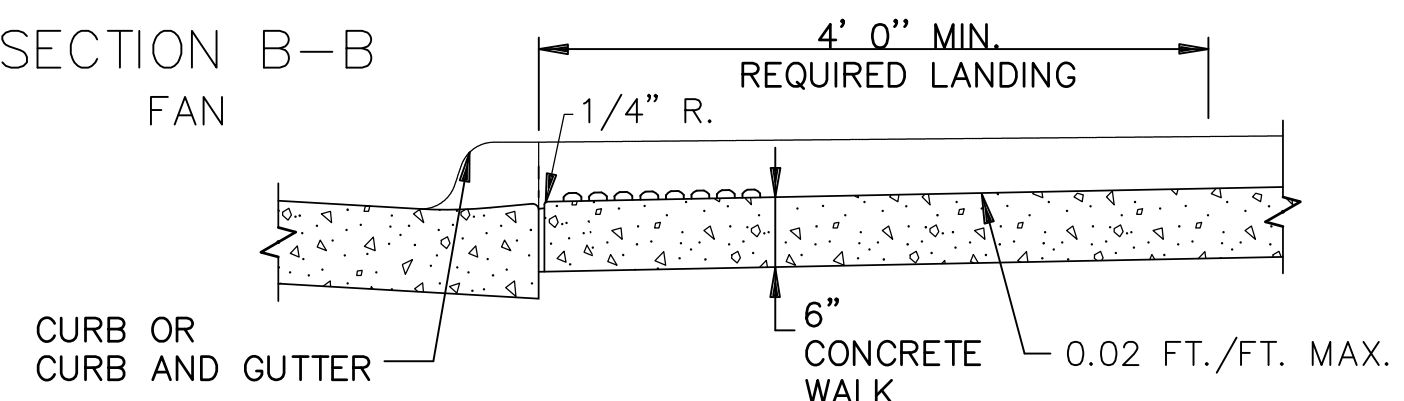
PARALLEL



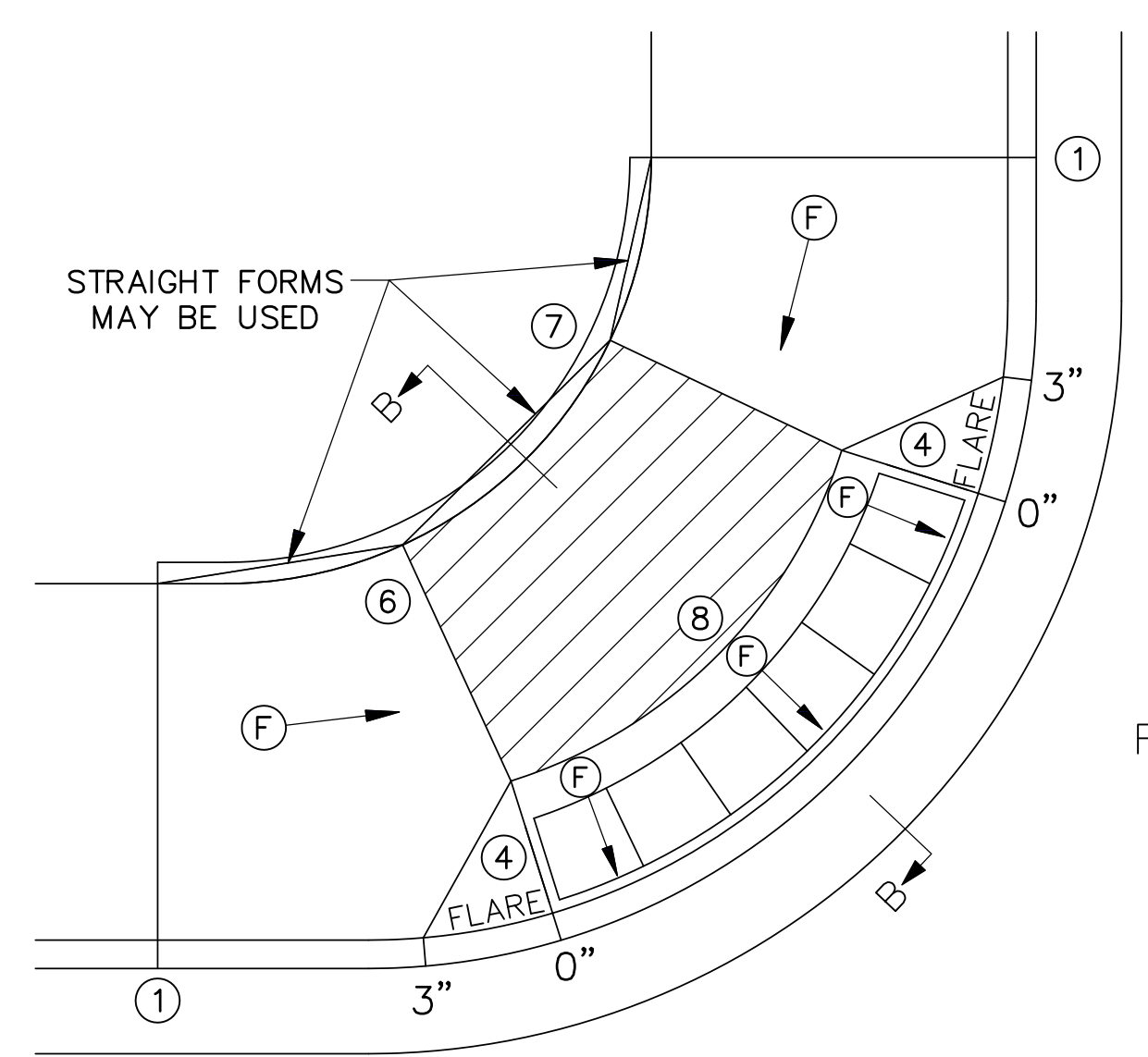
SECTION A-A
PERPENDICULAR/TIERED/DIAGONAL



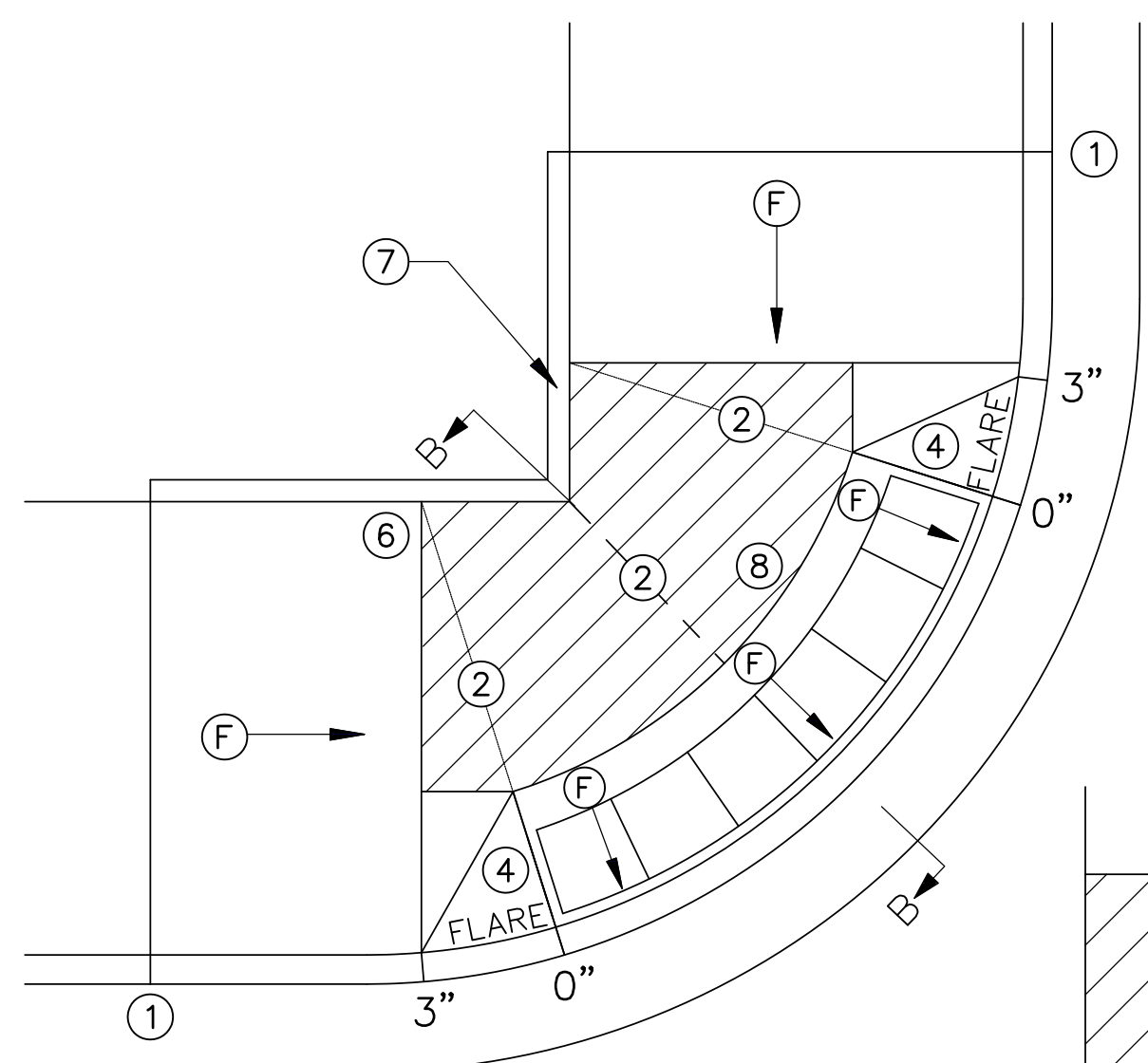
SECTION B-B
FAN



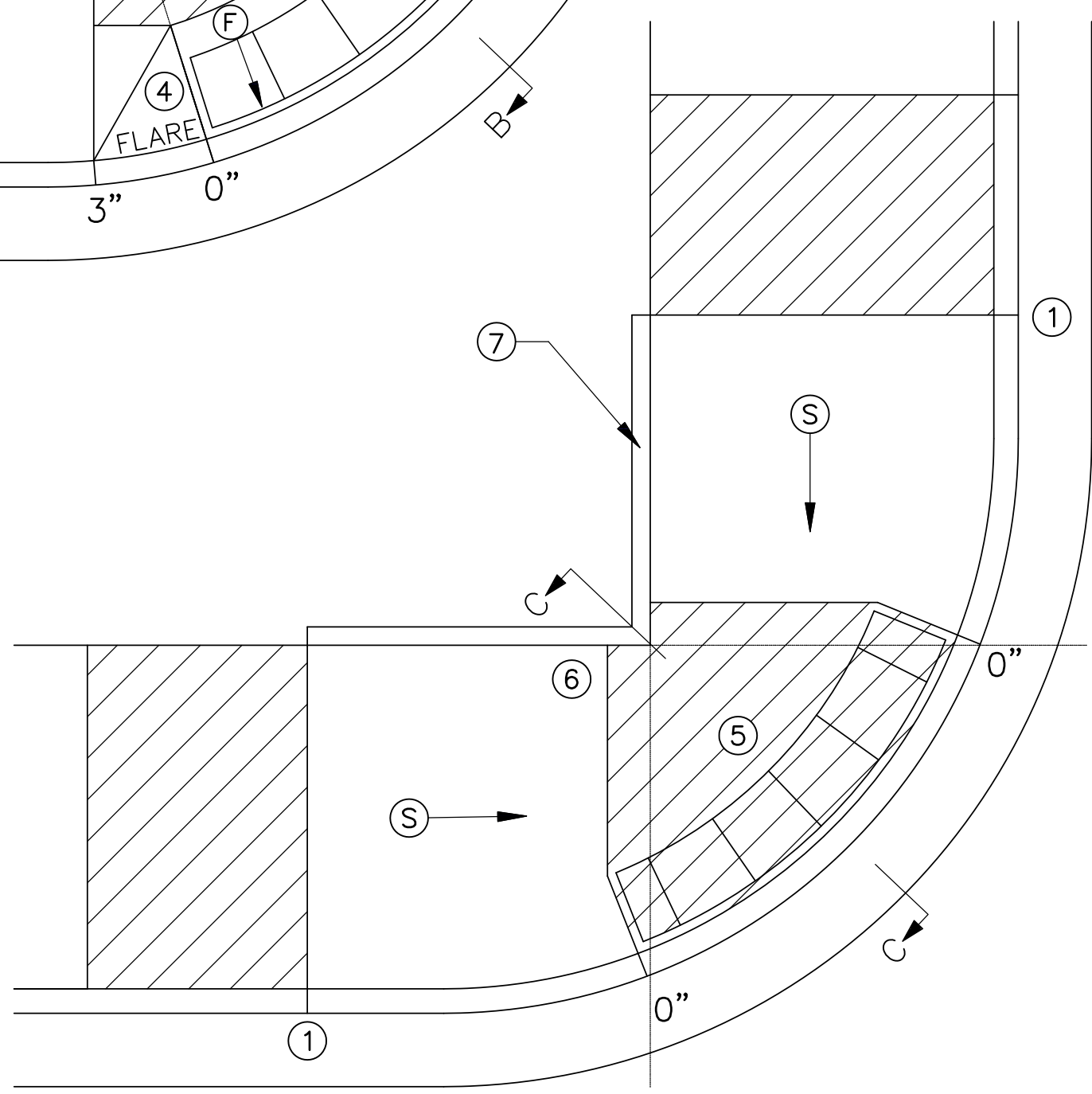
SECTION C-C
PARALLEL/DEPRESSED CORNER



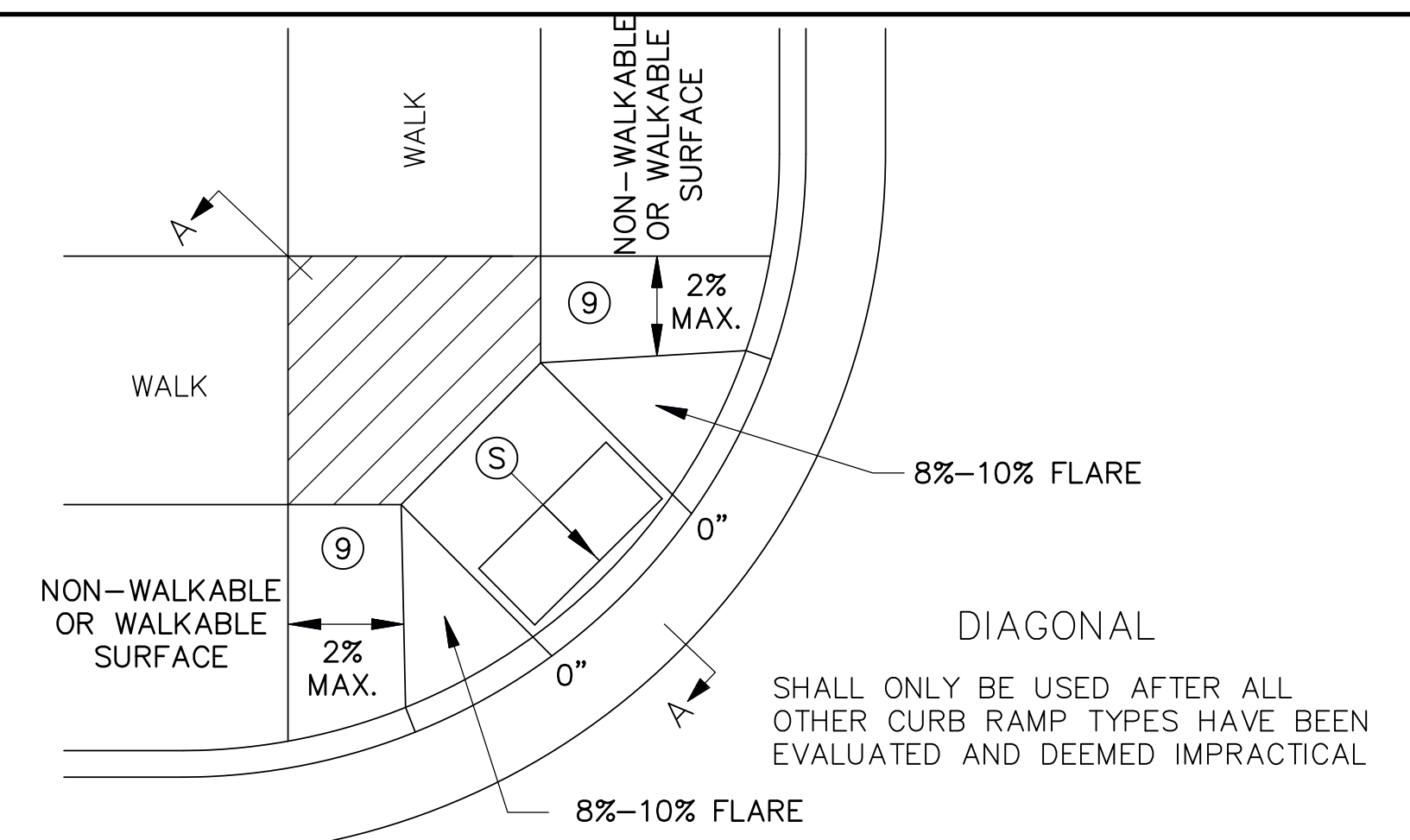
FAN ⑩



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



DEPRESSED CORNER



DIAGONAL
SHALL ONLY BE USED AFTER ALL
OTHER CURB RAMP TYPES HAVE BEEN
EVALUATED AND DEEMED IMPRACTICAL

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 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 RAMPS 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 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 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 53, 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	
(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%.
(Hatched Box)	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

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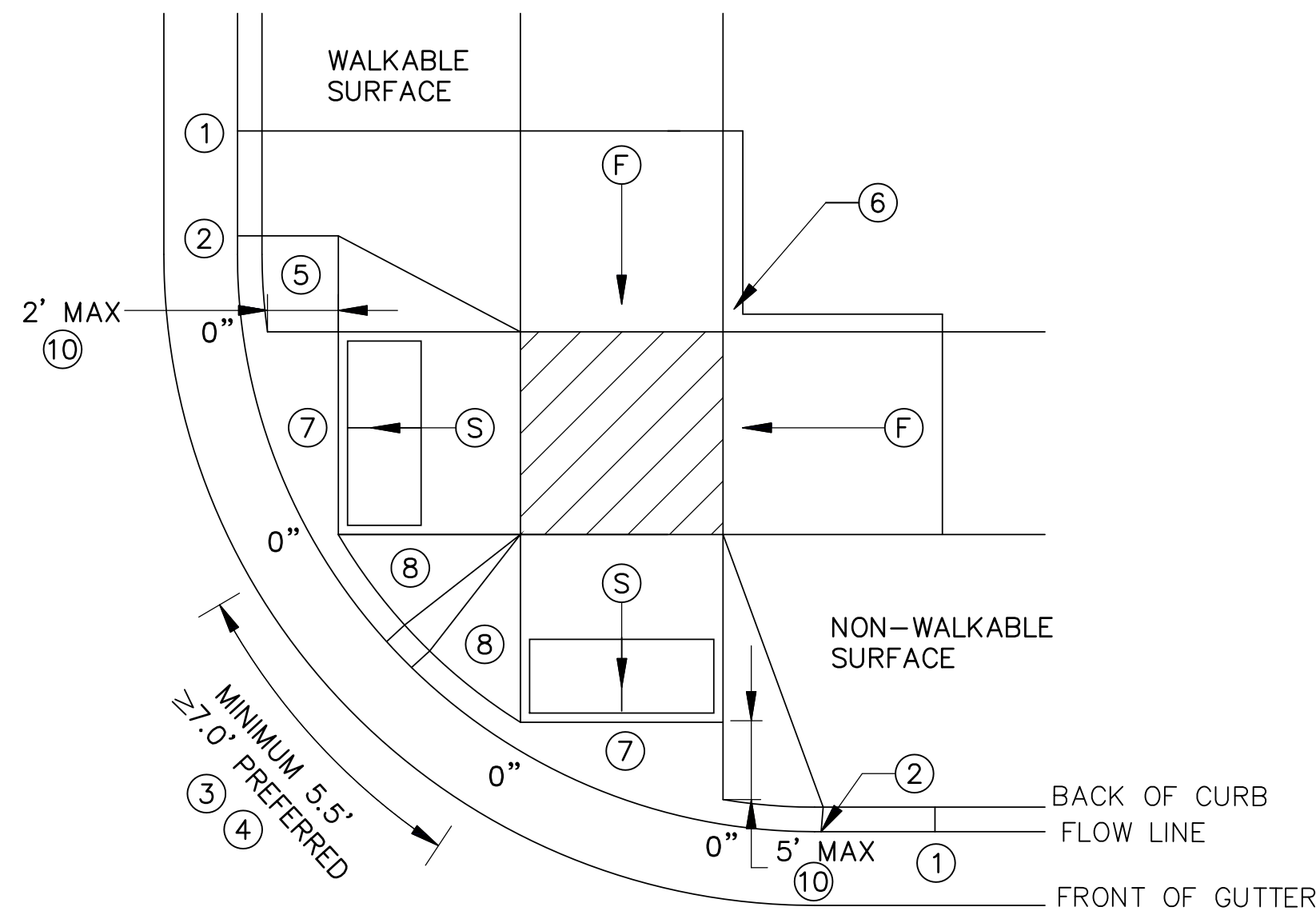
REVISION:
 APPROVED: JANUARY 23, 2017

 OPERATIONS ENGINEER

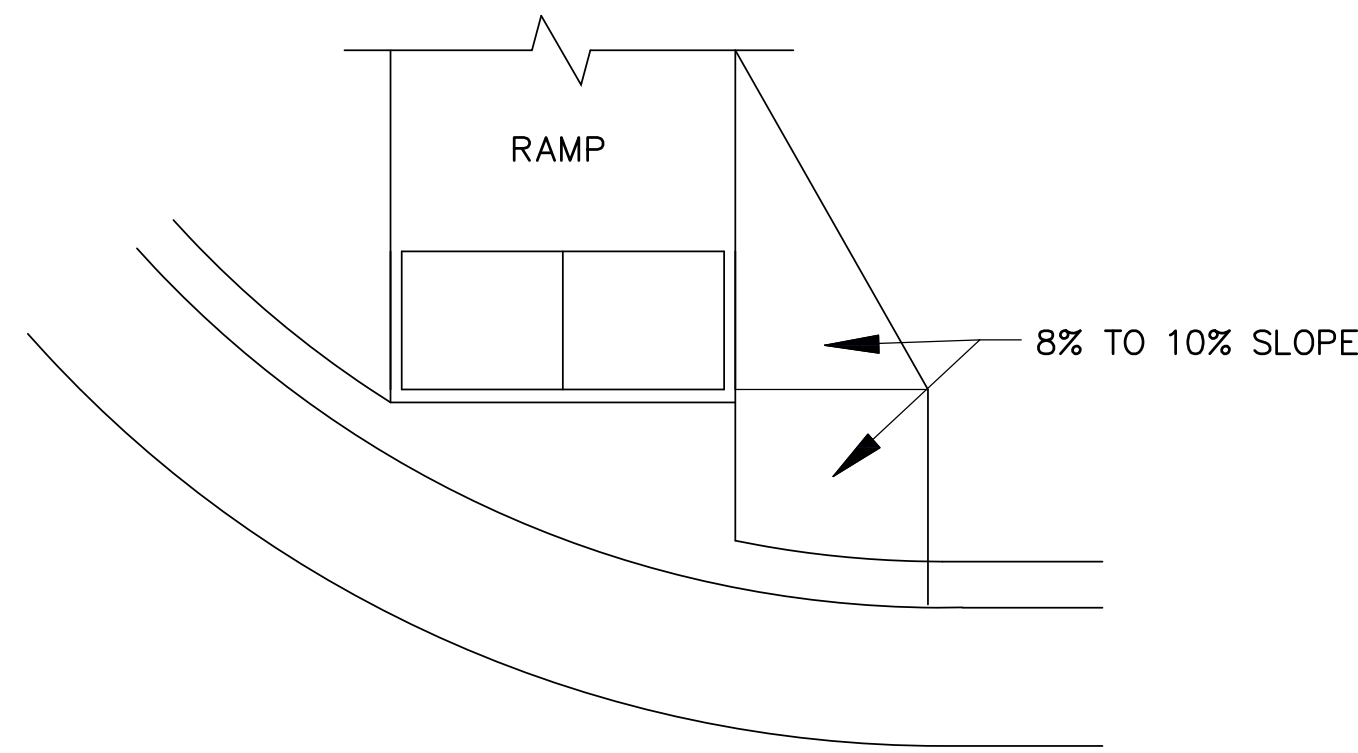
MINNESOTA
 DEPARTMENT OF TRANSPORTATION

 STATE DESIGN ENGINEER
 REVISOR:
 APPROVED: 1-23-2017

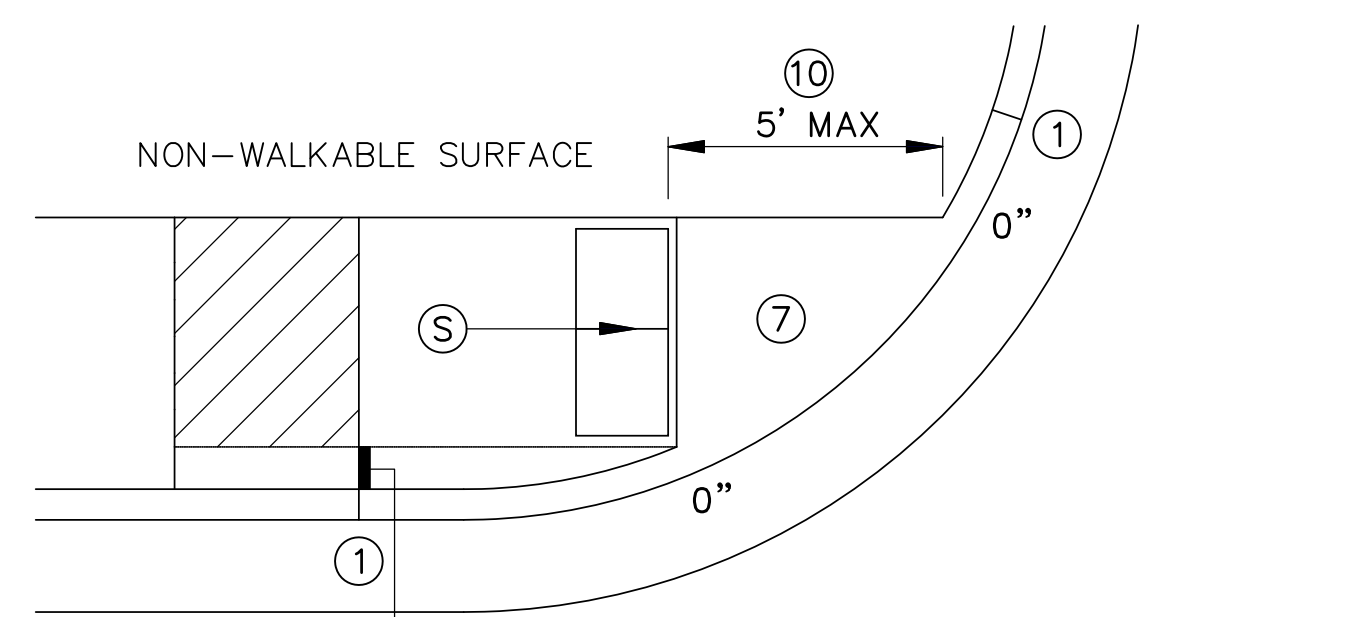
PEDESTRIAN CURB RAMP DETAILS
 SHEET 4 OF 22
 STANDARD PLAN 5-297.250
 1 OF 6



COMBINED DIRECTIONAL ⑨

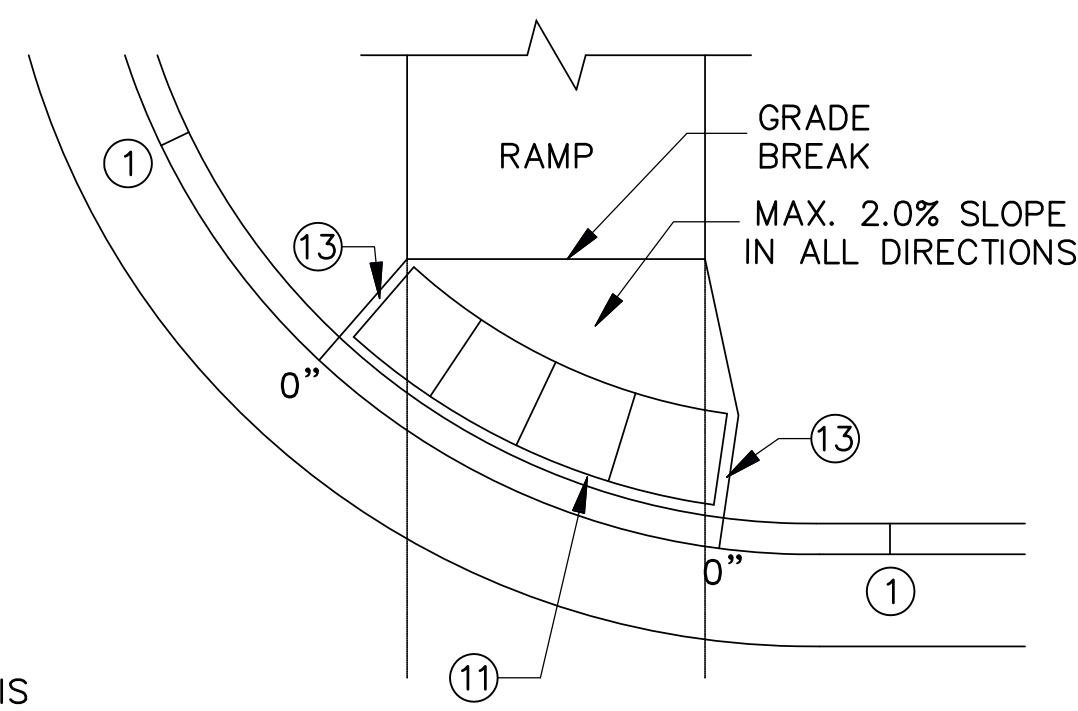


DIRECTIONAL RAMP WALKABLE FLARE

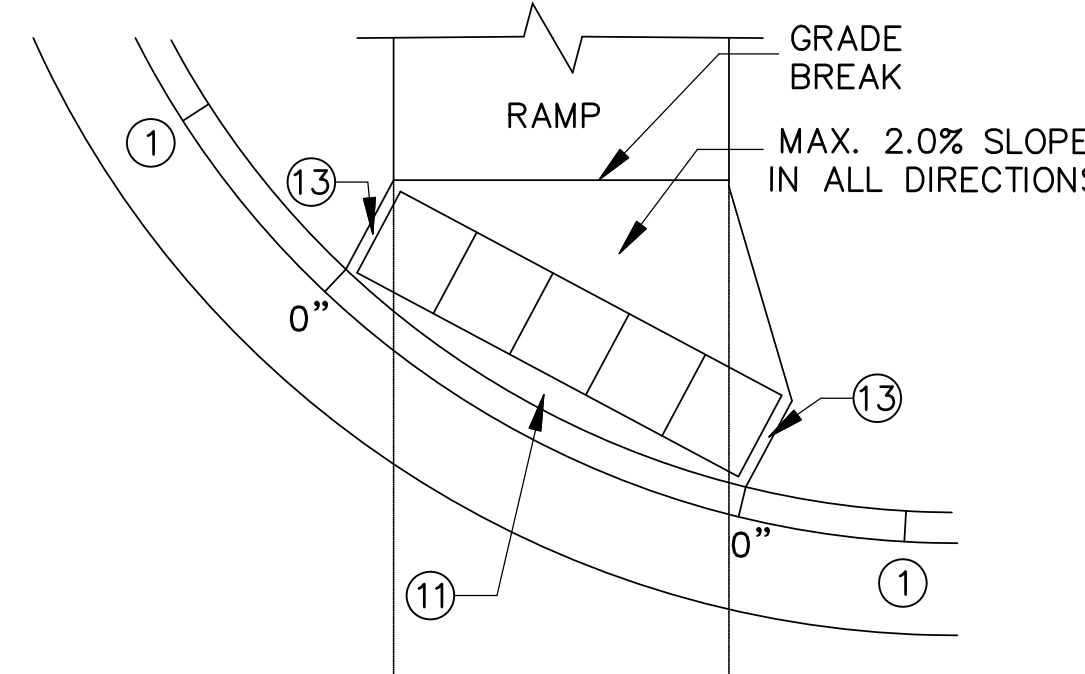


STANDARD ONE-WAY DIRECTIONAL ⑨

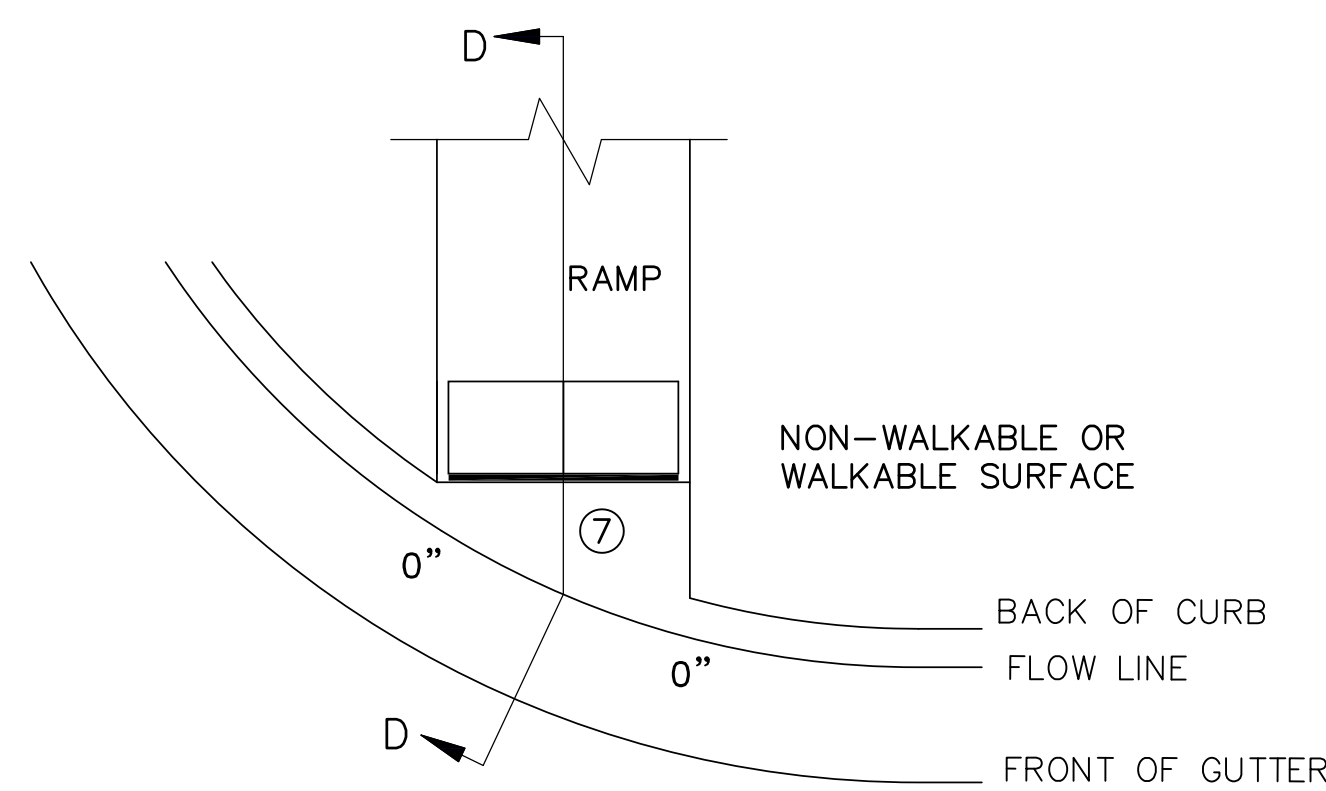
IF NON-CONCRETE BLVD. IS CONSTRUCTED AND IS LESS THAN 2' IN WIDTH AT TOP OF CURB TRANSITION, PAVE CONCRETE RAMP WIDTH TO ADJACENT BACK OF CURB.



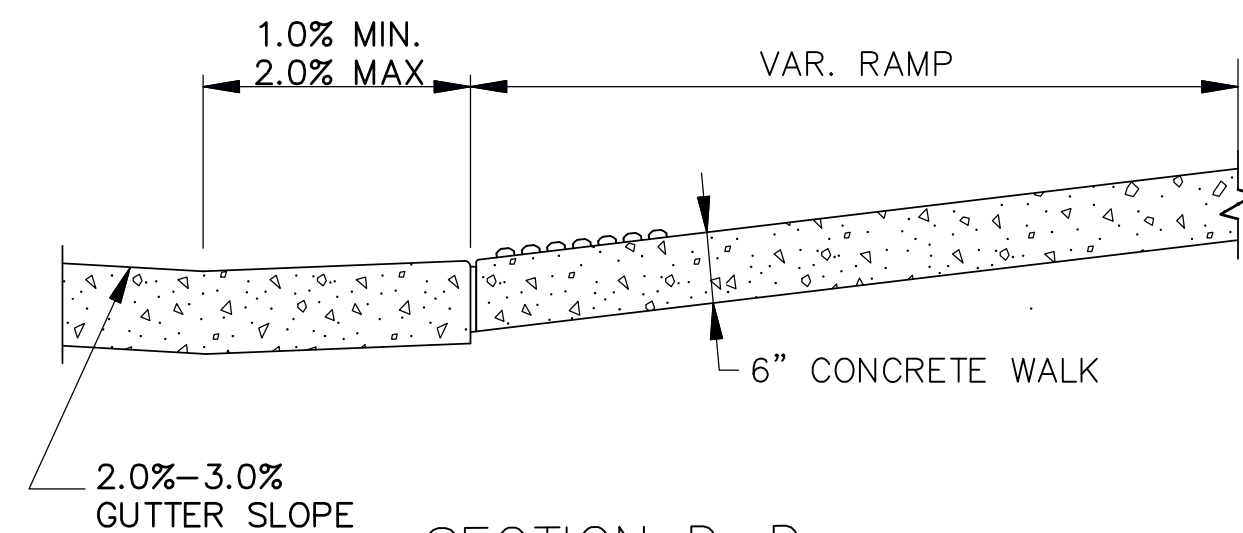
DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫



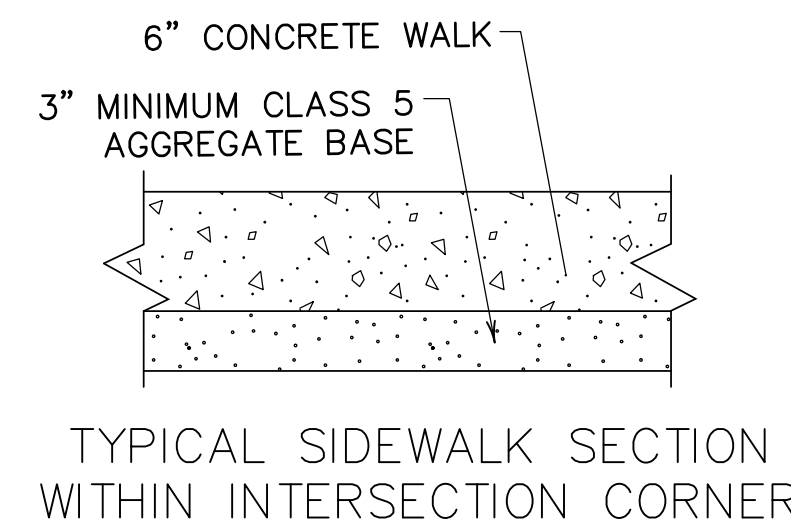
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB



CURB FOR DIRECTIONAL RAMPS ⑭



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.

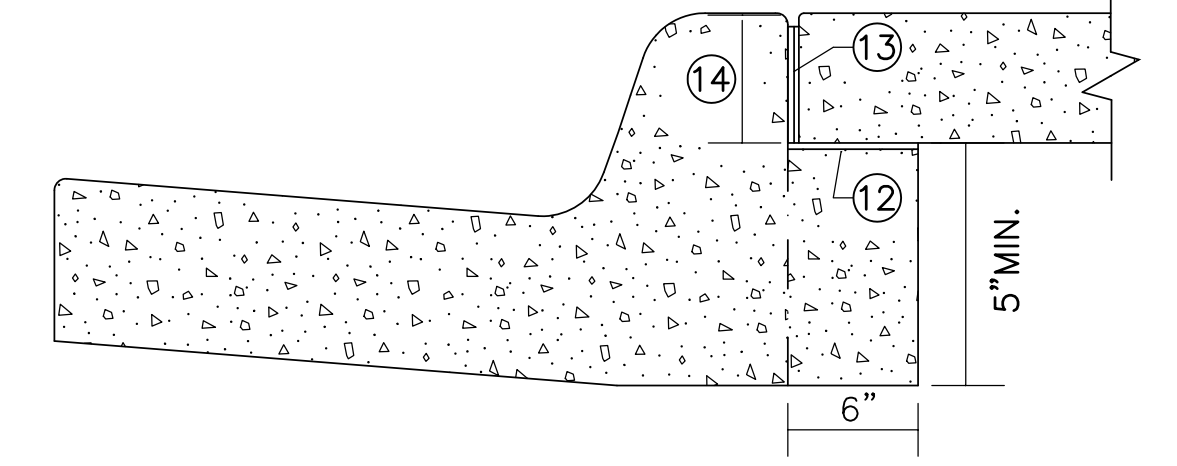
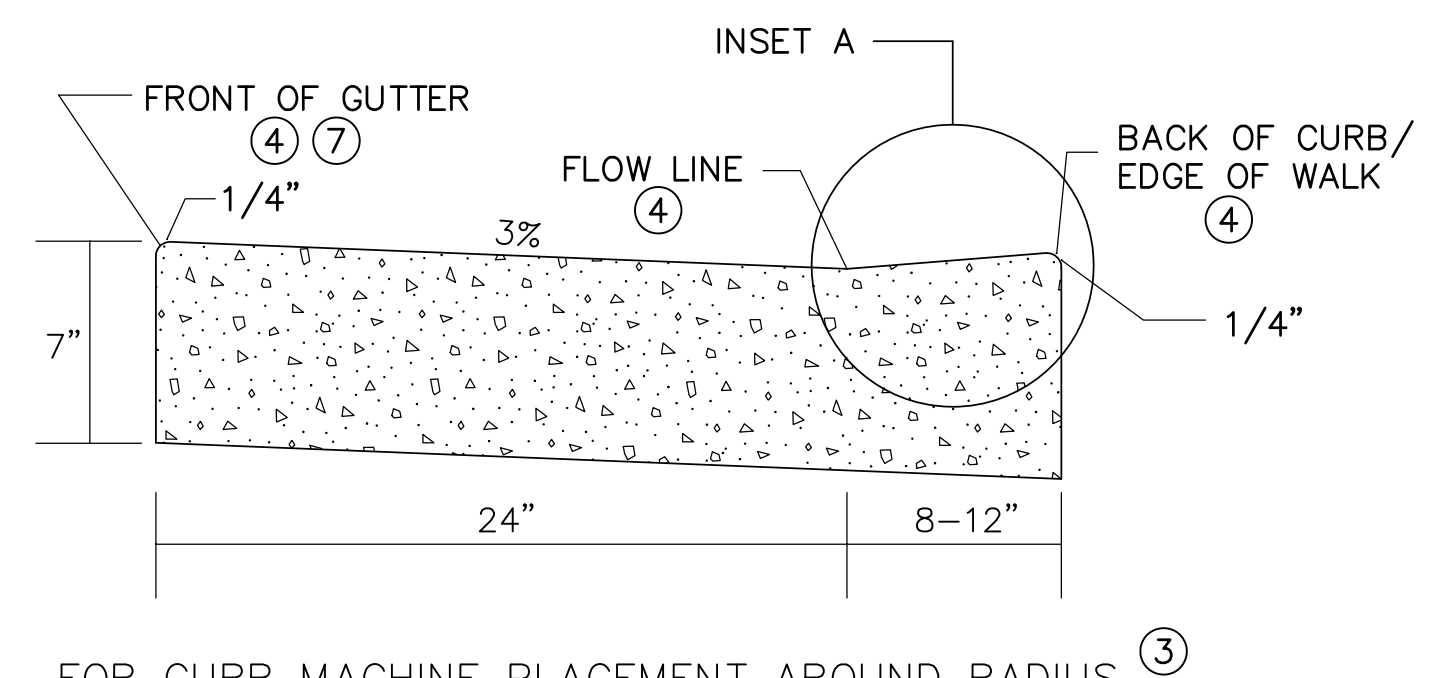
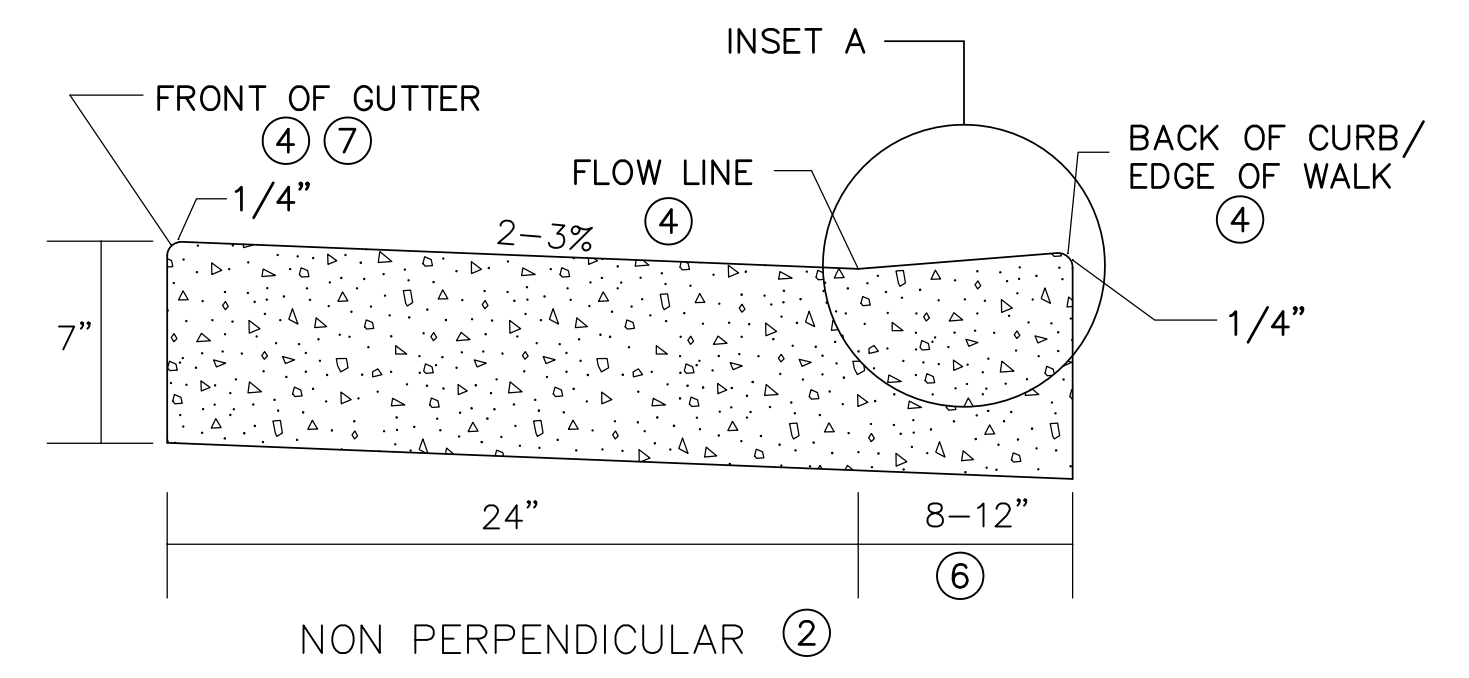
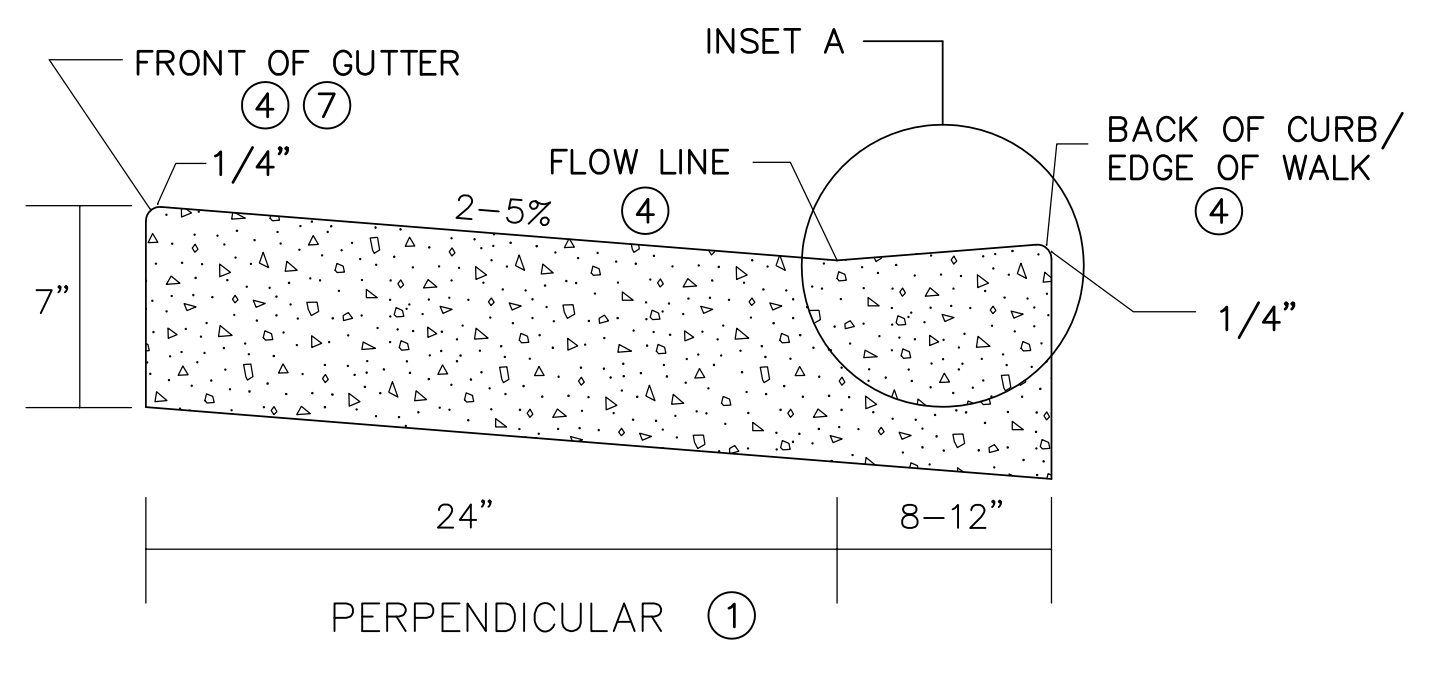
LEGEND	
THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.	
Ⓢ	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
Ⓣ	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 PARS.
X"	CURB HEIGHT

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REVISION:
APPROVED: JANUARY 23, 2017
[Signature]
OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION
[Signature]
STATE DESIGN ENGINEER
REVISOR:
APPROVED: 1-23-2017

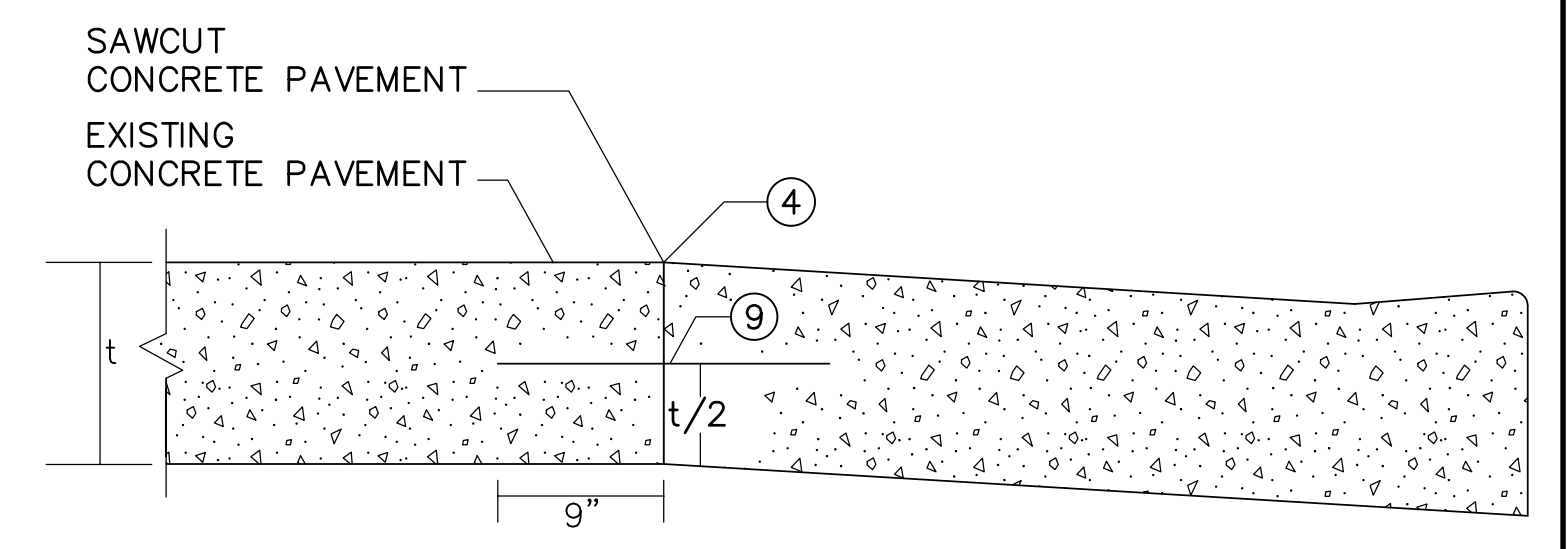
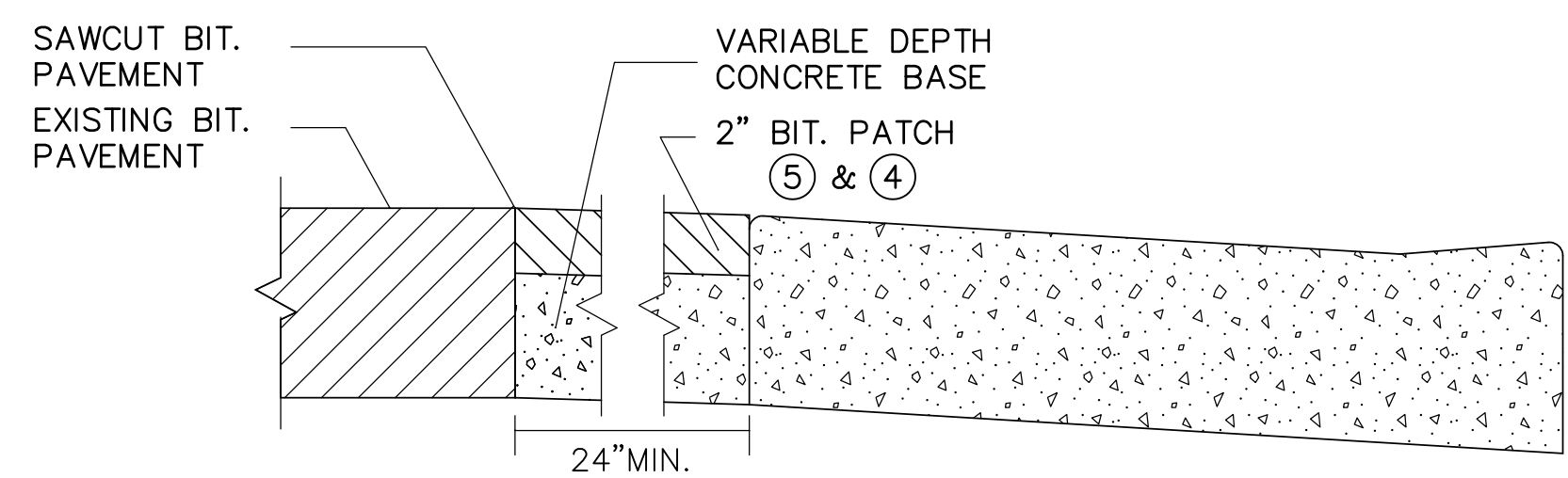
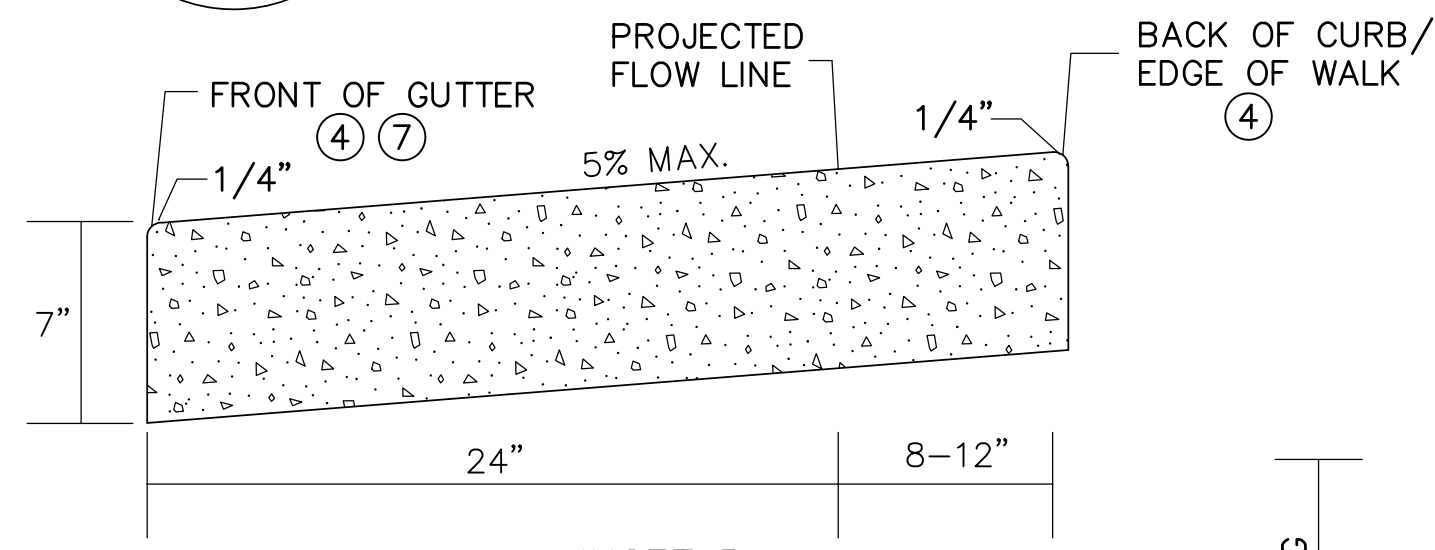
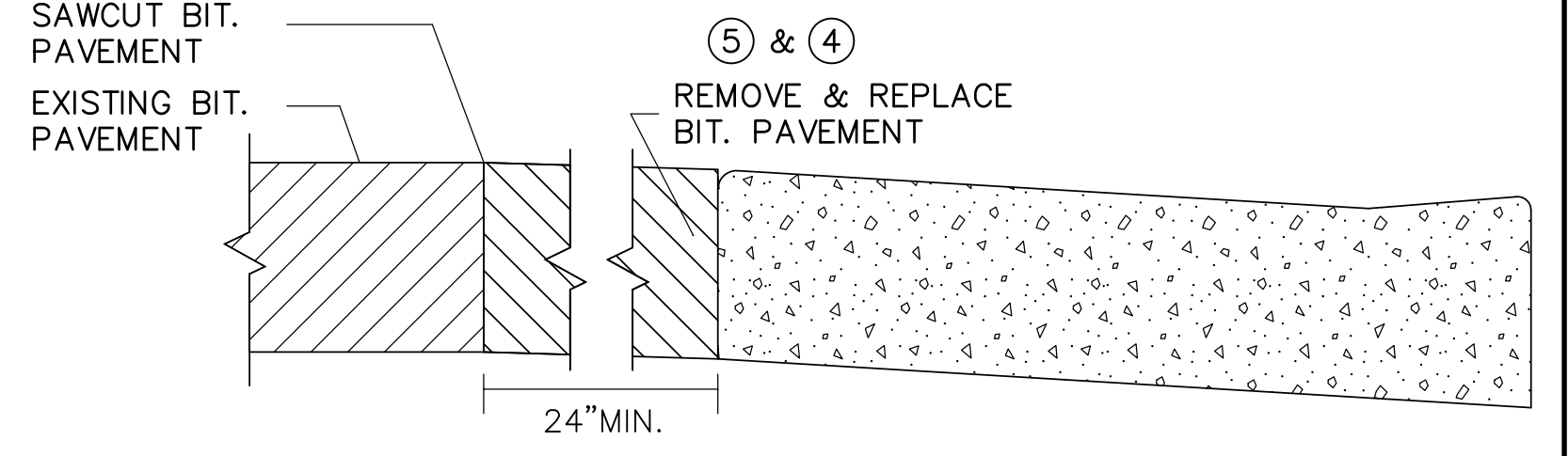
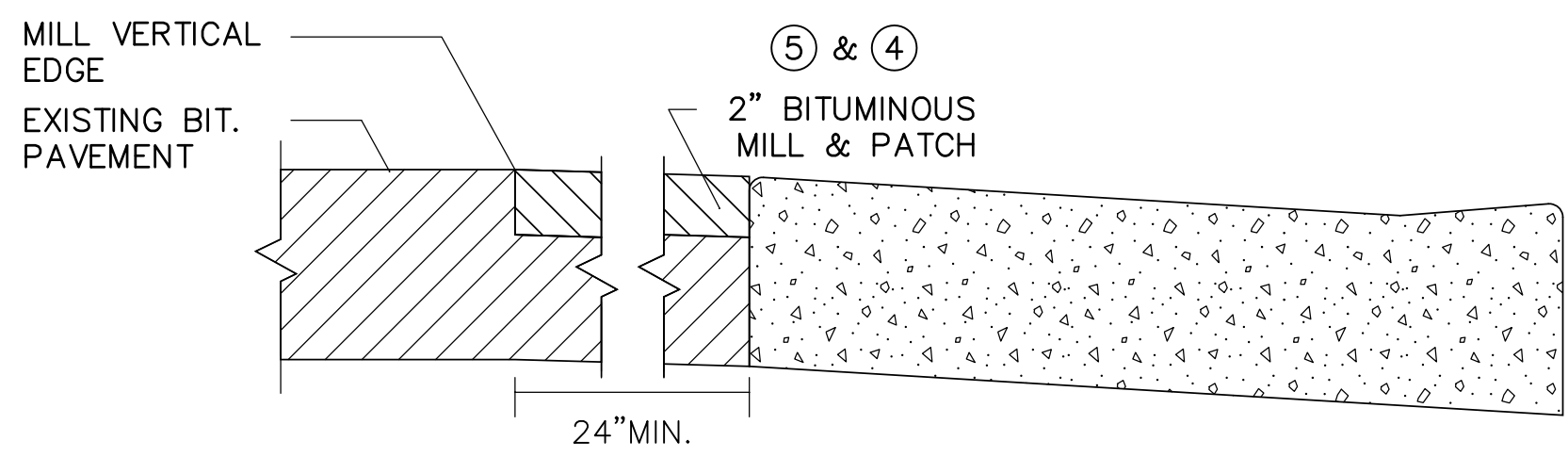
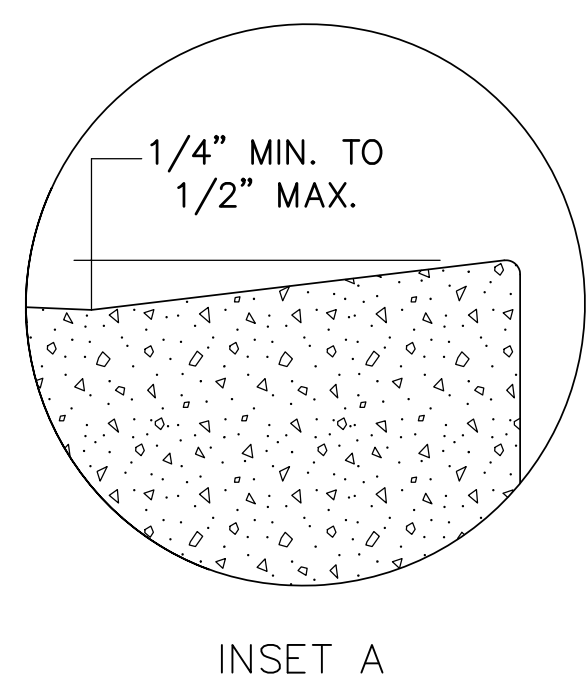
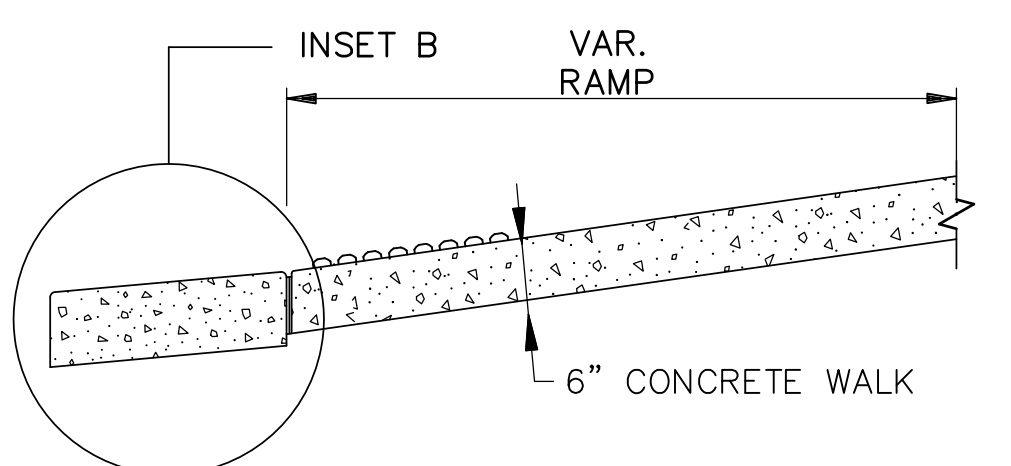
PEDESTRIAN CURB RAMP DETAILS
SHEET 5 OF 22
STANDARD PLAN 5-297.250
2 OF 6



PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL

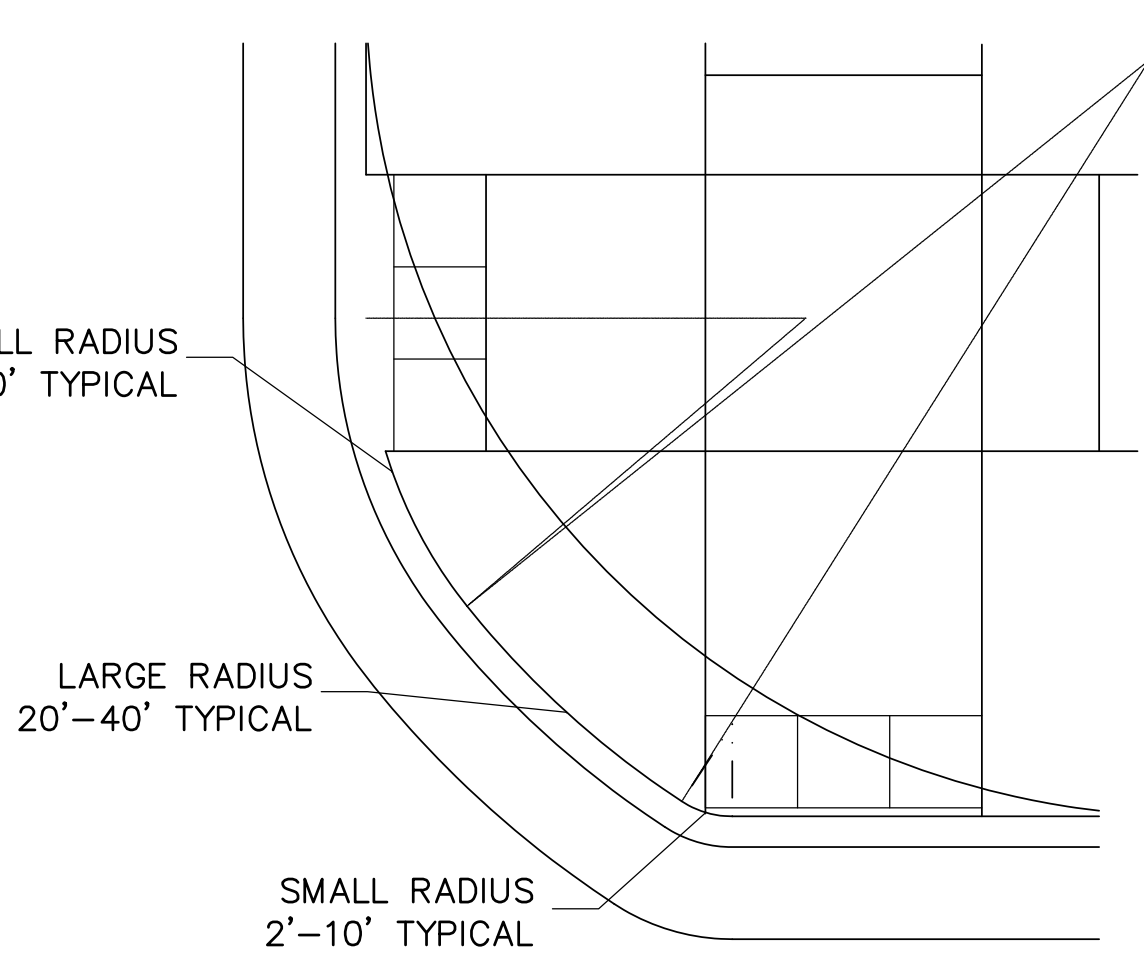
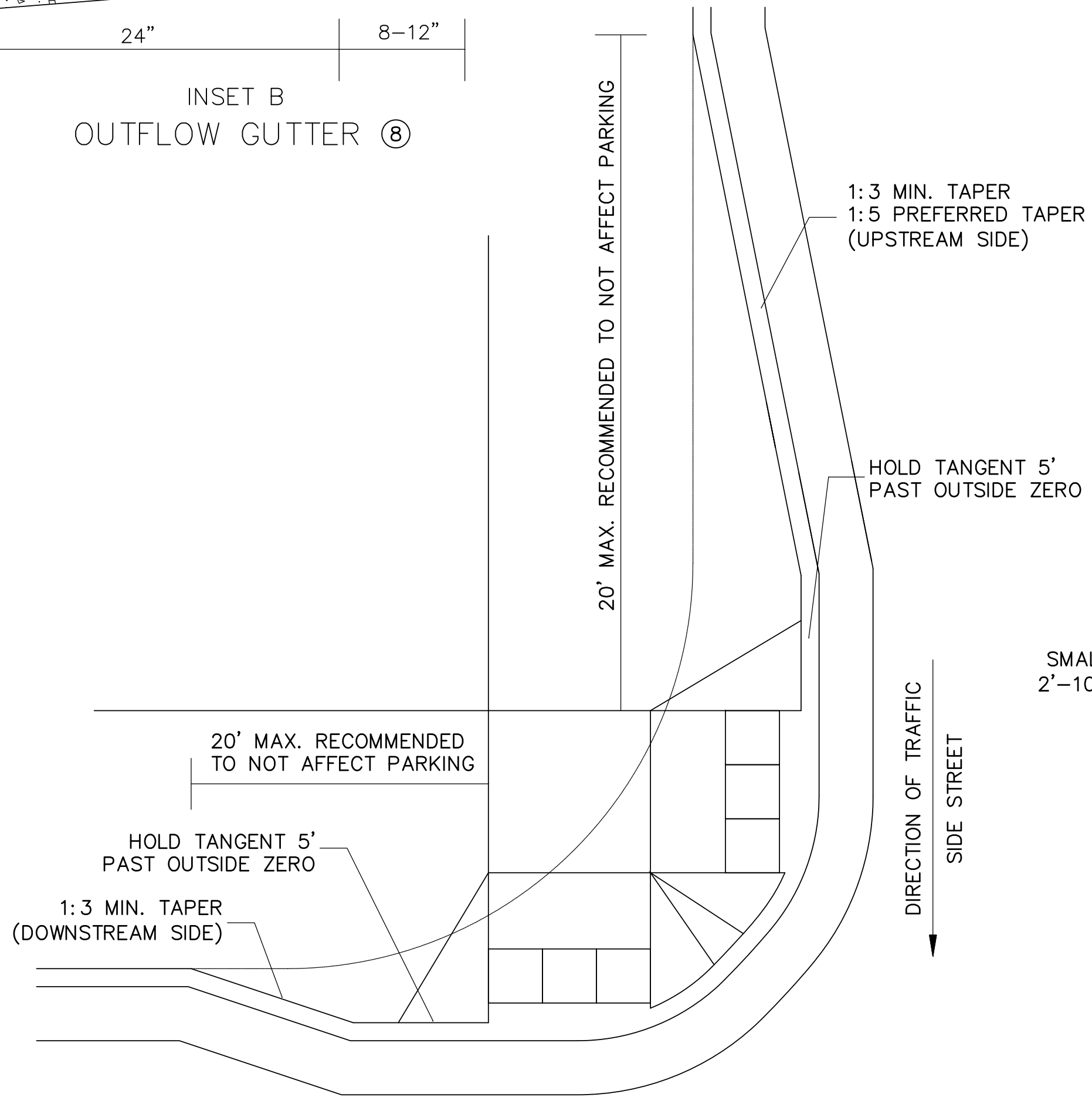
FOR CURB MACHINE PLACEMENT AROUND RADIUS (REGARDLESS OF RAMP TYPE)

OPTIONAL SILL CURB WHEN SIDEWALK IS AT BACK OF CURB
CONCRETE SILL TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.



ONLY ALLOWED PER ENGINEER'S APPROVAL

PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER
FOR USE ON CURB RAMP RETROFITS



COMBINED DIRECTIONAL (COMPOUND RADIUS)

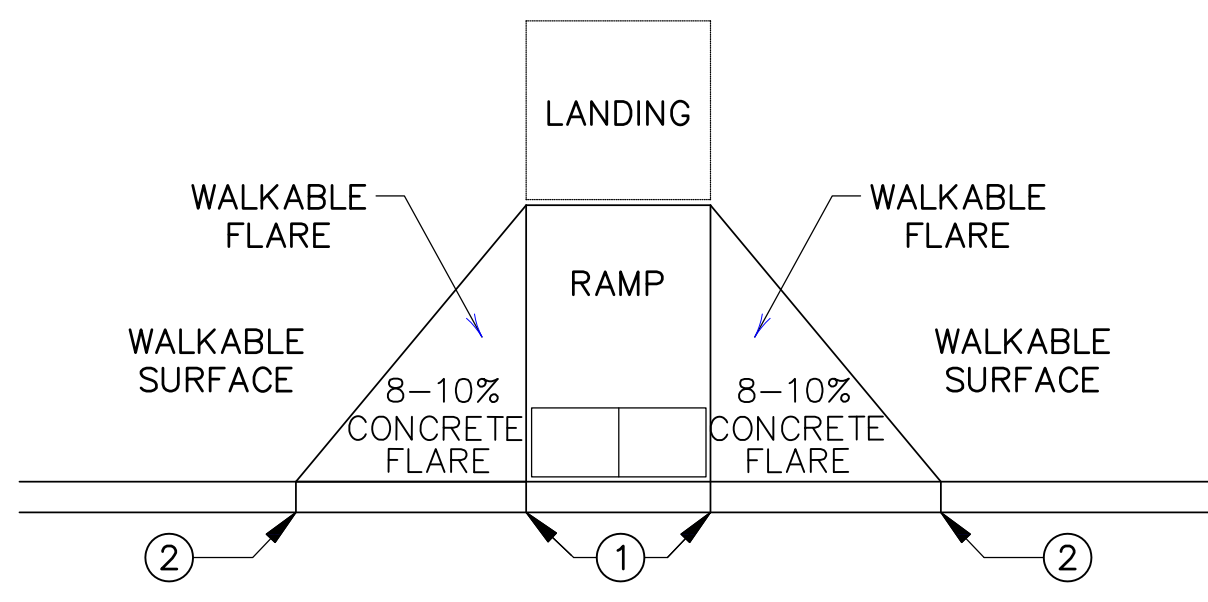
- NOTES:
- POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM. NO PONDING SHALL BE PRESENT IN THE PAR.
 - ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.
 - ① FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMPS.
 - ② FOR USE AT CURB RAMPS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS & DEPRESSED CORNERS.
 - ③ BEGIN GUTTER SLOPE TRANSITION 10' OUTSIDE OF ALL CURB RAMPS.
 - ④ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4\".
 - ⑤ ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.
 - ⑥ VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS. SEE SHEET 51 FOR DIRECTIONAL CURB SLOPE REQUIREMENTS.
 - ⑦ TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. TOP 1.5\" OF THE GUTTER FACE MUST BE A FORMED EDGE. PAR GUTTER SHALL NOT BE OVERLAID.
 - ⑧ SHOULD BE USED AT VERTICALLY CONSTRAINED AREAS WHEN AT A DRAINAGE HIGH POINT OR SUPER ELEVATED ROADWAY SEGMENTS
 - ⑨ DRILL AND GROUT NO. 4 EPOXY-COATED 18\" LONG TIE BARS AT 30\" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT 1' MINIMUM FROM ALL JOINTS.
 - ⑩ HELPS PROVIDE TWO SEPARATE RAMPS, REDUCES THE DOME SETBACK LENGTH AND MINIMIZES DIRECTIONAL CURB. THIS RADIUS DESIGN CLOSELY FOLLOWS THE TURNING VEHICLE PATH WHILE OPTIMIZING CURB RAMP LENGTH.
 - ⑪ CURB EXTENSIONS SHOULD BE USED IN VERTICALLY CONSTRAINED AREAS, USUALLY IN DOWNTOWN ROADWAY SEGMENTS WHERE ON-STREET PARKING IS AVAILABLE. CURB EXTENSIONS SHOULD BE CONSIDERED FOR APS INTERSECTIONS WHERE SPACE IS LIMITED. PUSH BUTTONS MUST MEET APS CRITERIA AS DESCRIBED IN THE PUSH BUTTON LOCATION DETAIL SHEET.
 - ⑫ PLACE BOND BREAKER BETWEEN WALK AND TOP OF SILL.
 - ⑬ 1/2\" PREFORMED JOINT FILLER PER MNDOT SPEC. 3702.
 - ⑭ DIMENSION TO BE SAME AS SIDEWALK THICKNESS, 4\" MIN.

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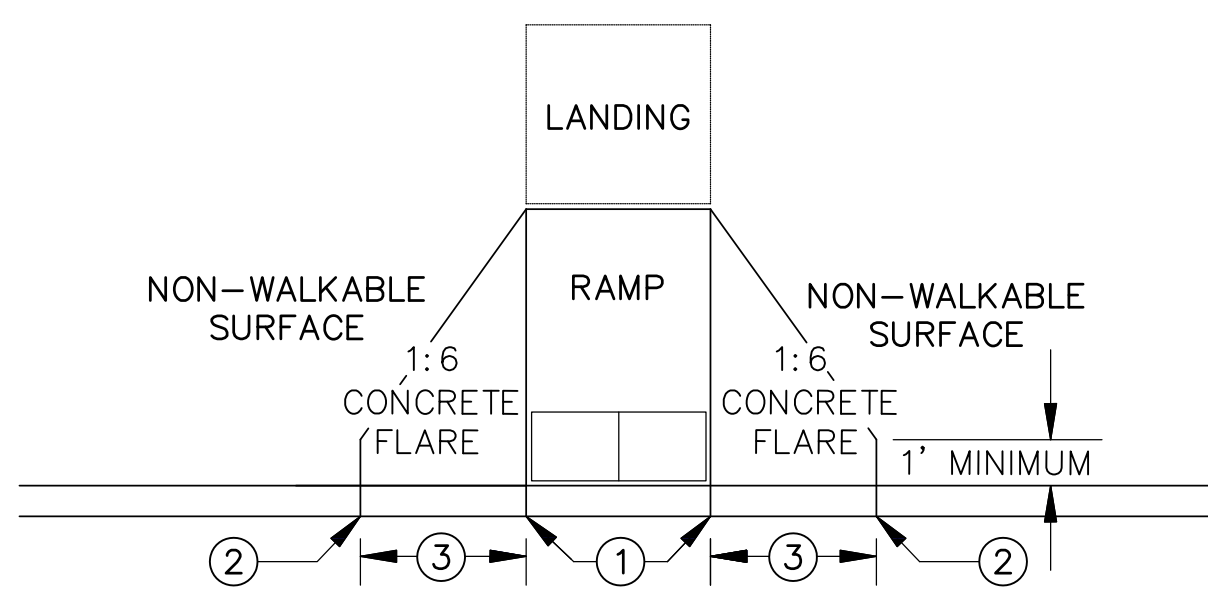
REVISION:
APPROVED: JANUARY 23, 2017
Ann Sabr
OPERATIONS ENGINEER

MINNESOTA
DEPARTMENT OF TRANSPORTATION
REVISOR:
Tom Gilh
STATE DESIGN ENGINEER
APPROVED:
1-23-2017

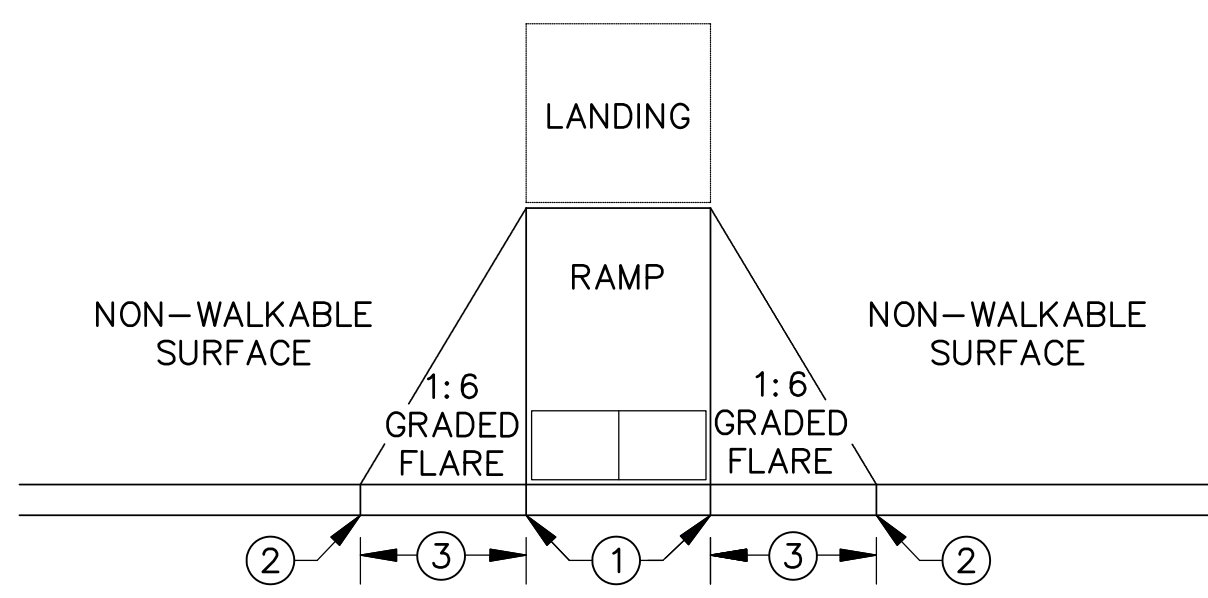
PEDESTRIAN CURB RAMP DETAILS
SHEET 6 OF 22
STANDARD PLAN 5-297.250
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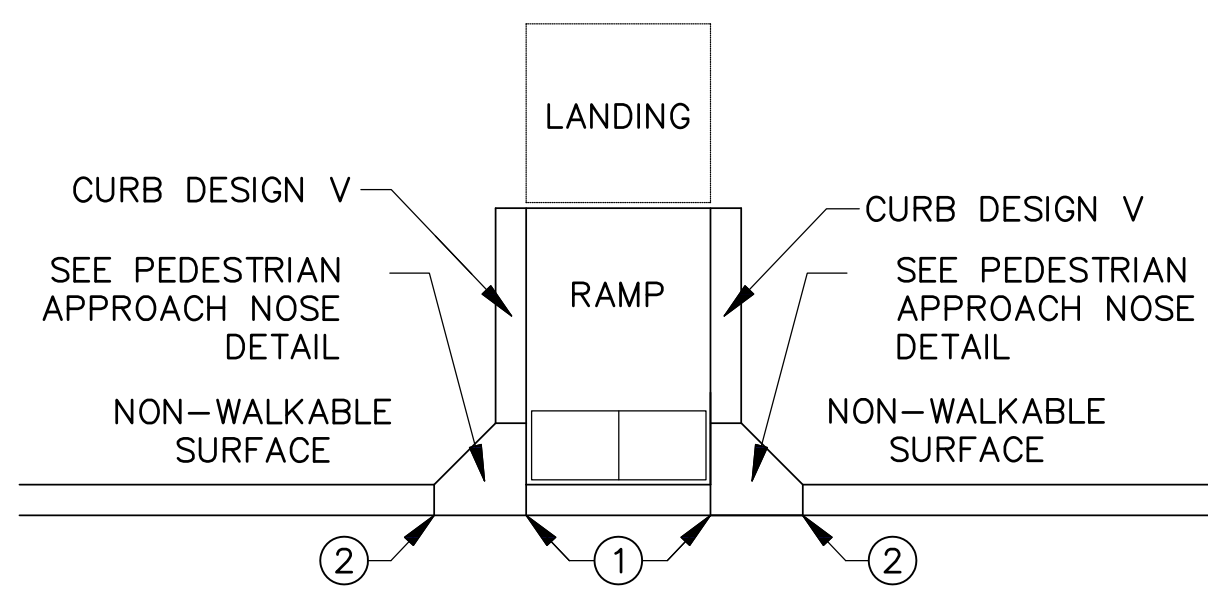
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

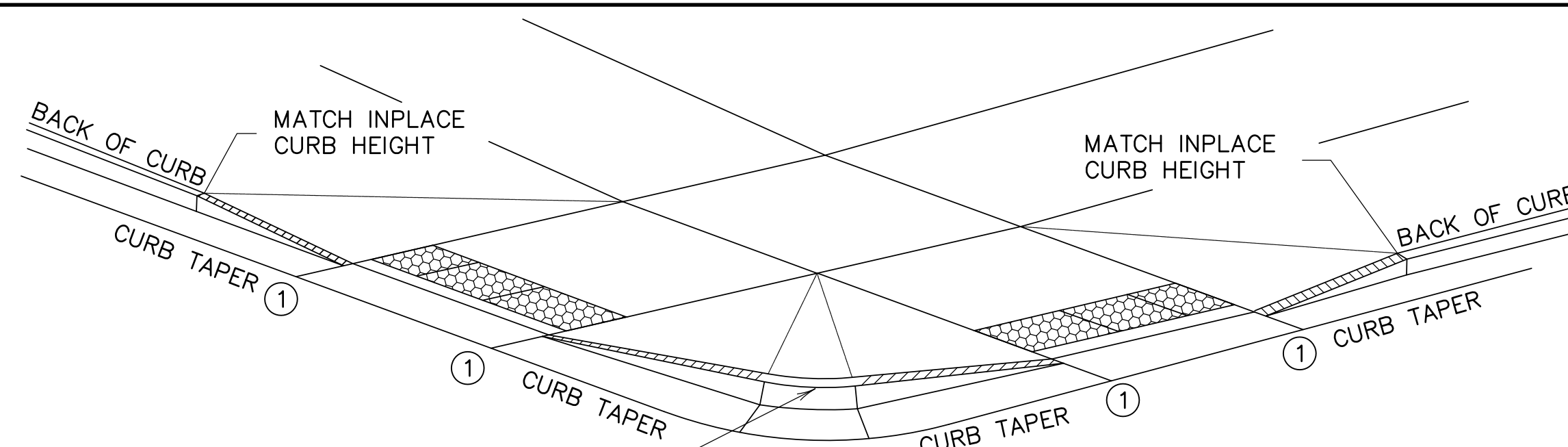


GRADED FLARES



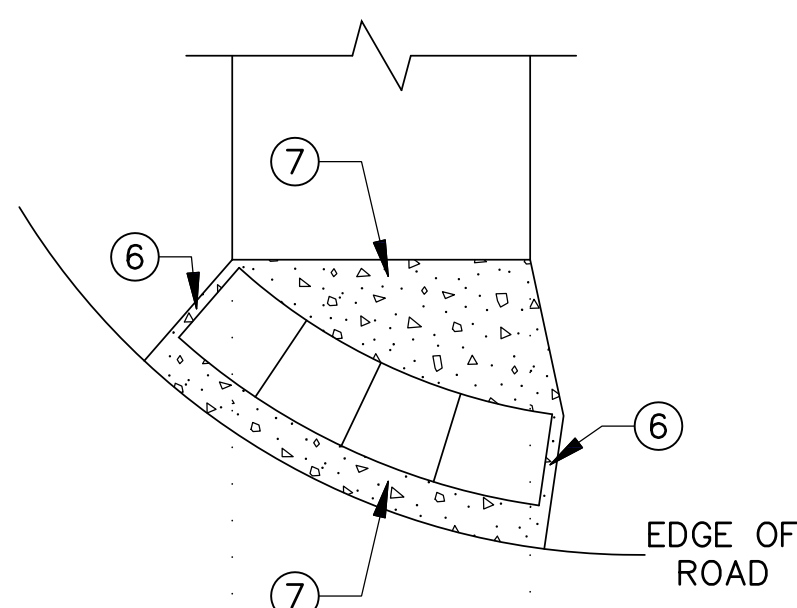
RETURNED CURB ⑤

TYPICAL SIDE TREATMENT OPTIONS ④ ⑪

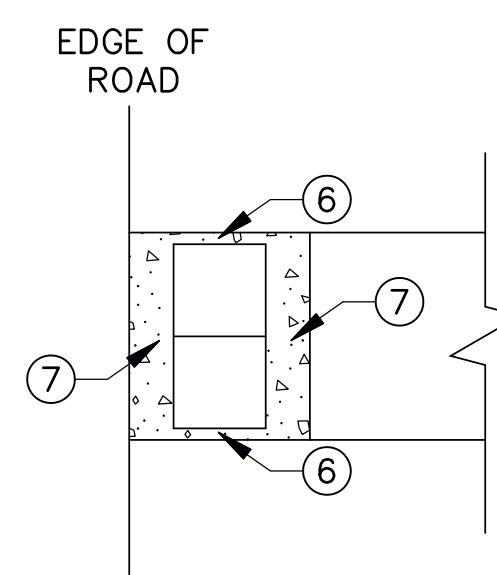


3" MINIMUM CURB HEIGHT, 4" PREFERRED
(MEASURED AT FRONT FACE OF CURB)
FOR A MIN. 6" LENGTH (MEASURED ALONG FLOW LINE)

DETECTABLE EDGE WITH CURB AND GUTTER ⑧

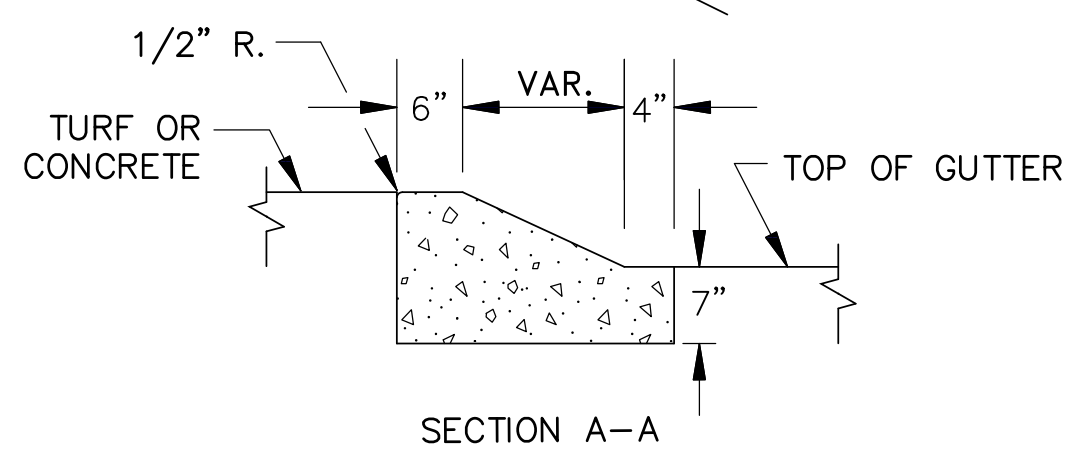
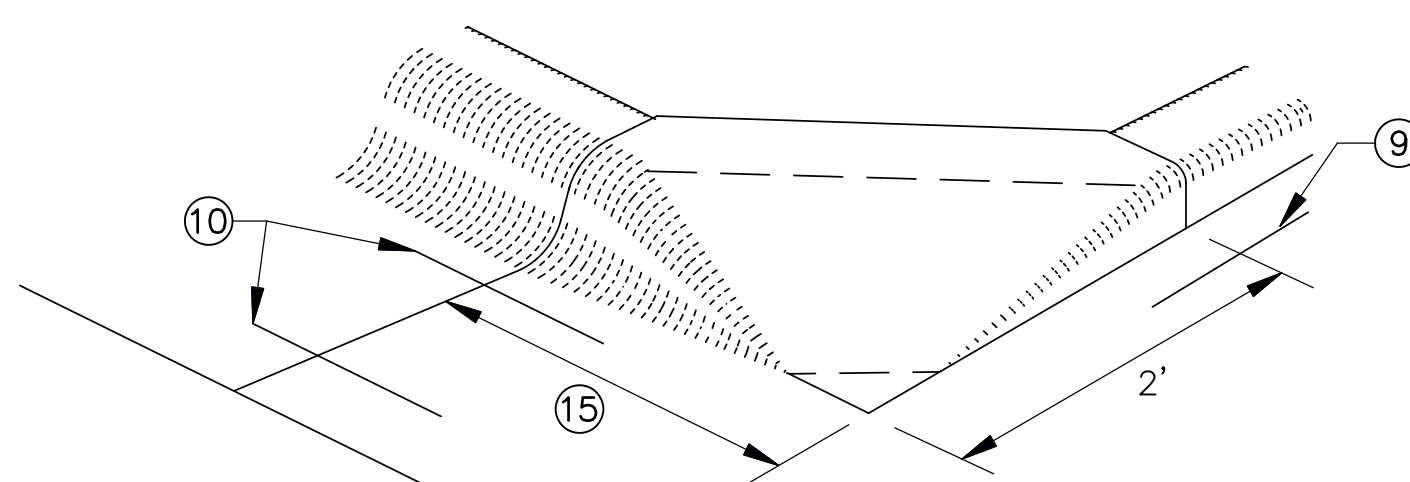


RADIAL DETECTABLE WARNING

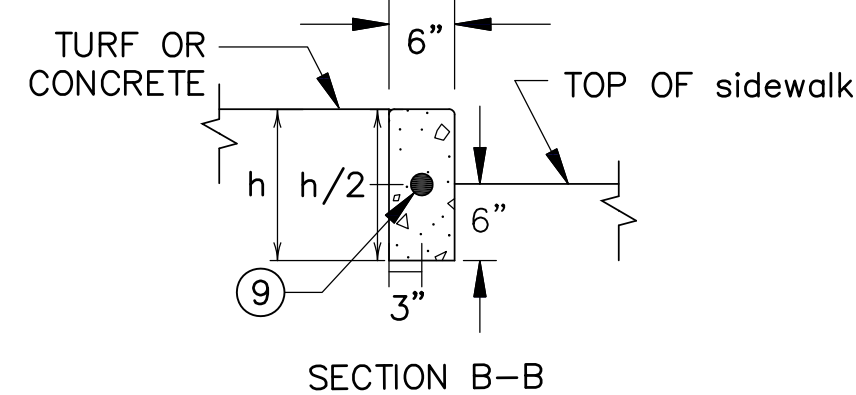


RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

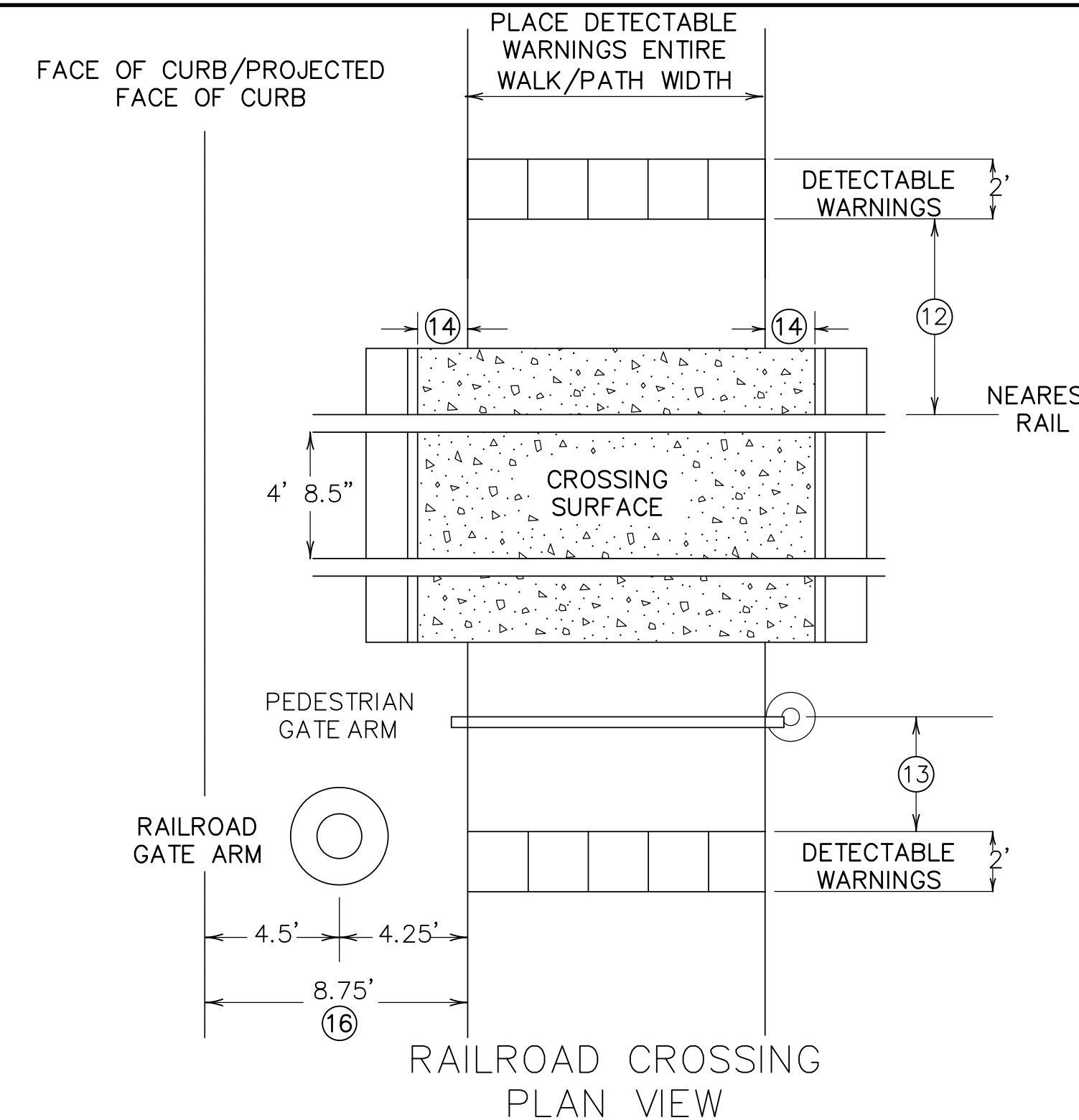


SECTION A-A



SECTION B-B

PEDESTRIAN APPROACH
NOSE DETAIL
(FOR RETURNED CURB
SIDE TREATMENT)



RAILROAD CROSSING
PLAN VIEW

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 RAMPS 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.

REVISION:
APPROVED: JANUARY 23, 2017
Ann Sobr
OPERATIONS ENGINEER

MINNESOTA
DEPARTMENT OF TRANSPORTATION
Ram Saha
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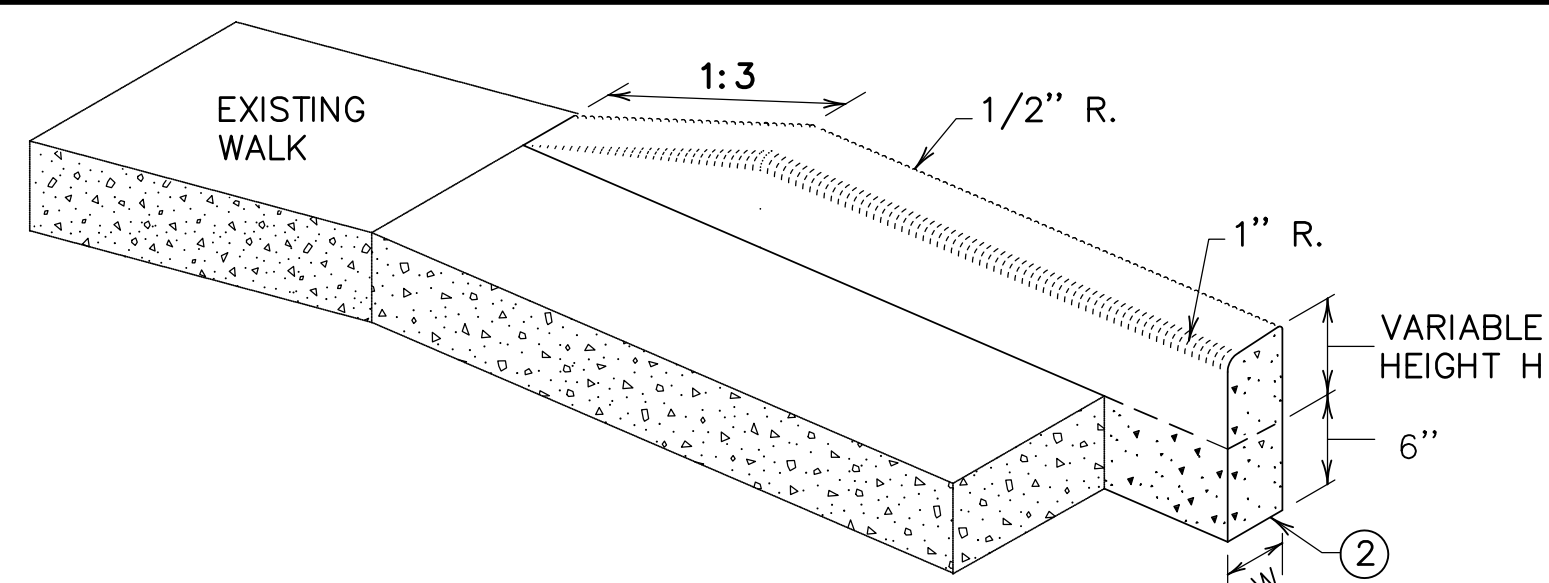
REVISED:
APPROVED:
1-23-2017

PEDESTRIAN CURB RAMP DETAILS

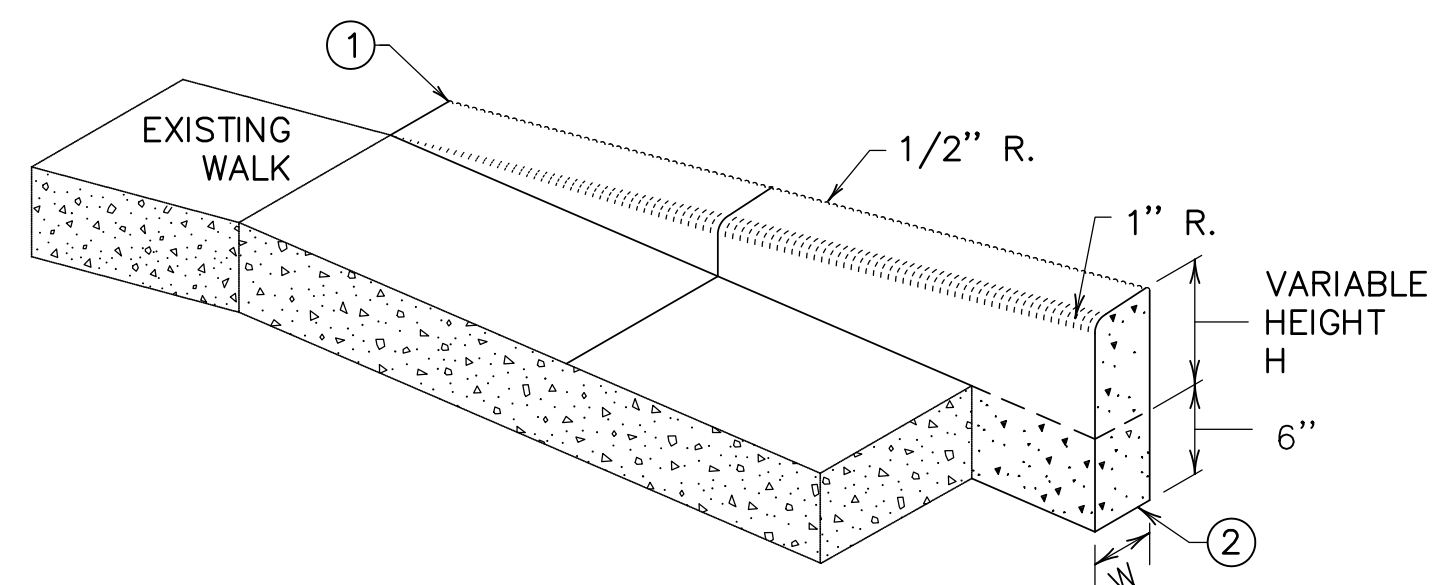
STANDARD PLAN 5-297.250

SHEET 7 OF 22

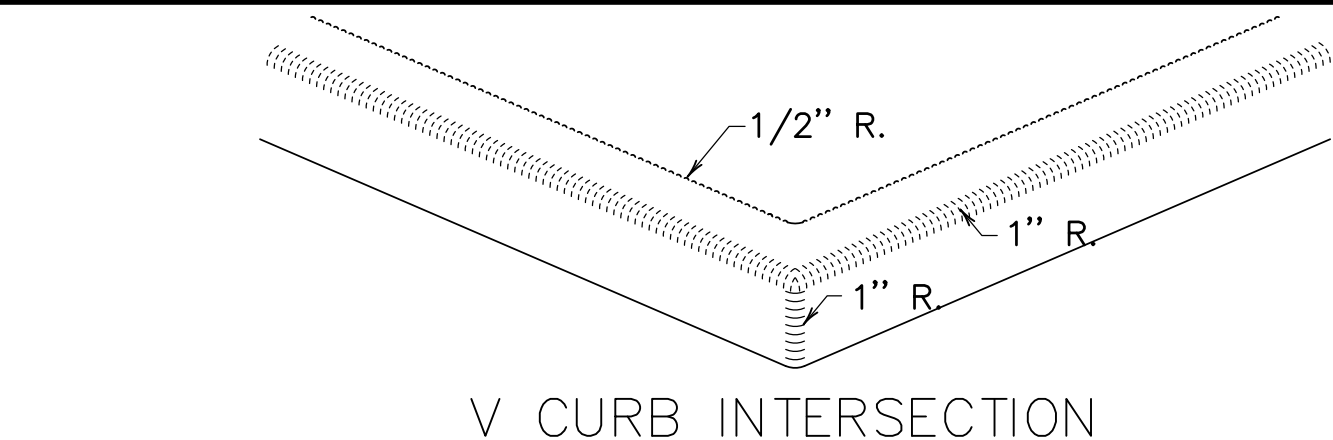
4 OF 6



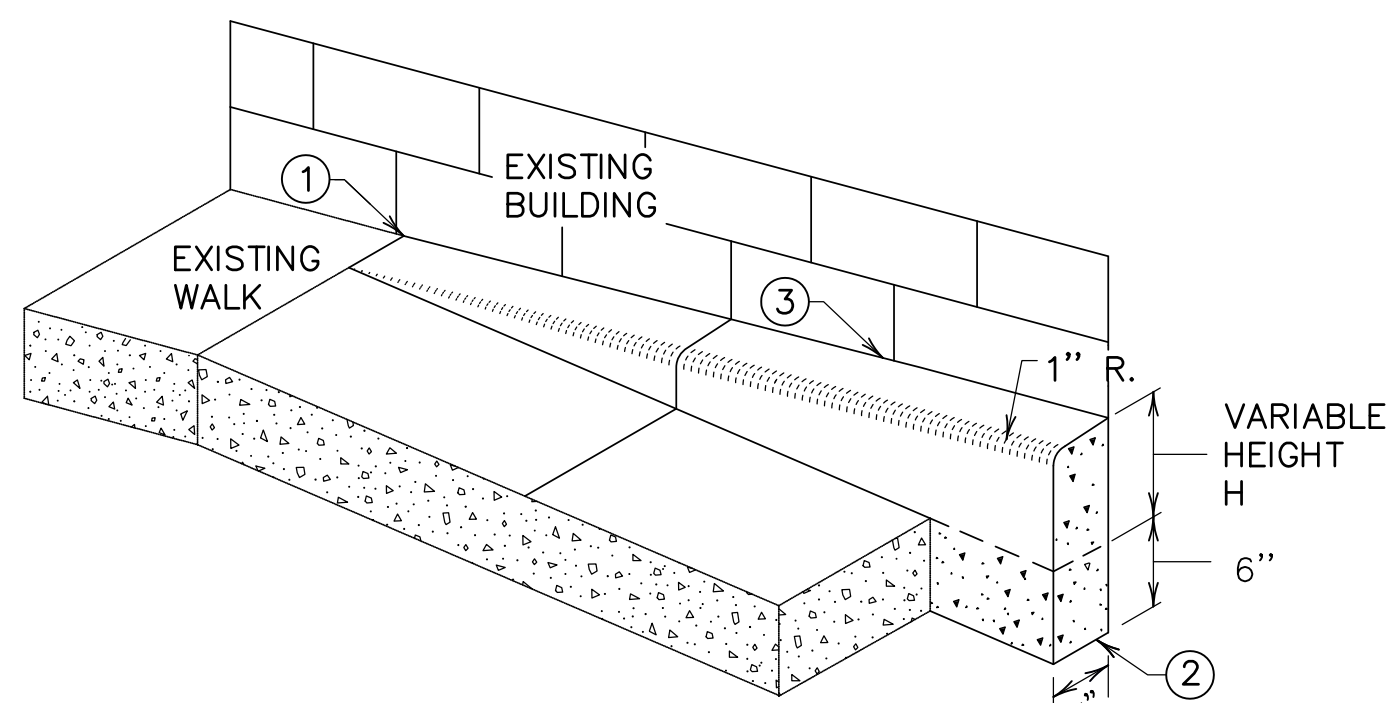
V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS

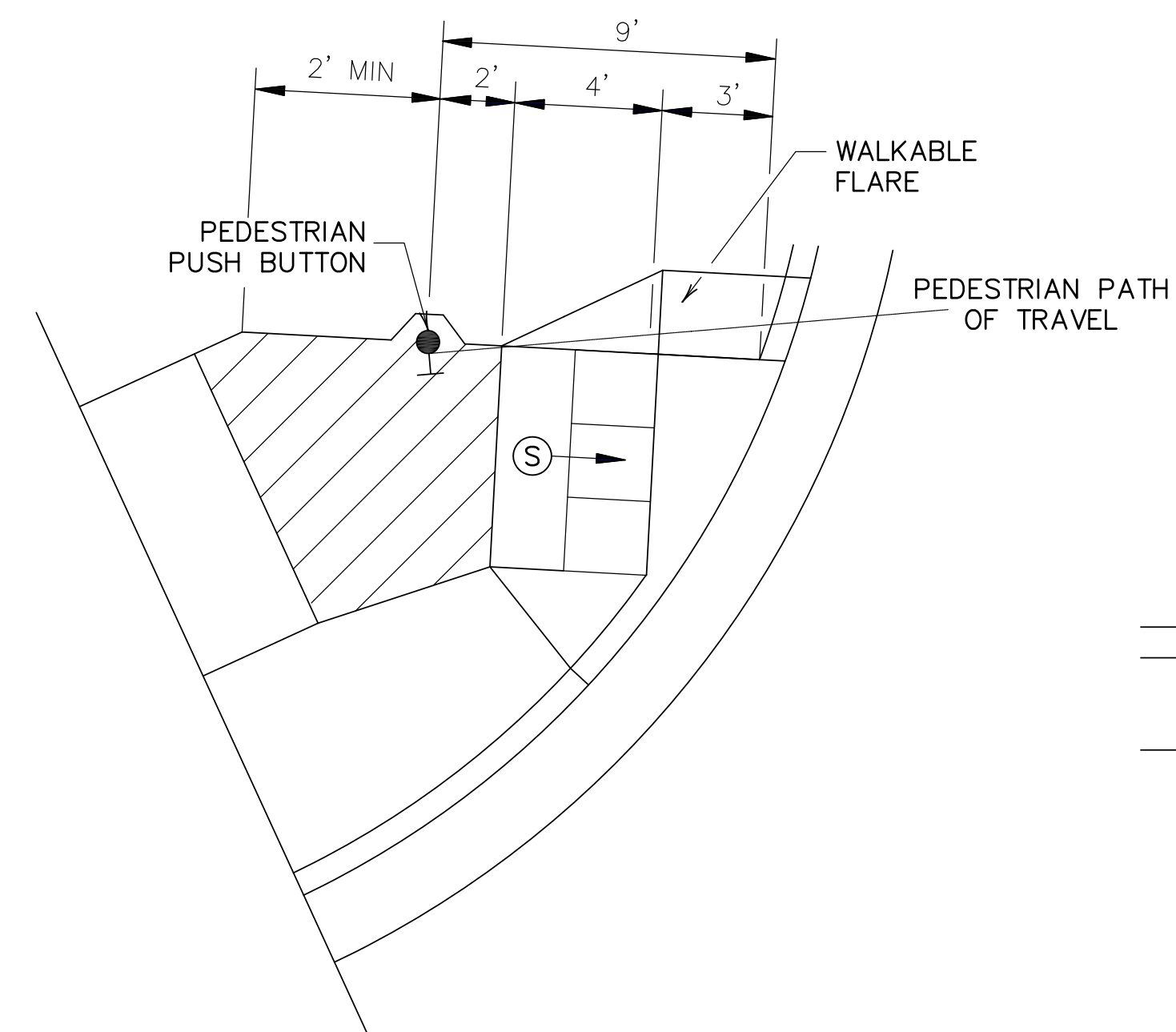


V CURB INTERSECTION



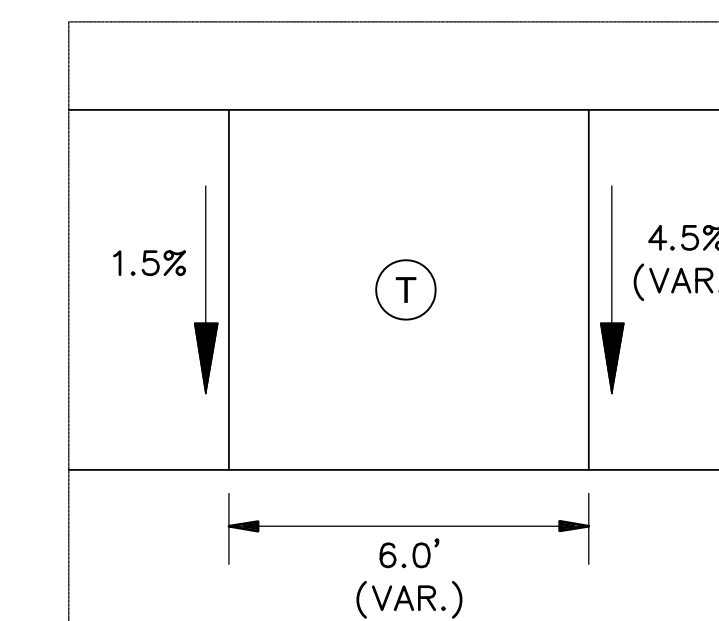
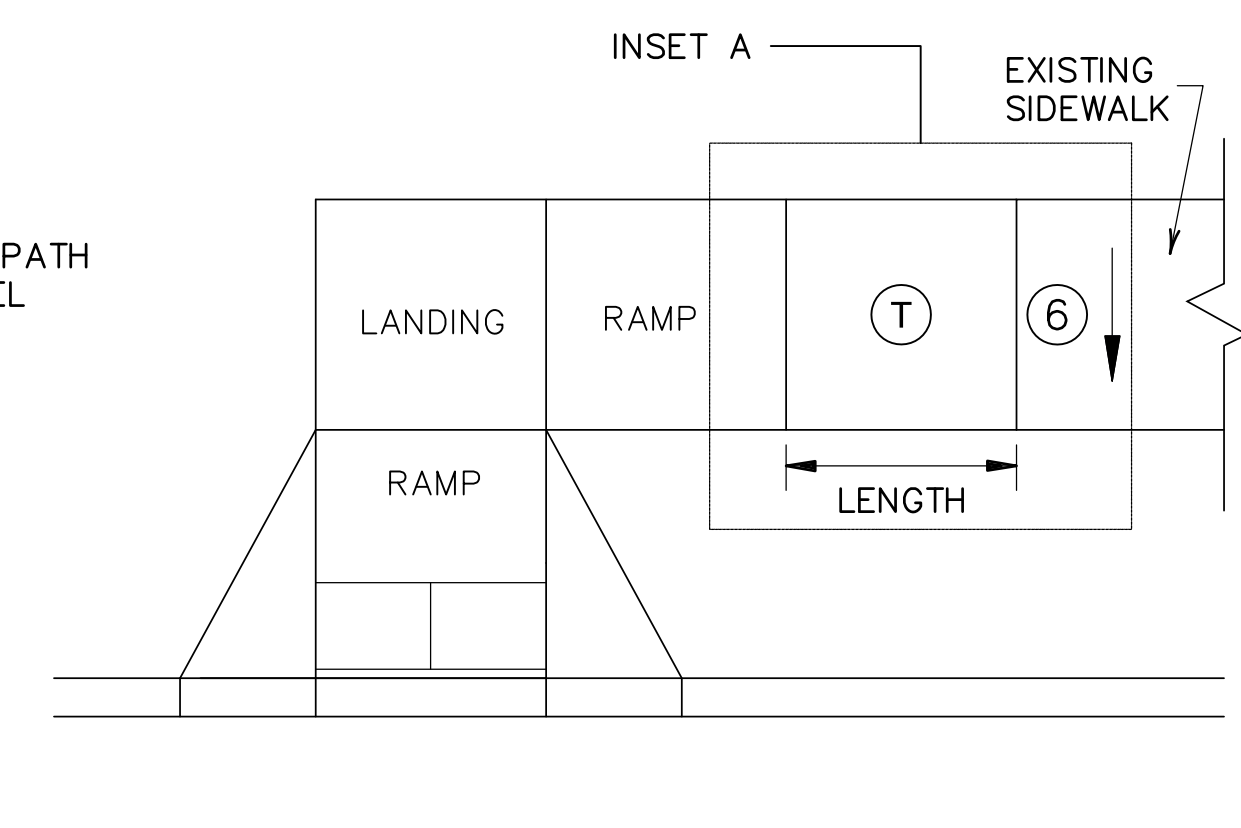
V CURB ADJACENT TO BUILDING
OR BARRIER

CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"

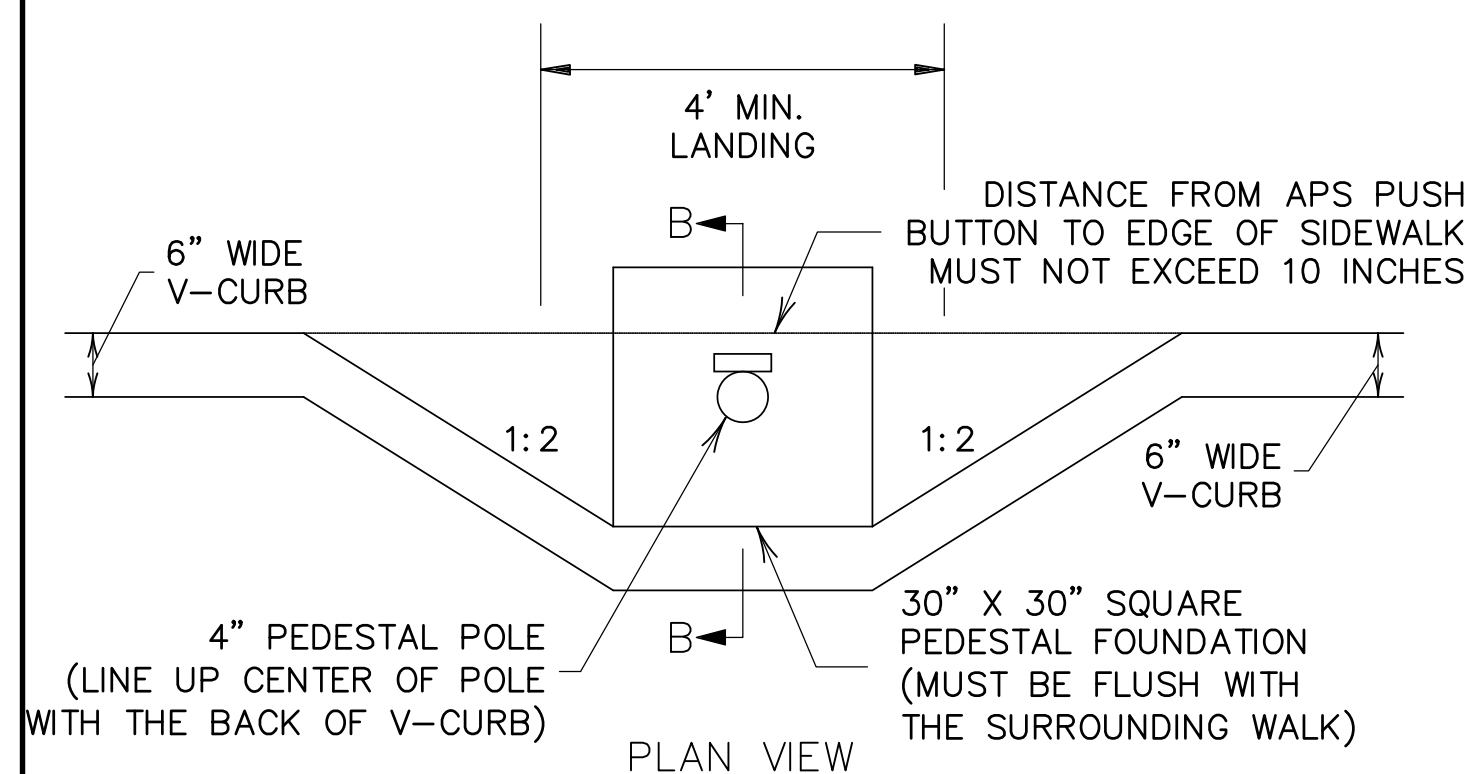


SEMI-DIRECTIONAL RAMP (3,4,9)

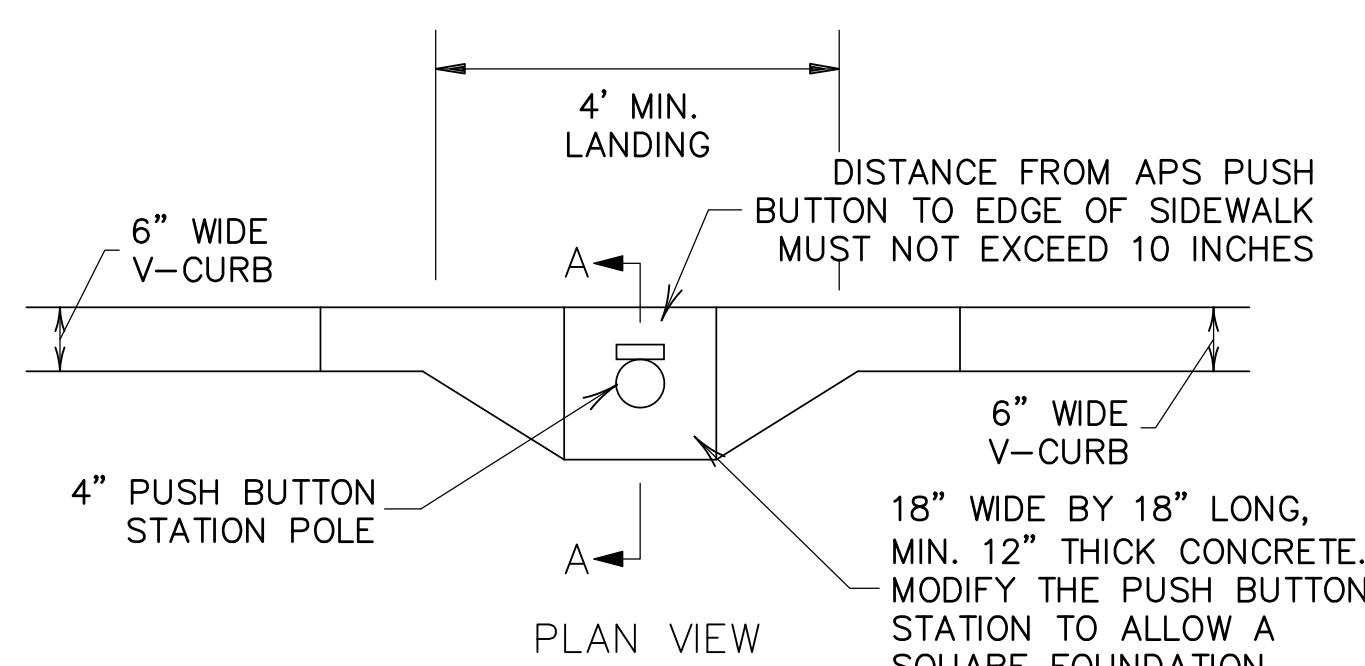
3' DOME SETBACK, 4' LONG RAMP AND
PUSH BUTTON 9' FROM THE BACK OF CURB
PRIMARYLY USED FOR APS APPLICATIONS
WHERE THE PAR DOES NOT CONTINUE PAST
THE PUSH BUTTON (DEAD-END SIDEWALK)



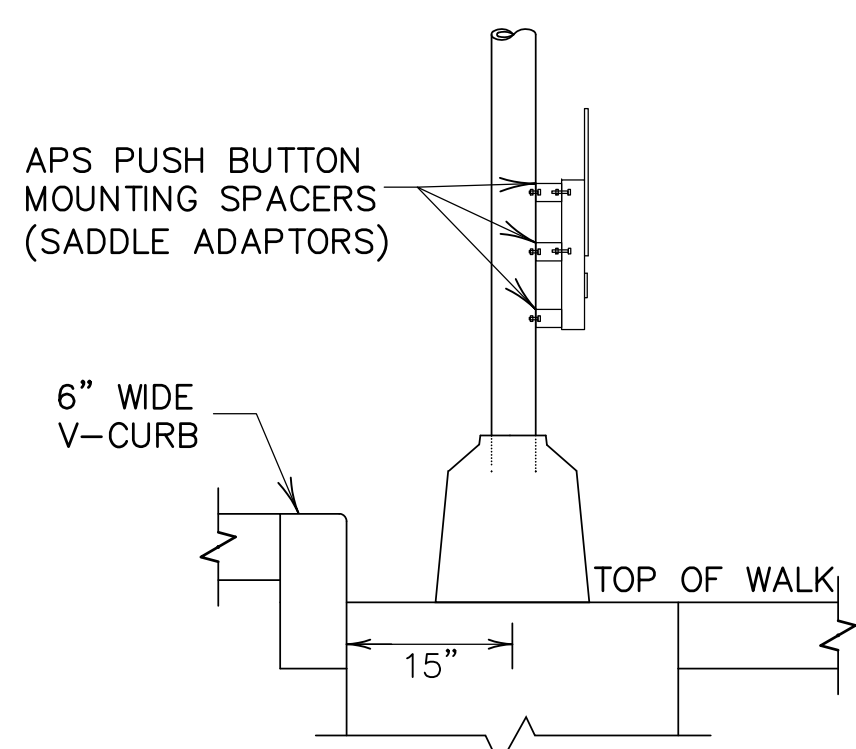
INSET A
TRANSITION PANEL (4,5)



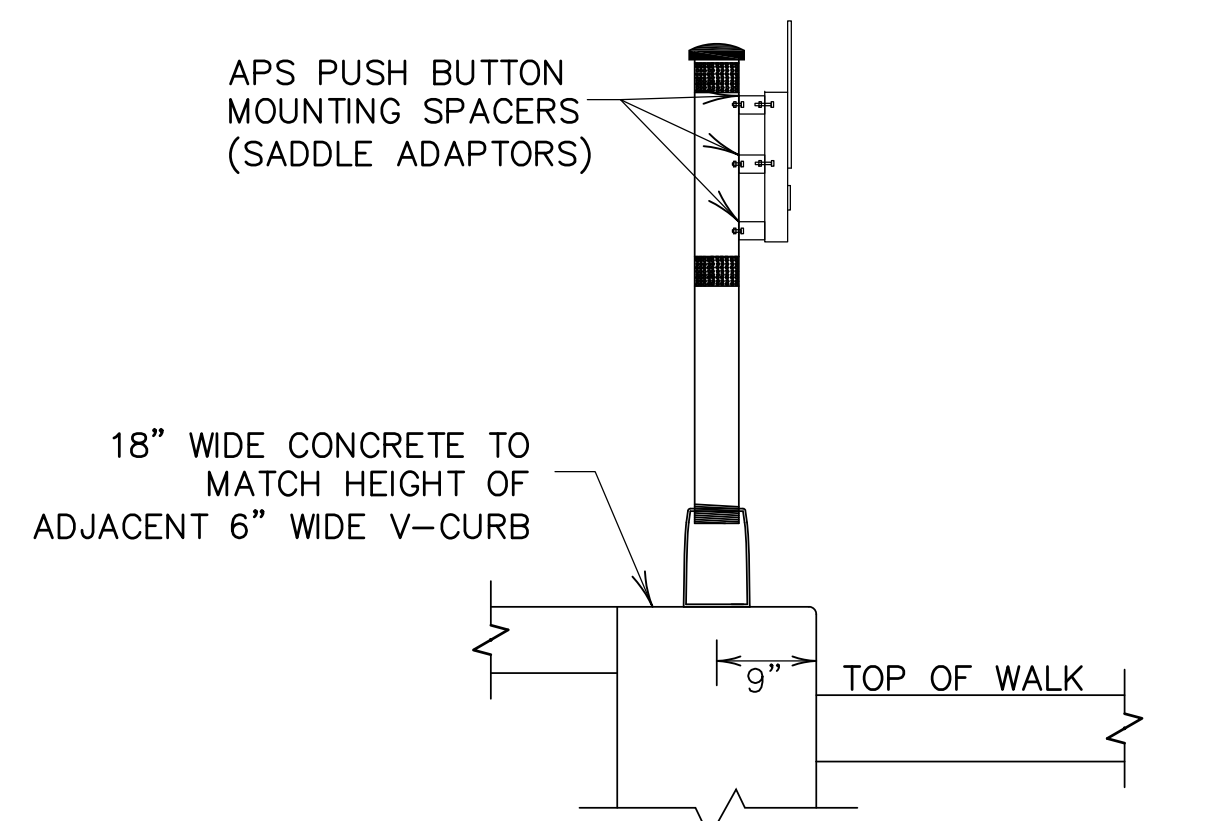
PLAN VIEW



PLAN VIEW



SECTION B-B



SECTION A-A

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)

PUSH BUTTON STATION (V-CURB)

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.
- (1) END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.
- (2) ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.
- (3) EDGE BETWEEN NEW V CURB AND INPLACE STRUCTURE SHALL BE SEALED AND BOND BREAKER SHALL BE USED BETWEEN EXISTING STRUCTURE AND PLACED V-CURB.
- (4) 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.
- (5) TRANSITION PANELS ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING AREA AT THE FULL CURB HEIGHT (TYPICAL SECTION).
- (6) 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.

- (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%.
- (T) 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.

Jun 01, 2017 - 11:54am
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REVISION:
APPROVED: JANUARY 23, 2017
<i>[Signature]</i> OPERATIONS ENGINEER

MINNESOTA
DEPARTMENT OF TRANSPORTATION
Tom [Signature]
STATE DESIGN ENGINEER

REVISED:

APPROVED:

1-23-2017

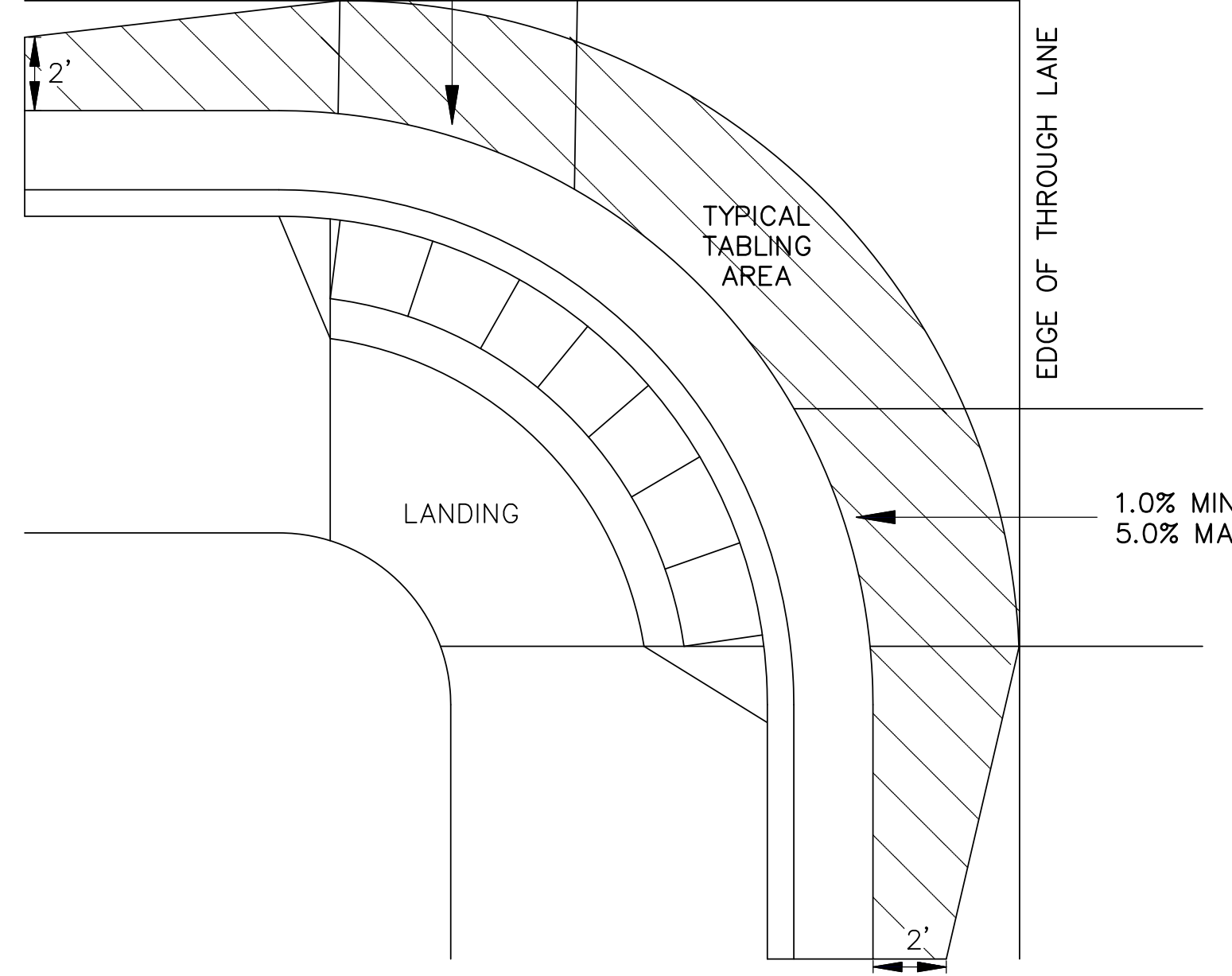
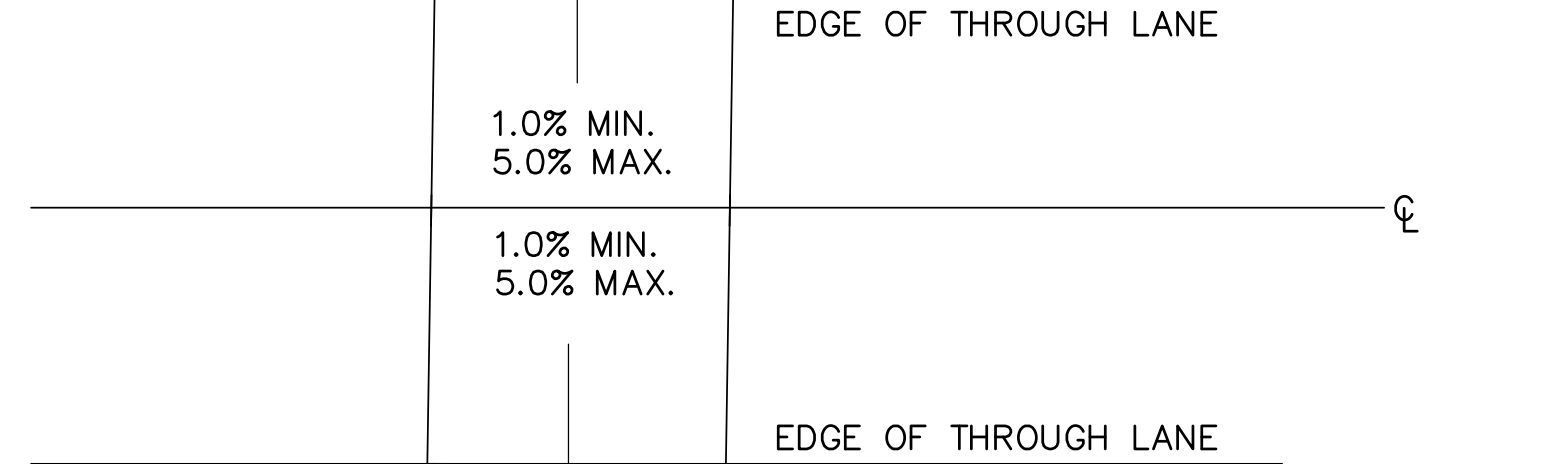
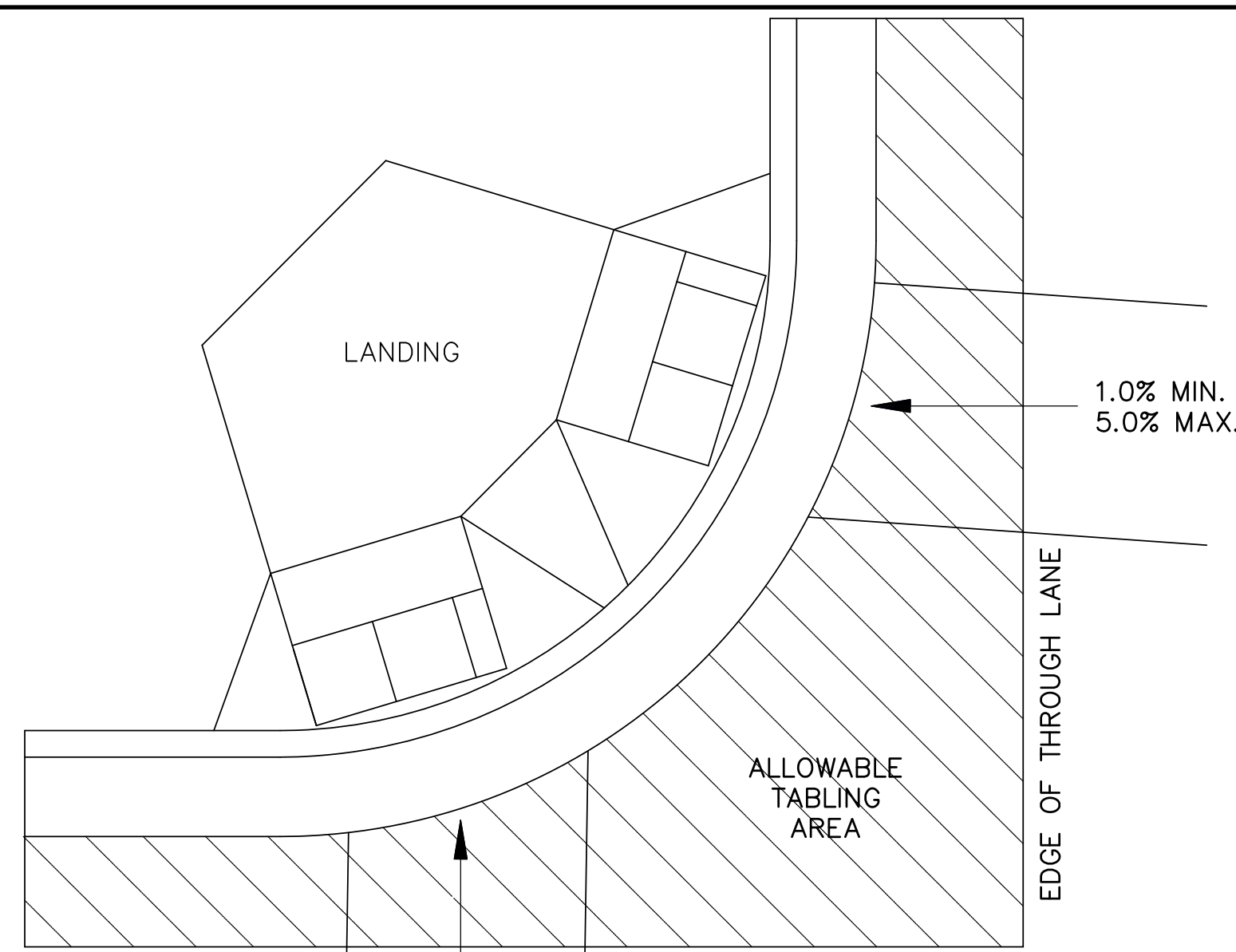
PEDESTRIAN CURB RAMP DETAILS

SHEET 8 OF 22

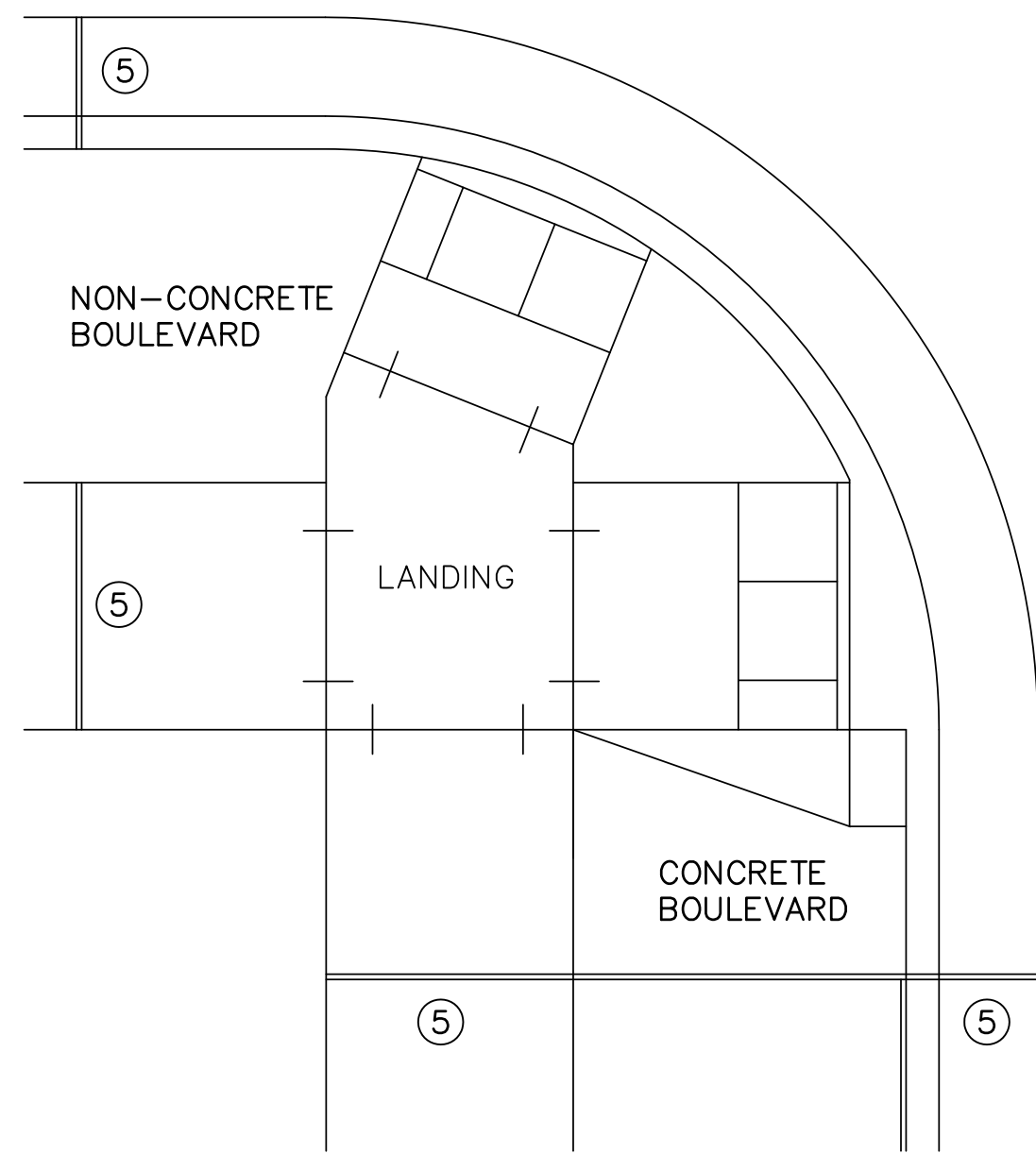
STANDARD PLAN 5-297.250

5 OF 6

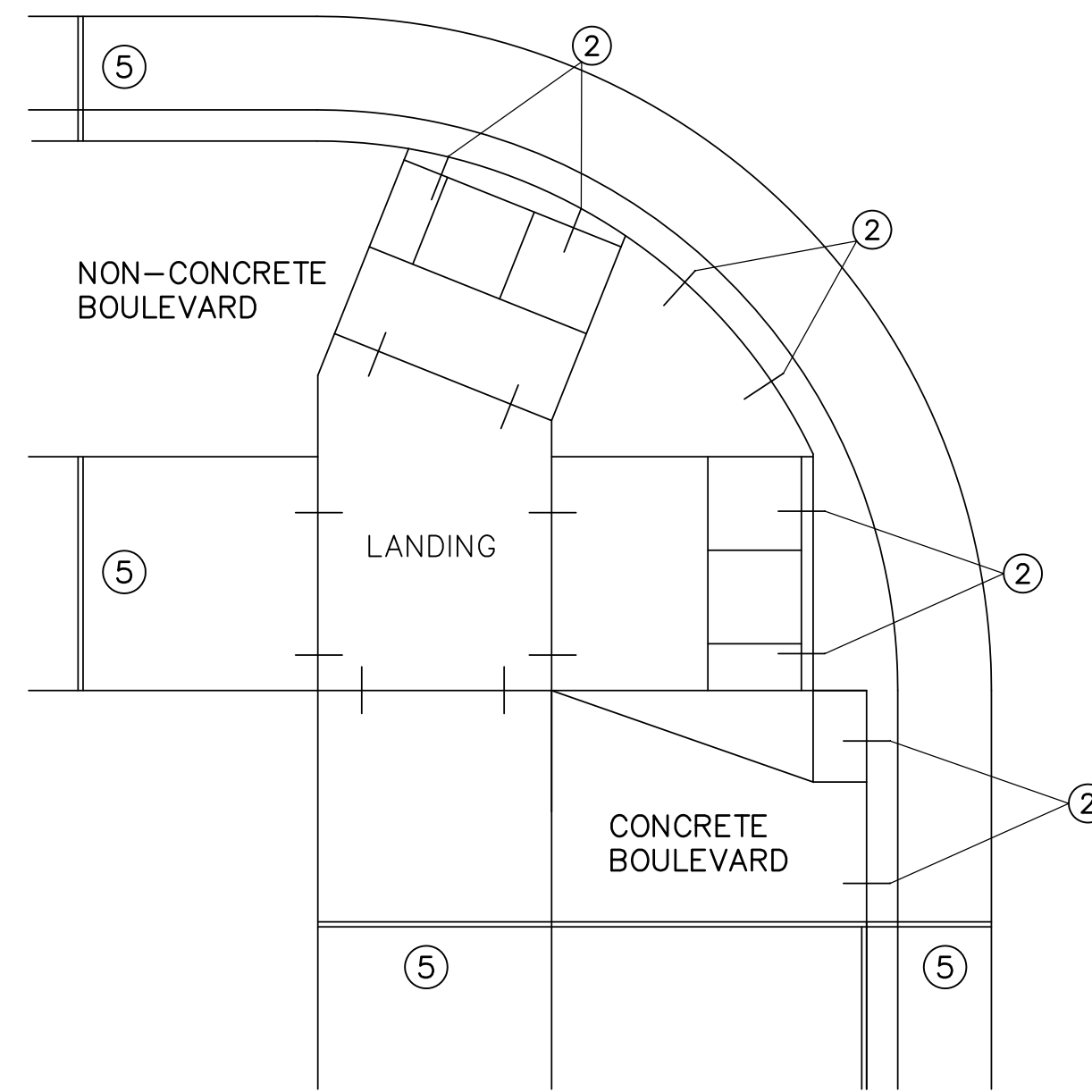
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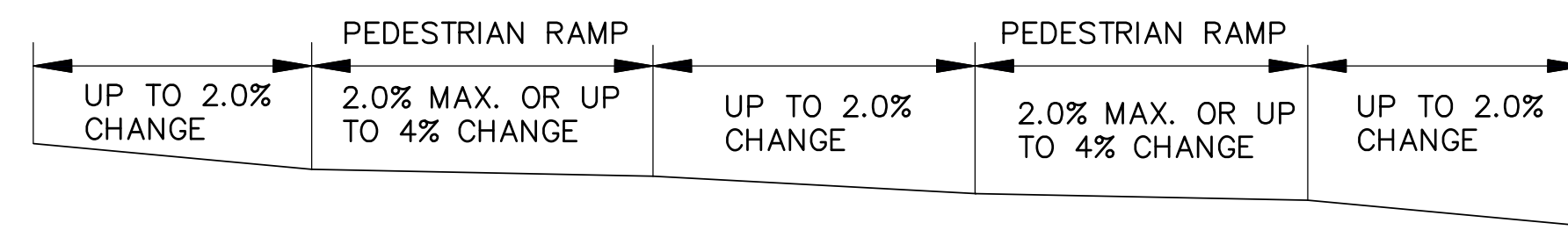
CURB LINE AND ROAD CROSSING ADJUSTMENTS



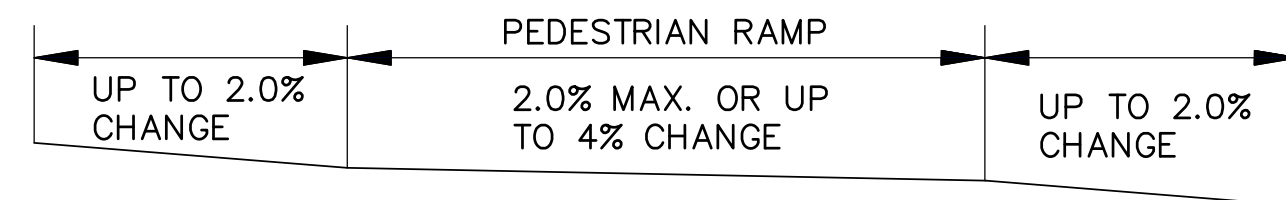
EXPANSION MATERIAL PLACEMENT FOR CONCRETE AND BITUMINOUS ROADWAYS



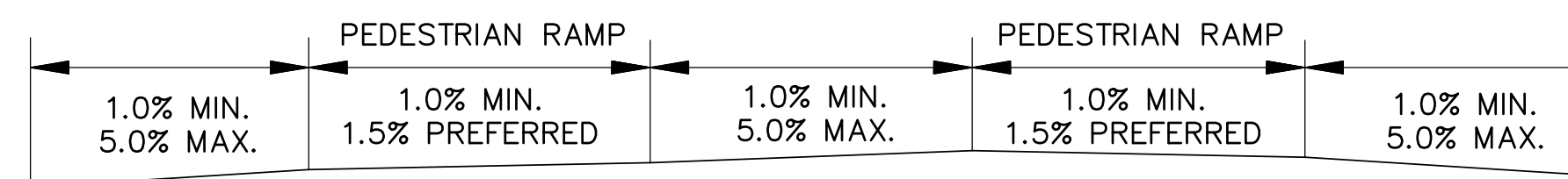
OPTIONAL CURB LINE REINFORCEMENT PLACEMENT ON BITUMINOUS ROADWAYS ④



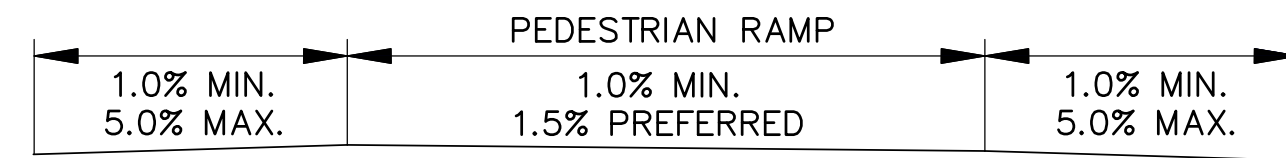
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



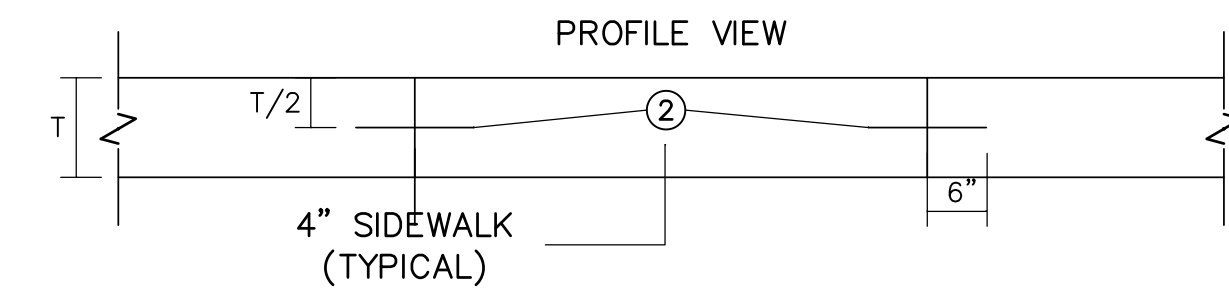
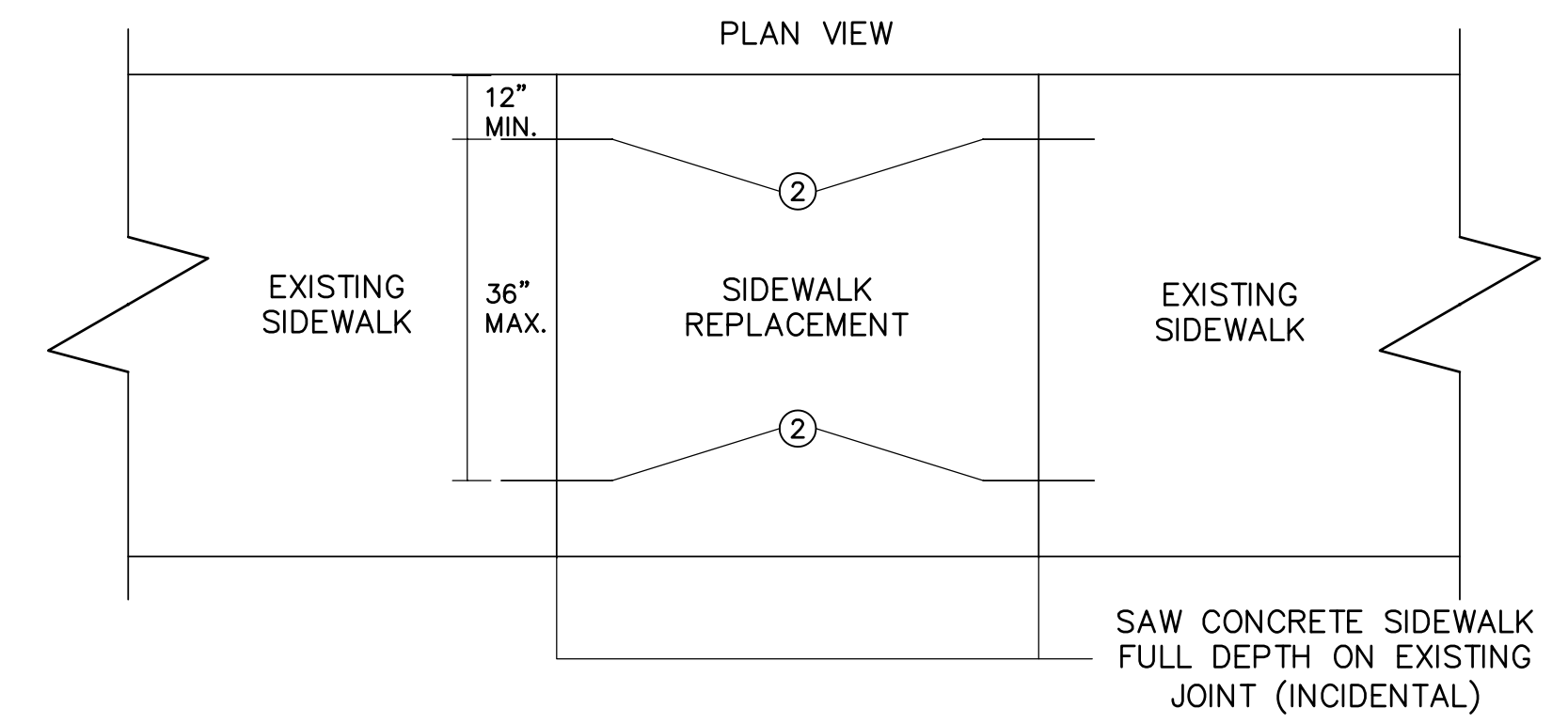
FLOW LINE PROFILE "TABLE" - FAN



FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

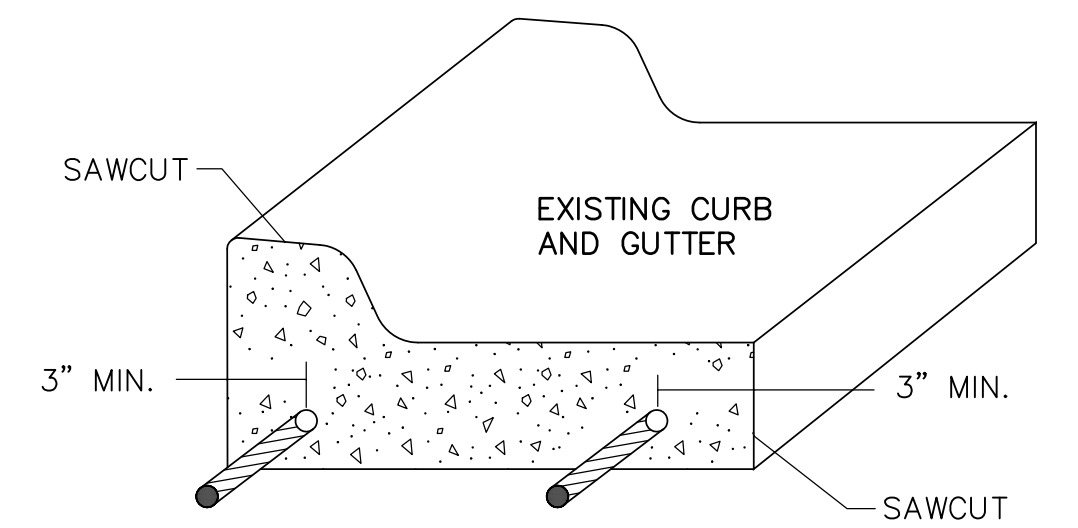
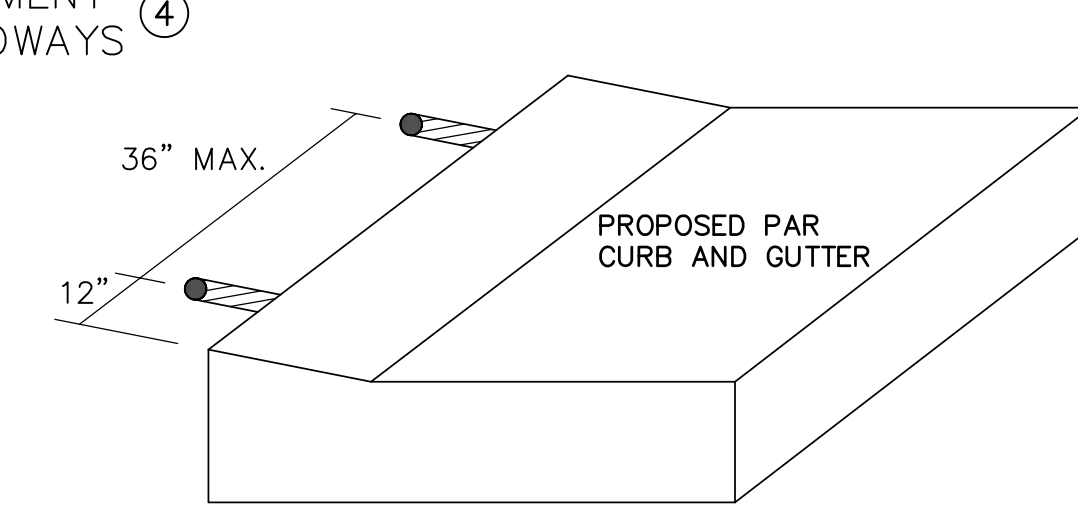


FLOW LINE PROFILE RAISE - FAN



OPTIONAL SIDEWALK REINFORCEMENT

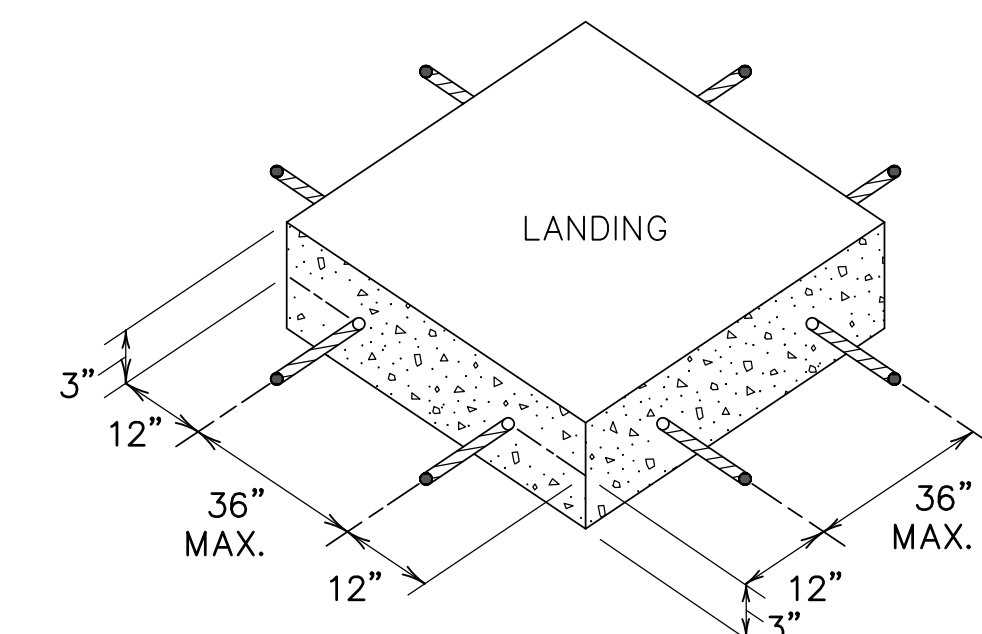
SIDEWALK REINFORCEMENT TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.



FOR USE ON CURB RAMP RETROFITS

CURB AND GUTTER REINFORCEMENT ③

OPTIONAL CURB LINE REINFORCEMENT DETAILS ② ④



SEPARATE LANDING POUR REINFORCEMENT ①

"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

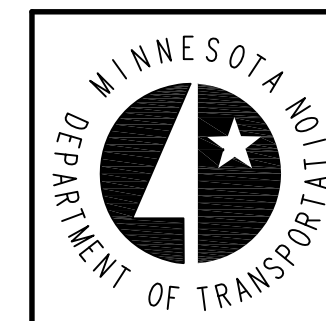
NOTES:

- 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

Ann Sobor
OPERATIONS ENGINEER



Rom S...
STATE DESIGN ENGINEER

REVISED:

APPROVED:

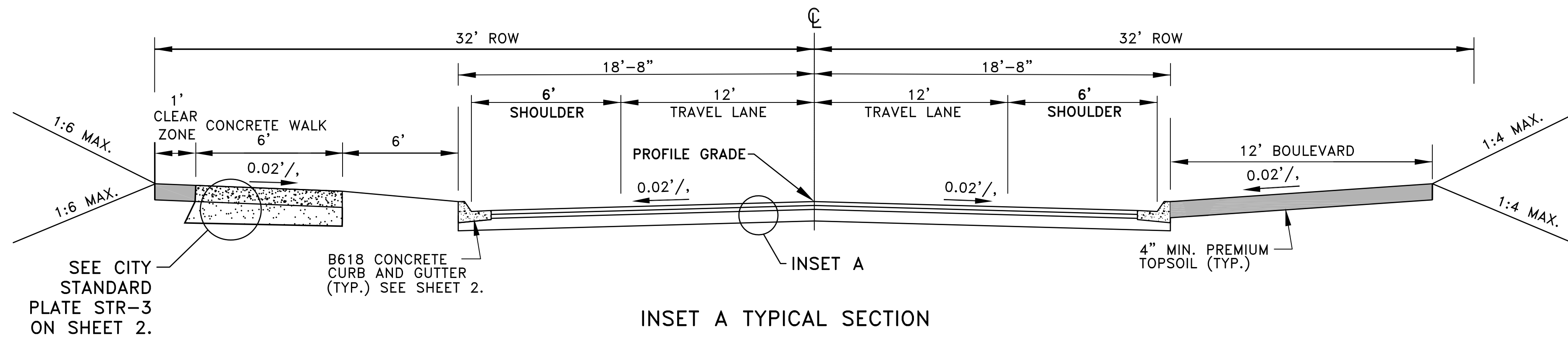
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PEDESTRIAN CURB RAMP DETAILS

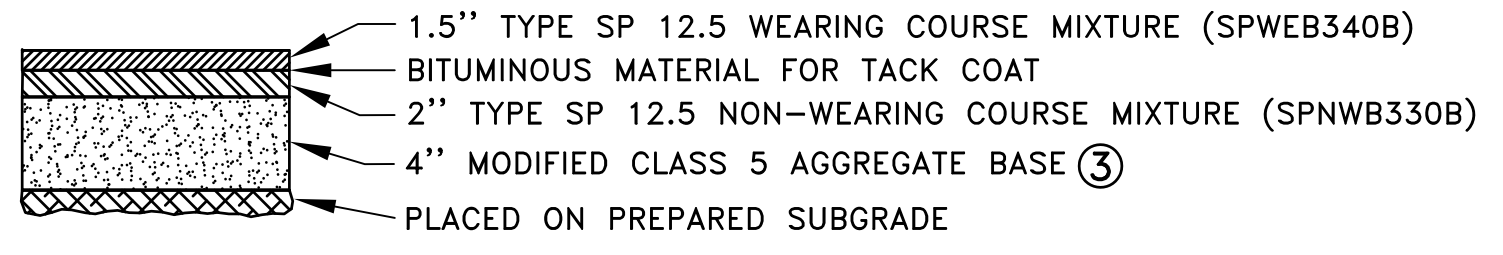
SHEET 9 OF 22

STANDARD PLAN 5-297.250

6 OF 6



INSET A TYPICAL SECTION



① TYPICAL SECTION - YOLITE STREET ①②
N.T.S.

TABLE A
MODIFIED CLASS 5
SPECIFICATIONS

% PASSING

1"	100
3/4"	90 - 100
3/8"	50 - 80
No.4	35 - 70
No.10	20 - 60
No.40	10 - 35
No.200	5 - 10

- REFERENCE NOTES:
- ① SEE SHEET 10 FOR TYPICAL FILL AND EXCAVATION SECTIONS.
 - ② CONTRACTOR SHALL SCARIFY AND COMPACT, ACCORDING TO THE SPECIFIED DENSITY METHOD, THE TOP 12 INCHES OF MATERIAL PRIOR TO PLACING ANY FILL MATERIALS OR CLASS 5 AGGREGATE BASE.
 - ③ SEE ②/10.

② MODIFIED CLASS 5 SPECIFICATIONS
N.T.S.

DATE	REVISION
6/1/17	CITY COMMENTS

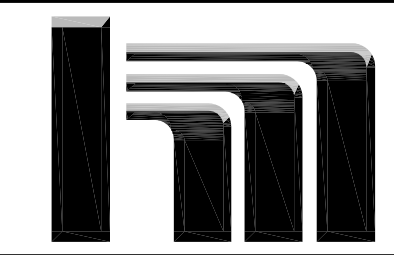
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Craig J. Jochem
CRAIG J. JOCHUM, P.E.
Date 5-4-17 Lic. No. 23461

DESIGNED BY:
CJJ

DRAWN BY:
MSS

CHECKED BY:
CJJ

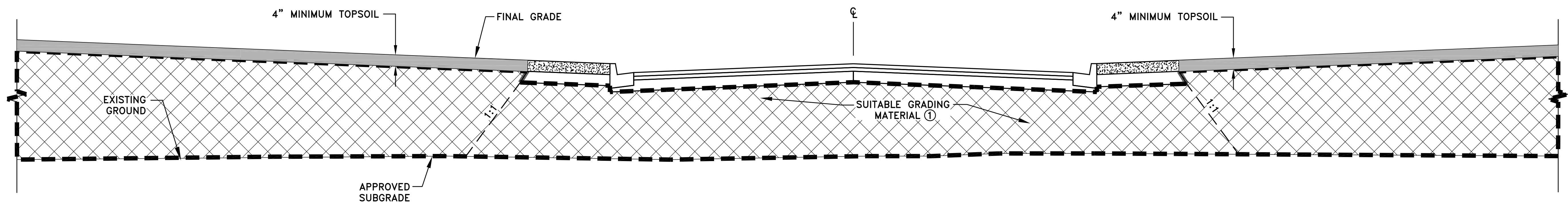


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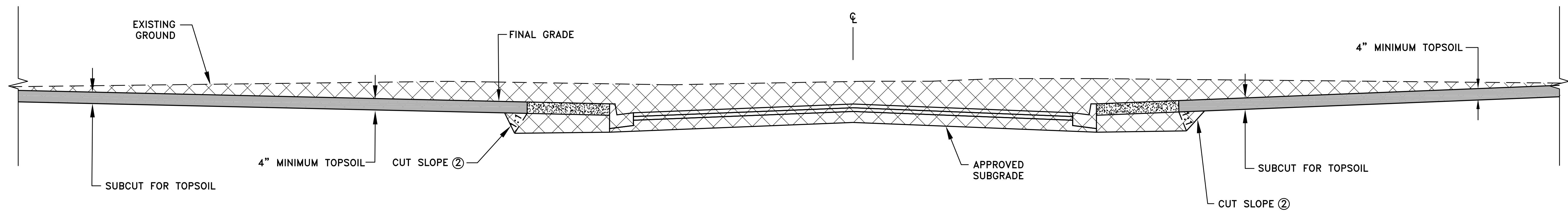
YOLITE STREET

TYPICAL SECTIONS
CITY OF RAMSEY, MINNESOTA

SHEET 10 OF 22 SHEETS





1
11
TYPICAL FILL SECTION (EMBANKMENT)
N.T.S.



2
11
TYPICAL EXCAVATION SECTION
N.T.S.

- REFERENCE NOTES:
- ① SUITABLE GRADING MATERIAL ON THIS PROJECT SHALL CONSIST OF ALL SOILS ENCOUNTERED WITH THE EXCEPTION OF TOPSOIL, SILTS, DEBRIS, ORGANIC MATERIAL, AND OTHER UNSTABLE MATERIAL.
 - ② CONTRACTOR SHALL PROVIDE A SAFE CUT SLOPE PER OSHA REQUIREMENTS.
 - ③ ALL DISTURBED AREAS REQUIRE A MINIMUM OF 4 INCHES OF TOPSOIL. SEE CITY STANDARD PLATE ERO-6 ON SHEET 2.

LEGEND

-  TOPSOIL ③
-  COMMON EXCAVATION

DATE	REVISION
6/1/17	CITY COMMENTS

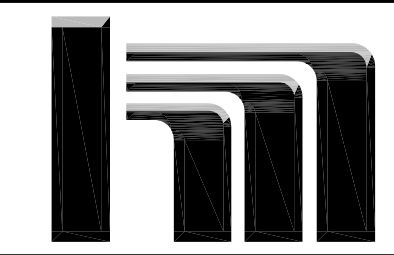
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YOLITE STREET

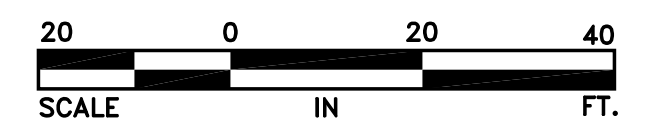
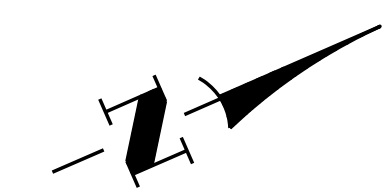
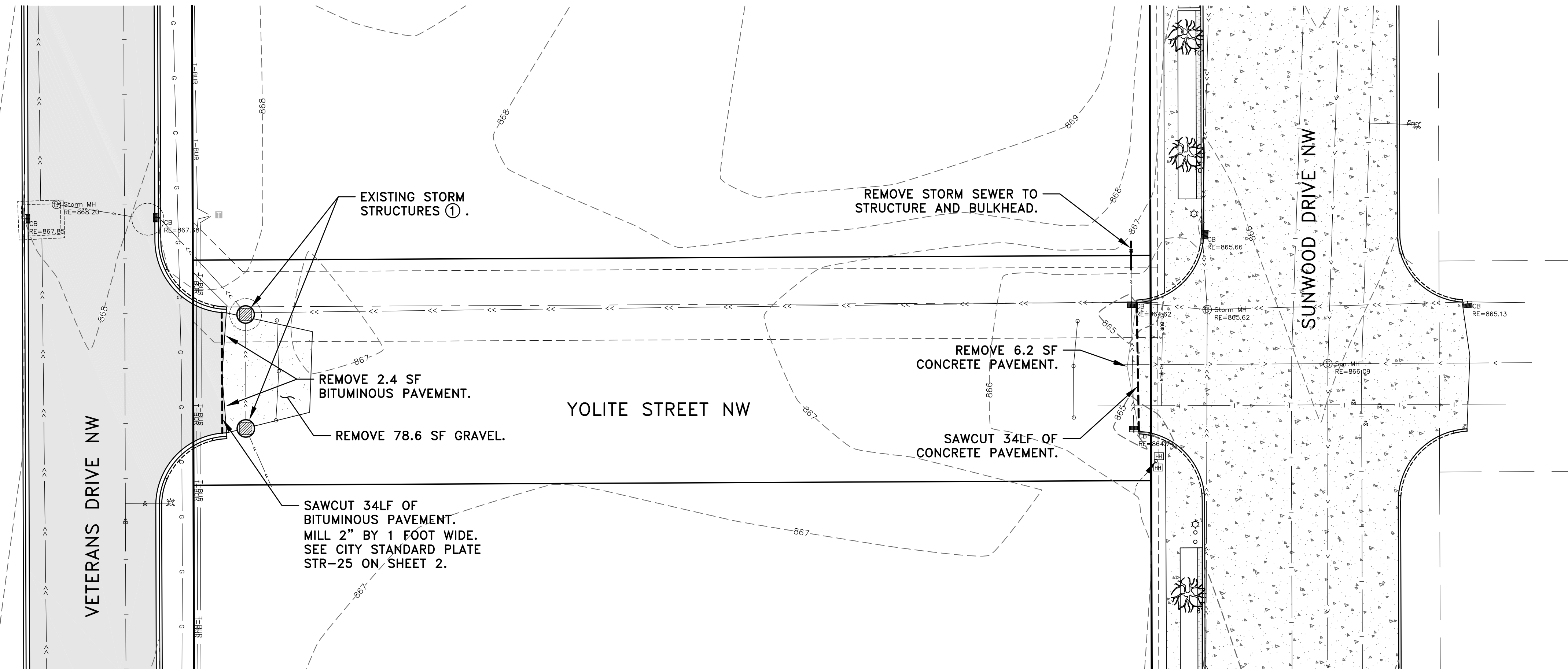
TYPICAL SECTIONS
 CITY OF RAMSEY, MINNESOTA

SHEET
11
OF
22
SHEETS

REFERENCE NOTES:
 ① THE EXISTING STORM STRUCTURES ARE BURIED BELOW GRADE.

CONSTRUCTION PLAN LEGEND

- EXISTING GRAVEL EDGE
- EXISTING RIGHT-OF-WAY
- - - 800 - - - EXISTING CONTOUR
- PROPERTY BOUNDARY
- EXISTING WATERMAIN
- > — EXISTING SANITARY
- - - SAWCUT CONCRETE PAVEMENT (FULL DEPTH)
- - - SAWCUT BITUMINOUS (FULL DEPTH)
- << — EXISTING STORM SEWER
- P-OH — OVERHEAD POWER
- G — GAS LINE
- T-BUR — BURIED TELEPHONE LINE
- P-BUR — BURIED ELECTRIC LINE
- FO-BUR — BURIED FIBER OPTIC
- ⊠ EXISTING ELECTRIC PEDESTAL
- ⊞ EXISTING CATCH BASIN
- ⊙ EXISTING STORM MANHOLE
- ⊛ EXISTING HYDRANT
- ⊗ EXISTING GATE VALVE
- ⊙ EXISTING SANITARY MANHOLE
- ▨ EXISTING CONCRETE
- ▩ EXISTING GRAVEL



DATE	REVISION
6/1/17	CITY COMMENTS

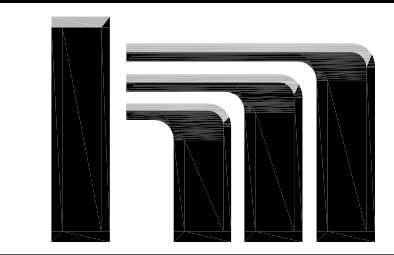
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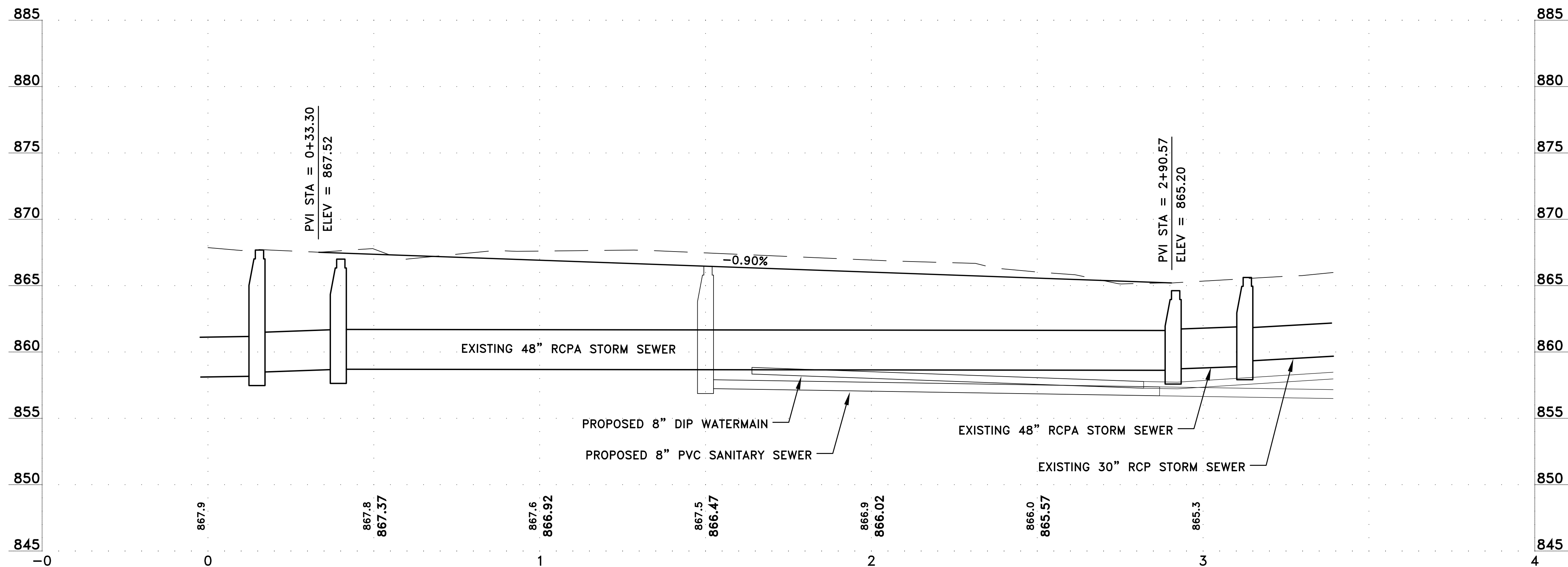
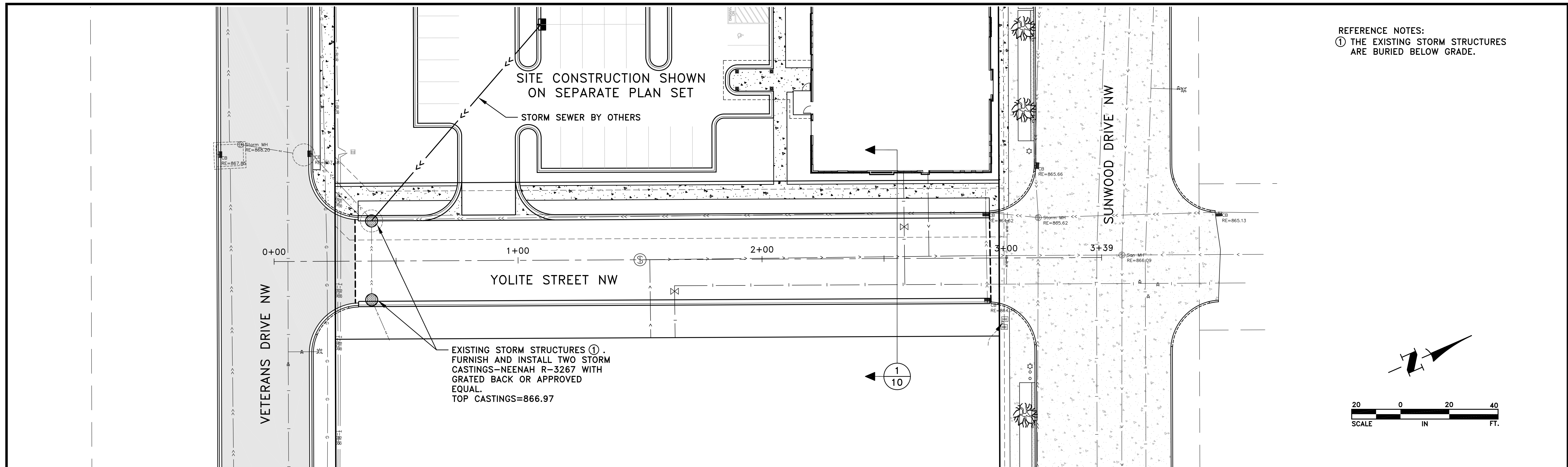
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YOLITE STREET

EXISTING CONDITIONS AND REMOVALS
 CITY OF RAMSEY, MINNESOTA

SHEET 12 OF 22 SHEETS

REFERENCE NOTES:
 ① THE EXISTING STORM STRUCTURES ARE BURIED BELOW GRADE.



CONSTRUCTION PLAN LEGEND

- EXISTING GRAVEL EDGE
- EXISTING RIGHT-OF-WAY
- - - PROPOSED CENTERLINE
- PROPERTY BOUNDARY
- EXISTING WATERMAIN
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- ⊙ EXISTING HYDRANT
- ⊗ EXISTING GATE VALVE
- ⊙ EXISTING SANITARY MANHOLE
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- ▨ EXISTING CONCRETE
- ▨ PROPOSED CONCRETE

DATE	REVISION
6/1/17	CITY COMMENTS

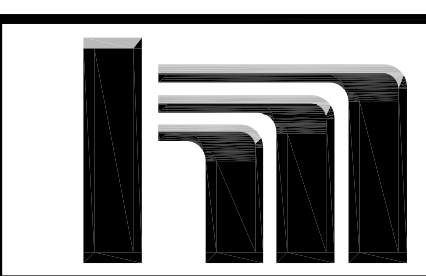
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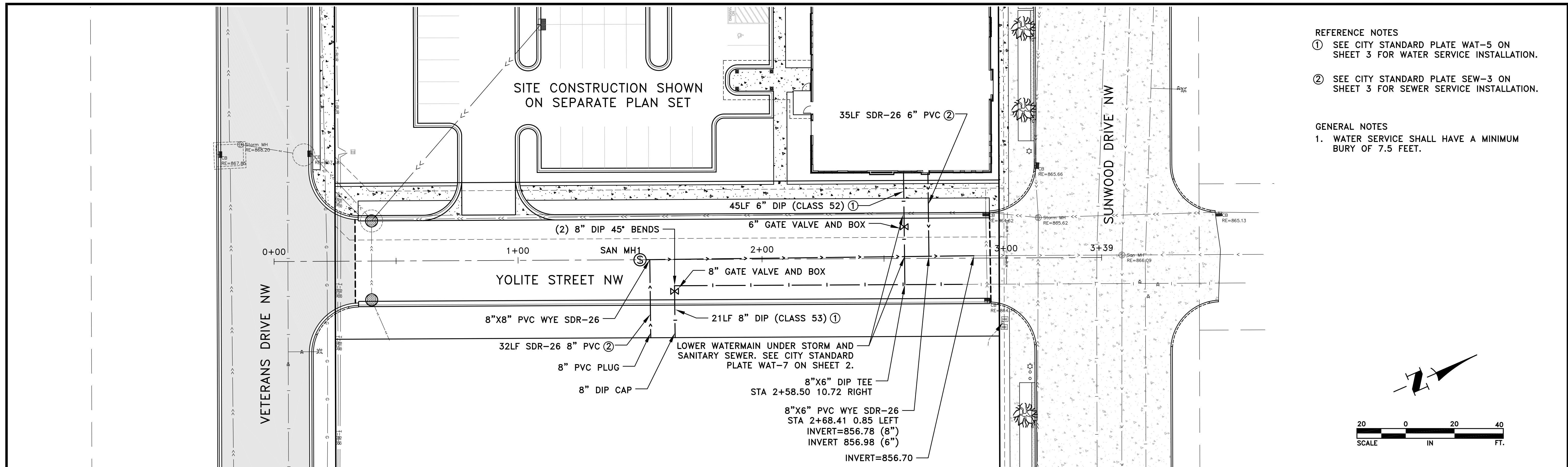


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YOLITE STREET

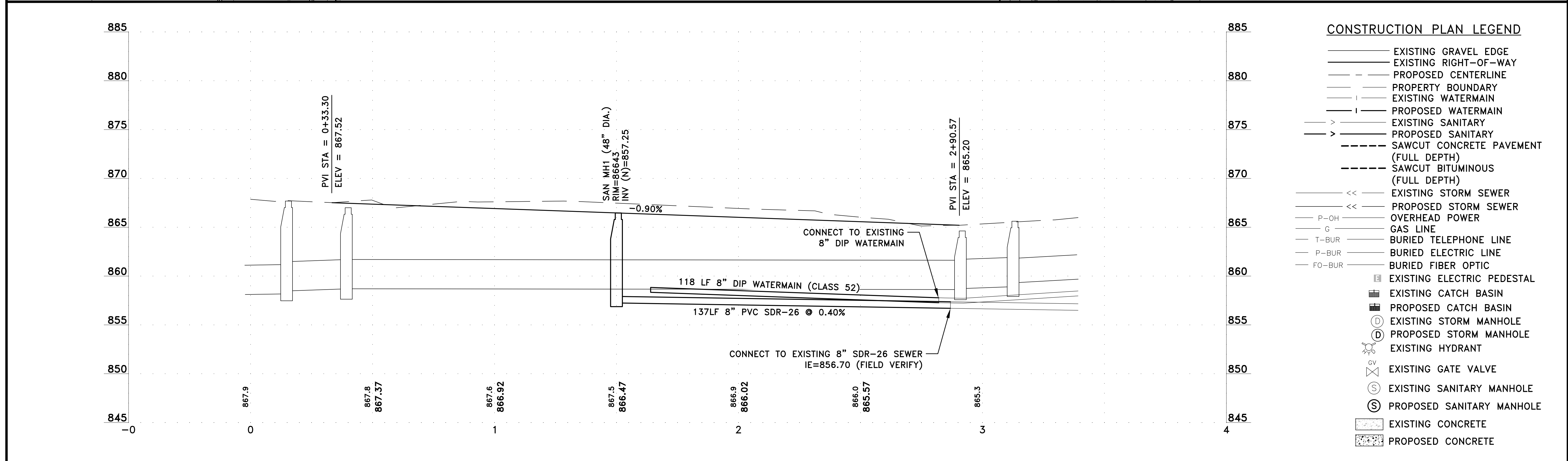
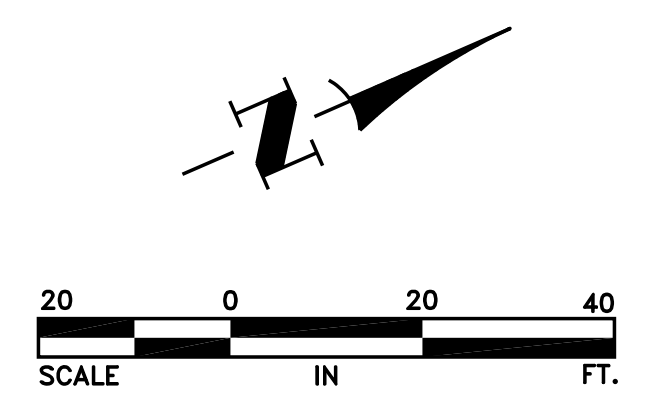
STREET PLAN AND PROFILE
 CITY OF RAMSEY, MINNESOTA

SHEET 13 OF 22 SHEETS
 4163.01



- REFERENCE NOTES
- ① SEE CITY STANDARD PLATE WAT-5 ON SHEET 3 FOR WATER SERVICE INSTALLATION.
 - ② SEE CITY STANDARD PLATE SEW-3 ON SHEET 3 FOR SEWER SERVICE INSTALLATION.

- GENERAL NOTES
- 1. WATER SERVICE SHALL HAVE A MINIMUM BURY OF 7.5 FEET.



CONSTRUCTION PLAN LEGEND

- EXISTING GRAVEL EDGE
- EXISTING RIGHT-OF-WAY
- - - PROPOSED CENTERLINE
- - - PROPERTY BOUNDARY
- - - EXISTING WATERMAIN
- - - PROPOSED WATERMAIN
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- ⊙ EXISTING GATE VALVE
- ⊙ EXISTING SANITARY MANHOLE
- ⊙ PROPOSED SANITARY MANHOLE
- EXISTING CONCRETE
- PROPOSED CONCRETE

DATE	REVISION
6/1/17	CITY COMMENTS

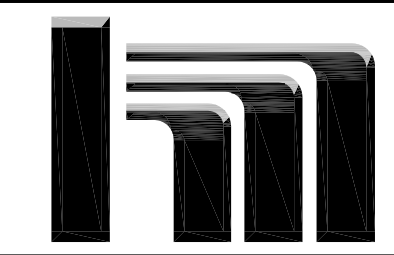
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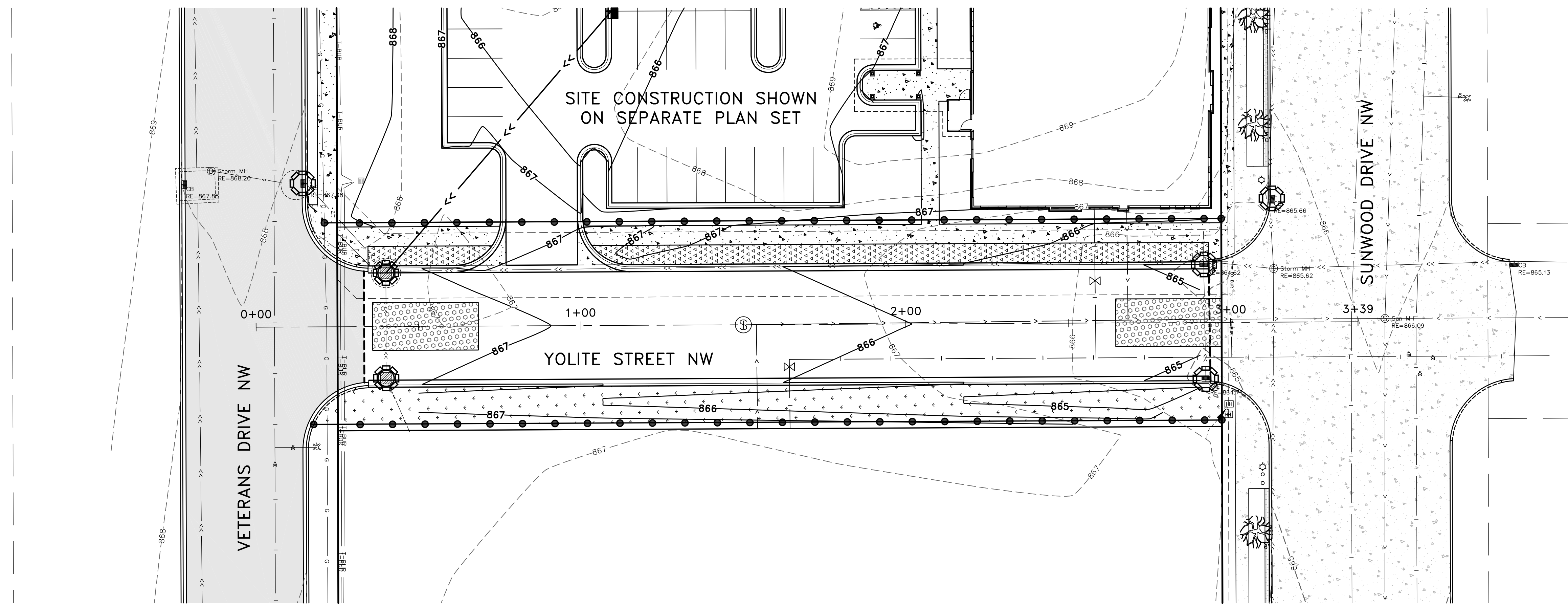


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YOLITE STREET

SANITARY SEWER AND WATERMAIN PLAN
 CITY OF RAMSEY, MINNESOTA

SHEET 14 OF 22 SHEETS



CONSTRUCTION PLAN LEGEND

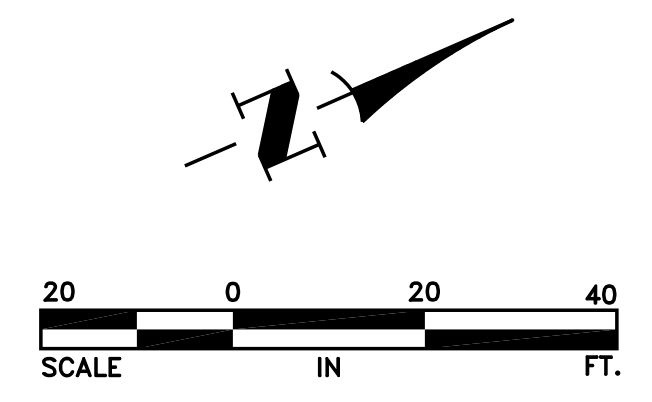
- EXISTING GRAVEL EDGE
- EXISTING RIGHT-OF-WAY
- - - PROPOSED CENTERLINE
- PROPERTY BOUNDARY
- EXISTING WATERMAIN
- PROPOSED WATERMAIN
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- ⊙ EXISTING SANITARY MANHOLE
- ⊙ PROPOSED SANITARY MANHOLE
- ▨ EXISTING CONCRETE
- ▨ PROPOSED CONCRETE

EROSION AND SEDIMENT CONTROL LEGEND

- SILT FENCE SEE CITY STANDARD PLATE ERO-1 ON SHEET 2.
- ⊙ INLET PROTECTION SEE SHEET 3.
- ▨ ROCK CONSTRUCTION ENTRANCE SEE SHEET 3.
- ▨ MNDOT SEED MIX 25-121
- ▨ MNDOT SEED MIX 25-121 WITH TYPE 1 DISK ANCHORED MULCH AND FERTILIZER SEE SHEET 2 FOR APPLICATION RATES.

GENERAL EROSION CONTROL NOTES:

1. EROSION CONTROL SHALL CONFORM TO THE Mn/DOT EROSION CONTROL HANDBOOK.
2. THE CONTRACTOR SHALL INSTALL EROSION AND SEDIMENT CONTROL FACILITIES (BMP'S) PRIOR TO GRADING AND REMOVAL ACTIVITIES. BMP'S SHALL BE MAINTAINED FOR THE DURATION OF CONSTRUCTION ACTIVITIES AND POTENTIAL FOR EROSION HAS PASSED.
3. THE CONTRACTOR SHALL SCHEDULE OPERATIONS TO MINIMIZE THE AMOUNT OF DISTURBED AREA AT ANY GIVEN TIME.
4. BMP'S SHALL BE INSPECTED DAILY BY THE CONTRACTOR. OBSERVATIONS SHALL BE RECORDED IN THE INSPECTION LOG.
5. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROPERLY REMOVED AND DISPOSED OF WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION.
6. SITE STABILIZATION SHALL OCCUR WITHIN 7 DAYS OF FINAL GRADING, OR PRIOR TO FINAL GRADING IF LOOSE SOIL IS UNWORKED FOR MORE THAN 7 DAYS.
7. STREETS SHALL BE CLEANED WITHIN 3 HOURS AFTER NOTIFICATION BY CITY THAT SWEEPING IS REQUIRED.

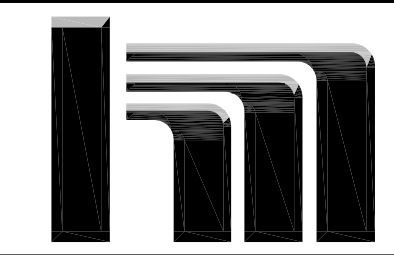


DATE	REVISION
6/1/17	CITY COMMENTS

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Craig J. Jochem
CRAIG J. JOCHUM, P.E.
 Lic. No. 23461

DESIGNED BY: CJJ
 DRAWN BY: MSS
 CHECKED BY: CJJ



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YOLITE STREET

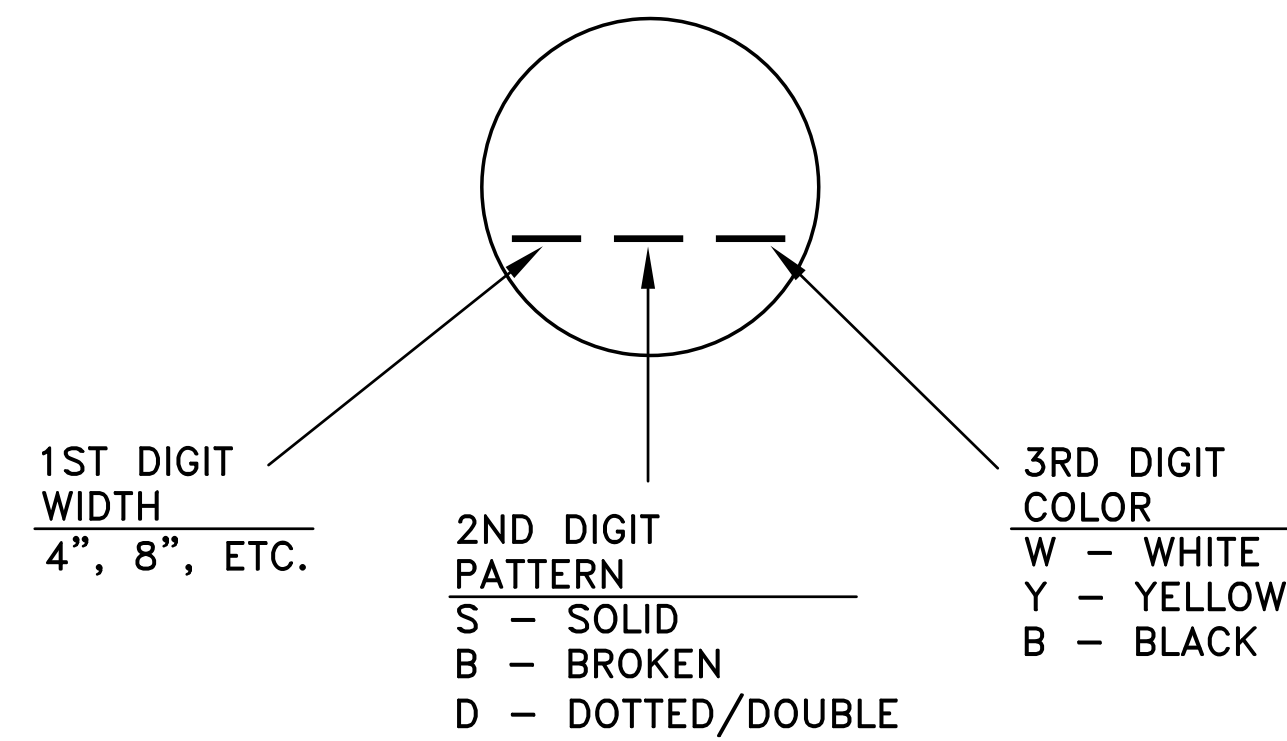
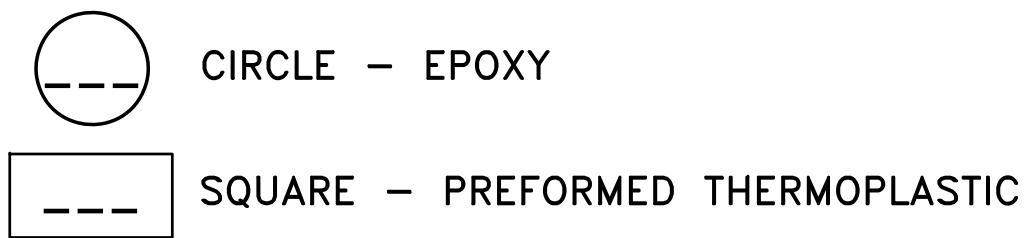
GRADING AND EROSION CONTROL PLAN
 CITY OF RAMSEY, MINNESOTA

SHEET 15 OF 22 SHEETS

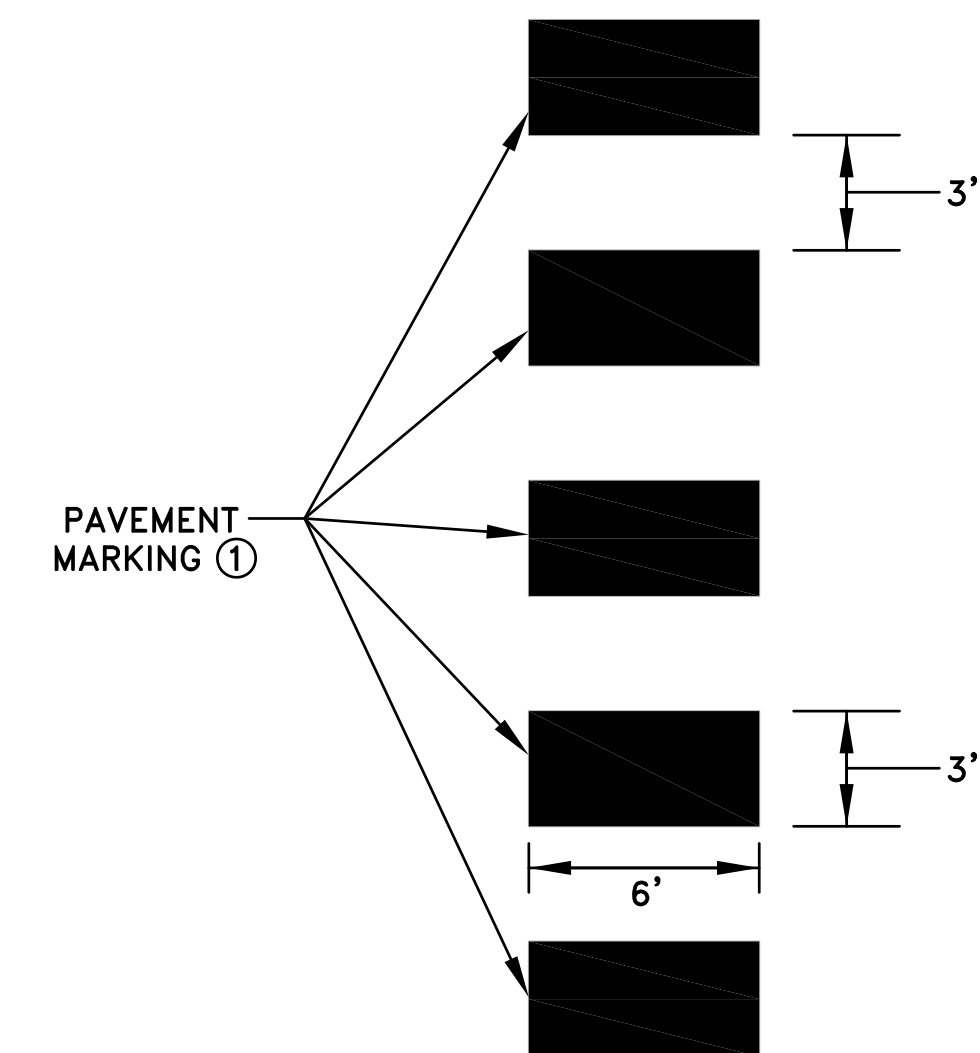
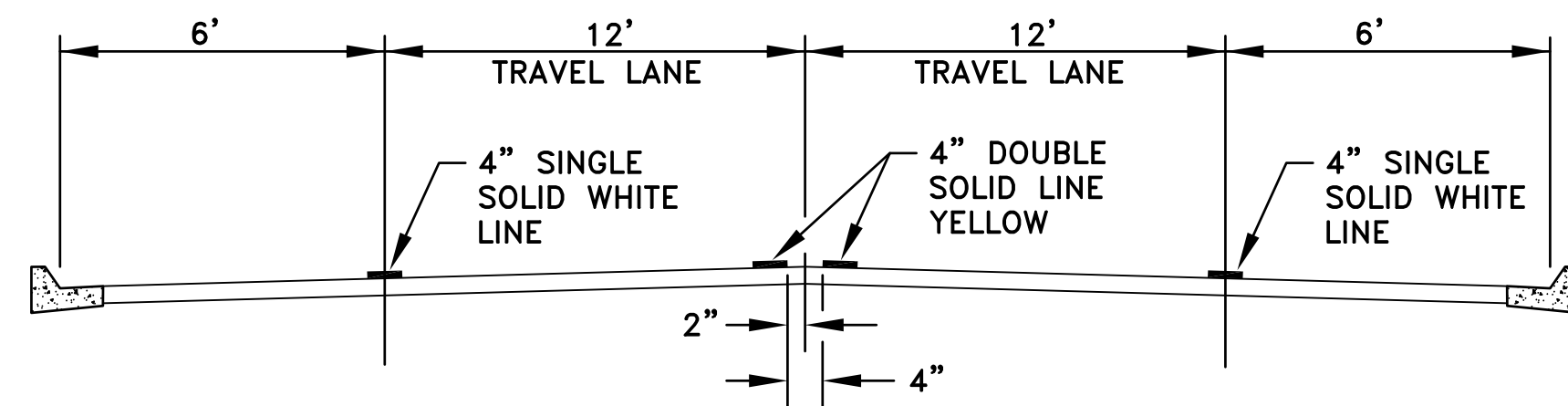
PERMANENT PAVEMENT MARKING GENERAL NOTES AND GUIDELINES:

1. THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. THE CONTRACTOR WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.
2. EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.
3. A TOLERANCE OF 1/4 INCH UNDER OR 1/4 OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO 1/2 FOOT FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.
4. THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER.
5. THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.
6. FOR 15 MIL APPLICATIONS, GLASS BEADS SHALL BE APPLIED AT A RATE OF AT LEAST 25 LB/GAL. THE "NO-TRACKING" CONDITION SHALL BE DETERMINED ON AN APPLICATION OF SPECIFIED THICKNESS TO THE PAVEMENT AND COVERED WITH GLASS BEADS AT THE RATE OF AT LEAST 25 LB/GAL.
7. OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES *F OR GREATER.
8. PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

STRIPING KEY & LEGEND



EXAMPLE: (4SW) = 4" SOLID LINE WHITE-EPOXY

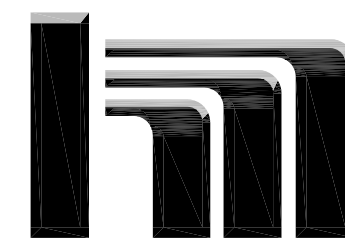


DATE	REVISION
6/1/17	CITY COMMENTS

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Craig J. Jochem
 CRAIG J. JOCHUM, P.E.
 Lic. No. 23461
 Date 5-4-17

DESIGNED BY: CJJ
 DRAWN BY: MSS
 CHECKED BY: CJJ

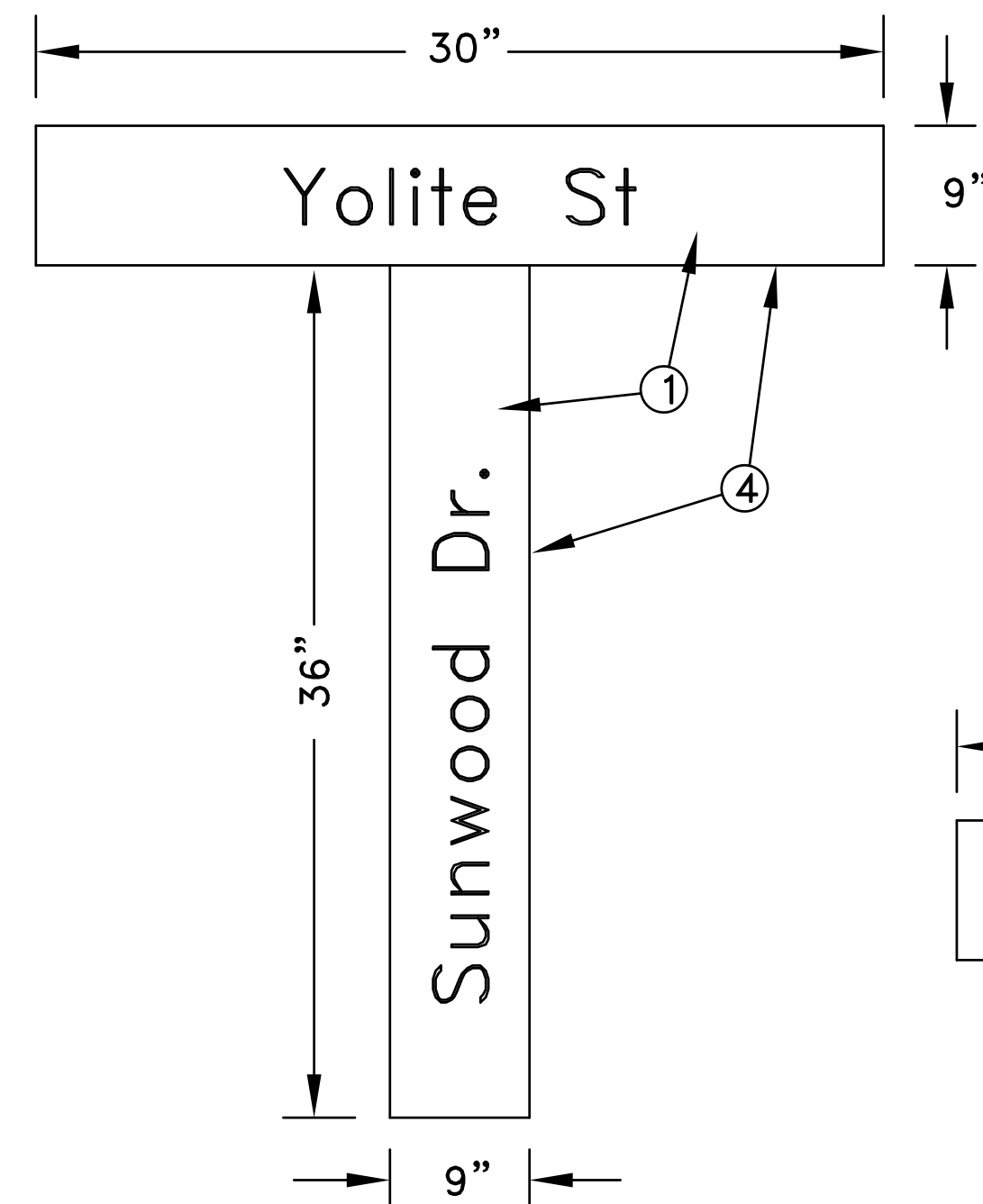


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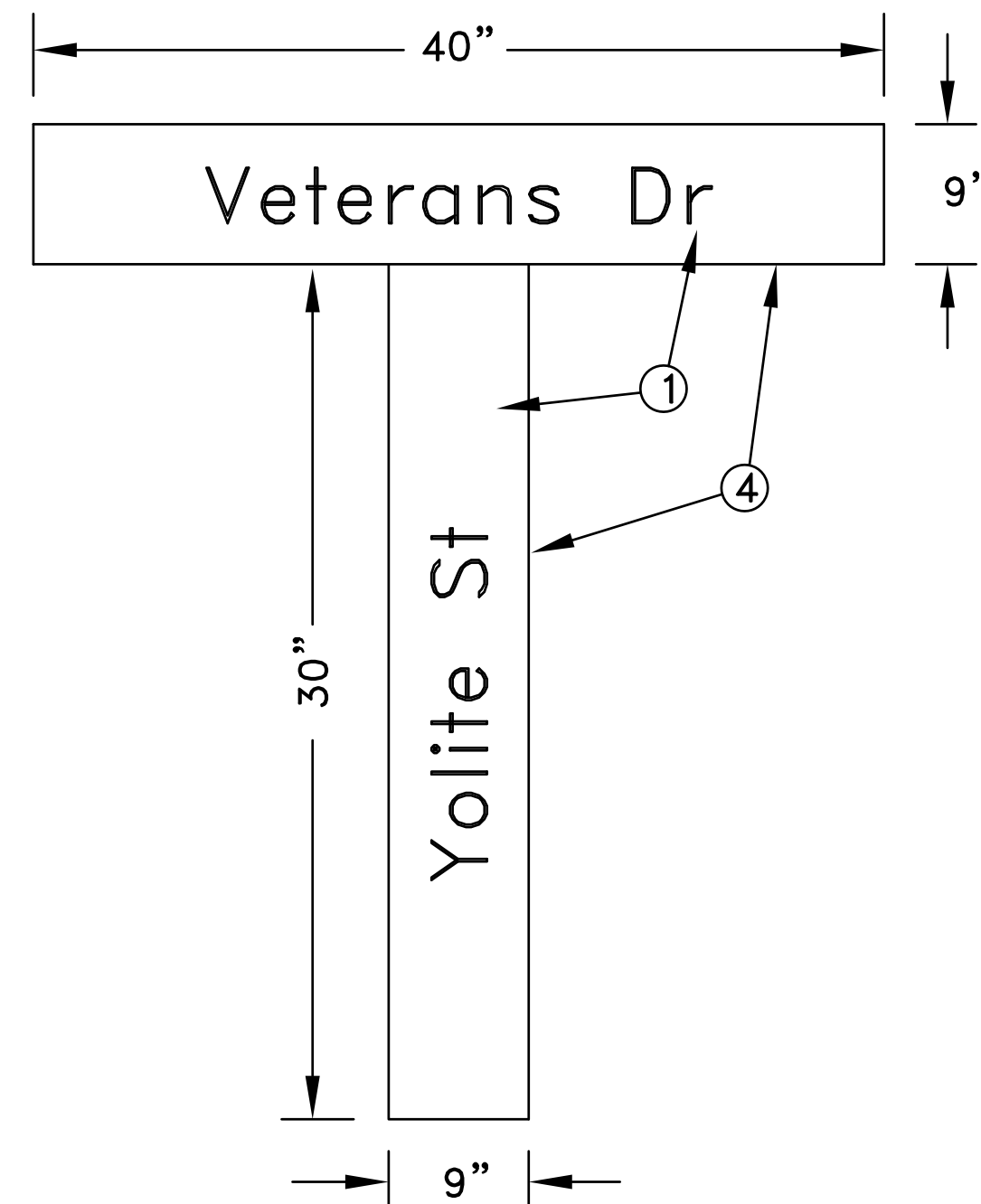
YOLITE STREET

STRIPING LEGEND AND NOTES
 CITY OF RAMSEY, MINNESOTA

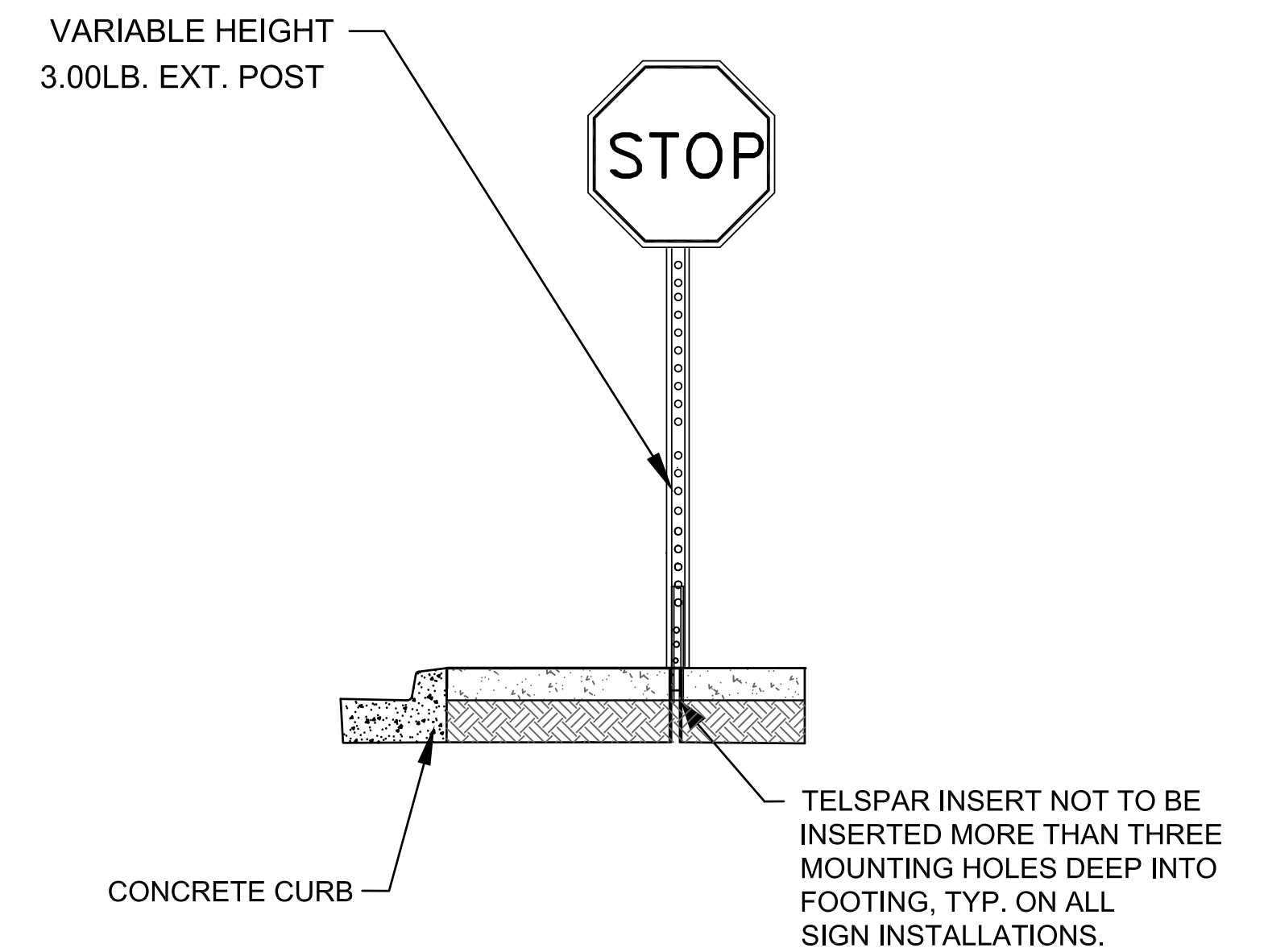
SHEET 16 OF 22 SHEETS



SIGN 1 DETAIL
NO SCALE



SIGN 2 DETAIL
NO SCALE



SIDEWALK MOUNT BREAK-AWAY
SIGN INSTALLATION
1
17

SIGN LEGEND	SIGN NUMBER	SIGN SIZE	SIGN MESSAGE	SIGN COLOR ⑤	POSTS			REMARKS	ESTIMATED QUANTITY
					NUMBER AND TYPE	NUMBER OF KNEE BRACES	LENGTH (FEET)		
	R1-1	30"X30"	STOP	WHITE ON RED	2-U		13.5		2
1		30"X9" 36"X9"	YOLITE ST ① SUNWOOD DR ⑥	WHITE ON GREEN		②③		SEE DETAIL ON THIS SHEET	1
2		30"X9" 40"X9"	YOLITE ST ① VETERANS DR ⑥	WHITE ON GREEN		②③		SEE DETAIL ON THIS SHEET	1

GENERAL NOTES:

- ALL SIGNS SHALL HAVE TYPE IX SHEETING UNLESS NOTED.
- SIGNS CONSTRUCTED IN THE SIDEWALK SHALL BE CONSTRUCTED PER ①/17.
- THE CITY OF RAMSEY FABRICATES AND INSTALLS ALL SIGNS.

REFERENCE NOTES:

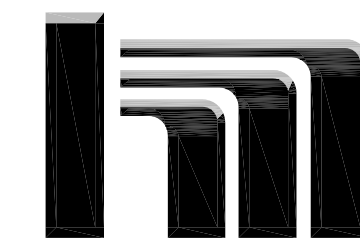
- ALL STREET NAME SIGNS SHALL HAVE 6" AND 4 1/2" LETTERING FOR UPPERCASE AND LOWERCASE LETTERS, RESPECTIVELY. SERIES "B" LETTERING AND NUMBERING SHALL BE USED WITH 75% SPACING.
- MOUNTING BRACKETS SHALL BE E-450 FOURWAY BRACKET OR EQUAL.
- MOUNTING POSTS SHALL BE 2.5" O.D. BY 10' GALVANIZED TUBE. POSTS SHALL BE IMBEDDED IN A 12" DIAMETER BY 24" DEEP CONCRETE FOOTING. CONCRETE MIX 3Y43 SHALL BE USED FOR THE FOOTING.
- SIGN PLATES SHALL BE SINGLE FACED CONSTRUCTED OF 0.100 ALUMINUM TYPE IX SHEETING.
- SIGN COLOR SHALL BE AS SHOWN IN THE MNDOT STANDARD SIGNS MANUAL, UNLESS NOTED.
- ALL STREET NAME SIGNS SHALL BE NOTCHED AND PUNCHED AND HAVE A 3/8" WHITE BORDER.

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6/1/17	CITY COMMENTS

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 Date 5-4-17 CRAIG J. JOCHUM, P.E.
 Lic. No. 23461

DESIGNED BY:
CJJ
 DRAWN BY:
MSS
 CHECKED BY:
CJJ

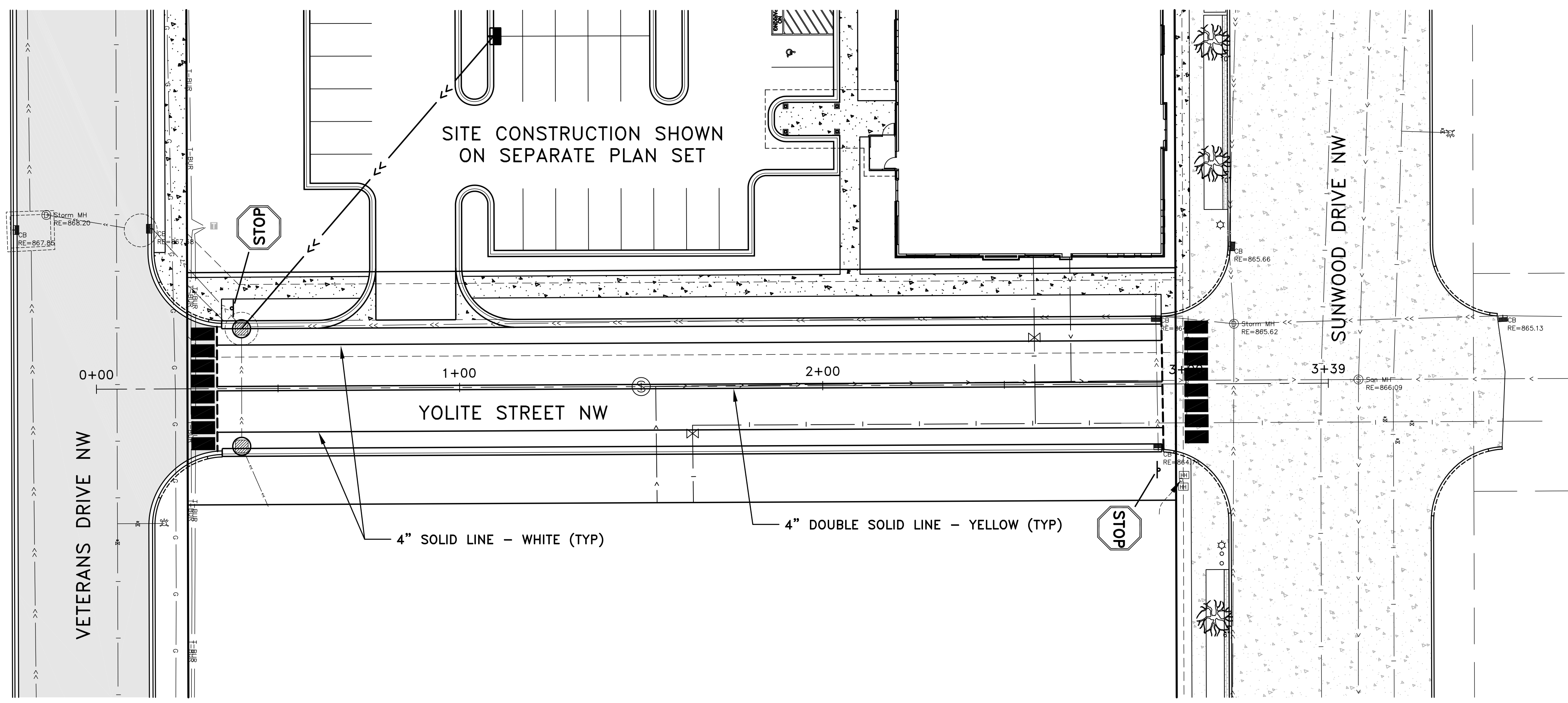


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YOLITE STREET

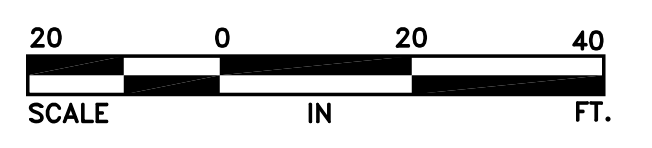
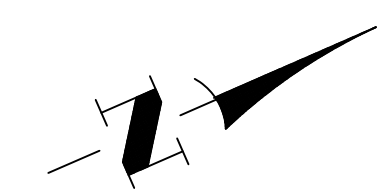
SIGNAGE LEGEND AND NOTES
 CITY OF RAMSEY, MINNESOTA

SHEET 17 OF 22 SHEETS
 4163.01



CONSTRUCTION PLAN LEGEND

- EXISTING GRAVEL EDGE
- EXISTING RIGHT-OF-WAY
- - - PROPOSED CENTERLINE
- - - PROPERTY BOUNDARY
- EXISTING WATERMAIN
- PROPOSED WATERMAIN
- > - EXISTING SANITARY
- > - PROPOSED SANITARY
- - - SAWCUT CONCRETE PAVEMENT (FULL DEPTH)
- - - SAWCUT BITUMINOUS (FULL DEPTH)
- << — EXISTING STORM SEWER
- << — PROPOSED STORM SEWER
- P-OH — OVERHEAD POWER
- G — GAS LINE
- T-BUR — BURIED TELEPHONE LINE
- P-BUR — BURIED ELECTRIC LINE
- FO-BUR — BURIED FIBER OPTIC
- EXISTING ELECTRIC PEDESTAL
- EXISTING CATCH BASIN
- PROPOSED CATCH BASIN
- ⊙ EXISTING STORM MANHOLE
- ⊙ PROPOSED STORM MANHOLE
- ⊙ EXISTING HYDRANT
- ⊗ EXISTING GATE VALVE
- ⊙ EXISTING SANITARY MANHOLE
- ⊙ PROPOSED SANITARY MANHOLE
- EXISTING CONCRETE
- PROPOSED CONCRETE



DATE	REVISION
6/1/17	CITY COMMENTS

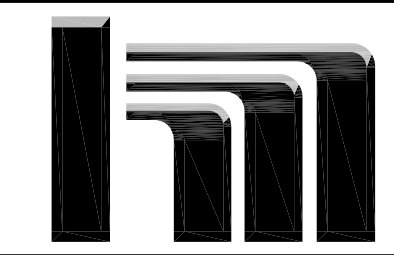
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Craig J. Jochem
CRAIG J. JOCHUM, P.E.
 Lic. No. 23461

DESIGNED BY:
CJJ

DRAWN BY:
MSS

CHECKED BY:
CJJ



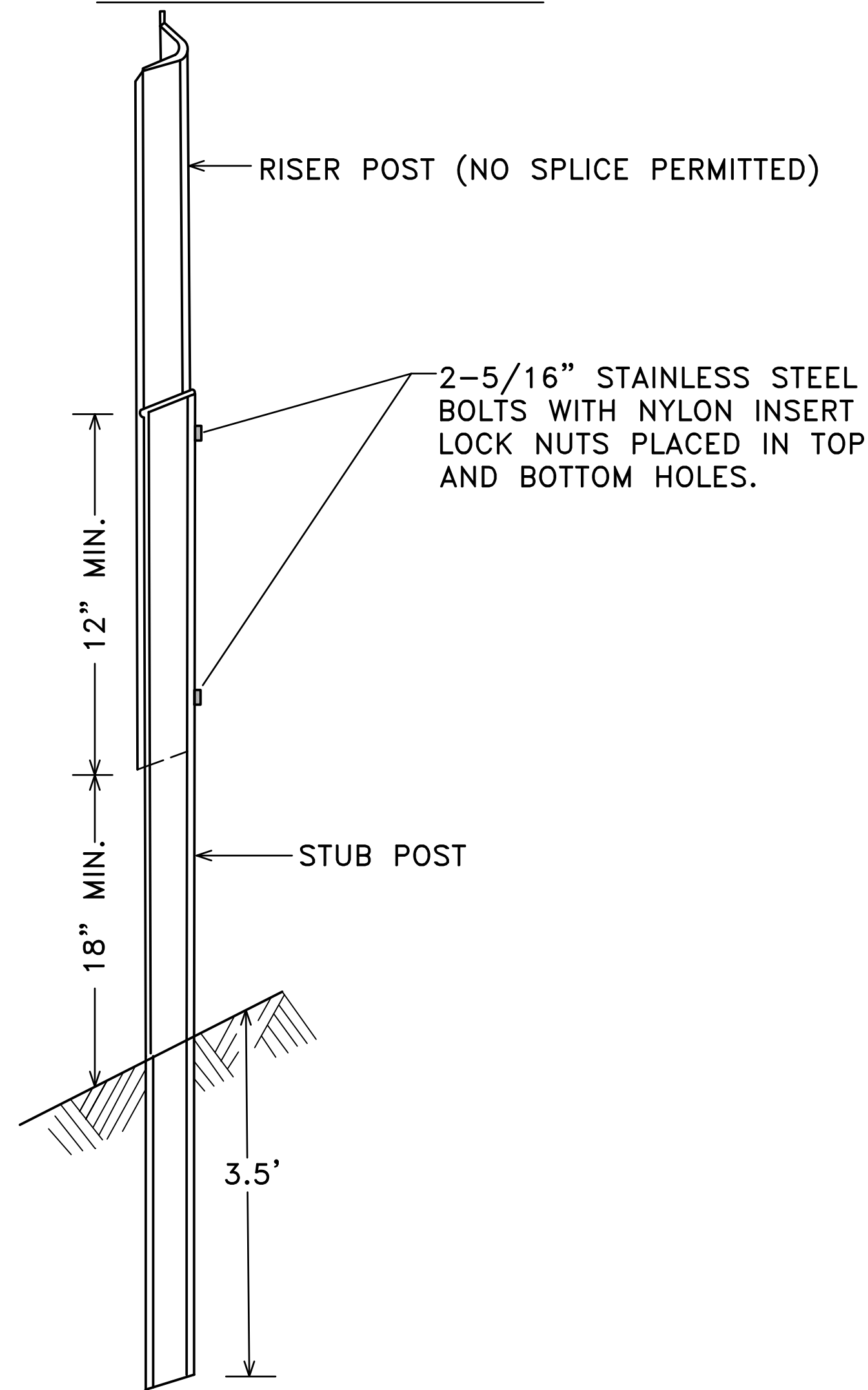
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YOLITE STREET

STRIPING & SIGNAGE PLAN
 CITY OF RAMSEY, MINNESOTA

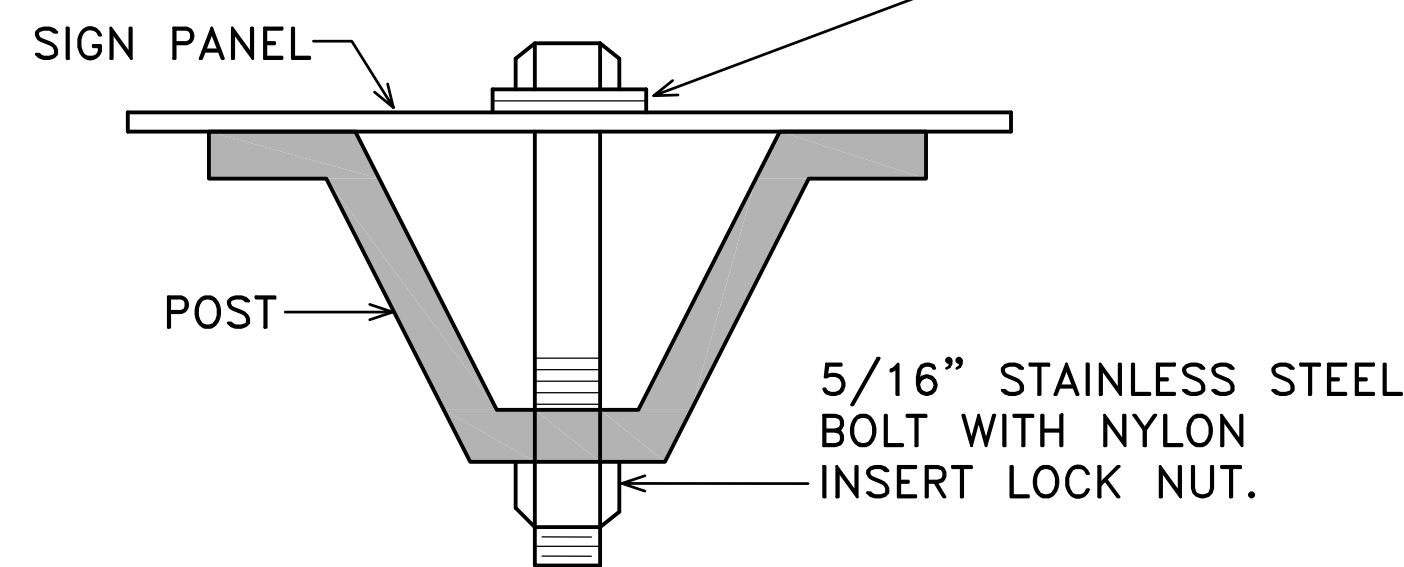
SHEET 18 OF 22 SHEETS

TYPE C & D POST

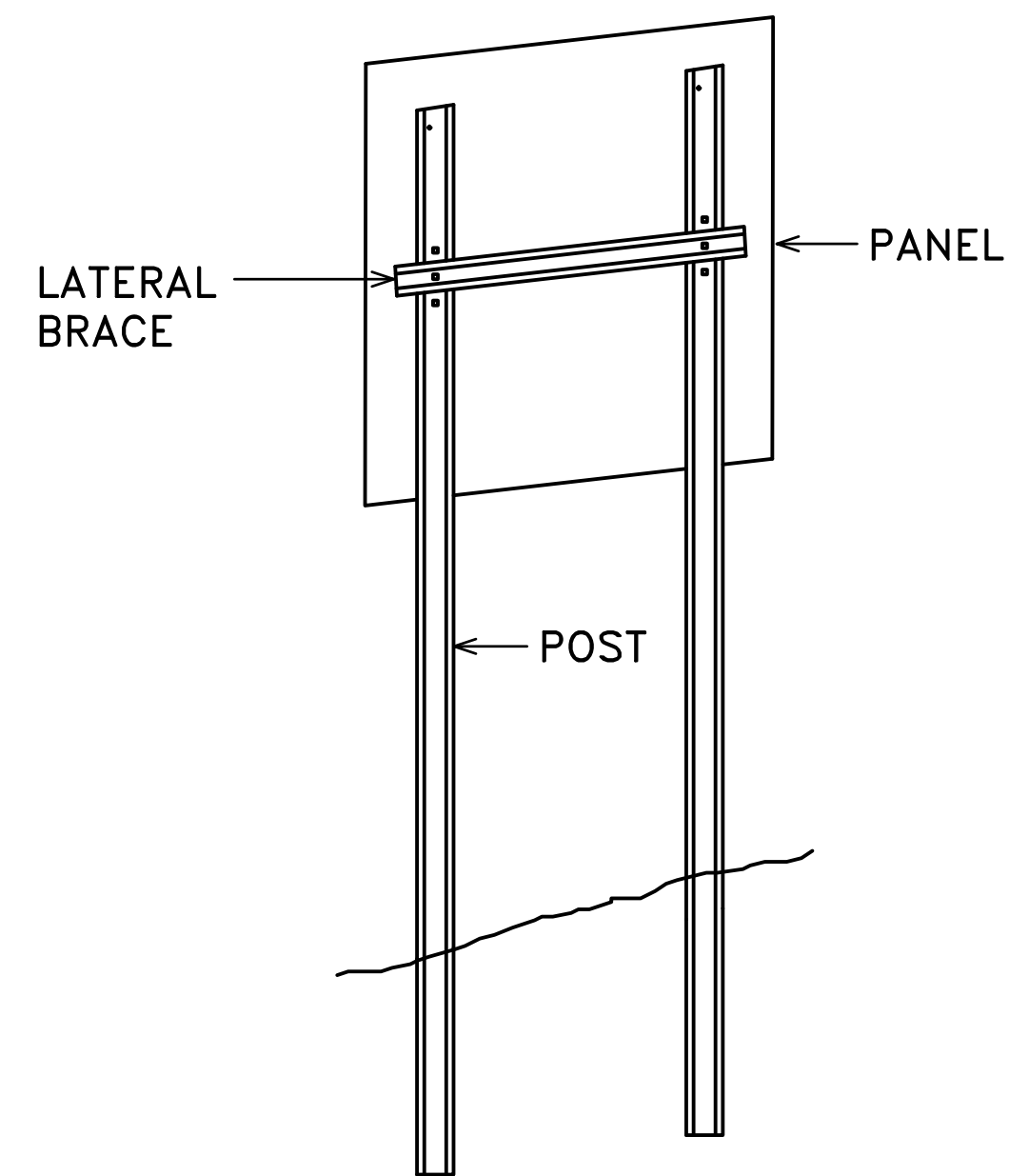


U POST SPLICE

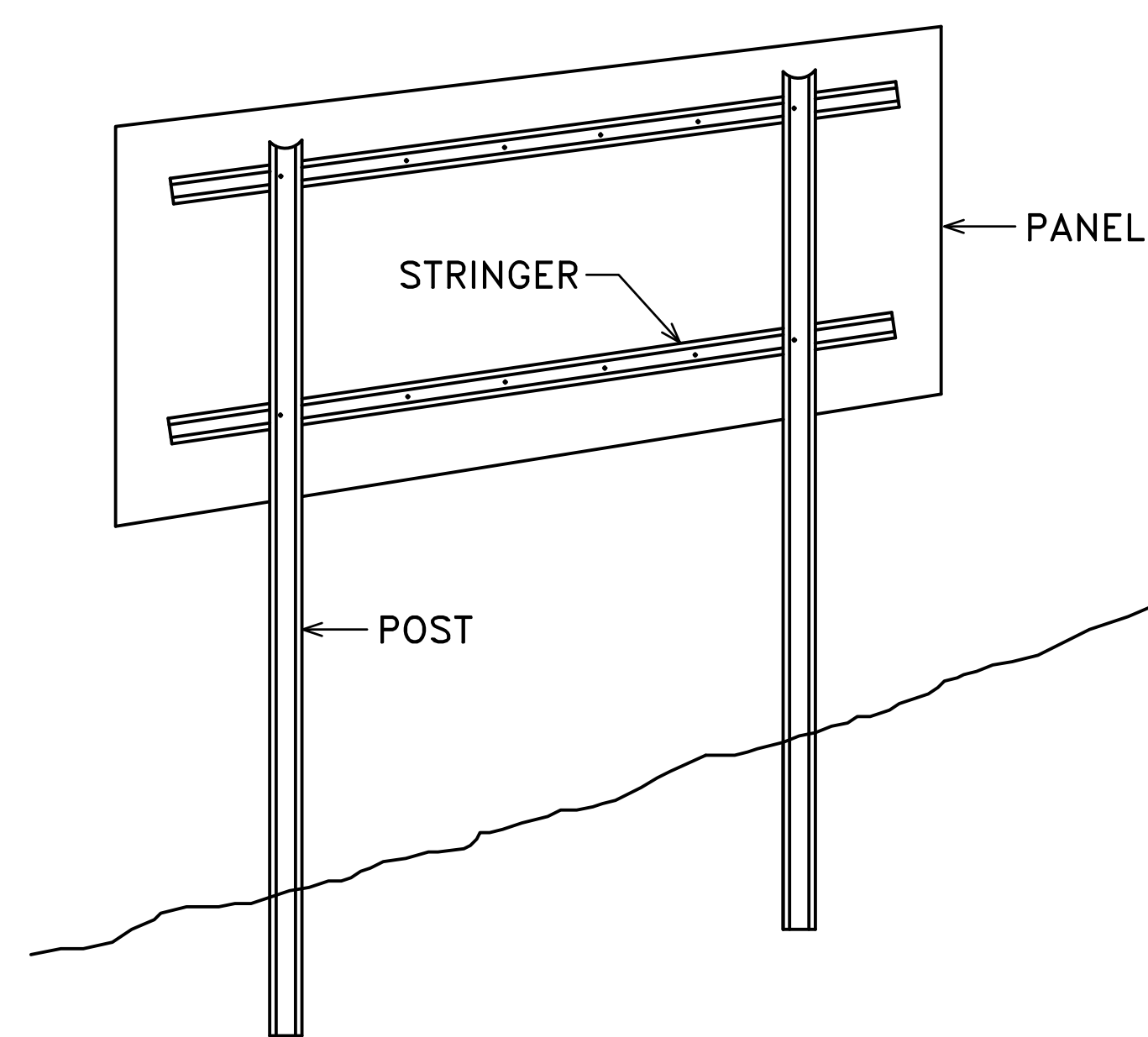
STAINLESS STEEL WASHER AND NYLON WASHER
(T=1/32" MIN., I.D.=3/8" MAX., O.D.=7/8" MAX.)



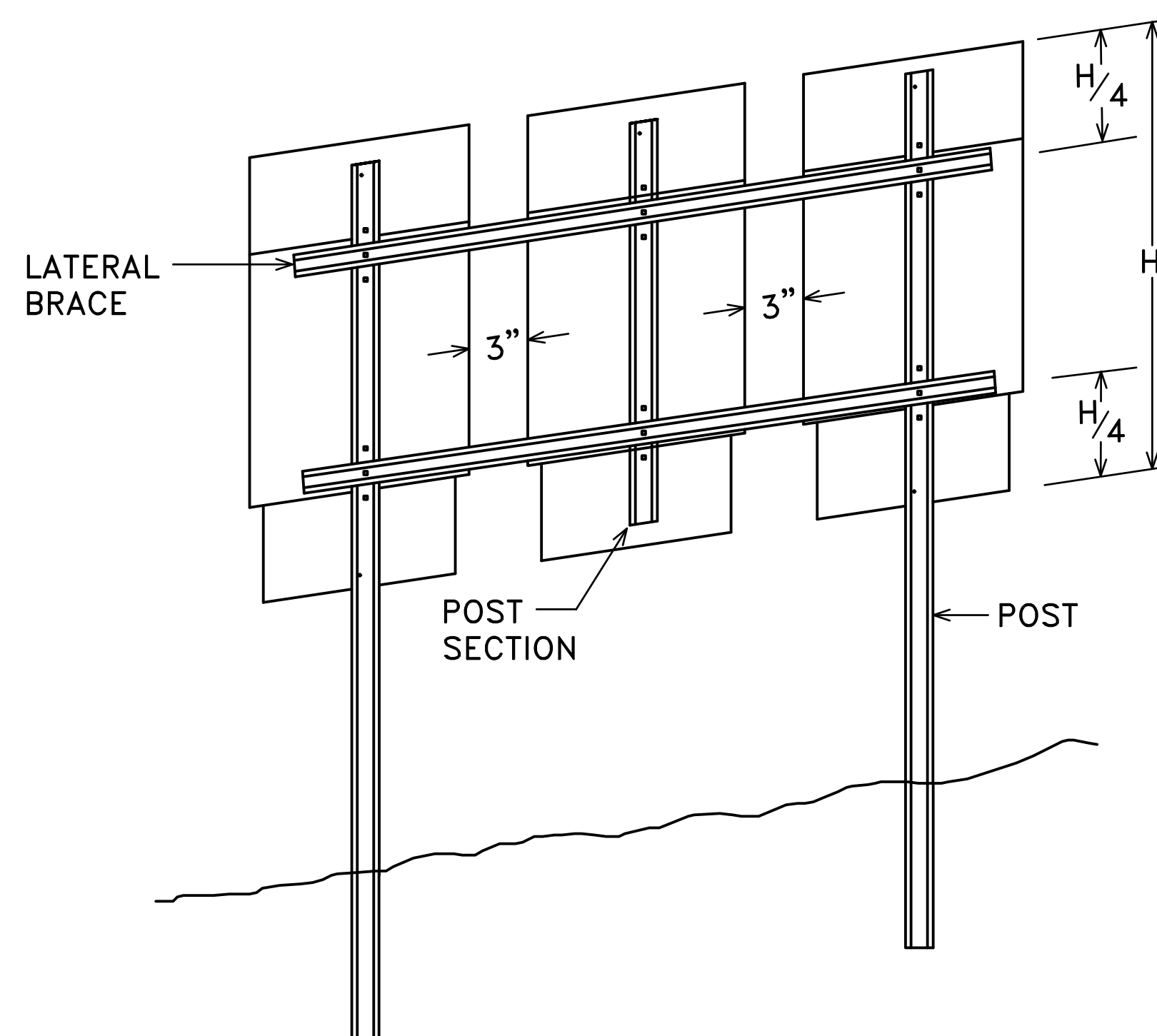
U POST MOUNTING
TYPE C SIGNS



TYPICAL TYPE C INSTALLATION



TYPICAL TYPE D INSTALLATION



MODIFIED TYPE C INSTALLATION

NOTES:

1. USE 3 LB/FT STUB POSTS, RISER POSTS, STRINGERS, KNEE BRACES, LATERAL BRACES AND KNEE BRACE STUB POSTS. ALL SHALL CONFORM TO MN/DOT 3401.
2. SEE TYPE D SIGN POSTS LENGTHS AND SPACINGS, SEE SIGN DATA SHEET.
3. TYPE D SIGN PANELS SHALL BE BOLTED TO STRINGERS AT 24" MAXIMUM INTERVALS IN ACCORDANCE WITH THE TYPE D STRINGER AND PANEL-JOINT DETAIL (SEE STANDARD SIGNS MANUAL).
4. MOUNTING (PUNCH CODE) FOR TYPE C SIGN PANELS SHALL BE AS INDICATED IN THE STANDARD SIGNS MANUAL UNLESS OTHERWISE SPECIFIED.
5. ALL RISER (VERTICAL) U POSTS SHALL BE SPLICED. DRIVEN STUB POSTS SHALL BE AT LEAST 7' LONG.
6. USE STAINLESS STEEL 5/16" BOLTS, WASHERS AND NYLON INSERT LOCK NUTS AS SHOWN FOR ALL GROUND MOUNTED AND OVERHEAD MOUNTED SIGNS.
7. STAINLESS STEEL WASHER WITH SAME DIMENSIONS SHALL BE PROVIDED BETWEEN ALL NYLON WASHERS AND BOLT HEADS.
8. BRACING STUBS SHALL BE NO MORE THAN 4" ABOVE GROUND AND EMBEDDED AT LEAST 3 1/2'.
9. A-FRAME BRACKET SHALL BE STEEL CONFORMING TO MN/DOT 3306 AND GALVANIZED IN ACCORDANCE WITH MN/DOT 3394.
10. COLLARS SHALL BE USED TO SHIM OVERLAYS AND DEMOUNTABLE LEGEND AWAY FROM PANEL WHERE INTERFERENCE WITH BOLT HEADS IS ENCOUNTERED. MN/DOT 3352.2A5.
11. 2 POST TYPE C SIGNS SHALL BE REINFORCED WITH AT LEAST ONE LATERAL BRACE. INSTALLATIONS WHERE THE TOTAL PANEL HEIGHT IS 60" OR MORE SHALL HAVE TWO LATERAL BRACES LOCATED APPROXIMATELY AT THE QUARTER POINTS.
12. WHERE 2 SINGLE POST TYPE C SIGNS ARE INSTALLED SIDE BY SIDE, THEY SHALL BE REINFORCED Laterally BY AT LEAST 2 BRACES, BOLTED AT EACH POST AND LOCATED APPROXIMATELY AT THE QUARTER POINTS.
13. WHERE 3 OR MORE TYPE C SIGNS ARE INSTALLED SIDE BY SIDE, THEY SHALL BE REINFORCED Laterally BY AT LEAST 2 BRACES, BOLTED AT EACH POST AND POST SECTION AND LOCATED APPROXIMATELY AT THE QUARTER POINTS AS SHOWN IN MODIFIED TYPE C INSTALLATION.

TYPE C & D SIGN
STRUCTURAL DETAILS

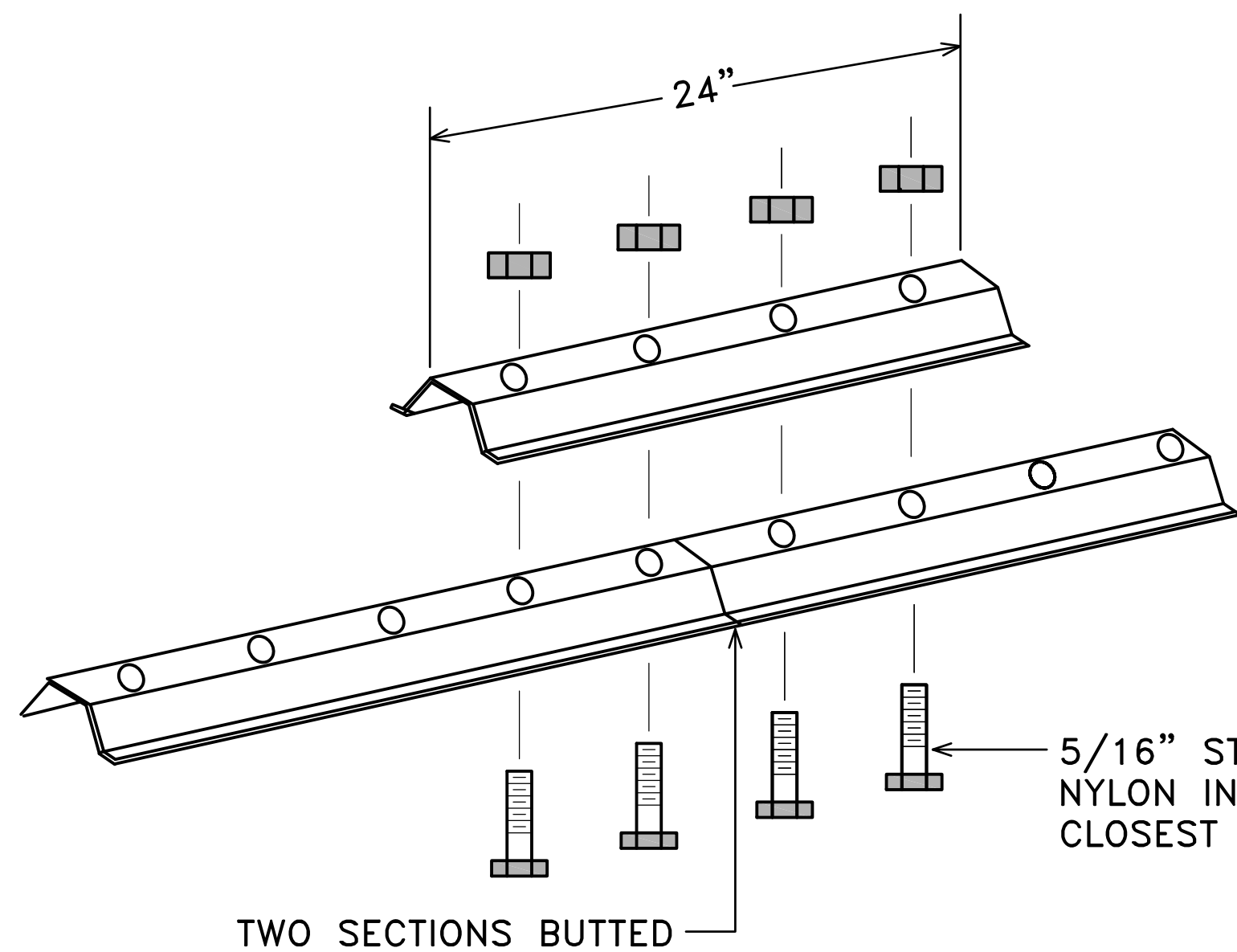
Sheet 1 of 3

REVISD: 1-7-08

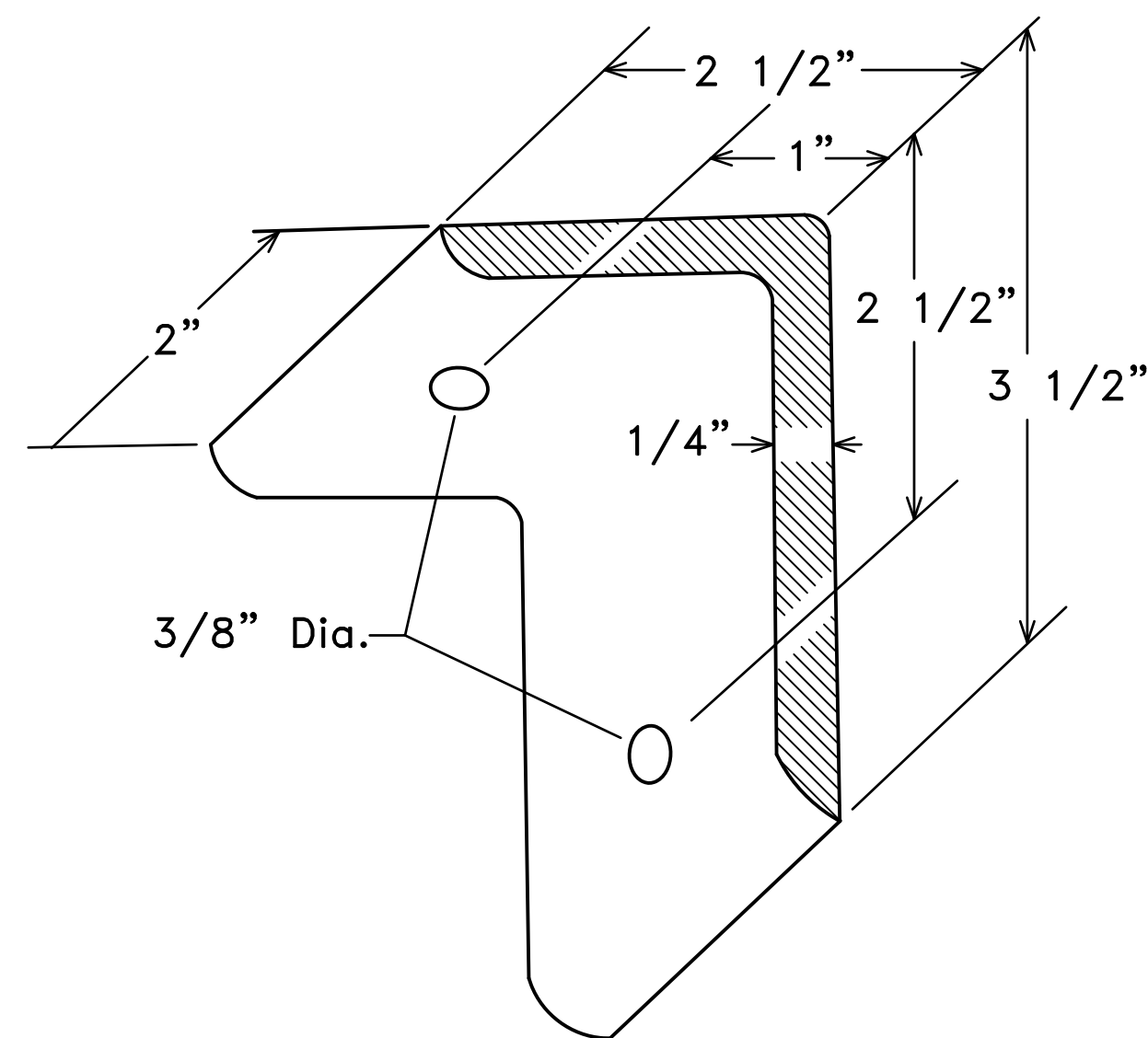
YOLITE STREET
RAMSEY, MINNESOTA

Sheet No. 19 of 22 Sheets

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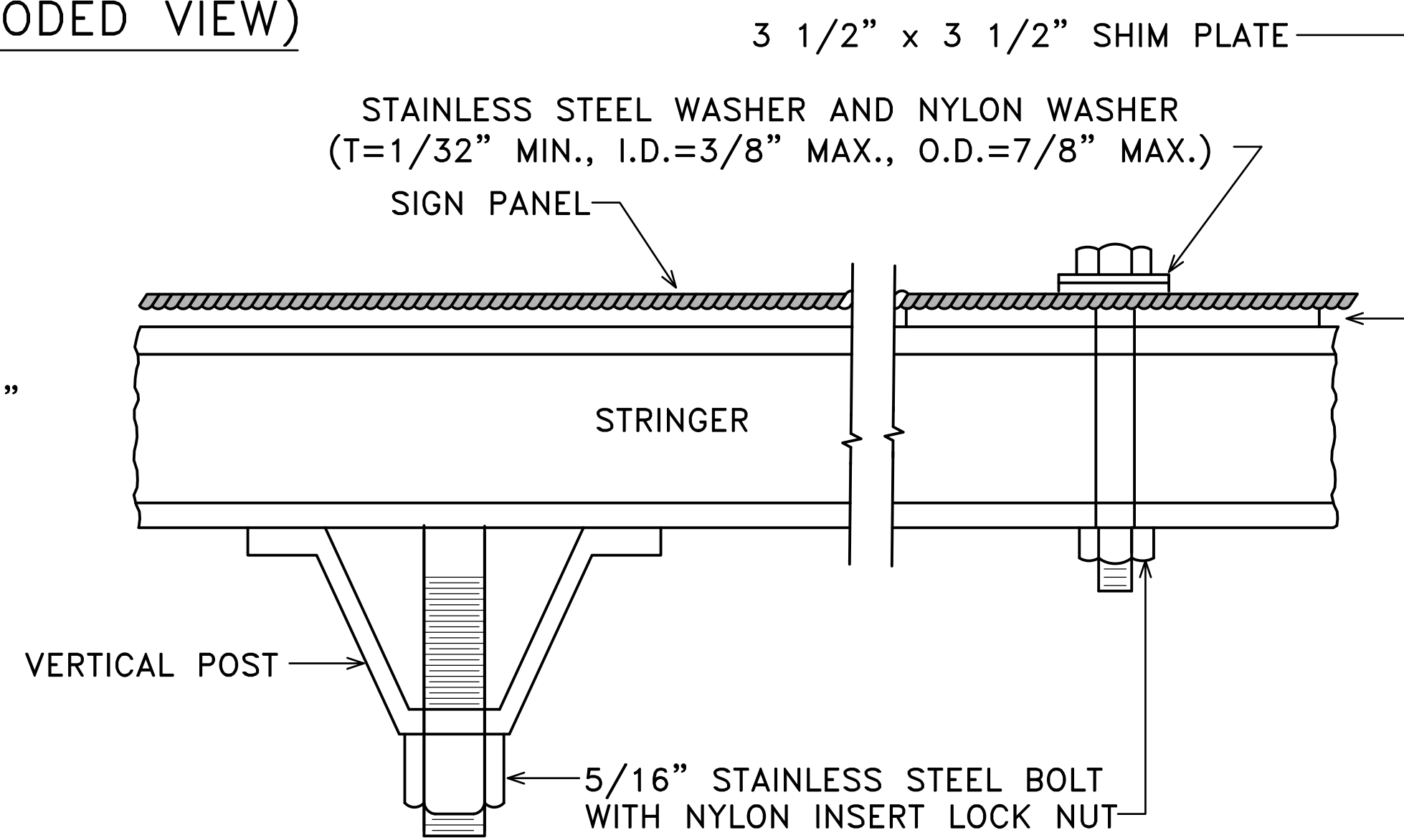


LATERAL BRACE OR STRINGER
SPLICE DETAIL (EXPLODED VIEW)

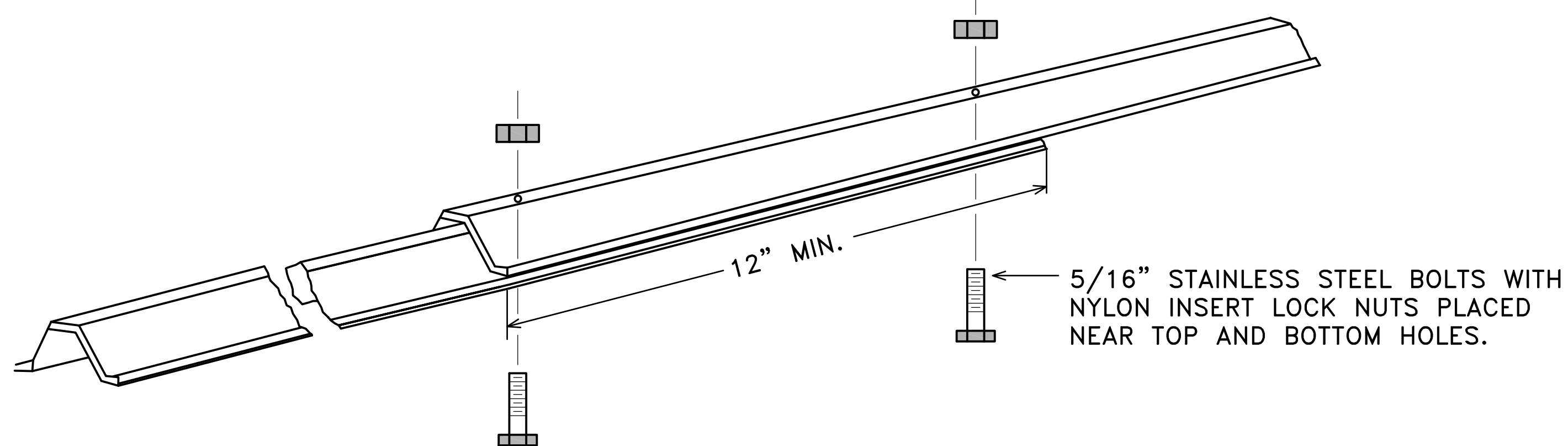


A-FRAME BRACKET

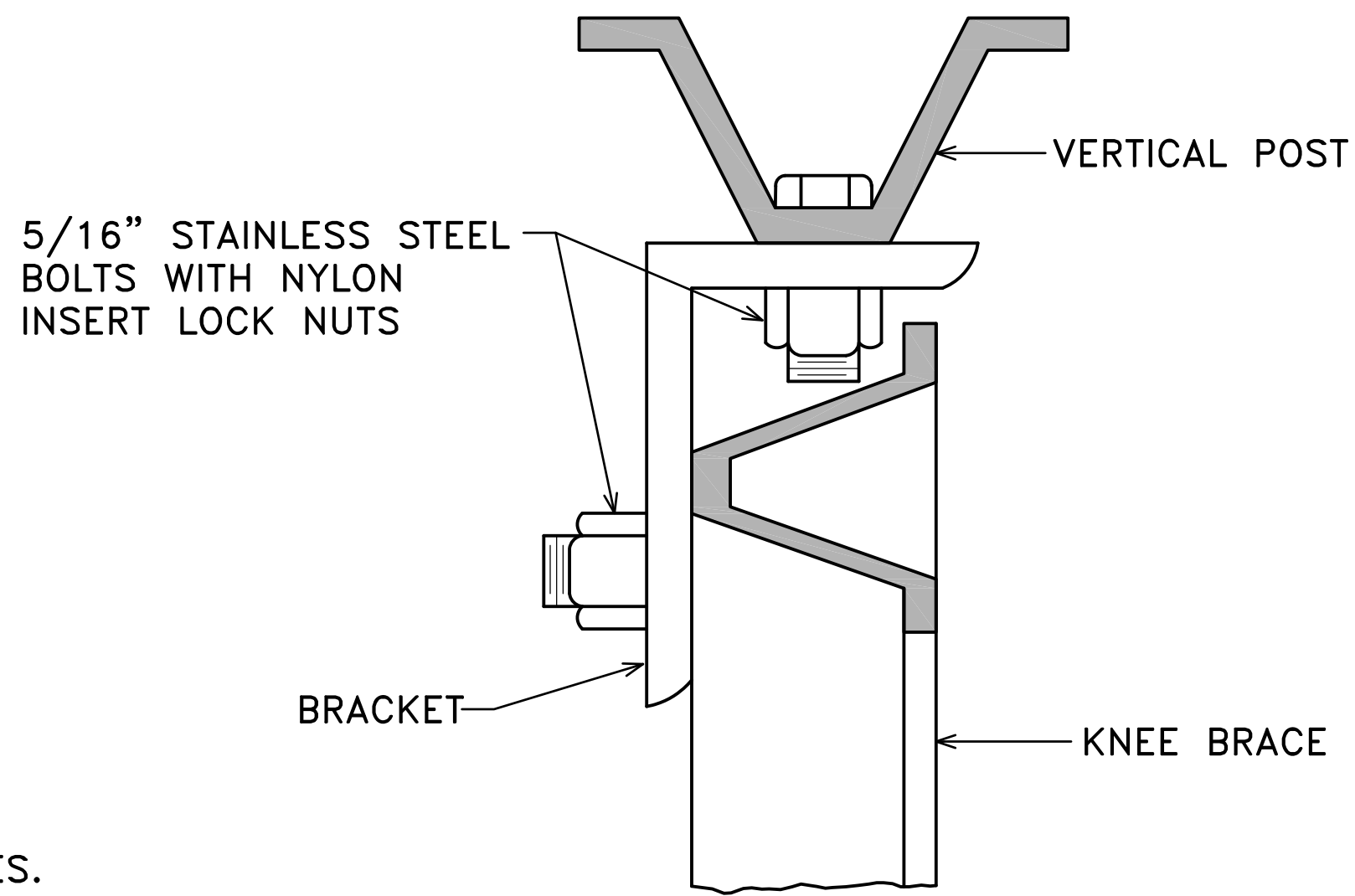
(STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)



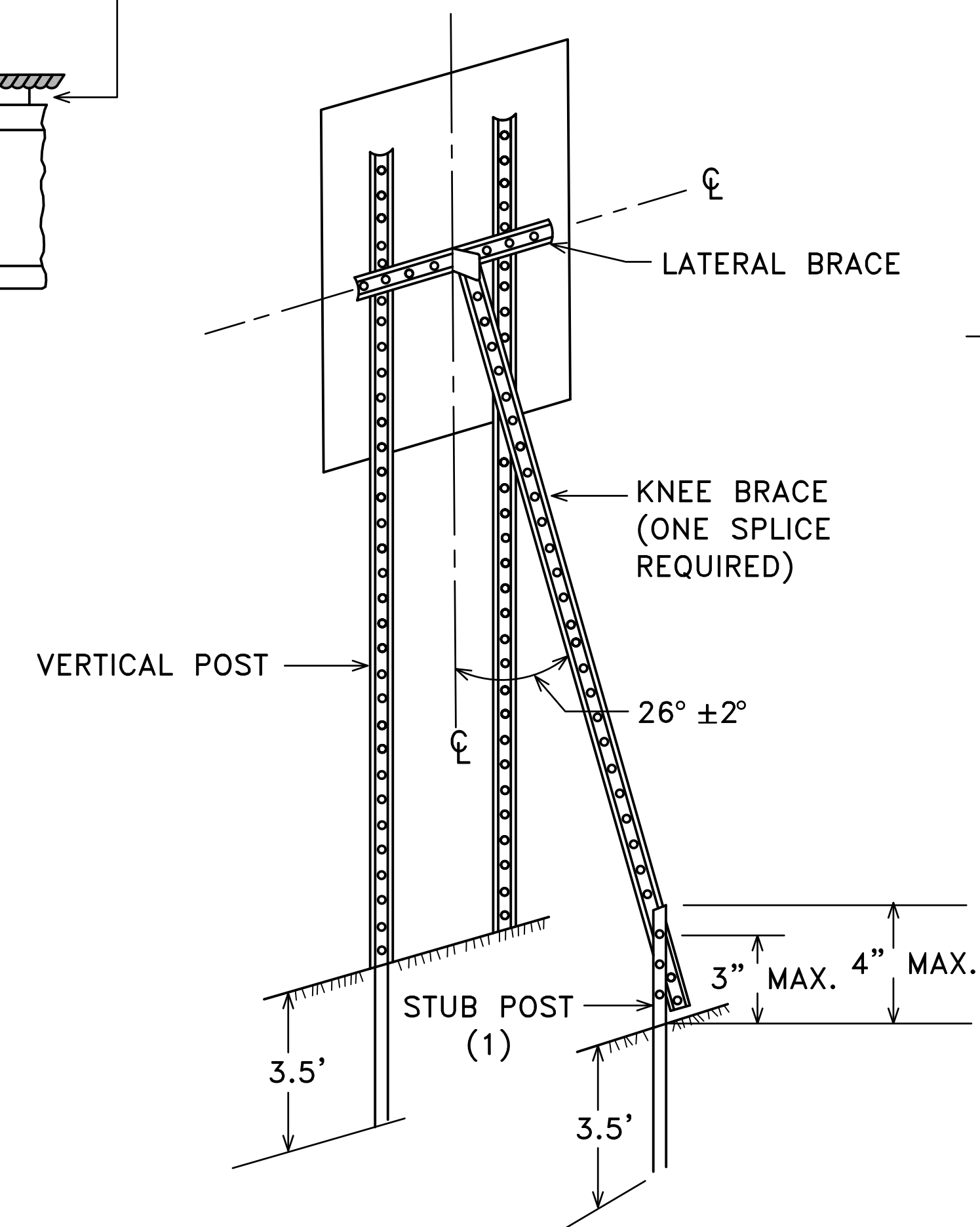
SECTION B-B



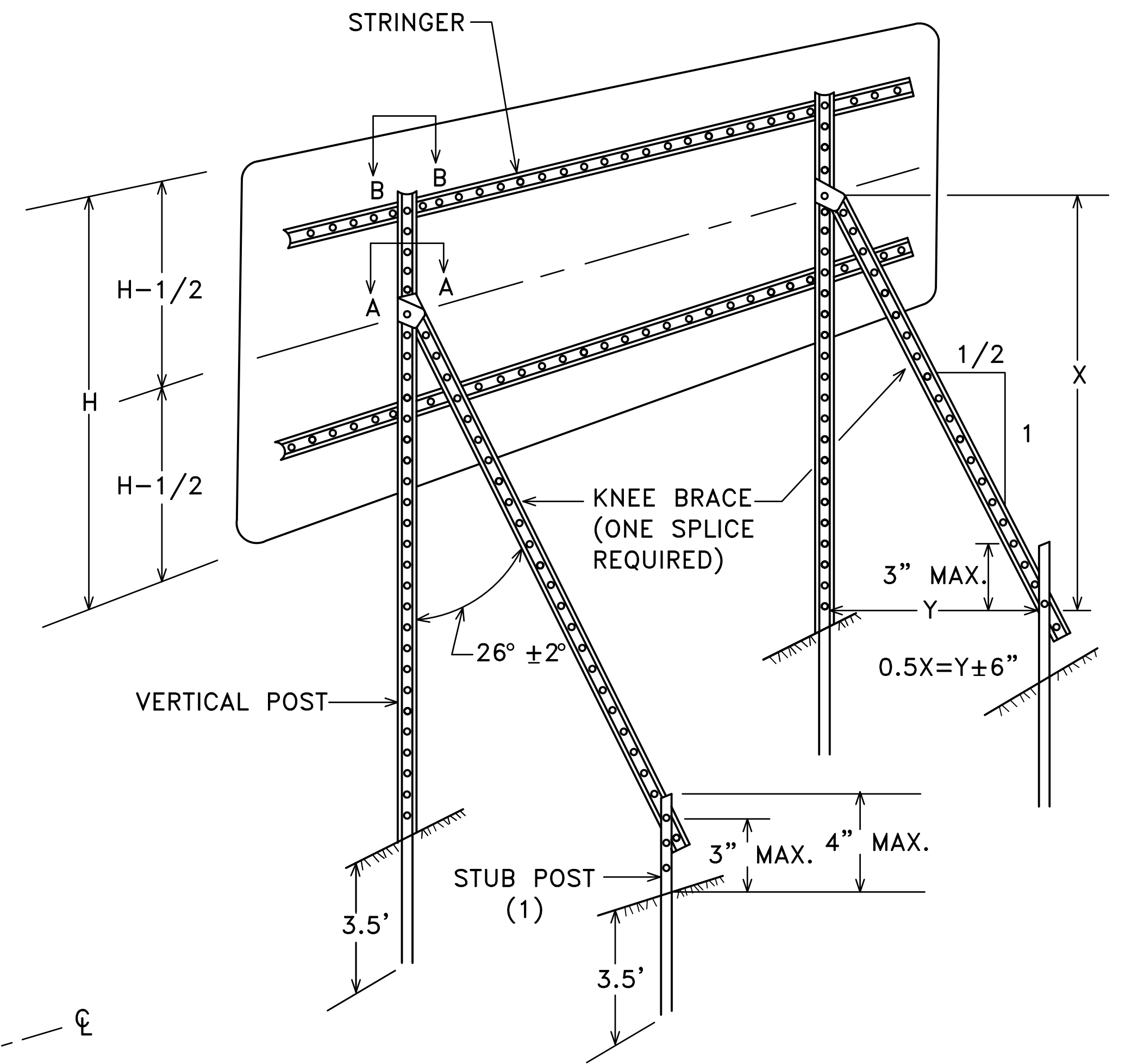
KNEE BRACE SPLICE



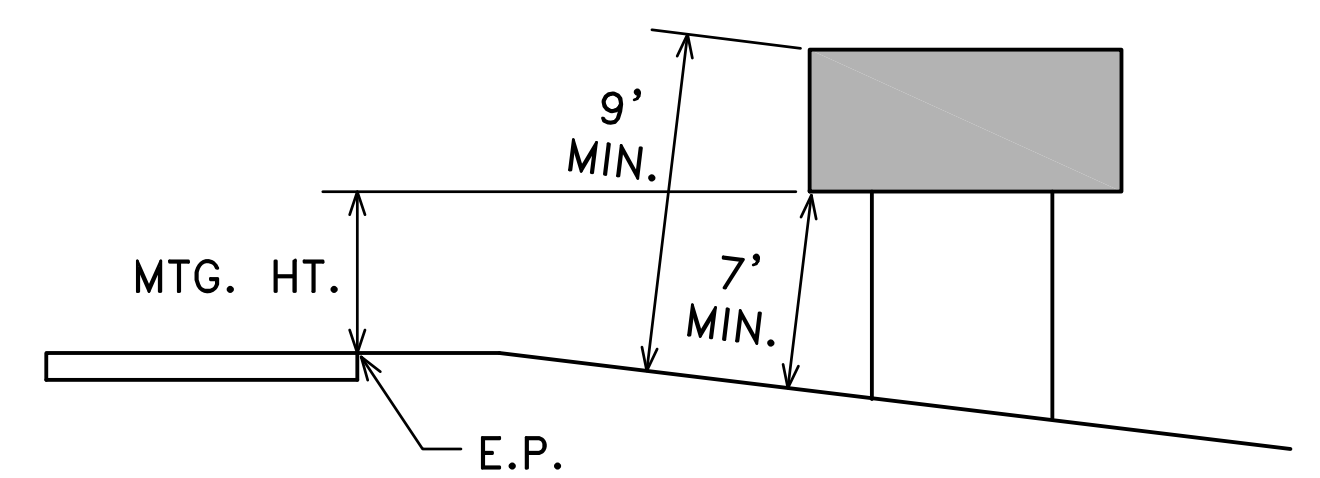
SECTION A-A



TYPICAL "A-FRAME" INSTALLATION
TYPE "C" SIGNS



TYPICAL "A-FRAME" INSTALLATION
TYPE "D" SIGNS



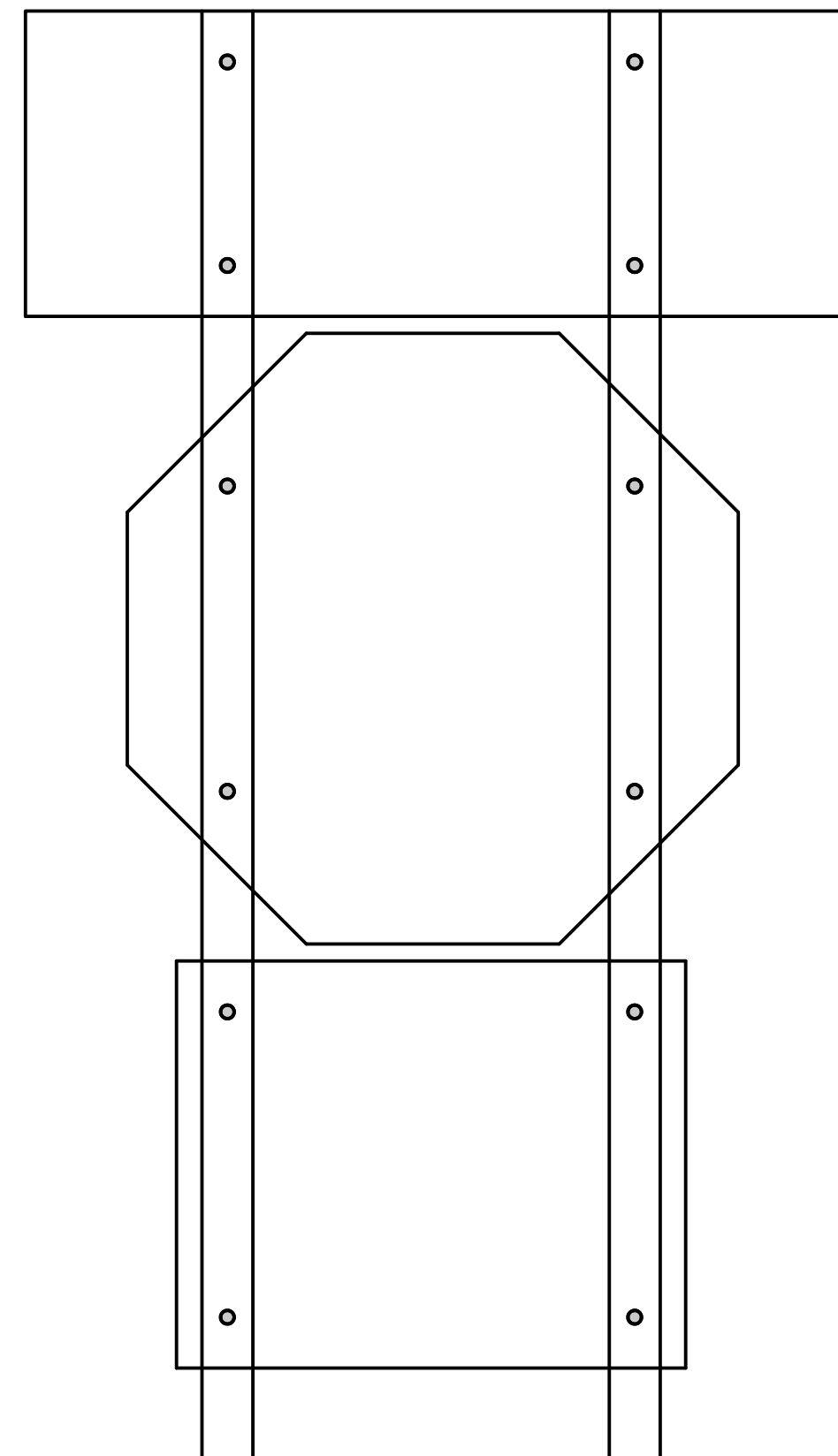
TYPICAL MOUNTING

(1) OFFSET STUB POST 1' TOWARD ROADWAY
RELATIVE TO VERTICAL POST. ATTACH STUB
POST AND KNEE BRACE BACK TO BACK.

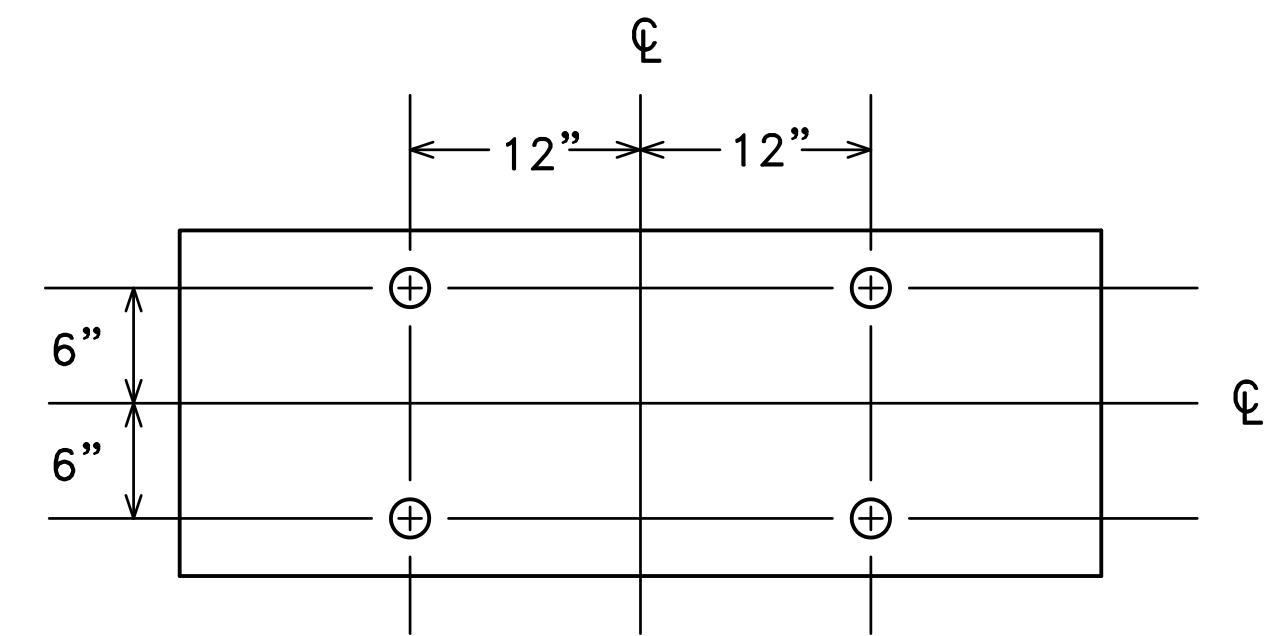
TYPE C & D SIGN

STRUCTURAL DETAILS

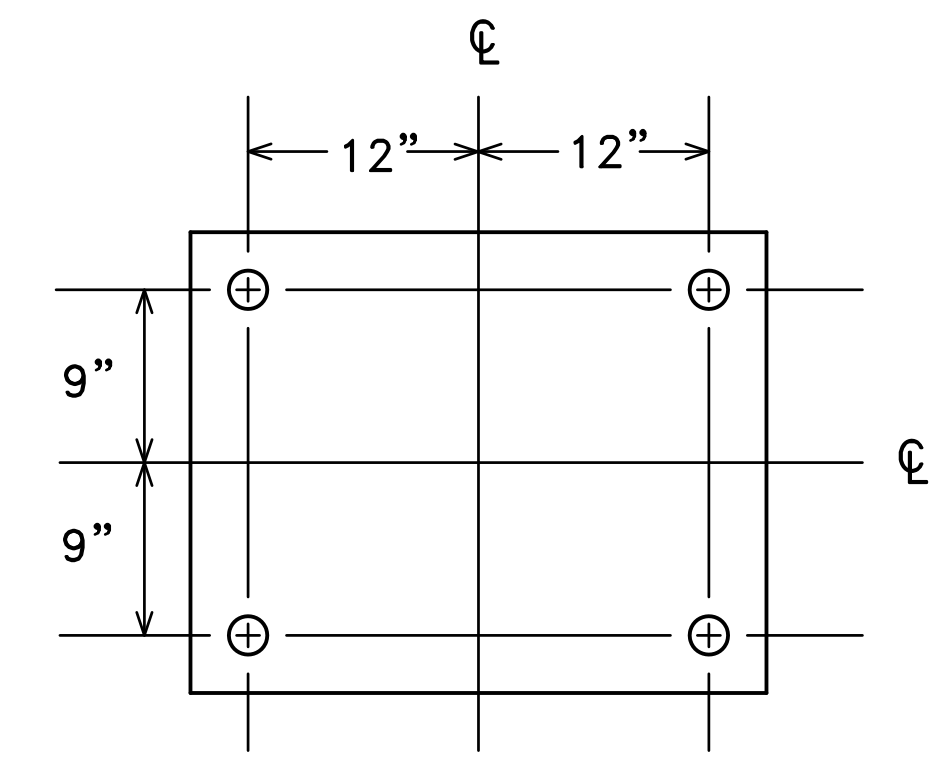
Sheet 2 of 3



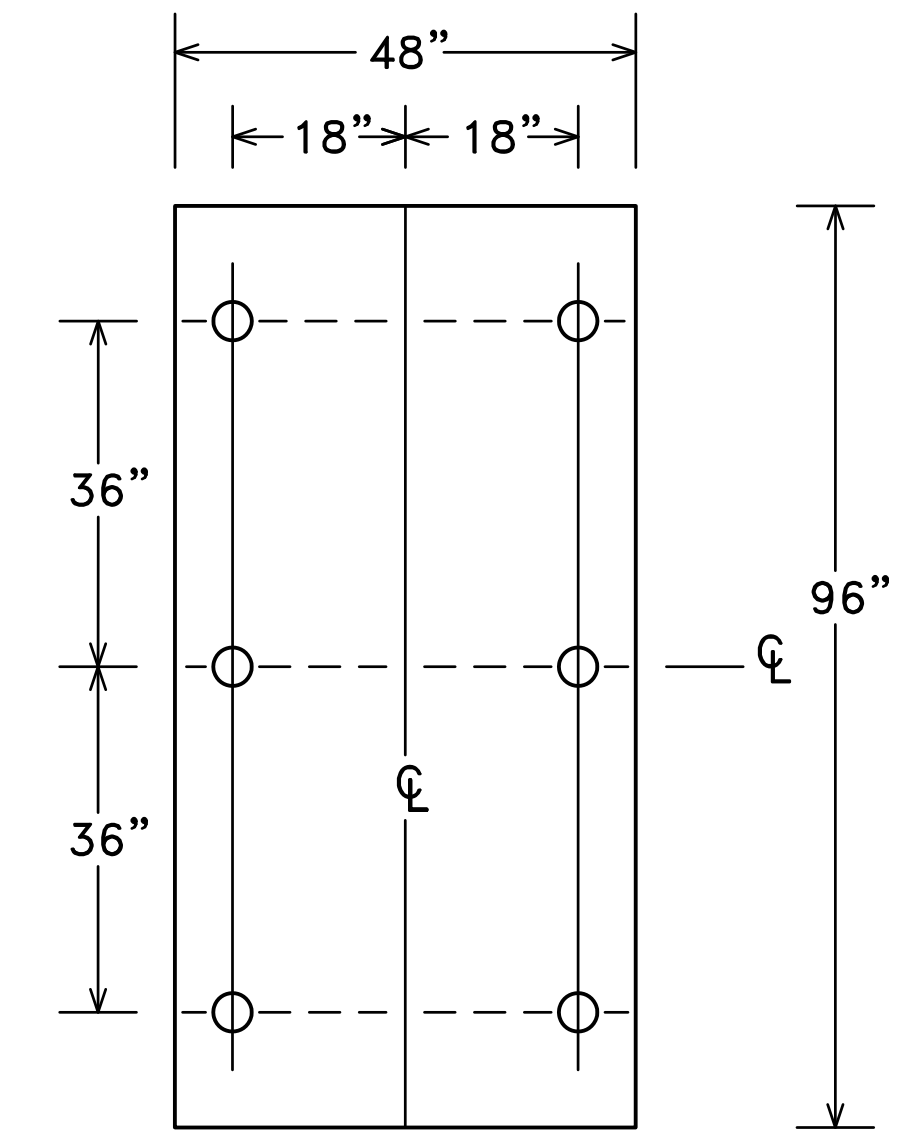
R6-1, R1-1 & (R6-3 OR R6-3a)
MOUNTING



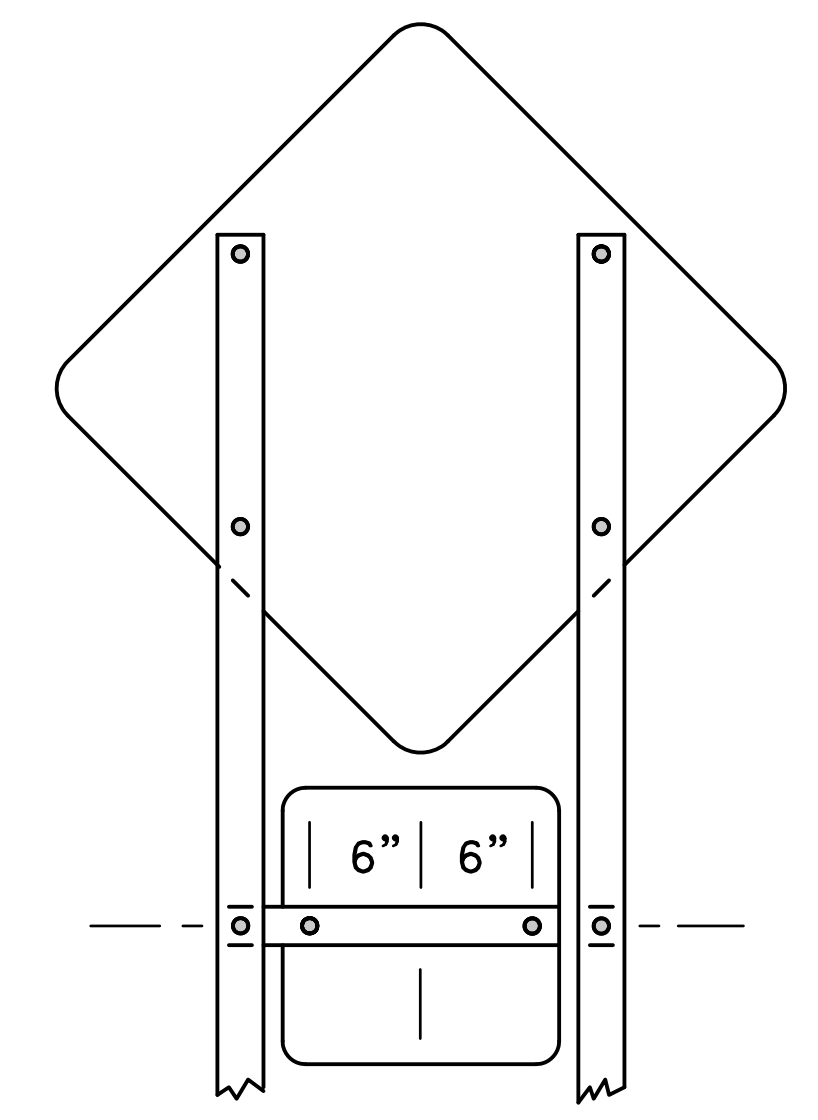
PUNCHING FOR R6-1(48"x18")



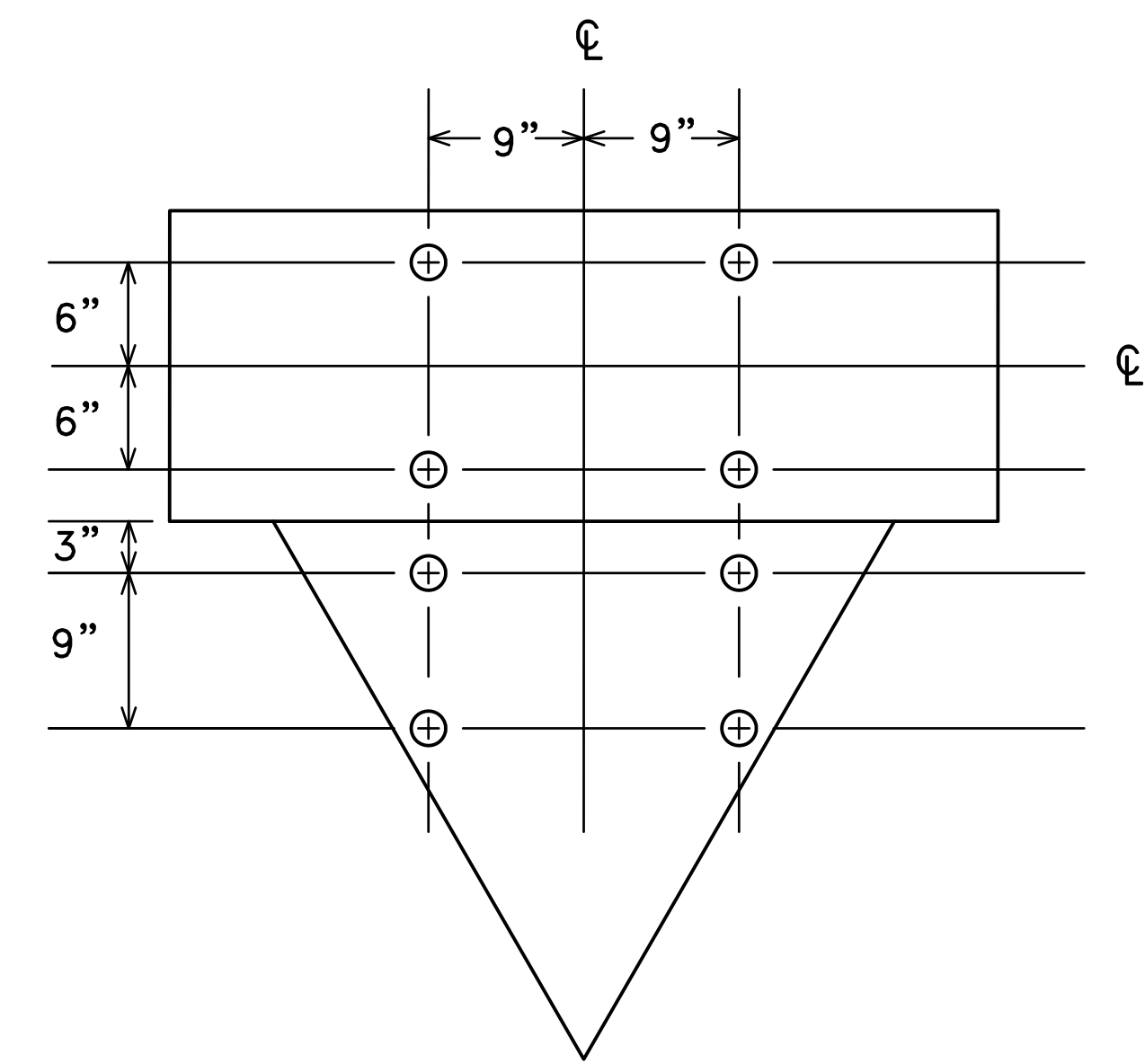
PUNCHING FOR R6-3 OR R6-3a(30"x24")



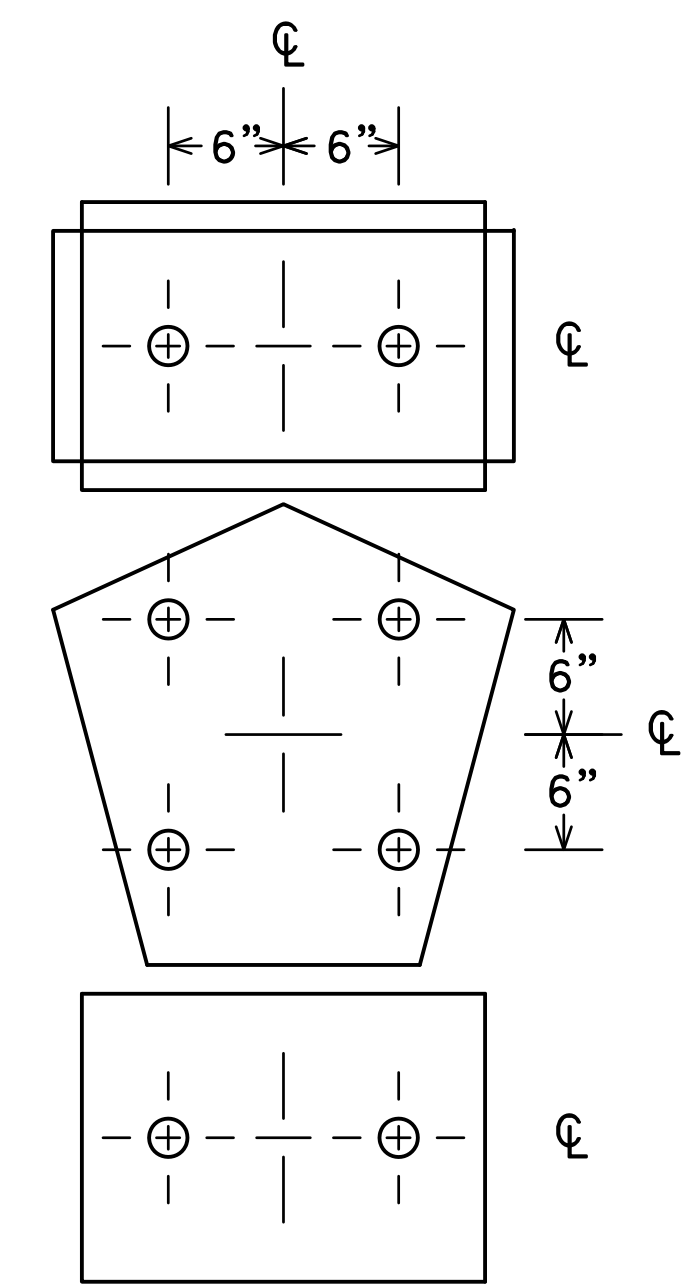
PUNCHING FOR R2-4b
SPEED LIMIT



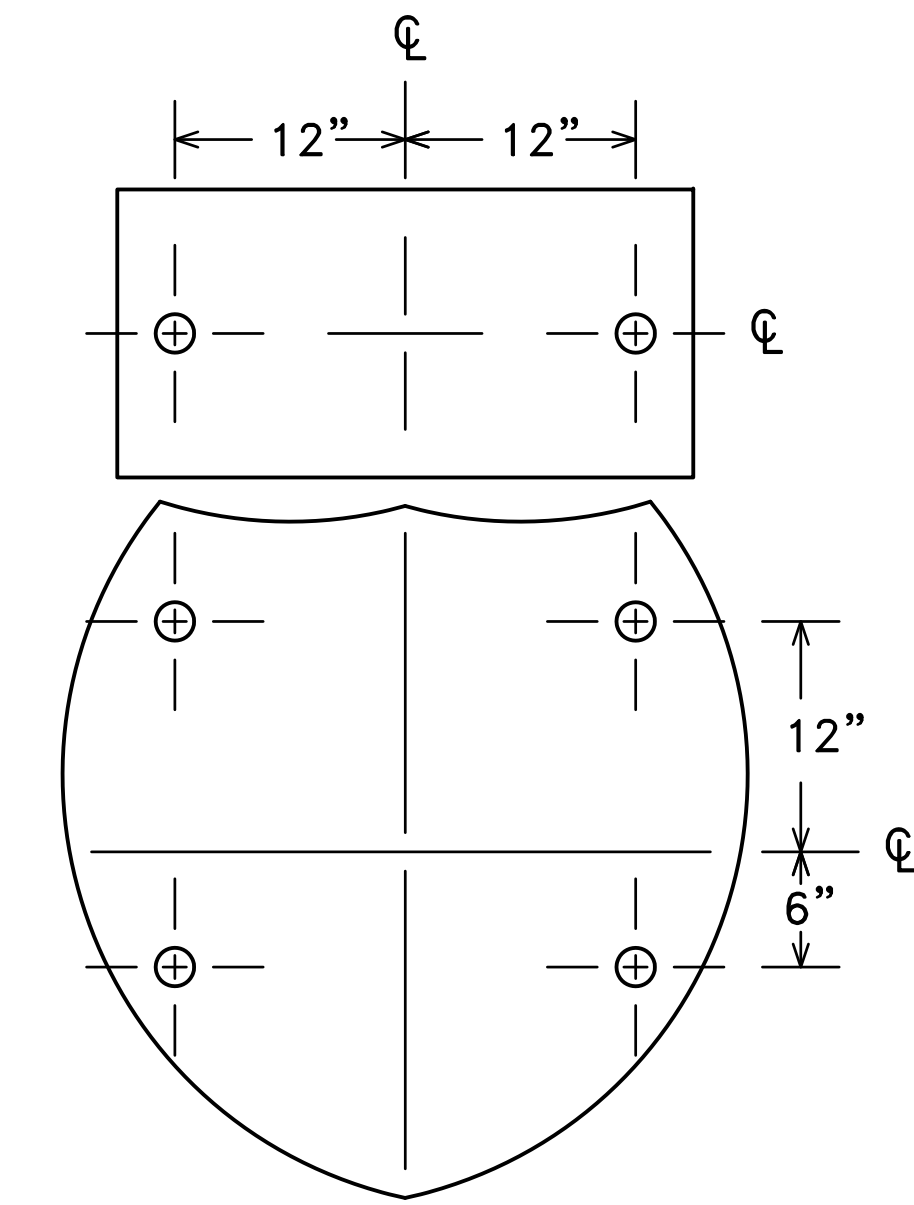
(W1-1, W1-2, W1-3, W1-4 OR W1-5) & W13-1
MOUNTING



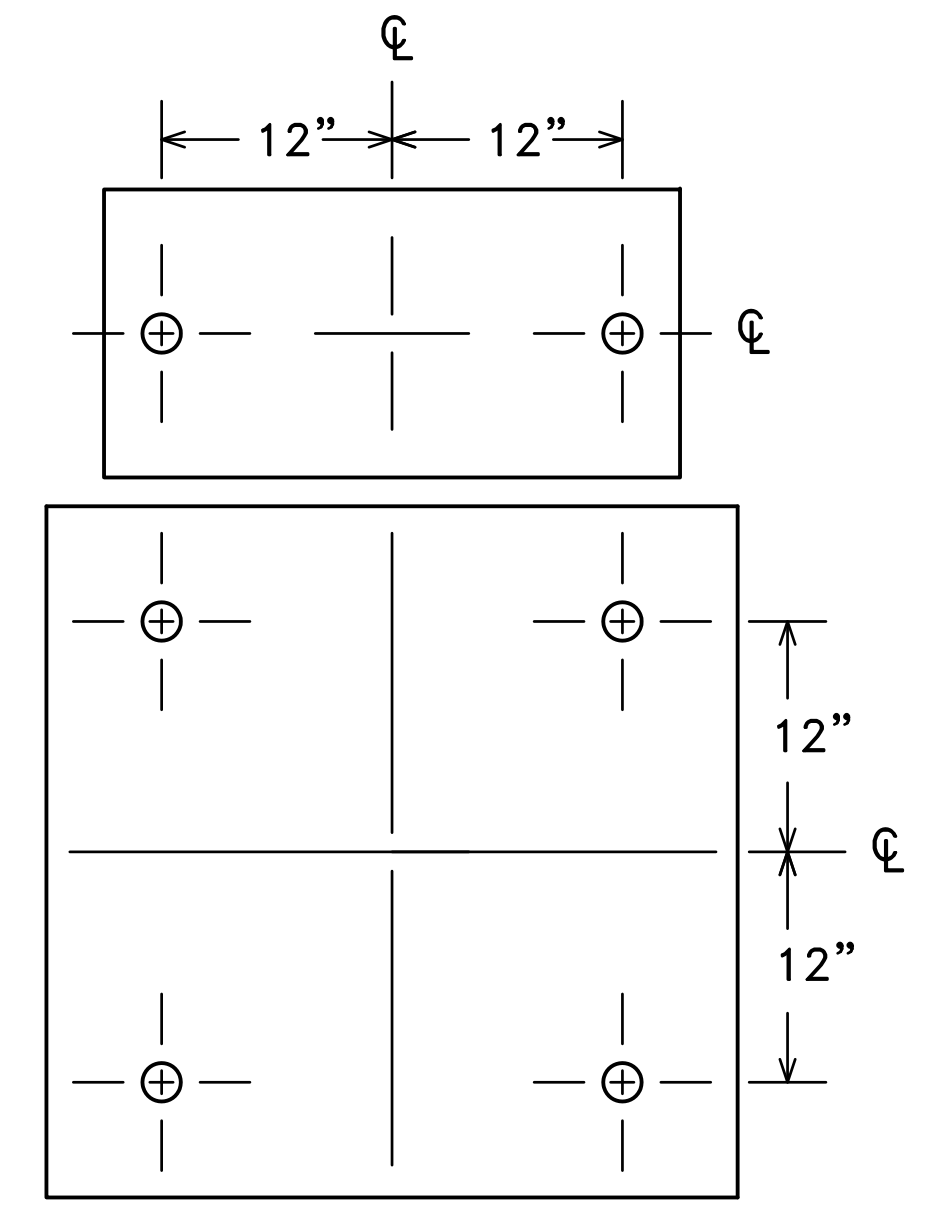
PUNCHING FOR R6-1(48"x18")
& R1-2(36"x36"x36")



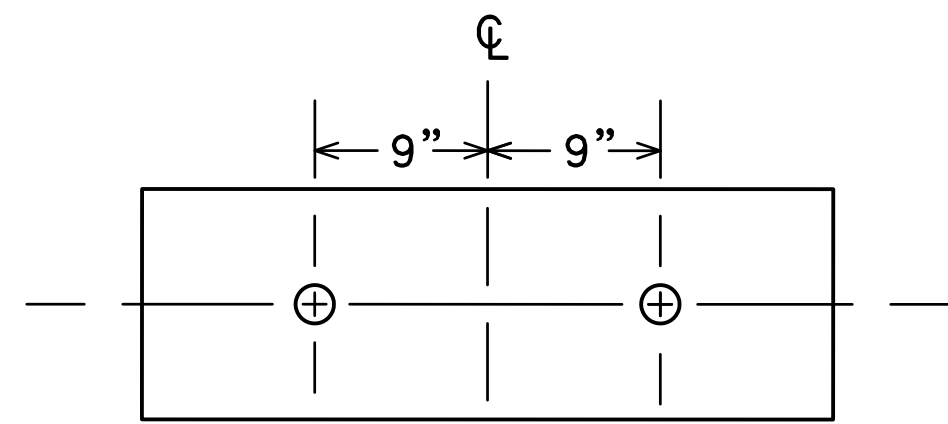
M2-1A [21"x15"] OR
(M3-1A, M3-2A, M3-3A OR M3-4A) [24"x12"] AND
M1-6 [24"x24"] AND
(M5-1A, M5-2A, M6-1A, M6-2A, M6-3A, M6-4A, M6-5A OR M6-6A) [21"x15"]
PUNCHING



(M3-1A, M3-2A, M3-3A OR M3-4A) [30"x15"] AND
M1-1 [45"x36" OR 36"x36"]
PUNCHING



(M3-1, M3-1A, M3-2, M3-2A, M3-3, M3-3A, M3-4 OR
M3-4A) [30"x15"] AND (M1-4 OR M1-5A) [36"x36"]
PUNCHING



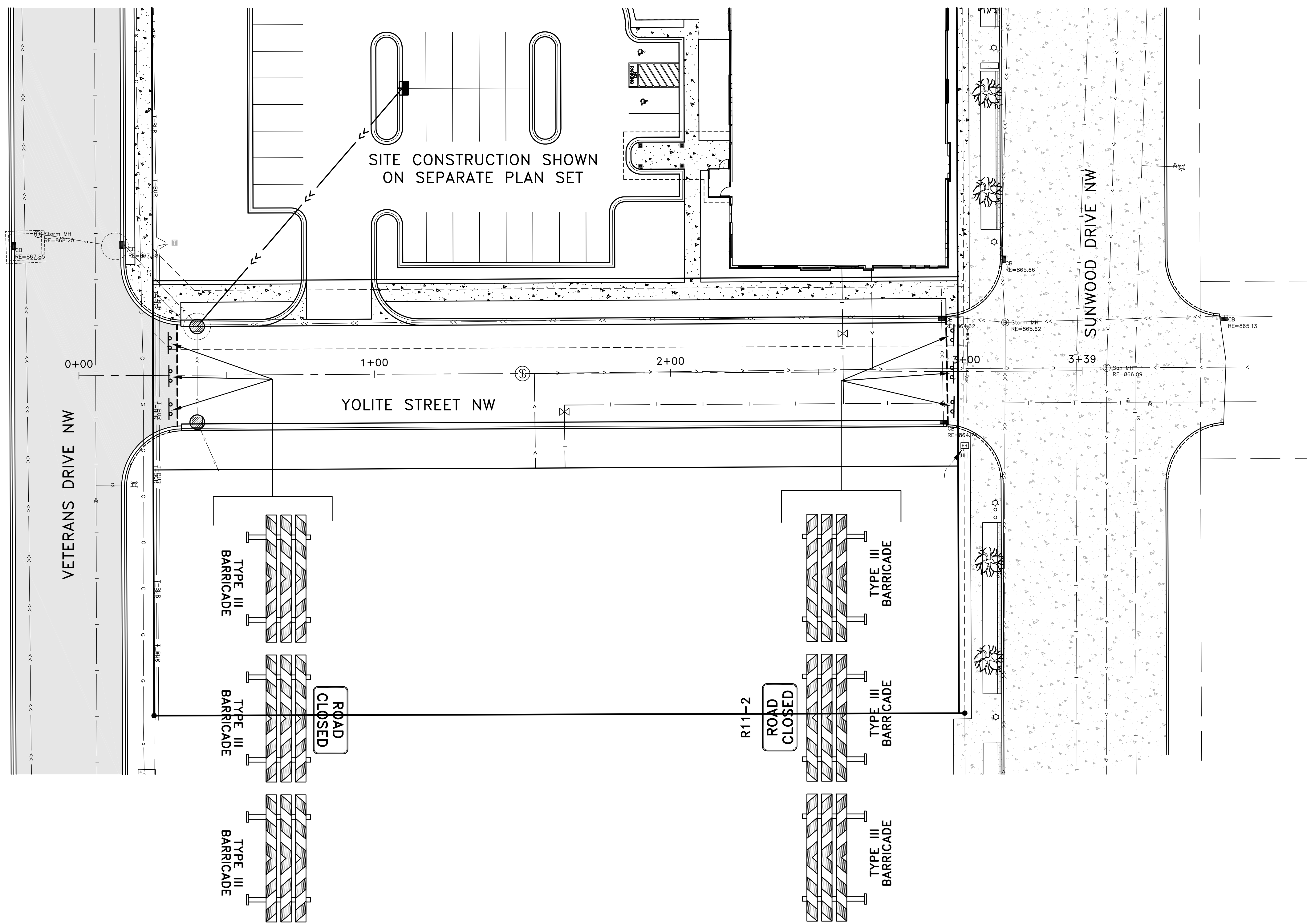
PUNCHING FOR R6-1(36"x12")

TYPE C & D SIGN
STRUCTURAL DETAILS

Sheet 3 of 3

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REVISED: 10-28-08



CONSTRUCTION PLAN LEGEND

- EXISTING GRAVEL EDGE
- EXISTING RIGHT-OF-WAY
- - - PROPOSED CENTERLINE
- - - PROPERTY BOUNDARY
- EXISTING WATERMAIN
- PROPOSED WATERMAIN
- EXISTING SANITARY
- PROPOSED SANITARY
- SAWCUT CONCRETE PAVEMENT (FULL DEPTH)
- SAWCUT BITUMINOUS (FULL DEPTH)
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- P-OH OVERHEAD POWER
- G GAS LINE
- T-BUR BURIED TELEPHONE LINE
- P-BUR BURIED ELECTRIC LINE
- FO-BUR BURIED FIBER OPTIC
- EXISTING ELECTRIC PEDESTAL
- EXISTING CATCH BASIN
- PROPOSED CATCH BASIN
- ⊙ EXISTING STORM MANHOLE
- ⊙ PROPOSED STORM MANHOLE
- ⊙ EXISTING HYDRANT
- ⊙ EXISTING GATE VALVE
- ⊙ EXISTING SANITARY MANHOLE
- ⊙ PROPOSED SANITARY MANHOLE
- EXISTING CONCRETE
- PROPOSED CONCRETE

SITE CONSTRUCTION SHOWN ON SEPARATE PLAN SET

YOLITE STREET NW

SUNWOOD DRIVE NW

VETERANS DRIVE NW

TYPE III BARRICADE

TYPE III BARRICADE

TYPE III BARRICADE

TYPE III BARRICADE

TYPE III BARRICADE

TYPE III BARRICADE

ROAD CLOSED

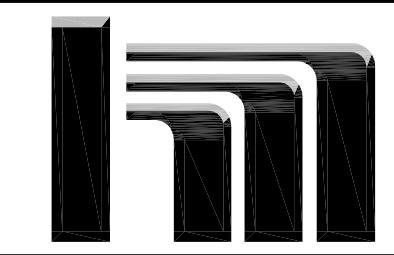
R11-2 ROAD CLOSED

DATE	REVISION
6/1/17	CITY COMMENTS

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.

Craig J. Jochem
CRAIG J. JOCHUM, P.E.
 Lic. No. 23461

DESIGNED BY: CJJ
 DRAWN BY: MSS
 CHECKED BY: CJJ

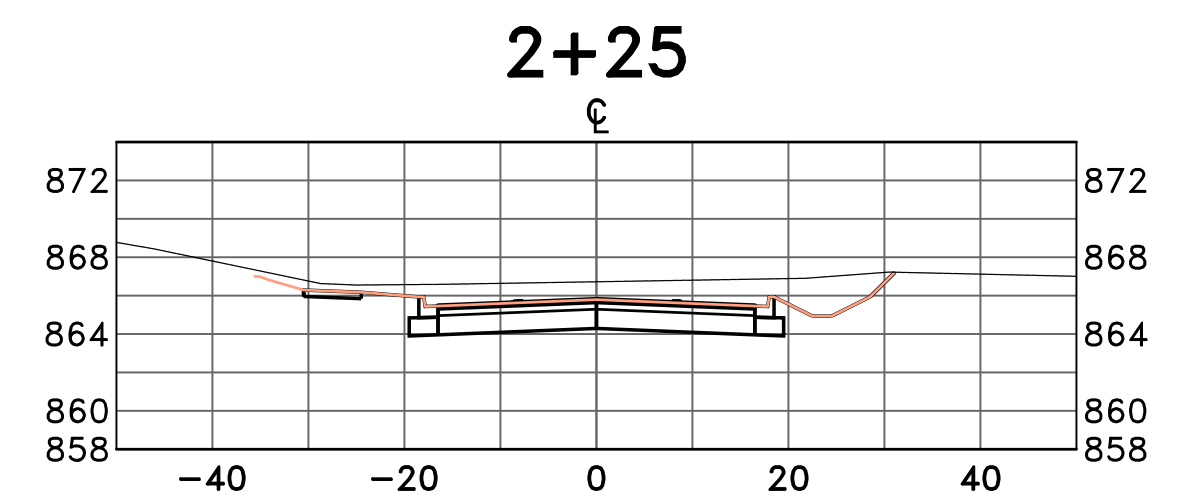
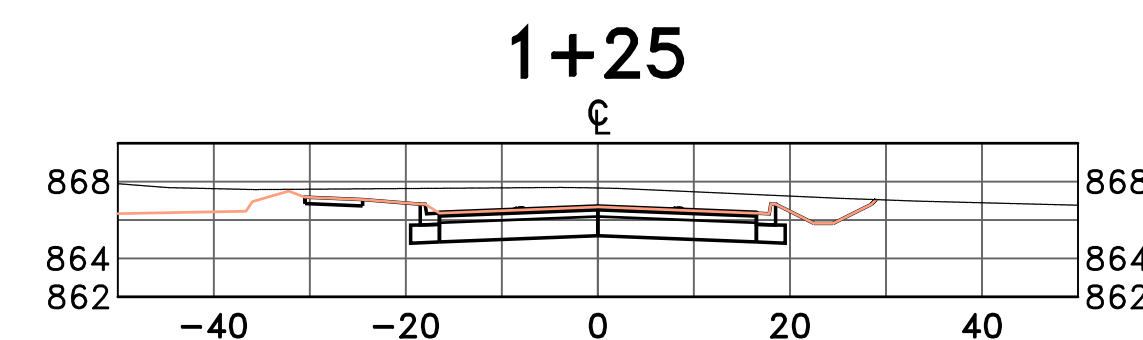
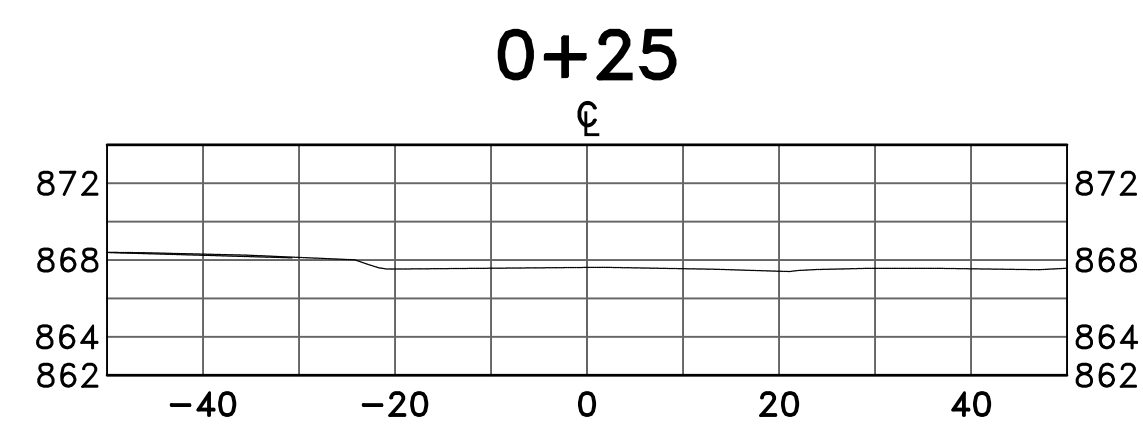
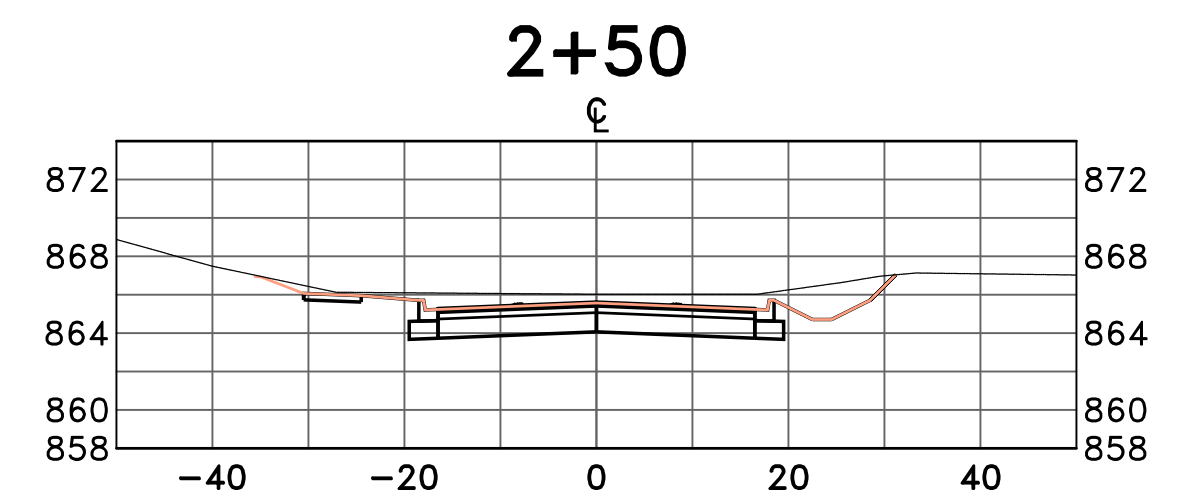
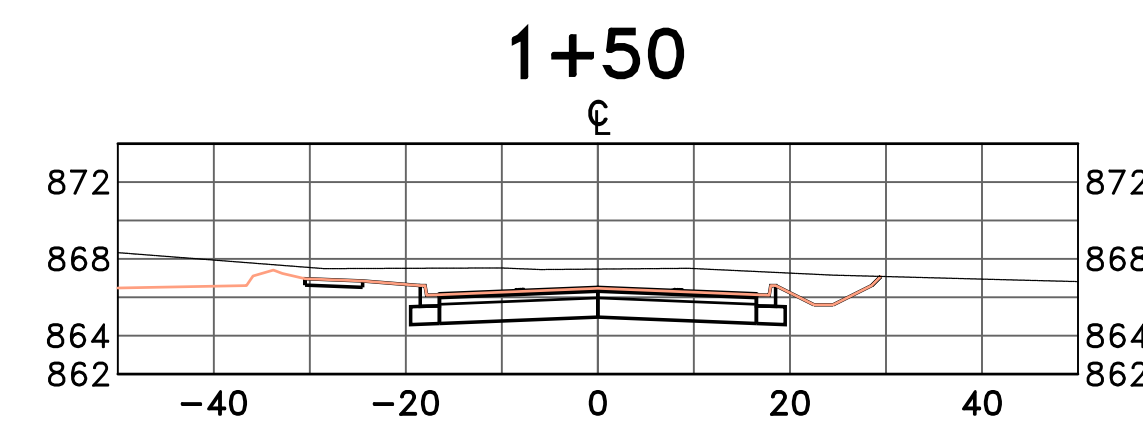
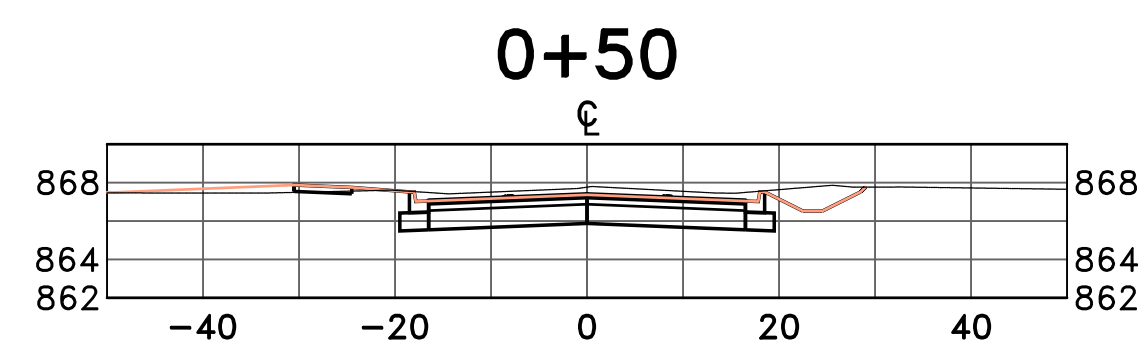
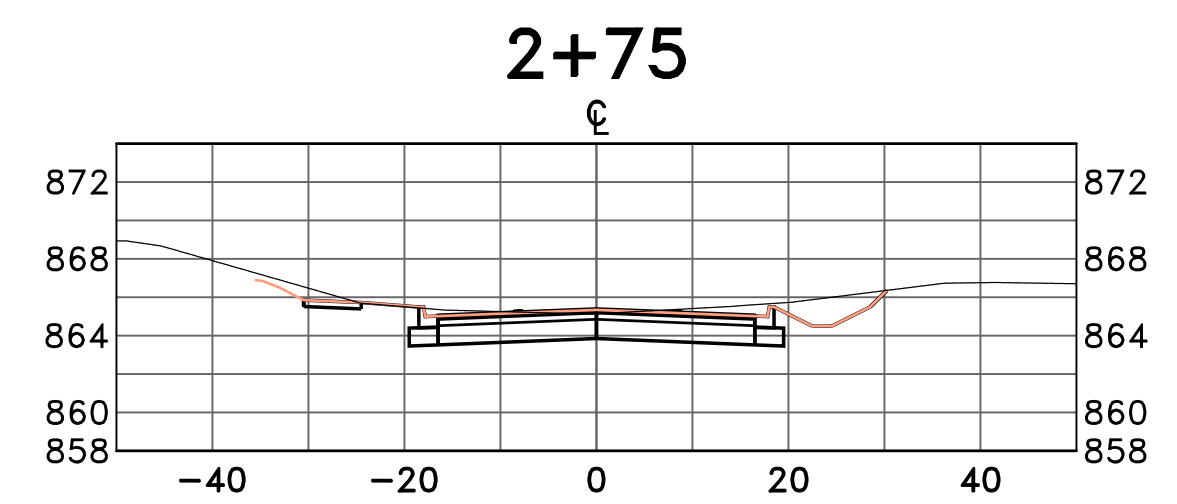
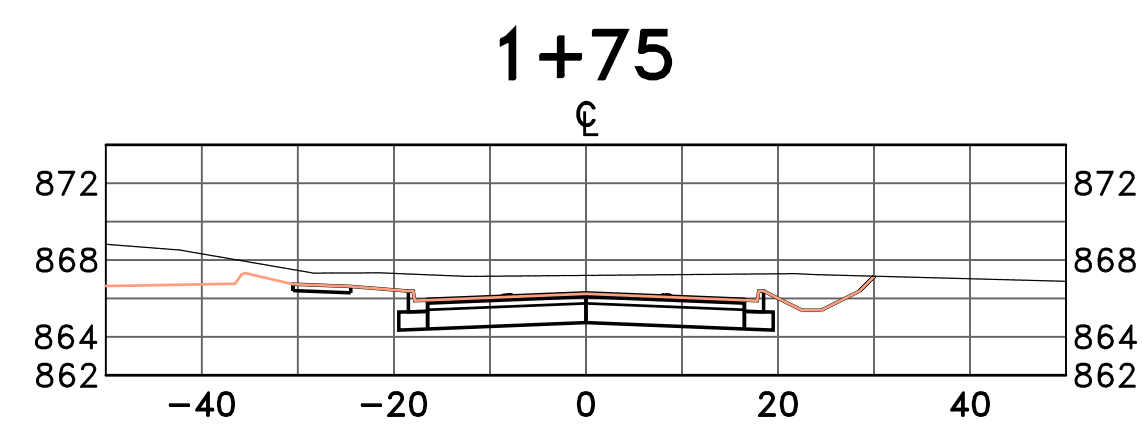
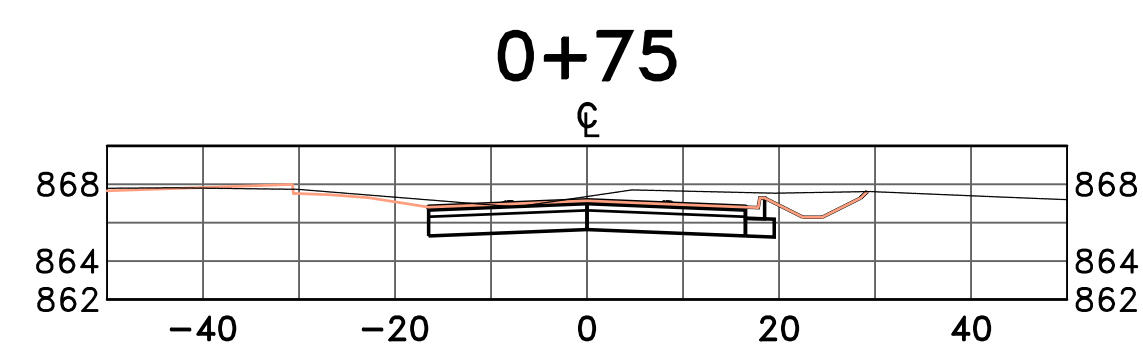
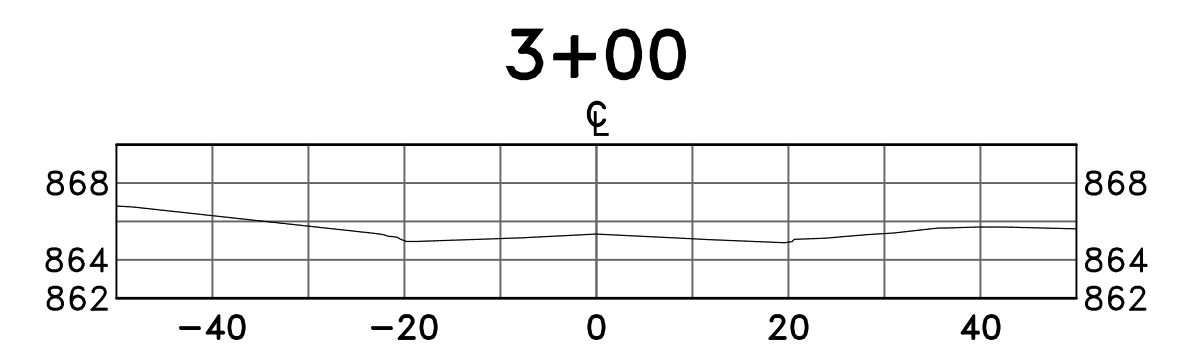
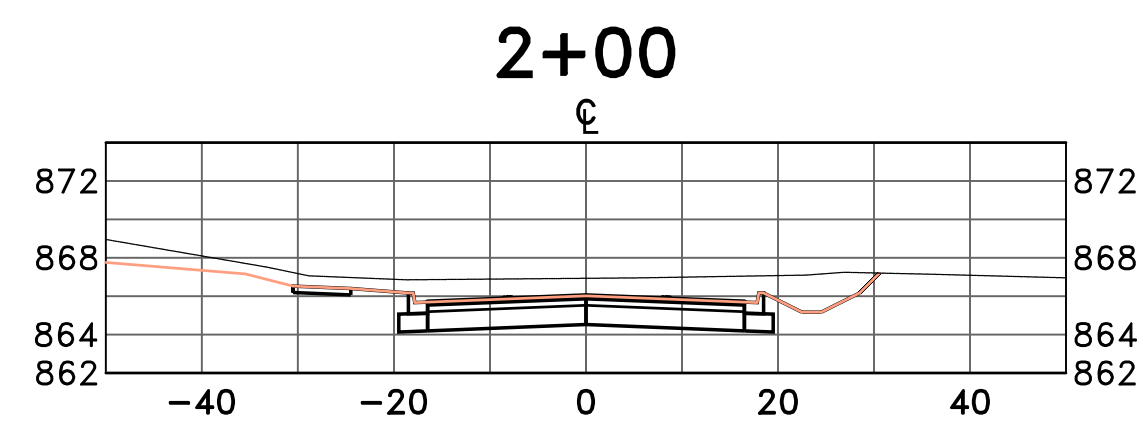
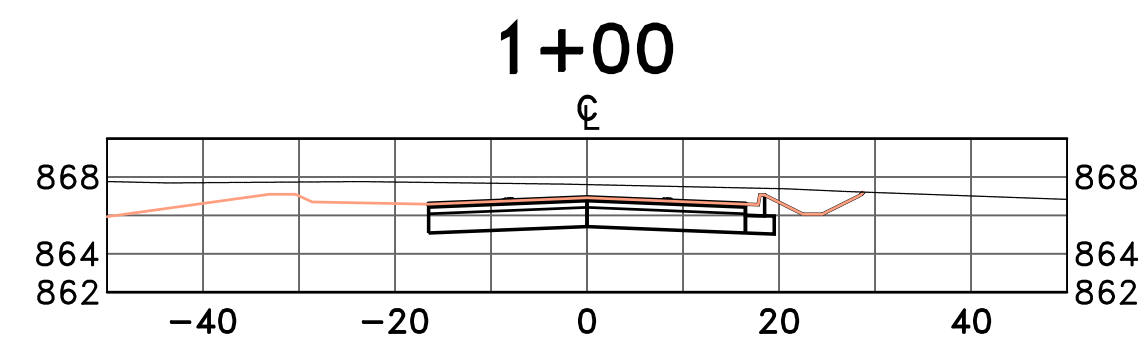


Hakanson Anderson
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YOLITE STREET

TRAFFIC CONTROL PLAN
 CITY OF RAMSEY, MINNESOTA

SHEET 22 OF 22 SHEETS
 4163.01



DATE	REVISION
6/1/17	CITY COMMENTS

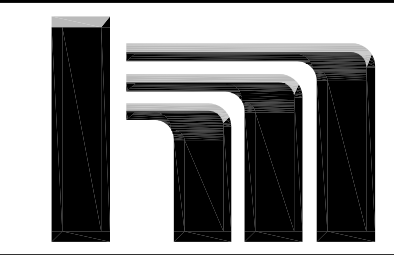
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Craig J. Jochum
 CRAIG J. JOCHUM, P.E.
 Date 5-4-17 Lic. No. 23461

DESIGNED BY:
CJJ

DRAWN BY:
MSS

CHECKED BY:
CJJ



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YOLITE STREET

TYPICAL SECTIONS
 CITY OF RAMSEY, MINNESOTA

SHEET X1
 OF 22 SHEETS