

GOVERNING SPECIFICATIONS

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION 'STANDARD SPECIFICATIONS FOR CONSTRUCTION', SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE TO THE 'MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES' (MN MUTCD) AND PART VI, 'FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS'.

ANOKA COUNTY

ANOKA COUNTY, MINNESOTA

CONSTRUCTION PLAN FOR: GRADING, BITUMINOUS SURFACING, DRAINAGE AND SIGNAL SYSTEMS

21ST AVENUE

COUNTY PROJECT NO. 12-56-14

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PLAN SYMBOLS

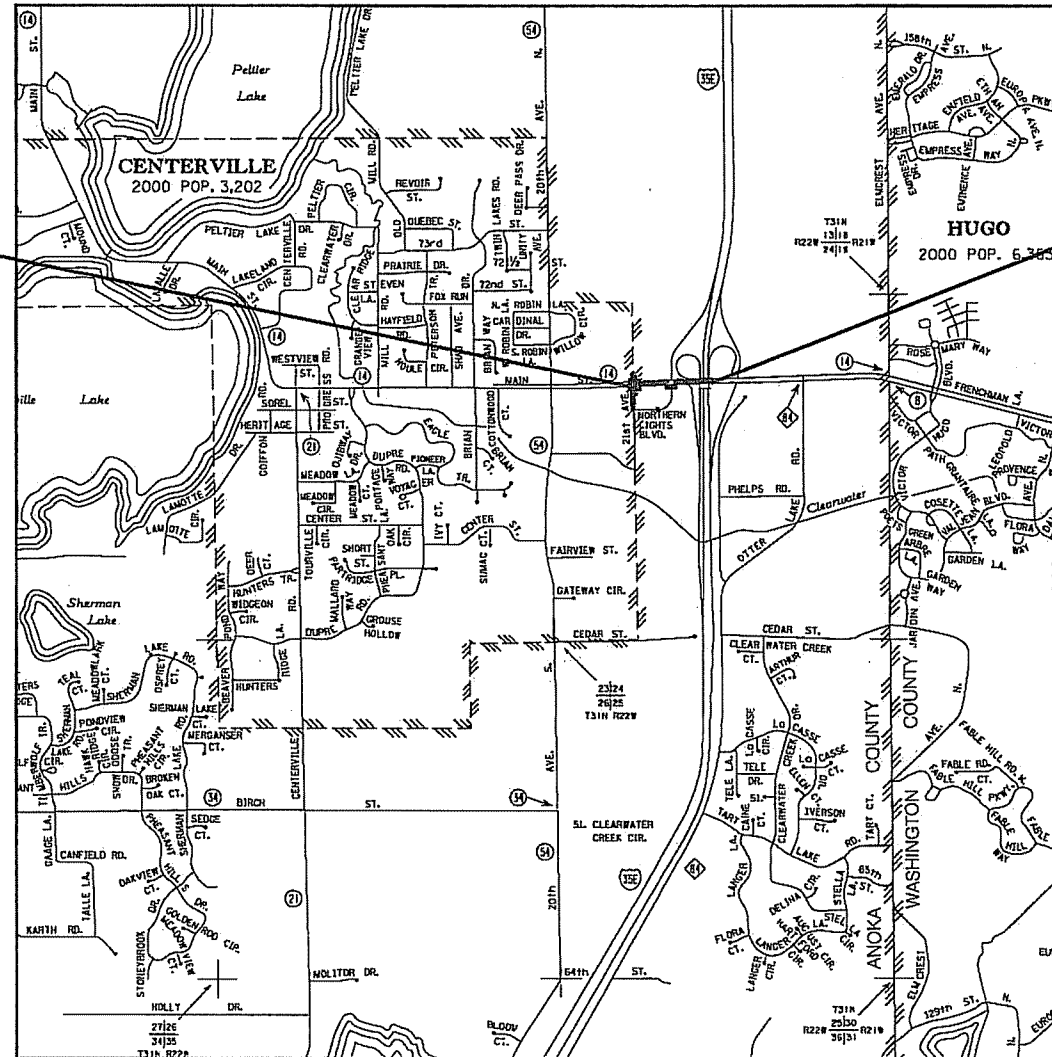
- STATE LINE
- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- RIGHT-OF-WAY LINE
- PRESENT RIGHT-OF-WAY LINE
- CONTROL OF ACCESS LINE
- PROPERTY LINE (Except Land Lines)
- VACATED PLATTED PROPERTY
- CORPORATE OR CITY LIMITS
- TRUNK HIGHWAY CENTER LINE
- CONC. RETAINING WALL
- RAILROAD
- RAILROAD RIGHT-OF-WAY LINE
- RIVER OR CREEK
- DRY RUN
- DRAINAGE DITCH
- DRAIN TILE
- CULVERT
- DROP INLET
- QUARD RAIL
- BARBED WIRE FENCE
- WOVEN WIRE FENCE
- CHAIN LINK FENCE
- RAILROAD SNOW FENCE
- STONE WALL OR FENCE
- HEDGE
- RAILROAD CROSSING SIGN
- RAILROAD CROSSING BELL
- ELECTRIC WARNING SIGN
- CROSSING GATE
- MEANDER CORNER
- MAIL BOX
- SPRINGS
- MARSH
- TIMBER
- ORCHARD
- BRUSH
- NURSERY
- CATCH BASIN
- FIRE HYDRANT
- CATTLE GUARD
- OVERPASS (Highway Over)
- UNDERPASS (Highway Under)
- BRIDGE
- BUILDING (One Story Frame)
- F-FRAME C-CONCRETE
- S-STONE T-TILE
- B-BRICK ST-STUCCO
- IRON PIPE OR ROD
- MONUMENT (STONE, CONCRETE, OR METAL)
- WOODEN HUB
- GRAVEL PIT
- SAND PIT
- BORROW PIT
- ROCK QUARRY

UTILITY SYMBOLS

- POWER POLE LINE
- TELEPHONE OR TELEGRAPH POLE LINE
- JOINT TELEPHONE AND POWER ON POWER POLES ON TELEPHONE POLES
- ANCHOR
- STEEL TOWER
- STREET LIGHT
- PEDESTAL TELEPHONE CABLE TERMINAL
- GAS MAIN
- WATER MAIN
- CONDUIT
- TELEPHONE CABLE IN CONDUIT
- ELECTRIC CABLE IN CONDUIT
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- BURIED TELEPHONE CABLE
- BURIED ELECTRIC CABLE
- AERIAL TELEPHONE CABLE
- SEWER (SANITARY)
- SEWER (STORM)
- SEWER MANHOLE
- HANDHOLE

BEGIN CONSTRUCTION
E.B. C.S.A.H. 14
STA. 183+97.36

END CONSTRUCTION
E.B. C.S.A.H. 14
STA. 197+00.00



THIS PLAN CONTAINS ...42... SHEETS



I HEREBY CERTIFY THAT THIS PLAN 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.

SIGNATURE *Aaron Vacer*
DATE 4-19-2013 LIC. NO. 44277 PRINT NAME AARON VACER

APPROVED *[Signature]* 4/19/13
ANOKA COUNTY ENGINEER

DESIGN DESIGNATION FOR:

C.S.A.H. 14

R-VALUE	60
ADT (Current Year) 2013 =	63,200
ADT (Future Year) 2033 =	47,300 (2033)
PAVEMENT DESIGN	10 TON
FUNCTIONAL CLASSIFICATION	MINOR ARTERIAL
NO. OF TRAFFIC LANES	4
NO. OF PARKING LANES	0
ESALS (20)	3,290,000 (20 YRS.)
Design Speed	45 MPH
Based on Sight Distance	STOPPING
Height of eye / Height of Object	3.5' / 2.0'
Design Speed not achieved at:	

SCALES

INDEX MAP	3000'
PLAN	100'

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY



PROJECT LOCATION
COUNTY : ANOKA
DISTRICT : METRO

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THIS PLAN AND/OR SPECIFICATION WAS PREPARED SPECIFICALLY FOR THIS PROJECT, AND ANY RE-USE OF DETAILS OR SPECIFICATIONS ON OTHER PROJECTS IS NOT INTENDED OR AUTHORIZED BY THE DESIGNER. LIABILITY FOR ANY RE-USE ON OTHER PROJECTS IS THE RESPONSIBILITY OF THE PERSON, AGENCY, OR CORPORATION USING PLAN OR SPECIFICATION DATA FROM THIS PROJECT.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO GUIDELINES OF C1/ASCE 38-02. ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".

STATEMENT OF ESTIMATED QUANTITIES

NOTES	ITEM NO.	ITEM DESCRIPTION	UNIT	21ST AVE CONNECTION
				ROADWAY QUANTITIES
	2021.501	MOBILIZATION	LUMP SUM	1
(1)	2102.501	PAVEMENT MARKING REMOVAL	SQ FT	250
(2)	2102.502	PAVEMENT MARKING REMOVAL	LIN FT	3120
	2104.501	REMOVE BITUMINOUS CURB	LIN FT	110
	2104.501	REMOVE CURB AND GUTTER	LIN FT	1040
	2104.503	REMOVE BITUMINOUS WALK	SQ FT	1530
	2104.503	REMOVE CONCRETE WALK	SQ FT	11780
	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD	2810
	2104.509	REMOVE SIGN TYPE C	EACH	23
	2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	60
	2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	850
	2104.523	SALVAGE CASTING	EACH	2
	2104.523	SALVAGE SIGN TYPE C	EACH	4
	2105.550	SUBSOILING	ACRE	0.8
	2106.607	EXCAVATION - COMMON	CU YD	410
	2106.607	EXCAVATION - SUBGRADE	CU YD	1510
	2106.607	GRANULAR EMBANKMENT (CV)	CU YD	1130
	2106.607	SELECT GRANULAR EMBANKMENT (CV)	CU YD	380
	2106.607	COMMON EMBANKMENT (CV)	CU YD	490
	2211.503	AGGREGATE BASE (CV) CLASS 5	CU YD	480
	2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (3,F)	TON	230
	2360.502	TYPE SP 12.5 NON WEARING COURSE MIXTURE (3,B)	TON	130
	2503.541	15" RC PIPE SEWER DES 3006	LIN FT	17
	2506.501	CONST DRAINAGE STRUCTURE DESIGN H	LIN FT	4
	2506.501	CONST DRAINAGE STRUCTURE DES 48-4020	LIN FT	5.7
	2506.516	CASTING ASSEMBLY	EACH	2
	2506.521	INSTALL CASTING	EACH	2
	2506.522	ADJUST FRAME & RING CASTING	EACH	4
	2506.602	CONNECT TO EXISTING STORM SEWER	EACH	1
	2521.501	4" CONCRETE WALK	SQ FT	5590
	2521.501	6" CONCRETE WALK	SQ FT	580
	2521.511	3" BITUMINOUS WALK	SQ FT	2190
	2531.501	CONCRETE CURB & GUTTER DESIGN B424	LIN FT	1180
	2531.618	TRUNCATED DOMES	SQ FT	110
	2540.602	RELOCATE MAIL BOX SUPPORT	EACH	2
	2554.505	PERMANENT BARRICADES	EACH	3
	2563.601	TRAFFIC CONTROL	LUMP SUM	1
	2564.531	SIGN PANELS TYPE C	SQ FT	50.4
	2564.537	INSTALL SIGN TYPE C	EACH	4
	2565.601	EMERGENCY VEHICLE PREEMPTION (SYSTEM "A")	LUMP SUM	1
	2565.616	REVISE SIGNAL SYSTEM (SYSTEM "A")	SYSTEM	1
	2565.616	REVISE SIGNAL SYSTEM (SYSTEM "B")	SYSTEM	1
	2573.502	SILT FENCE, TYPE MACHINE SLICED	LIN FT	1100
	2573.530	STORM DRAIN INLET PROTECTION	EACH	9
	2573.550	EROSION CONTROL SUPERVISOR	LUMP SUM	1
	2573.602	CULVERT PROTECTION	EACH	2
	2575.501	SEEDING	ACRE	0.7
	2575.505	SEED MIXTURE 350	POUND	60
	2575.505	SODDING TYPE LAWN	SQ YD	510
	2575.532	FERTILIZER TYPE 4	POUND	100
	2582.501	PAVEMENT MESSAGE (LT ARROW) PREFORMED THERMOPLASTIC	EACH	5
	2582.501	PAVEMENT MESSAGE (RT ARROW) PREFORMED THERMOPLASTIC	EACH	1
	2582.502	4" SOLID LINE WHITE-EPOXY	LIN FT	790
	2582.502	24" SOLID LINE WHITE- PREFORMED THERMOPLASTIC	LIN FT	30
	2582.502	4" SOLID LINE YELLOW-EPOXY	LIN FT	600
	2582.502	24" SOLID LINE YELLOW- PREFORMED THERMOPLASTIC	LIN FT	350
	2582.502	4" DOUBLE SOLID LINE YELLOW-EPOXY	LIN FT	470
	2582.503	CROSSWALK MARKING- PREFORMED THERMOPLASTIC	SQ FT	1200

NOTES:
 (1) QUANTITY FOR MARKING REMOVAL OF ZEBRA BARS AND TURN ARROWS.
 (2) QUANTITY BASED ON MARKING REMOVAL PER 4" LINE WIDTH.
 QUANTITY INCLUDES MULTIPLE PASSES NECESSARY FOR
 REMOVAL OF STOP BARS AND CROSS HATCHING.

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NO	DATE	BY	CKD	APPR	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.
 Print Name: **AARON VACEK**
Aaron Vacek
 Date: 4-19-2013 License # 44277

STATE AID PROJECT NO. _____
 STATE PROJECT NO. _____
 COUNTY PROJECT NO. 12-56-14
 CITY PROJECT NO. _____
 DRAWN BY S. MARTINS
 DESIGNED BY A. VACEK
 CHECKED BY J. McPHERSON
 COMM. NO. 0127841



ENGINEERS
 PLANNERS
 DESIGNERS

ANOKA COUNTY
 STATEMENT OF ESTIMATED QUANTITIES
 21ST AVENUE

CONSTRUCTION / SOILS NOTES

GRADING, BASE AND SURFACE

- 1 TOP OF THE GRADING SUBGRADE IS DEFINED AS THE BOTTOM OF THE CLASS 5 OR 6 AGGREGATE BASE.
- 2 SUITABLE GRADING MATERIAL ON THIS PROJECT, WHETHER OBTAINED LOCALLY OR FROM BORROW, SHALL CONSIST OF ALL SOILS EXCEPT TOPSOIL, DEBRIS, PEAT, MUCK AND ORGANIC OR OTHER UNSTABLE MATERIAL.
- 3 UNSUITABLE MATERIALS ARE TOPSOILS, PAVEMENT OR CONCRETE DEBRIS, PEAT, MUCK AND ORGANIC OR OTHER UNSTABLE SOILS.
- 4 GRANULAR MATERIAL IS DEFINED AS MATERIAL MEETING THE REQUIREMENTS OF SPEC. 3149.2B1. SELECT GRANULAR MATERIAL IS DEFINED AS MATERIAL MEETING THE REQUIREMENTS OF SPEC. 3149.2B2.
- 5 STRIP SOD AND TOPSOIL FROM AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS SLOPE DRESSING. FOR ESTIMATING PURPOSES, THE DEPTH OF TOPSOIL AVAILABLE IS CONSIDERED TO BE 12 INCHES.
- 6 ALL TOPSOIL STRIPPING WILL BE CONSIDERED TO BE EXCAVATION-COMMON.
- 7 IN FILL SECTIONS, TOPSOIL AND OTHER UNSUITABLE MATERIALS SHALL BE ELIMINATED FROM THE UPPER 4 FEET OF THE "GRADING GRADE" BENEATH THE ROADWAY, WITHIN THE LIMITS SHOWN ON THE TYPICAL SECTIONS.
- 8 OBTAIN COMPACTION ON THE GRADING PORTIONS OF PERMANENT CONSTRUCTION IN ACCORDANCE WITH THE "SPECIFIED DENSITY METHOD" REQUIREMENTS.
- 9 COMPACTION OF THE AGGREGATE BASE LAYER SHALL BE OBTAINED IN ACCORDANCE WITH THE PENETRATION INDEX METHOD. THE TEST SHALL BE PERFORMED IN ACCORDANCE WITH SECTION C4 AND C4A OF THE (2211) AGGREGATE BASE SPECIFICATION, INCLUDED IN THE SPECIAL PROVISIONS. THIS INCLUDES ANY AREAS WHERE CRUSHED CONCRETE OR SALVAGED ASPHALT MAY BE USED FOR AGGREGATE BASE.
- 10 COMPACTION OF THE GRADING AND AGGREGATE ITEMS ON BYPASSES AND OTHER TEMPORARY WORK SHALL BE BY THE "QUALITY COMPACTION" METHOD. TEMPORARY WORK IS DEFINED AS WORK TO BE REMOVED PRIOR TO COMPLETION OF THE PROJECT.
- 11 AS A PRECAUTIONARY MEASURE FROM A SOILS STANDPOINT, TRAFFIC LANES TO BE USED DURING CONSTRUCTION MUST BE DELINEATED TO KEEP VEHICLES A SAFE DISTANCE AWAY FROM THE ADJACENT EXCAVATION. THE DELINEATION SHOULD COINCIDE WITH POINTS ESTABLISHED BY PROJECTING A 1(V):2(H) OR GREATER (FLATTER) SLOPE BETWEEN THE EDGE OF THE TRAFFIC SURFACE AND THE BOTTOM OF THE EXCAVATION.
- 12 WHERE CONNECTING NEW SURFACING ADJACENT TO ANY INPLACE PAVEMENTS TO BE WIDENED, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING DESIGN, WHICHEVER IS DEEPER, THEN AT A 2(V):1(H) SLOPE TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.
- 13 WHERE CONNECTING TO THE INPLACE ROADWAYS AT THE TERMINI OF PROPOSED CONSTRUCTION, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING, WHICHEVER IS DEEPER, THEN 1V:20H TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.
- 14 PROVIDE 1V:20H LONGITUDINAL TAPERS BETWEEN CHANGES IN SUBGRADE AND SUBCUT DEPTHS.
- 15 DITCH BOTTOMS, TOE OF FILL, CUT RUNOUTS AND THE TOP EDGE OF THE BACKSLOPES SHALL BE ROUNDED REGARDLESS OF THE SECTION USED ON THE CROSS SECTION SHEETS.
- 16 PROVIDE FOR A UNIFORM BITUMINOUS TACK COAT BETWEEN ALL BITUMINOUS COURSES. THE TACK COAT SHALL BE IN ACCORDANCE WITH MN/DOT SPECIFICATION 2357 WITH THE FOLLOWING MODIFICATIONS:
 1. THE TACK COAT SHALL CONSIST OF EMULSIFIED ASPHALT (CSS-1 OR CSS-1H) AND SHALL BE APPLIED BETWEEN ALL BITUMINOUS COURSES.
 2. THE TACK COAT SHALL BE APPLIED AT A UNIFORM RATE OF 0.03 TO 0.05 GAL/SY BETWEEN BITUMINOUS LAYERS AND 0.07 TO 0.10 GAL/SY ON MILLED BITUMINOUS SURFACES PRIOR TO BEING OVERLAID.
- 17 PROVIDE A SAWCUT AT PROJECT TERMINI AND WHERE PLACING NEW PAVEMENT ADJACENT TO INPLACE PAVEMENT TO ENSURE A UNIFORM JOINT.

CONSTRUCTION /SOILS NOTES

REMOVALS

- 18 PROVIDE FOR THE REMOVAL AND DISPOSAL OF ANY INPLACE SURFACING, GUARDRAIL, OTHER STRUCTURES OR DEBRIS THAT WOULD INTERFERE WITH CONSTRUCTION. ALL SUCH MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL EITHER BE RECYCLED TO THE EXTENT ALLOWED OR DISPOSED OF OFF THE RIGHT OF WAY IN ACCORDANCE WITH SPEC. 2104.3C. PROVIDE FOR SAW CUTTING AS DEEMED NECESSARY BY THE ENGINEER.
- 19 THE EXISTING PAVEMENT THICKNESSES ARE ASSUMED TO BE AS FOLLOWS:
 C.S.A.H. 14 - 6 TO 7 INCHES BITUMINOUS PAVEMENT
 21ST AVE - 6 INCHES BITUMINOUS PAVEMENT
 21ST AVE CONNECTION - 6 INCHES BITUMINOUS PAVEMENT

 THE EXISTING TOPSOIL THICKNESS IS ASSUMED TO BE 12 INCHES. TOPSOIL THICKNESS ALONG E.B. C.S.A.H. 14 IS KNOWN TO VARY IN DEPTH FROM 4 INCHES TO 2 FEET.


 THE ABOVE INFORMATION WAS TAKEN FROM PREVIOUS PROJECT SOIL BORINGS AND RECORD DRAWINGS. THE CONTRACTOR SHALL INVESTIGATE AND MAKE HIS OWN DETERMINATION.
- 20 PLACE A MINIMUM OF 6 INCHES OF TOPSOIL ON ALL AREAS SCHEDULED FOR PERMANENT TURF ESTABLISHMENT, UNLESS OTHERWISE INDICATED ON THE TYPICAL SECTION PLAN SHEETS.
- 21 SOD ALL BOULEVARDS AND A 2 FOOT STRIP BEHIND ALL BITUMINOUS WALK. APPLY FERTILIZER TYPE 4 (22-5-10) @ 400 POUNDS PER ACRE TO ALL SODDED AREAS.
- 22 PERMANENT TURF ESTABLISHMENT SHALL BE CONDUCTED USING TYPICAL SEEDING METHODS. THE FOLLOWING RATES SHALL APPLY:
 SEED MIXTURE 350 @ 84.5 POUNDS PER ACRE, FERTILIZER TYPE 4 (18-1-18) @ 120 POUNDS PER ACRE.
 DISK ANCHOR AND MULCH ALL SEEDED AREAS FLATTER THAN 1:3 WITH MULCH MATERIAL TYPE 3 @ 2 TONS PER ACRE.
 APPLY EROSION CONTROL BLANKETS CATEGORY 3 TO ALL SEEDED AREAS 1:3 OR STEEPER.
- 23 ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
- 24 THE CONTRACTOR IS HEREBY REMINDED OF HIS RESPONSIBILITY UNDER STATE LAW TO CONTACT ALL UTILITIES THAT MAY HAVE FACILITIES IN THE AREA. CONTACT MUST BE MADE THROUGH GOPHER STATE ONE-CALL.

THE FOLLOWING STANDARD PLATES APPROVED BY THE DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT.

STANDARD PLATES	
PLATE NO.	DESCRIPTION
3000 L	REINFORCED CONCRETE PIPE
3006 G	GASKET JOINT FOR R.C. PIPE
3007 D	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
4005 L	MANHOLE OR CATCH BASIN TYPE A & B CONE SECTIONS PRECAST - DESIGN F
4006 L	MANHOLE OR CATCH BASIN PRECAST - DESIGNS G AND H
4011 E	PRECAST CONCRETE BASE
4020 J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS)
4026 A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101 D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110 F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS) - CASTING NO. 715 AND 716
4129 G	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) - CASTING NO. 802A
4154 B	CATCH BASIN GRATE CASTING - CASTING NO. 816
4160 D	CURB BOX CASTING FOR CATCH BASIN - CASTING NO. 823A AND 833A
7038 A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100 H	CONCRETE CURB & GUTTER (DESIGN B AND DESIGN V)
7111 J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
7113 A	CONCRETE APPROACH NOSE DETAIL
8000 I	STANDARD BARRICADES
8002 G	PERMANENT BARRICADE
8112 G	PEDESTAL FOUNDATION (TRAFFIC CONTROL SIGNALS)
8114 A	P.V.C. HANDHOLE / PULL BOX (NO VEHICLE LOAD)
8121 G	TRANSFORMER BASE AND POLE BASE PLATE (PA85M, PA90 AND PA100)
8122 F	PEDESTAL AND PEDESTAL BASE (FOR TRAFFIC CONTROL SIGNALS SUPPORT)
8123 G	POLE AND MAST ARM (LUMINAIRES AND TRAFFIC LIGHTS ASSEMBLY) FOR ALL POLE TYPES
8126 K	POLE FOUNDATION (PA90 AND PA100)
8132 B	PREFORMED RIGID PVC CONDUIT LOOP DETECTOR LAYOUT DETAILS, NOTES, TYPICAL INSTALLATION

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NO	DATE	BY	CKD	APPR	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.
 Print Name: AARON VACEK

 Date: 4-17-2013 License # 44277

STATE AID PROJECT NO.
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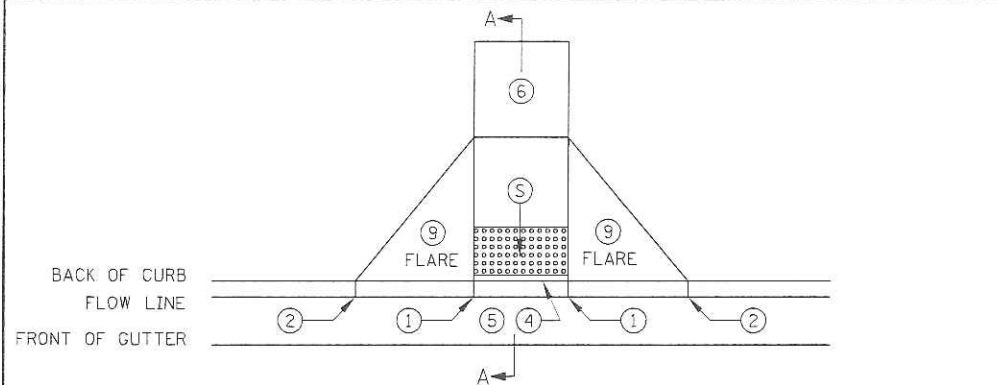
DRAWN BY S. MARTINS
 DESIGNED BY A. VACEK
 CHECKED BY J. McPHERSON
 COMM. NO. 0127841



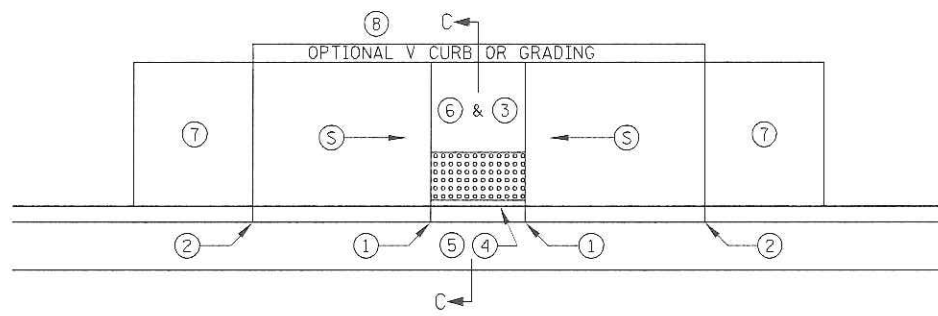
ENGINEERS
 PLANNERS
 DESIGNERS

ANOKA COUNTY
 CONSTRUCTION/SOILS NOTES AND STANDARD PLATES
 21ST AVENUE

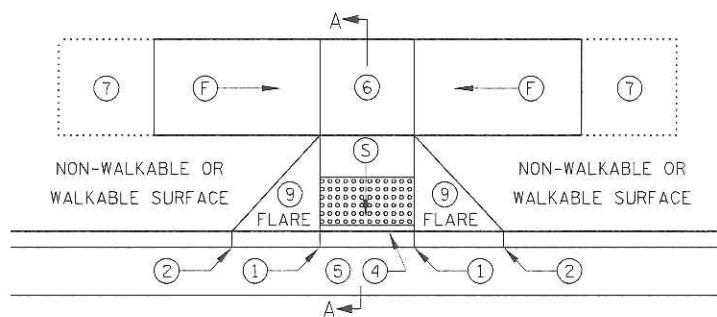
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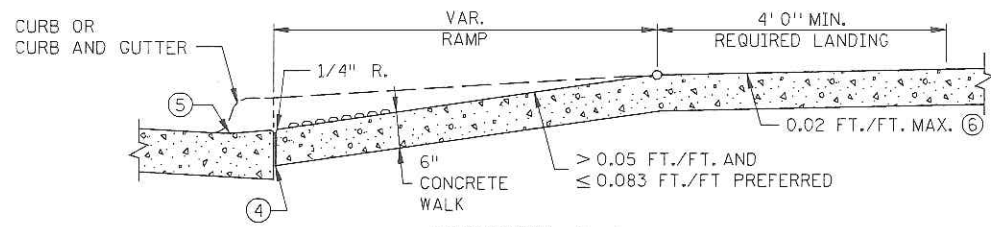
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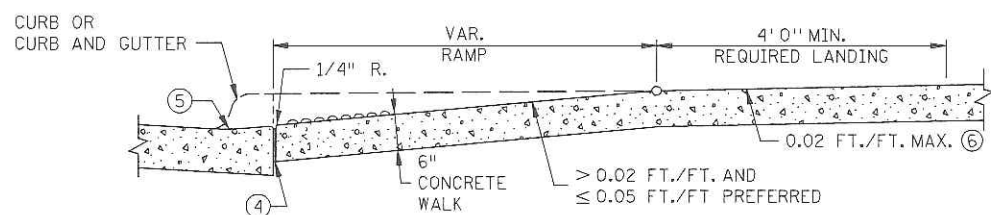
PARALLEL



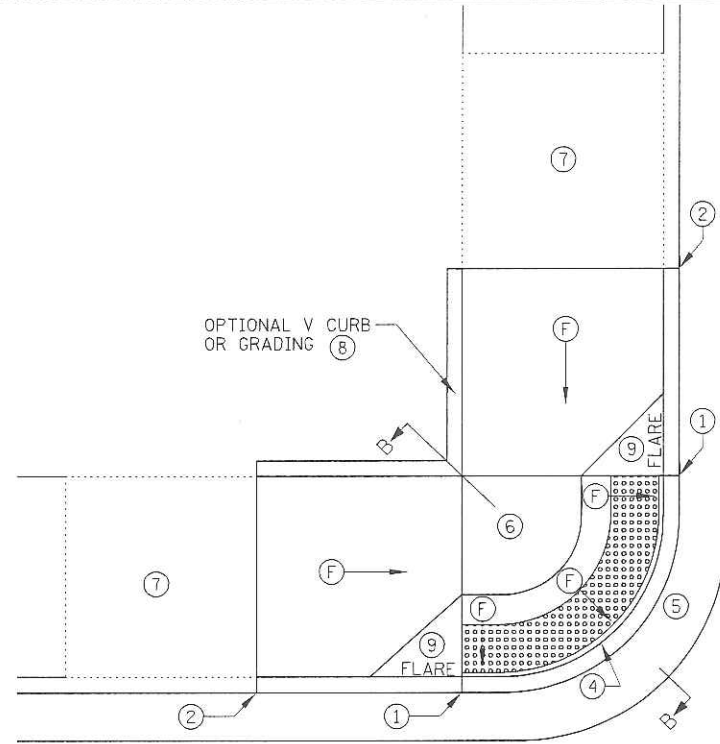
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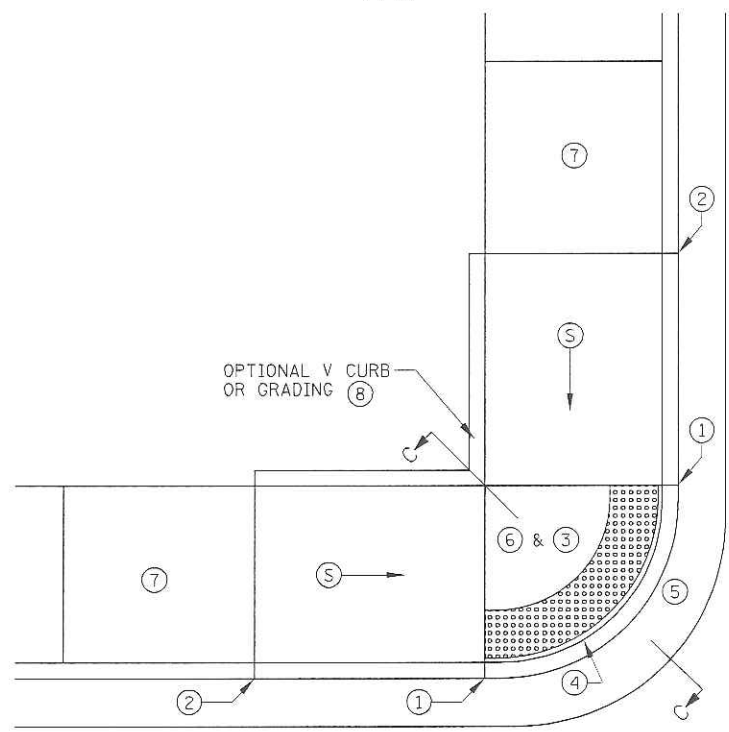
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PERPENDICULAR/TIERED/DIAGONAL



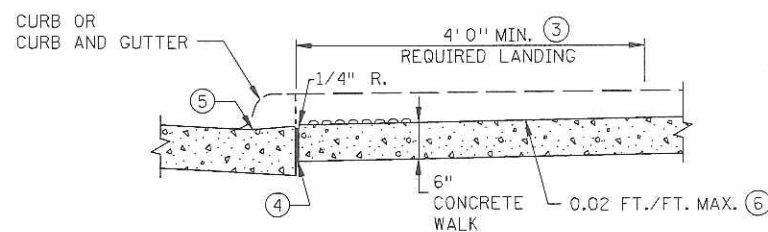
SECTION B-B
FAN



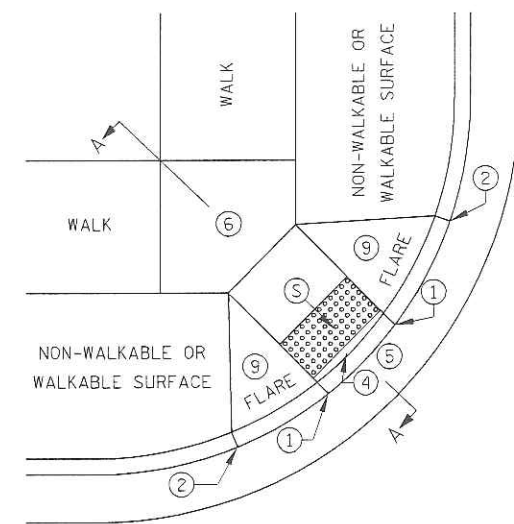
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DEPRESSED CORNER



SECTION C-C
PARALLEL/DEPRESSED CORNER



DIAGONAL 10

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE 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.

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.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL.

TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS MAY BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 5 WHEN LANDINGS ARE CAST SEPARATELY.

ALL SLOPES ARE ABSOLUTE, RATHER THAN RELATIVE TO SIDEWALK/ROADWAY GRADES.

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MINIMUM OF 24" IN THE PATH OF TRAVEL. SHARED USE PATHS SHALL HAVE DETECTABLE WARNING ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A ROAD.

SEE STANDARD PLATE 7038 AND SHEET 4 OF 5 FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

- 1 0" CURB HEIGHT.
- 2 FULL CURB HEIGHT.
- 3 DETECTABLE WARNINGS MAY BE PART OF 4' X 4' LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
- 4 1/2" PREFORMED JOINT FILLER MATERIAL AASHTO M 213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE OF DEBRIS. 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.
- 5 SEE PEDESTRIAN ACCESS ROUTE CURB AND GUTTER DETAIL FOR INFORMATION ON CONSTRUCTING CURB AND GUTTER AT CURB OPENINGS. SEE SHEET NO. 3 OF 5.
- 6 4' BY 4' MIN. LANDING WITH MAX. 2.0% SLOPE IN ALL DIRECTIONS.
- 7 IF LONGITUDINAL SLOPE IS GREATER THAN 5.0%, 4' X 4' MIN. LANDING WITH MAX 2.0% SLOPE IN ALL DIRECTIONS REQUIRED.
- 8 V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. SEE SHEET 5 OF 5.
- 9 SEE SHEET 4 OF 5, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
- 10 DIAGONAL RAMPS SHOULD ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES 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%

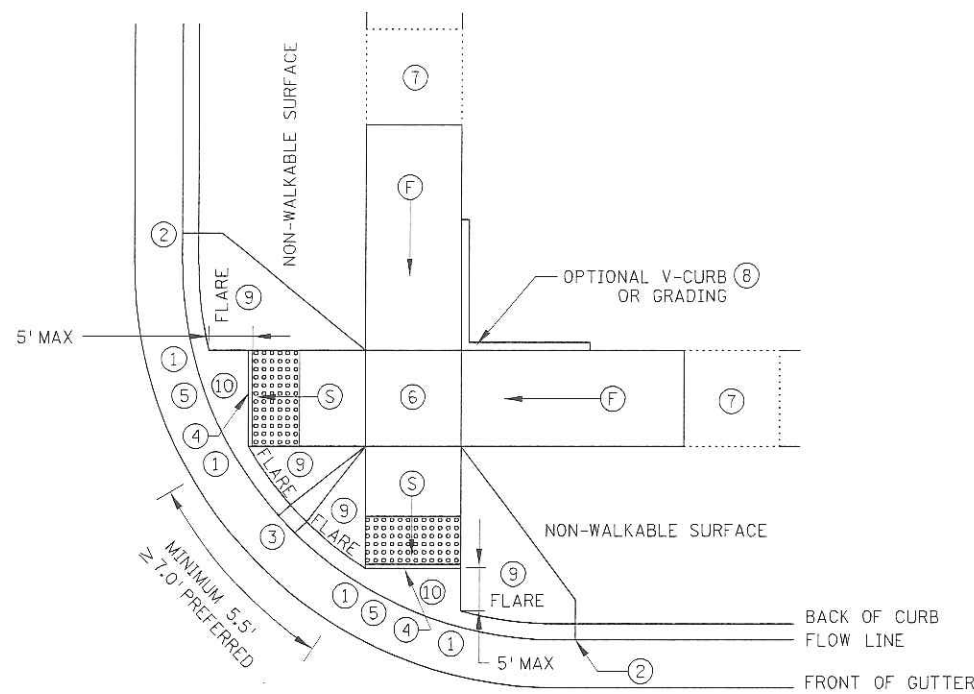
STANDARD PLAN SHEET NO.
5-297.250 (1 OF 5)

STANDARD APPROVED:
APRIL 10, 2013

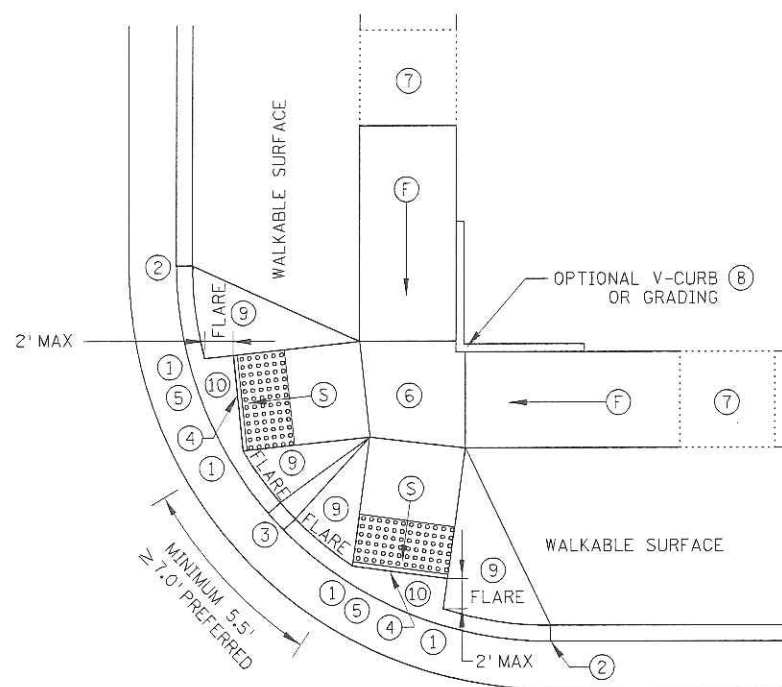
COUNTY PROJ. NO. 12-56-14

PEDESTRIAN CURB RAMP DETAILS

SHEET NO. 4 OF 42 SHEETS

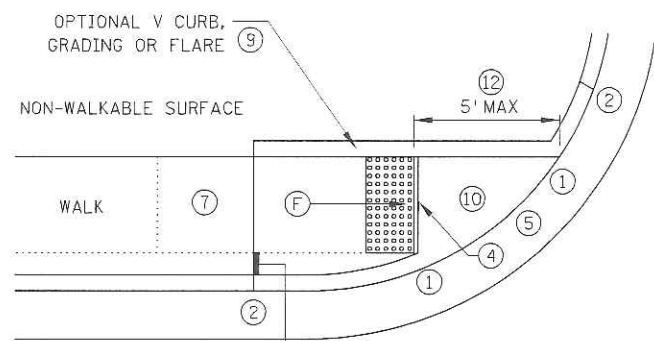


ADJACENT TO NON-WALKABLE SURFACE



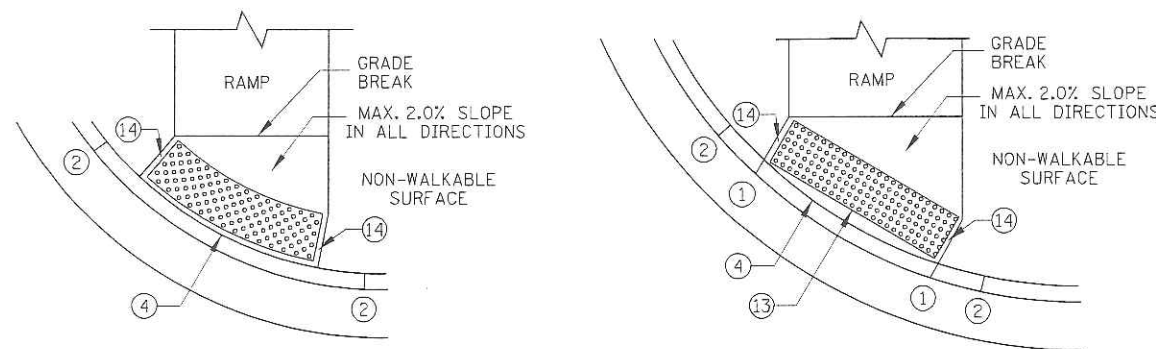
ADJACENT TO WALKABLE SURFACE

COMBINED DIRECTIONAL 15

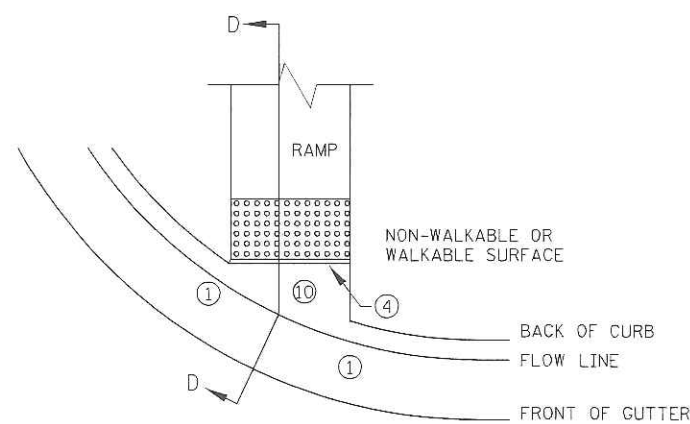


ONE-WAY DIRECTIONAL

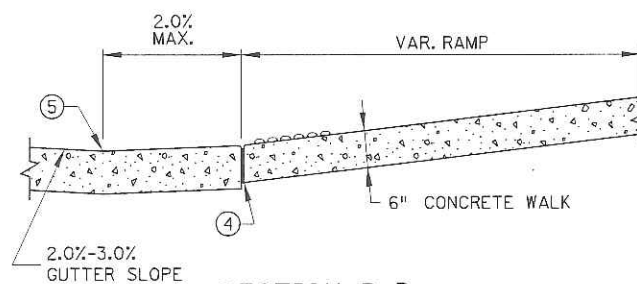
IF NON-CONCRETE BLVD. IS CONSTRUCTED AND IS LESS THAN 2' IN WIDTH AT TOP OF CURB TRANSITION, PAVE CONCRETE RAMP WIDTH TO ADJACENT BACK OF CURB.



DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED



CURB FOR DIRECTIONAL RAMPS 11



SECTION D-D

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE 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.

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.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL.

TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS MAY BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 5 WHEN LANDINGS ARE CAST SEPARATELY.

ALL SLOPES ARE ABSOLUTE, RATHER THAN RELATIVE TO SIDEWALK/ROADWAY GRADES.

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MINIMUM OF 24" IN THE PATH OF TRAVEL. SHARED USE PATHS SHALL HAVE DETECTABLE WARNING ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A ROAD.

SEE STANDARD PLATE 7038 AND SHEET 4 OF 5 FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

- 1 0" CURB HEIGHT.
- 2 FULL CURB HEIGHT.
- 3 3" MINIMUM CURB HEIGHT, 4" PREFERRED.
- 4 1/2" PREFORMED JOINT FILLER MATERIAL AASHTO M 213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE OF DEBRIS. RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MIN. TO 6" MAX. FROM THE BACK OF CURB.
- 5 SEE PEDESTRIAN ACCESS ROUTE CURB AND GUTTER DETAIL FOR INFORMATION ON CONSTRUCTING CURB AND GUTTER AT CURB OPENINGS. SEE SHEET NO. 3 OF 5.
- 6 4' BY 4' MIN. LANDING WITH MAX. 2.0% SLOPE IN ALL DIRECTIONS.
- 7 IF LONGITUDINAL SLOPE IS GREATER THAN 5.0%, 4' X 4' MIN. LANDING WITH MAX 2.0% SLOPE IN ALL DIRECTIONS REQUIRED.
- 8 V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.
- 9 SEE SHEET 4 OF 5, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
- 10 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.
- 11 TO BE USED FOR ALL DIRECTIONAL RAMPS.
- 12 PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.
- 13 RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.
- 14 WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
- 15 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. WHETHER A SURFACE IS WALKABLE OR NOT SHALL BE DETERMINED BY THE ENGINEER

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%

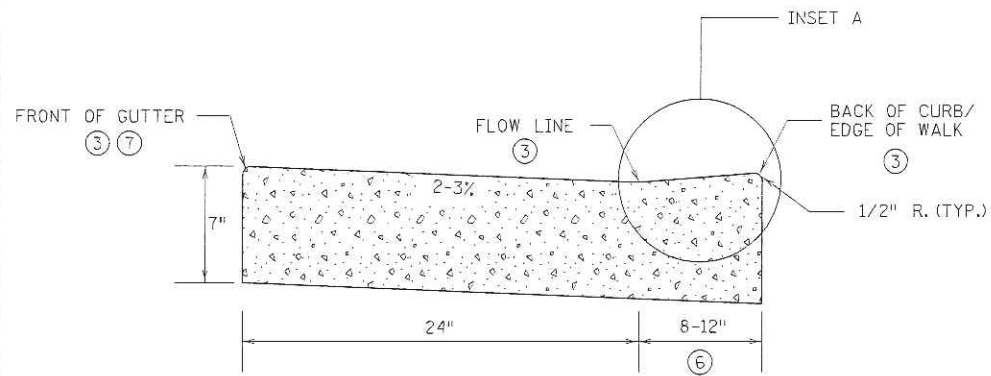
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5-297.250 (2 OF 5)

STANDARD APPROVED:
APRIL 10, 2013

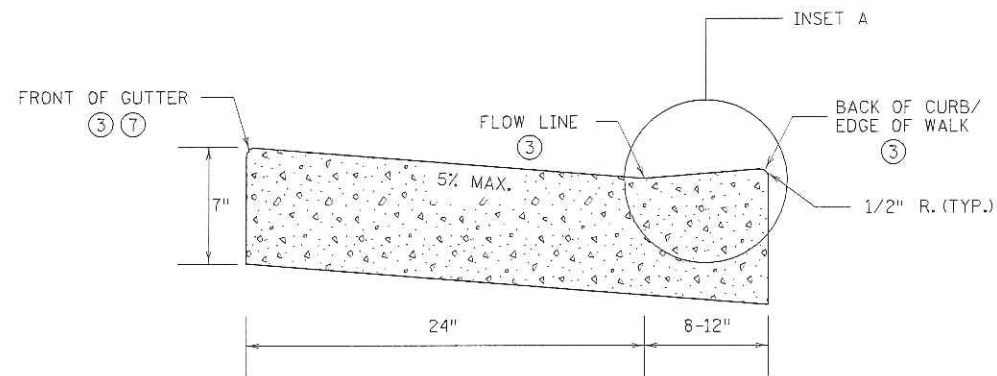
COUNTY PROJ. NO. 12-56-14

PEDESTRIAN CURB RAMP DETAILS

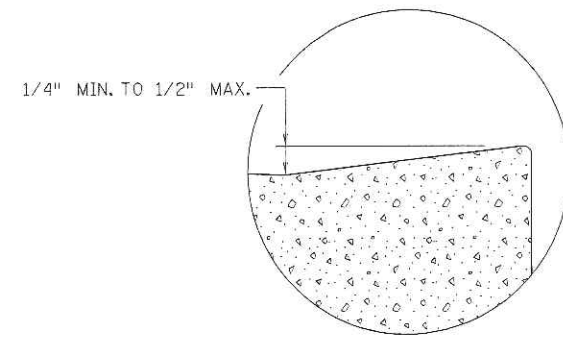
SHEET NO. 5 OF 42 SHEETS



NON PERPENDICULAR ①

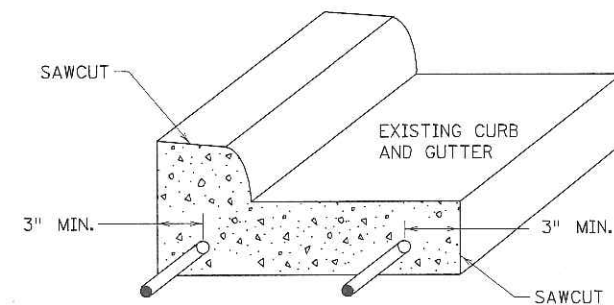
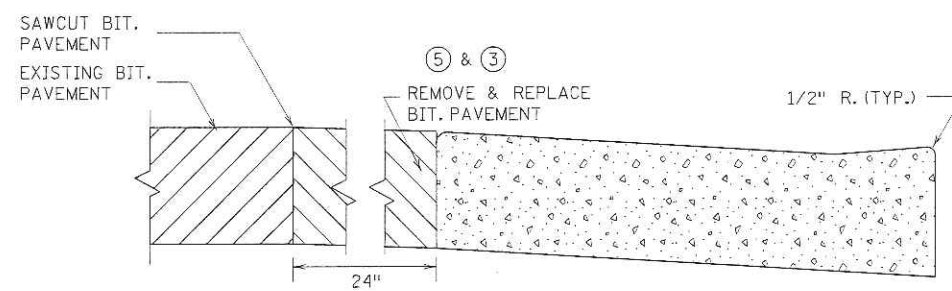
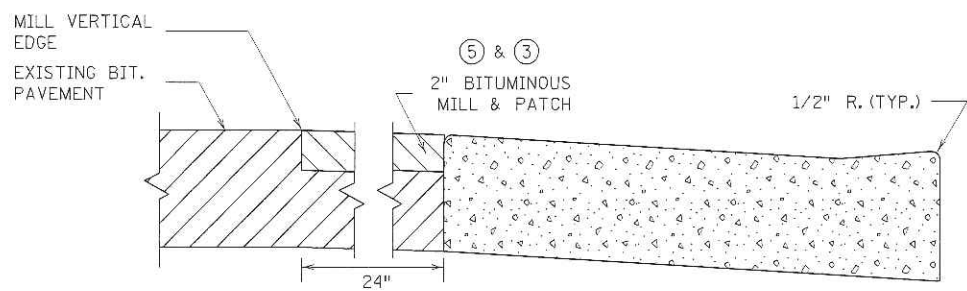


PERPENDICULAR ②

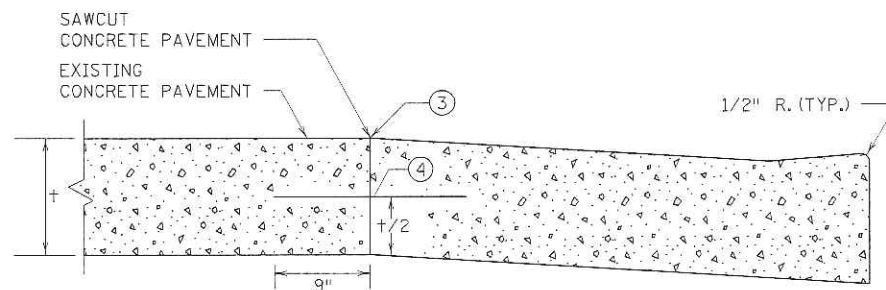
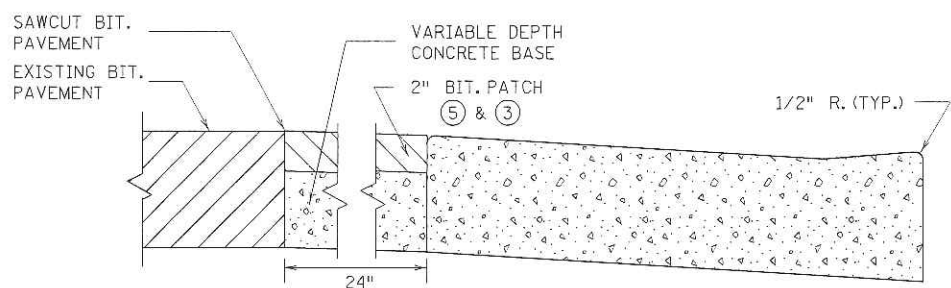


INSET A

PEDESTRIAN ACCESS ROUTE
CURB & GUTTER DETAIL



CURB AND GUTTER
REINFORCEMENT ⑧
FOR USE ON CURB RAMP RETROFITS



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

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 NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS, DEPRESSED CORNERS, & ONE WAY AND COMBINED DIRECTIONALS.

② 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.

③ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4\".

④ DRILL AND GROUT NO. 4 EPOXY-COATED 18\" LONG TIE BARS AT 30\" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT.

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.

⑦ TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. PAR GUTTER SHALL NOT BE OVERLAID.

⑧ WHERE PLAN SPECIFIES, DRILL AND GROUT 2 - NO. 4 X 12\" LONG REINFORCEMENT BARS (EPOXY COATED).

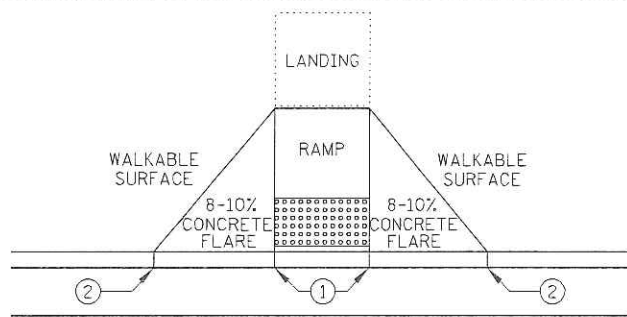
STANDARD PLAN SHEET NO.
5-297.250 (3 OF 5)

STANDARD APPROVED:
APRIL 10, 2013

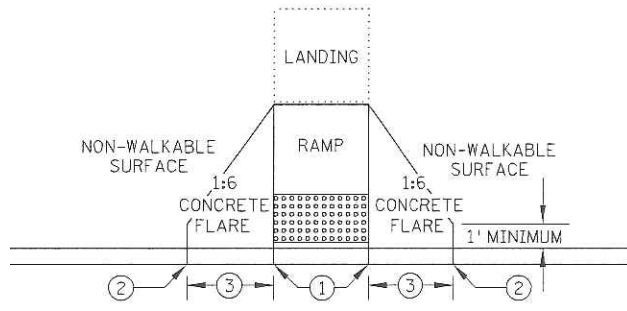
COUNTY PROJ. NO. 12-56-14

PEDESTRIAN CURB RAMP DETAILS

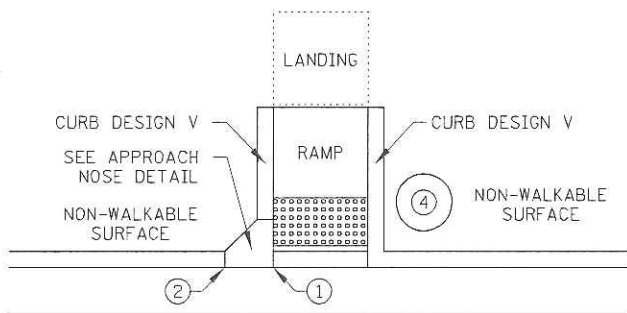
SHEET NO. 6 OF 42 SHEETS



PAVED FLARES
ADJACENT TO WALKABLE SURFACE

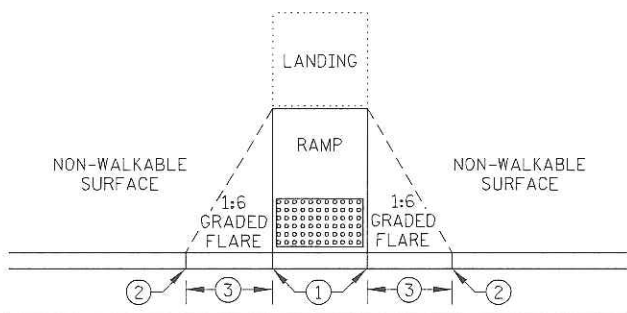


PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE



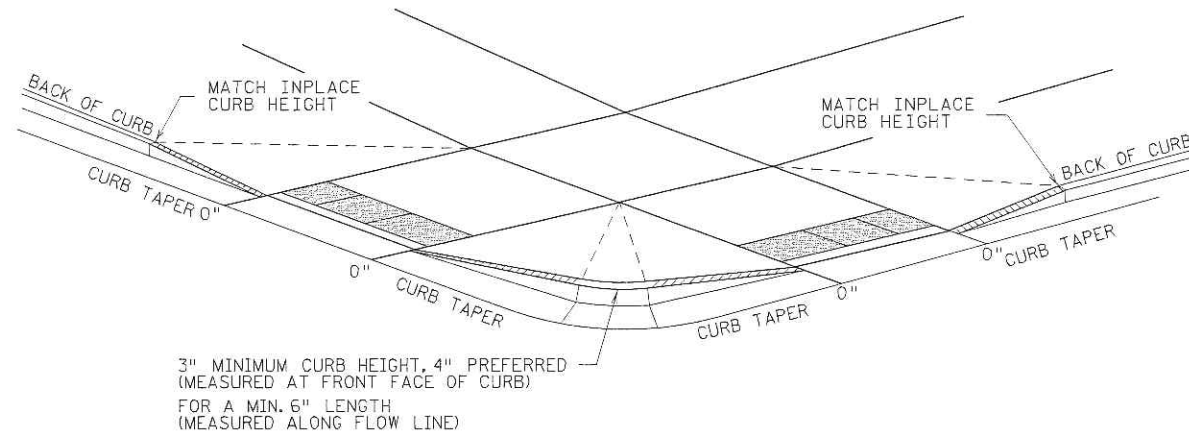
DIRECTION OF TRAFFIC

RETURNED CURB



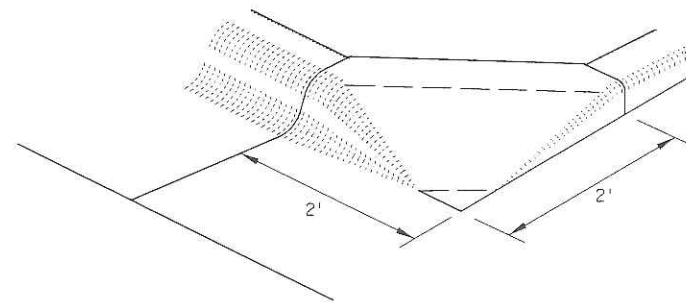
GRADED FLARES

TYPICAL SIDE TREATMENT OPTIONS ⑤



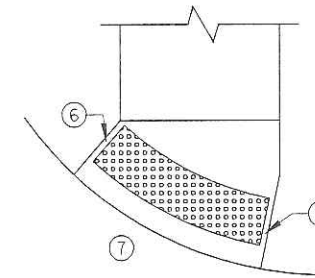
3" MINIMUM CURB HEIGHT, 4" PREFERRED
(MEASURED AT FRONT FACE OF CURB)
FOR A MIN. 6" LENGTH
(MEASURED ALONG FLOW LINE)

DETECTABLE EDGE WITH
CURB AND GUTTER ⑧

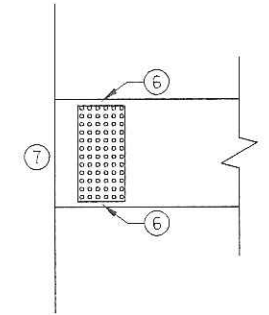


SECTION A-A

APPROACH NOSE DETAIL
FOR DOWNSTREAM SIDE OF TRAFFIC



RADIAL DETECTABLE WARNING



RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

NOTES:

SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING. WHETHER A SURFACE IS WALKABLE OR NOT SHALL BE DETERMINED BY THE ENGINEER. 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' - 3' FLARE.
- ④ IMMOVABLE OBJECT OR OBSTRUCTION.
- ⑤ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED ON ALL RAMPS 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.
- ⑥ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" 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 ROADWAY 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.

STANDARD PLAN SHEET NO.
5-297.250 (4 OF 5)

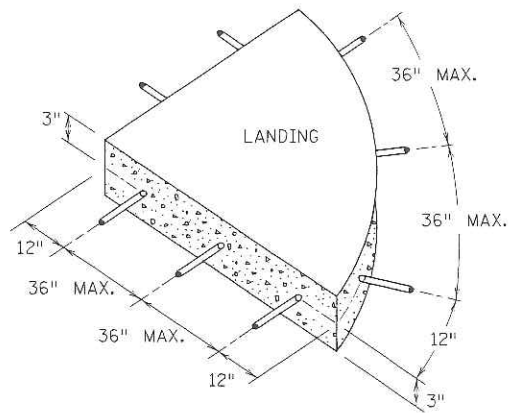
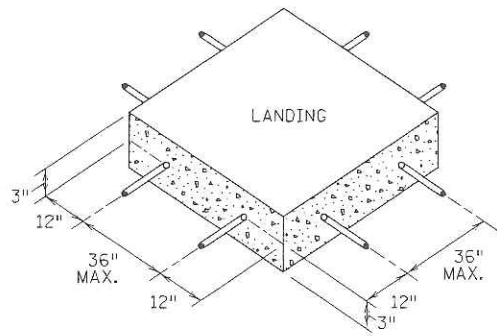
STANDARD APPROVED:
APRIL 10, 2013

PEDESTRIAN CURB RAMP DETAILS

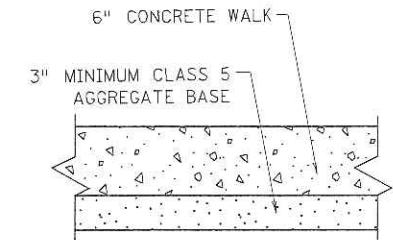
COUNTY PROJ. NO. 12-56-14

SHEET NO. 7 OF 42 SHEETS

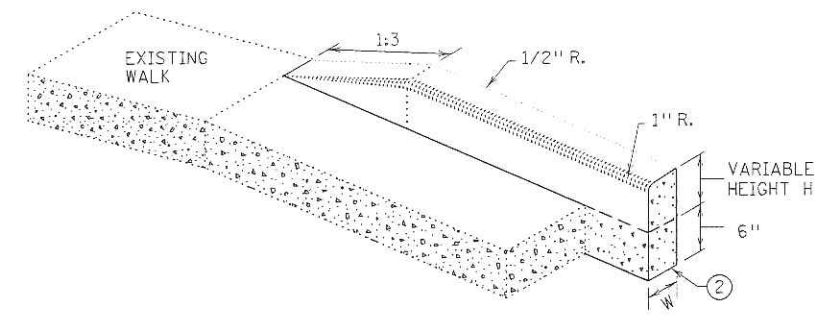
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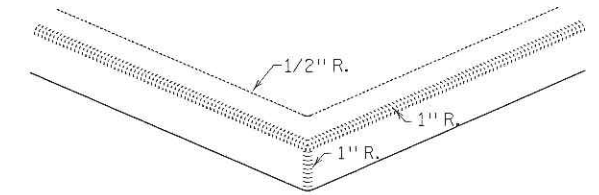
SIDEWALK REINFORCEMENT ⑤ ⑥



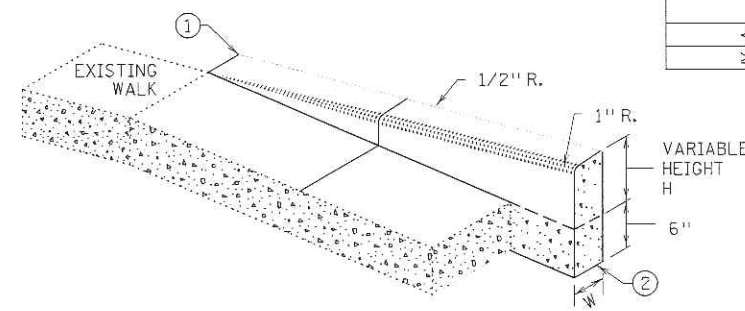
TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER



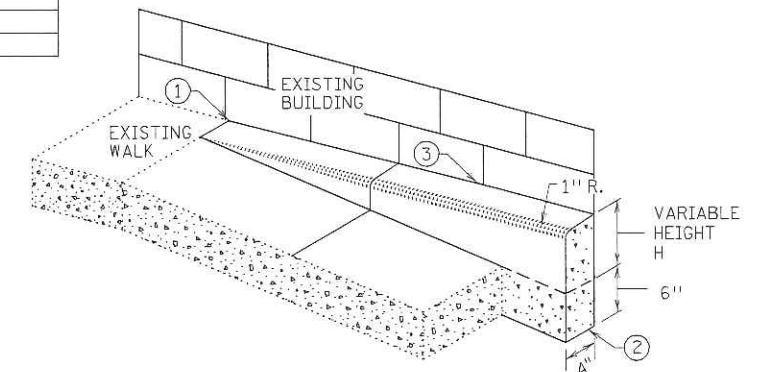
V CURB ADJACENT TO LANDSCAPE CURB WITHIN SIDEWALK LIMITS



V CURB INTERSECTION

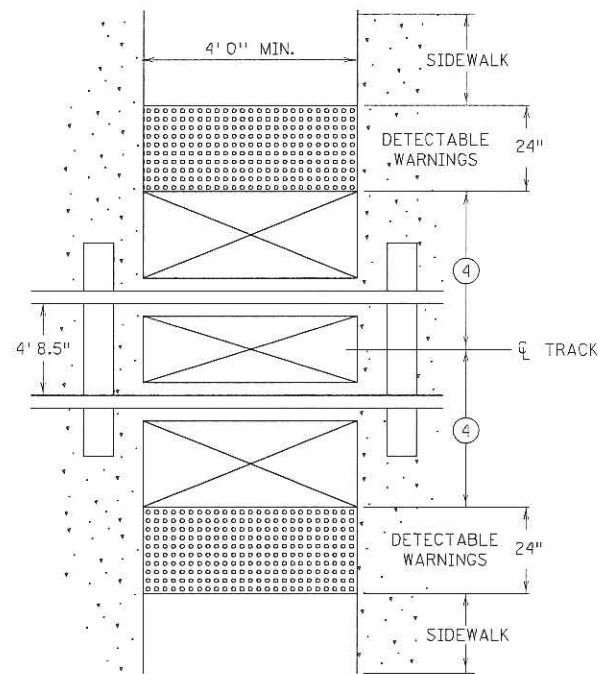


V CURB ADJACENT TO LANDSCAPE CURB OUTSIDE SIDEWALK LIMITS

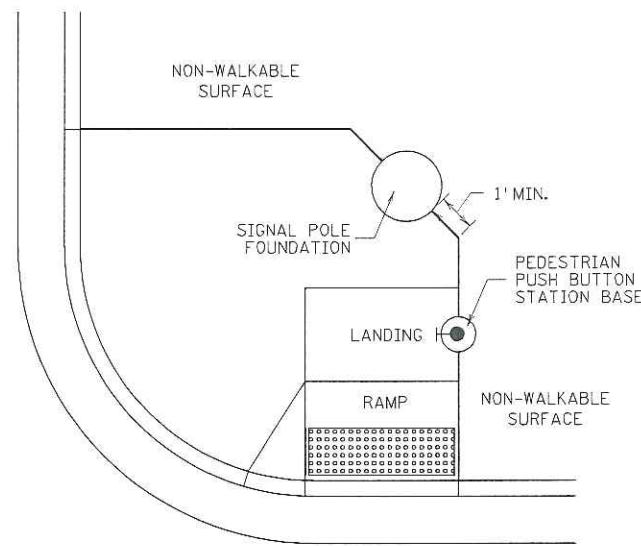


V CURB ADJACENT TO BUILDING OR BARRIER

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



RAILROAD CROSSING PLAN VIEW



CONCRETE WALK EDGES ADJACENT TO CONCRETE STRUCTURES

NOTES:

- 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 EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 15' MAXIMUM FROM THE CENTERLINE OF THE TRACK. WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 17" - 19" FROM THE APPROACHING SIDE OF THE GATE ARM.
- ⑤ WHEN PLAN SPECIFIES, DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS AT 36" MAX. CENTER TO CENTER (EPOXY COATED).
- ⑥ TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS MAY BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET WHEN LANDINGS ARE CAST SEPARATELY.

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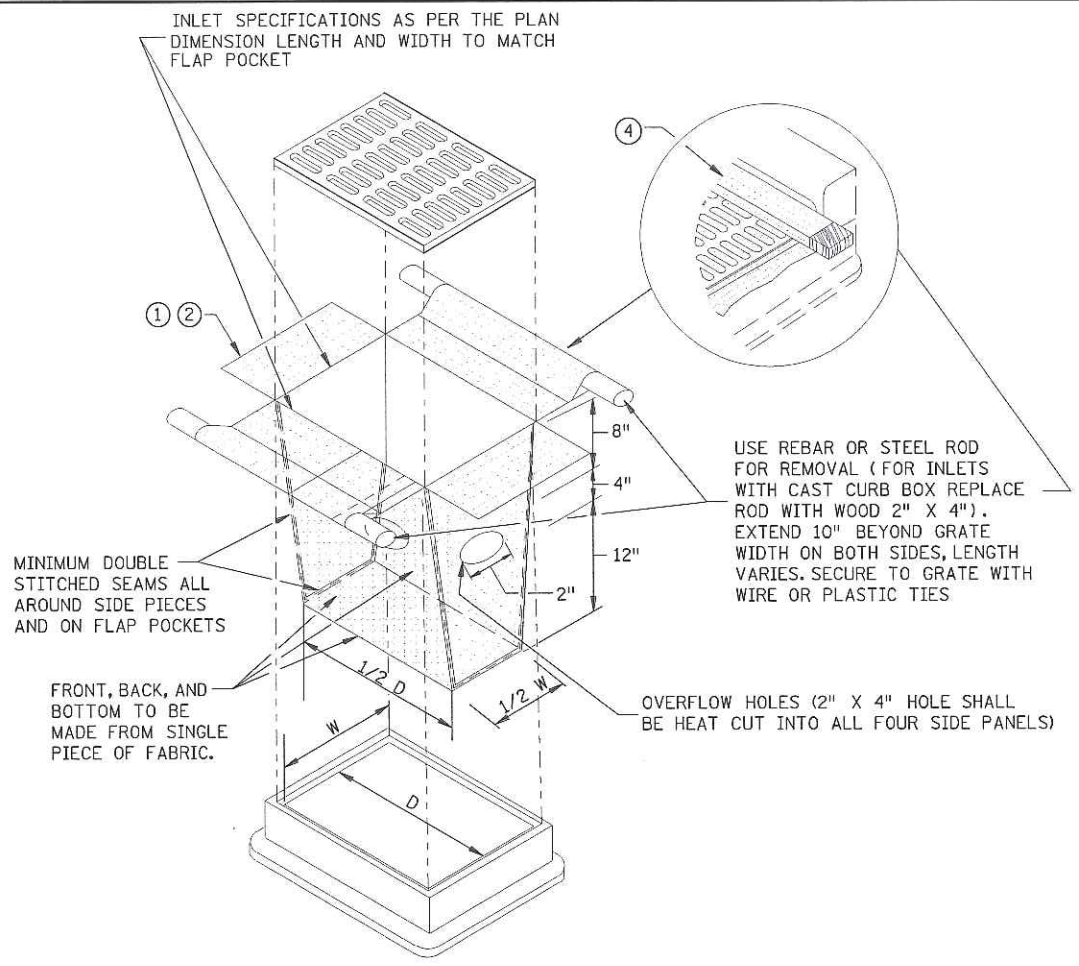
STANDARD PLAN SHEET NO. 5-297.250 (5 OF 5)

STANDARD APPROVED: APRIL 10, 2013

COUNTY PROJ. NO. 12-56-14

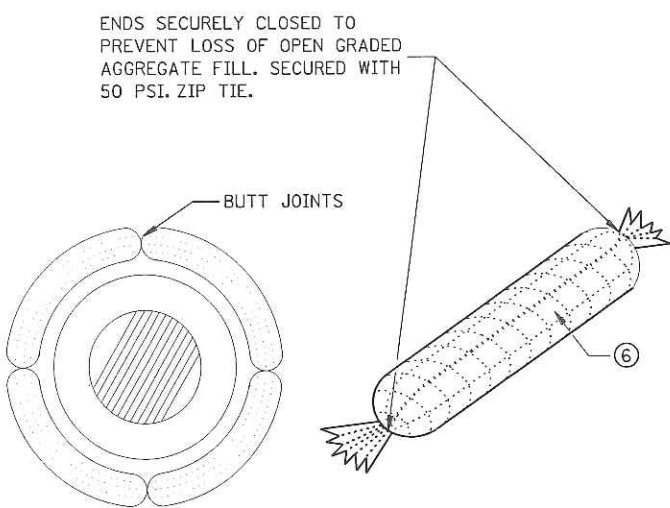
PEDESTRIAN CURB RAMP DETAILS

SHEET NO. 8 OF 42 SHEETS

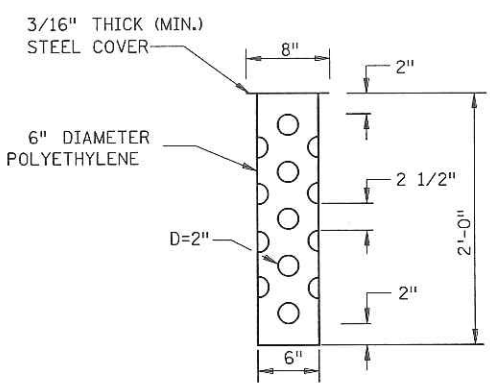


FILTER BAG INSERT ③

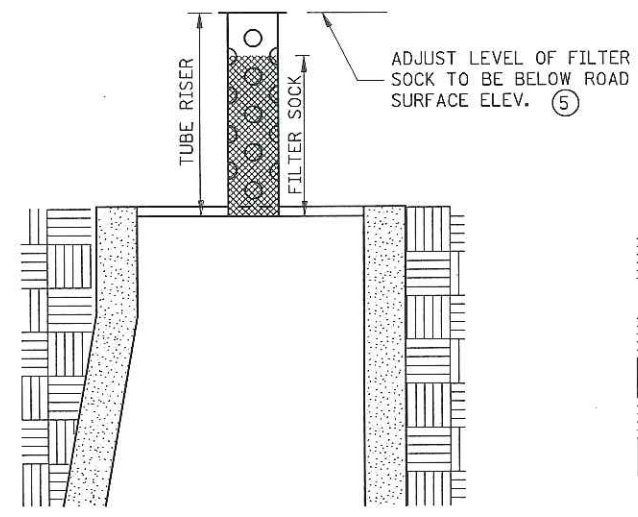
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)



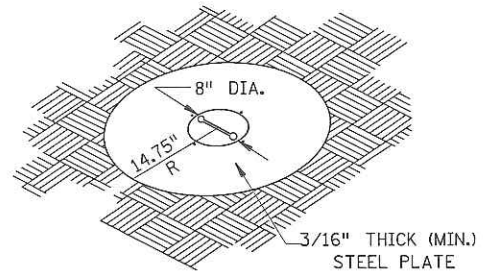
ROCK LOG/COMPOST LOG



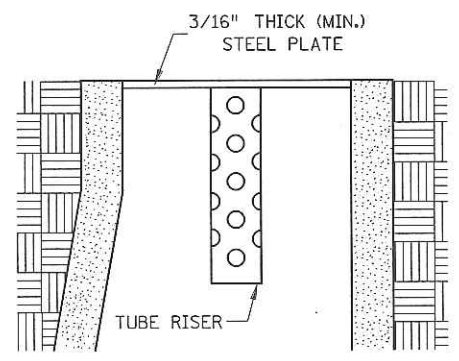
TUBE RISER



SECTION (UP POSITION)

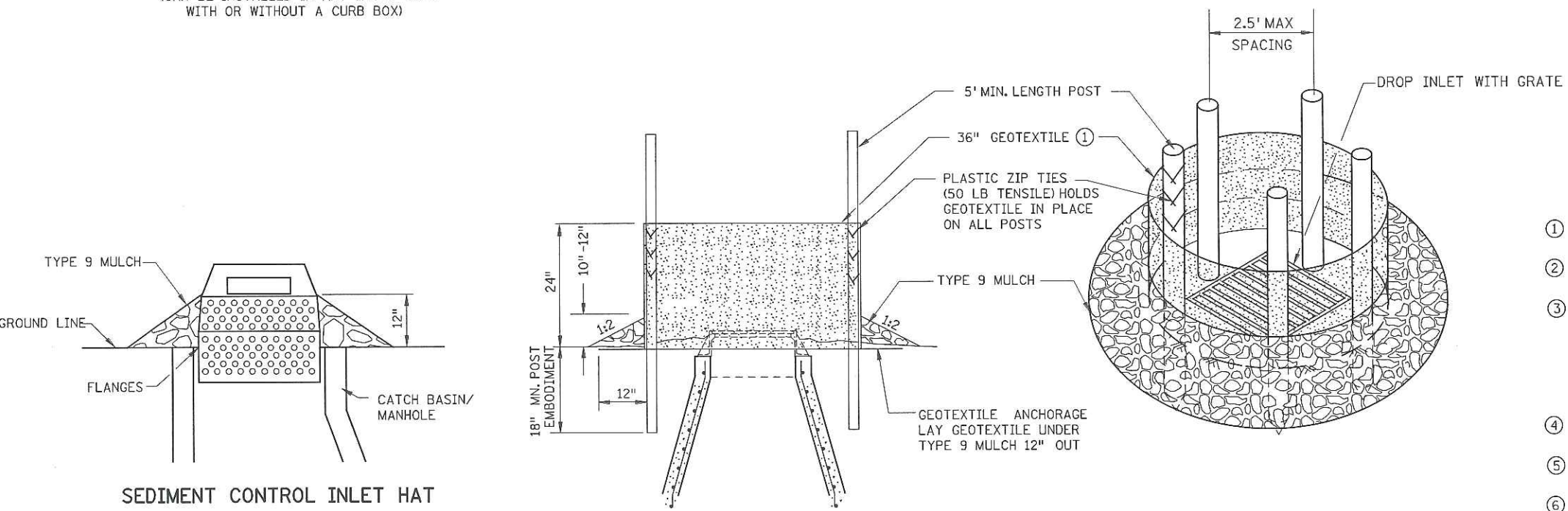


PERSPECTIVE VIEW



SECTION (DOWN POSITION)

POP-UP HEAD



SEDIMENT CONTROL INLET HAT

SILTY FENCE RING AND ROCK FILTER BERM

USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 OR LESS

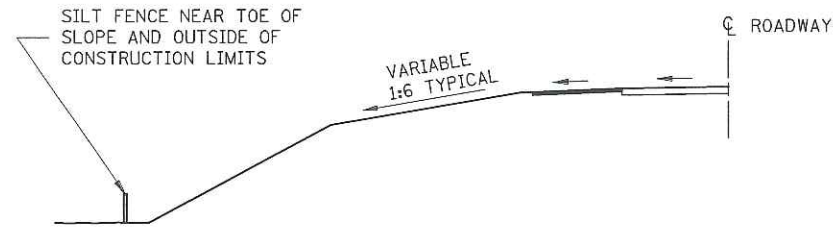
NOTES:

- SEE SPECS. 2573, 3137, 3886 & 3891.
- MANUFACTURED ALTERNATIVES LISTED ON Mn/DOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED.
- ① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.
- ② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ③ INSTALLATION NOTES:
DO NOT INSTALL FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.
- ④ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.
- ⑤ SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.
- ⑥ GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

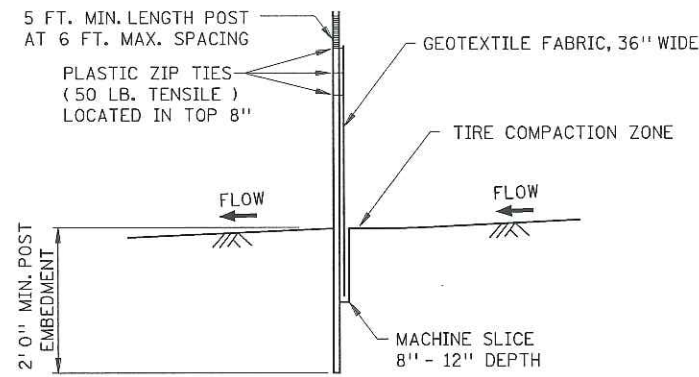
NOTE:
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING, FLANGES AND A LID/COVER.

STANDARD SHEET NO. 297.405 (4 OF 4)	TITLE: TEMPORARY SEDIMENT CONTROL STORM DRAIN INLET PROTECTION
STANDARD APPROVED: MARCH 29, 2012	
COUNTY PROJ. NO. 12-56-14	SHEET NO. 9 OF 42 SHEETS

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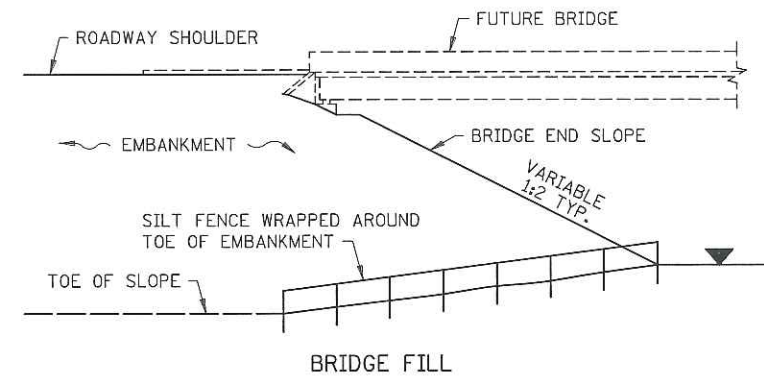


LOCATION OF SILT FENCE AT TOE OF ROADWAY EMBANKMENT

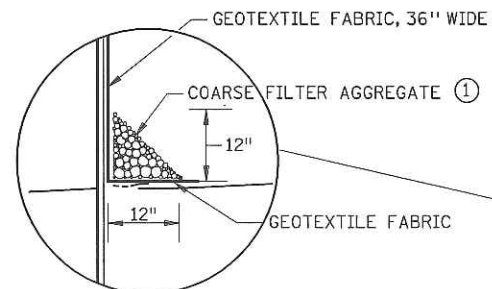


SILT FENCE, MACHINE SLICED

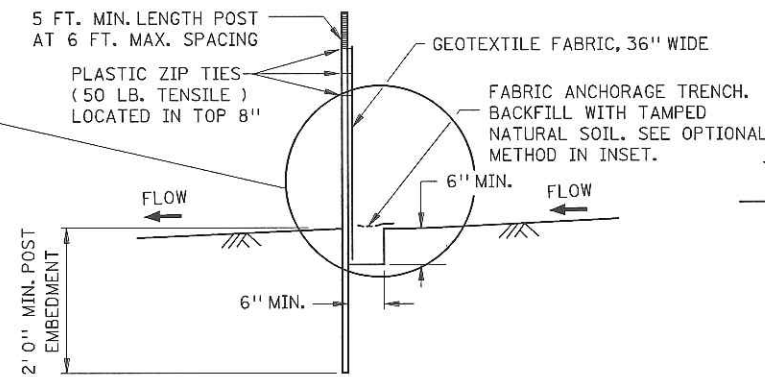
DESIGN GUIDELINES:
TO PROTECT AREAS FROM SHEET FLOW.
MAXIMUM CONTRIBUTING AREA: 1 ACRE.



DESIGN GUIDELINES:
WATER COURSE FLOW VELOCITY: STAGNANT
CONTRIBUTING SLOPE AREA: 1/2 ACRE

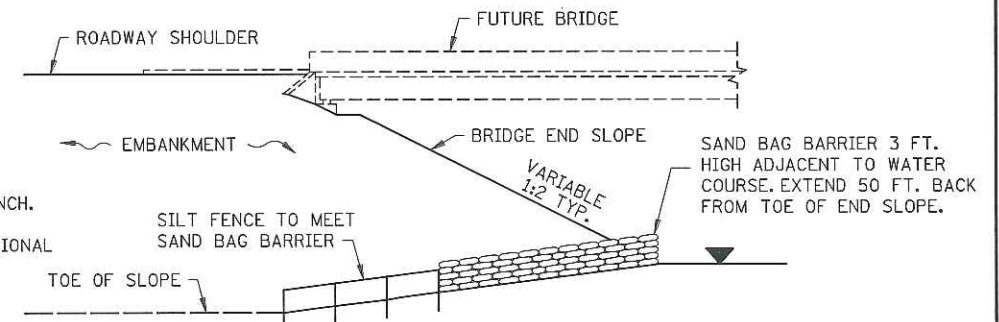


OPTIONAL METHOD FOR SILT FENCE, HEAVY DUTY

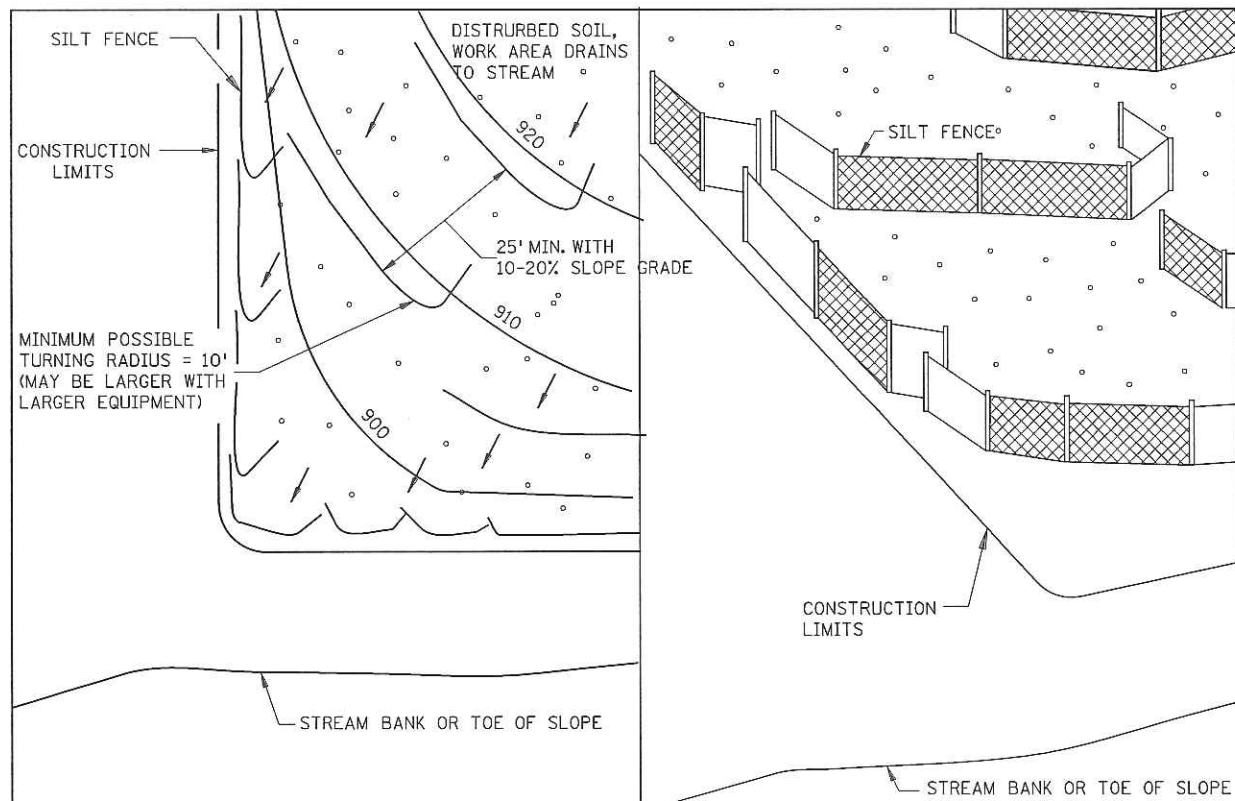


SILT FENCE, HEAVY DUTY (HAND INSTALLED)

DESIGN GUIDELINES:
TO PROTECT AREAS FROM SHEET FLOW.
MAXIMUM CONTRIBUTING AREA: 1 ACRE.



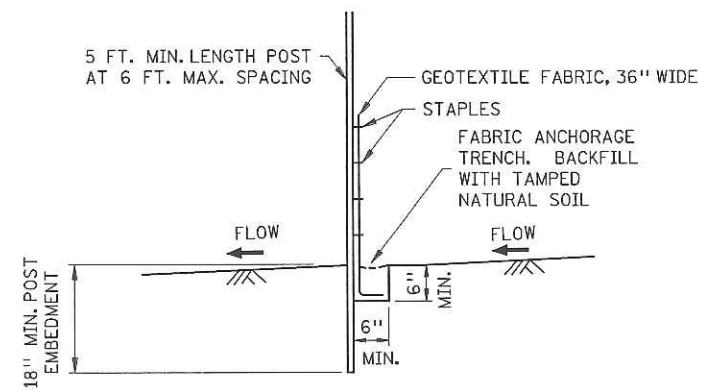
DESIGN GUIDELINES:
WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC.
CONTRIBUTING SLOPE AREA: 1 ACRE



PLAN VIEW

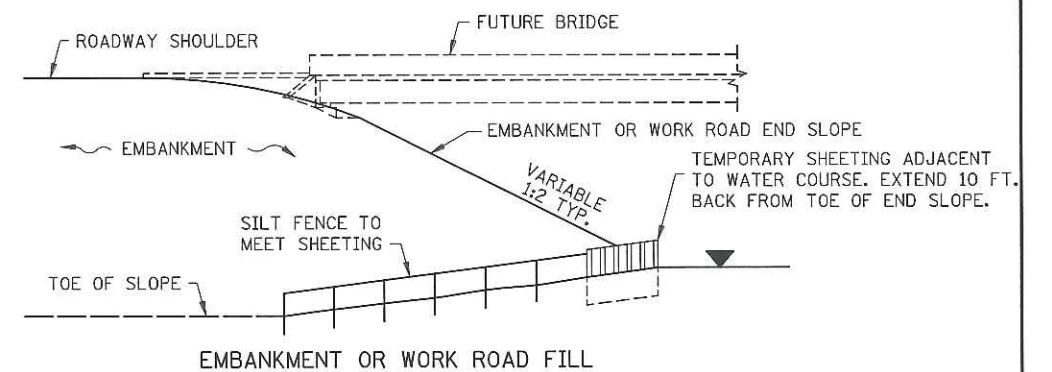
SIDE VIEW

SILT FENCE, J-HOOK INSTALLATION



SILT FENCE, PREASSEMBLED

DESIGN GUIDELINES:
TO PROTECT AREAS FROM SHEET FLOW.
MAXIMUM CONTRIBUTING AREA: 1 ACRE.



DESIGN GUIDELINES:
WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC.
CONTRIBUTING SLOPE AREA: 3 ACRES

SILT FENCE AT BRIDGE EMBANKMENT ADJACENT TO WATER

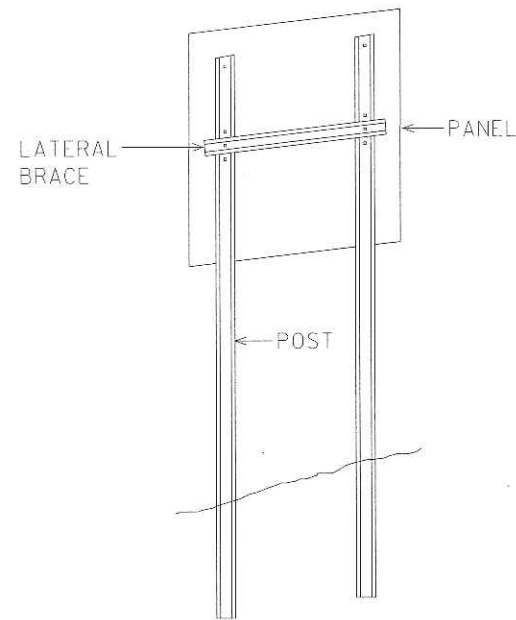
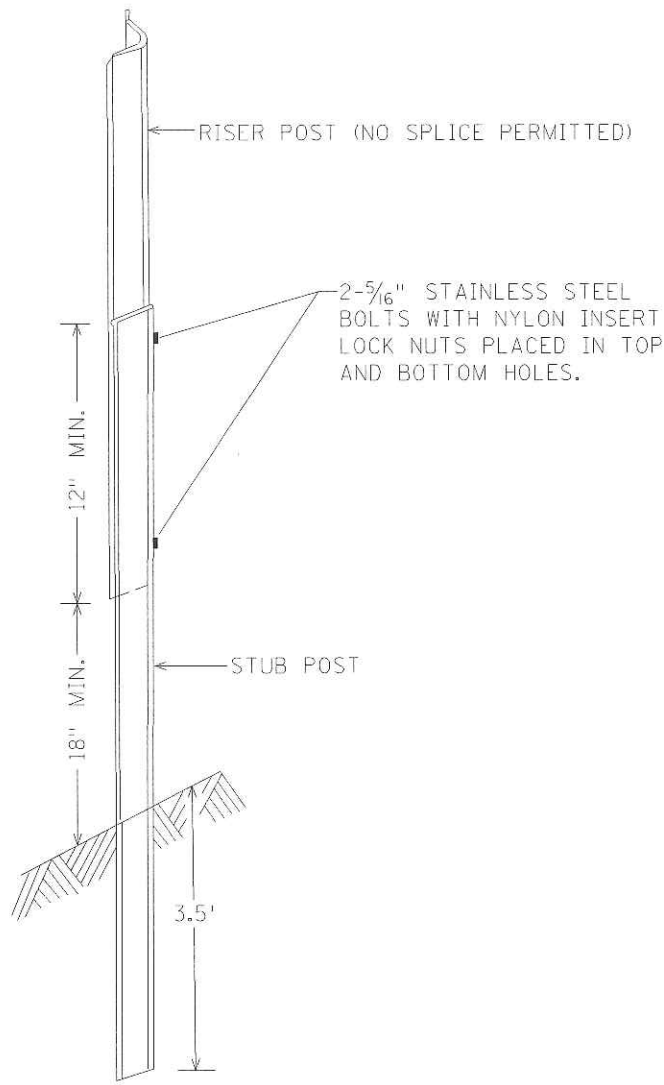
NOTES:

SEE SPECS. 2573, 3149 & 3886.

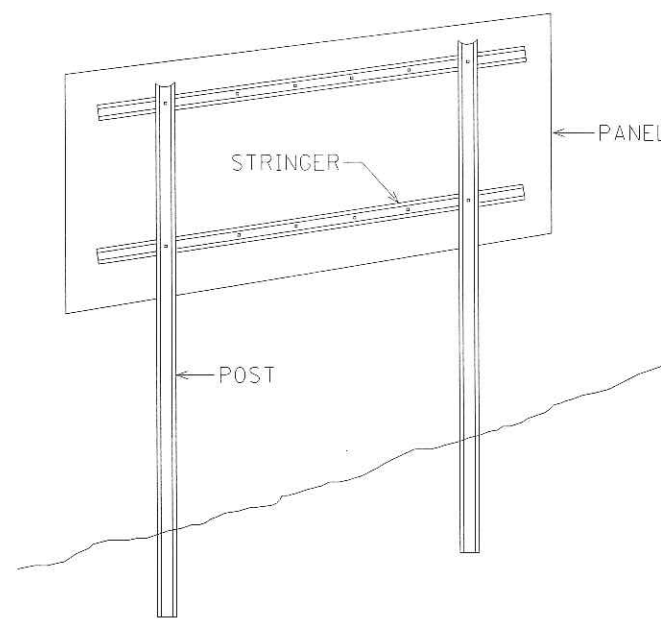
① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.

STANDARD SHEET NO. 5-297.408 (1 OF 2)	TITLE: TEMPORARY SEDIMENT CONTROL SILT FENCE
STANDARD APPROVED: SEPTEMBER 27, 2006	
COUNTY PROJ. NO. 12-56-14	SHEET NO. 10 OF 42 SHEETS

TYPE C & D POST



TYPICAL TYPE C INSTALLATION

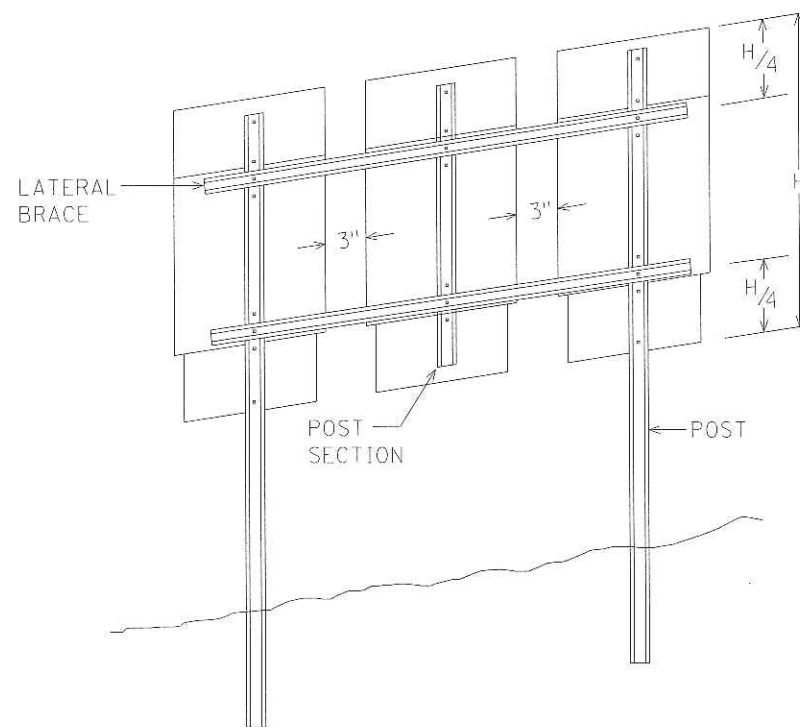
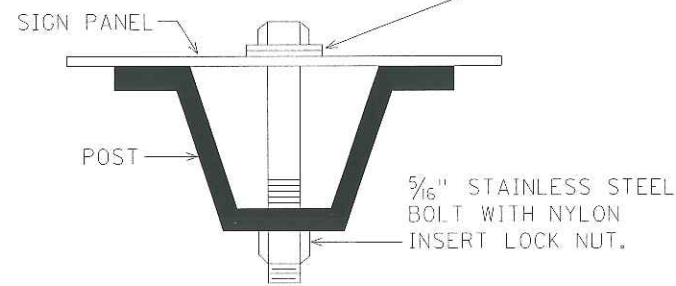


TYPICAL TYPE D INSTALLATION

NOTES:

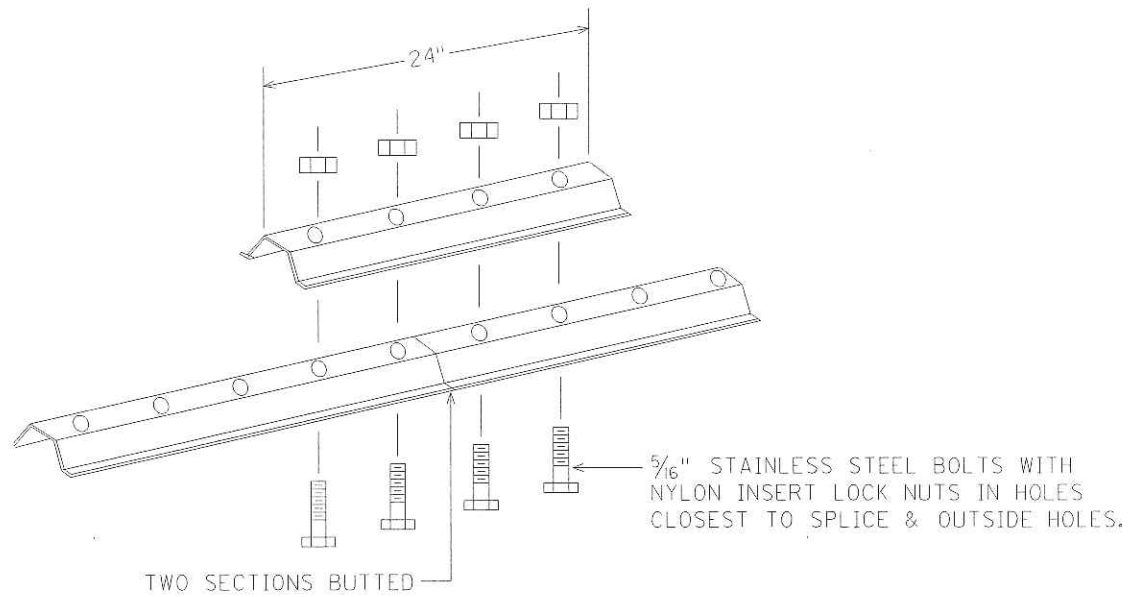
1. USE 3 LB/FT STUB POSTS, RISER POSTS, STRINGERS, KNEE BRACES, LATERAL BRACES AND KNEE BRACE STUB POSTS. ALL SHALL CONFORM TO MN/DOT 3401.
2. FOR TYPE D SIGN POSTS LENGTHS AND SPACINGS, SEE SIGN DATA SHEET.
3. TYPE D SIGN PANELS SHALL BE BOLTED TO STRINGERS AT 24" MAXIMUM INTERVALS IN ACCORDANCE WITH 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.

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

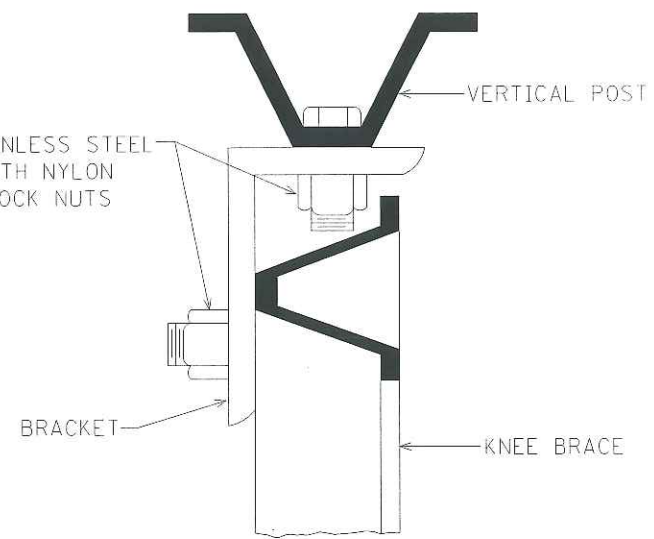


TYPE C & D SIGN
STRUCTURAL DETAILS

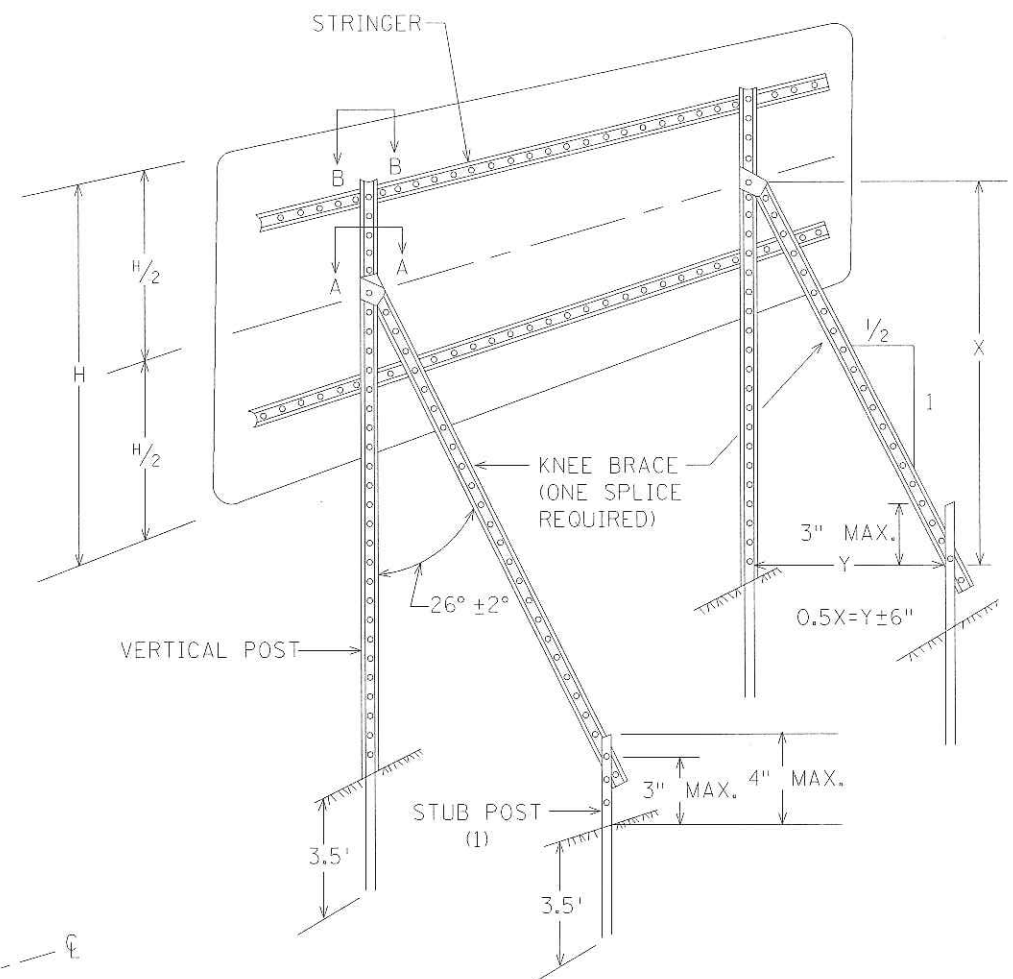
Sheet 1 of 3



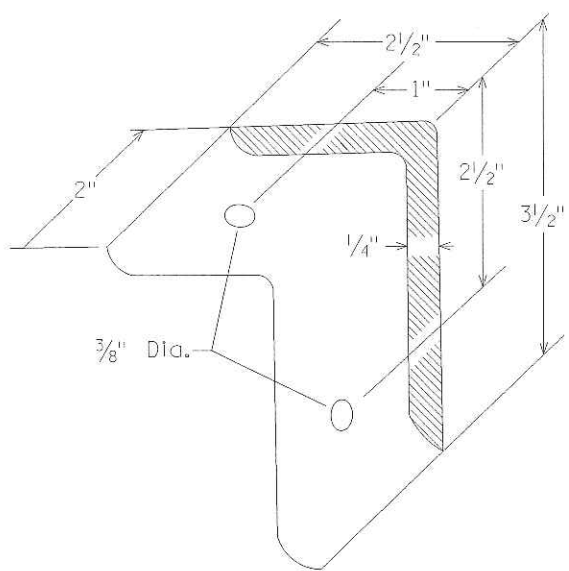
LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)



SECTION A-A

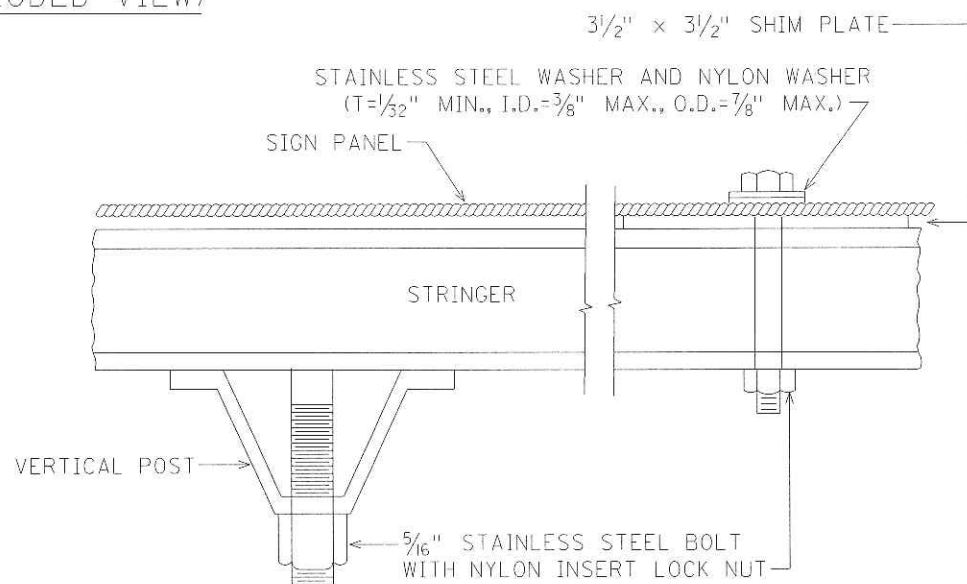


TYPICAL "A-FRAME" INSTALLATION TYPE "D" SIGNS

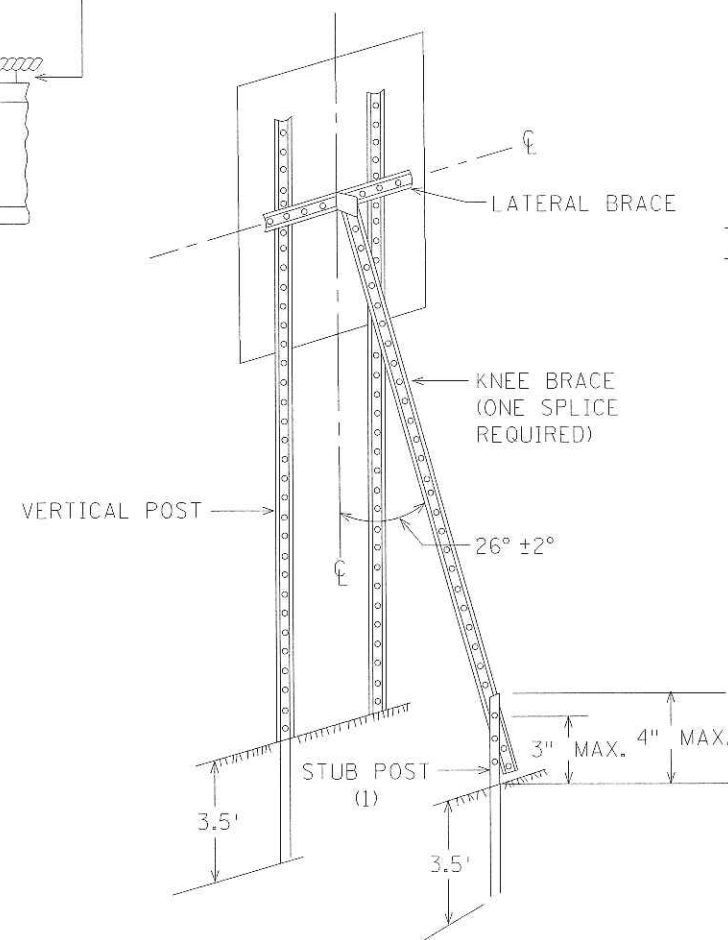


A-FRAME BRACKET

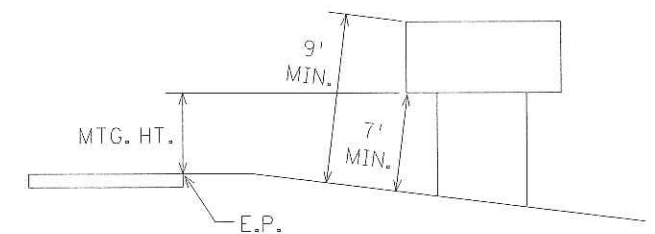
(STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)



SECTION B-B



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

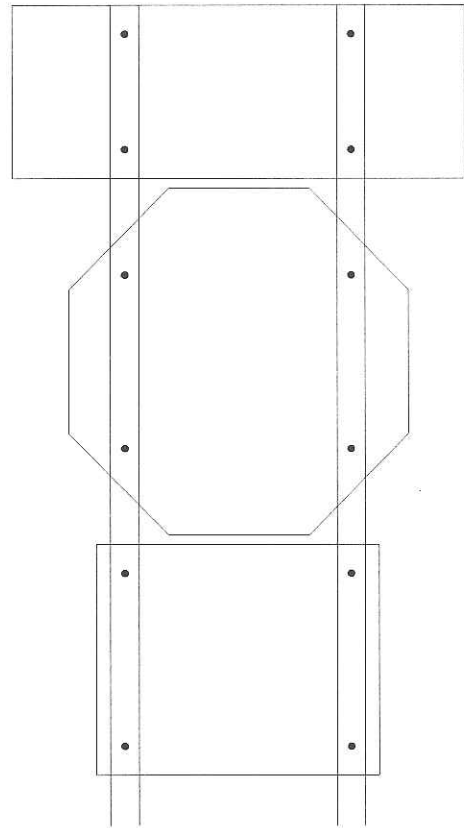


TYPICAL MOUNTING

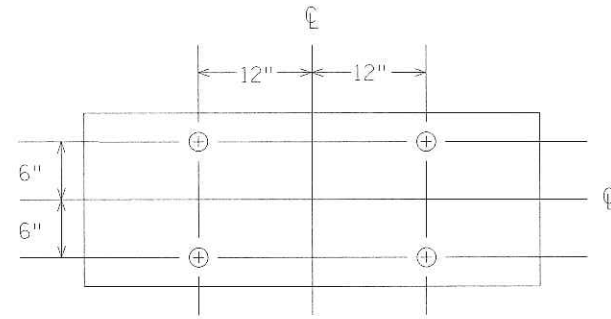
(1) OFFSET STUB POST 1' TOWARD ROADWAY RELATIVE TO VERTICAL POST. ATTACH STUB POST AND KNEE BRACE BACK TO BACK.

TYPE C & D SIGN STRUCTURAL DETAILS

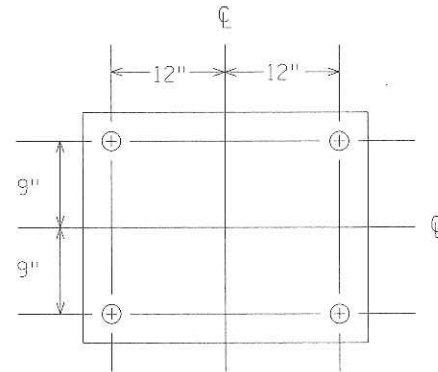
Sheet 2 of 3



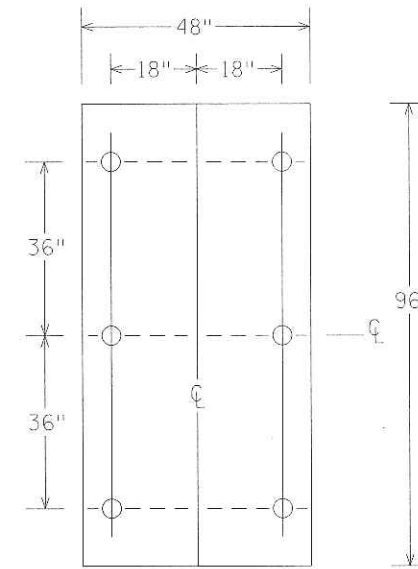
R6-1, R1-1 & (R6-3 OR R6-3a)
MOUNTING



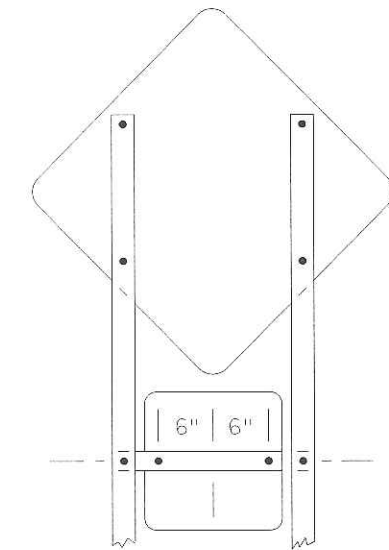
PUNCHING FOR R6-1(48" x 18")



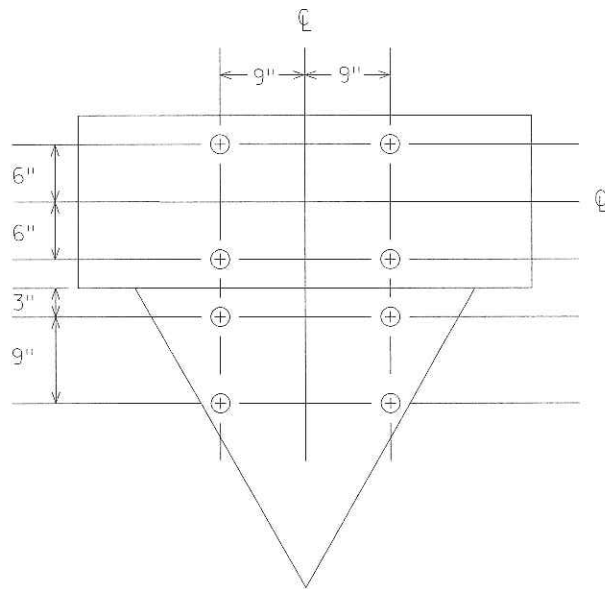
PUNCHING FOR R6-3 OR R6-3a(30" x 24")



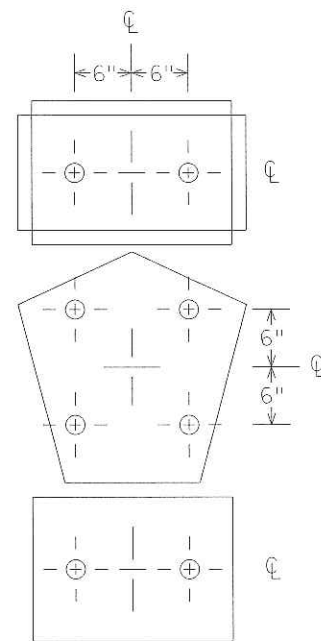
PUNCHING FOR R2-4b
SPEED LIMIT



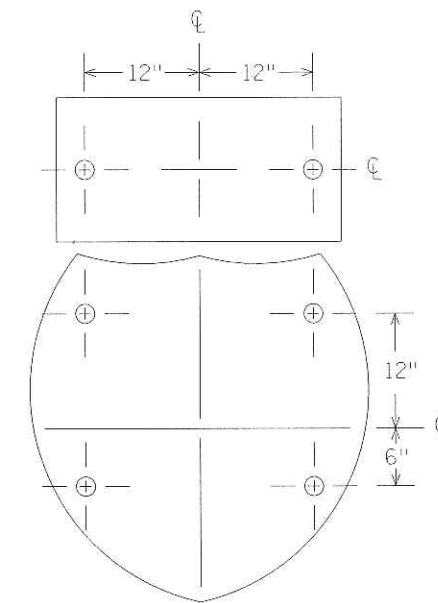
(W1-1, W1-2, W1-3, W1-4 OR W1-5) & W13-1
MOUNTING



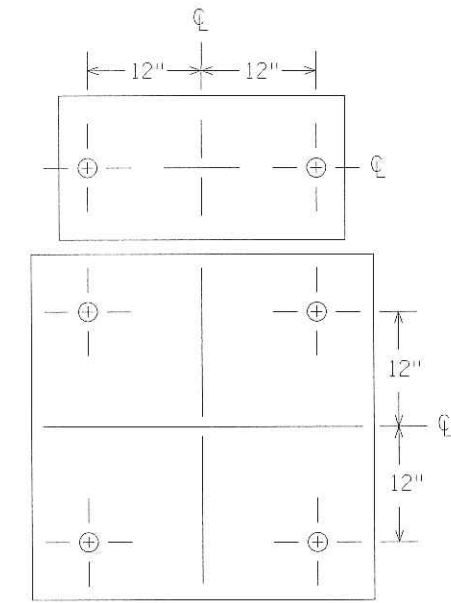
PUNCHING FOR R6-1(48" x 18")
& R1-2(36" x 36" x 36")



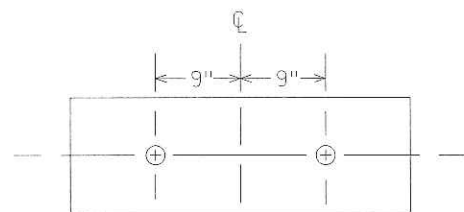
M2-1A [21" x 15"] OR
(M3-1A, M3-2A, M3-3A OR M3-4A) [24" x 12"] AND
M1-6 [24" x 24"] AND
(M5-1A, M5-2A, M6-1A, M6-2A, M6-3A M6-4A, M6-5A OR M6-6A) [21" x 15"]
PUNCHING



(M3-1A, M3-2A, M3-3A OR M3-4A) [30" x 15"] AND
M1-1 [45" x 36" OR 36" x 36"]
PUNCHING



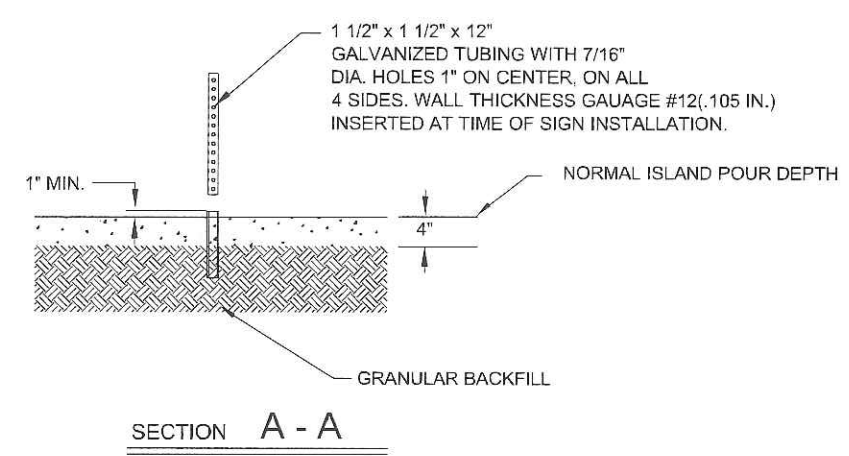
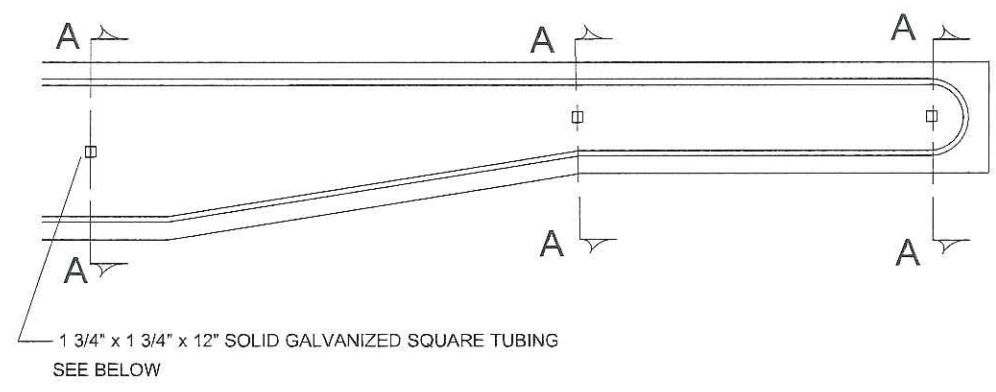
(M3-1, M3-1A, M3-2, M3-2A, M3-3, M3-3A M3-4 OR
M3-4A) [30" x 15"] AND (M1-4 OR M1-5A) [36" x 36"]
PUNCHING



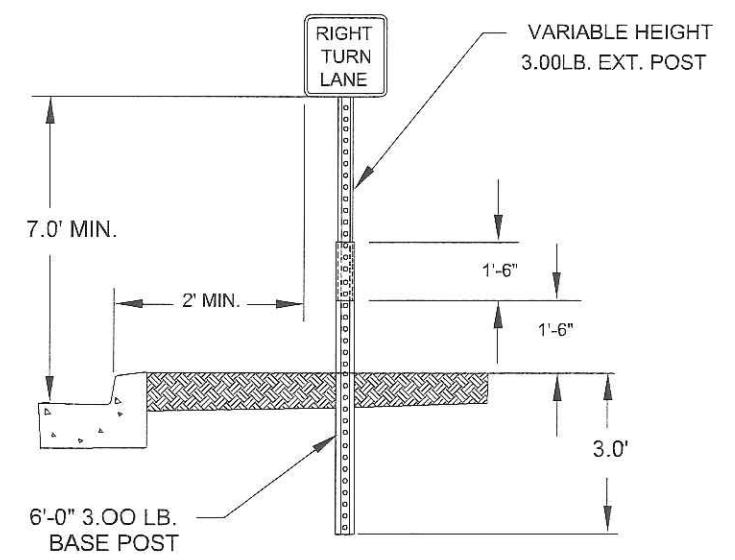
PUNCHING FOR R6-1(36" x 12")

TYPE C & D SIGN
STRUCTURAL DETAILS

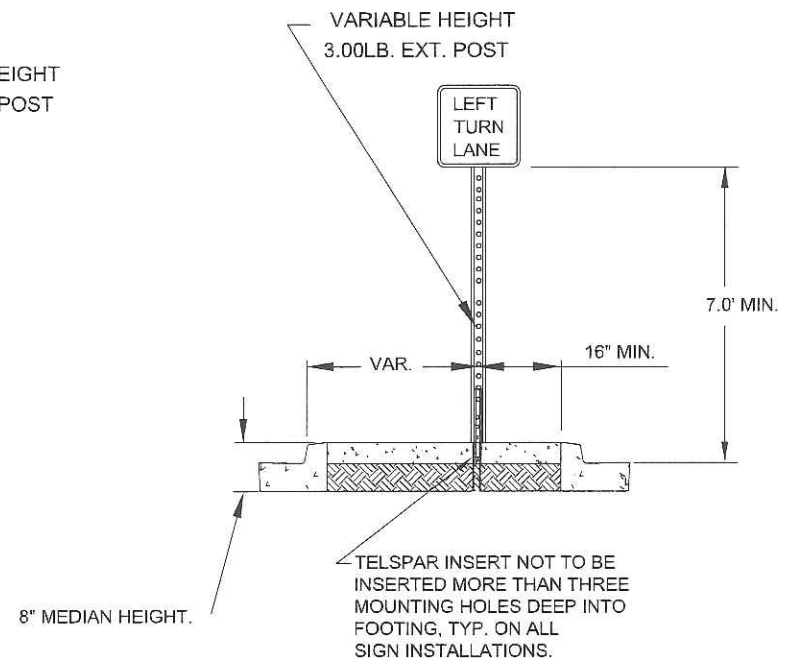
Sheet 3 of 3



GROUND POST MOUNT SIGN
INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN
INSTALLATION TYPICAL



8/11/11 AM
 4/19/2013
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NO	DATE	BY	CKD	APPR	REVISION

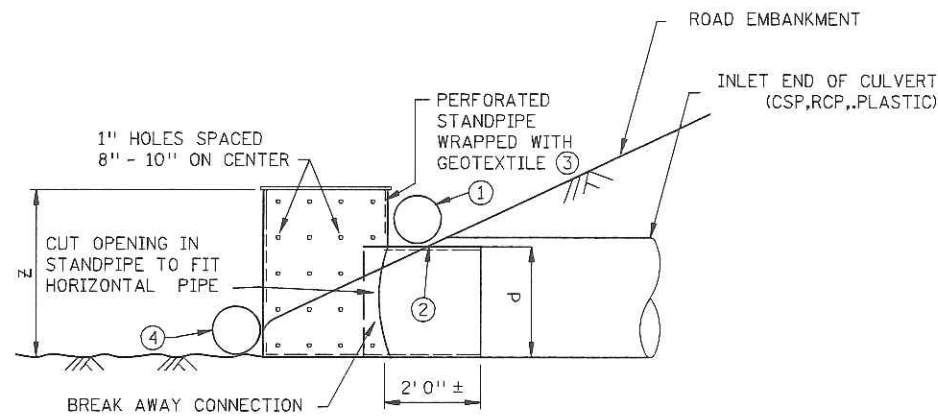
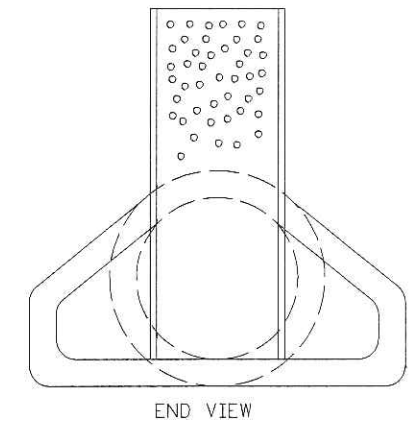
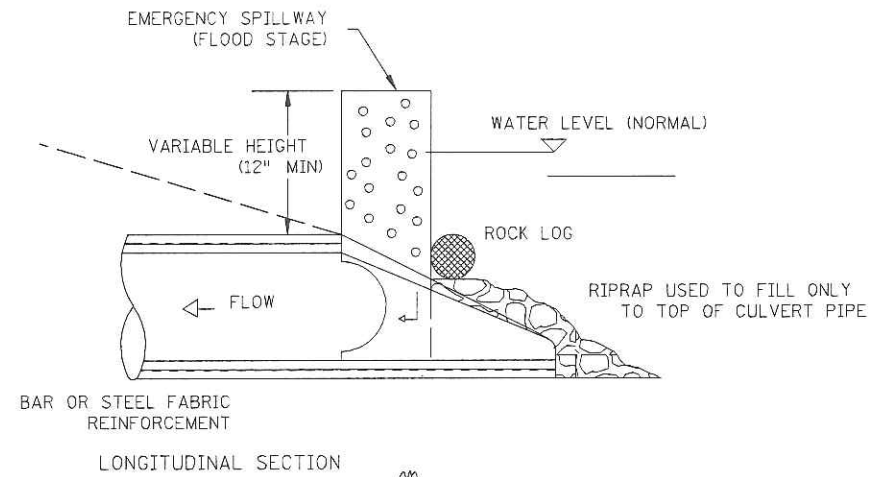
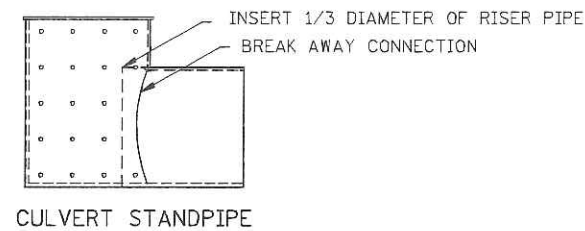
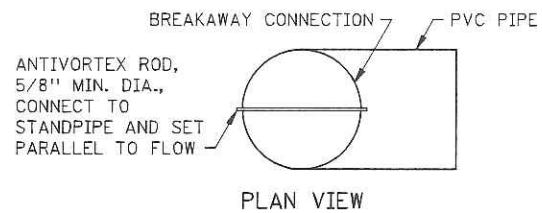
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: **AARON VACEK**
 Date: 4-19-2013 License # 44277

STATE AID PROJECT NO.	DRAWN BY S. MARTINS
STATE PROJECT NO.	DESIGNED BY A. VACEK
COUNTY PROJECT NO. 12-56-14	CHECKED BY J. McPHERSON
CITY PROJECT NO.	COMM. NO. 0127841

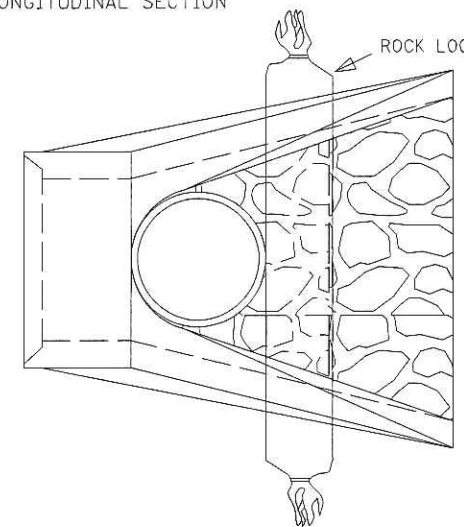


**ENGINEERS
PLANNERS
DESIGNERS**

ANOKA COUNTY		SHEET 14 OF 42
STANDARD PLANS 21ST AVENUE		
SIGNING & STRIPING DETAILS		



ELEVATION VIEW OF CULVERT INSTALLATION



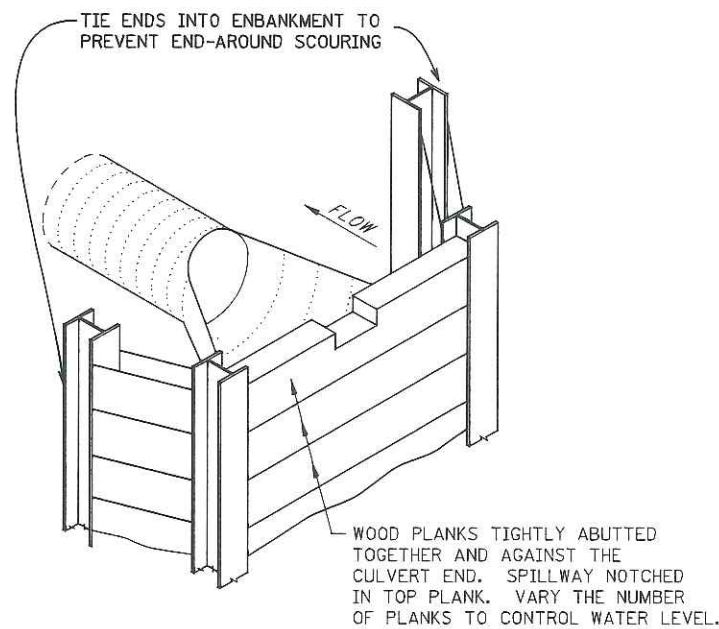
CULVERT STANDPIPE PROTECTION (D-RISER)

CULVERT SIZE: 12" - 36"

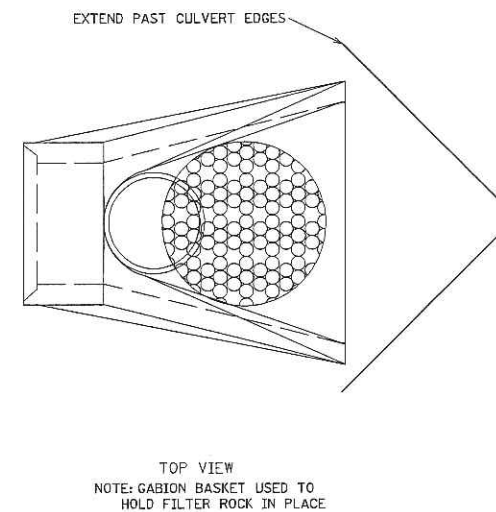
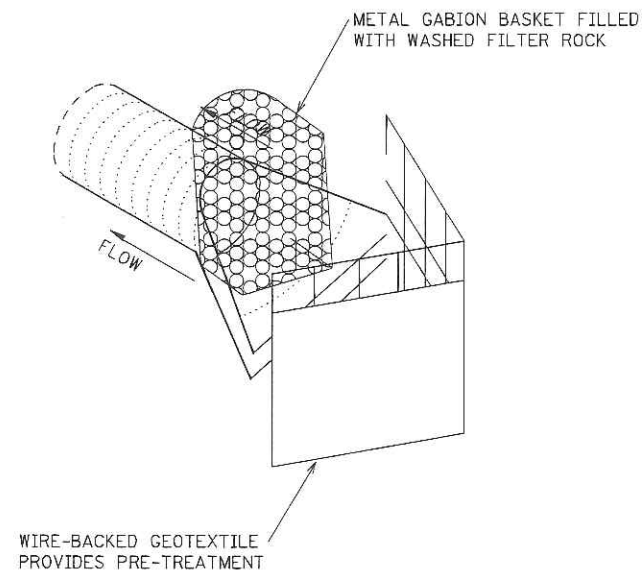
d = O.D. DIAMETER OF STANDPIPE TO FIT INTO I.D. DIAMETER OF PLAN CULVERT
z = LENGTH OF PERFORATED STANDPIPE (MIN d+12")

CULVERT STANDPIPE PROTECTION (D-RISER)

FOR SEDIMENT CONTROL ON CULVERT INLET



WOOD PLANK WEIR FOR SEDIMENT CONTROL AT CULVERT INLETS



NOTES:

- SEE SPECS. 2573, 3891 & 3893.
- MANUFACTURED ALTERNATIVES LISTED ON Mn/DOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED.
- ① ROCK LOG OR SANDBAG TO HOLD STANDPIPE AND ACT AS A SEAL BETWEEN RISER PIPE AND CULVERT.
- ② INSTALL CULVERT APRON AND SLIDE TEMPORARY STANDPIPE INTO CSP OR RCP CULVERT. AFTER VEGETATION IS ESTABLISHED REMOVE TEMPORARY STANDPIPE.
- ③ ALL GEOTEXTILE USED FOR CULVERT PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886 FOR MACHINE SLICED.
- ④ ROCK LOG OR RIP RAP TO HOLD STANDPIPE AND ACT AS A FILTER BETWEEN RISER PIPE AND CULVERT.

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NO	DATE	BY	CHKD	APPR	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.
Print Name: AARON VACEK
Date: 4-17-2013 License #: 44277

STATE AID PROJECT NO.
STATE PROJECT NO.
COUNTY PROJECT NO. 12-56-14
CITY PROJECT NO.

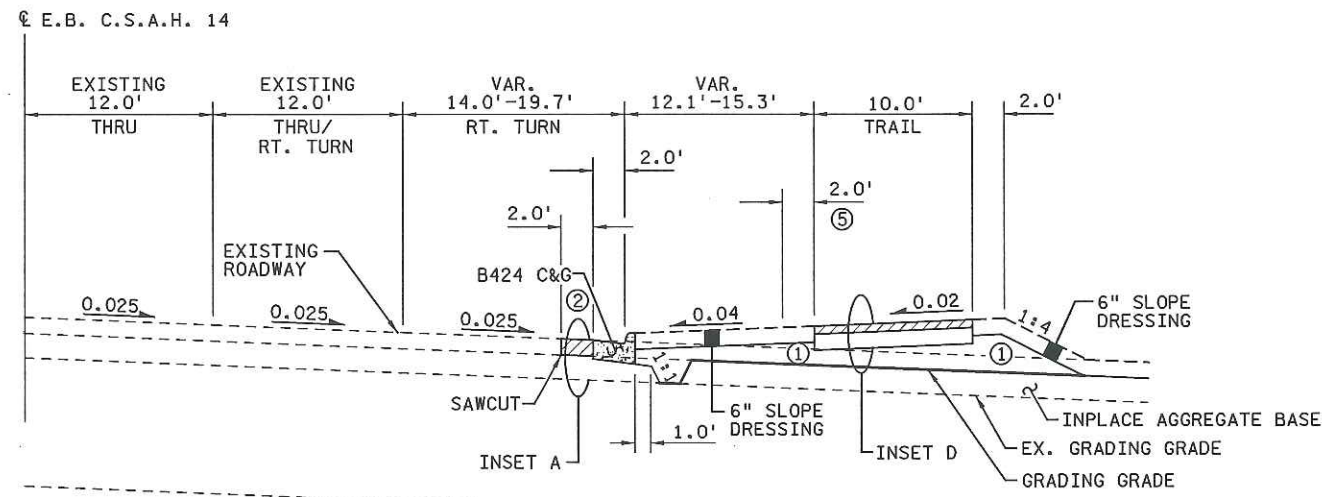
DRAWN BY S. MARTINS
DESIGNED BY A. VACEK
CHECKED BY J. McPHERSON
COMM. NO. 0127841



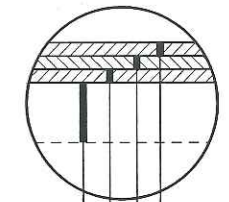
ENGINEERS PLANNERS DESIGNERS

ANOKA COUNTY
STANDARD PLANS
21ST AVENUE

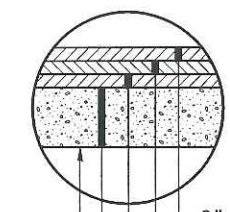
SHEET 15 OF 42



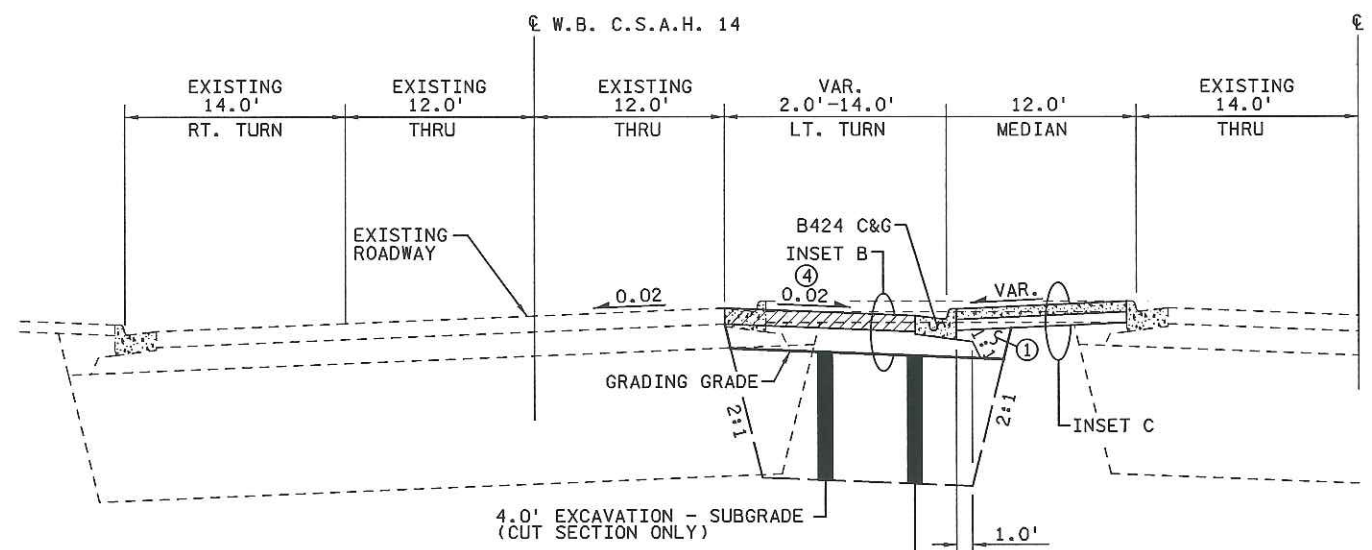
C.S.A.H. 14
 E.B. STA. 189+75.5 TO E.B. STA. 191+25.8
 TRAIL
 E.B. STA. 189+89.5 TO E.B. STA. 191+17.2



INSET A
C.S.A.H. 14

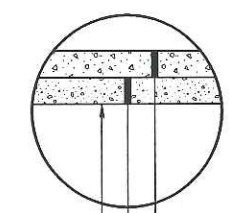


INSET B
C.S.A.H. 14
21ST AVE.

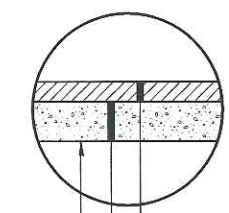


SUBGRADE SHALL CONSIST OF 4' GRANULAR MATERIAL OF WHICH THE UPPER 1' SHALL MEET SELECT GRANULAR MATERIAL, MN/DOT SPEC. 3149.

C.S.A.H. 14
 W.B. STA. 185+00.6 TO W.B. STA. 189+80.9



INSET C
CONCRETE WALK



INSET D
BITUMINOUS TRAIL

GENERAL NOTES:
 ALL SLOPES ARE IN FOOT PER FOOT FORMAT.

- NOTES:
- ① BACKFILL WITH SUITABLE GRADING MATERIAL.
 - ② MATCH EXISTING CROSS SLOPE.
 - ④ SEE DRAINAGE AND SUPERELEVATION PLANS FOR SUPERELEVATION TRANSITIONS.
 - ⑤ 2.0' OBSTACLE FREE ZONE.

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NO	DATE	BY	CKD	APPR	REVISION

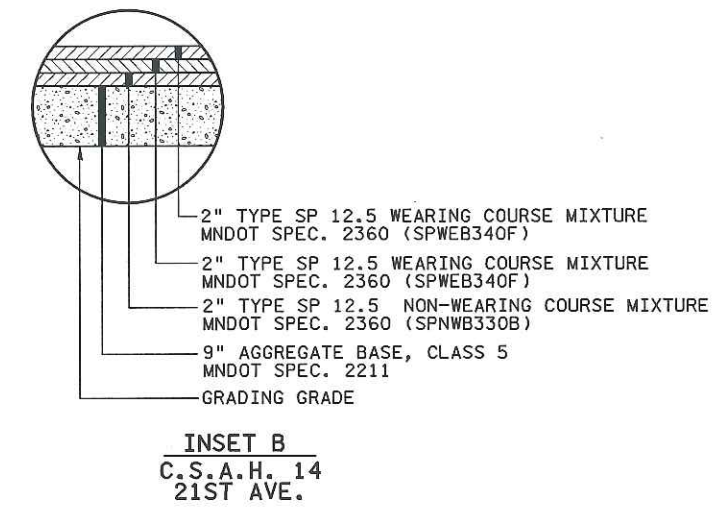
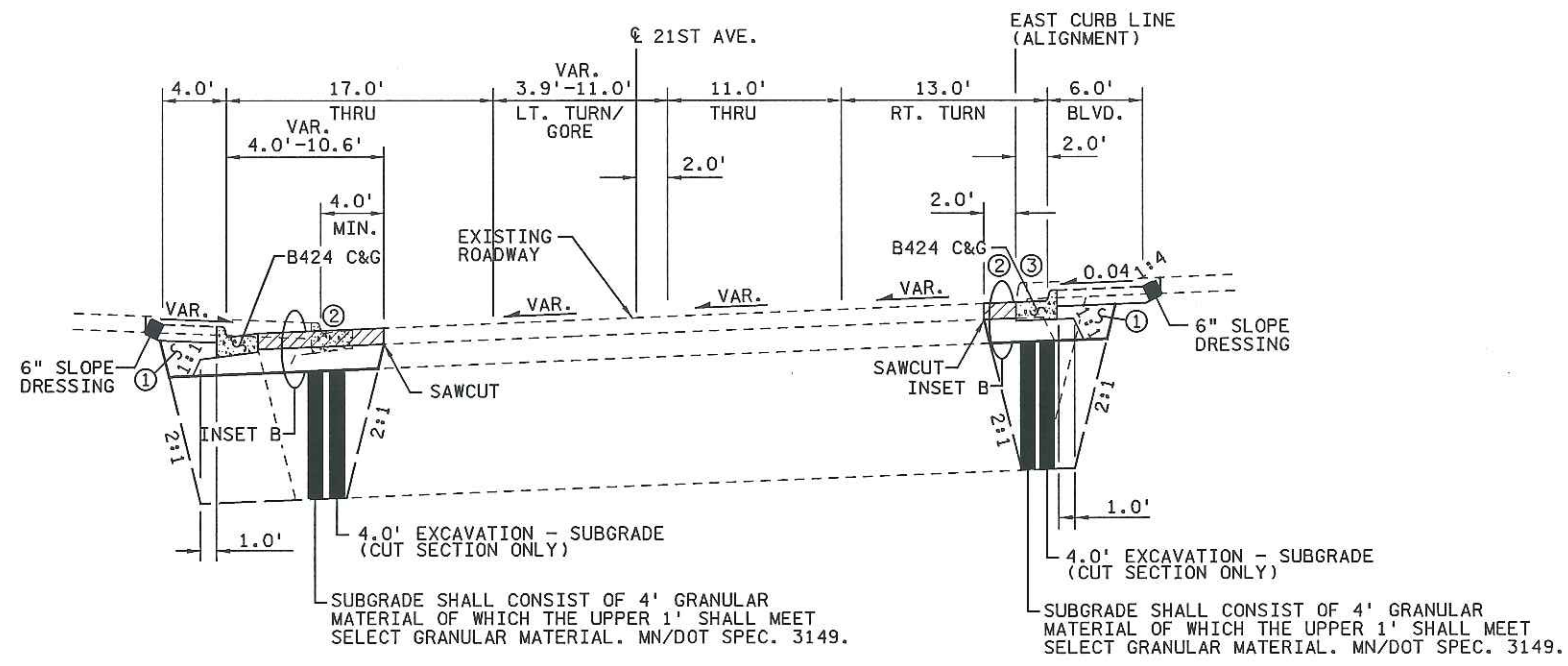
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: AARON VACEK
Aaron Vacek
 Date: 4-17-2013 License # 44277

STATE AID PROJECT NO.
 STATE PROJECT NO.
 COUNTY PROJECT NO. 12-56-14
 CITY PROJECT NO.
 DRAWN BY S. MARTINS
 DESIGNED BY A. VACEK
 CHECKED BY J. McPHERSON
 COMM. NO. 0127841

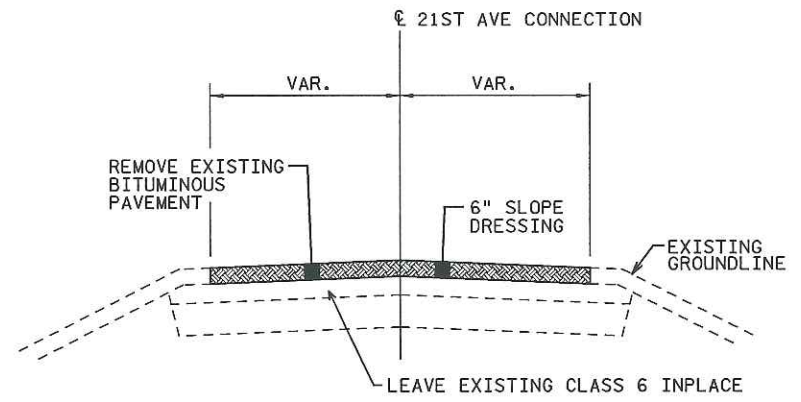


ENGINEERS
 PLANNERS
 DESIGNERS

ANOKA COUNTY
 TYPICAL SECTIONS
 21ST AVENUE
 SHEET 16 OF 42



21ST AVENUE



21ST AVE. CONNECTION

GENERAL NOTES:
 ALL SLOPES ARE IN FOOT PER FOOT FORMAT.

- NOTES:
 ① BACKFILL WITH SUITABLE GRADING MATERIAL.
 ② MATCH EXISTING CROSS SLOPE.
 ③ GUTTER TO MATCH EXISTING CROSS SLOPE.

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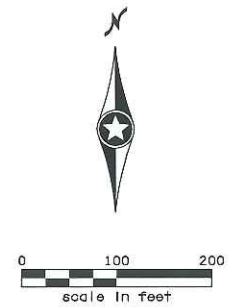
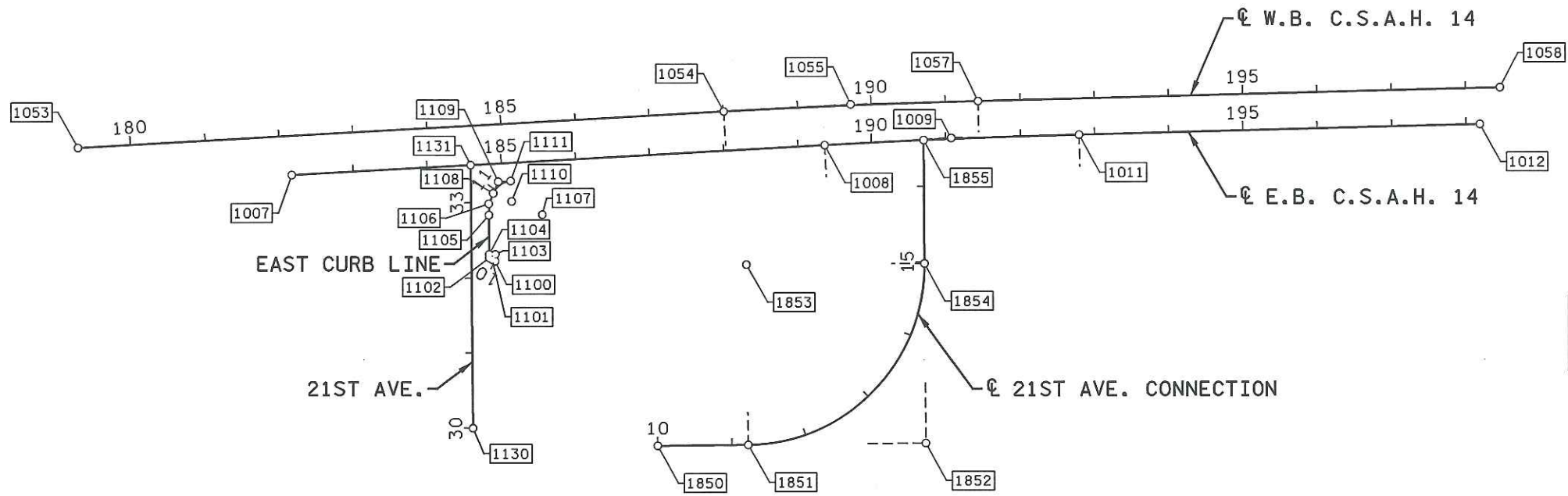
NO	DATE	BY	CHKD	APPR	REVISION

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ANOKA COUNTY
 TYPICAL SECTIONS
21ST AVENUE



HORIZONTAL CONTROL
 HORIZONTAL CONTROL BASED ON
 ANOKA COUNTY COORDINATE
 SYSTEM, NAD 83 (1986 ADJ.)

ALIGNMENT TABULATION										
POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
			SPIRAL CURVE DATA							
			ANGLE (θs)	DEGREE	ST	LT	LS			
☉ E.B. C.S.A.H. 14										
1007	POT	☉ E.B. C.S.A.H. 14 182+17.041						559,336.4837	146,962.5678	
1008	PC	189+36.315						560,054.6606	147,002.2735	86° 50' 07.89"
1009	PI	191+07.645	1° 42' 47.43" RT	0° 30' 00.00"	11,459.156'	171.330'	342.635'	560,225.7296	147,011.7313	PI
1010	CC							560,687.2339	135,560.5907	
1011	PT	192+78.950						560,397.0049	147,016.0706	88° 32' 55.32"
1012	POT	☉ E.B. C.S.A.H. 14 198+18.987						560,936.8694	147,029.7483	
☉ W.B. C.S.A.H. 14										
1053	POT	☉ W.B. C.S.A.H. 14 179+29.045						559,048.4083	146,998.7205	
1054	PC	188+00.940						559,918.9734	147,046.8512	86° 50' 07.90"
1055	PI	189+72.270	1° 42' 47.43" RT	0° 30' 00.00"	11,459.156'	171.330'	342.635'	560,090.0424	147,056.3090	PI
1056	CC							560,551.5461	135,605.1683	
1057	PT	191+43.575						560,261.3177	147,060.6483	88° 32' 55.33"
1058	POT	☉ W.B. C.S.A.H. 14 198+46.166						560,963.6840	147,078.4430	
☉ 21ST AVE.										
1130	POT	☉ 21ST AVE. 30+00.000						559,580.9969	146,626.1187	359° 30' 37.13"
1131	POT	☉ 21ST AVE. 33+49.815						559,578.0071	146,975.9208	

ALIGNMENT TABULATION										
POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
			SPIRAL CURVE DATA							
			ANGLE (θs)	DEGREE	ST	LT	LS			
☉ 21ST AVE. CONNECTION										
1850	POT	☉ 21ST AVE CONNECTION 10+00.000						559,829.7795	146,602.6433	
1851	PC	11+21.927						559,951.7004	146,603.8209	89° 26' 47.85"
1852	PI	13+61.117	89° 48' 23.13" LT	23° 52' 23.67"	240.000'	239.191'	376.180'	560,190.8798	146,606.1310	PI
1853	CC							559,949.3825	146,843.8097	
1854	PT	14+98.107						560,189.3778	146,845.3168	359° 38' 24.71"
1855	POT	☉ 21ST AVE CONNECTION 16+61.675						560,188.3506	147,008.8818	
EAST CURB LINE										
1100	POT	EAST CURB LINE 10+00.000						559,610.8865	146,848.4831	
1101	PC	10+04.397						559,607.0644	146,850.6569	299° 37' 44.28"
1102	PI	10+09.005	59° 52' 52.85" RT	71° 11' 50.08"	8.000'	4.608'	8.361'	559,603.0592	146,852.9348	PI
1103	CC							559,611.0195	146,857.6108	
1104	PT	10+12.758						559,603.0198	146,857.5424	359° 30' 37.13"
1105	PC	10+64.895						559,602.5742	146,909.6771	
1106	PI	10+79.878	23° 30' 38.59" RT	79° 34' 38.90"	72.000'	14.983'	29.544'	559,602.4461	146,924.6596	PI
1107	CC							559,674.5716	146,910.2924	23° 01' 15.72"
1108	PCC	10+94.439						559,608.3056	146,938.4494	
1109	PI	11+11.293	63° 56' 52.15" RT	212° 12' 23.73"	27.000'	16.854'	30.135'	559,614.8968	146,953.9615	PI
1110	CC							559,633.1553	146,927.8905	
1111	PT	EAST CURB LINE 11+24.574						559,631.7276	146,954.8528	86° 58' 07.87"

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NO	DATE	BY	CKD	APPR	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.
 Print Name: AARON VACEK
Aaron Vacek
 Date: 4-17-2013 License #: 44277

STATE AID PROJECT NO.
 STATE PROJECT NO.
 COUNTY PROJECT NO. 12-56-14
 CITY PROJECT NO.
 DRAWN BY S. MARTINS
 DESIGNED BY A. VACEK
 CHECKED BY J. McPHERSON
 COMM. NO. 0127841



ANOKA COUNTY
 ALIGNMENT PLAN AND TABULATION
 21ST AVENUE





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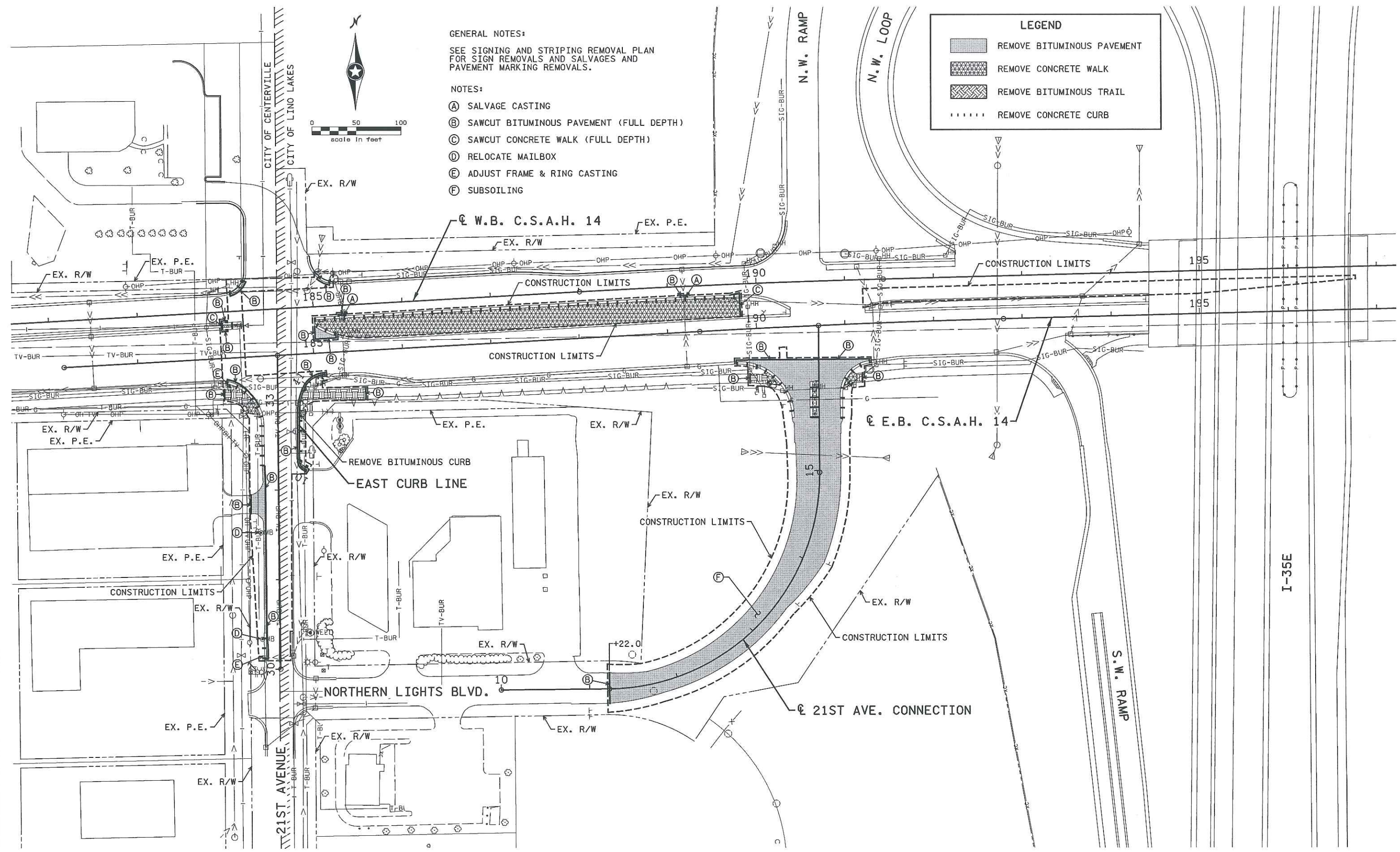
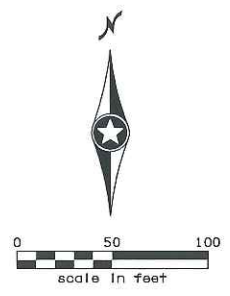
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GENERAL NOTES:
SEE SIGNING AND STRIPING REMOVAL PLAN FOR SIGN REMOVALS AND SALVAGES AND PAVEMENT MARKING REMOVALS.

NOTES:
 (A) SALVAGE CASTING
 (B) SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH)
 (C) SAWCUT CONCRETE WALK (FULL DEPTH)
 (D) RELOCATE MAILBOX
 (E) ADJUST FRAME & RING CASTING
 (F) SUBSOILING

LEGEND

-  REMOVE BITUMINOUS PAVEMENT
-  REMOVE CONCRETE WALK
-  REMOVE BITUMINOUS TRAIL
-  REMOVE CONCRETE CURB



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Print Name: **AARON VACEK**

Aaron Vacek
Date: **4-17-2013** License # **44277**

STATE AID PROJECT NO.
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COUNTY PROJECT NO. 12-56-14
CITY PROJECT NO.

DRAWN BY S. MARTINS
DESIGNED BY A. VACEK
CHECKED BY J. McPHERSON
COMM. NO. 0127841



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DESIGNERS



ANOKA COUNTY
TOPOGRAPHY, UTILITY AND REMOVAL PLAN
21ST AVENUE

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42

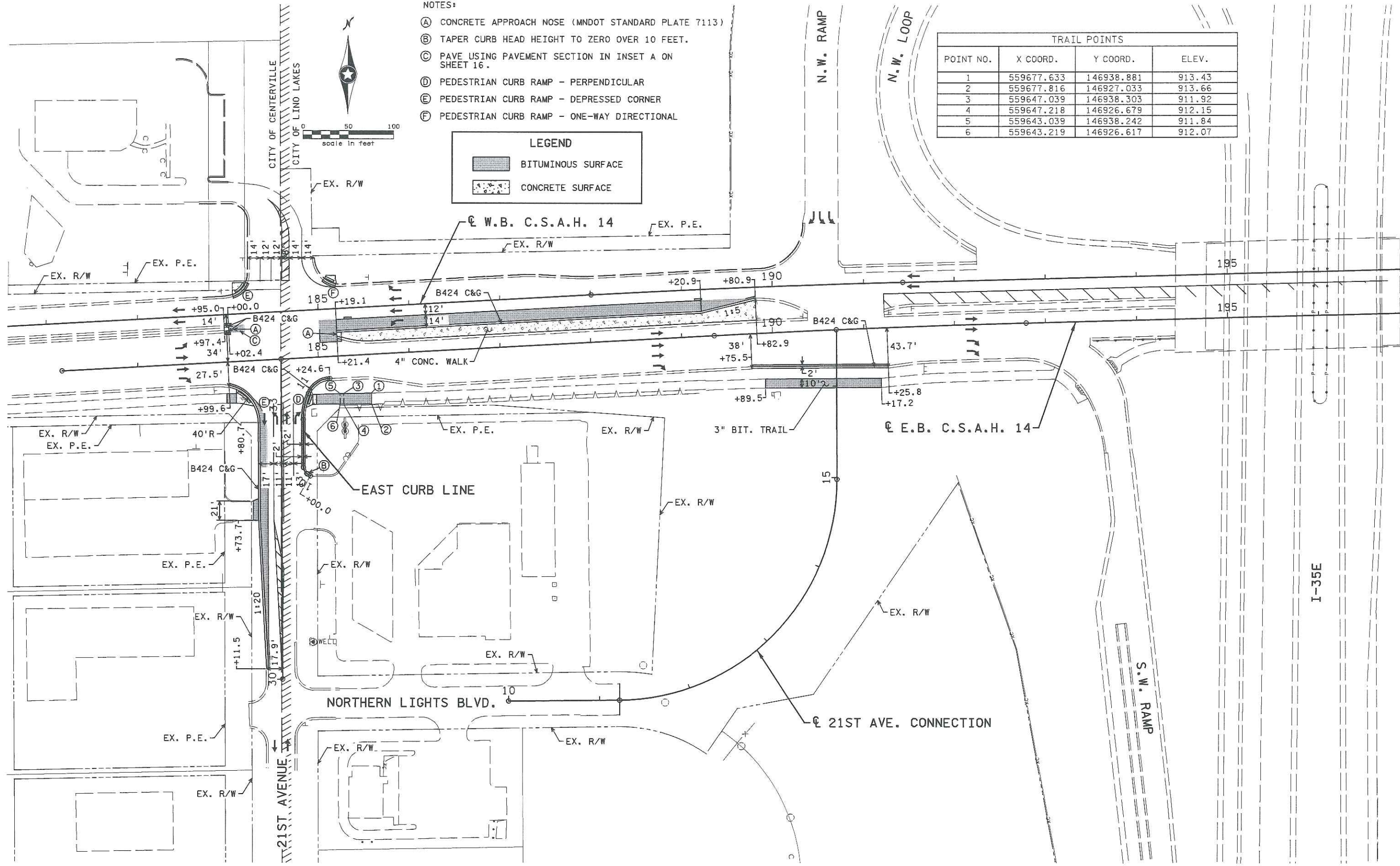
NOTES:

- (A) CONCRETE APPROACH NOSE (MNDOT STANDARD PLATE 7113)
- (B) TAPER CURB HEAD HEIGHT TO ZERO OVER 10 FEET.
- (C) PAVE USING PAVEMENT SECTION IN INSET A ON SHEET 16.
- (D) PEDESTRIAN CURB RAMP - PERPENDICULAR
- (E) PEDESTRIAN CURB RAMP - DEPRESSED CORNER
- (F) PEDESTRIAN CURB RAMP - ONE-WAY DIRECTIONAL

LEGEND

-  BITUMINOUS SURFACE
-  CONCRETE SURFACE

TRAIL POINTS			
POINT NO.	X COORD.	Y COORD.	ELEV.
1	559677.633	146938.881	913.43
2	559677.816	146927.033	913.66
3	559647.039	146938.303	911.92
4	559647.218	146926.679	912.15
5	559643.039	146938.242	911.84
6	559643.219	146926.617	912.07



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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: **AARON VACEK**
Aaron Vacek
 Date: **4-18-2013** License # **44277**

STATE AID PROJECT NO.
 STATE PROJECT NO.
 COUNTY PROJECT NO. 12-56-14
 CITY PROJECT NO.

DRAWN BY
S. MARTINS
 DESIGNED BY
A. VACEK
 CHECKED BY
J. McPHERSON
 COMM. NO. 0127841

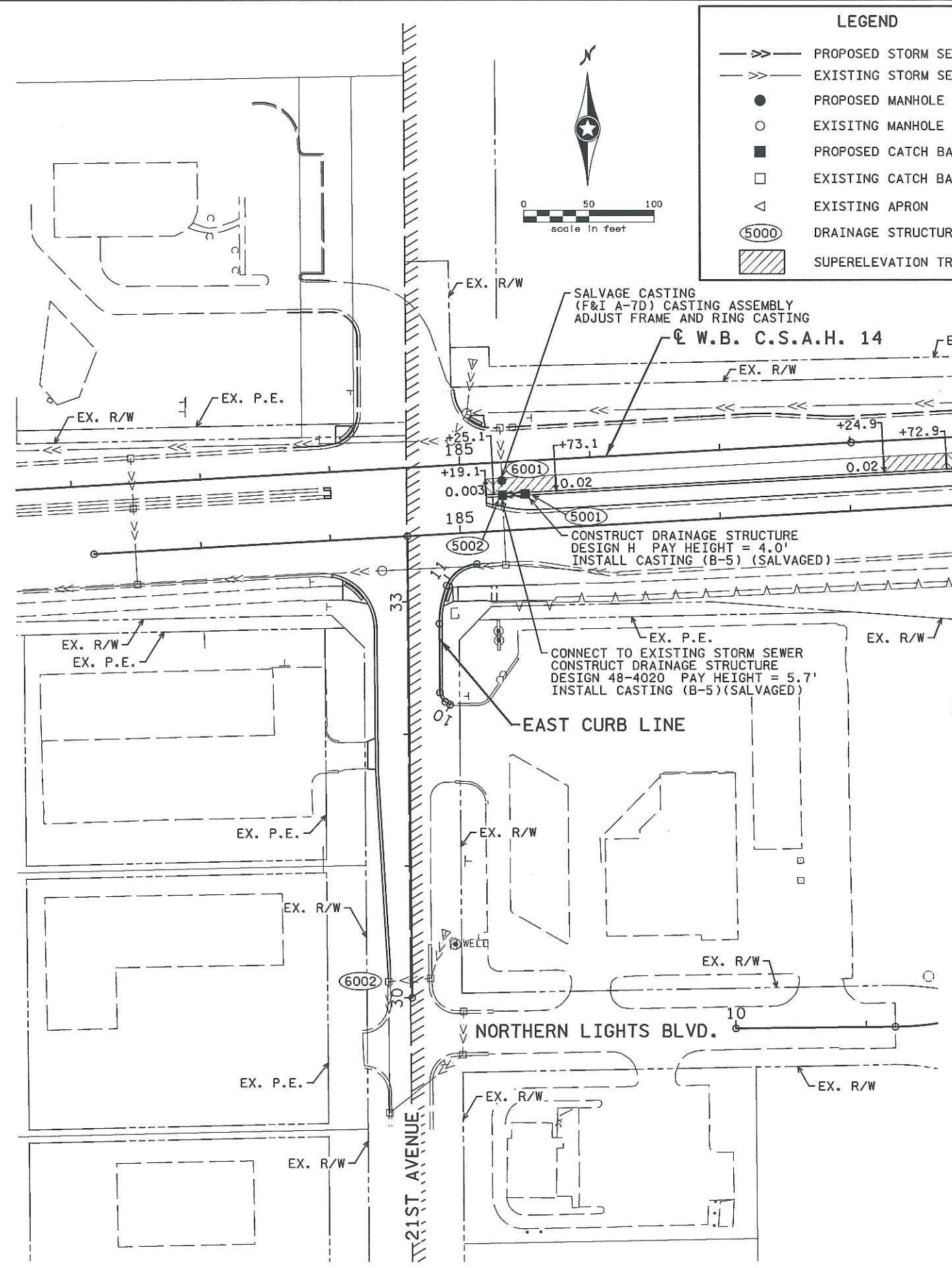


**ENGINEERS
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**ANOKA COUNTY
 CONSTRUCTION PLAN
 21ST AVENUE**

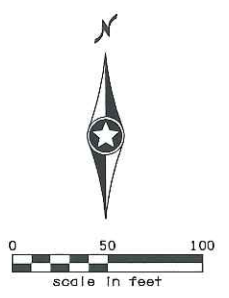
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LEGEND

- >— PROPOSED STORM SEWER
- >-> EXISTING STORM SEWER
- PROPOSED MANHOLE
- EXISTING MANHOLE
- PROPOSED CATCH BASIN
- EXISTING CATCH BASIN
- △ EXISTING APRON
- ⑤ DRAINAGE STRUCTURE NUMBER
- ▨ SUPERELEVATION TRANSITION



GENERAL NOTES:
 CROSS SLOPES ARE IN FT. / FT.
 SEE CONSTRUCTION PLAN FOR ROADWAY DIMENSIONS.
 OFFSETS ARE TO CENTER OF GRATE.

930	EX. CB 6001 W.B. C.S.A.H. 14 STA: 185+31.8 13.0' RT.	CB 5002 W.B. C.S.A.H. 14 STA: 185+31.8 25.0' RT. T.C. 912.68	CB 5002 W.B. C.S.A.H. 14 STA: 185+49.1 25.0' RT. T.C. 913.13	CB 5001 W.B. C.S.A.H. 14 STA: 185+49.1 25.0' RT. T.C. 913.13	930
925					925
920					920
915					915
910					910
905	EX. INV. 907.03 (FIELD VERIFY) INV. 906.97 (FIELD VERIFY) EX. 15" RCP	PROPOSED GROUND LINE EXISTING GROUND LINE EX. CB	PROPOSED GROUND LINE EXISTING GROUND LINE	INV. 909.03 17' - 15" RC PIPE SEWER DES 3006 @ 2.50% INV. 908.60	905
900	EX. INV. 906.73 (FIELD VERIFY) EX. INV. 904.83 (FIELD VERIFY)				900
895					895

B.M. ELEV. = 931.468
 MNDOT DISK 0282 S 2010
 DATUM NAVD 88

NO	DATE	BY	CHKD	APPR	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.
 Print Name: **ROBERT J. LEBE**
 Date: *4/17/13* License # 41951







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 COUNTY PROJECT NO. 12-56-14
 CITY PROJECT NO.
 DRAWN BY S. MARTINS
 DESIGNED BY B. LEBE
 CHECKED BY J. McPHERSON
 COMM. NO. 0127841

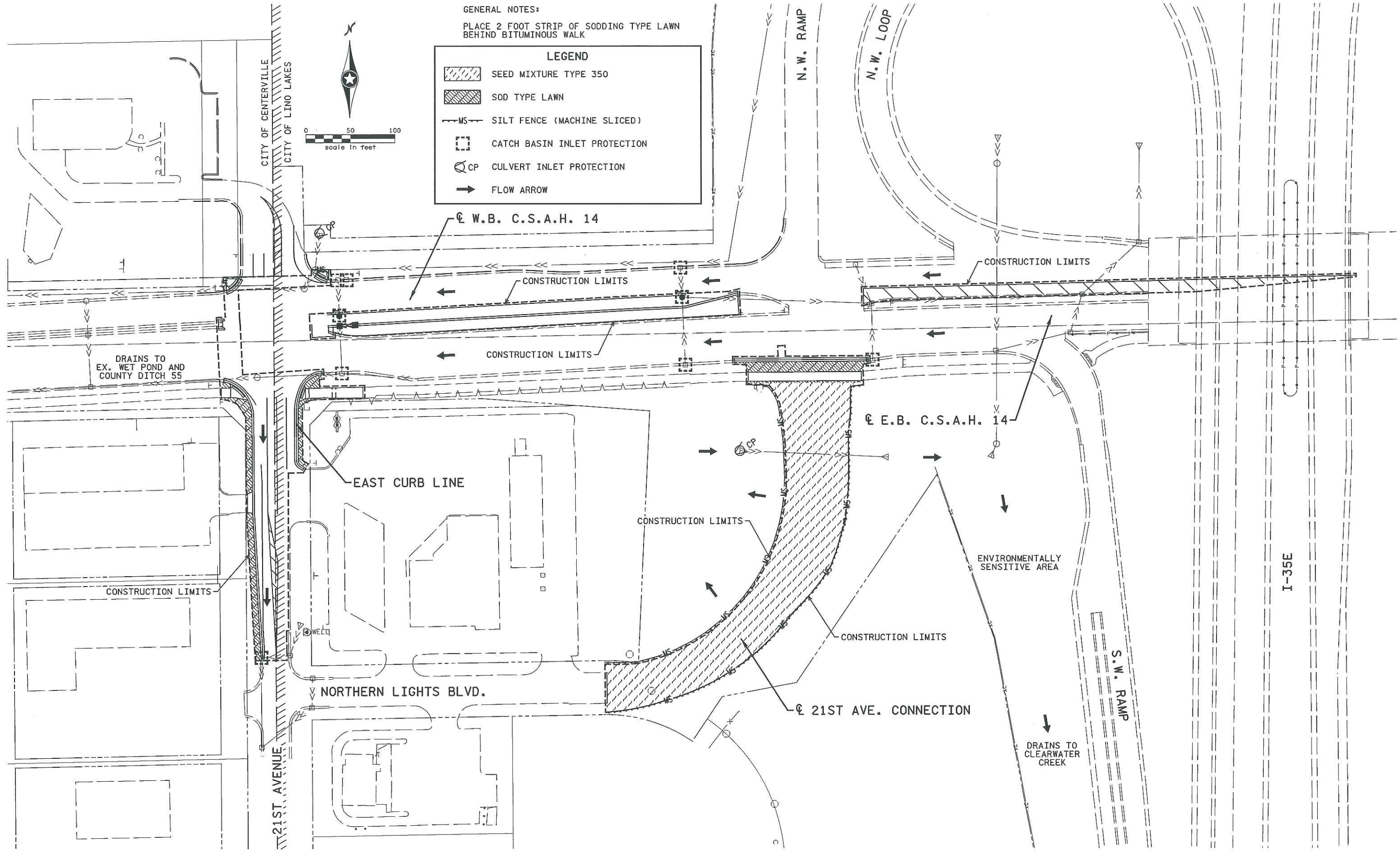
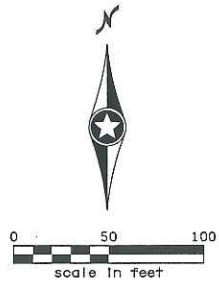


ANOKA COUNTY
 DRAINAGE AND SUPERELEVATION PLAN
 21ST AVENUE
 SHEET 21 OF 42

GENERAL NOTES:
 PLACE 2 FOOT STRIP OF SODDING TYPE LAWN
 BEHIND BITUMINOUS WALK

LEGEND

-  SEED MIXTURE TYPE 350
-  SOD TYPE LAWN
-  SILT FENCE (MACHINE SLICED)
-  CATCH BASIN INLET PROTECTION
-  CULVERT INLET PROTECTION
-  FLOW ARROW



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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: **AARON VACEK**

Aaron Vacek

Date: 4-17-2013 License # 44277

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STATE PROJECT NO. _____

COUNTY PROJECT NO. 12-56-14

CITY PROJECT NO. _____

DRAWN BY
S. MARTINS

DESIGNED BY
A. VACEK

CHECKED BY
J. McPHERSON

COMM. NO. 0127841



ENGINEERS
PLANNERS
DESIGNERS

ANOKA COUNTY

EROSION CONTROL AND TURF ESTABLISHMENT PLAN

21ST AVENUE

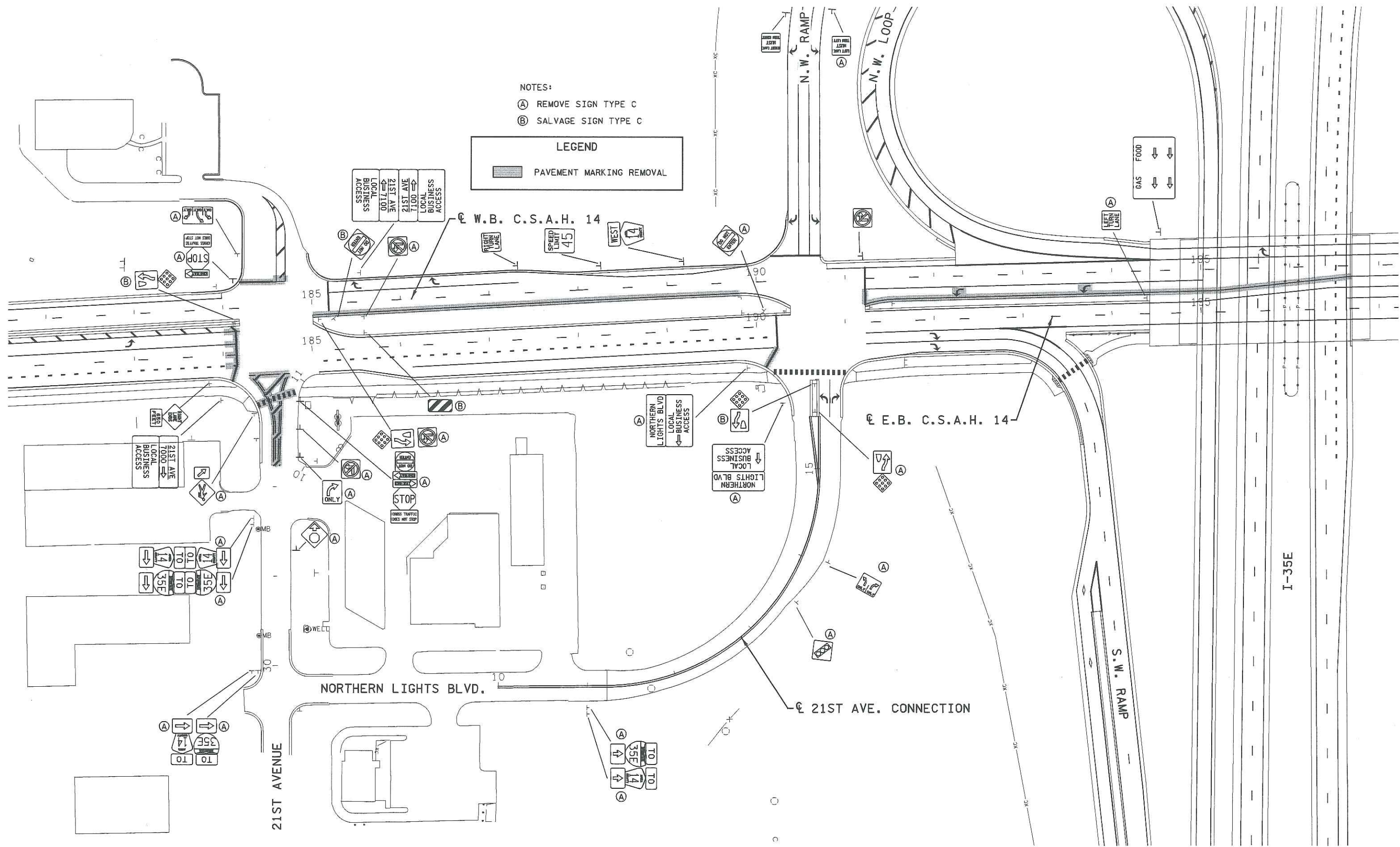
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NOTES:

- (A) REMOVE SIGN TYPE C
- (B) SALVAGE SIGN TYPE C

LEGEND

PAVEMENT MARKING REMOVAL



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Date: *4-19-2013* License # 44277

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STATE PROJECT NO. _____

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DRAWN BY
S. MARTINS

DESIGNED BY
A. VACEK

CHECKED BY
J. McPHERSON

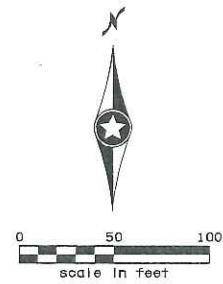
COMM. NO. 0127841



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ANOKA COUNTY
SIGNING AND STRIPING REMOVAL PLAN
21ST AVENUE

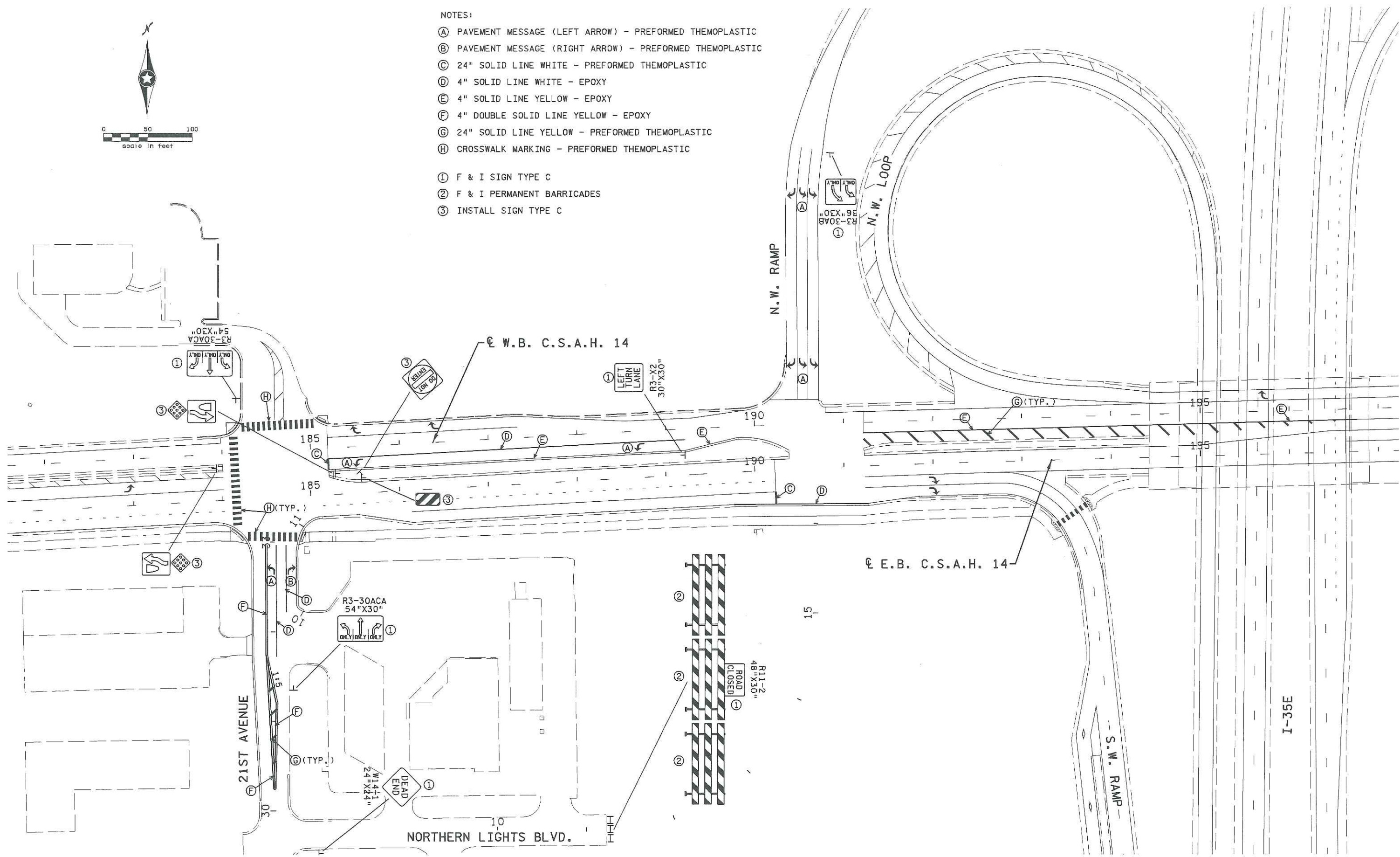
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42



NOTES:

- (A) PAVEMENT MESSAGE (LEFT ARROW) - PREFORMED THEMOPLASTIC
- (B) PAVEMENT MESSAGE (RIGHT ARROW) - PREFORMED THEMOPLASTIC
- (C) 24" SOLID LINE WHITE - PREFORMED THEMOPLASTIC
- (D) 4" SOLID LINE WHITE - EPOXY
- (E) 4" SOLID LINE YELLOW - EPOXY
- (F) 4" DOUBLE SOLID LINE YELLOW - EPOXY
- (G) 24" SOLID LINE YELLOW - PREFORMED THEMOPLASTIC
- (H) CROSSWALK MARKING - PREFORMED THEMOPLASTIC

- ① F & I SIGN TYPE C
- ② F & I PERMANENT BARRICADES
- ③ INSTALL SIGN TYPE C



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NO	DATE	BY	CHKD	APPR	REVISION

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Date: *4-19-2013* License # 44277

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DRAWN BY
S. MARTINS

DESIGNED BY
A. VACEK

CHECKED BY
J. McPHERSON

COMM. NO. 0127841

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ENGINEERS
PLANNERS
DESIGNERS

ANOKA COUNTY

SIGNING AND STRIPING PLAN

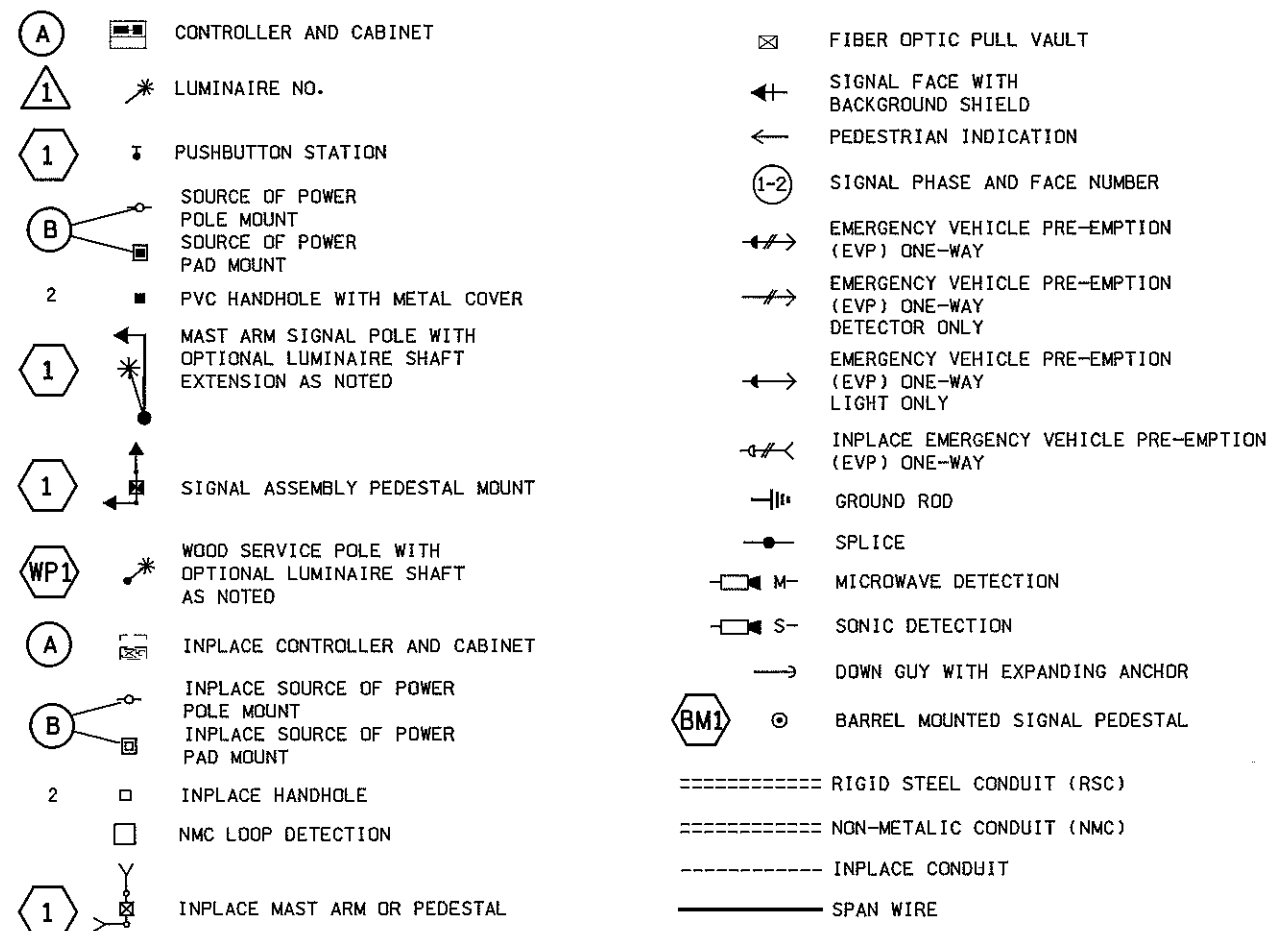
21ST AVENUE

SHEET
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OF
42

ABBREVIATIONS

APS	ACCESSIBLE PEDESTRIAN SIGNAL	NEU	NEUTRAL
AWF	ADVANCED WARNING FLASHER	NMC	NONMETALLIC CONDUIT
BL	BLUE	O	ORANGE
BL/BLK	BLUE WITH BLACK TRACER	O/BLK	ORANGE WITH BLACK TRACER
BLK	BLACK	P1-1 (e.g.)	PEDESTRIAN INDICATION (PHASE 1, NO. 1)
BLK/R	BLACK WITH RED TRACER	PB	PUSHBUTTON
BLK/WH	BLACK WITH WHITE TRACER	PB2-1 (e.g.)	PUSHBUTTON (PHASE 2, NO. 1)
CD	COUNTDOWN	PEC	PHOTOELECTRIC CELL
CH SW	CHECK SWITCH	PED	PEDESTRIAN
CLR	CLEAR	Ø	PHASE
D2-1 (e.g.)	DETECTOR (PHASE 2, NO. 1)	R	RED
DWK	DON'T WALK	R&S	REMOVE AND SALVAGE
EQ.G	EQUIPMENT GROUND	R/BLK	RED WITH BLACK TRACER
EVP	EMERGENCY VEHICLE PRE-EMPTION	RLTA	RED LEFT TURN ARROW
F&I	FURNISH AND INSTALL	RSC	RIGID STEEL CONDUIT
FL	FLASH/FLASHING	SQP	SOURCE OF POWER
G	GREEN	SPR	SPARE
G/BLK	GREEN WITH BLACK TRACER	ST LHT	STREET LIGHT
GLTA	GREEN LEFT TURN ARROW	STA	STATION
GRN	GREEN	SW	SWITCH
GR. RD.	GROUND ROD	SWD	SWITCHED
GRTA	GREEN RIGHT TURN ARROW	TDW	TELEPHONE DROP WIRE
GTHA	GREEN THRU ARROW	WH	WHITE
HH	HANDHOLE	WH/BLK	WHITE WITH BLACK TRACER
HPS	HIGH PRESSURE SODIUM	WH/R	WHITE WITH RED TRACER
IMC	INTERMEDIATE METAL CONDUIT	WLK	WALK
INP	INPLACE	YEL	YELLOW
INS. GR.	INSULATED GROUND	YLTA	YELLOW LEFT TURN ARROW
JB	JUNCTION BOX	YRTA	YELLOW RIGHT TURN ARROW
LED	LIGHT EMITTING DIODE		
LHT	LIGHT		
LUM	LUMINAIRE		

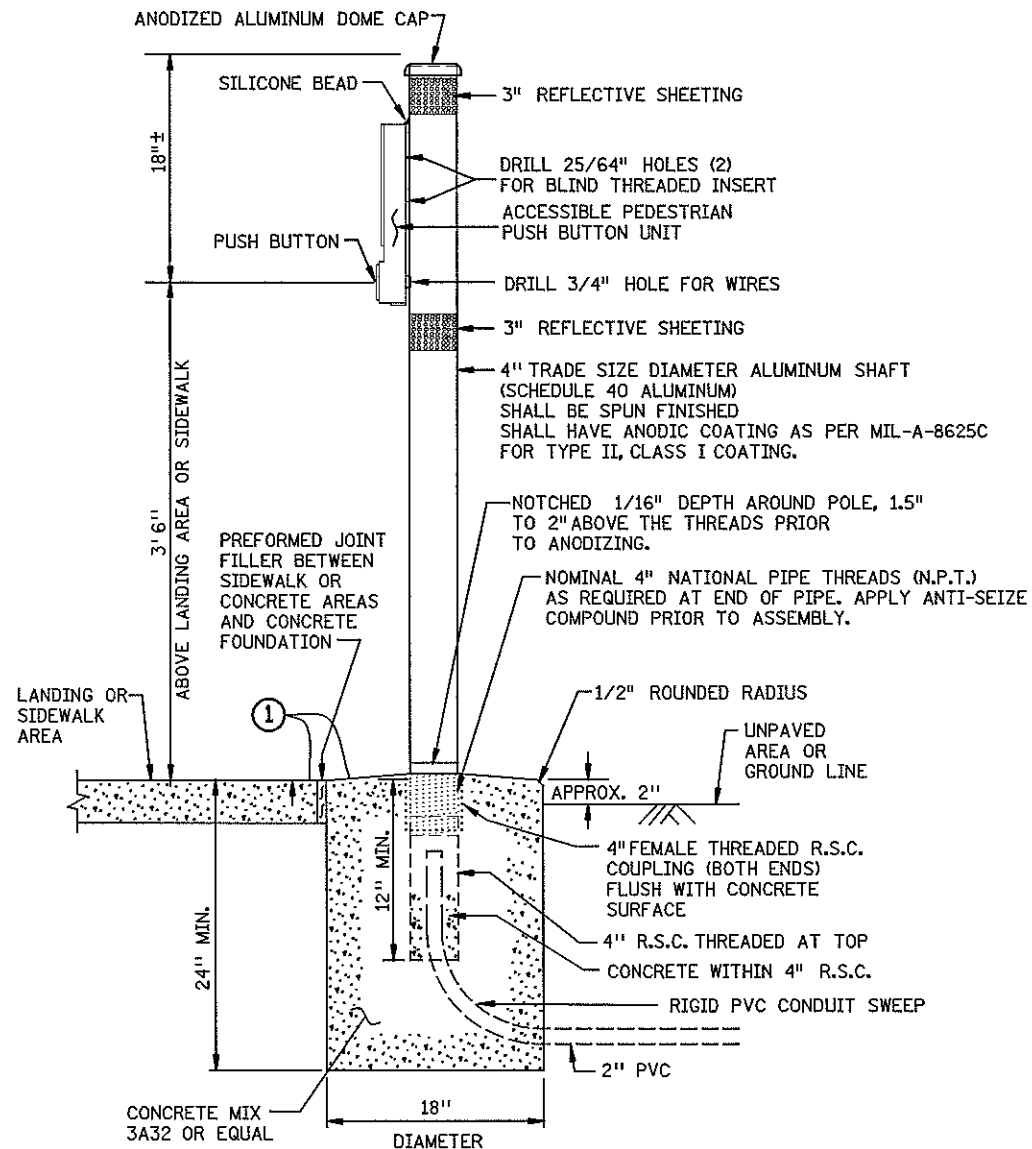
SIGNAL PLAN LAYOUT LEGEND



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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. Print Name: SCOTT C. POSKA Date: 4-11-13 License #: 47068				STATE AID PROJECT NO. STATE PROJECT NO. COUNTY PROJECT NO. 12-56-14 CITY PROJECT NO.	DRAWN BY D. RASMUSSEN DESIGNED BY D. RASMUSSEN CHECKED BY S. POSKA COMM. NO. 0127841		ENGINEERS PLANNERS DESIGNERS	ANOKA COUNTY TRAFFIC SIGNAL PLANS 21ST AVENUE SIGNAL PLAN ABBREVIATIONS AND LEGEND	SHEET 25 OF 42
NO	DATE	BY	CKD	APPR	REVISION				
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PEDESTRIAN PUSH BUTTON STATION



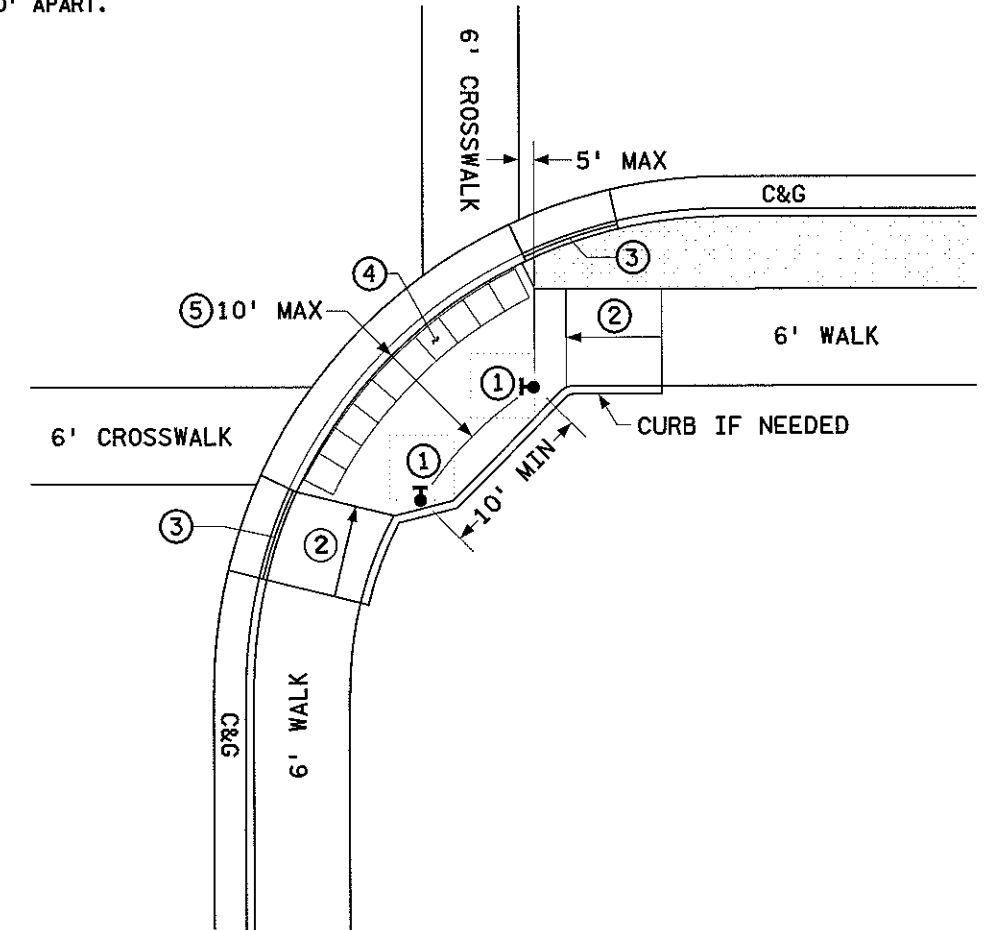
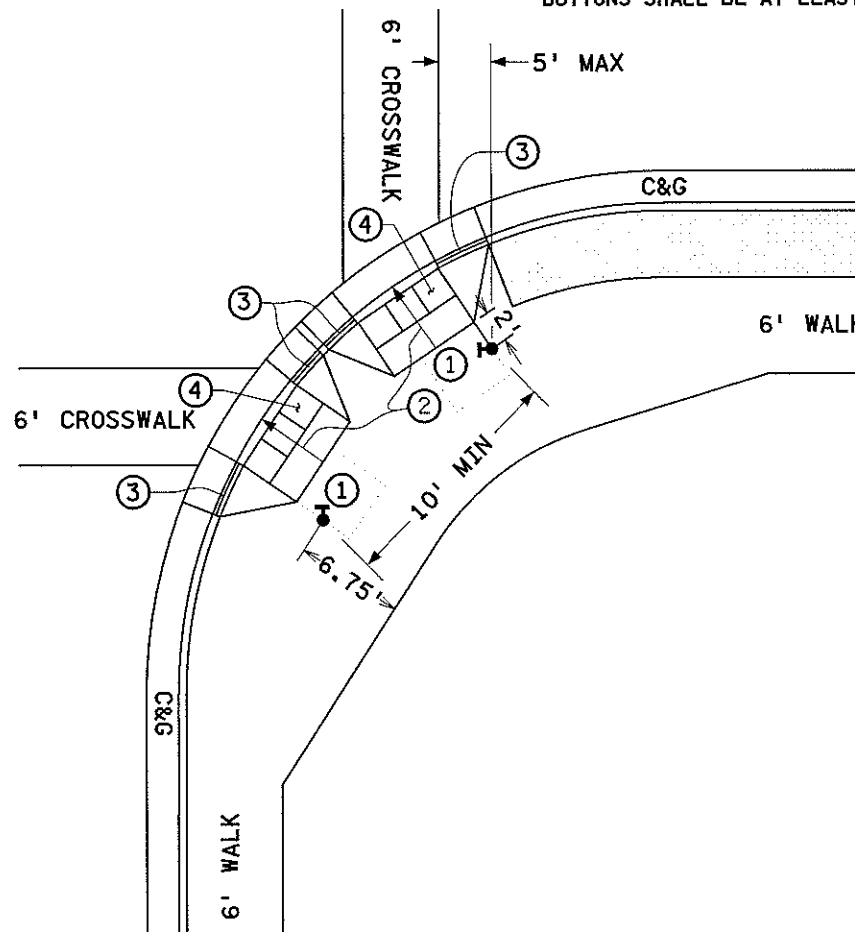
NOTES:

- PLACEMENT AND ORIENTATION OF THE PUSH BUTTON STATION IS CRITICAL. MOUNT THE BUTTON SO THAT THE FACE IS PARALLEL WITH THE ASSOCIATED CROSSWALK. SCREW IN POST TO A TIGHTENED POSITION BEFORE MOUNTING ACCESSIBLE PEDESTRIAN PUSH BUTTON UNIT TO THE POST.
- BLIND THREADED INSERTS (RIVET NUT) MUST BE INSERTED USING MANUFACTURERS SPECIFIC INSTALLATION TOOL. NO OTHER METHOD OF INSTALLATION IS ACCEPTABLE.
- BLIND THREADED INSERTS SHALL BE ZINC PLATED STEEL WITH 1/4 - 20 UNC THREADS. INSERT SHALL BE SUITABLE FOR USE ON A MOUNTING SURFACE WALL THICKNESS OF .337". APPROVED BLIND THREADED INSERTS CAN BE FOUND ON THE MN/DOT QUALIFIED PRODUCTS LIST.
- MOUNTING BOLTS SHALL BE 1/4 - 20 STAINLESS STEEL. APPLY BRUSH ON ANTI SEIZE COMPOUND TO BOLTS PRIOR TO ASSEMBLY.
- APPLY A BEAD OF 100% SILICONE SEALANT ALONG THE TOP OF THE PUSH BUTTON UNIT WHERE IT COMES IN CONTACT WITH THE 4" POST.
- THE REFLECTIVE SHEETING SHALL BE WHITE AT INTERSECTION CORNERS AND SHALL BE YELLOW WHEN USED IN CENTER MEDIANS. SEE MN/DOT SIGNING QUALIFIED PRODUCTS LIST (QPL) FOR APPROVED SIGN SHEETING.
- ANTI-SEIZE COMPOUND MUST BE USED ON THE MOUNTING BOLTS WHEN THE PEDESTRIAN SIGN IS MOUNTED.

① THE CONCRETE FOUNDATION SHALL BE CAST INPLACE AND CONSTRUCTED FLUSH WITH THE SURROUNDING SIDEWALK.

GUIDELINES FOR LOCATING APS PUSH BUTTONS:

- THIS IS A GENERAL DETAIL INTENDED TO SHOW THE REQUIREMENTS OF APS PUSH BUTTON LOCATION. FOR PROJECT SPECIFIC DETAILS REGARDING PEDESTRIAN RAMP LAYOUT, SEE THE PEDESTRIAN CURB RAMP AND SIDEWALK DETAILS.
- BUTTONS SHALL BE WITHIN 5' OF THE OUTSIDE EDGE OF THE CROSSWALK.
- THE FACE OF THE BUTTON SHALL BE PARALLEL WITH THE CROSSWALK.
- A MIN. 4'X4' LANDING AREA SHALL BE PROVIDED ADJACENT TO EACH BUTTON.
- BUTTONS SHALL BE WITHIN 10' OF THE BACK OF CURB OR EDGE OF ROADWAY.
- BUTTONS SHALL BE AT LEAST 10' APART.



- ① 4'X4' MINIMUM LANDING AREA ADJACENT TO PUSH BUTTON. (2% SLOPE MAX.)
- ② RAMP - SLOPE (5% PREFERRED 8% MAX).
- ③ CURB TAPER SECTION AT 1:10 (10%) (HEIGHT OF CURB IS TAPERED TO 0").
- ④ DETECTABLE WARNING SURFACE (TRUNCATED DOMES) - RADIUS SECTIONS WHERE SPECIFIED.
- ⑤ DISTANCE FROM THE BACK OF CURB TO PUSH BUTTON STATION.

TYPICAL ACCESSIBLE PEDESTRIAN SIGNAL (APS) PEDESTRIAN PUSH BUTTON LOCATION

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Print Name: SCOTT C. POSKA

Date: 4-11-13 License #: 47068

STATE AID PROJECT NO. _____

STATE PROJECT NO. _____

COUNTY PROJECT NO. 12-56-14

CITY PROJECT NO. _____

DRAWN BY D. RASMUSSEN

DESIGNED BY D. RASMUSSEN

CHECKED BY S. POSKA

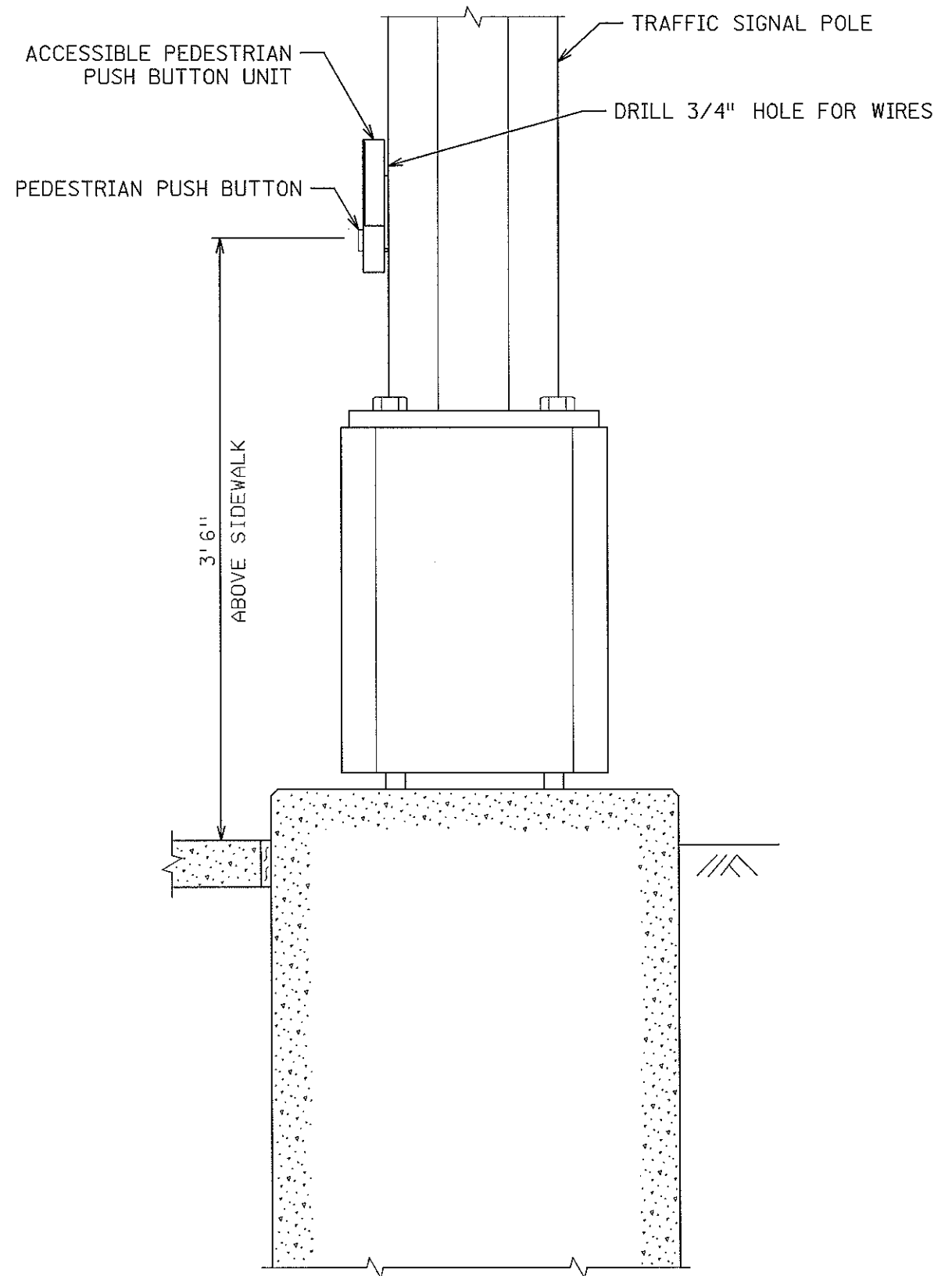
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ANOKA COUNTY
TRAFFIC SIGNAL PLANS
21ST AVENUE
PEDESTRIAN PUSH BUTTON STATION &
TYPICAL LOCATION DETAILS

SHEET
26
OF
42



PEDESTRIAN BUTTON POLE STATION

NOT TO SCALE

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[Signature]

Date: 4-11-13 License # 47068

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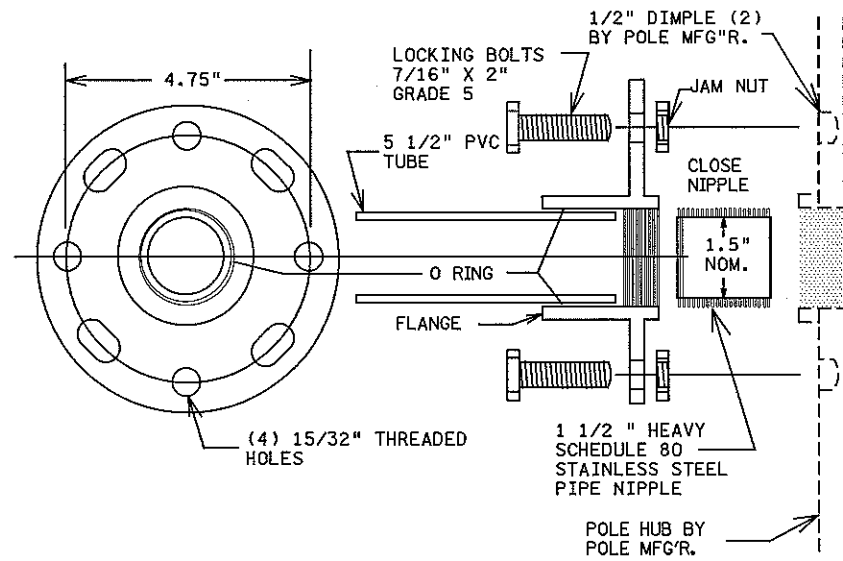
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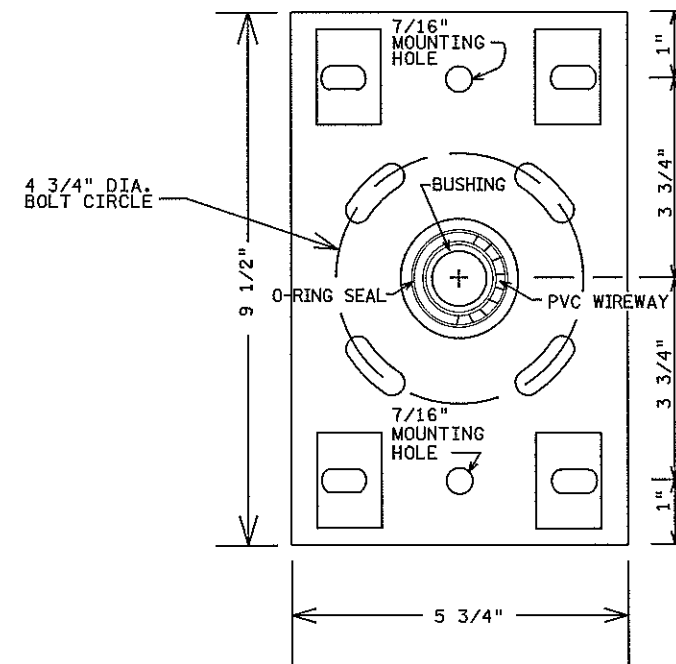
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ANOKA COUNTY
 TRAFFIC SIGNAL PLANS
 21ST AVENUE
 PEDESTRIAN BUTTON POLE STATION DETAIL

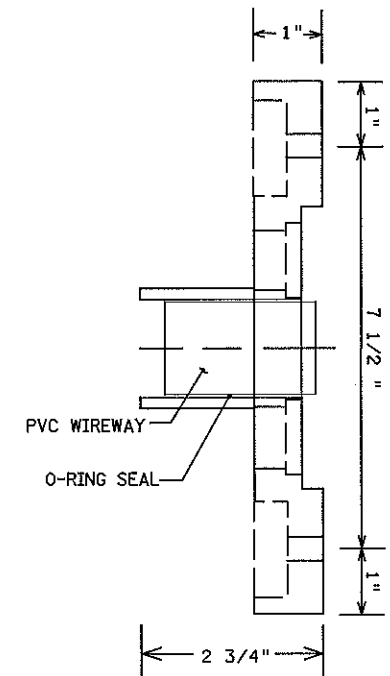
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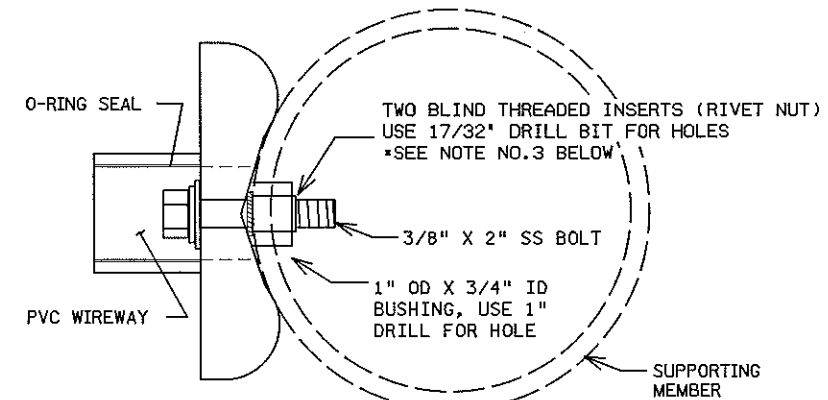
THREADED HUB AND FLANGE POLE ADAPTOR



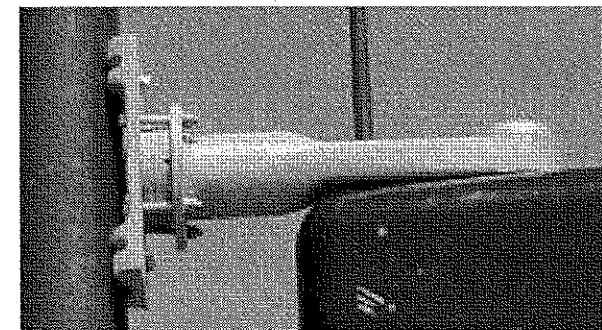
BOLT ON HUB & FLANGE



SIDE VIEW

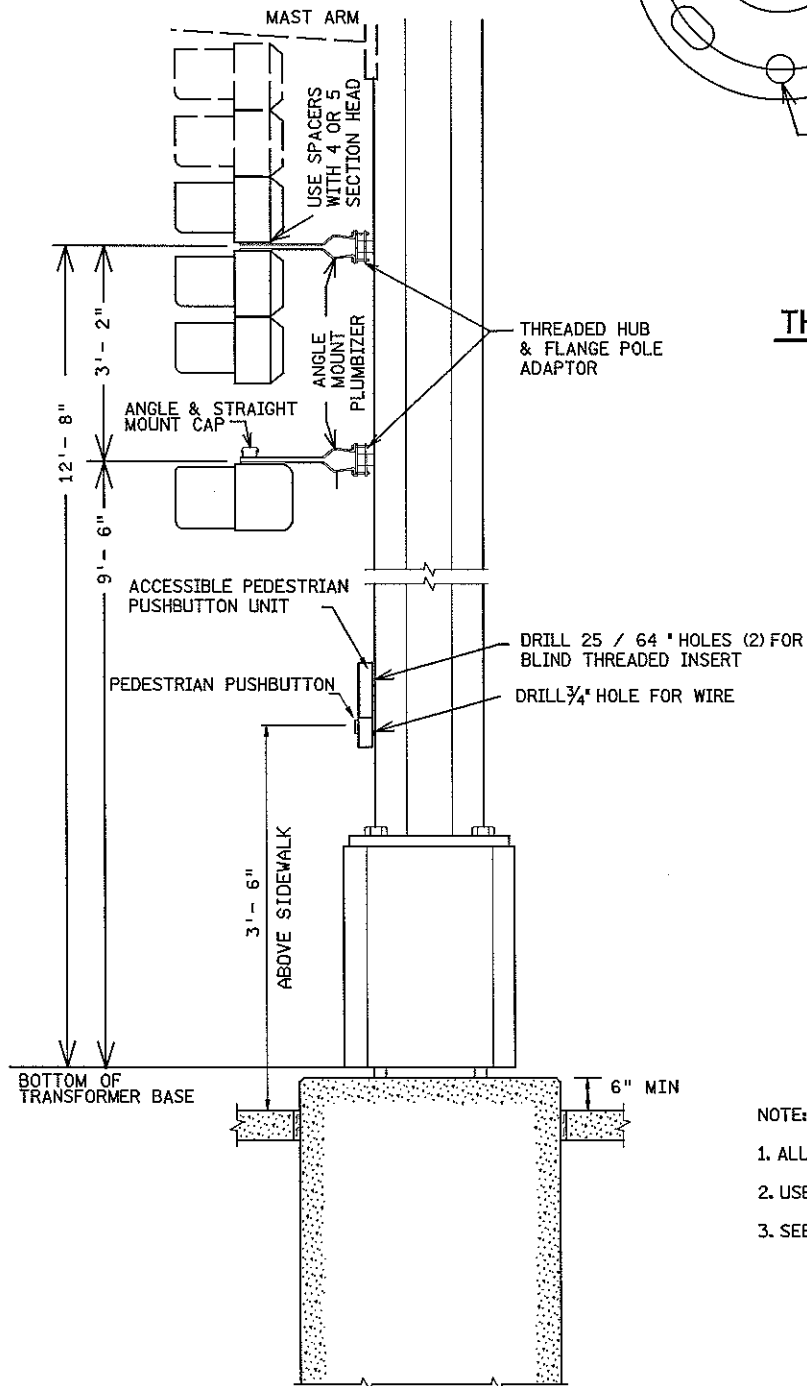


TOP VIEW



NOTE:

1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 & 5 SECTION POLY HEADS.
3. BLIND THREADED INSERTS (RIVET NUT) MUST BE INSERTED USING MANUFACTURERS SPECIFIC INSTALLATION TOOL. NO OTHER METHOD OF INSTALLATION IS ACCEPTABLE.
4. SEE STANDARD PLATE NUMBER 8122 FOR ADDITIONAL PEDESTAL POLE DETAILS.

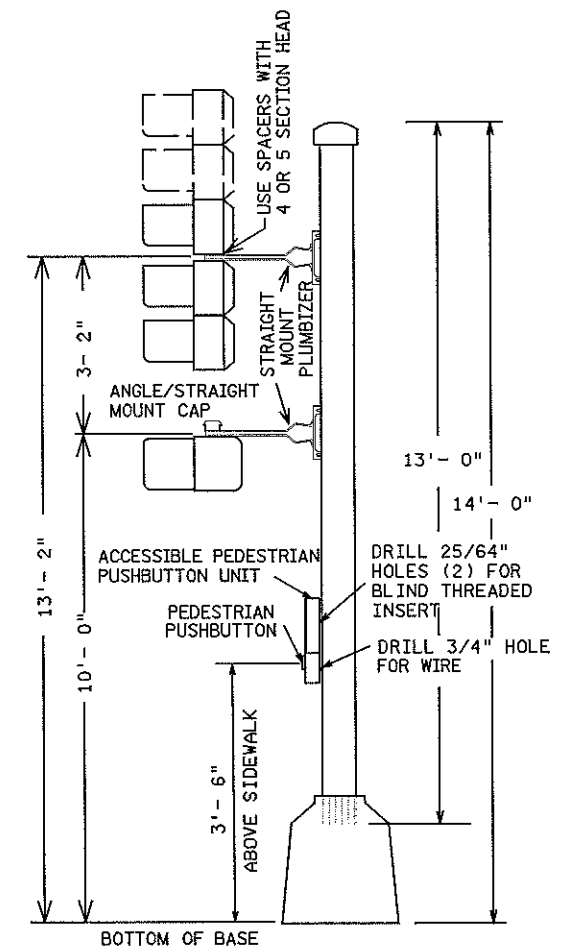
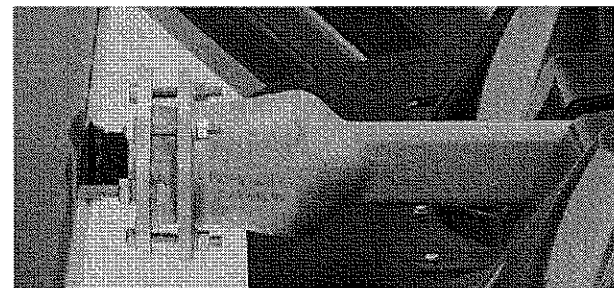


TYPICAL SIGNAL POLE MOUNTING

NOT TO SCALE

NOTE:

1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 & 5 SECTION POLY HEADS.
3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.



TYPICAL PEDESTAL MOUNTING

NOT TO SCALE

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Date: 4-11-13 License #: 47068

STATE AID PROJECT NO.
STATE PROJECT NO.
COUNTY PROJECT NO. 12-55-14
CITY PROJECT NO.
DRAWN BY D. RASMUSSEN
DESIGNED BY D. RASMUSSEN
CHECKED BY S. POSKA
COMM. NO. 0127841



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ANOKA COUNTY
TRAFFIC SIGNAL PLANS
21ST AVENUE
POLE MOUNTED SIGNAL &
PEDESTRIAN INDICATION DETAILS

SHEET
28
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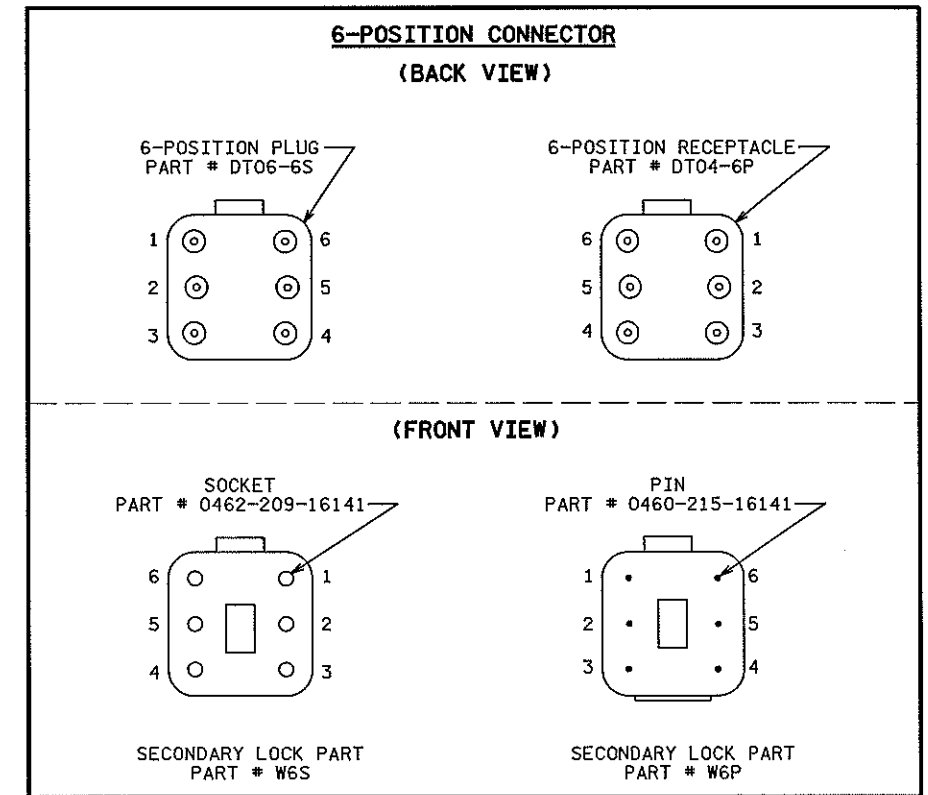
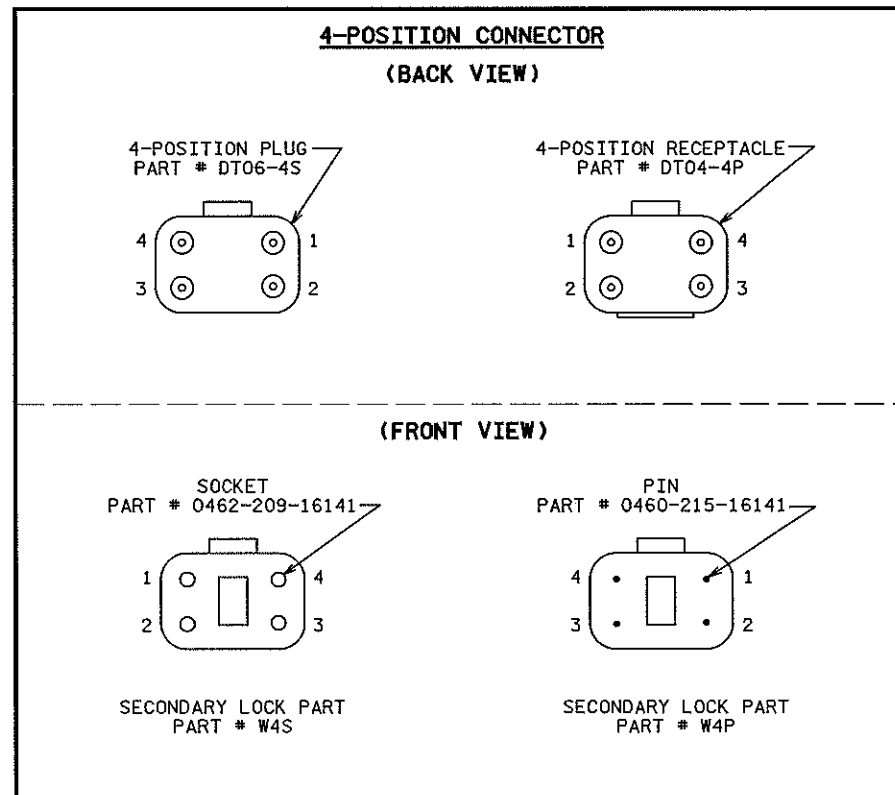
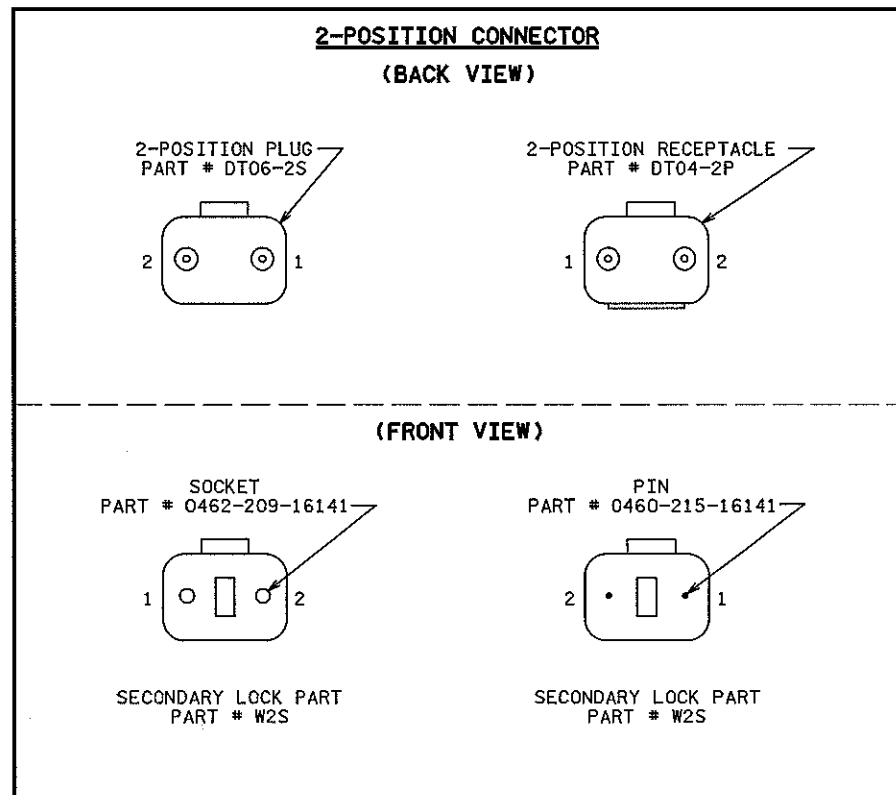


TABLE 1 2 Position DT Connector (As Needed)

Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
BLK	1	BLK	PB (If Required)
WH or CL	2	WH or CL	NEU

TABLE 2a 4 Position DT Connector (3 Section Head/DWK/WLK)

Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
R or R/BLK or BLK	1	R	RED or DWK
O or O/BLK or BLK/WH or BLK	2	BLK/R	YEL or WLK
BL or BL/BLK or BLK/R or BLK	3	BLK	GRN or SPR
WH or WH/BLK or WH/R	4	WH	NEU

TABLE 3 6 Position DT Connector (4 and 5 Section Heads)

Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
R	1	R	RED
O	2	O	YEL
BL	3	BL	GRN
WH	4	WH	NEU
O/BLK or BLK/R (6/C)	5	BLK/R	YLA or FYLA
BL/BLK or BLK (6/C)	6	BLK	GLA

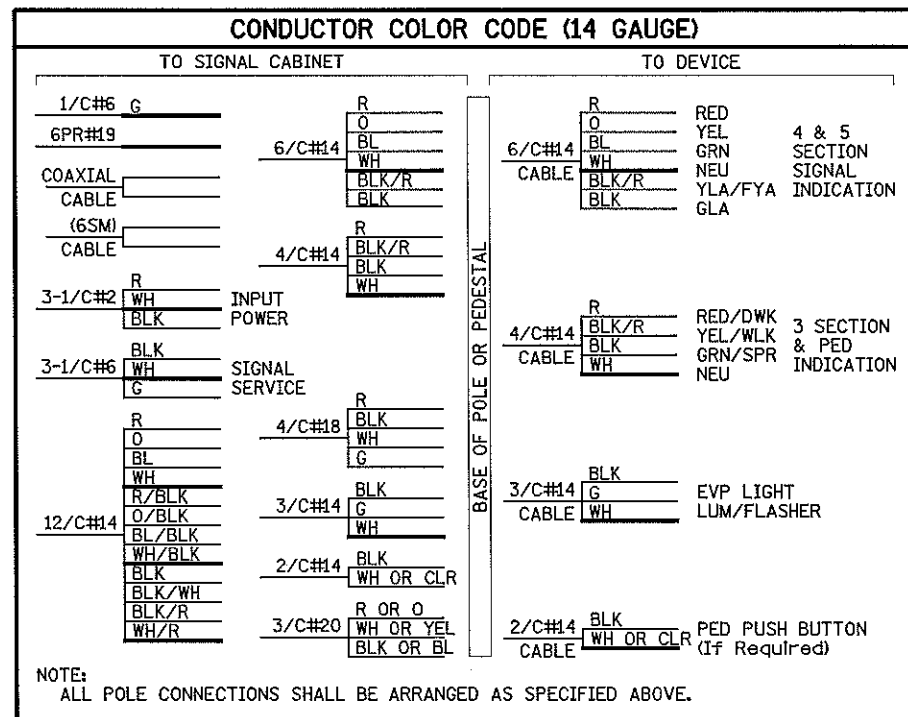


TABLE 2b 4 Position DT Connector (Used with 3 Conductor Cable Only) (EVP LHT/LUM/Flasher)

Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
BLK	1	BLK	EVP LHT or LUM or RED or YEL
(Not Used)	2	(Not Used)	(Not Used) (See Note #8)
G	3	G	EQ.G
WH	4	WH	NEU

- NOTES:**
- DT04-P RECEPTACLE SHALL BE TERMINATED TO THE WIRING HARNESS RUNNING FROM THE BASE/JUNCTION BOX OF THE POLE TO SIGNAL INDICATIONS.
 - DT06-S PLUG SHALL BE TERMINATED TO THE CABLES RUNNING FROM THE TRAFFIC SIGNAL CABINET TO THE BASE/JUNCTION BOX OF THE POLE.
 - THERE SHALL BE A MINIMUM OF 24 INCHES OF SLACK ON EACH CABLE IN EVERY POLE BASE /JUNCTION BOX.
 - STRIP A MAXIMUM OF 6 INCHES OF THE OUTER JACKET OF EACH SIGNAL CABLE.
 - STRIP .250 INCHES OF INSULATION FROM EACH INDIVIDUAL CONDUCTOR.
 - CRIMP PINS OR SOCKETS USING RATCHETING TYPE CRIMPING TOOL HDT-48-00. NO OTHER CRIMPING TOOL WILL BE ALLOWED.
 - WIRES MUST BE TERMINATED AS DETAILED IN TABLES 1 THRU 3 DEPENDING ON WIRE COUNT.
 - ANY UNUSED PIN MUST HAVE A SEALING PLUG PLACED IN BOTH THE PLUG & RECEPTACLE (PART # 114017).
 - LABEL EACH HALF OF THE CONNECTOR (PLUG AND RECEPTACLE) WITH THE DEVICE DESIGNATION (AS INDICATED IN THE WIRING DIAGRAM) USING A PERMANENT BLACK MARKER.

Wire Color Code Key

R	Red
O	Orange
BL	Blue
WH	White
BLK	Black
BRN	Brown
CL	Clear
G	Green
R/BLK	Red with Black Stripe
O/BLK	Orange with Black Stripe
BL/BLK	Blue with Black Stripe
WH/BLK	White with Black Stripe
WH/R	White with Red Stripe
BLK/WH	Black with White Stripe
BLK/R	Black with Red Stripe

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Print Name: SCOTT C. POSKA

Date: 4-11-13 License #: 47068

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STATE PROJECT NO. _____

COUNTY PROJECT NO. 12-56-14

CITY PROJECT NO. _____

DRAWN BY D. RASMUSSEN

DESIGNED BY D. RASMUSSEN

CHECKED BY S. POSKA

COMM. NO. 0127841

SRE Consulting Group, Inc.

ANOKA COUNTY

TRAFFIC SIGNAL PLANS

21ST AVENUE

TRAFFIC SIGNAL POLE BASE CONNECTOR DETAILS

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29
OF
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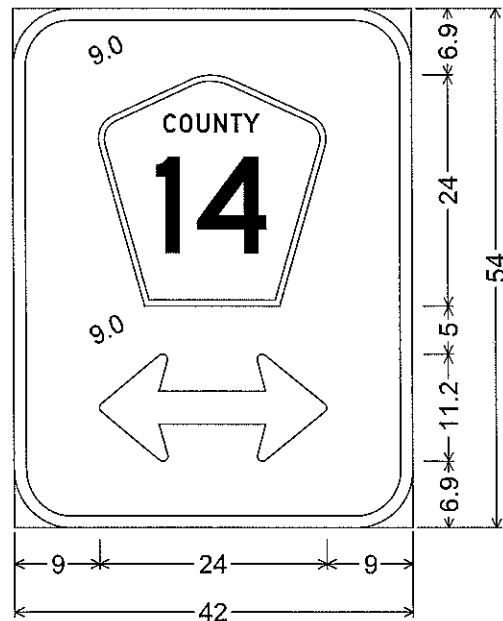
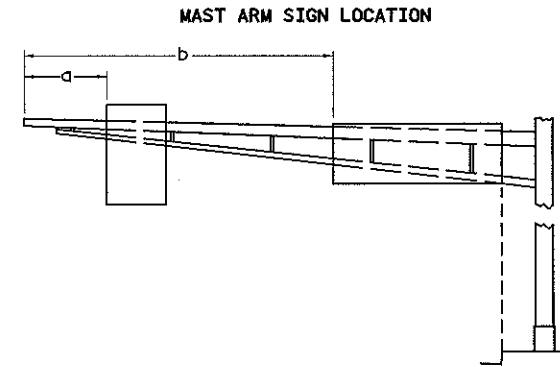
MAST ARM MOUNTED SIGNS								
SIGN PANEL	POLE NO.	a (FT)	b (FT)	SIZE (IN)	MOUNTING BRACKET		AREA/SIGN (SQ. FT.)	NO. REQ.
					NO.	SPACING (1)		
D-1	1		29	42X54	2	----	15.75	1
D-1	3		25	42X54	2	----	15.75	1 (2)
D-5	2		31	84X24	3	----	14	1 (2)
D-5	4		INPLACE	84X24				
SYS. "A"								
D-1	1		INPLACE	42X54				
D-1	3		INPLACE	42X54				(2)
D-2	4	INPLACE		54X66				
D-3	4		INPLACE	54X66				
D-6	2		INPLACE					
SYS. "B"								

GENERAL NOTES:

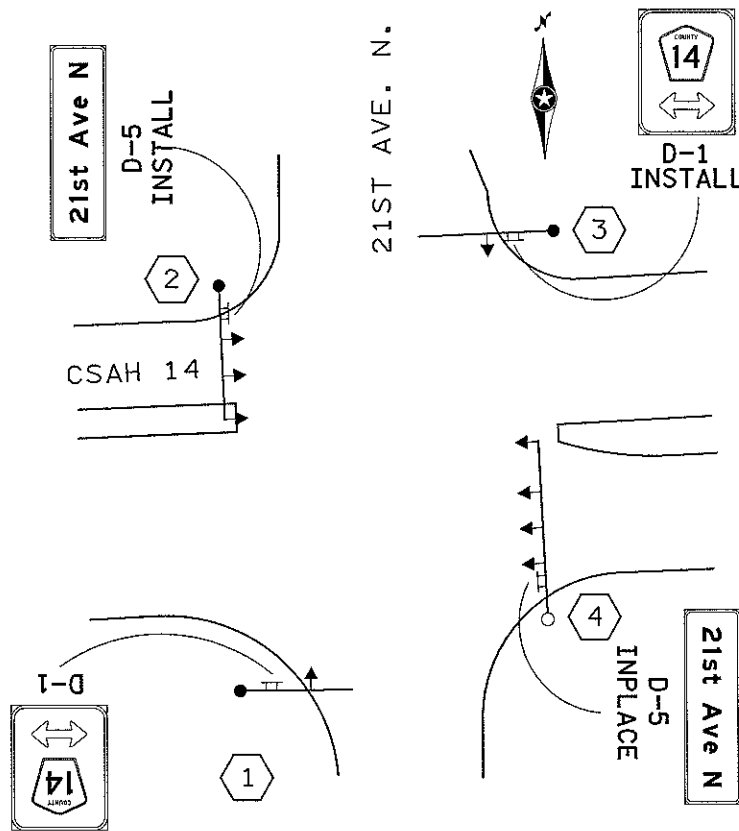
- 1) CORNERS OF STANDARD SIGN PANELS WITH MARGINS SHALL BE TRIMMED.
- 2) TYPE D SIGN PANELS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
- 3) FOR STRUCTURAL DETAILS OF MAST ARM MOUNTED SIGNS SEE STANDARD SIGNS MANUAL, PAGE 105A.
- 4) FOR TYPE "D" STRINGER AND PANEL JOINT DETAILS SEE STANDARD SIGNS MANUAL, PAGE 105.
- 5) THE MAST ARM MOUNTED SIGNS ARE INCIDENTAL.

SPECIFIC NOTE:

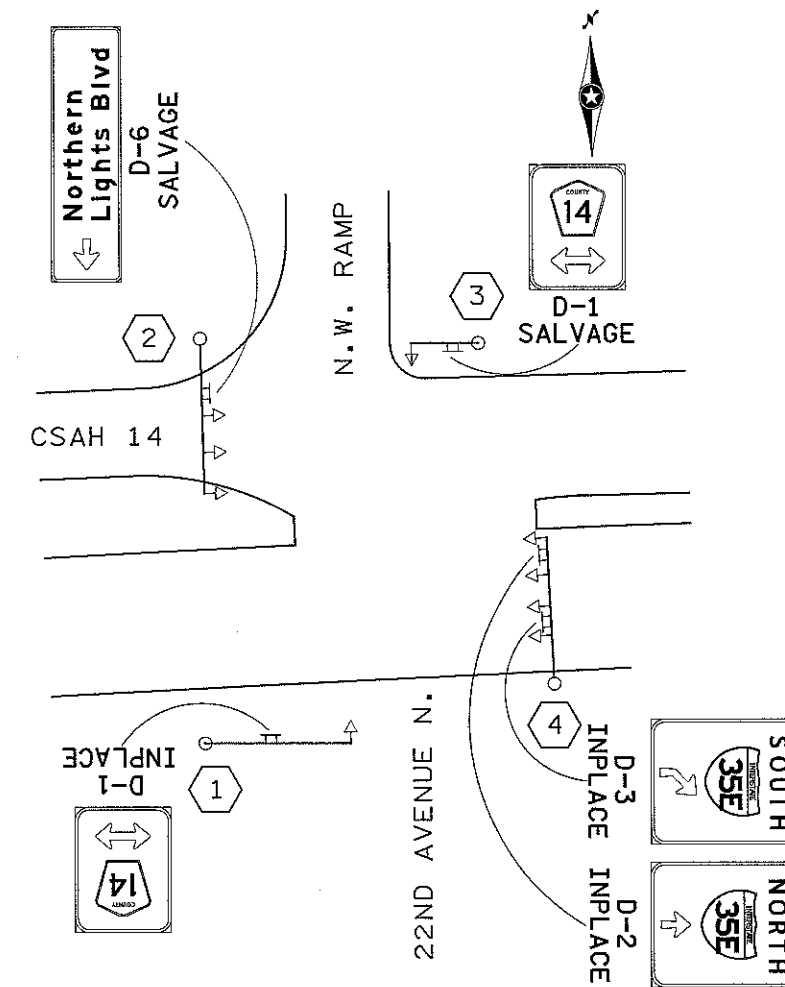
- (1) SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE 8/22/05) FOR BRACKET SPACING REQUIREMENTS.
- (2) CONTRACTOR SHALL SALVAGE AND INSTALL MAST ARM SIGN AS DESCRIBED IN THE SPECIAL PROVISIONS.



D-1;
6.0" Radius, 1.3" Border, White on Green;
Double Headed Arrow 5 - 24.0" 0°;



CSAH 14 & 21ST AVENUE N.
SYSTEM "A"
SIGN LAYOUT



CSAH 14 & 35E N.W. RAMP/22ND AVENUE N.
SYSTEM "B"
SIGN LAYOUT

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DRAWN BY D. RASMUSSEN
DESIGNED BY D. RASMUSSEN
CHECKED BY S. POSKA
COMM. NO. 0127841



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ANOKA COUNTY
TRAFFIC SIGNAL PLANS
21ST AVENUE
MAST ARM SIGN DETAILS

SHEET
30
OF
42

LED SIGNAL INDICATIONS

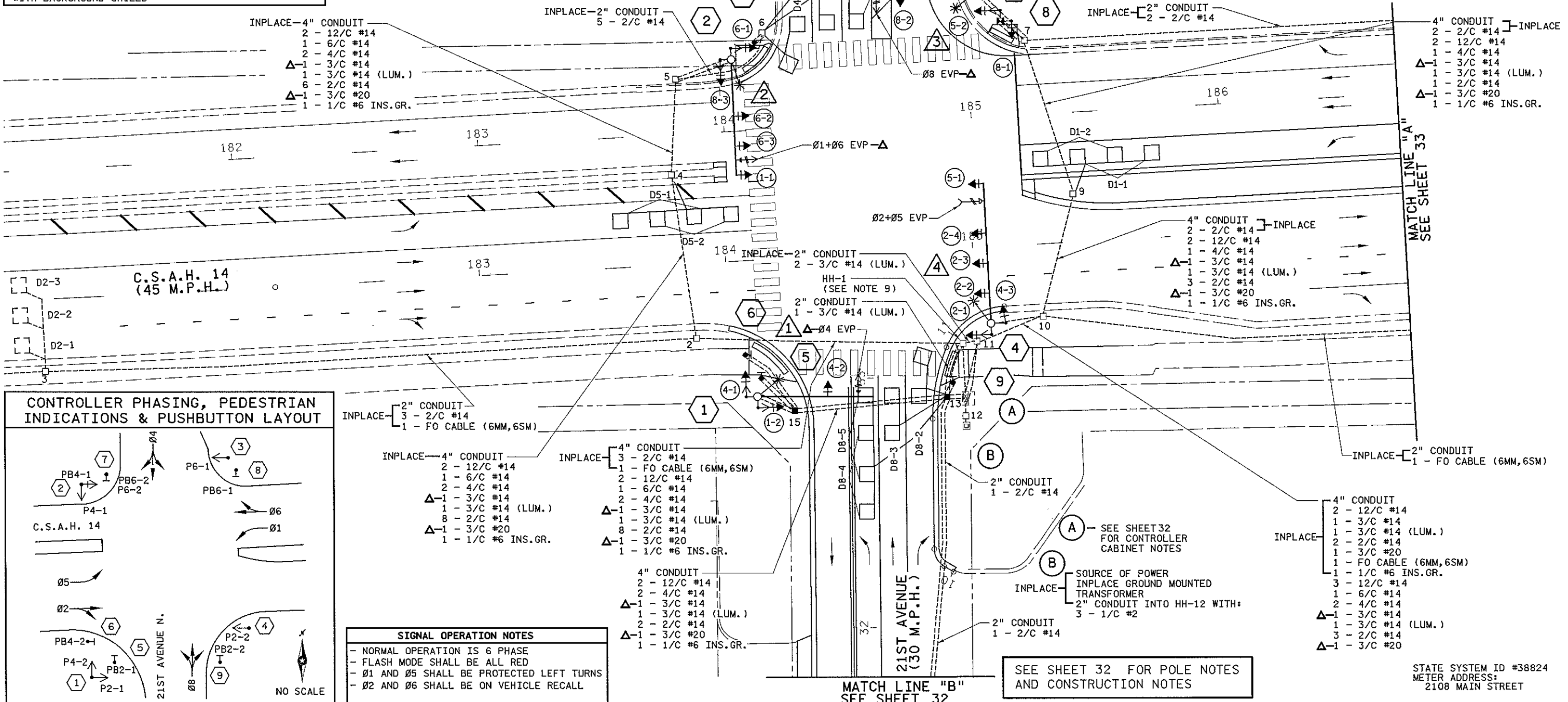
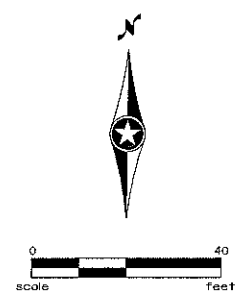
FACE	R	Y	G	RLTA	YLTA	GLTA
1-1,1-2				←	←	←
2-1	●	●	●			
2-2,2-3,2-4	●	●	●			
4-1,4-2,4-3	●	●	●			
5-1				←	←	←
5-2				←	←	←
6-1,6-2,6-3	●	●	●			
8-1,8-2,8-3	●	●	●			

-CONTRACTOR SHALL INSTALL COUNTY FURNISHED VEHICLE HEADS AND INDICATIONS, SALVAGED SYSTEM "B" VEHICLE HEADS AND INDICATIONS, AND CONTRACTOR FURNISHED VEHICLE INDICATIONS, AS DESCRIBED IN THE SPECIAL PROVISIONS
 -ALL VEHICLE SIGNAL INDICATIONS SHALL BE 12"
 -EACH SIGNAL FACE SHALL BE BLACK POLYCARBONITE WITH BACKGROUND SHIELD

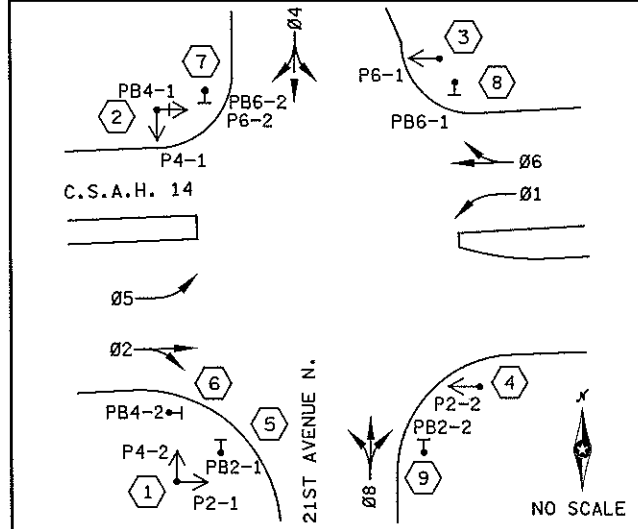
NMC LOOP DETECTORS

DESIGNATION	NO. & SIZE/FT.	LOCATION
D1-1,D5-1	2-6'X6'	20',50'
D2-1,D2-2,D2-3	1-6'X6'	300'
D4-1	2-6'X6'	-6',9'
D4-2	2-6'X6'	0',15'
D4-3,D8-4	2-6'X6'	5',35'
D4-4,D8-5	2-6'X6'	20',50'
D1-2,D5-2	2-6'X6'	5',35'
D6-1,D6-2	1-6'X6'	300'
D8-1	1-6'X6'	145'
D8-2	2-6'X6'	-6',9'
D8-3	2-6'X6'	0',15'

-LOCATION: DISTANCE FROM CROSSWALK/STOP LINE IN FEET



CONTROLLER PHASING, PEDESTRIAN INDICATIONS & PUSHBUTTON LAYOUT



SIGNAL OPERATION NOTES
 - NORMAL OPERATION IS 6 PHASE
 - FLASH MODE SHALL BE ALL RED
 - Ø1 AND Ø5 SHALL BE PROTECTED LEFT TURNS
 - Ø2 AND Ø6 SHALL BE ON VEHICLE RECALL

SEE SHEET 32 FOR POLE NOTES AND CONSTRUCTION NOTES

STATE SYSTEM ID #38824
 METER ADDRESS:
 2108 MAIN STREET

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- 1** PA100 POLE FOUNDATION
 INSTALL - TYPE PA100-A-45-D40-9 (DAVIT AT 350°)
 (SEE NOTE 13) 1 - STRAIGHT MOUNT SIGNAL OVERHEAD AT 18°
 SEE NOTE 14 1 - ANGLE MOUNT SIGNAL AT 90°
 1 - ANGLE MOUNT SIGNAL AT 180°
 INSTALL - 1 - ANGLE MOUNT C.D. PED IND AT 90°
 (SEE NOTE 2) 1 - ANGLE MOUNT C.D. PED IND AT 180°
 Δ - ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 4)
 INSTALL (SEE NOTE 13) - LUMINAIRE - 250 WATT H.P.S.
 INSTALL (SEE NOTE 10) - TYPE D SIGN - SEE MAST ARM SIGN DETAILS
 EXTEND INTO HH-15:
1 3" CONDUIT
 2 - 12/C #14
 2 - 4/C #14
 Δ - 1 - 3/C #14
 1 - 3/C #14 (LUM.)
 Δ - 1 - 3/C #20
 1 - 1/C #6 INS.GR.

- 2** PA100 POLE FOUNDATION
 INSTALL - TYPE PA100-A-45-D40-9 (DAVIT AT 350°)
 (SEE NOTE 13) 1 - ANGLE MOUNT SIGNAL OVERHEAD AT 0°
 SEE NOTE 14 2 - STRAIGHT MOUNT SIGNALS OVERHEAD AT 12' AND 24'
 2 - ANGLE MOUNT SIGNALS AT 90° AND 180°
 1 - ANGLE MOUNT C.D. PED IND AT 90°
 1 - ANGLE MOUNT C.D. PED IND AT 180°
 Δ - ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 1+6)
 INSTALL (SEE NOTE 13) - LUMINAIRE - 250 WATT H.P.S.
 INSTALL (SEE NOTE 10) - TYPE D SIGN - SEE MAST ARM SIGN DETAILS
 1 - R6-1L SIGN (36x12)
 EXTEND INTO HH-5:
2 3" CONDUIT
 2 - 12/C #14
 1 - 6/C #14
 2 - 4/C #14
 Δ - 1 - 3/C #14
 1 - 3/C #14 (LUM.)
 1 - 2/C #14
 Δ - 1 - 3/C #20
 1 - 1/C #6 INS.GR.
 1 - APS PUSH BUTTON & SIGN (RT ARROW) PB4-1

- 3** PA100 POLE FOUNDATION
 INSTALL (SEE NOTE 13) - TYPE PA100-A-45-D40-9 (DAVIT AT 350°)
 INSTALL (SEE NOTE 14) - 1 - STRAIGHT MOUNT SIGNAL OVERHEAD AT 16°
 Δ - ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 8)
 INSTALL (SEE NOTE 2) - LUMINAIRE - 250 WATT H.P.S.
 TYPE D SIGN - SEE MAST ARM SIGN DETAILS
 EXTEND INTO HH-7:
3 3" CONDUIT
 1 - 12/C #14
 Δ - 1 - 3/C #14
 1 - 3/C #14 (LUM.)
 Δ - 1 - 3/C #20
 1 - 1/C #6 INS.GR.

- A** EQUIPMENT PAD
 CONTROLLER & CABINET
 SERVICE CABINET
 INPLACE - 1 - FIBER-OPTIC TELEMETRY INTERFACE PANEL WITH HARNESS
 2 - FIBER-OPTIC MODEMS
 EXTEND 4" CONDUIT INTO HH-1 WITH:
 3 - 2/C #14
 1 - FO CABLE (6MM,6SM)
 2 - 12/C #14
 1 - 6/C #14
 2 - 4/C #14
 Δ - 1 - 3/C #14
 1 - 3/C #20
 8 - 2/C #14
 1 - 1/C #6 INS.GR.
 EXTEND 4" CONDUIT INTO HH-11 WITH:
 2 - 12/C #14
 1 - 3/C #14
 2 - 2/C #14
 1 - 3/C #20
 1 - FO CABLE (6MM,6SM)
 1 - 1/C #6 INS.GR.
 3 - 12/C #14
 2 - 4/C #14
 Δ - 1 - 3/C #14
 3 - 2/C #14
 Δ - 1 - 3/C #20
 INPLACE - 3/4" CONDUIT STUBBED OUT (THREADED & CAPPED BOTH ENDS)
 CONTROLLER TO SERVICE CABINET
 EXTEND 2" CONDUIT WITH:
 2 - 1/C #6 AND 1 - 1/C #6 INS.GR.
 SERVICE CABINET TO HH-11
 EXTEND 2" CONDUIT WITH:
 1 - 3/C #14 (LUM.)
 3 - 3/C #14 (LUM.)
 INPLACE - SERVICE CABINET TO HH-12
 EXTEND 2" CONDUIT WITH:
 3 - 1/C #2
 CONNECT WITH INPLACE STUBBED OUT 3" CONDUIT
 3" CONDUIT TO HH-13 WITH:
 2 - 12/C #14
 2 - 4/C #14
 1 - 3/C #14
 Δ - 1 - 3/C #20
 8 - 2/C #14

- 4** PA100 POLE FOUNDATION
 INPLACE - TYPE PA100-A-55-D40-9 (DAVIT AT 350°)
 3 - STRAIGHT MOUNT SIGNALS OVERHEAD AT 18', 30' AND 42'
 SEE NOTE 14 1 - ANGLE MOUNT SIGNAL OVERHEAD AT 0°
 2 - ANGLE MOUNT SIGNALS AT 90° AND 180°
 INSTALL - 1 - ANGLE MOUNT C.D. PED IND AT 180°
 (SEE NOTE 2) Δ - ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 2+5)
 LUMINAIRE - 250 WATT H.P.S.
 TYPE D SIGN - SEE MAST ARM SIGN DETAILS
 1 - R6-1L SIGN (36x12)
 1 - R9-3a SIGN (18x18) FACING POLE 8
 INPLACE - EXTEND INTO HH-10:
4 3" CONDUIT
 2 - 12/C #14
 1 - 3/C #14
 1 - 3/C #14 (LUM.)
 1 - 3/C #20
 1 - 1/C #6 INS.GR.
 1 - 12/C #14
 1 - 4/C #14

- 5** PUSHBUTTON STATION FOUNDATION
 INSTALL (SEE NOTE 2) 1 - APS PEDESTRIAN PUSH BUTTON STATION
 1 - APS PUSH BUTTON & SIGN (LT ARROW) PB2-1
 EXTEND INTO HH-15:
 2" CONDUIT
 1 - 2/C #14

- 6** PUSHBUTTON STATION FOUNDATION
 1 - APS PEDESTRIAN PUSH BUTTON STATION
 1 - APS PUSH BUTTON & SIGN (RT ARROW) PB4-2
 EXTEND INTO HH-15:
 2" CONDUIT
 1 - 2/C #14

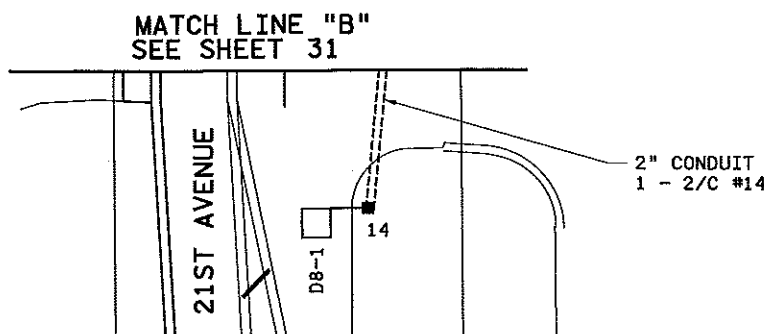
- 7** PUSHBUTTON STATION FOUNDATION
 1 - APS PEDESTRIAN PUSH BUTTON STATION
 1 - APS PUSH BUTTON & SIGN (RT ARROW) PB6-2
 EXTEND INTO HH-6:
 2" CONDUIT
 1 - 2/C #14

- 8** PEDESTAL POLE FOUNDATION
 13' PEDESTAL POLE AND BASE
 2 - ANGLE MOUNT SIGNALS AT 90° AND 180°
 1 - ANGLE MOUNT C.D. PED IND AT 90°
 1 - R9-3a SIGN (18x18) FACING POLE 2
 1 - APS PEDESTRIAN PUSH BUTTON STATION
 1 - APS PUSH BUTTON & SIGN (LT ARROW) PB6-1
 EXTEND INTO HH-7:
 3" CONDUIT
 1 - 12/C #14
 1 - 4/C #14
 1 - 2/C #14
 1 - 1/C #6 INS.GR.

- 9** PUSHBUTTON STATION FOUNDATION
 INSTALL (SEE NOTE 2) 1 - APS PEDESTRIAN PUSH BUTTON STATION
 1 - APS PUSH BUTTON & SIGN (RT ARROW) PB2-2
 EXTEND INTO HH-1:
 2" CONDUIT
 1 - 2/C #14

NOTES:

- ALL ITEMS ARE FURNISH AND INSTALL UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL INSTALL PEDESTRIAN HEADS, PEDESTRIAN PUSH BUTTONS, PHASES 1+6 AND 8 EVP DETECTOR, AND PHASES 1+6 AND 8 EVP CONFIRMATORY LIGHT AS DESCRIBED IN THE SPECIAL PROVISIONS.
- THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS SHALL BE DETERMINED IN FIELD BY THE ENGINEER AND VERIFIED BY MNDOT TRAFFIC OFFICE PERSONNEL.
- A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PREEMPTION EQUIPMENT SHALL BE FURNISHED AND INSTALLED 6' FROM THE END OF EACH MAST ARM.
- MAST ARM SIGNING IS INCLUDED IN THE SIGNAL PAY ITEM. FOR TYPE "D" MAST ARM SIGNS, SEE DETAILS.
- FOR PAYEMENT MARKINGS, SEE SIGNING AND STRIPING PLANS.
- ITEMS DENOTED WITH AN Δ ARE INCLUDED IN THE EVP SYSTEM PAY ITEM.
- ALL SCHEDULE 80 PVC OR HDPE SHALL CARRY 1 - 1/C #6 INSULATED GREEN GROUNDING CONDUCTOR AS SHOWN ON THE PLAN.
- ADJUST AND RE-LOCATE INPLACE HH-1 TO AVOID CONFLICT WITH NEW PEDESTRIAN RAMP.
- THE CONTRACTOR SHALL INSTALL SIGNS AS DESCRIBED IN THE SPECIAL PROVISIONS.
- REFER TO "FOR INFORMATION ONLY" SHEETS FOR INPLACE SIGNAL COMPONENTS.
- THE CONTRACTOR SHALL PROTECT AND MAINTAIN INPLACE ITEMS.
- THE CONTRACTOR SHALL SALVAGE INPLACE LUMINAIRE EXTENSIONS AND LUMINAIRES, AND SHALL INSTALL POLE, MAST ARM, LUMINAIRE EXTENSIONS, AND LUMINAIRES, AS DESCRIBED IN THE SPECIAL PROVISIONS.
- THE CONTRACTOR SHALL INSTALL COUNTY FURNISHED VEHICLE HEADS AND INDICATIONS, SALVAGED SYSTEM "B" VEHICLE HEADS AND INDICATIONS, AND CONTRACTOR FURNISHED VEHICLE INDICATIONS, AS DESCRIBED IN THE SPECIAL PROVISIONS.



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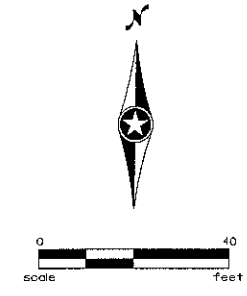
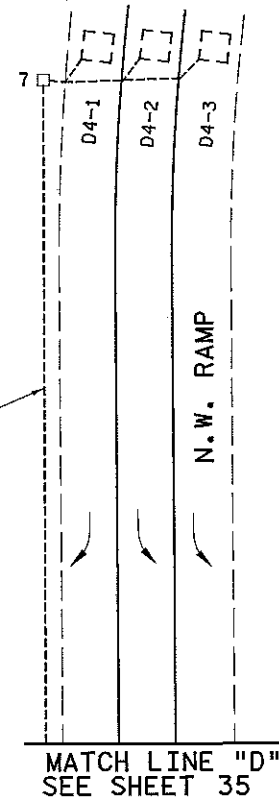
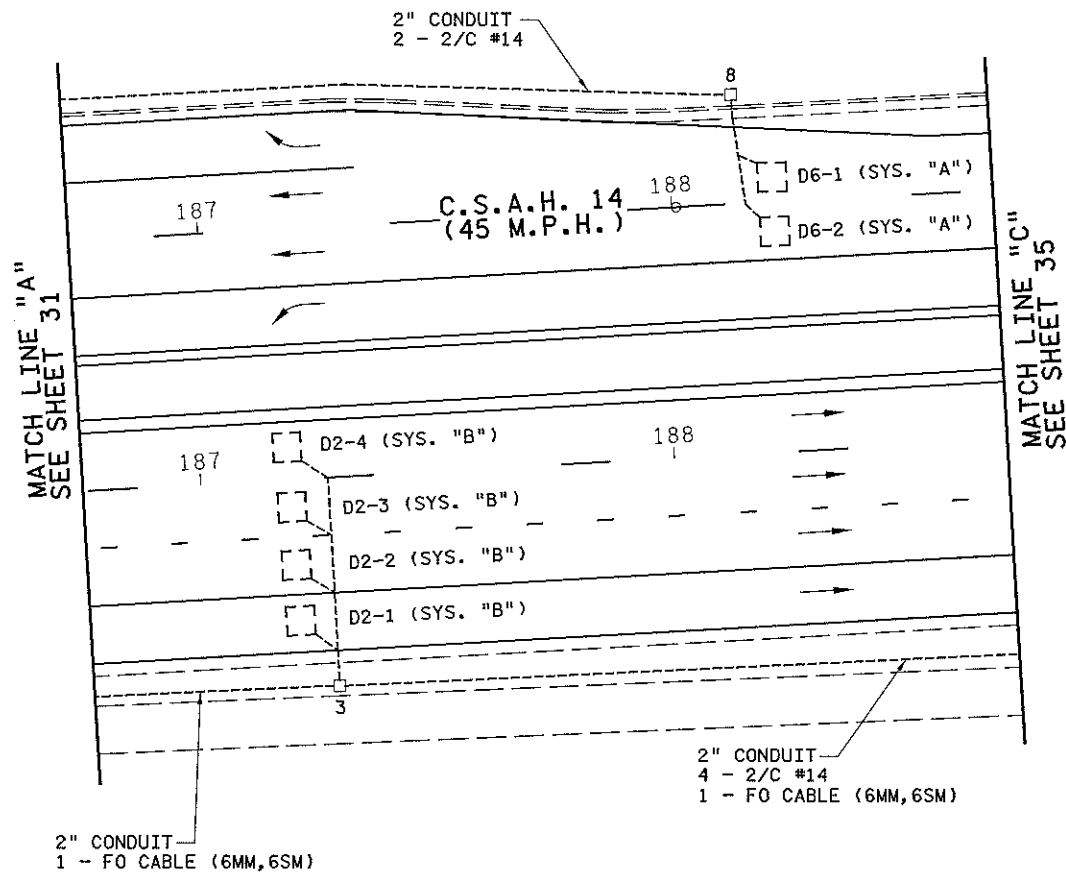
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: SCOTT C. POSKA
 Date: 9-18-13 License #: 47068

STATE AID PROJECT NO.
 STATE PROJECT NO.
 COUNTY PROJECT NO. 12-56-14
 CITY PROJECT NO.
 DRAWN BY D. RASMUSSEN
 DESIGNED BY D. RASMUSSEN
 CHECKED BY S. POSKA
 COMM. NO. 0127841

SRH ENGINEERS PLANNERS DESIGNERS
 Consulting Group, Inc.

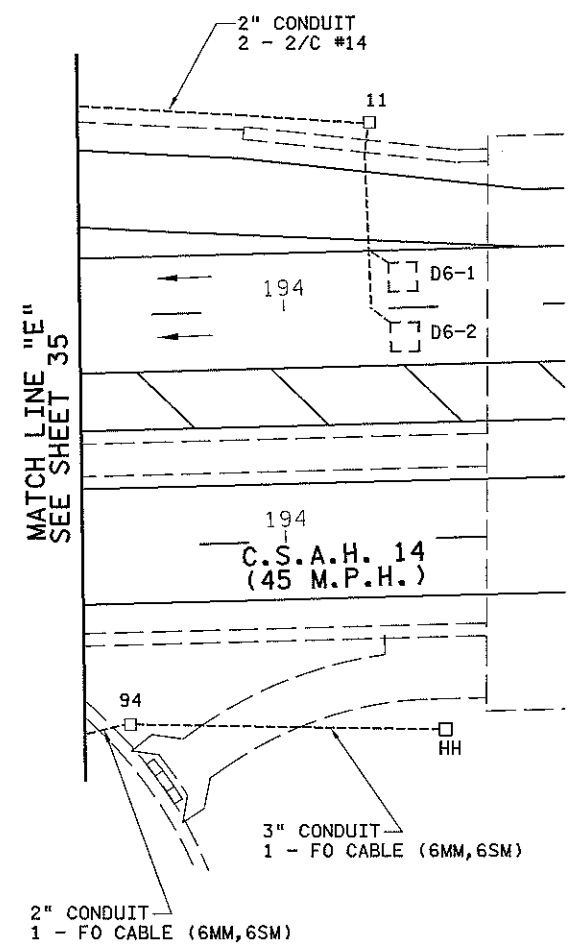
ANOKA COUNTY
 TRAFFIC SIGNAL PLANS
 21ST AVENUE
 C.S.A.H. 14 AT 21ST AVENUE N.
 INTERSECTION LAYOUT (SYSTEM "A")

SHEET 32 OF 42



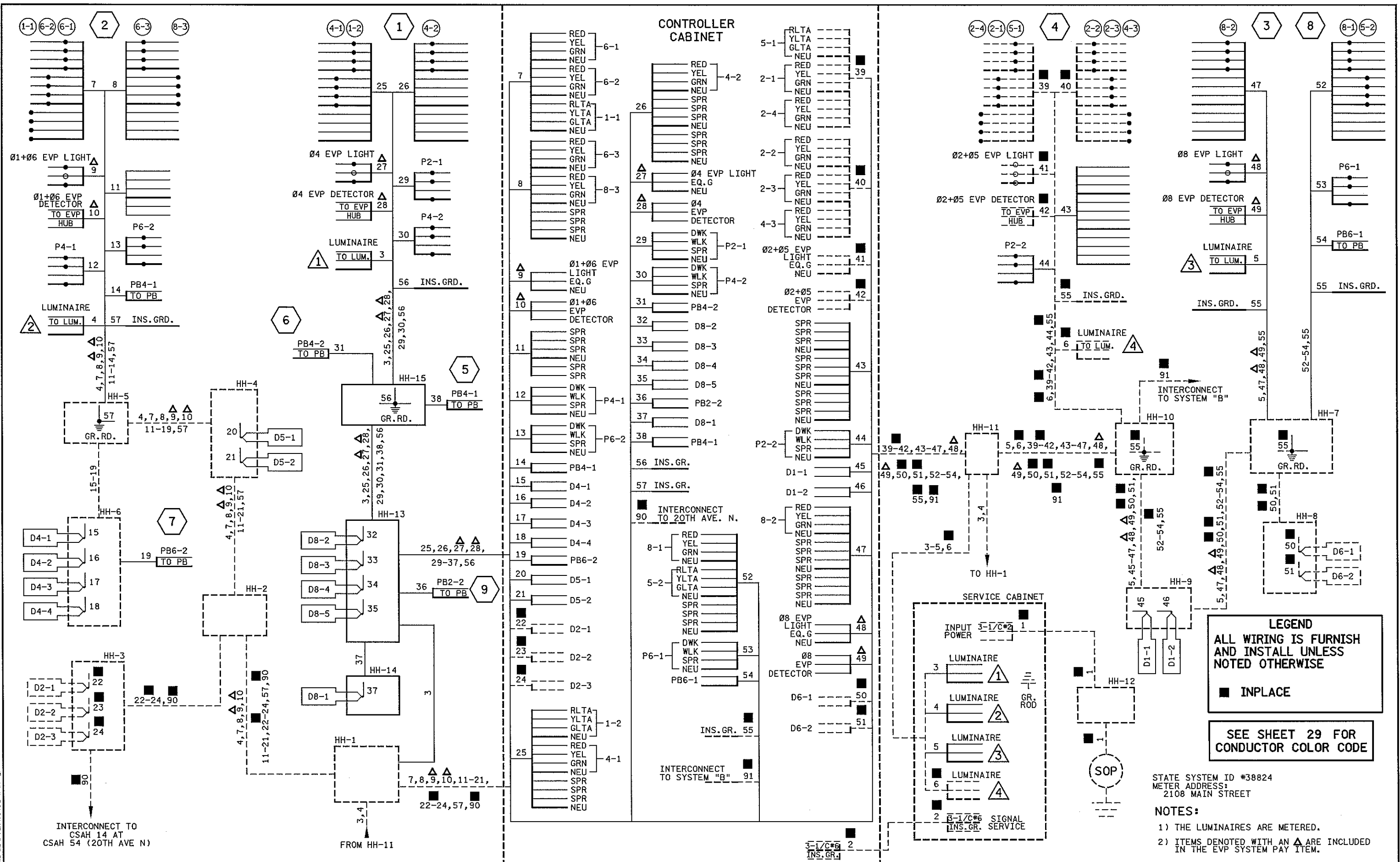
NOTES:

- 1) ALL ITEMS ARE INPLACE AND SHALL REMAIN INPLACE UNLESS NOTED OTHERWISE.
- 2) THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER AND VERIFIED BY MNDOT TRAFFIC OFFICE PERSONNEL.



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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. Print Name: SCOTT C. POSKA Date: 6-11-13 License #: 47068				STATE AID PROJECT NO. STATE PROJECT NO. COUNTY PROJECT NO. 12-56-14 CITY PROJECT NO.	DRAWN BY D. RASMUSSEN DESIGNED BY D. RASMUSSEN CHECKED BY S. POSKA COMM. NO. 0127841	 ENGINEERS PLANNERS DESIGNERS	ANOKA COUNTY TRAFFIC SIGNAL PLANS 21ST AVENUE MATCH LINE LAYOUT	SHEET 33 OF 42		
NO	DATE	BY	CKD	APPR	REVISION					
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NO	DATE	BY	CHKD	APPR	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.
 Pr Int Name: SCOTT C. POSKA
 Date: 4-11-13 License # 47068

STATE AID PROJECT NO.
 STATE PROJECT NO.
 COUNTY PROJECT NO. 12-56-14
 CITY PROJECT NO.
 DRAWN BY D. RASMUSSEN
 DESIGNED BY D. RASMUSSEN
 CHECKED BY S. POSKA
 COMM. NO. 0127841

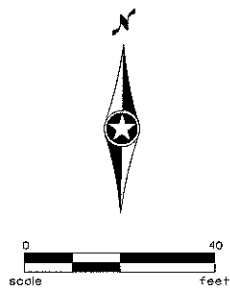


ANOKA COUNTY
 TRAFFIC SIGNAL PLANS
 21ST AVENUE
 C.S.A.H. 14 AT 21ST AVENUE N.
 FIELD WIRING DIAGRAM (SYSTEM "A")

SHEET
 34
 OF
 42

LED SIGNAL INDICATIONS							
FACE	R	Y	G	RLTA	YLTA	GLTA	
SALVAGE (SEE NOTE 5)	1-1,1-2				←	←	←
	2-1,2-2,2-3	○	○	○			
	2-4,2-5	○	○	○			
SALVAGE (SEE NOTE 5)	3-1	○	○	○			
	3-2,3-3	○	○	○	←	←	
	4-1	○	○	○			
INSTALL (SEE NOTE 5)	4-2	●	●	●			
	4-3	●	●	●			
	6-1,6-2,6-3	○	○	○			

-CONTRACTOR SHALL SALVAGE AND INSTALL INPLACE VEHICLE HEADS AND INDICATIONS AS DESCRIBED IN THE SPECIAL PROVISIONS
 -ALL VEHICLE SIGNAL INDICATIONS SHALL BE 12"
 -EACH SIGNAL FACE SHALL BE BLACK POLYCARBONITE WITH BACKGROUND SHIELD



NMC LOOP DETECTORS		
DESIGNATION	NO. & SIZE/FT.	LOCATION
D1-1	1-6' X6'	40'
D1-2	1-6' X6'	10'
D2-1, D2-2, D2-3, D2-4	1-6' X6'	300'
D3-1, D3-2	2-6' X6'	0', 15'
D4-1, D4-2, D4-3	1-6' X6'	250'
D4-4	2-6' X6'	-6', 9'
D4-5, D4-6	2-6' X6'	0', 15'
D6-1, D6-2	1-6' X6'	300'

-LOCATION: DISTANCE FROM CROSSWALK/STOP LINE IN FEET

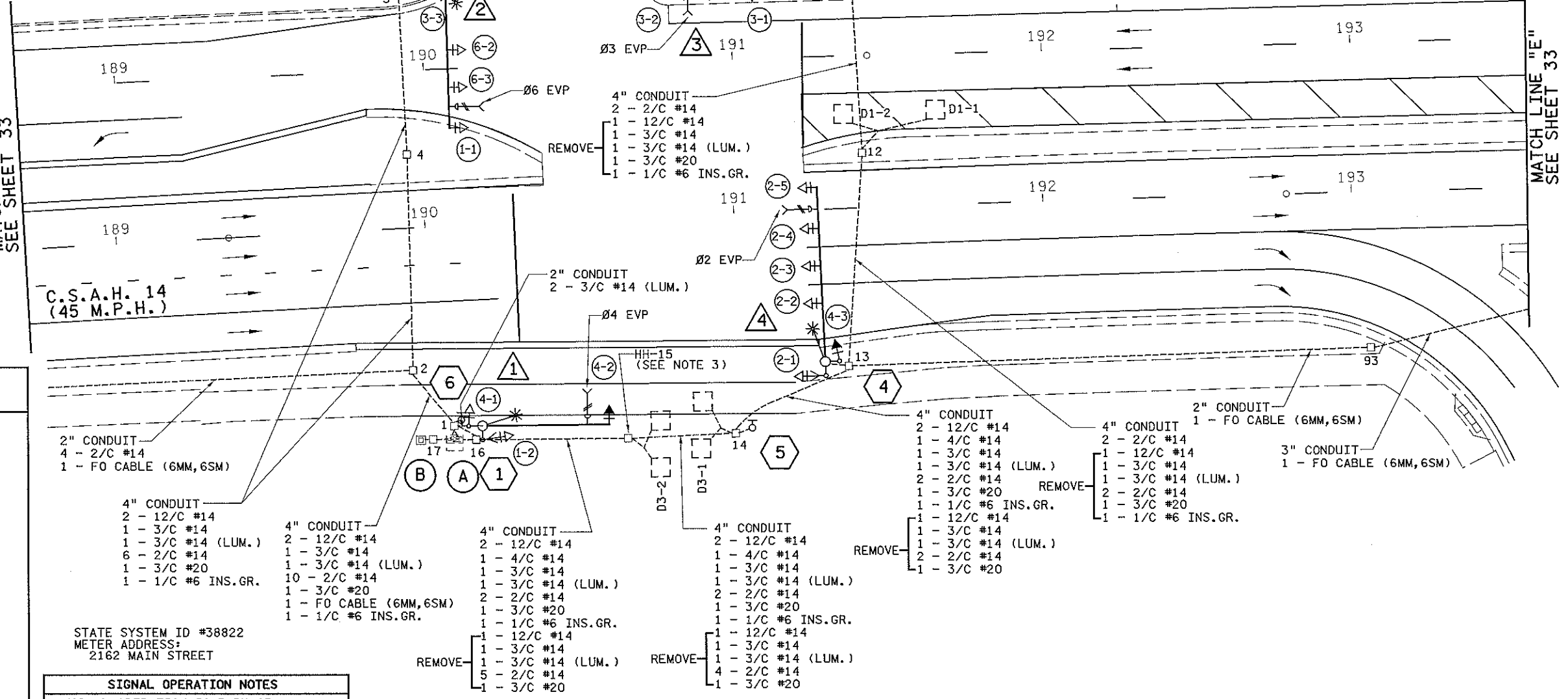
MATCH LINE "D"
SEE SHEET 33

MATCH LINE "C"
SEE SHEET 33

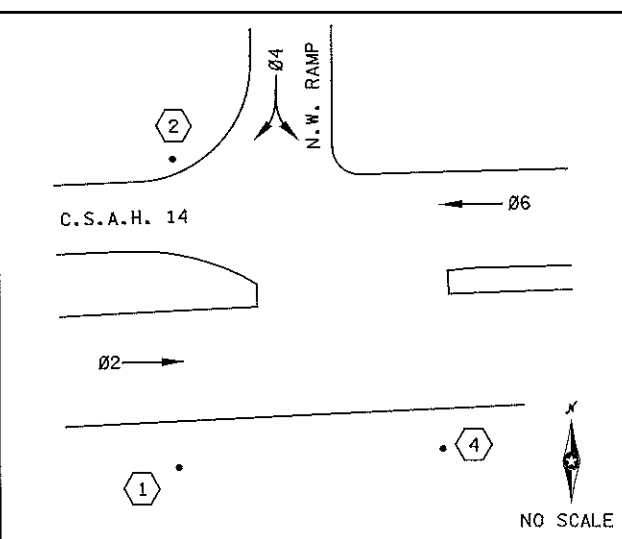
MATCH LINE "E"
SEE SHEET 33

- (B) SOURCE OF POWER
GROUND MOUNTED TRANSFORMER
(APPROXIMATE LOCATION)
EXTEND 2" CONDUIT INTO HH-17 WITH:
3 - 1/C #2

- (A) EQUIPMENT PAD
CONTROLLER & CABINET
SERVICE CABINET
1 - FIBER-OPTIC TELEMETRY
INTERFACE PANEL WITH HARNESS
2 - FIBER-OPTIC MODEMS
EXTEND 4" CONDUIT INTO HH-1 WITH:
4 - 12/C #14 11 - 2/C #14
2 - 3/C #14 1 - 1/C #6 INS.GR.
2 - 3/C #20
1 - FO CABLE (6MM,6SM)
EXTEND 4" CONDUIT INTO HH-16 WITH:
2 - 12/C #14 1 - 4/C #14
1 - 3/C #14 2 - 2/C #14
1 - 3/C #20 1 - 1/C #6 INS.GR.
1 - FO CABLE (6MM,6SM)
REMOVE:
1 - 12/C #14
1 - 3/C #14
5 - 2/C #14
1 - 3/C #20
3" CONDUIT STUBBED OUT
(THREADED & CAPPED BOTH ENDS)
3/4" CONDUIT STUBBED OUT
(THREADED & CAPPED BOTH ENDS)
CONTROLLER TO SERVICE CABINET
EXTEND 2" CONDUIT WITH:
2 - 1/C #6 AND 1 - 1/C #6 INS.GR.
SERVICE CABINET TO HH-1
EXTEND 2" CONDUIT WITH:
3 - 3/C #14 (LUM.)
1 - 3/C #14 (LUM.)
SERVICE CABINET TO HH-17
EXTEND 2" CONDUIT WITH:
3 - 1/C #2



CONTROLLER PHASING



STATE SYSTEM ID #38822
METER ADDRESS:
2162 MAIN STREET

SIGNAL OPERATION NOTES
 - NORMAL OPERATION IS 3 PHASE
 - FLASH MODE SHALL BE ALL RED
 - Ø2 AND Ø6 SHALL BE ON VEHICLE RECALL

SEE SHEET 36 FOR POLE NOTES
AND CONSTRUCTION NOTES

1 PA100 POLE FOUNDATION
 TYPE PA100-A-40-D40-9 (DAVIT AT 350°)
 1 - ANGLE MOUNT SIGNAL OVERHEAD AT 0'
 SALVAGE - 1 - ANGLE MOUNT SIGNAL AT 90°
 (SEE NOTE 5) 1 - ANGLE MOUNT SIGNAL AT 180°
 SALVAGE - 1 - ANGLE MOUNT C.D. PED IND AT 90°
 (SEE NOTE 4) ONE WAY EVP DETECTOR AND
 CONFIRMATORY LIGHT (PHASE 4)
 LUMINAIRE - 250 WATT H.P.S.
 TYPE D SIGN - SEE MAST ARM SIGN DETAILS
 1 - R6-1R SIGN (36x12)
 1 - R6-1L SIGN (36x12)
 1 - R9-3a SIGN (18x18) FACING POLE 2
 EXTEND INTO HH-1:
 3" CONDUIT
 2 - 12/C #14
 1 - 3/C #14
 1 - 3/C #14 (LUM.)
 1 - 3/C #20
 1 - 1/C #6 INS.GR.

2 PA100 POLE FOUNDATION
 TYPE PA100-A-50-D40-9 (DAVIT AT 350°)
 SALVAGE - 1 - ANGLE MOUNT SIGNAL OVERHEAD AT 0'
 (SEE NOTE 5) 2 - STRAIGHT MOUNT SIGNALS OVERHEAD AT 12' AND 24'
 SALVAGE - 1 - ANGLE MOUNT SIGNAL AT 90°
 (SEE NOTE 5) 1 - ANGLE MOUNT SIGNAL AT 180°
 ONE WAY EVP DETECTOR AND
 CONFIRMATORY LIGHT (PHASE 6)
 LUMINAIRE - 250 WATT H.P.S.
 TYPE D MAST ARM SIGN
 SALVAGE - TYPE D MAST ARM SIGN
 (SEE NOTE 6) 1 - R6-1R SIGN (36x12)
 1 - R6-1L SIGN (36x12)
 1 - R9-3a SIGN (18x18) FACING POLE 1
 1 - R9-3a SIGN (18x18) FACING POLE 3
 EXTEND INTO HH-5:
 3" CONDUIT
 2 - 12/C #14
 1 - 3/C #14
 1 - 3/C #14 (LUM.)
 1 - 3/C #20
 1 - 1/C #6 INS.GR.

3 REMOVE - PA90 POLE FOUNDATION
 SEE NOTE 9 - TYPE PA90-A-20-D40-9 (DAVIT AT 350°)
 SALVAGE (SEE NOTE 5) - 1 - ANGLE MOUNT SIGNAL OVERHEAD AT 0'
 1 - ANGLE MOUNT SIGNAL AT 180°
 SALVAGE (SEE NOTE 4) - ONE WAY EVP DETECTOR AND
 CONFIRMATORY LIGHT (PHASE 3)
 SALVAGE (SEE NOTE 9) - LUMINAIRE - 250 WATT H.P.S.
 SALVAGE (SEE NOTE 6) - TYPE D SIGN - SEE MAST ARM SIGN DETAILS
 1 - R6-1R SIGN (36x12)
 1 - R6-1L SIGN (36x12)
 1 - R9-3a SIGN (18x18) FACING POLE 2
 1 - R9-3a SIGN (18x18) FACING POLE 4
 EXTEND INTO HH-8:
 REMOVE - 3" CONDUIT
 1 - 12/C #14
 1 - 3/C #14
 1 - 3/C #14 (LUM.)
 1 - 3/C #20
 1 - 1/C #6 INS.GR.

4 PA100 POLE FOUNDATION
 TYPE PA100-A-55-D40-9 (DAVIT AT 350°)
 1 - ANGLE MOUNT SIGNAL OVERHEAD AT 0'
 3 - STRAIGHT MOUNT SIGNALS OVERHEAD
 AT 12', 24' AND 36'
 2 - ANGLE MOUNT SIGNALS AT 90° AND 180°
 SALVAGE - 1 - ANGLE MOUNT C.D. PED IND AT 180°
 (SEE NOTE 4) ONE WAY EVP DETECTOR AND
 CONFIRMATORY LIGHT (PHASE 2)
 LUMINAIRE - 250 WATT H.P.S.
 TYPE D SIGN - SEE MAST ARM SIGN DETAILS
 1 - R6-1R SIGN (36x12)
 1 - R6-1L SIGN (36x12)
 1 - R9-3a SIGN (18x18) FACING POLE 3
 EXTEND INTO HH-13:
 3" CONDUIT
 2 - 12/C #14
 1 - 4/C #14
 1 - 3/C #14
 1 - 3/C #14 (LUM.)
 1 - 3/C #20
 1 - 1/C #6 INS.GR.

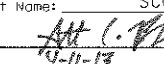

5 REMOVE - PUSHBUTTON STATION FOUNDATION
 SALVAGE - 1 - APS PEDESTRIAN PUSH BUTTON STATION
 1 - APS PUSH BUTTON & SIGN (RT ARROW)
 REMOVE - EXTEND INTO HH-14:
 1 1/4" CONDUIT
 1 - 2/C #14

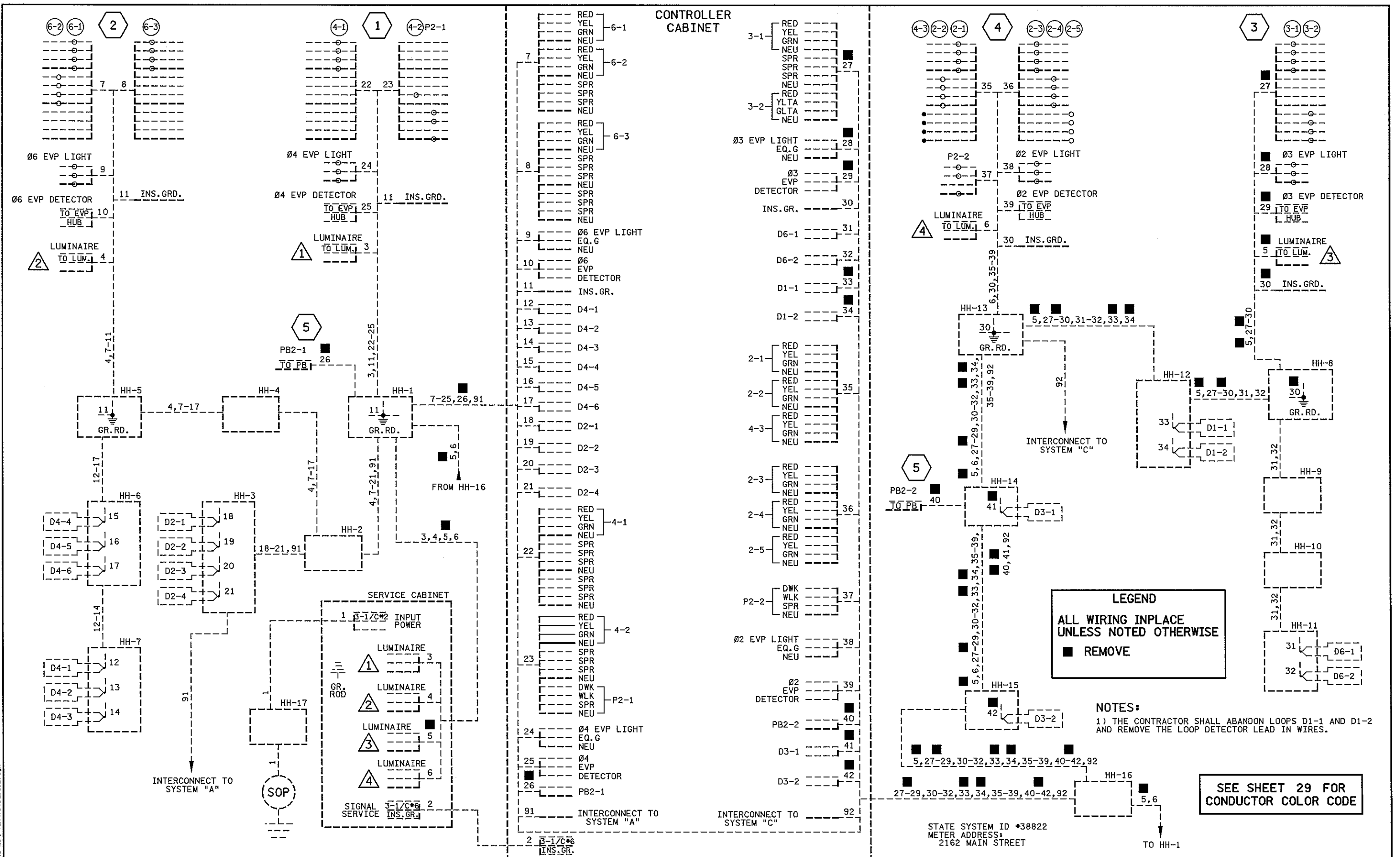
6 REMOVE - PUSHBUTTON STATION FOUNDATION
 SALVAGE - 1 - APS PEDESTRIAN PUSH BUTTON STATION
 1 - APS PUSH BUTTON & SIGN (LT ARROW)
 REMOVE - EXTEND INTO HH-1:
 1 1/4" CONDUIT
 1 - 2/C #14

NOTES:

- 1) ALL ITEMS ARE INPLACE AND SHALL REMAIN INPLACE UNLESS NOTED OTHERWISE.
- 2) CONTRACTOR SHALL PLUG HUBS AFTER REMOVAL OF HEADS. SEE SPECIAL PROVISIONS.
- 3) ADJUST HEIGHT OF INPLACE HH-15 TO MATCH FINISHED GRADE.
- 4) CONTRACTOR SHALL SALVAGE INPLACE PEDESTRIAN HEADS, PEDESTRIAN PUSH BUTTONS, PHASE 3 EVP DETECTOR AND PHASE 3 EVP CONFIRMATORY LIGHT AS DESCRIBED IN THE SPECIAL PROVISIONS.
- 5) CONTRACTOR SHALL SALVAGE AND INSTALL INPLACE VEHICLE HEADS AND INDICATIONS AS DESCRIBED IN THE SPECIAL PROVISIONS.
- 6) CONTRACTOR SHALL SALVAGE SIGNS AS DESCRIBED IN THE SPECIAL PROVISIONS.
- 7) THE CONTRACTOR SHALL PROTECT AND MAINTAIN INPLACE ITEMS.
- 8) REFER TO "FOR INFORMATION ONLY" SHEETS FOR INPLACE SIGNAL COMPONENTS.
- 9) THE CONTRACTOR SHALL SALVAGE THE LUMINAIRE EXTENSION AND LUMINAIRE, AND REMOVE THE SIGNAL POLE AND MAST ARM AS DESCRIBED IN THE SPECIAL PROVISIONS.

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NO	DATE	BY	CKD	APPR	REVISION													



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NO	DATE	BY	CHKD	APPR	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.
 Print Name: SCOTT C. POSKA
 Date: 4-11-13 License #: 47068

STATE AID PROJECT NO.
 COUNTY PROJECT NO. 12-56-14
 CITY PROJECT NO.
 DRAWN BY D. RASMUSSEN
 DESIGNED BY D. RASMUSSEN
 CHECKED BY S. POSKA
 COMM. NO. 0127841



FOR INFORMATION ONLY

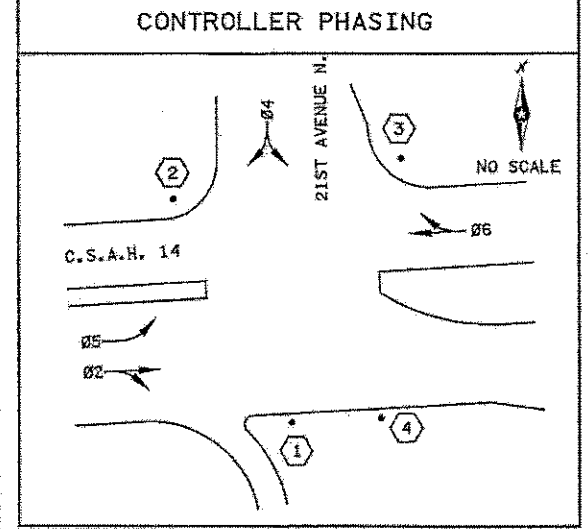
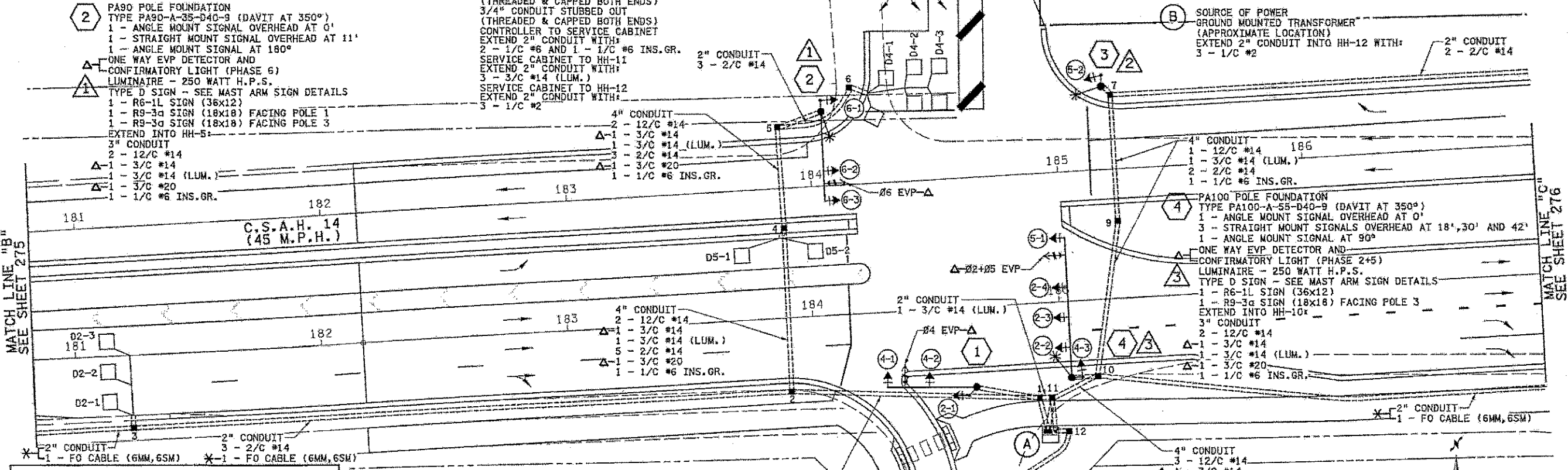
LED SIGNAL INDICATIONS									
FACE	R	Y	G	RLTA	YLTA	GLTA	RRTA	YRTA	GRTA
2-1,2-2,2-3,2-4	●	●	●						
4-1				←	←	←	→	→	→
4-2,4-3				←	←	←			
5-1,5-2				←	←	←			
6-1,6-2,6-3	●	●	●						

-ALL VEHICLE SIGNAL INDICATIONS SHALL BE 12"
-EACH SIGNAL FACE SHALL BE BLACK POLYCARBONITE WITH BACKGROUND SHIELD

(A) EQUIPMENT PAD - SEE DETAIL SERVICE CABINET
 1 - FIBER-OPTIC TELEMETRY INTERFACE PANEL WITH HARNESS
 2 - FIBER-OPTIC MODEMS
 EXTEND 4" CONDUIT INTO HH-1 WITH:
 4 - 12/C #14 8 - 2/C #14
 2 - 3/C #14 1 - 1/C #6 INS.GR.
 * 1 - FO CABLE (6MM,65M)
 EXTEND 4" CONDUIT INTO HH-11 WITH:
 3 - 12/C #14 2 - 2/C #14
 1 - 3/C #14 1 - 1/C #6 INS.GR.
 * 1 - FO CABLE (6MM,65M)
 3" CONDUIT STUBBED OUT (THREADED & CAPPED BOTH ENDS)
 3/4" CONDUIT STUBBED OUT (THREADED & CAPPED BOTH ENDS)
 CONTROLLER TO SERVICE CABINET
 EXTEND 2" CONDUIT WITH:
 2 - 1/C #6 AND 1 - 1/C #6 INS.GR.
 SERVICE CABINET TO HH-11
 EXTEND 2" CONDUIT WITH:
 3 - 3/C #14 (LUM.)
 SERVICE CABINET TO HH-12
 EXTEND 2" CONDUIT WITH:
 3 - 1/C #2

NMC LOOP DETECTORS		
DESIGNATION	NO. & SIZE/FT.	LOCATION
D2-1,D2-2,D2-3	1-6'X6'	300'
D4-1	2-6'X6'	-6',9'
D4-2,D4-3	2-6'X6'	0',15'
D5-1	1-6'X6'	40'
D5-2	1-6'X6'	10'
D6-1,D6-2	1-6'X6'	300'

-LOCATION: DISTANCE FROM CROSSWALK/STOP LINE IN FEET



(1) PA90 POLE FOUNDATION
 TYPE PA90-A-35
 1 - ANGLE MOUNT SIGNAL OVERHEAD AT 0'
 1 - STRAIGHT MOUNT SIGNAL OVERHEAD AT 16'
 1 - STRAIGHT MOUNT SIGNAL AT 225°
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 4)
 TYPE D SIGN - SEE MAST ARM SIGN DETAILS
 EXTEND INTO HH-1:
 3" CONDUIT
 2 - 12/C #14
 1 - 3/C #14
 1 - 3/C #20
 1 - 1/C #6 INS.GR.

SIGNAL OPERATION NOTES
 - NORMAL OPERATION IS 4 PHASE
 - FLASH MODE SHALL BE ALL RED
 - Ø5 SHALL BE PROTECTED LEFT TURN
 - Ø2 AND Ø6 SHALL BE ON VEHICLE RECALL

TE #4744
 STATE SYSTEM ID #38824
 METER ADDRESS: 2108 MAIN STREET

- NOTES:**
- SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
 - THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER AND VERIFIED BY MN/DOT TRAFFIC OFFICE PERSONNEL.
 - A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PREEMPTION EQUIPMENT SHALL BE FURNISHED AND INSTALLED 6' FROM THE END OF EACH MAST ARM.
 - SIGNING IS INCLUDED IN THE SIGNAL PAY ITEM. FOR TYPE "D" SIGNS, SEE DETAILS.
 - FOR PAVEMENT MARKINGS, SEE SIGNING AND STRIPING PLANS.
 - ITEMS DENOTED WITH AN * ARE INCLUDED IN THE INTERCONNECT PAY ITEM.
 - ITEMS DENOTED WITH AN Δ ARE INCLUDED IN THE EVP SYSTEM PAY ITEM.
 - ALL SCHEDULE 80 PVC OR HDPE SHALL CARRY 1 - 1/C #6 INSULATED GREEN GROUNDING CONDUCTOR AS SHOWN ON THE PLAN.
 - THE CONTRACTOR SHALL COORDINATE WITH CONNEXUS ENERGY THE SOURCE OF POWER CONNECTION AND LOCATION OF NEW GROUND MOUNTED TRANSFORMER.
 - THIS PLAN SPECIFIES CONDUIT SIZES, TYPES AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER ROADWAYS REQUIRE BORING.

NO	DATE	BY	CHK	APPR	REVISION
1	5/27/09				

I hereby certify that this plan, specification, or contract was prepared by me or under my direct supervision and that I am a Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: *David D. Holt*
 License #: 21424

I hereby certify that this plan, specification, or contract was prepared by me or under my direct supervision and that I am a Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: *Harman S. Potter*
 License #: 42726

PROJECT NO. 0282-00-11-35E
 STATE PROJECT NO. 02-614-2B
 COUNTY PROJECT NO. X
 CITY PROJECT NO. X

DRAWN BY: M. BRESSLER
 DESIGNED BY: M. BRESSLER
 CHECKED BY: A. WALTER
 COMM. NO. 0088589



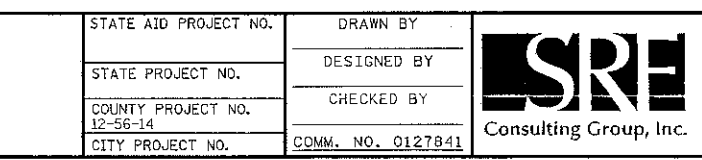
ANOKA COUNTY/CITIES OF CENTERVILLE & LINO LAKES
 TRAFFIC SIGNAL PLANS
 C.S.A.H. 14/T.H. 35E INTERCHANGE
 C.S.A.H. 14 & 21ST AVENUE N.
 INTERSECTION LAYOUT (SYSTEM "A")

SHEET 269 OF 471

NO	DATE	BY	CHK	APPR	REVISION
1	5/27/09				

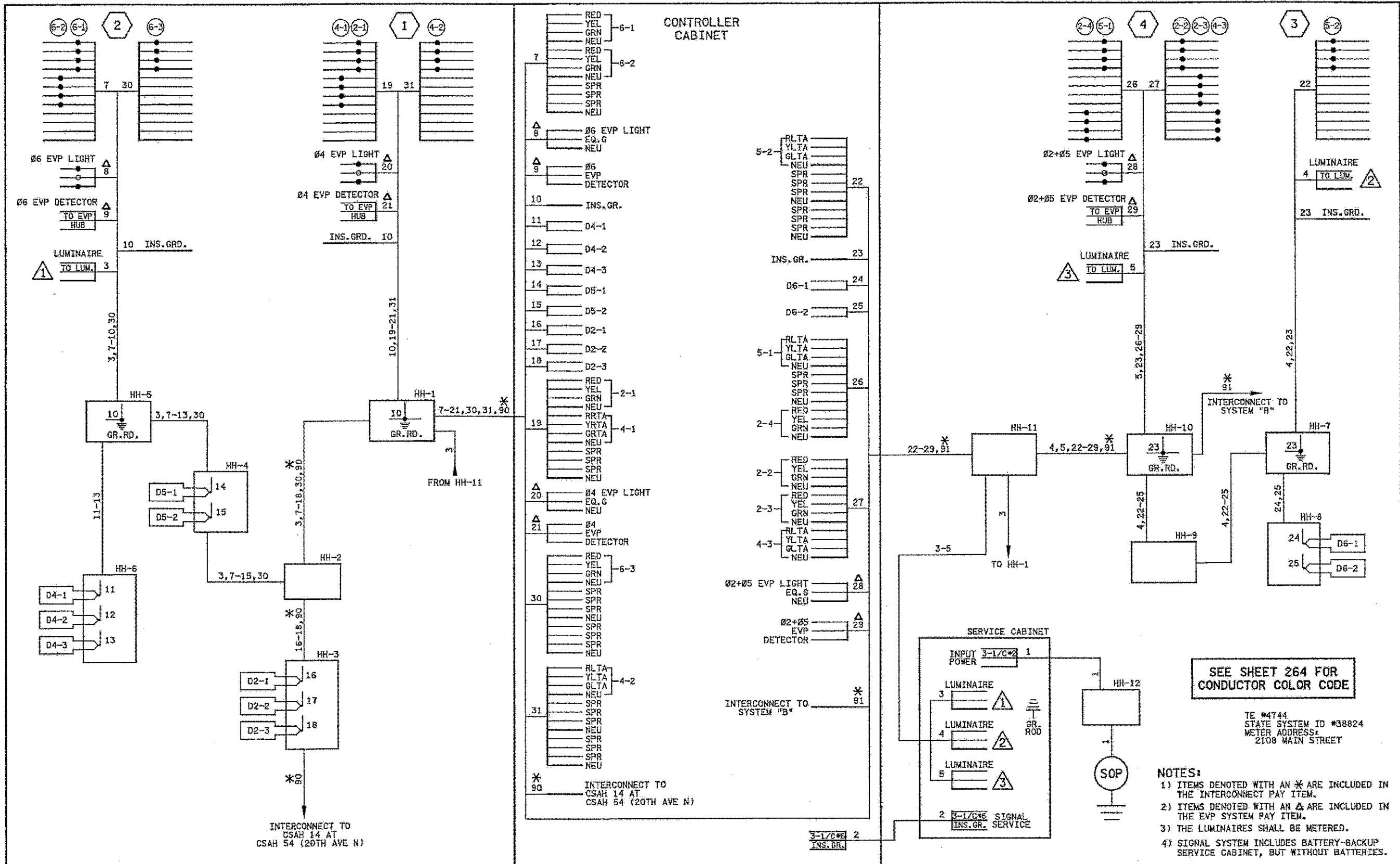
STATE AID PROJECT NO.
 STATE PROJECT NO.
 COUNTY PROJECT NO. 12-56-14
 CITY PROJECT NO.

DRAWN BY
 DESIGNED BY
 CHECKED BY
 COMM. NO. 0127841



ANOKA COUNTY
 TRAFFIC SIGNAL PLANS
 21ST AVENUE
 FOR INFORMATION ONLY

SHEET 38 OF 42



I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: <u>John D. Holt</u> License No. <u>5122/09</u> License * <u>213</u>		I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: <u>Allen S. Potter</u> License No. <u>05/27/09</u> License * <u>42106</u>		STATE PROJECT NO. 0282-25 (TH 35E) COUNTY PROJECT NO. X CITY PROJECT NO. X	DRAWN BY: <u>M. BRESSLER</u> DESIGNED BY: <u>M. BRESSLER</u> CHECKED BY: <u>M. BRESSLER</u> COMM. NO. 0088899	ANOKA COUNTY/CITIES OF CENTERVILLE & LINO LAKES TRAFFIC SIGNAL PLANS C.S.A.H. 14/T.H. 35E INTERCHANGE C.S.A.H. 14 & 21ST AVENUE N. FIELD WIRING DIAGRAM (SYSTEM "A")	SHEET 270 OF 471
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STATE AID PROJECT NO. STATE PROJECT NO. COUNTY PROJECT NO. 12-56-14 CITY PROJECT NO.		DRAWN BY DESIGNED BY CHECKED BY COMM. NO. 0127841	SRE ENGINEERS PLANNERS DESIGNERS Consulting Group, Inc.	ANOKA COUNTY TRAFFIC SIGNAL PLANS 21ST AVENUE FOR INFORMATION ONLY	SHEET 39 OF 42
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FOR INFORMATION ONLY

LED SIGNAL INDICATIONS

FACE	R	Y	G	RLTA	YLTA	GLTA
1-1,1-2				←	←	←
2-1,2-2,2-3	●	●	●			
2-4,2-5	●	●	●			
3-1	●	●	●			
3-2,3-3				←	←	←
4-1	●	●	●			
4-2	●	●	●			
4-3	●	●	●	←	←	←
6-1,6-2,6-3	●	●	●			

-ALL VEHICLE SIGNAL INDICATIONS SHALL BE 12"
-EACH SIGNAL FACE SHALL BE BLACK POLYCARBONITE WITH BACKGROUND SHIELD

2 PA100 POLE FOUNDATION
TYPE PA100-A-50-D40-9 (DAVIT AT 350°)
1 - ANGLE MOUNT SIGNAL OVERHEAD AT 0°
2 - STRAIGHT MOUNT SIGNALS OVERHEAD AT 12' AND 24'
2 - ANGLE MOUNT SIGNALS AT 90° AND 180°

ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 1+6)
LUMINAIRE - 250 WATT H.P.S.
TYPE D SIGN - SEE MAST ARM SIGN DETAILS

1 - R6-1R SIGN (36x12)
1 - R6-1L SIGN (36x12)
1 - R9-3a SIGN (18x18) FACING POLE 1
1 - R9-3a SIGN (18x18) FACING POLE 3
EXTEND INTO HH-5:
3" CONDUIT
2 - 12/C #14
Δ-1 - 3/C #14
1 - 3/C #14 (LUM.)
Δ-1 - 3/C #20
1 - 1/C #6 INS.GR.

3 PA90 POLE FOUNDATION
TYPE PA90-A-20-D40-9 (DAVIT AT 350°)
1 - ANGLE MOUNT SIGNAL OVERHEAD AT 0°
1 - ANGLE MOUNT SIGNAL AT 180°

ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 3)
LUMINAIRE - 250 WATT H.P.S.
TYPE D SIGN - SEE MAST ARM SIGN DETAILS

1 - R6-1R SIGN (36x12)
1 - R6-1L SIGN (36x12)
1 - R9-3a SIGN (18x18) FACING POLE 2
1 - R9-3a SIGN (18x18) FACING POLE 4
EXTEND INTO HH-8:
3" CONDUIT
1 - 12/C #14
Δ-1 - 3/C #14
1 - 3/C #14 (LUM.)
Δ-1 - 3/C #20
1 - 1/C #6 INS.GR.

NMC LOOP DETECTORS

DESIGNATION	NO. & SIZE/FT.	LOCATION
D1-1	1-6'X6'	40'
D1-2	1-6'X6'	10'
D2-1, D2-2, D2-3, D2-4	1-6'X6'	300'
D3-1, D3-2	2-6'X6'	0', 15'
D4-1, D4-2, D4-3	1-6'X6'	250'
D4-4	2-6'X6'	-6', 9'
D4-5, D4-6	2-6'X6'	0', 15'
D6-1, D6-2	1-6'X6'	300'

-LOCATION: DISTANCE FROM CROSSWALK/STOP LINE IN FEET

B SOURCE OF POWER
GROUND MOUNTED TRANSFORMER (APPROXIMATE LOCATION)
EXTEND 2" CONDUIT INTO HH-17 WITH:
3 - 1/C #2

1 PA100 POLE FOUNDATION
TYPE PA100-A-40-D40-9 (DAVIT AT 350°)
1 - ANGLE MOUNT SIGNAL OVERHEAD AT 0°
2 - ANGLE MOUNT SIGNALS AT 90° AND 180°
1 - ANGLE MOUNT C.D. PED IND AT 90°

ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 4)
LUMINAIRE - 250 WATT H.P.S.
TYPE D SIGN - SEE MAST ARM SIGN DETAILS

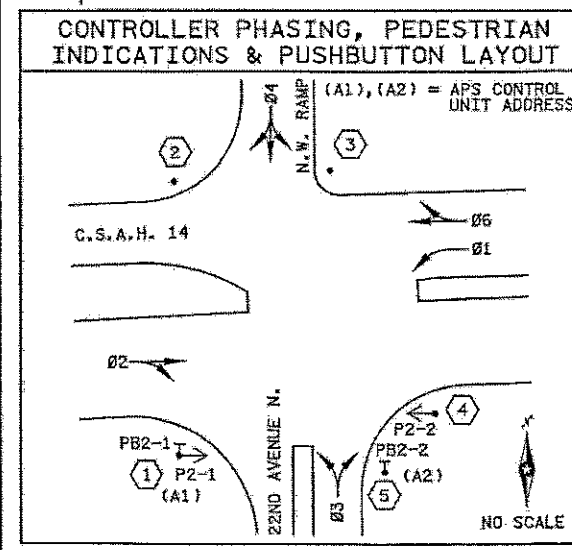
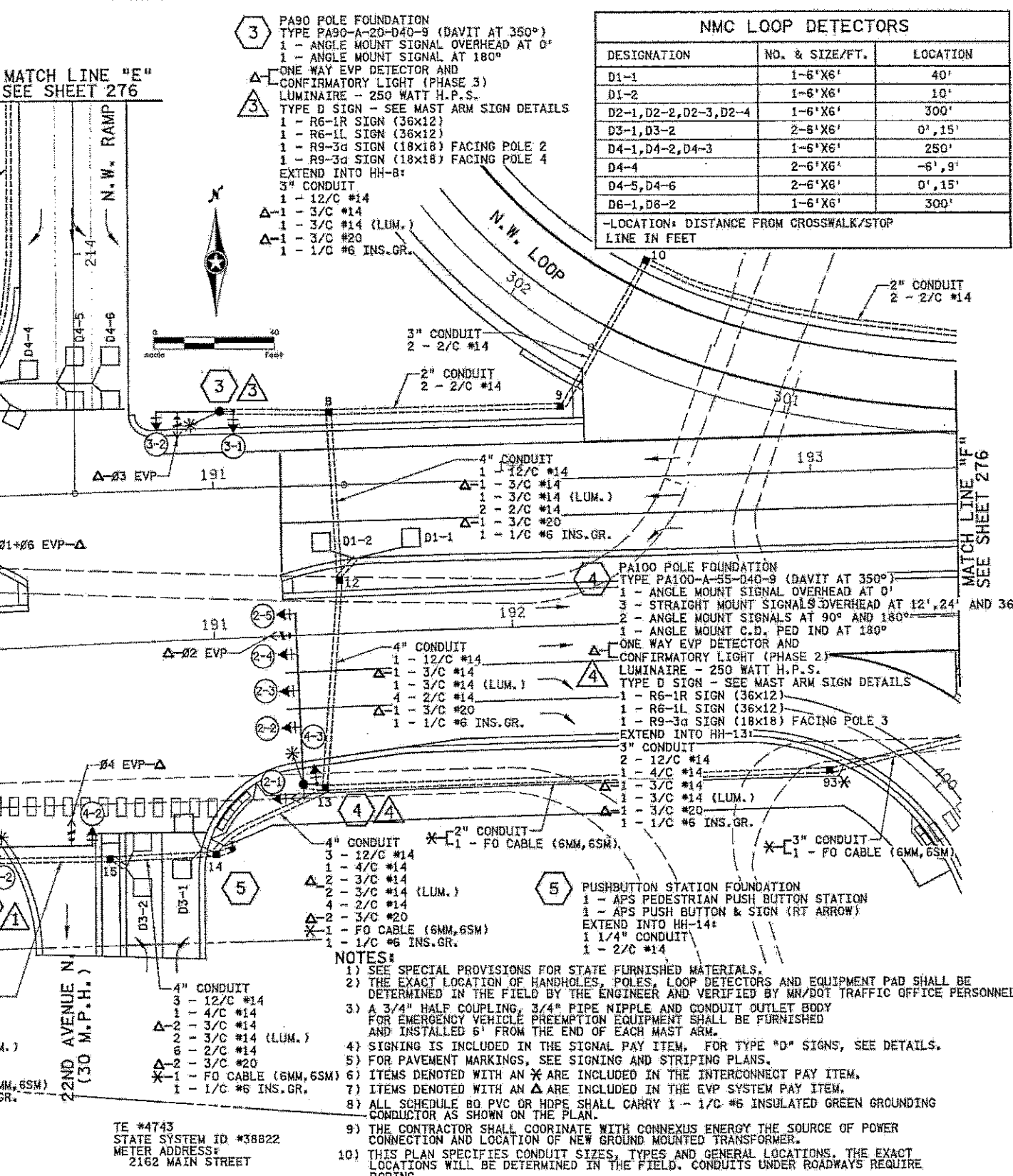
1 - R6-1R SIGN (36x12)
1 - R6-1L SIGN (36x12)
1 - R9-3a SIGN (18x18) FACING POLE 2
EXTEND INTO HH-1:
3" CONDUIT
2 - 12/C #14 188
Δ-1 - 3/C #14
1 - 3/C #14 (LUM.)
Δ-1 - 2/C #14
1 - 3/C #20
1 - 1/C #6 INS.GR.

A EQUIPMENT PAD - SEE DETAIL
CONTROLLER & CABINET SERVICE CABINET

1 - FIBER-OPTIC TELEMETRY INTERFACE PANEL WITH HARNESS
2 - FIBER-OPTIC MODEMS
EXTEND 4" CONDUIT INTO HH-1 WITH:
4 - 12/C #14 11 - 2/C #14
2 - 3/C #14 1 - 1/C #6 INS.GR.
Δ-1 - 3/C #20
1 - 1/C #6 INS.GR.

3" CONDUIT STUBBED OUT (THREADED & CAPPED BOTH ENDS)
3/4" CONDUIT STUBBED OUT (THREADED & CAPPED BOTH ENDS)
CONTROLLER TO SERVICE CABINET
EXTEND 2" CONDUIT WITH:
2 - 1/C #6 AND 1 - 1/C #8 INS.GR.

SERVICE CABINET TO HH-1
EXTEND 2" CONDUIT WITH:
4 - 3/C #14 (LUM.)
3 - 1/C #2



SIGNAL OPERATION NOTES

- NORMAL OPERATION IS 5 PHASE
- FLASH MODE SHALL BE ALL RED
- Ø1 SHALL BE PROTECTED LEFT TURN
- Ø3 AND Ø4 SHALL BE PHASE SEQUENTIAL
- Ø2 AND Ø6 SHALL BE ON VEHICLE RECALL

- NOTES:**
- SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
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 - THIS PLAN SPECIFIES CONDUIT SIZES, TYPES AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER ROADWAYS REQUIRE BORING.

TE #4743
STATE SYSTEM ID #38822
METER ADDRESS: 2162 MAIN STREET

STATE PROJECT NO. 0282-2 (IN 35E)
STATE PROJECT NO. 02-614-28
COUNTY PROJECT NO. X
DRAWN BY M. BRESSLER
DESIGNED BY M. BRESSLER
CHECKED BY M. BRESSLER
COMM. NO. 008080

SRF CONSULTING GROUP, INC.

ANOKA COUNTY/CITY OF CENTERVILLE
TRAFFIC SIGNAL PLANS
C.S.A.H. 14/T.H. 35E INTERCHANGE
C.S.A.H. 14 & 35E N.W. RAMP/22ND AVENUE N.
INTERSECTION LAYOUT (SYSTEM "B")

SHEET 271 OF 471

STATE AID PROJECT NO. DRAWN BY
STATE PROJECT NO. DESIGNED BY
COUNTY PROJECT NO. 12-56-14 CHECKED BY
CITY PROJECT NO. COMM. NO. 0127841

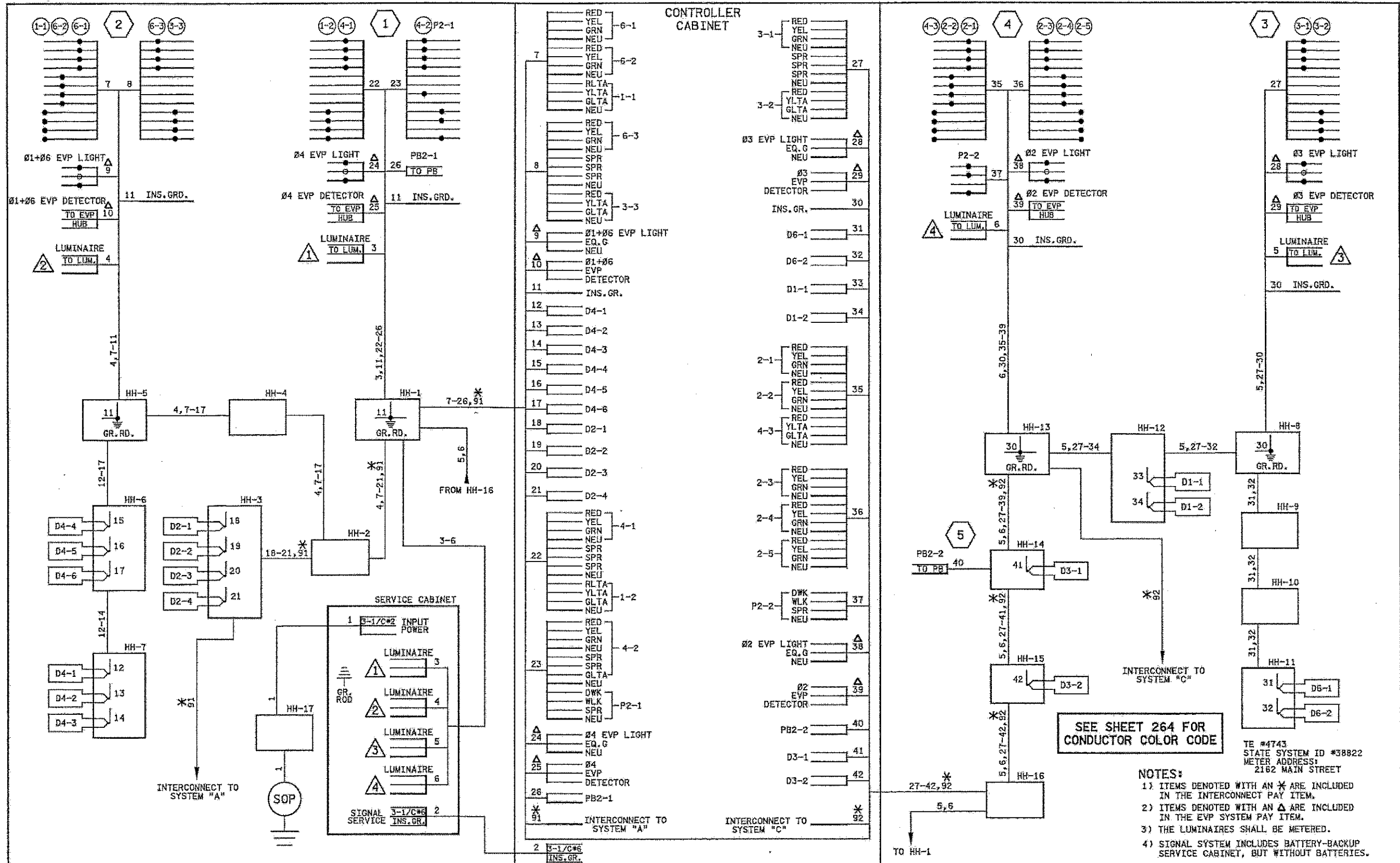
SRF ENGINEERS PLANNERS DESIGNERS
Consulting Group, Inc.

ANOKA COUNTY
TRAFFIC SIGNAL PLANS
21ST AVENUE
FOR INFORMATION ONLY

SHEET 40 OF 42

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FOR INFORMATION ONLY



- NOTES:**
- 1) ITEMS DENOTED WITH AN * ARE INCLUDED IN THE INTERCONNECT PAY ITEM.
 - 2) ITEMS DENOTED WITH AN Δ ARE INCLUDED IN THE EVP SYSTEM PAY ITEM.
 - 3) THE LUMINAIRES SHALL BE METERED.
 - 4) SIGNAL SYSTEM INCLUDES BATTERY-BACKUP SERVICE CABINET, BUT WITHOUT BATTERIES.

TE #4743
STATE SYSTEM ID #38822
METER ADDRESS:
2162 MAIN STREET

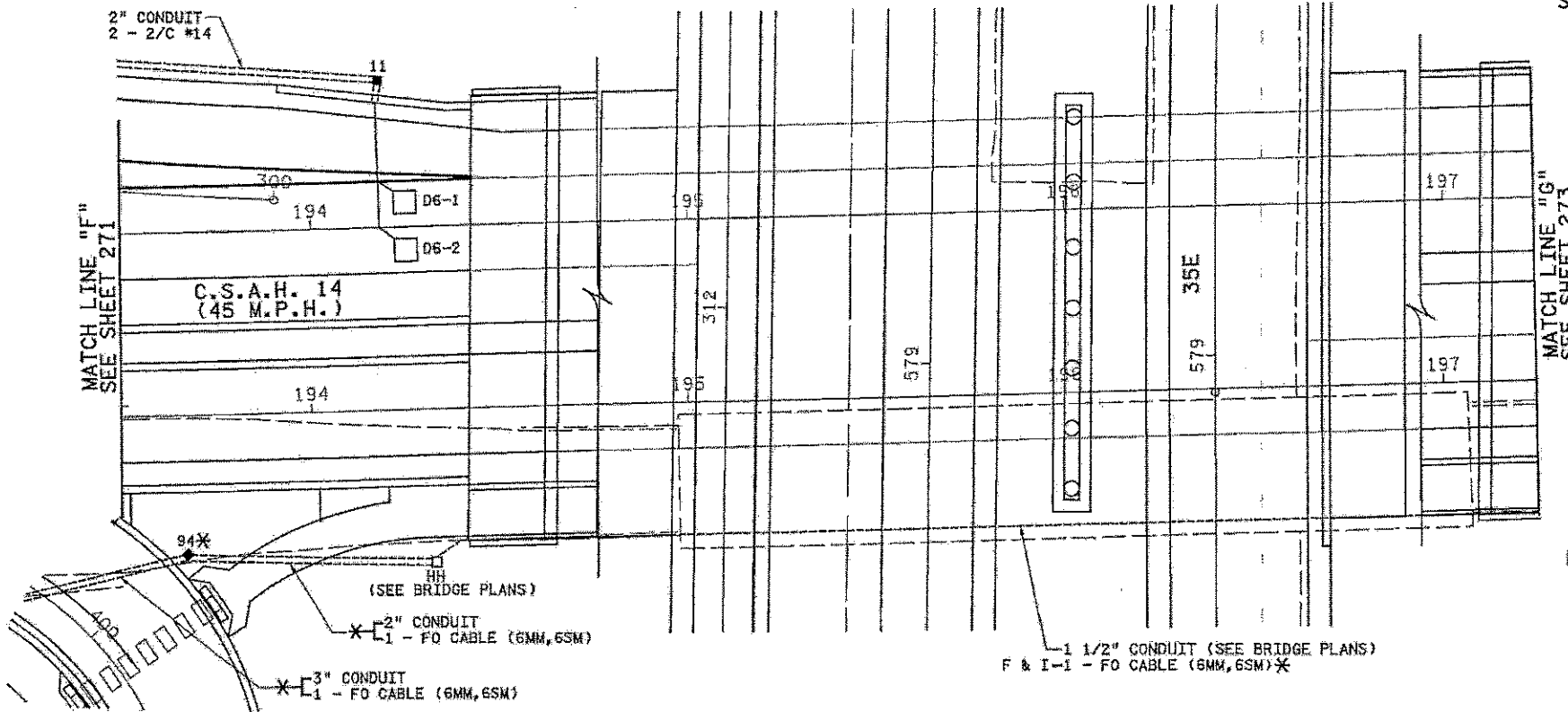
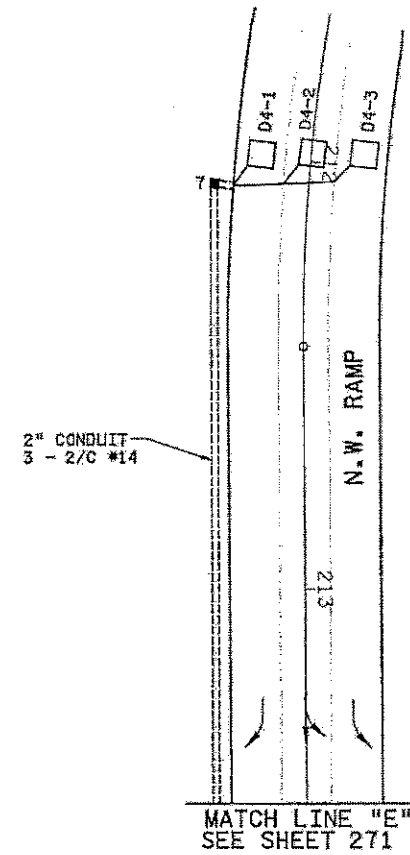
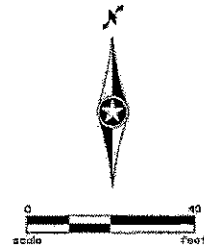
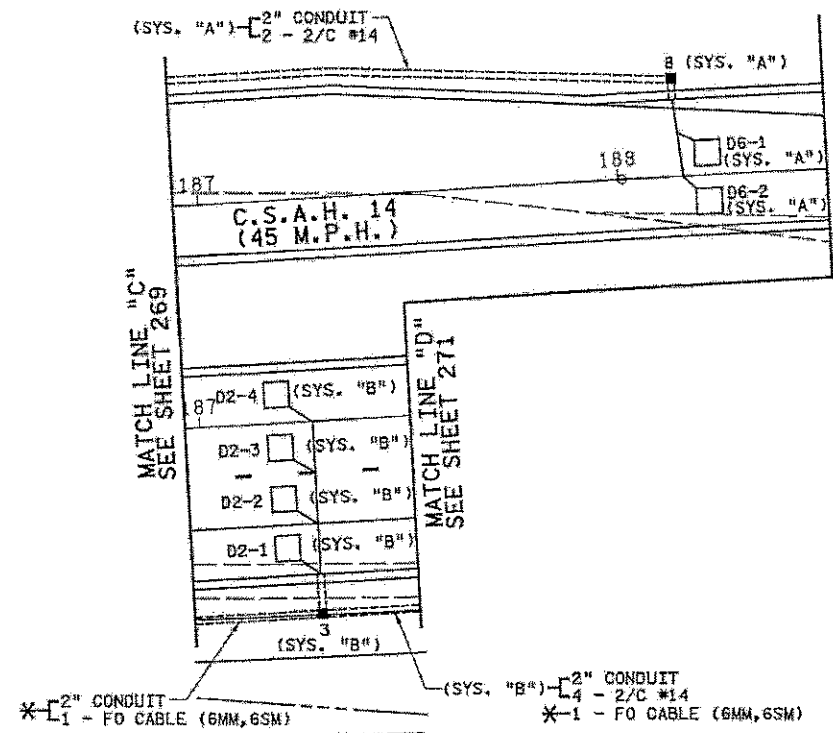
SEE SHEET 264 FOR CONDUCTOR COLOR CODE

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 Electrical Engineer under the laws of the State of Minnesota. Print Name: David D. Holt License #: 5127109		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. Print Name: Adrian S. Potter License #: 42104		PROJECT NO. 0282-1 (CH 55E) STATE PROJECT NO. 02-614-28 COUNTY PROJECT NO. X CITY PROJECT NO. X	DRAWN BY: M. BRESSLER DESIGNED BY: M. BRESSLER CHECKED BY: A. POTTER COMM. NO. 0088509	SRF CONSULTING GROUP, INC. ANOKA COUNTY/CITY OF CENTERVILLE TRAFFIC SIGNAL PLANS C.S.A.H. 14/T.H. 35E INTERCHANGE C.S.A.H. 14 & 35E N.W. RAMP/22ND AVENUE N. FIELD WIRING DIAGRAM (SYSTEM "B")	SHEET 272 OF 471
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STATE AID PROJECT NO. STATE PROJECT NO. COUNTY PROJECT NO. 12-56-14 CITY PROJECT NO.		DRAWN BY DESIGNED BY CHECKED BY COMM. NO. 0127841		SRF CONSULTING GROUP, INC. ENGINEERS PLANNERS DESIGNERS	ANOKA COUNTY TRAFFIC SIGNAL PLANS 21ST AVENUE FOR INFORMATION ONLY.	SHEET 41 OF 42
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- NOTES:**
- 1) SEE SPECIAL PROVISIONS FOR FURNISHED MATERIALS.
 - 2) THE EXACT LOCATION OF HANDHOLES AND LOOP DETECTORS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER AND VERIFIED BY MN/DOT TRAFFIC PERSONNEL.
 - 3) FOR PAVEMENT MARKINGS, SEE SIGNING AND STRIPING PLANS.
 - 4) ITEMS DENOTED WITH AN * ARE INCLUDED IN THE INTERCONNECT PAY ITEM.
 - 5) THE CONTRACTOR SHALL LOCATE AND VERIFY INPLACE UTILITIES PRIOR TO COMMENCING WORK. SEE UTILITY PLANS.

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NO	DATE	BY	CHKD	APPR	REVISION

I hereby certify that this plan, specification, or contract was prepared by me or under my direct supervision and that I am a duly Licensed Professional Electrical Engineer under the laws of the State of Minnesota.
 Print Name: **D. HOLT**
 License No. **21328**
 Date: **5/22/09**

I hereby certify that this plan, specification, or contract 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.
 Print Name: **A. S. POTTER**
 License No. **42105**
 Date: **05/27/09**

STATE PROJECT NO. 0282-211H 35E
 STATE PROJECT NO. 02-614-28
 COUNTY PROJECT NO. X
 CITY PROJECT NO. X

SRF CONSULTING GROUP, INC.
 DRAWN BY: M. BRESSLER
 DESIGNED BY: M. BRESSLER
 CHECKED BY: A. POTTER
 COMM. NO. 0088298

ANOKA COUNTY
 TRAFFIC SIGNAL PLANS
 C.S.A.H. 14/T.H. 35E INTERCHANGE
 MATCH LINE/INTERCONNECT LAYOUT

SHEET **276** OF **471**

NO	DATE	BY	CHKD	APPR	REVISION

I hereby certify that this plan, specification, or contract 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.
 Print Name: **D. HOLT**
 License No. **21328**
 Date: **5/22/09**

STATE AID PROJECT NO. DRAWN BY
 STATE PROJECT NO. DESIGNED BY
 COUNTY PROJECT NO. 12-56-14 CHECKED BY
 CITY PROJECT NO. COMM. NO. 0127841

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 ENGINEERS
 PLANNERS
 DESIGNERS

ANOKA COUNTY
 TRAFFIC SIGNAL PLANS
 21ST AVENUE
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SHEET **42** OF **42**

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