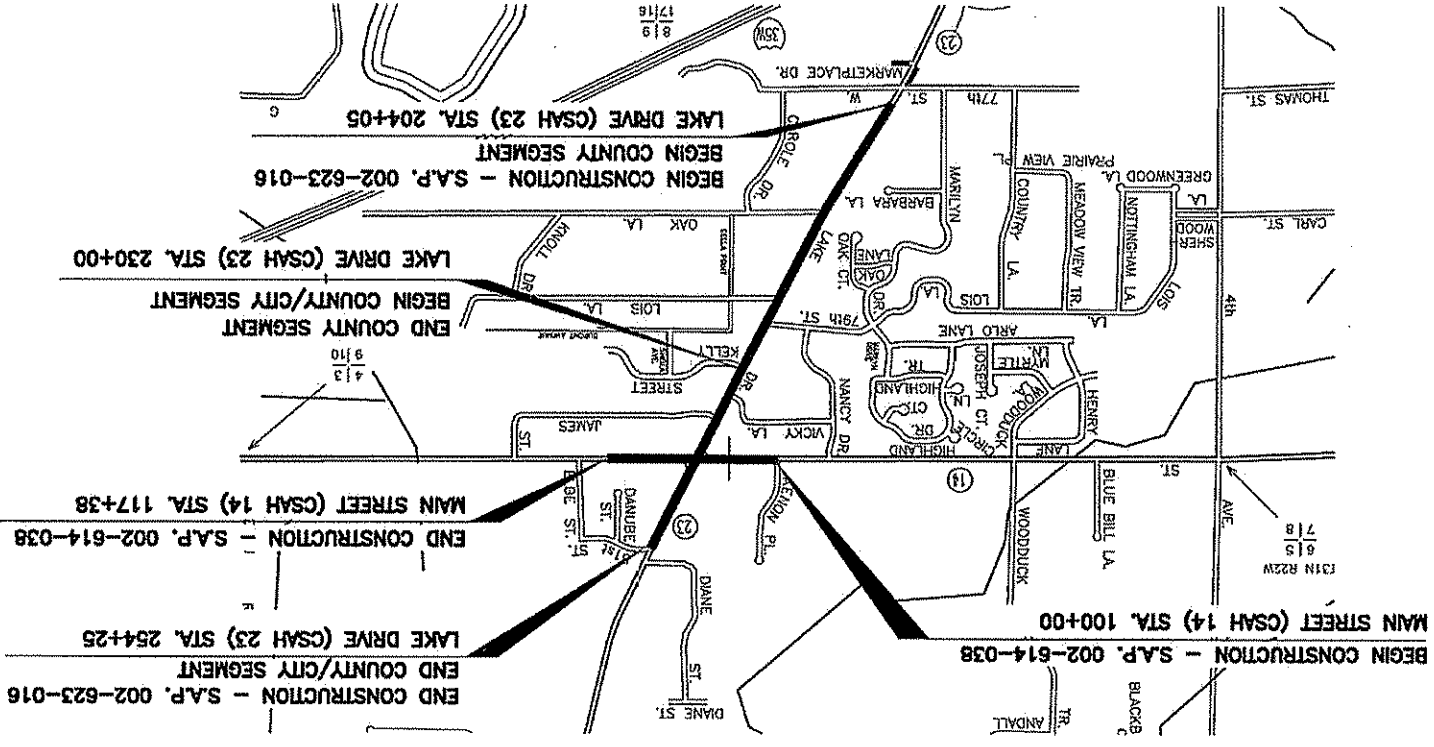


MINNESOTA DEPARTMENT OF TRANSPORTATION CITY OF LINO LAKES

CONSTRUCTION PLAN FOR: SUBGRADE PREPARATION, AGGREGATE BASE, BITUMINOUS MILL, BITUMINOUS PAVING, CRACK AND SEAT, STORM SEWER, SIGNALS, SIGNING AND STRIPING, AND APPURTENANT WORK.

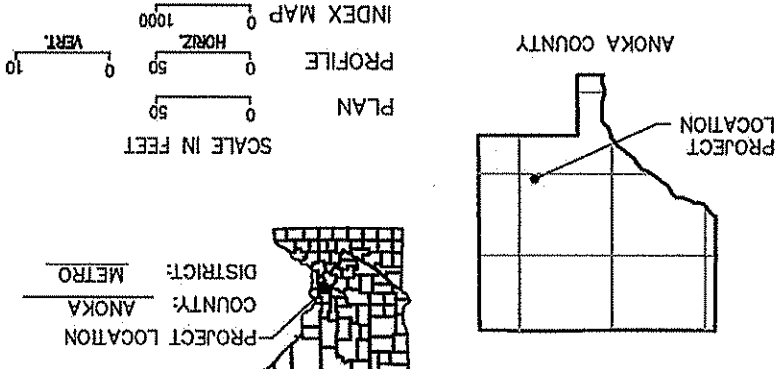
LOCATED ON: MAIN STREET FROM AENON PLACE TO APPROX. 900 FEET EAST OF LAKE DRIVE, LAKE DRIVE FROM APPROX. 600 FEET NORTH OF 77TH STREET WEST TO APPROX. 1100 FEET NORTH OF MAIN STREET.

S.A.P. 002-614-038, MAIN STREET (CSAH 14)		S.A.P. 002-623-016, LAKE DRIVE (CSAH 23)	
GROSS LENGTH	1738 FEET 0.33 MILES	GROSS LENGTH	5020 FEET 0.95 MILES
BRIDGES-LENGTH	0 FEET 0 MILES	BRIDGES-LENGTH	0 FEET 0 MILES
EXCEPTIONS-LENGTH	0 FEET 0 MILES	EXCEPTIONS-LENGTH	0 FEET 0 MILES
NET LENGTH	1738 FEET 0.33 MILES	NET LENGTH	5020 FEET 0.95 MILES



DESIGN DESIGNATION MAIN STREET (CSAH 14)
 Present ADT (2012) = 7,500
 Projected ADT (2032) = 19,000
 No. of Traffic Lanes = 2
 No. of Parking Lanes = 0
 Ton Design = 9 ton
 Design Speed = 40 MPH
 Soil Factor = 50%
 Functional Classification = PRINCIPAL ARTERIAL
 Stopping Sight Distance Based On: 3.5' Height of Eyes And 2.0' Height of Object

DESIGN DESIGNATION LAKE DRIVE (CSAH 23)
 Present ADT (2012) = 9,900
 Projected ADT (2032) = 16,400
 No. of Traffic Lanes = 2
 No. of Parking Lanes = 0
 Ton Design = 9 ton
 Design Speed = 55/50 MPH
 Soil Factor = 50%
 Functional Classification = A MINOR ARTERIAL
 Stopping Sight Distance Based On: 3.5' Height of Eyes And 2.0' Height of Object



PROJECT LOCATION
 COUNTY: ANOKA
 DISTRICT: METRO



PLAN REVISIONS	
DATE	SHEET NO.

LEGEND	
EXIST. RIGHT-OF-WAY	---
EXIST. PROPERTY LINE	==
EXIST. CONC. CURB AND GUTTER	---
EXIST. CURB (TYPE AS NOTED)	---
EXIST. EDGE OF BIT. SURFACE	---
EXIST. EDGE OF GRAVEL	---
EXIST. SIDEWALK (TYPE AS NOTED)	---
EXIST. POWER POLE, GUY	---
EXIST. LIGHT POLE, HAND HOLE	---
EXIST. TREE	---
EXIST. CHAIN LINK FENCE	---
EXIST. WOOD FENCE	---
EXIST. RETAINING WALL	---
EXIST. BUILDING	---
EXIST. SANITARY SEWER	---
EXIST. STORM SEWER (12"-36")	---
EXIST. STORM SEWER (< 12")	---
EXIST. MANHOLE	---
EXIST. CATCHBASIN	---
EXIST. WATERMAIN	---
EXIST. HYDRANT, GATE VALVE	---
EXIST. GAS MAIN	---
EXIST. BURIED ELECTRIC	---
ELECTRIC BOX	---
BURIED TELEPHONE	---
TELEPHONE PEDESTAL	---
BURIED CABLE TELEVISION	---
TEMPORARY EASEMENT	---
RIGHT-OF-WAY	---
PROPERTY LINE	==
CONC. CURB AND GUTTER	---
EXIST. CURB (TYPE AS NOTED)	---
EXIST. EDGE OF BIT. SURFACE	---
EXIST. EDGE OF GRAVEL	---
EXIST. SIDEWALK (TYPE AS NOTED)	---
EXIST. POWER POLE, GUY	---
EXIST. LIGHT POLE, HAND HOLE	---
EXIST. TREE	---
EXIST. CHAIN LINK FENCE	---
EXIST. WOOD FENCE	---
EXIST. RETAINING WALL	---
EXIST. BUILDING	---
EXIST. SANITARY SEWER	---
EXIST. STORM SEWER (12"-36")	---
EXIST. STORM SEWER (< 12")	---
EXIST. MANHOLE	---
EXIST. CATCHBASIN	---
EXIST. WATERMAIN	---
EXIST. HYDRANT, GATE VALVE	---
EXIST. GAS MAIN	---
EXIST. BURIED ELECTRIC	---
ELECTRIC BOX	---
BURIED TELEPHONE	---
TELEPHONE PEDESTAL	---
BURIED CABLE TELEVISION	---
TEMPORARY EASEMENT	---
RIGHT-OF-WAY	---
PROPERTY LINE	==
CONC. CURB AND GUTTER	---
EXIST. CURB (TYPE AS NOTED)	---
EXIST. EDGE OF BIT. SURFACE	---
EXIST. EDGE OF GRAVEL	---
EXIST. SIDEWALK (TYPE AS NOTED)	---
EXIST. POWER POLE, GUY	---
EXIST. LIGHT POLE, HAND HOLE	---
EXIST. TREE	---
EXIST. CHAIN LINK FENCE	---
EXIST. WOOD FENCE	---
EXIST. RETAINING WALL	---
EXIST. BUILDING	---
EXIST. SANITARY SEWER	---
EXIST. STORM SEWER (12"-36")	---
EXIST. STORM SEWER (< 12")	---
EXIST. MANHOLE	---
EXIST. CATCHBASIN	---
EXIST. WATERMAIN	---
EXIST. HYDRANT, GATE VALVE	---
EXIST. GAS MAIN	---
EXIST. BURIED ELECTRIC	---
ELECTRIC BOX	---
BURIED TELEPHONE	---
TELEPHONE PEDESTAL	---
BURIED CABLE TELEVISION	---

PROPOSED CONSTRUCTION	
TEMPORARY EASEMENT	---
RIGHT-OF-WAY	---
PROPERTY LINE	==
CURB & GUTTER	---
CONC. DRIVEWAY (THICKNESS AS NOTED)	---
CONC. SIDEWALK	---
CONC. SIDEWALK DECORATIVE	---
SANITARY SEWER	---
WATERMAIN	---
STORM SEWER	---
MANHOLE	---
CATCHBASIN	---
ADJUST MANHOLE	---
CHAIN LINK FENCE	---
WOOD FENCE	---
RETAINING WALL	---
BITUMINOUS DRIVE	---
BITUMINOUS SURFACING	---
SILT FENCE	---
CONDUIT	---
STREET LIGHT	---
TREE	---
TREE GRATE	---
SIGNAL POLE	---

DESCRIPTION	SHEET NO.
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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" (MUTCD) AND PART "A" FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

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.

PRINTED NAME: JAMES E. STUODENSKI
 SIGNATURE: *James E. StoudenSKI*
 DATE: 7/23/12
 LIC. NO. 23757

TKDA
 ENGINEERING - ARCHITECTURE - PLANNING

STATE AID APPROVALS:

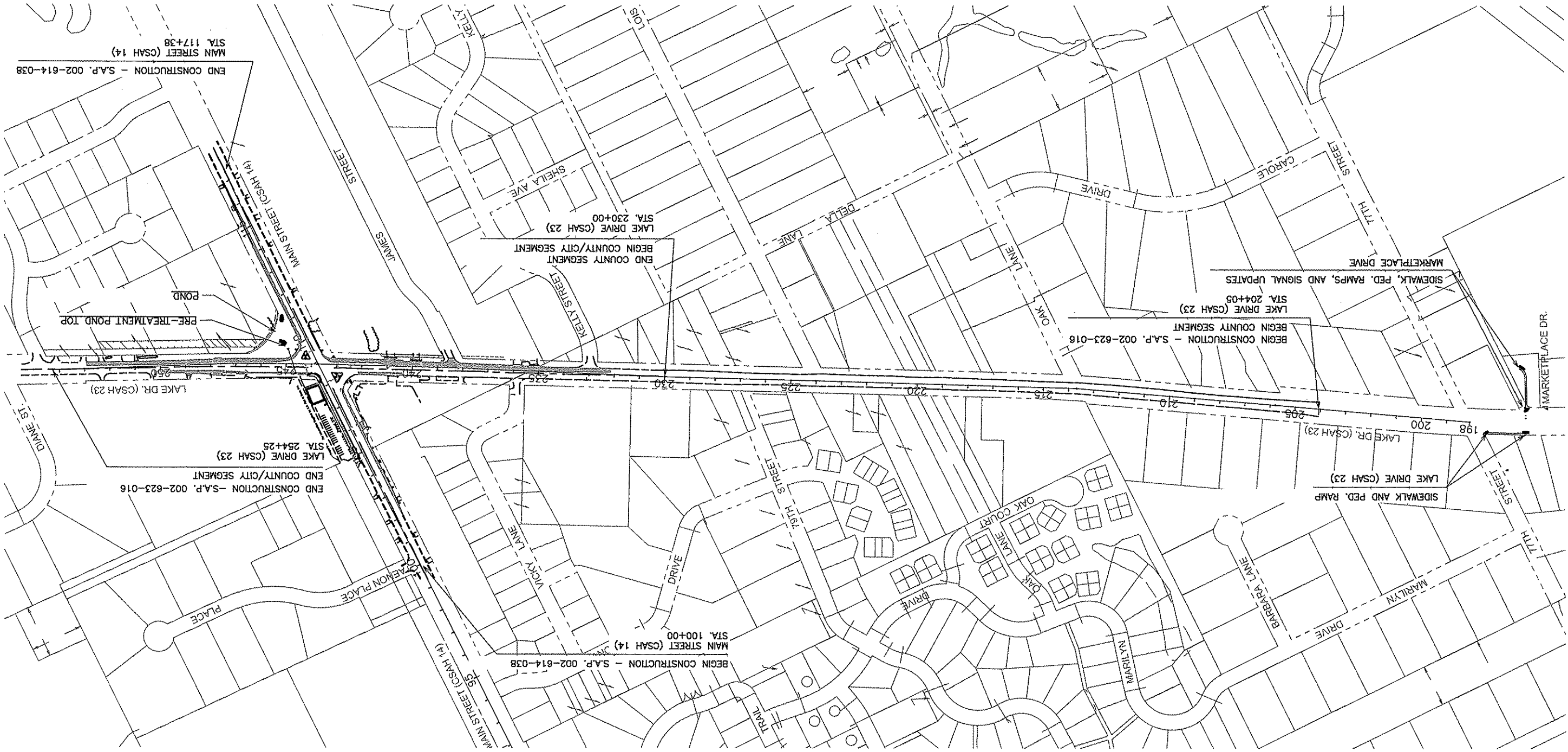
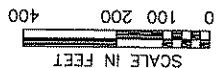
APPROVED: *[Signature]* LINO LAKES ENGINEER DATE: 7/31/12
 APPROVED: *[Signature]* ANOKA COUNTY ENGINEER DATE: 7/31/12

APPROVED FOR STATE FUNDING, STATE AID ENGINEER, DATE: 8/7/12
 METRO DISTRICT/STATE AID ENGINEERS REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY, DATE: 8/7/12

S.A.P. 002-614-038, S.A.P. 002-623-016
 SHEET NO. 1 OF 78 SHEETS

NO	DATE	BY	CHKD	APPR	REVISION


Plot Date: 02/07/2012
Drawing name: K:\s\lino\lakes\14850\municipal\Signal\LakeDr\23-016.dwg
Drawing Date: 02/07/2012
Drawing User: James E. Studenski
Drawing Title: Signalization - Lake Dr (CSAH 23), Main St (CSAH 14)



NO	DATE	BY	CHKD	APPR	REVISION
1	8/24/2012	EJK	FOT	JES	APPENDUM NO. 1

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: *[Signature]*
 PRINTED NAME: JAMES E. STUDENSKI
 LIC. NO. 23757
 DATE: 7/23/2012

DRAWN BY: _____ DATE: _____
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____
 S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.



ENGINEERING & ARCHITECTURE - PLANNING

CITY OF LINO LAKES
ESTIMATED QUANTITIES
LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

SHEET NO.	ITEM NUMBER	ITEM	NOTE	UNIT	ESTIMATED QUANTITY	CITY OF LINO LAKES LAKE DRIVE NON-PARTICIPATING	CITY OF LINO LAKES MAIN STREET NON-PARTICIPATING	ANOKA COUNTY MAIN STREET S.A.P. 002-614-038	ANOKA COUNTY CRACK AND SEAT NON-PARTICIPATING	ANOKA COUNTY MARKETPLACE CROSSWALK NON-PARTICIPATING
2101.502		CLEARING	(6)	TREE	19					
2101.507		GRUBBING	(6)	TREE	19					
2101.501		MOBILIZATION		LUMP SUM	1	0.13	0.09	0.23	0.17	0.03
2102.502		PAVEMENT MARKING REMOVAL - (STOP BAR)		LIN FT	110					
2102.504		PAVEMENT MARKING REMOVAL - (CROSSWALK)		SQ FT	180					
2104.501		REMOVE PIPE CULVERTS		LIN FT	110					
2104.501		REMOVE SEWER PIPE (STORM)		LIN FT	100					
2104.501		REMOVE CONCRETE CURB AND GUTTER		LIN FT	1449					
2104.501		REMOVE BITUMINOUS CURB		LIN FT	556					
2104.501		REMOVE CONCRETE MEDIUM		SQ FT	1778					
2104.503		REMOVE BITUMINOUS DRIVEWAY PAVEMENT		SQ FT	4770					
2104.505		REMOVE CONCRETE WALK (PEDESTRIAN RAMP)		SQ YD	135					
2104.505		REMOVE BITUMINOUS PAVEMENT	(7)	SQ YD	2201		1407		794	
2104.509		REMOVE WOOD POLE W/ LIGHT FIXTURE & FLASHER		EACH	2					
2104.509		REMOVE SIGN TYPE C		EACH	22					
2104.509		REMOVE DRAINAGE STRUCTURE		EACH	2					
2104.509		REMOVE PIPE APRON		EACH	5					
2104.513		SAVING BIT PAVEMENT (FULL DEPTH)		LIN FT	2453		1007		1446	
2104.523		SALVAGE MAIL BOX AND SUPPORT		EACH	11					
2104.523		SALVAGE SIGN TYPE C		EACH	28					
2104.602		RELOCATE STREET LIGHT		EACH	1					
2105.501		COMMON EXCAVATION	(4)	CU YD	2329		1083		593	
2105.511		COMMON CHANNEL EXCAVATION	(5)	CU YD	406					
2105.525		TOPSOIL BORROW MOD (LV)	(15)	CU YD	90					
2105.525		TOPSOIL BORROW (CV)		CU YD	591					
2105.601		DEWATERING		LUMP SUM	1					
2211.503		AGGREGATE BASE (CV) CLASS 5	(p)	CU YD	1256		862		394	
2211.501		AGGREGATE SHOULDERING (CV) CLASS 2 MOD		CU YD	218		165		55	
2231.603		PAVEMENT CRACKING		SQ YD	13865					
2231.603		PAVEMENT SEATING		SQ YD	13865					
2232.501		MILL BITUMINOUS SURFACE (1.5")		SQ YD	13865					
2232.501		MILL BITUMINOUS SURFACE (2.0")		SQ YD	14967					
2232.501		MILL BITUMINOUS SURFACE (3.5")		SQ YD	13865					
2360.501		TYPE SP 12.5 WEARING COURSE MIX (4,E)	(1,8)	TON	4024		1561		1274	
2360.503		TYPE SP 12.5 NON WEAR COURSE MIX (4,B)	(8)	TON	2895		1574		459	
2501.511		12" CS PIPE CULVERT		LIN FT	96					
2501.515		12" GS PIPE APRON		EACH	4					
2501.515		15" RC PIPE APRON		EACH	2					
2501.602		TRASH GUARD FOR 12" GS APRON		EACH	4					
2501.602		4" PE PIPE DRAIN CLEANOUT	(2)	LIN FT	100					
2502.602		4" PE PIPE DRAIN CLEANOUT		EACH	1					
2503.541		12" RC PIPE SEWER DES 3006 CL II		LIN FT	8					
2503.541		15" RC PIPE SEWER DES 3006 CL II		LIN FT	140					

- NOTES:
- (p) DENOTES PLAN QUANTITY.
 - (1) 3" THICK WEAR COURSE MIX SHALL BE USED FOR DRIVEWAYS AND SHALL BE PLACED IN ONE LIFT.
 - (2) INCLUDES INSTALLATION OF 4" PERFORATED PE PIPE WITH A FILTER SOCK EMBEDDED IN ONE FOOT OF GRAVEL ON BOTH SIDES OF PIPE.
 - (3) POND OVERFLOW - SEE SHEET NO. 45 FOR DETAILS.
 - (4) INCLUDES INPLACE TOPSOIL. TOPSOIL ENCOUNTERED IN THE PROJECT LIMITS IS ASSUMED TO BE 4" AND SHALL BE STOCKPILED FOR SLOPE DRESSING. ANY MATERIAL NOT USED ON PROJECT, OTHER THAN RIGHT-OF-WAY.
 - (5) INCLUDES POND SUBCUT. NO ATTEMPT HAS BEEN MADE TO DETERMINE THE TYPE OF MATERIAL TO BE EXCAVATED.
 - (6) LIMITS OF CLEARING AND GRUBBING SHALL BE STAKED IN THE FIELD.
 - (7) DEPTH MAY VARY.
 - (8) SPEC. 2360 BITUMINOUS MIXTURES COMPUTED AT 133 POUNDS / SQ YD / INCH.
 - (9) ALL TRAFFIC CONTROL AND SIGNING SHALL CONFORM TO THE MUTCD INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
 - (10) SIGN POST SHALL BE INCIDENTAL.
 - (11) INCLUDES REMOVING SEDIMENT BUILD-UP AND REPAIRING, REPLACING, OR SUPPLEMENTING WHEN NON-FUNCTIONAL.
 - (12) LUMP SUM ITEM INCLUDES INSTALLATION, MAINTENANCE AND REMOVAL OF CULTURE END PROTECTION FOR THE LIFE OF THE PROJECT.
 - (13) FERTILIZER ANALYSIS 18-1-18, APPLIED AT A RATE OF 150 LBS PER ACRE.
 - (14) SEED MIX 350 APPLIED AT A RATE OF 84.5 POUNDS/ACRE.
 - (15) PLANTING MEDIUM FOR FILTRATION PONDS AND SWALES. A WELL BLENDED, HOMOGENOUS MIXTURE OF 55-65% CONSTRUCTION SAND; 10-20% TOP SOIL; AND 25-35% ORGANIC LEAF COMPOST.

ESTIMATED QUANTITIES

NO	DATE	BY	CKD	APPR	REVISION
1	8/24/2012	EJK		JES	APPENDUM NO. 1

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: *JAMES E. STUDENSKI*
 PRINTED NAME: JAMES E. STUDENSKI
 LIC. NO. 23757
 DATE: 7/23/2012

DATE	BY	DESIGN
DATE		DATE
DATE		DATE

S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.



CITY OF LINO LAKES
 ESTIMATED QUANTITIES
 LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

SHEET NO.	ITEM NUMBER	ITEM	NOTE	UNIT	TOTAL ESTIMATED QUANTITY	ANOKA COUNTY	CITY OF LINO LAKES	ANOKA COUNTY	ANOKA STREET	ANOKA COUNTY	QUANTITY
	2504.602	RELOCATE HYDRANT		EACH	1						1
	2504.602	ADJUST HYDRANT		EACH	1						1
	2504.602	ADJUST GATE VALVE		EACH	7						7
	2506.501	CONSTRUCT DRAINAGE STRUCTURE DES 48-4020		LIN FT	8.3						4.4
	2506.516	CASTING ASSEMBLY		EACH	2						1
	2506.522	ADJUST FRAME & RING CASTING		EACH	15						9
	2506.602	CONSTRUCT POND OVERFLOW	(3)	EACH	2						2
	2511.501	RANDOM RIPPAP CLASS III		CU YD	66						60
	2521.501	CONCRETE WALK		SQ FT	6754						1027
	2521.501	CONCRETE WALK SPECIAL (COLORED CONCRETE)		SQ FT	1290						19
	2531.507	CONCRETE DRIVEWAY PAVEMENT		SQ YD	54						35
	2531.507	CONCRETE DRIVEWAY PAVEMENT		SQ YD	170						49
	2531.501	CONCRETE CURB & GUTTER DESIGN B418		LIN FT	934						467
	2531.501	CONCRETE CURB & GUTTER DESIGN B618		LIN FT	1228						574
	2531.618	TRUNCATED DOMES		SQ FT	232						96
	2555.501	BITUMINOUS CURB		LIN FT	260						130
	2540.602	WHEEL STOPS		EACH	21						21
	2540.602	INSTALL MAIL BOX AND SUPPORT		EACH	11						3
	2540.602	MAIL BOX SUPPORT		EACH	11						3
	2554.509	GUIDE POST TYPE B		EACH	6						5
	2554.601	TRAFFIC CONTROL SIGNAL SYSTEM A		SIGS	1						0.25
	2555.601	EMERGENCY VEHICLE PREEMPTION SYSTEM A		LUMP SUM	1						0.25
	2555.616	REVISE SIGNAL SYSTEM		SYS	1						0.25
	2573.530	STORM DRAIN INLET PROTECTION		EACH	5						4
	2573.540	FILTER LOG TYPE COMPOST LOG	(11)	LIN FT	500						250
	2573.502	SILT FENCE, TYPE MACHINE SLICED		LF	400						400
	2573.601	CULVERT END PROTECTION	(12)	LUMP SUM	1						0.5
	2573.602	TEMPORARY ROCK CONSTRUCTION ENTRANCE		EACH	1						1
	2575.501	SEEDING		ACRE	1.05						0.2
	2575.502	SEED MIXTURE 350	(14)	POUND	89						72
	2575.511	MULCH MATERIAL TYPE 3		TON	2.1						1.7
	2575.519	DISC ANCHORING		ACRE	1.05						0.85
	2575.532	FERTILIZER TYPE 4	(13)	POUND	157.5						127.5
	2582.501	PAVT MMSG (RT ARROW) PERFORMED THERMOPLASTIC		EACH	7						3
	2582.501	PAVT MMSG (LT ARROW) PERFORMED THERMOPLASTIC		EACH	8						4
	2582.502	4" SOLID LINE WHITE-EPOXY		LIN FT	15805						11546
	2582.502	4" SOLID LINE YELLOW-EPOXY		LIN FT	2000						1000
	2582.502	4" BROKEN LINE YELLOW-EPOXY		LIN FT	3420						2420
	2582.502	4" DOUBLE SOLID LINE YELLOW-EPOXY		LIN FT	7005						4385
	2582.502	24" SOLID LINE WHITE PERFORMED THERMOPLASTIC		LIN FT	186						74
	2582.502	24" SOLID LINE YELLOW PERFORMED THERMOPLASTIC		LIN FT	575						311
	2582.503	CROSSWALK MARKINGS PERFORMED THERMOPLASTIC		SQ FT	1062						288
	396										378

NOTES:

- (P) DENOTES PLAN QUANTITY.
- (1) 2" THICK WEAR COURSE MIX SHALL BE USED FOR DRIVEWAYS AND SHALL BE PLACED IN ONE LIFT.
- (2) INCLUDES INSTALLATION OF 4" PERFORATED PE PIPE WITH A FILTER SOCK EMBEDDED IN ONE FOOT OF GRAVEL ON BOTH SIDES OF PIPE.
- (3) POND OVERFLOW - SEE SHEET NO. 45 FOR DETAILS.
- (4) INCLUDES INPLACE TOPSOIL. TOPSOIL ENCOUNTERED IN THE PROJECT LIMITS IS ASSUMED TO BE 4" AND SHALL BE STOCKPILED FOR SOPE DRESSING. ANY MATERIAL NOT USED ON PROJECT, OTHER THAN TOPSOIL, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OUTSIDE THE RIGHT-OF-WAY.
- (5) INCLUDES POND SUBCUT. NO ATTEMPT HAS BEEN MADE TO DETERMINE THE TYPE OF MATERIAL TO BE EXCAVATED.
- (6) LIMITS OF CLEARING AND GRUBBING SHALL BE STAKED IN THE FIELD.
- (7) DEPTH MAY VARY
- (8) SPEC. 2360 BITUMINOUS MIXTURES COMPUTED AT 113 POUNDS/SQ YD / INCH.
- (9) ALL TRAFFIC CONTROL AND SIGNALING SHALL CONFORM TO THE MANUAL INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- (10) RE SIGN POST SHALL BE INCIDENTAL.
- (11) INCLUDES REMOVING SEDIMENT BUILD-UP AND REPAIRING, REPLACING, OR SUPPLEMENTING WHEN NON-FUNCTIONAL.
- (12) LUMP SUM ITEM INCLUDES INSTALLATION, MAINTENANCE AND REMOVAL OF CULVERT END PROTECTION FOR THE LIFE OF THE PROJECT.
- (13) FERTILIZER ANALYSIS 18-1-18, APPLIED AT A RATE OF 150 LBS PER ACRE
- (14) SEED MIX 350 APPLIED AT A RATE OF 84.5 POUNDS/ACRE.
- (15) 55-65% CONSTRUCTION SAND; 10-20% TOP SOIL; AND 25-35% ORGANIC LEAF COMPOST.

ESTIMATED QUANTITIES

THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY

SOILS AND CONSTRUCTION NOTES

1. THE GRADING GRADE IS DEFINED AS THE BOTTOM OF THE CLASS 5 OR 6 AGGREGATE.
2. SUITABLE GRADING MATERIAL ON THIS PROJECT SHALL CONSIST OF ALL SOILS ENCOUNTERED EXCEPT TOPSOIL, SILT, DEBRIS, ORGANIC MATERIAL, AND OTHER UNSUITABLE MATERIAL.
3. STRIP SOIL AND TOPSOIL FROM AREAS TO BE DISTURBED BY CONSTRUCTION AND, IF PRACTICAL, STOCKPILE FOR REPLACEMENT LATER AS SLOPE DRESSING. TOPSOIL SHALL NOT BE REMOVED OFF THIS PROJECT.
4. SLOPE DRESSING IS DEFINED AS THE TOPSOIL OR OTHER SOIL PLACED DURING CONSTRUCTION TO PROVIDE A MEDIUM FINE ESTABLISHING TURF. IN ALL AREAS OF CONSTRUCTION, PROVIDE FOR A MINIMUM 4" OF SLOPE DRESSING.
5. THE TOP OF BACKSLOPES AND THE TOE OF FILL SLOPES SHALL BE ROUNDED TO NATURALIZE THE CONSTRUCTION EVEN THOUGH THE CROSS SECTIONS DO NOT SHOW ANY SUCH ROUNDING.
6. THE BOTTOM OF ALL SUBCUTS SHALL BE SHAPED AND COMPACTED BY THE "QUALITY COMPACTION METHOD".
7. OBTAIN COMPACTION ON THE GRADING PORTION OF PERMANENT CONSTRUCTION IN ACCORDANCE WITH THE "SPECIFIED DENSITY METHOD" REQUIREMENTS.
8. TEST ROLLING WILL NOT BE REQUIRED.
9. ANY DEBRIS WHICH MAY BE ENCOUNTERED DURING GRADING SHALL BE DISPOSED OF BY THE CONTRACTOR OFF THE PROJECT RIGHT OF WAY IN A SUITABLE DISPOSAL AREA AS APPROVED BY THE ENGINEER.
10. THE CONSTRUCTION LIMITS AS SHOWN IN THE PLANS REPRESENT THE POINT OF INTERSECTION BETWEEN THE PROPOSED CUT OR FILL SLOPE AND THE EXISTING GROUND LINE AS DEPICTED ON THE CROSS SECTIONS. THE CONSTRUCTION LIMITS DO NOT INCLUDE AREAS REQUIRED FOR SLOPE ROUNDING.
11. THE CONTRACTOR SHALL NOT STORE EXCAVATED MATERIAL OUTSIDE THE PLANNED CONSTRUCTION LIMITS UNLESS APPROVED BY THE ENGINEER.
12. EARTHWORK FINISHING AND TOPSOIL COVERING OPERATIONS SHALL BE CONDUCTED CONCURRENTLY WITH GRADING OPERATIONS SO FAR AS TO PERMIT COMPLETION OF THE EROSION CONTROL ITEMS AT THE EARLIEST PRACTICAL TIME. TOPSOIL COVERING SHALL BE COMPLETED AS SOON AS POSSIBLE AFTER THE GRADING SOILS HAVE BEEN FINISHED TO GRADE IN ANY SIGNIFICANT AREA.
13. SEED ALL AREAS DISTURBED BY CONSTRUCTION AS SHOWN ON THE EROSION CONTROL PLANS. ALL AREAS OUTSIDE THE PLANNED CONSTRUCTION DISTURBED BY THE CONTRACTOR'S EQUIPMENT SHALL BE RESTORED, AS APPROVED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.
14. PROVIDE FOR THE REMOVAL AND DISPOSAL, OUTSIDE THE RIGHT-OF-WAY, OF ANY INPLACE SURFACING OR OTHER STRUCTURES 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.
15. THE CONTRACTOR SHALL COORDINATE THE SALVAGE OR REMOVAL OF ALL MISCELLANEOUS STRUCTURES, SUCH AS PRIVATE SIGNS, WITHIN THE PROJECT LIMITS WITH THE APPROPRIATE OWNERS.
16. FOR ALL PERMANENT AND TEMPORARY CONSTRUCTION, PROVIDE A FULL DEPTH SAWCUT WHERE PLACING NEW PAVEMENT ADJACENT TO INPLACE PAVEMENT TO ENSURE A UNIFORM JOINT. ALL LONGITUDINAL SAWCUTS SHALL BE PLACED AT THE INSIDE EDGE OF PROPOSED LANE LINES. ALL TRANSVERSE SAWCUTS SHALL BE PERPENDICULAR TO PROPOSED LANE LINES. SAWCUT EDGES SHALL BE TACK-COATED PRIOR TO PAVING (INCIDENTAL).
17. 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 1 (V) : 1 (H) SLOPE TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.
18. IN LOCATIONS OF WIDENING, THE CONTRACTOR SHALL MATCH THE EXISTING SOILS AND LAYERS IN THE UPPER 4 FEET OF THE ROADWAYS TO THE GREATEST EXTENT POSSIBLE. GRANULAR BACKFILL SHALL NOT BE PERMITTED ADJACENT TO EXISTING NON-GRANULAR (FROST SUSCEPTIBLE) SOILS IN ORDER TO PREVENT AN ABRUPT SOILS DIFFERENTIAL WHERE WIDENING ADJACENT TO NON-GRANULAR (FROST SUSCEPTIBLE) EXISTING SOILS.
19. AS A PRECAUTIONARY MEASURE, 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 1/2" OR FLATTER SLOPE BETWEEN THE EDGE OF THE TRAFFIC SURFACE AND THE BOTTOM OF THE EXCAVATION.
20. OBTAIN COMPACTION ON 4 INCH OR GREATER AGGREGATE BASE LIFTS IN ACCORDANCE WITH THE "MODIFIED PENETRATION INDEX METHOD" REQUIREMENTS. THE TESTS SHALL BE PERFORMED IN ACCORDANCE WITH MNDOT SPEC. 2211.3C3. THIS WOULD INCLUDE ANY AREAS WHERE CRUSHED CONCRETE OR SALVAGED ASPHALT MAY BE USED FOR AGGREGATE BASE. FOR LIFTS OF LESS THAN 4 INCHES OBTAIN COMPACTION IN ACCORDANCE WITH QUALITY COMPACTION METHOD (MNDOT SPEC. 2211.3C2).
21. THE CONTRACTOR SHALL SHAPE AND RECOMPACT ANY AGGREGATE BASE THAT IS EXPOSED AFTER MILLING THE BITUMINOUS SHOULDER PAVEMENT. THIS WORK SHALL BE PERFORMED AHEAD OF THE SHOULDER PAVING OPERATION AND BE DONE TO THE SATISFACTION OF THE ENGINEER. THIS WORK SHALL BE INCIDENTAL.
22. AFTER MILLING THE PAVEMENT TO THE REQUIRED DEPTH AND PRIOR TO OVERLAYING, AIR BLAST ANY DETEIORATED CRACKS AND JOINTS TO REMOVE LOOSE OR DETEIORATED BITUMINOUS SURFACING. THE AIR BLASTING SHALL BE DONE WITH HIGH-PRESSURE (100+ PSI) EQUIPMENT.
23. DEPRESSIONS RESULTING AFTER AIR BLASTING, SWEEPING OR MILLING OPERATIONS WHICH ARE GREATER THAN 2 INCHES IN DEPTH AND 4 INCHES IN WIDTH AND JOINTS AND CRACKS THAT ARE GREATER THAN 1-1/2 INCHES IN DEPTH AND WIDTH SHALL BE PATCHED WITH BITUMINOUS PATCHING MIXTURE. PATCHING OF THESE AREAS SHALL BE DONE AHEAD OF THE PAVING OPERATIONS AND COMPACTED WITH A SMALL VIBRATORY OR PNEUMATIC ROLLER. DEPRESSIONS OF LESSER DIMENSIONS SHALL BE FILLED WITH THE WEAR COURSE MIXTURE IN FRONT OF THE PAYER.
24. ADDITIONAL WORK REQUIRED TO MILL AND OVERLAY AROUND MANHOLES AND VALVES, INCLUDING THOSE NOT SHOWN ON THE PLANS, SHALL BE INCIDENTAL.
25. TEMPORARY GRADING AND SURFACING MATERIALS REQUIRED TO FILL IN EXCAVATIONS TO MEET TEMPORARY DROP-OFF GUIDELINES AND MAINTAIN TEMPORARY PEDESTRIAN ACCESS ROUTES SHALL BE INCIDENTAL.
26. PROVIDE FOR A UNIFORM BITUMINOUS TACK COAT BETWEEN ALL COURSES. PLACE BITUMINOUS MATERIAL FOR TACK COAT IN ACCORDANCE WITH SPECIFICATION 2357 AT A RATE OF 0.04 GALLONS PER SQUARE YARD BETWEEN BITUMINOUS LAYERS (INCIDENTAL).
27. BITUMINOUS PAVEMENT SHALL BE CONSTRUCTED IN LAYERS OF THE THICKNESS SPECIFIED IN THE CONSTRUCTION DETAILS AND TYPICAL SECTIONS. BITUMINOUS DRIVEWAYS SHALL BE CONSTRUCTED IN ONE 3" LAYER.
28. LOCATIONS OF UNDERGROUND UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE LOCATIONS PROVIDED BY THE UTILITY OWNER. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING UTILITY LOCATIONS PRIOR TO ANY EXCAVATING OPERATIONS.
29. 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 AND RAILROAD ENGINEERING REPRESENTATIVES.
30. PIPE SEWERS CONNECTING MANHOLES AND CATCHBASINS SHALL BE IN ACCORDANCE WITH SPEC. 2503. BEDDING AND BACKFILL SHALL CONSIST OF UNIFORM SUITABLE GRADING MATERIAL MATCHING ADJACENT SOILS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
31. THE CONTRACTOR SHALL PRESERVE ALL LAND AND PROPERTY CORNERS, VERTICAL AND HORIZONTAL CONTROLS AND RIGHT OF WAY MONUMENTS.
32. ALL CONCRETE TRUCKS SHALL WASH OUT WITHIN THE PROJECT LIMITS AND PROPERLY DISPOSED. SEE SWPPP NOTES FOR ADDITIONAL POLLUTION PREVENTION MEASURES.

PLATE NO.	DESCRIPTION
3000L	REINFORCED CONCRETE PIPE (5 SHEETS)
3006G	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3007D	SHAFT REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3022C	PRECAST CONCRETE SAFETY APRON (3 SHEETS)
3040F	CORRUGATED METAL PIPE CULVERT (STANDARD 2-2/3" X 1/2" CORRUGATION)
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3133C	RIPRAP AT RCP OUTLETS
3134C	RIPRAP AT CMP OUTLETS
3145F	CONCRETE PIPE TIES
3221C	CORRUGATED STEEL PIPE COUPLING BAND (3 SHEETS)
4011E	PRECAST CONCRETE BASE
4020U	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4108F	ADJUSTING RINGS FOR CATCH BASINS AND MANHOLES
4110F	COVER CASTING FOR MANHOLE
4125D	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) - CASTING NO. 806
4134A	CURB BOX CASTING FOR CATCH BASIN (FOR DESIGN B CURBS) - CASTING NO. 825
4145B	CATCH BASIN GRATE CASTING - CASTING NO. 816
7035N	CONCRETE WALK & CURB RETURNS AT ENTRANCE
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7055C	BITUMINOUS CURB
7102U	CONCRETE CURB AND GUTTER (DESIGN D, S, B4, B5, AND D3) (2 SHEETS)
7111U	INSTALLATION OF CAST BASIN CASTINGS (CONCRETE CURB AND GUTTER)
7133A	CONCRETE APPROACH NOSE DETAIL
8100I	STANDARD BARRICADES
8110E	TRAFFIC SIGNAL BRACKETING (POLE MOUNTED)
8111E	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED) (3 SHEETS)
8112G	PEDESTAL FOUNDATION (TRAFFIC CONTROL SIGNALS)
8114A	P.V.C. HAND HOLE / PULL BOX (NO VEHICLE LOAD) (2 SHEETS)
8119C	GROUND MOUNTED CABINET FOUNDATION
8120P	POLE FOUNDATION (P&S)
8121G	TRANSFORMER BASE & POLE BASE PLATE (P&S, P&90, & P&100) (2 SHEETS)
8123G	POLE & MAST ARM - LUMINAIRES & TRAFFIC LIGHT ASSEMBLY (FOR ALL POLE TYPES) (2 SHEETS)
8127F	PEDESTAL & PEDESTAL BASE (FOR TRAFFIC CONTROL SIGNAL SUPPORT) (2 SHEETS)
8129G	POLE FOUNDATION (P&90 & P&100)
8132B	PERFORMED RIGID PVC CONDUIT LOOP DETECTOR (3 SHEETS)
8150C	INSTALLATION OF CULVERT MARKERS
9350A	MAILBOX SUPPORT
9102D	TURF ESTABLISHMENT AREAS (AT PIPE CULVERT ENDS)

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: *James E. Studenski*
 PRINTED NAME: JAMES E. STUDENSKI
 LIC. NO. 23757
 DATE: 7/23/2012

DRAWN BY _____ DATE _____
 DESIGN BY _____ DATE _____
 CHECKED BY _____ DATE _____

S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.



CITY OF LINO LAKES
STANDARD PLATES & SOILS CONSTRUCTION NOTES
 LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

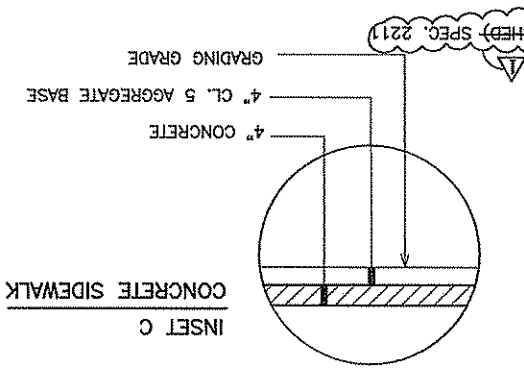
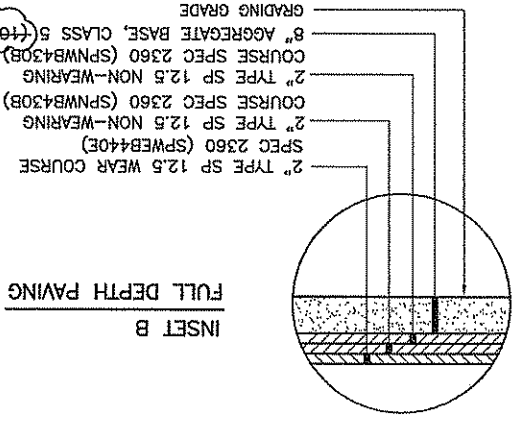
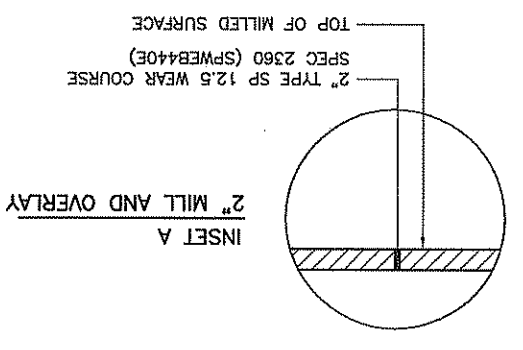
NO	DATE	BY	CHKD	APPR	REVISION
1	08/24/2012	EJK	FDT	JES	ADDendum NO. 1

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.
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 PRINTED NAME: JAMES E. STUDENSKI
 LIC. NO. 23757
 DATE: 7/23/2012

DRAWN BY: _____ DATE: _____
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____
 S.P.
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TKDA
 ENGINEERING - ARCHITECTURE - PLANNING

CITY OF LINO LAKES
 TYPICAL SECTIONS
 MAIN STREET (CSAH 14)
 LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

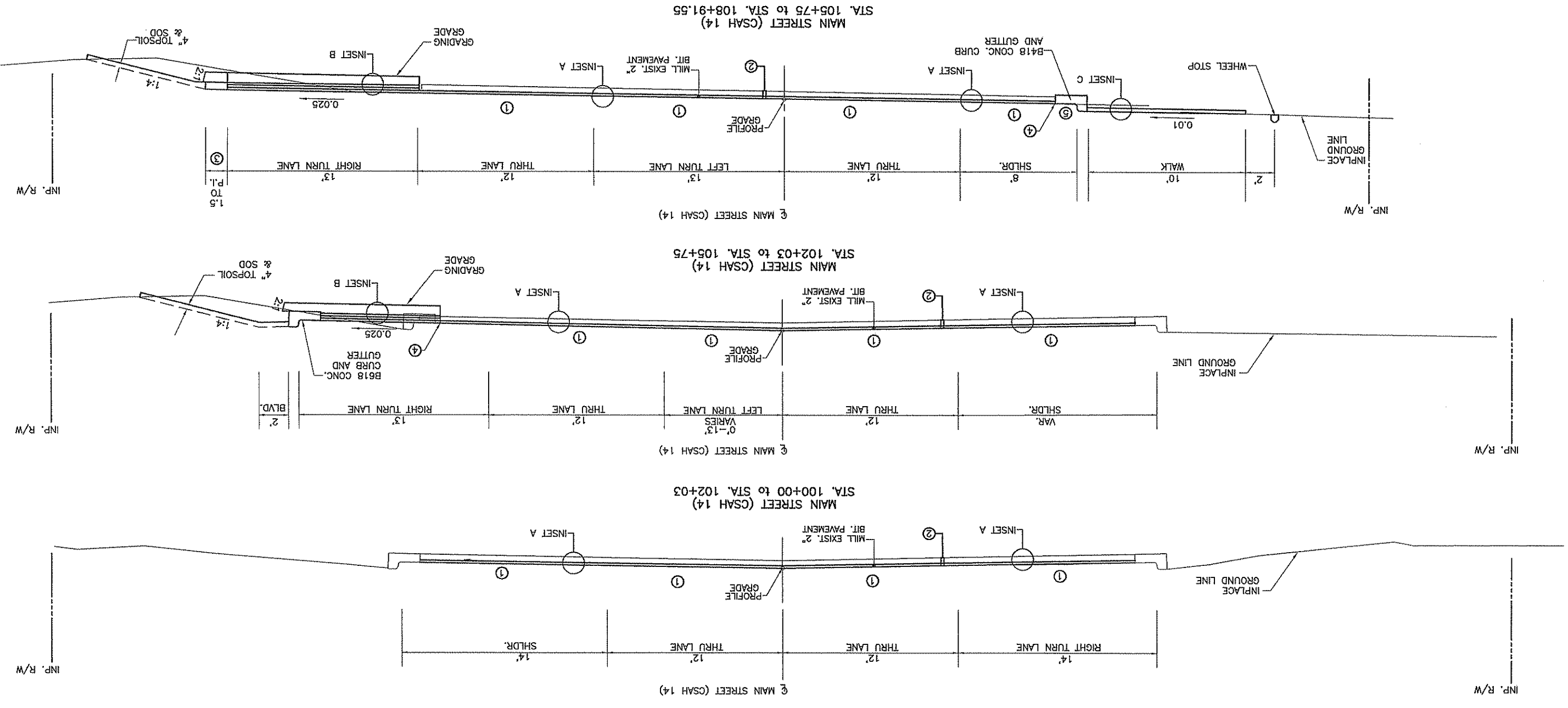


GENERAL NOTES:

- SEE CONSTRUCTION PLANS FOR TURN LANE LOCATIONS.
- ALL CROSS SLOPES EXPRESSED IN FT./FT.
- UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPE SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.
- UNLESS OTHERWISE SPECIFIED, SUBGRADE EXCAVATION WILL EXTEND 1' BEYOND SHOULDER OF CURB, AND 1.5' BEYOND RURAL SHOULDER EDGE.

NOTES:

- ① MATCH INPLACE CROSS SLOPE.
- ② INPLACE BITUMINOUS PAVEMENT.
- ③ AGGREGATE SHOULDERING, CLASS 2 MOD.
- ④ SAWCUT 1' FROM EXISTING EDGE OF PAVEMENT OR LIP OF CURB AND REMOVE BITUMINOUS PAVEMENT.
- ⑤ BEGIN B+18 C&G STA. 105+02.



Plot Date: 08/28/2012
 Plot Time: 10:45:00 AM
 User: zack@tkda.com
 Job: 20120828_123456789

NO	DATE	BY	CHKD	APPR	REVISION
1	8/28/2012	EJK	FDT	JES	ADDENDUM NO. 1

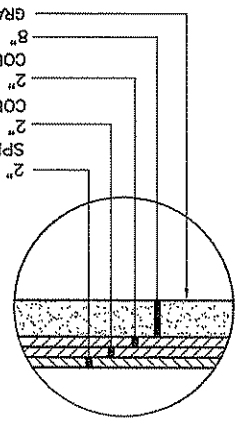
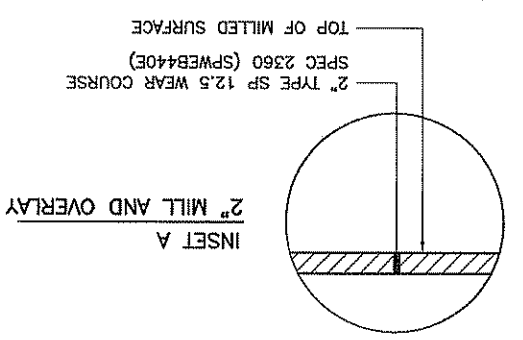
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 CHECKED BY: _____ DATE: _____
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 TKDA Proj. 14850.000
 S.P.

TKDA
 ENGINEERING - ARCHITECTURE - PLANNING

CITY OF LINO LAKES
 TYPICAL SECTIONS
 MAIN STREET (CSAH 14)
 LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

SHEET 7 OF 78

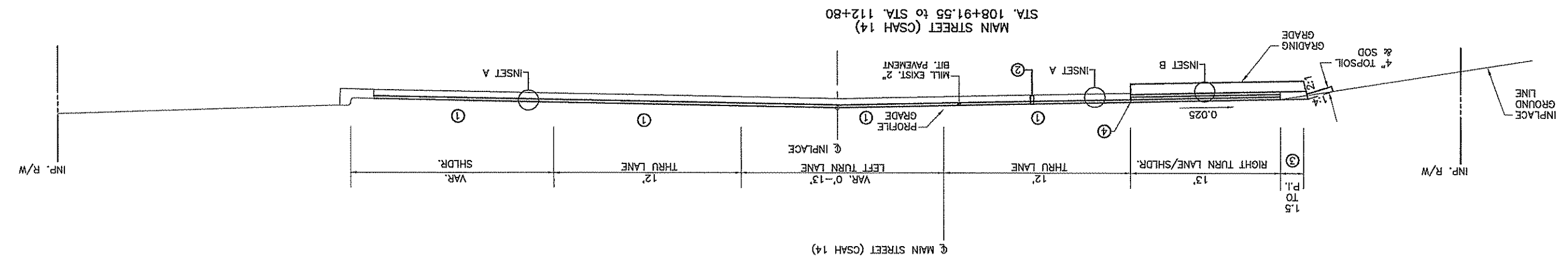
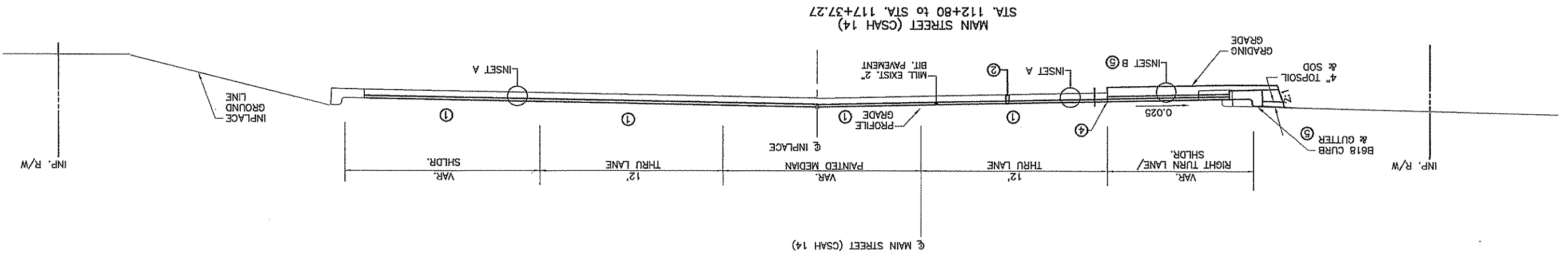


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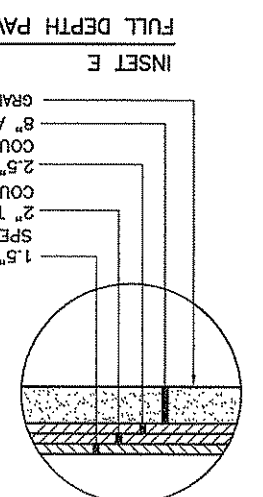
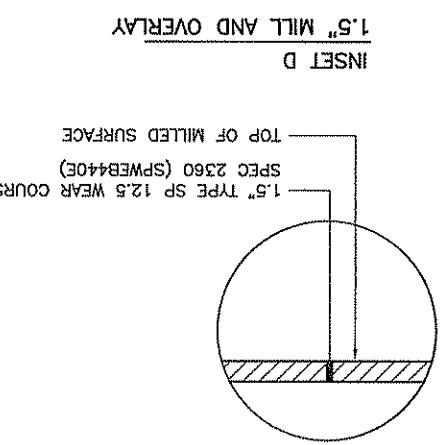
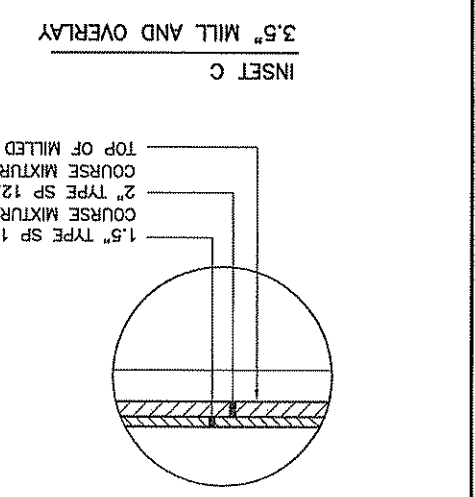
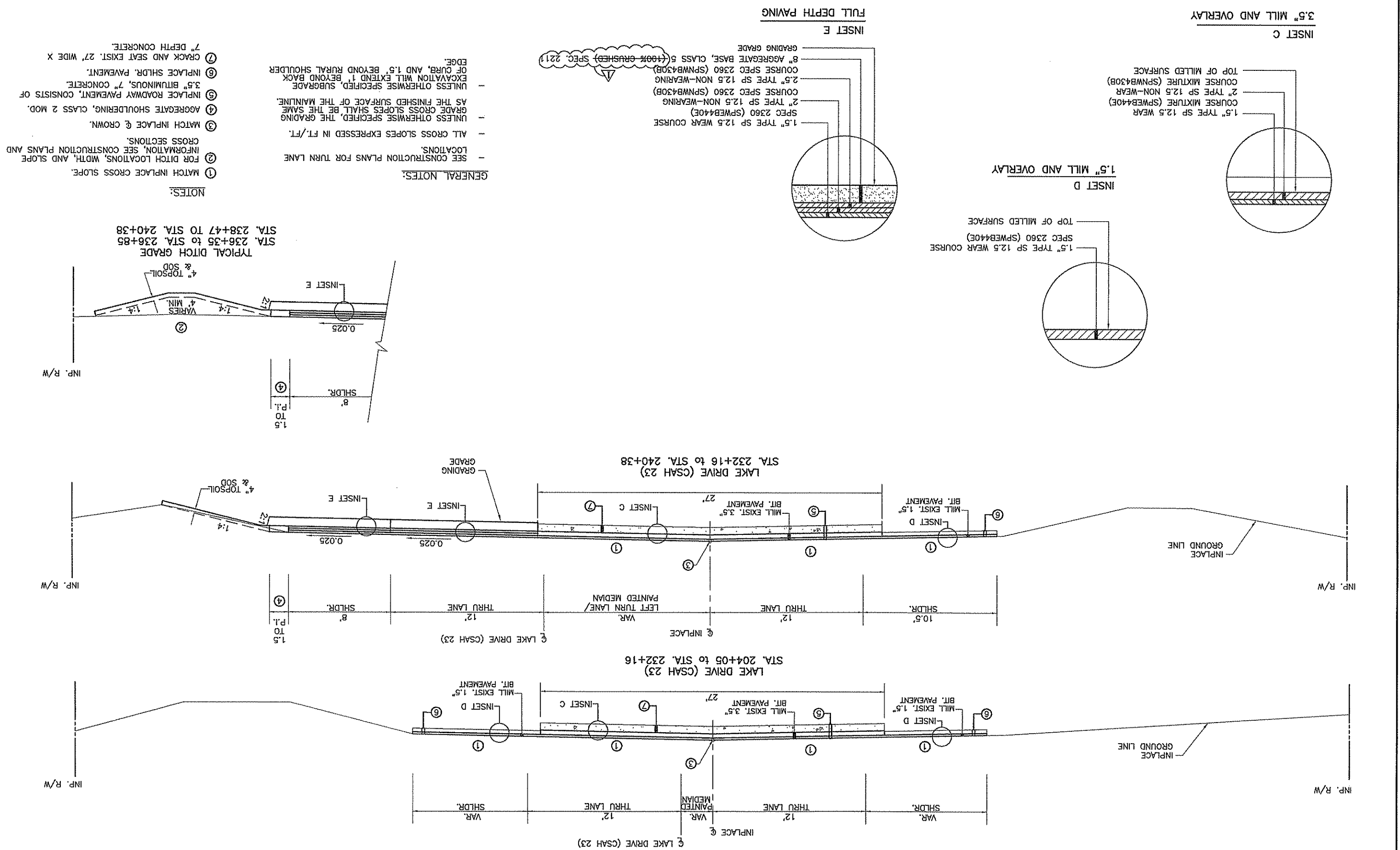
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NOTES:

- ① MATCH INPLACE CROSS SLOPE.
- ② INPLACE BITUMINOUS PAVEMENT.
- ③ AGGREGATE SHOULDERING, CLASS 2 MOD.
- ④ SAWCUT 1' FROM EXISTING EDGE AND REMOVE BITUMINOUS PAVEMENT.
- ⑤ END B618 C&G AND FULL DEPTH WIDENING AT STA. 116+80.



Plot Date: 08/28/2012
 Plot Time: 11:41:14 AM
 Project: 14850.000
 Drawing: 002-614-038-016-01
 User: jstuden
 System: AutoCAD LT 2011



GENERAL NOTES:

- 1 MATCH INPLACE CROSS SLOPE.
- 2 FOR DITCH LOCATIONS, WIDTH, AND SLOPE INFORMATION, SEE CONSTRUCTION PLANS AND CROSS SECTIONS.
- 3 MATCH INPLACE & CROWN.
- 4 AGGREGATE SHOULDERING, CLASS 2 MOD.
- 5 INPLACE ROADWAY PAVEMENT, CONSISTS OF 3.5" BITUMINOUS, 7" CONCRETE.
- 6 INPLACE SHLDR. PAVEMENT.
- 7 CRACK AND SEAT EXIST. 27" WIDE X 7" DEPTH CONCRETE.

SEE CONSTRUCTION PLANS FOR TURN LANE LOCATIONS.
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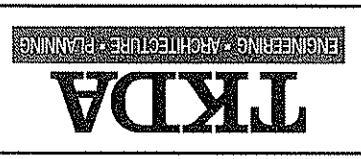
TYPICAL DITCH GRADE
 STA. 236+35 TO STA. 236+85
 STA. 238+47 TO STA. 240+38

NO	DATE	BY	CHKD	APPR	REVISION
1	8/22/12	JES	FDT	ECK	APPENDUM NO. 1

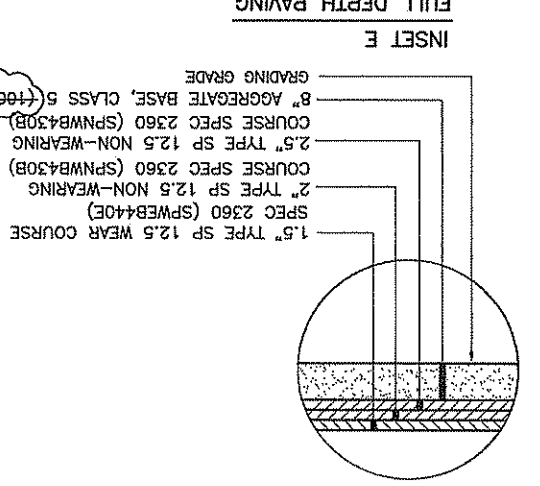
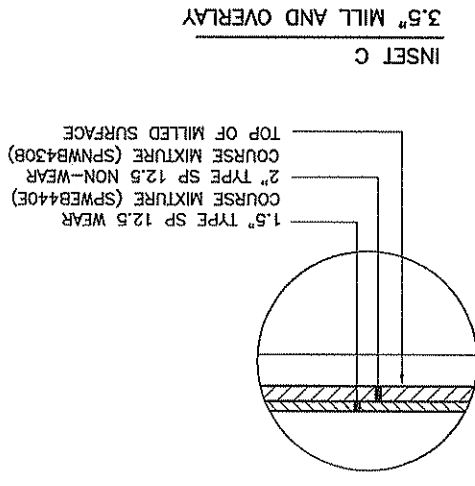
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 SIGNATURE: *[Signature]*
 PRINTED NAME: JAMES E. STUDENSKI
 LIC. NO. 23757
 DATE: 7/23/2012

DRAWN BY: _____ DATE: _____
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____

S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.



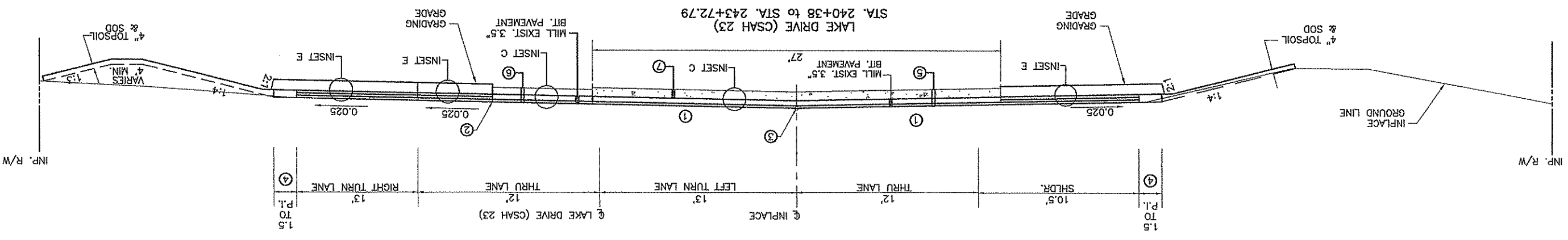
CITY OF LINO LAKES
TYPICAL SECTIONS
LAKE DRIVE (CSAH 23)
LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION
 SHEET 9 OF 78



- NOTES:**
- MATCH INPLACE CROSS SLOPE.
 - SAWCUT 1' FROM EXISTING EDGE AND REMOVE BITUMINOUS PAVEMENT.
 - MATCH INPLACE & CROWN.
 - AGGREGATE SHOULDERING, CLASS 2 MOD.
 - INPLACE ROADWAY PAVEMENT, CONSISTS OF 3.5" BITUMINOUS, 7" CONCRETE.
 - INPLACE SHLDR BITUMINOUS PAVEMENT.
 - CRACK AND SEAT EXIST. 27" WIDE X 7" DEPTH CONCRETE.

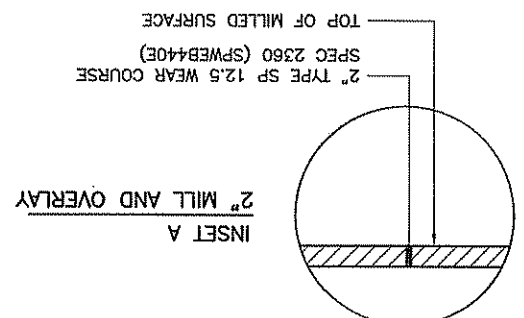
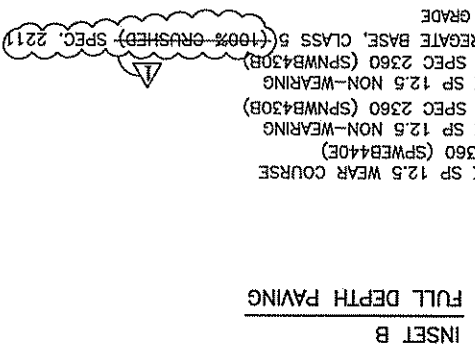
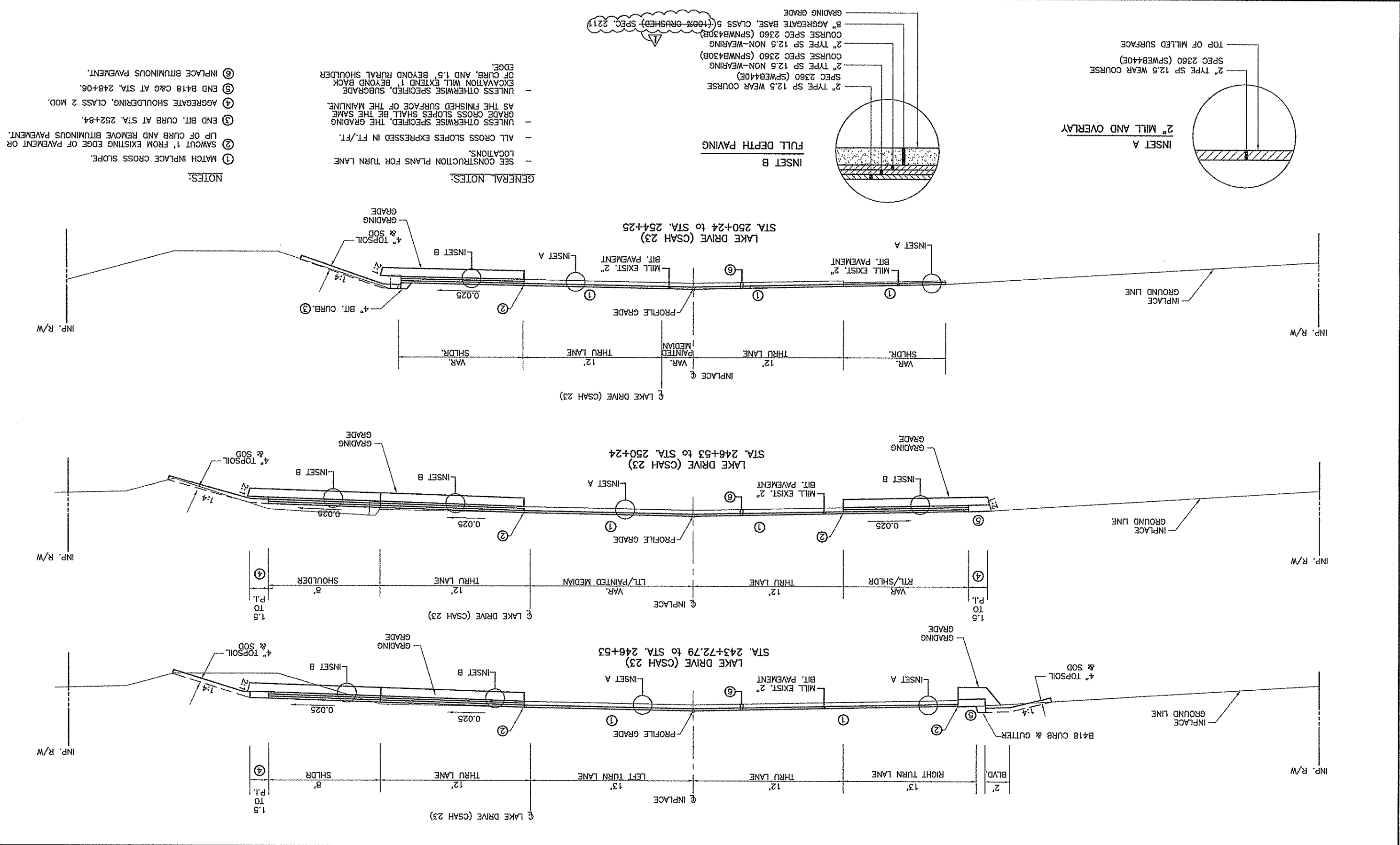
GENERAL NOTES:

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NO	DATE	BY	CHKD	APPR	REVISION
1	02/02/12	EJK	FDT	JES	ADDENDUM NO. 1

Plot Date: 02/02/2012
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 User: jstudenkski
 Date: 2/2/2012 10:55:48 AM



- GENERAL NOTES:**
- SEE CONSTRUCTION PLANS FOR TURN LANE LOCATIONS.
 - ALL CROSS SLOPES EXPRESSED IN FT./FT.
 - UNLESS OTHERWISE SPECIFIED, THE GRADING AS THE FINISHED SURFACE OF THE MAINLINE.
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- NOTES:**
- ① MATCH INPLACE CROSS SLOPE.
 - ② SAWCUT 1' FROM EXISTING EDGE OF PAVEMENT OR LIP OF CURB AND REMOVE BITUMINOUS PAVEMENT.
 - ③ END BIT. CURB AT STA. 252+84.
 - ④ AGGREGATE SHOULDERING, CLASS 2 MOD.
 - ⑤ END B+18 C&G AT STA. 248+06.
 - ⑥ INPLACE BITUMINOUS PAVEMENT.

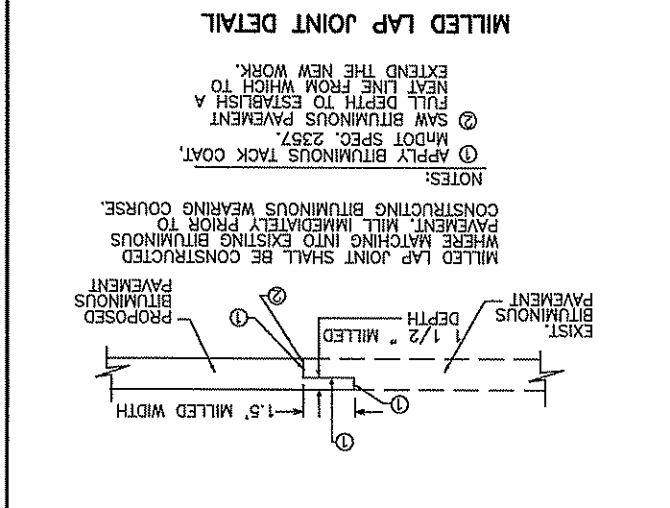
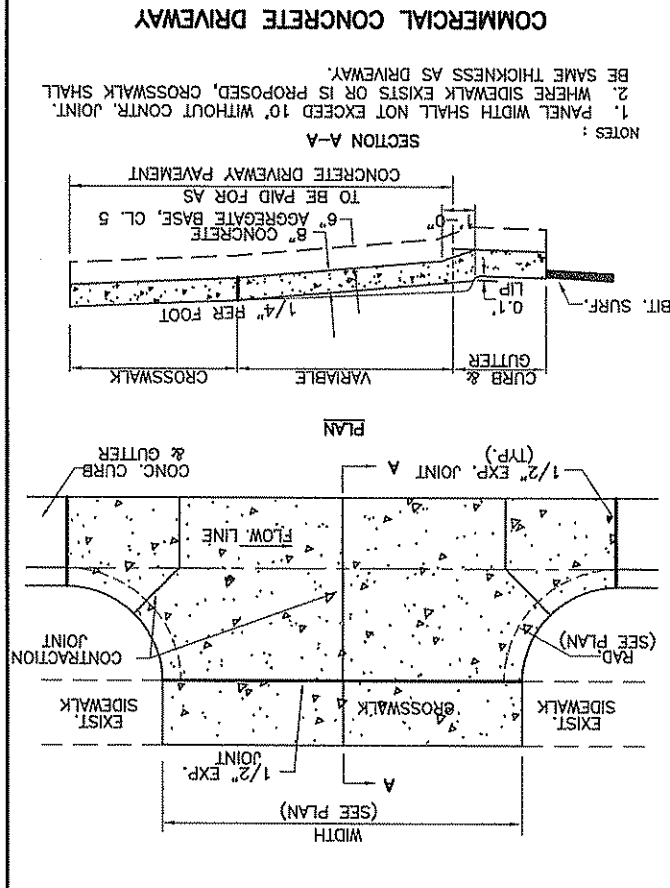
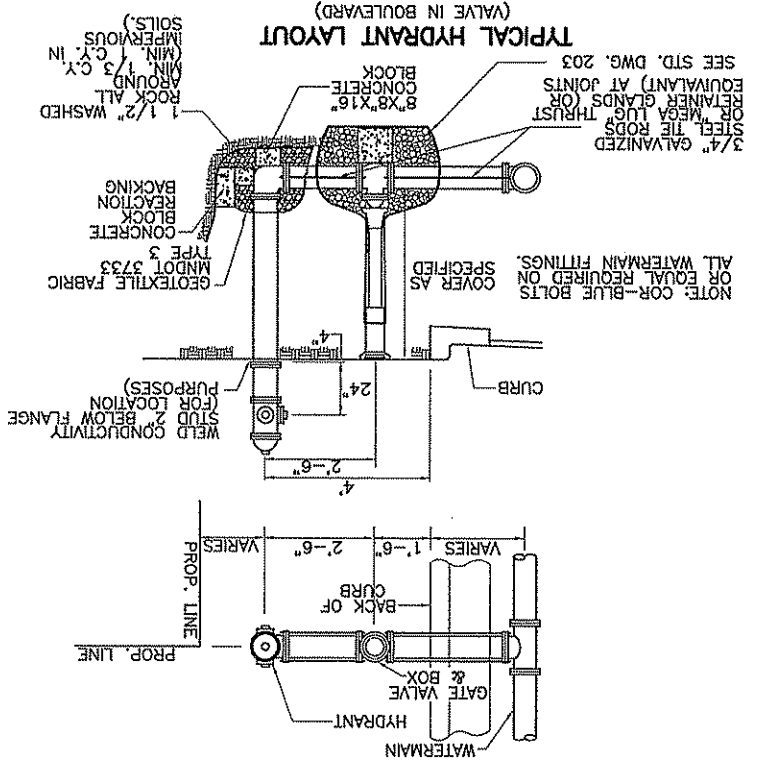
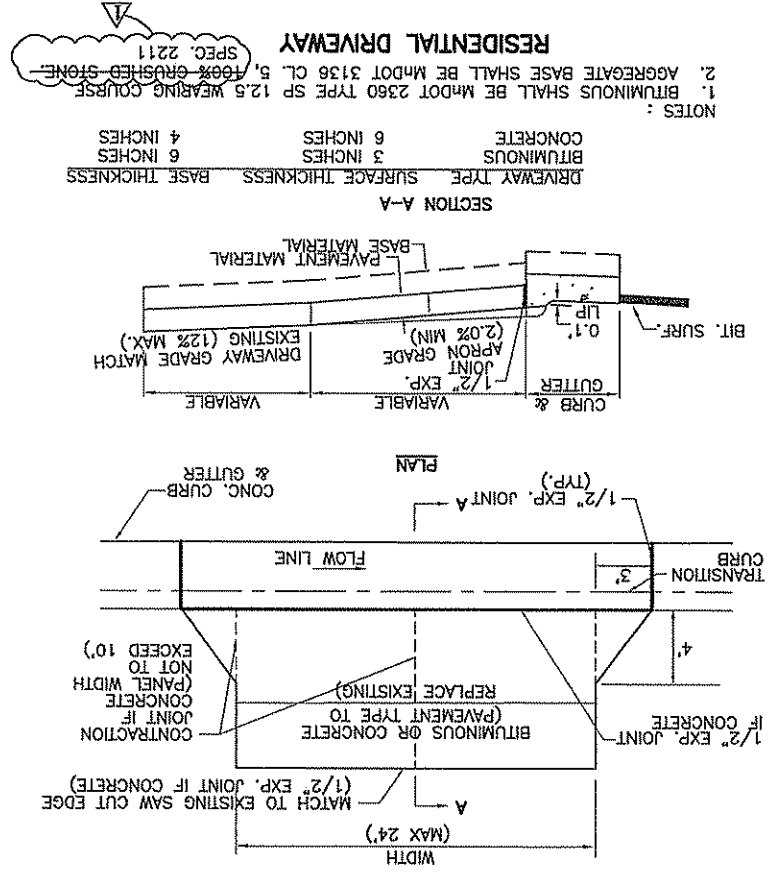
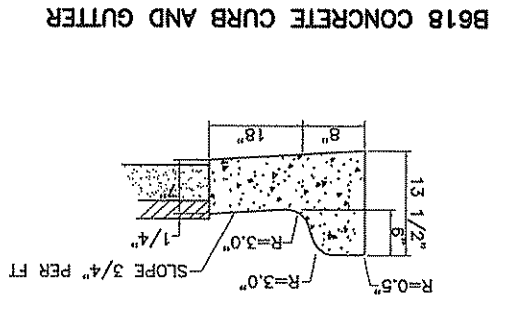
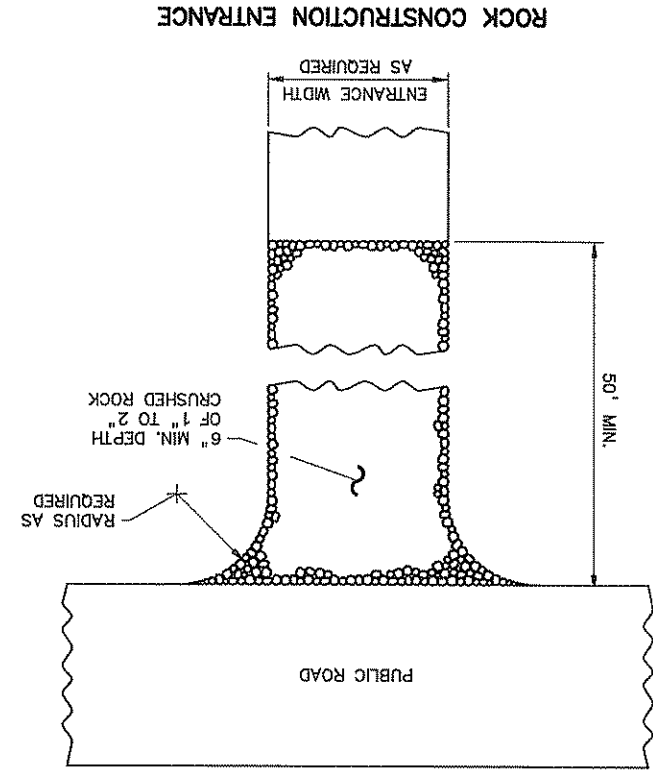
NO	DATE	BY	CHKD	APPR	REVISION
1	8/23/2012	EJK	FDT	JES	ADDEDUM NO. 1

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.
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 DATE: 7/23/2012

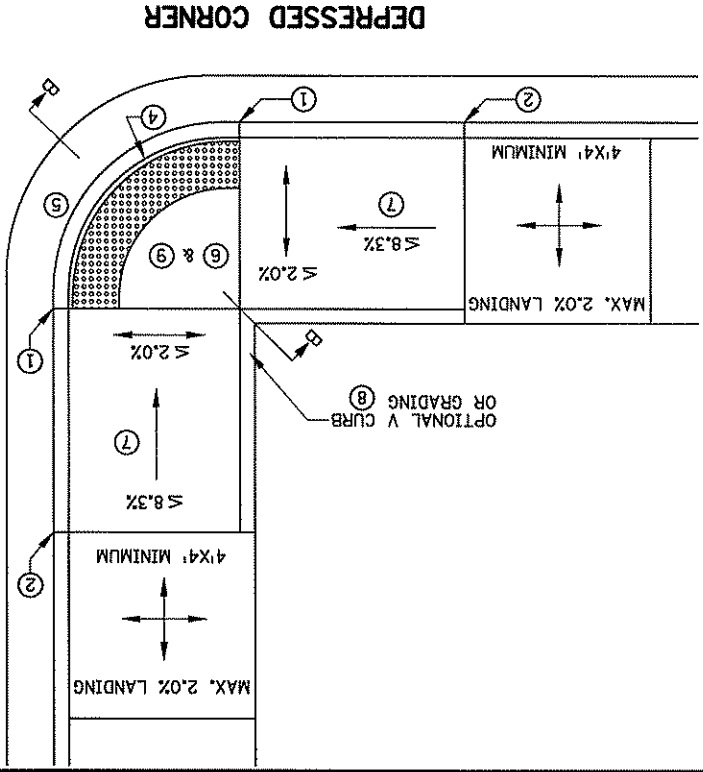
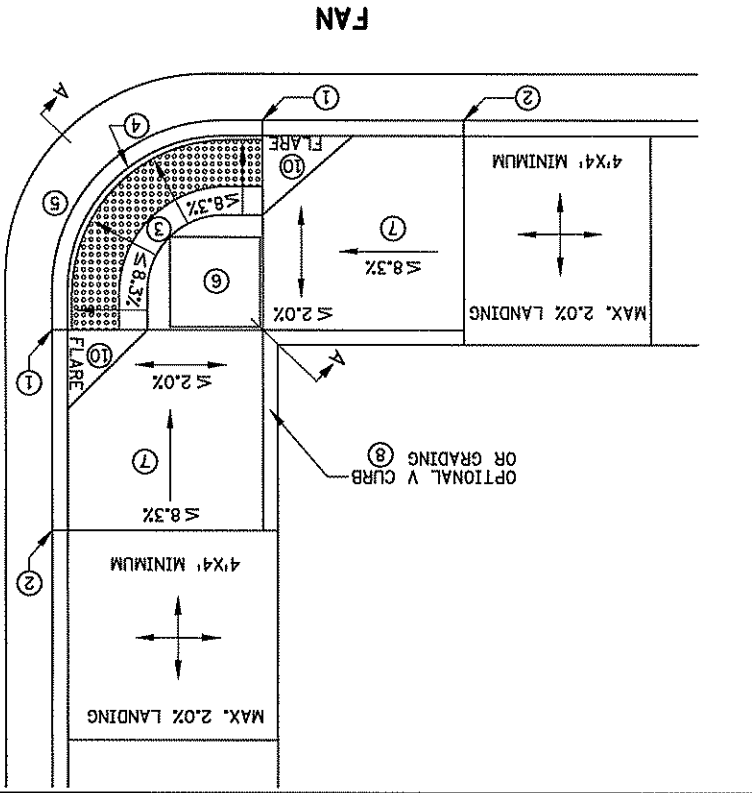
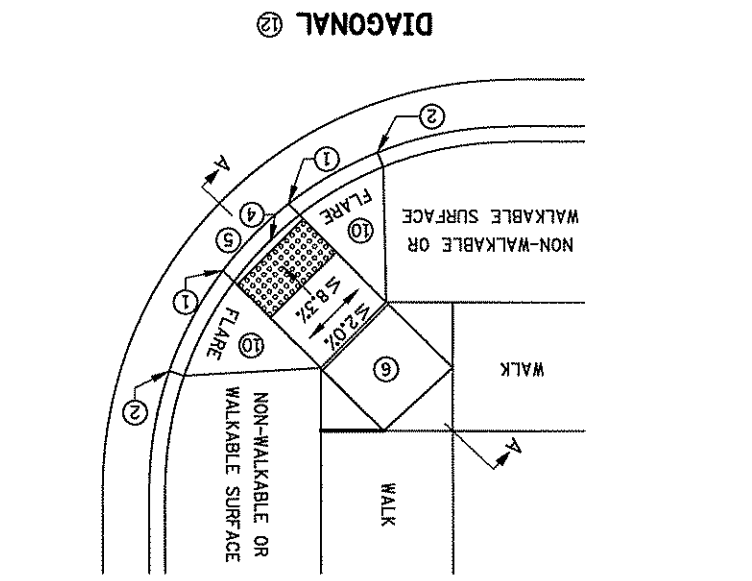
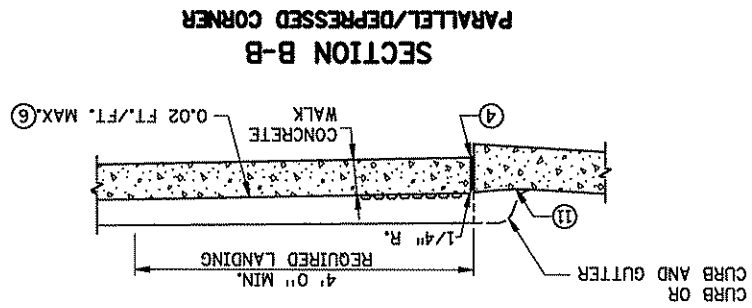
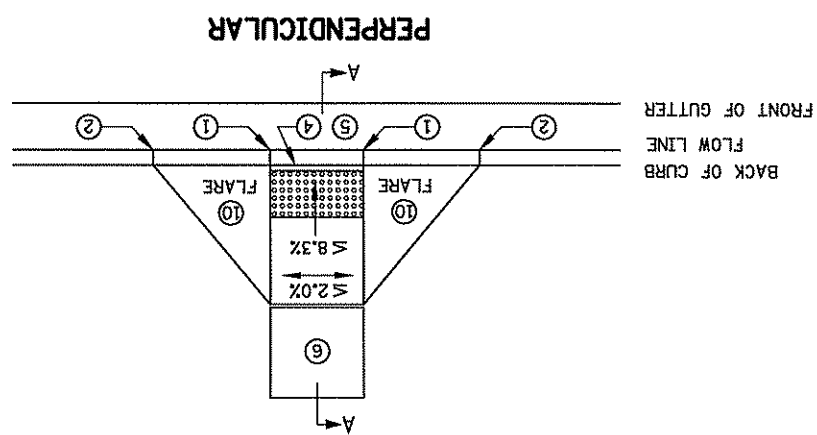
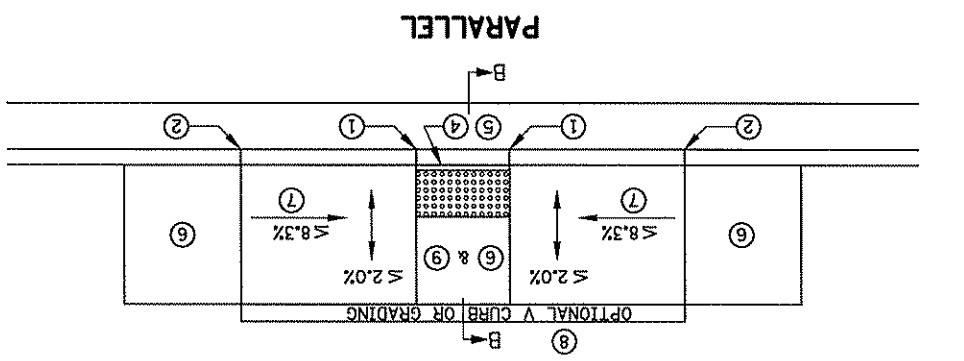
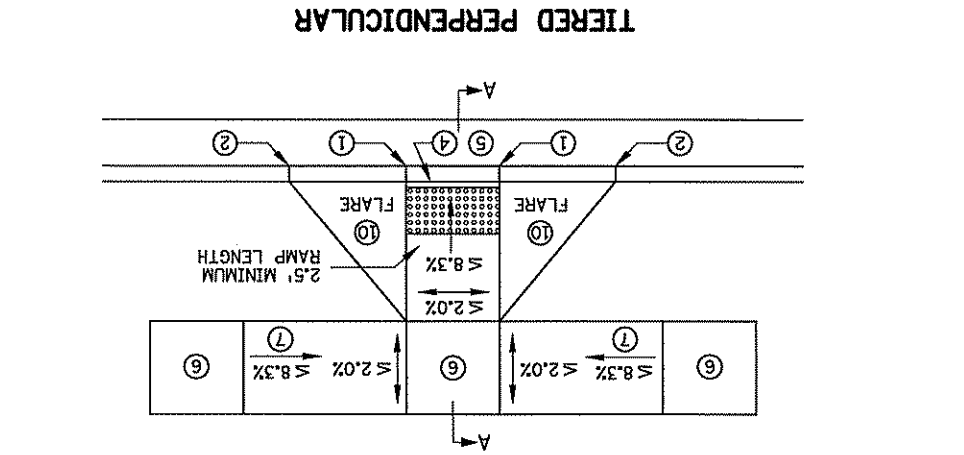
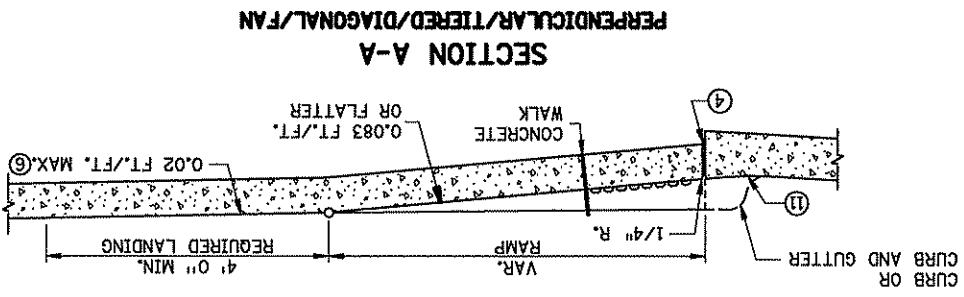
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 S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.

TKDA
 ENGINEERING ARCHITECTURE PLANNING

CITY OF LINO LAKES
 MISCELLANEOUS DETAILS
 LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION
 SHEET 11 OF 78



NOTES:
 1. APPLY BITUMINOUS TACK COAT, MNDOT SPEC. 2357.
 2. SAW BITUMINOUS PAVEMENT FULL DEPTH TO ESTABLISH A NEAT LINE FROM WHICH TO EXTEND THE NEW WORK.



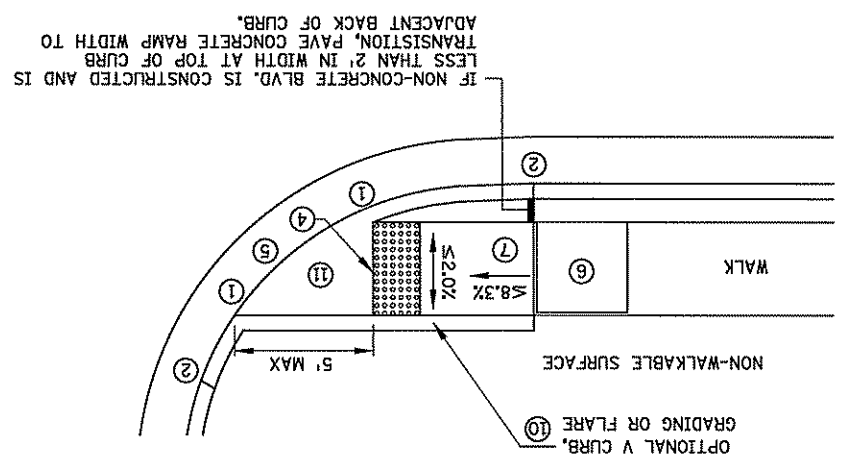
PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN SHEET NO. 5-297,250 (1 OF 5)
 STANDARD APPROVED
 MAY 10, 2012

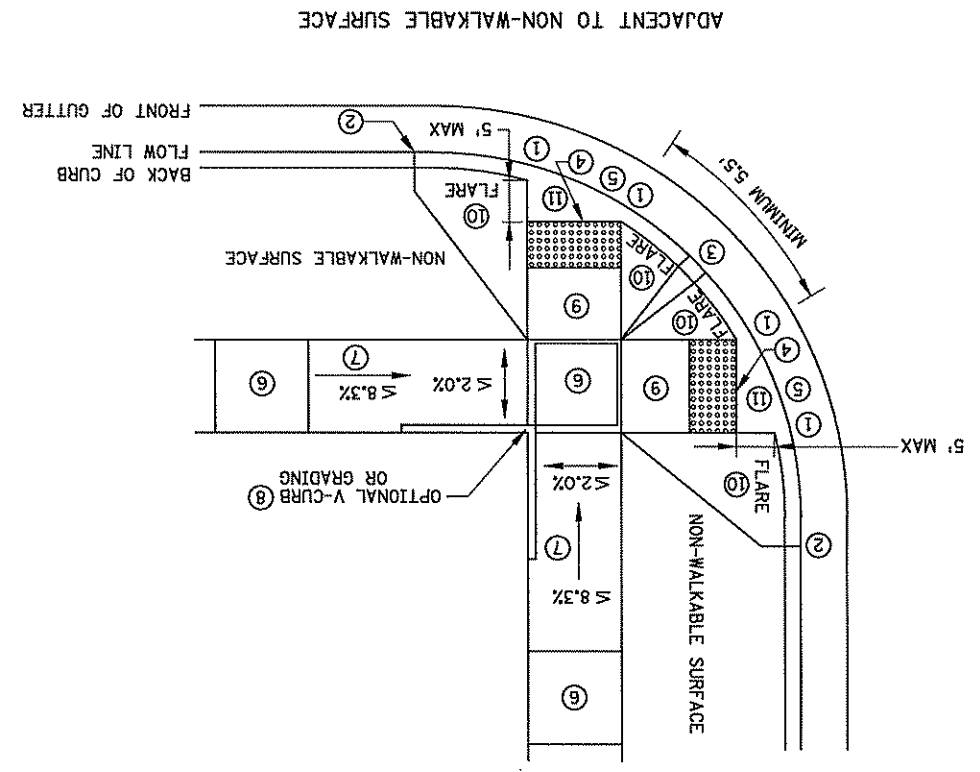
STATE AID PROJ. NO. 002-623-016 LAKE DRIVE (CSAH 23)
 STATE AID PROJ. NO. 002-614-038 MAIN STREET (CSAH 14)

- NOTES:
- 1 0" CURB HEIGHT.
 - 2 FULL CURB HEIGHT.
 - 3 LESS THAN 5% PREFERRED, 5-8.3% SHOULD ONLY BE USED AFTER ALL OTHER SLOPES HAVE BEEN CONSIDERED AND DEEMED IMPRACTICAL.
 - 4 1/2" PREFORMED JOINT FILLER MATERIAL ASHTO M 213, JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK, JOINT SHALL BE FREE OF DEBRIS, DOMES SHALL BE SET BACK 3" FROM THE BACK OF CURB OR EDGE OF ROADWAY.
 - 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% SLOPE IN ALL DIRECTIONS.
 - 7 IF RUNNING SLOPE IS LESS THAN 5.0% NO UPPER LANDING IS REQUIRED.
 - 8 V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN ROW ALLOWS, SEE SHEET 5 OF 5.
 - 9 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. SEE SHEET 4 OF 5, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
 - 10 ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE MAY NOT BE GREATER THAN 1/4 INCH, SEE INSET A ON SHEET 3 OF 5 FOR FURTHER DETAIL.
 - 11 DIAGONAL RAMP SHOULD ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN CONSIDERED AND DEEMED IMPRACTICAL.
 - 12

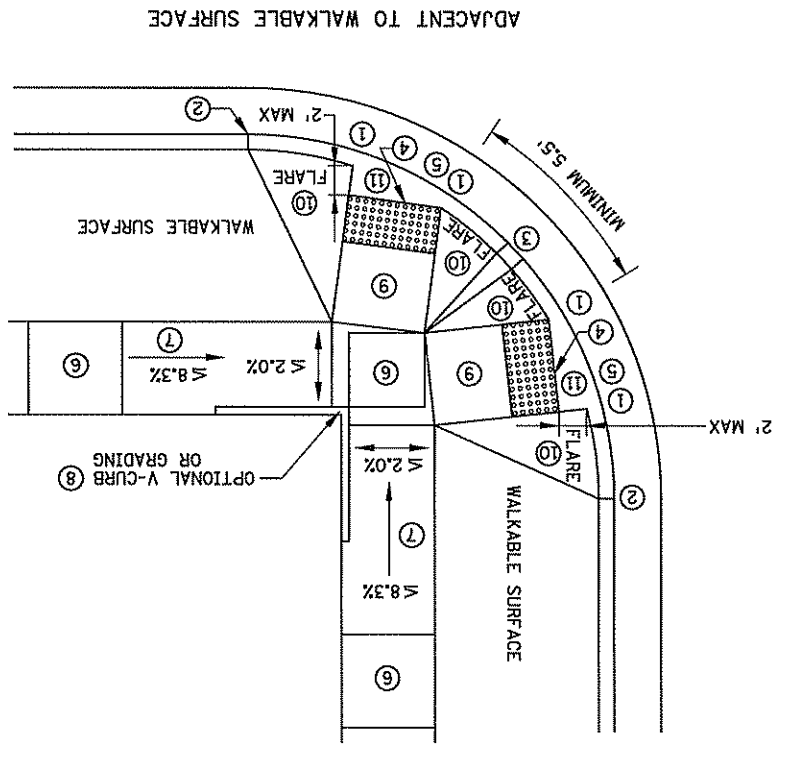
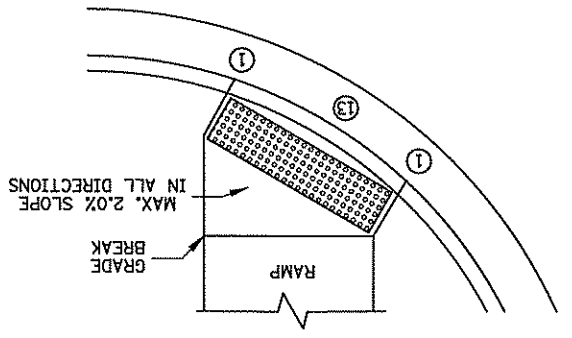
SEE STANDARD PLATE 7038, AND SHEET 4 OF 5 FOR DETAILS ON DETECTABLE WARNING. SLOPES ARE DEFINED AS ABSOLUTE ELEVATION DIFFERENCE PER LENGTH OF RUN, (AS OPPOSED TO A RELATIVE SLOPE WITH RESPECT TO A CURB LINE OR CURB HEIGHT). LANGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE CHANGES DIRECTION, AND AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5%. INITIAL CURB 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 EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS 5% OR GREATER. CONTRACTION JOINTS SHALL BE CONSTRUCTED AT ALL GRADE BREAKS. TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE. USE 6" CONCRETE FOR ALL RAMP AND LANDING AREAS. CONTRACTOR SHALL EMPLOY APPROPRIATE METHODS FOR INTERMEDIATE GRADE CONTROL TO ENSURE ALL GRADE BREAKS ARE CONSTRUCTED PROPERLY. ALL GRADE BREAKS SHALL BE PERPENDICULAR TO THE DIRECTION OF TRAVEL/PEDESTRIAN ACCESS ROUTE.



ONE-WAY DIRECTIONAL

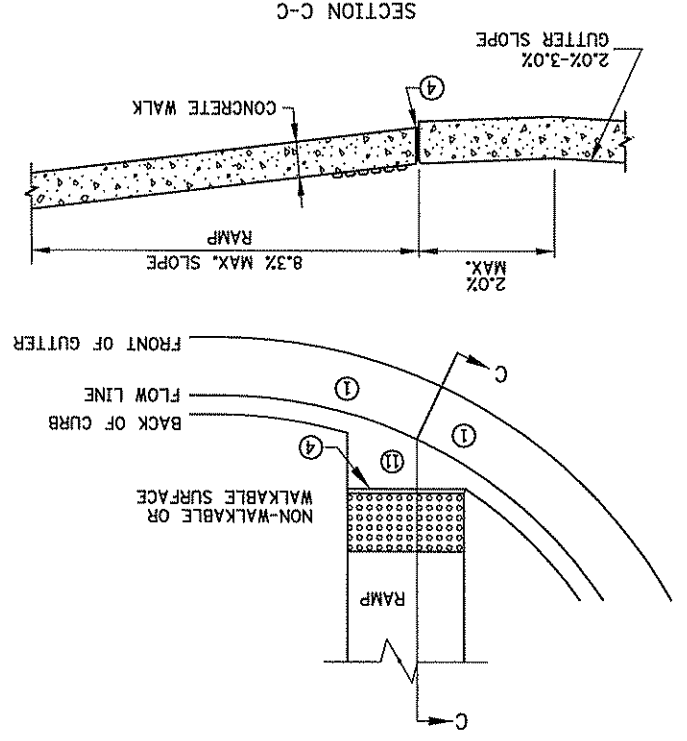


COMBINED DIRECTIONAL



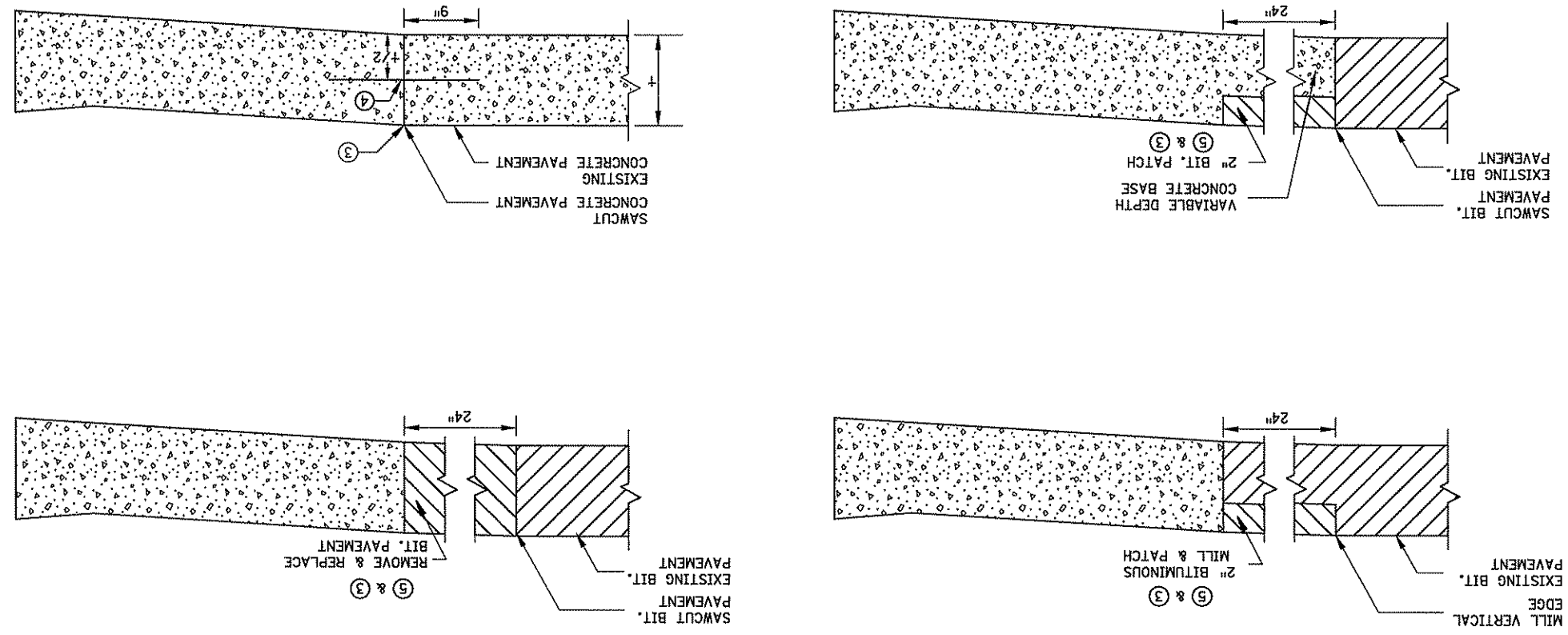
- NOTES:
- 1) SEE STANDARD PLATE 7038, AND SHEET 4 OF 5 FOR DETAILS ON DETECTABLE WARNING. SLOPES ARE DEFINED AS ABSOLUTE ELEVATION DIFFERENCE PER LENGTH OF RUN.
 - 2) (AS OPPOSED TO A RELATIVE SLOPE WITH RESPECT TO A CURB LINE OR CURB HEIGHT.)
 - 3) LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE CHANGES DIRECTION, AND AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5%.
 - 4) 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.
 - 5) SECONDARY CURB RAMP LANDINGS ARE REQUIRED EVERY 30' OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS 5% OR GREATER.
 - 6) CONTRACTION JOINTS SHALL BE CONSTRUCTED AT ALL GRADE BREAKS.
 - 7) TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.
 - 8) USE 6" CONCRETE WALK FOR ALL RAMP AND LANDING AREAS.
 - 9) CONTRACTOR SHALL EMPLOY APPROPRIATE METHODS FOR INTERMEDIATE GRADE CONTROL TO ENSURE ALL GRADE BREAKS ARE CONSTRUCTED PROPERLY.
 - 10) ALL GRADE BREAKS SHALL BE PERPENDICULAR TO THE DIRECTION OF TRAVEL/PEDESTRIAN ACCESS ROUTE.
 - 11) 0" CURB HEIGHT.
 - 12) 3" MINIMUM CURB HEIGHT.
 - 13) 1/2" PERFORMED JOINT FILLER MATERIAL ASHTO M 213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE OF DEBRIS.
 - 14) DOWNS SHALL BE SET BACK 3" FROM THE BACK OF CURB OR EDGE OF ROADWAY.
 - 15) SEE PEDESTRIAN ACCESS ROUTE CURB AND GUTTER DETAIL FOR INFORMATION ON CONSTRUCTING CURB AND GUTTER AT CURB OPENINGS. SEE SHEET NO. 3 OF 5.
 - 16) 4' BY 4' MIN. LANDING WITH MAX. 2% SLOPE IN ALL DIRECTIONS.
 - 17) IF RAMP SLOPE IS LESS THAN 5% NO UPPER LANDING IS REQUIRED.
 - 18) V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN ROW ALLOWS.
 - 19) RUNNING SLOPE LESS THAN OR EQUAL TO 8.3% & CROSS SLOPE LESS THAN OR EQUAL TO 2%.
 - 20) SEE SHEET 4 OF 5, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
 - 21) MAX. 2% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW CURB DETAIL ON THIS SHEET).
 - 22) TO BE USED FOR ALL DIRECTIONAL RAMPS.
 - 23) DOWNS PLACED AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.

CURB FOR DIRECTIONAL RAMPS



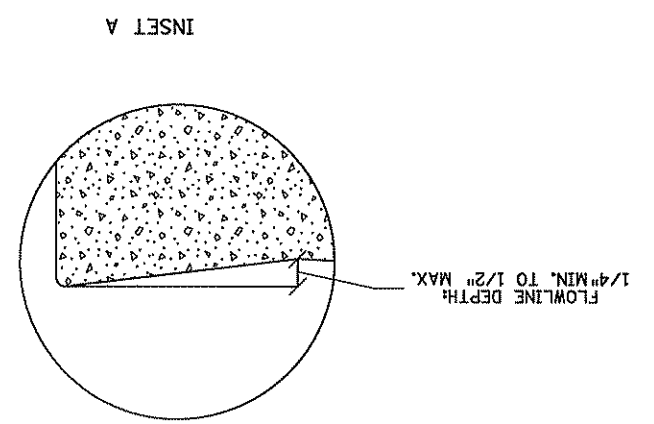
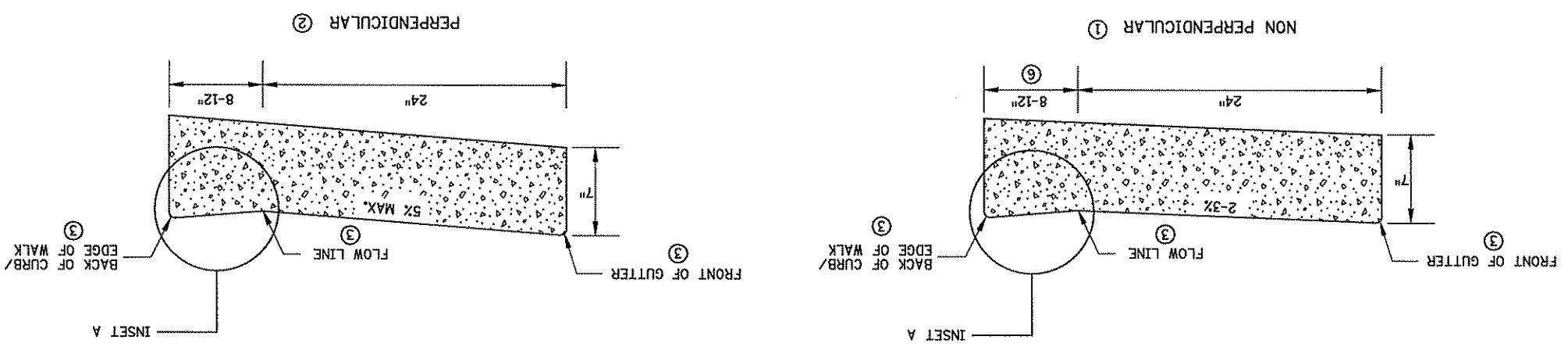
PEDESTRIAN CURB RAMP DETAILS

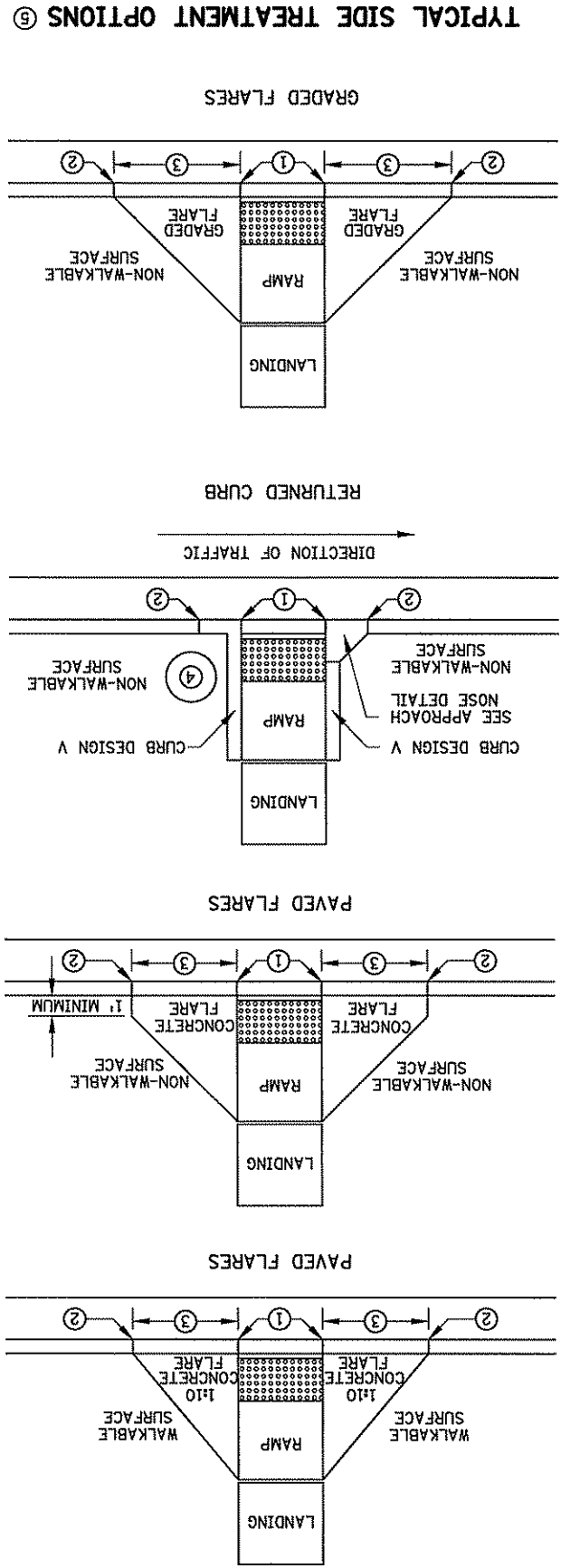
PAVEMENT TREATMENT OPTIONS
 IN FRONT OF CURB & GUTTER
 FOR USE ON CURB RAMP RETROFITS



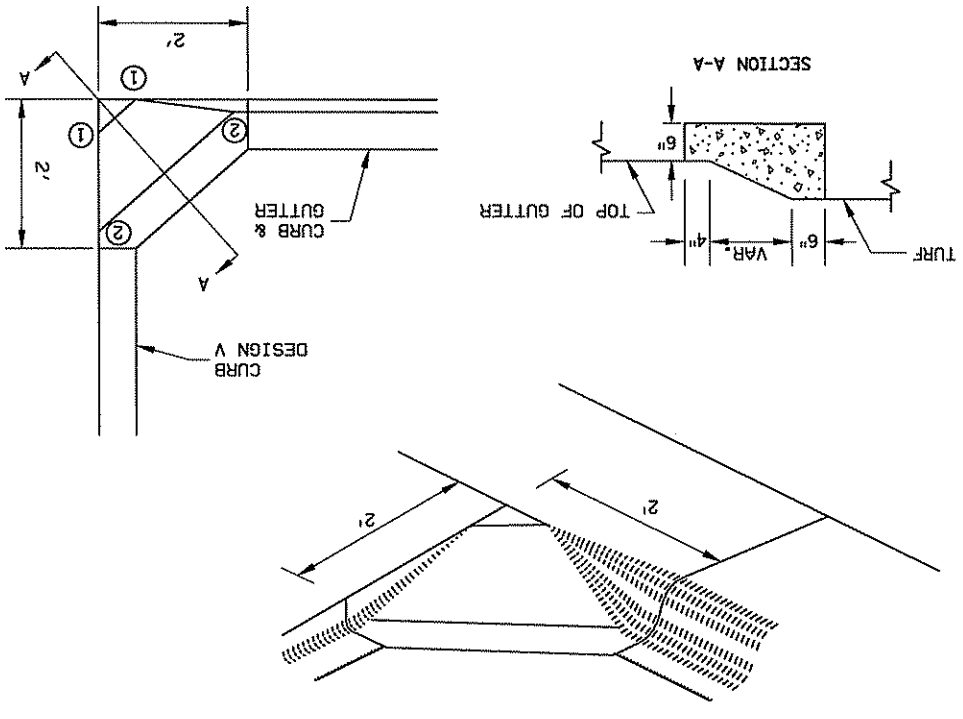
- NOTES:
- FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS, DEPRESSED CORNERS, & ONE WAY AND COMBINED DIRECTIONALS.
 - FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, PARALLEL AND DIAGONAL RAMPS.
 - THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".
 - DRILL AND GROUT NO. 13 EPOXY-COATED 18" LONG BARS AT 2' CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT.
 - 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.
 - VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS.

PEDESTRIAN ACCESS ROUTE
 CURB & GUTTER DETAIL

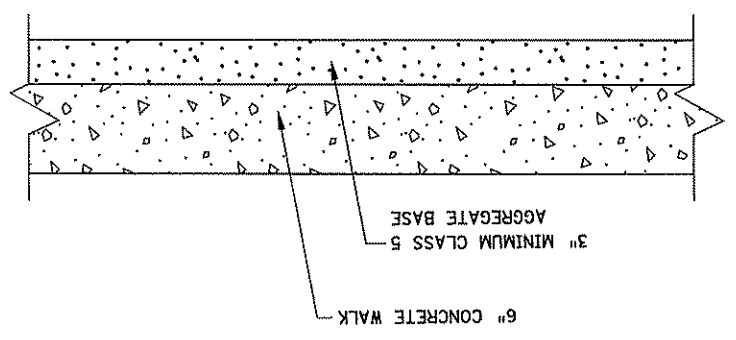




APPROACH NOSE DETAIL
 FOR DOWNSTREAM SIDE OF TRAFFIC

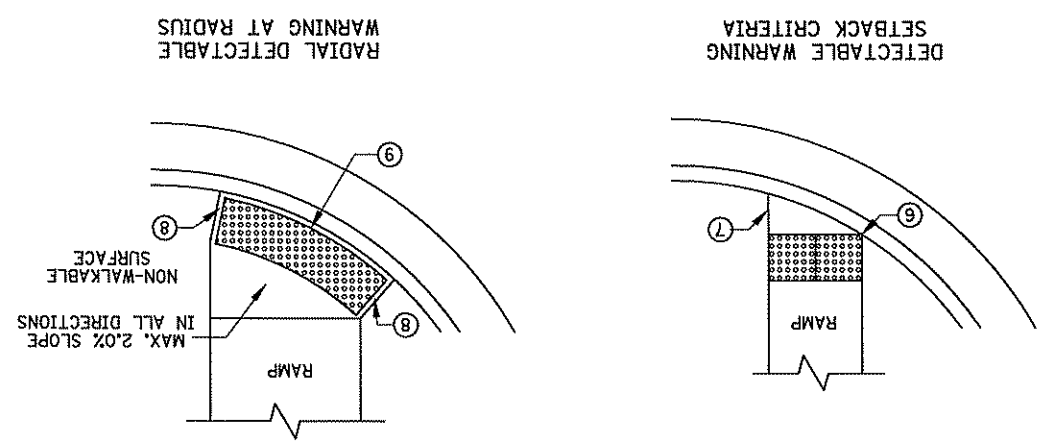


TYPICAL SIDEWALK SECTION AT QUADRANT



- NOTES:
- ① CURB HEIGHT.
 - ② FULL CURB HEIGHT.
 - ③ SHALL BE 1:10 WHEN ADJACENT TO WALKABLE SURFACES, A PAVED FLARE SHOULD BE 2" WHEN ADJACENT TO NON-WALKABLE SURFACES WHILE A GRADED FLARE SHOULD BE 1:6.
 - ④ IMMOVABLE OBJECT OR OBSTRUCTION.
 - ⑤ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED ON ALL RAMP 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 DETECTABLE WARNING SHALL HAVE ONE CORNER 3" FROM THE BACK OF CURB.
 - ⑦ SHALL BE 2' MAXIMUM OFFSET WHEN ADJACENT TO WALKABLE SURFACE AND 5' MAXIMUM OFFSET WHEN ADJACENT TO NON-WALKABLE SURFACE.
 - ⑧ WHEN NO 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.
 - ⑨ DETECTABLE WARNING TO BE PLACED AT AN UNIFORM OFFSET DISTANCE FROM 3" TO 6" FROM THE BACK OF CURB. IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNING SHALL BE PLACED 1' FROM THE EDGE OF ROADWAY TO PROVIDE CONCRETE BORDER.
- SEE STANDARD PLATE 7036, AND THIS SHEET FOR DETAILS ON DETECTABLE WARNING.
 USE 6" CONCRETE WALK UP TO EXISTING SIDEWALK GRADES FOR ALL RAMP AND LANDING AREAS.
 WHETHER A SURFACE IS WALKABLE OR NOT SHALL BE DETERMINED BY THE ENGINEER.
 FLARE LENGTHS SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMP'S FROM THE BACK OF CURB.

DETECTABLE WARNING PLACEMENT



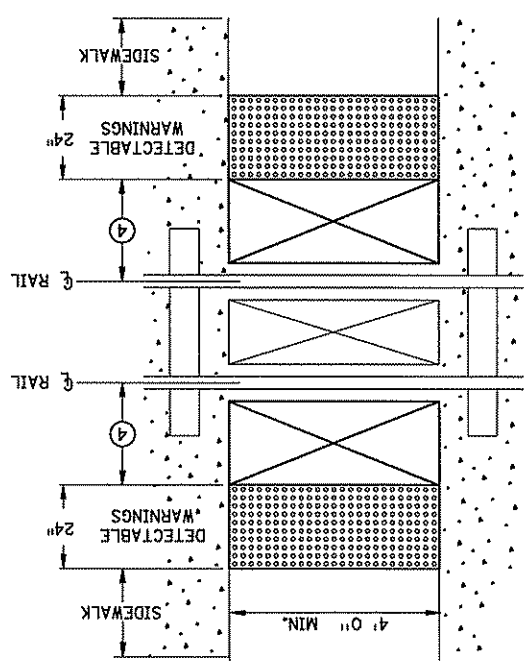
PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN SHEET NO. 5-297.250 (4 OF 5)
 STANDARD APPROVED
 MAY 10, 2012

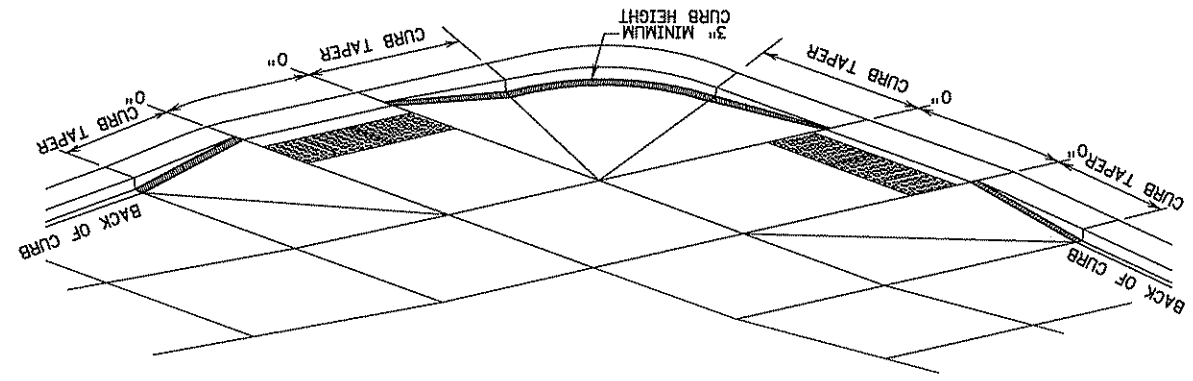
PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN SHEET NO. 5-297,250 (5 OF 5)
 STANDARD APPROVED
 MAY 10, 2012

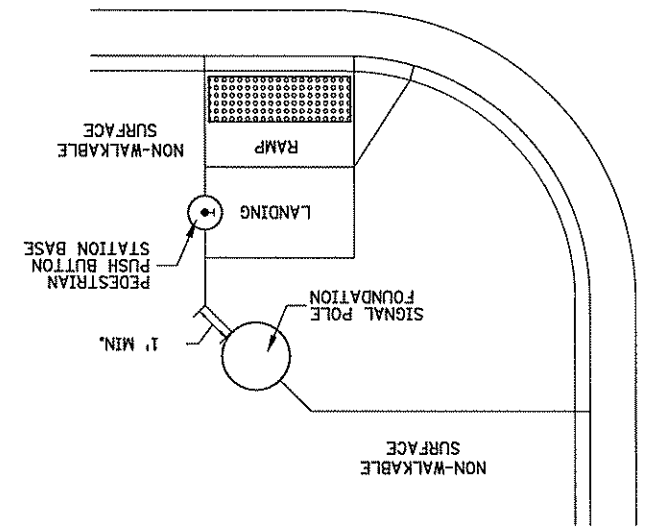
RAILROAD CROSSING
 PLAN VIEW



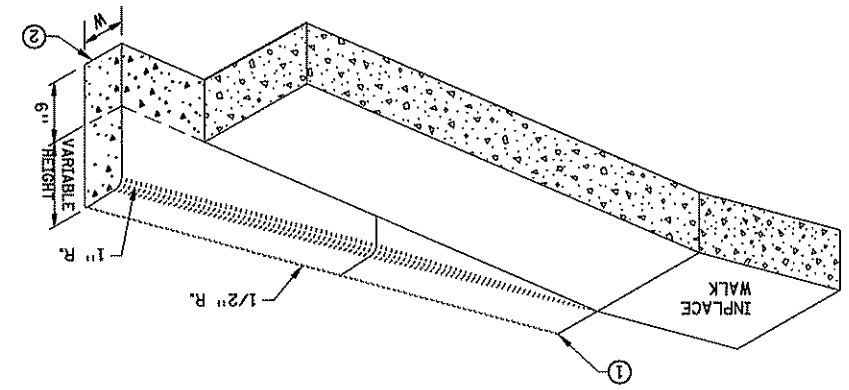
DETECTABLE EDGE AT QUADRANT ⑤



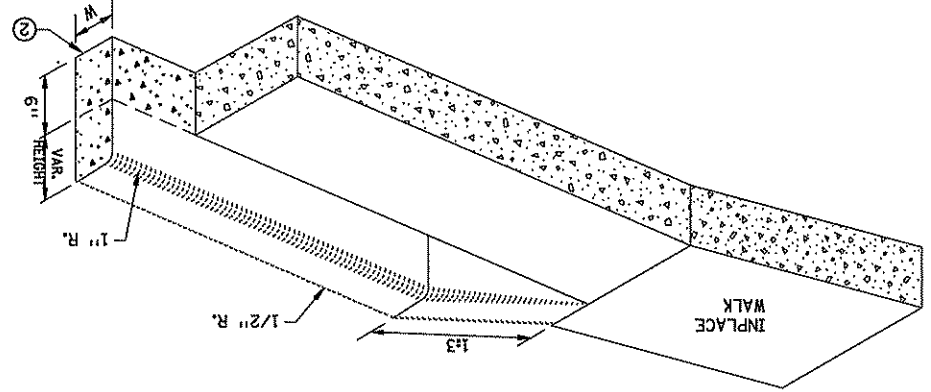
CONCRETE WALK EDGES ADJACENT TO CONCRETE STRUCTURES



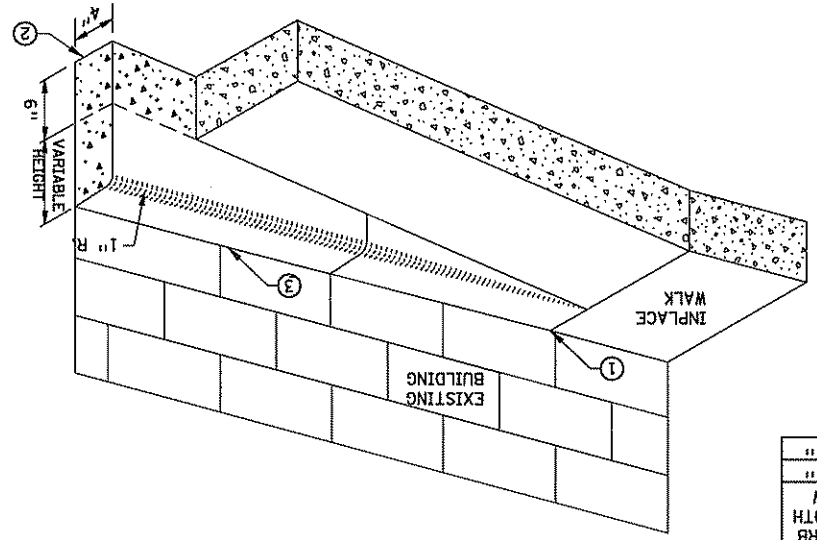
V CURB ADJACENT TO LANDSCAPE
 CURB OUTSIDE SIDEWALK LIMITS



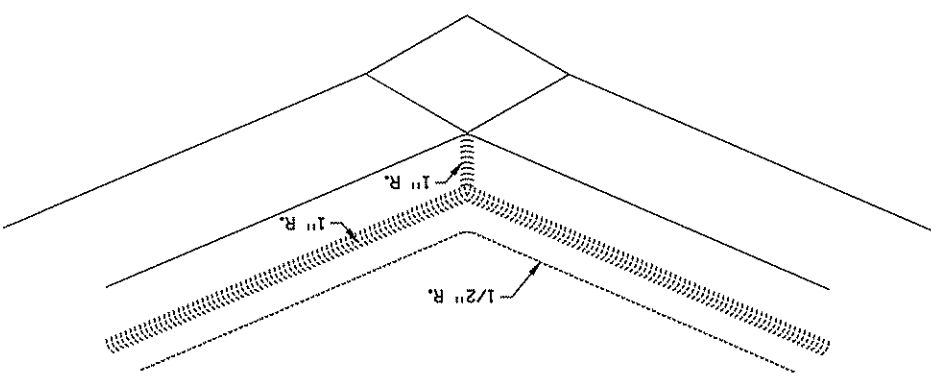
V CURB ADJACENT TO LANDSCAPE
 CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO BUILDING



V CURB AT CORNER



- NOTES:
- 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 6" MINIMUM TO 15" MAXIMUM FROM THE CENTERLINE OF THE NEAREST RAIL, WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL.
 - 5 ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES TRUNCATED DOMES WHEREVER THERE IS ZERO INCH HIGH CURB. CURB TRANSITIONS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS IMMEDIATELY AT THE EDGE OF THE ROUNDED DOMES AND UNIFORMLY RISES TO A 3 INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TRANSITION AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT PROWAG COMPLIANT.

NO	DATE	BY	CHKD	APPR	REVISION

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: *Bryant J. Ficek*
 PRINTED NAME: BRYANT J. FICEK
 LIC. NO. 42802
 DATE: July 23, 2012

DRAWN BY _____ DATE _____
 DESIGN BY _____ DATE _____
 CHECKED BY _____ DATE _____

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 S.A.P. 002-623-016
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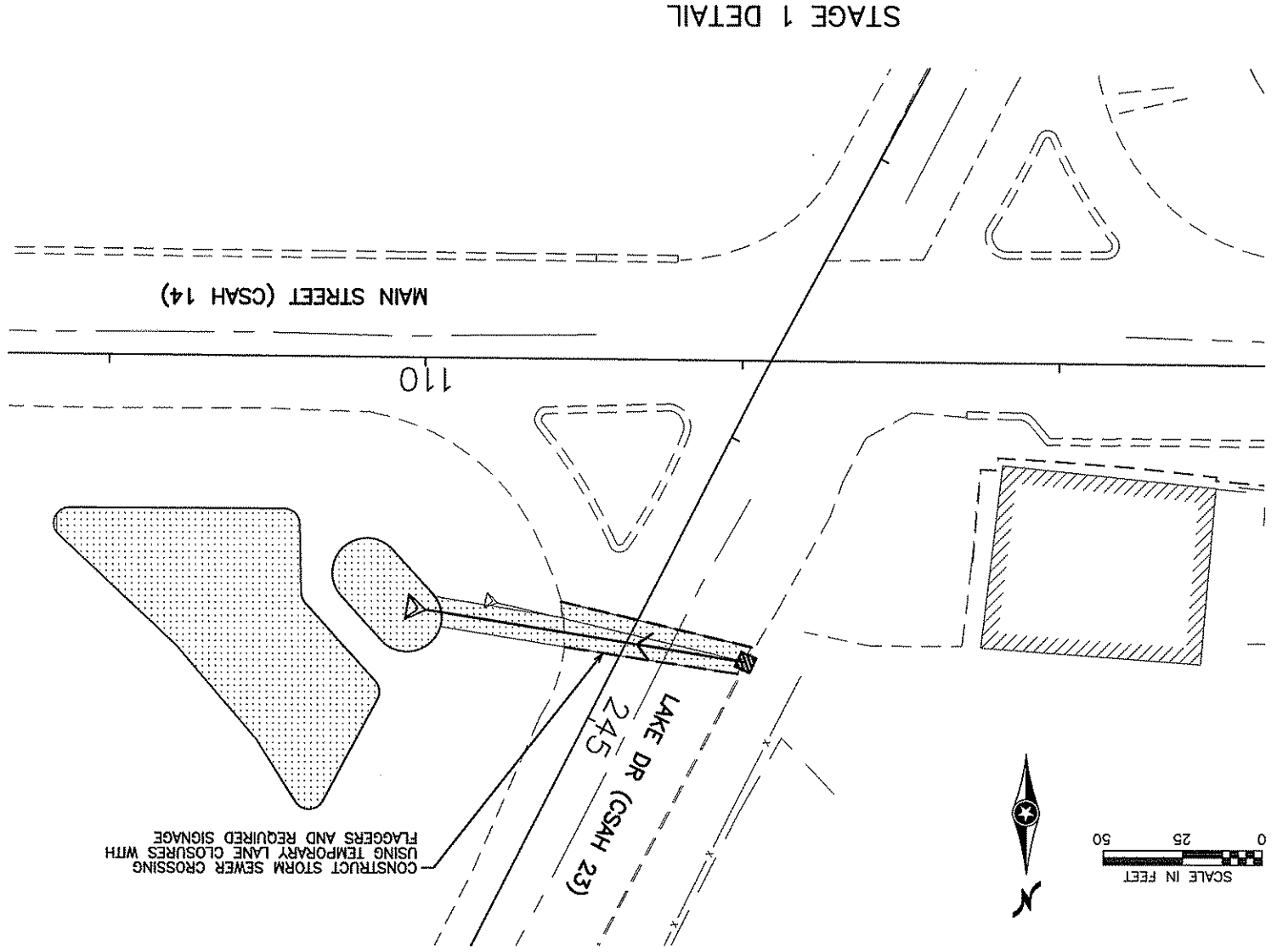
CITY OF LINO LAKES
 STAGING NARRATIVE AND STAGE 1 DETAIL
 CONSTRUCTION STAGING AND TRAFFIC CONTROL
 MAIN STREET (CSAH 14)
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION

- SIGNING:**
- WHEN SIGNS ARE INSTALLED, THEY SHALL BE MOUNTED AT THE PROPER HEIGHT AND LATERAL OFFSET AS DETAILED IN THE MNMUTCD.
 - ALL ORANGE SIGNS SHALL BE MADE OF HIGH PERFORMANCE FLUORESCENT SIGN SHEETING OR AN APPROVED SUBSTITUTE.
 - LONGITUDINAL DROP OFFS SHALL BE SIGNED AS SHOWN ON PAGES 6K-100 THROUGH 6K-102 OF THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS" UNLESS OTHERWISE SPECIFIED IN THESE PLANS.
 - REMOVAL OF EXISTING SIGNS SHALL BE COORDINATED WITH THE SIGNING PLANS. ANY CONFLICTING SIGNS SHALL BE REMOVED.
 - THE REMOVAL OF THE TEMPORARY SIGNS WILL BE COORDINATED TO ASSURE THAT THE FINAL SIGNS ARE INSTALLED AS NEEDED, OR TEMPORARY SIGNING WILL BE PROVIDED UNTIL THE FINAL SIGNING IS INSTALLED.
 - EXISTING SIGNS MAY BE RE-USED FOR CONSTRUCTION SIGNING.

- GENERAL NOTES:**
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE WITH THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MNMUTCD) AND "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
 - FIELD CONDITIONS MAY REQUIRE MODIFICATIONS OF LAYOUTS AS DEEMED NECESSARY BY THE ENGINEER.
 - ALL DISTANCES ARE APPROXIMATE.
 - BARRICADES ARE 8 FOOT TYPE III AND SHALL BE REFLECTORIZED ON BOTH SIDES.
 - OBVERTING ANY CONFLICTING PAVEMENT MARKINGS SHALL BE INCIDENTAL.
 - ALL TRAFFIC CONTROL DEVICES ON ROADS OPEN TO TRAFFIC THAT ARE NOT CONSISTENT WITH TRAFFIC OPERATIONS SHALL BE COVERED, REMOVED, OR REVISED (INCIDENTAL).
 - THE CONTRACTOR IS RESPONSIBLE FOR TRANSITIONING TRAFFIC TO FACILITATE TRAFFIC SWITCHES OR FOR TRANSITIONING TRAFFIC FROM ONE STAGE TO ANOTHER.
 - THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY WORK AREAS NEAR TRAFFIC IN ACCORDANCE WITH THE MNMUTCD INCLUDING THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
 - THE CONTRACTOR SHALL COORDINATE THE PERMANENT SIGNING SO THAT THE INSTALLATION OF THE PERMANENT SIGNS IS COMPLETED BEFORE THE ROADWAYS ARE OPEN TO TRAFFIC.
 - IF THE CONTRACTOR DESIRES TO PERFORM WORK IN A SEQUENCE OTHER THAN SHOWN IN THE PLANS, THE CONTRACTOR SHALL SUBMIT THE PROPOSED CHANGES, IN WRITING, TO THE ENGINEER FOR APPROVAL AT LEAST 10 WORKING DAYS PRIOR TO THE COMMENCEMENT OF THE WORK. IF THE SEQUENCE OF CONSTRUCTION CHANGES ARE APPROVED AND THE CHANGES RESULT IN CHANGES TO THE TRAFFIC CONTROL, THE CONTRACTOR SHALL SUBMIT, IN WRITING, REVISED TRAFFIC CONTROL PLANS TO THE ENGINEER FOR APPROVAL AT LEAST 14 DAYS PRIOR TO IMPLEMENTING THE TRAFFIC CONTROL.
 - SEE SIGNING DETAIL SHEETS FOR TYPICAL ERECTION DETAILS (FOR SIGNS TYPES "C & D").
 - ALL DRUMS, BARRICADES, AND SIGNS SHALL BE RETRO-REFLECTIVE.
 - THE DEVICES IN THIS TRAFFIC CONTROL PLAN SHALL BE FURNISHED, INSTALLED AND MAINTAINED UNLESS OTHERWISE NOTED.
 - ALL TRAFFIC CONTROL ITEMS SHALL BE INCLUDED IN THE LUMP SUM BID FOR TRAFFIC CONTROL.

STAGING NARRATIVE

- STAGE 1**
 CONSTRUCT POND AND STORM SEWER CROSSING ON LAKE DRIVE (CSAH 23).
 SHIFT TRAFFIC TO NORTH MAIN STREET (CSAH 14) AND EAST LAKE DRIVE (CSAH 23). CONSTRUCT WIDENING AND RECONSTRUCT ISLAND.
- STAGE 2**
 SHIFT TRAFFIC TO SOUTH MAIN STREET (CSAH 14) AND WEST LAKE DRIVE (CSAH 23). CONSTRUCT WIDENING AND RECONSTRUCT ISLAND.
- STAGE 3**
 SHIFT TRAFFIC TO NORTH MAIN STREET (CSAH 14) AND EAST LAKE DRIVE (CSAH 23). CONSTRUCT WIDENING AND RECONSTRUCT ISLAND.
- STAGE 4**
 MILL OF REMAINING EXISTING PAVEMENT. FINAL BITUMINOUS WEAR COURSE PAVING. ALL WAY STOP AT LAKE DR. (CSAH 23) AND MAIN ST. (CSAH 14) TO REMAIN UNTIL SIGNAL SYSTEM COMPLETE.



NO	DATE	BY	CHKD	APPR	REVISION

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: *Bryan J. Ficek*
 PRINTED NAME: BRYAN J. FICEK
 LIC. NO. 42802
 DATE: July 23, 2012

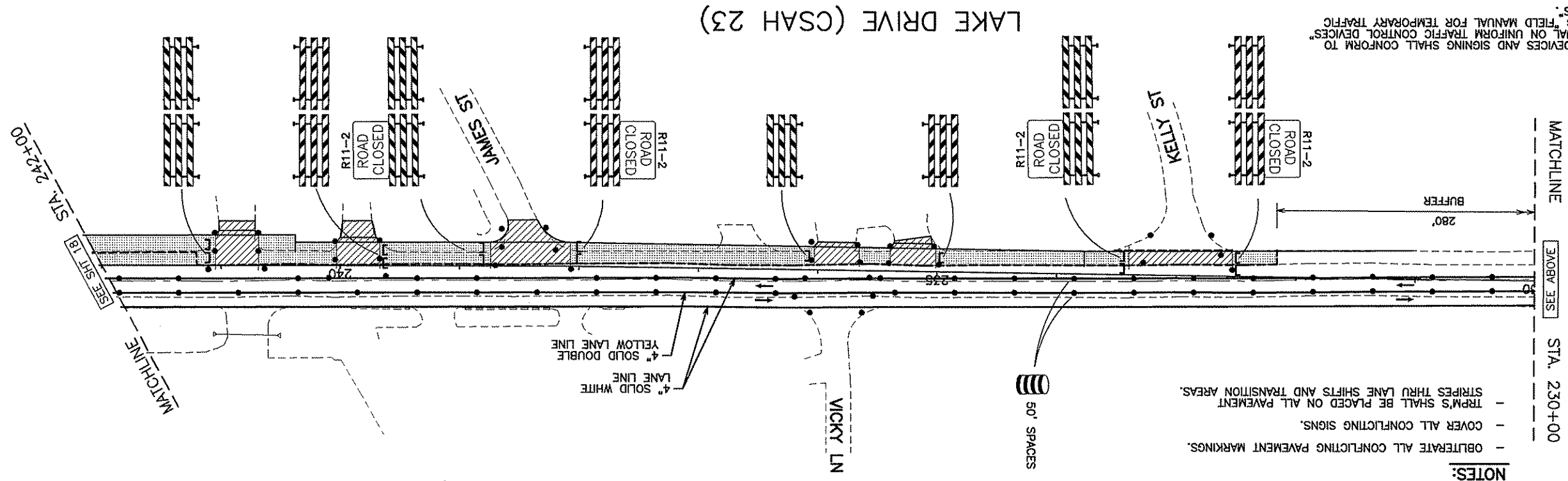
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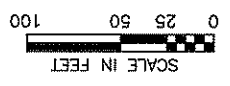


CITY OF LINO LAKES
 STAGE 2
 CONSTRUCTION STAGING AND TRAFFIC CONTROL
 LAKE DRIVE (CSAH 23)
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION
 SHEET 19 OF 78

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



- NOTES:
- OBLITERATE ALL CONFLICTING PAVEMENT MARKINGS.
 - COVER ALL CONFLICTING SIGNS.
 - TRPV'S SHALL BE PLACED ON ALL PAVEMENT AREAS.
 - STRIPES THRU LANE SHIFTS AND TRANSITION AREAS.

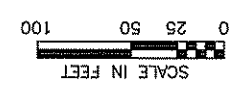
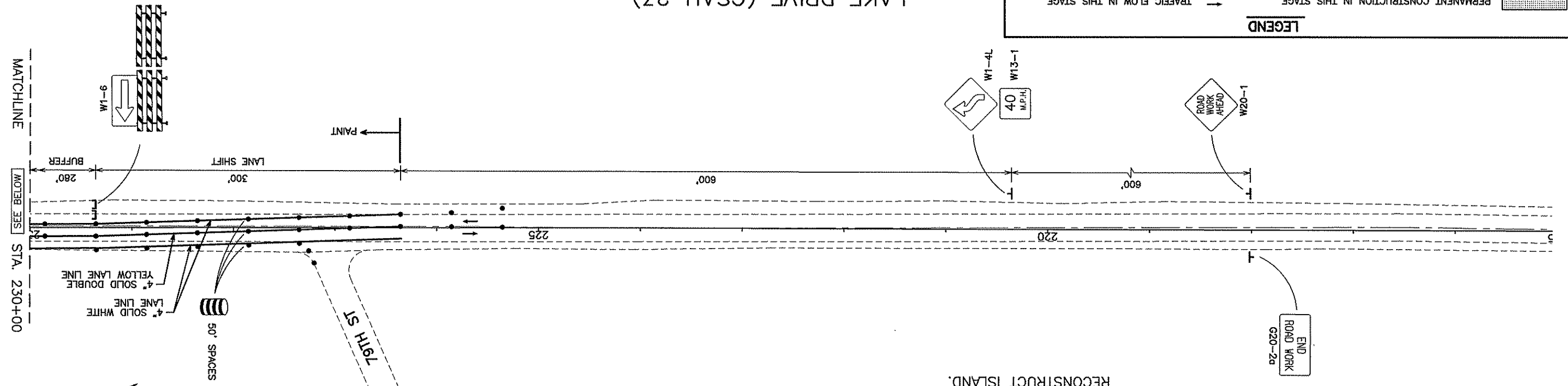


LEGEND

- PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
- TRAFFIC FLOW IN THIS STAGE
- RETROREFLECTIVE DRUM
- TRAFFIC CONTROL SIGN
- TYPE III BARRICADE
- TYPE A FLASHING WARNING LIGHT

THIS STAGE THE CONTRACTOR SHALL PROVIDE FOR FLAGGING OPERATIONS, AS DIRECTED BY THE ENGINEER, PER THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS". FLAGGING IS CONSIDERED A PART OF THE LUMP SUM BID FOR TRAFFIC CONTROL.

LAKE DRIVE (CSAH 23)



SHIFT TRAFFIC TO SOUTH MAIN STREET (CSAH 14) AND WEST LAKE DRIVE (CSAH 23). CONSTRUCT WIDENING AND RECONSTRUCT ISLAND.

STAGE 2

NO	DATE	BY	CHKD	APPD	REVISION

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: *Bryant J. Ficker*
 PRINTED NAME: BRYANT J. FICKER
 LIC. NO. 42802
 DATE: July 23, 2012

DRAWN BY: _____ DATE: _____
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____

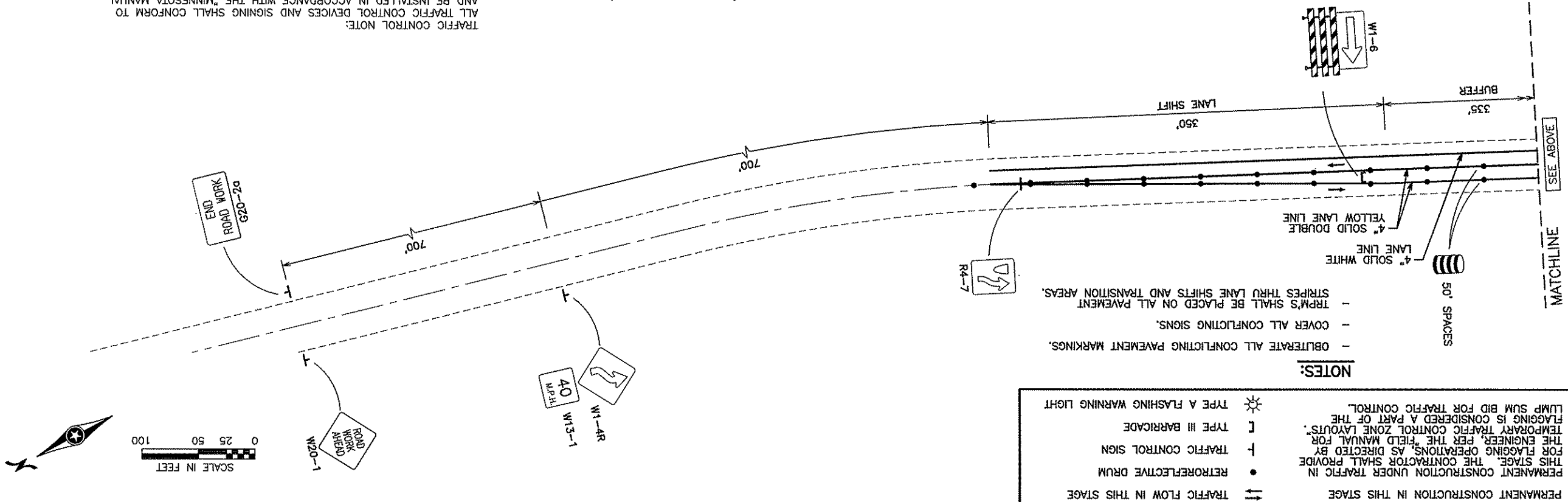
S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.



CITY OF LINO LAKES
 STAGE 2
 CONSTRUCTION STAGING AND TRAFFIC CONTROL
 LAKE DRIVE (CSAH 23)
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION

TRAFFIC CONTROL NOTE:
 ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO AND BE INSTALLED IN ACCORDANCE WITH THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUNUTCD), INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

LAKE DRIVE (CSAH 23)

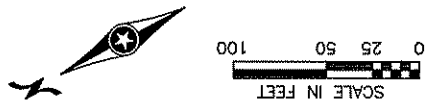


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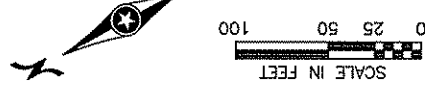
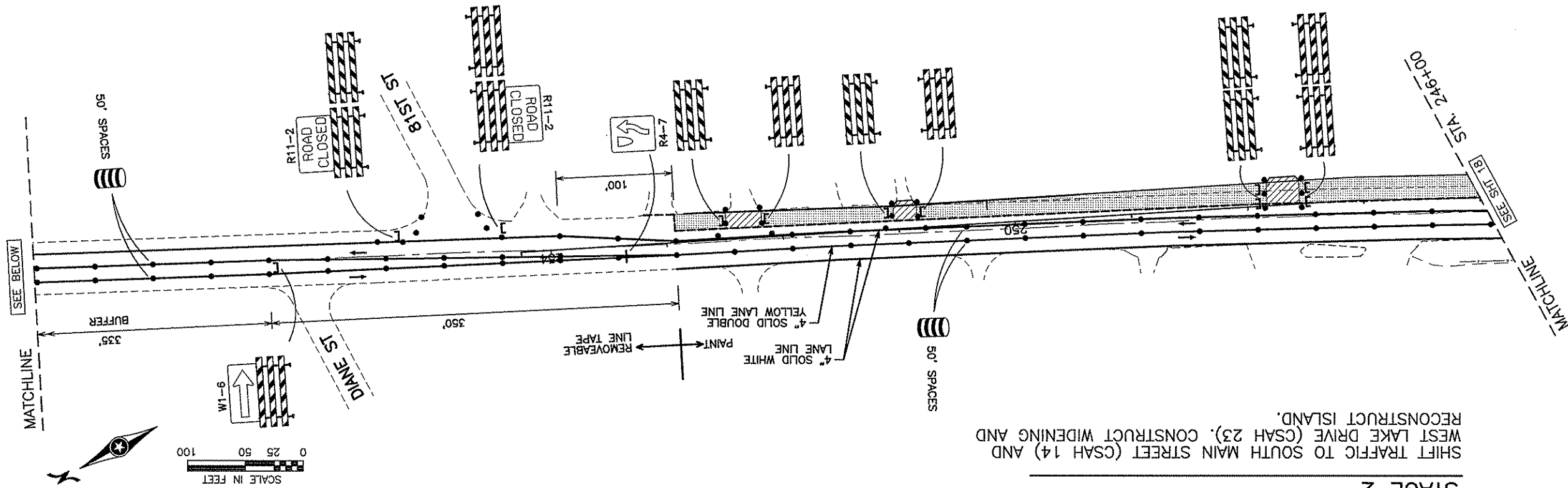
- PERMANENT CONSTRUCTION IN THIS STAGE
- TRAFFIC FLOW IN THIS STAGE
- RETROREFLECTIVE DRUM
- TRAFFIC CONTROL SIGN
- TYPE III BARRICADE
- TYPE A FLASHING WARNING LIGHT

NOTES:

- OBTURATE ALL CONFLICTING PAVEMENT MARKINGS.
- COVER ALL CONFLICTING SIGNS.
- STRIPES SHALL BE PLACED ON ALL PAVEMENT AREAS.
- 50' SPACES
- 4" SOLID WHITE LANE LINE
- 4" SOLID DOUBLE YELLOW LANE LINE
- 335' BUFFER
- LANE SHIFT
- 350'
- 700'



LAKE DRIVE (CSAH 23)



STAGE 2
 SHIFT TRAFFIC TO SOUTH MAIN STREET (CSAH 14) AND WEST LAKE DRIVE (CSAH 23). CONSTRUCT WIDENING AND RECONSTRUCT ISLAND.

NO	DATE	BY	CHKD	APPR	REVISION

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: *Bryant J. Fick*
 PRINTED NAME: BRYANT J. FICK
 LIC. NO. 42802
 DATE: July 23, 2012

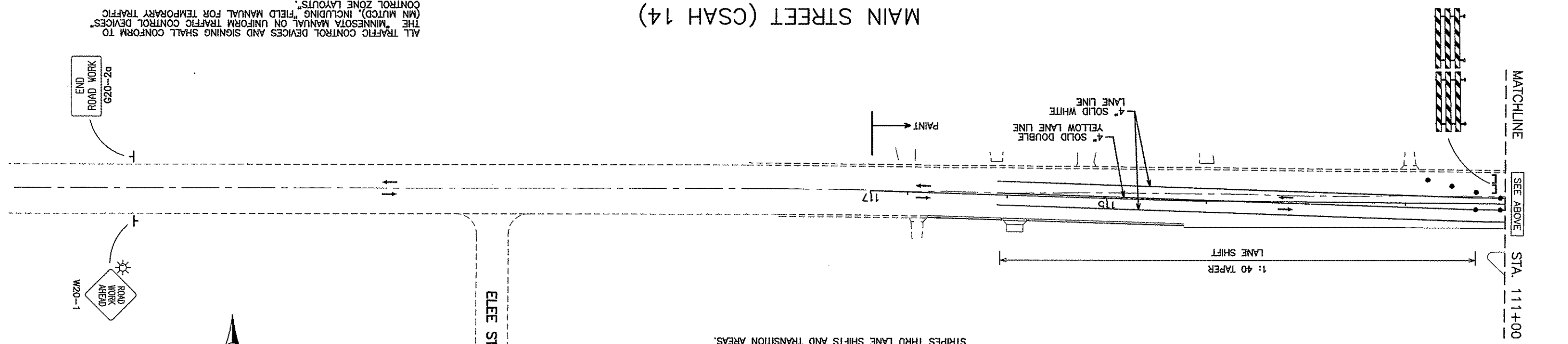
DRAWN BY: _____ DATE: _____
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____

S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.



CITY OF LINO LAKES
 STAGE 3
 CONSTRUCTION STAGING AND TRAFFIC CONTROL
 MAIN STREET (CSAH 14)
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION
 SHEET 21 OF 78

MAIN STREET (CSAH 14)

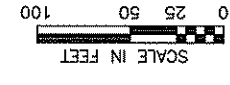


NOTES:
 - OBLITERATE ALL CONFLICTING PAVEMENT MARKINGS.
 - COVER ALL CONFLICTING SIGNS.
 - TRPMS SHALL BE PLACED ON ALL PAVEMENT STRIPES THRU LANE SHIFTS AND TRANSITION AREAS.

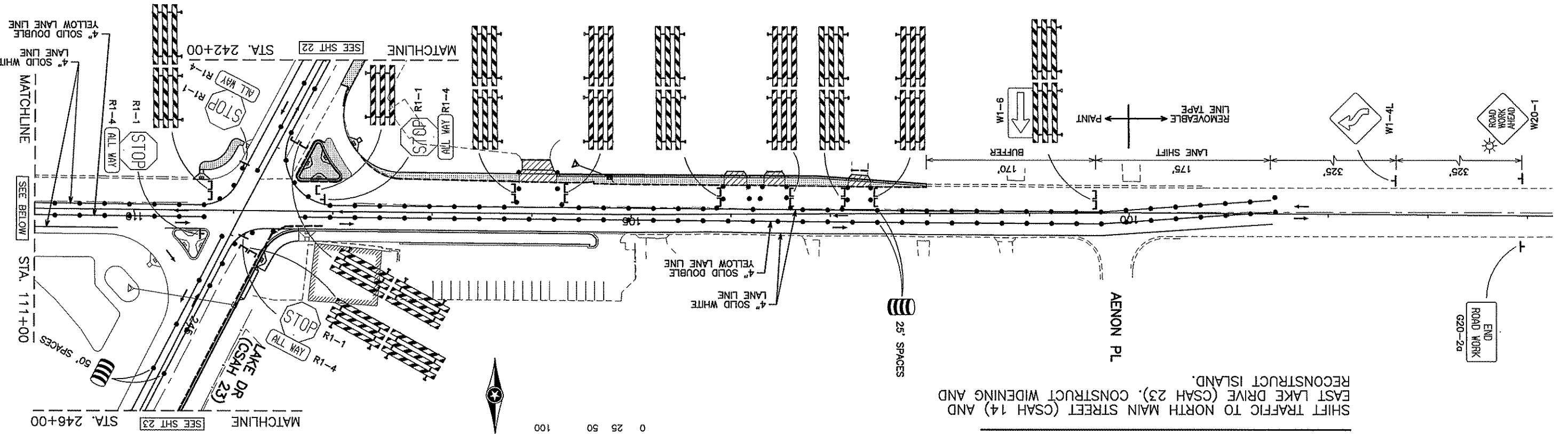
LEGEND

- PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
- TRAFFIC FLOW IN THIS STAGE
- RETROREFLECTIVE DRUM
- TRAFFIC CONTROL SIGN
- TYPE III BARRICADE
- TYPE A FLASHING WARNING LIGHT

LUMP SUM BID FOR TRAFFIC CONTROL FLAGGING IS CONSIDERED A PART OF THE TEMPORARY TRAFFIC CONTROL LAYOUTS. THE ENGINEER, PER THE FIELD MANUAL FOR FOR FLAGGING OPERATIONS, AS DIRECTED BY THIS STAGE, THE CONTRACTOR SHALL PROVIDE PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE.

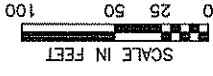


MAIN STREET (CSAH 14)



SHIFT TRAFFIC TO NORTH MAIN STREET (CSAH 14) AND EAST LAKE DRIVE (CSAH 23). CONSTRUCT WIDENING AND RECONSTRUCT ISLAND.

STAGE 3



NO	DATE	BY	CHKD	APPR	REVISION

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: *Bryant J. Ficker*
 PRINTED NAME: BRYANT J. FICKER
 DATE: July 23, 2012
 LIC. NO. 42802

DATE: _____
 DRAWN BY: _____
 DATE: _____
 CHECKED BY: _____
 DATE: _____

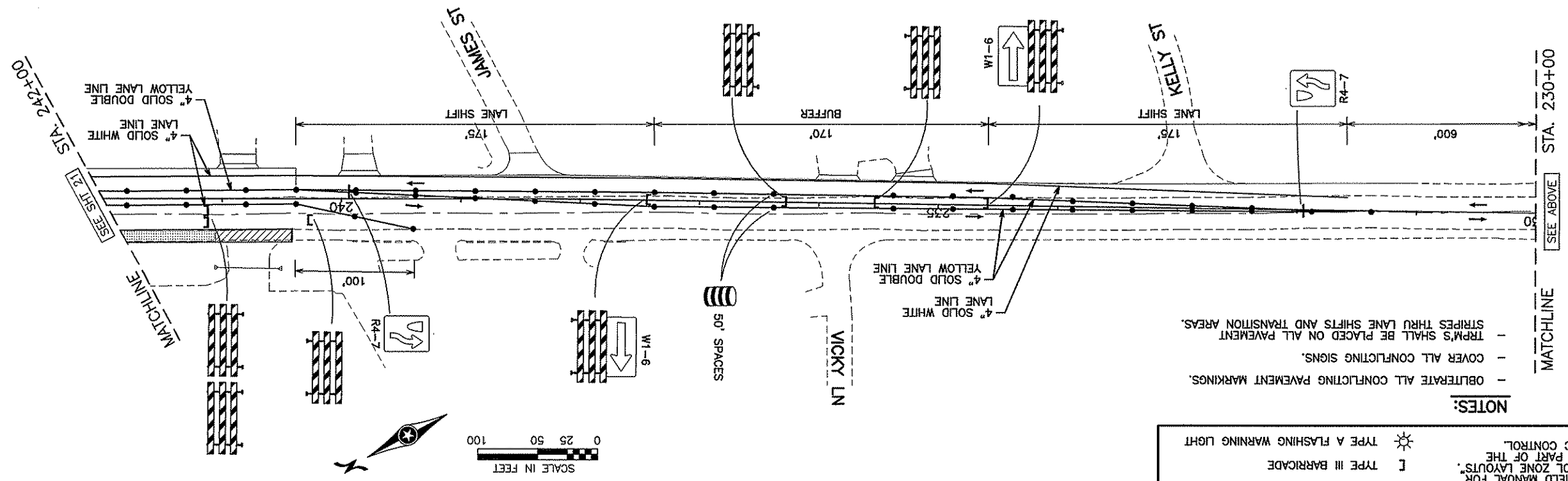
S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.



CITY OF LINO LAKES
 STAGE 3
 CONSTRUCTION STAGING AND TRAFFIC CONTROL
 LAKE DRIVE (CSAH 23)
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION

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

LAKE DRIVE (CSAH 23)



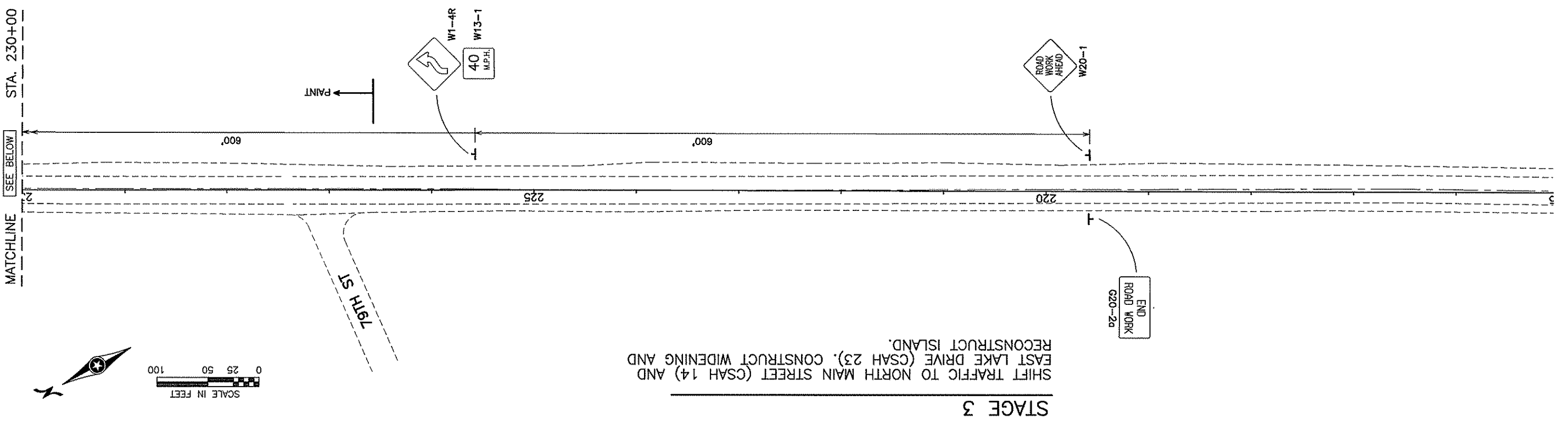
- NOTES:
- OBLITERATE ALL CONFLICTING PAVEMENT MARKINGS.
 - COVER ALL CONFLICTING SIGNS.
 - TRPM'S SHALL BE PLACED ON ALL PAVEMENT AREAS.
 - STRIPES THRU LANE SHIFTS AND TRANSITION AREAS.

LEGEND

- PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
- TRAFFIC FLOW IN THIS STAGE
- RETROREFLECTIVE DRUM
- TRAFFIC CONTROL SIGN
- TYPE III BARRICADE
- TYPE A FLASHING WARNING LIGHT

PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
 THIS STAGE THE CONTRACTOR SHALL PROVIDE FOR FLAGGING OPERATIONS, AS DIRECTED BY THE ENGINEER, PER THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS". FLAGGING IS CONSIDERED A PART OF THE LUMP SUM BID FOR TRAFFIC CONTROL.

LAKE DRIVE (CSAH 23)



STAGE 3
 SHIFT TRAFFIC TO NORTH MAIN STREET (CSAH 14) AND EAST LAKE DRIVE (CSAH 23). CONSTRUCT WIDENING AND RECONSTRUCT ISLAND.

NO	DATE	BY	CHKD	APPR	REVISION

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.
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 DATE: July 23, 2012

DRAWN BY: _____ DATE: _____
 DESIGN BY: _____ DATE: _____
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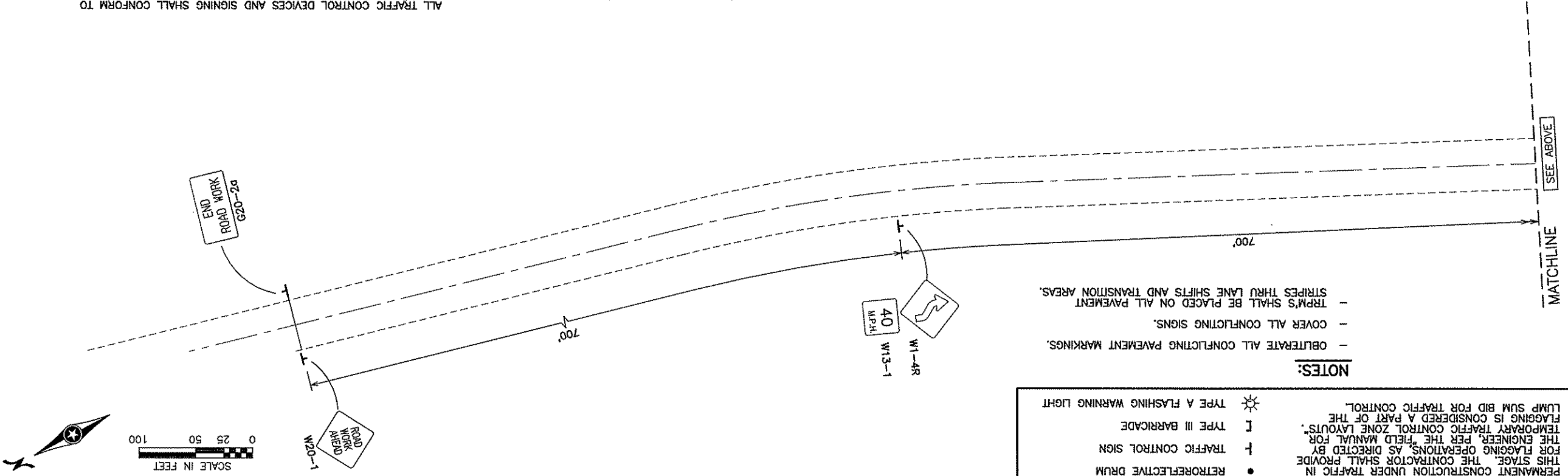
S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.

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 ENGINEERING - ARCHITECTURE - PLANNING

CITY OF LINO LAKES
 STAGE 3
 CONSTRUCTION STAGING AND TRAFFIC CONTROL
 LAKE DRIVE (CSAH 23)
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION

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

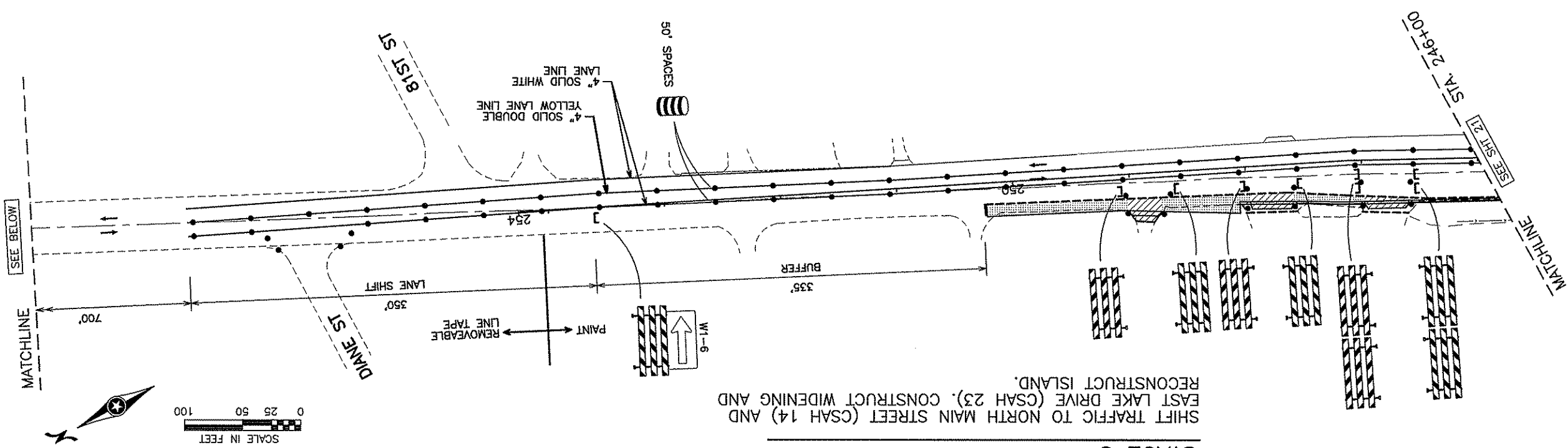
LAKE DRIVE (CSAH 23)



- NOTES:**
- OBLITERATE ALL CONFLICTING PAVEMENT MARKINGS.
 - COVER ALL CONFLICTING SIGNS.
 - TRIP'S SHALL BE PLACED ON ALL PAVEMENT AREAS.

- LEGEND**
- PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE
 - TRAFFIC FLOW IN THIS STAGE
 - RETROREFLECTIVE DRUM
 - TRAFFIC CONTROL SIGN
 - TYPE III BARRICADE
 - TYPE A FLASHING WARNING LIGHT

LAKE DRIVE (CSAH 23)



SHIFT TRAFFIC TO NORTH MAIN STREET (CSAH 14) AND EAST LAKE DRIVE (CSAH 23). CONSTRUCT WIDENING AND RECONSTRUCT ISLAND.

STAGE 3

Plot Date: 08/02/2012
Drawing Name: City of Lino Lakes, 14850 Main Street, Signal Lake, MN
Drawing Title: Lake Drive Construction Alignment
Project Number: 14850 Main Street, Signal Lake, MN
Revision: 1/23/2012
Author: James E. Studenski
Date: 1/23/2012
Scale: As Shown
Sheet: 24 of 78

NO	DATE	BY	CHKD	APPR	REVISION

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: *[Signature]*
PRINTED NAME: JAMES E. STUDENSKI
LIC. NO. 23157
DATE: 1/23/2012
CHECKED BY: _____ DATE: _____
DESIGN BY: _____ DATE: _____
DRAWN BY: _____ DATE: _____

S.A.P. 002-614-038
S.A.P. 002-623-016
TKDA Proj. 14850.000
S.P.

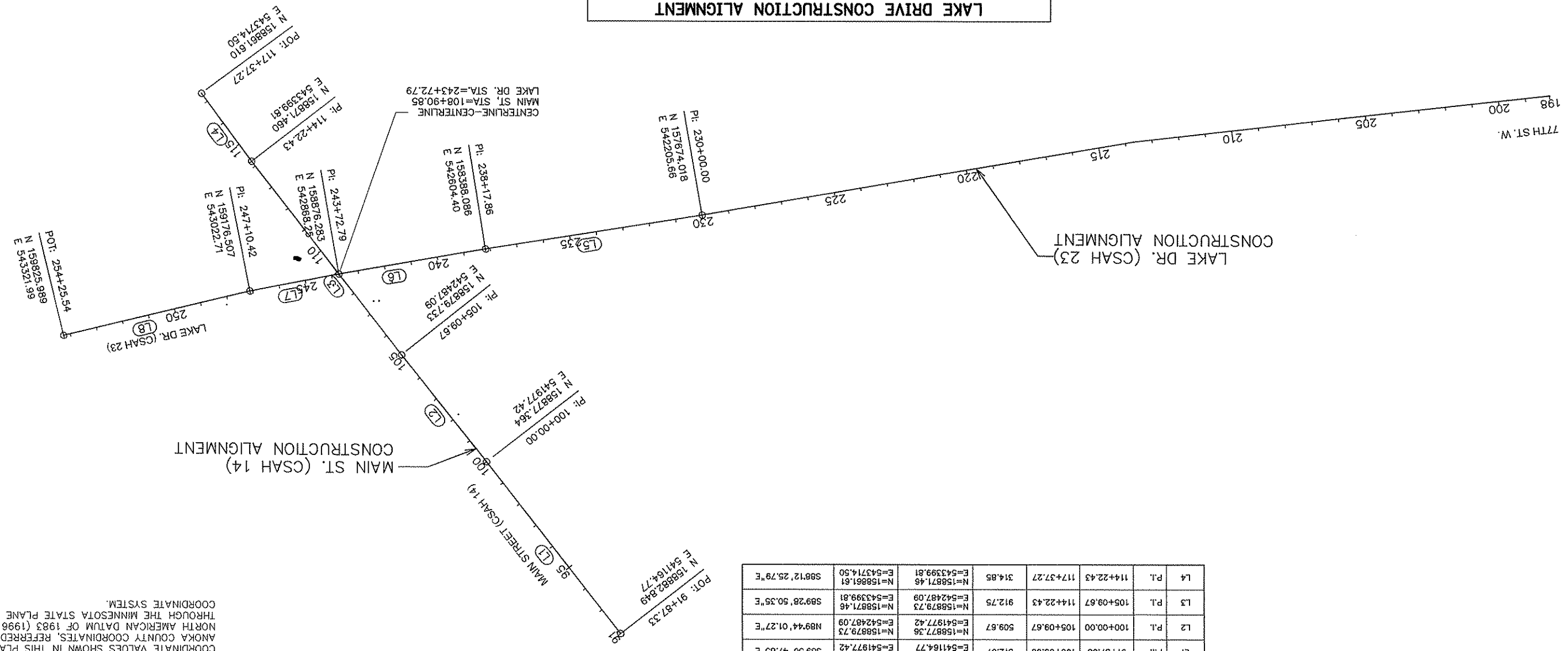
TKDA
ENGINEERING • ARCHITECTURE • PLANNING

CITY OF LINO LAKES
ALIGNMENT PLAN
LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

24
OF
78
SHEET

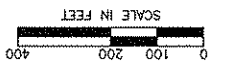
NOTE:
STA. 198+00 TO 230+00
TO BE FIELD VERIFIED.

NUMBER	POINT	START STATION	END STATION	LINE LENGTH	START OF LINE COORDINATES	END OF LINE COORDINATES	LINE CHORD DIRECTION
L5	P.I.	230+00.00	238+17.86	817.86	N=157674.02 E=542205.66	N=158388.09 E=542604.40	N2910'45.90"E
L6	P.I.	238+17.86	243+72.79	554.93	N=158388.09 E=542604.40	N=158876.28 E=542868.25	N2823'21.30"E
L7	P.I.	243+72.79	247+10.42	337.63	N=158876.28 E=542868.25	N=159176.51 E=543022.71	N2713'30.28"E
L8	P.I.	247+10.42	254+25.54	715.12	N=159176.51 E=543022.71	N=159825.99 E=543321.99	N2444'24.15"E



NUMBER	POINT	START STATION	END STATION	LINE LENGTH	START OF LINE COORDINATES	END OF LINE COORDINATES	LINE CHORD DIRECTION
L1	P.I.	91+87.33	100+00.00	812.67	N=15882.85 E=541164.77	N=158877.36 E=541977.42	S8936'47.85"E
L2	P.I.	100+00.00	105+09.67	509.67	N=158877.36 E=541977.42	N=158879.73 E=542487.09	N8944'01.27"E
L3	P.I.	105+09.67	114+22.43	912.75	N=158879.73 E=542487.09	N=158871.46 E=543399.81	S8928'50.35"E
L4	P.I.	114+22.43	117+37.27	314.85	N=158871.46 E=543399.81	N=158861.61 E=543714.50	S8812'25.79"E

HORIZONTAL CONTROL



COORDINATE VALUES SHOWN IN THIS PLAN ARE ANOKA COUNTY COORDINATES, REFERRED TO THE NORTH AMERICAN DATUM OF 1983 (1996 ADJ.) THROUGH THE MINNESOTA STATE PLANE COORDINATE SYSTEM.

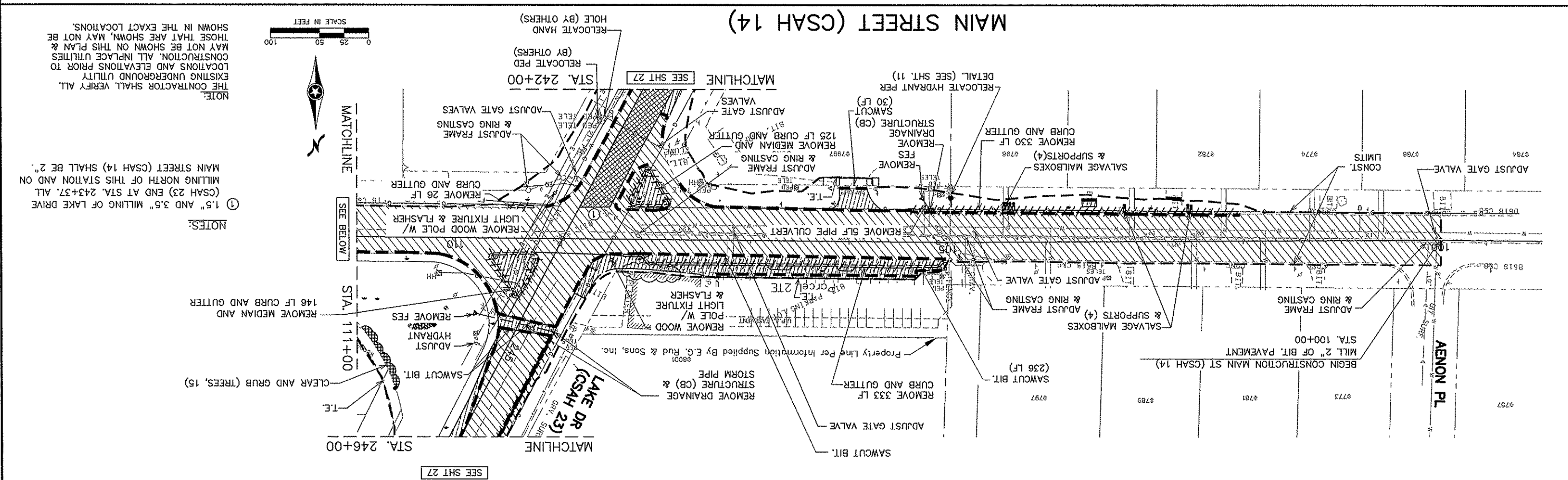
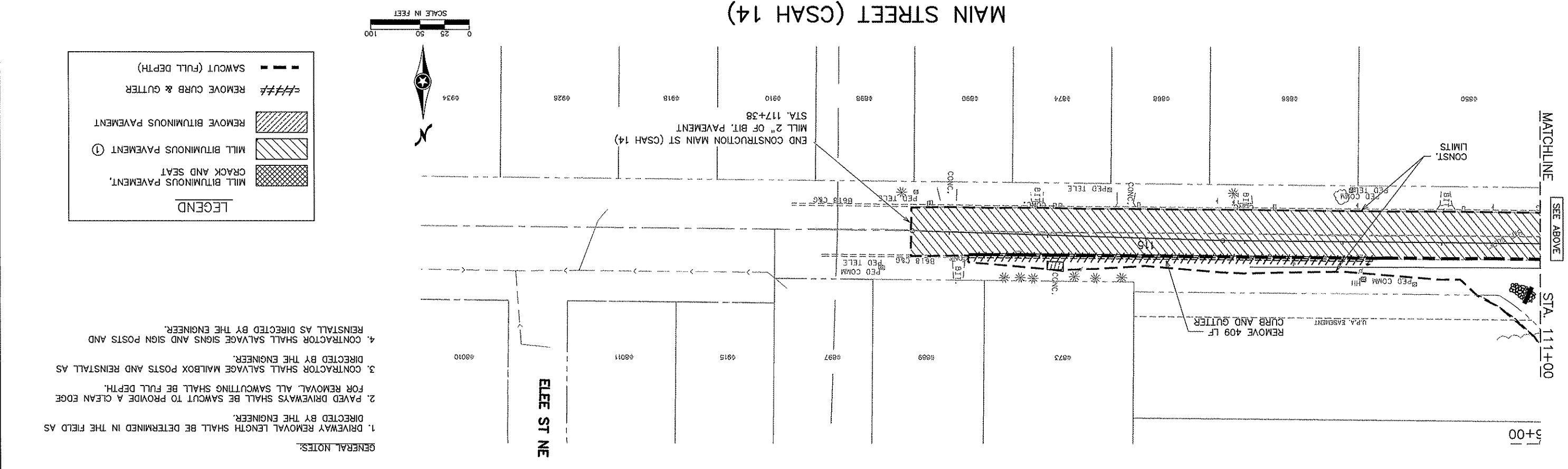
NO	DATE	BY	CHKD	APPR	REVISION

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: *[Signature]*
 PRINTED NAME: JAMES E. STUDENSKI
 LIC. NO. 23757
 DATE: 1/23/2012

DRAWN BY: _____ DATE: _____
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____
 S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.

TRKDA
 ENGINEERING - ARCHITECTURE - PLANNING

CITY OF LINDO LAKES
 INPLACE TOPOGRAPHY, UTILITIES
 AND REMOVAL PLAN
 MAIN STREET (CSAH 14)
 LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION



Date: 08/01/2012
 Drawing Name: K:\Projects\14850\14850.dwg
 User: jstuden
 Title: City of Lino Lakes
 Project: Lake Drive (CSAH 23) Milling and Removal Plan
 Scale: 1" = 20'
 Sheet: 27 of 78
 Date: 08/01/2012

NO	DATE	BY	CHKD	APPR	REVISION

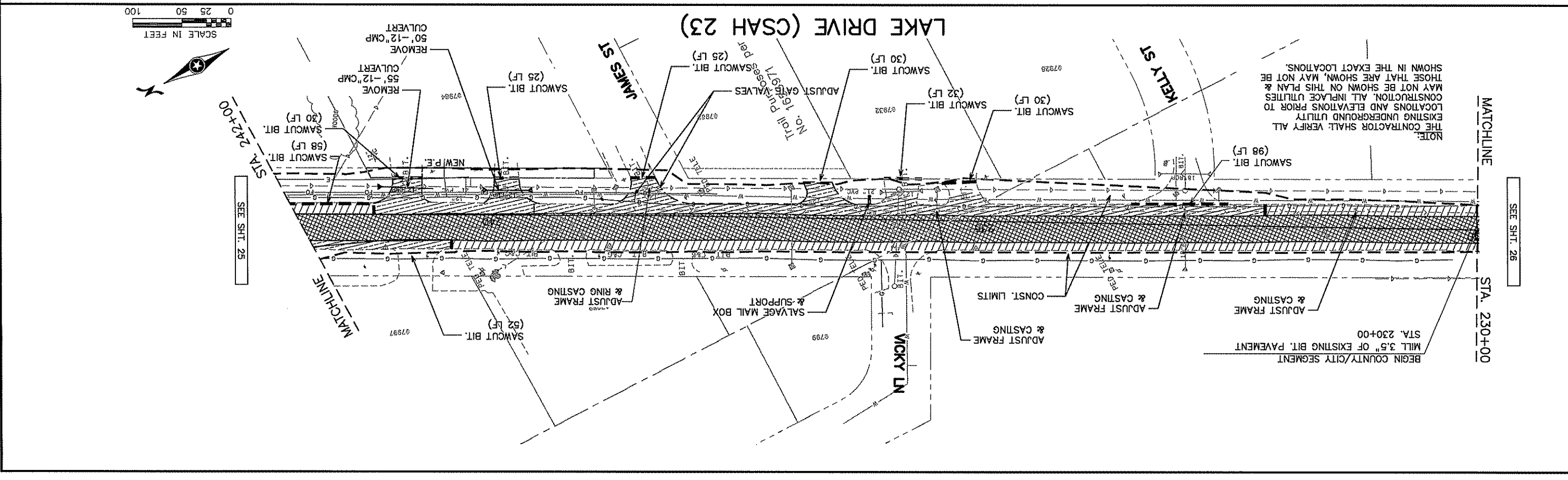
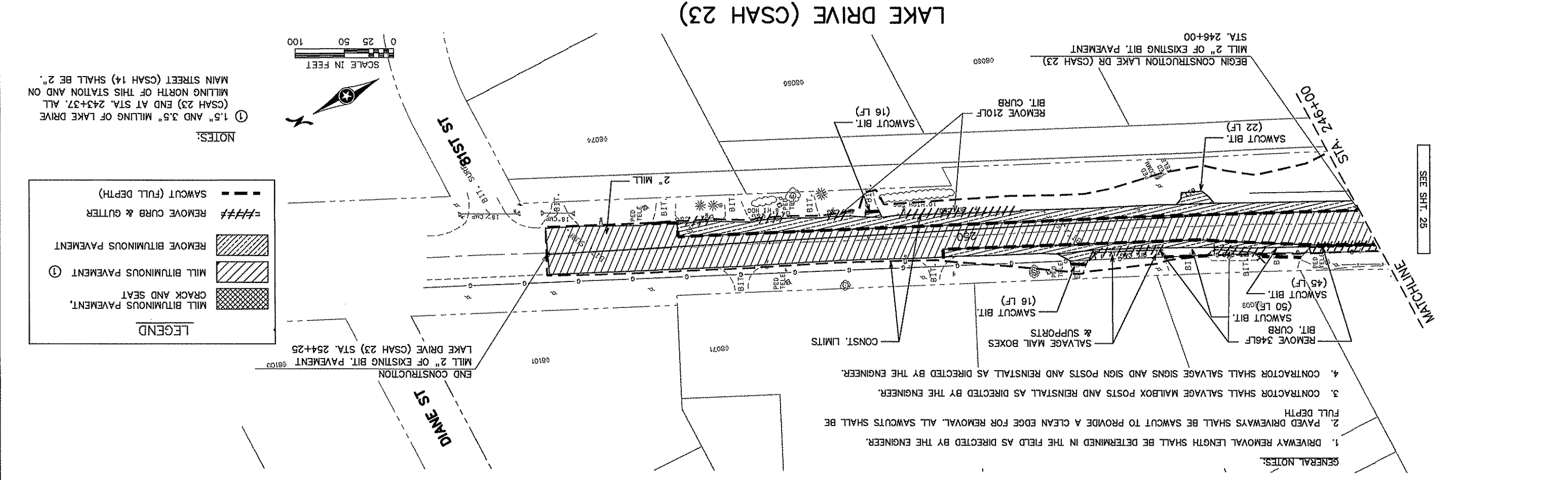
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 SIGNATURE: *[Signature]*
 PRINTED NAME: JAMES E. STUDENSKI
 LIC. NO. 23757
 DATE: 7/23/2012

DRAWN BY: _____ DATE: _____
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____
 S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.

TKDA
 ENGINEERING • ARCHITECTURE • PLANNING

CITY OF LINO LAKES
INPLACE TOPOGRAPHY, UTILITIES
AND REMOVAL PLAN
LAKE DR. (CSAH 23)
LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

SHEET 27 OF 78



LAKE DRIVE (CSAH 23)
 STA. 246+00
 MILL 2" OF EXISTING BIT. PAVEMENT
 BEGIN CONSTRUCTION LAKE DR. (CSAH 23)

REMOVE 210LF BIT. CURB
 SAWCUT BIT. (16 LF)
 SAWCUT BIT. (22 LF)
 STA. 246+00
 REMOVE 346LF BIT. CURB & SUPPORTS
 SAWCUT BIT. (50 LF)
 SAWCUT BIT. (16 LF)
 SAWCUT BIT. (45 LF)
 SALVAGE MAIL BOXES & SUPPORTS
 CONST. LIMITS
 END CONSTRUCTION LAKE DRIVE (CSAH 23) STA. 254+25
 MILL 2" OF EXISTING BIT. PAVEMENT

LAKE DRIVE (CSAH 23)
 STA. 230+00
 BEGIN COUNTY/CITY SEGMENT
 MILL 3.5" OF EXISTING BIT. PAVEMENT
 STA. 230+00
 ADJUST FRAME & CASTING
 ADJUST FRAME & CASTING
 ADJUST FRAME & CASTING
 SALVAGE MAIL BOX & SUPPORT
 ADJUST FRAME & RING CASTING
 SAWCUT BIT. (52 LF)
 SAWCUT BIT. (30 LF)
 SAWCUT BIT. (32 LF)
 SAWCUT BIT. (30 LF)
 SAWCUT BIT. (30 LF)
 ADJUST GATE VALVES
 TAIL PIPES per No. 107977
 SAWCUT BIT. (25 LF)
 SAWCUT BIT. (25 LF)
 REMOVE 50'-12" CMP CULVERT
 REMOVE 55'-12" CMP CULVERT
 SAWCUT BIT. (30 LF)
 SAWCUT BIT. (58 LF)
 NEW P.E.

NOTES:
 1. DRIVEWAY REMOVAL LENGTH SHALL BE DETERMINED IN THE FIELD AS DIRECTED BY THE ENGINEER.
 2. PAVED DRIVEWAYS SHALL BE SAWCUT TO PROVIDE A CLEAN EDGE FOR REMOVAL. ALL SAWCUTS SHALL BE FULL DEPTH.
 3. CONTRACTOR SHALL SALVAGE MAILBOX POSTS AND REINSTALL AS DIRECTED BY THE ENGINEER.
 4. CONTRACTOR SHALL SALVAGE SIGNS AND SIGN POSTS AND REINSTALL AS DIRECTED BY THE ENGINEER.

GENERAL NOTES:
 1. DRIVEWAY REMOVAL LENGTH SHALL BE DETERMINED IN THE FIELD AS DIRECTED BY THE ENGINEER.
 2. PAVED DRIVEWAYS SHALL BE SAWCUT TO PROVIDE A CLEAN EDGE FOR REMOVAL. ALL SAWCUTS SHALL BE FULL DEPTH.
 3. CONTRACTOR SHALL SALVAGE MAILBOX POSTS AND REINSTALL AS DIRECTED BY THE ENGINEER.
 4. CONTRACTOR SHALL SALVAGE SIGNS AND SIGN POSTS AND REINSTALL AS DIRECTED BY THE ENGINEER.

LEGEND
 MILL BITUMINOUS PAVEMENT, CRACK AND SEAT
 MILL BITUMINOUS PAVEMENT
 REMOVE BITUMINOUS PAVEMENT
 REMOVE CURB & GUTTER
 SAWCUT (FULL DEPTH)

NOTES:
 1. 1.5" AND 3.5" MILLING OF LAKE DRIVE (CSAH 23) END AT STA. 243+37. ALL MILLING NORTH OF THIS STATION AND ON MAIN STREET (CSAH 14) SHALL BE 2".

NO	DATE	BY	CHKD	APPR	REVISION

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: *[Signature]*
 PRINTED NAME: JAMES E. STUDESKI
 LIC. NO. 23151
 DATE: 7/23/2012

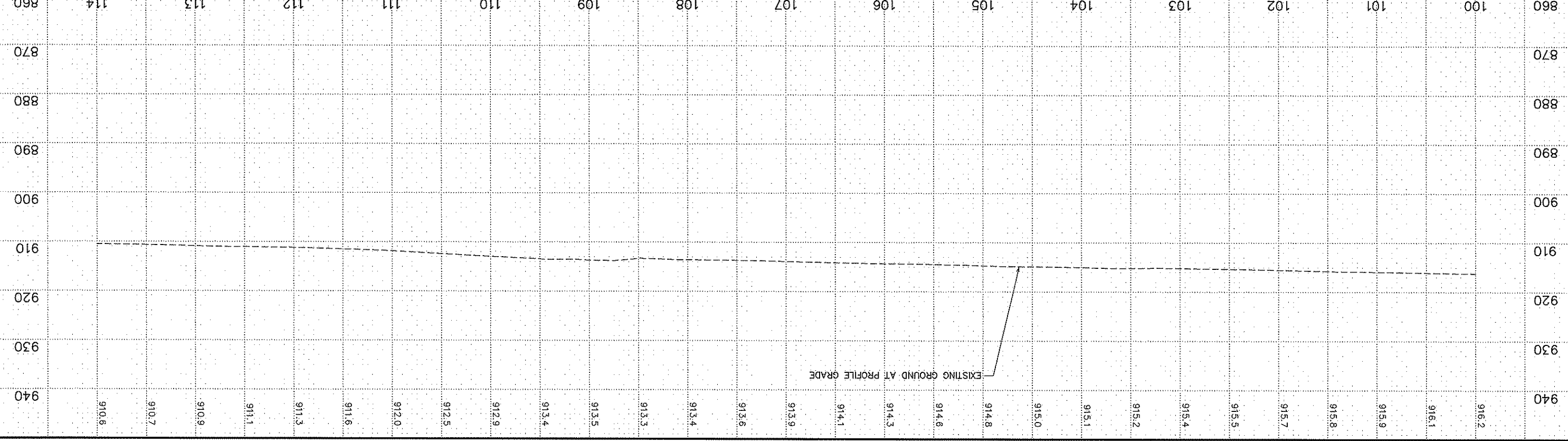
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 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____

S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
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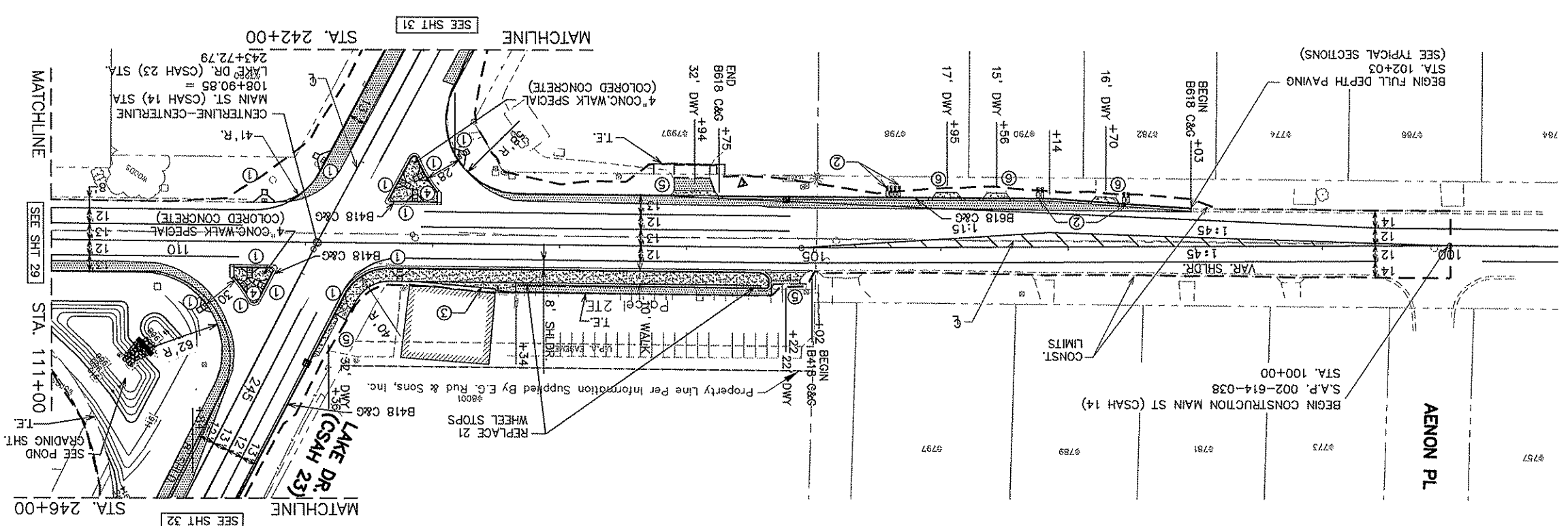
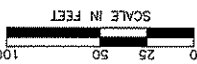
TKDA
 ENGINEERING - ARCHITECTURE - PLANNING

CITY OF LINO LAKES
CONSTRUCTION PLAN AND PROFILE
MAIN STREET (CSAH 14)
LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

SHEET 28 OF 78



MAIN STREET (CSAH 14)



- GENERAL NOTES:**
1. ALL DIMENSIONS ARE TO FACE OF CURB
 2. FOR STORM SEWER SEE DRAINAGE PLAN
 3. FOR STRIPING SEE SIGNING & STRIPING PLAN
 4. SEE SHEET 34 FOR INTERSECTION DETAIL
- SPECIFIC NOTES:**
1. CONSTRUCT PEDESTRIAN RAMP SEE SHEETS 12-16
 2. MAIL BOX SUPPORT, SEE STANDARD PLATE 9350.
 3. MATCH EXISTING EDGE OF CONCRETE
 4. COLOR CONCRETE IN ISLANDS (SEE SPECIFICATION)
 5. 8" CONCRETE DRIVEWAY PAVEMENT
 6. 6" CONCRETE DRIVEWAY PAVEMENT

Plot Date: 08/20/2012
 Project Name: City of Lindo Lakes, 14850.000, 002-623-016, S.A.P., 002-614-038, TKDA
 Date: 7/23/2012
 License No.: 23757
 Printed Name: James E. Stodenski
 Signature: [Signature]
 I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED

NO	DATE	BY	CHKD	APPR	REVISION

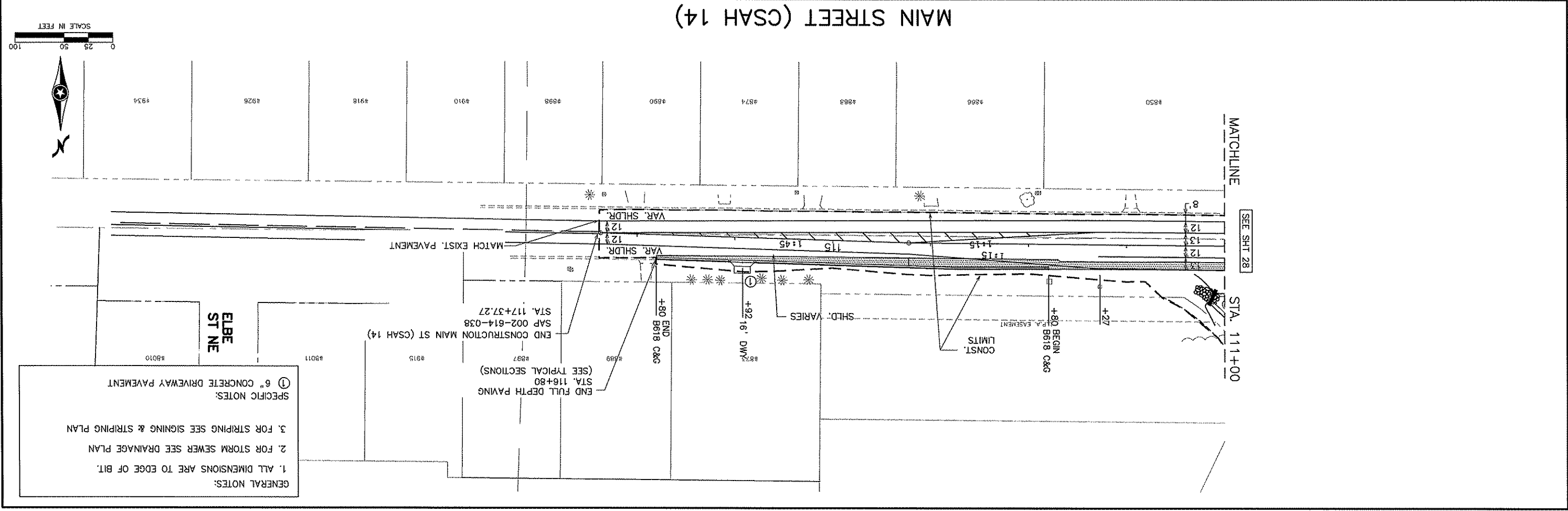
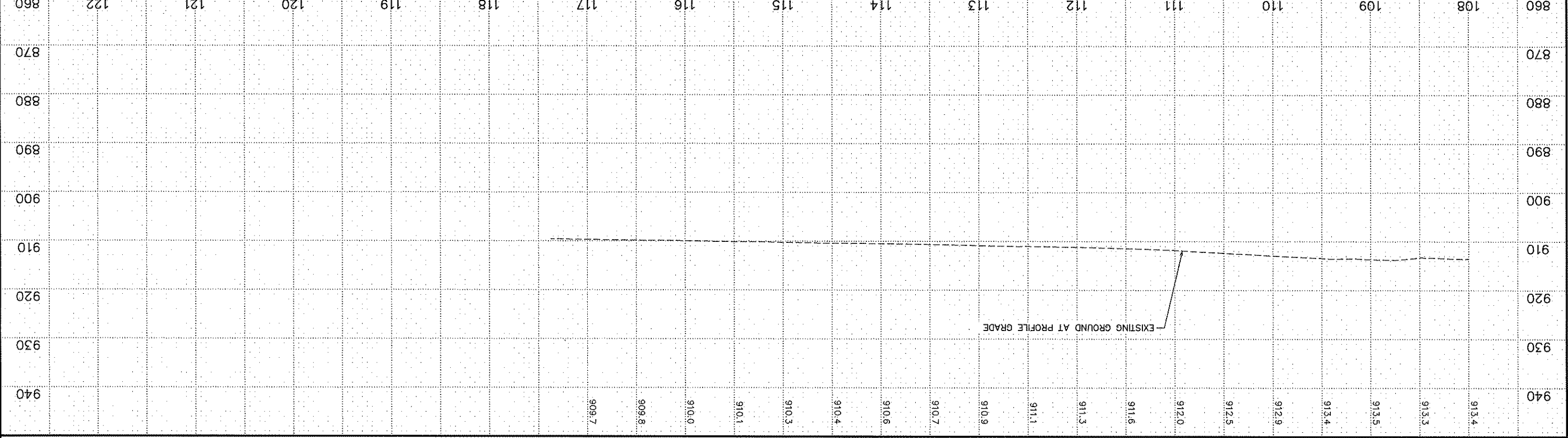
DATE: 7/23/2012
 PRINTED NAME: JAMES E. STODENSKI
 SIGNATURE: [Signature]
 I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED

DRAWN BY: _____ DATE: _____
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____
 S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.

TKDA
 ENGINEERING • ARCHITECTURE • PLANNING

CITY OF LINDO LAKES
CONSTRUCTION PLAN AND PROFILE
MAIN STREET (CSAH 14)
LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

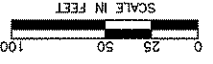
SHEET
 29
 OF
 78



- GENERAL NOTES:**
1. ALL DIMENSIONS ARE TO EDGE OF BIT.
 2. FOR STORM SEWER SEE DRAINAGE PLAN
 3. FOR STRIPING SEE SIGNING & STRIPING PLAN
- SPECIFIC NOTES:**
1. 6" CONCRETE DRIVEWAY PAVEMENT

MATCHLINE SEE SHT 28 STA. 111+00

MAIN STREET (CSAH 14)



NO	DATE	BY	CHKD	APPR	REVISION

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

SIGNATURE: _____
 PRINTED NAME: JAMES E. STUDEMSKI
 DATE: 7/23/2012
 LIC. NO. 23757

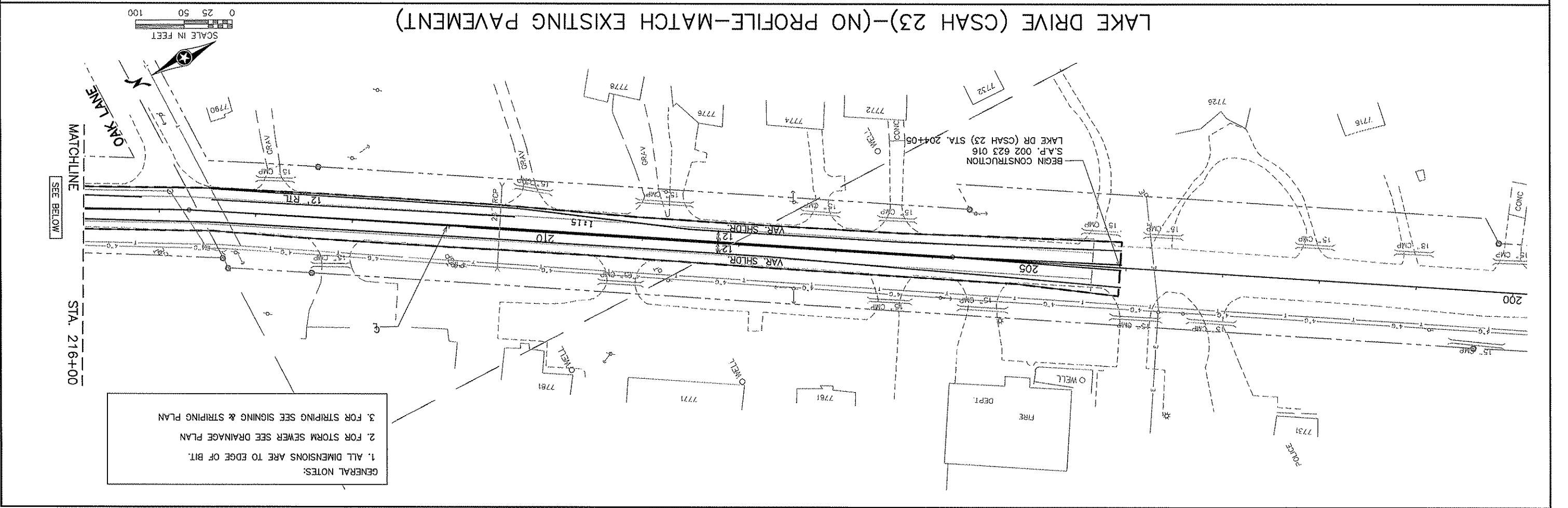
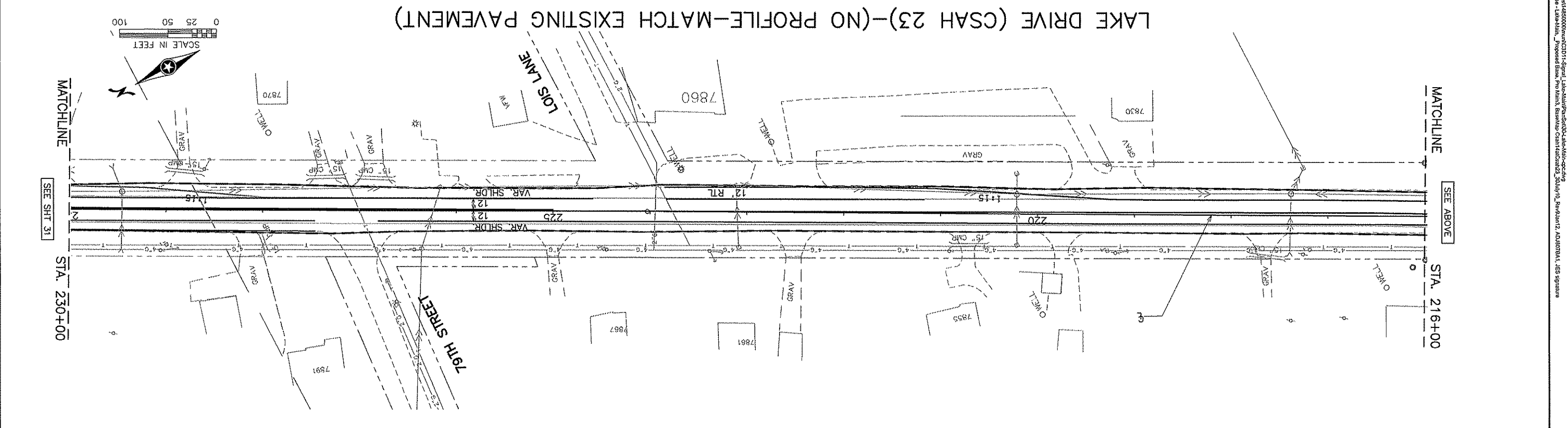
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 DESIGN BY _____ DATE _____
 DRAWN BY _____ DATE _____

S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P. _____

TRKDA
 ENGINEERING • ARCHITECTURE • PLANNING

CITY OF LINO LAKES
 CONSTRUCTION PLAN AND PROFILE
 LAKE DRIVE (CSAH 23)
 LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

SHEET 30 OF 78



Plot Date: 08/01/2012
 Drawing Name: R:\m\lino\lakes\14850\000\plan\21011.dwg
 User: james@trkda.com
 Title: Lake Drive (CSAH 23)/Main St (CSAH 14) Signalization
 Date: 7/23/2012 11:04:34 AM
 Author: James E. Studemski
 Date: 7/23/2012 11:04:34 AM
 Layer: 14850.dwg
 Plot Date: 08/01/2012 11:04:34 AM
 Plot Size: 11x17 inches
 Plot Scale: 1:1

Plot Date: 08/28/2012
 Project Name: City of Lino Lakes Signal Lake Mainline
 User: J. Stodenski
 Path: C:\Users\jstodenski\AppData\Local\Temp\20120828\Signal Lake Mainline\20120828_254+25\254+25.dwg
 Job: 02-623-016

NO	DATE	BY	CHKD	APPR	REVISION

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: *J. Stodenski*
 PRINTED NAME: JAMES E. STODENSKI
 LIC. NO. 23757
 DATE: 7/23/2012

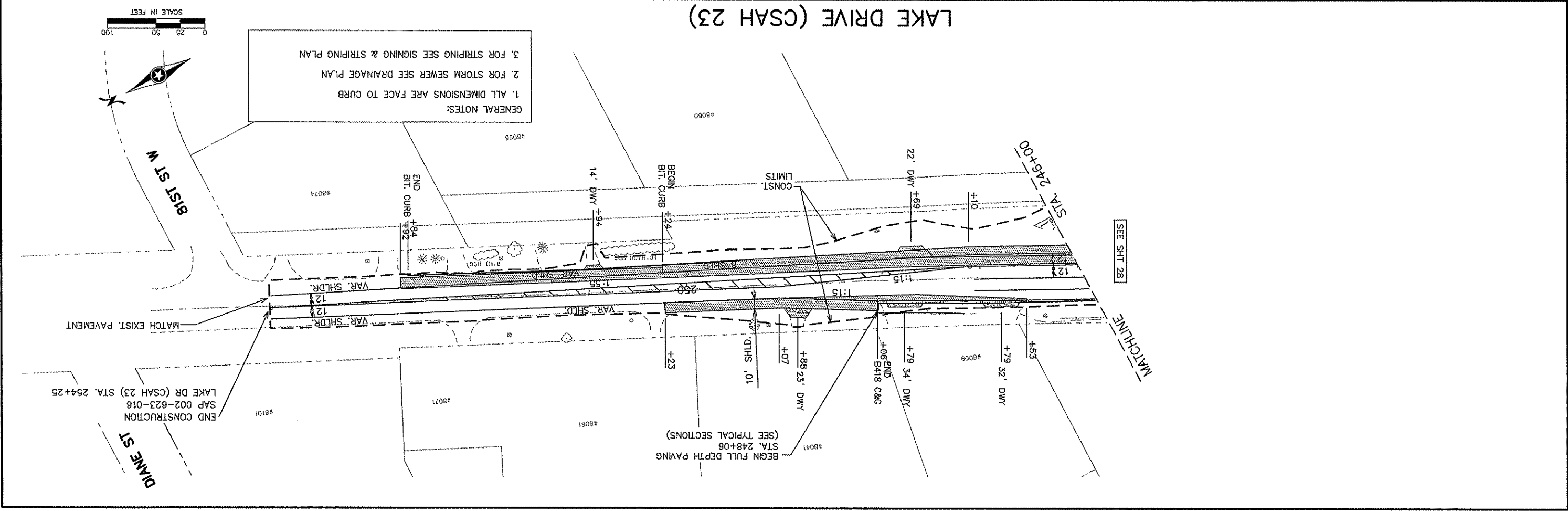
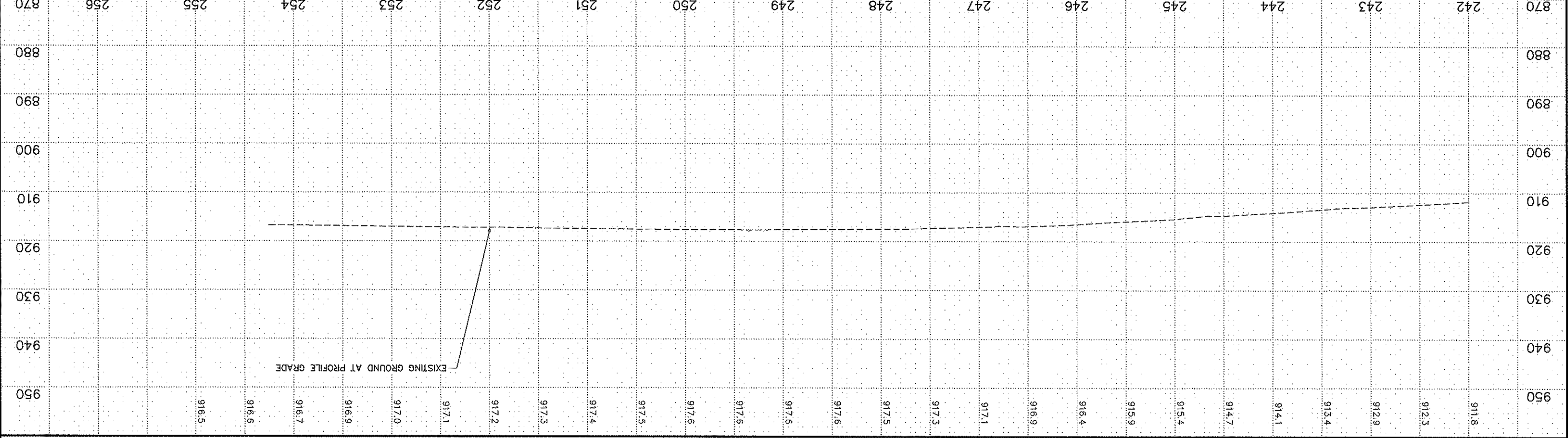
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 CHECKED BY: _____ DATE: _____

S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.

TKDA
 ENGINEERING - ARCHITECTURE - PLANNING

CITY OF LINO LAKES
 CONSTRUCTION PLAN AND PROFILE
 LAKE DRIVE (CSAH 23)
 LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

SHEET 32 OF 78



Project Name: City of Lino Lakes, Lake Superior Avenue, Signal Lake, Minnesota
 Date: 1/23/2012
 License No.: 23751
 State: Minnesota
 City: Lino Lakes
 Project No.: 14850.000
 Project Name: Lake Superior Avenue, Signal Lake, Minnesota

NO	DATE	BY	CHKD	APPR	REVISION

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: *[Signature]*
 PRINTED NAME: JAMES E. STUDENSKI
 LIC. NO. 23751
 DATE: 1/23/2012

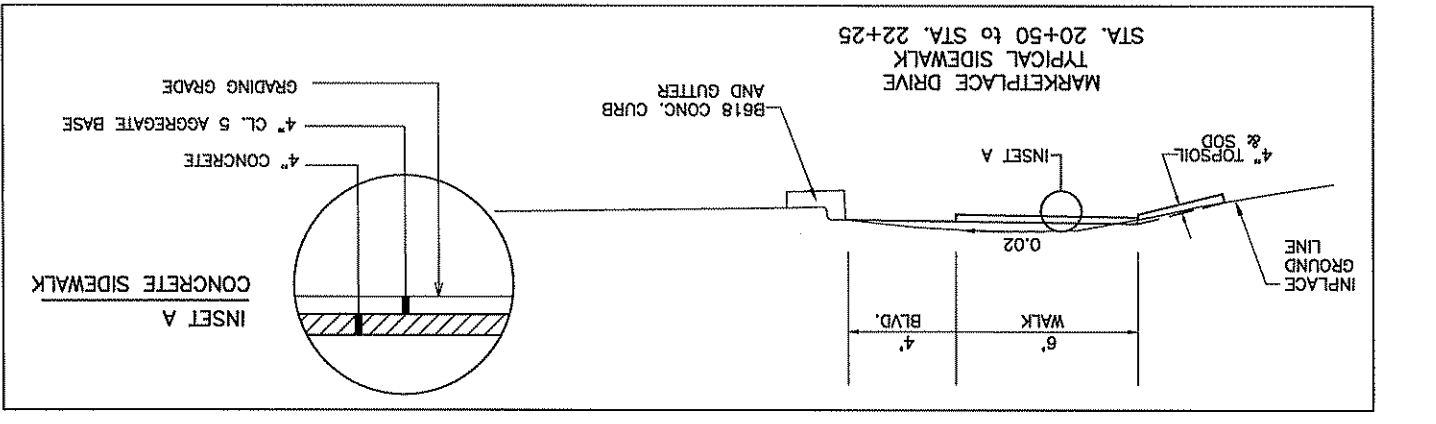
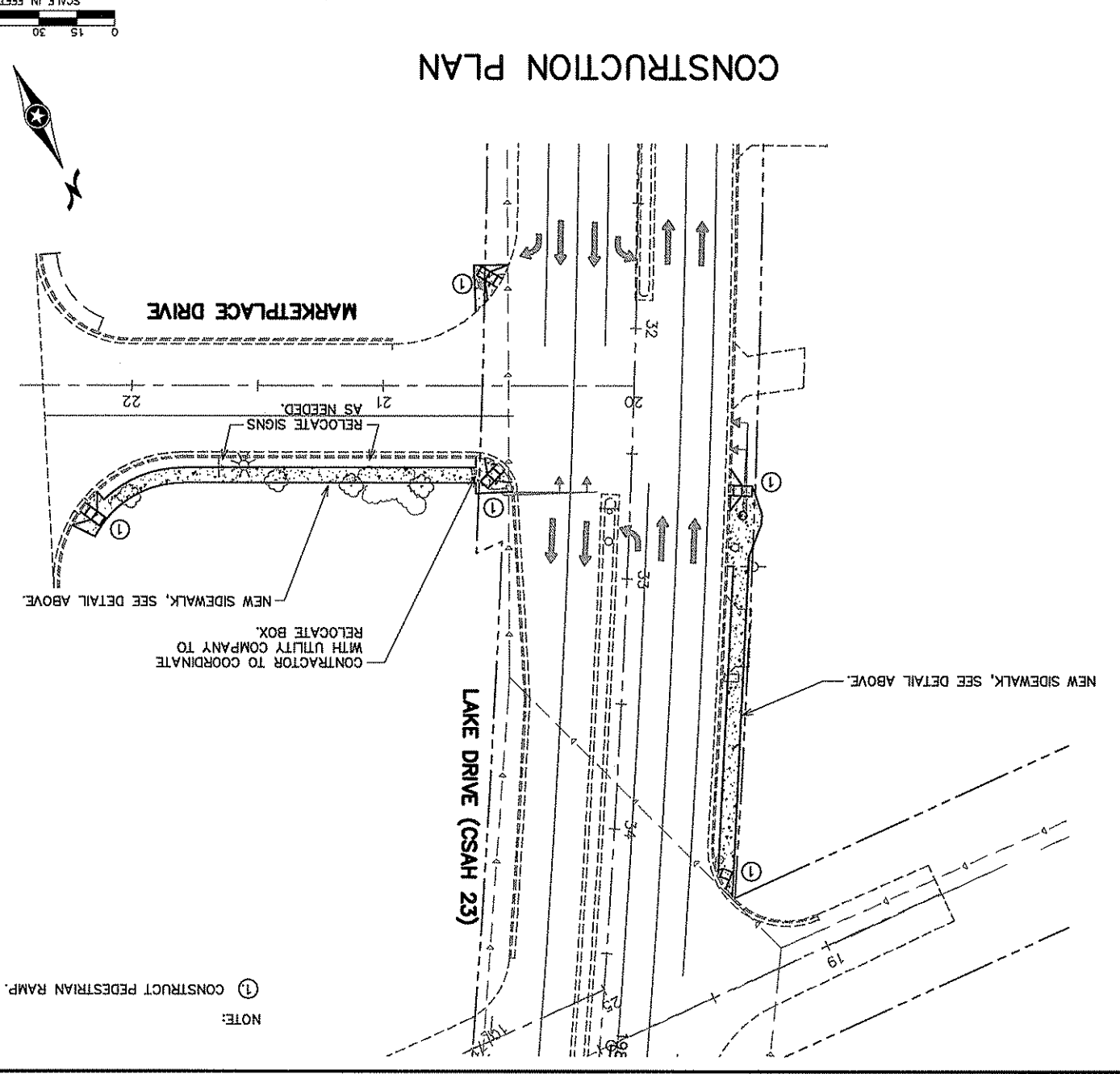
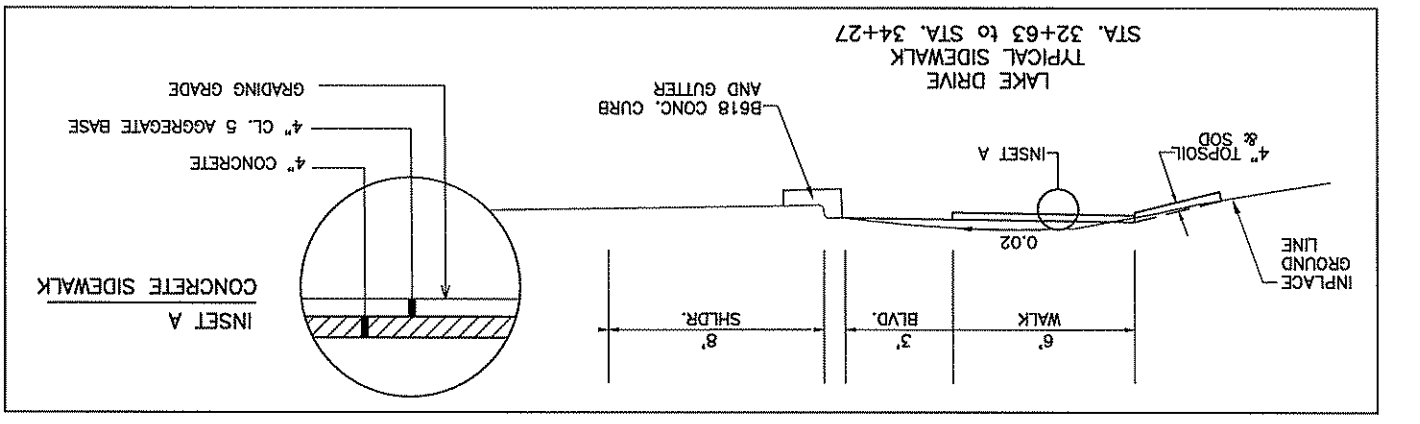
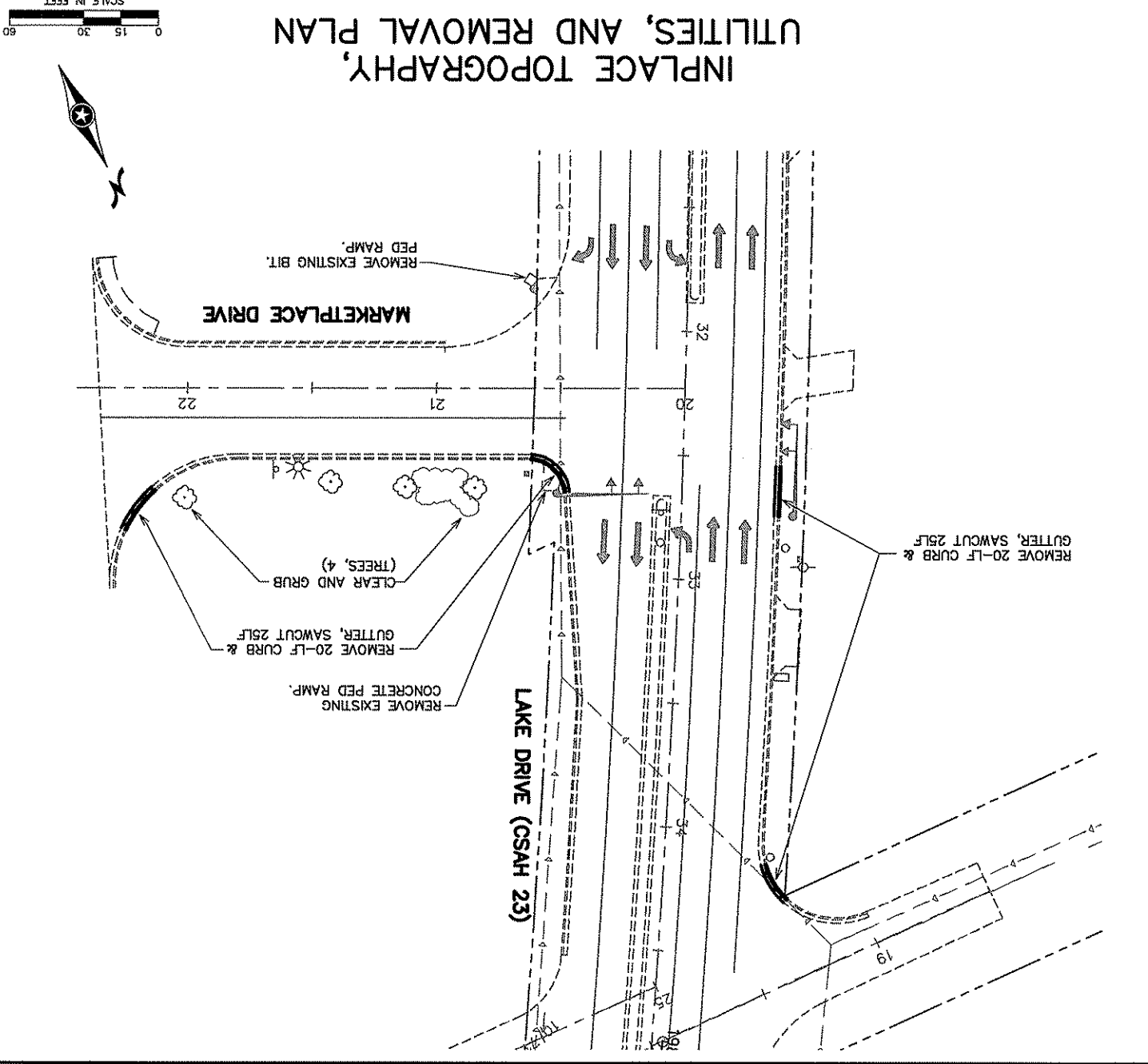
DRAWN BY: _____ DATE: _____
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____

S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.

TKDA
 ENGINEERING • ARCHITECTURE • PLANNING

CITY OF LINO LAKES
 CONSTRUCTION PLAN AND DETAILS
 MARKETPLACE DRIVE
 LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

SHEET 33 OF 78



NOTE: ① CONSTRUCT PEDESTRIAN RAMP.

CONTRACTOR TO COORDINATE WITH UTILITY COMPANY TO RELOCATE BOX.
 NEW SIDEWALK, SEE DETAIL ABOVE.

RELOCATE SIGN AS NEEDED.



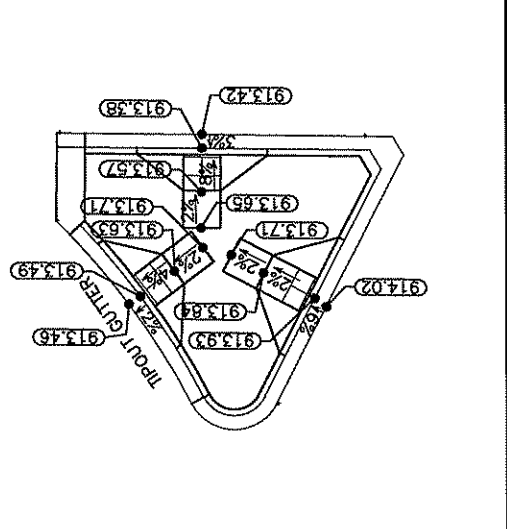
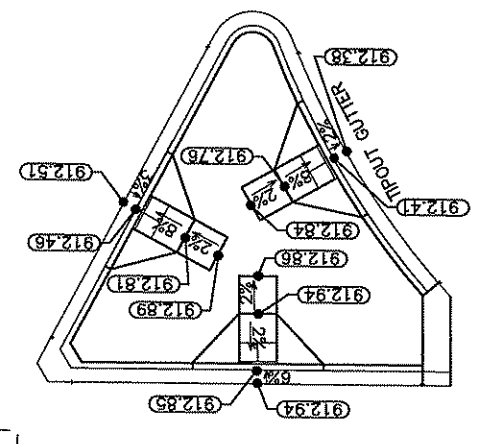
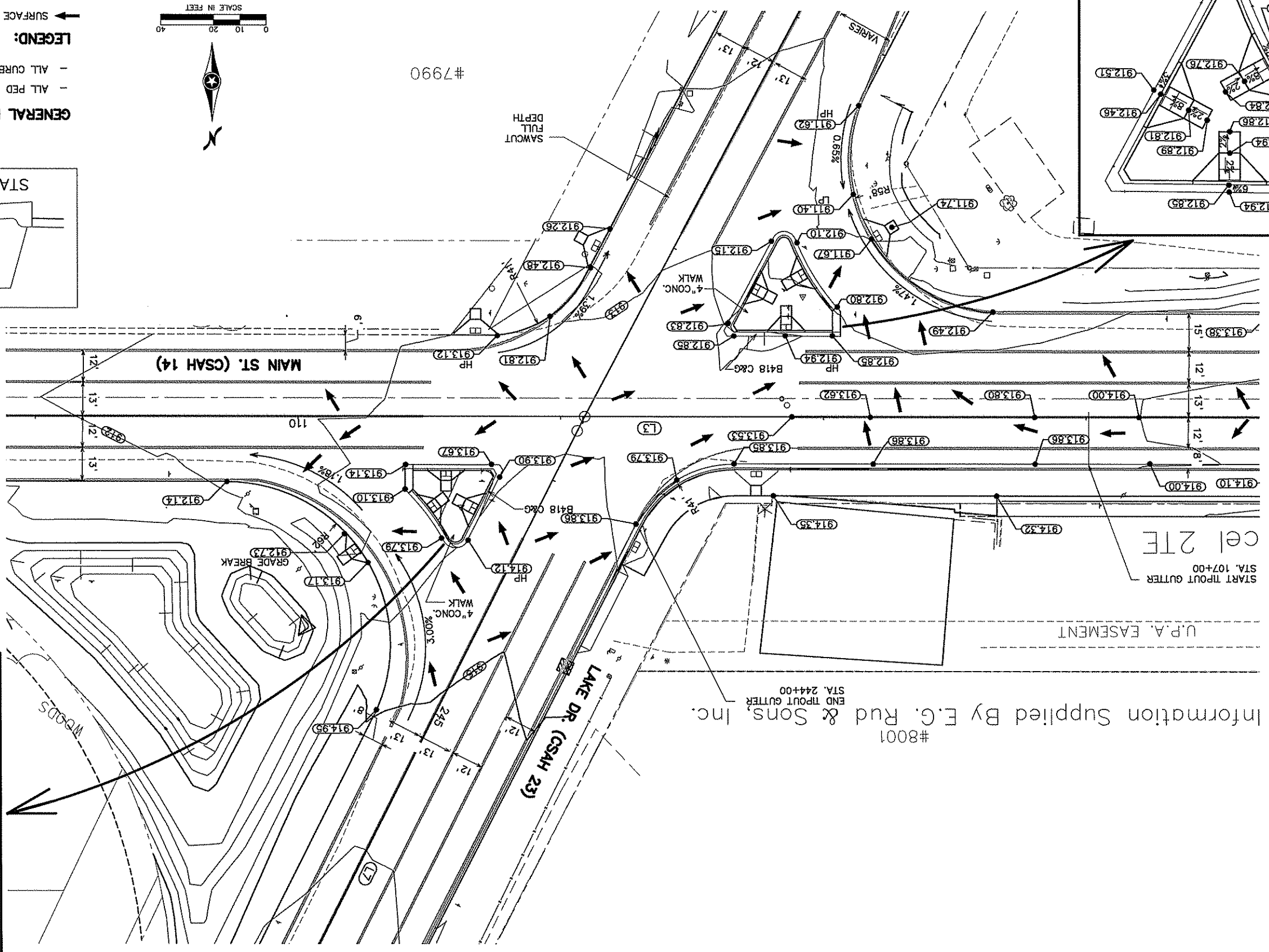
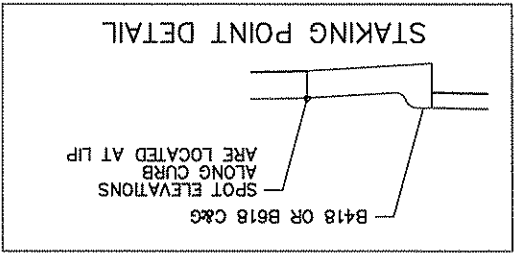
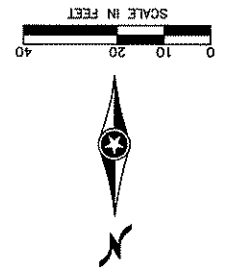
S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.
 DATE _____
 DESIGN BY _____
 DATE _____
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 DATE _____

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: *[Signature]*
 PRINTED NAME: JAMES E. STUDENSKI
 LIC. NO. 23757
 DATE: 7/23/2012

NO	DATE	BY	CHKD	APPR	REVISION

MAIN ST. & LAKE DR. INTERSECTION

GENERAL NOTES:
 - ALL PED RAMPS ARE PER STANDARD PLATE 7036 AND 7038
 - ALL CURB AND GUTTER IS GUTTER-IN UNLESS NOTED OTHERWISE.
LEGEND:
 ← SURFACE DRAINAGE FLOW DIRECTION.



NO	DATE	BY	CHKD	APPR	REVISION

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: *[Signature]*
 PRINTED NAME: JAMES E. STJODENSKI
 LIC. NO. 23757
 DATE: 7/23/2012

DATE _____ DRAWN BY _____
 DATE _____ DESIGN BY _____
 DATE _____ CHECKED BY _____

S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.



CITY OF LINO LAKES
 STORM WATER POLLUTION PREVENTION PLAN NOTES
 LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

PROJECT LOCATION AND DESCRIPTION
 THE PROJECT (S.A.P. 002-614-038 & S.A.P. 002-623-016) IS LOCATED ALONG LAKE DRIVE FROM 600 FEET NORTH OF 77TH STREET TO 100 FEET SOUTH OF 81ST STREET IN THE CITY OF LINO LAKES. AS SHOWN ON THE TITLE SHEET AND GENERAL LAYOUT (SHEETS 1-2).

THE PROJECT INCLUDES:
 - GRADING
 - BRIMMUS MILL & OVERLAY
 - ADA IMPROVEMENTS
 - TRAFFIC SIGNALS
 - TURN LANE CONSTRUCTION
 - MISCELLANEOUS STORM SEWER, CULVERT, AND DRAINAGE STRUCTURE REPAIRS AND REPLACEMENTS
 - PERMANENT EROSION CONTROL AND TURF ESTABLISHMENT
 - TEMPORARY EROSION CONTROL AND TURF ESTABLISHMENT

THE APPROXIMATE CONSTRUCTION TIMELINE IS JULY 2012 TO DECEMBER 2012.

PROJECT CONTACTS / RESPONSIBLE PARTIES

IN ACCORDANCE WITH MN/DOT SPEC. 2573.3A1, THE CONTRACTOR WILL PROVIDE A CERTIFIED EROSION CONTROL SUPERVISOR WHO IS KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL PRACTICES. THE EROSION CONTROL SUPERVISOR IS INCIDENTAL. THE EROSION CONTROL SUPERVISOR SHALL BE AVAILABLE TO BE ON SITE WITHIN 24 HOURS AT ALL TIMES FROM INITIAL DISTURBANCE TO FINAL STABILIZATION, AS WELL AS PERFORMING THE DUTIES LISTED IN MN/DOT SPEC. 2573.

THE ANOKA COUNTY INSPECTOR AND THE CITY EROSION CONTROL SUPERVISOR ARE RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP AND INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION CONTROL AND SEDIMENT CONTROL BMPs BEFORE AND DURING CONSTRUCTION UNTIL THE NOTICE OF TERMINATION HAS BEEN FILED WITH THE MPCA.

THE CITY OF LINO LAKES WILL BE RESPONSIBLE FOR THE LONG-TERM OPERATION AND MAINTENANCE OF THE PERMANENT STORM WATER MANAGEMENT SYSTEM.

LINO LAKES ENGINEER
 JASON WEDDEL
 TM PAYNE
 CITY EROSION CONTROL SUPERVISOR

LINO LAKES CITY HALL
 600 TOWN CENTER PARKWAY
 LINO LAKES, MN 55014

MPCA CONTACT
 SHAWN NELSON
 SWPPP DESIGNER
 FRANK TCKNOR
 MPCA COUNTY STAFF CONTACT
 TKDA
 DESIGN OF SWPPP CERTIFICATION
 (651) 757-2604
 EXPIRES MAY 31, 2014
 (651) 726-7925

CONTRACTOR EROSION CONTROL SUPERVISOR
 TO BE DETERMINED

MPCA 24-HR. EMERGENCY NOTIFICATION (STATE DUTY OFFICER)
 (651) 649-5451
 (800) 422-0798

SPECIAL AND IMPAIRED WATERS
 THE FOLLOWING SPECIAL AND IMPAIRED WATERS ARE LOCATED WITHIN ONE MILE OF THE PROJECT AND RECEIVE NONDIRECT RUNOFF FROM THE PROJECT SITE:
 • IMPAIRED LAKE (GEORGE WATCH LAKE)

THE FOLLOWING BMPs OUTLINED IN APPENDIX A OF THE NPDES PERMIT MUST BE IMPLEMENTED:
 • DURING CONSTRUCTION, ALL EXPOSED SOIL AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION BUT IN NO CASE LATER THAN SEVEN DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
 • AN UNDISTURBED BUFFER ZONE OF NOT LESS THAN 100 FEET FROM THE SPECIAL WATERS SHALL BE MAINTAINED AT ALL TIMES.

ENVIRONMENTALLY SENSITIVE AREAS
 THERE ARE NO ENVIRONMENTALLY SENSITIVE AREAS WITHIN THE PROJECT LIMITS. NO WETLANDS EXIST WITHIN THE PROJECT LIMITS. THERE ARE NO CALCAREOUS FENS WITHIN THE PROJECT LIMITS. THIS PROJECT IS NOT LOCATED IN AN AREA THAT IS KNOWN TO BE ACTIVE KARST.

ENVIRONMENTAL REVIEW
 THERE ARE NOT STORM WATER MITIGATION MEASURES REQUIRED AS A RESULT OF AN ENVIRONMENTAL, ARCHEOLOGICAL, OR AGENCY REVIEW.

SOIL TYPES
 SOIL TYPES TYPICALLY FOUND ON THIS PROJECT ARE - SILTY SAND AND SAND WITH SILT.

SWPPP TRAINING REQUIREMENTS
 THIS SWPPP WAS PREPARED BY TKDA PERSONNEL THAT ARE CERTIFIED IN THE DESIGN OF CONSTRUCTION SWPPPS. COPIES OF THE CERTIFICATION ARE ON FILE WITH MN/DOT AND ARE AVAILABLE UPON REQUEST. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A CERTIFIED EROSION CONTROL SUPERVISOR THAT IS RESPONSIBLE FOR OVERSEEING THE IMPLEMENTATION OF THE SWPPP. THE CONTRACTOR MUST PROVIDE PROOF OF CERTIFICATION AT THE PRECONSTRUCTION MEETING AND WILL NOT BE ALLOWED TO COMMENCE WORK UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN

DESCRIPTION	LOCATION
ESTIMATED QUANTITIES	SHEET NOS. 3-4
STANDARD PLATES	SHEET NO. 5
EROSION CONTROL AND TURF ESTABLISHMENT	SHEET NOS. 39-40
REMOVALS	SHEET NOS. 25-27
CONSTRUCTION PLANS	SHEET NOS. 28-33
DRAINAGE PLANS	SHEET NO. 37
DRAINAGE PROFILES AND TABULATIONS	SHEET NO. 38

LOCATION OF SWPPP REQUIREMENTS MAY BE LOCATED IN MANY PLACES WITHIN THE PLAN SET, AS WELL AS IN THE SPECIAL PROVISIONS, MN/DOT SPEC. BOOK (2005 EDITION), OR ON FILE WITH MN/DOT. THE NOTES AND TABLE BELOW ARE INTENDED TO BE A QUICK REFERENCE FOR THE CONTRACTOR AND PROJECT ENGINEER TO USE IN THE FIELD. THERE MAY BE ADDITIONAL REQUIRED SWPPP ELEMENTS INCLUDED ON THE PROJECT THAT ARE NOT LISTED ON THIS SHEET.

CONCRETE CRUSHING, PECKING, SAWING, AND GRINDING WILL REQUIRE DUST CONTROL USING WATER MISTS (INCIDENTAL), AND ALL CONCRETE PUMPING, WASHOFF, AND WASHOUT AREAS WILL NEED TO BE DESIGNATED AND KEPT FUNCTIONAL SOMEPLACE INSIDE THE PROJECT LIMITS. LEAD PAINT CHIPS MUST NOT COME INTO CONTACT WITH SOILS UNLESS IT IS THE INTENT OF THE CONTRACTOR TO HAUL OFF ALL CONTAMINATED SOILS.

CHEMICALS SUCH AS OIL, FUEL, FERTILIZER, AND PAINT MUST BE PROPERLY STORED, INCLUDING SECONDARY CONTAINMENT, TO PREVENT SPILLS, LEAKS, OR OTHER DISCHARGE. RESTRICTION ACCESS TO STORAGE AREAS MUST BE PROVIDED TO PREVENT VANDALISM. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE WITH MPCA REGULATIONS. THE CONTRACTOR WILL BE REQUIRED TO UPDATE THE SWPPP FOR PORTABLE RESTROOM PLACEMENT, REFUELING METHODS (INCLUDING SPILL KITS), AND SECONDARY CONTAINMENT OF STATIONARY MACHINES WITH FLUIDS. PORTABLE RESTROOM FACILITIES WILL BE ANCHORED TO PREVENT TIPPING.

TURF WASHING AND CONCRETE WASHOUT SHALL TAKE PLACE IN A FIELD OR COMMERCIAL LEAK-PROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER THAT PREVENTS RUNOFF ONTO ADJACENT SOILS. LOCATION OF WASHOUT AREAS MUST BE IDENTIFIED BY SIGNAGE, MUST BE AT LEAST 200 FEET FROM ENVIRONMENTALLY SENSITIVE AREAS, AND MUST BE SHOWN ON AN ENGINEER-APPROVED SITE PLAN. IF DEEMED NECESSARY BY THE PROJECT ENGINEER, THE CONTENTS SHALL BE DISPOSED OF AT AN APPROPRIATE FACILITY OFF SITE.

BURNING OF ANY MATERIAL IS NOT ALLOWED WITHIN THE PROJECT BOUNDARY.

CONSTRUCTION PHASE POLLUTANT SOURCES ANTICIPATED AT THIS SITE ARE DISTURBED (BARE) SOIL; SEDIMENT; VEHICLE FUELS AND LUBRICANTS; CHEMICALS ASSOCIATED WITH CONSTRUCTION-GENERATED LITTER AND DEBRIS; AND CONCRETE WASTE. WITHOUT ADEQUATE CONTROL, THERE IS POTENTIAL FOR EACH TYPE OF POLLUTANT TO BE TRANSPORTED BY STORM WATER.

IF SEDIMENT DEPOSITS IN A WATER OF THE STATE (AS DEFINED IN THE NPDES PERMIT), THE SEDIMENT MUST BE REMOVED WITHIN SEVEN DAYS.

EROSION PREVENTION PRACTICES
 THE CONTRACTOR MUST PLAN FOR AND IMPLEMENT CONSTRUCTION PRACTICES THAT MINIMIZE EROSION. PHASED CONSTRUCTION SHALL BE USED TO MINIMIZE SEDIMENT TRANSPORT.

ALL EROSION AND SEDIMENT CONTROL BMPs MUST BE INSPECTED BY THE CONTRACTOR TO ENSURE INTEGRITY AND EFFECTIVENESS. ALL NONFUNCTIONAL BMPs MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WITH FUNCTIONAL BMPs AS DIRECTED BY THE EROSION CONTROL SUPERVISOR OR THE PROJECT ENGINEER.

ALL INSPECTIONS AND MAINTENANCE CONDUCTED DURING CONSTRUCTION MUST BE RECORDED IN WRITING, AND THESE RECORDS MUST BE RETAINED WITH THE SWPPP IN ACCORDANCE WITH PART III.D OF THE NPDES PERMIT AND KEPT ON SITE DURING CONSTRUCTION.

DRAINAGE COMPUTATIONS ARE KEPT ON FILE WITH THE CITY OF LINO LAKES. CHANGES MADE IN THE FIELD MUST BE DISCUSSED WITH THE PROJECT ENGINEER, APPROVED BY THE CITY ENGINEER, AND NOTED IN THE CONTRACTOR'S CONSTRUCTION LOG.

CONSTRUCTION NOTES
 CONSTRUCTION SHALL BE GOVERNED BY THE MN/DOT 2005 SPEC. BOOK AND THE SPECIAL PROVISIONS. THE CONTRACTOR MUST KEEP THE SWPPP, ALL CHANGES TO IT, AND INSPECTION AND MAINTENANCE RECORDS AT THE SITE DURING CONSTRUCTION.

POLLUTION PREVENTION MANAGEMENT
 THE CONTRACTOR WILL IMPLEMENT THE POLLUTION PREVENTION MANAGEMENT MEASURES AS DIRECTED IN THE NPDES PERMIT, PART IV.F AS IT PERTAINS TO SOLID WASTE, HAZARDOUS MATERIALS, EXTERNAL TRUCK WASHING, BUTYRIOUS PAVING MACHINE, AND CONCRETE TRUCK WASHOUT. THESE MANAGEMENT MEASURES FOR POLLUTION PREVENTION WILL BE STRICTLY ENFORCED.

THE EROSION CONTROL SUPERVISOR SHALL MAKE A SPILL RESPONSE PLAN BEFORE THE APPLICATION OF ANY CHEMICAL THAT MAY BE HARMFUL TO THE ENVIRONMENT. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. SPILLS LARGE ENOUGH TO REACH THE STORM CONVEYANCE SYSTEM MUST BE REPORTED TO THE MPCA STATE DUTY OFFICER. THE CONTRACTOR MUST HAVE A SPILL KIT ON SITE AT ALL TIMES (INCIDENTAL).

SOLID WASTE SUCH AS COLLECTED SEDIMENT, ASPHALT AND CONCRETE MILLINGS, FLOATING DEBRIS, PAPER, PLASTIC, FABRIC, CONSTRUCTION AND DEMOLITION DEBRIS, AND OTHER WASTES MUST BE DISPOSED OF PROPERLY AND MUST COMPLY WITH MPCA DISPOSAL REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CREATING AND FOLLOWING A WRITTEN DISPOSAL PLAN FOR ALL WASTE MATERIALS. THE PLAN WILL INCLUDE HOW THE MATERIAL WILL BE DISPOSED OF AND THE LOCATION OF THE DISPOSAL SITE. THIS PLAN MUST BE SUBMITTED TO THE ENGINEER.

THE CONTRACTOR MUST USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT DUST, PARTICLES, SAW CUT SLURRY, CONCRETE WASTES, BITUMINOUS GRINDINGS, CUTTINGS, MILLINGS, AND OTHER WASTE FROM LEAVING MN/DOT RIGHT-OF-WAY, DEPOSITING IN EXISTING OR FUTURE VEGETATED AREAS, OR ENTERING STORM WATER CONVEYANCE SYSTEMS, INCLUDING INLETS AND CURB FLOW LINES.

ALL EXPOSED SOIL AREAS WILL BE STABILIZED PRIOR TO THE ONSET OF WINTER. ANY WORK STILL BEING PERFORMED WILL BE SNOW MULCHED, SEEDDED, OR BLANKETED WITHIN THE TIME FRAMES IN THE NPDES PERMIT.

ALL TEMPORARY TOPSOIL BERMS SHALL BE STABILIZED AS FOLLOWS:
 • BETWEEN APRIL 1 AND AUGUST 31, SEED WITH MIXTURE 150.
 • BETWEEN SEPTEMBER 1 AND MARCH 31, SEED WITH SEED MIXTURE 150 AND TOP WITH RAPID STABILIZATION 2.

UNDISTURBED GRASS BUFFERS ON SLOPES SHALL REMAIN IN PLACE AS PERIMETER CONTROL.

PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS OF BEING CONSTRUCTED.

PIPE OUTLETS INTO SURFACE WATERS MUST BE STABILIZED WITH TEMPORARY OR PERMANENT DITCH STABILIZATION.

BE USED FOR PERMANENT DITCH STABILIZATION.
 WATER, DISC ANCHORED MULCH AND HYDRAULIC SOIL STABILIZERS ARE NOT ALLOWED TO WITHIN SEVEN DAYS SINCE THE PROJECT IS WITHIN 1 MILE OF AND DRAINS TO A SPECIAL STABILIZATION OF THE REMAINING PORTIONS OF THE DITCH OR SWALE MUST BE COMPLETED BY 1717.2.2. RAPID STABILIZATION METHOD 4 WILL BE USED TO STABILIZE THESE AREAS. CONNECTION TO OTHER STORM WATER CONVEYANCE SYSTEM ACCORDING TO MN/DOT SPEC. DITCH, OR OTHER STORM WATER CONVEYANCE SYSTEM ACCORDING TO MN/DOT SPEC. CONNECTION TO A SURFACE WATER, EXISTING GUTTER, STORM SEWER INLET, DRAINAGE ANY SURFACE WATER. STABILIZATION MUST BE COMPLETED WITHIN 24 HOURS OF STABILIZED WITHIN 200 FEET FROM THE PROPERTY EDGE OR POINT OF DISCHARGE INTO SWALE THAT DRAINS WATER FROM OR AROUND THE CONSTRUCTION SITE MUST BE THE NORMAL WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH OR CONNECTION TO A SURFACE WATER, EXISTING GUTTER, STORM SEWER INLET, DRAINAGE DITCH, OR OTHER STORM WATER CONVEYANCE SYSTEM ACCORDING TO MN/DOT SPEC. WILL BE USED TO PROVIDE TEMPORARY COVER IN THESE AREAS AS APPROPRIATE. MORE THAN ONCE DURING ROUGH GRADING, RAPID STABILIZATION METHOD 1, 2, 3, OR 4 PERMANENTLY CEASED. IN MANY INSTANCES, THIS WILL REQUIRE STABILIZATION TO OCCUR DAYS AFTER CONSTRUCTION ACTIVITY ON THAT PORTION OF THE SITE HAS TEMPORARILY OR SOIL AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED NO MORE THAN SEVEN ORDER TO BE ABLE TO APPLY EROSION CONTROL MULCHES AND BLANKETS. ALL EXPOSED DITCHES AND EXPOSED SOILS MUST BE KEPT IN AN EVEN, ROUGH GRADED CONDITION IN ORDER TO BE ABLE TO APPLY EROSION CONTROL MULCHES AND BLANKETS. ALL EXPOSED SOIL AREAS MUST BE RETAINED WITH THE SWPPP IN ACCORDANCE WITH PART III.D OF THE NPDES PERMIT AND KEPT ON SITE DURING CONSTRUCTION.

DRAINAGE COMPUTATIONS ARE KEPT ON FILE WITH THE CITY OF LINO LAKES. CHANGES MADE IN THE FIELD MUST BE DISCUSSED WITH THE PROJECT ENGINEER, APPROVED BY THE CITY ENGINEER, AND NOTED IN THE CONTRACTOR'S CONSTRUCTION LOG.

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NO	DATE	BY	CKD	APPR	REVISION
1	11/2011	FT	FT		

DATE: 1/23/2012
 LIC. NO. 23757
 PRINTED NAME: JAMES E. STUDENSKI
 SIGNATURE: *[Signature]*
 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.

DATE: _____
 DRAWN BY: _____
 DATE: _____
 DESIGN BY: _____
 DATE: _____
 CHECKED BY: _____
 DATE: _____

S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.



CITY OF LINO LAKES
 STORM WATER POLLUTION
 PREVENTION PLAN
 LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

SEDIMENT CONTROL PRACTICES MUST BE ESTABLISHED ON ALL DOWN-GRADE PERMITS BEFORE ANY UP-GRADE LAND DISTURBING ACTIVITIES BEGIN. THESE PRACTICES SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION HAS BEEN ESTABLISHED. SEE THE STANDARD PLANS FOR DETAILS. SEDIMENT CONTROL PRACTICES MUST MINIMIZE SEDIMENT ENTERING SURFACE WATERS, INCLUDING CURB AND GUTTER SYSTEMS AND STORM SEWER INLETS. ALL STORM DRAIN INLETS MUST BE PROTECTED BY APPROPRIATE BMPs DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL DISCHARGE TO THE INLET HAVE BEEN STABILIZED. SEDIMENT REACHING SURFACE WATERS MUST BE REMOVED WITHIN SEVEN DAYS. PERIMETER CONTROL SUCH AS SILT FENCE OR FILTER LOGS SHALL BE LOCATED ON THE CONTOUR TO CAPTURE OVERLAND, LOW-VELOCITY SHEET FLOWS DOWN GRADIENT OF ALL EXPOSED SOILS AND PRIOR TO DISCHARGING TO SURFACE WATERS, WITH THE BMP J-HOOKED AT A MAXIMUM OF 100-FOOT INTERVALS, AND SHALL CONTAIN NO MORE THAN 1/4 ACRE OF DRAINAGE AREA. PERIMETER CONTROL MUST BE REPAIRED OR REPLACED WHEN IT BECOMES NONFUNCTIONAL OR THE SEDIMENT REACHES ONE-THIRD OF THE HEIGHT OF THE BMP. REPAIRS MUST BE MADE WITHIN 24 HOURS OF DISCOVERY AND ARE CONSIDERED INCIDENTAL.

DITCH CHECKS WILL BE PLACED AS INDICATED ON THE PLANS DURING ALL PHASES OF CONSTRUCTION. TEMPORARY DITCH CHECKS WILL CONSIST OF USING ROCK DITCH CHECKS, BILOCKS, AND ROCK WEPEERS IN FRONT OF CULVERT INLETS. IN LIEU OF REMOVING TEMPORARY DITCH CHECKS, THE ROCK MAY BE PUSHED INTO THE GROUND. FILTER LOGS WILL BE PLACED DURING PERMANENT TURF ESTABLISHMENT AT THE INTERVALS IDENTIFIED IN THE PLAN.

SEDIMENT DAMAGE FROM SOIL STOCKPILES WILL BE MINIMIZED BY PLACING A ROW OF HEAVY DUTY OR SUPER DUTY SILT FENCE A MINIMUM DISTANCE OF 5 FEET FROM THE TOE OF SLOPE. IF THERE IS NOT ADEQUATE PROJECT AREA TO PLACE THE SILT FENCE MORE THAN 5 FEET FROM THE TOE, THE CONTRACTOR MAY SUBMIT AN ALTERNATIVE FOR APPROVAL BY THE PROJECT ENGINEER. SOIL STOCKPILES CANNOT BE PLACED IN SURFACE WATERS, INCLUDING STORM WATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS OR DITCHES.

STORM SEWER INLETS WILL BE PROTECTED AT ALL TIMES WITH THE APPROPRIATE INLET PROTECTION DEVICES. APPROPRIATE PHASE OF CONSTRUCTION, INLET PROTECTION DEVICES MAY NEED TO BE PLACED MULTIPLE TIMES IN THE SAME LOCATION OVER THE LIFE OF THE CONTRACT. INLET PROTECTION DEVICES WILL BE PAID FOR ONCE PER INLET REGARDLESS OF THE NUMBER OF TIMES THE BMP IS PLACED. ALL STORM SEWER INLET PROTECTION DEVICES WILL BE KEPT IN GOOD FUNCTIONAL CONDITION AT ALL TIMES. IF THE PROJECT ENGINEER DEMS AN INLET PROTECTION DEVICE TO BE NONFUNCTIONAL, INEFFICIENT, OR NOT APPROPRIATE FOR THE CURRENT CONSTRUCTION ACTIVITIES, IT WILL BE REPLACED WITH A SUITABLE ALTERNATIVE AT NO COST TO MN/DOT.

THE CONTRACTOR WILL PLACE WOOD CHIP PADS, SLASH MULCH PADS, OR ROCK PADS AT MAJOR VEHICLE EXIT LOCATIONS TO MINIMIZE VEHICLE TRACKING OF SEDIMENT ONTO PAVED SURFACES (INCIDENTAL). PADS WILL BE SUFFICIENTLY SIZED AND MAINTAINED TO PREVENT TRACK OUT. STREET SWEEPING MUST BE USED IF SEDIMENT IS BEING TRACKED OFF THE CONSTRUCTION SITE (INCIDENTAL). TRACKED SEDIMENT MUST BE REMOVED WITHIN 24 HOURS OF DISCOVERY. PAVEMENT SHALL BE LIGHTLY WETTED PRIOR TO SWEEPING.

TEMPORARY DEWATERING ACTIVITIES MAY BE REQUIRED FOR THE ROADWAY CONSTRUCTION AND UTILITY WORK. A WATER APPROPRIATIONS PERMIT WILL BE REQUIRED FROM THE MNDNR FOR CONSTRUCTION DEWATERING EXCEEDING 10,000 GALLONS PER DAY. THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING THIS PERMIT.

TEMPORARY DEWATERING RELATED TO THE CONSTRUCTION ACTIVITY THAT MAY HAVE TURBID OR SEDIMENT-LADEN DISCHARGE WATER MUST BE DISCHARGED TO A TEMPORARY SEDIMENT BASIN ON THE PROJECT SITE OR AN ACCEPTABLE ALTERNATIVE. IF THE WATER CANNOT BE DISCHARGED TO A SEDIMENT BASIN PRIOR TO ENTERING RECEIVING WATERS, IT MUST BE TREATED WITH THE APPROPRIATE BMPs SUCH THAT THE DISCHARGE DOES NOT ADVERSELY AFFECT THE RECEIVING WATER OR DOWNSTREAM LANDOWNERS. THE CONTRACTOR MUST ENSURE THAT DISCHARGE POINTS ARE ADEQUATELY PROTECTED FROM EROSION AND SCOUR. THE DISCHARGE MUST BE DISPERSED OVER NATURAL ROCK RIPRAP, SAND BAGS, PLASTIC SHEETING, OR OTHER ACCEPTED ENERGY DISSIPATION MEASURES. ADEQUATE SEDIMENTATION CONTROL MEASURES ARE REQUIRED FOR DISCHARGE WATER THAT CONTAINS SUSPENDED SOLIDS. ALL DEWATERING REQUIRES A SITE PLAN TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK, ACCORDING TO MN/DOT SPEC. 171.2Z.

FINAL STABILIZATION
 THE CONTRACTOR MUST ENSURE FINAL STABILIZATION OF THE SITE. FINAL STABILIZATION SHALL INCLUDE A MINIMUM OF 70% VEGETATION ESTABLISHMENT (100% STABILIZED) ON ALL PERVIOUS AREAS.

ALL TEMPORARY EROSION CONTROL MEASURES AND BMPs MUST BE REMOVED AS PART OF THE FINAL STABILIZATION, UNLESS DIRECTED OTHERWISE BY THE OWNER OR ENGINEER.
 THE PERMITTEE MUST SUBMIT A NOTICE OF TERMINATION TO THE MPCA WITHIN 30 DAYS OR OPERATOR.
 THE PERMITTEE MUST SUBMIT A NOTICE OF TRANSFERRING PERMIT RESPONSIBILITY TO ANOTHER OWNER

Plot Date: 08/01/2012
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 Drawing Path: C:\projects\lakes\lakes\lakes.dwg
 User: jstuden
 Date: 7/23/2012 10:58:58 AM

NO	DATE	BY	CHKD	APPR	REVISION

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: *James E. Studenski*
 PRINTED NAME: JAMES E. STUDENSKI
 LIC. NO. 23757
 DATE: 7/23/2012

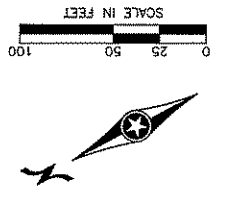
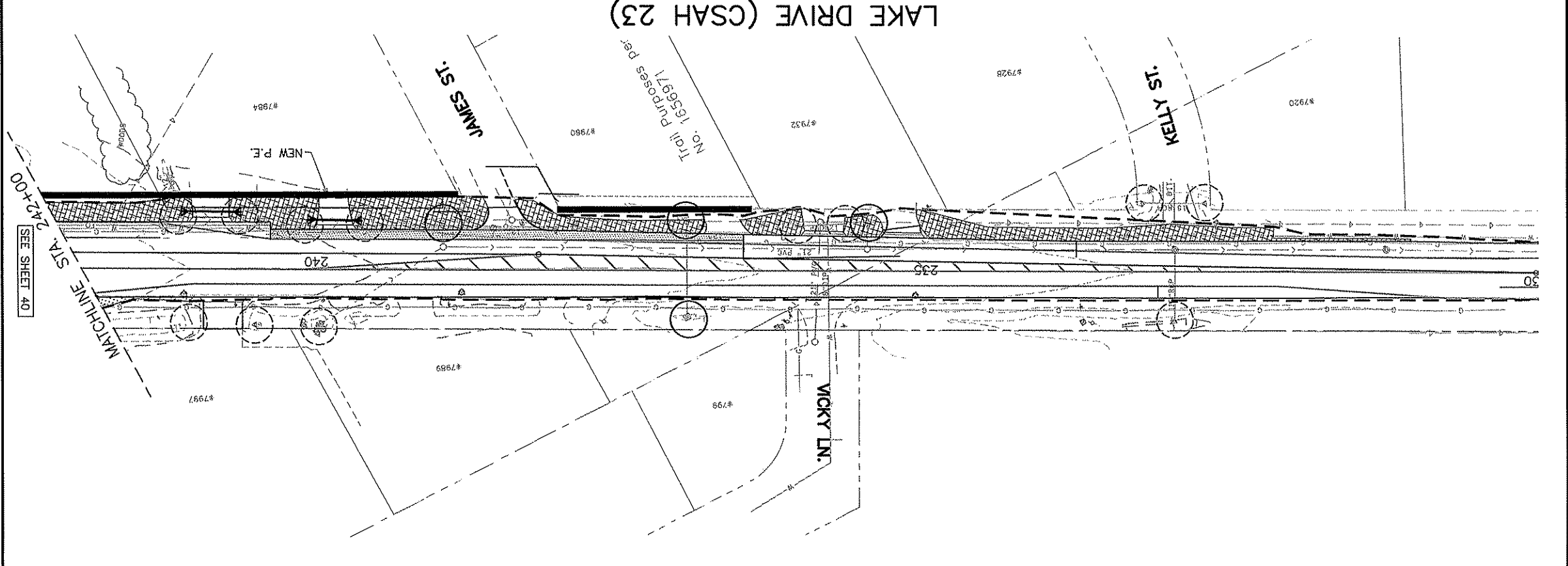
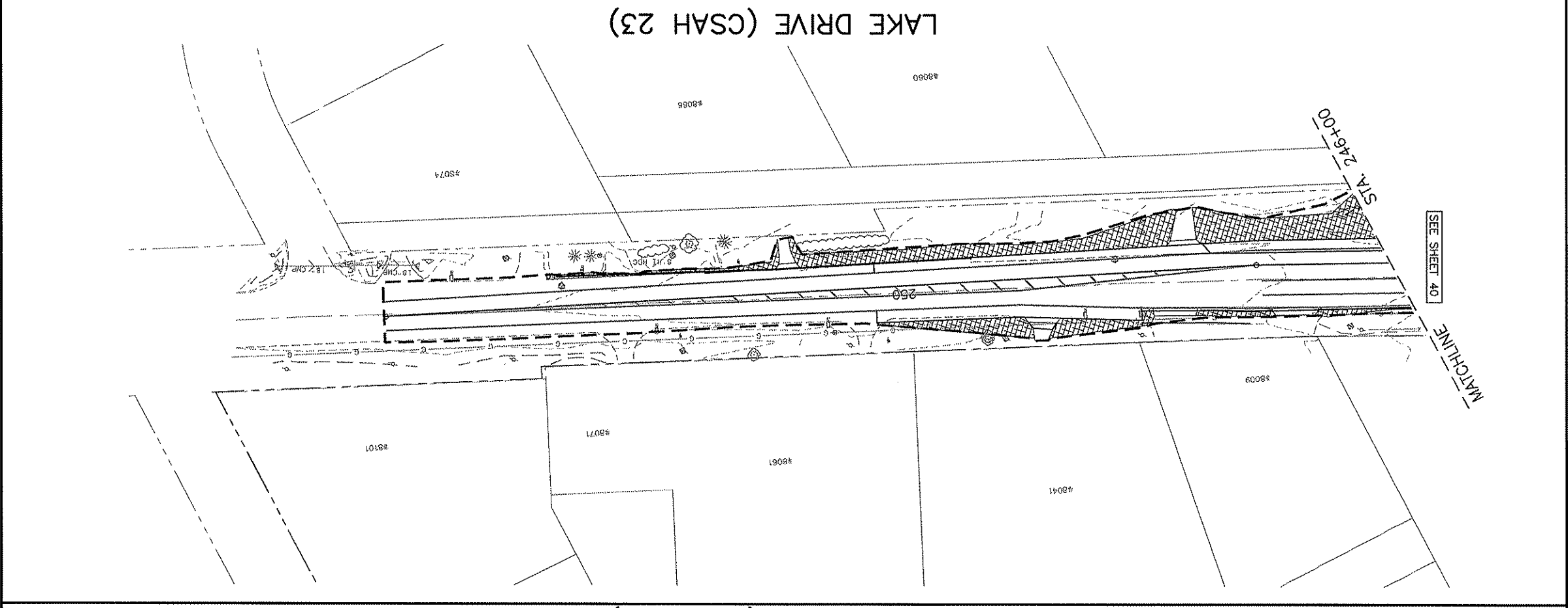
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 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____

S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.

TKDA
 ENGINEERING - ARCHITECTURE - PLANNING

CITY OF LINO LAKES
EROSION CONTROL AND TURF ESTABLISHMENT PLAN
LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

SHEET 39 OF 78



- GENERAL EROSION CONTROL NOTES:**
1. SILT FENCE AND FILTER LOG TYPE COMPOST LOG SHALL FOLLOW, AS CLOSELY AS POSSIBLE, TO A SINGLE CONTOUR LINE AND SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY GRADING ACTIVITIES.
 2. THE QUANTITIES INCLUDE FILTER LOG TYPE COMPOST LOG TO BE USED AS PERIMETER CONTROL AS SHOWN IN THE PLANS.
 3. ALL PONDS MUST BE SURVEYED AND CLEANED OUT AT THE END OF CONSTRUCTION TO MATCH THE PLAN CONTOURS. ALL MATERIAL EXCAVATED FROM THE PONDS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OUTSIDE THE RIGHT-OF-WAY.
 4. RIPRAP AT THE PIPE APRON OUTLETS MUST BE PLACED PRIOR TO APRON INSTALLATION. RIPRAP SHALL BE F&I AS PER MNDOT STANDARD PLATE 3133C.
 5. ALL TEMPORARY EROSION CONTROL DEVICES SHALL BE REMOVED AS DIRECTED BY THE EROSION CONTROL SUPERVISOR OR THE PROJECT ENGINEER AFTER TURF IS SUFFICIENTLY ESTABLISHED IN ACCORDANCE WITH PART IV.G OF THE NPDES PERMIT.

LEGEND

	SEED MIXTURE 350, TYPE 3
	MULCH, TYPE 4 FERTILIZER
	18-1-18 @ 150 lbs./ACRE
	SOD TYPE SALT RESISTANT, TYPE 2 FERTILIZER (22-5-10)
	80% WIN FERTILIZER
	CONSTRUCTION LIMITS
	STORM DRAIN
	INLET PROTECTION
	CULVERT PROTECTION
	SILT FENCE
	FILTER LOG TYPE COMPOST LOG
	ROCK ENTRANCE
	RIP RAP

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 User: jstuden
 Date: 8/1/2012 10:58:58 AM
 Project Path: K:\Development\14850\main\2011_Signat_Lake_Amenon\14850-038.dwg
 Drawing Scale: 1/8" = 1'-0"

NO	DATE	BY	CHKD	APPR	REVISION

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: *James E. Studenski*
 PRINTED NAME: JAMES E. STUDENSKI
 LIC. NO. 23757
 DATE: 7/23/2012

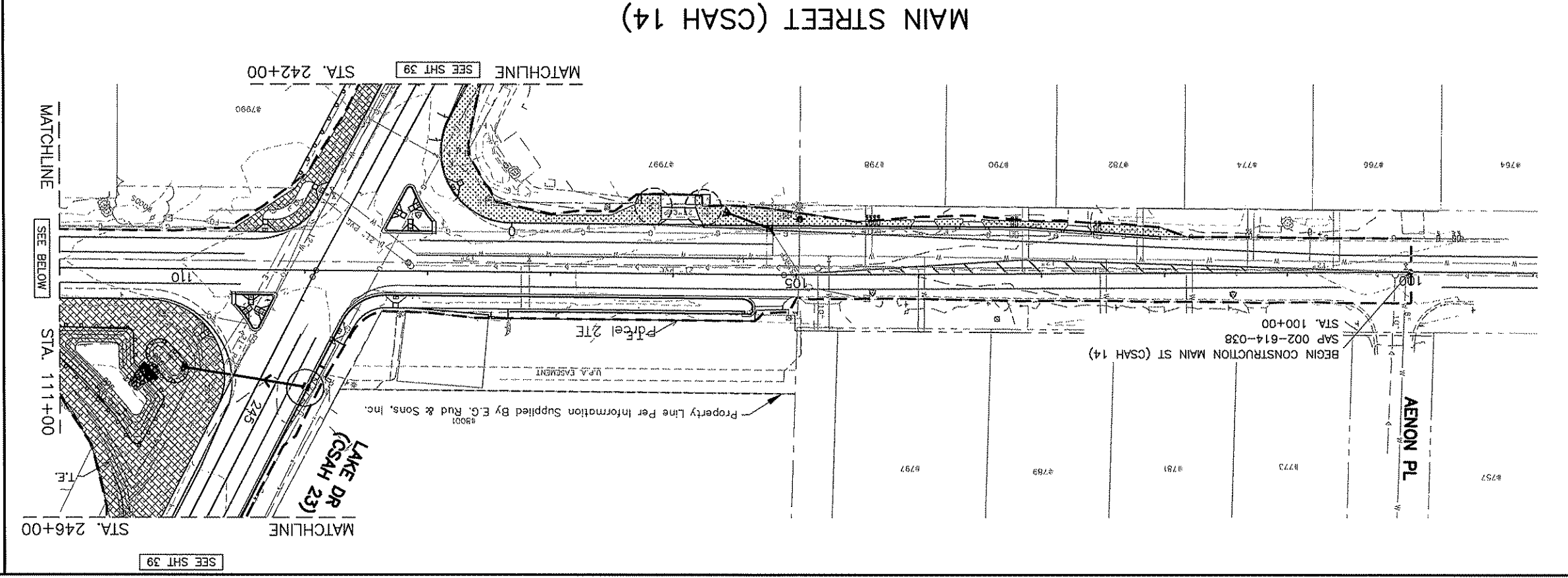
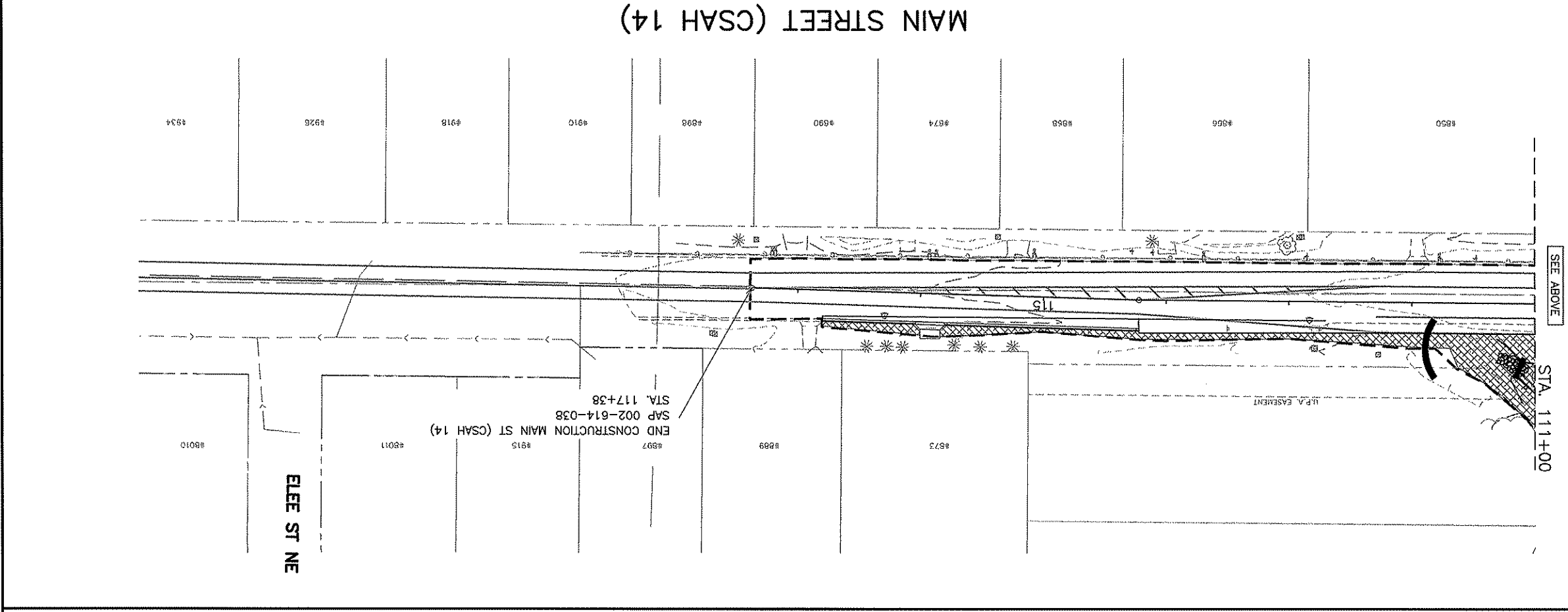
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 CHECKED BY: _____ DATE: _____

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CITY OF LINO LAKES
EROSION CONTROL AND TURF ESTABLISHMENT PLAN
LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

78
OF
40
SHEET



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	MULCH, TYPE 4 FERTILIZER
	SOD TYPE SALT RESISTANT
	TYPE 2 FERTILIZER (22-5-10)
	80% WIN FERTILIZER
	CONSTRUCTION LIMITS
	SURFACE FLOW DIRECTION
	STORM DRAIN
	INLET PROTECTION
	CULVERT PROTECTION
	SILT FENCE
	FILTER LOG TYPE COMPOST LOG
	ROCK ENTRANCE
	RIP RAP

SEE ABOVE
 STA. 111+00

SEE SHT 39

NO	DATE	BY	CHKD	APPR	REVISION

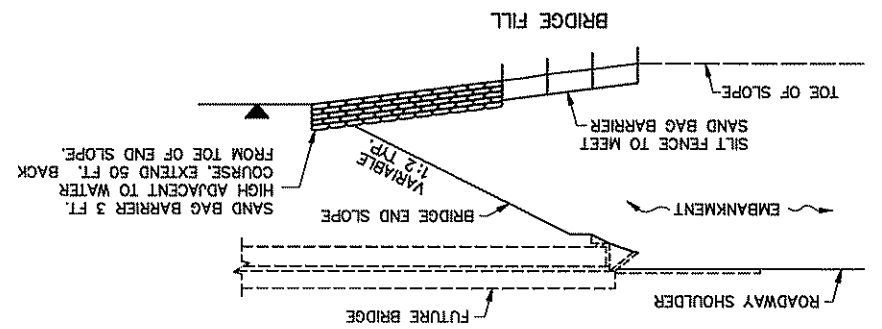
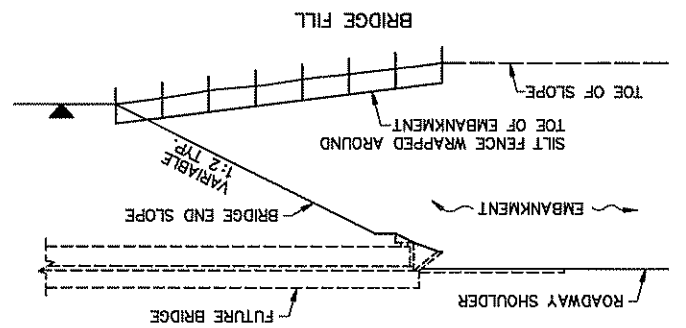
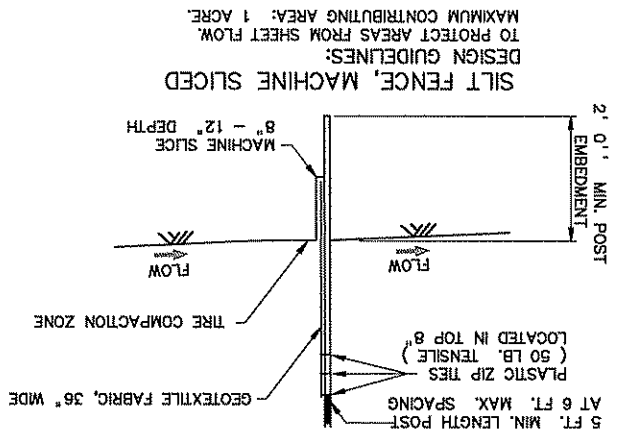
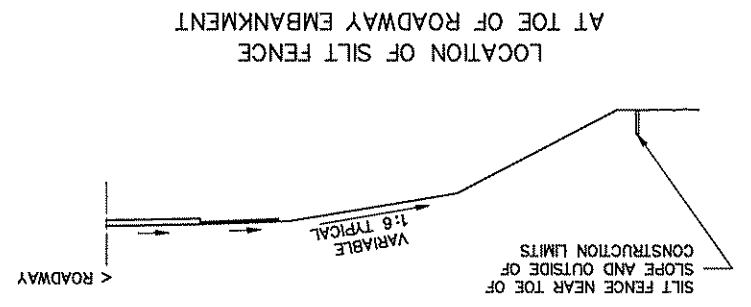
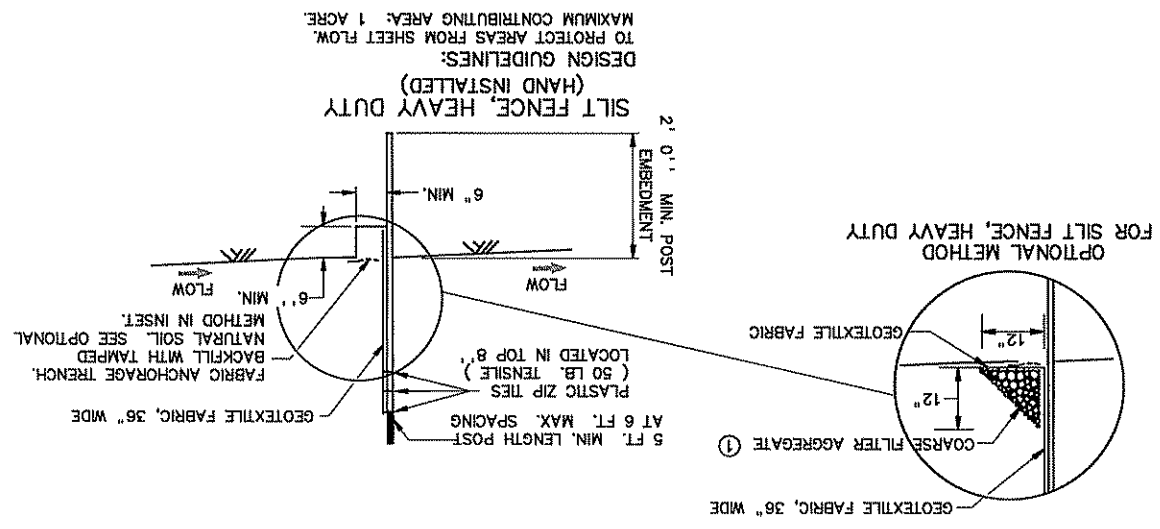
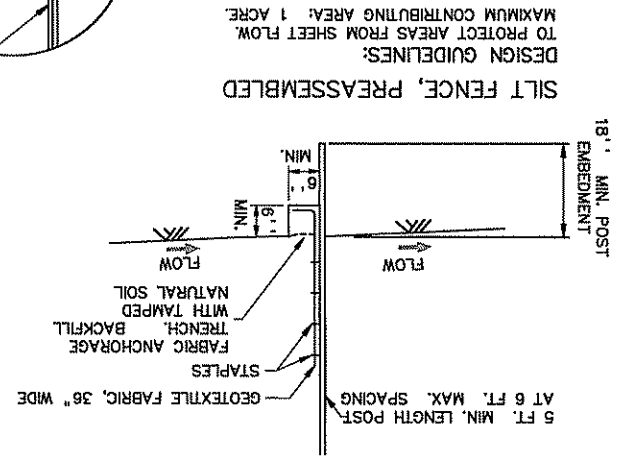
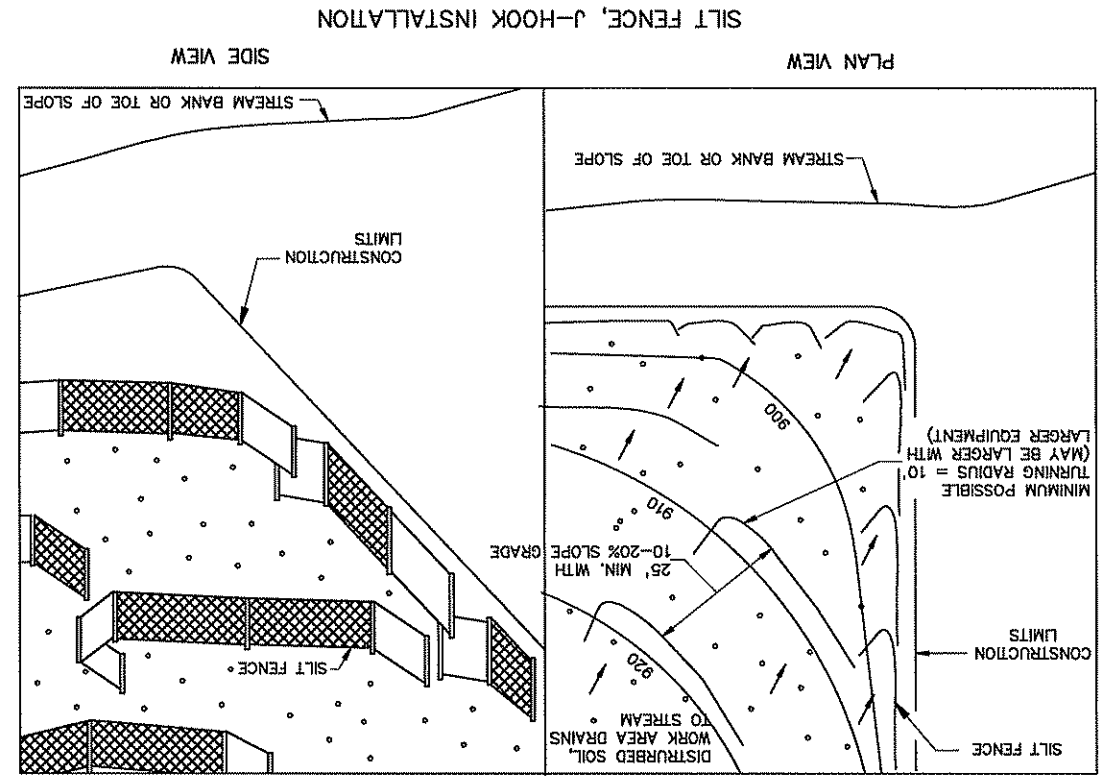
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 SIGNATURE: *[Signature]*
 PRINTED NAME: JAMES E. STUDENSKI
 DATE: 7/23/2012
 LIC. NO. 23757

DRAWN BY: _____ DATE: _____
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____

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CITY OF LINO LAKES
 EROSION CONTROL DETAILS
 LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION



NO	DATE	BY	CHKD	APPR	REVISION

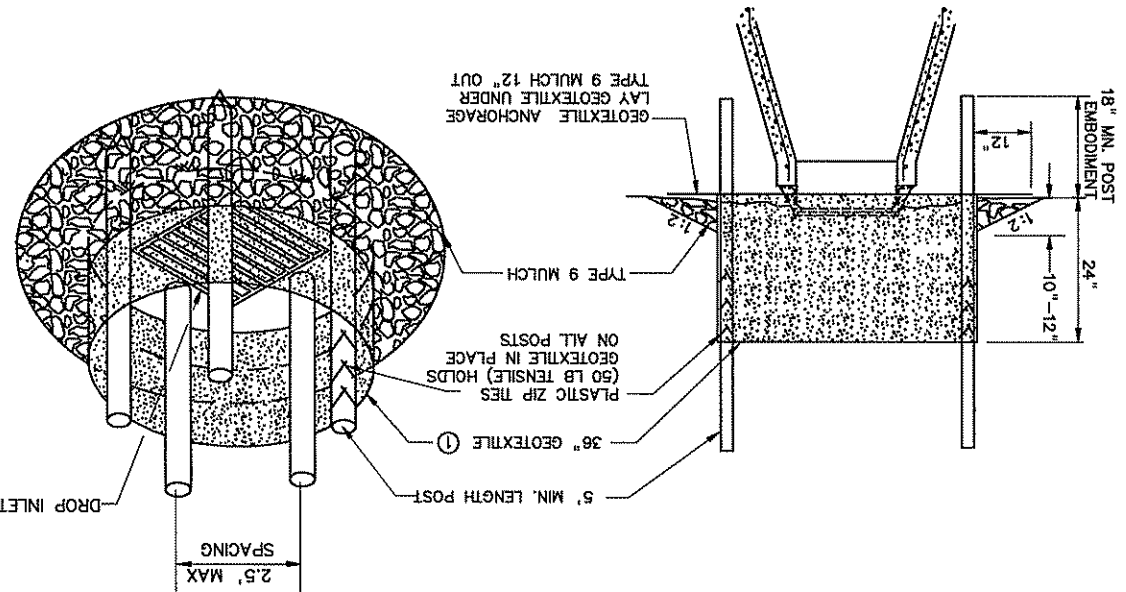
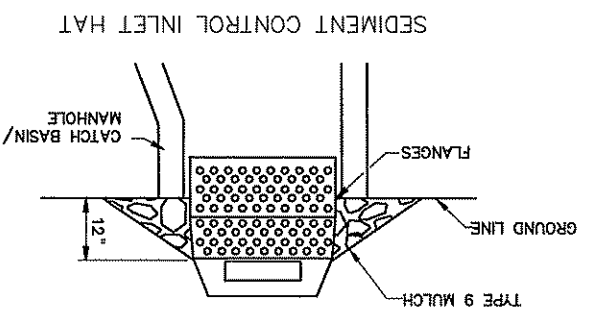
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 SIGNATURE: *[Signature]*
 PRINTED NAME: JAMES E. STUDENSKI
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 LIC. NO. 23757

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 S.A.P. 002-614-038
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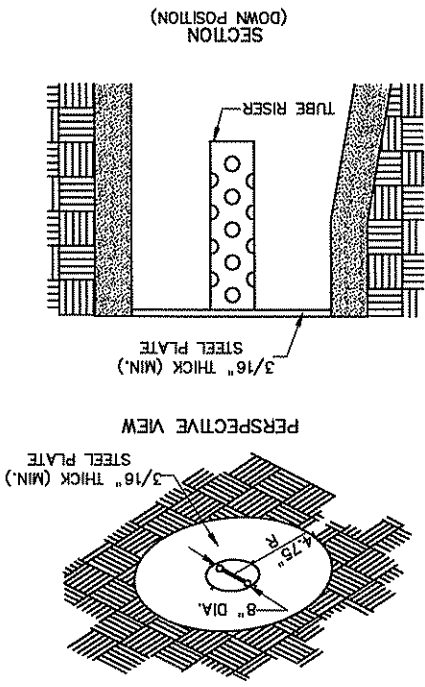
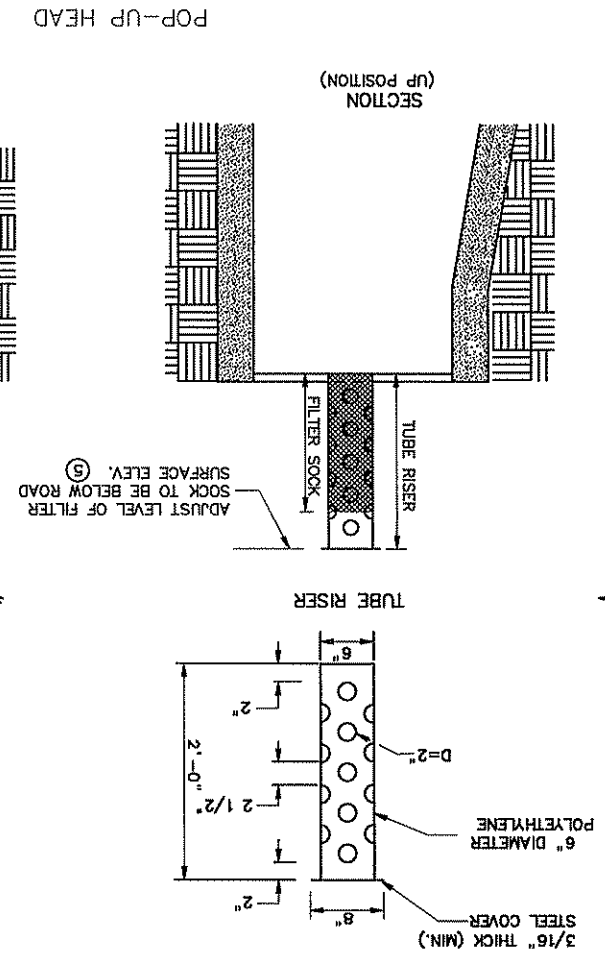
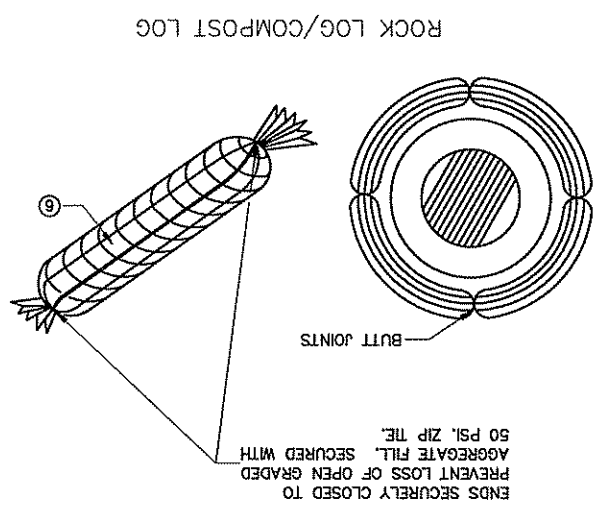
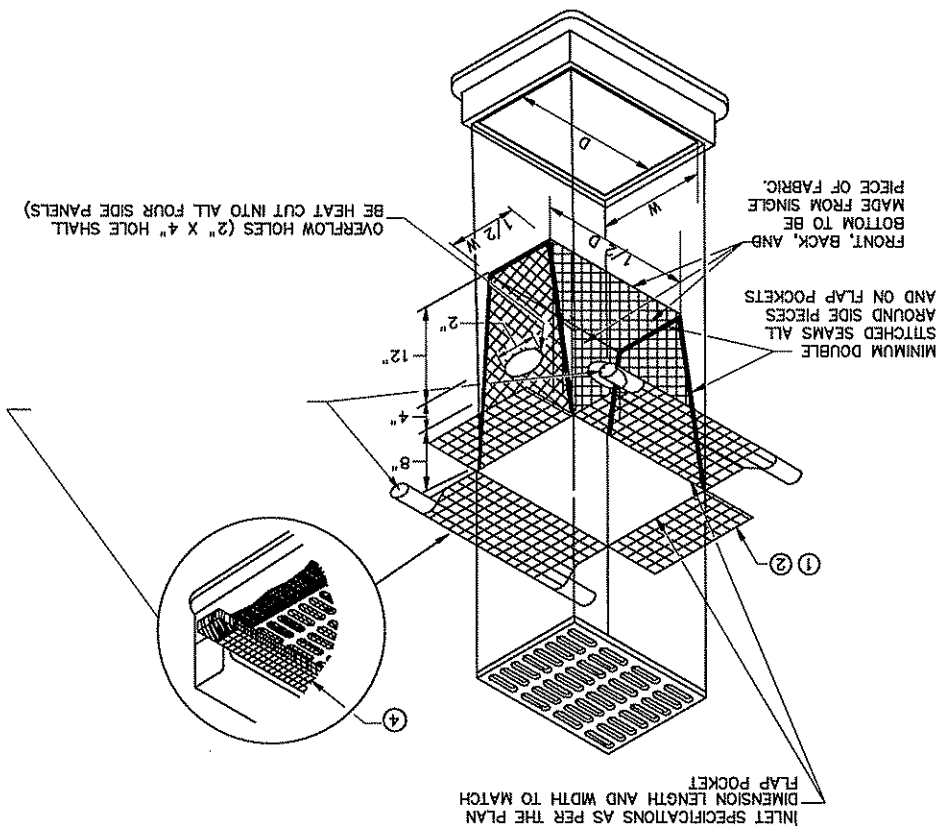


CITY OF LIND LAKES
EROSION CONTROL DETAILS
LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

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.



③ FILTER BAG INSERT
 (CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)



- NOTES:**
- 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 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 BOTTOM OF THE BAG, USING PLASTIC ZIP TIES. WHERE NECESSARY THE CONTRACTOR SHALL CLUNCH 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.

USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 OR LESS
 SILT FENCE RING AND ROCK FILTER BERM

NO	DATE	BY	CHKD	APPR	REVISION

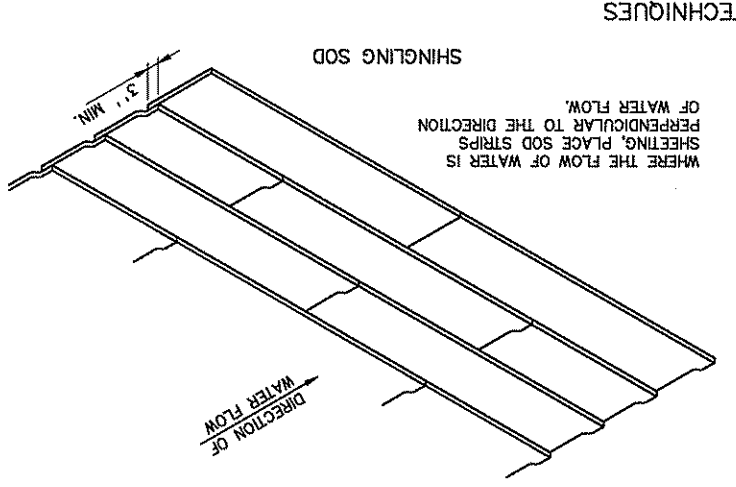
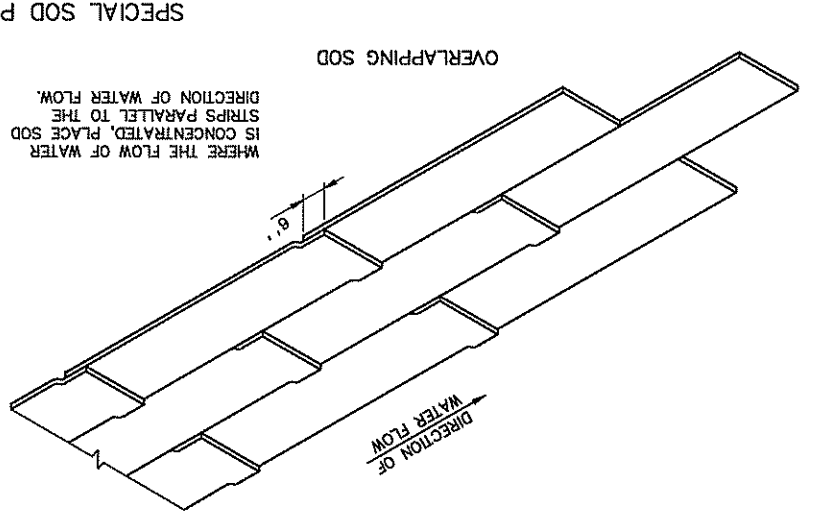
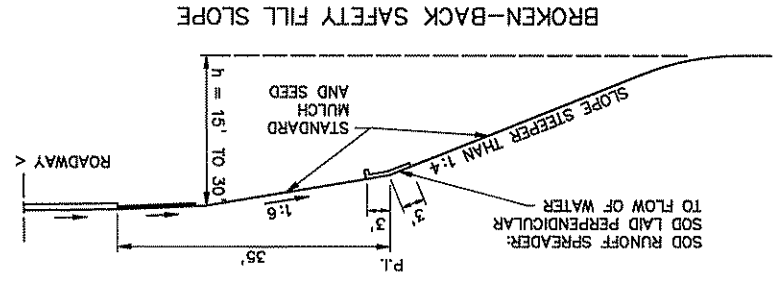
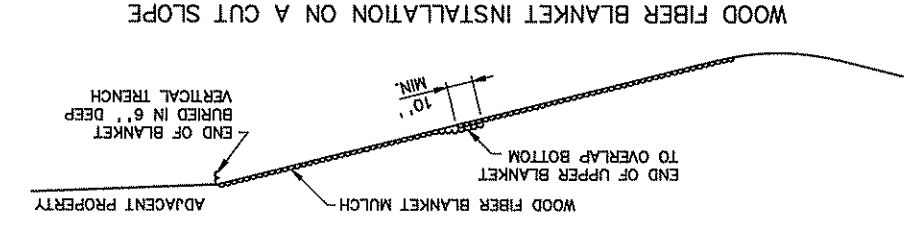
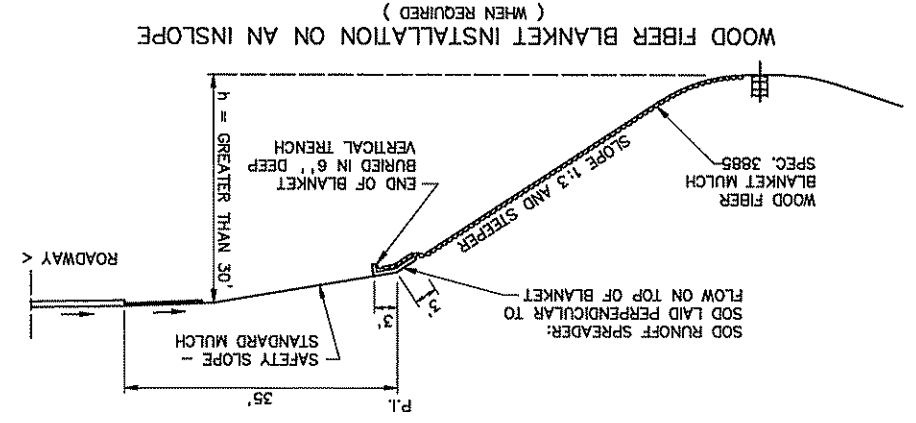
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 SIGNATURE: *[Signature]*
 PRINTED NAME: JAMES E. STUDENSKI
 DATE: 7/23/2012
 LIC. NO. 23157

DRAWN BY: _____ DATE: _____
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____

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CITY OF LINO LAKES
 EROSION CONTROL DETAILS
 LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION



SPECIAL SOD PLACEMENT TECHNIQUES

NO	DATE	BY	CHKD	APPR	REVISION

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: *Bryan J. Fick*
 PRINTED NAME: BRYAN J. FICK
 LIC. NO. 42802
 DATE: July 23, 2012

DRAWN BY: _____ DATE: _____
 DESIGN BY: TJV DATE: _____
 CHECKED BY: TAC DATE: _____

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 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.



CITY OF LINO LAKES
 SIGNING AND STRIPING TABULATIONS
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION

DELINEATORS AND MARKERS		
TYPE	QUANT.	LOCATION
X4-2	2	ISLAND

(2)(4)(5)

SIGN NO.	QUANT.	NO. & LEN.	HT. (1)	SIZE	CODE NO.	POSTS		TYPE	FEET	FEET	INCHES
						MTG.	PANEL				
C-1	1	1U	10	7	S5-2	24 X 30	END SCHOOL ZONE				
C-2	1	1U	12	7	R2-4	24 X 30	SPEED LIMIT 40				
C-2	1	1U	12	7	R8-3	24 X 24	NO PARKING				
C-3	2	1U	11	7	M2-1a	21 X 15	JCT				
C-3	2	1U	11	7	M1-6	24 X 24	COUNTY MARKER 23				
C-4	1	1U	12	7	M1-1	24 X 24	135W				
C-4	1	1U	12	7	M4-5a	24 X 12	TO				
C-4	1	1U	10	7	M6-1a	21 X 15	RIGHT ARROW				
C-5	2	1U	10	7	R5-X4	24 X 30	NO THRU TRAFFIC				
C-6	4	1U	10	7	R1-1	30 X 30	STOP				
C-7	1	1U	10	7	M3-3A	24 X 12	SOUTH				
C-7	1	1U	10	7	M1-6	24 X 24	COUNTY MARKER 23				
C-7	1	1U	10	7	M1-6	24 X 24	COUNTY MARKER 23				
C-8	2	1U	11	7	M6-4a	21 X 15	ARROWS				
C-9	2	1U	13	7	R1-2	36 X 36	YIELD				
C-9	2	1U	13	7	R5-1	30 X 30	DO NOT ENTER				
C-10	1	1U	10	7	R2-4	24 X 30	SPEED LIMIT 50				
C-11	2	1U	11	7	M2-1a	21 X 15	JCT				
C-11	2	1U	11	7	M1-6	24 X 24	COUNTY MARKER 14				
C-12	2	1U	11	7	M6-4a	21 X 15	ARROWS				
C-13	1	1U	10	7	M3-2A	24 X 12	EAST				
C-13	1	1U	10	7	M1-6	24 X 24	COUNTY MARKER 14				
C-14	1	1U	10	7	R2-4	24 X 30	SPEED LIMIT 40				
C-14	1	1U	10	7	R4-X5	30 X 24	STATE LAW				
C-15	2	2U	12	7	R4-18A	30 X 36	NO PASSING ON SHOULDER				
C-16	1	1U	10	7	M3-1A	24 X 12	NORTH				
C-16	1	1U	10	7	M1-6	24 X 24	COUNTY MARKER 23				
C-17	1	1U	10	7	R2-4	24 X 30	SPEED LIMIT 55				
C-18	1	1U	10	7	M3-4A	24 X 12	WEST				
C-18	1	1U	10	7	M1-6	24 X 24	COUNTY MARKER 14				
TOTAL 28											

- SPECIFIC NOTES:**
- (1) Mounting height is minimum, see Sheet 51 for typical mounting
 - (2) Mounted in concrete, see sheet 52
 - (3) Mounted back to back
 - (4) See Standard Signs Manual for Hazard markers (X4-2)
 - (5) Install on 3lb/ft post (MNDOT 3401) (background black)
- GENERAL NOTES:**
- Post lengths are approximate and include embedment but do not include additional length required for splice
 - See sheet 51 for structural details
 - See Standard Signs Manual for punching code and detailed drawings of type C sign panels.

PAVEMENT MARKINGS - EPOXY				
4"	SOLID LINE	4"	SOLID LINE	15,805
4"	SOLID LINE	4"	SOLID LINE	2,000
4"	BROKEN LINE	4"	BROKEN LINE	3,420
4"	DOUBLE YELLOW LINE	4"	DOUBLE YELLOW LINE	7,005
TOTAL 15,805				

PAVEMENT MARKINGS - PREFORMED THERMOPLASTIC					
PAVEMENT MESSAGES	LEFT ARROW (EACH)	RIGHT ARROW (EACH)	24" SOLID LINE (LIN FT)	24" SOLID LINE WHITE (LIN FT)	CROSS WALK MARKINGS (SQ FT)
8	7	575	186	1062	TOTAL

SIGN PANELS TYPE "C" - ROADWAY												
SIGN NO.	QUANT.	NO. & LEN.	HT. (1)	SIZE	AREA	TOTAL AREA	CODE NO.	PANEL				PANEL LEGEND
								POSTS	MTG.	FEET	INCHES	
C-101	4	2U	10	7	36 X 36	9	W3-3	36	45	11.25	R3-30ACA	SIGNAL HEAD
C-102	4	2U	10	7	54 X 30	7		4	45	11.25	R3-30ACA	LANE USE
TOTAL 81												

NO	DATE	BY	CHKD	APPR	REVISION

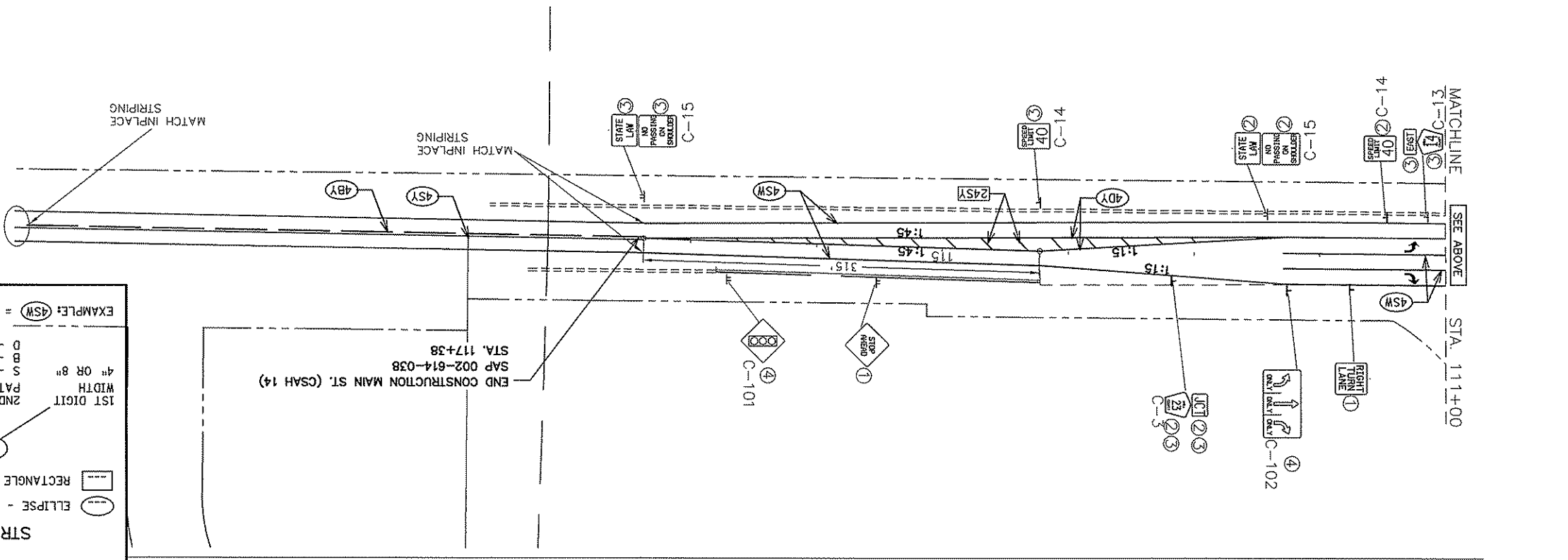
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 SIGNATURE: *Bryan D. Fieck*
 PRINTED NAME: BRYAN D. FIECK
 LIC. NO. 42802
 DATE: July 23, 2012

DRAWN BY: _____ DATE: _____
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____
 S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.

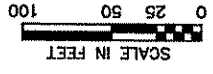


CITY OF LINO LAKES
 SIGNING & STRIPING PLAN
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION
 SHEET 47 OF 78

MAIN STREET (CSAH 14)



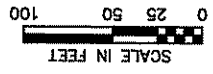
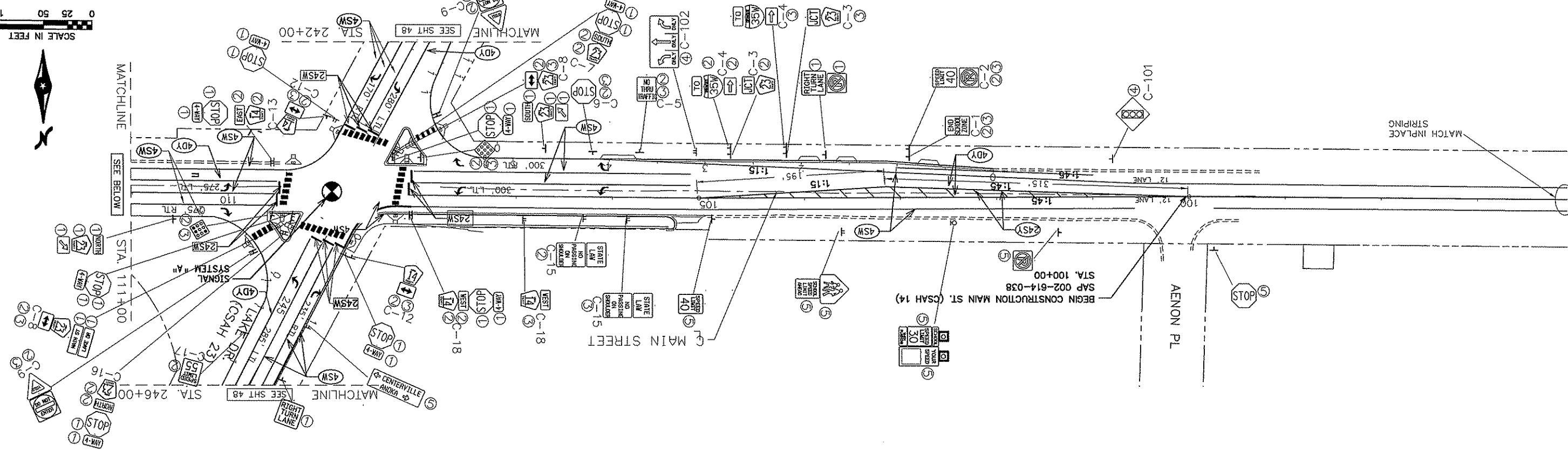
- NOTE:
- ① REMOVE SIGN
 - ② SALVAGE SIGN
 - ③ INSTALL SALVAGED SIGN
 - ④ F&D SIGN
 - ⑤ INPLACE TO REMAIN



SYMBOLS & MATERIALS LEGEND

- MESSAGE KEY
- ◀ PAYMENT MESSAGE (LT ARROW)
 - ▶ PAYMENT MESSAGE (RT ARROW)
 - ▭ RECTANGLE - PREFORMED THERMOPLASTIC
 - ▭ CROSSWALK MARKING
 - NOTE: ALL MESSAGES TO BE PERFORMED THERMOPLASTIC
- STRIPING KEY
- ELLIPSE - EPOXY
 - ▭ PREFORMED THERMOPLASTIC
 - ▭ 3RD DIGIT PATTERN COLOR
 - ▭ 2ND DIGIT PATTERN COLOR
 - ▭ 4th OR 8th WIDTH
 - S - SOLID W - WHITE Y - YELLOW B - BROKEN D - DOTTED/DOUBLE
 - EXAMPLE: 4SW = 4" SOLID LINE WHITE - EPOXY

MAIN STREET (CSAH 14)



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 SIGNATURE: *Bryant J. Ficker*
 PRINTED NAME: BRYANT J. FICKER
 LIC. NO. 42802
 DATE: July 23, 2012

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CITY OF LINO LAKES
 SIGNING AND STRIPING PLAN
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION

LAKE DRIVE (CSAH 23)

SYMBOLS & MATERIALS LEGEND

MESSAGE KEY

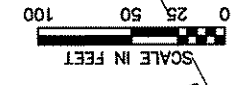
- ELIPSE - EPOXY
- RECTANGLE - PREFORMED THERMOPLASTIC
- CROSSWALK MARKING
- PAVEMENT MESSAGE (LT ARROW)
- PAVEMENT MESSAGE (RT ARROW)
- NOTE: ALL MESSAGES TO BE PERFORMED THERMOPLASTIC

STRIPING KEY

- 1ST DIGIT
- 2ND DIGIT
- 3RD DIGIT
- PATTERN
- COLOR
- WIDTH
- 4" OR 8"

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

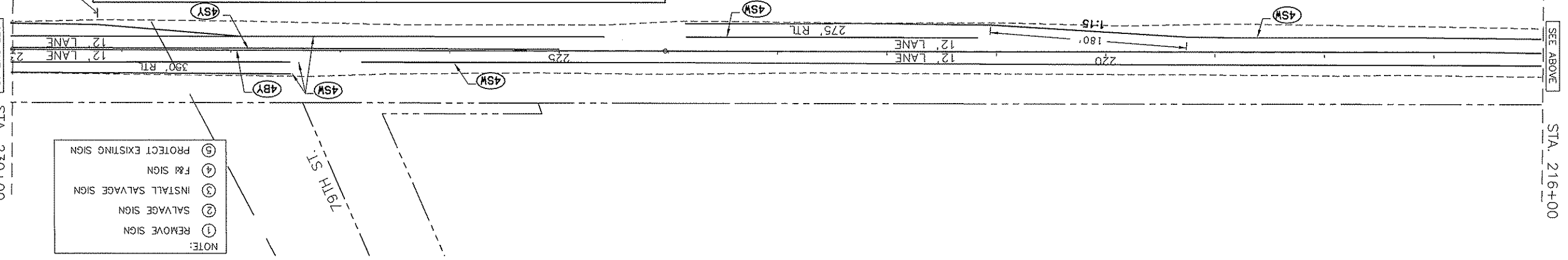
- D - DOUBLE
- D - DOTTED/
- S - SOLID
- B - BROKEN
- Y - YELLOW
- W - WHITE



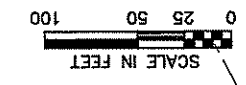
MATCHLINE
 SEE SHT 48
 STA. 230+00

MATCHLINE
 SEE ABOVE
 STA. 216+00

- NOTE:
- REMOVE SIGN
 - SALVAGE SIGN
 - INSTALL SALVAGE SIGN
 - F&I SIGN
 - PROTECT EXISTING SIGN

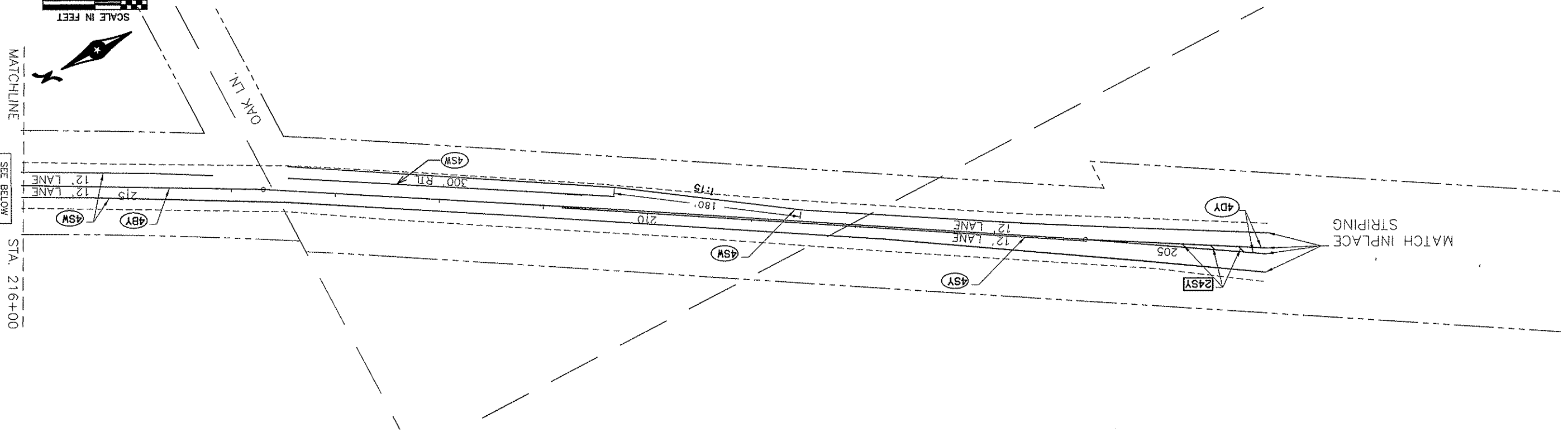


LAKE DRIVE (CSAH 23)



MATCHLINE
 SEE BELOW
 STA. 216+00

MATCH INPLACE STRIPING



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 LIC. NO. 42802
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CITY OF LINO LAKES
 SIGNING AND STRIPING PLAN
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION

SYMBOLS & MATERIALS LEGEND

STRIPING KEY

- ELLIPSE - EPOXY
- RECTANGLE - PREFORMED THERMOPLASTIC

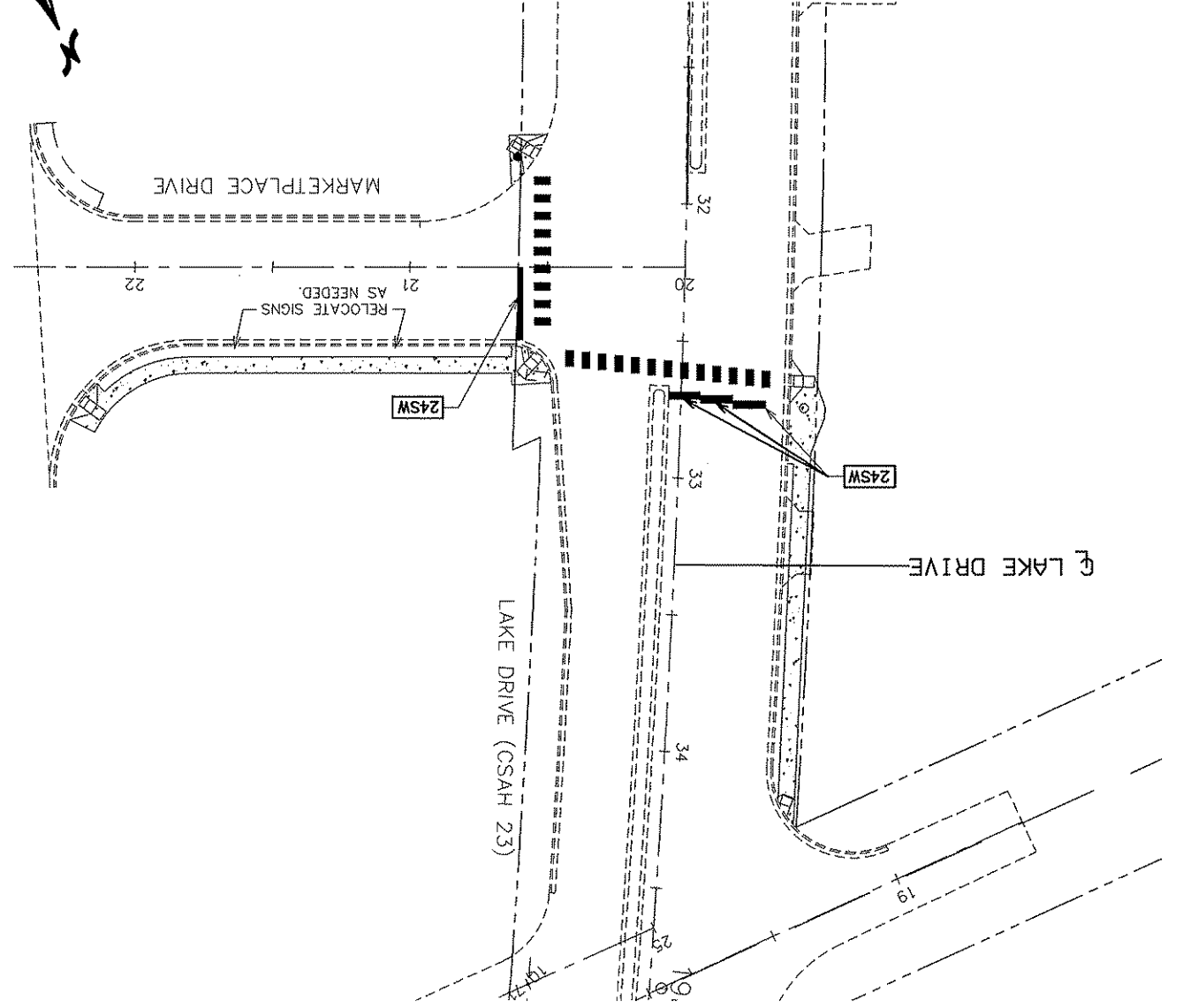
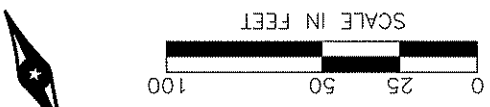
MESSAGE KEY

- CROSSWALK MARKING
- NOTE: ALL MESSAGES TO BE PREFORMED THERMOPLASTIC

STRIPING KEY

1ST DIGIT	2ND DIGIT	3RD DIGIT	WIDTH	COLOR	PATTERN
S	S	S	4" OR 8"	WHITE	SOLID
B	B	B	4" OR 8"	YELLOW	BROKEN
D	D	D	4" OR 8"	WHITE	DOTTED/DOUBLE

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



NO	DATE	BY	CHKD	APPR	REVISION

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 SIGNATURE: *Bryant J. Fick*
 PRINTED NAME: BRYANT J. FICK
 DATE: JULY 23, 2012
 LIC. NO. 42802

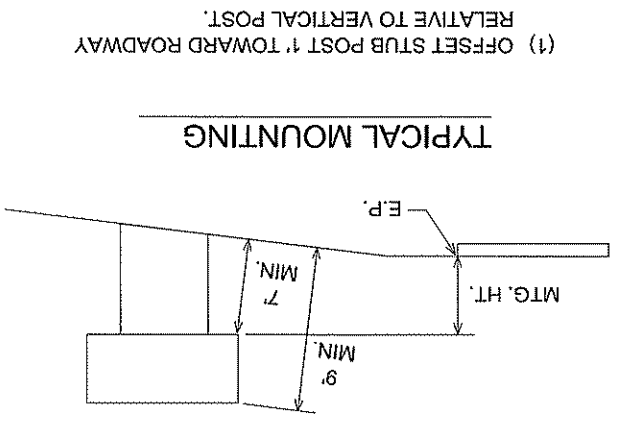
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 S.A.P. 002-623-016
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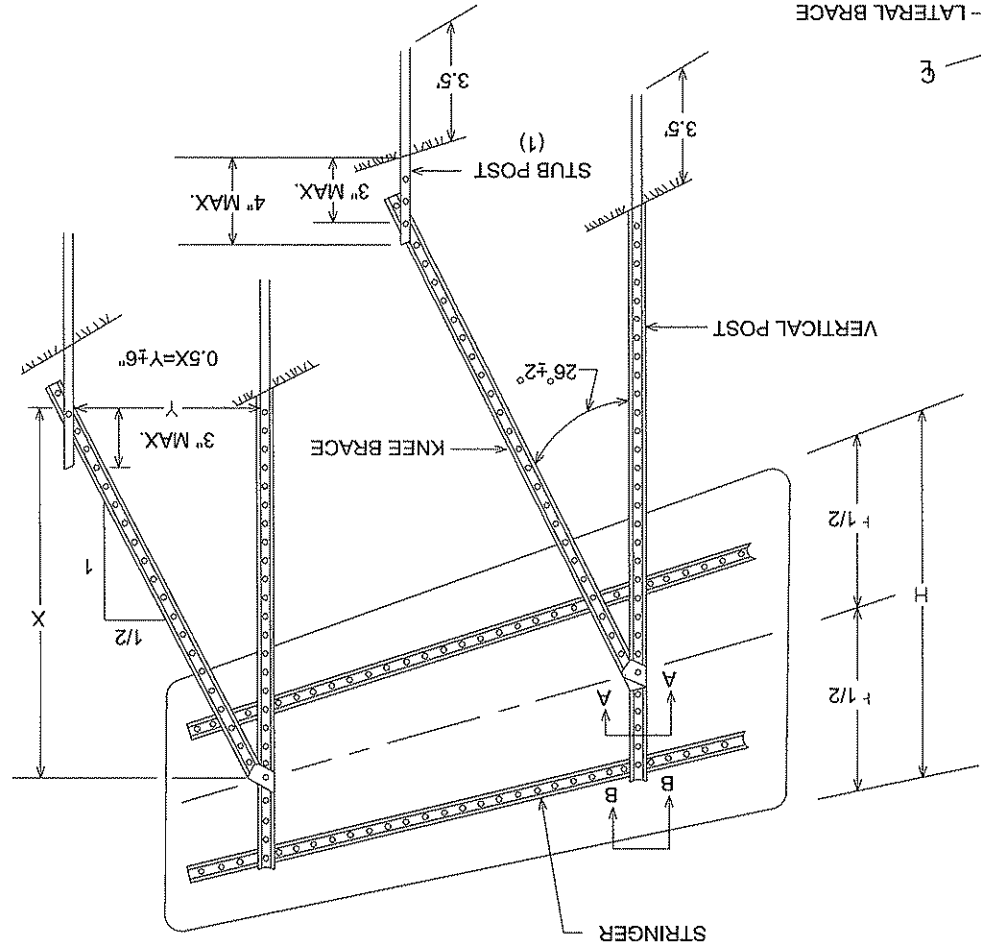
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 ENGINEERING • ARCHITECTURE • PLANNING

CITY OF LINO LAKES
 SIGNING & STRIPING DETAILS
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION

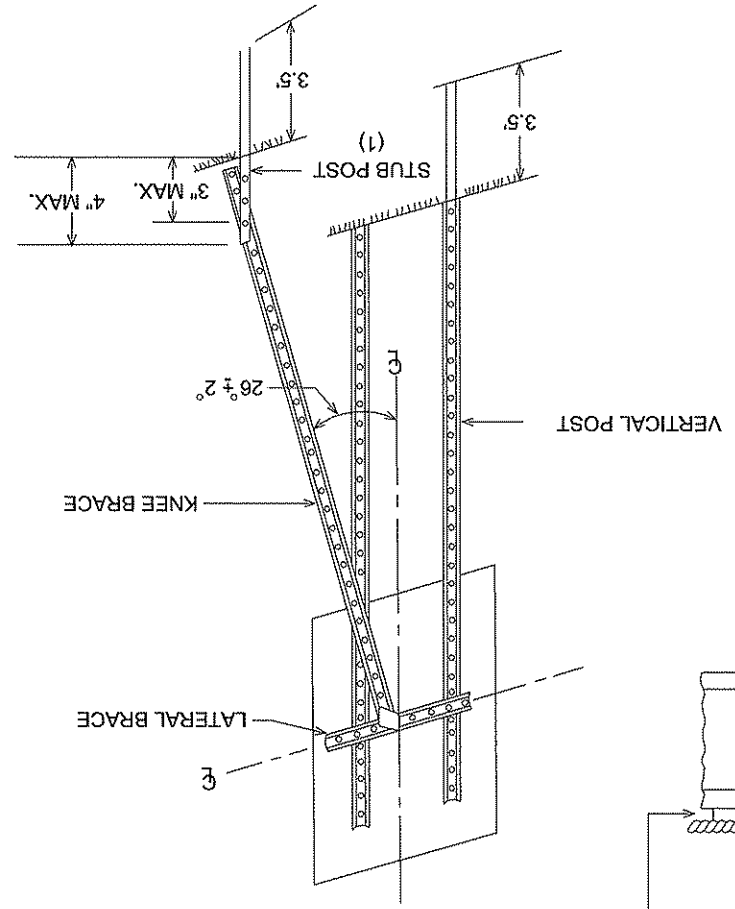
TYPE C & D SIGN STRUCTURAL DETAILS



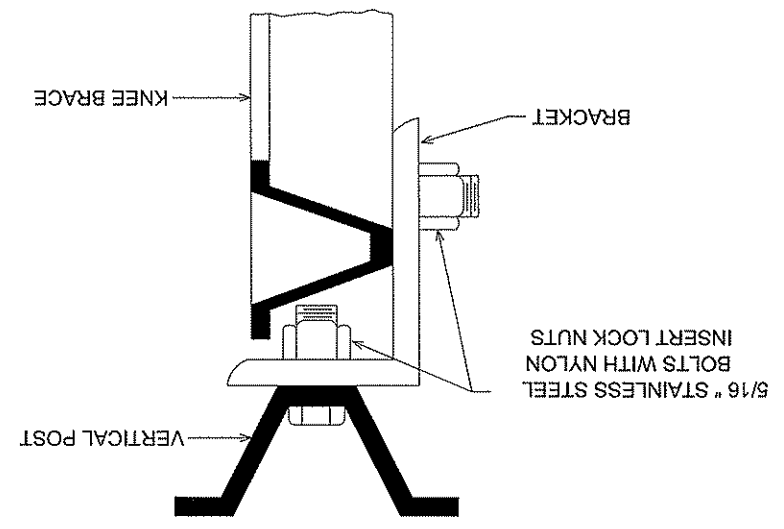
TYPE "D" SIGNS



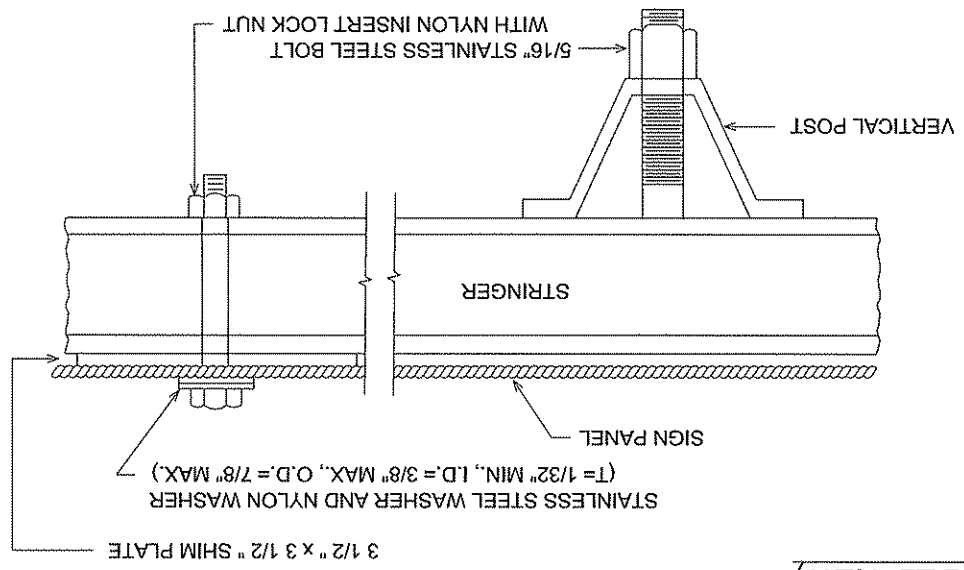
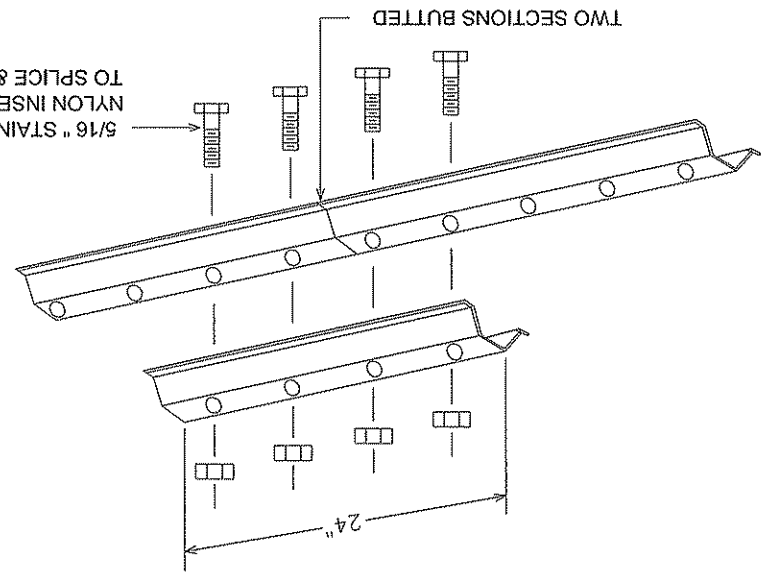
TYPE "C" SIGNS



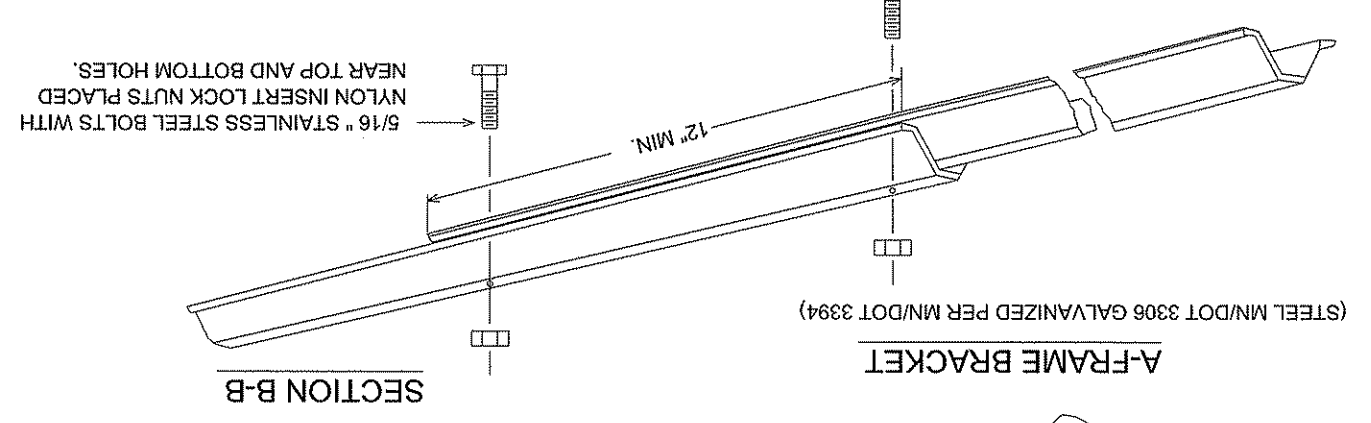
SECTION A-A



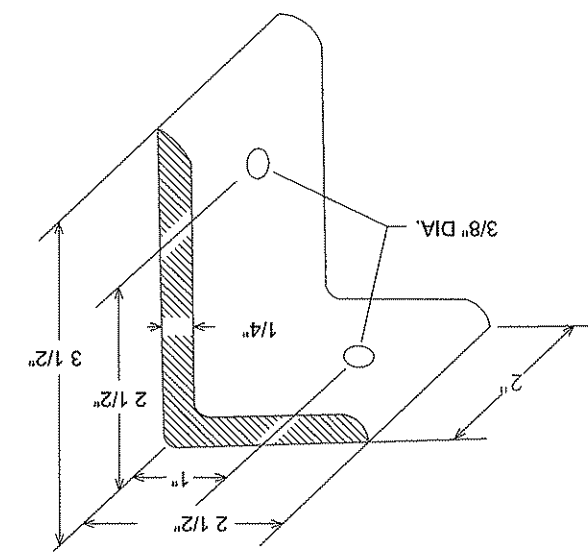
LATERAL BRACE OR STRINGER SPICE DETAIL (EXPLODED VIEW)



KNEE BRACE SPICE



A-FRAME BRACKET



NO	DATE	BY	CKD	APP	REVISION

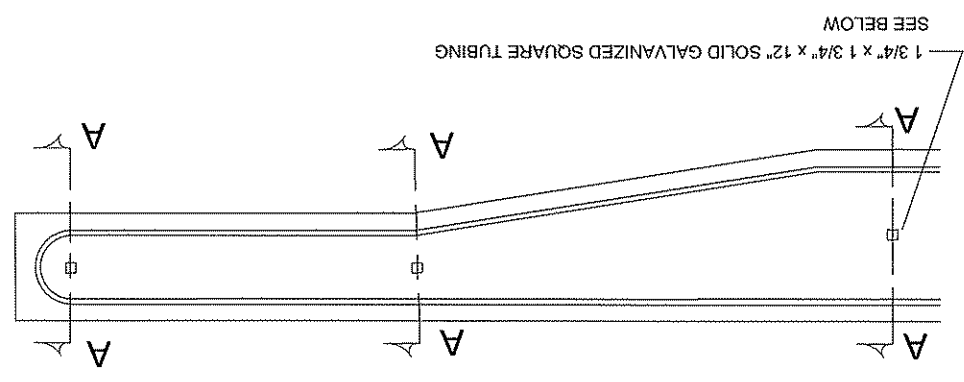
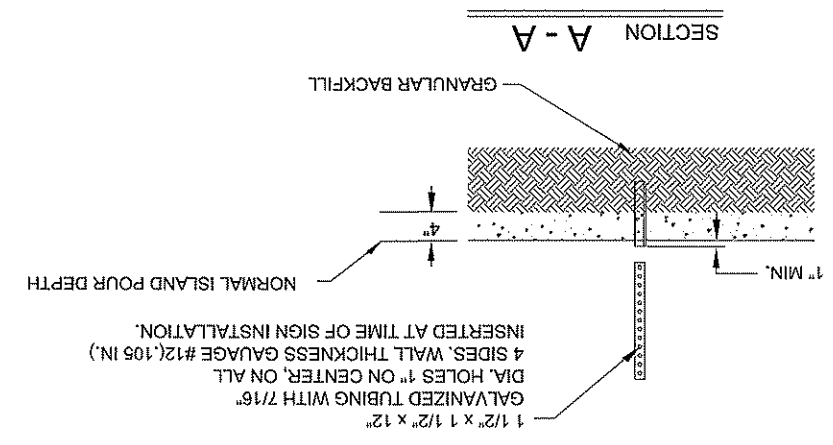
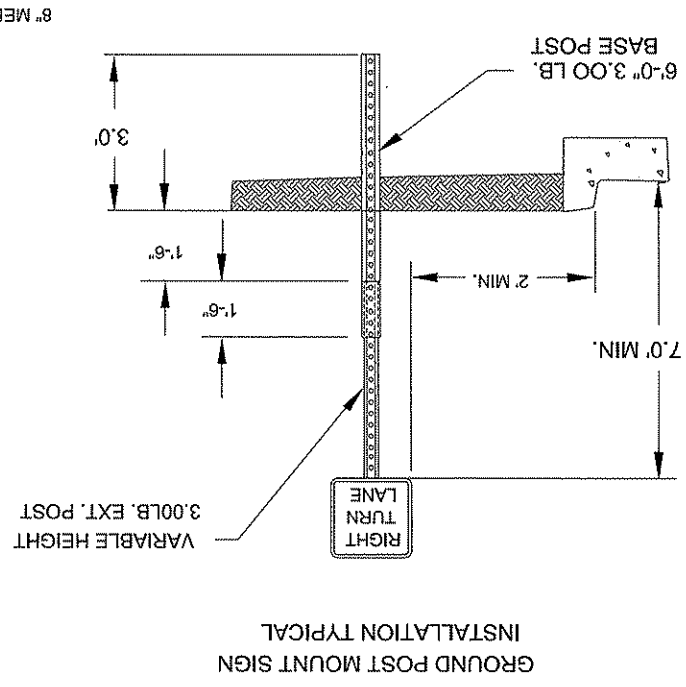
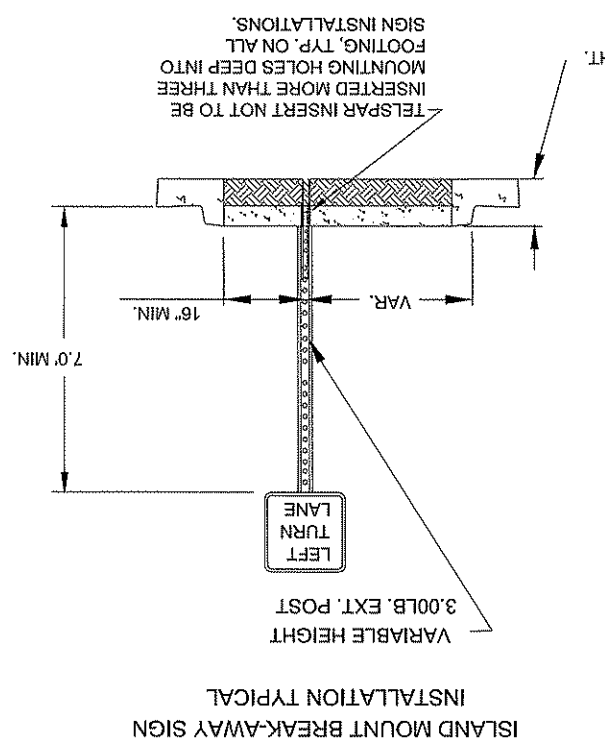
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 SIGNATURE: *Bryant J. Ficker*
 PRINTED NAME: BRYANT J. FICKER
 LIC. NO. 42802
 DATE: July 23, 2012

DRAWN BY: _____ DATE: _____
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CITY OF LINO LAKES
 SIGNING & STRIPING DETAILS
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION



NO	DATE	BY	CHKD	APPR	REVISION

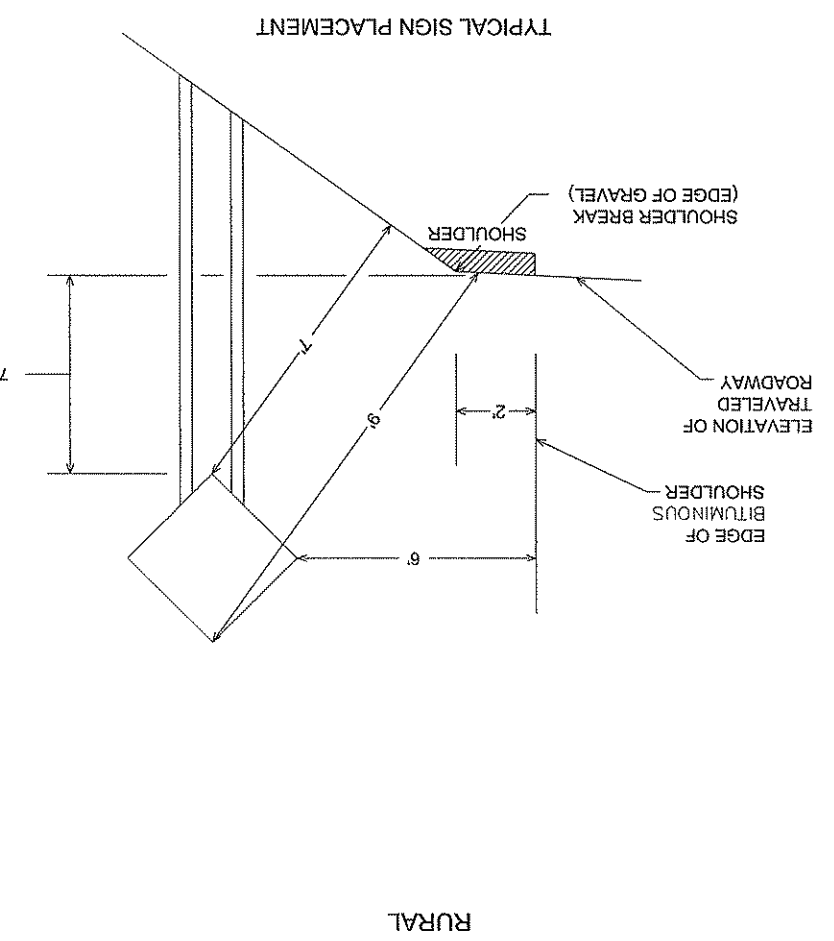
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DATE _____ DRAWN BY _____
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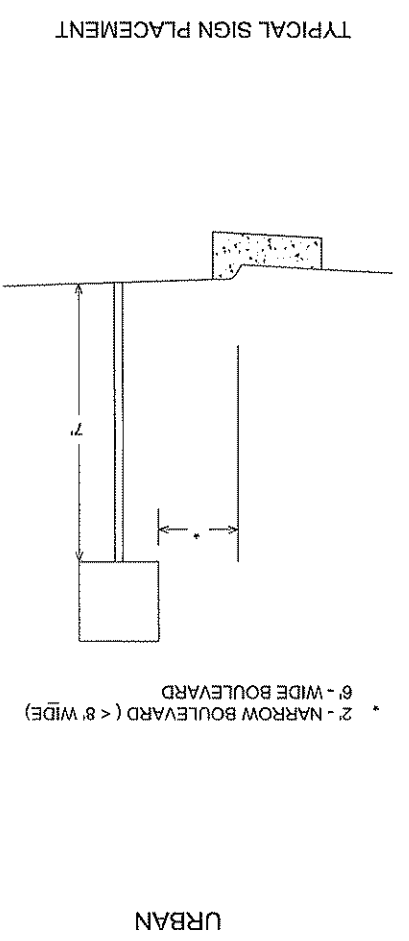


CITY OF LINO LAKES
 SIGNING & STRIPING DETAILS
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION



TYPICAL SIGN PLACEMENT

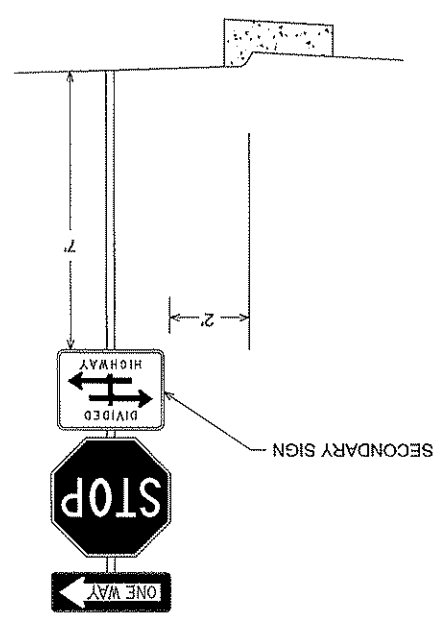
RURAL



TYPICAL SIGN PLACEMENT

URBAN

NOTE:
 - ALL DIMENSIONS ARE MINIMUMS
 - MAINTAIN 2' CLEAR FROM SIGNS TO BITUMINOUS TRAIL



SECONDARY SIGN

NO	DATE	BY	CHKD	APPR	REVISION

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 SIGNATURE: *Bryan J. Fickel*
 PRINTED NAME: BRYAN J. FICKEL
 DATE: July 23, 2012
 LIC. NO. 42802

DRAWN BY: _____ DATE: _____
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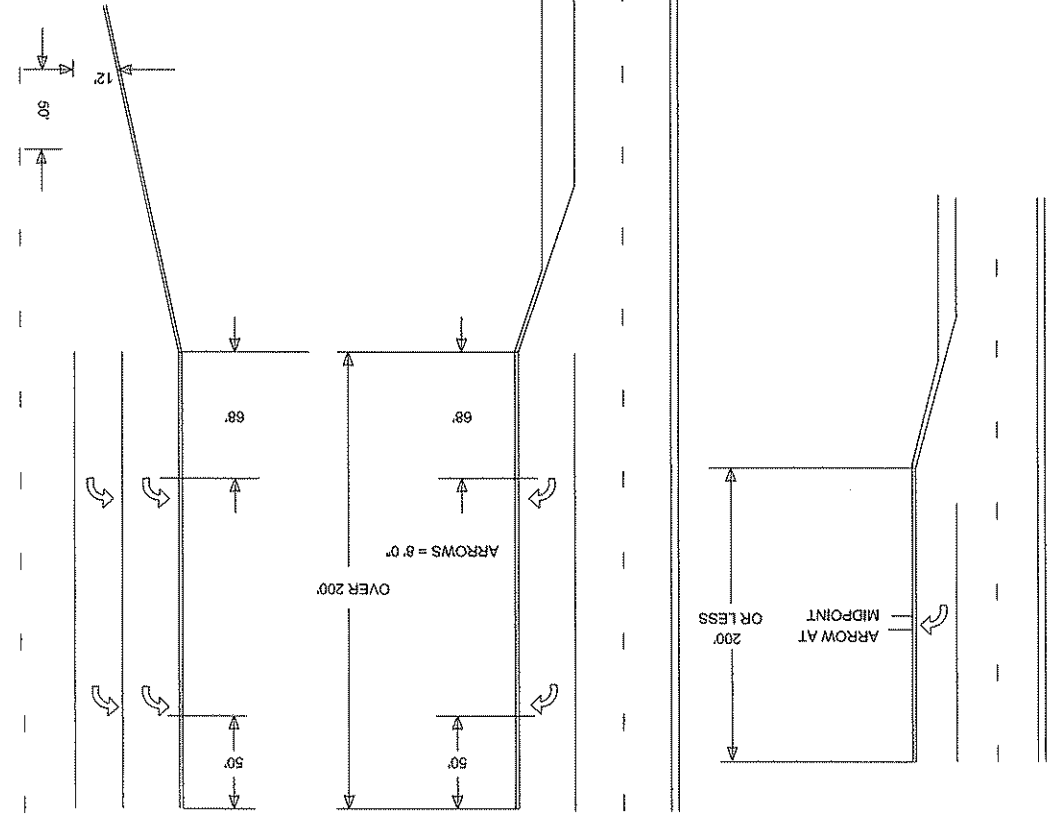


CITY OF LIND LAKES
 SIGNING & STRIPING DETAILS
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION

SHEET 54 OF 78

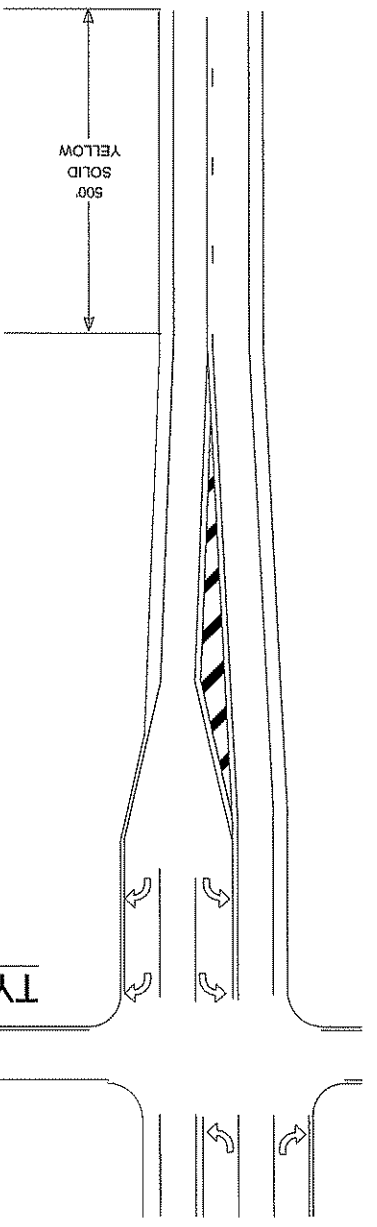
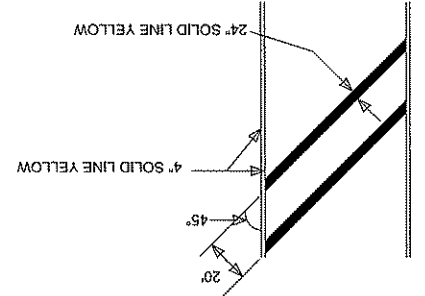
4 OF 5

DUAL LEFT TURN LANES



TYPICAL MESSAGE PLACEMENT FOR TURN LANES

TYPICAL MARKINGS FOR LEFT TURN ISLANDS



NO	DATE	BY	CHKD	APPR	REVISION

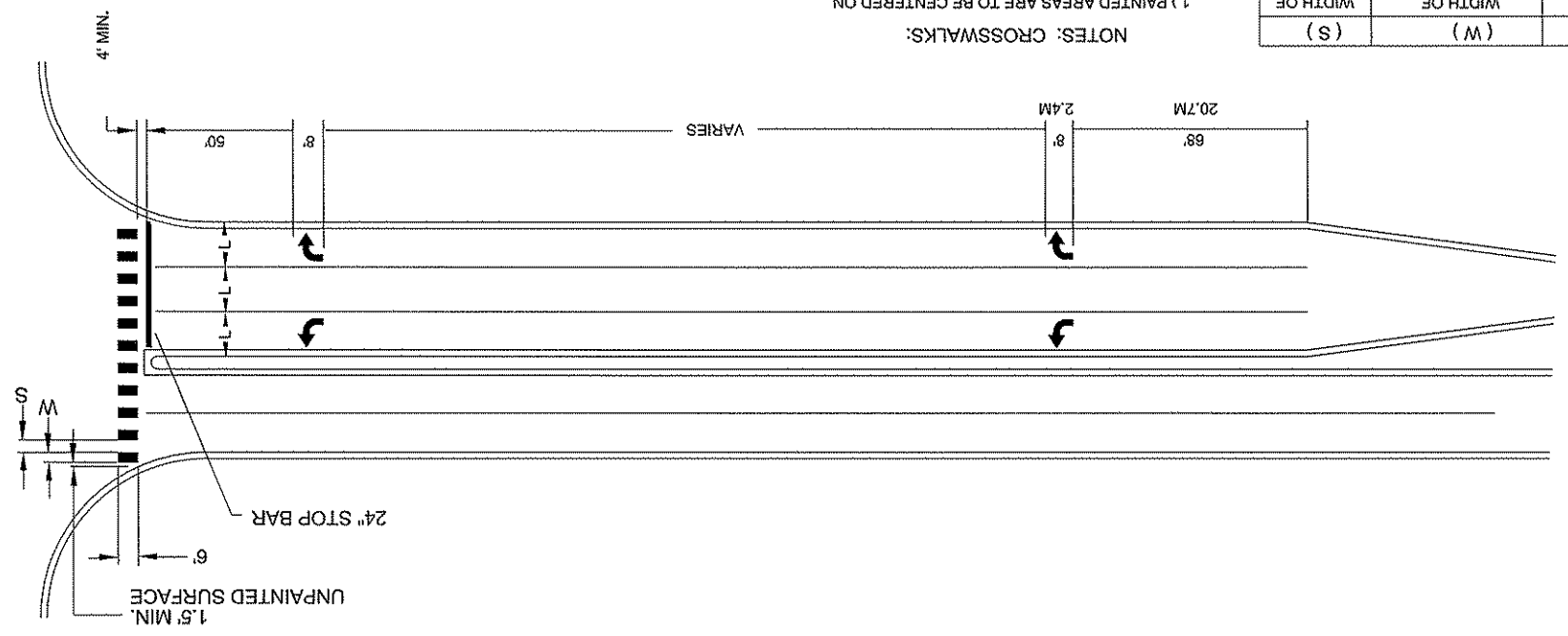
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CITY OF LINO LAKES
 SIGNING & STRIPING DETAILS
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION
 SHEET 55 OF 78

MARKINGS FOR PEDESTRIAN CROSSWALKS



NOTES: CROSSWALKS:

- 1) PAINTED AREAS ARE TO BE CENTERED ON CENTER AND LANE LINES, EVEN IF INTERSECTION IS NOT ALIGNED.
- 2) LOCATION OF ZEBRA CROSSWALKS AND STOP BARS, SIGNAL LOOPS AND PED RAMP ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE DETERMINED AND FIELD VERIFIED DURING CONSTRUCTION BY THE FIELD ENGR.
- 3) ZEBRA CROSSWALKS ARE TO BE PARALLEL TO THE DRIVING LANE OR LANES, EVEN IF THE STREET IS ON AN ANGLE TO THE INTERSECTION.
- 4) A MIN. OF 1.5' (450mm) CLEAR DISTANCE MUST BE LEFT ADJACENT TO THE CURB, IF LAST PAINTED AREA FALLS INTO THIS AREA, IT MUST BE OMITTED.
- 5) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 11' (3.3mm) INSIDE LANE.

WIDTH OF INSIDE LANE (L)	WIDTH OF PAINTED AREAS (W)	WIDTH OF SPACE (S)
9'	2.0'	2.5'
10'	2.5'	2.5'
11'	2.5'	3.0'
12'	3.0'	3.0'
13'	3.0'	3.5'

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. THE CONTRACTOR WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.
 EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.
 A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO ONE-HALF FOOT FROM THE SPECIFIED LENGTH PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

EPOXY:

THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE CLEANED TO REMOVE ANY SURFACE TREATMENTS AND/OR LAITANCE. ON LOW SPEED (SPEED LIMIT 35 OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS, SANDBLAST CLEANING SHALL BE USED FOR ALL EPOXY PAVEMENT MARKINGS.
 THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.
 AN EPOXY RESIN LINE 4" WIDE AND 16 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.
 OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES F° OR GREATER.
 PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

PAINT:

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.
 GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE. EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50°F OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILM OF DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.
 THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

NO	DATE	BY	CKD	APPR	REVISION

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 SIGNATURE: *Bryant J. Ficker*
 PRINTED NAME: BRYANT J. FICKER
 LIC. NO. 42802
 DATE: July 23, 2012

DRAWN BY _____ DATE _____
 DESIGN BY _____ DATE _____
 CHECKED BY _____ DATE _____

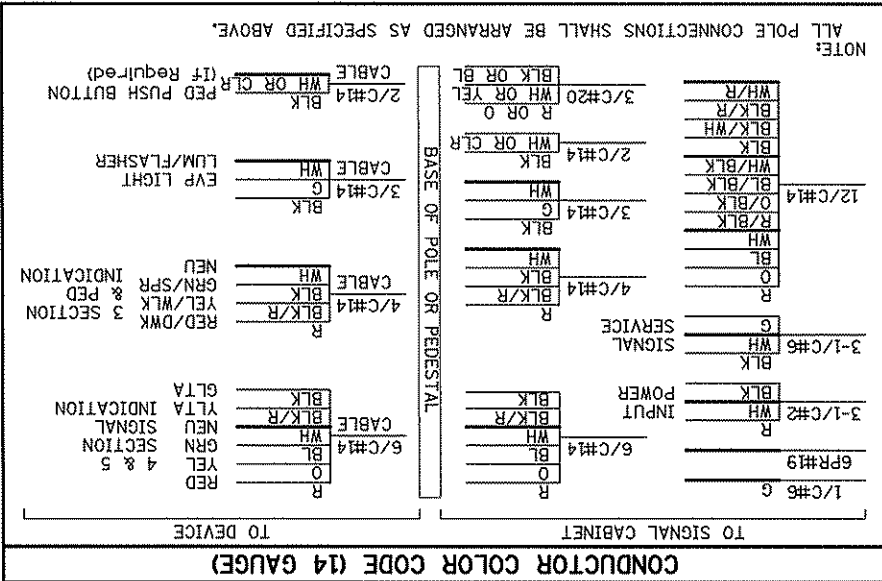
S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.



CITY OF LINO LAKES
 STANDARD PLATES AND DETAILS
 SIGNAL PLAN AND DETAILS
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION

PLATE NO.	DESCRIPTION
8110E	TRAFFIC SIGNAL BRACKETING (POLE MOUNTED)
8111E	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED) (3 SHEETS)
8112G	PEDESTAL FOUNDATION (TRAFFIC CONTROL SIGNALS)
8114A	P.V.C. HAND HOLE/PULL BOX (NO VEHICLE LOAD)(2 SHEETS)
8119C	GRAND MOUNTED CABINET FOUNDATION
8120P	POLE FOUNDATION (P85)
8121G	TRANSFORMER BASE & POLE BASE PLATE (P85, PA90, & PA100)(2 SHEETS)
8122F	PEDESTAL & PEDESTAL BASE (FOR TRAFFIC CONTROL SIGNALS SUPPORT)(2 SHEETS)
8123G	POLE & MAST ARM - LUMINAIRES & TRAFFIC LIGHT ASSEMBLY (FOR ALL POLE TYPES)(2 SHEETS)
8126I	POLE FOUNDATION (PA90 & PA100)
8132B	PERFORMED RIGID PVC CONDUIT LOOP DETECTOR (3 SHEETS)

TRAFFIC SIGNAL STANDARD PLATES
 THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT



- SYMBOLS**
- E.O. CONNECTION
 - EVP CONFIRMATORY LIGHT
 - ↔ EVP DETECTOR
 - ↔ EVP DETECTOR AND CONFIRMATORY LIGHT
 - FIBER OPTIC VAULT
 - △ LUMINAIRE NO.
 - SIGNAL BASE NO.
 - SIGNAL FACE NO./FLASHER FACE NO.
 - BARREL MOUNT BASE NO.
 - WOOD POLE NO.
 - SPLICE
 - VIDEO DETECTION
 - MICROWAVE DETECTION
 - SONIC DETECTION
- FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

- ABBREVIATIONS**
- APS ACCESSIBLE PEDESTRIAN SIGNAL
 - AWF ADVANCE WARNING FLASHER
 - C.D. COUNT DOWN
 - D2-1 (e.g.) DETECTOR (PHASE 2, NO. 1)
 - DEG DEGREES
 - DMK DON'T WALK
 - EQ.G EQUIPMENT GROUND
 - EVP EMERGENCY VEHICLE PRE-EMPTION
 - F&I FURNISH AND INSTALL
 - FL FLASH/FLASHING
 - FYA FLASHING YELLOW ARROW
 - FYA FLASHING YELLOW LEFT ARROW
 - GLA GREEN LEFT ARROW
 - GRN GREEN INDICATION
 - GR.RD. GROUND ROD
 - GRA GREEN RIGHT ARROW
 - GTA GREEN THRU ARROW
 - HH HANDHOLE
 - HPS HIGH PRESSURE SODIUM
 - IND INDICATION
 - IMC INTERMEDIATE METAL CONDUIT
 - INF INFLACE
 - INS. GR. INSULATED GROUND
 - JB JUNCTION BOX
 - LED LIGHT EMITTING DIODE
 - LUM LUMINAIRE
 - NEU NEUTRAL
 - NMC NONMETALLIC CONDUIT
 - P1-1 (e.g.) PEDESTRIAN INDICATION (PHASE 1, NO. 1)
 - PB PUSH BUTTON
 - PB2-1 (e.g.) PUSH BUTTON (PHASE 2, NO. 1)
 - PEC PHOTOELECTRIC CELL
 - PED PEDESTRIAN
 - PVC POLYVINYL CHLORIDE (CONDUIT)
 - RED RED INDICATION
 - R&S REMOVE AND SALVAGE
 - RLA RED LEFT ARROW
 - RSC RIGID STEEL CONDUIT
 - S&I SALVAGE AND INSTALL
 - SOP SOURCE OF POWER
 - SPR SPARE
 - STA STATION
 - WALK WALK
 - YEL YELLOW INDICATION
 - YLA YELLOW LEFT ARROW
 - YRA YELLOW RIGHT ARROW

NO	DATE	BY	CHKD	APPR	REVISION

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: *Bryant J. Fieck*
 PRINTED NAME: BRYANT J. FIECK
 LIC. NO. 42802
 DATE: July 23, 2012

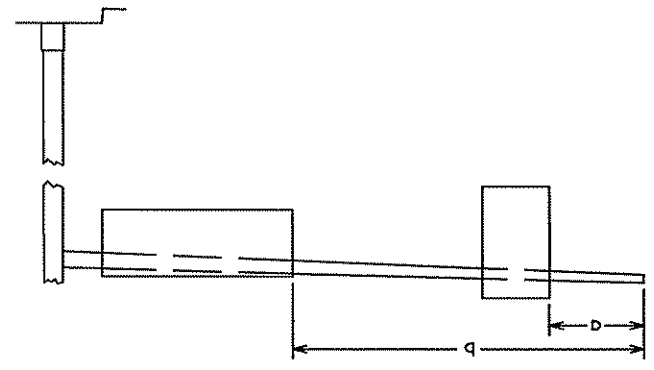
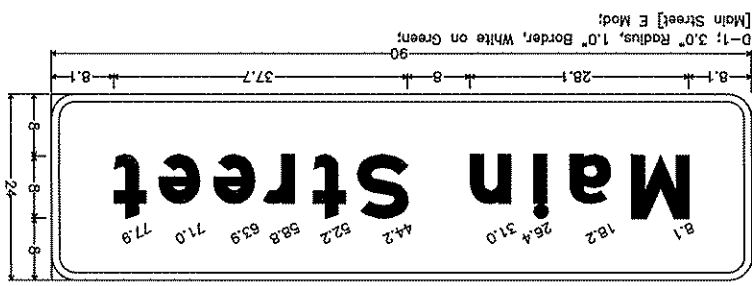
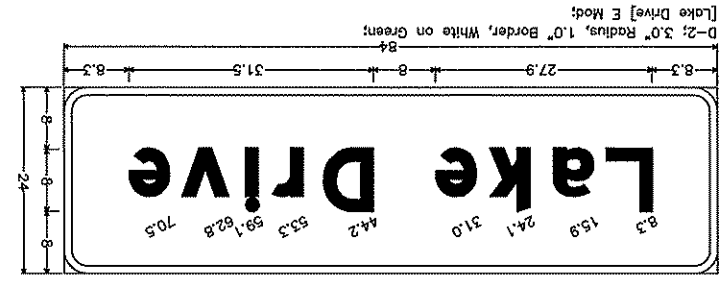
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 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.



CITY OF LINO LAKES
 SIGNAL SIGNING DETAILS
 SIGNAL PLAN AND DETAILS
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION

- NOTES:
- 1) COLOR FOR ALL NEW TYPE D SIGNS SHALL BE WHITE LEGEND AND BORDER ON GREEN BACKGROUND, FULLY REFLECTORIZED.
 - 2) CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
 - 3) FOR STRUCTURAL DETAILS OF MAST ARM MOUNTED SIGNS, SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE 7/06/07 AND SPECIAL PROVISIONS.
 - 4) SEE STANDARD SIGNS MANUAL FOR DETAILED DRAWING OF TYPE C SIGN PANELS.
 - 5) FURNISHING AND INSTALLING TYPE C AND D SIGNS SHALL BE CONSIDERED INCIDENTAL TO ITEM NO. 2565 (TRAFFIC SIGNAL CONTROL SYSTEM). SEE SPECIAL PROVISIONS.
 - 6) ALL NEW TYPE C AND D SIGN PANELS SHALL BE FABRICATED USING HP SHEETING. SEE SPECIAL PROVISIONS.



MAST ARM SIGN LOCATION

(**) = SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE SPECIAL PROVISIONS AND STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE 7-06-07) FOR BRACKET SPACING REQUIREMENTS.

MAST ARM MOUNTED SIGNS									
SIGN PANELS TYPE D (FURNISH AND INSTALL)									
SIGN PANEL SIZE (INCH)	NO. REQ.	NO. POSTS/STIFFENERS PER SIGN (**)	BAND SQ. FT.	POLE NO.	a	b	TOTAL QUANTITIES		
							4		
D-1 90X24	1	4	15.00	---	---	---	4	1	4
D-2 84X24	1	4	14.00	---	---	---	4	1	4
D-1 90X24	1	4	15.00	---	---	---	4	1	4
D-2 84X24	1	4	14.00	---	---	---	4	1	4
D-1 90X24	1	4	15.00	---	---	---	4	1	4
D-2 84X24	1	4	14.00	---	---	---	4	1	4
							58.00		

NO	DATE	BY	CHKD	APPR	REVISION

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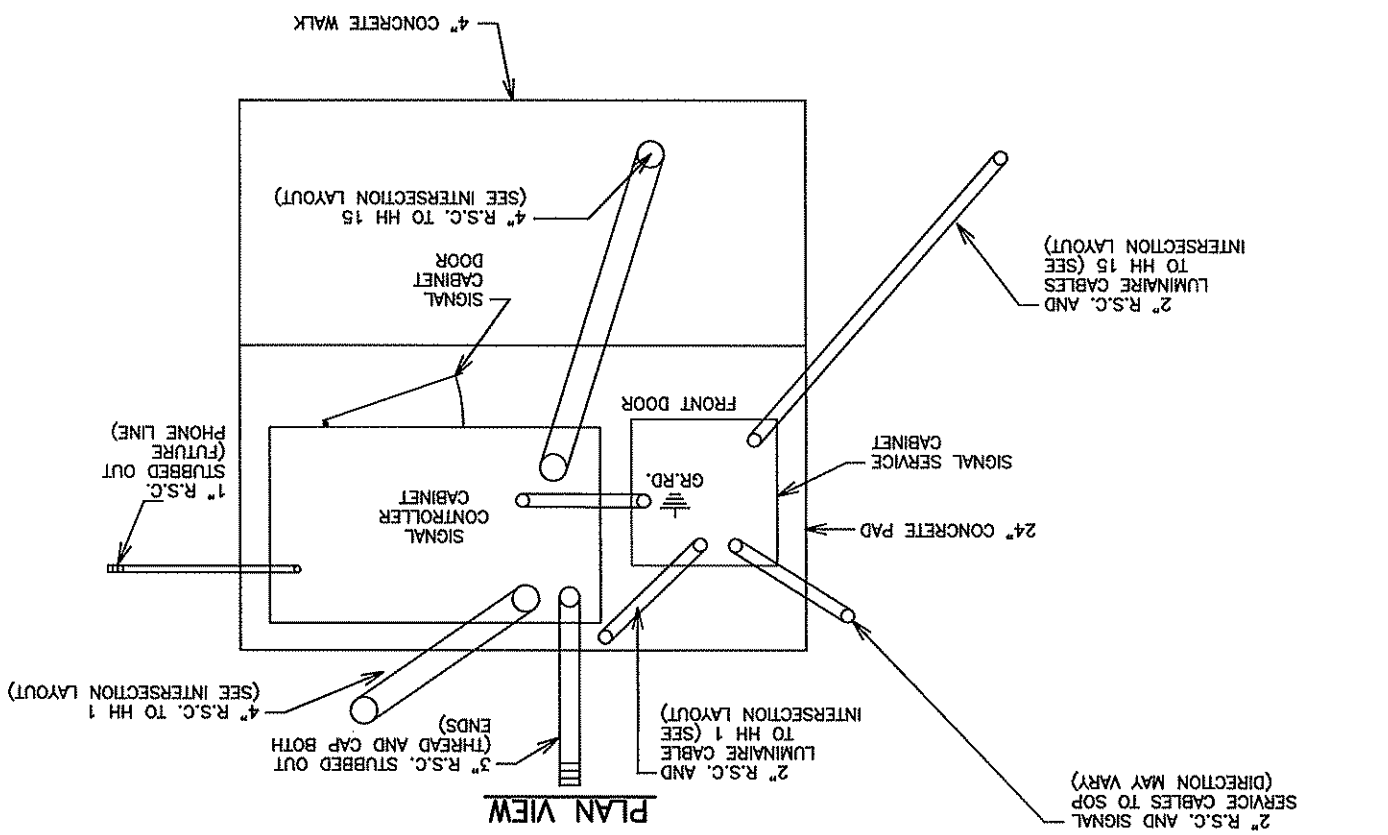
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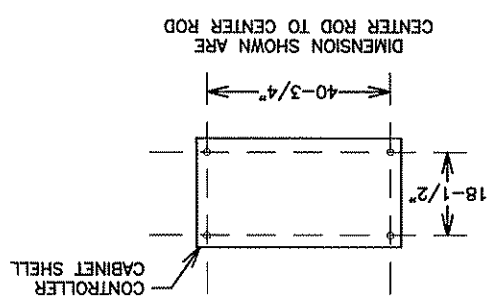


CITY OF LINO LAKES
 EQUIPMENT PAD DETAILS
 SIGNAL PLAN AND DETAILS
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION

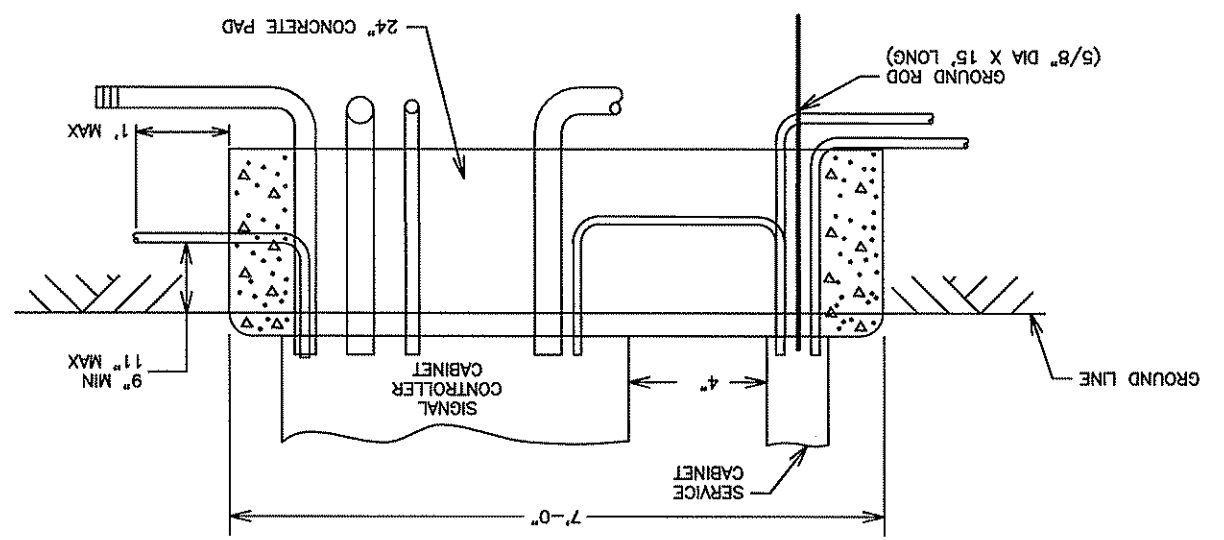
- NOTES:**
1. THE ANCHOR RODS, NUTS AND WASHERS FOR THE COUNTY FINISHED CONTROLLER AND CABINET SHALL BE FURNISHED BY THE CONTRACTOR.
 2. THE UPPER PART OF EACH EQUIPMENT PAD SHALL BE BEVELLED OR CHAMFERED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER.
 3. THE TOP OF THE CONDUITS SHALL BE THREADED AND CAPPED AFTER INSTALLATION (UNTIL CABLES ARE INSTALLED).
 4. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE CONCRETE AND SHALL BE LOCATED INSIDE THE CABINET WHERE DIRECTED BY THE ENGINEER, BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
 5. CONCRETE MIX 3032 OR EQUAL SHALL BE USED FOR THE EQUIPMENT PAD AND SIDEWALK.
 6. CONDUITS WITH BOTH ENDS TERMINATING WITHIN THE PAD SHALL NOT BE INSTALLED BELOW THE CONCRETE.
 7. THE EXACT LOCATIONS OF CONDUITS WITHIN EACH PAD SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
 8. ANCHOR RODS SHALL PROJECT A MINIMUM OF 3" ABOVE THE CONCRETE, BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
 9. CONTRACTOR SHALL PROVIDE MINIMUM 4 INCH CLEARANCE BETWEEN CONTROLLER AND SERVICE CABINETS ON THE EQUIPMENT PAD FOUNDATIONS AS SHOWN.
 10. CABINETS TO BE CENTERED (LEFT & RIGHT) ON THE PAD.
 11. BRUSH ON ANTI-SEIZE LUBRICANT MUST BE APPLIED TO ALL ANCHOR ROD THREADS PROTRUDING ABOVE THE CONCRETE PAD BEFORE THE CABINET IS SET.



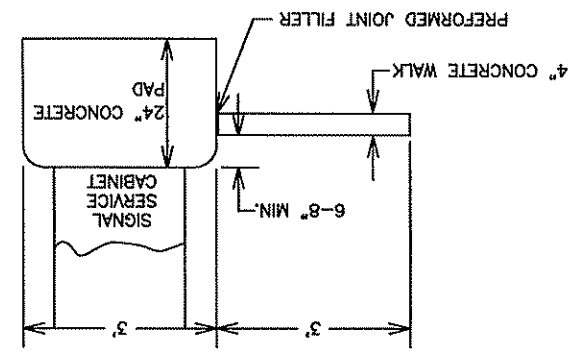
TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET
 SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)



CONTROLLER CABINET
 TYPE "P" & "R"
 BOLT PATTERN



FRONT VIEW



SIDE VIEW

NO	DATE	BY	CKD	APPR	REVISION

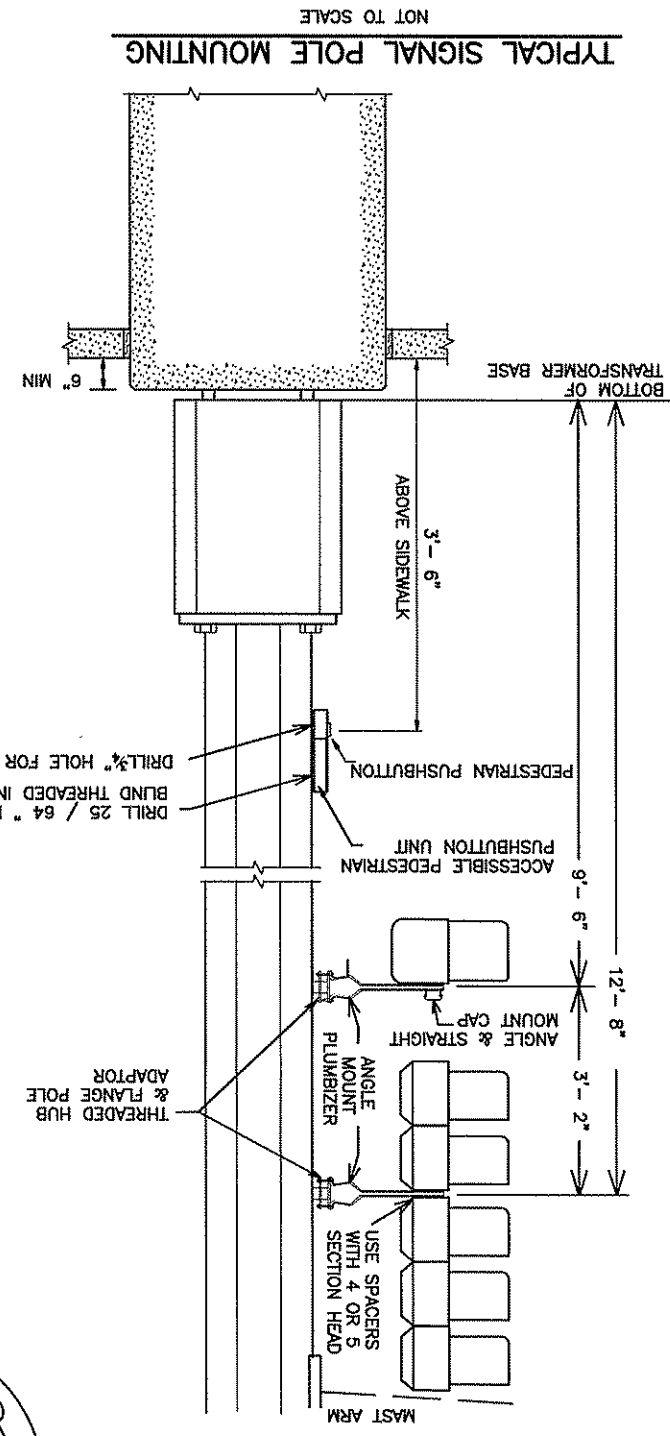
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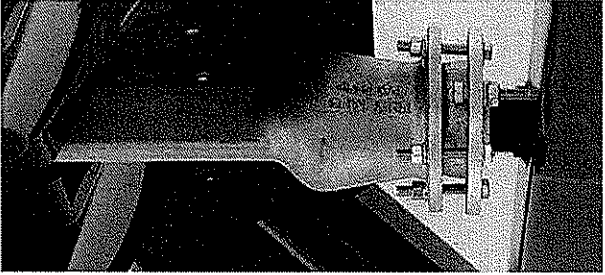
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TKDA
 ENGINEERING - ARCHITECTURE - PLANNING

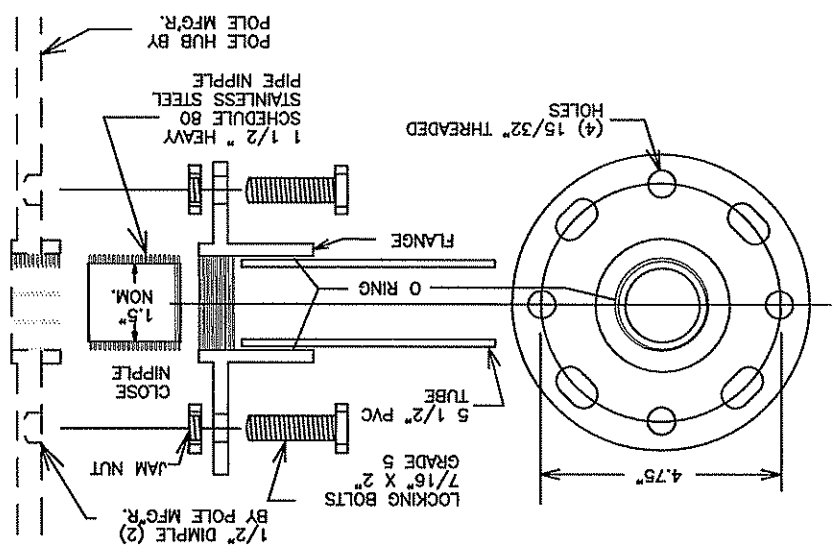
CITY OF LINO LAKES
 POLE MOUNT DETAILS
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION



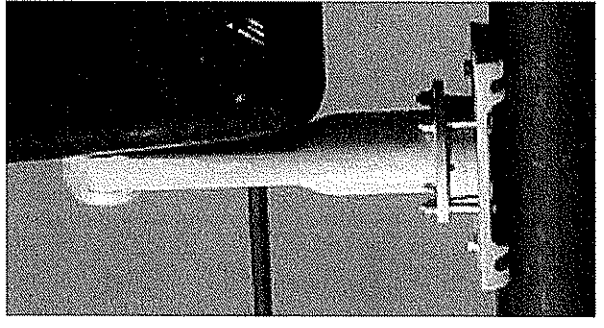
- NOTE:
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
 2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 & 5 SECTION POLY HEADS.
 3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.



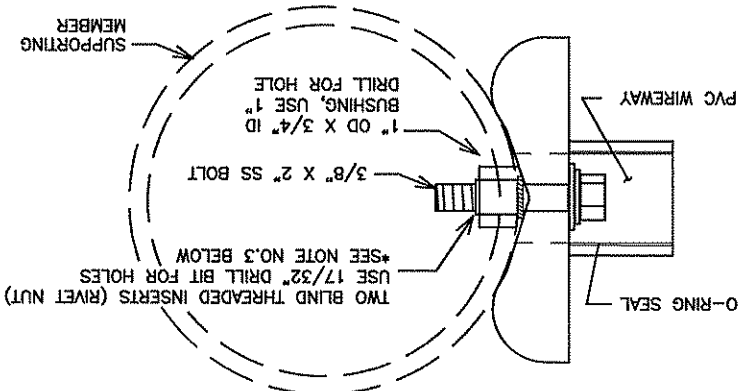
THREADED HUB AND FLANGE POLE ADAPTOR



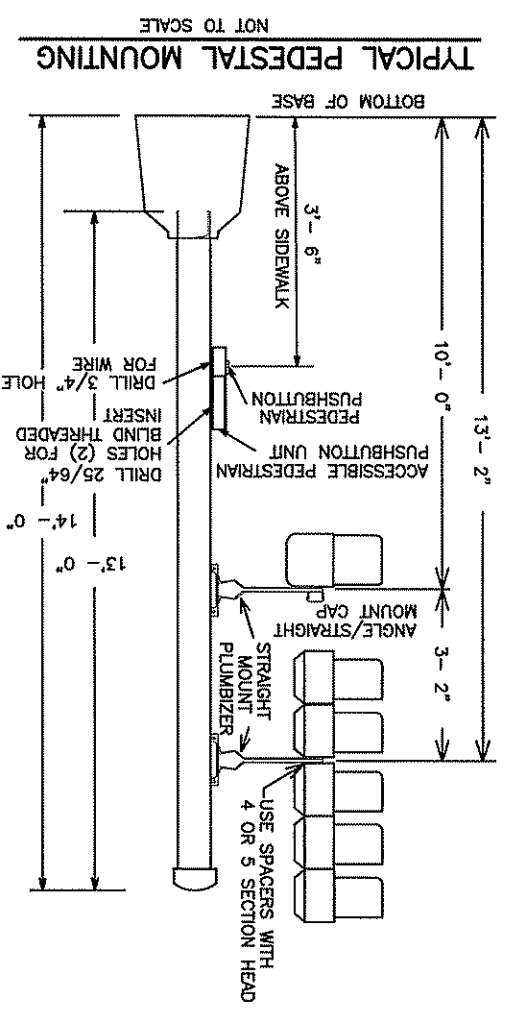
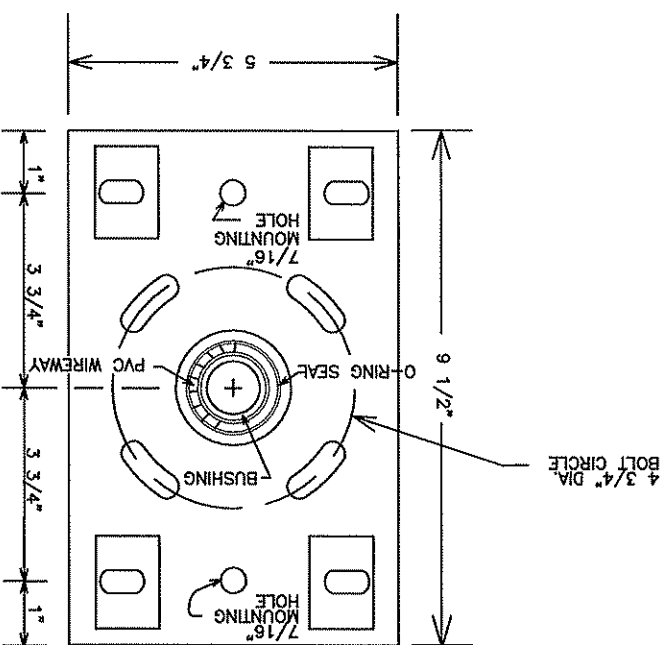
- NOTE:
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
 2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 & 5 SECTION POLY HEADS.
 3. BLIND THREADED INSERTS (RIVET NUT) MUST BE INSERTED USING MANUFACTURERS SPECIFIC INSTALLATION TOOL. NO OTHER METHOD OF INSTALLATION IS ACCEPTABLE.
 4. SEE STANDARD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



TOP VIEW

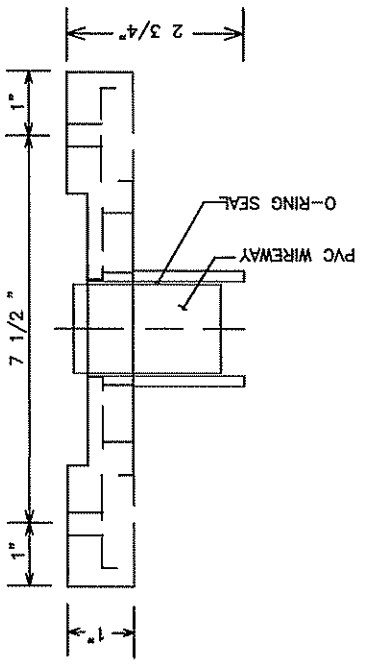


BOLT ON HUB & FLANGE



TYPICAL PEDESTAL MOUNTING

SIDE VIEW



ALL LOOP DETECTORS SHALL BE NMC UNLESS NOTED OTHERWISE.

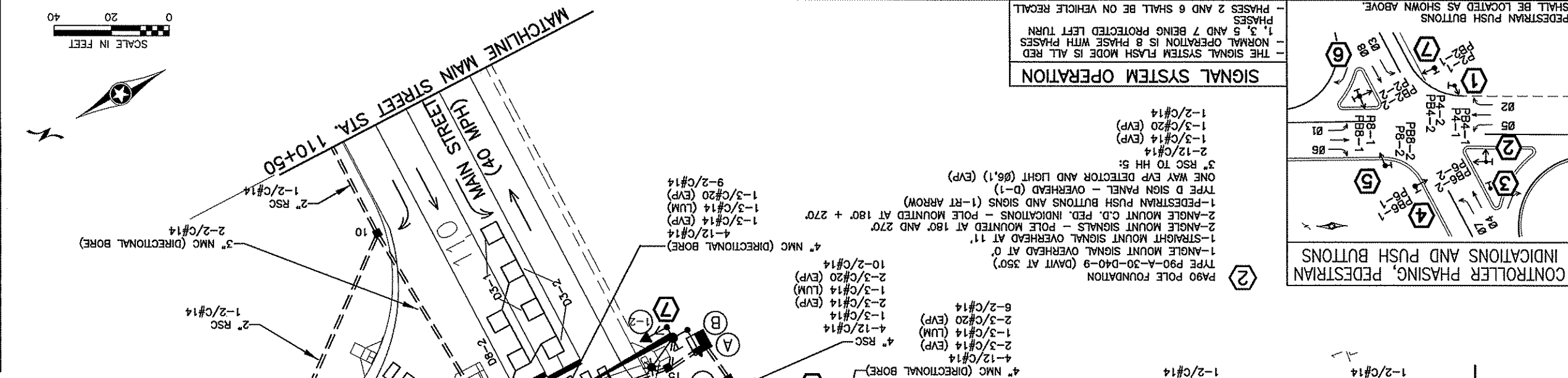
LOCATION = DISTANCE FROM STOP BAR TO FRONT OF DETECTOR IN FEET.

LOOP DETECTOR FUNCTIONS:

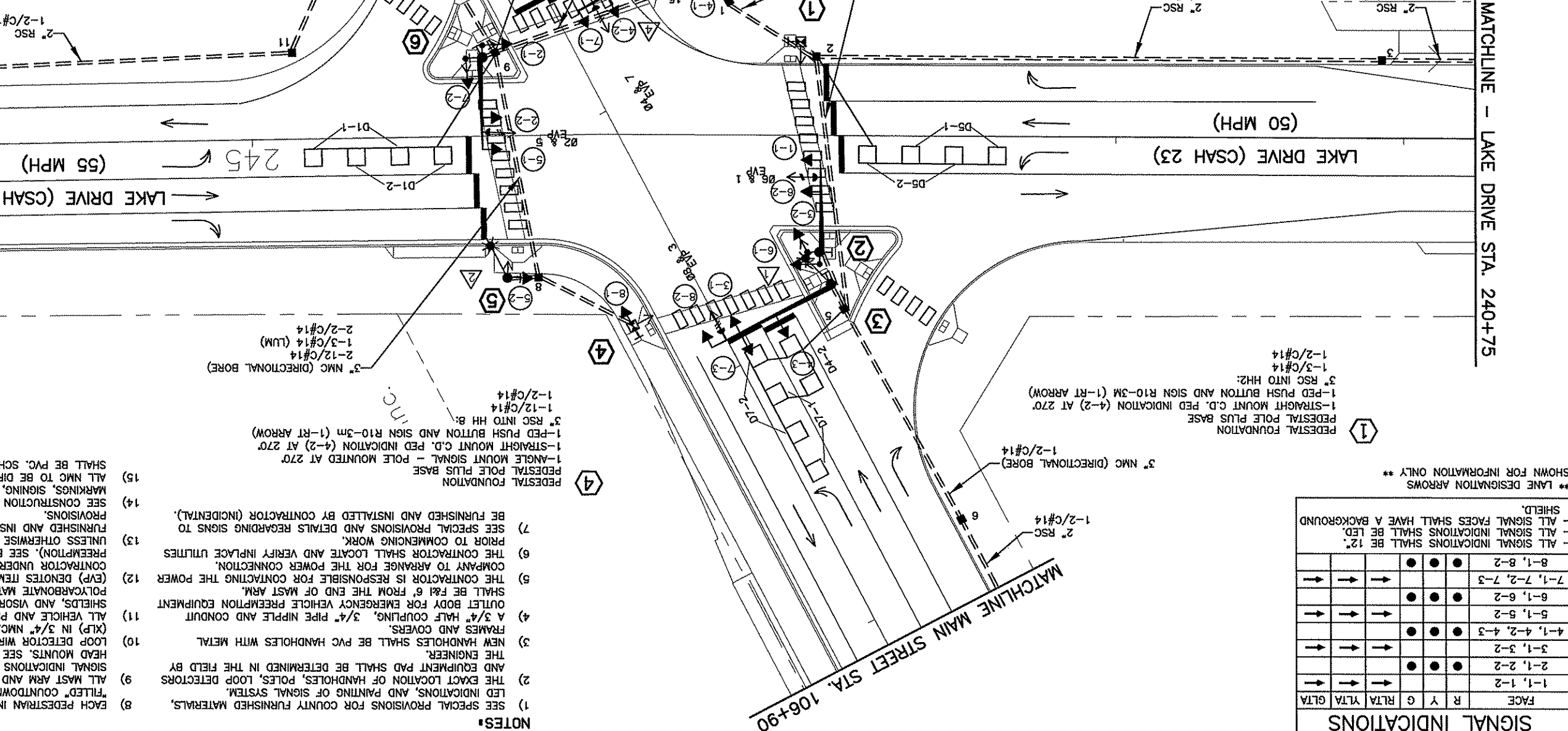
1 - CALL AND EXTEND.
3 - EXTEND ONLY.
7 - DELAY CALL, IMMEDIATE EXTEND.
8 - CARRY OVER (STRETCH).

NUMBER	SIZE (FEET)	LOCATION	FUNCTION
D1-1	2'-6"X6'	20' & 50'	1
D1-2	2'-6"X6'	5' & 35'	1
D2-1	6'X6'	400'	1
D3-1	2'-6"X6'	20' & 50'	1
D3-2	2'-6"X6'	5' & 35'	1
D4-1	6'X6'	250'	1
D4-2	2'-6"X6'	5' & 20'	1
D5-1	2'-6"X6'	20' & 50'	1
D5-2	2'-6"X6'	5' & 35'	1
D6-1	6'X6'	475'	1
D7-1	2'-6"X6'	20' & 50'	1
D7-2	2'-6"X6'	5' & 35'	1
D8-1	6'X6'	250'	1
D8-2	2'-6"X6'	5' & 20'	1

LOOP DETECTORS



- NOTES:**
- SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
 - LED INDICATIONS, AND PAINTING OF SIGNAL SYSTEM.
 - THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
 - A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PREEMPTION EQUIPMENT SHALL BE F&I 6' FROM THE END OF MAST ARM.
 - THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION.
 - THE CONTRACTOR SHALL LOCATE AND VERIFY INFRAE UTILITIES PRIOR TO COMMENCING WORK.
 - SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCIDENTAL).
 - PROVISIONS.
 - SEE CONSTRUCTION PLANS FOR MILLING AND OVERLAY, PAVEMENT MARKINGS, SIGNING, AND PEDIESTRIAN CURB RAMPS.
 - ALL NMC TO BE DIRECTIONAL BORE UNDER EXISTING ROADWAYS SHALL BE PVC. SCHEDULE 80 OR HDPE SCHEDULE 80.



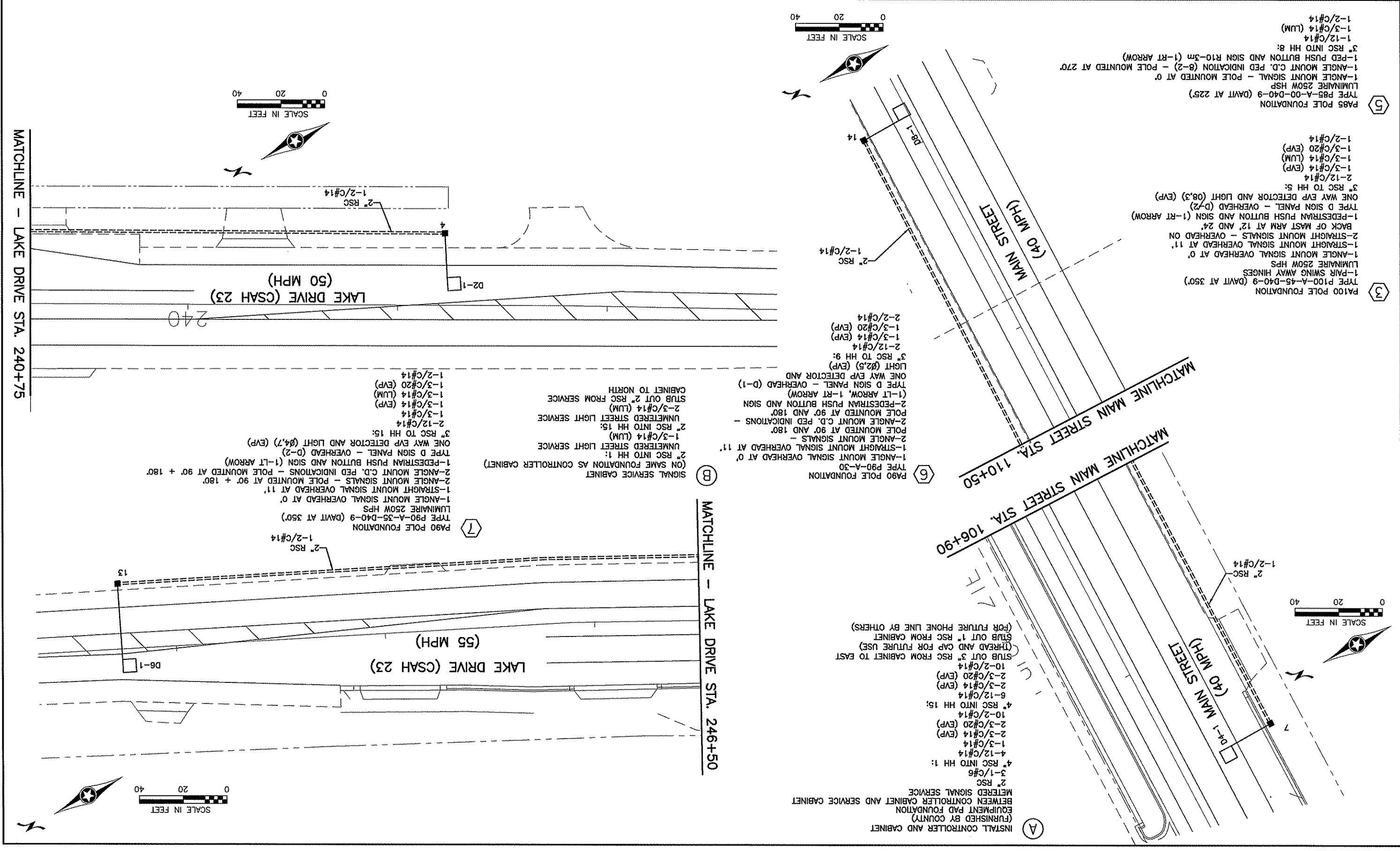
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 LIC. NO. 42802
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DATE _____ DRAWN BY _____
 DATE _____ DESIGN BY _____
 DATE _____ CHECKED BY _____
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 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.



CITY OF LINO LAKES
 LAKE/MAIN SIGNAL MATCHLINES
 SIGNAL PLAN AND DETAILS
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION

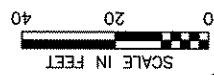
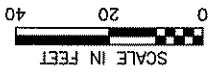
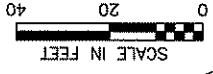
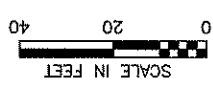


- PA100 POLE FOUNDATION
- TYPE P100-A-45-D40-9 (DAVT AT 350')
- 1-PAIR SWING AWAY HINGES
- LUMINAIRE 250W HPS
- 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
- 1-STRAIGHT MOUNT SIGNALS - OVERHEAD ON
- 2-STRAIGHT MOUNT SIGNALS - OVERHEAD AT 11'
- BACK OF MAST AT 12' AND 24'
- 1-PEDESTRIAN PUSH BUTTON AND SIGN (1-RT ARROW)
- TYPE D SIGN PANEL - OVERHEAD (D-2)
- ONE WAY EVP DETECTOR AND LIGHT (08.3) (EVP)
- 3" RSC TO HH 5;
- 2-12/C#14
- 1-3/C#14 (EVP)
- 1-3/C#14 (LUM)
- 1-3/C#14 (LUM)
- 1-3/C#20 (EVP)
- 1-2/C#14
- PA85 POLE FOUNDATION
- TYPE P85-A-00-D40-9 (DAVT AT 225')
- LUMINAIRE 250W HSP
- 1-ANGLE MOUNT SIGNAL - POLE MOUNTED AT 0'
- 1-ANGLE MOUNT C.D. PED INDICATION (8-2) - POLE MOUNTED AT 270'
- 1-PED PUSH BUTTON AND SIGN R10-5m (1-RT ARROW)
- 3" RSC INTO HH 8;
- 1-12/C#14
- 1-3/C#14 (LUM)
- 1-2/C#14

- PA90 POLE FOUNDATION
- TYPE P90-A-30
- 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
- 1-STRAIGHT MOUNT SIGNALS - OVERHEAD AT 11'
- 2-ANGLE MOUNT SIGNALS - OVERHEAD AT 90' AND 180'
- 2-ANGLE MOUNT C.D. PED INDICATIONS - OVERHEAD AT 90' AND 180'
- 2-PEDESTRIAN PUSH BUTTON AND SIGN
- (1-LT ARROW, 1-RT ARROW)
- TYPE D SIGN PANEL - OVERHEAD (D-1)
- ONE WAY EVP DETECTOR AND LIGHT (02.5) (EVP)
- 3" RSC TO HH 9;
- 2-12/C#14
- 1-3/C#14 (EVP)
- 1-3/C#14 (EVP)
- 1-3/C#20 (EVP)
- 2-2/C#14

- PA90 POLE FOUNDATION
- TYPE P90-A-35-D40-9 (DAVT AT 350')
- LUMINAIRE 250W HPS
- 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
- 1-STRAIGHT MOUNT SIGNALS - OVERHEAD AT 11'
- 2-ANGLE MOUNT SIGNALS - POLE MOUNTED AT 90' + 180'
- 2-ANGLE MOUNT C.D. PED INDICATIONS - POLE MOUNTED AT 90' + 180'
- 1-PEDESTRIAN PUSH BUTTON AND SIGN (1-LT ARROW)
- TYPE D SIGN PANEL - OVERHEAD (D-2)
- ONE WAY EVP DETECTOR AND LIGHT (04.7) (EVP)
- 3" RSC TO HH 15;
- 2" RSC INTO HH 15;
- 1-3/C#14 (LUM)
- UNMETERED STREET LIGHT SERVICE
- 2" RSC INTO HH 15;
- 2-12/C#14
- UNMETERED STREET LIGHT SERVICE
- 1-3/C#14 (EVP)
- 1-3/C#14 (EVP)
- 1-3/C#14 (LUM)
- 2-3/C#14 (LUM)
- STUB OUT 2" RSC FROM SERVICE CABINET TO NORTH

- INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)
- EQUIPMENT PAD FOUNDATION BETWEEN CONTROLLER CABINET AND SERVICE CABINET
- METERED SIGNAL SERVICE
- 2" RSC
- 3-1/C#6
- 4" RSC INTO HH 1;
- 4-12/C#14
- 1-3/C#14
- 2-3/C#14 (EVP)
- 2-3/C#20 (EVP)
- 10-2/C#14
- 4" RSC INTO HH 15;
- 6-12/C#14
- 2-3/C#14 (EVP)
- 2-3/C#20 (EVP)
- 10-2/C#14
- 4" RSC INTO HH 15;
- 10-2/C#14
- 6-12/C#14
- 2-3/C#14 (EVP)
- 2-3/C#20 (EVP)
- 10-2/C#14
- STUB OUT 3" RSC FROM CABINET TO EAST (THREAD AND CAP FOR FUTURE USE)
- STUB OUT 1" RSC FROM CABINET (FOR FUTURE PHONE LINE BY OTHERS)



MATCHLINE - LAKE DRIVE STA. 240+75

MATCHLINE - LAKE DRIVE STA. 246+50

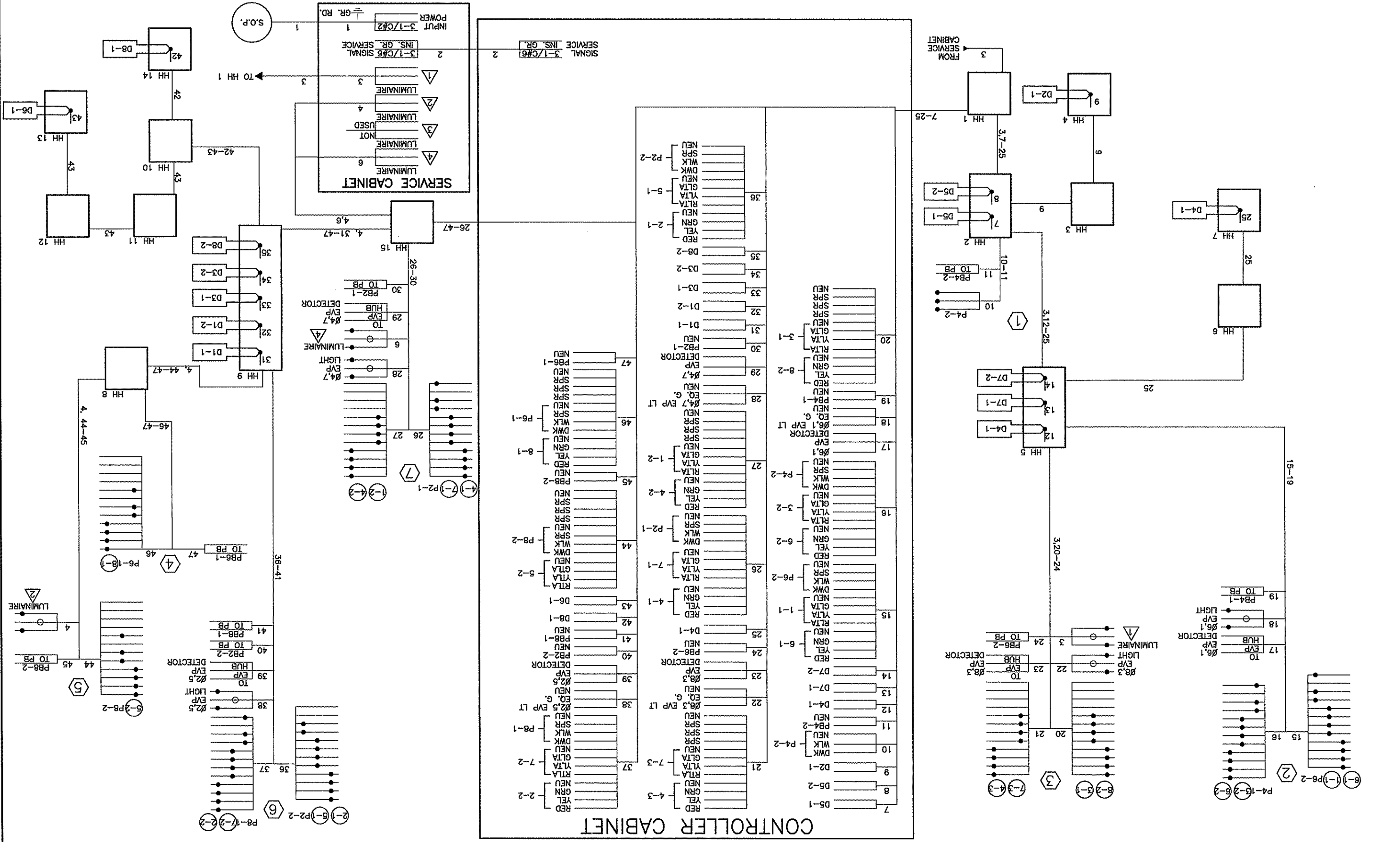
MATCHLINE MAIN STREET STA. 106+90

MATCHLINE MAIN STREET STA. 110+50

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S.A.P. 002-614-038
S.A.P. 002-623-016
TKDA Proj. 14850.000
ENGINEERING • ARCHITECTURE • PLANNING



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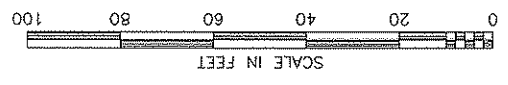
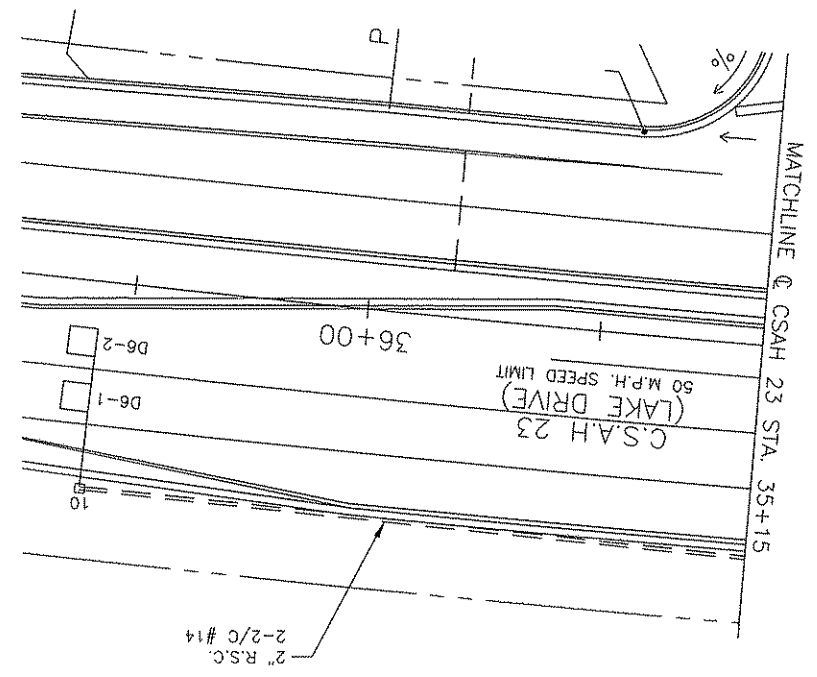
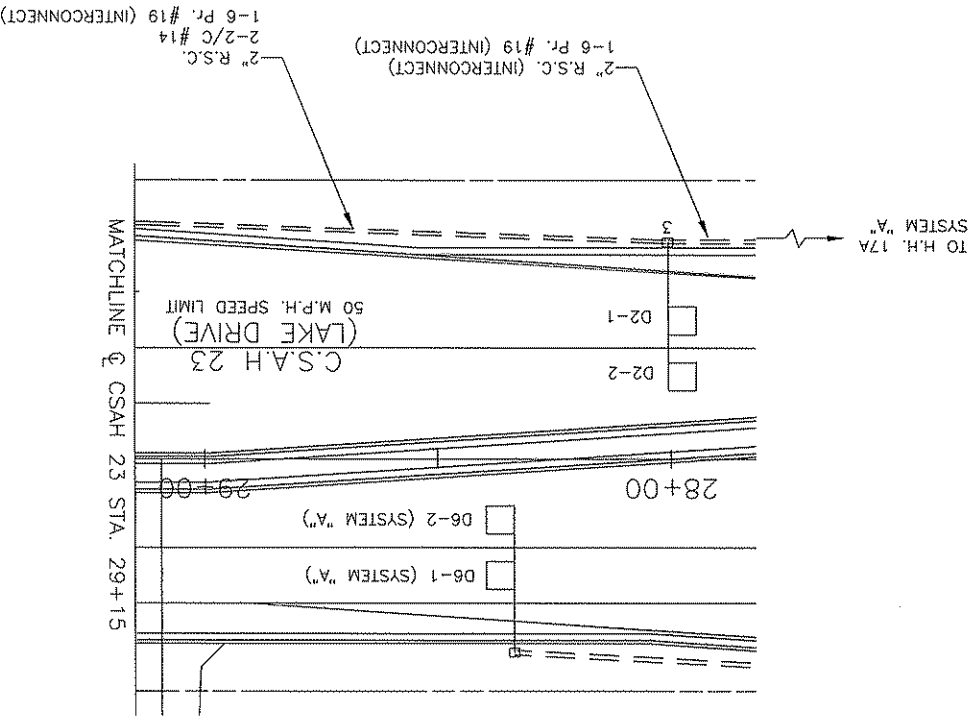
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CITY OF LINO LAKES
 LAKE/MARKETPLACE SIGNAL MATCHLINE
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION

SHEET 78 OF 65



NO	DATE	BY	CHKD	APPR	REVISION

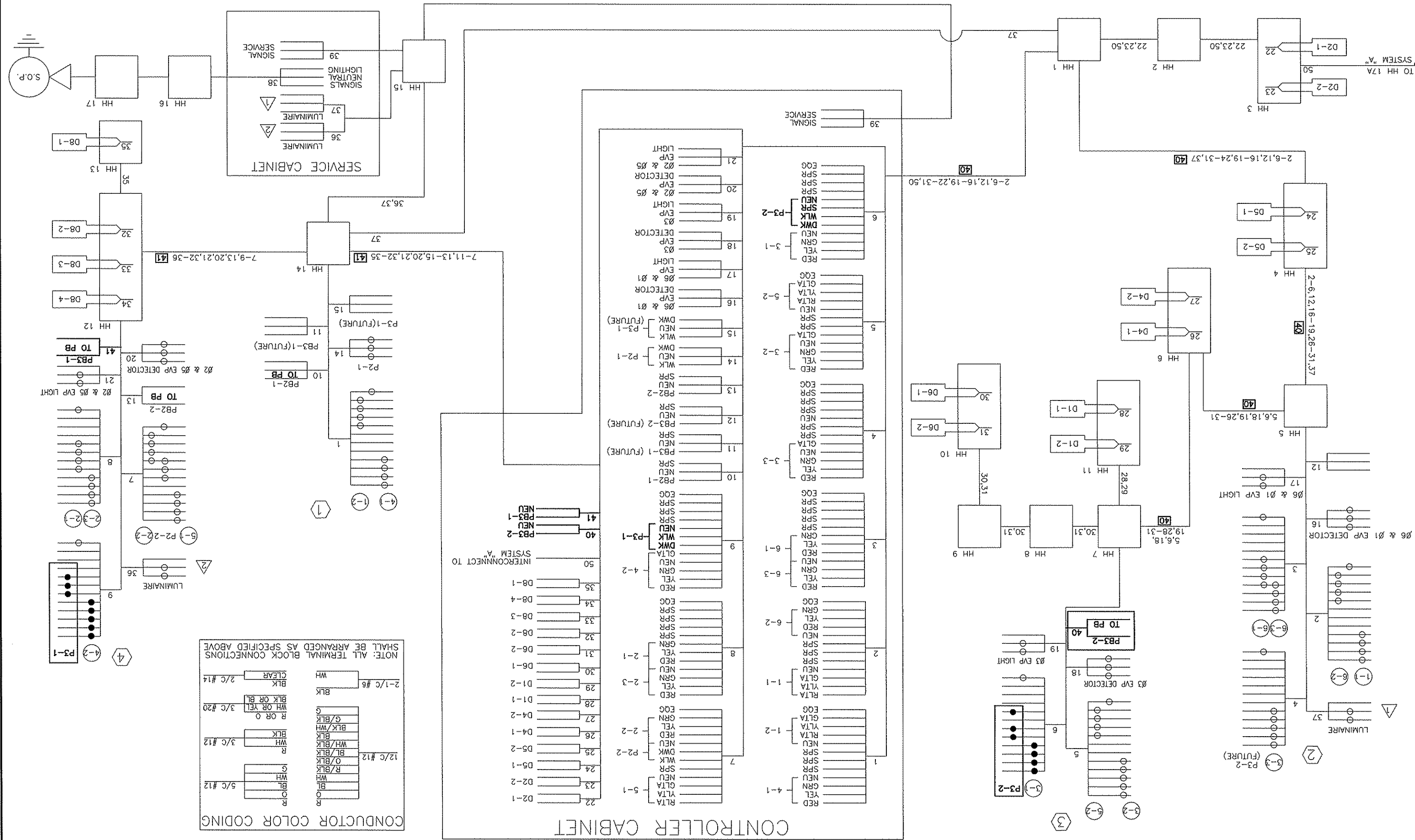
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CITY OF LINO LAKES
 LAKE/MARKETPLACE SIGNAL WIRING DIAGRAM
 LAKE DR. (CSAH 23)/MAIN ST. (CSAH 14) SIGNALIZATION
 SHEET 66 OF 78



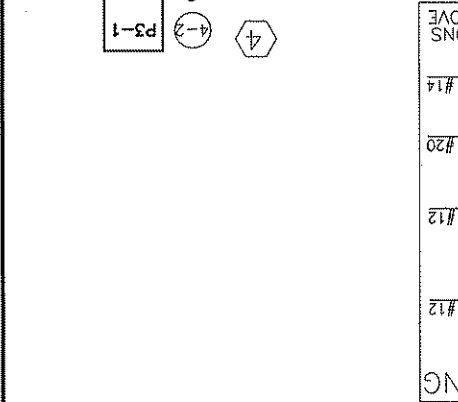
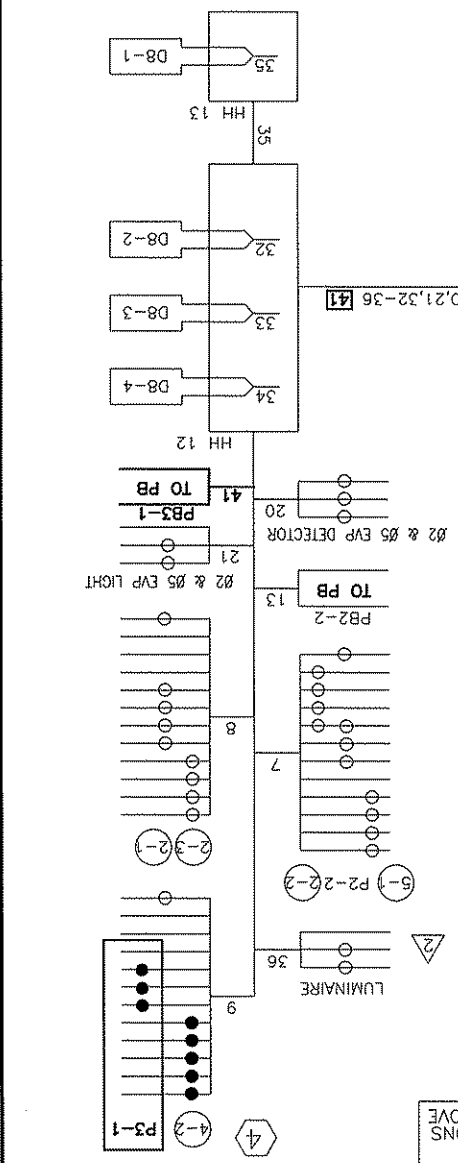
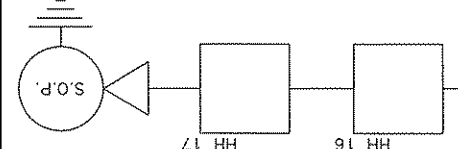
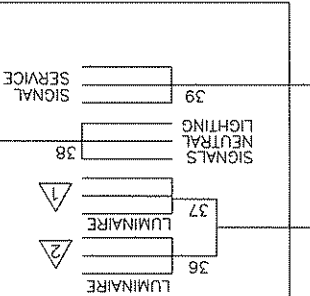
CONDUCTOR COLOR CODING

CONDUCTOR	WIRE
R	BLK
BL	WH
0	G
5/C #12	R/BLK
	WH/BLK
	BLK
	BLK/WH
	G/BLK
	BLK/WH
	R OR 0
3/C #20	WH OR YEL
	BLK OR BL
	BLK
2/C #14	CLEAR

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE

CONTROLLER CABINET

SERVICE CABINET



Plot Date: 08/01/2012
 Drawing Name: City of Lino Lakes Signal Lake Street CSAH 14
 Date: 08/01/2012
 User: jason@tkda.com

NO	DATE	BY	CHKD	APPR	REVISION

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: *James E. Studenski*
 PRINTED NAME: JAMES E. STUDENSKI
 LIC. NO. 23757
 DATE: 7/23/2012

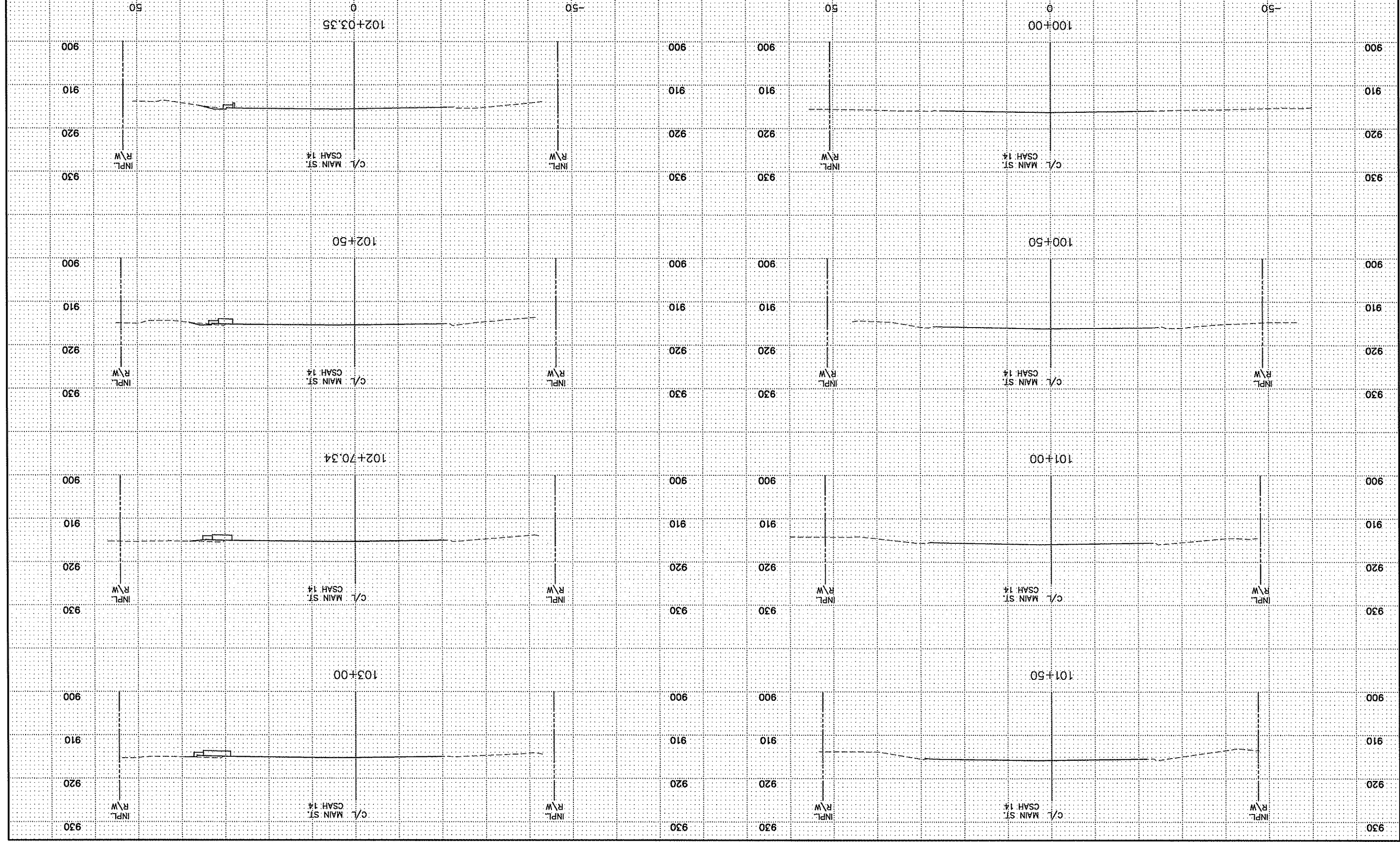
DRAWN BY: _____ DATE: _____
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____

S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
 S.P.



CITY OF LINO LAKES
 CROSS SECTIONS
 MAIN STREET (CSAH 14)
 LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

SHEET 67 OF 78



File Name: d:\work\14850\14850.dwg
Drawing Name: City of Lino Lakes
Date: 2/23/2012
User: jstuden

NO	DATE	BY	CHKD	APPR

DATE: 1/23/2012
LIC. NO. 23757
PRINTED NAME: JAMES E. STUDENSKI
SIGNATURE: *[Signature]*
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.

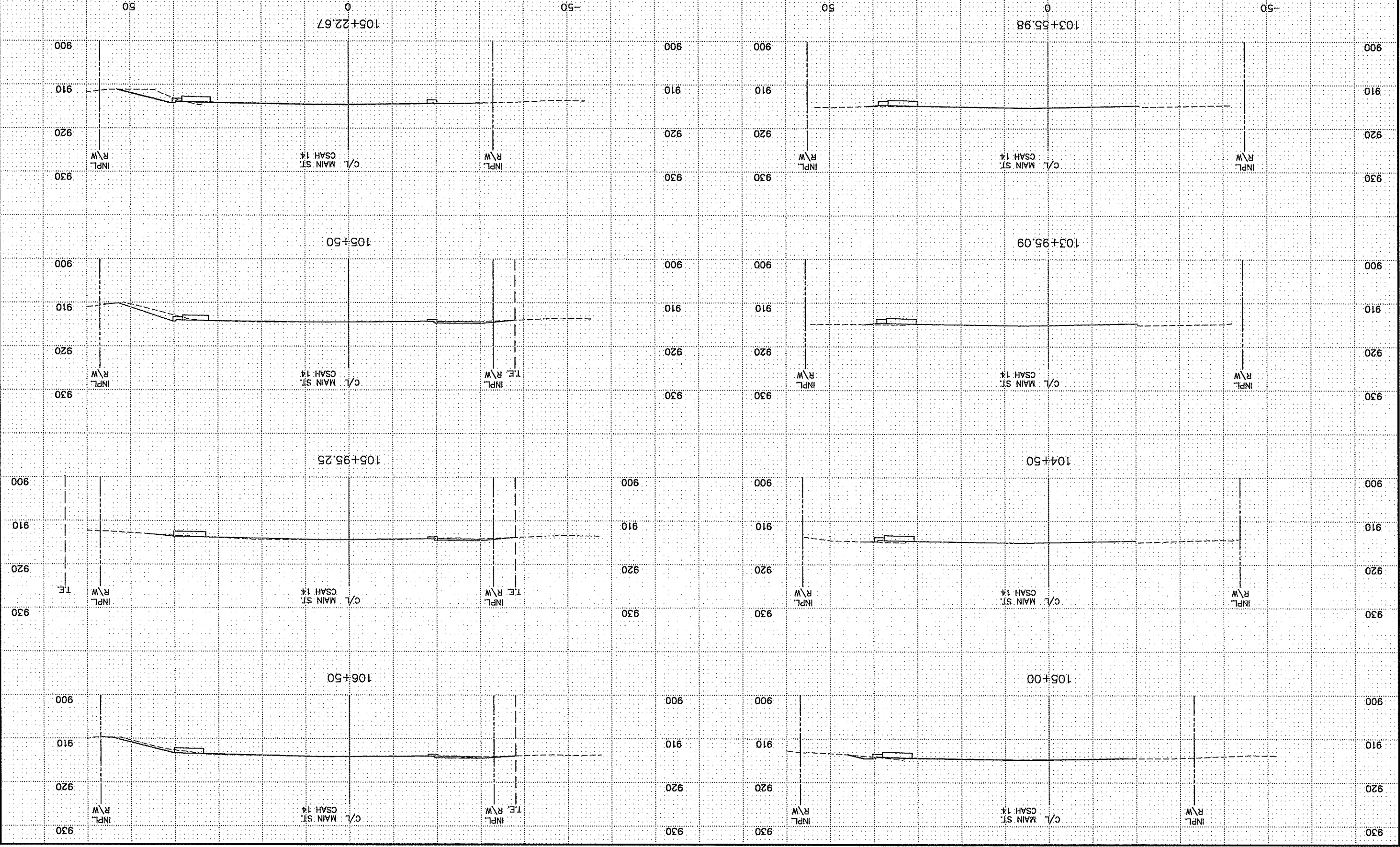
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DRAWN BY: _____
DATE: _____
DESIGN BY: _____
DATE: _____
CHECKED BY: _____
DATE: _____

S.A.P. 002-614-038
S.A.P. 002-623-016
TKDA Proj. 14850.000
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CITY OF LINO LAKES
CROSS SECTIONS
MAIN STREET (CSAH 14)
LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

SHEET 78 OF 68



NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED
 BY OR UNDER MY DIRECT SUPERVISION AND THAT
 I AM A DULY LICENSED PROFESSIONAL ENGINEER
 UNDER THE LAWS OF THE STATE OF MINNESOTA.
 SIGNATURE: *James E. Studenski*
 PRINTED NAME: JAMES E. STUDENSKI
 L.I.C. NO. 23757
 DATE: 7/23/2012

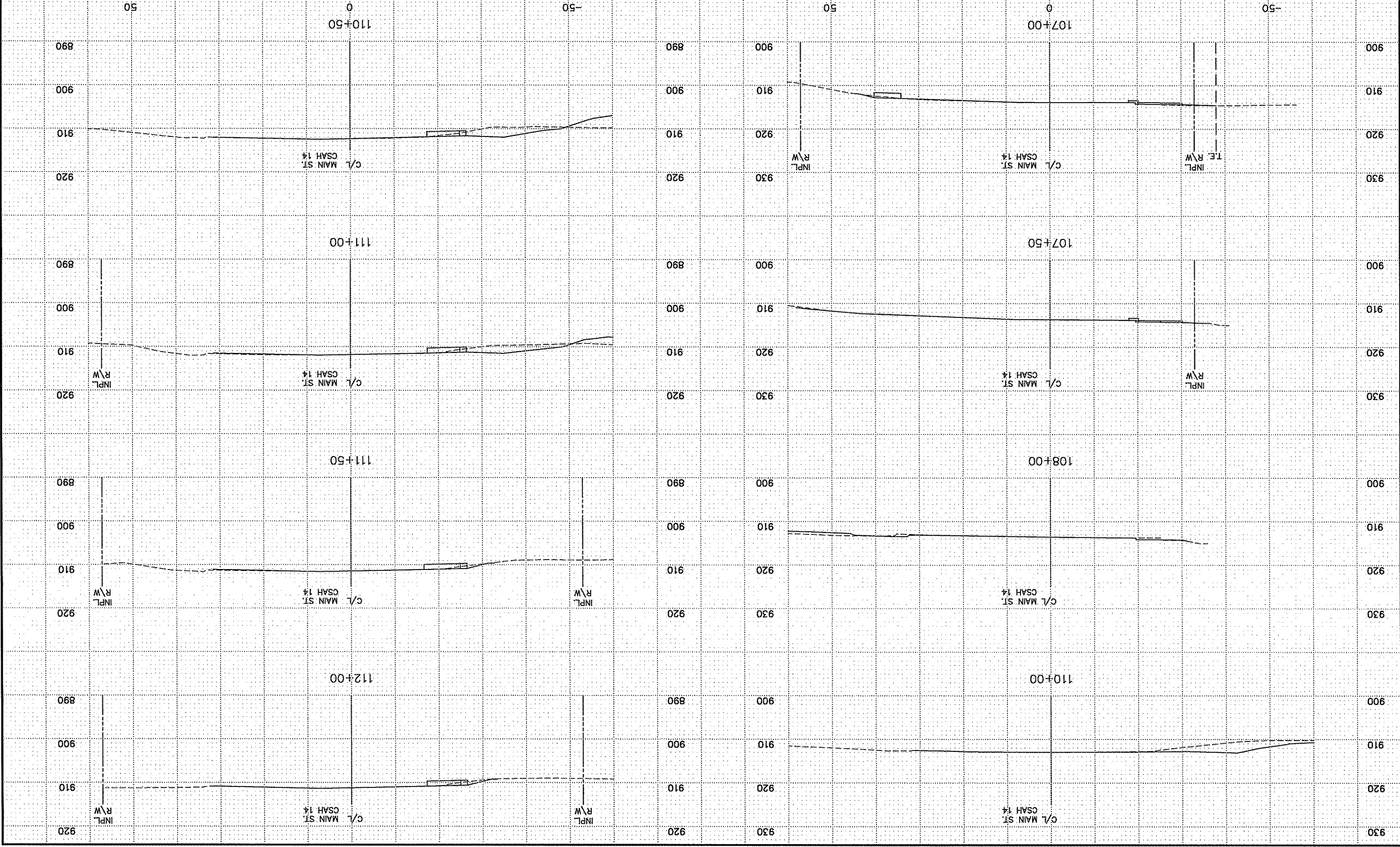
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 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____

S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000
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CITY OF LINO LAKES
 CROSS SECTIONS
 MAIN STREET (CSAH 14)
 LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

SHEET
 OF
 69
 78



Plot Date: 08/02/2012
 User: jstuden
 Project: LAKES DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION
 Job: 14850.000
 User: jstuden
 Project: LAKES DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION
 Job: 14850.000

NO	DATE	BY	CHKD	APPR	REVISION

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: *[Signature]*
 PRINTED NAME: JAMES E. STUDENSKI
 LIC. NO. 23157
 DATE: 7/23/2012

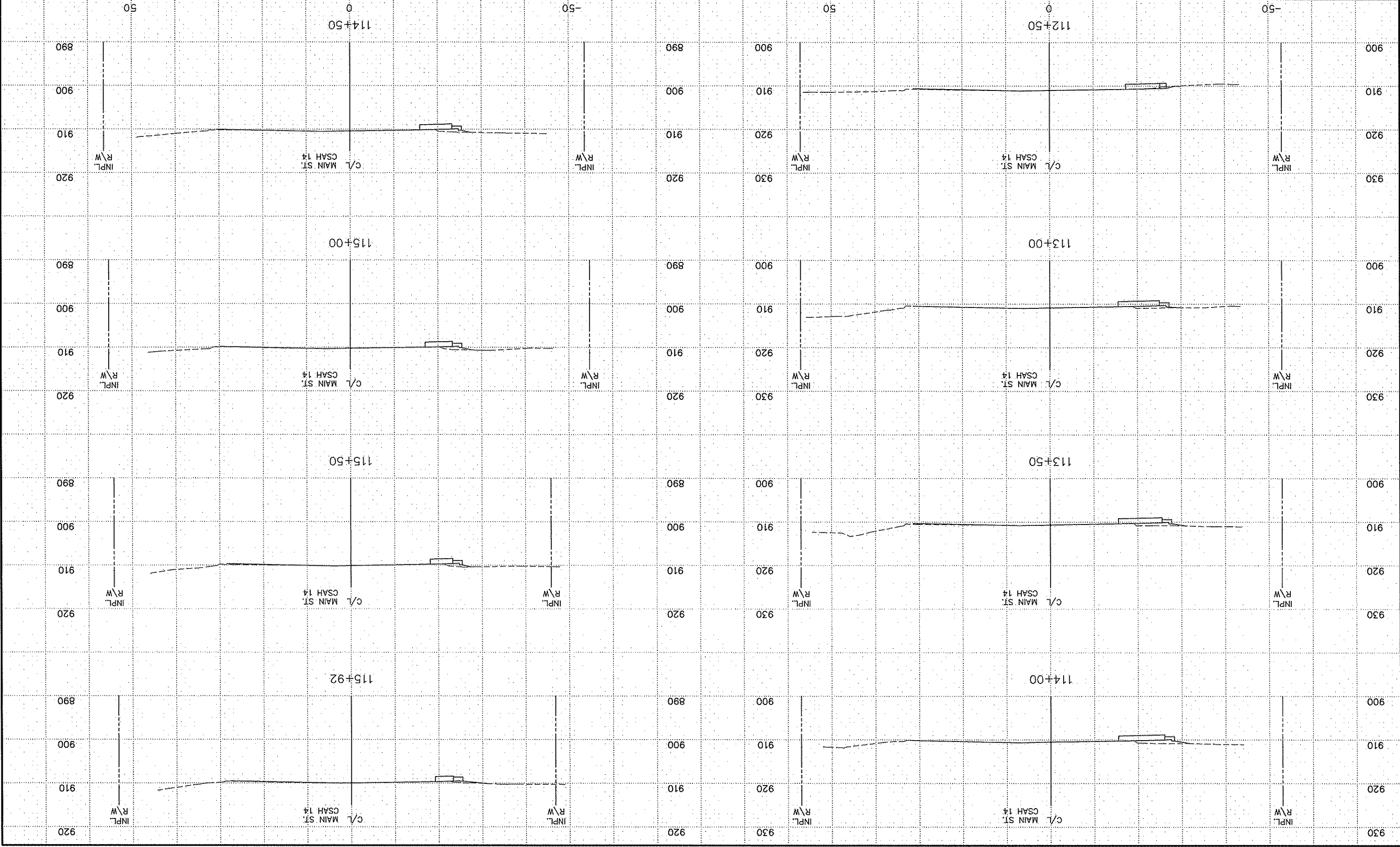
DATE _____ DRAWN BY _____
 DATE _____ DESIGN BY _____
 DATE _____ CHECKED BY _____
 S.P. _____

S.A.P. 002-614-038
 S.A.P. 002-623-016
 TKDA Proj. 14850.000



CITY OF LINO LAKES
 CROSS SECTIONS
 MAIN STREET (CSAH 14)
 LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

SHEET 70 OF 78



NO	DATE	BY	CHKD	APPR	REVISION

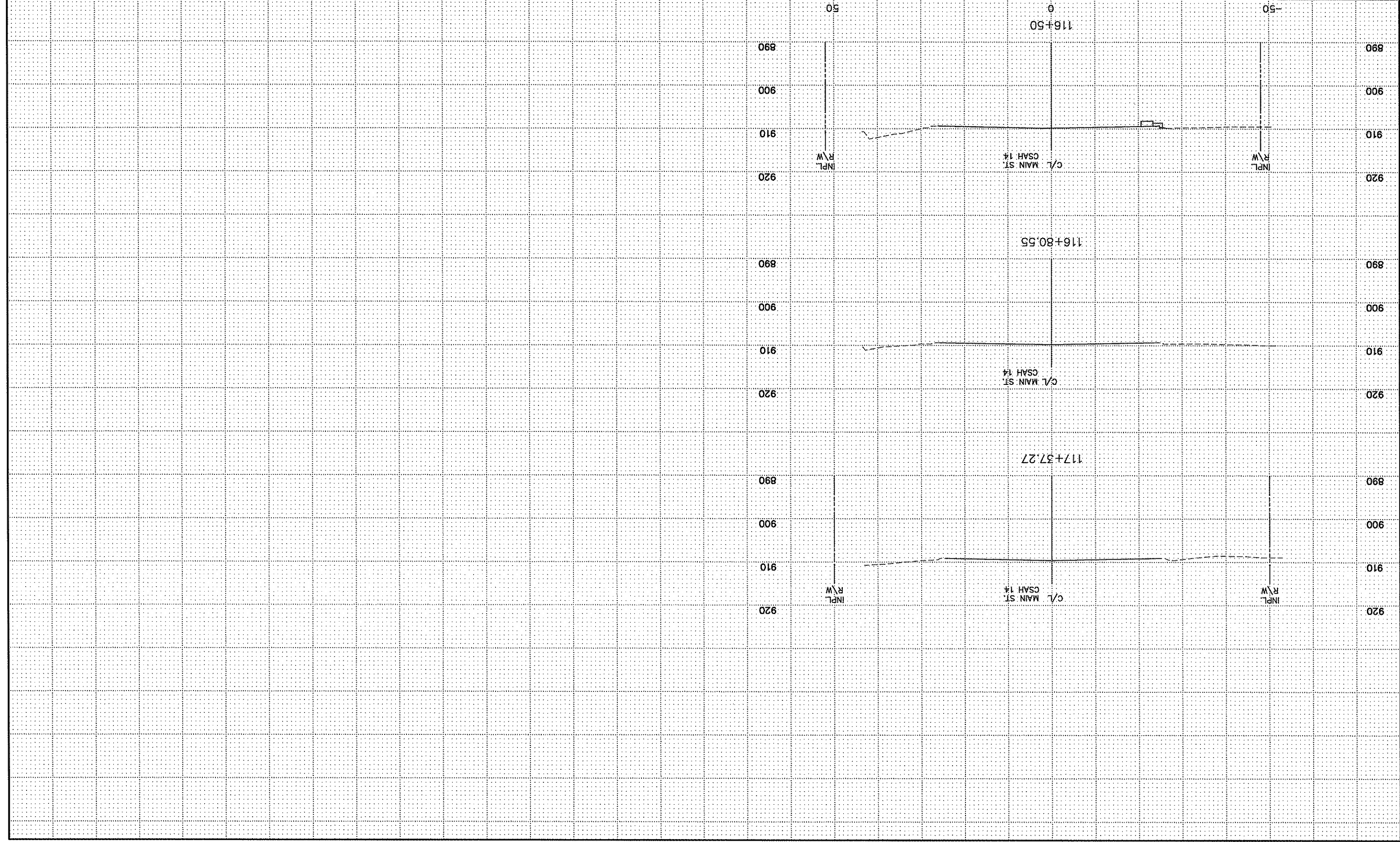
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNATURE: *James E. Studenski*
PRINTED NAME: JAMES E. STUDENSKI
LIC. NO. 23757
DATE: 7/23/2012

DRAWN BY: _____ DATE: _____
DESIGN BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____

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S.A.P. 002-623-016
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CITY OF LINO LAKES
CROSS SECTIONS
MAIN STREET (CSAH 14)
LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION



Plot Date: 08/01/2012
Drawing Name: City of Lindo Lakes Signal Lake Drive (CSAH 23) Signal Lake Drive (CSAH 23) Signal Lake Drive (CSAH 23) Signal Lake Drive (CSAH 23)
Drawing Path: C:\Users\james_e_studenski\Desktop\Signal Lake Drive (CSAH 23) Signal Lake Drive (CSAH 23) Signal Lake Drive (CSAH 23) Signal Lake Drive (CSAH 23)

NO	DATE	BY	CHKD	APPR	REVISION

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: *James E. Studenski*
PRINTED NAME: JAMES E. STUDENSKI
LIC. NO. 23757
DATE: 7/23/2012

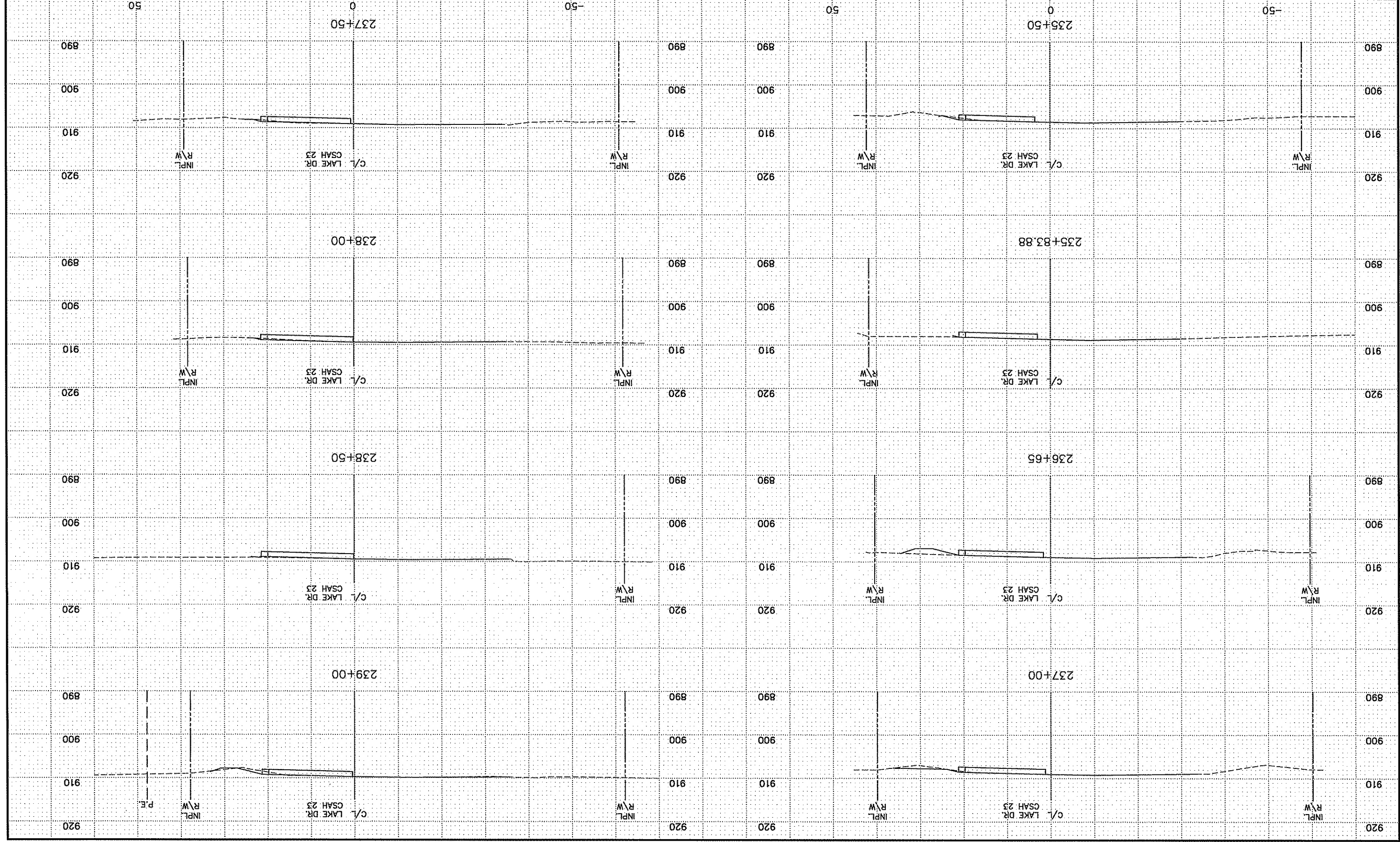
DATE _____ DRAWN BY _____
DATE _____ DESIGN BY _____
DATE _____ CHECKED BY _____

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S.A.P. 002-623-016
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CITY OF LINDO LAKES
CROSS SECTIONS
LAKE DRIVE (CSAH 23)
LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

SHEET 73 OF 78



Plot Date: 08/01/2012
X:\projects\2012\08\12\080808\plan\0201\0201.dwg
X:\projects\2012\08\12\080808\plan\0201\0201.dwg

NO	DATE	BY	CHKD	APPR	REVISION

DATE: 7/23/2012
LIC. NO. 23757
PRINTED NAME: JAMES E. STUDESKI
SIGNATURE: *[Signature]*
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.

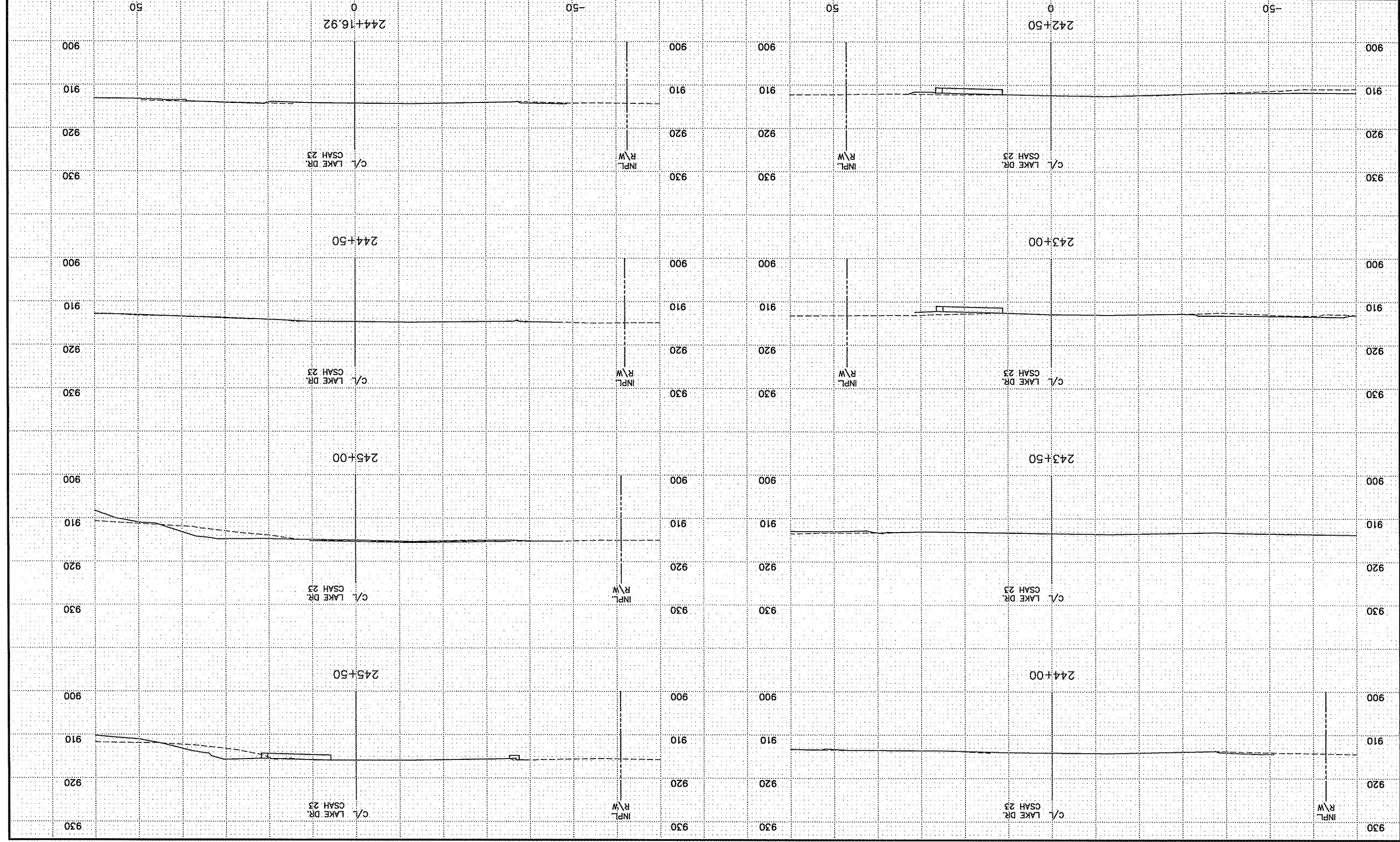
DATE: _____
DRAWN BY: _____
DATE: _____
DESIGN BY: _____
DATE: _____
CHECKED BY: _____
DATE: _____

S.A.P. 002-614-038
S.A.P. 002-623-016
TKDA Proj. 14850.000
S.P.



CITY OF LINO LAKES
CROSS SECTIONS
LAKE DRIVE (CSAH 23)
LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

SHEET 75 OF 78



P:\06\12012\12012.dwg
 User: jstuden
 Date: 1/23/2012 10:53:00 AM
 Plot Date: 1/23/2012 10:53:00 AM
 Plot Scale: 1:1
 Plot Style: acad.ctb
 Plot Device: HP DesignJet 50

NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED
 BY AN OREGON LICENSED PROFESSIONAL ENGINEER
 UNDER THE LAWS OF THE STATE OF MINNESOTA.
 SIGNATURE: *James E. Studenski*
 PRINTED NAME: JAMES E. STUDENSKI
 LIC. NO. 23157
 DATE: 1/23/2012

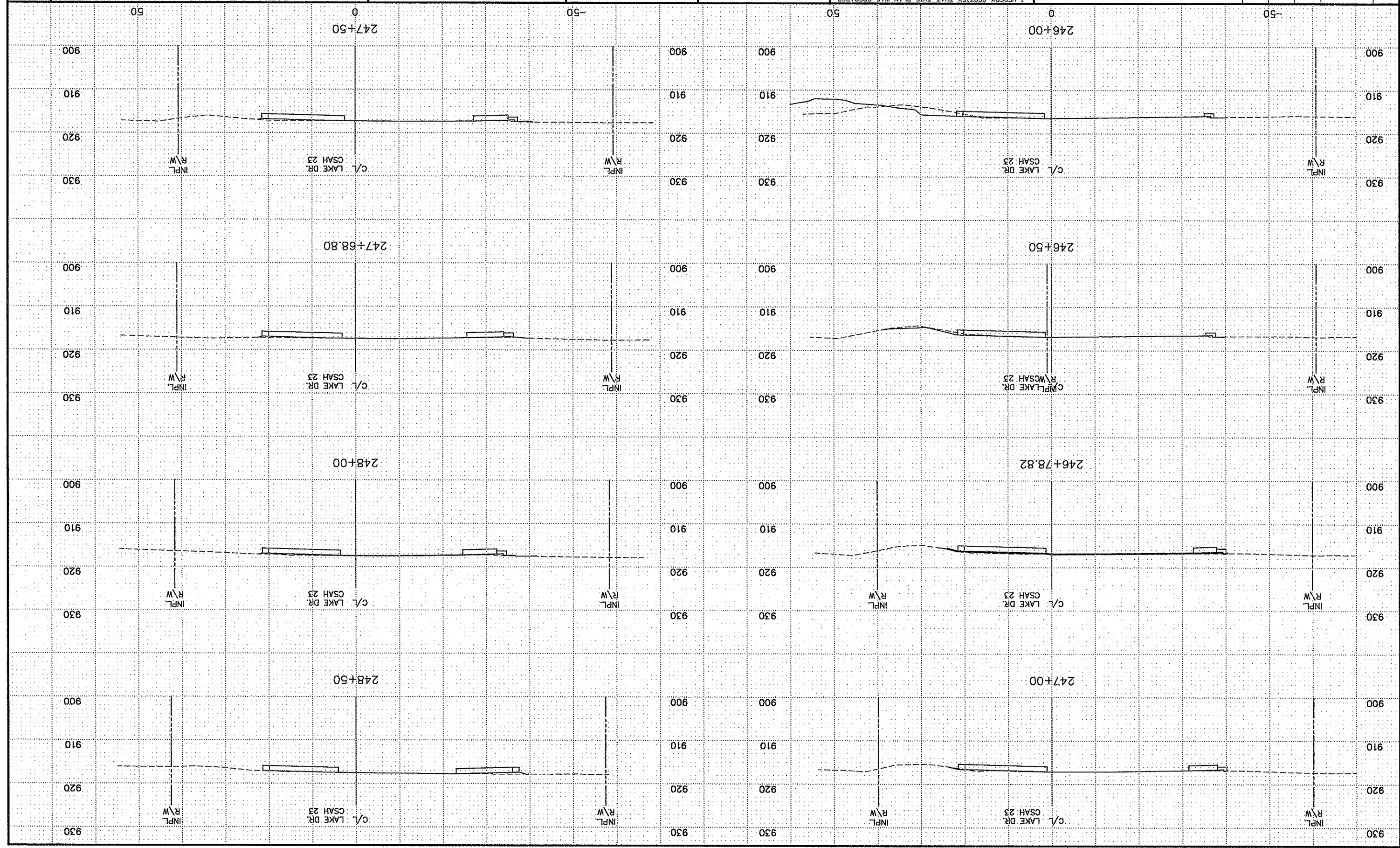
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 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____

S.A.P. 002-614-038
 S.A.P. 002-623-016
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CITY OF LINO LAKES
 CROSS SECTIONS
 LAKE DRIVE (CSAH 23)
 LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

SHEET
 76
 OF
 78



File Date: 08/01/2012
C:\Users\james\Documents\2012\City of Lino Lakes\23\Signal\2304\2304.dwg
User: jstudencki
Scale: 3200x1000
Plot Date: 08/01/2012
Plot Time: 10:55:33 AM
Printer: HP DesignJet 2400

NO	DATE	BY	CHKD	APPR	REVISION

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: *James E. Studenski*
PRINTED NAME: JAMES E. STUDENSKI
LIC. NO. 23797
DATE: 7/23/2012

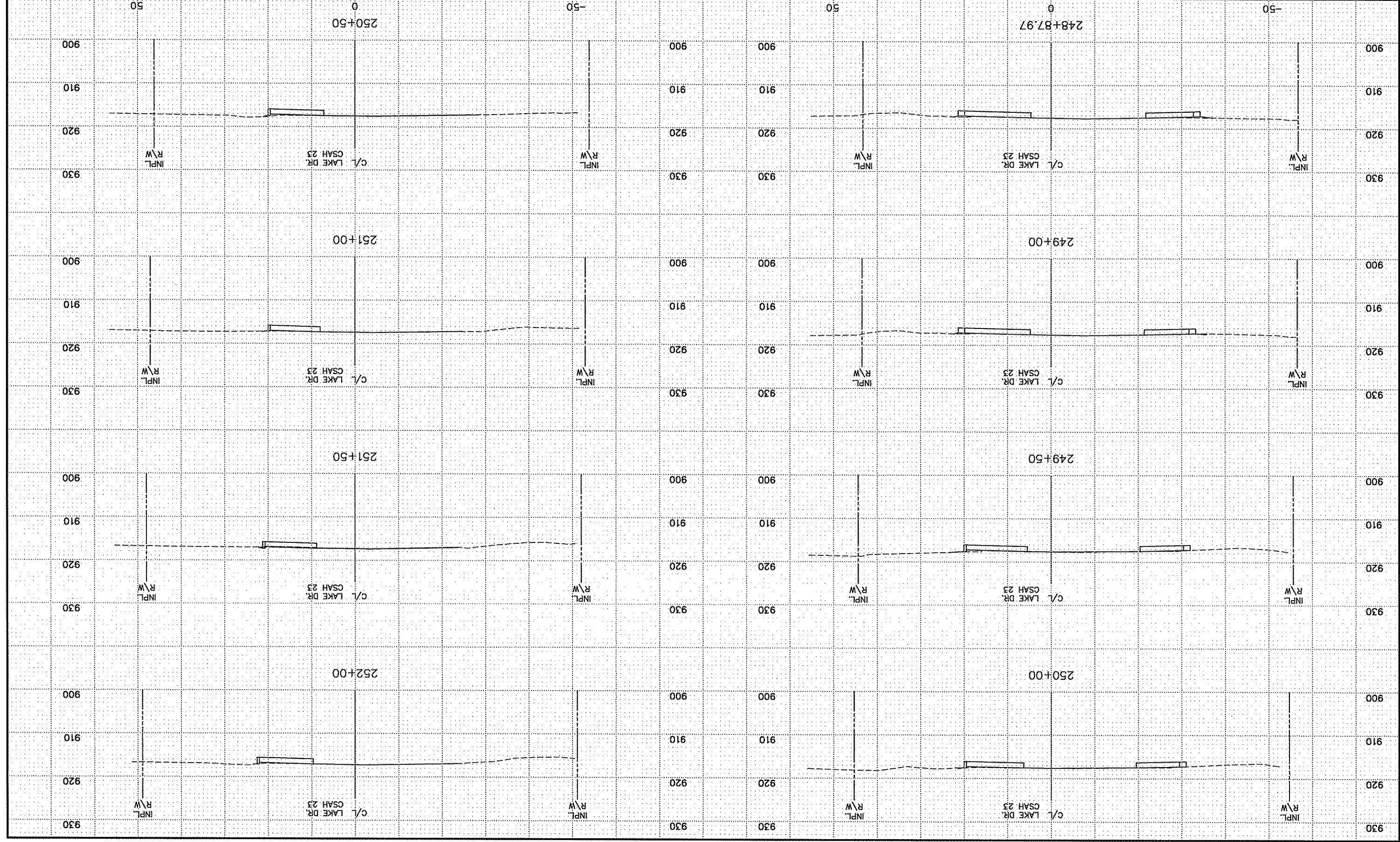
DRAWN BY: _____ DATE: _____
DESIGN BY: _____ DATE: _____
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S.A.P. 002-614-038
S.A.P. 002-623-016
TKDA Proj. 14850.000
S.P.



CITY OF LINO LAKES
CROSS SECTIONS
LAKE DRIVE (CSAH 23)
LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

77
OF
78
SHEET



File Path: 04/01/2012
C:\Users\james\Documents\2011\Signal Lake\Sheet\252+50.dwg
Date: 04/01/2012 10:58:58 AM
User: james

NO	DATE	BY	CHKD	APPR	REVISION

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: *[Signature]*
PRINTED NAME: JAMES E. STODENSKI
LIC. NO. 23757
DATE: 7/23/2012

DRAWN BY: _____ DATE: _____
DESIGN BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____

S.A.P. 002-614-038
S.A.P. 002-623-016
TKDA Proj. 14850.000
S.P. _____



CITY OF LINO LAKES
CROSS SECTIONS
LAKE DRIVE (CSAH 23)
LAKE DR (CSAH 23)/MAIN ST (CSAH 14) SIGNALIZATION

SHEET 78 OF 78

