

**PRELIMINARY**  
SUBJECT TO CHANGE

# CITY OF BROOKLYN PARK

HENNEPIN COUNTY, MINNESOTA  
PLANS FOR:

## 94TH AVENUE NORTH AND COLORADO AVENUE NORTH CAPITAL IMPROVEMENT NO. 4022-15

### GOVERNING SPECIFICATIONS

THE 2016 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

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

CITY OF BROOKLYN PARK STANDARD SPECIFICATION FOR UTILITY AND STREET CONSTRUCTION 2016.

### PLAN SYMBOLS

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

### UTILITY SYMBOLS

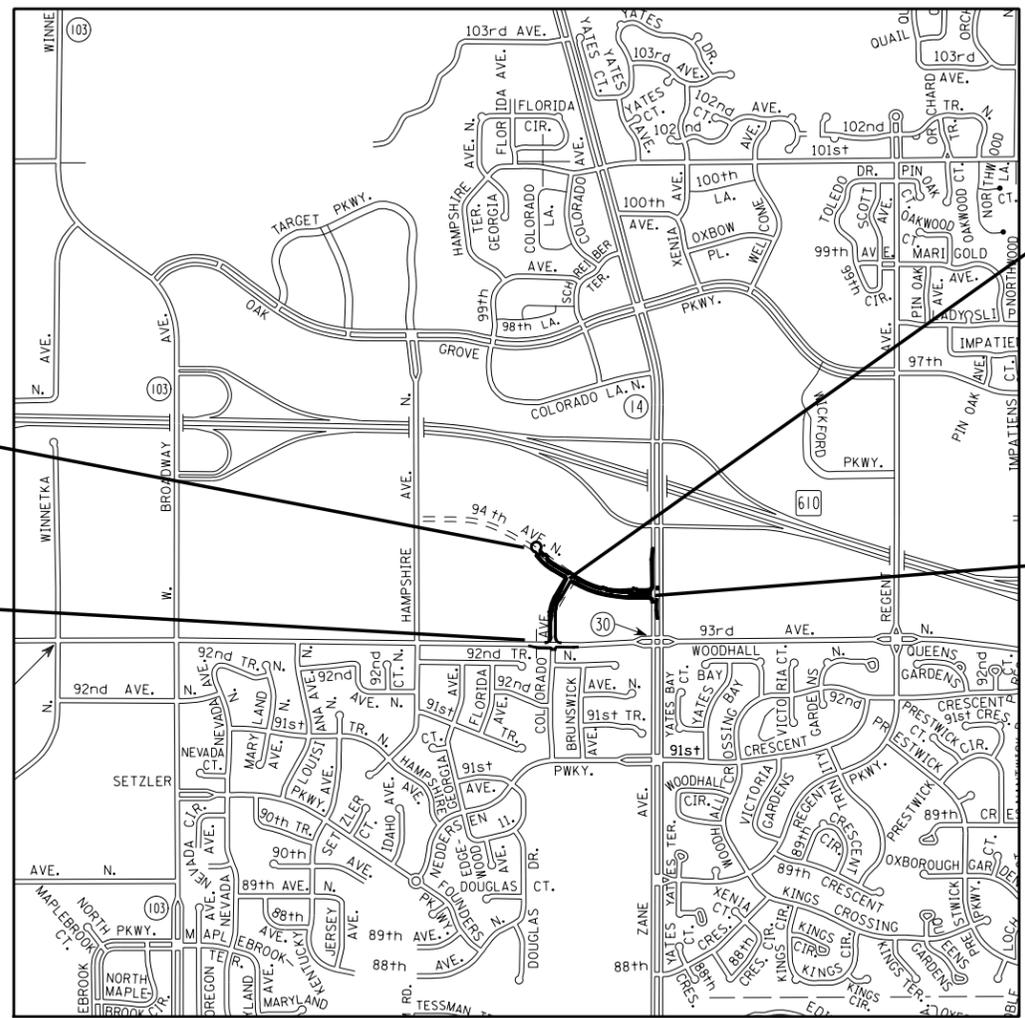
- POWER POLE LINE
- TELEPHONE OR TELEGRAPH POLE LINE
- JOINT TELEPHONE AND POWER ON POWER POLES
- ON TELEPHONE POLES
- ANCHOR
- STEEL TOWER
- STREET LIGHT
- PEDESTAL TELEPHONE CABLE TERMINAL
- GAS MAIN
- WATER MAIN
- CONDUIT
- TELEPHONE CABLE IN CONDUIT
- ELECTRIC CABLE IN CONDUIT
- TELEPHONE MANHOLE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

BEGIN C.I.P. 4022-15  
94TH AVE N  
ROAD STA. 12+85.60

BEGIN C.I.P. 4022-15  
COLORADO AVE N  
ROAD STA. 100+23.15

END C.I.P. 4022-15  
COLORADO AVE N  
ROAD STA. 107+64.90

END C.I.P. 4022-15  
94TH AVE N  
ROAD STA. 29+67.70



SCALE  
INDEX MAP 1000'



PROJECT LOCATION  
COUNTY : HENNEPIN  
DISTRICT : METRO

### DESIGN DESIGNATION FOR:

	94TH AVE N	COLORADO AVE N
R-VALUE	50	50
ADT (Current Year) 2016 =	6,300	2,900
ADT (Future Year) 2036 =	7,200	6,700
PAVEMENT DESIGN	10 TON	10 TON
FUNCTIONAL CLASSIFICATION	LOCAL	LOCAL
NO. OF TRAFFIC LANES	2	2
NO. OF PARKING LANES	NA	NA
ESALS (20)	849,000 (20 YRS.)	640,000 (20 YRS.)
Design Speed	30 MPH	30 MPH
Based on Sight Distance	STOPPING	STOPPING
Height of eye / Height of Object	3.5' / 2.0'	3.5' / 2.0'
Design Speed not achieved at:	NA	NA

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

SHEET NO.	SHEET DESCRIPTION
1	TITLE SHEET
2	GENERAL LAYOUT
3	STATEMENT OF ESTIMATED QUANTITIES
4	CONSTRUCTION/SOILS NOTES AND STANDARD PLATES
5	EARTHWORK SUMMARY, BALANCE, AND TABULATIONS
6	TABULATIONS
7-9	TYPICAL SECTIONS
10-23	STANDARD PLAN SHEETS
#-#	STAGING AND TRAFFIC CONTROL PLANS
24-25	ALIGNMENT PLANS AND TABULATIONS
26-27	TOPOGRAPHY AND UTILITY PLANS
28-29	REMOVAL PLANS
30-31	CONSTRUCTION PLANS
#-#	INTERSECTION DETAILS
32	PROFILES
33-34	DRAINAGE PLANS
35-41	STORM SEWER TABULATIONS, PROFILES AND DETAILS
42-44	STORM WATER POLLUTION PREVENTION PLAN
45-46	EROSION CONTROL AND TURF ESTABLISHMENT PLANS
47-56	SIGNING AND STRIPING PLAN AND DETAILS
57	LANDSCAPE PLANS
58-60	CONTOUR PLANS
61-98	CROSS SECTIONS

THIS PLAN CONTAINS 98 SHEETS



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

SIGNATURE \_\_\_\_\_  
DATE XX/XX/XX LIC. NO. 41327 PRINT NAME STEVEN J. MILLER

### CITY OF BROOKLYN PARK ENGINEERING SERVICES DIVISION

Brooklyn Park 5200 85TH AVE. N.  
BROOKLYN PARK, MN. 55443  
PH# 763/493-8100  
FAX# 763/493-8391

RECOMMENDED FOR APPROVAL ..... CITY ENGINEER, CITY OF BROOKLYN PARK ..... 20...16.....

RECOMMENDED FOR APPROVAL ..... HENNEPIN COUNTY DIRECTOR, TRANSPORTATION DEPARTMENT AND COUNTY ENGINEER ..... 20...16.....

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

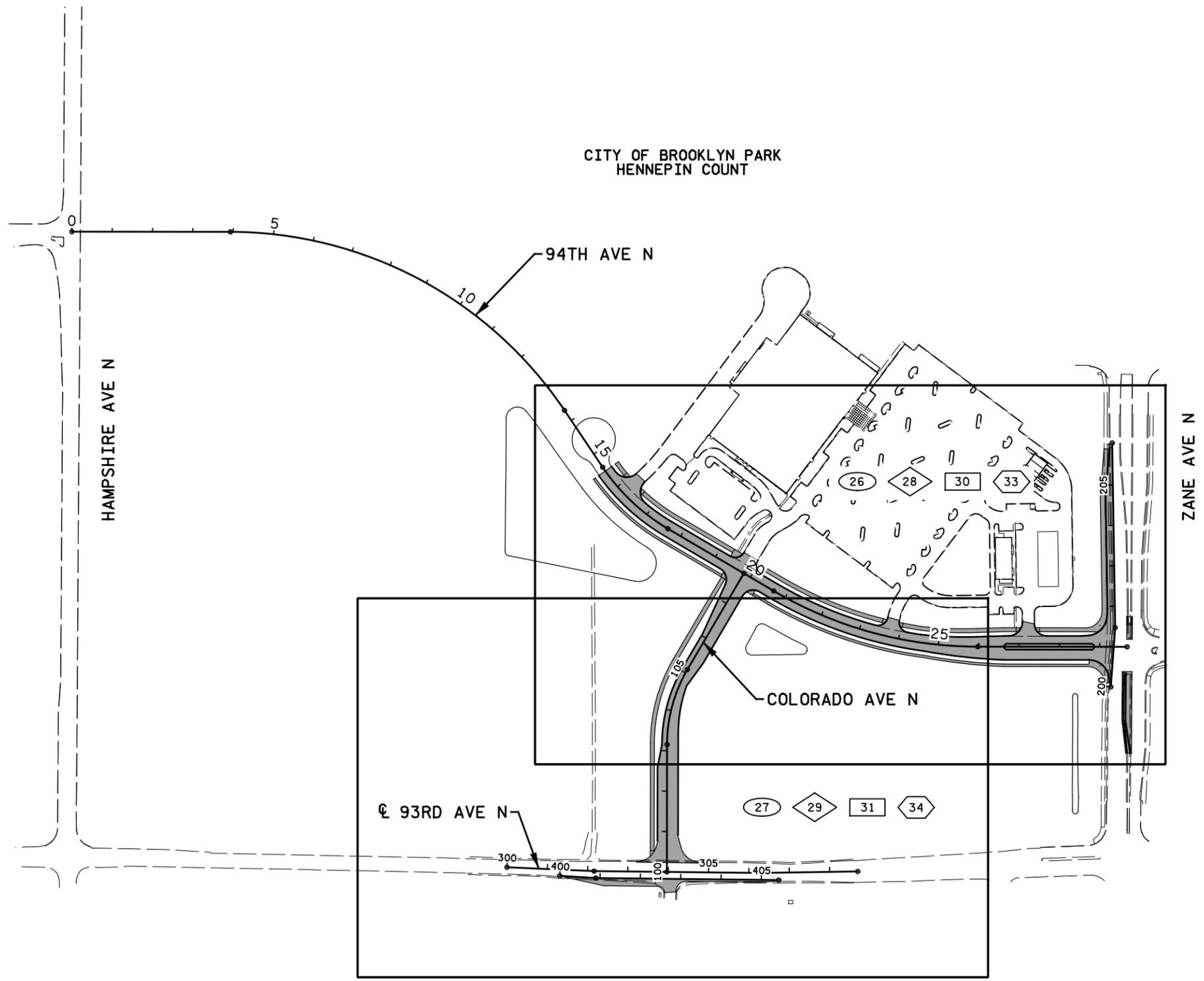
THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO GUIDELINES OF CI/ASCE 38-02. ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".



0 150 300  
scale in feet

CITY OF BROOKLYN PARK  
HENNEPIN COUNTY

LEGEND	
(XXX)	TOPOGRAPHY AND UTILITY PLAN SHEET NO.
◇(XXX)	REMOVAL PLAN SHEET NO.
□(XXX)	CONSTRUCTION PLAN SHEET NO.
⬡(XXX)	DRAINAGE PLAN SHEET NO.
—	INPLACE ROADWAY
▒	PROPOSED CONSTRUCTION



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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: STEVEN J. MILLER

Date: \_\_\_\_\_ License # 41327

DRAWN BY  
J. VAN BECK

DESIGNED BY  
M. JULIFF

CHECKED BY  
S. MILLER

0159048



CITY OF BROOKLYN PARK  
ENGINEERING SERVICES DIVISION  
Brooklyn Park

5200 85TH AVE. N.  
BROOKLYN PARK, MN. 55443  
PH# 763/493-8100  
FAX# 763/493-8391

CITY OF BROOKLYN PARK  
GENERAL LAYOUT  
94TH AVE N

SHEET  
2  
OF  
98

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 J. VAN BECK  
 DESIGNED BY  
 M. JULIFF  
 CHECKED BY  
 S. MILLER  
 0159048



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 Brooklyn Park  5200 85TH AVE. N.  
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**CITY OF BROOKLYN PARK**  
 STATEMENT OF ESTIMATED QUANTITIES  
**94TH AVE N**

**SHEET**  
**3**  
**OF**  
**98**

**CONSTRUCTION /SOILS NOTES**

**GRADING, BASE AND SURFACE**

- 1 TOP OF THE GRADING SUBGRADE IS DEFINED AS THE BOTTOM OF THE CLASS 5 AGGREGATE BASE.
- 2 EMBANKMENT AND EMBANKMENT WIDENING MATERIAL ON THIS PROJECT, WHETHER OBTAINED LOCALLY OR FROM BORROW, SHALL BE SELECT GRADING MATERIAL MEETING THE REQUIREMENTS OF SPEC. 2105.1.A.6
- 3 SELECT GRANULAR EMBANKMENT MATERIAL IS DEFINED AS MATERIAL MEETING THE REQUIREMENTS OF SPEC. 3149.2B2 TABLE 3149-1)
- 4 STRIP TOPSOIL FROM AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS SLOPE DRESSING. FOR ESTIMATING PURPOSES, THE DEPTH OF TOPSOIL AVAILABLE IS CONSIDERED TO BE 8 INCHES.
- 5 ALL TOPSOIL STRIPPING WILL BE CONSIDERED COMMON EXCAVATION
- 6 EXCESS TOPSOIL AND MUCK MATERIAL MAY BE USED OUTSIDE THE ROAD CORE AS DIRECTED BY THE ENGINEER.
- 7 COMPACTION OF THE GRADING AND AGGREGATE ITEMS ON BYPASSES AND OTHER TEMPORARY WORK SHALL BE BY THE "QUALITY COMPACTION" METHOD.
- 8 A) TEST ROLL TOP OF SELECT GRADING EMBANKMENT GREATER THAN 30 INCHES THICK, AND WHERE STRUCTURES ARE GREATER THAN 30 INCHES DEEP.  
 B) PROOF ROLL USING THE QUAD AXLE TRUCK, THE TOP OF SELECT GRADING EMBANKMENT WHERE SELECT GRADING EMBANKMENT IS LESS THAN 30 INCHES BUT GREATER THAN 18 INCHES AND IN AREAS WHERE STRUCTURES ARE LESS THAN 30 INCHES DEEP.  
 C) PROOF ROLL USING THE TANDEM AXLE TRUCK, TOP OF SELECT GRADING EMBANKMENT WHERE THE SELECT GRADING EMBANKMENT IS LESS THAN 18 INCHES.  
 D) ON TOP OF THE AGGREGATE BASE, PROOF ROLL USING THE TANDEM.
- 9 THE BOTTOM OF ALL SUBCUTS SHALL BE SHAPED AND COMPACTED BY THE "QUALITY COMPACTION METHOD". THE CONTRACTOR SHALL USE A MINIMUM OF 4 PASSES OF AN APPROVED COMPACTION DEVICE.
- 10 AS A PRECAUTIONARY MEASURE FROM A SOILS STANDPOINT, TRAFFIC LANES TO BE USED DURING CONSTRUCTION MUST BE DELINEATED TO KEEP VEHICLES A SAFE DISTANCE AWAY FROM THE ADJACENT EXCAVATION. THE DELINEATION SHOULD COINCIDE WITH POINTS ESTABLISHED BY PROJECTING A 1(V):4(H) OR GREATER (FLATTER) SLOPE BETWEEN THE EDGE OF THE TRAFFIC SURFACE AND THE BOTTOM OF THE EXCAVATION. FOR CROSSROADS, THE DELINEATION SHOULD COINCIDE WITH POINTS ESTABLISHED BY PROJECTING A 1(V):4(H) OR GREATER (FLATTER) SLOPE BETWEEN THE EDGE OF THE TRAFFIC SURFACE AND THE BOTTOM OF THE EXCAVATION.
- 11 WHERE CONNECTING TO THE INPLACE ROADWAYS AT THE TERMINI OF PROPOSED CONSTRUCTION, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING, WHICHEVER IS DEEPER, THEN 1V:20H TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION, UNLESS OTHERWISE NOTED.
- 12 PROVIDE 1V:20H LONGITUDINAL TAPERS BETWEEN CHANGES IN SUBGRADE AND SUBCUT DEPTHS.
- 13 DITCH BOTTOMS, TOE OF FILL, CUT RUNOUTS AND THE TOP EDGE OF THE BACKSLOPES SHALL BE ROUNDED REGARDLESS OF THE SECTION USED ON THE CROSS SECTION SHEETS.

**CONSTRUCTION /SOILS NOTES**

**REMOVALS**

- 14 PROVIDE FOR THE REMOVAL AND DISPOSAL OF ANY INPLACE SURFACING, GUARDRAIL, OTHER STRUCTURES OR DEBRIS THAT WOULD INTERFERE WITH CONSTRUCTION. ALL SUCH MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL EITHER BE RECYCLED TO THE EXTENT ALLOWED OR DISPOSED OF OFF THE RIGHT OF WAY IN ACCORDANCE WITH SPEC. 2104.3C. PROVIDE FOR SAW CUTTING AS DEEMED NECESSARY BY THE ENGINEER.
- 15 THE EXISTING PAVEMENT THICKNESSES ON ZANE AVE AND 93RD AVE ARE ASSUMED TO BE 6" OF BITUMINOUS OVER 6" OF AGGREGATE BASE. THE CONTRACTOR SHALL INVESTIGATE AND MAKE HIS OWN DETERMINATION OF THE EXISTING PAVEMENT THICKNESS.
- 16 NO DISPOSAL SITE IS PROVIDED FOR DEBRIS. ALL EXCESS MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR FOR DISPOSAL. THE CONTRACTOR SHALL DISPOSE OF MATERIAL UNSUITABLE FOR USE IN THE CONSTRUCTION IN ACCORDANCE WITH PROVISIONS OF 2104.3D. EXCESS EXCAVATION MATERIAL SHALL REMAIN ON SITE AND STOCKPILLED.

**TURF ESTABLISHMENT**

- 17 PLACE A MINIMUM OF 6 INCHES OF TOPSOIL ON ALL AREAS SCHEDULED FOR PERMANENT TURF ESTABLISHMENT.
- 18 SEEDING REQUIREMENTS ON THIS PROJECT ARE AS FOLLOWS:
  - A. PLACE SEED 35-221 @ 36.5 LBS/AC
  - B. PROVIDE FERTILIZER TYPE 3 (22-5-10 AT 350 LBS/AC) SLOW RELEASE TYPE, ON ALL SEED AREAS SEEDED.
  - C. PROVIDE FERTILIZER TYPE 3 (22-5-10 AT 200 LBS/AC) FOR SODDED AREAS.

**MISCELLANEOUS**

- 19 WHERE SEDIMENT DEPOSITS IN WATERS OF THE STATE THE MATERIAL MUST BE REMOVED IN 7 DAYS.
- 20 ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
- 21 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.
- 22 WHENEVER THE WORD "INCIDENTAL" IS USED IN THIS PLAN, IT SHALL MEAN THIS WORK WILL BE INCIDENTAL FOR WHICH NO DIRECT COMPENSATION WILL BE MADE.

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NO	DATE	BY	CKD	APPR	REVISION

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 Date: \_\_\_\_\_ License # 41327

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 DESIGNED BY  
M. JULIFF  
 CHECKED BY  
S. MILLER  
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**ENGINEERING SERVICES DIVISION**  
 Brooklyn Park 5200 85TH AVE. N.  
 BROOKLYN PARK, MN. 55443  
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 FAX# 763/493-8391

**CITY OF BROOKLYN PARK**  
 CONSTRUCTION/SOILS NOTES AND STANDARD PLATES  
**94TH AVE N**

**SHEET**  
**4**  
**OF**  
**98**

EARTHWORK SUMMARY						
ALIGNMENT	EXCAVATION TOTALS (EV)			EMBANKMENT TOTALS (CV)		
	COMMON		SUBGRADE	COMMON		SELECT GRANULAR
	TOPSOIL	SUITABLE		SUITABLE GRADING	SLOPE DRESSING	
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
<b>C.P. 4022-15</b>						
94TH	7602	2140	3404	16019	1972	6085
COLORADO	3596	146	750	7306	1150	2652
ZANE	1192	840	870	1158	338	870
93RD	221	296	469	792	94	473
EAST POND				341		
CENTRAL POND		6121				
WEST POND		31088				
<b>PROJECT TOTALS</b>	<b>12611</b>	<b>40631</b>	<b>5493</b>	<b>25616</b>	<b>3554</b>	<b>10080</b>
	<b>53242</b>					

NOTES:

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ENGINEERING SERVICES DIVISION  
Brooklyn Park

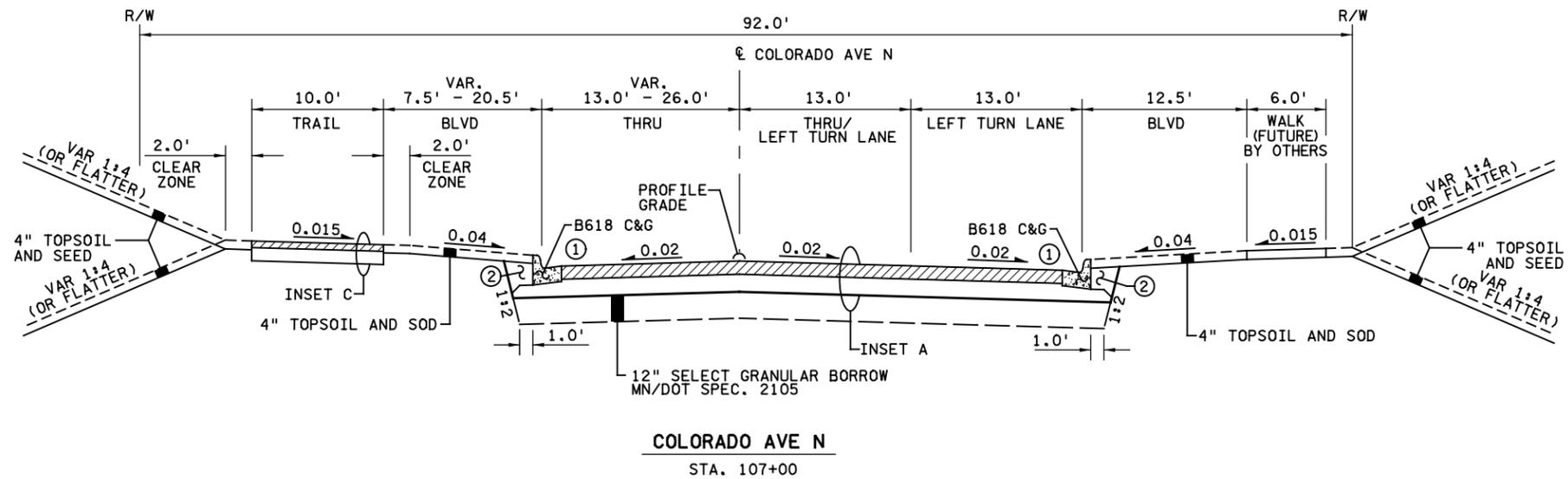
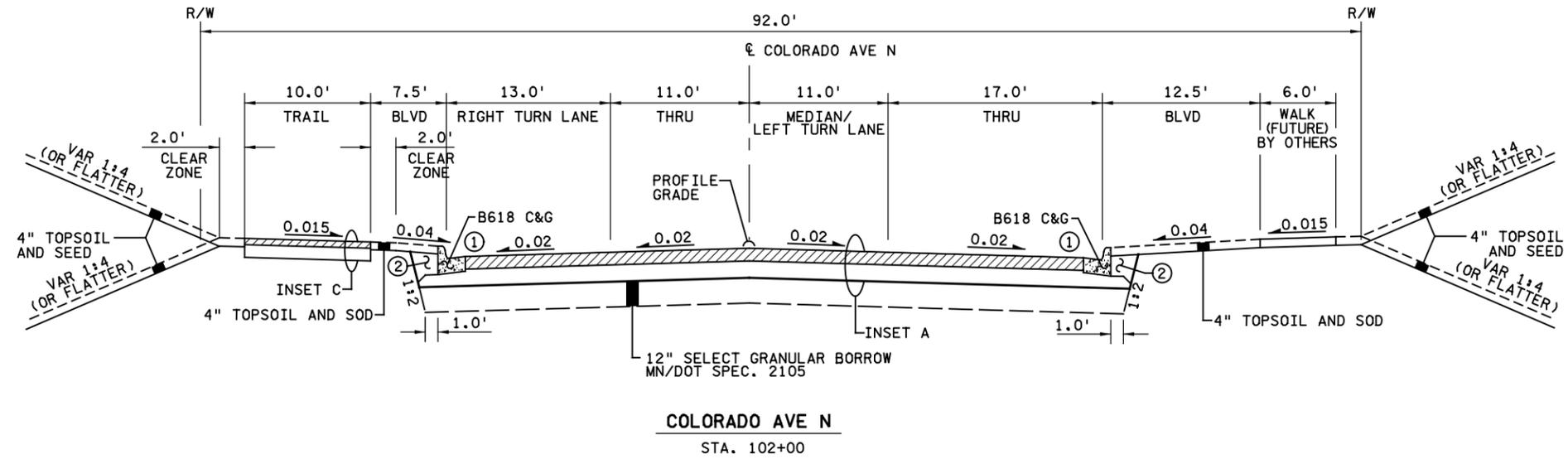
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**CITY OF BROOKLYN PARK**  
EARTHWORK SUMMARY, BALANCE AND TABULATIONS  
94TH AVE N

SHEET  
5  
OF  
98







GENERAL NOTES:

ALL SLOPES ARE IN FOOT PER FOOT.

FOR PAVEMENT INSETS, SEE SHEET NO. 9

FOR LANE WIDTHS SEE CONSTRUCTION PLANS.

PLACE BITUMINOUS TACK COAT (MNDOR SPEC 2357) BETWEEN ALL BITUMINOUS LIFTS.

NOTES:

① JOINT ADHESIVE FOR WEAR COURSE PAVING OF FINAL LIFT MNDOT SPEC 2331

② BACKFILL WITH SUITABLE GRADING MATERIAL

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ENGINEERING SERVICES DIVISION

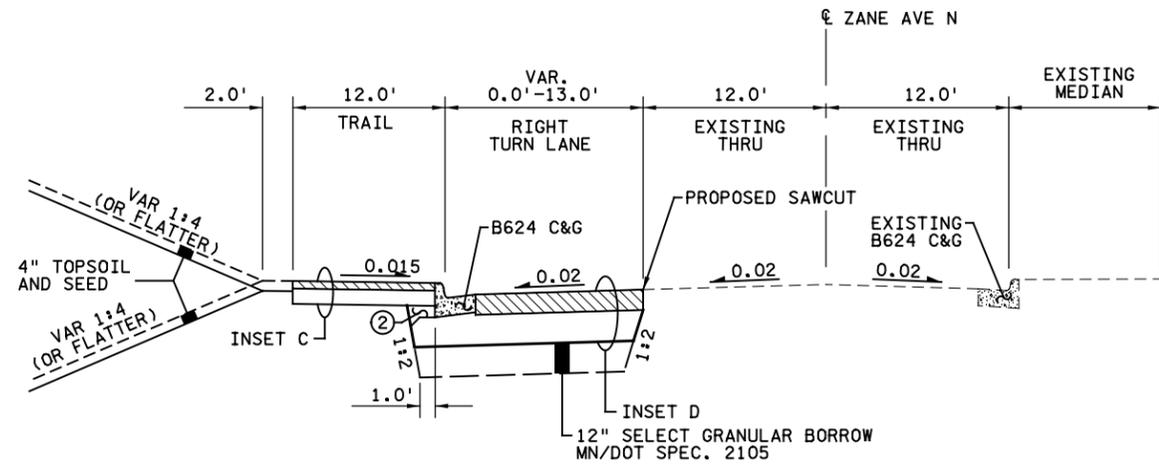
Brooklyn Park

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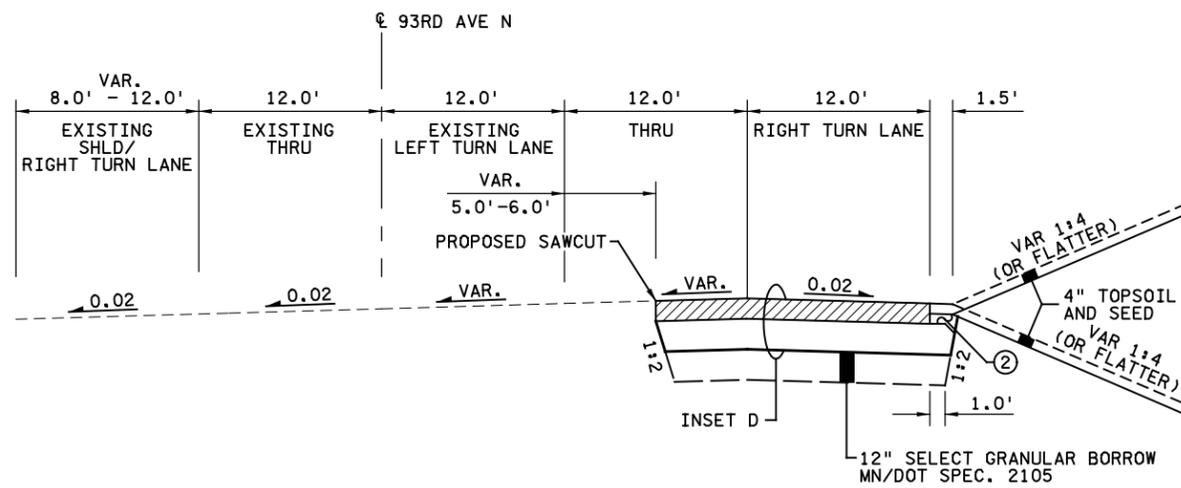
**CITY OF BROOKLYN PARK**

TYPICAL SECTIONS  
94TH AVE N

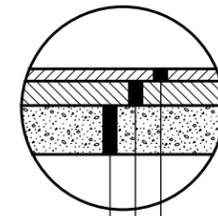
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OF  
98



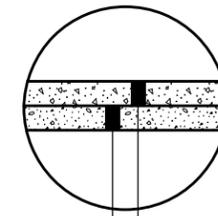
ZANE AVE N  
RIGHT TURN LANE



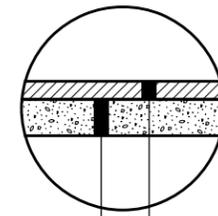
93RD AVE N  
RIGHT TURN LANE



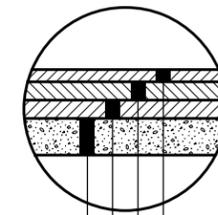
INSET A  
94TH AVE N  
COLORADO AVE N



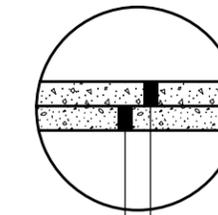
INSET B  
CONCRETE WALK



INSET C  
BITUMINOUS TRAIL



INSET D  
ZANE AVE N



INSET E  
COMMERCIAL CONCRETE DRIVEWAY

GENERAL NOTES:  
ALL SLOPES ARE IN FOOT PER FOOT.  
FOR PAVEMENT INSETS, SEE SHEET NO. 9  
FOR LANE WIDTHS SEE CONSTRUCTION PLANS.  
PLACE BITUMINOUS TACK COAT (MNDOR SPEC 2357)  
BETWEEN ALL BITUMINOUS LIFTS.

NOTES:  
② BACKFILL WITH SUITABLE GRADING MATERIAL

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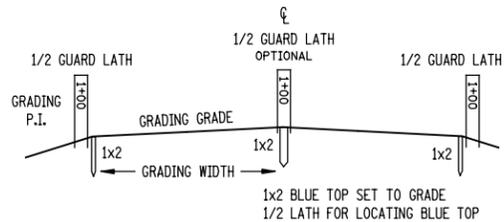
**SRE** ENGINEERS  
PLANNERS  
DESIGNERS  
Consulting Group, Inc.

**CITY OF BROOKLYN PARK**  
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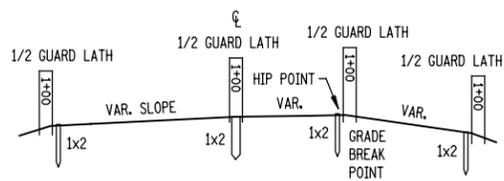
**CITY OF BROOKLYN PARK**  
TYPICAL SECTIONS  
94TH AVE N

**BLUE TOPS**

**NORMAL SECTION**

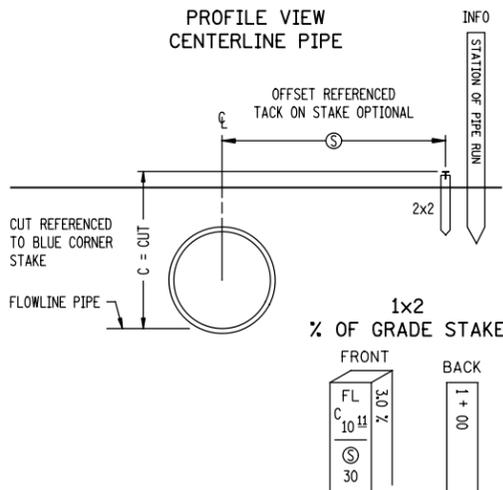


**TRANSITION SECTION**



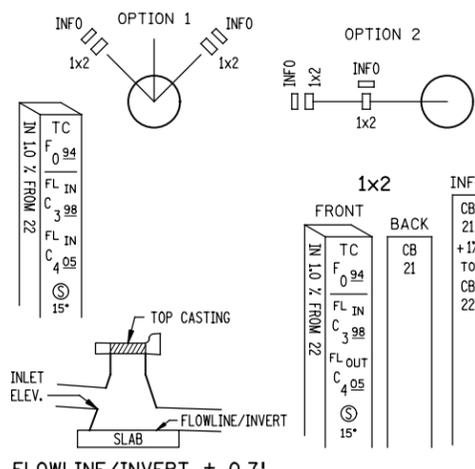
**PIPE STAKING**

**PROFILE VIEW  
CENTERLINE PIPE**

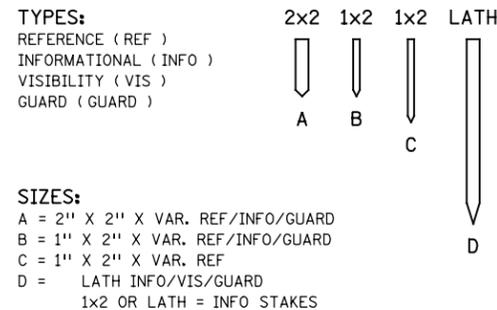


**CATCH BASIN OR MANHOLE (CB/MH)**

**TOP VIEWS**



**STANDARD STAKES**

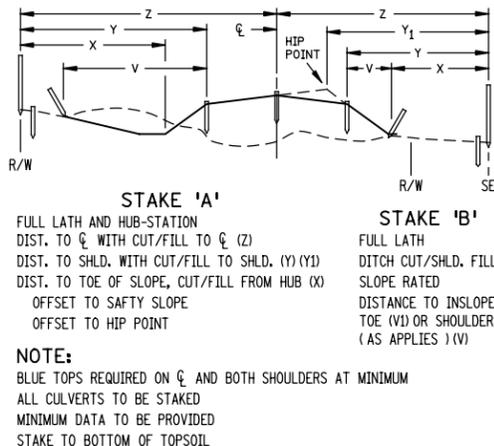


**ABBREVIATIONS**

- BBL = BARREL (PIPE)
- B.C. = BACK CURB
- C & G = CURB & GUTTER
- C = CUT
- CAP = CORR. ALUM. PIPE
- CB = CATCH BASIN
- CL = CENTERLINE
- CL & GR = CLEAR & GRUB
- CMP = CORR. METAL PIPE
- COR = CORNER
- CR = CROWN
- CSP = CORR. STEEL PIPE
- DC = DITCH CUT
- D.E. = DRAINAGE EASEMENT
- DI = DROP INLET
- EB = EASTBOUND
- E.M. = EDGE BITUMINOUS MAT
- E.S. = EDGE CONCRETE SLAB
- F = FILL
- FF = FRONT FACE
- FL = FLOW LINE
- FL IN = FLOWLINE INLET
- FL OUT = FLOWLINE OUTLET
- GR = GRADE
- GW = GRADING WIDTH
- HH = HANDHOLE
- HP = HIP POINT
- LT = LEFT
- MH = MANHOLE
- NB = NORTHBOUND
- NS = OFFSET
- PAR = PARCEL
- % = PERCENT GRADE
- P.E. = PERM. EASEMENT
- RAD = RADIUS POINT
- RCP = REINF. CONC. PIPE
- RP = REFERENCE POINT
- RSC = REINF. SECT. CONC.
- RT = RIGHT
- R/W = RIGHT OF WAY
- SB = SOUTHBOUND
- SCP = SECT. CONC. PIPE
- SH = SHOULDER
- TC = TOP CASTING
- OR TOP CURB
- T.E. = TEMP. EASEMENT
- 3:1 = SLOPE (EXAMPLE)
- WB = WESTBOUND
- WP = WORKING POINTS

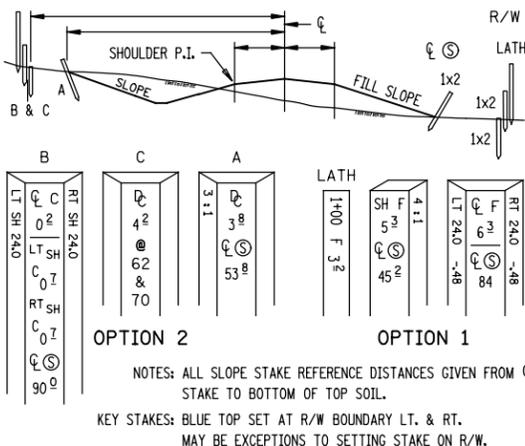
**SLOPE STAKES**

**SINGLE ROADWAY - EXAMPLE 'A'**

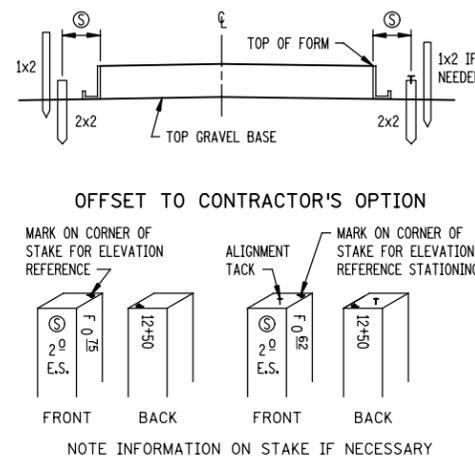


**SLOPE STAKES**

**SINGLE ROADWAY - EXAMPLE 'B'**



**CONCRETE PAVING STATIONARY FORM**



**RECOMMENDED STAKING INTERVALS**

**FIGURE A**

	SLOPE STAKES	SUB GRADE B.T.	CLASS MATERIAL B.T.	CONC PAVT	CL & GR LIMITS	MUCK EXC.	R/W	TEMP. EASE.
TANGENT	100	100	100	50	50	100	ALL CORNERS	ALL CORNERS
HORIZ. CURVE								
0 - 3'	100	100	100	50	50	100	ALL CORNERS	ALL CORNERS
OVER 3' -	100	50	50	25	25	100	ALL CORNERS	ALL CORNERS
VERT. CURVE								
'M' 100'	100	100	100	50	50			
CHORD 0 - .25	100	100	100	50	50			
'M' OVER .25	100	50	50	25	25			
TRAN.	50	50						

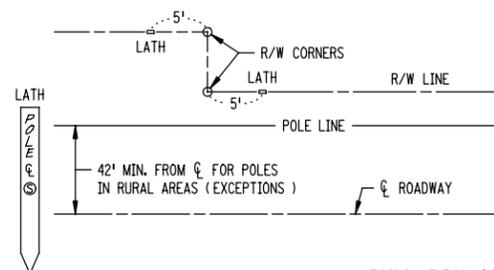
**STAKING TOLERANCES ( FEET )**

	HORIZONTAL	VERTICAL
CONSTRUCTION LIMITS	± 1.5	
CLEARING & GRUBBING	2.0	
SLOPES STAKES	2.0	± 0.2
KEY STAKES	0.2	0.03
DRAINAGE STAKES	0.05	0.05
CURB & GUTTER	0.07	0.03
PAVING	0.05	0.03
ALIGNMENT	0.07	
UTILITY	0.10	0.05
STRUCTURAL	0.02	0.02
GUARD RAIL	0.5	
BUILDINGS	0.04	
O.H. SIGNS	0.05	0.05
MUCK EXCAVATION LIMITS	2.0	
R/W B-POINTS	0.10	
NOISE WALLS	1.0	0.5

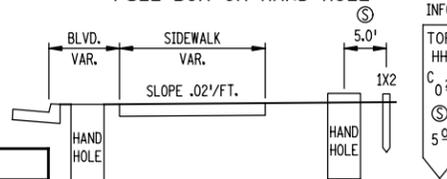
THE TOLERANCES ARE RELATIVE TO PROJECT DATUM

**UTILITY ( UTIL )**

STAKE POLES MINIMUM OF 5 FT. FROM ANY R/W CORNER  
EXAMPLE: POLE LINE = R/W LINE

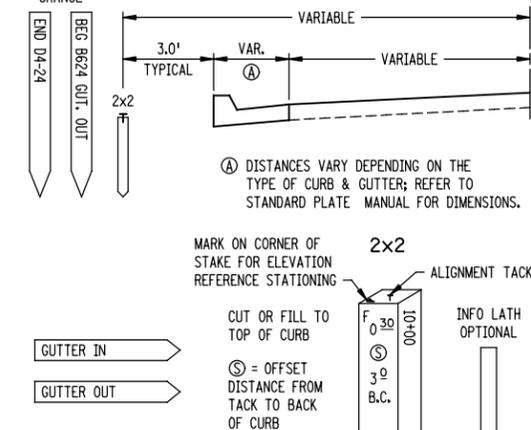


**PULL BOX OR HAND HOLE**

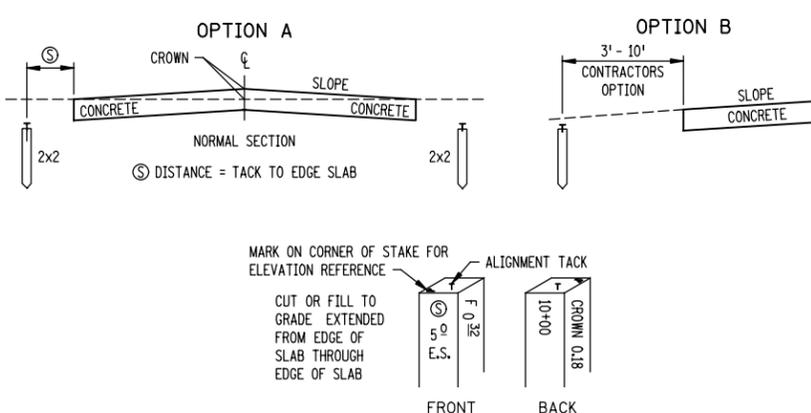


**CURB & GUTTER ( CURB )**

OPTIONAL LATH WHEN NEEDED TO MARK TYPE OF CURB & GUTTER IF THERE IS A CHANGE



**CONCRETE PAVING - SLIP FORM**



**DISCLAIMER**

THESE STAKING INFORMATION SHEETS ARE FOR INFORMATION PURPOSES ONLY. STAKING PROCEDURES VARY AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION BY CIRCUMSTANCES AND/OR AGREEMENTS BETWEEN SURVEY CREW AND CONTRACTOR.

REVISION:

APPROVED: 8-6-2014

*Erin Dadds*  
DIRECTOR, OFFICE OF LAND MANAGEMENT

MINNESOTA DEPARTMENT OF TRANSPORTATION  
REVISOR: *Christina Ry*  
APPROVED: 8-6-2014  
STATE DESIGN ENGINEER

STAKING INFORMATION SHEET

STANDARD PLAN 5-297.115

1 OF 2

DRAWN BY

DESIGNED BY

CHECKED BY

0159048

CITY OF BROOKLYN PARK

STANDARD PLAN SHEETS  
94TH AVE N

SHEET

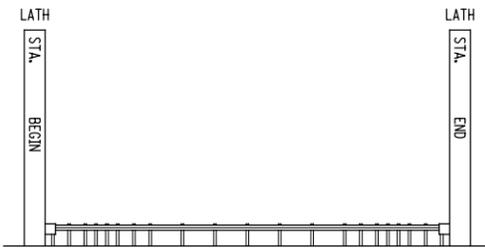
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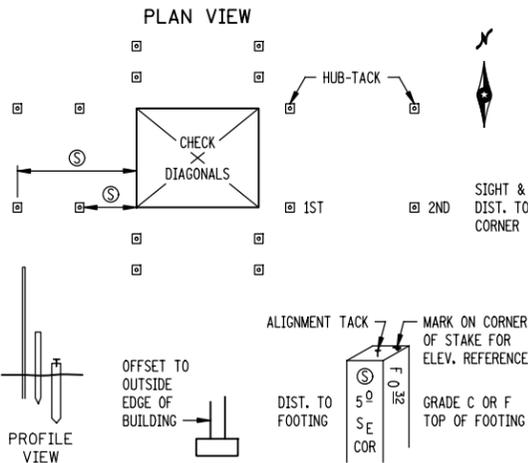
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PLOTTED/REVISED:  
\$\$\$\$@DATE\$\$\$\$

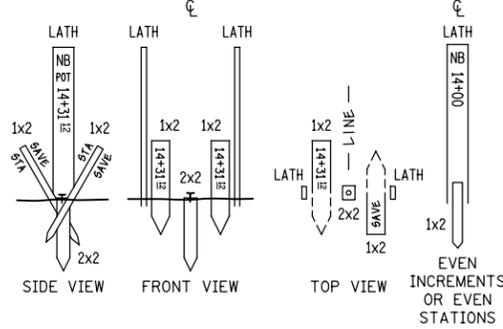
**GUARDRAIL ( GUARD )**



**BUILDING ( BUILD )  
FOUNDATION / FOOTING**

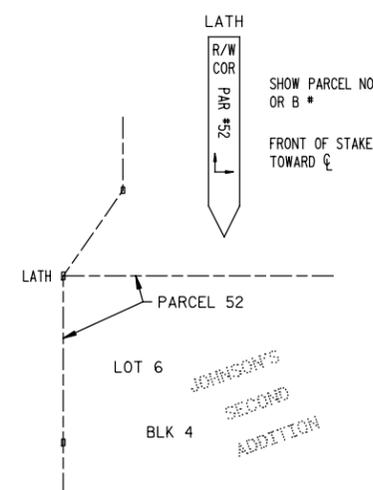


**ALIGNMENT POINTS ( ALIGN )**

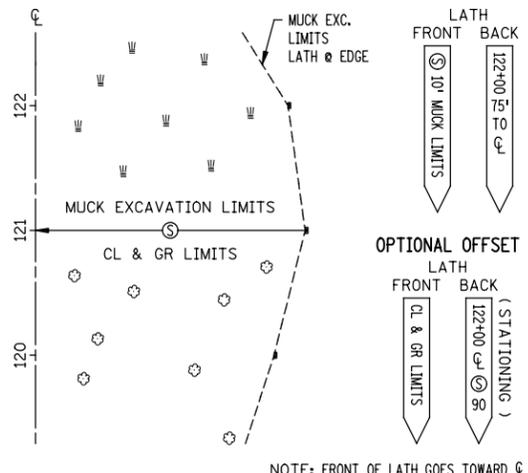


STAKE C = 2" X 2" HUB (LENGTH MAY VARY) SET AS TEMPORARY STAKE. MAY BE REPLACED BY M&DOT MARKER AFTER CONSTRUCTION IS COMPLETED.  
SET AT GROUND LEVEL (TEMPORARY CONSTRUCTION STAKE).  
TACK SET AT ALIGNMENT POINTS.  
STAKE A = GUARD STAKES SET AT ANGLE IN GROUND 6" EACH SIDE OF STAKE D, WITH STATIONING READ WHEN LOOKING UP STATION.

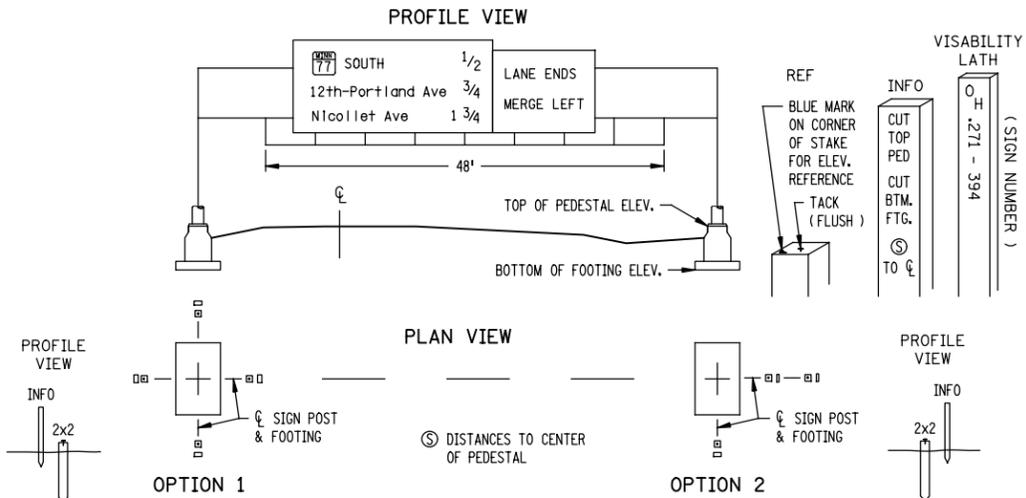
**R/W & TEMP. EASEMENT ( R/W )**



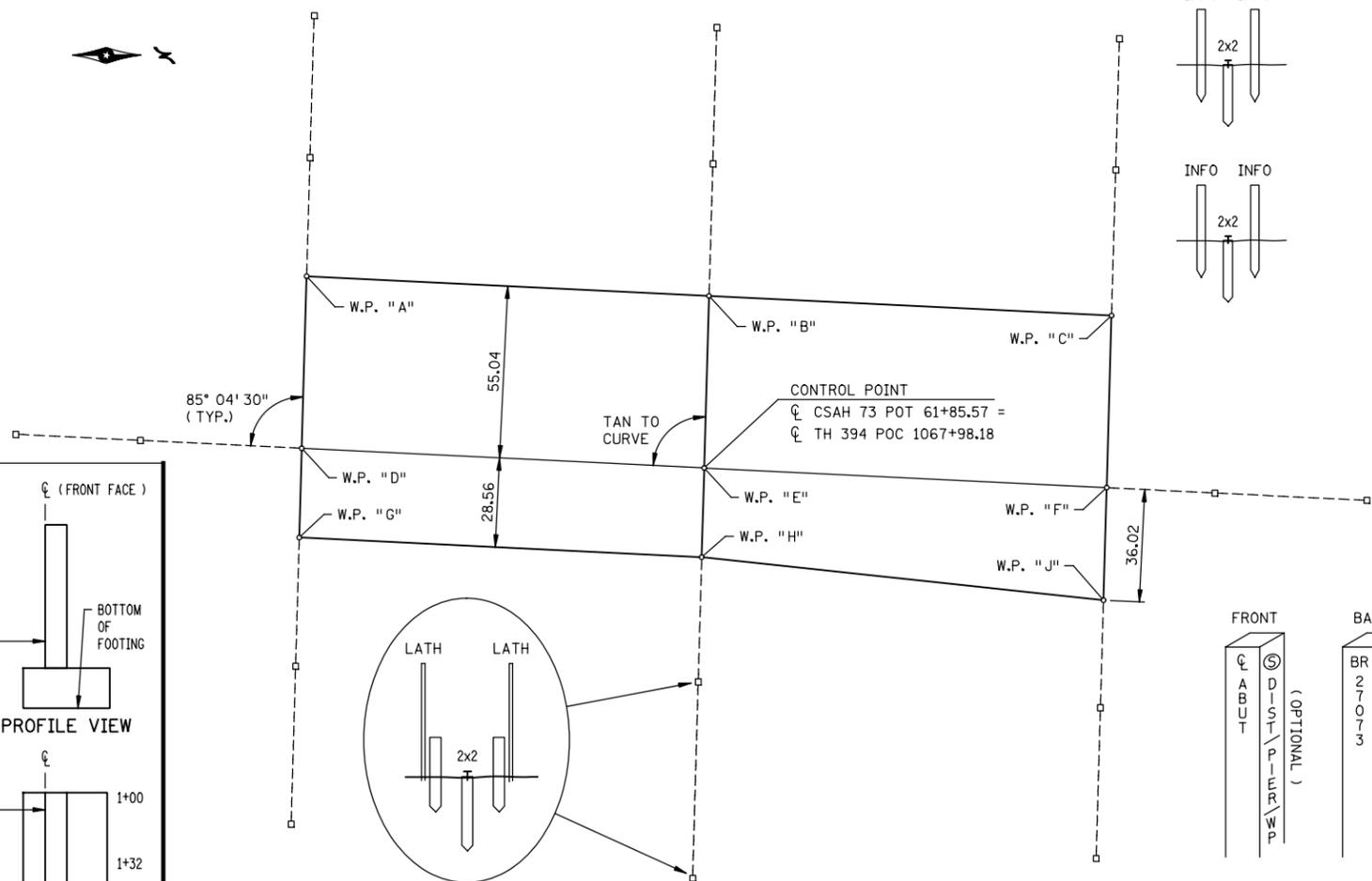
**CLEAR & GRUBBING LIMITS ( CLEAR )  
OR MUCK EXCAVATION LIMITS ( MUCK )**



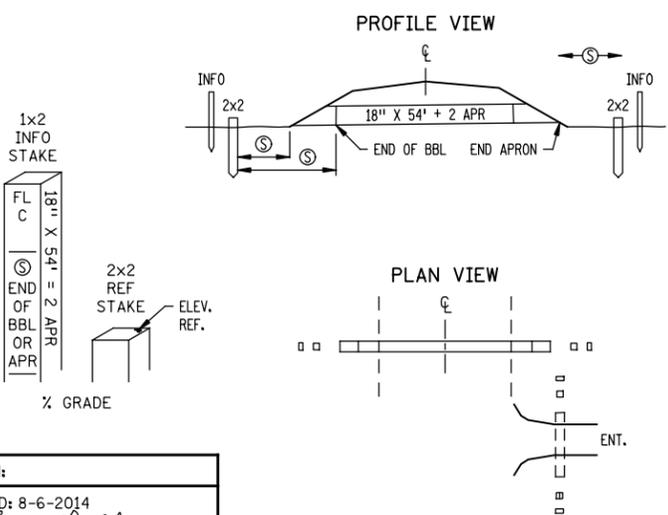
**OVERHEAD SIGNS ( SIGN )**



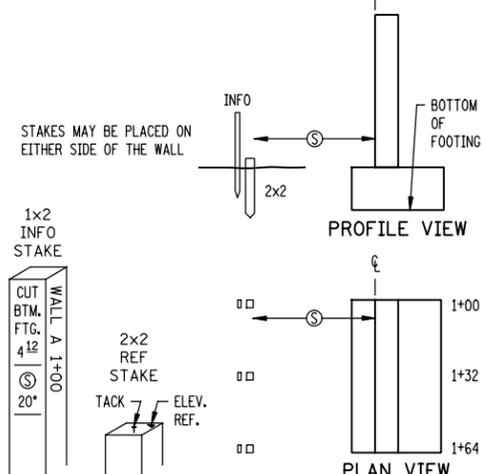
**BRIDGESTAKING ( BRIDGE )  
WORKING POINTS LAYOUT**



**CULVERT**



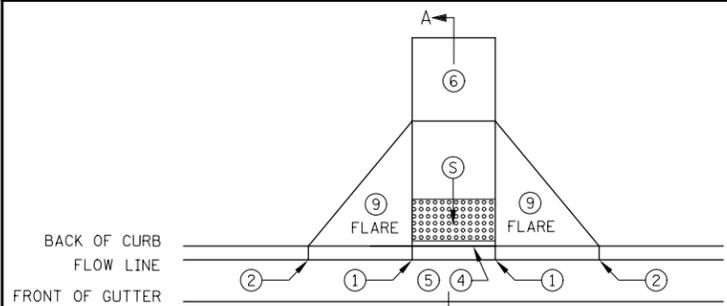
**WALL**



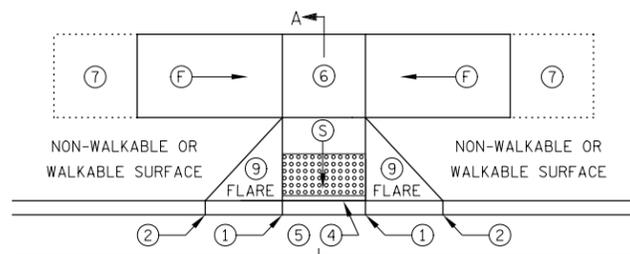
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FILE NAME: @FILENAME@  
REVISION:  
APPROVED: 8-6-2014  
DIRECTOR, OFFICE OF LAND MANAGEMENT

MINNESOTA DEPARTMENT OF TRANSPORTATION  
 REVISION: \_\_\_\_\_  
 APPROVED: 8-6-2014  
 STATE DESIGN ENGINEER  
 STAKING INFORMATION SHEET  
 STANDARD PLAN 5-297.115 2 OF 2

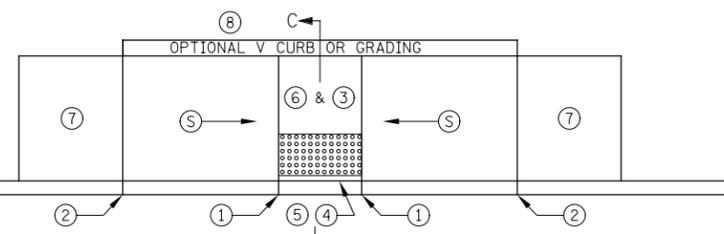
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DESIGNED BY			
CHECKED BY			
0159048			



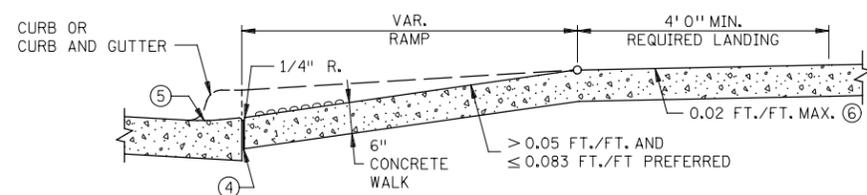
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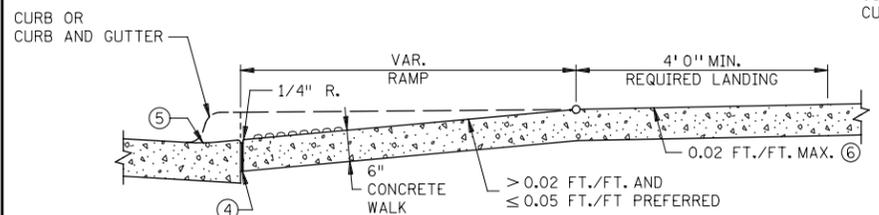
TIERED PERPENDICULAR



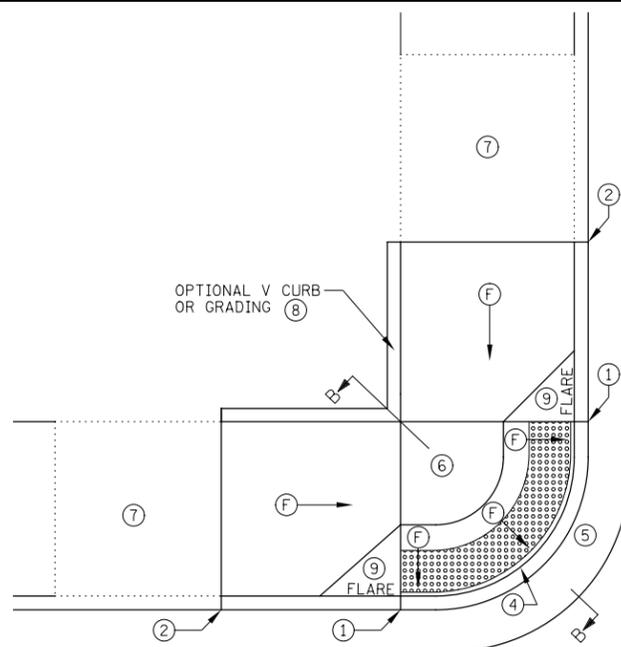
PARALLEL



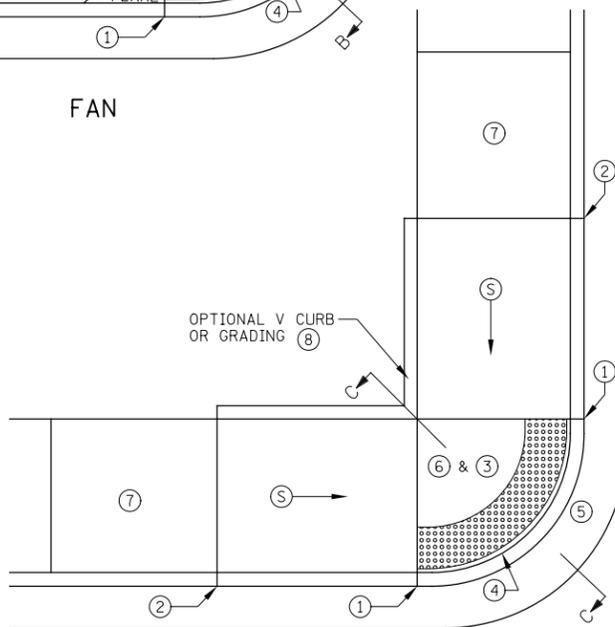
SECTION A-A  
PERPENDICULAR/TIERED/DIAGONAL



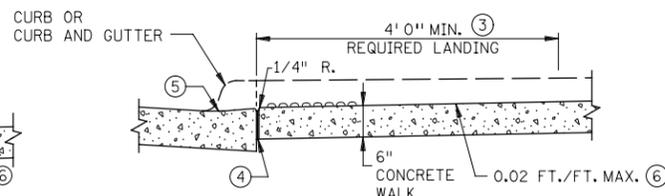
SECTION B-B  
FAN



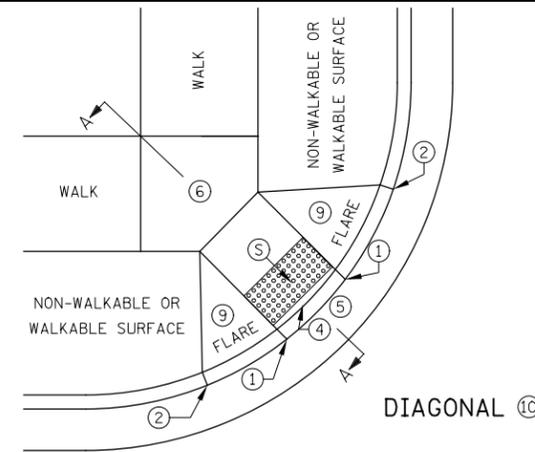
FAN



DEPRESSED CORNER



SECTION C-C  
PARALLEL/DEPRESSED CORNER



DIAGONAL 10

NOTES:

- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.
- INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE.
- SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30' OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS.
- ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL.
- TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS MAY BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 5 WHEN LANDINGS ARE CAST SEPARATELY.
- ALL SLOPES ARE ABSOLUTE, RATHER THAN RELATIVE TO SIDEWALK/ROADWAY GRADES.
- TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.
- 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MINIMUM OF 24" IN THE PATH OF TRAVEL. SHARED USE PATHS SHALL HAVE DETECTABLE WARNING ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A ROAD.
- SEE STANDARD PLATE 7038 AND SHEET 4 OF 5 FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.
- 1 0" CURB HEIGHT.
- 2 FULL CURB HEIGHT.
- 3 DETECTABLE WARNINGS MAY BE PART OF 4' X 4' LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
- 4 1/2" PREFORMED JOINT FILLER MATERIAL AASHTO M 213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE OF DEBRIS. RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.
- 5 SEE PEDESTRIAN ACCESS ROUTE CURB AND GUTTER DETAIL FOR INFORMATION ON CONSTRUCTING CURB AND GUTTER AT CURB OPENINGS. SEE SHEET NO. 3 OF 5.
- 6 4' BY 4' MIN. LANDING WITH MAX. 2.0% SLOPE IN ALL DIRECTIONS.
- 7 IF LONGITUDINAL SLOPE IS GREATER THAN 5.0%, 4' X 4' MIN. LANDING WITH MAX 2.0% SLOPE IN ALL DIRECTIONS REQUIRED.
- 8 V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. SEE SHEET 5 OF 5.
- 9 SEE SHEET 4 OF 5, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
- 10 DIAGONAL RAMPS SHOULD ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.

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

REVISION:  
APPROVED: 8-6-2014  
*Mark R. Rumpf*  
OPERATIONS ENGINEER

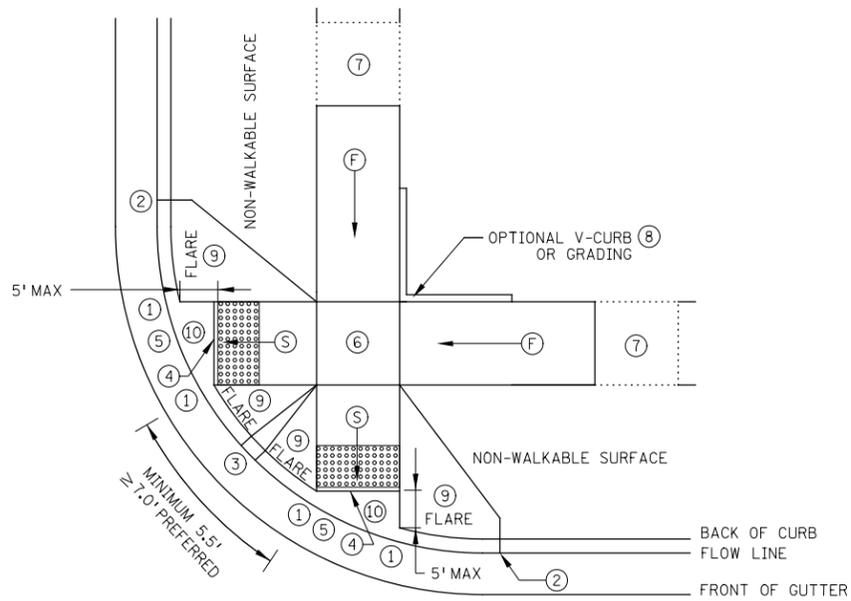
REVISOR:  
*Chaitanya R. K.*  
STATE DESIGN ENGINEER  
APPROVED: 8-6-2014

PEDESTRIAN CURB RAMP DETAILS  
STANDARD PLAN 5-297.250 1 OF 5

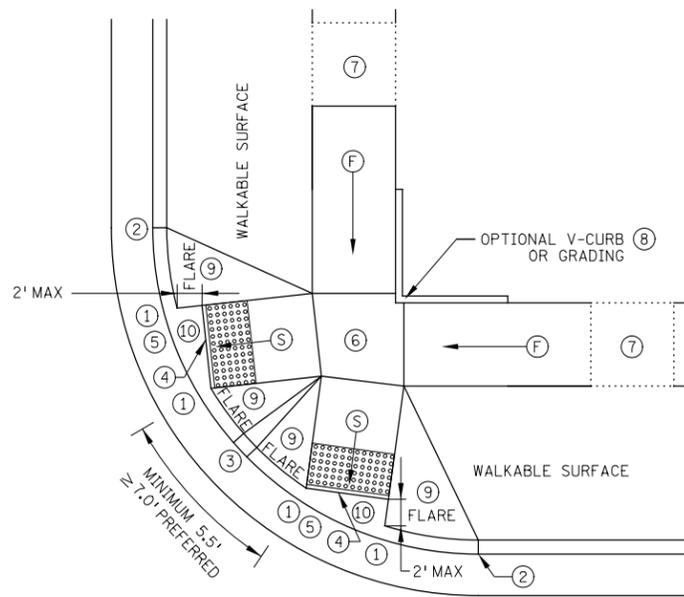
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CITY OF BROOKLYN PARK  
STANDARD PLAN SHEETS  
94TH AVE N  
SHEET 12 OF 98

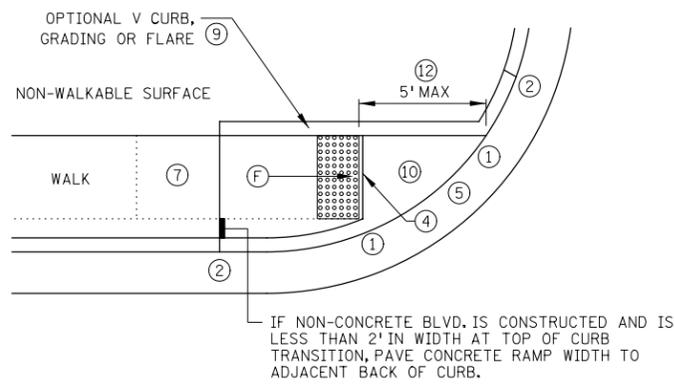


ADJACENT TO NON-WALKABLE SURFACE

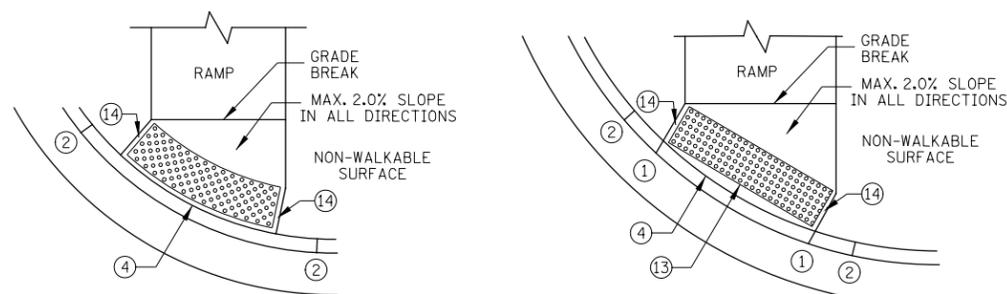


ADJACENT TO WALKABLE SURFACE

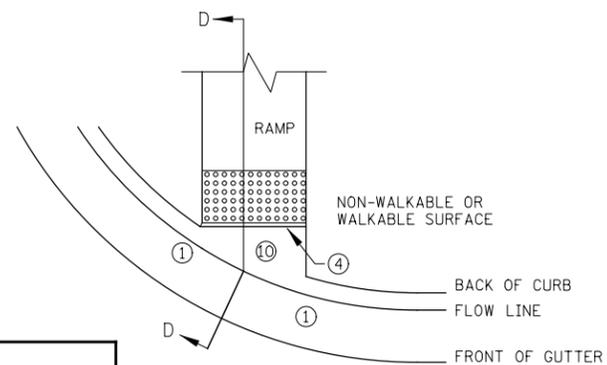
COMBINED DIRECTIONAL 15



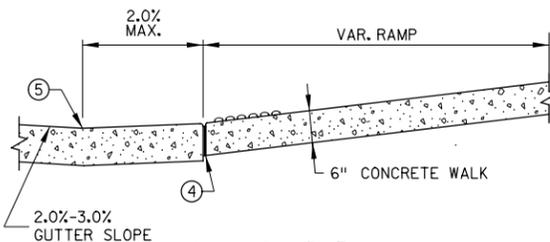
ONE-WAY DIRECTIONAL



DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED



CURB FOR DIRECTIONAL RAMPS 11



SECTION D-D

NOTES:

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

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE.

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

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS.

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

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

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

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

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

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

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

LEGEND

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

- S INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%
- F INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%

REVISION:  
APPROVED: 8-6-2014  
*Mark R. Rump*  
OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION  
REVISOR:  
*Christina Ry*  
STATE DESIGN ENGINEER  
APPROVED:  
8-6-2014

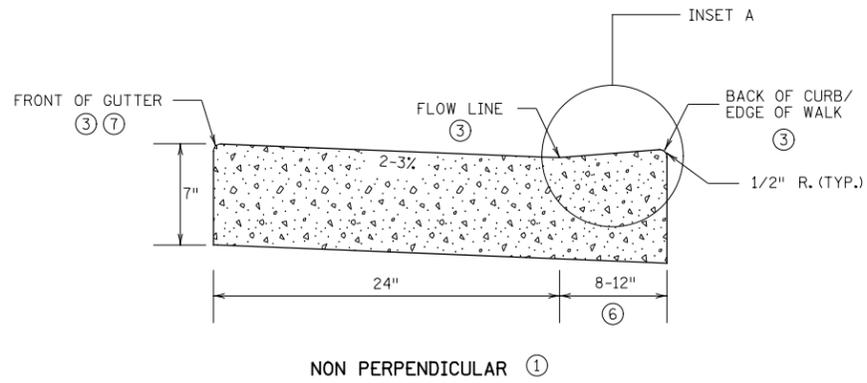
PEDESTRIAN CURB RAMP DETAILS  
STANDARD PLAN 5-297.250 2 OF 5

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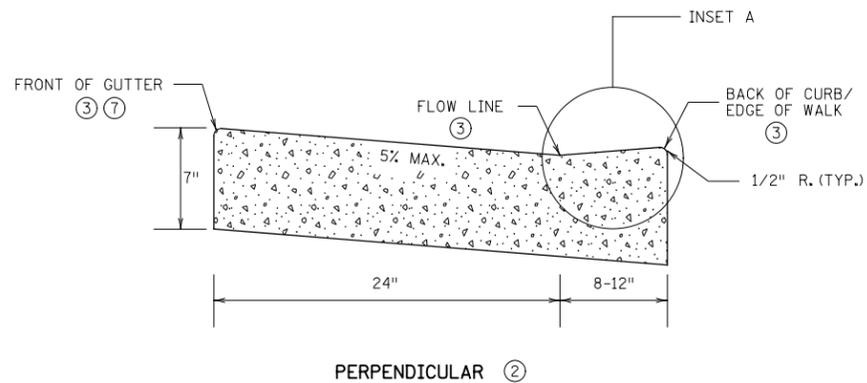
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0159048

CITY OF BROOKLYN PARK  
STANDARD PLAN SHEETS  
94TH AVE N

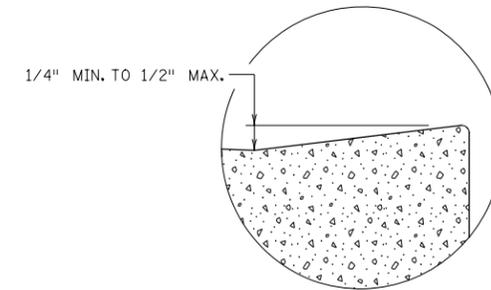
SHEET  
13  
OF  
98



NON PERPENDICULAR ①

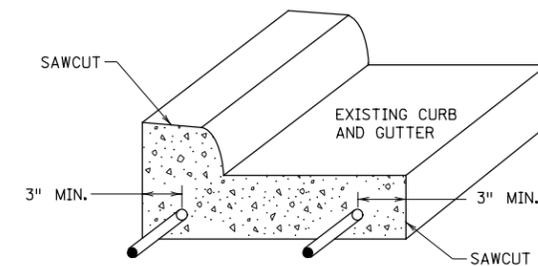
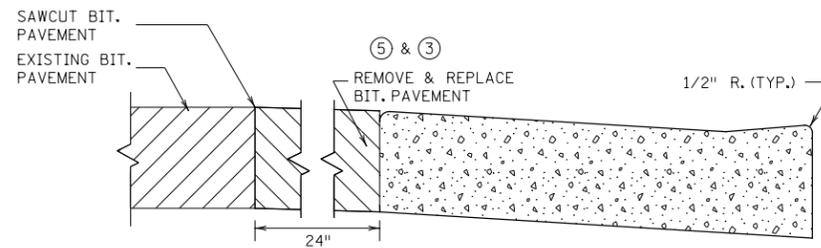
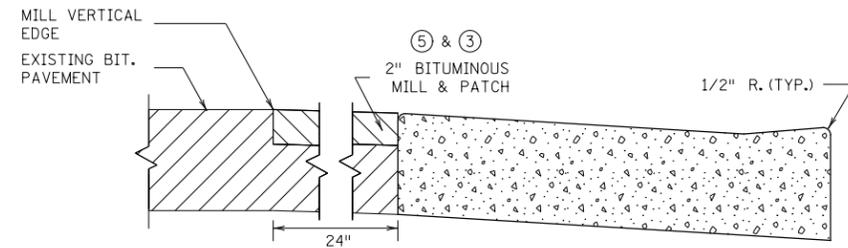


PERPENDICULAR ②

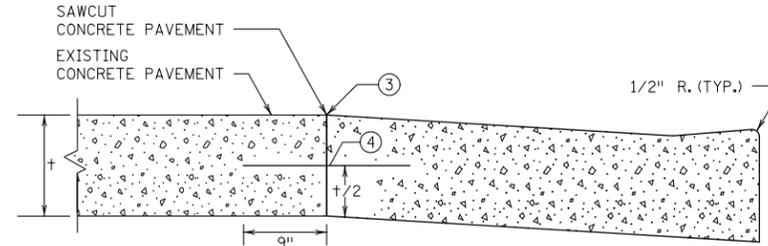
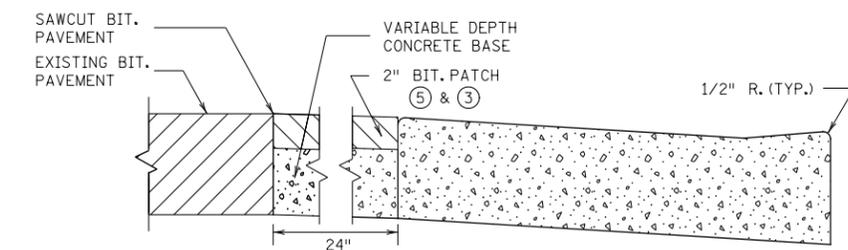


INSET A

PEDESTRIAN ACCESS ROUTE  
CURB & GUTTER DETAIL



CURB AND GUTTER  
REINFORCEMENT ⑧  
FOR USE ON CURB RAMP RETROFITS



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

NOTES:

- POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM.
- NO PONDING SHALL BE PRESENT IN THE PAR.
- ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.
- ① FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS, DEPRESSED CORNERS, & ONE WAY AND COMBINED DIRECTIONALS.
- ② FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMPS.
- ③ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".
- ④ DRILL AND GROUT NO. 4 EPOXY-COATED 18" LONG TIE BARS AT 30" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT.
- ⑤ ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.
- ⑥ VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS.
- ⑦ TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. PAR GUTTER SHALL NOT BE OVERLAID.
- ⑧ WHERE PLAN SPECIFIES, DRILL AND GROUT 2 - NO. 4 X 12" LONG REINFORCEMENT BARS (EPOXY COATED).

REVISION:  
APPROVED: 8-6-2014  
*Mark R. Rump*  
OPERATIONS ENGINEER

REVISOR:  
*Chaitanya R. K.*  
STATE DESIGN ENGINEER  
APPROVED: 8-6-2014

PEDESTRIAN CURB RAMP DETAILS  
STANDARD PLAN 5-297.250 3 OF 5

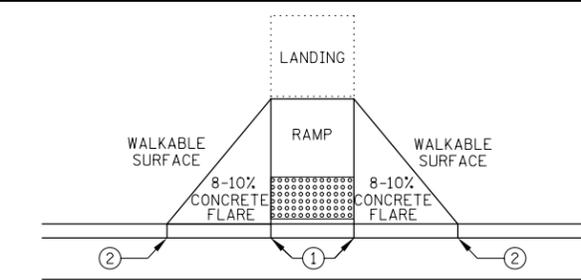
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DESIGNED BY  
CHECKED BY  
0159048

CITY OF BROOKLYN PARK  
STANDARD PLAN SHEETS  
94TH AVE N  
SHEET 14 OF 98

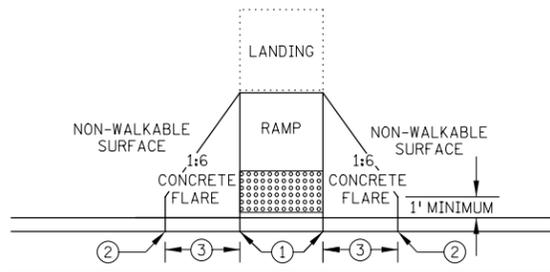
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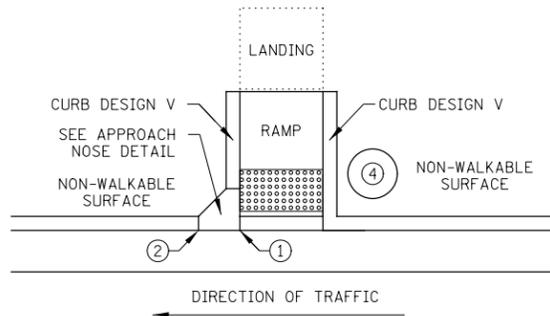
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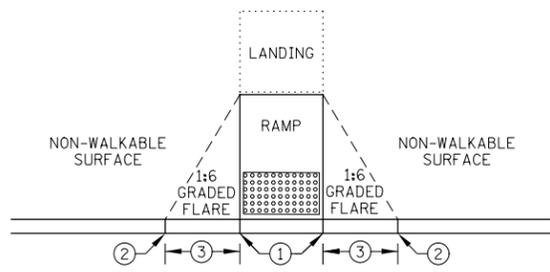
PAVED FLARES  
 ADJACENT TO WALKABLE SURFACE



PAVED FLARES  
 ADJACENT TO NON-WALKABLE SURFACE

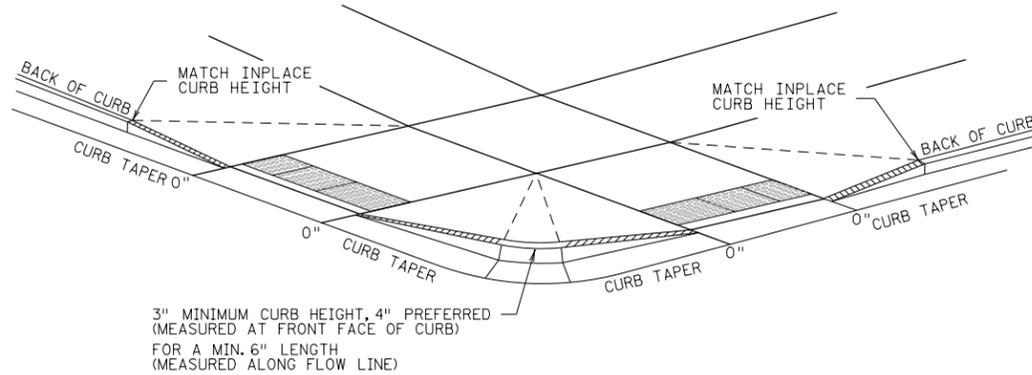


RETURNED CURB

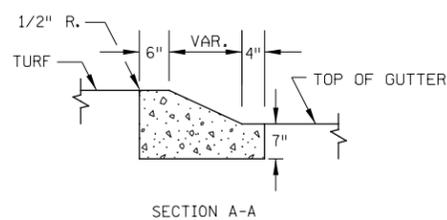
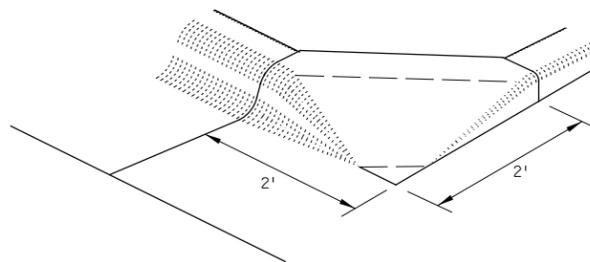


GRADED FLARES

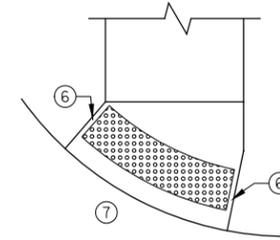
TYPICAL SIDE TREATMENT OPTIONS ⑤



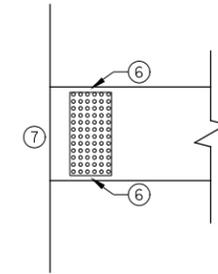
DETECTABLE EDGE WITH  
 CURB AND GUTTER ⑧



APPROACH NOSE DETAIL  
 FOR DOWNSTREAM SIDE OF TRAFFIC



RADIAL DETECTABLE WARNING



RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

NOTES:

SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING. WHETHER A SURFACE IS WALKABLE OR NOT SHALL BE DETERMINED BY THE ENGINEER. CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.

- ① 0" CURB HEIGHT.
- ② FULL CURB HEIGHT.
- ③ 2' - 3' FLARE.
- ④ IMMOVABLE OBJECT OR OBSTRUCTION.
- ⑤ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED ON ALL RAMPS AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.
- ⑥ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
- ⑦ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF ROADWAY TO PROVIDE VISUAL CONTRAST.
- ⑧ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.

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REVISION:  
 APPROVED: 8-6-2014  
 [Signature]  
 OPERATIONS ENGINEER

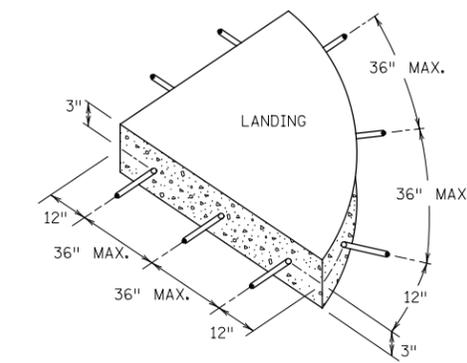
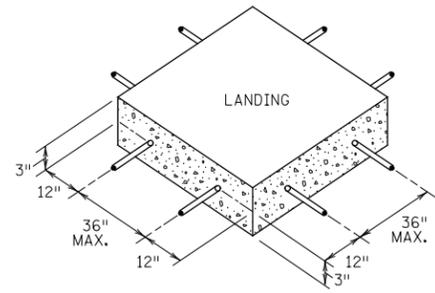
MINNESOTA DEPARTMENT OF TRANSPORTATION  
 [Signature]  
 STATE DESIGN ENGINEER  
 APPROVED: 8-6-2014

REVISION:  
 PEDESTRIAN CURB RAMP DETAILS  
 STANDARD PLAN 5-297.250 4 OF 5

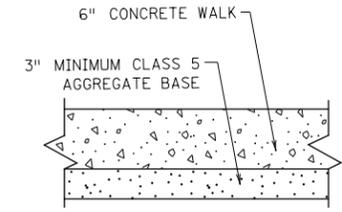
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 0159048

CITY OF BROOKLYN PARK  
 STANDARD PLAN SHEETS  
 94TH AVE N

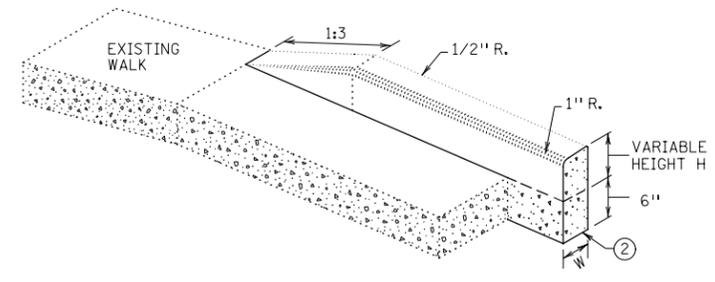
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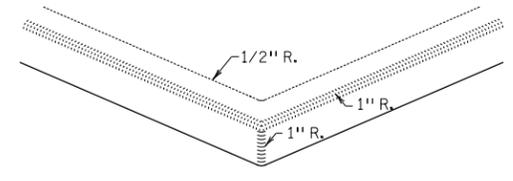
SIDEWALK REINFORCEMENT ⑥ ⑦



TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER

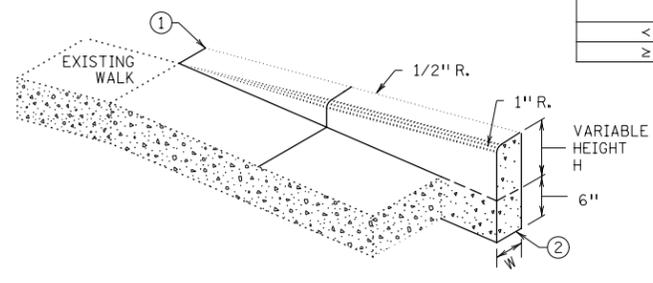


V CURB ADJACENT TO LANDSCAPE CURB WITHIN SIDEWALK LIMITS

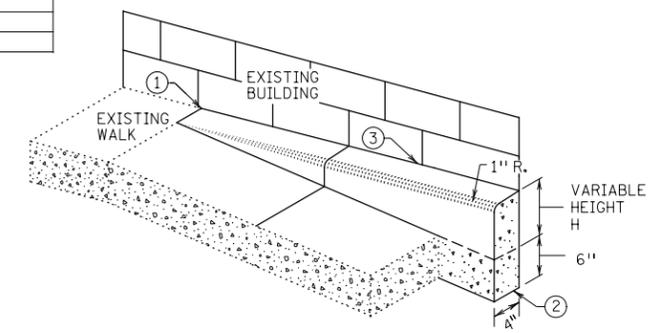


V CURB INTERSECTION

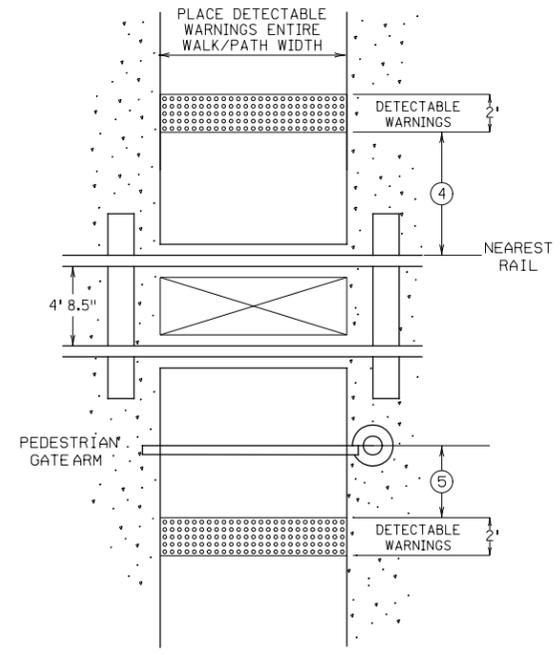
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



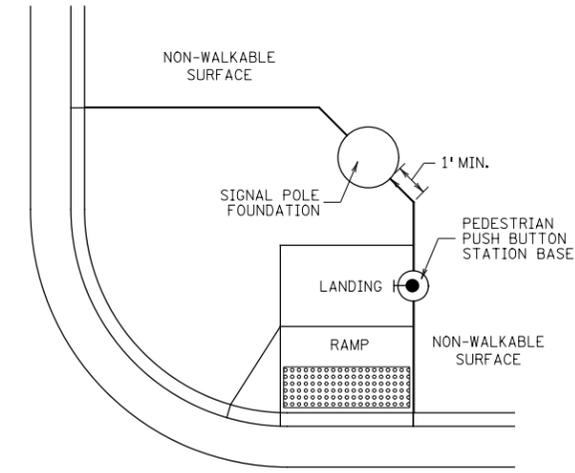
V CURB ADJACENT TO LANDSCAPE CURB OUTSIDE SIDEWALK LIMITS



V CURB ADJACENT TO BUILDING OR BARRIER



RAILROAD CROSSING PLAN VIEW



CONCRETE WALK EDGES ADJACENT TO CONCRETE STRUCTURES

NOTES:

- ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.
- WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.
- V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.
- V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.
- ① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.
- ② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.
- ③ EDGE BETWEEN NEW V CURB AND INPLACE STRUCTURE SHALL BE SEALED AND BOND BREAKER SHALL BE USED BETWEEN EXISTING STRUCTURE AND PLACED V-CURB.
- ④ NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL. FOR SKEWED RAILWAYS IN NO INSTANCE SHALL THE DETECTABLE WARNING BE CLOSER THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.
- ⑤ WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM.
- ⑥ WHEN PLAN SPECIFIES, DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS AT 36" MAX. CENTER TO CENTER (EPOXY COATED).
- ⑦ TO ENSURE RAMP AND LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS MAY BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET WHEN LANDINGS ARE CAST SEPARATELY.

REVISION:  
 APPROVED: 2-9-2015  
 OPERATIONS ENGINEER

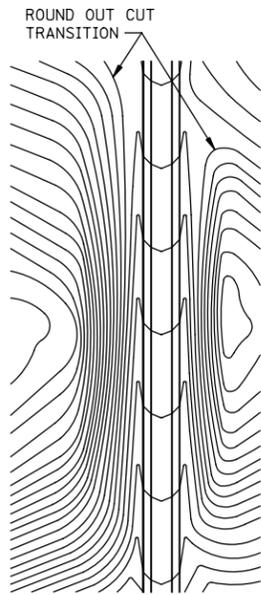
MINNESOTA DEPARTMENT OF TRANSPORTATION  
 STATE DESIGN ENGINEER  
 APPROVED: 2-9-2015

PEDESTRIAN CURB RAMP DETAILS  
 STANDARD PLAN 5-297.250 5 OF 5

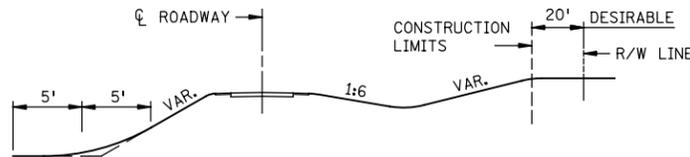
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 STANDARD PLAN SHEETS  
 94TH AVE N  
 SHEET 16 OF 98

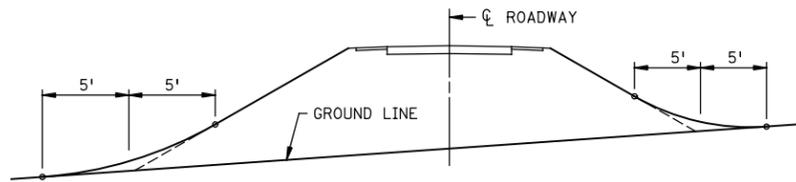
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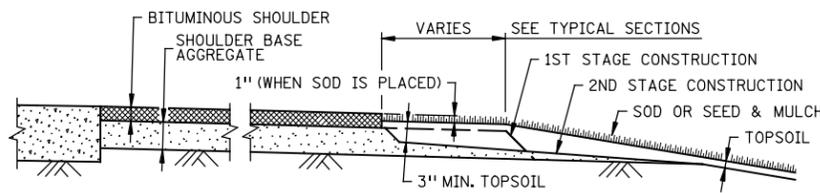
CONTOURING ROAD CUTS



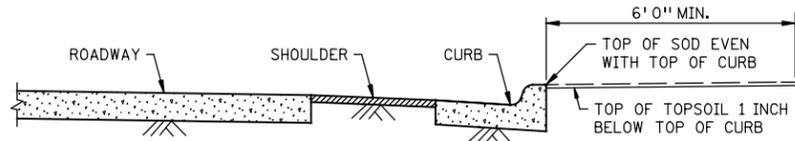
ROUNDING SHOULDERS AND BACKSLOPES



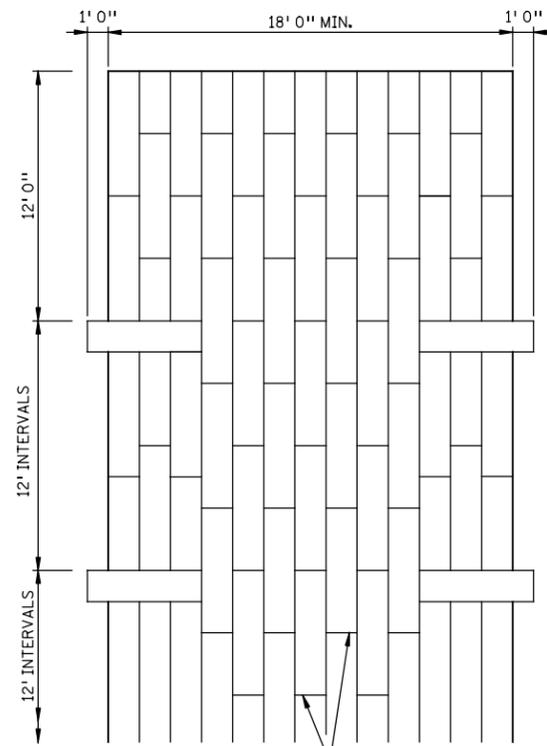
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



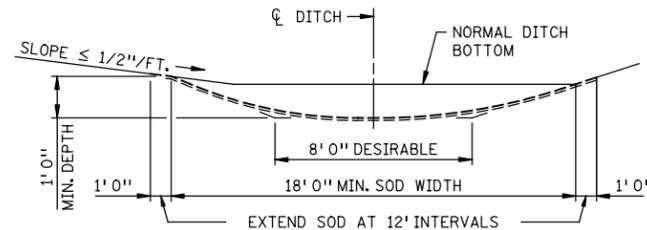
SHAPING AND TOPSOILING INSLOPES



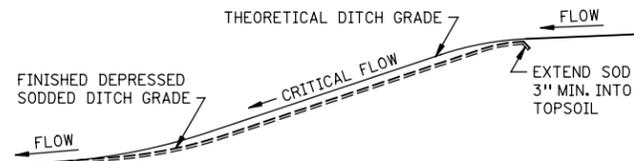
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



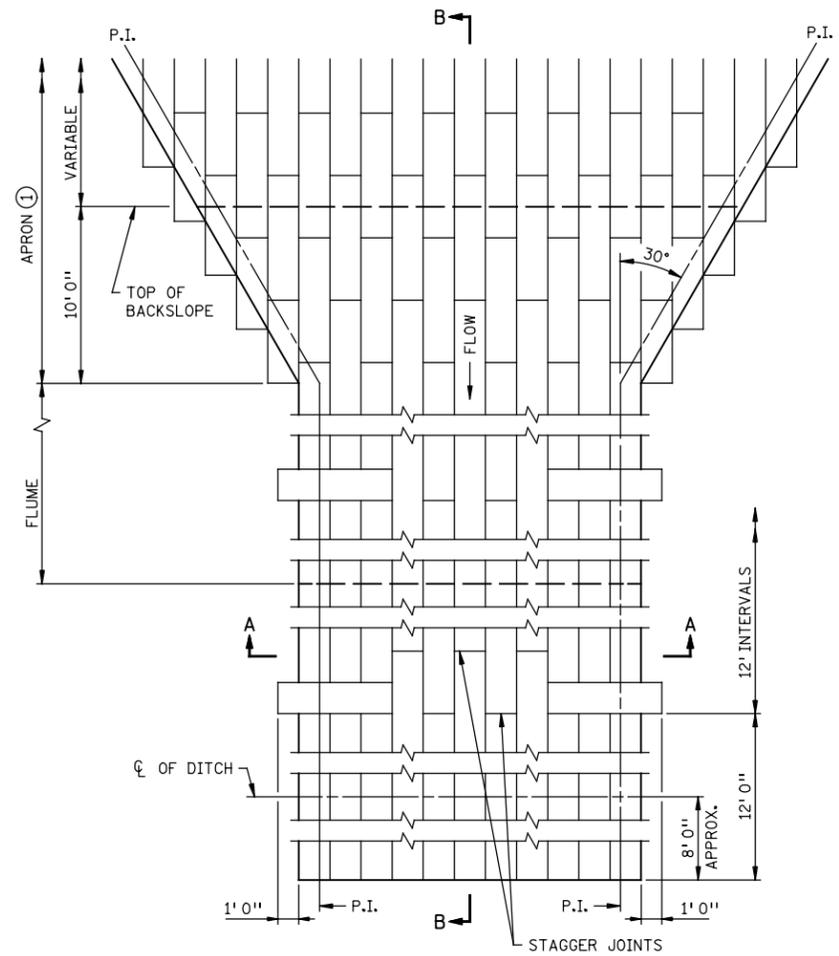
PLAN VIEW



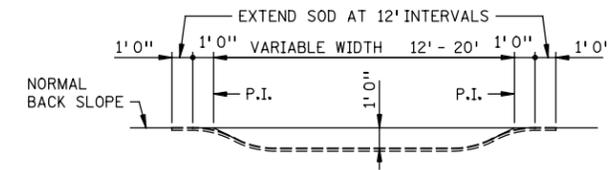
SODDED DITCH CROSS SECTION  
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.), FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



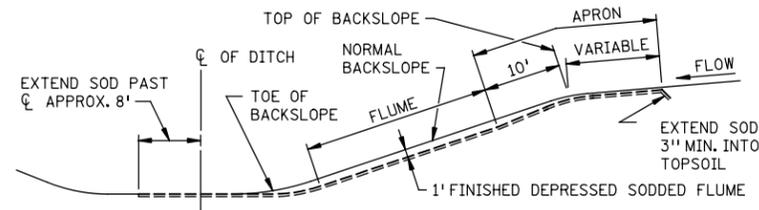
DITCH PROFILE  
SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A



SECTION B-B  
SODDED FLUME DETAILS

**NOTES:**  
SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.  
① CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

REVISION:  
APPROVED: 8-6-2014  
Chief Environmental Officer

MINNESOTA DEPARTMENT OF TRANSPORTATION  
State Design Engineer  
APPROVED: 8-6-2014

PERMANENT EROSION CONTROL  
ALONG ROADWAYS, DITCHES AND FLUMES  
STANDARD PLAN 5-297.404 1 OF 1

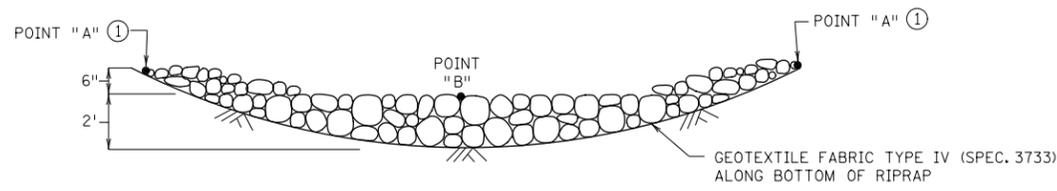
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CITY OF BROOKLYN PARK  
STANDARD PLAN SHEETS  
94TH AVE N

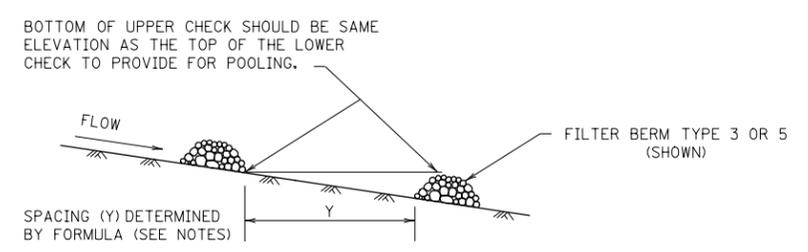
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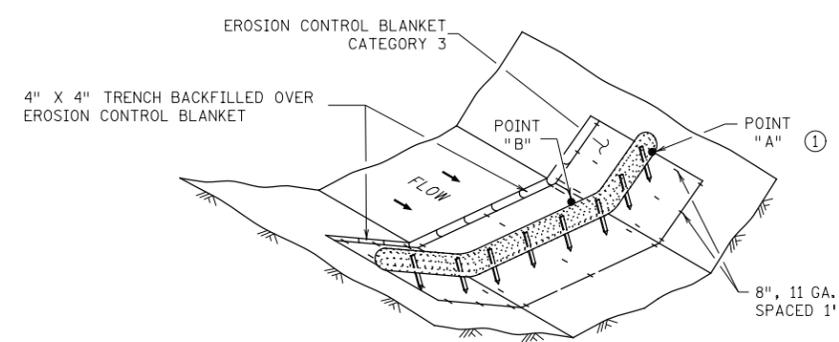
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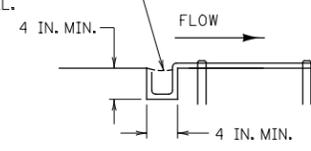
ROCK DITCH CHECKS  
 FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ②③  
 (FOR USE ON ROUGH GRADED AREAS)



DITCH CHECK SPACING  
 (FOR ALL FILTER BERM TYPES)



EROSION CONTROL BLANKET ANCHORAGE TRENCH. BACKFILL WITH TAMPED NATURAL SOIL.



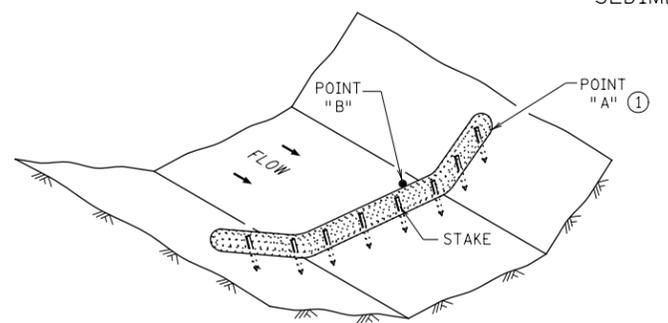
1 IN. X 2 IN. X 24 IN. LONG WOODEN STAKES AT 1 FT. MAXIMUM SPACING. STAKES SHALL BE DRIVEN THROUGH THE BACK HALF OF THE SEDIMENT CONTROL LOG AT AN ANGLE OF 45 DEGREES WITH THE TOP OF THE STAKE POINTING UPSTREAM.

SEDIMENT CONTROL LOG TYPE WOOD FIBER

EROSION CONTROL BLANKET CATEGORY 3 (8 FT. MIN. WIDTH)

STAPLE BLANKET IN ROWS WITH 6 IN. STAPLES AT 18 IN. MAX. SPACING WITHIN ROWS AND 2 FT. MAX. SPACING BETWEEN ROWS. LEADING AND TRAILING EDGE SHALL BE STAPLED APPROX. 6 IN. FROM EDGE (TYP.)

SEDIMENT CONTROL LOG TYPE BLANKET SYSTEM ④



SEDIMENT CONTROL LOG TYPE WOOD FIBER, OR TYPE COMPOST ⑤  
 (FOR USE ON ROUGH GRADED AREAS)

NOTES:

SEE SPECS. 2573, 3601, 3733, 3885, 3886 & 3889.

FOR DITCH CHECKS, PLACE SEDIMENT CONTROL LOG PERPENDICULAR TO FLOW AND IN A CRESCENT SHAPE WITH THE ENDS FACING UPSTREAM.

APPROXIMATE SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM THE FOLLOWING SPACING FORMULA:

$$\text{APPROXIMATE SPACING OF DITCH CHECKS (FT.)} = Y = \frac{\text{DITCH CHECK HEIGHT (FT)}}{\% \text{ CHANNEL SLOPE}} \times 100$$

- ① POINT "A" MUST BE A MINIMUM OF 6 INCHES HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.
- ② PERMANENT ROCK DITCH CHECKS PLACED WITHIN THE CLEAR ZONE ARE TO BE 18" OR LESS IN HEIGHT. A 1:6 APPROACH AND DEPARTURE SLOPE SHALL BE PROVIDED.
- ③ DITCH GRADE 3% - 5%, MAX. FLOW VELOCITY 12 FT./SEC..
- ④ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 4.5 FT./SEC..
- ⑤ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 1.5 FT./SEC..

REVISION:  
 APPROVED: 8-6-2014  
 [Signature]  
 CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION  
 [Signature]  
 STATE DESIGN ENGINEER  
 APPROVED: 8-6-2014

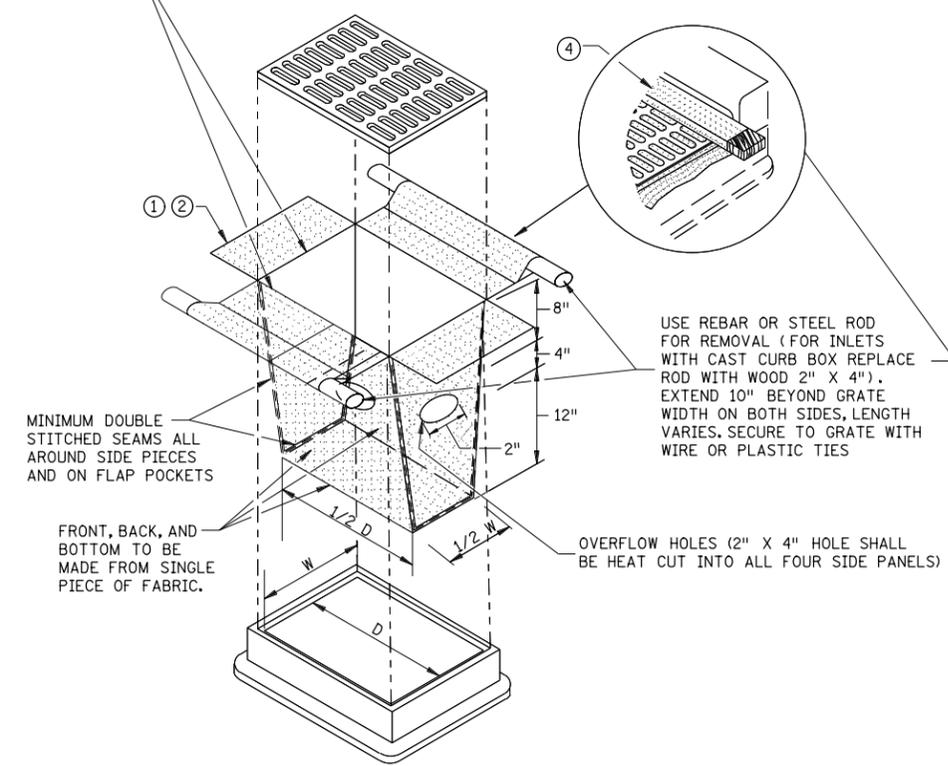
REVISOR:  
 TEMPORARY SEDIMENT CONTROL  
 DITCH CHECK  
 STANDARD PLAN 5-297.405 3 OF 7

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 CHECKED BY  
 0159048

CITY OF BROOKLYN PARK  
 STANDARD PLAN SHEETS  
 94TH AVE N  
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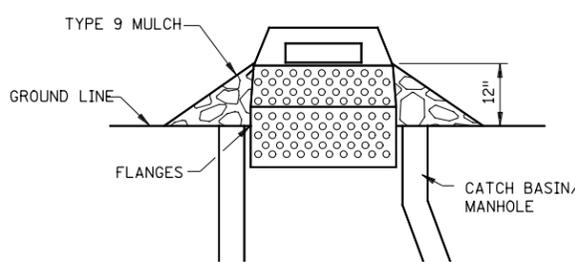
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INLET SPECIFICATIONS AS PER THE PLAN  
DIMENSION LENGTH AND WIDTH TO MATCH  
FLAP POCKET



**FILTER BAG INSERT ③**

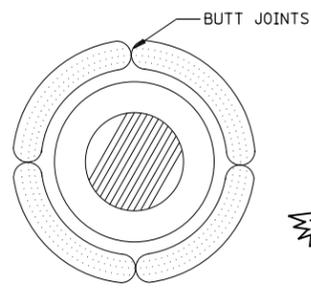
(CAN BE INSTALLED IN ANY INLET TYPE  
WITH OR WITHOUT A CURB BOX)



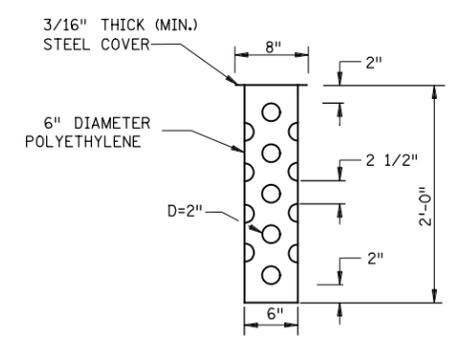
**SEDIMENT CONTROL INLET HAT**

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.

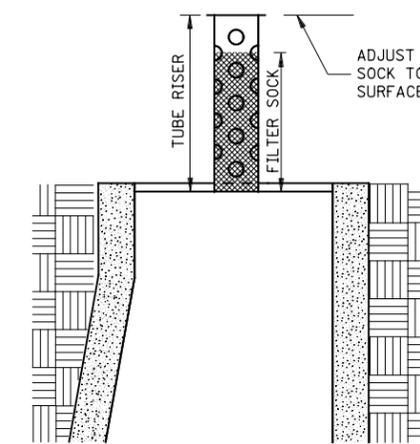
ENDS SECURELY CLOSED TO  
PREVENT LOSS OF OPEN GRADED  
AGGREGATE FILL. SECURED WITH  
50 PSI. ZIP TIE.



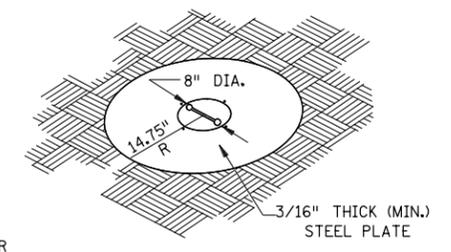
**ROCK LOG/COMPOST LOG**



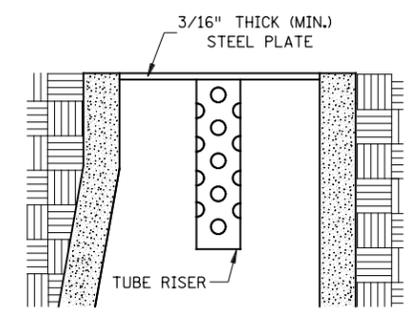
**TUBE RISER**



**SECTION  
(UP POSITION)**

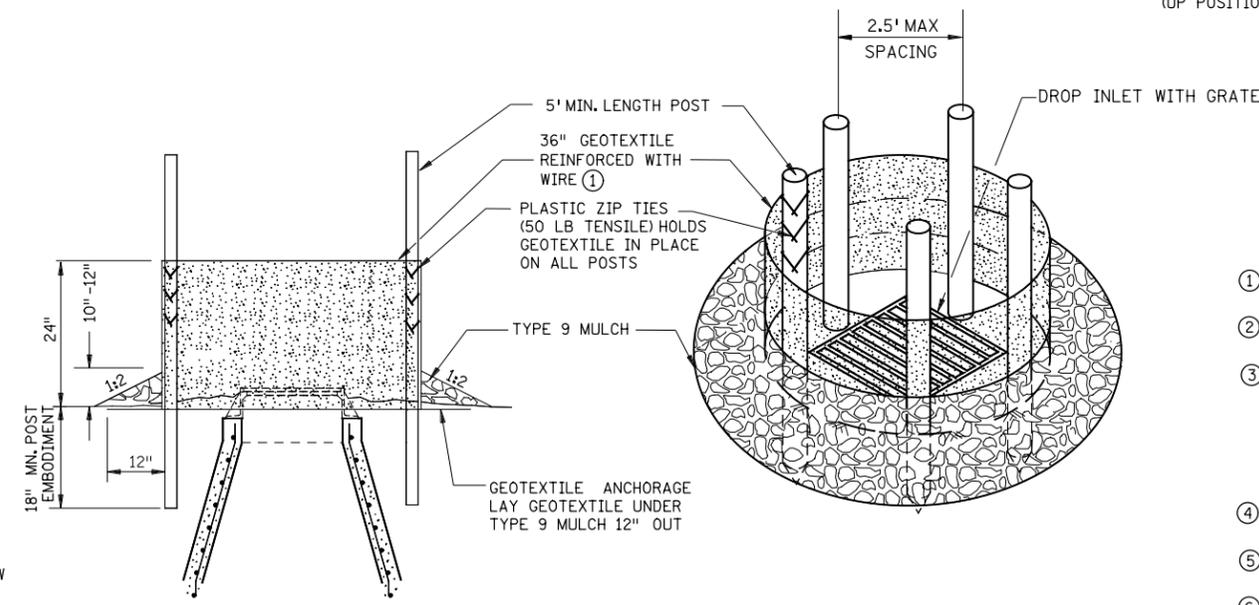


**PERSPECTIVE VIEW**



**SECTION  
(DOWN POSITION)**

**POP-UP HEAD**



**SILT FENCE RING AND ROCK FILTER BERM**

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

**NOTES:**

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

REVISION:  
APPROVED: 8-6-2014  
*[Signature]*  
CHIEF ENVIRONMENTAL OFFICER

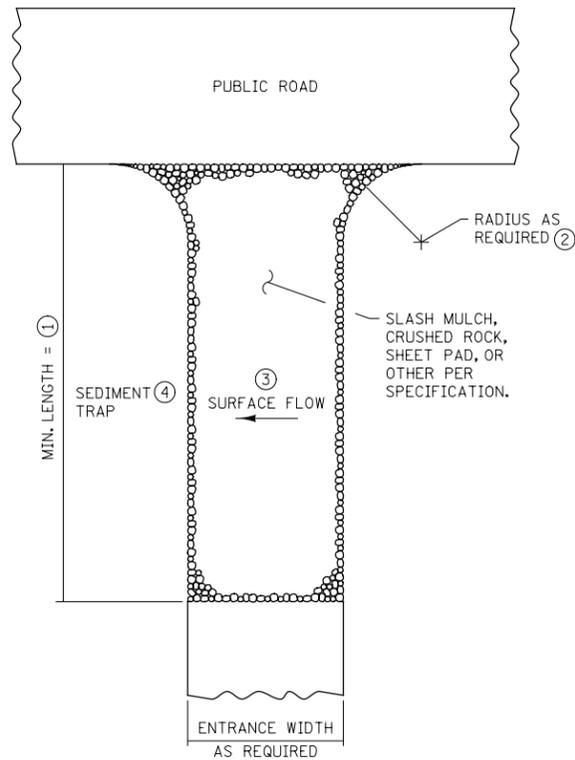
REVISOR:  
*[Signature]*  
STATE DESIGN ENGINEER  
APPROVED: 8-6-2014

**TEMPORARY SEDIMENT CONTROL**  
STORM DRAIN INLET PROTECTION  
**STANDARD PLAN 5-297.405**    **4 OF 7**

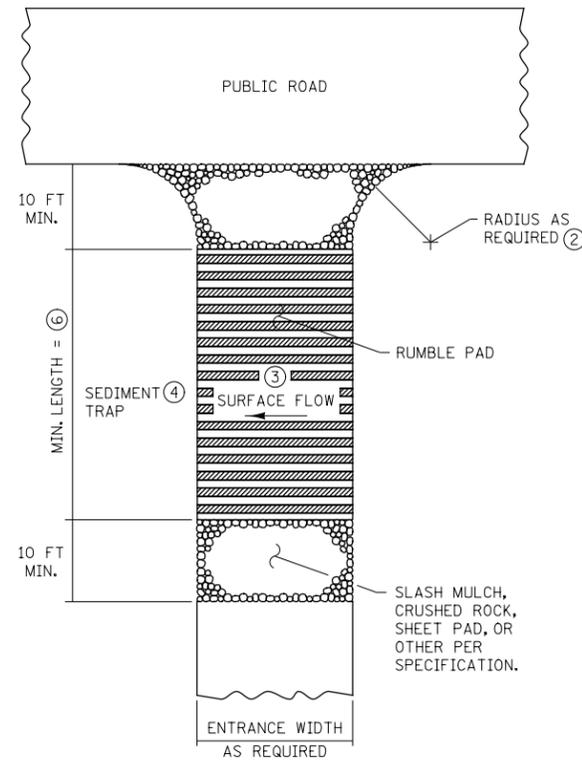
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0159048

**CITY OF BROOKLYN PARK**  
STANDARD PLAN SHEETS  
94TH AVE N  
**SHEET 19 OF 98**

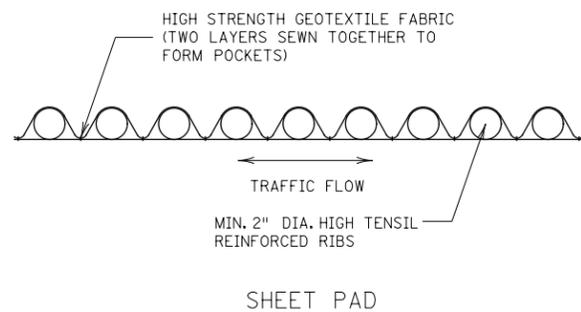
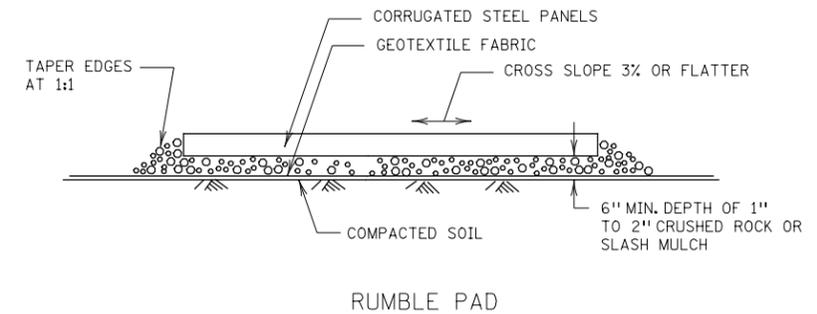
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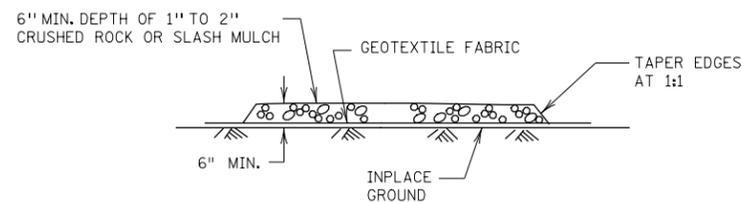
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT (5) (7)



RUMBLE PAD CONSTRUCTION EXIT (5) (7)



SHEET PAD



SLASH MULCH OR CRUSHED ROCK

NOTES:

- SEE SPECS. 2573 & 3882.
- (1) MINIMUM LENGTH SHALL BE THE GREATER OF 50 FEET OR A LENGTH SUFFICIENT TO ALLOW A MINIMUM OF 5 TIRE ROTATIONS ON THE PROVIDED PAD. MINIMUM LENGTH SHALL BE CALCULATED USING THE LARGEST TIRE WHICH WILL BE USED IN TYPICAL OPERATIONS.
- (2) PROVIDE RADIUS OR WIDEN PAD SUFFICIENTLY TO PREVENT VEHICLE TIRES FROM TRACKING OFF OF PAD WHEN LEAVING SITE.
- (3) IF RUNOFF FROM DISTURBED AREAS FLOWS TOWARD CONSTRUCTION EXITS, PREVENT RUNOFF FROM DRAINING DIRECTLY TO PUBLIC ROAD OVER CONSTRUCTION EXIT BY CROWNING THE EXIT OR SLOPING TO ONE SIDE. IF SURFACE GRADING IS INSUFFICIENT, PROVIDE OTHER MEANS OF INTERCEPTING RUNOFF.
- (4) IF RUNOFF FROM CONSTRUCTION EXITS WILL DRAIN OFF OF PROJECT SITE, PROVIDE SEDIMENT TRAP WITH STABILIZED OVERFLOW.
- (5) IF A TIRE WASH OFF IS REQUIRED THE CONSTRUCTION EXITS SHALL BE GRADED TO DRAIN THE WASH WATER TO A SEDIMENT TRAP.
- (6) MINIMUM LENGTH OF RUMBLE PAD SHALL BE 20 FEET, OR AS REQUIRED TO REMOVE SEDIMENT FROM TIRES. IF SIGNIFICANT SEDIMENT IS TRACKED FROM THE SITE, THE RUMBLE PAD SHALL BE LENGTHENED OR THE DESIGN MODIFIED TO PROVIDE ADDITIONAL VIBRATION. WASH-OFF LENGTH SHALL BE AS REQUIRED TO EFFECTIVELY REMOVE CONSTRUCTION SEDIMENT FROM VEHICLE TIRES.
- (7) MAINTENANCE OF CONSTRUCTION EXITS SHALL OCCUR WHEN THE EFFECTIVENESS OF SEDIMENT REMOVAL HAS BEEN REDUCED. MAINTENANCE SHALL CONSIST OF REMOVING SEDIMENT AND CLEANING THE MATERIALS OR PLACING ADDITIONAL MATERIAL (SLASH MULCH OR CRUSHED ROCK) OVER SEDIMENT FILLED MATERIAL TO RESTORE EFFECTIVENESS.

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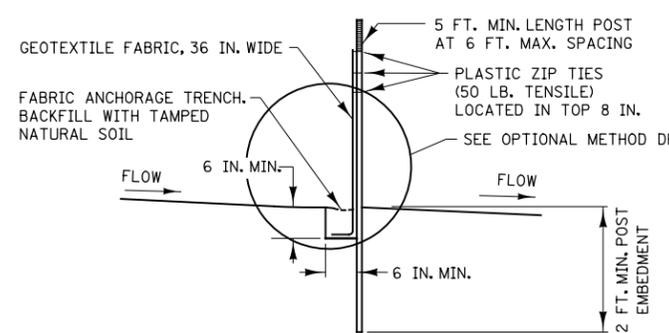
REVISOR:  
 APPROVED: 8-6-2014  
*[Signature]*  
 STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL  
 CONSTRUCTION EXITS  
 STANDARD PLAN 5-297.405 5 OF 7

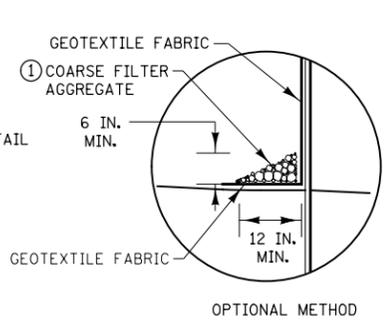
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CITY OF BROOKLYN PARK  
 STANDARD PLAN SHEETS  
 94TH AVE N  
 SHEET 20 OF 98

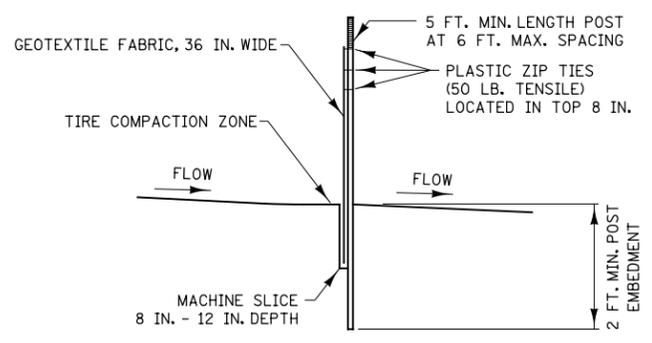
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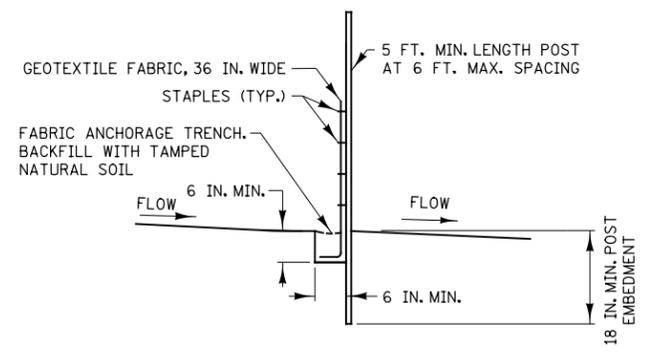
**SILT FENCE TYPE HI ②  
(HAND INSTALLED)**



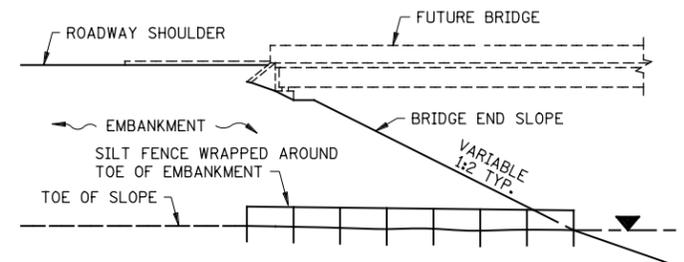
**OPTIONAL METHOD**



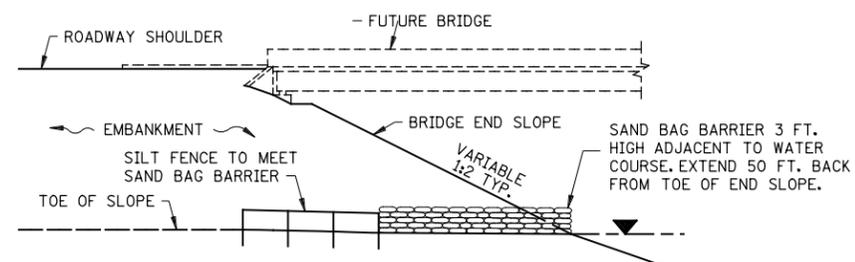
**SILT FENCE TYPE MS ②  
(MACHINE SLICED)**



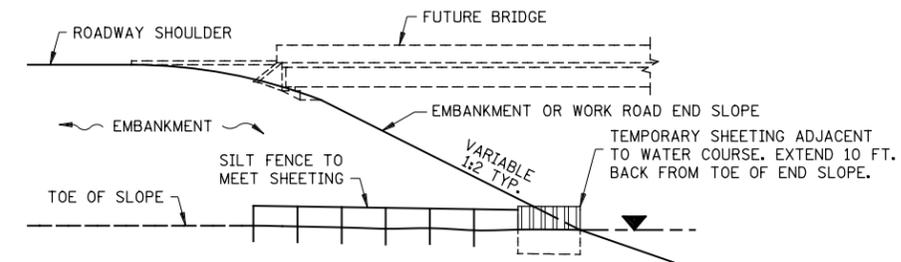
**SILT FENCE TYPE PA ③  
(PREASSEMBLED)**



**SILT FENCE ONLY ④**

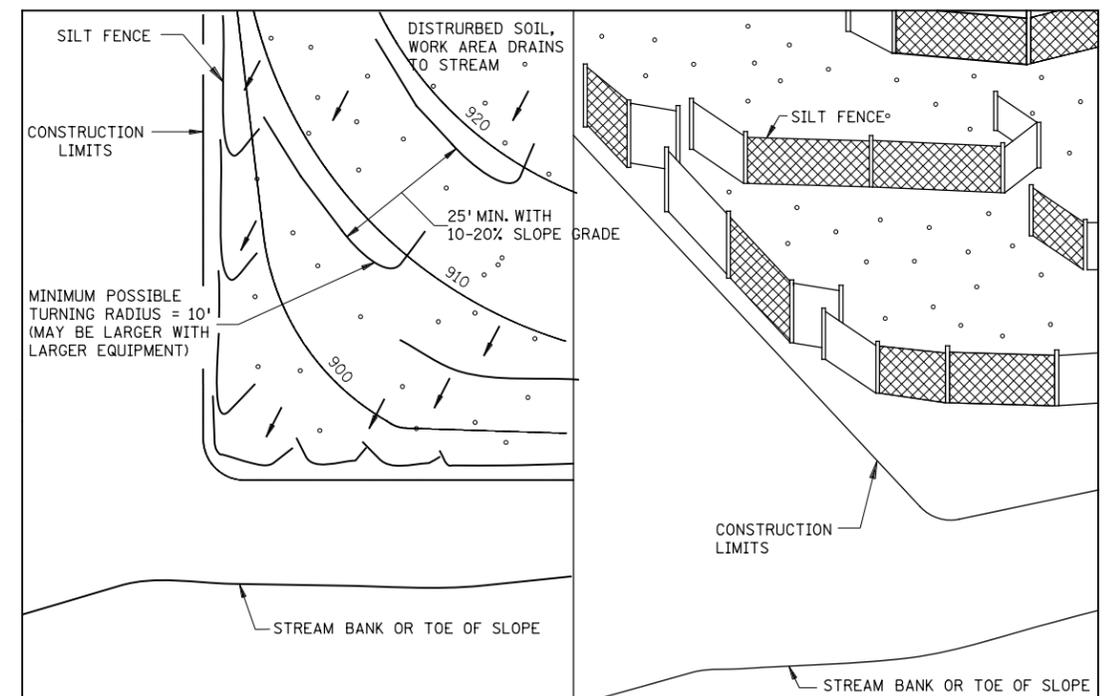


**SILT FENCE WITH SAND BAGS ⑤**



**SILT FENCE WITH SHEETING ⑥**

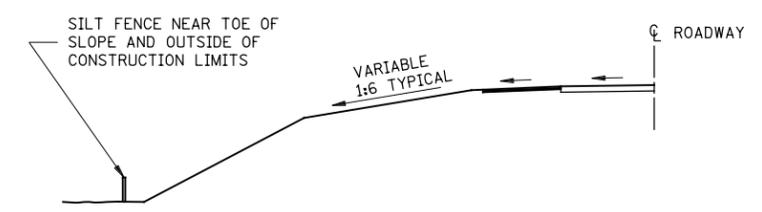
**INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER**



**PLAN VIEW**

**PERSPECTIVE VIEW**

**J-HOOK INSTALLATION**



**LOCATION AT TOE OF ROADWAY EMBANKMENT**

- NOTES:**  
 SEE SPECS. 2573, 3149 & 3886.  
 ① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.  
 ② TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 1 ACRE.  
 ③ TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 0.25 ACRE.  
 ④ WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC. CONTRIBUTING SLOPE AREA: 1/2 ACRE.  
 ⑤ WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC. CONTRIBUTING SLOPE AREA: 1 ACRE.  
 ⑥ WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC. CONTRIBUTING SLOPE AREA: 3 ACRES.

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 [Signature]  
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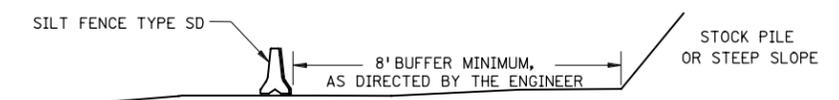
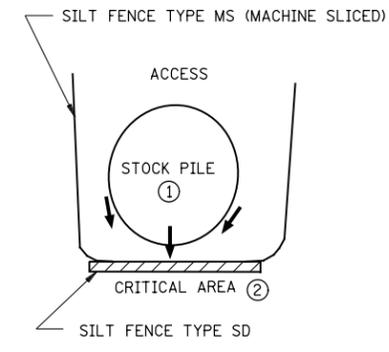
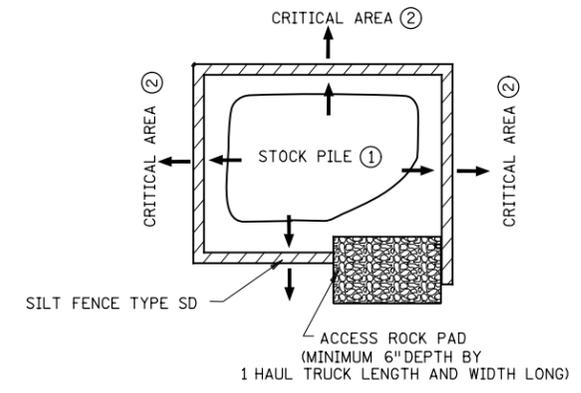
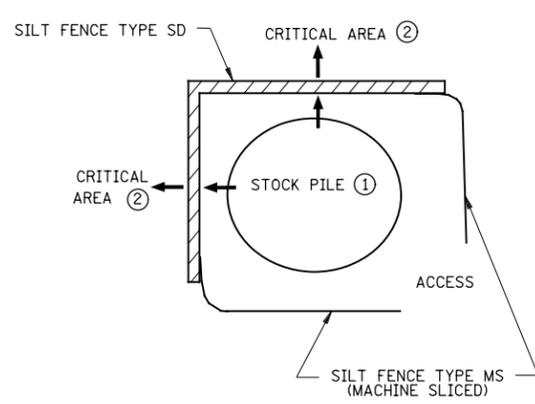
MINNESOTA DEPARTMENT OF TRANSPORTATION  
 [Signature]  
 STATE DESIGN ENGINEER  
 APPROVED: 8-6-2014

REVISION:  
**TEMPORARY SEDIMENT CONTROL**  
 SILT FENCE  
**STANDARD PLAN 5-297.405**    **6 OF 7**

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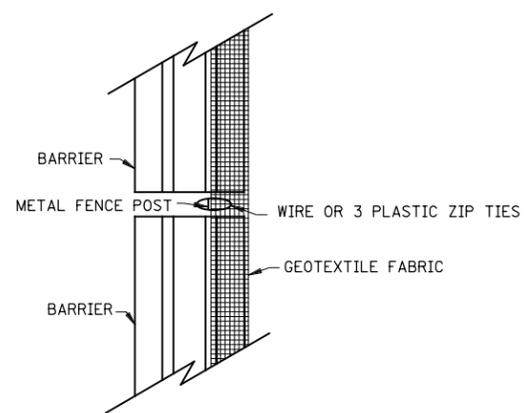
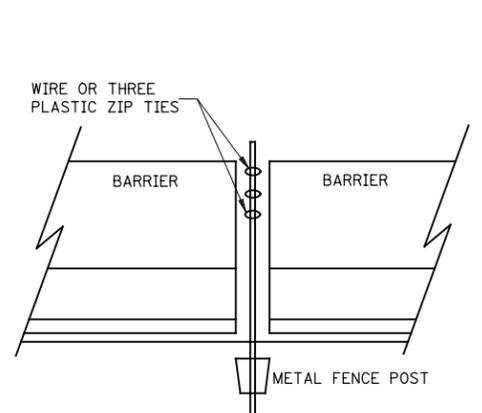
**CITY OF BROOKLYN PARK**  
 STANDARD PLAN SHEETS  
 94TH AVE N  
**SHEET 21 OF 98**

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**STOCKPILE SEDIMENT CONTROL**

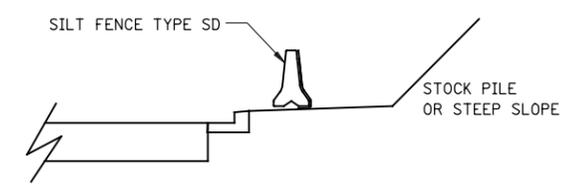
**STOCK PILE CONTAINMENT**



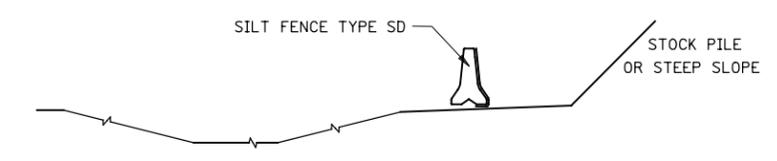
**PROFILE VIEW**

**TOP VIEW**

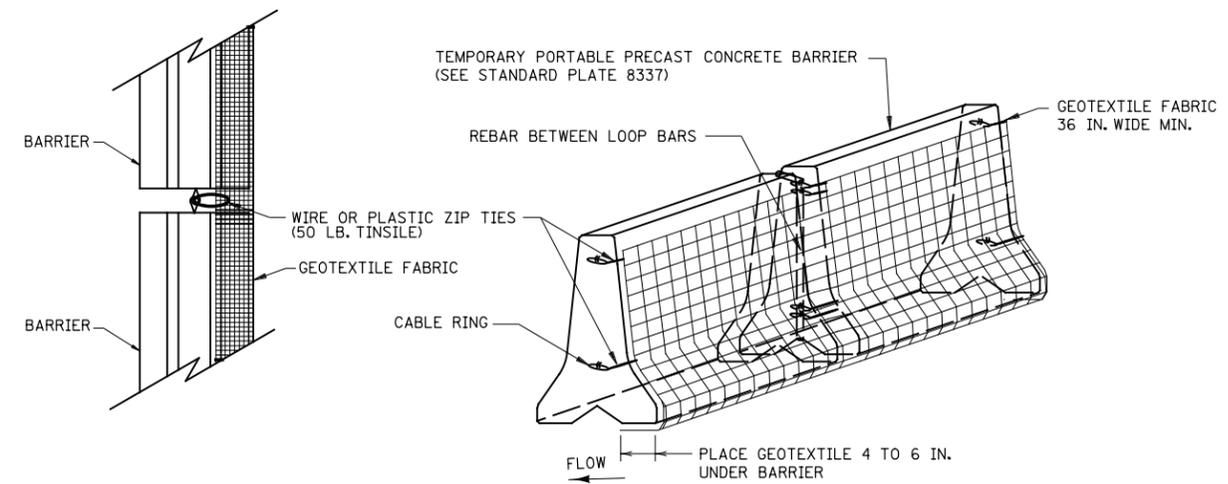
**SILT FENCE TYPE SD (SUPER DUTY) BARRIER WITHOUT LOOP BARS**



**CURB AND GUTTER PROTECTION SYSTEM**



**DITCH PROTECTION SYSTEM**



**TOP VIEW**

**PERSPECTIVE VIEW**

**SILT FENCE TYPE SD (SUPER DUTY) BARRIER WITH LOOP BARS**

**NOTES:**

- SEE SPECS. 2533, 2573 & 3886.
- SILT FENCE TYPE SD USED TO PROTECT CRITICAL AREAS FROM SHEET FLOW, AND AREAS WHERE OTHER SILT FENCES CANNOT BE PLACED. MAXIMUM CONTRIBUTING AREA: 1 ACRE.
- PLACE SILT FENCE TYPE SD ALONG A CONSTANT ELEVATION.
- SILT FENCE TYPE SD CAN UTILIZE EITHER A CONCRETE, OR WATER FILLED, TEMPORARY MEDIAN BARRIER.
- ① PLACING STOCK PILES NEXT TO AN ENVIRONMENTALLY SENSITIVE AREA IS NOT RECOMMENDED. WHEN THERE ARE NO FEASIBLE ALTERNATIVES, PLACE SILT FENCE SD AS SHOWN OR AS DIRECTED BY THE ENGINEER.
- ② CRITICAL AREAS INCLUDE WETLANDS, JUDICIAL DITCHES, STREAMS, WATER BODIES, AND OTHER AREAS REQUIRING PROTECTION.

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APPROVED: 8-6-2014  
*[Signature]*  
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION  
*[Signature]*  
STATE DESIGN ENGINEER  
APPROVED: 8-6-2014

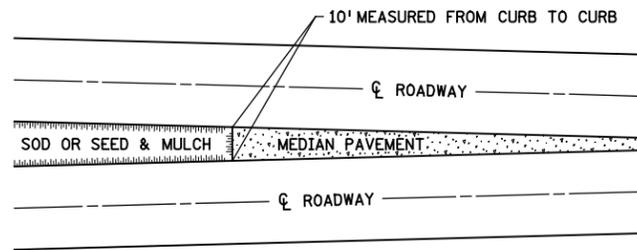
REVISED:  
**TEMPORARY SEDIMENT CONTROL**  
SUPER DUTY SILT FENCE  
**STANDARD PLAN 5-297.405**    **7 OF 7**

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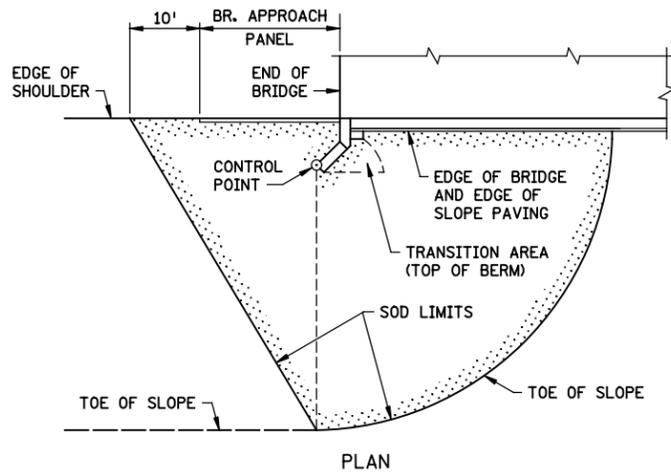
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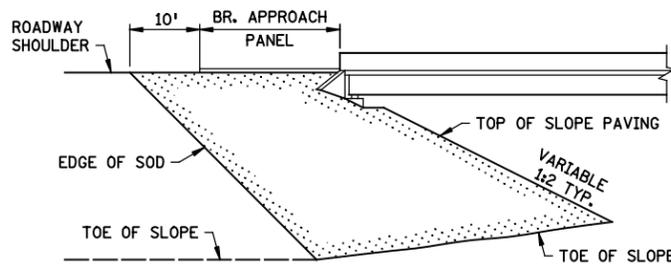
**CITY OF BROOKLYN PARK**  
STANDARD PLAN SHEETS  
94TH AVE N  
**SHEET 22 OF 98**



SODDING LIMITS AT GORE AREA

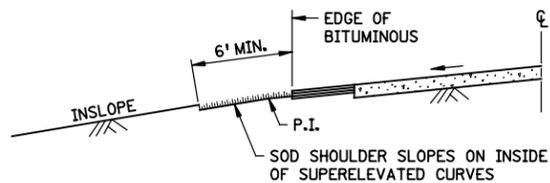


PLAN

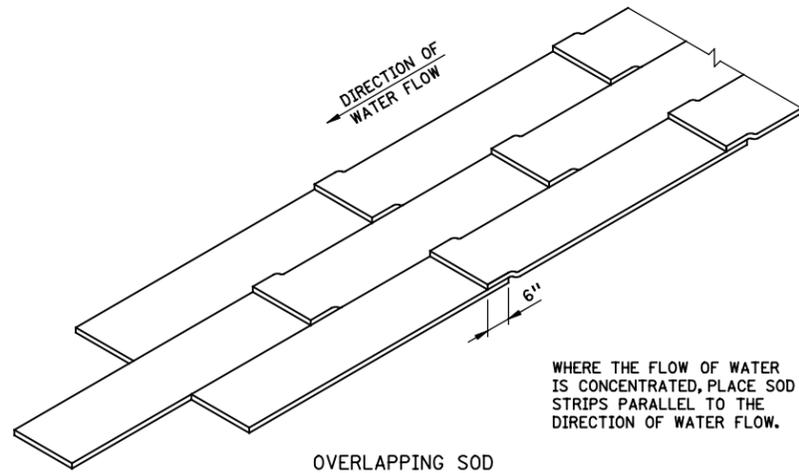


ELEVATION

SODDING LIMITS AT BRIDGE APPROACH FILLS

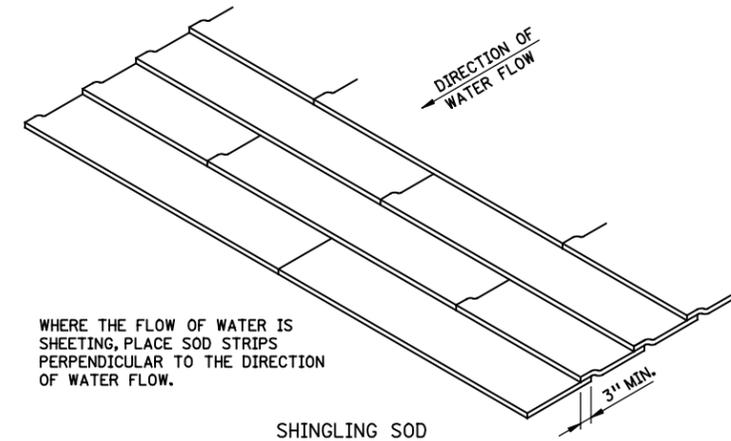


SODDING INSLOPES OF SUPERELEVATED CURVES



OVERLAPPING SOD

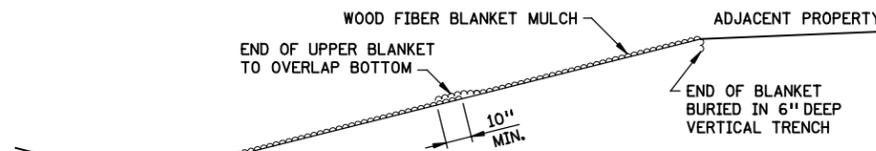
WHERE THE FLOW OF WATER IS CONCENTRATED, PLACE SOD STRIPS PARALLEL TO THE DIRECTION OF WATER FLOW.



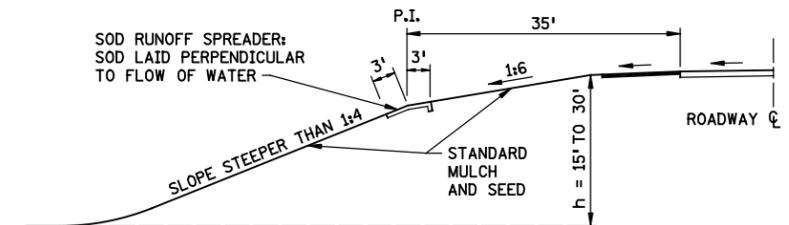
SHINGLING SOD

WHERE THE FLOW OF WATER IS SHEETING, PLACE SOD STRIPS PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

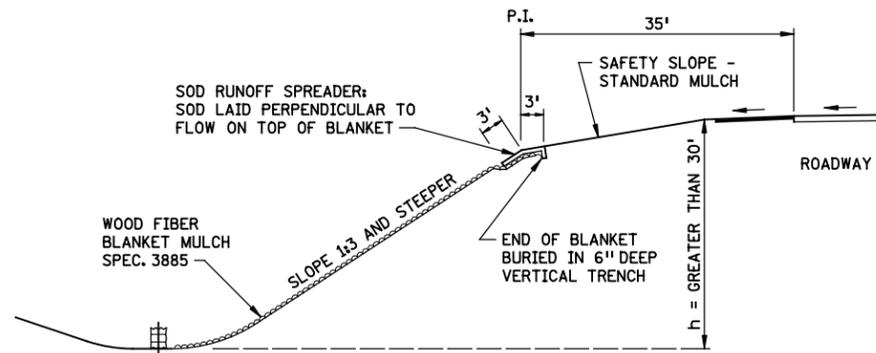
SPECIAL SOD PLACEMENT TECHNIQUES



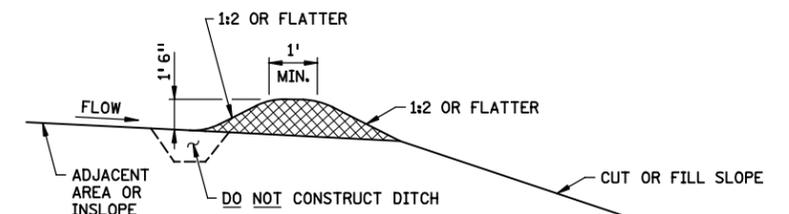
WOOD FIBER BLANKET INSTALLATION ON A CUT SLOPE



BROKEN-BACK SAFETY FILL SLOPE



WOOD FIBER BLANKET INSTALLATION ON AN INSLOPE (WHEN REQUIRED)



PERMANENT SLOPE PROTECTION DIKE

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*[Signature]*  
CHIEF ENVIRONMENTAL OFFICER

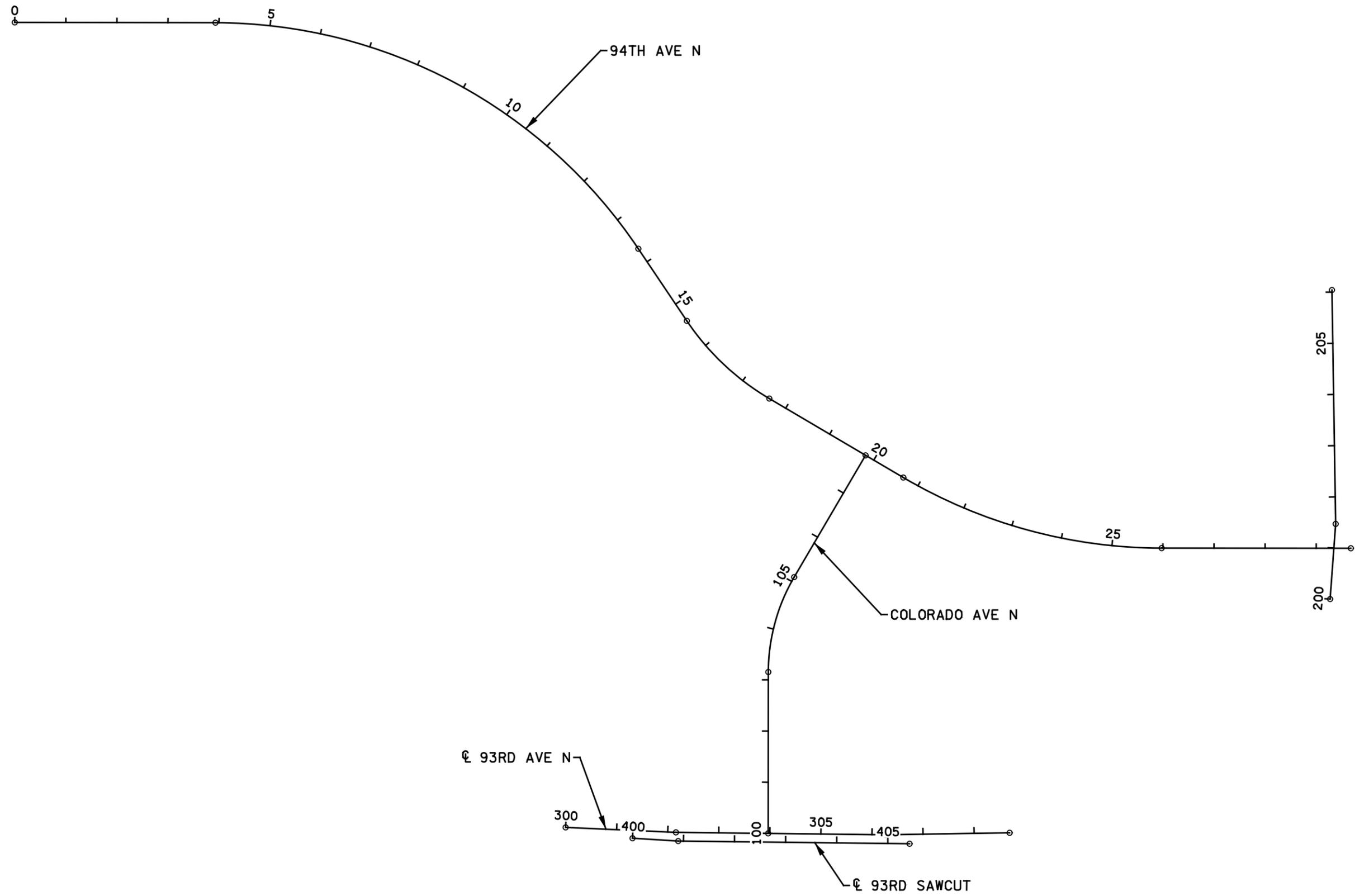
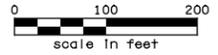
MINNESOTA DEPARTMENT OF TRANSPORTATION  
REVISOR:  
*[Signature]*  
STATE DESIGN ENGINEER  
APPROVED: 8-6-2014

PERMANENT SEDIMENT CONTROL  
ALONG ROADWAYS AND AT GORE AREAS & BRIDGE APPROACH FILLS  
STANDARD PLAN 5-297.406  
1 OF 1

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CITY OF BROOKLYN PARK  
STANDARD PLAN SHEETS  
94TH AVE N  
SHEET 23 OF 98

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: STEVEN J. MILLER  
 Date: \_\_\_\_\_ License # 41327

DRAWN BY  
 J. VAN BECK  
 DESIGNED BY  
 M. JULIFF  
 CHECKED BY  
 S. MILLER  
 0159048



**CITY OF BROOKLYN PARK**  
**ENGINEERING SERVICES DIVISION**  
 Brooklyn Park 5200 85TH AVE. N.  
 BROOKLYN PARK, MN. 55443  
 PH# 763/493-8100  
 FAX# 763/493-8391

**CITY OF BROOKLYN PARK**  
 ALIGNMENT PLAN  
**94TH AVE N**

**SHEET**  
**24**  
**OF**  
**98**

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
			SPIRAL CURVE DATA							
ANGLE (Θs)	DEGREE	ST	LT	LS						
<b>℄ 93RD SAWCUT &lt;93RDSA&gt;</b>										
		℄ Road 1								
1400	POT	400+00.000					505,569.4861	221,041.3501		
1401	POT	400+89.684					505,658.9975	221,035.7890		
1402	POT	405+42.650					506,111.9351	221,030.6985		

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
			SPIRAL CURVE DATA							
ANGLE (Θs)	DEGREE	ST	LT	LS						
<b>℄ 94TH AVE N &lt;94TH&gt;</b>										
		℄ 94TH AVE N								
1000	POT	0+00.000					504,360.2239	222,634.8109		
	PC	3+92.982					504,753.2057	222,634.1607	90° 05' 41.29"	
94TH-1	PI	9+24.160	55° 57' 08.94" RT	5° 43' 46.48"	1,000.000'	531.178'	976.555'	505,284.3826	222,633.2818	PI
	CC						504,751.5511	221,634.1620		
	PT	13+69.537					505,581.0499	222,192.6706	146° 02' 50.23"	
	PC	15+39.298					505,675.8629	222,051.8540	146° 02' 50.23"	
94TH-2	PI	16+52.974	25° 37' 01.15" LT	11° 27' 32.96"	500.000'	113.675'	223.550'	505,739.3514	221,957.5606	PI
	CC						506,090.6122	222,331.1082		
	PT	17+62.849					505,837.3673	221,899.9853	120° 25' 49.08"	
	PC	20+67.213					506,099.8044	221,745.8278	120° 25' 49.08"	
94TH-3	PI	23+38.772	30° 23' 08.08" LT	5° 43' 46.48"	1,000.000'	271.559'	530.328'	506,333.9549	221,608.2860	PI
	CC						506,606.2942	222,608.0737		
	PT	25+97.542					506,605.5136	221,608.0740	90° 02' 41.00"	
1001	POT	29+67.701					506,975.6731	221,607.7851		
<b>℄ COLORADO AVE N &lt;COLO&gt;</b>										
		℄ 93RD AVE N STA 303+96.794=								
1100	POT	100+00.000					505,835.1465	221,050.8103		
	PC	103+15.158					505,835.4551	221,365.9686	0° 03' 22.00"	
COLO-1	PI	104+14.781	30° 22' 27.08" RT	15° 36' 42.94"	367.000'	99.623'	194.558'	505,835.5527	221,465.5915	PI
	CC						506,202.4550	221,365.6092		
	PT	105+09.716					505,886.0107	221,551.4909	30° 25' 49.08"	
1101	POT	107+85.566					506,025.7262	221,789.3419		
		℄ 94TH AVE N STA 21+38.527								
<b>℄ 93RD AVE N &lt;93RD&gt;</b>										
		℄ 93RD AVE N								
1300	POT	300+00.000					505,438.5849	221,062.6145		
1301	POT	302+16.239					505,654.6033	221,052.8394		
1302	POT	306+26.513					506,064.8514	221,048.2287		
1303	POT	308+69.518					506,307.8272	221,051.9374		
		℄ 93RD AVE N								
<b>℄ ZANE AVE N &lt;ZANE&gt;</b>										
		℄ ZANE AVE N								
1200	POT	200+00.000					506,935.1058	221,508.4303		
1201	POT	201+47.264					506,945.9471	221,655.2950		
1202	POT	206+03.982					506,938.7471	222,111.9559		

NOTES:  
 ① ALIGNMENT POINT IS NOT SHOW ON ALIGNMENT PLAN VIEW.  
 <XXXX> INDICATES GEOPAK ALIGNMENT NAME.

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: STEVEN J. MILLER  
 Date: \_\_\_\_\_ License # 41327

DRAWN BY  
 J. VAN BECK  
 DESIGNED BY  
 M. JULIFF  
 CHECKED BY  
 S. MILLER  
 0159048



**CITY OF BROOKLYN PARK**  
 ENGINEERING SERVICES DIVISION  
 Brooklyn Park  
 5200 85TH AVE. N.  
 BROOKLYN PARK, MN. 55443  
 PH# 763/493-8100  
 FAX# 763/493-8391

**CITY OF BROOKLYN PARK**  
 ALIGNMENT TABULATIONS  
**94TH AVE N**

**SHEET**  
 25  
 OF  
 98

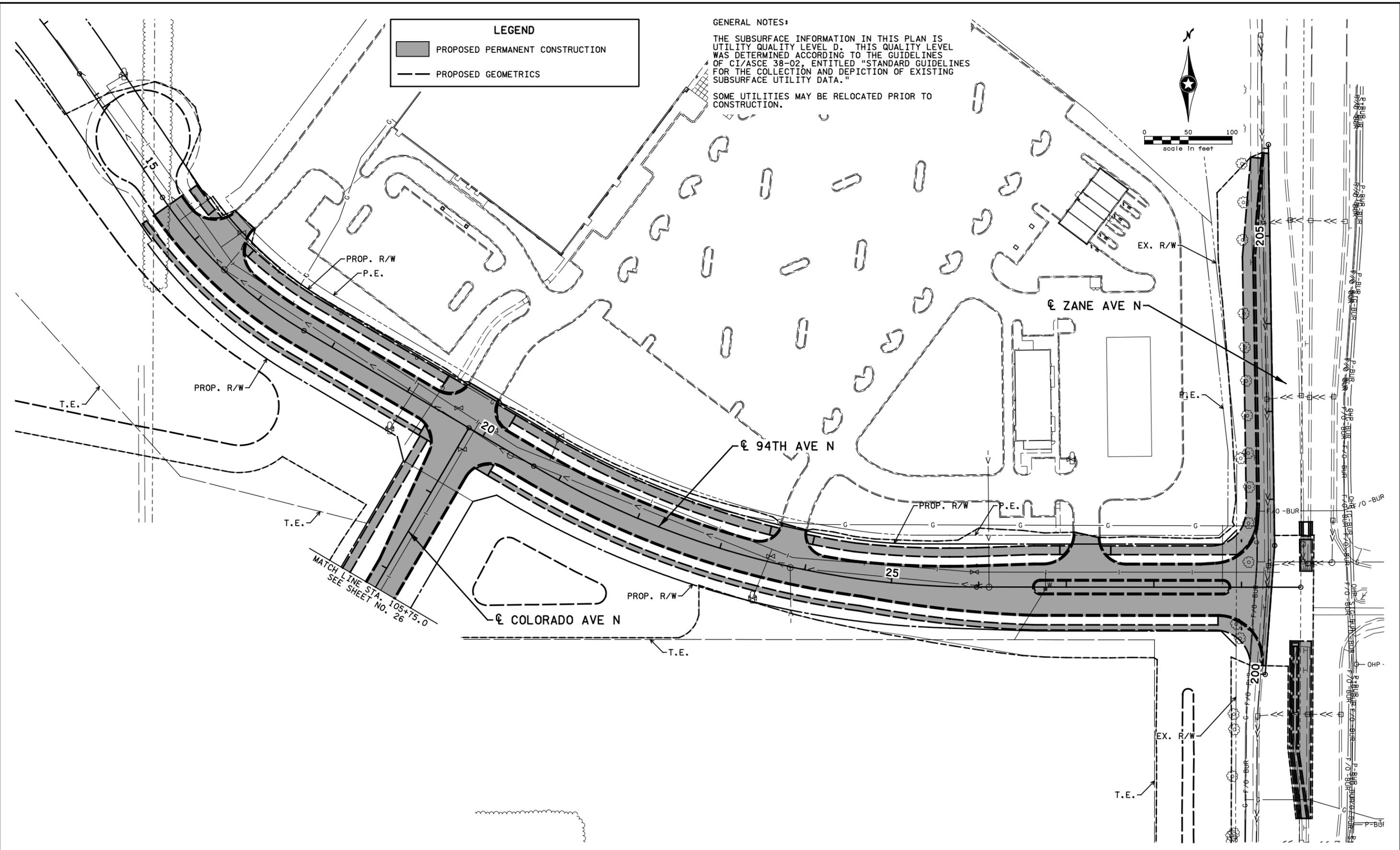
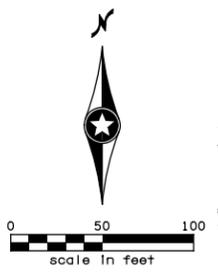
**LEGEND**

- PROPOSED PERMANENT CONSTRUCTION
- PROPOSED GEOMETRICS

**GENERAL NOTES:**

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

SOME UTILITIES MAY BE RELOCATED PRIOR TO CONSTRUCTION.



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Print Name: STEVEN J. MILLER

Date: \_\_\_\_\_ License # 41327

DRAWN BY  
J. VAN BECK

DESIGNED BY  
M. JULIFF

CHECKED BY  
S. MILLER

0159048

**SR** ENGINEERS  
PLANNERS  
DESIGNERS

Consulting Group, Inc.

**CITY OF BROOKLYN PARK**  
ENGINEERING SERVICES DIVISION

Brooklyn Park

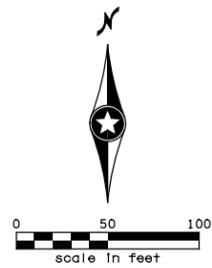
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FAX# 763/493-8391

**CITY OF BROOKLYN PARK**  
TOPOGRAPHY AND UTILITY PLANS

**94TH AVE N**

94TH AVE N STA. 14+16.41 TO STA. 29+32.51

**SHEET**  
26  
**OF**  
98

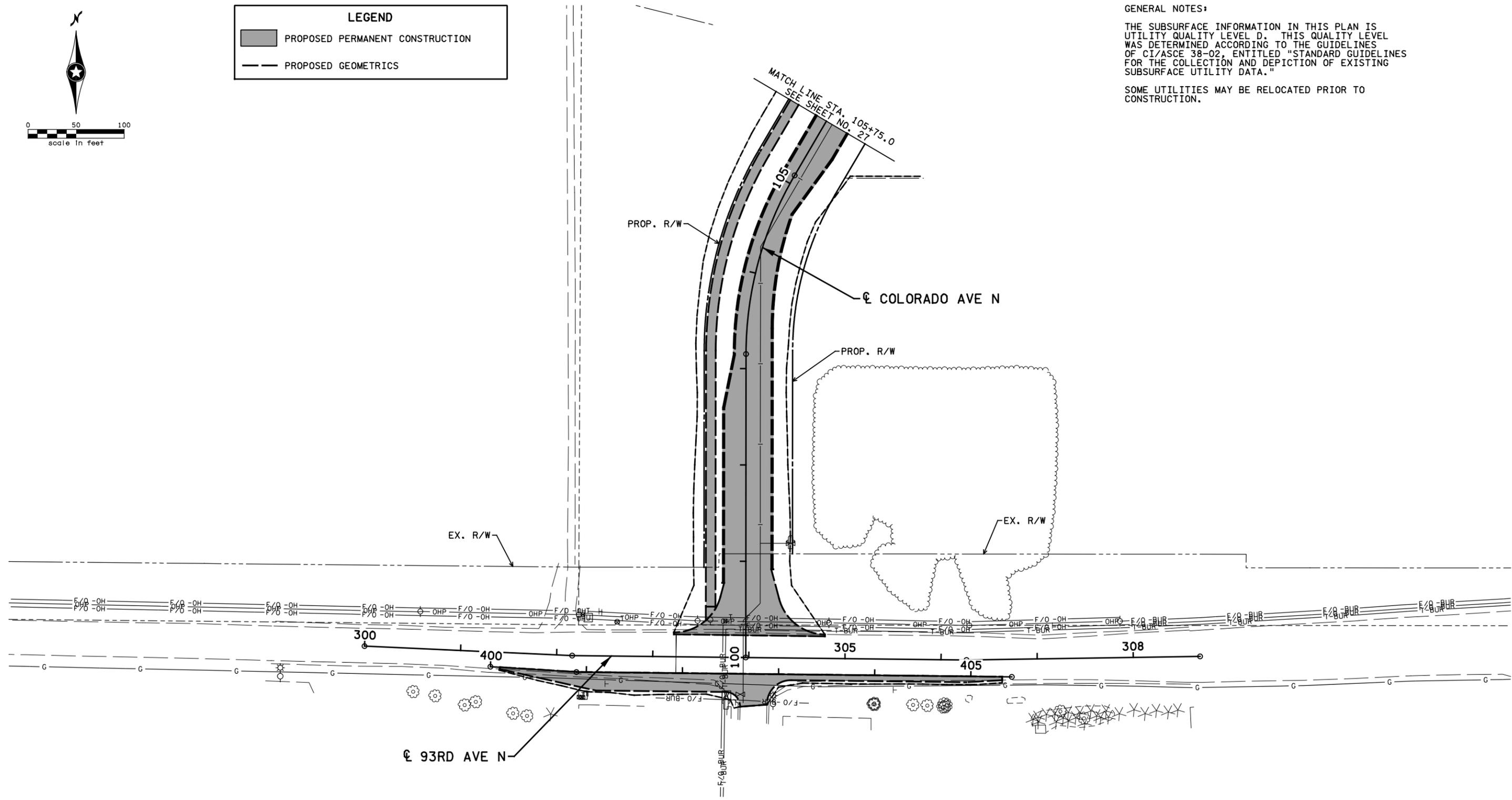


LEGEND	
	PROPOSED PERMANENT CONSTRUCTION
	PROPOSED GEOMETRICS

GENERAL NOTES:

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S. MILLER

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DESIGNERS**

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**CITY OF BROOKLYN PARK**

TOPOGRAPHY AND UTILITY PLANS

**94TH AVE N**

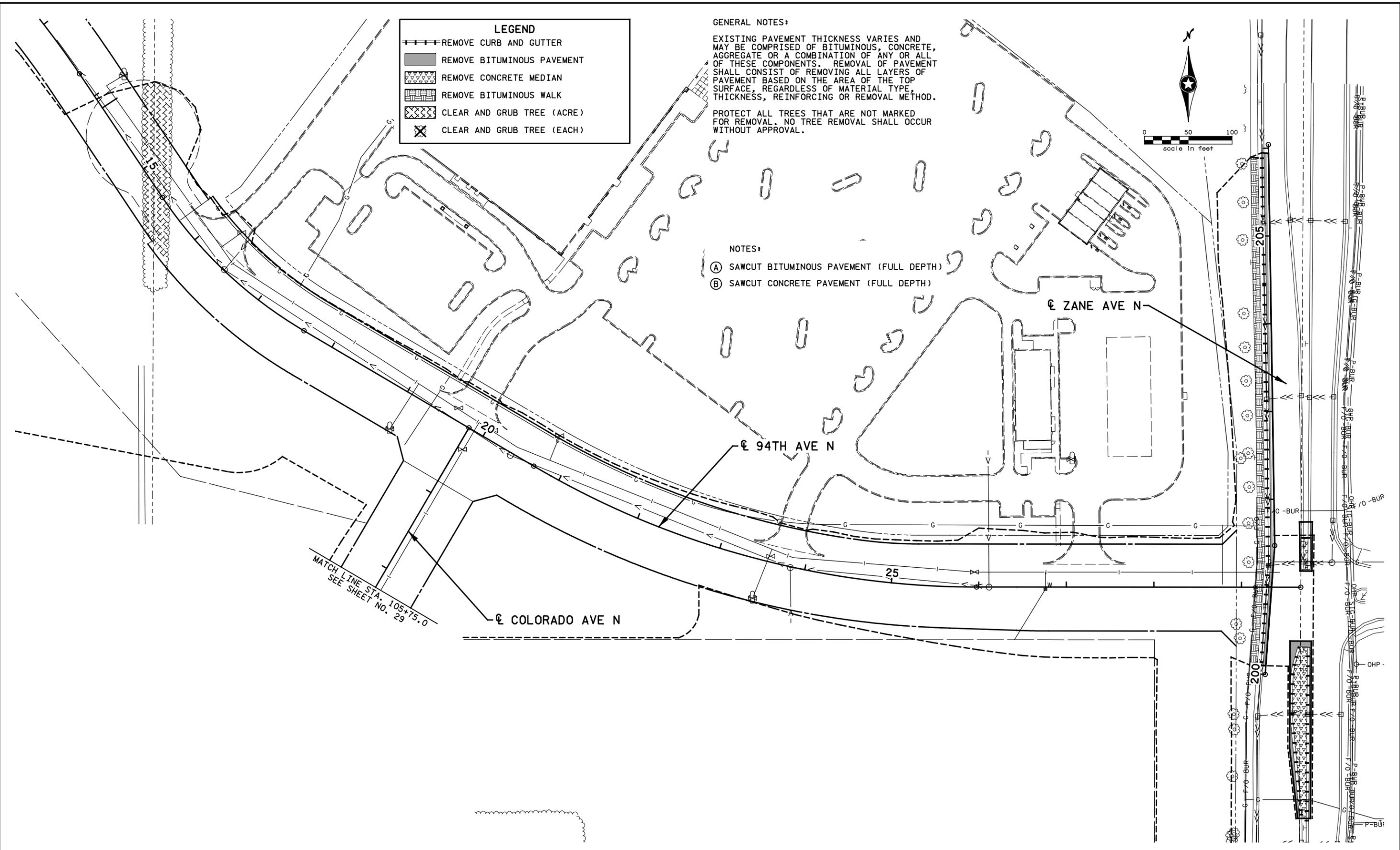
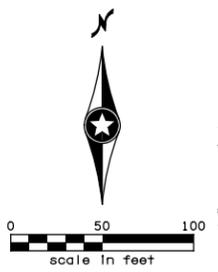
COLORADO AVE N STA. 100+22.12 TO STA. 105+75.00

**SHEET  
27  
OF  
98**

LEGEND	
	REMOVE CURB AND GUTTER
	REMOVE BITUMINOUS PAVEMENT
	REMOVE CONCRETE MEDIAN
	REMOVE BITUMINOUS WALK
	CLEAR AND GRUB TREE (ACRE)
	CLEAR AND GRUB TREE (EACH)

**GENERAL NOTES:**  
 EXISTING PAVEMENT THICKNESS VARIES AND MAY BE COMPRISED OF BITUMINOUS, CONCRETE, AGGREGATE OR A COMBINATION OF ANY OR ALL OF THESE COMPONENTS. REMOVAL OF PAVEMENT SHALL CONSIST OF REMOVING ALL LAYERS OF PAVEMENT BASED ON THE AREA OF THE TOP SURFACE, REGARDLESS OF MATERIAL TYPE, THICKNESS, REINFORCING OR REMOVAL METHOD.  
 PROTECT ALL TREES THAT ARE NOT MARKED FOR REMOVAL. NO TREE REMOVAL SHALL OCCUR WITHOUT APPROVAL.

**NOTES:**  
 (A) SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH)  
 (B) SAWCUT CONCRETE PAVEMENT (FULL DEPTH)



MATCH LINE STA. 105+75.0  
 SEE SHEET NO. 29

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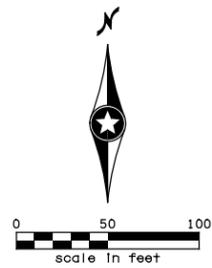
DRAWN BY J. VAN BECK  
 DESIGNED BY M. JULIFF  
 CHECKED BY S. MILLER  
 0159048



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**ENGINEERING SERVICES DIVISION**  
 Brooklyn Park  
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 PH# 763/493-8100  
 FAX# 763/493-8391

**CITY OF BROOKLYN PARK**  
 REMOVAL PLANS  
**94TH AVE N**  
 94TH AVE N STA. 14+16.41 TO STA. 29+32.51

**SHEET**  
**28**  
**OF**  
**98**



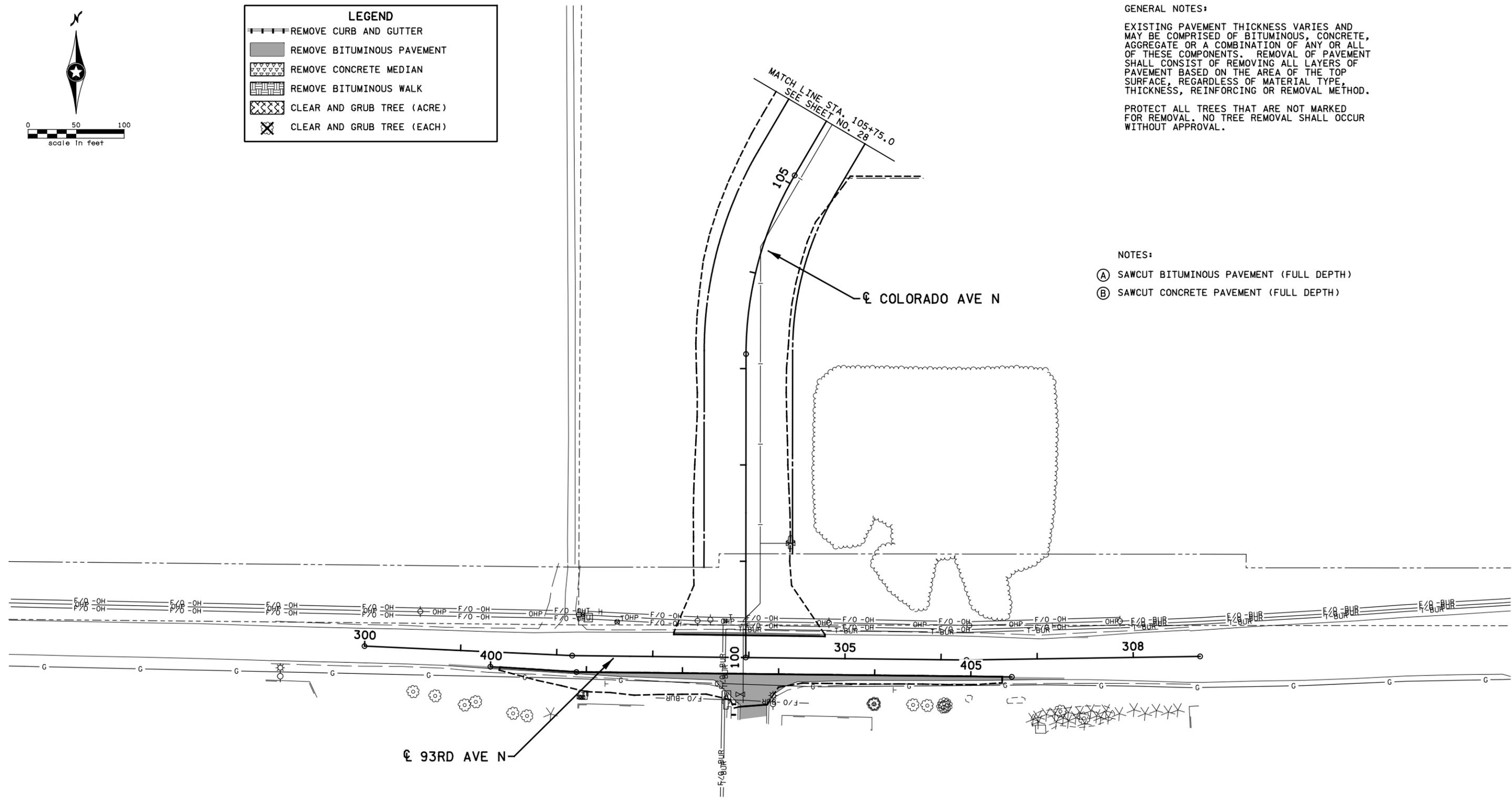
LEGEND	
	REMOVE CURB AND GUTTER
	REMOVE BITUMINOUS PAVEMENT
	REMOVE CONCRETE MEDIAN
	REMOVE BITUMINOUS WALK
	CLEAR AND GRUB TREE (ACRE)
	CLEAR AND GRUB TREE (EACH)

GENERAL NOTES:

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PROTECT ALL TREES THAT ARE NOT MARKED FOR REMOVAL. NO TREE REMOVAL SHALL OCCUR WITHOUT APPROVAL.

- NOTES:
- (A) SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH)
  - (B) SAWCUT CONCRETE PAVEMENT (FULL DEPTH)



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Date: \_\_\_\_\_ License # 41327

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J. VAN BECK

DESIGNED BY  
M. JULIFF

CHECKED BY  
S. MILLER

0159048



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ENGINEERING SERVICES DIVISION

Brooklyn Park

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BROOKLYN PARK, MN. 55443  
PH# 763/493-8100  
FAX# 763/493-8391

**CITY OF BROOKLYN PARK**

REMOVAL PLANS  
**94TH AVE N**

COLORADO AVE N STA. 100+22.12 TO STA. 105+75.00

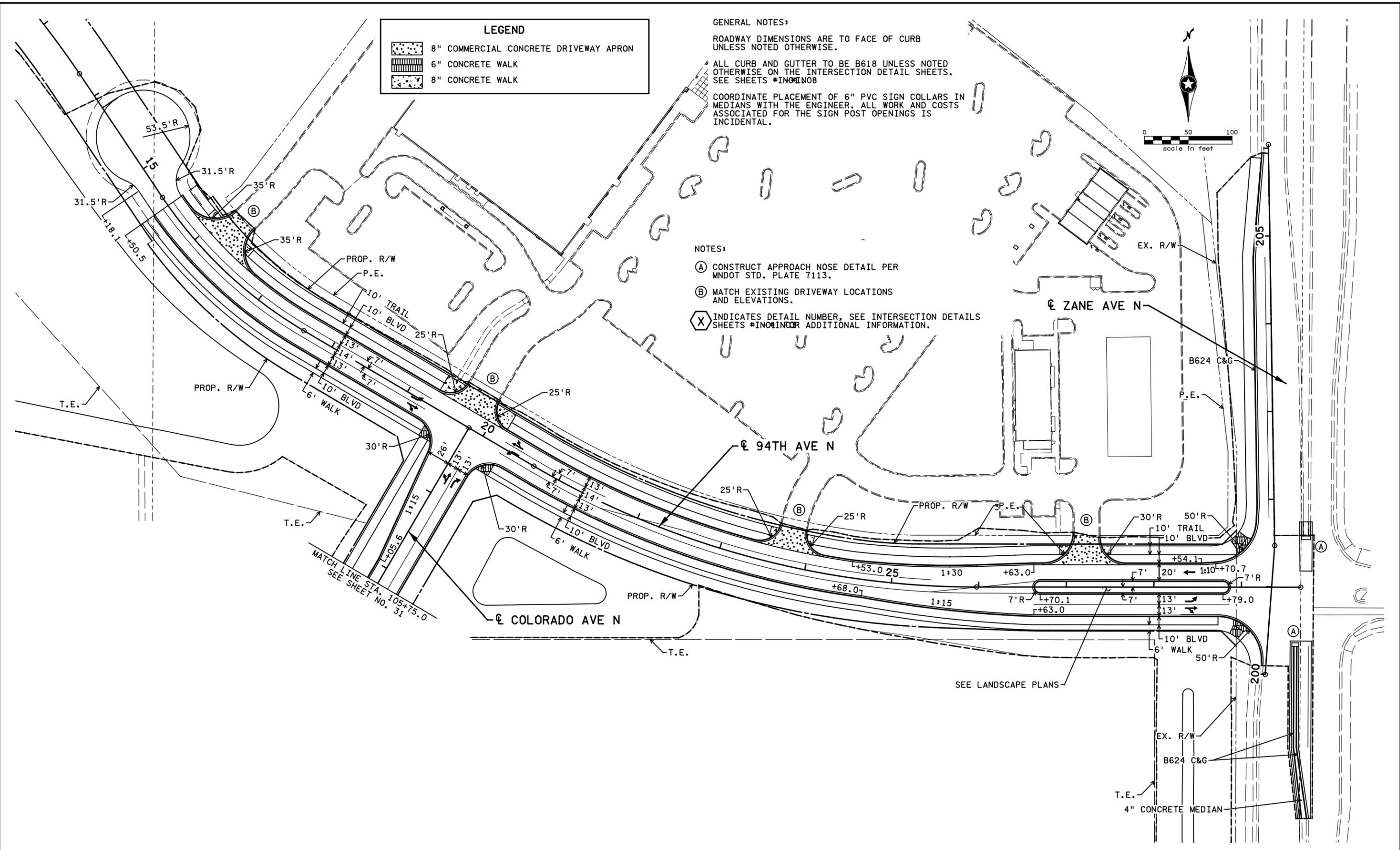
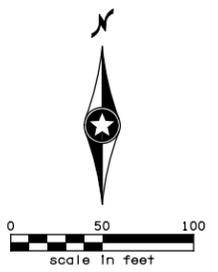
SHEET  
29  
OF  
98

**LEGEND**

	8" COMMERCIAL CONCRETE DRIVEWAY APRON
	6" CONCRETE WALK
	8" CONCRETE WALK

**GENERAL NOTES:**  
 ROADWAY DIMENSIONS ARE TO FACE OF CURB UNLESS NOTED OTHERWISE.  
 ALL CURB AND GUTTER TO BE B618 UNLESS NOTED OTHERWISE ON THE INTERSECTION DETAIL SHEETS. SEE SHEETS #1001108  
 COORDINATE PLACEMENT OF 6" PVC SIGN COLLARS IN MEDIANS WITH THE ENGINEER. ALL WORK AND COSTS ASSOCIATED FOR THE SIGN POST OPENINGS IS INCIDENTAL.

**NOTES:**  
 (A) CONSTRUCT APPROACH NOSE DETAIL PER MNDOT STD. PLATE 7113.  
 (B) MATCH EXISTING DRIVEWAY LOCATIONS AND ELEVATIONS.  
 (X) INDICATES DETAIL NUMBER, SEE INTERSECTION DETAILS SHEETS #1001108 FOR ADDITIONAL INFORMATION.



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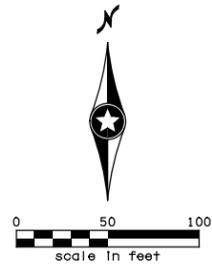
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 J. VAN BECK  
 DESIGNED BY  
 M. JULIFF  
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 PH# 763/493-8100  
 FAX# 763/493-8391

**CITY OF BROOKLYN PARK**  
 CONSTRUCTION PLANS  
**94TH AVE N**  
 94TH AVE N STA. 14+16.41 TO STA. 29+32.51

**SHEET**  
 30  
 OF  
 98



LEGEND	
	8" COMMERCIAL CONCRETE DRIVEWAY APRON
	6" CONCRETE WALK
	8" CONCRETE WALK

GENERAL NOTES:

ROADWAY DIMENSIONS ARE TO FACE OF CURB UNLESS NOTED OTHERWISE.

ALL CURB AND GUTTER TO BE B618 UNLESS NOTED OTHERWISE ON THE INTERSECTION DETAIL SHEETS. SEE SHEETS #100#108

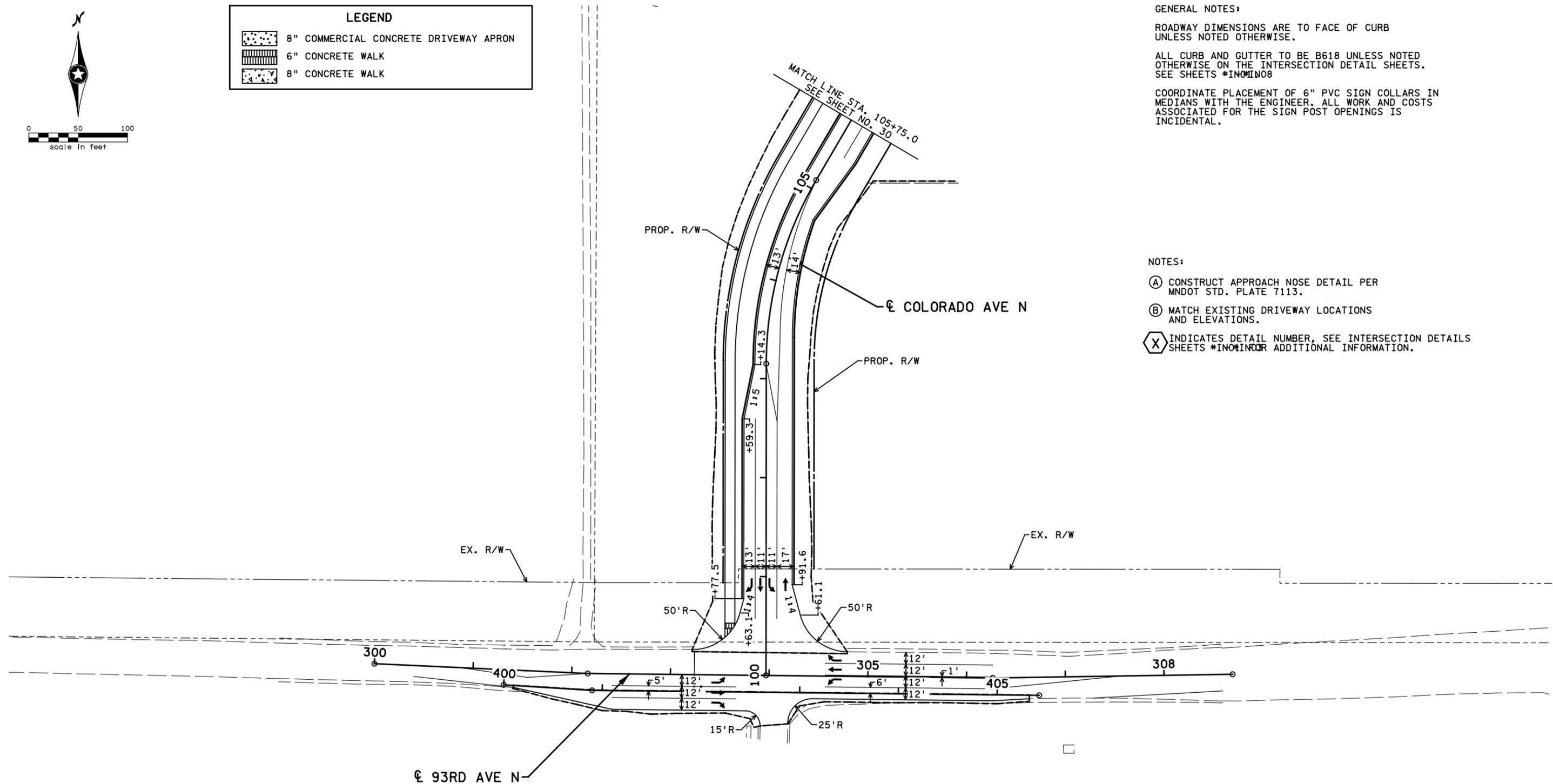
COORDINATE PLACEMENT OF 6" PVC SIGN COLLARS IN MEDIANS WITH THE ENGINEER. ALL WORK AND COSTS ASSOCIATED FOR THE SIGN POST OPENINGS IS INCIDENTAL.

NOTES:

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(B) MATCH EXISTING DRIVEWAY LOCATIONS AND ELEVATIONS.

(X) INDICATES DETAIL NUMBER, SEE INTERSECTION DETAILS SHEETS #100#108 FOR ADDITIONAL INFORMATION.



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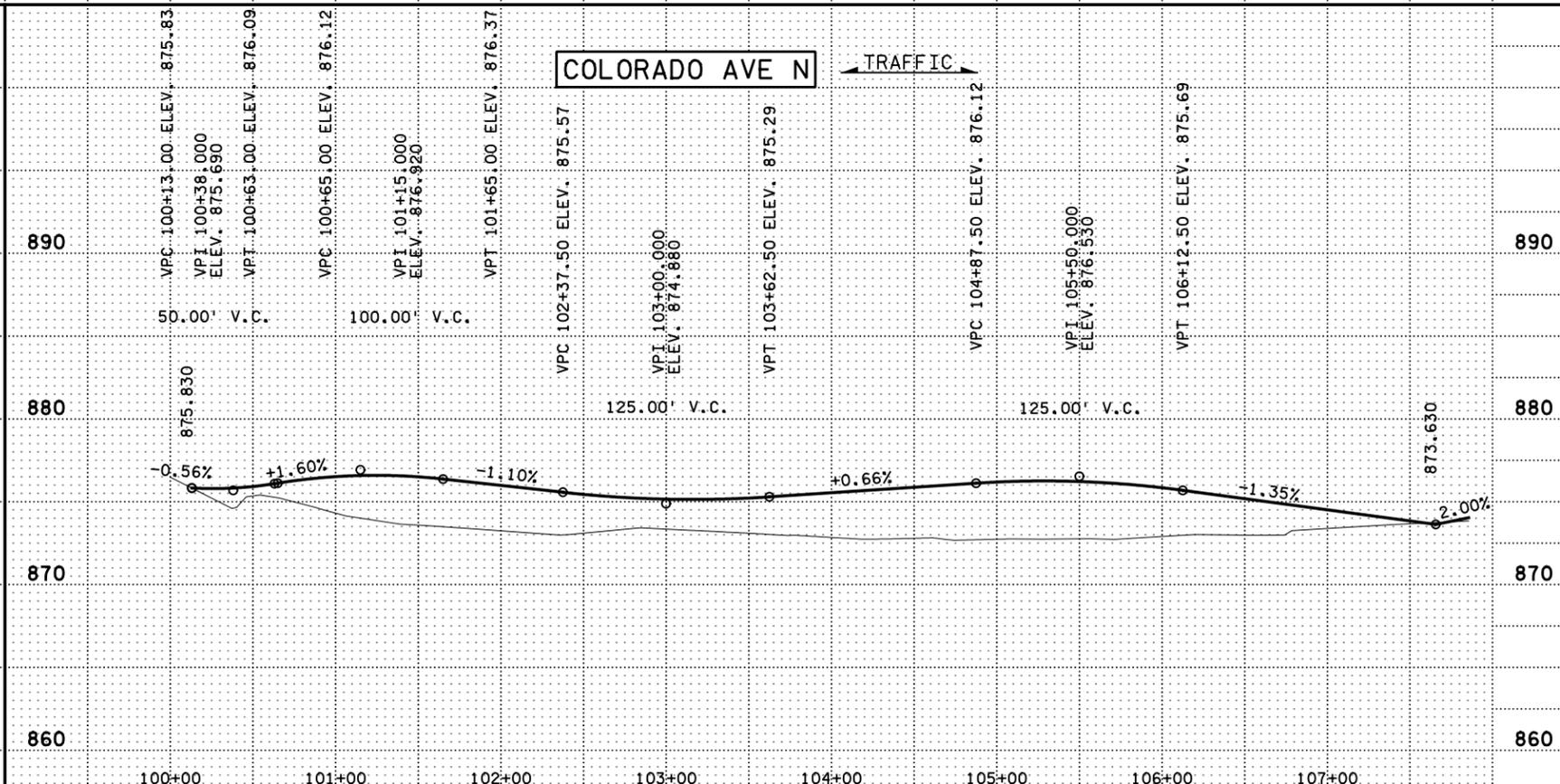
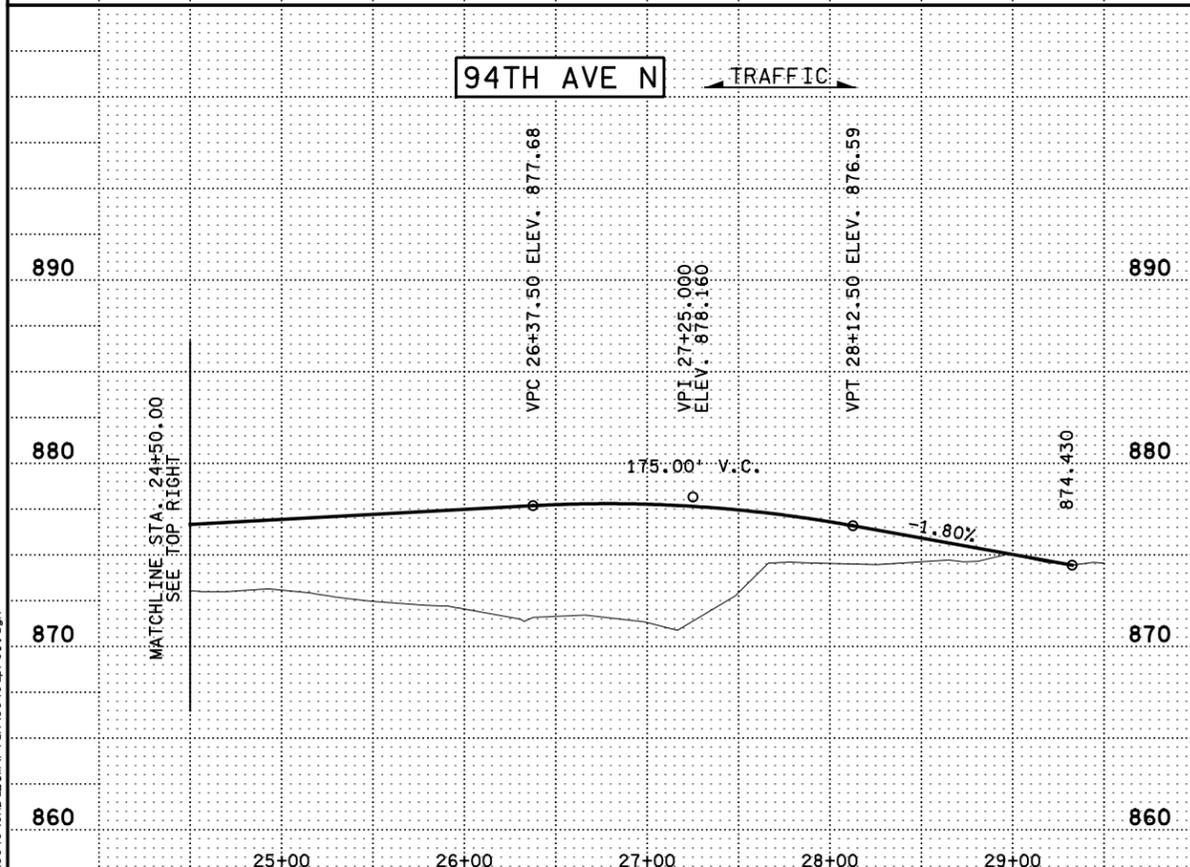
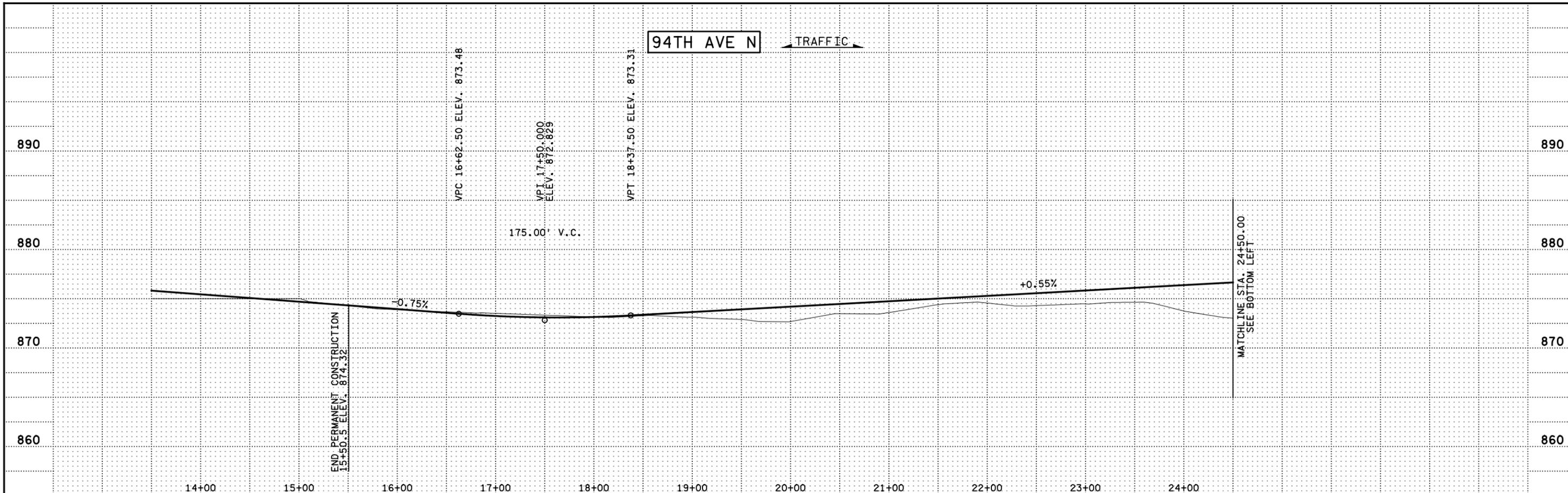
DRAWN BY  
J. VAN BECK  
 DESIGNED BY  
M. JULIFF  
 CHECKED BY  
S. MILLER  
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 Brooklyn Park  
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 BROOKLYN PARK, MN. 55443  
 PH# 763/493-8100  
 FAX# 763/493-8391

CITY OF BROOKLYN PARK  
 CONSTRUCTION PLANS  
 94TH AVE N  
 COLORADO AVE N STA. 100+22.12 TO STA. 105+75.00

SHEET  
31  
OF  
98



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 M. JULIFF  
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**ENGINEERING SERVICES DIVISION**  
 Brooklyn Park

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 PH# 763/493-8100  
 FAX# 763/493-8391

**CITY OF BROOKLYN PARK**  
 PROFILES (ROADWAY)  
**94TH AVE N**

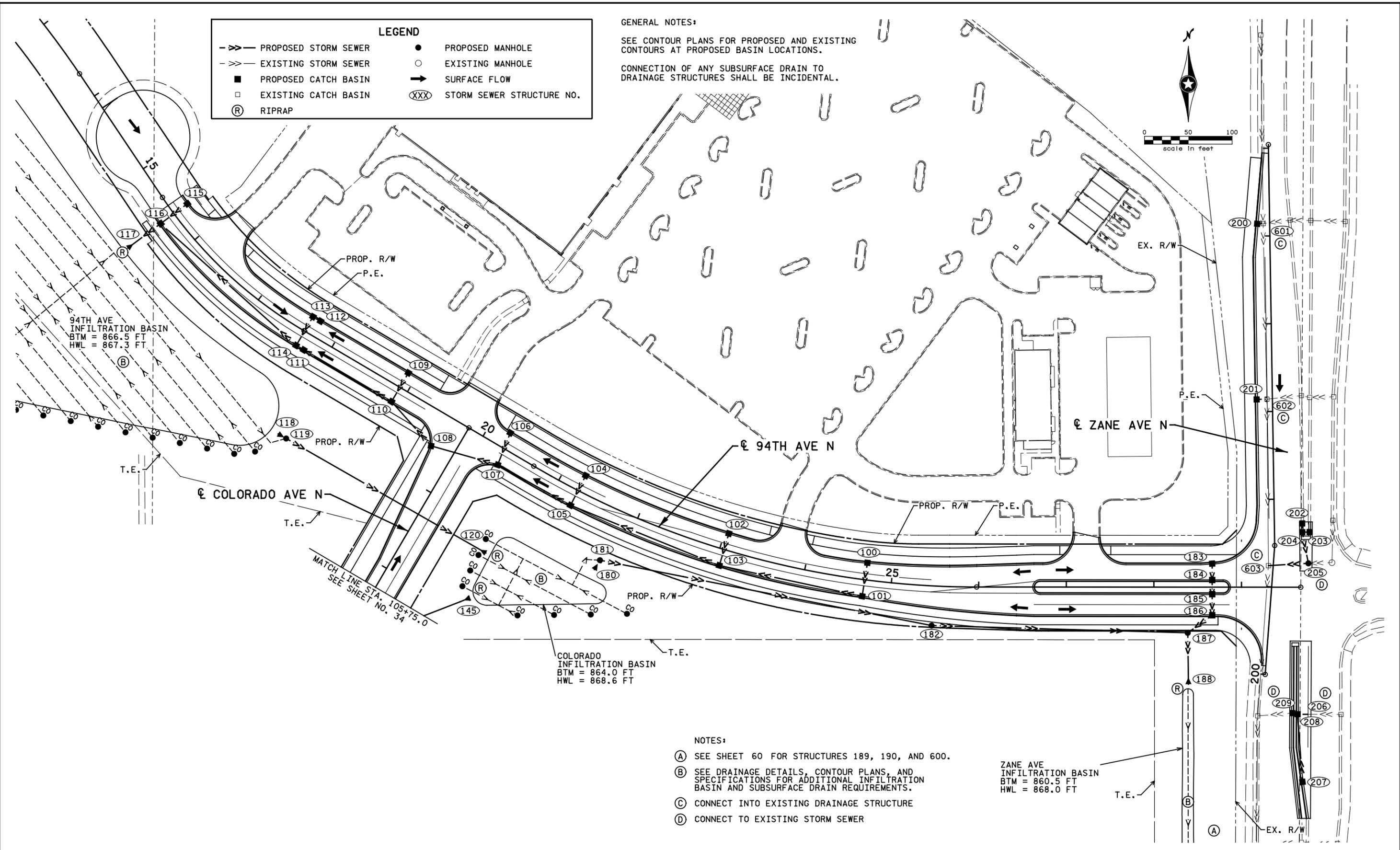
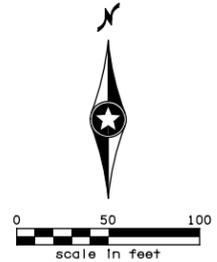
**SHEET**  
**32**  
**OF**  
**98**

LEGEND			
->->-	PROPOSED STORM SEWER	●	PROPOSED MANHOLE
->->-	EXISTING STORM SEWER	○	EXISTING MANHOLE
■	PROPOSED CATCH BASIN	→	SURFACE FLOW
□	EXISTING CATCH BASIN	XXX	STORM SEWER STRUCTURE NO.
(R)	RIPRAP		

GENERAL NOTES:

SEE CONTOUR PLANS FOR PROPOSED AND EXISTING CONTOURS AT PROPOSED BASIN LOCATIONS.

CONNECTION OF ANY SUBSURFACE DRAIN TO DRAINAGE STRUCTURES SHALL BE INCIDENTAL.



94TH AVE INFILTRATION BASIN  
BTM = 866.5 FT  
HWL = 867.3 FT

COLORADO INFILTRATION BASIN  
BTM = 864.0 FT  
HWL = 868.6 FT

ZANE AVE INFILTRATION BASIN  
BTM = 860.5 FT  
HWL = 868.0 FT

NOTES:

- (A) SEE SHEET 60 FOR STRUCTURES 189, 190, AND 600.
- (B) SEE DRAINAGE DETAILS, CONTOUR PLANS, AND SPECIFICATIONS FOR ADDITIONAL INFILTRATION BASIN AND SUBSURFACE DRAIN REQUIREMENTS.
- (C) CONNECT INTO EXISTING DRAINAGE STRUCTURE
- (D) CONNECT TO EXISTING STORM SEWER

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Print Name: ROBERT J. LEBA  
Date: License #: 41951

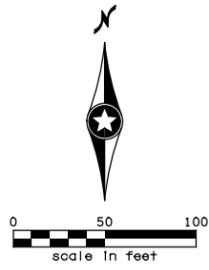
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DESIGNED BY Z. THELEN  
CHECKED BY P. ENGELMEYER  
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CITY OF BROOKLYN PARK  
DRAINAGE PLANS  
94TH AVE N  
94TH AVE N STA. 14+16.41 TO STA. 29+32.51

SHEET 33 OF 98

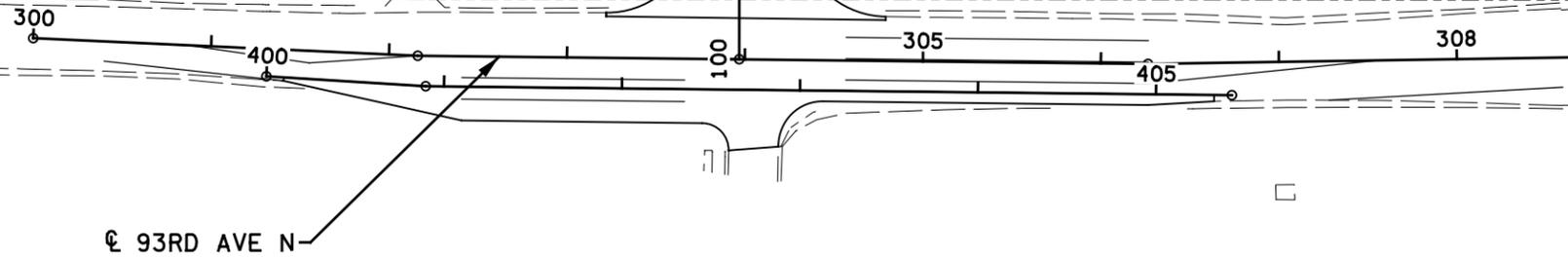
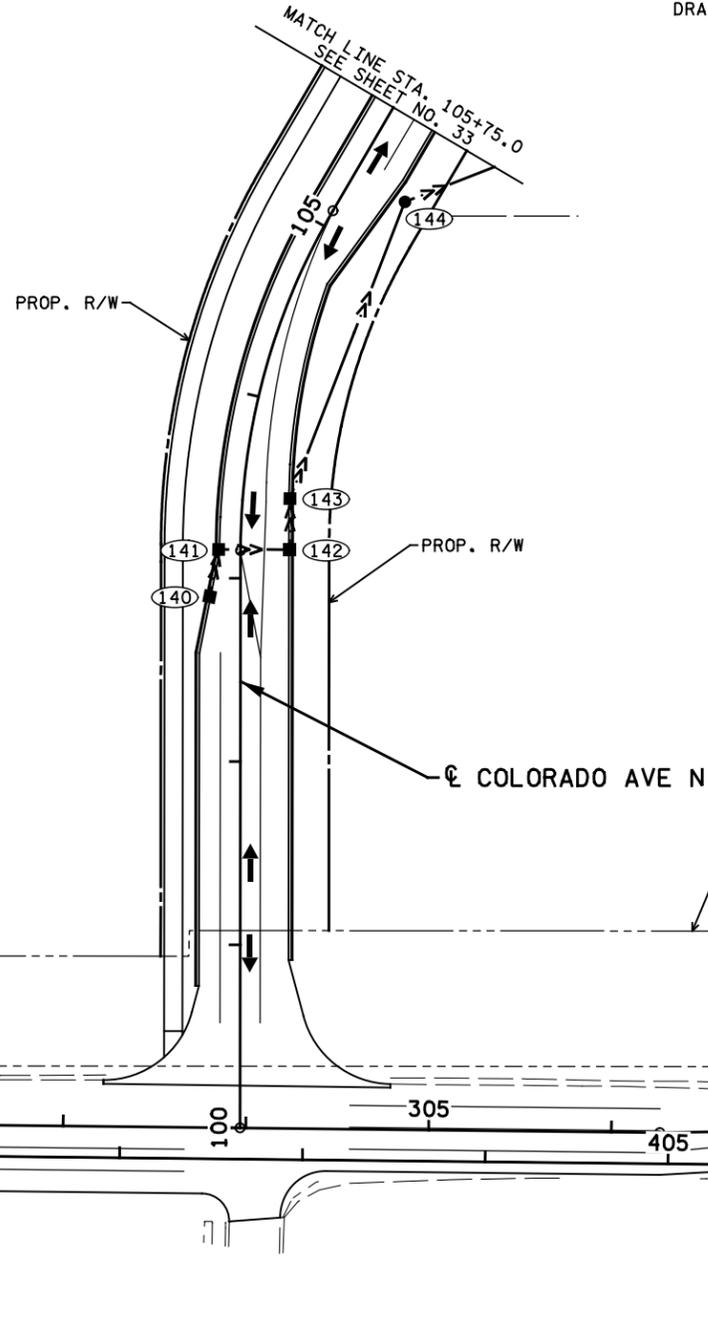


LEGEND			
- > -	PROPOSED STORM SEWER	●	PROPOSED MANHOLE
- > -	EXISTING STORM SEWER	○	EXISTING MANHOLE
■	PROPOSED CATCH BASIN	→	SURFACE FLOW
□	EXISTING CATCH BASIN	(XXX)	STORM SEWER STRUCTURE NO.
(R)	RIPRAP		

GENERAL NOTES:

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CONNECTION OF ANY SUBSURFACE DRAIN TO DRAINAGE STRUCTURES SHALL BE INCIDENTAL.



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Date: \_\_\_\_\_ License # 41951

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J. VAN BECK

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Z. THELEN

CHECKED BY  
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ENGINEERING SERVICES DIVISION

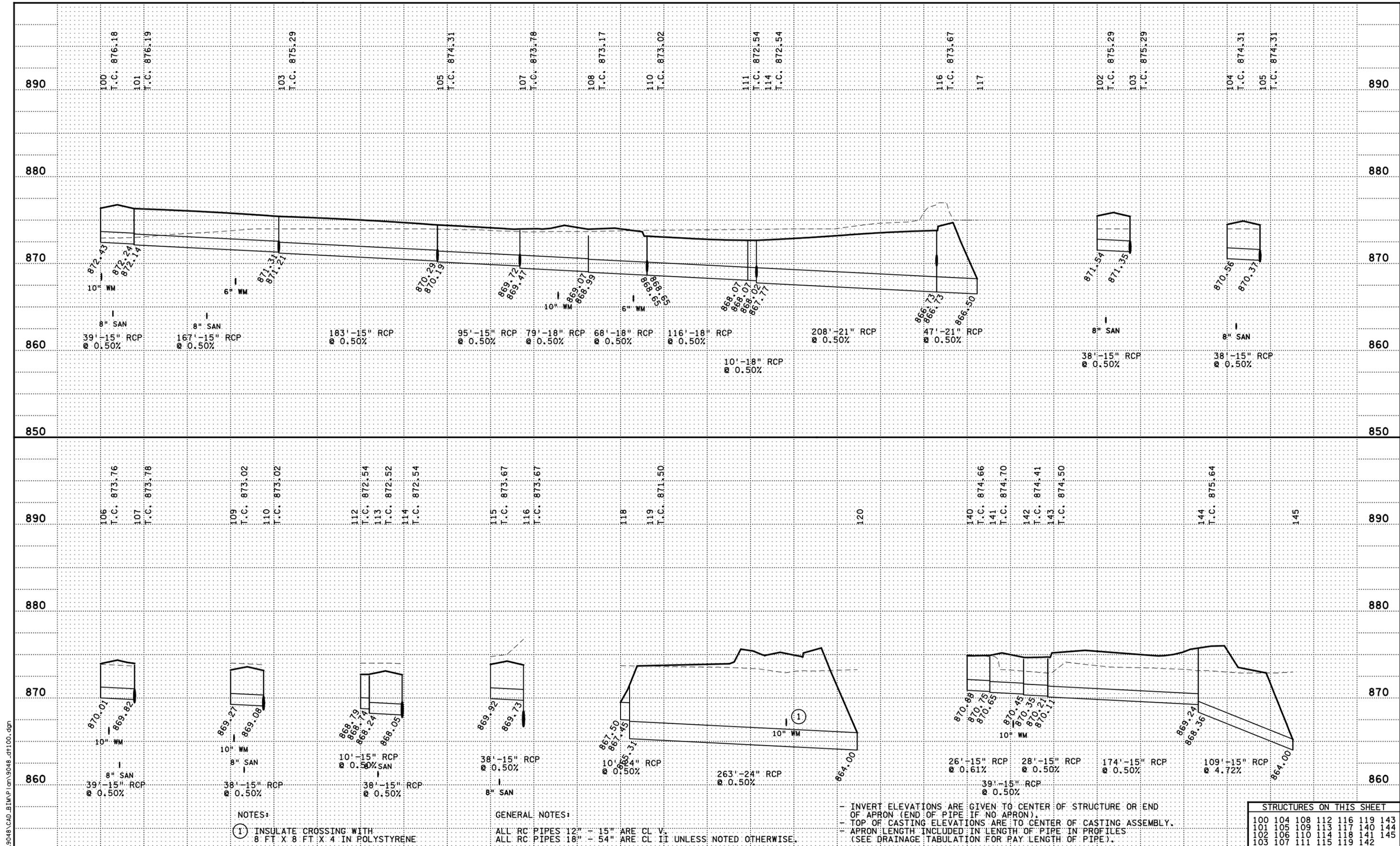
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**CITY OF BROOKLYN PARK**

DRAINAGE PLANS  
**94TH AVE N**  
COLORADO AVE N STA. 100+22.12 TO STA. 105+75.00

SHEET  
**34**  
OF  
**98**



NOTES:  
 (I) INSULATE CROSSING WITH 8 FT X 8 FT X 4 IN POLYSTYRENE

GENERAL NOTES:  
 ALL RC PIPES 12" - 15" ARE CL V,  
 ALL RC PIPES 18" - 54" ARE CL II UNLESS NOTED OTHERWISE.

- INVERT ELEVATIONS ARE GIVEN TO CENTER OF STRUCTURE OR END OF APRON (END OF PIPE IF NO APRON).  
 - TOP OF CASTING ELEVATIONS ARE TO CENTER OF CASTING ASSEMBLY.  
 - APRON LENGTH INCLUDED IN LENGTH OF PIPE IN PROFILES (SEE DRAINAGE TABULATION FOR PAY LENGTH OF PIPE).

STRUCTURES ON THIS SHEET													
100	104	108	112	116	119	143	101	105	109	113	117	140	144
102	106	110	114	118	141	145	103	107	111	115	119	142	

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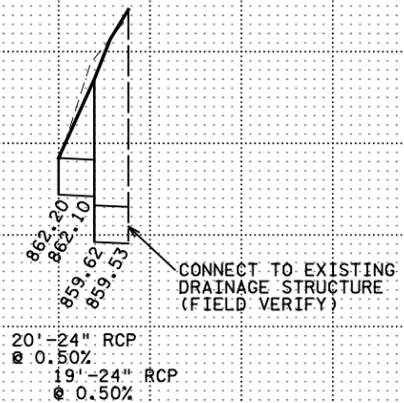
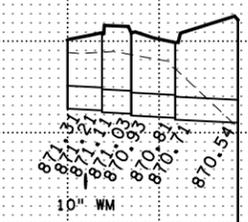
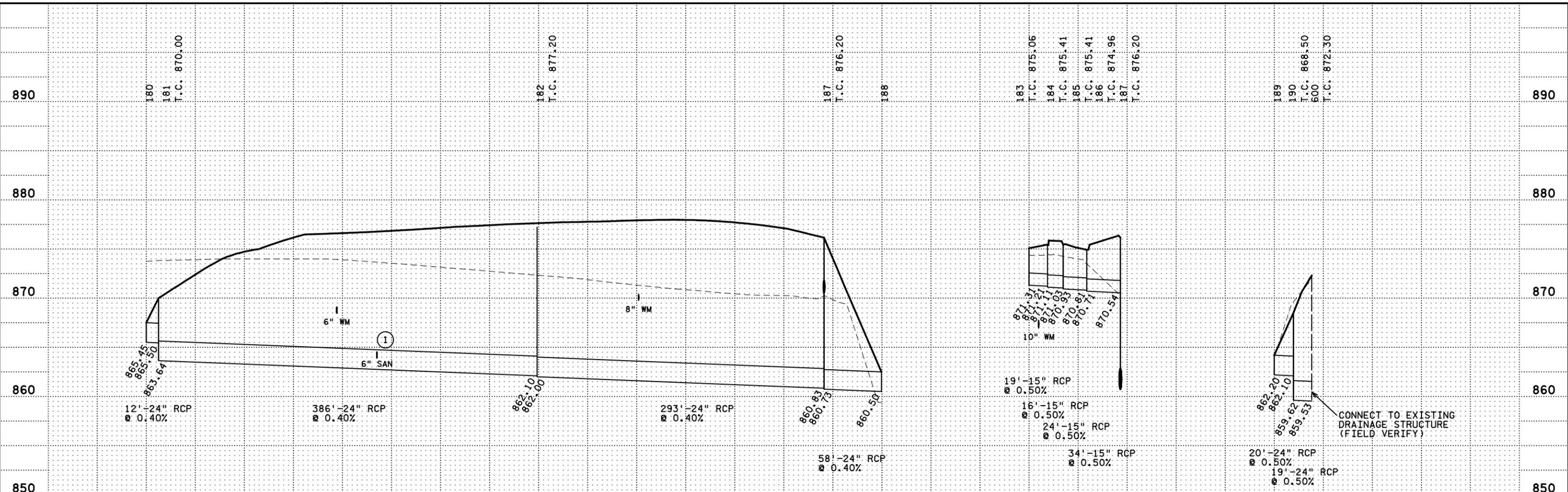
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CITY OF BROOKLYN PARK  
 DRAINAGE PROFILES  
 94TH AVE N  
 SHEET 35 OF 98

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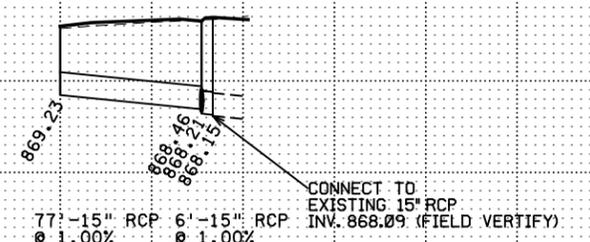
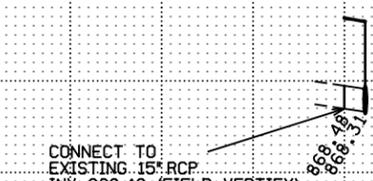
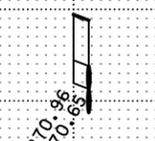
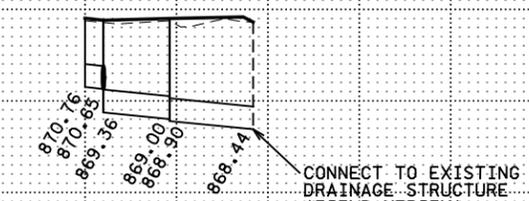
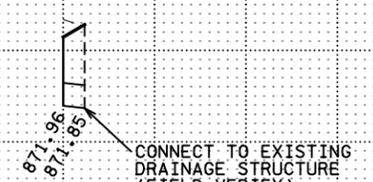
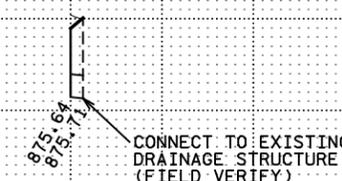
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602  
T.C. 876.40

202  
T.C. 874.51  
204  
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T.C. 874.50  
603  
T.C. 874.30

203  
T.C. 874.71  
204  
T.C. 874.40

206  
T.C. 874.50  
208  
T.C. 873.23

207  
T.C. 872.98  
208  
T.C. 873.23  
209  
T.C. 873.46



7'-15" RCP  
@ 1.00%

12'-15" RCP  
@ 1.00%

10'-15" RCP @ 1.10%  
46'-15" RCP @ 1.00%  
36'-15" RCP @ 1.00%

8'-15" RCP  
@ 3.70%

11'-15" RCP  
@ 1.50%

77'-15" RCP @ 1.00%  
6'-15" RCP @ 1.00%

NOTES:  
① INSULATE CROSSING WITH 8 FT X 8 FT X 4 IN POLYSTYRENE

GENERAL NOTES:  
ALL RC PIPES 12" - 15" ARE CL V.  
ALL RC PIPES 18" - 54" ARE CL II UNLESS NOTED OTHERWISE.

- INVERT ELEVATIONS ARE GIVEN TO CENTER OF STRUCTURE OR END OF APRON (END OF PIPE IF NO APRON).  
- TOP OF CASTING ELEVATIONS ARE TO CENTER OF CASTING ASSEMBLY.  
- APRON LENGTH INCLUDED IN LENGTH OF PIPE IN PROFILES (SEE DRAINAGE TABULATION FOR PAY LENGTH OF PIPE).

STRUCTURES ON THIS SHEET						
180	188	186	200	204	208	602
181	183	187	201	205	209	603
182	184	189	202	206	600	
187	185	190	203	207	601	

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Print Name: ROBERT J. LEBA  
Date: License #: 41951

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J. VAN BECK  
DESIGNED BY  
Z. THELEN  
CHECKED BY  
P. ENGELMEYER  
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**SR** ENGINEERS PLANNERS DESIGNERS  
Consulting Group, Inc.

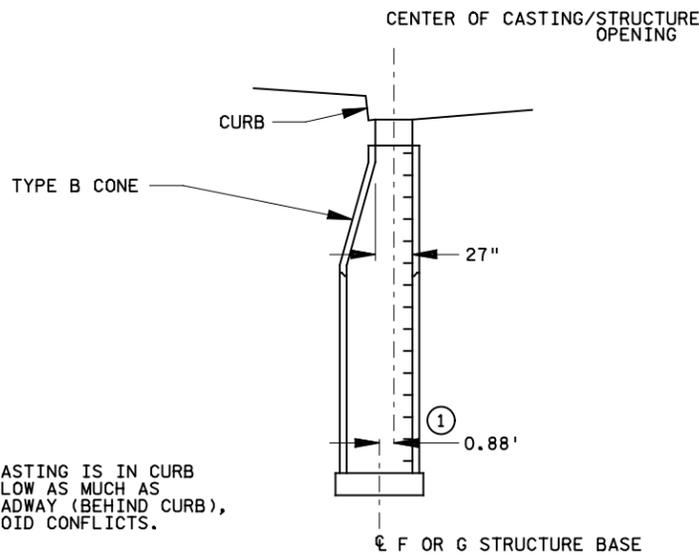
**CITY OF BROOKLYN PARK**  
ENGINEERING SERVICES DIVISION  
Brooklyn Park  
5200 85TH AVE. N.  
BROOKLYN PARK, MN. 55443  
PH# 763/493-8100  
FAX# 763/493-8391

**CITY OF BROOKLYN PARK**  
DRAINAGE PROFILES  
94TH AVE N

SHEET  
36  
OF  
98





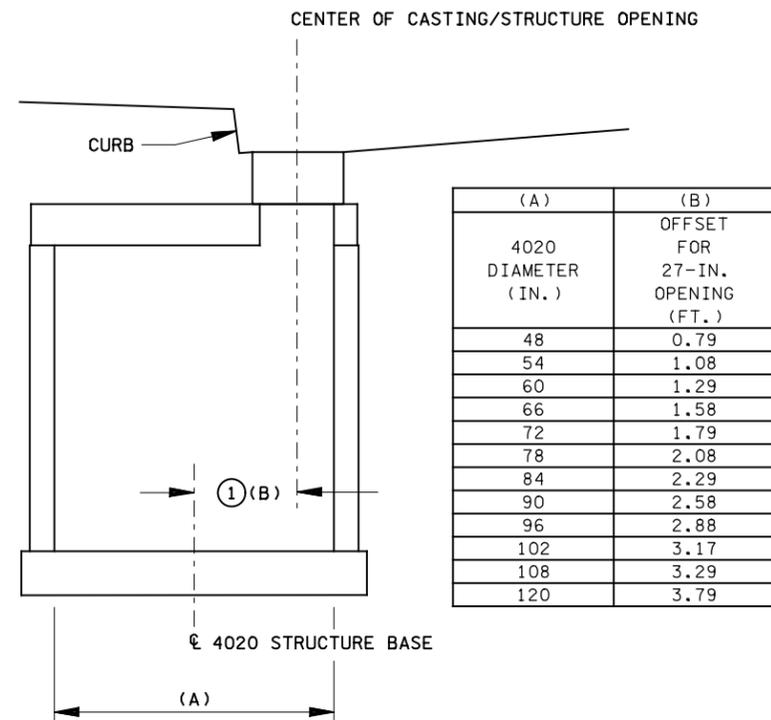


**NOTES:**  
 ① IN TYPICAL LOCATIONS WHERE CASTING IS IN CURB LINE, ROTATE STRUCTURE TO ALLOW AS MUCH AS POSSIBLE TO BE OUTSIDE OF ROADWAY (BEHIND CURB), OR ROTATE AS NECESSARY TO AVOID CONFLICTS.

LOCATE CENTER OF STRUCTURE 0.88' FROM CENTER OF STRUCTURE OPENING.

**STAKING DETAIL: F OR G STRUCTURE AT CURB AND GUTTER**

NOT TO SCALE



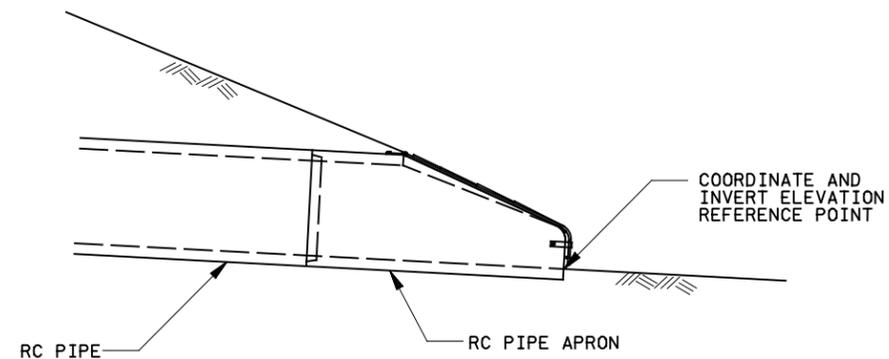
(A)	(B)
	OFFSET FOR 27-IN. OPENING (FT.)
48	0.79
54	1.08
60	1.29
66	1.58
72	1.79
78	2.08
84	2.29
90	2.58
96	2.88
102	3.17
108	3.29
120	3.79

**STAKING DETAIL: DESIGN XX-4020 OR SD-XX STRUCTURE**

NOT TO SCALE

X CASTING ASSEMBLIES SUMMARY						
ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX	STANDARD PLATE NO.	QUANTITY (EACH)	REMARKS
A - 7D	700-7			4101	0	MANHOLE (A)
		715	N/A	4110		
B - 1	801			4126	0	CATCH BASIN (B)
		810	821B	4149		
				4161		
B - 5	802A			4129	0	CATCH BASIN (C)
		816		4154		
			823A	4160		
PROJECT TOTALS:					0	

**NOTES:**  
 (A) A - 7D IS EQUIVALENT TO NEENAH CASTING NO. R-1733 PER CITY OF BROOKLYN PARK STANDARDS.  
 (B) B - 1 IS EQUIVALENT TO NEENAH CASTING NO. R-3250-A PER CITY OF BROOKLYN PARK STANDARDS.  
 (C) USE BENT BOLT WITH 816 GRATE.



**NOTES:**  
 CONSTRUCT RIP RAP TO MNDOT 3133 STANDARD PLATE

**STAKING DETAILS: PIPE APRONS**

NOT TO SCALE

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 P. ENGELMEYER  
 0159048

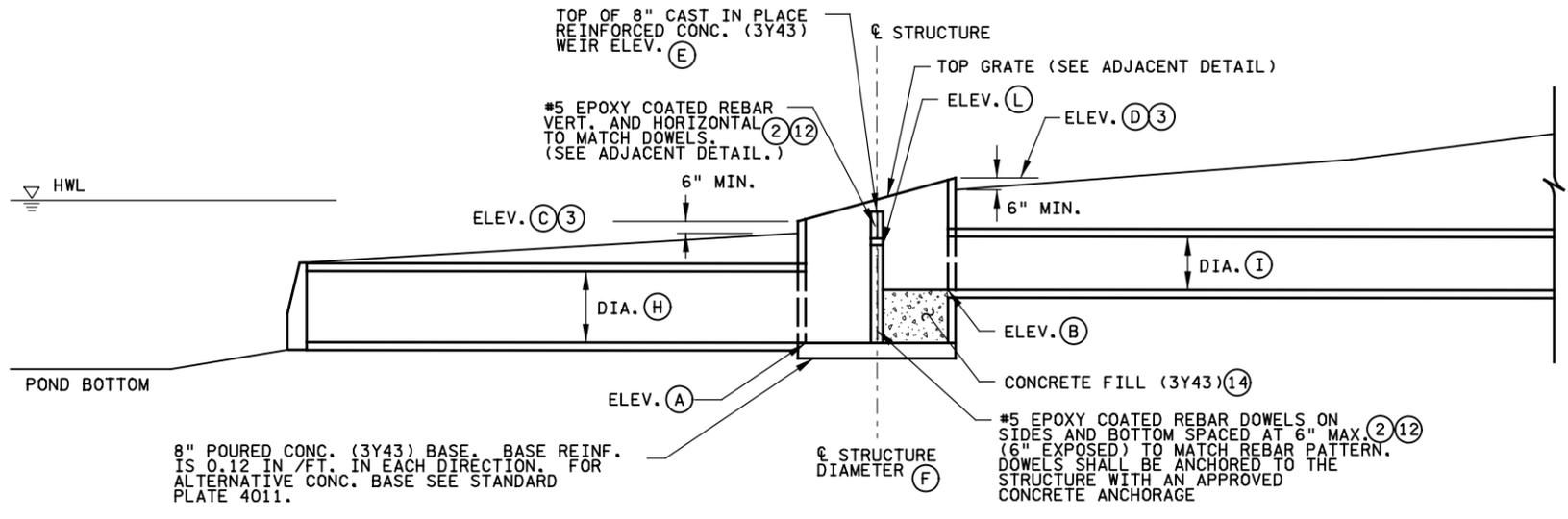


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**ENGINEERING SERVICES DIVISION**  
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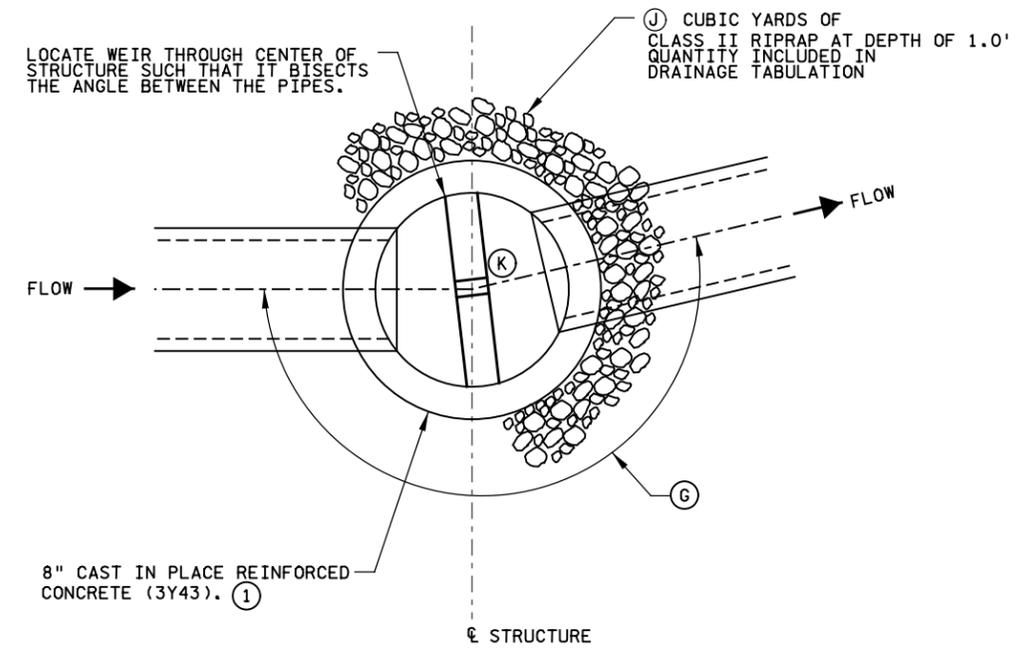
**CITY OF BROOKLYN PARK**  
 DRAINAGE DETAILS  
**94TH AVE N**  
 STAKING DETAILS / CASTING ASSEMBLIES SUMMARY

**SHEET**  
**39**  
**OF**  
**98**

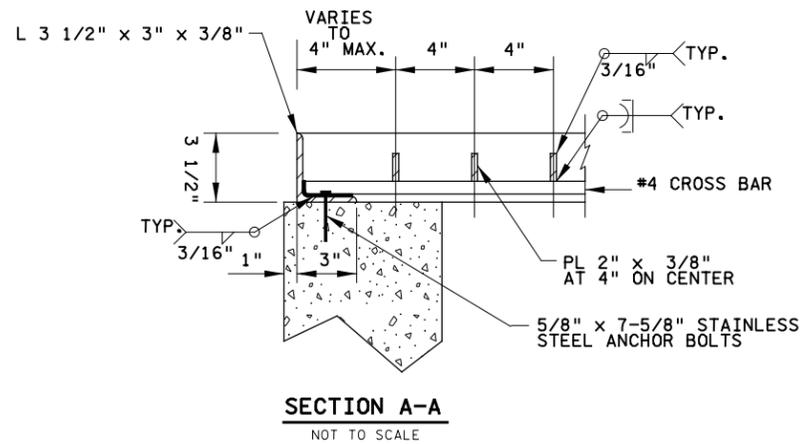
STRUCTURE	DESIGN SPECIAL	POND	BOTTOM	HWL	ELEV. (A)	ELEV. (B)	ELEV. (C)	ELEV. (D)	ELEV. (E)	DIA. (IN) (F)	ANGLE (DEG) (G)	DIA. (IN) (H)	DIA. (IN) (I)	VOL. (CY) (J)	ORIFICE DIA. (IN) (K)	ORIFICE ELEV. (L)	NOTES
119	1	94TH AVE	866.5	867.3	867.45	865.31	871.50	872.50		48	180	24	24	1.7			(3)(5)
181	2	COLORADO	864.0	868.6	865.45	863.64	870.00	871.00		48	110	24	24	1.7			(3)(5)
190	3	ZANE AVE	860.5	868.0	862.10	859.62	868.37	869.63	867.60	60	180	24	24	1.9	5	862.20	(3)



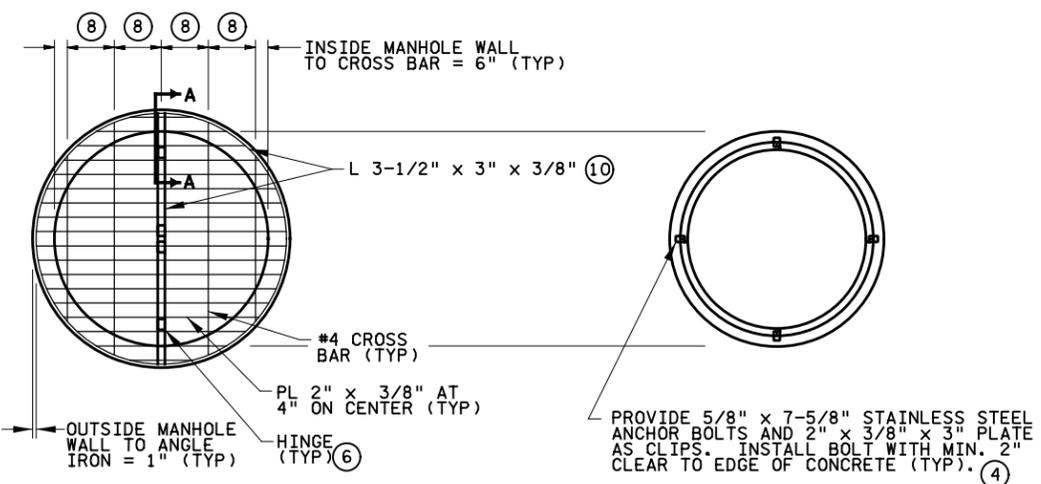
5 POND OUTLET STRUCTURE - DESIGN SPECIALS 1, 2, & 3  
NOT TO SCALE



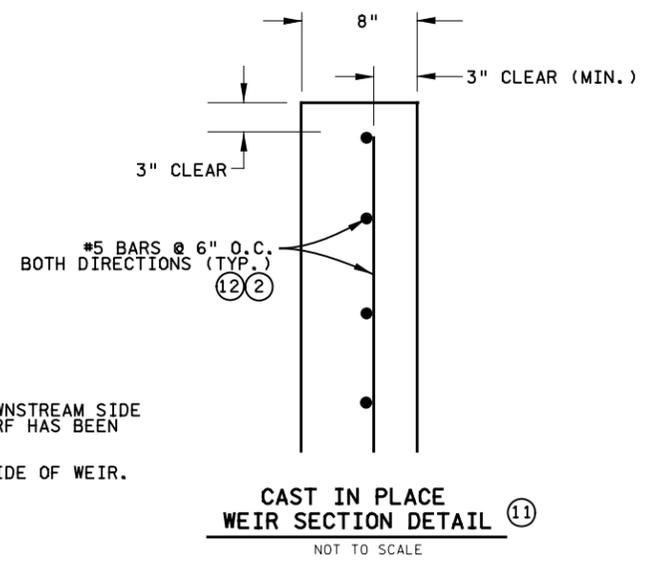
OUTLET STRUCTURE PLAN VIEW AND RIPRAP DETAIL  
NOT TO SCALE



SECTION A-A  
NOT TO SCALE



TOP GRATE DETAIL (7)(9)  
NOT TO SCALE



CAST IN PLACE WEIR SECTION DETAIL (11)  
NOT TO SCALE

NOTES:

- 1 WALL CONSTRUCTION MAY BE CLASS II PRECAST RC PIPE. SEE STANDARD PLATE 3000.
- 2 ALL REBAR SIZES ARE ENGLISH UNLESS OTHERWISE NOTED.
- 3 ELEVATION (C) OCCURS IN LINE WITH THE CENTERLINE OF PIPE (H). ELEVATION (D) OCCURS DIRECTLY ACROSS STRUCTURE FROM (C). ELEVATIONS (C) AND (D) ARE AT INSIDE EDGE OF MANHOLE.
- 4 BOLTS AND NUTS SHALL MEET THE REQUIREMENTS OF A.S.T.M. A307. MATERIALS FOR BASE PLATES AND ANCHOR BOLTS ASSEMBLIES SHALL CONFORM TO STRUCTURAL STEEL (WELDABLE A36).
- 5 PAYMENT FOR DRAINAGE DESIGN SPECIAL PER EACH WILL INCLUDE ALL MATERIALS, DETAILS AND WORK REQUIRED TO CONSTRUCT THE DRAINAGE STRUCTURE AS DETAILED ON THIS SHEET, EXCEPT THE RC PIPE, APRON AND RIPRAP, WHICH WILL BE PAID FOR SEPARATELY.
- 6 GRATE SHALL BE CONSTRUCTED IN TWO PIECES, WITH MINIMUM OF THREE HINGES TO PROVIDE ACCESS.
- 7 HOT DIP GALVANIZE GRATES AFTER FABRICATION.
- 8 12" MAX., 8" MIN. SPACING BETWEEN CROSS BARS. CROSS BARS MUST BE EVENLY SPACED AND MUST ALLOW FOR PLACEMENT OF HINGES AT CENTER OF GRATE.
- 9 CONTRACTOR TO PROVIDE GRATE AS SHOWN OR ENGINEER PRE-APPROVED EQUAL.
- 10 ANGLE AROUND CIRCUMFERENCE MAY BE FABRICATED FROM FLAT BARS RESULTING IN EQUIVALENT SIZE.
- 11 WEIR MUST BE CAST IN PLACE. PRE-CAST WEIR WILL NOT BE ALLOWED AS AN ALTERNATE.
- 12 ADJUST REBAR AT ORIFICE LOCATIONS.
- 13 CONNECT 6" PVC PIPE SEWER FROM INFILTRATION BASIN DRAIN TILE ON DOWNSTREAM SIDE OF WEIR. PLACE THREADED CAP ON PVC PIPE INSIDE OF MANHOLE AFTER TURF HAS BEEN ESTABLISHED IN INFILTRATION BASIN. SEE CONTOUR PLANS.
- 14 FILL STRUCTURE BOTTOM TO INVERT ELEVATION OF LOWEST PIPE ON EACH SIDE OF WEIR.
- 15 STRUCTURE DOES NOT CONTAIN INTERNAL WEIR AND ORIFICE.

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CHECKED BY B. LEBA  
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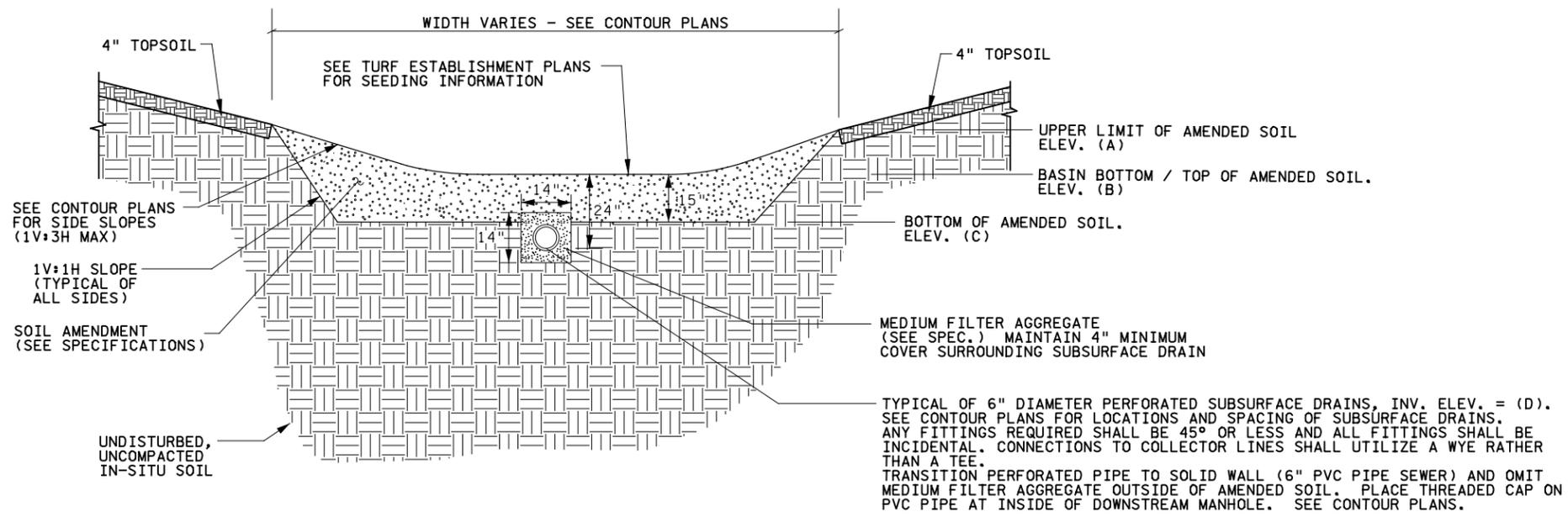


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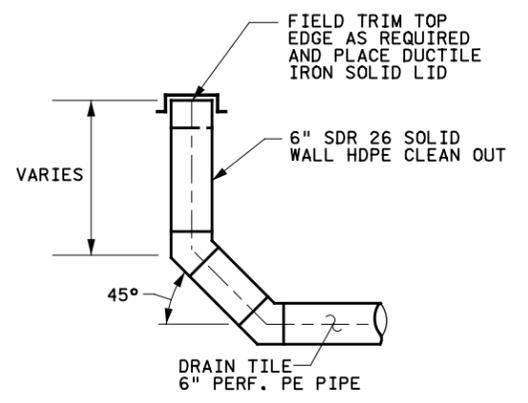
CITY OF BROOKLYN PARK  
DRAINAGE DETAILS  
94TH AVE N  
OUTLET CONTROL STRUCTURE - DESIGN SPECIALS 1 - 3

SHEET 40 OF 98

BASIN	ELEV. (A)	ELEV. (B)	ELEV. (C)	ELEV. (D)
94TH AVE	867.50 FT	866.50 FT	865.25 FT	864.50 FT
COLORADO	865.00 FT	864.00 FT	862.75 FT	862.00 FT
ZANE AVE	861.50 FT	860.50 FT	859.25 FT	858.50 FT



**INFILTRATION BASIN TYPICAL SECTION**  
NOT TO SCALE



NOTE:  
CLEAN OUT (INCLUDING ALL ITEMS IN DETAIL OTHER THAN HORIZONTAL PIPE) SHALL BE INCIDENTAL.

**DRAIN TILE CLEAN OUT**  
NOT TO SCALE

NOTE:  
PROPOSED INFILTRATION AREA SHALL NOT BE USED FOR STORAGE OF MATERIALS (INCLUDING SOIL STOCKPILES) OR EQUIPMENT. LIMIT CONSTRUCTION TRAFFIC IN INFILTRATION AREA TO REDUCE COMPACTION OF UNDERLYING SOILS. ONCE INFILTRATION AREA IS GRADED, PREVENT SEDIMENT LADEN RUNOFF FROM ENTERING (SEE SPECIFICATIONS).

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**CITY OF BROOKLYN PARK**

DRAINAGE DETAILS  
94TH AVE N  
INFILTRATION BASIN

SHEET  
41  
OF  
98

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE**

**PROJECT DESCRIPTION/LOCATION AND SCOPE**

SEE COVER SHEET FOR LOCATION MAP, PROJECT NUMBERS AND DESCRIPTION OF PROJECT SCOPE. PERMANENT STORMWATER BEST MANAGEMENT PRACTICES (BMPs) UTILIZED ON THE PROJECT INCLUDE SUMP MANHOLES WITH WATER QUALITY BAFFLES AND INFILTRATION BASINS.

**SPECIAL AND IMPAIRED WATERS**

THERE ARE NO SPECIAL/IMPAIRED WATERS LOCATED WITHIN ONE MILE OF THE PROJECT LIMITS WHICH RECEIVE RUNOFF FROM THE PROJECT SITE.

**ENVIRONMENTALLY SENSITIVE AREAS**

THERE ARE NO KNOWN ENVIRONMENTALLY SENSITIVE AREAS ADJACENT TO THIS PROJECT.

**LONG TERM MAINTENANCE AND OPERATION**

MAINTENANCE STAFF FROM THE CITY OF BROOKLYN PARK ARE RESPONSIBLE FOR THE LONG TERM MAINTENANCE AND OPERATION OF THE PERMANENT STORMWATER SYSTEMS. THE CITY OF BROOKLYN PARK HAS AN MS4 SWPPP THAT IS AVAILABLE ONLINE OR UPON REQUEST.

**SWPPP DEVELOPMENT AND MAINTENANCE**

THIS SWPPP WAS PREPARED BY PERSONNEL WHO ARE CERTIFIED IN THE DESIGN OF CONSTRUCTION SWPPPS. COPIES OF THE CERTIFICATIONS ARE AVAILABLE UPON REQUEST.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A CERTIFIED EROSION AND SEDIMENT CONTROL SUPERVISOR WHO SHALL BE RESPONSIBLE FOR FINALIZING, CERTIFYING, AND MAINTAINING THE SWPPP DOCUMENT AND OVERSEEING THE IMPLEMENTATION OF THE SWPPP. SEE PAGE 2 OF THE SWPPP NARRATIVE FOR ADDITIONAL REQUIREMENTS.

**SWPPP AMENDMENTS**

THE SWPPP SHALL BE AMENDED WHEN:

- A. THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE, WEATHER OR SEASON HAVING A SIGNIFICANT EFFECT ON DISCHARGE OF POLLUTANTS.
  - B. INSPECTIONS INDICATE THE SWPPP IS NOT EFFECTIVE.
  - C. A WATER QUALITY STANDARD CHANGES AND THE MPCA DETERMINES THE SWPPP SHALL BE AMENDED TO COMPLY.
- A DESCRIPTION OF ANY CHANGE TO THE SWPPP, ALONG WITH THE DATE AND NAME OF THE REVISION SHALL BE RECORDED AND INCLUDED WITH THE SWPPP AND RETAINED ON SITE. THE OWNER SHALL RETAIN ALL RECORDS AFTER COMPLETION OF THE PROJECT.

**SITE PLANS**

THE CONTRACTOR SHALL PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR CONCRETE MANAGEMENT, CONCRETE SLURRY APPLICATION AREAS, WORK IN AND NEAR AREAS OF ENVIRONMENTAL SENSITIVITY, DEWATERING AREAS, AREAS IDENTIFIED AS "SITE MANAGEMENT PLAN AREAS" AND AS REQUESTED BY THE PROJECT ENGINEER. SUBMIT ALL SITE MANAGEMENT PLANS IN WRITING AND ALLOW A MINIMUM OF 7 DAYS FOR REVIEW BY THE PROJECT ENGINEER. WORK SHALL NOT BE ALLOWED TO COMMENCE IF A SITE MANAGEMENT PLAN IS REQUIRED UNTIL ACCEPTANCE HAS BEEN GRANTED BY THE PROJECT ENGINEER.

**ENVIRONMENTAL REVIEW**

THE REQUIREMENTS OF SHINGLE CREEK AND WEST MISSISSIPPI WATERSHED MANAGEMENT COMMISSIONS AND THE CITY OF BROOKLYN PARK ARE SATISFIED BY THE PERMANENT BMPs LISTED ABOVE AND THE TEMPORARY MEASURES INCLUDED. THERE ARE NO ADDITIONAL STORMWATER MITIGATION MEASURES REQUIRED AS A RESULT OF ENVIRONMENTAL, ARCHAEOLOGICAL OR AGENCY REVIEW.

**DRINKING WATER SOURCE MANAGEMENT AREA (DWSMA) AND KARST REGIONS**

THE PROJECT IS LOCATED WITHIN A HIGH VULNERABILITY DWSMA. THE PROJECT IS NOT LOCATED IN A KARST AREA.

**SOIL TYPES**

SOIL TYPES FOUND ON THIS PROJECT ARE VARIABLE. REVIEW OF AVAILABLE RESOURCES AND TEST BORINGS DRILLED INDICATE GENERALIZED SOILS OF SILTY SAND AND POORLY GRADED SAND.

**LAND FEATURE CHANGES**

TOTAL DISTURBED AREA: 11.1 ACRES  
 TOTAL EXISTING IMPERVIOUS SURFACE AREA: 1.7 ACRES  
 TOTAL PROPOSED IMPERVIOUS SURFACE AREA: 14.3 ACRES  
 TOTAL PROPOSED NET CHANGE IN IMPERVIOUS SURFACE AREA: 12.6 ACRES

**PROJECT CONTACTS**

THE OWNER AND CONTRACTOR ARE RESPONSIBLE FOR THE IMPLEMENTATION OF THE SWPPP AND INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPs BEFORE, DURING AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION HAS BEEN FILED.

ORGANIZATION	CONTACT NAME	PHONE
CITY OF BROOKLYN PARK	JESSE STRUVE	763-493-8114
MINNESOTA POLLUTION CONTROL AGENCY	DON BERGER	651-276-7235
SHINGLE CREEK AND WEST MISSISSIPPI WMC'S	DIANE SPECTOR	763-479-4280
SRF WATER RESOURCES	ROBERT LEBA	763-475-0010

MPCA DUTY OFFICER 24 HOUR EMERGENCY NOTIFICATION: 651-649-5451  
800-422-0798

**LOCATION OF SWPPP REQUIREMENTS**

THE REQUIRED SWPPP ELEMENTS MAY BE LOCATED IN MANY PLACES WITHIN THE PLAN SET AS WELL AS IN THE SPECIAL PROVISIONS, MNDOT SPEC BOOK (2016 EDITION), CONSTRUCTION DIARIES OR ON FILE WITH THE PROJECT OWNER. 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. IN ADDITION, THE MINNESOTA NPDES/SDS CONSTRUCTION STORMWATER PERMIT SHOULD BE REVIEWED AND CONSULTED BY THE EROSION AND SEDIMENT CONTROL SUPERVISOR.

**LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN**

DESCRIPTION	LOCATION
TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AND STAGING	SHEET NOS. 45 TO 46
PERMANENT EROSION AND SEDIMENT CONTROL MEASURES	SHEET NOS. 45 TO 46
DIRECTION OF FLOW	SHEET NOS. 33 TO 34
FINAL STABILIZATION	SHEET NOS. 45 TO 46
SOILS AND CONSTRUCTION NOTES	SHEET NOS. 4
DRAINAGE STRUCTURES	SHEET NOS. 33 TO 34
DRAINAGE TABULATION	SHEET NOS. 37 TO 38
STORM SEWER PROFILE SHEETS	SHEET NOS. 35 TO 36
STORM SEWER TABULATION	SHEET NOS. 37 TO 38
EROSION AND SEDIMENT CONTROL DETAILS	SHEET NOS. 17 TO 23
EROSION CONTROL TABULATION	SHEET NOS. 6
TURF ESTABLISHMENT TABULATION	SHEET NOS. 6
STATEMENT OF ESTIMATED QUANTITIES	SHEET NOS. 3

**SITE MAPS AND DESIGN CALCULATIONS**

IN ADDITION TO WHAT IS LOCATED WITHIN THIS PLAN, SITE MAPS AND BMP DESIGN CALCULATIONS ARE AVAILABLE UPON REQUEST. PLEASE CONTACT THE PROJECT ENGINEER WITH ANY QUESTIONS REGARDING THE SITE MAPS OR CALCULATIONS.

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**CITY OF BROOKLYN PARK**  
 STORM WATER POLLUTION PREVENTION PLAN  
**94TH AVE N**

**SHEET**  
**42**  
**OF**  
**98**

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE**

GENERAL SWPPP NOTES FOR CONSTRUCTION ACTIVITY

1. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION STORMWATER PERMIT AT ALL TIMES UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA (FORM IS AVAILABLE FROM MPCA WEBSITE). THE CONTRACTOR SHALL DEVELOP A CHAIN OF COMMAND WITH ALL OPERATORS ON THE SITE TO ENSURE THAT THE SWPPP SHALL BE IMPLEMENTED AND STAY IN EFFECT UNTIL THE CONSTRUCTION PROJECT IS COMPLETE, THE ENTIRE SITE HAS UNDERGONE FINAL STABILIZATION, AND THE NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED TO THE MPCA.
2. THE CONTRACTOR SHALL PREPARE A WRITTEN, NOT ORAL, WEEKLY SCHEDULE OF PROPOSED EROSION CONTROL ACTIVITIES FOR THE PROJECT ENGINEER'S APPROVAL AS PER MNDOT SPEC. 1717.2D.
3. BURNING OF ANY MATERIAL IS NOT ALLOWED WITHIN PROJECT BOUNDARY.
4. THE CONTRACTOR SHALL PLACE STABILIZED CONSTRUCTION EXITS, AS NECESSARY, TO PREVENT TRACKING OF SEDIMENT ONTO PAVED SURFACES AND IN COMPLIANCE WITH PART IV.C. OF THE NPDES PERMIT. STABILIZED CONSTRUCTION EXITS SHALL BE SUFFICIENTLY SIZED AND MAINTAINED TO PREVENT TRACK OUT. STABILIZED CONSTRUCTION EXITS SHALL BE INCIDENTAL.
5. ALL TOPSOIL IN DISTURBED AREAS SHALL BE REMOVED AND STOCKPILED FOR LATER PLACEMENT. AVOID COMPACTION AS MUCH AS IS FEASIBLE IN ALL AREAS WHERE COMPACTION IS NOT REQUIRED FOR CONSTRUCTION. COMPACTION SHALL BE AVOIDED IN ALL AREAS DESIGNATED FOR INFILTRATION.
6. DO NOT DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS. DELINEATE AREAS NOT TO BE DISTURBED PRIOR TO STARTING GROUND DISTURBING ACTIVITIES. IF IT BECOMES NECESSARY TO DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS OBTAIN WRITTEN PERMISSION PRIOR TO PROCEEDING. PRESERVE ALL BUFFERS (IF ANY) SHOWN ON THE PLANS.
7. DIRECT DISCHARGES FROM BMPS TO VEGETATED AREAS AND ROUTE STORMWATER AROUND UNSTABILIZED AREAS OF THE SITE WHENEVER POSSIBLE. PROVIDE EROSION CONTROL AND VELOCITY DISSIPATION DEVICES AS NEEDED TO PREVENT EROSION AND NUISANCE CONDITIONS.
8. PROVIDE STABILIZATION IN ANY TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.
9. TEMPORARY DEWATERING ACTIVITIES MAY BE REQUIRED. THEREFORE, IT IS POSSIBLE THAT A PERMIT FOR THE TEMPORARY APPROPRIATION OF WATERS OF THE STATE FROM MNDNR SHALL BE REQUIRED FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THIS PERMIT (FORMS ARE AVAILABLE FROM THE MNDNR WEBSITE). ALL TEMPORARY DEWATERING SHALL BE DISCHARGED TO AN APPROVED LOCATION FOR TREATMENT PRIOR TO DISCHARGE TO THE RECEIVING WATER. THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT SITE MANAGEMENT PLANS TO THE PROJECT ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK ACCORDING TO SPEC 1717.2D. TEMPORARY DEWATERING SHALL BE INCIDENTAL.
10. BASIN DRAINING ACTIVITIES OF TURBID OR SEDIMENT LADEN WATER SHALL BE DISCHARGED TO TEMPORARY SEDIMENT BASINS WHENEVER POSSIBLE. IN THE EVENT THAT IT IS NOT POSSIBLE TO DISCHARGE THE SEDIMENT LADEN WATER TO A TEMPORARY SEDIMENT BASIN THE WATER SHALL BE TREATED SO THAT IT DOES NOT CAUSE A NUISANCE CONDITION IN THE RECEIVING WATERS OR TO DOWNSTREAM LANDOWNERS.
11. IT IS NOT ANTICIPATED THAT POLYMERS, FLOCCULANTS OR OTHER SEDIMENTATION TREATMENT CHEMICALS SHALL BE USED. HOWEVER, IF THE USE OF SUCH CHEMICALS BECOMES NECESSARY TO COMPLY WITH PERMIT REQUIREMENTS, IT SHALL BE IN ACCORDANCE WITH PART IV.C.10. OF THE CONSTRUCTION GENERAL PERMIT.

POLLUTION PREVENTION NOTES

1. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS REGARDING POLLUTION PREVENTION MANAGEMENT DURING CONSTRUCTION, WHICH SHALL INCLUDE, BUT NOT BE LIMITED TO, PROVIDING THE FOLLOWING (ITEMS LISTED ARE INCIDENTAL):
  - A. WASHOUT AREAS FOR CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS FOR USE BY ALL SUBCONTRACTORS AND MATERIAL TESTING PERSONNEL. LOCATION OF WASHOUT AREAS SHALL BE IDENTIFIED BY SIGNAGE AND SHALL BE AT LEAST 200 FT FROM SITE MANAGEMENT PLAN REQUIREMENT AREAS (IF APPLICABLE) OR ENVIRONMENTALLY SENSITIVE AREAS, AND UTILIZE A LEAK-PROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER THAT PREVENTS RUNOFF ONTO ADJACENT SOILS. AN ENGINEERED COLLECTION SYSTEM CAN ALSO BE USED IF IT IS APPROVED BY THE PROJECT ENGINEER.
  - B. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE PROJECT ENGINEER FOR A CHEMICAL STORAGE AREA AND SHALL DESIGNATE AN AREA FOR FUELING AND MINOR MAINTENANCE OF CONSTRUCTION VEHICLES (INCLUDING WASHING) WITH MEANS TO CAPTURE ANY FUEL SPILLS. RUNOFF SHALL BE CONTAINED IN A TEMPORARY SEDIMENT BASIN OR OTHER EFFECTIVE CONTROL AND ALL WASTE GENERATED SHALL BE PROPERLY DISPOSED OF. NO ENGINE DEGREASING IS ALLOWED ON SITE.
  - C. SOLID WASTE COLLECTION AND REMOVAL
  - D. SECONDARY CONTAINMENT FOR STORAGE OF HAZARDOUS MATERIALS
  - E. SECURED HAZARDOUS WASTE STORAGE CONTAINERS
  - F. CHEMICAL SPILL KITS (SHALL BE PROVIDED AT EACH LOCATION WHERE CHEMICALS ARE USED OR STORED AND ANY LOCATION WHERE VEHICLES ARE FUELED OR MAINTAINED).
  - G. PORTABLE RESTROOM FACILITIES THAT ARE ANCHORED TO PREVENT TIPPING
2. CHEMICALS SHALL BE KEPT IN A SECURE STORAGE AREA WITH RESTRICTED ACCESS IN SEALED CONTAINERS WHEN NOT IN USE. RETURN ALL CHEMICALS TO THE DESIGNATED STORAGE AREA BY THE END OF THE DAY UNLESS INFEASIBLE. CHEMICAL STORAGE CONTAINERS SHALL HAVE SECONDARY CONTAINMENT WHEN BEING USED OR STORED ON THE PROJECT SITE, AND PRODUCTS OR CHEMICALS THAT MAY LEACH POLLUTANTS SHALL BE UNDER COVER (PLASTIC SHEETING OR TEMPORARY ROOF). CHEMICAL SPILLS OF ANY KIND (OIL, FUEL, FERTILIZER, ETC.) SHALL BE CLEANED UP AND REMOVED FROM THE SITE IMMEDIATELY. THE CONTRACTOR SHALL HAVE A SPILL KIT ON SITE AT ALL TIMES.

POLLUTION PREVENTION NOTES (CONT.)

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CREATING AND FOLLOWING A WRITTEN DISPOSAL PLAN FOR ALL HAZARDOUS WASTE MATERIALS. THE PLAN SHALL INCLUDE HOW THE MATERIAL SHALL BE DISPOSED OF AND THE LOCATION OF THE DISPOSAL SITE AND SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO WORK ON SITE. LEAKS, SPILLS, OR OTHER RELEASES SHALL BE RESPONDED TO IN ACCORDANCE WITH MPCA SPILL CONTAINMENT AND REMEDIAL ACTION PROCEDURES.
4. THE CONTRACTOR SHALL USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT DISCHARGE OR PLACEMENT OF BITUMINOUS GRINDINGS, CUTTINGS, MILLINGS, AND OTHER BITUMINOUS WASTES FROM AREAS OF EXISTING OR FUTURE VEGETATED SOILS, AND ALL WATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.
5. THE CONTRACTOR SHALL USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT CONCRETE DUST, PARTICLES, SAW CUT SLURRY, PLANING WASTE AND OTHER CONCRETE WASTES FROM LEAVING PUBLIC RIGHT OF WAY, DEPOSITING IN EXISTING OR FUTURE VEGETATED AREAS OR ENTERING STORMWATER CONVEYANCE SYSTEM INCLUDING INLETS AND CURB FLOW LINES. ONSITE RELEASE OF CONCRETE SLURRY IS PERMISSIBLE IF MINNESOTA POLLUTION CONTROL GUIDANCE FOR ROAD CONSTRUCTION CONCRETE SLURRY AND THE REQUIREMENTS OF THE SPECIAL PROVISIONS ARE FOLLOWED.

EROSION AND SEDIMENT CONTROL SUPERVISOR, INSPECTIONS AND MAINTENANCE NOTES

1. IN ACCORDANCE WITH SPEC. 2573.3 A1, THE CONTRACTOR SHALL PROVIDE A CERTIFIED EROSION AND SEDIMENT CONTROL SUPERVISOR IN GOOD STANDING WHO IS KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BMPS. PROVIDE PROOF OF CERTIFICATION (UNIVERSITY OF MINNESOTA - CONSTRUCTION SITE MANAGEMENT) AT THE PRECONSTRUCTION MEETING. WORK SHALL NOT BE ALLOWED TO COMMENCE UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED. THE EROSION AND SEDIMENT CONTROL SUPERVISOR IS INCIDENTAL.
2. THE EROSION AND SEDIMENT CONTROL SUPERVISOR SHALL WORK WITH THE PROJECT ENGINEER TO OVERSEE THE IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA.
3. THE EROSION AND SEDIMENT CONTROL SUPERVISOR IS RESPONSIBLE FOR COMPLYING WITH ALL THE INSPECTION AND MAINTENANCE REQUIREMENTS STATED IN THE NPDES PERMIT PART IV. E. INSPECTIONS OF THE ENTIRE CONSTRUCTION SITE SHALL OCCUR A MINIMUM OF ONCE EVERY SEVEN DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS (IN NO CASE SHALL THE TIME BETWEEN INSPECTIONS EXCEED 7 DAYS). RAINFALL AMOUNTS SHALL BE OBTAINED USING A PROPERLY MAINTAINED RAIN GAUGE ONSITE OR BY A WEATHER STATION THAT IS WITHIN ONE MILE. THE EROSION AND SEDIMENT CONTROL SUPERVISOR SHALL THOROUGHLY INSPECT ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPS TO ENSURE INTEGRITY AND EFFECTIVENESS OF EACH BMP.
4. ALL INSPECTIONS AND MAINTENANCE CONDUCTED DURING CONSTRUCTION SHALL BE RECORDED IN WRITING WITHIN 24 HOURS AND THESE RECORDS SHALL BE RETAINED WITH THE SWPPP. INSPECTION REPORTS SHALL BE SUBMITTED TO THE PROJECT ENGINEER AND SWPPP DESIGNER IN A FORMAT APPROVED BY THE ENGINEER. INSPECTION RECORDS SHALL INCLUDE:
  - A. DATE AND TIME OF INSPECTIONS;
  - B. NAME OF PERSONS CONDUCTING INSPECTIONS;
  - C. FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS;
  - D. CORRECTIVE ACTIONS TAKEN INCLUDING DATES, TIMES, AND THE PARTY COMPLETING MAINTENANCE ACTIVITIES;
  - E. DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCH IN 24 HOURS;
  - F. LOCATION, DESCRIPTION AND PHOTO OF ANY DISCHARGES OFF THE PROJECT SITE.
  - G. DOCUMENTS AND CHANGES MADE TO THE SWPPP.
5. THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING INSPECTION AND MAINTENANCE REQUIREMENTS (INSPECTIONS MAY BE REDUCED UNDER CERTAIN CONDITIONS AS COVER IS ESTABLISHED AND CONDITIONS CHANGE AS DESCRIBED IN PART IV. E OF THE NPDES PERMIT):
  - A. SILT FENCE SHALL BE REPAIRED, REPLACED OR SUPPLEMENTED WHEN IT BECOMES NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT OF THE SILT FENCE. REPAIRS SHALL BE MADE WITHIN 24 HOURS OF DISCOVERY.
  - B. INLET PROTECTION DEVICES SHOULD BE REPAIRED WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT AND/OR DEPTH OF THE DEVICE.
  - C. TEMPORARY SEDIMENT BASINS, IF REQUIRED, SHALL HAVE THE SEDIMENT REMOVED ONCE THE SEDIMENT HAS REACHED 1/2 THE STORAGE VOLUME WITHIN 72 HOURS OF DISCOVERY.
  - D. REMOVE ANY SEDIMENT DEPOSITED IN SURFACE WATERS. SEDIMENT SHALL BE REMOVED AND ANY AREA DISTURBED BY THE REMOVAL RESTABILIZED WITHIN 7 DAYS OF DISCOVERY. A SITE MANAGEMENT PLAN IS REQUIRED FOR WORK IN ANY SURFACE WATER AND APPROPRIATE AUTHORITIES SHALL BE CONTACTED PRIOR TO COMMENCING WORK.
  - E. TRACKED SEDIMENT SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OF TRACKING ONTO PAVED SURFACES.
  - F. ALL OTHER NONFUNCTIONAL BMPS SHALL BE REPAIRED, REPLACED, OR SUPPLEMENTED WITHIN 24 HOURS OF DISCOVERY.
  - G. REINSTALL AS QUICKLY AS POSSIBLE ANY BMP REMOVED TO ACCOMMODATE SHORT TERM ACTIVITIES.
  - H. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL BMPS UNTIL WORK HAS BEEN COMPLETED, SITE HAS GONE UNDER FINAL STABILIZATION, AND THE NOTICE OF TERMINATION HAS BEEN SUBMITTED TO THE MPCA IN ACCORDANCE WITH PART II.C OF THE CONSTRUCTION GENERAL PERMIT. SEDIMENT REMOVAL AND MAINTENANCE OF BMPS IS INCIDENTAL.
6. CLEAN OUT ALL PERMANENT STORMWATER BASINS REGARDLESS OF WHETHER USED AS A TEMPORARY SEDIMENT BASIN OR SEDIMENT TRAP TO THE DESIGN CAPACITY AFTER ALL UPGRADIENT LAND DISTURBING ACTIVITY IS COMPLETED.

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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: ROBERT J. LEBA

Date: \_\_\_\_\_ License # 41951

DRAWN BY  
J. VAN BECK

DESIGNED BY  
P. ENGELMEYER

CHECKED BY  
B. LEBA

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**CITY OF BROOKLYN PARK**

STORM WATER POLLUTION PREVENTION PLAN

**94TH AVE N**

**SHEET**  
**43**  
**OF**  
**98**

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE**

STABILIZATION AND SEDIMENT CONTROL NOTES

1. THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS SHALL BE PLACED AS NECESSARY TO MINIMIZE EROSION FROM DISTURBED SURFACES AND CAPTURE SEDIMENT ONSITE. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO ANY REMOVAL WORK AND/OR GROUND DISTURBING ACTIVITIES AND SHALL BE MAINTAINED UNTIL THE POTENTIAL FOR EROSION HAS BEEN ELIMINATED. IF SEDIMENT CONTROLS ARE OVERLOADED (BASED ON FREQUENT FAILURE OR EXCESSIVE MAINTENANCE), ADDITIONAL UPGRADIENT OR REDUNDANT BMPS SHALL BE PLACED.
2. SEDIMENT CONTROL DEVICES SHALL BE ESTABLISHED ON ALL DOWN GRADIENT PERIMETERS BEFORE ANY UP GRADIENT LAND DISTURBING ACTIVITIES BEGIN. SEDIMENT CONTROL DEVICES INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
  - A. PERIMETER CONTROL 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. THE BMP SHALL BE J-HOOKED AT A MAXIMUM OF 100 FOOT INTERVALS AND EACH SECTION SHALL CONTAIN NO MORE THAN 1/4 ACRE OF DRAINAGE AREA.
  - B. SEDIMENT DAMAGE FROM STOCKPILES SHALL BE MINIMIZED BY PLACING A ROW OF SUPER DUTY SILT FENCE A MINIMUM 5 FEET FROM THE TOE. IF THERE IS NOT ADEQUATE PROJECT AREA TO PLACE THE SILT FENCE MORE THAN 5 FEET FROM THE TOE OF THE SLOPE, THE CONTRACTOR MAY SUBMIT AN ALTERNATIVE TO THE PROJECT ENGINEER FOR APPROVAL.
  - C. DITCH CHECKS (IF REQUIRED) SHALL BE PLACED AS INDICATED ON THE PLANS DURING ALL PHASES OF CONSTRUCTION.
    1. TEMPORARY DITCH CHECKS (IF REQUIRED) SHALL CONSIST OF USING ROCK DITCH CHECKS, BIOLOGS AND ROCK WEEPERS IN FRONT OF CULVERT INLETS. IN LIEU OF REMOVING TEMPORARY DITCH CHECKS, THE ROCK MAY BE PUSHED INTO THE GROUND.
    2. FILTER LOGS (IF REQUIRED) SHALL BE PLACED DURING PERMANENT TURF ESTABLISHMENT AT THE INTERVALS IDENTIFIED IN THE PLAN.
  - D. FLOTATION SILT CURTAIN MAY BE USED AS PERIMETER CONTROL BUT ONLY FOR WORK ON THE SHORELINE OR BELOW THE WATERLINE. IMMEDIATELY AFTER THE CONSTRUCTION IN THE AREA IS COMPLETE, AN UPLAND BMP SHALL BE PLACED IF EXPOSED SOILS CONTINUE TO DRAIN TO THE SURFACE WATER.
  - E. TEMPORARY SEDIMENT BASINS ARE REQUIRED WHERE TEN OR MORE ACRES DRAIN TO A COMMON LOCATION (FIVE IF DRAINING TO A SPECIAL OR IMPAIRED WATER).
    1. BASIN VOLUME SHALL BE A MINIMUM OF 1,800 CUBIC FEET PER ACRE OF DRAINAGE AREA TO THE BASIN (3,600 CUBIC FEET PER ACRE IF NO CALCULATIONS ARE PERFORMED)
    2. OUTLET SHALL ALLOW COMPLETE DRAWDOWN FOR MAINTENANCE AND A STABILIZED OVERFLOW. THE OUTLET SHALL WITHDRAW WATER FROM THE SURFACE EXCEPT DURING FROZEN CONDITIONS.
    3. IF A TEMPORARY BASIN OF THE REQUIRED SIZE IS INFEASIBLE THE REASONS SHALL BE DOCUMENTED IN THE SWPPP AND ALTERNATE BMPS SHALL BE PLACED.
3. PRESERVE A NATURAL BUFFER OF AT LEAST 50 FEET (100 FEET IF WITHIN 1 MILE OF AND DRAINS TO A SPECIAL OR IMPAIRED WATER) BETWEEN DISTURBED AREAS AND FLOWS TO A SURFACE WATER (NOT REQUIRED AT DITCHES OR STORMWATER CONVEYANCE CHANNELS, STORM DRAIN INLETS OR SEDIMENT BASINS). IF A BUFFER IS INFEASIBLE, PROVIDE AS LARGE A BUFFER AS POSSIBLE AND REDUNDANT SEDIMENT CONTROLS.
4. STORM SEWER INLETS SHALL BE PROTECTED AT ALL TIMES WITH THE APPROPRIATE INLET PROTECTION FOR EACH SPECIFIC PHASE OF CONSTRUCTION. PROVIDE INLET PROTECTION DEVICES WITH EMERGENCY OVERFLOW CAPABILITIES. SILT FENCE PLACED IN THE INLET GRATE IS NOT AN ACCEPTABLE INLET PROTECTION BMP FOR GRADING OPERATIONS (THIS BMP SHALL BE ACCEPTED ONLY FOR SHORT INTERVALS DURING MILLING OR PAVING OPERATIONS). INLET PROTECTION DEVICES MAY NEED TO BE PLACED MULTIPLE TIMES IN THE SAME LOCATION OVER THE LIFE OF THE CONTRACT. INLET PROTECTION DEVICES SHALL BE PAID FOR ONCE PER INLET REGARDLESS OF THE NUMBER OF TIMES THE BMP IS PLACED. ALL STORM SEWER INLET PROTECTION DEVICES SHALL BE KEPT IN GOOD FUNCTIONAL CONDITION AT ALL TIMES. IF THE PROJECT ENGINEER DEEMS AN INLET PROTECTION DEVICE TO BE NONFUNCTIONAL, IN POOR CONDITION, INEFFECTIVE OR NOT APPROPRIATE FOR THE CURRENT CONSTRUCTION ACTIVITIES IT SHALL BE REPLACED WITH A SUITABLE ALTERNATIVE AT NO COST TO THE OWNER. FAILURE TO PERFORM SHALL RESULT IN DEDUCT.

STABILIZATION AND SEDIMENT CONTROL NOTES (CONT.)

5. PAVEMENT SURFACES SHALL BE SWEEPED WITHIN 24 HOURS OF DISCOVERY OF SEDIMENT OR TRACKING ONTO PAVEMENT THAT DRAINS TO CURB, INLETS, DITCHES OR PONDS. PAVEMENT SHALL BE LIGHTLY WETTED PRIOR TO SWEEPING. THIS WORK IS INCIDENTAL.
6. OUTLETS INTO SURFACE WATERS SHALL BE STABILIZED WITH ENERGY DISSIPATION WITHIN 24 HOURS OF BEING CONSTRUCTED.
7. DITCHES AND EXPOSED SOILS SHALL BE KEPT IN AN EVEN ROUGH GRADED CONDITION IN ORDER TO BE ABLE TO APPLY EROSION CONTROL MULCHES AND BLANKETS.
8. INITIATE STABILIZATION OF ALL EXPOSED SOIL AND STOCKPILE AREAS IMMEDIATELY AFTER CONSTRUCTION ACTIVITY ON THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY OR PERMANENT STABILIZATION SHALL BE COMPLETED WITHIN NO MORE THAN 14 DAYS (7 DAYS IF IT IS WITHIN 1 MILE OF AND DRAINS TO A SPECIAL OR IMPAIRED WATER). ALL EXPOSED SOIL WITHIN 200 LINEAL FEET OF AND DRAINING TO A PUBLIC WATER WITH "WORK IN WATER RESTRICTIONS" AND DURING SPECIFIED FISH SPAWNING TIME FRAMES, SHALL BE STABILIZED WITHIN 24 HOURS. IN MANY INSTANCES, THIS SHALL REQUIRE STABILIZATION TO OCCUR MORE THAN ONCE DURING ROUGH GRADING. RAPID STABILIZATION METHOD 3 SHALL BE USED TO PROVIDE TEMPORARY COVER IN THESE AREAS AS APPROPRIATE. SUBSTITUTE SEED MIXTURE 21-112 OR 21-111 FOR THE SPECIFIED SEED MIXTURE AS APPROPRIATE FOR THE SEASON. SEE PERMIT SECTION IV.B. FOR EXCEPTIONS.
9. THE NORMAL WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH THAT DRAINS WATER FROM THE CONSTRUCTION SITE, OR DIVERTS WATER AROUND THE CONSTRUCTION SITE, SHALL BE STABILIZED WITHIN 200 LINEAL FEET FROM THE PROPERTY EDGE OR POINT OF DISCHARGE TO ANY SURFACE WATER. STABILIZATION SHALL OCCUR WITHIN 24 HOURS OF CONNECTION TO A SURFACE WATER, EXISTING GUTTER, STORM SEWER INLET, DRAINAGE DITCH, OR OTHER STORMWATER CONVEYANCE SYSTEM ACCORDING TO SPEC 1717.2. RAPID STABILIZATION METHOD 4 SHALL BE USED TO STABILIZE THESE AREAS (SUBSTITUTE SEED MIXTURE 21-112 OR 21-111 FOR THE SPECIFIED SEED MIXTURE AS APPROPRIATE FOR THE SEASON). THE REMAINDER OF THE DITCH SHALL BE STABILIZED WITHIN 14 DAYS (7 DAYS IF IT IS WITHIN 1 MILE OF AND DRAINS TO A SPECIAL OR IMPAIRED WATER) OF CONNECTING TO THE SURFACE WATER. PERMANENT EROSION CONTROL BLANKET OR RAPID STABILIZATION METHOD 4 (SUBSTITUTE SEED MIXTURE 21-112 OR 21-111 FOR THE SPECIFIED SEED MIXTURE AS APPROPRIATE FOR THE SEASON) SHALL BE USED TO STABILIZE THESE AREAS. DISC ANCHORED MULCH AND HYDRAULIC SOIL STABILIZERS ARE NOT ALLOWED TO BE USED FOR DITCH STABILIZATION.
10. ALL EXPOSED SOIL AREAS SHALL BE STABILIZED PRIOR TO THE ONSET OF WINTER. ANY WORK STILL BEING PERFORMED SHALL BE SNOW MULCHED, SEEDED, OR BLANKETED WITHIN THE TIME FRAMES LISTED IN THE MPCAS GENERAL NPDES CONSTRUCTION STORMWATER PERMIT.
11. ALL TOPSOIL BERMS SHALL BE STABILIZED AS FOLLOWS:
  - A. BETWEEN APRIL 1 - AUGUST 31, SEED WITH SEED MIXTURE 21-111
  - B. BETWEEN SEPTEMBER 1 AND MARCH 31, SEED WITH SEED MIXTURE 21-112 AND TOP WITH RAPID STABILIZATION 2.
12. TILLING FOR BEDS OR TREE HOLES SHALL BE PLANTED AND MULCHED WITH WOODCHIPS WITHIN 7 DAYS OR STRAW MULCHED UNTIL PLANTING OPERATIONS CAN BE COMPLETED. FILTER LOGS SHALL BE PLACED, AS NEEDED, TO TRAP SEDIMENT ON THE LOWER EDGE OF BEDS OR TREE HOLES. FILTER LOGS SHALL BE LEFT TO PHOTO DEGRADE.

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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: ROBERT J. LEBA  
 Date: \_\_\_\_\_ License # 41951

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J. VAN BECK  
 DESIGNED BY  
P. ENGELMEYER  
 CHECKED BY  
B. LEBA  
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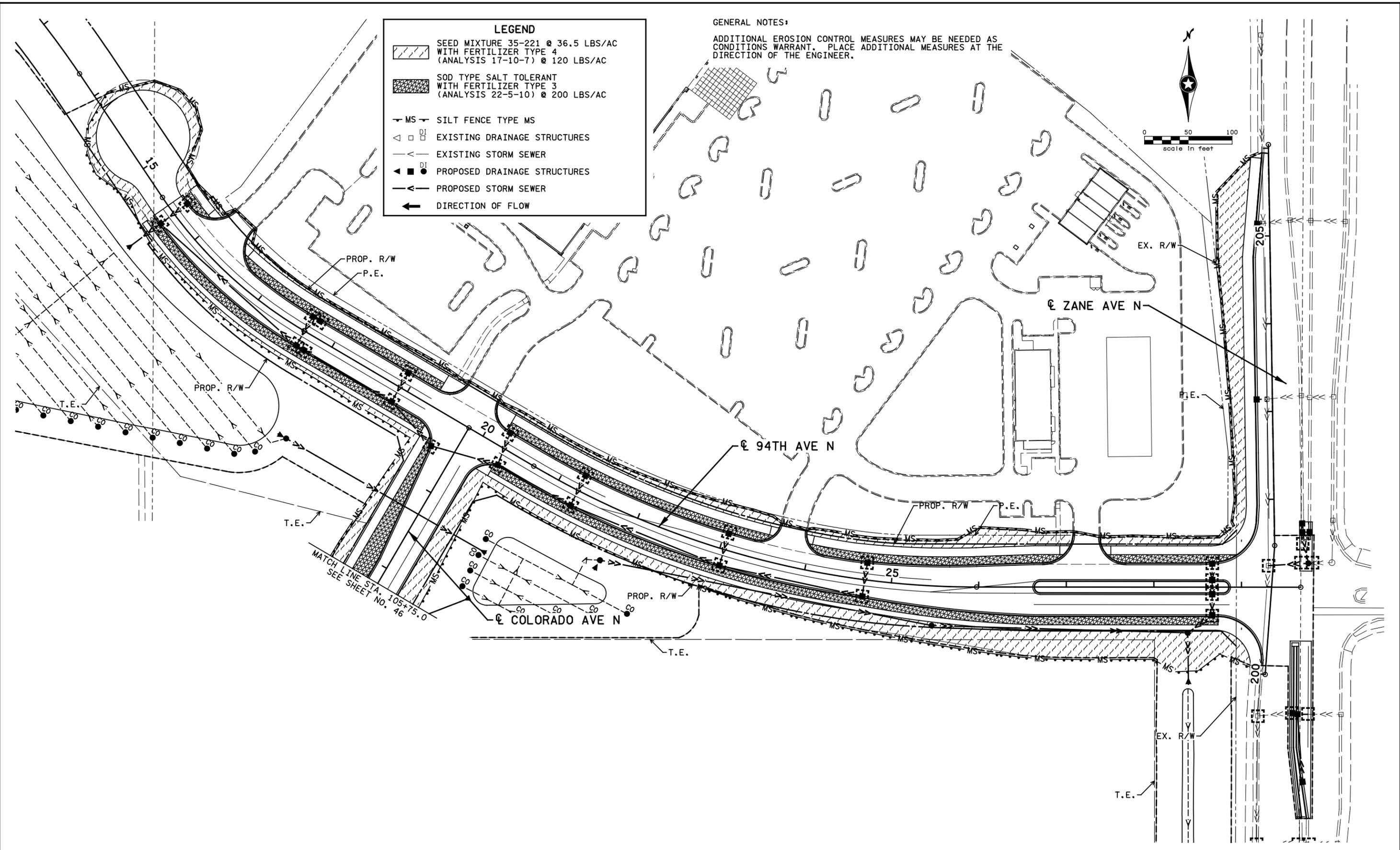
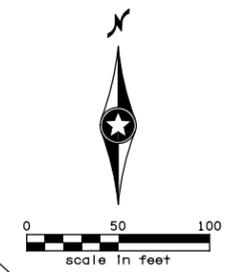
**CITY OF BROOKLYN PARK**  
 STORM WATER POLLUTION PREVENTION PLAN  
**94TH AVE N**

**SHEET**  
**44**  
**OF**  
**98**

**LEGEND**

-  SEED MIXTURE 35-221 @ 36.5 LBS/AC WITH FERTILIZER TYPE 4 (ANALYSIS 17-10-7) @ 120 LBS/AC
-  SOD TYPE SALT TOLERANT WITH FERTILIZER TYPE 3 (ANALYSIS 22-5-10) @ 200 LBS/AC
-  MS SILT FENCE TYPE MS
-  EXISTING DRAINAGE STRUCTURES
-  EXISTING STORM SEWER
-  PROPOSED DRAINAGE STRUCTURES
-  PROPOSED STORM SEWER
-  DIRECTION OF FLOW

**GENERAL NOTES:**  
 ADDITIONAL EROSION CONTROL MEASURES MAY BE NEEDED AS CONDITIONS WARRANT. PLACE ADDITIONAL MEASURES AT THE DIRECTION OF THE ENGINEER.



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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: STEVEN J. MILLER

Date: \_\_\_\_\_ License # 41327

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M. JULIFF

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**ENGINEERS  
PLANNERS  
DESIGNERS**

Consulting Group, Inc.

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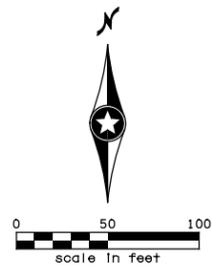
**CITY OF BROOKLYN PARK**

EROSION CONTROL AND TURF ESTABLISHMENT PLANS

**94TH AVE N**

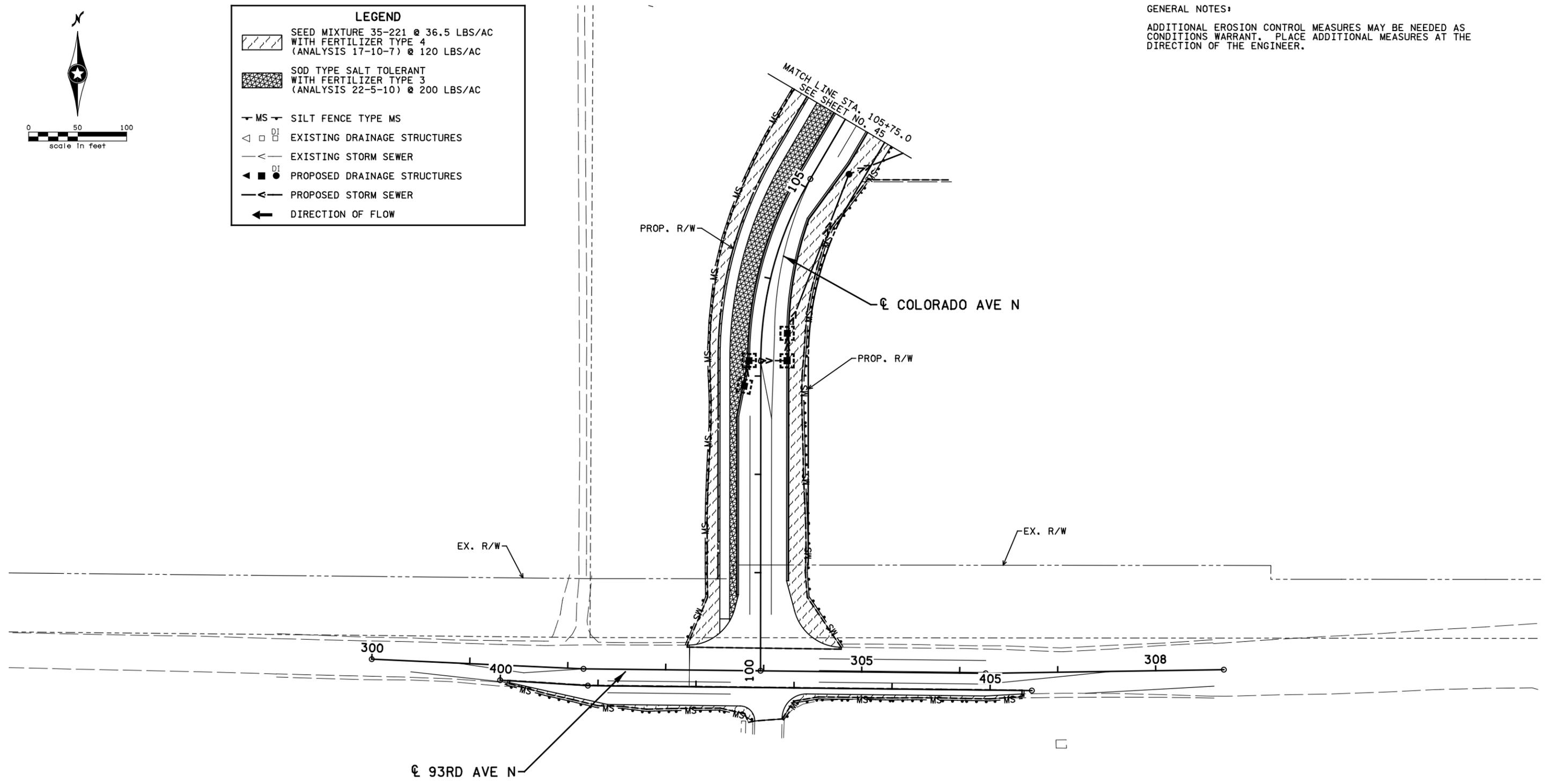
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OF  
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LEGEND	
	SEED MIXTURE 35-221 @ 36.5 LBS/AC WITH FERTILIZER TYPE 4 (ANALYSIS 17-10-7) @ 120 LBS/AC
	SOD TYPE SALT TOLERANT WITH FERTILIZER TYPE 3 (ANALYSIS 22-5-10) @ 200 LBS/AC
	MS SILT FENCE TYPE MS
	EXISTING DRAINAGE STRUCTURES
	EXISTING STORM SEWER
	PROPOSED DRAINAGE STRUCTURES
	PROPOSED STORM SEWER
	DIRECTION OF FLOW

GENERAL NOTES:  
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 CONDITIONS WARRANT. PLACE ADDITIONAL MEASURES AT THE  
 DIRECTION OF THE ENGINEER.



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NO	DATE	BY	CKD	APPR	REVISION

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Print Name: STEVEN J. MILLER

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**CITY OF BROOKLYN PARK**  
 EROSION CONTROL AND TURF ESTABLISHMENT PLANS  
**94TH AVE N**  
 COLORADO AVE N STA. 100+22.12 TO STA. 105+75.00

**SHEET**  
**46**  
**OF**  
**98**

# PERMANENT PAVEMENT MARKING PLAN

## NOTES & GUIDELINES

### 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 AGENCY PLACED 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 3 INCHES FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

JUST PRIOR TO THE PLACEMENT OF PAVEMENT MARKINGS THE ROAD SURFACE SHALL BE CLEANED AND FREE OF CONTAMINATION AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENTS AND/OR LAITANCE.

APPLY ALL PAVEMENT MARKINGS AS RECOMMENDED BY THE MATERIAL MANUFACTURER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

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.

### CONTRAST MARKINGS:

STANDARD LINEAR PAVEMENT MARKINGS, CROSSWALK MARKINGS AND PAVEMENT MESSAGES WITH 1.5 INCH NON REFLECTIVE BLACK BORDERS.

### PAINT:

GLASS BEADS SHALL BE APPLIED AT A RATE OF AT LEAST 8 LBS/GAL. IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR AND PAVEMENT SURFACE TEMPERATURES 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.

### 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 SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENTS AND/OR LAITANCE.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE.

APPLY EPOXY MARKINGS WITH A MINIMUM THICKNESS OF 20 MILS, GLASS BEADS SHALL BE APPLIED AT A RATE OF AT LEAST 25 LB/GAL. THE "NO-TRACKING" CONDITION SHALL BE DETERMINED ON AN APPLICATION OF SPECIFIED THICKNESS TO THE PAVEMENT AND COVERED WITH GLASS BEADS AT THE RATE OF AT LEAST 25 LB/GAL.

PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR AND PAVEMENT SURFACE TEMPERATURES ARE 40°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.

### PREFORMED MARKINGS:

MANUFACTURER CERTIFICATIONS ARE REQUIRED FOR INSTALLERS.

DO NOT USE LINE MATERIAL TO PIECE TOGETHER WIDER LINES, LETTERS, SYMBOLS, OR CROSSWALK BLOCKS

### PREFORMED MARKINGS GROUND IN APPLICATION:

CONCRETE PAVEMENT SURFACES AND BITUMINOUS PAVEMENT SURFACES WHERE PAVEMENT MARKINGS CANNOT BE INLAID IN THE HOT MAT, SHALL HAVE A RECESS GROUND IN FOR THE PLACEMENT OF DURABLE REFLECTORIZED PAVEMENT MARKINGS. SEE CONSTRUCTION SPECIFICATIONS.

### PREFORM TAPE INLAY APPLICATION:

MAT TEMPERATURE SHALL BE CHECKED USING A THERMOMETER TO MAKE SURE THE INLAY IS BEING DONE IN THE PROPER TEMPERATURE RANGE. THE TEMPERATURE SHOULD MEASURE BETWEEN 150° F (ASPHALT FIRM ENOUGH TO WALK ON) AND 120° F. APPLICATION BELOW 120° F MAY NOT GET A PROPER INLAY. INLAYS ARE NOT RECOMMENDED AFTER SEPTEMBER 15th AS THE ASPHALT COOLS TOO FAST AT THIS TIME OF THE YEAR.

NO PRIMERS ARE USED FOR INLAY APPLICATION. DO NOT PLACE LANE LINES ON AN ASPHALT SEAM. ROLLING OF ALL THE MARKINGS SHOULD BE LENGTHWISE IN THE DIRECTION THEY WERE LAID. FOR CROSSWALKS AND STOP BARS, INITIAL TAMPING WITH THE TAMPING CART IS RECOMMENDED USING ONLY 100 LBS. OF WEIGHT.

USE COMPACTION ROLLER TO EMBED (INLAY) MARKINGS INTO PAVEMENT SURFACE. USE MINIMUM SPEED AND WATER ON ROLLER. DO NOT USE VIBRATOR. IF MARKING BUCKLES OR DISTORTS SEVERELY IN FRONT OF ROLLER, MAT TEMPERATURE OR ROLLER SPEED MAY BE TOO HIGH.

### SYMBOLS & MATERIALS LEGEND

-  CROSSWALK BLOCK
-  PAVEMENT MESSAGE (LEFT ARROW)

TITLE: PERMANENT PAVEMENT MARKING  
TITLE SHEET

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CITY OF BROOKLYN PARK  
SIGNING AND STRIPING PLANS AND DETAILS  
94TH AVE N

SHEET  
47  
OF  
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SIGN PANELS TYPE C										
SIGN NO.	QTY.	POSTS			MTG. HT. (Q-1)	PANEL			CODE NO.	PANEL LEGEND
		NO. & TYPE	KNEE BRACES QTY.	LENGTH		SIZE	AREA	PROJECT TOTAL AREA		
C-1	4	2-U	0	9	4	30 x 30	6.25	25.00	R1-1	STOP
C-2	3	2-U	1	13	7	36 x 36	9.00	27.00	R1-1	STOP
C-3	7	2-U	0	12	7	30 x 30	6.25	43.75	R8-3	NO PARKING
C-4	2	2-U	1	13	7	30 x 36	7.50	15.00	R2-1	SPEED LIMIT 30
C-5	1	2-U	0	11	7	30 x 18	3.75	3.75	R9-9	SIDEWALK CLOSED
C-6	1	1-U	0	11	7	24 x 18	3.00	3.00	R9-9a	TRAIL CLOSED
C-7	3	1-U	0	8	4	18 x 18	2.25	6.75	X4-2	OBJECT MARKER
C-8	1	2-U	1	14	7	30 x 12	2.50	2.50	R3-17bP	END
						24 x 36	6.00	6.00	R3-9b	CENTER LANE LT/RT ONLY
C-9	1	2-U	1	11	7	30 x 12	2.50	2.50	R3-9cP	BEGIN
						24 x 36	6.00	6.00	R3-9b	CENTER LANE LT/RT ONLY
C-10	1	2-U	1	13	7	36 x 36	9.00	9.00	W14-1	DEAD END
C-11	1	2-U	1	12	7	36 x 30	7.50	7.50	R3-8AC	LT/THRU
C-12	1	2-U	1	12	7	36 x 30	7.50	7.50	R3-8AD	LT/THRU-RT
C-13	2	2-U	1	12	7	36 x 30	7.50	15.00	R3-8DA	THRU-LT/RT
						24 x 30	5.00	10.00	R4-7	KEEP RIGHT
C-14	2	2-U	1	12	7	18 x 18	2.25	4.50	X4-2	OBJECT MARKER
						36 x 36	9.00	9.00	R5-1	DO NOT ENTER
C-15	1	2-U	1	13	7	36 x 36	9.00	18.00	R3-7R	RT LANE MUST TURN RT
C-16	2	2-U	1	13	7	36 x 36	9.00	18.00	R3-7R	RT LANE MUST TURN RT
C-17	1	2-U	2	12	7	66 x 30	13.75	13.75	R3-8ACCA	LT/THRU/THRU/RT
C-18	3	2-U	1	12	7	54 x 30	11.25	33.75	R3-8ACA	LT/THRU/RT
C-19	1	2-U	1	13	7	36 x 36	9.00	9.00	W3-1	STOP AHEAD
<b>TOTAL</b>								<b>278.25</b>		

SALVAGE & INSTALL SIGN PANELS TYPE C					
SIGN NO.	QTY.	POSTS		PANEL SIZE	PANEL LEGEND
		NO. & TYPE	KNEE BRACES QTY.		
C-201	1	2-U	0	21 x 15	JCT
				24 x 24	CTY RD 30
C-202	1	2-U	1	36 x 36	DO NOT ENTER
C-203	2	1-U	0	24 x 30	KEEP RIGHT
				18 x 18	OBJECT MARKER
C-204	1	2-U	1	30 x 36	SPEED LIMIT 45
C-205	1	2-U	0	30 x 30	NO PARKING
<b>TOTAL</b>	<b>6</b>				

REMOVE SIGN TYPE C						#
SIGN NO.	QTY.	POSTS		PANEL SIZE	PANEL LEGEND	
		NO. & TYPE	KNEE BRACES QTY.			
						IN
C-101	1	1-U	1	30 x 12	ONE WAY	
<b>TOTAL</b>	<b>1</b>					

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: STEVEN J. MILLER  
 Date: \_\_\_\_\_ License # 41327

DRAWN BY  
 J. VAN BECK  
 DESIGNED BY  
 M. JULIFF  
 CHECKED BY  
 S. MILLER  
 0159048



**CITY OF BROOKLYN PARK**  
**ENGINEERING SERVICES DIVISION**  
 Brooklyn Park  
 5200 85TH AVE. N.  
 BROOKLYN PARK, MN. 55443  
 PH# 763/493-8100  
 FAX# 763/493-8391

**CITY OF BROOKLYN PARK**  
 SIGNING TABULATIONS  
**94TH AVE N**

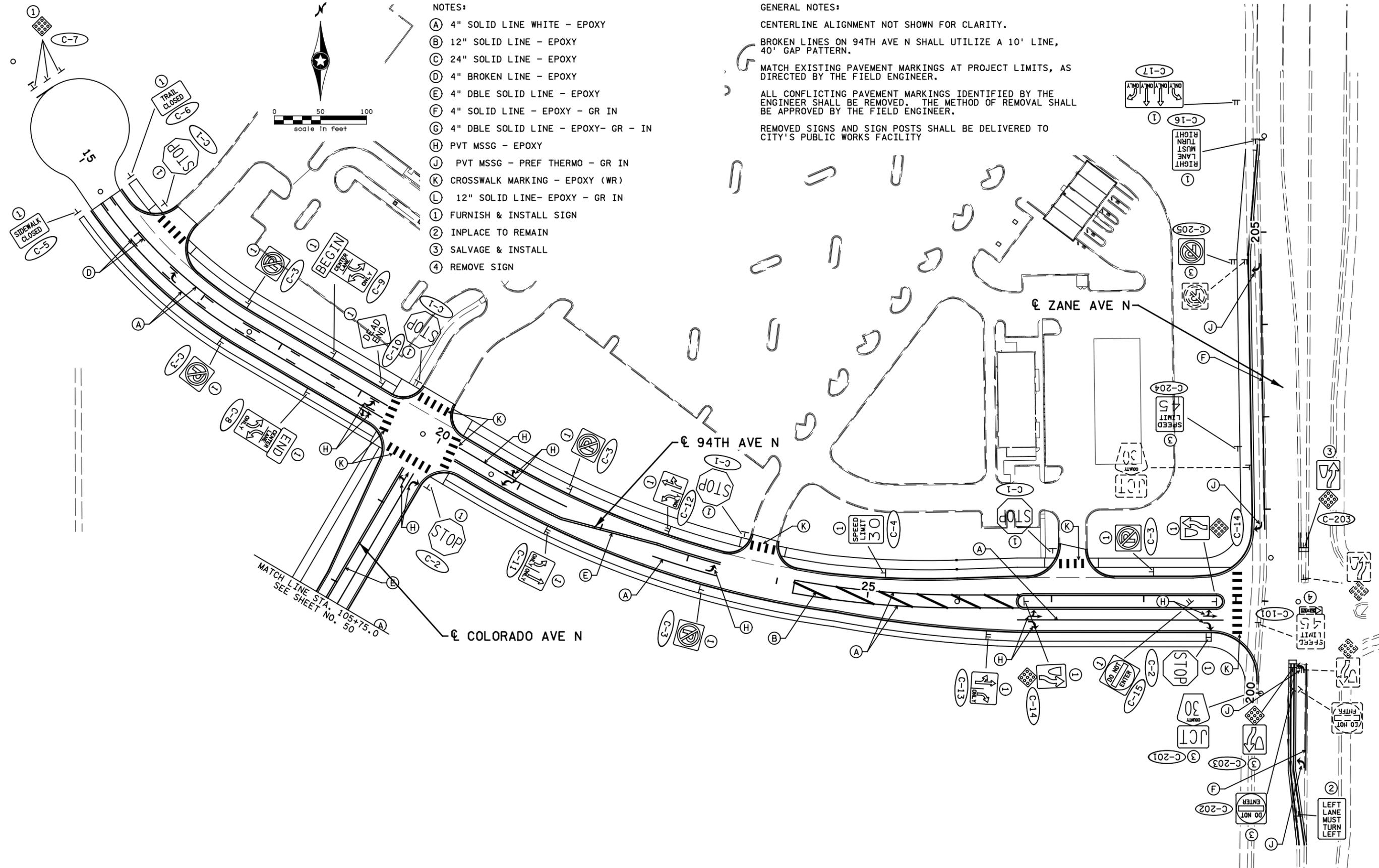
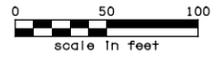
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NOTES:

- (A) 4" SOLID LINE WHITE - EPOXY
- (B) 12" SOLID LINE - EPOXY
- (C) 24" SOLID LINE - EPOXY
- (D) 4" BROKEN LINE - EPOXY
- (E) 4" DBLE SOLID LINE - EPOXY
- (F) 4" SOLID LINE - EPOXY - GR IN
- (G) 4" DBLE SOLID LINE - EPOXY- GR - IN
- (H) PVT MSSG - EPOXY
- (J) PVT MSSG - PREF THERMO - GR IN
- (K) CROSSWALK MARKING - EPOXY (WR)
- (L) 12" SOLID LINE- EPOXY - GR IN
- ① FURNISH & INSTALL SIGN
- ② INPLACE TO REMAIN
- ③ SALVAGE & INSTALL
- ④ REMOVE SIGN

GENERAL NOTES:

CENTERLINE ALIGNMENT NOT SHOWN FOR CLARITY.  
 BROKEN LINES ON 94TH AVE N SHALL UTILIZE A 10' LINE, 40' GAP PATTERN.  
 MATCH EXISTING PAVEMENT MARKINGS AT PROJECT LIMITS, AS DIRECTED BY THE FIELD ENGINEER.  
 ALL CONFLICTING PAVEMENT MARKINGS IDENTIFIED BY THE ENGINEER SHALL BE REMOVED. THE METHOD OF REMOVAL SHALL BE APPROVED BY THE FIELD ENGINEER.  
 REMOVED SIGNS AND SIGN POSTS SHALL BE DELIVERED TO CITY'S PUBLIC WORKS FACILITY



MATCH LINE STA. 105+75.0  
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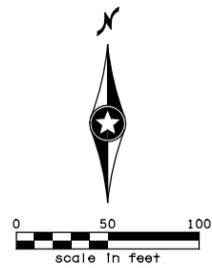
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 Print Name: STEVEN J. MILLER  
 Date: License # 41327

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 DESIGNED BY  
 M. JULIFF  
 CHECKED BY  
 S. MILLER  
 0159048

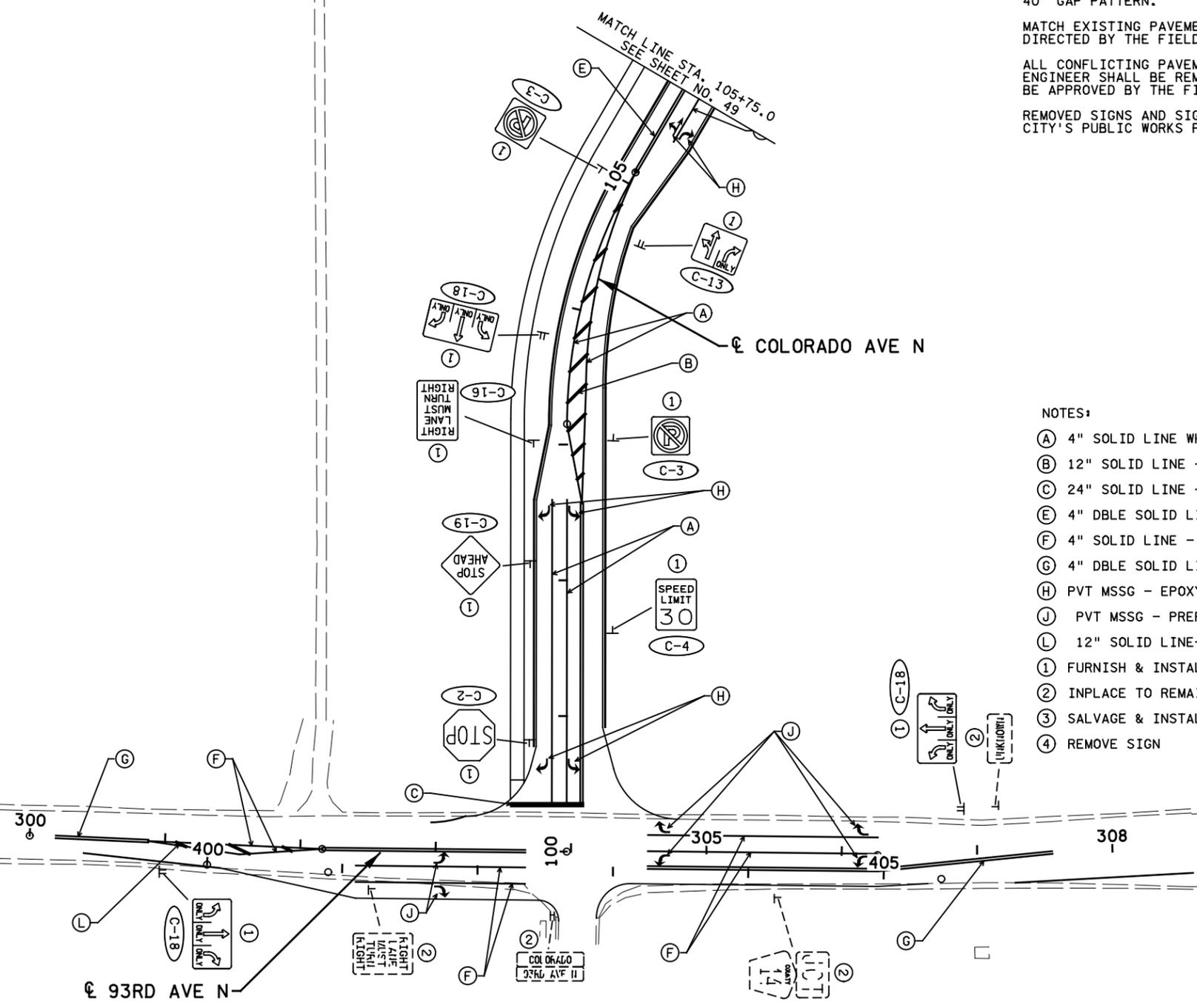
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**CITY OF BROOKLYN PARK**  
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**94TH AVE N**  
 94TH AVE N STA. 14+16.41 TO STA. 29+32.51

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 49  
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GENERAL NOTES:  
 CENTERLINE ALIGNMENT NOT SHOWN FOR CLARITY.  
 BROKEN LINES ON 94TH AVE N SHALL UTILIZE A 10' LINE, 40' GAP PATTERN.  
 MATCH EXISTING PAVEMENT MARKINGS AT PROJECT LIMITS, AS DIRECTED BY THE FIELD ENGINEER.  
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 REMOVED SIGNS AND SIGN POSTS SHALL BE DELIVERED TO CITY'S PUBLIC WORKS FACILITY



- NOTES:
- (A) 4" SOLID LINE WHITE - EPOXY
  - (B) 12" SOLID LINE - EPOXY
  - (C) 24" SOLID LINE - EPOXY
  - (E) 4" DBLE SOLID LINE - EPOXY
  - (F) 4" SOLID LINE - EPOXY - GR IN
  - (G) 4" DBLE SOLID LINE - EPOXY- GR - IN
  - (H) PVT MSSG - EPOXY
  - (J) PVT MSSG - PREF THERMO - GR IN
  - (L) 12" SOLID LINE- EPOXY - GR IN
  - (1) FURNISH & INSTALL SIGN
  - (2) INPLACE TO REMAIN
  - (3) SALVAGE & INSTALL
  - (4) REMOVE SIGN

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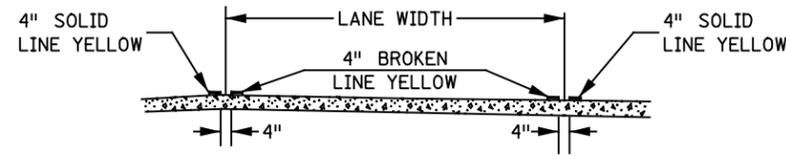
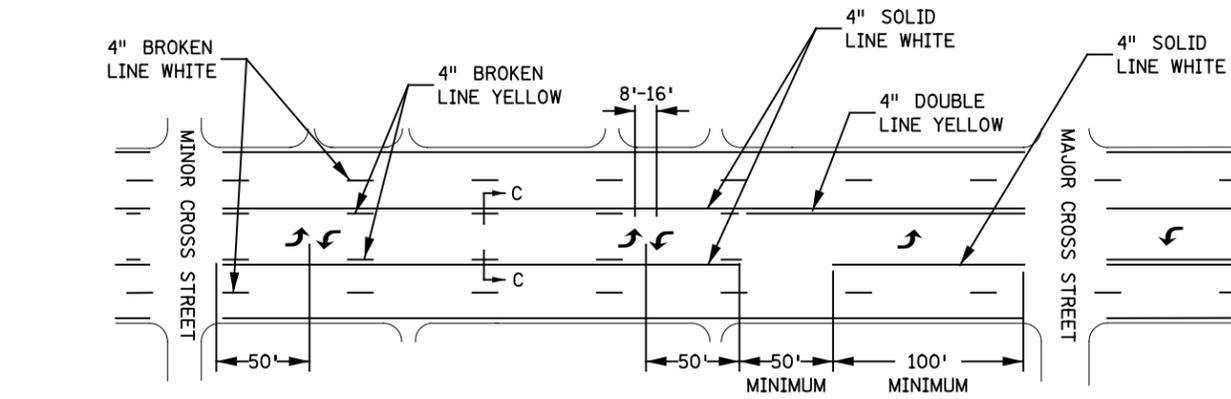


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**94TH AVE N**  
 COLORADO AVE N STA. 100+22.12 TO STA. 105+75.00

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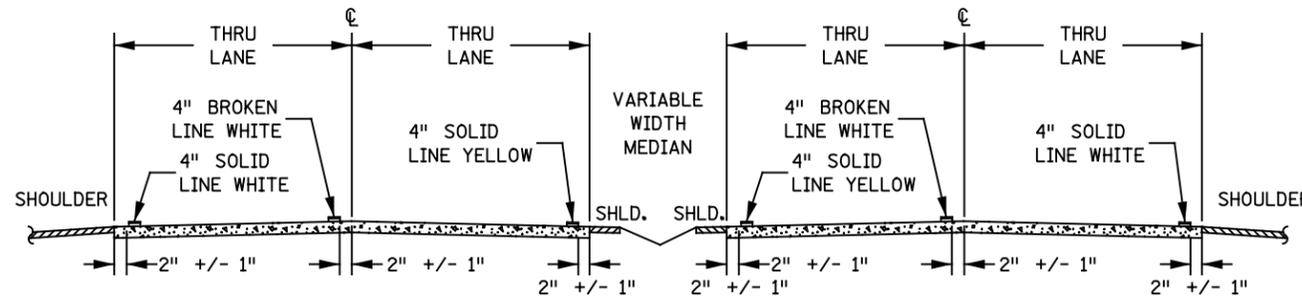
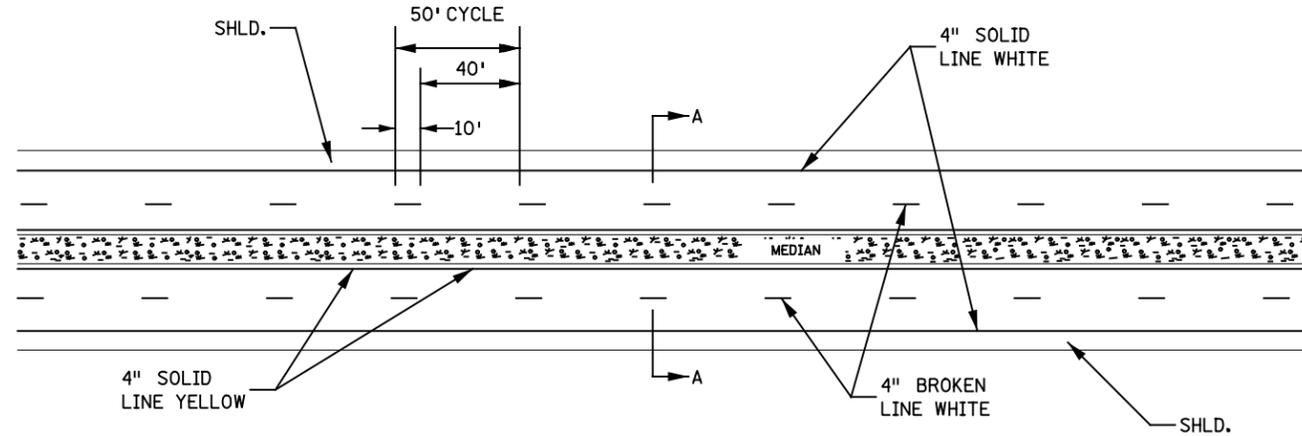
TWO-WAY LEFT-TURN LANE



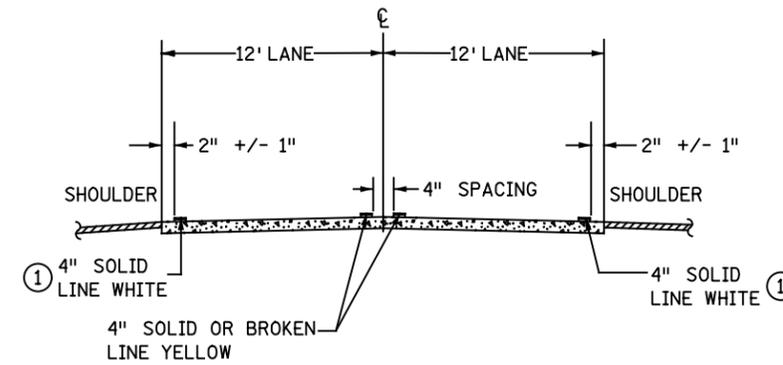
SECTION C-C  
TWO WAY LEFT TURN LANE

NOTE:  
SINGLE-DIRECTION LEFT-TURN ARROWS SHALL NOT BE USED IN LANES BORDERED ON BOTH SIDES BY TWO-WAY LEFT TURN LANE MARKINGS.

FOUR LANE DIVIDED



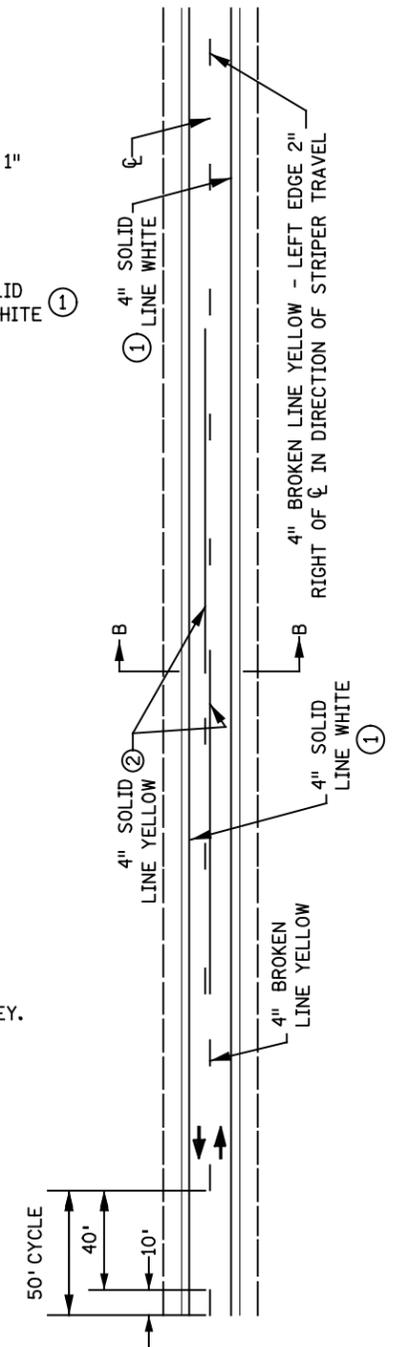
SECTION A-A  
FOUR LANES



SECTION B-B

DESIGNER'S NOTES:

- ① USE 6" EDGE LINES ON 2-LANE 2-WAY RURAL TYPE ROADWAYS WITH OUT SHOULDER RUMBLES.
- ② CONTACT TRAFFIC ENGINEER FOR NO PASSING ZONE SURVEY.



PAVEMENT MARKING TYPICALS

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CHECKED BY: XXX

CERTIFIED BY \_\_\_\_\_

LICENSED PROFESSIONAL ENGINEER

LIC. NO. \_\_\_\_\_

DATE 06/20/2004

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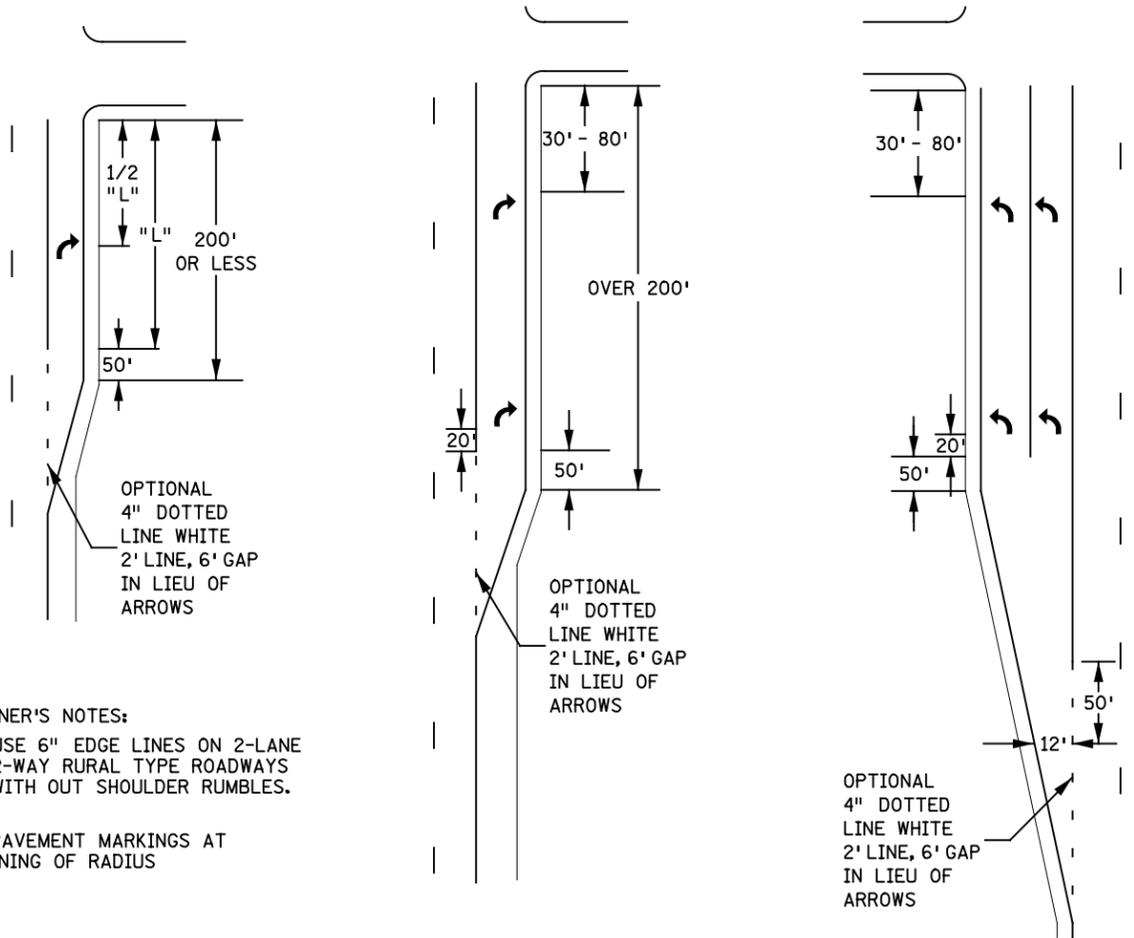
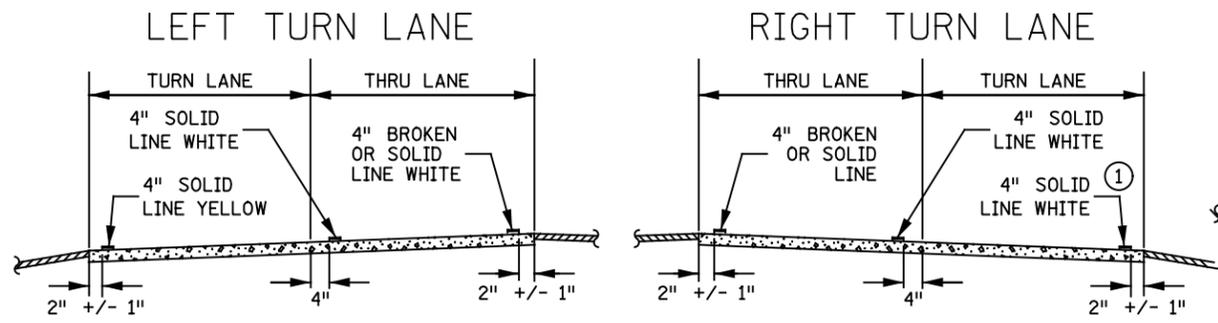
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# TURN LANE MESSAGE PLACEMENT

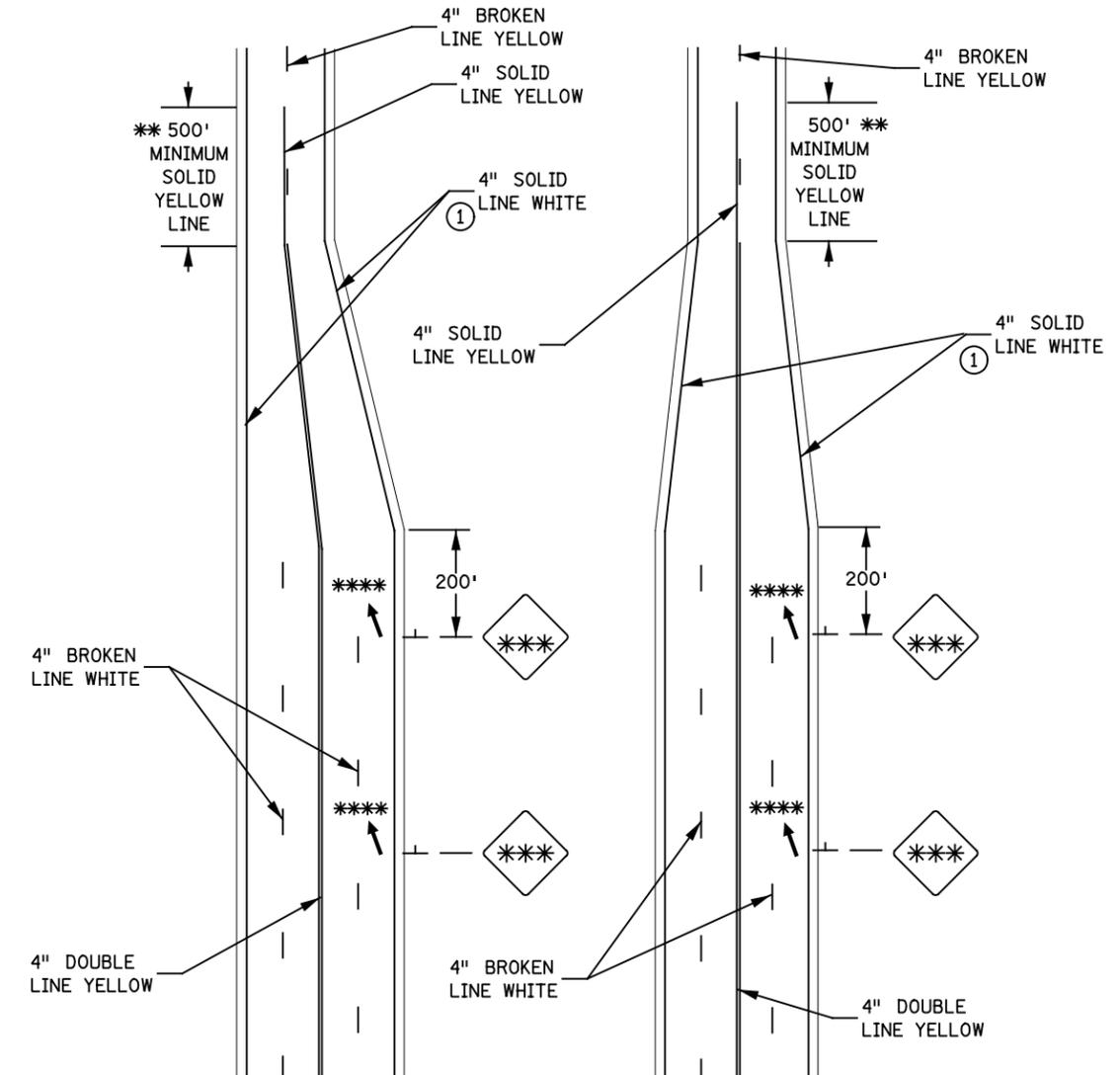


DESIGNER'S NOTES:

(1) USE 6" EDGE LINES ON 2-LANE 2-WAY RURAL TYPE ROADWAYS WITH OUT SHOULDER RUMBLES.

NOTE: END PAVEMENT MARKINGS AT BEGINNING OF RADIUS

# UNDIVIDED ROADWAY TRANSITION



NOTE: SIGN LOCATION FOR REFERENCE ONLY.

DESIGNER'S NOTES:

- \*\* IF THE DISTANCE BETWEEN THE BEGINNING OF THE SOLID LINE YELLOW IS LESS THAN THE DISTANCES IN CHART 7.4 FROM THE END OF A PRECEDING SOLID LINE YELLOW IN THE SAME LANE, THE SOLID LINE SHALL BE EXTENDED BETWEEN THEM.
- \*\*\* PLACE TRANSITION ARROWS ADJACENT TO LANE REDUCTION SIGNS. REFER TO SIGNING TYPICALS FOR SIGN DETAILS AND PLACEMENT.
- \*\*\*\* LANE REDUCTION TRANSITION ARROWS ARE OPTIONAL FOR SPEEDS LESS THAN 45 MPH.
- (1) MAY USE 6" EDGE LINES ON 2-LANE 2-WAY RURAL TYPE ROADWAYS WITH OUT SHOULDER RUMBLES.

## PAVEMENT MARKING TYPICALS

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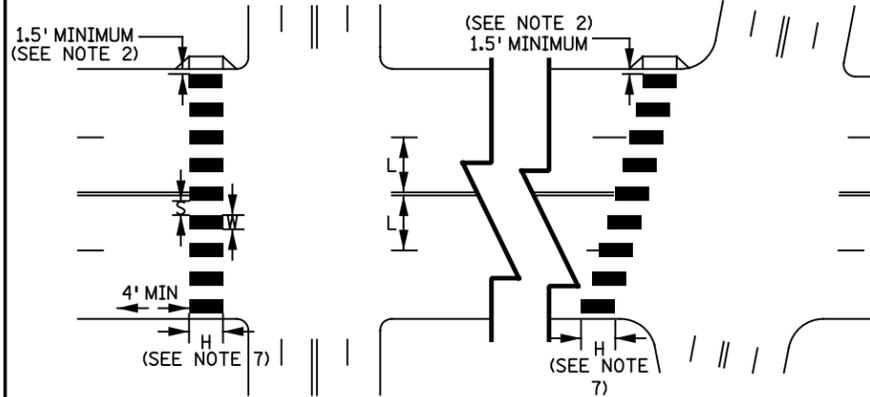
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# MARKINGS FOR PEDESTRIAN CROSSWALKS

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



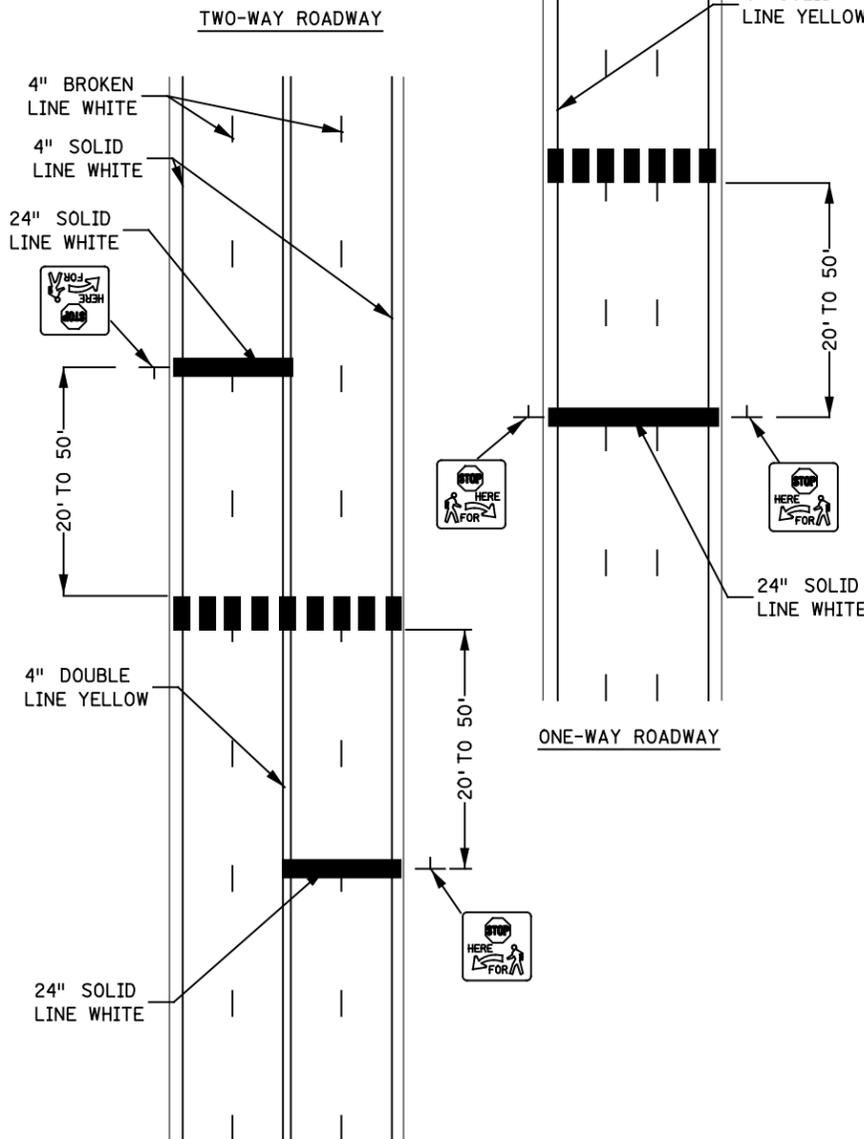
**DESIGNER'S NOTES:**

1. PAINTED AREAS TO BE CENTERED ON CENTERLINE AND LANE LINES.
2. A MINIMUM OF 1.5 FT. CLEAR DISTANCE SHALL BE LEFT ADJACENT TO THE CURB FACE. IF LAST PAINTED AREA FALLS INTO THIS DISTANCE IT MUST BE OMITTED.
3. ON TWO LANE TWO WAY STREETS, USE SPACING SHOWN FOR AN 11 FT. INSIDE LANE.
4. FOR DIVIDED ROADWAYS, ADJUSTMENTS IN SPACING OF THE BLOCKS SHOULD BE MADE IN THE MEDIAN SO THAT THE BLOCKS ARE MAINTAINED IN THEIR PROPER LOCATION ACROSS THE TRAVELED PORTION OF THE ROADWAY.
5. AT SKEWED CROSSWALKS, THE BLOCKS ARE TO REMAIN PARALLEL TO THE LANE LINES AS SHOWN.
6. THE BLOCKS SHALL BE PLACED SO THAT THEY ARE NOT LOCATED IN THE WHEEL PATH OF THE VEHICLES.
7. THE BLOCKS SHALL BE A MINIMUM OF 6' LONG AND AT LEAST AS LONG AS THE TRUNCATED DOMES, FOR FANNED TRUNCATED DOMES THE BLOCKS SHALL BE AT LEAST AS LONG AS THE APPROACHING SIDEWALK OR SHARED USE PATH.
8. THE ALTERNATE (W) AND (S) MAY BE USED WHEN BLOCKS LONGER THAN 6' (H) ARE USED.

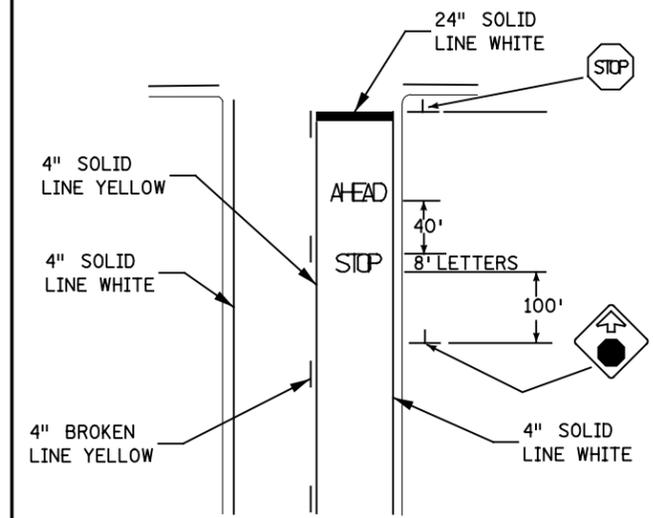
# STOP LINE AT UNSIGNALIZED MID BLOCK CROSSWALKS

NOTE:  
SIGN LOCATION FOR REFERENCE ONLY.

DESIGNER'S NOTES:  
SEE "MARKINGS FOR PEDESTRIAN CROSSWALKS"  
TYPICAL FOR PLACEMENT AND DIMENSIONS OF  
CROSSWALKS.



# STOP LINE AND "STOP AHEAD"



**NOTES:**

1. DO NOT PLACE A STOP AHEAD PAVEMENT MESSAGE IF THE INTERSECTION HAS ADEQUATE LIGHTING.
2. PLACE ONLY ONE SET OF STOP AHEAD PAVEMENT MESSAGES. IF A STOP AHEAD SIGN NEEDS TO BE PLACED MORE THAN 1000 FT FROM THE STOP SIGN, CONTACT THE DISTRICT TRAFFIC ENGINEER TO DETERMINE IF, WHERE, A SECOND SET OF 'STOP AHEAD' PAVEMENT MESSAGES SHOULD BE PLACED.
3. THE STOP LINE SHOULD ORDINARILY BE PLACED 4 FT IN ADVANCE OF AND PERPENDICULAR TO THE NEAREST CROSSWALK LINE. IN THE ABSENCE OF A MARKED CROSSWALK, THE STOP LINE SHOULD BE PLACED AT THE DESIRED STOPPING POINT, AND IN NO CASE NO MORE THAN 30 FT OR LESS THEN 4 FT FROM THE NEAREST EDGE OF THE INTERSECTING CURB LINE OR THE NEAR EDGE OF THE THRU LANE.
4. IF A STOP LINE IS USED IN CONJUNCTION WITH A STOP SIGN, IT SHOULD ORDINARILY BE PLACED IN LINE WITH THE STOP SIGN. HOWEVER, IF THE SIGN CANNOT BE LOCATED EXACTLY WHERE VEHICLES ARE EXPECTED TO STOP, THE STOP LINE SHOULD BE PLACED AT THE STOPPING POINT.
5. IF THE DISTANCE BETWEEN THE BEGINNING OF THE SOLID LINE YELLOW IS LESS THAN THE DISTANCES IN CHART 7.5 IN THE (TEM) FROM THE END OF A PROCEEDING SOLID LINE YELLOW IN THE SAME LANE, THE SOLID LINE SHALL BE EXTENDED BETWEEN THEM.
6. USE TABLE 7.4 IN THE (TEM) TO DETERMINE THE MINIMUM LENGTH OF A NO PASSING ZONE IN ADVANCE OF A STOP CONDITION.
7. SIGN LOCATION FOR REFERENCE ONLY.

**PAVEMENT MARKING TYPICALS**

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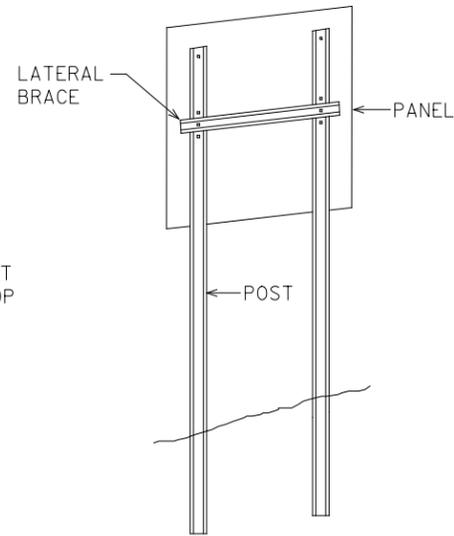
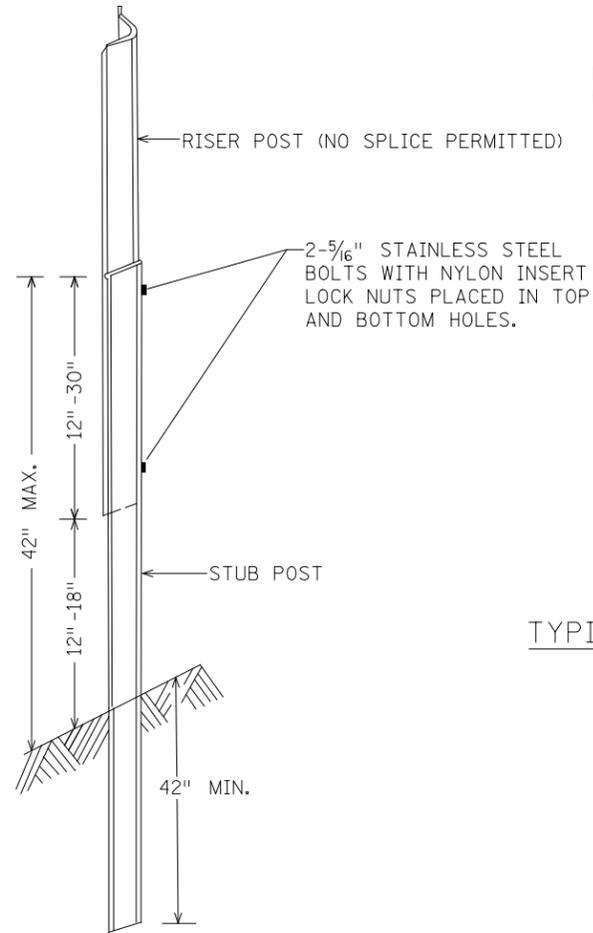
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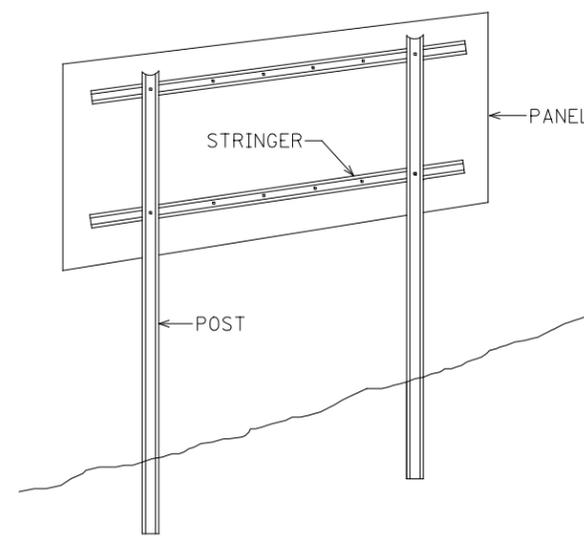
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98

TYPE C & D POST

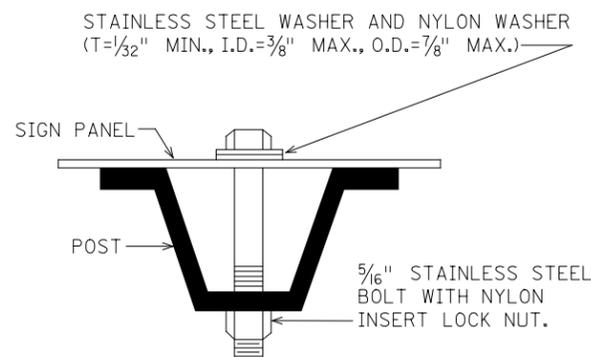


TYPICAL TYPE C INSTALLATION

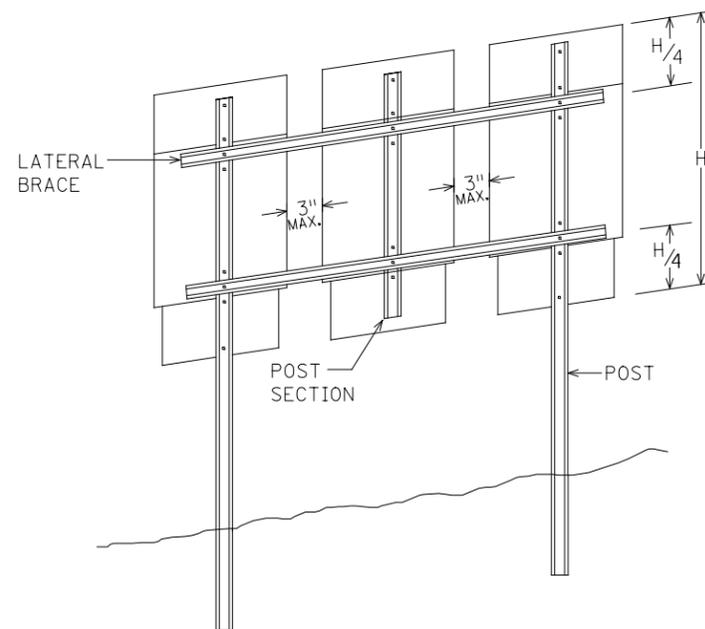


TYPICAL TYPE D INSTALLATION

U POST BREAKAWAY SPLICE



U POST MOUNTING  
TYPE C SIGNS



MODIFIED TYPE C INSTALLATION

NOTES:

1. USE 3 LB/FT STUB POSTS. SHALL CONFORM TO MNDOT 3401.
2. USE 2.5 LB/FT RISER POSTS, STRINGERS, KNEE BRACES AND LATERAL BRACES. ALL SHALL CONFORM TO MNDOT 3401.
3. SEE SIGN DATA SHEETS FOR NUMBER OF POSTS, KNEE BRACES, POST LENGTHS AND SPACINGS, AS DETERMINED FROM TEM CHARTS 6.3 AND 6.4.
4. IF MORE THAN TWO POSTS ARE NEEDED, THE MINIMUM SPACING SHALL BE 45" BETWEEN POSTS.
5. TYPE D SIGN PANELS SHALL BE BOLTED TO STRINGERS AT 24" MAXIMUM INTERVALS IN ACCORDANCE WITH THE TYPE D STRINGER AND PANEL-JOINT DETAIL (SEE STANDARD SIGNS MANUAL).
6. MOUNTING (PUNCH CODE) FOR TYPE C SIGN PANELS SHALL BE AS INDICATED IN THE STANDARD SIGNS MANUAL UNLESS OTHERWISE SPECIFIED.
7. ALL RISER (VERTICAL) U POSTS SHALL BE SPLICED. DRIVEN STUB POSTS SHALL BE AT LEAST 7' LONG.
8. USE STAINLESS STEEL 5/16" BOLTS, WASHERS AND NYLON INSERT LOCK NUTS AS SHOWN FOR ALL GROUND MOUNTED AND OVERHEAD MOUNTED SIGNS.
9. STAINLESS STEEL WASHER WITH SAME DIMENSIONS SHALL BE PROVIDED BETWEEN ALL NYLON WASHERS AND BOLT HEADS.
10. BRACING STUBS SHALL BE NO MORE THAN 4" ABOVE GROUND AND EMBEDDED AT LEAST 42".
11. A-FRAME BRACKET SHALL BE STEEL CONFORMING TO MNDOT 3306 AND GALVANIZED IN ACCORDANCE WITH MNDOT 3394.
12. COLLARS SHALL BE USED TO SHIM OVERLAYS AND LEGEND COMPONENTS AWAY FROM PANEL WHERE INTERFERENCE WITH BOLT HEADS IS ENCOUNTERED. MNDOT 3352.2A6.
13. 2 POST TYPE C SIGNS SHALL BE REINFORCED WITH AT LEAST ONE LATERAL BRACE. INSTALLATIONS WHERE THE TOTAL PANEL HEIGHT IS 60" OR MORE SHALL HAVE TWO LATERAL BRACES LOCATED APPROXIMATELY AT THE QUARTER POINTS.
14. WHERE 2 SINGLE POST TYPE C SIGNS ARE INSTALLED SIDE BY SIDE, THEY SHALL BE REINFORCED LATERALLY BY AT LEAST 2 BRACES, BOLTED AT EACH POST AND LOCATED APPROXIMATELY AT THE QUARTER POINTS.
15. WHERE 3 OR MORE TYPE C SIGNS ARE INSTALLED SIDE BY SIDE, THEY SHALL BE REINFORCED LATERALLY BY AT LEAST 2 BRACES, BOLTED AT EACH POST AND POST SECTION AND LOCATED APPROXIMATELY AT THE QUARTER POINTS AS SHOWN IN MODIFIED TYPE C INSTALLATION.

TYPE C & D SIGN  
STRUCTURAL DETAILS

Sheet 1 of 3

REVISED: 3-7-2014

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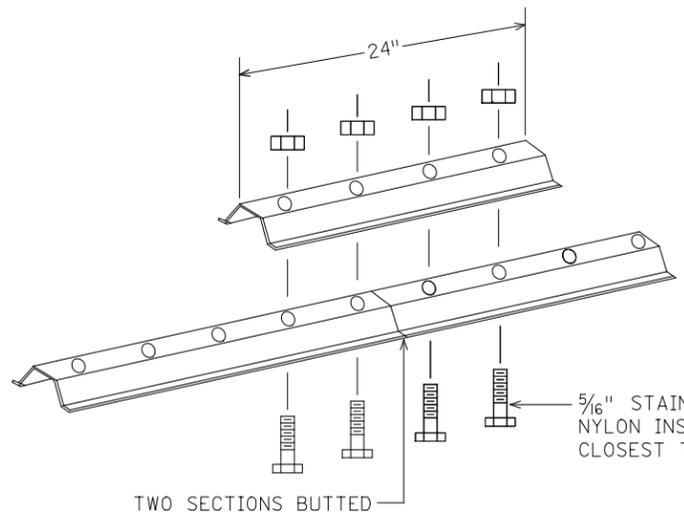
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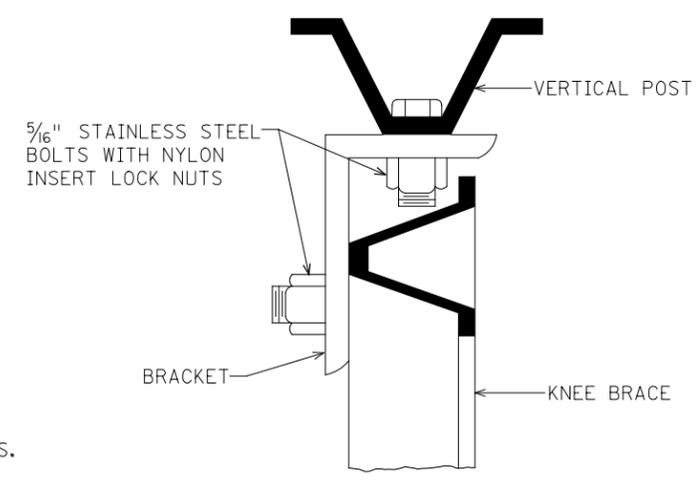
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CITY OF BROOKLYN PARK  
SIGNING AND STRIPING PLANS AND DETAILS  
94TH AVE N

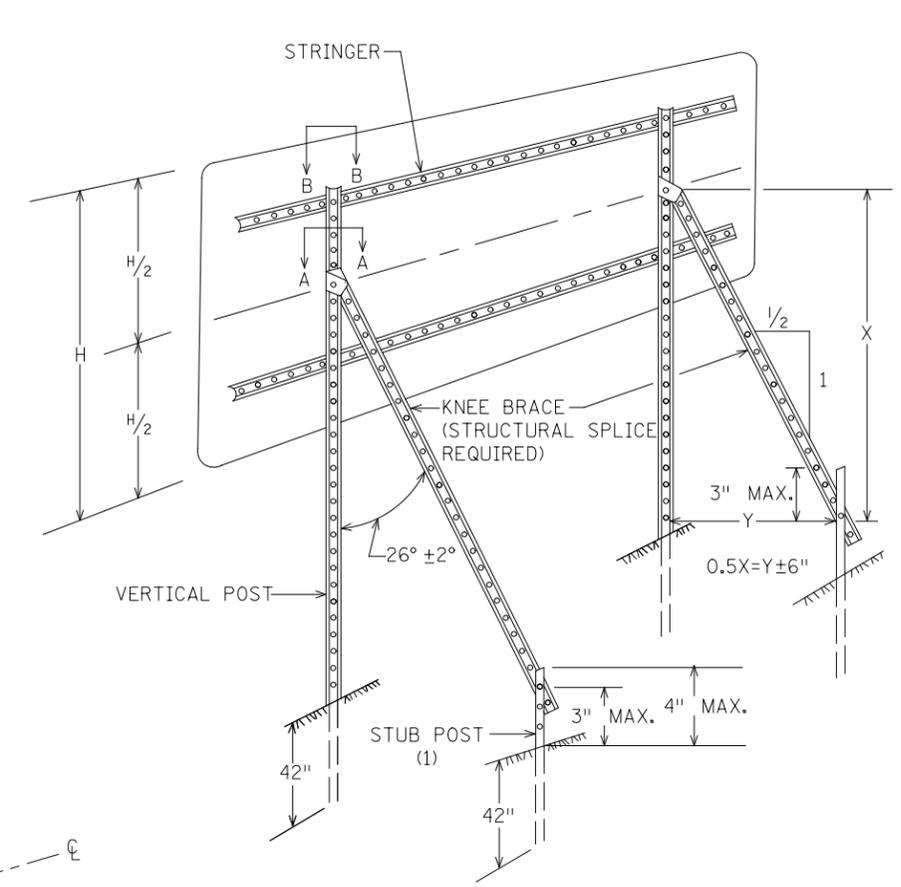
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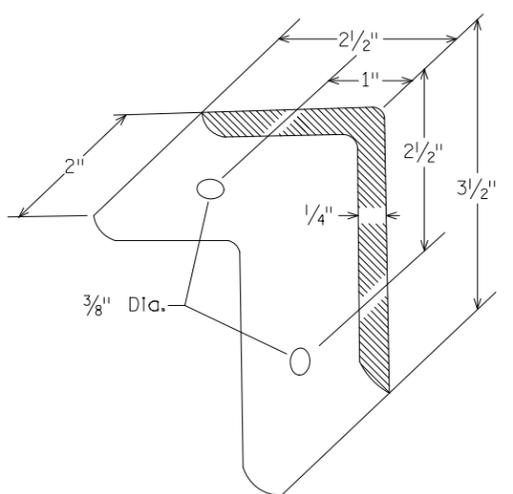
LATERAL BRACE OR STRINGER  
SPLICE DETAIL (EXPLODED VIEW)



SECTION A-A

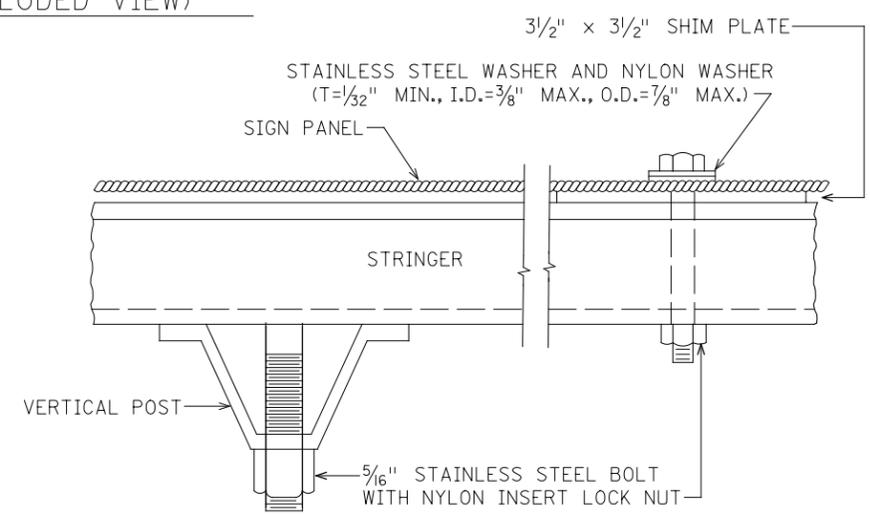


TYPICAL "A-FRAME" INSTALLATION  
TYPE "D" SIGNS

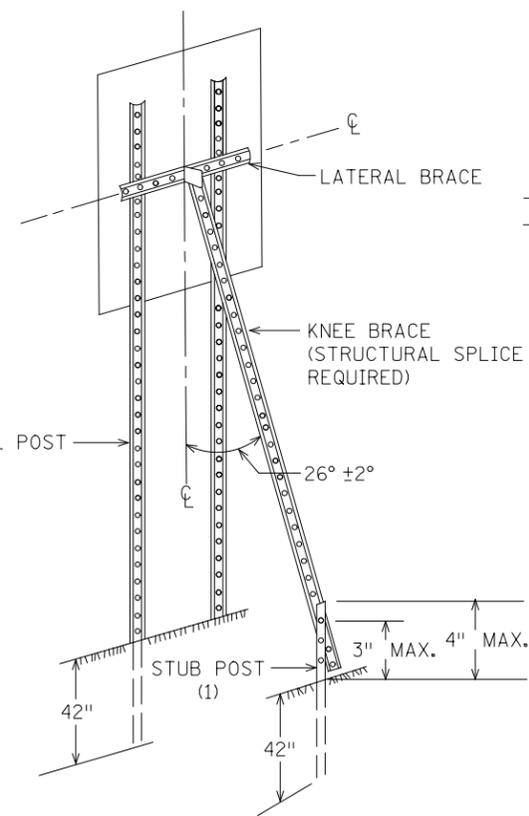


A-FRAME BRACKET

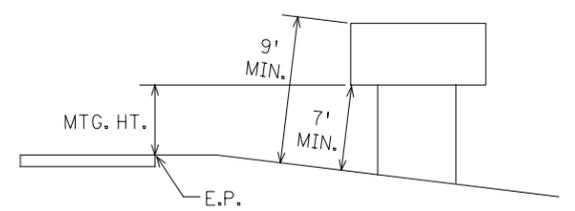
(STEEL MNDOT 3306 GALVANIZED PER MNDOT 3394)



SECTION B-B

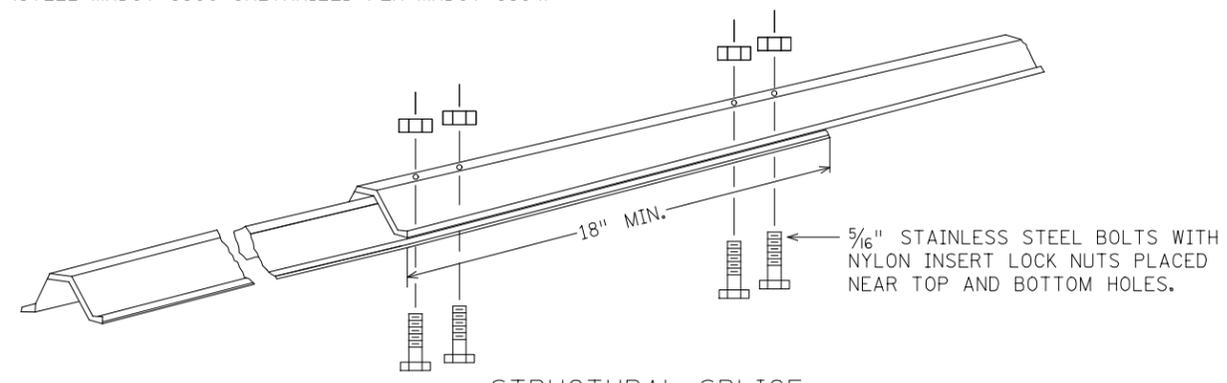


TYPICAL "A-FRAME" INSTALLATION  
TYPE "C" SIGNS



TYPICAL MOUNTING

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



STRUCTURAL SPLICE

(USE WHEN IT IS NECESSARY TO FABRICATE THE CORRECT LENGTH OF POST FROM TWO PIECES)

REVISED: 12-4-2013

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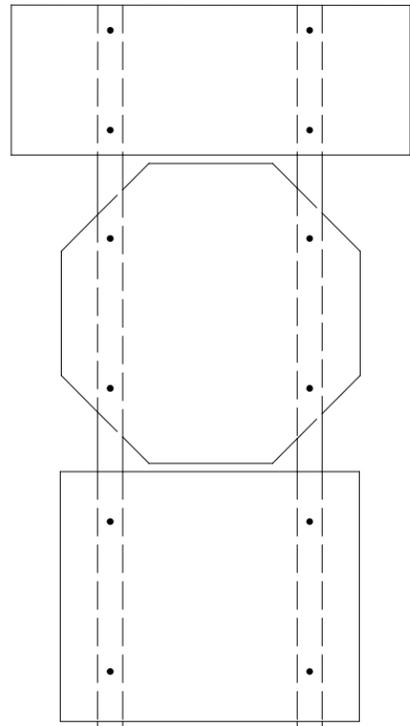
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SIGNING AND STRIPING PLANS AND DETAILS  
94TH AVE N

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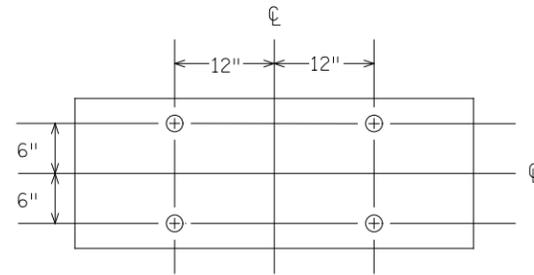
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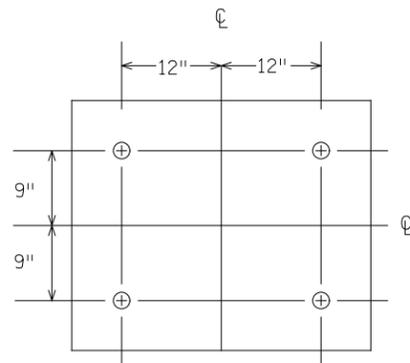
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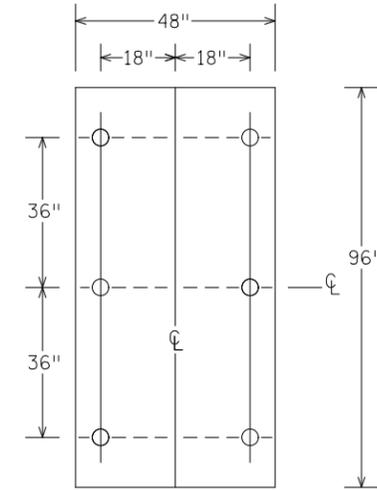
R6-1, R1-1 & (R6-3 OR R6-3a)  
MOUNTING



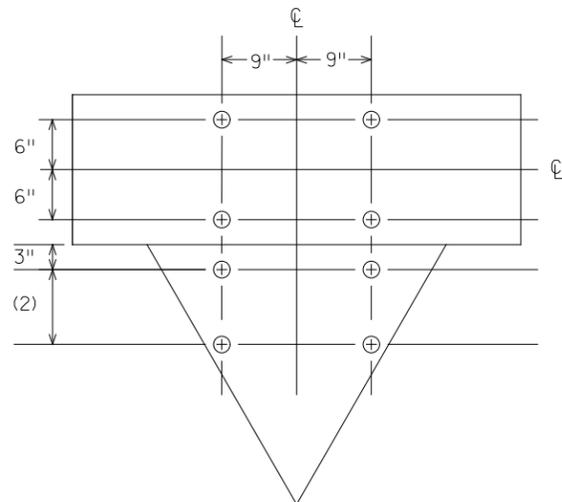
PUNCHING FOR R6-1 (54" x 18")



PUNCHING FOR R6-3 OR R6-3a (36" x 30")

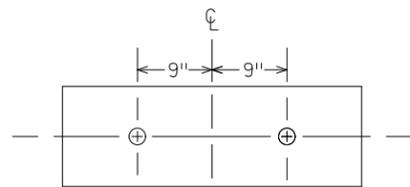


PUNCHING FOR R2-4b  
SPEED LIMIT

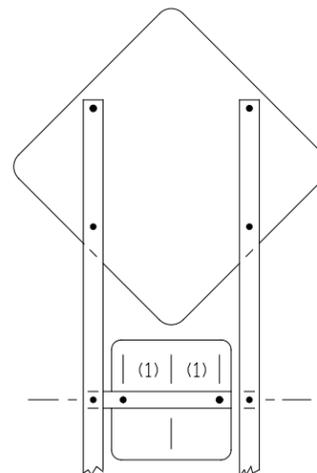


PUNCHING FOR R6-1 (54" x 18") AND  
R1-2 (36" x 36" x 36" OR 48" x 48" x 48")

(2) 9" FOR 36" x 36" x 36"  
18" FOR 48" x 48" x 48"

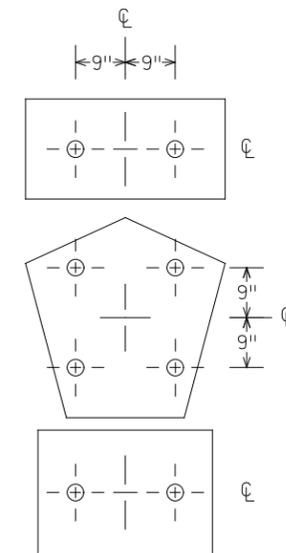


PUNCHING FOR R6-1 (36" x 12")



WARNING SIGN [30" x 30 OR 48" x 48"] AND  
WARNING PLAQUE [18" x 18" OR 30" x 30"]  
PUNCHING AND MOUNTING

(1) 6" FOR WARNING PLAQUE (18" x 18")  
12" FOR WARNING PLAQUE (30" x 30")



(M3-1A, M3-2A, M3-3A OR M3-4A) [36" x 18"] AND  
(M1-6) [36" x 36"] AND  
(M5-1A, M5-2A, M6-1A, M6-2A, M6-3A, M6-4A, M6-5A OR M6-6A) [30" x 24"]  
PUNCHING

TYPE C & D SIGN  
STRUCTURAL DETAILS

Sheet 3 of 3

REVISED: 2-13-2015

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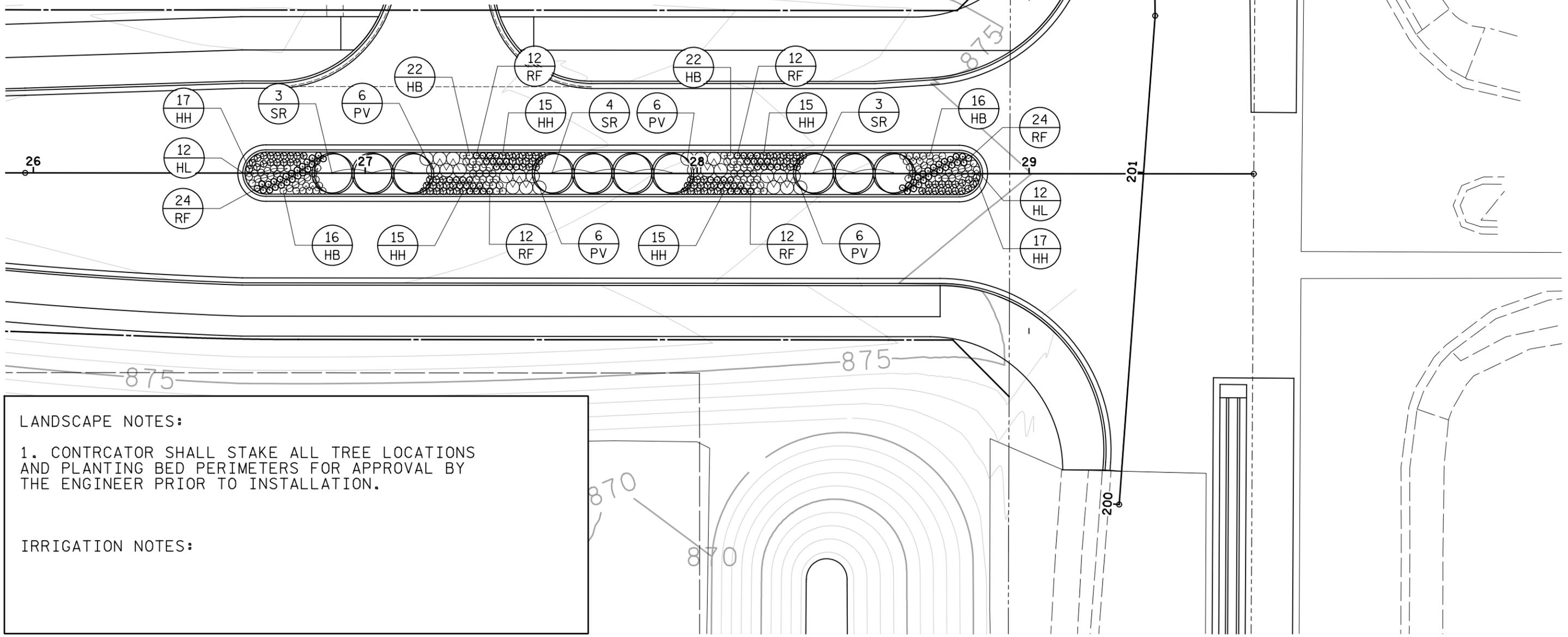
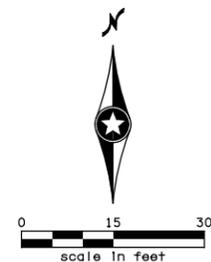
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CITY OF BROOKLYN PARK  
SIGNING AND STRIPING PLANS AND DETAILS  
94TH AVE N

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OF  
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PLANT SCHEDULE

SYMBOL	QUANTITY	BOTANICAL NAME	SIZE	ROOT	NOTES
<b>DECIDUOUS TREES</b>					
SR	10	<i>Syringa reticulata</i> 'Ivory Silk' <b>JAPANESE TREE LILAC</b>	3" CAL.	B&B	SINGLE STRAIGHT LEADER
<b>PERENNIALS AND ORNAMENTAL GRASSES</b>					
HB	76	<i>Hemerocallis</i> 'Bela Lugosi' <b>BELA LUGOSI DAYLILY</b>	#1 GAL.	CONT.	PLANT 24" O.C.
HH	94	<i>Hemerocallis</i> 'Big Time Happy' <b>BIG TIME HAPPY DAYLILY</b>	#1 GAL.	CONT.	PLANT 24" O.C.
HL	24	<i>Hemerocallis</i> 'Lime Frost' <b>LIME FROST DAYLILY</b>	#1 GAL.	CONT.	PLANT 24" O.C.
RF	96	<i>Rudbeckia fulgida</i> 'Goldsturm' <b>GOLDSTURM BLACK-EYED SUSAN</b>	#1 GAL.	CONT.	PLANT 24" O.C.
PV	24	<i>Panicum virgatum</i> <b>SWITCHGRASS</b>	#1 GAL.	CONT.	PLANT 4' O.C.



**LANDSCAPE NOTES:**

1. CONTRACTOR SHALL STAKE ALL TREE LOCATIONS AND PLANTING BED PERIMETERS FOR APPROVAL BY THE ENGINEER PRIOR TO INSTALLATION.

**IRRIGATION NOTES:**

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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: MICHAEL P. MCGARVEY

Date: \_\_\_\_\_ License # 26216

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R. BURAND

DESIGNED BY  
R. BURAND

CHECKED BY  
M. MCGARVEY

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**CITY OF BROOKLYN PARK**  
**ENGINEERING SERVICES DIVISION**

Brooklyn Park

5200 85TH AVE. N.  
BROOKLYN PARK, MN. 55443  
PH# 763/493-8100  
FAX# 763/493-8391

**CITY OF BROOKLYN PARK**

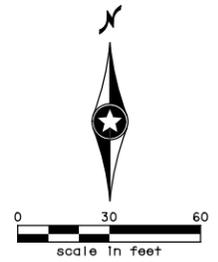
LANDSCAPE PLANS  
**94TH AVE N**

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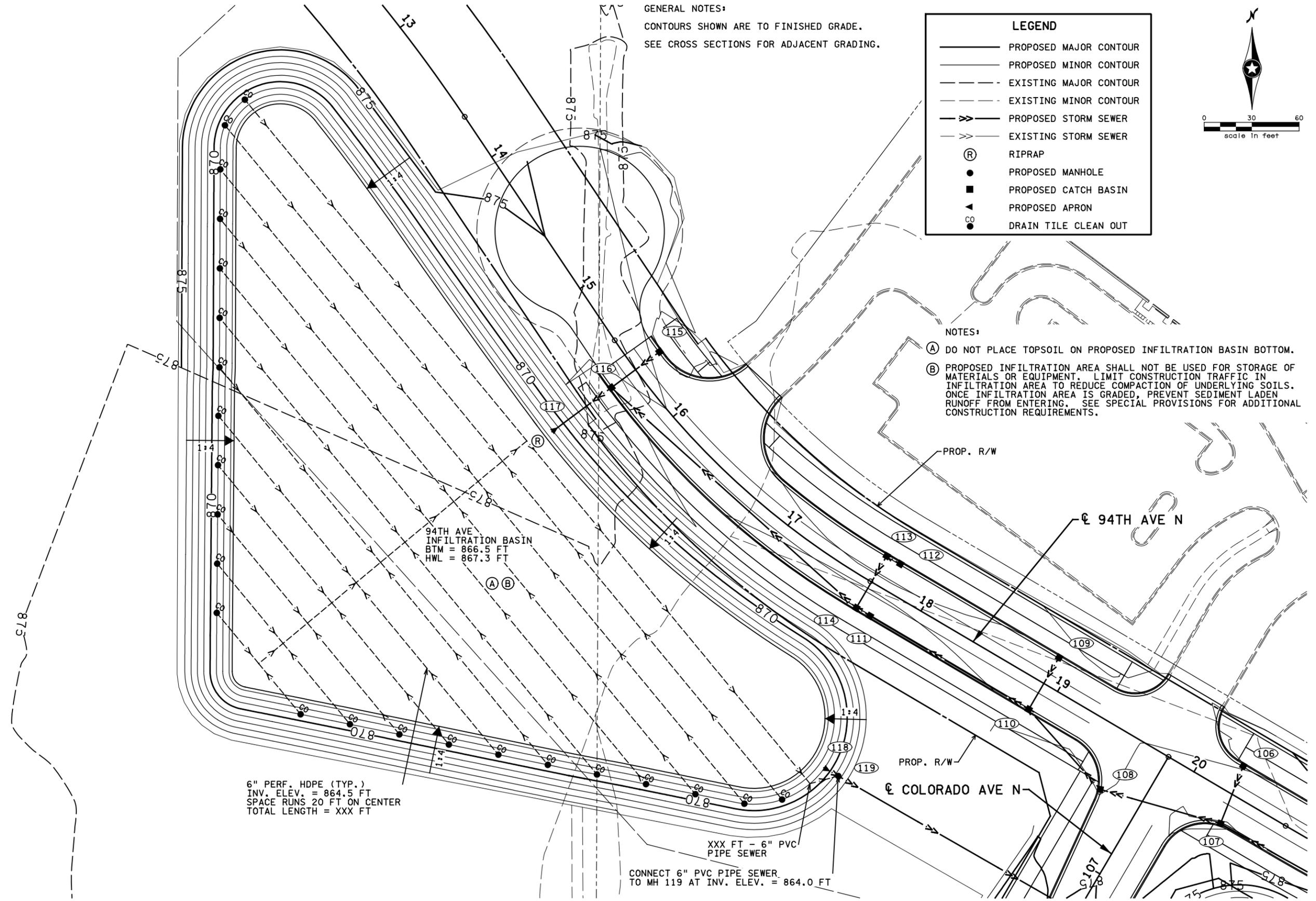
GENERAL NOTES:  
 CONTOURS SHOWN ARE TO FINISHED GRADE.  
 SEE CROSS SECTIONS FOR ADJACENT GRADING.

**LEGEND**

- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- - - - EXISTING MAJOR CONTOUR
- - - - EXISTING MINOR CONTOUR
- >— PROPOSED STORM SEWER
- - ->- EXISTING STORM SEWER
- (R) RIPRAP
- PROPOSED MANHOLE
- PROPOSED CATCH BASIN
- ▲ PROPOSED APRON
- CO DRAIN TILE CLEAN OUT



NOTES:  
 (A) DO NOT PLACE TOPSOIL ON PROPOSED INFILTRATION BASIN BOTTOM.  
 (B) PROPOSED INFILTRATION AREA SHALL NOT BE USED FOR STORAGE OF MATERIALS OR EQUIPMENT. LIMIT CONSTRUCTION TRAFFIC IN INFILTRATION AREA TO REDUCE COMPACTION OF UNDERLYING SOILS. ONCE INFILTRATION AREA IS GRADED, PREVENT SEDIMENT LADEN RUNOFF FROM ENTERING. SEE SPECIAL PROVISIONS FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.



94TH AVE INFILTRATION BASIN  
 BTM = 866.5 FT  
 HWL = 867.3 FT

6" PERF. HDPE (TYP.)  
 INV. ELEV. = 864.5 FT  
 SPACE RUNS 20 FT ON CENTER  
 TOTAL LENGTH = XXX FT

XXX FT - 6" PVC PIPE SEWER  
 CONNECT 6" PVC PIPE SEWER TO MH 119 AT INV. ELEV. = 864.0 FT

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 Print Name: ROBERT J. LEBA  
 Date: \_\_\_\_\_ License #: 41951

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 J. VAN BECK  
 DESIGNED BY  
 P. ENGELMEYER  
 CHECKED BY  
 B. LEBA  
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**CITY OF BROOKLYN PARK**  
 CONTOUR PLAN  
**94TH AVE N**  
 94TH AVE INFILTRATION BASIN

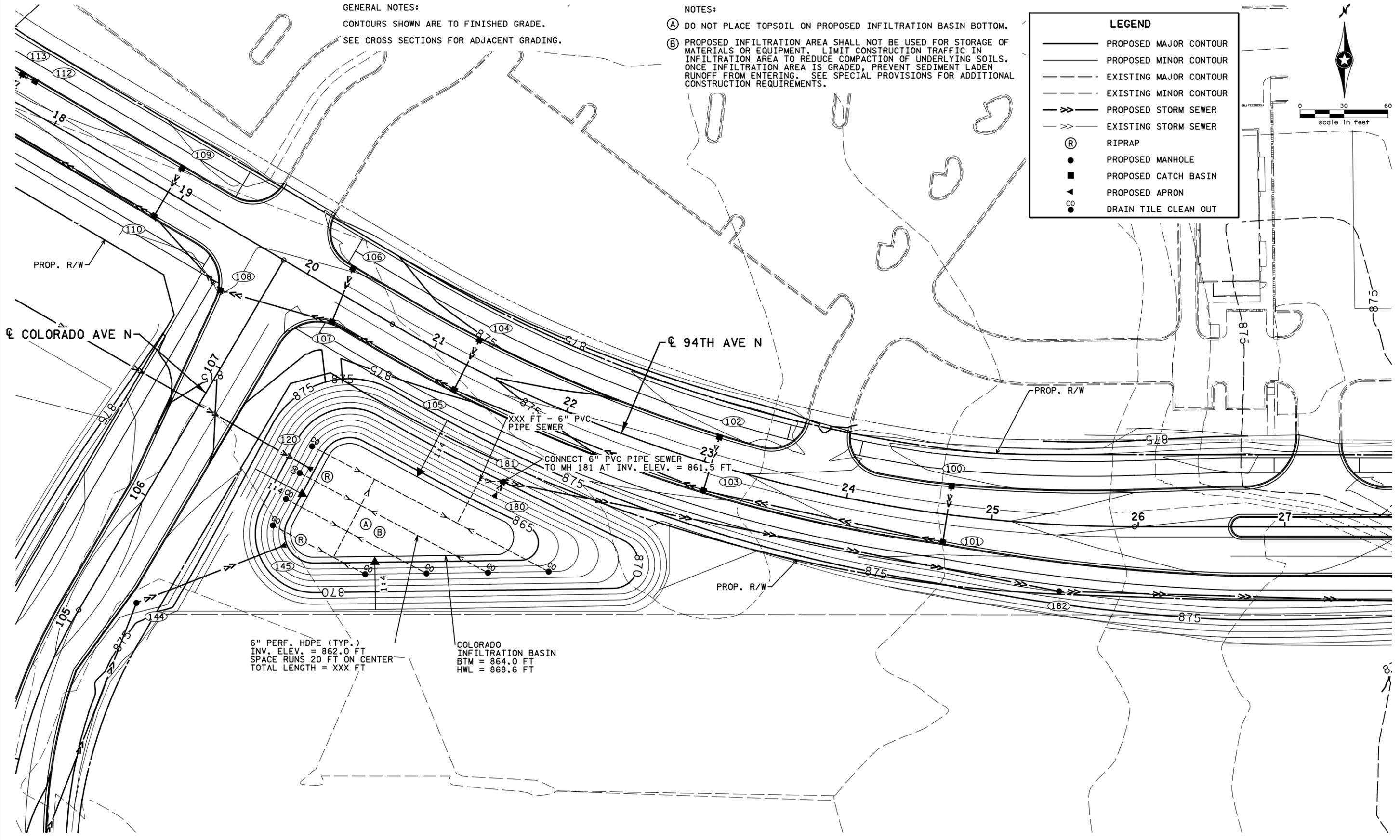
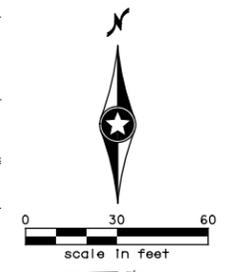
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GENERAL NOTES:  
 CONTOURS SHOWN ARE TO FINISHED GRADE.  
 SEE CROSS SECTIONS FOR ADJACENT GRADING.

NOTES:  
 (A) DO NOT PLACE TOPSOIL ON PROPOSED INFILTRATION BASIN BOTTOM.  
 (B) PROPOSED INFILTRATION AREA SHALL NOT BE USED FOR STORAGE OF MATERIALS OR EQUIPMENT. LIMIT CONSTRUCTION TRAFFIC IN INFILTRATION AREA TO REDUCE COMPACTION OF UNDERLYING SOILS. ONCE INFILTRATION AREA IS GRADED, PREVENT SEDIMENT LADEN RUNOFF FROM ENTERING. SEE SPECIAL PROVISIONS FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.

**LEGEND**

- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- - - - EXISTING MAJOR CONTOUR
- - - - EXISTING MINOR CONTOUR
- > PROPOSED STORM SEWER
- - -> EXISTING STORM SEWER
- (R) RIPRAP
- PROPOSED MANHOLE
- PROPOSED CATCH BASIN
- ▲ PROPOSED APRON
- CO DRAIN TILE CLEAN OUT



6" PERF. HDPE (TYP.)  
 INV. ELEV. = 862.0 FT  
 SPACE RUNS 20 FT ON CENTER  
 TOTAL LENGTH = XXX FT

COLORADO  
 INFILTRATION BASIN  
 BTM = 864.0 FT  
 HWL = 868.6 FT

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Date: \_\_\_\_\_ License # 41951

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 P. ENGELMEYER  
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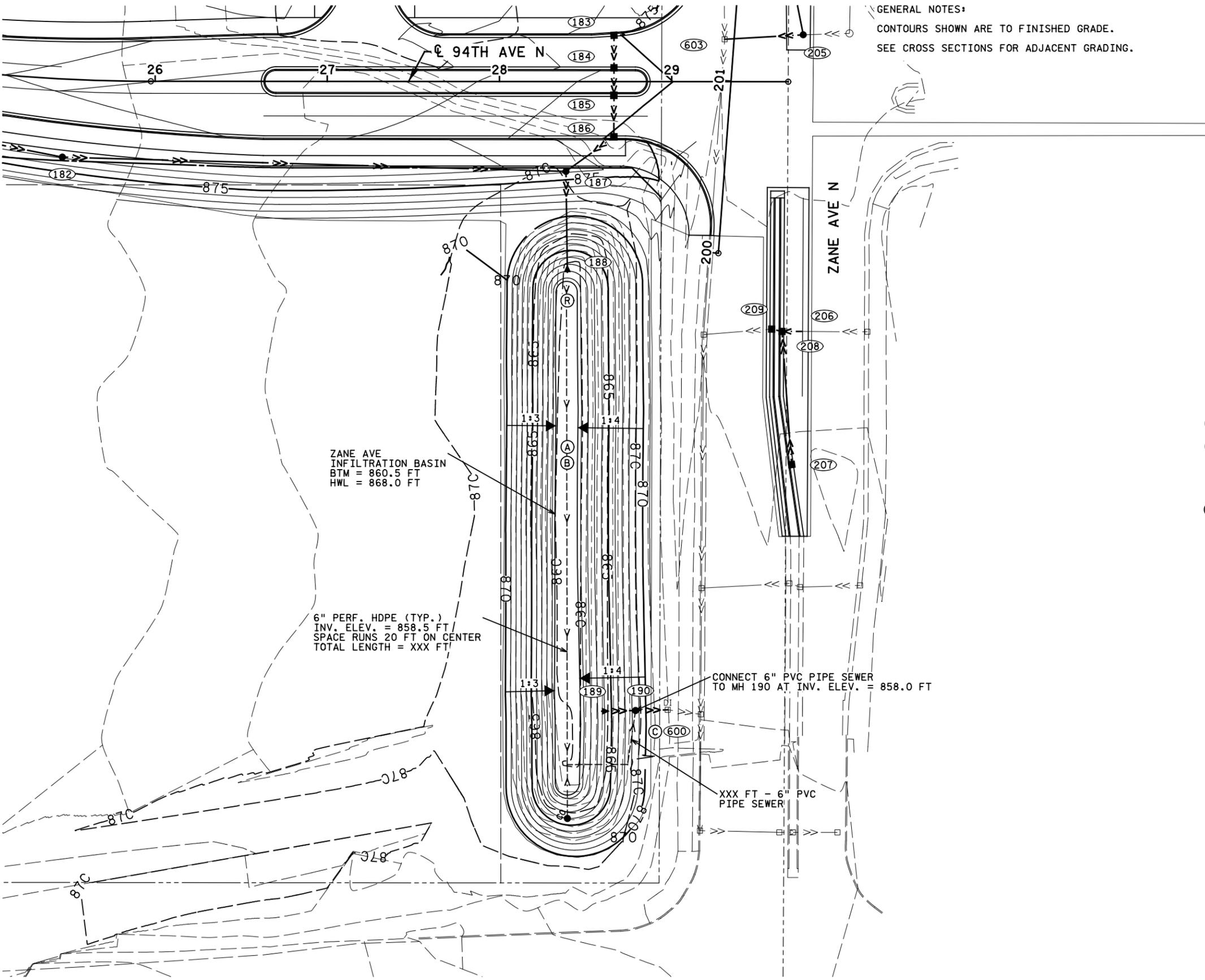


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 FAX# 763/493-8391

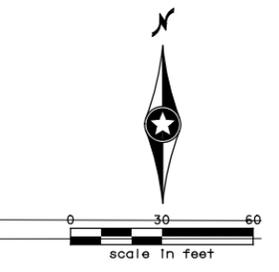
**CITY OF BROOKLYN PARK**  
 CONTOUR PLAN  
**94TH AVE N**  
 COLORADO INFILTRATION BASIN

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**OF**  
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**LEGEND**

—	PROPOSED MAJOR CONTOUR
- - -	PROPOSED MINOR CONTOUR
---	EXISTING MAJOR CONTOUR
- - -	EXISTING MINOR CONTOUR
—Y—	PROPOSED STORM SEWER
- - -Y - - -	EXISTING STORM SEWER
(R)	RIPRAP
●	PROPOSED MANHOLE
■	PROPOSED CATCH BASIN
▲	PROPOSED APRON
○	DRAIN TILE CLEAN OUT



- NOTES:**
- (A) DO NOT PLACE TOPSOIL ON PROPOSED INFILTRATION BASIN BOTTOM.
  - (B) PROPOSED INFILTRATION AREA SHALL NOT BE USED FOR STORAGE OF MATERIALS OR EQUIPMENT. LIMIT CONSTRUCTION TRAFFIC IN INFILTRATION AREA TO REDUCE COMPACTION OF UNDERLYING SOILS. ONCE INFILTRATION AREA IS GRADED, PREVENT SEDIMENT LADEN RUNOFF FROM ENTERING. SEE SPECIAL PROVISIONS FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.
  - (C) CONNECT TO EXISTING DRAINAGE STRUCTURE.

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NO	DATE	BY	CKD	APPR	REVISION

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Print Name: ROBERT J. LEBEA

Date: \_\_\_\_\_ License # 41951

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DESIGNED BY  
P. ENGELMEYER

CHECKED BY  
B. LEBEA

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ENGINEERING SERVICES DIVISION

Brooklyn Park

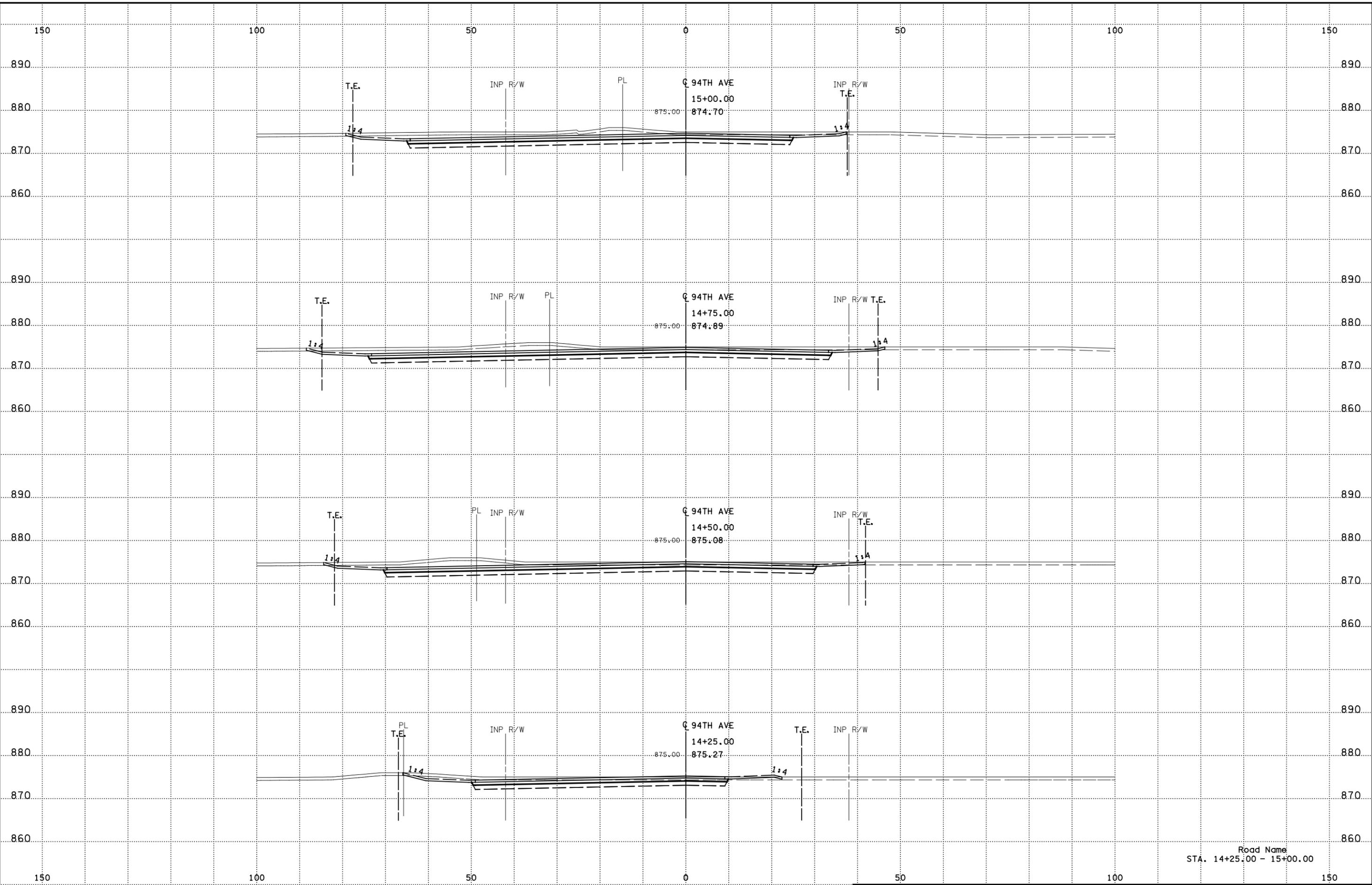
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CONTOUR PLAN  
**94TH AVE N**  
ZANE AVE INFILTRATION BASIN

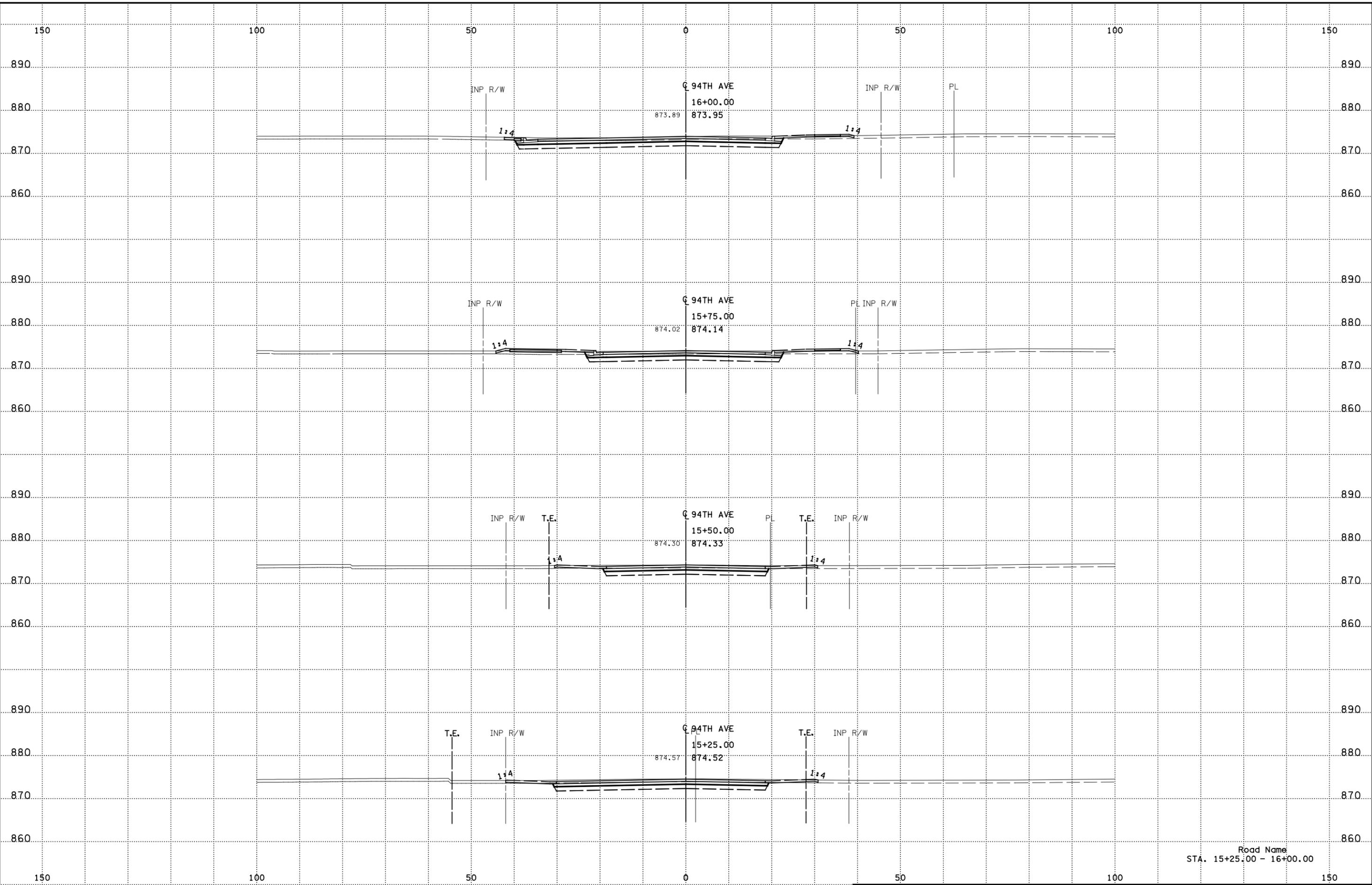
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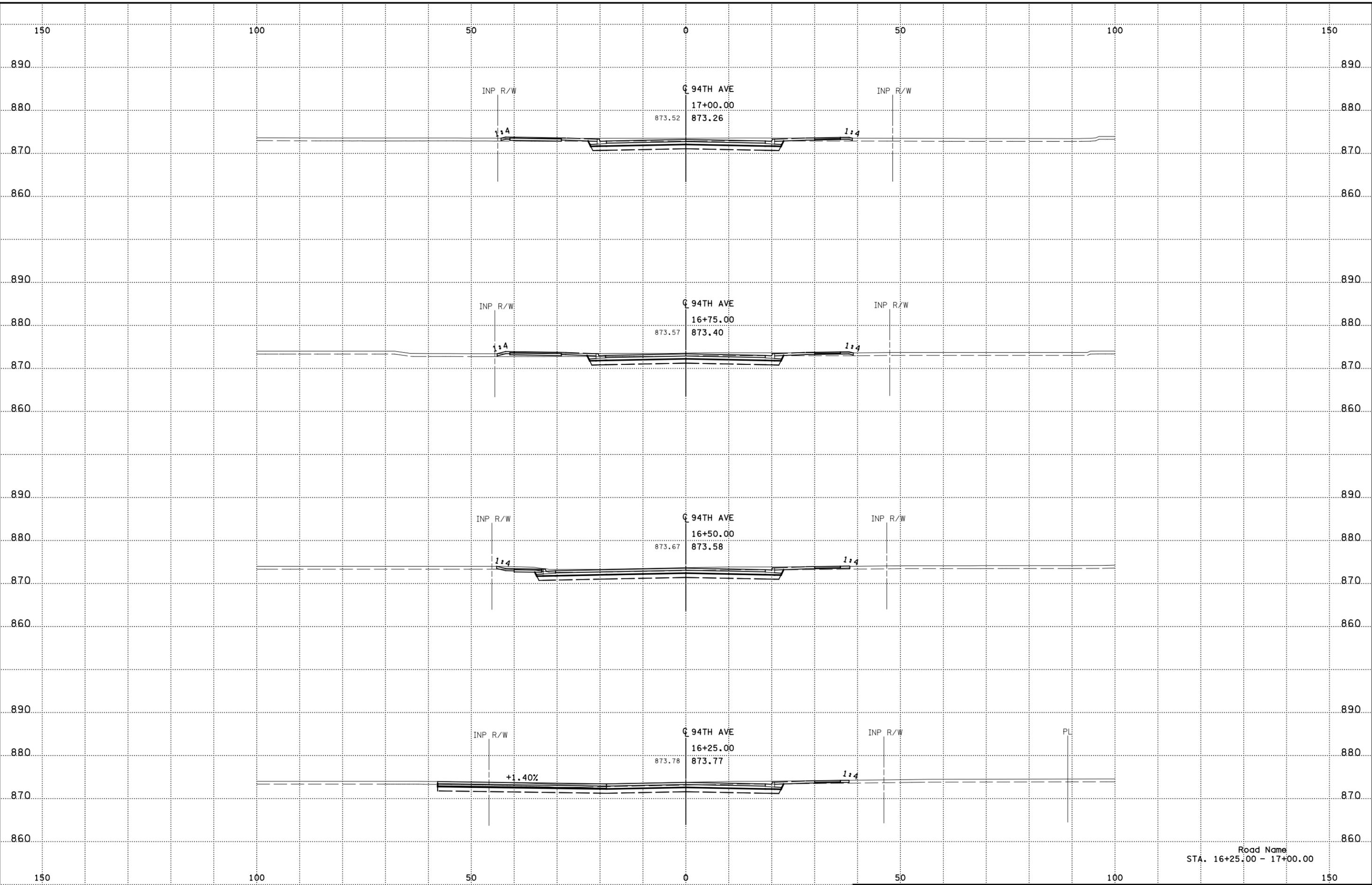


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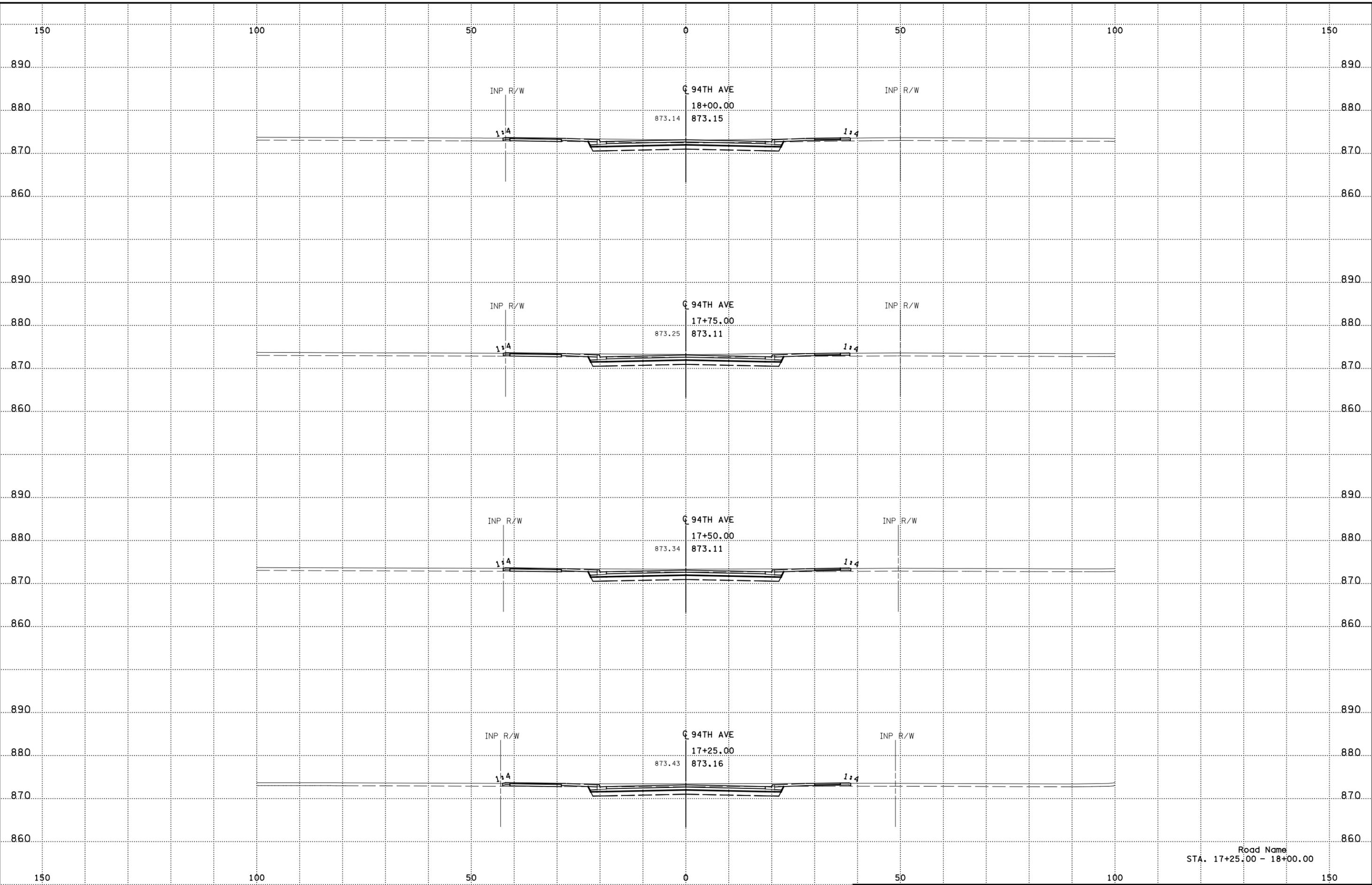


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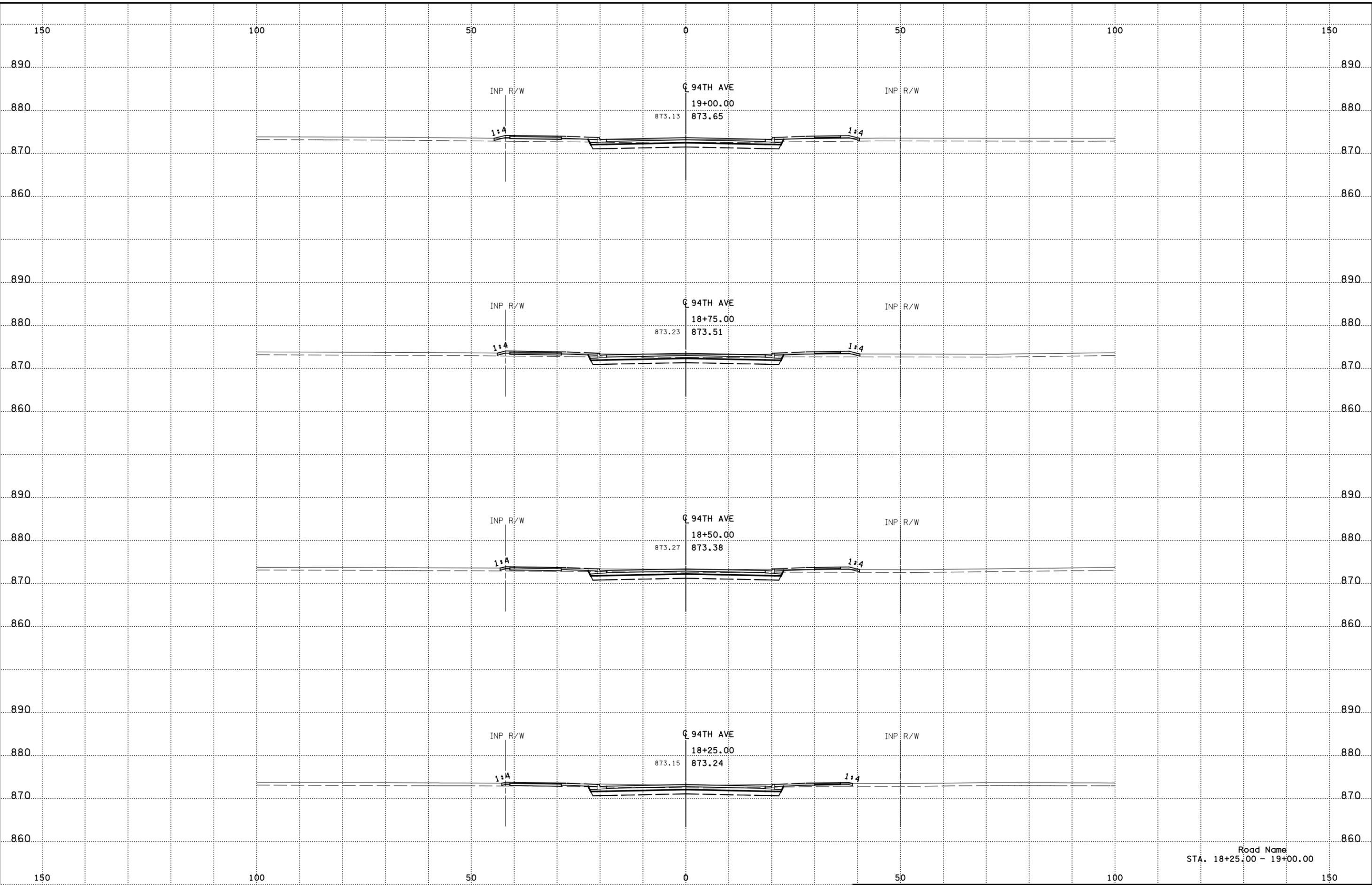
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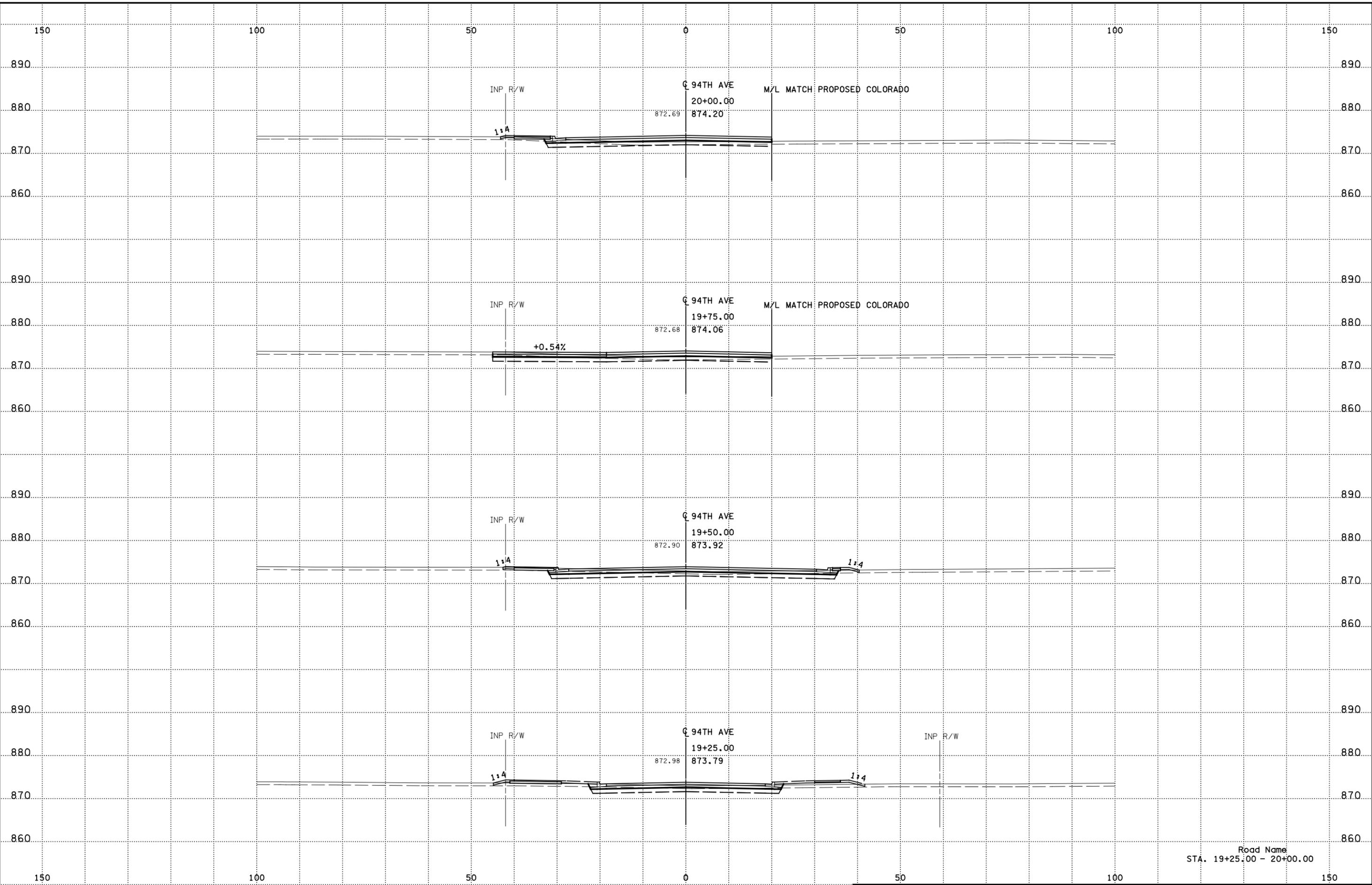
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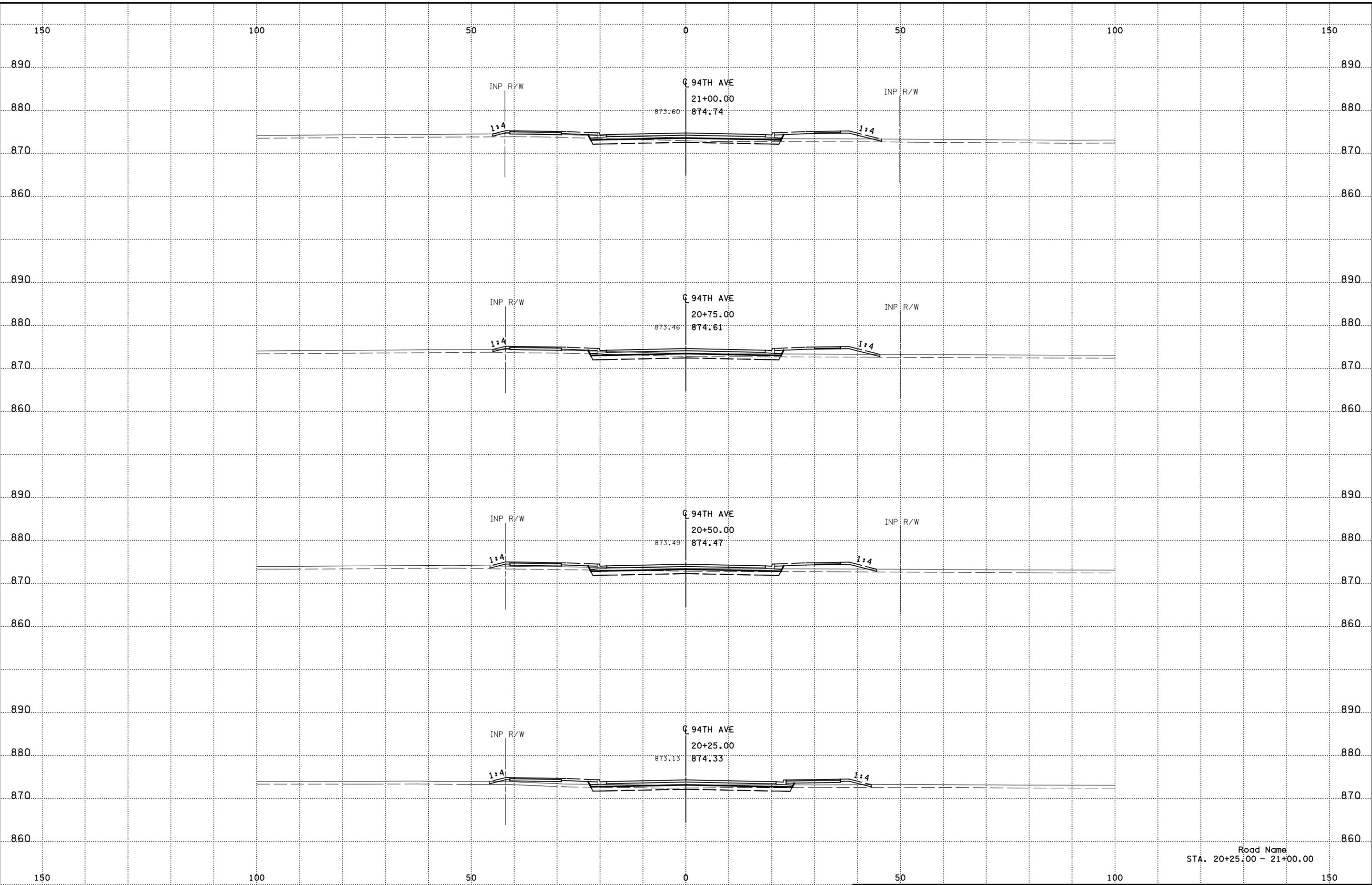
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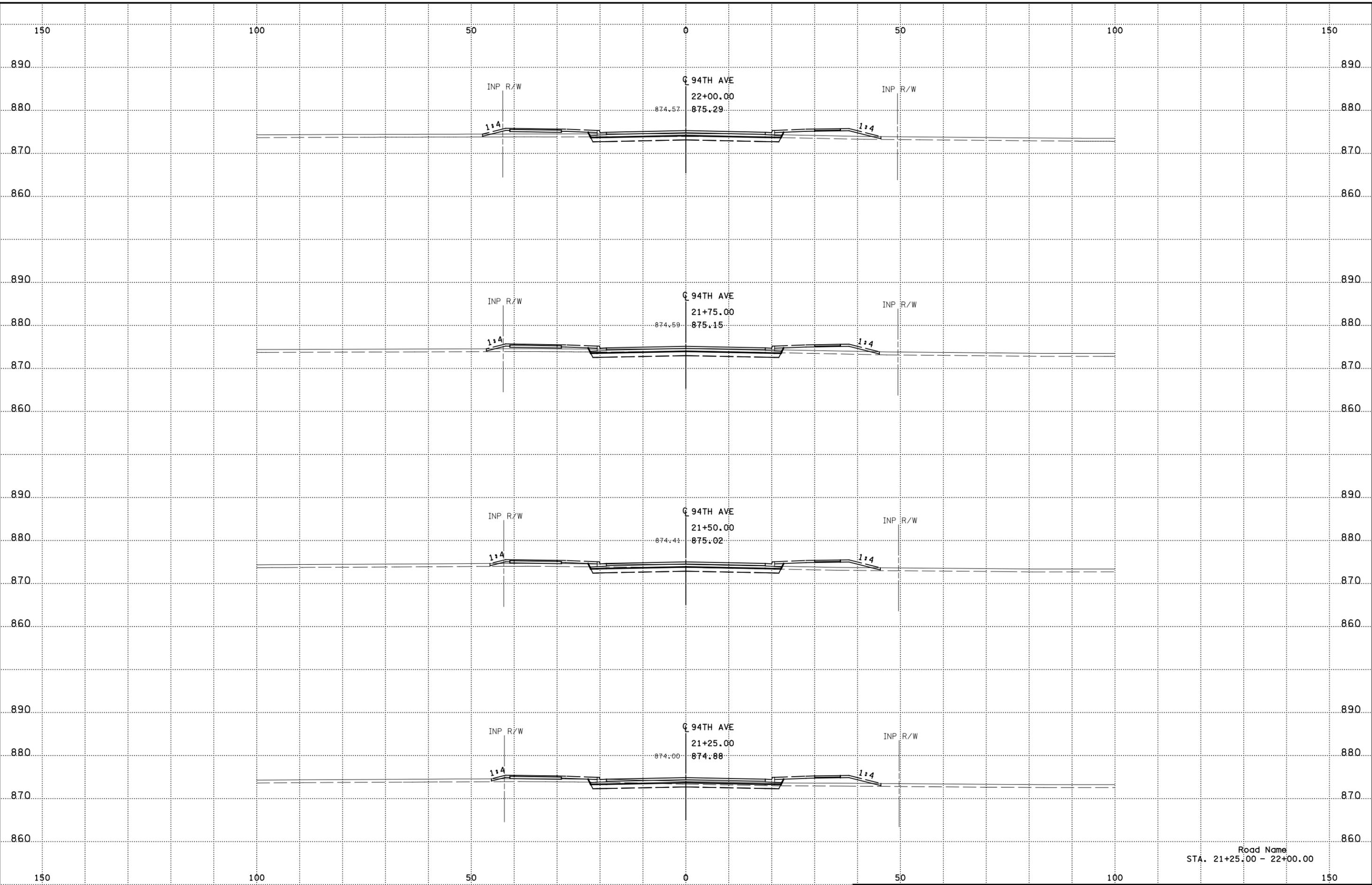
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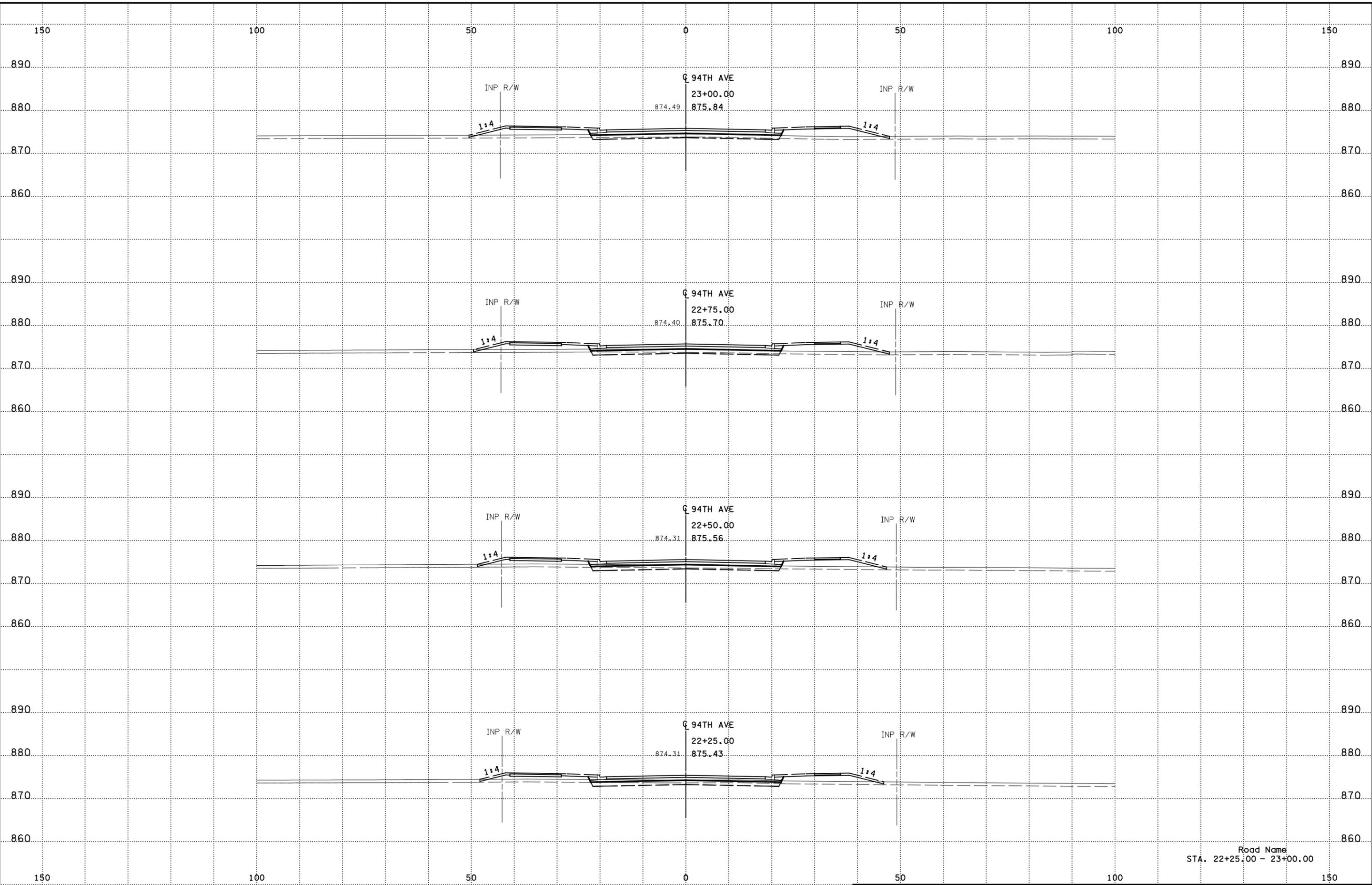
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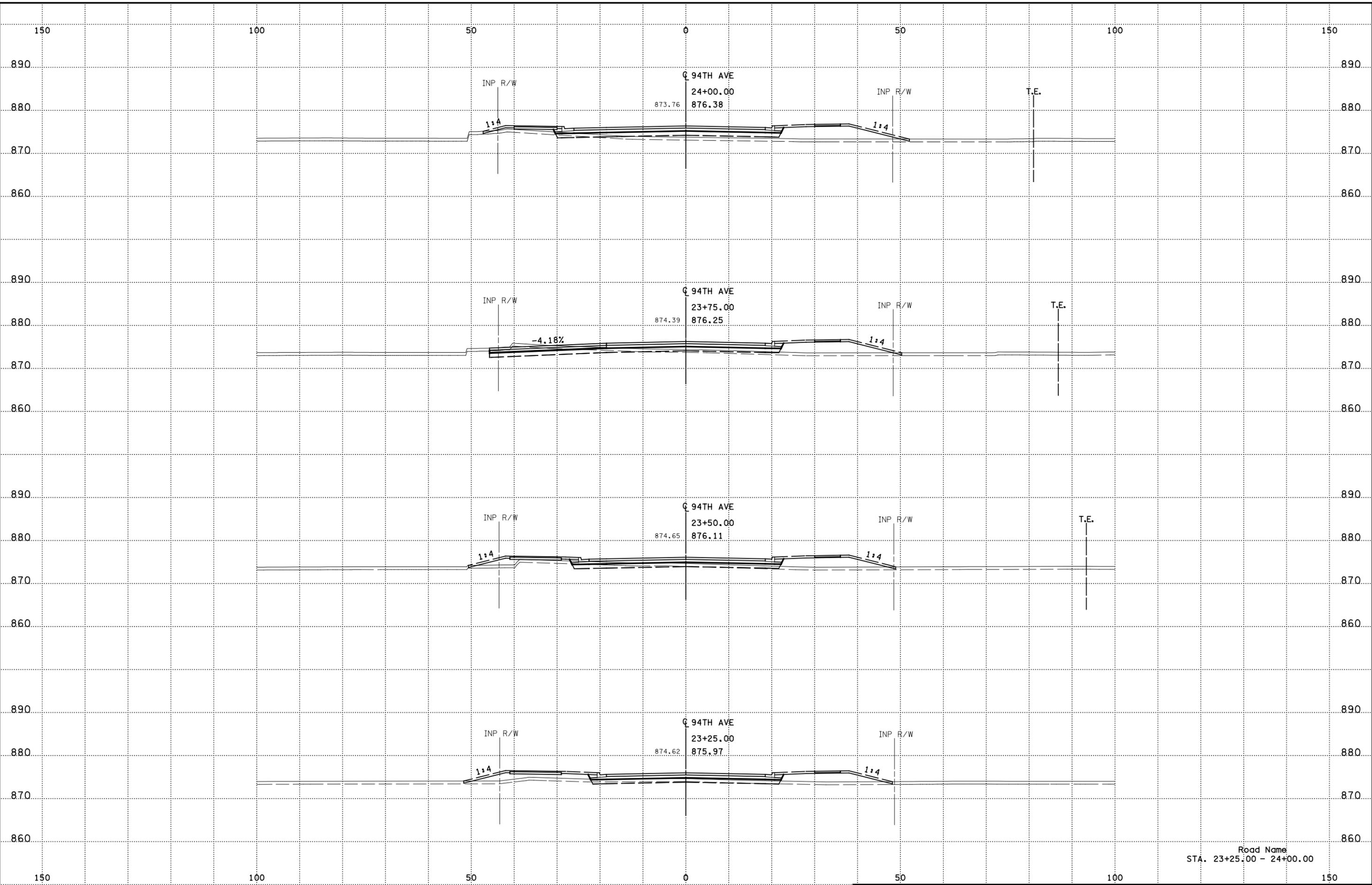
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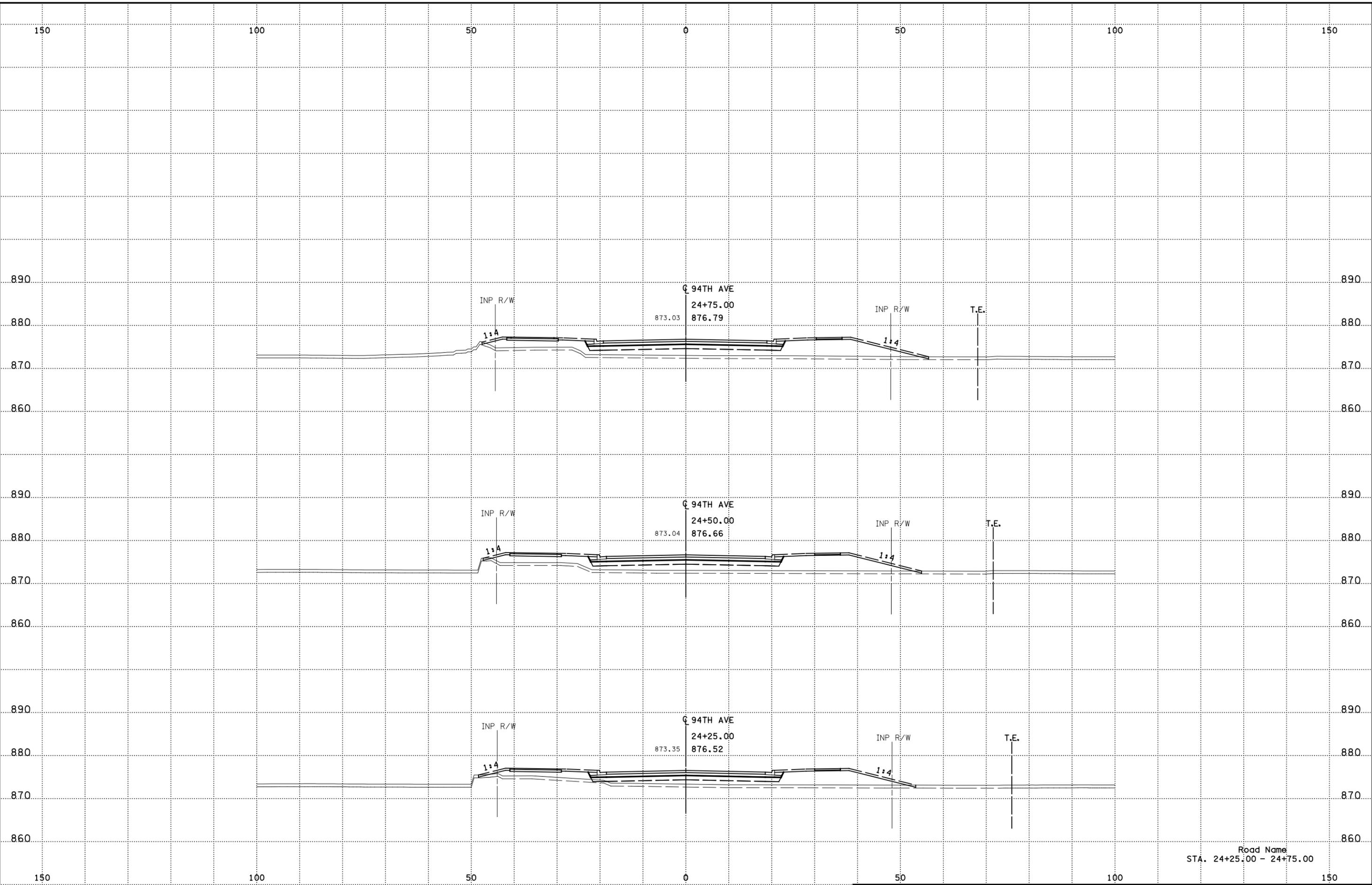
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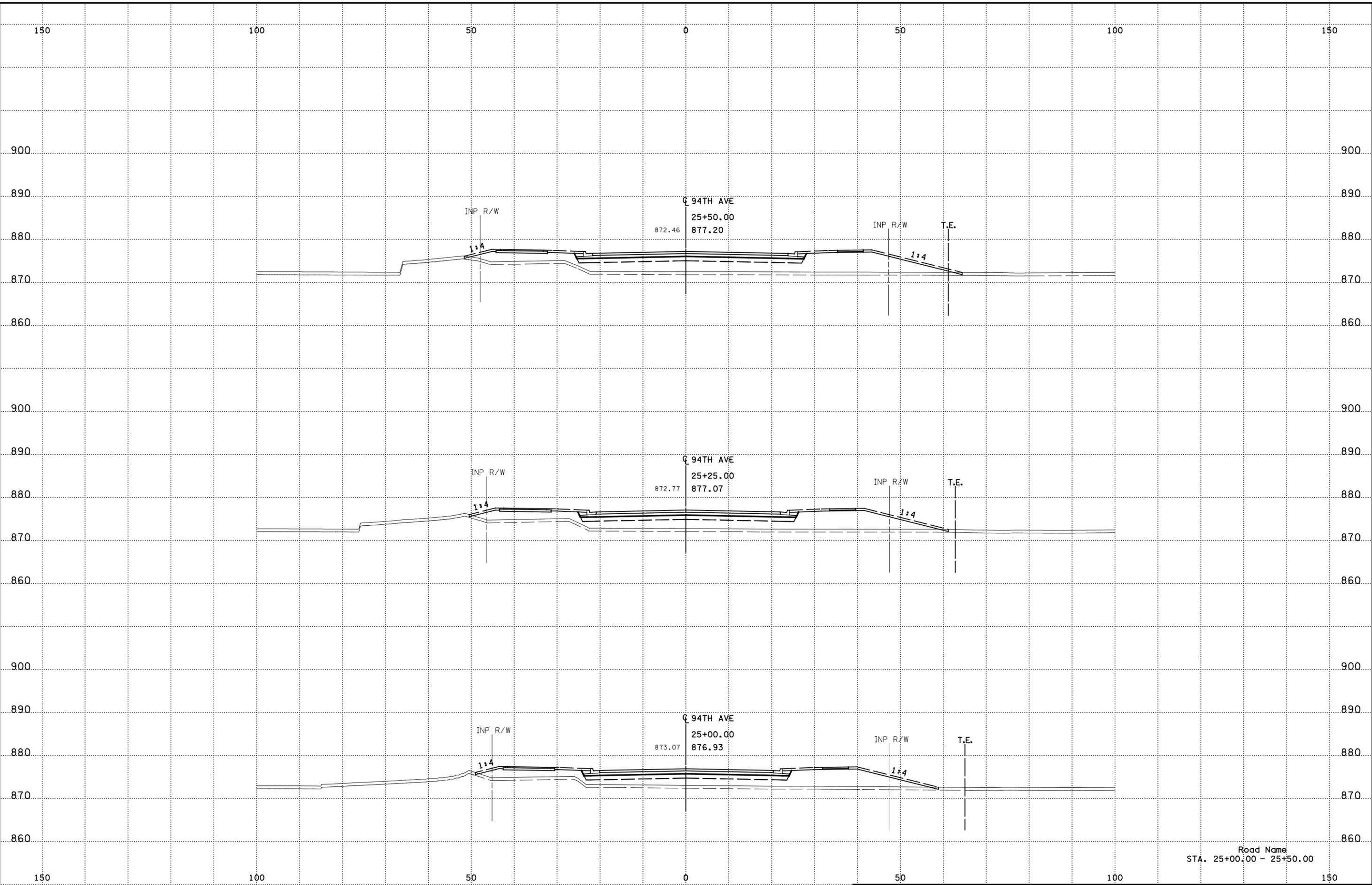
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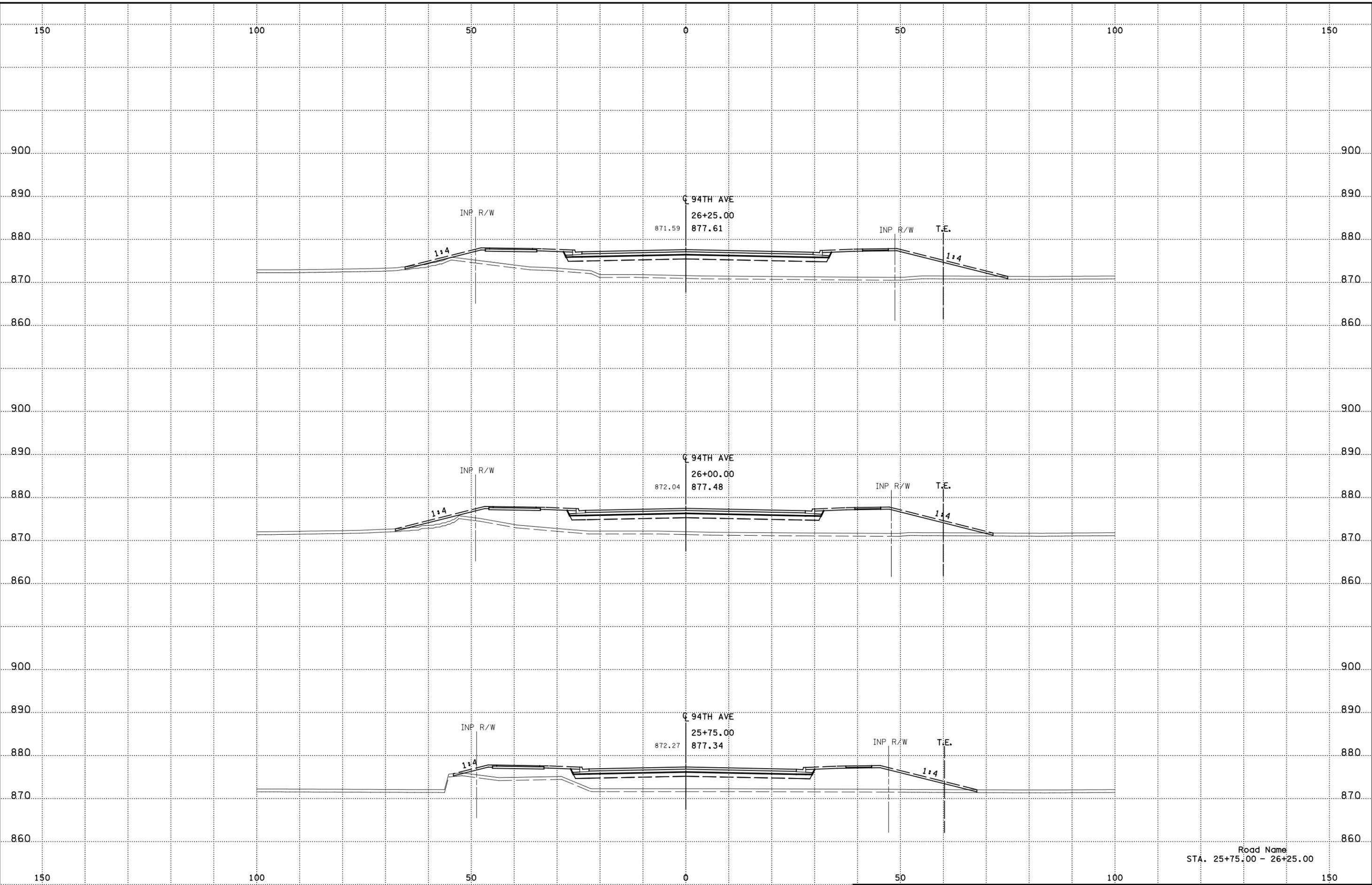
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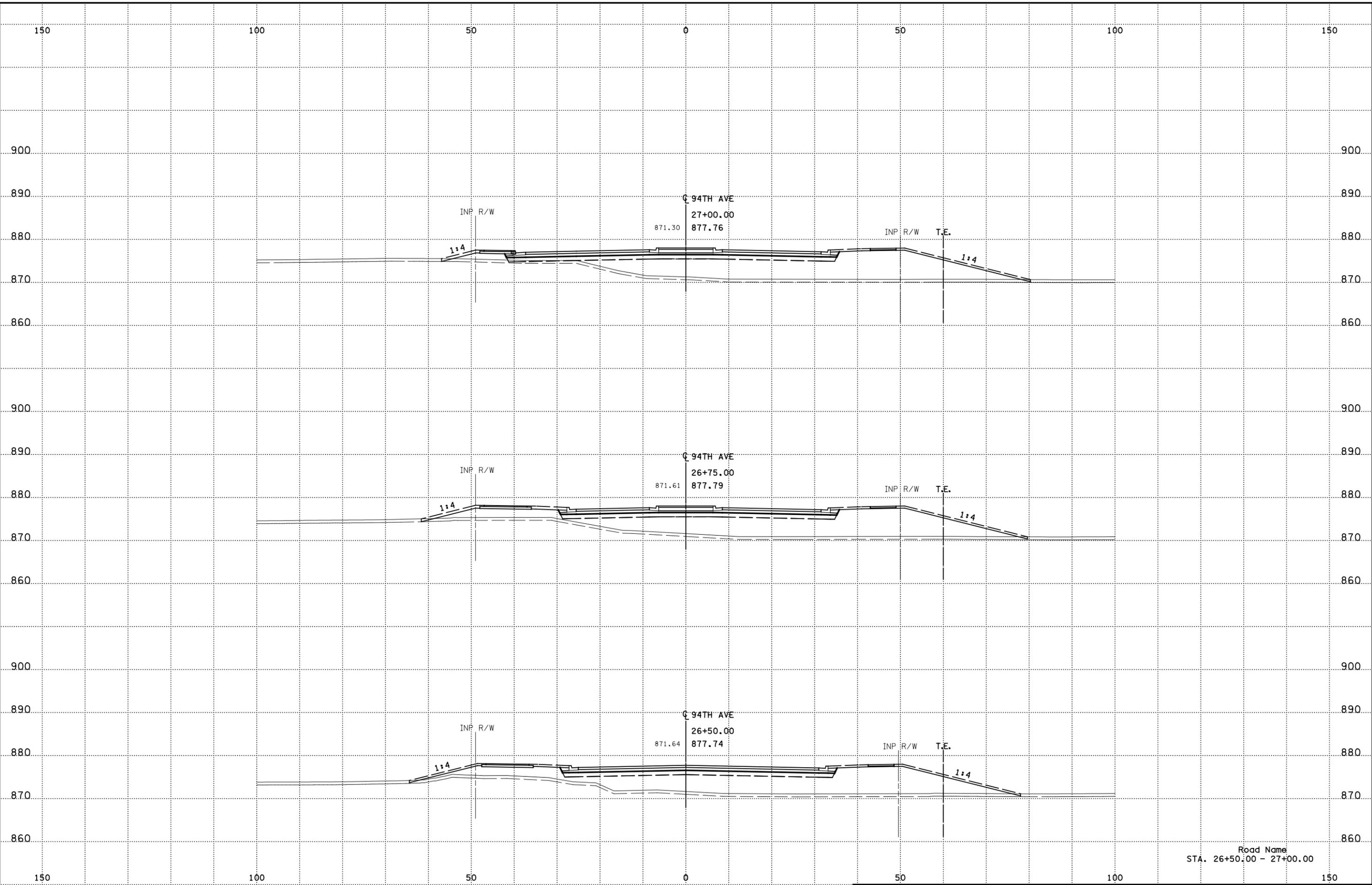
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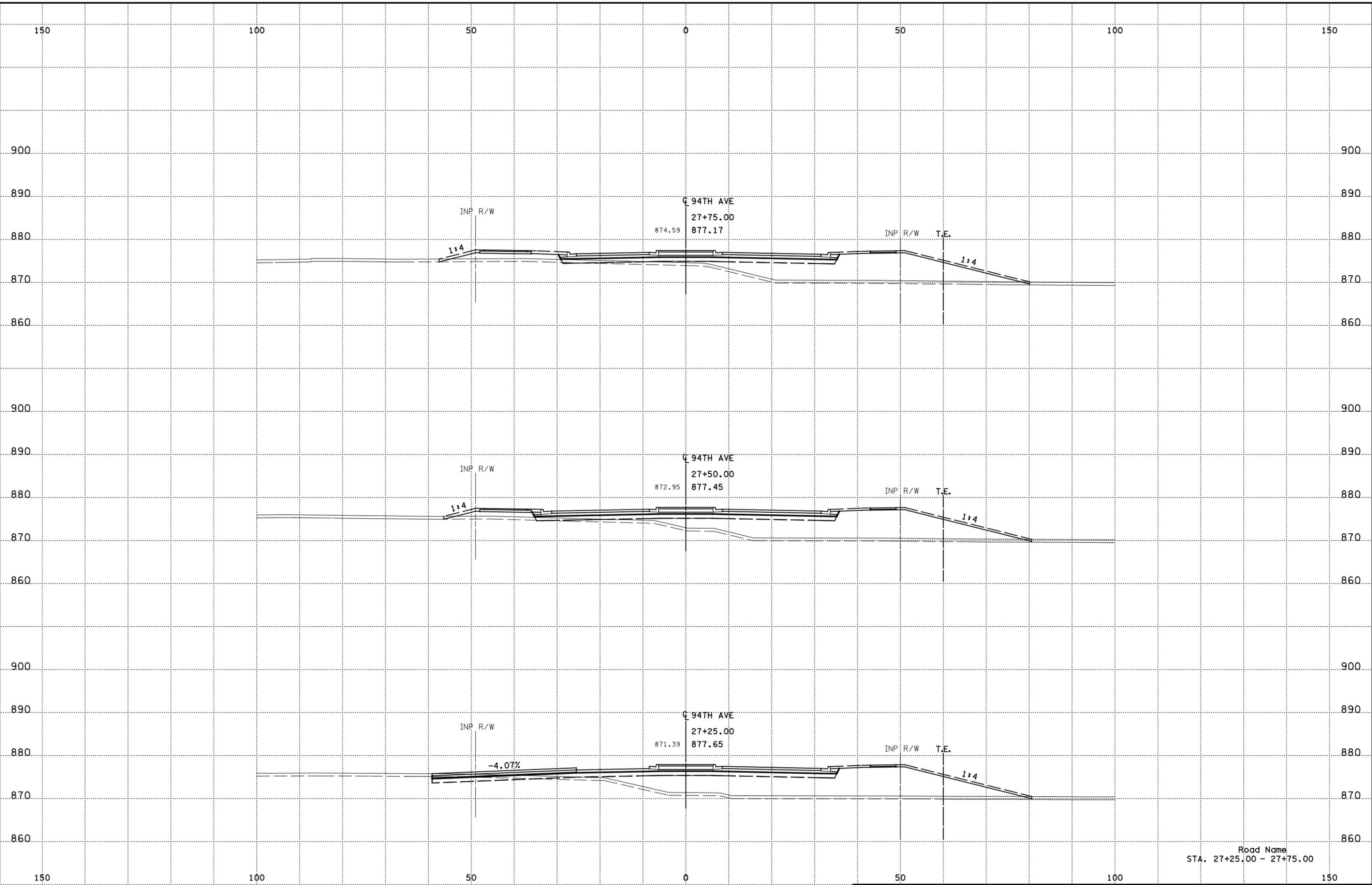


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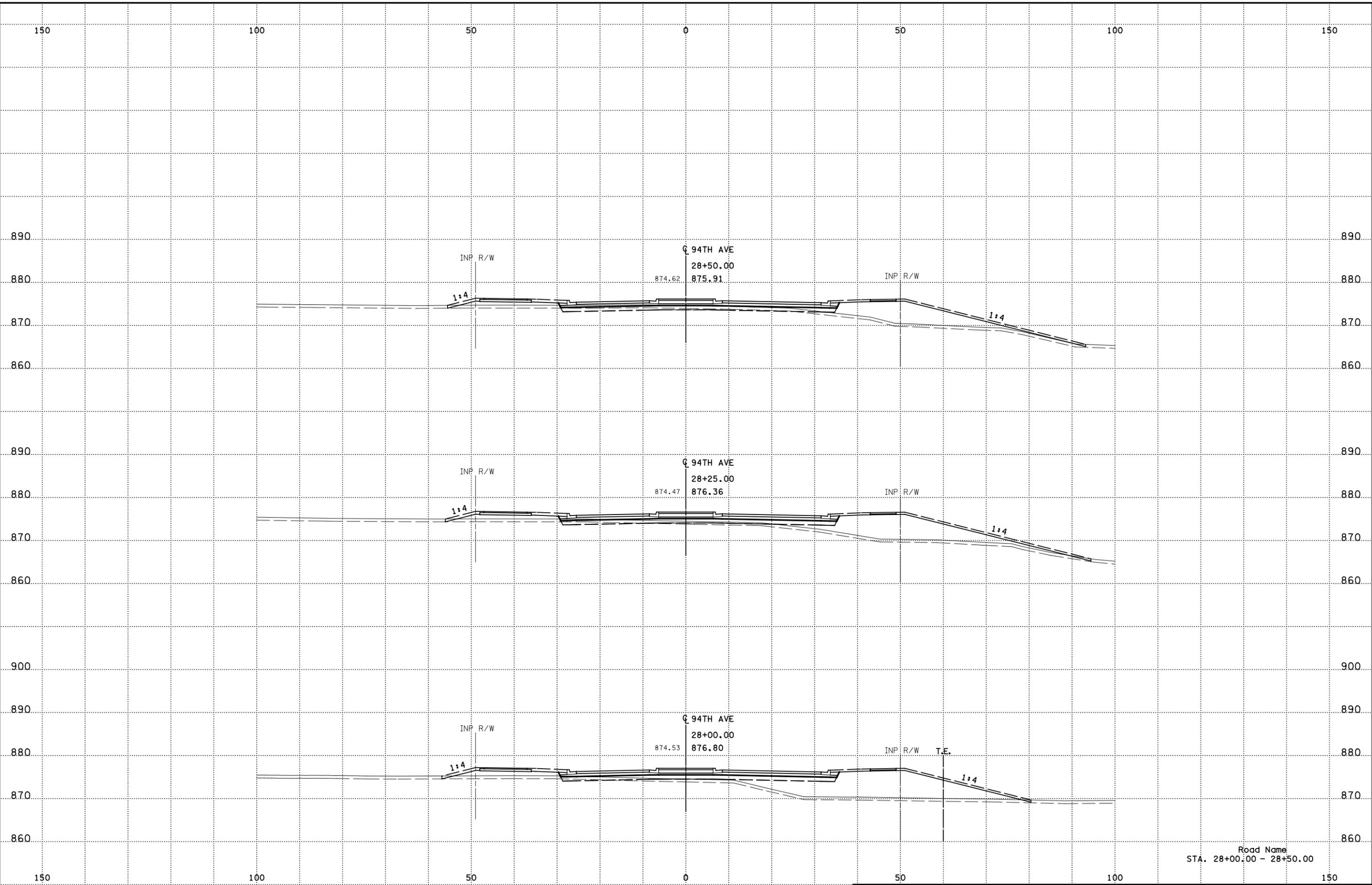
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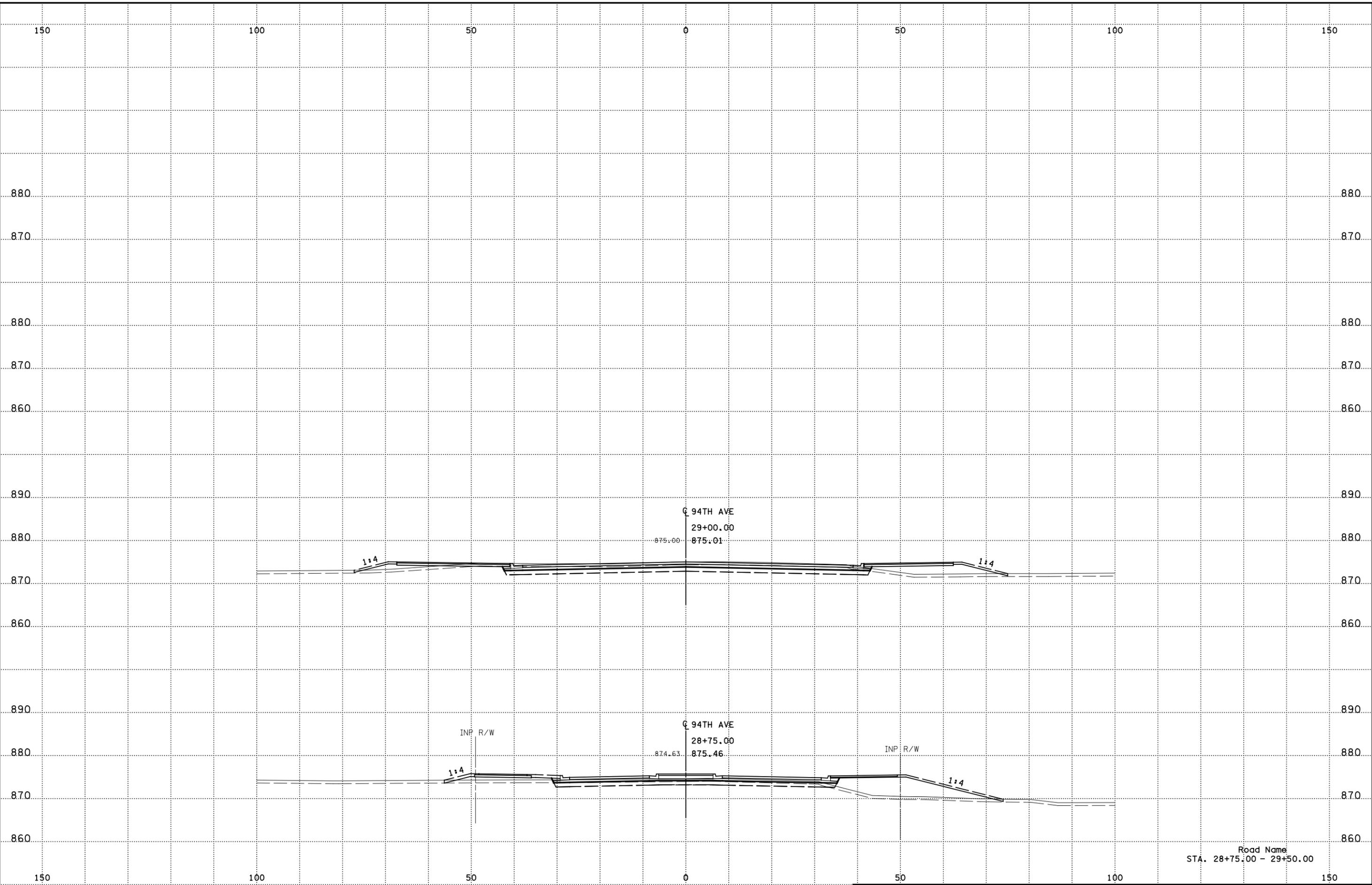


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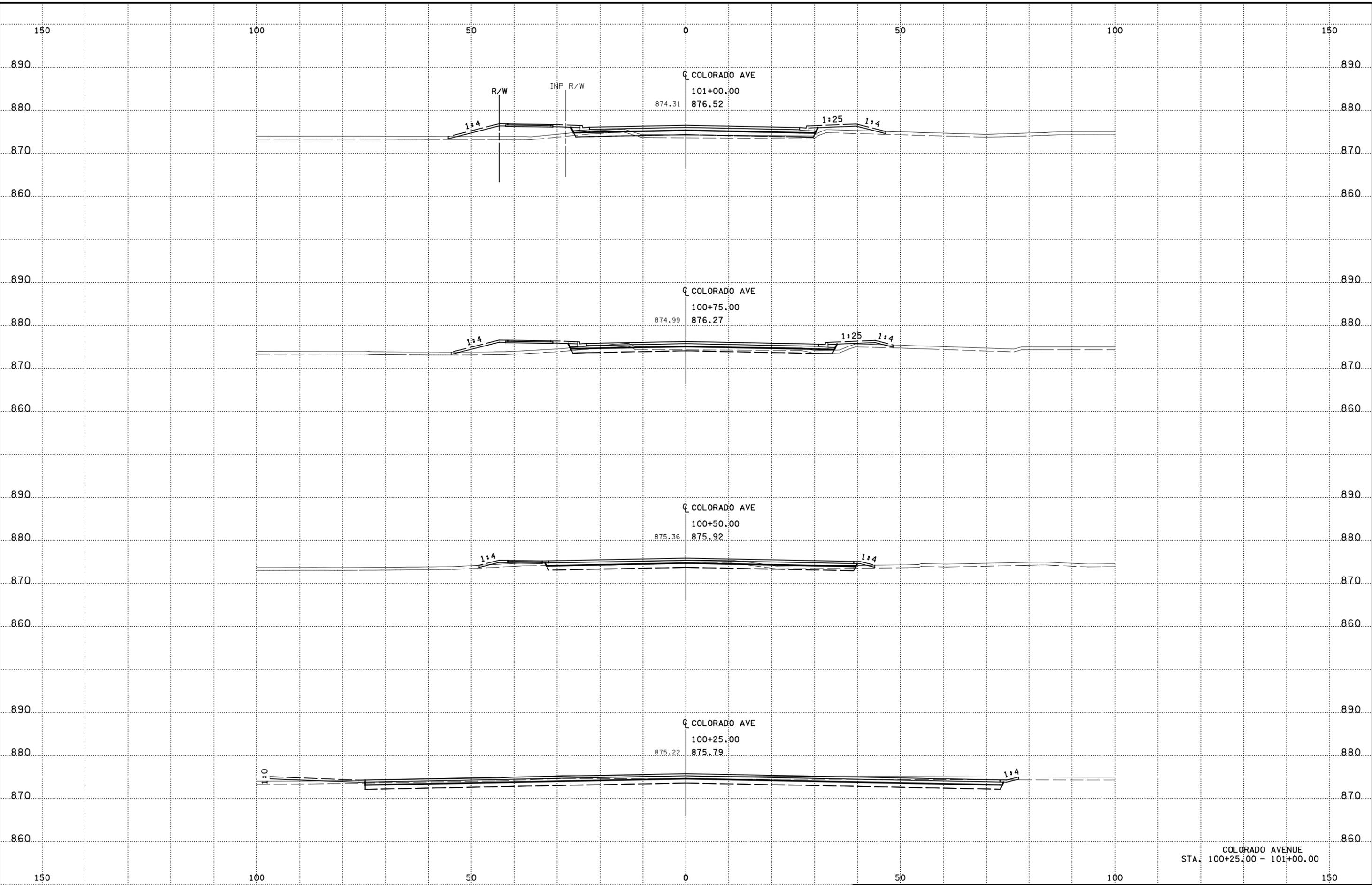
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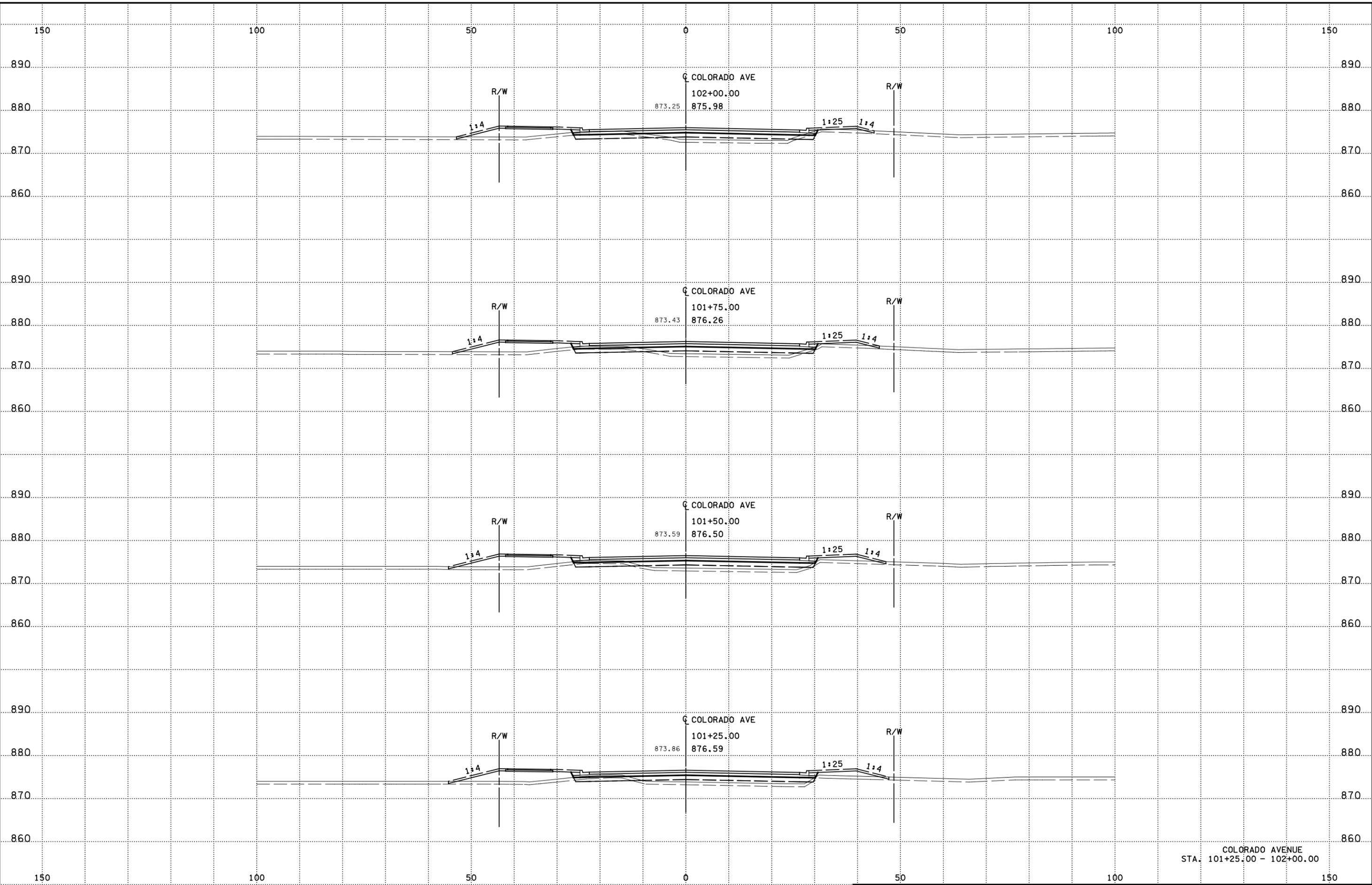
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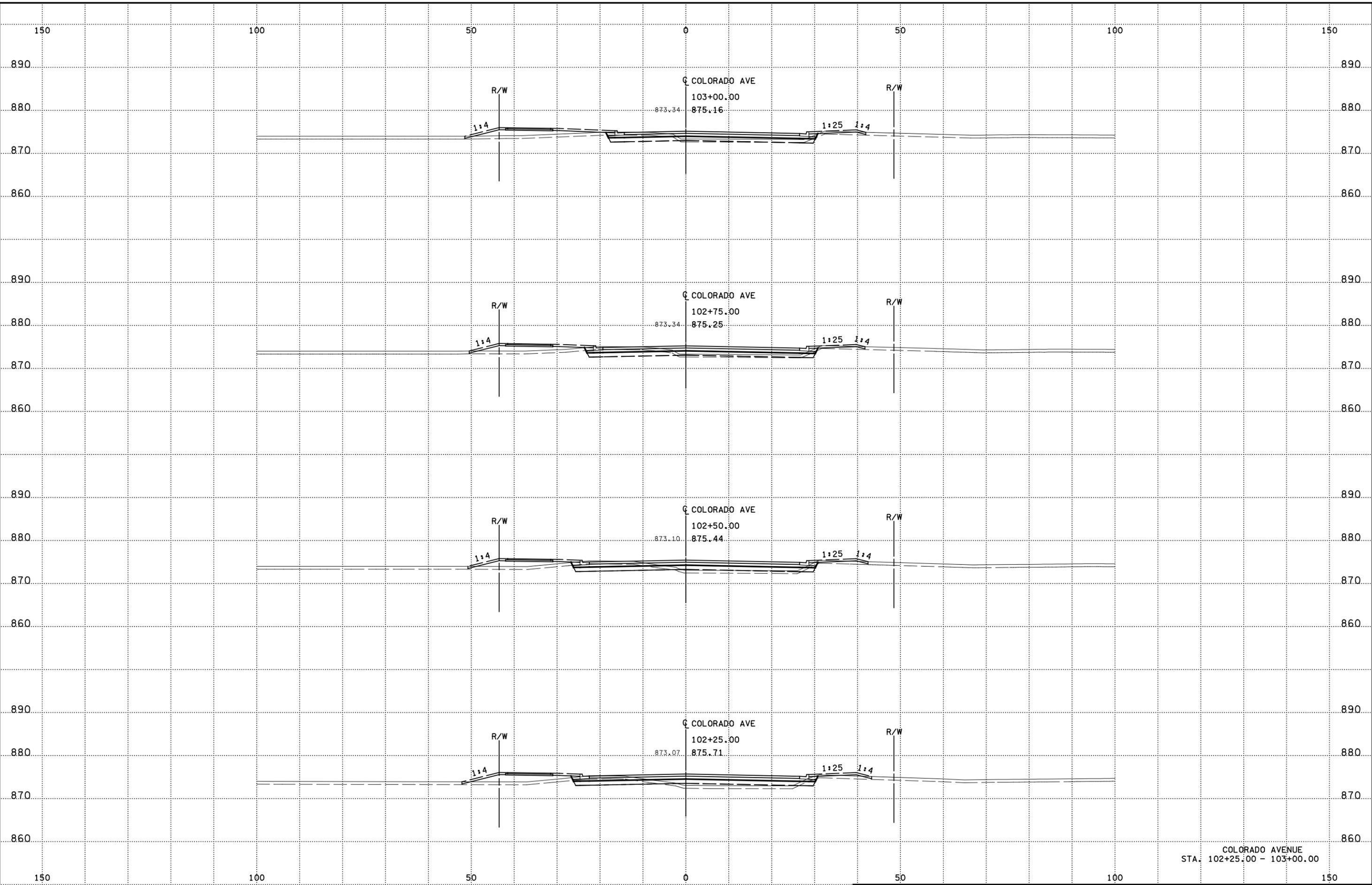
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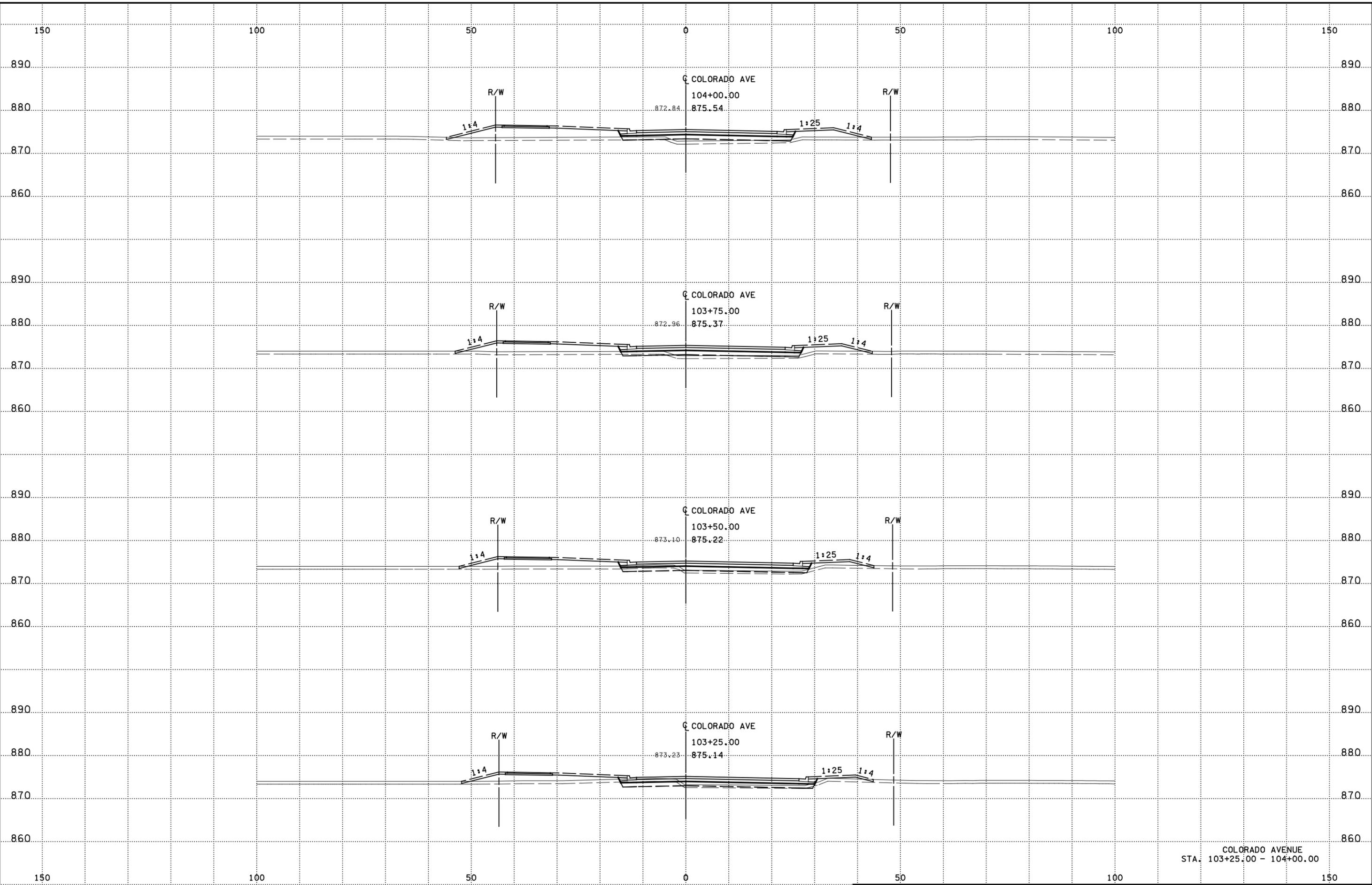
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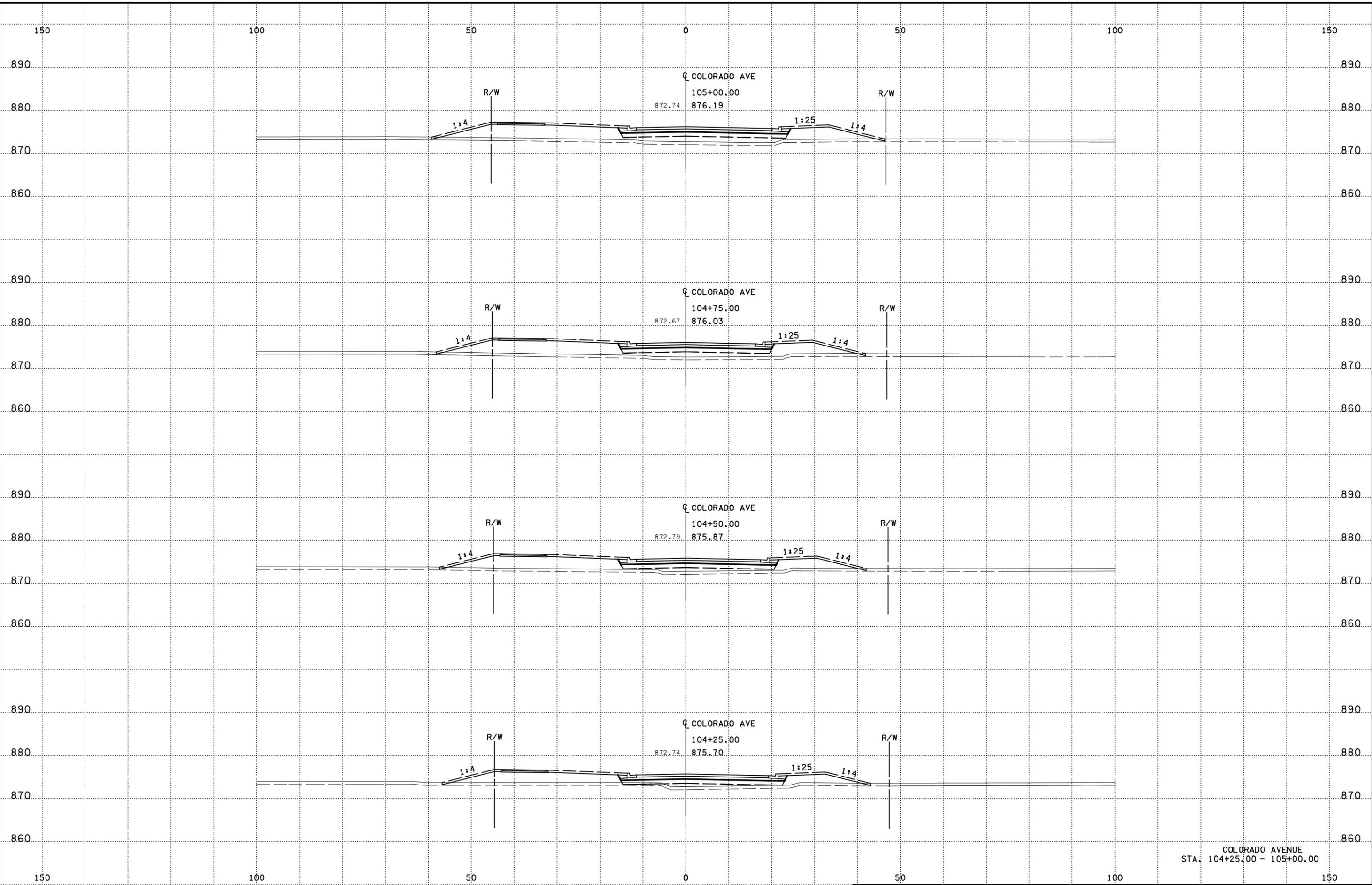
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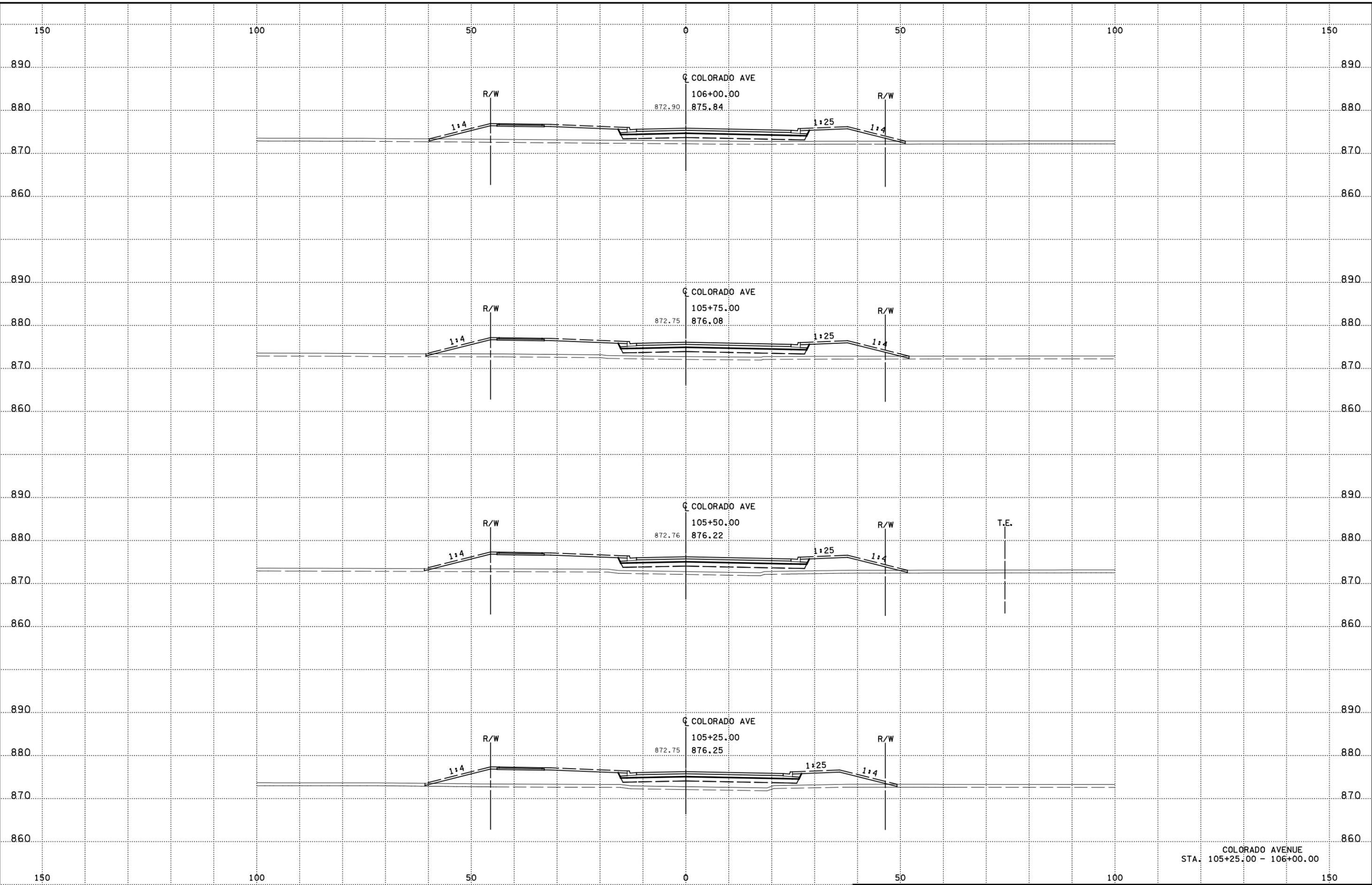
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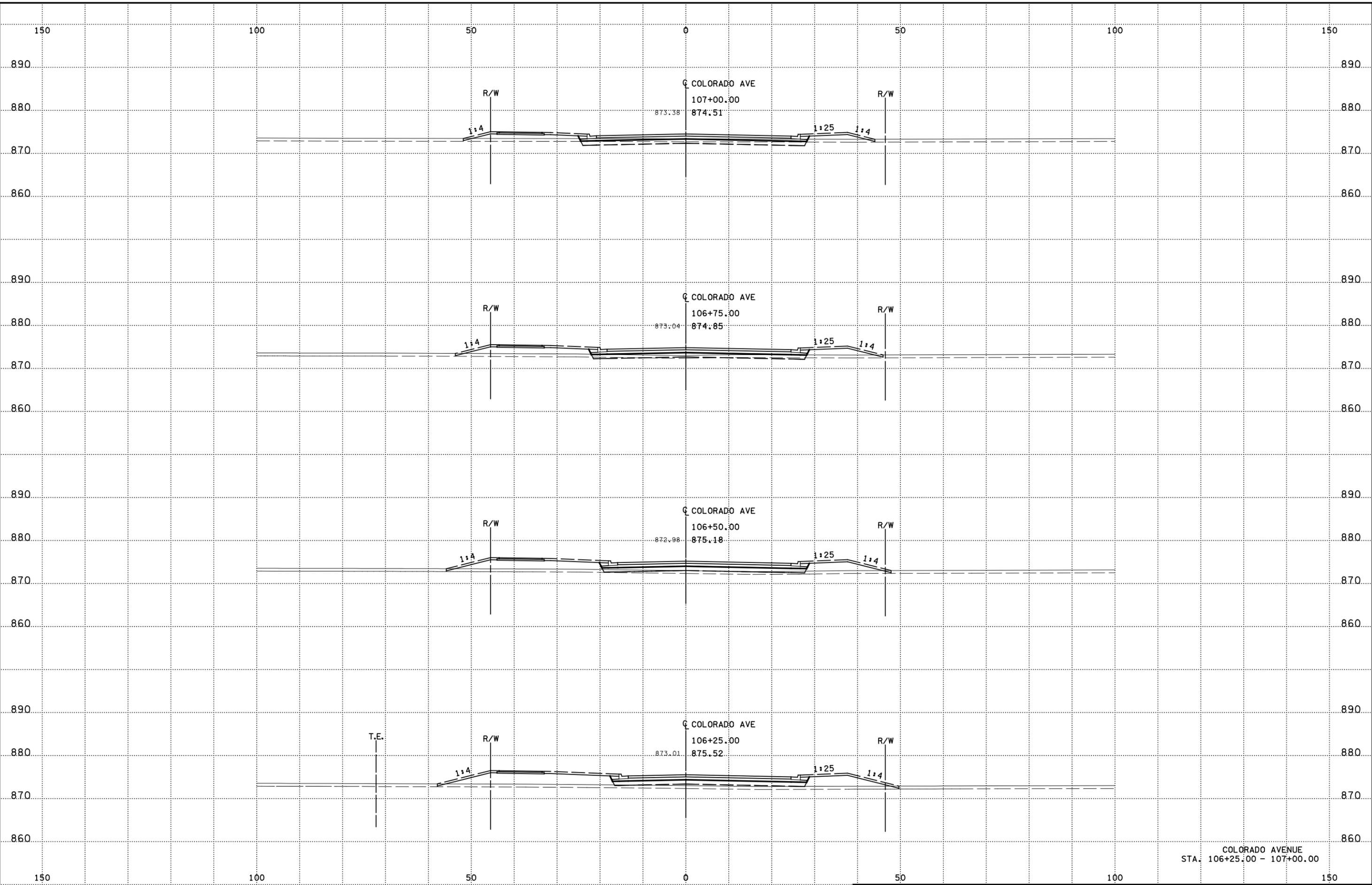
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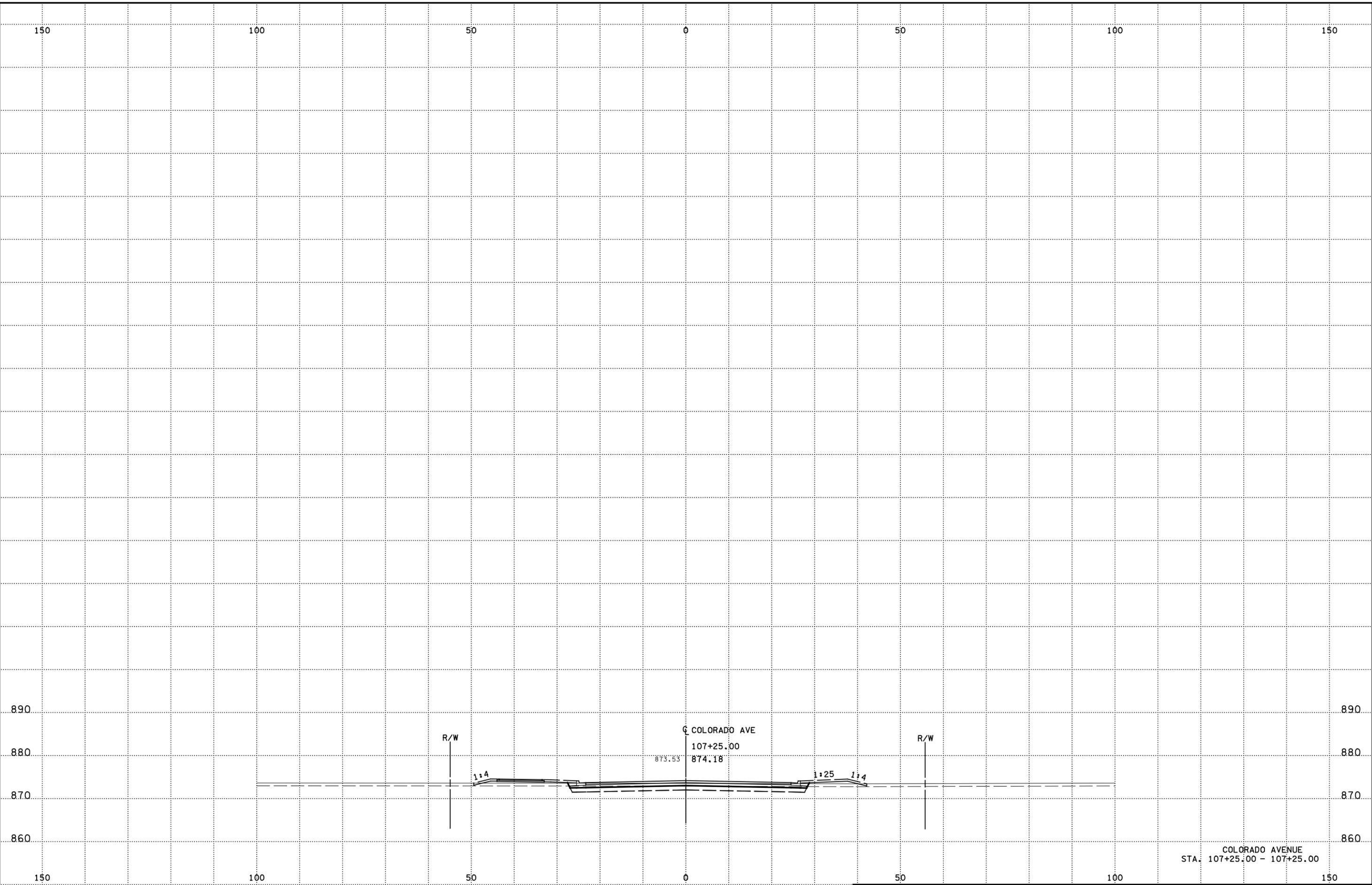
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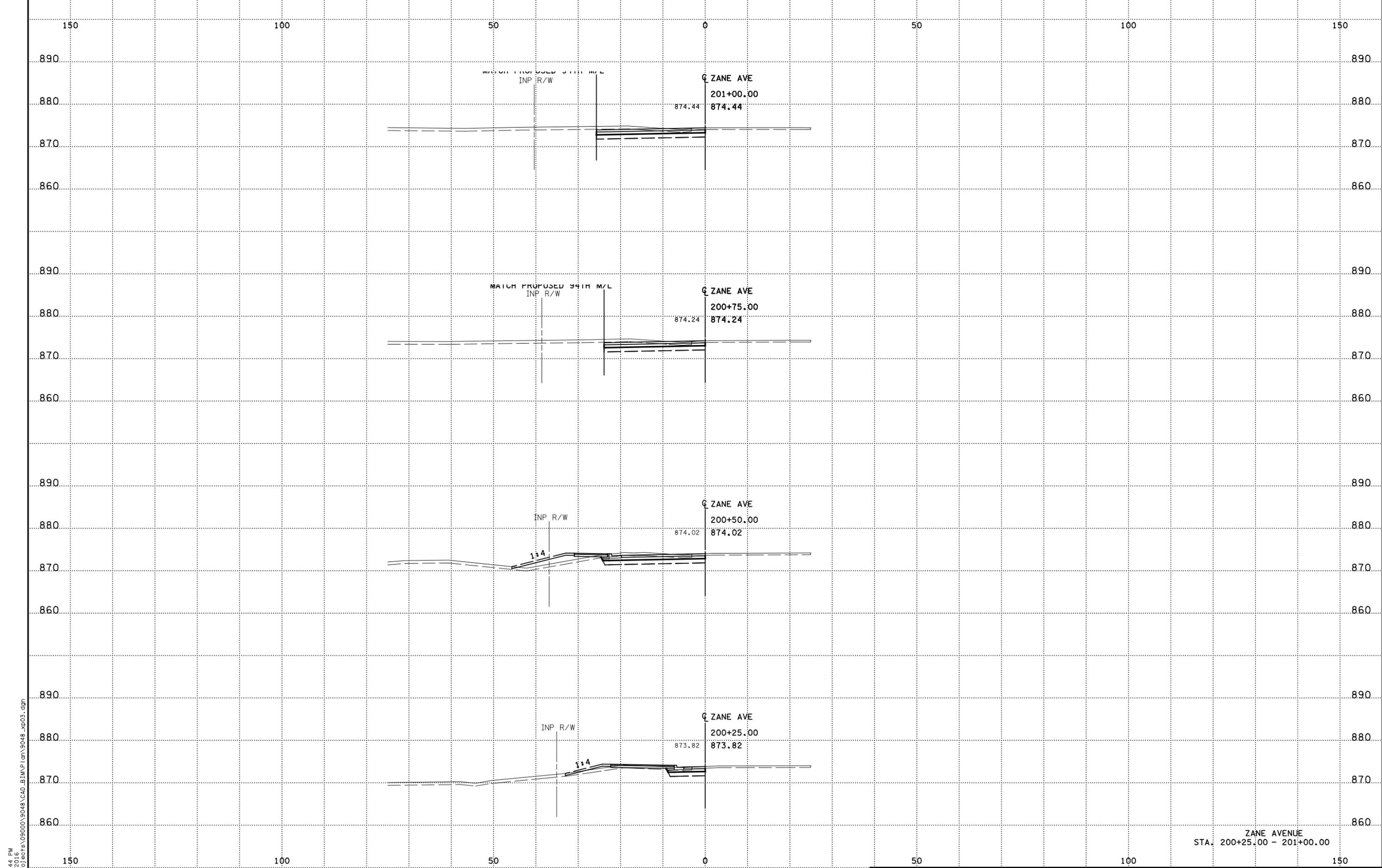


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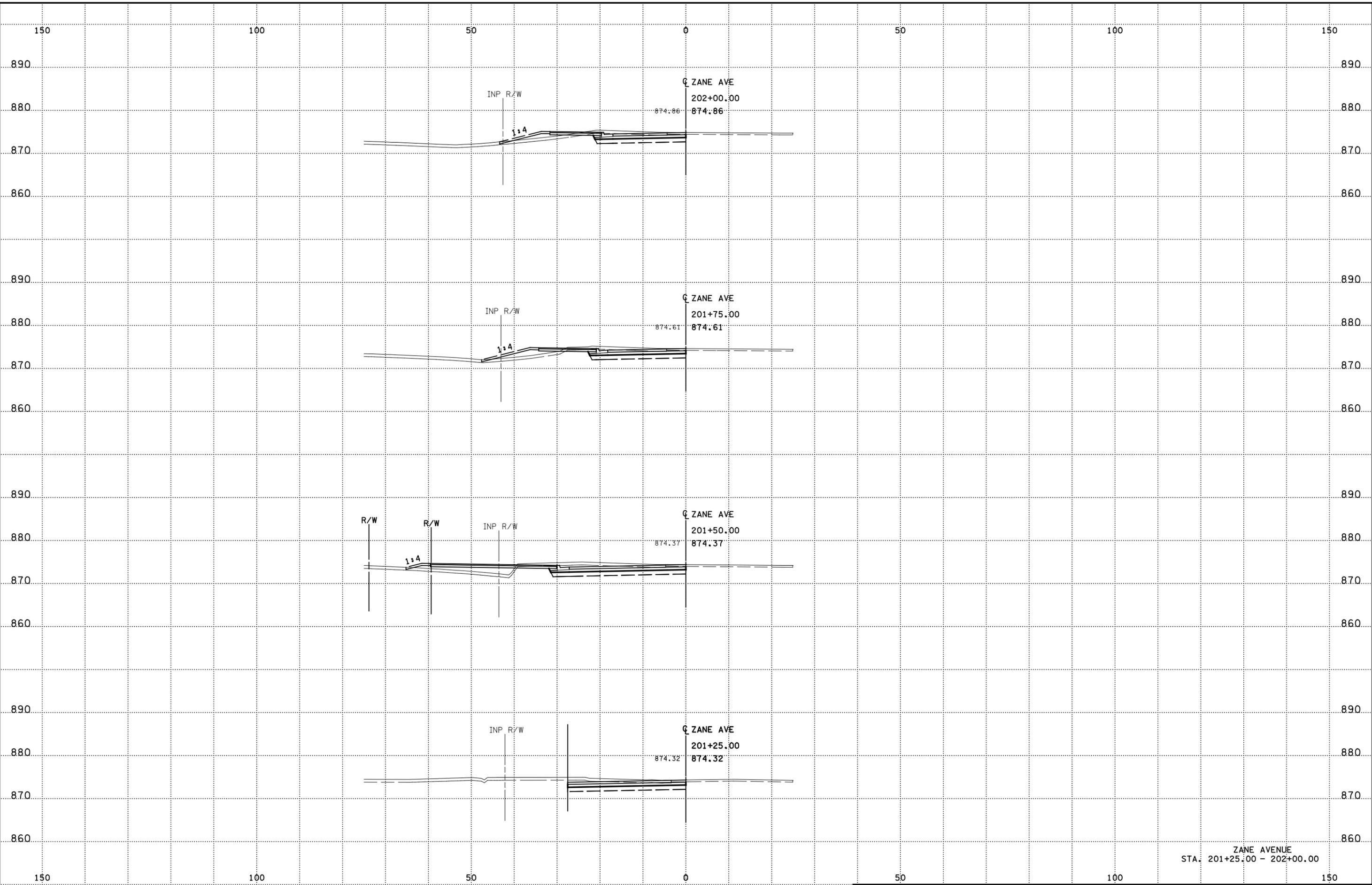
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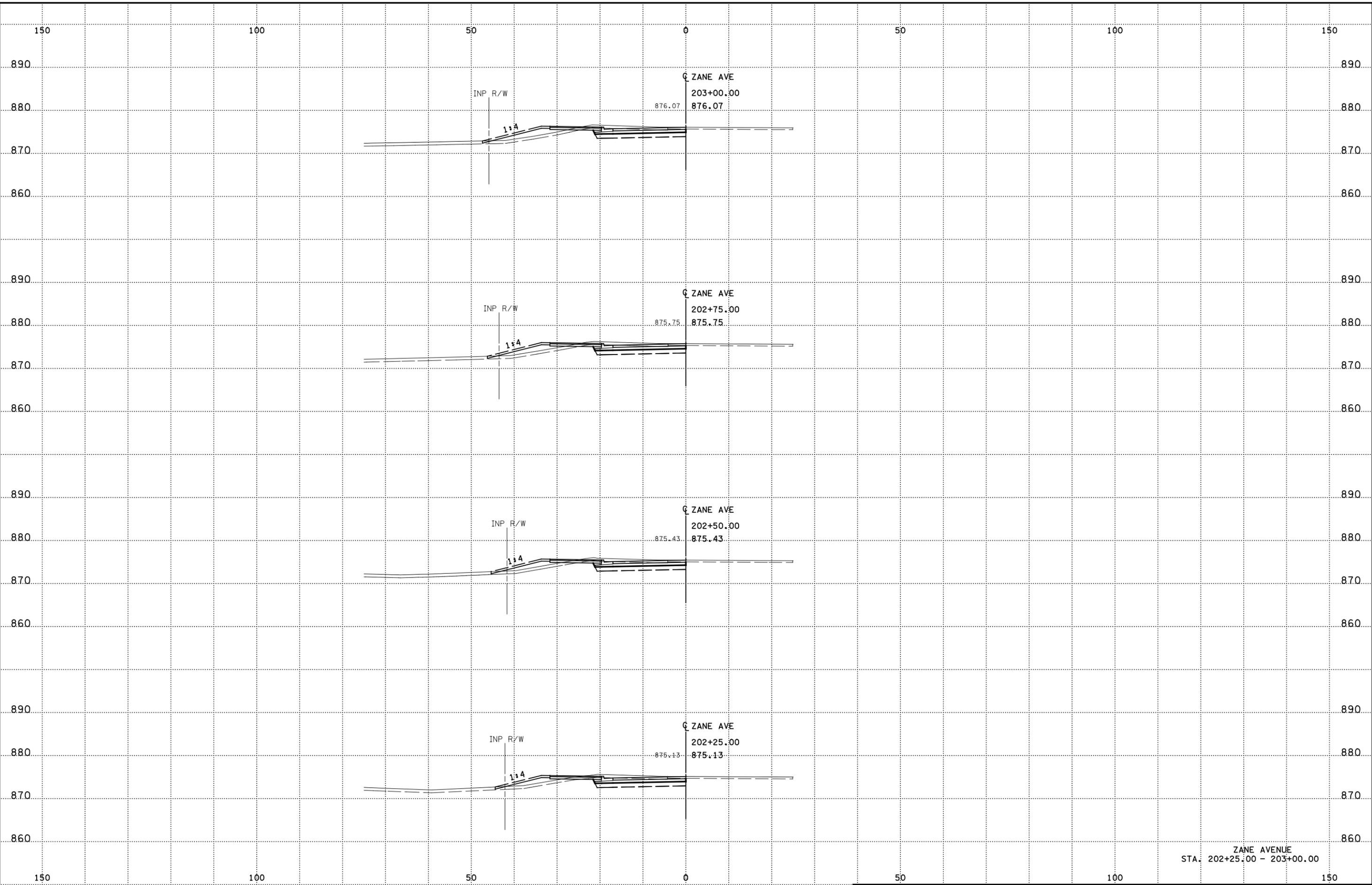
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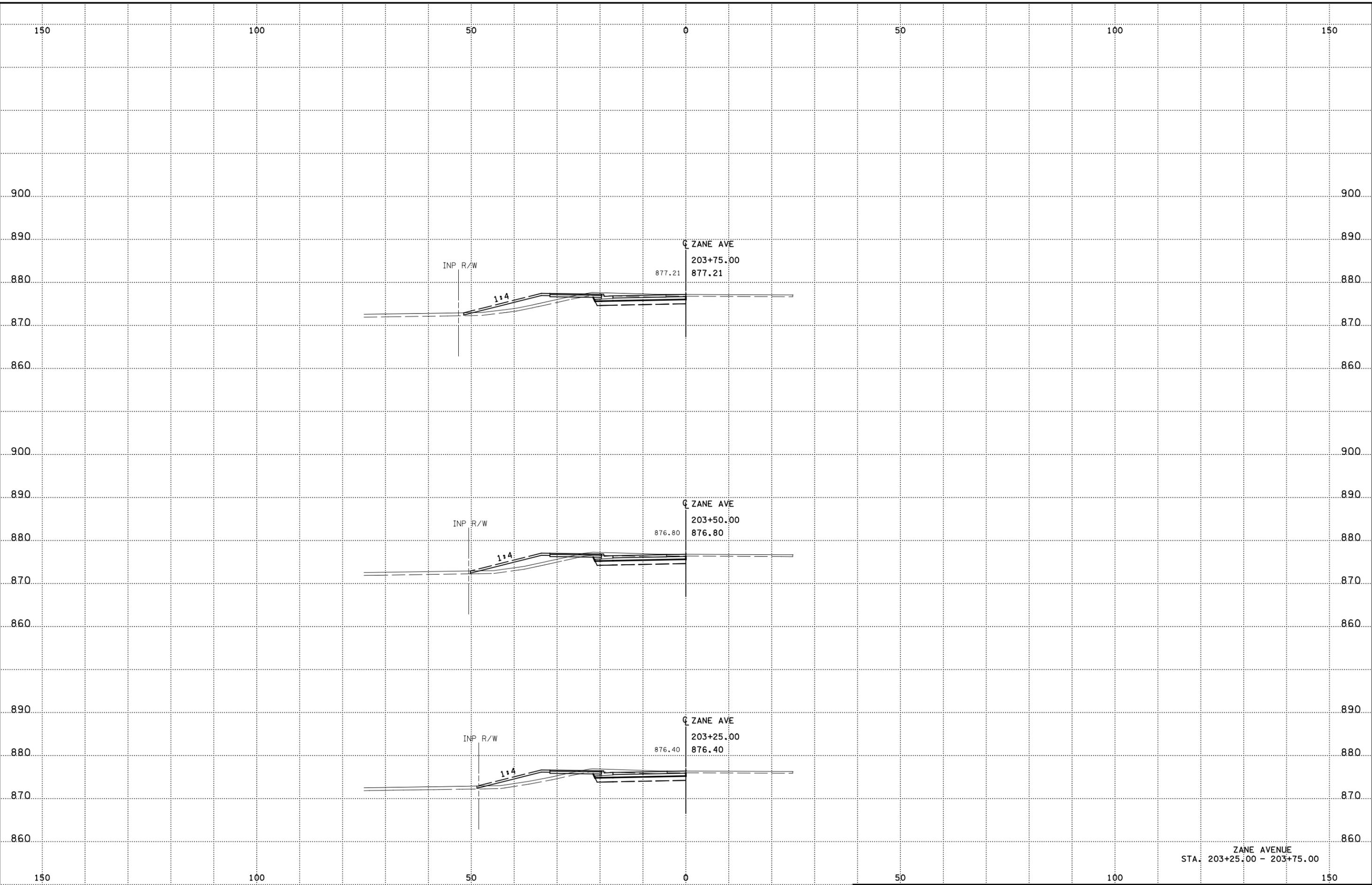
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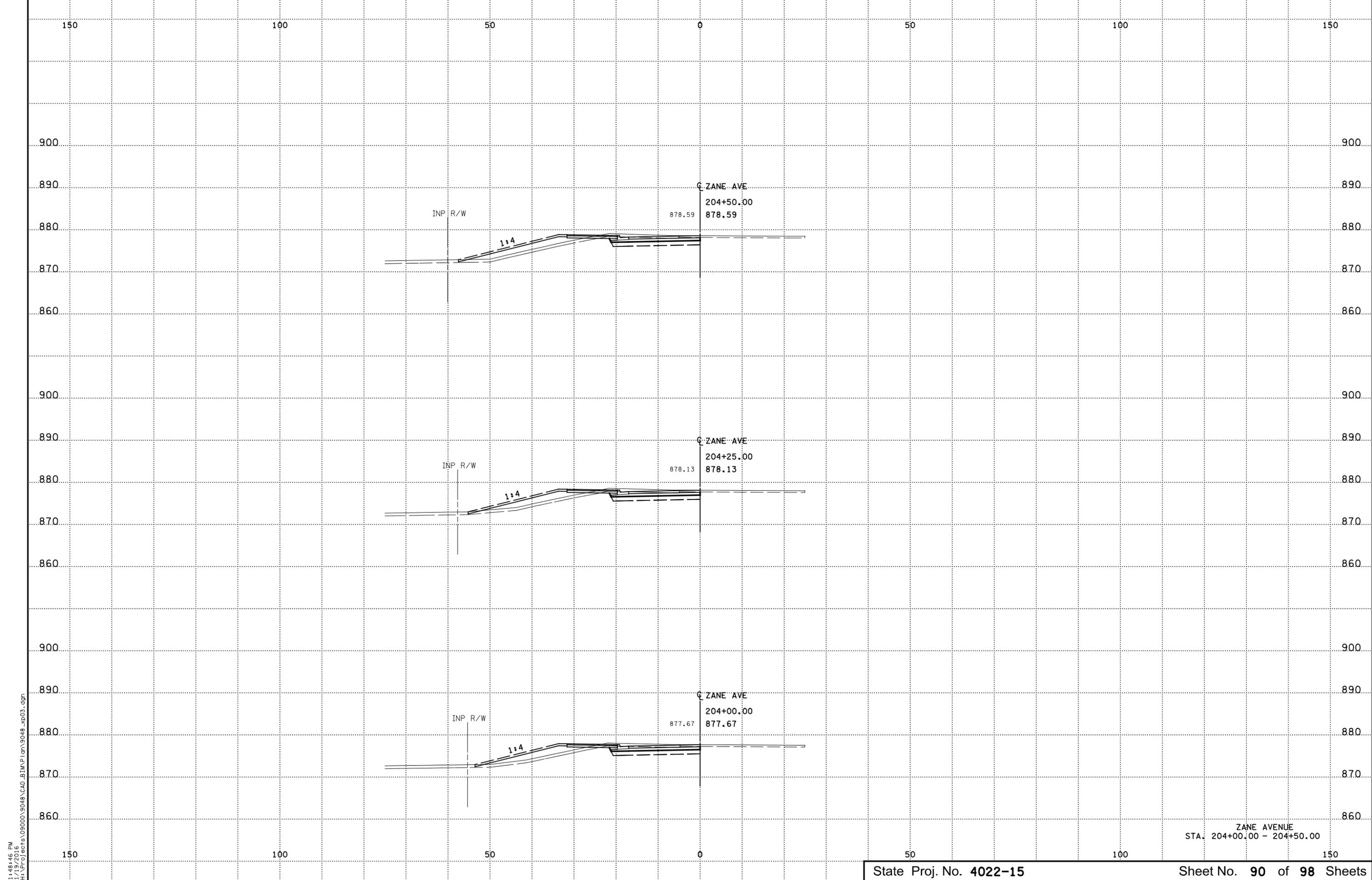


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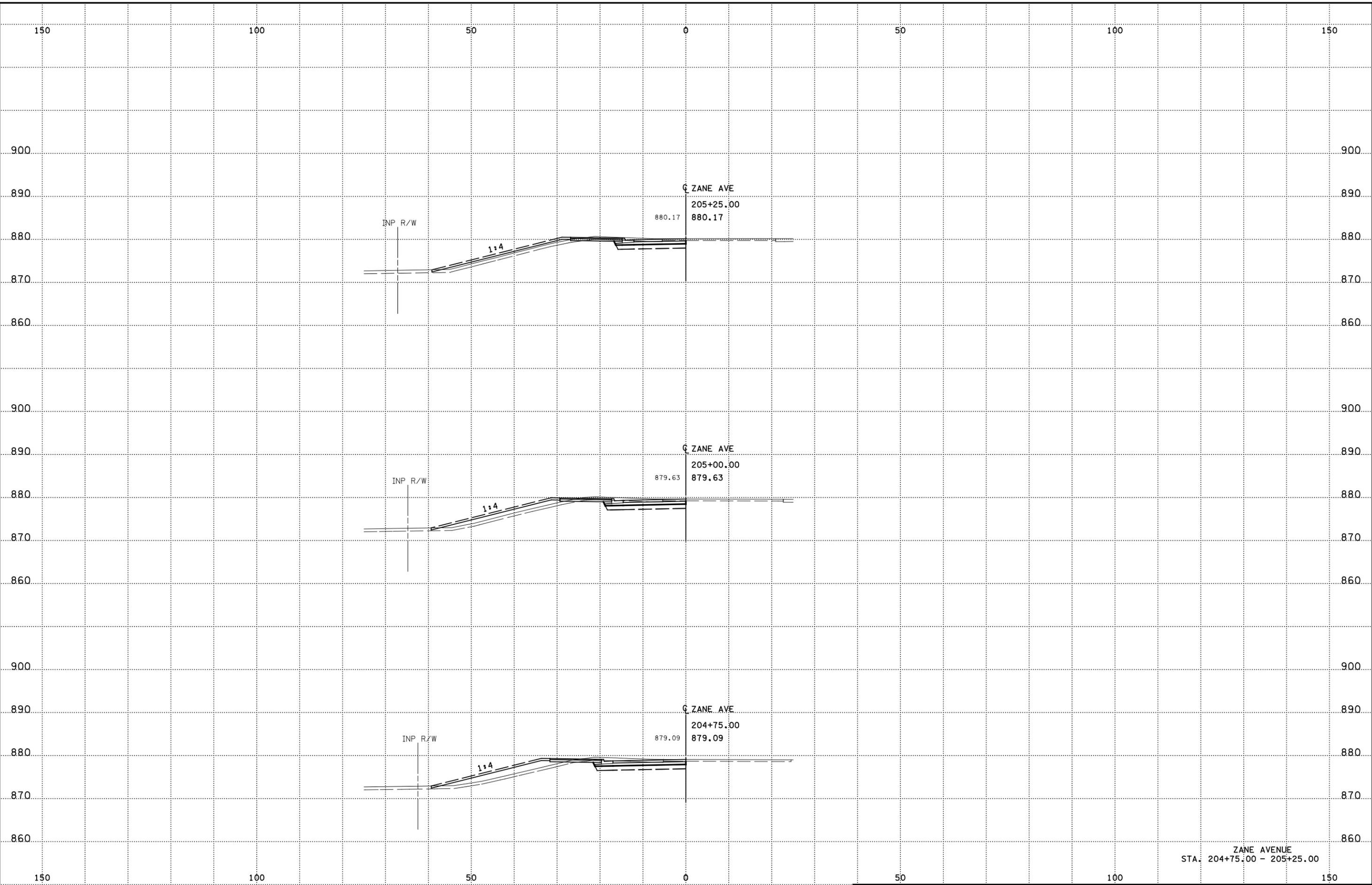


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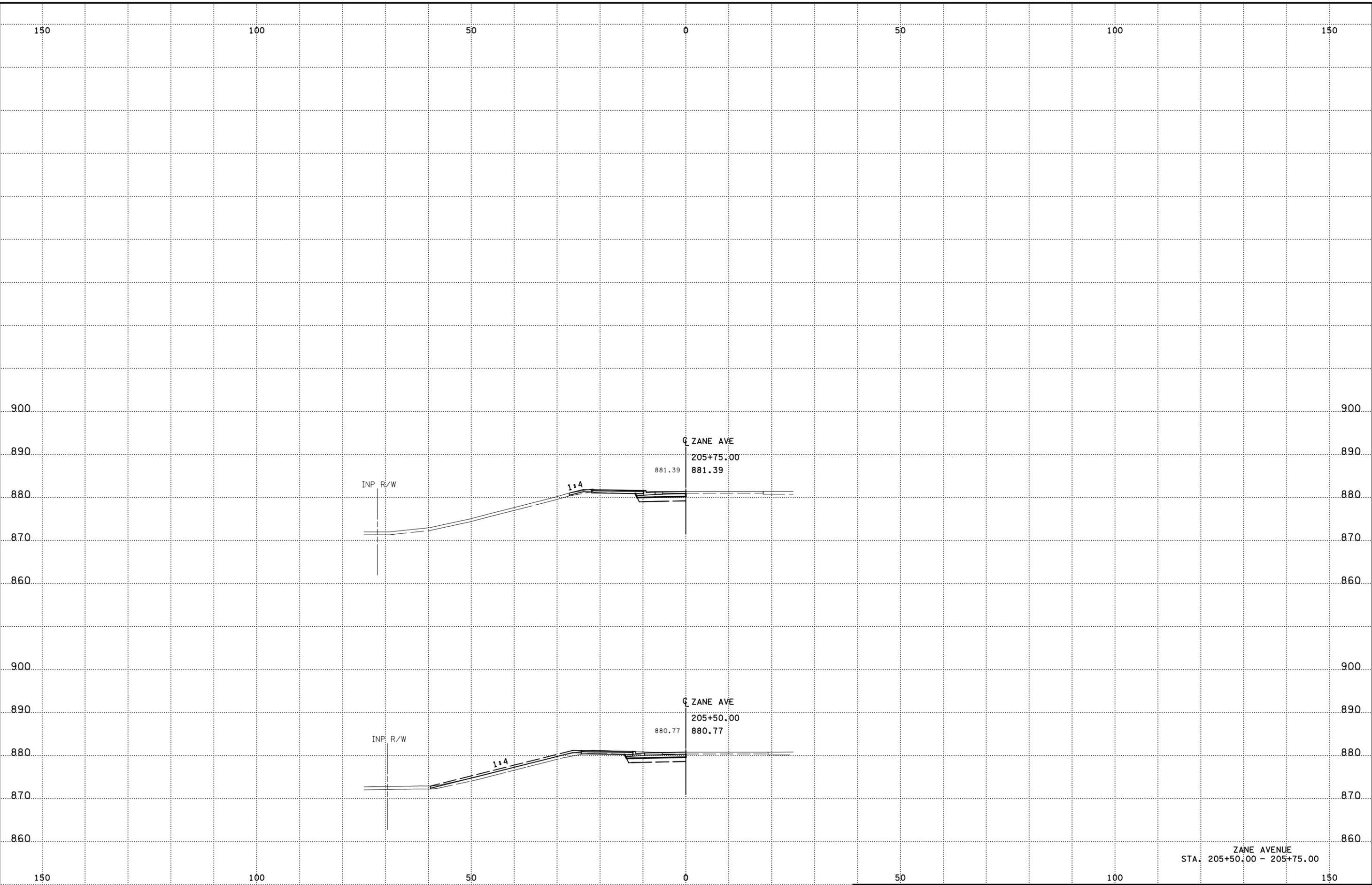
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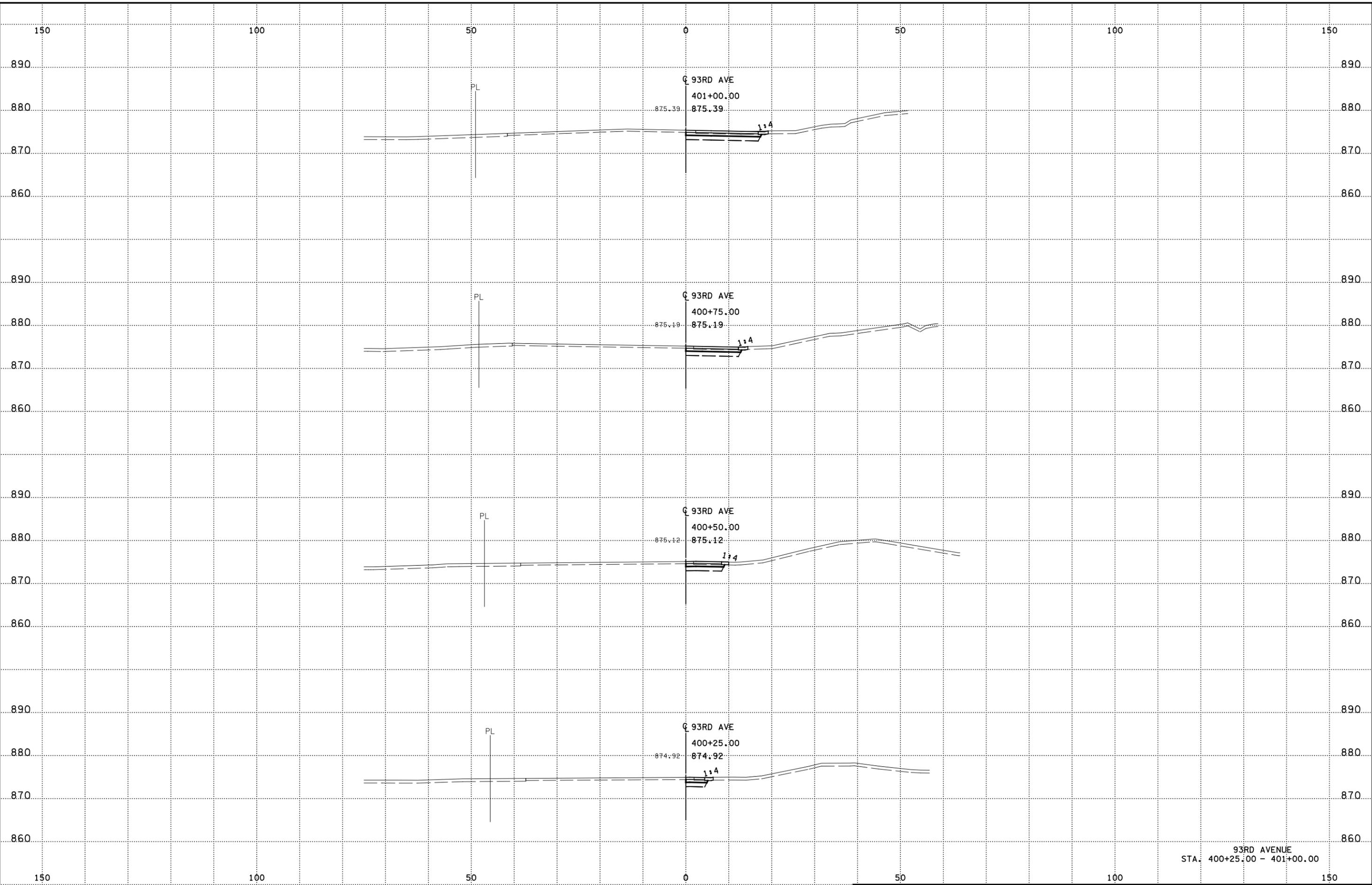
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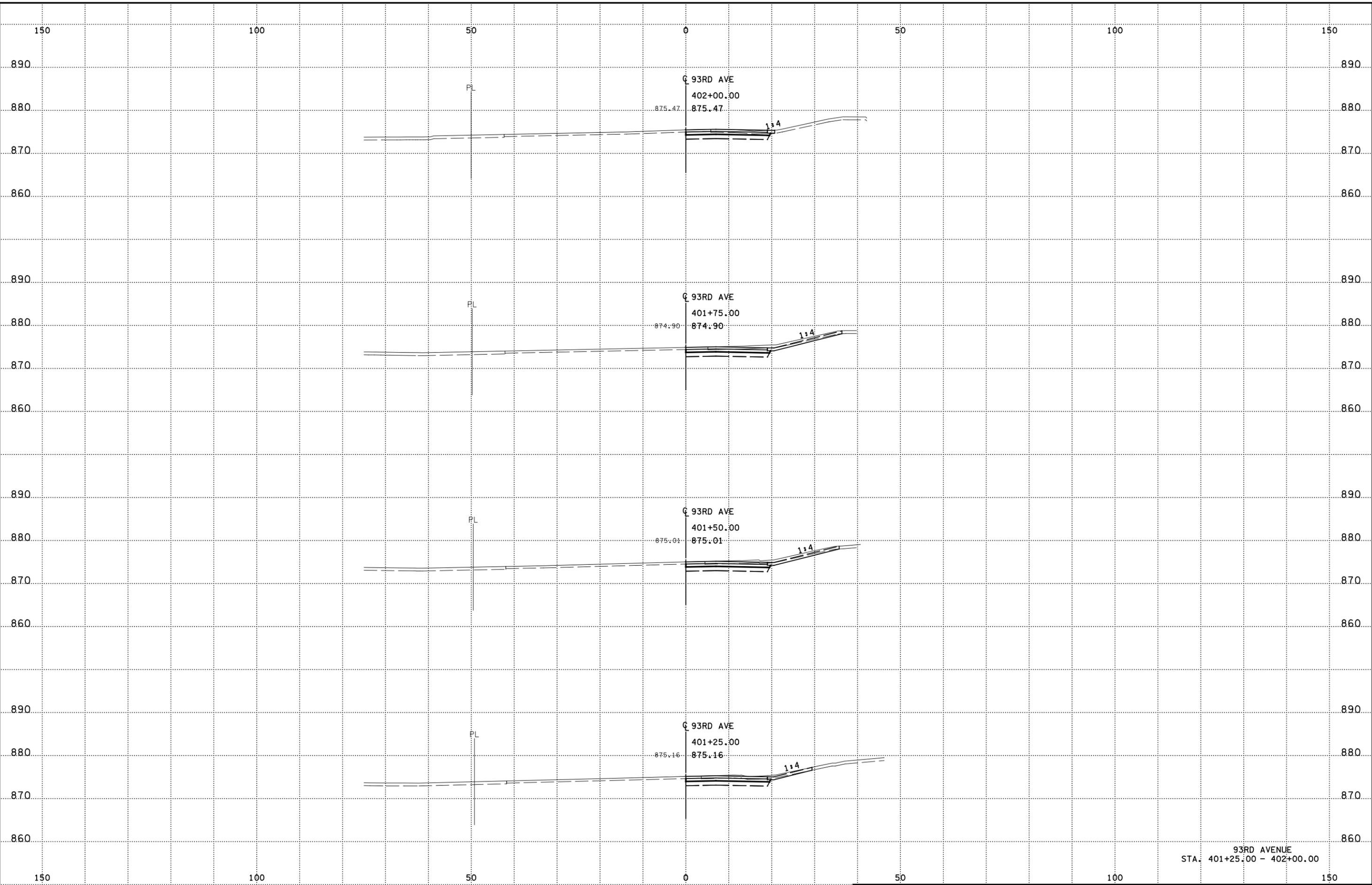
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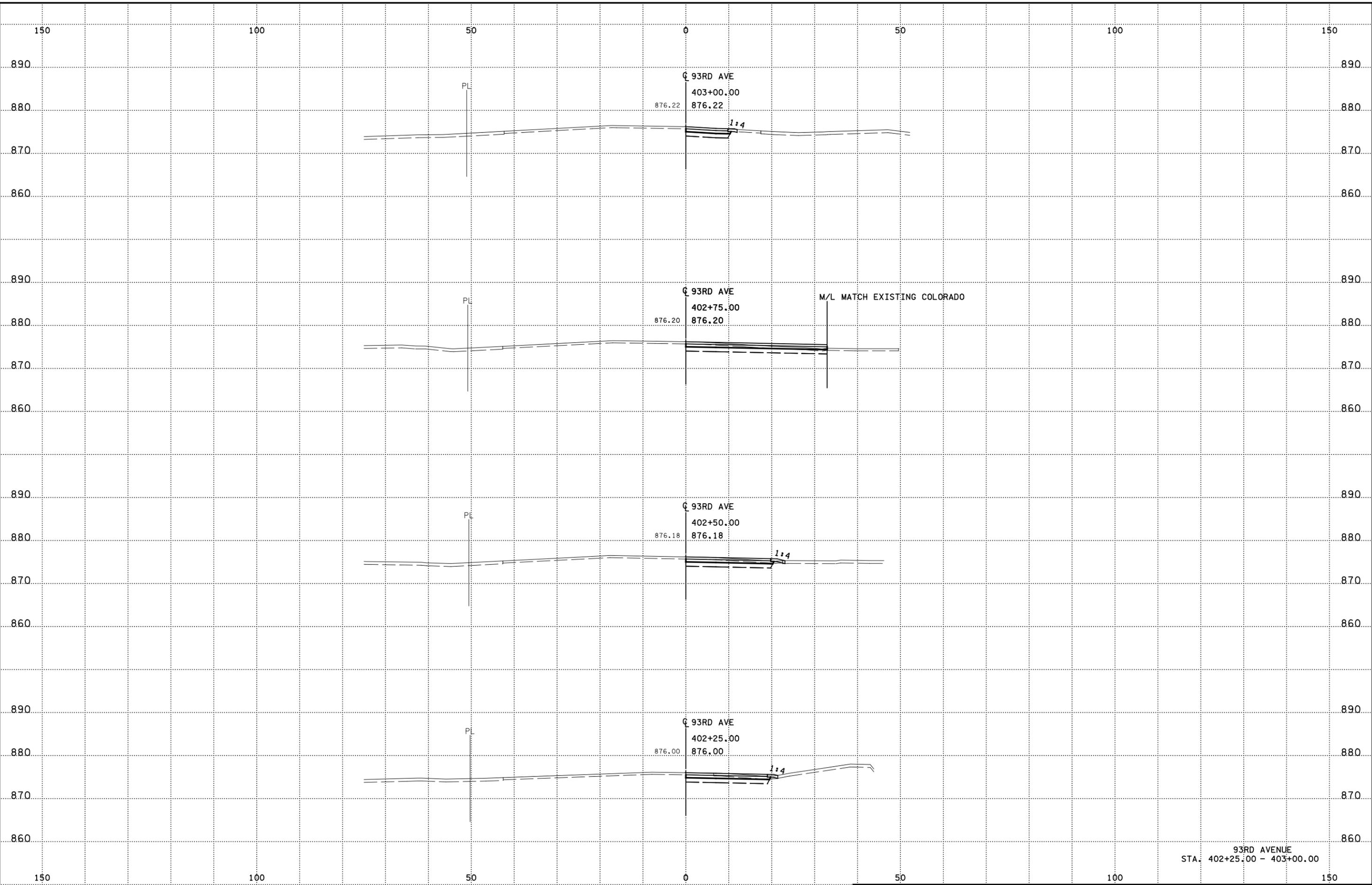
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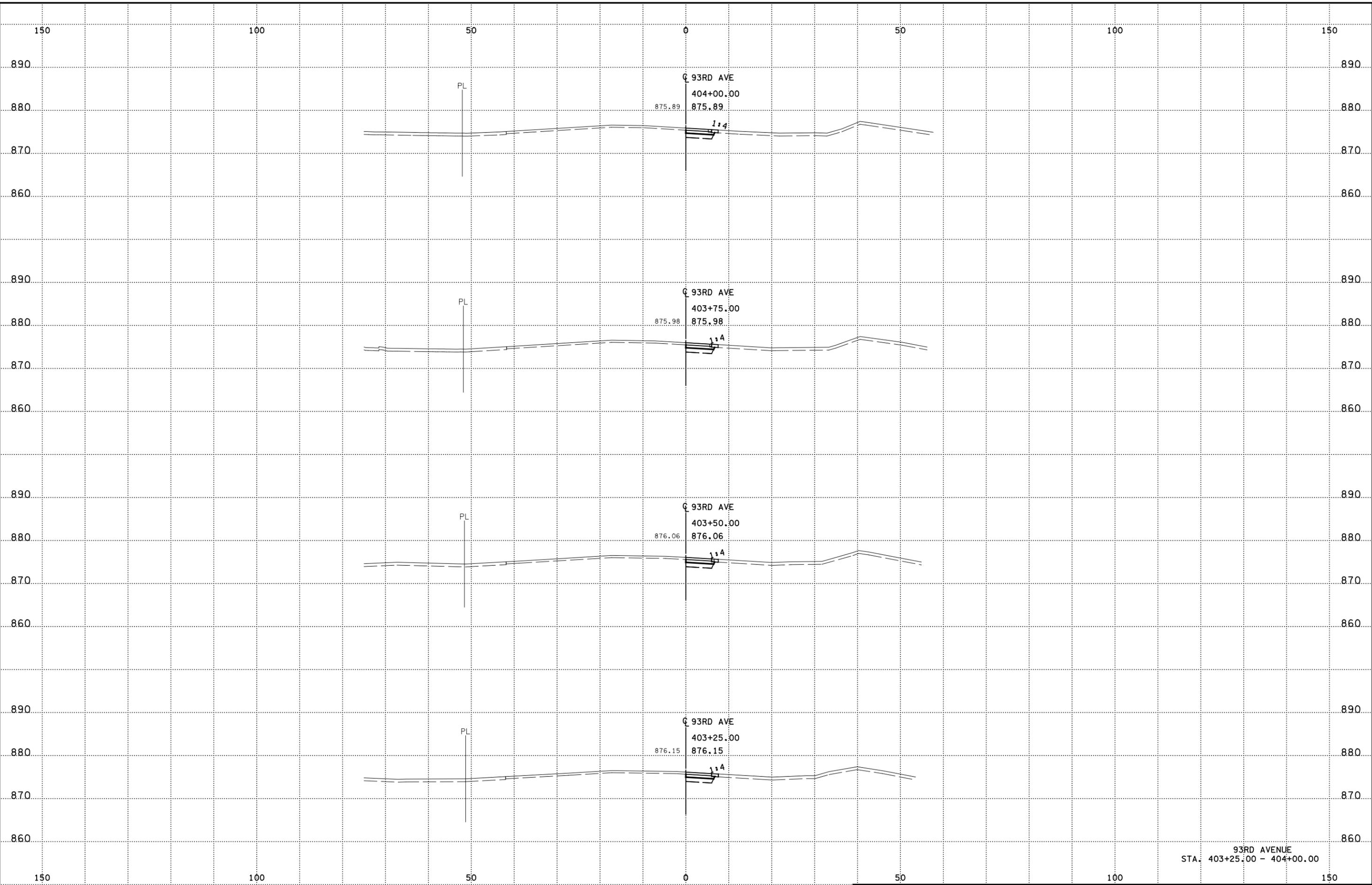
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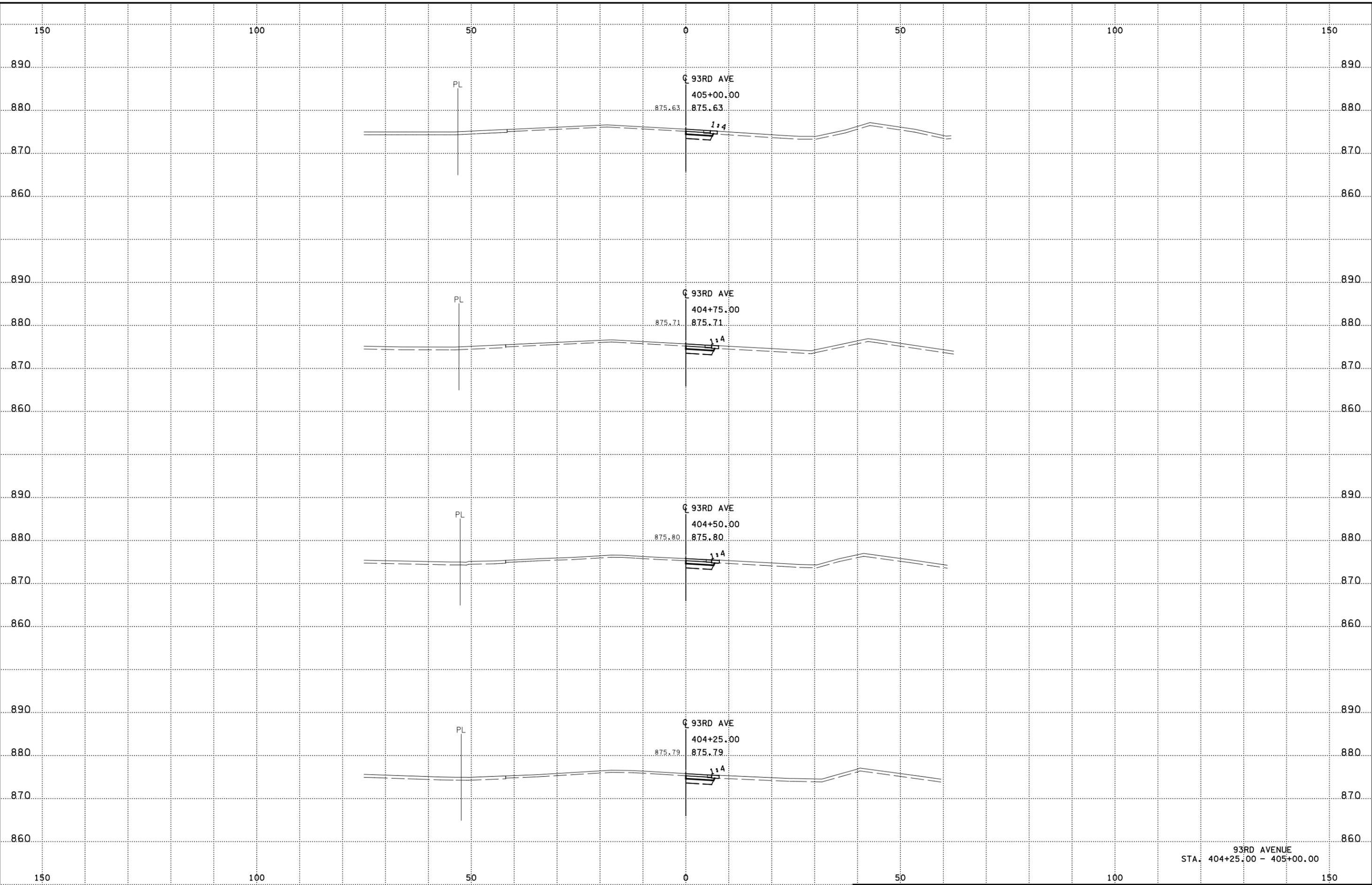
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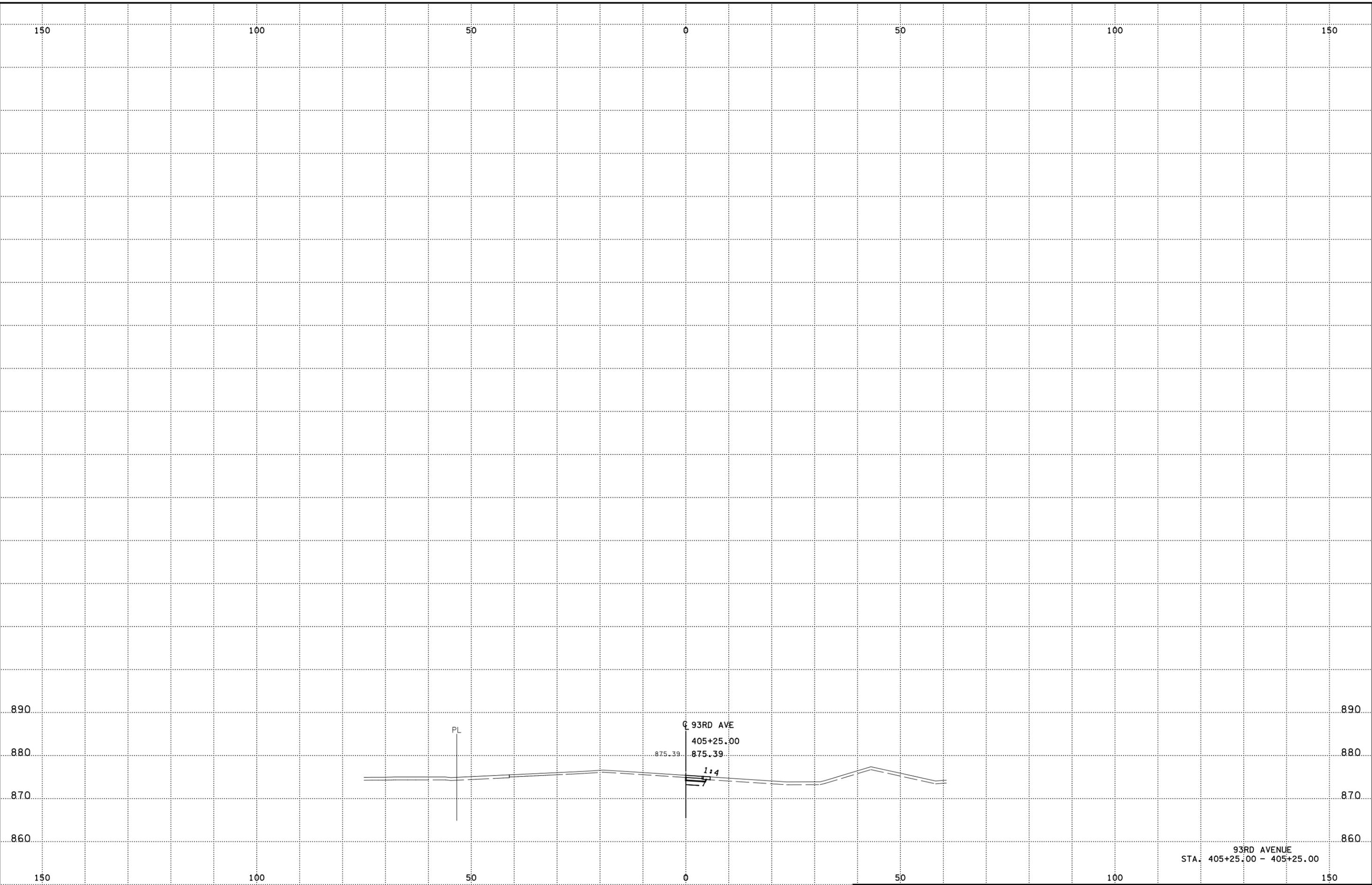
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93RD AVENUE  
STA. 405+25.00 - 405+25.00